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Arthur G. Maki and Joseph S. Wells

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Wavenumber Calibration Tables From Heterodyne Frequency Measurements

Arthur G. Maki[1]
Molecular Physics Division
Physics Laboratory
National Institute of Standards and Technology
Gaithersburg, MD 20899

and

Joseph S. Wells[2]
Time and Frequency Division
Physics Laboratory
National Institute of Standards and Technology
Boulder, CO 80303

Current Addresses:

[1] 15012 24th Ave. S.E.
Mill Creek, WA 98012

[2] Phlatirons Photonics, Inc.
2385 Kohler Dr.
Boulder, CO 80303

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CONTENTS

PREFACE

We dedicate this volume to the memory of the late F. Russell Petersen, who was one of three original members of the project and who made invaluable contributions until his untimely demise in 1983. Russ was known for his CO_2 laser expertise, but his contributions and knowledge of physics extended over a much wider range. His dedication to manuscripts was meticulous, his wry humor was uplifting, and his presence tended to put things in the proper perspective. On occasion when debating whether a measurement was of sufficient accuracy, he would remark, "All we can do is the best we can." We have attempted to carry the work forward with this attitude. He left a legacy not only of his CO_2 lasers which are still in use, but also a sense of inspiration to those of us in the Time and Frequency Division of the National Institute of Standards and Technology (NIST).

We are grateful to our colleague of many years, D. A. Jennings, for his contributions which included writing the frequency synthesis programs, collaboration on some TDL measurements and some experiments with nonlinear crystals, as well as various discussions in general. M. D. Vanek has also been an especially valuable coworker in the past few years. We gratefully acknowledge the contributions of various visiting physicists who worked on the tunable diode laser (TDL) heterodyne measurements. The first was D. J. Sukle of Front Range Community College in Westminster, Colo. More recently guest researchers, A. Hinz and M. Schneider, from Prof. W. Urban's group in the Institut für Angewandte Physik of the Univ. of Bonn, have made especially valuable contributions in experiments with the liquid-nitrogen-cooled CO laser. L. Zink was also an important contributor following completion of his Ph.D. at the Univ. of Colorado. It was a pleasure working with every one of these Time and Frequency Division visiting scientists.

Of special value were the contributions by our friend, C. R. Pollock, during his tenure as a post doctoral fellow at NIST. These included not only his color center expertise in improving CO_2 frequencies, but also measurements at 2.3 μm on CO, and N_2O.

The results of other types of measurements were used in conjunction with the heterodyne measurements. We thank W. B. Olson, formerly of the NIST Molecular Physics Division, especially for his Fourier transform spectroscopy (FTS) measurements. Other major contributors to the accumulation of data upon which we also drew include A. Fayt, G. Guelachvili, J. W. C. Johns, and J. Kauppinen.

We are also very appreciative of the long term support of the measurement program and the encouragement to aggregate the results in book form by the chiefs of our organizational units, D. B. Sullivan of the Time and Frequency Division and A. Weber of the Molecular Physics Division. We thank J. Burkholder of NOAA and D. A. Jennings and M. Young of NIST for helpful comments regarding the manuscript. We gratefully acknowledge the partial support of this program over the past decade by the Upper Atmospheric Research Office of the National Aeronautics and Space Agency.

ABSTRACT

This new calibration atlas is based on frequency rather than wavelength calibration techniques for absolute references. Since a limited number of absolute frequency measurements is possible, additional data from alternate methodology are used for difference frequency measurements within each band investigated by frequency measurement techniques. Data from these complementary techniques include the best Fourier transform measurements available. Included in the text portion of the atlas are a description of the heterodyne frequency measurement techniques, details of the analysis including the Hamiltonians and least-squares-fitting and calculation procedures. Also included are other relevant considerations such as intensities and lineshape parameters. A 350-entry bibliography which contains all data sources used and a subsequent section on errors conclude the text portion.

The larger portion of the atlas consists of several hundred spectral-maps/facing-tables pages for the various calibration molecules. The spectral maps (as well as the facing tables) are calculated from the molecular constants derived for the work. The primary calibration molecules are the linear triatomics, carbonyl sulfide and nitrous oxide, which cover portions of the infrared spectrum ranging from 488 to 3120 cm^{-1}. Some gaps in the coverage afforded by OCS and N_2O are partially covered by NO, CO, and CS_2. An additional region from 4000 to 4400 cm^{-1} based on CO is also included.

Key words: calibration atlas; carbonyl sulfide; carbon monoxide; carbon disulfide; IR frequency calibrations; IR wavenumber calibrations; nitric oxide; nitrous oxide; wavenumber tables.

Chapter I
INTRODUCTION

The primary purpose of this book is to provide an atlas of molecular spectra and associated tables of wavenumbers to be used for the calibration of infrared spectrometers. A secondary purpose is to furnish a detailed description of the infrared heterodyne frequency measurement techniques developed for this work. Additionally, we provide a bibliography of all the measurements used in producing these tables, as well as to provide a description of how those measurements were combined to calculate energy levels, transitions and uncertainties. We also provide useful related information such as line intensities, pressure broadening coefficients, and estimates of pressure shifts of spectral lines. This book does not include an exhaustive list of all the weaker transition frequencies currently available, especially for the less abundant molecular species. Such a list, containing over 10 000 transitions for OCS, is available, however, in floppy disk form from the authors. To put this book in proper perspective, some background, philosophy, and the status of existing atlases are discussed in the following sections.

Over the last 35 years (since the work of Downie *et al.* **[1.1]**) several compilations of infrared absorption spectra intended for the calibration of infrared spectrometers have appeared. Two compilations have been published by the International Union of Pure and Applied Chemistry (IUPAC) **[1.2,1.3]** and contain sections pertaining to the calibration of fairly low resolution ($0.5\ cm^{-1}$) instruments. Other compilations **[1.4-1.7]** and other sections of the IUPAC compilations **[1.2,1.3]** were devoted to data intended for the calibration of high resolution instruments (resolution better than 0.5 cm^{-1}). This book falls into the latter category. Of the earlier compilations, only the work of Guelachvili and Rao **[1.7]** provides calibration data that are consistently more accurate than $\pm 0.01\ cm^{-1}$.

A number of commercially available infrared spectrometers are capable of recording spectra with a resolution of $0.06\ cm^{-1}$ or better. For the calibration of such spectrometers, one needs calibration data with an uncertainty smaller than 1/30th of the spectral linewidth. For a resolution of $0.06\ cm^{-1}$ this means an accuracy of $0.002\ cm^{-1}$. For Doppler-limited resolution at room temperatures, a calibration accuracy of $0.0002\ cm^{-1}$ or better would be desirable. The present work responds to these needs, even though it was recognized that state-of-the-art instrumentation (for sub-Doppler measurements, for example) could use even more accurate calibration data.

Most high resolution spectrometers are not capable of broad frequency scans. For the most accurate measurements the calibration should be applied to each spectral scan. This requires that at least one and preferably several calibration points be available within the scanning range of the spectrometer. For tunable diode laser spectrometers, a single scan may cover only $0.5\ cm^{-1}$, while for a Fourier transform spectrometer (FTS) a high resolution scan may cover hundreds of wavenumbers. This means that for many purposes calibration standards should be no more than $100\ cm^{-1}$ apart, while for other purposes standards no more than $0.5\ cm^{-1}$ apart are required throughout the infrared region of interest. Our work here presents a compromise between these two requirements.

In our opinion, all previous compilations of infrared wavenumber standards have suffered from the lack of a consistent effort to draw together a number of experimental measurements to arrive at a well determined set of molecular energy levels which could be used to determine frequency (or wavenumber) standards for a number of bands throughout the infrared spectral region. The present compilation provides a model for producing such frequency or wavenumber calibration data.

It is appropriate at this point to define some of the terminology used in this book clarifying an important distinction: in some places emphasis is placed on the difference between frequency measurements and wavelength measurements. All measurements that can be reduced to counting frequencies or frequency differences are frequency measurements, while all measurements that are really comparisons of wavelengths (or wavenumbers), including counting fringes, are wavelength measurements. Fourier transform measurements, for instance are truly wavelength measurements even though counting (of fringes of a laser beam passed through the spectrometer for, example) may be involved.

Most measurements of infrared absorption spectra are made using grating or Fourier transform spectrometers. These measurements are truly wavelength measurements. They rely for calibration on measuring the difference in wavelength of some calibration feature and the feature of the spectrum to be determined. For FTS instruments, the position of the moveable mirror must be determined, while for grating instruments one is essentially calibrating the grating angle and the spacing of the grooves of the grating. Very often these instruments use more than one beam and compare the wavelength of a calibration beam with the beam carrying the spectra of interest. With FTS instruments a helium-neon laser beam is often used to monitor the mirror position. In other cases a single beam is used, but one cannot be certain that the beam properties are independent of wavelength. With all wavelength measuring instruments, it is extremely important that the calibration light beam follow precisely the same path through the spectrometer as the beam of light being measured. Problems of wavelength-dependent diffraction effects become very important for measurements intended to approach or exceed one part in 10^7. One of the most insidious problems with wavelength measurements is the risk (or ease) of incurring systematic errors and the virtual impossibility of detecting them.

The great advantage of frequency measurements is that they simply depend on frequency counting techniques. Over the years considerable attention has been given to electronic techniques of frequency counting, and simple, accurate, well calibrated devices are readily available. The accuracy of frequency techniques does not depend on whether or not the beams are perfectly collinear or have parallel wavefronts. If a countable signal (25 dB signal-to-noise ratio) is obtained, it will be correct. The frequency of light does not depend on the medium, nor does it depend on the angle from which it is viewed.

Over the past decade we have striven to provide infrared heterodyne frequency measurements on the transitions and energy levels of several simple molecules, which are good candidates for frequency calibration standards. OCS, CO, and N_2O were chosen because they are stable, safe to handle, easily obtainable, and well documented in terms of good measurements reported in existing literature. Furthermore, they are particularly amenable to the accurate calculation of energy levels from a relatively simple Hamiltonian.

For these molecules a least-squares fit of many transitions (over 3000 OCS lines for example) has permitted the determination of all of the lower energy separations, using frequency differences referred to the primary cesium frequency standard. Due to statistical improvements from a large data base, transition frequencies between these energy levels can be calculated with greater accuracy than any single measurement with its attendant random errors.

Although we have had to use some FTS (wavelength) measurements to help define certain higher order rotational constants, for the most part the energy levels were determined from *frequency* measurements because they are less susceptible to unknown systematic errors than are wavelength measurements. Particular importance was attached to estimating the uncertainties in the transition wavenumbers; see the discussion in the chapter on errors (Chapter IV).

As with any good calibration standard, a number of different measurements were used in determining the energy levels and transition frequencies. However, only a few laboratories have used frequency measurement techniques in the infrared region and very few of the more accurate sub-Doppler frequency measurements have been made, so it is somewhat premature to claim the level of accuracy that we desire for infrared standards. Nevertheless we are encouraged by the convergence of different FTS measurements on the same values for the band centers as frequency measurements. Our publication of this atlas at this time is dictated by the need to provide good calibration data now, rather than await the arrival of a perfect atlas.

Of course the combination of OCS, CO, and N_2O gases is insufficient to provide calibration data everywhere within the infrared, so we have had to provide heterodyne measurements on other molecular species, such as CS_2 and NO in order to fill some of the gaps. The user will still note that many gaps remain in the coverage appearing by these tables. To some extent these gaps may be filled by using the data provided by the compilation of Guelachvili and Rao [**1.6**]. We also expect that future measurements will provide calibration data where none are currently available.

Since most workers are more comfortable with calibration data given in wavenumber units, the tables in this book are given in wavenumbers (cm^{-1}) even though the values were primarily determined from frequency measurements. The conversion from frequency units to wavenumber units was made by using the defined value of the velocity of light, $c = 299\ 792\ 458$ m/s. Since the tables are given in wavenumbers, we often use the terms wavenumber and frequency interchangeably in the text, but the term wavelength is reserved for quantities determined by wavelength measurements and must not be confused with frequency measurements.

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Chapter II
TECHNIQUES USED FOR INFRARED HETERODYNE FREQUENCY MEASUREMENTS

Preliminary Considerations

At the present time the only frequency measurements that have been made on infrared absorption spectra of molecules treated in this book are those made in the NIST Boulder Laboratories **[5.73]**[1], the Harry Diamond Laboratories **[5.88]**, the University of Lille **[5.126]**, and University of Bonn **[5.321]**. The measurements of the N_2O laser transition frequencies made at the National Research Council of Canada **[5.183]** were also used here. This chapter describes the techniques that have been used in the NIST Boulder frequency measurements in order to familiarize the reader with the techniques that have evolved. We hope that such familiarity will give greater confidence in the accuracy of the results.

The first heterodyne frequency measurements on carbonyl sulfide (OCS) were made in the NIST Boulder Labs. A frequency-stabilized CO_2 laser served as the local oscillator for these heterodyne measurements. For this chapter, the term local oscillator is reserved for the fixed-frequency oscillator which carries the reference frequency information (near the frequency of the molecular transition to be measured) to the mixer or heterodyne detector. For each OCS measurement, the frequency of a tunable diode laser (TDL) was locked to the peak of a selected (OCS) absorption line with an assigned uncertainty, $\delta_{\nu\mathrm{lock}}$, given by $\pm \frac{1}{2}\Delta\nu_{\mathrm{Dopp}}/\mathrm{SNR}$, where $\Delta\nu_{\mathrm{Dopp}}$ is the full Doppler width at half maximum and SNR is the signal-to-noise ratio of the first derivative lock signal. The frequency of the locked TDL was compared with the frequency of the CO_2 laser frequency standard by mixing the TDL and CO_2 laser radiation in a fast (1 GHz, 3 dB bandwidth) HgCdTe detector. The resulting difference-frequency beatnote was measured with the aid of a spectrum analyzer and a marker oscillator (a conventional oscillator whose frequency was tuned to the center of the beatnote). The frequency of the OCS transition was the sum of the CO_2 laser frequency and the appropriately signed beatnote frequency.

Similar sets of measurements have also been made in which the TDL was heterodyned against a CO laser local oscillator (or transfer oscillator). In these cases the frequency of the CO laser was simultaneously measured relative to a frequency synthesized from combinations of CO_2 laser standard frequencies **[5.94]**. In a third type of measurement, a tunable color center laser (CCL) was the local oscillator. In this case, the CCL (which was locked to the transition of interest) was heterodyned directly with a frequency synthesized from CO_2 laser standards **[5.304]**. All three techniques are discussed in detail later in this chapter.

The determination of the spectroscopic constants for a particular band of a selected molecule was based on a number of measurements such as those described above. Some preliminary considerations for selection of the particular transitions to be measured were as follows. A review of the set of transitions of a particular band of interest served as a starting point. This set was reduced immediately to those transitions whose frequencies were within 10 GHz (the approximate combined bandpass limit of the HgCdTe detector-rf-amplifier that was used) of the frequency of a CO_2 laser or a CO laser transition frequency. Those transitions which were blended with nearby transitions from other bands or isotopic species of the molecule of interest were deleted from this subset. An attempt was then made to select (from the candidates available at this point) and measure those transitions which permitted the best determination of the constants. As a minimal set, these included low-J transitions in both the P- and R-branches in order to determine the band center, intermediate-J

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[1] Rather than repeat references given in the bibliography (Chapter V), they are referenced as [5.XX]. The references at the end of Chapter II are referenced as [2.XX], *etc.*

transitions for determining the *B*-value, and high-*J* (60 to 100 depending on the particular band strength) transitions for the centrifugal distortion constants. If possible, additional measurements were made in order to cover the entire band with the smallest gaps possible. This served to increase the redundancy and to minimize extrapolated values in the calculated frequencies.

In some instances, it was not possible to realize the above goals. The region of interest often covered 100 cm^{-1} or so and typical TDL frequency coverage (guaranteed by the vendor) was 15 cm^{-1}, although many times the coverage turned out to be larger. Within the 15 cm^{-1} region, there were usually holes in coverage and it was necessary to buy the TDLs in pairs. An additional factor which was not within the experimenter's control concerned frequency holes (regions where the beatnote was not discernible) in the bandpass of the combination of the HgCdTe detector and the rf amplifiers which follow it. These two factors were the final restrictions on the set of measurements which were used to determine the spectroscopic constants for the band.

CO_2 Laser Standard Frequencies

The 1.25 m long CO_2 lasers used in these measurements were constructed by the late F. R. Petersen **[2.1]**. These had gratings for line selection and output mirrors typically coated for 85% transmission. In order to render the output beams nearly parallel, compensated output coupling mirrors were utilized. By compensated, we mean that the anti-reflection coated surface of the mirror was formed with a smaller radius of curvature than the reflecting concave surface. Irises at both ends were available for mode discrimination and control of the power output, which was 1 to 3 W. These lasers were equipped with internal absorption cells (filled to a pressure of 5.3 Pa (40 mTorr) of carbon dioxide) to provide frequency stabilization by the Freed-Javan technique **[2.2]**. Although some seven isotopic combinations of CO_2 have been the object of extensive frequency measurements, only three isotopes have been used for the NIST heterodyne frequency measurements. These were $^{12}C^{16}O_2$ (626), $^{13}C^{16}O_2$ (636) and $^{12}C^{18}O_2$ (828). [The shorthand notation used here involves the last digits in the rounded nuclear masses for the three atoms, O, C, and O. For example, the $^{16}O^{12}C^{16}O$ laser is designated (626).] In addition to the 1.25 m lasers, a 2 m laser with a similar grating and compensated output mirror (but with an external absorption cell for stabilization) was used for high-J and hot band transitions. This longer laser has been operated with the three different isotopic gases.

The frequencies of the CO_2 transitions were initially related to the cesium standard in an NBS experiment published in 1973 (Evenson *et al.* **[2.1]**). This was an experiment in which the frequency of the methane stabilized HeNe laser was measured. A new wavelength measurement (Barger and Hall **[2.3]**) of the same methane transition was concurrently completed. The combination of these two quantities led to a new (at that time) value for the speed of light, 299 792 456.2(1.1) m/s **[2.4]**.

Figure 1a shows a block diagram of the frequency chain used in the methane frequency measurement. For the sake of brevity, the values of the offset frequencies in that experiment are not discussed here; the interested reader is referred to the original paper **[2.1]**. The essential details of the chain are as follows. An X-band klystron was phase-locked to a quartz crystal oscillator and the X-band frequency was accurately measured by a counter which was referred to the cesium standard. The seventh harmonic of the X-band frequency was used to phase-lock a 74 GHz klystron. The twelfth harmonic of the 74 GHz oscillator was used as a reference to frequency lock an HCN laser. The twelfth harmonic of the HCN laser frequency was close enough to the frequency of the 28 μm water vapor laser for the difference to be made up by the frequency from a phase-locked klystron. Three harmonics of the water vapor laser and another phase-locked klystron frequency moved the chain up to the CO_2 laser region, to the transition $R_{II}(10)$. Another frequency from a phase-locked klystron moved the chain from the 9.3 μm band to the 10.6 μm band, to $R_I(30)$ in particular. Three harmonics of the frequency of the $R_I(30)$ transition brought the chain up near the frequency of the methane-stabilized HeNe laser. (The measured values for these transitions are indicated in the boxes in Fig. 1a and the values are given in terahertz.) Petersen *et al.* **[2.5]** subsequently used the measured

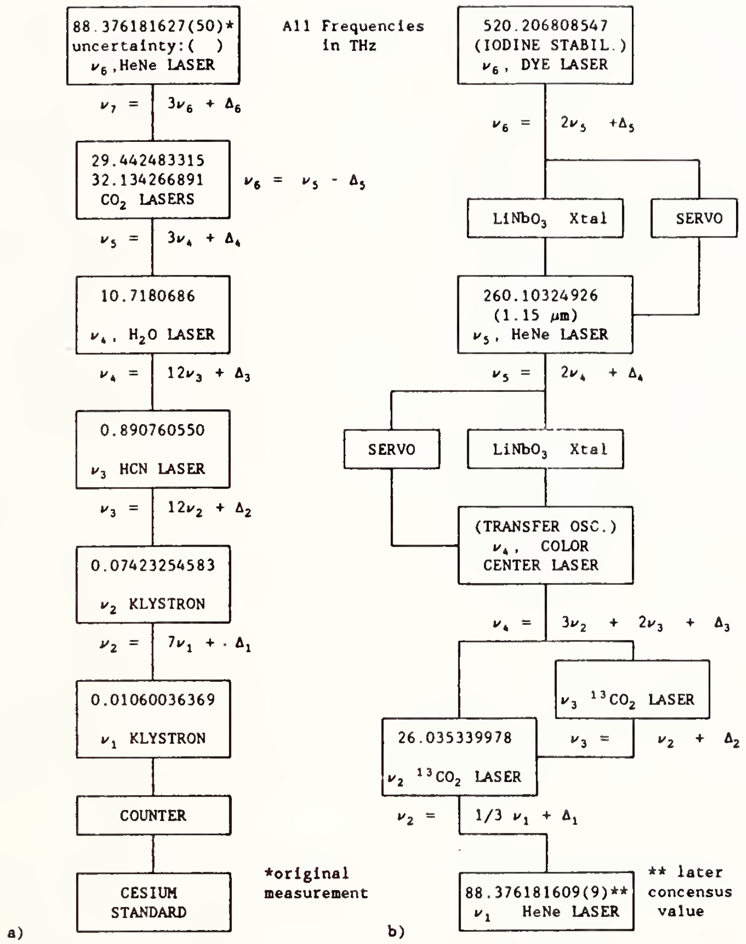

Fig. 1. Diagrams of Schemes Relating CO_2 Frequencies to the Cesium Standard.

values for these two transitions to make additional CO_2 laser frequency measurements and to generate tables of transitions for both the I and II branches.

Since 1973 several different international laboratories have repeated this frequency measurement experiment with minor variations and confirmative measurements have led to a new value for the speed of light which is now defined to be 299 792 458 m/s [2.6]. The proposal and expected acceptance of this new definition provided impetus to extend frequency measurements to the visible portion of the spectrum. Major efforts at NIST-Boulder accomplished this objective and experiments were published in 1983 by Pollock *et al.* [2.7], and by Jennings *et al.* [2.8].

Figure 1b shows a diagram of the chain used to measure the iodine transition at 520 THz (576 nm) [2.7]. The details of this chain are of secondary importance for purposes here, but a sketch will be provided. The starting point was the stabilized HeNe laser at 3.39 μm. A best value for this transition was determined from the most accurate results of the international measurements. The $P_I(50)$ transition of a stabilized $^{13}CO_2$ laser was measured relative to the stabilized HeNe laser, which was assumed to oscillate at the frequency 88 376 181.609$\pm$0.009 MHz. The frequency resettability of the CO_2 laser was reported to be within 5 parts in 10^{11}, which is better than the 1 part in 10^{10} uncertainty in the frequency of the HeNe laser. (Petersen *et al.* [2.9] later used this accurately measured $P_I(50)$ transition to measure other CO_2 transitions and to generate improved calibration tables.)

To continue with the sketch, we note that a second $^{13}CO_2$ transition $P_I(52)$ was phase-locked to $P_I(50)$ by means of a stabilized 62 GHz klystron. The synthesis scheme used to arrive at the CCL frequency is indicated in Fig. 1b. The remainder of the chain was locked from the top down. That is, the second harmonic of the 1.15 μm HeNe laser frequency was locked to the frequency of the dye laser, which was in turn locked to the frequency of the "o" hyperfine component of the visible (576 nm) $^{127}I_2$ 17-1 P(62) transition. The CCL was in turn locked to the frequency of the 1.15 μm HeNe laser. Both the HeNe and the CCL served as transfer oscillators in this scheme. The comparison was made at the CCL-CO_2 laser point of the chain. In a separate experiment, the HeNe laser was locked to its Lamb dip and that frequency was determined. The $^{13}CO_2$ frequency listed in Fig. 1b is the frequency used in the 520 THz determination (it was frequency-offset-locked from a stabilized CO_2 laser to remove the dither) and is not the frequency of the center of the transition. The values for the two higher frequencies are given in Fig. 1b. Additional details may be found in Ref. **[2.7]**.

The frequencies currently used for the $^{12}C^{16}O_2$ isotope are based on the most recent values (which made use of the above results) which were published in 1983 by Petersen *et al.* **[2.9]**. The stated 1 sigma uncertainties for the calculated tables based on these measurements are smaller than 5 kHz for the CO_2 transitions ($J<40$) which were used in the infrared heterodyne measurements. Subsequent CO_2 measurements relative to the values of Petersen were made by Freed and coworkers at MIT **[2.10]**. The uncertainties in the MIT values are also less than 5 kHz for the $^{13}C^{16}O_2$ transitions (and less than 10 kHz for the $^{12}C^{18}O_2$ transitions) used here. Note that the 1.25 m CO_2 lasers used in the TDL measurements were first generation lasers and that the numbers given in Tables 1, 2, and 3 were obtained using second generation lasers. Even if the reproducibility in the laser lock for the older lasers were somewhat poorer (an uncertainty of about 50 kHz was allowed for the realization of the frequencies) it would be of negligible consequence for the results presented here. The transition frequency values (for the three carbon dioxide isotopes) which were used are given in Tables 1, 2, and 3.

Listed in Table 4 are the frequencies and wavenumbers for some transitions of the $^{13}CO_2$ hot band (01^11-$[11^10,03^10]_I$) which extend the useful range of standard reference frequencies. These frequencies were determined from NIST measurements in which the 2 m CO_2 laser and an external reference cell were used. While measurements were made on both the 636 and 626 isotopes **[2.11, 2.12]**, only the 636 frequencies were used for subsequent TDL measurements. The two sigma uncertainties for the transitions used for OCS measurements were less than 80 kHz.

For the measurements in the CO_2 laser region, the CO_2 frequencies given in some of our papers were rounded to the nearest 0.1 MHz. However, the full accuracy of the CO_2 frequencies was retained for calculating or synthesizing the CO frequencies and the CO frequency was then rounded to the nearest 0.1 MHz.

Heterodyne Frequency Measurements with the TDL and CO_2 Laser (860 to 1120 cm^{-1})

The measurement procedure has evolved over the course of this work **[5.73, 5.83, 5.87, 5.221, 5.230, 5.243]**. A brief history of the TDL refrigeration evolution and the details of the apparatus and procedure currently in use will be described here. For considerations involving the TDL, refer to Fig. 2, which is a block diagram of the measurement scheme recently used for some N_2O measurements **[5.243]**.

The first commercially available TDL spectrometers featured liquid helium Dewars as the refrigeration system. Our initial system used a 4 l helium Dewar. It was necessary to use an assortment of stainless steel shims between the Dewar's OFHC (oxygen free high conductivity) copper cold surface and the TDL in order to vary the temperature (and operating wavenumber) of the TDL. The use of liquid helium was inconvenient, changing shims was cumbersome, and the resulting temperature cycling of the TDLs was reputed to shorten their lifetime; nevertheless a narrow TDL linewidth was generally observed.

Table 1. Frequencies (MHz) for the 626 carbon dioxide laser.

P(50)	27 413 600.4112	P(50)	30 480 527.0432
P(48)	27 478 430.1483	P(48)	30 545 874.3287
P(46)	27 542 482.6299	P(46)	30 610 516.1385
P(44)	27 605 762.5803	P(44)	30 674 445.7649
P(42)	27 668 274.4491	P(42)	30 737 656.7009
P(40)	27 730 022.4165	P(40)	30 800 142.6462
P(38)	27 791 010.3989	P(38)	30 861 897.5131
P(36)	27 851 242.0547	P(36)	30 922 915.4319
P(34)	27 910 720.7882	P(34)	30 983 190.7566
P(32)	27 969 449.7554	P(32)	31 042 718.0701
P(30)	28 027 431.8676	P(30)	31 101 492.1893
P(28)	28 084 669.7958	P(28)	31 159 508.1695
P(26)	28 141 165.9746	P(26)	31 216 761.3094
P(24)	28 196 922.6060	P(24)	31 273 247.1550
P(22)	28 251 941.6621	P(22)	31 328 961.5037
P(20)	28 306 224.8891	P(20)	31 383 900.4083
P(18)	28 359 773.8096	P(18)	31 438 060.1801
P(16)	28 412 589.7252	P(16)	31 491 437.3923
P(14)	28 464 673.7190	P(14)	31 544 028.8828
P(12)	28 516 026.6578	P(12)	31 595 831.7569
P(10)	28 566 649.1936	P(10)	31 646 843.3897
P(8)	28 616 541.7658	P(8)	31 697 061.4282
P(6)	28 665 704.6019	P(6)	31 746 483.7926
P(4)	28 714 137.7193	P(4)	31 795 108.6785
P(2)	28 761 840.9258	P(2)	31 842 934.5572
R(0)	28 832 026.2179	R(0)	31 913 172.5750
R(2)	28 877 902.4362	R(2)	31 958 996.0676
R(4)	28 923 046.4283	R(4)	32 004 017.3874
R(6)	28 967 457.0638	R(6)	32 048 236.2545
R(8)	29 011 133.0037	R(8)	32 091 652.6661
R(10)	29 054 072.6995	R(10)	32 134 266.8957
R(12)	29 096 274.3924	R(12)	32 176 079.4916
R(14)	29 137 736.1122	R(14)	32 217 091.2759
R(16)	29 178 455.6756	R(16)	32 257 303.3427
R(18)	29 218 430.6853	R(18)	32 296 717.0558
R(20)	29 257 658.5273	R(20)	32 335 334.0465
R(22)	29 296 136.3697	R(22)	32 373 156.2114
R(24)	29 333 861.1596	R(24)	32 410 185.7086
R(26)	29 370 829.6209	R(26)	32 446 424.9556
R(28)	29 407 038.2514	R(28)	32 481 876.6251
R(30)	29 442 483.3197	R(30)	32 516 543.6414
R(32)	29 477 160.8619	R(32)	32 550 429.1766
R(34)	29 511 066.6779	R(34)	32 583 536.6463
R(36)	29 544 196.3277	R(36)	32 615 869.7049
R(38)	29 576 545.1272	R(38)	32 647 432.2414
R(40)	29 608 108.1437	R(40)	32 678 228.3735
R(42)	29 638 880.1914	R(42)	32 708 262.4432
R(44)	29 668 855.8266	R(44)	32 737 539.0112
R(46)	29 698 029.3421	R(46)	32 766 062.8508
R(48)	29 726 394.7621	R(48)	32 793 838.9426
R(50)	29 753 945.8362	R(50)	32 820 872.4682

Table 2. Frequencies (MHz) for the 636 carbon dioxide laser.

P(50)	26 035 339.9907	P(50)	29 076 007.9206
P(48)	26 096 450.6641	P(48)	29 143 127.3150
P(46)	26 156 946.4184	P(46)	29 209 472.6217
P(44)	26 216 830.6112	P(44)	29 275 036.8793
P(42)	26 276 106.3711	P(42)	29 339 813.3299
P(40)	26 334 776.6055	P(40)	29 403 795.4269
P(38)	26 392 844.0080	P(38)	29 466 976.8408
P(36)	26 450 311.0648	P(36)	29 529 351.4663
P(34)	26 507 180.0614	P(34)	29 590 913.4283
P(32)	26 563 453.0887	P(32)	29 651 657.0881
P(30)	26 619 132.0481	P(30)	29 711 577.0488
P(28)	26 674 218.6570	P(28)	29 770 668.1612
P(26)	26 728 714.4536	P(26)	29 828 925.5288
P(24)	26 782 620.8011	P(24)	29 886 344.5126
P(22)	26 835 938.8920	P(22)	29 942 920.7360
P(20)	26 888 669.7515	P(20)	29 998 650.0890
P(18)	26 940 814.2413	P(18)	30 053 528.7321
P(16)	26 992 373.0624	P(16)	30 107 553.1003
P(14)	27 043 346.7579	P(14)	30 160 719.9062
P(12)	27 093 735.7156	P(12)	30 213 026.1432
P(10)	27 143 540.1699	P(10)	30 264 469.0880
P(8)	27 192 760.2040	P(8)	30 315 046.3033
P(6)	27 241 395.7512	P(6)	30 364 755.6398
P(4)	27 289 446.5964	P(4)	30 413 595.2373
P(2)	27 336 912.3769	P(2)	30 461 563.5271
R(0)	27 407 012.8973	R(0)	30 531 879.5457
R(2)	27 453 013.4681	R(2)	30 577 664.6182
R(4)	27 498 426.5523	R(4)	30 622 575.1932
R(6)	27 543 251.1292	R(6)	30 666 611.0177
R(8)	27 587 486.0315	R(8)	30 709 772.1308
R(10)	27 631 129.9443	R(10)	30 752 058.8623
R(12)	27 674 181.4045	R(12)	30 793 471.8321
R(14)	27 716 638.7993	R(14)	30 834 011.9476
R(16)	27 758 500.3646	R(16)	30 873 680.4025
R(18)	27 799 764.1833	R(18)	30 912 478.6740
R(20)	27 840 428.1829	R(20)	30 950 408.5203
R(22)	27 880 490.1333	R(22)	30 987 471.9773
R(24)	27 919 947.6441	R(24)	31 023 671.3556
R(26)	27 958 798.1612	R(26)	31 059 009.2364
R(28)	27 997 038.9638	R(28)	31 093 488.4680
R(30)	28 034 667.1602	R(30)	31 127 112.1610
R(32)	28 071 679.6844	R(32)	31 159 883.6838
R(34)	28 108 073.2910	R(34)	31 191 806.6579
R(36)	28 143 844.5509	R(36)	31 222 884.9524
R(38)	28 178 989.8459	R(38)	31 253 122.6787
R(40)	28 213 505.3631	R(40)	31 282 524.1845
R(42)	28 247 387.0891	R(42)	31 311 094.0480
R(44)	28 280 630.8034	R(44)	31 338 837.0715
R(46)	28 313 232.0718	R(46)	31 365 758.2751
R(48)	28 345 186.2387	R(48)	31 391 862.8896
R(50)	28 376 488.4197	R(50)	31 417 156.3497

Table 3. Frequencies (MHz) for the 828 carbon dioxide laser.

P(50)	27 702 788.3340	P(50)	31 275 461.0484
P(48)	27 763 916.5271	P(48)	31 330 648.1933
P(46)	27 824 219.8818	P(46)	31 385 304.7512
P(44)	27 883 701.5085	P(44)	31 439 427.2029
P(42)	27 942 364.3439	P(42)	31 493 012.1188
P(40)	28 000 211.1532	P(40)	31 546 056.1633
P(38)	28 057 244.5316	P(38)	31 598 556.0988
P(36)	28 113 466.9070	P(36)	31 650 508.7885
P(34)	28 168 880.5416	P(34)	31 701 911.2012
P(32)	28 223 487.5337	P(32)	31 752 760.4139
P(30)	28 277 289.8196	P(30)	31 803 053.6153
P(28)	28 330 289.1753	P(28)	31 852 788.1092
P(26)	28 382 487.2180	P(26)	31 901 961.3173
P(24)	28 433 885.4075	P(24)	31 950 570.7820
P(22)	28 484 485.0477	P(22)	31 998 614.1692
P(20)	28 534 287.2879	P(20)	32 046 089.2707
P(18)	28 583 293.1240	P(18)	32 092 994.0069
P(16)	28 631 503.3995	P(16)	32 139 326.4282
P(14)	28 678 918.8066	P(14)	32 185 084.7176
P(12)	28 725 539.8870	P(12)	32 230 267.1924
P(10)	28 771 367.0327	P(10)	32 274 872.3053
P(8)	28 816 400.4870	P(8)	32 318 898.6464
P(6)	28 860 640.3445	P(6)	32 362 344.9440
P(4)	28 904 086.5522	P(4)	32 405 210.0657
P(2)	28 946 738.9095	P(2)	32 447 493.0190
R(0)	29 009 228.1753	R(0)	32 509 824.0588
R(2)	29 049 894.0639	R(2)	32 550 648.1734
R(4)	29 089 764.2422	R(4)	32 590 887.7557
R(6)	29 128 837.8481	R(6)	32 630 542.4476
R(8)	29 167 113.8723	R(8)	32 669 612.0318
R(10)	29 204 591.1583	R(10)	32 708 096.4309
R(12)	29 241 268.4016	R(12)	32 745 995.7070
R(14)	29 277 144.1494	R(14)	32 783 310.0604
R(16)	29 312 216.8002	R(16)	32 820 039.8289
R(18)	29 346 484.6028	R(18)	32 856 185.4857
R(20)	29 379 945.6557	R(20)	32 891 747.6385
R(22)	29 412 597.9061	R(22)	32 926 727.0276
R(24)	29 444 439.1492	R(24)	32 961 124.5238
R(26)	29 475 467.0268	R(26)	32 994 941.1261
R(28)	29 505 679.0261	R(28)	33 028 177.9601
R(30)	29 535 072.4788	R(30)	33 060 836.2746
R(32)	29 563 644.5594	R(32)	33 092 917.4396
R(34)	29 591 392.2837	R(34)	33 124 422.9433
R(36)	29 618 312.5075	R(36)	33 155 354.3890
R(38)	29 644 401.9248	R(38)	33 185 713.4920
R(40)	29 669 657.0662	R(40)	33 215 502.0763
R(42)	29 694 074.2966	R(42)	33 244 722.0715
R(44)	29 717 649.8141	R(44)	33 273 375.5085
R(46)	29 740 379.6471	R(46)	33 301 464.5166
R(48)	29 762 259.6531	R(48)	33 328 991.3192
R(50)	29 783 285.5157	R(50)	33 355 958.2301

Table 4. Frequencies and wavenumbers for the 01^11-$[11^10,03^10]_I$ band of $^{13}CO_2$.

Rot. Trans.	Frequency (MHz)[a]	Rot. Trans.	Frequency (MHz)[a]
P(50)	25 110 914.276(1909)	R(1)	26 522 359.352(307)
P(49)	25 163 452.505(1658)	R(2)	26 545 384.349(356)
P(48)	25 173 184.219(1500)	R(3)	26 568 137.000(372)
P(47)	25 223 707.197(1300)	R(4)	26 590 844.300(435)
P(46)	25 234 801.135(1157)	R(5)	26 613 344.206(446)
P(45)	25 283 388.000(1001)	R(6)	26 635 672.514(520)
P(44)	25 295 767.670(874)	R(7)	26 657 980.003(528)
P(43)	25 342 496.069(755)	R(8)	26 679 867.807(608)
P(42)	25 356 086.324(643)	R(9)	26 702 043.339(622)
P(41)	25 401 032.476(555)	R(10)	26 723 428.851(700)
P(40)	25 415 759.456(459)	R(11)	26 745 533.080(728)
P(39)	25 458 998.211(395)	R(12)	26 766 354.173(792)
P(38)	25 474 789.277(315)	R(13)	26 788 448.007(850)
P(37)	25 516 394.177(271)	R(14)	26 808 642.157(885)
P(36)	25 533 177.855(206)	R(15)	26 830 786.820(992)
P(35)	25 573 221.199(177)	R(16)	26 850 291.041(979)
P(34)	25 590 927.113(127)	R(17)	26 872 548.133(1159)
P(33)	25 629 480.014(109)	R(18)	26 891 298.919(1072)
P(32)	25 648 038.830(72)	R(19)	26 913 730.480(1356)
P(31)	25 685 171.278(62)	R(20)	26 931 663.740(1167)
P(30)	25 704 514.640(39)	R(21)	26 954 332.308(1589)
P(29)	25 740 295.564(33)	R(22)	26 971 383.309(1267)
P(28)	25 760 356.034(24)	R(23)	26 994 351.983(1865)
P(27)	25 794 853.362(22)	R(24)	27 010 455.287(1377)
P(26)	25 815 564.357(21)	R(25)	27 033 787.788(2192)
P(25)	25 848 845.075(21)	R(26)	27 048 877.189(1503)
P(24)	25 870 140.808(21)	R(27)	27 072 637.922(2577)
P(23)	25 902 271.029(20)	R(28)	27 086 646.387(1656)
P(22)	25 924 086.446(20)	R(29)	27 110 900.501(3027)
P(21)	25 955 131.461(18)	R(30)	27 123 760.107(1847)
P(20)	25 977 402.180(20)	R(31)	27 148 573.557(3552)
P(19)	26 007 426.528(18)	R(32)	27 160 215.432(2089)
P(18)	26 030 088.780(21)	R(33)	27 185 655.039(4159)
P(17)	26 059 156.302(20)	R(34)	27 196 009.301(2394)
P(16)	26 082 146.866(21)	R(35)	27 222 142.814(4856)
P(15)	26 110 320.773(28)	R(36)	27 231 138.505(2775)
P(14)	26 133 576.918(20)	R(37)	27 258 034.663(5653)
P(13)	26 160 919.848(39)	R(38)	27 265 599.695(3242)
P(12)	26 184 379.270(22)	R(39)	27 293 328.288(6559)
P(11)	26 210 953.348(55)	R(40)	27 299 389.374(3806)
P(10)	26 234 554.110(33)	R(41)	27 328 021.302(7584)
P(9)	26 260 421.015(76)	R(42)	27 332 503.902(4475)
P(8)	26 284 101.484(57)	R(43)	27 362 111.241(8736)
P(7)	26 309 322.503(103)	R(44)	27 364 939.495(5260)
P(6)	26 333 021.291(91)	R(45)	27 395 595.552(****)
P(5)	26 357 657.387(136)	R(46)	27 396 692.223(6167)
P(4)	26 381 313.287(134)	R(47)	27 428 471.603(****)
P(3)	26 405 425.156(176)	R(48)	27 427 758.013(7208)
P(2)	26 428 977.084(187)	R(49)	27 460 736.676(****)
		R(50)	27 458 132.647(8390)

a) The number in parentheses is the estimated 1-σ uncertainty in the last digits.

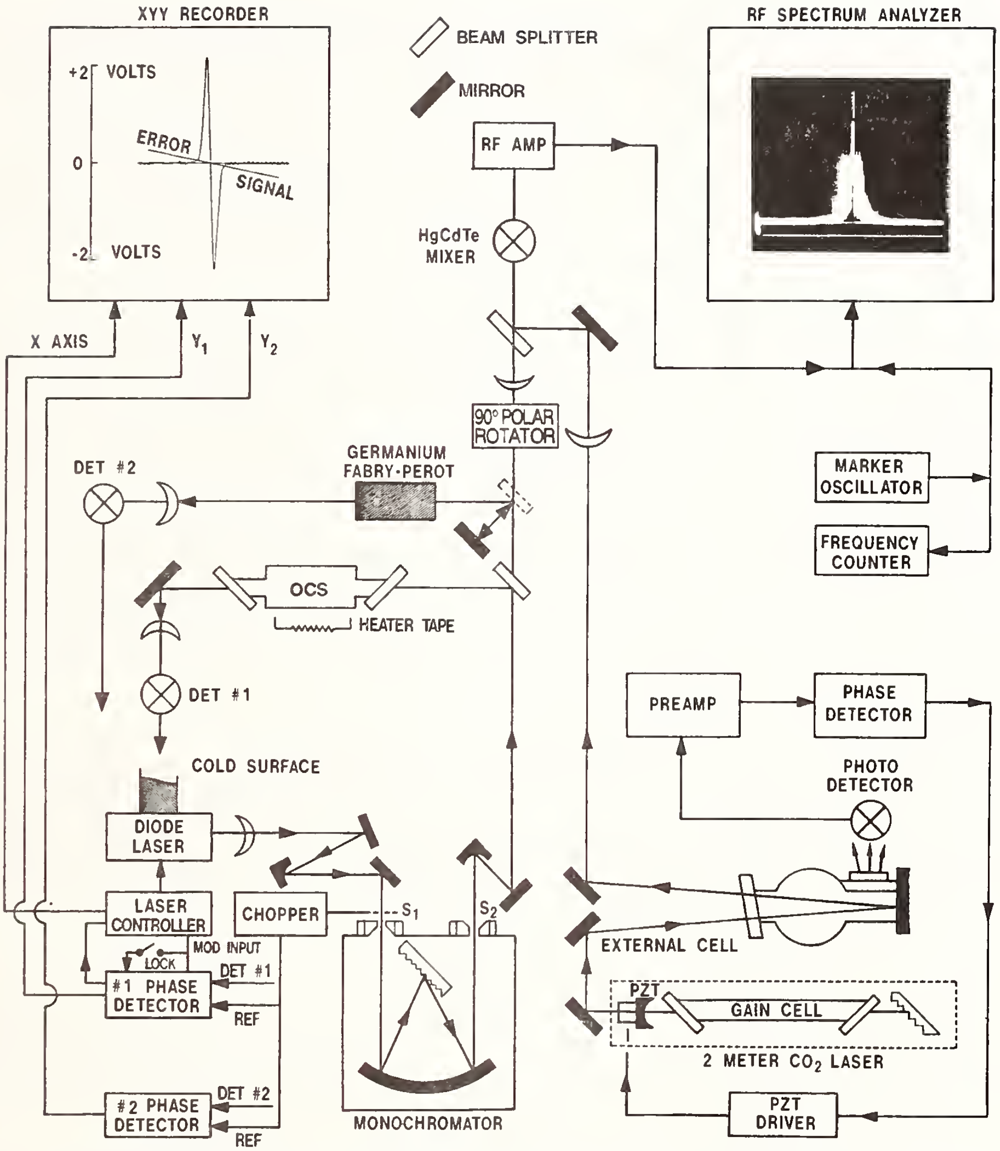

Fig. 2. Block diagram of scheme used for heterodyne measurements with a CO_2 laser.

As the demand for TDLs increased, vendors began experiencing difficulties in growing semiconductors that would meet the customers' specified frequency region while operating in the 4 to 10 K range. The materials problem became more tractable as the temperature constraint was removed by selling to the customers closed-cycle coolers with 10 to 70 K operating capabilities. Soon it became nearly impossible to obtain TDLs operable at helium temperatures. Most of our measurements were made using a closed-cycle cooler. This was an improvement in many areas, however in spite of an isolation scheme, some residual vibrations from the cooler's piston were transmitted to the TDL, resulting in the famous jitter linewidth which is familiar to all TDL users. The vendor has made two additional isolation improvement schemes available and while these appear worthwhile, they are still not the ultimate solution.

Currently, the NIST liquid helium Dewar has been modified to accommodate a four-laser mounting platform (including the heater coils and temperature sensing diodes) from a closed-cycle cooler. While helium consumption is too high for most of the TDLs available to us, this does offer promise with the recent advent of the higher temperature MBE (molecular beam epitaxy) TDLs. A few of these are now available and operate in the temperature range accessible with liquid nitrogen (70 K to 120 K if a heater is available).

Both the Dewar and closed-cycle refrigerator are interchangeable in that they were compatible with the laser control module (current controller) and temperature control system. Both the control module and temperature controller have also been upgraded to reduce current noise and temperature instabilities; these upgrades have proved worthwhile. The particular type of refrigeration is not specified in Fig. 2.

After passing through the AR-coated ZnSe window of the refrigeration stage, the TDL radiation was collimated with an AR-coated *f*/1 lens and directed with a flat mirror and off-axis parabolic mirror into a 0.8 m Ebert-Fastie monochromator. A second off-axis parabolic mirror recollimated the TDL beam after it emerged from the monochromator. A portion of the beam was split off and passed through an absorption cell (containing the molecule of interest, N_2O in this case) to a detector which was used initially in recording the spectra and later for the TDL locking procedure. The monochromator and a solid three inch germanium etalon were used to help identify the particular molecular transition of interest. Once the transition had been identified, the kinematic mirror mount directing the TDL beam through the etalon was removed and the TDL beam was then focused on the HgCdTe mixer element. At this time, both the entrance and exit slits were removed from the monochromator, in order to eliminate the fringes or channel spectra which the slits may cause via feedback to the laser.

At this point in the procedure, it was useful to measure the TDL linewidth by heterodyning its output with that from a CO_2 laser (or CO laser as described in the next section). TDL linewidths of several hundred megahertz are not uncommon at higher currents (higher gains) when viewed for integration times of several seconds. Next, the current was reduced (while increasing the temperature to maintain frequency) until an acceptable (10 to 30 MHz), or at least the narrowest attainable, linewidth was achieved for a measurement.

TDL Locking Procedure and Minimization of Error

Assuming the best conditions, that is, a strong TDL (0.5 mW for example) with a single mode that has a flat power versus wavelength curve, a narrow TDL linewidth, and a well isolated and intense line for a locking reference, we could likely make a measurement with an uncertainty of less than 1 MHz. While these conditions sometimes prevail, more often, they do not.

It is germane to discuss here the TDL locking procedure and some of the ways we have minimized errors that can creep into a measurement. After the chopper was removed from the TDL beam path, the TDL was frequency-modulated at 4.5 kHz and a first derivative scheme was used to lock the TDL frequency. In this procedure, the frequency of the radiation output of the TDL was tuned from well below the molecular transition to well above it, and the resulting derivative signal (including the baseline and the absorption line) was traced by the recorder. (See derivative trace in the xyy recorder box in Fig. 2.) The frequency was returned to the low value and then the recorder signal monitored as the trace was followed to the derivative midpoint for locking. [Note: The derivative trace in Fig. 2 has a line labeled "error signal" superimposed on it. This error signal was recorded while scanning the TDL current both up and down while the laser was locked with moderate gain. For "infinite gain" the line becomes horizontal, or zero volts everywhere; for nearly zero gain, the line has a slope near that of the derivative signal. The slope of the error signal may be chosen (by adjusting the loop gain) to any value between these limits. By proper adjustments of the gain value and the TDL current the TDL may be "locked" (or stabilized) to nonzero values.] A low gain was used in the lock loop and the recorder pen position was monitored during the measurement. One of the reasons for this was that the TDL mode generally was not flat over the region of the line of interest. Rather than locking the TDL to the zero-voltage point, the TDL frequency was locked to a point where the derivative signal crossed the existing baseline derivative. The sources of error to be avoided are not only sloping background (with resultant zero offset in the derivative signal), but also possible instrumental zero offsets from the lock-in amplifier. Both sources become magnified when dealing with weaker TDL modes or low level absorption and a very high sensitivity on the lock-in amplifier, and the procedure outlined above was essential.

Since the background slopes may have either sign and compensation for zero offsets may be either too large or too small, these errors are random when spread over measurements of several different lines. In the case of strong absorption lines and a powerful TDL mode, the difference between the lock point and 0 V was generally negligible compared to other sources of error.

Another obvious source of error in determining the location of the center of the molecular absorption line was noise. In addition to TDL amplitude fluctuations and detector noise, feedback fringes or channel spectra are also included, although some of amplitude noise can be attributable to feedback. Several techniques were used to minimize sources of error. The frequency of the TDL modulation was chosen to be higher than that of the TDL amplitude fluctuations and higher than the upper frequency of typical detector noise. The usual techniques for fringe reduction, including the monochromator slit removal alluded to earlier, tilting of various optical elements in the TDL beam path (particularly the detectors) were all employed. Cells of absorbing gases (for isolation) were placed in the TDL beam path in a few instances although it was not possible for most spectral regions.

Measurement of the Difference Frequency between the TDL and Gas (CO_2 or CO) Laser

The portion of the TDL beam passing through the first beam splitter in Fig. 2 has its polarization rotated by 90° to be parallel to the gas laser beam polarization. (The TDL polarization was assumed to be in the plane of the junction; however, a sizeable perpendicular component may also exist.) The TDL beam was then focused (typically, FL = 12.5 cm) through a second beam splitter onto the HgCdTe fast detector or mixer which had an element with an area of 0.1 mm^2. The 3 dB bandwidth of this detector was 1 GHz. Power from the gas laser was focused with a 40 cm focal length lens and then reflected off the beam splitter (NaCl was chosen to keep the local oscillator power below 10 mW) in such manner as to make the gas laser beam collinear with the TDL beam and to make the beam waists coincide.

After initial observation of the beatnote, the amplitude was maximized by fine adjustment of the focusing lenses. It was also necessary to ascertain that the beatnote observed on the spectrum analyzer was the one of interest. This was particularly relevant when using the CO laser. On some occasions, the first beatnote observed was due to the TDL radiation mixing with that from a nearby unintended CO transition which could not be prevented from lasing along with the CO transition of interest. Multimode TDLs are also the source of extraneous beatnotes.

Once we determined that the observed beatnote was the one of interest, the TDL frequency was scanned by changing the current and the beatnote was followed on the spectrum analyzer from zero frequency up (or down) to the molecular feature to be measured. The scan rate was reduced to a lower value and the progress of the beatnote carefully monitored relative to the derivative signal. The TDL frequency was then locked to the desired point on the derivative signal which was displayed on the recorder. The beatnote was then averaged with the persistent screen averaging feature of the spectrum analyzer, and a marker oscillator was adjusted to the center of this averaged display. (A representative beat note is shown in the right hand portion of Fig. 2. Here the frequency span of the spectrum analyzer display was 100 MHz.) The marker oscillator frequency was counted and the measurement repeated a number of times (10 to 20, depending on the reproducibility of the measurements).

Minimization of the Difference Frequency Uncertainties

Ideally, the best method to determine the difference frequency between the TDL and the gas laser would be to use an electronic counter. However, the signal-to-noise ratio (S/N) of the beatnote and the frequency modulation associated with the cold head and compressor generally precluded this approach. The next best approach is that described in the preceding paragraph.

The best measurements were those made with a liquid helium Dewar; the beatnote was essentially stationary on the spectrum analyzer. However, the rapid He consumption rates for higher temperature TDLs made this choice impractical as well as inconvenient. When the compressor was used, the beatnote had a jitter linewidth associated with it and its frequency fluctuations made determination of the beatnote center more difficult. A wide variation of jitter linewidths from many different TDLs has been observed over an extended period. The current tuning rates (60 to 1600 MHz/ma) and linewidths due to current noise vary widely from one TDL to another. In a similar fashion the jitter linewidth varies greatly from one laser to the next, due to varying sensitivity to vibrations associated with the compressor/coldhead. Sometimes an apparent jitter linewidth was due to feedback, however this was generally recognized and steps were taken to minimize it. Beatnotes ranging in width from a few megahertz (10 μm TDLs in a liquid helium Dewar) to 60 to 100 MHz (6 μm TDLs in a closed-cycle cooler) were observed during the measurements. However the larger values (in the 5 to 6 μm region) were observed prior to the currently implemented improvements in the vibration isolation system. The most recent approach was to adjust the current modulation for the derivative lock such that the beatnote linewidth was not broadened beyond the jitter linewidth. (This was subject to retention of a suitable S/N for the lock signal.)

The frequency-modulated beatnote was observed at a repetitive rate on the spectrum analyzer. The pulse rate of the closed-cycle cooler was asynchronous with both the modulation rate and the spectrum analyzer sweep rate. As a result, the beatnote observed on the spectrum analyzer made small and slowly varying excursions about an average value. This led to some scatter in the measured value for the beatnote center frequency. Some experiments were conducted to check the compressor-induced fluctuations as a source of systematic error. Typically, 20 measurements were made with the compressor on, and the marker oscillator frequency was adjusted to the resultant average value. The TDL lock point was then rechecked and the compressor was turned off (eliminating the jitter from the beatnote) momentarily. The jitter-free beatnote was observed for a few seconds in this configuration. To date no appreciable deviation of the jitter-free beatnote from the marker oscillator has been observed.

On some occasions, the beatnote envelope was slightly asymmetric. Generally, two different operators have determined the center value and some subjective disagreement was apparent. In a recent set of measurements of 20 transitions the average value of 10 measurements each from two operators varied by 2.5 MHz. This was well within the assigned uncertainty of 7 MHz for the measurement. More often, the average values from different operators agree within a fraction of 1 MHz.

Another difficulty in these measurements was the presence of "holes" in the frequency coverage of the detector-rf-amplifier combination. In some instances, these frequency holes were associated with connector lengths and their effect could be minimized (by moving the hole to another frequency) by using line stretchers or by changing cables. Some holes were associated with lengths of connecting elements in the detector, and for practical purposes could not be eliminated. In other cases, holes were associated with amplifiers themselves; sometimes they precluded making measurements. In a few instances shallow holes have led to systematic errors. This occurred when only very weak TDL modes were available and the S/N for the beatnote was small (3 to 4 dB for example). Often the beatnote envelope was fairly wide (50 MHz or greater). In cases like these, one side of the beatnote envelope can overlap a hole and the apparent line center will be shifted. This has happened in a few instances but the error was apparent in the fitting process. In these cases, a repetition of the measurement with a different TDL and a much stronger beatnote gave a different and better fitting result. Such holes generally remain at the same frequency and experience has shown which frequency regions to avoid.

Measurements with a CO Laser Transfer Oscillator and CO_2 Laser Synthesizer

Near the inception of this program, a CO laser stabilization scheme on low pressure CO laser discharges had been demonstrated by Freed [2.13]. More recently, a stabilization scheme using optogalvanic detection has been reported by Schneider *et al.* [2.14]; neither of these schemes was operable over the entire range required for our measurements. Some values of CO frequencies in the literature (available when the measurements in this region began) were in error by over 50 MHz. Since the goal of this measurement program was to be able to make measurements with a 3 MHz uncertainty, it was necessary to measure the frequency of the CO laser at the same time that the CO laser-TDL difference frequency measurements were made on N_2O and OCS transitions. This process required the use of the CO laser as a transfer oscillator, and the CO laser frequency was measured relative to a frequency generated by a CO_2 laser synthesizer [5.94, 5.221, 2.15].

Two different CO lasers were used in this manner. One was a sealed-off laser which was cooled by flowing alcohol through dry ice and then through a jacket around the discharge tube. This operated over the frequency range from 1600 to 1900 cm^{-1} (corresponding to lower vibrational quantum numbers ranging from v" = 20 to v" = 6). The second CO laser was a flowing gas laser which was cooled by liquid-nitrogen and operated from 1220 to 1600 cm^{-1} (v" = 36 to v" = 20). After installation of a shorter wavelength grating and an appropriate output mirror, operation was extended to the 1900 to 2080 cm^{-1} region (v" = 6 to v" = 1). Additional details regarding the liquid-nitrogen cooled CO laser may be found in the literature [5.125, 5.224, 5.231].

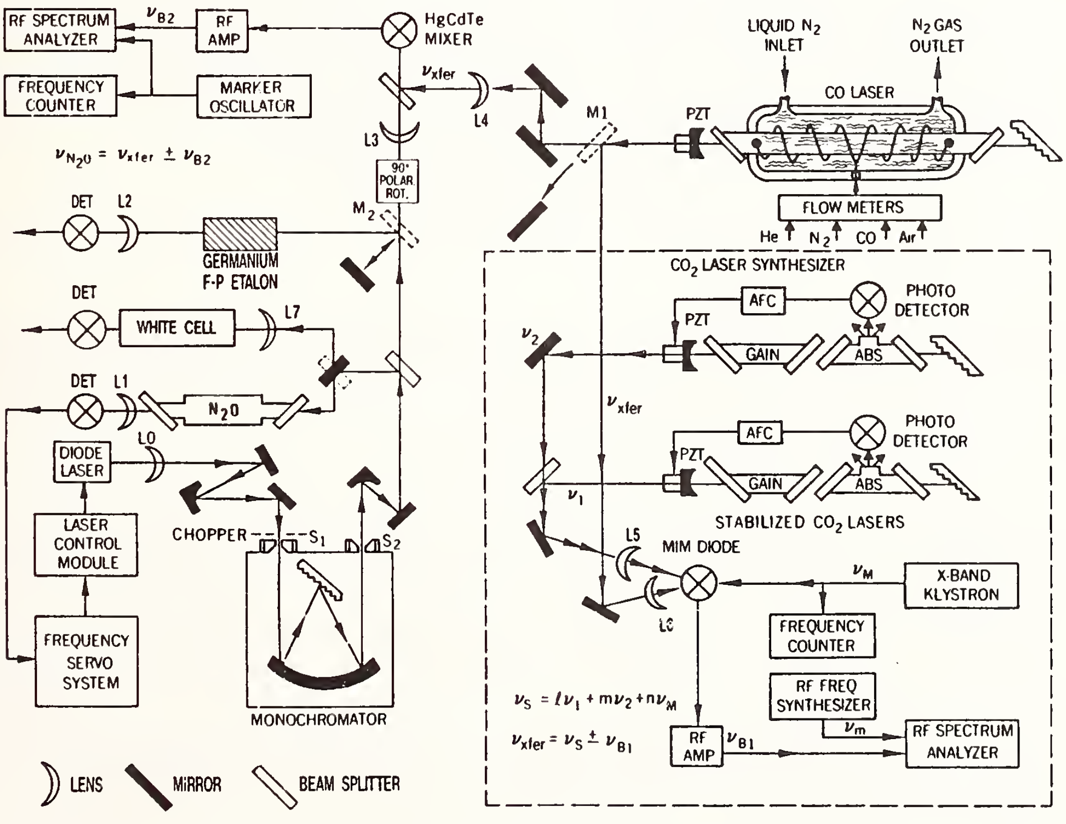

Fig. 3. Block diagram of scheme used to make heterodyne frequency measurements with a CO laser. The CO_2 laser synthesizer is shown in the dashed box.

Figure 3 shows a block diagram for making frequency measurements with the CO laser. The dashed outline shows the kinematically mounted mirror, M_1, in position for measuring the CO laser frequency relative to the CO_2 synthesizer, which is shown enclosed in the large dashed box. The synthesizer consists of two stabilized CO_2 lasers, a phase-locked microwave oscillator and frequency counter, a metal-insulator-metal (MIM) diode, and a combination of an rf amplifier, rf spectrum analyzer, and a 0 to 1.0 GHz rf frequency synthesizer. When radiation from the two CO_2 lasers and the microwave oscillator were coupled to the MIM diode, currents were generated at a synthesized frequency, ν_s, given by

$$\nu_s = \ell\nu_1 + m\nu_2 + n\nu_M,$$

where ν_1 and ν_2 were the frequencies of the CO_2 laser frequency standards, and ν_M was a microwave frequency. The quantities ℓ, m, and n are integers which are allowed both positive and negative values. The quantity $[1 + |\ell| + |m| + |n|]$ is called the mixing order; the synthesized currents generally become weaker as the mixing order is increased. Mixing orders vary from 3 or 4 near 50 THz to 7 or 8 near 38 THz, the frequency at the longest wavelength operation of the CO laser used in these measurements. Typical values might be ℓ = 3 or 4, m = -2 or -3, and (with the use of an X-band klystron) n was restricted to 0, ± 1, or ± 2.

When the CO laser radiation was focused on the MIM diode, an additional current at the CO laser frequency, ν_{CO}, was generated in the diode and it combined with the synthesized frequency, ν_s, to produce a difference frequency beatnote at a frequency, ν_{B1}. (The microwave frequency was chosen so that this beatnote was within the 1.2 GHz range of the spectrum analyzer in use.) The beatnote was amplified, displayed on the spectrum analyzer, and its excursion was noted as the CO laser was tuned through its gain bandwidth. The beatnote was positioned at the center of this excursion (a determination of the frequency of the CO transition was a secondary objective) and a marker signal from the rf synthesizer was used to mark this frequency point on the spectrum analyzer. The rf synthesizer reading was then used as the value for ν_{B1} and the CO laser (which was not locked) was periodically readjusted to return the beatnote to the assigned frequency.

The frequency of the CO laser (transfer oscillator) was then

$$\nu_{CO} = \nu_{transfer} = \nu_s \pm \nu_{B1}.$$

The full accuracy of CO_2 frequencies was used for the ν_s calculation. An uncertainty of 0.3 MHz (which includes allowance for drift between readjustments) in the transfer oscillator was included in the measurement uncertainty of the molecular transition, which was given by

$$\nu_{mol} = \nu_{transfer} \pm \nu_{B2},$$

where ν_{B2} was the beatnote between the TDL and the transfer oscillator. The transfer oscillator frequency and beatnote frequency are both rounded to the nearest 0.1 MHz. The main uncertainty was again due to the TDL linewidth which was discussed in the early part of the chapter.

The most recent advance in making heterodyne frequency measurements with TDL's involves a computer-controlled, frequency offset-locking (CCFOL) scheme. Freed *et al.* [2.16] demonstrated the use of a frequency offset lock combined with a frequency synthesizer to control the output frequency of the TDL. We have combined that technique with the scanning and data-logging technology used in this laboratory for other measurements [2.17-2.19] to obtain accurate data on $d\nu/dP$, the pressure-induced frequency shifts, in the rovibrational spectrum of OCS. The potential for better absolute frequency measurements was also demonstrated.

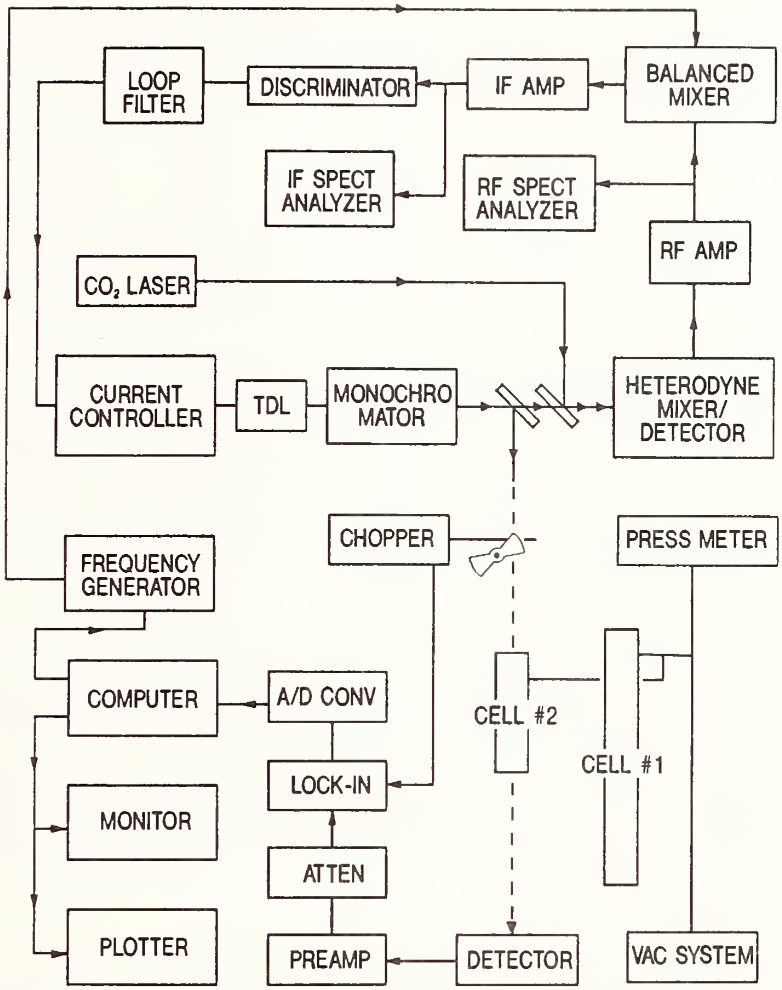

Fig. 4. Block diagram of a computer controlled frequency offset-locked spectrometer.

Figure 4 shows a block diagram of the apparatus used for this type of measurement. The output beams from a TDL and a CO_2 laser frequency standard were focused with separate lenses and then combined with a ZnSe beam splitter and directed to a HgCdTe heterodyne mixer/detector which produced a beatnote at the difference frequency, ν_B, between the two lasers. The beatnote was amplified in an rf amplifier and displayed on an rf spectrum analyzer. A balanced mixer was used to down-convert the beatnote at frequency ν_B to a nominal 160 MHz, the region of operation of the IF amplifier and discriminator. The beatnote was fed to one input arm of the balanced mixer, and the output of the sweepable frequency generator, at frequency ν_{sw}, was fed to the other input arm (the local oscillator arm). The frequency ν_{sw} was adjusted such that $|\nu_{sw}-\nu_B|$ was nominally 160 MHz, and this resulting output signal was fed to the discriminator which had a sensitivity of 0.1 V/MHz and an 80 MHz bandwidth.

After the switch in the loop filter was closed, the discriminator-based locking loop adjusted the TDL frequency to insure that the beatnote ν_B was locked at a frequency ν_{DO} away from ν_{SW}. That is,

$$\nu_{DO} = |\nu_{SW}-\nu_B|,$$

where ν_{DO} is close but (due to the presence of various zero offsets in the locking loop) not necessarily equal to 160 MHz. For frequency shift and lineshape measurements, the important point is that the frequency ν_{DO} must remain fixed, whatever value it assumes. If a frequency measurement is the objective, it becomes necessary to measure ν_{DO}. Frequency of the CCFOL TDL is then given by

$$\nu_{TDL} = \nu_{CO_2} \pm \nu_{SW} \pm \nu_{DO}.$$

Two frequency measurements were made with an uncertainty of ± 2 MHz, which was almost entirely due to the TDL linewidth. By narrowing the TDL linewidth with a faster loop filter, one should be able to use an electronic counter to measure ν_{DO} and make measurements with uncertainties the order of 0.2 MHz.

We have restricted our initial experiments to those OCS transitions which lie within 2000 MHz of a CO_2 laser transition because the lock loop requires a beatnote with a good S/N and the beatnote signal decreases with increasing frequency. This is also the band limit of our most convenient rf amplifier. We chose from the available TDLs those with sufficient power to give a beatnote with a S/N of about 30 dB. For the present measurements a 400 ms integration time was used and 640 points were recorded in each direction. Recording in both directions is a good way to cancel certain types of systematic errors. Generally only one round trip pass was made per measurement but as many passes could be made as required to give a good S/N.

A large number of measurements have been made with the older technique and these have been combined with FTS measurements, particularly the high quality measurements made recently. As the situation stands now good molecular constants exist, with the band centers currently having the largest uncertainties. The number of measurements left to be made is a relatively small number of high quality. The best approach is to make sub-Doppler or saturated measurements, however, the accidental overlaps required are rather infrequent. We believe the CCFOL approach is the next best option and several strategic overlaps occur in the 2 GHz range.

Measurements with the Color Center Laser

Pollock *et al.* [5.219] used a color center laser (CCL) to perform a set of experiments on N_2O. A brief description of their work and some related work concludes the summary of heterodyne techniques. It is of interest to compare and contrast some of the salient features of the TDL and the CCL. The tuning range of a TDL mode was 15 to 30 GHz; that of the CCL was less than 1 GHz. The linewidth of the TDL in the best instances was a few MHz, that of the CCL was 10 kHz. Perhaps the most important feature of the CCL was a large power output (in excess of 10 mW), which along with its beam quality permitted a direct coupling of the CCL output to the MIM diode, and subsequent synthesis measurements without a transfer oscillator. This relatively large power and narrow linewidth made it an ideal tool to use for some saturated absorption measurements by Pollock *et al.* on CO [5.304]. Sub-Doppler measurements could not be made on the N_2O band studied, and uncertainties of 4 to 8 MHz (at 130 to 140 THz) were reported. This uncertainty was due to the uncertainty in locating the center of the transition and was due in part to the small free spectral range of the tuning element of the CCL, which frequently prevented us from sweeping over the entire line and was also insufficient to sweep far enough on either side of an absorption line to determine a background slope.

Shown in Fig. 5 is a block diagram of the ring configuration color center laser developed by Pollock and Jennings [2.20]. The lasing entity in the lithium-doped potassium chloride crystal was an $(F^+_2)_A$ center. The centers were optically pumped with the 3 W power output from an Nd:YAG laser operating in a TEM_{00} mode at 1.3 μm. These color centers were continuously replenished by uv radiation from a Hg lamp.

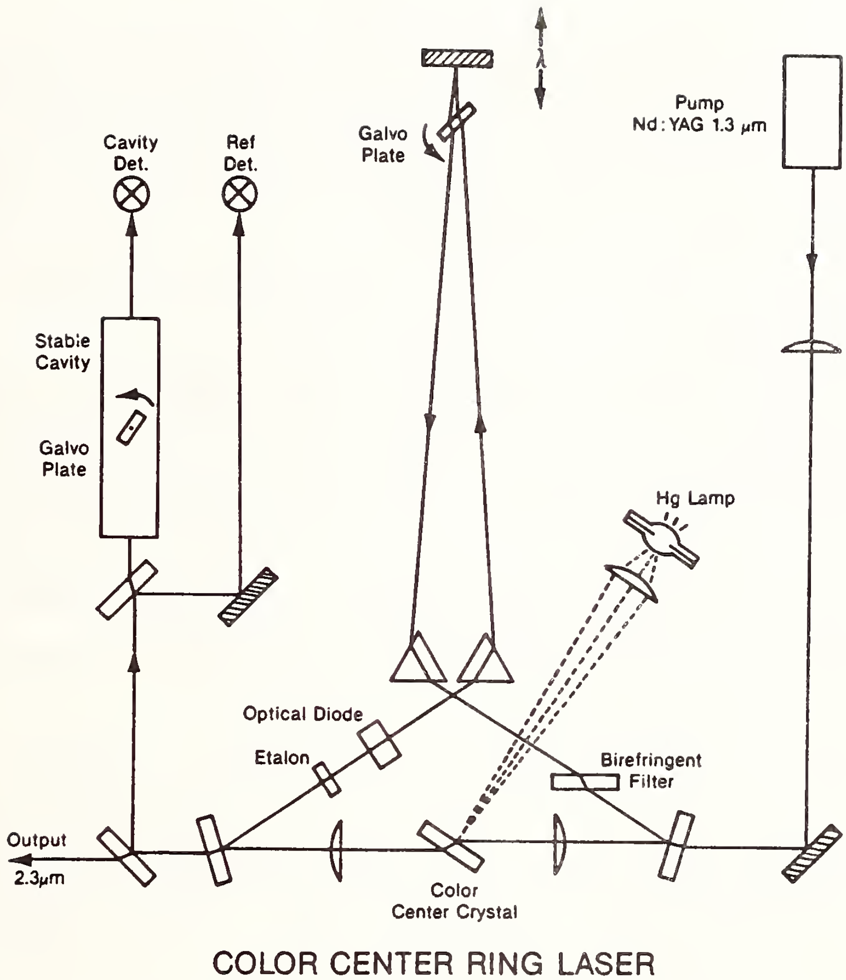

Fig. 5. Block diagram of color center laser in ring configuration.

Two Brewster's angle sapphire prisms, a single plate birefringent filter and one etalon comprised the tuning elements. The ring was constrained to operate in a unidirectional manner by an optical diode consisting of an AR-coated YIG plate in a 0.1 tesla magnetic field and a Brewster-cut quartz plate reciprocal rotator. One portion of the output radiation was used for stabilization to the side of a fringe in a passively stabilized optical cavity. The cavity was scanned by tuning a Galvo plate inside this reference cavity. Corrections were applied to the Galvo plate (slow) and to the PZT driving the tuning mirror (fast) in the laser resonator; this narrowed the CCL linewidth to 10 kHz. A second portion of the beam was split off and sent through a cell containing CO. The Galvo plate in the reference cavity was modulated at 7 kHz and slowly scanned to observe the first derivative signal, which was used to lock the CCL to the CO lines of interest.

A third portion of the CCL radiation was directed to the CO_2 synthesizer (more specifically the MIM diode portion) for a simultaneous measurement of the CO frequency. Typical synthesis schemes used $5\nu_1$, $4\nu_1+\nu_2$, or $3\nu_1+\nu_2$, where ν_1 and ν_2 are different CO_2 laser frequencies. No microwave oscillators were required, and the ν_{B1} type beatnotes fell within 2 GHz. In contrast to the TDL measurements, the measurement uncertainty was entirely the uncertainty in locating the center of the absorption line.

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CHAPTER III
FORMULAS AND DATA SOURCES USED TO PREPARE THE TABLES

Expressions Used for Fitting the Frequency Data and for Calculating the Transition Wavenumbers

For diatomic molecules and for linear triatomic molecules in $^1\Sigma$ electronic states the energy levels are generally given by

$$E_{vJl} = G_v + B_v J(J+1) - D_v [J(J+1)-l^2]^2 + H_v [J(J+1)-l^2]^3$$
$$+ L_v [J(J+1)-l^2]^4 + \textit{higher terms}, \tag{3.1}$$

where J is the quantum number for overall rotational angular momentum and l is the quantum number for vibrational angular momentum. Diatomic molecules have no vibrational angular momentum; that is, $l = 0$. In this work no higher order terms were needed and even the H_v and L_v terms were either poorly determined or not determinable.

For diatomic molecules, an alternative formulation is often given for the energy levels,

$$E_{vJ} = \sum_{ij} Y_{ij} (v+½)^i [J(J+1)]^j . \tag{3.2}$$

Dunham [**3.1**] has related the Y_{ij} constants to the potential function of a diatomic molecule in a $^1\Sigma$ state. Most of the papers reporting constants for CO use Eq. (3.2). The ground state of the NO molecule is a $^2\Pi$ state and is treated differently [**5.371**].

Transitional frequencies, ν_{calc}, are calculated as differences between energy levels

$$\nu_{calc} = E_{vJl}' - E_{vJl}''. \tag{3.3}$$

In this book the band centers, ν_0, are defined by

$$\nu_0 = G_v' - G_v''. \tag{3.4}$$

For linear triatomic molecules two types of perturbations are commonly encountered that affect the importance of higher order terms in Eq. (3.1), l-type resonance and Fermi resonance. Because it has a large effect on the centrifugal distortion constants, l-type resonance was treated explicitly in the analysis of the OCS and N_2O spectra. Both l-type doubling and l-type resonance are manifestations of the same matrix element that couples levels that differ only in the value of the l quantum number, where l is treated as a signed quantum number. In this book, both effects are treated under the general title of l-type resonance. If the bending vibrational quantum number, v_2, is greater than zero, l-type resonance will be present and is usually noticeable.

When $v_2 \neq 0$, the l-type resonance was taken into account by diagonalizing the energy matrix which includes the matrix elements coupling l levels with $l \pm 2$ levels. The form of these matrices has been described in Refs. [**5.120**] and [**3.2**] but we shall repeat that description for a specific case.

For $v_2 = 3$, there are four possible values of l, $l = 3$, $l = 1$, $l = -1$, and $l = -3$. The l-doubling constant, q_v, represented by

$$q_v = q_v^0 - q_{vJ} J(J+1) + q_{vJJ} J^2 (J+1)^2 , \tag{3.5}$$

couples these levels through the matrix element

$$W_{l-2,l} = W_{l,l-2} = \langle v,l|H|v,l-2\rangle = \tfrac{1}{4}q_v \{[v_2+l]\,[v_2-l+2]$$

$$\times\ [J(J+1) - l(l-1)]\,[J(J+1) - (l-1)(l-2)]\}^{1/2}. \qquad (3.6)$$

For each J level the form of the energy matrix for $v_2 = 3$ is

$$\begin{vmatrix} E^0(v,l=3) & W_{3,1} & 0 & 0 \\ W_{1,3} & E^0(v,l=1) & W_{1,-1} & 0 \\ 0 & W_{-1,1} & E^0(v,l=-1) & W_{-1,-3} \\ 0 & 0 & W_{-3,-1} & E^0(v,l=-3) \end{vmatrix}. \qquad (3.7)$$

Here, the matrix elements are given by Eq. (3.1) (where $E_{vJl} \equiv E^0$) and Eq. (3.6). $J = 0$ is not allowed and for $J < 3$ only the central two-by-two matrix is allowed. Higher order terms coupling l and $l \pm 4$ levels are sometimes important but were not necessary for the present calculations.

In general the l-type resonance calculation requires the use of a matrix of dimension v_2+1 by v_2+1. Since this is a nonlinear system, a nonlinear least-squares fitting technique was needed to fit the experimental data to determine the best constants, as explained later.

Most other workers have only used Eq. (3.1) to fit the data of OCS and N_2O. That has the effect of absorbing the l-type resonance into the effective B_v, D_v, and H_v values. While such a treatment is quite reasonable, the effective values of the higher order constants are quite different from the ground state values, and the level at which Eq. (3.1) is truncated has an important effect on both interpolation and extrapolation. By treating the l-type resonance explicitly, we bring the effective values for D_v and H_v much closer to the ground state values. This model gives a better approximation to the true Hamiltonian than the model that only uses Eq. (3.1). This improvement in the model used for fitting the data improves the reliability of the least-squares fits and gives more accurate uncertainties for the calculated transition frequencies.

For each value of $|l|$ (except $l = 0$) the states with $v_2 > 0$ are split into e and f components. For OCS and N_2O the $l = 0$ states ($^1\Sigma^+$ states) always have the same symmetry (or parity) as the e states. These e and f components have been assigned in accordance with the convention established by Brown *et al.* **[3.3]**. That convention leads to the selection rules:

$$\Delta J = 0,\ e \leftrightarrow f$$

$$\Delta J = \pm 1,\ e \leftrightarrow e,\ \text{and}\ f \leftrightarrow f$$

for electric dipole transitions. These selection rules are obeyed even when the normal rule, $\Delta l = 0, \pm 1$, is broken because perturbations always connect e to e and f to f.

All of the l-type resonance energy matrices, like Eq. (3.7), may be factored into two submatrices which represent the e levels in one case and the f levels in the other case. We have used the full matrix, as indicated by Eq. (3.7), rather than a factored form, because it is more convenient for obtaining the eigenvectors needed to calculate the intensities of the transitions.

The present analysis ignores the Fermi resonance that couples the levels $(v_1, v_2+2, l, v_3-1, J)$ and (v_1, v_2, l, v_3, J) of OCS and N_2O. In OCS the unperturbed Fermi resonance levels are far apart, so there is very little change in the resonance across a band. This results in only small changes in the effective values of D_v, H_v, and L_v. Such small changes can be accommodated by Eq. (3.1) without affecting either the accuracy of the least-squares fits or the accuracy of the calculated values. In N_2O the Fermi resonance is expected to be more important but again the effective values of D_v, H_v, and L_v are only slightly changed from the unperturbed values.

Since the Fermi resonance coupling is different for different values of $|l|$, it gives rise to different effective values of the constants q_v, B_v, etc. for levels that differ only in the value of $|l|$. Consequently, in Eq. (3.7) one must use two values for B_v, one for the $|l|=1$ states and one for the $|l|=3$ states. Similarly, two values are needed for D_v, H_v, and L_v. There will also be two different off-diagonal coupling constants, q_v, in Eq. (3.7), one for the $W_{3,1}$, $W_{1,3}$, $W_{-1,-3}$, and $W_{-3,-1}$ terms and a slightly different one for the $W_{1,-1}$ and $W_{-1,1}$ terms. However, these small differences in q_v are difficult to separate from the differences in B_v and D_v. Consequently, we have been forced to use a single value of q_v for a given vibrational state irrespective of differences in the value of the l quantum number.

In analyzing the spectral data to get the rovibrational constants for calculating the most accurate transition frequencies of OCS and N_2O, a large body of data on many different types of transitions was fit. Because of the form of the energy matrix for l-type resonance, it was not possible to use a linear least-squares technique to fit the data. Instead, an iterative nonlinear least-squares fitting procedure was used. In this procedure it was necessary to approximate the derivative of the transition frequency with respect to each constant by applying the technique described by Rowe and Wilson **[3.4]**.

A similar nonlinear least-squares fitting procedure was used for NO but the energy matrix was somewhat different from Eq. (3.7). For a complete description of the energy matrix for NO one should refer to the work of Hinz *et al.* **[5.371]**.

In order to calculate the statistical uncertainties in the calculated wavenumbers given in these tables it was necessary to use the variance-covariance matrix, given by the least-squares analysis, and the derivative of the transition frequency with respect to each constant. The uncertainty, or estimated standard error, given by $\sigma(\nu)$ was then determined by the double summation,

$$\sigma(\nu) = \sum_i \sum_j V_{ij} \, (\partial\nu/\partial c_i)(\partial\nu/\partial c_j) \, , \tag{3.8}$$

where V_{ij} is a particular element of the variance-covariance matrix and $\partial\nu/\partial c_i$ and $\partial\nu/\partial c_j$ are the derivatives of the transition frequency with respect to the rovibrational constants c_i and c_j respectively.

Data Sources Used for Fitting the Frequency Data and for Calculating the Transition Wavenumbers

OCS

All of the OCS transitions to be used for calibration (shown with an asterisk in the atlas) were calculated by means of constants and a variance-covariance matrix given by a single least-squares fit that included all of the frequency measurements given in the literature. The equations used in this fit were described in the preceding section. In this section we indicate what references provided the data that went into that fit and give a few more details about the fit and the selection of data.

The rotational spectrum of OCS has been extensively studied by microwave and sub-millimeter wave techniques. These measurements use frequency techniques for calibration and have uncertainties on the order of ± 0.05 MHz and in some cases even smaller uncertainties. Such measurements are blessed with small line widths and are made at low pressures which contribute to the accuracy of the measurements. The three most abundant isotopic species of OCS have no fine structure due to quadrupole effects.

Some microwave measurements **[5.43, 5.79]** extend to fairly high J values so they are able to give accurate values for B_v and D_v. In addition, the heterodyne measurements made by Vanek *et al.* **[5.124]** on high-J transitions were used in the analysis. Although there are a great many measurements of rotational transitions for the lower vibrational states, Bogey and Bauer **[5.78]** and Tanaka *et al.* **[5.98]** have given measurements of rotational transitions for fairly high vibrational states, up to 4100 cm^{-1}. Some transitions show the splitting due to l-type resonance and for a few vibrational states, 01^10 **[5.32, 5.47]**, 02^20 **[5.54]**, and 03^10 **[5.54]**, the transitions between split levels have been observed.

Altogether 333 frequency measurements of rotational transitions, taken from the above references as well as from Refs. **[5.5, 5.29, 5.30, 5.37, 5.41, 5.48, 5.55, 5.66, 5.119]**, were included in the least-squares fit that determined the rovibrational constants given in Tables 5 and 6. When possible these measurements were given uncertainties suggested in the original papers. In some cases the uncertainty was estimated by us, based on other work from that time or from that laboratory, or based on the goodness of the fit.

With three exceptions, all of the infrared heterodyne frequency measurements came from a series of papers from the same laboratory at the National Institute of Standards and Technology in Boulder, Colorado **[5.73, 5.83, 5.87, 5.94, 5.107, 5.120-5.122, 5.125, 5.129]**. The exceptions are the measurements on the 02^00-00^00 band and accompanying hot bands made in the Harry Diamond Laboratory by Sattler *et al.* **[5.88]**, the measurements in the same frequency region made at the University of Lille by Fayt *et al.* **[5.126]**, and the preliminary measurements from the University of Bonn **[5.137a]**. From the root-mean-square (rms) deviations of the NIST measurements it was obvious that their assigned uncertainties were too large by approximately a factor of two. This reflected caution in allowing for systematic errors which would not be revealed by the least-squares analysis.

An extensive set of laser-Stark resonance measurements have been made by Fayt and others **[5.105, 5.106, 5.111, 5.112]** and by Tanaka *et al.* **[5.71, 5.97]**. This is a type of frequency measurement that should be quite accurate but we have not included those data in this least-squares fit as they would introduce the additional complications of determining dipole-moment functions and assessing the accuracy of the electric field measurements. In the case of measurements using CO laser transitions there is an additional uncertainty in the laser frequency.

In order to determine the most accurate centrifugal distortion constants, some of the better diode laser and FTS measurements were included in the least-squares fits. For the most part the diode laser measurements given in Refs. **[5.83, 5.88, 5.94]** were calibrated with the heterodyne measurements and probably had systematic errors much smaller than the dispersion shown by the least-squares fit.

Except for the weakest transitions, the FTS measurements were more precise than any of the other infrared measurements. The high precision, however, does not necessarily imply high accuracy. The FTS data used in the analysis for these tables were taken from Refs. **[5.75, 5.101, 5.102, 5.120, 5.122, 5.128, 5.132, 5.135, 5.136]** or from private communication with the authors of those papers in the cases where the original data were not published.

The FTS measurements were given uncertainties equal to the rms deviations of the fits on a band-by-band basis. In order to keep the FTS measurements from affecting the determination of the vibrational energy levels, they were fitted to the same rotational constants as the other data, but to different band centers. All of the recommended calibration data were based on vibrational energy levels determined only from frequency measurements, not from FTS or ordinary diode-laser measurements.

For the less abundant isotopomers of OCS many of the above papers plus a few additional papers **[5.5, 5.52, 5.82, 5.84]** give microwave and sub-millimeter wave measurements of rotational transitions. Some of the infrared heterodyne measurements also included transitions for the less abundant isotopomers of OCS **[5.73, 5.87, 5.94, 5.120, 5.122, 5.125]**. A few transitions of $^{16}O^{13}C^{32}S$

Table 5. Rovibrational constants (in cm^{-1}) used for $^{16}O^{12}C^{32}S$.

Vib. State	ν_0	B_v	$D_v \times 10^8$	$H_v \times 10^{14}$	$L_v \times 10^{17}$
$00^{0}0$	0.0	0.202 856 740 8(8)[a]	4.340 64(25)	-0.329(30)	
$01^{1}0$	520.422 055(147)	0.203 209 834 8(21)	4.411 48(31)	-0.260(38)	
$00^{0}1$	858.966 932(48)	0.202 251 831 6(60)	4.433 50(36)	0.045(45)	
$02^{2}0$	1041.293 318(239)	0.203 559 482 1(89)	4.483 28(93)	-0.135(80)	
$02^{0}0$	1047.042 048(11)	0.203 480 485(12)	4.419 64(63)	-0.712(73)	
$01^{1}1$	1372.459 242(136)	0.202 657 042(22)	4.542 71(63)	[0.1][b]	
$03^{3}0$	[1562.611 159]	0.203 905 589 7(148)	4.550 22(80)	[-0.3]	
$03^{1}0$	1573.366 413(158)	0.203 762 735 1(132)	4.453 60(113)	-0.801(206)	
$00^{0}2$	1710.976 247(76)	0.201 635 352(32)	4.533 64(111)	0.396(102)	
$02^{2}1$	1886.947 787(135)	0.203 048 230 7(117)	4.639 14(113)	[0.1]	
$02^{0}1$	1892.230 557(91)	0.202 953 496 6(220)	4.554 09(123)	[-0.3]	
$10^{0}0$	2062.200 841(121)	0.201 641 530 0(477)	4.409 80(260)	4.551(470)	-0.1155(267)
$04^{4}0$	[2084.378 374]	0.204 248 031 9(608)	4.592 0(296)	[-0.3]	
$04^{2}0$	2099.524 648(251)	0.204 051 914 6(232)	4.494 89(828)	[-0.6]	
$04^{0}0$	2104.827 673(87)	0.203 968 086 4(171)	4.306 15(970)	-32.73(814)	
$01^{1}2$	2218.028 446(175)	0.202 091 366 5(527)	4.682 71(123)	[0.6]	
$03^{3}1$	[2402.340 630]	0.203 428 111(148)	4.734 93(580)	[0.1]	
$03^{1}1$	2412.122 352(193)	0.203 259 077 6(203)	4.599 03(43)	[-0.3]	
$00^{0}3$	2555.991 217(126)	0.201 006 219(100)	4.647 60(514)	1.61(70)	
$11^{1}0$	2575.307 586(181)	0.202 015 427(45)	4.473 84(210)	2.86(28)	
$05^{5}0$	[2606.596 100]	[0.204 589 3]	[4.55]	[-0.3]	
$05^{3}0$	2625.607 054(200)	0.204 345 249(246)	4.583 7(402)	[-0.7]	
$05^{1}0$	2635.589 700(206)	0.204 198 969(125)	4.387 40(643)	[-0.9]	
$02^{2}2$	[2726.564 984]	[0.202 523 2]	[4.804 7]	[0.1]	
$02^{0}2$	2731.399 122(245)	0.202 414 701(227)	4.707(109)	[-0.3]	
$10^{0}1$	2918.104 865(255)	0.201 102 979(109)	5.071 51(681)	54.42(147)	-1.988(95)
$04^{4}1$	[2918.572 190]	[0.203 799 95]	[4.34]	[-0.3]	
$04^{2}1$	2932.216 820(310)	0.203 569 074(81)	4.668 2(13)	[-0.3]	
$04^{0}1$	2937.146 843(207)	0.203 436 472(357)	3.943 2(255)	-52.44(634)	1.71(50)
$01^{1}3$	3057.093 032(518)	0.201 510 88(145)	4.824(81)	[2.2]	
$12^{2}0$	[3088.908 46]	0.202 382 585(146)	4.531 9(48)	[2.2]	
$12^{0}0$	3095.554 42(9)	0.202 311 240(147)	4.500 9(56)	[2.2]	
$03^{3}2$	[3236.415 907]	[0.202 936 096]	[4.776 6]	[-0.2416]	
$03^{1}2$	3245.260 572(251)	0.202 744 75(42)	4.771 0(128)	[-0.2416]	
$00^{0}4$	3393.969 128(594)	0.200 363 45(173)	4.792(96)	[2.5]	
$11^{1}1$	3424.139 675(235)	0.201 515 951(235)	4.757 4(105)	8.78(125)	
$02^{2}3$	[3560.106 489]	[0.201 981 318]	[4.983 28]	[2.397]	
$02^{0}3$	3564.479 808(987)	0.201 863 71(335)	4.989(220)	[2.397]	
$13^{3}0$	[3603.006 802]	[0.202 745 521]	[4.41]	[-1.948]	
$13^{1}0$	3615.345 30(20)	0.202 617 950(637)	4.569(66)	6.7(189)	
$04^{0}2$[c]	3762.825 61(83)	0.202 601 23(931)	15.06(323)	-5459.(4814)	160.(3450)
$10^{0}2$[d]	3768.497 40(22)	0.200 840 86(229)	-14.315(842)	-3551.(1249)	9138.(864)
$12^{2}1$	3931.301 568(234)	0.201 923 654(440)	4.782 5(153)	[6.00]	
$12^{0}1$	3937.427 356(330)	0.201 835 302(539)	4.745 3(180)	[6.00]	
$11^{1}2$	4266.325 10(53)	0.201 069 31(120)	6.539 9(551)	[240.0]	

a) The uncertainty in the last digits (twice the estimated standard error) is given in parentheses.
b) The values enclosed in square brackets were fixed during the analysis.
c) Additional terms needed in the analysis were: M=-1.03(118)$\times 10^{-17}$ and N=4.26(153)$\times 10^{-21}$. See Ref. [5.132] for discussion of analysis beyond J=50.
d) Additional terms needed in the analysis were: M=-3.21(28)$\times 10^{-17}$ and N=3.34(33)$\times 10^{-21}$.

Table 6. *l*-type resonance constants (in cm^{-1}) for $^{16}O^{12}C^{32}S$.

Vib. State $v_1v_2v_3$	$q_v^0 \times 10^4$	$q_{vJ} \times 10^{10}$
0 1 0	2.121 938 68(53)[a]	1.424 13(102)[b]
0 2 0	2.086 287(47)	0.659(35)
0 1 1	2.285 201(291)	3.593(114)
0 3 0	2.064 232(39)	0.252(22)
0 2 1	2.222 23(145)	1.898(64)
0 4 0	2.018 56(408)	-12.49(345)
0 1 2	2.447 445(564)	6.146(177)
0 3 1	2.183 365(144)	1.475 6(245)
1 1 0	2.155 327(274)	3.764(70)
0 5 0	2.019 577(583)	-1.318(375)
0 2 2	2.365(100)	2.76(137)
0 4 1	2.127 48(95)	-1.168(169)
0 1 3	2.596 1(162)	3.2(120)
1 2 0	2.130 1(102)	6.6(28)
0 3 2	2.302 77(231)	2.93(90)
1 1 1	2.373 76(132)	8.57(31)
0 2 3	[2.42]	[0.6587][c]
1 3 0	2.100 35(154)	2.06(87)
1 2 1	[2.255 63]	[3.7]
1 1 2	2.709 0(144)	47.6(85)

a) The uncertainty in the last digits (twice the estimated standard error) is given in parentheses.
b) Also included in the fit was a higher order term $q_{vJJ} = 0.574(44) \times 10^{-15}$.
c) The values enclosed in square brackets were fixed during the analysis.

and $^{16}O^{12}C^{34}S$ have enough frequency measurements to warrant being considered as possible calibration transitions. In most cases, however, transitions of the rarer isotopomers are only included in the atlas to help in identifying the other, more useful transitions.

A good many wavelength measurements have been made on the less abundant isotopomers, and they can be found in the bibliography, Chapter V. The most important sources of information on infrared measurements of the less abundant species are Refs. [**5.45**, **5.65**, **5.76**, **5.101**, **5.109**, **5.111**, **5.128**].

N_2O

The microwave data on N_2O are not so extensive as for OCS but a great many measurements are still available. The early work of Pearson *et al.* [**5.161**] and of Lafferty and Lide [**5.156**] were very useful as were other early measurements given in the review by Lovas [**5.5**], namely the data given in Refs. [**5.138**, **5.139**, **5.146**, **5.148**, **5.159**, **5.162**]. The ν_1 rotational transitions given by Bogey [**5.186**] and the high-*J* transitions given by Andreev *et al.* [**5.194**], by Burenin *et al.* [**5.179**], and by Vanek *et al.* [**5.242**] were of particular value for better determining the centrifugal distortion contribution to the line positions.

All of the heterodyne measurements involving N_2O have come from two laboratories, NRC in Canada, and NIST in the U.S. The only saturated absorption measurements were those of Whitford *et al.* **[5.183]** on the laser transitions, 10^00-00^01, near 930 cm^{-1}. The other infrared heterodyne measurements were made by Wells and co-workers in a series of papers, Refs. **[5.219, 5.221, 5.224, 5.230, 5.231, 5.241, 5.243]**.

There have been a great many measurements on infrared bands of N_2O using either grating instruments or, more recently, FTS instruments. Some of the more important measurements which were used in the least squares refinement of the constants, but did not contribute to the band centers for the recommended calibration lines, were given in Refs. **[5.191-5.193, 5.213, 5.215, 5.220, 5.225, 5.229]**.

All these data were fit in the same way as was done for OCS. The constants given by the least-squares fit are given in Tables 7 and 8.

For N_2O the Fermi resonance is much more important than for OCS; nevertheless, the Fermi resonance was ignored in the fits and only the *l*-type resonance was included in the analysis. For some levels the Fermi resonance causes an effective centrifugal distortion quite different from that of the ground state.

Table 7. Rovibrational constants (in cm^{-1}) used for $^{14}N^{14}N^{16}O$.

Vib. State	ν_0	B_v	$D_v \times 10^7$	$H_v \times 10^{14}$	$L_v \times 10^{17}$
00^00	0.0	0.419 011 006(15)[a]	1.760 91(19)	-1.66(21)	
01^10	588.767 741(163)	0.419 573 590(23)	1.788 70(33)	-0.82(46)	
02^00	1168.132 418(198)	0.419 919 855(52)	1.871 21(85)	-8.18(368)	
02^20	1177.744 555(85)	0.420 124 817(41)	1.816 72(78)	5.25(504)	-2.14(69)
00^01	1284.903 289(124)	0.417 255 066(20)	1.725 67(24)	11.30(42)	0.444(27)
03^10	1749.064 972(166)	0.420 331 191(67)	1.911 42(80)	-11.89(205)	
03^30	1766.911 896(161)	0.420 664 523(346)	1.852 1(64)	17.4(405)	
01^11	1880.265 695(150)	0.417 918 446(50)	1.733 61(53)	14.15(126)	0.288(102)
10^00	2223.756 693(124)	0.415 559 512(18)	1.754 67(20)	-1.359(218)	
04^00	2322.572 934(211)	0.420 618 036(216)	1.943 02(155)	-384.4(164)	
04^20	2331.121 460(124)	0.420 768 166(253)	1.990 06(230)	321.2(158)	
04^40	[2356.251 397][b]	[0.421 193 718]	[1.90]	[0.0]	
02^01	2461.996 447(242)	0.418 147 317(318)	1.892 76(175)	[0.0]	
02^21	2474.798 428(324)	0.418 530 238(655)	1.750 31(257)	[0.0]	
00^02	2563.339 334(169)	0.415 605 588(268)	1.639 20(152)	64.40(224)	
11^10	2798.292 466(200)	0.416 159 111(81)	1.782 02(46)	-0.47(58)	
03^11	3046.212 560(931)	0.418 567 39(164)	1.904 70(539)	[0.0]	
03^31	[3068.720 525]	[0.419 107]	[1.818]	[0.0]	
01^12	3165.853 959(214)	0.416 382 245(410)	1.632 92(294)	48.70(571)	
13^10	3931.248 302(341)	0.416 994 90(118)	1.909 53(549)	[0.0]	
13^30	3948.285 330(370)	0.417 327 81(195)	1.835 5(123)	[0.0]	

a) The uncertainty in the last digits (twice the estimated standard error) is given in parentheses.
b) The values enclosed in square brackets were fixed during the analysis.

Table 8. l-type resonance constants (in cm^{-1}) for $^{14}N^{14}N^{16}O$.

Vib. State $v_1v_2v_3$	$q_v^0 \times 10^4$	$q_{vJ} \times 10^9$
0 1 0	7.920 055 2(83)[a]	1.002 0(155)
0 2 0	7.607 30(98)	2.766(108)[b]
0 3 0	7.472 506(257)	2.889(49)[c]
0 1 1	9.083 842(493)	-2.877(32)[d]
0 4 0	7.481 95(567)	12.379(424)
0 2 1	8.206 5(118)	1.405(305)
1 1 0	7.771 651(471)	1.199 1(185)
0 3 1	8.086 4(103)	2.292(416)
0 1 2	10.722 70(197)	-10.713(76)
1 3 0	7.326 0(111)	3.062(567)

a) The uncertainty in the last digits (twice the estimated standard error) is given in parentheses.
b) Also included in the fit was a higher order term $q_{vJJ}= 0.123(315)\times 10^{-13}$.
c) Also included in the fit was a higher order term $q_{vJJ}=-0.224(102)\times 10^{-13}$.
d) Also included in the fit was a higher order term $q_{vJJ}= 1.109(32)\times 10^{-13}$.

In order to show the position of some of the hot band lines in the spectra, it was necessary to use constants for some levels not included in Tables 7 and 8. The wavenumbers for those lines were calculated by taking the constants for the upper state reported in Refs. **[5.191, 5.213, 5.215, 5.229]**.

For the less abundant isotopic species, the microwave data given in Refs. **[5.194, 5.227]** were used in preparing these tables. One paper has reported heterodyne frequency measurements in the infrared for $^{15}N^{14}N^{16}O$ and $^{14}N^{15}N^{16}O$ **[5.231]**. For the most part the data for the rarer isotopic species were taken from Refs. **[1.7, 5.173, 5.184, 5.192, 5.193, 5.213, 5.215, 5.225, 5.229]**.

CS_2

Since carbon disulfide (CS_2) is a symmetric linear molecule, it is nonpolar and has no microwave spectrum. There are, however, several high resolution infrared studies of its spectrum in the 1450 to 1550 cm^{-1} region **[5.383, 5.386, 5.389]** in addition to the heterodyne measurements made by Wells *et al.* **[5.390]**. A number of other measurements have been made on CS_2 so that the ground state constants, B_0 and D_0, are quite well determined for both the $^{12}C^{32}S_2$ and $^{13}C^{32}S_2$ isotopic species.

The analysis of the ν_3 band of CS_2 is uncomplicated by either Fermi resonance or l-type resonance. The analysis used Eqs. (3.1)-(3.3) as described in detail by Wells *et al.* **[5.390]**. The recommended calibration frequencies are based on the constants given in their paper. Only the 00^01-00^00 transitions of $^{12}C^{32}S_2$ and $^{13}C^{32}S_2$ should be used for calibration. The other line wavenumbers given in the tables are for identification purposes and to show how close some weaker lines may be to the calibration lines. The wavenumbers of the other lines were calculated from the constants given by Winther *et al.* **[5.389]** and may be in error by as much as 0.01 cm^{-1}. In the spectral maps some lines may not be shown in the region below 1505 cm^{-1} because they arise from transitions not included in the data base.

CO

The carbon monoxide (CO) wavenumbers for the calibration lines given in the atlas were calculated from the constants given in Table 9 and based on Eqs. (3.2) and (3.3). Only the wavenumbers given for the $^{12}C^{16}O$ molecule were determined adequately by frequency measurements and so they are the only wavenumbers that should be used for frequency (wavenumber) calibration. There are a few frequency measurements for the other isotopomers, but not enough to provide good calibration.

For the $^{12}C^{16}O$ molecule the ground state constants are primarily based on the sub-millimeter wave measurements given by Gordy and Cowan **[5.250]**, Rosenblum *et al.* **[5.253]**, and Helminger *et al.* **[5.266]** and on the far-infrared heterodyne measurements of Nolt *et al.* **[5.309]** and Varberg and Evenson **[5.320]**. Also included in the fit were microwave measurements of the $J = 1 \leftarrow 0$ transitions in the first two vibrationally excited states as reported by Dixon **[5.288]**. Aside from these two measurements the upper state constants are based primarily on the heterodyne measurements of the 1-0 band given by Schneider *et al.* **[5.314]** and by Maki *et al.* **[5.316]** and the 2-0 band given by Pollock *et al.* **[5.304]**. Also used was one sub-Doppler measurement of the 1-0 band communicated to us by Urban **[5.321]**.

Other data included in the analysis to determine the best constants were some heterodyne laser measurements given by Schneider *et al.* **[5.313]** and some FTS measurements from Guelachvili *et al.* **[5.289, 5.301, 5.307]** and Brown and Toth **[5.306]**. The FTS measurements were used to help

Table 9. Constants used to calculate the $v=1 \leftarrow 0$, $v=2 \leftarrow 0$, and $v=2 \leftarrow 1$ transition wavenumbers for $^{12}C^{16}O$.

constant[a]	Wavenumber[b] (cm^{-1})
Y_{10}	2169.812 615(26)[c]
Y_{20}	-13.287 812 0(87)
Y_{30}	0.010 383 46(980)
$Y_{40} \times 10^4$	0.740 03(1300)
$Y_{50} \times 10^6$	-0.137 37(5913)
Y_{01}	1.931 280 858 2(555)
Y_{11}	-0.017 504 036 7(1302)
$Y_{21} \times 10^6$	0.486 50(4041)
$Y_{31} \times 10^7$	0.333 87(2754)
$Y_{02} \times 10^5$	-0.612 159 11(230)
$Y_{12} \times 10^8$	0.100 669(3765)
$Y_{22} \times 10^9$	-0.177 14(2551)
$Y_{03} \times 10^{11}$	0.589 265(709)
$Y_{13} \times 10^{12}$	-0.145 467(300)
$Y_{04} \times 10^{16}$	-0.360 976(20)
$Y_{14} \times 10^{18}$	-0.684 5(47)
$Y_{05} \times 10^{22}$	-0.471 36(167)

a) Dunham coefficients defined by Eq. (3.2).
b) To convert to frequency units multiply by 29 979.2458 MHz/cm^{-1}.
c) The uncertainty (twice the estimated standard error) in the last digits is given in parentheses. Excess digits are given to avoid round-off errors.

determine the best centrifugal distortion constants for the v = 1, 2, and 3 states. Only heterodyne frequency measurements were used to determine the vibrational frequencies.

The analysis of the CO data was carried out in the same way as described by Maki *et al.* [5.316] except that new data have been included [5.320, 5.321]. In order to avoid the possibility of problems with the potential function model, the lowest order constants, Y_{10}, Y_{20}, Y_{01}, Y_{11}, Y_{21}, Y_{02}, Y_{12}, and Y_{03} were fit to data for only the v = 0, 1, and 2 states. The other constants were constrained to values given by earlier fits which included data for higher vibrational states, as described by Schneider *et al.* [5.314].

The uncertainties given for the calibration wavenumbers are based on the variance-covariance matrix given by the least-squares fit with the higher order constants constrained.

The wavenumbers for the other isotopic species of CO were calculated from constants given by Guelachvili *et al.* [5.301], but corrected to agree with the offset observed in the wavenumbers for the $^{12}C^{16}O$ species. The wavenumbers for the rarer isotopic species are given to help in correctly identifying the calibration lines.

NO

The wavenumbers of the line positions used to produce the NO atlas were calculated using the constants given by Hinz *et al.* [5.371] for the $^{14}N^{16}O$ species. The constants given by Amiot and Guelachvili [5.355] were used for $^{15}N^{16}O$ and those given by Amiot *et al.* [5.350] were used for $^{14}N^{18}O$. Those were the only transitions strong enough to show on the spectral plots. The uncertainties given in the tables are only estimates based on the accuracy of other heterodyne measurements and an estimate of the accuracy of the Hamiltonian used to fit the data.

The tables only give the wavenumber values for lines of $^{14}N^{16}O$. Because only one paper [5.371] reports infrared frequency measurements for NO, the NO lines are not recommended for calibration in those regions where either OCS or N_2O transitions are available for calibration. For many spectrometers most of the NO transitions are unresolved doublets. At low pressures the doublets will have equal intensities and widths so that no appreciable errors will be incurred by using the average frequency of the doublet. A few of the low-J transitions, especially for the Q-branch lines, will have additional structure due to the interaction of the nuclear electric quadrupole moment of the nitrogen atom with the surrounding charge distribution. Such small splittings will be no larger than a few megahertz and the average line positions given in the tables will not be affected.

Intensity Calculations

This section is intended to show how the transition intensities were calculated and how the intensity was defined. This will enable users to determine the intensity to be expected for conditions other than those used to prepare the atlas. In order to estimate the appearance of the spectrum under conditions of pressure broadening and spectrometer resolution different from that used to produce the atlas figures, it is also necessary to consider the line shapes and the effect of finite slit functions. Such effects are discussed in Chapter IV.

The integrated intensity of an individual line representing a single rovibrational transition is independent of the line shape. For this atlas we take the integrated line intensity, S, to mean

$$S = \int_{-\infty}^{+\infty} k(\nu)\mathrm{d}\nu = (1/pl) \int_{-\infty}^{+\infty} ln(I_0/I)_\nu \mathrm{d}\nu, \tag{3.9}$$

where $k(\nu)$ is the absorption coefficient at frequency ν, p is the partial pressure of the gas, l is the length of the absorption path, I_0 is the intensity of radiation without absorption from the line in question, and I is the intensity of radiation after absorption by the line. Note that Eq. (3.9) is only concerned with the absorption due to a particular transition.

The integrated intensities, as given in this atlas, were calculated by using the equation

$$S = exp(-E''/kT)\ [1-exp(-\nu/0.69504T)]\ [N_i/Q_vQ_R]$$

$$\times\ \nu C|R^{v'l'J'}_{v''l''J''}|^2 S_v^2 S_R^2, \tag{3.10}$$

where C is a proportionality constant that includes the factors $8\pi^3/3hc$ and other factors, such as the Loschmidt constant (2.686 763$\times10^{25}$ molecules/m^3), required to give S in appropriate units. If S is in units of cm/molecule at STP, C is 4.162 38$\times10^{-19}$ cm^{2}D^{-2}/molecule. If S is in units of cm^{-2}atm^{-1} at temperature T, C would be $3054.7262/T$ cm^{-1}D^{-2}atm^{-1}. In Eq. (3.10) $|R^{v'l'J'}_{v''l''J''}|$ is the vibrational transition moment or dipole derivative in debye units (1 debye=3.335 64$\times10^{-30}$ C m), ν is the transition wavenumber in units of cm^{-1}, T is the temperature in kelvin, N_i is the concentration of the isotopic species under consideration, Q_v and Q_R are the vibrational and rotational partition functions respectively, and S_v and S_R are vibrational and rotational strength factors that should be included in the intensity. Some workers prefer to include S_v in the transition moment but we prefer to express it separately so the transition moment can be seen to be nearly the same for the ground state transitions and the accompanying hot bands. S_R is also called the direction cosine matrix element. The intensities given in these tables were calculated for a temperature of 296 K.

In Eq (3.10) the term N_i/Q_vQ_R compensates for the fact that the pressure used in Eq. (3.9) is the total pressure of the gas being measured, including all isotopic species. That is to say, the pressure does not take into account the isotopic concentration or the number of molecules in different states.

Table 10. Percent isotopic abundances.

^{12}C	98.90
^{13}C	1.10
^{14}N	99.634
^{15}N	0.366
^{16}O	99.762
^{17}O	0.038
^{18}O	0.200
^{32}S	95.02
^{33}S	0.75
^{34}S	4.21
^{36}S	0.02

The values of N_i were calculated from the isotopic abundances given in Table 10 and taken from Refs. [**3.5**, **3.6**]. The vibrational partition function was calculated by summing the Boltzmann population of the vibrational energy levels. The vibrational partition functions are given in Table 11.

The rotational partition functions were calculated from the equations given by McDowell [**3.7**]. A different rotational partition function was calculated for each vibrational energy level and for each isotopomer.

Some workers like to use $S^0 = S/N_i$ for S because S^0 seems to be a more appropriate molecular property. On the other hand, S is more useful for analytical purposes, such as the determination of the amount of CO in the atmosphere. Actually, it is $|R|$ or $|R|^2$, rather than S, that is the true molecular property in Eq. (3.10), and, as suggested by Toth [**5.218**], all intensity measurements should

Table 11. Vibrational partition function and natural abundance for the various isotopic species found in the calibration atlas.

molecule	Q_v(296 K)	N_i	molecule	Q_v(296 K)	N_i
$^{16}O^{12}C^{32}S$	1.199	0.937 5	$^{12}C^{16}O$	1.000	0.986 6
$^{16}O^{12}C^{34}S$	1.203	0.041 63	$^{13}C^{16}O$	1.000	0.010 97
$^{16}O^{13}C^{32}S$	1.216	0.010 50	$^{12}C^{18}O$	1.000	0.001 98
$^{16}O^{12}C^{33}S$	1.201	0.007 40	$^{12}C^{17}O$	1.000	0.000 38
$^{18}O^{12}C^{32}S$	1.207	0.001 92	$^{13}C^{18}O$	1.000	0.000 022
$^{14}N^{14}N^{16}O$	1.1273	0.990 3	$^{13}C^{17}O$	1.000	0.000 004
$^{14}N^{15}N^{16}O$	1.1364	0.003 64	$^{12}C^{32}S_2$	1.424	0.892 95
$^{15}N^{14}N^{16}O$	1.1298	0.003 64	$^{13}C^{32}S_2$	1.452	0.009 93
$^{14}N^{14}N^{18}O$	1.1308	0.001 99	$^{12}C^{34}S^{32}S$	1.430	0.079 13
$^{14}N^{16}O$	1.000	0.994 0	$^{12}C^{33}S^{32}S$	1.428	0.014 10
$^{15}N^{16}O$	1.000	0.003 7			
$^{14}N^{18}O$	1.000	0.002 0			
$^{14}N^{17}O$	1.000	0.000 38			

report the value of $|R|$, or $|R|^2$. Unfortunately, some authors have left out the N_i term and report values of $|R|$ that are not true molecular properties relatable to the electron distribution in the molecule.

In the infancy of infrared spectroscopy the instrumentation was unable to resolve individual rovibrational transitions, so many early papers measured the intensity of entire vibrational bands. Those papers measured band intensities by using a modification of Eq. (3.9) in which the integration was over the entire band rather than over a single line. The fine points of isotopic concentration and vibrational hot bands were ignored. Even today integrated band intensities are often measured for heavier molecules for which the density of lines is very high.

From those early measurements the term *band intensity* came to mean the intensity of all the lines in a band including all isotopes present in a normal sample and all hot bands. As a first approximation such a band intensity can be calculated from Eq. (3.10) if the terms S_v^2, S_R^2, and N_i/Q_vQ_R are all omitted and ν is set equal to the center of the band. This band intensity will generally be within a few percent of the intensity obtained by adding all the line intensities for the band. To be faithful to the original meaning, the true band intensity should be the sum of the intensities of all the lines in the band, including all isotopes and all hot bands.

Calculation of the strength factors

The vibrational strength factors were slightly different for even and odd values of Δv_2. For simplicity the strength factor was broken into two factors such that

$$S_v^2 = S_{13}^2 S_2^2 \tag{3.11}$$

with

$$S_{13}^2 = (v_1+\Delta v_1)!\ (v_3+\Delta v_3)!\,/\,(v_1!v_3!\Delta v_1!\Delta v_3!) \tag{3.12}$$

and for Δv_2 even (or zero)

$$S_2^2 = [\tfrac{1}{2}(v_2+l+\Delta v_2)]!\ [\tfrac{1}{2}(v_2-l+\Delta v_2)]!\ /\ \Big\{[\tfrac{1}{2}(v_2+l)]!\ [\tfrac{1}{2}(v_2-l)]! \times \{[\tfrac{1}{2}(\Delta v_2)]!\}^2\Big\}, \tag{3.13}$$

while for Δv_2 odd

$$S_2^2 = [\tfrac{1}{2}(v_2+l+\Delta v_2-1)]!\ [\tfrac{1}{2}(v_2-l+\Delta v_2-1)]!\ (v_2+l\Delta l+\Delta v_2+1)$$

$$/\left\{[\tfrac{1}{2}(v_2+l)]!\ [\tfrac{1}{2}(v_2-l)]!\ \{[\tfrac{1}{2}(\Delta v_2-1)]!\}^2\ (\Delta v_2+1)\right\}. \tag{3.14}$$

In both cases $S_2 = 0$ if $|\Delta l| > 1$. In Eqs. (3.12)-(3.14) the smaller of v′ and v″ is used for v, $\Delta v = |v'-v''|$, $l = l''$, and $\Delta l = l'-l''$. For the present calculations, S_2 can be taken as the positive square-root of Eqs. (3.13) and (3.14).

Equation (3.12) was derived from the properties of harmonic oscillator wave functions such as can be found, among other places, in Appendix III of Ref. **[3.8]**. Equations (3.13) and (3.14) were derived from the properties of the two-dimensional harmonic oscillator wave functions given by Moffitt and Liehr **[3.9]**.

Note that S_v^2 is normalized so that transitions from the ground state always have $S_v^2 = 1$. For certain hot bands, such as $2\nu_1-\nu_1$, $S_v^2 = 2$, while for the hot band $3\nu_1-\nu_1$, $S_v^2 = 3$. Other authors sometimes include S_v in the transition moment, $|R|$, in which case the transition moment for certain hot bands will be very different from the transition moment for the ground state transitions.

For transitions for which $v_2 = 0$ (and $l = 0$) the rotational strength factors are given by

$$S_R^2 = |m| \text{ for } \Delta J = \pm 1$$

and

$$S_R^2 = 0 \text{ for } \Delta J = 0,$$

where m has the usual meaning of $-J''$ for $\Delta J = -1$ and $J''+1$ for $\Delta J = +1$.

If $v_2 \neq 0$, the l-type resonance energy matrix was used and the intensity was obtained by multiplying each term of the eigenvector, for the appropriate eigenvalue, by the appropriate intensity factor given by $S_v S_R$ where S_R was determined from Table 2.1 of Gordy and Cook **[3.11]**, or Table 4-4 of Townes and Schawlow **[3.12]**. Di Lauro and Mills **[3.13]** describe a similar procedure for determining intensities of transitions in Coriolis coupled levels of a symmetric rotor. For the specific cases of l-type resonance, this procedure was described by Maki *et al.* **[3.14]** although they dealt with the symmetry factored matrix whereas the present calculations used the unfactored matrix, such as Eq. (3.7).

To understand this intensity calculation let us consider a transition from an unperturbed lower state (v_1,v_2,l,v_3,J) to an upper state that is involved in l-type resonance, $(v_1',v_2',l',v_3',J') = (v_1+\Delta v_1,v_2+\Delta v_2,l+\Delta l,v_3+\Delta v_3,J')$. The upper state energy is given by a particular eigenvalue, E_1. The eigenvector for this eigenvalue gives the mixing coefficients a_{11}, a_{12}, a_{13}, *etc.* that measure the contribution of each unperturbed state to the perturbed state. The transition intensity is given by

$$\begin{aligned}
&|<v_1+\Delta v_1,v_2+\Delta v_2,l+\Delta l,v_3+\Delta v_3,J+\Delta J|\mu|v_1,v_2,l,v_3,J>|^2 = \\
&\quad |a_{11}<v_1+\Delta v_1,v_2+\Delta v_2,l'=v_2+\Delta v_2,v_3+\Delta v_3,J+\Delta J|\mu|v_1,v_2,l,v_3,J> \\
&\quad + a_{12}<v_1+\Delta v_1,v_2+\Delta v_2,l'=v_2+\Delta v_2-2,v_3+\Delta v_3,J+\Delta J|\mu|v_1,v_2,l,v_3,J> \\
&\quad + a_{13}<v_1+\Delta v_1,v_2+\Delta v_2,l'=v_2+\Delta v_2-4,v_3+\Delta v_3,J+\Delta J|\mu|v_1,v_2,l,v_3,J> \\
&\qquad \ldots|^2.
\end{aligned} \tag{3.15}$$

All the upper state quantum numbers on the left side of Eq. (3.15) are the same as those on the right side except the l' values. The l-type resonance mixes levels that differ only in the value of l.

If one assumes that the transition moment, or dipole derivative, is the same for all values of l, then Eq. (3.15) can be rewritten

$$|\mathrm{R}|^2 S_v^2 S_\mathrm{R}^2 = |\mathrm{R}|^2 S_{13}^2 \{a_{11} S_2 S_\mathrm{R}(\mathrm{v}_2+\Delta\mathrm{v}_2, l=\mathrm{v}_2+\Delta\mathrm{v}_2, J' \leftarrow \mathrm{v}_2, l'', J'')$$

$$+a_{12} S_2 S_\mathrm{R}(\mathrm{v}_2+\Delta\mathrm{v}_2, l=\mathrm{v}_2+\Delta\mathrm{v}_2\text{-}2, J' \leftarrow \mathrm{v}_2, l'', J'')$$

$$+a_{13} \ldots \quad \}^2. \tag{3.16}$$

Each term within the curly brackets on the right side of Eq. (3.16) has a different value for S_2 and S_R depending on the unperturbed transition to which they apply. In many cases they will be zero because they apply to $|\Delta l| > 1$. In Eqs. (3.12)-(3.14) we have already given the formulas for the values of S_{13}^2 and S_2^2.

The only nonzero values of S_R are given below.

For $\Delta l = 0$, the $\Delta J = 0$ transitions have

$$S_\mathrm{R} = [(2J+1)l^2/J(J+1)]^{1/2} \tag{3.17}$$

and the $\Delta J = \pm 1$ transitions have

$$S_\mathrm{R} = [(|m|^2-l^2)/|m|]^{1/2}. \tag{3.18}$$

For $\Delta l = \pm 1$, the expressions for $\Delta J = 0$ were

$$S_\mathrm{R} = \tfrac{1}{2}[(2J+1)(J+l)(J-l+1)/J(J+1)]^{1/2}, \tag{3.19}$$

where l is the larger of l' and l''. For $\Delta l = +1$ and $\Delta J = +1$,

$$S_\mathrm{R} = -\tfrac{1}{2}[(J+l)(J+l+1)/J]^{1/2}; \tag{3.20}$$

for $\Delta l = +1$ and $\Delta J = -1$,

$$S_\mathrm{R} = \tfrac{1}{2}[(-J+l)(-J+l+1)/J]^{1/2}; \tag{3.21}$$

for $\Delta l = -1$ and $\Delta J = +1$,

$$S_\mathrm{R} = \tfrac{1}{2}[(J-l)(J-l+1)/J]^{1/2}; \tag{3.22}$$

and for $\Delta l = -1$ and $\Delta J = -1$,

$$S_\mathrm{R} = -\tfrac{1}{2}[(-J-l)(-J-l+1)/J]^{1/2}. \tag{3.23}$$

In Eqs. (3.19)-(3.23) J is the larger of J' and J'' but l is always l''.

When both the upper and lower states are involved in l-type resonance, Eqs. (3.15) and (3.16) must be modified to include the eigenvectors for both the upper and lower states, otherwise the treatment is the same.

Herman-Wallis terms

Sometimes it is necessary to divide $|R^{v'l'J'}_{v''l''J''}|$ into two terms such that

$$|R^{v'l'J'}_{v''l''J''}|^2 = |R^{v'l'}_{v''l''}|^2 \, F^{J'}_{J''} , \tag{3.24}$$

where $F^{J'}_{J''}$ is similar to the Herman-Wallis term [**3.15, 3.16**]. There are several forms that have been used for the $F^{J'}_{J''}$ term. For the overtone of CO the form used was

$$F^{J'}_{J''} = 1 + C_1 m + C_2 m^2. \tag{3.25}$$

Toth [**5.218**], in his extensive intensity measurements for N_2O, has given the values for the Herman-Wallis constants for several bands. Toth has used several formulations such as Eq. (3.25) above and also

$$F^{J'}_{J''} = [1 + aJ(J+1) + bJ^2(J+1)^2] \tag{3.26}$$

$$F^{J'}_{J''} = [1 + a_1 m + a_2 J'(J'+1)]^2 \tag{3.27}$$

$$F^{J'}_{J''} = [1 + \xi_1 m + \xi_2 m^2]^2. \tag{3.28}$$

In the case of OCS, Dang-Nhu and Guelachvili [**5.104**] used the form of Eq. (3.25) for the 11^10-00^00 band. The same constant was also used to calculate the intensities of the hot bands for which $\Delta v_1 = 1$ and $\Delta v_2 = 1$. The same form and, coincidentally, almost the same value for the Herman-Wallis term was used for the ν_2 band system. As recommended by Maki *et al.* [**5.132**], we used

$$F^{J'}_{J''} = [1 + a_3 J'(J'+1)] \tag{3.29}$$

for the hot bands 10^02-00^01 and 04^02-00^01 in order to allow for the resonance interaction of the upper states. For the other transitions, there seemed to be no need for using a Herman-Wallis term in the intensity calculations.

For the 03^10-01^10 band of OCS, Depannemaecker and Lemaire [**5.118**] found that the first term, C_1, in Eq. (3.25) was needed although no Herman-Wallis term was needed for the 02^00-00^00 band. On the other hand, the more extensive measurements of Blanquet *et al.* [**5.134**] showed that a Herman-Wallis term would improve the intensity fit for 02^00-00^00.

Data Sources for Intensity Calculations

OCS

Only a small number of intensity measurements have been published for OCS. Most of them are measurements of integrated band intensities including transitions from the ground state as well as from other low energy states populated at room temperature, hot bands. The most thorough studies of band intensities are those of Foord and Whiffen [**5.49**] and Kagann [**5.89**] where references to earlier work may be found. Kagann's values were consistently smaller by 11 to 15 percent except for the strongest band near 2062 cm^{-1} for which Kagann found an intensity that was 18 percent *larger*.

There have been only 9 papers reporting intensity measurements of individual rovibrational transitions [**5.73, 5.74, 5.83, 5.85, 5.103, 5.104, 5.118, 5.127, 5.134**] and the first three of those papers are considerably less thorough than the others. In addition, there are two papers that give information on the relative intensities of well resolved rovibrational transitions without making absolute intensity measurements [**5.101, 5.132**].

Table 12 Integrated intensities and transition moments for OCS.

Band	Frequency Interval (cm^{-1})	Measured Integrated Intensity ($cm^{-2}atm^{-1}$)[c] at 296 K	[REF.]	Used in Atlas Calculation: Integrated Intensity ($cm^{-2}atm^{-1}$) at 296 K	Used in Atlas Calculation: Integrated Intensity (cm/molecule) $\times 10^{19}$ at 296 K	Used in Atlas Calculation: Transition Moment[a] $\|R_{v''l''}^{v'l'}\|$[b] (debye)[d]
ν_2	494-567	11.9(8)[e]	[5.28]	11.85	4.78	0.047
		12.0(8)	[5.89]			
ν_3	812-890	41.(4)	[5.49]	36.3	14.64	0.064
		35.4(16)	[5.85]			
		35.5(23)	[5.89]			
		36.3(10)	[5.103]			
		36.3(1)	[5.127]			
$2\nu_2$	1000-1095	14.9(15)	[5.49]	13.8[f]	5.57	0.0333
		13.3(9)	[5.89]			
		12.9[f]	[5.118]			
		12.7[f]	[5.134]			
$2\nu_3$	1650-1739	7.6(16)	[5.49]	6.9	2.78	0.0195
		6.71(47)	[5.89]			
$2\nu_2+\nu_3$	1832-1934	12.4(25)	[5.49]	11.2	4.52	0.022
		10.9(8)	[5.89]			
ν_1	1970-2091	2520.(250)	[5.49]	2533.	1021.7	0.345
		2980.(220)	[5.89]			
$4\nu_2$	2080-2141	19.5(49)	[5.49]	10.4[f]	4.19	0.024
		9.6[f]	[5.101]			
$3\nu_3$	2510-2574		[5.132]	0.35	0.14	0.00367
$\nu_1+\nu_2$	2550-2600	0.147(6)[f]	[5.104]	0.149[f]	0.060	0.00257
$2\nu_2+2\nu_3$	2693-2763	0.52(8)	[5.49]	0.52	0.21	0.004
$\nu_1+\nu_3$	2862-2941	37.6(40)	[5.49]	35.5	14.3	0.034
		33.6(22)	[5.89]			
$4\nu_2+\nu_3$	2910-2970	0.32[f]	[5.132]	0.32[f]	0.13	0.0036
$\nu_1+2\nu_2$	3065-3120	3.01(30)	[5.49]	2.43	0.98	0.008
		2.25(16)	[5.89]			

a) See the key page for each band region for transition moments of hot bands that are not the same as for the ground state transitions.
b) See Eq. (3.24) for definition of $|R_{v''l''}^{v'l'}|$.
c) 1 $cm^{-2}atm^{-1}$ at 296 K = 4.0335×10^{-20} cm/molecule
d) 1 debye = 3.336×10^{-30} C m.
e) The uncertainties in the last digits are given in parentheses.
f) Hot band intensities were not included.

Several papers [5.49, 5.97, 5.100, 5.106, 5.112] have used intensity and/or dipole moment measurements to derive a dipole moment function for OCS. At the present time the dipole function of OCS can be used to predict the dipole moment of OCS in different vibrational states, but it is not very useful for predicting transition intensities. The accuracy of the dipole moment function for predicting dipole moments is due largely to the fact that it is based on very accurate laser-Stark measurements involving many vibrational states.

Table 12 summarizes the intensity measurements reported in the literature. Table 12 also gives the transition moments used in the calculations for this atlas and the integrated intensity of each band as obtained by actually summing all of the transitions within each band, including all hot bands and all isotopic species. In a few cases, where indicated by a footnote, the integrated intensity given in the literature and reported in Table 12 does not include the hot band intensity. In those cases Table 12 gives the intensity calculated without including the contribution from hot bands in order to more easily compare the intensity used in this atlas with what was reported in the literature.

Only a few bands of OCS show any need for Herman-Wallis terms. As is usually the case, the two perpendicular bands, ν_2 and $\nu_1+\nu_2$, required a small Herman-Wallis term, C_1 = 0.0045 and 0.00463 for the two bands, respectively. The Herman-Wallis term is defined by Eqs. (3.24) and (3.25). For ν_2 it was estimated by us from inspection of the experimental spectrum and is not a very accurate value. The H.-W. term for $\nu_1+\nu_2$ was measured by Dang-Nhu and Guelachvili **[5.104]**. Although the Herman-Wallis term is likely to be somewhat different for different isotopes and for hot bands, the same term was used for all bands involving the same quantum number changes unless indicated in the key that accompanies the tables.

The only other bands that were given nonzero Herman-Wallis constants were some of the hot bands that go with $2\nu_2$ and the hot bands 04^02-00^01 and 10^02-00^01 which involve resonance coupled upper states. Depannemaecker and Lemaire **[5.118]** determined that C_1 = 0.0019 gives the best fit to their intensity data for 03^10-01^10 transitions. We have used the same H.-W. term for most of the other hot bands accompanying $2\nu_2$; see the descriptive key accompanying the 1000 cm^{-1} to 1095 cm^{-1} tables. Maki *et al.* **[5.132]** have given effective constants a_3 = 0.00105 and a_3 = -0.00034, respectively, to the resonance coupled transitions. The latter constants are based on Eqs. (3.24) and (3.29).

After the tables were prepared the new intensity measurements of Blanquet *et al.* **[5.134]** became available and it leads us to believe that the intensity values in the tables are too high by about 7 percent because we assumed that the dipole derivative given by Depannemaecker and Lemaire took into account the isotopic abundance. Any revised intensity calculations for the $2\nu_2$ band should also include the Herman-Wallis constant measured by Blanquet *et al.* **[5.134]**.

N_2O

A great many intensity measurements have been made on the various bands of N_2O given in this atlas. Not all the measurements are given in Table 13, but the most important or most recent measurements are given there.

As was the case for OCS, the earlier measurements were of the intensity of the unresolved bands. Such measurements included all hot bands and all isotopic species present in a normal sample. One of the more complete sets of measurements is that reported by Kagann **[5.214]**. Many earlier measurements are summarized in that paper. Kobayashi and Suzuki **[5.228]** have fit the available data on intensities to a dipole moment function from which they calculate transition moments and Herman-Wallis constants. More measurements are needed to evaluate the accuracy of the constants calculated from their dipole moment function.

Because of the interest in N_2O as an atmospheric gas, the more recent intensity measurements involve spectra with resolved rotational structure and individual rovibrational lines have been measured. In many places in Table 13 we give both the intensity of the transitions from the ground state and the intensity of all transitions with the same change of quantum numbers regardless of the lower state. That allows one to compare our intensities with those reported in the literature.

For most of the transitions we have tried to use what we judge to be the best measurements for the intensity but in a few cases we have departed from the literature values in order to give a more realistic appearance to the spectrum. For example, we have used the transition moment given by Toth **[5.218]** for the ν_3 band near 1270 cm^{-1}, but the transition moment given for the $2\nu_2$ band did not give a calculated spectrum that matched the observed spectrum where the two bands overlap. This mismatch caused us to use a slightly smaller value for the transition moment for $2\nu_2$ than that given by Toth. It is possible that either the Herman-Wallis constants or the intensity of the ν_3 band should

Table 13 Integrated intensities and transition moments for N_2O.

Band	Frequency Interval (cm^{-1})	Measured Integrated Intensity ($cm^{-2}atm^{-1}$)[c] at 296 K	[REF.]	Used in Atlas Calculation: Integrated Intensity ($cm^{-2}atm^{-1}$) at 296 K	Used in Atlas Calculation: Integrated Intensity (cm/molecule) $\times 10^{19}$ at 296 K	Used in Atlas Calculation: Transition Moment[a] $\lvert R_{v''l''}^{v'l'} \rvert$[b] (debye)[d]
ν_2	520-660	28.9(15)[e,f]	[5.214]	24.5	9.88	0.0692
		30.4(40)[f]	[5.151]	29.2[f]		
		31.4(40)[f]	[5.157]			
ν_1-ν_3	880-990	0.0524	[5.209]	0.052	0.021	0.056
		0.055	[5.172]			
ν_1-$2\nu_2$	990-1090	---	---	0.01	0.004	0.018
$2\nu_2$	1110-1225	7.00(3)	[5.218]	6.66	2.69	0.0247
		7.36(7)	[5.216]	8.30[f]		
		6.98	[5.237]			
		8.27(43)[f]	[5.214]			
		8.49(9)[f]	[5.234]			
ν_3	1200-1340	207.(1)	[5.218]	206.	83.1	0.1326
		225.(12)[f]	[5.214]	232.5[f]		
		226.(2)[f]	[5.234]			
		229.8(45)	[5.216]			
$\nu_2+\nu_3$	1835-1925	0.52(3)	[5.212]	0.52	0.21	0.00548
		0.58(10)[f]	[5.214]	0.60[f]		
		0.437(20)	[5.185]			
ν_1	2140-2269	1207.(22)	[5.226]	1206.	486.4	0.244
		1421.(76)[f]	[5.214]	1358.[f]		
		1189.(30)	[5.187]			
		1302.(50)	[5.171]			
		1301.(54)[f]	[5.198]			
$2\nu_2+\nu_3$	2410-2510	6.79(4)	[5.216]	6.7	2.7	0.017
		7.35(38)[f]	[5.214]	8.2[f]		
$2\nu_3$	2490-2605	30.86(14)	[5.216]	32.1	12.9	0.037
		32.1(17)[f]	[5.214]	36.3[f]		
$\nu_1+\nu_2$	2725-2840	2.24(13)[f]	[5.214]	1.895	0.764	0.0086
		2.11	[5.235]	2.26[f]		

a) Unless indicated otherwise (see footnote f), the integrated intensities are given only for the vibrational transition from the ground state.
b) See Eq. (3.24) for definition of $\lvert R_{v''l''}^{v'l'} \rvert$.
c) 1 $cm^{-2}atm^{-1}$ at 296 K = 4.0335×10^{-20} cm/molecule.
d) 1 debye = 3.336×10^{-30} C m.
e) The uncertainties in the last digits are given in parentheses.
f) All hot bands and isotopes are included.

have been changed. The more reasonable thing seemed to be to change the intensity of the weaker band. We have also recognized that Toth has included the vibrational factors in the dipole moment matrix elements that he reported, whereas Eq. (3.10) treats that as a separate term that multiplies the transition moment.

The two bands $2\nu_2+\nu_3$ and $2\nu_3$ also overlap and again there was some modification of the literature values for the intensities in order to get a good agreement between the calculated spectrum and that obtained experimentally.

We know of no intensity measurements for the ν_1-$2\nu_2$ transitions between 990 and 1090 cm^{-1}; consequently, we have estimated the intensity for that region. The true intensity could be quite different from what we have estimated, but the relative intensities of the lines in that region are probably good enough to recognize and assign the lines needed for calibration. That band is so weak that it is probably useless as a source of calibration for many workers, but it was included because it is based on frequency measurements. Since the lower energy level of the band is quite high, heating the absorption cell will make a large difference in the intensity.

Please see Eqs. (3.24) to (3.29) for the definition of the various Herman-Wallis constants used in this work. In his intensity studies [**5.218**, **5.185**] Toth has given Herman-Wallis terms for all the bands. For the most part we have used those constants in the intensity calculations for the tables and figures. Several exceptions were made, however. For the 03^10-01^10 hot band we have used the same Herman-Wallis terms as given by Toth for the 02^00-00^00 band. For the other transitions involving $\Delta v_2=2$, we have estimated the intensity constants to be used for the calculations because they were not included in Toth's tables.

There seems to be no determination of a Herman-Wallis constant for the $\Delta v_2=1$ transitions, therefore, we used $a_1 = 0.0016$ which was estimated from the experimental spectrum. This value was estimated from laboratory spectra that were compared with the calculated spectrum. The intensities of the lines in the bands in the 1835-1925 cm^{-1} region were all calculated with $\xi_1 = -0.0107$ as measured by Toth and Farmer [**5.185**]. The two Herman-Wallis constants measured by Boissy *et al.* [**5.187**] for the ν_1 band, were used for all the $\Delta v_1 = 1$ transitions including hot bands and different isotopomers used in the tables. The $2\nu_2+\nu_3$ band also seemed to require a Herman-Wallis term although the spectra were better matched with a value of $\xi_2 = 0.3\times10^{-4}$ rather than the term given by Levy *et al.* [**5.216**]. No Herman-Wallis terms were used in the intensity calculations for the ν_1-ν_3, ν_1-$2\nu_2$, $2\nu_3$, and $\nu_1+\nu_2$ bands and the hot bands that accompany them.

CS_2

Only a few intensity measurements have been made on the ν_3 band of CS_2 [**5.375**, **5.377**, **5.378**, **5.379**]. There seem to be no measurements of individually resolved rovibrational transitions, only integrated band intensities. For the purposes of this atlas we have calculated all hot band and isotopomer transitions with the same transition moment, 0.27 debye, and with no Herman-Wallis terms. The integrated intensity for the 1500 cm^{-1} band region of CS_2 is 9.309×10^{-17} cm/molecule (2308 $cm^{-2}atm^{-1}$ at 296 K) as determined from adding all the line intensities including hot bands and different isotopes. This may be compared to the value 9.55×10^{-17} cm/molecule given by McKean *et al.* [**5.378**], 9.38×10^{-17} cm/molecule given by Robinson [**5.375**], 9.23×10^{-17} cm/molecule given by Kiyama and Ozawa [**5.377**], and 9.13×10^{-17} cm/molecule given by Person and Hall [**5.379**].

CO

fundamental band

Because of the large spacing between lines, CO was one of the first molecules for which individual line intensities were measured [**5.255**]. More recent measurements are tabulated in the review article by Smith *et al.* [**5.2**]. For the fundamental band near 2143 cm^{-1} it is difficult to determine which measurements are best but most of the recent measurements give integrated band intensities close to 1.027×10^{-17} cm/molecule (276 $cm^{-2}atm^{-1}$ at 273.15 K). For this atlas we have used a dipole transition moment of 0.1073 D which gives a total band intensity of 1.03×10^{-17} cm/molecule (276 $cm^{-2}atm^{-1}$ at 273.15 K or 255 $cm^{-2}atm^{-1}$ at 296 K). The changes in the matrix elements for the less abundant isotopic species were taken from the theoretical calculations of Chackerian and Tipping

[5.305]. The isotopic abundance was taken from Table 11. The uncertainty in the total band intensity seems to be about 3 percent. The intensity measurements of Chackerian *et al.* **[5.300]** (1.027×10^{-17} cm/molecule) are in agreement with other recent measurements for the main isotopic species and they also have studied the intensity of the weaker isotopic transitions. They gave transition intensities calculated from the electric dipole moment function given by Chackerian and Tipping **[5.305]**. Their calculated intensities seem to include a weak Herman-Wallis effect but they do not give any explicit constants for easily calculating that effect. A calculation that duplicates their temperature and dipole derivative agrees with their values to within one percent (for J < 35) even without including a Herman-Wallis effect.

In an earlier paper **[5.282]** Tipping gave calculated values for the Herman-Wallis constants but they were small enough to ignore for this atlas. Bouanich **[5.310]** has also given calculated values for the Herman-Wallis constants. Apparently there are only two experimental determinations of Herman-Wallis constants that have been reported for the fundamental band of CO **[5.261, 5.318]**. The earlier work is subject to question because of the sensitivity to temperature errors. The most recent measurement was reported after this work was done and would change the intensities by no more than one percent. The intensity calculations used for the atlas did not include a Herman-Wallis effect for the fundamental band.

first overtone

Fewer intensity measurements have been made on individual lines of the overtone band near 4260 cm^{-1}. A good average of the more recent values seems to give an integrated band intensity of 7.78×10^{-20} cm/molecule (2.09 $cm^{-2}atm^{-1}$ at 273.15 K) with an uncertainty of about six percent. This is equivalent to a transition dipole matrix element of 0.0066 D.

The Herman-Wallis effect is significant for the first overtone band and has been included in the intensity calculation for the atlas. The constants given by Tipping **[5.282]**, $C_1 = 0.005$ and $C_2 = 0.000\ 034$ [see Eq. (3.25)], were used for the calculation of the intensities of the first overtone transitions. Those calculated Herman-Wallis constants were in agreement with three experimental determinations **[5.265, 5.271, 5.295]** as well as with the calculation of Toth *et al.* **[5.265]**.

NO

A transition moment of 0.00412 debye was used to calculate the line intensities given in the tables. This gives an integrated band intensity of about 5.04×10^{-18} cm/molecule (125 $cm^{-2}atm^{-1}$ at 296 K) which agrees with the measurements of King and Crawford **[5.330]**, Mandin *et al.* **[5.359]**, and Holland *et al.* **[5.368]**. Some earlier measurements **[5.326, 5.344, 5.347, 5.364, 5.367]** and even some recent measurements **[5.374]** indicate that the intensity might be more like 4.44 to 4.64×10^{-18} cm/molecule (110 to 115 $cm^{-2}atm^{-1}$ at 296 K) so the intensities given in the tables may be too large by about ten percent. We have taken the higher intensity value because NO is prone to having impurities that are hard to remove, thus giving low intensity readings.

Other Line Parameters

Lineshape and pressure broadening

Smith *et al.* [5.2] have given a good discussion of lineshapes and the determination of pressure broadening coefficients. We shall give here only a brief description to ensure that the reader understands the principal equations describing these effects. For a more complete understanding of the subject one should refer to the work of Smith *et al.* **[5.2]** and the papers to which they refer.

For a static gas in a field-free environment at pressures below one atmosphere, there are four major factors that might contribute to the shapes of infrared absorption lines, (1) lifetime broadening, (2) Doppler broadening, (3) pressure broadening, and (4) collisional narrowing.

lifetime broadening

The lifetime broadening of a state n is given by

$$\gamma_n = h/2\pi\tau_n ,$$

where γ_n is the half-width of the state and τ_n is the lifetime of that state. For a transition $i \rightarrow j$ between two states, i and j, the transition linewidth will be given by the lifetime of both upper and lower states,

$$\gamma_{i \rightarrow j} = (1/\tau_i + 1/\tau_j)h/2\pi.$$

For most stable molecules in the ground electronic state the radiative lifetime in a given rovibrational state will be on the order of 1 ms or more which gives a linewidth of about 1×10^{-8} cm^{-1} (0.16 kHz) or less. This is much smaller than the Doppler width even at temperatures on the order of 5 K. For Doppler-free measurements the effect of lifetime broadening could be important even for stable molecules although various instrumental effects, such as beam width or beam collimation, usually limit the effective linewidth. Transit time broadening is a variation of lifetime broadening where the lifetime is the time that the molecule is in the lightbeam.

Doppler broadening

The Doppler width is the result of the random motion of the molecules in a gas sample and is given by

$$\gamma_D = 3.581 \times 10^{-7} \nu (T/M)^{1/2}, \tag{3.30}$$

where ν is the wavenumber or frequency of the transition, T is the temperature of the gas in kelvin, M is the relative molecular mass of the molecule in atomic mass units, and γ_D is half the width of the transition at half the intensity (half-width at half height or HWHH). Since spectrometer resolution is often expressed in terms of the full width at half the line height (FWHH), the Doppler width is sometimes given by $2\gamma_D$.

For most gases at ambient temperatures and pressures below 2 kPa (15 Torr), the true lineshape (that is, the lineshape that would be observed with an instrument with infinite resolution) is dominated by the Doppler effect. For some molecules the effect of collisional narrowing, see below, is also important in that pressure regime. The Doppler effect gives a Gaussian lineshape which is described by the function

$$f(\nu) = \{[(\ln 2)/\pi]^{1/2}/\gamma_D\} \exp\{-(\ln 2)[(\nu-\nu_o)/\gamma_D]^2\}, \tag{3.31}$$

where ν_o is the frequency (or wavenumber) of the center of the line.

In Eq. (3.31) the Gaussian shape function $f(\nu)$ has been normalized so that

$$\int_{-\infty}^{+\infty} f(\nu)\mathrm{d}\nu = 1. \tag{3.32}$$

Consequently, since

$$k(\nu) = Sf(\nu), \tag{3.33}$$

integrating both sides of Eq. (3.33) over all frequency space gives

$$\int_{-\infty}^{+\infty} k(\nu)\mathrm{d}\nu = \int_{-\infty}^{+\infty} Sf(\nu)\ \mathrm{d}\nu = S. \tag{3.34}$$

Here $k(\nu)$ is the absorption coefficient at frequency ν and S is the integrated line intensity given earlier in Eq. (3.9).

One important characteristic of the Gaussian lineshape is the small wing absorption due to the exponential reduction in absorption as one gets farther from the center of the line. As pointed out by Korb *et al.* **[5.263]**, accurate intensity measurements are more easily made when the wing absorption is small. Another characteristic of the Gaussian shape is the bluntness at the center of the line.

pressure broadening

Pressure broadening gives rise to lines with a Lorentzian lineshape for which the normalized shape function has the form

$$f(\nu) = (\gamma_L/\pi) / [(\nu\text{-}\nu_0)^2 + \gamma_L^2], \tag{3.35}$$

where γ_L is half the width of the line at the half intensity point. When pressure broadening is the dominant effect determining the lineshape, then Eq. (3.35) must be used in Eqs. (3.33) and (3.34).

Pressure broadening is an additive effect, therefore, the broadening of each gas in a mixture depends only on the partial pressure, P_x, of that gas. The total broadening in a mixture is the sum of the broadening of each gas. Thus, for gases a and b with broadening coefficients c_a and c_b, the total pressure broadened width will be $\gamma_L = c_aP_a + c_bP_b$. The broadening coefficient is unique to each absorbing molecule and to each collision partner. The broadening coefficient is a function of the temperature as one might expect since the average collision velocity changes with temperature. The broadening coefficient is also different for each rotational transition although the changes are systematic with the rotational quantum numbers.

The pressure broadening coefficients generally have values in the range of 400 to 1300 MHz/Pa (3 to 10 MHz/Torr) and are greatest for molecules that have large dipole moments. The pressure broadening coefficients are generally smallest for those rotational energy levels that are at relatively high energy.

In contrast to Gaussian shaped lines, the Lorentzian shaped lines are sharper at the line center but have very extensive wings. For very strong lines it is possible to have significant absorption intensity twenty half-widths from the line center. This is noticeable in the CO atlas where there is only a small amount of pressure broadening and yet the strong lines have very noticeable wings. If there were no pressure broadening, the wings of the strong lines would not be so prominent.

Voigt profile

In many cases the lineshape is determined both by the Doppler effect and by the effects of pressure broadening. In such cases the lineshape is more accurately given by a Voigt profile which is a convolution of the Gaussian and Lorentzian profiles. There is no good single closed-form expression for the Voigt profile. Rather, the Voigt shape function is given by the integral expression

$$f(\nu) = (Bx/\pi) \int_{-\infty}^{+\infty} [\exp(\text{-}y^2)] / [x^2 + (z\text{-}y)^2]\ \mathrm{d}y \tag{3.36}$$

and various approximations to that integral. Equation (3.36) has been simplified by using

$$B = (1/\gamma_D)[(\ln 2)/\pi]^{1/2},$$

$$x = (\gamma_L/\gamma_D)(\ln 2)^{1/2},$$

and

$$z = [(\nu-\nu_0)/\gamma_D](\ln 2)^{1/2}.$$

There are a number of good computer programs **[3.17, 3.18]** for evaluating the Voigt shape function.

collisional narrowing

Collisional narrowing or Dicke narrowing **[3.19-3.21]** has only recently been measured for a few molecules, but its effects have been observed for NO **[5.370]**. Collisional narrowing has the effect of reducing the size of the Gaussian linewidth γ_D. In other words, it makes the line appear to have a Doppler width that is smaller than that calculated by Eq. (3.30). For NO, the effective Gaussian width is about 9 percent smaller than the Doppler width at a pressure of 6.6 kPa (50 Torr). Since collisional narrowing is primarily a kinetic collisional effect (sometimes described in terms of hard and soft collision models), it is not expected to depend on the rotational or vibrational levels involved in the transition. There is, however, a weak dependence on the transition assignment as shown by Pine and Looney's work on HCl and HF **[3.22]**.

Estimating peak intensities

From tables of line intensities, such as are given in this atlas, it is possible to estimate the pressure-pathlength product needed to obtain a spectrum with adequate intensity. For this purpose we consider the two limiting cases of Doppler (or Gaussian) shaped lines at low pressures and the pressure broadened Lorentzian lines for high pressures.

If the effect of pressure broadening is negligible and the lineshape is determined by the Doppler width rather than the spectrometer slit function, the percent transmission at the center of a line is given by

$$\%\ \text{transmission} = 100\exp(-CSlp/\gamma), \qquad (3.37)$$

where C is 1.1494×10^{14} if S is the intensity given in the tables (in units of cm/molecule), γ is the Doppler width [given by Eq. (3.30)], l is the pathlength in centimeters, and p is the pressure in pascals (Pa). (If p is measured in Torr, then $C = 1.5324\times10^{16}$.) Note that C has been evaluated for a temperature of 296 K, which is the temperature for which the intensities have been calculated in this atlas.

If the lineshape is dominated by pressure broadening, the percent transmission is again given by Eq. (3.37), but γ should be the pressure-broadened linewidth, γ_L, and C will be 7.789×10^{13} if p is in Pa (1.038×10^{16} if p is in Torr).

For the same linewidth and integrated intensity a Doppler-broadened line will have a peak intensity 1.476 times greater than a pressure-broadened line, even though the pressure broadened line is sharper.

For intermediate pressures the peak intensity can be more accurately estimated by modifying Eq. (3.37) so as to add the approximate contribution of both shapes according to

$$\%\ \text{transmission} = 100\exp\{-Slp[(1.1494\times10^{14}\gamma_D + 7.789\times10^{13}\gamma_L)/(\gamma_D^2+\gamma_L^2)]\}. \qquad (3.38)$$

Equation (3.38) reduces to Eq. (3.37) when either γ_D or γ_L dominates the lineshape.

The peak intensity observed with an instrument that introduces any instrumental broadening will, of course, be smaller than that calculated with either Eq.(3.37) or (3.38). As a rule of thumb, the peak intensity will be diminished by more than the ratio γ/γ_S, where γ is the true linewidth and γ_S is the width of the instrumental resolution function. Thus, for an instrument with a resolution function that is ten times greater than the "true" linewidth, an absorption line will appear at least ten times weaker than what is calculated by either Eq. (3.37) or Eq. (3.38), provided the line is not saturated.

Pressure induced lineshifts

A good frequency calibration standard is one whose frequency is not changed as the measurement conditions are varied. Some of the absorption lines given in this atlas are weak enough to require that either long pathlengths or moderate pressures, 0.3 to 1.3 Pa (2 to 10 Torr), be used. It is important that one recognize the additional calibration uncertainty introduced by using pressures that are too high. Although pressure induced shifts in the frequency of the absorption lines are poorly understood and measurements are few and not very accurate, it is possible to estimate the approximate effect of moderate pressures on the frequencies of these calibration standards.

As a general rule, pressure induced frequency shifts are at least an order of magnitude smaller than pressure induced broadening. For the overtone of CO, Pollock *et al.* **[5.304]** found a pressure shift (due to CO) on the order of -2 ± 1.5 kHz/Pa (-0.3 ± 0.2 MHz/Torr). Bouanich **[5.302]** found pressure shifts on the order of -1.2 ± 0.3 kHz/Pa (-0.16 ± 0.04 MHz/Torr). He seems to have observed a significant rotational dependence, but we only quote an average value. For the overtone of NO, Pine *et al.* **[5.370]** found a self-induced pressure shift of -1.1 ± 0.3 kHz/Pa (-0.15 ± 0.04 MHz/Torr). They found that there may be a weak rotational dependence but it was obscured by experimental error.

For N_2O an attempt to measure the self-induced pressure shift in the rotational spectrum resulted in an estimate of an upper limit of 0.75 kHz/Pa **[5.201]**. The pressure shift of several lines of N_2O were measured near 4500 cm^{-1} and an average value of -1.2 ± 0.3 kHz/Pa (-0.16 ± 0.04 MHz/Torr) was found **[5.219]**. The pressure shift caused by N_2 and O_2 on the ν_3 band of N_2O near 1280 cm^{-1} was measured by Varanasi and Chudamani **[5.238]**. Their diode laser measurements gave an average value of about -0.6 ± 0.15 kHz/Pa (-0.08 MHz/Torr) for several lines between 1250 and 1300 cm^{-1}.

More pressure shift measurements seem to have been made on OCS than on any of the other molecules in this atlas. The earlier measurements indicated that the pressure shift was on the order of 0.5 MHz/Torr or less **[5.94]**. Later this estimate was improved by new measurements that gave an average value of -0.4 ± 1.5 kHz/Pa (-0.05 ± 0.20 MHz/Torr) **[5.120]**. The most recent measurements at about 1000 cm^{-1} **[5.133]** indicate that the self-shift is -0.37 ± 0.04 kHz/Pa (-0.049 ± 0.005 MHz/Torr). Recent measurements of the self-shift of microwave transitions **[5.119]** found that the shift was too small to measure, 0.000 ± 0.04 kHz/Pa or 0.000 ± 0.006 MHz/Torr.

Kou and Guelachvili **[3.23]** have recently measured the self-induced pressure shift for the CO_2 laser lines near 1000 cm^{-1}. They found the shift to be on the order of -1.05 ± 0.2 kHz/Pa (-0.14 ± 0.03 MHz/Torr) with no evidence of a *J*-dependence. One might expect that the self-induced pressure-shift of CO_2 would be similar to that of the molecules used in the present compilation.

Since the pressure shift is a shift in the energy levels, it is likely to be greater as one goes to higher energy levels. As a first approximation one can probably assume that the shift is proportional to the frequency. It is also possible that for polyatomic molecules, the pressure shift may depend, to a large extent, on the vibrational mode involved.

For purposes of estimating the maximum error that could be introduced in a calibration measurement using any of the data given in this atlas, one should treat the frequencies given in this book as applying for a pressure below 130 Pa (1 Torr). For each increase in pressure of 130 Pa (1 Torr) the uncertainty in the frequency for N_2O, NO, CO, and CS_2 should be increased by 0.3 MHz unless the pressure shift is added to the frequencies given in these tables or unless more accurate values for the pressure shift become available. For OCS the uncertainty should be increased by about 0.1 MHz/Torr. Note that the pressure shift seems to be negative for all the molecules in this atlas.

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Chapter IV
ERROR ANALYSIS

The standards presented in this book are based on data derived in large part from frequency measurements because such measurements are less prone to systematic errors. In assessing the uncertainties that should be assigned to the recommended calibration frequencies, we must consider five major factors that may contribute to error in the determination of the line frequencies.

1. The accuracy of the calibration source.
2. The uncertainty in locating the center of the absorption line.
3. The accuracy of transferring the calibration to the line center measurement.
4. Errors caused by environmental effects.
5. Model errors, or uncertainties in the application of least-squares techniques to obtain the best estimate of the correct line frequency.

In succeeding paragraphs of this section each of these factors will be examined in relation to the calibration frequencies recommended in this book.

Accuracy of the Calibration Source

Much of the primary infrared data used for these tables originated at the NIST laboratory in Boulder, Colorado. Two other laboratories have reported heterodyne frequency measurements on the $2\nu_2$ band of OCS, **[5.88, 5.126]**. The most important of these were two saturated absorption measurements made by Fayt *et al.* **[5.126]** which considerably reduce the uncertainty in the frequencies for $2\nu_2$. The measurement of the laser transitions of N_2O by Whitford *et al.* **[5.183]** gave accurate frequencies for the separation of the ν_1 and ν_3 states which were useful for the tables between 880 and 980 cm^{-1}. Recently frequency measurements have been made by Urban and co-workers **[5.321, 5.137a]**.

The NIST measurements used well characterized CO_2 lasers that were virtually identical to the lasers used by Petersen *et al.* **[2.9, 2.11, 2.12]** in the last major determination of the CO_2 laser frequencies. Since much of the laser technology that went into the determination of the CO_2 laser frequencies was developed in the same laboratory where the heterodyne measurements were made, one can be sure of the accuracy of the calibration source. These lasers have been described in Chapter II. The CO_2 laser frequencies are good to at least ± 0.05 MHz and are not a significant source of error for the Doppler limited heterodyne measurements.

Uncertainty in Locating the Line Center

Two major factors contribute to errors in the location or determination of absorption line centers: the signal-to-noise ratio, and the slope or other irregularities in the background.

For the infrared measurements the slope or irregular background in the radiation being absorbed was only a minor contributor to error since its effect could be practically eliminated, as described in Chapter II.

In some cases imperfectly resolved or overlapping lines were measured. In cases where the lines are close doublets, the measurement represents the center of gravity of the doublets, and the least-squares analysis took that into account. If the lines were partially resolved, that was taken into account in assigning the uncertainty for the measurement. In most cases partially resolved lines that have unequal intensities should not be used unless a very generous allowance is made for the uncertainty since the resulting error is not random, but is in a particular direction. OCS, CO, and CS_2 are good molecules to use for standards because they have no quadrupole fine structure. N_2O is not as good because all of its transitions have a small quadrupole splitting. Since the splitting for N_2O is never greater than 4 MHz and diminishes rapidly with increasing J-values and since the Doppler full-width of N_2O at 500 cm^{-1} is 28 MHz, the splitting should not affect the use of N_2O for most infrared calibration purposes.

For each infrared heterodyne frequency measurement two line centers must be measured: the absorption line center, and the center of the difference frequency (between the TDL and the local oscillator). The location of the absorption line center is determined by the technique used to lock the TDL to the absorption line as described in Chapter II. The uncertainty assigned to the line-center lock is given by half the Doppler-width of the line divided by the signal-to-noise ratio of the derivative signal for the line. Because of modulation broadening the linewidth is slightly greater than the Doppler-width but this approximation to the lock uncertainty is adequate. The lock error is random and is reflected in the statistical analysis of the least-squares fit of many measurements.

More important than the uncertainty in locking to the line center is the uncertainty in the difference frequency measurements. That uncertainty is given by one-tenth the beat note linewidth, or by half the beat note width divided by the signal-to-noise ratio, whichever is larger. We believe this covers both random and residual systematic errors for a single measurement. In most of our measurements, this has been the predominant uncertainty and the lock uncertainty has been negligible by comparison.

One source of error in the heterodyne measurements that has no direct counterpart in wavelength measurements is due to frequency-dependent differences in the transmission or amplification components involved in the heterodyne frequency measurements. This frequency dependence sometimes presented an additional distortion to the heterodyne frequency lineshape as displayed by the spectrum analyzer. Fortunately this error, which would be systematic for all measurements of the same heterodyne frequency, becomes randomized if enough different lines are measured. In most cases this problem was recognized and was taken into account in estimating the uncertainty of each measurement.

Examination of our results over the past decade indicates that the procedure outlined above for assigning the uncertainty produced values which turned out to be close to a two sigma uncertainty.

For the microwave and sub-millimeter wave measurements used to prepare these tables, the uncertainties given in the literature are generally accurate enough although we have increased the uncertainties slightly in a few cases. There may be some systematic error due to incomplete modulation when Stark modulation was used, but this is compensated by the much smaller linewidths, and the smaller frequency dependent irregularities, compared to the infrared measurements.

Accuracy of Transferring the Calibration to the Line Center Measurement

The primary difference in the reliability of wavelength and frequency measurements is in the accuracy of transferring the calibration to the measurement. In frequency measurements the accuracy of the measurements is not affected by beam dimensions, by wavefront mismatch or other misalignments, or by refractive index effects. The frequency of the radiation is always the same no matter what the medium may be, or how it is measured. Modern electronics excel at counting, and that is how frequency is determined. With frequency measurements, if a measurement can be made at all, the uncertainty must come from the four other sources of error discussed in this chapter.

On the other hand, wavelength comparisons are susceptible to many different wavelength-dependent errors, errors due to misalignment, errors due to differences in the ratio of the dimensions of the optical elements (or of the optical beam), to the wavelength. The best wavelength measurements use a calibration that is nearly the same wavelength and intensity as the feature to be calibrated. Each type of wavelength measurement has its own peculiarities.

The present tables are based in part on higher order centrifugal distortion constants determined to some extent by FTS measurements which are essentially wavelength measurements. These measurements were all internally calibrated by means of lines whose frequency could be determined by heterodyne frequency measurements. These calibration features were always within the approximately 120 cm^{-1} band-pass of the FTS measurements. For the FTS measurements there may be a phase error which is different for weak features and for strong features and that is one reason why greater emphasis was placed on the use of frequency measurements of pure rotational transitions to determine the rotational constants wherever possible. In no case were FTS measurements used to determine the band centers or vibrational levels for the lines recommended as frequency standards.

Errors Caused by Environmental Effects

For closed shell molecules the only significant environmental effects are due to pressure shifts and electric field effects such as either the *ac* or *dc* Stark effects. As long as the radiation field (for absorption spectra) is too low to give saturated absorption effects, the *ac* Stark effect can be ignored in its effect on the absorption line center. Even the *dc* Stark effect can be ignored for most work since stray electric fields are generally too small to give noticeable Stark shifts.

We believe that even in the case of the saturated absorption measurements on the 2-0 band of CO, the shift due to the *ac* Stark effect will be smaller than a tenth of the linewidth, or less than 0.2 MHz.

The *ac* Stark effect may have a small effect on the frequency of the CO_2 lasers but, since those lasers have the same characteristics as the lasers used in the original measurements against the cesium frequency standard, the effect of the shift will already be included in the frequency assigned to the laser lines. In the case of the CO transfer oscillators, the CO frequencies are measured at the same time as the beat note frequency measurement and any *ac* shift is included in the measurement.

On the other hand, the effect of pressure induced shifts is potentially significant and deserves serious consideration. Pressure-induced shifts in infrared spectra have not been extensively studied, so there is no experimentally confirmed theory that one can use to calculate the pressure shifts to be expected for much of the data given in the present tables. All of the pressure shift measurements seem to indicate that the shift for the transitions given in these tables may be on the order of -2.2kHz/Pa (-0.3 MHz/Torr) or less. Only in the case of the measurements given by Vanek *et al.* **[9.133]** is the shift of -0.37 ± 0.04 kHz/Pa (-49 ± 5 kHz/Torr) reliably given for the $2\nu_2$ band of OCS. Since neither the frequency dependence nor the rotational or vibrational dependence of the pressure shift is known, this remains one of the most important uncertainties in the application of these tables to real measurements.

Uncertainties in the Application of Least-squares Techniques

Because individual measurements of infrared absorption lines by heterodyne measurement techniques are not very precise (uncertainties of the order of 5 to 10 MHz for some regions) and only a small number of transitions can be measured, it is necessary to use least-squares techniques to combine all available measurements to yield calculated transitions that are considerably more accurate than any one measurement. Such fitting techniques can be no more accurate than the equations used to describe the transitions (the Hamiltonian). The molecules and the particular transitions in these tables were chosen in part because of the reliability of the Hamiltonian as shown by extensive studies reported in the literature. Although certain interactions, such as Fermi resonance, affect the constants used in the effective Hamiltonian, such resonances can be ignored, provided that measurements are available for a wide range of rotational levels for each vibrational state. In the analysis used in this book the effect of *l*-type resonance was included because it represents the largest resonance effect and it can be reliably estimated, thereby giving the correct functional form to the centrifugal distortion constants. The details of the fitting procedure and Hamiltonian are given in Chapter III.

The variance-covariance matrix determined by the least-squares fit gives a reliable estimate of the uncertainties of the transitions in the range of rotational levels for which there are good measurements. The calculated uncertainties get large quite rapidly for transitions extrapolated beyond the range of measured energy levels, but the reliability of those calculated uncertainties deteriorates even more quickly. For that reason we have terminated the recommended calibration standard indication at the highest J-value for which there are good measurements. Higher transitions are given in the tables but their accuracy is less certain.

Summary

Of the five sources of error identified above, the first (the accuracy of the calibration source) does not contribute significantly to the uncertainties in the calibration frequencies given in these tables. For frequency measurements the second and third source (uncertainty in locating the line center and accuracy of transferring the calibration) will appear as random errors and so will be given by the statistical analysis of the least-squares fit of the measurements. For the molecules and bands represented in these tables the uncertainties contributed by model errors are small and likely to show as deviations that are included in the statistical analysis.

In conclusion we think that the uncertainties given by the statistical analysis are adequate to describe the errors in the frequency measurements that might arise from all causes except errors due to pressure-induced frequency shifts. Most of the heterodyne measurements were made at low pressures but some measurements of weaker transitions were made at pressures as great as 1200 Pa (9 Torr). To allow an extra margin of error due to pressure shifts, the uncertainties assigned to the heterodyne frequency measurement data used in the fit were about twice as large as the rms deviation. Primarily, this had the effect of increasing the uncertainty in the vibrational energy levels.

Chapter V
BIBLIOGRAPHY

We attempt here to list all references to papers giving infrared or microwave frequency (or wavenumber) measurements, as well as lineshape and intensity measurements that are relevant to this atlas. Papers involving bands not included in this atlas may be missing from this bibliography. Some papers are not included if they involve foreign gas broadening measurements only. For a more complete listing of pressure broadening papers see the review given by Smith *et al.* [5.2]. When completely superseded, some of the older papers may not appear in this bibliography but they can be found referenced in the more recent papers. The references are grouped by molecule and arranged in chronological order for each molecule. At the end of each reference is a list of initials that indicate the subject matter covered by the reference as follows:

F - frequency measurements,
FB - foreign gas broadening measurements,
I - intensity measurements,
LS - laser-Stark measurements,
PS - pressure shift measurements,
SB - self-broadening measurements,
T - theory, and
W - wavenumber or wavelength measurements.

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CHAPTER VI
ATLAS AND WAVENUMBER TABLES

Description

Throughout the wavenumber tables the lines that are suitable for use as wavenumber standards are indicated by an asterisk (*) following the wavenumber and its uncertainty. In assigning the asterisks no consideration was given to problems related to overlapping with other transitions. The tables list nearby lines that may cause problems with overlapping. The user must exercise judgment in determining if such overlapping will impair the accuracy of the measurement. The asterisk only certifies the accuracy of the line position in the hypothetical absence of any other nearby lines. Obviously, the resolution of the instrumentation being used will determine if a nearby line might invalidate the accuracy of a calibration line.

The uncertainties of the wavenumbers are given in parentheses after the wavenumbers in those cases where there is reason to believe that a good estimate of the uncertainty can be made. Even so, the uncertainty in the lines not designated as calibration lines should be taken with some degree of skepticism.

The uncertainties given in the tables are twice the estimated standard error as calculated from the variance-covariance matrix given by the least-squares fit that determined the constants used to calculate the wavenumbers. The uncertainties refer to the accuracy of each individual transition. In general, the wavenumber separation of two nearby lines for the same vibrational transition of the same molecular species will be given more accurately than the uncertainty given in parentheses might lead one to believe. That is because the relative differences between the rotational energy levels are usually known more accurately than the differences in the vibrational energy levels.

On the other hand, the separation of two lines that are due to absorption from two different isotopic species is probably known no more accurately than the uncertainty (given in parentheses) would lead us to believe.

The wavenumbers given in the tables are calculated wavenumbers because they are more reliable than individual line measurements and the uncertainties in the calculated wavenumbers can be accurately estimated.

The wavenumber tables also contain a column for the intensity estimated for each transition at a temperature of 296 K. The format for the intensity values is the standard computer format consisting of a decimal value followed by the exponent (the power of ten multiplying the decimal value). The intensities given in the wavenumber tables are represented by S in Eq. (3.10) and are integrated line intensities rather than peak intensities.

In the sections giving discussions and equations on intensity calculations and on pressure broadening (Chapter III), equations are given for estimating the appearance of the spectrum for different experimental conditions. In particular, Eq. (3.37) can be used to estimate the percent transmission at the center of a line under different conditions of pressure and pathlength. As an aid in calculating intensities at different temperatures the tables for OCS and N_2O also contain a column giving the separation (in cm^{-1}) of the lower state energy level from the ground state. The units given in the tables can be converted to the more common units of $cm^{-2}\,atm^{-1}$ at 296 K by multiplying by 2.479×10^{19}. To convert to intensities at some other temperature one should refer to Eq. (3.10). Smith *et al.* **[5.2]** give a table for converting to other units.

The intensity values given in this book are only given as an aid in estimating the appearance of the spectrum, they should not be treated as well determined values. The intensities given for weak lines and especially for the rarer isotopes may be in error by 50 percent or more.

The spectral illustrations were actually calculated spectra rather than reproductions of real measurements. This gave us more flexibility in choosing effective pressures and pathlengths that seemed most appropriate to illustrate even the weak lines. As with any digitized spectrum, regardless of whether it is calculated or measured, the peak intensity of sharp lines may show some irregularity depending on whether the true peak falls on a digitized point or slightly misses it. The spectra were plotted with a digitizing interval of about 0.0005 to 0.001 cm^{-1}. Close doublets that should have the same intensity may show slight intensity differences because of this digitizing effect.

Comparison with real spectra measured in our own laboratory or illustrated in published works (such as Refs. **[5.101, 5.102, 5.307]**) showed that the spectra given in this book are adequate for identifying the calibration lines. Some weak transitions may be absent from the calculated spectrum even though they might be found in a real spectrum of comparable pressure and pathlength. Certainly, absorption due to common impurities such as H_2O or CO_2 will not be found in these spectra.

The spectra used in the illustrations for CO were calculated for infinite resolution but the lines were given widths dictated by the Doppler width of the line convolved with the pressure broadened width. For the CO spectra the shape of the weak lines is dominated by the Doppler width which is 0.0047 cm^{-1} (FWHH) at 2000 cm^{-1} and 0.0093 cm^{-1} at 4000 cm^{-1}. For the conditions chosen for the atlas illustrations, the strong CO lines are much broader than the weak ones and show pronounced shoulders due to the effect of even a very small pressure broadening.

The figures used for illustrating the OCS and N_2O spectra were calculated for spectrometer resolutions on the order of 0.003 cm^{-1}. Again the expected Doppler and pressure-broadened lineshapes were used in calculating the spectra. The atlas for OCS and N_2O is divided into sections according to the vibrational transitions involved. At the beginning of each section the parameters (slit width, dipole derivative, Herman-Wallis constants) used in calculating the spectra are given as well as a key to the abbreviations used for the vibrational transitions in the atlas.

In calculating the pressure-broadened width, a single value for the pressure broadening was used for all lines in a spectrum. It is well known that such an assumption is incorrect and therein lies one reason for the illustration to depart slightly from a true spectrum.

The spectra overlap slightly in order to show the relationship of the lines near the ends of each panel. At the top of each spectrum fiducial marks indicate which lines are given in the accompanying wavenumber tables. Every fifth line is indicated with a darker and longer mark. In the tables, every fifth line is set apart by a following blank line. Even though the panels overlap, each line is identified by a fiducial mark only once.

Diskettes with Detailed Linelist

In preparing the tables for this atlas, far more transitions were calculated than could possibly be published. A complete list of transitions calculated for this work is available from the authors in the form of four floppy diskettes readable on a personal computer (PC) capable of reading 5¼ inch high-density floppy discs generated by DOS-5.0. These diskettes are written in ASCII and contain the following information: wavenumber (cm^{-1}), uncertainty, lower state energy (cm^{-1}), intensity (cm/molecule), vibrational assignment, rotational assignment, date of data entry, isotopic species, and band designation according to the keys given in this book. The authors intend to update these discs as new data become available. Persons interested in obtaining the most up-to-date calibration data should contact the authors for the most recent version of these discs.

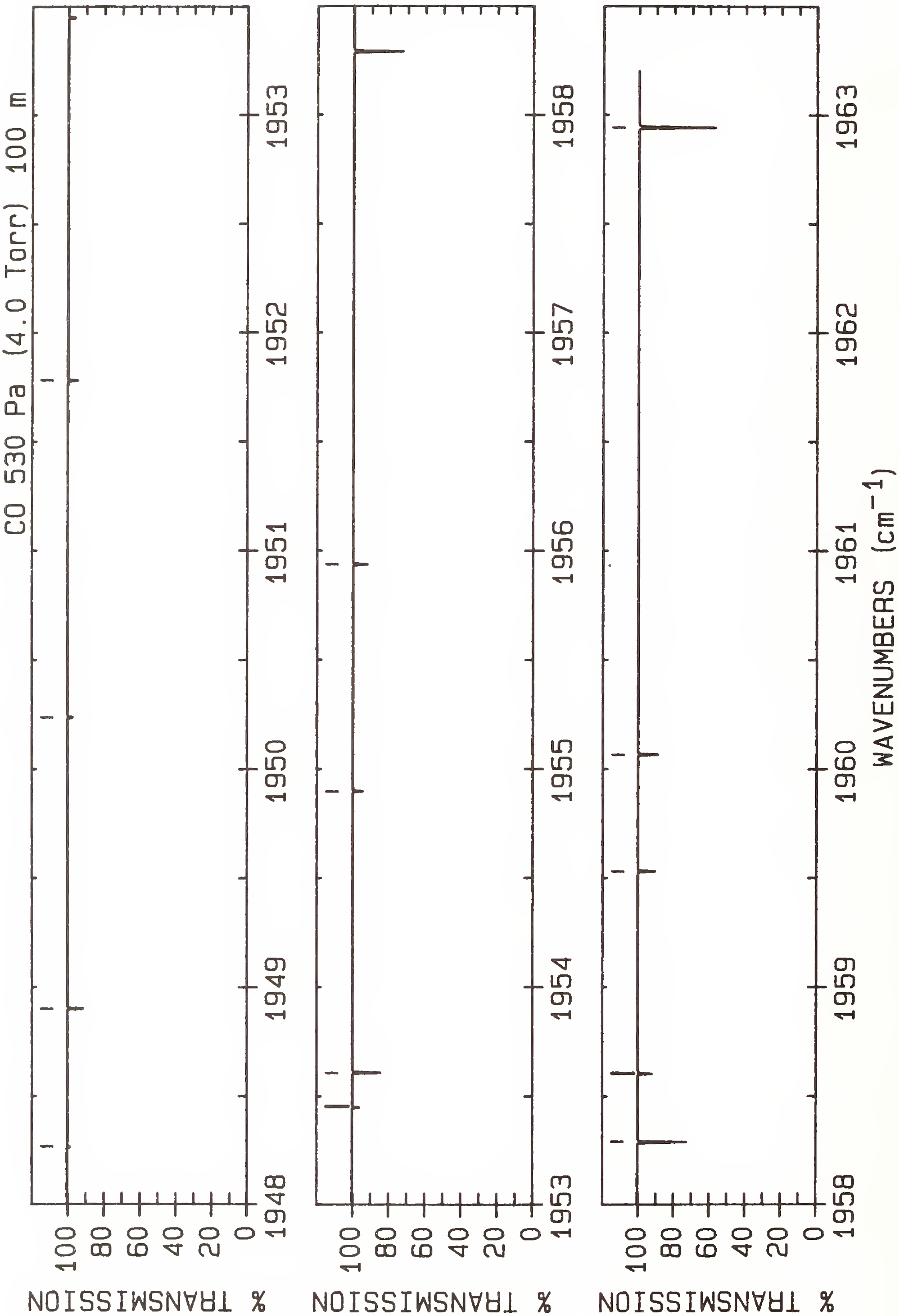
ATLAS of CO ABSORPTION LINES

from 1948 to 2275 cm^{-1}

and

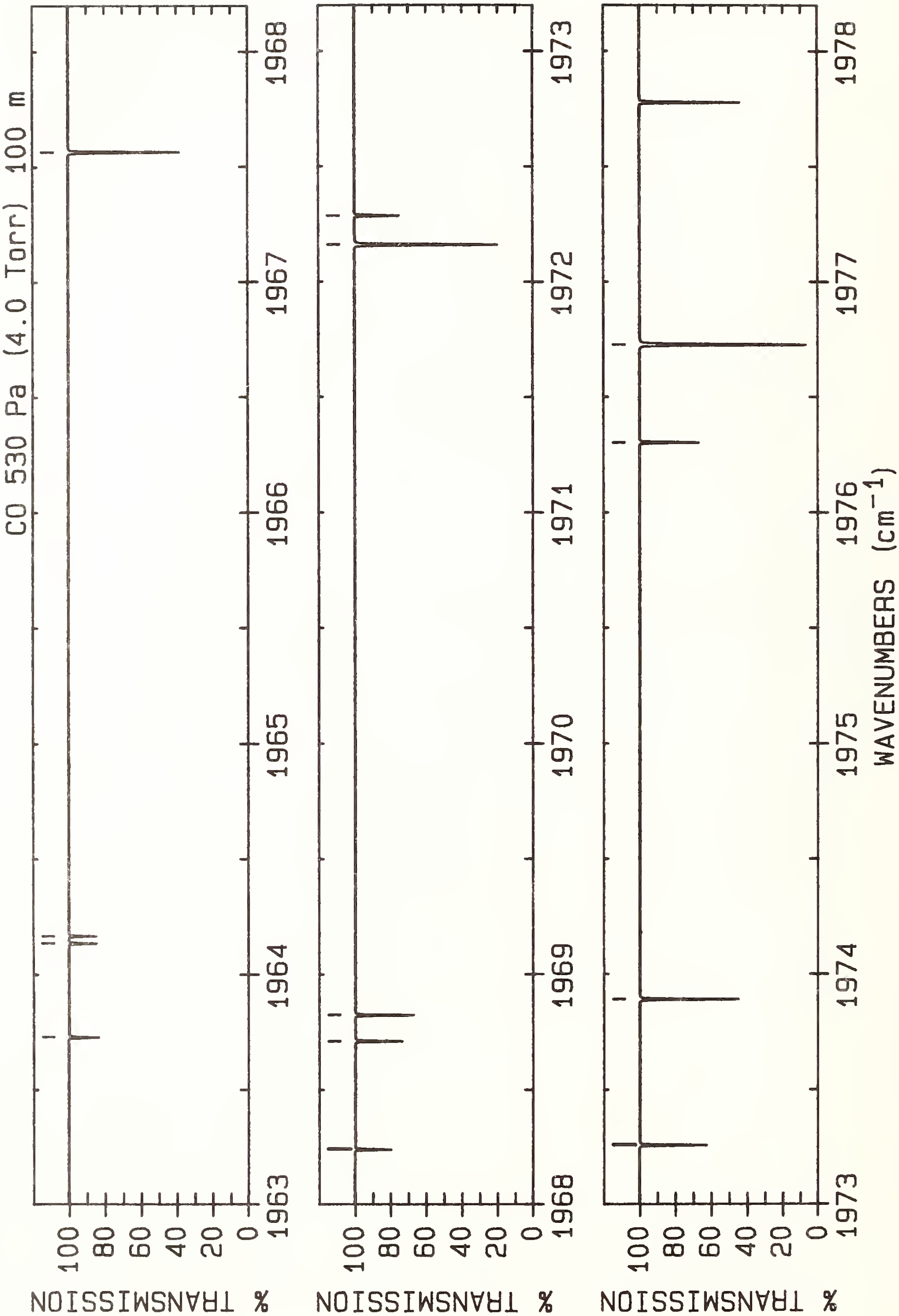
from 4071 to 4352 cm^{-1}

Spectra of the fundamental region are given for a slitwidth of < 0.001 cm^{-1} and a transition moment of 0.1073 debye at a temperature of 296 K. For the first overtone region the transition moment was 0.0066 debye and the same narrow slitwidth was used. No Herman-Wallis constant was used for the fundamental band but the constants $C_1 = 0.005$ and $C_2 = 0.000\,034$ were used for the first overtone band region.


CO 530 Pa (4.0 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
1948 1949 1950 1951 1952 1953
1953 1954 1955 1956 1957 1958
1958 1959 1960 1961 1962 1963
WAVENUMBERS (cm-1)

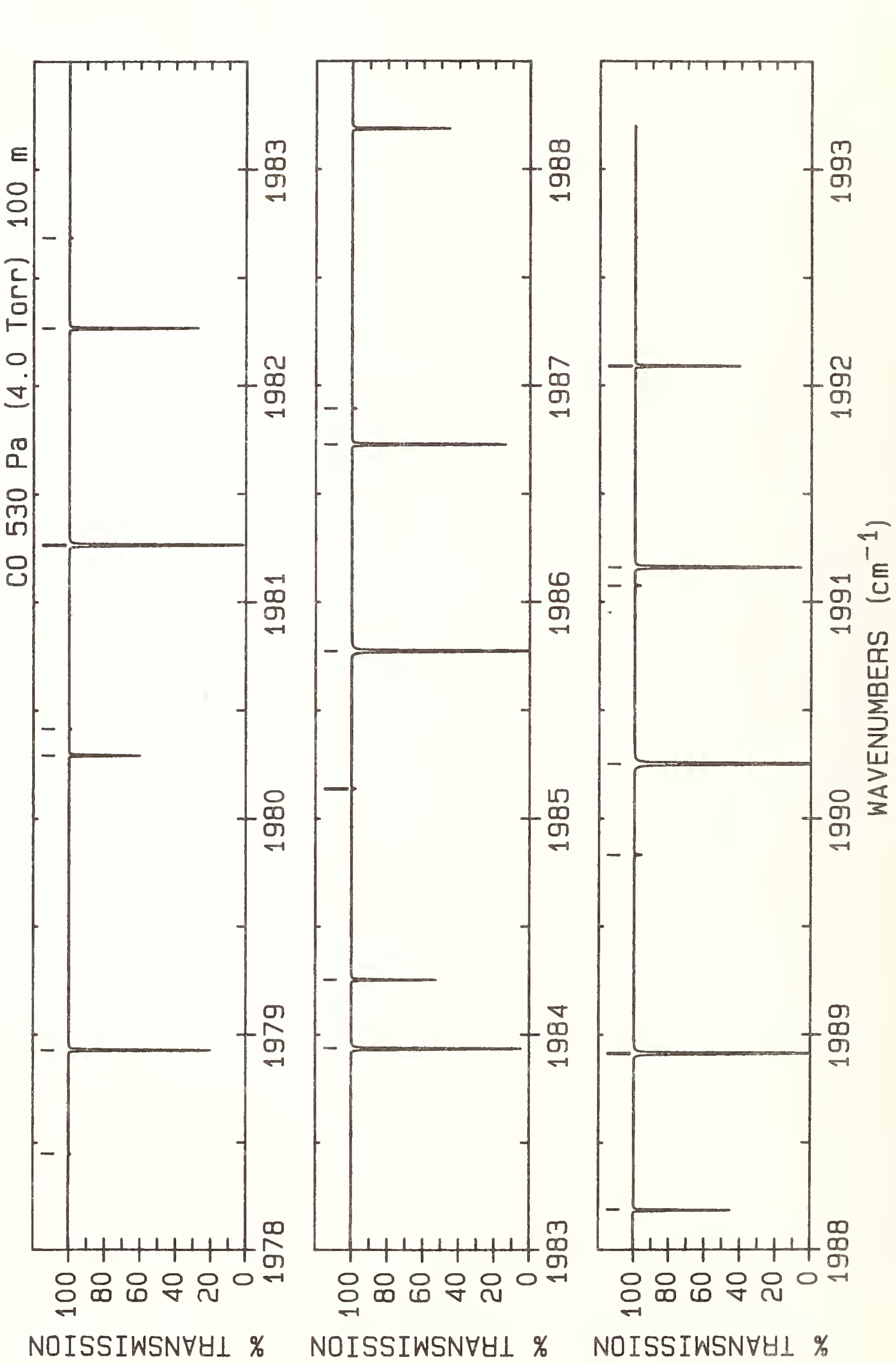
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	1948.266 18(8)*	P(43)	1	0.860E-25
2	1948.900 4	P(35)	2	0,424E-24
3	1950.237 1	P(34)	3	0.145E-24
4	1951.781 3	P(24)	5	0.253E-24
5	1953.449 28(7)*	P(42)	1	0.186E-24
6	1953.609 0	P(34)	2	0.768E-24
7	1954.898 0	P(33)	3	0.258E-24
8	1955.937 5	P(23)	5	0.365E-24
9	1958.289 5	P(33)	2	0.137E-23
10	1958.603 50(6)*	P(41)	1	0.396E-24
11	1959.530 7	P(32)	3	0.449E-24
12	1960.066 1	P(22)	5	0.516E-24
13	1962.941 6	P(32)	2	0.239E-23

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ (v = 2 – 1)


CO 530 Pa (4.0 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
1963 1964 1965 1966 1967 1968
1968 1969 1970 1971 1972 1973
1973 1974 1975 1976 1977 1978
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	1963.728 69(6)*	P(40)	1	0.827E-24
2	1964.135 2	P(31)	3	0.767E-24
3	1964.167 2	P(21)	5	0.716E-24
4	1967.565 3	P(31)	2	0.409E-23
5	1968.240 5	P(20)	5	0.975E-24
6	1968.711 2	P(30)	3	0.129E-23
7	1968.824 71(5)*	P(39)	1	0.169E-23
8	1972.160 4	P(30)	2	0.688E-23
9	1972.285 9	P(19)	5	0.130E-23
10	1973.258 7	P(29)	3	0.212E-23
11	1973.891 41(4)*	P(38)	1	0.341E-23
12	1976.303 4	P(18)	5	0.171E-23
13	1976.726 7	P(29)	2	0.114E-22

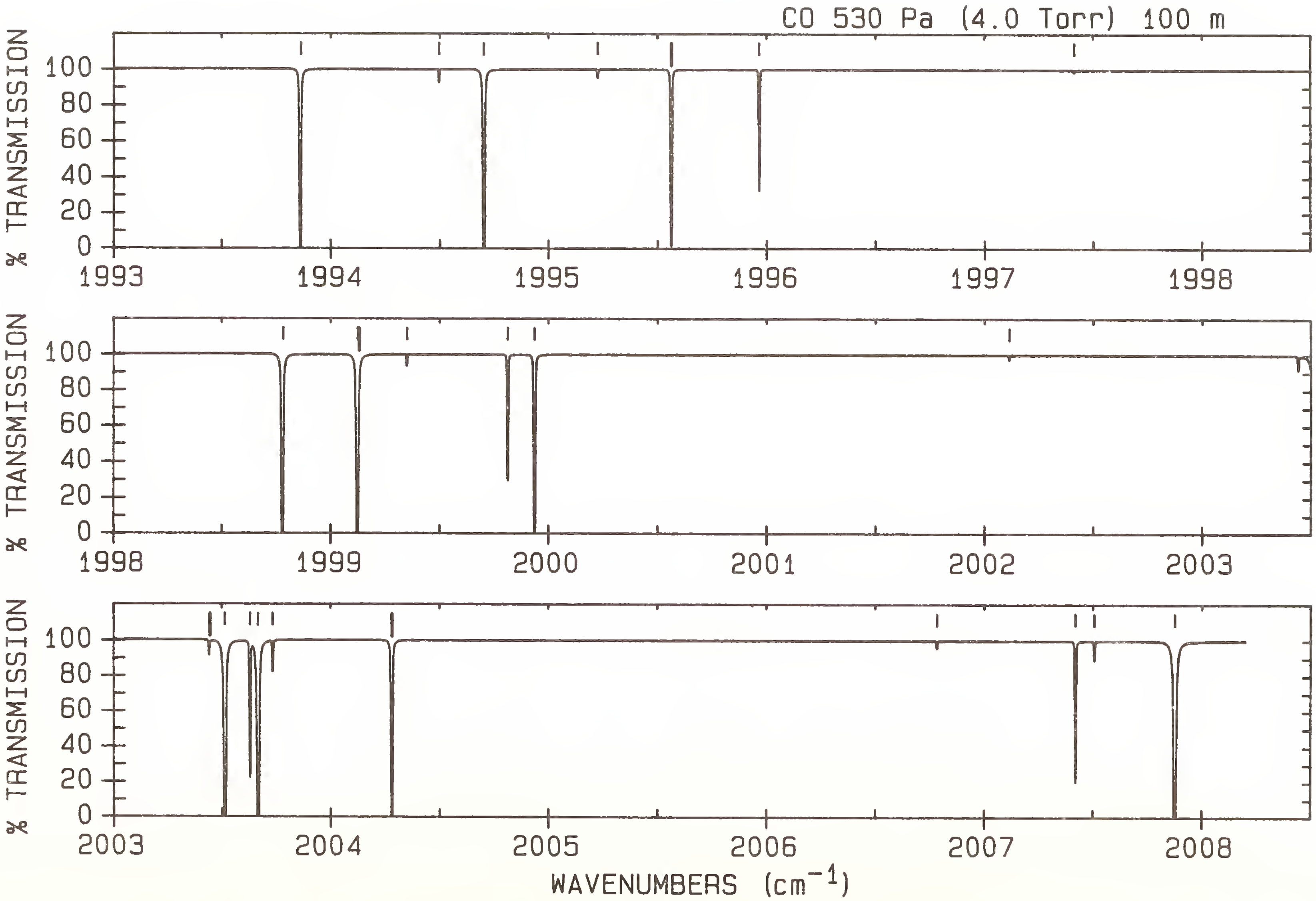
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ (v = 2 – 1)



CO 530 Pa (4.0 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
1978 1979 1980 1981 1982 1983
1983 1984 1985 1986 1987 1988
1988 1989 1990 1991 1992 1993
WAVENUMBERS (cm^{-1})

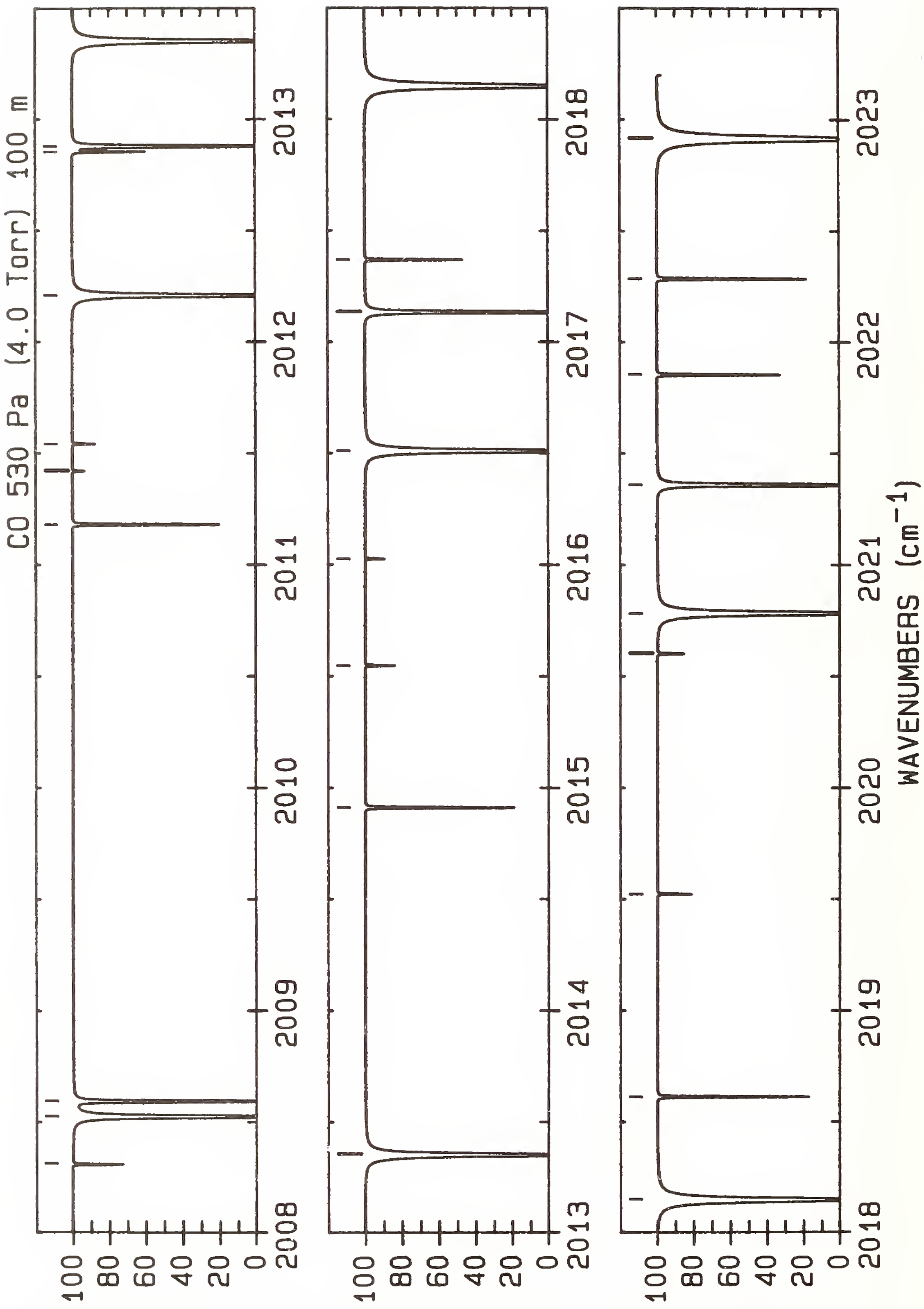
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	1978.446 9	P(23)	6	0.623E-25
2	1978.928 66(4)*	P(37)	1	0.672E-23
3	1980.292 7	P(17)	5	0.219E-23
4	1980.415 1	P(32)	4	0.688E-25
5	1981.264 3	P(28)	2	0.184E-22
6	1982.267 4	P(27)	3	0.545E-23
7	1982.684 9	P(22)	6	0.890E-25
8	1983.936 30(4)*	P(36)	1	0.130E-22
9	1984.253 7	P(16)	5	0.276E-23
10	1985.138 2	P(31)	4	0.119E-24
11	1985.772 9	P(27)	2	0.293E-22
12	1986.728 4	P(26)	3	0.848E-23
13	1986.894 2	P(21)	6	0.125E-24
14	1988.186 5	P(15)	5	0.340E-23
15	1988.914 20(3)*	P(35)	1	0.247E-22
16	1989.831 8	P(30)	4	0.203E-24
17	1990.252 4	P(26)	2	0.457E-22
18	1991.074 8	P(20)	6	0.171E-24
19	1991.160 4	P(25)	3	0.130E-22
20	1992.090 7	P(14)	5	0.410E-23

molecular species identification: 1 $-{}^{12}C^{16}O$, 2 $-{}^{13}C^{16}O$, 3 $-{}^{12}C^{18}O$, 4 $-{}^{12}C^{17}O$, 5 $-{}^{13}C^{18}O$, 6 $-{}^{13}C^{17}O$, 7 $-{}^{12}C^{16}O$ $(v = 2-1)$


CO 530 Pa (4.0 Torr) 100 m
% TRANSMISSION
100
80
60
40
20
0
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	1993.862 203(29)*	P(34)	1	0.461E-22
2	1994.496 2	P(29)	4	0.338E-24
3	1994.702 7	P(25)	2	0.699E-22
4	1995.226 5	P(19)	6	0.231E-24
5	1995.563 1	P(24)	3	0.194E-22
6	1995.966 4	P(13)	5	0.483E-23
7	1997.415 29(3)*	P(28)	7	0.807E-25
8	1998.780 175(27)*	P(33)	1	0.842E-22
9	1999.123 5	P(24)	2	0.105E-21
10	1999.130 4	P(28)	4	0.554E-24
11	1999.349 2	P(18)	6	0.304E-24
12	1999.813 3	P(12)	5	0.557E-23
13	1999.936 4	P(23)	3	0.286E-22
14	2002.114 971(29)*	P(27)	7	0.131E-24
15	2003.442 7	P(17)	6	0.394E-24
16	2003.514 9	P(23)	2	0.154E-21
17	2003.631 3	P(11)	5	0.627E-23
18	2003.667 967(25)*	P(32)	1	0.151E-21
19	2003.735 1	P(27)	4	0.890E-24
20	2004.280 4	P(22)	3	0.412E-22
21	2006.783 600(26)*	P(26)	7	0.208E-24
22	2007.420 5	P(10)	5	0.688E-23
23	2007.507 0	P(16)	6	0.499E-24
24	2007.876 6	P(22)	2	0.223E-21

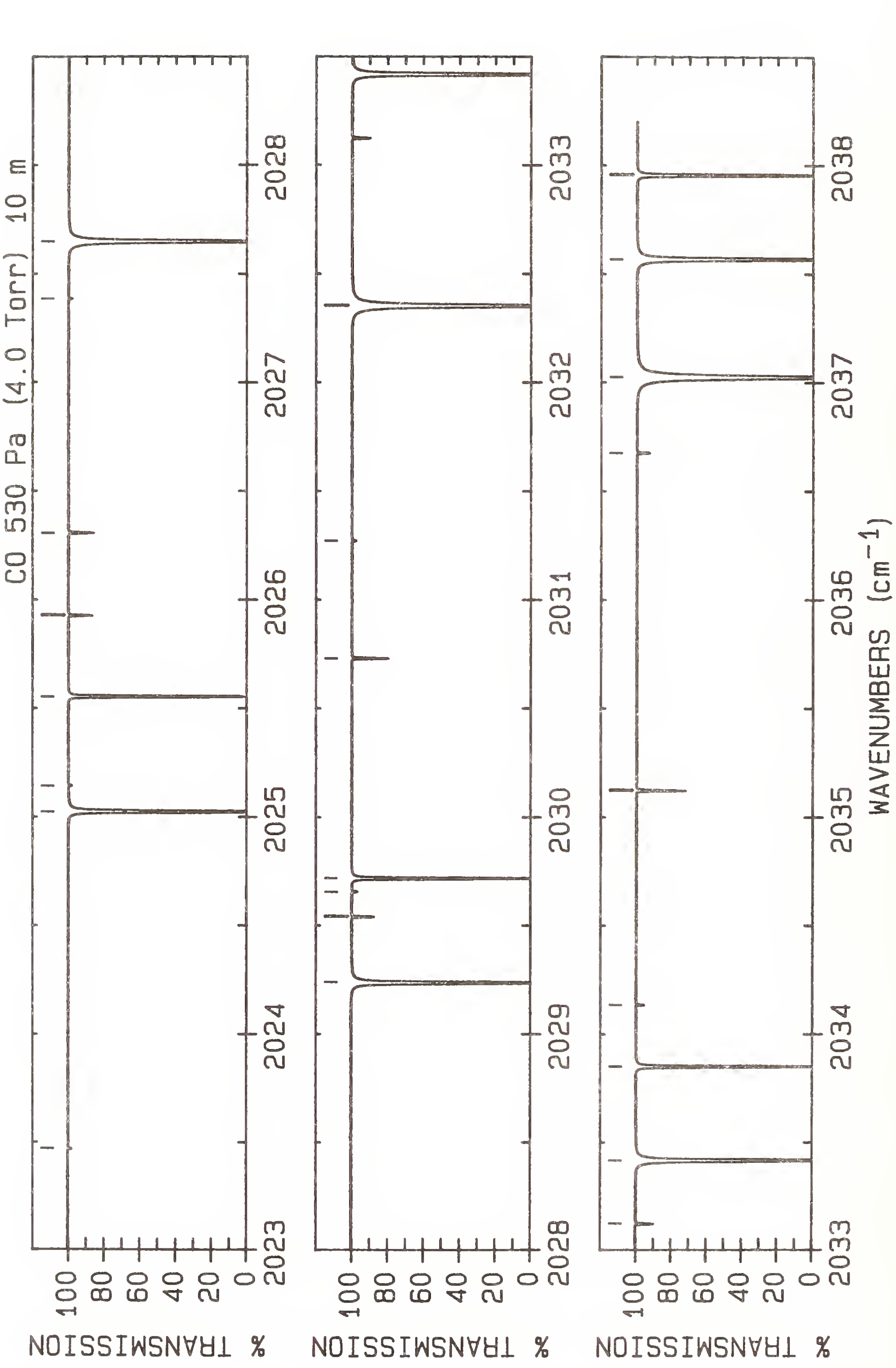
molecular species identification: 1 $-{}^{12}C^{16}O$, 2 $-{}^{13}C^{16}O$, 3 $-{}^{12}C^{18}O$, 4 $-{}^{12}C^{17}O$, 5 $-{}^{13}C^{18}O$, 6 $-{}^{13}C^{17}O$, 7 $-{}^{12}C^{16}O$ ($v = 2-1$)



CO 530 Pa (4.0 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
2008 2009 2010 2011 2012 2013
2013 2014 2015 2016 2017 2018
2018 2019 2020 2021 2022 2023
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2008.309 9	P(26)	4	0.140E-23
2	2008.525 445(23)*	P(31)	1	0.266E-21
3	2008.594 7	P(21)	3	0.582E-22
4	2011.180 5	P(9)	5	0.735E-23
5	2011.421 033(22)*	P(25)	7	0.323E-24
6	2011.541 9	P(15)	6	0.619E-24
7	2012.208 6	P(21)	2	0.316E-21
8	2012.854 6	P(25)	4	0.216E-23
9	2012.879 2	P(20)	3	0.807E-22
10	2013.352 434(21)*	P(30)	1	0.459E-21
11	2014.911 3	P(8)	5	0.763E-23
12	2015.547 3	P(14)	6	0.751E-24
13	2016.027 125(20)*	P(24)	7	0.493E-24
14	2016.510 7	P(20)	2	0.438E-21
15	2017.134 0	P(19)	3	0.110E-21
16	2017.369 1	P(24)	4	0.328E-23
17	2018.148 820(19)*	P(29)	1	0.776E-21
18	2018.612 8	P(7)	5	0.766E-23
19	2019.523 0	P(13)	6	0.891E-24
20	2020.601 731(17)*	P(23)	7	0.737E-24
21	2020.782 8	P(19)	2	0.596E-21
22	2021.358 7	P(18)	3	0.146E-21
23	2021.853 3	P(23)	4	0.487E-23
24	2022.284 8	P(6)	5	0.741E-23
25	2022.914 447(18)*	P(28)	1	0.129E-20

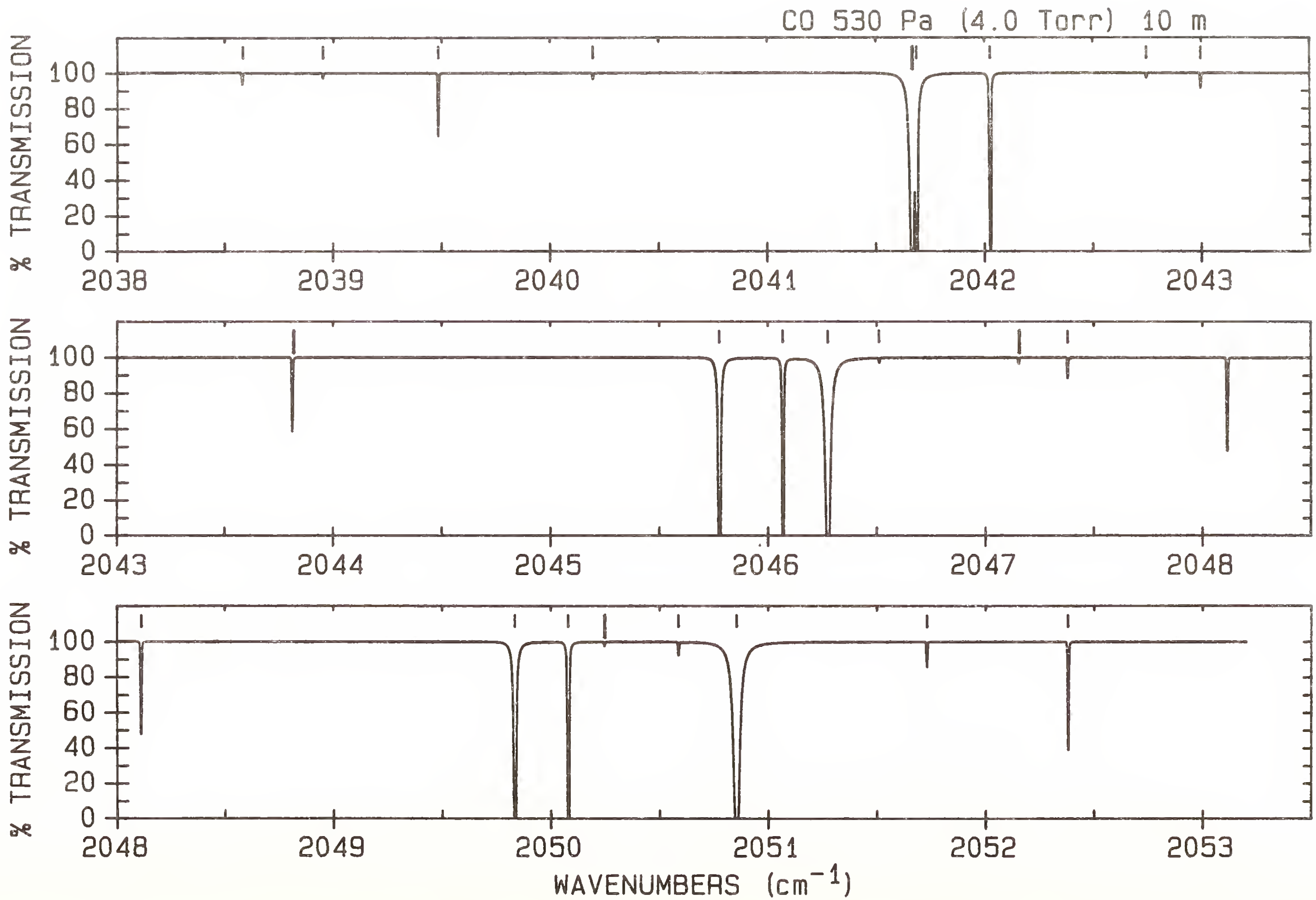
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)



CO 530 Pa (4.0 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2023 2024 2025 2026 2027 2028
2028 2029 2030 2031 2032 2033
2033 2034 2035 2036 2037 2038
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2023.469 0	P(12)	6	0.103E-23
2	2025.024 6	P(18)	2	0.794E-21
3	2025.144 704(15)*	P(22)	7	0.108E-23
4	2025.553 2	P(17)	3	0.190E-21
5	2025.927 3	P(5)	5	0.685E-23
6	2026.307 0	P(22)	4	0.708E-23
7	2027.385 1	P(11)	6	0.117E-23
8	2027.649 169(16)*	P(27)	1	0.210E-20
9	2029.236 2	P(17)	2	0.104E-20
10	2029.540 1	P(4)	5	0.598E-23
11	2029.655 899(12)*	P(21)	7	0.155E-23
12	2029.717 6	P(16)	3	0.242E-21
13	2030.730 0	P(21)	4	0.101E-22
14	2031.271 1	P(10)	6	0.129E-23
15	2032.352 842(15)*	P(26)	1	0.334E-20
16	2033.123 0	P(3)	5	0.480E-23
17	2033.417 3	P(16)	2	0.132E-20
18	2033.851 5	P(15)	3	0.302E-21
19	2034.135 170(10)*	P(20)	7	0.218E-23
20	2035.122 3	P(20)	4	0.141E-22
21	2035.127 0	P(9)	6	0.138E-23
22	2036.676 0	P(2)	5	0.338E-23
23	2037.025 319(14)*	P(25)	1	0.522E−20
24	2037.567 9	P(15)	2	0.165E-20
25	2037.954 8	P(14)	3	0.369E-21

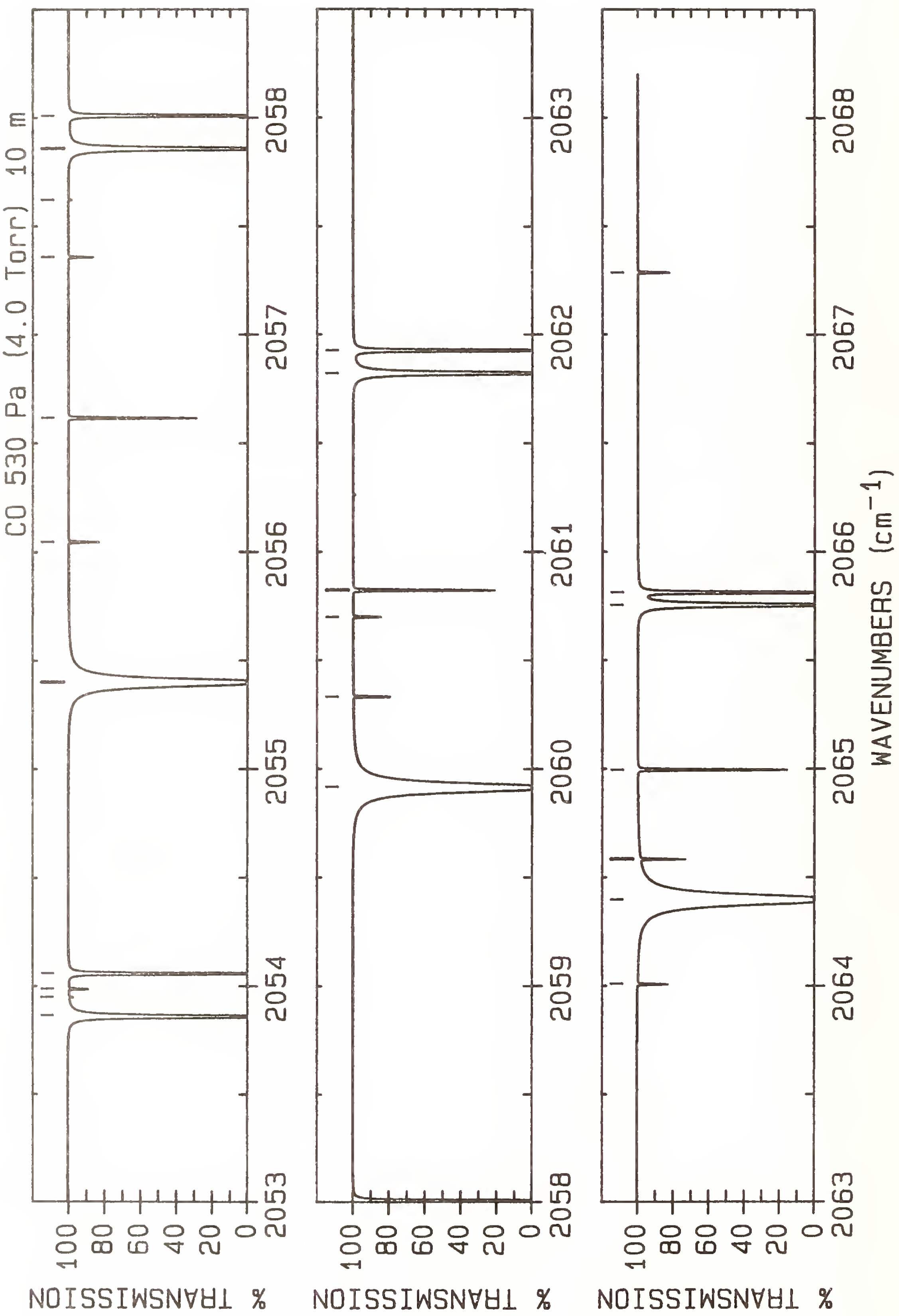
molecular species identification: 1 − $^{12}C^{16}O$, 2 − $^{13}C^{16}O$, 3 − $^{12}C^{18}O$, 4 − $^{12}C^{17}O$, 5 − $^{13}C^{18}O$, 6 − $^{13}C^{17}O$, 7 − $^{12}C^{16}O$ (v = 2 − 1)



CO 530 Pa (4.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
WAVENUMBERS (cm⁻¹)

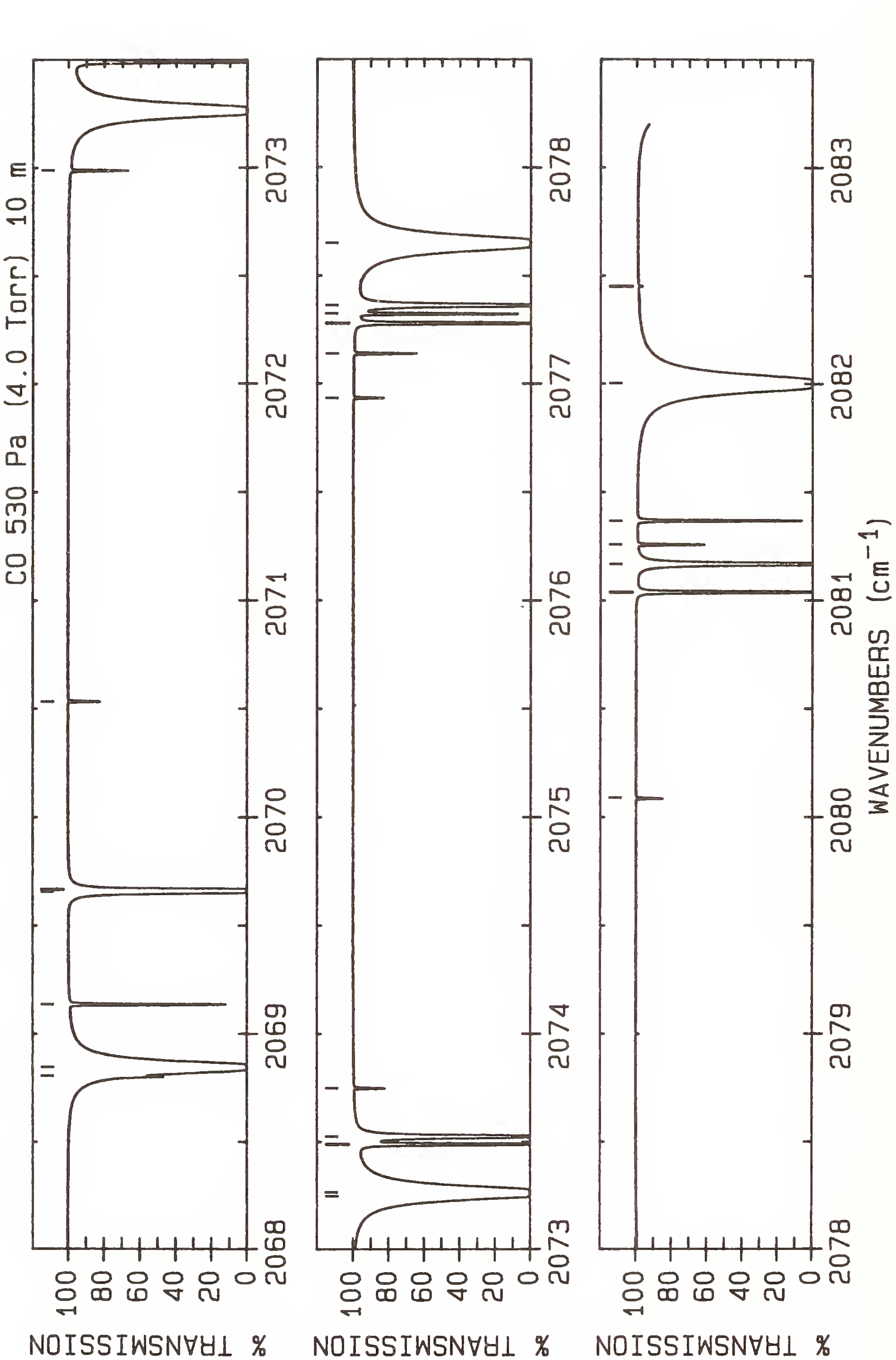
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2038.582 371(9)*	P(19)	7	0.301E-23
2	2038.952 6	P(8)	6	0.144E-23
3	2039.483 7	P(19)	4	0.193E-22
4	2040.199 0	P(1)	5	0.175E-23
5	2041.666 456(12)*	P(24)	1	0.800E-20
6	2041.687 8	P(14)	2	0.202E-20
7	2042.027 5	P(13)	3	0.441E-21
8	2042.747 7	P(7)	6	0.145E-23
9	2042.997 355(7)*	P(18)	7	0.405E-23
10	2043.814 1	P(18)	4	0.259E-22
11	2045.776 8	P(13)	2	0.241E-20
12	2046.069 5	P(12)	3	0.513E-21
13	2046.276 106(11)*	P(23)	1	0.120E-19
14	2046.512 4	P(6)	6	0.141E-23
15	2047.154 3	R(0)	5	0.179E-23
16	2047.379 977(6)*	P(17)	7	0.535E-23
17	2048.113 3	P(17)	4	0.341E-22
18	2049.834 9	P(12)	2	0.282E-20
19	2050.080 4	P(11)	3	0.584E-21
20	2050.246 4	P(5)	6	0.130E-23
21	2050.586 4	R(1)	5	0.352E-23
22	2050.854 123(10)*	P(22)	1	0.177E-19
23	2051.730 089(5)*	P(16)	7	0.691E-23
24	2052.381 2	P(16)	4	0.437E-22

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)


CO 530 Pa (4.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
WAVENUMBERS (cm^{-1})

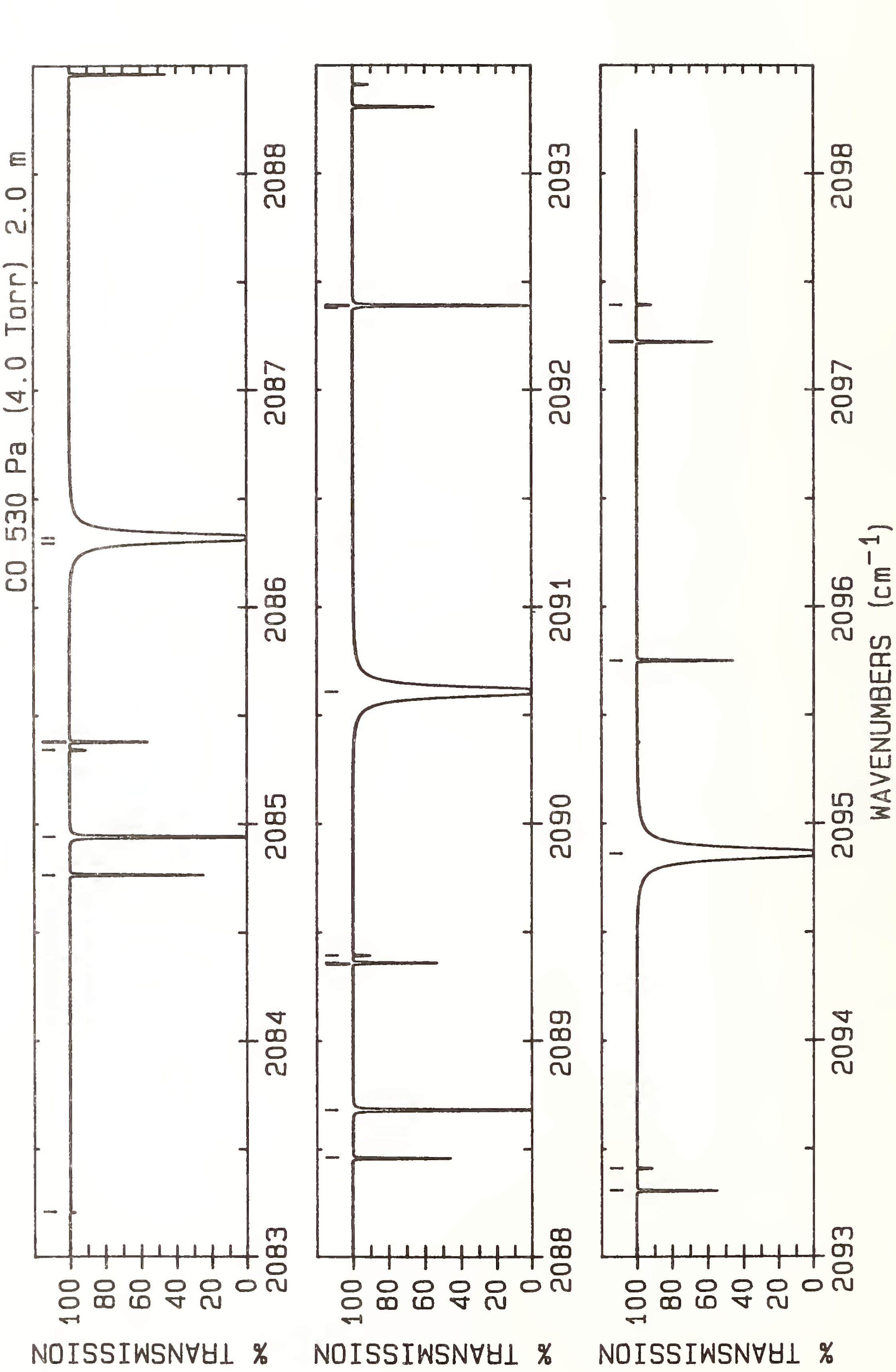
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2053.861 8	P(11)	2	0.320E-20
2	2053.949 6	P(4)	6	0.114E-23
3	2053.987 9	R(2)	5	0.511E-23
4	2054.060 3	P(10)	3	0.647E-21
5	2055.400 361(9)*	P(21)	1	0.255E-19
6	2056.047 547(4)*	P(15)	7	0.873E-23
7	2056.617 6	P(15)	4	0.550E-22
8	2057.358 8	R(3)	5	0.648E-23
9	2057.621 9	P(3)	6	0.919E-24
10	2057.857 5	P(10)	2	0.355E-20
11	2058.009 1	P(9)	3	0.697E-21
12	2059.914 675(7)*	P(20)	1	0.360E-19
13	2060.332 203(4)*	P(14)	7	0.108E-22
14	2060.698 9	R(4)	5	0.758E-23
15	2060.822 5	P(14)	4	0.676E-22
16	2061.821 8	P(9)	2	0.383E-20
17	2061.926 4	P(8)	3	0.728E-21
18	2064.008 1	R(5)	5	0.837E-23
19	2064.396 918(6)*	P(19)	1	0.497E-19
20	2064.583 910(4)*	P(13)	7	0.130E-22
21	2064.995 6	P(13)	4	0.811E-22
22	2065.754 7	P(8)	2	0.400E-20
23	2065.812 4	P(7)	3	0.736E-21
24	2067.286 3	R(6)	5	0.884E-23

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)


CO 530 Pa (4.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2068.802 523(4)*	P(12)	7	0.153E-22
2	2068.846 944(5)*	P(18)	1	0.673E-19
3	2069.136 8	P(12)	4	0.950E-22
4	2069.655 8	P(7)	2	0.405E-20
5	2069.666 7	P(6)	3	0.716E-21
6	2070.533 3	R(7)	5	0.898E-23
7	2072.987 894(5)*	P(11)	7	0.175E-22
8	2073.246 0	P(11)	4	0.109E-21
9	2073.264 606(4)*	P(17)	1	0.891E-19
10	2073.489 3	P(5)	3	0.665E-21
11	2073.525 3	P(6)	2	0.394E-20
12	2073.749 1	R(8)	5	0.884E-23
13	2076.933 4	R(9)	5	0.844E-23
14	2077.139 877(5)*	P(10)	7	0.196E-22
15	2077.280 0	P(4)	3	0.582E-21
16	2077.323 1	P(10)	4	0.121E-21
17	2077.362 7	P(5)	2	0.366E-20
18	2077.649 757(4)*	P(16)	1	0.115E-18
19	2080.086 3	R(10)	5	0.785E-23
20	2081.038 7	P(3)	3	0.470E-21
21	2081.168 2	P(4)	2	0.321E-20
22	2081.258 325(6)*	P(9)	7	0.212E-22
23	2081.367 9	P(9)	4	0.131E-21
24	2082.002 253(3)*	P(15)	1	0.146E-18
25	2082.451 6	R(3)	6	0.124E-23

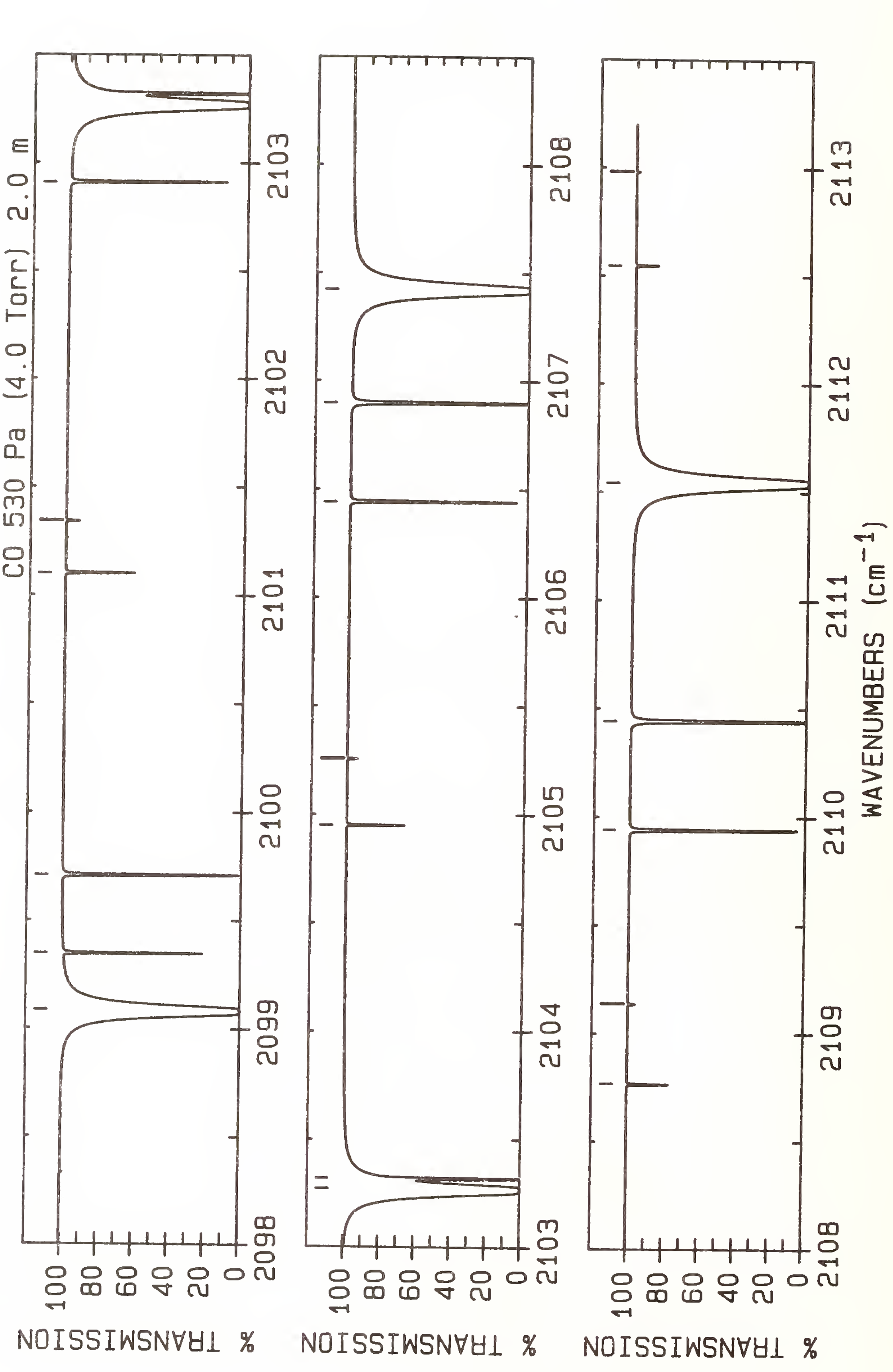
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)



CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100
80
60
40
20
0
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2083.207 5	R(11)	5	0.711E-23
2	2084.765 3	P(2)	3	0.331E-21
3	2084.941 4	P(3)	2	0.259E-20
4	2085.343 092(6)*	P(8)	7	0.223E-22
5	2085.380 3	P(8)	4	0.137E-21
6	2086.297 0	R(12)	5	0.630E-23
7	2086.321 944(3)*	P(14)	1	0.181E-18
8	2088.459 7	P(1)	3	0.172E-21
9	2088.682 4	P(2)	2	0.182E-20
10	2089.354 6	R(13)	5	0.545E-23
11	2089.360 0	P(7)	4	0.139E-21
12	2089.394 030(7)*	P(7)	7	0.227E-22
13	2090.608 687(3)*	P(13)	1	0.218E-18
14	2092.380 3	R(14)	5	0.461E-23
15	2092.390 9	P(1)	2	0.947E-21
16	2093.307 1	P(6)	4	0.136E-21
17	2093.410 993(7)*	P(6)	7	0.222E-22
18	2094.862 332(4)*	P(12)	1	0.258E-18
19	2095.751 0	R(0)	3	0.176E-21
20	2097.221 4	P(5)	4	0.126E-21
21	2097.393 834(8)*	P(5)	7	0.207E-22

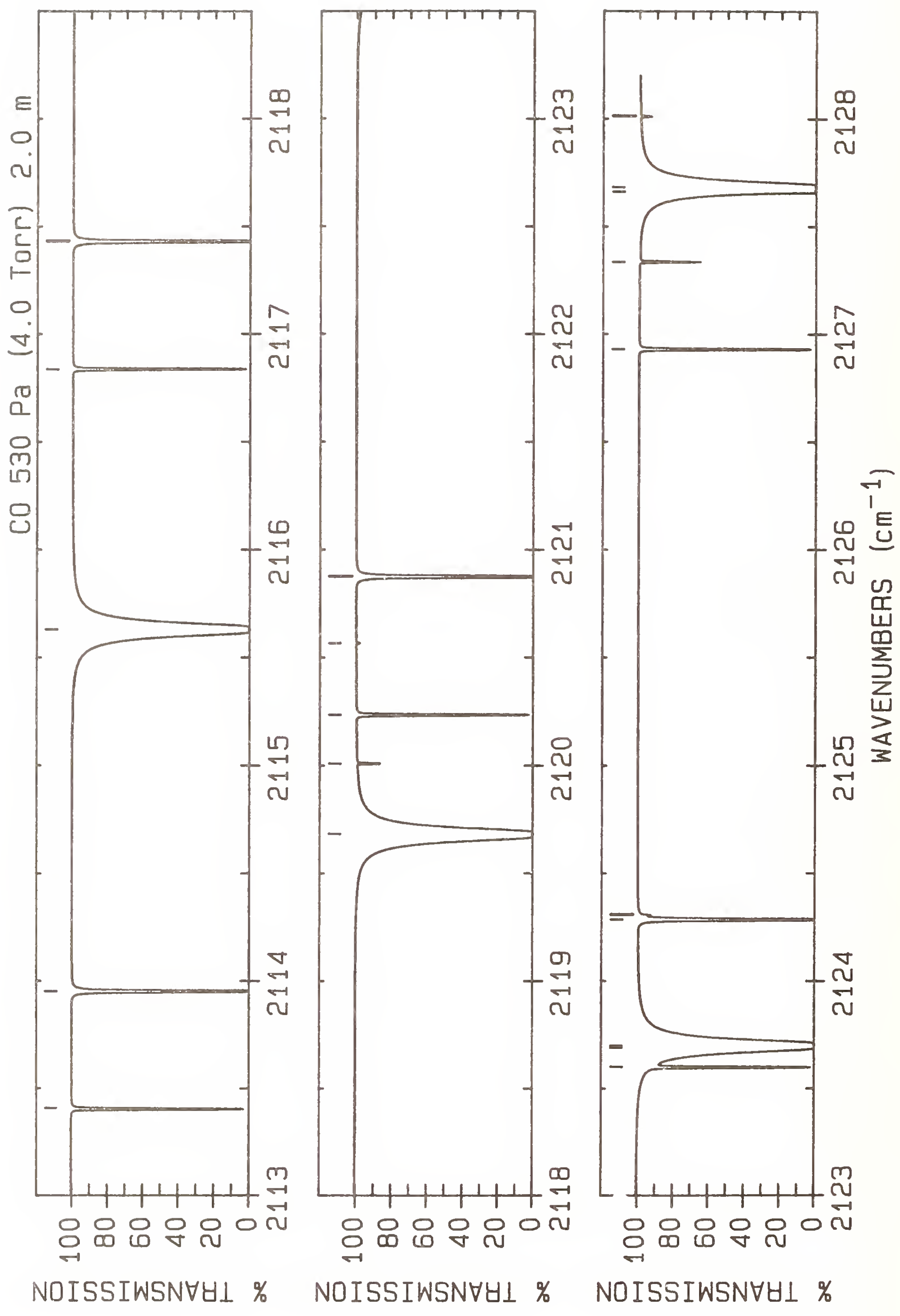
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)



CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100 80 60 40 20 0
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
WAVENUMBERS (cm^{-1})

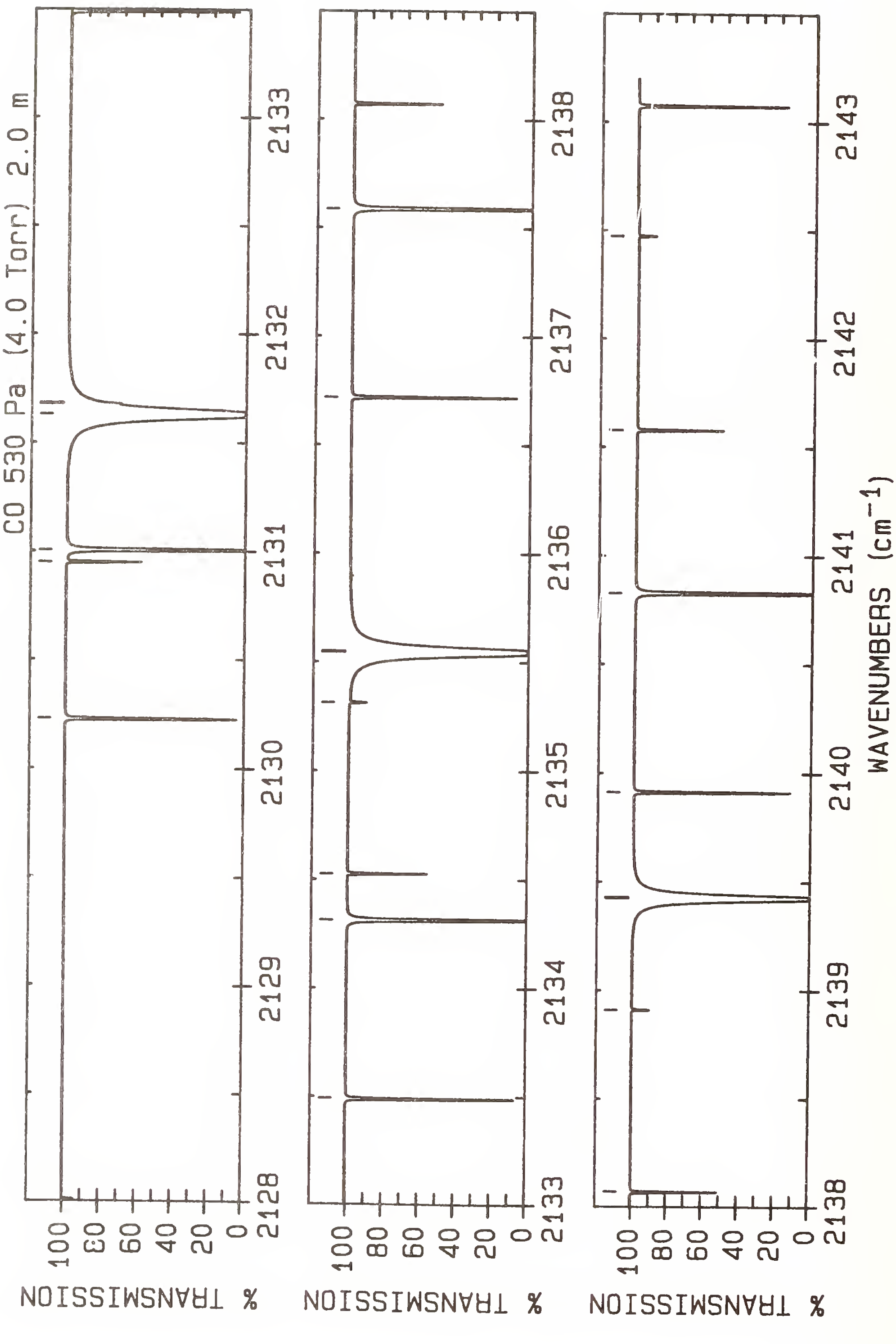
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2099.082 735(4)*	P(11)	1	0.296E-18
2	2099.347 8	R(1)	3	0.345E-21
3	2099.710 0	R(0)	2	0.968E-21
4	2101.102 6	P(4)	4	0.111E-21
5	2101.342 406(8)*	P(4)	7	0.182E-22
6	2102.911 7	R(2)	3	0.501E-21
7	2103.269 747(5)*	P(10)	1	0.331E-18
8	2103.320 4	R(1)	2	0.190E-20
9	2104.950 7	P(3)	4	0.897E-22
10	2105.256 563(8)*	P(3)	7	0.147E-22
11	2106.442 7	R(3)	3	0.634E-21
12	2106.897 8	R(2)	2	0.276E-20
13	2107.423 222(6)*	P(9)	1	0.360E-18
14	2108.765 6	P(2)	4	0.632E-22
15	2109.136 156(8)*	P(2)	7	0.104E-22
16	2109.940 7	R(4)	3	0.740E-21
17	2110.442 0	R(3)	2	0.350E-20
18	2111.543 014(6)*	P(8)	1	0.379E-18
19	2112.547 0	P(1)	4	0.329E-22
20	2112.981 040(8)*	P(1)	7	0.541E-23

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)


CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100 80 60 40 20 0
2113 2114 2115 2116 2117 2118
2118 2119 2120 2121 2122 2123
2123 2124 2125 2126 2127 2128
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2113.405 5	R(5)	3	0.813E-21
2	2113.953 0	R(4)	2	0.407E-20
3	2115.628 975(7)*	P(7)	1	0.386E-18
4	2116.836 9	R(6)	3	0.854E-21
5	2117.430 6	R(5)	2	0.448E-20
6	2119.680 959(8)*	P(6)	1	0.378E-18
7	2120.009 1	R(0)	4	0.336E-22
8	2120.234 9	R(7)	3	0.863E-21
9	2120.566 092(9)*	R(0)	7	0.553E-23
10	2120.874 7	R(6)	2	0.470E-20
11	2123.599 2	R(8)	3	0.844E-21
12	2123.689 5	R(1)	4	0.661E-22
13	2123.698 818(8)*	P(5)	1	0.353E-18
14	2124.285 1	R(7)	2	0.475E-20
15	2124.305 966(9)*	R(1)	7	0.109E-22
16	2126.929 9	R(9)	3	0.800E-21
17	2127.336 0	R(2)	4	0.957E-22
18	2127.661 8	R(8)	2	0.464E-20
19	2127.682 406(8)*	P(4)	1	0.311E-18
20	2128.010 543(8)*	R(2)	7	0.157E-22

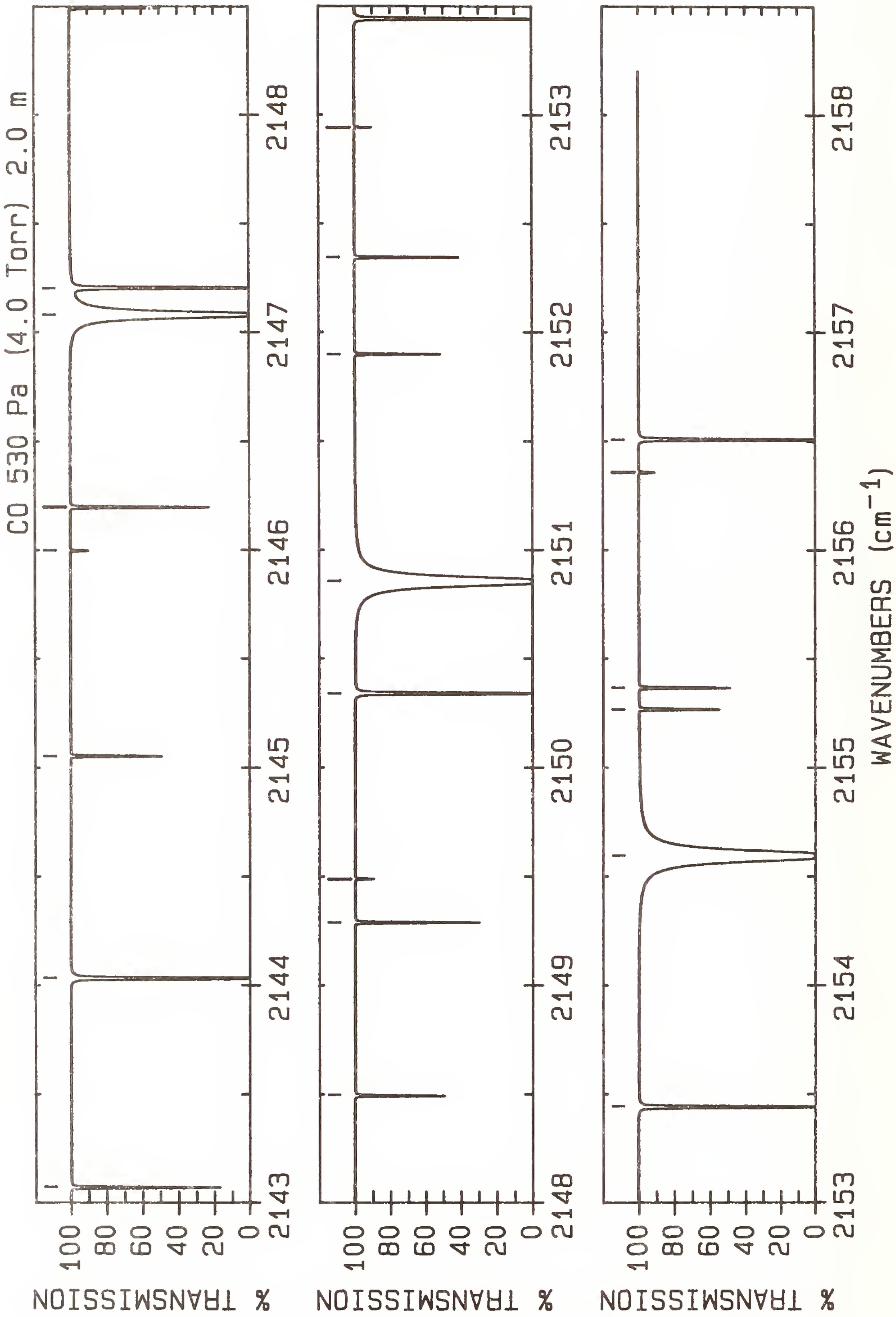
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ (v = 2 – 1)



CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100
80
60
40
20
0
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2130.226 7	R(10)	3	0.738E-21
2	2130.948 3	R(3)	4	0.121E-21
3	2131.004 5	R(9)	2	0.440E-20
4	2131.631 575(9)*	P(3)	1	0.252E-18
5	2131.679 676(8)*	R(3)	7	0.199E-22
6	2133.489 5	R(11)	3	0.663E-21
7	2134.313 1	R(10)	2	0.405E-20
8	2134.526 4	R(4)	4	0.141E-21
9	2135.313 218(8)*	R(4)	7	0.231E-22
10	2135.546 180(9)*	P(2)	1	0.178E-18
11	2136.718 1	R(12)	3	0.581E-21
12	2137.587 6	R(11)	2	0.364E-20
13	2138.070 1	R(5)	4	0.155E-21
14	2138.911 022(8)*	R(5)	7	0.253E-22
15	2139.426 072(9)*	P(1)	1	0.924E-19
16	2139.912 5	R(13)	3	0.497E-21
17	2140.827 7	R(12)	2	0.318E-20
18	2141.579 3	R(6)	4	0.162E-21
19	2142.472 942(8)*	R(6)	7	0.265E-22

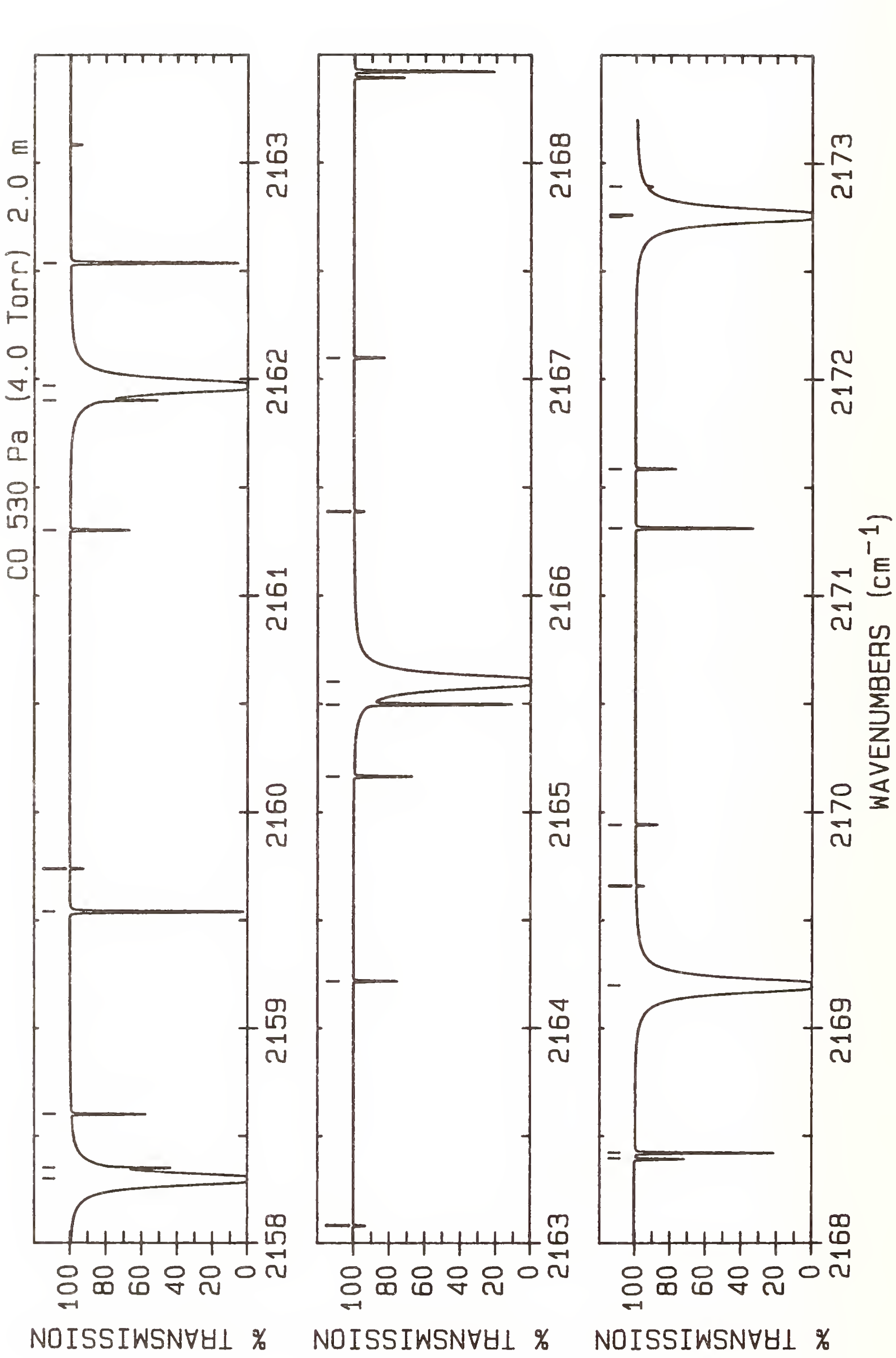
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)



CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100 80 60 40 20 0
2143 2144 2145 2146 2147 2148
2148 2149 2150 2151 2152 2153
2153 2154 2155 2156 2157 2158
WAVENUMBERS (cm-1)

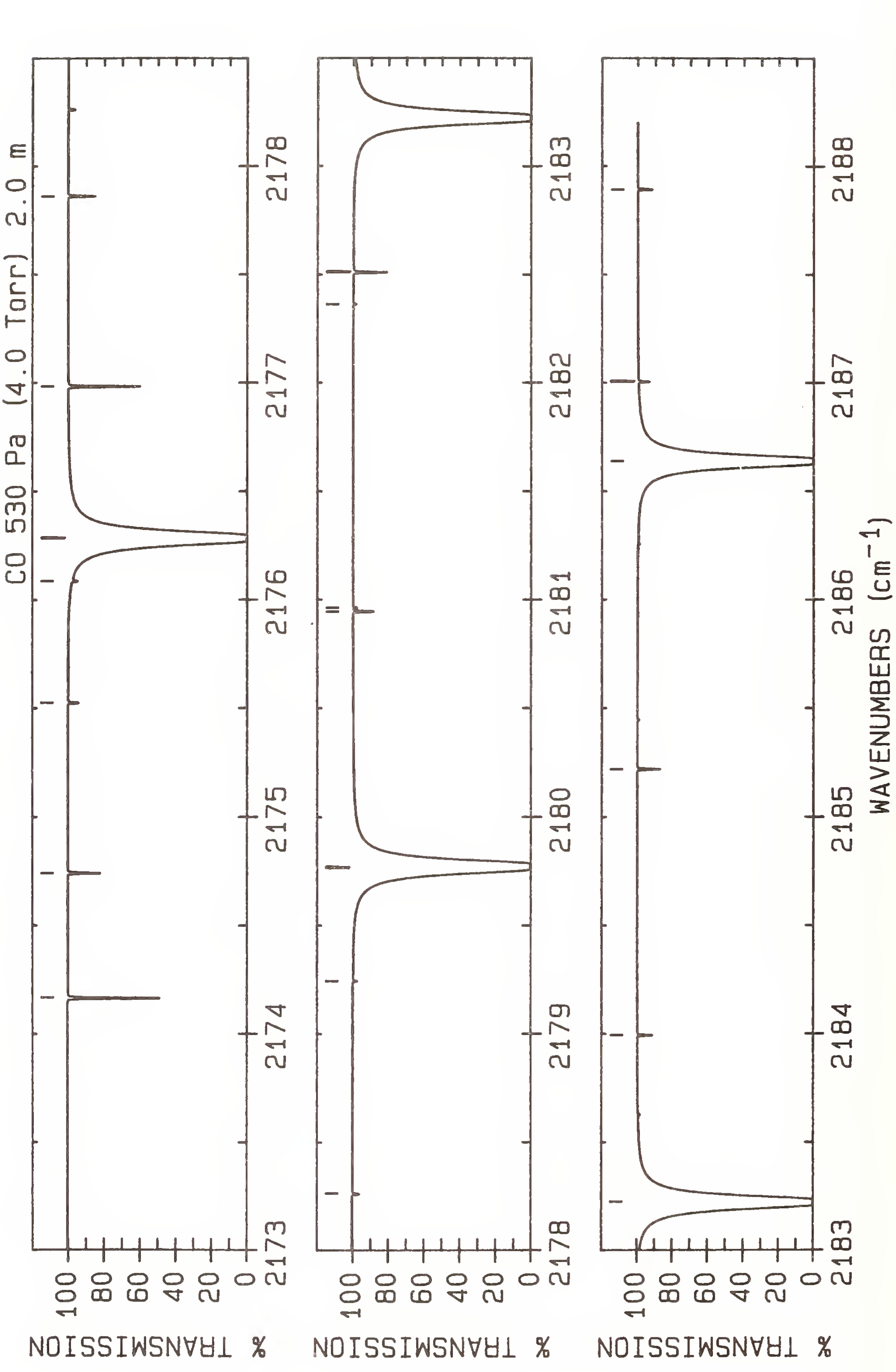
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2143.072 6	R(14)	3	0.416E-21
2	2144.033 4	R(13)	2	0.272E-20
3	2145.053 8	R(7)	4	0.163E-21
4	2145.998 831(7)*	R(7)	7	0.266E-22
5	2146.198 0	R(15)	3	0.340E-21
6	2147.081 133(9)*	R(0)	1	0.945E-19
7	2147.204 5	R(14)	2	0.228E-20
8	2148.493 5	R(8)	4	0.159E-21
9	2149.288 9	R(16)	3	0.272E-21
10	2149.488 542(7)*	R(8)	7	0.259E-22
11	2150.340 9	R(15)	2	0.186E-20
12	2150.856 008(9)*	R(1)	1	0.186E-18
13	2151.898 3	R(9)	4	0.150E-21
14	2152.344 9	R(17)	3	0.214E-21
15	2152.941 928(6)*	R(9)	7	0.244E-22
16	2153.442 4	R(16)	2	0.149E-20
17	2154.595 583(8)*	R(2)	1	0.269E-18
18	2155.268 0	R(10)	4	0.138E-21
19	2155.366 1	R(18)	3	0.164E-21
20	2156.358 843(6)*	R(10)	7	0.223E-22
21	2156.508 9	R(17)	2	0.116E-20

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)


CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2158.299 712(8)*	R(3)	1	0.340E-18
2	2158.352 1	R(19)	3	0.123E-21
3	2158.602 5	R(11)	4	0.123E-21
4	2159.540 3	R(18)	2	0.894E-21
5	2159.739 140(5)*	R(11)	7	0.199E-22
6	2161.303 0	R(20)	3	0.909E-22
7	2161.901 6	R(12)	4	0.108E-21
8	2161.968 247(8)*	R(4)	1	0.395E-18
9	2162.536 4	R(19)	2	0.671E-21
10	2163.082 673(5)*	R(12)	7	0.173E-22
11	2164.218 6	R(21)	3	0.657E-22
12	2165.165 2	R(13)	4	0.916E-22
13	2165.497 1	R(20)	2	0.494E-21
14	2165.601 042(7)*	R(5)	1	0.432E-18
15	2166.389 295(5)*	R(13)	7	0.147E-22
16	2167.098 7	R(22)	3	0.466E-22
17	2168.393 2	R(14)	4	0.762E-22
18	2168.422 3	R(21)	2	0.357E-21
19	2169.197 950(6)*	R(6)	1	0.451E-18
20	2169.658 859(5)*	R(14)	7	0.122E-22
21	2169.943 2	R(23)	3	0.323E-22
22	2171.311 9	R(22)	2	0.252E-21
23	2171.585 4	R(15)	4	0.619E-22
24	2172.752 0	R(24)	3	0.220E-22
25	2172.758 825(6)*	R(7)	1	0.453E-18
26	2172.891 220(5)*	R(15)	7	0.984E-23

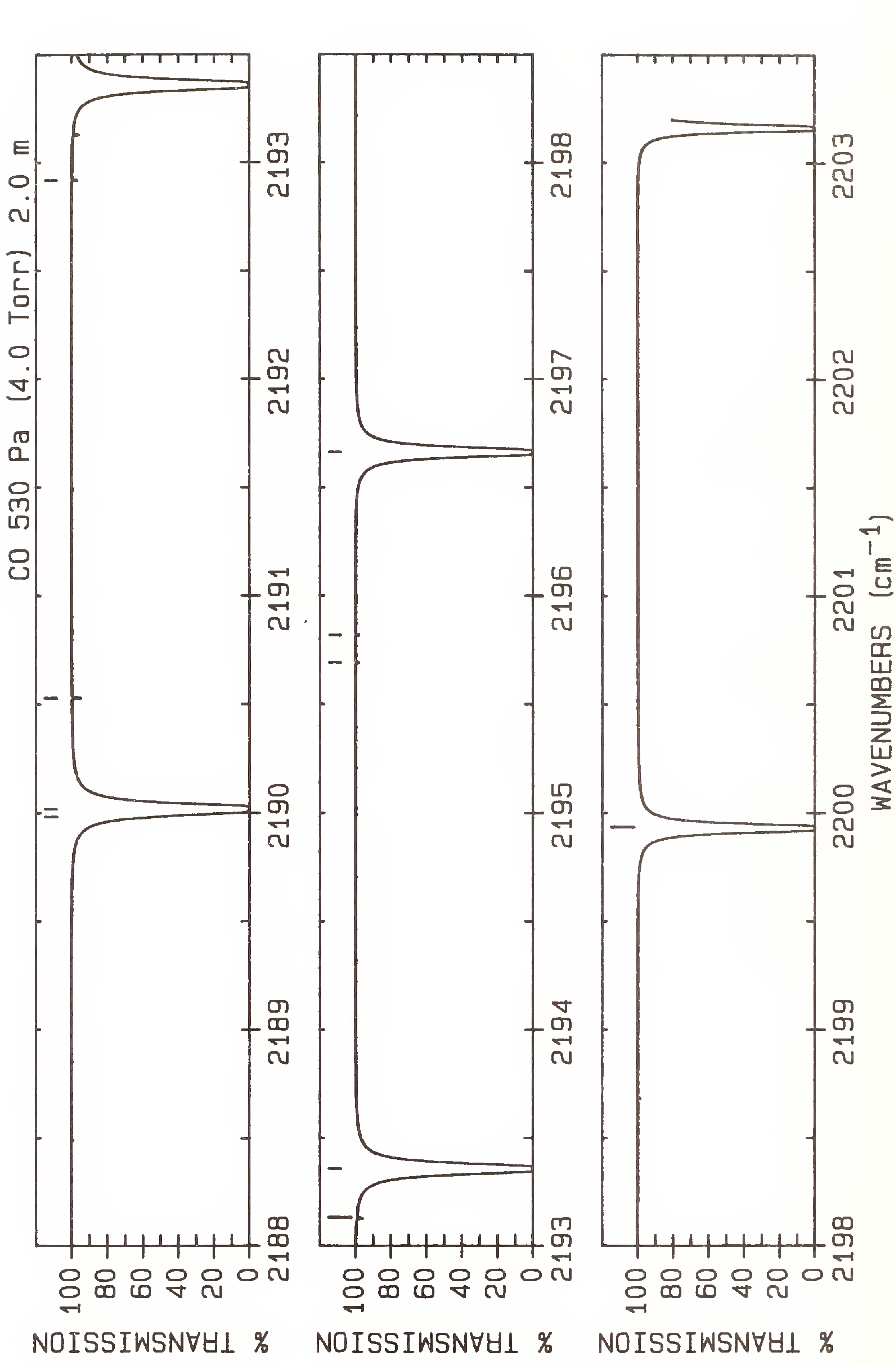
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)



CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100
80
60
40
20
0
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
WAVENUMBERS (cm^{-1})

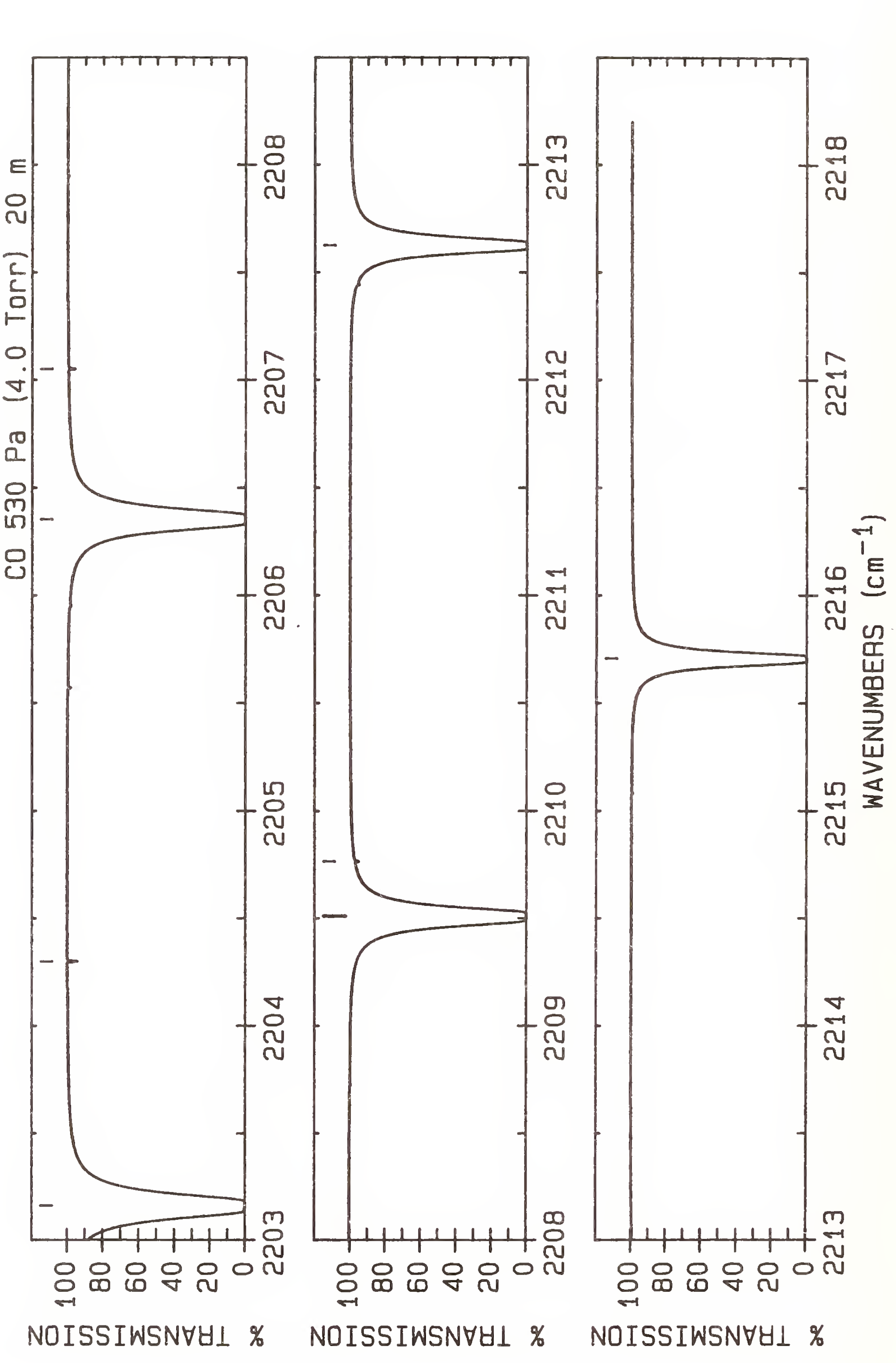
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2174.165 6	R(23)	2	0.175E-21
2	2174.741 7	R(16)	4	0.493E-22
3	2175.525 0	R(25)	3	0.147E-22
4	2176.086 230(6)*	R(16)	7	0.779E-23
5	2176.283 519(5)*	R(8)	1	0.440E-18
6	2176.983 4	R(24)	2	0.119E-21
7	2177.862 0	R(17)	4	0.383E-22
8	2178.261 9	R(26)	3	0.966E-23
9	2179.243 744(7)*	R(17)	7	0.603E-23
10	2179.765 2	R(25)	2	0.794E-22
11	2179.771 887(4)*	R(9)	1	0.414E-18
12	2180.946 0	R(18)	4	0.292E-22
13	2180.962 8	R(27)	3	0.622E-23
14	2182.363 615(9)*	R(18)	7	0.457E-23
15	2182.510 7	R(26)	2	0.520E-22
16	2183.223 781(4)*	R(10)	1	0.378E-18
17	2183.993 8	R(19)	4	0.218E-22
18	2185.220 0	R(27)	2	0.334E-22
19	2186.639 055(3)*	R(11)	1	0.336E-18
20	2187.005 0	R(20)	4	0.159E-22
21	2187.892 7	R(28)	2	0.211E-22

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)


CO 530 Pa (4.0 Torr) 2.0 m
% TRANSMISSION
100 80 60 40 20 0
2188 2189 2190 2191 2192 2193
% TRANSMISSION
100 80 60 40 20 0
2193 2194 2195 2196 2197 2198
% TRANSMISSION
100 80 60 40 20 0
2198 2199 2200 2201 2202 2203
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2189.979 7	R(21)	4	0.114E-22
2	2190.017 562(3)*	R(12)	1	0.292E-18
3	2190.528 9	R(29)	2	0.130E-22
4	2192.917 6	R(22)	4	0.802E-23
5	2193.128 4	R(30)	2	0.790E-23
6	2193.359 157(3)*	R(13)	1	0.247E-18
7	2195.691 0	R(31)	2	0.471E-23
8	2195.818 6	R(23)	4	0.552E-23
9	2196.663 692(4)*	R(14)	1	0.204E-18
10	2199.931 022(4)*	R(15)	1	0.165E-18

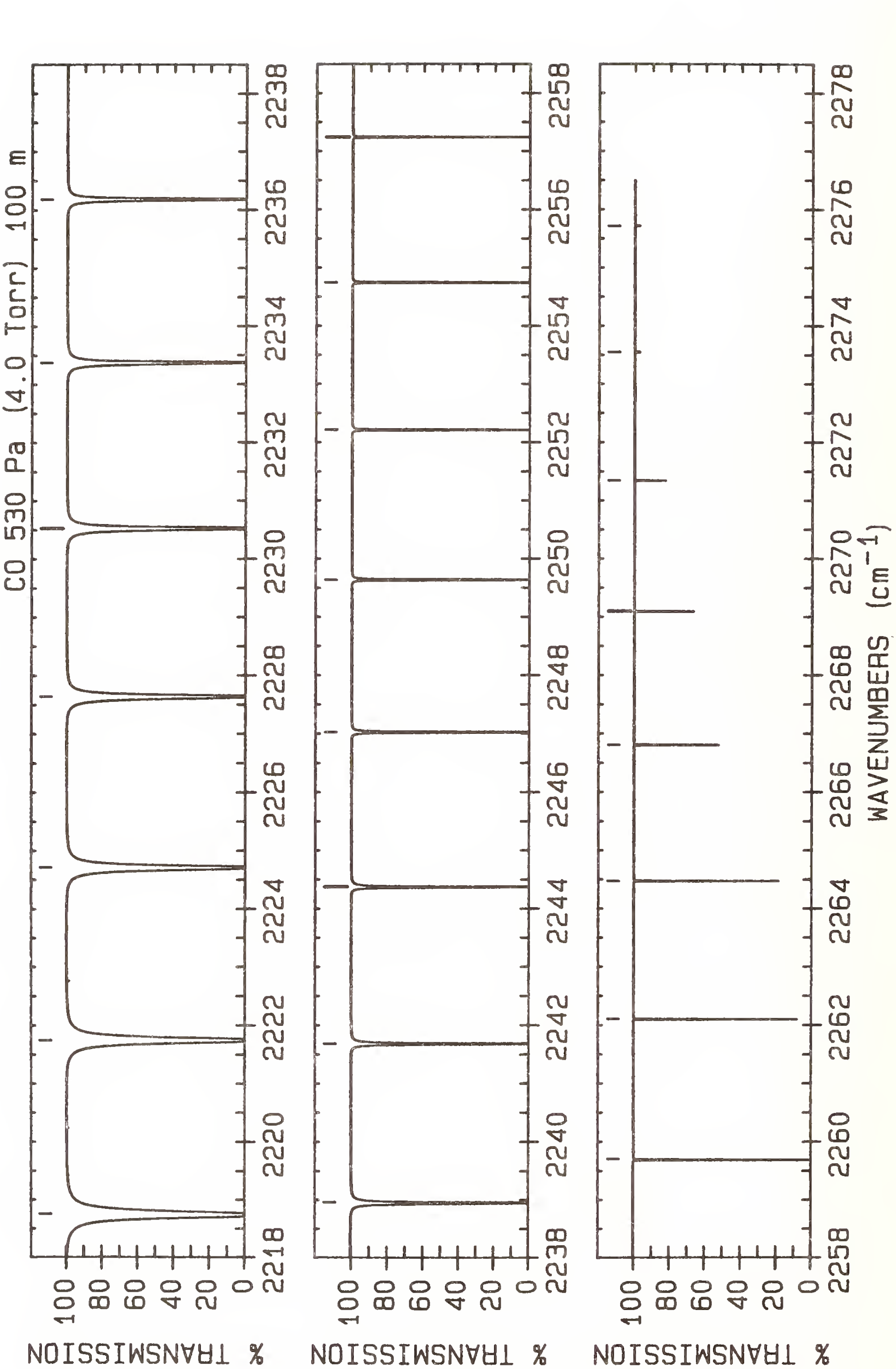
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ (v = 2 – 1)



CO 530 Pa (4.0 Torr) 20 m
% TRANSMISSION
100
80
60
40
20
0
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2203.161 000(5)*	R(16)	1	0.130E-18
2	2204.299 0	R(26)	4	0.160E-23
3	2206.353 481(6)*	R(17)	1	0.100E-18
4	2207.051 1	R(27)	4	0.102E-23
5	2209.508 317(7)*	R(18)	1	0.759E-19
6	2209.765 6	R(28)	4	0.634E-24
7	2212.625 363(9)*	R(19)	1	0.561E-19
8	2215.704 473(10)*	R(20)	1	0.407E-19

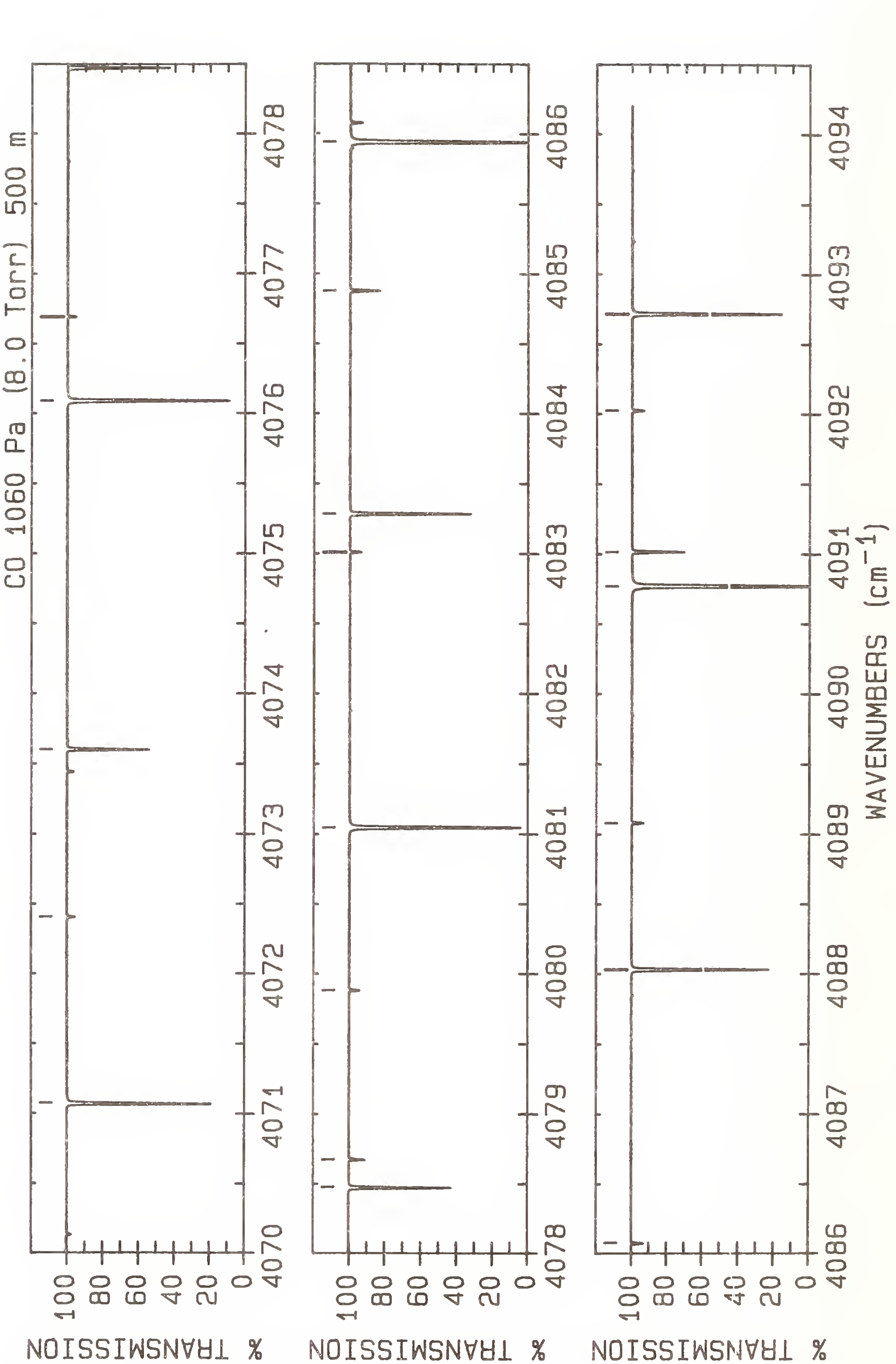
molecular species identification: 1 $-{}^{12}C^{16}O$, 2 $-{}^{13}C^{16}O$, 3 $-{}^{12}C^{18}O$, 4 $-{}^{12}C^{17}O$, 5 $-{}^{13}C^{18}O$, 6 $-{}^{13}C^{17}O$, 7 $-{}^{12}C^{16}O$ $(v = 2-1)$



CO 530 Pa (4.0 Torr) 100 m
% TRANSMISSION
0
20
40
60
80
100
2218
2220
2222
2224
2226
2228
2230
2232
2234
2236
2238
% TRANSMISSION
0
20
40
60
80
100
2238
2240
2242
2244
2246
2248
2250
2252
2254
2256
2258
% TRANSMISSION
0
20
40
60
80
100
2258
2260
2262
2264
2266
2268
2270
2272
2274
2276
2278
WAVENUMBERS (cm-1)

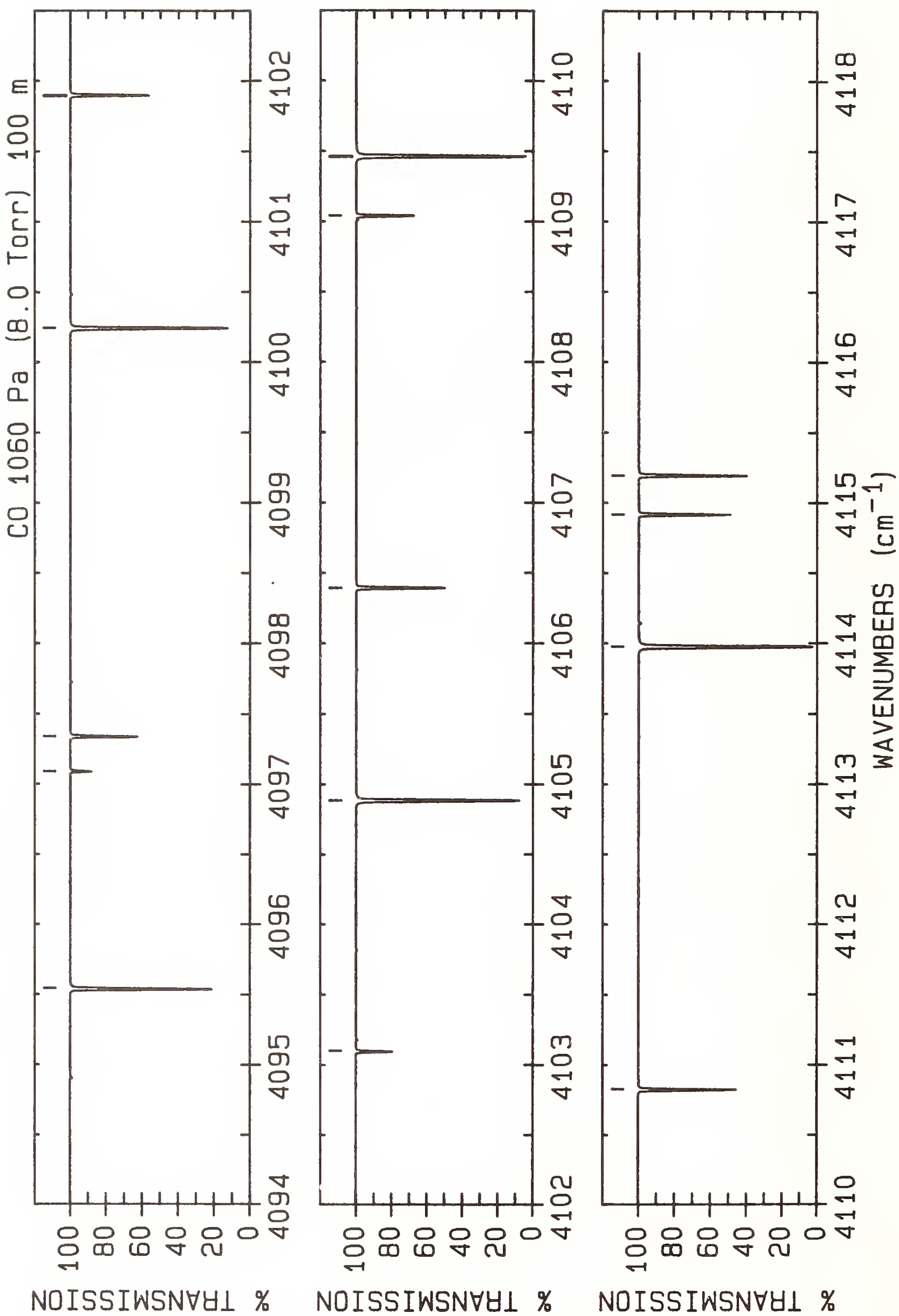
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	2218.745 501(11)*	R(21)	1	0.288E-19
2	2221.748 302(12)*	R(22)	1	0.200E-19
3	2224.712 729(14)*	R(23)	1	0.136E-19
4	2227.638 638(15)*	R(24)	1	0.910E-20
5	2230.525 881(16)*	R(25)	1	0.595E-20
6	2233.374 315(18)*	R(26)	1	0.381E-20
7	2236.183 793(19)*	R(27)	1	0.240E-20
8	2238.954 171(21)*	R(28)	1	0.148E-20
9	2241.685 302(23)*	R(29)	1	0.892E-21
10	2244.377 043(25)*	R(30)	1	0.528E-21
11	2247.029 247(27)*	R(31)	1	0.307E-21
12	2249.641 771(29)*	R(32)	1	0.175E-21
13	2252.214 47(3)*	R(33)	1	0.978E-22
14	2254.747 20(4)*	R(34)	1	0.536E-22
15	2257.239 81(4)*	R(35)	1	0.289E-22
16	2259.692 16(5)*	R(36)	1	0.152E-22
17	2262.104 10(5)*	R(37)	1	0.789E-23
18	2264.475 50(6)*	R(38)	1	0.401E-23
19	2266.806 20(6)*	R(39)	1	0.200E-23
20	2269.096 07(7)*	R(40)	1	0.980E-24
21	2271.344 95(8)*	R(41)	1	0.471E-24
22	2273.552 71(8)*	R(42)	1	0.222E-24
23	2275.719 20(9)*	R(43)	1	0.103E-24

molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$, 6 – $^{13}C^{17}O$, 7 – $^{12}C^{16}O$ ($v = 2-1$)


CO 1060 Pa (8.0 Torr) 500 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100 80 60 40 20 0
4070 4071 4072 4073 4074 4075 4076 4077 4078
4078 4079 4080 4081 4082 4083 4084 4085 4086
4086 4087 4088 4089 4090 4091 4092 4093 4094
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4071.071 8	P(22)	2	0.152E-23
2	4072.407 67(10)*	P(37)	1	0.451E-25
3	4073.602 1	P(20)	3	0.550E-24
4	4076.090 7	P(21)	2	0.215E-23
5	4076.694 7	R(3)	5	0.472E-25
6	4078.474 9	P(19)	3	0.749E-24
7	4078.675 43(9)*	P(36)	1	0.875E-25
8	4079.883 3	R(4)	5	0.555E-25
9	4081.047 1	P(20)	2	0.299E-23
10	4083.010 7	R(5)	5	0.615E-25
11	4083.285 1	P(18)	3	0.100E-23
12	4084.878 44(8)*	P(35)	1	0.167E-24
13	4085.940 7	P(19)	2	0.408E-23
14	4086.076 8	R(6)	5	0.652E-25
15	4088.032 6	P(17)	3	0.131E-23
16	4089.081 5	R(7)	5	0.666E-25
17	4090.771 5	P(18)	2	0.546E-23
18	4091.016 55(7)*	P(34)	1	0.311E-24
19	4092.024 6	R(8)	5	0.658E-25
20	4092.717 4	P(16)	3	0.167E-23

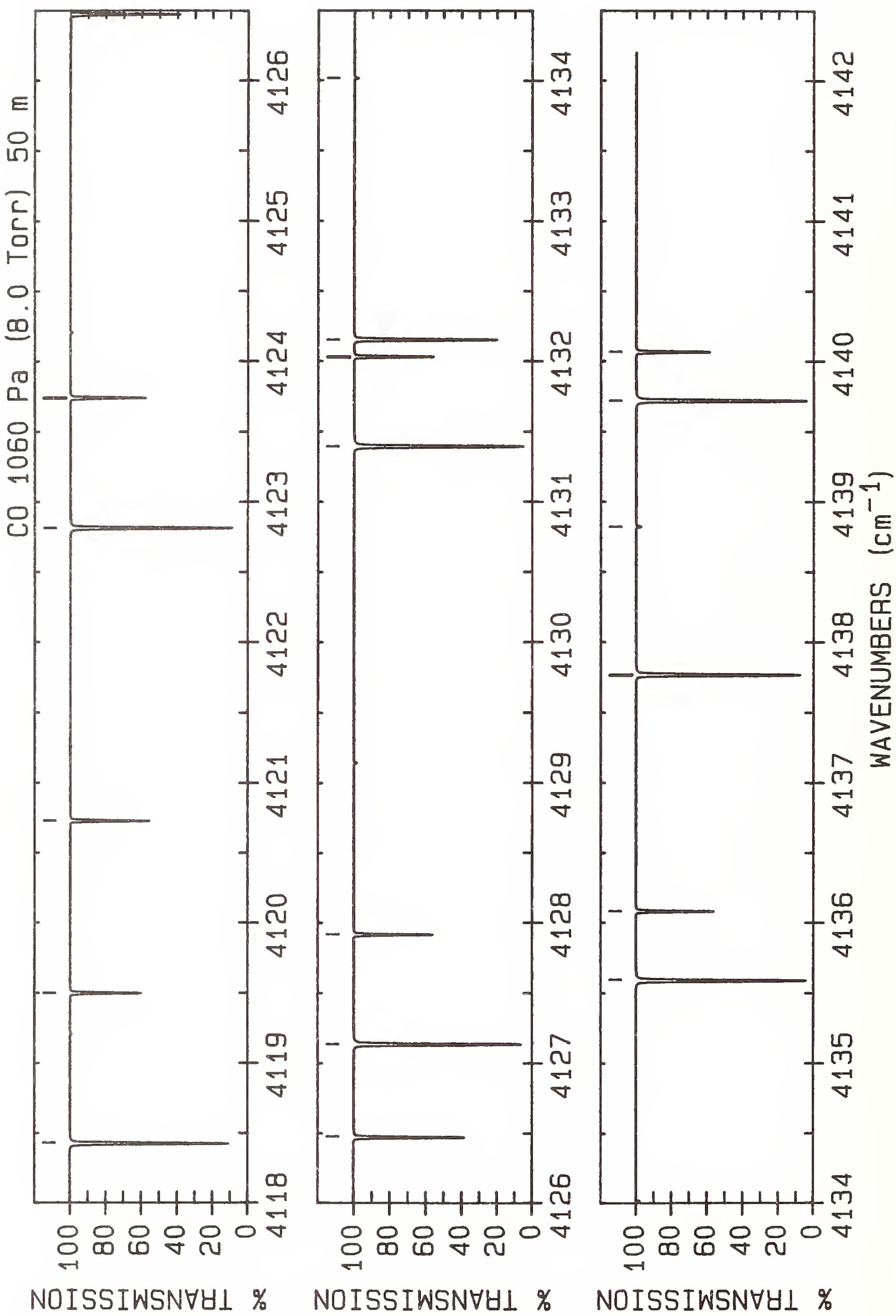
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$



CO 1060 Pa (8.0 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
4094 4095 4096 4097 4098 4099 4100 4101 4102
4102 4103 4104 4105 4106 4107 4108 4109 4110
4110 4111 4112 4113 4114 4115 4116 4117 4118
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4095.539 2	P(17)	2	0.714E-23
2	4097.089 63(6)*	P(33)	1	0.570E-24
3	4097.339 2	P(15)	3	0.210E-23
4	4100.243 7	P(16)	2	0.915E-23
5	4101.897 9	P(14)	3	0.257E-23
6	4103.097 52(5)*	P(32)	1	0.102E-23
7	4104.885 0	P(15)	2	0.115E-22
8	4106.393 5	P(13)	3	0.307E-23
9	4109.040 08(4)*	P(31)	1	0.181E-23
10	4109.462 9	P(14)	2	0.141E-22
11	4110.825 7	P(12)	3	0.360E-23
12	4113.977 2	P(13)	2	0.169E-22
13	4114.917 17(4)*	P(30)	1	0.312E-23
14	4115.194 5	P(11)	3	0.410E-23

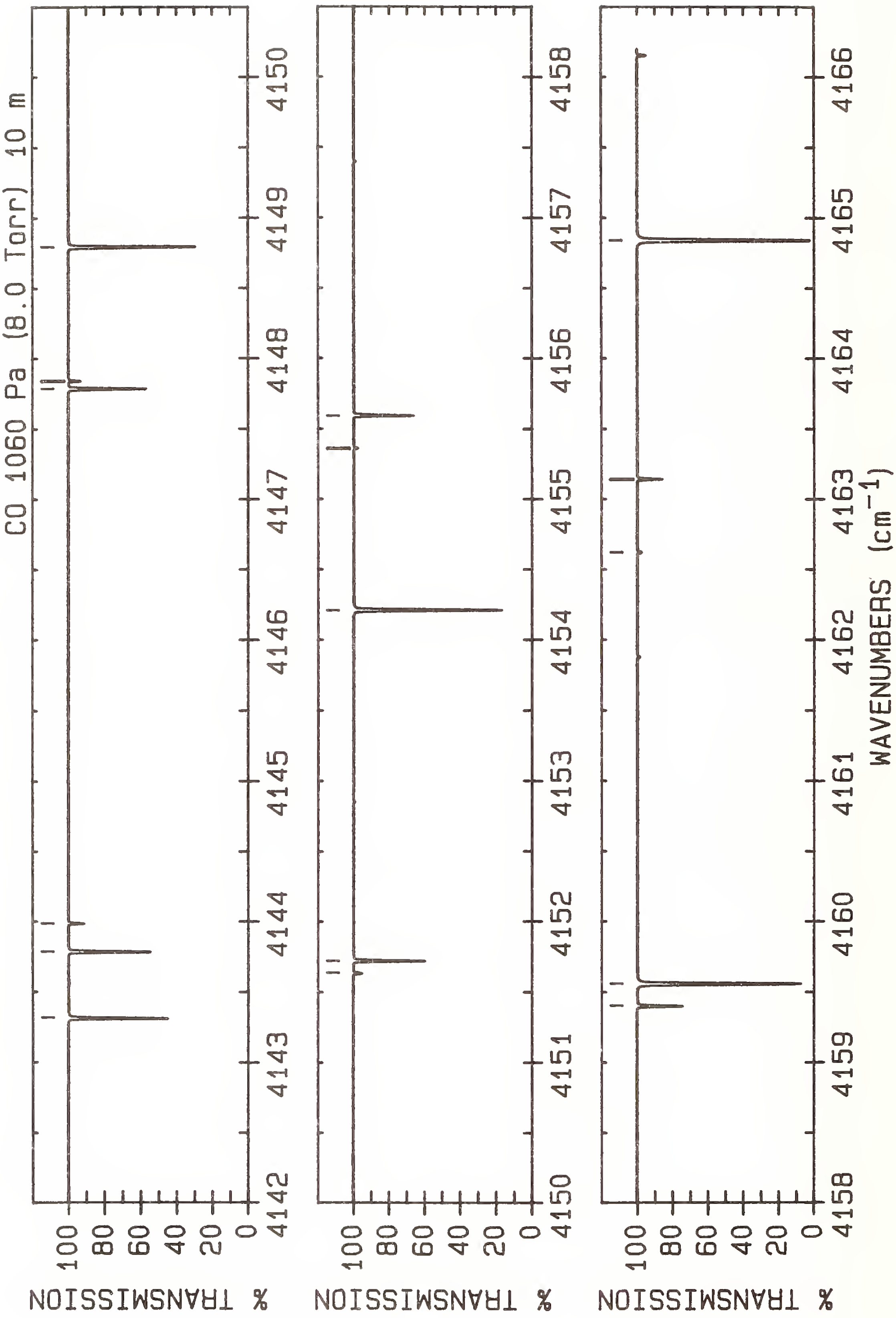
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$



CO 1060 Pa (8.0 Torr) 50 m
% TRANSMISSION
100 80 60 40 20 0
4118 4119 4120 4121 4122 4123 4124 4125 4126
4126 4127 4128 4129 4130 4131 4132 4133 4134
4134 4135 4136 4137 4138 4139 4140 4141 4142
WAVENUMBERS (cm^{-1})

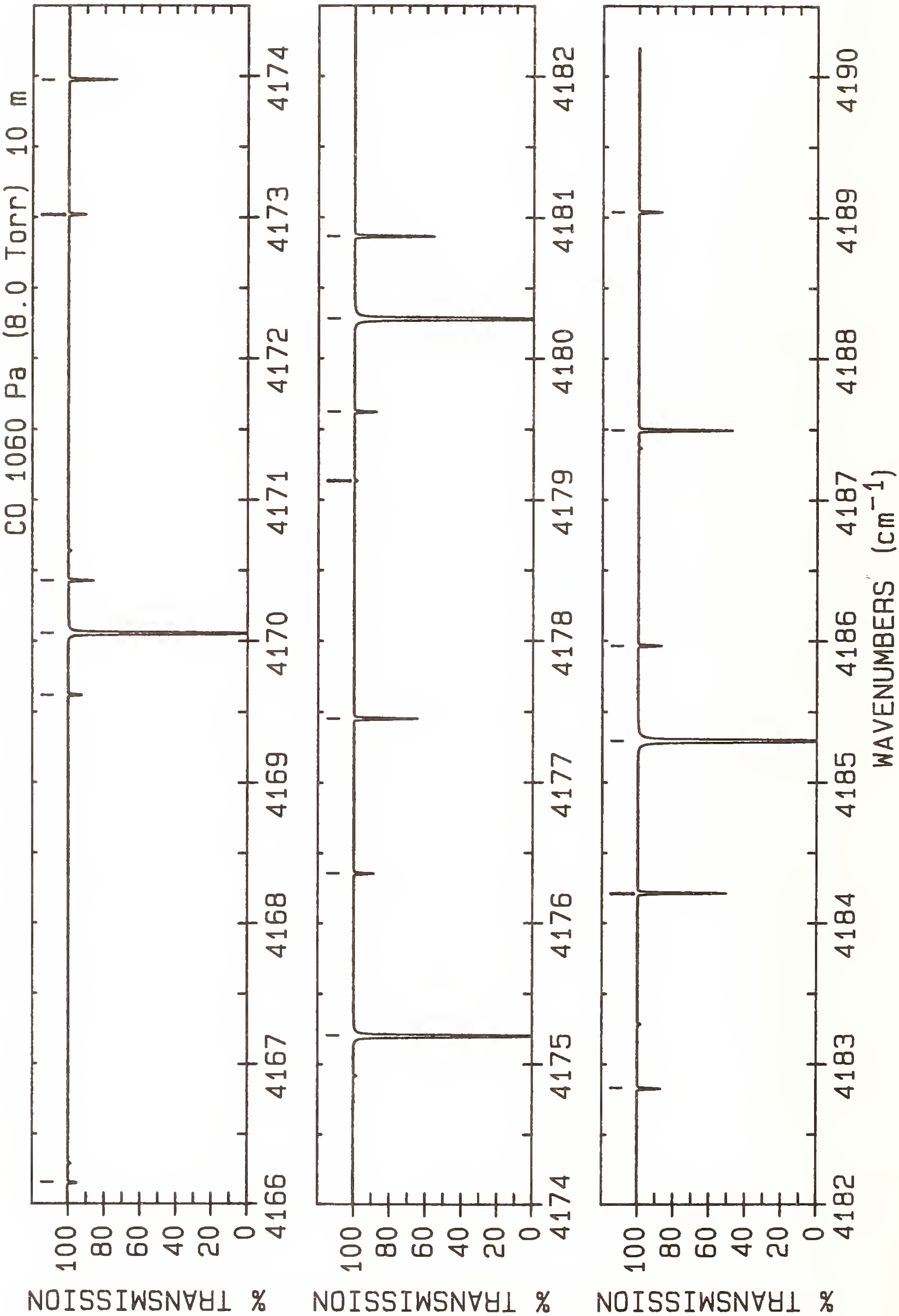
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4118.427 8	P(12)	2	0.198E-22
2	4119.499 7	P(10)	3	0.456E-23
3	4120.728 64(3)*	P(29)	1	0.530E-23
4	4122.814 6	P(11)	2	0.226E-22
5	4123.741 2	P(9)	3	0.493E-23
6	4126.474 350(26)*	P(28)	1	0.881E-23
7	4127.137 5	P(10)	2	0.251E-22
8	4127.918 8	P(8)	3	0.517E-23
9	4131.396 2	P(9)	2	0.271E-22
10	4132.032 4	P(7)	3	0.525E-23
11	4132.154 153(22)*	P(27)	1	0.144E-22
12	4134.016 7	P(17)	4	0.237E-24
13	4135.590 8	P(8)	2	0.285E-22
14	4136.081 9	P(6)	3	0.513E-23
15	4137.767 902(18)*	P(26)	1	0.230E-22
16	4138.823 5	P(16)	4	0.306E-24
17	4139.721 0	P(7)	2	0.289E-22
18	4140.067 1	P(5)	3	0.478E-23

molecular species identification: 1 — $^{12}C^{16}O$, 2 — $^{13}C^{16}O$, 3 — $^{12}C^{18}O$, 4 — $^{12}C^{17}O$, 5 — $^{13}C^{18}O$


CO 1060 Pa (8.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
4142
4143
4144
4145
4146
4147
4148
4149
4150
4151
4152
4153
4154
4155
4156
4157
4158
4159
4160
4161
4162
4163
4164
4165
4166
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4143.315 454(15)*	P(25)	1	0.360E-22
2	4143.786 7	P(6)	2	0.283E-22
3	4143.988 0	P(4)	3	0.420E-23
4	4147.787 7	P(5)	2	0.264E-22
5	4147.844 3	P(3)	3	0.341E-23
6	4148.796 662(13)*	P(24)	1	0.554E-22
7	4151.635 9	P(2)	3	0.241E-23
8	4151.724 0	P(4)	2	0.232E-22
9	4154.211 380(10)*	P(23)	1	0.834E-22
10	4155.362 8	P(1)	3	0.125E-23
11	4155.595 4	P(3)	2	0.188E-22
12	4159.401 8	P(2)	2	0.133E-22
13	4159.559 463(9)*	P(22)	1	0.123E-21
14	4162.621 6	R(0)	3	0.129E-23
15	4163.143 0	P(1)	2	0.693E-23
16	4164.840 765(7)*	P(21)	1	0.178E-21

molecular species identification: 1—$^{12}C^{16}O$, 2—$^{13}C^{16}O$, 3—$^{12}C^{18}O$, 4—$^{12}C^{17}O$, 5—$^{13}C^{18}O$



CO 1060 Pa (8.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
4166
4167
4168
4169
4170
4171
4172
4173
4174
4174
4175
4176
4177
4178
4179
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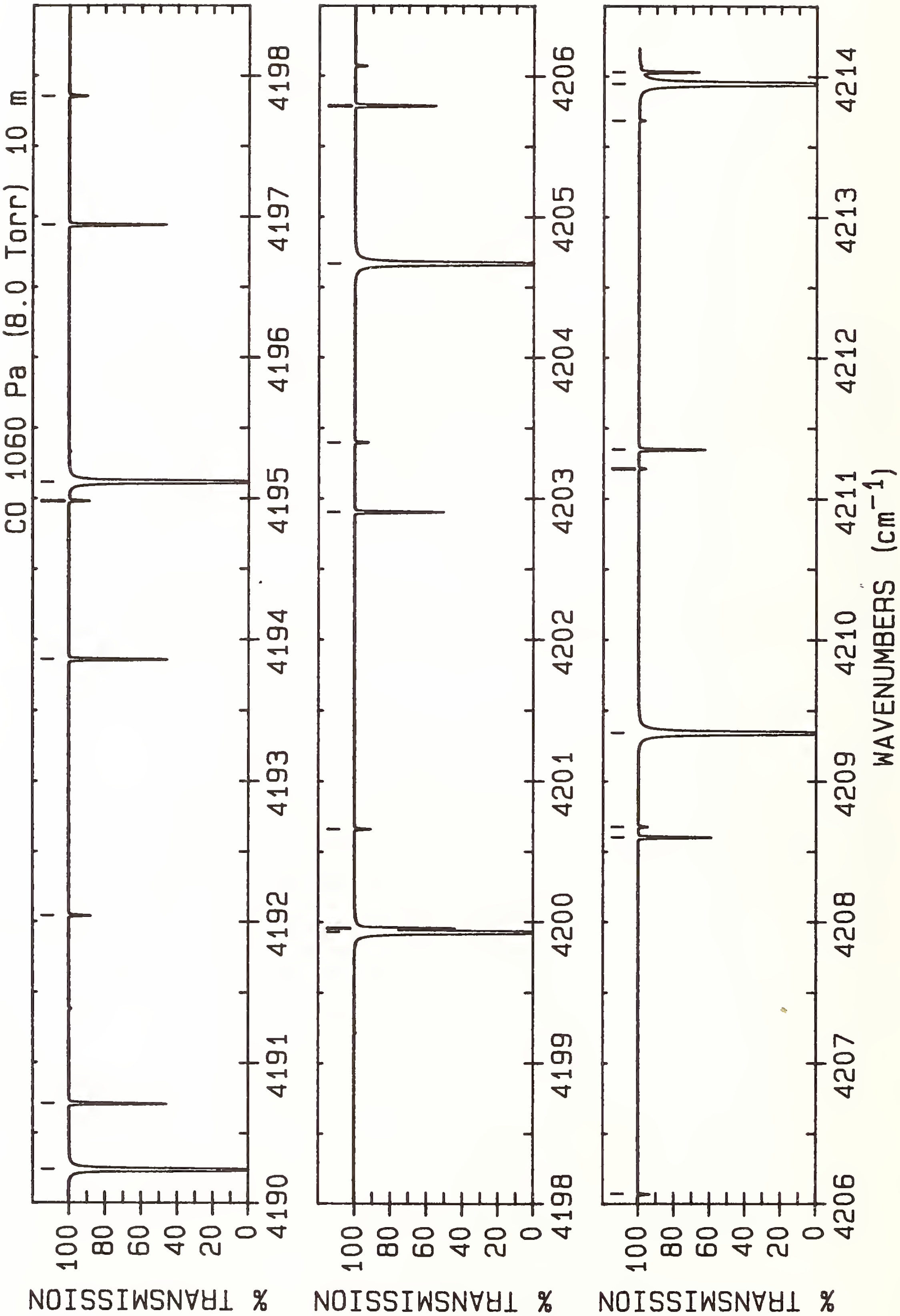
4181
4182
4182
4183
4184
4185
4186
4187
4188
4189
4190
WAVENUMBERS (cm^{-1})

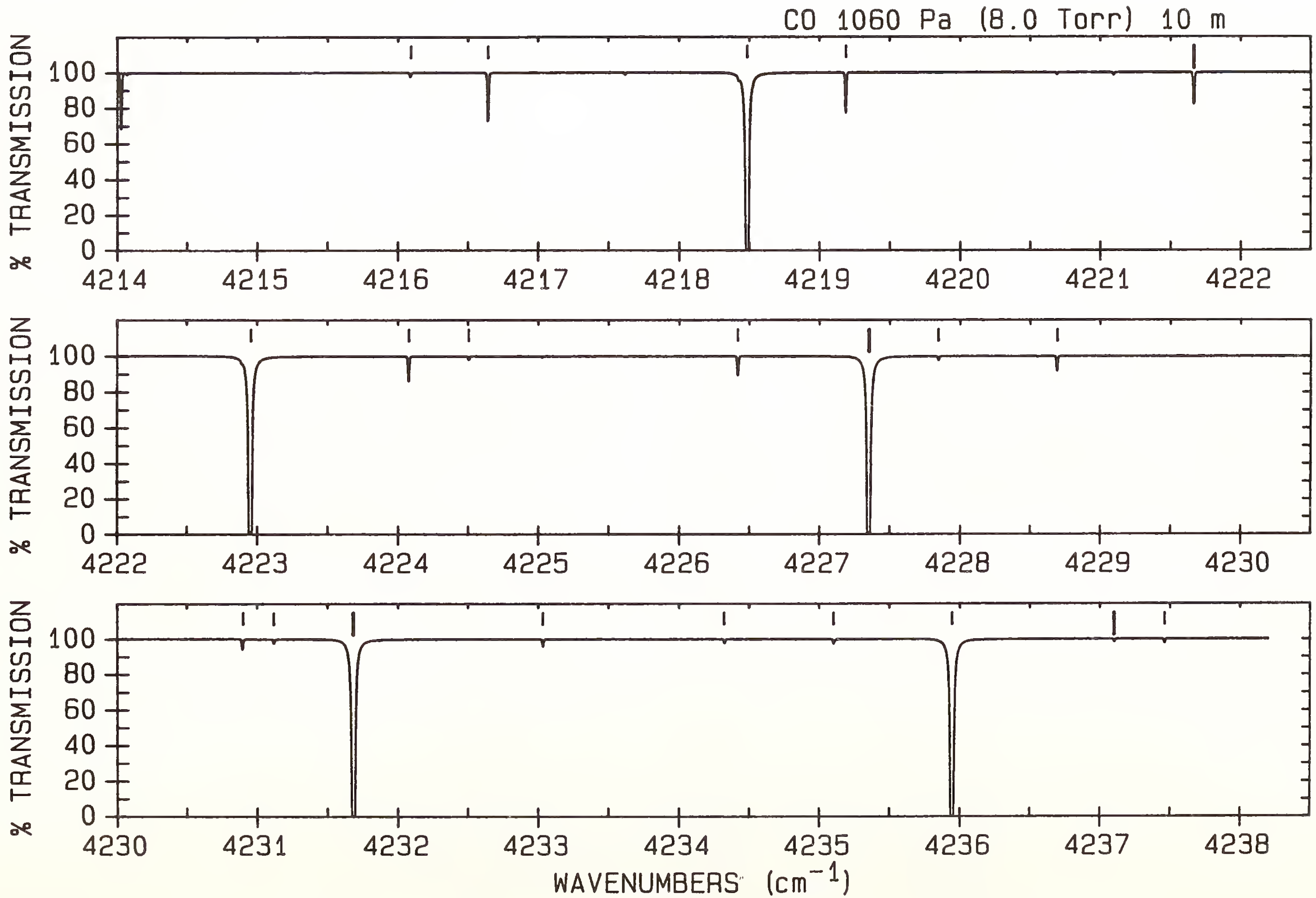
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4166.153 3	R(1)	3	0.255E-23
2	4169.619 7	R(2)	3	0.372E-23
3	4170.055 139(6)*	P(20)	1	0.252E-21
4	4170.429 4	R(0)	2	0.714E-23
5	4173.020 6	R(3)	3	0.473E-23
6	4173.974 4	R(1)	2	0.141E-22
7	4175.202 440(6)*	P(19)	1	0.349E-21
8	4176.355 9	R(4)	3	0.554E-23
9	4177.453 6	R(2)	2	0.205E-22
10	4179.136 9	P(7)	4	0.100E-23
11	4179.625 5	R(5)	3	0.612E-23
12	4180.282 521(5)*	P(18)	1	0.474E-21
13	4180.867 0	R(3)	2	0.261E-22
14	4182.829 2	R(6)	3	0.645E-23
15	4184.214 4	R(4)	2	0.306E-22
16	4185.295 235(4)*	P(17)	1	0.629E-21
17	4185.967 0	R(7)	3	0.655E-23
18	4187.495 7	R(5)	2	0.338E-22
19	4189.038 6	R(8)	3	0.643E-23

molecular species identification: 1 — $^{12}C^{16}O$, 2 — $^{13}C^{16}O$, 3 — $^{12}C^{18}O$, 4 — $^{12}C^{17}O$, 5 — $^{13}C^{18}O$


CO 1060 Pa (8.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
4190
4191
4192
4193
4194
4195
4196
4197
4198
4199
4200
4201
4202
4203
4204
4205
4206
4207
4208
4209
4210
4211
4212
4213
4214
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4190.240 437(4)*	P(16)	1	0.818E-21
2	4190.710 8	R(6)	2	0.356E-22
3	4192.044 0	R(9)	3	0.613E-23
4	4193.859 5	R(7)	2	0.361E-22
5	4194.983 0	R(10)	3	0.567E-23
6	4195.117 979(4)*	P(15)	1	0.104E-20
7	4196.941 7	R(8)	2	0.354E-22
8	4197.855 4	R(11)	3	0.512E-23
9	4199.927 715(3)*	P(14)	1	0.129E-20
10	4199.957 3	R(9)	2	0.337E-22
11	4200.661 2	R(12)	3	0.451E-23
12	4202.906 1	R(10)	2	0.312E-22
13	4203.400 3	R(13)	3	0.388E-23
14	4204.669 499(3)*	P(13)	1	0.156E-20
15	4205.788 0	R(11)	2	0.282E-22
16	4206.072 4	R(14)	3	0.326E-23
17	4208.602 9	R(12)	2	0.248E-22
18	4208.677 4	R(15)	3	0.268E-23
19	4209.343 183(3)*	P(12)	1	0.185E-20
20	4211.215 3	R(16)	3	0.216E-23
21	4211.350 6	R(13)	2	0.213E-22
22	4213.685 8	R(17)	3	0.170E-23
23	4213.948 621(2)*	P(11)	1	0.214E-20
24	4214.030 9	R(14)	2	0.179E-22

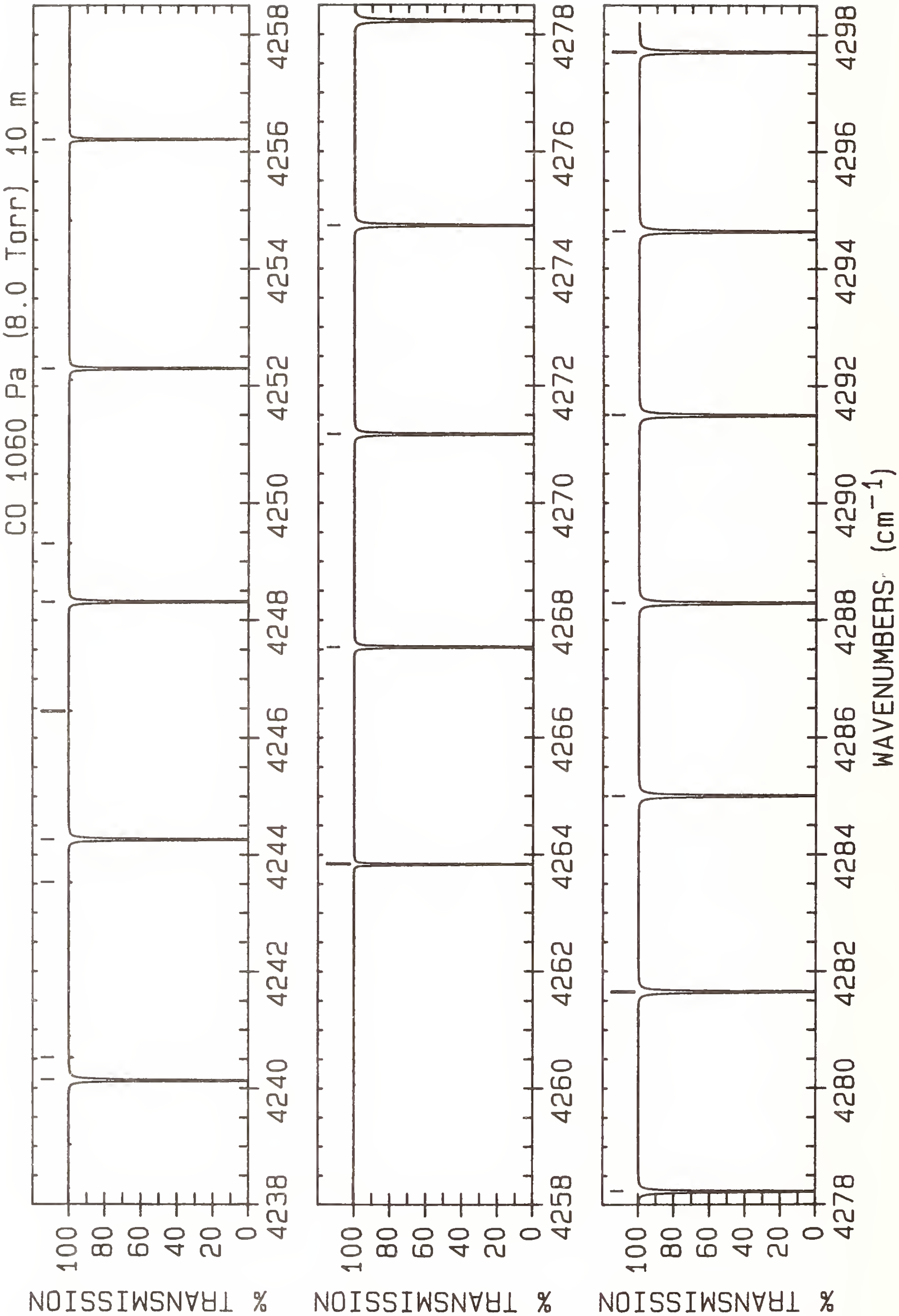
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$



CO 1060 Pa (8.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
4214
4215
4216
4217
4218
4219
4220
4221
4222
4223
4224
4225
4226
4227
4228
4229
4230
4231
4232
4233
4234
4235
4236
4237
4238
WAVENUMBERS (cm^{-1})

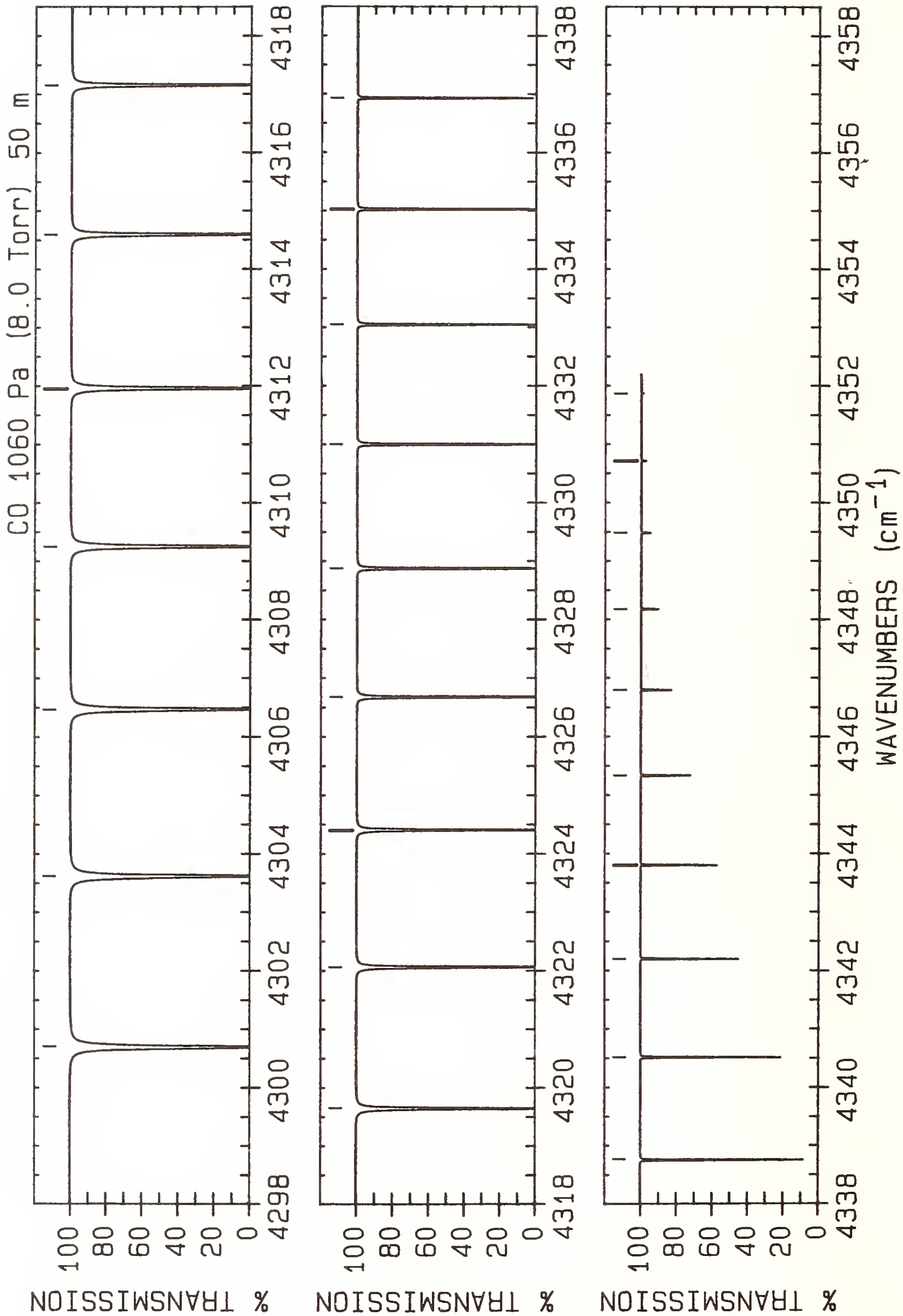
LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4216.088 9	R(18)	3	0.131E-23
2	4216.643 9	R(15)	2	0.147E-22
3	4218.485 666(2)*	P(10)	1	0.240E-20
4	4219.189 2	R(16)	2	0.118E-22
5	4221.666 9	R(17)	2	0.928E-23
6	4222.954 170(2)*	P(9)	1	0.262E-20
7	4224.076 7	R(18)	2	0.715E-23
8	4224.505 3	R(4)	4	0.107E-23
9	4226.418 5	R(19)	2	0.540E-23
10	4227.353 988(2)*	P(8)	1	0.277E-20
11	4227.846 9	R(5)	4	0.118E-23
12	4228.692 3	R(20)	2	0.399E-23
13	4230.897 7	R(21)	2	0.290E-23
14	4231.120 3	R(6)	4	0.124E-23
15	4231.684 973(2)*	P(7)	1	0.282E-20
16	4233.034 9	R(22)	2	0.206E-23
17	4234.325 4	R(7)	4	0.125E-23
18	4235.103 5	R(23)	2	0.144E-23
19	4235.946 976(2)*	P(6)	1	0.278E-20
20	4237.103 4	R(24)	2	0.982E-24
21	4237.461 9	R(8)	4	0.123E-23

molecular species identification: 1 − $^{12}C^{16}O$, 2 − $^{13}C^{16}O$, 3 − $^{12}C^{18}O$, 4 − $^{12}C^{17}O$, 5 − $^{13}C^{18}O$


CO 1060 Pa (8.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
4238
4240
4242
4244
4246
4248
4250
4252
4254
4256
4258
4260
4262
4264
4266
4268
4270
4272
4274
4276
4278
4280
4282
4284
4286
4288
4290
4292
4294
4296
4298
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4240.139 852(2)*	P(5)	1	0.260E-20
2	4240.529 9	R(9)	4	0.116E-23
3	4243.529 1	R(10)	4	0.107E-23
4	4244.263 453(2)*	P(4)	1	0.230E-20
5	4246.459 4	R(11)	4	0.965E-24
6	4248.317 633(2)*	P(3)	1	0.187E-20
7	4249.320 6	R(12)	4	0.846E-24
8	4252.302 244(3)*	P(2)	1	0.133E-20
9	4256.217 140(3)*	P(1)	1	0.692E-21
10	4263.837 198(3)*	R(0)	1	0.713E-21
11	4267.542 066(2)*	R(1)	1	0.141E-20
12	4271.176 631(2)*	R(2)	1	0.205E-20
13	4274.740 746(2)*	R(3)	1	0.260E-20
14	4278.234 265(2)*	R(4)	1	0.303E-20
15	4281.657 040(2)*	R(5)	1	0.333E-20
16	4285.008 925(2)*	R(6)	1	0.350E-20
17	4288.289 773(2)*	R(7)	1	0.353E-20
18	4291.499 438(2)*	R(8)	1	0.344E-20
19	4294.637 773(2)*	R(9)	1	0.325E-20
20	4297.704 631(3)*	R(10)	1	0.298E-20

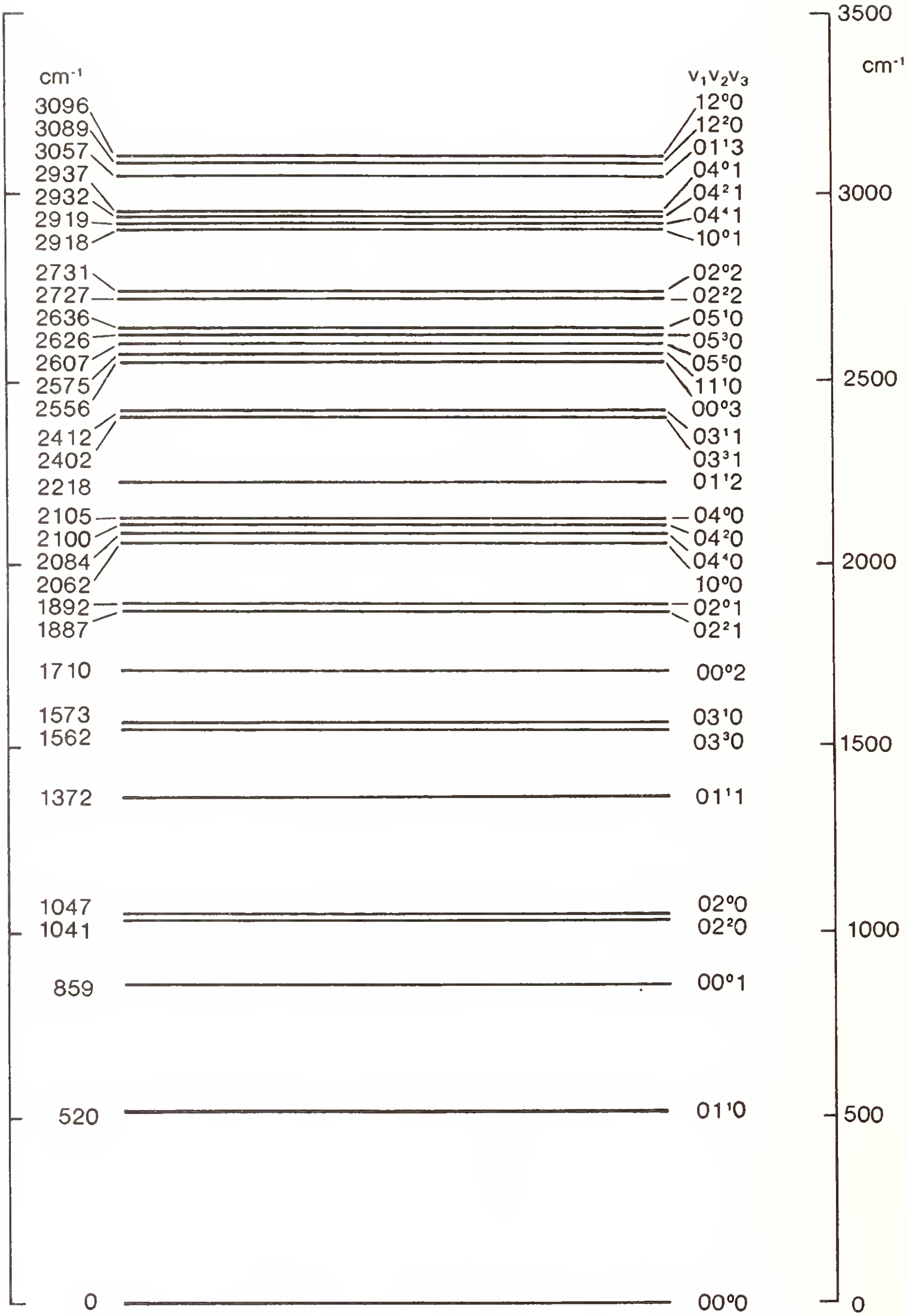
molecular species identification: 1 – $^{12}C^{16}O$, 2 – $^{13}C^{16}O$, 3 – $^{12}C^{18}O$, 4 – $^{12}C^{17}O$, 5 – $^{13}C^{18}O$


CO 1060 Pa (8.0 Torr) 50 m
% TRANSMISSION
100 80 60 40 20 0
4298 4300 4302 4304 4306 4308 4310 4312 4314 4316 4318
4318 4320 4322 4324 4326 4328 4330 4332 4334 4336 4338
4338 4340 4342 4344 4346 4348 4350 4352 4354 4356 4358
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	ROTATIONAL ASSIGNMENT	Mol.	INTENSITY (cm/molecule)
1	4300.699 867(3)*	R(11)	1	0.267E-20
2	4303.623 333(3)*	R(12)	1	0.232E-20
3	4306.474 883(4)*	R(13)	1	0.197E-20
4	4309.254 372(4)*	R(14)	1	0.164E-20
5	4311.961 652(4)*	R(15)	1	0.133E-20
6	4314.596 577(5)*	R(16)	1	0.106E-20
7	4317.159 002(6)*	R(17)	1	0.819E-21
8	4319.648 781(6)*	R(18)	1	0.622E-21
9	4322.065 766(7)*	R(19)	1	0.462E-21
10	4324.409 813(9)*	R(20)	1	0.336E-21
11	4326.680 776(10)*	R(21)	1	0.240E-21
12	4328.878 508(13)*	R(22)	1	0.167E-21
13	4331.002 864(15)*	R(23)	1	0.115E-21
14	4333.053 698(18)*	R(24)	1	0.768E-22
15	4335.030 865(22)*	R(25)	1	0.504E-22
16	4336.934 219(26)*	R(26)	1	0.325E-22
17	4338.763 614(31)*	R(27)	1	0.205E-22
18	4340.518 91(4)*	R(28)	1	0.127E-22
19	4342.199 95(4)*	R(29)	1	0.771E-23
20	4343.806 59(5)*	R(30)	1	0.459E-23
21	4345.338 70(6)*	R(31)	1	0.268E-23
22	4346.796 12(7)*	R(32)	1	0.154E-23
23	4348.178 71(8)*	R(33)	1	0.864E-24
24	4349.486 32(9)*	R(34)	1	0.476E-24
25	4350.718 82(10)*	R(35)	1	0.258E-24
26	4351.876 04(11)*	R(36)	1	0.137E-24

molecular species identification: 1 — $^{12}C^{16}O$, 2 — $^{13}C^{16}O$, 3 — $^{12}C^{18}O$, 4 — $^{12}C^{17}O$, 5 — $^{13}C^{18}O$

Energy Levels for OCS

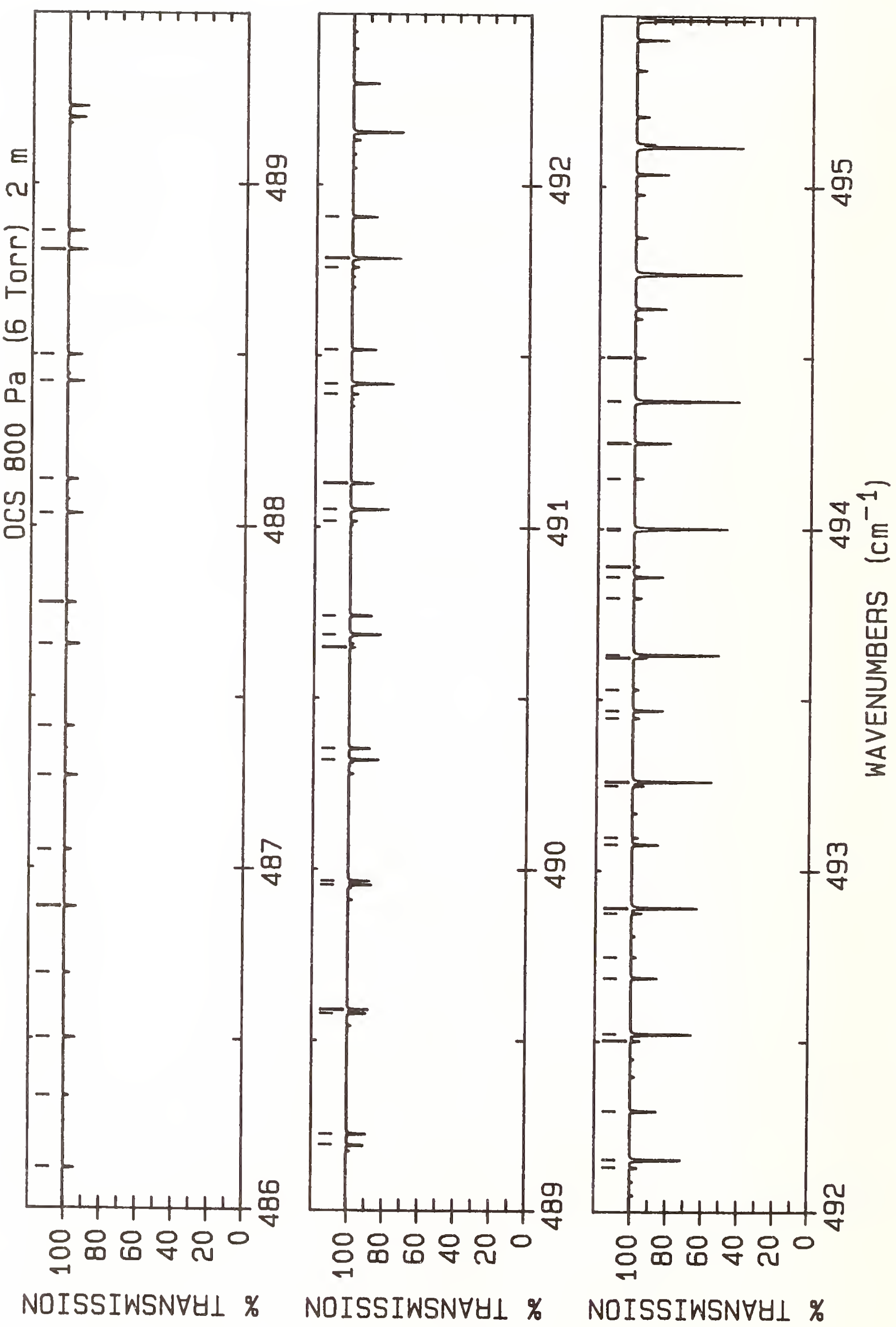


ATLAS OF OCS ABSORPTION LINES FROM 486 cm^{-1} to 567 cm^{-1}

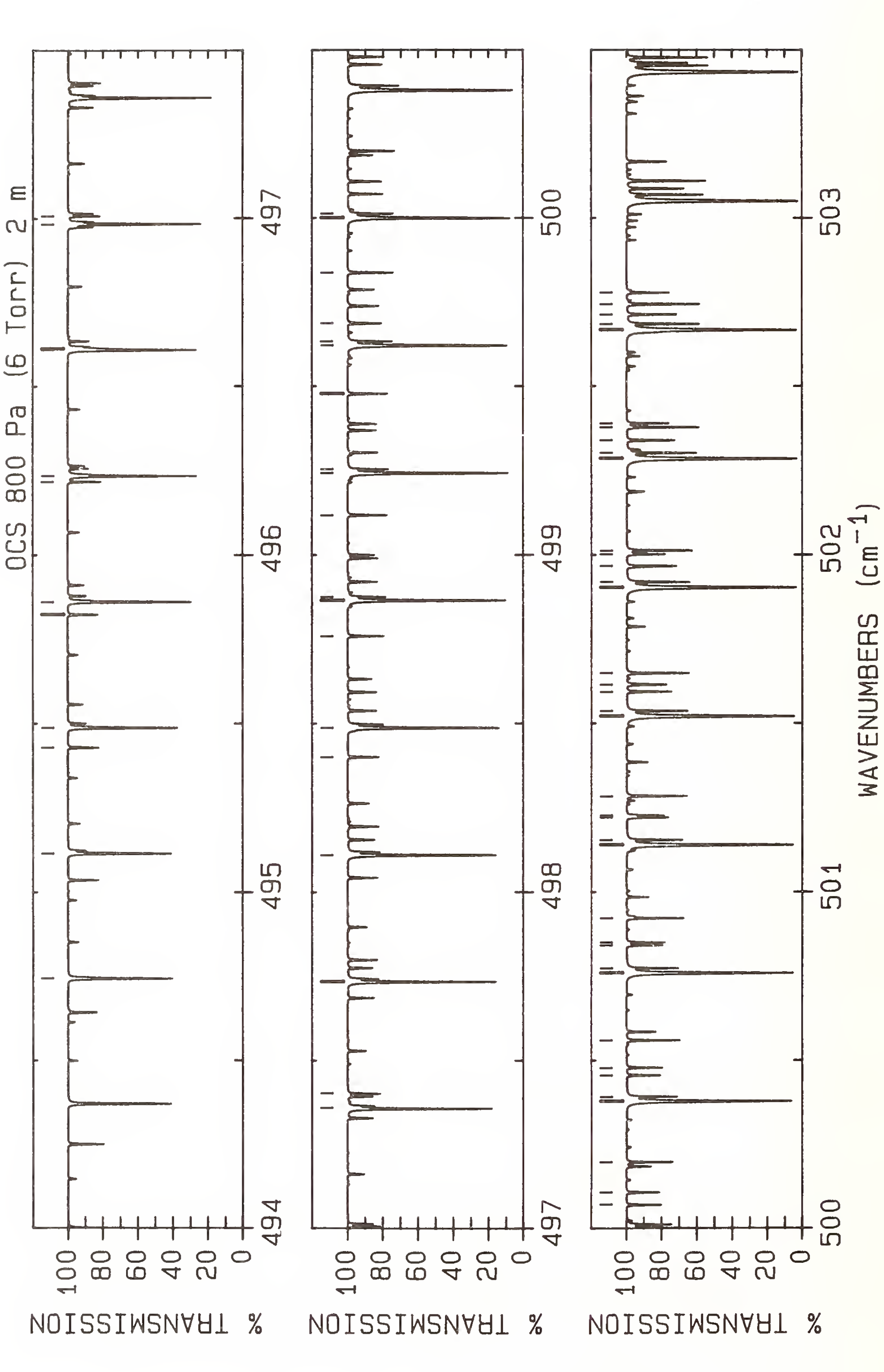
key:

Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$01^10\text{-}00^00$
B		$02^20\text{-}01^{1e}0$
C		$02^20\text{-}01^{1f}0$
D		$01^11\text{-}00^01$
E		$03^30\text{-}02^{2e}0$
F		$03^30\text{-}02^{2f}0$
G		$03^10\text{-}02^00$
H		$02^00\text{-}01^10$
I		$03^10\text{-}02^{2e}0$
J		$03^10\text{-}02^{2f}0$
P	$^{16}O^{12}C^{34}S$	$01^10\text{-}00^00$
Q		$02^20\text{-}01^{1e}0$
R		$02^20\text{-}01^{1f}0$
S		$02^00\text{-}01^10$
T	$^{16}O^{13}C^{32}S$	$01^10\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.047 debye at a temperature of 296 K. A Herman-Wallis constant of $C_1 = 0.0045$ is included in the intensity calculation for the lines of all bands.

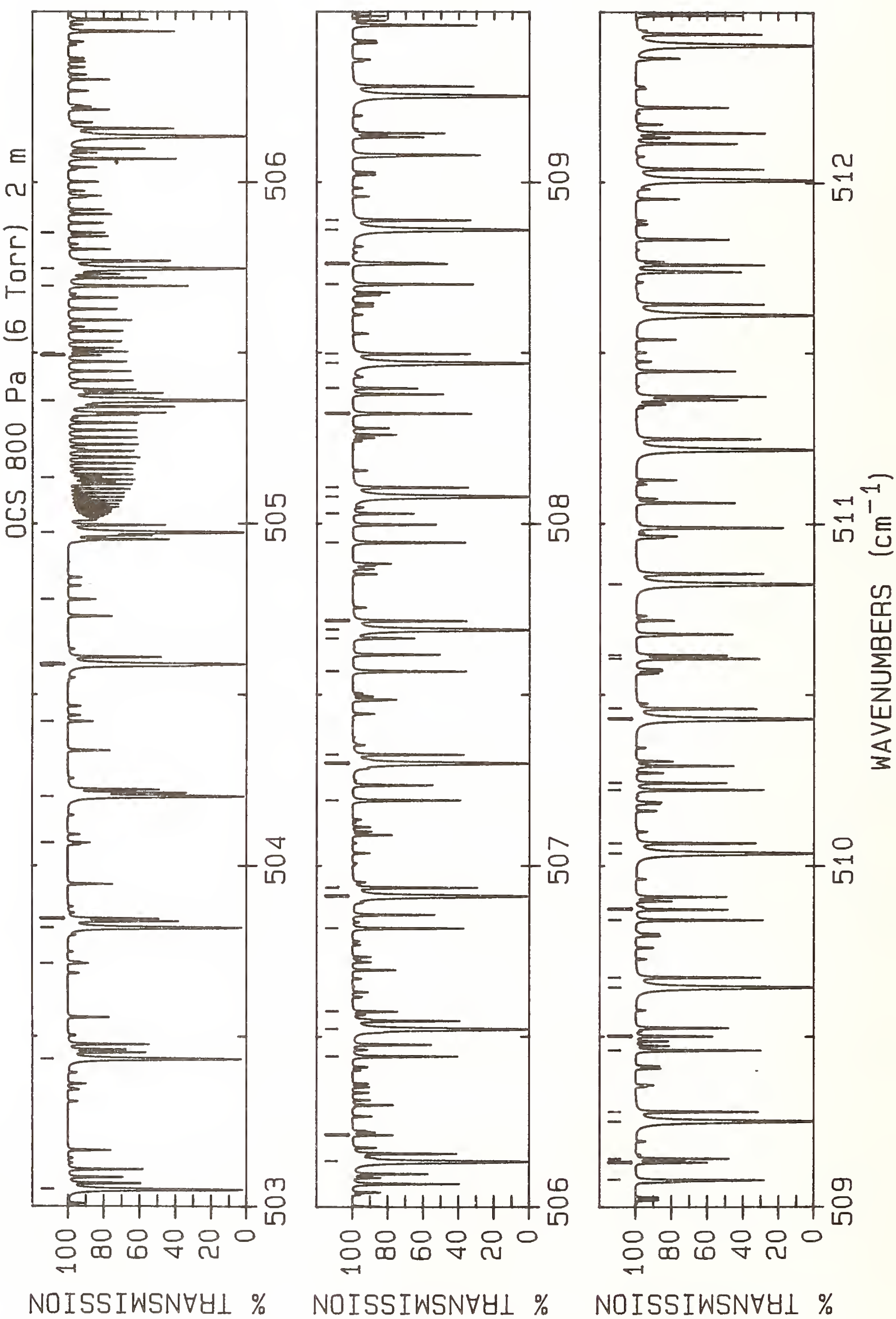

OCS 800 Pa (6 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
486
487
488
489
490
491
492
493
494
495
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	486.120 97(47)	475.34	0.628E-23	P(48)	T
2	486.332 35(17)	1622.09	0.310E-23	P(89)	A
3	486.503 30(43)	455.95	0.680E-23	P(47)	T
4	486.692 21(17)	1586.11	0.368E-23	P(88)	A
5	486.886 12(40)	436.96	0.734E-23	P(46)	T
6	487.052 61(17)	1550.52	0.436E-23	P(87)	A
7	487.269 42(37)	418.37	0.791E-23	P(45)	T
8	487.413 53(16)	1515.34	0.516E-23	P(86)	A
9	487.653 20(34)	400.19	0.850E-23	P(44)	T
10	487.774 98(16)*	1480.56	0.609E-23	P(85)	A
11	488.037 47(32)	382.41	0.911E-23	P(43)	T
12	488.136 96(16)*	1446.18	0.717E-23	P(84)	A
13	488.422 22(29)	365.03	0.974E-23	P(42)	T
14	488.499 47(16)*	1412.20	0.842E-23	P(83)	A
15	488.807 45(27)	348.06	0.104E-22	P(41)	T
16	488.862 50(16)*	1378.63	0.987E-23	P(82)	A
17	489.193 16(25)	331.49	0.110E-22	P(40)	T
18	489.226 07(16)*	1345.45	0.115E-22	P(81)	A
19	489.579 36(23)	315.33	0.117E-22	P(39)	T
20	489.590 17(15)*	1312.68	0.135E-22	P(80)	A
21	489.954 80(15)*	1280.32	0.157E-22	P(79)	A
22	489.966 03(22)	299.57	0.124E-22	P(38)	T
23	490.319 95(15)*	1248.35	0.182E-22	P(78)	A
24	490.353 19(20)	284.21	0.131E-22	P(37)	T
25	490.648 36(16)	1574.38	0.318E-23	P(59)	D
26	490.685 64(15)*	1216.79	0.212E-22	P(77)	A
27	490.740 82(19)	269.25	0.138E-22	P(36)	T
28	491.017 99(16)	1550.55	0.354E-23	P(58)	D
29	491.051 86(15)*	1185.63	0.245E-22	P(76)	A
30	491.128 93(17)	254.70	0.144E-22	P(35)	T
31	491.388 22(16)	1527.12	0.392E-23	P(57)	D
32	491.418 60(15)*	1154.87	0.283E-22	P(75)	A
33	491.517 53(16)	240.56	0.151E-22	P(34)	T
34	491.759 07(16)	1504.10	0.434E-23	P(56)	D
35	491.785 88(15)*	1124.51	0.326E-22	P(74)	A
36	491.906 60(15)	226.81	0.158E-22	P(33)	T
37	492.130 52(15)	1481.48	0.479E-23	P(55)	D
38	492.153 69(15)*	1094.56	0.375E-22	P(73)	A
39	492.296 14(14)	213.47	0.164E-22	P(32)	T
40	492.502 58(15)	1459.26	0.527E-23	P(54)	D
41	492.522 03(15)*	1065.01	0.430E-22	P(72)	A
42	492.686 17(13)	200.54	0.170E-22	P(31)	T
43	492.746 97(25)	1676.68	0.309E-23	P(75)	B
44	492.875 25(15)	1437.44	0.579E-23	P(53)	D
45	492.889 38(25)	1587.83	0.330E-23	P(72)	C
46	492.890 90(15)*	1035.86	0.492E-22	P(71)	A
47	493.076 67(12)	188.01	0.176E-22	P(30)	T
48	493.096 54(25)	1646.29	0.353E-23	P(74)	B
49	493.248 53(15)	1416.03	0.634E-23	P(52)	D
50	493.259 59(25)	1558.61	0.378E-23	P(71)	C
51	493.260 30(15)*	1007.12	0.562E-22	P(70)	A
52	493.446 57(25)	1616.30	0.403E-23	P(73)	B
53	493.467 64(11)	175.88	0.181E-22	P(29)	T
54	493.528 91(19)	954.88	0.310E-23	P(69)	P
55	493.622 42(15)	1395.02	0.693E-23	P(51)	D
56	493.630 23(15)*	978.78	0.640E-22	P(69)	A
57	493.630 33(25)	1529.81	0.431E-23	P(70)	C
58	493.797 08(25)	1586.71	0.459E-23	P(72)	B
59	493.859 09(10)	164.16	0.186E-22	P(28)	T
60	493.890 03(18)	927.62	0.352E-23	P(68)	P
61	493.996 91(15)	1374.42	0.756E-23	P(50)	D
62	494.000 69(15)*	950.84	0.728E-22	P(68)	A
63	494.001 59(25)	1501.40	0.491E-23	P(69)	C
64	494.148 06(25)	1557.53	0.522E-23	P(71)	B
65	494.251 01(10)	152.84	0.190E-22	P(27)	T
66	494.251 67(17)	900.76	0.398E-23	P(67)	P
67	494.371 68(15)*	923.31	0.826E-22	P(67)	A
68	494.372 02(15)	1354.21	0.823E-23	P(49)	D
69	494.373 38(25)	1473.40	0.559E-23	P(68)	C
70	494.499 54(25)	1528.76	0.592E-23	P(70)	B



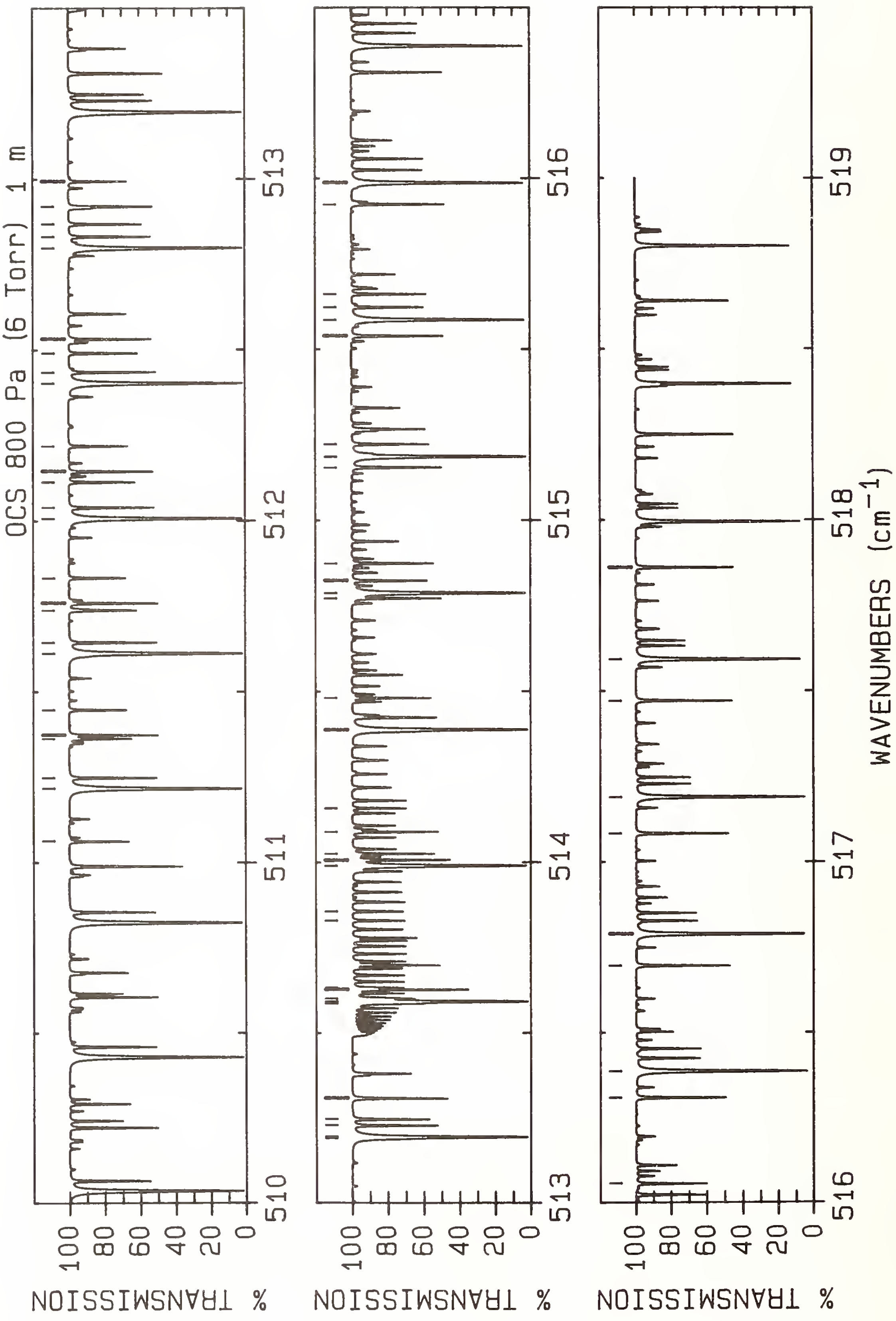
OCS 800 Pa (6 Torr) 2 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
WAVENUMBERS (cm^{-1})
494
495
496
497
497
498
499
500
500
501
502
503
100
80
60
40
20
0

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	494.743 21(15)*	896.18	0.935E-22	P(66)	A	36	500.393 33(26)	1080.42	0.319E-22	P(52)	C
2	495.115 26(15)*	869.46	0.106E-21	P(65)	A	37	500.456 38(15)	1085.84	0.224E-22	P(33)	D
3	495.429 61(8)	121.31	0.200E-22	P(24)	T	38	500.479 27(7)	504.37	0.229E-22	P(50)	P
4	495.487 84(15)*	843.13	0.119E-21	P(64)	A	39	500.560 35(26)	1101.34	0.354E-22	P(53)	B
5	495.823 42(7)	111.60	0.202E-22	P(23)	T	40	500.759 63(15)*	517.00	0.498E-21	P(50)	A
6	495.860 96(15)*	817.21	0.134E-21	P(63)	A	41	500.774 03(26)	1059.31	0.349E-22	P(51)	C
7	496.217 71(6)	102.30	0.203E-22	P(22)	T	42	500.841 81(15)	1072.49	0.233E-22	P(32)	D
8	496.234 60(15)*	791.70	0.150E-21	P(62)	A	43	500.850 28(6)	484.60	0.248E-22	P(49)	P
9	496.608 78(15)*	766.58	0.168E-21	P(61)	A	44	500.922 51(26)	1079.84	0.386E-22	P(52)	B
10	496.612 46(6)	93.41	0.203E-22	P(21)	T	45	501.140 15(15)*	496.74	0.542E-21	P(49)	A
11	496.983 48(15)*	741.87	0.188E-21	P(60)	A	46	501.155 25(26)	1038.59	0.380E-22	P(50)	C
12	497.007 67(5)	84.92	0.202E-22	P(20)	T	47	501.221 81(6)	465.23	0.269E-22	P(48)	P
13	497.358 71(15)*	717.57	0.209E-21	P(59)	A	48	501.227 85(15)	1059.56	0.242E-22	P(31)	D
14	497.403 36(5)	76.83	0.200E-22	P(19)	T	49	501.285 37(26)	1058.74	0.419E-22	P(51)	B
15	497.734 48(15)*	693.67	0.232E-21	P(58)	A	50	501.521 20(15)*	476.88	0.589E-21	P(48)	A
16	498.110 77(15)*	670.17	0.258E-21	P(57)	A	51	501.536 99(26)	1018.28	0.413E-22	P(49)	C
17	498.401 34(25)	1238.86	0.203E-22	P(59)	B	52	501.593 85(6)	446.25	0.290E-22	P(47)	P
18	498.487 59(15)*	647.08	0.285E-21	P(56)	A	53	501.614 49(15)	1047.02	0.250E-22	P(30)	D
19	498.759 57(25)	1214.93	0.224E-22	P(58)	B	54	501.648 92(26)	1038.05	0.453E-22	P(50)	B
20	498.864 94(15)*	624.39	0.315E-21	P(55)	A	55	501.902 78(15)*	457.42	0.637E-21	P(47)	A
21	498.875 77(26)	1168.96	0.218E-22	P(56)	C	56	501.919 25(27)	998.38	0.448E-22	P(48)	C
22	499.118 42(26)	1191.40	0.247E-22	P(57)	B	57	501.966 42(6)	427.66	0.313E-22	P(46)	P
23	499.242 82(15)*	602.10	0.347E-21	P(54)	A	58	502.001 74(15)	1034.89	0.258E-22	P(29)	D
24	499.254 38(26)	1146.22	0.241E-22	P(55)	C	59	502.013 19(26)	1017.76	0.490E-22	P(49)	B
25	499.477 91(26)	1168.28	0.271E-22	P(56)	B	60	502.284 88(15)*	438.37	0.689E-21	P(46)	A
26	499.621 23(15)*	580.22	0.381E-21	P(53)	A	61	502.302 04(27)	978.88	0.485E-22	P(47)	C
27	499.633 51(26)	1123.88	0.265E-22	P(54)	C	62	502.339 50(5)	409.47	0.336E-22	P(45)	P
28	499.687 33(15)	1113.73	0.205E-22	P(35)	D	63	502.378 17(26)	997.88	0.528E-22	P(48)	B
29	499.838 06(26)	1145.56	0.297E-22	P(55)	B	64	502.389 59(15)	1023.17	0.265E-22	P(28)	D
30	500.000 17(15)*	558.74	0.417E-21	P(52)	A	65	502.667 51(15)*	419.73	0.742E-21	P(45)	A
31	500.013 16(26)	1101.95	0.291E-22	P(53)	C	66	502.685 34(27)	959.78	0.524E-22	P(46)	C
32	500.071 55(15)	1099.58	0.215E-22	P(34)	D	67	502.713 10(5)	391.68	0.361E-22	P(44)	P
33	500.108 78(7)	524.53	0.210E-22	P(51)	P	68	502.743 88(27)	978.40	0.568E-22	P(47)	B
34	500.198 87(26)	1123.25	0.325E-22	P(54)	B	69	502.778 05(15)	1011.84	0.271E-22	P(27)	D
35	500.379 64(15)*	537.67	0.457E-21	P(51)	A						



OCS 800 Pa (6 Torr) 2 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100 80 60 40 20 0
503 504 505 506
506 507 508 509
509 510 511 512
WAVENUMBERS (cm⁻¹)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	503.050 66(15)*	401.49	0.797E-21	P(44)	A
2	503.434 34(15)*	383.65	0.855E-21	P(43)	A
3	503.714 47(15)*	1263.19	0.117E-22	P(60)	H
4	503.818 55(15)*	366.22	0.914E-21	P(42)	A
5	503.845 48(27)	922.39	0.696E-22	P(44)	B
6	504.068 07(15)*	1238.86	0.132E-22	P(59)	H
7	504.203 28(15)*	349.19	0.975E-21	P(41)	A
8	504.422 80(15)*	1214.93	0.148E-22	P(58)	H
9	504.583 67(27)	887.08	0.788E-22	P(42)	B
10	504.588 53(15)*	332.57	0.104E-20	P(40)	A
11	504.778 65(15)*	1191.40	0.167E-22	P(57)	H
12	504.974 31(15)*	316.35	0.110E-20	P(39)	A
13	505.135 60(15)*	1168.28	0.186E-22	P(56)	H
14	505.360 61(15)*	300.54	0.117E-20	P(38)	A
15	505.493 65(15)*	1145.56	0.208E-22	P(55)	H
16	505.696 82(27)	837.16	0.930E-22	P(39)	B
17	505.747 44(15)*	285.13	0.123E-20	P(37)	A
18	505.852 79(15)*	1123.25	0.231E-22	P(54)	H
19	506.134 79(15)*	270.13	0.129E-20	P(36)	A
20	506.213 00(15)*	1101.34	0.257E-22	P(53)	H
21	506.442 90(28)	805.90	0.102E-21	P(37)	B
22	506.522 66(15)*	255.53	0.136E-20	P(35)	A
23	506.574 28(15)*	1079.84	0.285E-22	P(52)	H
24	506.817 16(28)	790.88	0.107E-21	P(36)	B
25	506.911 05(15)*	241.34	0.142E-20	P(34)	A
26	506.935 95(28)	776.53	0.102E-21	P(35)	C
27	506.936 61(15)*	1058.74	0.314E-22	P(51)	H
28	507.192 24(28)	776.26	0.112E-21	P(35)	B
29	507.299 96(15)*	227.55	0.148E-20	P(33)	A
30	507.299 98(15)*	1038.05	0.346E-22	P(50)	H
31	507.325 47(28)	762.31	0.107E-21	P(34)	C
32	507.568 14(28)	762.05	0.116E-21	P(34)	B
33	507.664 38(15)*	1017.76	0.380E-22	P(49)	H
34	507.689 40(15)*	214.17	0.154E-20	P(32)	A
35	507.715 51(28)	748.49	0.111E-21	P(33)	C
36	507.944 88(28)	748.25	0.120E-21	P(33)	B
37	508.029 81(15)*	997.88	0.417E-22	P(48)	H
38	508.079 35(15)*	201.19	0.160E-20	P(31)	A
39	508.106 06(28)	735.07	0.115E-21	P(32)	C
40	508.322 46(28)	734.85	0.124E-21	P(32)	B
41	508.396 25(15)*	978.40	0.456E-22	P(47)	H
42	508.469 82(15)*	188.62	0.165E-20	P(30)	A
43	508.497 13(28)	722.07	0.119E-21	P(31)	C
44	508.700 88(28)	721.86	0.128E-21	P(31)	B
45	508.760 69(4)	160.67	0.770E-22	P(28)	P
46	508.763 69(15)*	959.33	0.496E-22	P(46)	H
47	508.860 81(15)*	176.45	0.170E-20	P(29)	A
48	508.888 71(28)	709.47	0.123E-21	P(30)	C
49	509.080 15(28)	709.27	0.132E-21	P(30)	B
50	509.132 13(15)*	940.66	0.540E-22	P(45)	H
51	509.143 01(4)	149.59	0.788E-22	P(27)	P
52	509.252 32(15)*	164.69	0.175E-20	P(28)	A
53	509.280 80(28)	697.27	0.127E-21	P(29)	C
54	509.460 27(28)	697.09	0.135E-21	P(29)	B
55	509.501 55(15)*	922.39	0.585E-22	P(44)	H
56	509.644 35(15)*	153.34	0.179E-20	P(27)	A
57	509.673 40(28)	685.49	0.130E-21	P(28)	C
58	509.841 26(28)	685.31	0.138E-21	P(28)	B
59	509.871 94(15)*	904.54	0.632E-22	P(43)	H
60	509.872 82(16)	877.17	0.178E-22	P(9)	D
61	510.036 89(15)*	142.38	0.183E-20	P(26)	A
62	510.066 52(28)	674.10	0.132E-21	P(27)	C
63	510.223 10(28)	673.94	0.140E-21	P(27)	B
64	510.243 30(15)*	887.08	0.682E-22	P(42)	H
65	510.429 95(15)*	131.84	0.186E-20	P(25)	A
66	510.460 15(28)	663.13	0.135E-21	P(26)	C
67	510.605 82(28)	662.98	0.142E-21	P(26)	B
68	510.615 62(15)*	870.04	0.733E-22	P(41)	H
69	510.823 53(15)*	121.70	0.188E-20	P(24)	A



OCS 800 Pa (6 Torr) 1 m
% TRANSMISSION
100
80
60
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510
511
512
513
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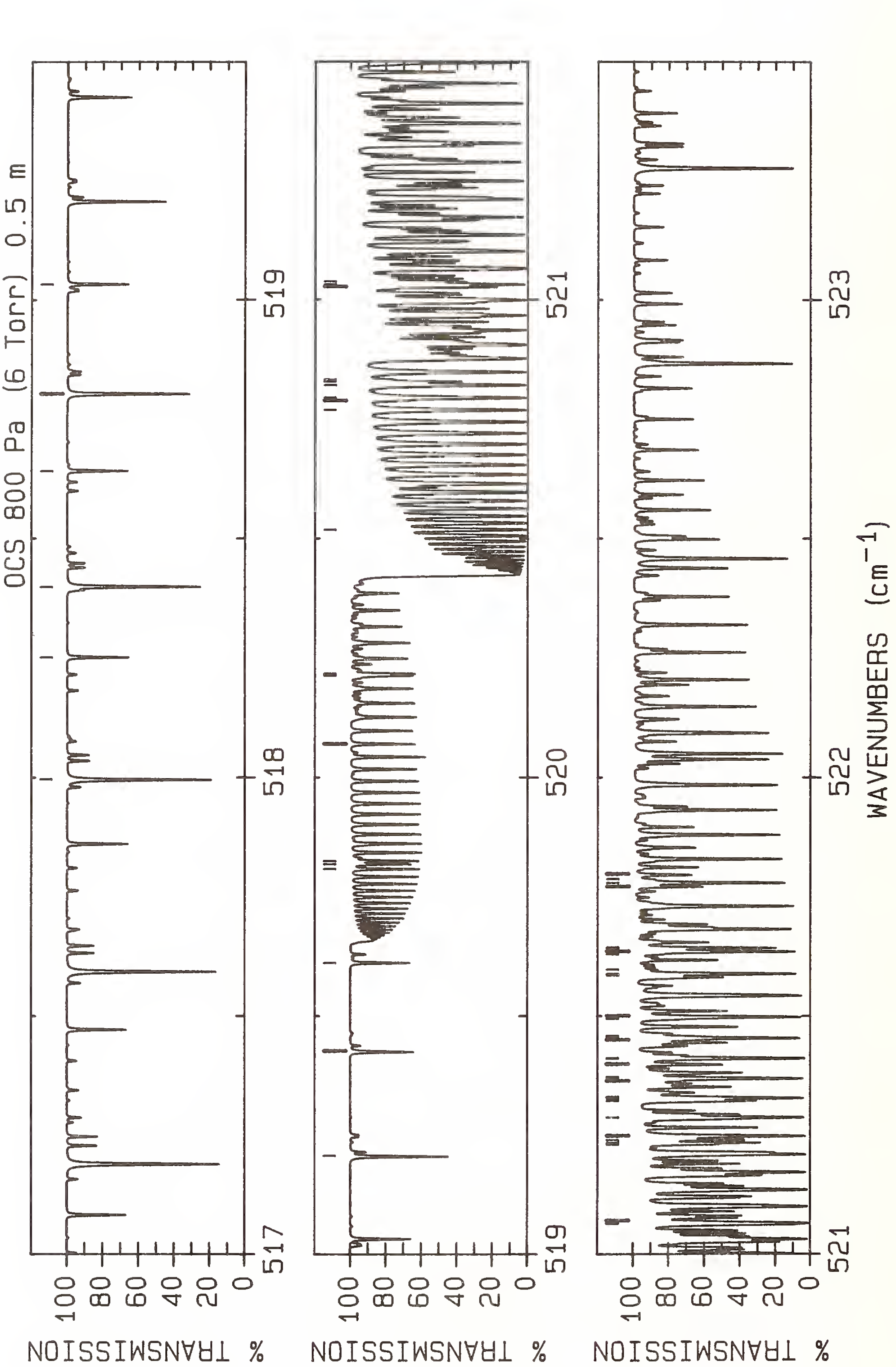
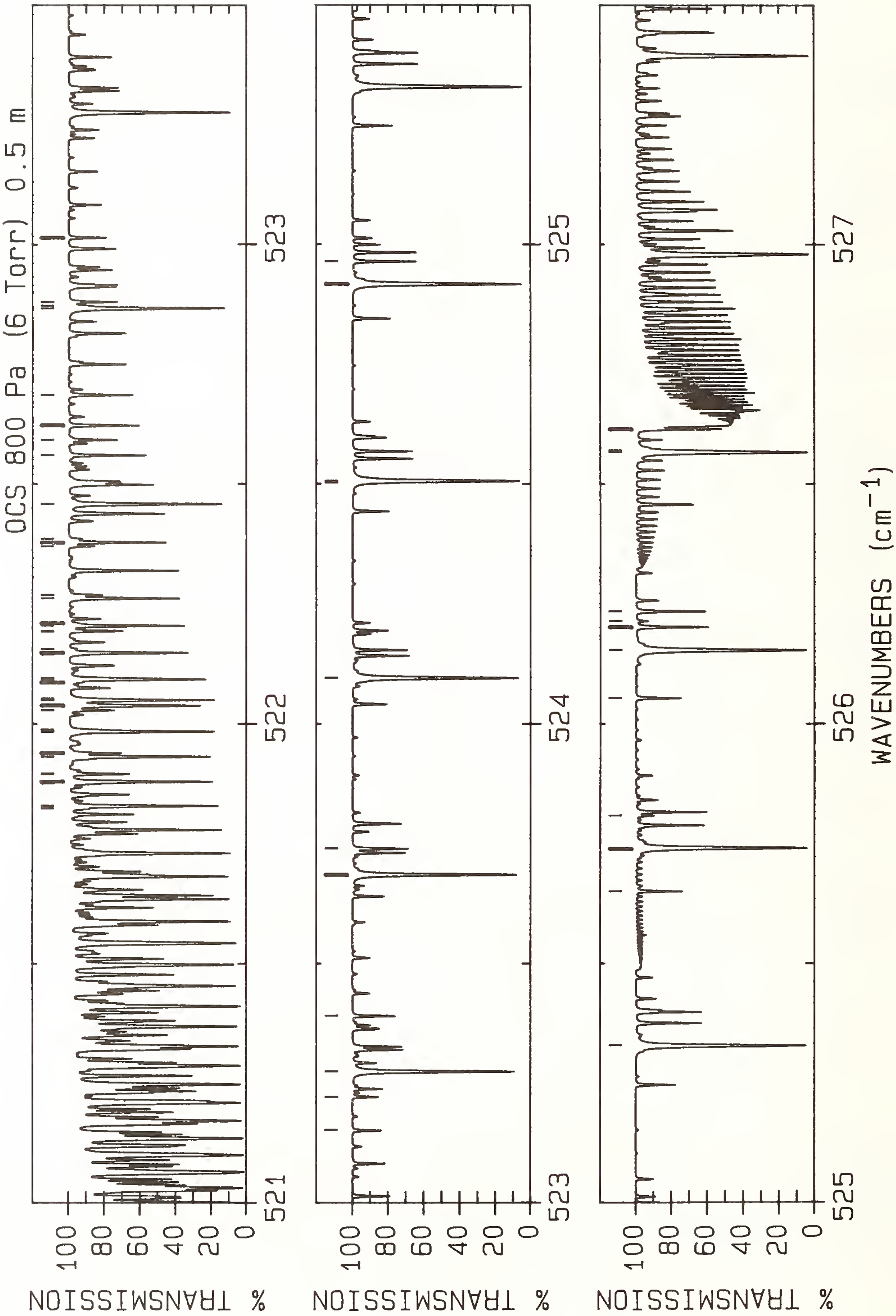
517
518
519
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	511.062 25(4)	100.13	0.833E-22	P(22)	P	36	513.633 51(16)	913.98	0.647E-22	Q(16)	D
2	511.217 62(15)*	111.96	0.190E-20	P(23)	A	37	513.829 47(16)	990.41	0.689E-22	Q(25)	D
3	511.248 93(28)	642.40	0.138E-21	P(24)	C	38	513.856 40(16)	1000.93	0.681E-22	Q(26)	D
4	511.363 09(15)*	837.16	0.841E-22	P(39)	H	39	513.990 62(15)*	55.17	0.178E-20	P(16)	A
5	511.373 88(28)	642.27	0.144E-21	P(24)	B	40	514.006 45(16)	1059.56	0.609E-22	Q(31)	D
6	511.447 62(5)	91.42	0.833E-22	P(21)	P	41	514.008 14(15)*	734.85	0.124E-21	P(32)	H
7	511.612 23(15)*	102.63	0.191E-20	P(22)	A	42	514.025 66(28)	582.63	0.129E-21	P(17)	C
8	511.644 08(28)	632.64	0.138E-21	P(23)	C	43	514.090 02(28)	582.57	0.132E-21	P(17)	B
9	511.738 22(15)*	821.33	0.896E-22	P(38)	H	44	514.159 27(5)	41.56	0.719E-22	P(14)	P
10	511.759 23(28)	632.52	0.144E-21	P(23)	B	45	514.388 80(15)*	48.68	0.172E-20	P(15)	A
11	511.833 49(5)	83.11	0.829E-22	P(20)	P	46	514.389 57(15)*	721.86	0.129E-21	P(31)	H
12	512.007 34(15)*	93.71	0.191E-20	P(21)	A	47	514.481 63(28)	575.66	0.127E-21	P(16)	B
13	512.039 75(28)	623.29	0.139E-21	P(22)	C	48	514.771 87(15)*	709.27	0.135E-21	P(30)	H
14	512.114 28(15)*	805.90	0.953E-22	P(37)	H	49	514.787 49(15)*	42.60	0.166E-20	P(14)	A
15	512.145 46(28)	623.18	0.144E-21	P(22)	B	50	514.823 55(28)	569.22	0.119E-21	P(15)	C
16	512.219 87(5)	75.19	0.821E-22	P(19)	P	51	514.874 14(28)	569.16	0.122E-21	P(15)	B
17	512.402 97(15)*	85.19	0.190E-20	P(20)	A	52	515.155 04(15)*	697.09	0.140E-21	P(29)	H
18	512.435 92(28)	614.35	0.138E-21	P(21)	C	53	515.186 69(15)*	36.92	0.158E-20	P(13)	A
19	512.491 25(15)*	790.88	0.101E-21	P(36)	H	54	515.223 25(28)	563.12	0.113E-21	P(14)	C
20	512.532 58(28)	614.25	0.143E-21	P(21)	B	55	515.539 07(15)*	685.31	0.145E-21	P(28)	H
21	512.799 12(15)*	77.08	0.189E-20	P(19)	A	56	515.586 40(15)*	31.64	0.150E-20	P(12)	A
22	512.832 59(28)	605.81	0.137E-21	P(20)	C	57	515.623 45(28)	557.42	0.107E-21	P(13)	C
23	512.869 13(15)*	776.26	0.107E-21	P(35)	H	58	515.661 89(28)	557.38	0.108E-21	P(13)	B
24	512.920 60(28)	605.72	0.141E-21	P(20)	B	59	515.923 95(15)*	673.94	0.149E-21	P(27)	H
25	512.994 12(5)	60.55	0.793E-22	P(17)	P	60	515.986 61(15)*	26.78	0.140E-20	P(11)	A
26	513.190 20(6)	76.83	0.289E-22	R(19)	T	61	516.057 12(28)	552.11	0.101E-21	P(12)	B
27	513.195 77(15)*	69.37	0.186E-20	P(18)	A	62	516.309 67(15)*	662.98	0.153E-21	P(26)	H
28	513.229 78(28)	597.68	0.135E-21	P(19)	C	63	516.387 33(15)*	22.31	0.130E-20	P(10)	A
29	513.247 91(15)*	762.05	0.112E-21	P(34)	H	64	516.696 23(15)*	652.42	0.157E-21	P(25)	H
30	513.309 50(28)	597.60	0.139E-21	P(19)	B	65	516.788 55(15)*	18.26	0.118E-20	P(9)	A
31	513.586 80(16)	895.77	0.578E-22	Q(13)	D	66	517.083 63(15)*	642.27	0.160E-21	P(24)	H
32	513.592 94(15)*	62.07	0.183E-20	P(17)	A	67	517.190 27(15)*	14.61	0.106E-20	P(8)	A
33	513.601 33(16)	901.44	0.604E-22	Q(14)	D	68	517.471 85(15)*	632.52	0.162E-21	P(23)	H
34	513.627 46(28)	589.95	0.132E-21	P(18)	C	69	517.592 50(15)*	11.36	0.927E-21	P(7)	A
35	513.627 58(15)*	748.25	0.118E-21	P(33)	H	70	517.860 90(15)*	623.18	0.164E-21	P(22)	H

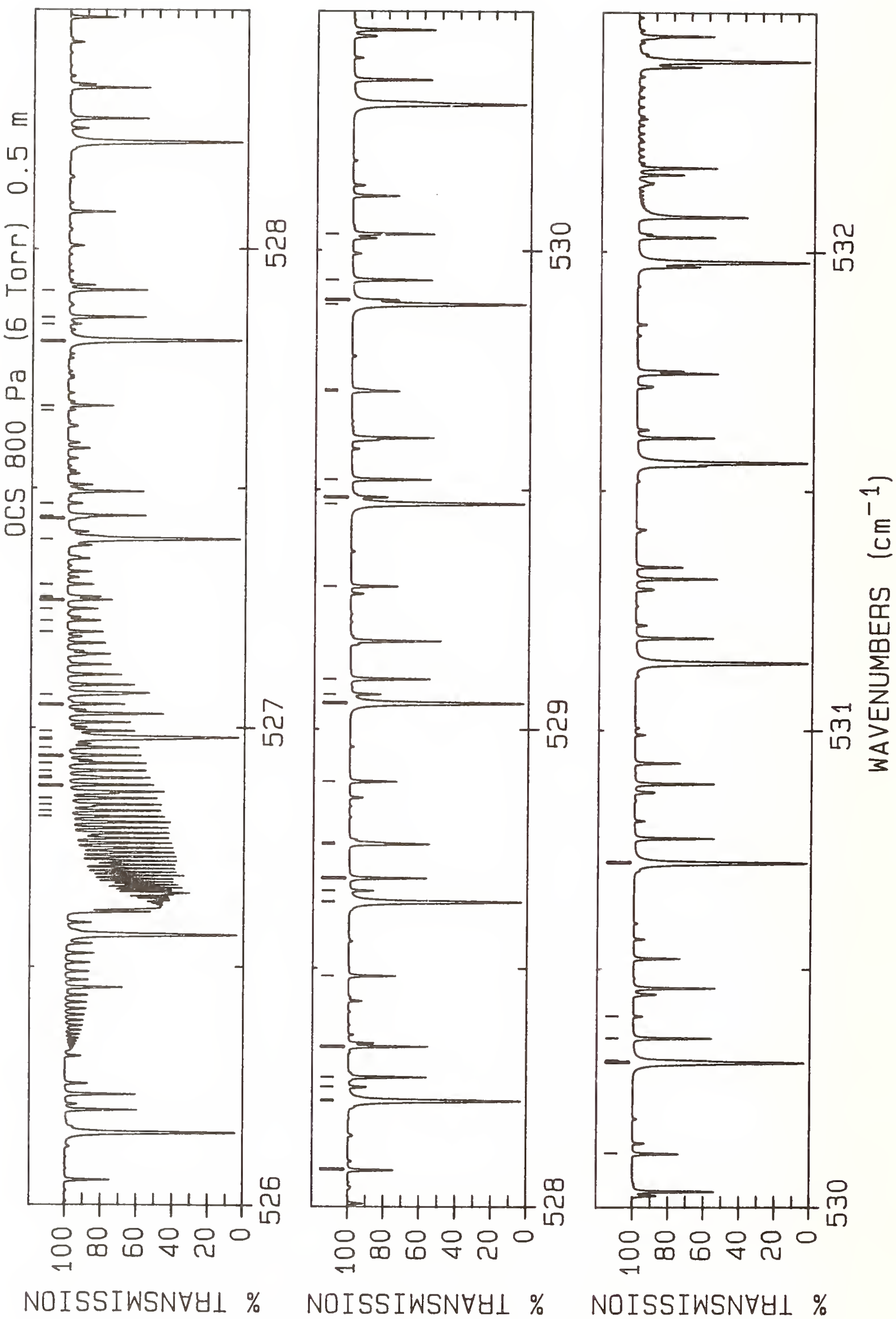

OCS 800 Pa (6 Torr) 0.5 m
% TRANSMISSION
100
80
60
40
20
0
517
518
519
520
521
522
523
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	517.995 22(15)*	8.52	0.788E-21	P(6)	A	36	521.288 23(15)*	383.65	0.229E-20	Q(43)	A
2	518.250 77(15)*	614.25	0.165E-21	P(21)	H	37	521.322 85(28)	721.86	0.321E-21	Q(31)	B
3	518.398 45(15)*	6.09	0.641E-21	P(5)	A	38	521.328 38(15)*	401.49	0.215E-20	Q(44)	A
4	518.641 45(15)*	605.72	0.166E-21	P(20)	H	39	521.331 28(13)	747.86	0.238E-22	Q(61)	P
5	518.802 18(15)*	4.06	0.488E-21	P(4)	A	40	521.363 68(25)	1068.16	0.312E-22	Q(11)	E
6	518.803 38(16)	890.52	0.329E-22	R(12)	D	41	521.369 43(15)*	419.73	0.201E-20	Q(45)	A
7	519.032 94(15)*	597.60	0.166E-21	P(19)	H	42	521.371 85(25)	1073.05	0.333E-22	Q(12)	F
8	519.206 40(15)*	2.43	0.330E-21	P(3)	A	43	521.372 03(25)	1073.05	0.333E-22	Q(12)	E
9	519.425 23(15)*	589.88	0.165E-21	P(18)	H	44	521.398 33(26)	998.38	0.106E-21	Q(48)	C
10	519.427 03(16)	1109.30	0.226E-22	P(17)	G	45	521.398 62(15)*	557.38	0.148E-21	P(13)	H
11	519.611 12(15)*	1.22	0.167E-21	P(2)	A	46	521.400 84(25)	1090.14	0.385E-22	Q(15)	F
12	519.808 07(5)	67.68	0.195E-21	Q(18)	P	47	521.401 27(25)	1090.14	0.385E-22	Q(15)	E
13	519.818 33(15)*	582.57	0.163E-21	P(17)	H	48	521.411 38(15)*	438.37	0.188E-20	Q(46)	A
14	519.824 99(5)	75.19	0.198E-21	Q(19)	P	49	521.411 87(25)	1096.66	0.398E-22	Q(16)	F
15	520.069 66(4)	184.01	0.183E-21	Q(30)	P	50	521.450 14(24)	1118.64	0.425E-22	Q(19)	E
16	520.212 22(15)*	575.66	0.161E-21	P(16)	H	51	521.454 23(15)*	457.42	0.175E-20	Q(47)	A
17	520.216 25(5)	249.29	0.155E-21	Q(35)	P	52	521.458 79(26)	1059.31	0.819E-22	Q(51)	C
18	520.518 47(15)*	42.60	0.400E-20	Q(14)	A	53	521.494 26(24)	1144.28	0.433E-22	Q(22)	E
19	520.768 82(15)*	153.34	0.443E-20	Q(27)	A	54	521.497 98(15)*	476.88	0.162E-20	Q(48)	A
20	520.787 75(7)	504.37	0.638E-22	Q(50)	P	55	521.500 19(26)	1101.95	0.678E-22	Q(53)	C
21	520.794 48(15)*	164.69	0.435E-20	Q(28)	A	56	521.585 25(25)	1192.10	0.451E-22	Q(57)	C
22	520.821 04(15)*	176.45	0.425E-20	Q(29)	A	57	521.588 16(15)*	517.00	0.139E-20	Q(50)	A
23	520.828 26(15)*	0.00	0.341E-21	R(0)	A	58	521.596 85(24)	1206.55	0.405E-22	Q(28)	F
24	520.832 84(7)	524.53	0.590E-22	Q(51)	P	59	521.628 73(25)	1239.61	0.363E-22	Q(59)	C
25	521.027 13(28)	589.88	0.356E-21	Q(18)	B	60	521.634 60(15)*	537.67	0.129E-20	Q(51)	A
26	521.032 43(15)*	270.13	0.334E-20	Q(36)	A	61	521.636 97(24)	1230.57	0.385E-22	Q(30)	F
27	521.038 35(28)	663.13	0.340E-21	Q(26)	C	62	521.641 95(5)	3.96	0.442E-22	R(4)	P
28	521.063 79(28)	685.49	0.325E-21	Q(28)	C	63	521.642 16(15)*	1.22	0.686E-21	R(2)	A
29	521.066 26(15)*	285.13	0.319E-20	Q(37)	A	64	521.643 67(24)	1230.56	0.385E-22	Q(30)	E
30	521.071 27(9)	631.27	0.386E-22	Q(56)	P	65	521.771 09(27)	922.39	0.171E-21	Q(44)	B
31	521.231 33(27)	837.49	0.203E-21	Q(39)	C	66	521.772 83(24)	1312.36	0.308E-22	Q(36)	F
32	521.234 96(15)*	0.41	0.514E-21	R(1)	A	67	521.779 26(15)*	602.10	0.994E-21	Q(54)	A
33	521.241 03(28)	685.31	0.346E-21	Q(28)	B	68	521.786 73(24)	1312.34	0.308E-22	Q(36)	E
34	521.248 69(27)	853.74	0.191E-21	Q(40)	C	69	521.795 65(15)*	552.11	0.142E-21	P(12)	H
35	521.248 98(15)*	366.22	0.244E-20	Q(42)	A	70	521.797 70(24)	1327.41	0.293E-22	Q(37)	F

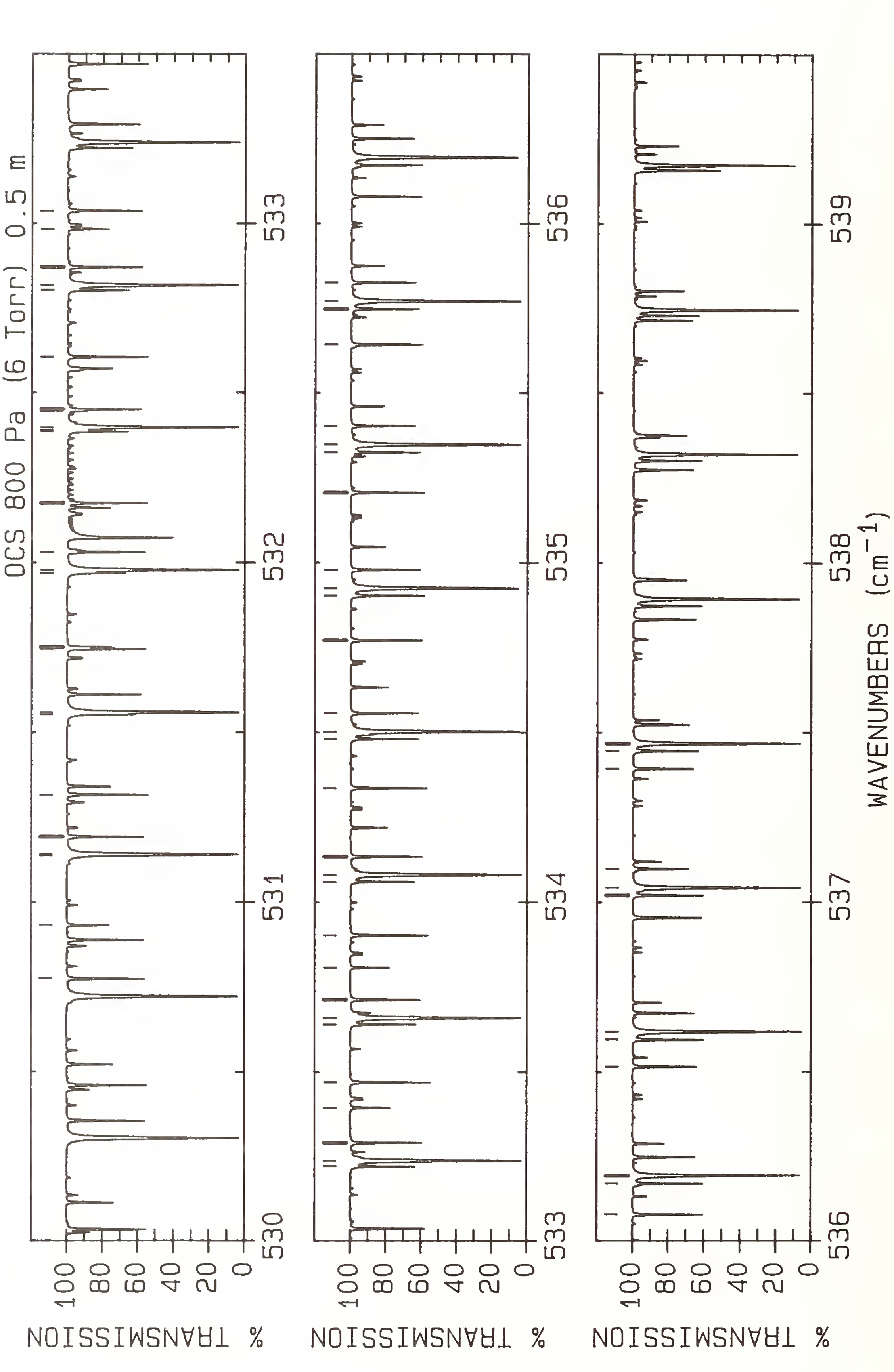


OCS 800 Pa (6 Torr) 0.5 m
% TRANSMISSION
100 80 60 40 20 0
521
522
523
524
525
526
527
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	521.823 19(24)	1342.87	0.279E-22	Q(38)	F
2	521.829 27(15)*	624.39	0.909E-21	Q(55)	A
3	521.829 42(24)	1473.41	0.119E-22	Q(68)	C
4	521.876 04(24)	1375.01	0.250E-22	Q(40)	F
5	521.880 16(15)*	647.08	0.828E-21	Q(56)	A
6	521.896 03(27)	978.40	0.139E-21	Q(47)	B
7	521.897 27(24)	1374.99	0.251E-22	Q(40)	E
8	521.931 34(24)	1408.78	0.222E-22	Q(42)	F
9	521.931 95(15)*	670.17	0.754E-21	Q(57)	A
10	521.939 46(26)	997.88	0.129E-21	Q(48)	B
11	521.983 78(26)	1017.76	0.120E-21	Q(49)	B
12	521.984 62(15)*	693.67	0.684E-21	Q(58)	A
13	521.988 33(23)	1426.24	0.209E-22	Q(43)	E
14	522.028 99(26)	1038.05	0.111E-21	Q(50)	B
15	522.038 18(15)*	717.57	0.620E-21	Q(59)	A
16	522.040 65(5)	5.94	0.514E-22	R(5)	P
17	522.049 15(23)	1481.18	0.170E-22	Q(46)	F
18	522.049 84(15)*	2.43	0.857E-21	R(3)	A
19	522.052 98(23)	1462.44	0.183E-22	Q(45)	E
20	522.086 51(23)	1481.14	0.170E-22	Q(46)	E
21	522.092 62(15)*	741.87	0.560E-21	Q(60)	A
22	522.094 08(28)	521.64	0.913E-22	R(2)	C
23	522.095 35(28)	521.64	0.914E-22	R(2)	B
24	522.143 66(23)	1539.75	0.135E-22	Q(49)	F
25	522.147 95(15)*	766.58	0.505E-21	Q(61)	A
26	522.155 98(23)	1519.78	0.147E-22	Q(48)	E
27	522.191 94(23)	1539.70	0.136E-22	Q(49)	E
28	522.193 46(15)*	547.23	0.135E-21	P(11)	H
29	522.204 16(15)*	791.70	0.454E-21	Q(62)	A
30	522.209 51(23)	1580.82	0.114E-22	Q(51)	F
31	522.261 26(15)*	817.21	0.408E-21	Q(63)	A
32	522.261 69(16)	1069.42	0.162E-22	P(10)	G
33	522.268 35(26)	1145.56	0.723E-22	Q(55)	B
34	522.370 28(25)	1191.40	0.600E-22	Q(57)	B
35	522.378 09(15)*	869.46	0.326E-21	Q(65)	A
36	522.385 55(31)	348.07	0.177E-22	R(41)	T
37	522.458 01(15)*	4.06	0.103E-20	R(4)	A
38	522.559 93(15)*	950.85	0.230E-21	Q(68)	A
39	522.592 05(15)*	542.76	0.128E-21	P(10)	H
40	522.622 30(15)*	978.78	0.204E-21	Q(69)	A
41	522.685 54(15)*	1007.13	0.180E-21	Q(70)	A
42	522.866 67(15)*	6.09	0.119E-20	R(5)	A
43	522.872 46(24)	1417.69	0.231E-22	Q(66)	B
44	522.880 49(15)*	1094.57	0.123E-21	Q(73)	A
45	523.014 80(15)*	1154.87	0.941E-22	Q(75)	A
46	523.152 58(15)*	1216.79	0.715E-22	Q(77)	A
47	523.222 76(15)*	1248.35	0.621E-22	Q(78)	A
48	523.275 83(15)*	8.52	0.135E-20	R(6)	A
49	523.391 54(15)*	535.04	0.110E-21	P(8)	H
50	523.685 46(15)*	11.36	0.151E-20	R(7)	A
51	523.740 17(28)	528.95	0.139E-21	R(6)	B
52	524.095 58(15)*	14.61	0.166E-20	R(8)	A
53	524.502 60(46)	436.96	0.131E-22	R(46)	T
54	524.506 19(15)*	18.26	0.180E-20	R(9)	A
55	524.917 28(15)*	22.31	0.194E-20	R(10)	A
56	524.964 22(28)	538.72	0.173E-21	R(9)	C
57	525.328 85(15)*	26.78	0.207E-20	R(11)	A
58	525.650 30(24)	704.08	0.158E-22	Q(30)	S
59	525.650 45(5)	41.56	0.104E-21	R(14)	P
60	525.738 93(24)	798.44	0.127E-22	Q(37)	S
61	525.740 90(15)*	31.64	0.218E-20	R(12)	A
62	525.808 33(15)*	521.64	0.405E-22	P(2)	H
63	526.053 90(5)	47.49	0.107E-21	R(15)	P
64	526.153 43(15)*	36.92	0.229E-20	R(13)	A
65	526.201 44(28)	552.14	0.201E-21	R(12)	C
66	526.213 79(15)*	520.83	0.273E-22	P(1)	H
67	526.234 29(28)	552.11	0.204E-21	R(12)	B
68	526.566 43(15)*	42.60	0.239E-20	R(14)	A
69	526.570 38(16)	1149.99	0.592E-22	Q(22)	G
70	526.614 80(28)	557.42	0.209E-21	R(13)	C

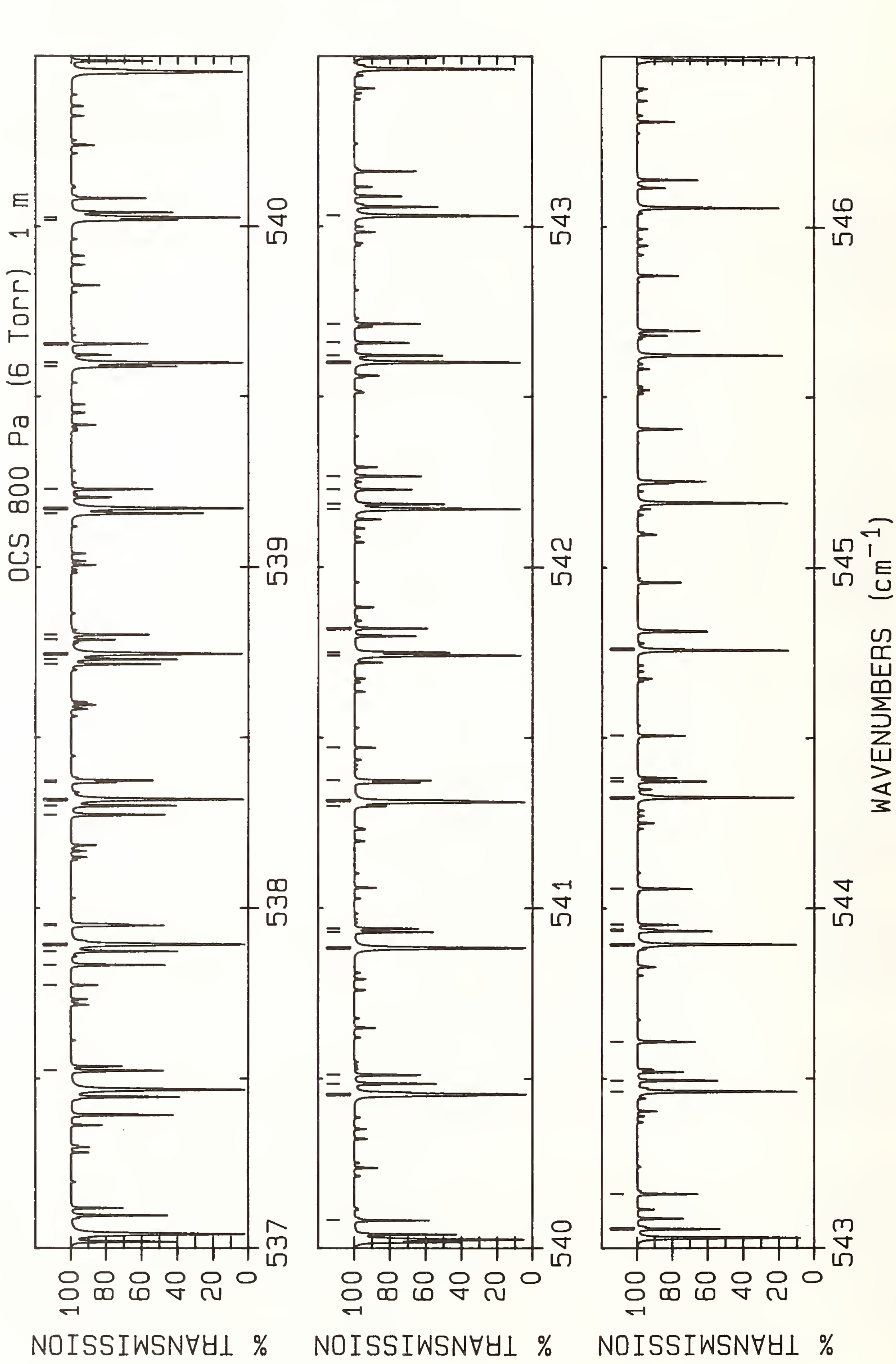

OCS 800 Pa (6 Torr) 0.5 m
% TRANSMISSION
100
80
60
40
20
0
526
527
528
529
530
531
532
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	526.814 14(15)*	748.49	0.329E-21	Q(33)	H	36	528.223 22(15)*	69.37	0.268E-20	R(18)	A
2	526.826 54(15)*	762.31	0.318E-21	Q(34)	H	37	528.225 54(5)	594.94	0.107E-22	R(19)	Q
3	526.839 37(15)*	776.53	0.307E-21	Q(35)	H	38	528.252 35(15)*	522.86	0.415E-22	R(3)	H
4	526.852 65(15)*	791.16	0.296E-21	Q(36)	H	39	528.272 92(28)	582.63	0.233E-21	R(17)	C
5	526.880 57(15)*	821.64	0.272E-21	Q(38)	H	40	528.336 95(28)	582.57	0.238E-21	R(17)	B
6	526.895 24(15)*	837.49	0.259E-21	Q(39)	H	41	528.484 43(4)	91.42	0.121E-21	R(21)	P
7	526.898 76(17)	1289.13	0.473E-22	Q(34)	G	42	528.638 60(15)*	77.08	0.272E-20	R(19)	A
8	526.910 37(15)*	853.74	0.247E-21	Q(40)	H	43	528.639 90(5)	602.87	0.109E-22	R(20)	Q
9	526.925 99(15)*	870.40	0.235E-21	Q(41)	H	44	528.662 32(15)*	524.48	0.552E-22	R(4)	H
10	526.942 10(15)*	887.47	0.223E-21	Q(42)	H	45	528.688 62(28)	589.95	0.236E-21	R(18)	C
11	526.958 71(15)*	904.94	0.210E-21	Q(43)	H	46	528.760 08(28)	589.88	0.242E-21	R(18)	B
12	526.975 83(15)*	922.82	0.198E-21	Q(44)	H	47	528.763 09(24)	1103.58	0.309E-22	R(17)	F
13	526.979 92(15)*	48.68	0.248E-20	R(15)	A	48	528.891 15(4)	100.13	0.122E-21	R(22)	P
14	526.993 46(15)*	941.10	0.187E-21	Q(45)	H	49	529.054 45(15)*	85.19	0.275E-20	R(20)	A
15	527.049 53(15)*	998.38	0.153E-21	Q(48)	H	50	529.055 08(5)	611.19	0.109E-22	R(21)	Q
16	527.069 30(15)*	1018.28	0.143E-21	Q(49)	H	51	529.073 03(15)*	526.51	0.686E-22	R(5)	H
17	527.200 06(15)*	1146.22	0.895E-22	Q(55)	H	52	529.104 78(28)	597.68	0.239E-21	R(19)	C
18	527.223 96(15)*	1168.96	0.821E-22	Q(56)	H	53	529.298 32(4)	109.23	0.122E-21	R(23)	P
19	527.248 48(15)*	1192.10	0.752E-22	Q(57)	H	54	529.470 77(15)*	93.71	0.278E-20	R(21)	A
20	527.267 08(5)	67.68	0.116E-21	R(18)	P	55	529.484 50(15)*	528.95	0.817E-22	R(6)	H
21	527.271 85(17)	1449.79	0.287E-22	Q(44)	G	56	529.521 40(28)	605.81	0.241E-21	R(20)	C
22	527.273 64(15)*	1215.65	0.687E-22	Q(58)	H	57	529.705 94(4)	118.72	0.122E-21	R(24)	P
23	527.299 45(15)*	1239.61	0.626E-22	Q(59)	H	58	529.709 25(15)	1158.61	0.291E-22	R(38)	D
24	527.393 88(15)*	55.17	0.256E-20	R(16)	A	59	529.887 55(15)*	102.63	0.279E-20	R(22)	A
25	527.438 59(15)*	1365.45	0.381E-22	Q(64)	H	60	529.896 72(15)*	531.80	0.944E-22	R(7)	H
26	527.442 92(28)	569.22	0.223E-21	R(15)	C	61	529.938 49(28)	614.35	0.242E-21	R(21)	C
27	527.468 51(15)*	1391.83	0.343E-22	Q(65)	H	62	530.034 55(28)	614.25	0.250E-21	R(21)	B
28	527.663 56(15)*	1558.62	0.173E-22	Q(71)	H	63	530.114 03(4)	128.62	0.121E-21	R(25)	P
29	527.672 40(5)	75.19	0.118E-21	R(19)	P	64	530.304 80(15)*	111.96	0.279E-20	R(23)	A
30	527.808 31(15)*	62.07	0.262E-20	R(17)	A	65	530.305 46(5)	638.52	0.110E-22	R(24)	Q
31	527.809 15(15)*	1677.89	0.106E-22	Q(75)	H	66	530.309 69(15)*	535.04	0.107E-21	R(8)	H
32	527.843 13(15)*	521.64	0.277E-22	R(2)	H	67	530.356 04(28)	623.29	0.242E-21	R(22)	C
33	527.857 69(28)	575.72	0.228E-21	R(16)	C	68	530.402 12(16)	1065.36	0.225E-22	R(9)	G
34	527.914 69(28)	575.66	0.233E-21	R(16)	B	69	530.722 52(15)*	121.70	0.278E-20	R(24)	A
35	528.078 19(4)	83.11	0.120E-21	R(20)	P	70	530.723 41(15)*	538.70	0.118E-21	R(9)	H



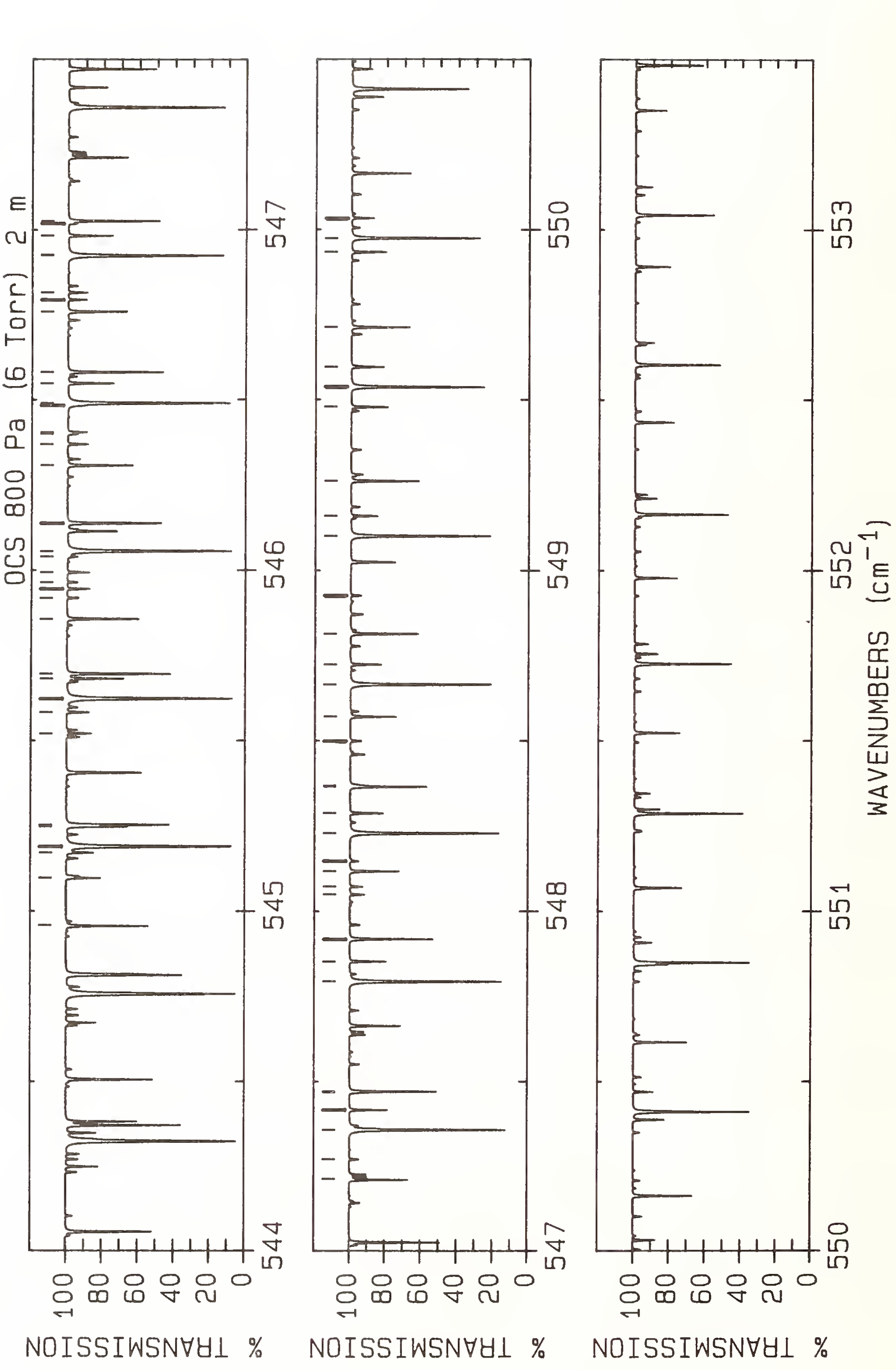
OCS 800 Pa (6 Torr) 0.5 m
% TRANSMISSION
100
80
60
40
20
0
530
531
532
533
534
535
536
537
538
539
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	530.774 05(28)	632.64	0.241E-21	R(23)	C
2	530.931 57(4)	149.59	0.119E-21	R(27)	P
3	531.137 89(15)*	542.76	0.129E-21	R(10)	H
4	531.140 69(15)*	131.84	0.276E-20	R(25)	A
5	531.192 51(28)	642.40	0.240E-21	R(24)	C
6	531.316 56(28)	642.27	0.251E-21	R(24)	B
7	531.553 12(15)*	547.23	0.140E-21	R(11)	H
8	531.559 33(15)*	142.38	0.274E-20	R(26)	A
9	531.745 54(28)	652.42	0.249E-21	R(25)	B
10	531.750 92(4)	172.14	0.115E-21	R(29)	P
11	531.969 10(15)*	552.11	0.149E-21	R(12)	H
12	531.978 43(15)*	153.34	0.270E-20	R(27)	A
13	532.030 81(28)	663.13	0.234E-21	R(26)	C
14	532.171 99(29)	1090.14	0.132E-22	Q(15)	I
15	532.175 34(28)	662.98	0.247E-21	R(26)	B
16	532.385 84(15)*	557.38	0.158E-21	R(13)	H
17	532.388 81(29)	1195.15	0.134E-22	Q(27)	I
18	532.397 99(15)*	164.69	0.266E-20	R(28)	A
19	532.446 22(16)	1089.77	0.297E-22	R(14)	G
20	532.450 64(28)	674.10	0.231E-21	R(27)	C
21	532.605 94(28)	673.94	0.244E-21	R(27)	B
22	532.606 22(29)	1297.69	0.100E-22	Q(35)	I
23	532.803 34(15)*	563.07	0.166E-21	R(14)	H
24	532.818 01(15)*	176.45	0.261E-20	R(29)	A
25	532.870 91(28)	685.49	0.227E-21	R(28)	C
26	532.983 32(4)	208.93	0.107E-21	R(32)	P
27	533.037 34(28)	685.31	0.240E-21	R(28)	B
28	533.221 59(15)*	569.16	0.173E-21	R(15)	H
29	533.238 48(15)*	188.62	0.255E-20	R(30)	A
30	533.291 65(28)	697.27	0.222E-21	R(29)	C
31	533.395 01(4)	221.99	0.104E-21	R(33)	P
32	533.469 54(28)	697.09	0.236E-21	R(29)	B
33	533.640 61(15)*	575.66	0.179E-21	R(16)	H
34	533.659 41(15)*	201.19	0.248E-20	R(31)	A
35	533.712 82(28)	709.47	0.216E-21	R(30)	C
36	533.807 15(5)	235.44	0.100E-21	R(34)	P
37	533.902 52(28)	709.27	0.231E-21	R(30)	B
38	534.060 39(15)*	582.57	0.185E-21	R(17)	H
39	534.080 79(15)*	214.17	0.242E-20	R(32)	A
40	534.134 45(28)	722.07	0.210E-21	R(31)	C
41	534.336 27(28)	721.86	0.226E-21	R(31)	B
42	534.480 93(15)*	589.88	0.189E-21	R(18)	H
43	534.502 62(15)*	227.55	0.234E-20	R(33)	A
44	534.556 52(28)	735.07	0.204E-21	R(32)	C
45	534.770 80(28)	734.85	0.220E-21	R(32)	B
46	534.902 24(15)*	597.60	0.193E-21	R(19)	H
47	534.903 21(16)	1132.50	0.340E-22	R(20)	G
48	534.924 90(15)*	241.34	0.226E-20	R(34)	A
49	534.979 04(28)	748.49	0.197E-21	R(33)	C
50	535.206 09(28)	748.25	0.214E-21	R(33)	B
51	535.324 32(15)*	605.72	0.195E-21	R(20)	H
52	535.347 63(15)*	255.53	0.218E-20	R(35)	A
53	535.401 99(28)	762.31	0.191E-21	R(34)	C
54	535.642 13(28)	762.05	0.208E-21	R(34)	B
55	535.747 18(15)*	614.25	0.197E-21	R(21)	H
56	535.770 80(15)*	270.13	0.210E-20	R(36)	A
57	535.825 39(28)	776.53	0.183E-21	R(35)	C
58	536.078 91(28)	776.26	0.201E-21	R(35)	B
59	536.170 81(15)*	623.18	0.198E-21	R(22)	H
60	536.194 42(15)*	285.13	0.201E-20	R(37)	A
61	536.516 44(27)	790.88	0.194E-21	R(36)	B
62	536.595 22(15)*	632.52	0.198E-21	R(23)	H
63	536.598 33(16)	1459.26	0.102E-22	R(54)	D
64	536.618 48(15)*	300.54	0.192E-20	R(38)	A
65	537.020 41(15)*	642.27	0.197E-21	R(24)	H
66	537.042 99(15)*	316.35	0.183E-20	R(39)	A
67	537.098 22(27)	821.64	0.161E-21	R(38)	C
68	537.393 65(27)	821.33	0.179E-21	R(38)	B
69	537.446 39(15)*	652.42	0.196E-21	R(25)	H
70	537.467 93(15)*	332.57	0.174E-20	R(40)	A



OCS 800 Pa (6 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
537 538 539 540
540 541 542 543
543 544 545 546
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	537.523 36(27)	837.49	0.153E-21	R(39)	C	36	540.930 12(26)	959.33	0.118E-21	R(46)	B
2	537.774 46(16)	1200.85	0.329E-22	R(27)	G	37	540.939 95(26)	978.88	0.949E-22	R(47)	C
3	537.833 33(27)	837.16	0.171E-21	R(39)	B	38	541.299 84(8)	545.09	0.363E-22	R(52)	P
4	537.873 15(15)*	662.98	0.193E-21	R(26)	H	39	541.311 95(15)*	496.74	0.994E-21	R(49)	A
5	537.893 32(15)*	349.19	0.165E-20	R(41)	A	40	541.316 22(15)*	762.05	0.156E-21	R(34)	H
6	537.948 94(27)	853.74	0.146E-21	R(40)	C	41	541.375 11(26)	978.40	0.111E-21	R(47)	B
7	537.952 63(5)	391.68	0.629E-22	R(44)	P	42	541.471 57(17)	1318.01	0.249E-22	R(36)	G
8	538.273 71(27)	853.39	0.164E-21	R(40)	B	43	541.741 20(15)*	517.00	0.923E-21	R(50)	A
9	538.300 71(15)*	673.94	0.190E-21	R(27)	H	44	541.750 29(15)*	776.26	0.150E-21	R(35)	H
10	538.319 13(15)*	366.22	0.157E-20	R(42)	A	45	541.820 72(26)	997.88	0.104E-21	R(48)	B
11	538.369 56(6)	409.47	0.592E-22	R(45)	P	46	542.170 87(15)*	537.67	0.855E-21	R(51)	A
12	538.374 95(27)	870.40	0.138E-21	R(41)	C	47	542.185 20(15)*	790.88	0.143E-21	R(36)	H
13	538.714 78(27)	870.04	0.156E-21	R(41)	B	48	542.228 13(26)	1038.59	0.762E-22	R(50)	C
14	538.729 07(15)*	685.31	0.187E-21	R(28)	H	49	542.266 94(26)	1017.76	0.973E-22	R(49)	B
15	538.745 39(15)*	383.65	0.148E-20	R(43)	A	50	542.600 96(15)*	558.74	0.790E-21	R(52)	A
16	538.786 90(6)	427.66	0.556E-22	R(46)	P	51	542.620 96(15)*	805.90	0.137E-21	R(37)	H
17	538.801 38(27)	887.47	0.130E-21	R(42)	C	52	542.658 35(26)	1059.31	0.705E-22	R(51)	C
18	539.156 53(27)	887.08	0.148E-21	R(42)	B	53	542.713 75(26)	1038.05	0.908E-22	R(50)	B
19	539.158 23(15)*	697.09	0.183E-21	R(29)	H	54	543.031 47(15)*	580.22	0.728E-21	R(53)	A
20	539.172 08(15)*	401.49	0.139E-20	R(44)	A	55	543.057 56(15)*	821.33	0.130E-21	R(38)	H
21	539.228 25(27)	904.94	0.123E-21	R(43)	C	56	543.161 14(26)	1058.74	0.846E-22	R(51)	B
22	539.588 20(15)*	709.27	0.178E-21	R(30)	H	57	543.462 39(15)*	602.10	0.669E-21	R(54)	A
23	539.598 94(27)	904.54	0.141E-21	R(43)	B	58	543.495 02(15)*	837.16	0.123E-21	R(39)	H
24	539.599 20(15)*	419.73	0.131E-20	R(45)	A	59	543.609 10(26)	1079.84	0.786E-22	R(52)	B
25	539.655 54(27)	922.82	0.116E-21	R(44)	C	60	543.893 73(15)*	624.39	0.614E-21	R(55)	A
26	540.018 97(15)*	721.86	0.173E-21	R(31)	H	61	543.933 34(15)*	853.39	0.116E-21	R(40)	H
27	540.026 74(15)*	438.37	0.123E-20	R(46)	A	62	543.938 24(17)	1414.41	0.183E-22	R(42)	G
28	540.083 26(27)	941.10	0.109E-21	R(45)	C	63	543.951 47(26)	1123.88	0.551E-22	R(54)	C
29	540.450 57(15)*	734.85	0.168E-21	R(32)	H	64	544.057 62(26)	1101.34	0.728E-22	R(53)	B
30	540.454 72(15)*	457.42	0.115E-20	R(47)	A	65	544.325 47(15)*	647.08	0.562E-21	R(56)	A
31	540.485 75(27)	940.66	0.125E-21	R(45)	B	66	544.372 53(15)*	870.04	0.110E-21	R(41)	H
32	540.511 39(27)	959.78	0.102E-21	R(46)	C	67	544.383 33(26)	1146.22	0.505E-22	R(55)	C
33	540.879 97(7)	524.53	0.392E-22	R(51)	P	68	544.506 69(26)	1123.25	0.674E-22	R(54)	B
34	540.882 98(15)*	748.25	0.162E-21	R(33)	H	69	544.757 63(15)*	670.17	0.513E-21	R(57)	A
35	540.883 12(15)*	476.88	0.107E-20	R(48)	A	70	544.760 57(17)	1449.79	0.161E-22	R(44)	G


OCS 800 Pa (6 Torr) 2 m
% TRANSMISSION
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60
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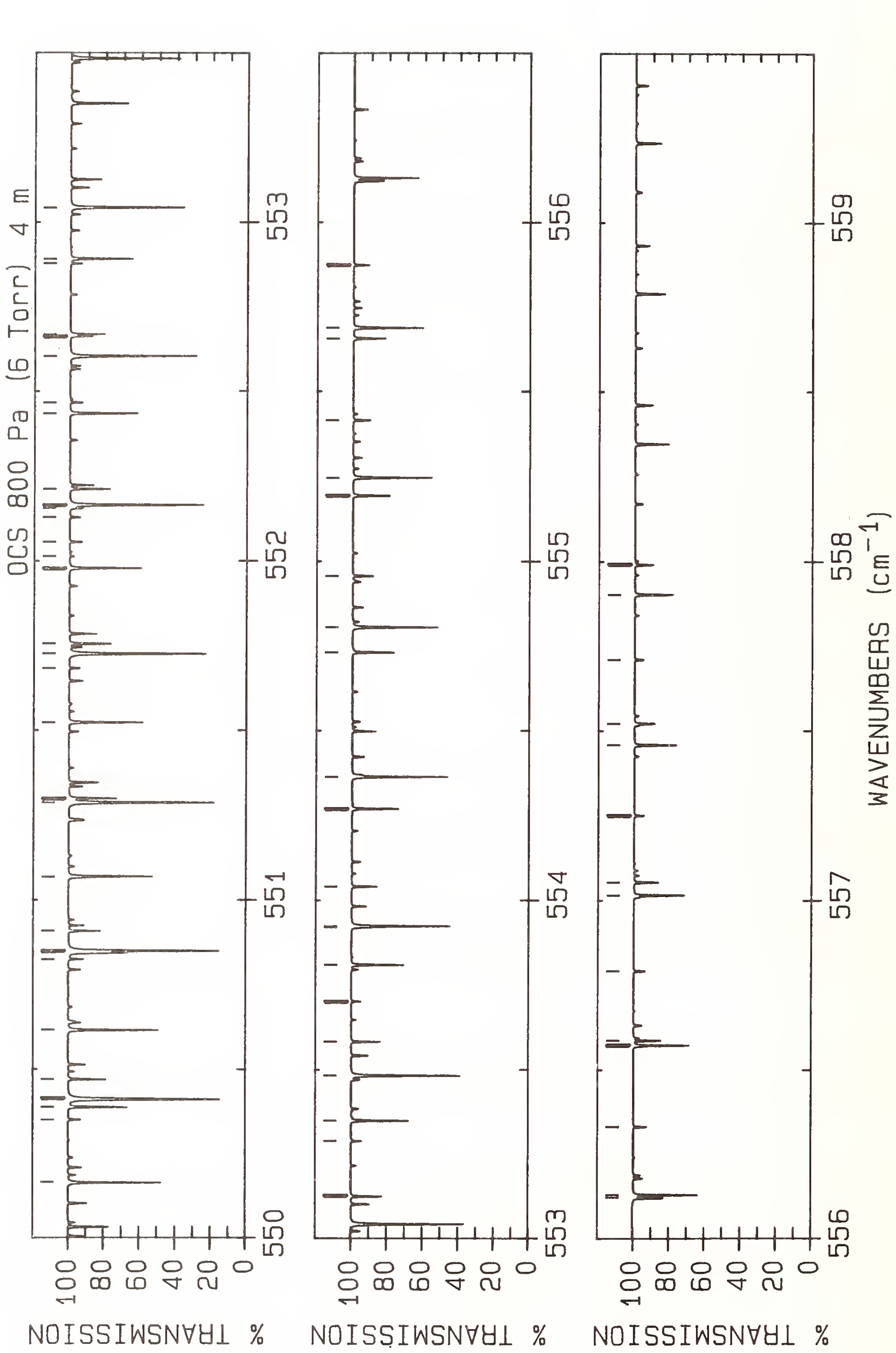
553
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	544.956 30(26)	1145.56	0.622E-22	R(55)	B	36	547.026 31(15)*	978.40	0.728E-22	R(47)	H
2	545.097 01(13)	747.86	0.165E-22	R(61)	P	37	547.211 90(25)	1263.19	0.403E-22	R(60)	B
3	545.097 76(29)	1230.57	0.681E-23	R(30)	J	38	547.272 05(29)	1297.71	0.581E-23	R(35)	J
4	545.171 74(17)	1468.09	0.151E-22	R(45)	G	39	547.359 06(15)*	817.21	0.284E-21	R(63)	A
5	545.190 19(15)*	693.67	0.468E-21	R(58)	A	40	547.417 51(25)	1313.90	0.258E-22	R(62)	C
6	545.248 25(25)	1192.10	0.421E-22	R(57)	C	41	547.468 87(24)	1785.62	0.418E-23	R(60)	E
7	545.253 54(15)*	904.54	0.968E-22	R(43)	H	42	547.471 78(15)*	997.88	0.673E-22	R(48)	H
8	545.520 93(14)	772.36	0.149E-22	R(62)	P	43	547.794 03(15)*	843.13	0.256E-21	R(64)	A
9	545.582 89(17)	1486.80	0.141E-22	R(46)	G	44	547.852 54(25)	1339.47	0.232E-22	R(63)	C
10	545.623 16(15)*	717.57	0.426E-21	R(59)	A	45	547.918 18(15)*	1017.76	0.621E-22	R(49)	H
11	545.681 31(25)	1215.65	0.384E-22	R(58)	C	46	547.919 97(24)	1810.40	0.379E-23	R(61)	E
12	545.695 38(15)*	922.39	0.905E-22	R(44)	H	47	548.049 32(17)	1607.56	0.883E-23	R(52)	G
13	545.857 06(25)	1191.40	0.526E-22	R(57)	B	48	548.072 66(19)	927.63	0.788E-23	R(68)	P
14	545.918 48(29)	1269.62	0.739E-23	R(33)	I	49	548.117 44(25)	1313.07	0.333E-22	R(62)	B
15	545.945 24(14)	797.25	0.135E-22	R(63)	P	50	548.147 57(29)	1327.41	0.533E-23	R(37)	J
16	545.965 00(29)	1256.20	0.645E-23	R(32)	J	51	548.229 39(15)*	869.46	0.229E-21	R(65)	A
17	545.994 03(17)	1505.91	0.131E-22	R(47)	G	52	548.287 95(24)	1365.45	0.209E-22	R(64)	C
18	546.039 99(23)	1713.77	0.549E-23	R(57)	F	53	548.365 51(15)*	1038.05	0.571E-22	R(50)	H
19	546.056 54(15)*	741.87	0.386E-21	R(60)	A	54	548.368 73(29)	1358.72	0.608E-23	R(39)	I
20	546.138 11(15)*	940.66	0.844E-22	R(45)	H	55	548.499 30(20)	954.88	0.703E-23	R(69)	P
21	546.308 19(25)	1214.93	0.482E-22	R(58)	B	56	548.570 87(24)	1338.62	0.302E-22	R(63)	B
22	546.369 95(15)	822.54	0.122E-22	R(64)	P	57	548.665 14(15)*	896.18	0.205E-21	R(66)	A
23	546.399 86(29)	1269.63	0.625E-23	R(33)	J	58	548.723 76(24)	1391.83	0.187E-22	R(65)	C
24	546.405 15(17)	1525.43	0.122E-22	R(48)	G	59	548.813 79(15)*	1058.74	0.524E-22	R(51)	H
25	546.483 27(23)	1737.35	0.501E-23	R(58)	F	60	548.926 32(21)	982.53	0.626E-23	R(70)	P
26	546.490 31(15)*	766.58	0.349E-21	R(61)	A	61	549.101 29(15)*	923.31	0.183E-21	R(67)	A
27	546.548 62(25)	1263.97	0.316E-22	R(60)	C	62	549.159 95(24)	1418.62	0.167E-22	R(66)	C
28	546.581 75(15)*	959.33	0.785E-22	R(46)	H	63	549.263 02(15)*	1079.84	0.480E-22	R(52)	H
29	546.759 81(25)	1238.86	0.441E-22	R(59)	B	64	549.478 98(24)	1390.93	0.247E-22	R(65)	B
30	546.795 04(16)	848.22	0.109E-22	R(65)	P	65	549.537 82(15)*	950.85	0.164E-21	R(68)	A
31	546.816 25(17)	1545.35	0.113E-22	R(49)	G	66	549.596 51(24)	1445.81	0.149E-22	R(67)	C
32	546.924 49(15)*	791.70	0.316E-21	R(62)	A	67	549.713 22(15)*	1101.34	0.438E-22	R(53)	H
33	546.927 02(24)	1761.33	0.456E-23	R(59)	F	68	549.933 63(24)	1417.69	0.222E-22	R(66)	B
34	546.982 87(25)	1288.73	0.286E-22	R(61)	C	69	549.974 74(15)*	978.78	0.145E-21	R(69)	A
35	547.018 52(23)	1761.24	0.461E-23	R(59)	E	70	550.033 46(24)	1473.41	0.133E-22	R(68)	C



OCS 800 Pa (6 Torr) 4 m
% TRANSMISSION
100
80
60
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550
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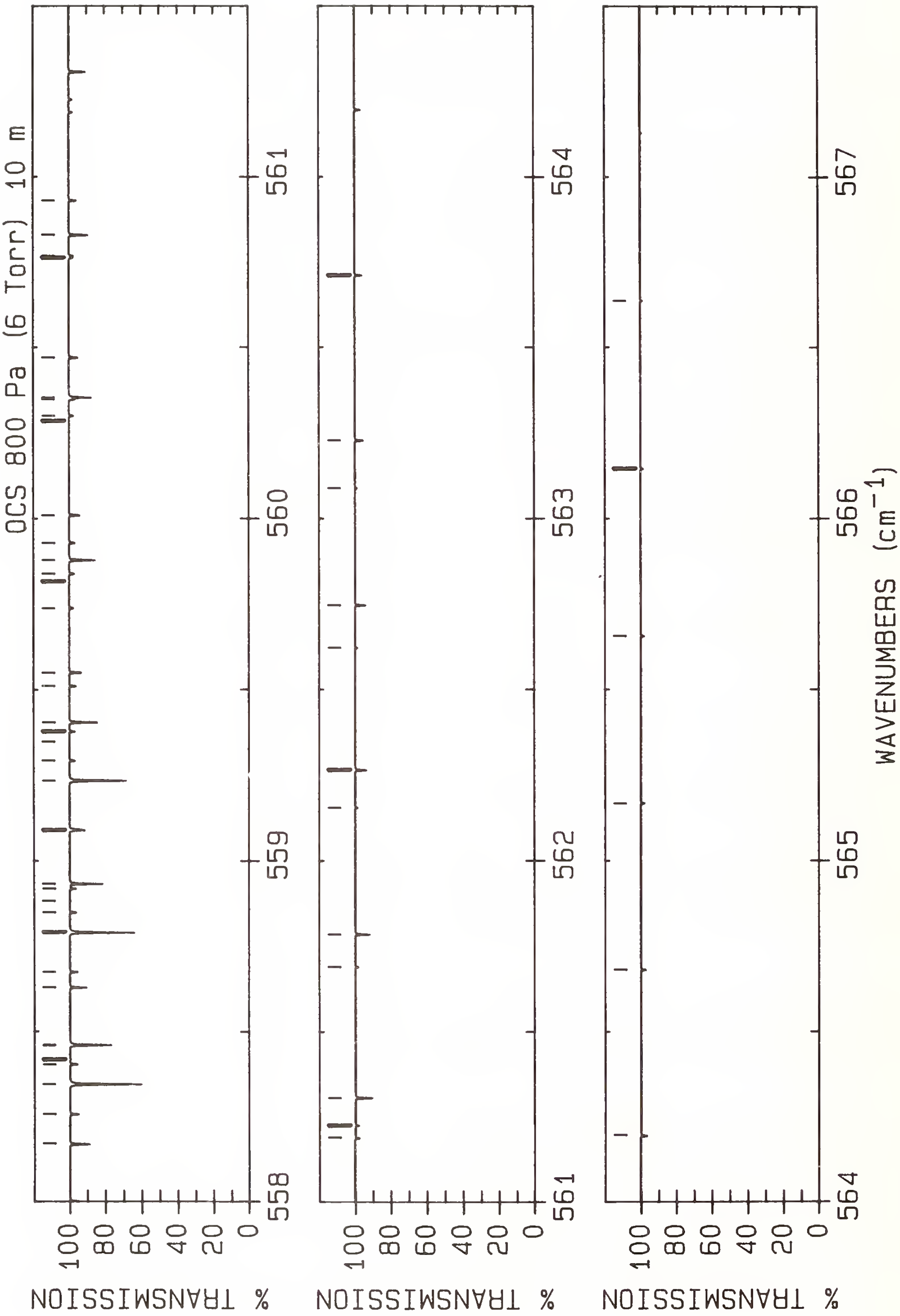
559
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	550.164 38(15)*	1123.25	0.399E-22	R(54)	H
2	550.350 99(28)	1408.78	0.409E-23	R(42)	J
3	550.388 66(24)	1444.85	0.200E-22	R(67)	B
4	550.412 04(15)*	1007.13	0.129E-21	R(70)	A
5	550.415 20(28)	1444.14	0.481E-23	R(44)	I
6	550.470 79(24)	1501.41	0.118E-22	R(69)	C
7	550.616 53(15)*	1145.56	0.362E-22	R(55)	H
8	550.825 12(28)	1462.44	0.455E-23	R(45)	I
9	550.844 06(24)	1472.41	0.179E-22	R(68)	B
10	550.849 72(15)*	1035.87	0.114E-21	R(71)	A
11	550.908 49(24)	1529.81	0.105E-22	R(70)	C
12	551.067 08(28)	1126.67	0.339E-23	R(75)	P
13	551.069 66(15)*	1168.28	0.328E-22	R(56)	H
14	551.287 78(15)*	1065.02	0.101E-21	R(72)	A
15	551.299 81(24)	1500.39	0.160E-22	R(69)	B
16	551.523 78(15)*	1191.40	0.297E-22	R(57)	H
17	551.683 14(28)	1462.47	0.338E-23	R(45)	J
18	551.726 22(15)*	1094.57	0.891E-22	R(73)	A
19	551.755 91(24)	1528.76	0.143E-22	R(70)	B
20	551.978 92(15)*	1214.93	0.267E-22	R(58)	H
21	552.014 03(28)	2051.69	0.142E-23	R(70)	E
22	552.056 38(28)	1519.78	0.381E-23	R(48)	I
23	552.128 89(28)	1481.18	0.315E-23	R(46)	J
24	552.155 67(18)	1841.28	0.335E-23	R(62)	G
25	552.165 03(15)*	1124.52	0.783E-22	R(74)	A
26	552.212 34(24)	1557.54	0.128E-22	R(71)	B
27	552.435 06(15)*	1238.86	0.240E-22	R(59)	H
28	552.467 33(28)	1539.70	0.357E-23	R(49)	I
29	552.604 22(15)*	1154.87	0.688E-22	R(75)	A
30	552.663 01(24)	1647.46	0.635E-23	R(74)	C
31	552.669 08(24)	1586.72	0.114E-22	R(72)	B
32	552.878 58(28)	1560.03	0.334E-23	R(50)	I
33	552.892 24(15)*	1263.19	0.215E-22	R(60)	H
34	553.043 77(15)*	1185.63	0.603E-22	R(76)	A
35	553.126 13(24)	1616.30	0.101E-22	R(73)	B
36	553.290 13(28)	1580.76	0.312E-23	R(51)	I
37	553.350 44(15)*	1287.93	0.193E-22	R(61)	H
38	553.483 70(15)*	1216.79	0.527E-22	R(77)	A
39	553.583 47(24)	1646.29	0.893E-23	R(74)	B
40	553.702 00(27)	1601.90	0.290E-23	R(52)	I
41	553.809 69(15)*	1313.07	0.172E-22	R(62)	H
42	553.920 41(28)	1560.08	0.233E-23	R(50)	J
43	553.923 99(15)*	1248.35	0.460E-22	R(78)	A
44	554.041 08(24)	1676.68	0.789E-23	R(75)	B
45	554.269 99(15)*	1338.62	0.153E-22	R(63)	H
46	554.364 64(15)*	1280.32	0.400E-22	R(79)	A
47	554.731 35(15)*	1364.57	0.136E-22	R(64)	H
48	554.805 66(15)*	1312.69	0.348E-22	R(80)	A
49	554.957 10(24)	1738.67	0.612E-23	R(77)	B
50	555.193 78(15)*	1390.93	0.120E-22	R(65)	H
51	555.247 03(16)*	1345.46	0.301E-22	R(81)	A
52	555.415 48(24)	1770.28	0.537E-23	R(78)	B
53	555.657 29(15)*	1417.69	0.106E-22	R(66)	H
54	555.688 76(16)*	1378.63	0.261E-22	R(82)	A
55	555.874 09(24)	1802.28	0.470E-23	R(79)	B
56	556.121 89(15)*	1444.85	0.935E-23	R(67)	H
57	556.130 85(16)*	1412.21	0.225E-22	R(83)	A
58	556.332 92(24)	1834.68	0.411E-23	R(80)	B
59	556.570 19(36)	1559.93	0.231E-24	R(72)	S
60	556.573 29(16)*	1446.18	0.194E-22	R(84)	A
61	556.587 58(15)*	1472.41	0.821E-23	R(68)	H
62	556.791 95(24)	1867.49	0.358E-23	R(81)	B
63	557.016 08(16)*	1480.56	0.166E-22	R(85)	A
64	557.054 39(15)*	1500.39	0.720E-23	R(69)	H
65	557.251 18(24)	1900.71	0.312E-23	R(82)	B
66	557.459 22(17)	1515.34	0.143E-22	R(86)	A
67	557.522 31(15)*	1528.76	0.629E-23	R(70)	H
68	557.710 59(24)	1934.32	0.271E-23	R(83)	B
69	557.902 70(17)	1550.53	0.122E-22	R(87)	A
70	557.991 36(15)*	1557.54	0.549E-23	R(71)	H



OCS 800 Pa (6 Torr) 10 m
% TRANSMISSION
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567
WAVENUMBERS (cm^{-1})

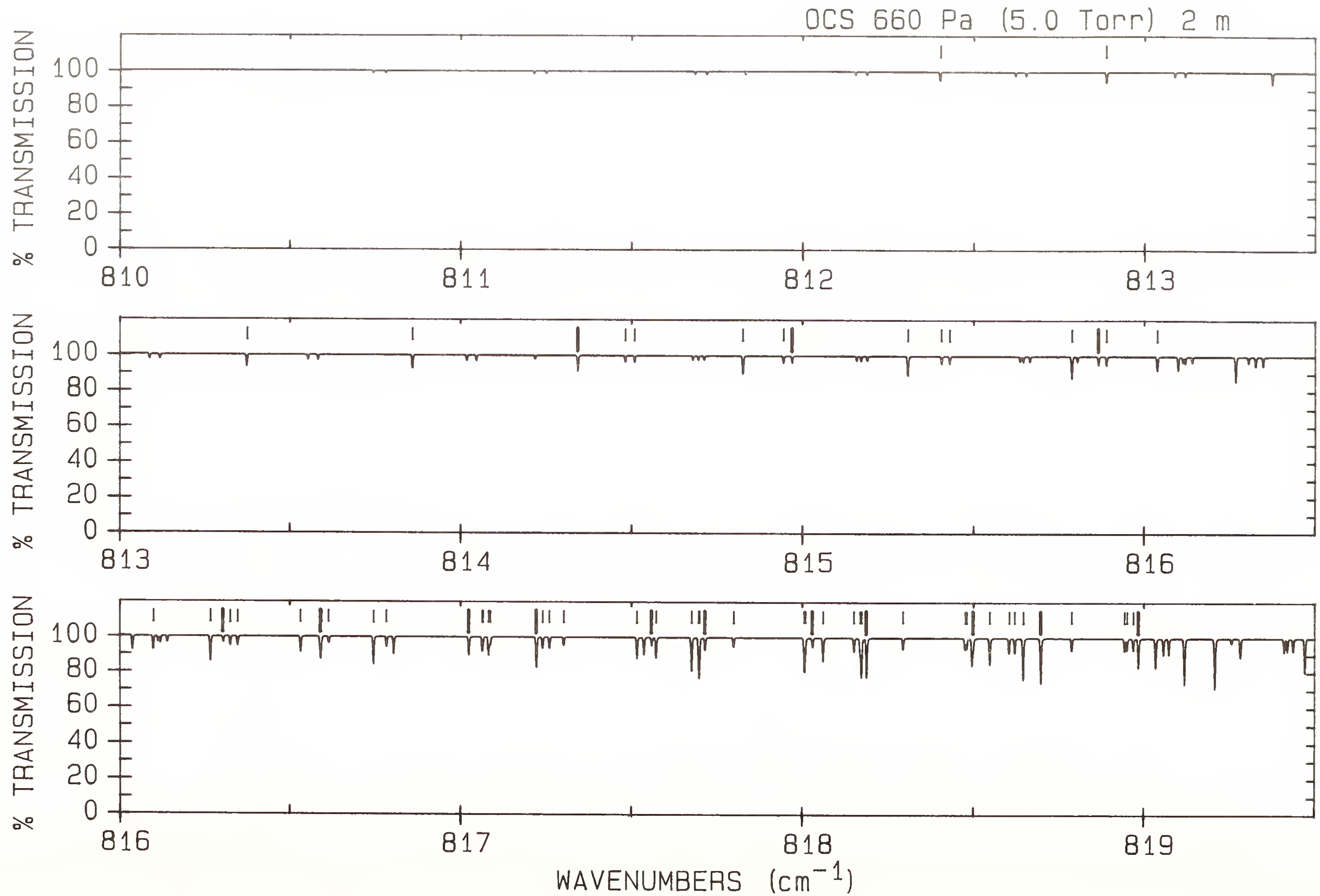
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	558.170 18(25)	1968.34	0.235E-23	R(84)	B
2	558.258 11(26)	1861.19	0.113E-23	R(63)	I
3	558.346 52(17)	1586.11	0.104E-22	R(88)	A
4	558.404 76(27)	2074.42	0.983E-24	R(87)	C
5	558.418 11(42)	1677.74	0.131E-24	R(76)	S
6	558.459 85(27)	1785.72	0.914E-24	R(60)	J
7	558.461 54(15)*	1586.72	0.478E-23	R(72)	H
8	558.629 92(25)	2002.76	0.203E-23	R(85)	B
9	558.675 06(26)	1887.19	0.103E-23	R(64)	I
10	558.790 69(18)	1622.10	0.890E-23	R(89)	A
11	558.848 84(27)	2110.08	0.839E-24	R(88)	C
12	558.882 94(43)	1708.18	0.113E-24	R(77)	S
13	558.918 63(26)	1810.52	0.821E-24	R(61)	J
14	558.932 86(15)*	1616.30	0.414E-23	R(73)	H
15	559.089 83(25)	2037.58	0.175E-23	R(86)	B
16	559.092 54(26)	1913.60	0.926E-24	R(65)	I
17	559.235 20(18)	1658.48	0.757E-23	R(90)	A
18	559.293 26(28)	2146.15	0.714E-24	R(89)	C
19	559.348 94(45)	1739.01	0.971E-25	R(78)	S
20	559.378 30(26)	1835.71	0.736E-24	R(62)	J
21	559.405 34(15)*	1646.29	0.359E-23	R(74)	H
22	559.510 58(26)	1940.41	0.834E-24	R(66)	I
23	559.549 87(26)	2072.80	0.151E-23	R(87)	B
24	559.738 00(28)	2182.61	0.607E-24	R(90)	C
25	559.816 09(47)	1770.23	0.833E-25	R(79)	S
26	559.838 86(26)	1861.32	0.658E-24	R(63)	J
27	559.878 98(16)*	1676.68	0.310E-23	R(75)	H
28	559.929 19(26)	1967.62	0.750E-24	R(67)	I
29	560.010 04(26)	2108.43	0.130E-23	R(88)	B
30	560.284 42(48)	1801.85	0.713E-25	R(80)	S
31	560.300 32(26)	1887.33	0.587E-24	R(64)	J
32	560.348 39(26)	1995.24	0.673E-24	R(68)	I
33	560.353 79(16)*	1707.48	0.267E-23	R(76)	H
34	560.470 34(26)	2144.46	0.111E-23	R(89)	B
35	560.762 67(26)	1913.74	0.522E-24	R(65)	J
36	560.768 21(27)	2023.26	0.602E-24	R(69)	I
37	560.829 77(16)*	1738.67	0.229E-23	R(77)	H
38	560.930 75(27)	2180.89	0.949E-24	R(90)	B
39	561.188 66(27)	2051.69	0.537E-24	R(70)	I
40	561.225 93(26)	1940.56	0.464E-24	R(66)	J
41	561.306 95(16)*	1770.28	0.197E-23	R(78)	H
42	561.690 09(26)	1967.78	0.411E-24	R(67)	J
43	561.785 31(16)*	1802.28	0.168E-23	R(79)	H
44	562.155 16(26)	1995.41	0.363E-24	R(68)	J
45	562.264 87(16)*	1834.68	0.143E-23	R(80)	H
46	562.621 14(26)	2023.44	0.320E-24	R(69)	J
47	562.745 65(17)*	1867.49	0.122E-23	R(81)	H
48	563.088 03(26)	2051.88	0.281E-24	R(70)	J
49	563.227 64(17)*	1900.71	0.104E-23	R(82)	H
50	563.710 85(17)*	1934.32	0.876E-24	R(83)	H
51	564.195 29(17)*	1968.34	0.740E-24	R(84)	H
52	564.680 97(18)*	2002.76	0.624E-24	R(85)	H
53	565.167 89(18)	2037.58	0.524E-24	R(86)	H
54	565.656 06(19)	2072.80	0.440E-24	R(87)	H
55	566.145 48(20)	2108.43	0.368E-24	R(88)	H
56	566.636 16(20)	2144.46	0.307E-24	R(89)	H

ATLAS OF OCS ABSORPTION LINES FROM 812 cm^{-1} to 890 cm^{-1}

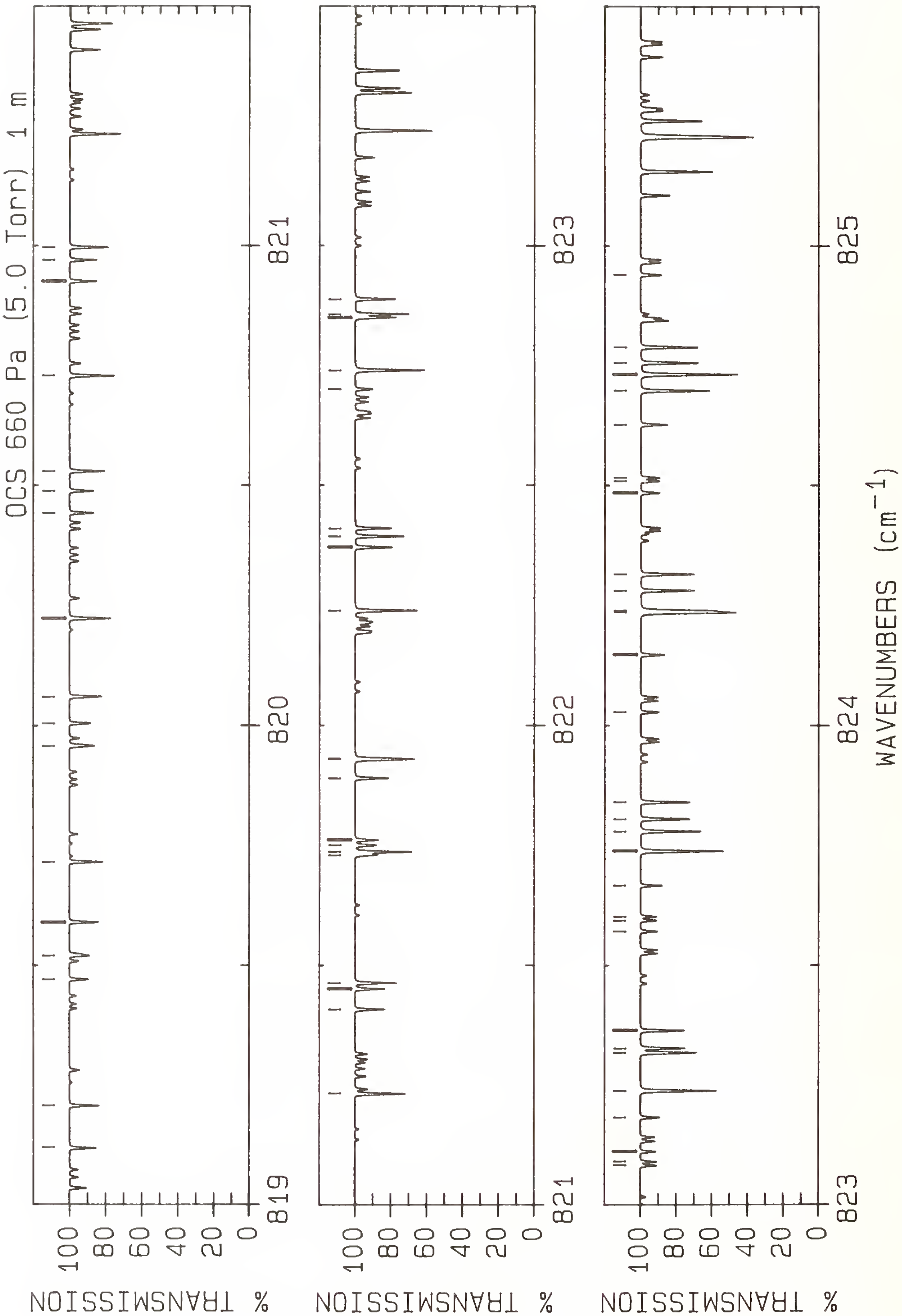
key:

Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$00^01\text{-}00^00$
B		$01^11\text{-}01^{1e}0$
C		$01^11\text{-}01^{1f}0$
D		$00^02\text{-}00^01$
E		$02^21\text{-}02^{2e}0$
F		$02^21\text{-}02^{2f}0$
G		$02^01\text{-}02^00$
H		$01^12\text{-}01^{1e}1$
I		$01^12\text{-}01^{1f}1$
L	$^{16}O^{12}C^{33}S$	$00^01\text{-}00^00$
P	$^{16}O^{12}C^{34}S$	$00^01\text{-}00^00$
Q		$01^11\text{-}01^{1e}0$
R		$01^11\text{-}01^{1f}0$
T	$^{16}O^{13}C^{32}S$	$00^01\text{-}00^00$

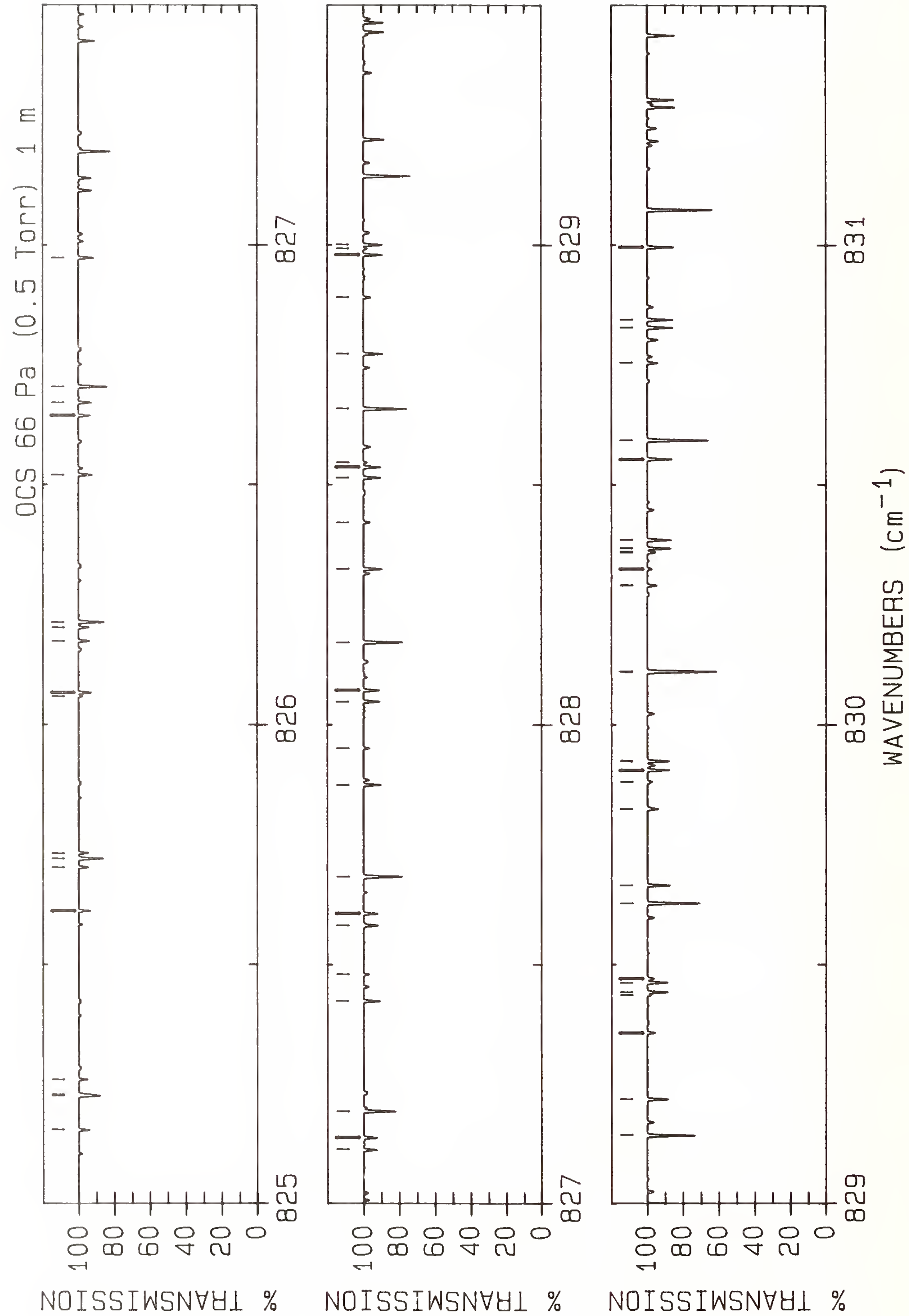
If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.064 debye at a temperature of 296 K. No Herman-Wallis constant was included in the intensity calculation.


OCS 660 Pa (5.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
810
811
812
813
814
815
816
817
818
819
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	812.400 81(11)	1280.64	0.716E-23	P(80)	P
2	812.888 21(11)	1249.06	0.825E-23	P(79)	P
3	813.374 45(10)	1217.87	0.948E-23	P(78)	P
4	813.859 54(10)	1187.08	0.109E-22	P(77)	P
5	814.343 47(10)	1156.68	0.125E-22	P(76)	P
6	814.482 27(18)	1292.95	0.525E-23	P(62)	Q
7	814.508 98(19)	1293.74	0.523E-23	P(62)	R
8	814.826 24(10)*	1126.67	0.142E-22	P(75)	P
9	814.944 69(18)	1268.42	0.582E-23	P(61)	Q
10	814.970 22(18)	1269.19	0.580E-23	P(61)	R
11	815.307 86(9)*	1097.06	0.162E-22	P(74)	P
12	815.406 02(17)	1244.29	0.644E-23	P(60)	Q
13	815.430 39(18)	1245.03	0.642E-23	P(60)	R
14	815.788 31(9)*	1067.84	0.185E-22	P(73)	P
15	815.866 28(17)	1220.55	0.711E-23	P(59)	Q
16	815.889 51(17)	1221.27	0.709E-23	P(59)	R
17	816.038 51(13)*	1834.68	0.113E-22	P(80)	B
18	816.099 21(30)*	1836.05	0.112E-22	P(80)	C
19	816.267 62(9)*	1039.01	0.210E-22	P(72)	P
20	816.305 01(7)*	2135.43	0.515E-23	P(79)	D
21	816.325 45(16)	1197.20	0.784E-23	P(58)	Q
22	816.347 56(17)	1197.89	0.781E-23	P(58)	R
23	816.532 30(12)*	1802.28	0.131E-22	P(79)	B
24	816.589 03(22)	1940.41	0.558E-23	P(66)	E
25	816.591 28(28)*	1803.61	0.130E-22	P(79)	C
26	816.593 19(10)	1919.30	0.610E-23	P(65)	G
27	816.614 45(33)	1940.56	0.558E-23	P(66)	F
28	816.745 76(9)*	1010.57	0.238E-22	P(71)	P
29	816.783 53(16)	1174.25	0.862E-23	P(57)	Q
30	817.024 98(12)*	1770.28	0.151E-22	P(78)	B
31	817.063 63(22)	1913.60	0.626E-23	P(65)	E
32	817.065 22(10)	1892.89	0.683E-23	P(64)	G
33	817.082 24(26)*	1771.58	0.150E-22	P(78)	C
34	817.087 42(32)	1913.74	0.626E-23	P(65)	F
35	817.222 76(9)*	982.53	0.269E-22	P(70)	P
36	817.240 54(16)	1151.69	0.945E-23	P(56)	Q
37	817.260 47(16)	1152.34	0.942E-23	P(56)	R
38	817.302 26(7)*	2072.09	0.684E-23	P(77)	D
39	817.516 53(11)*	1738.67	0.174E-22	P(77)	B
40	817.559 36(31)	1887.33	0.702E-23	P(64)	F
41	817.572 10(25)*	1739.94	0.173E-22	P(77)	C
42	817.676 43(10)*	1658.48	0.299E-22	P(90)	A
43	817.696 46(16)	1129.53	0.103E-22	P(55)	Q
44	817.698 59(9)*	954.88	0.303E-22	P(69)	P
45	817.715 34(16)	1130.15	0.103E-22	P(55)	R
46	817.799 06(7)*	2041.03	0.785E-23	P(76)	D
47	818.006 36(10)	1841.28	0.851E-23	P(62)	G
48	818.006 96(11)*	1707.48	0.200E-22	P(76)	B
49	818.009 52(23)	1861.19	0.784E-23	P(63)	E
50	818.030 27(31)	1861.32	0.784E-23	P(63)	F
51	818.060 85(23)*	1708.71	0.198E-22	P(76)	C
52	818.151 30(15)	1107.77	0.113E-22	P(54)	Q
53	818.169 15(16)	1108.37	0.113E-22	P(54)	R
54	818.173 27(8)*	927.63	0.341E-22	P(68)	P
55	818.188 13(9)*	1622.10	0.353E-22	P(89)	A
56	818.294 64(7)*	2010.36	0.900E-23	P(75)	D
57	818.475 46(10)	1816.08	0.947E-23	P(61)	G
58	818.480 82(23)	1835.60	0.875E-23	P(62)	E
59	818.496 27(10)*	1676.68	0.229E-22	P(75)	B
60	818.500 15(30)	1835.71	0.874E-23	P(62)	F
61	818.548 51(22)*	1677.89	0.228E-22	P(75)	C
62	818.605 06(15)	1086.39	0.123E-22	P(53)	Q
63	818.621 90(16)	1086.97	0.123E-22	P(53)	R
64	818.646 80(8)*	900.76	0.383E-22	P(67)	P
65	818.698 64(9)*	1586.11	0.417E-22	P(88)	A
66	818.789 01(7)*	1980.10	0.103E-22	P(74)	D
67	818.943 58(10)	1791.29	0.105E-22	P(60)	G
68	818.951 02(23)	1810.40	0.973E-23	P(61)	E
69	818.969 01(30)	1810.52	0.973E-23	P(61)	F
70	818.984 46(10)*	1646.29	0.262E-22	P(74)	B

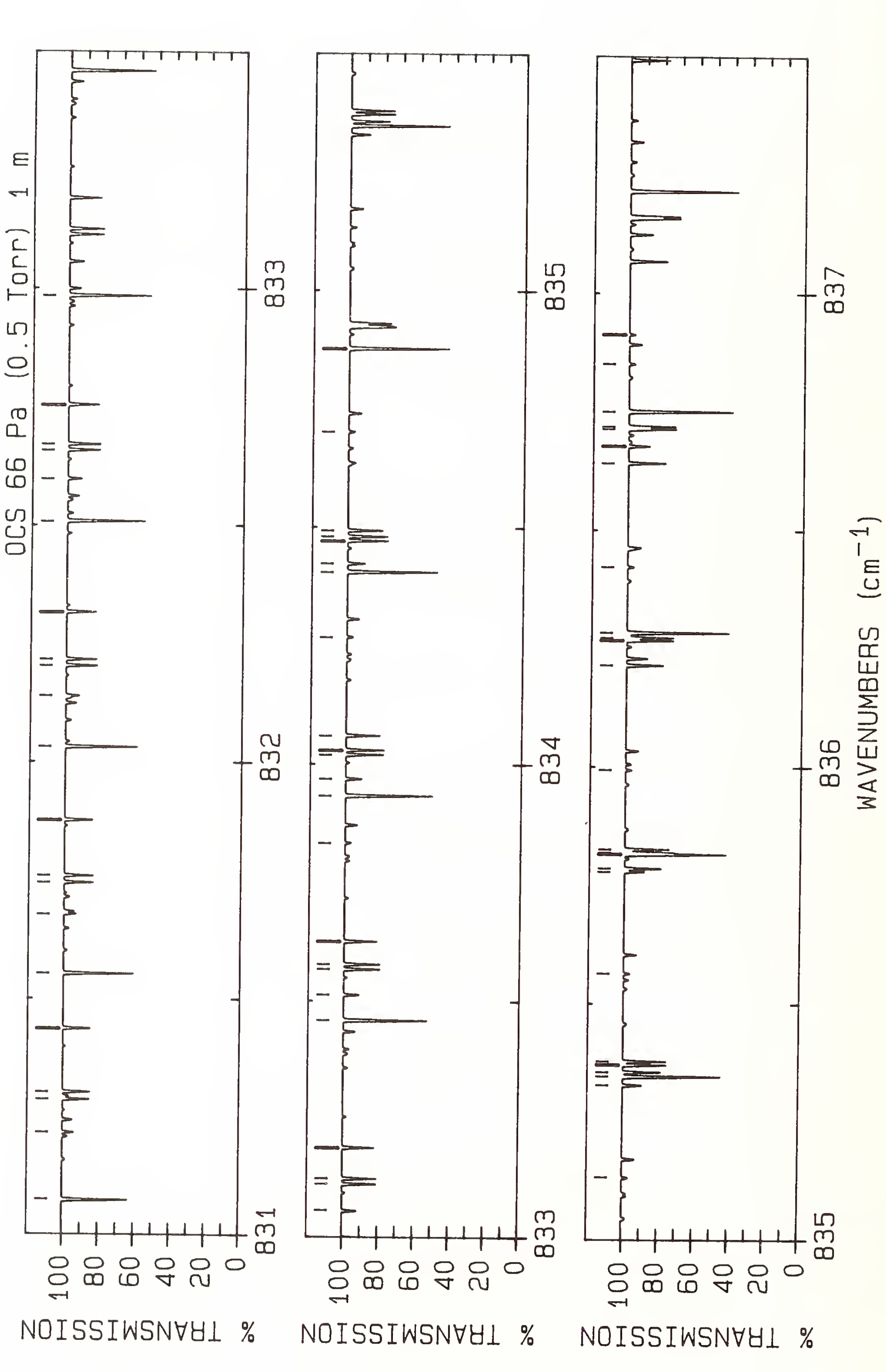

OCS 660 Pa (5.0 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
819
820
821
821
822
823
823
824
825
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	819.119 17(8)*	874.29	0.430E-22	P(66)	P
2	819.207 95(8)*	1550.53	0.490E-22	P(87)	A
3	819.471 54(9)*	1616.30	0.299E-22	P(73)	B
4	819.520 51(19)*	1617.44	0.298E-22	P(73)	C
5	819.590 39(8)*	848.22	0.480E-22	P(65)	P
6	819.716 06(7)*	1515.34	0.575E-22	P(86)	A
7	819.957 49(9)*	1586.72	0.341E-22	P(72)	B
8	820.004 86(18)*	1587.83	0.339E-22	P(72)	C
9	820.060 46(8)*	822.54	0.536E-22	P(64)	P
10	820.222 97(7)*	1480.56	0.674E-22	P(85)	A
11	820.442 33(9)*	1557.54	0.388E-22	P(71)	B
12	820.488 11(17)*	1558.62	0.386E-22	P(71)	C
13	820.529 37(8)*	797.25	0.597E-22	P(63)	P
14	820.728 70(7)*	1446.18	0.787E-22	P(84)	A
15	820.926 06(8)*	1528.76	0.440E-22	P(70)	B
16	820.970 27(16)*	1529.81	0.438E-22	P(70)	C
17	820.997 12(7)*	772.36	0.664E-22	P(62)	P
18	821.233 22(6)*	1412.21	0.918E-22	P(83)	A
19	821.408 67(8)*	1500.39	0.498E-22	P(69)	B
20	821.451 34(15)*	1501.41	0.496E-22	P(69)	C
21	821.463 72(7)*	747.86	0.736E-22	P(61)	P
22	821.729 69(7)*	1806.96	0.220E-22	P(68)	D
23	821.736 56(6)*	1378.63	0.107E-21	P(82)	A
24	821.751 12(15)	947.84	0.210E-22	P(46)	Q
25	821.761 52(14)	948.28	0.210E-22	P(46)	R
26	821.890 16(8)*	1472.41	0.563E-22	P(68)	B
27	821.929 17(7)*	723.75	0.815E-22	P(60)	P
28	821.931 30(15)*	1473.41	0.560E-22	P(68)	C
29	822.238 70(6)*	1345.46	0.124E-21	P(81)	A
30	822.370 55(8)*	1444.85	0.634E-22	P(67)	B
31	822.393 47(7)*	700.04	0.899E-22	P(59)	P
32	822.410 18(14)*	1445.81	0.631E-22	P(67)	C
33	822.700 20(7)*	1752.46	0.279E-22	P(66)	D
34	822.739 64(6)*	1312.69	0.144E-21	P(80)	A
35	822.849 82(7)*	1417.69	0.714E-22	P(66)	B
36	822.856 61(7)*	676.72	0.991E-22	P(58)	P
37	822.887 97(13)*	1418.62	0.710E-22	P(66)	C
38	823.083 23(15)	894.39	0.255E-22	P(43)	Q
39	823.091 24(14)	894.77	0.255E-22	P(43)	R
40	823.112 45(10)	1586.42	0.243E-22	P(51)	G
41	823.183 64(7)*	1725.81	0.313E-22	P(65)	D
42	823.239 40(5)*	1280.32	0.166E-21	P(79)	A
43	823.318 59(7)*	653.80	0.109E-21	P(57)	P
44	823.327 97(7)*	1390.93	0.801E-22	P(65)	B
45	823.364 66(12)*	1391.83	0.797E-22	P(65)	C
46	823.570 72(10)	1565.68	0.264E-22	P(50)	G
47	823.593 45(25)	1580.76	0.250E-22	P(51)	E
48	823.601 43(28)	1580.82	0.250E-22	P(51)	F
49	823.665 87(7)*	1699.57	0.350E-22	P(64)	D
50	823.737 96(5)*	1248.35	0.192E-21	P(78)	A
51	823.779 43(6)*	631.27	0.119E-21	P(56)	P
52	823.805 02(7)*	1364.57	0.897E-22	P(64)	B
53	823.840 27(12)*	1365.45	0.893E-22	P(64)	C
54	824.028 00(10)	1545.35	0.286E-22	P(49)	G
55	824.146 89(7)*	1673.73	0.391E-22	P(63)	D
56	824.235 33(5)*	1216.79	0.221E-21	P(77)	A
57	824.239 11(6)*	609.13	0.131E-21	P(55)	P
58	824.280 96(7)*	1338.62	0.100E-21	P(63)	B
59	824.314 79(11)*	1339.47	0.998E-22	P(63)	C
60	824.484 28(10)	1525.43	0.309E-22	P(48)	G
61	824.509 09(26)	1539.70	0.293E-22	P(49)	E
62	824.515 71(28)	1539.75	0.293E-22	P(49)	F
63	824.626 69(7)*	1648.29	0.436E-22	P(62)	D
64	824.697 64(6)*	587.39	0.143E-21	P(54)	P
65	824.731 52(5)*	1185.63	0.254E-21	P(76)	A
66	824.755 78(7)*	1313.07	0.112E-21	P(62)	B
67	824.788 22(11)*	1313.90	0.111E-21	P(62)	C
68	824.939 56(10)	1505.91	0.332E-22	P(47)	G

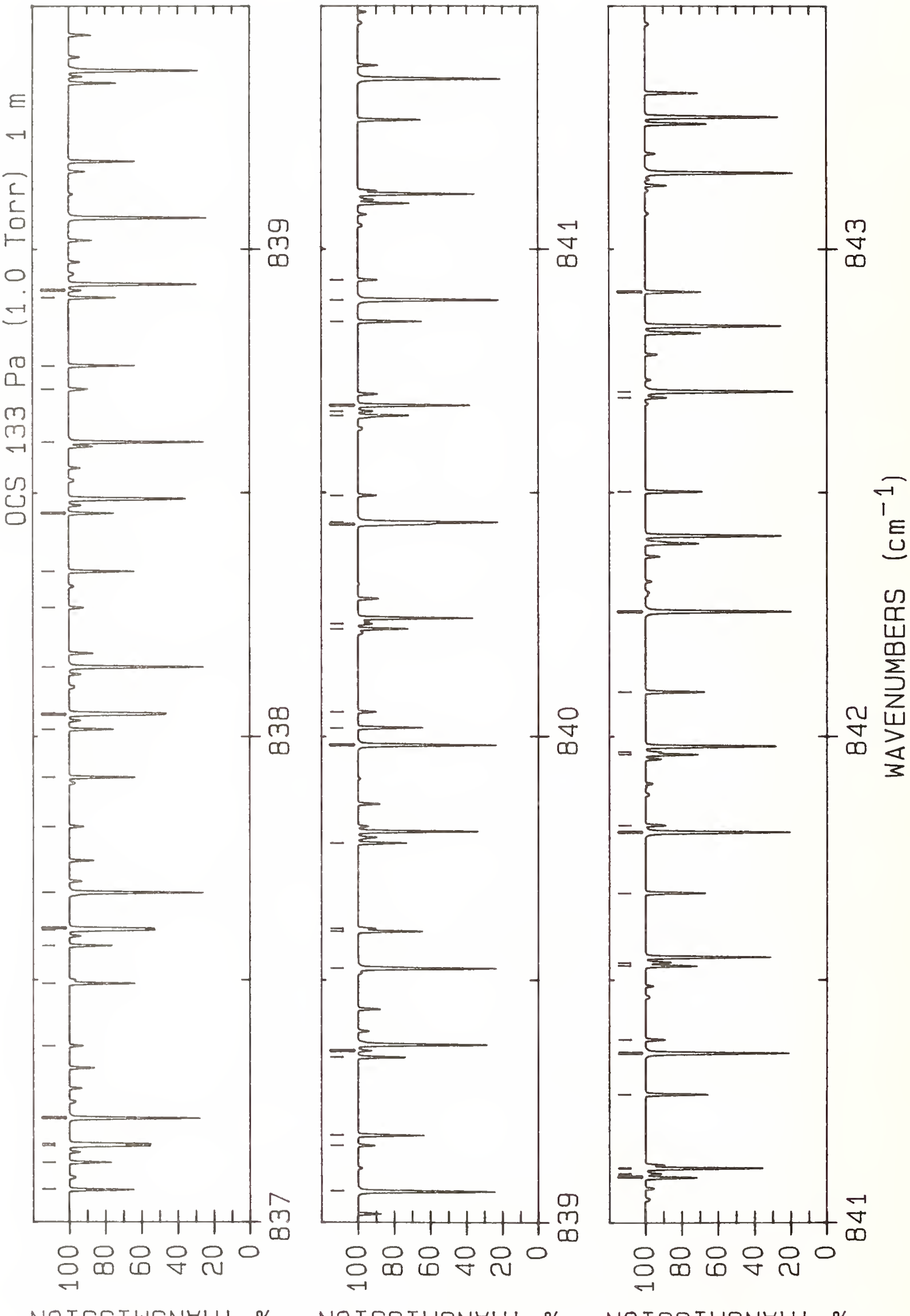


OCS 66 Pa (0.5 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
825
826
827
828
829
830
831
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	825.155 01(6)*	566.04	0.155E-21	P(53)	P	36	828.545 78(10)	1364.38	0.551E-22	P(39)	G
2	825.226 51(5)*	1154.87	0.291E-21	P(75)	A	37	828.658 15(5)*	950.85	0.715E-21	P(68)	A
3	825.229 50(7)*	1287.93	0.124E-21	P(61)	B	38	828.772 47(5)*	409.47	0.284E-21	P(45)	P
4	825.260 56(10)*	1288.73	0.124E-21	P(61)	C	39	828.890 47(7)*	1437.45	0.104E-21	P(53)	D
5	825.611 23(6)*	545.09	0.169E-21	P(52)	P	40	828.979 37(7)*	1101.34	0.269E-21	P(53)	B
6	825.702 11(7)*	1263.19	0.138E-21	P(60)	B	41	828.992 03(10)	1348.52	0.581E-22	P(38)	G
7	825.720 31(5)*	1124.52	0.333E-21	P(74)	A	42	829.000 29(8)*	1101.95	0.268E-21	P(53)	C
8	825.731 82(10)*	1263.97	0.137E-21	P(60)	C	43	829.143 63(5)*	923.31	0.806E-21	P(67)	A
9	826.058 84(7)*	1574.38	0.595E-22	P(59)	D	44	829.219 47(5)*	391.68	0.303E-21	P(44)	P
10	826.066 30(6)*	524.53	0.183E-21	P(51)	P	45	829.358 18(7)*	1416.04	0.114E-21	P(52)	D
11	826.173 61(7)*	1238.86	0.153E-21	P(59)	B	46	829.437 27(10)	1333.06	0.610E-22	P(37)	G
12	826.201 99(9)*	1239.61	0.152E-21	P(59)	C	47	829.443 13(7)*	1079.84	0.293E-21	P(52)	B
13	826.212 92(5)*	1094.57	0.381E-21	P(73)	A	48	829.462 90(8)*	1080.42	0.292E-21	P(52)	C
14	826.520 21(6)*	504.37	0.198E-21	P(50)	P	49	829.469 99(28)	1342.85	0.596E-22	P(38)	E
15	826.644 00(7)*	1214.93	0.169E-21	P(58)	B	50	829.471 92(28)	1342.87	0.596E-22	P(38)	F
16	826.671 08(9)*	1215.65	0.168E-21	P(58)	C	51	829.627 93(5)*	896.18	0.907E-21	P(66)	A
17	826.704 34(5)*	1065.02	0.434E-21	P(72)	A	52	829.665 30(5)*	374.27	0.322E-21	P(43)	P
18	826.972 97(5)*	484.60	0.214E-21	P(49)	P	53	829.824 67(7)*	1395.03	0.124E-21	P(51)	D
19	827.113 29(7)*	1191.40	0.186E-21	P(57)	B	54	829.881 50(10)	1318.01	0.639E-22	P(36)	G
20	827.139 08(9)*	1192.10	0.186E-21	P(57)	C	55	829.905 78(7)*	1058.74	0.318E-21	P(51)	B
21	827.194 58(5)*	1035.87	0.493E-21	P(71)	A	56	829.924 42(7)*	1059.31	0.318E-21	P(51)	C
22	827.424 58(5)*	465.23	0.231E-21	P(48)	P	57	830.109 99(5)*	357.27	0.342E-21	P(42)	P
23	827.480 10(7)*	1504.10	0.797E-22	P(56)	D	58	830.111 04(5)*	869.46	0.102E-20	P(65)	A
24	827.581 46(7)*	1168.28	0.205E-21	P(56)	B	59	830.289 96(7)*	1374.42	0.134E-21	P(50)	D
25	827.606 01(8)*	1168.96	0.204E-21	P(56)	C	60	830.324 71(10)	1303.37	0.667E-22	P(35)	G
26	827.683 62(5)*	1007.13	0.559E-21	P(70)	A	61	830.358 47(28)	1312.34	0.655E-22	P(36)	E
27	827.875 03(5)*	446.25	0.248E-21	P(47)	P	62	830.359 93(28)	1312.36	0.655E-22	P(36)	F
28	827.951 43(7)*	1481.48	0.874E-22	P(55)	D	63	830.367 33(7)*	1038.05	0.345E-21	P(50)	B
29	828.048 54(7)*	1145.56	0.225E-21	P(55)	B	64	830.384 87(7)*	1038.59	0.344E-21	P(50)	C
30	828.071 85(8)*	1146.22	0.224E-21	P(55)	C	65	830.553 51(5)*	340.66	0.362E-21	P(41)	P
31	828.171 48(5)*	978.78	0.633E-21	P(69)	A	66	830.592 96(5)*	843.13	0.114E-20	P(64)	A
32	828.324 33(5)*	427.66	0.266E-21	P(46)	P	67	830.754 05(7)*	1354.22	0.145E-21	P(49)	D
33	828.421 56(7)*	1459.26	0.956E-22	P(54)	D	68	830.827 77(7)*	1017.76	0.374E-21	P(49)	B
34	828.514 50(7)*	1123.25	0.246E-21	P(54)	B	69	830.844 24(7)*	1018.28	0.373E-21	P(49)	C
35	828.536 61(8)*	1123.88	0.245E-21	P(54)	C	70	830.995 89(5)*	324.44	0.383E-21	P(40)	P

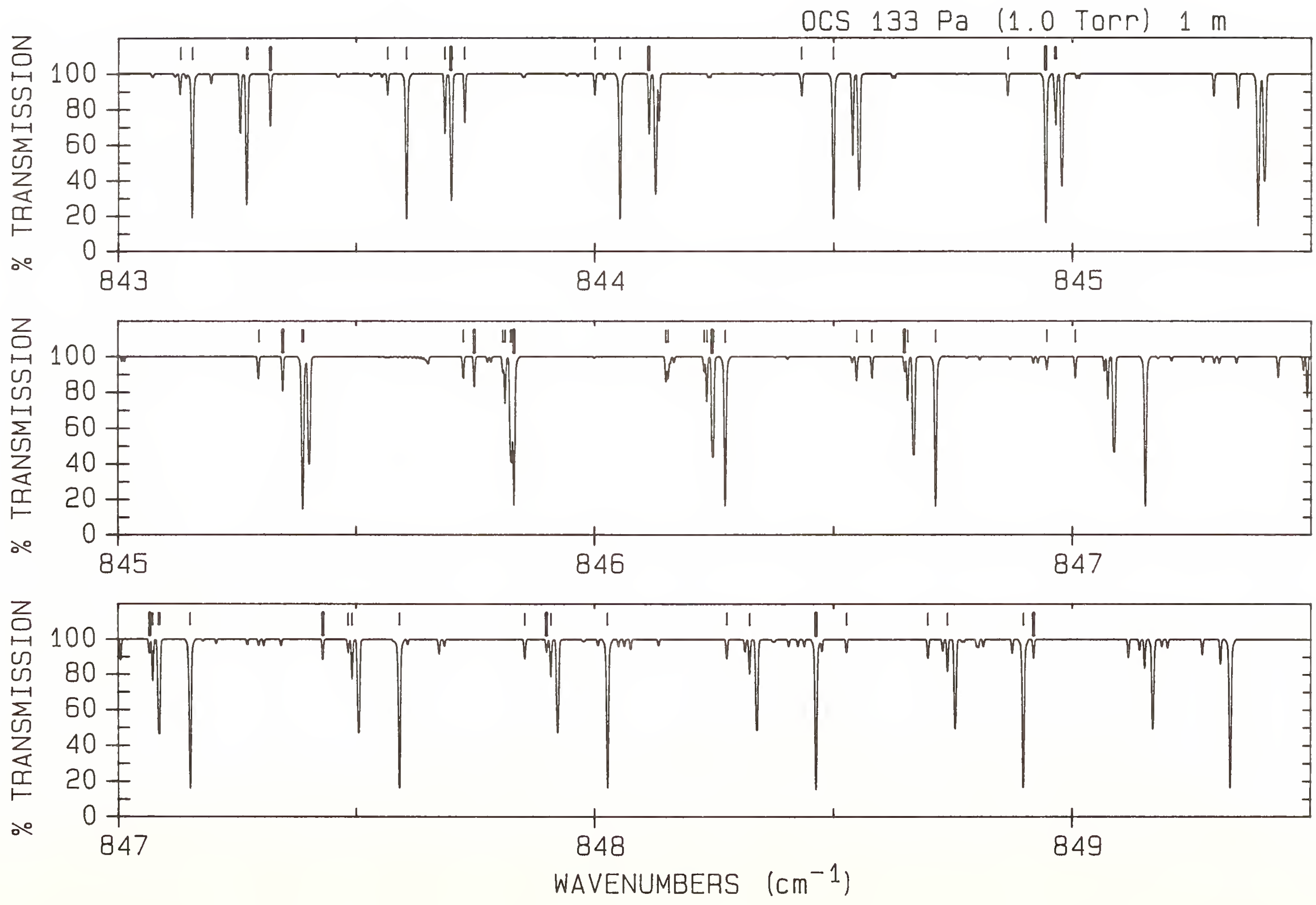

OCS 66 Pa (0.5 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
831
832
833
834
835
836
837
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	831.073 70(5)*	817.21	0.127E-20	P(63)	A	36	834.060 14(7)*	221.99	0.522E-21	P(33)	P
2	831.216 92(7)*	1334.42	0.157E-21	P(48)	D	37	834.267 75(10)	1189.87	0.865E-22	P(26)	G
3	831.287 11(7)*	997.88	0.404E-21	P(48)	B	38	834.405 66(5)*	647.08	0.260E-20	P(56)	A
4	831.302 53(7)*	998.38	0.403E-21	P(48)	C	39	834.423 18(7)*	1207.11	0.249E-21	P(41)	D
5	831.437 10(5)*	308.62	0.403E-21	P(39)	P	40	834.471 63(7)*	870.04	0.644E-21	P(41)	B
6	831.553 25(5)*	791.70	0.142E-20	P(62)	A	41	834.480 46(7)*	870.40	0.643E-21	P(41)	C
7	831.678 58(7)*	1315.02	0.168E-21	P(47)	D	42	834.493 27(7)*	208.93	0.539E-21	P(32)	P
8	831.745 35(7)*	978.40	0.435E-21	P(47)	B	43	834.700 74(10)	1179.29	0.876E-22	P(25)	G
9	831.759 74(7)*	978.88	0.434E-21	P(47)	C	44	834.876 39(7)*	1190.54	0.264E-21	P(40)	D
10	831.877 17(6)*	293.19	0.424E-21	P(38)	P	45	834.876 91(5)*	624.39	0.285E-20	P(55)	A
11	832.031 61(5)*	766.58	0.158E-20	P(61)	A	46	835.132 71(10)	1169.12	0.884E-22	P(24)	G
12	832.139 04(7)*	1296.03	0.181E-21	P(46)	D	47	835.328 38(7)*	1174.37	0.278E-21	P(39)	D
13	832.202 49(7)*	959.33	0.467E-21	P(46)	B	48	835.346 99(5)*	602.10	0.312E-20	P(54)	A
14	832.215 88(7)*	959.78	0.466E-21	P(46)	C	49	835.356 05(7)*	184.01	0.571E-21	P(30)	P
15	832.316 07(6)*	278.16	0.444E-21	P(37)	P	50	835.371 58(7)*	837.16	0.720E-21	P(39)	B
16	832.508 79(5)*	741.87	0.175E-20	P(60)	A	51	835.378 78(7)*	837.49	0.719E-21	P(39)	C
17	832.598 28(7)*	1277.44	0.194E-21	P(45)	D	52	835.563 65(10)	1159.35	0.889E-22	P(23)	G
18	832.658 52(7)*	940.66	0.501E-21	P(45)	B	53	835.779 17(7)*	1158.61	0.293E-21	P(38)	D
19	832.670 95(7)*	941.10	0.500E-21	P(45)	C	54	835.785 70(8)*	172.14	0.585E-21	P(29)	P
20	832.753 83(6)*	263.53	0.464E-21	P(36)	P	55	835.815 87(5)*	580.22	0.341E-20	P(53)	A
21	832.984 79(5)*	717.57	0.194E-20	P(59)	A	56	835.819 89(7)*	821.33	0.758E-21	P(38)	B
22	833.056 32(7)*	1259.25	0.207E-21	P(44)	D	57	835.826 32(7)*	821.64	0.757E-21	P(38)	C
23	833.113 45(7)*	922.39	0.535E-21	P(44)	B	58	835.993 55(10)	1149.99	0.890E-22	P(22)	G
24	833.124 94(7)*	922.82	0.534E-21	P(44)	C	59	836.214 19(8)*	160.67	0.598E-21	P(28)	P
25	833.190 42(6)*	249.29	0.484E-21	P(35)	P	60	836.267 11(7)*	805.90	0.796E-21	P(37)	B
26	833.459 60(5)*	693.67	0.214E-20	P(58)	A	61	836.272 80(7)*	806.20	0.795E-21	P(37)	C
27	833.513 15(7)*	1241.47	0.221E-21	P(43)	D	62	836.283 57(5)*	558.74	0.371E-20	P(52)	A
28	833.567 28(7)*	904.54	0.571E-21	P(43)	B	63	836.422 43(10)	1141.04	0.888E-22	P(21)	G
29	833.577 85(7)*	904.94	0.570E-21	P(43)	C	64	836.641 52(8)*	149.59	0.609E-21	P(27)	P
30	833.625 86(6)*	235.44	0.503E-21	P(34)	P	65	836.677 11(7)*	1128.29	0.322E-21	P(36)	D
31	833.833 72(10)	1200.85	0.851E-22	P(27)	G	66	836.713 23(7)*	790.88	0.833E-21	P(36)	B
32	833.933 22(5)*	670.17	0.236E-20	P(57)	A	67	836.718 20(7)*	791.16	0.832E-21	P(36)	C
33	833.968 77(7)*	1224.09	0.235E-21	P(42)	D	68	836.750 09(5)*	537.67	0.404E-20	P(51)	A
34	834.020 01(7)*	887.08	0.607E-21	P(42)	B	69	836.850 27(10)	1132.50	0.882E-22	P(20)	G
35	834.029 69(7)*	887.47	0.606E-21	P(42)	C	70	836.912 82(8)	348.07	0.898E-22	P(41)	T



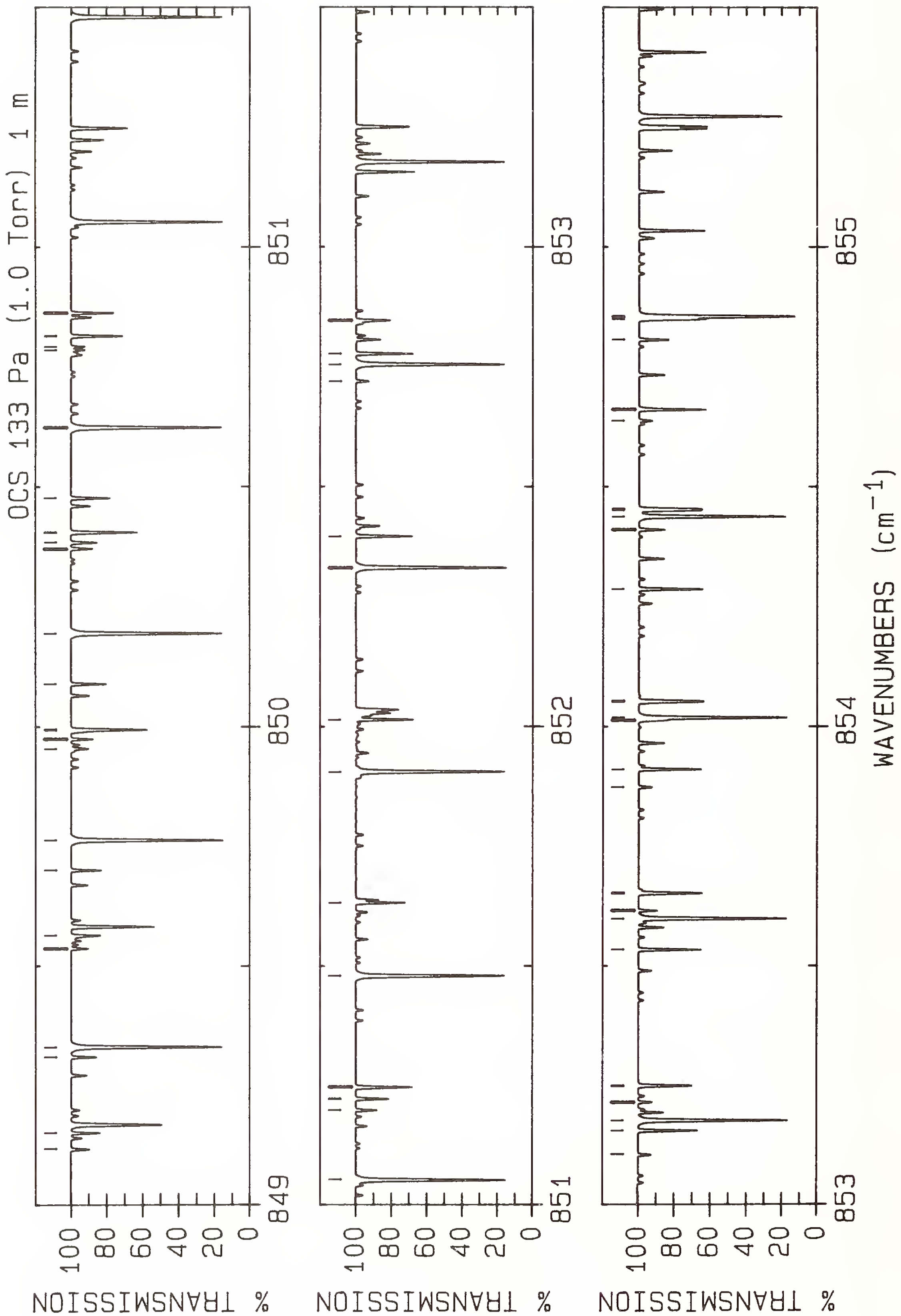
OCS 133 Pa (1.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
837 838 839
839 840 841
841 842 843
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	837.067 70(8)*	138.90	0.618E-21	P(26)	P	36	840.018 40(10)*	75.19	0.618E-21	P(19)	P
2	837.124 27(7)*	1113.73	0.336E-21	P(35)	D	37	840.050 81(7)	240.56	0.126E-21	P(34)	T
3	837.158 24(7)*	776.26	0.870E-21	P(35)	B	38	840.220 48(7)*	1023.17	0.419E-21	P(28)	D
4	837.162 53(7)*	776.53	0.869E-21	P(35)	C	39	840.230 83(12)	198.66	0.997E-22	P(31)	L
5	837.215 42(5)*	517.00	0.438E-20	P(50)	A	40	840.435 28(10)*	67.68	0.607E-21	P(18)	P
6	837.364 64(8)	331.50	0.951E-22	P(40)	T	41	840.439 59(5)*	383.65	0.723E-20	P(43)	A
7	837.492 71(9)*	128.62	0.625E-21	P(25)	P	42	840.494 39(7)	226.82	0.131E-21	P(33)	T
8	837.570 21(7)*	1099.58	0.350E-21	P(34)	D	43	840.657 95(7)*	1011.84	0.427E-21	P(27)	D
9	837.602 15(7)*	762.05	0.907E-21	P(34)	B	44	840.666 89(12)	186.25	0.102E-21	P(30)	L
10	837.605 79(7)*	762.31	0.905E-21	P(34)	C	45	840.678 57(7)*	674.10	0.111E-20	P(27)	C
11	837.679 57(5)*	496.74	0.474E-20	P(49)	A	46	840.678 67(7)*	673.94	0.111E-20	P(27)	B
12	837.815 28(8)	315.33	0.100E-21	P(39)	T	47	840.850 99(10)*	60.55	0.594E-21	P(17)	P
13	837.916 56(9)*	118.72	0.630E-21	P(24)	P	48	840.895 44(5)*	366.22	0.769E-20	P(42)	A
14	838.014 95(7)*	1085.84	0.364E-21	P(33)	D	49	840.936 78(7)	213.48	0.136E-21	P(32)	T
15	838.044 96(7)*	748.25	0.941E-21	P(33)	B	50	841.094 20(7)*	1000.93	0.434E-21	P(26)	D
16	838.047 97(7)*	748.49	0.940E-21	P(33)	C	51	841.101 78(12)	174.23	0.105E-21	P(29)	L
17	838.142 53(5)*	476.88	0.512E-20	P(48)	A	52	841.113 25(7)*	663.13	0.113E-20	P(26)	C
18	838.264 74(8)	299.57	0.106E-21	P(38)	T	53	841.113 76(7)*	662.98	0.113E-20	P(26)	B
19	838.339 25(9)*	109.23	0.632E-21	P(23)	P	54	841.265 54(11)*	53.83	0.578E-21	P(16)	P
20	838.458 48(7)*	1072.49	0.376E-21	P(32)	D	55	841.350 12(5)*	349.19	0.816E-20	P(41)	A
21	838.604 31(5)*	457.42	0.551E-20	P(47)	A	56	841.377 99(7)	200.54	0.140E-21	P(31)	T
22	838.713 02(7)	284.21	0.111E-21	P(37)	T	57	841.529 25(7)*	990.41	0.440E-21	P(25)	D
23	838.760 79(9)*	100.13	0.633E-21	P(22)	P	58	841.535 50(12)	162.62	0.108E-21	P(28)	L
24	838.900 80(7)*	1059.56	0.388E-21	P(31)	D	59	841.678 92(11)*	47.49	0.559E-21	P(15)	P
25	838.915 61(12)	238.30	0.900E-22	P(34)	L	60	841.803 60(5)*	332.57	0.864E-20	P(40)	A
26	839.064 91(5)*	438.37	0.592E-20	P(46)	A	61	841.818 03(7)	188.01	0.144E-21	P(30)	T
27	839.160 13(7)	269.26	0.116E-21	P(36)	T	62	841.963 08(7)*	980.30	0.444E-21	P(24)	D
28	839.181 15(9)*	91.42	0.630E-21	P(21)	P	63	841.968 04(12)	151.40	0.109E-21	P(27)	L
29	839.341 90(7)*	1047.02	0.400E-21	P(30)	D	64	842.091 13(11)*	41.56	0.537E-21	P(14)	P
30	839.355 19(12)	224.69	0.934E-22	P(33)	L	65	842.255 90(5)*	316.35	0.912E-20	P(39)	A
31	839.524 32(5)*	419.73	0.634E-20	P(45)	A	66	842.256 89(7)	175.88	0.148E-21	P(29)	T
32	839.600 36(10)*	83.11	0.625E-21	P(20)	P	67	842.502 18(11)*	36.02	0.513E-21	P(13)	P
33	839.606 06(7)	254.71	0.121E-21	P(35)	T	68	842.694 56(7)	164.16	0.151E-21	P(28)	T
34	839.781 79(7)*	1034.89	0.410E-21	P(29)	D	69	842.707 02(5)*	300.54	0.960E-20	P(38)	A
35	839.982 55(5)*	401.49	0.678E-20	P(44)	A	70	842.912 06(11)*	30.87	0.486E-21	P(12)	P



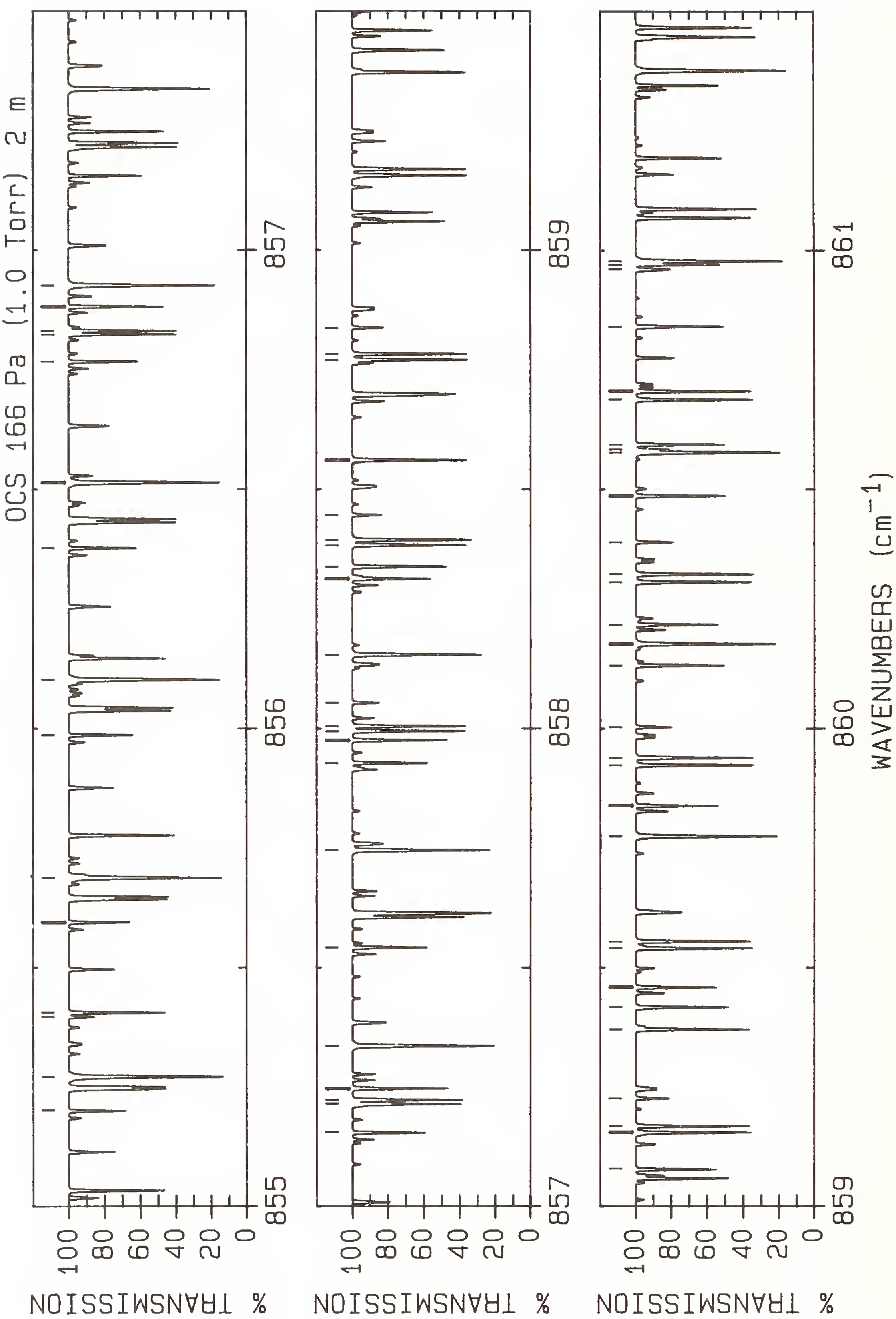
OCS 133 Pa (1.0 Torr) 1 m
% TRANSMISSION
0
20
40
60
80
100
843
844
845
846
847
848
849
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	843.131 06(7)	152.84	0.154E-21	P(27)	T	36	846.148 94(12)*	3.96	0.185E-21	P(4)	P
2	843.156 95(5)*	285.13	0.101E-19	P(37)	A	37	846.153 45(8)	84.92	0.159E-21	P(20)	T
3	843.270 56(7)*	614.35	0.115E-20	P(21)	C	38	846.228 78(12)	61.29	0.107E-21	P(17)	L
4	843.272 65(7)*	614.25	0.115E-20	P(21)	B	39	846.234 52(7)*	901.44	0.382E-21	P(14)	D
5	843.320 77(11)*	26.12	0.456E-21	P(11)	P	40	846.245 65(7)*	563.12	0.988E-21	P(14)	C
6	843.566 37(7)	141.93	0.157E-21	P(26)	T	41	846.248 63(7)*	563.07	0.988E-21	P(14)	B
7	843.605 70(5)*	270.13	0.106E-19	P(36)	A	42	846.273 24(5)*	188.62	0.131E-19	P(30)	A
8	843.686 25(7)*	943.90	0.442E-21	P(20)	D	43	846.548 27(12)*	2.38	0.140E-21	P(3)	P
9	843.686 46(12)	110.55	0.114E-21	P(23)	L	44	846.580 49(8)	76.83	0.158E-21	P(19)	T
10	843.698 80(7)*	605.81	0.115E-20	P(20)	C	45	846.648 38(12)	54.48	0.104E-21	P(16)	L
11	843.701 11(7)*	605.72	0.115E-20	P(20)	B	46	846.654 96(7)*	895.77	0.365E-21	P(13)	D
12	843.728 31(12)*	21.77	0.424E-21	P(10)	P	47	846.713 68(5)*	176.45	0.135E-19	P(29)	A
13	844.000 51(7)	131.41	0.158E-21	P(25)	T	48	846.946 42(12)*	1.19	0.940E-22	P(2)	P
14	844.053 26(5)*	255.53	0.110E-19	P(35)	A	49	847.006 34(8)	69.15	0.155E-21	P(18)	T
15	844.113 12(12)	101.34	0.114E-21	P(22)	L	50	847.066 79(12)	48.07	0.101E-21	P(15)	L
16	844.114 01(7)*	935.82	0.437E-21	P(19)	D	51	847.074 18(7)*	890.52	0.346E-21	P(12)	D
17	844.433 46(8)	121.31	0.160E-21	P(24)	T	52	847.085 99(7)*	552.14	0.893E-21	P(12)	C
18	844.499 63(5)*	241.34	0.115E-19	P(34)	A	53	847.088 93(7)*	552.11	0.893E-21	P(12)	B
19	844.865 23(8)	111.60	0.161E-21	P(23)	T	54	847.152 93(5)*	164.69	0.138E-19	P(28)	A
20	844.943 90(12)*	11.08	0.313E-21	P(7)	P	55	847.431 01(8)	61.87	0.152E-21	P(17)	T
21	844.944 81(5)*	227.55	0.119E-19	P(33)	A	56	847.484 02(12)	42.06	0.973E-22	P(14)	L
22	844.962 92(12)	84.12	0.113E-21	P(20)	L	57	847.492 19(7)*	885.66	0.324E-21	P(11)	D
23	844.965 87(7)*	920.85	0.421E-21	P(17)	D	58	847.590 98(5)*	153.34	0.140E-19	P(27)	A
24	845.295 82(8)	102.30	0.161E-21	P(22)	T	59	847.854 49(9)	55.00	0.148E-21	P(16)	T
25	845.346 76(12)*	8.31	0.272E-21	P(6)	P	60	847.900 07(12)	36.45	0.929E-22	P(13)	L
26	845.386 05(12)	76.11	0.112E-21	P(19)	L	61	847.908 96(7)*	881.21	0.301E-21	P(10)	D
27	845.388 81(5)*	214.17	0.124E-19	P(32)	A	62	848.027 85(5)*	142.38	0.143E-19	P(26)	A
28	845.389 97(7)*	913.98	0.410E-21	P(16)	D	63	848.276 79(9)	48.53	0.143E-21	P(15)	T
29	845.725 23(8)	93.41	0.161E-21	P(21)	T	64	848.324 52(7)*	877.17	0.277E-21	P(9)	D
30	845.748 44(12)*	5.94	0.229E-21	P(5)	P	65	848.463 53(5)*	131.84	0.145E-19	P(25)	A
31	845.808 01(12)	68.50	0.110E-21	P(18)	L	66	848.527 24(12)*	0.40	0.945E-22	R(1)	P
32	845.812 85(7)*	907.50	0.397E-21	P(15)	D	67	848.697 90(9)	42.46	0.138E-21	P(14)	T
33	845.823 87(7)*	569.22	0.103E-20	P(15)	C	68	848.738 85(7)*	873.53	0.251E-21	P(8)	D
34	845.826 81(7)*	569.16	0.103E-20	P(15)	B	69	848.898 02(5)*	121.70	0.146E-19	P(24)	A
35	845.831 62(5)*	201.19	0.128E-19	P(31)	A	70	848.919 50(12)*	1.19	0.141E-21	R(2)	P



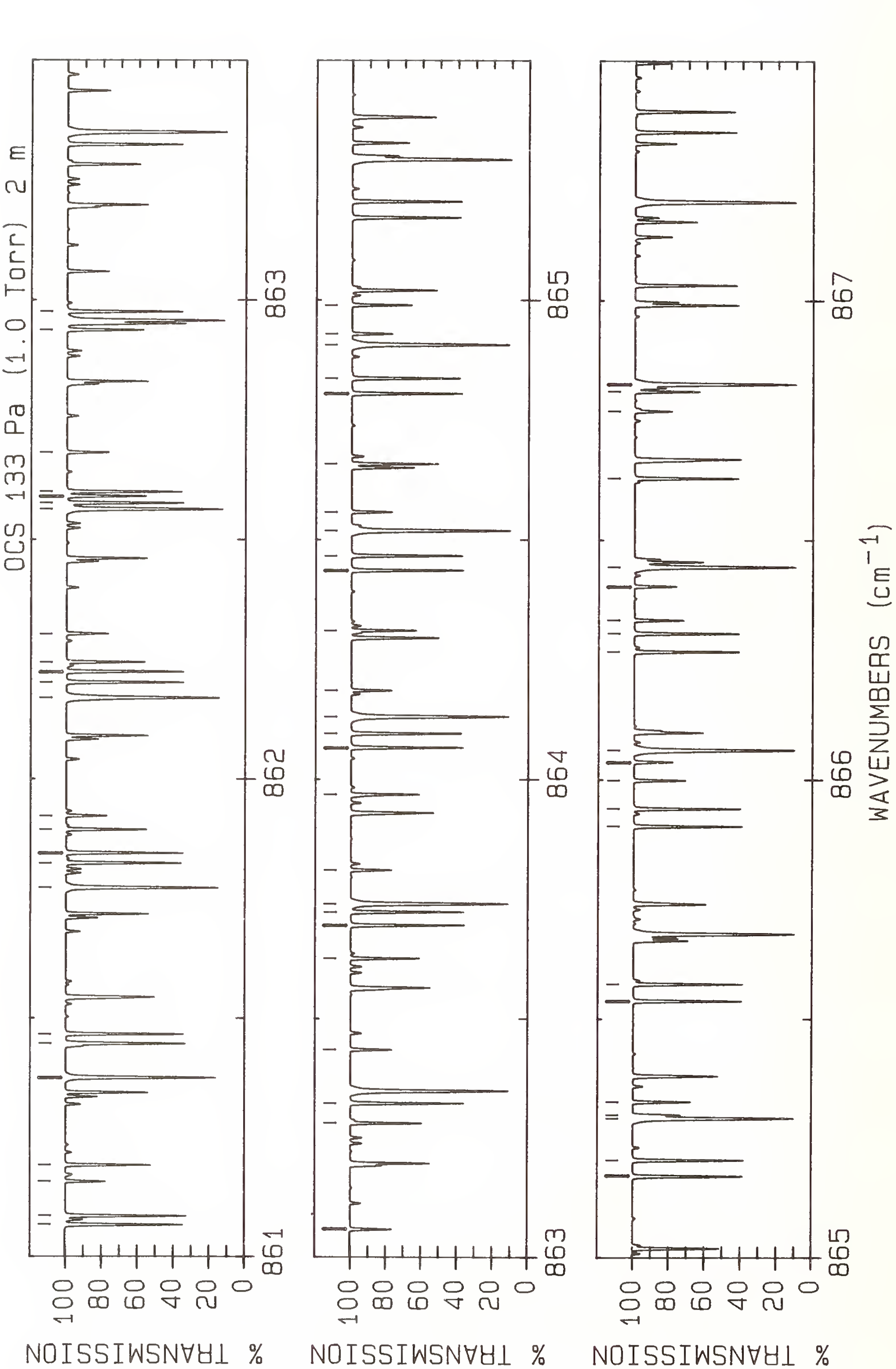
OCS 133 Pa (1.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
849
850
851
852
853
854
855
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	849.117 82(9)	36.80	0.131E-21	P(13)	T
2	849.151 96(7)*	870.29	0.223E-21	P(7)	D
3	849.310 57(12)*	2.38	0.187E-21	R(3)	P
4	849.331 31(5)*	111.96	0.147E-19	P(23)	A
5	849.536 56(9)	31.54	0.125E-21	P(12)	T
6	849.563 84(7)*	867.46	0.194E-21	P(6)	D
7	849.700 46(12)*	3.96	0.233E-21	R(4)	P
8	849.763 42(5)*	102.63	0.147E-19	P(22)	A
9	849.954 10(9)	26.69	0.117E-21	P(11)	T
10	849.974 49(7)*	865.03	0.164E-21	P(5)	D
11	849.993 16(7)*	526.52	0.409E-21	P(5)	C
12	849.994 95(7)*	526.51	0.409E-21	P(5)	B
13	850.089 16(12)*	5.94	0.277E-21	R(5)	P
14	850.194 33(5)*	93.71	0.146E-19	P(21)	A
15	850.370 46(9)	22.24	0.109E-21	P(10)	T
16	850.383 91(7)*	863.01	0.132E-21	P(4)	D
17	850.404 13(7)*	524.49	0.323E-21	P(4)	C
18	850.405 63(7)*	524.48	0.323E-21	P(4)	B
19	850.476 68(12)*	8.31	0.319E-21	R(6)	P
20	850.624 05(5)*	85.19	0.145E-19	P(20)	A
21	850.785 62(9)	18.20	0.998E-22	P(9)	T
22	850.792 11(7)*	861.39	0.100E-21	P(3)	D
23	850.814 03(7)*	522.86	0.231E-21	P(3)	C
24	850.815 20(7)*	522.86	0.231E-21	P(3)	B
25	850.863 01(12)*	11.08	0.360E-21	R(7)	P
26	851.052 58(5)*	77.08	0.144E-19	P(19)	A
27	851.199 59(10)	14.56	0.903E-22	P(8)	T
28	851.222 83(7)*	521.64	0.131E-21	P(2)	C
29	851.223 65(7)*	521.64	0.131E-21	P(2)	B
30	851.248 15(12)*	14.25	0.399E-21	R(8)	P
31	851.479 91(5)*	69.37	0.142E-19	P(18)	A
32	851.632 10(11)*	17.81	0.436E-21	R(9)	P
33	851.906 05(5)*	62.07	0.138E-19	P(17)	A
34	852.014 86(11)*	21.77	0.471E-21	R(10)	P
35	852.331 00(5)*	55.17	0.135E-19	P(16)	A
36	852.396 43(11)*	26.12	0.503E-21	R(11)	P
37	852.719 57(10)	1116.63	0.924E-22	R(18)	G
38	852.754 74(5)*	48.68	0.131E-19	P(15)	A
39	852.776 81(11)*	30.87	0.533E-21	R(12)	P
40	852.846 23(7)*	520.83	0.132E-21	R(1)	B
41	852.847 18(7)*	520.83	0.132E-21	R(1)	C
42	853.105 30(10)	1124.36	0.937E-22	R(19)	G
43	853.155 99(11)*	36.02	0.560E-21	R(13)	P
44	853.177 30(5)*	42.60	0.126E-19	P(14)	A
45	853.215 42(7)*	860.18	0.101E-21	R(2)	D
46	853.249 07(7)*	521.64	0.234E-21	R(2)	B
47	853.250 54(7)*	521.64	0.234E-21	R(2)	C
48	853.533 98(11)*	41.56	0.584E-21	R(14)	P
49	853.598 65(5)*	36.92	0.120E-19	P(13)	A
50	853.614 99(7)*	861.39	0.134E-21	R(3)	D
51	853.650 79(7)*	522.86	0.327E-21	R(3)	B
52	853.652 81(7)*	522.86	0.327E-21	R(3)	C
53	853.873 55(10)	1141.04	0.951E-22	R(21)	G
54	853.910 77(10)*	47.49	0.606E-21	R(15)	P
55	854.013 32(7)*	863.01	0.166E-21	R(4)	D
56	854.018 81(5)*	31.64	0.114E-19	P(12)	A
57	854.051 37(7)*	524.48	0.415E-21	R(4)	B
58	854.053 98(7)*	524.49	0.415E-21	R(4)	C
59	854.286 36(10)*	53.83	0.624E-21	R(16)	P
60	854.410 40(7)*	865.03	0.197E-21	R(5)	D
61	854.437 76(5)*	26.78	0.107E-19	P(11)	A
62	854.450 83(7)*	526.51	0.500E-21	R(5)	B
63	854.454 06(7)*	526.52	0.500E-21	R(5)	C
64	854.637 52(10)	1159.35	0.950E-22	R(23)	G
65	854.660 75(10)*	60.55	0.640E-21	R(17)	P
66	854.806 25(7)*	867.46	0.228E-21	R(6)	D
67	854.849 16(7)*	528.95	0.581E-21	R(6)	B
68	854.853 05(7)*	528.96	0.581E-21	R(6)	C
69	854.855 52(5)*	22.31	0.992E-20	P(10)	A

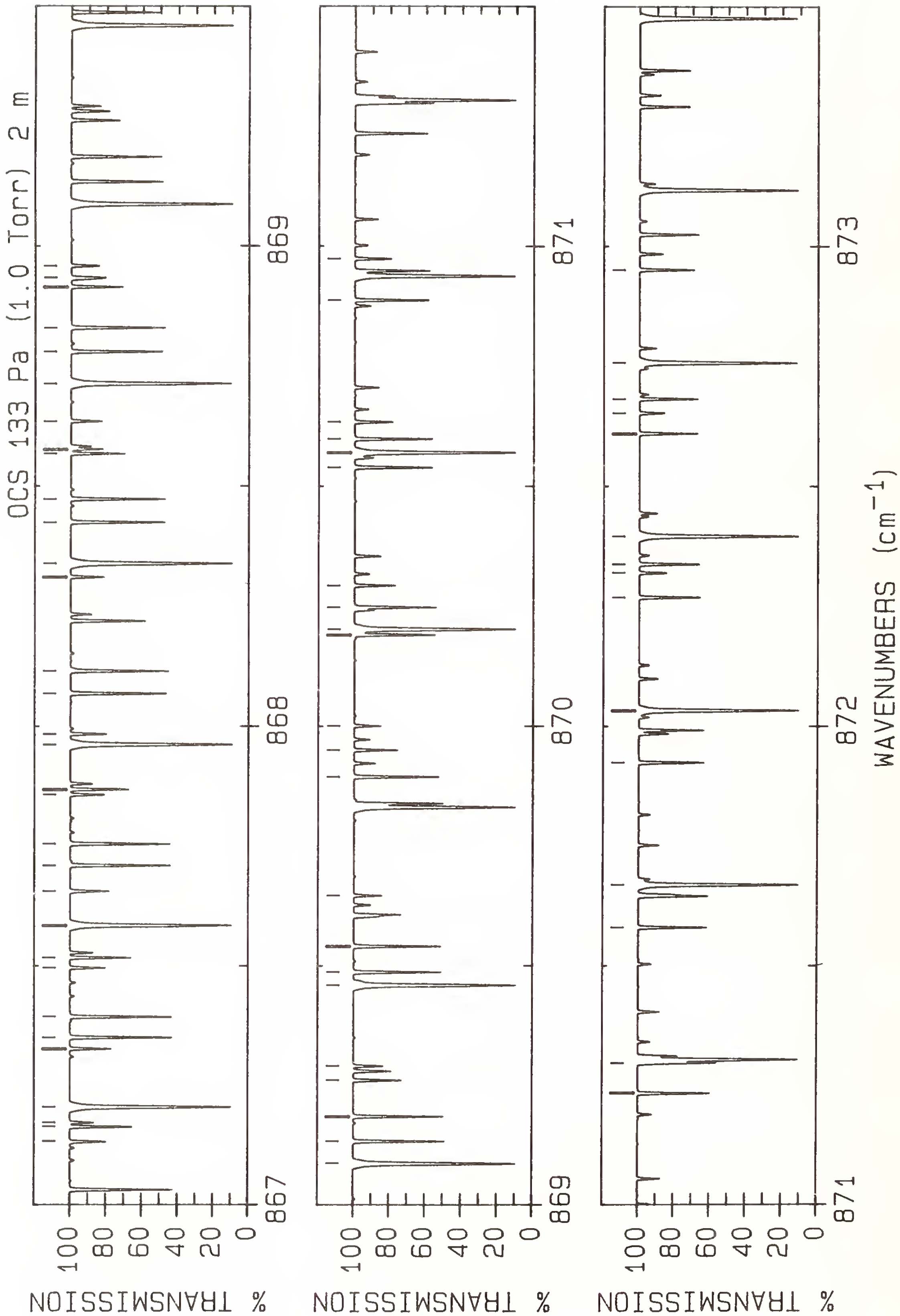


OCS 166 Pa (1.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
855
856
857
858
859
860
861
WAVENUMBERS (cm^{-1})

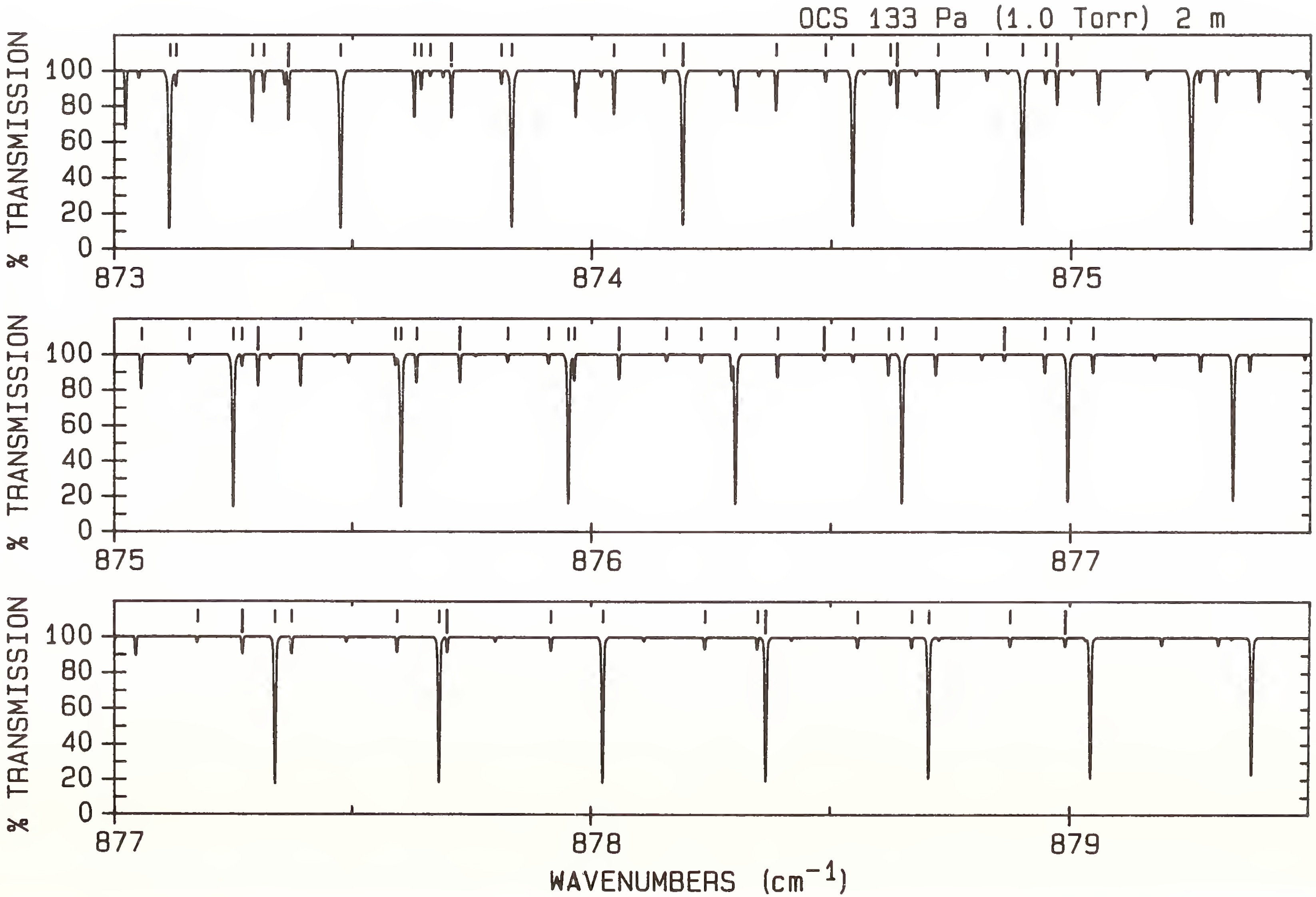
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	855.200 86(7)*	870.29	0.257E-21	R(7)	D
2	855.272 08(5)*	18.26	0.911E-20	P(9)	A
3	855.397 21(10)	1179.29	0.935E-22	R(25)	G
4	855.405 93(9)*	75.19	0.663E-21	R(19)	P
5	855.594 23(7)*	873.53	0.284E-21	R(8)	D
6	855.687 44(5)*	14.61	0.825E-20	P(8)	A
7	855.986 35(7)*	877.17	0.311E-21	R(9)	D
8	856.101 59(5)*	11.36	0.734E-20	P(7)	A
9	856.377 23(7)*	881.21	0.335E-21	R(10)	D
10	856.514 54(5)*	8.52	0.638E-20	P(6)	A
11	856.514 67(9)*	100.13	0.676E-21	R(22)	P
12	856.766 86(7)*	885.66	0.358E-21	R(11)	D
13	856.823 84(7)*	547.23	0.926E-21	R(11)	B
14	856.831 47(7)*	547.26	0.926E-21	R(11)	C
15	856.881 84(9)*	109.23	0.675E-21	R(23)	P
16	856.926 29(5)*	6.09	0.538E-20	P(5)	A
17	857.155 24(7)*	890.52	0.379E-21	R(12)	D
18	857.215 37(7)*	552.11	0.981E-21	R(12)	B
19	857.223 84(7)*	552.14	0.981E-21	R(12)	C
20	857.247 80(8)*	118.72	0.672E-21	R(24)	P
21	857.336 83(5)*	4.06	0.435E-20	P(4)	A
22	857.542 37(7)*	895.77	0.398E-21	R(13)	D
23	857.746 17(5)*	2.43	0.329E-20	P(3)	A
24	857.928 26(7)*	901.44	0.415E-21	R(14)	D
25	857.976 08(8)*	138.90	0.659E-21	R(26)	P
26	857.995 01(7)*	563.07	0.107E-20	R(14)	B
27	858.005 28(7)*	563.12	0.107E-20	R(14)	C
28	858.053 91(9)	14.56	0.102E-21	R(8)	T
29	858.154 30(5)*	1.22	0.221E-20	P(2)	A
30	858.312 89(7)*	907.50	0.430E-21	R(15)	D
31	858.338 40(8)*	149.59	0.649E-21	R(27)	P
32	858.383 12(7)*	569.16	0.112E-20	R(15)	B
33	858.394 33(7)*	569.22	0.112E-20	R(15)	C
34	858.446 27(9)	18.20	0.112E-21	R(9)	T
35	858.561 22(5)*	0.41	0.111E-20	P(1)	A
36	858.770 09(7)*	575.66	0.115E-20	R(16)	B
37	858.782 27(7)*	575.72	0.115E-20	R(16)	C
38	858.837 41(9)	22.24	0.121E-21	R(10)	T
39	859.078 39(7)*	920.85	0.454E-21	R(17)	D
40	859.155 91(7)*	582.57	0.118E-20	R(17)	B
41	859.169 10(7)*	582.63	0.118E-20	R(17)	C
42	859.227 34(9)	26.69	0.129E-21	R(11)	T
43	859.371 44(5)*	0.00	0.111E-20	R(0)	A
44	859.418 06(7)*	184.01	0.608E-21	R(30)	P
45	859.459 26(7)*	928.13	0.463E-21	R(18)	D
46	859.540 59(7)*	589.88	0.120E-20	R(18)	B
47	859.554 82(7)*	589.95	0.120E-20	R(18)	C
48	859.774 73(5)*	0.41	0.222E-20	R(1)	A
49	859.775 50(7)*	196.27	0.592E-21	R(31)	P
50	859.838 87(7)*	935.82	0.469E-21	R(19)	D
51	859.924 12(7)*	597.60	0.122E-20	R(19)	B
52	859.939 42(7)*	597.68	0.122E-20	R(19)	C
53	860.003 56(9)	36.80	0.143E-21	R(13)	T
54	860.131 73(6)*	208.93	0.574E-21	R(32)	P
55	860.176 81(5)*	1.22	0.332E-20	R(2)	A
56	860.217 22(7)*	943.90	0.474E-21	R(20)	D
57	860.306 50(7)*	605.72	0.123E-20	R(20)	B
58	860.322 90(7)*	605.81	0.123E-20	R(20)	C
59	860.389 85(9)	42.46	0.150E-21	R(14)	T
60	860.486 74(6)*	221.99	0.556E-21	R(33)	P
61	860.577 68(5)*	2.43	0.440E-20	R(3)	A
62	860.583 99(12)	68.50	0.118E-21	R(18)	L
63	860.594 31(7)*	952.40	0.477E-21	R(21)	D
64	860.687 73(7)*	614.25	0.124E-20	R(21)	B
65	860.705 27(7)*	614.35	0.124E-20	R(21)	C
66	860.840 51(6)*	235.44	0.536E-21	R(34)	P
67	860.960 48(12)	76.11	0.120E-21	R(19)	L
68	860.970 14(7)*	961.29	0.478E-21	R(22)	D
69	860.977 33(5)*	4.06	0.546E-20	R(4)	A


OCS 133 Pa (1.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
861
862
863
864
865
866
867
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	861.067 81(7)*	623.18	0.124E-20	R(22)	B
2	861.086 51(7)*	623.29	0.124E-20	R(22)	C
3	861.158 76(8)	55.00	0.160E-21	R(16)	T
4	861.193 07(6)*	249.29	0.516E-21	R(35)	P
5	861.375 77(5)*	6.09	0.649E-20	R(5)	A
6	861.446 73(7)*	632.52	0.124E-20	R(23)	B
7	861.466 63(7)*	632.64	0.124E-20	R(23)	C
8	861.772 99(5)*	8.52	0.749E-20	R(6)	A
9	861.824 50(7)*	642.27	0.123E-20	R(24)	B
10	861.845 62(7)*	642.40	0.123E-20	R(24)	C
11	861.894 48(5)*	278.16	0.473E-21	R(37)	P
12	861.922 79(8)	69.15	0.167E-21	R(18)	T
13	862.168 99(5)*	11.36	0.845E-20	R(7)	A
14	862.201 11(7)*	652.42	0.122E-20	R(25)	B
15	862.223 49(7)*	652.56	0.122E-20	R(25)	C
16	862.243 34(5)*	293.19	0.452E-21	R(38)	P
17	862.302 97(8)	76.83	0.169E-21	R(19)	T
18	862.563 78(5)*	14.61	0.936E-20	R(8)	A
19	862.576 56(7)*	662.98	0.120E-20	R(26)	B
20	862.590 97(5)*	308.62	0.430E-21	R(39)	P
21	862.600 22(7)*	663.13	0.120E-20	R(26)	C
22	862.681 92(8)	84.92	0.171E-21	R(20)	T
23	862.937 36(5)*	324.44	0.408E-21	R(40)	P
24	862.975 83(7)*	674.10	0.118E-20	R(27)	C
25	863.059 64(8)	93.41	0.172E-21	R(21)	T
26	863.282 52(5)*	340.66	0.387E-21	R(41)	P
27	863.323 97(7)*	685.31	0.116E-20	R(28)	B
28	863.436 14(8)	102.30	0.172E-21	R(22)	T
29	863.626 44(5)*	357.27	0.365E-21	R(42)	P
30	863.695 93(7)*	697.09	0.113E-20	R(29)	B
31	863.723 65(7)*	697.27	0.113E-20	R(29)	C
32	863.740 81(5)*	26.78	0.118E-19	R(11)	A
33	863.811 40(7)	111.60	0.172E-21	R(23)	T
34	863.969 11(5)*	374.27	0.344E-21	R(43)	P
35	864.066 73(7)*	709.27	0.110E-20	R(30)	B
36	864.095 85(7)*	709.47	0.110E-20	R(30)	C
37	864.130 70(5)*	31.64	0.125E-19	R(12)	A
38	864.185 43(7)	121.31	0.171E-21	R(24)	T
39	864.310 54(5)*	391.68	0.324E-21	R(44)	P
40	864.436 35(7)*	721.86	0.107E-20	R(31)	B
41	864.466 91(7)*	722.07	0.107E-20	R(31)	C
42	864.519 37(5)*	36.92	0.131E-19	R(13)	A
43	864.558 23(7)	131.41	0.169E-21	R(25)	T
44	864.658 62(7)*	1072.49	0.401E-21	R(32)	D
45	864.804 81(7)*	734.85	0.104E-20	R(32)	B
46	864.836 84(7)*	735.07	0.104E-20	R(32)	C
47	864.906 82(5)*	42.60	0.136E-19	R(14)	A
48	864.929 79(7)	141.93	0.167E-21	R(26)	T
49	864.989 68(5)*	427.66	0.284E-21	R(46)	P
50	865.172 09(7)*	748.25	0.100E-20	R(33)	B
51	865.205 62(7)*	748.49	0.100E-20	R(33)	C
52	865.293 03(5)*	48.68	0.141E-19	R(15)	A
53	865.300 12(7)	152.84	0.164E-21	R(27)	T
54	865.327 37(5)*	446.25	0.265E-21	R(47)	P
55	865.538 19(7)*	762.05	0.966E-21	R(34)	B
56	865.573 25(7)*	762.31	0.965E-21	R(34)	C
57	865.903 13(7)*	776.26	0.928E-21	R(35)	B
58	865.939 74(7)*	776.53	0.927E-21	R(35)	C
59	865.999 01(6)*	484.60	0.229E-21	R(49)	P
60	866.037 05(7)	175.88	0.158E-21	R(29)	T
61	866.061 78(5)*	62.07	0.149E-19	R(17)	A
62	866.266 88(7)*	790.88	0.889E-21	R(36)	B
63	866.305 07(7)*	791.16	0.888E-21	R(36)	C
64	866.332 94(6)*	504.37	0.213E-21	R(50)	P
65	866.403 65(7)	188.01	0.154E-21	R(30)	T
66	866.444 30(5)*	69.37	0.152E-19	R(18)	A
67	866.629 45(7)*	805.90	0.849E-21	R(37)	B
68	866.769 01(7)	200.54	0.149E-21	R(31)	T
69	866.810 31(7)*	1158.61	0.313E-21	R(38)	D
70	866.825 59(5)*	77.08	0.154E-19	R(19)	A

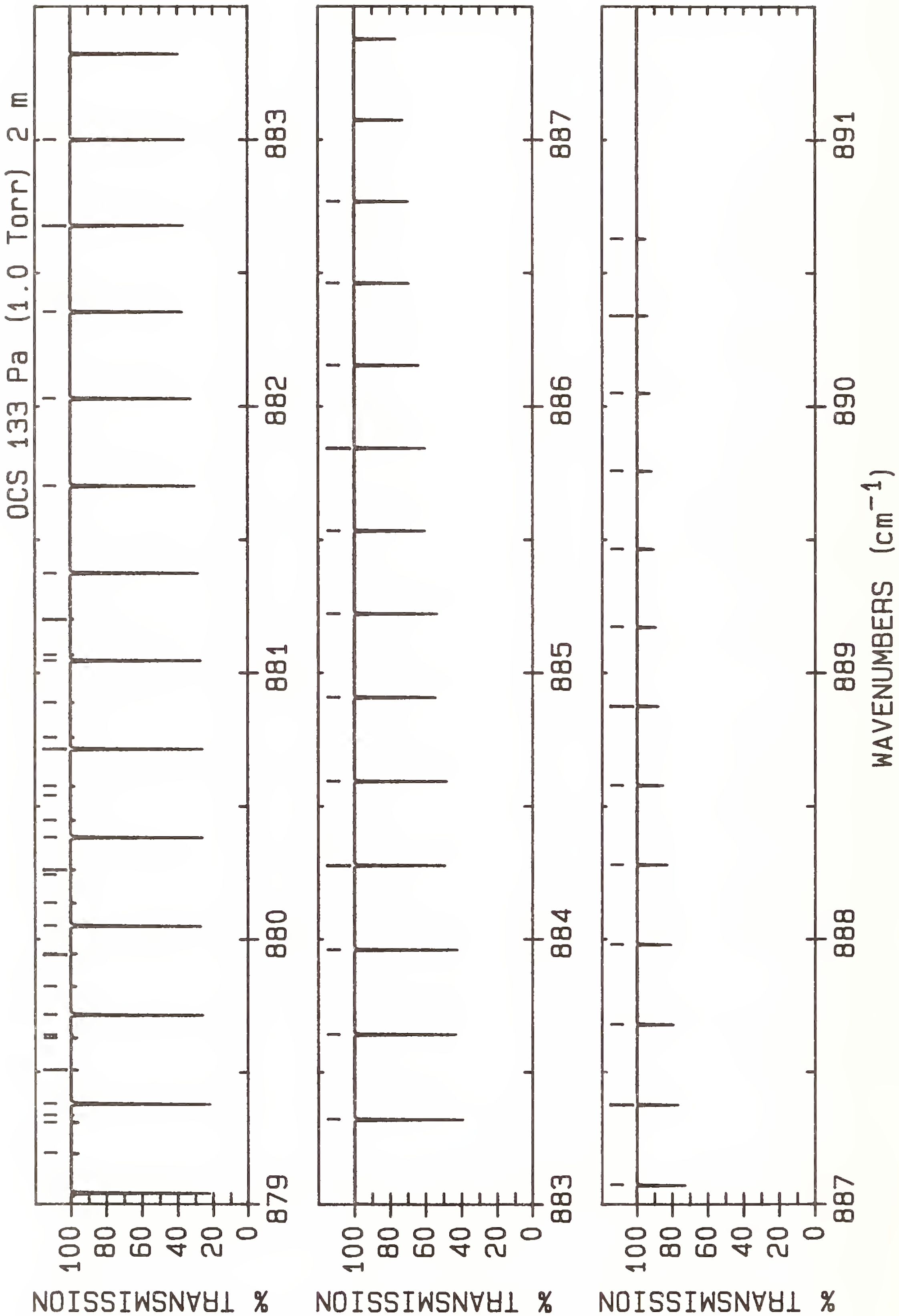

OCS 133 Pa (1.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
867
868
869
870
871
872
873
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	867.133 12(7)	213.48	0.145E-21	R(32)	T	36	869.261 75(7)*	1277.44	0.208E-21	R(45)	D
2	867.164 41(7)*	1174.37	0.297E-21	R(39)	D	37	869.291 51(8)	299.57	0.113E-21	R(38)	T
3	867.173 07(12)	266.73	0.884E-22	R(36)	L	38	869.459 94(5)*	142.38	0.152E-19	R(26)	A
4	867.205 64(5)*	85.19	0.156E-19	R(20)	A	39	869.487 22(7)*	940.66	0.536E-21	R(45)	B
5	867.327 22(6)*	566.04	0.167E-21	R(53)	P	40	869.540 96(7)*	941.10	0.535E-21	R(45)	C
6	867.351 03(7)*	837.16	0.769E-21	R(39)	B	41	869.646 85(8)	315.33	0.107E-21	R(39)	T
7	867.394 16(7)*	837.49	0.767E-21	R(39)	C	42	869.894 67(7)*	959.78	0.499E-21	R(46)	C
8	867.495 98(7)	226.82	0.140E-21	R(33)	T	43	869.950 42(7)*	1315.02	0.181E-21	R(47)	D
9	867.517 21(7)*	1190.54	0.282E-21	R(40)	D	44	870.000 92(8)	331.50	0.102E-21	R(40)	T
10	867.584 46(5)*	93.71	0.157E-19	R(21)	A	45	870.189 70(7)*	978.40	0.466E-21	R(47)	B
11	867.656 12(6)*	587.39	0.154E-21	R(54)	P	46	870.201 42(5)*	164.69	0.147E-19	R(28)	A
12	867.710 05(7)*	853.39	0.728E-21	R(40)	B	47	870.247 20(7)*	978.88	0.465E-21	R(47)	C
13	867.754 87(7)*	853.74	0.727E-21	R(40)	C	48	870.292 80(7)*	1334.42	0.168E-21	R(48)	D
14	867.857 60(7)	240.56	0.134E-21	R(34)	T	49	870.539 13(7)*	997.88	0.433E-21	R(48)	B
15	867.868 72(7)*	1207.11	0.266E-21	R(41)	D	50	870.570 28(5)*	176.45	0.143E-19	R(29)	A
16	867.962 04(5)*	102.63	0.157E-19	R(22)	A	51	870.598 54(7)*	998.38	0.432E-21	R(48)	C
17	867.983 76(7)*	609.13	0.141E-21	R(55)	P	52	870.633 86(7)*	1354.22	0.156E-21	R(49)	D
18	868.067 87(7)*	870.04	0.688E-21	R(41)	B	53	870.887 35(7)*	1017.76	0.401E-21	R(49)	B
19	868.114 42(7)*	870.40	0.687E-21	R(41)	C	54	870.973 60(7)*	1374.42	0.144E-21	R(50)	D
20	868.310 13(7)*	631.27	0.129E-21	R(56)	P	55	871.234 36(7)*	1038.05	0.371E-21	R(50)	B
21	868.338 38(5)*	111.96	0.157E-19	R(23)	A	56	871.297 69(8)*	1038.59	0.370E-21	R(50)	C
22	868.424 50(7)*	887.08	0.649E-21	R(42)	B	57	871.580 16(7)*	1058.74	0.342E-21	R(51)	B
23	868.472 81(7)*	887.47	0.648E-21	R(42)	C	58	871.669 36(5)*	214.17	0.132E-19	R(32)	A
24	868.567 84(7)*	1241.47	0.236E-21	R(43)	D	59	871.924 74(7)*	1079.84	0.315E-21	R(52)	B
25	868.577 07(7)	269.26	0.124E-21	R(36)	T	60	872.033 22(5)*	227.55	0.127E-19	R(33)	A
26	868.635 24(7)*	653.80	0.117E-21	R(57)	P	61	872.268 10(7)*	1101.34	0.289E-21	R(53)	B
27	868.713 47(5)*	121.70	0.156E-19	R(24)	A	62	872.319 36(7)*	1459.26	0.103E-21	R(54)	D
28	868.779 94(7)*	904.54	0.610E-21	R(43)	B	63	872.337 49(8)*	1101.95	0.288E-21	R(53)	C
29	868.830 03(7)*	904.94	0.609E-21	R(43)	C	64	872.395 81(5)*	241.34	0.122E-19	R(34)	A
30	868.915 45(7)*	1259.25	0.222E-21	R(44)	D	65	872.610 25(7)*	1123.25	0.265E-21	R(54)	B
31	868.934 92(8)	284.21	0.118E-21	R(37)	T	66	872.652 49(7)*	1481.48	0.941E-22	R(55)	D
32	868.959 07(7)*	676.72	0.107E-21	R(58)	P	67	872.681 70(8)*	1123.88	0.264E-21	R(54)	C
33	869.087 33(5)*	131.84	0.154E-19	R(25)	A	68	872.757 14(5)*	255.53	0.118E-19	R(35)	A
34	869.134 18(7)*	922.39	0.573E-21	R(44)	B	69	872.951 16(7)*	1145.56	0.242E-21	R(55)	B
35	869.186 08(7)*	922.82	0.571E-21	R(44)	C						



OCS 133 Pa (1.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
873
874
875
876
877
878
879
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	873.117 21(5)*	270.13	0.113E-19	R(36)	A	36	875.825 07(11)	668.01	0.282E-22	R(57)	T
2	873.130 46(9)	495.14	0.561E-22	R(49)	T	37	875.910 23(7)*	1725.81	0.340E-22	R(65)	D
3	873.290 86(7)*	1168.28	0.221E-21	R(56)	B	38	875.952 11(5)*	401.49	0.725E-20	R(44)	A
4	873.314 75(7)*	1527.13	0.781E-22	R(57)	D	39	875.963 94(7)*	1364.57	0.972E-22	R(64)	B
5	873.366 53(9)*	1168.96	0.220E-21	R(56)	C	40	876.057 38(13)*	1365.45	0.968E-22	R(64)	C
6	873.476 01(5)*	285.13	0.108E-19	R(37)	A	41	876.156 07(11)	691.43	0.256E-22	R(58)	T
7	873.629 32(7)*	1191.40	0.201E-21	R(57)	B	42	876.228 59(7)*	1752.46	0.303E-22	R(66)	D
8	873.643 88(7)*	1550.55	0.710E-22	R(58)	D	43	876.300 73(5)*	419.73	0.679E-20	R(45)	A
9	873.662 75(9)*	1067.84	0.201E-22	R(73)	P	44	876.388 24(14)*	1391.83	0.865E-22	R(65)	C
10	873.707 13(9)*	1192.10	0.200E-21	R(57)	C	45	876.485 75(12)	715.26	0.232E-22	R(59)	T
11	873.811 86(9)	535.94	0.479E-22	R(51)	T	46	876.545 60(7)*	1779.51	0.270E-22	R(67)	D
12	873.833 55(5)*	300.54	0.102E-19	R(38)	A	47	876.619 77(8)*	1417.69	0.775E-22	R(66)	B
13	874.046 53(10)*	1215.65	0.182E-21	R(58)	C	48	876.648 08(5)*	438.37	0.634E-20	R(46)	A
14	874.150 63(9)	556.95	0.441E-22	R(52)	T	49	876.717 86(14)*	1418.62	0.772E-22	R(66)	C
15	874.189 83(5)*	316.35	0.973E-20	R(39)	A	50	876.861 25(7)*	1806.96	0.240E-22	R(68)	D
16	874.384 72(10)*	1239.61	0.164E-21	R(59)	C	51	876.945 79(8)*	1444.85	0.690E-22	R(67)	B
17	874.488 10(10)	578.35	0.405E-22	R(53)	T	52	876.994 14(5)*	457.42	0.590E-20	R(47)	A
18	874.544 83(5)*	332.57	0.922E-20	R(40)	A	53	877.046 25(15)*	1445.81	0.686E-22	R(67)	C
19	874.623 24(7)*	1623.25	0.524E-22	R(61)	D	54	877.175 54(7)*	1834.81	0.212E-22	R(69)	D
20	874.637 32(7)*	1263.19	0.149E-21	R(60)	B	55	877.270 56(8)*	1472.41	0.612E-22	R(68)	B
21	874.721 69(10)*	1263.97	0.149E-21	R(60)	C	56	877.338 91(5)*	476.88	0.548E-20	R(48)	A
22	874.824 29(10)	600.16	0.371E-22	R(54)	T	57	877.373 40(16)*	1473.41	0.609E-22	R(68)	C
23	874.898 56(5)*	349.19	0.872E-20	R(41)	A	58	877.594 07(9)*	1500.39	0.542E-22	R(69)	B
24	874.947 01(7)*	1648.29	0.472E-22	R(62)	D	59	877.682 40(5)*	496.74	0.508E-20	R(49)	A
25	874.970 84(7)*	1287.93	0.135E-21	R(61)	B	60	877.699 30(17)*	1501.41	0.540E-22	R(69)	C
26	875.057 45(11)*	1288.73	0.134E-21	R(61)	C	61	877.916 31(9)*	1528.76	0.479E-22	R(70)	B
27	875.159 18(10)	622.38	0.339E-22	R(55)	T	62	878.024 60(5)*	517.00	0.470E-20	R(50)	A
28	875.251 02(5)*	366.22	0.822E-20	R(42)	A	63	878.237 29(9)*	1557.54	0.423E-22	R(71)	B
29	875.269 43(7)*	1673.73	0.424E-22	R(63)	D	64	878.347 37(19)*	1558.62	0.421E-22	R(71)	C
30	875.303 12(7)*	1313.07	0.121E-21	R(62)	B	65	878.365 51(5)*	537.67	0.434E-20	R(51)	A
31	875.391 98(12)*	1313.90	0.121E-21	R(62)	C	66	878.556 99(10)*	1586.72	0.372E-22	R(72)	B
32	875.590 51(7)*	1699.57	0.380E-22	R(64)	D	67	878.669 53(21)*	1587.83	0.370E-22	R(72)	C
33	875.602 20(5)*	383.65	0.773E-20	R(43)	A	68	878.705 12(5)*	558.74	0.399E-20	R(52)	A
34	875.634 16(7)*	1338.62	0.109E-21	R(63)	B	69	878.875 42(10)*	1616.30	0.327E-22	R(73)	B
35	875.725 29(12)*	1339.47	0.108E-21	R(63)	C	70	878.990 43(22)*	1617.44	0.325E-22	R(73)	C



OCS 133 Pa (1.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
879
880
881
882
883
884
885
886
887
888
889
890
891
WAVENUMBERS (cm^{-1})

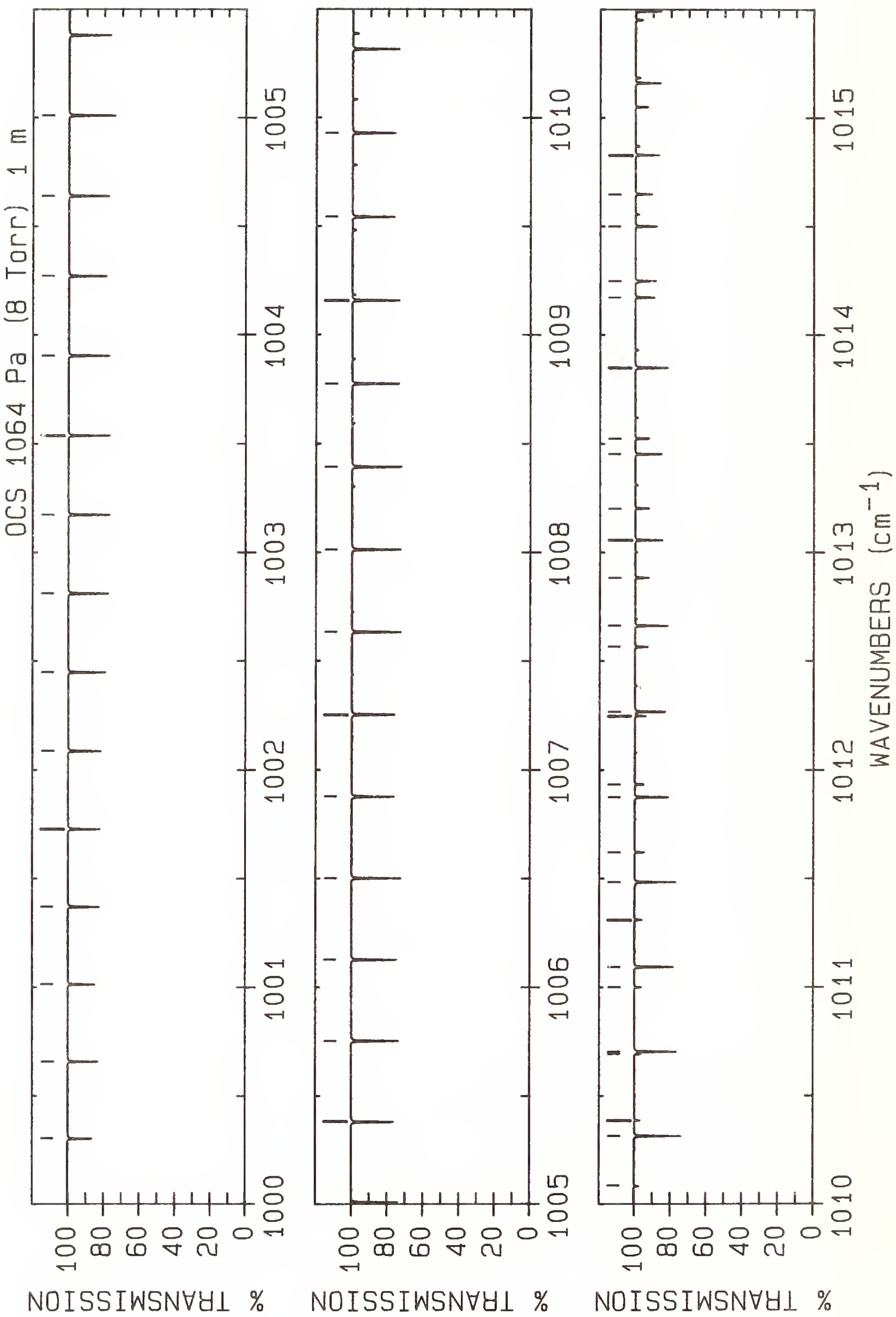
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	879.192 57(11)*	1646.29	0.286E-22	R(74)	B
2	879.310 07(23)*	1647.46	0.285E-22	R(74)	C
3	879.337 21(7)*	2041.03	0.860E-23	R(76)	D
4	879.380 46(5)*	602.10	0.336E-20	R(54)	A
5	879.508 44(11)*	1676.68	0.251E-22	R(75)	B
6	879.628 45(25)*	1677.89	0.249E-22	R(75)	C
7	879.640 50(7)*	2072.09	0.749E-23	R(77)	D
8	879.716 18(5)*	624.39	0.307E-20	R(55)	A
9	879.823 03(12)*	1707.48	0.219E-22	R(76)	B
10	879.942 41(7)*	2103.56	0.651E-23	R(78)	D
11	879.945 57(26)*	1708.71	0.217E-22	R(76)	C
12	880.050 59(5)*	647.08	0.280E-20	R(56)	A
13	880.136 34(12)*	1738.67	0.190E-22	R(77)	B
14	880.242 94(7)*	2135.43	0.565E-23	R(79)	D
15	880.261 41(28)*	1739.94	0.189E-22	R(77)	C
16	880.383 70(5)*	670.17	0.255E-20	R(57)	A
17	880.448 35(13)*	1770.28	0.165E-22	R(78)	B
18	880.542 07(8)*	2167.70	0.489E-23	R(80)	D
19	880.575 98(29)*	1771.58	0.164E-22	R(78)	C
20	880.715 51(5)*	693.67	0.231E-20	R(58)	A
21	880.759 07(14)*	1802.28	0.143E-22	R(79)	B
22	880.889 27(31)*	1803.61	0.142E-22	R(79)	C
23	881.046 00(5)*	717.57	0.209E-20	R(59)	A
24	881.068 50(14)*	1834.68	0.124E-22	R(80)	B
25	881.201 29(33)*	1836.05	0.123E-22	R(80)	C
26	881.375 18(5)*	741.87	0.189E-20	R(60)	A
27	881.703 05(5)*	766.58	0.171E-20	R(61)	A
28	882.029 60(5)*	791.70	0.153E-20	R(62)	A
29	882.354 84(5)*	817.21	0.138E-20	R(63)	A
30	882.678 75(5)*	843.13	0.123E-20	R(64)	A
31	883.001 34(5)*	869.46	0.110E-20	R(65)	A
32	883.322 60(5)*	896.18	0.984E-21	R(66)	A
33	883.642 54(5)*	923.31	0.876E-21	R(67)	A
34	883.961 14(5)*	950.85	0.778E-21	R(68)	A
35	884.278 41(5)*	978.78	0.689E-21	R(69)	A
36	884.594 35(5)*	1007.13	0.609E-21	R(70)	A
37	884.908 95(5)*	1035.87	0.537E-21	R(71)	A
38	885.222 21(5)*	1065.02	0.473E-21	R(72)	A
39	885.534 12(5)*	1094.57	0.416E-21	R(73)	A
40	885.844 69(5)*	1124.52	0.364E-21	R(74)	A
41	886.153 91(5)*	1154.87	0.318E-21	R(75)	A
42	886.461 78(5)*	1185.63	0.278E-21	R(76)	A
43	886.768 30(5)*	1216.79	0.242E-21	R(77)	A
44	887.073 46(5)*	1248.35	0.210E-21	R(78)	A
45	887.377 26(6)*	1280.32	0.183E-21	R(79)	A
46	887.679 71(6)*	1312.69	0.158E-21	R(80)	A
47	887.980 79(6)*	1345.46	0.136E-21	R(81)	A
48	888.280 50(6)*	1378.63	0.118E-21	R(82)	A
49	888.578 85(7)*	1412.21	0.101E-21	R(83)	A
50	888.875 82(7)*	1446.18	0.867E-22	R(84)	A
51	889.171 42(8)*	1480.56	0.743E-22	R(85)	A
52	889.465 64(8)*	1515.34	0.635E-22	R(86)	A
53	889.758 48(9)*	1550.53	0.541E-22	R(87)	A
54	890.049 94(10)*	1586.11	0.461E-22	R(88)	A
55	890.340 02(10)*	1622.10	0.391E-22	R(89)	A
56	890.628 71(11)*	1658.48	0.332E-22	R(90)	A

ATLAS OF OCS ABSORPTION LINES FROM 1000 cm^{-1} to 1095 cm^{-1}

key:

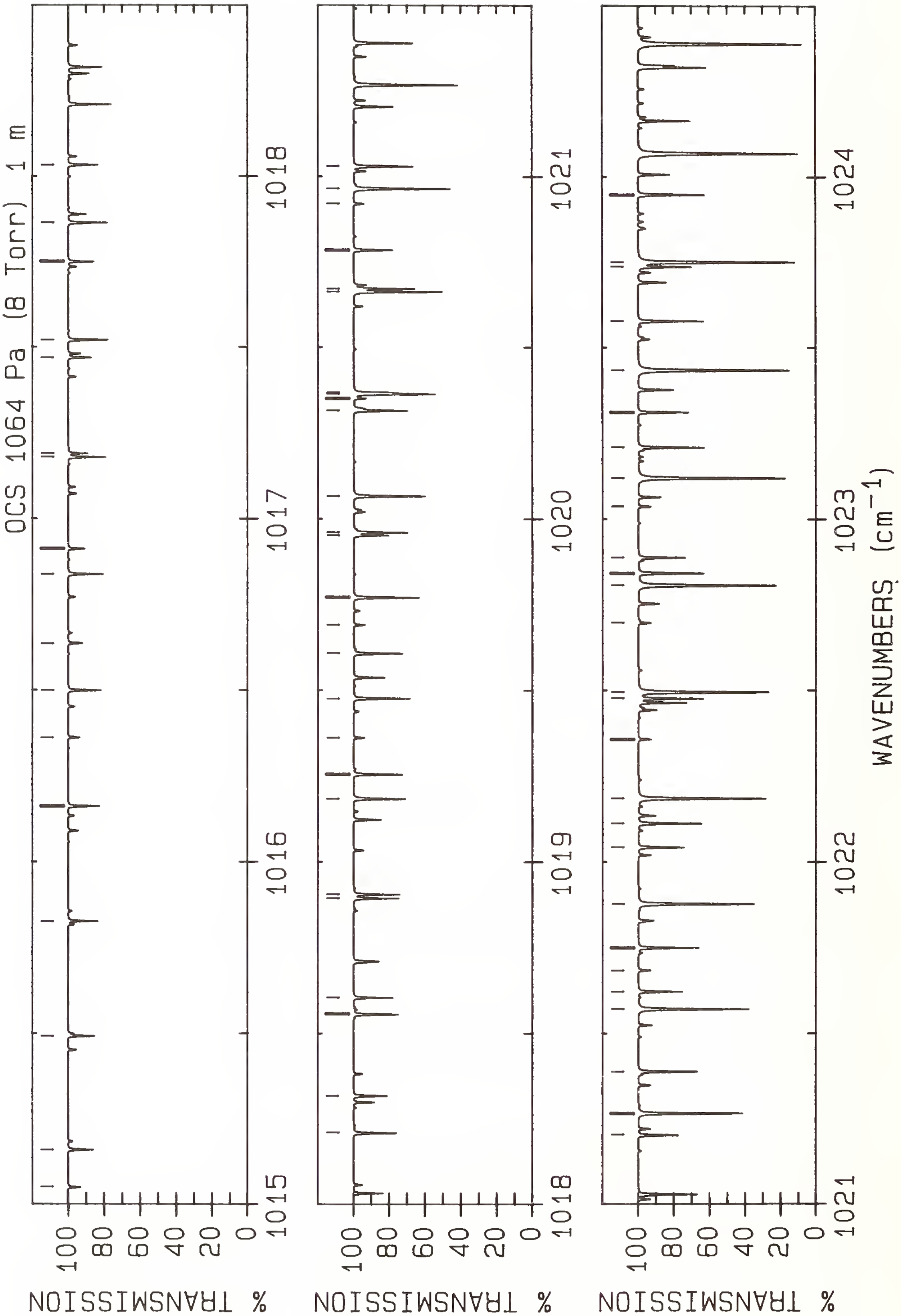
Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$02^00\text{-}00^00$
X		$02^{2e}0\text{-}00^00$
B		$03^10\text{-}01^{1e}0$
C		$03^10\text{-}01^{1f}0$
D		$02^01\text{-}00^01$
E		$04^20\text{-}02^{2e}0$
F		$04^20\text{-}02^{2f}0$
G		$04^00\text{-}02^00$
H		$03^11\text{-}01^{1e}1$
I		$03^11\text{-}01^{1f}1$
J		$05^30\text{-}03^{3e}0$
K		$05^30\text{-}03^{3f}0$
L		$05^10\text{-}03^{1e}0$
M		$05^10\text{-}03^{1f}0$
P	$^{16}O^{12}C^{34}S$	$02^00\text{-}00^00$
Q		$03^10\text{-}01^{1e}0$
R		$03^10\text{-}01^{1f}0$
T	$^{16}O^{13}C^{32}S$	$02^00\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a temperature of 296 K. For the A, X, D, P, and T bands a transition moment of 0.0333 debye was used and no Herman-Wallis constant was included in the intensity calculation. For the other bands a transition moment of 0.032 debye was used with a Herman-Wallis constant of $C_1=0.0019$.


OCS 1064 Pa (8 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
WAVENUMBERS (cm^{-1})

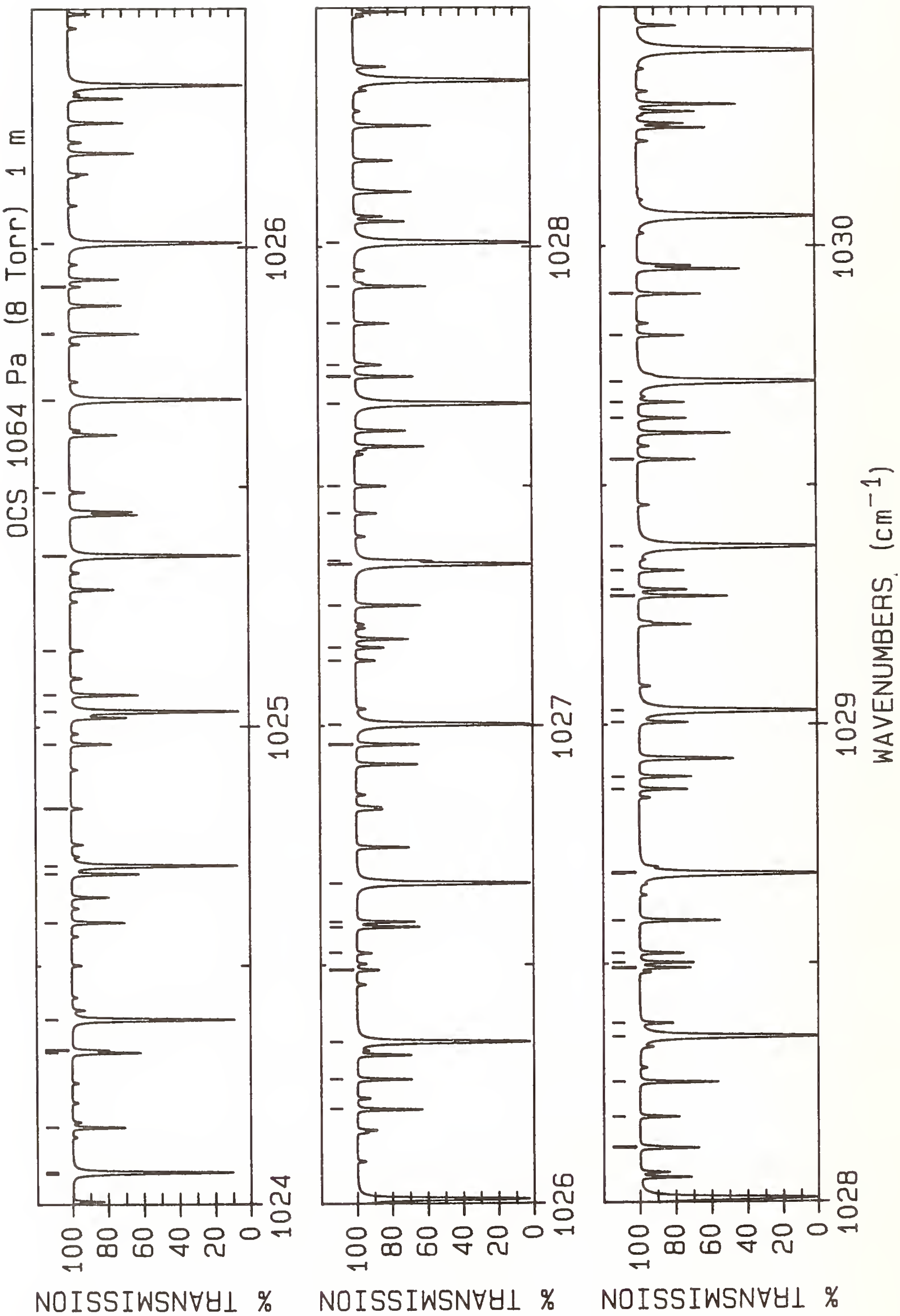
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1000.304 01(6)	365.04	0.275E-22	P(42)	T
2	1000.658 14(6)	348.07	0.292E-22	P(41)	T
3	1001.013 61(6)	331.50	0.309E-22	P(40)	T
4	1001.370 42(6)	315.33	0.326E-22	P(39)	T
5	1001.728 56(6)	299.57	0.344E-22	P(38)	T
6	1002.088 01(6)	284.21	0.361E-22	P(37)	T
7	1002.448 78(6)	269.26	0.378E-22	P(36)	T
8	1002.810 85(5)	254.71	0.394E-22	P(35)	T
9	1003.174 22(5)	240.56	0.411E-22	P(34)	T
10	1003.538 88(5)	226.82	0.427E-22	P(33)	T
11	1003.904 82(5)	213.48	0.442E-22	P(32)	T
12	1004.272 04(5)	200.54	0.456E-22	P(31)	T
13	1004.640 52(5)	188.01	0.469E-22	P(30)	T
14	1005.010 27(5)	175.88	0.481E-22	P(29)	T
15	1005.381 28(5)	164.16	0.492E-22	P(28)	T
16	1005.753 54(5)	152.84	0.502E-22	P(27)	T
17	1006.127 04(5)	141.93	0.510E-22	P(26)	T
18	1006.501 78(5)	131.41	0.516E-22	P(25)	T
19	1006.877 75(5)	121.31	0.521E-22	P(24)	T
20	1007.254 95(5)	111.60	0.523E-22	P(23)	T
21	1007.633 38(5)	102.30	0.524E-22	P(22)	T
22	1008.013 02(5)	93.41	0.522E-22	P(21)	T
23	1008.393 87(5)	84.92	0.519E-22	P(20)	T
24	1008.775 94(5)	76.83	0.513E-22	P(19)	T
25	1009.159 21(5)	69.15	0.504E-22	P(18)	T
26	1009.543 68(5)	61.87	0.494E-22	P(17)	T
27	1009.929 34(6)	55.00	0.481E-22	P(16)	T
28	1010.084 72(10)*	1725.81	0.509E-23	P(65)	D
29	1010.316 20(6)	48.53	0.465E-22	P(15)	T
30	1010.388 34(10)*	1699.57	0.571E-23	P(64)	D

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
31	1010.693 84(10)*	1673.73	0.638E-23	P(63)	D
32	1010.704 25(6)	42.46	0.447E-22	P(14)	T
33	1011.001 19(10)*	1648.29	0.712E-23	P(62)	D
34	1011.093 48(6)	36.80	0.427E-22	P(13)	T
35	1011.310 38(10)*	1623.25	0.793E-23	P(61)	D
36	1011.483 90(6)	31.54	0.405E-22	P(12)	T
37	1011.621 42(10)*	1598.62	0.881E-23	P(60)	D
38	1011.875 49(6)	26.69	0.380E-22	P(11)	T
39	1011.934 27(10)*	1574.38	0.976E-23	P(59)	D
40	1012.248 94(10)*	1550.55	0.108E-22	P(58)	D
41	1012.268 26(6)	22.24	0.353E-22	P(10)	T
42	1012.565 41(10)*	1527.13	0.119E-22	P(57)	D
43	1012.662 20(7)	18.20	0.324E-22	P(9)	T
44	1012.883 66(10)*	1504.10	0.131E-22	P(56)	D
45	1013.057 32(7)	14.56	0.294E-22	P(8)	T
46	1013.203 69(10)*	1481.48	0.144E-22	P(55)	D
47	1013.453 60(7)	11.32	0.261E-22	P(7)	T
48	1013.525 49(10)*	1459.26	0.158E-22	P(54)	D
49	1013.849 04(10)*	1437.45	0.172E-22	P(53)	D
50	1013.851 05(7)	8.49	0.227E-22	P(6)	T
51	1014.174 33(10)*	1416.04	0.188E-22	P(52)	D
52	1014.249 66(7)	6.07	0.191E-22	P(5)	T
53	1014.501 35(9)*	1395.03	0.204E-22	P(51)	D
54	1014.649 44(7)	4.04	0.155E-22	P(4)	T
55	1014.830 09(9)*	1374.42	0.222E-22	P(50)	D



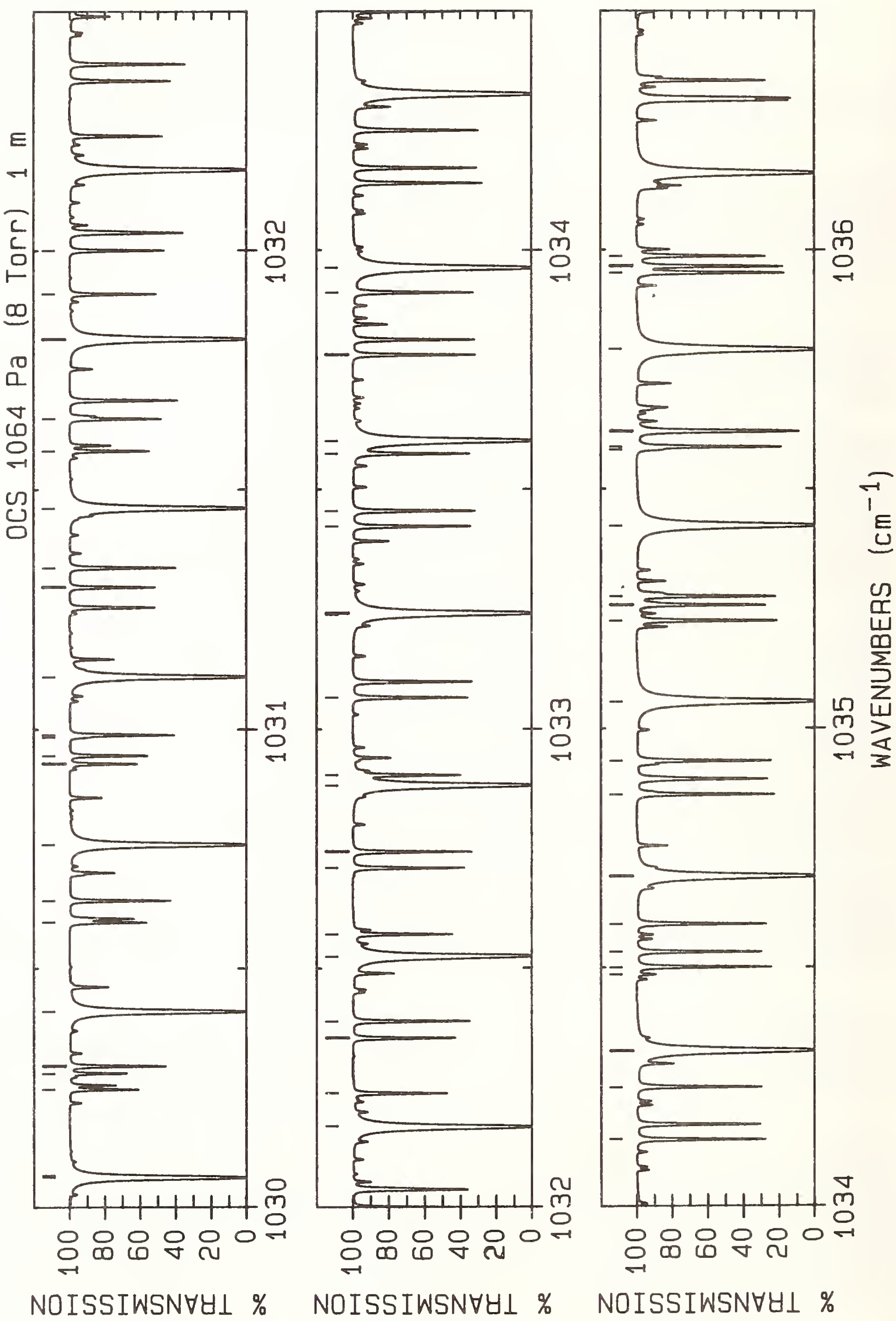
OCS 1064 Pa (8 Torr) 1 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100
80
60
40
20
0
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1015.050 37(7)	2.43	0.117E-22	P(3)	T
2	1015.160 54(9)*	1354.22	0.240E-22	P(49)	D
3	1015.492 68(9)*	1334.42	0.259E-22	P(48)	D
4	1015.826 52(9)*	1315.02	0.279E-22	P(47)	D
5	1016.162 02(9)*	1296.03	0.300E-22	P(46)	D
6	1016.362 28(11) *	1622.10	0.111E-22	P(89)	A
7	1016.499 19(9)*	1277.44	0.322E-22	P(45)	D
8	1016.636 14(10) *	1586.11	0.131E-22	P(88)	A
9	1016.838 02(9)*	1259.25	0.344E-22	P(44)	D
10	1016.911 857(92)*	1550.53	0.155E-22	P(87)	A
11	1017.178 49(9)*	1241.47	0.367E-22	P(43)	D
12	1017.189 440(85)*	1515.34	0.182E-22	P(86)	A
13	1017.468 878(78)*	1480.56	0.214E-22	P(85)	A
14	1017.520 60(9)*	1224.09	0.390E-22	P(42)	D
15	1017.750 163(72)*	1446.18	0.251E-22	P(84)	A
16	1017.864 33(9)*	1207.11	0.414E-22	P(41)	D
17	1018.033 288(67)*	1412.21	0.293E-22	P(83)	A
18	1018.209 67(9)*	1190.54	0.438E-22	P(40)	D
19	1018.318 245(62)*	1378.63	0.342E-22	P(82)	A
20	1018.556 62(9)*	1174.37	0.462E-22	P(39)	D
21	1018.605 026(58)*	1345.46	0.398E-22	P(81)	A
22	1018.893 623(54)*	1312.69	0.462E-22	P(80)	A
23	1018.905 17(10)*	1158.61	0.487E-22	P(38)	D
24	1019.184 027(50)*	1280.32	0.536E-22	P(79)	A
25	1019.255 31(10)*	1143.24	0.511E-22	P(37)	D
26	1019.361 59(21)	741.87	0.101E-22	P(60)	X
27	1019.476 228(47)*	1248.35	0.619E-22	P(78)	A
28	1019.607 02(10)*	1128.29	0.535E-22	P(36)	D
29	1019.690 09(21)	717.57	0.105E-22	P(59)	X
30	1019.770 219(44)*	1216.79	0.715E-22	P(77)	A
31	1019.951 71(6)	14.56	0.333E-22	R(8)	T
32	1019.960 30(10)*	1113.73	0.559E-22	P(35)	D
33	1020.065 990(41)*	1185.63	0.823E-22	P(76)	A
34	1020.315 15(10)*	1099.58	0.582E-22	P(34)	D
35	1020.350 36(21)	670.17	0.111E-22	P(57)	X
36	1020.363 532(38)*	1154.87	0.946E-22	P(75)	A
37	1020.367 66(6)	18.20	0.363E-22	R(9)	T
38	1020.662 834(36)*	1124.52	0.108E-21	P(74)	A
39	1020.671 55(10)*	1085.84	0.604E-22	P(33)	D
40	1020.784 75(6)	22.24	0.392E-22	R(10)	T
41	1020.919 90(30)	954.88	0.100E-22	P(69)	P
42	1020.963 888(34)*	1094.57	0.124E-21	P(73)	A
43	1021.029 49(10)*	1072.49	0.625E-22	P(32)	D
44	1021.203 00(6)	26.69	0.418E-22	R(11)	T
45	1021.266 683(32)*	1065.02	0.141E-21	P(72)	A
46	1021.388 97(10)*	1059.56	0.646E-22	P(31)	D
47	1021.571 210(30)*	1035.87	0.161E-21	P(71)	A
48	1021.622 41(6)	31.54	0.443E-22	R(12)	T
49	1021.684 32(22)	580.22	0.119E-22	P(53)	X
50	1021.749 98(10)*	1047.02	0.664E-22	P(30)	D
51	1021.877 458(29)*	1007.13	0.183E-21	P(70)	A
52	1022.042 98(6)	36.80	0.465E-22	R(13)	T
53	1022.112 52(10)*	1034.89	0.682E-22	P(29)	D
54	1022.185 417(27)*	978.78	0.207E-21	P(69)	A
55	1022.358 19(22)	537.67	0.120E-22	P(51)	X
56	1022.476 57(10)*	1023.17	0.697E-22	P(28)	D
57	1022.495 077(26)*	950.85	0.235E-21	P(68)	A
58	1022.696 88(22)	517.00	0.121E-22	P(50)	X
59	1022.806 427(25)*	923.31	0.265E-21	P(67)	A
60	1022.842 13(10)*	1011.84	0.711E-22	P(27)	D
61	1022.887 58(5)	48.53	0.503E-22	R(15)	T
62	1023.036 75(23)	496.74	0.120E-22	P(49)	X
63	1023.119 458(24)*	896.18	0.298E-21	P(66)	A
64	1023.209 19(10)*	1000.93	0.722E-22	P(26)	D
65	1023.311 63(5)	55.00	0.518E-22	R(16)	T
66	1023.434 158(22)*	869.46	0.335E-21	P(65)	A
67	1023.577 75(10)*	990.41	0.731E-22	P(25)	D
68	1023.736 84(5)	61.87	0.530E-22	R(17)	T
69	1023.750 518(21)*	843.13	0.376E-21	P(64)	A
70	1023.947 80(10)*	980.30	0.737E-22	P(24)	D



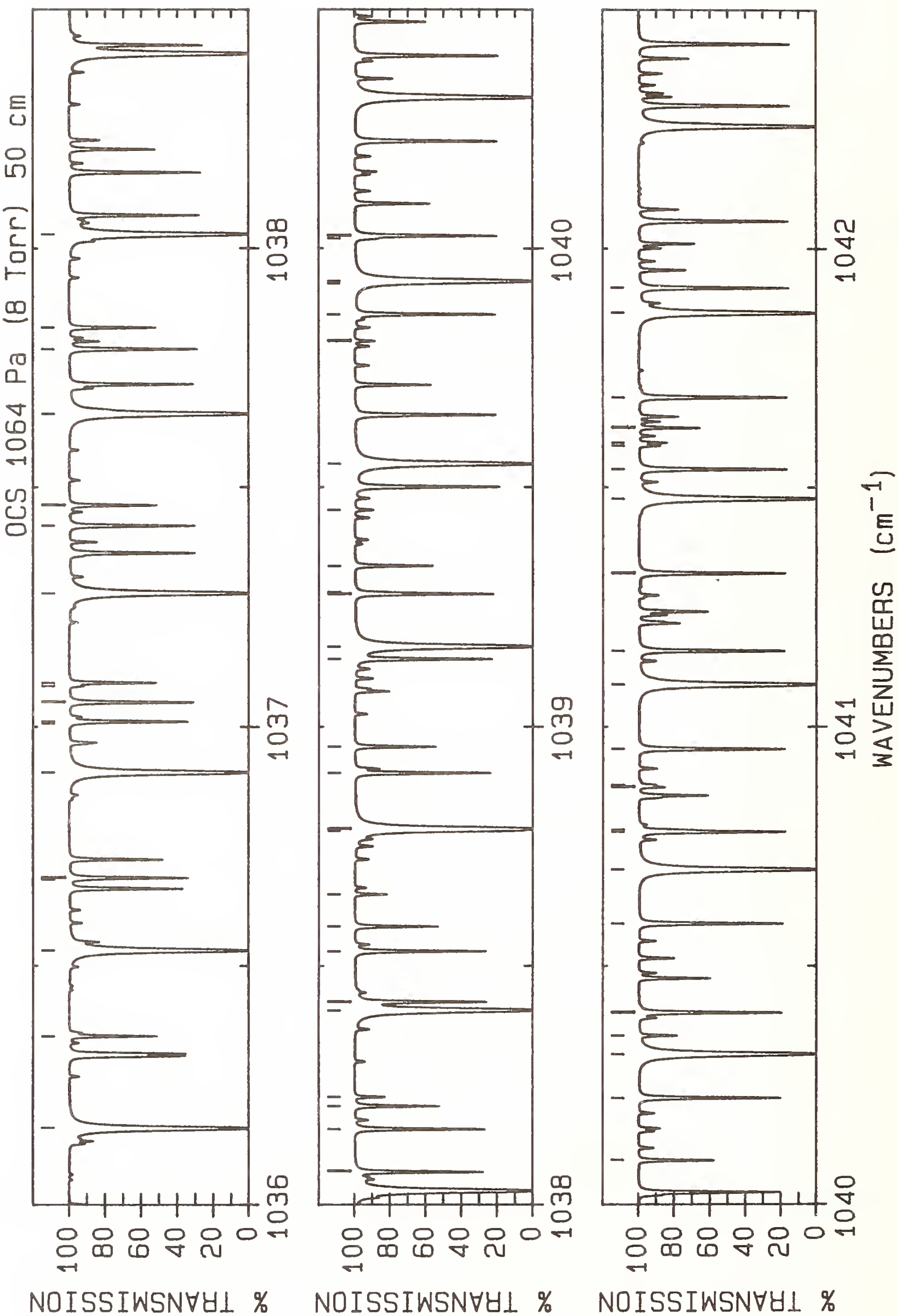
OCS 1064 Pa (8 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1024
1025
1026
1027
1028
1029
1030
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1024.063 59(23)	438.37	0.116E-22	P(46)	X	36	1027.344 38(10)*	907.50	0.659E-22	P(15)	D
2	1024.068 526(21)*	817.21	0.420E-21	P(63)	A	37	1027.443 87(8)*	1558.62	0.210E-22	P(71)	C
3	1024.163 21(5)	69.15	0.541E-22	R(18)	T	38	1027.500 90(8)*	1472.41	0.308E-22	P(68)	B
4	1024.319 33(10)*	970.60	0.741E-22	P(23)	D	39	1027.672 469(15)*	558.74	0.124E-20	P(52)	A
5	1024.324 62(25)	676.72	0.333E-22	P(58)	P	40	1027.729 03(10)*	901.44	0.634E-22	P(14)	D
6	1024.388 173(20)*	791.70	0.469E-21	P(62)	A	41	1027.753 15(7)*	1529.81	0.239E-22	P(70)	C
7	1024.590 76(5)	76.83	0.548E-22	R(19)	T	42	1027.840 21(8)*	1444.85	0.348E-22	P(67)	B
8	1024.692 34(10)*	961.29	0.742E-22	P(22)	D	43	1027.917 65(24)	446.25	0.837E-22	P(47)	P
9	1024.709 447(19)*	766.58	0.522E-21	P(61)	A	44	1028.009 458(15)*	537.67	0.134E-20	P(51)	A
10	1024.829 76(15)	1707.48	0.107E-22	P(76)	B	45	1028.115 13(10)*	895.77	0.605E-22	P(13)	D
11	1024.964 27(25)	631.27	0.402E-22	P(56)	P	46	1028.180 69(8)*	1417.69	0.392E-22	P(66)	B
12	1025.032 339(18)*	741.87	0.580E-21	P(60)	A	47	1028.253 19(24)	427.66	0.897E-22	P(46)	P
13	1025.066 83(10)*	952.40	0.740E-22	P(21)	D	48	1028.347 964(15)*	517.00	0.146E-20	P(50)	A
14	1025.159 34(13)*	1676.68	0.123E-22	P(75)	B	49	1028.376 24(7)*	1473.41	0.307E-22	P(68)	C
15	1025.356 838(18)*	717.57	0.643E-21	P(59)	A	50	1028.491 70(5)	164.16	0.522E-22	R(28)	T
16	1025.490 17(12)*	1646.29	0.141E-22	P(74)	B	51	1028.502 65(10)*	890.52	0.573E-22	P(12)	D
17	1025.682 934(17)*	693.67	0.711E-21	P(58)	A	52	1028.522 34(7)*	1390.93	0.441E-22	P(65)	B
18	1025.820 19(10)*	935.82	0.726E-22	P(19)	D	53	1028.590 17(24)	409.47	0.960E-22	P(45)	P
19	1025.822 25(11)*	1616.30	0.161E-22	P(73)	B	54	1028.687 978(14)*	496.74	0.158E-20	P(49)	A
20	1025.920 26(12)*	1708.71	0.107E-22	P(76)	C	55	1028.690 03(6)*	1445.81	0.347E-22	P(67)	C
21	1026.010 616(17)*	670.17	0.784E-21	P(57)	A	56	1028.865 14(7)*	1364.57	0.495E-22	P(64)	B
22	1026.199 07(10)*	928.13	0.714E-22	P(18)	D	57	1028.891 61(10)*	885.66	0.538E-22	P(11)	D
23	1026.261 93(24)	545.09	0.570E-22	P(52)	P	58	1029.005 32(6)*	1418.62	0.391E-22	P(66)	C
24	1026.339 874(16)*	647.08	0.863E-21	P(56)	A	59	1029.029 490(14)*	476.88	0.171E-20	P(48)	A
25	1026.490 09(10)*	1557.54	0.210E-22	P(71)	B	60	1029.268 44(24)	374.27	0.109E-21	P(43)	P
26	1026.525 14(10)*	1647.46	0.141E-22	P(74)	C	61	1029.281 99(10)*	881.21	0.500E-22	P(10)	D
27	1026.579 39(10)*	920.85	0.699E-22	P(17)	D	62	1029.322 11(6)*	1391.83	0.440E-22	P(65)	C
28	1026.590 11(24)	524.53	0.618E-22	P(51)	P	63	1029.371 69(5)	188.01	0.497E-22	R(30)	T
29	1026.670 699(16)*	624.39	0.947E-21	P(55)	A	64	1029.372 491(14)*	457.42	0.184E-20	P(47)	A
30	1026.961 16(10)*	913.98	0.681E-22	P(16)	D	65	1029.554 17(7)*	1313.07	0.619E-22	P(62)	B
31	1027.003 079(15)*	602.10	0.104E-20	P(54)	A	66	1029.640 39(6)*	1365.45	0.494E-22	P(64)	C
32	1027.136 11(8)*	1587.83	0.184E-22	P(72)	C	67	1029.673 79(10)*	877.17	0.459E-22	P(9)	D
33	1027.162 77(9)*	1500.39	0.272E-22	P(69)	B	68	1029.716 972(14)*	438.37	0.198E-20	P(46)	A
34	1027.250 94(24)	484.60	0.723E-22	P(49)	P	69	1029.813 50(5)	200.54	0.483E-22	R(31)	T
35	1027.337 006(15)*	580.22	0.113E-20	P(53)	A	70	1029.900 38(7)*	1287.93	0.690E-22	P(61)	B

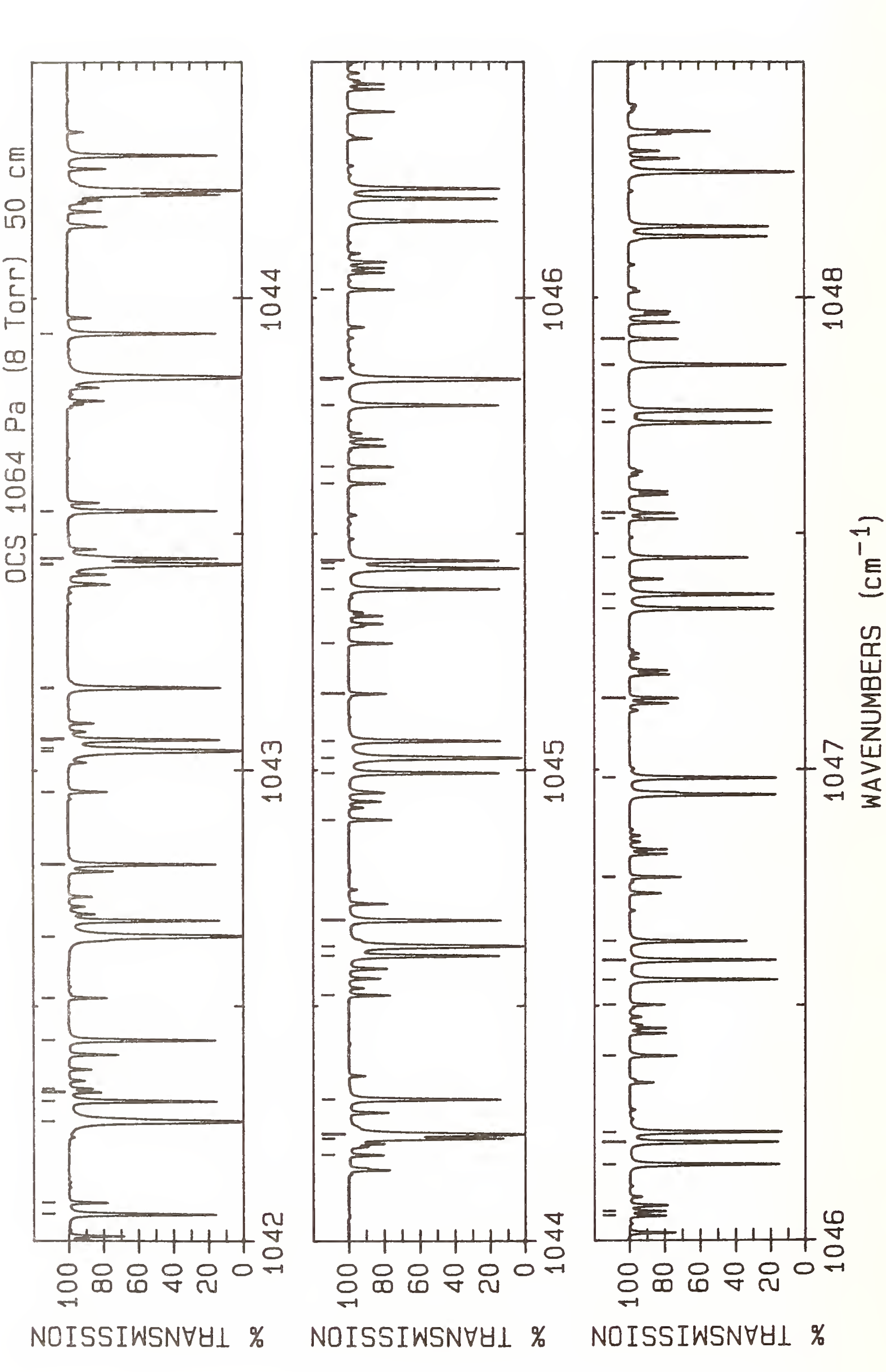


OCS 1064 Pa (8 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1030
1031
1032
1033
1034
1035
1036
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1030.062 924(14)*	419.73	0.212E-20	P(45)	A
2	1030.067 01(10)*	873.53	0.416E-22	P(8)	D
3	1030.247 71(7)*	1263.19	0.768E-22	P(60)	B
4	1030.281 39(6)*	1313.90	0.618E-22	P(62)	C
5	1030.296 48(24)	324.44	0.129E-21	P(40)	P
6	1030.410 338(14)*	401.49	0.227E-20	P(44)	A
7	1030.596 16(7)*	1238.86	0.852E-22	P(59)	B
8	1030.641 96(24)	308.62	0.136E-21	P(39)	P
9	1030.759 206(14)*	383.65	0.242E-20	P(43)	A
10	1030.928 30(6)*	1263.97	0.766E-22	P(60)	C
11	1030.945 71(7)*	1214.93	0.944E-22	P(58)	B
12	1030.983 89(14)	1474.93	0.109E-22	P(22)	H
13	1030.988 83(24)	293.19	0.143E-21	P(38)	P
14	1031.109 519(14)*	366.22	0.257E-20	P(42)	A
15	1031.296 37(6)*	1191.40	0.104E-21	P(57)	B
16	1031.337 08(24)	278.16	0.150E-21	P(37)	P
17	1031.461 269(14)*	349.19	0.273E-20	P(41)	A
18	1031.581 09(6)*	1215.65	0.942E-22	P(58)	C
19	1031.648 12(6)*	1168.28	0.115E-21	P(56)	B
20	1031.814 448(14)*	332.57	0.289E-20	P(40)	A
21	1031.909 68(6)*	1192.10	0.104E-21	P(57)	C
22	1032.000 95(6)*	1145.56	0.126E-21	P(55)	B
23	1032.169 048(14)*	316.35	0.305E-20	P(39)	A
24	1032.239 73(6)*	1168.96	0.115E-21	P(56)	C
25	1032.354 86(6)*	1123.25	0.139E-21	P(54)	B
26	1032.390 06(24)	235.44	0.170E-21	P(34)	P
27	1032.525 061(14)*	300.54	0.321E-20	P(38)	A
28	1032.571 23(6)*	1146.22	0.126E-21	P(55)	C
29	1032.709 85(6)*	1101.34	0.152E-21	P(53)	B
30	1032.743 77(24)	221.99	0.177E-21	P(33)	P
31	1032.882 479(14)*	285.13	0.337E-20	P(37)	A
32	1032.904 18(6)*	1123.88	0.138E-21	P(54)	C
33	1033.065 90(6)*	1079.84	0.166E-21	P(52)	B
34	1033.238 58(6)*	1101.95	0.152E-21	P(53)	C
35	1033.241 296(14)*	270.13	0.353E-20	P(36)	A
36	1033.423 01(6)*	1058.74	0.181E-21	P(51)	B
37	1033.455 22(24)	196.27	0.188E-21	P(31)	P
38	1033.574 42(6)*	1080.42	0.165E-21	P(52)	C
39	1033.601 504(14)*	255.53	0.369E-20	P(35)	A
40	1033.781 18(6)*	1038.05	0.196E-21	P(50)	B
41	1033.911 69(6)*	1059.31	0.180E-21	P(51)	C
42	1033.963 095(13)*	241.34	0.384E-20	P(34)	A
43	1034.140 40(6)*	1017.76	0.213E-21	P(49)	B
44	1034.250 40(6)*	1038.59	0.196E-21	P(50)	C
45	1034.326 064(13)*	227.55	0.399E-20	P(33)	A
46	1034.485 56(10)*	860.18	0.167E-22	R(2)	D
47	1034.500 67(6)*	997.88	0.230E-21	P(48)	B
48	1034.532 41(24)	160.67	0.202E-21	P(28)	P
49	1034.590 54(6)*	1018.28	0.213E-21	P(49)	C
50	1034.690 403(13)*	214.17	0.413E-20	P(32)	A
51	1034.861 97(6)*	978.40	0.249E-21	P(47)	B
52	1034.932 11(6)*	998.38	0.230E-21	P(48)	C
53	1035.056 106(13)*	201.19	0.426E-20	P(31)	A
54	1035.224 30(6)*	959.33	0.268E-21	P(46)	B
55	1035.257 13(24)	138.90	0.209E-21	P(26)	P
56	1035.275 11(6)*	978.88	0.248E-21	P(47)	C
57	1035.423 167(13)*	188.62	0.438E-20	P(30)	A
58	1035.581 55(11)	861.08	0.168E-22	P(41)	R
59	1035.587 67(6)*	940.66	0.287E-21	P(45)	B
60	1035.619 52(6)*	959.78	0.267E-21	P(46)	C
61	1035.621 46(24)	128.62	0.211E-21	P(25)	P
62	1035.791 578(13)*	176.45	0.450E-20	P(29)	A
63	1035.952 06(6)*	922.39	0.308E-21	P(44)	B
64	1035.965 35(6)*	941.10	0.287E-21	P(45)	C
65	1035.965 9	1761.33	0.102E-22	P(59)	F
66	1035.987 08(24)	118.72	0.213E-21	P(24)	P


OCS 1064 Pa (8 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
1036
1037
1038
1039
1040
1041
1042
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1036.161 336(13)*	164.69	0.460E-20	P(28)	A
2	1036.354 01(24)	109.23	0.214E-21	P(23)	P
3	1036.532 432(13)*	153.34	0.469E-20	P(27)	A
4	1036.679 61(9)*	1696.18	0.176E-22	P(56)	G
5	1036.683 89(6)*	887.08	0.351E-21	P(42)	B
6	1036.904 863(12)*	142.38	0.477E-20	P(26)	A
7	1037.007 04(85)	1690.60	0.137E-22	P(56)	F
8	1037.011 29(6)*	887.47	0.350E-21	P(42)	C
9	1037.051 32(6)*	870.04	0.373E-21	P(41)	B
10	1037.051 53(10)	455.95	0.209E-22	R(47)	T
11	1037.085 21(13)	783.50	0.218E-22	P(36)	Q
12	1037.091 73(24)	91.42	0.213E-21	P(21)	P
13	1037.278 622(12)*	131.84	0.483E-20	P(25)	A
14	1037.419 76(6)*	853.39	0.396E-21	P(40)	B
15	1037.462 52(24)	83.11	0.211E-21	P(20)	P
16	1037.653 705(12)*	121.70	0.487E-20	P(24)	A
17	1037.789 19(6)*	837.16	0.418E-21	P(39)	B
18	1037.834 59(24)	75.19	0.209E-21	P(19)	P
19	1038.030 106(12)*	111.96	0.489E-20	P(23)	A
20	1038.069 86(6)*	837.49	0.418E-21	P(39)	C
21	1038.159 63(6)*	821.33	0.441E-21	P(38)	B
22	1038.207 94(24)	67.68	0.205E-21	P(18)	P
23	1038.227 02(10)*	885.66	0.593E-22	R(11)	D
24	1038.407 820(12)*	102.63	0.490E-20	P(22)	A
25	1038.425 51(6)*	821.64	0.441E-21	P(38)	C
26	1038.531 06(6)*	805.90	0.464E-21	P(37)	B
27	1038.582 55(24)	60.55	0.201E-21	P(17)	P
28	1038.649 76(10)*	890.52	0.627E-22	R(12)	D
29	1038.782 54(6)*	806.20	0.464E-21	P(37)	C
30	1038.786 842(12)*	93.71	0.489E-20	P(21)	A
31	1038.903 48(6)*	790.88	0.487E-21	P(36)	B
32	1038.958 44(24)	53.83	0.195E-21	P(16)	P
33	1039.140 96(6)*	791.16	0.487E-21	P(36)	C
34	1039.167 169(12)*	85.19	0.485E-20	P(20)	A
35	1039.276 88(6)*	776.26	0.510E-21	P(35)	B
36	1039.280 84(15)	703.89	0.271E-22	P(30)	Q
37	1039.335 59(24)	47.49	0.189E-21	P(15)	P
38	1039.452 54(9)*	1525.43	0.355E-22	P(48)	G
39	1039.548 795(12)*	77.08	0.480E-20	P(19)	A
40	1039.805 82(9)*	1505.91	0.383E-22	P(47)	G
41	1039.861 94(6)*	762.31	0.531E-21	P(34)	C
42	1039.926 41(10)*	907.50	0.712E-22	R(15)	D
43	1039.931 717(12)*	69.37	0.472E-20	P(18)	A
44	1040.020 46(16)	680.52	0.285E-22	P(28)	Q
45	1040.026 63(6)*	748.25	0.553E-21	P(33)	B
46	1040.093 66(24)	36.02	0.173E-21	P(13)	P
47	1040.224 50(6)*	748.49	0.553E-21	P(33)	C
48	1040.315 930(12)*	62.07	0.462E-20	P(17)	A
49	1040.354 79(10)*	913.98	0.733E-22	R(16)	D
50	1040.402 97(6)*	734.85	0.574E-21	P(32)	B
51	1040.588 43(6)*	735.07	0.573E-21	P(32)	C
52	1040.701 431(12)*	55.17	0.450E-20	P(16)	A
53	1040.780 28(6)*	721.86	0.594E-21	P(31)	B
54	1040.784 58(10)*	920.85	0.751E-22	R(17)	D
55	1040.874 18(9)*	1449.79	0.476E-22	P(44)	G
56	1040.878 59(17)	658.87	0.295E-22	P(26)	R
57	1040.953 74(6)*	722.07	0.593E-21	P(31)	C
58	1041.088 215(11)*	48.68	0.436E-20	P(15)	A
59	1041.158 56(6)*	709.27	0.612E-21	P(30)	B
60	1041.320 41(6)*	709.47	0.612E-21	P(30)	C
61	1041.476 280(11)*	42.60	0.419E-20	P(14)	A
62	1041.537 80(6)*	697.09	0.629E-21	P(29)	B
63	1041.587 18(19)	1426.24	0.393E-22	P(43)	E
64	1041.593 35(9)*	1414.41	0.543E-22	P(42)	G
65	1041.624 85(24)	17.81	0.131E-21	P(9)	P
66	1041.688 44(6)*	697.27	0.629E-21	P(29)	C
67	1041.865 622(11)*	36.92	0.400E-20	P(13)	A
68	1041.918 01(6)*	685.31	0.645E-21	P(28)	B


OCS 1064 Pa (8 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
1042
1043
1044
1045
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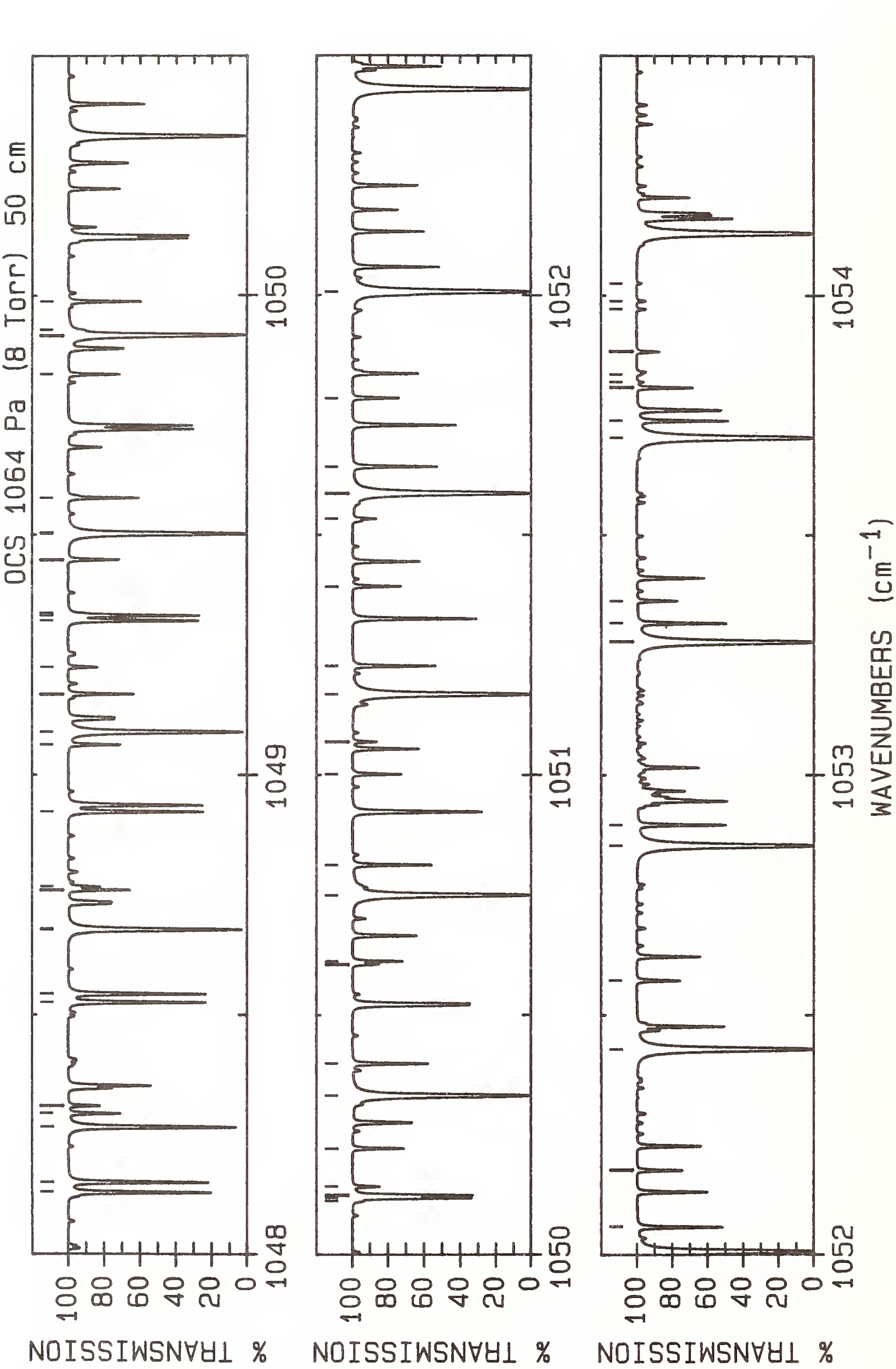
1047
1048
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1042.057 84(6)*	685.49	0.644E-21	P(28)	C
2	1042.082 47(10)*	943.90	0.784E-22	R(20)	D
3	1042.256 237(11)*	31.64	0.379E-20	P(12)	A
4	1042.299 18(6)*	673.94	0.659E-21	P(27)	B
5	1042.317 93(9)*	1380.65	0.612E-22	P(40)	G
6	1042.325 25(14)	1391.67	0.446E-22	P(41)	E
7	1042.428 59(6)*	674.10	0.658E-21	P(27)	C
8	1042.517 95(10)*	952.40	0.789E-22	R(21)	D
9	1042.648 124(11)*	26.78	0.356E-20	P(11)	A
10	1042.800 70(6)*	663.13	0.670E-21	P(26)	C
11	1042.954 86(10)*	961.29	0.790E-22	R(22)	D
12	1043.041 278(11)*	22.31	0.331E-20	P(10)	A
13	1043.047 79(9)*	1348.52	0.684E-22	P(38)	G
14	1043.064 37(6)*	652.42	0.680E-21	P(25)	B
15	1043.066 39(11)	1358.72	0.500E-22	P(39)	E
16	1043.174 17(6)*	652.56	0.680E-21	P(25)	C
17	1043.175 94(24)	5.94	0.773E-22	P(5)	P
18	1043.435 697(11)*	18.26	0.304E-20	P(9)	A
19	1043.438 13(10)	1342.85	0.527E-22	P(38)	E
20	1043.448 40(6)*	642.27	0.688E-21	P(24)	B
21	1043.548 99(6)*	642.40	0.687E-21	P(24)	C
22	1043.925 15(6)*	632.64	0.692E-21	P(23)	C
23	1044.184 03(8)	1312.34	0.582E-22	P(36)	E
24	1044.219 29(6)*	623.18	0.695E-21	P(22)	B
25	1044.228 322(11)*	11.36	0.245E-20	P(7)	A
26	1044.302 67(6)*	623.29	0.694E-21	P(22)	C
27	1044.522 85(9)*	1289.13	0.825E-22	P(34)	G
28	1044.606 15(6)*	614.25	0.694E-21	P(21)	B
29	1044.626 523(11)*	8.52	0.213E-20	P(6)	A
30	1044.681 52(6)*	614.35	0.694E-21	P(21)	C
31	1044.894 73(9)*	1275.30	0.859E-22	P(33)	G
32	1044.993 95(6)*	605.72	0.690E-21	P(20)	B
33	1045.025 980(11)*	6.09	0.179E-20	P(5)	A
34	1045.061 72(6)*	605.81	0.690E-21	P(20)	C
35	1045.161 01(10)*	1011.84	0.753E-22	R(27)	D

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1045.267 82(9)*	1261.88	0.891E-22	P(32)	G
37	1045.382 69(6)*	597.60	0.684E-21	P(19)	B
38	1045.426 691(11)*	4.06	0.145E-20	P(4)	A
39	1045.438 55(15)	1409.32	0.103E-22	R(13)	H
40	1045.443 26(6)*	597.68	0.684E-21	P(19)	C
41	1045.606 59(10)*	1023.17	0.739E-22	R(28)	D
42	1045.642 12(9)*	1248.86	0.922E-22	P(31)	G
43	1045.772 37(6)*	589.88	0.674E-21	P(18)	B
44	1045.826 14(6)*	589.95	0.674E-21	P(18)	C
45	1045.828 655(11)*	2.43	0.110E-20	P(3)	A
46	1046.017 61(9)*	1236.25	0.952E-22	P(30)	G
47	1046.053 62(10)*	1034.89	0.722E-22	R(29)	D
48	1046.063 33(7)	1243.17	0.709E-22	P(31)	E
49	1046.162 97(6)*	582.57	0.661E-21	P(17)	B
50	1046.210 35(6)*	582.63	0.661E-21	P(17)	C
51	1046.231 870(11)*	1.22	0.735E-21	P(2)	A
52	1046.394 27(9)*	1224.04	0.978E-22	P(29)	G
53	1046.502 13(10)*	1047.02	0.703E-22	R(30)	D
54	1046.554 52(6)*	575.66	0.644E-21	P(16)	B
55	1046.595 89(6)*	575.72	0.644E-21	P(16)	C
56	1046.636 335(11)*	0.41	0.369E-21	P(1)	A
57	1046.772 10(9)*	1212.24	0.100E-21	P(28)	G
58	1046.772 83(15)	1427.61	0.116E-22	R(16)	I
59	1046.982 76(6)*	569.22	0.625E-21	P(15)	C
60	1047.151 08(9)*	1200.85	0.102E-21	P(27)	G
61	1047.340 38(6)*	563.07	0.602E-21	P(14)	B
62	1047.370 96(6)*	563.12	0.601E-21	P(14)	C
63	1047.449 009(11)*	0.00	0.370E-21	R(0)	A
64	1047.531 20(9)*	1189.87	0.104E-21	P(26)	G
65	1047.543 17(24)	5.94	0.932E-22	R(5)	P
66	1047.734 71(6)*	557.38	0.575E-21	P(13)	B
67	1047.760 49(6)*	557.42	0.575E-21	P(13)	C
68	1047.856 48(10)*	1085.84	0.639E-22	R(33)	D
69	1047.857 217(11)*	0.41	0.739E-21	R(1)	A
70	1047.912 45(9)*	1179.29	0.106E-21	P(25)	G



OCS 1064 Pa (8 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
1048
1049
1050
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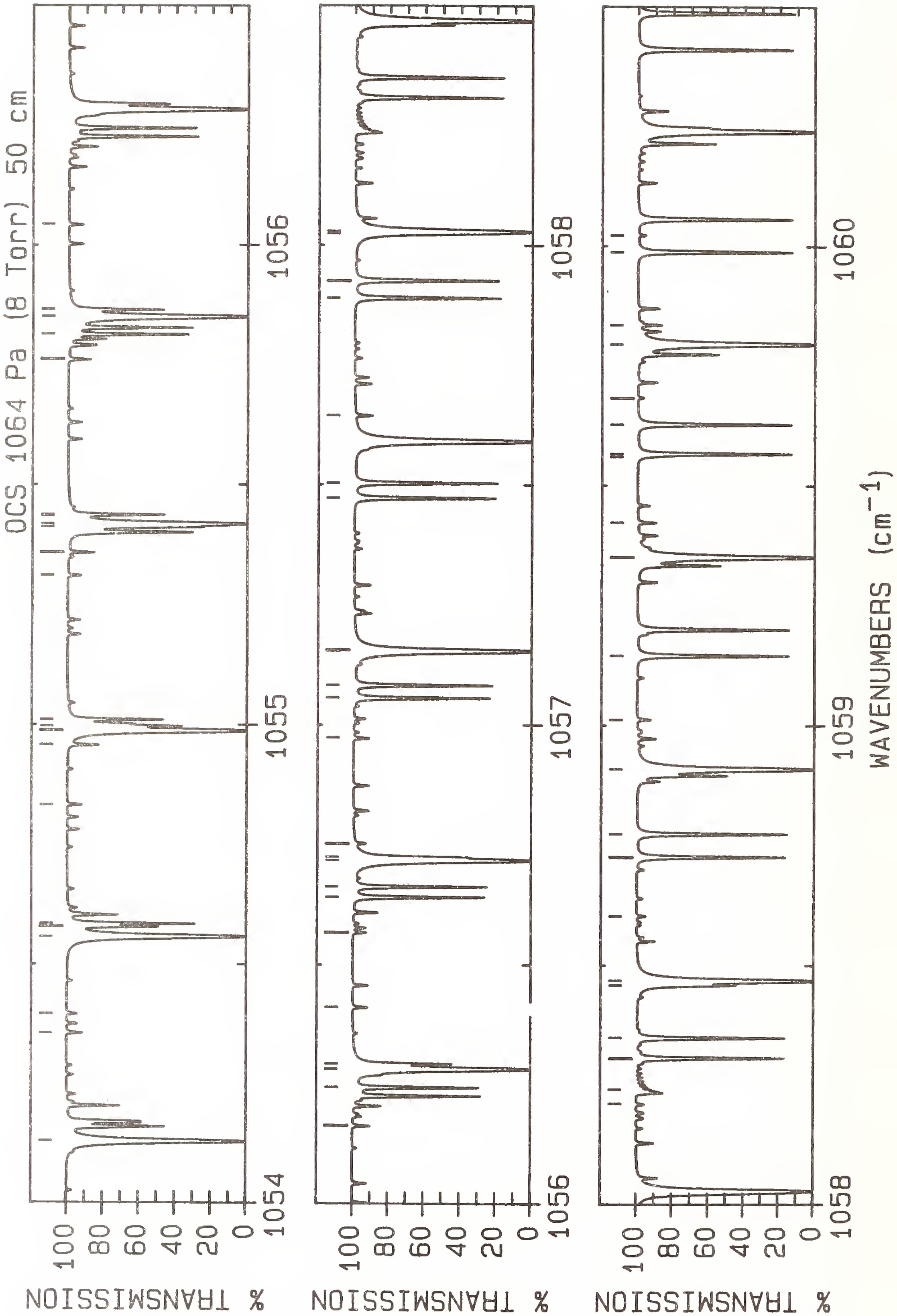
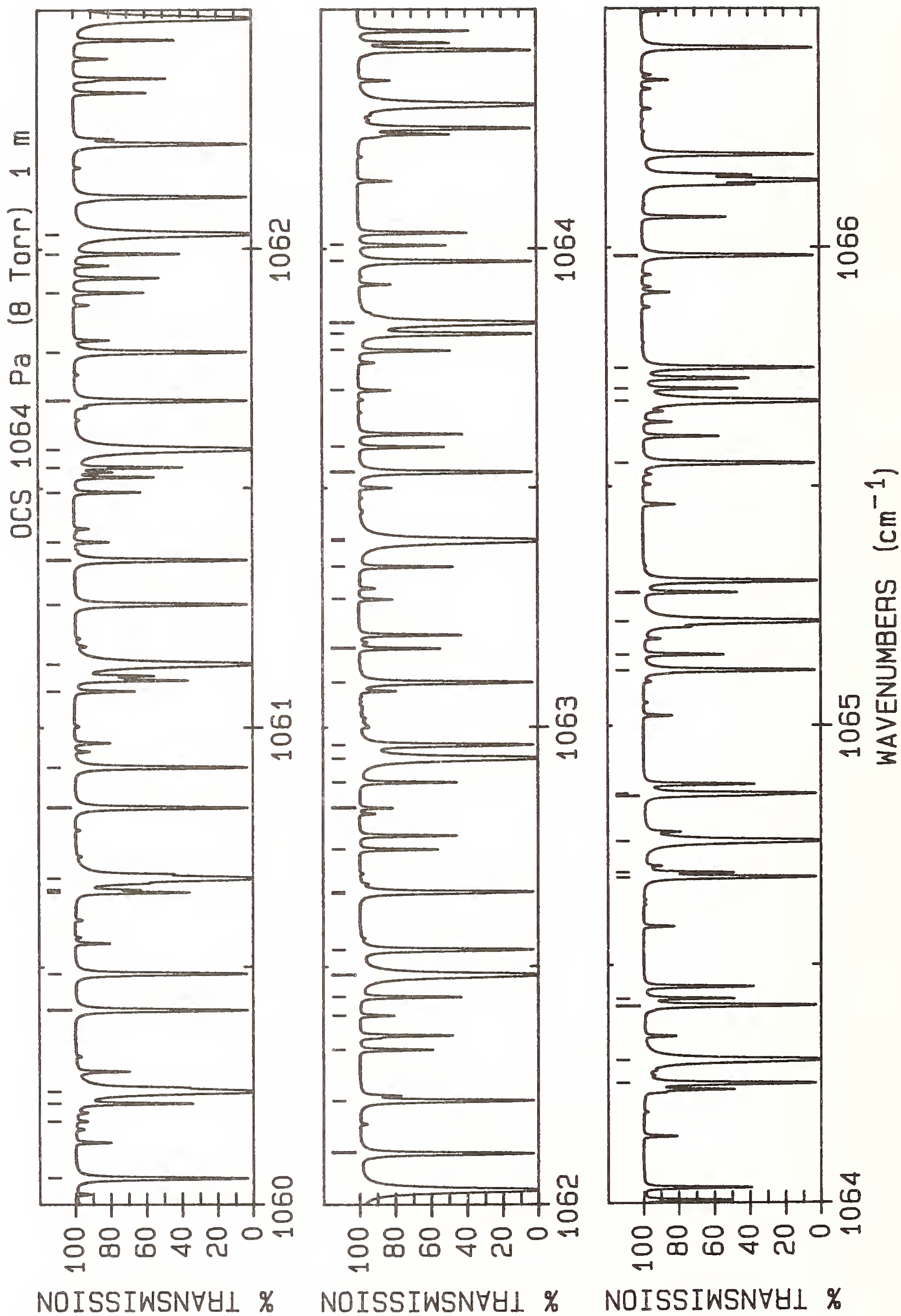
1053
1054
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1048.129 95(6)*	552.11	0.545E-21	P(12)	B
2	1048.151 35(6)*	552.14	0.545E-21	P(12)	C
3	1048.266 670(11)*	1.22	0.110E-20	R(2)	A
4	1048.294 82(9)*	1169.12	0.107E-21	P(24)	G
5	1048.310 90(10)*	1099.58	0.616E-22	R(34)	D
6	1048.526 12(6)*	547.23	0.512E-21	P(11)	B
7	1048.543 53(6)*	547.26	0.512E-21	P(11)	C
8	1048.677 369(11)*	2.43	0.147E-20	R(3)	A
9	1048.678 29(9)*	1159.35	0.108E-21	P(23)	G
10	1048.760 02(24)	14.25	0.134E-21	R(8)	P
11	1048.766 82(10)*	1113.73	0.591E-22	R(35)	D
12	1048.923 21(6)*	542.76	0.476E-21	P(10)	B
13	1049.062 87(9)*	1149.99	0.108E-21	P(22)	G
14	1049.089 312(11)*	4.06	0.182E-20	R(4)	A
15	1049.168 09(24)	17.81	0.147E-21	R(9)	P
16	1049.224 23(10)*	1128.29	0.566E-22	R(36)	D
17	1049.321 21(6)*	538.70	0.437E-21	P(9)	B
18	1049.331 84(6)*	538.72	0.437E-21	P(9)	C
19	1049.336 52(18)	1802.17	0.100E-22	P(33)	M
20	1049.448 53(9)*	1141.04	0.108E-21	P(21)	G
21	1049.502 500(11)*	6.09	0.216E-20	R(5)	A
22	1049.504 64(7)	1144.28	0.828E-22	P(22)	F
23	1049.577 39(24)	21.77	0.158E-21	R(10)	P
24	1049.835 26(9)*	1132.50	0.108E-21	P(20)	G
25	1049.916 933(11)*	8.52	0.249E-20	R(6)	A
26	1049.928 74(20)	1775.25	0.108E-22	P(31)	L
27	1049.987 91(24)	26.12	0.169E-21	R(11)	P
28	1050.112 43(14)	1493.97	0.126E-22	R(24)	H
29	1050.119 98(6)*	531.80	0.350E-21	P(7)	B
30	1050.125 43(6)*	531.81	0.350E-21	P(7)	C
31	1050.143 59(10)*	1158.61	0.515E-22	R(38)	D
32	1050.223 07(9)*	1124.36	0.107E-21	P(19)	G
33	1050.332 611(11)*	11.36	0.281E-20	R(7)	A
34	1050.399 67(24)	30.87	0.179E-21	R(12)	P
35	1050.605 55(9)*	1174.37	0.489E-22	R(39)	D
36	1050.611 94(9)*	1116.63	0.105E-21	P(18)	G
37	1050.749 534(11)*	14.61	0.312E-20	R(8)	A
38	1050.812 66(24)	36.02	0.189E-21	R(13)	P
39	1051.001 86(9)*	1109.30	0.103E-21	P(17)	G
40	1051.069 04(9)*	1190.54	0.464E-22	R(40)	D
41	1051.167 702(11)*	18.26	0.340E-20	R(9)	A
42	1051.226 88(24)	41.56	0.197E-21	R(14)	P
43	1051.392 83(9)*	1102.39	0.101E-21	P(16)	G
44	1051.534 07(9)*	1207.11	0.438E-22	R(41)	D
45	1051.587 116(11)*	22.31	0.367E-20	R(10)	A
46	1051.642 33(24)	47.49	0.204E-21	R(15)	P
47	1051.784 83(9)*	1095.88	0.976E-22	P(15)	G
48	1052.007 777(11)*	26.78	0.392E-20	R(11)	A
49	1052.059 02(24)	53.83	0.210E-21	R(16)	P
50	1052.177 86(9)*	1089.77	0.941E-22	P(14)	G
51	1052.429 686(11)*	31.64	0.415E-20	R(12)	A
52	1052.571 92(9)*	1084.07	0.900E-22	P(13)	G
53	1052.852 844(11)*	36.92	0.436E-20	R(13)	A
54	1052.896 11(24)	67.68	0.220E-21	R(18)	P
55	1053.277 251(12)*	42.60	0.454E-20	R(14)	A
56	1053.316 51(24)	75.19	0.223E-21	R(19)	P
57	1053.363 09(9)*	1073.90	0.804E-22	P(11)	G
58	1053.702 911(12)*	48.68	0.470E-20	R(15)	A
59	1053.738 16(24)	83.11	0.225E-21	R(20)	P
60	1053.807 30(8)	1068.16	0.600E-22	P(11)	E
61	1053.807 44(8)	1068.16	0.600E-22	P(11)	F
62	1053.819 10(17)	1667.40	0.126E-22	P(21)	L
63	1053.835 59(15)	1586.54	0.108E-22	R(32)	I
64	1053.882 51(9)*	1296.03	0.318E-22	R(46)	D
65	1053.883 01(18)	1667.59	0.126E-22	P(21)	M
66	1053.971 65(18)	530.75	0.180E-22	R(7)	Q
67	1053.988 75(18)	530.76	0.180E-22	R(7)	R
68	1054.026 02(15)	1599.65	0.104E-22	R(33)	H



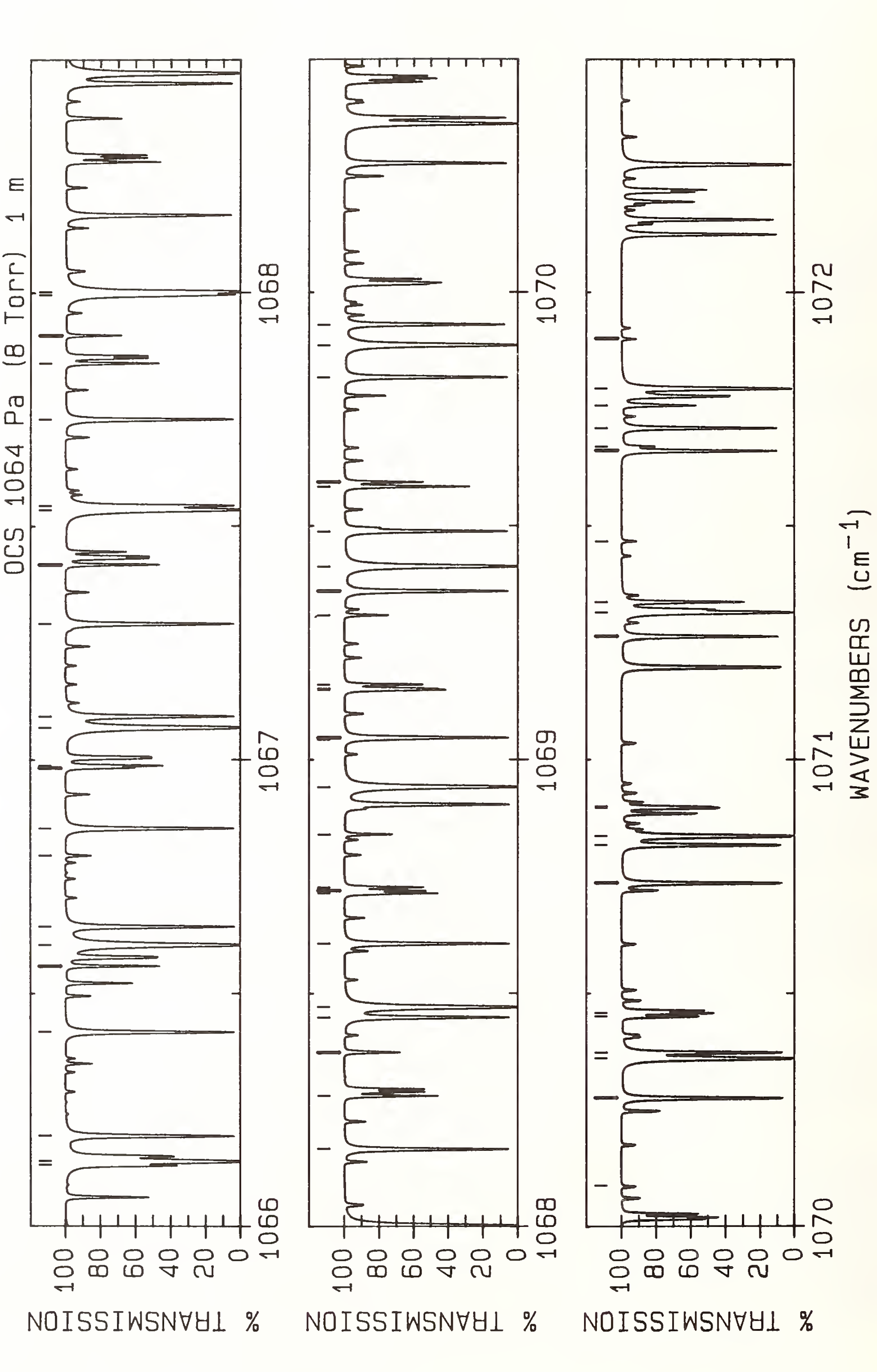
OCS 1064 Pa (8 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
1054
1055
1056
1057
1058
1059
1060
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1054.129 823(12)*	55.17	0.485E-20	R(16)	A
2	1054.356 92(9)*	1315.02	0.296E-22	R(47)	D
3	1054.397 03(18)	533.94	0.201E-22	R(8)	R
4	1054.557 991(12)*	62.07	0.496E-20	R(17)	A
5	1054.578 23(6)*	522.86	0.205E-21	R(3)	B
6	1054.583 94(6)*	522.86	0.205E-21	R(3)	C
7	1054.585 19(24)	100.13	0.228E-21	R(22)	P
8	1054.832 92(9)*	1334.42	0.275E-22	R(48)	D
9	1054.957 46(9)*	1058.44	0.557E-22	P(7)	G
10	1054.987 415(12)*	69.37	0.506E-20	R(18)	A
11	1054.988 95(6)*	524.48	0.261E-21	R(4)	B
12	1054.997 10(6)*	524.49	0.261E-21	R(4)	C
13	1055.010 59(24)	109.23	0.227E-21	R(23)	P
14	1055.310 53(9)*	1354.22	0.254E-22	R(49)	D
15	1055.358 54(9)*	1055.59	0.485E-22	P(6)	G
16	1055.411 55(6)*	526.52	0.315E-21	R(5)	C
17	1055.418 098(12)*	77.08	0.513E-20	R(19)	A
18	1055.434 57(19)	1635.78	0.120E-22	P(17)	M
19	1055.437 23(24)	118.72	0.226E-21	R(24)	P
20	1055.760 60(9)*	1053.15	0.410E-22	P(5)	G
21	1055.813 10(6)*	528.95	0.367E-21	R(6)	B
22	1055.850 043(12)*	85.19	0.518E-20	R(20)	A
23	1055.865 13(24)	128.62	0.224E-21	R(25)	P
24	1056.042 99(18)	550.60	0.272E-22	R(12)	R
25	1056.163 65(9)*	1051.11	0.332E-22	P(4)	G
26	1056.244 37(6)*	531.81	0.417E-21	R(7)	C
27	1056.283 251(12)*	93.71	0.521E-20	R(21)	A
28	1056.294 29(24)	138.90	0.222E-21	R(26)	P
29	1056.411 57(18)	555.72	0.286E-22	R(13)	Q
30	1056.567 67(9)*	1049.48	0.252E-22	P(3)	G
31	1056.640 85(6)*	535.04	0.464E-21	R(8)	B
32	1056.662 73(6)*	535.06	0.464E-21	R(8)	C
33	1056.717 726(12)*	102.63	0.522E-20	R(22)	A
34	1056.724 72(24)	149.59	0.218E-21	R(27)	P
35	1056.753 05(10)*	1416.04	0.199E-22	R(52)	D
36	1056.972 68(9)*	1048.26	0.169E-22	P(2)	G
37	1057.056 07(6)*	538.70	0.509E-21	R(9)	B
38	1057.082 39(6)*	538.72	0.509E-21	R(9)	C
39	1057.153 470(12)*	111.96	0.520E-20	R(23)	A
40	1057.156 41(24)	160.67	0.214E-21	R(28)	P
41	1057.472 19(6)*	542.76	0.551E-21	R(10)	B
42	1057.503 34(6)*	542.79	0.551E-21	R(10)	C
43	1057.643 66(18)	573.55	0.322E-22	R(16)	Q
44	1057.889 21(6)*	547.23	0.590E-21	R(11)	B
45	1057.925 60(6)*	547.26	0.590E-21	R(11)	C
46	1058.023 61(24)	184.01	0.204E-21	R(30)	P
47	1058.028 777(13)*	131.84	0.512E-20	R(25)	A
48	1058.210 34(10)*	1481.48	0.153E-22	R(55)	D
49	1058.241 18(8)	1045.36	0.116E-22	Q(4)	E
50	1058.307 12(6)*	552.11	0.626E-21	R(12)	B
51	1058.349 16(6)*	552.14	0.626E-21	R(12)	C
52	1058.459 13(24)	196.27	0.199E-21	R(31)	P
53	1058.468 348(13)*	142.38	0.506E-20	R(26)	A
54	1058.602 47(9)*	1047.45	0.171E-22	R(1)	G
55	1058.725 93(6)*	557.38	0.659E-21	R(13)	B
56	1058.774 01(6)*	557.42	0.659E-21	R(13)	C
57	1058.909 200(13)*	153.34	0.497E-20	R(27)	A
58	1059.012 36(9)*	1048.26	0.257E-22	R(2)	G
59	1059.145 64(6)*	563.07	0.689E-21	R(14)	B
60	1059.351 339(13)*	164.69	0.488E-20	R(28)	A
61	1059.423 22(9)*	1049.48	0.341E-22	R(3)	G
62	1059.560 40(23)	349.19	0.128E-22	R(41)	X
63	1059.566 24(6)*	569.16	0.716E-21	R(15)	B
64	1059.627 61(6)*	569.22	0.716E-21	R(15)	C
65	1059.682 63(10)*	1550.55	0.115E-22	R(58)	D
66	1059.794 767(13)*	176.45	0.476E-20	R(29)	A
67	1059.835 06(9)*	1051.11	0.424E-22	R(4)	G
68	1059.987 74(6)*	575.66	0.739E-21	R(16)	B
69	1060.022 71(23)	366.22	0.133E-22	R(42)	X



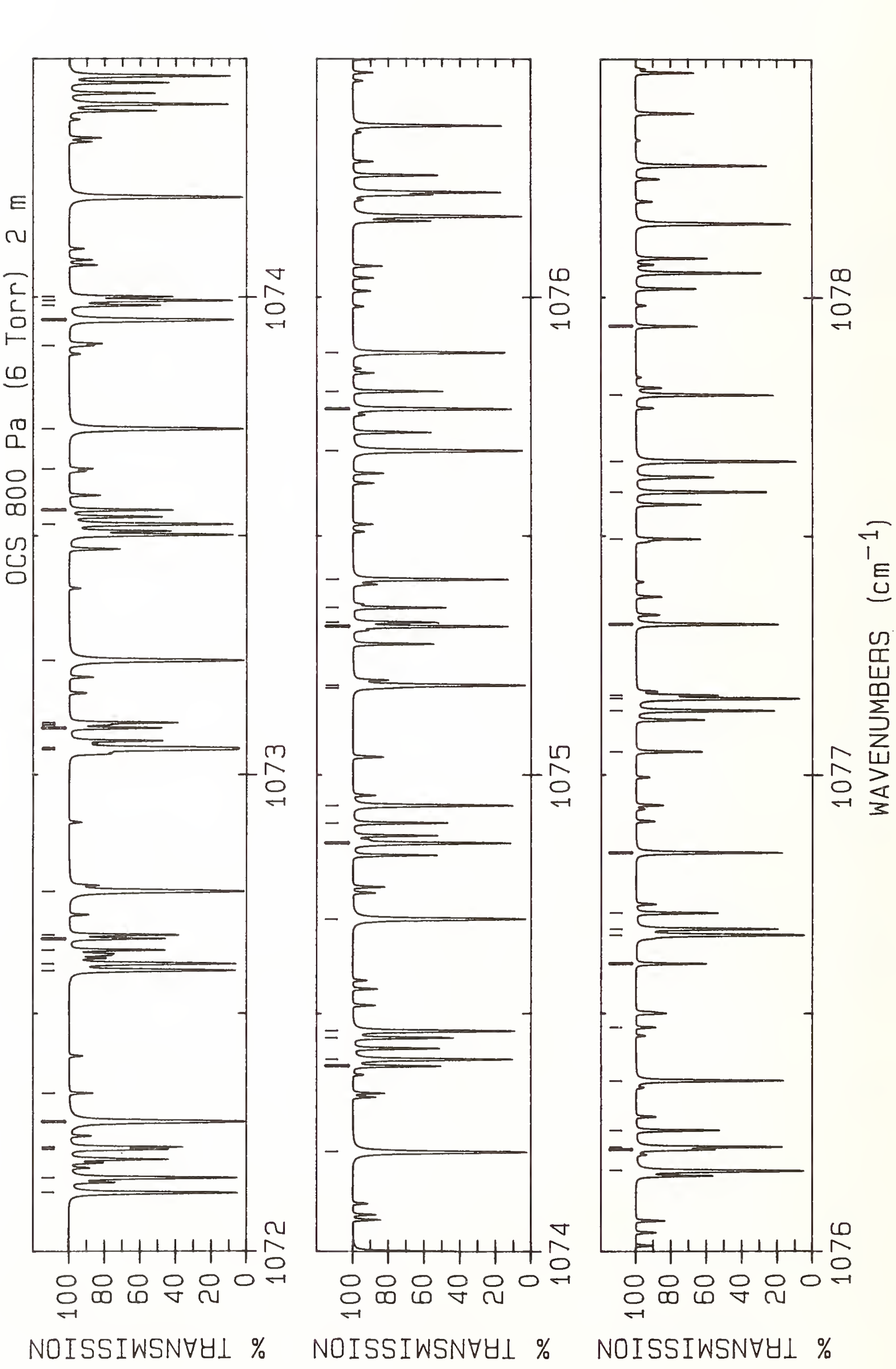
OCS 1064 Pa (8 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1060
1061
1062
1063
1064
1065
1066
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1060.056 36(6)*	575.72	0.739E-21	R(16)	C
2	1060.176 77(10)*	1574.38	0.104E-22	R(59)	D
3	1060.214 07(24)	249.29	0.173E-21	R(35)	P
4	1060.239 490(13)*	188.62	0.464E-20	R(30)	A
5	1060.410 14(6)*	582.57	0.759E-21	R(17)	B
6	1060.486 40(6)*	582.63	0.758E-21	R(17)	C
7	1060.656 05(24)	263.53	0.166E-21	R(36)	P
8	1060.661 66(9)*	1055.59	0.583E-22	R(6)	G
9	1060.685 510(13)*	201.19	0.451E-20	R(31)	A
10	1060.833 43(6)*	589.88	0.775E-21	R(18)	B
11	1060.917 75(6)*	589.95	0.775E-21	R(18)	C
12	1061.076 43(9)*	1058.44	0.659E-22	R(7)	G
13	1061.132 833(13)*	214.17	0.437E-20	R(32)	A
14	1061.257 62(6)*	597.60	0.788E-21	R(19)	B
15	1061.350 39(6)*	597.68	0.787E-21	R(19)	C
16	1061.388 43(16)	648.43	0.349E-22	R(25)	Q
17	1061.492 19(9)*	1061.69	0.731E-22	R(8)	G
18	1061.543 93(24)	293.19	0.151E-21	R(38)	P
19	1061.581 464(14)*	227.55	0.422E-20	R(33)	A
20	1061.682 71(6)*	605.72	0.797E-21	R(20)	B
21	1061.784 33(6)*	605.81	0.797E-21	R(20)	C
22	1061.908 92(9)*	1065.36	0.800E-22	R(9)	G
23	1061.989 85(24)	308.62	0.144E-21	R(39)	P
24	1062.031 406(14)*	241.34	0.406E-20	R(34)	A
25	1062.108 69(6)*	614.25	0.803E-21	R(21)	B
26	1062.219 56(6)*	614.35	0.803E-21	R(21)	C
27	1062.326 65(9)*	1069.42	0.864E-22	R(10)	G
28	1062.398 22(16)	669.58	0.341E-22	R(27)	R
29	1062.437 09(24)	324.44	0.137E-21	R(40)	P
30	1062.482 665(14)*	255.53	0.390E-20	R(35)	A
31	1062.535 58(6)*	623.18	0.806E-21	R(22)	B
32	1062.652 89(15)	680.52	0.336E-22	R(28)	Q
33	1062.656 10(6)*	623.29	0.805E-21	R(22)	C
34	1062.745 37(9)*	1073.90	0.925E-22	R(11)	G
35	1062.832 18(16)	680.68	0.336E-22	R(28)	R
36	1062.885 66(24)	340.66	0.130E-21	R(41)	P
37	1062.935 247(14)*	270.13	0.373E-20	R(36)	A
38	1062.963 36(6)*	632.52	0.805E-21	R(23)	B
39	1063.093 94(6)*	632.64	0.805E-21	R(23)	C
40	1063.165 09(9)*	1078.78	0.980E-22	R(12)	G
41	1063.267 42(15)	692.18	0.329E-22	R(29)	R
42	1063.335 56(24)	357.27	0.122E-21	R(42)	P
43	1063.389 156(14)*	285.13	0.356E-20	R(37)	A
44	1063.392 04(6)*	642.27	0.802E-21	R(24)	B
45	1063.533 07(6)*	642.40	0.801E-21	R(24)	C
46	1063.585 80(9)*	1084.07	0.103E-21	R(13)	G
47	1063.703 96(15)	704.08	0.322E-22	R(30)	R
48	1063.786 81(24)	374.27	0.115E-21	R(43)	P
49	1063.821 62(6)*	652.42	0.796E-21	R(25)	B
50	1063.844 398(14)*	300.54	0.339E-20	R(38)	A
51	1063.973 50(6)*	652.56	0.795E-21	R(25)	C
52	1064.007 52(9)*	1089.77	0.108E-21	R(14)	G
53	1064.252 10(6)*	662.98	0.787E-21	R(26)	B
54	1064.300 978(14)*	316.35	0.322E-20	R(39)	A
55	1064.415 24(6)*	663.13	0.786E-21	R(26)	C
56	1064.430 25(9)*	1095.88	0.112E-21	R(15)	G
57	1064.683 48(6)*	673.94	0.775E-21	R(27)	B
58	1064.693 35(24)	409.47	0.102E-21	R(45)	P
59	1064.758 903(14)*	332.57	0.305E-20	R(40)	A
60	1064.854 00(9)*	1102.39	0.115E-21	R(16)	G
61	1064.858 28(6)*	674.10	0.775E-21	R(27)	C
62	1065.115 76(6)*	685.31	0.761E-21	R(28)	B
63	1065.148 66(24)	427.66	0.949E-22	R(46)	P
64	1065.218 178(14)*	349.19	0.289E-20	R(41)	A
65	1065.278 77(9)*	1109.30	0.118E-21	R(17)	G
66	1065.548 94(6)*	697.09	0.746E-21	R(29)	B
67	1065.678 810(14)*	366.22	0.272E-20	R(42)	A
68	1065.704 57(9)*	1116.63	0.121E-21	R(18)	G
69	1065.748 25(6)*	697.27	0.745E-21	R(29)	C
70	1065.983 03(6)*	709.27	0.728E-21	R(30)	B

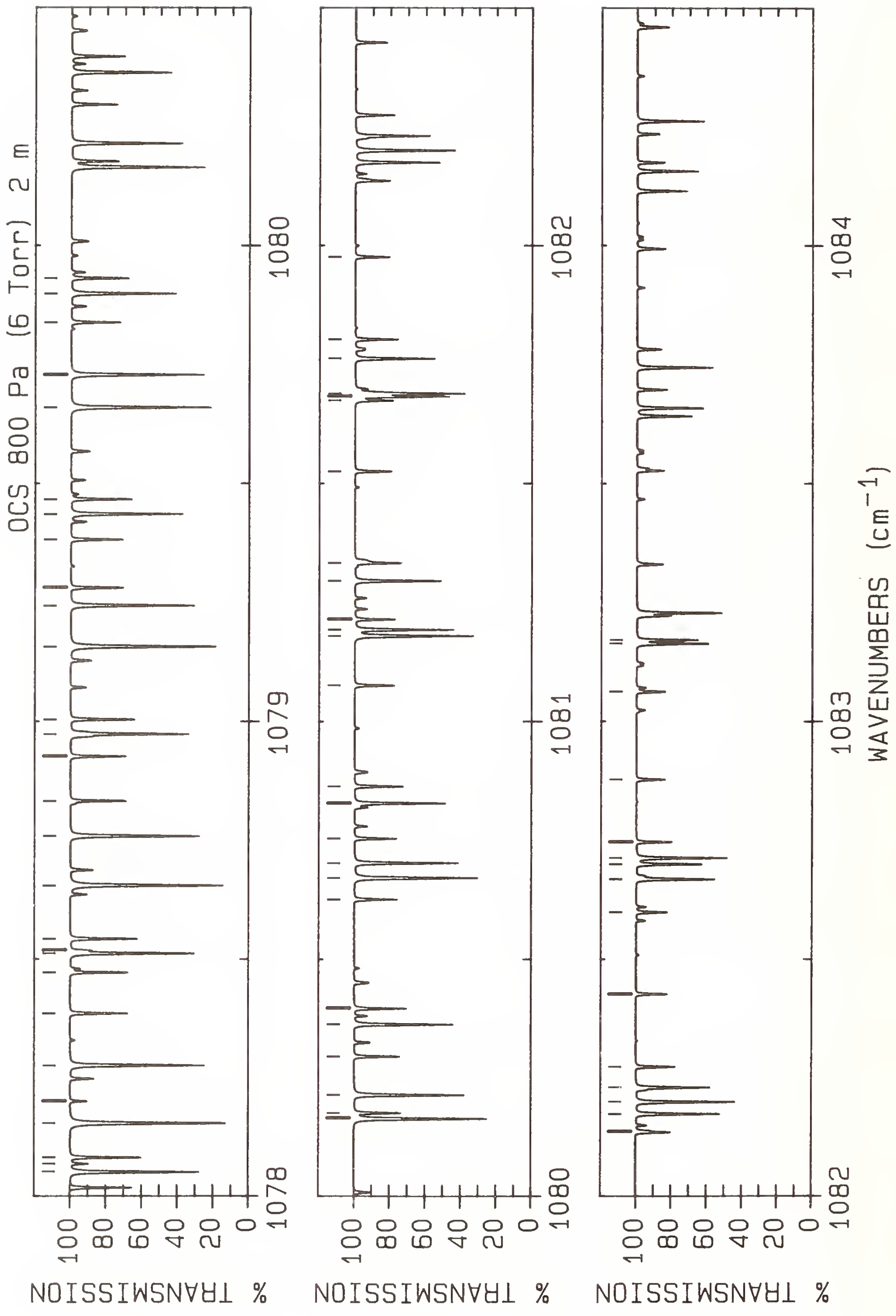


OCS 1064 Pa (8 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1066
1067
1068
1069
1070
1071
1072
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1066.131 40(9)*	1124.36	0.123E-21	R(19)	G	36	1069.148 87(9)*	1189.87	0.122E-21	R(26)	G
2	1066.140 805(14)*	383.65	0.256E-20	R(43)	A	37	1069.151 92(7)	1173.59	0.950E-22	R(25)	E
3	1066.195 19(6)*	709.47	0.727E-21	R(30)	C	38	1069.160 23(7)	1173.59	0.950E-22	R(25)	F
4	1066.418 02(6)*	721.86	0.708E-21	R(31)	B	39	1069.308 83(25)	609.13	0.467E-22	R(55)	P
5	1066.559 27(9)*	1132.50	0.124E-21	R(20)	G	40	1069.360 34(6)*	806.20	0.566E-21	R(37)	C
6	1066.604 170(14)*	401.49	0.240E-20	R(44)	A	41	1069.413 498(15)*	517.00	0.155E-20	R(50)	A
7	1066.643 44(6)*	722.07	0.708E-21	R(31)	C	42	1069.488 43(6)*	821.33	0.540E-21	R(38)	B
8	1066.795 81(11)	798.44	0.253E-22	R(37)	R	43	1069.584 13(7)	1184.17	0.939E-22	R(26)	E
9	1066.853 92(6)*	734.85	0.687E-21	R(32)	B	44	1069.584 27(9)*	1200.85	0.121E-21	R(27)	G
10	1066.983 64(24)	504.37	0.709E-22	R(50)	P	45	1069.593 77(7)	1184.17	0.939E-22	R(26)	F
11	1066.988 20(9)*	1141.04	0.125E-21	R(21)	G	46	1069.817 74(6)*	821.64	0.540E-21	R(38)	C
12	1067.068 910(14)*	419.73	0.224E-20	R(45)	A	47	1069.886 643(15)*	537.67	0.143E-20	R(51)	A
13	1067.092 99(6)*	735.07	0.687E-21	R(32)	C	48	1069.930 72(6)*	837.16	0.514E-21	R(39)	B
14	1067.290 73(6)*	748.25	0.665E-21	R(33)	B	49	1070.087 17(18)	1642.98	0.141E-22	R(18)	L
15	1067.418 18(9)*	1149.99	0.125E-21	R(22)	G	50	1070.276 45(6)*	837.49	0.514E-21	R(39)	C
16	1067.535 033(14)*	438.37	0.209E-20	R(46)	A	51	1070.361 216(15)*	558.74	0.131E-20	R(52)	A
17	1067.543 85(6)*	748.49	0.664E-21	R(33)	C	52	1070.373 92(6)*	853.39	0.488E-21	R(40)	B
18	1067.728 45(6)*	762.05	0.641E-21	R(34)	B	53	1070.451 04(7)	1206.55	0.909E-22	R(28)	E
19	1067.849 23(9)*	1159.35	0.125E-21	R(23)	G	54	1070.458 44(9)*	1224.04	0.116E-21	R(29)	G
20	1067.909 48(24)	545.09	0.604E-22	R(52)	P	55	1070.736 47(6)*	853.74	0.488E-21	R(40)	C
21	1067.996 01(6)*	762.31	0.641E-21	R(34)	C	56	1070.818 05(6)*	870.04	0.462E-21	R(41)	B
22	1068.002 547(14)*	457.42	0.195E-20	R(47)	A	57	1070.837 222(16)*	580.22	0.120E-20	R(53)	A
23	1068.167 07(6)*	776.26	0.617E-21	R(35)	B	58	1070.897 23(9)*	1236.25	0.113E-21	R(30)	G
24	1068.281 35(9)*	1169.12	0.125E-21	R(24)	G	59	1070.900 27(7)	1218.36	0.891E-22	R(29)	F
25	1068.374 51(24)	566.04	0.555E-22	R(53)	P	60	1071.263 10(6)*	887.08	0.437E-21	R(42)	B
26	1068.449 48(6)*	776.53	0.616E-21	R(35)	C	61	1071.314 671(16)*	602.10	0.110E-20	R(54)	A
27	1068.471 457(15)*	476.88	0.181E-20	R(48)	A	62	1071.337 16(9)*	1248.86	0.110E-21	R(31)	G
28	1068.606 61(6)*	790.88	0.592E-21	R(36)	B	63	1071.337 74(7)	1230.57	0.870E-22	R(30)	F
29	1068.714 56(9)*	1179.29	0.124E-21	R(25)	G	64	1071.467 34(17)	1667.59	0.146E-22	R(21)	M
30	1068.720 54(7)	1163.41	0.957E-22	R(24)	E	65	1071.660 46(6)*	887.47	0.436E-21	R(42)	C
31	1068.727 67(7)	1163.41	0.957E-22	R(24)	F	66	1071.669 87(26)	723.75	0.290E-22	R(60)	P
32	1068.840 96(25)	587.39	0.510E-22	R(54)	P	67	1071.709 08(6)*	904.54	0.411E-21	R(43)	B
33	1068.941 772(15)*	496.74	0.167E-20	R(49)	A	68	1071.757 41(7)	1243.17	0.846E-22	R(31)	E
34	1069.043 11(11)	877.73	0.197E-22	R(42)	R	69	1071.793 571(17)*	624.39	0.101E-20	R(55)	A
35	1069.047 06(6)*	805.90	0.566E-21	R(37)	B	70	1071.899 83(17)	1676.56	0.146E-22	R(22)	M

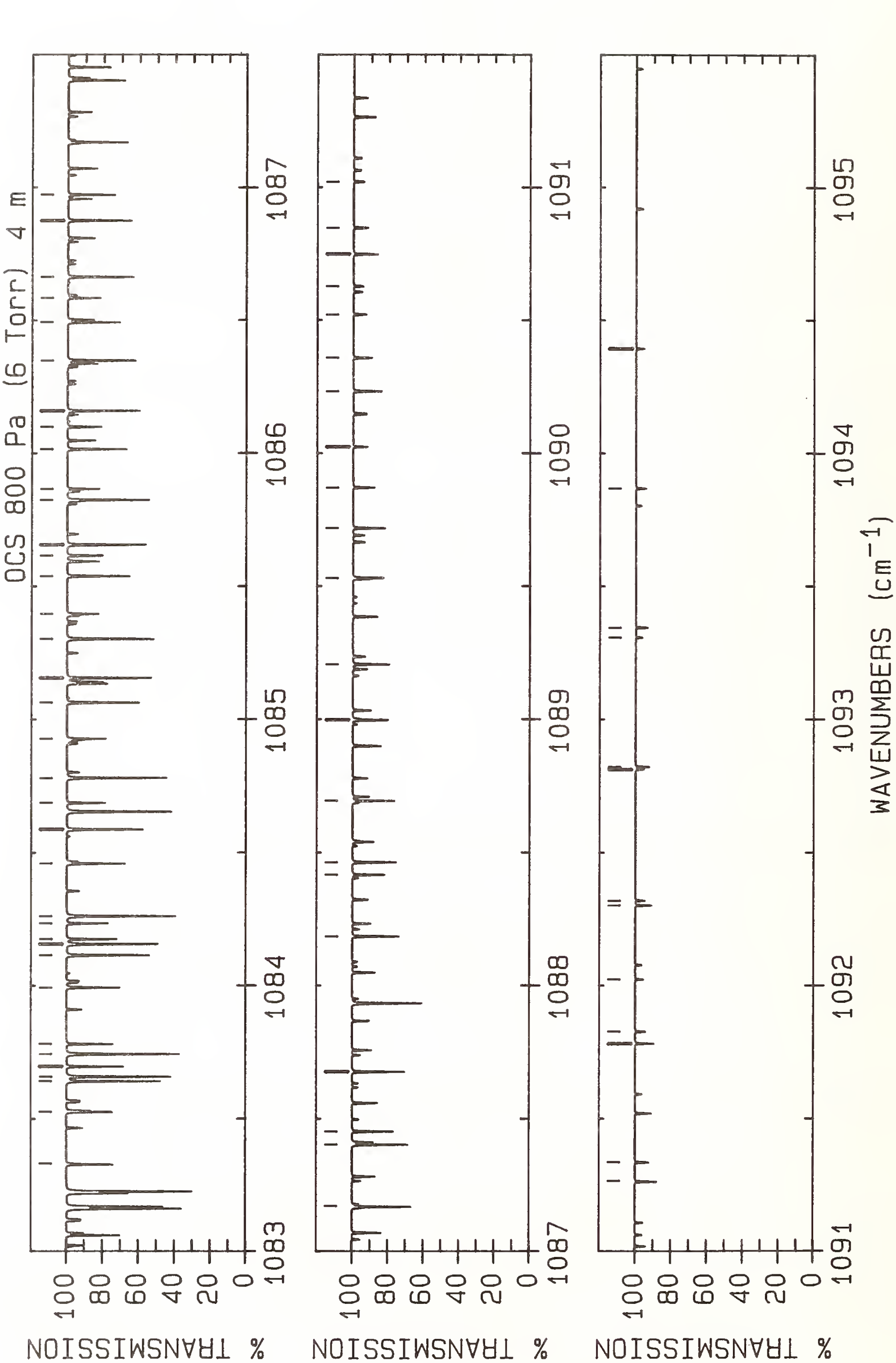

OCS 800 Pa (6 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1072
1073
1074
1075
1076
1077
1078
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1072.124 43(6)*	904.94	0.411E-21	R(43)	C
2	1072.155 99(6)*	922.39	0.387E-21	R(44)	B
3	1072.215 62(8)	1256.20	0.821E-22	R(32)	F
4	1072.220 52(9)*	1275.30	0.103E-21	R(33)	G
5	1072.273 929(17)*	647.08	0.917E-21	R(56)	A
6	1072.333 39(16)	1685.94	0.146E-22	R(23)	M
7	1072.589 72(6)*	922.82	0.386E-21	R(44)	C
8	1072.603 83(6)*	940.66	0.362E-21	R(45)	B
9	1072.632 19(8)	1269.62	0.794E-22	R(33)	E
10	1072.656 04(9)	1269.63	0.795E-22	R(33)	F
11	1072.663 97(9)*	1289.13	0.995E-22	R(34)	G
12	1072.755 753(18)*	670.17	0.833E-21	R(57)	A
13	1073.052 61(6)*	959.33	0.339E-21	R(46)	B
14	1073.056 33(6)*	941.10	0.362E-21	R(45)	C
15	1073.097 45(10)	1283.47	0.767E-22	R(34)	F
16	1073.104 10(27)	797.25	0.212E-22	R(63)	P
17	1073.108 61(9)*	1303.37	0.957E-22	R(35)	G
18	1073.239 052(18)*	693.67	0.756E-21	R(58)	A
19	1073.524 25(6)*	959.78	0.338E-21	R(46)	C
20	1073.554 47(9)*	1318.01	0.917E-22	R(36)	G
21	1073.640 58(15)	1716.53	0.143E-22	R(26)	M
22	1073.723 834(19)*	717.57	0.684E-21	R(59)	A
23	1073.898 48(18)	1727.23	0.141E-22	R(27)	L
24	1073.949 91(10)	1312.34	0.707E-22	R(36)	E
25	1073.952 98(6)*	997.88	0.294E-21	R(48)	B
26	1073.983 24(13)	1312.36	0.707E-22	R(36)	F
27	1073.993 50(6)*	978.88	0.315E-21	R(47)	C
28	1074.001 55(9)*	1333.06	0.877E-22	R(37)	G
29	1074.210 107(20)*	741.87	0.617E-21	R(60)	A
30	1074.390 58(11)	1327.39	0.677E-22	R(37)	E
31	1074.404 58(6)*	1017.76	0.273E-21	R(49)	B
32	1074.449 87(9)*	1348.52	0.837E-22	R(38)	G
33	1074.464 08(6)*	998.38	0.294E-21	R(48)	C
34	1074.697 879(21)*	766.58	0.556E-21	R(61)	A
35	1074.857 13(6)*	1038.05	0.253E-21	R(50)	B
36	1074.899 43(9)*	1364.38	0.796E-22	R(39)	G
37	1074.935 98(6)*	1018.28	0.272E-21	R(49)	C
38	1075.181 65(22)	1762.64	0.132E-22	R(30)	L
39	1075.187 160(21)*	791.70	0.500E-21	R(62)	A
40	1075.310 64(6)*	1058.74	0.234E-21	R(51)	B
41	1075.319 36(19)	1358.74	0.615E-22	R(39)	F
42	1075.350 26(9)*	1380.65	0.755E-22	R(40)	G
43	1075.409 21(6)*	1038.59	0.252E-21	R(50)	C
44	1075.677 956(22)*	817.21	0.448E-21	R(63)	A
45	1075.765 10(6)*	1079.84	0.215E-21	R(52)	B
46	1075.766 73(21)	1375.01	0.584E-22	R(40)	F
47	1075.802 37(9)*	1397.33	0.714E-22	R(41)	G
48	1075.883 76(6)*	1059.31	0.233E-21	R(51)	C
49	1076.170 278(23)*	843.13	0.401E-21	R(64)	A
50	1076.215 10(24)	1391.69	0.552E-22	R(41)	F
51	1076.220 51(6)*	1101.34	0.198E-21	R(53)	B
52	1076.255 78(9)*	1414.41	0.674E-22	R(42)	G
53	1076.359 65(6)*	1080.42	0.215E-21	R(52)	C
54	1076.471 37(32)	1801.70	0.121E-22	R(33)	L
55	1076.604 02(23)	1408.75	0.521E-22	R(42)	E
56	1076.664 132(25)*	869.46	0.358E-21	R(65)	A
57	1076.664 47(26)	1408.78	0.522E-22	R(42)	F
58	1076.676 90(6)*	1123.25	0.181E-21	R(54)	B
59	1076.710 49(9)*	1431.90	0.635E-22	R(43)	G
60	1076.836 87(6)*	1101.95	0.197E-21	R(53)	C
61	1077.048 62(26)	1426.24	0.491E-22	R(43)	E
62	1077.134 25(6)*	1145.56	0.166E-21	R(55)	B
63	1077.159 528(26)*	896.18	0.318E-21	R(66)	A
64	1077.166 52(9)*	1449.79	0.596E-22	R(44)	G
65	1077.315 43(6)*	1123.88	0.181E-21	R(54)	C
66	1077.493 83(31)	1444.14	0.461E-22	R(44)	E
67	1077.592 57(7)*	1168.28	0.152E-21	R(56)	B
68	1077.656 473(27)*	923.31	0.283E-21	R(67)	A
69	1077.795 32(6)*	1146.22	0.166E-21	R(55)	C
70	1077.939 63(36)	1462.44	0.432E-22	R(45)	E



OCS 800 Pa (6 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1078
1079
1080
1081
1082
1083
1084
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1078.051 87(7)*	1191.40	0.138E-21	R(57)	B
2	1078.069 18(34)	1844.98	0.107E-22	R(36)	M
3	1078.082 59(9)*	1486.80	0.522E-22	R(46)	G
4	1078.154 976(29)*	950.85	0.251E-21	R(68)	A
5	1078.201 41(51)	1859.48	0.103E-22	R(37)	L
6	1078.276 54(6)*	1168.96	0.151E-21	R(56)	C
7	1078.386 00(42)	1481.14	0.404E-22	R(46)	E
8	1078.472 01(41)	1481.18	0.404E-22	R(46)	F
9	1078.512 16(7)*	1214.93	0.126E-21	R(58)	B
10	1078.518 15(39)	1860.07	0.102E-22	R(37)	M
11	1078.542 67(9)*	1505.91	0.486E-22	R(47)	G
12	1078.655 046(30)*	978.78	0.222E-21	R(69)	A
13	1078.759 11(6)*	1192.10	0.138E-21	R(57)	C
14	1078.832 93(49)	1500.26	0.377E-22	R(47)	E
15	1078.926 43(45)	1500.30	0.377E-22	R(47)	F
16	1078.973 43(7)*	1238.86	0.114E-21	R(59)	B
17	1079.004 12(9)*	1525.43	0.452E-22	R(48)	G
18	1079.156 689(32)*	1007.13	0.196E-21	R(70)	A
19	1079.243 02(6)*	1215.65	0.125E-21	R(58)	C
20	1079.280 40(56)	1519.78	0.351E-22	R(48)	E
21	1079.381 86(49)	1519.82	0.351E-22	R(48)	F
22	1079.435 70(7)*	1263.19	0.103E-21	R(60)	B
23	1079.466 96(9)*	1545.35	0.419E-22	R(49)	G
24	1079.659 915(34)*	1035.87	0.172E-21	R(71)	A
25	1079.728 27(6)*	1239.61	0.114E-21	R(59)	C
26	1079.728 40(65)	1539.70	0.325E-22	R(49)	E
27	1079.838 31(54)	1539.75	0.326E-22	R(49)	F
28	1079.898 97(7)*	1287.93	0.931E-22	R(61)	B
29	1079.931 21(9)*	1565.68	0.388E-22	R(50)	G
30	1080.164 731(36)*	1065.02	0.151E-21	R(72)	A
31	1080.176 92(75)	1560.03	0.301E-22	R(50)	E
32	1080.214 87(6)*	1263.97	0.103E-21	R(60)	C
33	1080.295 79(60)	1560.08	0.302E-22	R(50)	F
34	1080.363 24(7)*	1313.07	0.839E-22	R(62)	B
35	1080.396 87(9)*	1586.42	0.358E-22	R(51)	G
36	1080.625 94(86)	1580.76	0.278E-22	R(51)	E
37	1080.671 144(38)*	1094.57	0.133E-21	R(73)	A
38	1080.702 81(6)*	1288.73	0.929E-22	R(61)	C
39	1080.754 29(66)	1580.82	0.279E-22	R(51)	F
40	1080.828 52(7)*	1338.62	0.754E-22	R(63)	B
41	1080.863 96(9)*	1607.56	0.330E-22	R(52)	G
42	1081.075 44(98)	1601.90	0.256E-22	R(52)	E
43	1081.179 163(40)*	1124.52	0.116E-21	R(74)	A
44	1081.192 10(6)*	1313.90	0.837E-22	R(62)	C
45	1081.213 82(72)	1601.96	0.257E-22	R(52)	F
46	1081.294 82(8)*	1364.57	0.676E-22	R(64)	B
47	1081.332 50(9)*	1629.11	0.303E-22	R(53)	G
48	1081.525 4	1623.45	0.236E-22	R(53)	E
49	1081.674 39(78)	1623.51	0.236E-22	R(53)	F
50	1081.682 74(6)*	1339.47	0.753E-22	R(63)	C
51	1081.688 795(43)*	1154.87	0.101E-21	R(75)	A
52	1081.762 14(8)*	1390.93	0.605E-22	R(65)	B
53	1081.802 48(9)*	1651.06	0.278E-22	R(54)	G
54	1081.975 9	1645.40	0.216E-22	R(54)	E
55	1082.135 98(85)	1645.47	0.217E-22	R(54)	F
56	1082.174 74(6)*	1365.45	0.675E-22	R(64)	C
57	1082.200 047(46)*	1185.63	0.882E-22	R(76)	A
58	1082.230 50(8)*	1417.69	0.540E-22	R(66)	B
59	1082.273 94(9)*	1673.42	0.254E-22	R(55)	G
60	1082.426 7	1667.76	0.198E-22	R(55)	E
61	1082.598 62(93)	1667.83	0.198E-22	R(55)	F
62	1082.668 09(6)*	1391.83	0.604E-22	R(65)	C
63	1082.699 89(9)*	1444.85	0.481E-22	R(67)	B
64	1082.712 927(49)*	1216.79	0.766E-22	R(77)	A
65	1082.746 87(9)*	1696.18	0.232E-22	R(56)	G
66	1082.878 0	1690.52	0.181E-22	R(56)	E
67	1083.062 3	1690.60	0.181E-22	R(56)	F
68	1083.162 79(7)*	1418.62	0.539E-22	R(66)	C
69	1083.170 33(9)*	1472.41	0.428E-22	R(68)	B


OCS 800 Pa (6 Torr) 4 m
% TRANSMISSION
100 80 60 40 20 0
1083 1084 1085 1086 1087
1087 1088 1089 1090 1091
1091 1092 1093 1094 1095
WAVENUMBERS (cm^{-1})

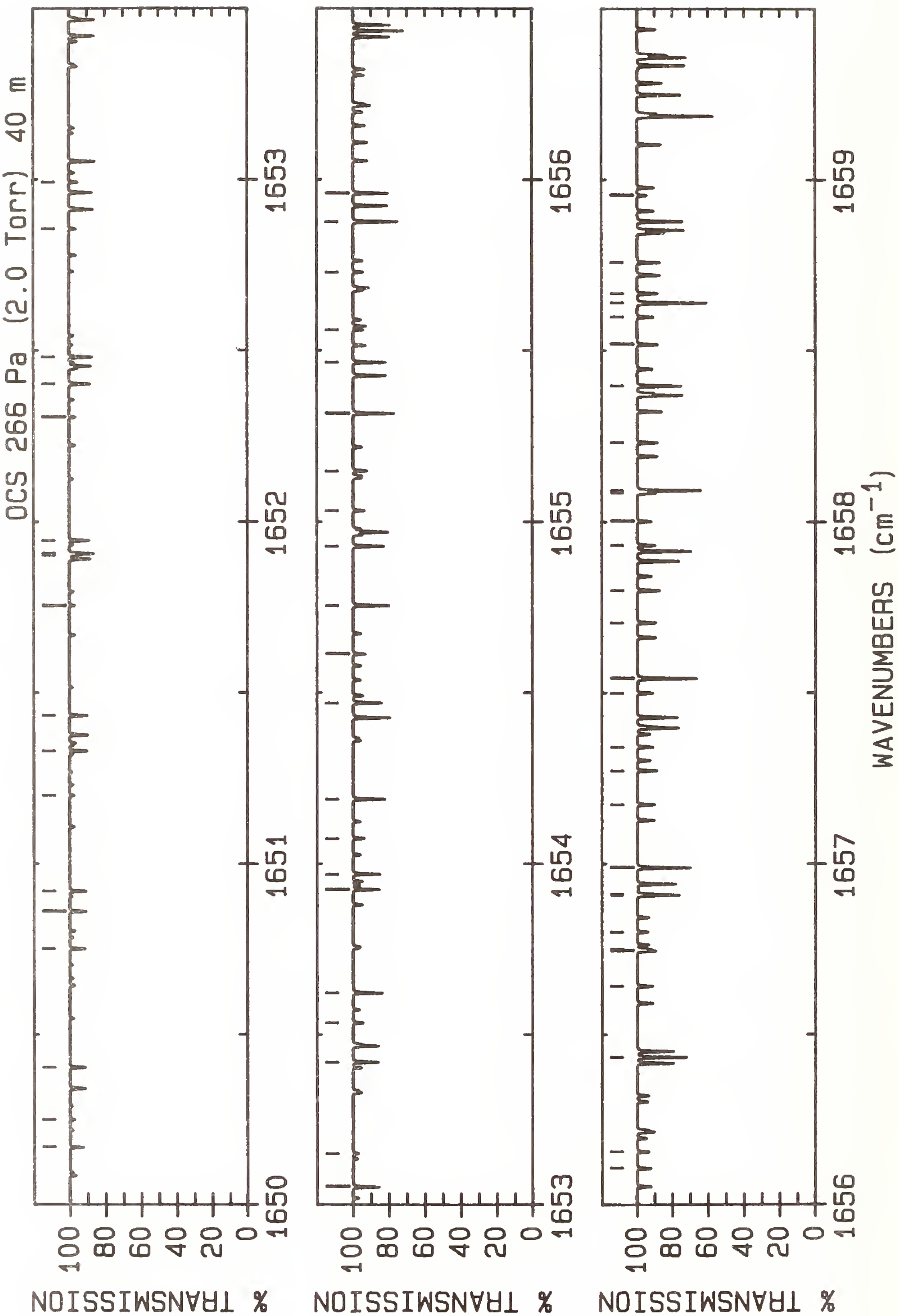
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1083.329 8	1713.69	0.165E-22	R(57)	E
2	1083.527 0	1713.77	0.165E-22	R(57)	F
3	1083.641 82(10)*	1500.39	0.379E-22	R(69)	B
4	1083.658 85(7)*	1445.81	0.480E-22	R(67)	C
5	1083.697 20(10)*	1742.93	0.191E-22	R(58)	G
6	1083.743 595(56)*	1280.32	0.575E-22	R(79)	A
7	1083.781 9	1737.26	0.150E-22	R(58)	E
8	1083.992 8	1737.35	0.150E-22	R(58)	F
9	1084.114 38(10)*	1528.76	0.336E-22	R(70)	B
10	1084.156 28(7)*	1473.41	0.427E-22	R(68)	C
11	1084.174 61(10)*	1766.91	0.173E-22	R(59)	G
12	1084.234 4	1761.24	0.136E-22	R(59)	E
13	1084.261 397(61)*	1312.69	0.496E-22	R(80)	A
14	1084.459 7	1761.33	0.136E-22	R(59)	F
15	1084.588 00(11)*	1557.54	0.296E-22	R(71)	B
16	1084.687 3	1785.62	0.123E-22	R(60)	E
17	1084.780 853(65)*	1345.46	0.427E-22	R(81)	A
18	1084.927 6	1785.72	0.123E-22	R(60)	F
19	1085.062 70(12)*	1586.72	0.261E-22	R(72)	B
20	1085.155 21(8)*	1529.81	0.335E-22	R(70)	C
21	1085.301 969(70)*	1378.63	0.367E-22	R(82)	A
22	1085.396 5	1810.52	0.111E-22	R(61)	F
23	1085.538 48(13)*	1616.30	0.230E-22	R(73)	B
24	1085.615 99(11)*	1841.28	0.127E-22	R(62)	G
25	1085.656 73(9)*	1558.62	0.296E-22	R(71)	C
26	1085.824 750(76)*	1412.21	0.315E-22	R(83)	A
27	1085.866 6	1835.71	0.100E-22	R(62)	F
28	1086.015 36(14)*	1646.29	0.201E-22	R(74)	B
29	1086.099 51(11)*	1866.88	0.114E-22	R(63)	G
30	1086.159 61(10)*	1587.83	0.261E-22	R(72)	C
31	1086.349 202(82)*	1446.18	0.270E-22	R(84)	A
32	1086.493 35(16)	1676.68	0.176E-22	R(75)	B
33	1086.584 57(12)*	1892.89	0.102E-22	R(64)	G
34	1086.663 86(10)*	1617.44	0.230E-22	R(73)	C
35	1086.875 329(89)*	1480.56	0.230E-22	R(85)	A
36	1086.972 45(17)	1707.48	0.154E-22	R(76)	B
37	1087.169 48(11)*	1647.46	0.201E-22	R(74)	C
38	1087.403 138(96)*	1515.34	0.196E-22	R(86)	A
39	1087.452 68(19)	1738.67	0.134E-22	R(77)	B
40	1087.676 48(13)*	1677.89	0.176E-22	R(75)	C
41	1088.184 85(14)*	1708.71	0.154E-22	R(76)	C
42	1088.416 55(23)	1802.28	0.101E-22	R(79)	B
43	1088.463 82(11) *	1586.11	0.141E-22	R(88)	A
44	1088.694 60(16)	1739.94	0.134E-22	R(77)	C
45	1088.996 69(12) *	1622.10	0.120E-22	R(89)	A
46	1089.205 73(17)	1771.58	0.117E-22	R(78)	C
47	1089.531 27(13) *	1658.48	0.101E-22	R(90)	A
48	1089.718 23(19)	1803.61	0.101E-22	R(79)	C
49	1089.871 06(30)	1900.71	0.653E-23	R(82)	B
50	1090.023 40(24)	2086.28	0.444E-23	R(71)	G
51	1090.232 12(21)	1836.05	0.878E-23	R(80)	C
52	1090.358 26(33)	1934.32	0.561E-23	R(83)	B
53	1090.520 87(27)	2115.53	0.391E-23	R(72)	G
54	1090.626 9	2109.97	0.311E-23	R(72)	F
55	1090.747 40(24)	1868.90	0.759E-23	R(81)	C
56	1090.846 67(36)	1968.34	0.482E-23	R(84)	B
57	1091.019 89(30)	2145.18	0.343E-23	R(73)	G
58	1091.264 06(26)	1902.14	0.655E-23	R(82)	C
59	1091.336 30(39)	2002.76	0.413E-23	R(85)	B
60	1091.782 10(29)	1935.79	0.564E-23	R(83)	C
61	1091.827 16(43)	2037.58	0.353E-23	R(86)	B
62	1092.022 57(39)	2205.70	0.263E-23	R(75)	G
63	1092.301 54(32)	1969.85	0.484E-23	R(84)	C
64	1092.319 26(47)	2072.80	0.301E-23	R(87)	B
65	1092.812 62(51)	2108.43	0.256E-23	R(88)	B
66	1092.822 36(35)	2004.30	0.415E-23	R(85)	C
67	1093.307 26(55)	2144.46	0.217E-23	R(89)	B
68	1093.344 58(39)	2039.16	0.355E-23	R(86)	C
69	1093.868 19(42)	2074.42	0.303E-23	R(87)	C
70	1094.393 19(46)	2110.08	0.258E-23	R(88)	C

ATLAS OF OCS ABSORPTION LINES FROM 1650 cm^{-1} to 1739 cm^{-1}

key:

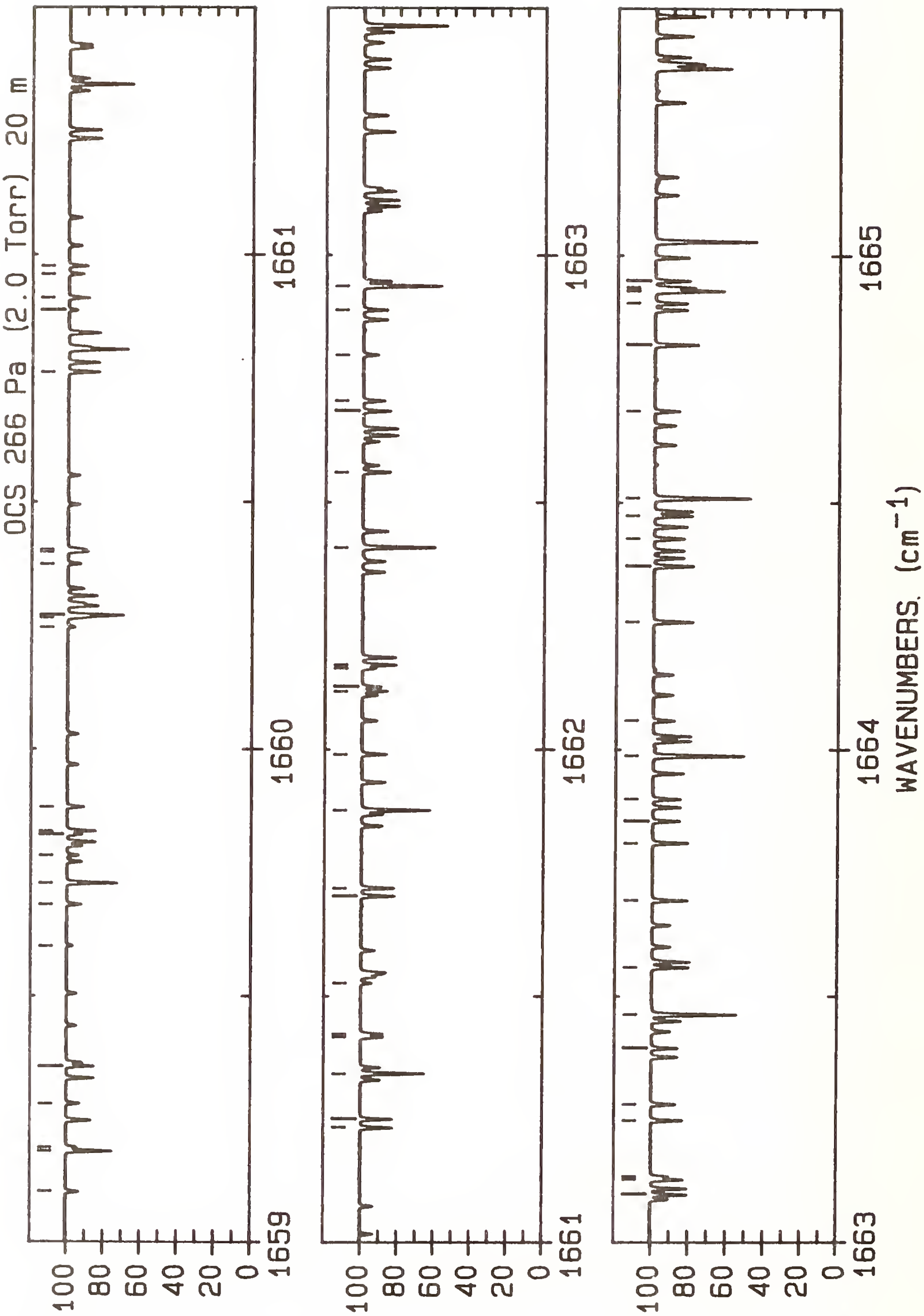
Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$00^02\text{-}00^00$
B		$01^12\text{-}01^{1e}0$
C		$01^12\text{-}01^{1f}0$
D		$00^03\text{-}00^01$
E		$02^22\text{-}02^{2e}0$
F		$02^22\text{-}02^{2f}0$
G		$02^02\text{-}02^00$
H		$01^13\text{-}01^{1e}1$
I		$01^13\text{-}01^{1f}1$
L	$^{16}O^{12}C^{33}S$	$00^02\text{-}00^00$
P	$^{16}O^{12}C^{34}S$	$00^02\text{-}00^00$
Q		$01^12\text{-}01^{1e}0$
R		$01^12\text{-}01^{1f}0$
T	$^{16}O^{13}C^{32}S$	$00^02\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1}, a temperature of 296 K, and a transition moment of 0.0195 debye. No Herman-Wallis constant was included in the intensity calculation.



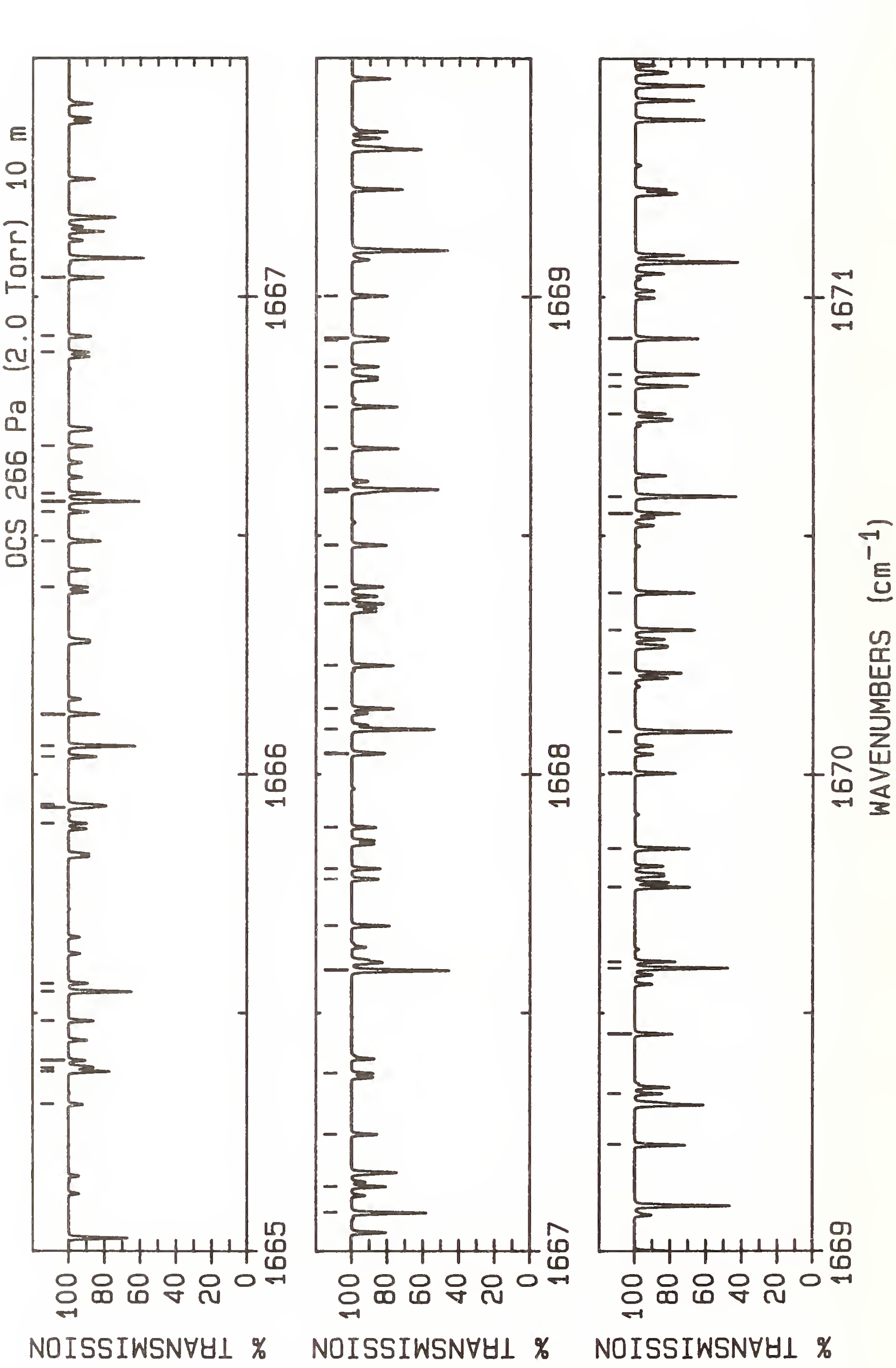
OCS 266 Pa (2.0 Torr) 40 m
% TRANSMISSION
100
80
60
40
20
0
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1650.169 63(29)*	1249.06	0.158E-23	P(79)	P
2	1650.251 12(26)	2086.28	0.563E-24	P(71)	G
3	1650.404 19(39)	1152.34	0.180E-23	P(56)	R
4	1650.751 22(27)*	1217.87	0.182E-23	P(78)	P
5	1650.860 86(39)	1129.53	0.198E-23	P(55)	Q
6	1650.920 21(38)	1130.15	0.197E-23	P(55)	R
7	1651.201 09(20)	2080.72	0.581E-24	P(71)	F
8	1651.330 38(25)*	1187.08	0.209E-23	P(77)	P
9	1651.434 03(38)	1108.37	0.215E-23	P(54)	R
10	1651.755 00(20)	2051.88	0.659E-24	P(70)	F
11	1651.902 04(25)	2000.97	0.818E-24	P(68)	G
12	1651.907 0	2322.86	0.513E-24	P(68)	I
13	1651.907 14(23)*	1156.68	0.239E-23	P(76)	P
14	1651.945 65(38)	1086.97	0.234E-23	P(53)	R
15	1652.306 72(20)	2023.44	0.746E-24	P(69)	F
16	1652.403 03(37)	1065.41	0.255E-23	P(52)	Q
17	1652.481 48(21)*	1126.67	0.273E-23	P(75)	P
18	1652.856 27(20)	1995.41	0.843E-24	P(68)	F
19	1652.992 51(25)	1946.12	0.104E-23	P(66)	G
20	1653.053 40(20)*	1097.06	0.311E-23	P(74)	P
21	1653.151 57(45)	2108.43	0.629E-24	P(88)	B
22	1653.419 95(36)	1024.64	0.300E-23	P(50)	Q
23	1653.534 70(25)	1919.30	0.117E-23	P(65)	G
24	1653.622 92(18)*	1067.84	0.354E-23	P(73)	P
25	1653.925 04(37)	1004.85	0.323E-23	P(49)	Q
26	1653.970 23(39)	1005.35	0.322E-23	P(49)	R
27	1654.074 88(25)	1892.89	0.130E-23	P(64)	G
28	1654.190 03(17)*	1039.01	0.402E-23	P(72)	P
29	1654.470 90(39)	985.93	0.347E-23	P(48)	R
30	1654.613 02(25)	1866.88	0.146E-23	P(63)	G
31	1654.754 73(16)*	1010.57	0.455E-23	P(71)	P
32	1654.928 53(37)	966.45	0.374E-23	P(47)	Q
33	1655.032 76(20)	1887.33	0.134E-23	P(64)	F
34	1655.149 14(25)	1841.28	0.163E-23	P(62)	G
35	1655.317 02(15)*	982.53	0.514E-23	P(70)	P
36	1655.465 69(38)	948.28	0.400E-23	P(46)	R
37	1655.560 70(35)*	1968.34	0.119E-23	P(84)	B
38	1655.729 17(45)	1969.85	0.118E-23	P(84)	C
39	1655.876 91(14)*	954.88	0.580E-23	P(69)	P
40	1655.959 81(38)	930.05	0.428E-23	P(45)	R
41	1656.108 05(21)	1835.71	0.167E-23	P(62)	F
42	1656.157 04(33)*	1934.32	0.139E-23	P(83)	B
43	1656.434 40(13)*	927.63	0.653E-23	P(68)	P
44	1656.642 46(21)	1810.52	0.186E-23	P(61)	F
45	1656.745 35(25)	1766.91	0.222E-23	P(59)	G
46	1656.751 01(31)*	1900.71	0.161E-23	P(82)	B
47	1656.800 93(38)*	2167.70	0.128E-23	P(80)	D
48	1656.908 72(37)	894.39	0.486E-23	P(43)	Q
49	1656.911 71(39)*	1902.14	0.160E-23	P(82)	C
50	1656.989 48(12)*	900.76	0.733E-23	P(67)	P
51	1657.174 73(21)	1785.72	0.207E-23	P(60)	F
52	1657.273 36(25)	1742.93	0.246E-23	P(58)	G
53	1657.342 61(29)*	1867.49	0.187E-23	P(81)	B
54	1657.499 47(37)*	1868.90	0.186E-23	P(81)	C
55	1657.542 17(11)*	874.29	0.822E-23	P(66)	P
56	1657.544 2	1545.54	0.106E-24	P(87)	T
57	1657.704 85(21)	1761.33	0.229E-23	P(59)	F
58	1657.799 34(24)	1719.35	0.271E-23	P(57)	G
59	1657.931 84(27)*	1834.68	0.217E-23	P(80)	B
60	1658.002 15(30)*	2103.56	0.171E-23	P(78)	D
61	1658.084 88(34)*	1836.05	0.216E-23	P(80)	C
62	1658.092 46(11)*	848.22	0.919E-23	P(65)	P
63	1658.232 84(21)	1737.35	0.253E-23	P(58)	F
64	1658.397 73(36)	844.83	0.576E-23	P(40)	R
65	1658.518 71(25)*	1802.28	0.251E-23	P(79)	B
66	1658.598 94(27)*	2072.09	0.197E-23	P(77)	D
67	1658.640 34(10)*	822.54	0.103E-22	P(64)	P
68	1658.667 97(32)*	1803.61	0.249E-23	P(79)	C
69	1658.758 68(21)	1713.77	0.279E-23	P(57)	F
70	1658.954 33(20)*	2004.02	0.118E-23	P(99)	A



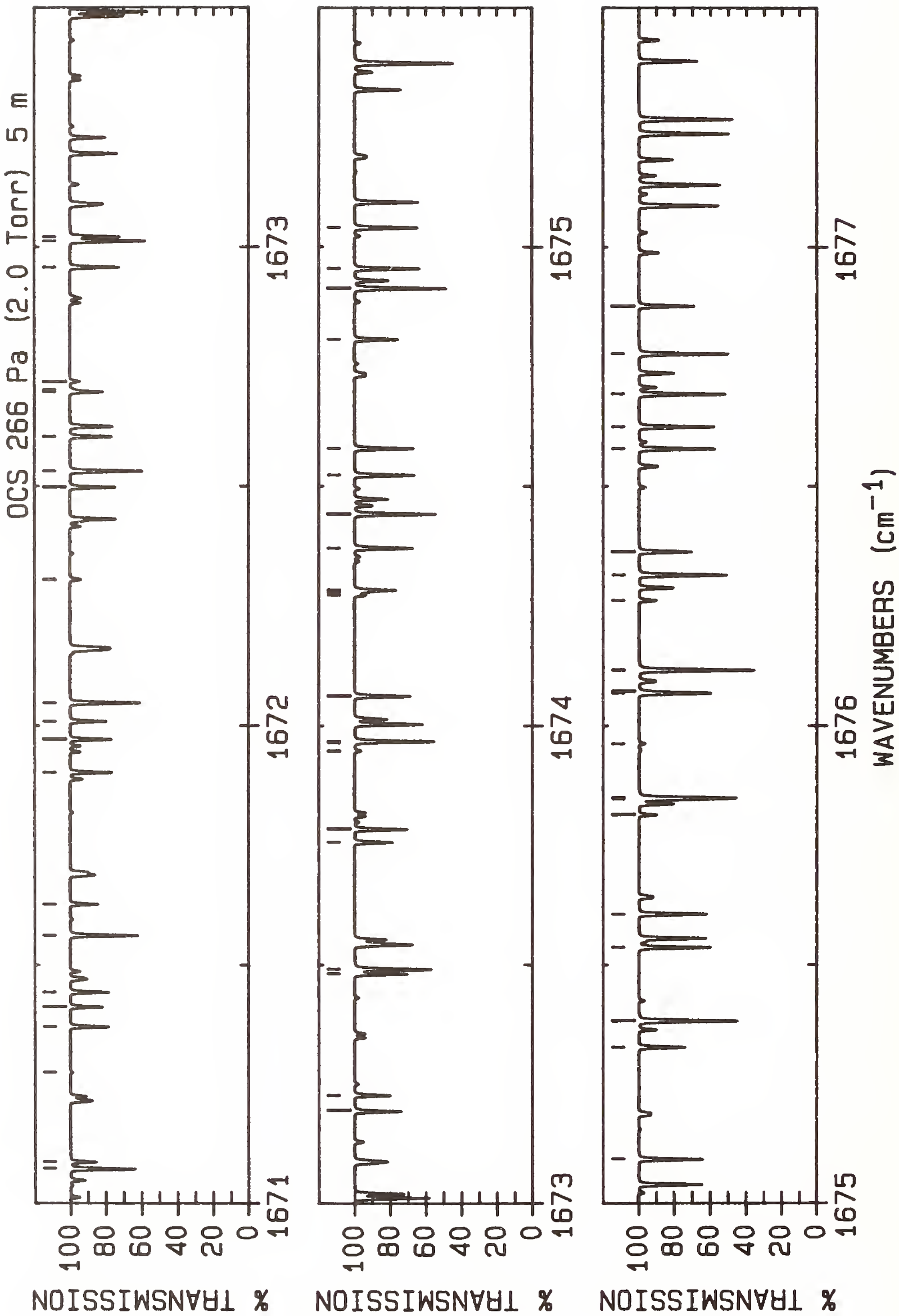
OCS 266 Pa (2.0 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
1659
1660
1661
% TRANSMISSION
100 80 60 40 20 0
1661
1662
1663
% TRANSMISSION
100 80 60 40 20 0
1663
1664
1665
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1659.103 23(24)*	1770.28	0.290E-23	P(78)	B	36	1662.163 52(12)*	1808.05	0.291E-23	P(94)	A
2	1659.185 84(10)*	797.25	0.114E-22	P(63)	P	37	1662.170 58(33)	728.85	0.811E-23	P(32)	Q
3	1659.193 19(24)*	2041.03	0.226E-23	P(76)	D	38	1662.408 55(9)*	653.80	0.208E-22	P(57)	P
4	1659.282 39(21)	1690.60	0.306E-23	P(56)	F	39	1662.560 94(16)*	1586.72	0.654E-23	P(72)	B
5	1659.357 67(35)	813.51	0.637E-23	P(38)	R	40	1662.684 57(19)*	1587.83	0.650E-23	P(72)	C
6	1659.601 24(18)*	1964.03	0.142E-23	P(98)	A	41	1662.705 36(15)*	1863.06	0.495E-23	P(70)	D
7	1659.685 38(22)*	1738.67	0.333E-23	P(77)	B	42	1662.797 75(11)*	1770.05	0.346E-23	P(93)	A
8	1659.728 94(9)*	772.36	0.127E-22	P(62)	P	43	1662.888 90(22)	1539.75	0.559E-23	P(49)	F
9	1659.784 89(22)*	2010.36	0.259E-23	P(75)	D	44	1662.937 31(9)*	631.27	0.228E-22	P(56)	P
10	1659.827 16(28)*	1739.94	0.331E-23	P(77)	C	45	1663.098 41(32)	703.89	0.859E-23	P(30)	Q
11	1659.834 38(34)	798.44	0.668E-23	P(37)	R	46	1663.129 02(15)*	1557.54	0.743E-23	P(71)	B
12	1659.882 92(24)	1629.11	0.391E-23	P(53)	G	47	1663.134 9	1829.68	0.392E-23	P(47)	I
13	1660.245 62(16)*	1924.43	0.170E-23	P(97)	A	48	1663.249 13(18)*	1558.62	0.739E-23	P(71)	C
14	1660.265 19(21)*	1707.48	0.383E-23	P(76)	B	49	1663.281 85(14)*	1834.81	0.560E-23	P(69)	D
15	1660.269 64(9)*	747.86	0.141E-22	P(61)	P	50	1663.395 66(23)	1519.82	0.604E-23	P(48)	F
16	1660.374 06(20)*	1980.10	0.296E-23	P(74)	D	51	1663.463 68(9)*	609.13	0.249E-22	P(55)	P
17	1660.398 73(24)	1607.56	0.426E-23	P(52)	G	52	1663.559 00(32)	692.01	0.880E-23	P(29)	Q
18	1660.403 27(26)*	1708.71	0.381E-23	P(76)	C	53	1663.694 77(14)*	1528.76	0.843E-23	P(70)	B
19	1660.762 19(34)	769.25	0.728E-23	P(35)	Q	54	1663.811 39(17)*	1529.81	0.839E-23	P(70)	C
20	1660.887 45(15)*	1885.23	0.204E-23	P(96)	A	55	1663.855 82(14)*	1806.96	0.633E-23	P(68)	D
21	1660.912 49(24)	1586.42	0.464E-23	P(51)	G	56	1663.900 30(23)	1500.30	0.650E-23	P(47)	F
22	1660.960 68(18)*	1950.24	0.338E-23	P(73)	D	57	1663.987 67(9)*	587.39	0.272E-22	P(54)	P
23	1660.977 06(24)*	1677.89	0.437E-23	P(75)	C	58	1664.058 64(10)*	1695.27	0.487E-23	P(91)	A
24	1661.233 88(34)	755.38	0.757E-23	P(34)	Q	59	1664.258 19(13)*	1500.39	0.954E-23	P(69)	B
25	1661.251 50(32)	755.63	0.756E-23	P(34)	R	60	1664.371 36(16)*	1501.41	0.949E-23	P(69)	C
26	1661.343 88(9)*	700.04	0.172E-22	P(59)	P	61	1664.427 26(14)*	1779.51	0.713E-23	P(67)	D
27	1661.417 75(18)*	1646.29	0.503E-23	P(74)	B	62	1664.473 52(32)	669.43	0.914E-23	P(27)	Q
28	1661.424 21(24)	1565.68	0.503E-23	P(50)	G	63	1664.509 27(9)*	566.04	0.297E-22	P(53)	P
29	1661.526 75(13)*	1846.44	0.244E-23	P(95)	A	64	1664.685 30(9)*	1658.48	0.576E-23	P(90)	A
30	1661.703 34(33)	741.92	0.785E-23	P(33)	Q	65	1664.819 28(13)*	1472.41	0.108E-22	P(68)	B
31	1661.719 54(32)	742.14	0.784E-23	P(33)	R	66	1664.903 28(23)	1462.47	0.749E-23	P(45)	F
32	1661.877 41(9)*	676.72	0.189E-22	P(58)	P	67	1664.927 46(32)	658.73	0.927E-23	P(26)	Q
33	1661.990 51(17)*	1616.30	0.574E-23	P(73)	B	68	1664.929 04(15)*	1473.41	0.107E-22	P(68)	C
34	1662.117 71(21)*	1617.44	0.571E-23	P(73)	C	69	1664.935 20(32)	658.87	0.927E-23	P(26)	R
35	1662.126 33(16)*	1891.72	0.437E-23	P(71)	D	70	1664.948 84(24)	1431.90	0.831E-23	P(43)	G

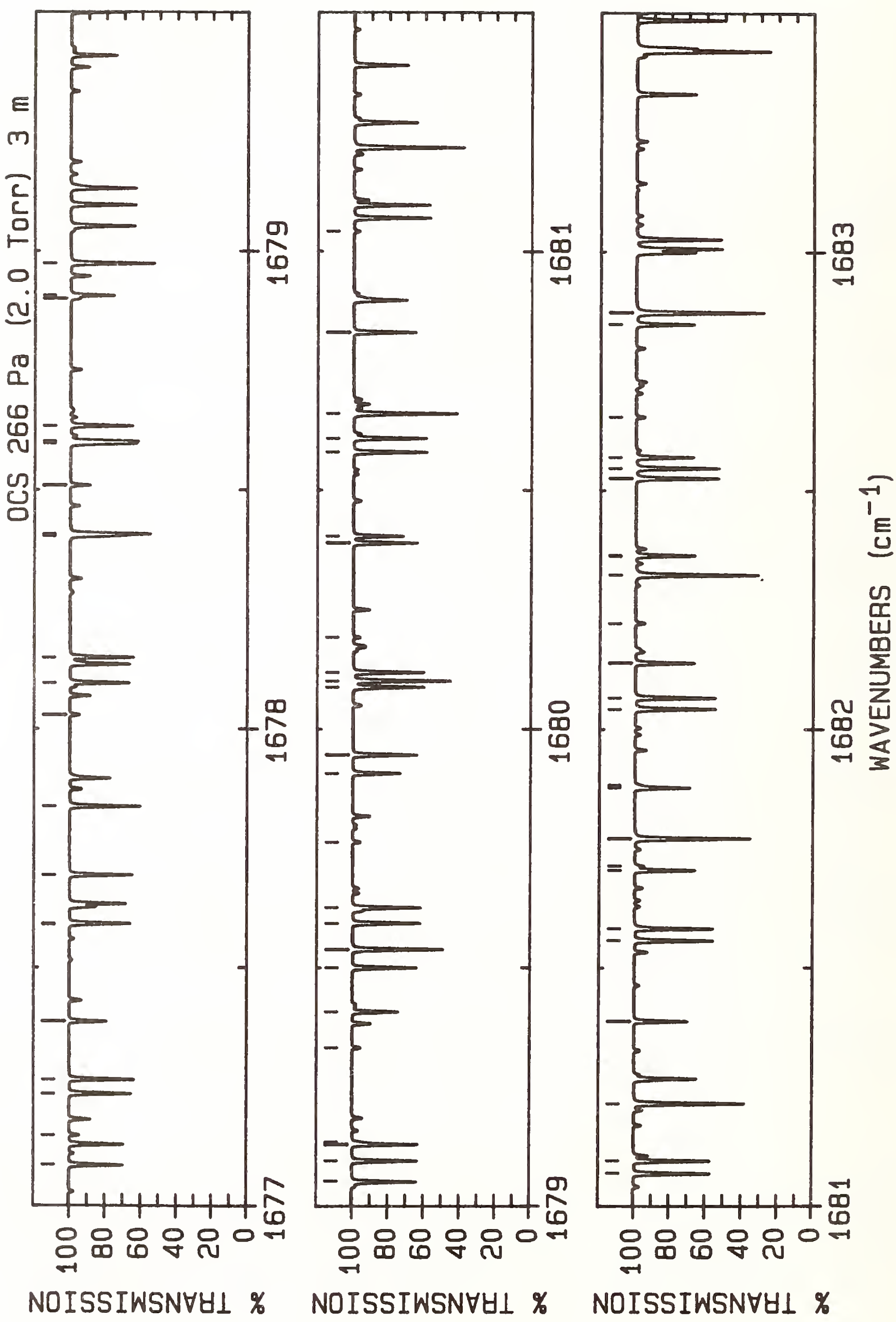


OCS 266 Pa (2.0 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
1665
1666
1667
1668
1669
1670
1671
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1665.309 45(9)*	1622.10	0.680E-23	P(89)	A	36	1668.044 93(36)	595.02	0.924E-23	P(19)	R
2	1665.378 04(12)*	1444.85	0.121E-22	P(67)	B	37	1668.093 81(9)*	427.66	0.505E-22	P(46)	P
3	1665.379 18(32)	648.43	0.938E-23	P(25)	Q	38	1668.137 01(10)*	1313.07	0.214E-22	P(62)	B
4	1665.385 93(32)	648.56	0.937E-23	P(25)	R	39	1668.227 15(11)*	1313.90	0.213E-22	P(62)	C
5	1665.401 62(23)	1444.17	0.800E-23	P(44)	F	40	1668.356 76(13)*	1598.62	0.154E-22	P(60)	D
6	1665.484 42(14)*	1445.81	0.121E-22	P(67)	C	41	1668.392 43(8)*	1446.18	0.151E-22	P(84)	A
7	1665.545 33(9)*	524.53	0.349E-22	P(51)	P	42	1668.479 20(36)	587.41	0.909E-23	P(18)	Q
8	1665.562 57(13)*	1725.81	0.898E-23	P(65)	D	43	1668.480 54(37)	587.48	0.908E-23	P(18)	R
9	1665.897 86(23)	1426.27	0.853E-23	P(43)	F	44	1668.590 9	1642.17	0.749E-23	P(36)	H
10	1665.931 07(9)*	1586.11	0.802E-23	P(88)	A	45	1668.596 37(9)*	409.47	0.540E-22	P(45)	P
11	1665.934 47(12)*	1417.69	0.137E-22	P(66)	B	46	1668.681 86(10)*	1287.93	0.238E-22	P(61)	B
12	1665.937 35(24)	1397.33	0.938E-23	P(41)	G	47	1668.768 88(11)*	1288.73	0.237E-22	P(61)	C
13	1666.037 53(13)*	1418.62	0.136E-22	P(66)	C	48	1668.853 21(24)	1303.37	0.127E-22	P(35)	G
14	1666.059 78(9)*	504.37	0.378E-22	P(50)	P	49	1668.908 06(13)*	1574.38	0.171E-22	P(59)	D
15	1666.125 0	1721.10	0.581E-23	P(41)	H	50	1668.913 20(37)	580.28	0.888E-23	P(17)	Q
16	1666.126 44(13)*	1699.57	0.100E-22	P(64)	D	51	1668.913 99(38)	580.35	0.888E-23	P(17)	R
17	1666.392 00(23)	1408.78	0.907E-23	P(42)	F	52	1669.001 50(8)*	1412.21	0.176E-22	P(83)	A
18	1666.488 58(11)*	1390.93	0.153E-22	P(65)	B	53	1669.224 40(10)*	1263.19	0.264E-22	P(60)	B
19	1666.550 18(8)*	1550.53	0.943E-23	P(87)	A	54	1669.331 91(24)	1289.13	0.132E-22	P(34)	G
20	1666.571 86(9)*	484.60	0.408E-22	P(49)	P	55	1669.456 84(13)*	1550.55	0.188E-22	P(58)	D
21	1666.588 35(12)*	1391.83	0.153E-22	P(65)	C	56	1669.594 37(9)*	374.27	0.613E-22	P(43)	P
22	1666.687 80(13)*	1673.73	0.112E-22	P(63)	D	57	1669.608 07(8)*	1378.63	0.205E-22	P(82)	A
23	1666.884 05(23)	1391.69	0.963E-23	P(41)	F	58	1669.764 63(10)*	1238.86	0.292E-22	P(59)	B
24	1666.917 60(24)	1364.38	0.105E-22	P(39)	G	59	1669.845 54(10)*	1239.61	0.291E-22	P(59)	C
25	1667.040 38(11)*	1364.57	0.172E-22	P(64)	B	60	1670.003 12(13)*	1527.13	0.207E-22	P(57)	D
26	1667.081 55(9)*	465.23	0.439E-22	P(48)	P	61	1670.089 80(9)*	357.27	0.651E-22	P(42)	P
27	1667.136 89(12)*	1365.45	0.171E-22	P(64)	C	62	1670.212 13(8)*	1345.46	0.238E-22	P(81)	A
28	1667.246 64(13)*	1648.29	0.125E-22	P(62)	D	63	1670.302 55(10)*	1214.93	0.322E-22	P(58)	B
29	1667.374 01(24)	1375.01	0.102E-22	P(40)	F	64	1670.380 48(10)*	1215.65	0.321E-22	P(58)	C
30	1667.589 85(11)*	1338.62	0.192E-22	P(63)	B	65	1670.546 88(12)*	1504.10	0.228E-22	P(56)	D
31	1667.683 16(11)*	1339.47	0.191E-22	P(63)	C	66	1670.582 87(9)*	340.66	0.689E-22	P(41)	P
32	1667.780 85(8)*	1480.56	0.129E-22	P(85)	A	67	1670.755 53(24)	1248.86	0.146E-22	P(31)	G
33	1667.802 96(13)*	1623.25	0.139E-22	P(61)	D	68	1670.813 70(8)*	1312.69	0.276E-22	P(80)	A
34	1667.889 55(24)	1333.06	0.116E-22	P(37)	G	69	1670.838 18(10)*	1191.40	0.355E-22	P(57)	B
35	1668.042 98(36)	594.94	0.925E-23	P(19)	Q	70	1670.913 16(10)*	1192.10	0.354E-22	P(57)	C

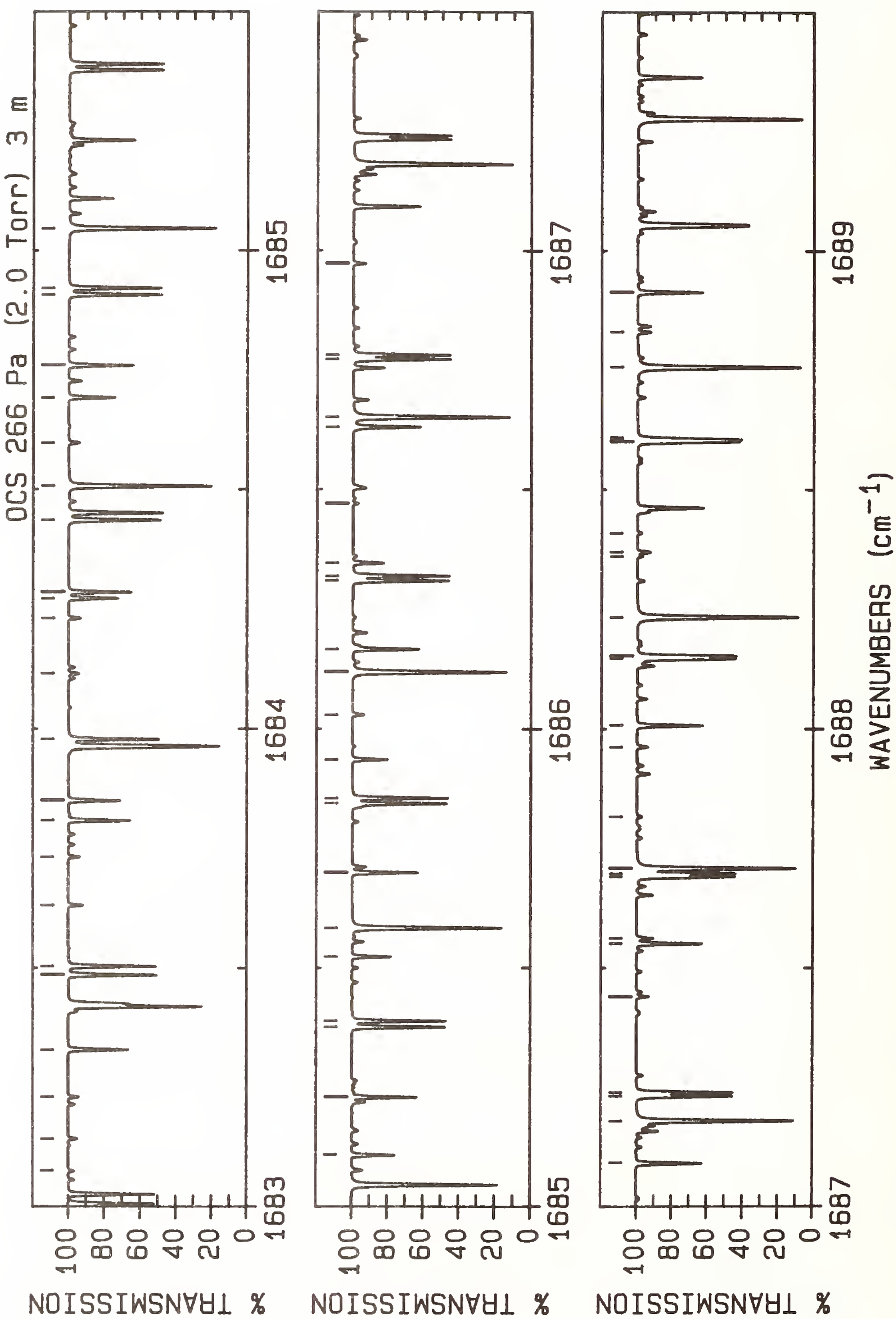

OCS 266 Pa (2.0 Torr) 5 m
% TRANSMISSION
100
80
60
40
20
0
1671
1672
1673
1674
1675
1676
1677
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1671.073 55(9)*	324.44	0.727E-22	P(40)	P
2	1671.088 14(12)*	1481.48	0.250E-22	P(55)	D
3	1671.276 1	732.54	0.270E-23	P(60)	L
4	1671.371 50(10)*	1168.28	0.391E-22	P(56)	B
5	1671.412 77(8)*	1280.32	0.319E-22	P(79)	A
6	1671.443 59(10)*	1168.96	0.389E-22	P(56)	C
7	1671.561 87(9)*	308.62	0.766E-22	P(39)	P
8	1671.626 90(12)*	1459.26	0.274E-22	P(54)	D
9	1671.902 52(10)*	1145.56	0.429E-22	P(55)	B
10	1671.971 76(10)*	1146.22	0.427E-22	P(55)	C
11	1672.009 34(8)*	1248.35	0.368E-22	P(78)	A
12	1672.047 81(9)*	293.19	0.805E-22	P(38)	P
13	1672.303 82(44)	537.51	0.575E-23	P(9)	R
14	1672.305 43(44)	537.49	0.575E-23	P(9)	Q
15	1672.497 69(10)*	1123.88	0.468E-22	P(54)	C
16	1672.531 38(9)*	278.16	0.843E-22	P(37)	P
17	1672.603 42(8)*	1216.79	0.424E-22	P(77)	A
18	1672.696 90(12)*	1416.04	0.325E-22	P(52)	D
19	1672.701 71(20)	764.12	0.334E-23	P(61)	T
20	1672.717 82(45)	533.94	0.519E-23	P(8)	R
21	1672.719 48(44)	533.92	0.519E-23	P(8)	Q
22	1672.957 67(10)*	1101.34	0.512E-22	P(53)	B
23	1673.012 58(9)*	263.53	0.881E-22	P(36)	P
24	1673.021 37(10)*	1101.95	0.511E-22	P(53)	C
25	1673.195 01(8)*	1185.63	0.487E-22	P(76)	A
26	1673.228 15(12)*	1395.03	0.353E-22	P(51)	D
27	1673.481 81(10)*	1079.84	0.558E-22	P(52)	B
28	1673.491 41(9)*	249.29	0.918E-22	P(35)	P
29	1673.756 90(12)*	1374.42	0.383E-22	P(50)	D
30	1673.784 12(8)*	1154.87	0.558E-22	P(75)	A
31	1673.946 86(46)	525.61	0.329E-23	P(5)	R
32	1673.948 32(46)	525.60	0.329E-23	P(5)	Q
33	1673.964 5	616.53	0.436E-23	P(55)	L
34	1673.967 86(9)*	235.44	0.954E-22	P(34)	P
35	1674.062 00(10)*	1059.31	0.605E-22	P(51)	C
36	1674.272 1	1493.97	0.103E-22	P(24)	H
37	1674.278 4	1494.11	0.103E-22	P(24)	I
38	1674.283 15(12)*	1354.22	0.414E-22	P(49)	D
39	1674.370 73(8)*	1124.52	0.639E-22	P(74)	A
40	1674.441 95(9)*	221.99	0.989E-22	P(33)	P
41	1674.523 20(10)*	1038.05	0.658E-22	P(50)	B
42	1674.578 96(10)*	1038.59	0.656E-22	P(50)	C
43	1674.806 90(12)*	1334.42	0.447E-22	P(48)	D
44	1674.913 35(24)	1149.99	0.168E-22	P(22)	G
45	1674.913 66(9)*	208.93	0.102E-21	P(32)	P
46	1674.954 87(8)*	1094.57	0.729E-22	P(73)	A
47	1675.040 47(10)*	1017.76	0.712E-22	P(49)	B
48	1675.093 68(10)*	1018.28	0.710E-22	P(49)	C
49	1675.328 16(12)*	1315.02	0.481E-22	P(47)	D
50	1675.383 01(9)*	196.27	0.105E-21	P(31)	P
51	1675.384 29(36)	1153.64	0.172E-22	P(23)	E
52	1675.384 96(24)	1153.64	0.172E-22	P(23)	F
53	1675.536 52(8)*	1065.02	0.831E-22	P(72)	A
54	1675.606 17(10)*	998.38	0.767E-22	P(48)	C
55	1675.814 20(24)	1132.50	0.167E-22	P(20)	G
56	1675.846 92(12)*	1296.03	0.517E-22	P(46)	D
57	1675.849 98(9)*	184.01	0.108E-21	P(30)	P
58	1675.962 83(16)	622.38	0.601E-23	P(55)	T
59	1676.068 15(10)*	978.40	0.827E-22	P(47)	B
60	1676.071 67(71)	530.90	0.614E-23	P(51)	L
61	1676.115 69(8)*	1035.87	0.944E-22	P(71)	A
62	1676.116 42(10)*	978.88	0.826E-22	P(47)	C
63	1676.261 46(24)	1124.36	0.165E-22	P(19)	G
64	1676.314 59(9)*	172.14	0.111E-21	P(29)	P
65	1676.363 20(12)*	1277.44	0.553E-22	P(45)	D
66	1676.578 56(10)*	959.33	0.889E-22	P(46)	B
67	1676.624 44(10)*	959.78	0.887E-22	P(46)	C
68	1676.692 38(8)*	1007.13	0.107E-21	P(70)	A
69	1676.776 83(9)*	160.67	0.113E-21	P(28)	P
70	1676.876 97(12)*	1259.25	0.591E-22	P(44)	D



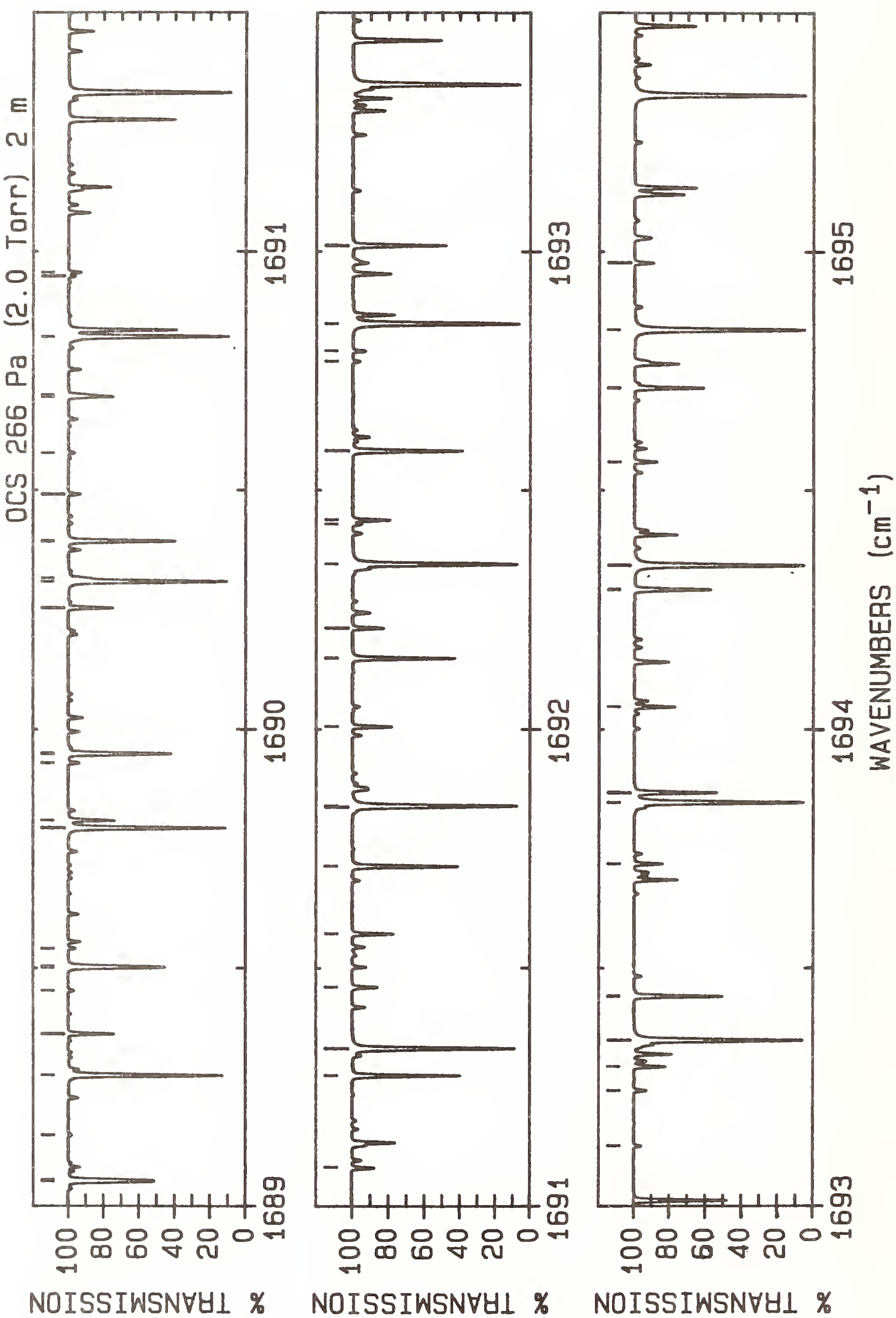
OCS 266 Pa (2.0 Torr) 3 m
% TRANSMISSION
100
80
60
40
20
0
1677
1678
1679
1680
1681
1682
1683
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1677.086 69(10)*	940.66	0.952E-22	P(45)	B
2	1677.149 65(24)	1109.30	0.159E-22	P(17)	G
3	1677.236 70(9)*	149.59	0.115E-21	P(27)	P
4	1677.266 59(8)*	978.78	0.121E-21	P(69)	A
5	1677.388 26(12)*	1241.47	0.630E-22	P(43)	D
6	1677.590 58(24)	1102.39	0.155E-22	P(16)	G
7	1677.592 54(10)*	922.39	0.102E-21	P(44)	B
8	1677.694 19(9)*	138.90	0.117E-21	P(26)	P
9	1677.838 33(8)*	950.85	0.137E-21	P(68)	A
10	1678.029 39(24)	1095.88	0.150E-22	P(15)	G
11	1678.096 12(10)*	904.54	0.109E-21	P(43)	B
12	1678.149 32(9)*	128.62	0.118E-21	P(25)	P
13	1678.403 36(12)*	1207.11	0.710E-22	P(41)	D
14	1678.407 60(8)*	923.31	0.154E-21	P(67)	A
15	1678.509 52(25)	1096.66	0.157E-22	P(16)	E
16	1678.509 63(25)	1096.66	0.157E-22	P(16)	F
17	1678.597 42(10)*	887.08	0.115E-21	P(42)	B
18	1678.602 08(9)*	118.72	0.119E-21	P(24)	P
19	1678.634 28(10)*	887.47	0.115E-21	P(42)	C
20	1678.900 67(24)	1084.07	0.138E-22	P(13)	G
21	1678.907 18(12)*	1190.54	0.751E-22	P(40)	D
22	1678.974 40(8)*	896.18	0.173E-21	P(66)	A
23	1679.052 47(9)*	109.23	0.120E-21	P(23)	P
24	1679.096 44(10)*	870.04	0.122E-21	P(41)	B
25	1679.131 19(10)*	870.40	0.122E-21	P(41)	C
26	1679.136 09(15)	495.14	0.995E-23	P(49)	T
27	1679.333 13(24)	1078.78	0.130E-22	P(12)	G
28	1679.408 51(12)*	1174.37	0.793E-22	P(39)	D
29	1679.500 49(9)*	100.13	0.120E-21	P(22)	P
30	1679.538 72(8)*	869.46	0.194E-21	P(65)	A
31	1679.593 19(10)*	853.39	0.129E-21	P(40)	B
32	1679.625 87(10)*	853.74	0.129E-21	P(40)	C
33	1679.763 48(25)	1073.90	0.122E-22	P(11)	G
34	1679.907 36(12)*	1158.61	0.834E-22	P(38)	D
35	1679.946 15(9)*	91.42	0.119E-21	P(21)	P
36	1680.087 66(10)*	837.16	0.137E-21	P(39)	B
37	1680.100 58(8)*	843.13	0.218E-21	P(64)	A
38	1680.118 34(10)*	837.49	0.137E-21	P(39)	C
39	1680.191 70(25)	1069.42	0.114E-22	P(10)	G
40	1680.389 43(9)*	83.11	0.118E-21	P(20)	P
41	1680.403 71(12)*	1143.24	0.876E-22	P(37)	D
42	1680.579 86(10)*	821.33	0.144E-21	P(38)	B
43	1680.608 60(10)*	821.64	0.144E-21	P(38)	C
44	1680.659 98(8)*	817.21	0.243E-21	P(63)	A
45	1680.830 34(9)*	75.19	0.117E-21	P(19)	P
46	1681.041 78(25)	1061.69	0.944E-23	P(8)	G
47	1681.069 80(10)*	805.90	0.151E-21	P(37)	B
48	1681.096 64(10)*	806.20	0.151E-21	P(37)	C
49	1681.216 91(8)*	791.70	0.271E-21	P(62)	A
50	1681.388 98(12)*	1113.73	0.956E-22	P(35)	D
51	1681.557 46(9)*	790.88	0.158E-21	P(36)	B
52	1681.582 47(10)*	791.16	0.158E-21	P(36)	C
53	1681.705 05(9)*	60.55	0.112E-21	P(17)	P
54	1681.713 61(14)	400.19	0.142E-22	P(44)	T
55	1681.771 37(8)*	766.58	0.301E-21	P(61)	A
56	1681.877 88(12)*	1099.58	0.996E-22	P(34)	D
57	1681.883 37(25)	1055.59	0.730E-23	P(6)	G
58	1682.042 86(9)*	776.26	0.165E-21	P(35)	B
59	1682.066 09(10)*	776.53	0.165E-21	P(35)	C
60	1682.138 86(9)*	53.83	0.109E-21	P(16)	P
61	1682.221 84(13)	382.42	0.151E-22	P(43)	T
62	1682.323 38(8)*	741.87	0.334E-21	P(60)	A
63	1682.362 80(37)	573.60	0.925E-23	R(16)	R
64	1682.364 30(12)*	1085.84	0.103E-21	P(33)	D
65	1682.525 98(9)*	762.05	0.172E-21	P(34)	B
66	1682.547 50(9)*	762.31	0.172E-21	P(34)	C
67	1682.570 29(9)*	47.49	0.106E-21	P(15)	P
68	1682.653 91(45)	296.75	0.143E-22	P(38)	L
69	1682.848 24(12)*	1072.49	0.107E-21	P(32)	D
70	1682.872 93(8)*	717.57	0.370E-21	P(59)	A


OCS 266 Pa (2.0 Torr) 3 m
% TRANSMISSION
100 80 60 40 20 0
1683
1684
1685
1686
1687
1688
1689
WAVENUMBERS (cm^{-1})

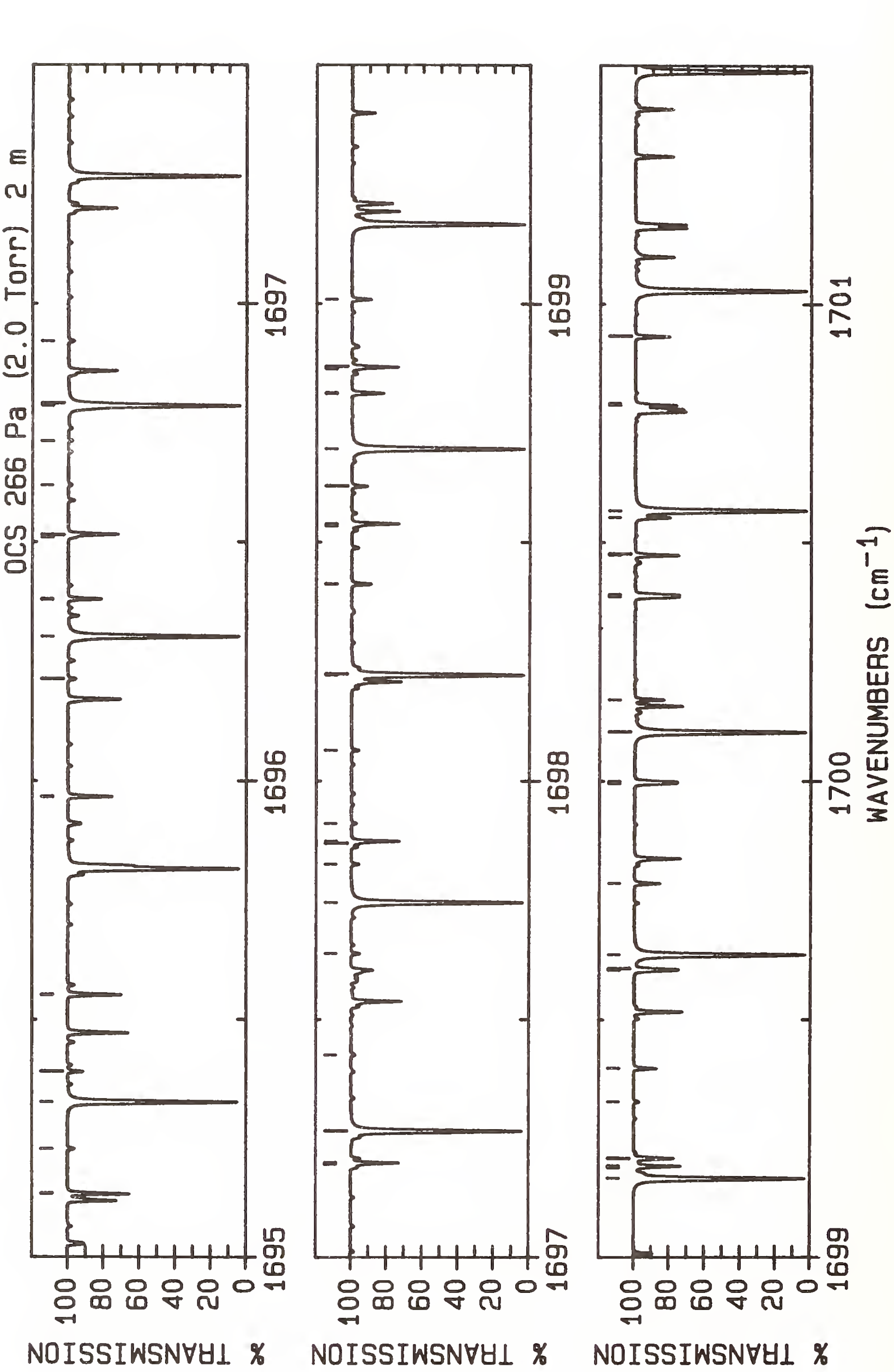
LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1683.075 48(35)	587.48	0.967E-23	R(18)	R
2	1683.143 40(45)	281.54	0.150E-22	P(37)	L
3	1683.231 02(13)	348.07	0.171E-22	P(41)	T
4	1683.329 70(12)*	1059.56	0.110E-21	P(31)	D
5	1683.485 44(9)*	734.85	0.185E-21	P(32)	B
6	1683.503 70(9)*	735.07	0.185E-21	P(32)	C
7	1683.630 50(44)	266.73	0.157E-22	P(36)	L
8	1683.731 98(12)	331.50	0.180E-22	P(40)	T
9	1683.808 67(12)*	1047.02	0.113E-21	P(30)	D
10	1683.850 35(10)*	30.87	0.916E-22	P(12)	P
11	1683.978 49(9)*	722.07	0.190E-21	P(31)	C
12	1684.115 19(43)	252.31	0.164E-22	P(35)	L
13	1684.230 52(12)	315.33	0.190E-22	P(39)	T
14	1684.272 29(10)*	26.12	0.859E-22	P(11)	P
15	1684.285 16(11)*	1034.89	0.116E-21	P(29)	D
16	1684.435 84(9)*	709.27	0.196E-21	P(30)	B
17	1684.506 82(8)*	647.08	0.495E-21	P(56)	A
18	1684.597 48(42)	238.30	0.171E-22	P(34)	L
19	1684.691 86(10)*	21.77	0.798E-22	P(10)	P
20	1684.759 18(11)*	1023.17	0.119E-21	P(28)	D
21	1684.907 64(9)*	697.09	0.201E-21	P(29)	B
22	1684.921 46(9)*	697.27	0.201E-21	P(29)	C
23	1685.046 55(8)*	624.39	0.543E-21	P(55)	A
24	1685.109 05(10)*	17.81	0.732E-22	P(9)	P
25	1685.230 71(11)*	1011.84	0.121E-21	P(27)	D
26	1685.377 18(9)*	685.31	0.206E-21	P(28)	B
27	1685.389 65(9)*	685.49	0.206E-21	P(28)	C
28	1685.523 87(10)*	14.25	0.662E-22	P(8)	P
29	1685.583 82(8)*	602.10	0.595E-21	P(54)	A
30	1685.699 76(11)*	1000.93	0.123E-21	P(26)	D
31	1685.844 46(9)*	673.94	0.210E-21	P(27)	B
32	1685.855 63(9)*	674.10	0.210E-21	P(27)	C
33	1685.936 32(10)*	11.08	0.589E-22	P(7)	P
34	1686.029 96(39)	198.66	0.189E-22	P(31)	L
35	1686.118 64(8)*	580.22	0.649E-21	P(53)	A

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1686.166 33(11)*	990.41	0.125E-21	P(25)	D
37	1686.309 47(9)*	662.98	0.213E-21	P(26)	B
38	1686.319 41(9)*	663.13	0.213E-21	P(26)	C
39	1686.346 39(10)*	8.31	0.512E-22	P(6)	P
40	1686.470 46(32)	680.52	0.943E-23	R(28)	Q
41	1686.630 42(11)*	980.30	0.126E-21	P(24)	D
42	1686.651 01(8)*	558.74	0.708E-21	P(52)	A
43	1686.772 23(9)*	652.42	0.216E-21	P(25)	B
44	1686.780 99(9)*	652.56	0.216E-21	P(25)	C
45	1686.972 94(36)	174.23	0.199E-22	P(29)	L
46	1687.092 03(11)*	970.60	0.126E-21	P(23)	D
47	1687.180 93(8)*	537.67	0.769E-21	P(51)	A
48	1687.232 72(9)*	642.27	0.218E-21	P(24)	B
49	1687.240 37(9)*	642.40	0.217E-21	P(24)	C
50	1687.440 83(35)	162.62	0.203E-22	P(28)	L
51	1687.551 16(11)*	961.29	0.127E-21	P(22)	D
52	1687.562 33(10)*	2.38	0.264E-22	P(3)	P
53	1687.690 96(9)*	632.52	0.219E-21	P(23)	B
54	1687.697 55(9)*	632.64	0.219E-21	P(23)	C
55	1687.708 41(8)*	517.00	0.834E-21	P(50)	A
56	1687.816 89(32)	729.06	0.848E-23	R(32)	R
57	1687.962 89(10)*	1.19	0.177E-22	P(2)	P
58	1688.007 82(11)*	952.40	0.126E-21	P(21)	D
59	1688.146 93(9)*	623.18	0.219E-21	P(22)	B
60	1688.152 54(9)*	623.29	0.219E-21	P(22)	C
61	1688.233 43(8)*	496.74	0.902E-21	P(49)	A
62	1688.361 06(10)*	0.40	0.887E-23	P(1)	P
63	1688.369 42(33)	140.59	0.210E-22	P(26)	L
64	1688.409 32(35)	755.38	0.792E-23	R(34)	Q
65	1688.600 64(9)*	614.25	0.218E-21	P(21)	B
66	1688.605 32(9)*	614.35	0.218E-21	P(21)	C
67	1688.608 61(10)	188.01	0.273E-22	P(30)	T
68	1688.756 02(8)*	476.88	0.973E-21	P(48)	A
69	1688.830 12(32)	130.18	0.213E-22	P(25)	L
70	1688.913 68(11)*	935.82	0.124E-21	P(19)	D



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1689
1690
1691
1692
1693
1694
1695
WAVENUMBERS (cm^{-1})

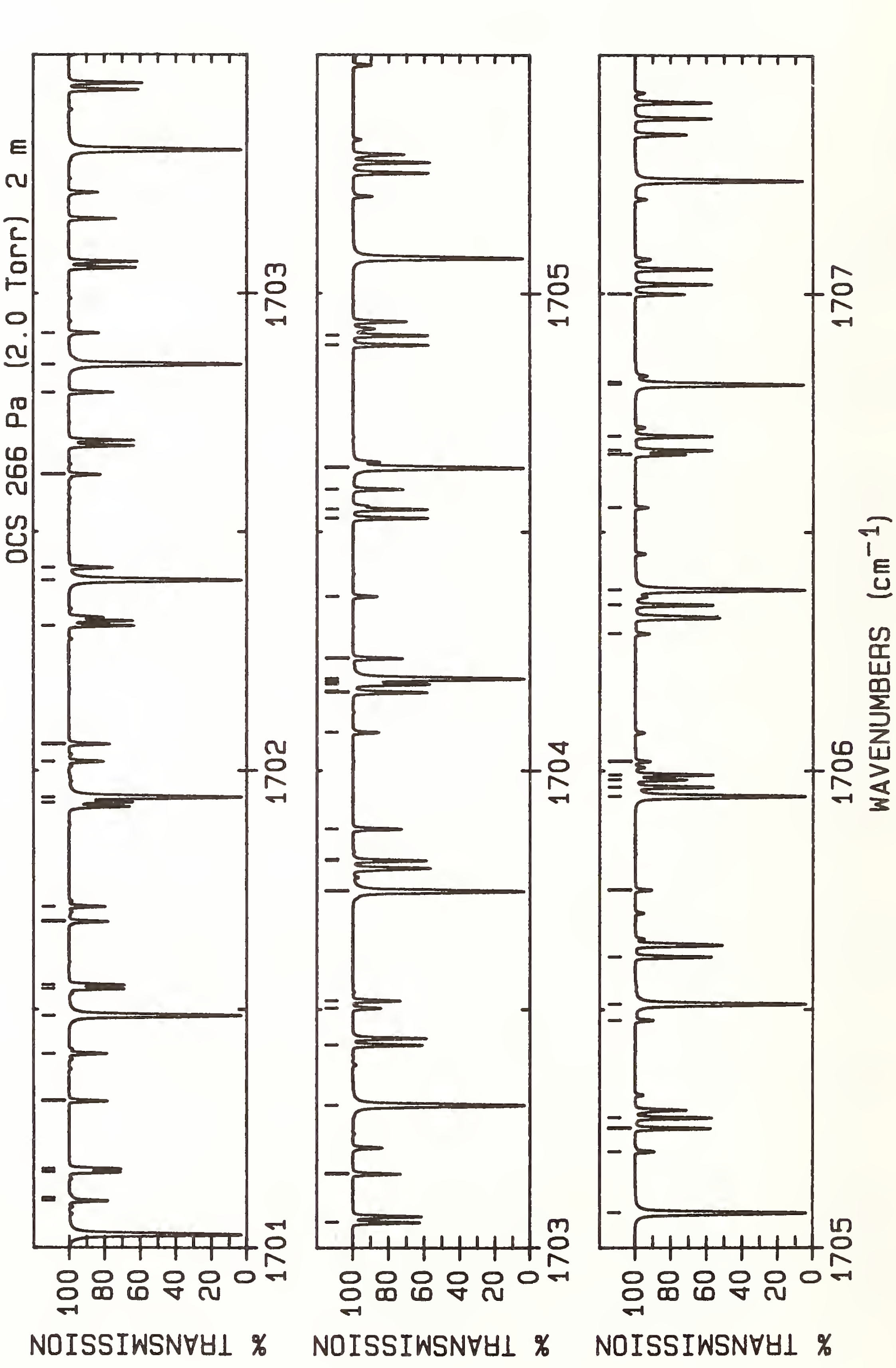
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1689.052 10(9)*	605.72	0.217E-21	P(20)	B
2	1689.055 91(9)*	605.81	0.217E-21	P(20)	C
3	1689.150 27(10)*	0.00	0.889E-23	R(0)	P
4	1689.276 16(8)*	457.42	0.105E-20	P(47)	A
5	1689.362 90(11)*	928.13	0.122E-21	P(18)	D
6	1689.453 31(24)	1078.78	0.142E-22	R(12)	G
7	1689.501 29(9)*	597.60	0.214E-21	P(19)	B
8	1689.504 31(9)*	597.68	0.214E-21	P(19)	C
9	1689.541 31(10)*	0.40	0.178E-22	R(1)	P
10	1689.793 85(8)*	438.37	0.113E-20	P(46)	A
11	1689.809 63(12)*	920.85	0.119E-21	P(17)	D
12	1689.929 95(10)*	1.19	0.265E-22	R(2)	P
13	1689.948 23(9)*	589.88	0.211E-21	P(18)	B
14	1689.950 51(9)*	589.95	0.211E-21	P(18)	C
15	1690.253 88(12)*	913.98	0.116E-21	P(16)	D
16	1690.309 11(8)*	419.73	0.121E-20	P(45)	A
17	1690.316 21(10)*	2.38	0.352E-22	R(3)	P
18	1690.392 90(9)*	582.57	0.206E-21	P(17)	B
19	1690.394 51(9)*	582.63	0.206E-21	P(17)	C
20	1690.491 67(10)	141.93	0.296E-22	P(26)	T
21	1690.578 04(24)	1095.88	0.161E-22	R(15)	G
22	1690.695 66(12)*	907.50	0.112E-21	P(15)	D
23	1690.700 09(10)*	3.96	0.437E-22	R(4)	P
24	1690.821 92(8)*	401.49	0.129E-20	P(44)	A
25	1690.948 67(24)	1102.39	0.166E-22	R(16)	G
26	1690.956 41(10)	131.41	0.300E-22	P(25)	T
27	1691.081 57(10)*	5.94	0.519E-22	R(5)	P
28	1691.275 47(9)*	569.16	0.194E-21	P(15)	B
29	1691.275 92(9)*	569.22	0.194E-21	P(15)	C
30	1691.332 30(8)*	383.65	0.137E-20	P(43)	A
31	1691.460 67(10)*	8.31	0.599E-22	R(6)	P
32	1691.571 76(12)*	895.77	0.103E-21	P(13)	D
33	1691.713 34(9)*	563.12	0.186E-21	P(14)	C
34	1691.713 37(9)*	563.07	0.186E-21	P(14)	B
35	1691.837 38(10)*	11.08	0.675E-22	R(7)	P
36	1691.840 23(8)*	366.22	0.146E-20	P(42)	A
37	1692.006 09(12)*	890.52	0.977E-22	P(12)	D
38	1692.148 56(9)*	557.42	0.178E-21	P(13)	C
39	1692.149 01(9)*	557.38	0.178E-21	P(13)	B
40	1692.211 70(10)*	14.25	0.748E-22	R(8)	P
41	1692.345 73(8)*	349.19	0.155E-20	P(41)	A
42	1692.429 29(34)	61.29	0.203E-22	P(17)	L
43	1692.437 94(12)*	885.66	0.917E-22	P(11)	D
44	1692.581 58(9)*	552.14	0.168E-21	P(12)	C
45	1692.582 38(9)*	552.11	0.168E-21	P(12)	B
46	1692.583 62(10)*	17.81	0.817E-22	R(9)	P
47	1692.769 67(24)	1141.04	0.178E-22	R(21)	G
48	1692.791 24(11)	93.41	0.303E-22	P(21)	T
49	1692.848 79(8)*	332.57	0.164E-20	P(40)	A
50	1693.012 40(9)*	547.26	0.158E-21	P(11)	C
51	1693.013 50(9)*	547.23	0.158E-21	P(11)	B
52	1693.127 45(23)	1149.99	0.178E-22	R(22)	G
53	1693.243 93(11)	84.92	0.301E-22	P(20)	T
54	1693.294 19(12)*	877.17	0.782E-22	P(9)	D
55	1693.349 41(8)*	316.35	0.173E-20	P(39)	A
56	1693.441 03(9)*	542.79	0.146E-21	P(10)	C
57	1693.442 35(9)*	542.76	0.146E-21	P(10)	B
58	1693.718 59(12)*	873.53	0.708E-22	P(8)	D
59	1693.847 60(8)*	300.54	0.182E-20	P(38)	A
60	1693.867 47(9)*	538.72	0.134E-21	P(9)	C
61	1693.868 94(9)*	538.70	0.134E-21	P(9)	B
62	1694.047 36(9)*	36.02	0.105E-21	R(13)	P
63	1694.291 70(9)*	535.06	0.121E-21	P(8)	C
64	1694.293 27(9)*	535.04	0.121E-21	P(8)	B
65	1694.343 35(8)*	285.13	0.191E-20	P(37)	A
66	1694.559 93(12)*	867.46	0.547E-22	P(6)	D
67	1694.713 74(9)*	531.81	0.107E-21	P(7)	C
68	1694.715 34(9)*	531.80	0.107E-21	P(7)	B
69	1694.836 67(8)*	270.13	0.200E-20	P(36)	A
70	1694.976 88(12)*	865.03	0.461E-22	P(5)	D



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1695
1696
1697
1698
1699
1700
1701
WAVENUMBERS (cm^{-1})

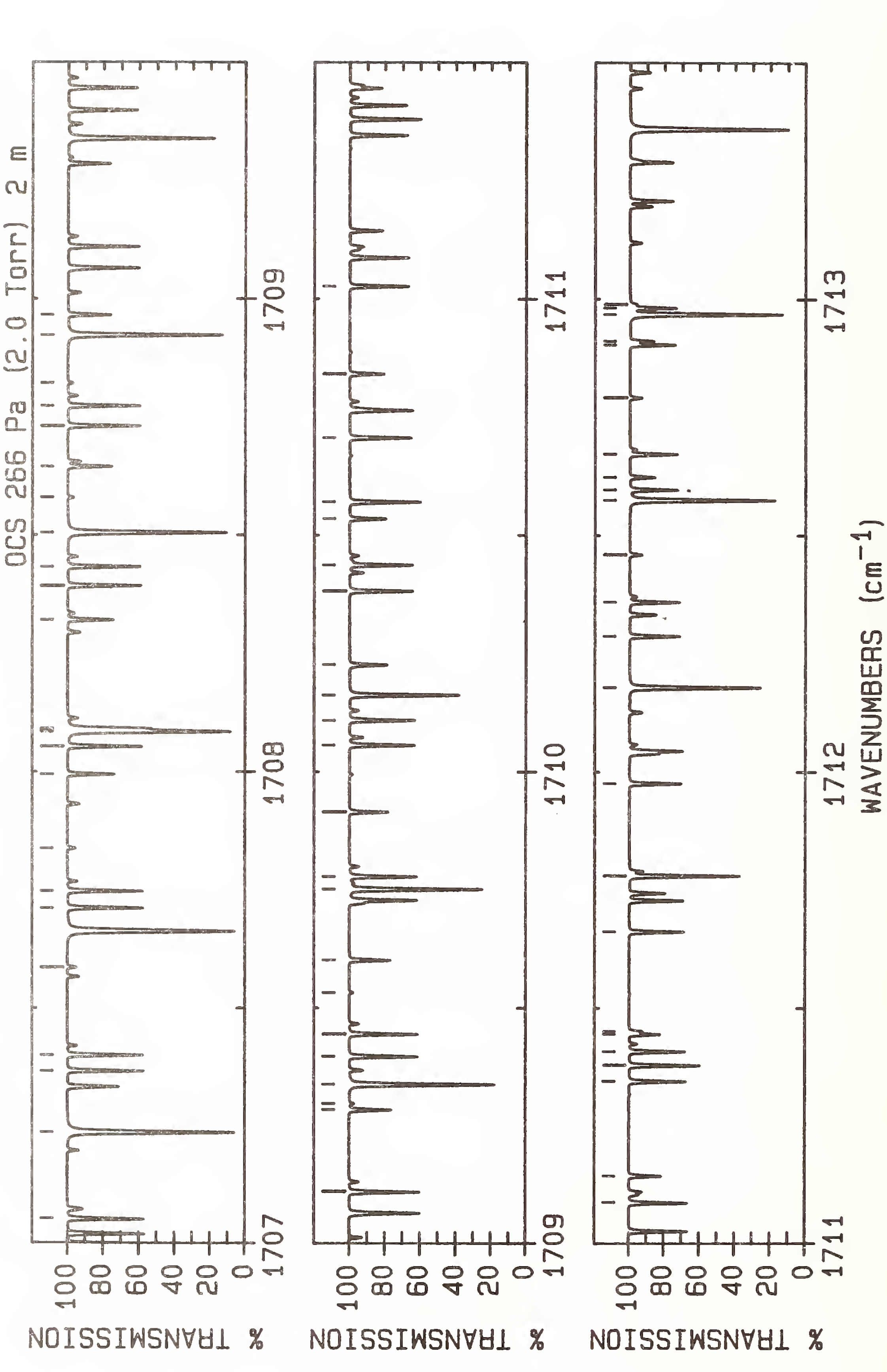
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1695.133 58(9)*	528.96	0.924E-22	P(6)	C
2	1695.135 15(9)*	528.95	0.924E-22	P(6)	B
3	1695.229 08(24)	1212.24	0.166E-22	R(28)	G
4	1695.327 55(8)*	255.53	0.209E-20	P(35)	A
5	1695.391 33(12)*	863.01	0.373E-22	P(4)	D
6	1695.551 22(9)*	526.52	0.769E-22	P(5)	C
7	1695.552 69(9)*	526.51	0.769E-22	P(5)	B
8	1695.966 65(9)*	524.49	0.607E-22	P(4)	C
9	1695.967 96(9)*	524.48	0.607E-22	P(4)	B
10	1696.212 79(12)*	860.18	0.189E-22	P(2)	D
11	1696.302 01(8)*	227.55	0.226E-20	P(33)	A
12	1696.379 89(9)*	522.86	0.435E-22	P(3)	C
13	1696.380 97(9)*	522.86	0.435E-22	P(3)	B
14	1696.509 57(93)	1218.35	0.166E-22	R(29)	E
15	1696.513 95(24)	1218.36	0.166E-22	R(29)	F
16	1696.516 43(9)*	83.11	0.125E-21	R(20)	P
17	1696.619 78(12)*	859.37	0.949E-23	P(1)	D
18	1696.712 14(47)	11.22	0.107E-22	P(7)	L
19	1696.785 60(8)*	214.17	0.234E-20	P(32)	A
20	1696.790 93(9)*	521.64	0.246E-22	P(2)	C
21	1696.791 71(9)*	521.64	0.246E-22	P(2)	B
22	1696.921 52(24)	1275.30	0.143E-22	R(33)	G
23	1697.195 78(24)	1243.18	0.157E-22	R(31)	F
24	1697.200 19(9)*	100.13	0.126E-21	R(22)	P
25	1697.266 75(8)*	201.19	0.241E-20	P(31)	A
26	1697.426 30(12)*	858.97	0.952E-23	R(0)	D
27	1697.638 16(14)	22.24	0.205E-22	P(10)	T
28	1697.745 47(8)*	188.62	0.248E-20	P(30)	A
29	1697.825 82(12)*	859.37	0.190E-22	R(1)	D
30	1697.869 02(24)	1269.63	0.147E-22	R(33)	F
31	1697.874 29(9)*	118.72	0.125E-21	R(24)	P
32	1697.911 29(24)	1318.01	0.127E-22	R(36)	G
33	1698.064 32(14)	18.20	0.188E-22	P(9)	T
34	1698.221 75(8)*	176.45	0.255E-20	P(29)	A
35	1698.222 84(12)*	860.18	0.284E-22	R(2)	D

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1698.412 00(9)*	520.83	0.248E-22	R(1)	B
37	1698.413 05(9)*	520.83	0.248E-22	R(1)	C
38	1698.533 64(24)	1297.71	0.136E-22	R(35)	F
39	1698.538 71(9)*	138.90	0.123E-21	R(26)	P
40	1698.617 38(12)*	861.39	0.377E-22	R(3)	D
41	1698.695 61(8)*	164.69	0.261E-20	P(28)	A
42	1698.811 40(9)*	521.64	0.438E-22	R(2)	B
43	1698.813 06(9)*	521.64	0.438E-22	R(2)	C
44	1698.862 71(24)	1312.36	0.130E-22	R(36)	F
45	1698.867 29(9)*	149.59	0.121E-21	R(27)	P
46	1699.009 41(12)*	863.01	0.467E-22	R(4)	D
47	1699.167 04(8)*	153.34	0.265E-20	P(27)	A
48	1699.189 62(24)	1327.41	0.124E-22	R(37)	F
49	1699.193 44(9)*	160.67	0.119E-21	R(28)	P
50	1699.208 52(9)*	522.86	0.613E-22	R(3)	B
51	1699.210 87(9)*	522.86	0.613E-22	R(3)	C
52	1699.328 31(15)	8.49	0.131E-22	P(6)	T
53	1699.398 95(12)*	865.03	0.555E-22	R(5)	D
54	1699.603 37(9)*	524.48	0.779E-22	R(4)	B
55	1699.606 47(9)*	524.49	0.779E-22	R(4)	C
56	1699.636 03(8)*	142.38	0.270E-20	P(26)	A
57	1699.785 99(12)*	867.46	0.640E-22	R(6)	D
58	1699.995 94(9)*	526.51	0.937E-22	R(5)	B
59	1699.999 86(9)*	526.52	0.937E-22	R(5)	C
60	1700.102 60(8)*	131.84	0.273E-20	P(25)	A
61	1700.170 53(12)*	870.29	0.722E-22	R(7)	D
62	1700.386 24(9)*	528.95	0.109E-21	R(6)	B
63	1700.391 03(9)*	528.96	0.109E-21	R(6)	C
64	1700.473 73(9)*	208.93	0.107E-21	R(32)	P
65	1700.475 48(23)	1391.69	0.101E-22	R(41)	F
66	1700.552 57(12)*	873.53	0.800E-22	R(8)	D
67	1700.566 73(8)*	121.70	0.275E-20	P(24)	A
68	1700.787 72(9)*	221.99	0.104E-21	R(33)	P
69	1700.791 49(23)	1408.78	0.948E-23	R(42)	F
70	1700.932 10(12)*	877.17	0.873E-22	R(9)	D



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1701
1702
1703
1703
1704
1705
1705
1706
1707
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1701.099 27(9)*	235.44	0.998E-22	R(34)	P	36	1704.166 60(15)	6.07	0.133E-22	R(5)	T
2	1701.105 31(23)	1426.27	0.892E-23	R(43)	F	37	1704.180 73(9)*	575.72	0.215E-21	R(16)	C
3	1701.159 99(9)*	535.04	0.137E-21	R(8)	B	38	1704.185 72(40)	26.44	0.171E-22	R(11)	L
4	1701.166 74(9)*	535.06	0.137E-21	R(8)	C	39	1704.192 29(8)*	55.17	0.254E-20	P(16)	A
5	1701.309 13(12)*	881.21	0.942E-22	R(10)	D	40	1704.235 00(11)*	928.13	0.130E-21	R(18)	D
6	1701.408 37(9)*	249.29	0.960E-22	R(35)	P	41	1704.364 57(9)*	409.47	0.564E-22	R(45)	P
7	1701.487 70(8)*	102.63	0.277E-20	P(22)	A	42	1704.528 74(9)*	582.57	0.220E-21	R(17)	B
8	1701.543 45(9)*	538.70	0.150E-21	R(9)	B	43	1704.547 45(9)*	582.63	0.220E-21	R(17)	C
9	1701.551 27(9)*	538.72	0.150E-21	R(9)	C	44	1704.589 41(11)*	935.82	0.132E-21	R(19)	D
10	1701.683 66(12)*	885.66	0.101E-21	R(11)	D	45	1704.634 55(8)*	48.68	0.246E-20	P(15)	A
11	1701.715 03(9)*	263.53	0.921E-22	R(36)	P	46	1704.891 58(9)*	589.88	0.224E-21	R(18)	B
12	1701.933 58(9)*	542.79	0.162E-21	R(10)	C	47	1704.911 94(9)*	589.95	0.224E-21	R(18)	C
13	1701.944 55(8)*	93.71	0.276E-20	P(21)	A	48	1705.074 37(8)*	42.60	0.237E-20	P(14)	A
14	1702.019 25(9)*	278.16	0.881E-22	R(37)	P	49	1705.203 38(9)*	465.23	0.458E-22	R(48)	P
15	1702.055 67(12)*	890.52	0.106E-21	R(12)	D	50	1705.252 12(9)*	597.60	0.228E-21	R(19)	B
16	1702.303 51(9)*	547.23	0.173E-21	R(11)	B	51	1705.274 19(9)*	597.68	0.228E-21	R(19)	C
17	1702.303 60(46)	8.41	0.109E-22	R(6)	L	52	1705.478 03(9)*	484.60	0.426E-22	R(49)	P
18	1702.398 96(8)*	85.19	0.274E-20	P(20)	A	53	1705.511 77(8)*	36.92	0.226E-20	P(13)	A
19	1702.425 18(12)*	895.77	0.112E-21	R(13)	D	54	1705.610 35(9)*	605.72	0.230E-21	R(20)	B
20	1702.620 32(9)*	308.62	0.800E-22	R(39)	P	55	1705.750 20(9)*	504.37	0.395E-22	R(50)	P
21	1702.792 17(12)*	901.44	0.116E-21	R(14)	D	56	1705.946 72(8)*	31.64	0.214E-20	P(12)	A
22	1702.850 94(8)*	77.08	0.271E-20	P(19)	A	57	1705.966 28(9)*	614.25	0.231E-21	R(21)	B
23	1702.917 18(9)*	324.44	0.759E-22	R(40)	P	58	1705.981 79(11)*	970.60	0.133E-21	R(23)	D
24	1703.054 42(9)*	557.38	0.193E-21	R(13)	B	59	1705.991 96(9)*	614.35	0.231E-21	R(21)	C
25	1703.156 65(12)*	907.50	0.121E-21	R(15)	D	60	1706.019 89(9)*	524.53	0.365E-22	R(51)	P
26	1703.300 49(8)*	69.37	0.267E-20	P(18)	A	61	1706.287 08(9)*	545.09	0.337E-22	R(52)	P
27	1703.426 44(9)*	563.07	0.201E-21	R(14)	B	62	1706.347 48(9)*	623.29	0.231E-21	R(22)	C
28	1703.503 53(9)*	357.27	0.679E-22	R(42)	P	63	1706.379 25(8)*	26.78	0.201E-20	P(11)	A
29	1703.518 62(11)*	913.98	0.124E-21	R(16)	D	64	1706.551 79(9)*	566.04	0.310E-22	R(53)	P
30	1703.747 61(8)*	62.07	0.261E-20	P(17)	A	65	1706.662 79(11)*	990.41	0.131E-21	R(25)	D
31	1703.811 77(9)*	569.22	0.209E-21	R(15)	C	66	1706.671 21(9)*	632.52	0.231E-21	R(23)	B
32	1703.814 15(41)	22.03	0.160E-22	R(10)	L	67	1706.700 75(9)*	632.64	0.231E-21	R(23)	C
33	1703.878 07(11)*	920.85	0.127E-21	R(17)	D	68	1706.809 34(8)*	22.31	0.187E-20	P(10)	A
34	1704.080 02(9)*	391.68	0.602E-22	R(44)	P	69	1706.814 00(9)*	587.39	0.285E-22	R(54)	P
35	1704.163 60(9)*	575.66	0.215E-21	R(16)	B	70	1706.999 49(11)*	1000.93	0.130E-21	R(26)	D



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
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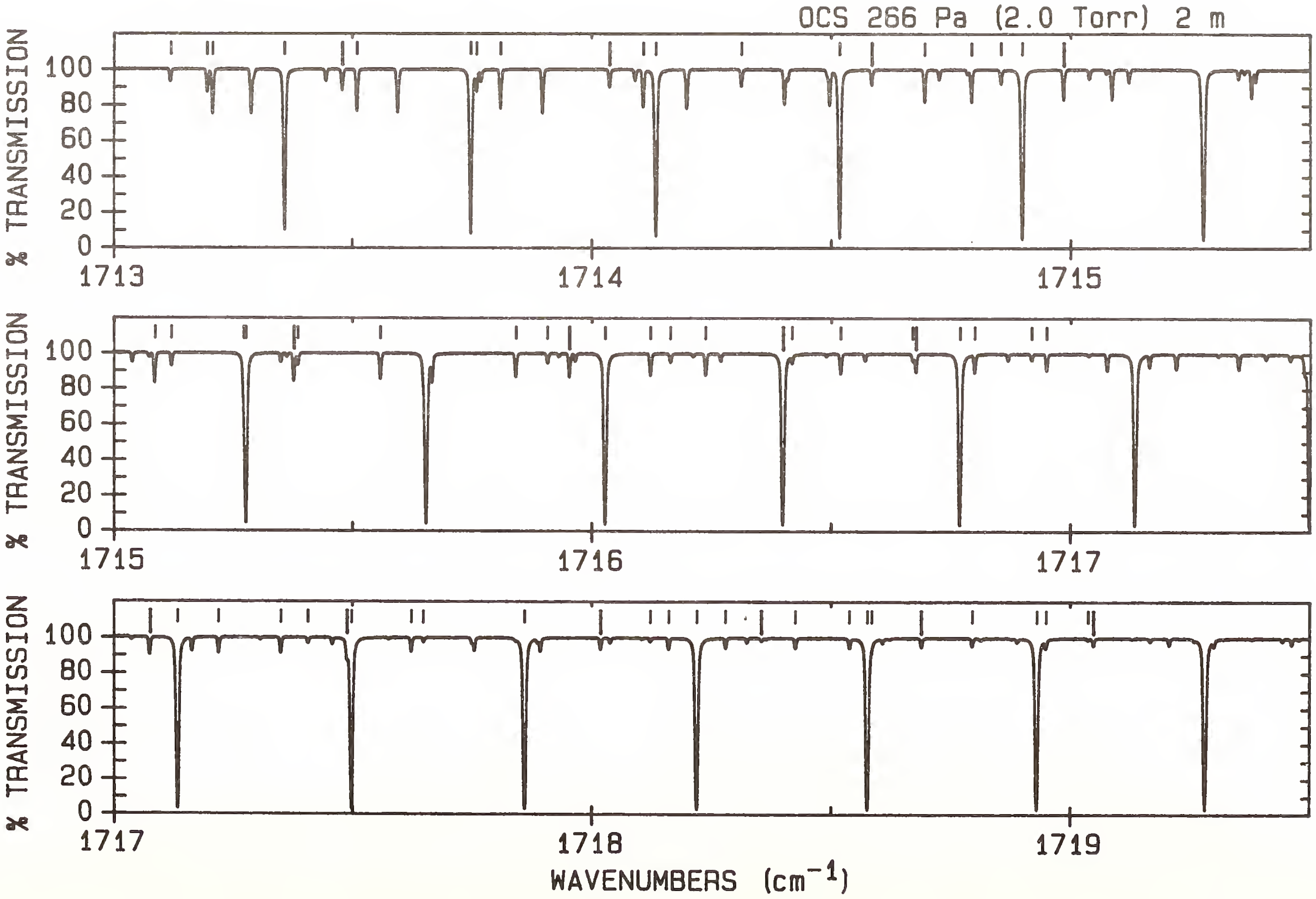
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1707.051 77(9)*	642.40	0.229E-21	R(24)	C
2	1707.237 00(8)*	18.26	0.171E-20	P(9)	A
3	1707.366 90(9)*	652.42	0.227E-21	R(25)	B
4	1707.400 54(9)*	652.56	0.227E-21	R(25)	C
5	1707.585 65(9)*	653.80	0.217E-22	R(57)	P
6	1707.711 26(9)*	662.98	0.224E-21	R(26)	B
7	1707.747 05(9)*	663.13	0.224E-21	R(26)	C
8	1707.837 85(9)*	676.72	0.198E-22	R(58)	P
9	1707.994 35(12)*	1034.89	0.122E-21	R(29)	D
10	1708.053 31(9)*	673.94	0.220E-21	R(27)	B
11	1708.085 01(8)*	11.36	0.138E-20	P(7)	A
12	1708.087 55(9)*	700.04	0.180E-22	R(59)	P
13	1708.091 30(9)*	674.10	0.220E-21	R(27)	C
14	1708.320 88(12)*	1047.02	0.119E-21	R(30)	D
15	1708.393 03(9)*	685.31	0.216E-21	R(28)	B
16	1708.433 29(9)*	685.49	0.216E-21	R(28)	C
17	1708.505 36(8)*	8.52	0.120E-20	P(6)	A
18	1708.579 41(10)*	747.86	0.147E-22	R(61)	P
19	1708.644 86(12)*	1059.56	0.116E-21	R(31)	D
20	1708.730 43(9)*	697.09	0.211E-21	R(29)	B
21	1708.773 01(9)*	697.27	0.211E-21	R(29)	C
22	1708.821 56(10)*	772.36	0.133E-22	R(62)	P
23	1708.923 27(8)*	6.09	0.101E-20	P(5)	A
24	1708.966 28(12)*	1072.49	0.112E-21	R(32)	D
25	1709.110 46(9)*	709.47	0.206E-21	R(30)	C
26	1709.285 16(12)*	1085.84	0.108E-21	R(33)	D
27	1709.298 29(11)*	822.54	0.107E-22	R(64)	P
28	1709.338 74(8)*	4.06	0.818E-21	P(4)	A
29	1709.398 24(9)*	721.86	0.200E-21	R(31)	B
30	1709.445 64(9)*	722.07	0.200E-21	R(31)	C
31	1709.532 86(12)*	848.22	0.962E-23	R(65)	P
32	1709.601 47(12)*	1099.58	0.104E-21	R(34)	D
33	1709.751 78(8)*	2.43	0.618E-21	P(3)	A
34	1709.778 55(9)*	735.07	0.193E-21	R(32)	C
35	1709.915 23(12)*	1113.73	0.100E-21	R(35)	D

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1710.056 70(9)*	748.25	0.187E-21	R(33)	B
37	1710.109 18(10)*	748.49	0.187E-21	R(33)	C
38	1710.162 37(8)*	1.22	0.415E-21	P(2)	A
39	1710.226 42(12)*	1128.29	0.958E-22	R(36)	D
40	1710.382 43(9)*	762.05	0.180E-21	R(34)	B
41	1710.437 52(10)*	762.31	0.180E-21	R(34)	C
42	1710.535 04(12)*	1143.24	0.915E-22	R(37)	D
43	1710.570 53(8)*	0.41	0.208E-21	P(1)	A
44	1710.705 81(10)*	776.26	0.173E-21	R(35)	B
45	1710.841 10(12)*	1158.61	0.872E-22	R(38)	D
46	1711.026 84(10)*	790.88	0.165E-21	R(36)	B
47	1711.087 35(10)*	791.16	0.165E-21	R(36)	C
48	1711.144 59(12)*	1174.37	0.829E-22	R(39)	D
49	1711.345 53(10)*	805.90	0.158E-21	R(37)	B
50	1711.379 51(8)*	0.00	0.209E-21	R(0)	A
51	1711.408 83(10)*	806.20	0.158E-21	R(37)	C
52	1711.445 50(12)*	1190.54	0.785E-22	R(40)	D
53	1711.451 70(10)	131.41	0.315E-22	R(25)	T
54	1711.661 86(10)*	821.33	0.150E-21	R(38)	B
55	1711.780 34(8)*	0.41	0.417E-21	R(1)	A
56	1711.975 84(10)*	837.16	0.143E-21	R(39)	B
57	1712.178 72(8)*	1.22	0.623E-21	R(2)	A
58	1712.287 45(10)*	853.39	0.135E-21	R(40)	B
59	1712.359 46(10)*	853.74	0.135E-21	R(40)	C
60	1712.459 79(10)	164.16	0.300E-22	R(28)	T
61	1712.574 66(8)*	2.43	0.826E-21	R(3)	A
62	1712.596 70(10)*	870.04	0.128E-21	R(41)	B
63	1712.623 34(12)*	1259.25	0.618E-22	R(44)	D
64	1712.671 73(10)*	870.40	0.128E-21	R(41)	C
65	1712.790 87(10)	175.88	0.293E-22	R(29)	T
66	1712.903 59(10)*	887.08	0.121E-21	R(42)	B
67	1712.911 33(12)*	1277.44	0.578E-22	R(45)	D
68	1712.968 14(8)*	4.06	0.102E-20	R(4)	A
69	1712.981 69(10)*	887.47	0.120E-21	R(42)	C
70	1712.989 23(46)	281.54	0.157E-22	R(37)	L


OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
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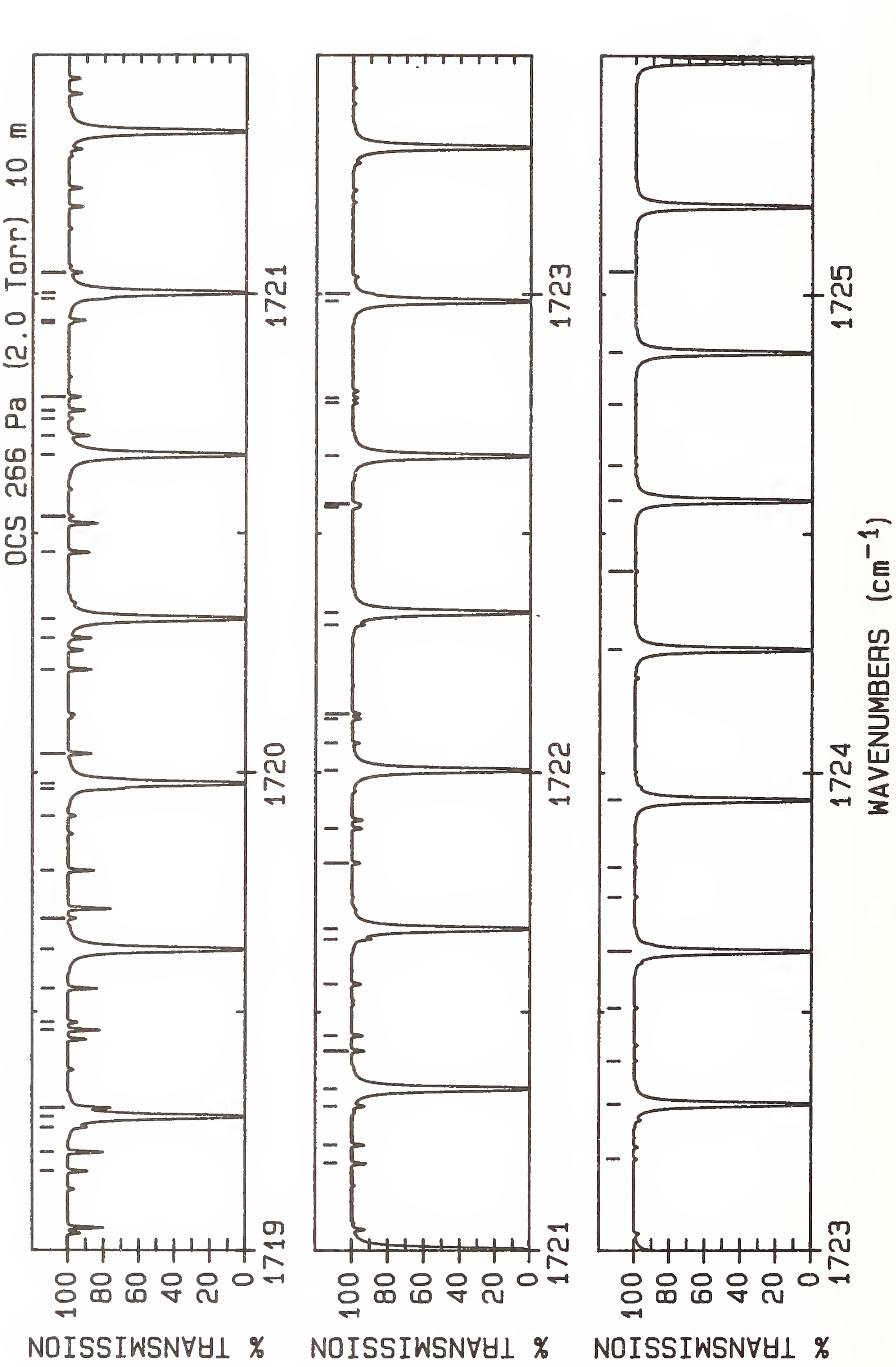
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1713.119 48(10)	188.01	0.286E-22	R(30)	T
2	1713.196 73(12)*	1296.03	0.540E-22	R(46)	D
3	1713.208 11(10)*	904.54	0.113E-21	R(43)	B
4	1713.359 18(8)*	6.09	0.122E-20	R(5)	A
5	1713.479 53(12)*	1315.02	0.503E-22	R(47)	D
6	1713.510 25(10)*	922.39	0.106E-21	R(44)	B
7	1713.747 77(8)*	8.52	0.140E-20	R(6)	A
8	1713.759 73(12)*	1334.42	0.467E-22	R(48)	D
9	1713.810 01(10)*	940.66	0.995E-22	R(45)	B
10	1714.037 33(12)*	1354.22	0.433E-22	R(49)	D
11	1714.107 39(10)*	959.33	0.928E-22	R(46)	B
12	1714.133 91(8)*	11.36	0.158E-20	R(7)	A
13	1714.312 32(12)*	1374.42	0.400E-22	R(50)	D
14	1714.517 60(8)*	14.61	0.175E-20	R(8)	A
15	1714.584 70(12)*	1395.03	0.369E-22	R(51)	D
16	1714.695 00(10)*	997.88	0.803E-22	R(48)	B
17	1714.792 64(10)*	998.38	0.801E-22	R(48)	C
18	1714.854 47(12)*	1416.04	0.340E-22	R(52)	D
19	1714.898 83(8)*	18.26	0.191E-20	R(9)	A
20	1714.985 22(10)*	1017.76	0.744E-22	R(49)	B
21	1715.086 29(10)*	1018.28	0.742E-22	R(49)	C
22	1715.121 61(12)*	1437.45	0.312E-22	R(53)	D
23	1715.273 04(10)*	1038.05	0.688E-22	R(50)	B
24	1715.277 60(8)*	22.31	0.207E-20	R(10)	A
25	1715.377 60(10)*	1038.59	0.686E-22	R(50)	C
26	1715.386 14(12)*	1459.26	0.286E-22	R(54)	D
27	1715.558 46(10)*	1058.74	0.634E-22	R(51)	B
28	1715.841 48(10)*	1079.84	0.584E-22	R(52)	B
29	1715.907 32(13)*	1504.10	0.238E-22	R(56)	D
30	1715.953 16(10)*	1080.42	0.582E-22	R(52)	C
31	1716.027 78(8)*	31.64	0.233E-20	R(12)	A
32	1716.122 08(10)*	1101.34	0.536E-22	R(53)	B
33	1716.163 97(13)*	1527.13	0.217E-22	R(57)	D
34	1716.237 41(10)*	1101.95	0.534E-22	R(53)	C
35	1716.399 18(8)*	36.92	0.245E-20	R(13)	A
36	1716.400 28(10)*	1123.25	0.491E-22	R(54)	B
37	1716.417 98(13)*	1550.55	0.197E-22	R(58)	D
38	1716.519 29(10)*	1123.88	0.489E-22	R(54)	C
39	1716.669 35(13)*	1574.38	0.178E-22	R(59)	D
40	1716.676 06(10)*	1145.56	0.448E-22	R(55)	B
41	1716.768 12(8)*	42.60	0.255E-20	R(14)	A
42	1716.798 79(10)*	1146.22	0.447E-22	R(55)	C
43	1716.918 07(13)*	1598.62	0.161E-22	R(60)	D
44	1716.949 41(10)*	1168.28	0.408E-22	R(56)	B
45	1717.075 93(10)*	1168.96	0.407E-22	R(56)	C
46	1717.134 59(8)*	48.68	0.265E-20	R(15)	A
47	1717.220 34(10)*	1191.40	0.372E-22	R(57)	B
48	1717.350 69(10)*	1192.10	0.370E-22	R(57)	C
49	1717.407 58(13)*	1648.29	0.131E-22	R(62)	D
50	1717.488 85(10)*	1214.93	0.337E-22	R(58)	B
51	1717.498 59(8)*	55.17	0.272E-20	R(16)	A
52	1717.623 06(10)*	1215.65	0.336E-22	R(58)	C
53	1717.648 36(13)*	1673.73	0.118E-22	R(63)	D
54	1717.860 13(8)*	62.07	0.279E-20	R(17)	A
55	1718.018 55(10)*	1263.19	0.276E-22	R(60)	B
56	1718.121 93(14)*	1725.81	0.941E-23	R(65)	D
57	1718.160 63(11)*	1263.97	0.275E-22	R(60)	C
58	1718.219 20(8)*	69.37	0.284E-20	R(18)	A
59	1718.279 74(11)*	1287.93	0.249E-22	R(61)	B
60	1718.354 72(14)*	1752.46	0.839E-23	R(66)	D
61	1718.425 82(11)*	1288.73	0.248E-22	R(61)	C
62	1718.538 48(11)*	1313.07	0.224E-22	R(62)	B
63	1718.575 80(8)*	77.08	0.288E-20	R(19)	A
64	1718.584 84(14)*	1779.51	0.747E-23	R(67)	D
65	1718.688 60(12)*	1313.90	0.223E-22	R(62)	C
66	1718.794 77(11)*	1338.62	0.201E-22	R(63)	B
67	1718.929 93(8)*	85.19	0.291E-20	R(20)	A
68	1718.948 98(12)*	1339.47	0.200E-22	R(63)	C
69	1719.037 06(16)*	1834.81	0.588E-23	R(69)	D
70	1719.048 60(12)*	1364.57	0.180E-22	R(64)	B



OCS 266 Pa (2.0 Torr) 10 m
% TRANSMISSION
100
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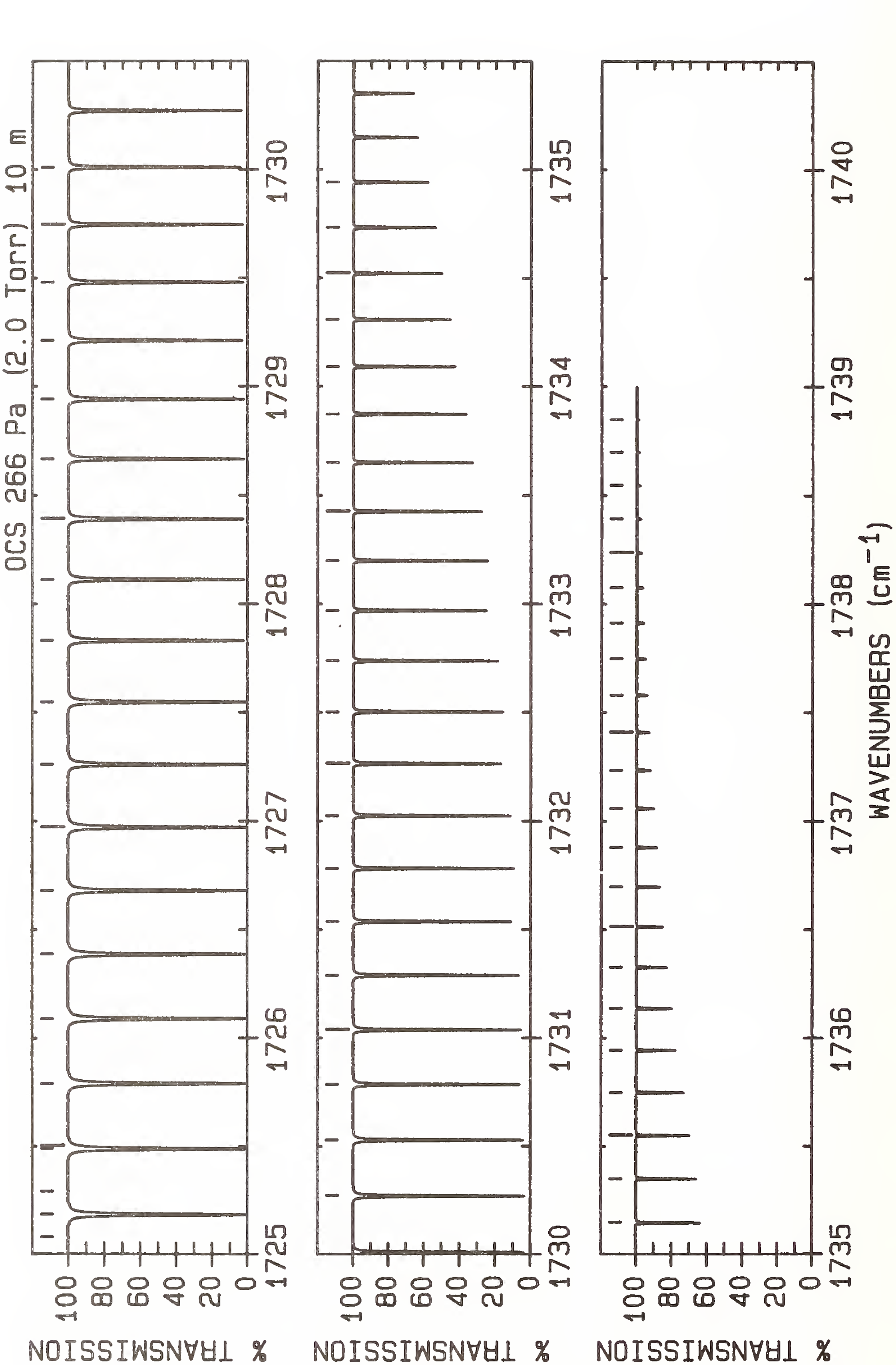
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1719.167 12(15)	515.34	0.962E-23	R(50)	T	36	1721.450 80(21)*	1646.29	0.528E-23	R(74)	B
2	1719.206 94(13)*	1365.45	0.179E-22	R(64)	C	37	1721.558 35(20)	715.26	0.429E-23	R(59)	T
3	1719.259 14(17)*	1863.06	0.520E-23	R(70)	D	38	1721.652 48(26)*	1647.46	0.525E-23	R(74)	C
4	1719.281 58(8)*	93.71	0.293E-20	R(21)	A	39	1721.673 64(8)*	164.69	0.274E-20	R(28)	A
5	1719.299 97(12)*	1390.93	0.160E-22	R(65)	B	40	1721.811 21(21)	739.49	0.387E-23	R(60)	T
6	1719.462 48(14)*	1391.83	0.160E-22	R(65)	C	41	1721.883 51(28)*	1677.89	0.459E-23	R(75)	C
7	1719.478 54(18)*	1891.72	0.458E-23	R(71)	D	42	1722.005 41(8)*	176.45	0.267E-20	R(29)	A
8	1719.548 88(13)*	1417.69	0.143E-22	R(66)	B	43	1722.061 49(22)	764.12	0.349E-23	R(61)	T
9	1719.630 75(8)*	102.63	0.293E-20	R(22)	A	44	1722.112 05(30)*	1708.71	0.400E-23	R(76)	C
10	1719.695 25(20)*	1920.78	0.404E-23	R(72)	D	45	1722.122 75(25)*	1738.67	0.350E-23	R(77)	B
11	1719.795 32(13)*	1444.85	0.127E-22	R(67)	B	46	1722.309 18(23)	789.15	0.314E-23	R(62)	T
12	1719.909 27(22)*	1950.24	0.355E-23	R(73)	D	47	1722.334 68(8)*	188.62	0.260E-20	R(30)	A
13	1719.966 27(16)*	1445.81	0.127E-22	R(67)	C	48	1722.554 28(25)	814.58	0.282E-23	R(63)	T
14	1719.977 44(8)*	111.96	0.292E-20	R(23)	A	49	1722.558 09(29)*	1802.28	0.264E-23	R(79)	B
15	1720.039 28(14)*	1472.41	0.113E-22	R(68)	B	50	1722.561 66(34)*	1771.58	0.303E-23	R(78)	C
16	1720.214 52(17)*	1473.41	0.112E-22	R(68)	C	51	1722.661 46(8)*	201.19	0.253E-20	R(31)	A
17	1720.280 76(15)*	1500.39	0.100E-22	R(69)	B	52	1722.771 97(31)*	1834.68	0.228E-23	R(80)	B
18	1720.321 65(8)*	121.70	0.290E-20	R(24)	A	53	1722.782 71(37)*	1803.61	0.262E-23	R(79)	C
19	1720.460 32(18)*	1501.41	0.996E-23	R(69)	C	54	1722.985 74(8)*	214.17	0.245E-20	R(32)	A
20	1720.535 12(30)*	2041.03	0.238E-23	R(76)	D	55	1723.001 25(39)*	1836.05	0.227E-23	R(80)	C
21	1720.663 38(8)*	131.84	0.287E-20	R(25)	A	56	1723.192 09(35)*	1900.71	0.170E-23	R(82)	B
22	1720.703 67(19)*	1529.81	0.880E-23	R(70)	C	57	1723.307 51(8)*	227.55	0.236E-20	R(33)	A
23	1720.738 32(34)*	2072.09	0.207E-23	R(77)	D	58	1723.398 32(38)*	1934.32	0.146E-23	R(83)	B
24	1720.756 26(17)*	1557.54	0.780E-23	R(71)	B	59	1723.508 72(33)	920.34	0.179E-23	R(67)	T
25	1720.784 33(18)	644.99	0.573E-23	R(56)	T	60	1723.626 78(8)*	241.34	0.228E-20	R(34)	A
26	1720.938 80(38)*	2103.56	0.180E-23	R(78)	D	61	1723.740 81(35)	947.79	0.159E-23	R(68)	T
27	1720.944 57(21)*	1558.62	0.776E-23	R(71)	C	62	1723.803 11(43)	2002.76	0.107E-23	R(85)	B
28	1720.990 28(18)*	1586.72	0.686E-23	R(72)	B	63	1723.943 54(8)*	255.53	0.219E-20	R(35)	A
29	1721.002 62(8)*	142.38	0.284E-20	R(26)	A	64	1724.257 78(8)*	270.13	0.209E-20	R(36)	A
30	1721.044 90(18)	668.01	0.521E-23	R(57)	T	65	1724.421 38(45)	1032.54	0.110E-23	R(71)	T
31	1721.183 01(22)*	1587.83	0.683E-23	R(72)	C	66	1724.569 52(8)*	285.13	0.200E-20	R(37)	A
32	1721.221 79(19)*	1616.30	0.603E-23	R(73)	B	67	1724.642 98(48)	1061.59	0.970E-24	R(72)	T
33	1721.302 91(19)	691.43	0.473E-23	R(58)	T	68	1724.770 06(58)	2180.89	0.477E-24	R(90)	B
34	1721.339 38(8)*	153.34	0.279E-20	R(27)	A	69	1724.878 74(8)*	300.54	0.190E-20	R(38)	A
35	1721.418 98(24)*	1617.44	0.599E-23	R(73)	C	70	1725.047 35(73)	2182.61	0.474E-24	R(90)	C



OCS 266 Pa (2.0 Torr) 10 m
% TRANSMISSION
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WAVENUMBERS (cm^{-1})

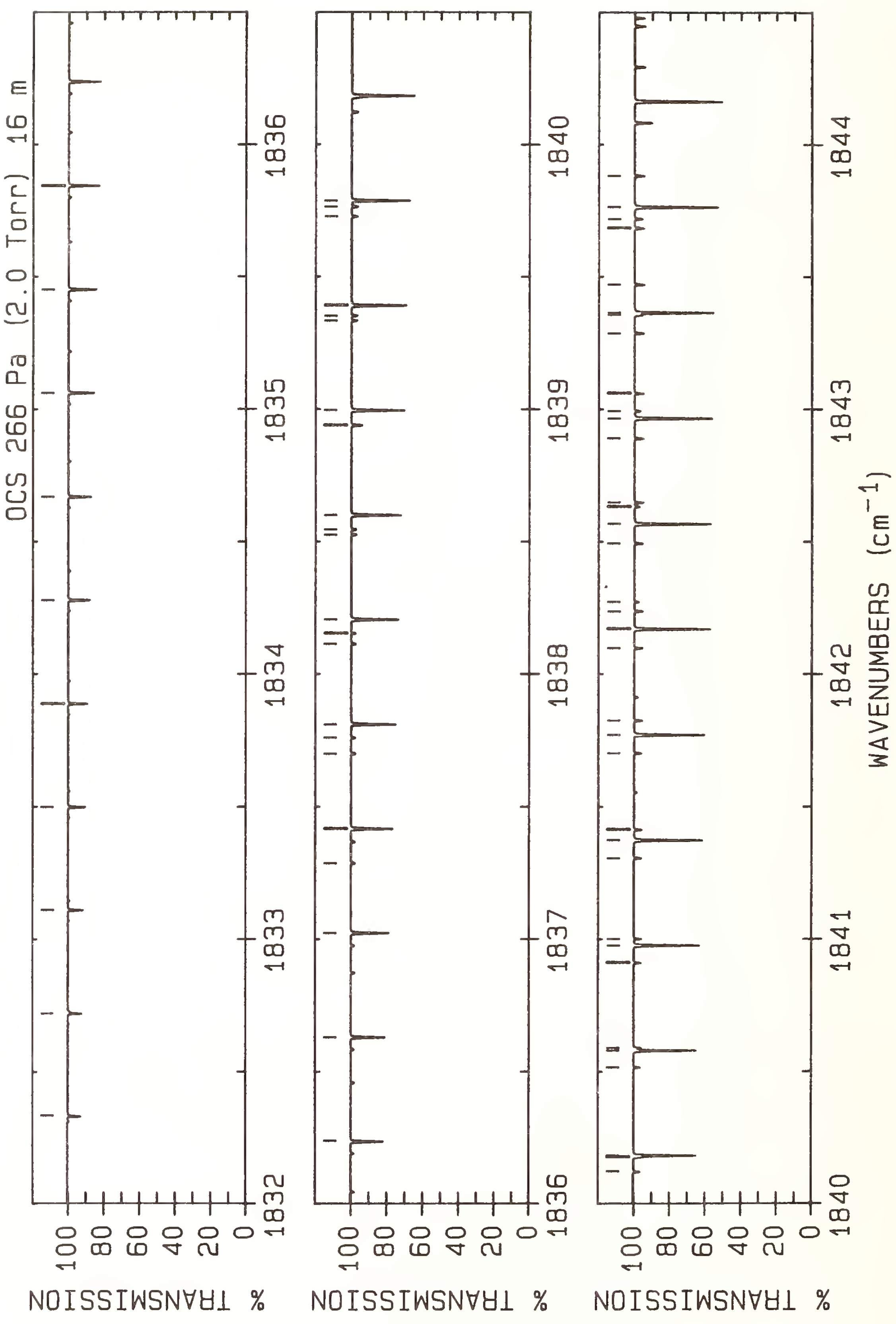
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1725.078 28(56)	1120.90	0.747E-24	R(74)	T
2	1725.185 44(8)*	316.35	0.181E-20	R(39)	A
3	1725.291 97(61)	1151.16	0.654E-24	R(75)	T
4	1725.489 62(8)*	332.57	0.171E-20	R(40)	A
5	1725.503 02(65)	1181.82	0.571E-24	R(76)	T
6	1725.791 27(8)*	349.19	0.162E-20	R(41)	A
7	1726.090 40(8)*	366.22	0.153E-20	R(42)	A
8	1726.386 99(8)*	383.65	0.143E-20	R(43)	A
9	1726.681 05(8)*	401.49	0.135E-20	R(44)	A
10	1726.972 58(8)*	419.73	0.126E-20	R(45)	A
11	1727.261 56(8)*	438.37	0.118E-20	R(46)	A
12	1727.548 00(8)*	457.42	0.110E-20	R(47)	A
13	1727.831 90(8)*	476.88	0.102E-20	R(48)	A
14	1728.113 25(8)*	496.74	0.942E-21	R(49)	A
15	1728.392 04(8)*	517.00	0.871E-21	R(50)	A
16	1728.668 28(8)*	537.67	0.803E-21	R(51)	A
17	1728.941 96(8)*	558.74	0.739E-21	R(52)	A
18	1729.213 07(8)*	580.22	0.679E-21	R(53)	A
19	1729.481 62(8)*	602.10	0.622E-21	R(54)	A
20	1729.747 60(8)*	624.39	0.568E-21	R(55)	A
21	1730.011 01(8)*	647.08	0.518E-21	R(56)	A
22	1730.271 84(8)*	670.17	0.471E-21	R(57)	A
23	1730.530 09(8)*	693.67	0.427E-21	R(58)	A
24	1730.785 76(8)*	717.57	0.387E-21	R(59)	A
25	1731.038 84(8)*	741.87	0.350E-21	R(60)	A
26	1731.289 33(8)*	766.58	0.315E-21	R(61)	A
27	1731.537 23(8)*	791.70	0.284E-21	R(62)	A
28	1731.782 52(8)*	817.21	0.254E-21	R(63)	A
29	1732.025 22(8)*	843.13	0.228E-21	R(64)	A
30	1732.265 30(8)*	869.46	0.204E-21	R(65)	A
31	1732.502 78(8)*	896.18	0.182E-21	R(66)	A
32	1732.737 65(8)*	923.31	0.162E-21	R(67)	A
33	1732.969 90(8)*	950.85	0.143E-21	R(68)	A
34	1733.199 52(8)*	978.78	0.127E-21	R(69)	A
35	1733.426 52(8)*	1007.13	0.112E-21	R(70)	A
36	1733.650 89(8)*	1035.87	0.990E-22	R(71)	A
37	1733.872 63(8)*	1065.02	0.872E-22	R(72)	A
38	1734.091 73(8)*	1094.57	0.765E-22	R(73)	A
39	1734.308 19(8)*	1124.52	0.671E-22	R(74)	A
40	1734.522 00(8)*	1154.87	0.586E-22	R(75)	A
41	1734.733 16(8)*	1185.63	0.512E-22	R(76)	A
42	1734.941 67(8)*	1216.79	0.446E-22	R(77)	A
43	1735.147 51(8)*	1248.35	0.387E-22	R(78)	A
44	1735.350 70(8)*	1280.32	0.336E-22	R(79)	A
45	1735.551 22(8)*	1312.69	0.290E-22	R(80)	A
46	1735.749 06(8)*	1345.46	0.251E-22	R(81)	A
47	1735.944 23(8)*	1378.63	0.216E-22	R(82)	A
48	1736.136 72(8)*	1412.21	0.186E-22	R(83)	A
49	1736.326 53(8)*	1446.18	0.159E-22	R(84)	A
50	1736.513 65(8)*	1480.56	0.136E-22	R(85)	A
51	1736.698 07(9)*	1515.34	0.117E-22	R(86)	A
52	1736.879 79(9)*	1550.53	0.994E-23	R(87)	A
53	1737.058 82(9)*	1586.11	0.846E-23	R(88)	A
54	1737.235 13(10)*	1622.10	0.718E-23	R(89)	A
55	1737.408 73(10)*	1658.48	0.608E-23	R(90)	A
56	1737.579 62(11)*	1695.27	0.514E-23	R(91)	A
57	1737.747 78(12)*	1732.46	0.434E-23	R(92)	A
58	1737.913 22(13)*	1770.05	0.365E-23	R(93)	A
59	1738.075 93(15)*	1808.05	0.307E-23	R(94)	A
60	1738.235 91(16)*	1846.44	0.257E-23	R(95)	A
61	1738.393 14(18)*	1885.23	0.215E-23	R(96)	A
62	1738.547 63(20)*	1924.43	0.180E-23	R(97)	A
63	1738.699 37(22)*	1964.03	0.150E-23	R(98)	A
64	1738.848 36(24)*	2004.02	0.125E-23	R(99)	A

ATLAS OF OCS ABSORPTION LINES FROM 1832 cm^{-1} to 1934 cm^{-1}

key:

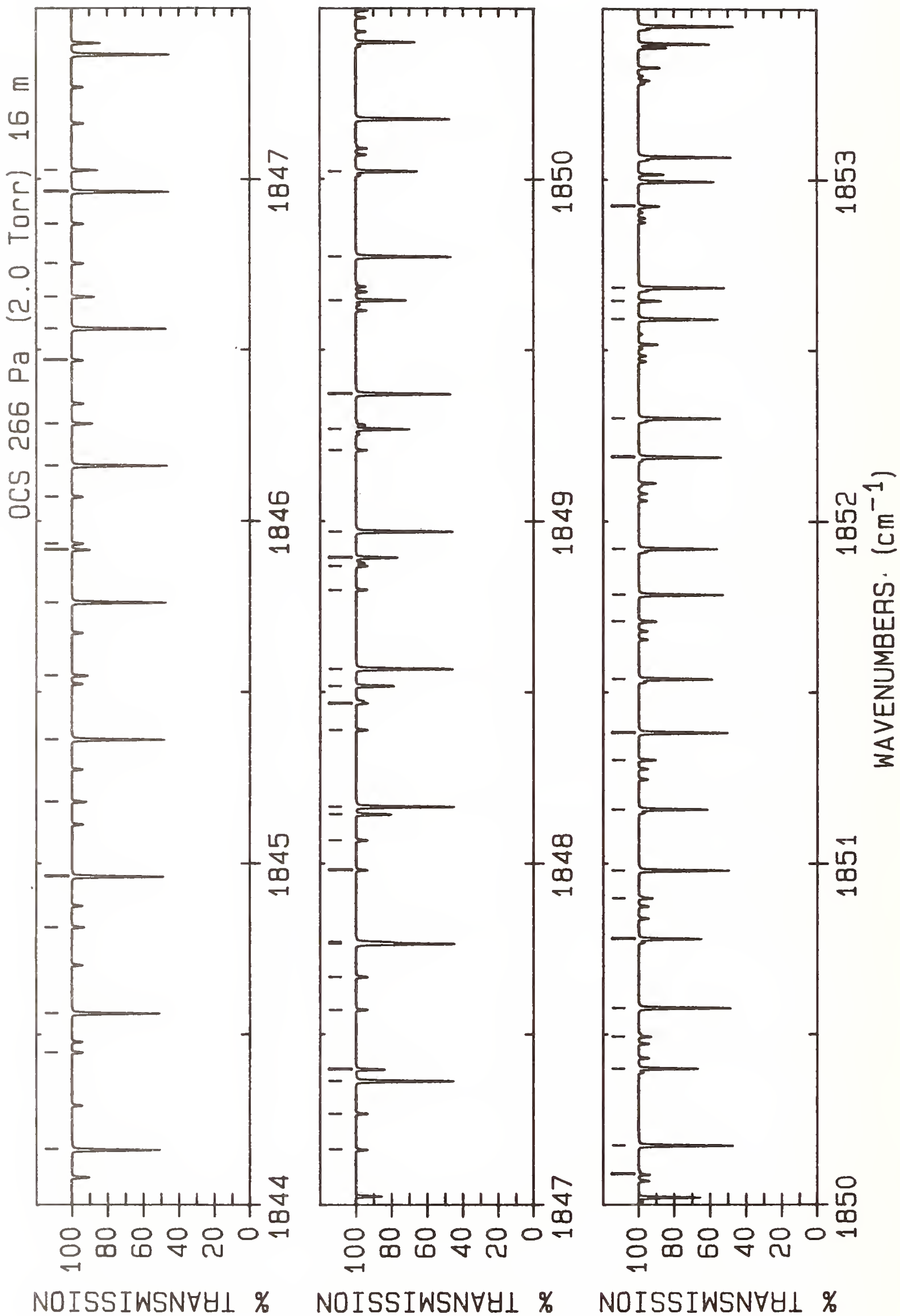
Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	02^01-00^00
B		$03^11-01^{1e}0$
C		$03^11-01^{1f}0$
D		02^02-00^01
E		$04^21-02^{2e}0$
F		$04^21-02^{2f}0$
G		04^01-02^00
H		$03^12-01^{1e}1$
I		$03^12-01^{1f}1$
X		02^21-00^00
P	$^{16}O^{12}C^{34}S$	02^01-00^00
Q		$03^11-01^{1e}0$
R		$03^11-01^{1f}0$
T	$^{16}O^{13}C^{32}S$	02^01-00^00
U		$03^11-01^{1e}0$
V		$03^11-01^{1f}0$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1}, a temperature of 296 K, and a transition moment of 0.022 debye. No Herman-Wallis constant was included in the intensity calculation.

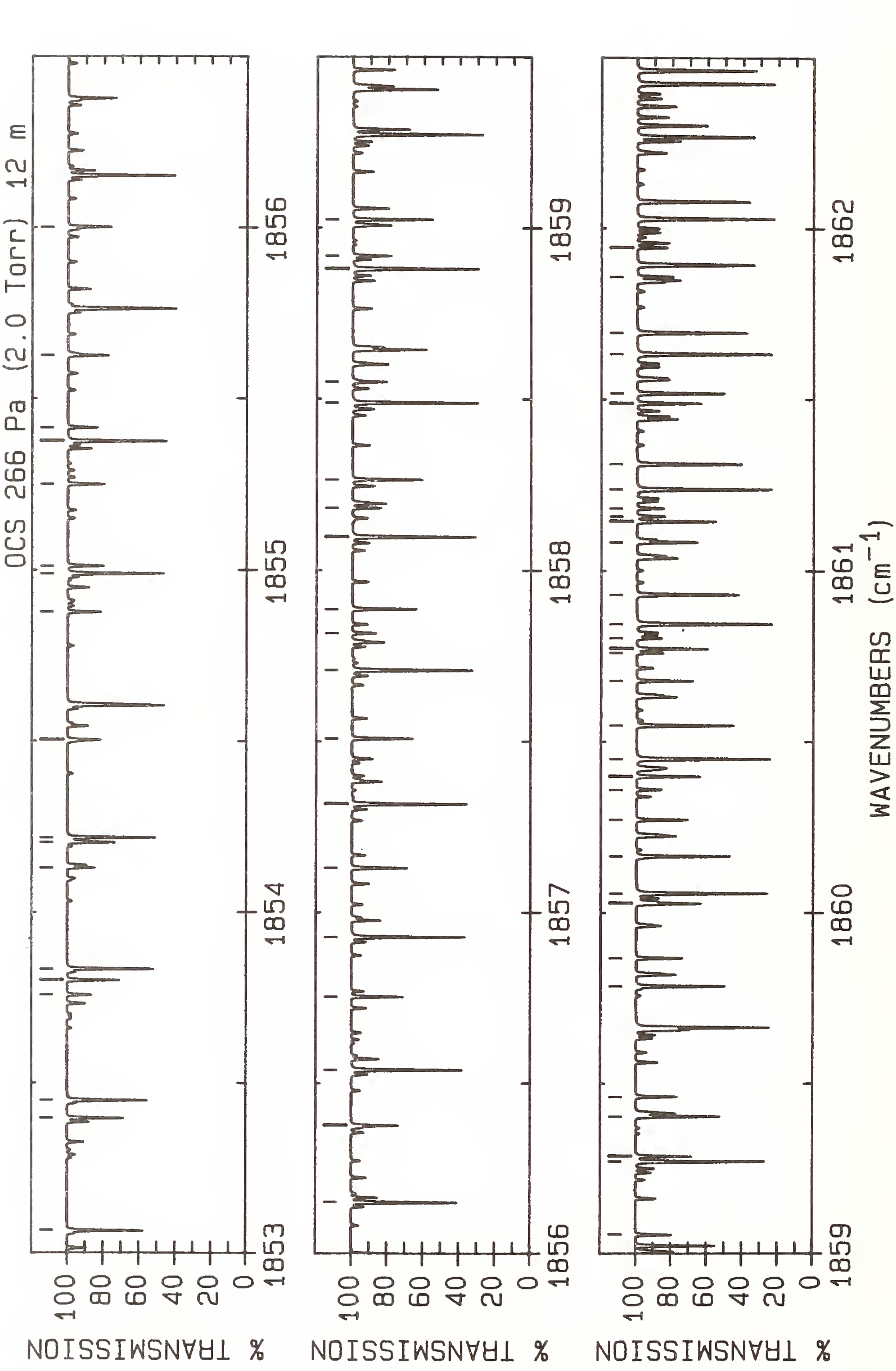


OCS 266 Pa (2.0 Torr) 16 m
% TRANSMISSION
100
80
60
40
20
0
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
WAVENUMBERS (cm^{-1})

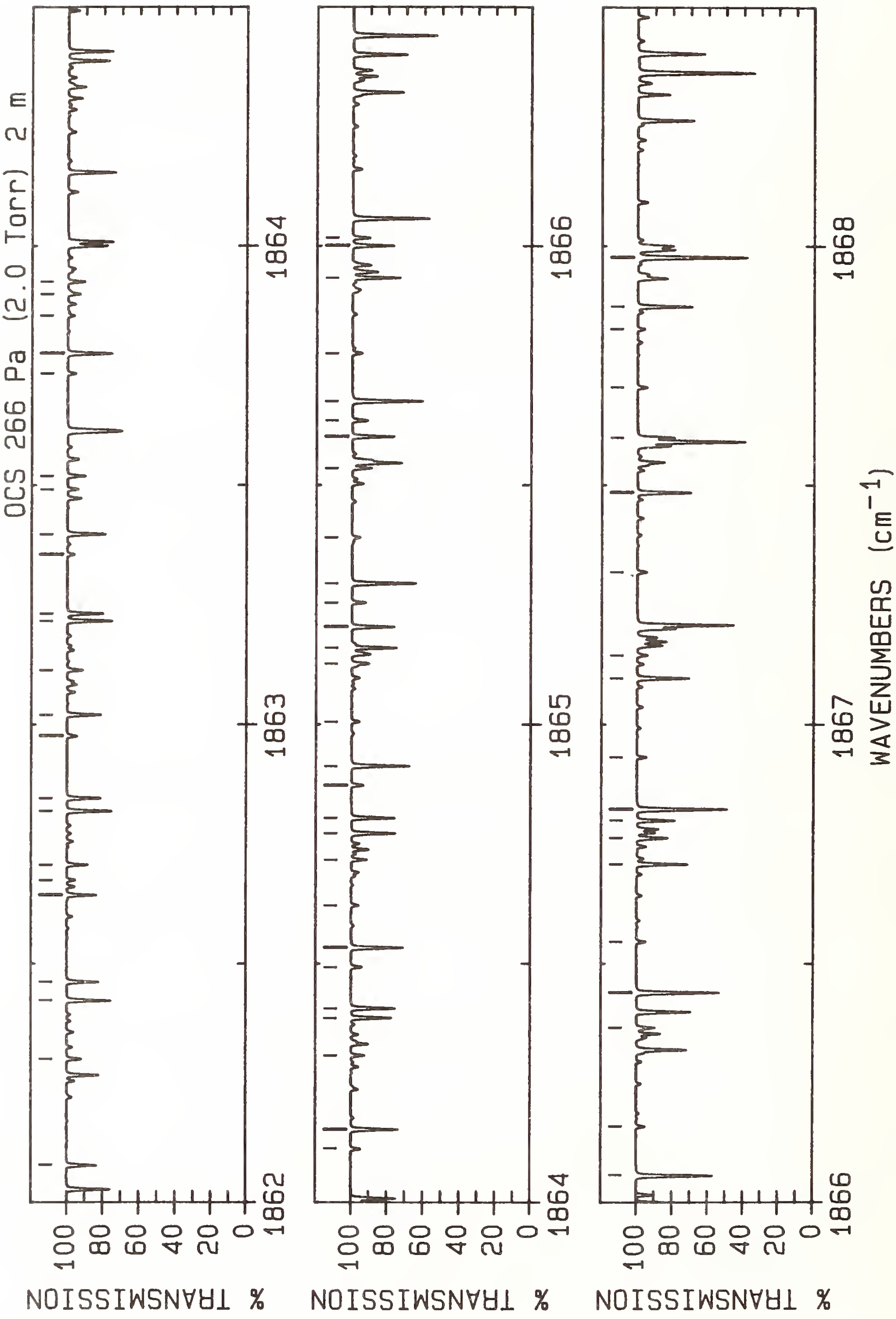
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1832.333 60(39)	789.15	0.398E-23	P(62)	T
2	1832.721 70(36)	764.12	0.444E-23	P(61)	T
3	1833.110 33(33)	739.49	0.494E-23	P(60)	T
4	1833.499 48(31)	715.26	0.548E-23	P(59)	T
5	1833.889 13(28)	691.43	0.607E-23	P(58)	T
6	1834.279 27(26)	668.01	0.670E-23	P(57)	T
7	1834.669 89(25)	644.99	0.739E-23	P(56)	T
8	1835.060 99(23)	622.38	0.812E-23	P(55)	T
9	1835.452 55(22)	600.16	0.890E-23	P(54)	T
10	1835.844 56(21)	578.35	0.974E-23	P(53)	T
11	1836.237 01(20)	556.95	0.106E-22	P(52)	T
12	1836.629 89(19)	535.94	0.116E-22	P(51)	T
13	1837.023 19(19)	515.34	0.125E-22	P(50)	T
14	1837.286 7	961.47	0.138E-23	P(47)	U
15	1837.416 90(18)	495.14	0.136E-22	P(49)	T
16	1837.700 1	942.46	0.148E-23	P(46)	U
17	1837.760 3	961.95	0.138E-23	P(47)	V
18	1837.811 00(17)	475.34	0.147E-22	P(48)	T
19	1838.113 4	923.85	0.159E-23	P(45)	U
20	1838.153 1	942.92	0.148E-23	P(46)	V
21	1838.205 49(17)	455.95	0.158E-22	P(47)	T
22	1838.526 5	905.65	0.170E-23	P(44)	U
23	1838.546 3	924.30	0.158E-23	P(45)	V
24	1838.600 36(16)	436.96	0.170E-22	P(46)	T
25	1838.939 4	887.85	0.181E-23	P(43)	U
26	1838.939 7	906.08	0.169E-23	P(44)	V
27	1838.995 59(16)	418.38	0.183E-22	P(45)	T
28	1839.333 4	888.26	0.180E-23	P(43)	V
29	1839.352 2	870.45	0.192E-23	P(42)	U
30	1839.391 18(15)	400.19	0.195E-22	P(44)	T
31	1839.727 5	870.84	0.192E-23	P(42)	V
32	1839.764 8	853.46	0.204E-23	P(41)	U
33	1839.787 12(14)	382.42	0.208E-22	P(43)	T
34	1840.121 8	853.84	0.203E-23	P(41)	V
35	1840.177 3	836.87	0.215E-23	P(40)	U
36	1840.183 39(14)	365.04	0.222E-22	P(42)	T
37	1840.516 4	837.23	0.215E-23	P(40)	V
38	1840.580 00(13)	348.07	0.235E-22	P(41)	T
39	1840.589 6	820.69	0.227E-23	P(39)	U
40	1840.911 3	821.03	0.227E-23	P(39)	V
41	1840.976 91(12)	331.50	0.249E-22	P(40)	T
42	1841.001 7	804.91	0.239E-23	P(38)	U
43	1841.306 5	805.23	0.239E-23	P(38)	V
44	1841.374 14(12)	315.33	0.263E-22	P(39)	T
45	1841.413 7	789.54	0.251E-23	P(37)	U
46	1841.702 0	789.84	0.251E-23	P(37)	V
47	1841.771 67(11)	299.57	0.277E-22	P(38)	T
48	1841.825 5	774.57	0.263E-23	P(36)	U
49	1842.097 8	774.86	0.262E-23	P(36)	V
50	1842.169 48(11)	284.21	0.291E-22	P(37)	T
51	1842.237 1	760.00	0.274E-23	P(35)	U
52	1842.272 39(35)	2103.56	0.148E-23	P(78)	D
53	1842.493 9	760.27	0.274E-23	P(35)	V
54	1842.567 58(11)	269.26	0.305E-22	P(36)	T
55	1842.632 64(32)	2072.09	0.171E-23	P(77)	D
56	1842.648 5	745.84	0.286E-23	P(34)	U
57	1842.890 2	746.10	0.285E-23	P(34)	V
58	1842.965 95(10)	254.71	0.318E-22	P(35)	T
59	1842.993 82(30)	2041.03	0.197E-23	P(76)	D
60	1843.059 8	732.08	0.296E-23	P(33)	U
61	1843.286 8	732.32	0.296E-23	P(33)	V
62	1843.355 92(28)*	2010.36	0.226E-23	P(75)	D
63	1843.364 59(10)	240.56	0.331E-22	P(34)	T
64	1843.470 9	718.73	0.307E-23	P(32)	U
65	1843.683 7	718.95	0.306E-23	P(32)	V
66	1843.718 95(27)*	1980.10	0.260E-23	P(74)	D
67	1843.763 48(10)	226.82	0.344E-22	P(33)	T
68	1843.881 8	705.77	0.316E-23	P(31)	U


OCS 266 Pa (2.0 Torr) 16 m
% TRANSMISSION
100
80
60
40
20
0
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1844.162 63(10)	213.48	0.356E-22	P(32)	T	36	1848.518 16(24)*	1623.25	0.126E-22	P(61)	D
2	1844.447 72(25)*	1920.78	0.339E-23	P(72)	D	37	1848.567 76(9)	93.41	0.421E-22	P(21)	T
3	1844.562 02(10)	200.54	0.368E-22	P(31)	T	38	1848.798 6	581.93	0.354E-23	P(19)	U
4	1844.813 46(25)*	1891.72	0.387E-23	P(71)	D	39	1848.868 5	582.01	0.354E-23	P(19)	V
5	1844.961 64(10)	188.01	0.378E-22	P(30)	T	40	1848.893 14(24)*	1598.62	0.140E-22	P(60)	D
6	1845.180 09(25)*	1863.06	0.440E-23	P(70)	D	41	1848.969 39(9)	84.92	0.418E-22	P(20)	T
7	1845.361 49(10)	175.88	0.388E-22	P(29)	T	42	1849.207 1	574.24	0.348E-23	P(18)	U
8	1845.547 59(25)*	1834.81	0.499E-23	P(69)	D	43	1849.268 89(24)*	1574.38	0.156E-22	P(59)	D
9	1845.761 56(10)	164.16	0.397E-22	P(28)	T	44	1849.269 2	574.31	0.348E-23	P(18)	V
10	1845.915 97(24)*	1806.96	0.565E-23	P(68)	D	45	1849.371 19(9)	76.83	0.413E-22	P(19)	T
11	1845.933 7	647.09	0.353E-23	P(26)	U	46	1849.645 41(24)*	1550.55	0.172E-22	P(58)	D
12	1846.071 0	647.25	0.353E-23	P(26)	V	47	1849.773 16(9)	69.15	0.406E-22	P(18)	T
13	1846.161 85(10)	152.84	0.405E-22	P(27)	T	48	1850.022 67(24)*	1527.13	0.190E-22	P(57)	D
14	1846.285 21(24)*	1779.51	0.638E-23	P(67)	D	49	1850.023 5	560.07	0.332E-23	P(16)	U
15	1846.469 8	636.71	0.357E-23	P(25)	V	50	1850.089 6	2018.52	0.350E-23	P(56)	H
16	1846.562 35(10)	141.93	0.411E-22	P(26)	T	51	1850.175 29(9)	61.87	0.398E-22	P(17)	T
17	1846.655 30(24)*	1752.46	0.719E-23	P(66)	D	52	1850.400 68(24)*	1504.10	0.209E-22	P(56)	D
18	1846.753 2	626.45	0.361E-23	P(24)	U	53	1850.493 9	1995.86	0.384E-23	P(55)	H
19	1846.868 9	626.58	0.360E-23	P(24)	V	54	1850.577 57(9)	55.00	0.387E-22	P(16)	T
20	1846.963 05(10)	131.41	0.416E-22	P(25)	T	55	1850.779 42(24)*	1481.48	0.230E-22	P(55)	D
21	1847.026 23(24)*	1725.81	0.809E-23	P(65)	D	56	1850.898 3	1973.61	0.420E-23	P(54)	H
22	1847.162 6	616.74	0.362E-23	P(23)	U	57	1850.980 02(9)	48.53	0.375E-22	P(15)	T
23	1847.268 3	616.86	0.362E-23	P(23)	V	58	1851.158 87(23)*	1459.26	0.252E-22	P(54)	D
24	1847.363 94(10)	121.31	0.420E-22	P(24)	T	59	1851.302 9	1951.77	0.459E-23	P(53)	H
25	1847.397 99(24)*	1699.57	0.907E-23	P(64)	D	60	1851.382 61(9)	42.46	0.360E-22	P(14)	T
26	1847.571 9	607.43	0.363E-23	P(22)	U	61	1851.539 02(23)*	1437.45	0.275E-22	P(53)	D
27	1847.668 0	607.54	0.362E-23	P(22)	V	62	1851.707 6	1930.32	0.500E-23	P(52)	H
28	1847.765 03(10)	111.60	0.422E-22	P(23)	T	63	1851.785 35(9)	36.80	0.344E-22	P(13)	T
29	1847.770 58(24)*	1673.73	0.102E-22	P(63)	D	64	1851.919 86(23)*	1416.04	0.300E-22	P(52)	D
30	1847.981 0	598.52	0.361E-23	P(21)	U	65	1852.188 23(9)	31.54	0.326E-22	P(12)	T
31	1848.067 9	598.62	0.361E-23	P(21)	V	66	1852.301 39(23)*	1395.03	0.326E-22	P(51)	D
32	1848.143 97(24)*	1648.29	0.113E-22	P(62)	D	67	1852.591 25(10)	26.69	0.306E-22	P(11)	T
33	1848.166 31(9)	102.30	0.422E-22	P(22)	T	68	1852.644 89(19)*	982.53	0.701E-23	P(70)	P
34	1848.389 9	590.02	0.359E-23	P(20)	U	69	1852.683 58(23)*	1374.42	0.354E-22	P(50)	D
35	1848.468 1	590.11	0.359E-23	P(20)	V	70	1852.922 5	1868.42	0.638E-23	P(49)	H

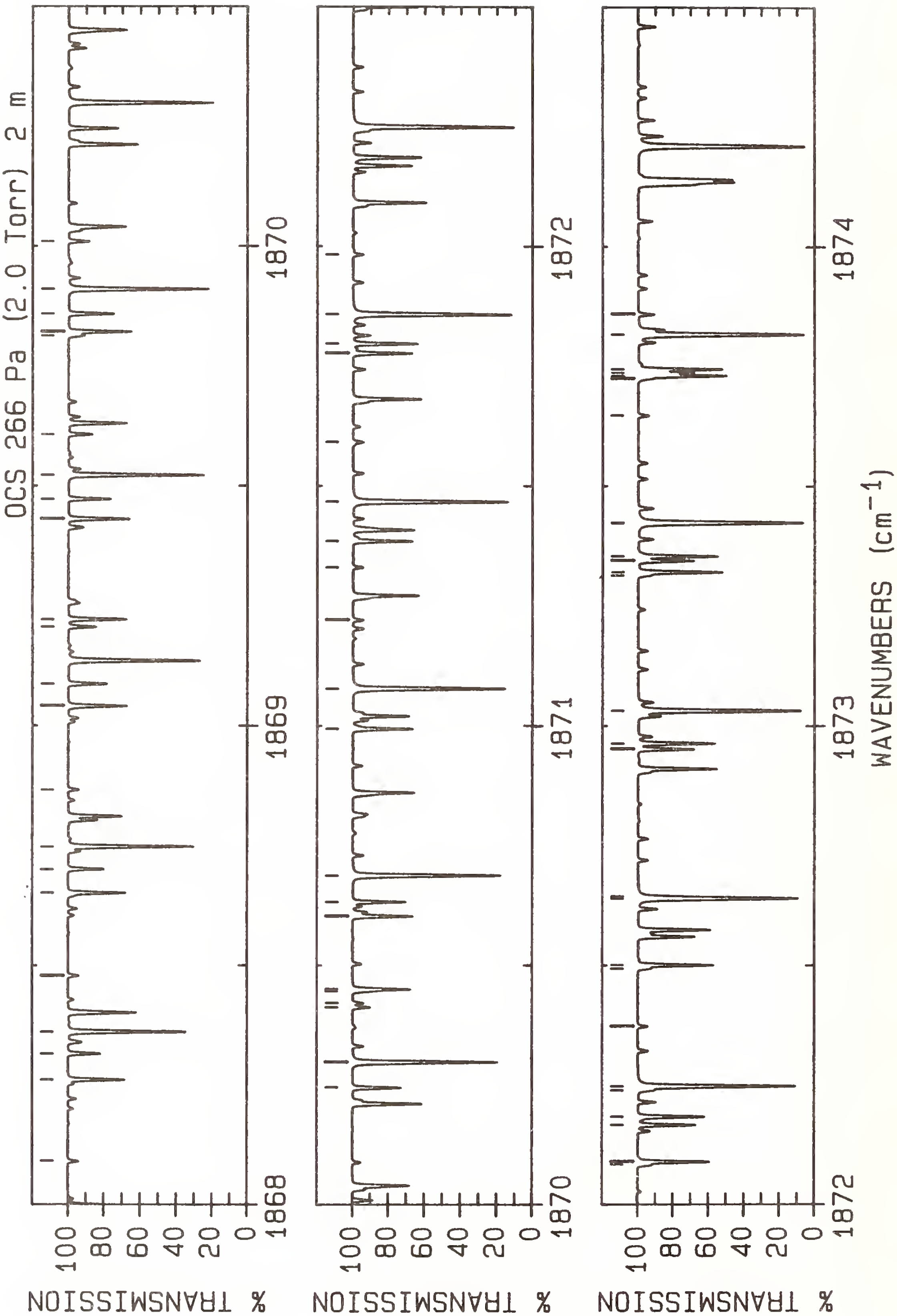

OCS 266 Pa (2.0 Torr) 12 m
% TRANSMISSION
100 80 60 40 20 0
1853 1854 1855 1856
1856 1857 1858 1859
1859 1860 1861 1862
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1853.066 43(23)*	1354.22	0.384E-22	P(49)	D	36	1858.918 38(9)*	1480.56	0.168E-22	P(85)	A
2	1853.397 70(10)	18.20	0.261E-22	P(9)	T	37	1859.024 14(18)*	566.04	0.415E-22	P(53)	P
3	1853.449 92(23)*	1334.42	0.414E-22	P(48)	D	38	1859.056 80(12)	4.04	0.156E-22	R(4)	T
4	1853.758 17(18)*	900.76	0.101E-22	P(67)	P	39	1859.272 00(23)*	1085.84	0.967E-22	P(33)	D
5	1853.801 13(11)	14.56	0.236E-22	P(8)	T	40	1859.287 45(9)*	1446.18	0.197E-22	P(84)	A
6	1853.834 04(23)*	1315.02	0.446E-22	P(47)	D	41	1859.404 29(18)*	545.09	0.452E-22	P(52)	P
7	1854.130 54(18)*	874.29	0.113E-22	P(66)	P	42	1859.461 89(11)	6.07	0.185E-22	R(5)	T
8	1854.204 68(11)	11.32	0.210E-22	P(7)	T	43	1859.784 92(18)*	524.53	0.490E-22	P(51)	P
9	1854.218 79(23)*	1296.03	0.480E-22	P(46)	D	44	1859.867 10(11)	8.49	0.213E-22	R(6)	T
10	1854.503 52(18)*	848.22	0.126E-22	P(65)	P	45	1860.027 91(9)*	1378.63	0.269E-22	P(82)	A
11	1854.877 12(18)*	822.54	0.141E-22	P(64)	P	46	1860.057 12(23)*	1059.56	0.103E-21	P(31)	D
12	1854.990 09(23)*	1259.25	0.550E-22	P(44)	D	47	1860.166 02(18)*	504.37	0.531E-22	P(50)	P
13	1855.012 17(12)	6.07	0.154E-22	P(5)	T	48	1860.272 42(10)	11.32	0.241E-22	R(7)	T
14	1855.251 31(18)*	797.25	0.158E-22	P(63)	P	49	1860.360 71(9)	966.45	0.107E-22	P(47)	Q
15	1855.376 63(23)*	1241.47	0.587E-22	P(43)	D	50	1860.399 29(9)*	1345.46	0.313E-22	P(81)	A
16	1855.416 10(12)	4.04	0.124E-22	P(4)	T	51	1860.450 37(23)*	1047.02	0.106E-21	P(30)	D
17	1855.626 10(18)*	772.36	0.176E-22	P(62)	P	52	1860.547 59(18)*	484.60	0.573E-22	P(49)	P
18	1856.001 47(18)*	747.86	0.195E-22	P(61)	P	53	1860.677 86(10)	14.56	0.267E-22	R(8)	T
19	1856.151 43(23)*	1207.11	0.662E-22	P(41)	D	54	1860.759 84(9)	947.84	0.114E-22	P(46)	Q
20	1856.377 41(18)*	723.75	0.216E-22	P(60)	P	55	1860.771 43(9)*	1312.69	0.364E-22	P(80)	A
21	1856.539 66(23)*	1190.54	0.701E-22	P(40)	D	56	1860.802 34(10)	966.90	0.107E-22	P(47)	R
22	1856.753 91(18)*	700.04	0.239E-22	P(59)	P	57	1860.844 08(23)*	1034.89	0.109E-21	P(29)	D
23	1856.928 44(23)*	1174.37	0.740E-22	P(39)	D	58	1860.929 61(18)*	465.23	0.618E-22	P(48)	P
24	1857.130 96(18)*	676.72	0.264E-22	P(58)	P	59	1861.083 41(10)	18.20	0.291E-22	R(9)	T
25	1857.317 76(23)*	1158.61	0.779E-22	P(38)	D	60	1861.144 33(9)*	1280.32	0.422E-22	P(79)	A
26	1857.508 55(18)*	653.80	0.290E-22	P(57)	P	61	1861.158 97(9)	929.63	0.122E-22	P(45)	Q
27	1857.707 59(23)*	1143.24	0.818E-22	P(37)	D	62	1861.182 44(9)	948.28	0.114E-22	P(46)	R
28	1857.815 86(9)*	1586.11	0.103E-22	P(88)	A	63	1861.238 24(23)*	1023.17	0.112E-21	P(28)	D
29	1857.886 67(18)*	631.27	0.318E-22	P(56)	P	64	1861.312 07(18)*	446.25	0.664E-22	P(47)	P
30	1858.097 95(23)*	1128.29	0.856E-22	P(36)	D	65	1861.489 08(9)	22.24	0.314E-22	R(10)	T
31	1858.182 58(9)*	1550.53	0.121E-22	P(87)	A	66	1861.517 97(9)*	1248.35	0.489E-22	P(78)	A
32	1858.265 32(18)*	609.13	0.349E-22	P(55)	P	67	1861.632 83(23)*	1011.84	0.114E-21	P(27)	D
33	1858.488 81(23)*	1113.73	0.894E-22	P(35)	D	68	1861.694 97(18)*	427.66	0.712E-22	P(46)	P
34	1858.550 09(9)*	1515.34	0.143E-22	P(86)	A	69	1861.858 76(14)*	1616.30	0.161E-22	P(73)	B
35	1858.880 16(23)*	1099.58	0.931E-22	P(34)	D	70	1861.943 88(9)	912.21	0.130E-22	P(44)	R

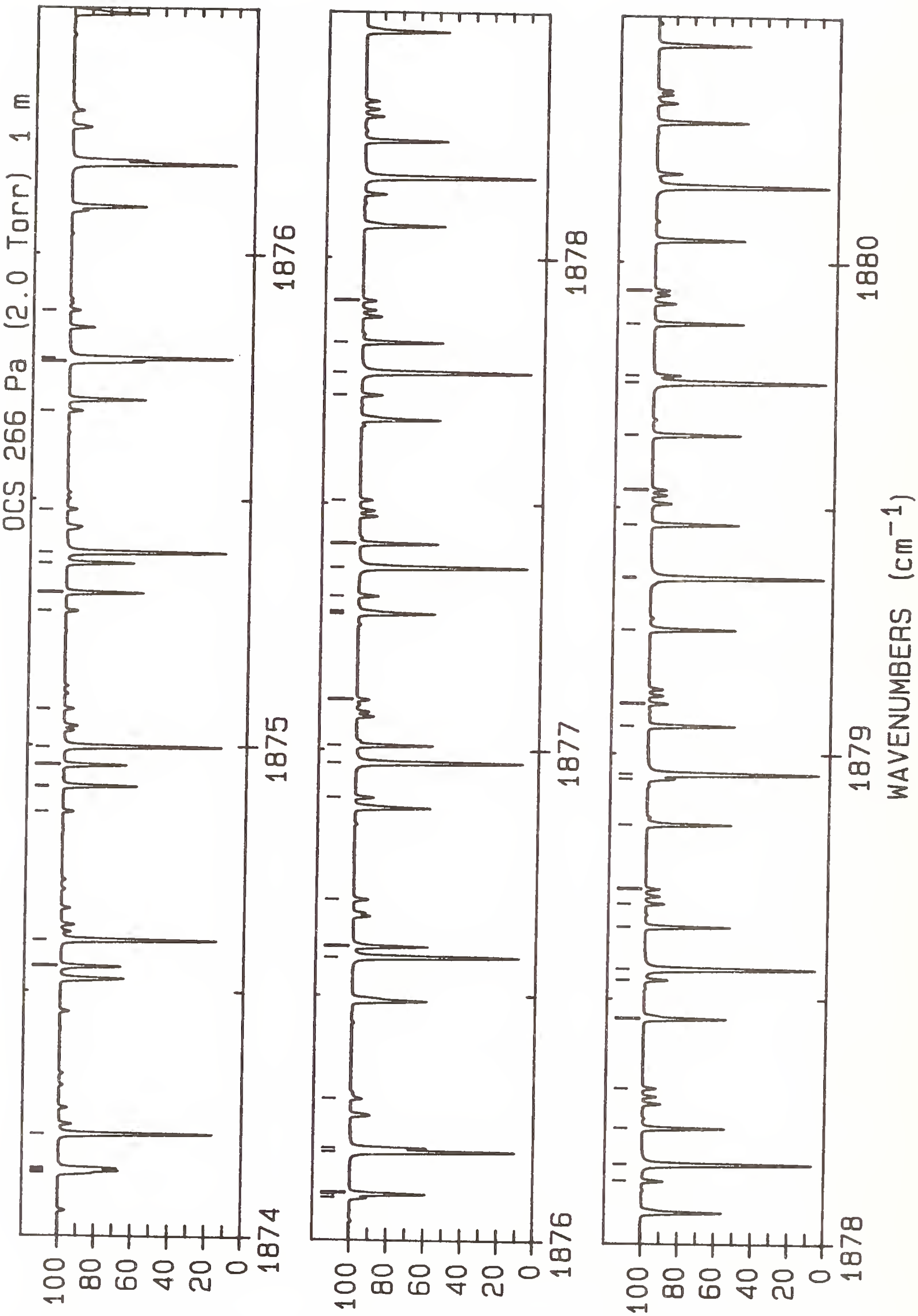


OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1862
1863
1864
% TRANSMISSION
100
80
60
40
20
0
1864
1865
1866
% TRANSMISSION
100
80
60
40
20
0
1866
1867
1868
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1862.078 29(18)*	409.47	0.762E-22	P(45)	P	36	1864.913 14(9)*	978.78	0.165E-21	P(69)	A
2	1862.300 77(9)	31.54	0.355E-22	R(12)	T	37	1865.005 51(7)	783.77	0.199E-22	P(36)	R
3	1862.423 31(23)*	990.41	0.117E-21	P(25)	D	38	1865.126 30(13)*	1390.93	0.433E-22	P(65)	B
4	1862.462 03(18)*	391.68	0.813E-22	P(44)	P	39	1865.159 12(18)*	278.16	0.119E-21	P(37)	P
5	1862.643 31(9)*	1154.87	0.748E-22	P(75)	A	40	1865.202 82(23)*	928.13	0.114E-21	P(18)	D
6	1862.674 61(13)*	1557.54	0.209E-22	P(71)	B	41	1865.253 77(13)*	1445.81	0.342E-22	P(67)	C
7	1862.706 79(9)	36.80	0.373E-22	R(13)	T	42	1865.293 83(9)*	950.85	0.186E-21	P(68)	A
8	1862.819 17(23)*	980.30	0.118E-21	P(24)	D	43	1865.389 96(7)	769.50	0.208E-22	P(35)	R
9	1862.846 17(18)*	374.27	0.865E-22	P(43)	P	44	1865.535 40(13)*	1364.57	0.485E-22	P(64)	B
10	1862.976 03(13)*	1617.44	0.161E-22	P(73)	C	45	1865.601 45(23)*	920.85	0.112E-21	P(17)	D
11	1863.019 87(9)*	1124.52	0.857E-22	P(74)	A	46	1865.635 02(13)*	1418.62	0.385E-22	P(66)	C
12	1863.112 93(9)	42.46	0.389E-22	R(14)	T	47	1865.675 18(9)*	923.31	0.210E-21	P(67)	A
13	1863.215 46(23)*	970.60	0.119E-21	P(23)	D	48	1865.774 80(7)	755.63	0.216E-22	P(34)	R
14	1863.230 72(18)*	357.27	0.919E-22	P(42)	P	49	1865.932 98(18)*	249.29	0.130E-21	P(35)	P
15	1863.354 47(13)*	1587.83	0.184E-22	P(72)	C	50	1866.000 45(23)*	913.98	0.109E-21	P(16)	D
16	1863.397 14(9)*	1094.57	0.981E-22	P(73)	A	51	1866.016 74(13)*	1391.83	0.432E-22	P(65)	C
17	1863.491 21(13)*	1500.39	0.269E-22	P(69)	B	52	1866.057 17(9)*	896.18	0.237E-21	P(66)	A
18	1863.519 19(9)	48.53	0.402E-22	R(15)	T	53	1866.160 02(7)	742.14	0.224E-22	P(33)	R
19	1863.733 39(13)*	1558.62	0.209E-22	P(71)	C	54	1866.366 62(10)	102.30	0.446E-22	R(22)	T
20	1863.775 11(9)*	1065.02	0.112E-21	P(72)	A	55	1866.439 80(9)*	869.46	0.266E-21	P(65)	A
21	1863.854 46(8)	828.97	0.173E-22	P(39)	R	56	1866.545 61(6)	729.06	0.231E-22	P(32)	R
22	1863.899 77(13)*	1472.41	0.304E-22	P(68)	B	57	1866.708 19(18)*	221.99	0.140E-21	P(33)	P
23	1863.925 58(9)	55.00	0.414E-22	R(16)	T	58	1866.763 34(13)*	1287.93	0.672E-22	P(61)	B
24	1864.112 78(13)*	1529.81	0.237E-22	P(70)	C	59	1866.799 56(24)*	901.44	0.101E-21	P(14)	D
25	1864.153 77(9)*	1035.87	0.128E-21	P(71)	A	60	1866.823 05(9)*	843.13	0.299E-21	P(64)	A
26	1864.308 47(13)*	1444.85	0.343E-22	P(67)	B	61	1866.931 57(6)	716.37	0.239E-22	P(31)	R
27	1864.386 65(18)*	308.62	0.108E-21	P(39)	P	62	1867.096 27(18)*	208.93	0.145E-21	P(32)	P
28	1864.406 71(23)*	943.90	0.117E-21	P(20)	D	63	1867.143 91(6)	703.89	0.245E-22	P(30)	Q
29	1864.492 64(13)*	1501.41	0.269E-22	P(69)	C	64	1867.317 91(6)	704.08	0.245E-22	P(30)	R
30	1864.533 12(9)*	1007.13	0.145E-21	P(70)	A	65	1867.484 68(18)*	196.27	0.149E-21	P(31)	P
31	1864.621 44(8)	798.44	0.191E-22	P(37)	R	66	1867.600 10(24)*	890.52	0.915E-22	P(12)	D
32	1864.717 32(13)*	1417.69	0.386E-22	P(66)	B	67	1867.704 62(6)	692.18	0.251E-22	P(29)	R
33	1864.772 71(18)*	293.19	0.114E-21	P(38)	P	68	1867.826 17(17)	1673.42	0.184E-22	P(55)	G
34	1864.804 57(23)*	935.82	0.116E-21	P(19)	D	69	1867.873 38(18)*	184.01	0.153E-21	P(30)	P
35	1864.872 97(13)*	1473.41	0.304E-22	P(68)	C	70	1867.976 47(9)*	766.58	0.416E-21	P(61)	A

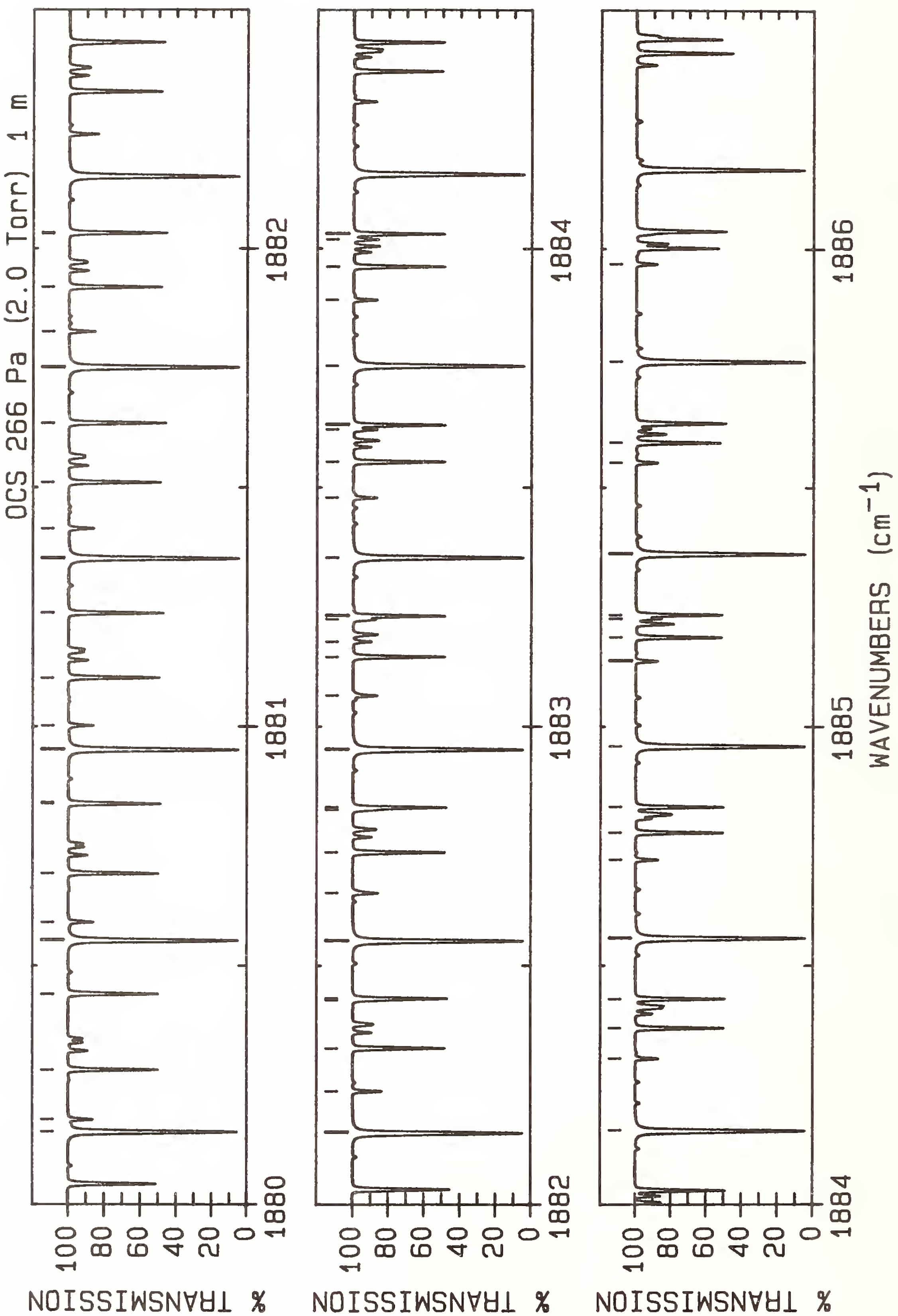

OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1868
1869
1870
1871
1872
1873
1874
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1868.091 70(6)	680.68	0.257E-22	P(28)	R	36	1871.329 76(20)	1519.78	0.258E-22	P(48)	E
2	1868.262 39(18)*	172.14	0.157E-21	P(29)	P	37	1871.384 60(19)*	91.42	0.169E-21	P(21)	P
3	1868.316 61(13)*	1239.61	0.825E-22	P(59)	C	38	1871.467 15(9)*	558.74	0.986E-21	P(52)	A
4	1868.362 12(9)*	741.87	0.462E-21	P(60)	A	39	1871.591 65(8)	595.02	0.264E-22	P(19)	R
5	1868.479 15(6)	669.58	0.261E-22	P(27)	R	40	1871.776 06(19)*	83.11	0.167E-21	P(20)	P
6	1868.651 70(18)*	160.67	0.160E-21	P(28)	P	41	1871.796 19(13)*	1038.59	0.186E-21	P(50)	C
7	1868.701 49(13)*	1215.65	0.911E-22	P(58)	C	42	1871.857 60(9)*	537.67	0.107E-20	P(51)	A
8	1868.748 35(9)*	717.57	0.512E-21	P(59)	A	43	1871.982 31(9)	587.48	0.259E-22	P(18)	R
9	1868.866 95(6)	658.87	0.265E-22	P(26)	R	44	1872.083 99(11)	269.26	0.318E-22	R(36)	T
10	1869.041 29(18)*	149.59	0.163E-21	P(27)	P	45	1872.090 79(13)*	997.88	0.218E-21	P(48)	B
11	1869.086 81(13)*	1192.10	0.101E-21	P(57)	C	46	1872.167 77(19)*	75.19	0.165E-21	P(19)	P
12	1869.205 40(24)*	873.53	0.663E-22	P(8)	D	47	1872.184 95(13)*	1018.28	0.202E-21	P(49)	C
13	1869.221 07(10)	175.88	0.406E-22	R(29)	T	48	1872.240 04(20)	1481.18	0.300E-22	P(46)	F
14	1869.221 34(13)*	1145.56	0.122E-21	P(55)	B	49	1872.248 53(9)*	517.00	0.116E-20	P(50)	A
15	1869.431 16(18)*	138.90	0.166E-21	P(26)	P	50	1872.373 31(9)	580.35	0.254E-22	P(17)	R
16	1869.472 57(13)*	1168.96	0.111E-21	P(56)	C	51	1872.493 78(12)	284.21	0.303E-22	R(37)	T
17	1869.522 49(9)*	670.17	0.625E-21	P(57)	A	52	1872.500 75(13)*	978.40	0.235E-21	P(47)	B
18	1869.607 58(24)*	870.29	0.589E-22	P(7)	D	53	1872.639 93(9)*	496.74	0.126E-20	P(49)	A
19	1869.812 49(17)	1565.68	0.285E-22	P(50)	G	54	1872.644 58(20)	1462.47	0.321E-22	P(45)	F
20	1869.821 32(18)*	128.62	0.168E-21	P(25)	P	55	1872.951 91(19)*	60.55	0.159E-21	P(17)	P
21	1869.858 76(13)*	1146.22	0.121E-21	P(55)	C	56	1872.963 71(13)*	978.88	0.234E-21	P(47)	C
22	1869.910 38(9)*	647.08	0.688E-21	P(56)	A	57	1873.031 78(9)*	476.88	0.136E-20	P(48)	A
23	1870.010 10(24)*	867.46	0.512E-22	P(6)	D	58	1873.314 03(13)	315.33	0.274E-22	R(39)	T
24	1870.245 39(13)*	1123.88	0.133E-21	P(54)	C	59	1873.320 65(13)*	940.66	0.270E-21	P(45)	B
25	1870.298 80(9)*	624.39	0.755E-21	P(55)	A	60	1873.344 34(19)*	53.83	0.155E-21	P(16)	P
26	1870.412 95(25)*	865.03	0.432E-22	P(5)	D	61	1873.353 71(13)*	959.78	0.252E-21	P(46)	C
27	1870.421 79(7)	620.01	0.271E-22	P(22)	R	62	1873.423 37(17)	1397.33	0.534E-22	P(41)	G
28	1870.446 90(10)	213.48	0.372E-22	R(32)	T	63	1873.424 09(9)*	457.42	0.147E-20	P(47)	A
29	1870.450 99(13)*	1079.84	0.158E-21	P(52)	B	64	1873.647 65(25)*	860.18	0.266E-22	R(2)	D
30	1870.602 43(18)*	109.23	0.170E-21	P(23)	P	65	1873.724 49(14)	331.50	0.259E-22	R(40)	T
31	1870.632 45(13)*	1101.95	0.145E-21	P(53)	C	66	1873.730 58(13)*	922.39	0.289E-21	P(44)	B
32	1870.687 75(9)*	602.10	0.827E-21	P(54)	A	67	1873.737 00(19)*	47.49	0.150E-21	P(15)	P
33	1870.993 39(18)*	100.13	0.170E-21	P(22)	P	68	1873.744 13(13)*	941.10	0.270E-21	P(45)	C
34	1871.077 20(9)*	580.22	0.905E-21	P(53)	A	69	1873.816 84(9)*	438.37	0.158E-20	P(46)	A
35	1871.219 66(25)*	861.39	0.264E-22	P(3)	D	70	1873.858 86(20)	1408.78	0.389E-22	P(42)	F


OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1874
1875
1876
% TRANSMISSION
100
80
60
40
20
0
1876
1877
1878
% TRANSMISSION
100
80
60
40
20
0
1878
1879
1880
WAVENUMBERS (cm^{-1})

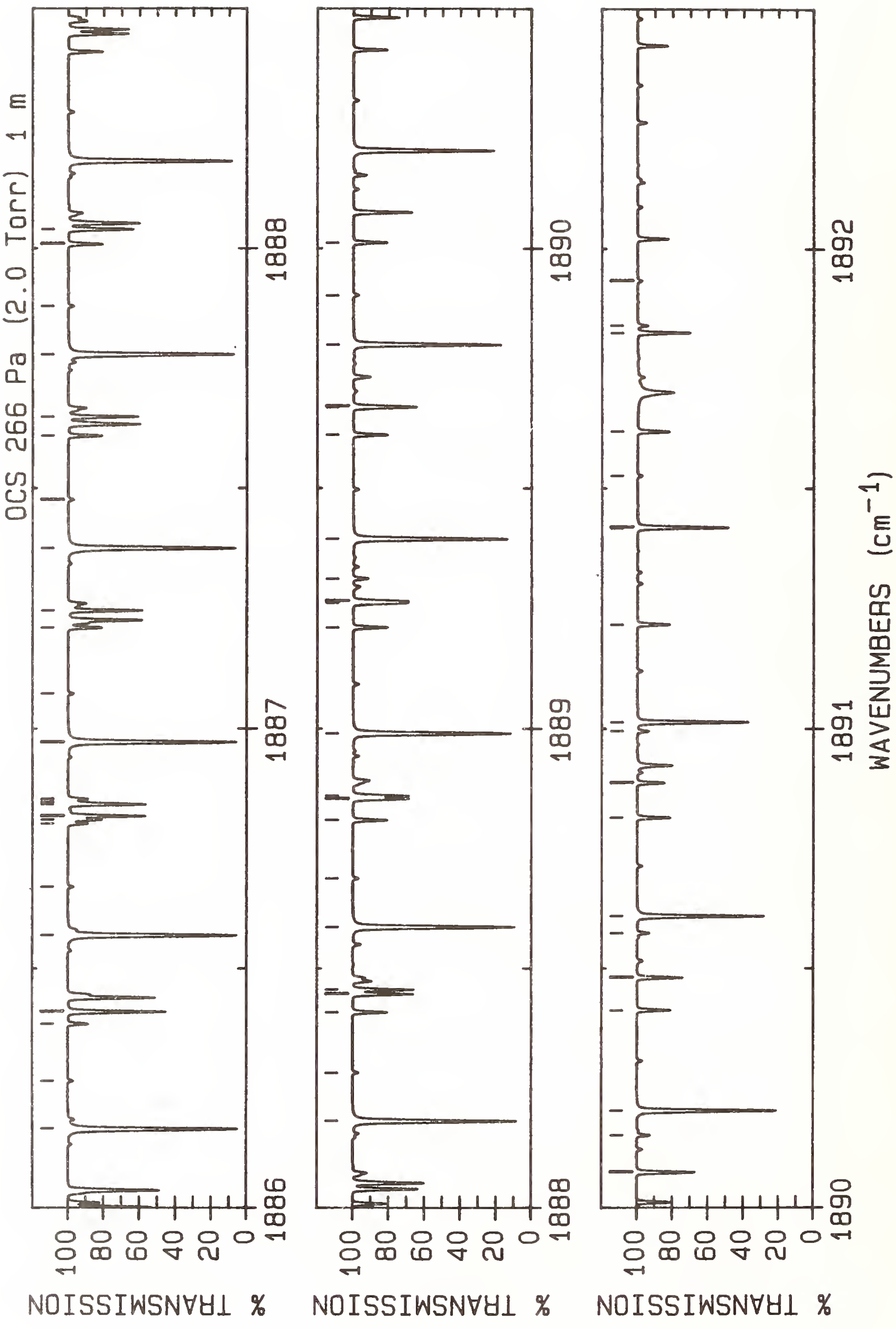
LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1874.129 88(19)*	41.56	0.144E-21	P(14)	P
2	1874.134 95(13)*	922.82	0.289E-21	P(44)	C
3	1874.140 48(13)*	904.54	0.308E-21	P(43)	B
4	1874.210 02(9)*	419.73	0.169E-20	P(45)	A
5	1874.550 36(13)*	887.08	0.328E-21	P(42)	B
6	1874.603 63(9)*	401.49	0.181E-20	P(44)	A
7	1874.866 03(24)*	865.03	0.520E-22	R(5)	D
8	1874.916 33(19)*	30.87	0.130E-21	P(12)	P
9	1874.917 80(13)*	887.47	0.327E-21	P(42)	C
10	1874.960 21(13)*	870.04	0.348E-21	P(41)	B
11	1874.997 64(9)*	383.65	0.193E-20	P(43)	A
12	1875.074 04(19)	1358.74	0.461E-22	P(39)	F
13	1875.272 80(24)*	867.46	0.599E-22	R(6)	D
14	1875.309 83(13)*	870.40	0.347E-21	P(41)	C
15	1875.309 88(19)*	26.12	0.122E-21	P(11)	P
16	1875.370 03(13)*	853.39	0.368E-21	P(40)	B
17	1875.392 06(9)*	366.22	0.205E-20	P(42)	A
18	1875.479 28(19)	1342.87	0.486E-22	P(38)	F
19	1875.679 90(24)*	870.29	0.676E-22	R(7)	D
20	1875.779 81(13)*	837.16	0.388E-21	P(39)	B
21	1875.786 88(9)*	349.19	0.218E-20	P(41)	A
22	1875.884 62(19)	1327.41	0.510E-22	P(37)	F
23	1876.087 32(24)*	873.53	0.749E-22	R(8)	D
24	1876.095 08(13)*	837.49	0.388E-21	P(39)	C
25	1876.097 62(19)*	17.81	0.104E-21	P(9)	P
26	1876.182 08(9)*	332.57	0.230E-20	P(40)	A
27	1876.189 54(13)*	821.33	0.409E-21	P(38)	B
28	1876.290 04(19)	1312.36	0.534E-22	P(36)	F
29	1876.577 66(9)*	316.35	0.243E-20	P(39)	A
30	1876.599 24(13)*	805.90	0.429E-21	P(37)	B
31	1876.695 54(19)	1297.71	0.557E-22	P(35)	F
32	1876.903 14(24)*	881.21	0.882E-22	R(10)	D
33	1876.973 61(9)*	300.54	0.256E-20	P(38)	A
34	1877.008 88(13)*	790.88	0.449E-21	P(36)	B
35	1877.101 12(19)	1283.47	0.580E-22	P(34)	F

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1877.275 89(13)*	791.16	0.449E-21	P(36)	C
37	1877.280 80(20)*	8.31	0.725E-22	P(6)	P
38	1877.311 55(24)*	885.66	0.942E-22	R(11)	D
39	1877.369 92(9)*	285.13	0.269E-20	P(37)	A
40	1877.418 47(13)*	776.26	0.469E-21	P(35)	B
41	1877.506 78(19)	1269.63	0.602E-22	P(33)	F
42	1877.720 28(24)*	890.52	0.996E-22	R(12)	D
43	1877.766 58(9)*	270.13	0.281E-20	P(36)	A
44	1877.828 00(13)*	762.05	0.488E-21	P(34)	B
45	1877.912 52(19)	1256.20	0.623E-22	P(32)	F
46	1878.129 34(24)*	895.77	0.105E-21	R(13)	D
47	1878.163 59(9)*	255.53	0.294E-20	P(35)	A
48	1878.237 47(13)*	748.25	0.507E-21	P(33)	B
49	1878.318 33(19)	1243.18	0.644E-22	P(31)	F
50	1878.460 17(13)*	748.49	0.506E-21	P(33)	C
51	1878.538 74(23)*	901.44	0.109E-21	R(14)	D
52	1878.560 93(9)*	241.34	0.306E-20	P(34)	A
53	1878.646 88(13)*	734.85	0.525E-21	P(32)	B
54	1878.693 95(17)	1212.24	0.904E-22	P(28)	G
55	1878.724 21(19)	1230.57	0.662E-22	P(30)	F
56	1878.855 69(13)*	735.07	0.524E-21	P(32)	C
57	1878.948 47(23)*	907.50	0.113E-21	R(15)	D
58	1878.958 61(9)*	227.55	0.318E-20	P(33)	A
59	1879.056 23(13)*	721.86	0.542E-21	P(31)	B
60	1879.101 01(17)	1200.85	0.922E-22	P(27)	G
61	1879.251 59(13)*	722.07	0.541E-21	P(31)	C
62	1879.356 61(9)*	214.17	0.329E-20	P(32)	A
63	1879.358 55(23)*	913.98	0.116E-21	R(16)	D
64	1879.465 50(13)*	709.27	0.557E-21	P(30)	B
65	1879.536 17(19)	1206.55	0.694E-22	P(28)	F
66	1879.647 86(13)*	709.47	0.557E-21	P(30)	C
67	1879.754 93(9)*	201.19	0.340E-20	P(31)	A
68	1879.768 96(23)*	920.85	0.119E-21	R(17)	D
69	1879.874 71(13)*	697.09	0.572E-21	P(29)	B
70	1879.942 24(19)	1195.16	0.708E-22	P(27)	F



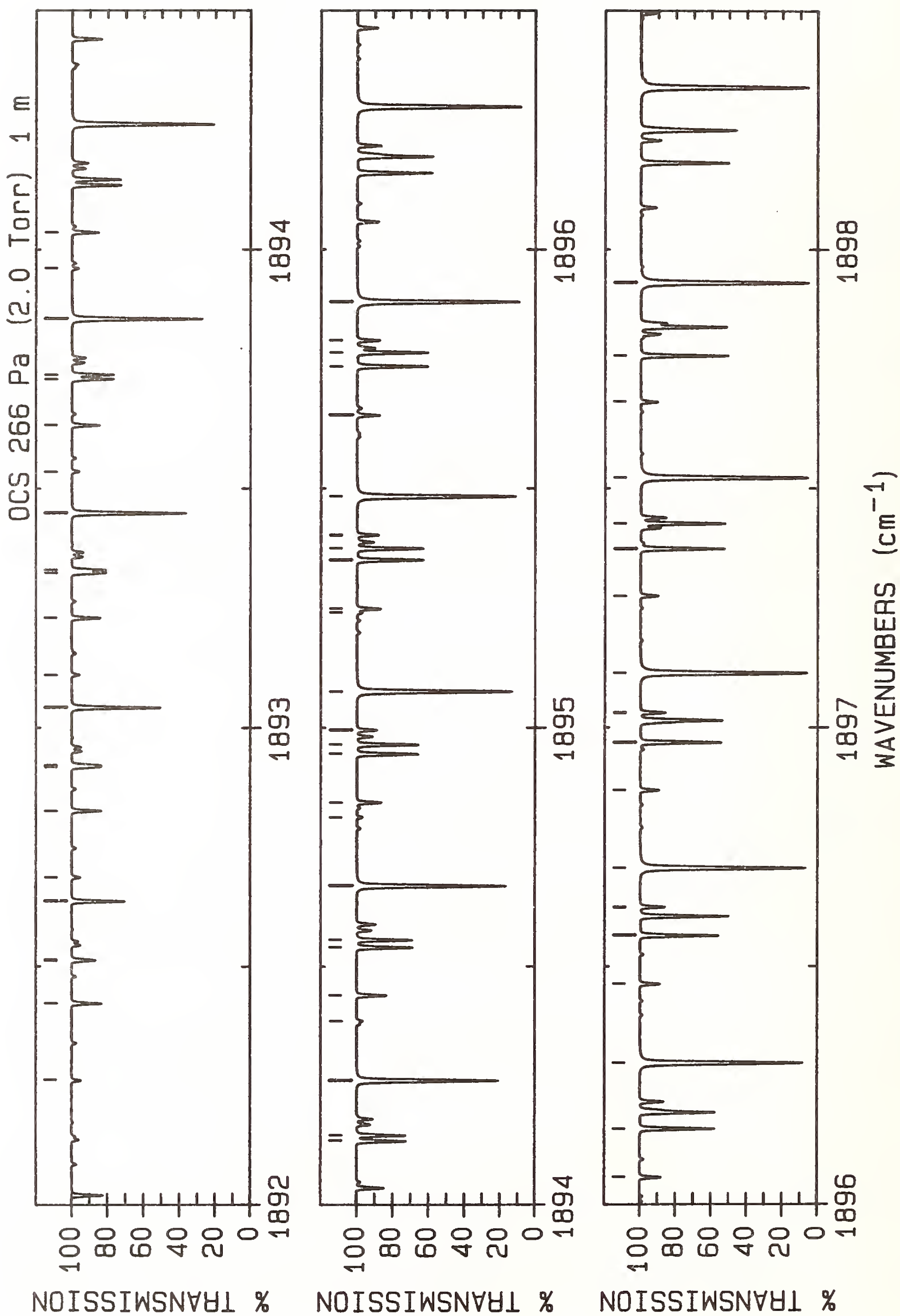
OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1880
1881
1882
1883
1884
1885
1886
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1880.153 55(9)*	188.62	0.350E-20	P(30)	A
2	1880.179 71(23)*	928.13	0.121E-21	R(18)	D
3	1880.283 84(13)*	685.31	0.585E-21	P(28)	B
4	1880.441 51(13)*	685.49	0.584E-21	P(28)	C
5	1880.552 48(9)*	176.45	0.359E-20	P(29)	A
6	1880.590 82(23)*	935.82	0.123E-21	R(19)	D
7	1880.692 89(13)*	673.94	0.596E-21	P(27)	B
8	1880.838 89(13)*	674.10	0.595E-21	P(27)	C
9	1880.841 16(20)*	1.19	0.376E-22	R(2)	P
10	1880.951 71(9)*	164.69	0.367E-20	P(28)	A
11	1881.002 27(23)*	943.90	0.124E-21	R(20)	D
12	1881.101 86(13)*	662.98	0.605E-21	P(26)	B
13	1881.236 64(13)*	663.13	0.605E-21	P(26)	C
14	1881.237 74(20)*	2.38	0.499E-22	R(3)	P
15	1881.351 22(9)*	153.34	0.374E-20	P(27)	A
16	1881.414 07(23)*	952.40	0.125E-21	R(21)	D
17	1881.510 75(13)*	652.42	0.613E-21	P(25)	B
18	1881.634 50(20)*	3.96	0.619E-22	R(4)	P
19	1881.634 75(13)*	652.56	0.612E-21	P(25)	C
20	1881.751 02(9)*	142.38	0.380E-20	P(26)	A
21	1881.826 24(23)*	961.29	0.125E-21	R(22)	D
22	1881.919 56(13)*	642.27	0.618E-21	P(24)	B
23	1882.031 45(20)*	5.94	0.735E-22	R(5)	P
24	1882.033 22(13)*	642.40	0.618E-21	P(24)	C
25	1882.151 10(9)*	131.84	0.385E-20	P(25)	A
26	1882.238 76(23)*	970.60	0.125E-21	R(23)	D
27	1882.328 28(13)*	632.52	0.621E-21	P(23)	B
28	1882.428 60(20)*	8.31	0.848E-22	R(6)	P
29	1882.432 05(13)*	632.64	0.621E-21	P(23)	C
30	1882.551 46(9)*	121.70	0.388E-20	P(24)	A
31	1882.651 65(23)*	980.30	0.124E-21	R(24)	D
32	1882.736 91(13)*	623.18	0.622E-21	P(22)	B
33	1882.825 94(19)*	11.08	0.957E-22	R(7)	P
34	1882.831 24(13)*	623.29	0.621E-21	P(22)	C
35	1882.952 07(9)*	111.96	0.390E-20	P(23)	A
36	1883.064 92(23)*	990.41	0.123E-21	R(25)	D
37	1883.145 44(13)*	614.25	0.620E-21	P(21)	B
38	1883.177 03(18)	1109.30	0.908E-22	P(17)	G
39	1883.223 48(19)*	14.25	0.106E-21	R(8)	P
40	1883.230 78(13)*	614.35	0.619E-21	P(21)	C
41	1883.352 96(9)*	102.63	0.390E-20	P(22)	A
42	1883.478 55(23)*	1000.93	0.121E-21	R(26)	D
43	1883.553 89(13)*	605.72	0.615E-21	P(20)	B
44	1883.621 21(19)*	17.81	0.116E-21	R(9)	P
45	1883.630 68(13)*	605.81	0.615E-21	P(20)	C
46	1883.754 10(9)*	93.71	0.389E-20	P(21)	A
47	1883.892 57(23)*	1011.84	0.119E-21	R(27)	D
48	1883.962 24(13)*	597.60	0.608E-21	P(19)	B
49	1884.019 13(19)*	21.77	0.125E-21	R(10)	P
50	1884.030 92(13)*	597.68	0.608E-21	P(19)	C
51	1884.155 49(9)*	85.19	0.387E-20	P(20)	A
52	1884.306 98(23)*	1023.17	0.117E-21	R(28)	D
53	1884.370 49(13)*	589.88	0.598E-21	P(18)	B
54	1884.431 52(13)*	589.95	0.598E-21	P(18)	C
55	1884.557 13(9)*	77.08	0.382E-20	P(19)	A
56	1884.721 77(23)*	1034.89	0.114E-21	R(29)	D
57	1884.778 64(13)*	582.57	0.585E-21	P(17)	B
58	1884.832 47(13)*	582.63	0.585E-21	P(17)	C
59	1884.959 01(9)*	69.37	0.376E-20	P(18)	A
60	1885.136 96(23)*	1047.02	0.111E-21	R(30)	D
61	1885.186 69(13)*	575.66	0.569E-21	P(16)	B
62	1885.225 53(20)	1084.04	0.622E-22	P(14)	E
63	1885.226 10(19)	1084.04	0.622E-22	P(14)	F
64	1885.233 76(13)*	575.72	0.569E-21	P(16)	C
65	1885.361 13(9)*	62.07	0.368E-20	P(17)	A
66	1885.552 56(23)*	1059.56	0.108E-21	R(31)	D
67	1885.594 63(13)*	569.16	0.551E-21	P(15)	B
68	1885.763 49(9)*	55.17	0.358E-20	P(16)	A
69	1885.968 56(23)*	1072.49	0.105E-21	R(32)	D



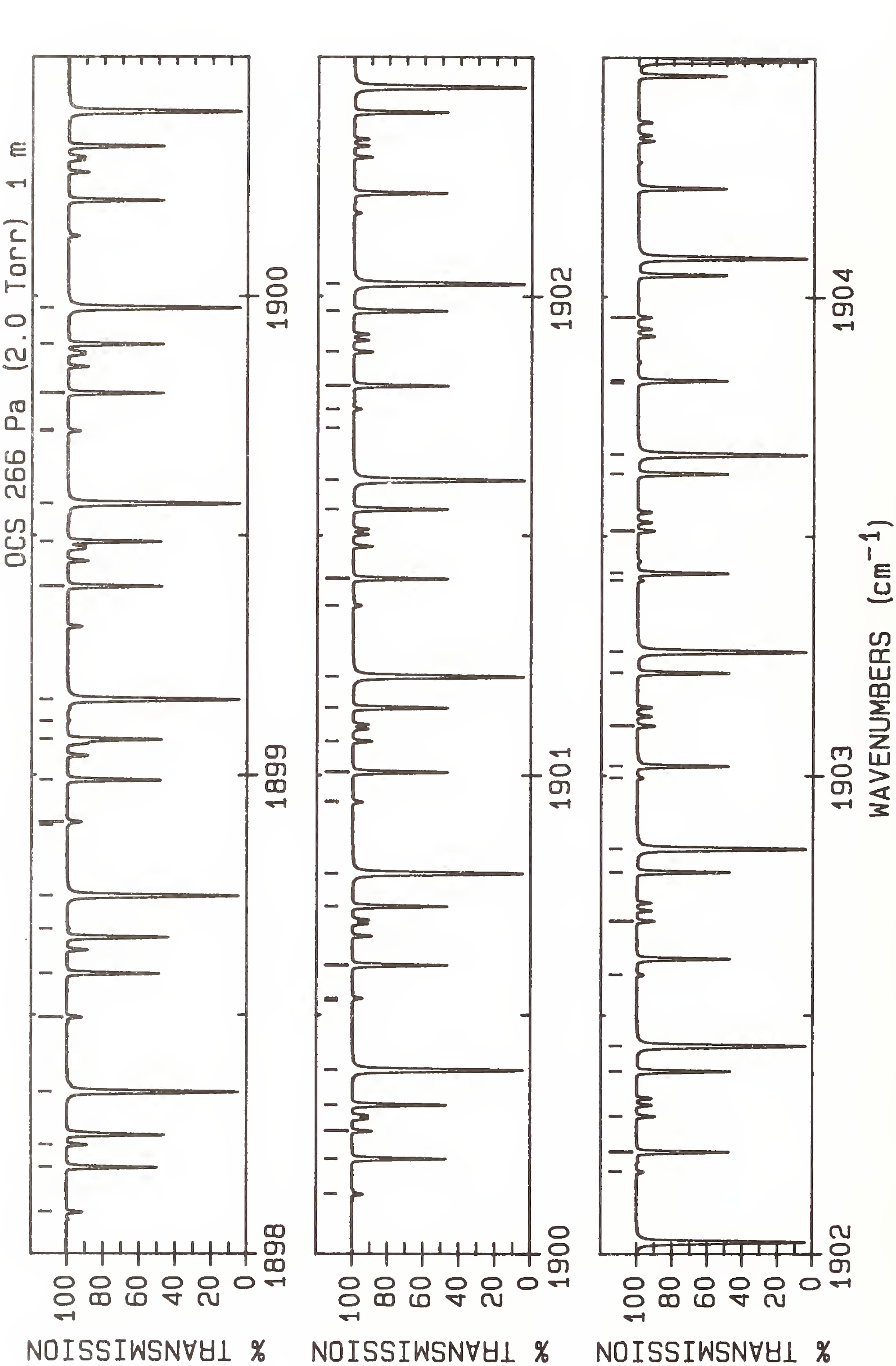
OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1886
1887
1888
1889
1890
1891
1892
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1886.166 08(9)*	48.68	0.347E-20	P(15)	A
2	1886.266 96(8)	580.35	0.271E-22	R(17)	R
3	1886.384 99(23)*	1085.84	0.101E-21	R(33)	D
4	1886.410 21(13)*	557.38	0.505E-21	P(13)	B
5	1886.410 80(19)*	53.83	0.165E-21	R(16)	P
6	1886.568 89(9)*	42.60	0.333E-20	P(14)	A
7	1886.669 66(8)	587.48	0.276E-22	R(18)	R
8	1886.801 83(23)*	1099.58	0.972E-22	R(34)	D
9	1886.810 12(19)*	60.55	0.170E-21	R(17)	P
10	1886.817 83(13)*	552.11	0.478E-21	P(12)	B
11	1886.842 37(13)*	552.14	0.478E-21	P(12)	C
12	1886.846 80(20)	1061.69	0.540E-22	P(8)	G
13	1886.853 23(20)	1063.68	0.481E-22	P(10)	E
14	1886.853 35(20)	1063.68	0.481E-22	P(10)	F
15	1886.971 93(9)*	36.92	0.318E-20	P(13)	A
16	1887.072 68(8)	595.02	0.280E-22	R(19)	R
17	1887.209 64(19)*	67.68	0.173E-21	R(18)	P
18	1887.245 37(13)*	547.26	0.448E-21	P(11)	C
19	1887.375 19(9)*	31.64	0.302E-20	P(12)	A
20	1887.476 01(7)	602.95	0.283E-22	R(20)	R
21	1887.609 38(19)*	75.19	0.176E-21	R(19)	P
22	1887.648 71(13)*	542.79	0.416E-21	P(10)	C
23	1887.778 67(9)*	26.78	0.283E-20	P(11)	A
24	1887.879 65(7)	611.28	0.285E-22	R(21)	R
25	1888.009 32(18)*	83.11	0.177E-21	R(20)	P
26	1888.040 04(13)*	538.70	0.381E-21	P(9)	B
27	1888.182 36(9)*	22.31	0.263E-20	P(10)	A
28	1888.283 60(7)	620.01	0.286E-22	R(22)	R
29	1888.409 48(18)*	91.42	0.178E-21	R(21)	P
30	1888.447 21(13)*	535.04	0.343E-21	P(8)	B
31	1888.456 39(13)*	535.06	0.343E-21	P(8)	C
32	1888.586 27(9)*	18.26	0.242E-20	P(9)	A
33	1888.687 86(6)	629.13	0.286E-22	R(23)	R
34	1888.809 85(18)*	100.13	0.179E-21	R(22)	P
35	1888.854 27(13)*	531.80	0.304E-21	P(7)	B
36	1888.860 73(13)*	531.81	0.304E-21	P(7)	C
37	1888.990 38(9)*	14.61	0.218E-20	P(8)	A
38	1889.210 45(18)*	109.23	0.179E-21	R(23)	P
39	1889.261 21(13)*	528.95	0.262E-21	P(6)	B
40	1889.265 40(13)*	528.96	0.262E-21	P(6)	C
41	1889.312 19(23)*	1190.54	0.730E-22	R(40)	D
42	1889.394 70(9)*	11.36	0.194E-20	P(7)	A
43	1889.611 26(18)*	118.72	0.178E-21	R(24)	P
44	1889.668 03(13)*	526.51	0.218E-21	P(5)	B
45	1889.670 40(13)*	526.52	0.218E-21	P(5)	C
46	1889.799 22(9)*	8.52	0.169E-20	P(6)	A
47	1889.902 50(6)	658.87	0.278E-22	R(26)	R
48	1890.012 31(18)*	128.62	0.176E-21	R(25)	P
49	1890.074 73(13)*	524.48	0.172E-21	P(4)	B
50	1890.075 73(13)*	524.49	0.172E-21	P(4)	C
51	1890.152 71(23)*	1224.09	0.650E-22	R(42)	D
52	1890.203 95(9)*	6.09	0.142E-20	P(5)	A
53	1890.413 58(18)*	138.90	0.174E-21	R(26)	P
54	1890.481 31(13)*	522.86	0.124E-21	P(3)	B
55	1890.481 38(13)*	522.86	0.124E-21	P(3)	C
56	1890.573 70(23)*	1241.47	0.611E-22	R(43)	D
57	1890.608 88(9)*	4.06	0.115E-20	P(4)	A
58	1890.815 09(18)*	149.59	0.171E-21	R(27)	P
59	1890.887 37(13)*	521.64	0.699E-22	P(2)	C
60	1890.887 76(13)*	521.64	0.699E-22	P(2)	B
61	1890.995 20(23)*	1259.25	0.572E-22	R(44)	D
62	1891.014 00(9)*	2.43	0.870E-21	P(3)	A
63	1891.216 84(18)*	160.67	0.168E-21	R(28)	P
64	1891.417 21(23)*	1277.44	0.535E-22	R(45)	D
65	1891.419 33(9)*	1.22	0.584E-21	P(2)	A
66	1891.526 38(6)	704.08	0.257E-22	R(30)	R
67	1891.618 83(18)*	172.14	0.164E-21	R(29)	P
68	1891.824 84(9)*	0.41	0.293E-21	P(1)	A
69	1891.839 74(23)*	1296.03	0.499E-22	R(46)	D
70	1891.933 13(7)	716.37	0.250E-22	R(31)	R

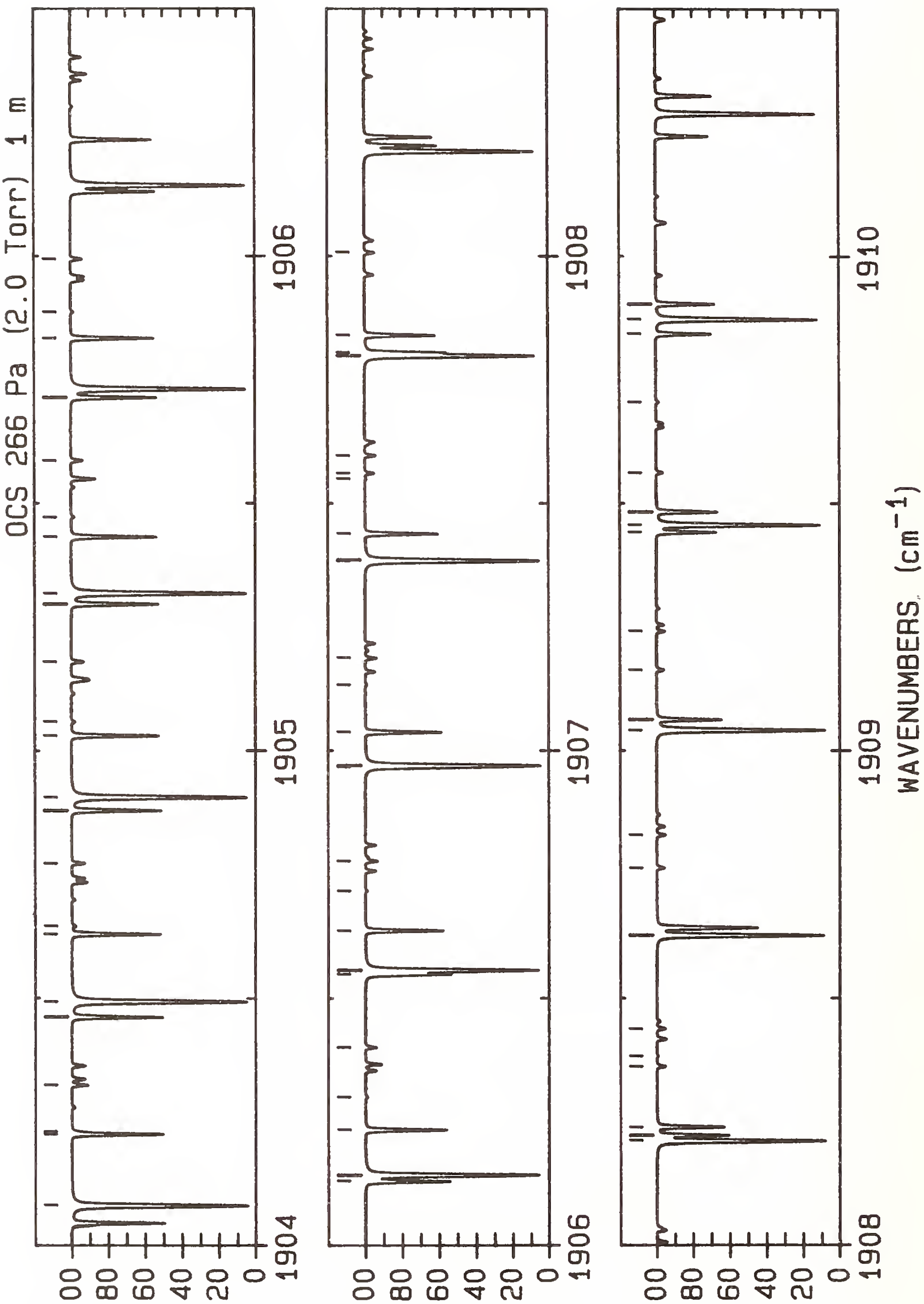


OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1892
1893
1894
1895
1896
1897
1898
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1892.262 81(23)*	1315.02	0.464E-22	R(47)	D
2	1892.423 55(18)*	196.27	0.156E-21	R(31)	P
3	1892.512 34(13)*	520.83	0.702E-22	R(1)	B
4	1892.514 54(13)*	520.83	0.702E-22	R(1)	C
5	1892.636 46(9)*	0.00	0.294E-21	R(0)	A
6	1892.686 41(23)*	1334.42	0.431E-22	R(48)	D
7	1892.826 29(18)*	208.93	0.151E-21	R(32)	P
8	1892.918 17(13)*	521.64	0.124E-21	R(2)	B
9	1892.922 13(13)*	521.64	0.124E-21	R(2)	C
10	1893.042 56(9)*	0.41	0.587E-21	R(1)	A
11	1893.110 57(23)*	1354.22	0.399E-22	R(49)	D
12	1893.229 30(18)*	221.99	0.146E-21	R(33)	P
13	1893.323 86(13)*	522.86	0.174E-21	R(3)	B
14	1893.330 05(13)*	522.86	0.174E-21	R(3)	C
15	1893.448 86(9)*	1.22	0.877E-21	R(2)	A
16	1893.535 28(23)*	1374.42	0.368E-22	R(50)	D
17	1893.632 57(18)*	235.44	0.141E-21	R(34)	P
18	1893.729 43(13)*	524.48	0.221E-21	R(4)	B
19	1893.738 29(13)*	524.49	0.221E-21	R(4)	C
20	1893.855 34(9)*	2.43	0.116E-20	R(3)	A
21	1893.960 57(23)*	1395.03	0.339E-22	R(51)	D
22	1894.036 11(18)*	249.29	0.136E-21	R(35)	P
23	1894.134 87(13)*	526.51	0.266E-21	R(5)	B
24	1894.146 84(13)*	526.52	0.266E-21	R(5)	C
25	1894.262 01(9)*	4.06	0.144E-20	R(4)	A
26	1894.386 43(23)*	1416.04	0.312E-22	R(52)	D
27	1894.439 93(18)*	263.53	0.130E-21	R(36)	P
28	1894.540 17(13)*	528.95	0.309E-21	R(6)	B
29	1894.555 72(13)*	528.96	0.309E-21	R(6)	C
30	1894.668 88(9)*	6.09	0.171E-20	R(5)	A
31	1894.812 89(24)*	1437.45	0.286E-22	R(53)	D
32	1894.844 03(18)*	278.16	0.124E-21	R(37)	P
33	1894.945 35(13)*	531.80	0.350E-21	R(7)	B
34	1894.964 90(13)*	531.81	0.350E-21	R(7)	C
35	1894.995 32(20)	1059.61	0.493E-22	R(9)	E
36	1894.995 59(20)	1059.61	0.493E-22	R(9)	F
37	1895.075 93(9)*	8.52	0.198E-20	R(6)	A
38	1895.239 94(24)*	1459.26	0.262E-22	R(54)	D
39	1895.248 42(18)*	293.19	0.119E-21	R(38)	P
40	1895.350 39(13)*	535.04	0.389E-21	R(8)	B
41	1895.374 41(13)*	535.06	0.389E-21	R(8)	C
42	1895.402 48(20)	1063.68	0.536E-22	R(10)	E
43	1895.402 86(20)	1063.68	0.536E-22	R(10)	F
44	1895.483 18(9)*	11.36	0.223E-20	R(7)	A
45	1895.653 11(18)*	308.62	0.113E-21	R(39)	P
46	1895.755 30(13)*	538.70	0.426E-21	R(9)	B
47	1895.784 23(13)*	538.72	0.426E-21	R(9)	C
48	1895.809 62(20)	1068.16	0.575E-22	R(11)	E
49	1895.810 15(20)	1068.16	0.575E-22	R(11)	F
50	1895.890 62(9)*	14.61	0.247E-20	R(8)	A
51	1896.058 09(18)*	324.44	0.107E-21	R(40)	P
52	1896.160 07(13)*	542.76	0.460E-21	R(10)	B
53	1896.298 25(9)*	18.26	0.269E-20	R(9)	A
54	1896.463 39(18)*	340.66	0.101E-21	R(41)	P
55	1896.564 71(13)*	547.23	0.492E-21	R(11)	B
56	1896.623 79(19)	1078.34	0.643E-22	R(13)	E
57	1896.624 75(19)	1078.34	0.643E-22	R(13)	F
58	1896.706 07(9)*	22.31	0.291E-20	R(10)	A
59	1896.869 00(18)*	357.27	0.956E-22	R(42)	P
60	1896.969 21(13)*	552.11	0.521E-21	R(12)	B
61	1897.030 82(19)	1084.04	0.672E-22	R(14)	E
62	1897.032 07(19)	1084.04	0.672E-22	R(14)	F
63	1897.114 09(9)*	26.78	0.310E-20	R(11)	A
64	1897.274 92(18)*	374.27	0.900E-22	R(43)	P
65	1897.373 58(13)*	557.38	0.547E-21	R(13)	B
66	1897.426 65(13)*	557.42	0.547E-21	R(13)	C
67	1897.522 30(9)*	31.64	0.328E-20	R(12)	A
68	1897.681 18(18)*	391.68	0.846E-22	R(44)	P
69	1897.777 81(13)*	563.07	0.571E-21	R(14)	B
70	1897.930 70(9)*	36.92	0.345E-20	R(13)	A

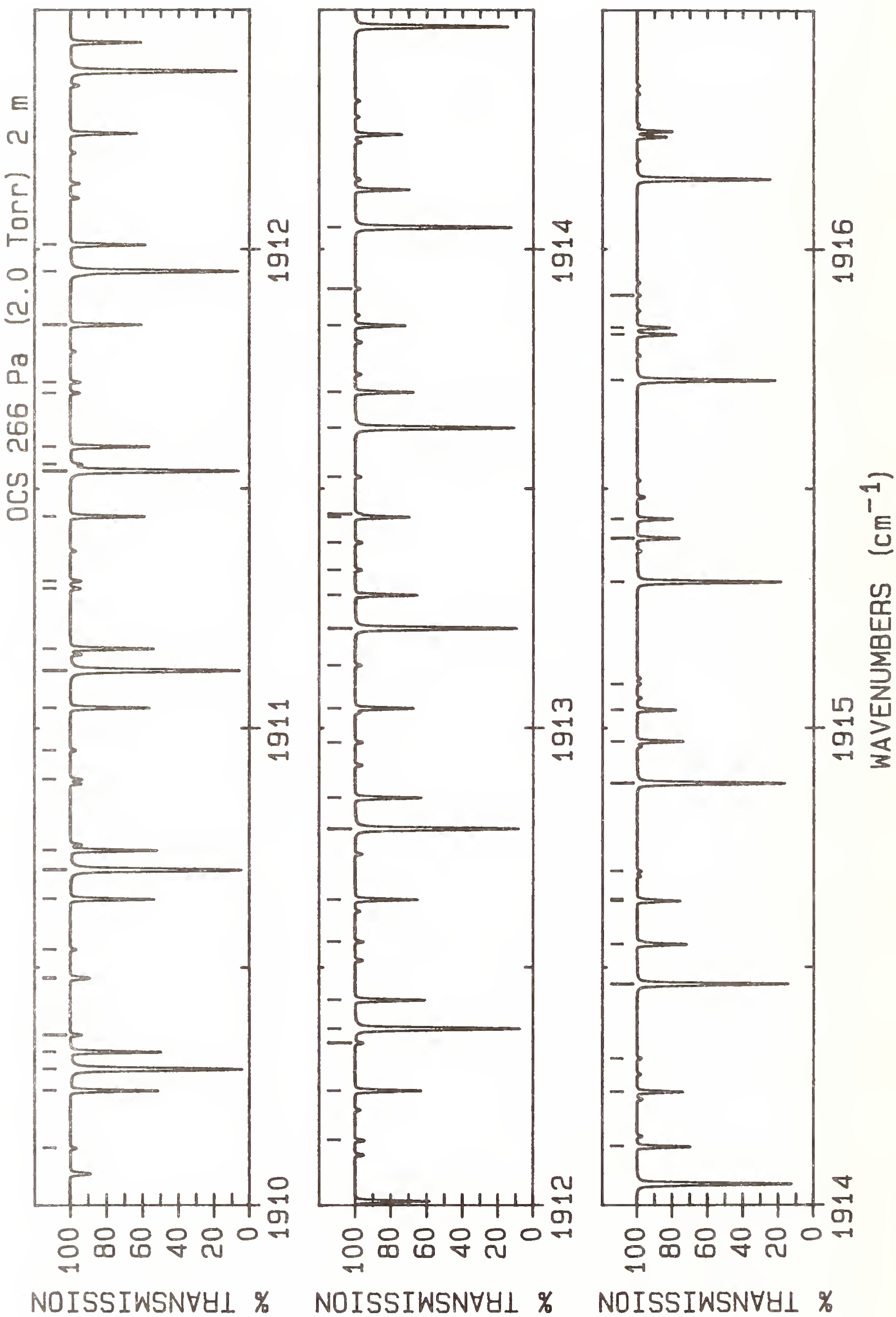

OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1898
1899
1900
1901
1902
1903
1904
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1898.087 77(18)*	409.47	0.793E-22	R(45)	P	36	1901.070 72(17)	1189.87	0.983E-22	R(26)	G
2	1898.181 90(13)*	569.16	0.592E-21	R(15)	B	37	1901.140 33(13)*	623.29	0.656E-21	R(22)	C
3	1898.228 71(17)	1124.36	0.100E-21	R(19)	G	38	1901.205 22(9)*	93.71	0.412E-20	R(21)	A
4	1898.339 31(9)*	42.60	0.359E-20	R(14)	A	39	1901.353 43(18)*	566.04	0.432E-22	R(53)	P
5	1898.494 70(18)*	427.66	0.741E-22	R(46)	P	40	1901.409 74(13)*	632.52	0.655E-21	R(23)	B
6	1898.585 86(13)*	575.66	0.610E-21	R(16)	B	41	1901.554 51(13)*	632.64	0.654E-21	R(23)	C
7	1898.679 13(24)*	1648.29	0.118E-22	R(62)	D	42	1901.615 48(9)*	102.63	0.412E-20	R(22)	A
8	1898.748 11(9)*	48.68	0.372E-20	R(15)	A	43	1901.724 19(25)*	1834.81	0.519E-23	R(69)	D
9	1898.895 65(10)	985.93	0.103E-22	R(48)	R	44	1901.763 37(18)*	587.39	0.396E-22	R(54)	P
10	1898.901 99(18)*	446.25	0.691E-22	R(47)	P	45	1901.812 60(13)*	642.27	0.651E-21	R(24)	B
11	1898.989 68(13)*	582.57	0.624E-21	R(17)	B	46	1901.883 52(17)	1212.24	0.947E-22	R(28)	G
12	1899.074 07(13)*	582.63	0.624E-21	R(17)	C	47	1901.969 00(13)*	642.40	0.650E-21	R(24)	C
13	1899.112 02(24)*	1673.73	0.106E-22	R(63)	D	48	1902.025 95(9)*	111.96	0.411E-20	R(23)	A
14	1899.157 11(9)*	55.17	0.383E-20	R(16)	A	49	1902.173 71(18)*	609.13	0.362E-22	R(55)	P
15	1899.393 37(13)*	589.88	0.636E-21	R(18)	B	50	1902.215 33(13)*	652.42	0.644E-21	R(25)	B
16	1899.486 70(13)*	589.95	0.636E-21	R(18)	C	51	1902.290 13(17)	1224.04	0.925E-22	R(29)	G
17	1899.566 32(9)*	62.07	0.393E-20	R(17)	A	52	1902.383 80(13)*	652.56	0.644E-21	R(25)	C
18	1899.717 63(18)*	484.60	0.596E-22	R(49)	P	53	1902.436 65(9)*	121.70	0.408E-20	R(24)	A
19	1899.720 75(10)	1025.16	0.889E-23	R(50)	R	54	1902.584 48(18)*	631.27	0.331E-22	R(56)	P
20	1899.796 92(13)*	597.60	0.646E-21	R(19)	B	55	1902.696 89(17)	1236.25	0.901E-22	R(30)	G
21	1899.899 64(13)*	597.68	0.645E-21	R(19)	C	56	1902.798 91(13)*	663.13	0.635E-21	R(26)	C
22	1899.975 73(9)*	69.37	0.400E-20	R(18)	A	57	1902.847 57(9)*	131.84	0.404E-20	R(25)	A
23	1900.126 00(18)*	504.37	0.552E-22	R(50)	P	58	1902.995 68(18)*	653.80	0.301E-22	R(57)	P
24	1900.200 33(13)*	605.72	0.652E-21	R(20)	B	59	1903.020 38(13)*	673.94	0.625E-21	R(27)	B
25	1900.258 37(17)	1169.12	0.101E-21	R(24)	G	60	1903.103 83(17)	1248.86	0.874E-22	R(31)	G
26	1900.312 89(13)*	605.81	0.652E-21	R(20)	C	61	1903.214 33(13)*	674.10	0.625E-21	R(27)	C
27	1900.385 35(9)*	77.08	0.406E-20	R(19)	A	62	1903.258 72(9)*	142.38	0.399E-20	R(26)	A
28	1900.529 67(13)	214.17	0.789E-23	R(32)	X	63	1903.407 31(18)*	676.72	0.274E-22	R(58)	P
29	1900.534 75(18)*	524.53	0.510E-22	R(51)	P	64	1903.422 70(13)*	685.31	0.613E-21	R(28)	B
30	1900.603 60(13)*	614.25	0.656E-21	R(21)	B	65	1903.510 97(17)	1261.88	0.846E-22	R(32)	G
31	1900.726 46(13)*	614.35	0.655E-21	R(21)	C	66	1903.630 06(13)*	685.49	0.613E-21	R(28)	C
32	1900.795 18(9)*	85.19	0.409E-20	R(20)	A	67	1903.670 10(9)*	153.34	0.392E-20	R(27)	A
33	1900.943 89(18)*	545.09	0.470E-22	R(52)	P	68	1903.819 38(18)*	700.04	0.248E-22	R(59)	P
34	1900.945 88(13)	227.55	0.858E-23	R(33)	X	69	1903.824 89(13)*	697.09	0.599E-21	R(29)	B
35	1901.006 74(13)*	623.18	0.656E-21	R(22)	B	70	1903.957 24(19)	1243.18	0.673E-22	R(31)	F

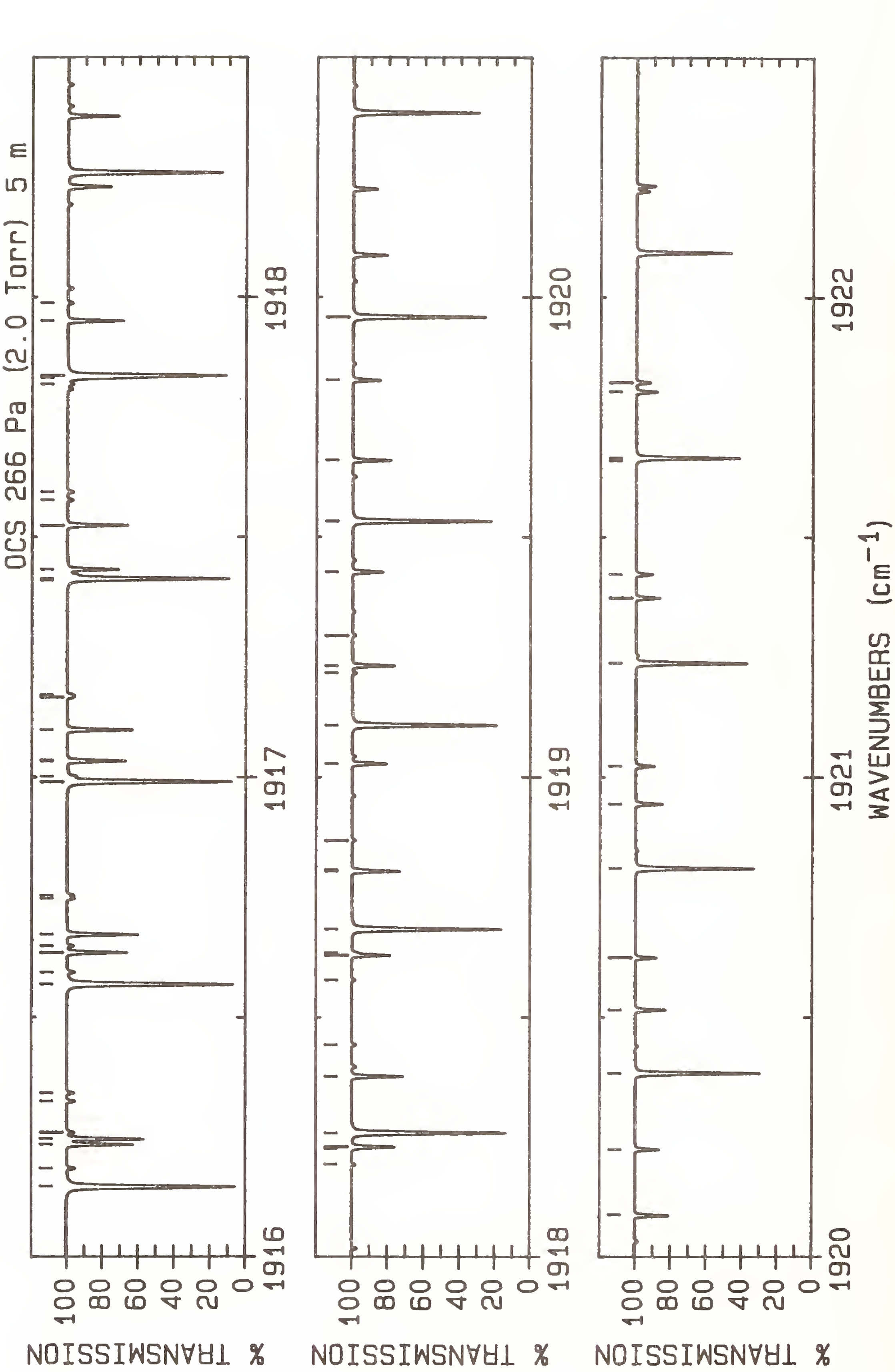


OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1904 1905 1906
1906 1907 1908
1908 1909 1910
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1904.081 73(9)*	164.69	0.385E-20	R(28)	A	36	1907.037 68(13)*	805.90	0.448E-21	R(37)	B
2	1904.226 94(13)*	709.27	0.583E-21	R(30)	B	37	1907.132 84(19)*	900.76	0.105E-22	R(67)	P
3	1904.231 90(18)*	723.75	0.225E-22	R(60)	P	38	1907.186 84(16)	1397.33	0.556E-22	R(41)	G
4	1904.325 89(17)	1289.13	0.786E-22	R(34)	G	39	1907.383 79(9)*	270.13	0.294E-20	R(36)	A
5	1904.462 45(13)*	709.47	0.583E-21	R(30)	C	40	1907.385 56(13)*	806.20	0.447E-21	R(37)	C
6	1904.493 59(9)*	176.45	0.376E-20	R(29)	A	41	1907.438 70(13)*	821.33	0.426E-21	R(38)	B
7	1904.628 86(13)*	721.86	0.567E-21	R(31)	B	42	1907.549 24(19)*	927.63	0.929E-23	R(68)	P
8	1904.644 88(18)*	747.86	0.203E-22	R(61)	P	43	1907.560 86(19)	1374.99	0.455E-22	R(40)	E
9	1904.772 06(19)	1269.63	0.630E-22	R(33)	F	44	1907.596 91(16)	1414.41	0.524E-22	R(42)	G
10	1904.879 11(13)*	722.07	0.566E-21	R(31)	C	45	1907.797 77(9)*	285.13	0.280E-20	R(37)	A
11	1904.905 70(9)*	188.62	0.366E-20	R(30)	A	46	1907.804 39(13)*	821.64	0.426E-21	R(38)	C
12	1905.030 65(13)*	734.85	0.549E-21	R(32)	B	47	1907.839 61(13)*	837.16	0.405E-21	R(39)	B
13	1905.058 33(18)*	772.36	0.183E-22	R(62)	P	48	1908.007 37(16)	1431.90	0.492E-22	R(43)	G
14	1905.179 48(19)	1283.47	0.606E-22	R(34)	F	49	1908.212 03(9)*	300.54	0.267E-20	R(38)	A
15	1905.296 07(13)*	735.07	0.548E-21	R(32)	C	50	1908.223 53(13)*	837.49	0.405E-21	R(39)	C
16	1905.318 06(9)*	201.19	0.355E-20	R(31)	A	51	1908.240 40(13)*	853.39	0.384E-21	R(40)	B
17	1905.432 31(13)*	748.25	0.530E-21	R(33)	B	52	1908.362 78(20)	1408.75	0.405E-22	R(42)	E
18	1905.472 25(18)*	797.25	0.164E-22	R(63)	P	53	1908.383 61(20)*	982.53	0.728E-23	R(70)	P
19	1905.586 90(19)	1297.71	0.582E-22	R(35)	F	54	1908.439 11(20)	1408.78	0.406E-22	R(42)	F
20	1905.713 35(13)*	748.49	0.529E-21	R(33)	C	55	1908.626 59(9)*	316.35	0.253E-20	R(39)	A
21	1905.833 84(13)*	762.05	0.510E-21	R(34)	B	56	1908.763 06(20)	1426.24	0.380E-22	R(43)	E
22	1905.886 66(18)*	822.54	0.147E-22	R(64)	P	57	1908.829 56(16)	1468.09	0.431E-22	R(45)	G
23	1905.994 33(19)	1312.36	0.557E-22	R(36)	F	58	1909.041 45(9)*	332.57	0.240E-20	R(40)	A
24	1906.130 94(13)*	762.31	0.510E-21	R(34)	C	59	1909.041 62(13)*	887.08	0.342E-21	R(42)	B
25	1906.143 55(9)*	227.55	0.332E-20	R(33)	A	60	1909.062 74(13)*	870.40	0.362E-21	R(41)	C
26	1906.235 25(13)*	776.26	0.490E-21	R(35)	B	61	1909.162 87(20)	1444.14	0.357E-22	R(44)	E
27	1906.301 55(18)*	848.22	0.132E-22	R(65)	P	62	1909.241 33(16)	1486.80	0.402E-22	R(46)	G
28	1906.401 77(19)	1327.41	0.532E-22	R(37)	F	63	1909.442 06(13)*	904.54	0.321E-21	R(43)	B
29	1906.548 83(13)*	776.53	0.489E-21	R(35)	C	64	1909.456 61(9)*	349.19	0.227E-20	R(41)	A
30	1906.556 69(9)*	241.34	0.320E-20	R(34)	A	65	1909.482 82(13)*	887.47	0.341E-21	R(42)	C
31	1906.636 52(13)*	790.88	0.469E-21	R(36)	B	66	1909.562 18(20)	1462.44	0.334E-22	R(45)	E
32	1906.716 94(19)*	874.29	0.117E-22	R(66)	P	67	1909.704 37(11)	602.10	0.154E-22	R(54)	X
33	1906.777 15(16)	1380.65	0.589E-22	R(40)	G	68	1909.842 39(13)*	922.39	0.301E-21	R(44)	B
34	1906.967 04(13)*	791.16	0.468E-21	R(36)	C	69	1909.872 10(9)*	366.22	0.214E-20	R(42)	A
35	1906.970 10(9)*	255.53	0.307E-20	R(35)	A	70	1909.903 21(13)*	904.94	0.321E-21	R(43)	C

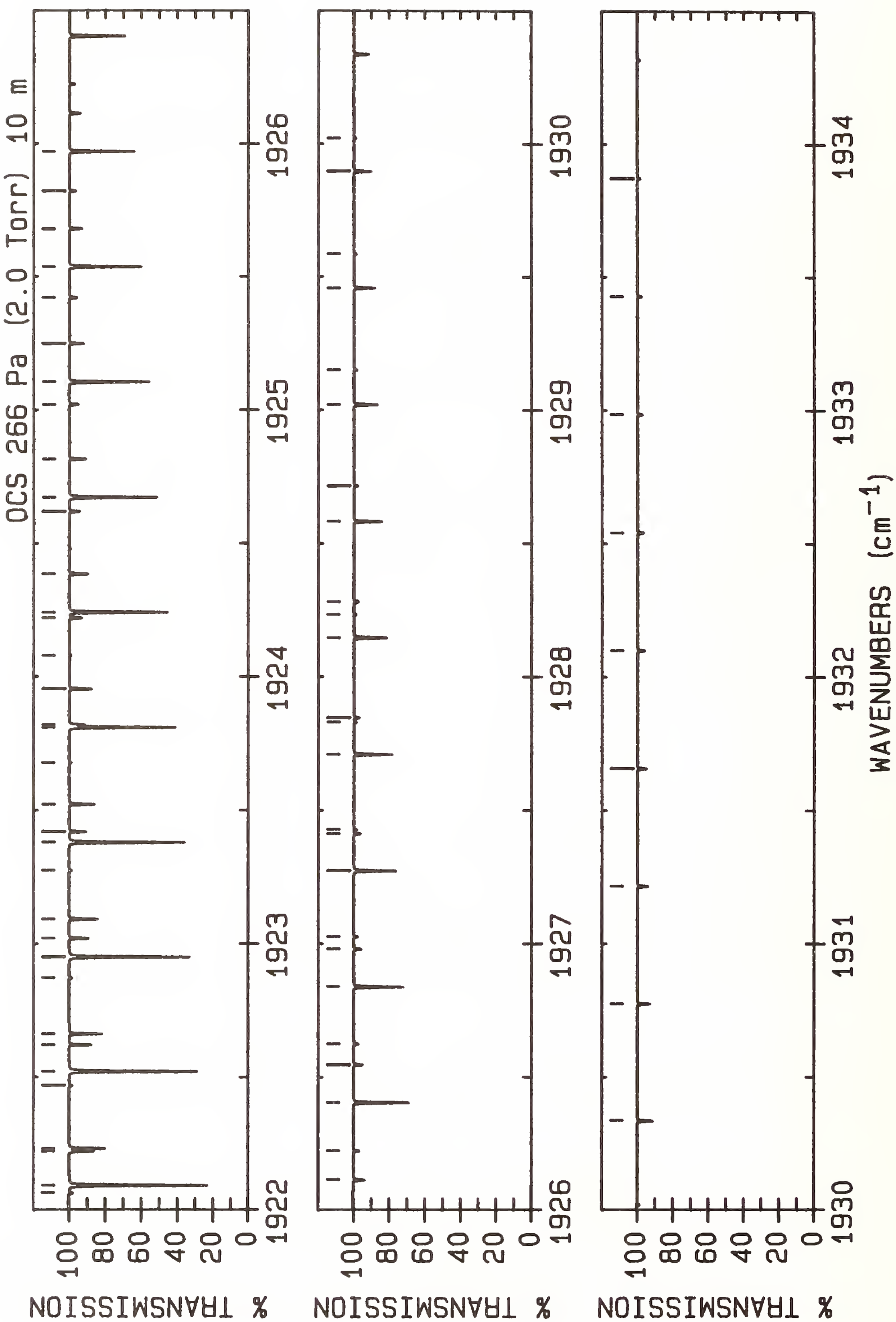

OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
1910
1911
1912
1913
1914
1915
1916
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1910.121 06(10)	624.39	0.151E-22	R(55)	X	36	1912.854 73(13)*	1038.59	0.194E-21	R(50)	C
2	1910.242 62(13)*	940.66	0.282E-21	R(45)	B	37	1912.970 30(17)	1673.42	0.191E-22	R(55)	G
3	1910.287 90(9)*	383.65	0.201E-20	R(43)	A	38	1913.041 43(13)*	1079.84	0.165E-21	R(52)	B
4	1910.323 91(13)*	922.82	0.301E-21	R(44)	C	39	1913.131 08(21)	1645.40	0.164E-22	R(54)	E
5	1910.359 26(20)	1500.26	0.289E-22	R(47)	E	40	1913.208 18(9)*	517.00	0.121E-20	R(50)	A
6	1910.476 77(20)	1500.30	0.291E-22	R(47)	F	41	1913.277 64(13)*	1059.31	0.179E-21	R(51)	C
7	1910.479 51(17)	1545.35	0.321E-22	R(49)	G	42	1913.330 36(21)	1645.47	0.165E-22	R(54)	F
8	1910.537 59(10)	647.08	0.148E-22	R(56)	X	43	1913.387 47(17)	1696.18	0.174E-22	R(56)	G
9	1910.642 73(13)*	959.33	0.263E-21	R(46)	B	44	1913.440 91(13)*	1101.34	0.151E-21	R(53)	B
10	1910.704 04(9)*	401.49	0.188E-20	R(44)	A	45	1913.447 39(9)	817.21	0.114E-22	R(63)	X
11	1910.744 93(13)*	941.10	0.281E-21	R(45)	C	46	1913.524 59(21)	1667.76	0.149E-22	R(55)	E
12	1910.893 25(17)	1565.68	0.296E-22	R(50)	G	47	1913.626 84(9)*	537.67	0.112E-20	R(51)	A
13	1910.953 95(10)	670.17	0.144E-22	R(57)	X	48	1913.700 86(13)*	1080.42	0.165E-21	R(52)	C
14	1911.042 75(13)*	978.40	0.245E-21	R(47)	B	49	1913.840 31(13)*	1123.25	0.139E-21	R(54)	B
15	1911.120 51(9)*	419.73	0.176E-20	R(45)	A	50	1913.917 43(21)	1690.52	0.136E-22	R(56)	E
16	1911.166 26(13)*	959.78	0.263E-21	R(46)	C	51	1914.045 88(9)*	558.74	0.103E-20	R(52)	A
17	1911.291 96(20)	1539.75	0.250E-22	R(49)	F	52	1914.124 41(13)*	1101.95	0.151E-21	R(53)	C
18	1911.307 53(17)	1586.42	0.273E-22	R(51)	G	53	1914.239 65(13)*	1145.56	0.127E-21	R(55)	B
19	1911.442 67(13)*	997.88	0.227E-21	R(48)	B	54	1914.309 61(21)	1713.69	0.124E-22	R(57)	E
20	1911.537 33(9)*	438.37	0.164E-20	R(46)	A	55	1914.465 33(9)*	580.22	0.941E-21	R(53)	A
21	1911.550 76(21)	1560.03	0.230E-22	R(50)	E	56	1914.548 27(13)*	1123.88	0.138E-21	R(54)	C
22	1911.587 91(13)*	978.88	0.244E-21	R(47)	C	57	1914.638 92(13)*	1168.28	0.115E-21	R(56)	B
23	1911.699 59(21)	1560.08	0.231E-22	R(50)	F	58	1914.642 70(18)	1766.91	0.129E-22	R(59)	G
24	1911.722 37(17)	1607.56	0.250E-22	R(52)	G	59	1914.701 12(21)	1737.26	0.112E-22	R(58)	E
25	1911.842 49(13)*	1017.76	0.210E-21	R(49)	B	60	1914.885 18(9)*	602.10	0.861E-21	R(54)	A
26	1911.954 49(9)*	457.42	0.153E-20	R(47)	A	61	1914.972 44(13)*	1146.22	0.126E-21	R(55)	C
27	1912.009 87(13)*	998.38	0.227E-21	R(48)	C	62	1915.038 13(13)*	1191.40	0.105E-21	R(57)	B
28	1912.137 76(17)	1629.11	0.230E-22	R(53)	G	63	1915.091 94(21)	1761.24	0.101E-22	R(59)	E
29	1912.242 22(13)*	1038.05	0.195E-21	R(50)	B	64	1915.305 45(9)*	624.39	0.785E-21	R(55)	A
30	1912.342 16(21)	1601.90	0.195E-22	R(52)	E	65	1915.396 94(13)*	1168.96	0.115E-21	R(56)	C
31	1912.372 02(9)*	476.88	0.142E-20	R(48)	A	66	1915.437 29(13)*	1214.93	0.952E-22	R(58)	B
32	1912.432 14(13)*	1018.28	0.210E-21	R(49)	C	67	1915.726 14(9)*	647.08	0.715E-21	R(56)	A
33	1912.553 74(17)	1651.06	0.210E-22	R(54)	G	68	1915.821 76(13)*	1192.10	0.105E-21	R(57)	C
34	1912.641 87(13)*	1058.74	0.179E-21	R(51)	B	69	1915.836 40(13)*	1238.86	0.861E-22	R(59)	B
35	1912.789 91(9)*	496.74	0.131E-20	R(49)	A	70	1915.903 67(18)	1841.28	0.943E-23	R(62)	G



OCS 266 Pa (2.0 Torr) 5 m
% TRANSMISSION
100
80
60
40
20
0
1916
1917
1918
1918
1919
1920
1920
1921
1922
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1916.147 27(9)*	670.17	0.650E-21	R(57)	A	36	1918.259 69(9)*	791.70	0.388E-21	R(62)	A
2	1916.185 56(21)	1810.52	0.832E-23	R(61)	F	37	1918.377 38(13)*	1339.47	0.564E-22	R(63)	C
3	1916.235 47(13)*	1263.19	0.778E-22	R(60)	B	38	1918.443 32(21)	2000.97	0.471E-23	R(68)	G
4	1916.246 89(13)*	1215.65	0.950E-22	R(58)	C	39	1918.577 77(21)	1995.24	0.373E-23	R(68)	E
5	1916.260 23(21)	1835.60	0.741E-23	R(62)	E	40	1918.629 37(13)*	1417.69	0.402E-22	R(66)	B
6	1916.325 29(19)	1866.88	0.845E-23	R(63)	G	41	1918.634 84(22)	1967.78	0.425E-23	R(67)	F
7	1916.342 43(8)	1007.13	0.749E-23	R(70)	X	42	1918.683 59(9)*	817.21	0.347E-21	R(63)	A
8	1916.568 83(9)*	693.67	0.589E-21	R(58)	A	43	1918.804 44(13)*	1365.45	0.505E-22	R(64)	C
9	1916.593 62(21)	1835.71	0.748E-23	R(62)	F	44	1918.807 56(9)	1185.63	0.459E-23	R(76)	X
10	1916.634 50(13)*	1287.93	0.701E-22	R(61)	B	45	1918.868 89(21)	2029.00	0.416E-23	R(69)	G
11	1916.648 26(21)	1861.19	0.665E-23	R(63)	E	46	1919.028 34(13)*	1444.85	0.357E-22	R(67)	B
12	1916.672 35(13)*	1239.61	0.860E-22	R(59)	C	47	1919.107 99(9)*	843.13	0.311E-21	R(64)	A
13	1916.747 58(19)	1892.89	0.755E-23	R(64)	G	48	1919.216 67(10)	1216.79	0.419E-23	R(77)	X
14	1916.754 45(8)	1035.87	0.696E-23	R(71)	X	49	1919.231 82(13)*	1391.83	0.451E-22	R(65)	C
15	1916.990 85(9)*	717.57	0.532E-21	R(59)	A	50	1919.295 12(22)	2057.44	0.367E-23	R(70)	G
16	1917.001 74(21)	1861.32	0.671E-23	R(63)	F	51	1919.427 33(13)*	1472.41	0.317E-22	R(68)	B
17	1917.033 50(13)*	1313.07	0.630E-22	R(62)	B	52	1919.532 88(9)*	869.46	0.277E-21	R(65)	A
18	1917.035 58(21)	1887.19	0.595E-23	R(64)	E	53	1919.659 53(13)*	1418.62	0.402E-22	R(66)	C
19	1917.098 12(13)*	1263.97	0.777E-22	R(60)	C	54	1919.826 35(13)*	1500.39	0.281E-22	R(69)	B
20	1917.166 02(9)	1065.02	0.644E-23	R(72)	X	55	1919.958 28(9)*	896.18	0.246E-21	R(66)	A
21	1917.170 52(19)	1919.30	0.673E-23	R(65)	G	56	1920.087 55(13)*	1445.81	0.357E-22	R(67)	C
22	1917.409 92(21)	1887.33	0.601E-23	R(64)	F	57	1920.225 40(14)*	1528.76	0.248E-22	R(70)	B
23	1917.413 33(9)*	741.87	0.480E-21	R(60)	A	58	1920.384 20(9)*	923.31	0.219E-21	R(67)	A
24	1917.432 48(13)*	1338.62	0.565E-22	R(63)	B	59	1920.515 90(13)*	1473.41	0.317E-22	R(68)	C
25	1917.524 22(13)*	1288.73	0.700E-22	R(61)	C	60	1920.624 51(14)*	1557.54	0.218E-22	R(71)	B
26	1917.577 14(9)	1094.57	0.595E-23	R(73)	X	61	1920.810 64(9)*	950.85	0.194E-21	R(68)	A
27	1917.594 13(20)	1946.12	0.599E-23	R(66)	G	62	1920.944 58(13)*	1501.41	0.281E-22	R(69)	C
28	1917.818 16(21)	1913.74	0.536E-23	R(65)	F	63	1921.023 67(14)*	1586.72	0.192E-22	R(72)	B
29	1917.831 45(13)*	1364.57	0.506E-22	R(64)	B	64	1921.237 61(9)*	978.78	0.171E-21	R(69)	A
30	1917.836 27(9)*	766.58	0.432E-21	R(61)	A	65	1921.373 57(13)*	1529.81	0.248E-22	R(70)	C
31	1917.950 64(13)*	1313.90	0.629E-22	R(62)	C	66	1921.422 90(14)*	1616.30	0.168E-22	R(73)	B
32	1917.987 78(9)	1124.52	0.547E-23	R(74)	X	67	1921.659 39(13)	1412.21	0.226E-23	R(83)	X
33	1918.193 28(21)	1967.62	0.420E-23	R(67)	E	68	1921.665 11(9)*	1007.13	0.151E-21	R(70)	A
34	1918.226 47(21)	1940.56	0.478E-23	R(66)	F	69	1921.802 89(13)*	1558.62	0.218E-22	R(71)	C
35	1918.230 41(13)*	1390.93	0.451E-22	R(65)	B	70	1921.822 21(14)*	1646.29	0.147E-22	R(74)	B


OCS 266 Pa (2.0 Torr) 10 m
% TRANSMISSION
WAVENUMBERS (cm-1)
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934

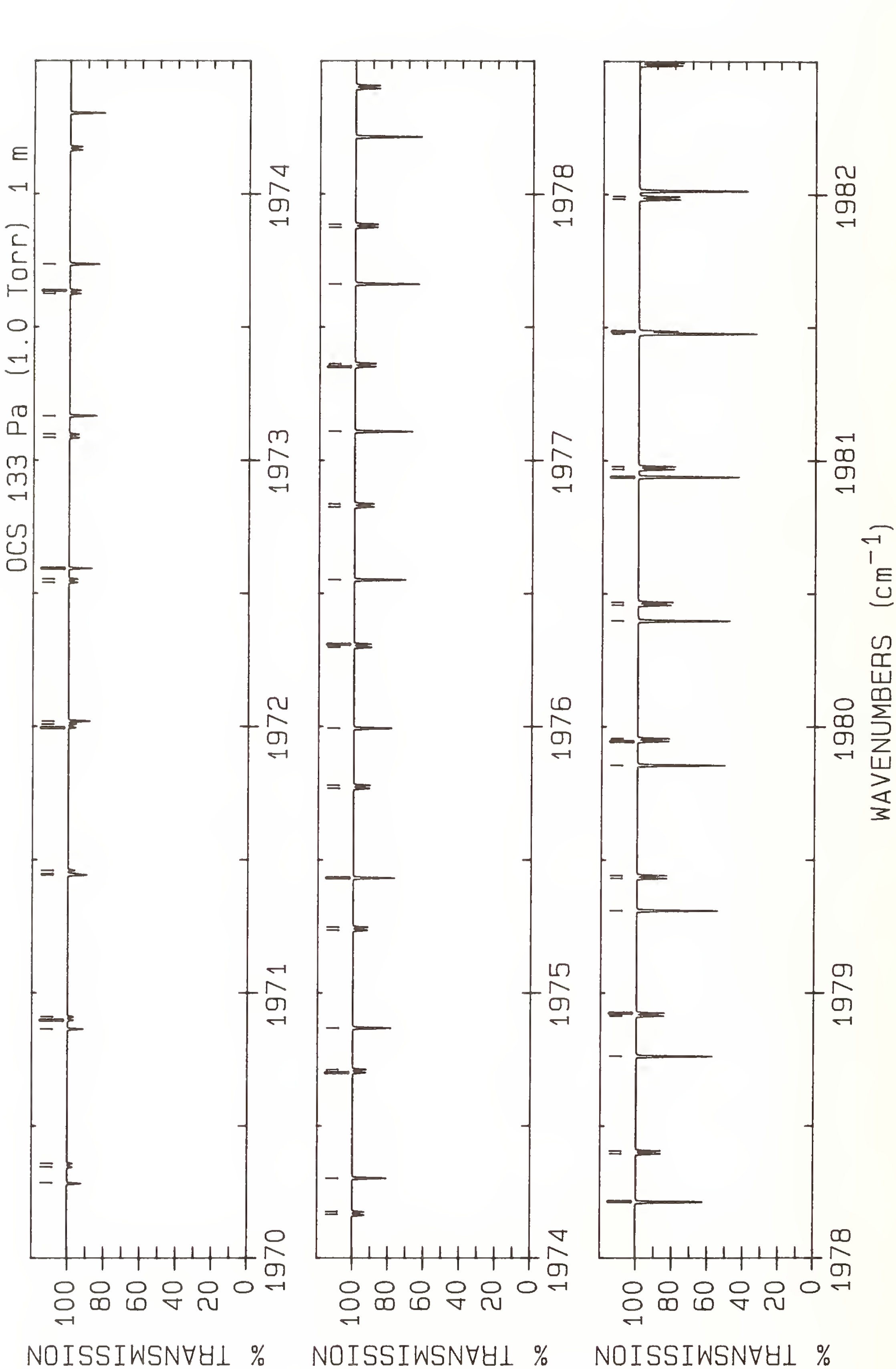
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1922.064 38(14)	1446.18	0.202E-23	R(84)	X	36	1925.971 06(9)*	1312.69	0.379E-22	R(80)	A
2	1922.093 16(9)*	1035.87	0.133E-21	R(71)	A	37	1926.113 81(14)*	1868.90	0.549E-23	R(81)	C
3	1922.221 61(14)*	1676.68	0.129E-22	R(75)	B	38	1926.223 54(14)*	2002.76	0.294E-23	R(85)	B
4	1922.232 53(13)*	1587.83	0.192E-22	R(72)	C	39	1926.404 86(9)*	1345.46	0.326E-22	R(81)	A
5	1922.468 73(14)	1480.56	0.180E-23	R(85)	X	40	1926.546 67(14)*	1902.14	0.472E-23	R(82)	C
6	1922.521 76(9)*	1065.02	0.117E-21	R(72)	A	41	1926.624 85(14)*	2037.58	0.251E-23	R(86)	B
7	1922.621 11(14)*	1707.48	0.112E-22	R(76)	B	42	1926.839 26(9)*	1378.63	0.280E-22	R(82)	A
8	1922.662 50(14)*	1617.44	0.169E-22	R(73)	C	43	1926.979 85(14)*	1935.79	0.406E-23	R(83)	C
9	1922.872 41(15)	1515.34	0.159E-23	R(86)	X	44	1927.026 43(14)*	2072.80	0.213E-23	R(87)	B
10	1922.950 92(9)*	1094.57	0.102E-21	R(73)	A	45	1927.274 25(9)*	1412.21	0.240E-22	R(83)	A
11	1923.020 73(14)*	1738.67	0.974E-23	R(77)	B	46	1927.413 34(14)*	1969.85	0.348E-23	R(84)	C
12	1923.092 79(14)*	1647.46	0.148E-22	R(74)	C	47	1927.428 29(14)*	2108.43	0.181E-23	R(88)	B
13	1923.275 43(16)	1550.53	0.141E-23	R(87)	X	48	1927.709 85(9)*	1446.18	0.205E-22	R(84)	A
14	1923.380 64(9)*	1124.52	0.892E-22	R(74)	A	49	1927.830 45(14)*	2144.46	0.153E-23	R(89)	B
15	1923.420 48(14)*	1770.28	0.845E-23	R(78)	B	50	1927.847 15(14)*	2004.30	0.297E-23	R(85)	C
16	1923.523 40(14)*	1677.89	0.129E-22	R(75)	C	51	1928.146 05(9)*	1480.56	0.175E-22	R(85)	A
17	1923.677 76(17)	1586.11	0.124E-23	R(88)	X	52	1928.232 93(14)*	2180.89	0.129E-23	R(90)	B
18	1923.810 93(9)*	1154.87	0.778E-22	R(75)	A	53	1928.281 28(14)*	2039.16	0.254E-23	R(86)	C
19	1923.820 38(14)*	1802.28	0.732E-23	R(79)	B	54	1928.582 86(9)*	1515.34	0.149E-22	R(86)	A
20	1923.954 33(14)*	1708.71	0.112E-22	R(76)	C	55	1928.715 72(14)*	2074.42	0.216E-23	R(87)	C
21	1924.079 39(19)	1622.10	0.110E-23	R(89)	X	56	1929.020 27(9)*	1550.53	0.126E-22	R(87)	A
22	1924.220 43(14)*	1834.68	0.632E-23	R(80)	B	57	1929.150 47(14)*	2110.08	0.184E-23	R(88)	C
23	1924.241 79(9)*	1185.63	0.677E-22	R(76)	A	58	1929.458 29(9)*	1586.11	0.107E-22	R(88)	A
24	1924.385 59(14)*	1739.94	0.979E-23	R(77)	C	59	1929.585 53(15)*	2146.15	0.156E-23	R(89)	C
25	1924.620 65(14)*	1867.49	0.545E-23	R(81)	B	60	1929.896 91(9)*	1622.10	0.906E-23	R(89)	A
26	1924.673 23(9)*	1216.79	0.587E-22	R(77)	A	61	1930.020 91(15)*	2182.61	0.132E-23	R(90)	C
27	1924.817 16(14)*	1771.58	0.850E-23	R(78)	C	62	1930.336 14(9)*	1658.48	0.764E-23	R(90)	A
28	1925.021 05(14)*	1900.71	0.468E-23	R(82)	B	63	1930.775 98(9)*	1695.27	0.643E-23	R(91)	A
29	1925.105 25(9)*	1248.35	0.509E-22	R(78)	A	64	1931.216 41(9)*	1732.46	0.540E-23	R(92)	A
30	1925.249 06(14)*	1803.61	0.736E-23	R(79)	C	65	1931.657 45(9)*	1770.05	0.453E-23	R(93)	A
31	1925.421 66(14)*	1934.32	0.402E-23	R(83)	B	66	1932.099 08(9)*	1808.05	0.379E-23	R(94)	A
32	1925.537 86(9)*	1280.32	0.440E-22	R(79)	A	67	1932.541 31(9)*	1846.44	0.316E-23	R(95)	A
33	1925.678 70(24)	1770.05	0.638E-24	R(93)	X	68	1932.984 12(9)*	1885.23	0.264E-23	R(96)	A
34	1925.681 28(14)*	1836.05	0.636E-23	R(80)	C	69	1933.427 53(9)*	1924.43	0.219E-23	R(97)	A
35	1925.822 49(14)*	1968.34	0.344E-23	R(84)	B	70	1933.871 51(9)*	1964.03	0.182E-23	R(98)	A

ATLAS OF OCS ABSORPTION LINES FROM 1970 cm^{-1} to 2141 cm^{-1}

key:

Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$10^00\text{-}00^00$
B		$11^10\text{-}01^{1e}0$
C		$11^10\text{-}01^{1f}0$
D		$10^01\text{-}00^01$
E		$12^20\text{-}02^{2e}0$
F		$12^20\text{-}02^{2f}0$
G		$12^00\text{-}02^00$
H		$11^11\text{-}01^{1e}1$
I		$11^11\text{-}01^{1f}1$
W		$04^00\text{-}00^00$
Y		$05^10\text{-}01^{1e}0$
Z		$05^10\text{-}01^{1f}0$
J	$^{16}O^{13}C^{34}S$	$10^00\text{-}00^00$
K	$^{18}O^{12}C^{32}S$	$10^00\text{-}00^00$
L	$^{16}O^{12}C^{33}S$	$10^00\text{-}00^00$
M		$11^10\text{-}01^{1e}0$
N		$11^10\text{-}01^{1f}0$
P	$^{16}O^{12}C^{34}S$	$10^00\text{-}00^00$
Q		$11^10\text{-}01^{1e}0$
R		$11^10\text{-}01^{1f}0$
S		$10^01\text{-}00^01$
T	$^{16}O^{13}C^{32}S$	$10^00\text{-}00^00$
U		$11^10\text{-}01^{1e}0$
V		$11^10\text{-}01^{1f}0$

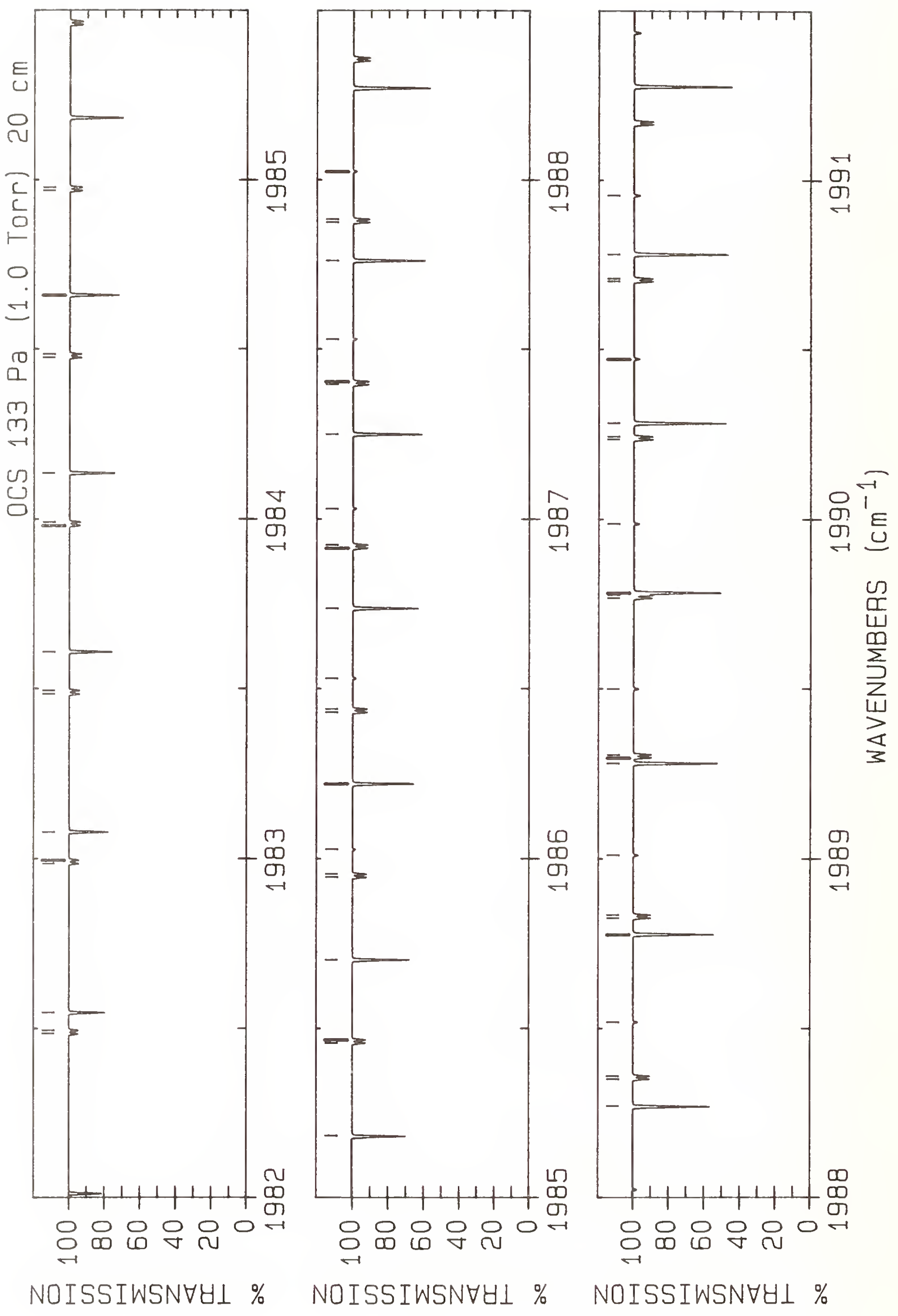
If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1}, a temperature of 296 K, and transition moments of 0.345 debye for $\Delta v_1 = 1$ transitions, 0.024 debye for the W band, and 0.017 debye for the Y and Z bands. No Herman-Wallis constant was included in the intensity calculation.



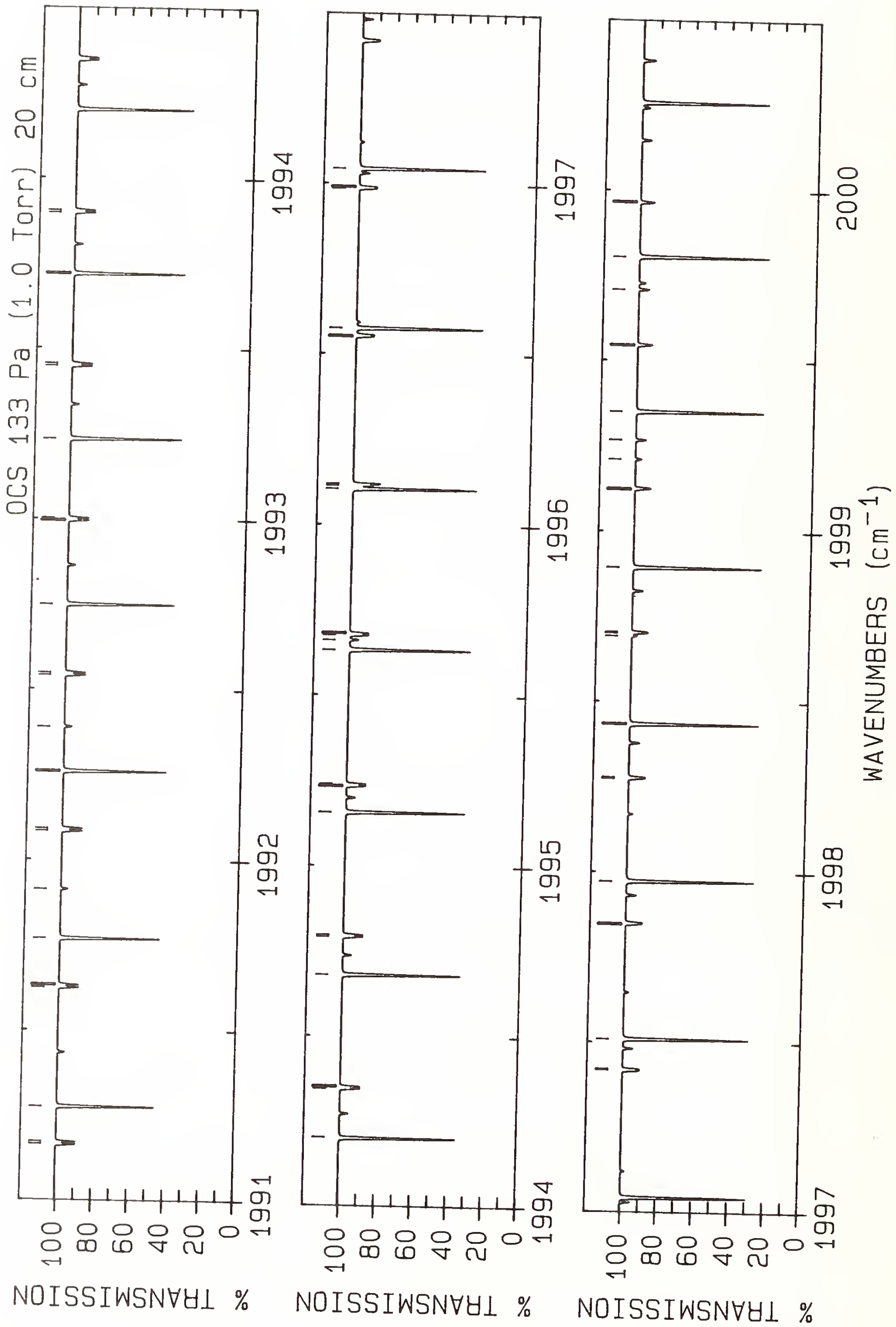
OCS 133 Pa (1.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1970 1971 1972 1973 1974
1974 1975 1976 1977 1978
1978 1979 1980 1981 1982
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1970.283 26(58)	1276.20	0.132E-21	P(79)	T
2	1970.345 31(52)	1427.35	0.539E-22	P(67)	V
3	1970.358 44(57)	1426.37	0.542E-22	P(67)	U
4	1970.864 20(52)	1244.34	0.153E-21	P(78)	T
5	1970.897 53(48)	1400.25	0.606E-22	P(66)	V
6	1970.910 46(52)	1399.29	0.609E-22	P(66)	U
7	1971.442 91(47)	1212.88	0.176E-21	P(77)	T
8	1971.447 53(44)	1373.55	0.680E-22	P(65)	V
9	1971.460 26(48)	1372.62	0.683E-22	P(65)	U
10	1971.995 31(40)	1347.26	0.761E-22	P(64)	V
11	1972.007 85(44)	1346.35	0.764E-22	P(64)	U
12	1972.019 40(42)	1181.82	0.202E-21	P(76)	T
13	1972.540 87(37)	1321.36	0.850E-22	P(63)	V
14	1972.553 24(41)	1320.49	0.853E-22	P(63)	U
15	1972.593 66(37)	1151.16	0.231E-21	P(75)	T
16	1973.084 21(34)	1295.87	0.946E-22	P(62)	V
17	1973.096 40(37)	1295.03	0.950E-22	P(62)	U
18	1973.165 69(34)	1120.90	0.264E-21	P(74)	T
19	1973.625 32(32)	1270.79	0.105E-21	P(61)	V
20	1973.637 36(34)	1269.97	0.106E-21	P(61)	U
21	1973.735 49(30)	1091.04	0.301E-21	P(73)	T
22	1974.164 21(29)	1246.10	0.117E-21	P(60)	V
23	1974.176 10(31)	1245.31	0.117E-21	P(60)	U
24	1974.303 05(27)	1061.59	0.343E-21	P(72)	T
25	1974.700 88(27)	1221.82	0.129E-21	P(59)	V
26	1974.712 63(29)	1221.06	0.130E-21	P(59)	U
27	1974.868 37(25)*	1032.54	0.390E-21	P(71)	T
28	1975.235 33(25)	1197.95	0.143E-21	P(58)	V
29	1975.246 94(26)	1197.21	0.143E-21	P(58)	U
30	1975.431 45(23)*	1003.88	0.442E-21	P(70)	T
31	1975.767 55(23)	1174.48	0.157E-21	P(57)	V
32	1975.779 04(24)	1173.76	0.158E-21	P(57)	U
33	1975.992 29(21)*	975.63	0.500E-21	P(69)	T
34	1976.297 55(21)	1151.41	0.173E-21	P(56)	V
35	1976.308 92(22)	1150.71	0.173E-21	P(56)	U

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1976.550 89(19)*	947.79	0.564E-21	P(68)	T
37	1976.825 33(20)	1128.74	0.190E-21	P(55)	V
38	1976.836 59(21)	1128.07	0.190E-21	P(55)	U
39	1977.107 24(18)*	920.34	0.635E-21	P(67)	T
40	1977.350 89(18)	1106.48	0.207E-21	P(54)	V
41	1977.362 03(19)	1105.84	0.208E-21	P(54)	U
42	1977.661 34(17)*	893.30	0.714E-21	P(66)	T
43	1977.874 23(17)	1084.62	0.226E-21	P(53)	V
44	1977.885 26(18)	1084.00	0.227E-21	P(53)	U
45	1978.213 20(17)*	866.66	0.800E-21	P(65)	T
46	1978.395 34(17)	1063.17	0.247E-21	P(52)	V
47	1978.406 27(17)	1062.57	0.247E-21	P(52)	U
48	1978.762 80(16)*	840.42	0.895E-21	P(64)	T
49	1978.914 23(16)	1042.12	0.268E-21	P(51)	V
50	1978.925 06(16)	1041.54	0.269E-21	P(51)	U
51	1979.310 16(16)*	814.58	0.100E-20	P(63)	T
52	1979.430 90(15)	1021.47	0.291E-21	P(50)	V
53	1979.441 63(15)	1020.92	0.291E-21	P(50)	U
54	1979.855 26(16)*	789.15	0.111E-20	P(62)	T
55	1979.945 35(15)	1001.23	0.314E-21	P(49)	V
56	1979.955 98(15)	1000.70	0.315E-21	P(49)	U
57	1980.398 11(15)*	764.12	0.124E-20	P(61)	T
58	1980.457 57(14)	981.39	0.339E-21	P(48)	V
59	1980.468 11(15)	980.88	0.340E-21	P(48)	U
60	1980.938 70(15)*	739.49	0.137E-20	P(60)	T
61	1980.967 58(14)	961.95	0.365E-21	P(47)	V
62	1980.978 02(14)	961.47	0.366E-21	P(47)	U
63	1981.475 36(14)	942.92	0.392E-21	P(46)	V
64	1981.477 04(15)*	715.26	0.152E-20	P(59)	T
65	1981.485 70(14)	942.46	0.393E-21	P(46)	U
66	1981.980 91(14)	924.30	0.420E-21	P(45)	V
67	1981.991 17(14)	923.85	0.421E-21	P(45)	U

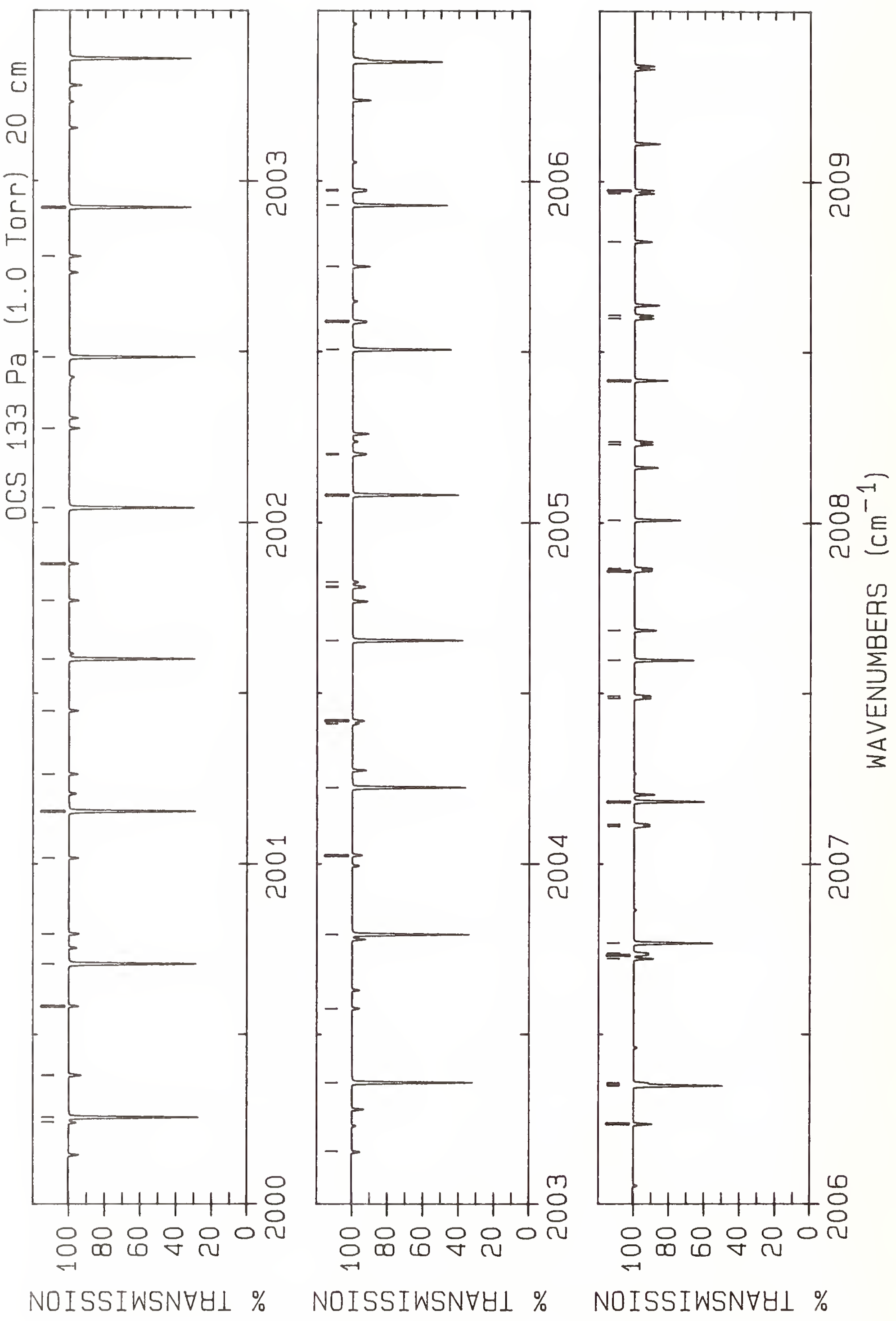

OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
1982 1983 1984 1985
% TRANSMISSION
100 80 60 40 20 0
1985 1986 1987 1988
% TRANSMISSION
100 80 60 40 20 0
1988 1989 1990 1991
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1982.484 25(14)	906.08	0.449E-21	P(44)	V
2	1982.494 41(14)	905.65	0.450E-21	P(44)	U
3	1982.546 95(15)*	668.01	0.185E-20	P(57)	T
4	1982.985 36(14)	888.26	0.478E-21	P(43)	V
5	1982.995 43(14)	887.85	0.479E-21	P(43)	U
6	1983.078 51(15)*	644.99	0.203E-20	P(56)	T
7	1983.484 26(14)	870.84	0.509E-21	P(42)	V
8	1983.494 22(14)	870.45	0.510E-21	P(42)	U
9	1983.607 82(15)*	622.38	0.223E-20	P(55)	T
10	1983.980 92(14)	853.84	0.539E-21	P(41)	V
11	1983.990 79(14)	853.46	0.540E-21	P(41)	U
12	1984.134 87(15)*	600.16	0.243E-20	P(54)	T
13	1984.475 37(14)	837.23	0.571E-21	P(40)	V
14	1984.485 13(14)	836.87	0.572E-21	P(40)	U
15	1984.659 65(15)*	578.35	0.266E-20	P(53)	T
16	1984.967 60(13)	821.03	0.602E-21	P(39)	V
17	1984.977 25(13)	820.69	0.603E-21	P(39)	U
18	1985.182 18(15)*	556.95	0.290E-20	P(52)	T
19	1985.457 60(13)	805.23	0.634E-21	P(38)	V
20	1985.467 15(13)	804.91	0.635E-21	P(38)	U
21	1985.702 44(15)*	535.94	0.315E-20	P(51)	T
22	1985.945 38(13)	789.84	0.665E-21	P(37)	V
23	1985.954 81(13)	789.54	0.666E-21	P(37)	U
24	1986.027 5	502.58	0.155E-21	P(50)	J
25	1986.220 44(15)*	515.34	0.341E-20	P(50)	T
26	1986.430 93(13)	774.86	0.696E-21	P(36)	V
27	1986.440 25(13)	774.57	0.697E-21	P(36)	U
28	1986.530 1	482.88	0.167E-21	P(49)	J
29	1986.736 18(15)*	495.14	0.369E-20	P(49)	T
30	1986.914 27(13)	760.27	0.726E-21	P(35)	V
31	1986.923 47(13)	760.00	0.727E-21	P(35)	U
32	1987.030 5	463.57	0.180E-21	P(48)	J
33	1987.249 65(15)*	475.34	0.398E-20	P(48)	T
34	1987.395 38(13)	746.10	0.756E-21	P(34)	V
35	1987.404 45(13)	745.84	0.757E-21	P(34)	U
36	1987.528 8	444.66	0.193E-21	P(47)	J
37	1987.760 86(15)*	455.95	0.428E-20	P(47)	T
38	1987.874 27(13)	732.32	0.785E-21	P(33)	V
39	1987.883 21(13)	732.08	0.786E-21	P(33)	U
40	1988.024 8	426.14	0.207E-21	P(46)	J
41	1988.269 81(15)*	436.96	0.460E-20	P(46)	T
42	1988.350 93(13)	718.95	0.812E-21	P(32)	V
43	1988.359 74(13)	718.73	0.813E-21	P(32)	U
44	1988.518 6	408.01	0.221E-21	P(45)	J
45	1988.776 49(15)*	418.38	0.492E-20	P(45)	T
46	1988.825 37(13)	705.99	0.838E-21	P(31)	V
47	1988.834 04(13)	705.77	0.839E-21	P(31)	U
48	1989.010 2	390.28	0.236E-21	P(44)	J
49	1989.280 91(15)*	400.19	0.526E-20	P(44)	T
50	1989.297 59(13)	693.43	0.863E-21	P(30)	V
51	1989.306 11(13)	693.23	0.863E-21	P(30)	U
52	1989.499 5	372.94	0.251E-21	P(43)	J
53	1989.767 58(13)	681.28	0.885E-21	P(29)	V
54	1989.775 95(13)	681.09	0.885E-21	P(29)	U
55	1989.783 06(15)*	382.42	0.560E-20	P(43)	T
56	1989.986 7	356.00	0.266E-21	P(42)	J
57	1990.235 35(13)	669.53	0.905E-21	P(28)	V
58	1990.243 56(13)	669.35	0.905E-21	P(28)	U
59	1990.282 94(15)*	365.04	0.596E-20	P(42)	T
60	1990.471 7	339.45	0.282E-21	P(41)	J
61	1990.700 90(13)	658.18	0.922E-21	P(27)	V
62	1990.708 93(13)	658.02	0.923E-21	P(27)	U
63	1990.780 56(14)*	348.07	0.632E-20	P(41)	T
64	1990.954 4	323.29	0.297E-21	P(40)	J



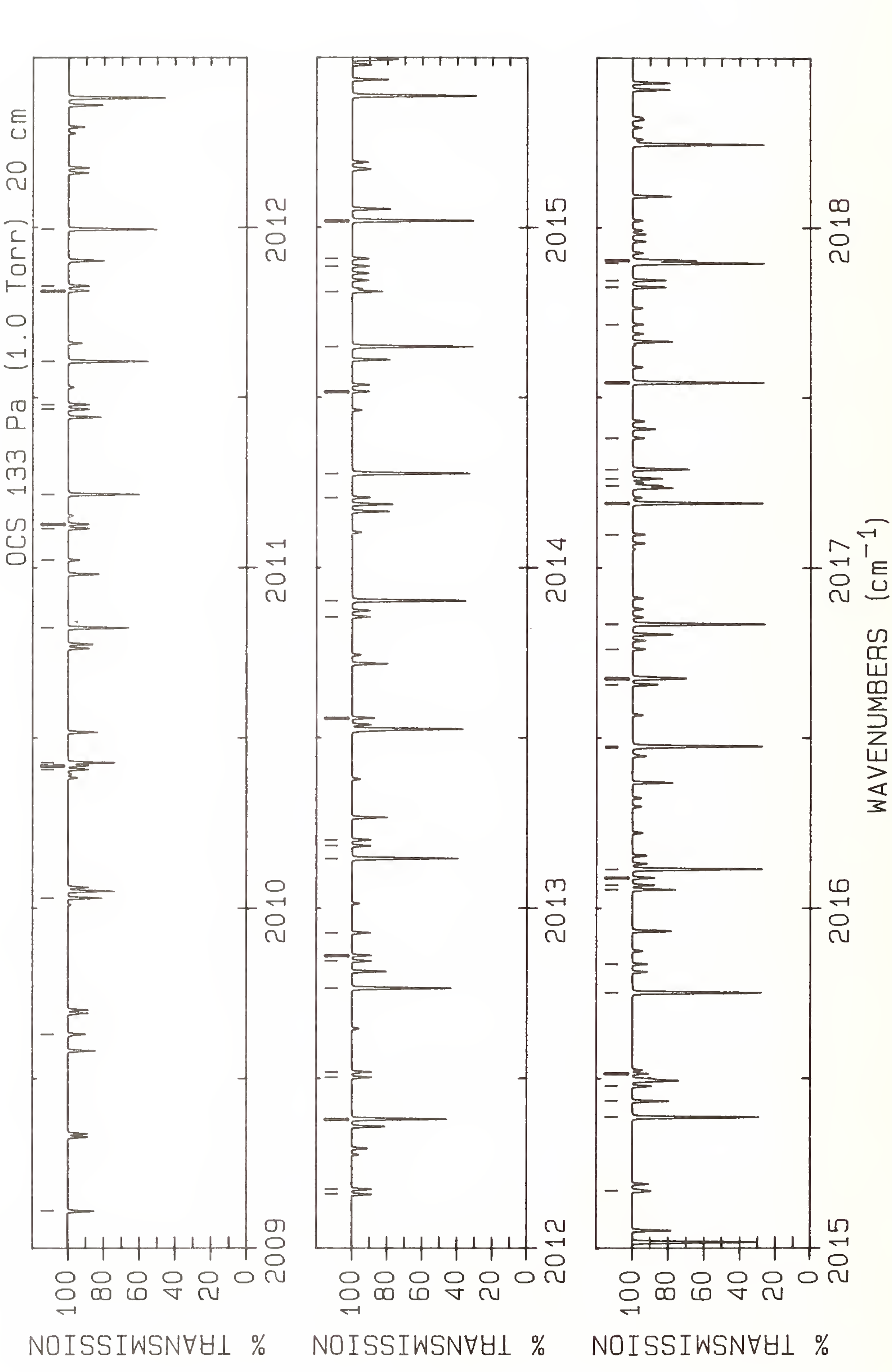
OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1991.164 22(13)	647.25	0.936E-21	P(26)	V	36	1996.104 75(14)*	188.01	0.101E-19	P(30)	T
2	1991.172 08(13)	647.09	0.937E-21	P(26)	U	37	1996.113 80(13)	553.64	0.851E-21	P(15)	V
3	1991.275 92(14)*	331.50	0.668E-20	P(40)	T	38	1996.119 17(13)	553.59	0.851E-21	P(15)	U
4	1991.625 31(13)	636.71	0.948E-21	P(25)	V	39	1996.119 2	171.53	0.452E-21	P(29)	J
5	1991.632 99(13)	636.57	0.948E-21	P(25)	U	40	1996.550 40(14)	547.56	0.818E-21	P(14)	V
6	1991.769 00(14)*	315.33	0.705E-20	P(39)	T	41	1996.555 48(13)	547.52	0.818E-21	P(14)	U
7	1991.913 4	292.15	0.329E-21	P(38)	J	42	1996.575 16(14)*	175.88	0.104E-19	P(29)	T
8	1992.084 18(13)	626.58	0.956E-21	P(24)	V	43	1996.575 5	160.09	0.461E-21	P(28)	J
9	1992.091 67(13)	626.45	0.956E-21	P(24)	U	44	1996.984 76(14)	541.89	0.780E-21	P(13)	V
10	1992.259 82(14)*	299.57	0.742E-20	P(38)	T	45	1996.989 55(14)	541.85	0.780E-21	P(13)	U
11	1992.389 5	277.17	0.344E-21	P(37)	J	46	1997.043 30(14)*	164.16	0.106E-19	P(28)	T
12	1992.540 83(13)	616.86	0.960E-21	P(23)	V	47	1997.416 89(14)	536.62	0.738E-21	P(12)	V
13	1992.548 11(13)	616.74	0.961E-21	P(23)	U	48	1997.421 37(14)	536.59	0.738E-21	P(12)	U
14	1992.748 38(14)*	284.21	0.778E-20	P(37)	T	49	1997.509 17(14)*	152.84	0.108E-19	P(27)	T
15	1992.995 24(13)	607.54	0.961E-21	P(22)	V	50	1997.846 79(14)	531.76	0.692E-21	P(11)	V
16	1993.002 32(13)	607.43	0.962E-21	P(22)	U	51	1997.850 96(14)	531.73	0.692E-21	P(11)	U
17	1993.234 66(14)*	269.26	0.815E-20	P(36)	T	52	1997.972 77(14)*	141.93	0.109E-19	P(26)	T
18	1993.447 44(13)	598.62	0.958E-21	P(21)	V	53	1998.274 45(14)	527.30	0.642E-21	P(10)	V
19	1993.454 30(13)	598.52	0.959E-21	P(21)	U	54	1998.278 30(14)	527.28	0.642E-21	P(10)	U
20	1993.718 68(14)*	254.71	0.850E-20	P(35)	T	55	1998.434 10(14)*	131.41	0.111E-19	P(25)	T
21	1993.897 40(13)	590.11	0.951E-21	P(20)	V	56	1998.691 3	719.15	0.269E-21	P(61)	K
22	1993.904 04(13)	590.02	0.952E-21	P(20)	U	57	1998.699 88(14)	523.25	0.588E-21	P(9)	V
23	1994.200 43(14)*	240.56	0.885E-20	P(34)	T	58	1998.703 39(14)	523.23	0.588E-21	P(9)	U
24	1994.345 14(13)	582.01	0.940E-21	P(19)	V	59	1998.893 16(14)*	121.31	0.112E-19	P(24)	T
25	1994.351 54(13)	581.93	0.940E-21	P(19)	U	60	1999.123 08(14)	519.60	0.530E-21	P(8)	V
26	1994.679 91(14)*	226.82	0.919E-20	P(33)	T	61	1999.126 25(14)	519.58	0.530E-21	P(8)	U
27	1994.790 65(13)	574.31	0.924E-21	P(18)	V	62	1999.210 3	695.97	0.297E-21	P(60)	K
28	1994.796 80(13)	574.24	0.925E-21	P(18)	U	63	1999.266 9	99.77	0.487E-21	P(22)	J
29	1995.157 13(14)*	213.48	0.951E-20	P(32)	T	64	1999.349 94(14)*	111.60	0.112E-19	P(23)	T
30	1995.233 93(13)	567.01	0.904E-21	P(17)	V	65	1999.544 04(14)	516.36	0.469E-21	P(7)	V
31	1995.239 83(13)	566.95	0.905E-21	P(17)	U	66	1999.546 85(14)	516.35	0.469E-21	P(7)	U
32	1995.632 07(14)*	200.54	0.981E-20	P(31)	T	67	1999.707 7	91.09	0.485E-21	P(21)	J
33	1995.660 7	183.35	0.441E-21	P(30)	J	68	1999.804 46(14)*	102.30	0.113E-19	P(22)	T
34	1995.674 98(13)	560.13	0.880E-21	P(16)	V	69	1999.962 77(14)	513.52	0.405E-21	P(6)	V
35	1995.680 62(13)	560.07	0.880E-21	P(16)	U	70	1999.965 21(14)	513.51	0.405E-21	P(6)	U



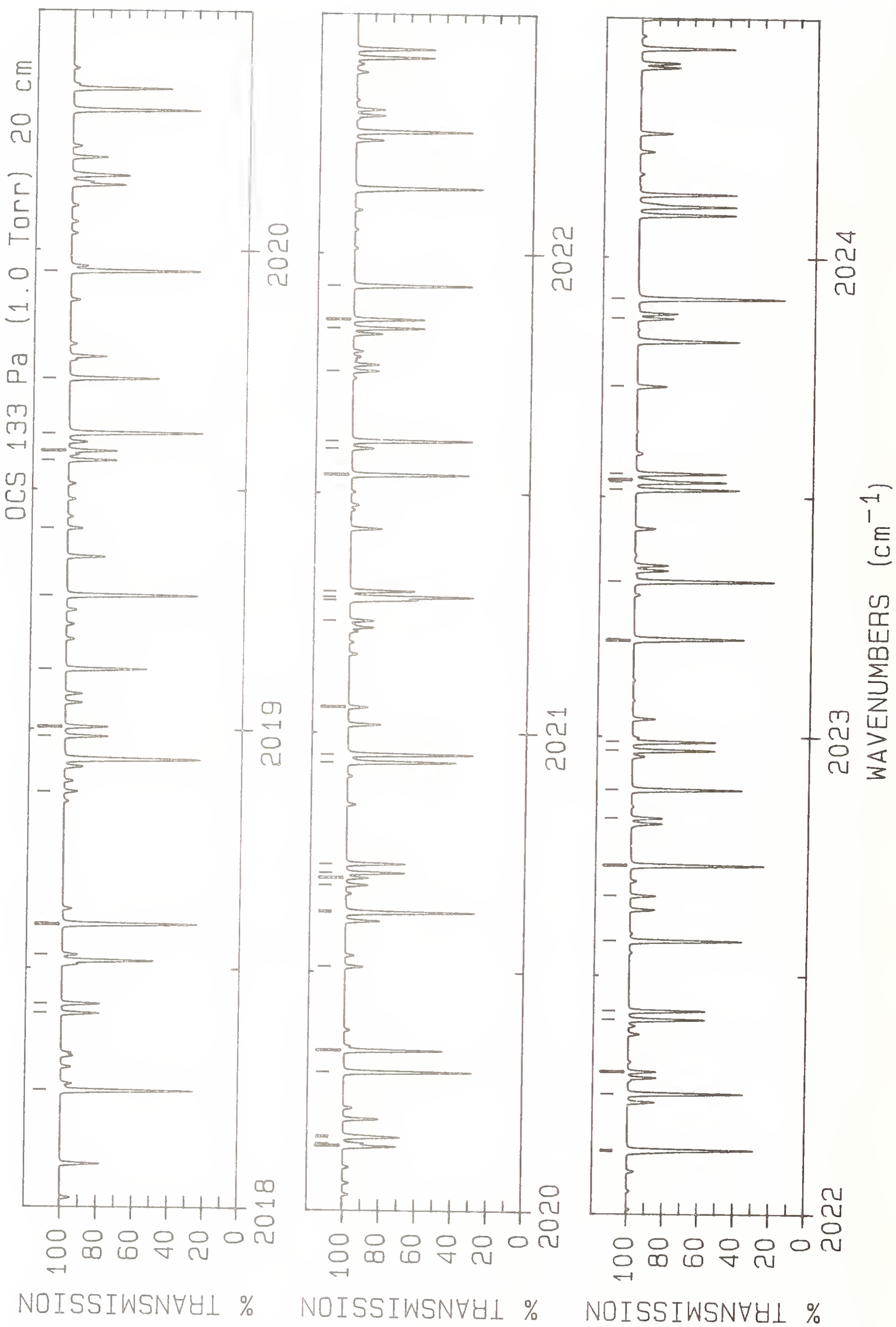
OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2000 2001 2002 2003
2003 2004 2005 2006
2006 2007 2008 2009
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2000.241 4	650.74	0.358E-21	P(58)	K	36	2005.198 96(14)	513.51	0.477E-21	R(6)	U
2	2000.256 71(14)*	93.41	0.112E-19	P(21)	T	37	2005.202 31(14)	513.52	0.477E-21	R(6)	V
3	2000.379 26(14)	511.09	0.337E-21	P(5)	V	38	2005.506 30(14)*	18.20	0.694E-20	P(9)	T
4	2000.381 32(14)	511.08	0.337E-21	P(5)	U	39	2005.585 75(14)	516.35	0.540E-21	R(7)	U
5	2000.582 8	74.93	0.475E-21	P(19)	J	40	2005.589 62(14)	516.36	0.540E-21	R(7)	V
6	2000.706 68(14)*	84.92	0.111E-19	P(20)	T	41	2005.749 6	429.11	0.853E-21	P(47)	K
7	2000.793 51(14)	509.06	0.266E-21	P(4)	V	42	2005.928 97(14)*	14.56	0.628E-20	P(8)	T
8	2000.795 18(14)	509.06	0.266E-21	P(4)	U	43	2005.970 29(14)	519.58	0.601E-21	R(8)	U
9	2001.017 0	67.44	0.466E-21	P(18)	J	44	2005.974 69(14)	519.60	0.601E-21	R(8)	V
10	2001.154 38(14)*	76.83	0.110E-19	P(19)	T	45	2006.236 7	411.24	0.911E-21	P(46)	K
11	2001.263 4	607.03	0.427E-21	P(56)	K	46	2006.349 36(14)*	11.32	0.559E-20	P(7)	T
12	2001.449 0	60.34	0.456E-21	P(17)	J	47	2006.352 55(14)	523.23	0.657E-21	R(9)	U
13	2001.599 81(14)*	69.15	0.108E-19	P(18)	T	48	2006.357 50(14)	523.25	0.657E-21	R(9)	V
14	2001.771 0	585.75	0.465E-21	P(55)	K	49	2006.721 4	393.75	0.971E-21	P(45)	K
15	2001.878 8	53.63	0.444E-21	P(16)	J	50	2006.732 56(14)	527.28	0.710E-21	R(10)	U
16	2002.042 96(14)*	61.87	0.106E-19	P(17)	T	51	2006.738 06(14)	527.30	0.710E-21	R(10)	V
17	2002.276 4	564.84	0.506E-21	P(54)	K	52	2006.767 46(14)*	8.49	0.486E-20	P(6)	T
18	2002.483 84(14)*	55.00	0.103E-19	P(16)	T	53	2007.110 29(14)	531.73	0.760E-21	R(11)	U
19	2002.779 4	544.31	0.549E-21	P(53)	K	54	2007.116 36(14)	531.76	0.759E-21	R(11)	V
20	2002.922 45(14)*	48.53	0.997E-20	P(15)	T	55	2007.183 29(14)*	6.07	0.410E-20	P(5)	T
21	2003.155 0	35.89	0.393E-21	P(13)	J	56	2007.485 76(13)	536.59	0.805E-21	R(12)	U
22	2003.358 78(14)*	42.46	0.959E-20	P(14)	T	57	2007.492 40(13)	536.62	0.804E-21	R(12)	V
23	2003.575 9	30.76	0.372E-21	P(12)	J	58	2007.596 84(14)*	4.04	0.331E-20	P(4)	T
24	2003.792 84(14)*	36.80	0.915E-20	P(13)	T	59	2007.684 0	359.90	0.109E-20	P(43)	K
25	2004.025 00(14)	507.44	0.269E-21	R(3)	U	60	2007.858 96(13)	541.85	0.845E-21	R(13)	U
26	2004.026 85(14)	507.44	0.269E-21	R(3)	V	61	2007.866 18(13)	541.89	0.845E-21	R(13)	V
27	2004.224 62(14)*	31.54	0.867E-20	P(12)	T	62	2008.008 10(14)*	2.43	0.250E-20	P(3)	T
28	2004.411 2	21.69	0.324E-21	P(10)	J	63	2008.229 89(13)	547.52	0.882E-21	R(14)	U
29	2004.418 58(14)	509.06	0.341E-21	R(4)	U	64	2008.237 71(13)	547.56	0.882E-21	R(14)	V
30	2004.420 92(14)	509.06	0.341E-21	R(4)	V	65	2008.417 08(14)*	1.21	0.168E-20	P(2)	T
31	2004.654 12(14)*	26.69	0.814E-20	P(11)	T	66	2008.598 55(13)	553.59	0.914E-21	R(15)	U
32	2004.809 90(14)	511.08	0.411E-21	R(5)	U	67	2008.606 97(13)	553.64	0.914E-21	R(15)	V
33	2004.812 74(14)	511.09	0.410E-21	R(5)	V	68	2008.823 77(14)*	0.40	0.843E-21	P(1)	T
34	2004.825 6	17.75	0.298E-21	P(9)	J	69	2008.964 93(13)	560.07	0.942E-21	R(16)	U
35	2005.081 35(14)*	22.24	0.756E-20	P(10)	T	70	2008.973 96(13)	560.13	0.941E-21	R(16)	V



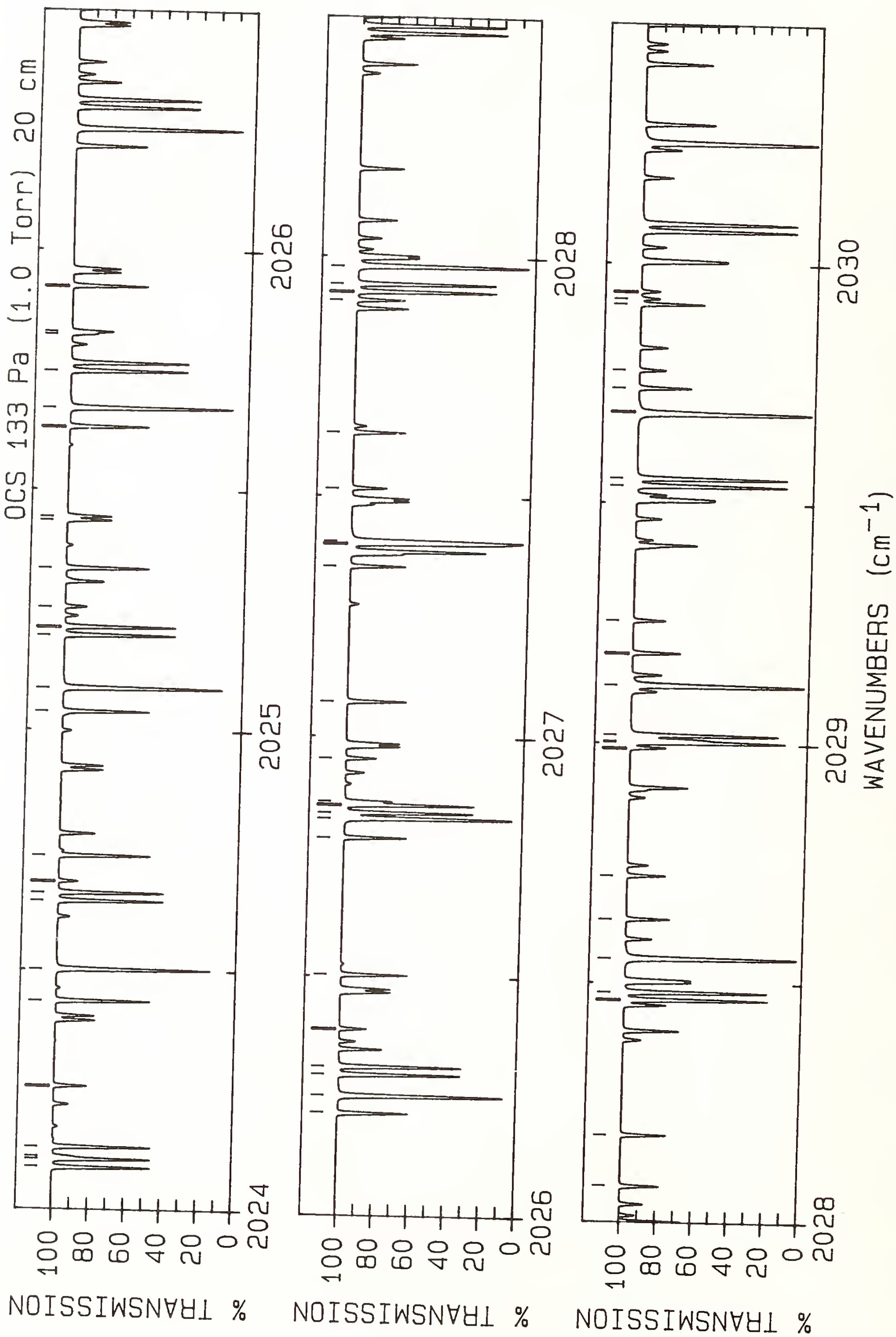
OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2009.110 7	311.98	0.129E-20	P(40)	K
2	2009.630 30(14)*	0.00	0.845E-21	R(0)	T
3	2010.030 14(14)*	0.40	0.169E-20	R(1)	T
4	2010.407 70(13)	590.02	0.101E-20	R(20)	U
5	2010.419 28(13)	590.11	0.101E-20	R(20)	V
6	2010.427 68(14)*	1.21	0.252E-20	R(2)	T
7	2010.822 93(14)*	2.43	0.334E-20	R(3)	T
8	2011.022 72(15)	1964.03	0.538E-21	P(98)	A
9	2011.115 41(13)	607.43	0.101E-20	R(22)	U
10	2011.128 32(13)	607.54	0.101E-20	R(22)	V
11	2011.215 89(14)*	4.04	0.414E-20	R(4)	T
12	2011.465 84(13)	616.74	0.101E-20	R(23)	U
13	2011.479 42(13)	616.86	0.101E-20	R(23)	V
14	2011.606 56(14)*	6.07	0.493E-20	R(5)	T
15	2011.813 99(13)	626.45	0.101E-20	R(24)	U
16	2011.828 25(13)	626.58	0.101E-20	R(24)	V
17	2011.994 94(14)*	8.49	0.568E-20	R(6)	T
18	2012.159 85(13)	636.57	0.997E-21	R(25)	U
19	2012.174 80(13)	636.71	0.996E-21	R(25)	V
20	2012.381 02(14)*	11.32	0.640E-20	R(7)	T
21	2012.503 42(13)	647.09	0.983E-21	R(26)	U
22	2012.519 07(13)	647.25	0.983E-21	R(26)	V
23	2012.764 80(14)*	14.56	0.709E-20	R(8)	T
24	2012.844 70(13)	658.02	0.967E-21	R(27)	U
25	2012.861 06(13)	658.18	0.967E-21	R(27)	V
26	2012.927 50(13)*	1846.44	0.924E-21	P(95)	A
27	2013.146 29(14)*	18.20	0.775E-20	R(9)	T
28	2013.183 69(13)	669.35	0.949E-21	R(28)	U
29	2013.200 76(13)	669.53	0.948E-21	R(28)	V
30	2013.557 77(13)*	1808.05	0.110E-20	P(94)	A
31	2013.854 80(13)	693.23	0.903E-21	R(30)	U
32	2013.902 36(14)*	26.69	0.892E-20	R(11)	T
33	2014.206 14(13)	705.99	0.876E-21	R(31)	V
34	2014.276 94(14)*	31.54	0.944E-20	R(12)	T
35	2014.516 72(13)	718.73	0.850E-21	R(32)	U
36	2014.649 22(14)*	36.80	0.991E-20	R(13)	T
37	2014.811 28(13)*	1732.46	0.156E-20	P(92)	A
38	2014.885 63(18)*	1836.05	0.820E-21	P(80)	C
39	2014.907 69(19)*	1834.68	0.826E-21	P(80)	B
40	2015.019 20(14)*	42.46	0.103E-19	R(14)	T
41	2015.169 44(13)	745.84	0.790E-21	R(34)	U
42	2015.386 87(14)*	48.53	0.107E-19	R(15)	T
43	2015.434 53(13)*	1695.27	0.185E-20	P(91)	A
44	2015.478 25(17)*	1803.61	0.949E-21	P(79)	C
45	2015.514 55(13)	760.27	0.758E-21	R(35)	V
46	2015.752 23(14)*	55.00	0.110E-19	R(16)	T
47	2015.835 91(13)	774.86	0.726E-21	R(36)	V
48	2016.055 44(13)*	1658.48	0.219E-20	P(90)	A
49	2016.068 55(15)*	1771.58	0.110E-20	P(78)	C
50	2016.089 90(16)*	1770.28	0.110E-20	P(78)	B
51	2016.115 28(14)*	61.87	0.113E-19	R(17)	T
52	2016.471 72(14)	805.23	0.660E-21	R(38)	V
53	2016.476 02(14)*	69.15	0.115E-19	R(18)	T
54	2016.656 53(14)*	1739.94	0.126E-20	P(77)	C
55	2016.674 00(13)*	1622.10	0.258E-20	P(89)	A
56	2016.677 54(15)*	1738.67	0.127E-20	P(77)	B
57	2016.760 95(14)	820.69	0.628E-21	R(39)	U
58	2016.834 45(14)*	76.83	0.117E-19	R(19)	T
59	2017.098 31(14)	837.23	0.595E-21	R(40)	V
60	2017.190 56(14)*	84.92	0.118E-19	R(20)	T
61	2017.242 18(13)*	1708.71	0.145E-20	P(76)	C
62	2017.262 87(14)*	1707.48	0.146E-20	P(76)	B
63	2017.290 22(13)*	1586.11	0.304E-20	P(88)	A
64	2017.381 39(14)	853.46	0.563E-21	R(41)	U
65	2017.544 35(14)*	93.41	0.119E-19	R(21)	T
66	2017.715 66(14)	870.84	0.530E-21	R(42)	V
67	2017.825 51(13)*	1677.89	0.166E-20	P(75)	C
68	2017.845 88(13)*	1676.68	0.167E-20	P(75)	B
69	2017.895 83(14)*	102.30	0.119E-19	R(22)	T
70	2017.904 10(13)*	1550.53	0.357E-20	P(87)	A



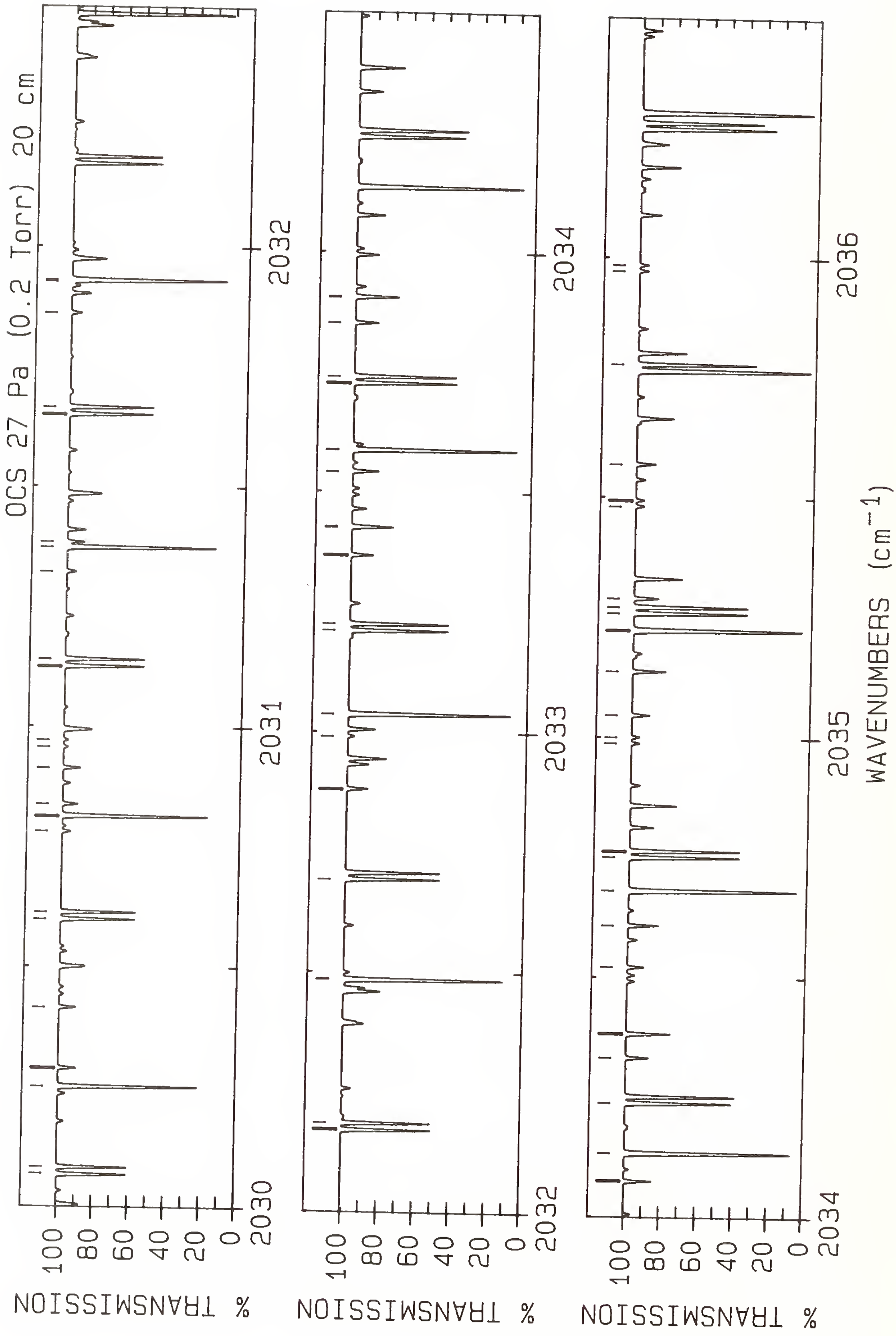
OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2018
2019
2020
2021
2022
2023
2024
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2018.244 99(14)*	111.60	0.118E-19	R(23)	T
2	2018.406 51(12)*	1647.46	0.190E-20	P(74)	C
3	2018.426 57(13)*	1646.29	0.191E-20	P(74)	B
4	2018.528 56(32)	1810.40	0.710E-21	P(61)	E
5	2018.591 7	149.06	0.492E-21	R(27)	J
6	2018.591 83(14)*	121.31	0.118E-19	R(24)	T
7	2018.594 51(15)	923.85	0.438E-21	R(45)	U
8	2018.869 67(15)	1841.28	0.622E-21	P(62)	G
9	2018.985 18(12)*	1617.44	0.217E-20	P(73)	C
10	2019.004 95(12)*	1616.30	0.218E-20	P(73)	B
11	2019.124 81(13)*	1480.56	0.491E-20	P(85)	A
12	2019.278 53(14)*	141.93	0.115E-19	R(26)	T
13	2019.419 15(13)	1816.08	0.692E-21	P(61)	G
14	2019.561 53(11)*	1587.83	0.247E-20	P(72)	C
15	2019.581 00(12)*	1586.72	0.249E-20	P(72)	B
16	2019.617 23(27)	1761.24	0.873E-21	P(59)	E
17	2019.618 39(14)*	152.84	0.113E-19	R(27)	T
18	2019.731 65(13)*	1446.18	0.574E-20	P(84)	A
19	2019.955 93(14)*	164.16	0.111E-19	R(28)	T
20	2020.135 54(11)*	1558.62	0.281E-20	P(71)	C
21	2020.141 88(25)	1737.35	0.964E-21	P(58)	F
22	2020.154 73(11)*	1557.54	0.283E-20	P(71)	B
23	2020.158 21(24)	1737.26	0.964E-21	P(58)	E
24	2020.291 13(14)*	175.88	0.108E-19	R(29)	T
25	2020.336 13(13)*	1412.21	0.669E-20	P(83)	A
26	2020.511 03(12)	1766.91	0.850E-21	P(59)	G
27	2020.624 00(14)*	188.01	0.106E-19	R(30)	T
28	2020.628 09(20)	1062.57	0.257E-21	R(52)	U
29	2020.681 66(23)	1713.77	0.106E-20	P(57)	F
30	2020.696 93(22)	1713.69	0.106E-20	P(57)	E
31	2020.707 22(11)*	1529.81	0.319E-20	P(70)	C
32	2020.726 14(11)*	1528.76	0.321E-20	P(70)	B
33	2020.938 25(13)*	1378.63	0.778E-20	P(82)	A
34	2020.954 54(14)*	200.54	0.103E-19	R(31)	T
35	2021.053 44(12)	1742.93	0.940E-21	P(58)	G
36	2021.233 41(21)	1690.52	0.117E-20	P(56)	E
37	2021.276 58(11)*	1501.41	0.361E-20	P(69)	C
38	2021.282 74(14)*	213.48	0.993E-20	R(32)	T
39	2021.295 22(11)*	1500.39	0.363E-20	P(69)	B
40	2021.538 03(13)*	1345.46	0.903E-20	P(81)	A
41	2021.593 49(11)	1719.35	0.104E-20	P(57)	G
42	2021.608 60(14)*	226.82	0.959E-20	R(33)	T
43	2021.754 31(20)	1667.83	0.128E-20	P(55)	F
44	2021.843 59(11)*	1473.41	0.408E-20	P(68)	C
45	2021.861 98(11)*	1472.41	0.410E-20	P(68)	B
46	2021.932 13(14)*	240.56	0.924E-20	R(34)	T
47	2022.131 19(11)	1696.18	0.114E-20	P(56)	G
48	2022.135 45(13)*	1312.69	0.105E-19	P(80)	A
49	2022.253 31(14)*	254.71	0.887E-20	R(35)	T
50	2022.299 59(18)	1645.40	0.140E-20	P(54)	E
51	2022.408 27(11)*	1445.81	0.460E-20	P(67)	C
52	2022.426 40(11)*	1444.85	0.462E-20	P(67)	B
53	2022.572 15(14)*	269.26	0.850E-20	R(36)	T
54	2022.666 53(11)	1673.42	0.125E-20	P(55)	G
55	2022.730 51(13)*	1280.32	0.121E-19	P(79)	A
56	2022.829 30(17)	1623.45	0.153E-20	P(53)	E
57	2022.888 65(14)*	284.21	0.812E-20	R(37)	T
58	2022.970 62(11)*	1418.62	0.517E-20	P(66)	C
59	2022.988 50(11)*	1417.69	0.519E-20	P(66)	B
60	2023.199 53(11)	1651.06	0.137E-20	P(54)	G
61	2023.202 79(14)*	299.57	0.773E-20	R(38)	T
62	2023.323 21(13)*	1248.35	0.140E-19	P(78)	A
63	2023.514 59(15)*	315.33	0.735E-20	R(39)	T
64	2023.530 63(11)*	1391.83	0.580E-20	P(65)	C
65	2023.535 83(20)	1217.87	0.699E-21	P(78)	P
66	2023.548 27(11)*	1390.93	0.583E-20	P(65)	B
67	2023.730 18(10)	1629.11	0.150E-20	P(53)	G
68	2023.871 94(15)	1580.82	0.182E-20	P(51)	F
69	2023.913 55(12)*	1216.79	0.161E-19	P(77)	A


OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2024
2025
2026
2027
2028
2029
2030
WAVENUMBERS (cm^{-1})

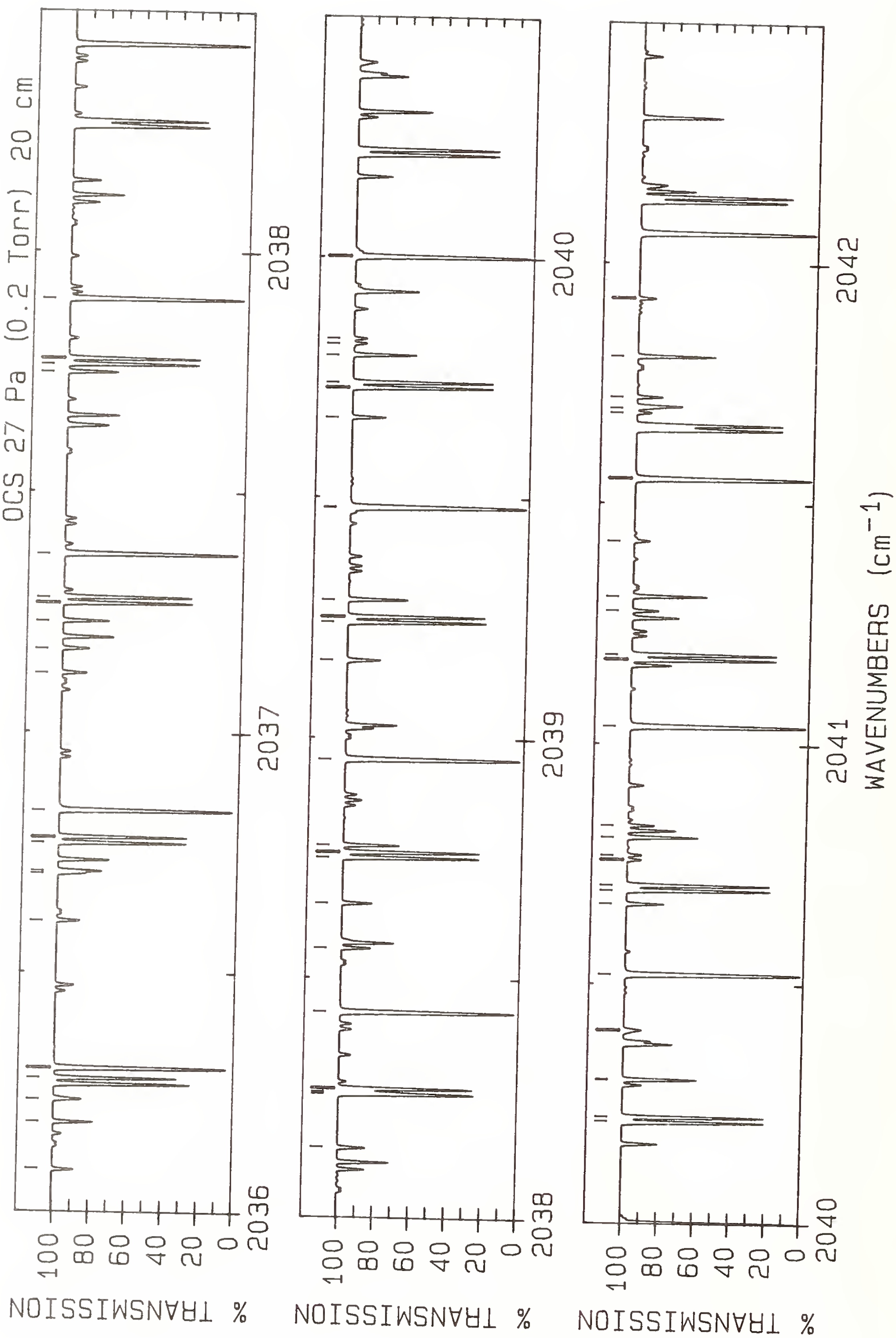
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2024.088 30(11)*	1365.45	0.649E-20	P(64)	C
2	2024.105 70(11)*	1364.57	0.652E-20	P(64)	B
3	2024.111 32(19)*	1187.08	0.802E-21	P(77)	P
4	2024.131 14(15)*	348.07	0.658E-20	R(41)	T
5	2024.258 48(10)	1607.56	0.163E-20	P(52)	G
6	2024.435 88(15)*	365.04	0.621E-20	R(42)	T
7	2024.501 53(12)*	1185.63	0.185E-19	P(76)	A
8	2024.643 64(11)*	1339.47	0.725E-20	P(63)	C
9	2024.660 80(11)*	1338.62	0.728E-20	P(63)	B
10	2024.684 52(18)*	1156.68	0.917E-21	P(76)	P
11	2024.738 27(15)*	382.42	0.584E-20	R(43)	T
12	2025.038 30(15)*	400.19	0.547E-20	R(44)	T
13	2025.087 15(12)*	1154.87	0.212E-19	P(75)	A
14	2025.196 63(11)*	1313.90	0.809E-20	P(62)	C
15	2025.213 56(10)*	1313.07	0.812E-20	P(62)	B
16	2025.255 41(17)*	1126.67	0.105E-20	P(75)	P
17	2025.335 97(15)*	418.38	0.512E-20	R(45)	T
18	2025.435 91(13)	1519.82	0.230E-20	P(48)	F
19	2025.443 86(14)	1519.78	0.230E-20	P(48)	E
20	2025.631 28(15)*	436.96	0.478E-20	R(46)	T
21	2025.670 41(12)*	1124.52	0.242E-19	P(74)	A
22	2025.747 29(10)*	1288.73	0.899E-20	P(61)	C
23	2025.824 01(16)*	1097.06	0.119E-20	P(74)	P
24	2025.829 29(9)	1545.35	0.208E-20	P(49)	G
25	2025.924 23(15)*	455.95	0.446E-20	R(47)	T
26	2026.214 81(15)*	475.34	0.414E-20	R(48)	T
27	2026.251 29(12)*	1094.57	0.276E-19	P(73)	A
28	2026.295 60(10)*	1263.97	0.998E-20	P(60)	C
29	2026.312 09(10)*	1263.19	0.100E-19	P(60)	B
30	2026.390 30(15)*	1067.84	0.136E-20	P(73)	P
31	2026.503 03(15)*	495.14	0.384E-20	R(49)	T
32	2026.788 88(15)*	515.34	0.355E-20	R(50)	T
33	2026.829 82(12)*	1065.02	0.315E-19	P(72)	A
34	2026.841 58(10)*	1239.61	0.110E-19	P(59)	C
35	2026.857 84(10)*	1238.86	0.111E-19	P(59)	B

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2026.864 78(9)	1505.91	0.242E-20	P(47)	G
37	2026.954 30(15)*	1039.01	0.154E-20	P(72)	P
38	2027.072 36(15)*	535.94	0.327E-20	R(51)	T
39	2027.353 47(15)*	556.95	0.301E-20	R(52)	T
40	2027.401 25(10)*	1214.93	0.123E-19	P(58)	B
41	2027.405 97(12)*	1035.87	0.358E-19	P(71)	A
42	2027.515 98(14)*	1010.57	0.175E-20	P(71)	P
43	2027.632 21(15)*	578.35	0.277E-20	R(53)	T
44	2027.908 57(15)*	600.16	0.253E-20	R(54)	T
45	2027.926 50(10)*	1192.10	0.135E-19	P(57)	C
46	2027.942 33(10)*	1191.40	0.135E-19	P(57)	B
47	2027.979 75(12)*	1007.13	0.405E-19	P(70)	A
48	2028.075 36(14)*	982.53	0.197E-20	P(70)	P
49	2028.182 56(15)*	622.38	0.232E-20	R(55)	T
50	2028.465 44(10)*	1168.96	0.148E-19	P(56)	C
51	2028.481 06(10)*	1168.28	0.148E-19	P(56)	B
52	2028.551 17(12)*	978.78	0.459E-19	P(69)	A
53	2028.632 43(14)*	954.88	0.223E-20	P(69)	P
54	2028.723 41(15)*	668.01	0.192E-20	R(57)	T
55	2028.990 27(15)*	691.43	0.175E-20	R(58)	T
56	2029.002 04(10)*	1146.22	0.162E-19	P(55)	C
57	2029.004 25(11)	1391.69	0.367E-20	P(41)	F
58	2029.017 45(10)*	1145.56	0.163E-19	P(55)	B
59	2029.120 21(12)*	950.85	0.518E-19	P(68)	A
60	2029.187 20(14)*	927.63	0.251E-20	P(68)	P
61	2029.254 75(15)*	715.26	0.158E-20	R(59)	T
62	2029.536 29(10)*	1123.88	0.178E-19	P(54)	C
63	2029.551 49(10)*	1123.25	0.178E-19	P(54)	B
64	2029.686 88(12)*	923.31	0.584E-19	P(67)	A
65	2029.690 10(27)	1648.29	0.159E-20	P(62)	D
66	2029.739 65(14)*	900.76	0.281E-20	P(67)	P
67	2029.776 57(15)*	764.12	0.129E-20	R(61)	T
68	2029.915 08(8)	1397.33	0.358E-20	P(41)	G
69	2029.926 19(7)	1086.97	0.901E-21	P(53)	R
70	2029.941 20(6)	1086.39	0.904E-21	P(53)	Q

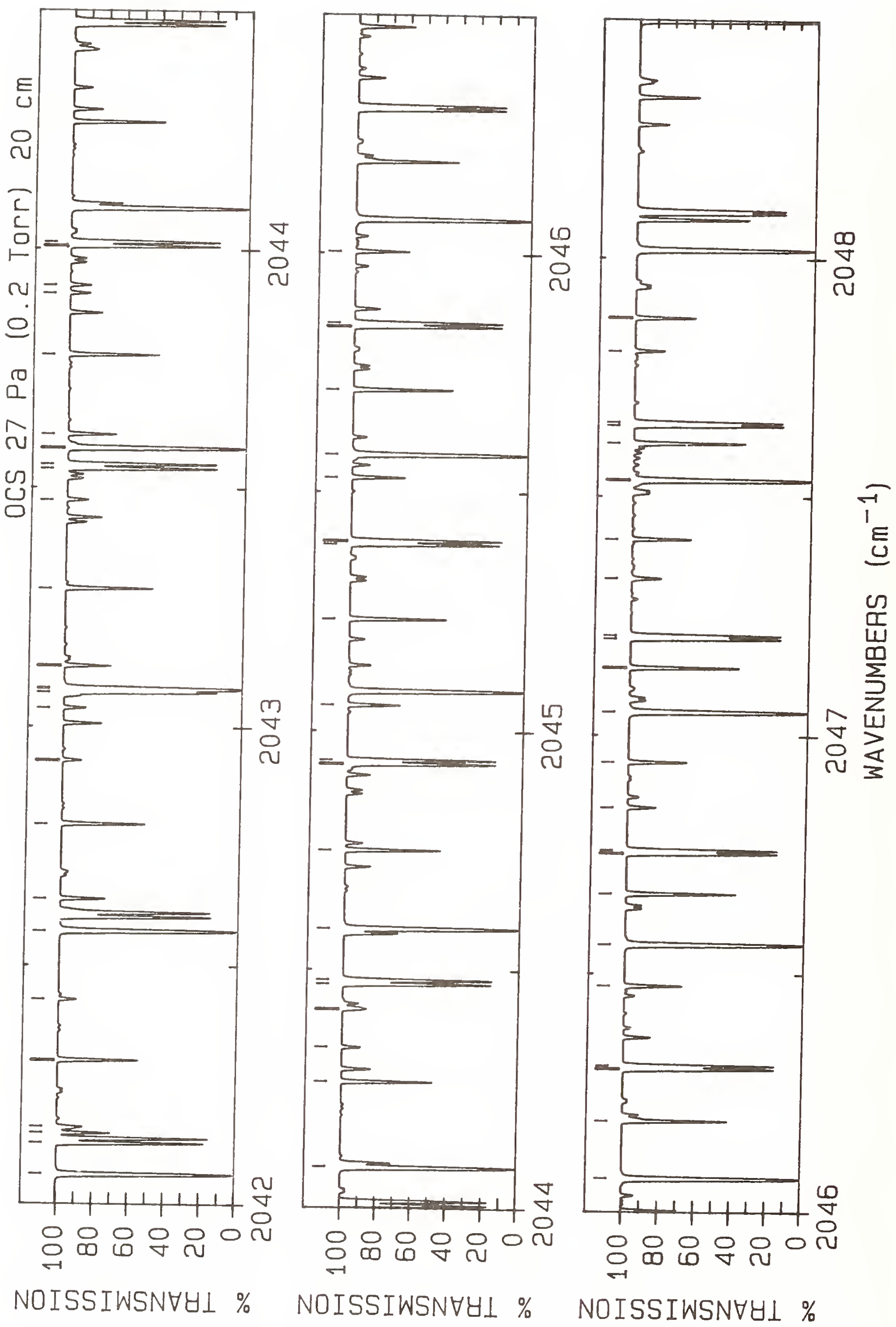


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2030
2031
2032
2033
2034
2035
2036
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2030.068 20(10)*	1101.95	0.194E-19	P(53)	C
2	2030.083 20(10)*	1101.34	0.195E-19	P(53)	B
3	2030.251 17(12)*	896.18	0.656E-19	P(66)	A
4	2030.288 86(16)*	814.58	0.104E-20	R(63)	T
5	2030.289 79(14)*	874.29	0.315E-20	P(66)	P
6	2030.415 29(8)	1380.65	0.379E-20	P(40)	G
7	2030.597 76(10)*	1080.42	0.212E-19	P(52)	C
8	2030.612 55(10)*	1079.84	0.212E-19	P(52)	B
9	2030.780 13(26)	1598.62	0.196E-20	P(60)	D
10	2030.813 09(12)*	869.46	0.736E-19	P(65)	A
11	2030.837 62(14)*	848.22	0.352E-20	P(65)	P
12	2030.913 15(8)	1364.38	0.400E-20	P(39)	G
13	2030.956 75(6)	1045.37	0.106E-20	P(51)	R
14	2030.971 29(5)	1044.83	0.107E-20	P(51)	Q
15	2031.124 97(10)*	1059.31	0.230E-19	P(51)	C
16	2031.139 56(10)*	1058.74	0.231E-19	P(51)	B
17	2031.321 62(26)	1574.38	0.217E-20	P(59)	D
18	2031.372 64(12)*	843.13	0.824E-19	P(64)	A
19	2031.383 13(14)*	822.54	0.393E-20	P(64)	P
20	2031.649 84(10)*	1038.59	0.249E-19	P(50)	C
21	2031.664 22(10)*	1038.05	0.250E-19	P(50)	B
22	2031.860 75(26)	1550.55	0.239E-20	P(58)	D
23	2031.926 33(14)*	797.25	0.438E-20	P(63)	P
24	2031.929 80(12)*	817.21	0.920E-19	P(63)	A
25	2032.172 35(10)*	1018.28	0.270E-19	P(49)	C
26	2032.186 53(10)*	1017.76	0.271E-19	P(49)	B
27	2032.484 59(12)*	791.70	0.103E-18	P(62)	A
28	2032.485 43(5)	985.93	0.134E-20	P(48)	R
29	2032.692 52(10)*	998.38	0.291E-19	P(48)	C
30	2032.881 29(7)	1303.37	0.483E-20	P(35)	G
31	2032.990 41(5)	966.90	0.143E-20	P(47)	R
32	2033.037 00(12)*	766.58	0.114E-18	P(61)	A
33	2033.210 34(10)*	978.88	0.313E-19	P(47)	C
34	2033.224 11(10)*	978.40	0.314E-19	P(47)	B
35	2033.367 50(7)	1289.13	0.503E-20	P(34)	G
36	2033.425 21(10)	1256.20	0.554E-20	P(32)	F
37	2033.427 02(10)	1256.19	0.554E-20	P(32)	E
38	2033.542 02(14)*	723.75	0.597E-20	P(60)	P
39	2033.587 02(12)*	741.87	0.127E-18	P(60)	A
40	2033.725 81(10)*	959.78	0.337E-19	P(46)	C
41	2033.739 37(10)*	959.33	0.338E-19	P(46)	B
42	2033.851 37(7)	1275.30	0.522E-20	P(33)	G
43	2033.904 82(10)	1243.18	0.571E-20	P(31)	F
44	2033.906 43(10)	1243.17	0.571E-20	P(31)	E
45	2034.075 94(14)*	700.04	0.658E-20	P(59)	P
46	2034.134 67(12)*	717.57	0.140E-18	P(59)	A
47	2034.238 92(10)*	941.10	0.361E-19	P(45)	C
48	2034.332 91(7)	1261.88	0.541E-20	P(32)	G
49	2034.382 10(10)	1230.57	0.588E-20	P(30)	F
50	2034.383 54(10)	1230.56	0.588E-20	P(30)	E
51	2034.521 18(25)	1437.45	0.379E-20	P(53)	D
52	2034.607 55(14)*	676.72	0.725E-20	P(58)	P
53	2034.679 93(12)*	693.67	0.155E-18	P(58)	A
54	2034.749 69(10)*	922.82	0.386E-19	P(44)	C
55	2034.762 84(10)*	922.39	0.387E-19	P(44)	B
56	2034.987 43(4)	894.77	0.187E-20	P(43)	R
57	2035.000 13(4)	894.39	0.187E-20	P(43)	Q
58	2035.046 21(25)	1416.04	0.413E-20	P(52)	D
59	2035.136 83(14)*	653.80	0.797E-20	P(57)	P
60	2035.222 81(12)*	670.17	0.171E-18	P(57)	A
61	2035.258 10(10)*	904.94	0.411E-19	P(43)	C
62	2035.271 04(10)*	904.54	0.412E-19	P(43)	B
63	2035.289 00(7)	1236.25	0.575E-20	P(30)	G
64	2035.480 95(4)	877.73	0.198E-20	P(42)	R
65	2035.493 42(3)	877.36	0.198E-20	P(42)	Q
66	2035.568 88(25)	1395.03	0.449E-20	P(51)	D
67	2035.776 89(10)*	887.08	0.438E-19	P(42)	B
68	2035.972 18(4)	861.08	0.210E-20	P(41)	R
69	2035.984 43(3)	860.73	0.210E-20	P(41)	Q


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2036
2037
2038
2039
2040
2041
2042
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2036.089 21(25)	1374.42	0.486E-20	P(50)	D	36	2039.287 41(14)*	484.60	0.156E-19	P(49)	P
2	2036.188 43(14)*	609.13	0.956E-20	P(55)	P	37	2039.478 80(10)	1118.64	0.639E-20	P(19)	E
3	2036.235 78(7)	1212.24	0.603E-20	P(28)	G	38	2039.479 91(12)*	496.74	0.341E-18	P(49)	A
4	2036.280 38(10)*	870.04	0.465E-19	P(41)	B	39	2039.665 73(25)	1241.47	0.800E-20	P(43)	D
5	2036.301 41(12)*	624.39	0.206E-18	P(55)	A	40	2039.727 86(10)*	762.31	0.652E-19	P(34)	C
6	2036.607 19(25)	1354.22	0.526E-20	P(49)	D	41	2039.738 81(10)*	762.05	0.652E-19	P(34)	B
7	2036.705 68(7)	1200.85	0.615E-20	P(27)	G	42	2039.795 76(14)*	465.23	0.168E-19	P(48)	P
8	2036.710 74(14)*	587.39	0.104E-19	P(54)	P	43	2039.819 40(4)	742.14	0.301E-20	P(33)	R
9	2036.769 22(10)*	853.74	0.491E-19	P(40)	C	44	2039.829 79(3)	741.92	0.302E-20	P(33)	Q
10	2036.781 52(10)*	853.39	0.492E-19	P(40)	B	45	2040.001 30(12)*	476.88	0.368E-18	P(48)	A
11	2036.837 13(12)*	602.10	0.225E-18	P(54)	A	46	2040.212 71(10)*	748.49	0.677E-19	P(33)	C
12	2037.122 81(25)	1334.42	0.567E-20	P(48)	D	47	2040.223 43(10)*	748.25	0.677E-19	P(33)	B
13	2037.173 24(7)	1189.87	0.625E-20	P(26)	G	48	2040.300 11(3)	728.85	0.312E-20	P(32)	Q
14	2037.230 73(14)*	566.04	0.114E-19	P(53)	P	49	2040.301 78(14)*	446.25	0.181E-19	P(47)	P
15	2037.268 21(10)*	837.49	0.518E-19	P(39)	C	50	2040.403 87(7)	451.67	0.317E-20	P(47)	L
16	2037.280 30(10)*	837.16	0.519E-19	P(39)	B	51	2040.520 29(12)*	457.42	0.396E-18	P(47)	A
17	2037.370 47(12)*	580.22	0.246E-18	P(53)	A	52	2040.666 48(25)	1207.11	0.901E-20	P(41)	D
18	2037.748 39(14)*	545.09	0.124E-19	P(52)	P	53	2040.695 21(10)*	735.07	0.701E-19	P(32)	C
19	2037.764 85(10)*	821.64	0.546E-19	P(38)	C	54	2040.705 69(10)*	734.85	0.701E-19	P(32)	B
20	2037.776 72(10)*	821.33	0.546E-19	P(38)	B	55	2040.758 24(4)	716.37	0.321E-20	P(31)	R
21	2037.901 41(12)*	558.74	0.268E-18	P(52)	A	56	2040.768 14(3)	716.17	0.321E-20	P(31)	Q
22	2038.147 02(25)	1296.03	0.656E-20	P(46)	D	57	2040.805 47(14)*	427.66	0.194E-19	P(46)	P
23	2038.259 14(10)*	806.20	0.573E-19	P(37)	C	58	2040.829 95(8)	1116.63	0.618E-20	P(18)	G
24	2038.263 72(14)*	524.53	0.134E-19	P(51)	P	59	2041.036 89(12)*	438.37	0.426E-18	P(46)	A
25	2038.270 78(10)*	805.90	0.574E-19	P(37)	B	60	2041.175 35(10)*	722.07	0.723E-19	P(31)	C
26	2038.429 97(12)*	537.67	0.291E-18	P(51)	A	61	2041.185 59(10)*	721.86	0.724E-19	P(31)	B
27	2038.561 97(7)	1159.35	0.641E-20	P(23)	G	62	2041.276 57(8)	1109.30	0.605E-20	P(17)	G
28	2038.655 60(25)	1277.44	0.702E-20	P(45)	D	63	2041.306 83(14)*	409.47	0.207E-19	P(45)	P
29	2038.751 07(10)*	791.16	0.600E-19	P(36)	C	64	2041.421 41(6)	414.44	0.364E-20	P(45)	L
30	2038.762 49(10)*	790.88	0.600E-19	P(36)	B	65	2041.551 09(12)*	419.73	0.456E-18	P(45)	A
31	2038.776 73(14)*	504.37	0.145E-19	P(50)	P	66	2041.687 88(4)	692.18	0.338E-20	P(29)	R
32	2038.956 14(12)*	517.00	0.315E-18	P(50)	A	67	2041.697 28(3)	692.01	0.338E-20	P(29)	Q
33	2039.161 84(25)	1259.25	0.750E-20	P(44)	D	68	2041.720 85(8)	1102.39	0.589E-20	P(16)	G
34	2039.240 64(10)*	776.53	0.626E-19	P(35)	C	69	2041.805 86(14)*	391.68	0.221E-19	P(44)	P
35	2039.251 83(10)*	776.26	0.627E-19	P(35)	B	70	2041.926 64(6)	396.43	0.389E-20	P(44)	L


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2042
2043
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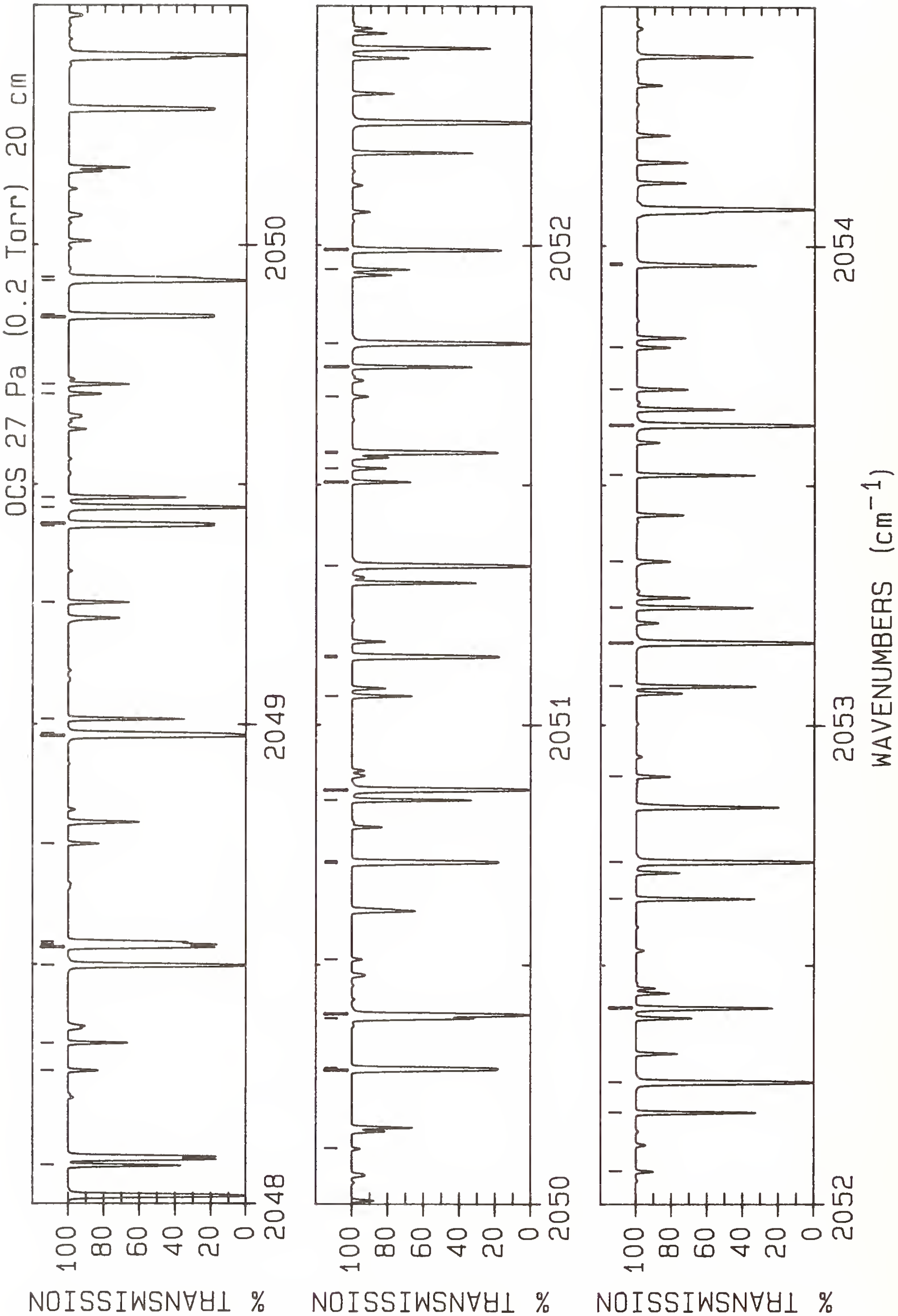
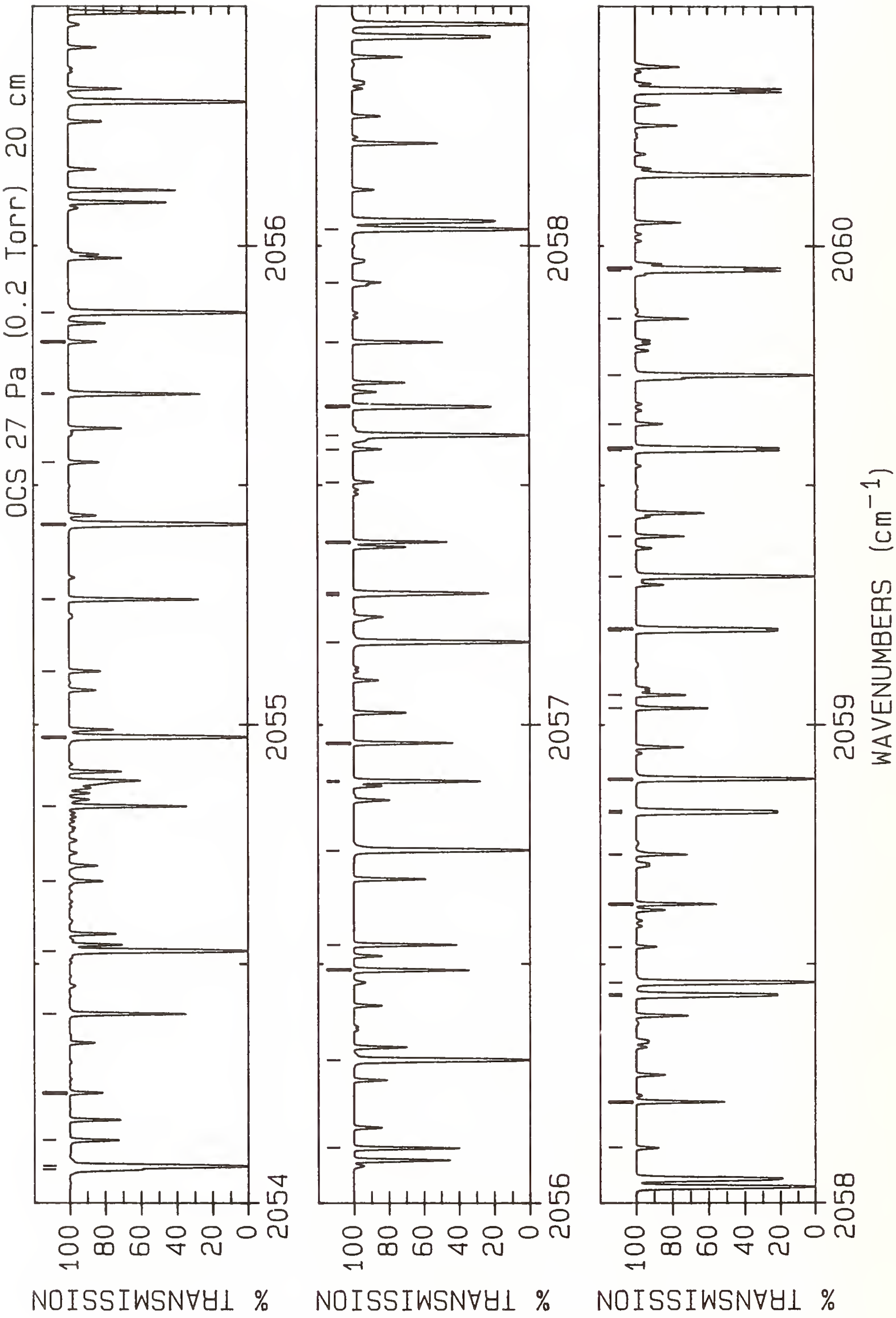
2046
2047
2048
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2042.062 90(13)*	401.49	0.487E-18	P(44)	A	36	2044.939 57(10)*	632.52	0.830E-19	P(23)	B
2	2042.128 55(10)*	697.27	0.763E-19	P(29)	C	37	2045.054 20(25)	1072.49	0.136E-19	P(32)	D
3	2042.150 06(25)	1158.61	0.106E-19	P(38)	D	38	2045.233 72(14)*	278.16	0.323E-19	P(37)	P
4	2042.162 80(8)	1095.88	0.570E-20	P(15)	G	39	2045.390 32(10)*	623.29	0.830E-19	P(22)	C
5	2042.302 56(14)*	374.27	0.235E-19	P(43)	P	40	2045.397 06(6)	281.54	0.572E-20	P(37)	L
6	2042.429 51(6)	378.82	0.414E-20	P(43)	L	41	2045.398 15(10)*	623.18	0.831E-19	P(22)	B
7	2042.572 32(13)*	383.65	0.520E-18	P(43)	A	42	2045.530 07(25)	1059.56	0.140E-19	P(31)	D
8	2042.639 91(25)	1143.24	0.111E-19	P(37)	D	43	2045.578 46(13)*	285.13	0.723E-18	P(37)	A
9	2042.796 92(14)*	357.27	0.249E-19	P(42)	P	44	2045.714 07(14)*	263.53	0.337E-19	P(36)	P
10	2042.930 01(6)	361.61	0.440E-20	P(42)	L	45	2045.846 82(10)*	614.35	0.828E-19	P(21)	C
11	2043.039 72(8)	1084.07	0.524E-20	P(13)	G	46	2045.854 37(10)*	614.25	0.828E-19	P(21)	B
12	2043.072 30(10)*	674.10	0.796E-19	P(27)	C	47	2046.003 63(25)	1047.02	0.144E-19	P(30)	D
13	2043.079 34(13)*	366.22	0.553E-18	P(42)	A	48	2046.071 09(13)*	270.13	0.757E-18	P(36)	A
14	2043.081 52(10)*	673.94	0.796E-19	P(27)	B	49	2046.192 09(14)*	249.29	0.351E-19	P(35)	P
15	2043.127 43(25)	1128.29	0.116E-19	P(36)	D	50	2046.300 97(10)*	605.81	0.822E-19	P(20)	C
16	2043.288 95(14)*	340.66	0.264E-19	P(41)	P	51	2046.308 21(10)*	605.72	0.822E-19	P(20)	B
17	2043.474 69(8)	1078.78	0.496E-20	P(12)	G	52	2046.474 86(25)	1034.89	0.148E-19	P(29)	D
18	2043.540 63(10)*	663.13	0.808E-19	P(26)	C	53	2046.561 31(13)*	255.53	0.790E-18	P(35)	A
19	2043.549 58(10)*	662.98	0.809E-19	P(26)	B	54	2046.667 77(14)*	235.44	0.365E-19	P(34)	P
20	2043.583 96(13)*	349.19	0.586E-18	P(41)	A	55	2046.752 74(10)*	597.68	0.812E-19	P(19)	C
21	2043.612 61(25)	1113.73	0.121E-19	P(35)	D	56	2046.759 69(10)*	597.60	0.812E-19	P(19)	B
22	2043.778 65(14)*	324.44	0.278E-19	P(40)	P	57	2046.848 89(6)	238.30	0.649E-20	P(34)	L
23	2043.907 32(8)	1073.90	0.466E-20	P(11)	G	58	2046.943 77(25)	1023.17	0.151E-19	P(28)	D
24	2043.923 93(6)	328.38	0.492E-20	P(40)	L	59	2047.049 14(13)*	241.34	0.822E-18	P(34)	A
25	2044.006 60(10)*	652.56	0.818E-19	P(25)	C	60	2047.141 11(14)*	221.99	0.379E-19	P(33)	P
26	2044.015 28(10)*	652.42	0.819E-19	P(25)	B	61	2047.202 15(10)*	589.95	0.799E-19	P(18)	C
27	2044.086 18(13)*	332.57	0.620E-18	P(40)	A	62	2047.208 78(10)*	589.88	0.799E-19	P(18)	B
28	2044.266 01(14)*	308.62	0.293E-19	P(39)	P	63	2047.328 09(6)	224.69	0.673E-20	P(33)	L
29	2044.337 63(8)	1069.42	0.433E-20	P(10)	G	64	2047.410 37(25)	1011.84	0.154E-19	P(27)	D
30	2044.417 34(6)	312.37	0.519E-20	P(39)	L	65	2047.534 56(13)*	227.55	0.854E-18	P(33)	A
31	2044.470 20(10)*	642.40	0.825E-19	P(24)	C	66	2047.612 11(14)*	208.93	0.391E-19	P(32)	P
32	2044.478 61(10)*	642.27	0.826E-19	P(24)	B	67	2047.649 18(10)*	582.63	0.781E-19	P(17)	C
33	2044.586 01(13)*	316.35	0.654E-18	P(39)	A	68	2047.655 50(10)*	582.57	0.782E-19	P(17)	B
34	2044.751 03(14)*	293.19	0.308E-19	P(38)	P	69	2047.804 92(6)	211.47	0.697E-20	P(32)	L
35	2044.931 44(10)*	632.64	0.829E-19	P(23)	C	70	2047.874 65(25)	1000.93	0.156E-19	P(26)	D

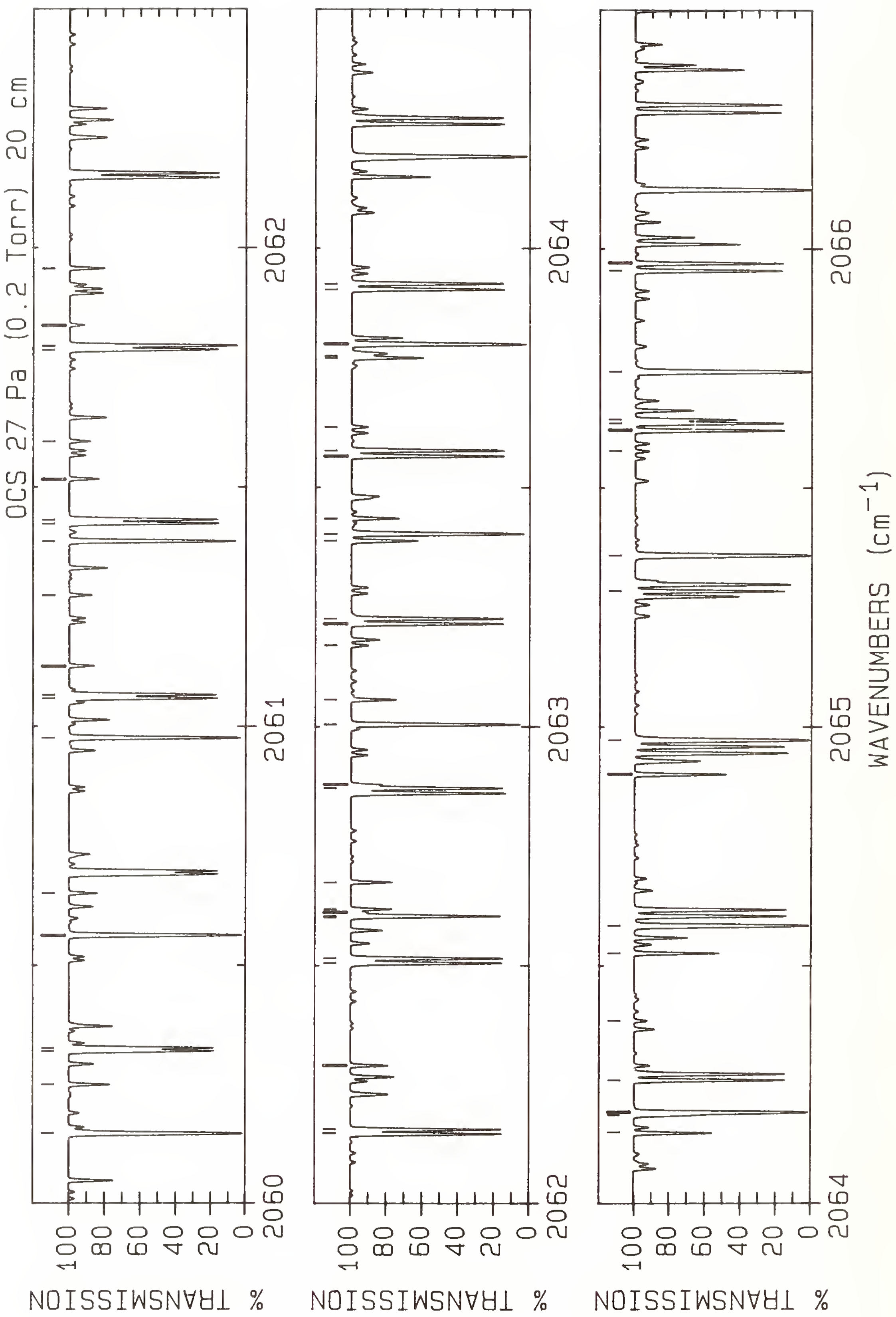


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2048
2049
2050
2051
2052
2053
2054
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2048.080 77(14)*	196.27	0.403E-19	P(31)	P
2	2048.279 39(6)	198.66	0.718E-20	P(31)	L
3	2048.336 62(25)	990.41	0.158E-19	P(25)	D
4	2048.498 19(13)*	201.19	0.912E-18	P(31)	A
5	2048.536 15(10)*	569.22	0.735E-19	P(15)	C
6	2048.541 82(10)*	569.16	0.736E-19	P(15)	B
7	2048.547 09(14)*	184.01	0.414E-19	P(30)	P
8	2048.751 48(6)	186.25	0.739E-20	P(30)	L
9	2048.976 07(11)*	563.12	0.707E-19	P(14)	C
10	2048.976 40(13)*	188.62	0.938E-18	P(30)	A
11	2048.981 41(11)*	563.07	0.707E-19	P(14)	B
12	2049.011 07(14)*	172.14	0.424E-19	P(29)	P
13	2049.253 62(25)	970.60	0.160E-19	P(23)	D
14	2049.413 63(11)*	557.42	0.674E-19	P(13)	C
15	2049.418 63(11)*	557.38	0.675E-19	P(13)	B
16	2049.452 20(13)*	176.45	0.963E-18	P(29)	A
17	2049.472 71(14)*	160.67	0.433E-19	P(28)	P
18	2049.688 54(6)	162.62	0.773E-20	P(28)	L
19	2049.708 66(25)	961.29	0.161E-19	P(22)	D
20	2049.848 81(11)*	552.14	0.638E-19	P(12)	C
21	2049.853 46(11)*	552.11	0.638E-19	P(12)	B
22	2049.925 60(13)*	164.69	0.984E-18	P(28)	A
23	2049.932 01(14)*	149.59	0.441E-19	P(27)	P
24	2050.116 78(9)	1049.48	0.191E-20	R(3)	G
25	2050.281 61(11)*	547.26	0.598E-19	P(11)	C
26	2050.285 91(11)*	547.23	0.598E-19	P(11)	B
27	2050.388 97(14)*	138.90	0.447E-19	P(26)	P
28	2050.396 59(13)*	153.34	0.100E-17	P(27)	A
29	2050.398 96(12)	1049.84	0.307E-20	R(6)	E
30	2050.398 97(12)	1049.84	0.307E-20	R(6)	F
31	2050.512 04(9)	1051.11	0.237E-20	R(4)	G
32	2050.712 04(11)*	542.79	0.555E-19	P(10)	C
33	2050.715 99(11)*	542.76	0.555E-19	P(10)	B
34	2050.843 58(14)*	128.62	0.452E-19	P(25)	P
35	2050.865 18(13)*	142.38	0.102E-17	P(26)	A
36	2051.059 95(25)	935.82	0.157E-19	P(19)	D
37	2051.140 10(11)*	538.72	0.508E-19	P(9)	C
38	2051.143 68(11)*	538.70	0.509E-19	P(9)	B
39	2051.331 35(13)*	131.84	0.103E-17	P(25)	A
40	2051.505 77(25)	928.13	0.154E-19	P(18)	D
41	2051.534 19(5)	120.17	0.816E-20	P(24)	L
42	2051.565 78(11)*	535.06	0.459E-19	P(8)	C
43	2051.568 99(11)*	535.04	0.459E-19	P(8)	B
44	2051.683 75(8)	1058.44	0.367E-20	R(7)	G
45	2051.745 77(14)*	109.23	0.458E-19	P(23)	P
46	2051.795 12(13)*	121.70	0.104E-17	P(24)	A
47	2051.949 29(25)	920.85	0.151E-19	P(17)	D
48	2051.989 08(11)*	531.81	0.406E-19	P(7)	C
49	2051.989 66(5)	110.55	0.819E-20	P(23)	L
50	2051.991 91(11)*	531.80	0.406E-19	P(7)	B
51	2052.069 63(8)	1061.69	0.406E-20	R(8)	G
52	2052.193 35(14)*	100.13	0.458E-19	P(22)	P
53	2052.256 48(13)*	111.96	0.105E-17	P(23)	A
54	2052.410 00(11)*	528.96	0.350E-19	P(6)	C
55	2052.412 45(11)*	528.95	0.350E-19	P(6)	B
56	2052.638 58(14)*	91.42	0.456E-19	P(21)	P
57	2052.715 42(13)*	102.63	0.105E-17	P(22)	A
58	2052.893 48(5)	92.53	0.817E-20	P(21)	L
59	2053.081 47(14)*	83.11	0.452E-19	P(20)	P
60	2053.171 96(13)*	93.71	0.104E-17	P(21)	A
61	2053.244 71(11)*	524.49	0.230E-19	P(4)	C
62	2053.246 37(11)*	524.48	0.230E-19	P(4)	B
63	2053.341 82(5)	84.12	0.811E-20	P(20)	L
64	2053.522 01(14)*	75.19	0.446E-19	P(19)	P
65	2053.626 08(13)*	85.19	0.104E-17	P(20)	A
66	2053.700 40(26)	895.77	0.131E-19	P(13)	D
67	2053.787 78(5)	76.11	0.801E-20	P(19)	L
68	2053.960 20(14)*	67.68	0.439E-19	P(18)	P
69	2053.963 78(8)	1084.07	0.567E-20	R(13)	G


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2054
2055
2056
2057
2058
2059
2060
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2054.069 89(11)*	521.64	0.934E-20	P(2)	C	36	2057.506 14(26)	863.01	0.472E-20	P(4)	D
2	2054.070 73(11)*	521.64	0.934E-20	P(2)	B	37	2057.575 26(7)	1159.35	0.675E-20	R(23)	G
3	2054.077 79(13)*	77.08	0.102E-17	P(19)	A	38	2057.604 54(13)*	26.78	0.759E-18	P(11)	A
4	2054.132 44(26)	890.52	0.124E-19	P(12)	D	39	2057.661 95(11)*	528.95	0.413E-19	R(6)	B
5	2054.231 36(5)	68.50	0.787E-20	P(18)	L	40	2057.665 11(11)*	528.96	0.413E-19	R(6)	C
6	2054.396 04(14)*	60.55	0.429E-19	P(17)	P	41	2057.798 15(14)*	17.81	0.280E-19	P(9)	P
7	2054.527 09(13)*	69.37	0.101E-17	P(18)	A	42	2057.923 40(7)	1169.12	0.671E-20	R(24)	G
8	2054.672 56(5)	61.29	0.770E-20	P(17)	L	43	2058.034 51(13)*	22.31	0.705E-18	P(10)	A
9	2054.829 54(14)*	53.83	0.417E-19	P(16)	P	44	2058.116 37(8)	18.03	0.504E-20	P(9)	L
10	2054.973 98(13)*	62.07	0.986E-18	P(17)	A	45	2058.212 82(14)*	14.25	0.253E-19	P(8)	P
11	2055.111 38(6)	54.48	0.750E-20	P(16)	L	46	2058.433 63(11)*	535.04	0.519E-19	R(8)	B
12	2055.260 68(14)*	47.49	0.403E-19	P(15)	P	47	2058.437 75(11)*	535.06	0.519E-19	R(8)	C
13	2055.261 57(10)	1118.64	0.678E-20	R(19)	E	48	2058.462 05(13)*	18.26	0.647E-18	P(9)	A
14	2055.261 68(10)	1118.64	0.678E-20	R(19)	F	49	2058.536 11(8)	14.42	0.456E-20	P(8)	L
15	2055.418 45(13)*	55.17	0.960E-18	P(16)	A	50	2058.625 14(14)*	11.08	0.225E-19	P(7)	P
16	2055.547 81(6)	48.07	0.725E-20	P(15)	L	51	2058.728 80(10)	1218.35	0.631E-20	R(29)	E
17	2055.689 47(14)*	41.56	0.388E-19	P(14)	P	52	2058.728 94(10)	1218.36	0.631E-20	R(29)	F
18	2055.690 78(11)*	520.83	0.938E-20	R(1)	B	53	2058.815 86(11)*	538.70	0.568E-19	R(9)	B
19	2055.691 64(11)*	520.83	0.938E-20	R(1)	C	54	2058.820 47(11)*	538.72	0.568E-19	R(9)	C
20	2055.799 05(7)	1116.63	0.658E-20	R(18)	G	55	2058.887 17(13)*	14.61	0.586E-18	P(8)	A
21	2055.860 50(13)*	48.68	0.929E-18	P(15)	A	56	2059.035 10(14)*	8.31	0.196E-19	P(6)	P
22	2056.115 92(14)*	36.02	0.370E-19	P(13)	P	57	2059.062 41(10)	1230.56	0.615E-20	R(30)	E
23	2056.300 14(13)*	42.60	0.894E-18	P(14)	A	58	2059.062 53(10)	1230.57	0.615E-20	R(30)	F
24	2056.486 44(11)*	522.86	0.232E-19	R(3)	B	59	2059.195 70(11)*	542.76	0.614E-19	R(10)	B
25	2056.488 20(11)*	522.86	0.232E-19	R(3)	C	60	2059.200 80(11)*	542.79	0.614E-19	R(10)	C
26	2056.540 00(14)*	30.87	0.350E-19	P(12)	P	61	2059.309 87(13)*	11.36	0.521E-18	P(7)	A
27	2056.737 36(13)*	36.92	0.853E-18	P(13)	A	62	2059.393 64(10)	1243.17	0.597E-20	R(31)	E
28	2056.880 67(11)*	524.48	0.295E-19	R(4)	B	63	2059.393 74(10)	1243.18	0.597E-20	R(31)	F
29	2056.882 89(11)*	524.49	0.295E-19	R(4)	C	64	2059.573 13(11)*	547.23	0.657E-19	R(11)	B
30	2056.961 74(14)*	26.12	0.329E-19	P(11)	P	65	2059.578 73(11)*	547.26	0.657E-19	R(11)	C
31	2057.172 16(13)*	31.64	0.808E-18	P(12)	A	66	2059.628 44(7)	1224.04	0.617E-20	R(29)	G
32	2057.269 73(7)	26.44	0.591E-20	P(11)	L	67	2059.730 14(13)*	8.52	0.453E-18	P(6)	A
33	2057.272 51(11)*	526.51	0.355E-19	R(5)	B	68	2059.847 94(14)*	3.96	0.133E-19	P(4)	P
34	2057.275 20(11)*	526.52	0.355E-19	R(5)	C	69	2059.948 15(11)*	552.11	0.696E-19	R(12)	B
35	2057.381 12(14)*	21.77	0.305E-19	P(10)	P	70	2059.954 26(11)*	552.14	0.695E-19	R(12)	C


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100
80
60
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0
2060
2061
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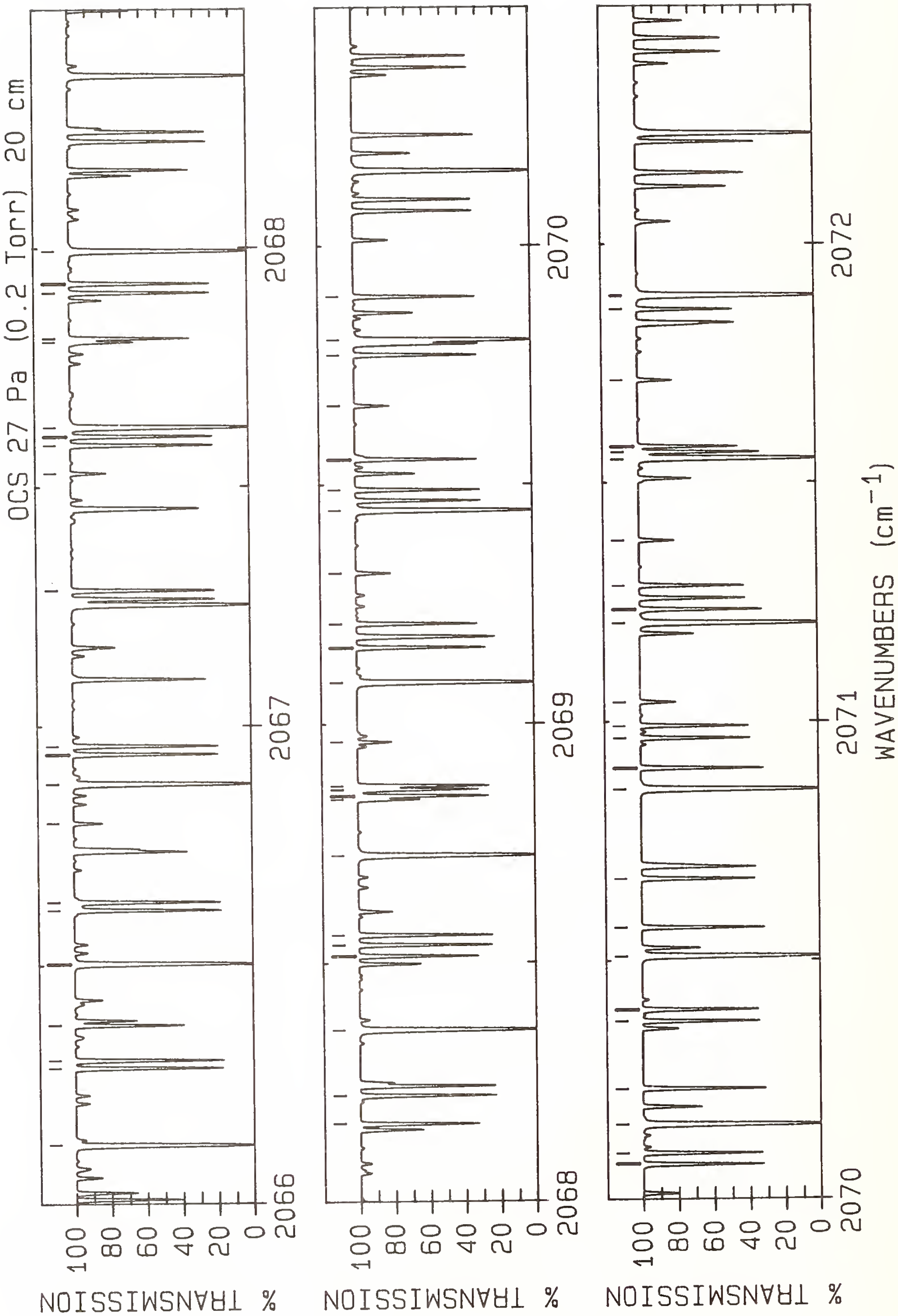
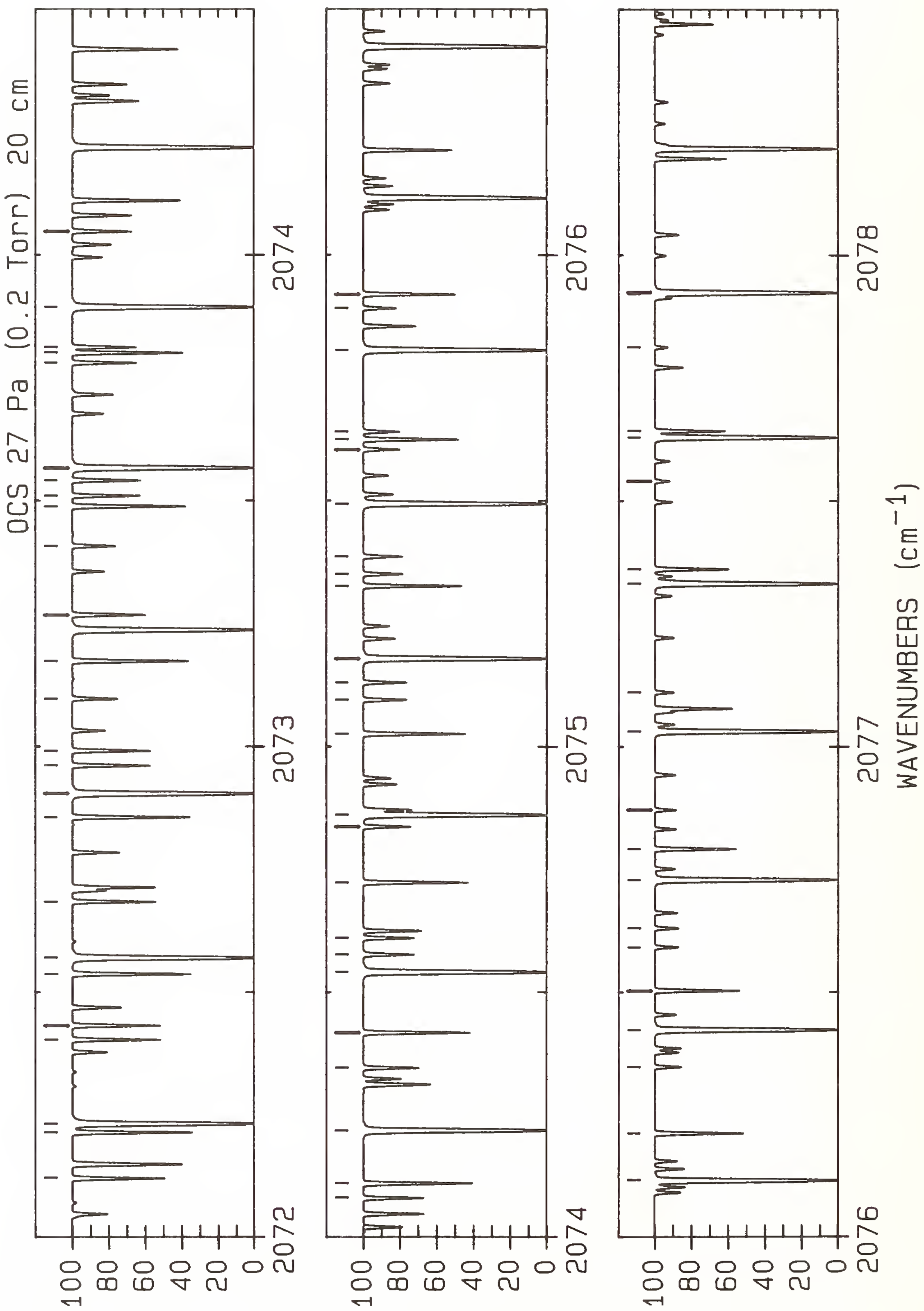
2066
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2060.147 99(13)*	6.09	0.382E-18	P(5)	A	36	2063.004 83(14)*	2.38	0.134E-19	R(3)	P
2	2060.250 82(14)*	2.38	0.101E-19	P(3)	P	37	2063.004 98(13)*	0.41	0.157E-18	R(1)	A
3	2060.320 76(10)*	557.38	0.731E-19	R(13)	B	38	2063.056 34(26)	877.17	0.110E-19	R(9)	D
4	2060.327 40(10)*	557.42	0.731E-19	R(13)	C	39	2063.169 45(8)	1380.65	0.395E-20	R(40)	G
5	2060.563 42(13)*	4.06	0.309E-18	P(4)	A	40	2063.214 89(10)*	614.25	0.875E-19	R(21)	B
6	2060.651 34(14)*	1.19	0.676E-20	P(2)	P	41	2063.225 85(10)*	614.35	0.875E-19	R(21)	C
7	2060.976 41(13)*	2.43	0.233E-18	P(3)	A	42	2063.388 80(14)*	3.96	0.167E-19	R(4)	P
8	2061.058 77(10)*	569.16	0.790E-19	R(15)	B	43	2063.403 39(13)*	1.22	0.235E-18	R(2)	A
9	2061.066 45(10)*	569.22	0.790E-19	R(15)	C	44	2063.435 48(26)	881.21	0.119E-19	R(10)	D
10	2061.125 96(26)	863.01	0.591E-20	R(4)	D	45	2063.565 79(10)*	623.18	0.876E-19	R(22)	B
11	2061.273 92(7)	1289.13	0.525E-20	R(34)	G	46	2063.577 31(10)*	623.29	0.876E-19	R(22)	C
12	2061.386 98(13)*	1.22	0.156E-18	P(2)	A	47	2063.626 49(4)	648.56	0.378E-20	R(25)	R
13	2061.424 16(10)*	575.66	0.814E-19	R(16)	B	48	2063.770 40(14)*	5.94	0.198E-19	R(5)	P
14	2061.432 37(10)*	575.72	0.814E-19	R(16)	C	49	2063.775 02(8)	4.01	0.301E-20	R(4)	L
15	2061.516 65(26)	865.03	0.703E-20	R(5)	D	50	2063.799 38(13)*	2.43	0.311E-18	R(3)	A
16	2061.595 84(7)	1303.37	0.504E-20	R(35)	G	51	2063.914 27(10)*	632.52	0.874E-19	R(23)	B
17	2061.787 13(10)*	582.57	0.834E-19	R(17)	B	52	2063.926 36(10)*	632.64	0.873E-19	R(23)	C
18	2061.795 13(13)*	0.41	0.786E-19	P(1)	A	53	2064.149 62(14)*	8.31	0.229E-19	R(6)	P
19	2061.795 88(10)*	582.63	0.833E-19	R(17)	C	54	2064.186 79(26)	890.52	0.135E-19	R(12)	D
20	2061.838 73(14)*	0.00	0.340E-20	R(0)	P	55	2064.192 93(13)*	4.06	0.386E-18	R(4)	A
21	2061.957 10(11)	1358.74	0.427E-20	R(39)	F	56	2064.260 32(10)*	642.27	0.869E-19	R(24)	B
22	2061.957 40(12)	1358.72	0.427E-20	R(39)	E	57	2064.385 00(9)	1449.79	0.310E-20	R(44)	G
23	2062.147 70(10)*	589.88	0.850E-19	R(18)	B	58	2064.526 48(14)*	11.08	0.258E-19	R(7)	P
24	2062.156 99(10)*	589.95	0.849E-19	R(18)	C	59	2064.584 04(13)*	6.09	0.459E-18	R(5)	A
25	2062.291 12(26)	870.29	0.914E-20	R(7)	D	60	2064.900 96(14)*	14.25	0.286E-19	R(8)	P
26	2062.505 84(10)*	597.60	0.862E-19	R(19)	B	61	2064.972 72(13)*	8.52	0.529E-18	R(6)	A
27	2062.515 69(10)*	597.68	0.861E-19	R(19)	C	62	2065.283 95(10)*	673.94	0.835E-19	R(27)	B
28	2062.600 74(3)	619.90	0.384E-20	R(22)	Q	63	2065.358 96(13)*	11.36	0.597E-18	R(7)	A
29	2062.604 12(13)*	0.00	0.788E-19	R(0)	A	64	2065.576 62(3)	716.17	0.336E-20	R(31)	Q
30	2062.611 67(3)	620.01	0.384E-20	R(22)	R	65	2065.620 31(10)*	685.31	0.818E-19	R(28)	B
31	2062.618 50(14)*	1.19	0.101E-19	R(2)	P	66	2065.635 34(10)*	685.49	0.818E-19	R(28)	C
32	2062.674 89(26)	873.53	0.101E-19	R(8)	D	67	2065.642 81(14)*	21.77	0.337E-19	R(10)	P
33	2062.871 98(10)*	605.81	0.870E-19	R(20)	C	68	2065.742 76(13)*	14.61	0.661E-18	R(8)	A
34	2062.878 72(12)	1408.78	0.360E-20	R(42)	F	69	2065.954 25(10)*	697.09	0.800E-19	R(29)	B
35	2062.879 34(13)	1408.75	0.360E-20	R(42)	E	70	2065.969 87(10)*	697.27	0.799E-19	R(29)	C

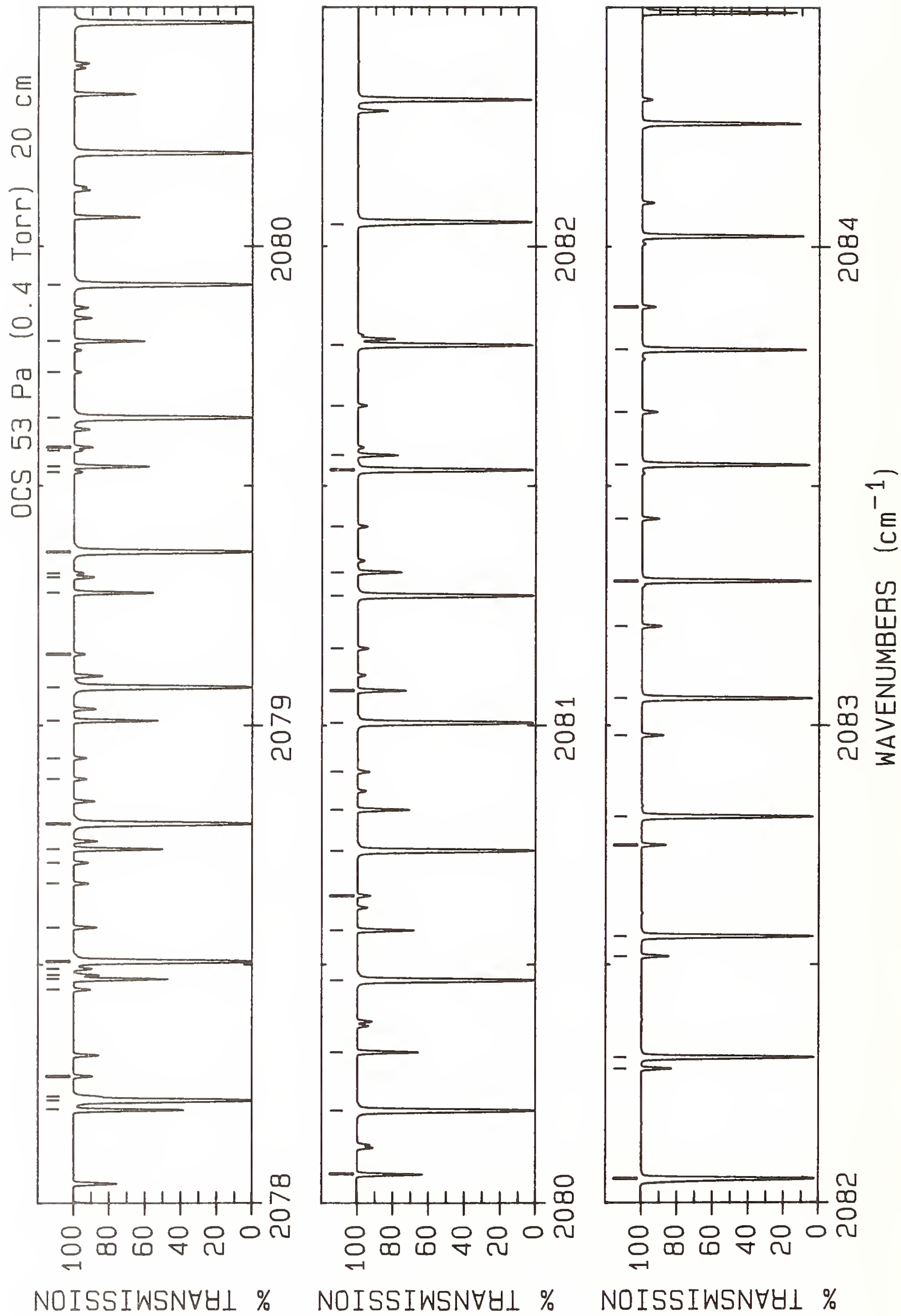


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2066
2067
2068
2069
2070
2071
2072
WAVENUMBERS (cm^{-1})

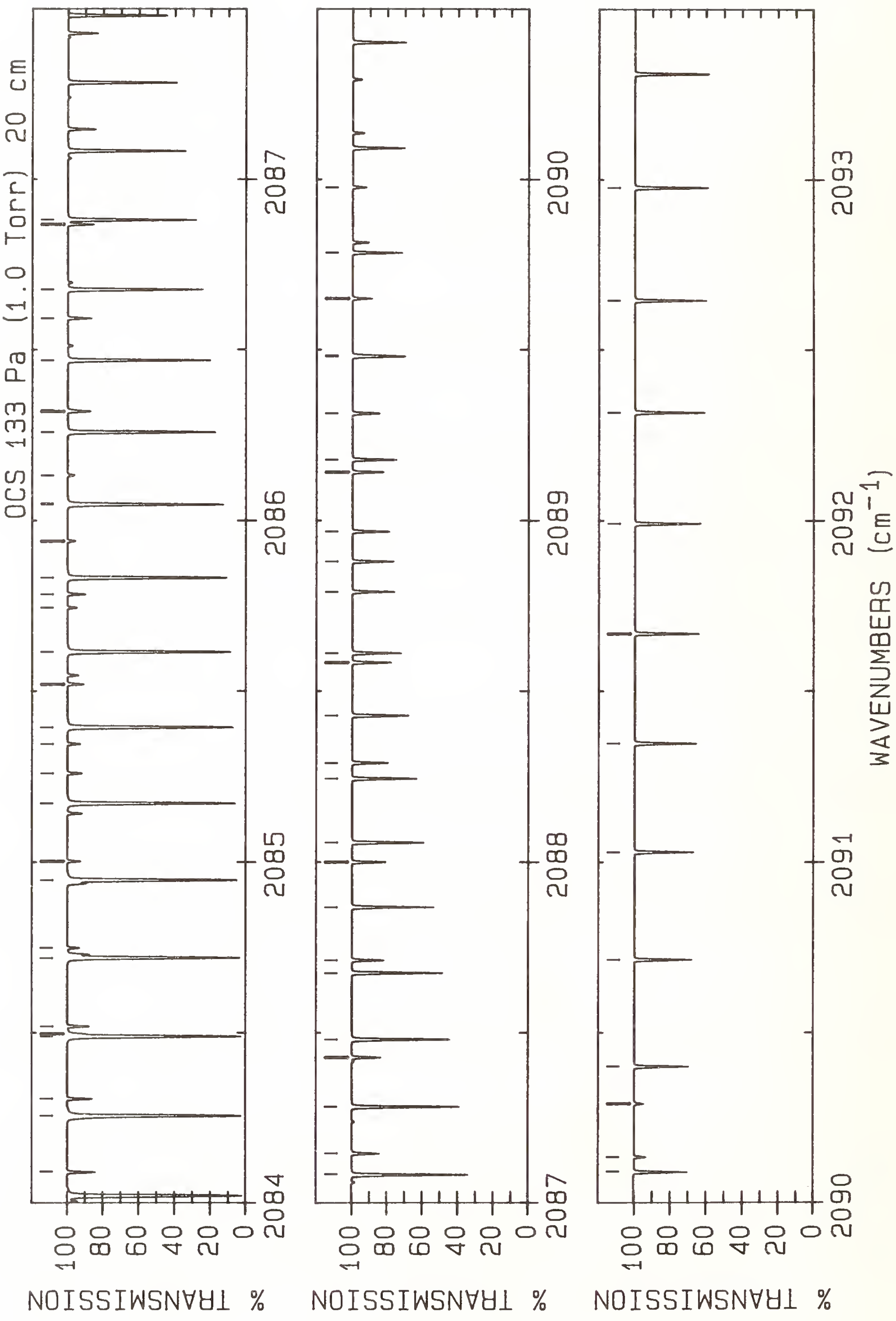
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2066.124 12(13)*	18.26	0.722E-18	R(9)	A
2	2066.285 75(10)*	709.27	0.779E-19	R(30)	B
3	2066.301 97(10)*	709.47	0.778E-19	R(30)	C
4	2066.375 15(14)*	30.87	0.381E-19	R(12)	P
5	2066.503 04(13)*	22.31	0.779E-18	R(10)	A
6	2066.614 83(10)*	721.86	0.756E-19	R(31)	B
7	2066.631 65(10)*	722.07	0.756E-19	R(31)	C
8	2066.797 36(6)	31.25	0.686E-20	R(12)	L
9	2066.879 51(13)*	26.78	0.831E-18	R(11)	A
10	2066.941 47(10)*	734.85	0.733E-19	R(32)	B
11	2066.958 90(10)*	735.07	0.732E-19	R(32)	C
12	2067.283 73(10)*	748.49	0.706E-19	R(33)	C
13	2067.528 86(6)	42.06	0.751E-20	R(14)	L
14	2067.587 46(10)*	762.05	0.681E-19	R(34)	B
15	2067.606 12(10)*	762.31	0.680E-19	R(34)	C
16	2067.625 13(13)*	36.92	0.924E-18	R(13)	A
17	2067.803 34(25)	961.29	0.169E-19	R(22)	D
18	2067.811 28(14)*	53.83	0.446E-19	R(16)	P
19	2067.906 80(10)*	776.26	0.654E-19	R(35)	B
20	2067.926 08(10)*	776.53	0.653E-19	R(35)	C
21	2067.994 27(13)*	42.60	0.963E-18	R(14)	A
22	2068.164 36(14)*	60.55	0.457E-19	R(17)	P
23	2068.223 70(10)*	790.88	0.626E-19	R(36)	B
24	2068.360 96(13)*	48.68	0.997E-18	R(15)	A
25	2068.515 05(14)*	67.68	0.466E-19	R(18)	P
26	2068.538 17(10)*	805.90	0.598E-19	R(37)	B
27	2068.558 69(10)*	806.20	0.597E-19	R(37)	C
28	2068.725 20(13)*	55.17	0.103E-17	R(16)	A
29	2068.842 46(25)	990.41	0.166E-19	R(25)	D
30	2068.850 19(10)*	821.33	0.569E-19	R(38)	B
31	2068.863 36(14)*	75.19	0.473E-19	R(19)	P
32	2068.871 35(10)*	821.64	0.568E-19	R(38)	C
33	2068.962 89(5)	68.50	0.837E-20	R(18)	L
34	2069.086 99(13)*	62.07	0.105E-17	R(17)	A
35	2069.159 78(10)*	837.16	0.541E-19	R(39)	B
36	2069.209 28(14)*	83.11	0.478E-19	R(20)	P
37	2069.315 35(5)	76.11	0.849E-20	R(19)	L
38	2069.446 33(13)*	69.37	0.107E-17	R(18)	A
39	2069.489 34(10)*	853.74	0.511E-19	R(40)	C
40	2069.552 81(14)*	91.42	0.481E-19	R(21)	P
41	2069.665 39(5)	84.12	0.858E-20	R(20)	L
42	2069.771 63(10)*	870.04	0.484E-19	R(41)	B
43	2069.803 21(13)*	77.08	0.109E-17	R(19)	A
44	2069.893 96(14)*	100.13	0.482E-19	R(22)	P
45	2070.073 88(10)*	887.08	0.456E-19	R(42)	B
46	2070.097 56(10)*	887.47	0.455E-19	R(42)	C
47	2070.157 65(13)*	85.19	0.110E-17	R(20)	A
48	2070.232 71(14)*	109.23	0.482E-19	R(23)	P
49	2070.373 69(10)*	904.54	0.429E-19	R(43)	B
50	2070.398 01(10)*	904.94	0.428E-19	R(43)	C
51	2070.509 62(13)*	93.71	0.110E-17	R(21)	A
52	2070.569 07(14)*	118.72	0.479E-19	R(24)	P
53	2070.671 06(10)*	922.39	0.402E-19	R(44)	B
54	2070.859 14(13)*	102.63	0.110E-17	R(22)	A
55	2070.903 03(14)*	128.62	0.475E-19	R(25)	P
56	2070.965 97(10)*	940.66	0.376E-19	R(45)	B
57	2070.991 56(10)*	941.10	0.376E-19	R(45)	C
58	2071.041 34(6)	120.17	0.858E-20	R(24)	L
59	2071.206 20(13)*	111.96	0.110E-17	R(23)	A
60	2071.234 60(14)*	138.90	0.469E-19	R(26)	P
61	2071.284 66(10)*	959.78	0.351E-19	R(46)	C
62	2071.379 26(6)	130.18	0.850E-20	R(25)	L
63	2071.548 46(10)*	978.40	0.327E-19	R(47)	B
64	2071.563 77(14)*	149.59	0.462E-19	R(27)	P
65	2071.575 31(10)*	978.88	0.326E-19	R(47)	C
66	2071.714 75(6)	140.59	0.839E-20	R(26)	L
67	2071.863 51(10)*	998.38	0.303E-19	R(48)	C
68	2071.890 55(14)*	160.67	0.454E-19	R(28)	P
69	2071.892 94(13)*	131.84	0.108E-17	R(25)	A


OCS 27 Pa (0.2 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2072
2073
2074
2074
2075
2076
2076
2077
2078
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2072.121 13(10)*	1017.76	0.281E-19	R(49)	B	36	2074.861 20(13)*	241.34	0.858E-18	R(34)	A
2	2072.214 92(14)*	172.14	0.444E-19	R(29)	P	37	2075.026 10(14)*	293.19	0.321E-19	R(38)	P
3	2072.232 61(13)*	142.38	0.107E-17	R(26)	A	38	2075.095 10(10)*	1263.19	0.104E-19	R(60)	B
4	2072.403 78(10)*	1038.05	0.260E-19	R(50)	B	39	2075.130 11(11)*	1263.97	0.104E-19	R(60)	C
5	2072.432 55(10)*	1038.59	0.260E-19	R(50)	C	40	2075.178 65(13)*	255.53	0.824E-18	R(35)	A
6	2072.536 90(14)*	184.01	0.433E-19	R(30)	P	41	2075.326 41(14)*	308.62	0.305E-19	R(39)	P
7	2072.569 83(13)*	153.34	0.105E-17	R(27)	A	42	2075.350 68(11)*	1287.93	0.940E-20	R(61)	B
8	2072.683 98(10)*	1058.74	0.240E-19	R(51)	B	43	2075.386 30(11)*	1288.73	0.937E-20	R(61)	C
9	2072.856 47(14)*	196.27	0.421E-19	R(31)	P	44	2075.493 62(13)*	270.13	0.789E-18	R(36)	A
10	2072.904 57(13)*	164.69	0.103E-17	R(28)	A	45	2075.603 80(11)*	1313.07	0.846E-20	R(62)	B
11	2072.961 73(10)*	1079.84	0.221E-19	R(52)	B	46	2075.624 30(14)*	324.44	0.290E-19	R(40)	P
12	2072.991 76(10)*	1080.42	0.220E-19	R(52)	C	47	2075.640 02(11)*	1313.90	0.842E-20	R(62)	C
13	2073.097 27(25)	1158.61	0.110E-19	R(38)	D	48	2075.806 12(13)*	285.13	0.753E-18	R(37)	A
14	2073.173 64(14)*	208.93	0.409E-19	R(32)	P	49	2075.891 26(11)*	1339.47	0.756E-20	R(63)	C
15	2073.267 68(10)*	1101.95	0.202E-19	R(53)	C	50	2075.919 77(14)*	340.66	0.274E-19	R(41)	P
16	2073.407 71(25)	1174.37	0.105E-19	R(39)	D	51	2076.116 13(13)*	300.54	0.717E-18	R(38)	A
17	2073.488 40(14)*	221.99	0.395E-19	R(33)	P	52	2076.212 83(14)*	357.27	0.259E-19	R(42)	P
18	2073.509 84(10)*	1123.25	0.185E-19	R(54)	B	53	2076.348 34(11)*	1390.93	0.607E-20	R(65)	B
19	2073.541 14(10)*	1123.88	0.185E-19	R(54)	C	54	2076.423 67(13)*	316.35	0.681E-18	R(39)	A
20	2073.566 66(13)*	188.62	0.981E-18	R(30)	A	55	2076.503 47(14)*	374.27	0.244E-19	R(43)	P
21	2073.780 21(10)*	1145.56	0.169E-19	R(55)	B	56	2076.591 58(11)*	1417.69	0.541E-20	R(66)	B
22	2073.800 76(14)*	235.44	0.381E-19	R(34)	P	57	2076.630 15(11)*	1418.62	0.539E-20	R(66)	C
23	2073.812 13(10)*	1146.22	0.169E-19	R(55)	C	58	2076.728 72(13)*	332.57	0.646E-18	R(40)	A
24	2073.894 00(13)*	201.19	0.953E-18	R(31)	A	59	2076.791 69(14)*	391.68	0.230E-19	R(44)	P
25	2074.048 11(10)*	1168.28	0.155E-19	R(56)	B	60	2076.871 49(11)*	1445.81	0.479E-20	R(67)	C
26	2074.080 66(10)*	1168.96	0.154E-19	R(56)	C	61	2077.031 29(13)*	349.19	0.610E-18	R(41)	A
27	2074.110 71(14)*	249.29	0.366E-19	R(35)	P	62	2077.110 35(11)*	1473.41	0.425E-20	R(68)	C
28	2074.218 88(13)*	214.17	0.923E-18	R(32)	A	63	2077.331 37(13)*	366.22	0.575E-18	R(42)	A
29	2074.346 72(10)*	1192.10	0.140E-19	R(57)	C	64	2077.360 86(14)*	427.66	0.201E-19	R(46)	P
30	2074.418 25(14)*	263.53	0.351E-19	R(36)	P	65	2077.539 82(12)*	1528.76	0.334E-20	R(70)	B
31	2074.541 27(13)*	227.55	0.891E-18	R(33)	A	66	2077.628 97(12)*	383.65	0.541E-18	R(43)	A
32	2074.576 53(10)*	1214.93	0.128E-19	R(58)	B	67	2077.641 81(14)*	446.25	0.188E-19	R(47)	P
33	2074.610 32(10)*	1215.65	0.127E-19	R(58)	C	68	2077.812 05(12)*	1558.62	0.293E-20	R(71)	C
34	2074.723 38(14)*	278.16	0.336E-19	R(37)	P	69	2077.920 33(14)*	465.23	0.175E-19	R(48)	P
35	2074.837 05(10)*	1238.86	0.115E-19	R(59)	B	70	2077.924 08(12)*	401.49	0.507E-18	R(44)	A

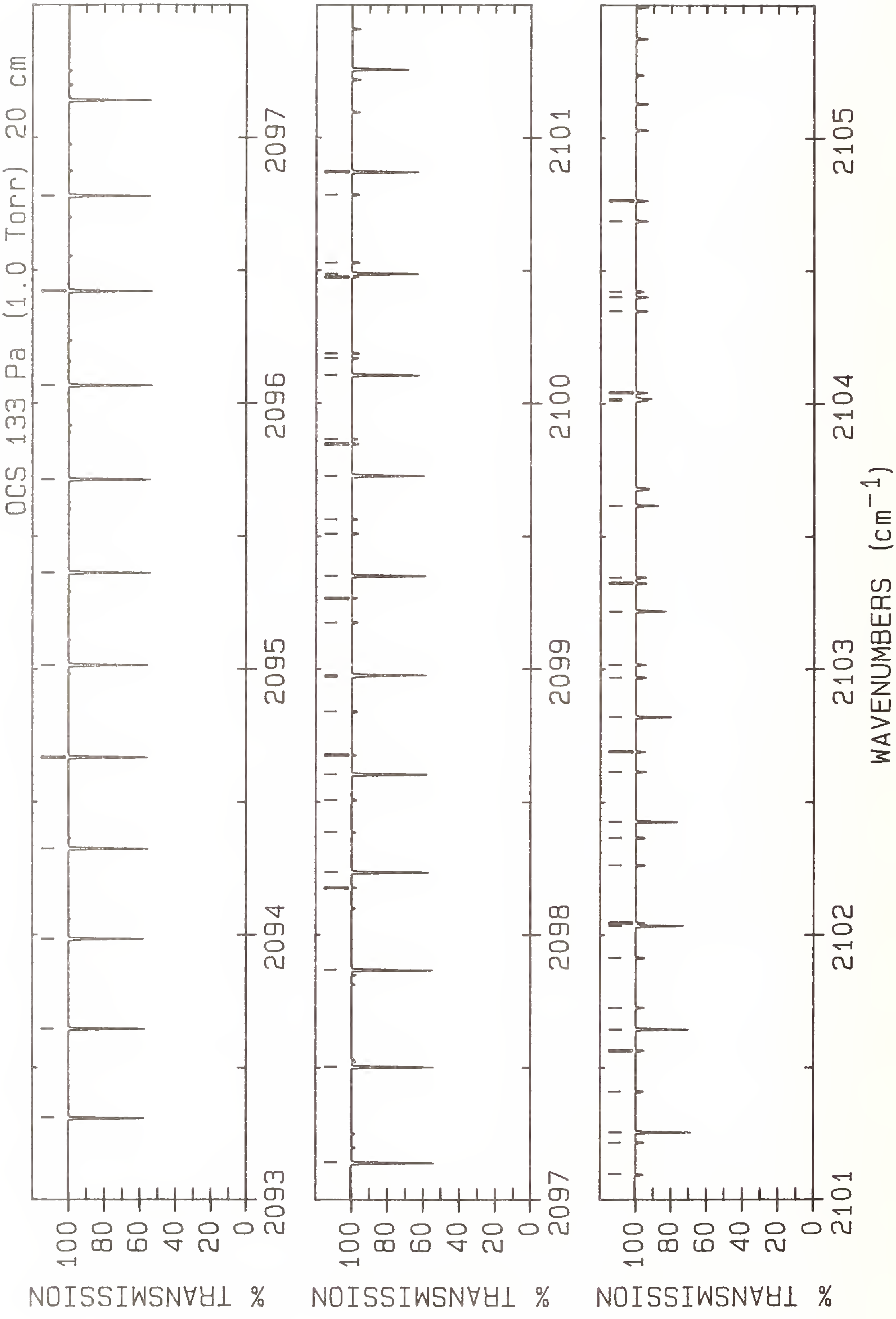

OCS 53 Pa (0.4 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2078
2079
2080
2081
2082
2083
2084
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2078.196 43(14)*	484.60	0.163E-19	R(49)	P
2	2078.196 86(8)	451.67	0.330E-20	R(47)	L
3	2078.216 71(12)*	419.73	0.474E-18	R(45)	A
4	2078.225 03(13)*	1616.30	0.228E-20	R(73)	B
5	2078.267 43(13)*	1617.44	0.227E-20	R(73)	C
6	2078.448 48(14)*	1646.29	0.200E-20	R(74)	B
7	2078.470 10(14)*	504.37	0.151E-19	R(50)	P
8	2078.478 60(8)	470.88	0.307E-20	R(48)	L
9	2078.491 40(13)*	1647.46	0.198E-20	R(74)	C
10	2078.506 84(12)*	438.37	0.443E-18	R(46)	A
11	2078.577 52(26)	1527.13	0.274E-20	R(57)	D
12	2078.669 46(15)*	1676.68	0.174E-20	R(75)	B
13	2078.712 88(14)*	1677.89	0.173E-20	R(75)	C
14	2078.741 34(14)*	524.53	0.139E-19	R(51)	P
15	2078.794 48(12)*	457.42	0.412E-18	R(47)	A
16	2078.887 96(16)*	1707.48	0.152E-20	R(76)	B
17	2078.931 87(15)*	1708.71	0.151E-20	R(76)	C
18	2079.010 15(14)*	545.09	0.128E-19	R(52)	P
19	2079.079 63(12)*	476.88	0.383E-18	R(48)	A
20	2079.148 38(17)*	1739.94	0.132E-20	R(77)	C
21	2079.276 53(14)*	566.04	0.118E-19	R(53)	P
22	2079.309 05(9)	530.90	0.243E-20	R(51)	L
23	2079.317 53(19)*	1770.28	0.115E-20	R(78)	B
24	2079.361 54(27)	1598.62	0.204E-20	R(60)	D
25	2079.362 28(12)*	496.74	0.355E-18	R(49)	A
26	2079.362 40(18)*	1771.58	0.114E-20	R(78)	C
27	2079.528 60(21)*	1802.28	0.998E-21	R(79)	B
28	2079.540 48(14)*	587.39	0.109E-19	R(54)	P
29	2079.573 93(20)*	1803.61	0.991E-21	R(79)	C
30	2079.580 95(9)	551.71	0.224E-20	R(52)	L
31	2079.642 44(12)*	517.00	0.328E-18	R(50)	A
32	2079.737 20(23)*	1834.68	0.863E-21	R(80)	B
33	2079.801 99(14)*	609.13	0.994E-20	R(55)	P
34	2079.920 10(12)*	537.67	0.303E-18	R(51)	A
35	2080.061 07(14)*	631.27	0.909E-20	R(56)	P
36	2080.195 27(12)*	558.74	0.278E-18	R(52)	A
37	2080.317 71(14)*	653.80	0.829E-20	R(57)	P
38	2080.467 93(12)*	580.22	0.256E-18	R(53)	A
39	2080.571 92(14)*	676.72	0.754E-20	R(58)	P
40	2080.643 90(10)	638.93	0.158E-20	R(56)	L
41	2080.738 10(12)*	602.10	0.234E-18	R(54)	A
42	2080.823 68(14)*	700.04	0.685E-20	R(59)	P
43	2080.903 48(11)	661.74	0.144E-20	R(57)	L
44	2081.005 76(12)*	624.39	0.214E-18	R(55)	A
45	2081.073 01(14)*	723.75	0.621E-20	R(60)	P
46	2081.160 58(12)	684.94	0.131E-20	R(58)	L
47	2081.270 92(12)*	647.08	0.195E-18	R(56)	A
48	2081.319 90(14)*	747.86	0.561E-20	R(61)	P
49	2081.415 22(14)	708.54	0.118E-20	R(59)	L
50	2081.533 58(12)*	670.17	0.177E-18	R(57)	A
51	2081.564 34(14)*	772.36	0.506E-20	R(62)	P
52	2081.667 39(17)	732.54	0.107E-20	R(60)	L
53	2081.793 73(12)*	693.67	0.161E-18	R(58)	A
54	2082.045 91(14)*	822.54	0.409E-20	R(64)	P
55	2082.051 38(12)*	717.57	0.146E-18	R(59)	A
56	2082.283 03(14)*	848.22	0.367E-20	R(65)	P
57	2082.306 52(12)*	741.87	0.132E-18	R(60)	A
58	2082.517 70(14)*	874.29	0.328E-20	R(66)	P
59	2082.559 15(12)*	766.58	0.119E-18	R(61)	A
60	2082.749 93(14)*	900.76	0.293E-20	R(67)	P
61	2082.809 28(12)*	791.70	0.107E-18	R(62)	A
62	2082.979 71(14)*	927.63	0.261E-20	R(68)	P
63	2083.056 89(12)*	817.21	0.959E-19	R(63)	A
64	2083.207 05(14)*	954.88	0.232E-20	R(69)	P
65	2083.301 99(12)*	843.13	0.858E-19	R(64)	A
66	2083.431 94(15)*	982.53	0.206E-20	R(70)	P
67	2083.544 58(12)*	869.46	0.767E-19	R(65)	A
68	2083.654 38(15)*	1010.57	0.182E-20	R(71)	P
69	2083.784 66(12)*	896.18	0.684E-19	R(66)	A
70	2083.874 38(16)*	1039.01	0.161E-20	R(72)	P

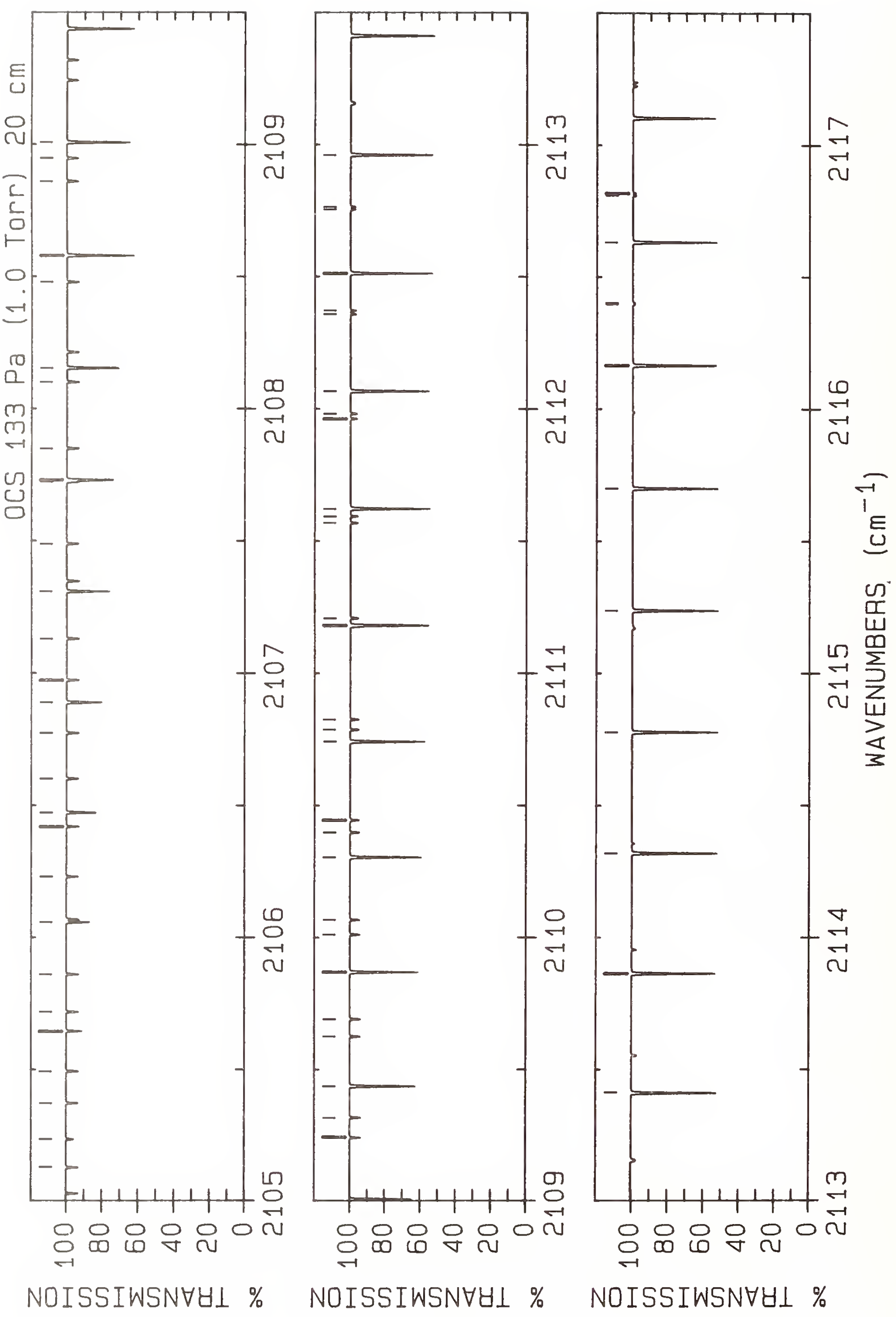

OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2084.091 93(17)*	1067.84	0.142E-20	R(73)	P
2	2084.257 27(12)*	950.85	0.540E-19	R(68)	A
3	2084.307 03(18)*	1097.06	0.124E-20	R(74)	P
4	2084.489 80(12)*	978.78	0.478E-19	R(69)	A
5	2084.497 85(10)*	766.58	0.533E-21	P(61)	W
6	2084.519 68(19)*	1126.67	0.109E-20	R(75)	P
7	2084.719 82(12)*	1007.13	0.423E-19	R(70)	A
8	2084.748 73(10)*	741.87	0.594E-21	P(60)	W
9	2084.947 32(12)*	1035.87	0.373E-19	R(71)	A
10	2085.002 79(9)*	717.57	0.659E-21	P(59)	W
11	2085.172 30(12)*	1065.02	0.328E-19	R(72)	A
12	2085.259 98(9)*	693.67	0.731E-21	P(58)	W
13	2085.345 79(27)	1249.06	0.635E-21	R(79)	P
14	2085.394 76(12)*	1094.57	0.288E-19	R(73)	A
15	2085.520 30(9)*	670.17	0.808E-21	P(57)	W
16	2085.614 71(12)*	1124.52	0.252E-19	R(74)	A
17	2085.744 16(33)	1312.61	0.478E-21	R(81)	P
18	2085.783 72(9)*	647.08	0.890E-21	P(56)	W
19	2085.832 13(12)*	1154.87	0.221E-19	R(75)	A
20	2085.939 67(36)	1344.97	0.413E-21	R(82)	P
21	2086.047 03(13)*	1185.63	0.193E-19	R(76)	A
22	2086.050 23(9)*	624.39	0.979E-21	P(55)	W
23	2086.132 73(40)	1377.73	0.357E-21	R(83)	P
24	2086.259 41(13)*	1216.79	0.168E-19	R(77)	A
25	2086.319 78(9)*	602.10	0.107E-20	P(54)	W
26	2086.323 35(45)	1410.88	0.307E-21	R(84)	P
27	2086.469 26(13)*	1248.35	0.146E-19	R(78)	A
28	2086.592 38(9)*	580.22	0.118E-20	P(53)	W
29	2086.676 60(13)*	1280.32	0.126E-19	R(79)	A
30	2086.867 98(9)*	558.74	0.129E-20	P(52)	W
31	2086.881 41(13)*	1312.69	0.109E-19	R(80)	A
32	2087.083 69(13)*	1345.46	0.944E-20	R(81)	A
33	2087.146 58(9)*	537.67	0.140E-20	P(51)	W
34	2087.283 45(13)*	1378.63	0.813E-20	R(82)	A
35	2087.428 13(9)*	517.00	0.152E-20	P(50)	W

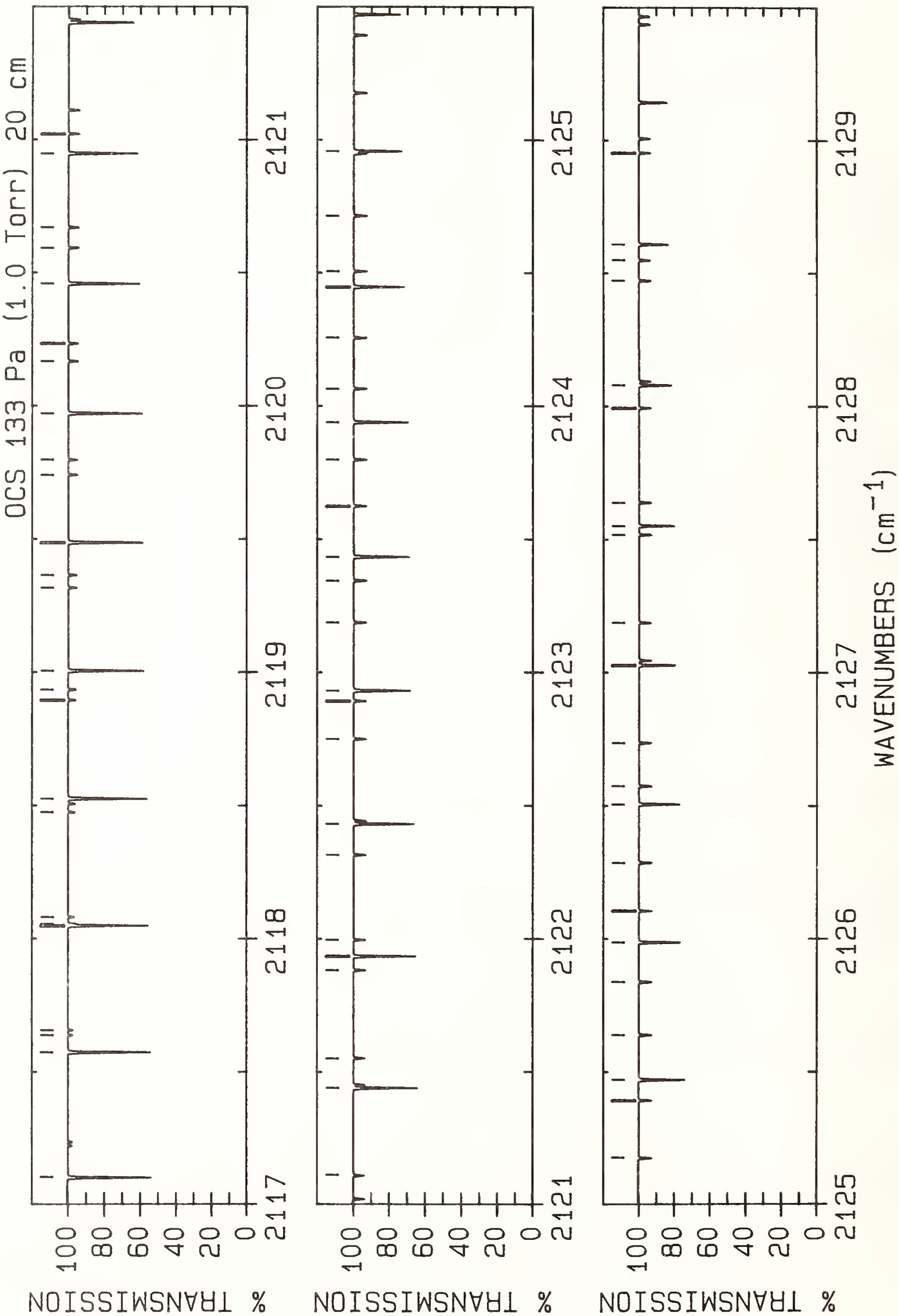
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2087.480 68(13)*	1412.21	0.699E-20	R(83)	A
37	2087.675 39(13)*	1446.18	0.600E-20	R(84)	A
38	2087.712 63(9)*	496.74	0.165E-20	P(49)	W
39	2087.867 57(13)*	1480.56	0.514E-20	R(85)	A
40	2088.000 04(9)*	476.88	0.178E-20	P(48)	W
41	2088.057 22(13)*	1515.34	0.439E-20	R(86)	A
42	2088.244 35(13)*	1550.53	0.374E-20	R(87)	A
43	2088.290 35(9)*	457.42	0.192E-20	P(47)	W
44	2088.428 95(13)*	1586.11	0.318E-20	R(88)	A
45	2088.583 52(9)*	438.37	0.207E-20	P(46)	W
46	2088.611 01(13)*	1622.10	0.270E-20	R(89)	A
47	2088.790 55(13)*	1658.48	0.229E-20	R(90)	A
48	2088.879 54(9)*	419.73	0.222E-20	P(45)	W
49	2088.967 56(13)*	1695.27	0.194E-20	R(91)	A
50	2089.142 03(13)*	1732.46	0.163E-20	R(92)	A
51	2089.178 38(9)*	401.49	0.237E-20	P(44)	W
52	2089.313 98(13)*	1770.05	0.137E-20	R(93)	A
53	2089.480 02(9)*	383.65	0.253E-20	P(43)	W
54	2089.483 39(14)*	1808.05	0.116E-20	R(94)	A
55	2089.650 27(14)*	1846.44	0.969E-21	R(95)	A
56	2089.784 43(9)*	366.22	0.270E-20	P(42)	W
57	2089.976 43(16)	1924.43	0.677E-21	R(97)	A
58	2090.091 60(9)*	349.19	0.287E-20	P(41)	W
59	2090.135 71(18)	1964.03	0.564E-21	R(98)	A
60	2090.292 45(20)	2004.02	0.469E-21	R(99)	A
61	2090.401 49(9)*	332.57	0.303E-20	P(40)	W
62	2090.714 08(9)*	316.35	0.321E-20	P(39)	W
63	2091.029 36(9)*	300.54	0.338E-20	P(38)	W
64	2091.347 31(9)*	285.13	0.355E-20	P(37)	W
65	2091.667 89(9)*	270.13	0.372E-20	P(36)	W
66	2091.991 09(9)*	255.53	0.388E-20	P(35)	W
67	2092.316 88(9)*	241.34	0.404E-20	P(34)	W
68	2092.645 26(9)*	227.55	0.420E-20	P(33)	W
69	2092.976 19(9)*	214.17	0.435E-20	P(32)	W


OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2093 2094 2095 2096 2097
2097 2098 2099 2100 2101
2101 2102 2103 2104 2105
WAVENUMBERS (cm^{-1})

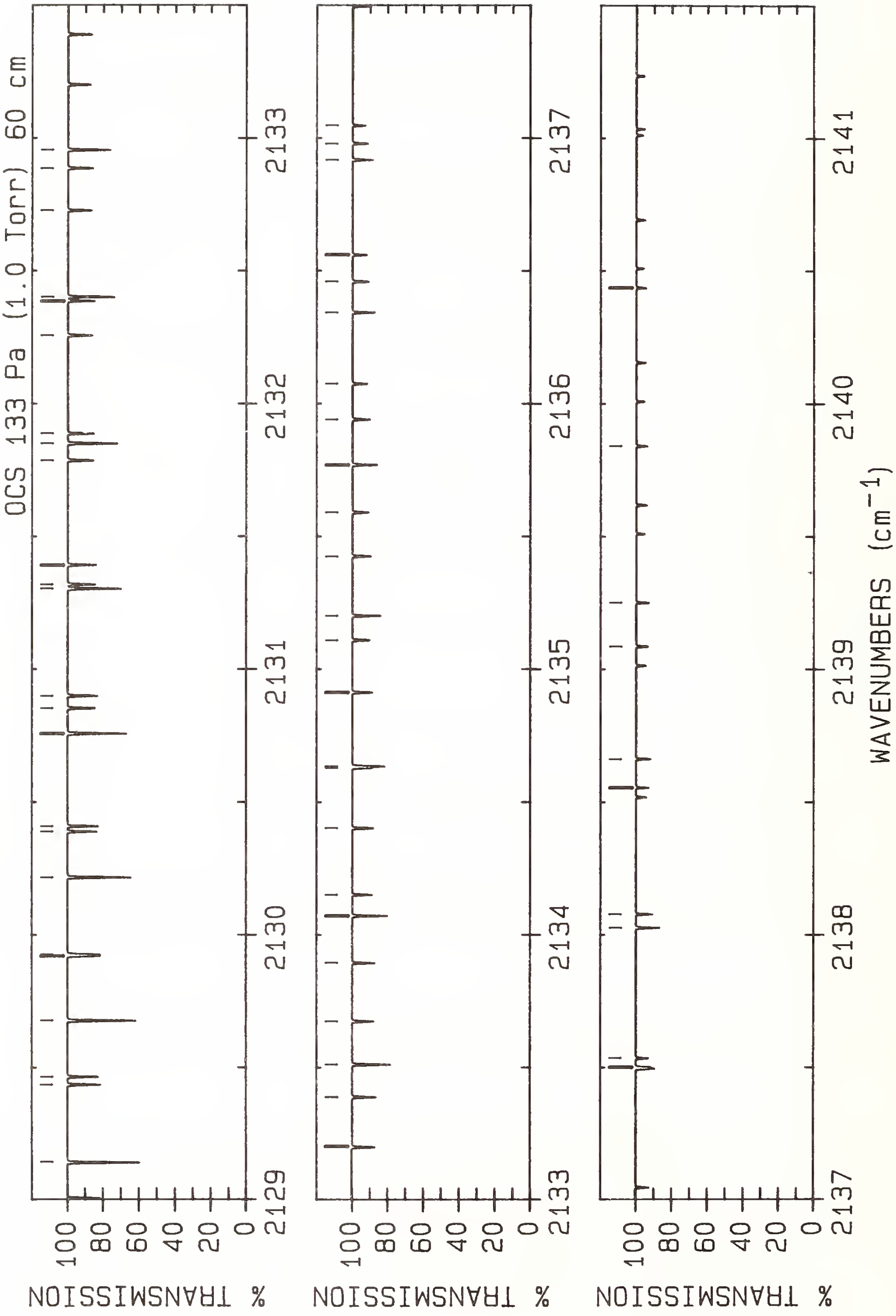
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2093.309 67(9)*	201.19	0.449E-20	P(31)	W	36	2100.487 58(9)*	26.78	0.375E-20	P(11)	W
2	2093.645 66(9)*	188.62	0.462E-20	P(30)	W	37	2100.529 23(15)	837.16	0.387E-21	P(39)	Y
3	2093.984 15(9)*	176.45	0.475E-20	P(29)	W	38	2100.784 33(15)	853.74	0.367E-21	P(40)	Z
4	2094.325 13(9)*	164.69	0.485E-20	P(28)	W	39	2100.870 92(9)*	22.31	0.348E-20	P(10)	W
5	2094.668 58(9)*	153.34	0.495E-20	P(27)	W	40	2100.872 47(15)	821.33	0.408E-21	P(38)	Y
6	2095.014 48(9)*	142.38	0.503E-20	P(26)	W	41	2101.095 65(15)	837.49	0.387E-21	P(39)	Z
7	2095.362 81(9)*	131.84	0.509E-20	P(25)	W	42	2101.217 50(15)	805.90	0.429E-21	P(37)	Y
8	2095.713 56(9)*	121.70	0.514E-20	P(24)	W	43	2101.256 51(9)*	18.26	0.320E-20	P(9)	W
9	2096.066 72(9)*	111.96	0.516E-20	P(23)	W	44	2101.409 52(15)	821.64	0.407E-21	P(38)	Z
10	2096.422 27(9)*	102.63	0.517E-20	P(22)	W	45	2101.564 30(15)	790.88	0.449E-21	P(36)	Y
11	2096.780 19(9)*	93.71	0.515E-20	P(21)	W	46	2101.644 36(9)*	14.61	0.289E-20	P(8)	W
12	2097.140 48(9)*	85.19	0.512E-20	P(20)	W	47	2101.725 95(14)	806.20	0.428E-21	P(37)	Z
13	2097.503 12(9)*	77.08	0.506E-20	P(19)	W	48	2101.912 87(15)	776.26	0.469E-21	P(35)	Y
14	2097.868 10(9)*	69.37	0.498E-20	P(18)	W	49	2102.034 46(9)*	11.36	0.257E-20	P(7)	W
15	2098.177 54(19)	959.33	0.251E-21	P(46)	Y	50	2102.044 92(14)	791.16	0.448E-21	P(36)	Z
16	2098.235 41(9)*	62.07	0.487E-20	P(17)	W	51	2102.263 19(15)	762.05	0.487E-21	P(34)	Y
17	2098.386 93(23)	998.38	0.218E-21	P(48)	Z	52	2102.366 42(14)	776.53	0.468E-21	P(35)	Z
18	2098.507 94(18)	940.66	0.270E-21	P(45)	Y	53	2102.426 79(9)*	8.52	0.224E-20	P(6)	W
19	2098.605 03(9)*	55.17	0.474E-20	P(16)	W	54	2102.615 26(15)	748.25	0.505E-21	P(33)	Y
20	2098.677 47(22)	978.88	0.234E-21	P(47)	Z	55	2102.690 45(14)	762.31	0.487E-21	P(34)	Z
21	2098.840 22(17)	922.39	0.288E-21	P(44)	Y	56	2102.821 36(9)*	6.09	0.189E-20	P(5)	W
22	2098.970 64(20)	959.78	0.251E-21	P(46)	Z	57	2102.969 06(15)	734.85	0.525E-21	P(32)	Y
23	2098.976 97(9)*	48.68	0.459E-20	P(15)	W	58	2103.017 00(14)	748.49	0.505E-21	P(33)	Z
24	2099.174 35(16)	904.54	0.308E-21	P(43)	Y	59	2103.218 17(9)*	4.06	0.152E-20	P(4)	W
25	2099.266 43(19)	941.10	0.270E-21	P(45)	Z	60	2103.324 59(15)	721.86	0.540E-21	P(31)	Y
26	2099.351 20(9)*	42.60	0.441E-20	P(14)	W	61	2103.346 06(14)	735.07	0.525E-21	P(32)	Z
27	2099.510 34(16)	887.08	0.327E-21	P(42)	Y	62	2103.617 21(9)*	2.43	0.115E-20	P(3)	W
28	2099.564 82(18)	922.82	0.288E-21	P(44)	Z	63	2104.011 69(14)	709.47	0.555E-21	P(30)	Z
29	2099.727 71(9)*	36.92	0.421E-20	P(13)	W	64	2104.018 47(9)*	1.22	0.773E-21	P(2)	W
30	2099.848 15(16)	870.04	0.347E-21	P(41)	Y	65	2104.040 79(14)	697.09	0.570E-21	P(29)	Y
31	2099.865 82(17)	904.94	0.307E-21	P(43)	Z	66	2104.348 25(14)	697.27	0.570E-21	P(29)	Z
32	2100.106 51(9)*	31.64	0.399E-20	P(12)	W	67	2104.401 45(14)	685.31	0.585E-21	P(28)	Y
33	2100.169 41(16)	887.47	0.327E-21	P(42)	Z	68	2104.421 96(9)*	0.41	0.388E-21	P(1)	W
34	2100.187 79(15)	853.39	0.368E-21	P(40)	Y	69	2104.687 29(14)	685.49	0.585E-21	P(28)	Z
35	2100.475 58(15)	870.40	0.346E-21	P(41)	Z	70	2104.763 80(14)	673.94	0.595E-21	P(27)	Y


OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100
80
60
40
20
0
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2105.127 84(14)	662.98	0.604E-21	P(26)	Y
2	2105.235 61(9)*	0.00	0.389E-21	R(0)	W
3	2105.372 80(14)	663.13	0.604E-21	P(26)	Z
4	2105.493 56(14)	652.42	0.612E-21	P(25)	Y
5	2105.645 77(9)*	0.41	0.777E-21	R(1)	W
6	2105.719 26(14)	652.56	0.611E-21	P(25)	Z
7	2105.860 96(14)	642.27	0.617E-21	P(24)	Y
8	2106.058 15(9)*	1.22	0.116E-20	R(2)	W
9	2106.230 02(14)	632.52	0.620E-21	P(23)	Y
10	2106.419 54(14)	632.64	0.620E-21	P(23)	Z
11	2106.472 75(9)*	2.43	0.154E-20	R(3)	W
12	2106.600 74(14)	623.18	0.621E-21	P(22)	Y
13	2106.773 36(14)	623.29	0.620E-21	P(22)	Z
14	2106.889 58(9)*	4.06	0.191E-20	R(4)	W
15	2106.973 12(14)	614.25	0.619E-21	P(21)	Y
16	2107.129 62(14)	614.35	0.619E-21	P(21)	Z
17	2107.308 63(9)*	6.09	0.227E-20	R(5)	W
18	2107.488 32(14)	605.81	0.614E-21	P(20)	Z
19	2107.722 83(14)	597.60	0.607E-21	P(19)	Y
20	2107.729 92(9)*	8.52	0.262E-20	R(6)	W
21	2107.849 45(14)	597.68	0.607E-21	P(19)	Z
22	2108.100 14(14)	589.88	0.597E-21	P(18)	Y
23	2108.153 43(9)*	11.36	0.295E-20	R(7)	W
24	2108.479 08(14)	582.57	0.584E-21	P(17)	Y
25	2108.578 98(14)	582.63	0.584E-21	P(17)	Z
26	2108.579 18(9)*	14.61	0.327E-20	R(8)	W
27	2108.859 66(14)	575.66	0.568E-21	P(16)	Y
28	2108.947 38(14)	575.72	0.568E-21	P(16)	Z
29	2109.007 16(9)*	18.26	0.357E-20	R(9)	W
30	2109.241 86(14)	569.16	0.550E-21	P(15)	Y
31	2109.318 19(14)	569.22	0.550E-21	P(15)	Z
32	2109.437 39(9)*	22.31	0.385E-20	R(10)	W
33	2109.625 69(14)	563.07	0.528E-21	P(14)	Y
34	2109.691 41(14)	563.12	0.528E-21	P(14)	Z
35	2109.869 87(9)*	26.78	0.411E-20	R(11)	W
36	2110.011 13(14)	557.38	0.504E-21	P(13)	Y
37	2110.067 04(14)	557.42	0.504E-21	P(13)	Z
38	2110.304 60(9)*	31.64	0.435E-20	R(12)	W
39	2110.398 18(14)	552.11	0.477E-21	P(12)	Y
40	2110.445 06(14)	552.14	0.477E-21	P(12)	Z
41	2110.741 59(9)*	36.92	0.456E-20	R(13)	W
42	2110.786 85(14)	547.23	0.447E-21	P(11)	Y
43	2110.825 49(14)	547.26	0.447E-21	P(11)	Z
44	2111.177 12(14)	542.76	0.415E-21	P(10)	Y
45	2111.180 85(9)*	42.60	0.476E-20	R(14)	W
46	2111.208 31(14)	542.79	0.415E-21	P(10)	Z
47	2111.568 99(14)	538.70	0.380E-21	P(9)	Y
48	2111.593 52(14)	538.72	0.380E-21	P(9)	Z
49	2111.622 39(9)*	48.68	0.493E-20	R(15)	W
50	2111.962 47(14)	535.04	0.343E-21	P(8)	Y
51	2111.981 12(14)	535.06	0.343E-21	P(8)	Z
52	2112.066 21(9)*	55.17	0.507E-20	R(16)	W
53	2112.357 55(14)	531.80	0.303E-21	P(7)	Y
54	2112.371 11(14)	531.81	0.303E-21	P(7)	Z
55	2112.512 32(9)*	62.07	0.519E-20	R(17)	W
56	2112.754 22(14)	528.95	0.262E-21	P(6)	Y
57	2112.763 48(14)	528.96	0.262E-21	P(6)	Z
58	2112.960 73(9)*	69.37	0.529E-20	R(18)	W
59	2113.411 45(9)*	77.08	0.537E-20	R(19)	W
60	2113.864 49(9)*	85.19	0.542E-20	R(20)	W
61	2114.319 87(9)*	93.71	0.544E-20	R(21)	W
62	2114.777 58(9)*	102.63	0.545E-20	R(22)	W
63	2115.237 66(9)*	111.96	0.544E-20	R(23)	W
64	2115.700 10(9)*	121.70	0.540E-20	R(24)	W
65	2116.164 92(9)*	131.84	0.534E-20	R(25)	W
66	2116.395 78(15)	521.64	0.124E-21	R(2)	Y
67	2116.401 78(15)	521.64	0.124E-21	R(2)	Z
68	2116.632 14(9)*	142.38	0.527E-20	R(26)	W
69	2116.808 32(14)	522.86	0.174E-21	R(3)	Y
70	2116.817 89(14)	522.86	0.174E-21	R(3)	Z


OCS 133 Pa (1.0 Torr) 20 cm
% TRANSMISSION
100 80 60 40 20 0
2117 2118 2119 2120 2121
2121 2122 2123 2124 2125
2125 2126 2127 2128 2129
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2117.101 78(9)*	153.34	0.518E-20	R(27)	W	36	2122.931 31(9)*	316.35	0.333E-20	R(39)	W
2	2117.573 83(9)*	164.69	0.508E-20	R(28)	W	37	2123.186 63(14)	589.88	0.635E-21	R(18)	Y
3	2117.638 15(14)	526.51	0.266E-21	R(5)	Y	38	2123.344 34(14)	589.95	0.635E-21	R(18)	Z
4	2117.657 23(14)	526.52	0.266E-21	R(5)	Z	39	2123.433 82(9)*	332.57	0.315E-20	R(40)	W
5	2118.048 33(9)*	176.45	0.496E-20	R(29)	W	40	2123.624 60(14)	597.60	0.645E-21	R(19)	Y
6	2118.055 44(14)	528.95	0.308E-21	R(6)	Y	41	2123.798 48(14)	597.68	0.645E-21	R(19)	Z
7	2118.080 45(14)	528.96	0.308E-21	R(6)	Z	42	2123.938 99(9)*	349.19	0.297E-20	R(41)	W
8	2118.474 31(14)	531.80	0.349E-21	R(7)	Y	43	2124.064 17(14)	605.72	0.650E-21	R(20)	Y
9	2118.525 28(9)*	188.62	0.483E-20	R(30)	W	44	2124.255 02(14)	605.81	0.650E-21	R(20)	Z
10	2118.894 76(14)	535.04	0.388E-21	R(8)	Y	45	2124.446 86(9)*	366.22	0.280E-20	R(42)	W
11	2118.934 01(14)	535.06	0.388E-21	R(8)	Z	46	2124.505 35(14)	614.25	0.655E-21	R(21)	Y
12	2119.004 70(9)*	201.19	0.469E-20	R(31)	W	47	2124.713 95(14)	614.35	0.655E-21	R(21)	Z
13	2119.316 80(14)	538.70	0.425E-21	R(9)	Y	48	2124.957 42(9)*	383.65	0.263E-20	R(43)	W
14	2119.364 35(14)	538.72	0.425E-21	R(9)	Z	49	2125.175 28(14)	623.29	0.655E-21	R(22)	Z
15	2119.486 62(9)*	214.17	0.454E-20	R(32)	W	50	2125.392 55(14)	632.52	0.655E-21	R(23)	Y
16	2119.740 42(14)	542.76	0.459E-21	R(10)	Y	51	2125.470 72(9)*	401.49	0.246E-20	R(44)	W
17	2119.797 06(14)	542.79	0.459E-21	R(10)	Z	52	2125.639 02(14)	632.64	0.655E-21	R(23)	Z
18	2119.971 05(9)*	227.55	0.438E-20	R(33)	W	53	2125.838 58(14)	642.27	0.650E-21	R(24)	Y
19	2120.165 63(14)	547.23	0.490E-21	R(11)	Y	54	2125.986 77(9)*	419.73	0.230E-20	R(45)	W
20	2120.232 14(14)	547.26	0.490E-21	R(11)	Z	55	2126.105 17(14)	642.40	0.650E-21	R(24)	Z
21	2120.458 00(9)*	241.34	0.421E-20	R(34)	W	56	2126.286 24(14)	652.42	0.645E-21	R(25)	Y
22	2120.592 42(14)	552.11	0.520E-21	R(12)	Y	57	2126.505 59(9)*	438.37	0.214E-20	R(46)	W
23	2120.669 60(14)	552.14	0.520E-21	R(12)	Z	58	2126.573 72(14)	652.56	0.645E-21	R(25)	Z
24	2120.947 49(9)*	255.53	0.404E-20	R(35)	W	59	2126.735 53(14)	662.98	0.635E-21	R(26)	Y
25	2121.020 81(14)	557.38	0.545E-21	R(13)	Y	60	2127.027 20(9)*	457.42	0.199E-20	R(47)	W
26	2121.109 44(14)	557.42	0.545E-21	R(13)	Z	61	2127.186 46(14)	673.94	0.625E-21	R(27)	Y
27	2121.439 55(9)*	270.13	0.387E-20	R(36)	W	62	2127.518 08(14)	674.10	0.625E-21	R(27)	Z
28	2121.551 65(14)	563.12	0.570E-21	R(14)	Z	63	2127.551 62(9)*	476.88	0.185E-20	R(48)	W
29	2121.882 35(14)	569.16	0.590E-21	R(15)	Y	64	2127.639 03(14)	685.31	0.610E-21	R(28)	Y
30	2121.934 19(9)*	285.13	0.369E-20	R(37)	W	65	2127.993 90(14)	685.49	0.610E-21	R(28)	Z
31	2121.996 25(14)	569.22	0.590E-21	R(15)	Z	66	2128.078 89(9)*	496.74	0.171E-20	R(49)	W
32	2122.315 51(14)	575.66	0.610E-21	R(16)	Y	67	2128.472 14(14)	697.27	0.595E-21	R(29)	Z
33	2122.431 44(9)*	300.54	0.351E-20	R(38)	W	68	2128.549 12(15)	709.27	0.580E-21	R(30)	Y
34	2122.750 27(14)	582.57	0.625E-21	R(17)	Y	69	2128.609 01(9)*	517.00	0.157E-20	R(50)	W
35	2122.892 59(14)	582.63	0.625E-21	R(17)	Z	70	2128.952 82(14)	709.47	0.580E-21	R(30)	Z



OCS 133 Pa (1.0 Torr) 60 cm
% TRANSMISSION
100
80
60
40
20
0
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
WAVENUMBERS (cm^{-1})

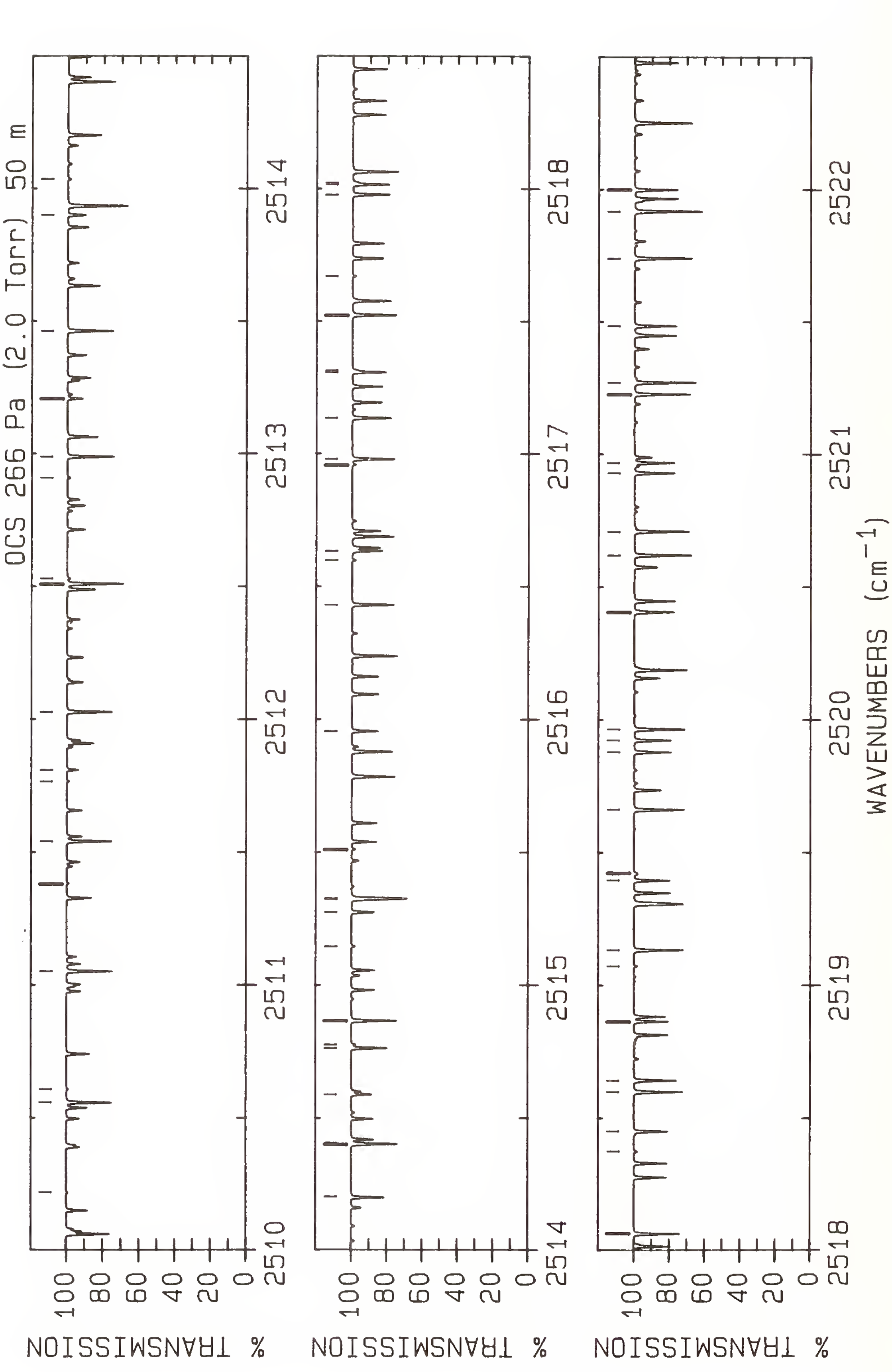
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2129.142 02(9)*	537.67	0.145E-20	R(51)	W	31	2134.151 26(17)	887.08	0.341E-21	R(42)	Y
2	2129.435 94(14)	722.07	0.565E-21	R(31)	Z	32	2134.402 39(17)	870.40	0.361E-21	R(41)	Z
3	2129.465 85(15)	734.85	0.545E-21	R(32)	Y	33	2134.629 36(18)	904.54	0.320E-21	R(43)	Y
4	2129.677 92(9)*	558.74	0.133E-20	R(52)	W	34	2134.635 00(10)*	766.58	0.551E-21	R(61)	W
5	2129.921 49(14)	735.07	0.545E-21	R(32)	Z	35	2134.912 70(18)	887.47	0.340E-21	R(42)	Z
6	2129.926 72(15)	748.25	0.530E-21	R(33)	Y	36	2135.109 23(19)	922.39	0.300E-21	R(44)	Y
7	2130.216 75(9)*	580.22	0.122E-20	R(53)	W	37	2135.201 01(11)*	791.70	0.494E-21	R(62)	W
8	2130.389 27(15)	762.05	0.510E-21	R(34)	Y	38	2135.425 51(19)	904.94	0.320E-21	R(43)	Z
9	2130.409 50(14)	748.49	0.530E-21	R(33)	Z	39	2135.590 89(20)	940.66	0.281E-21	R(45)	Y
10	2130.758 52(9)*	602.10	0.111E-20	R(54)	W	40	2135.770 14(11)*	817.21	0.441E-21	R(63)	W
11	2130.853 51(15)	776.26	0.488E-21	R(35)	Y	41	2135.940 84(20)	922.82	0.299E-21	R(44)	Z
12	2130.899 96(14)	762.31	0.510E-21	R(34)	Z	42	2136.074 36(22)	959.33	0.261E-21	R(46)	Y
13	2131.303 26(9)*	624.39	0.101E-20	R(55)	W	43	2136.342 38(12)*	843.13	0.393E-21	R(64)	W
14	2131.319 45(15)	790.88	0.467E-21	R(36)	Y	44	2136.458 69(22)	941.10	0.281E-21	R(45)	Z
15	2131.392 89(14)	776.53	0.488E-21	R(35)	Z	45	2136.559 64(23)	978.40	0.244E-21	R(47)	Y
16	2131.787 10(15)	805.90	0.447E-21	R(37)	Y	46	2136.917 76(13)*	869.46	0.350E-21	R(65)	W
17	2131.850 98(9)*	647.08	0.921E-21	R(56)	W	47	2136.979 07(23)	959.78	0.261E-21	R(46)	Z
18	2131.888 27(15)	791.16	0.467E-21	R(36)	Z	48	2137.046 76(25)	997.88	0.226E-21	R(48)	Y
19	2132.256 46(15)	821.33	0.425E-21	R(38)	Y	49	2137.496 29(14)*	896.18	0.311E-21	R(66)	W
20	2132.386 13(15)	806.20	0.446E-21	R(37)	Z	50	2137.501 98(26)	978.88	0.244E-21	R(47)	Z
21	2132.401 70(9)*	670.17	0.835E-21	R(57)	W	51	2137.535 73(27)	1017.76	0.209E-21	R(49)	Y
22	2132.727 55(16)	837.16	0.404E-21	R(39)	Y	52	2138.026 55(30)	1038.05	0.193E-21	R(50)	Y
23	2132.886 47(15)	821.64	0.425E-21	R(38)	Z	53	2138.027 44(28)	998.38	0.226E-21	R(48)	Z
24	2132.955 45(10)*	693.67	0.755E-21	R(58)	W	54	2138.077 98(15)*	923.31	0.275E-21	R(67)	W
25	2133.200 37(16)	853.39	0.382E-21	R(40)	Y	55	2138.555 44(31)	1018.28	0.209E-21	R(49)	Z
26	2133.389 28(15)	837.49	0.403E-21	R(39)	Z	56	2138.662 84(17)*	950.85	0.243E-21	R(68)	W
27	2133.512 23(10)*	717.57	0.681E-21	R(59)	W	57	2139.086 01(34)	1038.59	0.193E-21	R(50)	Z
28	2133.674 94(16)	870.04	0.361E-21	R(41)	Y	58	2139.250 89(19)	978.78	0.214E-21	R(69)	W
29	2133.894 59(16)	853.74	0.382E-21	R(40)	Z	59	2139.842 13(21)	1007.13	0.188E-21	R(70)	W
30	2134.072 08(10)*	741.87	0.613E-21	R(60)	W	60	2140.436 57(24)	1035.87	0.165E-21	R(71)	W

ATLAS OF OCS ABSORPTION LINES FROM 2510 cm^{-1} to 2600 cm^{-1}

key:

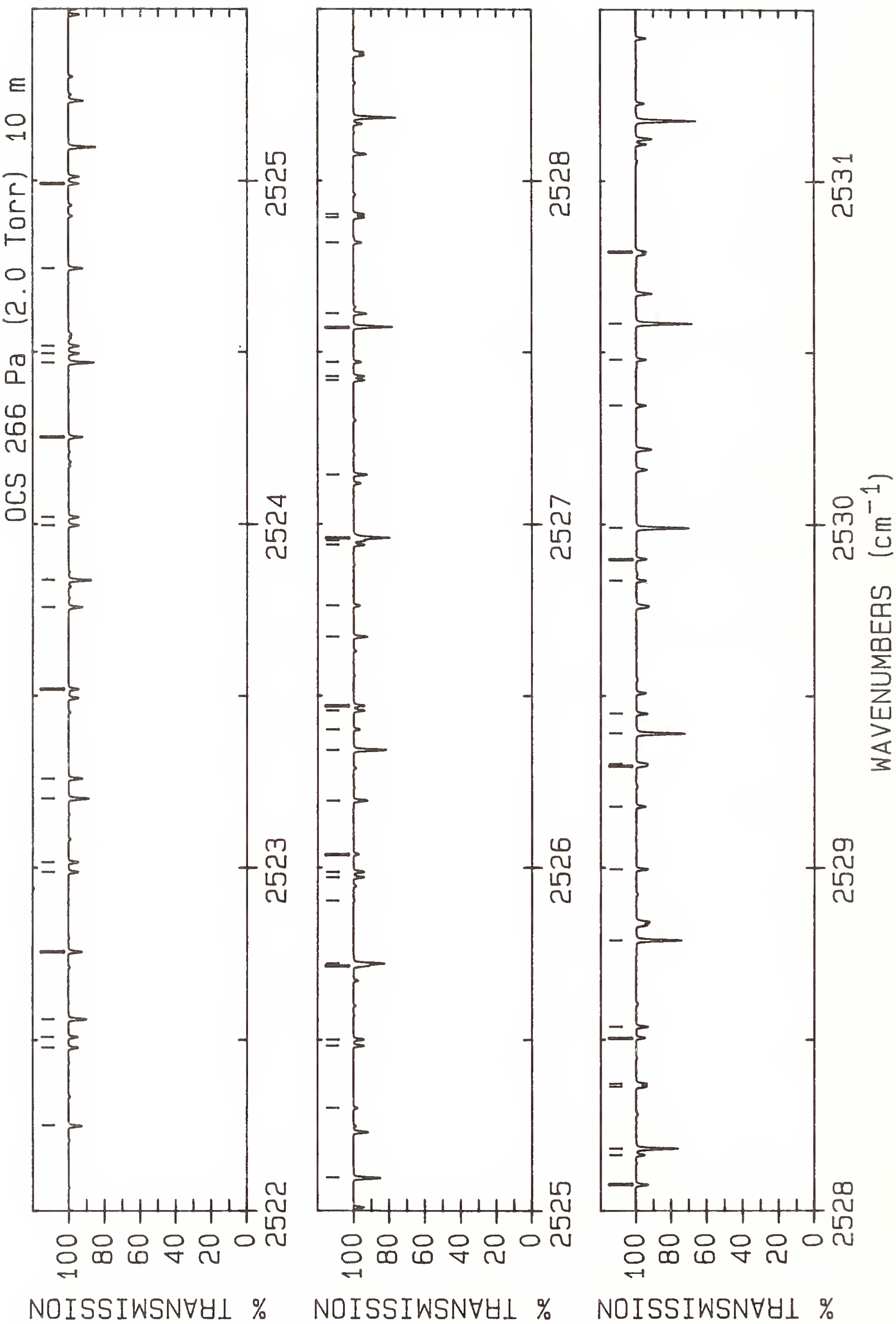
Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	00^03-00^00
B		01^13-$01^{1e}0$
C		01^13-$01^{1f}0$
D		00^04-00^01
E		02^23-$02^{2e}0$
F		02^23-$02^{2f}0$
G		02^03-02^00
W		11^10-00^00
X		12^00-01^10
Y		12^20-$01^{1e}0$
Z		12^20-$01^{1f}0$
L	$^{16}O^{12}C^{33}S$	11^10-00^00
P	$^{16}O^{12}C^{34}S$	00^03-00^00
Q		11^10-00^00
T	$^{16}O^{13}C^{32}S$	00^03-00^00
U		11^10-00^00

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1}, a temperature of 296 K. Except for the B and C bands for which the transition moment used was 0.00284 debye, the transition moment used for the $\Delta v_3=3$ transitions was 0.00367 debye and that used for the $\Delta v_1=1$, $\Delta v_2=1$ transitions was 0.00257 debye. No Herman-Wallis constant was included in the intensity calculation for the $\Delta v_3=3$ bands but the Herman-Wallis correction of $C_1=0.00463$ was used for the $\Delta v_1=1$, $\Delta v_2=1$ bands as recommended by Dang-Nhu and Guelachvili **[5.104]**.



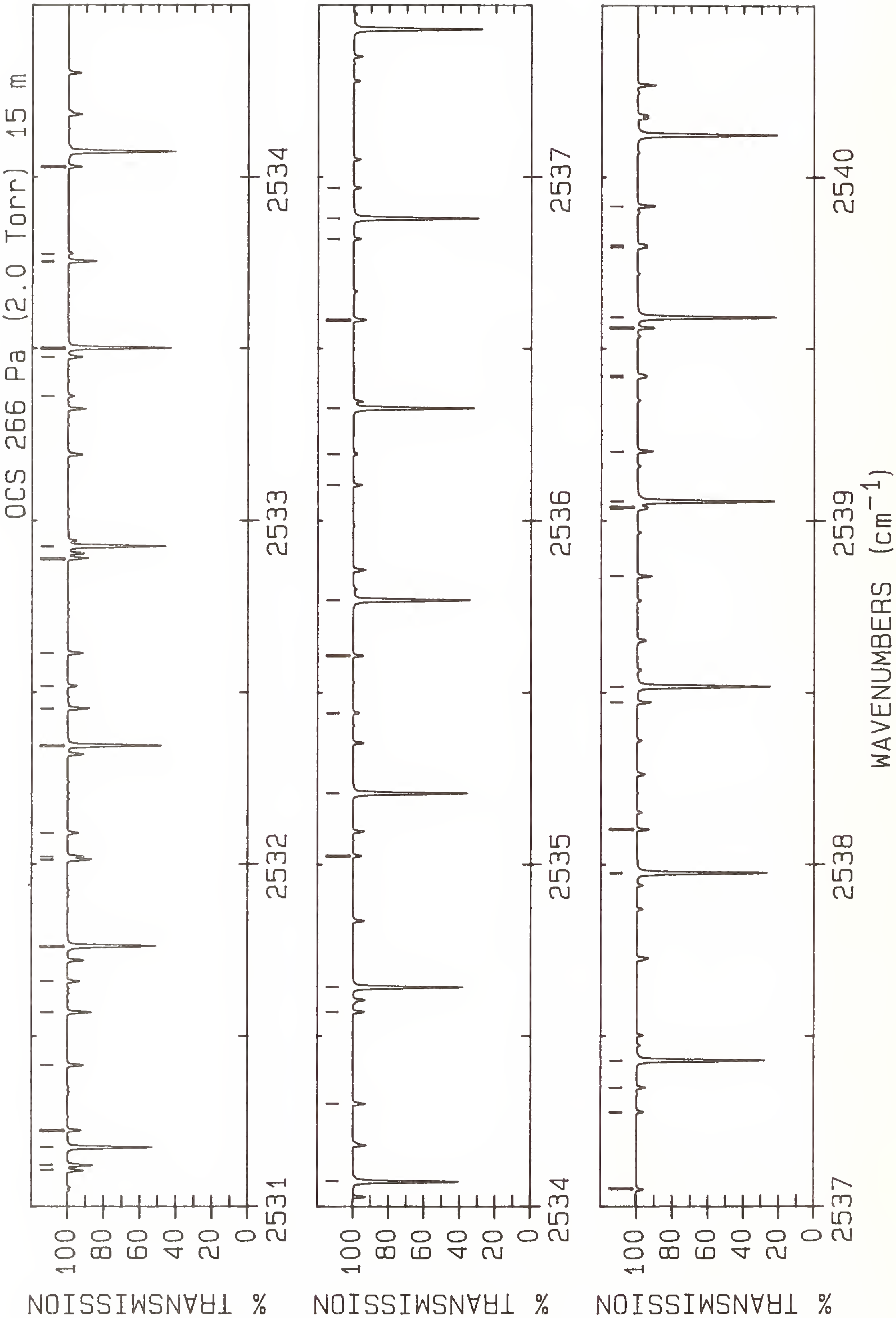
OCS 266 Pa (2.0 Torr) 50 m
% TRANSMISSION
100 80 60 40 20 0
2510 2511 2512 2513 2514
2514 2515 2516 2517 2518
2518 2519 2520 2521 2522
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2510.217 53(14)*	8.49	0.240E-24	R(6)	U
2	2510.558 56(56)	160.67	0.601E-23	P(28)	P
3	2510.607 47(14)*	11.32	0.268E-24	R(7)	U
4	2511.051 65(55)	149.59	0.611E-23	P(27)	P
5	2511.381 91(14)*	18.20	0.323E-24	R(9)	U
6	2511.541 14(53)	138.90	0.620E-23	P(26)	P
7	2511.766 41(14)*	22.24	0.348E-24	R(10)	U
8	2511.810 08(37)	1312.69	0.147E-23	P(80)	A
9	2512.027 02(51)	128.62	0.627E-23	P(25)	P
10	2512.509 29(49)	118.72	0.632E-23	P(24)	P
11	2512.510 58(33)*	1280.32	0.170E-23	P(79)	A
12	2512.529 94(14)*	31.54	0.395E-24	R(12)	U
13	2512.908 98(14)*	36.80	0.417E-24	R(13)	U
14	2512.987 97(47)	109.23	0.634E-23	P(23)	P
15	2513.207 25(30)*	1248.35	0.196E-23	P(78)	A
16	2513.463 03(45)	100.13	0.634E-23	P(22)	P
17	2513.900 11(27)*	1216.79	0.226E-23	P(77)	A
18	2514.035 15(14)*	55.00	0.470E-24	R(16)	U
19	2514.200 68(87)	1241.47	0.446E-23	P(43)	D
20	2514.402 36(42)	83.11	0.626E-23	P(20)	P
21	2514.406 89(14)*	61.87	0.484E-24	R(17)	U
22	2514.589 14(24)*	1185.63	0.259E-23	P(76)	A
23	2514.763 89(75)	1224.09	0.474E-23	P(42)	D
24	2514.776 80(14)*	69.15	0.496E-24	R(18)	U
25	2514.866 62(41)	75.19	0.619E-23	P(19)	P
26	2515.144 88(14)*	76.83	0.506E-24	R(19)	U
27	2515.274 37(22)*	1154.87	0.297E-23	P(75)	A
28	2515.323 29(65)	1207.11	0.503E-23	P(41)	D
29	2515.327 28(41)	67.68	0.608E-23	P(18)	P
30	2515.511 13(14)*	84.92	0.514E-24	R(20)	U
31	2515.955 78(20)*	1124.52	0.340E-23	P(74)	A
32	2516.430 70(51)	1174.37	0.561E-23	P(39)	D
33	2516.598 86(15)*	111.60	0.527E-24	R(23)	U
34	2516.633 39(18)*	1094.57	0.388E-23	P(73)	A
35	2516.957 77(15)*	121.31	0.527E-24	R(24)	U
36	2516.978 71(48)	1158.61	0.591E-23	P(38)	D
37	2517.133 89(49)	41.56	0.537E-23	P(14)	P
38	2517.307 19(17)*	1065.02	0.442E-23	P(72)	A
39	2517.314 83(16)*	131.41	0.525E-24	R(25)	U
40	2517.522 92(45)	1143.24	0.620E-23	P(37)	D
41	2517.670 05(16)*	141.93	0.522E-24	R(26)	U
42	2517.977 20(16)*	1035.87	0.503E-23	P(71)	A
43	2518.015 59(56)	30.87	0.485E-23	P(12)	P
44	2518.023 42(17)*	152.84	0.517E-24	R(27)	U
45	2518.063 34(44)	1128.29	0.649E-23	P(36)	D
46	2518.374 95(17)*	164.16	0.510E-24	R(28)	U
47	2518.451 03(59)	26.12	0.455E-23	P(11)	P
48	2518.599 96(44)	1113.73	0.677E-23	P(35)	D
49	2518.643 41(15)*	1007.13	0.570E-23	P(70)	A
50	2518.865 01(53)	821.64	0.457E-23	P(38)	C
51	2519.072 47(19)*	188.01	0.493E-24	R(30)	U
52	2519.132 80(44)	1099.58	0.705E-23	P(34)	D
53	2519.395 71(51)	806.20	0.480E-23	P(37)	C
54	2519.418 45(19)*	200.54	0.482E-24	R(31)	U
55	2519.424 04(94)	1051.11	0.330E-24	R(4)	G
56	2519.661 85(44)	1085.84	0.731E-23	P(33)	D
57	2519.878 82(49)	790.88	0.503E-23	P(36)	B
58	2519.923 03(49)	791.16	0.502E-23	P(36)	C
59	2519.964 46(15)*	950.85	0.728E-23	P(68)	A
60	2520.405 63(47)	776.26	0.525E-23	P(35)	B
61	2520.619 31(14)*	923.31	0.820E-23	P(67)	A
62	2520.708 59(43)	1059.56	0.781E-23	P(31)	D
63	2520.928 98(47)	762.05	0.547E-23	P(34)	B
64	2520.967 55(48)	762.31	0.546E-23	P(34)	C
65	2521.226 29(43)	1047.02	0.803E-23	P(30)	D
66	2521.270 37(14)*	896.18	0.922E-23	P(66)	A
67	2521.484 75(48)	748.49	0.567E-23	P(33)	C
68	2521.740 20(42)	1034.89	0.824E-23	P(29)	D
69	2521.917 65(14)*	869.46	0.103E-22	P(65)	A
70	2521.998 59(48)	735.07	0.587E-23	P(32)	C

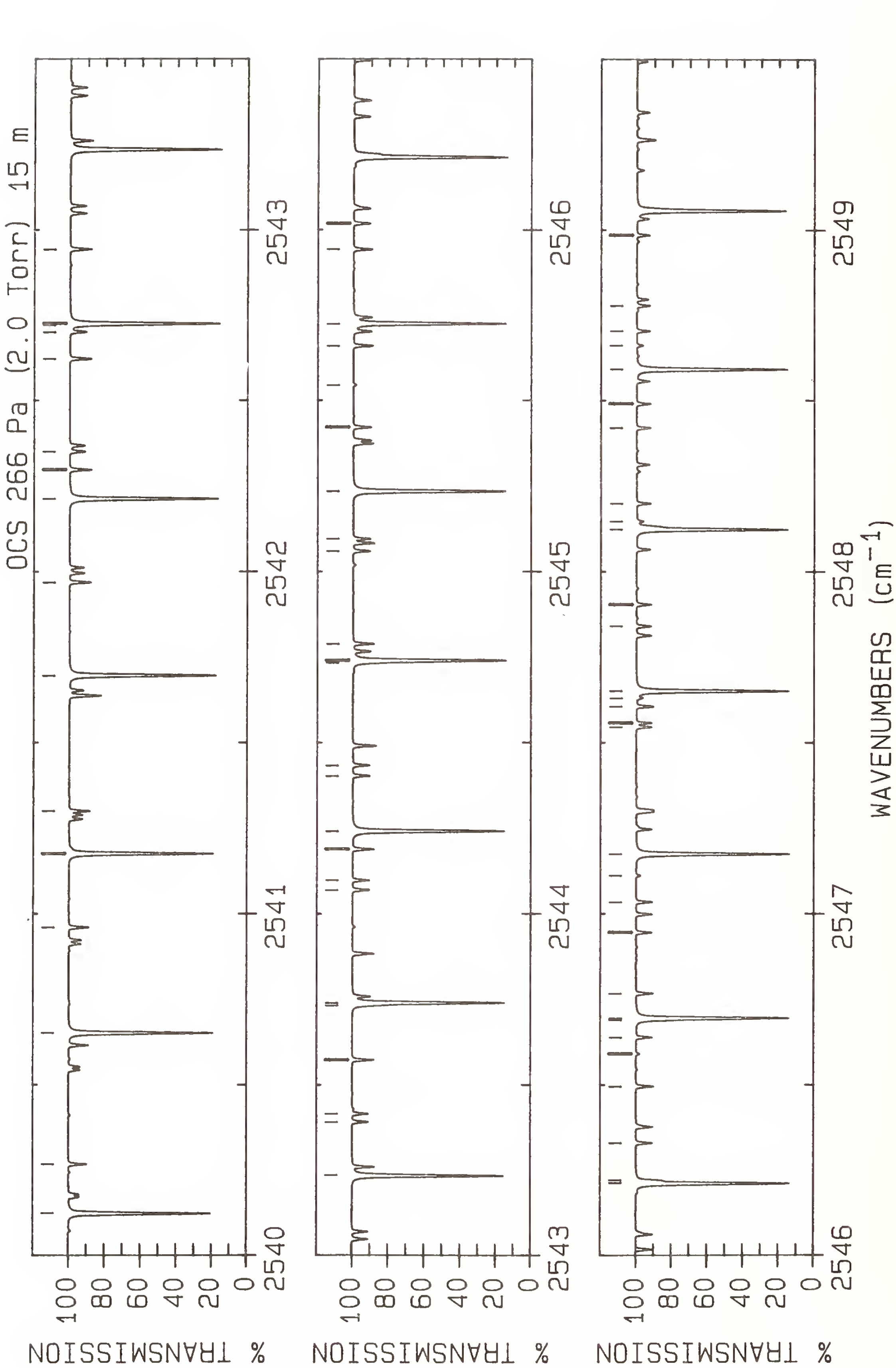


OCS 266 Pa (2.0 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2522 2523 2524 2525
2525 2526 2527 2528
2528 2529 2530 2531
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2522.250 33(41)	1023.17	0.842E-23	P(28)	D
2	2522.478 25(47)	721.86	0.606E-23	P(31)	B
3	2522.509 06(48)	722.07	0.606E-23	P(31)	C
4	2522.561 15(14)*	843.13	0.116E-22	P(64)	A
5	2522.756 69(40)	1011.84	0.858E-23	P(27)	D
6	2522.987 76(47)	709.27	0.624E-23	P(30)	B
7	2523.016 16(47)	709.47	0.623E-23	P(30)	C
8	2523.200 89(14)*	817.21	0.129E-22	P(63)	A
9	2523.259 26(38)	1000.93	0.872E-23	P(26)	D
10	2523.519 91(47)	697.27	0.639E-23	P(29)	C
11	2523.758 06(37)	990.41	0.882E-23	P(25)	D
12	2523.836 85(14)*	791.70	0.144E-22	P(62)	A
13	2523.996 41(46)	685.31	0.654E-23	P(28)	B
14	2524.020 29(46)	685.49	0.654E-23	P(28)	C
15	2524.253 08(35)	980.30	0.890E-23	P(24)	D
16	2524.469 04(13)*	766.58	0.160E-22	P(61)	A
17	2524.495 56(45)	673.94	0.667E-23	P(27)	B
18	2524.517 31(45)	674.10	0.666E-23	P(27)	C
19	2524.744 33(34)	970.60	0.894E-23	P(23)	D
20	2524.991 26(44)	662.98	0.677E-23	P(26)	B
21	2525.097 47(13)*	741.87	0.178E-22	P(60)	A
22	2525.302 05(73)	5.94	0.275E-23	R(5)	P
23	2525.483 50(43)	652.42	0.685E-23	P(25)	B
24	2525.501 29(43)	652.56	0.685E-23	P(25)	C
25	2525.715 51(32)	952.40	0.892E-23	P(21)	D
26	2525.722 14(13)*	717.57	0.197E-22	P(59)	A
27	2525.903 70(58)	1149.99	0.941E-24	R(22)	G
28	2525.972 30(41)	642.27	0.691E-23	P(24)	B
29	2525.988 25(41)	642.40	0.691E-23	P(24)	C
30	2526.039 45(67)	11.08	0.357E-23	R(7)	P
31	2526.195 44(32)	943.90	0.886E-23	P(20)	D
32	2526.343 05(13)*	693.67	0.217E-22	P(58)	A
33	2526.402 72(63)	14.25	0.396E-23	R(8)	P
34	2526.457 66(40)	632.52	0.695E-23	P(23)	B
35	2526.471 85(40)	632.64	0.694E-23	P(23)	C
36	2526.671 60(32)	935.82	0.875E-23	P(19)	D
37	2526.762 37(59)	17.81	0.432E-23	R(9)	P
38	2526.939 57(39)	623.18	0.695E-23	P(22)	B
39	2526.952 10(39)	623.29	0.695E-23	P(22)	C
40	2526.960 20(13)*	670.17	0.239E-22	P(57)	A
41	2527.143 98(33)	928.13	0.861E-23	P(18)	D
42	2527.418 03(37)	614.25	0.693E-23	P(21)	B
43	2527.429 01(38)	614.35	0.693E-23	P(21)	C
44	2527.470 79(52)	26.12	0.498E-23	R(11)	P
45	2527.573 60(13)*	647.08	0.263E-22	P(56)	A
46	2527.612 60(34)	920.85	0.842E-23	P(17)	D
47	2527.819 57(49)	30.87	0.528E-23	R(12)	P
48	2527.893 05(36)	605.72	0.688E-23	P(20)	B
49	2527.902 56(37)	605.81	0.688E-23	P(20)	C
50	2528.077 45(36)	913.98	0.820E-23	P(16)	D
51	2528.164 71(46)	36.02	0.554E-23	R(13)	P
52	2528.183 25(13)*	624.39	0.289E-22	P(55)	A
53	2528.364 63(36)	597.60	0.680E-23	P(19)	B
54	2528.372 76(36)	597.68	0.680E-23	P(19)	C
55	2528.506 23(44)	41.56	0.578E-23	R(14)	P
56	2528.538 52(38)	907.50	0.793E-23	P(15)	D
57	2528.789 16(13)*	602.10	0.316E-22	P(54)	A
58	2528.995 83(40)	901.44	0.763E-23	P(14)	D
59	2529.178 36(41)	53.83	0.617E-23	R(16)	P
60	2529.297 46(35)	582.57	0.654E-23	P(17)	B
61	2529.303 13(36)	582.63	0.654E-23	P(17)	C
62	2529.391 31(13)*	580.22	0.345E-22	P(53)	A
63	2529.449 36(42)	895.77	0.728E-23	P(13)	D
64	2529.835 95(42)	67.68	0.645E-23	R(18)	P
65	2529.899 13(45)	890.52	0.690E-23	P(12)	D
66	2529.989 73(13)*	558.74	0.376E-22	P(52)	A
67	2530.345 13(47)	885.66	0.648E-23	P(11)	D
68	2530.478 97(45)	83.11	0.662E-23	R(20)	P
69	2530.584 40(13)*	537.67	0.409E-22	P(51)	A
70	2530.795 01(47)	91.42	0.666E-23	R(21)	P

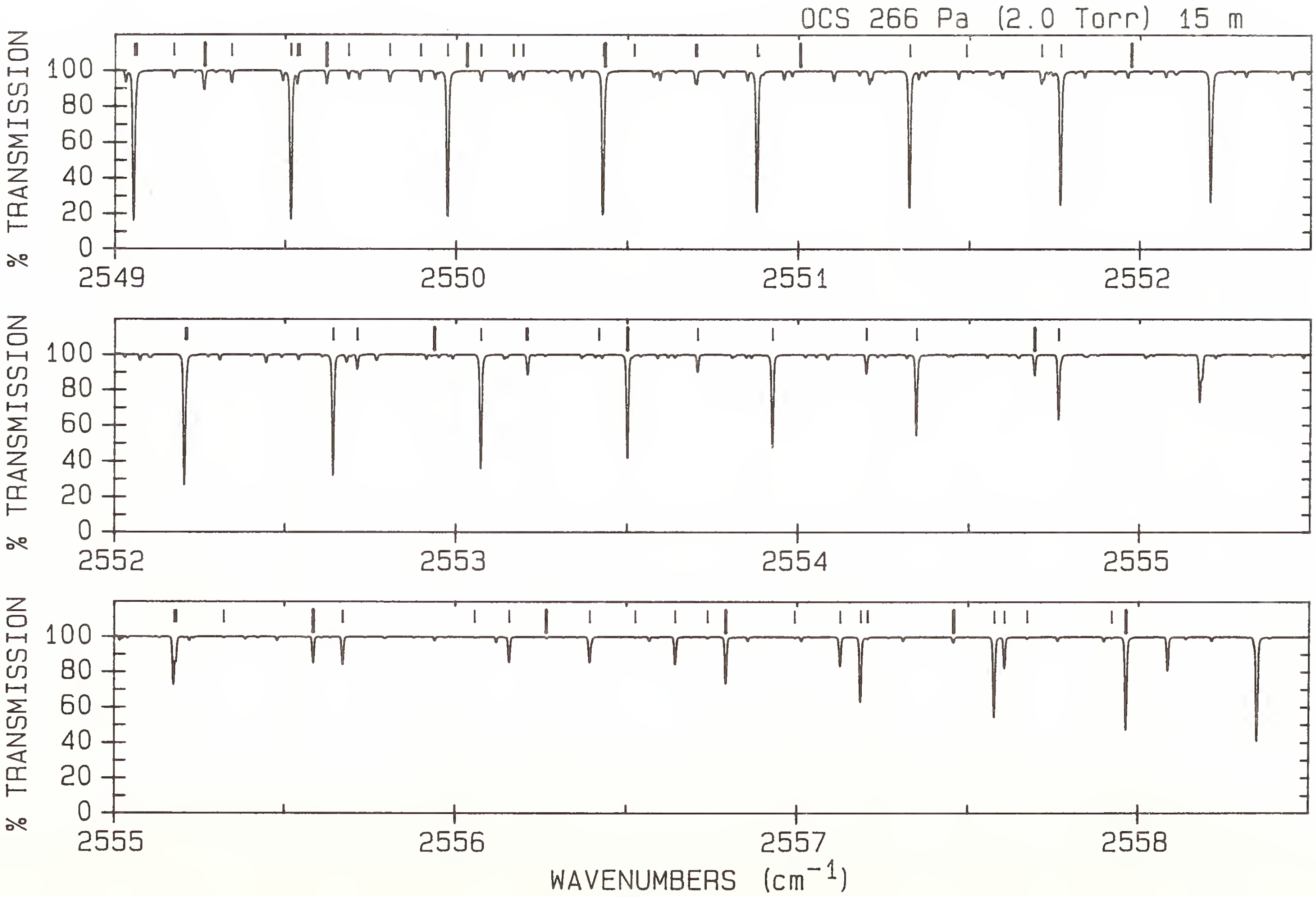

OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100 80 60 40 20 0
2531 2532 2533 2534
2534 2535 2536 2537
2537 2538 2539 2540
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2531.107 40(49)	100.13	0.668E-23	R(22)	P
2	2531.121 84(39)	557.38	0.565E-23	P(13)	B
3	2531.123 72(40)	557.42	0.564E-23	P(13)	C
4	2531.175 33(13)*	517.00	0.443E-22	P(50)	A
5	2531.225 81(52)	877.17	0.552E-23	P(9)	D
6	2531.416 15(51)	109.23	0.667E-23	R(23)	P
7	2531.569 34(40)	552.11	0.534E-23	P(12)	B
8	2531.570 50(41)	552.14	0.534E-23	P(12)	C
9	2531.660 50(54)	873.53	0.500E-23	P(8)	D
10	2531.762 53(13)*	496.74	0.479E-22	P(49)	A
11	2532.013 39(42)	547.23	0.501E-23	P(11)	B
12	2532.013 94(43)	547.26	0.501E-23	P(11)	C
13	2532.022 67(55)	128.62	0.657E-23	R(25)	P
14	2532.091 41(56)	870.29	0.444E-23	P(7)	D
15	2532.346 00(12)*	476.88	0.517E-22	P(48)	A
16	2532.454 01(44)	542.76	0.465E-23	P(10)	B
17	2532.454 04(45)	542.79	0.465E-23	P(10)	C
18	2532.518 56(57)	867.46	0.386E-23	P(6)	D
19	2532.614 56(57)	149.59	0.639E-23	R(27)	P
20	2532.890 79(46)	538.72	0.426E-23	P(9)	C
21	2532.891 19(45)	538.70	0.426E-23	P(9)	B
22	2532.925 73(12)*	457.42	0.557E-22	P(47)	A
23	2533.361 53(60)	863.01	0.263E-23	P(4)	D
24	2533.474 90(62)	184.01	0.599E-23	R(30)	P
25	2533.501 74(12)*	438.37	0.598E-22	P(46)	A
26	2533.754 25(49)	531.81	0.339E-23	P(7)	C
27	2533.754 34(65)	196.27	0.583E-23	R(31)	P
28	2533.755 23(49)	531.80	0.340E-23	P(7)	B
29	2533.777 36(61)	861.39	0.199E-23	P(3)	D
30	2534.030 10(70)	208.93	0.565E-23	R(32)	P
31	2534.074 02(12)*	419.73	0.641E-22	P(45)	A
32	2534.302 18(78)	221.99	0.546E-23	R(33)	P
33	2534.570 57(89)	235.44	0.527E-23	R(34)	P
34	2534.642 57(12)*	401.49	0.685E-22	P(44)	A
35	2535.024 36(52)	524.49	0.192E-23	P(4)	C
36	2535.025 49(52)	524.48	0.192E-23	P(4)	B
37	2535.207 40(12)*	383.65	0.730E-22	P(43)	A
38	2535.441 04(53)	522.86	0.138E-23	P(3)	C
39	2535.442 03(53)	522.86	0.138E-23	P(3)	B
40	2535.607 3	293.19	0.444E-23	R(38)	P
41	2535.768 52(12)*	366.22	0.776E-22	P(42)	A
42	2536.103 4	324.44	0.401E-23	R(40)	P
43	2536.193 04(60)	860.18	0.200E-23	R(2)	D
44	2536.325 91(12)*	349.19	0.823E-22	P(41)	A
45	2536.582 43(59)	861.39	0.266E-23	R(3)	D
46	2536.584 7	357.27	0.358E-23	R(42)	P
47	2536.819 8	374.27	0.338E-23	R(43)	P
48	2536.879 58(12)*	332.57	0.871E-22	P(40)	A
49	2536.968 04(57)	863.01	0.330E-23	R(4)	D
50	2537.051 2	391.68	0.317E-23	R(44)	P
51	2537.278 8	409.47	0.297E-23	R(45)	P
52	2537.349 86(56)	865.03	0.392E-23	R(5)	D
53	2537.429 54(12)*	316.35	0.919E-22	P(39)	A
54	2537.975 79(12)*	300.54	0.967E-22	P(38)	A
55	2538.102 15(52)	870.29	0.509E-23	R(7)	D
56	2538.472 62(50)	873.53	0.564E-23	R(8)	D
57	2538.518 32(12)*	285.13	0.102E-21	P(37)	A
58	2538.839 29(47)	877.17	0.616E-23	R(9)	D
59	2539.035 83(49)	526.51	0.297E-23	R(5)	B
60	2539.040 37(49)	526.52	0.297E-23	R(5)	C
61	2539.057 14(12)*	270.13	0.106E-21	P(36)	A
62	2539.202 17(45)	881.21	0.664E-23	R(10)	D
63	2539.417 90(47)	528.95	0.345E-23	R(6)	B
64	2539.423 52(48)	528.96	0.345E-23	R(6)	C
65	2539.561 26(42)	885.66	0.709E-23	R(11)	D
66	2539.592 26(12)*	255.53	0.111E-21	P(35)	A
67	2539.796 50(45)	531.80	0.391E-23	R(7)	B
68	2539.803 31(46)	531.81	0.391E-23	R(7)	C
69	2539.916 55(40)	890.52	0.750E-23	R(12)	D



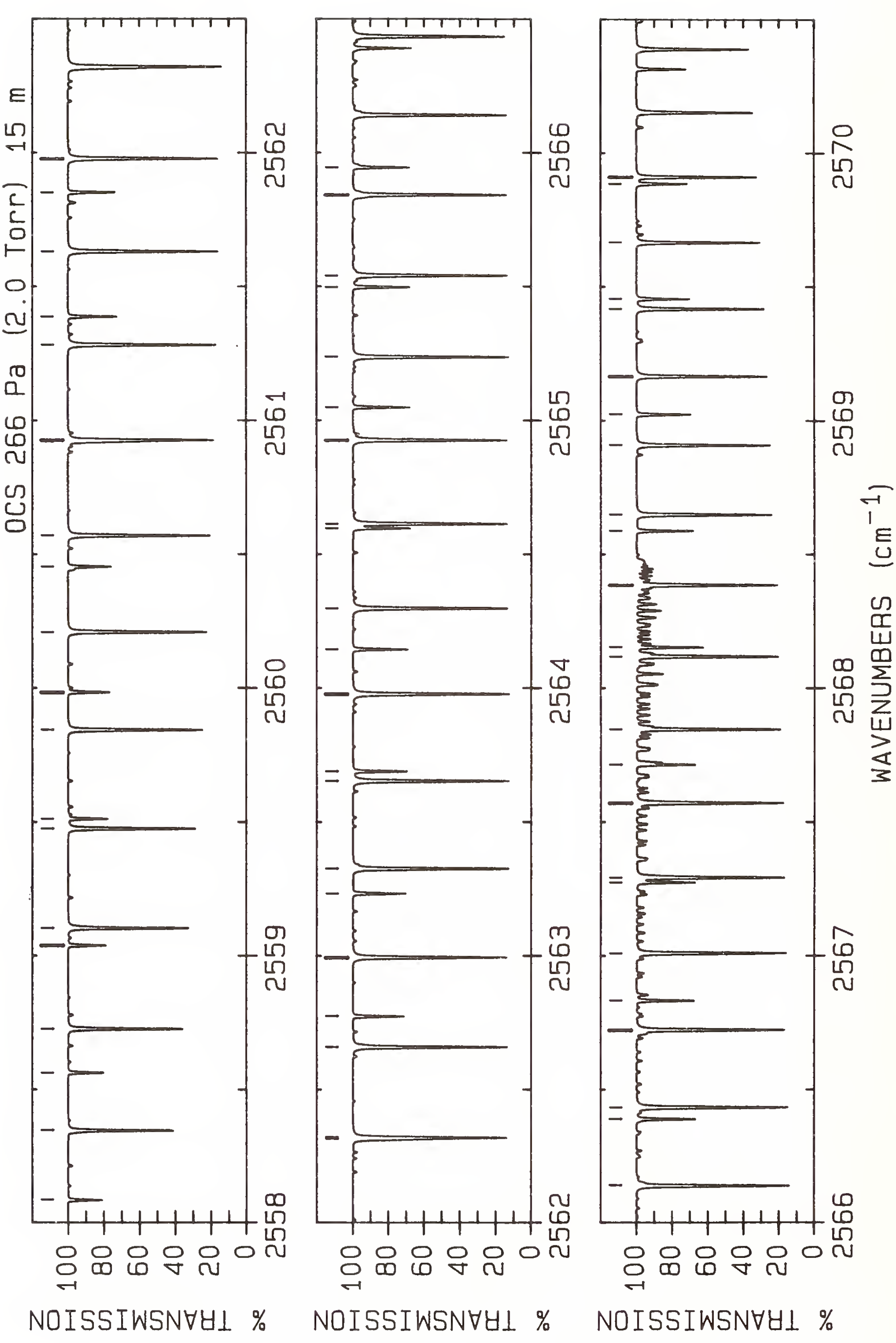
OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100
80
60
40
20
0
2540
2541
2542
2543
2543
2544
2545
2546
2546
2547
2548
2549
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2540.123 66(12)*	241.34	0.115E-21	P(34)	A
2	2540.268 04(38)	895.77	0.788E-23	R(13)	D
3	2540.651 36(12)*	227.55	0.120E-21	P(33)	A
4	2540.959 62(34)	907.50	0.851E-23	R(15)	D
5	2541.175 36(12)*	214.17	0.124E-21	P(32)	A
6	2541.299 71(33)	913.98	0.876E-23	R(16)	D
7	2541.695 65(12)*	201.19	0.128E-21	P(31)	A
8	2541.968 45(32)	928.13	0.914E-23	R(18)	D
9	2542.212 24(12)*	188.62	0.132E-21	P(30)	A
10	2542.297 10(32)	935.82	0.927E-23	R(19)	D
11	2542.349 83(36)	563.07	0.637E-23	R(14)	B
12	2542.621 93(33)	943.90	0.936E-23	R(20)	D
13	2542.700 72(35)	569.16	0.660E-23	R(15)	B
14	2542.720 40(36)	569.22	0.660E-23	R(15)	C
15	2542.725 12(12)*	176.45	0.135E-21	P(29)	A
16	2542.942 95(34)	952.40	0.941E-23	R(21)	D
17	2543.234 31(12)*	164.69	0.138E-21	P(28)	A
18	2543.392 07(36)	582.57	0.697E-23	R(17)	B
19	2543.415 91(36)	582.63	0.697E-23	R(17)	C
20	2543.573 52(37)	970.60	0.940E-23	R(23)	D
21	2543.732 53(36)	589.88	0.710E-23	R(18)	B
22	2543.739 80(12)*	153.34	0.141E-21	P(27)	A
23	2544.069 50(37)	597.60	0.720E-23	R(19)	B
24	2544.097 87(38)	597.68	0.720E-23	R(19)	C
25	2544.188 77(40)	990.41	0.925E-23	R(25)	D
26	2544.241 59(12)*	142.38	0.143E-21	P(26)	A
27	2544.402 99(39)	605.72	0.727E-23	R(20)	B
28	2544.433 76(39)	605.81	0.727E-23	R(20)	C
29	2544.732 98(40)	614.25	0.731E-23	R(21)	B
30	2544.739 68(12)*	131.84	0.145E-21	P(25)	A
31	2544.788 69(42)	1011.84	0.898E-23	R(27)	D
32	2545.059 48(41)	623.18	0.732E-23	R(22)	B
33	2545.095 36(41)	623.29	0.732E-23	R(22)	C
34	2545.234 07(12)*	121.70	0.146E-21	P(24)	A
35	2545.421 05(43)	632.64	0.730E-23	R(23)	C
36	2545.544 62(18)*	843.13	0.140E-23	P(64)	W
37	2545.659 75(44)	1047.02	0.838E-23	R(30)	D
38	2545.724 77(12)*	111.96	0.147E-21	P(23)	A
39	2545.942 40(44)	1059.56	0.814E-23	R(31)	D
40	2546.018 00(45)	652.42	0.719E-23	R(25)	B
41	2546.211 78(12)*	102.63	0.147E-21	P(22)	A
42	2546.221 20(44)	1072.49	0.788E-23	R(32)	D
43	2546.330 50(46)	662.98	0.709E-23	R(26)	B
44	2546.496 14(44)	1085.84	0.761E-23	R(33)	D
45	2546.591 03(18)*	791.70	0.178E-23	P(62)	W
46	2546.639 48(46)	673.94	0.698E-23	R(27)	B
47	2546.689 74(47)	674.10	0.697E-23	R(27)	C
48	2546.695 08(12)*	93.71	0.147E-21	P(21)	A
49	2546.767 22(44)	1099.58	0.733E-23	R(34)	D
50	2546.944 96(47)	685.31	0.684E-23	R(28)	B
51	2547.034 43(45)	1113.73	0.704E-23	R(35)	D
52	2547.111 42(18)*	766.58	0.201E-23	P(61)	W
53	2547.174 70(12)*	85.19	0.145E-21	P(20)	A
54	2547.545 35(47)	709.27	0.651E-23	R(30)	B
55	2547.557 23(51)	1143.24	0.644E-23	R(37)	D
56	2547.605 35(48)	709.47	0.650E-23	R(30)	C
57	2547.629 95(18)*	741.87	0.226E-23	P(60)	W
58	2547.650 62(12)*	77.08	0.144E-21	P(19)	A
59	2547.840 26(47)	721.86	0.632E-23	R(31)	B
60	2547.903 69(48)	722.07	0.631E-23	R(31)	C
61	2548.122 84(12)*	69.37	0.141E-21	P(18)	A
62	2548.146 60(18)*	717.57	0.253E-23	P(59)	W
63	2548.198 60(48)	735.07	0.611E-23	R(32)	C
64	2548.419 48(47)	748.25	0.591E-23	R(33)	B
65	2548.490 06(48)	748.49	0.590E-23	R(33)	C
66	2548.591 37(12)*	62.07	0.138E-21	P(17)	A
67	2548.661 38(18)*	693.67	0.283E-23	P(58)	W
68	2548.703 79(49)	762.05	0.569E-23	R(34)	B
69	2548.778 08(49)	762.31	0.568E-23	R(34)	C
70	2548.984 55(52)	776.26	0.546E-23	R(35)	B

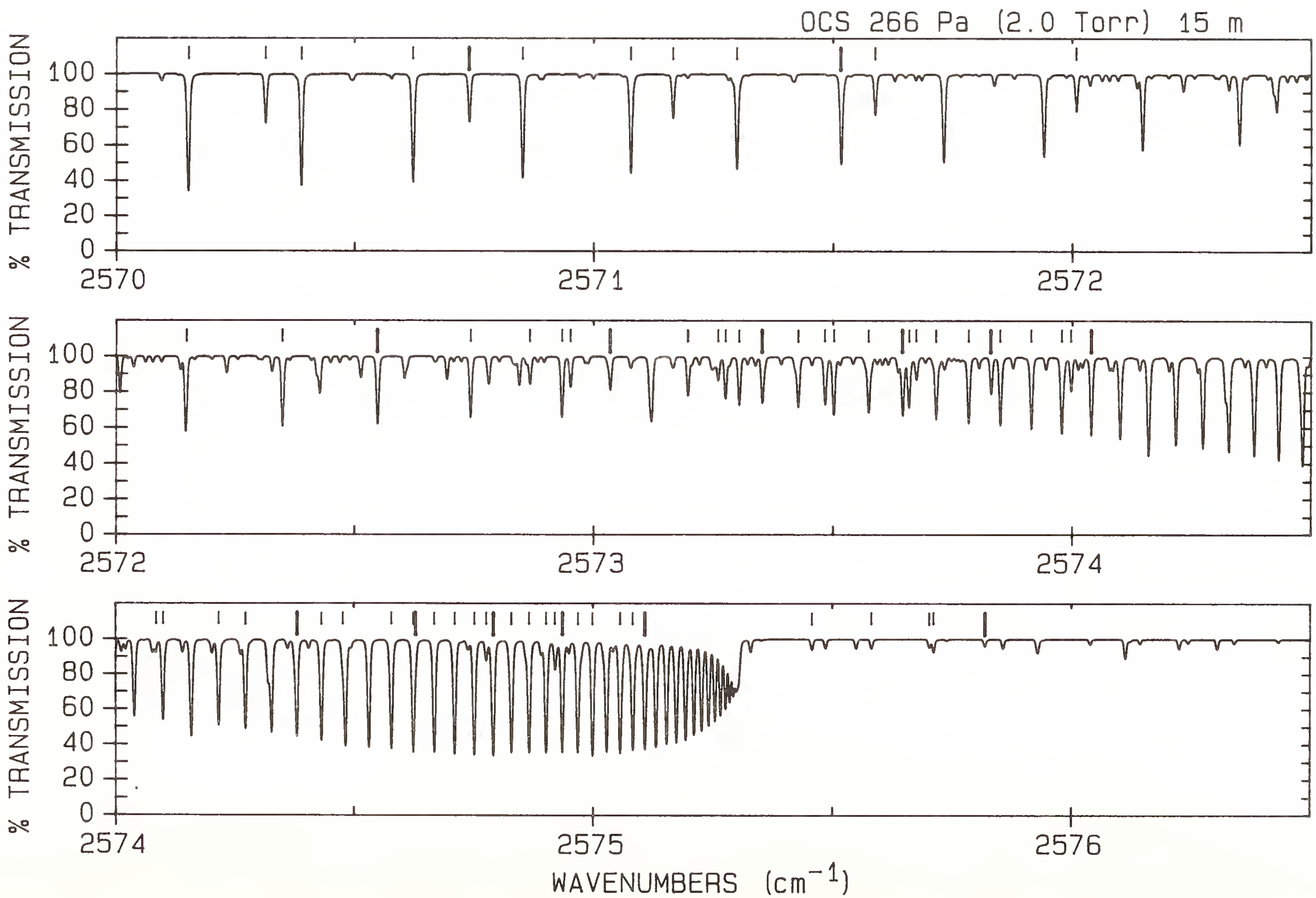


OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100
80
60
40
20
0
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2549.056 21(12)*	55.17	0.135E-21	P(16)	A	36	2553.073 56(13)*	11.36	0.731E-22	P(7)	A
2	2549.062 65(51)	776.53	0.545E-23	R(35)	C	37	2553.205 71(37)	446.25	0.376E-24	P(47)	Q
3	2549.174 29(18)*	670.17	0.315E-23	P(57)	W	38	2553.210 12(18)*	496.74	0.694E-23	P(49)	W
4	2549.261 77(57)	790.88	0.523E-23	R(36)	B	39	2553.417 62(40)	1017.76	0.491E-24	P(49)	X
5	2549.264 6	1259.25	0.434E-23	R(44)	D	40	2553.501 46(13)*	8.52	0.635E-22	P(6)	A
6	2549.343 76(53)	791.16	0.522E-23	R(36)	C	41	2553.706 17(18)*	476.88	0.757E-23	P(48)	W
7	2549.517 36(12)*	48.68	0.130E-21	P(15)	A	42	2553.925 66(13)*	6.09	0.536E-22	P(5)	A
8	2549.535 44(64)	805.90	0.499E-23	R(37)	B	43	2554.200 34(18)*	457.42	0.825E-23	P(47)	W
9	2549.541 95(42)	1191.40	0.208E-24	P(57)	X	44	2554.346 17(13)*	4.06	0.433E-22	P(4)	A
10	2549.621 42(58)	806.20	0.499E-23	R(37)	C	45	2554.692 64(18)*	438.37	0.896E-23	P(46)	W
11	2549.685 32(18)*	647.08	0.351E-23	P(56)	W	46	2554.762 98(13)*	2.43	0.327E-22	P(3)	A
12	2549.805 55(74)	821.33	0.476E-23	R(38)	B	47	2555.176 09(13)*	1.22	0.219E-22	P(2)	A
13	2549.895 61(64)	821.64	0.475E-23	R(38)	C	48	2555.183 07(18)*	419.73	0.971E-23	P(45)	W
14	2549.974 81(12)*	42.60	0.125E-21	P(14)	A	49	2555.322 99(39)	940.66	0.709E-24	P(45)	X
15	2550.031 03(41)	1168.28	0.234E-24	P(56)	X	50	2555.585 50(13)*	0.41	0.110E-22	P(1)	A
16	2550.072 10(86)	837.16	0.452E-23	R(39)	B	51	2555.586 69(36)	357.27	0.548E-24	P(42)	Q
17	2550.166 33(73)	837.49	0.451E-23	R(39)	C	52	2555.671 62(18)*	401.49	0.105E-22	P(44)	W
18	2550.194 48(18)*	624.39	0.390E-23	P(55)	W	53	2556.057 43(35)	340.66	0.586E-24	P(41)	Q
19	2550.428 57(12)*	36.92	0.120E-21	P(13)	A	54	2556.158 29(18)*	383.65	0.113E-22	P(43)	W
20	2550.433 58(83)	853.74	0.427E-23	R(40)	C	55	2556.267 34(38)	904.54	0.838E-24	P(43)	X
21	2550.518 82(41)	1145.56	0.262E-24	P(55)	X	56	2556.393 23(13)*	0.00	0.110E-22	R(0)	A
22	2550.697 34(96)	870.40	0.404E-23	R(41)	C	57	2556.526 35(35)	324.44	0.625E-24	P(40)	Q
23	2550.701 77(18)*	602.10	0.432E-23	P(54)	W	58	2556.643 10(18)*	366.22	0.122E-22	P(42)	W
24	2550.878 63(12)*	31.64	0.113E-21	P(12)	A	59	2556.737 41(38)	887.08	0.907E-24	P(42)	X
25	2551.005 29(41)	1123.25	0.293E-24	P(54)	X	60	2556.791 54(13)*	0.41	0.220E-22	R(1)	A
26	2551.325 01(12)*	26.78	0.106E-21	P(11)	A	61	2556.993 44(35)	308.62	0.666E-24	P(39)	Q
27	2551.490 43(41)	1101.34	0.326E-24	P(53)	X	62	2557.126 02(18)*	349.19	0.130E-22	P(41)	W
28	2551.710 73(18)*	558.74	0.526E-23	P(52)	W	63	2557.186 15(13)*	1.22	0.329E-22	R(2)	A
29	2551.767 68(12)*	22.31	0.989E-22	P(10)	A	64	2557.206 05(38)	870.04	0.980E-24	P(41)	X
30	2551.974 25(41)	1079.84	0.363E-24	P(52)	X	65	2557.458 72(35)	293.19	0.707E-24	P(38)	Q
31	2552.206 67(13)*	18.26	0.908E-22	P(9)	A	66	2557.577 05(13)*	2.43	0.437E-22	R(3)	A
32	2552.212 40(18)*	537.67	0.578E-23	P(51)	W	67	2557.607 07(18)*	332.57	0.139E-22	P(40)	W
33	2552.641 96(13)*	14.61	0.822E-22	P(8)	A	68	2557.673 27(38)	853.39	0.105E-23	P(40)	X
34	2552.712 20(18)*	517.00	0.634E-23	P(50)	W	69	2557.922 18(35)	278.16	0.748E-24	P(37)	Q
35	2552.937 85(40)	1038.05	0.445E-24	P(50)	X	70	2557.964 24(13)*	4.06	0.542E-22	R(4)	A

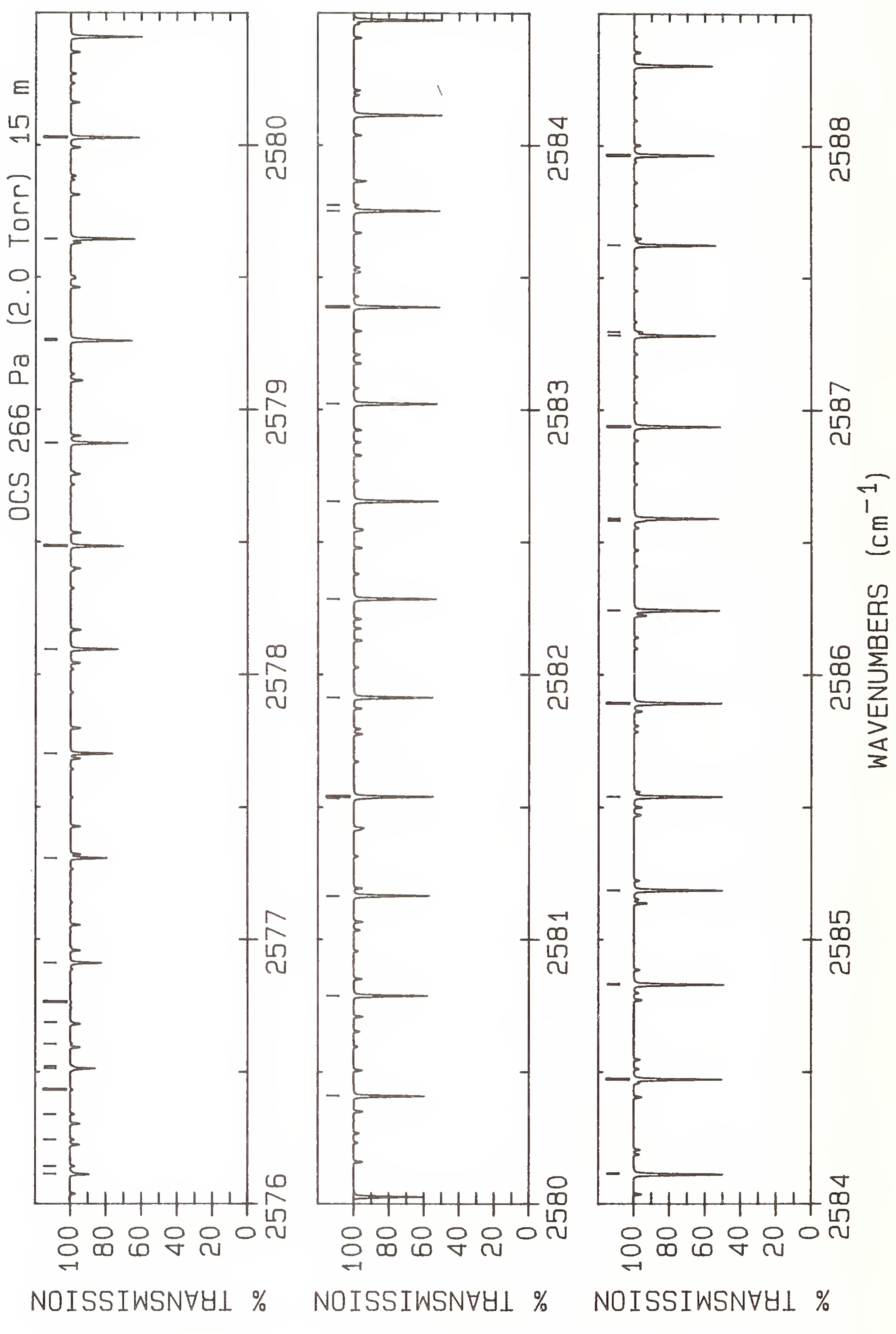

OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100 80 60 40 20 0
2558 2559 2560 2561 2562
% TRANSMISSION
100 80 60 40 20 0
2562 2563 2564 2565 2566
% TRANSMISSION
100 80 60 40 20 0
2566 2567 2568 2569 2570
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2558.086 25(18)*	316.35	0.149E-22	P(39)	W
2	2558.347 73(13)*	6.09	0.644E-22	R(5)	A
3	2558.563 55(18)*	300.54	0.158E-22	P(38)	W
4	2558.727 51(13)*	8.52	0.742E-22	R(6)	A
5	2559.038 97(18)*	285.13	0.168E-22	P(37)	W
6	2559.103 58(13)*	11.36	0.837E-22	R(7)	A
7	2559.475 94(12)*	14.61	0.927E-22	R(8)	A
8	2559.512 52(18)*	270.13	0.177E-22	P(36)	W
9	2559.844 58(12)*	18.26	0.101E-21	R(9)	A
10	2559.984 19(18)*	255.53	0.187E-22	P(35)	W
11	2560.209 51(12)*	22.31	0.109E-21	R(10)	A
12	2560.453 99(18)*	241.34	0.197E-22	P(34)	W
13	2560.570 72(12)*	26.78	0.117E-21	R(11)	A
14	2560.921 91(18)*	227.55	0.206E-22	P(33)	W
15	2560.928 21(12)*	31.64	0.123E-21	R(12)	A
16	2561.281 98(12)*	36.92	0.129E-21	R(13)	A
17	2561.387 95(18)*	214.17	0.216E-22	P(32)	W
18	2561.632 03(12)*	42.60	0.135E-21	R(14)	A
19	2561.852 12(18)*	201.19	0.225E-22	P(31)	W
20	2561.978 35(12)*	48.68	0.140E-21	R(15)	A
21	2562.314 40(18)*	188.62	0.233E-22	P(30)	W
22	2562.320 95(12)*	55.17	0.144E-21	R(16)	A
23	2562.659 81(12)*	62.07	0.147E-21	R(17)	A
24	2562.774 81(18)*	176.45	0.242E-22	P(29)	W
25	2562.994 94(12)*	69.37	0.150E-21	R(18)	A
26	2563.233 34(18)*	164.69	0.249E-22	P(28)	W
27	2563.326 34(12)*	77.08	0.152E-21	R(19)	A
28	2563.654 00(12)*	85.19	0.154E-21	R(20)	A
29	2563.690 00(18)*	153.34	0.257E-22	P(27)	W
30	2563.977 92(12)*	93.71	0.155E-21	R(21)	A
31	2564.144 77(18)*	142.38	0.263E-22	P(26)	W
32	2564.298 09(12)*	102.63	0.155E-21	R(22)	A
33	2564.597 66(18)*	131.84	0.269E-22	P(25)	W
34	2564.614 53(12)*	111.96	0.154E-21	R(23)	A
35	2564.927 21(12)*	121.70	0.153E-21	R(24)	A
36	2565.048 68(18)*	121.70	0.273E-22	P(24)	W
37	2565.236 14(12)*	131.84	0.152E-21	R(25)	A
38	2565.497 81(18)*	111.96	0.277E-22	P(23)	W
39	2565.541 32(12)*	142.38	0.150E-21	R(26)	A
40	2565.842 75(12)*	153.34	0.147E-21	R(27)	A
41	2565.945 06(18)*	102.63	0.280E-22	P(22)	W
42	2566.140 41(12)*	164.69	0.144E-21	R(28)	A
43	2566.390 44(18)*	93.71	0.281E-22	P(21)	W
44	2566.434 31(12)*	176.45	0.141E-21	R(29)	A
45	2566.724 44(12)*	188.62	0.137E-21	R(30)	A
46	2566.833 93(18)*	85.19	0.281E-22	P(20)	W
47	2567.010 81(12)*	201.19	0.134E-21	R(31)	A
48	2567.275 53(18)*	77.08	0.280E-22	P(19)	W
49	2567.293 40(12)*	214.17	0.129E-21	R(32)	A
50	2567.572 22(12)*	227.55	0.125E-21	R(33)	A
51	2567.715 26(18)*	69.37	0.277E-22	P(18)	W
52	2567.847 25(12)*	241.34	0.120E-21	R(34)	A
53	2568.118 51(12)*	255.53	0.115E-21	R(35)	A
54	2568.153 10(18)*	62.07	0.273E-22	P(17)	W
55	2568.385 97(12)*	270.13	0.111E-21	R(36)	A
56	2568.589 06(18)*	55.17	0.268E-22	P(16)	W
57	2568.649 65(12)*	285.13	0.106E-21	R(37)	A
58	2568.909 53(12)*	300.54	0.101E-21	R(38)	A
59	2569.023 13(18)*	48.68	0.260E-22	P(15)	W
60	2569.165 62(12)*	316.35	0.954E-22	R(39)	A
61	2569.417 90(12)*	332.57	0.904E-22	R(40)	A
62	2569.455 32(18)*	42.60	0.252E-22	P(14)	W
63	2569.666 38(12)*	349.19	0.854E-22	R(41)	A
64	2569.885 62(18)*	36.92	0.241E-22	P(13)	W
65	2569.911 05(12)*	366.22	0.805E-22	R(42)	A

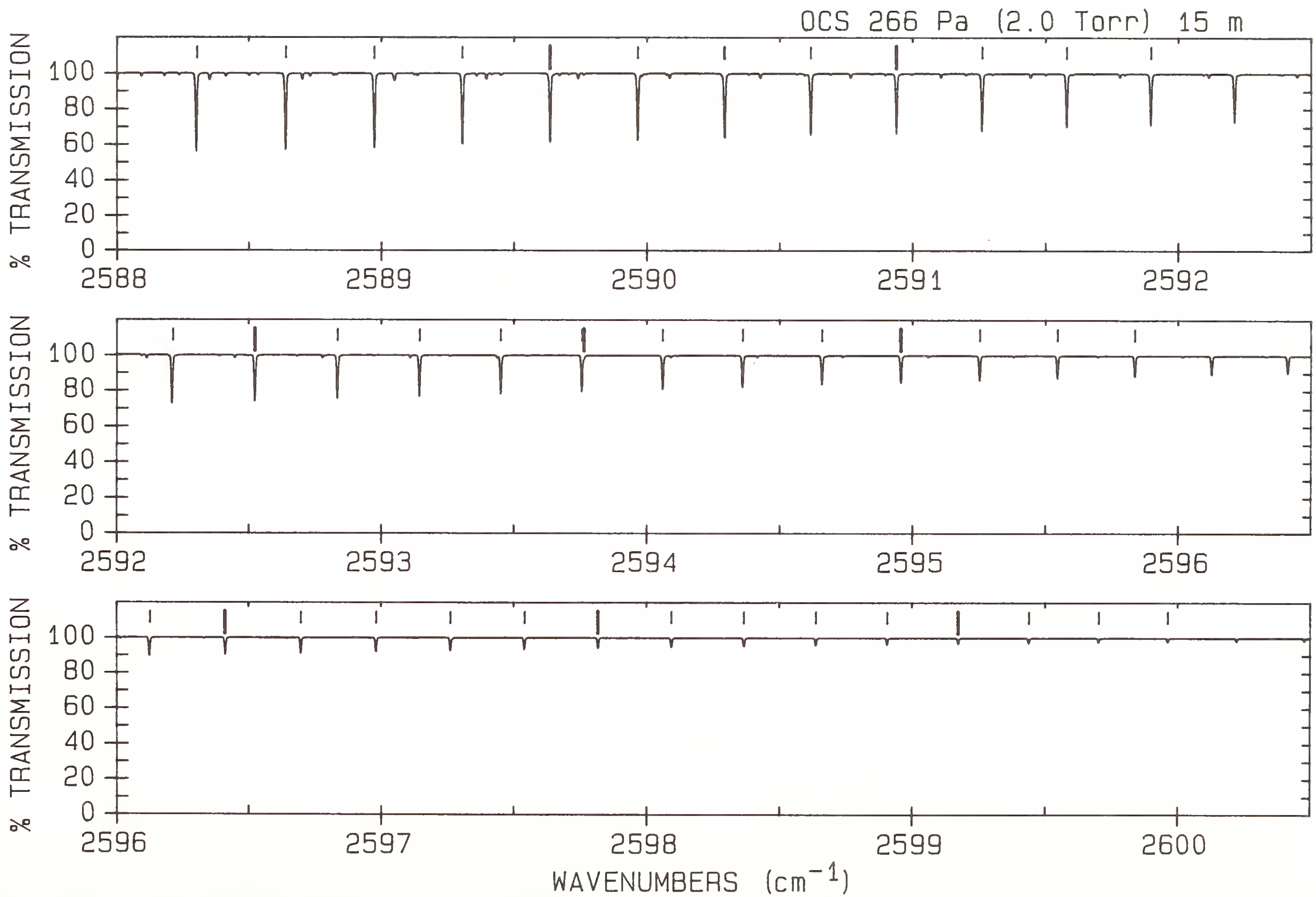


OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100
80
60
40
20
0
2570
2571
2572
2573
2574
2575
2576
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2570.151 90(12)*	383.65	0.757E-22	R(43)	A
2	2570.314 04(18)*	31.64	0.229E-22	P(12)	W
3	2570.388 94(12)*	401.49	0.710E-22	R(44)	A
4	2570.622 15(12)*	419.73	0.664E-22	R(45)	A
5	2570.740 57(18)*	26.78	0.215E-22	P(11)	W
6	2570.851 54(12)*	438.37	0.620E-22	R(46)	A
7	2571.077 10(13)*	457.42	0.577E-22	R(47)	A
8	2571.165 21(18)*	22.31	0.200E-22	P(10)	W
9	2571.298 83(13)*	476.88	0.536E-22	R(48)	A
10	2571.516 71(13)*	496.74	0.497E-22	R(49)	A
11	2571.587 96(18)*	18.26	0.183E-22	P(9)	W
12	2572.008 82(18)*	14.61	0.165E-22	P(8)	W
13	2572.147 29(13)*	558.74	0.390E-22	R(52)	A
14	2572.349 78(13)*	580.22	0.358E-22	R(53)	A
15	2572.548 40(13)*	602.10	0.327E-22	R(54)	A
16	2572.743 16(13)*	624.39	0.299E-22	R(55)	A
17	2572.867 31(18)*	670.17	0.121E-22	Q(57)	W
18	2572.934 04(13)*	647.08	0.273E-22	R(56)	A
19	2572.951 93(18)*	647.08	0.133E-22	Q(56)	W
20	2573.035 04(18)*	624.39	0.146E-22	Q(55)	W
21	2573.196 72(18)*	580.22	0.174E-22	Q(53)	W
22	2573.260 06(18)*	6.09	0.101E-22	P(5)	W
23	2573.275 30(18)*	558.74	0.189E-22	Q(52)	W
24	2573.304 18(13)*	693.67	0.225E-22	R(58)	A
25	2573.352 36(18)*	537.67	0.206E-22	Q(51)	W
26	2573.427 91(18)*	517.00	0.223E-22	Q(50)	W
27	2573.483 43(13)*	717.57	0.204E-22	R(59)	A
28	2573.501 96(18)*	496.74	0.241E-22	Q(49)	W
29	2573.574 50(18)*	476.88	0.260E-22	Q(48)	W
30	2573.645 53(18)*	457.42	0.280E-22	Q(47)	W
31	2573.658 78(14)*	741.87	0.184E-22	R(60)	A
32	2573.673 36(18)*	4.06	0.773E-23	P(4)	W
33	2573.715 07(18)*	438.37	0.301E-22	Q(46)	W
34	2573.783 10(18)*	419.73	0.323E-22	Q(45)	W
35	2573.830 24(14)*	766.58	0.166E-22	R(61)	A
36	2573.849 63(18)*	401.49	0.345E-22	Q(44)	W
37	2573.914 66(18)*	383.65	0.367E-22	Q(43)	W
38	2573.978 19(18)*	366.22	0.391E-22	Q(42)	W
39	2573.997 80(14)*	791.70	0.149E-22	R(62)	A
40	2574.040 23(18)*	349.19	0.415E-22	Q(41)	W
41	2574.084 76(18)*	2.43	0.524E-23	P(3)	W
42	2574.100 77(18)*	332.57	0.439E-22	Q(40)	W
43	2574.217 37(18)*	300.54	0.487E-22	Q(38)	W
44	2574.273 43(18)*	285.13	0.511E-22	Q(37)	W
45	2574.381 08(18)*	255.53	0.559E-22	Q(35)	W
46	2574.432 67(18)*	241.34	0.582E-22	Q(34)	W
47	2574.477 01(14)*	869.46	0.107E-22	R(65)	A
48	2574.578 53(18)*	201.19	0.646E-22	Q(31)	W
49	2574.624 18(18)*	188.62	0.665E-22	Q(30)	W
50	2574.628 91(15)*	896.18	0.956E-23	R(66)	A
51	2574.668 35(18)*	176.45	0.683E-22	Q(29)	W
52	2574.711 03(18)*	164.69	0.698E-22	Q(28)	W
53	2574.752 24(18)*	153.34	0.712E-22	Q(27)	W
54	2574.776 89(15)*	923.31	0.851E-23	R(67)	A
55	2574.791 96(18)*	142.38	0.724E-22	Q(26)	W
56	2574.830 20(18)*	131.84	0.733E-22	Q(25)	W
57	2574.866 97(18)*	121.70	0.740E-22	Q(24)	W
58	2574.902 26(18)*	111.96	0.744E-22	Q(23)	W
59	2574.920 93(15)*	950.85	0.755E-23	R(68)	A
60	2574.936 07(18)*	102.63	0.745E-22	Q(22)	W
61	2574.968 41(18)*	93.71	0.744E-22	Q(21)	W
62	2574.999 27(18)*	85.19	0.739E-22	Q(20)	W
63	2575.056 57(18)*	69.37	0.720E-22	Q(18)	W
64	2575.083 01(18)*	62.07	0.706E-22	Q(17)	W
65	2575.107 97(18)*	55.17	0.688E-22	Q(16)	W
66	2575.457 68(20)*	1065.02	0.459E-23	R(72)	A
67	2575.581 98(22)*	1094.57	0.403E-23	R(73)	A
68	2575.702 31(24)*	1124.52	0.353E-23	R(74)	A
69	2575.711 40(18)*	0.00	0.551E-23	R(0)	W
70	2575.818 68(27)*	1154.87	0.309E-23	R(75)	A


OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100
80
60
40
20
0
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2576.113 32(18)*	0.41	0.832E-23	R(1)	W	26	2581.913 36(18)*	55.17	0.438E-22	R(16)	W
2	2576.143 90(37)	1248.35	0.204E-23	R(78)	A	27	2582.284 73(18)*	62.07	0.451E-22	R(17)	W
3	2576.244 33(42)	1280.32	0.177E-23	R(79)	A	28	2582.654 17(18)*	69.37	0.462E-22	R(18)	W
4	2576.340 76(47)	1312.69	0.153E-23	R(80)	A	29	2583.021 69(18)*	77.08	0.472E-22	R(19)	W
5	2576.433 18(53)	1345.46	0.132E-23	R(81)	A	30	2583.387 29(18)*	85.19	0.479E-22	R(20)	W
6	2576.513 33(18)*	1.22	0.112E-22	R(2)	W	31	2583.750 96(18)*	93.71	0.485E-22	R(21)	W
7	2576.521 60(59)	1378.63	0.114E-23	R(82)	A	32	2583.773 20(35)	138.90	0.213E-23	R(26)	Q
8	2576.606 00(66)	1412.21	0.977E-24	R(83)	A	33	2584.112 70(18)*	102.63	0.489E-22	R(22)	W
9	2576.686 37(74)	1446.18	0.838E-24	R(84)	A	34	2584.116 96(35)	149.59	0.211E-23	R(27)	Q
10	2576.762 72(83)	1480.56	0.717E-24	R(85)	A	35	2584.472 51(18)*	111.96	0.490E-22	R(23)	W
11	2576.911 45(18)*	2.43	0.140E-22	R(3)	W	36	2584.830 39(18)*	121.70	0.491E-22	R(24)	W
12	2577.307 66(18)*	4.06	0.168E-22	R(4)	W	37	2584.833 0	922.82	0.217E-23	R(44)	Z
13	2577.701 97(18)*	6.09	0.196E-22	R(5)	W	38	2585.186 34(18)*	131.84	0.489E-22	R(25)	W
14	2578.094 37(18)*	8.52	0.224E-22	R(6)	W	39	2585.540 36(18)*	142.38	0.486E-22	R(26)	W
15	2578.484 87(18)*	11.36	0.250E-22	R(7)	W	40	2585.892 43(18)*	153.34	0.481E-22	R(27)	W
16	2578.873 46(18)*	14.61	0.276E-22	R(8)	W	41	2585.892 8	959.33	0.219E-23	R(46)	Y
17	2579.260 14(18)*	18.26	0.301E-22	R(9)	W	42	2586.242 58(18)*	164.69	0.475E-22	R(28)	W
18	2579.266 0	673.94	0.430E-23	R(27)	Y	43	2586.581 79(38)	697.09	0.326E-23	R(29)	X
19	2579.644 92(18)*	22.31	0.325E-22	R(10)	W	44	2586.590 78(18)*	176.45	0.467E-22	R(29)	W
20	2580.027 78(18)*	26.78	0.348E-22	R(11)	W	45	2586.937 04(18)*	188.62	0.458E-22	R(30)	W
21	2580.408 73(18)*	31.64	0.369E-22	R(12)	W	46	2586.939 07(38)	709.27	0.319E-23	R(30)	X
22	2580.787 76(18)*	36.92	0.389E-22	R(13)	W	47	2587.281 36(18)*	201.19	0.448E-22	R(31)	W
23	2581.164 88(18)*	42.60	0.407E-22	R(14)	W	48	2587.294 80(38)	721.86	0.312E-23	R(31)	X
24	2581.533 8	762.31	0.346E-23	R(34)	Z	49	2587.623 73(18)*	214.17	0.437E-22	R(32)	W
25	2581.540 08(18)*	48.68	0.423E-22	R(15)	W	50	2587.964 15(18)*	227.55	0.425E-22	R(33)	W



OCS 266 Pa (2.0 Torr) 15 m
% TRANSMISSION
100
80
60
40
20
0
2588
2589
2590
2591
2592
2593
2594
2595
2596
2597
2598
2599
2600
WAVENUMBERS (cm-1)

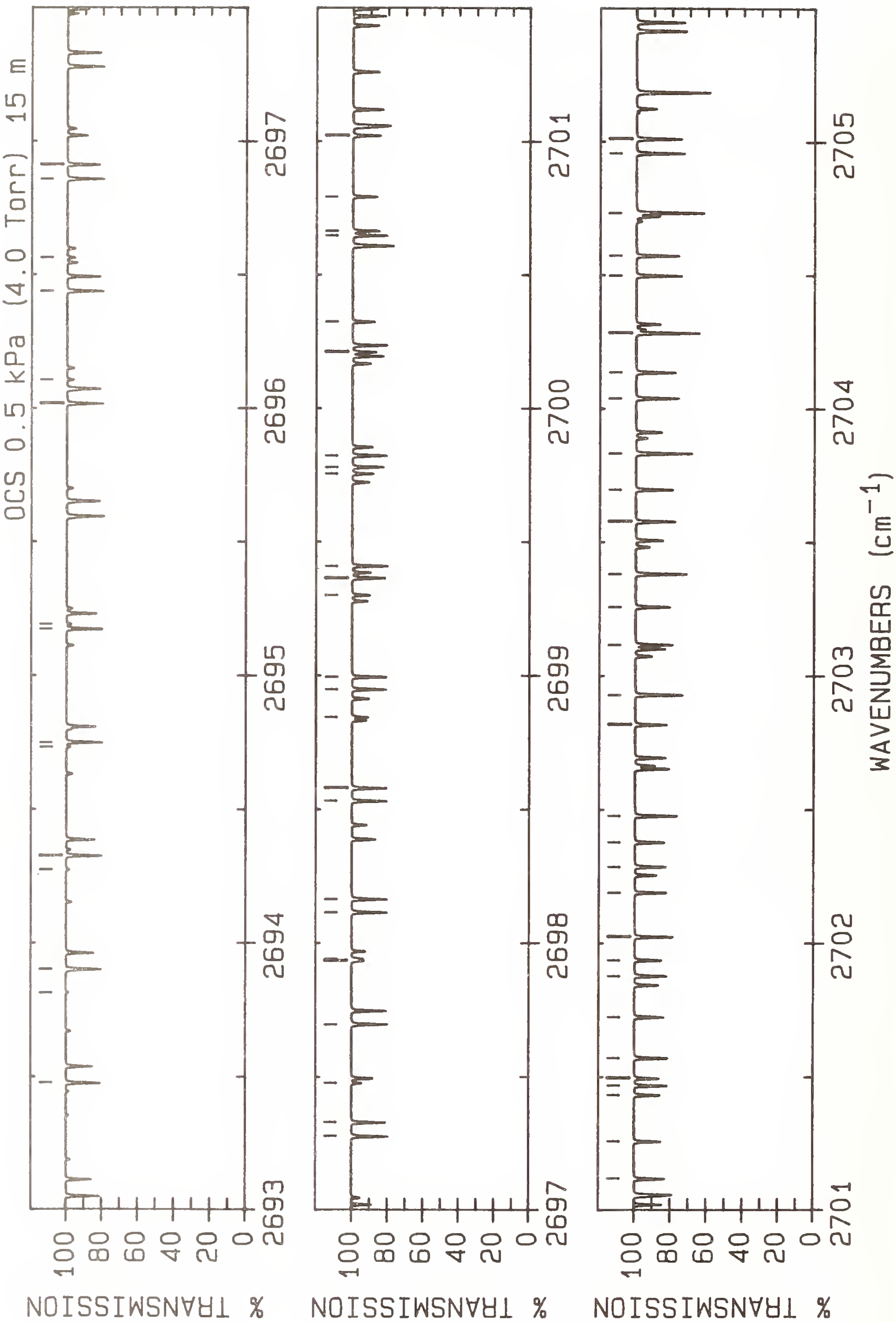
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2588.302 63(18)*	241.34	0.413E-22	R(34)	W
2	2588.639 16(18)*	255.53	0.399E-22	R(35)	W
3	2588.973 74(18)*	270.13	0.385E-22	R(36)	W
4	2589.306 36(18)*	285.13	0.370E-22	R(37)	W
5	2589.637 02(18)*	300.54	0.355E-22	R(38)	W
6	2589.965 73(18)*	316.35	0.340E-22	R(39)	W
7	2590.289 15(37)	427.66	0.105E-23	R(46)	Q
8	2590.292 48(18)*	332.57	0.324E-22	R(40)	W
9	2590.617 27(18)*	349.19	0.308E-22	R(41)	W
10	2590.940 09(18)*	366.22	0.293E-22	R(42)	W
11	2591.260 95(18)*	383.65	0.277E-22	R(43)	W
12	2591.579 84(18)*	401.49	0.262E-22	R(44)	W
13	2591.896 76(18)*	419.73	0.247E-22	R(45)	W
14	2592.211 71(18)*	438.37	0.232E-22	R(46)	W
15	2592.524 69(18)*	457.42	0.218E-22	R(47)	W
16	2592.835 69(18)*	476.88	0.204E-22	R(48)	W
17	2593.144 72(18)*	496.74	0.190E-22	R(49)	W
18	2593.451 76(18)*	517.00	0.177E-22	R(50)	W
19	2593.756 83(18)*	537.67	0.164E-22	R(51)	W
20	2593.765 48(41)	1038.05	0.111E-23	R(50)	X
21	2594.059 91(18)*	558.74	0.152E-22	R(52)	W
22	2594.361 01(18)*	580.22	0.141E-22	R(53)	W
23	2594.660 12(18)*	602.10	0.130E-22	R(54)	W
24	2594.951 55(72)	772.36	0.297E-24	R(62)	Q
25	2594.957 24(18)*	624.39	0.119E-22	R(55)	W
26	2595.252 37(18)*	647.08	0.110E-22	R(56)	W
27	2595.545 51(18)*	670.17	0.100E-22	R(57)	W
28	2595.836 66(18)*	693.67	0.918E-23	R(58)	W
29	2596.125 81(18)*	717.57	0.837E-23	R(59)	W
30	2596.412 96(18)*	741.87	0.762E-23	R(60)	W
31	2596.698 11(18)*	766.58	0.692E-23	R(61)	W
32	2596.981 26(18)*	791.70	0.626E-23	R(62)	W
33	2597.262 41(18)*	817.21	0.566E-23	R(63)	W
34	2597.541 55(18)*	843.13	0.510E-23	R(64)	W
35	2597.818 69(18)*	869.46	0.459E-23	R(65)	W
36	2598.093 81(18)*	896.18	0.412E-23	R(66)	W
37	2598.366 93(18)*	923.31	0.369E-23	R(67)	W
38	2598.638 03(18)*	950.85	0.330E-23	R(68)	W
39	2598.907 12(19)*	978.78	0.294E-23	R(69)	W
40	2599.174 19(19)*	1007.13	0.262E-23	R(70)	W
41	2599.439 24(19)*	1035.87	0.232E-23	R(71)	W
42	2599.702 28(19)*	1065.02	0.206E-23	R(72)	W
43	2599.963 30(20)*	1094.57	0.182E-23	R(73)	W

ATLAS OF OCS ABSORPTION LINES FROM 2693 cm^{-1} to 2763 cm^{-1}

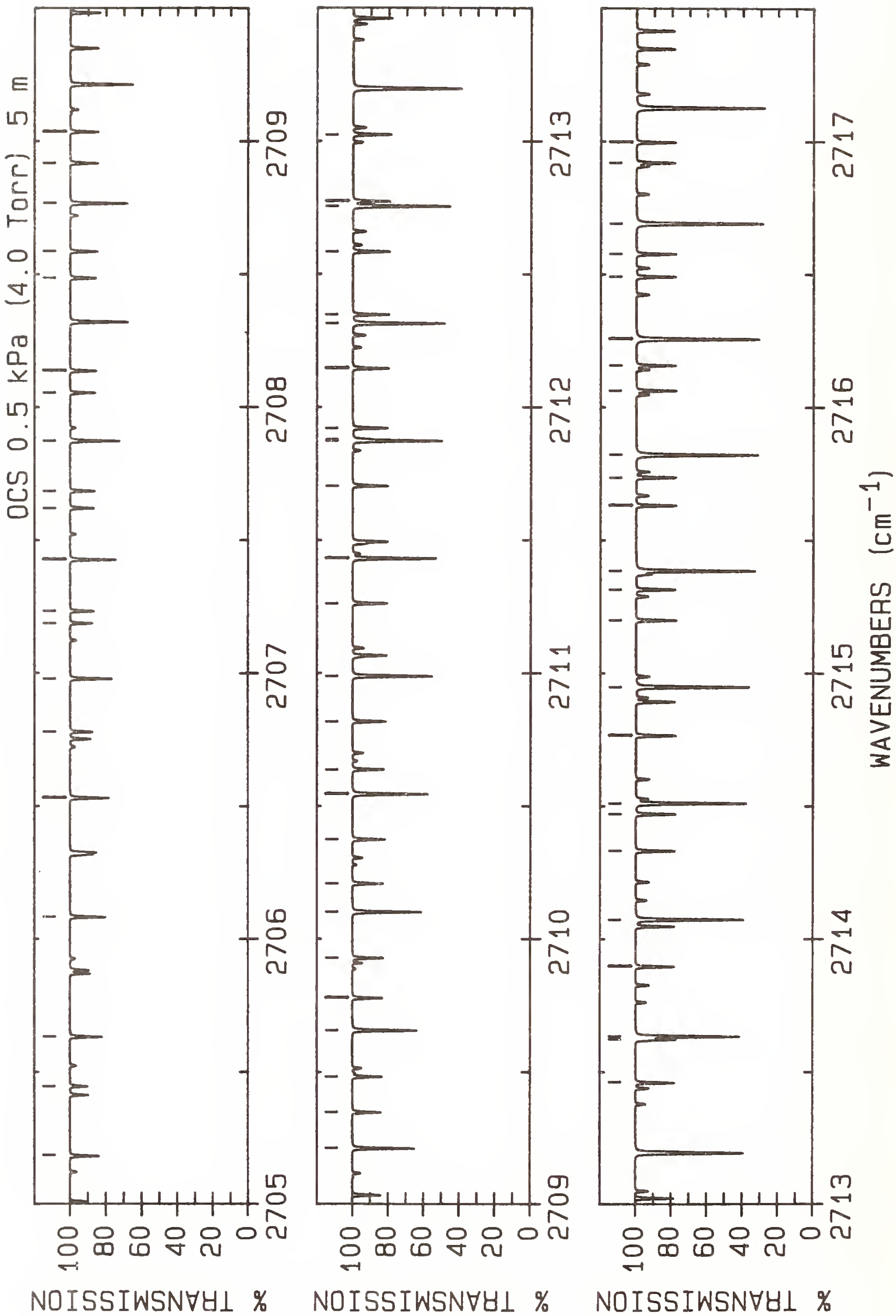
key:

Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$02^02\text{-}00^00$
B		$03^12\text{-}01^{1e}0$
C		$03^12\text{-}01^{1f}0$
D		$02^03\text{-}00^01$
P	$^{16}O^{12}C^{34}S$	$02^02\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1}, a temperature of 296 K, and a transition moment of 0.004 debye for the A, D, and P bands and 0.0039 debye for the B and C bands. No Herman-Wallis constant was included in the intensity calculation.

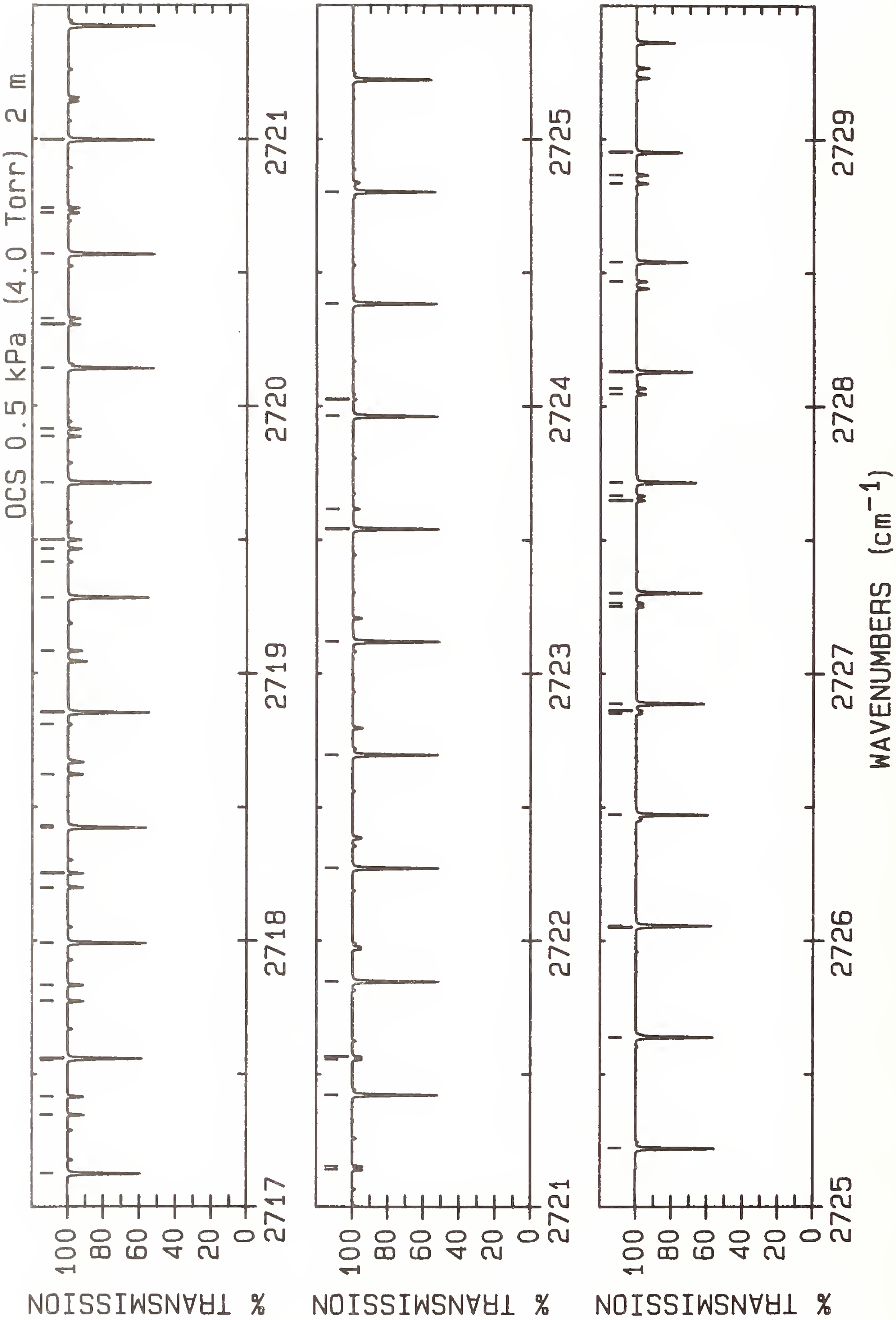

OCS 0.5 kPa (4.0 Torr) 15 m
% TRANSMISSION
100 80 60 40 20 0
2693 2694 2695 2696 2697
2697 2698 2699 2700 2701
2701 2702 2703 2704 2705
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2693.476 77(65)	1034.89	0.782E-23	P(29)	D
2	2693.814 9	1515.34	0.664E-24	P(86)	A
3	2693.901 86(64)	1023.17	0.800E-23	P(28)	D
4	2694.273 92(88)*	1480.56	0.781E-24	P(85)	A
5	2694.326 27(62)	1011.84	0.815E-23	P(27)	D
6	2694.732 57(77)*	1446.18	0.917E-24	P(84)	A
7	2694.750 01(60)	1000.93	0.828E-23	P(26)	D
8	2695.173 06(57)	990.41	0.838E-23	P(25)	D
9	2695.190 88(67)*	1412.21	0.107E-23	P(83)	A
10	2696.017 10(52)	970.60	0.850E-23	P(23)	D
11	2696.106 52(52)*	1345.46	0.146E-23	P(81)	A
12	2696.438 07(50)	961.29	0.851E-23	P(22)	D
13	2696.563 85(45)*	1312.69	0.170E-23	P(80)	A
14	2696.858 33(48)	952.40	0.848E-23	P(21)	D
15	2696.911 82(84)	160.67	0.766E-23	P(28)	P
16	2697.277 88(46)	943.90	0.842E-23	P(20)	D
17	2697.330 06(84)	149.59	0.780E-23	P(27)	P
18	2697.477 49(36)*	1248.35	0.229E-23	P(78)	A
19	2697.696 71(46)	935.82	0.832E-23	P(19)	D
20	2697.933 80(33)*	1216.79	0.265E-23	P(77)	A
21	2697.941 33(77)	1339.47	0.245E-23	P(63)	C
22	2698.114 81(46)	928.13	0.819E-23	P(18)	D
23	2698.164 20(85)	128.62	0.800E-23	P(25)	P
24	2698.532 20(48)	920.85	0.801E-23	P(17)	D
25	2698.580 09(84)	118.72	0.806E-23	P(24)	P
26	2698.845 40(28)*	1154.87	0.351E-23	P(75)	A
27	2698.948 84(50)	913.98	0.780E-23	P(16)	D
28	2698.995 19(82)	109.23	0.809E-23	P(23)	P
29	2699.300 67(27)*	1124.52	0.403E-23	P(74)	A
30	2699.364 76(53)	907.50	0.755E-23	P(15)	D
31	2699.409 48(79)	100.13	0.809E-23	P(22)	P
32	2699.755 59(26)*	1094.57	0.462E-23	P(73)	A
33	2699.779 93(57)	901.44	0.726E-23	P(14)	D
34	2699.822 98(75)	91.42	0.806E-23	P(21)	P
35	2700.210 15(26)*	1065.02	0.528E-23	P(72)	A
36	2700.324 10(43)	1168.28	0.502E-23	P(56)	B
37	2700.647 54(68)	75.19	0.789E-23	P(19)	P
38	2700.664 33(25)*	1035.87	0.602E-23	P(71)	A
39	2700.792 05(39)	1145.56	0.551E-23	P(55)	B
40	2701.020 97(70)	885.66	0.616E-23	P(11)	D
41	2701.118 15(25)*	1007.13	0.685E-23	P(70)	A
42	2701.258 98(35)	1123.25	0.603E-23	P(54)	B
43	2701.433 15(74)	881.21	0.572E-23	P(10)	D
44	2701.468 83(67)	60.55	0.758E-23	P(17)	P
45	2701.495 64(34)	1146.22	0.550E-23	P(55)	C
46	2701.571 57(25)*	978.78	0.777E-23	P(69)	A
47	2701.724 89(32)	1101.34	0.659E-23	P(53)	B
48	2701.878 24(70)	53.83	0.737E-23	P(16)	P
49	2701.937 20(31)	1123.88	0.602E-23	P(54)	C
50	2702.024 61(25)*	950.85	0.880E-23	P(68)	A
51	2702.189 77(29)	1079.84	0.718E-23	P(52)	B
52	2702.286 82(75)	47.49	0.713E-23	P(15)	P
53	2702.378 14(29)	1101.95	0.658E-23	P(53)	C
54	2702.477 26(25)*	923.31	0.994E-23	P(67)	A
55	2702.818 47(28)	1080.42	0.717E-23	P(52)	C
56	2702.929 49(25)*	896.18	0.112E-22	P(66)	A
57	2703.116 41(26)	1038.05	0.847E-23	P(50)	B
58	2703.258 19(27)	1059.31	0.780E-23	P(51)	C
59	2703.381 31(25)*	869.46	0.126E-22	P(65)	A
60	2703.578 16(25)	1017.76	0.916E-23	P(49)	B
61	2703.697 29(26)	1038.59	0.846E-23	P(50)	C
62	2703.832 70(25)*	843.13	0.141E-22	P(64)	A
63	2704.038 85(24)	997.88	0.989E-23	P(48)	B
64	2704.135 78(26)	1018.28	0.915E-23	P(49)	C
65	2704.283 67(25)*	817.21	0.158E-22	P(63)	A
66	2704.498 48(24)	978.40	0.106E-22	P(47)	B
67	2704.573 65(25)	998.38	0.988E-23	P(48)	C
68	2704.734 18(25)*	791.70	0.177E-22	P(62)	A
69	2704.957 04(24)	959.33	0.114E-22	P(46)	B
70	2705.010 90(25)	978.88	0.106E-22	P(47)	C



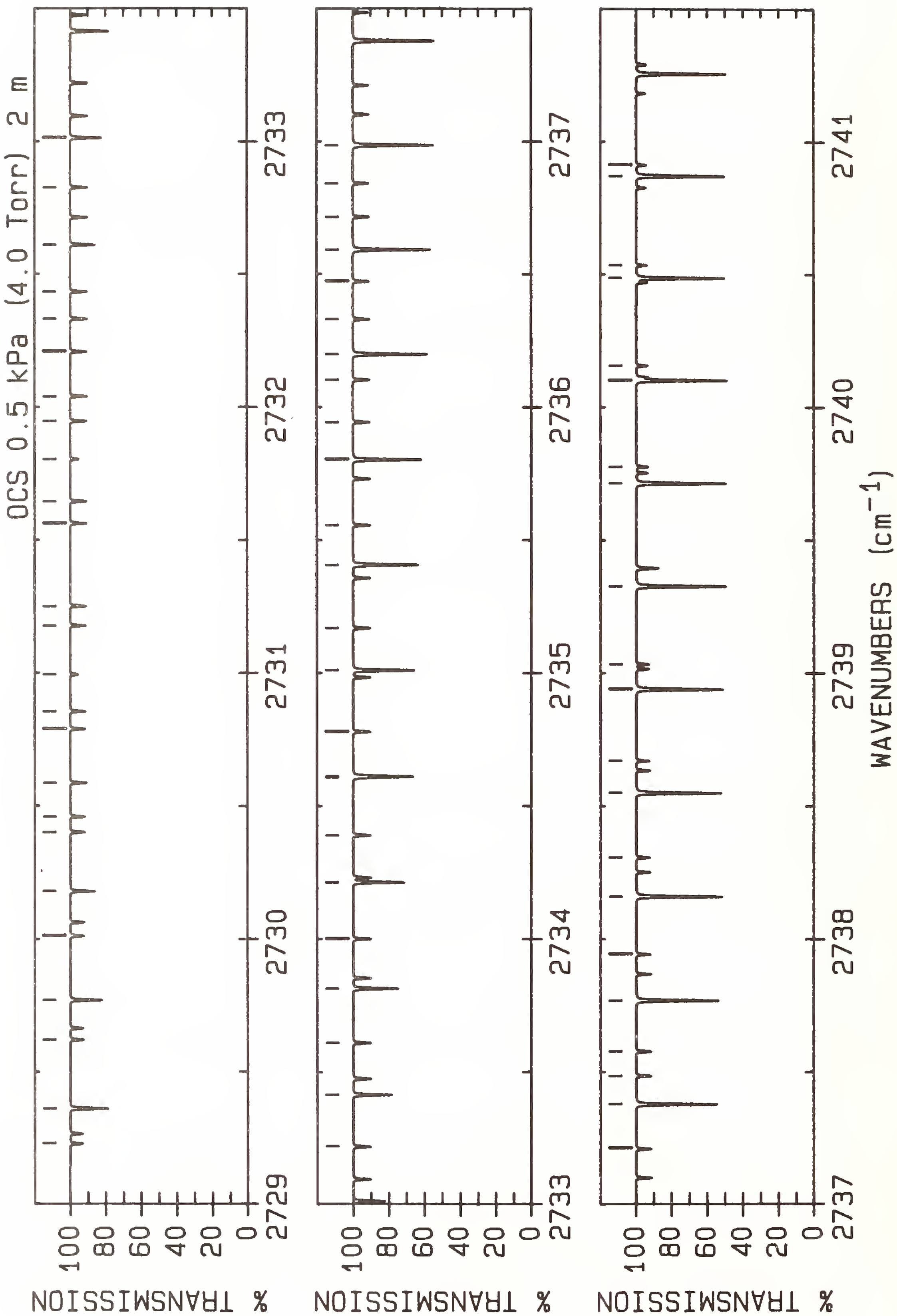
OCS 0.5 kPa (4.0 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
2705 2706 2707 2708 2709
2709 2710 2711 2712 2713
2713 2714 2715 2716 2717
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2705.184 25(25)*	766.58	0.197E-22	P(61)	A	36	2711.704 44(20)	721.86	0.246E-22	P(31)	B
2	2705.447 53(25)	959.78	0.114E-22	P(46)	C	37	2711.873 60(24)*	438.37	0.752E-22	P(46)	A
3	2705.633 85(25)*	741.87	0.219E-22	P(60)	A	38	2711.879 22(48)	907.50	0.809E-23	R(15)	D
4	2706.082 97(24)*	717.57	0.243E-22	P(59)	A	39	2711.921 69(19)	722.07	0.245E-22	P(31)	C
5	2706.531 62(24)*	693.67	0.269E-22	P(58)	A	40	2712.145 36(19)	709.27	0.253E-22	P(30)	B
6	2706.780 53(24)	887.08	0.149E-22	P(42)	B	41	2712.314 97(24)*	419.73	0.806E-22	P(45)	A
7	2706.979 76(24)*	670.17	0.297E-22	P(57)	A	42	2712.348 22(19)	709.47	0.252E-22	P(30)	C
8	2707.187 83(25)	887.47	0.148E-22	P(42)	C	43	2712.585 15(19)	697.09	0.259E-22	P(29)	B
9	2707.233 69(24)	870.04	0.158E-22	P(41)	B	44	2712.755 69(24)*	401.49	0.863E-22	P(44)	A
10	2707.427 40(24)*	647.08	0.327E-22	P(56)	A	45	2712.774 10(18)	697.27	0.259E-22	P(29)	C
11	2707.621 34(25)	870.40	0.158E-22	P(41)	C	46	2713.023 81(18)	685.31	0.265E-22	P(28)	B
12	2707.685 75(24)	853.39	0.167E-22	P(40)	B	47	2713.461 33(18)	673.94	0.270E-22	P(27)	B
13	2707.874 53(24)*	624.39	0.359E-22	P(55)	A	48	2713.623 93(17)	674.10	0.270E-22	P(27)	C
14	2708.054 23(25)	853.74	0.167E-22	P(40)	C	49	2713.635 21(24)*	366.22	0.979E-22	P(42)	A
15	2708.136 71(24)	837.16	0.176E-22	P(39)	B	50	2713.897 72(17)	662.98	0.274E-22	P(26)	B
16	2708.486 48(24)	837.49	0.176E-22	P(39)	C	51	2714.073 97(24)*	349.19	0.104E-21	P(41)	A
17	2708.586 57(23)	821.33	0.185E-22	P(38)	B	52	2714.332 96(17)	652.42	0.278E-22	P(25)	B
18	2708.767 18(24)*	580.22	0.431E-22	P(53)	A	53	2714.471 17(16)	652.56	0.278E-22	P(25)	C
19	2708.918 11(24)	821.64	0.185E-22	P(38)	C	54	2714.512 06(24)*	332.57	0.110E-21	P(40)	A
20	2709.035 33(23)	805.90	0.195E-22	P(37)	B	55	2714.767 07(17)	642.27	0.280E-22	P(24)	B
21	2709.212 69(24)*	558.74	0.470E-22	P(52)	A	56	2714.949 47(24)*	316.35	0.116E-21	P(39)	A
22	2709.349 10(23)	806.20	0.194E-22	P(37)	C	57	2715.200 03(16)	632.52	0.282E-22	P(23)	B
23	2709.482 97(23)	790.88	0.204E-22	P(36)	B	58	2715.315 80(16)	632.64	0.281E-22	P(23)	C
24	2709.657 64(24)*	537.67	0.511E-22	P(51)	A	59	2715.386 18(24)*	300.54	0.122E-21	P(38)	A
25	2709.779 46(23)	791.16	0.204E-22	P(36)	C	60	2715.631 84(16)	623.18	0.282E-22	P(22)	B
26	2709.929 50(22)	776.26	0.213E-22	P(35)	B	61	2715.737 13(16)	623.29	0.282E-22	P(22)	C
27	2710.102 02(24)*	517.00	0.555E-22	P(50)	A	62	2715.822 20(24)*	285.13	0.128E-21	P(37)	A
28	2710.209 18(22)	776.53	0.212E-22	P(35)	C	63	2716.062 51(16)	614.25	0.281E-22	P(21)	B
29	2710.374 92(22)	762.05	0.222E-22	P(34)	B	64	2716.157 82(16)	614.35	0.281E-22	P(21)	C
30	2710.545 81(24)*	496.74	0.601E-22	P(49)	A	65	2716.257 50(24)*	270.13	0.135E-21	P(36)	A
31	2710.638 27(21)	762.31	0.221E-22	P(34)	C	66	2716.492 02(17)	605.72	0.279E-22	P(20)	B
32	2710.819 21(21)	748.25	0.230E-22	P(33)	B	67	2716.577 84(17)	605.81	0.279E-22	P(20)	C
33	2710.989 02(24)*	476.88	0.649E-22	P(48)	A	68	2716.692 09(24)*	255.53	0.140E-21	P(35)	A
34	2711.262 39(21)	734.85	0.238E-22	P(32)	B	69	2716.920 39(17)	597.60	0.276E-22	P(19)	B
35	2711.431 62(24)*	457.42	0.700E-22	P(47)	A	70	2716.997 21(17)	597.68	0.275E-22	P(19)	C

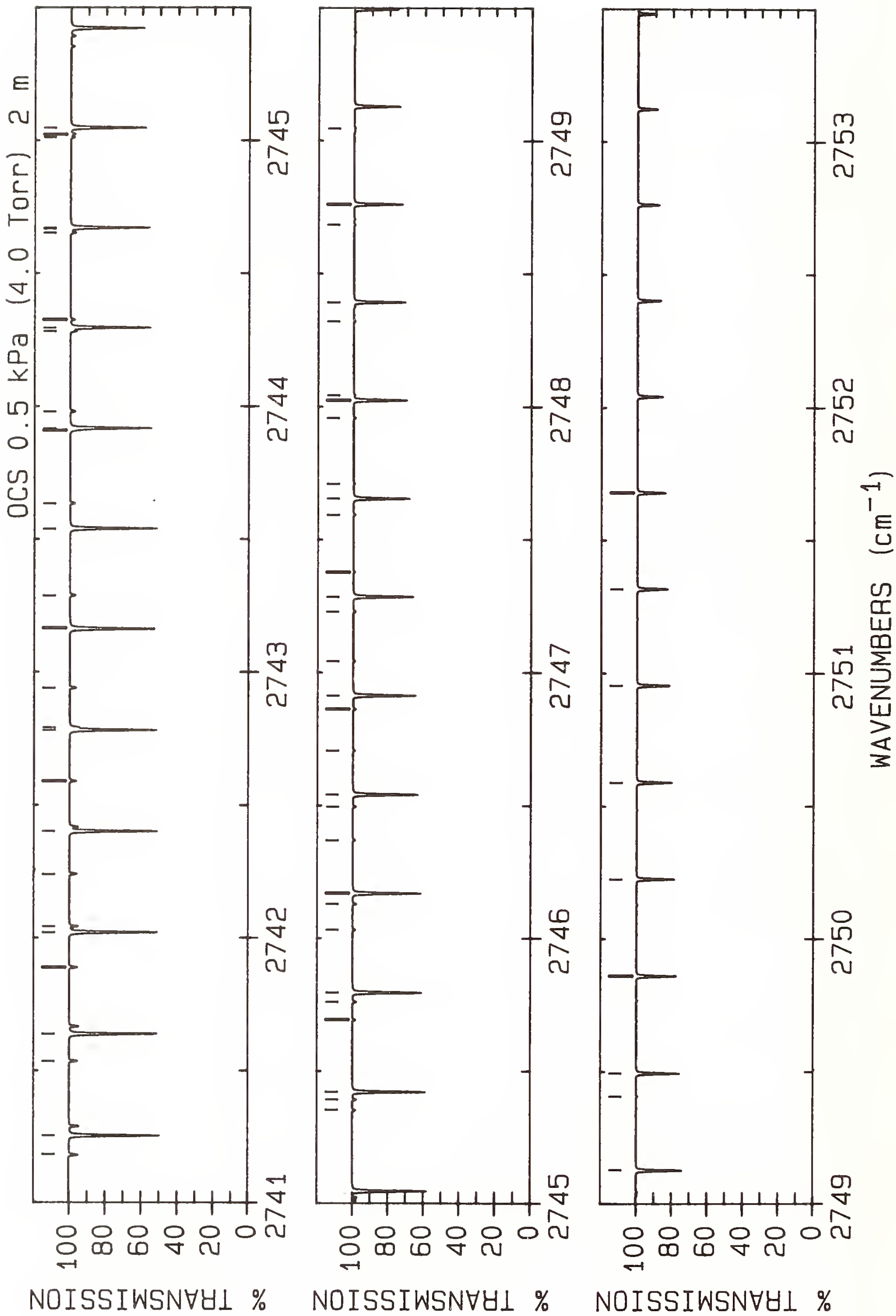


OCS 0.5 kPa (4.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
2717
2718
2719
2720
2721
2721
2722
2723
2724
2725
2725
2726
2727
2728
2729
WAVENUMBERS (cm-1)

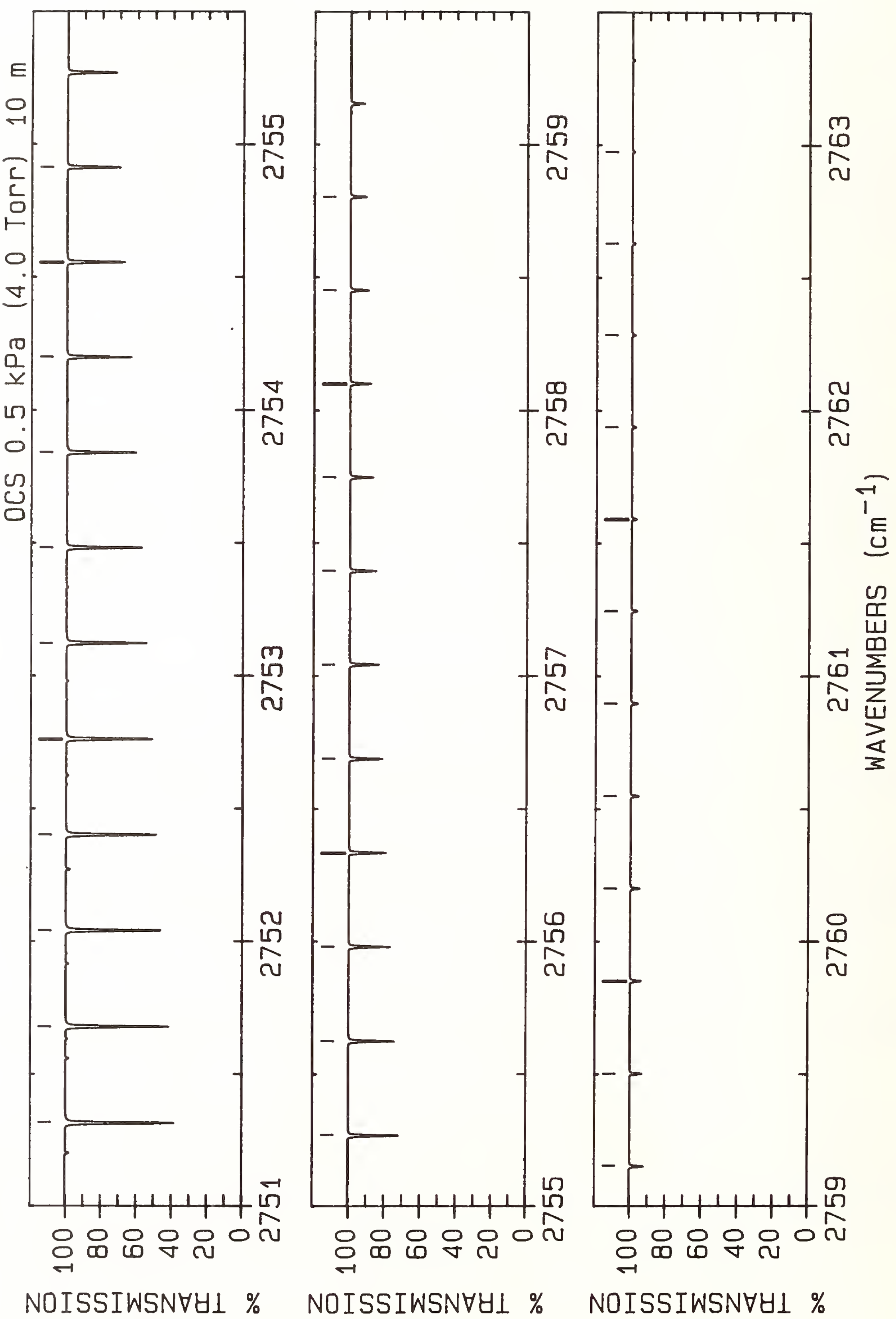
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2717.125 94(24)*	241.34	0.146E-21	P(34)	A
2	2717.347 60(17)	589.88	0.271E-22	P(18)	B
3	2717.415 92(17)	589.95	0.271E-22	P(18)	C
4	2717.553 33(85)	109.23	0.850E-23	R(23)	P
5	2717.559 06(24)*	227.55	0.152E-21	P(33)	A
6	2717.773 66(18)	582.57	0.265E-22	P(17)	B
7	2717.833 96(18)	582.63	0.265E-22	P(17)	C
8	2717.991 44(24)*	214.17	0.157E-21	P(32)	A
9	2718.198 56(18)	575.66	0.258E-22	P(16)	B
10	2718.251 35(18)	575.72	0.258E-22	P(16)	C
11	2718.423 07(24)*	201.19	0.162E-21	P(31)	A
12	2718.429 96(74)	1072.49	0.747E-23	R(32)	D
13	2718.622 30(19)	569.16	0.250E-22	P(15)	B
14	2718.808 80(79)	1085.84	0.721E-23	R(33)	D
15	2718.853 94(24)*	188.62	0.167E-21	P(30)	A
16	2719.084 13(20)	563.12	0.240E-22	P(14)	C
17	2719.284 04(24)*	176.45	0.171E-21	P(29)	A
18	2719.416 50(95)	160.67	0.800E-23	R(28)	P
19	2719.466 31(20)	557.38	0.229E-22	P(13)	B
20	2719.499 53(20)	557.42	0.229E-22	P(13)	C
21	2719.713 37(24)*	164.69	0.175E-21	P(28)	A
22	2719.886 57(21)	552.11	0.217E-22	P(12)	B
23	2719.914 25(21)	552.14	0.216E-22	P(12)	C
24	2720.141 92(23)*	153.34	0.179E-21	P(27)	A
25	2720.305 67(21)	547.23	0.203E-22	P(11)	B
26	2720.328 31(21)	547.26	0.203E-22	P(11)	C
27	2720.569 68(23)*	142.38	0.181E-21	P(26)	A
28	2720.723 60(22)	542.76	0.188E-22	P(10)	B
29	2720.741 70(22)	542.79	0.188E-22	P(10)	C
30	2720.996 66(23)*	131.84	0.184E-21	P(25)	A
31	2721.140 36(22)	538.70	0.172E-22	P(9)	B
32	2721.154 42(22)	538.72	0.172E-22	P(9)	C
33	2721.422 83(23)*	121.70	0.185E-21	P(24)	A
34	2721.555 96(23)	535.04	0.155E-22	P(8)	B
35	2721.566 47(23)	535.06	0.155E-22	P(8)	C
36	2721.848 19(24)*	111.96	0.186E-21	P(23)	A
37	2722.272 75(24)*	102.63	0.187E-21	P(22)	A
38	2722.696 49(24)*	93.71	0.186E-21	P(21)	A
39	2723.119 41(24)*	85.19	0.185E-21	P(20)	A
40	2723.541 51(24)*	77.08	0.183E-21	P(19)	A
41	2723.616 37(24)	522.86	0.559E-23	P(3)	B
42	2723.616 59(24)	522.86	0.559E-23	P(3)	C
43	2723.962 77(24)*	69.37	0.180E-21	P(18)	A
44	2724.024 58(24)	521.64	0.316E-23	P(2)	C
45	2724.024 93(24)	521.64	0.316E-23	P(2)	B
46	2724.383 19(24)*	62.07	0.176E-21	P(17)	A
47	2724.802 78(24)*	55.17	0.171E-21	P(16)	A
48	2725.221 52(24)*	48.68	0.166E-21	P(15)	A
49	2725.639 42(24)*	42.60	0.159E-21	P(14)	A
50	2726.050 07(24)	521.64	0.563E-23	R(2)	B
51	2726.054 32(24)	521.64	0.563E-23	R(2)	C
52	2726.056 46(24)*	36.92	0.152E-21	P(13)	A
53	2726.472 65(24)*	31.64	0.144E-21	P(12)	A
54	2726.851 86(24)	524.48	0.100E-22	R(4)	B
55	2726.861 44(24)	524.49	0.100E-22	R(4)	C
56	2726.887 97(25)*	26.78	0.135E-21	P(11)	A
57	2727.250 98(23)	526.51	0.120E-22	R(5)	B
58	2727.263 96(23)	526.52	0.120E-22	R(5)	C
59	2727.302 44(25)*	22.31	0.126E-21	P(10)	A
60	2727.648 92(23)	528.95	0.140E-22	R(6)	B
61	2727.665 80(23)	528.96	0.140E-22	R(6)	C
62	2727.716 04(25)*	18.26	0.115E-21	P(9)	A
63	2728.045 67(22)	531.80	0.158E-22	R(7)	B
64	2728.066 95(22)	531.81	0.158E-22	R(7)	C
65	2728.128 77(25)*	14.61	0.104E-21	P(8)	A
66	2728.467 41(22)	535.06	0.176E-22	R(8)	C
67	2728.540 63(25)*	11.36	0.928E-22	P(7)	A
68	2728.835 62(21)	538.70	0.193E-22	R(9)	B
69	2728.867 17(21)	538.72	0.192E-22	R(9)	C
70	2728.951 62(25)*	8.52	0.806E-22	P(6)	A


OCS 0.5 kPa (4.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
2729 2730 2731 2732 2733
2733 2734 2735 2736 2737
2737 2738 2739 2740 2741
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2729.228 81(21)	542.76	0.208E-22	R(10)	B	36	2735.010 69(25)*	14.61	0.118E-21	R(8)	A
2	2729.361 74(25)*	6.09	0.680E-22	P(5)	A	37	2735.168 84(17)	652.56	0.291E-22	R(25)	C
3	2729.620 81(20)	547.23	0.222E-22	R(11)	B	38	2735.407 55(25)*	18.26	0.128E-21	R(9)	A
4	2729.770 97(25)*	4.06	0.549E-22	P(4)	A	39	2735.556 74(18)	663.13	0.287E-22	R(26)	C
5	2730.011 62(19)	552.11	0.236E-22	R(12)	B	40	2735.803 52(24)*	22.31	0.139E-21	R(10)	A
6	2730.179 33(25)*	2.43	0.416E-22	P(3)	A	41	2735.943 94(18)	674.10	0.282E-22	R(27)	C
7	2730.401 25(19)	557.38	0.248E-22	R(13)	B	42	2736.102 55(19)	685.31	0.277E-22	R(28)	B
8	2730.459 32(19)	557.42	0.248E-22	R(13)	C	43	2736.198 61(24)*	26.78	0.148E-21	R(11)	A
9	2730.586 81(25)*	1.22	0.279E-22	P(2)	A	44	2736.330 43(19)	685.49	0.277E-22	R(28)	C
10	2730.789 68(18)	563.07	0.258E-22	R(14)	B	45	2736.473 10(20)	697.09	0.271E-22	R(29)	B
11	2730.855 62(18)	563.12	0.258E-22	R(14)	C	46	2736.592 82(24)*	31.64	0.157E-21	R(12)	A
12	2730.993 41(25)*	0.41	0.140E-22	P(1)	A	47	2736.716 21(19)	697.27	0.270E-22	R(29)	C
13	2731.176 93(18)	569.16	0.268E-22	R(15)	B	48	2736.842 45(21)	709.27	0.264E-22	R(30)	B
14	2731.251 23(18)	569.22	0.268E-22	R(15)	C	49	2736.986 15(24)*	36.92	0.164E-21	R(13)	A
15	2731.562 98(17)	575.66	0.276E-22	R(16)	B	50	2737.210 61(21)	721.86	0.256E-22	R(31)	B
16	2731.646 14(17)	575.72	0.275E-22	R(16)	C	51	2737.378 60(24)*	42.60	0.171E-21	R(14)	A
17	2731.803 95(25)*	0.00	0.140E-22	R(0)	A	52	2737.485 65(21)	722.07	0.256E-22	R(31)	C
18	2731.947 84(17)	582.57	0.282E-22	R(17)	B	53	2737.577 57(22)	734.85	0.248E-22	R(32)	B
19	2732.040 35(17)	582.63	0.282E-22	R(17)	C	54	2737.770 17(24)*	48.68	0.177E-21	R(15)	A
20	2732.207 89(25)*	0.41	0.280E-22	R(1)	A	55	2737.943 35(22)	748.25	0.239E-22	R(33)	B
21	2732.331 50(17)	589.88	0.288E-22	R(18)	B	56	2738.160 87(24)*	55.17	0.183E-21	R(16)	A
22	2732.433 86(17)	589.95	0.288E-22	R(18)	C	57	2738.307 94(23)	762.05	0.230E-22	R(34)	B
23	2732.610 95(25)*	1.22	0.418E-22	R(2)	A	58	2738.550 70(24)*	62.07	0.187E-21	R(17)	A
24	2732.826 68(16)	597.68	0.292E-22	R(19)	C	59	2738.671 34(23)	776.26	0.221E-22	R(35)	B
25	2733.013 13(25)*	2.43	0.554E-22	R(3)	A	60	2738.939 66(24)*	69.37	0.191E-21	R(18)	A
26	2733.218 79(16)	605.81	0.295E-22	R(20)	C	61	2739.033 55(23)	790.88	0.212E-22	R(36)	B
27	2733.414 41(25)*	4.06	0.688E-22	R(4)	A	62	2739.327 75(24)*	77.08	0.193E-21	R(19)	A
28	2733.610 21(16)	614.35	0.296E-22	R(21)	C	63	2739.714 97(24)*	85.19	0.195E-21	R(20)	A
29	2733.814 81(25)*	6.09	0.817E-22	R(5)	A	64	2739.776 97(24)	806.20	0.202E-22	R(37)	C
30	2734.000 92(16)	623.29	0.297E-22	R(22)	C	65	2740.101 34(24)*	93.71	0.196E-21	R(21)	A
31	2734.214 33(25)*	8.52	0.943E-22	R(6)	A	66	2740.156 36(25)	821.64	0.192E-22	R(38)	C
32	2734.390 93(16)	632.64	0.296E-22	R(23)	C	67	2740.486 85(23)*	102.63	0.196E-21	R(22)	A
33	2734.608 46(17)	642.27	0.294E-22	R(24)	B	68	2740.535 04(25)	837.49	0.183E-22	R(39)	C
34	2734.612 95(25)*	11.36	0.106E-21	R(7)	A	69	2740.871 50(23)*	111.96	0.196E-21	R(23)	A
35	2734.780 24(17)	642.40	0.294E-22	R(24)	C	70	2740.913 01(25)	853.74	0.173E-22	R(40)	C


OCS 0.5 kPa (4.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
2741 2742 2743 2744 2745
2745 2746 2747 2748 2749
2749 2750 2751 2752 2753
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2741.182 00(24)	887.08	0.154E-22	R(42)	B	36	2745.761 29(34)	1101.95	0.681E-23	R(53)	C
2	2741.255 31(23)*	121.70	0.194E-21	R(24)	A	37	2745.796 37(24)*	270.13	0.140E-21	R(36)	A
3	2741.535 95(24)	904.54	0.145E-22	R(43)	B	38	2746.032 06(53)	1168.28	0.519E-23	R(56)	B
4	2741.638 27(23)*	131.84	0.193E-21	R(25)	A	39	2746.129 18(37)	1123.88	0.623E-23	R(54)	C
5	2741.888 73(24)	922.39	0.136E-22	R(44)	B	40	2746.169 58(24)*	285.13	0.133E-21	R(37)	A
6	2742.020 38(24)*	142.38	0.190E-21	R(26)	A	41	2746.369 97(60)	1191.40	0.472E-23	R(57)	B
7	2742.042 63(25)	904.94	0.145E-22	R(43)	C	42	2746.496 34(41)	1146.22	0.569E-23	R(55)	C
8	2742.240 35(24)	940.66	0.127E-22	R(45)	B	43	2746.542 01(24)*	300.54	0.127E-21	R(38)	A
9	2742.401 66(24)*	153.34	0.187E-21	R(27)	A	44	2746.706 78(66)	1214.93	0.428E-23	R(58)	B
10	2742.590 79(24)	959.33	0.119E-22	R(46)	B	45	2746.862 77(45)	1168.96	0.519E-23	R(56)	C
11	2742.782 11(24)*	164.69	0.183E-21	R(28)	A	46	2746.913 68(24)*	316.35	0.120E-21	R(39)	A
12	2742.792 12(25)	941.10	0.127E-22	R(45)	C	47	2747.042 49(74)	1238.86	0.387E-23	R(59)	B
13	2742.940 08(25)	978.40	0.110E-22	R(47)	B	48	2747.228 48(50)	1192.10	0.471E-23	R(57)	C
14	2743.161 73(24)*	176.45	0.179E-21	R(29)	A	49	2747.284 59(24)*	332.57	0.114E-21	R(40)	A
15	2743.165 79(25)	959.78	0.118E-22	R(46)	C	50	2747.377 11(82)	1263.19	0.349E-23	R(60)	B
16	2743.288 21(26)	997.88	0.102E-22	R(48)	B	51	2747.593 46(56)	1215.65	0.428E-23	R(58)	C
17	2743.538 74(26)	978.88	0.110E-22	R(47)	C	52	2747.654 75(24)*	349.19	0.108E-21	R(41)	A
18	2743.540 53(24)*	188.62	0.174E-21	R(30)	A	53	2747.710 65(90)	1287.93	0.315E-23	R(61)	B
19	2743.635 18(27)	1017.76	0.948E-23	R(49)	B	54	2747.957 70(63)	1239.61	0.387E-23	R(59)	C
20	2743.910 97(26)	998.38	0.102E-22	R(48)	C	55	2748.024 17(24)*	366.22	0.101E-21	R(42)	A
21	2743.918 51(24)*	201.19	0.169E-21	R(31)	A	56	2748.043 1	1313.07	0.283E-23	R(62)	B
22	2743.981 00(29)	1038.05	0.876E-23	R(50)	B	57	2748.321 21(70)	1263.97	0.349E-23	R(60)	C
23	2744.282 48(27)	1018.28	0.947E-23	R(49)	C	58	2748.392 85(24)*	383.65	0.952E-22	R(43)	A
24	2744.295 68(24)*	214.17	0.164E-21	R(32)	A	59	2748.683 99(77)	1288.73	0.315E-23	R(61)	C
25	2744.325 68(32)	1058.74	0.808E-23	R(51)	B	60	2748.760 80(24)*	401.49	0.892E-22	R(44)	A
26	2744.653 27(28)	1038.59	0.875E-23	R(50)	C	61	2749.046 03(86)	1313.90	0.283E-23	R(62)	C
27	2744.669 22(35)	1079.84	0.743E-23	R(52)	B	62	2749.128 04(24)*	419.73	0.834E-22	R(45)	A
28	2744.672 05(24)*	227.55	0.158E-21	R(33)	A	63	2749.407 33(95)	1339.47	0.254E-23	R(63)	C
29	2745.011 62(39)	1101.34	0.681E-23	R(53)	B	64	2749.494 56(24)*	438.37	0.777E-22	R(46)	A
30	2745.023 33(29)	1059.31	0.807E-23	R(51)	C	65	2749.860 38(24)*	457.42	0.723E-22	R(47)	A
31	2745.047 61(24)*	241.34	0.152E-21	R(34)	A	66	2750.225 51(24)*	476.88	0.671E-22	R(48)	A
32	2745.352 89(43)	1123.25	0.624E-23	R(54)	B	67	2750.589 95(24)*	496.74	0.621E-22	R(49)	A
33	2745.392 67(31)	1080.42	0.742E-23	R(52)	C	68	2750.953 72(24)*	517.00	0.573E-22	R(50)	A
34	2745.422 38(24)*	255.53	0.146E-21	R(35)	A	69	2751.316 82(24)*	537.67	0.528E-22	R(51)	A
35	2745.693 03(48)	1145.56	0.570E-23	R(55)	B	70	2751.679 26(24)*	558.74	0.485E-22	R(52)	A


OCS 0.5 kPa (4.0 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2751 2752 2753 2754 2755
2755 2756 2757 2758 2759
2759 2760 2761 2762 2763
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2751.316 82(24)*	537.67	0.528E-22	R(51)	A
2	2751.679 26(24)*	558.74	0.485E-22	R(52)	A
3	2752.041 05(24)*	580.22	0.444E-22	R(53)	A
4	2752.402 20(24)*	602.10	0.406E-22	R(54)	A
5	2752.762 72(24)*	624.39	0.371E-22	R(55)	A
6	2753.122 61(24)*	647.08	0.337E-22	R(56)	A
7	2753.481 89(24)*	670.17	0.306E-22	R(57)	A
8	2753.840 56(25)*	693.67	0.277E-22	R(58)	A
9	2754.198 63(25)*	717.57	0.251E-22	R(59)	A
10	2754.556 12(25)*	741.87	0.226E-22	R(60)	A
11	2754.913 02(25)*	766.58	0.203E-22	R(61)	A
12	2755.269 35(25)*	791.70	0.182E-22	R(62)	A
13	2755.625 11(25)*	817.21	0.163E-22	R(63)	A
14	2755.980 31(25)*	843.13	0.146E-22	R(64)	A
15	2756.334 96(25)*	869.46	0.130E-22	R(65)	A
16	2756.689 06(25)*	896.18	0.115E-22	R(66)	A
17	2757.042 63(25)*	923.31	0.102E-22	R(67)	A
18	2757.395 66(25)*	950.85	0.906E-23	R(68)	A
19	2757.748 17(25)*	978.78	0.799E-23	R(69)	A
20	2758.100 15(26)*	1007.13	0.704E-23	R(70)	A

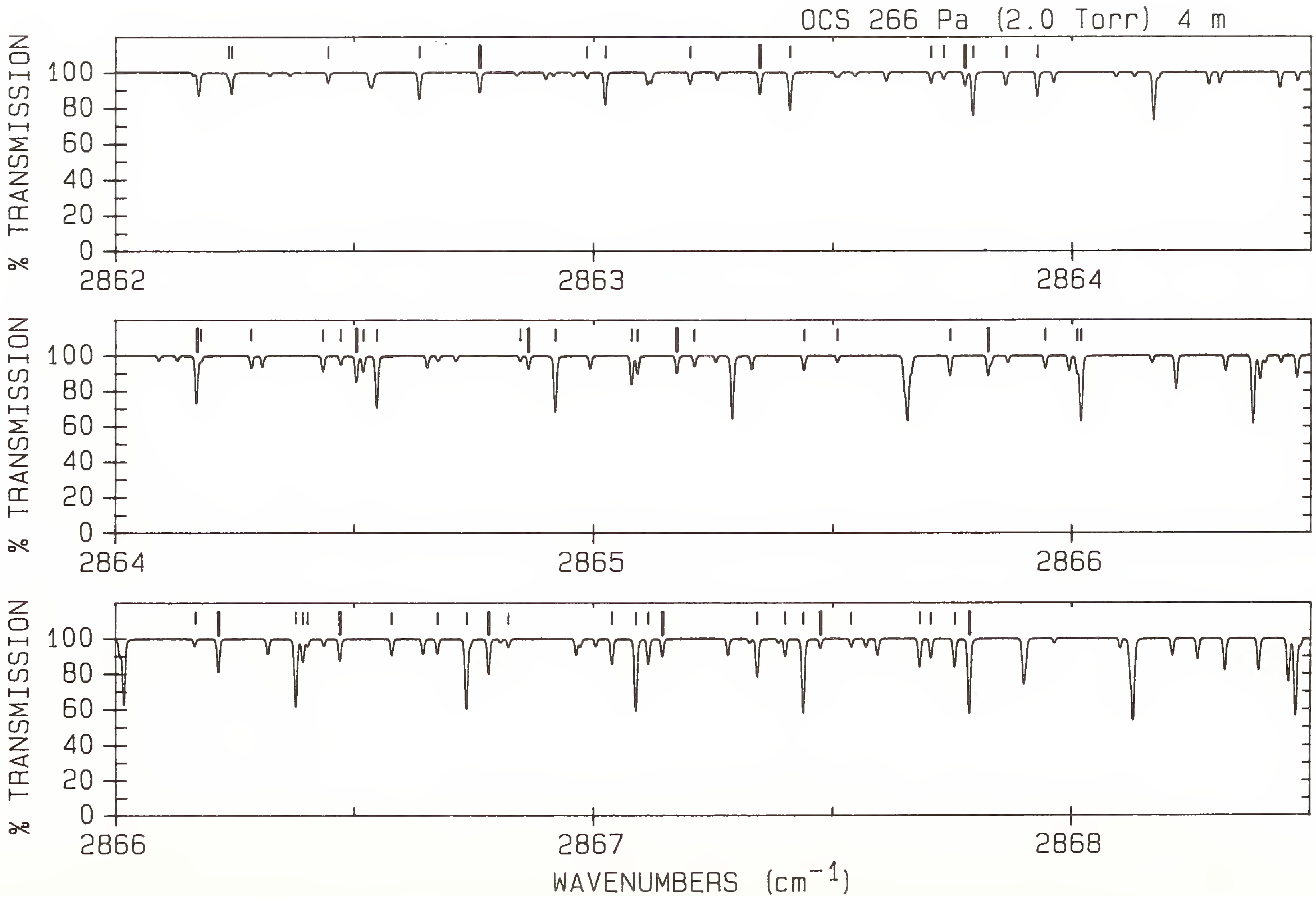
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
21	2758.451 62(26)*	1035.87	0.619E-23	R(71)	A
22	2758.802 57(27)*	1065.02	0.543E-23	R(72)	A
23	2759.153 01(28)*	1094.57	0.475E-23	R(73)	A
24	2759.502 95(30)*	1124.52	0.415E-23	R(74)	A
25	2759.852 38(33)*	1154.87	0.361E-23	R(75)	A
26	2760.201 31(36)*	1185.63	0.314E-23	R(76)	A
27	2760.549 73(40)*	1216.79	0.272E-23	R(77)	A
28	2760.897 66(45)*	1248.35	0.235E-23	R(78)	A
29	2761.245 09(52)*	1280.32	0.203E-23	R(79)	A
30	2761.592 02(59)*	1312.69	0.175E-23	R(80)	A
31	2761.938 45(67)*	1345.46	0.150E-23	R(81)	A
32	2762.284 37(77)*	1378.63	0.129E-23	R(82)	A
33	2762.629 79(88)*	1412.21	0.110E-23	R(83)	A
34	2762.974 7	1446.18	0.943E-24	R(84)	A

ATLAS OF OCS ABSORPTION LINES FROM 2862 cm^{-1} to 2970 cm^{-1}

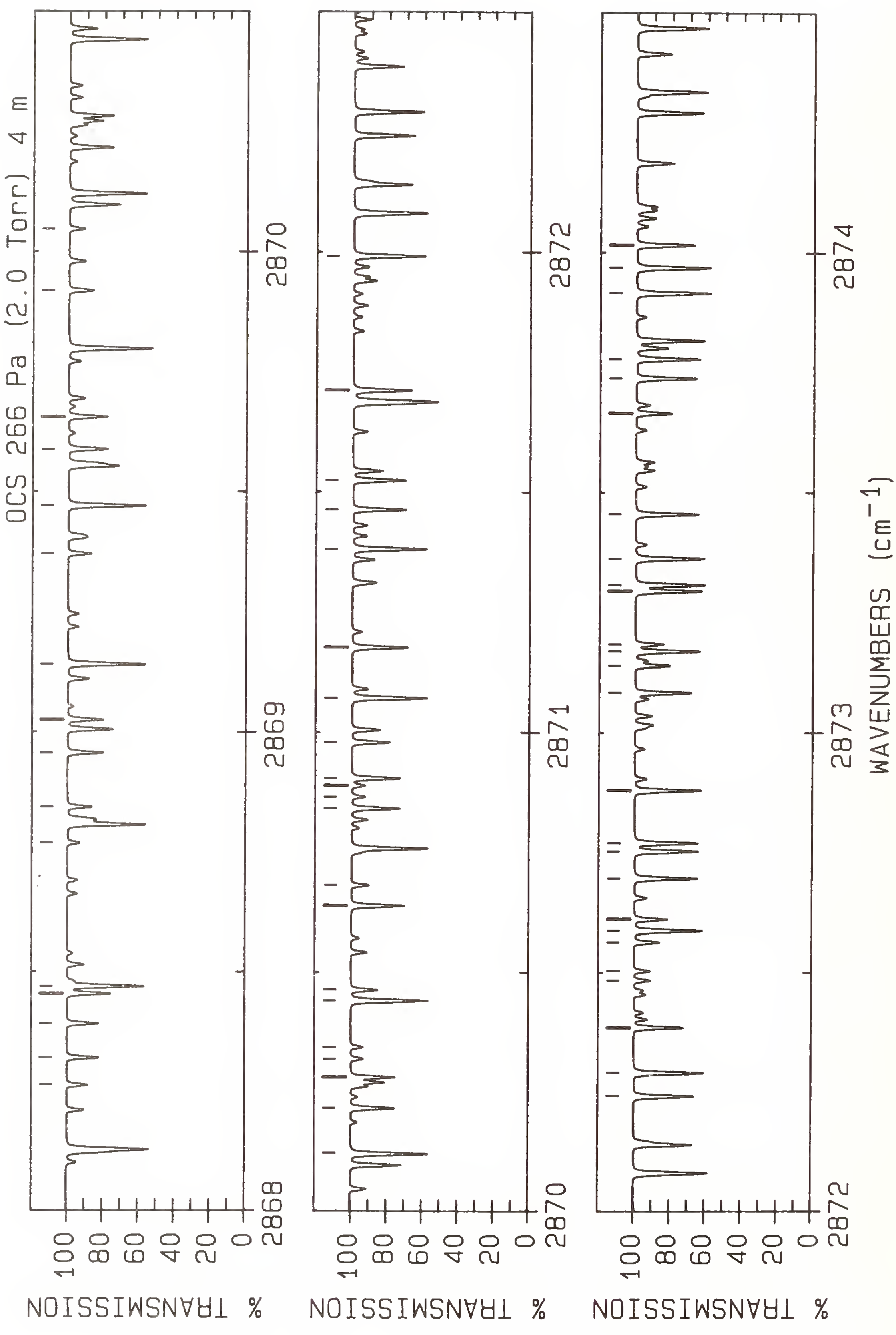
key:

Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	10^01-00^00
B		11^11-$01^{1e}0$
C		11^11-$01^{1f}0$
D		10^02-00^01
E		12^21-$02^{2e}0$
F		12^21-$02^{2f}0$
G		12^01-02^00
H		11^12-$01^{1e}1$
I		11^12-$01^{1f}1$
W		04^01-00^00
X		04^02-00^01
Y		05^11-$01^{1e}0$
Z		05^11-$01^{1f}0$
K	$^{18}O^{12}C^{32}S$	10^01-00^00
L	$^{16}O^{12}C^{33}S$	10^01-00^00
P	$^{16}O^{12}C^{34}S$	10^01-00^00
Q		11^10-$01^{1e}0$
R		11^10-$01^{1f}0$
T	$^{16}O^{13}C^{32}S$	10^01-00^00

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1} and a temperature of 296 K. The $\Delta v_1=1, \Delta v_3=1$ transitions (except for the D band) were calculated with assumed transition moments of 0.034 debye, the W band was calculated for a transition moment of 0.0036 debye, and the Y and Z bands were calculated with assumed transition moments of 0.0025 debye. No Herman-Wallis constant was included in the intensity calculation except for the D and X bands which are in resonance. For the D band a transition moment of 0.031 debye was used with a Herman-Wallis constant of $a_3=-0.00034$. For the X band the transition moment was 0.0146 debye and the Herman-Wallis constant was $a_3=0.00105$.


OCS 266 Pa (2.0 Torr) 4 m
% TRANSMISSION
100
80
60
40
20
0
2862
2863
2864
2865
2866
2867
2868
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2862.237 10(50)	1924.43	0.892E-23	P(97)	A	36	2865.209 47(38)	1770.05	0.181E-22	P(93)	A
2	2862.244 14(31)	1.21	0.349E-22	R(2)	T	37	2865.438 96(26)	1586.42	0.244E-22	P(51)	G
3	2862.445 78(38)	1738.67	0.175E-22	P(77)	B	38	2865.508 71(57)	1187.08	0.110E-22	P(77)	P
4	2862.635 91(30)	2.43	0.462E-22	R(3)	T	39	2865.744 03(28)	1586.72	0.343E-22	P(72)	B
5	2862.762 37(39)	1667.76	0.177E-22	P(55)	E	40	2865.823 67(28)	1587.83	0.341E-22	P(72)	C
6	2862.763 38(40)	1667.83	0.176E-22	P(55)	F	41	2865.943 40(37)	1732.46	0.215E-22	P(92)	A
7	2862.985 71(45)	1885.23	0.107E-22	P(96)	A	42	2866.010 48(23)	1565.68	0.264E-22	P(50)	G
8	2863.024 53(29)	4.04	0.573E-22	R(4)	T	43	2866.018 80(22)	31.54	0.131E-21	R(12)	T
9	2863.200 56(35)	1708.71	0.200E-22	P(76)	C	44	2866.167 37(49)	1156.68	0.126E-22	P(76)	P
10	2863.346 42(35)	1645.40	0.193E-22	P(54)	E	45	2866.217 05(23)	1539.70	0.293E-22	P(49)	E
11	2863.347 28(35)	1645.47	0.193E-22	P(54)	F	46	2866.217 32(23)	1539.75	0.293E-22	P(49)	F
12	2863.409 97(29)	6.07	0.681E-22	R(5)	T	47	2866.378 65(21)	36.80	0.137E-21	R(13)	T
13	2863.704 52(37)	1651.06	0.188E-22	P(54)	G	48	2866.393 32(27)	1557.54	0.390E-22	P(71)	B
14	2863.730 64(42)	1846.44	0.128E-22	P(95)	A	49	2866.403 43(96)	1086.39	0.124E-22	P(53)	Q
15	2863.775 45(32)	1676.68	0.230E-22	P(75)	B	50	2866.470 82(27)	1558.62	0.388E-22	P(71)	C
16	2863.792 23(28)	8.49	0.785E-22	R(6)	T	51	2866.578 69(22)	1545.35	0.286E-22	P(49)	G
17	2863.861 52(32)	1677.89	0.229E-22	P(75)	C	52	2866.673 68(36)	1695.27	0.255E-22	P(91)	A
18	2863.927 17(32)	1623.45	0.211E-22	P(53)	E	53	2866.735 27(21)	42.46	0.143E-21	R(14)	T
19	2863.927 89(32)	1623.51	0.211E-22	P(53)	F	54	2866.781 26(22)	1519.78	0.316E-22	P(48)	E
20	2864.171 32(27)	11.32	0.885E-22	R(7)	T	55	2866.781 44(22)	1519.82	0.316E-22	P(48)	F
21	2864.181 09(78)	1249.06	0.836E-23	P(79)	P	56	2866.822 59(42)	1126.67	0.144E-22	P(75)	P
22	2864.285 98(32)	1629.11	0.206E-22	P(53)	G	57	2867.039 14(26)	1528.76	0.442E-22	P(70)	B
23	2864.435 10(30)	1646.29	0.264E-22	P(74)	B	58	2867.088 63(20)	48.53	0.148E-21	R(15)	T
24	2864.471 89(39)	1808.05	0.152E-22	P(94)	A	59	2867.114 53(26)	1529.81	0.440E-22	P(70)	C
25	2864.504 60(29)	1601.90	0.230E-22	P(52)	E	60	2867.143 59(20)	1525.43	0.309E-22	P(48)	G
26	2864.505 19(29)	1601.96	0.230E-22	P(52)	F	61	2867.342 17(21)	1500.26	0.341E-22	P(47)	E
27	2864.519 02(31)	1647.46	0.262E-22	P(74)	C	62	2867.342 27(21)	1500.30	0.341E-22	P(47)	F
28	2864.547 22(26)	14.56	0.980E-22	R(8)	T	63	2867.400 32(36)	1658.48	0.302E-22	P(90)	A
29	2864.846 61(67)	1217.87	0.961E-23	P(78)	P	64	2867.438 74(20)	55.00	0.152E-21	R(16)	T
30	2864.864 13(29)	1607.56	0.224E-22	P(52)	G	65	2867.474 35(35)	1097.06	0.164E-22	P(74)	P
31	2864.919 93(25)	18.20	0.107E-21	R(9)	T	66	2867.539 07(71)	1044.83	0.146E-22	P(51)	Q
32	2865.078 72(26)	1580.76	0.250E-22	P(51)	E	67	2867.681 51(26)	1500.39	0.500E-22	P(69)	B
33	2865.079 20(26)	1580.82	0.250E-22	P(51)	F	68	2867.705 18(20)	1505.91	0.332E-22	P(47)	G
34	2865.091 30(29)	1616.30	0.301E-22	P(73)	B	69	2867.754 78(26)	1501.41	0.497E-22	P(69)	C
35	2865.173 07(29)	1617.44	0.299E-22	P(73)	C	70	2867.785 57(20)	61.87	0.156E-21	R(17)	T


OCS 266 Pa (2.0 Torr) 4 m
% TRANSMISSION
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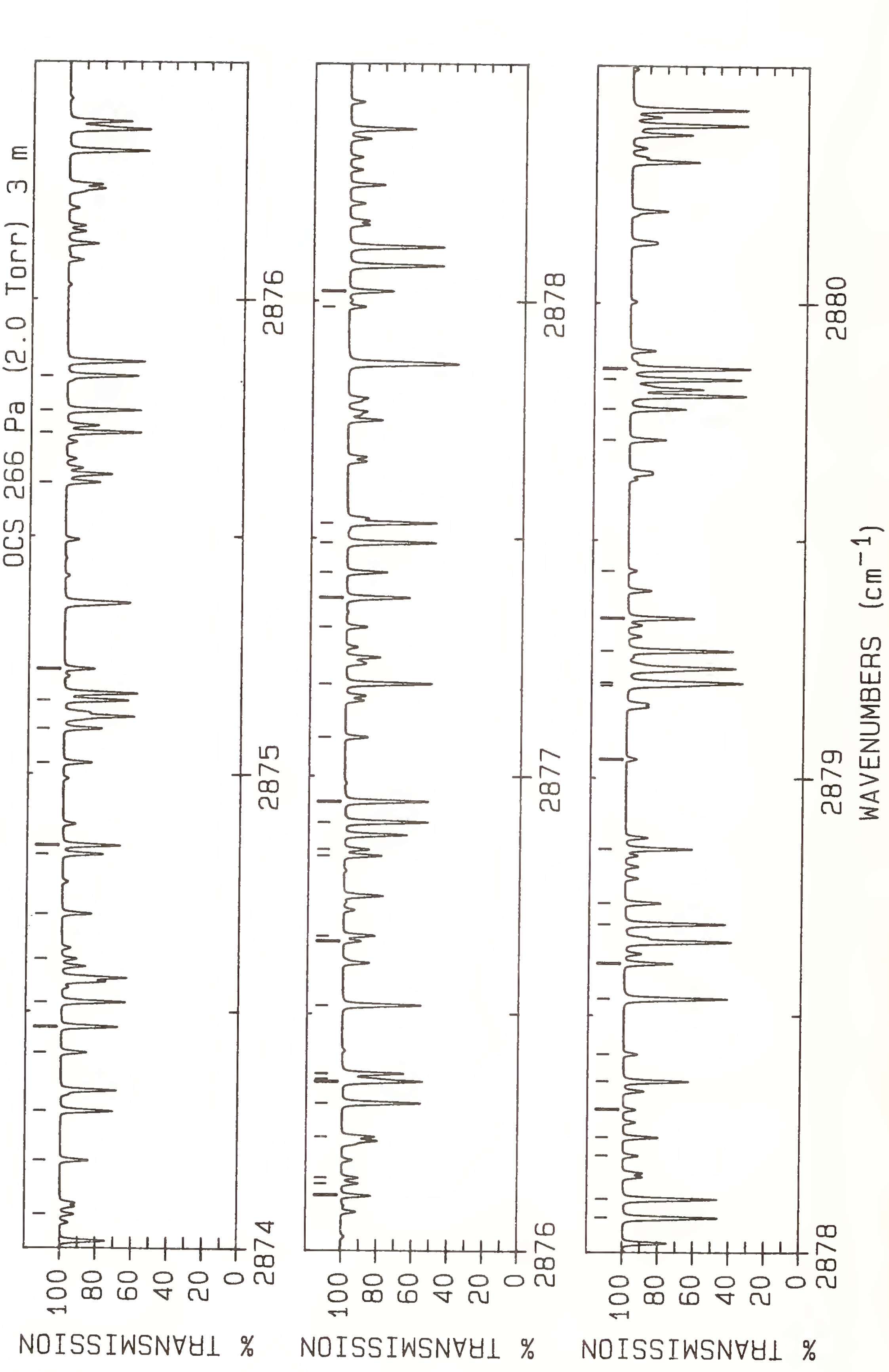
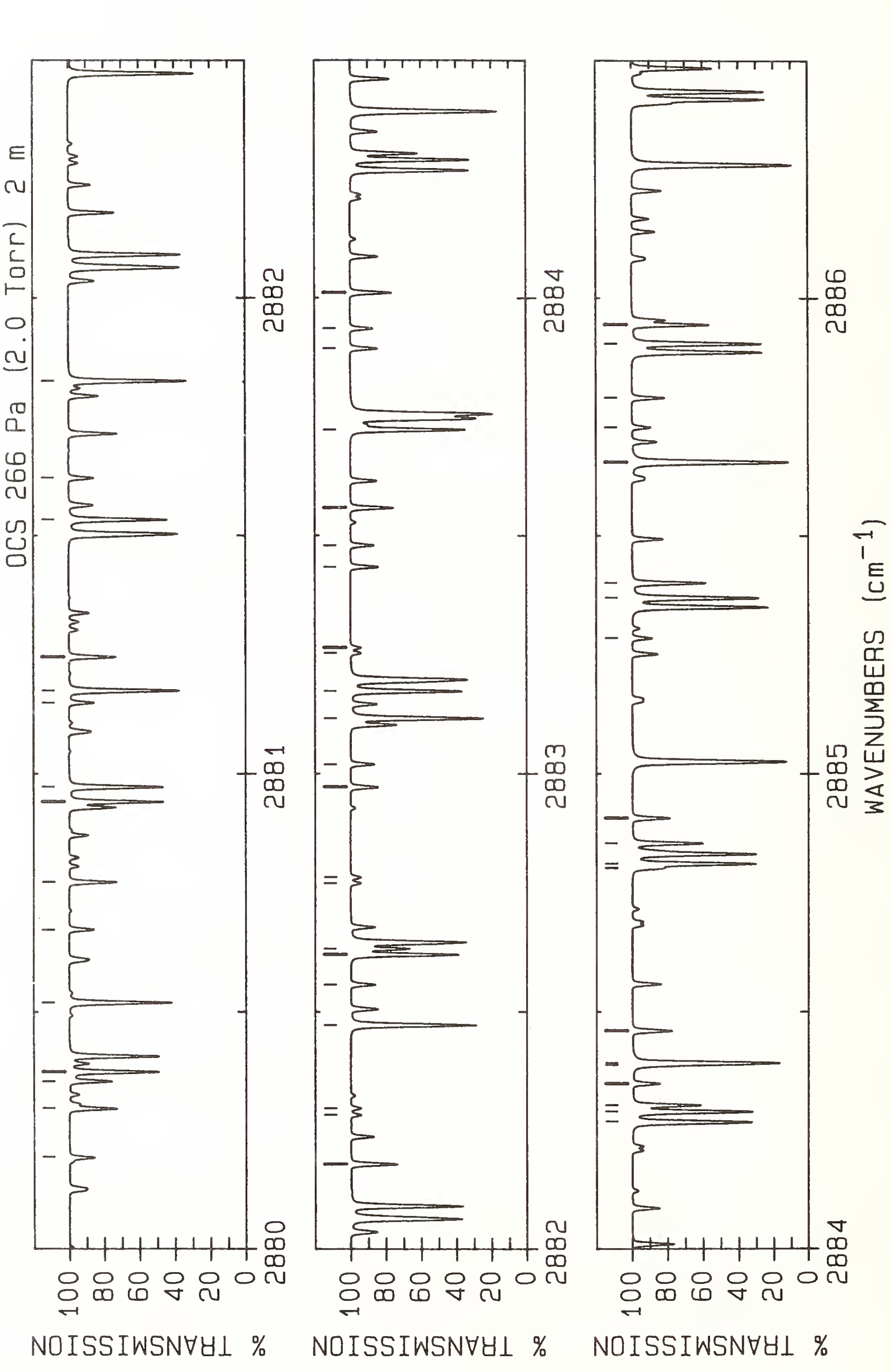
80
60
40
20
0
2868
2869
2870
2871
2872
2873
2874
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2868.263 47(19)	1486.80	0.357E-22	P(46)	G	36	2871.381 42(26)	164.16	0.153E-21	R(28)	T
2	2868.320 43(25)	1472.41	0.565E-22	P(68)	B	37	2871.463 21(24)	1338.62	0.100E-21	P(63)	B
3	2868.391 59(26)	1473.41	0.562E-22	P(68)	C	38	2871.524 05(24)	1339.47	0.999E-22	P(63)	C
4	2868.454 06(20)	1462.47	0.392E-22	P(45)	F	39	2871.710 59(20)	1358.74	0.563E-22	P(39)	F
5	2868.454 09(20)	1462.44	0.392E-22	P(45)	E	40	2871.710 84(20)	1358.72	0.563E-22	P(39)	E
6	2868.469 39(21)	76.83	0.161E-21	R(19)	T	41	2871.991 19(27)	188.01	0.146E-21	R(30)	T
7	2868.767 48(26)	1039.01	0.212E-22	P(72)	P	42	2872.241 86(20)	1342.87	0.593E-22	P(38)	F
8	2868.842 70(35)	1586.11	0.420E-22	P(88)	A	43	2872.242 13(20)	1342.85	0.593E-22	P(38)	E
9	2868.955 89(25)	1444.85	0.636E-22	P(67)	B	44	2872.290 90(27)	200.54	0.142E-21	R(31)	T
10	2869.024 96(25)	1445.81	0.633E-22	P(67)	C	45	2872.385 30(33)	1412.21	0.923E-22	P(83)	A
11	2869.139 99(22)	93.41	0.164E-21	R(21)	T	46	2872.483 90(38)	877.36	0.272E-22	P(42)	Q
12	2869.370 12(19)	1449.79	0.409E-22	P(44)	G	47	2872.503 66(42)	877.73	0.271E-22	P(42)	R
13	2869.470 29(22)	102.30	0.164E-21	R(22)	T	48	2872.563 28(17)	874.29	0.433E-22	P(66)	P
14	2869.587 90(25)	1417.69	0.715E-22	P(66)	B	49	2872.587 15(27)	213.48	0.137E-21	R(32)	T
15	2869.654 89(25)	1418.62	0.712E-22	P(66)	C	50	2872.610 85(19)	1348.52	0.578E-22	P(38)	G
16	2869.918 49(19)	1431.90	0.436E-22	P(43)	G	51	2872.696 17(24)	1287.93	0.124E-21	P(61)	B
17	2870.046 70(20)	982.53	0.271E-22	P(70)	P	52	2872.752 98(24)	1288.73	0.124E-21	P(61)	C
18	2870.120 86(24)	121.31	0.162E-21	R(24)	T	53	2872.769 85(19)	1327.41	0.622E-22	P(37)	F
19	2870.216 46(25)	1390.93	0.803E-22	P(65)	B	54	2872.770 14(19)	1327.39	0.622E-22	P(37)	E
20	2870.281 38(25)	1391.83	0.799E-22	P(65)	C	55	2872.879 91(27)	226.82	0.132E-21	R(33)	T
21	2870.319 62(38)	947.84	0.211E-22	P(46)	Q	56	2873.082 99(33)	1378.63	0.107E-21	P(82)	A
22	2870.344 21(55)	948.28	0.211E-22	P(46)	R	57	2873.139 42(18)	1333.06	0.607E-22	P(37)	G
23	2870.441 09(25)	131.41	0.161E-21	R(25)	T	58	2873.169 17(27)	240.56	0.128E-21	R(34)	T
24	2870.463 56(19)	1414.41	0.464E-22	P(42)	G	59	2873.183 68(17)	848.22	0.484E-22	P(65)	P
25	2870.638 21(20)	1391.69	0.504E-22	P(41)	F	60	2873.294 57(19)	1312.36	0.651E-22	P(36)	F
26	2870.638 41(20)	1391.67	0.504E-22	P(41)	E	61	2873.294 86(19)	1312.34	0.651E-22	P(36)	E
27	2870.681 09(19)	954.88	0.306E-22	P(69)	P	62	2873.307 47(24)	1263.19	0.138E-21	P(60)	B
28	2870.841 56(24)	1364.57	0.898E-22	P(64)	B	63	2873.362 30(24)	1263.97	0.138E-21	P(60)	C
29	2870.865 70(36)	929.63	0.226E-22	P(45)	Q	64	2873.454 93(27)	254.71	0.122E-21	R(35)	T
30	2870.889 06(49)	930.05	0.225E-22	P(45)	R	65	2873.664 71(18)	1318.01	0.636E-22	P(36)	G
31	2870.904 43(25)	1365.45	0.895E-22	P(64)	C	66	2873.737 17(27)	269.26	0.117E-21	R(36)	T
32	2870.979 10(34)	1480.56	0.678E-22	P(85)	A	67	2873.777 06(32)	1345.46	0.125E-21	P(81)	A
33	2871.071 39(26)	152.84	0.156E-21	R(27)	T	68	2873.915 33(23)	1238.86	0.153E-21	P(59)	B
34	2871.176 04(20)	1375.01	0.534E-22	P(40)	F	69	2873.968 20(23)	1239.61	0.152E-21	P(59)	C
35	2871.176 27(20)	1374.99	0.534E-22	P(40)	E	70	2874.015 87(27)	284.21	0.112E-21	R(37)	T

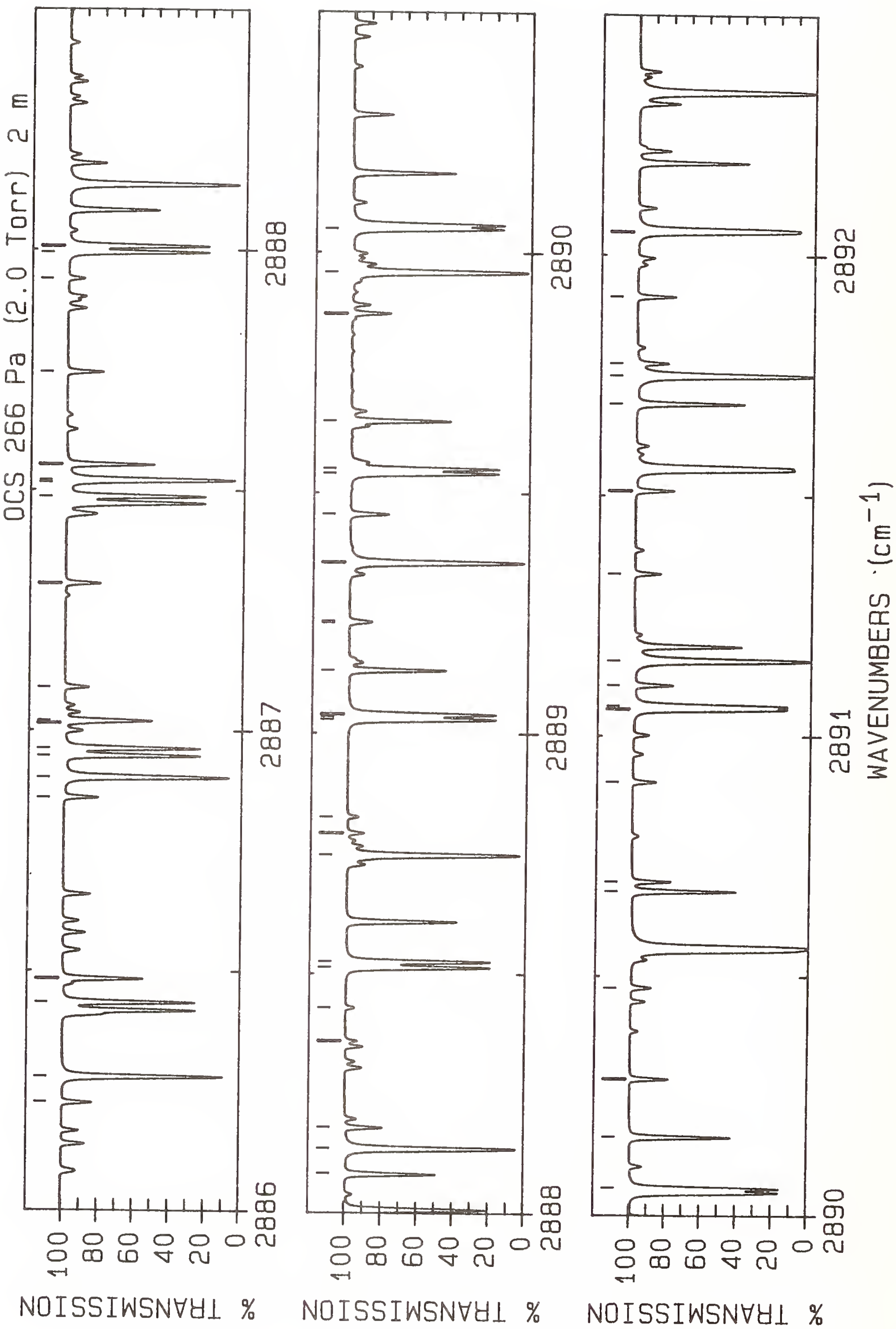


OCS 266 Pa (2.0 Torr) 3 m
% TRANSMISSION
100 80 60 40 20 0
2874
2875
2876
2877
2878
2879
2880
WAVENUMBERS (cm⁻¹)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2874.072 06(41)	828.65	0.320E-22	P(39)	Q	36	2877.081 31(38)	495.14	0.529E-22	R(49)	T
2	2874.186 69(18)	1303.37	0.664E-22	P(35)	G	37	2877.193 42(30)	1185.63	0.255E-21	P(76)	A
3	2874.291 03(27)	299.57	0.107E-21	R(38)	T	38	2877.313 32(38)	515.34	0.489E-22	R(50)	T
4	2874.413 95(17)	797.25	0.602E-22	P(63)	P	39	2877.374 48(15)	1206.55	0.846E-22	P(28)	F
5	2874.467 54(31)	1312.69	0.145E-21	P(80)	A	40	2877.374 74(15)	1206.55	0.846E-22	P(28)	E
6	2874.519 75(23)	1214.93	0.169E-21	P(58)	B	41	2877.428 18(16)	676.72	0.996E-22	P(58)	P
7	2874.610 00(44)	813.51	0.336E-22	P(38)	R	42	2877.490 16(22)	1101.34	0.268E-21	P(53)	B
8	2874.705 39(17)	1289.13	0.691E-22	P(34)	G	43	2877.531 71(22)	1101.95	0.267E-21	P(53)	C
9	2874.830 68(28)	331.50	0.961E-22	R(40)	T	44	2877.987 66(37)	578.35	0.381E-22	R(53)	T
10	2874.849 07(18)	1269.63	0.735E-22	P(33)	F	45	2878.020 49(16)	653.80	0.109E-21	P(57)	P
11	2874.849 37(18)	1269.62	0.735E-22	P(33)	E	46	2878.073 92(22)	1079.84	0.292E-21	P(52)	B
12	2875.023 82(17)	772.36	0.668E-22	P(62)	P	47	2878.113 68(22)	1080.42	0.291E-21	P(52)	C
13	2875.095 14(29)	348.07	0.908E-22	R(41)	T	48	2878.205 23(36)	600.16	0.350E-22	R(54)	T
14	2875.154 41(31)	1280.32	0.167E-21	P(79)	A	49	2878.244 10(16)	1200.85	0.844E-22	P(27)	G
15	2875.220 79(17)	1275.30	0.717E-22	P(33)	G	50	2878.302 43(46)	1613.69	0.284E-22	P(34)	I
16	2875.613 32(31)	382.42	0.805E-22	R(43)	T	51	2878.361 77(14)	1184.17	0.876E-22	P(26)	F
17	2875.718 24(23)	1168.28	0.204E-21	P(56)	B	52	2878.362 00(14)	1184.17	0.876E-22	P(26)	E
18	2875.765 34(23)	1168.96	0.204E-21	P(56)	C	53	2878.419 20(35)	622.38	0.320E-22	R(55)	T
19	2875.837 68(30)	1248.35	0.193E-21	P(78)	A	54	2878.534 75(29)	1124.52	0.334E-21	P(74)	A
20	2876.117 09(34)	418.38	0.707E-22	R(45)	T	55	2878.609 28(15)	631.27	0.120E-21	P(56)	P
21	2876.142 90(43)	769.25	0.384E-22	P(35)	Q	56	2878.692 23(22)	1059.31	0.317E-21	P(51)	C
22	2876.154 99(46)	769.50	0.383E-22	P(35)	R	57	2878.736 48(16)	1189.87	0.857E-22	P(26)	G
23	2876.241 72(16)	1248.86	0.767E-22	P(31)	G	58	2878.850 51(14)	1173.59	0.886E-22	P(25)	F
24	2876.312 32(23)	1145.56	0.224E-21	P(55)	B	59	2878.850 73(14)	1173.59	0.887E-22	P(25)	E
25	2876.357 54(23)	1146.22	0.224E-21	P(55)	C	60	2879.039 67(40)	691.43	0.241E-22	R(58)	T
26	2876.363 57(35)	436.96	0.660E-22	R(46)	T	61	2879.194 56(15)	609.13	0.131E-21	P(55)	P
27	2876.374 13(16)	1230.57	0.807E-22	P(30)	F	62	2879.200 01(28)	1094.57	0.381E-21	P(73)	A
28	2876.374 41(16)	1230.56	0.807E-22	P(30)	E	63	2879.267 38(22)	1038.59	0.343E-21	P(50)	C
29	2876.517 35(30)	1216.79	0.222E-21	P(77)	A	64	2879.335 99(14)	1163.41	0.894E-22	P(24)	F
30	2876.652 28(43)	755.38	0.399E-22	P(34)	Q	65	2879.336 19(14)	1163.41	0.894E-22	P(24)	E
31	2876.663 38(46)	755.63	0.398E-22	P(34)	R	66	2879.435 57(58)	739.49	0.197E-22	R(60)	T
32	2876.832 36(16)	700.04	0.905E-22	P(59)	P	67	2879.711 37(17)	1169.12	0.876E-22	P(24)	G
33	2876.845 68(37)	475.34	0.571E-22	R(48)	T	68	2879.776 33(15)	587.39	0.143E-21	P(54)	P
34	2876.902 96(23)	1123.25	0.245E-21	P(54)	B	69	2879.839 12(22)	1018.28	0.371E-21	P(49)	C
35	2876.946 34(23)	1123.88	0.245E-21	P(54)	C	70	2879.861 68(28)	1065.02	0.434E-21	P(72)	A

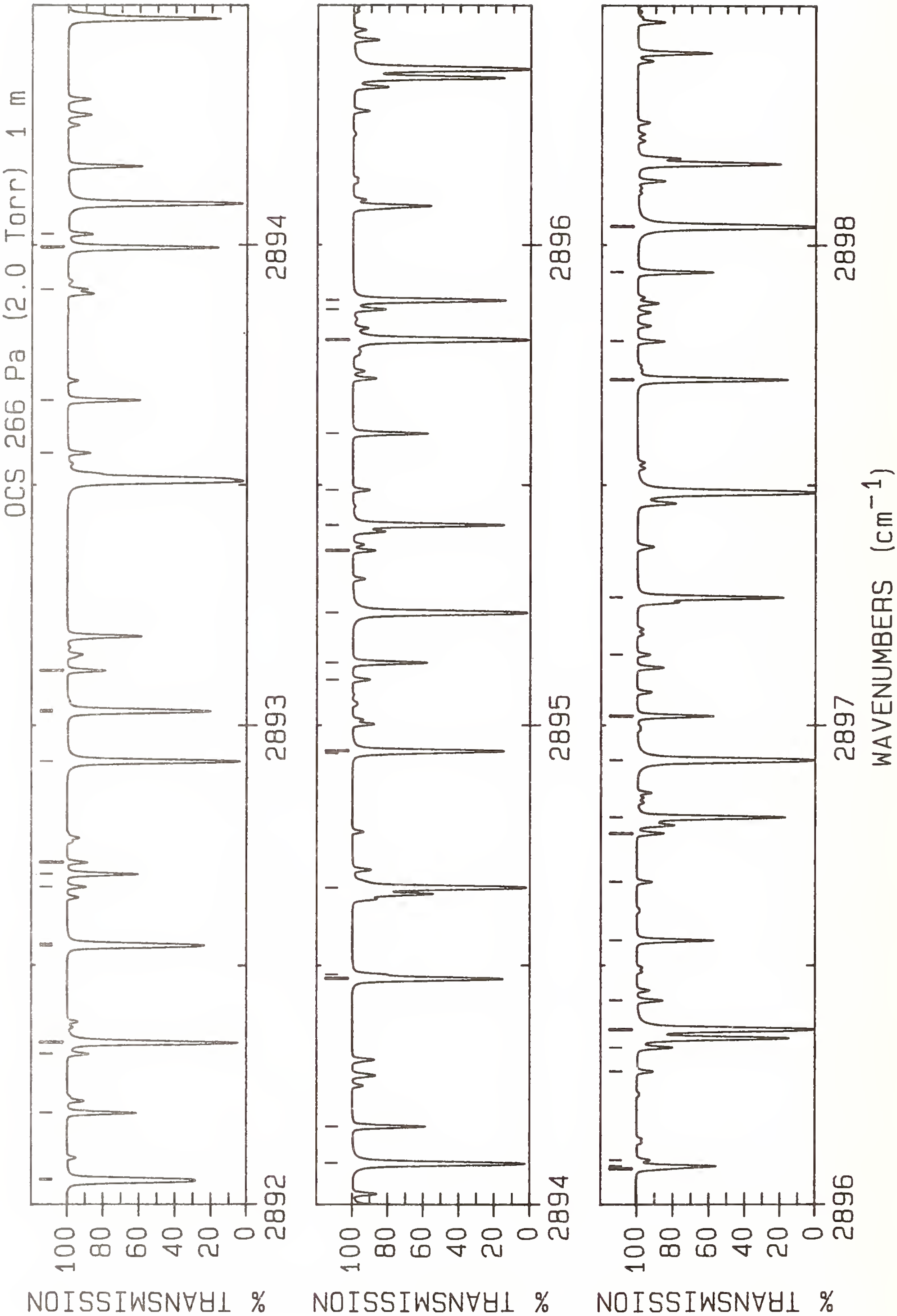

OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
2880
2881
2882
2883
2884
2885
2886
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2880.193 89(17)	1159.35	0.880E-22	P(23)	G
2	2880.297 15(14)	1144.28	0.898E-22	P(22)	F
3	2880.297 32(14)	1144.28	0.898E-22	P(22)	E
4	2880.354 58(15)	566.04	0.156E-21	P(53)	P
5	2880.374 60(22)	997.88	0.402E-21	P(48)	B
6	2880.519 74(28)	1035.87	0.493E-21	P(71)	A
7	2880.673 12(18)	1149.99	0.881E-22	P(22)	G
8	2880.772 84(14)	1135.33	0.895E-22	P(21)	F
9	2880.772 99(14)	1135.33	0.895E-22	P(21)	E
10	2880.941 19(22)	978.40	0.433E-21	P(47)	B
11	2880.972 40(22)	978.88	0.432E-21	P(47)	C
12	2881.149 07(19)	1141.04	0.879E-22	P(21)	G
13	2881.174 21(27)	1007.13	0.560E-21	P(70)	A
14	2881.245 26(15)	1126.78	0.888E-22	P(20)	F
15	2881.245 39(15)	1126.78	0.888E-22	P(20)	E
16	2881.533 94(22)	959.78	0.463E-21	P(46)	C
17	2881.621 73(20)	1132.50	0.872E-22	P(20)	G
18	2881.825 07(27)	978.78	0.633E-21	P(69)	A
19	2882.180 31(16)	1110.91	0.861E-22	P(18)	F
20	2882.180 42(16)	1110.90	0.861E-22	P(18)	E
21	2882.284 19(42)	1514.62	0.352E-22	P(26)	H
22	2882.298 03(40)	1514.78	0.352E-22	P(26)	I
23	2882.472 34(27)	950.85	0.715E-21	P(68)	A
24	2882.557 21(21)	1116.63	0.848E-22	P(18)	G
25	2882.620 36(22)	922.39	0.532E-21	P(44)	B
26	2882.632 52(14)	484.60	0.214E-21	P(49)	P
27	2882.770 34(41)	1504.09	0.356E-22	P(25)	H
28	2882.782 78(39)	1504.24	0.356E-22	P(25)	I
29	2882.971 30(31)	611.19	0.497E-22	P(21)	Q
30	2882.972 50(32)	611.28	0.496E-22	P(21)	R
31	2883.020 02(22)	1109.30	0.830E-22	P(17)	G
32	2883.116 00(27)	923.31	0.805E-21	P(67)	A
33	2883.173 23(21)	904.54	0.567E-21	P(43)	B
34	2883.253 20(40)	1493.97	0.359E-22	P(24)	H
35	2883.264 30(38)	1494.11	0.359E-22	P(24)	I
36	2883.434 10(31)	602.87	0.493E-22	P(20)	Q
37	2883.434 80(31)	602.95	0.492E-22	P(20)	R
38	2883.479 55(23)	1102.39	0.808E-22	P(16)	G
39	2883.558 41(17)	1090.14	0.790E-22	P(15)	F
40	2883.558 48(17)	1090.14	0.790E-22	P(15)	E
41	2883.722 68(21)	887.08	0.603E-21	P(42)	B
42	2883.893 57(31)	594.94	0.486E-22	P(19)	Q
43	2883.893 82(31)	595.02	0.486E-22	P(19)	R
44	2883.935 79(24)	1095.88	0.782E-22	P(15)	G
45	2884.011 25(18)	1084.04	0.758E-22	P(14)	F
46	2884.011 31(18)	1084.04	0.758E-22	P(14)	E
47	2884.268 70(21)	870.04	0.640E-21	P(41)	B
48	2884.290 71(21)	870.40	0.638E-21	P(41)	C
49	2884.304 20(14)	427.66	0.266E-21	P(46)	P
50	2884.349 55(31)	587.48	0.478E-22	P(18)	R
51	2884.349 72(32)	587.41	0.478E-22	P(18)	Q
52	2884.388 75(25)	1089.77	0.752E-22	P(14)	G
53	2884.392 53(27)	869.46	0.102E-20	P(65)	A
54	2884.460 83(19)	1078.34	0.721E-22	P(13)	F
55	2884.460 88(19)	1078.34	0.721E-22	P(13)	E
56	2884.802 00(31)	580.35	0.467E-22	P(17)	R
57	2884.802 54(32)	580.28	0.467E-22	P(17)	Q
58	2884.811 29(21)	853.39	0.677E-21	P(40)	B
59	2884.854 43(14)	409.47	0.284E-21	P(45)	P
60	2884.907 15(19)	1073.05	0.680E-22	P(12)	F
61	2884.907 18(19)	1073.05	0.680E-22	P(12)	E
62	2885.284 82(27)	1078.78	0.680E-22	P(12)	G
63	2885.369 70(21)	837.49	0.713E-21	P(39)	C
64	2885.401 17(14)	391.68	0.303E-21	P(44)	P
65	2885.654 65(26)	817.21	0.127E-20	P(63)	A
66	2885.727 93(28)	1073.90	0.639E-22	P(11)	G
67	2885.789 99(21)	1063.68	0.586E-22	P(10)	F
68	2885.790 01(21)	1063.68	0.586E-22	P(10)	E
69	2885.904 12(21)	821.64	0.750E-21	P(38)	C
70	2885.944 42(14)	374.27	0.322E-21	P(43)	P



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
2886 2887 2888
2888 2889 2890
2890 2891 2892
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2886.226 51(21)	1059.61	0.533E-22	P(9)	F	36	2888.792 52(43)	1404.09	0.277E-22	P(12)	I
2	2886.226 53(21)	1059.61	0.533E-22	P(9)	E	37	2888.826 29(23)	1315.02	0.370E-22	P(47)	D
3	2886.280 31(26)	791.70	0.142E-20	P(62)	A	38	2889.028 97(19)	734.85	0.964E-21	P(32)	B
4	2886.435 16(20)	806.20	0.788E-21	P(37)	C	39	2889.034 78(15)	1143.24	0.135E-21	P(37)	X
5	2886.484 18(14)	357.27	0.342E-21	P(42)	P	40	2889.039 68(19)	735.07	0.963E-21	P(32)	C
6	2886.860 58(69)	1224.09	0.121E-21	P(42)	X	41	2889.130 81(14)	278.16	0.443E-21	P(37)	P
7	2886.902 37(26)	766.58	0.157E-20	P(61)	A	42	2889.229 40(23)	1296.03	0.445E-22	P(46)	D
8	2886.947 47(20)	790.88	0.826E-21	P(36)	B	43	2889.232 57(44)	1399.22	0.260E-22	P(11)	I
9	2886.962 81(20)	791.16	0.825E-21	P(36)	C	44	2889.232 99(44)	1399.19	0.260E-22	P(11)	H
10	2887.015 05(36)	550.60	0.380E-22	P(12)	R	45	2889.354 63(25)	670.17	0.235E-20	P(57)	A
11	2887.016 81(37)	550.57	0.380E-22	P(12)	Q	46	2889.455 72(21)	1128.29	0.137E-21	P(36)	X
12	2887.020 46(14)	340.66	0.362E-21	P(41)	P	47	2889.540 81(19)	721.86	0.995E-21	P(31)	B
13	2887.089 76(22)	1052.69	0.414E-22	P(7)	F	48	2889.550 47(19)	722.07	0.994E-21	P(31)	C
14	2887.089 77(22)	1052.69	0.414E-22	P(7)	E	49	2889.649 73(14)	263.53	0.463E-21	P(36)	P
15	2887.305 65(54)	1207.11	0.124E-21	P(41)	X	50	2889.872 84(22)	1113.73	0.138E-21	P(35)	X
16	2887.487 09(20)	776.53	0.861E-21	P(35)	C	51	2889.958 70(25)	647.08	0.258E-20	P(56)	A
17	2887.516 49(22)	1049.84	0.348E-22	P(6)	F	52	2890.049 23(19)	709.27	0.102E-20	P(30)	B
18	2887.516 50(22)	1049.84	0.348E-22	P(6)	E	53	2890.057 88(19)	709.47	0.102E-20	P(30)	C
19	2887.520 83(26)	741.87	0.174E-20	P(60)	A	54	2890.165 18(14)	249.29	0.482E-21	P(35)	P
20	2887.553 26(14)	324.44	0.382E-21	P(40)	P	55	2890.286 50(23)	1099.58	0.139E-21	P(34)	X
21	2887.745 37(40)	1190.54	0.128E-21	P(40)	X	56	2890.476 62(19)	1241.47	0.706E-22	P(43)	D
22	2887.939 96(23)	1047.40	0.278E-22	P(5)	E	57	2890.677 16(13)	235.44	0.501E-21	P(34)	P
23	2887.939 96(23)	1047.40	0.278E-22	P(5)	F	58	2890.697 06(22)	1085.84	0.140E-21	P(33)	X
24	2887.995 05(20)	762.05	0.897E-21	P(34)	B	59	2890.904 16(17)	1224.09	0.806E-22	P(42)	D
25	2888.008 00(20)	762.31	0.896E-21	P(34)	C	60	2891.055 85(18)	685.31	0.107E-20	P(28)	B
26	2888.082 59(14)	308.62	0.402E-21	P(39)	P	61	2891.062 61(18)	685.49	0.107E-20	P(28)	C
27	2888.135 70(26)	717.57	0.193E-20	P(59)	A	62	2891.104 88(22)	1072.49	0.140E-21	P(32)	X
28	2888.179 94(26)	1174.37	0.130E-21	P(39)	X	63	2891.156 05(25)	602.10	0.310E-20	P(54)	A
29	2888.360 15(23)	1045.36	0.200E-22	P(4)	E	64	2891.337 05(16)	1207.11	0.912E-22	P(41)	D
30	2888.360 15(23)	1045.36	0.200E-22	P(4)	F	65	2891.510 30(23)	1059.56	0.140E-21	P(31)	X
31	2888.429 74(23)	1334.42	0.303E-22	P(48)	D	66	2891.690 77(13)	208.93	0.537E-21	P(32)	P
32	2888.513 72(19)	748.25	0.932E-21	P(33)	B	67	2891.749 34(25)	580.22	0.339E-20	P(53)	A
33	2888.525 53(19)	748.49	0.931E-21	P(33)	C	68	2891.774 91(16)	1190.54	0.102E-21	P(40)	D
34	2888.746 96(26)	693.67	0.213E-20	P(58)	A	69	2891.913 61(24)	1047.02	0.139E-21	P(30)	X
35	2888.792 49(42)	1404.06	0.277E-22	P(12)	H	70	2892.048 83(18)	662.98	0.111E-20	P(26)	B



OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
2892
2893
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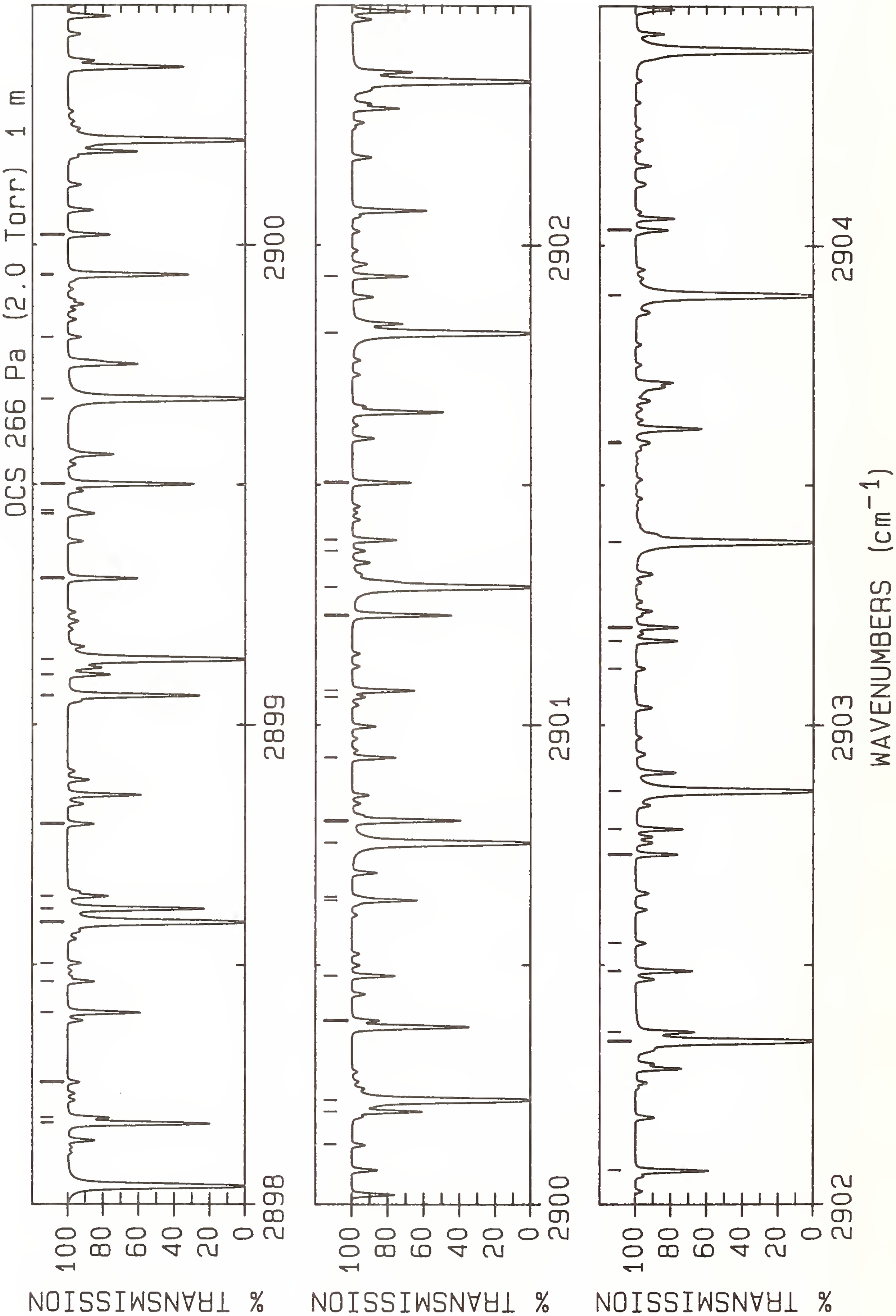
2898
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2892.048 83(18)	662.98	0.111E-20	P(26)	B	36	2895.416 91(17)	597.60	0.112E-20	P(19)	B
2	2892.053 87(18)	663.13	0.111E-20	P(26)	C	37	2895.417 38(17)	597.68	0.112E-20	P(19)	C
3	2892.192 40(13)	196.27	0.553E-21	P(31)	P	38	2895.489 64(23)	952.40	0.117E-21	P(21)	X
4	2892.315 12(26)	1034.89	0.138E-21	P(29)	X	39	2895.607 45(11)	118.72	0.625E-21	P(24)	P
5	2892.339 03(25)	558.74	0.369E-20	P(52)	A	40	2895.801 84(24)	438.37	0.587E-20	P(46)	A
6	2892.540 20(18)	652.42	0.112E-20	P(25)	B	41	2895.865 73(16)	1059.56	0.219E-21	P(31)	D
7	2892.544 45(18)	652.56	0.112E-20	P(25)	C	42	2895.884 44(17)	589.88	0.110E-20	P(18)	B
8	2892.663 78(16)	1158.61	0.126E-21	P(38)	D	43	2895.884 45(17)	589.95	0.110E-20	P(18)	C
9	2892.690 58(12)	184.01	0.568E-21	P(30)	P	44	2896.076 09(16)	1090.14	0.848E-22	R(15)	E
10	2892.715 08(27)	1023.17	0.137E-21	P(28)	X	45	2896.076 27(16)	1090.14	0.848E-22	R(15)	F
11	2892.925 14(25)	537.67	0.401E-20	P(51)	A	46	2896.081 59(11)	109.23	0.627E-21	P(23)	P
12	2893.028 17(17)	642.27	0.113E-20	P(24)	B	47	2896.094 24(23)	1089.77	0.809E-22	R(14)	G
13	2893.031 68(17)	642.40	0.113E-20	P(24)	C	48	2896.279 19(24)	935.82	0.108E-21	P(19)	X
14	2893.113 74(28)	1011.84	0.135E-21	P(27)	X	49	2896.328 94(16)	1047.02	0.232E-21	P(30)	D
15	2893.113 90(17)	1143.24	0.139E-21	P(37)	D	50	2896.366 43(24)	419.73	0.628E-20	P(45)	A
16	2893.567 19(17)	1128.29	0.152E-21	P(36)	D	51	2896.427 35(16)	1096.66	0.875E-22	R(16)	E
17	2893.676 61(12)	160.67	0.594E-21	P(28)	P	52	2896.427 57(16)	1096.66	0.875E-22	R(16)	F
18	2893.908 06(27)	990.41	0.131E-21	P(25)	X	53	2896.552 30(11)	100.13	0.627E-21	P(22)	P
19	2893.993 89(17)	623.18	0.114E-20	P(22)	B	54	2896.674 04(25)	928.13	0.103E-21	P(18)	X
20	2893.996 04(17)	623.29	0.114E-20	P(22)	C	55	2896.775 30(15)	1103.58	0.897E-22	R(17)	E
21	2894.023 21(17)	1113.73	0.165E-21	P(35)	D	56	2896.775 57(15)	1103.58	0.897E-22	R(17)	F
22	2894.086 57(24)	496.74	0.470E-20	P(49)	A	57	2896.808 50(17)	575.72	0.104E-20	P(16)	C
23	2894.164 47(12)	149.59	0.605E-21	P(27)	P	58	2896.809 29(17)	575.66	0.104E-20	P(16)	B
24	2894.471 63(17)	614.25	0.114E-20	P(21)	B	59	2896.927 44(24)	401.49	0.671E-20	P(44)	A
25	2894.473 18(17)	614.35	0.114E-20	P(21)	C	60	2897.019 59(12)	91.42	0.625E-21	P(21)	P
26	2894.481 50(16)	1099.58	0.179E-21	P(34)	D	61	2897.146 81(20)	1109.30	0.883E-22	R(17)	G
27	2894.661 91(24)	476.88	0.507E-20	P(48)	A	62	2897.265 50(17)	569.22	0.101E-20	P(15)	C
28	2894.941 62(16)	1085.84	0.192E-21	P(33)	D	63	2897.266 61(17)	569.16	0.101E-20	P(15)	B
29	2894.945 98(17)	605.72	0.113E-20	P(20)	B	64	2897.719 09(15)	1011.84	0.268E-21	P(27)	D
30	2894.946 96(17)	605.81	0.113E-20	P(20)	C	65	2897.719 14(17)	563.12	0.971E-21	P(14)	C
31	2895.094 74(24)	961.29	0.121E-21	P(22)	X	66	2897.720 52(17)	563.07	0.971E-21	P(14)	B
32	2895.129 89(12)	128.62	0.620E-21	P(25)	P	67	2897.799 29(14)	1126.78	0.939E-22	R(20)	E
33	2895.233 66(24)	457.42	0.546E-20	P(47)	A	68	2897.799 73(14)	1126.78	0.939E-22	R(20)	F
34	2895.363 67(17)	1078.34	0.782E-22	R(13)	E	69	2897.943 92(12)	75.19	0.612E-21	P(19)	P
35	2895.363 78(17)	1078.34	0.782E-22	R(13)	F	70	2898.038 74(24)	366.22	0.761E-20	P(42)	A



OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
2898
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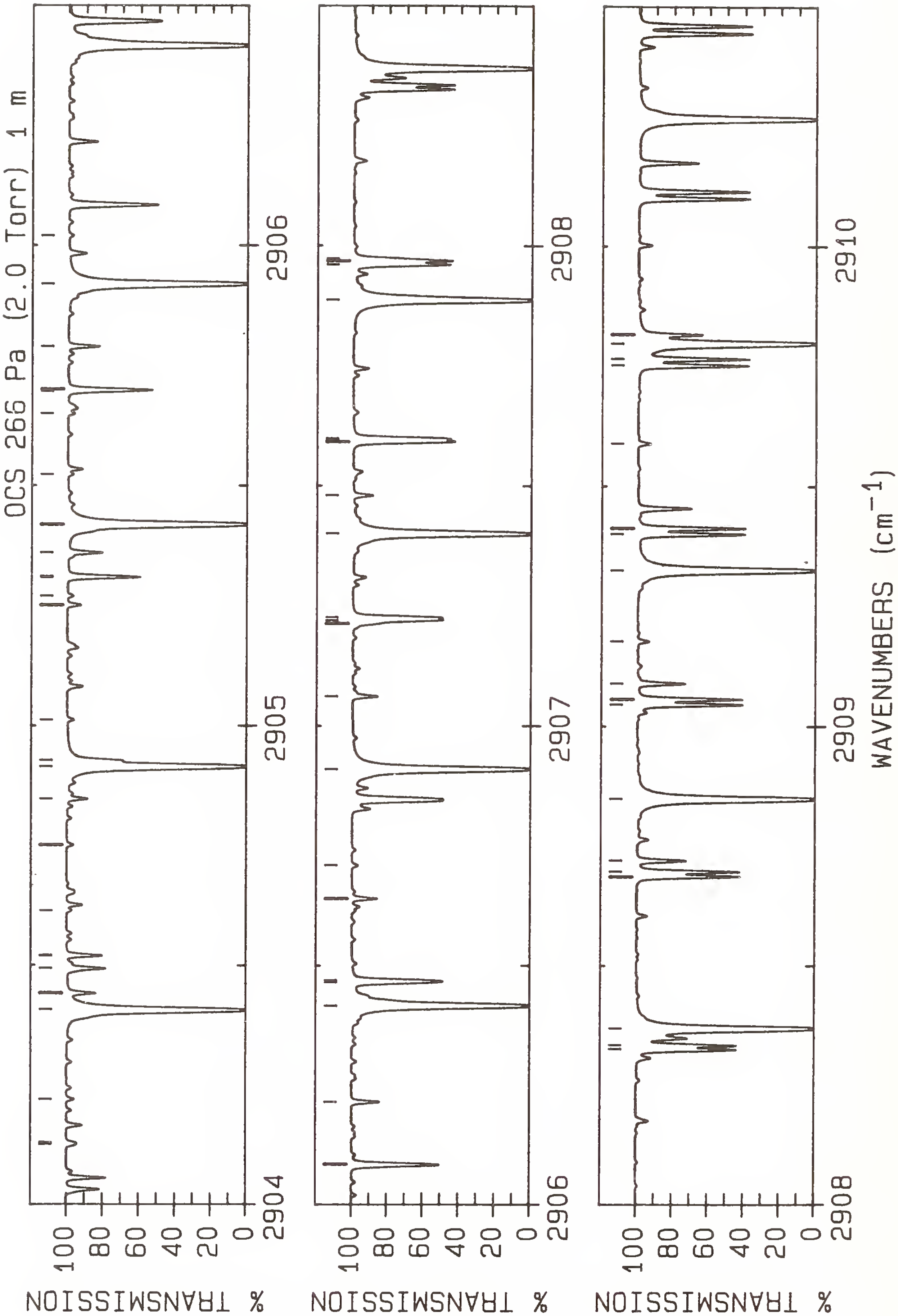
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2898.169 42(17)	557.42	0.926E-21	P(13)	C
2	2898.169 53(18)	1132.50	0.921E-22	R(20)	G
3	2898.171 02(17)	557.38	0.926E-21	P(13)	B
4	2898.181 66(15)	1000.93	0.278E-21	P(26)	D
5	2898.255 86(26)	901.44	0.824E-22	P(14)	X
6	2898.400 97(12)	67.68	0.601E-21	P(18)	P
7	2898.465 36(14)	1144.28	0.946E-22	R(22)	E
8	2898.465 96(14)	1144.28	0.946E-22	R(22)	F
9	2898.503 79(17)	1141.04	0.926E-22	R(21)	G
10	2898.589 03(24)	349.19	0.807E-20	P(41)	A
11	2898.616 34(17)	552.14	0.876E-21	P(12)	C
12	2898.618 12(17)	552.11	0.877E-21	P(12)	B
13	2898.643 40(15)	990.41	0.288E-21	P(25)	D
14	2898.793 41(14)	1153.64	0.944E-22	R(23)	E
15	2898.794 10(14)	1153.64	0.944E-22	R(23)	F
16	2899.059 92(18)	547.26	0.822E-21	P(11)	C
17	2899.061 82(18)	547.23	0.822E-21	P(11)	B
18	2899.104 07(14)	980.30	0.296E-21	P(24)	D
19	2899.135 75(24)	332.57	0.854E-20	P(40)	A
20	2899.304 82(13)	53.83	0.572E-21	P(16)	P
21	2899.439 53(15)	1173.59	0.929E-22	R(25)	E
22	2899.440 42(15)	1173.59	0.929E-22	R(25)	F
23	2899.446 46(31)	885.66	0.655E-22	P(11)	X
24	2899.500 13(18)	542.79	0.762E-21	P(10)	C
25	2899.502 11(18)	542.76	0.762E-21	P(10)	B
26	2899.678 90(24)	316.35	0.901E-20	P(39)	A
27	2899.807 58(16)	1179.29	0.909E-22	R(25)	G
28	2899.936 99(18)	538.72	0.698E-21	P(9)	C
29	2899.939 00(18)	538.70	0.698E-21	P(9)	B
30	2900.021 45(14)	961.29	0.309E-21	P(22)	D
31	2900.125 20(16)	1189.87	0.897E-22	R(26)	G
32	2900.195 05(13)	41.56	0.531E-21	P(14)	P
33	2900.218 49(24)	300.54	0.948E-20	P(38)	A
34	2900.383 67(16)	1206.55	0.884E-22	R(28)	E
35	2900.384 97(16)	1206.55	0.884E-22	R(28)	F

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2900.477 81(14)	952.40	0.313E-21	P(21)	D
37	2900.635 05(14)	36.02	0.507E-21	P(13)	P
38	2900.641 97(49)	873.53	0.480E-22	P(8)	X
39	2900.754 52(24)	285.13	0.995E-20	P(37)	A
40	2900.800 64(18)	531.81	0.557E-21	P(7)	C
41	2900.802 55(18)	531.80	0.557E-21	P(7)	B
42	2900.932 43(14)	943.90	0.316E-21	P(20)	D
43	2901.058 04(16)	1224.04	0.844E-22	R(29)	G
44	2901.071 65(14)	30.87	0.480E-21	P(12)	P
45	2901.227 42(18)	528.96	0.481E-21	P(6)	C
46	2901.229 22(18)	528.95	0.481E-21	P(6)	B
47	2901.286 98(24)	270.13	0.104E-19	P(36)	A
48	2901.362 30(17)	1236.25	0.822E-22	R(30)	G
49	2901.385 18(14)	935.82	0.317E-21	P(19)	D
50	2901.504 85(14)	26.12	0.450E-21	P(11)	P
51	2901.815 89(24)	255.53	0.109E-19	P(35)	A
52	2901.934 64(15)	21.77	0.418E-21	P(10)	P
53	2902.070 93(18)	524.49	0.316E-21	P(4)	C
54	2902.072 32(18)	524.48	0.316E-21	P(4)	B
55	2902.341 25(24)	241.34	0.113E-19	P(34)	A
56	2902.361 04(15)	17.81	0.384E-21	P(9)	P
57	2902.487 64(18)	522.86	0.226E-21	P(3)	C
58	2902.488 76(18)	522.86	0.226E-21	P(3)	B
59	2902.545 87(18)	1289.13	0.718E-22	R(34)	G
60	2902.731 09(15)	913.98	0.309E-21	P(16)	D
61	2902.784 03(15)	14.25	0.347E-21	P(8)	P
62	2902.863 06(24)	227.55	0.118E-19	P(33)	A
63	2903.117 52(19)	1318.01	0.660E-22	R(36)	G
64	2903.175 32(15)	907.50	0.302E-21	P(15)	D
65	2903.203 63(16)	11.08	0.308E-21	P(7)	P
66	2903.381 31(24)	214.17	0.122E-19	P(32)	A
67	2903.587 14(20)	1358.72	0.584E-22	R(39)	E
68	2903.591 06(20)	1358.74	0.584E-22	R(39)	F
69	2903.896 03(24)	201.19	0.126E-19	P(31)	A
70	2904.032 62(16)	5.94	0.226E-21	P(5)	P


OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
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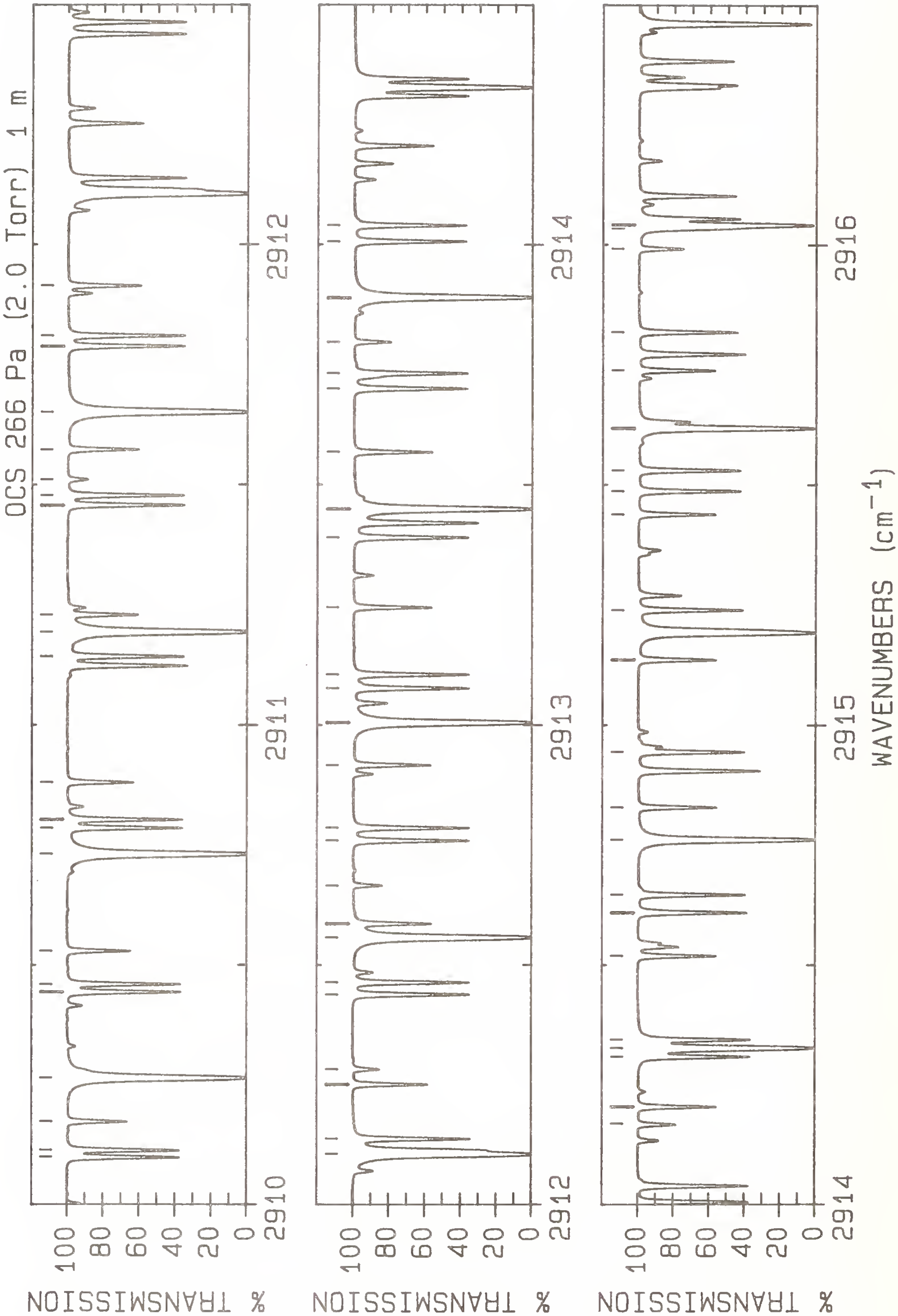
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2904.125 68(20)	1391.67	0.523E-22	R(41)	E
2	2904.130 33(20)	1391.69	0.523E-22	R(41)	F
3	2904.220 47(19)	1380.65	0.540E-22	R(40)	G
4	2904.407 19(24)	188.62	0.129E-19	P(30)	A
5	2904.442 02(16)	3.96	0.183E-21	P(4)	P
6	2904.493 70(14)	890.52	0.270E-21	P(12)	D
7	2904.519 79(18)	520.83	0.129E-21	R(1)	B
8	2904.520 79(18)	520.83	0.129E-21	R(1)	C
9	2904.614 08(43)	798.44	0.365E-22	R(37)	R
10	2904.751 72(19)	1414.41	0.480E-22	R(42)	G
11	2904.848 02(16)	2.38	0.138E-21	P(3)	P
12	2904.914 82(24)	176.45	0.133E-19	P(29)	A
13	2904.928 20(13)	885.66	0.255E-21	P(11)	D
14	2905.012 28(19)	1431.90	0.451E-22	R(43)	G
15	2905.250 61(17)	1.19	0.925E-22	P(2)	P
16	2905.269 45(19)	1449.79	0.423E-22	R(44)	G
17	2905.308 31(18)	522.86	0.319E-21	R(3)	B
18	2905.310 51(18)	522.86	0.319E-21	R(3)	C
19	2905.360 12(13)	881.21	0.239E-21	P(10)	D
20	2905.418 91(24)	164.69	0.135E-19	P(28)	A
21	2905.523 24(20)	1468.09	0.396E-22	R(45)	G
22	2905.649 81(17)	0.40	0.464E-22	P(1)	P
23	2905.695 95(46)	1599.65	0.307E-22	R(33)	H
24	2905.697 44(18)	524.48	0.405E-21	R(4)	B
25	2905.700 32(18)	524.49	0.405E-21	R(4)	C
26	2905.789 44(13)	877.17	0.221E-21	P(9)	D
27	2905.919 46(24)	153.34	0.138E-19	P(27)	A
28	2906.020 66(22)	1505.91	0.344E-22	R(47)	G
29	2906.083 15(18)	526.51	0.487E-21	R(5)	B
30	2906.086 75(18)	526.52	0.487E-21	R(5)	C
31	2906.216 10(14)	873.53	0.201E-21	P(8)	D
32	2906.416 48(24)	142.38	0.140E-19	P(26)	A
33	2906.465 44(18)	528.95	0.566E-21	R(6)	B
34	2906.469 82(18)	528.96	0.566E-21	R(6)	C
35	2906.640 08(14)	870.29	0.179E-21	P(7)	D

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2906.709 37(49)	867.46	0.433E-22	R(6)	X
37	2906.909 97(25)	131.84	0.142E-19	P(25)	A
38	2907.061 33(15)	867.46	0.157E-21	P(6)	D
39	2907.062 38(53)	966.45	0.204E-22	R(47)	Q
40	2907.212 58(16)	1.19	0.139E-21	R(2)	P
41	2907.219 75(18)	535.04	0.712E-21	R(8)	B
42	2907.225 83(18)	535.06	0.712E-21	R(8)	C
43	2907.399 93(25)	121.70	0.143E-19	P(24)	A
44	2907.479 83(16)	865.03	0.132E-21	P(5)	D
45	2907.591 77(18)	538.70	0.780E-21	R(9)	B
46	2907.594 75(16)	2.38	0.184E-21	R(3)	P
47	2907.598 78(18)	538.72	0.780E-21	R(9)	C
48	2907.886 36(25)	111.96	0.144E-19	P(23)	A
49	2907.960 36(17)	542.76	0.843E-21	R(10)	B
50	2907.968 34(17)	542.79	0.842E-21	R(10)	C
51	2907.973 53(16)	3.96	0.228E-21	R(4)	P
52	2908.325 52(17)	547.23	0.901E-21	R(11)	B
53	2908.334 53(17)	547.26	0.901E-21	R(11)	C
54	2908.369 27(25)	102.63	0.144E-19	P(22)	A
55	2908.687 25(17)	552.11	0.954E-21	R(12)	B
56	2908.697 33(17)	552.14	0.954E-21	R(12)	C
57	2908.720 83(15)	8.31	0.313E-21	R(6)	P
58	2908.848 66(25)	93.71	0.144E-19	P(21)	A
59	2909.045 55(17)	557.38	0.100E-20	R(13)	B
60	2909.056 75(17)	557.42	0.100E-20	R(13)	C
61	2909.089 37(15)	11.08	0.353E-21	R(7)	P
62	2909.176 58(26)	890.52	0.810E-22	R(12)	X
63	2909.324 53(25)	85.19	0.143E-19	P(20)	A
64	2909.400 41(17)	563.07	0.104E-20	R(14)	B
65	2909.412 78(17)	563.12	0.104E-20	R(14)	C
66	2909.589 43(26)	895.77	0.871E-22	R(13)	X
67	2909.751 83(17)	569.16	0.108E-20	R(15)	B
68	2909.765 42(17)	569.22	0.108E-20	R(15)	C
69	2909.796 88(25)	77.08	0.141E-19	P(19)	A
70	2909.816 18(14)	17.81	0.427E-21	R(9)	P


OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100
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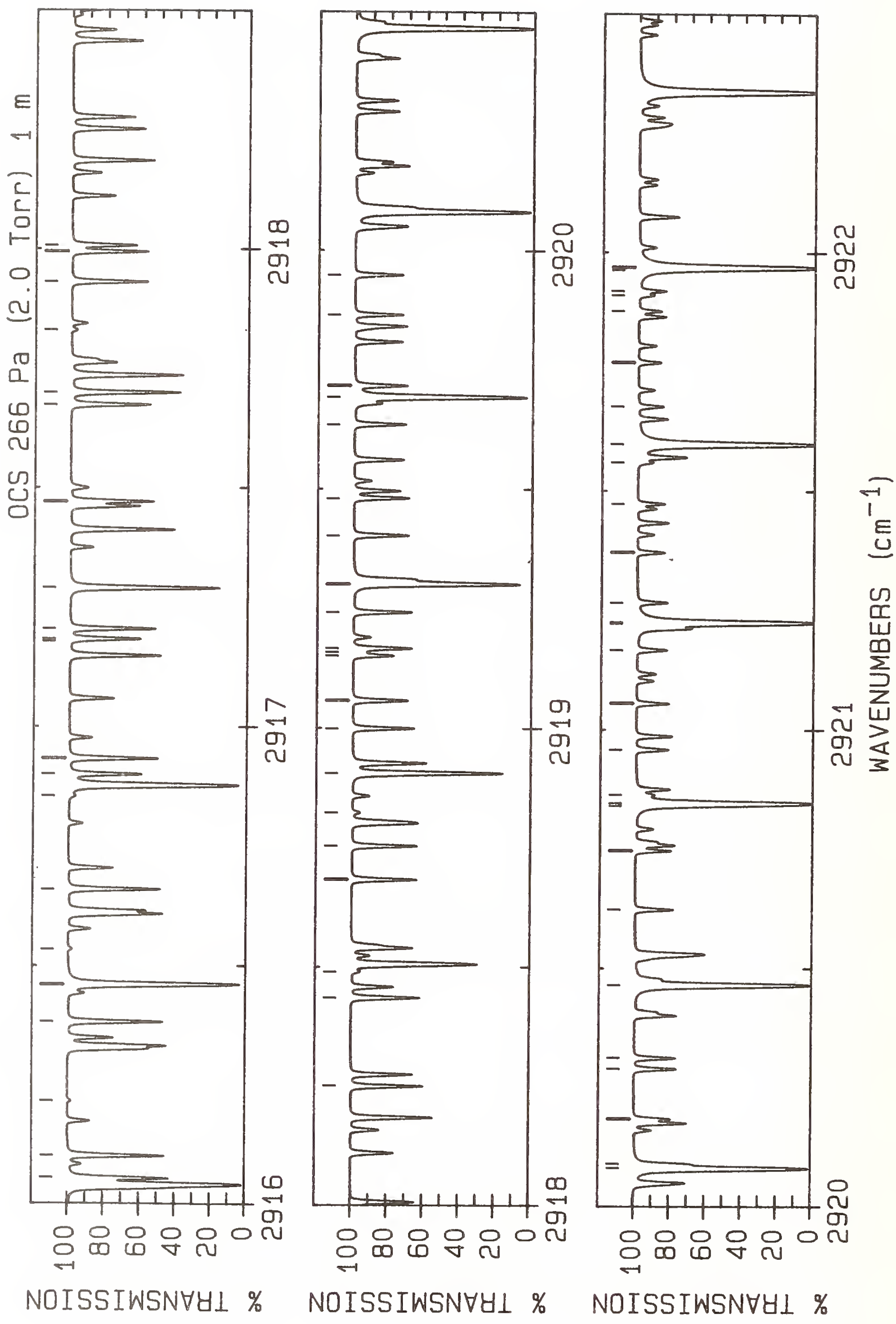
WAVENUMBERS (cm⁻¹)

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2910.099 82(17)	575.66	0.112E-20	R(16)	B	36	2913.076 48(18)	652.42	0.118E-20	R(25)	B
2	2910.114 67(17)	575.72	0.112E-20	R(16)	C	37	2913.104 83(18)	652.56	0.118E-20	R(25)	C
3	2910.174 45(14)	21.77	0.461E-21	R(10)	P	38	2913.244 37(12)	75.19	0.647E-21	R(19)	P
4	2910.265 71(25)	69.37	0.139E-19	P(18)	A	39	2913.389 93(18)	662.98	0.116E-20	R(26)	B
5	2910.444 36(17)	582.57	0.114E-20	R(17)	B	40	2913.449 25(25)	26.78	0.104E-19	P(11)	A
6	2910.460 52(17)	582.63	0.114E-20	R(17)	C	41	2913.568 23(11)	83.11	0.654E-21	R(20)	P
7	2910.529 30(14)	26.12	0.493E-21	R(11)	P	42	2913.699 92(18)	673.94	0.114E-20	R(27)	B
8	2910.731 04(25)	62.07	0.136E-19	P(17)	A	43	2913.731 76(18)	674.10	0.114E-20	R(27)	C
9	2910.785 46(17)	589.88	0.117E-20	R(18)	B	44	2913.796 74(14)	881.21	0.260E-21	R(10)	D
10	2910.802 98(17)	589.95	0.117E-20	R(18)	C	45	2913.888 63(11)	91.42	0.658E-21	R(21)	P
11	2910.880 72(13)	30.87	0.521E-21	R(12)	P	46	2913.890 01(25)	22.31	0.970E-20	P(10)	A
12	2911.142 04(17)	597.68	0.118E-20	R(19)	C	47	2914.006 43(19)	685.31	0.112E-20	R(28)	B
13	2911.192 84(25)	55.17	0.132E-19	P(16)	A	48	2914.040 09(19)	685.49	0.112E-20	R(28)	C
14	2911.228 71(13)	36.02	0.548E-21	R(13)	P	49	2914.168 58(14)	885.66	0.275E-21	R(11)	D
15	2911.457 31(17)	605.72	0.119E-20	R(20)	B	50	2914.205 56(11)	100.13	0.660E-21	R(22)	P
16	2911.477 70(17)	605.81	0.119E-20	R(20)	C	51	2914.309 47(19)	697.09	0.110E-20	R(29)	B
17	2911.510 81(15)	863.01	0.134E-21	R(4)	D	52	2914.327 26(25)	18.26	0.890E-20	P(9)	A
18	2911.573 27(13)	41.56	0.571E-21	R(14)	P	53	2914.344 98(19)	697.27	0.109E-20	R(29)	C
19	2911.651 14(25)	48.68	0.128E-19	P(15)	A	54	2914.519 01(12)	109.23	0.659E-21	R(23)	P
20	2911.788 06(17)	614.25	0.120E-20	R(21)	B	55	2914.609 03(19)	709.27	0.107E-20	R(30)	B
21	2911.809 95(17)	614.35	0.120E-20	R(21)	C	56	2914.646 44(19)	709.47	0.107E-20	R(30)	C
22	2911.914 38(12)	47.49	0.592E-21	R(15)	P	57	2914.761 01(25)	14.61	0.806E-20	P(8)	A
23	2912.105 93(25)	42.60	0.123E-19	P(14)	A	58	2914.828 99(12)	118.72	0.655E-21	R(24)	P
24	2912.138 79(17)	623.29	0.120E-20	R(22)	C	59	2914.944 47(19)	722.07	0.104E-20	R(31)	C
25	2912.252 05(12)	53.83	0.610E-21	R(16)	P	60	2915.135 49(12)	128.62	0.650E-21	R(25)	P
26	2912.283 51(14)	867.46	0.181E-21	R(6)	D	61	2915.239 04(20)	735.07	0.100E-20	R(32)	C
27	2912.439 19(18)	632.52	0.120E-20	R(23)	B	62	2915.438 50(12)	138.90	0.642E-21	R(26)	P
28	2912.464 22(18)	632.64	0.120E-20	R(23)	C	63	2915.486 82(20)	748.25	0.969E-21	R(33)	B
29	2912.557 21(25)	36.92	0.117E-19	P(13)	A	64	2915.530 18(20)	748.49	0.968E-21	R(33)	C
30	2912.586 28(12)	60.55	0.625E-21	R(17)	P	65	2915.618 00(25)	8.52	0.622E-20	P(6)	A
31	2912.665 78(13)	870.29	0.203E-21	R(7)	D	66	2915.738 02(12)	149.59	0.632E-21	R(27)	P
32	2912.759 57(18)	642.27	0.119E-20	R(24)	B	67	2915.817 86(20)	762.31	0.932E-21	R(34)	C
33	2912.786 24(18)	642.40	0.119E-20	R(24)	C	68	2915.991 66(14)	913.98	0.321E-21	R(16)	D
34	2912.917 05(12)	67.68	0.638E-21	R(18)	P	69	2916.034 04(12)	160.67	0.620E-21	R(28)	P
35	2913.004 98(25)	31.64	0.111E-19	P(12)	A	70	2916.041 24(25)	6.09	0.525E-20	P(5)	A



OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
100
80
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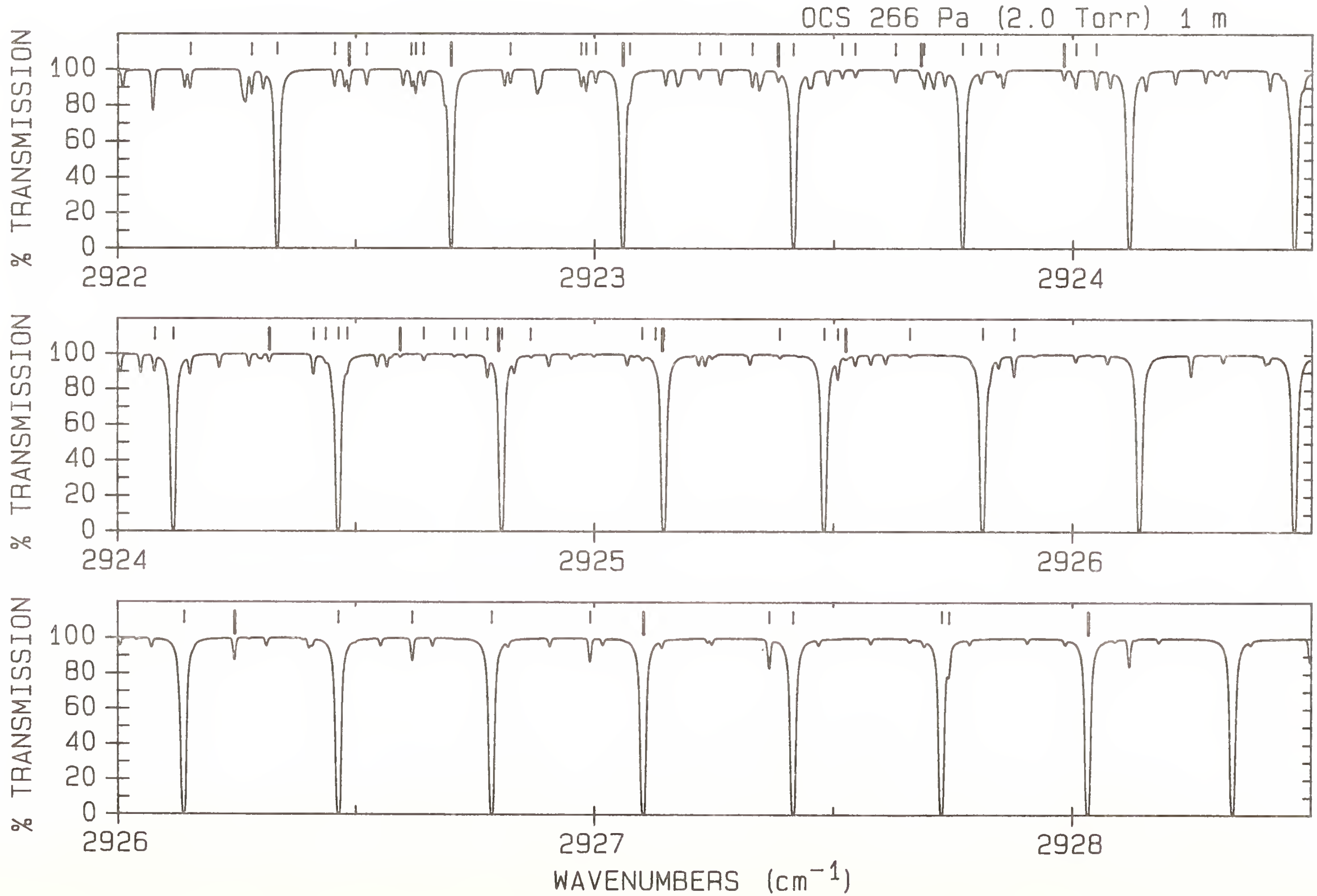
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2916.054 57(20)	776.26	0.895E-21	R(35)	B	36	2919.402 93(22)	997.88	0.416E-21	R(48)	B
2	2916.102 09(20)	776.53	0.894E-21	R(35)	C	37	2919.481 06(22)	998.38	0.415E-21	R(48)	C
3	2916.216 67(17)*	670.17	0.251E-22	P(57)	W	38	2919.635 81(22)	1017.76	0.385E-21	R(49)	B
4	2916.382 87(21)	791.16	0.856E-21	R(36)	C	39	2919.692 63(25)	2.43	0.428E-20	R(3)	A
5	2916.460 98(25)	4.06	0.424E-20	P(4)	A	40	2919.716 52(22)	1018.28	0.384E-21	R(49)	C
6	2916.534 98(17)*	647.08	0.277E-22	P(56)	W	41	2919.865 15(22)	1038.05	0.356E-21	R(50)	B
7	2916.660 18(21)	806.20	0.817E-21	R(37)	C	42	2919.948 47(22)	1038.59	0.355E-21	R(50)	C
8	2916.855 49(17)*	624.39	0.305E-22	P(55)	W	43	2920.080 79(25)	4.06	0.531E-20	R(4)	A
9	2916.901 06(13)	196.27	0.576E-21	R(31)	P	44	2920.090 95(22)	1058.74	0.328E-21	R(51)	B
10	2916.934 03(21)	821.64	0.778E-21	R(38)	C	45	2920.185 54(16)	1023.17	0.254E-21	R(28)	D
11	2917.178 19(17)*	602.10	0.335E-22	P(54)	W	46	2920.290 41(14)	391.68	0.313E-21	R(44)	P
12	2917.183 04(13)	208.93	0.558E-21	R(32)	P	47	2920.313 19(23)	1079.84	0.302E-21	R(52)	B
13	2917.204 41(21)	837.49	0.739E-21	R(39)	C	48	2920.465 44(25)	6.09	0.631E-20	R(5)	A
14	2917.289 93(25)	1.22	0.215E-20	P(2)	A	49	2920.623 19(23)	1101.95	0.276E-21	R(53)	C
15	2917.471 32(21)	853.74	0.700E-21	R(40)	C	50	2920.747 02(23)	1123.25	0.254E-21	R(54)	B
16	2917.673 82(21)	870.04	0.663E-21	R(41)	B	51	2920.841 03(23)	1123.88	0.253E-21	R(54)	C
17	2917.699 15(25)	0.41	0.108E-20	P(1)	A	52	2920.846 57(25)	8.52	0.727E-20	R(6)	A
18	2917.830 03(16)*	558.74	0.401E-22	P(52)	W	53	2920.864 49(16)*	383.65	0.794E-22	P(43)	W
19	2917.931 41(22)	887.08	0.625E-21	R(42)	B	54	2920.958 59(23)	1145.56	0.232E-21	R(55)	B
20	2917.994 70(22)	887.47	0.623E-21	R(42)	C	55	2921.055 35(23)	1146.22	0.231E-21	R(55)	C
21	2918.007 81(14)	249.29	0.501E-21	R(35)	P	56	2921.166 60(23)	1168.28	0.211E-21	R(56)	B
22	2918.251 16(22)	904.94	0.586E-21	R(43)	C	57	2921.222 18(16)	1059.56	0.214E-21	R(31)	D
23	2918.436 03(22)	922.39	0.551E-21	R(44)	B	58	2921.224 18(25)	11.36	0.820E-20	R(7)	A
24	2918.490 30(16)*	517.00	0.475E-22	P(50)	W	59	2921.266 12(23)	1168.96	0.211E-21	R(56)	C
25	2918.683 05(22)	940.66	0.515E-21	R(45)	B	60	2921.371 05(23)	1191.40	0.192E-21	R(57)	B
26	2918.753 62(22)	941.10	0.514E-21	R(45)	C	61	2921.473 34(23)	1192.10	0.192E-21	R(57)	C
27	2918.823 52(16)*	496.74	0.515E-22	P(49)	W	62	2921.559 98(16)*	349.19	0.898E-22	P(41)	W
28	2918.905 77(25)	0.41	0.216E-20	R(1)	A	63	2921.598 26(25)	14.61	0.908E-20	R(8)	A
29	2918.999 60(22)	959.78	0.480E-21	R(46)	C	64	2921.677 02(24)	1215.65	0.174E-21	R(58)	C
30	2919.057 92(14)	308.62	0.417E-21	R(39)	P	65	2921.769 23(24)	1238.86	0.158E-21	R(59)	B
31	2919.151 18(15)	990.41	0.288E-21	R(25)	D	66	2921.877 14(24)	1239.61	0.157E-21	R(59)	C
32	2919.158 78(16)*	476.88	0.557E-22	P(48)	W	67	2921.910 45(16)*	332.57	0.951E-22	P(40)	W
33	2919.166 50(22)	978.40	0.448E-21	R(47)	B	68	2921.919 39(17)	1085.84	0.186E-21	R(33)	D
34	2919.242 08(22)	978.88	0.447E-21	R(47)	C	69	2921.962 95(24)	1263.19	0.143E-21	R(60)	B
35	2919.300 95(25)	1.22	0.323E-20	R(2)	A	70	2921.968 82(25)	18.26	0.992E-20	R(9)	A



OCS 266 Pa (2.0 Torr) 1 m
% TRANSMISSION
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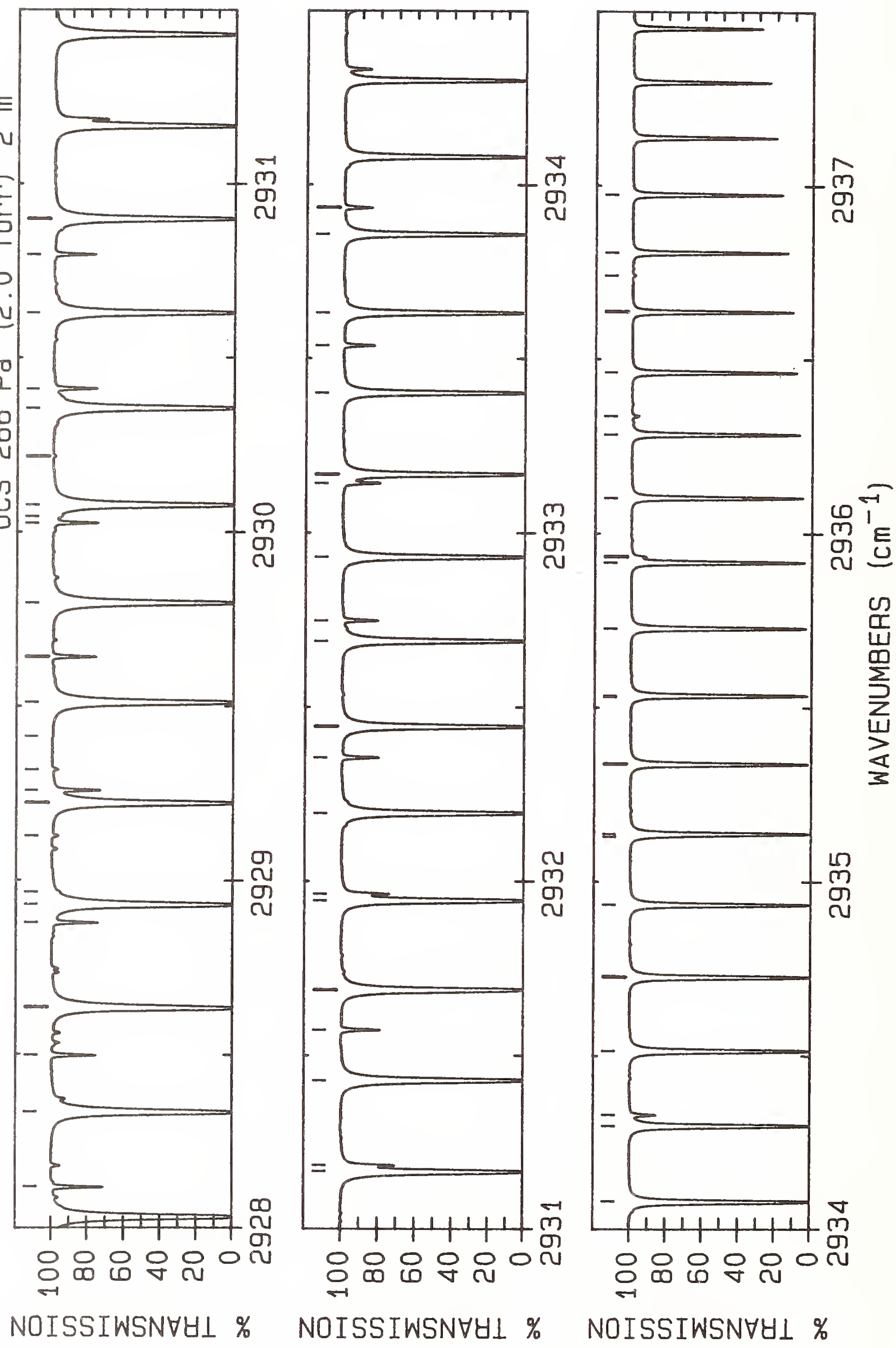
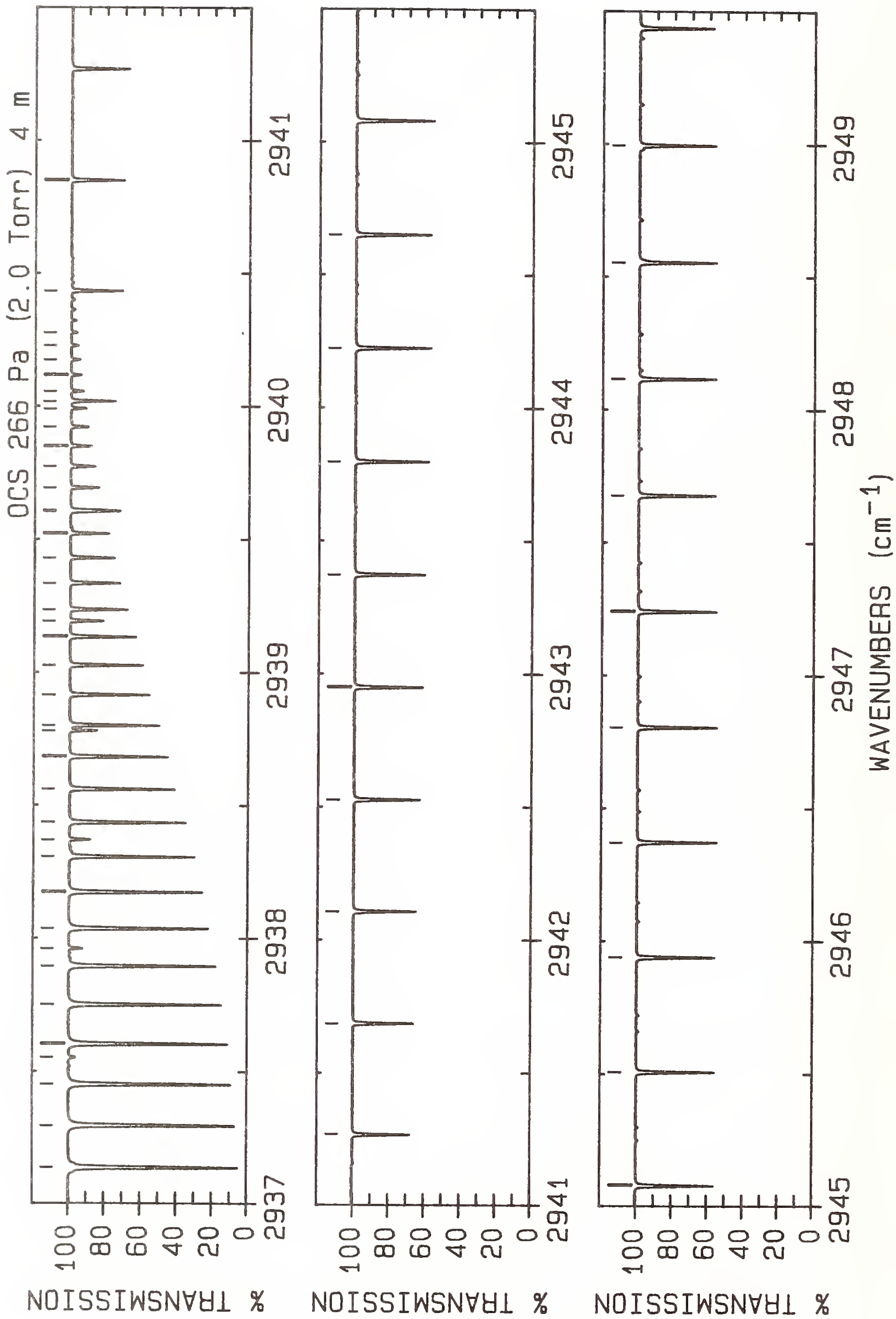
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2922.153 10(24)	1287.93	0.129E-21	R(61)	B	36	2924.411 93(17)*	227.55	0.132E-21	P(33)	W
2	2922.282 67(15)	566.04	0.161E-21	R(53)	P	37	2924.437 70(38)	1676.68	0.238E-22	R(75)	B
3	2922.335 86(25)	22.31	0.107E-19	R(10)	A	38	2924.463 82(25)	55.17	0.141E-19	R(16)	A
4	2922.456 14(25)	1313.90	0.115E-21	R(62)	C	39	2924.482 76(17)	848.22	0.501E-22	R(65)	P
5	2922.485 97(15)	587.39	0.148E-21	R(54)	P	40	2924.592 50(38)	1677.89	0.237E-22	R(75)	C
6	2922.522 64(25)	1338.62	0.104E-21	R(63)	B	41	2924.642 49(18)	874.29	0.448E-22	R(66)	P
7	2922.616 68(16)*	300.54	0.106E-21	P(38)	W	42	2924.706 32(47)	1738.67	0.181E-22	R(77)	B
8	2922.625 41(17)	1113.73	0.158E-21	R(35)	D	43	2924.731 60(42)	1708.71	0.207E-22	R(76)	C
9	2922.642 01(25)	1339.47	0.103E-21	R(63)	C	44	2924.775 85(17)*	214.17	0.137E-21	P(32)	W
10	2922.699 36(25)	26.78	0.114E-19	R(11)	A	45	2924.798 59(19)	900.76	0.400E-22	R(67)	P
11	2922.824 30(25)	1365.45	0.925E-22	R(64)	C	46	2924.806 07(25)	62.07	0.144E-19	R(17)	A
12	2922.972 40(17)*	285.13	0.111E-21	P(37)	W	47	2924.867 08(47)	1739.94	0.180E-22	R(77)	C
13	2922.982 84(16)	1128.29	0.144E-21	R(36)	D	48	2925.099 90(23)	954.88	0.316E-22	R(69)	P
14	2923.003 02(25)	1391.83	0.826E-22	R(65)	C	49	2925.127 16(58)	1803.61	0.135E-22	R(79)	C
15	2923.059 33(25)	31.64	0.121E-19	R(12)	A	50	2925.141 34(17)*	201.19	0.141E-21	P(31)	W
16	2923.074 13(16)	653.80	0.113E-21	R(57)	P	51	2925.144 77(25)	69.37	0.147E-19	R(18)	A
17	2923.218 64(26)	1444.85	0.658E-22	R(67)	B	52	2925.386 73(30)	1010.57	0.248E-22	R(71)	P
18	2923.262 93(16)	676.72	0.103E-21	R(58)	P	53	2925.479 92(25)	77.08	0.149E-19	R(19)	A
19	2923.329 80(17)*	270.13	0.117E-21	P(36)	W	54	2925.508 38(17)*	188.62	0.145E-21	P(30)	W
20	2923.383 65(26)	1472.41	0.584E-22	R(68)	B	55	2925.524 72(35)	1039.01	0.219E-22	R(72)	P
21	2923.415 77(25)	36.92	0.127E-19	R(13)	A	56	2925.659 10(42)	1067.84	0.193E-22	R(73)	P
22	2923.517 65(26)	1473.41	0.581E-22	R(68)	C	57	2925.811 49(25)	85.19	0.151E-19	R(20)	A
23	2923.545 05(27)	1500.39	0.517E-22	R(69)	B	58	2925.876 93(17)*	176.45	0.149E-21	P(29)	W
24	2923.629 62(17)	723.75	0.847E-22	R(60)	P	59	2926.139 51(25)	93.71	0.151E-19	R(21)	A
25	2923.682 01(27)	1501.41	0.515E-22	R(69)	C	60	2926.246 99(17)*	164.69	0.152E-21	P(28)	W
26	2923.688 88(17)*	255.53	0.122E-21	P(35)	W	61	2926.463 95(25)	102.63	0.152E-19	R(22)	A
27	2923.768 66(25)	42.60	0.132E-19	R(14)	A	62	2926.618 51(17)*	153.34	0.155E-21	P(27)	W
28	2923.807 52(17)	747.86	0.766E-22	R(61)	P	63	2926.784 82(25)	111.96	0.151E-19	R(23)	A
29	2923.842 77(28)	1529.81	0.455E-22	R(70)	C	64	2926.991 49(17)*	142.38	0.158E-21	P(26)	W
30	2923.981 78(17)	772.36	0.691E-22	R(62)	P	65	2927.102 10(24)	121.70	0.150E-19	R(24)	A
31	2924.007 63(30)	1586.72	0.354E-22	R(72)	B	66	2927.365 91(17)*	131.84	0.160E-21	P(25)	W
32	2924.049 60(17)*	241.34	0.127E-21	P(34)	W	67	2927.415 81(24)	131.84	0.149E-19	R(25)	A
33	2924.078 28(16)	1174.37	0.106E-21	R(39)	D	68	2927.725 92(24)	142.38	0.147E-19	R(26)	A
34	2924.118 02(25)	48.68	0.137E-19	R(15)	A	69	2927.741 73(17)*	121.70	0.161E-21	P(24)	W
35	2924.319 40(17)	822.54	0.558E-22	R(64)	P	70	2928.032 44(24)	153.34	0.144E-19	R(27)	A


OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
2928
2929
2930
2931
2931
2932
2933
2934
2934
2935
2936
2937
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2928.118 4	551.71	0.307E-22	R(52)	L
2	2928.118 95(17)*	111.96	0.162E-21	P(23)	W
3	2928.335 37(24)	164.69	0.141E-19	R(28)	A
4	2928.497 55(17)*	102.63	0.163E-21	P(22)	W
5	2928.634 69(24)	176.45	0.138E-19	R(29)	A
6	2928.877 51(17)*	93.71	0.162E-21	P(21)	W
7	2928.930 40(24)	188.62	0.135E-19	R(30)	A
8	2928.966 31(42)	1395.03	0.669E-23	R(51)	D
9	2929.127 2	661.74	0.197E-22	R(57)	L
10	2929.222 50(24)	201.19	0.131E-19	R(31)	A
11	2929.258 80(17)*	85.19	0.161E-21	P(20)	W
12	2929.317 9	684.94	0.179E-22	R(58)	L
13	2929.414 01(44)	1416.04	0.263E-23	R(52)	D
14	2929.510 99(24)	214.17	0.127E-19	R(32)	A
15	2929.641 42(17)*	77.08	0.159E-21	P(19)	W
16	2929.795 85(24)	227.55	0.122E-19	R(33)	A
17	2930.025 35(17)*	69.37	0.156E-21	P(18)	W
18	2930.044 1	781.74	0.119E-22	R(62)	L
19	2930.077 09(24)	241.34	0.118E-19	R(34)	A
20	2930.216 5	806.93	0.107E-22	R(63)	L
21	2930.354 70(24)	255.53	0.113E-19	R(35)	A
22	2930.410 58(17)*	62.07	0.153E-21	P(17)	W
23	2930.628 67(24)	270.13	0.108E-19	R(36)	A
24	2930.797 08(18)*	55.17	0.149E-21	P(16)	W
25	2930.899 01(24)	285.13	0.103E-19	R(37)	A
26	2931.165 70(24)	300.54	0.984E-20	R(38)	A
27	2931.184 85(18)*	48.68	0.144E-21	P(15)	W
28	2931.428 73(24)	316.35	0.934E-20	R(39)	A
29	2931.573 88(18)*	42.60	0.139E-21	P(14)	W
30	2931.688 12(24)	332.57	0.885E-20	R(40)	A
31	2931.943 85(24)	349.19	0.837E-20	R(41)	A
32	2931.964 15(18)*	36.92	0.132E-21	P(13)	W
33	2932.195 91(24)	366.22	0.789E-20	R(42)	A
34	2932.355 65(19)*	31.64	0.125E-21	P(12)	W
35	2932.444 31(24)	383.65	0.741E-20	R(43)	A

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2932.689 03(24)	401.49	0.695E-20	R(44)	A
37	2932.748 37(19)*	26.78	0.118E-21	P(11)	W
38	2932.930 08(24)	419.73	0.651E-20	R(45)	A
39	2933.142 31(19)*	22.31	0.109E-21	P(10)	W
40	2933.167 45(24)	438.37	0.607E-20	R(46)	A
41	2933.401 14(24)	457.42	0.565E-20	R(47)	A
42	2933.537 45(19)*	18.26	0.100E-21	P(9)	W
43	2933.631 14(25)	476.88	0.525E-20	R(48)	A
44	2933.857 45(25)	496.74	0.486E-20	R(49)	A
45	2933.933 79(20)*	14.61	0.909E-22	P(8)	W
46	2934.080 06(25)	517.00	0.450E-20	R(50)	A
47	2934.298 98(25)	537.67	0.415E-20	R(51)	A
48	2934.331 31(20)*	11.36	0.808E-22	P(7)	W
49	2934.514 19(25)	558.74	0.381E-20	R(52)	A
50	2934.725 70(25)	580.22	0.350E-20	R(53)	A
51	2934.730 02(20)*	8.52	0.702E-22	P(6)	W
52	2934.933 50(25)	602.10	0.321E-20	R(54)	A
53	2935.129 90(20)*	6.09	0.592E-22	P(5)	W
54	2935.137 59(25)	624.39	0.293E-20	R(55)	A
55	2935.337 96(26)	647.08	0.267E-20	R(56)	A
56	2935.530 96(20)*	4.06	0.479E-22	P(4)	W
57	2935.534 61(26)	670.17	0.243E-20	R(57)	A
58	2935.727 55(26)	693.67	0.221E-20	R(58)	A
59	2935.916 76(26)	717.57	0.200E-20	R(59)	A
60	2935.933 19(21)*	2.43	0.362E-22	P(3)	W
61	2936.102 24(26)	741.87	0.180E-20	R(60)	A
62	2936.284 00(26)	766.58	0.163E-20	R(61)	A
63	2936.336 58(21)*	1.22	0.243E-22	P(2)	W
64	2936.462 03(26)	791.70	0.146E-20	R(62)	A
65	2936.636 32(27)	817.21	0.131E-20	R(63)	A
66	2936.741 13(21)*	0.41	0.122E-22	P(1)	W
67	2936.806 88(27)	843.13	0.118E-20	R(64)	A
68	2936.973 70(27)	869.46	0.105E-20	R(65)	A



OCS 266 Pa (2.0 Torr) 4 m
% TRANSMISSION
100
80
60
40
20
0
2937
2938
2939
2940
2941
2942
2943
2944
2945
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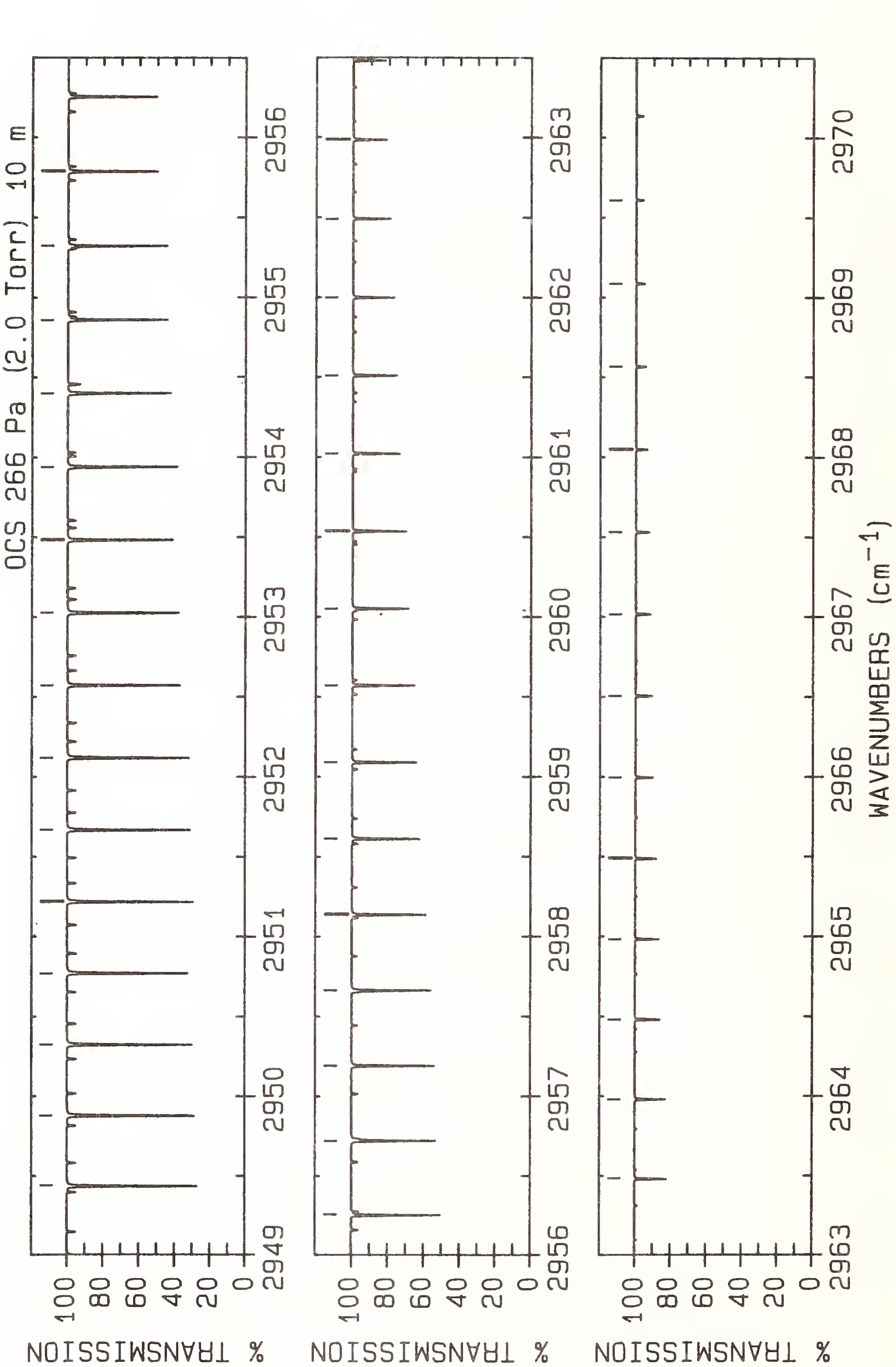
2949
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2937.136 79(27)	896.18	0.936E-21	R(66)	A
2	2937.296 13(27)	923.31	0.833E-21	R(67)	A
3	2937.451 73(27)	950.85	0.739E-21	R(68)	A
4	2937.553 72(21)*	0.00	0.122E-22	R(0)	W
5	2937.603 58(28)	978.78	0.655E-21	R(69)	A
6	2937.751 68(28)	1007.13	0.579E-21	R(70)	A
7	2937.896 04(28)	1035.87	0.510E-21	R(71)	A
8	2937.961 75(21)*	0.41	0.244E-22	R(1)	W
9	2938.036 64(29)	1065.02	0.449E-21	R(72)	A
10	2938.173 49(29)	1094.57	0.394E-21	R(73)	A
11	2938.306 59(30)	1124.52	0.346E-21	R(74)	A
12	2938.370 94(20)*	1.22	0.364E-22	R(2)	W
13	2938.435 92(30)	1154.87	0.302E-21	R(75)	A
14	2938.561 50(30)	1185.63	0.264E-21	R(76)	A
15	2938.683 31(31)	1216.79	0.229E-21	R(77)	A
16	2938.781 29(20)*	2.43	0.483E-22	R(3)	W
17	2938.801 36(31)	1248.35	0.199E-21	R(78)	A
18	2938.915 63(32)	1280.32	0.173E-21	R(79)	A
19	2939.026 14(33)	1312.69	0.150E-21	R(80)	A
20	2939.132 86(33)	1345.46	0.129E-21	R(81)	A
21	2939.192 81(20)*	4.06	0.599E-22	R(4)	W
22	2939.235 81(34)	1378.63	0.111E-21	R(82)	A
23	2939.334 97(34)	1412.21	0.956E-22	R(83)	A
24	2939.430 35(34)	1446.18	0.820E-22	R(84)	A
25	2939.521 92(35)	1480.56	0.702E-22	R(85)	A
26	2939.605 49(20)*	6.09	0.712E-22	R(5)	W
27	2939.609 70(35)	1515.34	0.600E-22	R(86)	A
28	2939.693 67(35)	1550.53	0.511E-22	R(87)	A
29	2939.773 83(36)	1586.11	0.435E-22	R(88)	A
30	2939.850 17(36)	1622.10	0.369E-22	R(89)	A
31	2939.922 67(37)	1658.48	0.313E-22	R(90)	A
32	2939.991 34(38)	1695.27	0.265E-22	R(91)	A
33	2940.019 34(20)*	8.52	0.821E-22	R(6)	W
34	2940.056 16(39)	1732.46	0.223E-22	R(92)	A
35	2940.117 11(42)	1770.05	0.188E-22	R(93)	A
36	2940.174 20(45)	1808.05	0.158E-22	R(94)	A
37	2940.227 40(50)	1846.44	0.133E-22	R(95)	A
38	2940.276 70(56)	1885.23	0.111E-22	R(96)	A
39	2940.434 36(19)*	11.36	0.925E-22	R(7)	W
40	2940.850 56(19)*	14.61	0.102E-21	R(8)	W
41	2941.267 95(19)*	18.26	0.112E-21	R(9)	W
42	2941.686 53(19)*	22.31	0.121E-21	R(10)	W
43	2942.106 30(18)*	26.78	0.129E-21	R(11)	W
44	2942.527 28(18)*	31.64	0.136E-21	R(12)	W
45	2942.949 48(18)*	36.92	0.143E-21	R(13)	W
46	2943.372 90(18)*	42.60	0.149E-21	R(14)	W
47	2943.797 56(17)*	48.68	0.154E-21	R(15)	W
48	2944.223 46(17)*	55.17	0.159E-21	R(16)	W
49	2944.650 62(17)*	62.07	0.163E-21	R(17)	W
50	2945.079 05(17)*	69.37	0.166E-21	R(18)	W
51	2945.508 76(17)*	77.08	0.168E-21	R(19)	W
52	2945.939 77(17)*	85.19	0.170E-21	R(20)	W
53	2946.372 10(17)*	93.71	0.171E-21	R(21)	W
54	2946.805 75(17)*	102.63	0.171E-21	R(22)	W
55	2947.240 75(17)*	111.96	0.170E-21	R(23)	W
56	2947.677 11(17)*	121.70	0.169E-21	R(24)	W
57	2948.114 86(17)*	131.84	0.167E-21	R(25)	W
58	2948.554 00(17)*	142.38	0.165E-21	R(26)	W
59	2948.994 56(17)*	153.34	0.162E-21	R(27)	W


OCS 266 Pa (2.0 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2949 2950 2951 2952 2953 2954 2955 2956
2956 2957 2958 2959 2960 2961 2962 2963
2963 2964 2965 2966 2967 2968 2969 2970
WAVENUMBERS (cm^{-1})

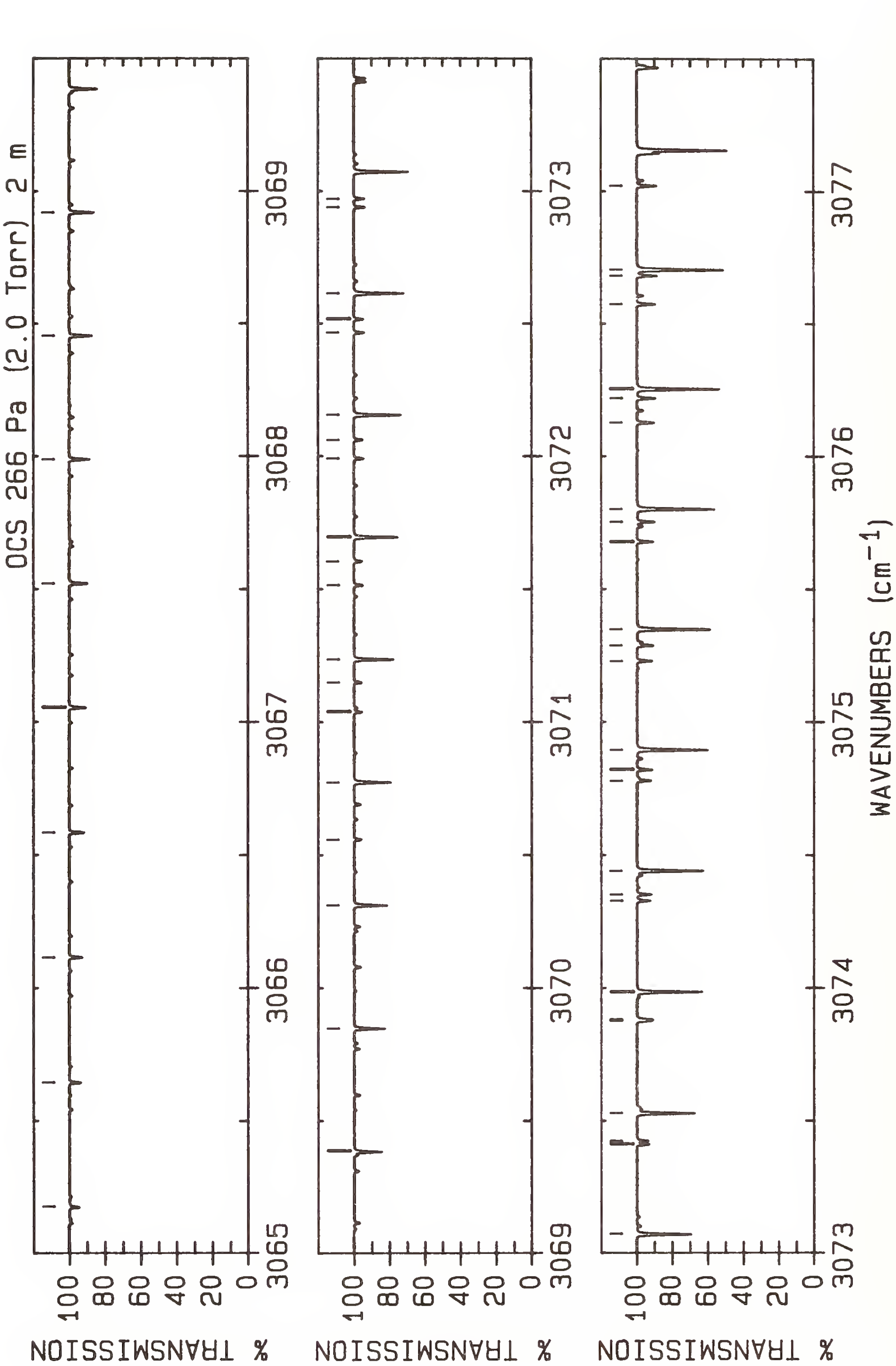
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2949.436 55(17)*	164.69	0.159E-21	R(28)	W
2	2949.880 01(17)*	176.45	0.155E-21	R(29)	W
3	2950.324 94(17)*	188.62	0.151E-21	R(30)	W
4	2950.771 37(17)*	201.19	0.147E-21	R(31)	W
5	2951.219 33(17)*	214.17	0.142E-21	R(32)	W
6	2951.668 84(17)*	227.55	0.137E-21	R(33)	W
7	2952.119 91(17)*	241.34	0.132E-21	R(34)	W
8	2952.572 58(17)*	255.53	0.126E-21	R(35)	W
9	2953.026 87(16)*	270.13	0.121E-21	R(36)	W
10	2953.482 80(16)*	285.13	0.115E-21	R(37)	W
11	2953.940 40(16)*	300.54	0.110E-21	R(38)	W
12	2954.399 69(16)*	316.35	0.104E-21	R(39)	W
13	2954.860 70(16)*	332.57	0.983E-22	R(40)	W
14	2955.323 46(16)*	349.19	0.927E-22	R(41)	W
15	2955.787 98(16)*	366.22	0.873E-22	R(42)	W
16	2956.254 31(16)*	383.65	0.819E-22	R(43)	W
17	2956.722 45(16)*	401.49	0.766E-22	R(44)	W
18	2957.192 45(16)*	419.73	0.716E-22	R(45)	W
19	2957.664 32(16)*	438.37	0.666E-22	R(46)	W
20	2958.138 09(16)*	457.42	0.619E-22	R(47)	W
21	2958.613 79(16)*	476.88	0.573E-22	R(48)	W
22	2959.091 44(16)*	496.74	0.530E-22	R(49)	W
23	2959.571 06(16)*	517.00	0.488E-22	R(50)	W
24	2960.052 68(16)*	537.67	0.449E-22	R(51)	W
25	2960.536 33(17)*	558.74	0.412E-22	R(52)	W
26	2961.022 02(17)*	580.22	0.377E-22	R(53)	W
27	2961.509 78(17)*	602.10	0.344E-22	R(54)	W
28	2961.999 63(17)*	624.39	0.313E-22	R(55)	W
29	2962.491 59(17)*	647.08	0.284E-22	R(56)	W
30	2962.985 68(17)*	670.17	0.257E-22	R(57)	W
31	2963.481 92(17)*	693.67	0.233E-22	R(58)	W
32	2963.980 32(17)*	717.57	0.210E-22	R(59)	W
33	2964.480 91(18)*	741.87	0.189E-22	R(60)	W
34	2964.983 70(18)*	766.58	0.169E-22	R(61)	W
35	2965.488 71(18)*	791.70	0.152E-22	R(62)	W
36	2965.995 94(18)*	817.21	0.135E-22	R(63)	W
37	2966.505 41(19)*	843.13	0.121E-22	R(64)	W
38	2967.017 13(19)*	869.46	0.107E-22	R(65)	W
39	2967.531 11(19)*	896.18	0.950E-23	R(66)	W
40	2968.047 36(20)*	923.31	0.841E-23	R(67)	W
41	2968.565 89(20)*	950.85	0.742E-23	R(68)	W
42	2969.086 71(21)*	978.78	0.654E-23	R(69)	W
43	2969.609 81(21)*	1007.13	0.574E-23	R(70)	W

ATLAS OF OCS ABSORPTION LINES FROM 3065 cm^{-1} to 3120 cm^{-1}

key:

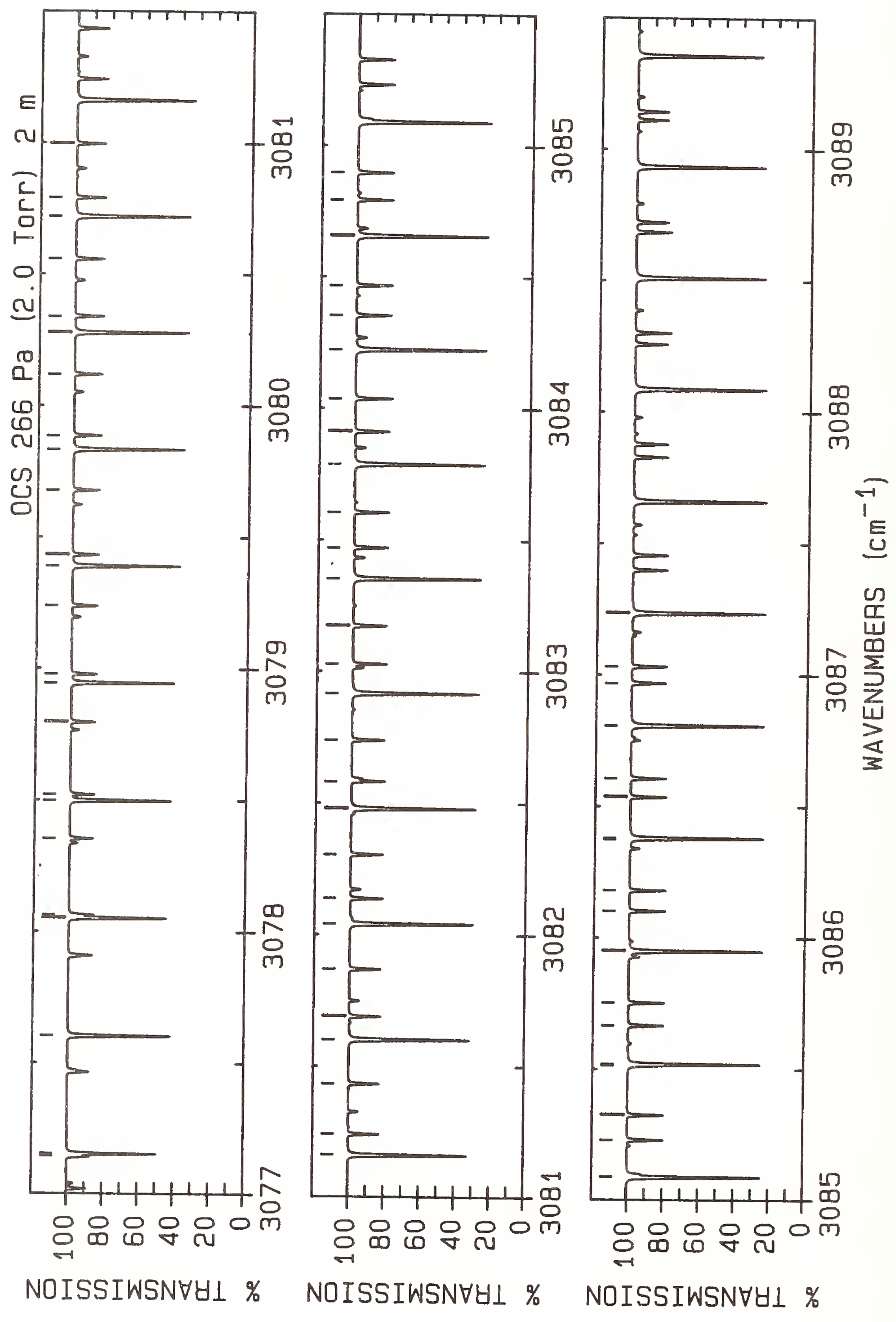
Band	Isotopomer	Vibrational Transition
A	$^{16}O^{12}C^{32}S$	$12^{0}0-00^{0}0$
B		$13^{1}0-01^{1e}0$
C		$13^{1}0-01^{1f}0$
D		$12^{0}1-00^{0}1$
P	$^{16}O^{12}C^{34}S$	$12^{0}0-00^{0}0$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.003 cm^{-1}, a temperature of 296 K, and a transition moment of 0.008 debye. No Herman-Wallis constant was included in the intensity calculation. Since no heterodyne measurements are available for this region, all uncertainties have been increased by 0.0002 cm^{-1}.



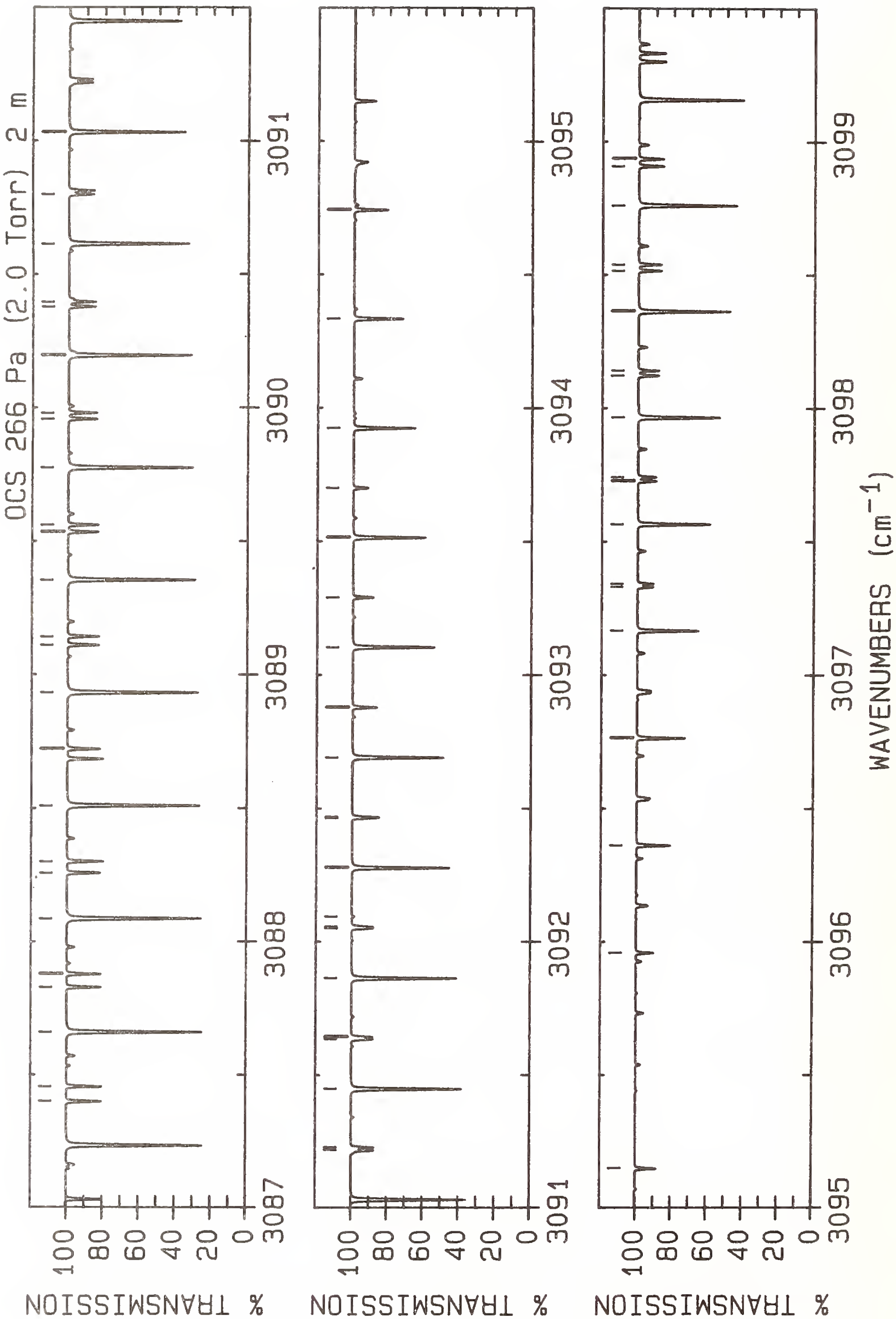
OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
3065
3066
3067
3068
3069
3070
3071
3072
3073
3074
3075
3076
3077
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	3065.175 02(57)	978.78	0.364E-22	P(69)	A
2	3065.645 80(52)	950.85	0.412E-22	P(68)	A
3	3066.115 85(48)	923.31	0.465E-22	P(67)	A
4	3066.585 15(44)	896.18	0.523E-22	P(66)	A
5	3067.053 70(41)	869.46	0.587E-22	P(65)	A
6	3067.521 48(38)	843.13	0.658E-22	P(64)	A
7	3067.988 49(36)	817.21	0.736E-22	P(63)	A
8	3068.454 73(34)	791.70	0.820E-22	P(62)	A
9	3068.920 18(33)	766.58	0.913E-22	P(61)	A
10	3069.384 83(32)	741.87	0.101E-21	P(60)	A
11	3069.848 68(32)	717.57	0.112E-21	P(59)	A
12	3070.311 72(31)	693.67	0.124E-21	P(58)	A
13	3070.559 1	1145.56	0.264E-22	P(55)	B
14	3070.773 93(31)	670.17	0.137E-21	P(57)	A
15	3071.037 76(97)	1123.25	0.289E-22	P(54)	B
16	3071.148 4	1146.22	0.264E-22	P(55)	C
17	3071.235 33(31)	647.08	0.151E-21	P(56)	A
18	3071.515 11(82)	1101.34	0.316E-22	P(53)	B
19	3071.605 4	1123.88	0.289E-22	P(54)	C
20	3071.695 88(31)	624.39	0.165E-21	P(55)	A
21	3071.991 21(70)	1079.84	0.344E-22	P(52)	B
22	3072.061 55(87)	1101.95	0.315E-22	P(53)	C
23	3072.155 59(31)	602.10	0.181E-21	P(54)	A
24	3072.466 03(60)	1058.74	0.375E-22	P(51)	B
25	3072.516 82(74)	1080.42	0.344E-22	P(52)	C
26	3072.614 45(30)	580.22	0.198E-21	P(53)	A
27	3072.939 59(53)	1038.05	0.406E-22	P(50)	B
28	3072.971 20(64)	1059.31	0.374E-22	P(51)	C
29	3073.072 46(30)	558.74	0.215E-21	P(52)	A
30	3073.411 87(47)	1017.76	0.439E-22	P(49)	B
31	3073.424 71(55)	1038.59	0.405E-22	P(50)	C
32	3073.529 59(30)	537.67	0.234E-21	P(51)	A
33	3073.877 33(49)	1018.28	0.438E-22	P(49)	C
34	3073.882 87(42)	997.88	0.474E-22	P(48)	B
35	3073.985 86(30)	517.00	0.254E-21	P(50)	A
36	3074.329 06(44)	998.38	0.473E-22	P(48)	C
37	3074.352 58(39)	978.40	0.510E-22	P(47)	B
38	3074.441 24(29)	496.74	0.275E-21	P(49)	A
39	3074.779 90(40)	978.88	0.509E-22	P(47)	C
40	3074.821 01(37)	959.33	0.548E-22	P(46)	B
41	3074.895 73(29)	476.88	0.297E-21	P(48)	A
42	3075.229 84(38)	959.78	0.547E-22	P(46)	C
43	3075.288 14(36)	940.66	0.587E-22	P(45)	B
44	3075.349 33(29)	457.42	0.320E-21	P(47)	A
45	3075.678 89(36)	941.10	0.586E-22	P(45)	C
46	3075.753 97(36)	922.39	0.628E-22	P(44)	B
47	3075.802 02(29)	438.37	0.343E-21	P(46)	A
48	3076.127 04(35)	922.82	0.627E-22	P(44)	C
49	3076.218 50(35)	904.54	0.669E-22	P(43)	B
50	3076.253 81(28)	419.73	0.368E-21	P(45)	A
51	3076.574 28(34)	904.94	0.668E-22	P(43)	C
52	3076.681 73(35)	887.08	0.712E-22	P(42)	B
53	3076.704 68(28)	401.49	0.393E-21	P(44)	A
54	3077.020 62(34)	887.47	0.711E-22	P(42)	C

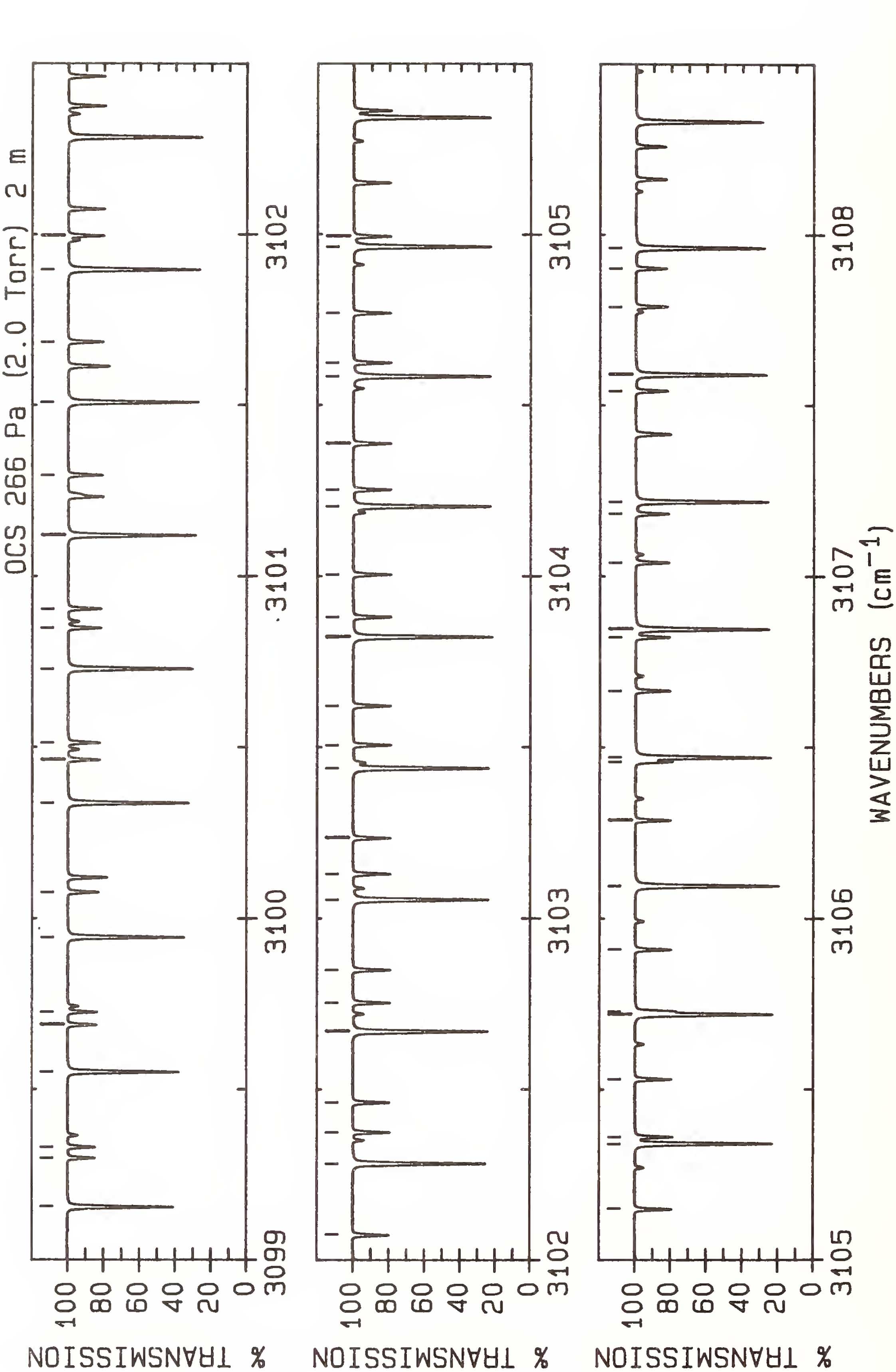


OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
3077
3078
3079
3080
3081
3081
3082
3083
3084
3085
3085
3086
3087
3088
3089
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	3077.143 64(34)	870.04	0.755E-22	P(41)	B
2	3077.154 62(28)	383.65	0.419E-21	P(43)	A
3	3077.603 64(28)	366.22	0.446E-21	P(42)	A
4	3077.604 25(34)	853.39	0.799E-22	P(40)	B
5	3078.051 72(28)	349.19	0.473E-21	P(41)	A
6	3078.063 53(33)	837.16	0.843E-22	P(39)	B
7	3078.354 19(32)	837.49	0.842E-22	P(39)	C
8	3078.498 86(28)	332.57	0.501E-21	P(40)	A
9	3078.521 50(33)	821.33	0.887E-22	P(38)	B
10	3078.796 89(32)	821.64	0.886E-22	P(38)	C
11	3078.945 05(27)	316.35	0.528E-21	P(39)	A
12	3078.978 15(32)	805.90	0.931E-22	P(37)	B
13	3079.238 67(32)	806.20	0.930E-22	P(37)	C
14	3079.390 28(27)	300.54	0.556E-21	P(38)	A
15	3079.433 47(32)	790.88	0.975E-22	P(36)	B
16	3079.679 53(31)	791.16	0.974E-22	P(36)	C
17	3079.834 55(27)	285.13	0.584E-21	P(37)	A
18	3079.887 47(32)	776.26	0.102E-21	P(35)	B
19	3080.119 47(31)	776.53	0.102E-21	P(35)	C
20	3080.277 86(27)	270.13	0.611E-21	P(36)	A
21	3080.340 13(32)	762.05	0.106E-21	P(34)	B
22	3080.558 49(31)	762.31	0.106E-21	P(34)	C
23	3080.720 19(27)	255.53	0.638E-21	P(35)	A
24	3080.791 46(32)	748.25	0.110E-21	P(33)	B
25	3080.996 58(31)	748.49	0.110E-21	P(33)	C
26	3081.161 54(27)	241.34	0.665E-21	P(34)	A
27	3081.241 45(32)	734.85	0.114E-21	P(32)	B
28	3081.433 75(31)	735.07	0.114E-21	P(32)	C
29	3081.601 91(27)	227.55	0.690E-21	P(33)	A
30	3081.690 11(32)	721.86	0.118E-21	P(31)	B
31	3081.869 98(31)	722.07	0.117E-21	P(31)	C
32	3082.041 30(27)	214.17	0.714E-21	P(32)	A
33	3082.137 42(32)	709.27	0.121E-21	P(30)	B
34	3082.305 29(31)	709.47	0.121E-21	P(30)	C
35	3082.479 68(27)	201.19	0.737E-21	P(31)	A
36	3082.583 39(32)	697.09	0.124E-21	P(29)	B
37	3082.739 66(31)	697.27	0.124E-21	P(29)	C
38	3082.917 07(27)	188.62	0.759E-21	P(30)	A
39	3083.028 01(31)	685.31	0.127E-21	P(28)	B
40	3083.173 10(31)	685.49	0.127E-21	P(28)	C
41	3083.353 46(27)	176.45	0.778E-21	P(29)	A
42	3083.471 28(31)	673.94	0.129E-21	P(27)	B
43	3083.605 60(31)	674.10	0.129E-21	P(27)	C
44	3083.788 83(27)	164.69	0.796E-21	P(28)	A
45	3083.913 21(31)	662.98	0.131E-21	P(26)	B
46	3084.037 16(31)	663.13	0.131E-21	P(26)	C
47	3084.223 19(27)	153.34	0.811E-21	P(27)	A
48	3084.353 78(31)	652.42	0.133E-21	P(25)	B
49	3084.467 78(30)	652.56	0.133E-21	P(25)	C
50	3084.656 54(27)	142.38	0.824E-21	P(26)	A
51	3084.792 99(31)	642.27	0.134E-21	P(24)	B
52	3084.897 47(30)	642.40	0.134E-21	P(24)	C
53	3085.088 86(27)	131.84	0.834E-21	P(25)	A
54	3085.230 85(30)	632.52	0.135E-21	P(23)	B
55	3085.326 20(30)	632.64	0.135E-21	P(23)	C
56	3085.514 87(69)	67.68	0.354E-22	P(18)	P
57	3085.520 15(27)	121.70	0.841E-21	P(24)	A
58	3085.667 35(30)	623.18	0.135E-21	P(22)	B
59	3085.753 99(29)	623.29	0.135E-21	P(22)	C
60	3085.950 42(27)	111.96	0.845E-21	P(23)	A
61	3086.102 49(29)	614.25	0.134E-21	P(21)	B
62	3086.180 84(29)	614.35	0.134E-21	P(21)	C
63	3086.375 06(39)	935.82	0.134E-22	R(19)	D
64	3086.379 64(27)	102.63	0.846E-21	P(22)	A
65	3086.536 27(29)	605.72	0.133E-21	P(20)	B
66	3086.606 73(29)	605.81	0.133E-21	P(20)	C
67	3086.807 83(27)	93.71	0.844E-21	P(21)	A
68	3086.968 68(29)	597.60	0.132E-21	P(19)	B
69	3087.031 68(28)	597.68	0.132E-21	P(19)	C
70	3087.234 98(27)	85.19	0.838E-21	P(20)	A

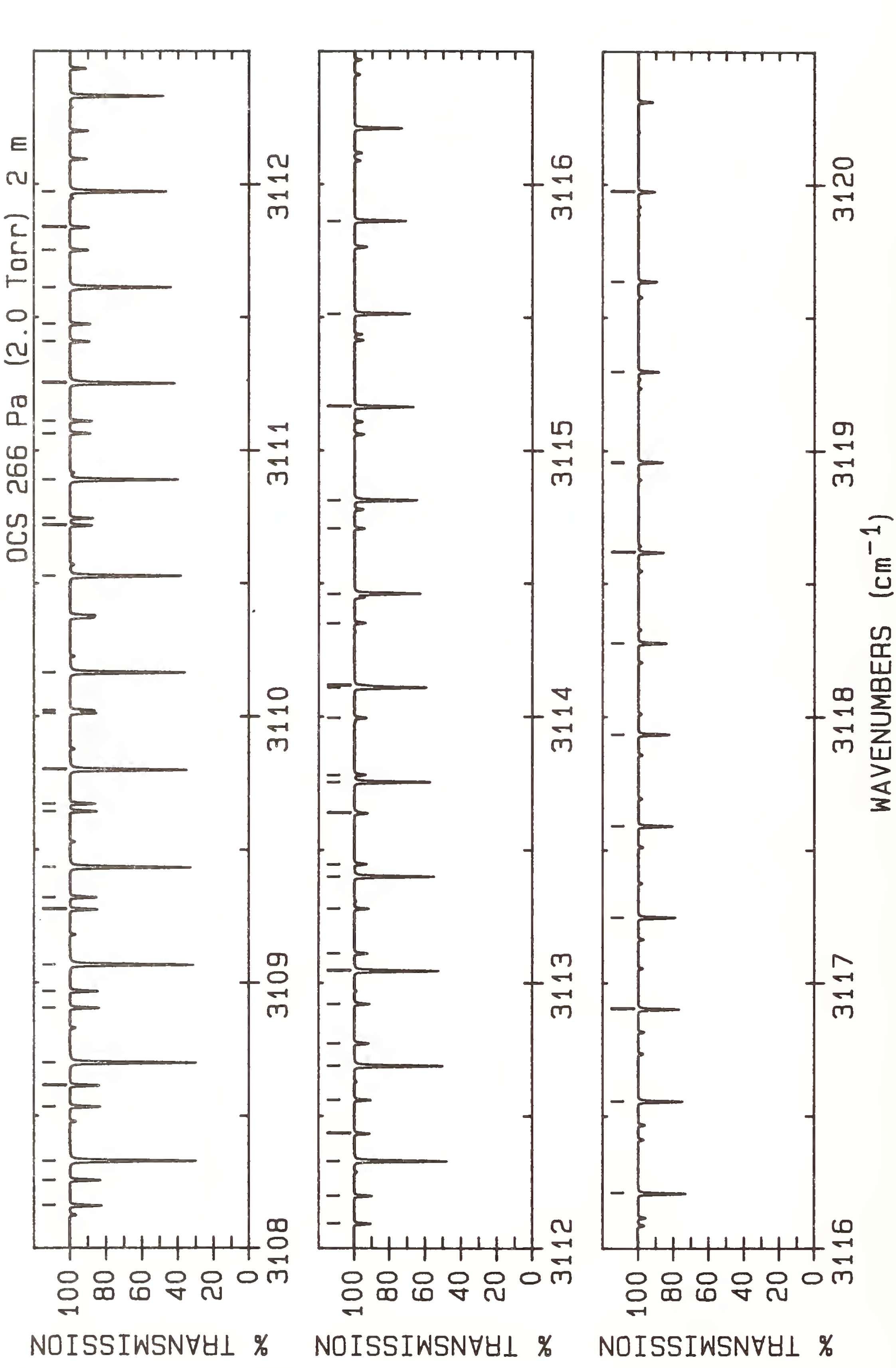

OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
3087 3088 3089 3090 3091
% TRANSMISSION
100 80 60 40 20 0
3091 3092 3093 3094 3095
% TRANSMISSION
100 80 60 40 20 0
3095 3096 3097 3098 3099
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	3087.399 73(28)	589.88	0.130E-21	P(18)	B	36	3092.465 16(33)	528.95	0.567E-22	P(6)	B
2	3087.455 67(28)	589.95	0.129E-21	P(18)	C	37	3092.468 85(33)	528.96	0.567E-22	P(6)	C
3	3087.661 08(28)	77.08	0.828E-21	P(19)	A	38	3092.468 97(38)	1113.73	0.101E-22	R(35)	D
4	3087.829 41(28)	582.57	0.127E-21	P(17)	B	39	3092.691 56(29)	11.36	0.421E-21	P(7)	A
5	3087.878 71(28)	582.63	0.127E-21	P(17)	C	40	3092.878 31(34)	526.51	0.472E-22	P(5)	B
6	3088.086 13(28)	69.37	0.815E-21	P(18)	A	41	3092.880 35(34)	526.52	0.472E-22	P(5)	C
7	3088.257 72(28)	575.66	0.123E-21	P(16)	B	42	3093.103 79(29)	8.52	0.366E-21	P(6)	A
8	3088.300 80(28)	575.72	0.123E-21	P(16)	C	43	3093.290 08(34)	524.48	0.373E-22	P(4)	B
9	3088.510 13(28)	62.07	0.797E-21	P(17)	A	44	3093.290 87(34)	524.49	0.373E-22	P(4)	C
10	3088.721 93(28)	569.22	0.119E-21	P(15)	C	45	3093.514 95(29)	6.09	0.308E-21	P(5)	A
11	3088.933 07(28)	55.17	0.776E-21	P(16)	A	46	3093.700 43(35)	522.86	0.267E-22	P(3)	C
12	3089.110 22(29)	563.07	0.115E-21	P(14)	B	47	3093.700 45(35)	522.86	0.267E-22	P(3)	B
13	3089.142 10(29)	563.12	0.115E-21	P(14)	C	48	3093.925 01(29)	4.06	0.249E-21	P(4)	A
14	3089.354 96(28)	48.68	0.751E-21	P(15)	A	49	3094.333 99(29)	2.43	0.188E-21	P(3)	A
15	3089.534 41(29)	557.38	0.109E-21	P(13)	B	50	3094.741 88(29)	1.22	0.126E-21	P(2)	A
16	3089.561 32(29)	557.42	0.109E-21	P(13)	C	51	3095.148 69(29)	0.41	0.634E-22	P(1)	A
17	3089.775 78(28)	42.60	0.722E-21	P(14)	A	52	3095.150 21(86)	5.94	0.160E-22	R(5)	P
18	3089.957 23(30)	552.11	0.104E-21	P(12)	B	53	3095.959 02(29)	0.00	0.636E-22	R(0)	A
19	3089.979 57(30)	552.14	0.104E-21	P(12)	C	54	3096.362 55(29)	0.41	0.127E-21	R(1)	A
20	3090.195 53(28)	36.92	0.689E-21	P(13)	A	55	3096.764 99(29)	1.22	0.190E-21	R(2)	A
21	3090.378 67(30)	547.23	0.970E-22	P(11)	B	56	3097.166 33(29)	2.43	0.251E-21	R(3)	A
22	3090.396 86(30)	547.26	0.970E-22	P(11)	C	57	3097.331 23(33)	526.51	0.575E-22	R(5)	B
23	3090.614 22(28)	31.64	0.653E-21	P(12)	A	58	3097.342 51(33)	526.52	0.575E-22	R(5)	C
24	3090.798 73(31)	542.76	0.900E-22	P(10)	B	59	3097.566 58(29)	4.06	0.312E-21	R(4)	A
25	3091.031 84(28)	26.78	0.613E-21	P(11)	A	60	3097.727 67(32)	528.95	0.668E-22	R(6)	B
26	3091.217 41(32)	538.70	0.824E-22	P(9)	B	61	3097.742 29(32)	528.96	0.668E-22	R(6)	C
27	3091.228 56(32)	538.72	0.824E-22	P(9)	C	62	3097.965 74(29)	6.09	0.370E-21	R(5)	A
28	3091.448 38(28)	22.31	0.570E-21	P(10)	A	63	3098.122 72(32)	531.80	0.757E-22	R(7)	B
29	3091.634 71(32)	535.04	0.743E-22	P(8)	B	64	3098.141 08(32)	531.81	0.757E-22	R(7)	C
30	3091.642 96(32)	535.06	0.743E-22	P(8)	C	65	3098.363 80(29)	8.52	0.427E-21	R(6)	A
31	3091.863 85(28)	18.26	0.523E-21	P(9)	A	66	3098.516 37(31)	535.04	0.841E-22	R(8)	B
32	3092.050 63(33)	531.80	0.658E-22	P(7)	B	67	3098.538 90(31)	535.06	0.841E-22	R(8)	C
33	3092.056 39(33)	531.81	0.658E-22	P(7)	C	68	3098.760 77(28)	11.36	0.482E-21	R(7)	A
34	3092.094 11(38)	1099.58	0.106E-22	R(34)	D	69	3098.908 62(30)	538.70	0.920E-22	R(9)	B
35	3092.278 25(29)	14.61	0.473E-21	P(8)	A	70	3098.935 72(30)	538.72	0.920E-22	R(9)	C



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
3099
3100
3101
3102
3102
3103
3104
3105
3105
3106
3107
3108
WAVENUMBERS (cm^{-1})

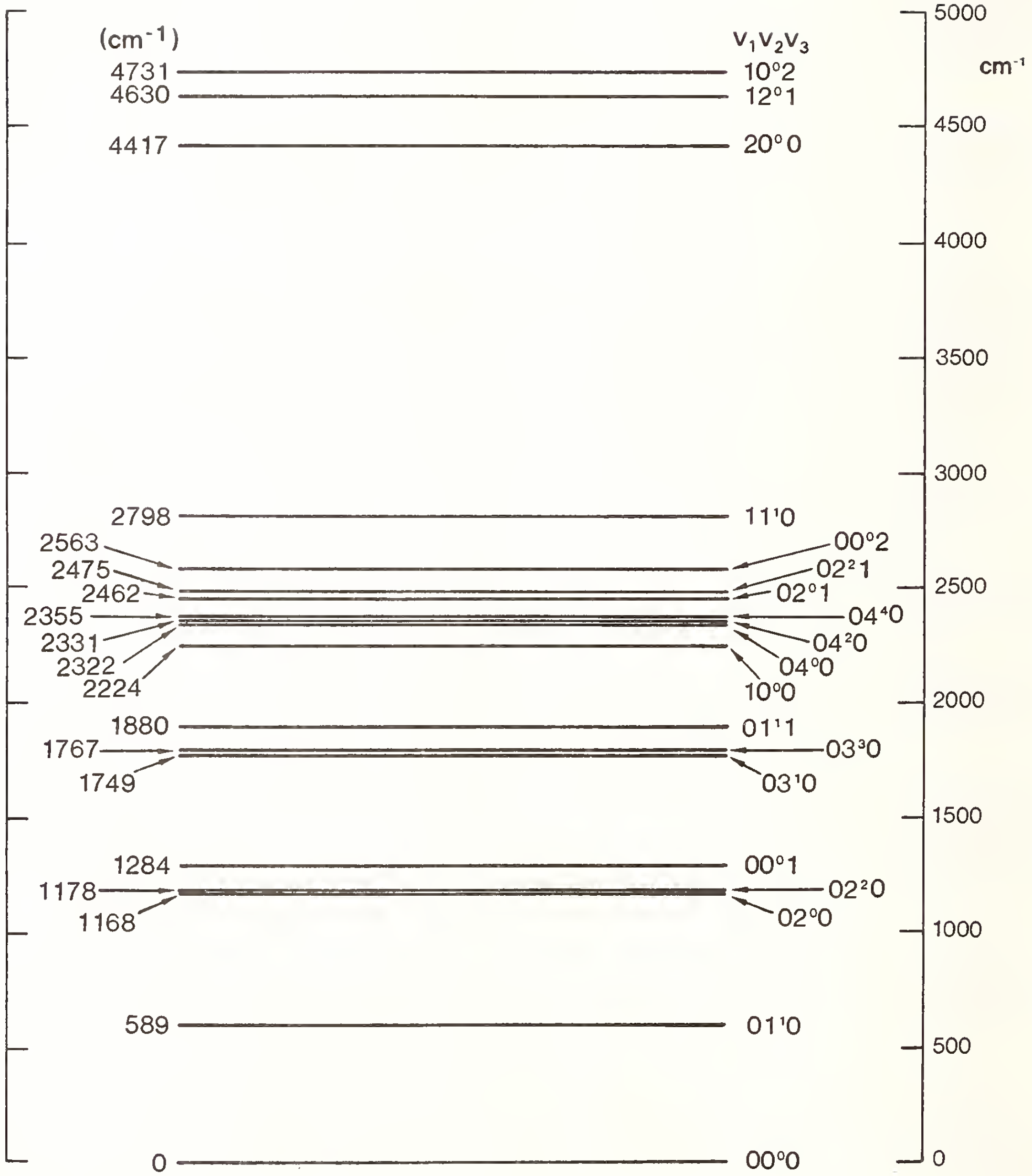
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	3099.156 64(28)	14.61	0.533E-21	R(8)	A
2	3099.299 47(30)	542.76	0.994E-22	R(10)	B
3	3099.331 57(30)	542.79	0.994E-22	R(10)	C
4	3099.551 42(28)	18.26	0.582E-21	R(9)	A
5	3099.688 91(29)	547.23	0.106E-21	R(11)	B
6	3099.726 42(29)	547.26	0.106E-21	R(11)	C
7	3099.945 10(28)	22.31	0.628E-21	R(10)	A
8	3100.076 96(29)	552.11	0.113E-21	R(12)	B
9	3100.337 69(28)	26.78	0.671E-21	R(11)	A
10	3100.463 60(28)	557.38	0.118E-21	R(13)	B
11	3100.513 18(28)	557.42	0.118E-21	R(13)	C
12	3100.729 18(28)	31.64	0.710E-21	R(12)	A
13	3100.848 84(28)	563.07	0.123E-21	R(14)	B
14	3100.905 07(28)	563.12	0.123E-21	R(14)	C
15	3101.119 58(28)	36.92	0.745E-21	R(13)	A
16	3101.295 98(28)	569.22	0.128E-21	R(15)	C
17	3101.508 89(28)	42.60	0.776E-21	R(14)	A
18	3101.685 90(28)	575.72	0.132E-21	R(16)	C
19	3101.897 11(28)	48.68	0.804E-21	R(15)	A
20	3101.996 13(29)	582.57	0.135E-21	R(17)	B
21	3102.074 82(28)	582.63	0.135E-21	R(17)	C
22	3102.284 24(28)	55.17	0.828E-21	R(16)	A
23	3102.375 75(29)	589.88	0.138E-21	R(18)	B
24	3102.462 76(29)	589.95	0.137E-21	R(18)	C
25	3102.670 28(28)	62.07	0.848E-21	R(17)	A
26	3102.753 96(29)	597.60	0.139E-21	R(19)	B
27	3102.849 70(29)	597.68	0.139E-21	R(19)	C
28	3103.055 23(27)	69.37	0.864E-21	R(18)	A
29	3103.130 77(30)	605.72	0.141E-21	R(20)	B
30	3103.235 65(29)	605.81	0.141E-21	R(20)	C
31	3103.439 09(27)	77.08	0.876E-21	R(19)	A
32	3103.506 18(30)	614.25	0.141E-21	R(21)	B
33	3103.620 61(30)	614.35	0.141E-21	R(21)	C
34	3103.820 75(66)	160.67	0.365E-22	R(28)	P
35	3103.821 87(27)	85.19	0.884E-21	R(20)	A
36	3103.880 17(31)	623.18	0.142E-21	R(22)	B
37	3104.004 58(30)	623.29	0.142E-21	R(22)	C
38	3104.203 56(27)	93.71	0.889E-21	R(21)	A
39	3104.252 76(31)	632.52	0.141E-21	R(23)	B
40	3104.387 55(30)	632.64	0.141E-21	R(23)	C
41	3104.584 17(27)	102.63	0.890E-21	R(22)	A
42	3104.623 95(31)	642.27	0.141E-21	R(24)	B
43	3104.769 53(31)	642.40	0.140E-21	R(24)	C
44	3104.963 71(27)	111.96	0.887E-21	R(23)	A
45	3104.993 72(31)	652.42	0.139E-21	R(25)	B
46	3105.150 51(31)	652.56	0.139E-21	R(25)	C
47	3105.342 16(27)	121.70	0.882E-21	R(24)	A
48	3105.362 09(31)	662.98	0.137E-21	R(26)	B
49	3105.530 50(31)	663.13	0.137E-21	R(26)	C
50	3105.719 54(27)	131.84	0.873E-21	R(25)	A
51	3105.729 06(32)	673.94	0.135E-21	R(27)	B
52	3105.909 50(31)	674.10	0.135E-21	R(27)	C
53	3106.094 62(32)	685.31	0.132E-21	R(28)	B
54	3106.095 84(27)	142.38	0.861E-21	R(26)	A
55	3106.287 50(31)	685.49	0.132E-21	R(28)	C
56	3106.458 77(32)	697.09	0.129E-21	R(29)	B
57	3106.471 08(27)	153.34	0.847E-21	R(27)	A
58	3106.664 50(31)	697.27	0.129E-21	R(29)	C
59	3106.821 51(32)	709.27	0.126E-21	R(30)	B
60	3106.845 24(27)	164.69	0.830E-21	R(28)	A
61	3107.040 51(31)	709.47	0.126E-21	R(30)	C
62	3107.182 85(32)	721.86	0.122E-21	R(31)	B
63	3107.218 35(27)	176.45	0.811E-21	R(29)	A
64	3107.542 79(32)	734.85	0.118E-21	R(32)	B
65	3107.590 38(27)	188.62	0.790E-21	R(30)	A
66	3107.789 54(31)	735.07	0.118E-21	R(32)	C
67	3107.901 32(32)	748.25	0.114E-21	R(33)	B
68	3107.961 36(27)	201.19	0.767E-21	R(31)	A



OCS 266 Pa (2.0 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
3108 3109 3110 3111 3112
3112 3113 3114 3115 3116
3116 3117 3118 3119 3120
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	3108.162 56(31)	748.49	0.114E-21	R(33)	C	36	3112.561 12(40)	941.10	0.606E-22	R(45)	C
2	3108.258 44(32)	762.05	0.110E-21	R(34)	B	37	3112.689 22(29)	401.49	0.407E-21	R(44)	A
3	3108.331 28(27)	214.17	0.743E-21	R(32)	A	38	3112.773 79(47)	978.40	0.528E-22	R(47)	B
4	3108.534 58(31)	762.31	0.110E-21	R(34)	C	39	3112.921 20(44)	959.78	0.566E-22	R(46)	C
5	3108.614 16(32)	776.26	0.106E-21	R(35)	B	40	3113.045 75(29)	419.73	0.380E-21	R(45)	A
6	3108.700 15(27)	227.55	0.717E-21	R(33)	A	41	3113.111 39(53)	997.88	0.490E-22	R(48)	B
7	3108.905 61(32)	776.53	0.106E-21	R(35)	C	42	3113.280 29(49)	978.88	0.527E-22	R(47)	C
8	3108.968 48(33)	790.88	0.101E-21	R(36)	B	43	3113.401 27(29)	438.37	0.355E-21	R(46)	A
9	3109.067 97(27)	241.34	0.690E-21	R(34)	A	44	3113.447 60(60)	1017.76	0.454E-22	R(49)	B
10	3109.275 64(32)	791.16	0.101E-21	R(36)	C	45	3113.638 39(55)	998.38	0.489E-22	R(48)	C
11	3109.321 40(33)	805.90	0.966E-22	R(37)	B	46	3113.755 81(29)	457.42	0.330E-21	R(47)	A
12	3109.434 74(27)	255.53	0.662E-21	R(35)	A	47	3113.782 44(70)	1038.05	0.420E-22	R(50)	B
13	3109.644 67(32)	806.20	0.965E-22	R(37)	C	48	3113.995 49(64)	1018.28	0.453E-22	R(49)	C
14	3109.672 92(34)	821.33	0.920E-22	R(38)	B	49	3114.109 35(30)	476.88	0.307E-21	R(48)	A
15	3109.800 47(27)	270.13	0.634E-21	R(36)	A	50	3114.115 90(82)	1058.74	0.387E-22	R(51)	B
16	3110.012 71(33)	821.64	0.918E-22	R(38)	C	51	3114.351 61(74)	1038.59	0.419E-22	R(50)	C
17	3110.023 04(34)	837.16	0.874E-22	R(39)	B	52	3114.461 91(30)	496.74	0.284E-21	R(49)	A
18	3110.165 15(27)	285.13	0.605E-21	R(37)	A	53	3114.706 73(87)	1059.31	0.386E-22	R(51)	C
19	3110.528 81(28)	300.54	0.576E-21	R(38)	A	54	3114.813 49(30)	517.00	0.262E-21	R(50)	A
20	3110.719 09(35)	870.04	0.782E-22	R(41)	B	55	3115.164 09(30)	537.67	0.242E-21	R(51)	A
21	3110.745 80(34)	853.74	0.826E-22	R(40)	C	56	3115.513 73(31)	558.74	0.222E-21	R(52)	A
22	3110.891 43(28)	316.35	0.547E-21	R(39)	A	57	3115.862 40(31)	580.22	0.204E-21	R(53)	A
23	3111.065 01(36)	887.08	0.737E-22	R(42)	B	58	3116.210 12(31)	602.10	0.187E-21	R(54)	A
24	3111.110 86(34)	870.40	0.781E-22	R(41)	C	59	3116.556 89(31)	624.39	0.170E-21	R(55)	A
25	3111.253 03(28)	332.57	0.518E-21	R(40)	A	60	3116.902 71(31)	647.08	0.155E-21	R(56)	A
26	3111.409 55(36)	904.54	0.693E-22	R(43)	B	61	3117.247 59(32)	670.17	0.141E-21	R(57)	A
27	3111.474 91(35)	887.47	0.736E-22	R(42)	C	62	3117.591 54(32)	693.67	0.128E-21	R(58)	A
28	3111.613 60(28)	349.19	0.490E-21	R(41)	A	63	3117.934 56(33)	717.57	0.116E-21	R(59)	A
29	3111.752 69(37)	922.39	0.649E-22	R(44)	B	64	3118.276 66(34)	741.87	0.104E-21	R(60)	A
30	3111.837 98(36)	904.94	0.692E-22	R(43)	C	65	3118.617 85(36)	766.58	0.941E-22	R(61)	A
31	3111.973 15(28)	366.22	0.461E-21	R(42)	A	66	3118.955 3	1417.69	0.869E-23	R(66)	B
32	3112.094 45(39)	940.66	0.608E-22	R(45)	B	67	3118.958 12(38)	791.70	0.846E-22	R(62)	A
33	3112.200 04(38)	922.82	0.648E-22	R(44)	C	68	3119.297 49(41)	817.21	0.758E-22	R(63)	A
34	3112.331 69(28)	383.65	0.434E-21	R(43)	A	69	3119.635 97(44)	843.13	0.678E-22	R(64)	A
35	3112.434 81(42)	959.33	0.567E-22	R(46)	B	70	3119.973 55(48)	869.46	0.605E-22	R(65)	A

Energy Levels for N_2O

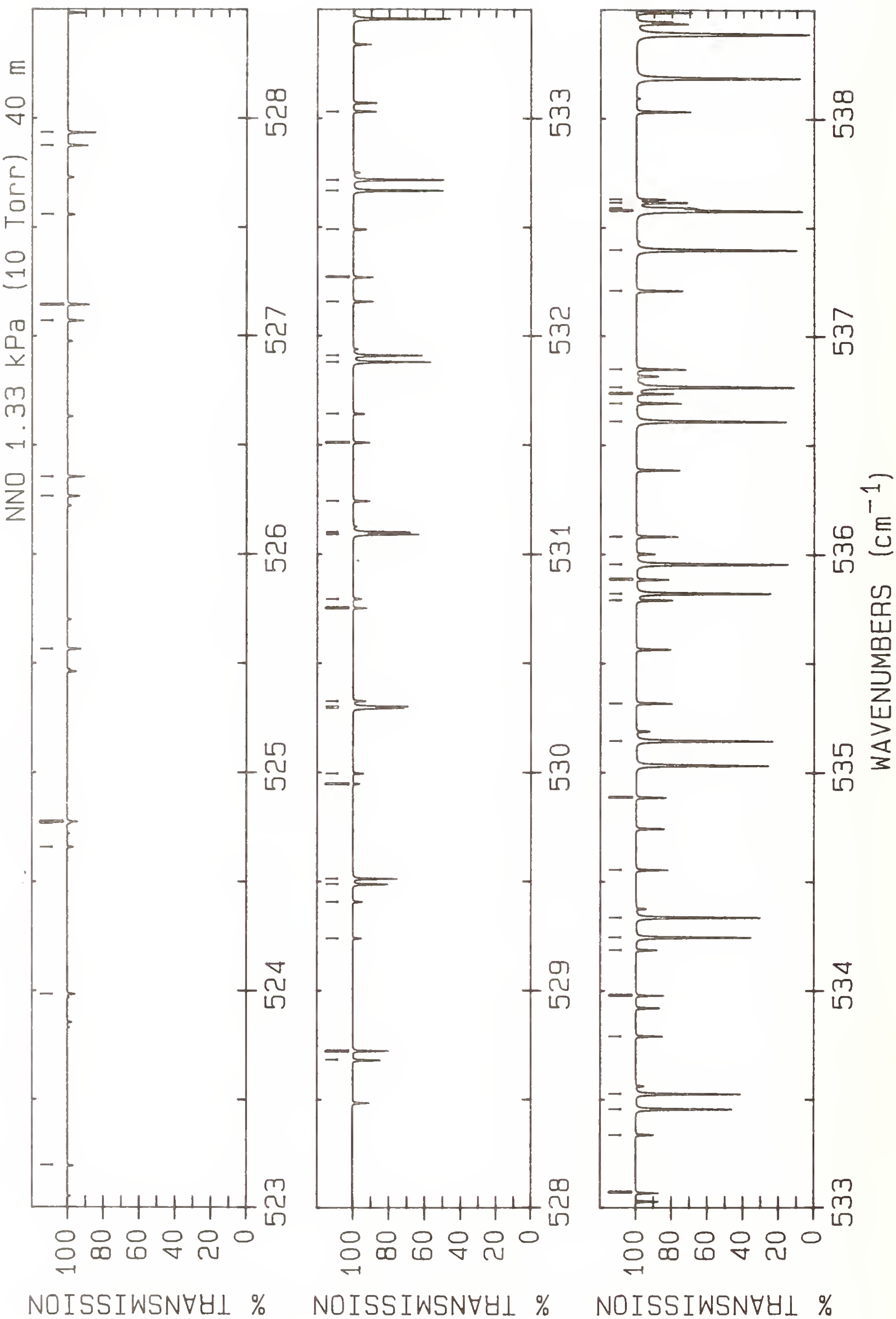


ATLAS OF N_2O ABSORPTION LINES FROM 523 cm^{-1} to 659 cm^{-1}

key:

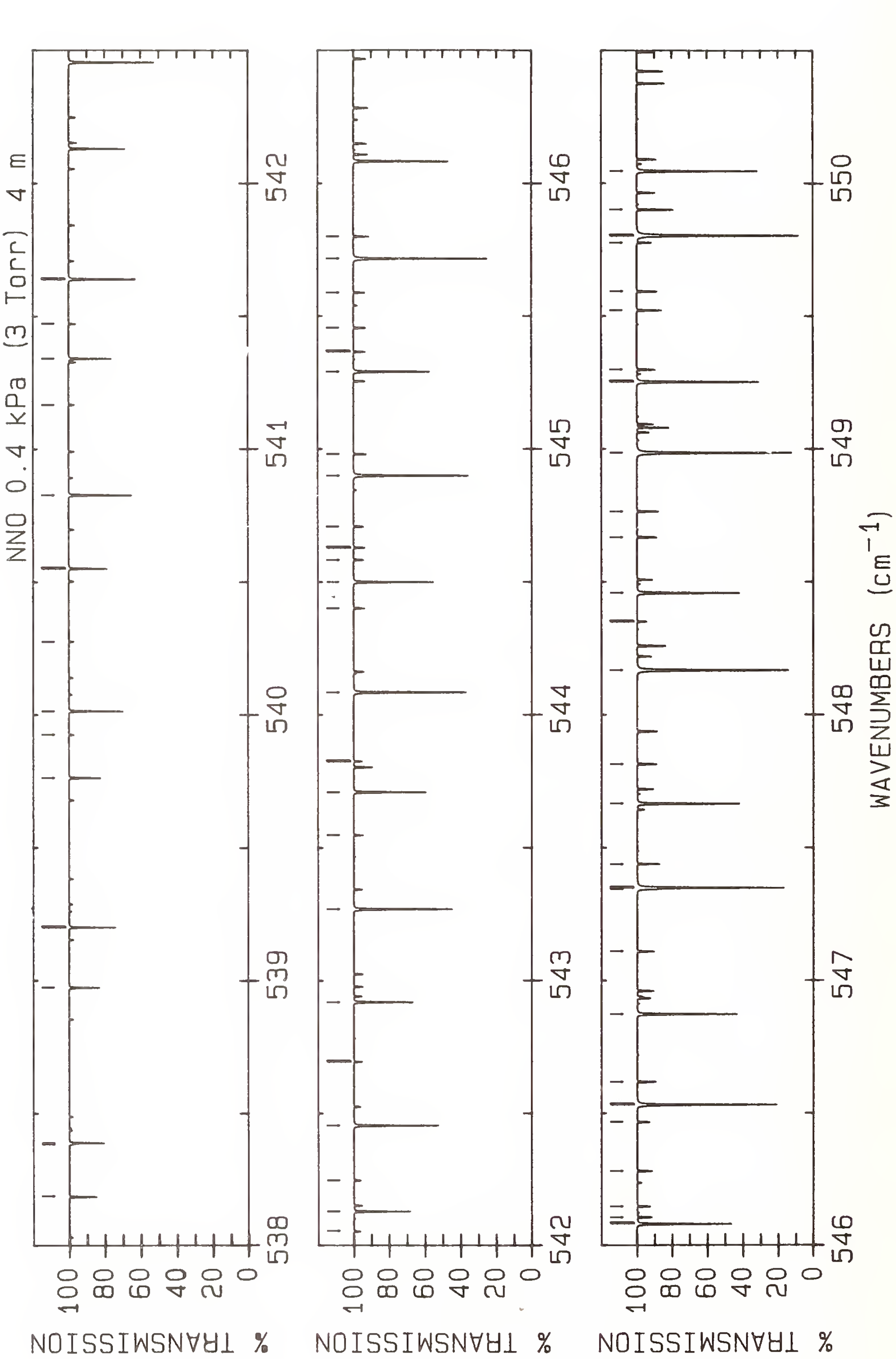
Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	01^10-00^00
B		02^20-$01^{1e}0$
C		02^20-$01^{1f}0$
D		01^11-00^01
E		03^30-$02^{2e}0$
F		03^30-$02^{2f}0$
G		03^10-02^00
H		02^00-01^10
I		03^10-$02^{2e}0$
J		03^10-$02^{2f}0$
P	$^{14}N^{15}N^{16}O$	01^10-00^00
R	$^{15}N^{14}N^{16}O$	01^10-00^00
T	$^{14}N^{14}N^{18}O$	01^10-00^00

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.0692 debye at a temperature of 296 K. A Herman-Wallis constant of $a_1 = 0.0016$ is included in the intensity calculation for the lines of all the bands.



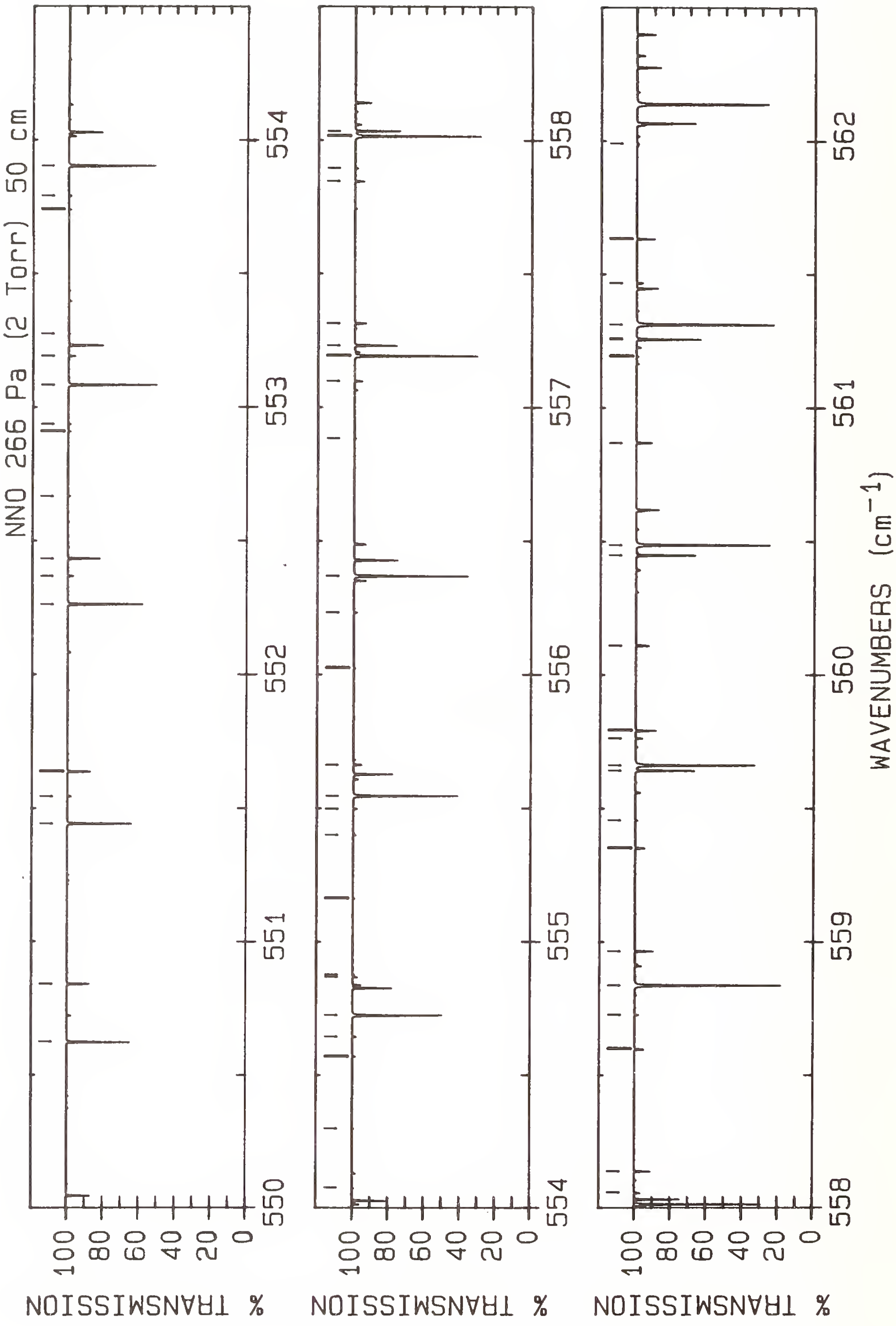
NNO 1.33 kPa (10 Torr) 40 m
% TRANSMISSION
100 80 60 40 20 0
523 524 525 526 527 528
528 529 530 531 532 533
533 534 535 536 537 538
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	523.194 27(22)*	2667.68	0.173E-24	P(70)	H	36	532.490 29(14)	2553.77	0.402E-24	P(57)	G
2	523.985 23(21)*	2609.24	0.226E-24	P(69)	H	37	532.668 33(15)*	2021.11	0.327E-23	P(58)	H
3	524.659 12(27)	2575.26	0.186E-24	P(78)	A	38	532.718 15(17)*	1962.12	0.337E-23	P(68)	A
4	524.767 77(11)	2379.09	0.102E-24	P(53)	I	39	533.030 70(14)	2164.88	0.659E-24	P(48)	J
5	524.775 88(20)*	2551.62	0.295E-24	P(68)	H	40	533.070 26(9)	2009.10	0.670E-24	P(44)	I
6	525.566 21(19)*	2494.84	0.383E-24	P(67)	H	41	533.338 49(14)	2506.08	0.498E-24	P(56)	G
7	526.266 87(24)	2446.02	0.344E-24	P(76)	A	42	533.456 65(14)*	1972.62	0.406E-23	P(57)	H
8	526.356 25(19)*	2438.88	0.494E-24	P(66)	H	43	533.526 83(17)*	1905.36	0.440E-23	P(67)	A
9	527.071 51(23)	2382.64	0.464E-24	P(75)	A	44	533.791 91(13)	2124.63	0.782E-24	P(47)	J
10	527.146 02(18)*	2383.76	0.636E-24	P(65)	H	45	533.979 41(9)	1972.17	0.805E-24	P(43)	I
11	527.560 22(10)	2248.24	0.200E-24	P(50)	I	46	534.187 15(14)	2459.21	0.616E-24	P(55)	G
12	527.876 65(22)	2320.08	0.623E-24	P(74)	A	47	534.244 89(14)*	1924.97	0.501E-23	P(56)	H
13	527.935 53(17)*	2329.46	0.814E-24	P(64)	H	48	534.336 01(16)*	1849.42	0.571E-23	P(66)	A
14	528.682 31(21)	2258.36	0.835E-24	P(73)	A	49	534.554 26(12)	2085.21	0.924E-24	P(46)	J
15	528.724 80(17)*	2275.99	0.104E-23	P(63)	H	50	534.886 06(9)	1936.08	0.963E-24	P(42)	I
16	529.240 27(25)	2378.66	0.263E-24	P(53)	J	51	535.145 69(15)*	1794.32	0.739E-23	P(65)	A
17	529.407 71(10)	2165.18	0.306E-24	P(48)	I	52	535.317 78(11)	2046.63	0.109E-23	P(45)	J
18	529.488 47(20)	2197.45	0.111E-23	P(72)	A	53	535.790 26(9)	1900.83	0.115E-23	P(41)	I
19	529.513 85(16)*	2223.36	0.132E-23	P(62)	H	54	535.821 29(13)*	1832.15	0.755E-23	P(54)	H
20	529.948 66(16)	2701.85	0.205E-24	P(60)	G	55	535.885 83(13)	2367.97	0.925E-24	P(53)	G
21	529.996 40(23)	2334.23	0.319E-24	P(52)	J	56	535.955 88(15)*	1740.04	0.953E-23	P(64)	A
22	530.295 13(20)	2137.38	0.148E-23	P(71)	A	57	536.082 50(10)	2008.88	0.127E-23	P(44)	J
23	530.302 71(16)*	2171.55	0.166E-23	P(61)	H	58	536.609 50(13)*	1786.99	0.921E-23	P(53)	H
24	530.327 33(10)	2124.90	0.375E-24	P(47)	I	59	536.692 06(9)	1866.41	0.136E-23	P(40)	I
25	530.753 47(20)	2290.64	0.385E-24	P(51)	J	60	536.735 82(13)	2323.60	0.113E-23	P(52)	G
26	530.795 37(15)	2651.66	0.258E-24	P(59)	G	61	536.766 56(14)*	1686.59	0.122E-22	P(63)	A
27	531.091 39(15)*	2120.57	0.209E-23	P(60)	H	62	536.848 47(10)	1971.97	0.149E-23	P(43)	J
28	531.102 30(19)*	2078.13	0.195E-23	P(70)	A	63	537.209 36(38)	905.01	0.154E-23	P(46)	P
29	531.244 27(9)	2085.47	0.457E-24	P(46)	I	64	537.397 76(13)*	1742.67	0.112E-22	P(52)	H
30	531.511 52(18)	2247.89	0.462E-24	P(50)	J	65	537.577 73(14)*	1633.97	0.156E-22	P(62)	A
31	531.642 58(15)	2602.30	0.323E-24	P(58)	G	66	537.586 21(13)	2280.07	0.137E-23	P(51)	G
32	531.879 92(15)*	2070.42	0.262E-23	P(59)	H	67	537.591 51(9)	1832.84	0.160E-23	P(39)	I
33	531.909 97(18)*	2019.71	0.257E-23	P(69)	A	68	537.615 72(9)	1935.90	0.172E-23	P(42)	J
34	532.158 57(9)	2046.86	0.555E-24	P(45)	I	69	537.630 85(63)	2226.43	0.850E-24	P(62)	C
35	532.270 58(16)	2205.96	0.553E-24	P(49)	J						

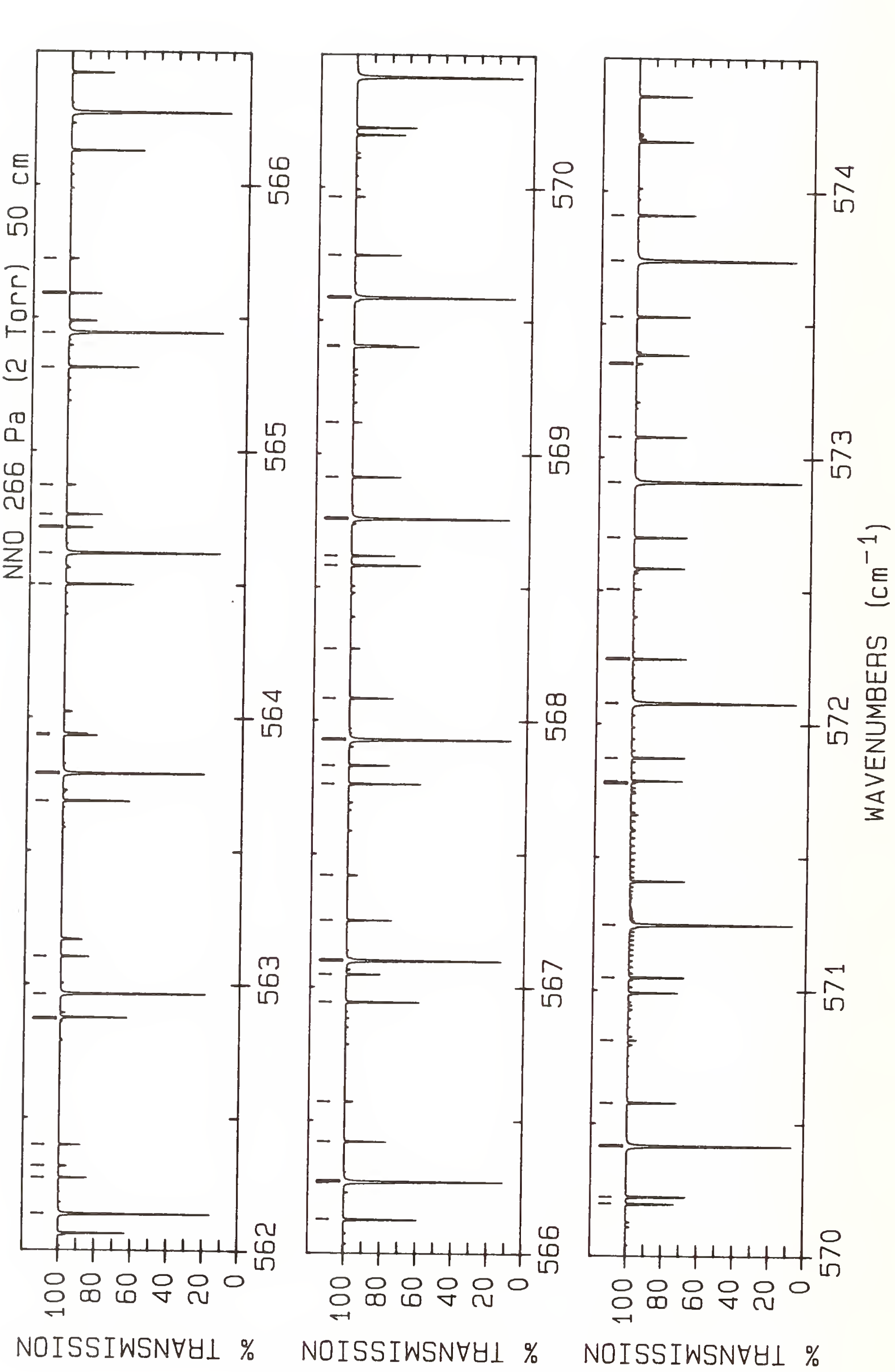


NNO 0.4 kPa (3 Torr) 4 m
% TRANSMISSION
100 80 60 40 20 0
538 539 540 541 542
542 543 544 545 546
546 547 548 549 550
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	538.186 11(12)*	1699.17	0.135E-22	P(51)	H
2	538.384 28(9)	1900.66	0.199E-23	P(41)	J
3	538.389 41(13)*	1582.18	0.199E-22	P(61)	A
4	538.974 58(12)*	1656.51	0.162E-22	P(50)	H
5	539.201 58(13)*	1531.22	0.252E-22	P(60)	A
6	539.763 20(12)*	1614.68	0.195E-22	P(49)	H
7	539.925 48(9)	1832.70	0.263E-23	P(39)	J
8	540.014 24(12)*	1481.09	0.317E-22	P(59)	A
9	540.276 25(9)	1737.13	0.252E-23	P(36)	I
10	540.552 01(12)*	1573.69	0.232E-22	P(48)	H
11	540.827 40(12)*	1431.79	0.398E-22	P(58)	A
12	541.166 80(9)	1706.91	0.291E-23	P(35)	I
13	541.341 05(12)*	1533.53	0.275E-22	P(47)	H
14	541.472 32(9)	1768.08	0.341E-23	P(37)	J
15	541.641 05(11)*	1383.33	0.498E-22	P(57)	A
16	542.055 25(9)	1677.52	0.334E-23	P(34)	I
17	542.130 36(12)*	1494.20	0.325E-22	P(46)	H
18	542.247 93(9)	1737.03	0.385E-23	P(36)	J
19	542.455 19(11)*	1335.69	0.620E-22	P(56)	A
20	542.696 01(12)	2036.33	0.395E-23	P(45)	G
21	542.919 97(12)*	1455.70	0.383E-22	P(45)	H
22	543.269 82(11)*	1288.88	0.768E-22	P(55)	A
23	543.548 69(12)	1998.62	0.463E-23	P(44)	G
24	543.709 92(12)*	1418.04	0.448E-22	P(44)	H
25	543.826 07(9)	1621.26	0.432E-23	P(32)	I
26	544.084 94(10)*	1242.91	0.947E-22	P(54)	A
27	544.401 59(12)	1961.75	0.542E-23	P(43)	G
28	544.500 26(11)*	1381.21	0.522E-22	P(43)	H
29	544.583 86(9)	1648.90	0.542E-23	P(33)	J
30	544.629 77(19)	588.74	0.599E-23	P(37)	P
31	544.708 54(9)	1594.39	0.488E-23	P(31)	I
32	544.900 55(10)*	1197.77	0.116E-21	P(53)	A
33	544.980 83(22)	1789.25	0.633E-23	P(53)	C
34	545.291 02(11)*	1345.22	0.606E-22	P(42)	H
35	545.365 63(9)	1621.19	0.601E-23	P(32)	J
36	545.456 17(17)	557.77	0.680E-23	P(36)	P
37	545.589 11(9)	1568.36	0.548E-23	P(30)	I
38	545.716 63(10)*	1153.46	0.142E-21	P(52)	A
39	545.799 82(20)	1744.84	0.774E-23	P(52)	C
40	546.082 24(11)*	1310.06	0.700E-22	P(41)	H
41	546.108 01(11)	1890.51	0.731E-23	P(41)	G
42	546.149 01(9)	1594.33	0.665E-23	P(31)	J
43	546.282 95(16)	527.64	0.769E-23	P(35)	P
44	546.467 83(9)	1543.16	0.611E-23	P(29)	I
45	546.533 21(9)*	1109.98	0.173E-21	P(51)	A
46	546.619 27(18)	1701.27	0.942E-23	P(51)	C
47	546.873 96(11)*	1275.74	0.805E-22	P(40)	H
48	547.110 11(15)	498.34	0.866E-23	P(34)	P
49	547.344 75(9)	1518.81	0.679E-23	P(28)	I
50	547.350 26(9)*	1067.33	0.210E-21	P(50)	A
51	547.439 18(16)	1658.53	0.114E-22	P(50)	C
52	547.666 23(11)*	1242.25	0.921E-22	P(39)	H
53	547.815 05(11)	1822.61	0.967E-23	P(39)	G
54	548.167 80(9)*	1025.52	0.254E-21	P(49)	A
55	548.351 69(11)	1742.67	0.490E-23	P(52)	B
56	548.459 09(11)*	1209.60	0.105E-21	P(38)	H
57	548.668 73(11)	1789.92	0.110E-22	P(38)	G
58	548.765 52(14)	442.25	0.108E-22	P(32)	P
59	548.985 81(9)*	984.54	0.304E-21	P(48)	A
60	549.252 57(11)*	1177.78	0.119E-21	P(37)	H
61	549.299 01(9)	1495.26	0.945E-23	P(27)	J
62	549.522 49(11)	1758.06	0.125E-22	P(37)	G
63	549.593 77(14)	415.46	0.119E-22	P(31)	P
64	549.777 36(10)	1656.51	0.749E-23	P(50)	B
65	549.804 30(9)*	944.39	0.364E-21	P(47)	A
66	549.804 46(25)	782.62	0.143E-23	P(44)	T
67	549.901 69(12)	1535.31	0.198E-22	P(47)	C
68	550.046 72(11)*	1146.80	0.134E-21	P(36)	H

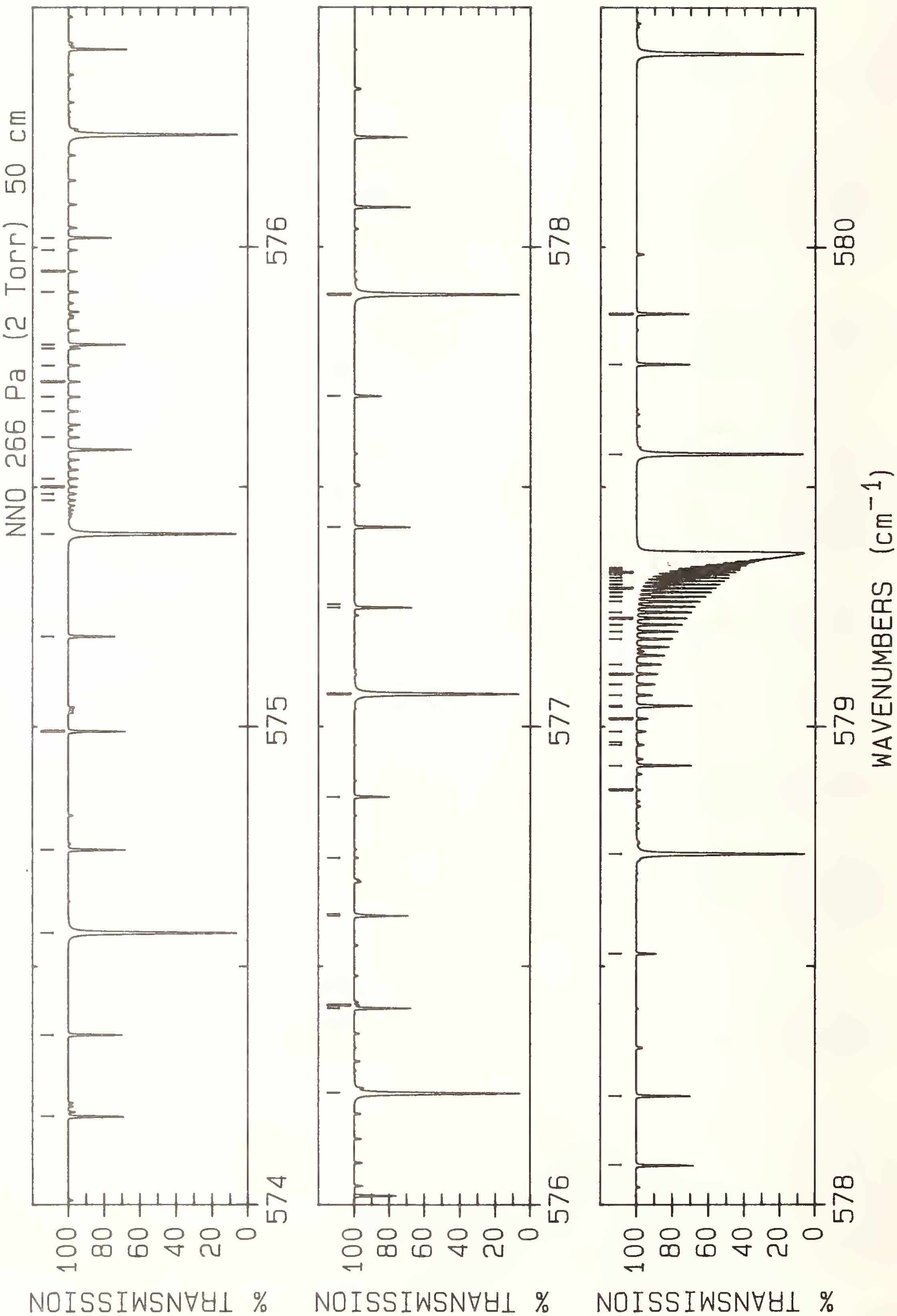

NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
550 551 552 553 554
554 555 556 557 558
558 559 560 561 562
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	550.623 26(8)*	905.08	0.434E-21	P(46)	A
2	550.841 57(11)*	1116.65	0.151E-21	P(35)	H
3	551.442 70(8)*	866.60	0.514E-21	P(45)	A
4	551.545 65(10)	1457.34	0.278E-22	P(45)	C
5	551.637 17(11)*	1087.34	0.168E-21	P(34)	H
6	552.262 61(8)*	828.95	0.606E-21	P(44)	A
7	552.368 31(10)	1419.61	0.328E-22	P(44)	C
8	552.433 56(11)*	1058.86	0.187E-21	P(33)	H
9	552.667 81(9)	1494.20	0.165E-22	P(46)	B
10	552.910 37(13)	316.65	0.171E-22	P(27)	P
11	552.937 74(11)	1638.97	0.200E-22	P(33)	G
12	553.082 99(8)*	792.14	0.711E-21	P(43)	A
13	553.191 43(9)	1382.71	0.385E-22	P(43)	C
14	553.275 18(9)	1390.28	0.131E-22	P(22)	J
15	553.740 40(13)	294.04	0.184E-22	P(26)	P
16	553.791 46(11)	1611.29	0.222E-22	P(32)	G
17	553.903 83(8)*	756.16	0.832E-21	P(42)	A
18	554.075 75(9)	1371.80	0.138E-22	P(21)	J
19	554.300 74(9)	1354.18	0.127E-22	P(20)	I
20	554.570 78(13)	272.26	0.198E-22	P(25)	P
21	554.645 09(11)	1584.45	0.244E-22	P(31)	G
22	554.725 15(8)*	721.01	0.968E-21	P(41)	A
23	554.868 90(9)	1381.21	0.283E-22	P(43)	B
24	554.878 14(9)	1354.16	0.144E-22	P(20)	J
25	555.163 43(9)	1337.38	0.134E-22	P(19)	I
26	555.401 51(13)	251.32	0.211E-22	P(24)	P
27	555.498 60(11)	1558.45	0.268E-22	P(30)	G
28	555.546 92(8)*	686.70	0.112E-20	P(40)	A
29	555.663 47(8)	1277.04	0.605E-22	P(40)	C
30	556.024 75(9)	1321.41	0.140E-22	P(18)	I
31	556.232 57(14)	231.22	0.224E-22	P(23)	P
32	556.369 16(8)*	653.23	0.129E-20	P(39)	A
33	556.884 71(9)	1306.29	0.145E-22	P(17)	I
34	557.097 50(9)	1275.74	0.463E-22	P(40)	B
35	557.191 85(8)*	620.59	0.148E-20	P(38)	A
36	557.230 62(11)*	905.56	0.321E-21	P(27)	H
37	557.313 73(8)	1210.77	0.798E-22	P(38)	C
38	557.846 31(9)	1242.25	0.541E-22	P(39)	B
39	557.895 71(14)	193.53	0.247E-22	P(21)	P
40	558.015 00(8)*	588.78	0.169E-20	P(37)	A
41	558.033 59(11)*	882.94	0.345E-21	P(26)	H
42	558.058 14(11)	1485.45	0.344E-22	P(27)	G
43	558.139 52(8)	1178.89	0.910E-22	P(37)	C
44	558.598 03(9)	1209.60	0.628E-22	P(38)	B
45	558.600 70(9)	1278.57	0.153E-22	P(15)	I
46	558.727 78(14)	175.94	0.257E-22	P(20)	P
47	558.837 65(11)*	861.16	0.368E-21	P(25)	H
48	558.838 61(8)*	557.81	0.192E-20	P(36)	A
49	558.965 75(8)	1147.85	0.103E-21	P(36)	C
50	559.352 62(9)	1177.78	0.725E-22	P(37)	B
51	559.456 79(9)	1265.97	0.156E-22	P(14)	I
52	559.642 83(11)*	840.21	0.392E-21	P(24)	H
53	559.662 67(8)*	527.67	0.217E-20	P(35)	A
54	559.763 42(11)	1440.98	0.395E-22	P(25)	G
55	559.792 41(8)	1117.64	0.116E-21	P(35)	C
56	560.110 05(9)	1146.80	0.833E-22	P(36)	B
57	560.449 15(11)*	820.10	0.414E-21	P(23)	H
58	560.487 18(8)*	498.37	0.244E-20	P(34)	A
59	560.870 27(9)	1116.65	0.952E-22	P(35)	B
60	561.193 25(14)	376.38	0.140E-22	P(30)	R
61	561.256 65(11)*	800.83	0.435E-21	P(22)	H
62	561.260 50(12)	1677.44	0.997E-23	P(34)	F
63	561.312 13(8)*	469.91	0.273E-20	P(33)	A
64	561.467 59(11)	1399.85	0.444E-22	P(23)	G
65	561.633 25(9)	1087.34	0.108E-21	P(34)	B
66	561.991 02(14)	352.10	0.153E-22	P(29)	R


NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
562 563 564 565 566
566 567 568 569 570
570 571 572 573 574
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	562.137 53(8)*	442.28	0.305E-20	P(32)	A
2	562.274 98(8)	1032.06	0.163E-21	P(32)	C
3	562.319 20(11)	1380.55	0.466E-22	P(22)	G
4	562.398 95(9)	1058.86	0.122E-21	P(33)	B
5	562.869 02(9)	1223.96	0.153E-22	P(10)	I
6	562.875 30(11)*	764.79	0.473E-21	P(20)	H
7	562.963 37(8)*	415.49	0.337E-20	P(31)	A
8	563.103 36(9)	1005.20	0.180E-21	P(31)	C
9	563.686 51(11)*	748.03	0.488E-21	P(19)	H
10	563.789 66(8)*	389.53	0.372E-20	P(30)	A
11	563.932 16(9)	979.18	0.198E-21	P(30)	C
12	563.938 36(9)	1004.42	0.154E-21	P(31)	B
13	564.499 01(11)*	732.11	0.501E-21	P(18)	H
14	564.616 38(8)*	364.41	0.408E-20	P(29)	A
15	564.711 99(9)	978.45	0.171E-21	P(30)	B
16	564.761 38(9)	954.01	0.217E-21	P(29)	C
17	564.871 85(11)	1327.67	0.520E-22	P(19)	G
18	565.312 82(11)*	717.02	0.511E-21	P(17)	H
19	565.443 53(8)*	340.12	0.445E-20	P(28)	A
20	565.591 01(9)	929.66	0.236E-21	P(28)	C
21	565.721 93(11)	1311.72	0.532E-22	P(18)	G
22	566.127 20(15)	218.31	0.126E-22	P(23)	T
23	566.127 97(11)*	702.77	0.518E-21	P(16)	H
24	566.266 92(9)	929.02	0.207E-21	P(28)	B
25	566.271 12(8)*	316.67	0.482E-20	P(27)	A
26	566.421 06(9)	906.16	0.255E-21	P(27)	C
27	566.571 58(11)	1296.61	0.540E-22	P(17)	G
28	566.944 47(11)*	689.36	0.521E-21	P(15)	H
29	567.048 15(9)	905.56	0.226E-21	P(27)	B
30	567.099 14(8)*	294.06	0.520E-20	P(26)	A
31	567.251 52(9)	883.50	0.274E-21	P(26)	C
32	567.420 76(11)	1282.33	0.544E-22	P(16)	G
33	567.762 36(11)*	676.79	0.519E-21	P(14)	H
34	567.831 83(9)	882.94	0.245E-21	P(26)	B
35	567.927 58(8)*	272.28	0.558E-20	P(25)	A

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	568.082 38(9)	861.67	0.293E-21	P(25)	C
37	568.269 48(11)	1268.90	0.543E-22	P(15)	G
38	568.581 63(11)*	665.05	0.514E-21	P(13)	H
39	568.617 95(9)	861.16	0.265E-21	P(25)	B
40	568.756 44(8)*	251.34	0.595E-20	P(24)	A
41	568.913 65(9)	840.68	0.312E-21	P(24)	C
42	569.117 70(11)	1256.31	0.538E-22	P(14)	G
43	569.402 32(11)*	654.15	0.504E-21	P(12)	H
44	569.406 45(9)	840.21	0.283E-21	P(24)	B
45	569.585 73(8)*	231.24	0.631E-20	P(23)	A
46	569.745 32(9)	820.54	0.329E-21	P(23)	C
47	569.965 41(11)	1244.55	0.527E-22	P(13)	G
48	570.197 31(9)	820.10	0.302E-21	P(23)	B
49	570.224 43(11)*	644.10	0.489E-21	P(11)	H
50	570.415 43(8)*	211.97	0.665E-20	P(22)	A
51	570.577 39(9)	801.23	0.345E-21	P(22)	C
52	570.812 59(11)	1233.63	0.511E-22	P(12)	G
53	571.047 99(11)*	634.88	0.470E-21	P(10)	H
54	571.245 55(8)*	193.54	0.696E-20	P(21)	A
55	571.778 27(9)	1390.30	0.273E-22	Q(22)	I
56	571.785 98(9)	782.39	0.335E-21	P(21)	B
57	571.873 00(11)*	626.49	0.446E-21	P(9)	H
58	572.076 08(8)*	175.95	0.724E-20	P(20)	A
59	572.077 84(9)	1543.16	0.180E-22	Q(29)	I
60	572.242 71(9)	765.12	0.372E-21	P(20)	C
61	572.505 31(11)	1214.32	0.462E-22	P(10)	G
62	572.699 47(11)*	618.95	0.418E-21	P(8)	H
63	572.907 01(8)*	159.20	0.748E-20	P(19)	A
64	573.075 95(9)	748.33	0.382E-21	P(19)	C
65	573.350 81(11)	1205.92	0.429E-22	P(9)	G
66	573.527 41(11)*	612.24	0.385E-21	P(7)	H
67	573.738 36(8)*	143.28	0.767E-20	P(18)	A
68	573.909 58(9)	732.38	0.390E-21	P(18)	C


NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
574
575
576
577
578
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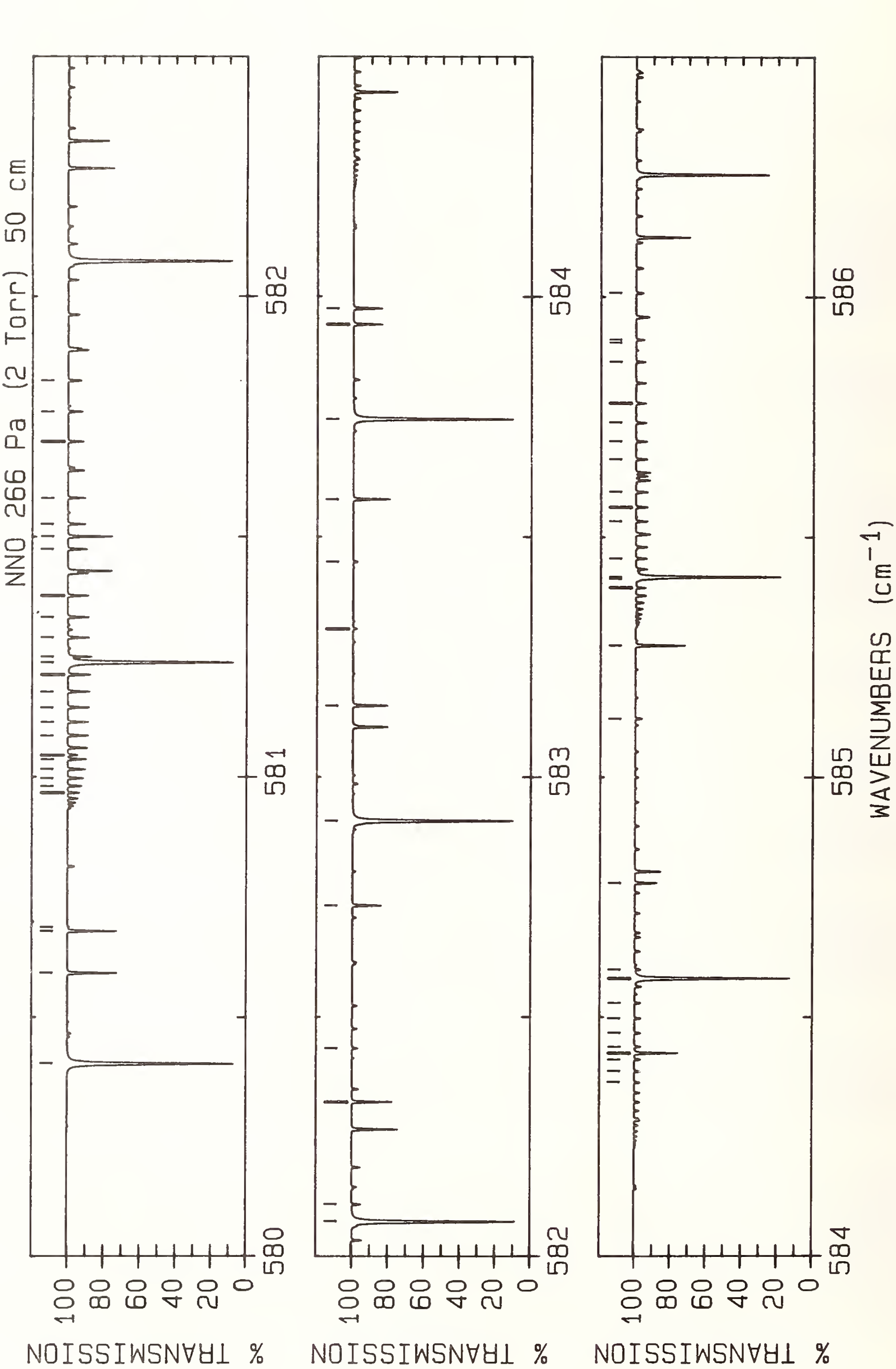
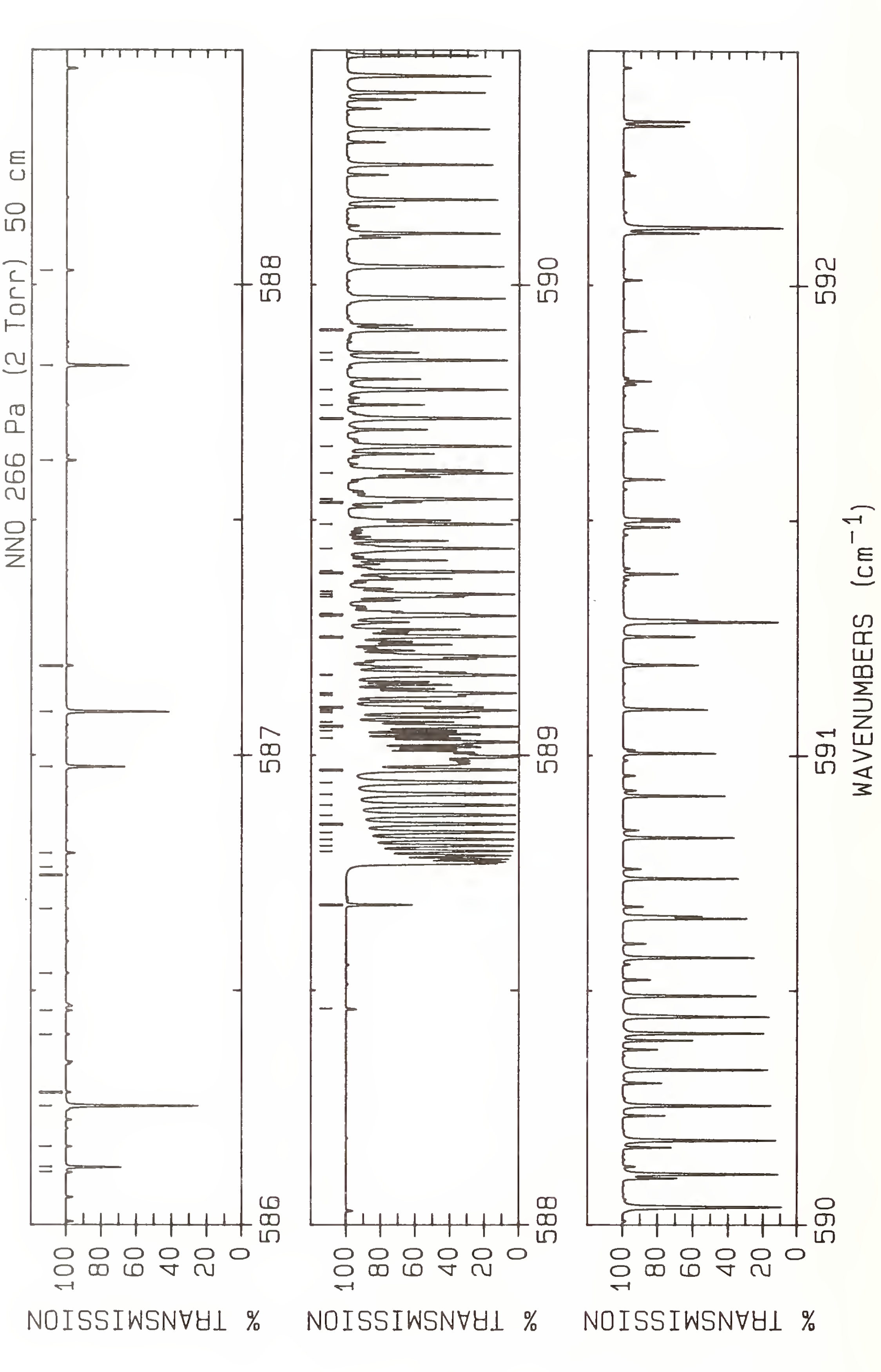
580
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	574.185 88(9)	732.11	0.370E-21	P(18)	B	36	578.083 38(9)	665.20	0.372E-21	P(13)	C
2	574.356 83(11)*	606.37	0.348E-21	P(6)	H	37	578.228 93(9)	665.05	0.362E-21	P(13)	B
3	574.570 10(8)*	128.20	0.780E-20	P(17)	A	38	578.526 26(11)*	589.61	0.110E-21	P(1)	H
4	574.743 59(9)	717.26	0.394E-21	P(17)	C	39	578.734 72(8)*	65.36	0.747E-20	P(12)	A
5	574.990 24(9)	717.02	0.376E-21	P(17)	B	40	578.868 79(12)*	1616.62	0.245E-22	Q(49)	H
6	575.187 73(11)*	601.34	0.306E-21	P(5)	H	41	578.919 25(9)	654.28	0.356E-21	P(12)	C
7	575.402 24(8)*	113.96	0.788E-20	P(16)	A	42	578.962 08(12)*	1495.90	0.435E-22	Q(46)	H
8	575.472 86(13)	17.60	0.419E-22	Q(6)	P	43	578.967 74(9)	1207.99	0.892E-23	R(8)	J
9	575.485 98(13)	23.46	0.470E-22	Q(7)	P	44	578.990 13(12)*	1457.34	0.521E-22	Q(45)	H
10	575.500 96(13)	30.17	0.516E-22	Q(8)	P	45	579.016 73(12)*	1419.61	0.623E-22	Q(44)	H
11	575.517 81(13)	37.71	0.555E-22	Q(9)	P	46	579.041 92(12)*	1382.71	0.740E-22	Q(43)	H
12	575.603 92(13)	76.25	0.655E-22	Q(13)	P	47	579.043 81(9)	654.15	0.347E-21	P(12)	B
13	575.658 18(13)	100.55	0.668E-22	Q(15)	P	48	579.065 74(11)*	1346.65	0.874E-22	Q(42)	H
14	575.688 10(13)	113.95	0.666E-22	Q(16)	P	49	579.088 25(11)*	1311.42	0.103E-21	Q(41)	H
15	575.719 89(13)	128.19	0.659E-22	Q(17)	P	50	579.109 47(11)*	1277.04	0.120E-21	Q(40)	H
16	575.753 54(13)	143.27	0.648E-22	Q(18)	P	51	579.129 45(11)*	1243.48	0.140E-21	Q(39)	H
17	575.789 05(13)	159.19	0.632E-22	Q(19)	P	52	579.182 42(11)*	1147.85	0.214E-21	Q(36)	H
18	575.796 74(9)	702.77	0.378E-21	P(16)	B	53	579.197 91(11)*	1117.64	0.245E-21	Q(35)	H
19	575.906 74(13)	211.96	0.564E-22	Q(22)	P	54	579.212 37(11)*	1088.28	0.277E-21	Q(34)	H
20	575.949 67(13)	231.22	0.537E-22	Q(23)	P	55	579.225 87(11)*	1059.75	0.313E-21	Q(33)	H
21	575.994 47(13)	251.32	0.507E-22	Q(24)	P	56	579.238 43(11)*	1032.06	0.352E-21	Q(32)	H
22	576.020 13(11)*	597.15	0.262E-21	P(4)	H	57	579.260 95(11)*	979.18	0.436E-21	Q(30)	H
23	576.234 78(8)*	100.55	0.789E-20	P(15)	A	58	579.270 98(11)*	954.01	0.481E-21	Q(29)	H
24	576.412 74(9)	689.55	0.391E-21	P(15)	C	59	579.280 26(11)*	929.66	0.529E-21	Q(28)	H
25	576.419 25(15)	442.25	0.266E-22	Q(32)	P	60	579.288 82(11)*	906.16	0.577E-21	Q(27)	H
26	576.605 38(9)	689.36	0.377E-21	P(15)	B	61	579.296 69(11)*	883.50	0.627E-21	Q(26)	H
27	576.608 86(17)	527.64	0.192E-22	Q(35)	P	62	579.303 93(11)*	861.67	0.676E-21	Q(25)	H
28	576.726 85(11)	1180.73	0.246E-22	P(5)	G	63	579.310 56(11)*	840.68	0.726E-21	Q(24)	H
29	576.854 01(11)*	593.80	0.214E-21	P(3)	H	64	579.316 62(11)*	820.54	0.774E-21	Q(23)	H
30	577.067 71(8)*	87.98	0.782E-20	P(14)	A	65	579.322 15(11)*	801.23	0.820E-21	Q(22)	H
31	577.247 88(9)	676.95	0.384E-21	P(14)	C	66	579.327 19(11)*	782.76	0.863E-21	Q(21)	H
32	577.255 30(9)	1195.39	0.643E-23	R(6)	J	67	579.331 76(11)*	765.12	0.904E-21	Q(20)	H
33	577.416 12(9)	676.79	0.372E-21	P(14)	B	68	579.568 80(8)*	55.31	0.716E-20	P(11)	A
34	577.689 39(11)*	591.28	0.163E-21	P(2)	H	69	579.755 48(9)	644.20	0.335E-21	P(11)	C
35	577.901 02(8)*	76.25	0.769E-20	P(13)	A	70	579.860 72(9)	644.10	0.329E-21	P(11)	B



NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
580
581
582
583
584
585
586
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	580.403 26(8)*	46.09	0.678E-20	P(10)	A
2	580.592 06(9)	634.96	0.310E-21	P(10)	C
3	580.679 65(9)	634.88	0.305E-21	P(10)	B
4	580.687 48(9)	1223.96	0.110E-22	R(10)	J
5	580.967 42(11)	1180.73	0.690E-22	Q(5)	G
6	580.981 35(11)	1185.77	0.795E-22	Q(6)	G
7	580.997 62(11)	1191.65	0.890E-22	Q(7)	G
8	581.016 23(11)	1198.37	0.975E-22	Q(8)	G
9	581.037 17(11)	1205.92	0.105E-21	Q(9)	G
10	581.045 77(11)*	589.61	0.560E-22	R(1)	H
11	581.086 13(11)	1223.56	0.116E-21	Q(11)	G
12	581.114 15(11)	1233.63	0.120E-21	Q(12)	G
13	581.144 54(11)	1244.55	0.123E-21	Q(13)	G
14	581.177 32(11)	1256.31	0.124E-21	Q(14)	G
15	581.212 48(11)	1268.90	0.125E-21	Q(15)	G
16	581.238 10(8)*	37.71	0.630E-20	P(9)	A
17	581.250 05(11)	1282.33	0.124E-21	Q(16)	G
18	581.290 02(11)	1296.61	0.122E-21	Q(17)	G
19	581.332 42(11)	1311.72	0.120E-21	Q(18)	G
20	581.377 24(11)	1327.67	0.116E-21	Q(19)	G
21	581.474 24(11)	1362.08	0.108E-21	Q(21)	G
22	581.500 58(9)	626.49	0.277E-21	P(9)	B
23	581.526 44(11)	1380.55	0.103E-21	Q(22)	G
24	581.581 11(11)	1399.85	0.975E-22	Q(23)	G
25	581.697 95(11)	1440.98	0.860E-22	Q(25)	G
26	581.760 15(11)	1462.80	0.800E-22	Q(26)	G
27	581.824 87(11)	1485.45	0.741E-22	Q(27)	G
28	582.073 30(8)*	30.17	0.575E-20	P(8)	A
29	582.109 35(11)	1584.45	0.515E-22	Q(31)	G
30	582.323 49(9)	618.95	0.244E-21	P(8)	B
31	582.435 33(11)	1696.84	0.329E-22	Q(35)	G
32	582.732 80(11)*	593.80	0.167E-21	R(3)	H
33	582.908 87(8)*	23.46	0.512E-20	P(7)	A
34	583.148 37(9)	612.24	0.207E-21	P(7)	B
35	583.308 40(7)	1201.27	0.119E-22	P(7)	E
36	583.308 58(7)	1201.27	0.119E-22	P(7)	F
37	583.448 09(11)	1170.65	0.268E-22	R(2)	G
38	583.578 50(11)*	597.15	0.220E-21	R(4)	H
39	583.744 80(8)*	17.60	0.441E-20	P(6)	A
40	583.941 90(9)	606.41	0.168E-21	P(6)	C
41	583.975 21(9)	606.37	0.167E-21	P(6)	B
42	584.364 03(14)	61.71	0.343E-22	Q(12)	T
43	584.387 23(14)	71.99	0.353E-22	Q(13)	T
44	584.412 22(14)	83.06	0.359E-22	Q(14)	T
45	584.425 64(11)*	601.34	0.272E-21	R(5)	H
46	584.438 98(14)	94.93	0.362E-22	Q(15)	T
47	584.467 53(14)	107.58	0.363E-22	Q(16)	T
48	584.497 85(14)	121.03	0.361E-22	Q(17)	T
49	584.529 95(14)	135.27	0.356E-22	Q(18)	T
50	584.581 09(8)*	12.57	0.363E-20	P(5)	A
51	584.599 47(14)	166.12	0.339E-22	Q(20)	T
52	584.780 21(9)	601.37	0.125E-21	P(5)	C
53	585.121 66(11)	1176.53	0.395E-22	R(4)	G
54	585.274 19(11)*	606.37	0.320E-21	R(6)	H
55	585.395 05(13)	36.44	0.554E-22	Q(9)	R
56	585.413 51(13)	44.53	0.589E-22	Q(10)	R
57	585.417 73(8)*	8.38	0.279E-20	P(4)	A
58	585.455 96(13)	63.15	0.640E-22	Q(12)	R
59	585.533 44(13)	97.16	0.673E-22	Q(15)	R
60	585.562 95(13)	110.11	0.673E-22	Q(16)	R
61	585.594 29(14)	123.87	0.668E-22	Q(17)	R
62	585.662 49(14)	153.82	0.643E-22	Q(19)	R
63	585.699 33(14)	170.01	0.625E-22	Q(20)	R
64	585.738 01(14)	187.01	0.604E-22	Q(21)	R
65	585.778 52(14)	204.82	0.580E-22	Q(22)	R
66	585.865 03(14)	242.85	0.524E-22	Q(24)	R
67	585.904 96(27)	747.87	0.427E-23	Q(43)	T
68	585.911 03(13)	263.09	0.495E-22	Q(25)	R
69	586.008 48(13)	305.98	0.433E-22	Q(27)	R



NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
586
587
588
588
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590
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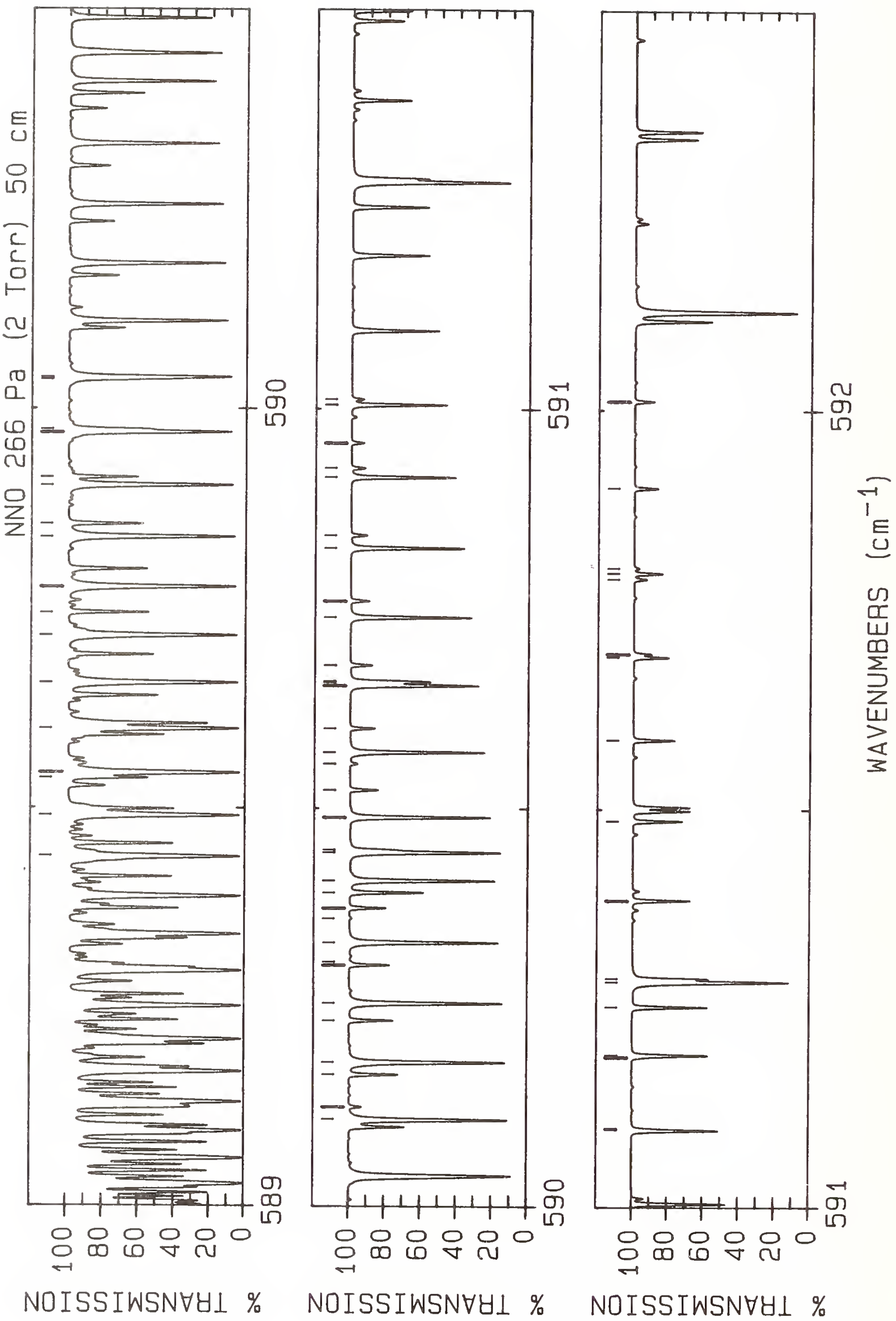
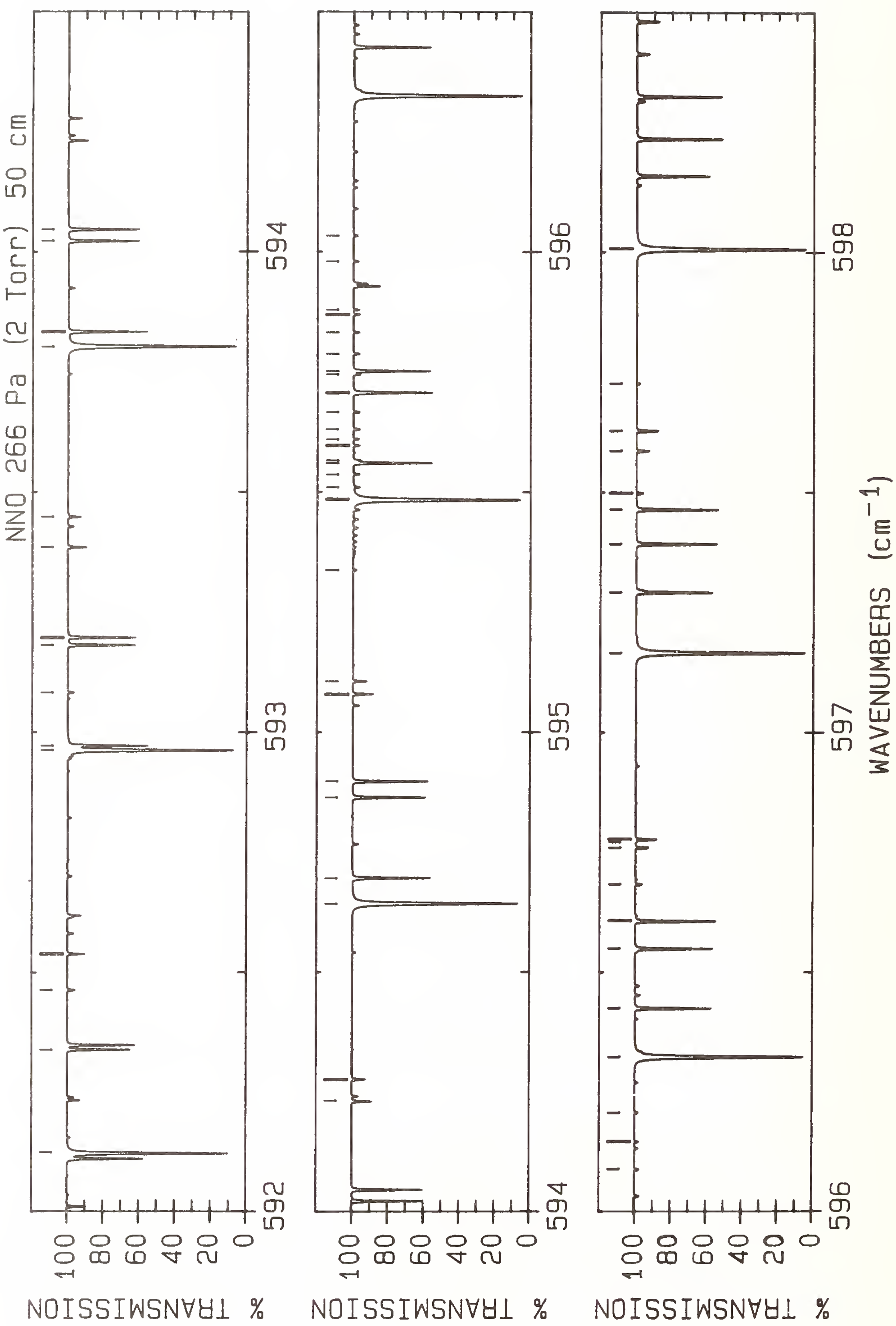
591
592
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	586.113 22(14)	352.10	0.372E-22	Q(29)	R	36	589.070 32(9)	801.23	0.975E-21	Q(22)	C
2	586.124 16(11)*	612.24	0.366E-21	R(7)	H	37	589.090 85(9)	840.68	0.889E-21	Q(24)	C
3	586.168 31(14)	376.38	0.341E-22	Q(30)	R	38	589.095 35(8)*	143.28	0.183E-19	Q(18)	A
4	586.254 73(8)*	5.03	0.190E-20	P(3)	A	39	589.101 81(9)	644.10	0.981E-21	Q(11)	B
5	586.283 94(14)	427.35	0.284E-22	Q(32)	R	40	589.102 17(9)	861.67	0.841E-21	Q(25)	C
6	586.406 81(15)	481.55	0.232E-22	Q(34)	R	41	589.127 04(9)	906.16	0.742E-21	Q(27)	C
7	586.457 83(9)	593.81	0.363E-22	P(3)	C	42	589.131 70(8)*	159.20	0.178E-19	Q(19)	A
8	586.536 90(17)	538.98	0.185E-22	Q(36)	R	43	589.169 95(8)*	175.95	0.173E-19	Q(20)	A
9	586.674 18(19)	599.64	0.146E-22	Q(38)	R	44	589.170 44(9)	979.18	0.591E-21	Q(30)	C
10	586.745 52(20)	631.18	0.128E-22	Q(39)	R	45	589.250 83(6)	1243.28	0.855E-22	Q(12)	E
11	586.762 47(9)	1306.29	0.146E-22	R(17)	J	46	589.252 16(8)*	211.97	0.159E-19	Q(22)	A
12	586.792 49(11)	1185.77	0.509E-22	R(6)	G	47	589.252 26(6)	1243.28	0.855E-22	Q(12)	F
13	586.975 52(11)*	618.95	0.408E-21	R(8)	H	48	589.295 00(6)	1278.57	0.909E-22	Q(15)	E
14	587.092 07(8)*	2.51	0.968E-21	P(2)	A	49	589.296 11(8)*	231.24	0.151E-19	Q(23)	A
15	587.189 59(13)	76.25	0.389E-22	R(13)	P	50	589.298 39(6)	1278.56	0.909E-22	Q(15)	F
16	587.626 86(11)	1191.65	0.559E-22	R(7)	G	51	589.300 64(9)	732.11	0.104E-20	Q(18)	B
17	587.828 24(11)*	626.49	0.446E-21	R(9)	H	52	589.336 58(9)	748.03	0.101E-20	Q(19)	B
18	588.030 88(13)	87.98	0.394E-22	R(14)	P	53	589.341 96(8)*	251.34	0.143E-19	Q(24)	A
19	588.460 56(11)	1198.37	0.605E-22	R(8)	G	54	589.347 91(6)	1321.41	0.892E-22	Q(18)	E
20	588.682 32(11)*	634.88	0.480E-21	R(10)	H	55	589.387 83(6)	1354.18	0.848E-22	Q(20)	E
21	588.796 54(8)*	12.57	0.102E-19	Q(5)	A	56	589.389 71(8)*	272.28	0.134E-19	Q(25)	A
22	588.808 04(8)*	17.60	0.118E-19	Q(6)	A	57	589.391 58(9)	1354.16	0.142E-22	R(20)	J
23	588.821 46(8)*	23.46	0.132E-19	Q(7)	A	58	589.439 34(8)*	294.06	0.126E-19	Q(26)	A
24	588.836 80(8)*	30.17	0.145E-19	Q(8)	A	59	589.490 87(8)*	316.67	0.117E-19	Q(27)	A
25	588.854 05(8)*	37.71	0.156E-19	Q(9)	A	60	589.537 73(11)*	644.10	0.509E-21	R(11)	H
26	588.873 22(8)*	46.09	0.166E-19	Q(10)	A	61	589.544 28(8)*	340.12	0.108E-19	Q(28)	A
27	588.894 30(8)*	55.31	0.174E-19	Q(11)	A	62	589.544 51(9)	840.21	0.816E-21	Q(24)	B
28	588.917 29(8)*	65.36	0.180E-19	Q(12)	A	63	589.599 58(8)*	364.41	0.995E-20	Q(29)	A
29	588.942 19(8)*	76.25	0.184E-19	Q(13)	A	64	589.656 77(8)*	389.53	0.910E-20	Q(30)	A
30	588.969 01(8)*	87.98	0.187E-19	Q(14)	A	65	589.715 83(8)*	415.49	0.828E-20	Q(31)	A
31	589.036 82(9)	732.38	0.109E-20	Q(18)	C	66	589.744 58(9)	929.02	0.617E-21	Q(28)	B
32	589.052 38(9)	765.12	0.104E-20	Q(20)	C	67	589.776 78(8)*	442.28	0.751E-20	Q(32)	A
33	589.060 90(8)*	128.20	0.186E-19	Q(17)	A	68	589.839 60(8)*	469.91	0.676E-20	Q(33)	A
34	589.061 04(9)	782.76	0.101E-20	Q(21)	C	69	589.855 82(8)	978.45	0.519E-21	Q(30)	B
35	589.062 02(9)	626.49	0.876E-21	Q(9)	B	70	589.904 30(8)*	498.37	0.607E-20	Q(34)	A


NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
589
590
591
592
WAVENUMBERS (cm^{-1})

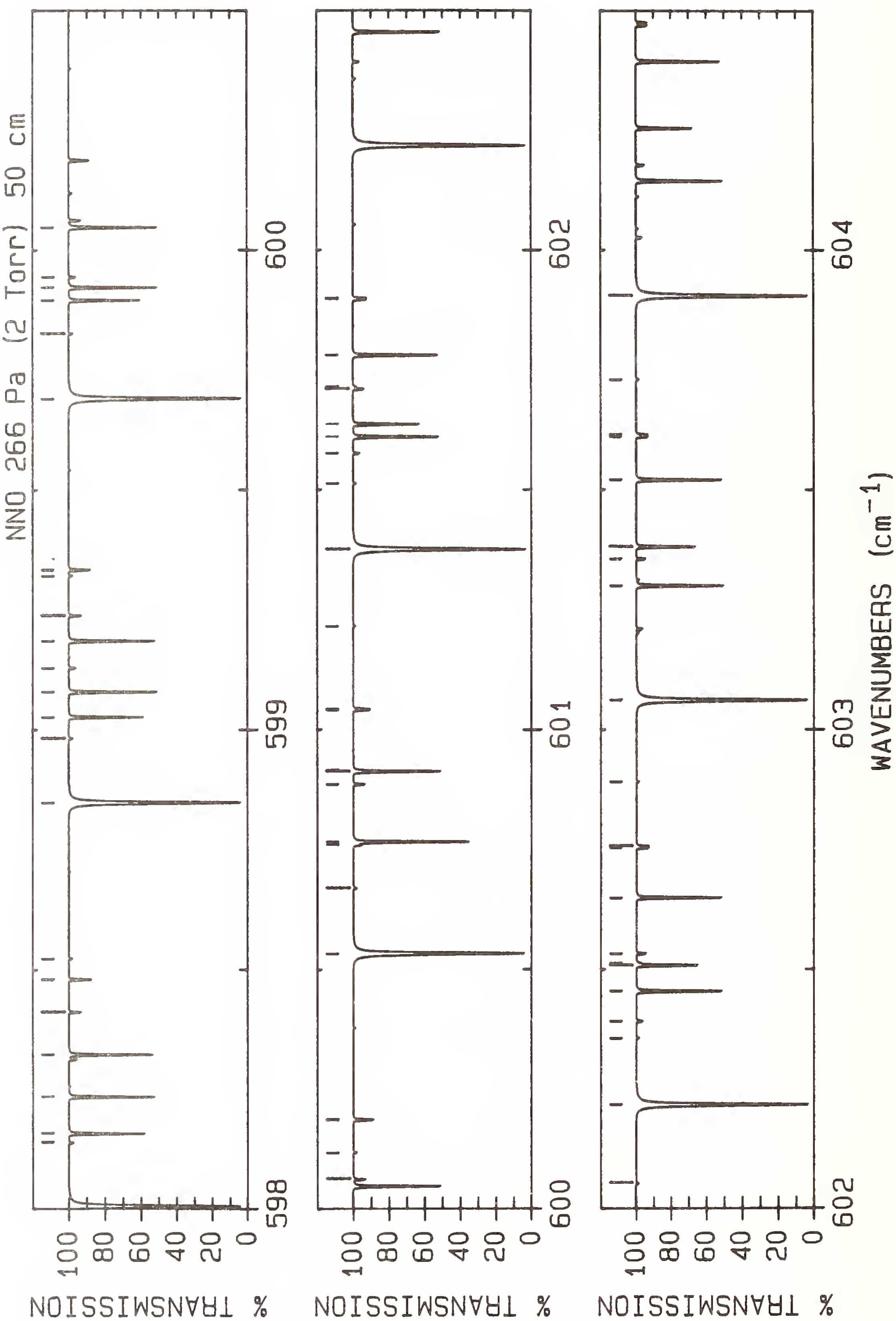
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	589.439 34(8)*	294.06	0.126E-19	Q(26)	A
2	589.490 87(8)*	316.67	0.117E-19	Q(27)	A
3	589.537 73(11)*	644.10	0.509E-21	R(11)	H
4	589.544 28(8)*	340.12	0.108E-19	Q(28)	A
5	589.544 51(9)	840.21	0.816E-21	Q(24)	B
6	589.599 58(8)*	364.41	0.995E-20	Q(29)	A
7	589.656 77(8)*	389.53	0.910E-20	Q(30)	A
8	589.715 83(8)*	415.49	0.828E-20	Q(31)	A
9	589.744 58(9)	929.02	0.617E-21	Q(28)	B
10	589.776 78(8)*	442.28	0.751E-20	Q(32)	A
11	589.839 60(8)*	469.91	0.676E-20	Q(33)	A
12	589.855 82(8)	978.45	0.519E-21	Q(30)	B
13	589.904 30(8)*	498.37	0.607E-20	Q(34)	A
14	589.914 23(8)	1004.42	0.473E-21	Q(31)	B
15	589.970 86(8)*	527.67	0.542E-20	Q(35)	A
16	589.974 50(8)	1031.22	0.429E-21	Q(32)	B
17	590.036 63(8)	1058.86	0.386E-21	Q(33)	B
18	590.039 30(8)*	557.81	0.481E-20	Q(36)	A
19	590.109 60(8)*	588.78	0.425E-20	Q(37)	A
20	590.125 89(11)	1214.32	0.680E-22	R(10)	G
21	590.166 44(8)	1116.65	0.309E-21	Q(35)	B
22	590.181 77(8)*	620.59	0.374E-20	Q(38)	A
23	590.234 12(8)	1146.80	0.275E-21	Q(36)	B
24	590.255 79(8)*	653.23	0.328E-20	Q(39)	A
25	590.303 65(8)	1177.78	0.243E-21	Q(37)	B
26	590.307 43(96)	2008.88	0.814E-23	Q(44)	F
27	590.331 68(8)*	686.70	0.285E-20	Q(40)	A
28	590.361 80(9)*	1302.43	0.863E-23	P(6)	D
29	590.362 1	2046.63	0.694E-23	Q(45)	F
30	590.375 02(8)	1209.60	0.214E-21	Q(38)	B
31	590.394 44(11)*	654.15	0.534E-21	R(12)	H
32	590.409 41(8)*	721.01	0.248E-20	Q(41)	A
33	590.444 81(8)*	0.84	0.298E-20	R(1)	A
34	590.448 23(8)	1242.25	0.187E-21	Q(39)	B
35	590.489 00(8)*	756.16	0.214E-20	Q(42)	A
36	590.523 28(8)	1275.74	0.163E-21	Q(40)	B
37	590.555 84(14)	128.19	0.390E-22	R(17)	P
38	590.570 44(8)*	792.14	0.184E-20	Q(43)	A
39	590.600 16(9)	1310.06	0.141E-21	Q(41)	B
40	590.653 72(8)*	828.95	0.157E-20	Q(44)	A
41	590.657 50(9)	589.61	0.342E-21	R(1)	C
42	590.659 09(9)	589.61	0.342E-21	R(1)	B
43	590.678 88(9)	1345.22	0.122E-21	Q(42)	B
44	590.738 84(8)*	866.60	0.134E-20	Q(45)	A
45	590.759 42(9)	1381.21	0.105E-21	Q(43)	B
46	590.825 80(9)*	905.08	0.113E-20	Q(46)	A
47	590.841 78(10)	1418.04	0.898E-22	Q(44)	B
48	590.914 59(9)*	944.39	0.958E-21	Q(47)	A
49	590.925 97(10)	1455.70	0.764E-22	Q(45)	B
50	590.957 53(11)	1223.56	0.709E-22	R(11)	G
51	591.005 21(9)*	984.54	0.805E-21	Q(48)	A
52	591.011 98(11)	1494.20	0.648E-22	Q(46)	B
53	591.097 66(9)*	1025.52	0.673E-21	Q(49)	A
54	591.099 80(12)	1533.53	0.547E-22	Q(47)	B
55	591.189 42(14)	1573.69	0.459E-22	Q(48)	B
56	591.191 94(9)*	1067.33	0.561E-21	Q(50)	A
57	591.252 43(11)*	665.05	0.554E-21	R(13)	H
58	591.283 82(8)*	2.51	0.397E-20	R(2)	A
59	591.288 03(10)*	1109.98	0.465E-21	Q(51)	A
60	591.385 94(10)*	1153.46	0.384E-21	Q(52)	A
61	591.485 66(10)*	1197.77	0.315E-21	Q(53)	A
62	591.587 18(10)*	1242.91	0.258E-21	Q(54)	A
63	591.690 51(11)*	1288.88	0.210E-21	Q(55)	A
64	591.694 56(7)	1180.27	0.487E-22	R(2)	E
65	591.694 56(7)	1180.27	0.487E-22	R(2)	F
66	591.788 50(11)	1233.63	0.732E-22	R(12)	G
67	591.795 64(11)*	1335.69	0.170E-21	Q(56)	A
68	591.802 29(13)	22.67	0.292E-22	R(7)	R
69	591.902 57(11)*	1383.33	0.138E-21	Q(57)	A
70	592.011 28(12)*	1431.79	0.111E-21	Q(58)	A



NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100 80 60 40 20 0
592
593
594
595
596
597
598
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	592.123 16(8)*	5.03	0.492E-20	R(3)	A
2	592.339 53(9)	593.81	0.423E-21	R(3)	C
3	592.463 96(13)*	1633.97	0.443E-22	Q(62)	A
4	592.539 12(7)	1182.79	0.508E-22	R(3)	E
5	592.539 12(7)	1182.79	0.508E-22	R(3)	F
6	592.962 80(8)*	8.38	0.584E-20	R(4)	A
7	592.972 14(11)*	689.36	0.579E-21	R(15)	H
8	593.082 32(14)	175.94	0.364E-22	R(20)	P
9	593.180 99(9)	597.17	0.468E-21	R(4)	C
10	593.196 88(9)	597.15	0.467E-21	R(4)	B
11	593.384 73(7)	1186.15	0.535E-22	R(4)	E
12	593.384 76(7)	1186.15	0.535E-22	R(4)	F
13	593.448 43(11)	1256.31	0.759E-22	R(14)	G
14	593.802 76(8)*	12.57	0.671E-20	R(5)	A
15	593.833 80(11)*	702.77	0.584E-21	R(16)	H
16	594.022 74(9)	601.37	0.512E-21	R(5)	C
17	594.046 60(9)	601.34	0.509E-21	R(5)	B
18	594.231 41(7)	1190.35	0.564E-22	R(5)	E
19	594.231 46(7)	1190.35	0.564E-22	R(5)	F
20	594.277 41(11)	1268.90	0.764E-22	R(15)	G
21	594.643 03(8)*	17.60	0.751E-20	R(6)	A
22	594.696 63(11)*	717.02	0.586E-21	R(17)	H
23	594.864 77(9)	606.41	0.553E-21	R(6)	C
24	594.898 22(9)	606.37	0.550E-21	R(6)	B
25	595.079 12(6)	1195.39	0.593E-22	R(6)	E
26	595.079 22(6)	1195.39	0.593E-22	R(6)	F
27	595.105 73(11)	1282.33	0.763E-22	R(16)	G
28	595.337 18(14)	71.99	0.209E-22	R(13)	T
29	595.483 60(8)*	23.46	0.826E-20	R(7)	A
30	595.485 41(9)*	1330.80	0.325E-22	Q(10)	D
31	595.510 00(9)*	1339.98	0.341E-22	Q(11)	D
32	595.536 84(9)*	1349.99	0.353E-22	Q(12)	D
33	595.560 58(11)*	732.11	0.582E-21	R(18)	H
34	595.565 91(9)*	1360.84	0.361E-22	Q(13)	D
35	595.597 22(9)*	1372.52	0.367E-22	Q(14)	D

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	595.610 18(13)	231.22	0.320E-22	R(23)	P
37	595.630 77(9)*	1385.04	0.369E-22	Q(15)	D
38	595.666 55(9)*	1398.38	0.368E-22	Q(16)	D
39	595.704 57(9)*	1412.57	0.364E-22	Q(17)	D
40	595.707 09(9)	612.29	0.591E-21	R(7)	C
41	595.744 83(9)*	1427.58	0.358E-22	Q(18)	D
42	595.751 74(9)	612.24	0.586E-21	R(7)	B
43	595.787 33(9)*	1443.43	0.350E-22	Q(19)	D
44	595.832 07(9)*	1460.12	0.339E-22	Q(20)	D
45	595.869 50(13)	63.15	0.381E-22	R(12)	R
46	595.879 05(9)*	1477.64	0.326E-22	Q(21)	D
47	595.979 73(9)*	1515.18	0.297E-22	Q(23)	D
48	596.033 43(9)*	1535.19	0.281E-22	Q(24)	D
49	596.089 37(9)*	1556.05	0.264E-22	Q(25)	D
50	596.147 55(9)*	1577.73	0.247E-22	Q(26)	D
51	596.207 98(9)*	1600.25	0.230E-22	Q(27)	D
52	596.324 46(8)*	30.17	0.892E-20	R(8)	A
53	596.425 63(11)*	748.03	0.575E-21	R(19)	H
54	596.549 68(9)	619.00	0.624E-21	R(8)	C
55	596.607 17(9)	618.95	0.617E-21	R(8)	B
56	596.683 88(13)	73.68	0.390E-22	R(13)	R
57	596.760 47(11)	1311.72	0.746E-22	R(18)	G
58	596.772 20(9)*	1810.37	0.107E-22	Q(35)	D
59	596.777 65(6)	1207.99	0.641E-22	R(8)	E
60	596.777 96(6)	1207.99	0.641E-22	R(8)	F
61	597.165 63(8)*	37.71	0.951E-20	R(9)	A
62	597.291 75(11)*	764.79	0.564E-21	R(20)	H
63	597.392 54(9)	626.56	0.653E-21	R(9)	C
64	597.464 53(9)	626.49	0.644E-21	R(9)	B
65	597.498 55(14)	85.01	0.396E-22	R(14)	R
66	597.586 91(11)	1327.67	0.730E-22	R(19)	G
67	597.628 44(6)	1215.56	0.660E-22	R(9)	E
68	597.628 92(6)	1215.55	0.660E-22	R(9)	F
69	597.726 60(14)	107.58	0.214E-22	R(16)	T
70	598.007 07(8)*	46.09	0.100E-19	R(10)	A


NNO 266 Pa (2 Torr) 50 cm
% TRANSMISSION
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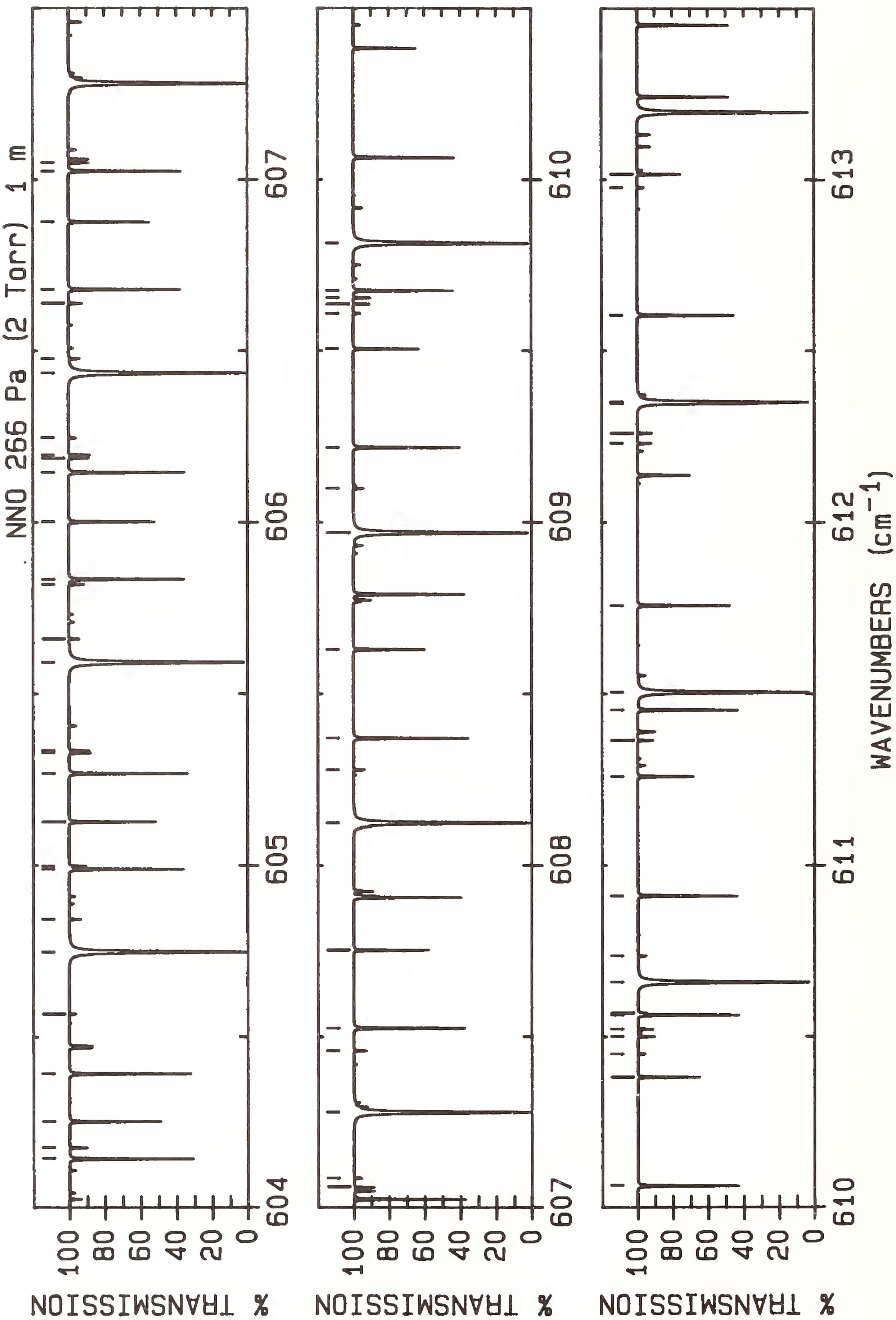
80
60
40
20
0
598
599
600
601
602
603
604
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	598.139 28(13)	294.04	0.268E-22	R(26)	P	36	600.916 55(15)	166.12	0.201E-22	R(20)	T
2	598.158 88(11)*	782.39	0.550E-21	R(21)	H	37	601.041 47(6)	1254.20	0.692E-22	R(13)	E
3	598.235 67(9)	634.96	0.677E-21	R(10)	C	38	601.043 44(6)	1254.20	0.692E-22	R(13)	F
4	598.323 81(9)	634.88	0.665E-21	R(10)	B	39	601.215 49(9)*	1302.43	0.147E-22	R(6)	D
5	598.412 73(11)	1344.45	0.710E-22	R(20)	G	40	601.375 66(8)*	87.98	0.111E-19	R(14)	A
6	598.480 23(6)	1223.96	0.675E-22	R(10)	E	41	601.513 07(14)	389.50	0.196E-22	R(30)	P
7	598.480 95(6)	1223.96	0.675E-22	R(10)	F	42	601.576 26(14)	153.82	0.381E-22	R(19)	R
8	598.523 66(15)	121.03	0.213E-22	R(17)	T	43	601.610 75(9)	676.95	0.719E-21	R(14)	C
9	598.848 81(8)*	55.31	0.104E-19	R(11)	A	44	601.636 90(11)*	861.16	0.468E-21	R(25)	H
10	598.982 56(13)	316.65	0.250E-22	R(27)	P	45	601.710 16(11)	1420.00	0.600E-22	R(24)	G
11	599.027 01(11)*	800.83	0.533E-21	R(22)	H	46	601.714 74(15)	182.72	0.195E-22	R(21)	T
12	599.079 06(9)	644.20	0.695E-21	R(11)	C	47	601.780 45(9)	676.79	0.696E-21	R(14)	B
13	599.128 78(14)	110.11	0.398E-22	R(16)	R	48	601.897 11(6)	1265.97	0.689E-22	R(14)	E
14	599.185 03(9)	644.10	0.681E-21	R(11)	B	49	601.899 75(6)	1265.96	0.689E-22	R(14)	F
15	599.237 95(11)	1362.08	0.687E-22	R(21)	G	50	602.053 23(9)*	1308.27	0.162E-22	R(7)	D
16	599.321 01(15)	135.27	0.210E-22	R(18)	T	51	602.218 48(8)*	100.55	0.111E-19	R(15)	A
17	599.333 01(6)	1233.20	0.685E-22	R(11)	E	52	602.356 77(15)	415.46	0.179E-22	R(31)	P
18	599.334 05(6)	1233.20	0.685E-22	R(11)	F	53	602.392 63(14)	170.01	0.370E-22	R(20)	R
19	599.690 82(8)*	65.36	0.107E-19	R(12)	A	54	602.455 14(9)	689.55	0.717E-21	R(15)	C
20	599.825 96(14)	340.10	0.232E-22	R(28)	P	55	602.508 56(11)*	882.94	0.443E-21	R(26)	H
21	599.896 08(11)*	820.10	0.513E-21	R(23)	H	56	602.513 19(15)	200.12	0.187E-22	R(22)	T
22	599.922 71(9)	654.28	0.709E-21	R(12)	C	57	602.533 11(11)	1440.98	0.567E-22	R(25)	G
23	599.944 33(14)	123.87	0.395E-22	R(17)	R	58	602.649 55(9)	689.36	0.690E-21	R(15)	B
24	600.048 20(9)	654.15	0.692E-21	R(12)	B	59	602.753 68(6)	1278.57	0.682E-22	R(15)	E
25	600.062 59(11)	1380.55	0.660E-22	R(22)	G	60	602.757 13(6)	1278.56	0.681E-22	R(15)	F
26	600.118 65(15)	150.30	0.206E-22	R(19)	T	61	602.891 36(9)*	1314.94	0.175E-22	R(8)	D
27	600.186 76(6)	1243.28	0.691E-22	R(12)	E	62	603.061 56(8)*	113.96	0.111E-19	R(16)	A
28	600.188 21(6)	1243.28	0.691E-22	R(12)	F	63	603.299 77(9)	702.99	0.710E-21	R(16)	C
29	600.533 11(8)*	76.25	0.110E-19	R(13)	A	64	603.355 54(11)	1462.80	0.533E-22	R(26)	G
30	600.669 46(14)	364.38	0.214E-22	R(29)	P	65	603.381 01(11)*	905.56	0.418E-21	R(27)	H
31	600.760 16(14)	138.44	0.389E-22	R(18)	R	66	603.520 67(9)	702.77	0.680E-21	R(16)	B
32	600.766 06(11)*	840.21	0.492E-21	R(24)	H	67	603.611 16(6)	1292.01	0.670E-22	R(16)	E
33	600.766 61(9)	665.20	0.716E-21	R(13)	C	68	603.615 60(6)	1292.01	0.670E-22	R(16)	F
34	600.886 65(11)	1399.85	0.631E-22	R(23)	G	69	603.729 86(9)*	1322.45	0.186E-22	R(9)	D
35	600.913 33(9)	665.05	0.697E-21	R(13)	B	70	603.904 89(8)*	128.20	0.110E-19	R(17)	A


NNO 266 Pa (2 Torr) 1 m
% TRANSMISSION
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604
605
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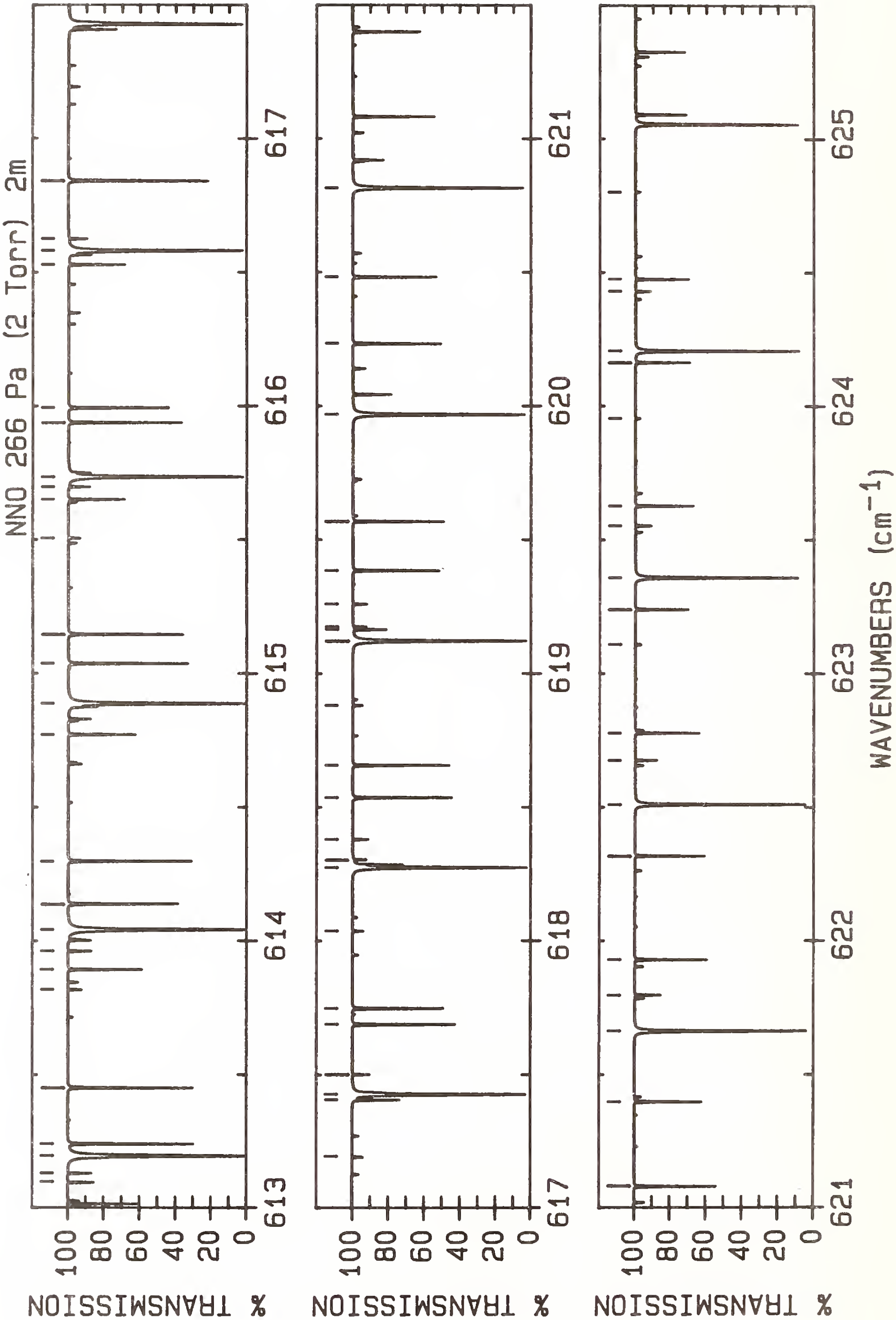
613
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	604.144 62(9)	717.26	0.698E-21	R(17)	C	36	608.125 17(8)*	211.97	0.946E-20	R(22)	A
2	604.177 45(11)	1485.45	0.499E-22	R(27)	G	37	608.279 88(11)	1611.29	0.331E-22	R(32)	G
3	604.254 19(11)*	929.02	0.391E-21	R(28)	H	38	608.372 18(9)	801.23	0.587E-21	R(22)	C
4	604.393 81(9)	717.02	0.666E-21	R(17)	B	39	608.629 49(11)*	1058.86	0.262E-21	R(33)	H
5	604.568 74(9)*	1330.80	0.196E-22	R(10)	D	40	608.969 91(8)*	231.24	0.901E-20	R(23)	A
6	604.748 47(8)*	143.28	0.108E-19	R(18)	A	41	609.099 06(11)	1638.97	0.301E-22	R(33)	G
7	604.843 34(14)	223.43	0.329E-22	R(23)	R	42	609.218 31(9)	820.54	0.558E-21	R(23)	C
8	604.989 70(9)	732.38	0.682E-21	R(18)	C	43	609.506 10(11)*	1087.34	0.238E-21	R(34)	H
9	604.998 87(11)	1508.94	0.464E-22	R(28)	G	44	609.609 62(9)*	1398.38	0.218E-22	R(16)	D
10	605.128 06(11)*	953.32	0.365E-21	R(29)	H	45	609.637 09(6)	1409.62	0.506E-22	R(23)	E
11	605.269 00(9)	732.11	0.647E-21	R(18)	B	46	609.655 46(6)	1409.60	0.506E-22	R(23)	F
12	605.328 74(6)	1321.41	0.636E-22	R(18)	E	47	609.676 37(9)	820.10	0.511E-21	R(23)	B
13	605.335 78(6)	1321.41	0.636E-22	R(18)	F	48	609.814 87(8)*	251.34	0.854E-20	R(24)	A
14	605.592 29(8)*	159.20	0.105E-19	R(19)	A	49	610.064 63(9)	840.68	0.527E-21	R(24)	C
15	605.660 75(14)	242.85	0.313E-22	R(24)	R	50	610.383 12(11)*	1116.65	0.215E-21	R(35)	H
16	605.819 80(11)	1533.28	0.430E-22	R(29)	G	51	610.450 98(9)*	1412.57	0.215E-22	R(17)	D
17	605.835 00(9)	748.33	0.663E-21	R(19)	C	52	610.501 04(6)	1429.78	0.476E-22	R(24)	E
18	606.002 57(11)*	978.45	0.338E-21	R(30)	H	53	610.522 75(6)	1429.76	0.475E-22	R(24)	F
19	606.146 25(9)	748.03	0.625E-21	R(19)	B	54	610.564 29(9)	840.21	0.479E-21	R(24)	B
20	606.188 81(6)	1337.38	0.614E-22	R(19)	E	55	610.570 19(14)	376.38	0.207E-22	R(30)	R
21	606.197 50(6)	1337.37	0.614E-22	R(19)	F	56	610.660 04(8)*	272.28	0.805E-20	R(25)	A
22	606.247 60(9)*	1349.99	0.210E-22	R(12)	D	57	610.736 26(11)	1696.84	0.244E-22	R(35)	G
23	606.436 35(8)*	175.95	0.102E-19	R(20)	A	58	610.911 14(9)	861.67	0.495E-21	R(25)	C
24	606.478 40(14)	263.09	0.296E-22	R(25)	R	59	611.260 48(11)*	1146.80	0.194E-21	R(36)	H
25	606.640 27(11)	1558.45	0.396E-22	R(30)	G	60	611.365 69(6)	1450.78	0.445E-22	R(25)	E
26	606.680 52(9)	765.12	0.641E-21	R(20)	C	61	611.454 42(9)	861.16	0.446E-21	R(25)	B
27	606.877 68(11)*	1004.42	0.312E-21	R(31)	H	62	611.505 41(8)*	294.06	0.754E-20	R(26)	A
28	607.025 60(9)	764.79	0.600E-21	R(20)	B	63	611.757 83(9)	883.50	0.463E-21	R(26)	C
29	607.049 71(6)	1354.18	0.590E-22	R(20)	E	64	612.231 02(6)	1472.61	0.414E-22	R(26)	E
30	607.060 33(6)	1354.16	0.590E-22	R(20)	F	65	612.260 74(6)	1472.58	0.413E-22	R(26)	F
31	607.087 58(9)*	1360.84	0.215E-22	R(13)	D	66	612.346 79(9)	882.94	0.414E-21	R(26)	B
32	607.280 65(8)*	193.54	0.987E-20	R(21)	A	67	612.350 99(8)*	316.67	0.703E-20	R(27)	A
33	607.460 29(11)	1584.45	0.363E-22	R(31)	G	68	612.604 70(9)	906.16	0.430E-21	R(27)	C
34	607.526 25(9)	782.76	0.615E-21	R(21)	C	69	612.977 08(9)*	1460.12	0.201E-22	R(20)	D
35	607.753 33(11)*	1031.22	0.287E-21	R(32)	H	70	613.016 09(11)*	1209.60	0.155E-21	R(38)	H


NNO 266 Pa (2 Torr) 2m
% TRANSMISSION
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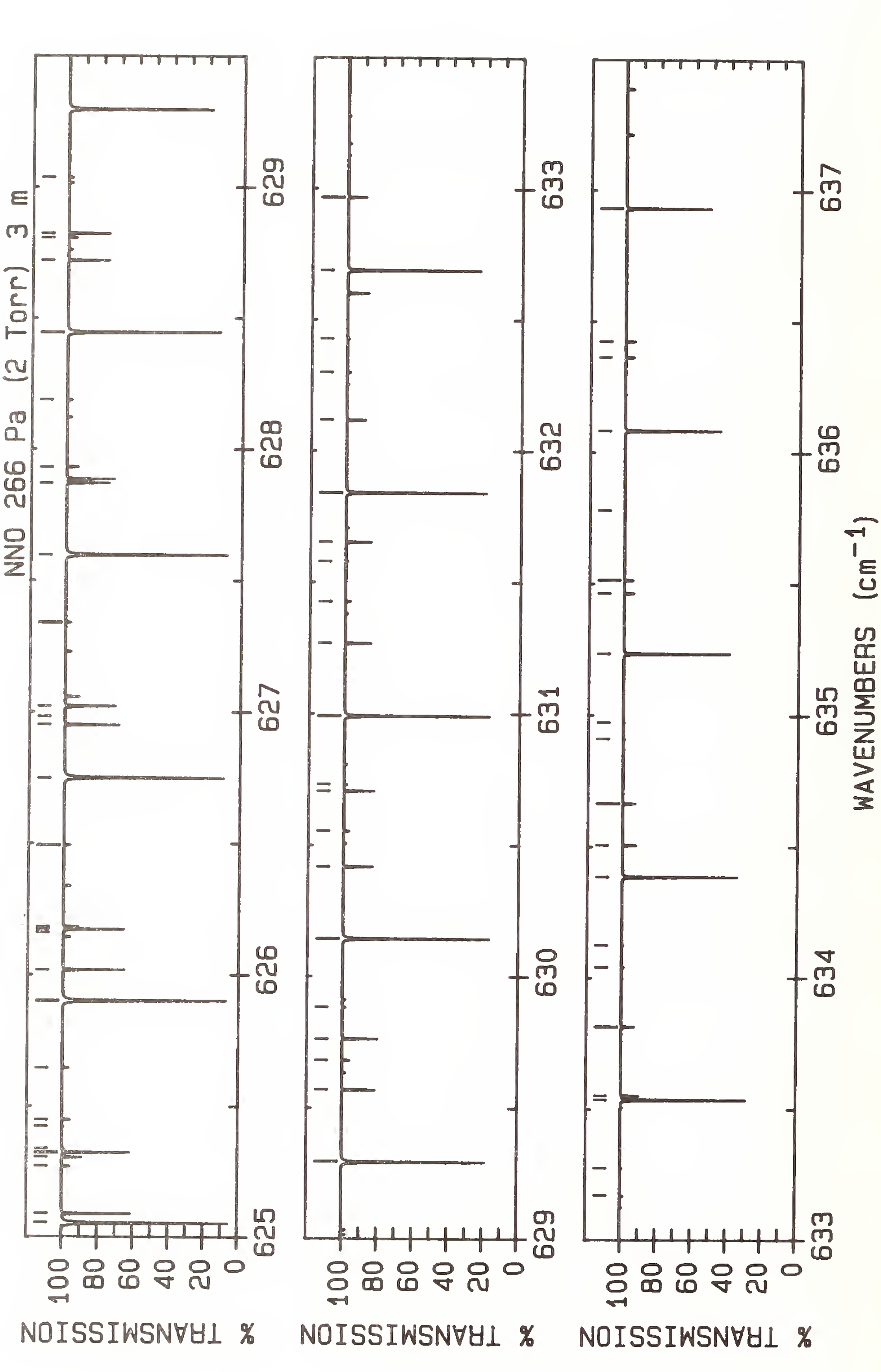
613 614 615 616 617
617 618 619 620 621
621 622 623 624 625
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	613.097 00(6)	1495.29	0.383E-22	R(27)	E
2	613.131 46(6)	1495.26	0.382E-22	R(27)	F
3	613.196 75(8)*	340.12	0.652E-20	R(28)	A
4	613.241 41(9)	905.56	0.381E-21	R(27)	B
5	613.451 74(9)	929.66	0.398E-21	R(28)	C
6	613.819 75(9)*	1477.64	0.194E-22	R(21)	D
7	613.894 22(11)*	1242.25	0.138E-21	R(39)	H
8	613.963 59(7)	1518.81	0.353E-22	R(28)	E
9	614.042 71(8)*	364.41	0.602E-20	R(29)	A
10	614.138 32(9)	929.02	0.350E-21	R(28)	B
11	614.298 95(9)	954.01	0.366E-21	R(29)	C
12	614.772 51(11)*	1275.74	0.121E-21	R(40)	H
13	614.888 85(8)*	389.53	0.552E-20	R(30)	A
14	615.037 55(9)	953.32	0.319E-21	R(29)	B
15	615.146 31(8)	979.18	0.335E-21	R(30)	C
16	615.506 05(9)*	1515.18	0.177E-22	R(23)	D
17	615.650 91(11)*	1310.06	0.107E-21	R(41)	H
18	615.698 53(8)	1568.36	0.295E-22	R(30)	E
19	615.735 16(8)*	415.49	0.504E-20	R(31)	A
20	615.939 12(9)	978.45	0.289E-21	R(30)	B
21	615.993 83(8)	1005.20	0.306E-21	R(31)	C
22	616.529 37(11)*	1345.22	0.935E-22	R(42)	H
23	616.581 64(8)*	442.28	0.458E-20	R(32)	A
24	616.626 10(10)	1594.33	0.267E-22	R(31)	F
25	616.841 49(8)	1032.06	0.277E-21	R(32)	C
26	616.843 06(9)	1004.42	0.261E-21	R(31)	B
27	617.193 55(9)*	1556.05	0.158E-22	R(25)	D
28	617.407 84(11)*	1381.21	0.814E-22	R(43)	H
29	617.428 29(8)*	469.91	0.414E-20	R(33)	A
30	617.502 76(12)	1621.19	0.241E-22	R(32)	F
31	617.689 30(8)	1059.75	0.250E-21	R(33)	C
32	617.749 41(9)	1031.22	0.234E-21	R(32)	B
33	618.037 75(9)*	1577.73	0.148E-22	R(26)	D
34	618.275 10(8)*	498.37	0.373E-20	R(34)	A
35	618.304 87(14)	1648.97	0.217E-22	R(33)	E
36	618.380 65(14)	1648.90	0.216E-22	R(33)	F
37	618.537 24(8)	1088.28	0.225E-21	R(34)	C
38	618.658 19(9)	1058.86	0.209E-21	R(33)	B
39	618.882 23(9)*	1600.25	0.138E-22	R(27)	D
40	619.122 05(8)*	527.67	0.334E-20	R(35)	A
41	619.164 61(12)*	1455.70	0.609E-22	R(45)	H
42	619.174 59(18)	1677.52	0.194E-22	R(34)	E
43	619.259 77(18)	1677.44	0.193E-22	R(34)	F
44	619.385 31(8)	1117.64	0.201E-21	R(35)	C
45	619.569 44(9)	1087.34	0.185E-21	R(34)	B
46	619.969 16(8)*	557.81	0.298E-20	R(36)	A
47	620.233 51(8)	1147.85	0.178E-21	R(36)	C
48	620.483 17(9)	1116.65	0.164E-21	R(35)	B
49	620.816 40(8)*	588.78	0.264E-20	R(37)	A
50	621.081 82(8)	1178.89	0.158E-21	R(37)	C
51	621.399 43(9)	1146.80	0.144E-21	R(36)	B
52	621.663 78(8)*	620.59	0.233E-20	R(38)	A
53	621.798 66(12)*	1573.69	0.381E-22	R(48)	H
54	621.930 24(8)	1210.77	0.139E-21	R(38)	C
55	622.318 24(9)	1177.78	0.126E-21	R(37)	B
56	622.511 28(8)*	653.23	0.205E-20	R(39)	A
57	622.676 20(12)*	1614.68	0.323E-22	R(49)	H
58	622.778 77(9)	1243.48	0.122E-21	R(39)	C
59	623.108 74(9)*	1725.33	0.904E-23	R(32)	D
60	623.239 62(9)	1209.60	0.109E-21	R(38)	B
61	623.358 90(8)*	686.70	0.179E-20	R(40)	A
62	623.553 42(12)*	1656.51	0.273E-22	R(50)	H
63	623.627 39(9)	1277.04	0.107E-21	R(40)	C
64	623.954 82(9)*	1752.85	0.818E-23	R(33)	D
65	624.163 62(9)	1242.25	0.948E-22	R(39)	B
66	624.206 64(8)*	721.01	0.156E-20	R(41)	A
67	624.430 29(13)*	1699.17	0.229E-22	R(51)	H
68	624.476 10(9)	1311.42	0.928E-22	R(41)	C
69	624.801 15(9)*	1781.19	0.736E-23	R(34)	D



NNO 266 Pa (2 Torr) 3 m
% TRANSMISSION
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80
60
40
20
0
625
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627
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629
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631
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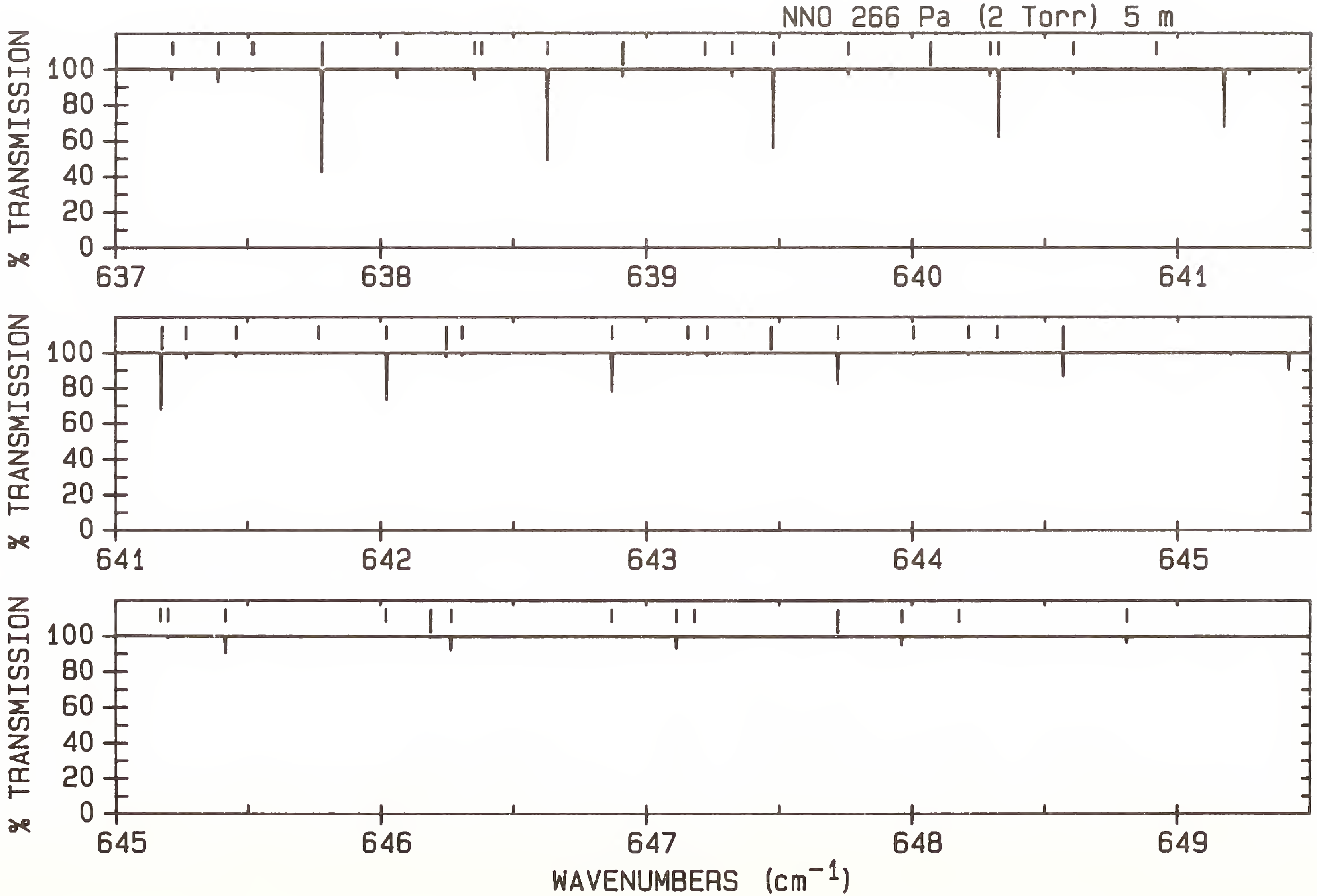
636
637
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	625.054 49(8)*	756.16	0.135E-20	R(42)	A
2	625.090 26(9)	1275.74	0.816E-22	R(40)	B
3	625.272 53(68)	1900.83	0.780E-23	R(41)	E
4	625.306 76(13)*	1742.67	0.191E-22	R(52)	H
5	625.324 91(9)	1346.65	0.803E-22	R(42)	C
6	625.339 92(43)	951.32	0.214E-23	R(48)	R
7	625.424 21(14)	2367.97	0.164E-23	R(53)	G
8	625.449 67(68)	1900.66	0.772E-23	R(41)	F
9	625.647 71(9)*	1810.37	0.660E-23	R(35)	D
10	625.902 44(8)*	792.14	0.117E-20	R(43)	A
11	626.019 56(9)	1310.06	0.700E-22	R(41)	B
12	626.161 83(46)	990.92	0.181E-23	R(49)	R
13	626.173 78(10)	1382.71	0.691E-22	R(43)	C
14	626.182 79(13)*	1786.99	0.159E-22	R(53)	H
15	626.494 51(9)*	1840.38	0.588E-23	R(36)	D
16	626.750 48(8)*	828.95	0.100E-20	R(44)	A
17	626.951 55(9)	1345.22	0.597E-22	R(42)	B
18	626.983 84(50)	1031.32	0.153E-23	R(50)	R
19	627.022 73(11)	1419.61	0.593E-22	R(44)	C
20	627.341 54(9)*	1871.22	0.522E-23	R(37)	D
21	627.598 61(9)*	866.60	0.855E-21	R(45)	A
22	627.871 75(12)	1457.34	0.506E-22	R(45)	C
23	627.933 38(14)*	1878.14	0.109E-22	R(55)	H
24	628.188 79(9)*	1902.90	0.461E-23	R(38)	D
25	628.446 82(9)*	905.08	0.728E-21	R(46)	A
26	628.720 82(13)	1495.90	0.430E-22	R(46)	C
27	628.807 87(14)*	1924.97	0.894E-23	R(56)	H
28	628.823 71(9)	1418.04	0.428E-22	R(44)	B
29	629.036 25(9)*	1935.40	0.405E-23	R(39)	D
30	629.295 11(9)*	944.39	0.616E-21	R(47)	A
31	629.569 94(14)	1535.31	0.364E-22	R(47)	C
32	629.681 76(14)*	1972.62	0.730E-23	R(57)	H
33	629.763 94(9)	1455.70	0.360E-22	R(45)	B
34	629.883 93(9)*	1968.74	0.355E-23	R(40)	D
35	630.143 46(9)*	984.54	0.519E-21	R(48)	A
36	630.419 11(16)	1575.55	0.306E-22	R(48)	C
37	630.555 03(15)*	2021.11	0.595E-23	R(58)	H
38	630.706 95(9)	1494.20	0.301E-22	R(46)	B
39	630.731 80(9)*	2002.90	0.309E-23	R(41)	D
40	630.991 88(9)*	1025.52	0.436E-21	R(49)	A
41	631.268 31(18)	1616.62	0.257E-22	R(49)	C
42	631.427 64(15)*	2070.42	0.482E-23	R(59)	H
43	631.579 87(9)*	2037.90	0.268E-23	R(42)	D
44	631.652 78(9)	1533.53	0.251E-22	R(47)	B
45	631.840 35(10)*	1067.33	0.365E-21	R(50)	A
46	632.117 53(20)	1658.53	0.214E-22	R(50)	C
47	632.299 56(16)*	2120.57	0.388E-23	R(60)	H
48	632.428 12(9)*	2073.73	0.231E-23	R(43)	D
49	632.688 87(10)*	1109.98	0.303E-21	R(51)	A
50	632.966 78(22)	1701.27	0.178E-22	R(51)	C
51	633.170 75(16)*	2171.55	0.312E-23	R(61)	H
52	633.276 56(9)*	2110.39	0.199E-23	R(44)	D
53	633.537 43(10)*	1153.46	0.251E-21	R(52)	A
54	633.552 96(10)	1614.68	0.171E-22	R(49)	B
55	633.816 04(25)	1744.84	0.147E-22	R(52)	C
56	634.041 19(17)*	2223.36	0.249E-23	R(62)	H
57	634.125 17(9)*	2147.88	0.170E-23	R(45)	D
58	634.386 02(10)*	1197.77	0.207E-21	R(53)	A
59	634.507 36(10)	1656.51	0.141E-22	R(50)	B
60	634.665 31(28)	1789.25	0.122E-22	R(53)	C
61	634.910 85(17)*	2275.99	0.198E-23	R(63)	H
62	634.973 95(9)*	2186.20	0.145E-23	R(46)	D
63	635.234 64(11)*	1242.91	0.170E-21	R(54)	A
64	635.464 64(11)	1699.17	0.115E-22	R(51)	B
65	635.514 56(32)	1834.50	0.997E-23	R(54)	C
66	635.779 70(18)*	2329.46	0.157E-23	R(64)	H
67	636.083 28(11)*	1288.88	0.139E-21	R(55)	A
68	636.363 81(36)	1880.57	0.814E-23	R(55)	C
69	636.424 82(11)	1742.67	0.935E-23	R(52)	B
70	636.931 93(12)*	1335.69	0.113E-21	R(56)	A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% TRANSMISSION
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638
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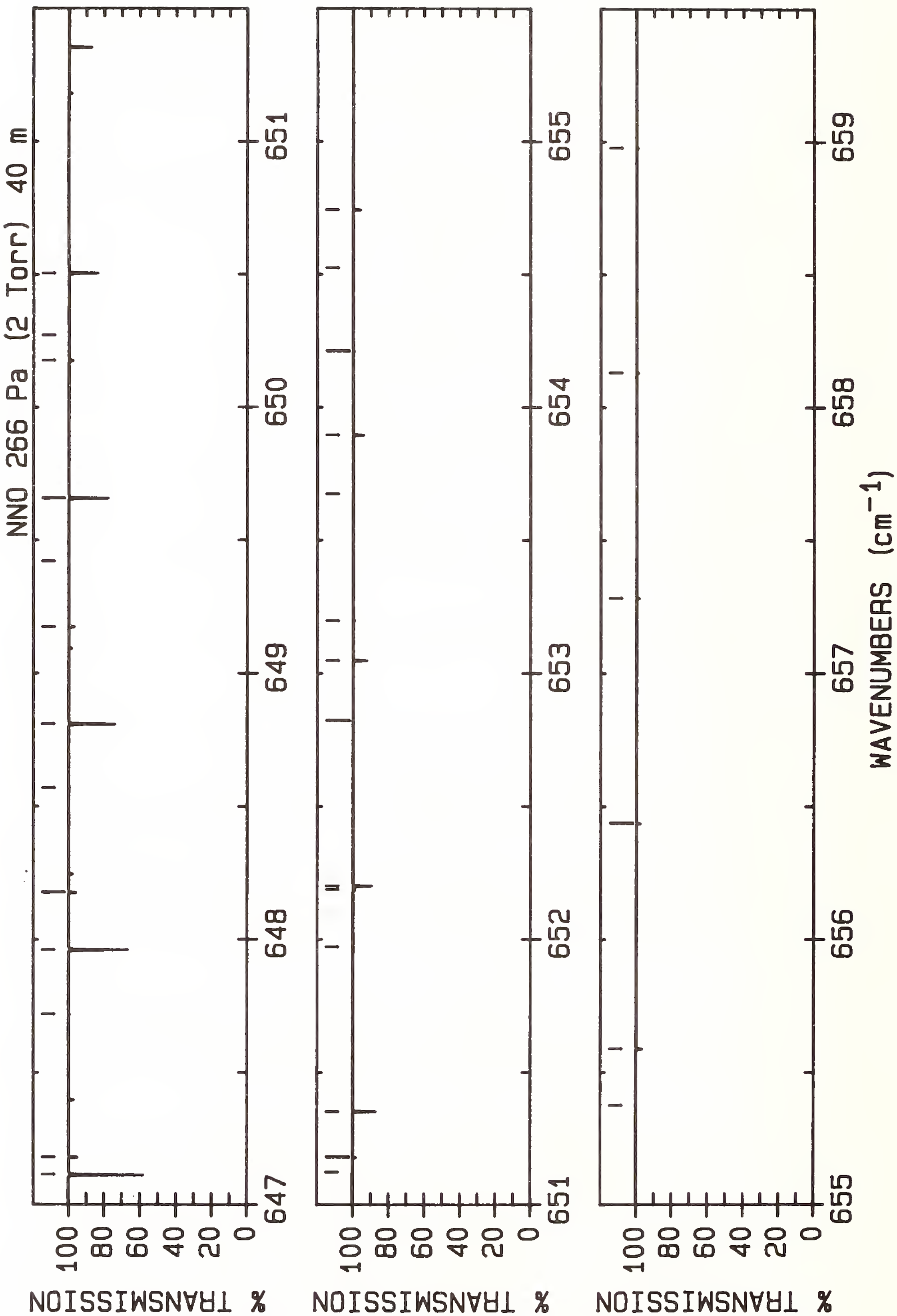
640
641
642
643
644
645
646
647
648
649
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	637.213 03(40)	1927.48	0.662E-23	R(56)	C
2	637.387 92(11)	1786.99	0.757E-23	R(53)	B
3	637.514 86(19)*	2438.88	0.973E-24	R(66)	H
4	637.521 23(10)*	2306.14	0.870E-24	R(49)	D
5	637.780 59(12)*	1383.33	0.919E-22	R(57)	A
6	638.062 23(45)	1975.23	0.536E-23	R(57)	C
7	638.353 95(12)	1832.15	0.610E-23	R(54)	B
8	638.381 12(20)*	2494.84	0.761E-24	R(67)	H
9	638.629 24(12)*	1431.79	0.742E-22	R(58)	A
10	638.911 38(50)	2023.80	0.432E-23	R(58)	C
11	639.220 12(10)*	2390.25	0.606E-24	R(51)	D
12	639.322 93(12)	1878.14	0.489E-23	R(55)	B
13	639.477 88(13)*	1481.09	0.596E-22	R(59)	A
14	639.760 48(56)	2073.21	0.347E-23	R(59)	C
15	640.069 76(11)*	2433.55	0.503E-24	R(52)	D
16	640.294 84(13)	1924.97	0.391E-23	R(56)	B
17	640.326 51(13)*	1531.22	0.477E-22	R(60)	A
18	640.609 52(63)	2123.45	0.277E-23	R(60)	C
19	640.919 51(11)*	2477.68	0.415E-24	R(53)	D
20	641.175 12(14)*	1582.18	0.380E-22	R(61)	A
21	641.269 72(13)	1972.62	0.310E-23	R(57)	B
22	641.458 48(70)	2174.53	0.221E-23	R(61)	C
23	641.769 38(11)*	2522.63	0.341E-24	R(54)	D
24	642.023 69(15)*	1633.97	0.301E-22	R(62)	A
25	642.247 55(14)	2021.11	0.245E-23	R(58)	B
26	642.307 37(78)	2226.43	0.175E-23	R(62)	C
27	642.872 22(15)*	1686.59	0.238E-22	R(63)	A
28	643.156 16(87)	2279.17	0.138E-23	R(63)	C
29	643.228 34(14)	2070.42	0.193E-23	R(59)	B
30	643.469 40(12)*	2615.03	0.228E-24	R(56)	D
31	643.720 71(16)*	1740.04	0.187E-22	R(64)	A
32	644.004 85(96)	2332.74	0.109E-23	R(64)	C
33	644.212 09(15)	2120.57	0.152E-23	R(60)	B
34	644.319 55(12)*	2662.47	0.185E-24	R(57)	D
35	644.569 14(16)*	1794.32	0.147E-22	R(65)	A
36	645.169 77(13)*	2710.73	0.149E-24	R(58)	D
37	645.198 80(15)	2171.55	0.118E-23	R(61)	B
38	645.417 52(17)*	1849.42	0.114E-22	R(66)	A
39	646.020 06(13)*	2759.83	0.120E-24	R(59)	D
40	646.188 47(16)	2223.36	0.920E-24	R(62)	B
41	646.265 82(18)*	1905.36	0.888E-23	R(67)	A
42	646.870 42(14)*	2809.75	0.961E-25	R(60)	D
43	647.114 04(18)*	1962.12	0.687E-23	R(68)	A
44	647.181 09(16)	2275.99	0.712E-24	R(63)	B
45	647.720 82(14)*	2860.50	0.766E-25	R(61)	D
46	647.962 18(19)*	2019.71	0.529E-23	R(69)	A
47	648.176 65(17)	2329.46	0.548E-24	R(64)	B
48	648.810 23(20)*	2078.13	0.405E-23	R(70)	A



NNO 266 Pa (2 Torr) 40 m
% TRANSMISSION
100 80 60 40 20 0
647 648 649 650 651
651 652 653 654 655
655 656 657 658 659
WAVENUMBERS (cm^{-1})

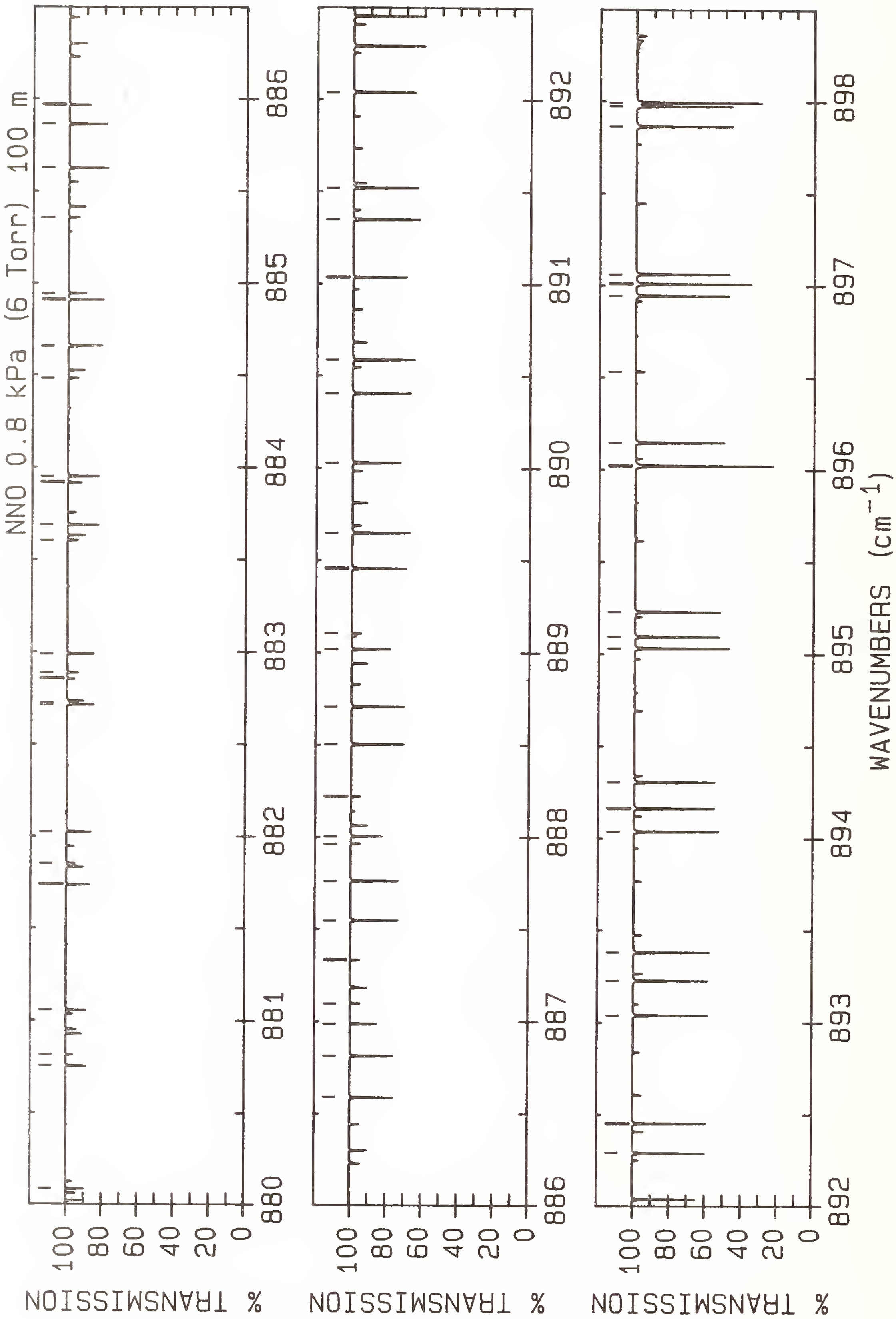
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	647.114 04(18)*	1962.12	0.687E-23	R(68)	A
2	647.181 09(16)	2275.99	0.712E-24	R(63)	B
3	647.720 82(14)*	2860.50	0.766E-25	R(61)	D
4	647.962 18(19)*	2019.71	0.529E-23	R(69)	A
5	648.176 65(17)	2329.46	0.548E-24	R(64)	B
6	648.571 28(15)*	2912.08	0.609E-25	R(62)	D
7	648.810 23(20)*	2078.13	0.405E-23	R(70)	A
8	649.175 14(18)	2383.76	0.420E-24	R(65)	B
9	649.421 77(15)*	2964.48	0.481E-25	R(63)	D
10	649.658 18(21)	2137.38	0.310E-23	R(71)	A
11	650.176 56(19)	2438.88	0.321E-24	R(66)	B
12	650.272 28(16)*	3017.71	0.379E-25	R(64)	D
13	650.506 02(22)	2197.45	0.235E-23	R(72)	A
14	651.122 82(17)*	3071.76	0.297E-25	R(65)	D
15	651.180 88(21)	2494.84	0.244E-24	R(67)	B
16	651.353 75(23)	2258.36	0.178E-23	R(73)	A
17	651.973 36(17)*	3126.64	0.232E-25	R(66)	D
18	652.188 10(23)	2551.62	0.185E-24	R(68)	B
19	652.201 35(24)	2320.08	0.134E-23	R(74)	A
20	652.823 90(18)*	3182.35	0.180E-25	R(67)	D
21	653.048 82(25)	2382.64	0.101E-23	R(75)	A
22	653.198 19(25)	2609.24	0.139E-24	R(69)	B
23	653.674 44(19)*	3238.88	0.140E-25	R(68)	D
24	653.896 15(27)	2446.02	0.754E-24	R(76)	A
25	654.211 14(28)	2667.68	0.105E-24	R(70)	B
26	654.524 96(20)*	3296.24	0.108E-25	R(69)	D
27	654.743 33(28)	2510.22	0.561E-24	R(77)	A
28	655.375 45(20)*	3354.41	0.826E-26	R(70)	D
29	655.590 35(30)	2575.26	0.416E-24	R(78)	A
30	656.437 21(31)	2641.11	0.307E-24	R(79)	A
31	657.283 90(33)	2707.79	0.226E-24	R(80)	A
32	658.130 41(35)	2775.30	0.165E-24	R(81)	A
33	658.976 73(37)	2843.63	0.121E-24	R(82)	A

ATLAS OF N_2O ABSORPTION LINES FROM 880 cm^{-1} to 1087 cm^{-1}

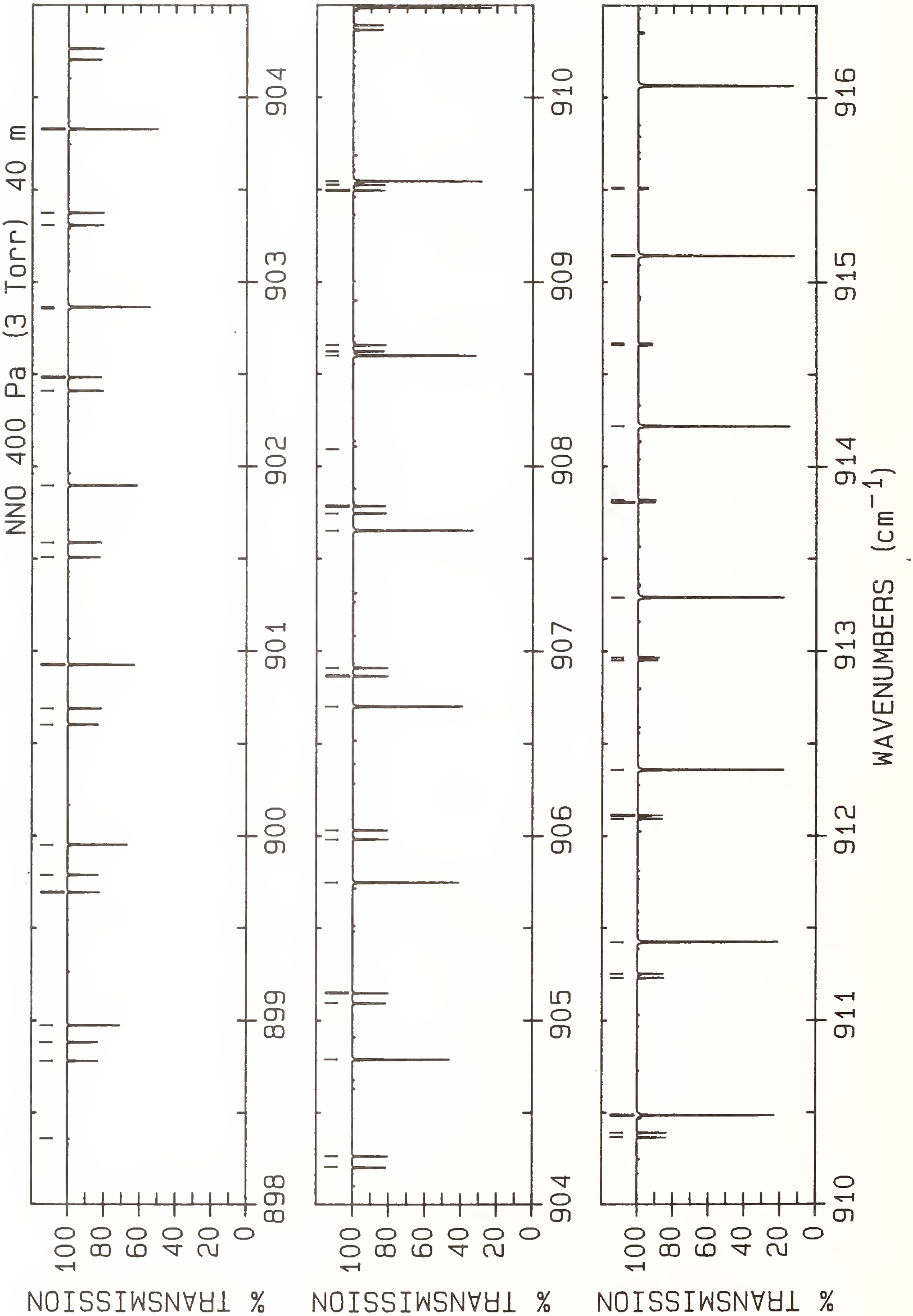
key:

Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	$10^00\text{-}00^01$
B		$11^10\text{-}01^{1e}1$
C		$11^10\text{-}01^{1f}1$
D		$12^00\text{-}02^01$
E		$12^20\text{-}02^{2e}1$
F		$12^20\text{-}02^{2f}1$
G		$10^01\text{-}00^02$
M		$10^00\text{-}02^00$
N		$11^10\text{-}03^{1e}0$
O		$11^10\text{-}03^{1f}0$
P	$^{14}N^{15}N^{16}O$	$10^00\text{-}00^01$
R	$^{15}N^{14}N^{16}O$	$10^00\text{-}00^01$
T	$^{14}N^{14}N^{18}O$	$10^00\text{-}00^01$

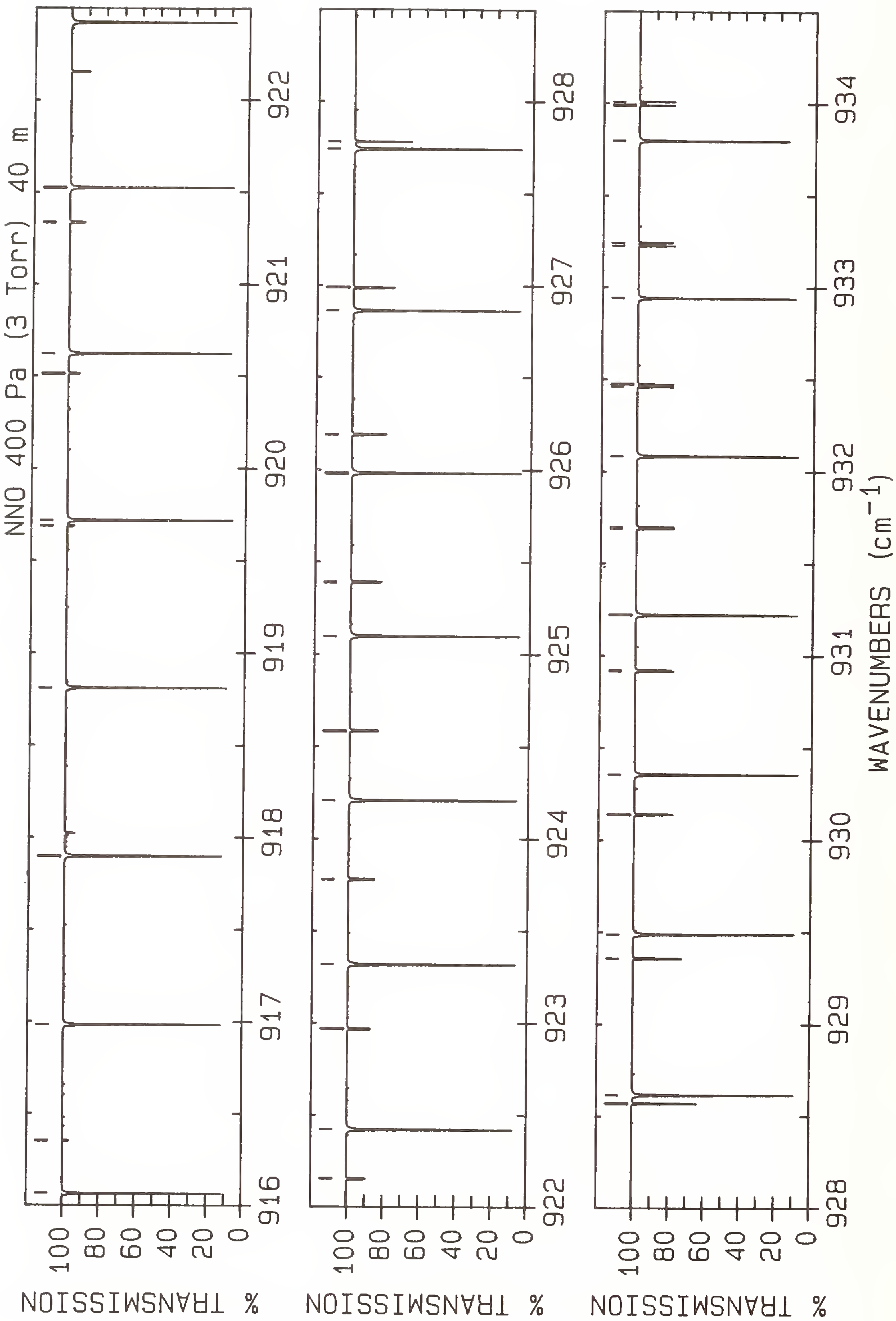
If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1}, a temperature of 296 K, and a transition moment of either 0.056 debye (for the $\Delta v_1=1$ and $\Delta v_3=1$ transitions) or 0.018 debye (for the $\Delta v_1=1$ and $\Delta v_2=2$ transitions). No Herman-Wallis constants were used in the calculations.


NNO 0.8 kPa (6 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
880 881 882 883 884 885 886
886 887 888 889 890 891 892
892 893 894 895 896 897 898
WAVENUMBERS (cm^{-1})

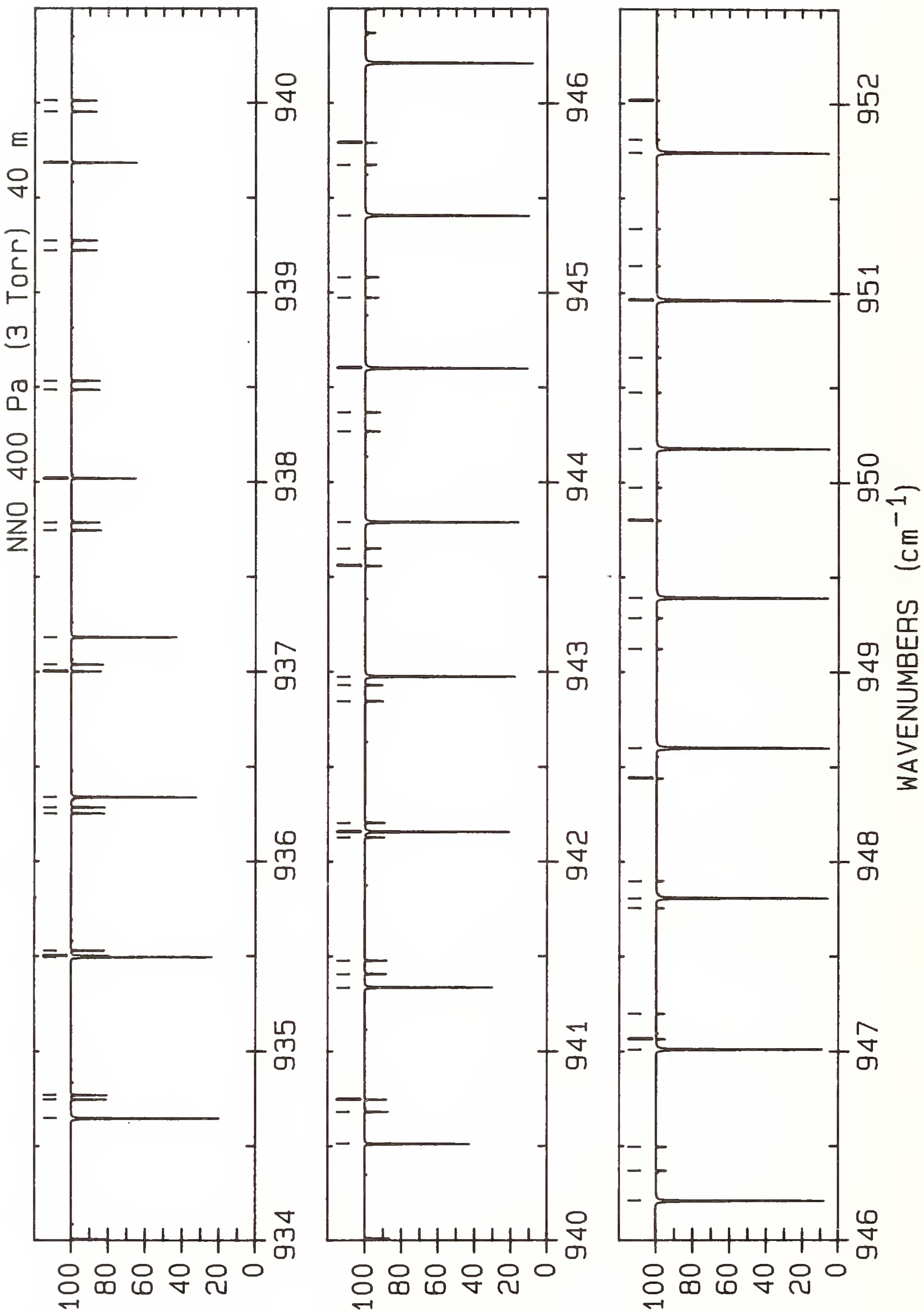
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	880.086 096(67)*	2633.64	0.234E-24	P(42)	B
2	880.755 137(67)*	2600.20	0.269E-24	P(41)	C
3	880.815 725(13)*	2912.08	0.892E-25	P(62)	A
4	881.057 146(67)*	2598.62	0.271E-24	P(41)	B
5	881.736 399(66)*	2565.94	0.310E-24	P(40)	C
6	881.852 709(13)*	2860.50	0.113E-24	P(61)	A
7	882.024 916(67)*	2564.44	0.312E-24	P(40)	B
8	882.714 030(66)*	2532.51	0.356E-24	P(39)	C
9	882.723 075(54)	1407.98	0.134E-24	P(17)	P
10	882.852 3	2673.52	0.101E-24	P(22)	D
11	882.886 359(12)*	2809.75	0.142E-24	P(60)	A
12	882.989 406(66)*	2531.09	0.359E-24	P(39)	B
13	883.603 905(55)	1393.80	0.135E-24	P(16)	P
14	883.688 035(66)*	2499.92	0.407E-24	P(38)	C
15	883.916 680(11)*	2759.83	0.178E-24	P(59)	A
16	883.950 616(66)*	2498.57	0.410E-24	P(38)	B
17	884.481 854(56)	1380.45	0.135E-24	P(15)	P
18	884.654 1	2637.58	0.110E-24	P(20)	D
19	884.658 416(66)*	2468.16	0.463E-24	P(37)	C
20	884.908 543(66)*	2466.88	0.466E-24	P(37)	B
21	884.943 677(11)*	2710.73	0.223E-24	P(58)	A
22	885.356 920(57)	1367.94	0.134E-24	P(14)	P
23	885.625 178(65)*	2437.23	0.524E-24	P(36)	C
24	885.863 188(65)*	2436.02	0.527E-24	P(36)	B
25	885.967 355(10)*	2662.47	0.277E-24	P(57)	A
26	886.588 324(65)*	2407.14	0.590E-24	P(35)	C
27	886.814 549(65)*	2405.99	0.594E-24	P(35)	B
28	886.987 716(9)*	2615.03	0.344E-24	P(56)	A
29	887.098 383(60)	1345.42	0.129E-24	P(12)	P
30	887.333 4	2589.93	0.118E-24	P(17)	D
31	887.547 856(65)*	2377.89	0.662E-24	P(34)	C
32	887.762 625(65)*	2376.80	0.666E-24	P(34)	B
33	887.964 772(61)	1335.41	0.124E-24	P(11)	P
34	888.004 763(9)*	2568.42	0.424E-24	P(55)	A
35	888.220 2	2575.72	0.119E-24	P(16)	D
36	888.503 777(65)*	2349.46	0.738E-24	P(33)	C
37	888.707 414(65)*	2348.44	0.742E-24	P(33)	B
38	889.018 502(8)*	2522.63	0.521E-24	P(54)	A
39	889.104 0	2562.34	0.120E-24	P(15)	D
40	889.456 089(64)*	2321.88	0.819E-24	P(32)	C
41	889.648 914(65)*	2320.91	0.824E-24	P(32)	B
42	890.028 933(8)*	2477.68	0.637E-24	P(53)	A
43	890.404 795(64)*	2295.12	0.905E-24	P(31)	C
44	890.587 125(64)*	2294.22	0.909E-24	P(31)	B
45	891.036 060(7)*	2433.55	0.775E-24	P(52)	A
46	891.349 896(64)*	2269.20	0.995E-24	P(30)	C
47	891.522 045(64)*	2268.36	0.999E-24	P(30)	B
48	892.039 885(7)*	2390.25	0.939E-24	P(51)	A
49	892.291 393(64)*	2244.12	0.109E-23	P(29)	C
50	892.453 671(64)*	2243.33	0.109E-23	P(29)	B
51	893.040 411(6)*	2347.78	0.113E-23	P(50)	A
52	893.229 289(64)*	2219.87	0.118E-23	P(28)	C
53	893.382 002(64)*	2219.13	0.119E-23	P(28)	B
54	894.037 638(6)*	2306.14	0.136E-23	P(49)	A
55	894.163 583(63)*	2196.46	0.128E-23	P(27)	C
56	894.307 036(64)*	2195.77	0.128E-23	P(27)	B
57	895.031 569(6)*	2265.33	0.163E-23	P(48)	A
58	895.094 278(63)*	2173.88	0.138E-23	P(26)	C
59	895.228 770(63)*	2173.24	0.138E-23	P(26)	B
60	896.021 373(63)*	2152.14	0.147E-23	P(25)	C
61	896.022 206(5)*	2225.35	0.194E-23	P(47)	A
62	896.147 202(63)*	2151.54	0.148E-23	P(25)	B
63	896.532 6	2812.64	0.114E-24	P(24)	G
64	896.944 870(63)*	2131.23	0.156E-23	P(24)	C
65	897.009 548(5)*	2186.20	0.230E-23	P(46)	A
66	897.062 331(63)*	2130.68	0.157E-23	P(24)	B
67	897.864 768(63)*	2111.16	0.165E-23	P(23)	C
68	897.974 153(63)*	2110.65	0.166E-23	P(23)	B
69	897.993 598(5)*	2147.88	0.271E-23	P(45)	A


NNO 400 Pa (3 Torr) 40 m
% TRANSMISSION
100 80 60 40 20 0
898 899 900 901 902 903 904
904 905 906 907 908 909 910
910 911 912 913 914 915 916
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	898.357 6	2773.59	0.126E-24	P(22)	G
2	898.781 067(63)*	2091.92	0.174E-23	P(22)	C
3	898.882 667(63)*	2091.46	0.174E-23	P(22)	B
4	898.974 356(4)*	2110.39	0.318E-23	P(44)	A
5	899.693 768(63)*	2073.52	0.182E-23	P(21)	C
6	899.787 869(63)*	2073.10	0.182E-23	P(21)	B
7	899.951 822(4)*	2073.73	0.372E-23	P(43)	A
8	900.602 869(63)*	2055.95	0.189E-23	P(20)	C
9	900.689 757(63)*	2055.57	0.189E-23	P(20)	B
10	900.925 997(4)*	2037.90	0.433E-23	P(42)	A
11	901.508 371(63)*	2039.22	0.195E-23	P(19)	C
12	901.588 328(63)*	2038.88	0.195E-23	P(19)	B
13	901.896 882(3)*	2002.90	0.502E-23	P(41)	A
14	902.410 271(63)*	2023.33	0.199E-23	P(18)	C
15	902.483 580(63)*	2023.02	0.200E-23	P(18)	B
16	902.856 8	2690.50	0.147E-24	P(17)	G
17	902.864 475(3)*	1968.74	0.579E-23	P(40)	A
18	903.308 571(63)*	2008.27	0.203E-23	P(17)	C
19	903.375 509(63)*	2007.99	0.203E-23	P(17)	B
20	903.828 778(3)*	1935.40	0.664E-23	P(39)	A
21	904.203 267(63)*	1994.05	0.205E-23	P(16)	C
22	904.264 113(63)*	1993.80	0.205E-23	P(16)	B
23	904.789 789(3)*	1902.90	0.759E-23	P(38)	A
24	905.094 359(63)*	1980.66	0.205E-23	P(15)	C
25	905.149 387(63)*	1980.45	0.205E-23	P(15)	B
26	905.747 509(2)*	1871.22	0.863E-23	P(37)	A
27	905.981 846(63)*	1968.12	0.203E-23	P(14)	C
28	906.031 331(63)*	1967.93	0.203E-23	P(14)	B
29	906.701 936(2)*	1840.38	0.976E-23	P(36)	A
30	906.865 725(63)*	1956.40	0.200E-23	P(13)	C
31	906.909 939(63)*	1956.24	0.200E-23	P(13)	B
32	907.653 071(2)*	1810.37	0.110E-22	P(35)	A
33	907.745 8	2479.56	0.853E-25	R(6)	D
34	907.745 995(64)*	1945.53	0.194E-23	P(12)	C
35	907.785 209(64)*	1945.39	0.195E-23	P(12)	B
36	908.092 94(13)*	3460.10	0.337E-29	Q(61)	C
37	908.600 911(2)*	1781.19	0.123E-22	P(34)	A
38	908.622 654(64)*	1935.49	0.187E-23	P(11)	C
39	908.657 137(64)*	1935.37	0.187E-23	P(11)	B
40	909.495 698(64)*	1926.29	0.178E-23	P(10)	C
41	909.525 721(64)*	1926.18	0.178E-23	P(10)	B
42	909.545 456(2)*	1752.85	0.137E-22	P(33)	A
43	910.365 127(64)*	1917.92	0.166E-23	P(9)	C
44	910.390 955(64)*	1917.84	0.166E-23	P(9)	B
45	910.486 705(1)*	1725.33	0.153E-22	P(32)	A
46	911.230 937(64)*	1910.39	0.153E-23	P(8)	C
47	911.252 838(64)*	1910.32	0.153E-23	P(8)	B
48	911.424 656(1)*	1698.65	0.168E-22	P(31)	A
49	912.093 125(64)*	1903.69	0.138E-23	P(7)	C
50	912.111 365(64)*	1903.64	0.138E-23	P(7)	B
51	912.359 308(1)*	1672.80	0.185E-22	P(30)	A
52	912.951 689(64)*	1897.84	0.121E-23	P(6)	C
53	912.966 532(64)*	1897.80	0.121E-23	P(6)	B
54	913.290 660(1)*	1647.79	0.202E-22	P(29)	A
55	913.806 625(64)*	1892.82	0.102E-23	P(5)	C
56	913.818 337(64)*	1892.79	0.102E-23	P(5)	B
57	914.218 709(1)*	1623.60	0.220E-22	P(28)	A
58	914.657 930(65)*	1888.63	0.813E-24	P(4)	C
59	914.666 774(65)*	1888.62	0.813E-24	P(4)	B
60	915.143 455(1)*	1600.25	0.238E-22	P(27)	A
61	915.505 601(65)*	1885.29	0.588E-24	P(3)	C
62	915.511 839(65)*	1885.28	0.588E-24	P(3)	B

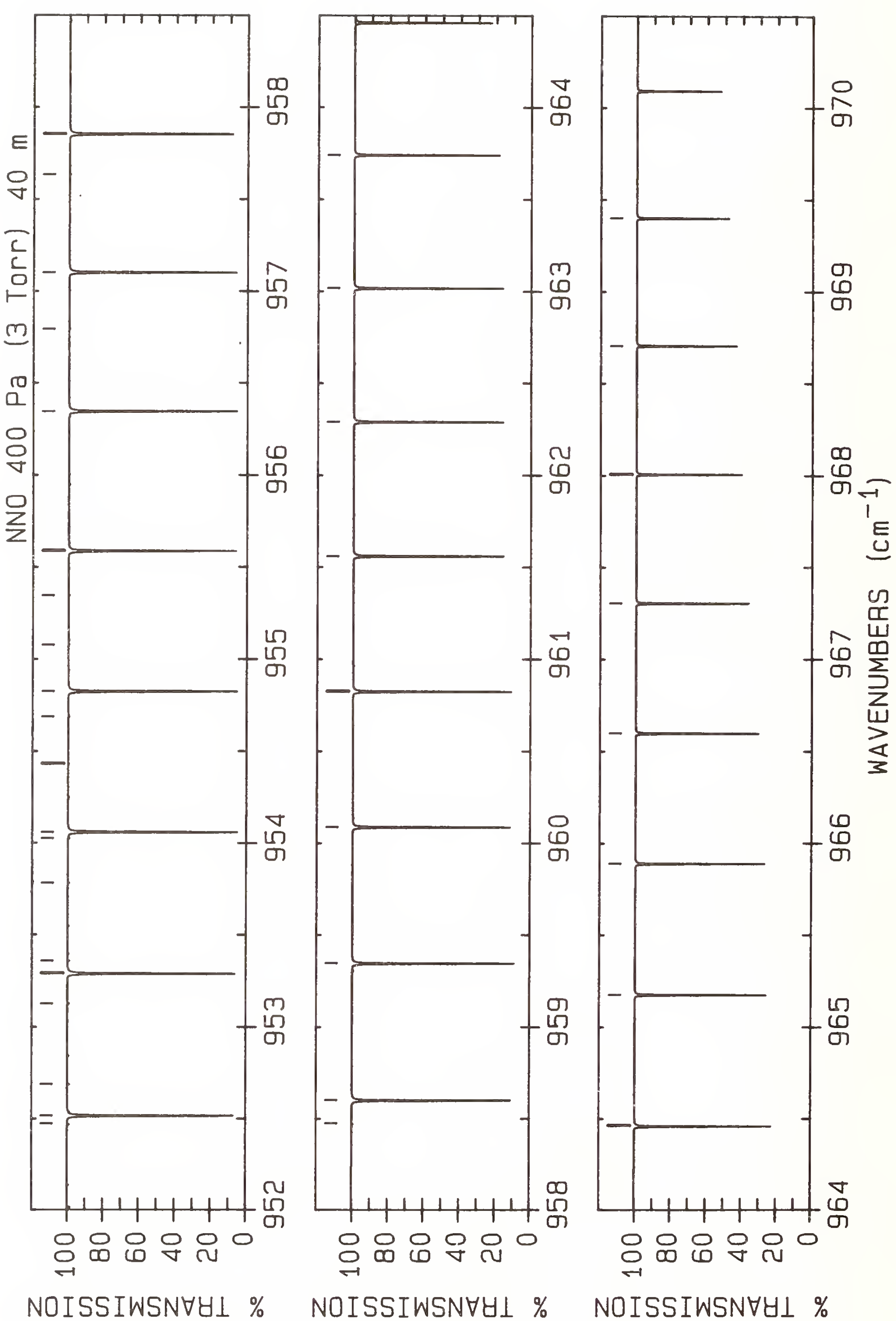

NNO 400 Pa (3 Torr) 40 m
% TRANSMISSION
100 80 60 40 20 0
916 917 918 919 920 921 922
922 923 924 925 926 927 928
928 929 930 931 932 933 934
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	916.064 894(1)*	1577.73	0.256E-22	P(26)	A
2	916.349 634(65)*	1882.78	0.335E-24	P(2)	C
3	916.353 530(65)*	1882.77	0.335E-24	P(2)	B
4	916.983 025(1)*	1556.05	0.273E-22	P(25)	A
5	917.897 847(1)*	1535.19	0.291E-22	P(24)	A
6	918.809 356(1)*	1515.18	0.307E-22	P(23)	A
7	919.686 461(65)*	1881.10	0.339E-24	R(1)	B
8	919.689 307(65)*	1881.10	0.339E-24	R(1)	C
9	919.717 550(1)*	1495.99	0.323E-22	P(22)	A
10	920.511 214(65)*	1882.77	0.599E-24	R(2)	B
11	920.515 090(65)*	1882.78	0.599E-24	R(2)	C
12	920.622 427(1)*	1477.64	0.338E-22	P(21)	A
13	921.332 567(65)*	1885.28	0.833E-24	R(3)	B
14	921.337 209(65)*	1885.29	0.833E-24	R(3)	C
15	921.523 985(1)*	1460.12	0.350E-22	P(20)	A
16	922.150 515(64)*	1888.62	0.105E-23	R(4)	B
17	922.155 660(64)*	1888.63	0.105E-23	R(4)	C
18	922.422 221(1)*	1443.43	0.361E-22	P(19)	A
19	922.965 054(64)*	1892.79	0.125E-23	R(5)	B
20	922.970 438(64)*	1892.82	0.125E-23	R(5)	C
21	923.317 131(1)*	1427.58	0.370E-22	P(18)	A
22	923.776 178(64)*	1897.80	0.144E-23	R(6)	B
23	923.781 538(64)*	1897.84	0.144E-23	R(6)	C
24	924.208 714(1)*	1412.57	0.376E-22	P(17)	A
25	924.583 884(64)*	1903.64	0.161E-23	R(7)	B
26	924.588 955(64)*	1903.69	0.161E-23	R(7)	C
27	925.096 967(1)*	1398.38	0.380E-22	P(16)	A
28	925.388 167(64)*	1910.32	0.176E-23	R(8)	B
29	925.392 683(64)*	1910.39	0.176E-23	R(8)	C
30	925.981 886(1)*	1385.04	0.380E-22	P(15)	A
31	926.189 021(64)*	1917.84	0.189E-23	R(9)	B
32	926.192 716(64)*	1917.92	0.189E-23	R(9)	C
33	926.863 468(1)*	1372.52	0.378E-22	P(14)	A
34	926.986 442(64)*	1926.18	0.200E-23	R(10)	B
35	926.989 049(64)*	1926.29	0.200E-23	R(10)	C
36	927.741 711(1)*	1360.84	0.372E-22	P(13)	A
37	927.780 425(64)*	1935.37	0.209E-23	R(11)	B
38	927.781 676(63)*	1935.49	0.209E-23	R(11)	C
39	928.570 590(63)*	1945.53	0.216E-23	R(12)	C
40	928.570 965(63)*	1945.39	0.216E-23	R(12)	B
41	928.616 611(1)*	1349.99	0.362E-22	P(12)	A
42	929.355 786(63)*	1956.40	0.221E-23	R(13)	C
43	929.358 056(63)*	1956.24	0.221E-23	R(13)	B
44	929.488 165(1)*	1339.98	0.349E-22	P(11)	A
45	930.137 256(63)*	1968.12	0.224E-23	R(14)	C
46	930.141 695(63)*	1967.93	0.224E-23	R(14)	B
47	930.356 369(1)*	1330.80	0.332E-22	P(10)	A
48	930.914 995(63)*	1980.66	0.225E-23	R(15)	C
49	930.921 875(63)*	1980.45	0.225E-23	R(15)	B
50	931.221 221(1)*	1322.45	0.311E-22	P(9)	A
51	931.688 995(63)*	1994.05	0.224E-23	R(16)	C
52	931.698 591(63)*	1993.80	0.225E-23	R(16)	B
53	932.082 716(1)*	1314.94	0.287E-22	P(8)	A
54	932.459 249(63)*	2008.27	0.222E-23	R(17)	C
55	932.471 838(63)*	2007.99	0.222E-23	R(17)	B
56	932.940 851(1)*	1308.27	0.260E-22	P(7)	A
57	933.225 750(63)*	2023.33	0.218E-23	R(18)	C
58	933.241 610(63)*	2023.02	0.218E-23	R(18)	B
59	933.795 623(1)*	1302.43	0.229E-22	P(6)	A
60	933.988 491(63)*	2039.22	0.213E-23	R(19)	C
61	934.007 901(63)*	2038.88	0.213E-23	R(19)	B


NNO 400 Pa (3 Torr) 40 m
% TRANSMISSION
100 80 60 40 20 0
934 935 936 937 938 939 940
940 941 942 943 944 945 946
946 947 948 949 950 951 952
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	934.647 027(1)*	1297.42	0.196E-22	P(5)	A
2	934.747 464(63)*	2055.95	0.206E-23	R(20)	C
3	934.770 707(63)*	2055.57	0.206E-23	R(20)	B
4	935.495 060(1)*	1293.25	0.160E-22	P(4)	A
5	935.502 661(63)*	2073.52	0.199E-23	R(21)	C
6	935.530 022(63)*	2073.10	0.199E-23	R(21)	B
7	936.254 074(63)*	2091.92	0.190E-23	R(22)	C
8	936.285 839(63)*	2091.46	0.190E-23	R(22)	B
9	936.339 719(1)*	1289.91	0.122E-22	P(3)	A
10	937.001 695(63)*	2111.16	0.181E-23	R(23)	C
11	937.038 152(63)*	2110.65	0.181E-23	R(23)	B
12	937.180 998(1)*	1287.41	0.826E-23	P(2)	A
13	937.745 516(63)*	2131.23	0.171E-23	R(24)	C
14	937.786 957(63)*	2130.68	0.171E-23	R(24)	B
15	938.018 894(1)*	1285.74	0.417E-23	P(1)	A
16	938.485 528(63)*	2152.14	0.161E-23	R(25)	C
17	938.532 246(63)*	2151.54	0.161E-23	R(25)	B
18	939.221 723(63)*	2173.88	0.150E-23	R(26)	C
19	939.274 014(64)*	2173.24	0.151E-23	R(26)	B
20	939.684 522(1)*	1284.90	0.419E-23	R(0)	A
21	939.954 090(64)*	2196.46	0.140E-23	R(27)	C
22	940.012 255(64)*	2195.77	0.140E-23	R(27)	B
23	940.512 245(1)*	1285.74	0.836E-23	R(1)	A
24	940.682 622(64)*	2219.87	0.129E-23	R(28)	C
25	940.746 961(64)*	2219.13	0.130E-23	R(28)	B
26	941.336 569(1)*	1287.41	0.124E-22	R(2)	A
27	941.407 308(64)*	2244.12	0.119E-23	R(29)	C
28	941.478 128(64)*	2243.33	0.119E-23	R(29)	B
29	942.128 139(64)*	2269.20	0.109E-23	R(30)	C
30	942.157 488(1)*	1289.91	0.164E-22	R(3)	A
31	942.205 747(64)*	2268.36	0.109E-23	R(30)	B
32	942.845 105(65)*	2295.12	0.992E-24	R(31)	C
33	942.929 814(65)*	2294.22	0.997E-24	R(31)	B
34	942.974 999(1)*	1293.25	0.202E-22	R(4)	A
35	943.558 196(65)*	2321.88	0.899E-24	R(32)	C

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	943.650 320(65)*	2320.91	0.904E-24	R(32)	B
37	943.789 097(1)*	1297.42	0.238E-22	R(5)	A
38	944.267 401(65)*	2349.46	0.811E-24	R(33)	C
39	944.367 259(65)*	2348.44	0.815E-24	R(33)	B
40	944.599 778(1)*	1302.43	0.271E-22	R(6)	A
41	944.972 710(65)*	2377.89	0.728E-24	R(34)	C
42	945.080 625(65)*	2376.80	0.732E-24	R(34)	B
43	945.407 037(1)*	1308.27	0.301E-22	R(7)	A
44	945.674 111(65)*	2407.14	0.650E-24	R(35)	C
45	945.790 409(66)*	2405.99	0.654E-24	R(35)	B
46	946.210 868(1)*	1314.94	0.328E-22	R(8)	A
47	946.371 594(66)*	2437.23	0.578E-24	R(36)	C
48	946.496 606(66)*	2436.02	0.581E-24	R(36)	B
49	947.011 269(1)*	1322.45	0.352E-22	R(9)	A
50	947.065 148(66)*	2468.16	0.511E-24	R(37)	C
51	947.199 208(66)*	2466.88	0.514E-24	R(37)	B
52	947.754 760(66)*	2499.92	0.450E-24	R(38)	C
53	947.808 233(1)*	1330.80	0.372E-22	R(10)	A
54	947.898 207(66)*	2498.57	0.453E-24	R(38)	B
55	948.440 419(66)*	2532.51	0.394E-24	R(39)	C
56	948.601 755(1)*	1339.98	0.389E-22	R(11)	A
57	949.122 112(67)*	2565.94	0.343E-24	R(40)	C
58	949.285 367(67)*	2564.44	0.346E-24	R(40)	B
59	949.391 832(1)*	1349.99	0.401E-22	R(12)	A
60	949.799 826(67)*	2600.20	0.298E-24	R(41)	C
61	949.973 513(67)*	2598.62	0.300E-24	R(41)	B
62	950.178 457(1)*	1360.84	0.410E-22	R(13)	A
63	950.473 550(67)*	2635.29	0.258E-24	R(42)	C
64	950.658 025(67)*	2633.64	0.260E-24	R(42)	B
65	950.961 625(1)*	1372.52	0.416E-22	R(14)	A
66	951.143 269(67)*	2671.21	0.221E-24	R(43)	C
67	951.338 897(68)*	2669.48	0.223E-24	R(43)	B
68	951.741 332(1)*	1385.04	0.418E-22	R(15)	A
69	951.808 971(68)*	2707.97	0.190E-24	R(44)	C
70	952.016 118(68)*	2706.16	0.191E-24	R(44)	B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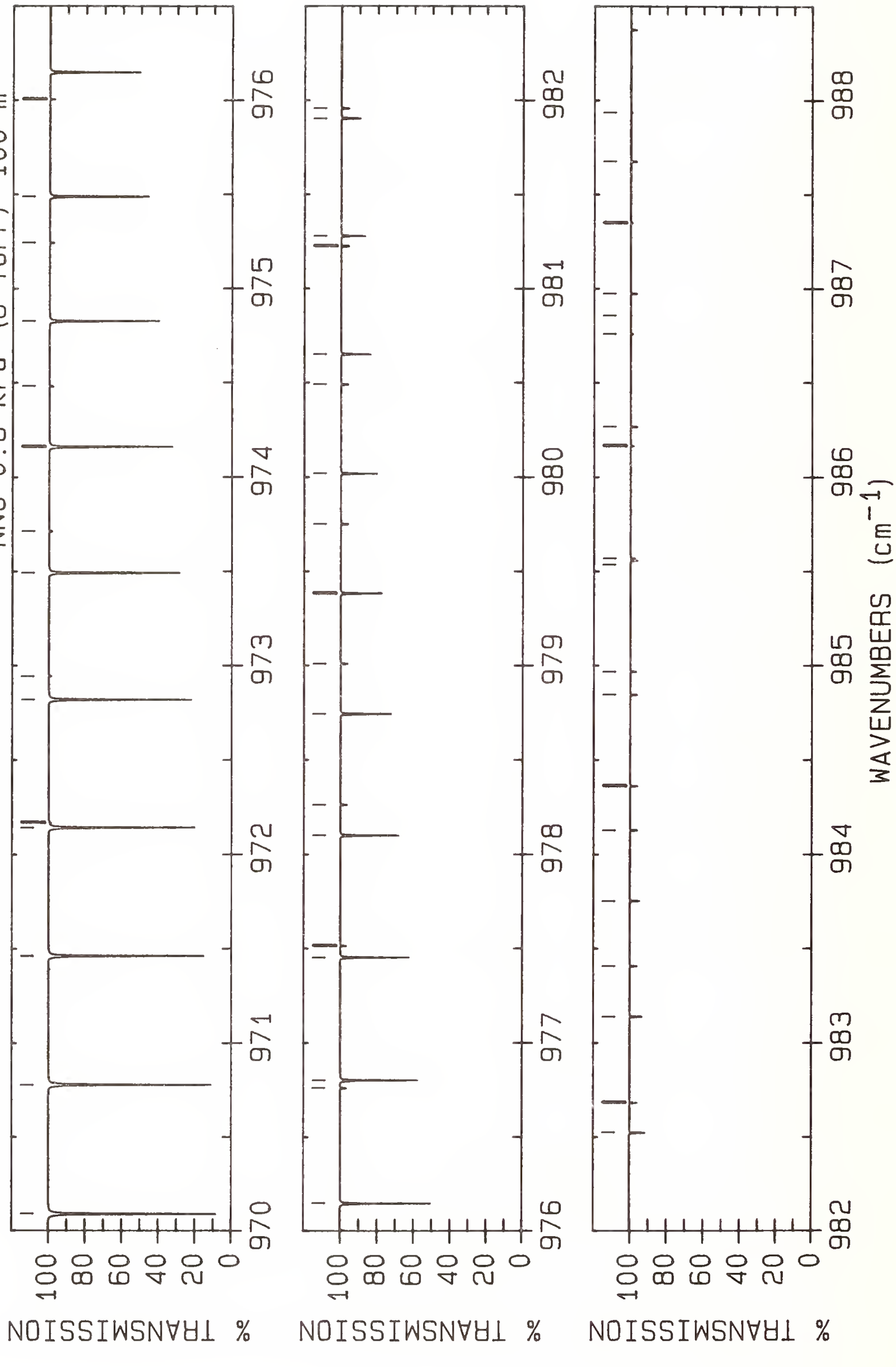
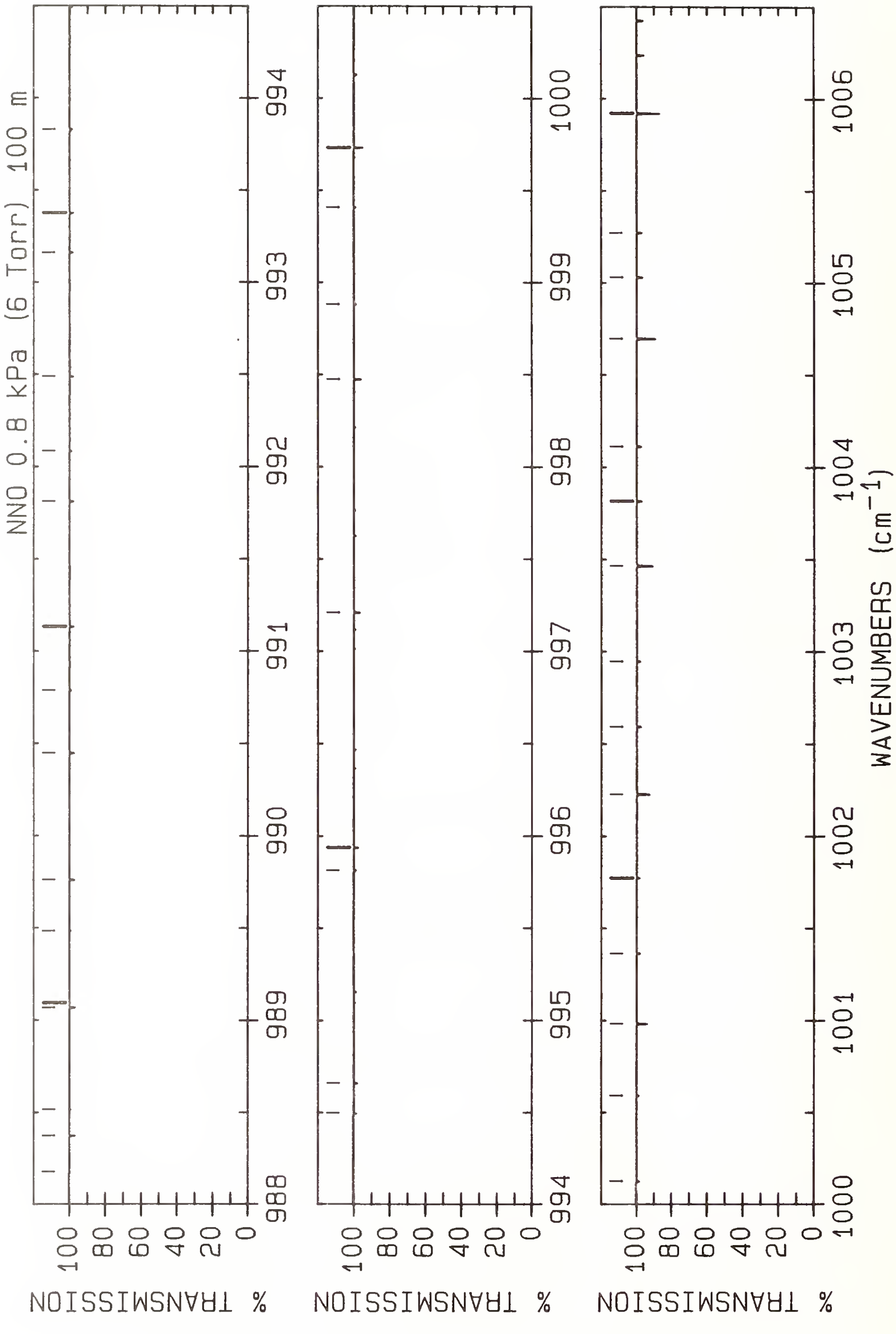
% TRANSMISSION
100 80 60 40 20 0
952 953 954 955 956 957 958
958 959 960 961 962 963 964
964 965 966 967 968 969 970
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	952.470 641(68)*	2745.56	0.162E-24	R(45)	C	21	958.472 423(39)	1329.64	0.912E-25	P(14)	T
2	952.517 571(0)*	1398.38	0.416E-22	R(16)	A	22	958.602 008(1)*	1535.19	0.317E-22	R(24)	A
3	952.689 682(68)*	2743.67	0.163E-24	R(45)	B	23	959.346 791(1)*	1556.05	0.298E-22	R(25)	A
4	953.128 266(68)*	2783.99	0.137E-24	R(46)	C	24	960.088 049(1)*	1577.73	0.279E-22	R(26)	A
5	953.290 338(1)*	1412.57	0.412E-22	R(17)	A	25	960.825 775(1)*	1600.25	0.259E-22	R(27)	A
6	953.359 580(68)*	2782.01	0.138E-24	R(46)	B	26	961.559 965(1)*	1623.60	0.240E-22	R(28)	A
7	953.781 830(68)*	2823.24	0.116E-24	R(47)	C	27	962.290 609(1)*	1647.79	0.221E-22	R(29)	A
8	954.025 802(69)*	2821.18	0.117E-24	R(47)	B	28	963.017 704(1)*	1672.80	0.202E-22	R(30)	A
9	954.059 627(1)*	1427.58	0.404E-22	R(18)	A	29	963.741 240(1)*	1698.65	0.184E-22	R(31)	A
10	954.431 320(68)*	2863.33	0.973E-25	R(48)	C	30	964.461 212(1)*	1725.33	0.167E-22	R(32)	A
11	954.688 341(69)*	2861.18	0.983E-25	R(48)	B	31	965.177 613(1)*	1752.85	0.151E-22	R(33)	A
12	954.825 433(1)*	1443.43	0.394E-22	R(19)	A	32	965.890 435(1)*	1781.19	0.135E-22	R(34)	A
13	955.076 720(69)*	2904.25	0.814E-25	R(49)	C	33	966.599 671(1)*	1810.37	0.121E-22	R(35)	A
14	955.347 187(69)*	2902.01	0.823E-25	R(49)	B	34	967.305 314(1)*	1840.38	0.107E-22	R(36)	A
15	955.587 749(1)*	1460.12	0.382E-22	R(20)	A	35	968.007 357(1)*	1871.22	0.950E-23	R(37)	A
16	956.346 571(1)*	1477.64	0.368E-22	R(21)	A	36	968.705 791(1)*	1902.90	0.837E-23	R(38)	A
17	956.794 457(36)	1354.07	0.924E-25	P(16)	T	37	969.400 609(1)*	1935.40	0.733E-23	R(39)	A
18	957.101 892(1)*	1495.99	0.352E-22	R(22)	A						
19	957.635 185(37)	1341.46	0.922E-25	P(15)	T						
20	957.853 706(1)*	1515.18	0.335E-22	R(23)	A						



NNO 0.8 kPa (6 Torr) 100 m
% TRANSMISSION
100 80 60 40 20 0
970 971 972 973 974 975 976
% TRANSMISSION
100 80 60 40 20 0
976 977 978 979 980 981 982
% TRANSMISSION
100 80 60 40 20 0
982 983 984 985 986 987 988
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	970.091 803(1)*	1968.74	0.640E-23	R(40)	A
2	970.779 364(2)*	2002.90	0.555E-23	R(41)	A
3	971.463 285(2)*	2037.90	0.480E-23	R(42)	A
4	972.143 557(2)*	2073.73	0.413E-23	R(43)	A
5	972.170 138(52)	1249.25	0.293E-25	R(2)	T
6	972.820 171(2)*	2110.39	0.354E-23	R(44)	A
7	972.944 250(51)	1251.61	0.387E-25	R(3)	T
8	973.493 118(3)*	2147.88	0.302E-23	R(45)	A
9	973.714 825(50)	1254.77	0.476E-25	R(4)	T
10	974.162 391(3)*	2186.20	0.256E-23	R(46)	A
11	974.481 856(49)	1258.71	0.561E-25	R(5)	T
12	974.827 978(3)*	2225.35	0.216E-23	R(47)	A
13	975.245 341(48)	1263.44	0.641E-25	R(6)	T
14	975.489 871(4)*	2265.33	0.182E-23	R(48)	A
15	976.005 274(47)	1268.95	0.713E-25	R(7)	T
16	976.148 061(4)*	2306.14	0.152E-23	R(49)	A
17	976.761 649(46)	1275.26	0.779E-25	R(8)	T
18	976.802 536(4)*	2347.78	0.127E-23	R(50)	A
19	977.453 289(5)*	2390.25	0.105E-23	R(51)	A
20	977.514 461(44)	1282.35	0.837E-25	R(9)	T
21	978.100 307(5)*	2433.55	0.871E-24	R(52)	A
22	978.263 705(43)	1290.23	0.887E-25	R(10)	T
23	978.743 580(6)*	2477.68	0.717E-24	R(53)	A
24	979.009 374(41)	1298.90	0.928E-25	R(11)	T
25	979.383 099(6)*	2522.63	0.587E-24	R(54)	A
26	979.751 464(40)	1308.36	0.961E-25	R(12)	T
27	980.018 850(7)*	2568.42	0.479E-24	R(55)	A
28	980.489 966(39)	1318.61	0.985E-25	R(13)	T
29	980.650 825(8)*	2615.03	0.389E-24	R(56)	A
30	981.224 875(37)	1329.64	0.100E-24	R(14)	T
31	981.279 009(8)*	2662.47	0.314E-24	R(57)	A
32	981.903 393(9)*	2710.73	0.253E-24	R(58)	A
33	981.956 185(36)	1341.46	0.101E-24	R(15)	T
34	982.523 963(10)*	2759.83	0.203E-24	R(59)	A
35	982.683 887(35)	1354.07	0.101E-24	R(16)	T
36	983.140 707(11)*	2809.75	0.162E-24	R(60)	A
37	983.407 976(34)	1367.47	0.100E-24	R(17)	T
38	983.753 612(12)*	2860.50	0.129E-24	R(61)	A
39	984.128 443(34)	1381.65	0.988E-25	R(18)	T
40	984.362 666(12)*	2912.08	0.102E-24	R(62)	A
41	984.845 281(33)	1396.63	0.968E-25	R(19)	T
42	984.967 853(13)*	2964.48	0.802E-25	R(63)	A
43	985.535 226(82)*	2910.90	0.101E-25	P(64)	M
44	985.569 162(14)*	3017.71	0.629E-25	R(64)	A
45	986.166 576(15)*	3071.76	0.492E-25	R(65)	A
46	986.268 037(34)	1428.93	0.911E-25	R(21)	T
47	986.760 082(16)*	3126.64	0.383E-25	R(66)	A
48	986.857 945(81)*	2857.40	0.129E-25	P(63)	M
49	986.973 940(34)	1446.27	0.876E-25	R(22)	T
50	987.349 665(17)*	3182.35	0.296E-25	R(67)	A
51	987.676 179(35)	1464.39	0.838E-25	R(23)	T
52	987.935 309(18)*	3238.88	0.229E-25	R(68)	A



NNO 0.8 kPa (6 Torr) 100 m
% TRANSMISSION
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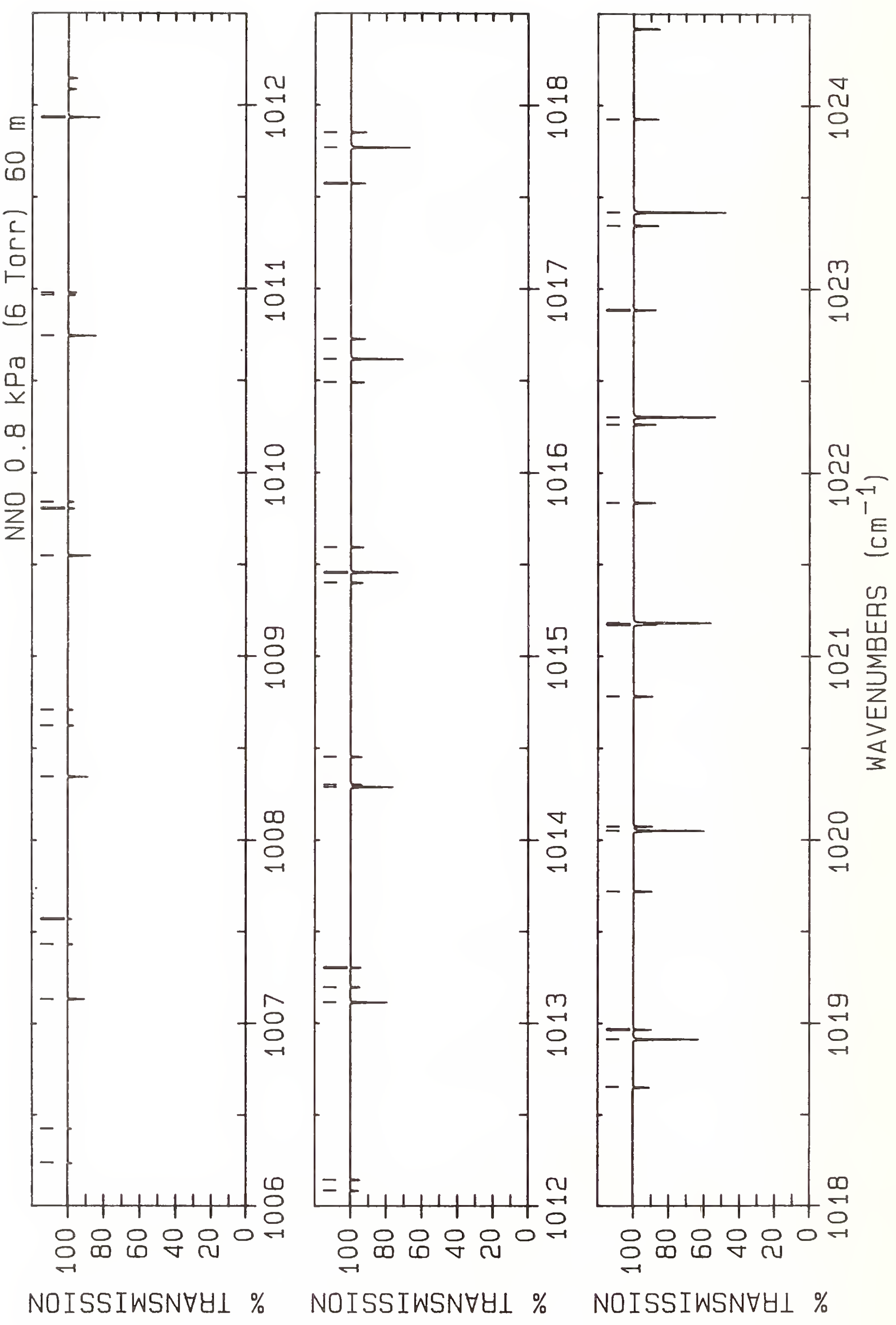
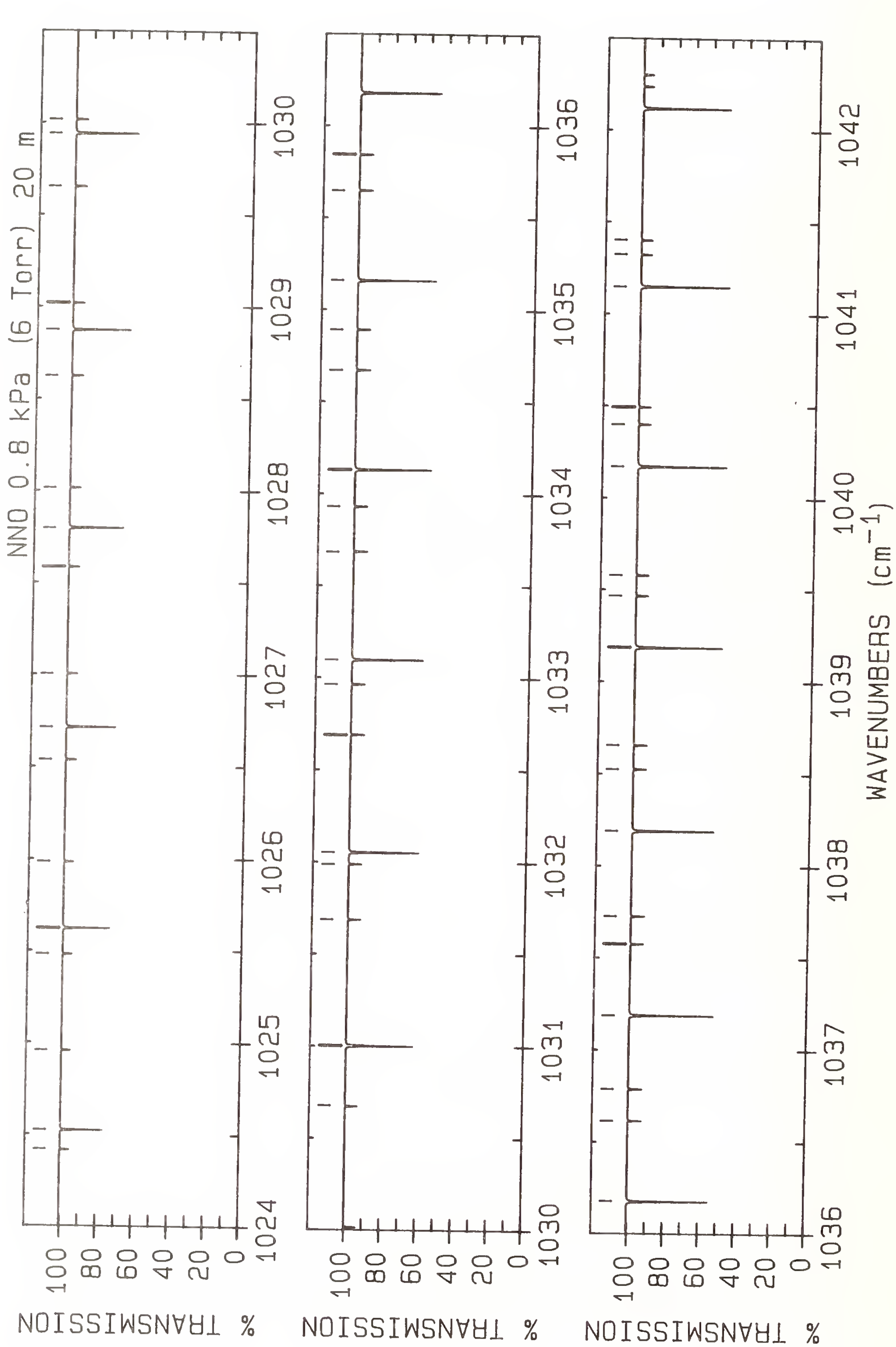
80
60
40
20
0
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	988.174 34(8)*	2804.72	0.165E-25	P(62)	M	21	997.209 20(7)*	2459.21	0.810E-25	P(55)	M
2	988.374 75(3)	1483.30	0.797E-25	R(24)	T	22	998.473 73(7)*	2413.18	0.998E-25	P(54)	M
3	988.517 00(2)*	3296.24	0.176E-25	R(69)	A	23	998.880 40(9)	2738.23	0.379E-25	P(48)	O
4	989.069 64(4)	1502.99	0.754E-25	R(25)	T	24	999.406 91(9)	2775.80	0.323E-25	P(49)	N
5	989.094 72(2)*	3354.41	0.134E-25	R(70)	A	25	999.731 61(7)*	2367.97	0.122E-24	P(53)	M
6	989.484 38(8)*	2752.87	0.210E-25	P(61)	M	26	1000.125 95(9)	2697.91	0.452E-25	P(47)	O
7	989.760 83(4)	1523.48	0.709E-25	R(26)	T	27	1000.593 35(9)	2734.77	0.387E-25	P(48)	N
8	990.448 33(4)	1544.75	0.663E-25	R(27)	T	28	1000.982 78(7)*	2323.60	0.150E-24	P(52)	M
9	990.788 04(8)*	2701.85	0.266E-25	P(60)	M	29	1001.363 73(9)	2658.42	0.537E-25	P(46)	O
10	991.132 12(4)	1566.80	0.618E-25	R(28)	T	30	1001.773 13(9)	2694.59	0.461E-25	P(47)	N
11	991.812 19(4)	1589.65	0.572E-25	R(29)	T	31	1002.227 21(7)*	2280.07	0.182E-24	P(51)	M
12	992.085 27(8)*	2651.66	0.335E-25	P(59)	M	32	1002.593 70(9)	2619.76	0.635E-25	P(45)	O
13	992.488 53(4)	1613.28	0.527E-25	R(30)	T	33	1002.946 21(9)	2655.23	0.547E-25	P(46)	N
14	993.161 12(4)	1637.70	0.484E-25	R(31)	T	34	1003.464 84(7)*	2237.36	0.221E-24	P(50)	M
15	993.376 04(8)*	2602.30	0.421E-25	P(58)	M	35	1003.815 80(9)	2581.95	0.748E-25	P(44)	O
16	993.829 97(4)	1662.90	0.442E-25	R(32)	T	36	1004.112 56(9)	2616.71	0.647E-25	P(45)	N
17	994.495 05(4)	1688.89	0.401E-25	R(33)	T	37	1004.695 63(7)*	2195.49	0.266E-24	P(49)	M
18	994.660 31(7)*	2553.77	0.526E-25	P(57)	M	38	1005.029 99(9)	2544.97	0.876E-25	P(43)	O
19	995.813 86(4)	1743.23	0.327E-25	R(35)	T	39	1005.272 16(9)	2579.02	0.761E-25	P(44)	N
20	995.938 04(7)*	2506.08	0.654E-25	P(56)	M	40	1005.919 54(7)*	2154.45	0.319E-24	P(48)	M



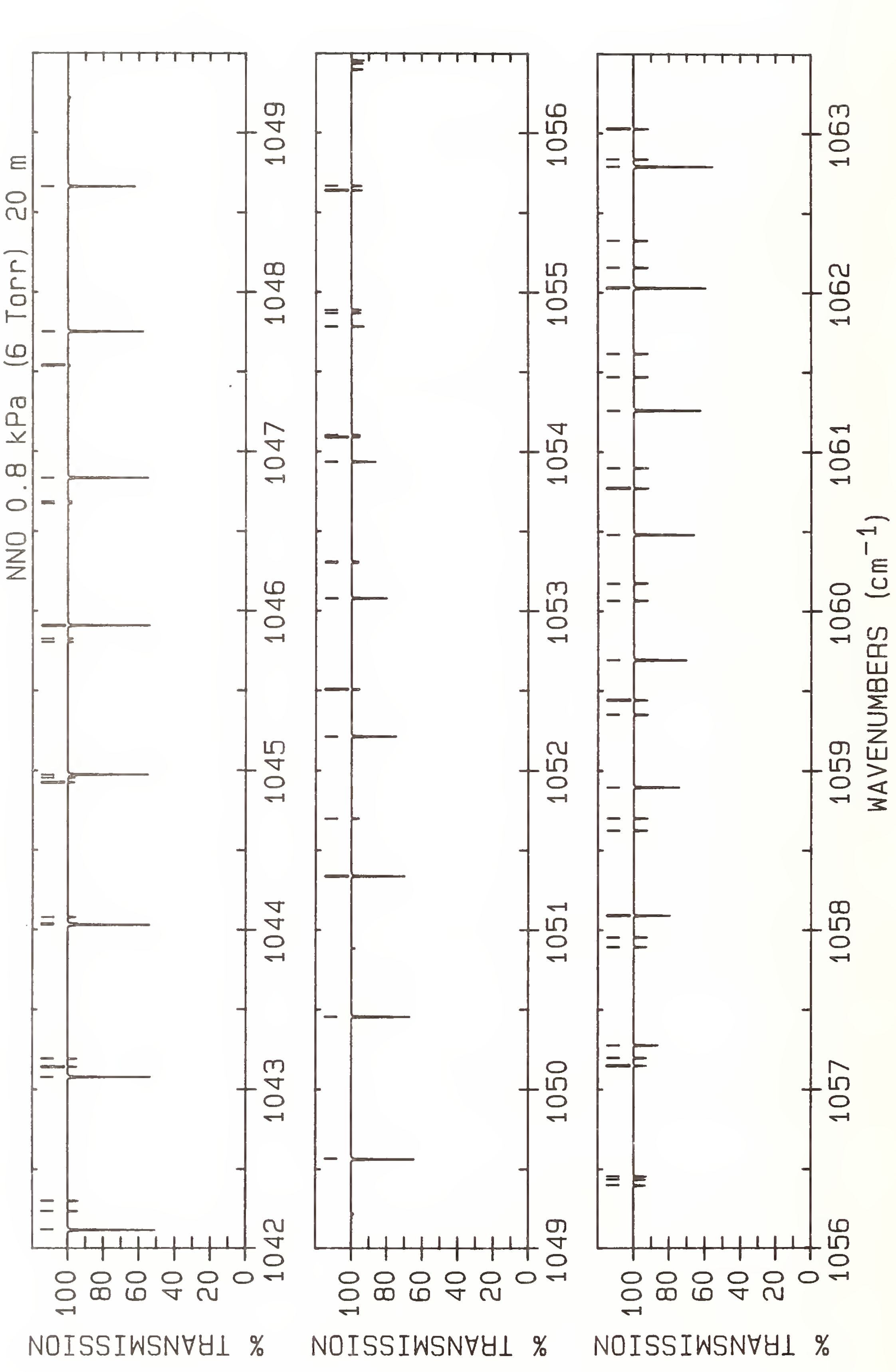
NNO 0.8 kPa (6 Torr) 60 m
% TRANSMISSION
100 80 60 40 20 0
1006 1007 1008 1009 1010 1011 1012
1012 1013 1014 1015 1016 1017 1018
1018 1019 1020 1021 1022 1023 1024
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1006.236 22(9)	2508.82	0.102E-24	P(42)	O
2	1006.424 98(9)	2542.17	0.891E-25	P(43)	N
3	1007.136 51(7)*	2114.24	0.381E-24	P(47)	M
4	1007.434 44(9)	2473.52	0.119E-24	P(41)	O
5	1007.571 00(9)	2506.15	0.104E-24	P(42)	N
6	1008.346 50(7)*	2074.87	0.453E-24	P(46)	M
7	1008.624 60(9)	2439.05	0.137E-24	P(40)	O
8	1008.710 17(9)	2470.97	0.120E-24	P(41)	N
9	1009.549 45(7)*	2036.33	0.536E-24	P(45)	M
10	1009.806 67(9)	2405.42	0.158E-24	P(39)	O
11	1009.842 49(9)	2436.62	0.139E-24	P(40)	N
12	1010.745 32(7)*	1998.62	0.631E-24	P(44)	M
13	1010.967 90(9)	2403.11	0.160E-24	P(39)	N
14	1010.980 59(9)	2372.63	0.180E-24	P(38)	O
15	1011.934 06(7)*	1961.75	0.740E-24	P(43)	M
16	1012.086 41(9)	2370.43	0.183E-24	P(38)	N
17	1012.146 33(9)	2340.67	0.205E-24	P(37)	O
18	1013.115 61(7)*	1925.71	0.864E-24	P(42)	M
19	1013.197 96(9)	2338.59	0.208E-24	P(37)	N
20	1013.303 85(8)	2309.55	0.233E-24	P(36)	O
21	1014.289 93(7)*	1890.51	0.100E-23	P(41)	M
22	1014.302 54(8)	2307.58	0.235E-24	P(36)	N
23	1014.453 09(8)	2279.28	0.263E-24	P(35)	O
24	1015.400 12(8)	2277.41	0.265E-24	P(35)	N
25	1015.456 96(7)*	1856.14	0.116E-23	P(40)	M
26	1015.594 03(8)	2249.84	0.295E-24	P(34)	O
27	1016.490 67(8)	2248.07	0.298E-24	P(34)	N
28	1016.616 65(7)*	1822.61	0.133E-23	P(39)	M
29	1016.726 62(8)	2221.24	0.329E-24	P(33)	O
30	1017.574 16(8)	2219.57	0.332E-24	P(33)	N
31	1017.768 95(7)*	1789.92	0.153E-23	P(38)	M
32	1017.850 83(8)	2193.48	0.366E-24	P(32)	O
33	1018.650 58(8)	2191.91	0.369E-24	P(32)	N
34	1018.913 80(7)*	1758.06	0.174E-23	P(37)	M
35	1018.966 62(8)	2166.56	0.404E-24	P(31)	O
36	1019.719 90(8)	2165.09	0.408E-24	P(31)	N
37	1020.051 16(7)*	1727.03	0.197E-23	P(36)	M
38	1020.073 95(8)	2140.48	0.445E-24	P(30)	O
39	1020.782 08(8)	2139.10	0.448E-24	P(30)	N
40	1021.172 79(8)	2115.24	0.487E-24	P(29)	O
41	1021.180 97(7)*	1696.84	0.223E-23	P(35)	M
42	1021.837 11(8)	2113.94	0.490E-24	P(29)	N
43	1022.263 11(8)	2090.84	0.530E-24	P(28)	O
44	1022.303 18(7)*	1667.49	0.250E-23	P(34)	M
45	1022.884 96(8)	2089.63	0.533E-24	P(28)	N
46	1023.344 87(8)	2067.28	0.573E-24	P(27)	O
47	1023.417 74(7)*	1638.97	0.279E-23	P(33)	M
48	1023.925 61(8)	2066.15	0.577E-24	P(27)	N

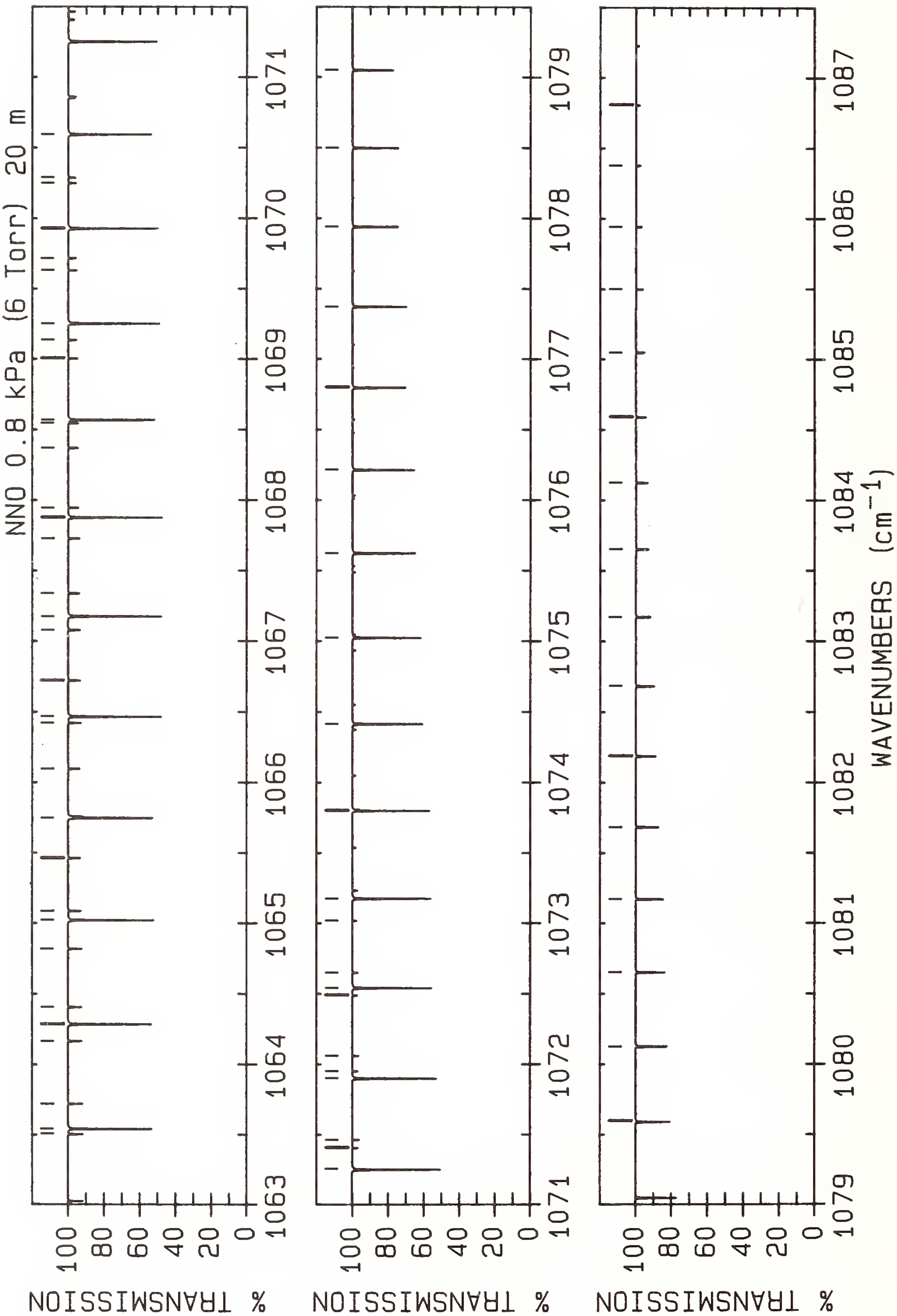


NNO 0.8 kPa (6 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
1024 1025 1026 1027 1028 1029 1030
1030 1031 1032 1033 1034 1035 1036
1036 1037 1038 1039 1040 1041 1042
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1024.418 04(8)	2044.56	0.617E-24	P(26)	O
2	1024.524 60(7)*	1611.29	0.310E-23	P(32)	M
3	1024.959 02(8)	2043.51	0.621E-24	P(26)	N
4	1025.482 60(8)	2022.67	0.661E-24	P(25)	O
5	1025.623 70(7)*	1584.45	0.343E-23	P(31)	M
6	1025.985 19(8)	2021.71	0.664E-24	P(25)	N
7	1026.538 51(8)	2001.63	0.704E-24	P(24)	O
8	1026.715 01(7)*	1558.45	0.378E-23	P(30)	M
9	1027.004 09(8)	2000.74	0.707E-24	P(24)	N
10	1027.585 75(8)	1981.43	0.744E-24	P(23)	O
11	1027.798 47(7)*	1533.28	0.413E-23	P(29)	M
12	1028.015 69(8)	1980.61	0.748E-24	P(23)	N
13	1028.624 28(8)	1962.08	0.783E-24	P(22)	O
14	1028.874 03(7)*	1508.94	0.450E-23	P(28)	M
15	1029.019 98(8)	1961.32	0.786E-24	P(22)	N
16	1029.654 08(8)	1943.56	0.819E-24	P(21)	O
17	1029.941 64(7)*	1485.45	0.487E-23	P(27)	M
18	1030.016 92(8)	1942.87	0.822E-24	P(21)	N
19	1030.675 13(8)	1925.88	0.850E-24	P(20)	O
20	1031.001 26(7)*	1462.80	0.524E-23	P(26)	M
21	1031.006 51(8)	1925.25	0.853E-24	P(20)	N
22	1031.687 41(8)	1909.04	0.877E-24	P(19)	O
23	1031.988 73(8)	1908.48	0.880E-24	P(19)	N
24	1032.052 84(7)*	1440.98	0.561E-23	P(25)	M
25	1032.690 88(8)	1893.05	0.899E-24	P(18)	O
26	1032.963 54(8)	1892.54	0.901E-24	P(18)	N
27	1033.096 34(7)*	1420.00	0.597E-23	P(24)	M
28	1033.685 52(8)	1877.89	0.915E-24	P(17)	O
29	1033.930 94(8)	1877.44	0.917E-24	P(17)	N
30	1034.131 72(7)*	1399.85	0.632E-23	P(23)	M
31	1034.671 32(8)	1863.58	0.923E-24	P(16)	O
32	1034.890 91(8)	1863.18	0.925E-24	P(16)	N
33	1035.158 93(7)*	1380.55	0.665E-23	P(22)	M
34	1035.648 26(8)	1850.11	0.925E-24	P(15)	O
35	1035.843 43(8)	1849.75	0.926E-24	P(15)	N
36	1036.177 94(7)*	1362.08	0.696E-23	P(21)	M
37	1036.616 30(8)	1837.48	0.918E-24	P(14)	O
38	1036.788 47(8)	1837.17	0.919E-24	P(14)	N
39	1037.188 70(7)*	1344.45	0.723E-23	P(20)	M
40	1037.575 45(8)	1825.69	0.903E-24	P(13)	O
41	1037.726 04(8)	1825.42	0.904E-24	P(13)	N
42	1038.191 17(7)*	1327.67	0.746E-23	P(19)	M
43	1038.525 68(8)	1814.75	0.879E-24	P(12)	O
44	1038.656 10(8)	1814.52	0.880E-24	P(12)	N
45	1039.185 32(7)*	1311.72	0.764E-23	P(18)	M
46	1039.466 96(8)	1804.64	0.846E-24	P(11)	O
47	1039.578 66(8)	1804.45	0.847E-24	P(11)	N
48	1040.171 11(7)*	1296.61	0.778E-23	P(17)	M
49	1040.399 30(8)	1795.38	0.804E-24	P(10)	O
50	1040.493 68(8)	1795.22	0.804E-24	P(10)	N
51	1041.148 52(7)*	1282.33	0.785E-23	P(16)	M
52	1041.322 66(8)	1786.96	0.752E-24	P(9)	O
53	1041.401 17(8)	1786.83	0.753E-24	P(9)	N


NNO 0.8 kPa (6 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
1042 1043 1044 1045 1046 1047 1048 1049
1049 1050 1051 1052 1053 1054 1055 1056
1056 1057 1058 1059 1060 1061 1062 1063
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1042.117 50(7)*	1268.90	0.787E-23	P(15)	M	36	1054.102 20(8)	1761.65	0.565E-24	R(5)	N
2	1042.237 05(8)	1779.38	0.692E-24	P(8)	O	37	1054.784 46(7)*	1168.97	0.864E-24	P(1)	M
3	1042.301 10(8)	1779.27	0.693E-24	P(8)	N	38	1054.868 67(8)	1766.75	0.649E-24	R(6)	O
4	1043.078 03(7)*	1256.31	0.781E-23	P(14)	M	39	1054.887 92(8)	1766.69	0.649E-24	R(6)	N
5	1043.142 44(8)	1772.64	0.623E-24	P(7)	O	40	1055.638 27(8)	1772.64	0.725E-24	R(7)	O
6	1043.193 47(8)	1772.56	0.624E-24	P(7)	N	41	1055.665 99(8)	1772.56	0.725E-24	R(7)	N
7	1044.030 07(7)*	1244.55	0.769E-23	P(13)	M	42	1056.398 79(8)	1779.38	0.792E-24	R(8)	O
8	1044.038 82(8)	1766.75	0.546E-24	P(6)	O	43	1056.436 43(8)	1779.27	0.793E-24	R(8)	N
9	1044.078 27(8)	1766.69	0.546E-24	P(6)	N	44	1056.455 42(7)*	1168.13	0.869E-24	R(0)	M
10	1044.926 19(8)	1761.70	0.461E-24	P(5)	O	45	1057.150 25(8)	1786.96	0.851E-24	R(9)	O
11	1044.955 48(8)	1761.65	0.461E-24	P(5)	N	46	1057.199 24(8)	1786.83	0.852E-24	R(9)	N
12	1044.973 60(7)*	1233.63	0.749E-23	P(12)	M	47	1057.277 81(7)*	1168.97	0.173E-23	R(1)	M
13	1045.804 54(8)	1757.49	0.368E-24	P(4)	O	48	1057.892 65(8)	1795.38	0.901E-24	R(10)	O
14	1045.825 10(8)	1757.46	0.368E-24	P(4)	N	49	1057.954 40(8)	1795.22	0.902E-24	R(10)	N
15	1045.908 60(7)*	1223.56	0.722E-23	P(11)	M	50	1058.091 48(7)*	1170.65	0.258E-23	R(2)	M
16	1046.673 84(8)	1754.12	0.266E-24	P(3)	O	51	1058.625 98(8)	1804.64	0.941E-24	R(11)	O
17	1046.687 11(8)	1754.10	0.266E-24	P(3)	N	52	1058.701 95(8)	1804.45	0.942E-24	R(11)	N
18	1046.835 04(7)*	1214.32	0.687E-23	P(10)	M	53	1058.896 42(7)*	1173.17	0.340E-23	R(3)	M
19	1047.534 11(8)	1751.59	0.152E-24	P(2)	O	54	1059.350 27(8)	1814.75	0.973E-24	R(12)	O
20	1047.541 52(8)	1751.58	0.152E-24	P(2)	N	55	1059.441 86(8)	1814.52	0.974E-24	R(12)	N
21	1047.752 89(7)*	1205.92	0.645E-23	P(9)	M	56	1059.692 63(7)*	1176.53	0.418E-23	R(4)	M
22	1048.662 13(7)*	1198.37	0.595E-23	P(8)	M	57	1060.065 51(8)	1825.69	0.995E-24	R(13)	O
23	1049.562 75(7)*	1191.65	0.539E-23	P(7)	M	58	1060.174 16(8)	1825.42	0.996E-24	R(13)	N
24	1050.454 73(7)*	1185.77	0.476E-23	P(6)	M	59	1060.480 12(7)*	1180.73	0.492E-23	R(5)	M
25	1051.338 05(7)*	1180.73	0.406E-23	P(5)	M	60	1060.771 72(8)	1837.48	0.101E-23	R(14)	O
26	1051.699 20(8)	1751.58	0.271E-24	R(2)	N	61	1060.898 84(8)	1837.17	0.101E-23	R(14)	N
27	1051.699 56(8)	1751.59	0.271E-24	R(2)	O	62	1061.258 88(7)*	1185.77	0.561E-23	R(6)	M
28	1052.212 69(7)*	1176.53	0.332E-23	P(4)	M	63	1061.468 89(8)	1850.11	0.101E-23	R(15)	O
29	1052.505 45(8)	1754.12	0.376E-24	R(3)	O	64	1061.615 91(8)	1849.75	0.101E-23	R(15)	N
30	1052.507 84(8)	1754.10	0.376E-24	R(3)	N	65	1062.028 94(7)*	1191.65	0.623E-23	R(7)	M
31	1053.078 65(7)*	1173.17	0.253E-23	P(3)	M	66	1062.157 05(8)	1863.58	0.101E-23	R(16)	O
32	1053.302 27(8)	1757.49	0.474E-24	R(4)	O	67	1062.325 39(8)	1863.18	0.101E-23	R(16)	N
33	1053.308 84(8)	1757.46	0.475E-24	R(4)	N	68	1062.790 28(7)*	1198.37	0.679E-23	R(8)	M
34	1053.935 91(7)*	1170.65	0.171E-23	P(2)	M	69	1062.836 20(8)	1877.89	0.997E-24	R(17)	O
35	1054.090 01(8)	1761.70	0.565E-24	R(5)	O	70	1063.027 27(8)	1877.44	0.999E-24	R(17)	N


NNO 0.8 kPa (6 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
1063 1064 1065 1066 1067 1068 1069 1070 1071
1071 1072 1073 1074 1075 1076 1077 1078 1079
1079 1080 1081 1082 1083 1084 1085 1086 1087
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1063.506 35(8)	1893.05	0.979E-24	R(18)	O	36	1071.465 78(8)	2139.10	0.487E-24	R(30)	N
2	1063.542 93(7)*	1205.92	0.728E-23	R(9)	M	37	1071.902 08(7)*	1362.08	0.755E-23	R(21)	M
3	1063.721 57(8)	1892.54	0.981E-24	R(18)	N	38	1071.952 93(8)	2193.48	0.398E-24	R(32)	O
4	1064.167 53(8)	1909.04	0.954E-24	R(19)	O	39	1072.062 59(8)	2165.09	0.443E-24	R(31)	N
5	1064.286 90(7)*	1214.32	0.769E-23	R(10)	M	40	1072.490 24(8)	2221.24	0.358E-24	R(33)	O
6	1064.408 30(8)	1908.48	0.957E-24	R(19)	N	41	1072.543 27(7)*	1380.55	0.721E-23	R(22)	M
7	1064.819 73(8)	1925.88	0.924E-24	R(20)	O	42	1072.651 99(8)	2191.91	0.401E-24	R(32)	N
8	1065.022 19(7)*	1223.56	0.803E-23	R(11)	M	43	1073.018 88(8)	2249.84	0.321E-24	R(34)	O
9	1065.087 46(8)	1925.25	0.927E-24	R(20)	N	44	1073.176 07(7)*	1399.85	0.686E-23	R(23)	M
10	1065.462 98(8)	1943.56	0.888E-24	R(21)	O	45	1073.800 50(7)*	1420.00	0.648E-23	R(24)	M
11	1065.748 82(7)*	1233.63	0.828E-23	R(12)	M	46	1074.416 61(7)*	1440.98	0.608E-23	R(25)	M
12	1066.097 29(8)	1962.08	0.850E-24	R(22)	O	47	1075.024 41(7)*	1462.80	0.568E-23	R(26)	M
13	1066.423 15(8)	1961.32	0.853E-24	R(22)	N	48	1075.623 96(7)*	1485.45	0.528E-23	R(27)	M
14	1066.466 82(7)*	1244.55	0.847E-23	R(13)	M	49	1076.215 28(7)*	1508.94	0.488E-23	R(28)	M
15	1066.722 68(8)	1981.43	0.807E-24	R(23)	O	50	1076.798 42(7)*	1533.28	0.448E-23	R(29)	M
16	1067.079 69(8)	1980.61	0.811E-24	R(23)	N	51	1077.373 41(7)*	1558.45	0.410E-23	R(30)	M
17	1067.176 18(7)*	1256.31	0.857E-23	R(14)	M	52	1077.940 29(7)*	1584.45	0.373E-23	R(31)	M
18	1067.339 16(8)	2001.63	0.763E-24	R(24)	O	53	1078.499 11(7)*	1611.29	0.337E-23	R(32)	M
19	1067.728 71(8)	2000.74	0.767E-24	R(24)	N	54	1079.049 90(7)*	1638.97	0.304E-23	R(33)	M
20	1067.876 94(7)*	1268.90	0.861E-23	R(15)	M	55	1079.592 70(7)*	1667.49	0.272E-23	R(34)	M
21	1067.946 76(8)	2022.67	0.717E-24	R(25)	O	56	1080.127 57(7)*	1696.84	0.243E-23	R(35)	M
22	1068.370 24(8)	2021.71	0.720E-24	R(25)	N	57	1080.654 54(7)*	1727.03	0.215E-23	R(36)	M
23	1068.545 49(8)	2044.56	0.670E-24	R(26)	O	58	1081.173 65(7)*	1758.06	0.190E-23	R(37)	M
24	1068.569 12(7)*	1282.33	0.857E-23	R(16)	M	59	1081.684 95(7)*	1789.92	0.167E-23	R(38)	M
25	1069.004 27(8)	2043.51	0.673E-24	R(26)	N	60	1082.188 48(7)*	1822.61	0.146E-23	R(39)	M
26	1069.135 38(8)	2067.28	0.622E-24	R(27)	O	61	1082.684 29(7)*	1856.14	0.127E-23	R(40)	M
27	1069.252 74(7)*	1296.61	0.847E-23	R(17)	M	62	1083.172 41(7)*	1890.51	0.110E-23	R(41)	M
28	1069.630 82(8)	2066.15	0.626E-24	R(27)	N	63	1083.652 90(7)*	1925.71	0.948E-24	R(42)	M
29	1069.716 44(8)	2090.84	0.575E-24	R(28)	O	64	1084.125 79(7)*	1961.75	0.813E-24	R(43)	M
30	1069.927 82(7)*	1311.72	0.831E-23	R(18)	M	65	1084.591 14(7)*	1998.62	0.694E-24	R(44)	M
31	1070.249 92(8)	2089.63	0.579E-24	R(28)	N	66	1085.048 97(7)*	2036.33	0.590E-24	R(45)	M
32	1070.288 70(8)	2115.24	0.528E-24	R(29)	O	67	1085.499 34(7)*	2074.87	0.499E-24	R(46)	M
33	1070.594 38(7)*	1327.67	0.810E-23	R(19)	M	68	1085.942 28(7)*	2114.24	0.420E-24	R(47)	M
34	1071.252 46(7)*	1344.45	0.784E-23	R(20)	M	69	1086.377 84(7)*	2154.45	0.352E-24	R(48)	M
35	1071.406 93(8)	2166.56	0.440E-24	R(31)	O	70	1086.806 06(7)*	2195.49	0.294E-24	R(49)	M

ATLAS OF N_2O ABSORPTION LINES FROM 1105 cm^{-1} to 1230 cm^{-1}

key:

Band	Isotopomer	Vibrational Transition
a	$^{14}N^{14}N^{16}O$	02^00-00^00
x		$02^{2e}0$-00^00
b		03^10-$01^{1e}0$
c		03^10-$01^{1f}0$
d		02^01-00^01
e		04^20-$02^{2e}0$
f		04^20-$02^{2f}0$
g		04^00-02^00
p	$^{14}N^{15}N^{16}O$	02^00-00^00
r	$^{15}N^{14}N^{16}O$	02^00-00^00
t	$^{14}N^{14}N^{18}O$	02^00-00^00
v	$^{14}N^{14}N^{17}O$	02^00-00^00

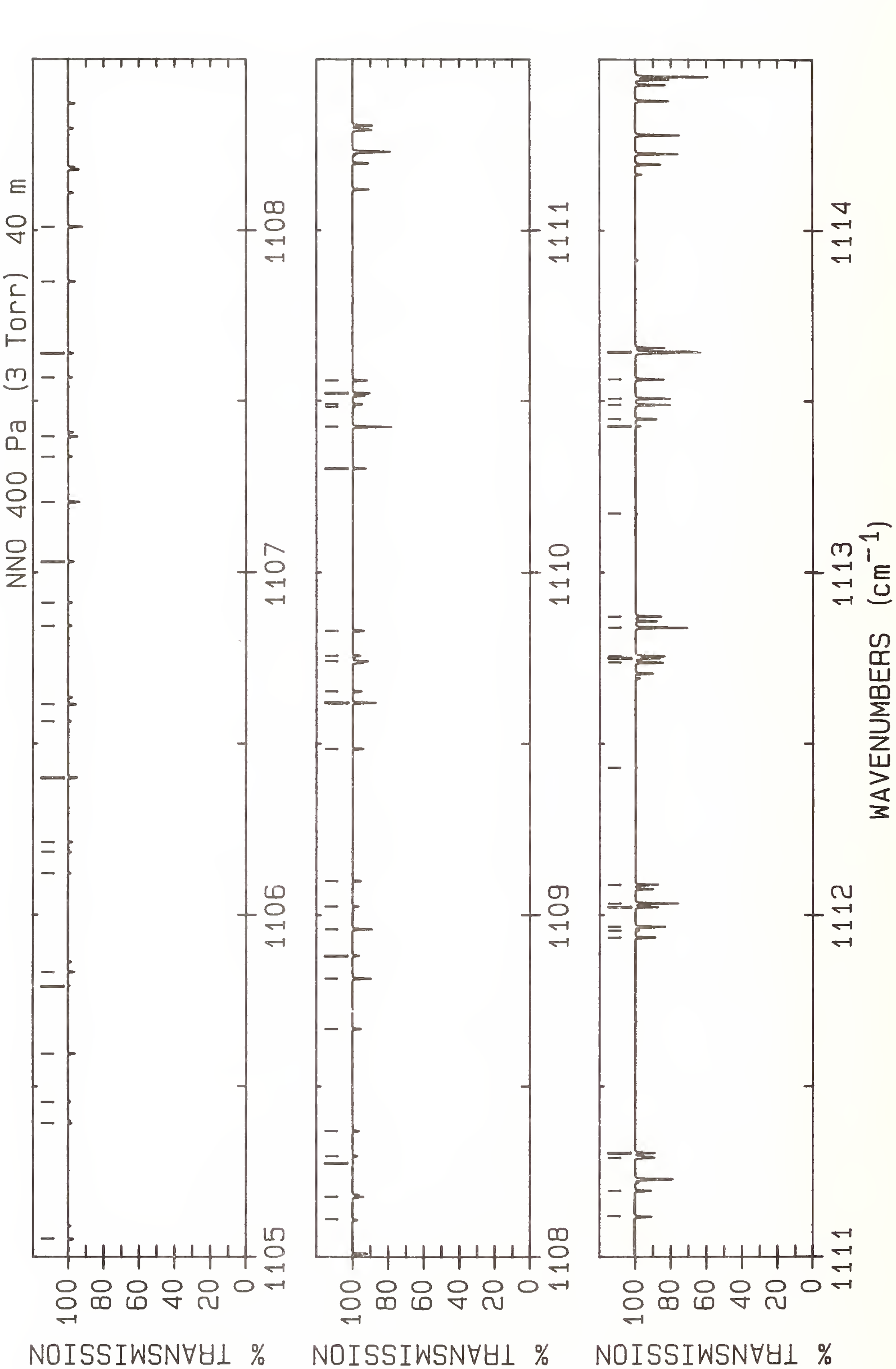
If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a temperature of 296 K. For the **a** band a transition moment of 0.0247 debye was used and the Herman-Wallis constants given by Toth **[5.218]** were used in the intensity calculation. For the **b** and **c** bands the transition moment used was 0.024 debye and the same H.-W. constants were used as for band **a**. The **g**, **e**, and **f** bands used no H.-W. constants and the same transition moment as band **b** and **c**. Band **d** used the same transition moment as band **a** but used H.-W. constants $a_1 = 0.627 \times 10^{-2}$ and $a_2 = 0.185 \times 10^{-3}$. Band **x** derives its intensity from the l-type resonance effect on band **a**, but the calculated intensity was raised by using a transition moment for **a** of 0.03 debye (for the **x** intensity calculation only). Of the different isotopes, only band **r** was given the same intensity constants as band **a** although all were given the same H.-W. constants as band **a**. Band **p** used a transition moment of 0.0175 debye; band **t** used a transition moment of 0.035 debye; and band **v** used a transition moment of 0.029 debye.

ATLAS OF N_2O ABSORPTION LINES FROM 1200 cm^{-1} to 1345 cm^{-1}

key:

Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	00^01-00^00
B		01^11-$01^{1e}0$
C		01^11-$01^{1f}0$
D		00^02-00^01
E		02^21-$02^{2e}0$
F		02^21-$02^{2f}0$
G		02^01-02^00
H		01^12-$01^{1e}1$
I		01^12-$01^{1f}1$
J		03^11-$03^{1e}0$
K		03^11-$03^{1f}0$
L		03^31-$03^{3e}0$
M		03^31-$03^{3f}0$
X		00^02-02^00
P	$^{14}N^{15}N^{16}O$	00^01-00^00
N		01^11-$01^{1e}0$
O		01^11-$01^{1f}0$
R	$^{15}N^{14}N^{16}O$	00^01-00^00
S		01^11-$01^{1e}0$
W		01^11-$01^{1f}0$
T	$^{14}N^{14}N^{18}O$	00^01-00^00
Y		01^11-$01^{1e}0$
Z		01^11-$01^{1f}0$
V	$^{14}N^{14}N^{17}O$	00^01-00^00

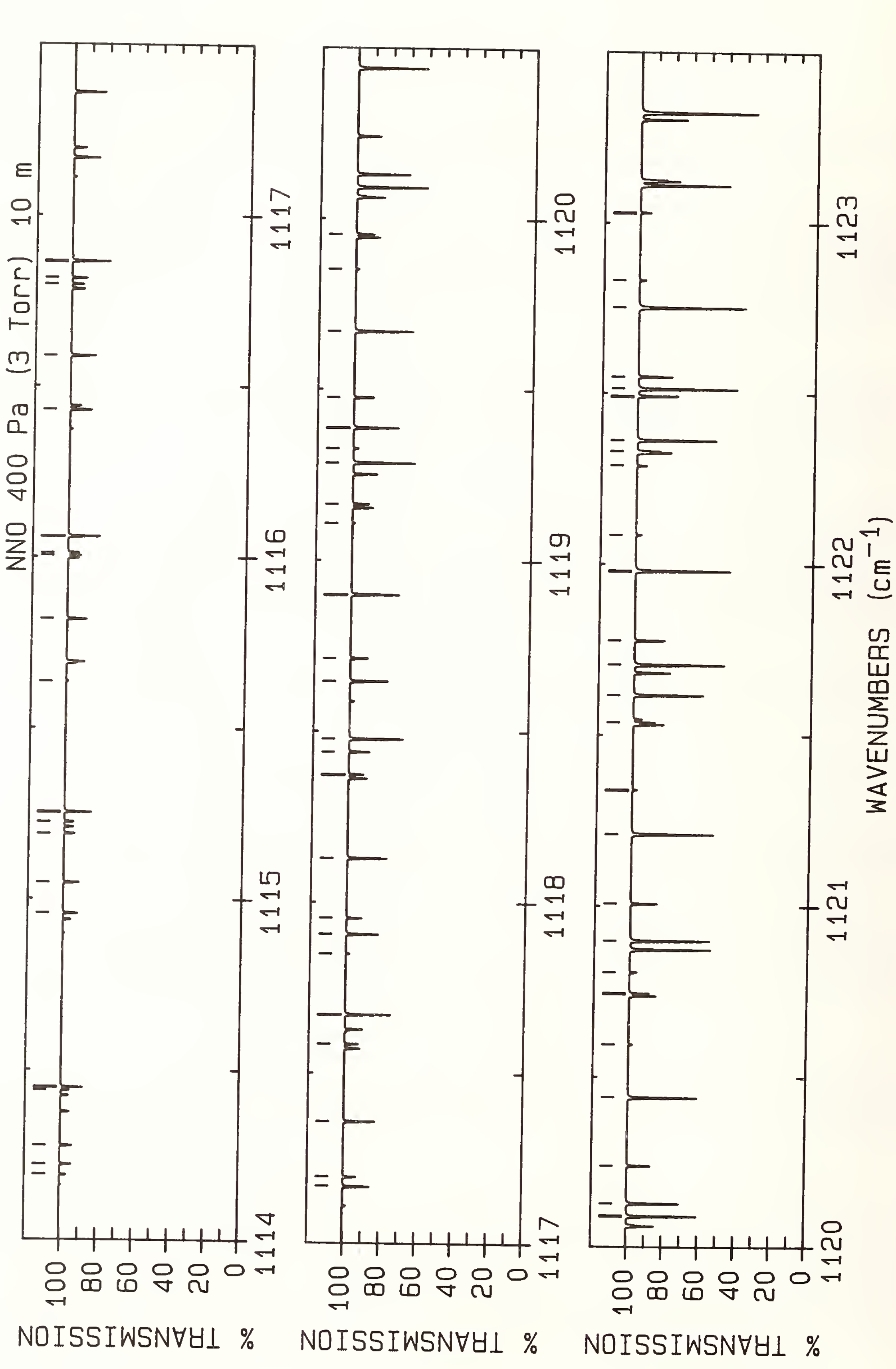
If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.1326 debye at a temperature of 296 K. The transition moments and Herman-Wallis constants used in the calculations were taken from Toth **[5.218]** after making allowance for the vibrational factors of 2, etc. included in Toth's transition moments, see Chapter III. Hot bands not covered by Toth's data were given the same transition moments and Herman-Wallis constants as the ground state transitions. The same intensity constants were used for band V as for band A.



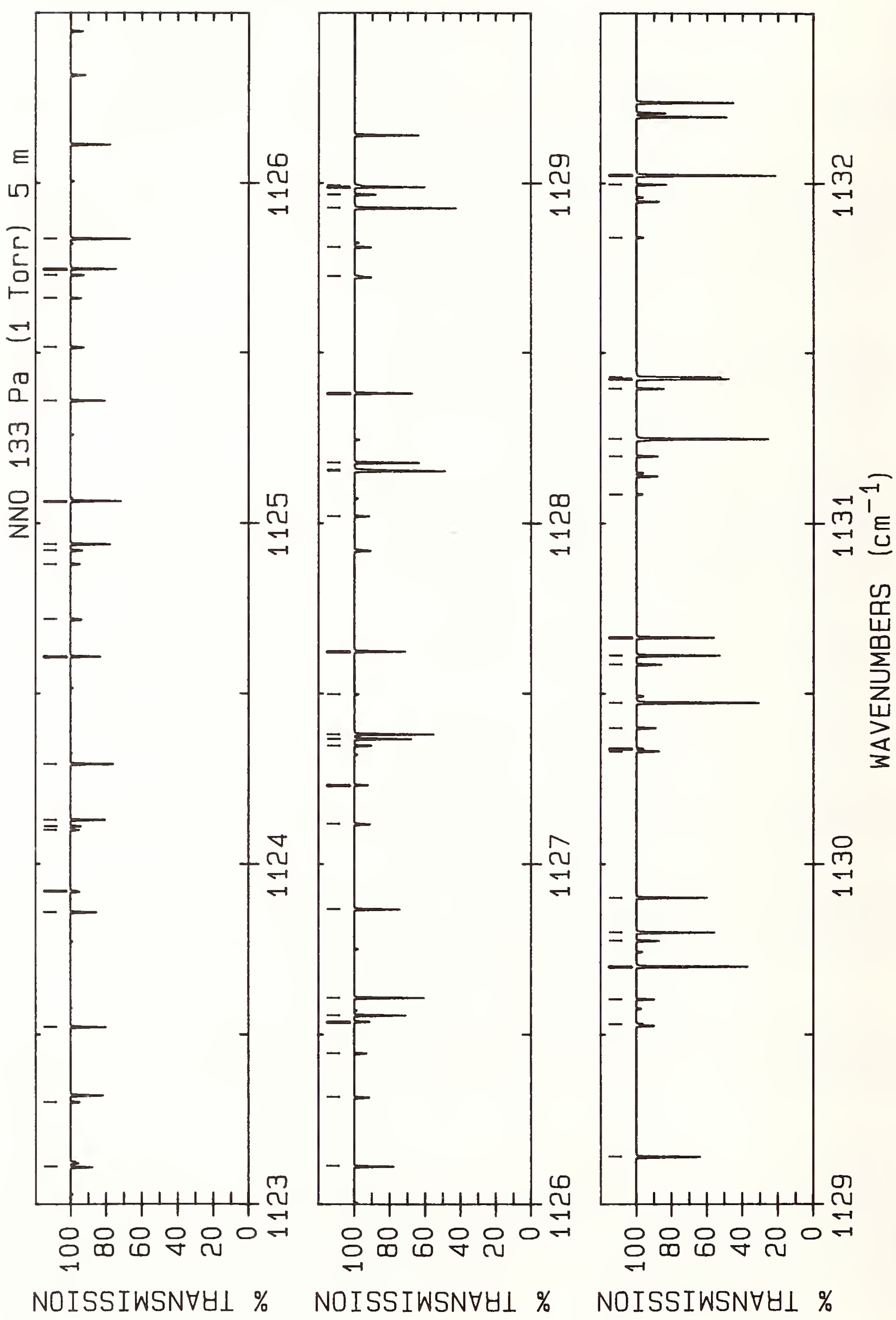
NNO 400 Pa (3 Torr) 40 m
% TRANSMISSION
100
80
60
40
20
0
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1105.053 19(6)	1025.45	0.326E-24	P(49)	p
2	1105.393 1	2701.85	0.215E-24	P(60)	g
3	1105.455 50(10)	2730.97	0.142E-24	P(71)	c
4	1105.596 14(6)	2494.84	0.419E-24	P(67)	b
5	1105.793 05(28)*	2641.11	0.125E-24	P(79)	a
6	1105.833 99(6)	984.47	0.389E-24	P(48)	p
7	1106.121 6	2713.65	0.159E-24	P(60)	e
8	1106.183 70(8)	2671.59	0.186E-24	P(70)	c
9	1106.212 8	2651.66	0.271E-24	P(59)	g
10	1106.400 85(5)	2438.88	0.540E-24	P(66)	b
11	1106.565 45(24)*	2575.26	0.169E-24	P(78)	a
12	1106.614 92(6)	944.33	0.463E-24	P(47)	p
13	1106.844 6	2663.35	0.200E-24	P(59)	e
14	1106.912 17(6)	2613.04	0.242E-24	P(69)	c
15	1107.031 8	2602.30	0.339E-24	P(58)	g
16	1107.205 53(4)	2383.76	0.691E-24	P(65)	b
17	1107.337 59(20)*	2510.22	0.229E-24	P(77)	a
18	1107.396 00(6)	905.01	0.549E-24	P(46)	p
19	1107.569 6	2613.89	0.250E-24	P(58)	e
20	1107.640 96(5)	2555.32	0.315E-24	P(68)	c
21	1107.850 3	2553.77	0.423E-24	P(57)	g
22	1108.010 19(4)	2329.46	0.882E-24	P(64)	b
23	1108.109 50(17)*	2446.02	0.308E-24	P(76)	a
24	1108.177 29(6)	866.54	0.647E-24	P(45)	p
25	1108.277 08(11)	1542.71	0.766E-25	P(62)	t
26	1108.296 7	2565.26	0.311E-24	P(57)	e
27	1108.370 12(5)	2498.43	0.408E-24	P(67)	c
28	1108.668 3	2506.08	0.525E-24	P(56)	g
29	1108.814 86(3)	2275.99	0.112E-23	P(63)	b
30	1108.881 18(15)*	2382.64	0.412E-24	P(75)	a
31	1108.958 83(6)	828.89	0.760E-24	P(44)	p
32	1109.025 9	2517.47	0.386E-24	P(56)	e
33	1109.099 70(4)	2442.37	0.525E-24	P(66)	c
34	1109.485 6	2459.21	0.649E-24	P(55)	g
35	1109.619 56(3)	2223.36	0.142E-23	P(62)	b

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1109.652 64(13)*	2320.08	0.550E-24	P(74)	a
37	1109.740 66(6)	792.08	0.888E-24	P(43)	p
38	1109.757 2	2470.51	0.476E-24	P(55)	e
39	1109.829 76(4)	2387.14	0.674E-24	P(65)	c
40	1110.302 4	2413.18	0.799E-24	P(54)	g
41	1110.423 91(12)*	2258.36	0.731E-24	P(73)	a
42	1110.424 29(3)	2171.55	0.179E-23	P(61)	b
43	1110.483 19(6)	1398.36	0.146E-24	P(59)	t
44	1110.490 6	2424.38	0.586E-24	P(54)	e
45	1110.522 83(6)	756.11	0.103E-23	P(42)	p
46	1110.560 35(4)	2332.74	0.862E-24	P(64)	c
47	1111.118 6	2367.97	0.979E-24	P(53)	g
48	1111.195 00(11)*	2197.45	0.968E-24	P(72)	a
49	1111.291 52(3)	2279.17	0.110E-23	P(63)	c
50	1111.305 38(5)	720.96	0.119E-23	P(41)	p
51	1111.934 3	2323.60	0.119E-23	P(52)	g
52	1111.954 41(5)	1306.05	0.219E-24	P(57)	t
53	1111.964 3	2334.64	0.873E-24	P(52)	e
54	1111.965 91(10)*	2137.38	0.128E-23	P(71)	a
55	1112.023 32(3)	2226.43	0.139E-23	P(62)	c
56	1112.033 97(3)	2070.42	0.280E-23	P(59)	b
57	1112.088 37(5)	686.65	0.138E-23	P(40)	p
58	1112.430 10(14)	1578.88	0.105E-24	P(62)	r
59	1112.736 68(10)*	2078.13	0.167E-23	P(70)	a
60	1112.749 3	2280.07	0.145E-23	P(51)	g
61	1112.755 80(3)	2174.53	0.175E-23	P(61)	c
62	1112.838 94(3)	2021.11	0.349E-23	P(58)	b
63	1112.871 85(5)	653.18	0.158E-23	P(39)	p
64	1113.171 08(12)	1528.83	0.132E-24	P(61)	r
65	1113.426 35(4)	1216.88	0.323E-24	P(55)	t
66	1113.447 2	2248.24	0.128E-23	P(50)	e
67	1113.489 02(3)	2123.45	0.220E-23	P(60)	c
68	1113.507 31(9)*	2019.71	0.219E-23	P(69)	a
69	1113.563 9	2237.36	0.175E-23	P(50)	g
70	1113.644 04(3)	1972.62	0.432E-23	P(57)	b

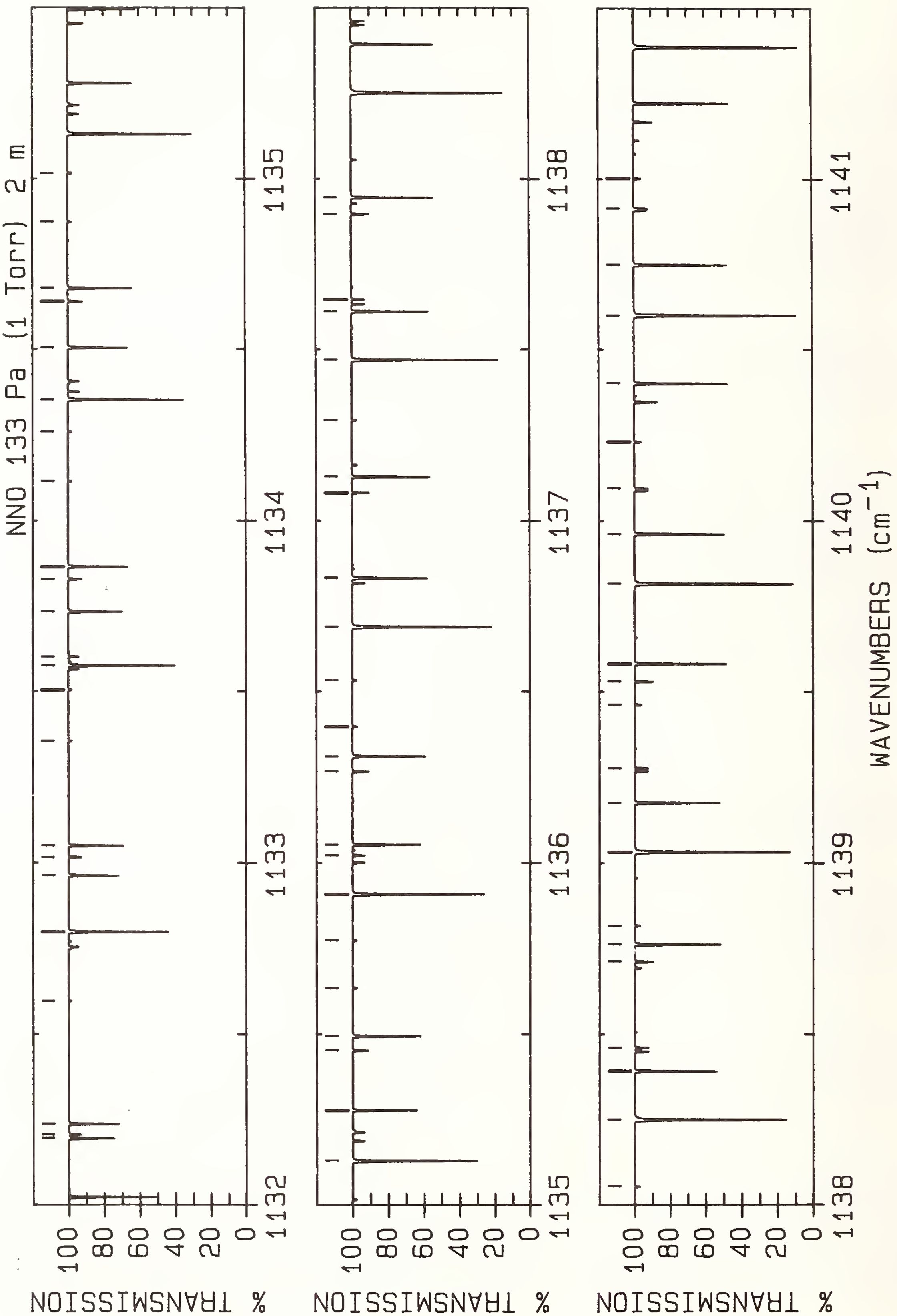

NNO 400 Pa (3 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1114.192 2	2206.29	0.154E-23	P(49)	e
2	1114.223 03(3)	2073.21	0.275E-23	P(59)	c
3	1114.277 82(9)*	1962.12	0.284E-23	P(68)	a
4	1114.440 47(5)	588.74	0.204E-23	P(37)	p
5	1114.449 27(3)	1924.97	0.533E-23	P(56)	b
6	1114.957 87(3)	2023.80	0.343E-23	P(58)	c
7	1115.048 23(9)*	1905.36	0.369E-23	P(67)	a
8	1115.191 3	2154.45	0.253E-23	P(48)	g
9	1115.225 72(5)	557.77	0.231E-23	P(36)	p
10	1115.254 65(3)	1878.14	0.655E-23	P(55)	b
11	1115.636 18(4)	1089.01	0.564E-24	P(52)	t
12	1115.818 57(9)*	1849.42	0.476E-23	P(66)	a
13	1116.004 3	2114.24	0.302E-23	P(47)	g
14	1116.011 67(5)	527.64	0.260E-23	P(35)	p
15	1116.060 21(3)	1832.15	0.800E-23	P(54)	b
16	1116.430 25(3)	1927.48	0.525E-23	P(56)	c
17	1116.588 85(9)*	1794.32	0.611E-23	P(65)	a
18	1116.798 38(5)	498.34	0.291E-23	P(34)	p
19	1116.816 7	2074.87	0.359E-23	P(46)	g
20	1116.865 97(3)	1786.99	0.975E-23	P(53)	b
21	1117.167 90(3)	1880.57	0.645E-23	P(55)	c
22	1117.196 4	2046.86	0.307E-23	P(45)	e
23	1117.359 09(9)*	1740.04	0.782E-23	P(64)	a
24	1117.585 89(5)	469.88	0.324E-23	P(33)	p
25	1117.671 94(3)	1742.67	0.118E-22	P(52)	b
26	1117.849 16(4)	968.22	0.946E-24	P(49)	t
27	1117.906 57(3)	1834.50	0.789E-23	P(54)	c
28	1117.953 6	2009.10	0.361E-23	P(44)	e
29	1118.129 32(9)*	1686.59	0.996E-23	P(63)	a
30	1118.374 26(5)	442.25	0.359E-23	P(32)	p
31	1118.440 2	1998.62	0.499E-23	P(44)	g
32	1118.478 14(3)	1699.17	0.143E-22	P(51)	b
33	1118.646 33(3)	1789.25	0.962E-23	P(53)	c
34	1118.713 3	1972.17	0.423E-23	P(43)	e
35	1118.899 56(9)*	1633.97	0.126E-22	P(62)	a
36	1119.108 00(5)	1157.36	0.683E-24	P(53)	r
37	1119.163 56(5)	415.46	0.396E-23	P(31)	p
38	1119.284 59(3)	1656.51	0.171E-22	P(50)	b
39	1119.326 68(4)	891.62	0.131E-23	P(47)	t
40	1119.387 21(3)	1744.84	0.117E-22	P(52)	c
41	1119.475 4	1936.08	0.492E-23	P(42)	e
42	1119.669 84(9)*	1582.18	0.159E-22	P(61)	a
43	1119.851 73(5)	1114.55	0.823E-24	P(52)	r
44	1119.953 82(5)	389.50	0.434E-23	P(30)	p
45	1120.091 31(3)	1614.68	0.205E-22	P(49)	b
46	1120.129 26(3)	1701.27	0.141E-22	P(51)	c
47	1120.240 1	1900.83	0.571E-23	P(41)	e
48	1120.440 18(9)*	1531.22	0.201E-22	P(60)	a
49	1120.595 94(5)	1072.53	0.987E-24	P(51)	r
50	1120.745 12(5)	364.38	0.474E-23	P(29)	p
51	1120.806 30(3)	818.17	0.178E-23	P(45)	t
52	1120.898 32(2)	1573.69	0.244E-22	P(48)	b
53	1121.007 2	1866.41	0.659E-23	P(40)	e
54	1121.210 60(8)*	1481.09	0.251E-22	P(59)	a
55	1121.340 65(5)	1031.32	0.118E-23	P(50)	r
56	1121.537 49(5)	340.10	0.514E-23	P(28)	p
57	1121.617 05(3)	1616.62	0.203E-22	P(49)	c
58	1121.705 64(2)	1533.53	0.290E-22	P(47)	b
59	1121.776 8	1832.84	0.757E-23	P(39)	e
60	1121.981 14(8)*	1431.79	0.313E-22	P(58)	a
61	1122.085 92(4)	990.92	0.140E-23	P(49)	r
62	1122.288 27(3)	747.87	0.238E-23	P(43)	t
63	1122.330 99(5)	316.65	0.555E-23	P(27)	p
64	1122.362 88(3)	1575.55	0.242E-22	P(48)	c
65	1122.492 2	1822.61	0.105E-22	P(39)	g
66	1122.513 29(2)	1494.20	0.342E-22	P(46)	b
67	1122.548 9	1800.10	0.865E-23	P(38)	e
68	1122.751 83(8)*	1383.33	0.389E-22	P(57)	a
69	1122.831 76(4)	951.32	0.166E-23	P(48)	r
70	1123.030 23(3)	713.90	0.274E-23	P(42)	t



NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100
80
60
40
20
0
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1123.110 05(2)	1535.31	0.287E-22	P(47)	c
2	1123.301 7	1789.92	0.120E-22	P(38)	g
3	1123.522 69(8)*	1335.69	0.481E-22	P(56)	a
4	1123.858 61(2)	1495.90	0.339E-22	P(46)	c
5	1123.921 60(5)	272.26	0.636E-23	P(25)	p
6	1124.100 4	1737.13	0.111E-22	P(36)	e
7	1124.111 0	1758.06	0.137E-22	P(37)	g
8	1124.129 65(2)	1418.04	0.471E-22	P(44)	b
9	1124.293 76(8)*	1288.88	0.592E-22	P(55)	a
10	1124.608 60(2)	1457.34	0.399E-22	P(45)	c
11	1124.718 81(5)	251.32	0.676E-23	P(24)	p
12	1124.879 7	1706.91	0.126E-22	P(35)	e
13	1124.920 2	1727.03	0.155E-22	P(36)	g
14	1124.938 39(2)	1381.21	0.549E-22	P(43)	b
15	1125.065 08(8)*	1242.91	0.725E-22	P(54)	a
16	1125.360 05(2)	1419.61	0.467E-22	P(44)	c
17	1125.517 35(5)	231.22	0.713E-23	P(23)	p
18	1125.661 5	1677.52	0.141E-22	P(34)	e
19	1125.729 3	1696.84	0.175E-22	P(35)	g
20	1125.747 54(2)	1345.22	0.636E-22	P(42)	b
21	1125.836 67(8)*	1197.77	0.884E-22	P(53)	a
22	1126.113 01(2)	1382.71	0.545E-22	P(43)	c
23	1126.317 26(5)	211.96	0.748E-23	P(22)	p
24	1126.445 5	1648.97	0.157E-22	P(33)	e
25	1126.538 3	1667.49	0.197E-22	P(34)	g
26	1126.557 10(2)	1310.06	0.735E-22	P(41)	b
27	1126.608 56(8)*	1153.46	0.107E-21	P(52)	a
28	1126.867 51(2)	1346.65	0.632E-22	P(42)	c
29	1127.118 60(5)	193.53	0.780E-23	P(21)	p
30	1127.231 9	1621.26	0.174E-22	P(32)	e
31	1127.347 4	1638.97	0.219E-22	P(33)	g
32	1127.367 11(2)	1275.74	0.844E-22	P(40)	b
33	1127.380 81(8)*	1109.98	0.130E-21	P(51)	a
34	1127.497 60(3)	526.63	0.573E-23	P(36)	t
35	1127.623 59(2)	1311.42	0.730E-22	P(41)	c
36	1128.020 5	1594.39	0.193E-22	P(31)	e
37	1128.153 43(8)*	1067.33	0.156E-21	P(50)	a
38	1128.156 6	1611.29	0.244E-22	P(32)	g
39	1128.177 58(2)	1242.25	0.966E-22	P(39)	b
40	1128.381 28(2)	1277.04	0.839E-22	P(40)	c
41	1128.725 72(4)	159.19	0.833E-23	P(19)	p
42	1128.811 4	1568.36	0.212E-22	P(30)	e
43	1128.926 48(8)*	1025.52	0.187E-21	P(49)	a
44	1128.966 0	1584.45	0.270E-22	P(31)	g
45	1128.988 52(2)	1209.60	0.110E-21	P(38)	b
46	1128.993 44(3)	470.51	0.708E-23	P(34)	t
47	1129.140 62(2)	1243.48	0.961E-22	P(39)	c
48	1129.531 57(4)	143.27	0.852E-23	P(18)	p
49	1129.604 5	1543.16	0.231E-22	P(29)	e
50	1129.699 99(8)*	984.54	0.224E-21	P(48)	a
51	1129.775 5	1558.45	0.296E-22	P(30)	g
52	1129.799 95(2)	1177.78	0.125E-21	P(37)	b
53	1129.901 65(2)	1210.77	0.109E-21	P(38)	c
54	1130.330 36(3)	599.64	0.711E-23	P(38)	r
55	1130.339 01(4)	128.19	0.865E-23	P(17)	p
56	1130.399 8	1518.81	0.252E-22	P(28)	e
57	1130.473 99(8)*	944.39	0.266E-21	P(47)	a
58	1130.585 4	1533.28	0.324E-22	P(29)	g
59	1130.611 90(2)	1146.80	0.141E-21	P(36)	b
60	1130.664 39(2)	1178.89	0.124E-21	P(37)	c
61	1131.085 05(3)	568.91	0.802E-23	P(37)	r
62	1131.197 1	1495.29	0.272E-22	P(27)	e
63	1131.248 54(8)*	905.08	0.314E-21	P(46)	a
64	1131.395 5	1508.94	0.353E-22	P(28)	g
65	1131.424 37(2)	1116.65	0.158E-21	P(35)	b
66	1131.428 88(2)	1147.85	0.140E-21	P(36)	c
67	1131.840 77(3)	538.98	0.900E-23	P(36)	r
68	1131.996 5	1472.61	0.293E-22	P(26)	e
69	1131.996 60(3)	367.75	0.102E-22	P(30)	t
70	1132.023 66(8)*	866.60	0.370E-21	P(45)	a



NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
1132
1133
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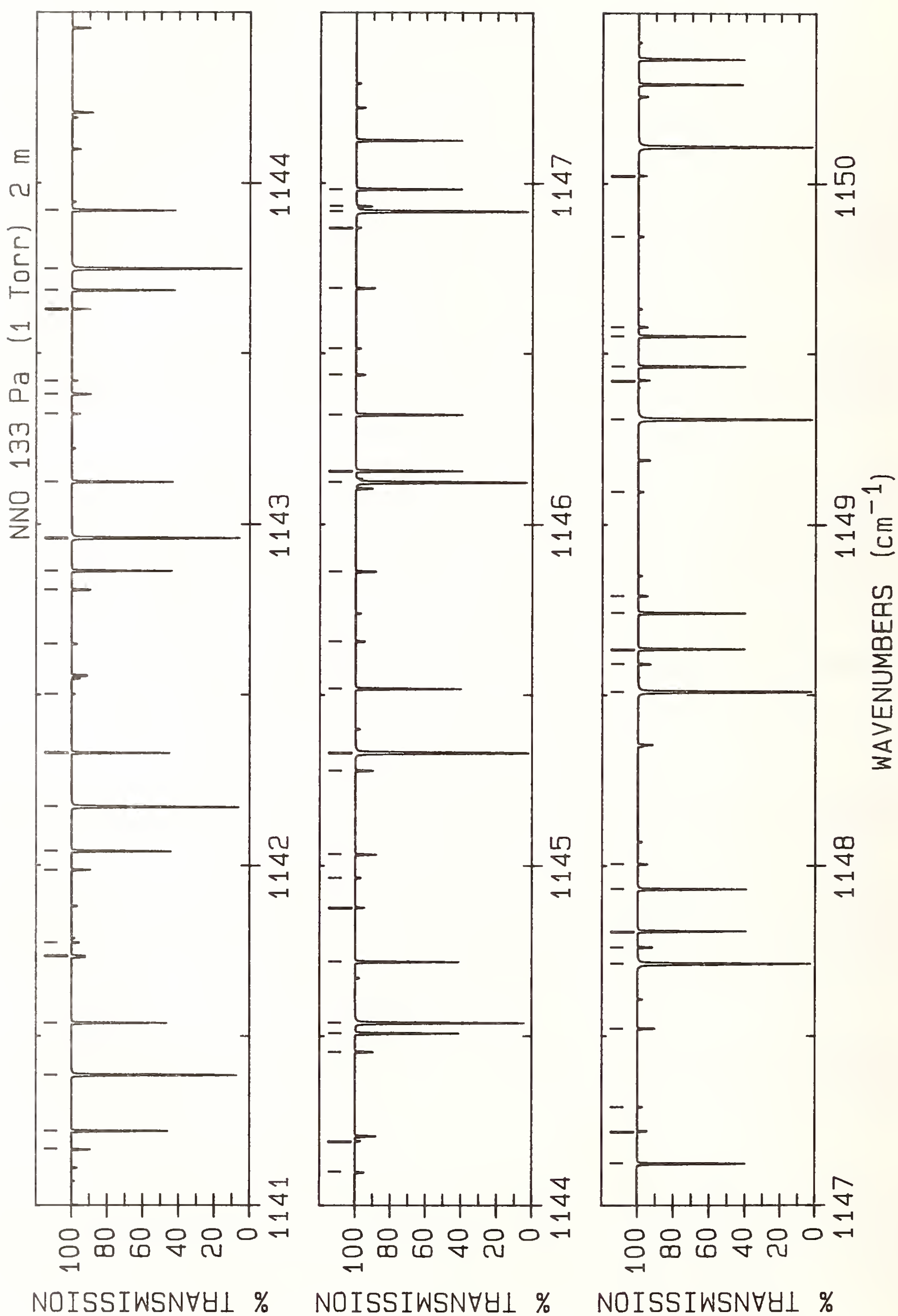
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1132.195 14(2)	1117.64	0.157E-21	P(35)	c	36	1136.533 27(3)	237.29	0.152E-22	P(24)	t
2	1132.206 1	1485.45	0.382E-22	P(27)	g	37	1136.688 94(8)*	653.23	0.893E-21	P(39)	a
3	1132.237 39(2)	1087.34	0.176E-21	P(34)	b	38	1136.831 65(2)	954.01	0.284E-21	P(29)	c
4	1132.597 56(3)	509.86	0.101E-22	P(35)	r	39	1136.834 0	1354.18	0.401E-22	P(20)	e
5	1132.799 41(8)*	828.95	0.433E-21	P(44)	a	40	1137.081 5	1362.08	0.545E-22	P(21)	g
6	1132.963 21(2)	1088.28	0.176E-21	P(34)	c	41	1137.127 86(2)	929.02	0.309E-21	P(28)	b
7	1133.017 1	1462.80	0.411E-22	P(26)	g	42	1137.293 41(3)	218.31	0.160E-22	P(23)	t
8	1133.050 97(2)	1058.86	0.196E-21	P(33)	b	43	1137.469 31(8)*	620.59	0.102E-20	P(38)	a
9	1133.355 43(3)	481.55	0.112E-22	P(34)	r	44	1137.611 12(2)	929.66	0.309E-21	P(28)	c
10	1133.504 36(3)	321.11	0.119E-22	P(28)	t	45	1137.646 7	1337.38	0.413E-22	P(19)	e
11	1133.575 82(8)*	792.14	0.505E-21	P(43)	a	46	1137.896 6	1344.45	0.566E-22	P(20)	g
12	1133.601 4	1429.78	0.333E-22	P(24)	e	47	1137.945 14(2)	905.56	0.334E-21	P(27)	b
13	1133.733 12(2)	1059.75	0.195E-21	P(33)	c	48	1138.054 77(3)	200.12	0.167E-22	P(22)	t
14	1133.828 7	1440.98	0.440E-22	P(25)	g	49	1138.250 59(8)*	588.78	0.115E-20	P(37)	a
15	1133.865 13(2)	1031.22	0.217E-21	P(32)	b	50	1138.392 59(2)	906.16	0.333E-21	P(27)	c
16	1134.114 44(3)	454.04	0.124E-22	P(33)	r	51	1138.461 1	1321.41	0.422E-22	P(18)	e
17	1134.259 88(3)	298.97	0.128E-22	P(27)	t	52	1138.712 6	1327.67	0.584E-22	P(19)	g
18	1134.352 93(8)*	756.16	0.587E-21	P(42)	a	53	1138.763 10(2)	882.94	0.358E-21	P(26)	b
19	1134.504 90(2)	1032.06	0.216E-21	P(32)	c	54	1138.817 36(3)	182.72	0.173E-22	P(21)	t
20	1134.640 8	1420.00	0.468E-22	P(24)	g	55	1139.032 84(8)*	557.81	0.130E-20	P(36)	a
21	1134.679 88(2)	1004.42	0.239E-21	P(31)	b	56	1139.176 06(2)	883.50	0.357E-21	P(26)	c
22	1134.874 62(3)	427.35	0.136E-22	P(32)	r	57	1139.277 1	1306.29	0.429E-22	P(17)	e
23	1135.016 52(3)	277.62	0.136E-22	P(26)	t	58	1139.461 98(3)	284.13	0.220E-22	P(26)	r
24	1135.130 80(8)*	721.01	0.678E-21	P(41)	a	59	1139.529 6	1311.72	0.598E-22	P(18)	g
25	1135.278 56(2)	1005.20	0.238E-21	P(31)	c	60	1139.581 20(3)	166.12	0.178E-22	P(20)	t
26	1135.453 6	1399.85	0.495E-22	P(23)	g	61	1139.581 73(2)	861.16	0.382E-21	P(25)	b
27	1135.495 24(2)	978.45	0.262E-21	P(30)	b	62	1139.816 10(8)*	527.67	0.146E-20	P(35)	a
28	1135.636 00(3)	401.46	0.150E-22	P(31)	r	63	1139.961 56(2)	861.67	0.381E-21	P(25)	c
29	1135.774 31(3)	257.06	0.144E-22	P(25)	t	64	1140.094 8	1292.01	0.432E-22	P(16)	e
30	1135.909 45(8)*	686.70	0.780E-21	P(40)	a	65	1140.231 21(3)	263.09	0.234E-22	P(25)	r
31	1136.023 1	1371.82	0.386E-22	P(21)	e	66	1140.401 06(2)	840.21	0.405E-21	P(24)	b
32	1136.054 13(2)	979.18	0.261E-21	P(30)	c	67	1140.600 40(8)*	498.37	0.164E-20	P(34)	a
33	1136.267 2	1380.55	0.521E-22	P(22)	g	68	1140.749 10(2)	840.68	0.404E-21	P(24)	c
34	1136.311 23(2)	953.32	0.285E-21	P(29)	b	69	1140.914 1	1278.57	0.432E-22	P(15)	e
35	1136.398 61(3)	376.38	0.163E-22	P(30)	r	70	1141.001 85(3)	242.85	0.248E-22	P(24)	r


NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
1141
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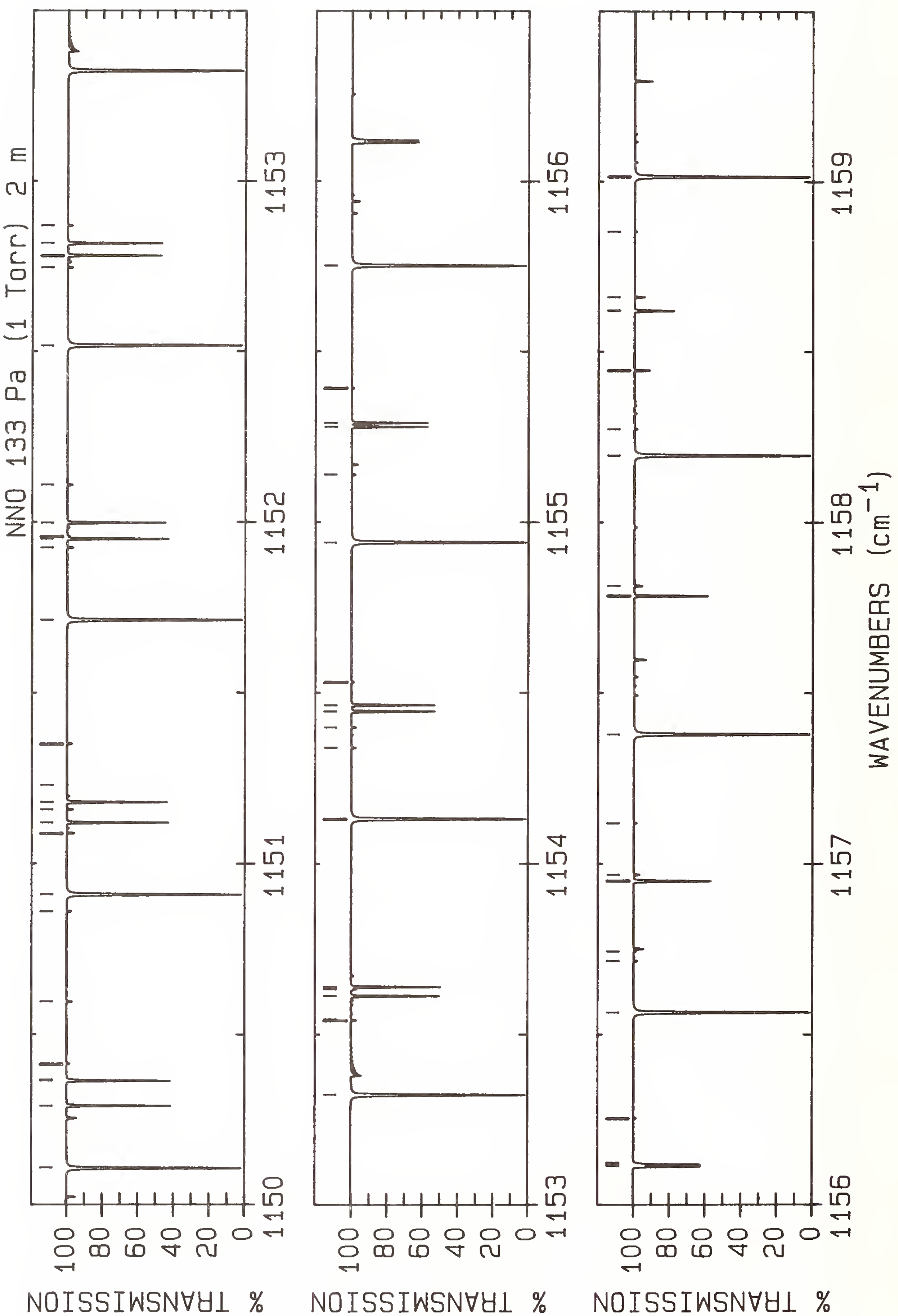
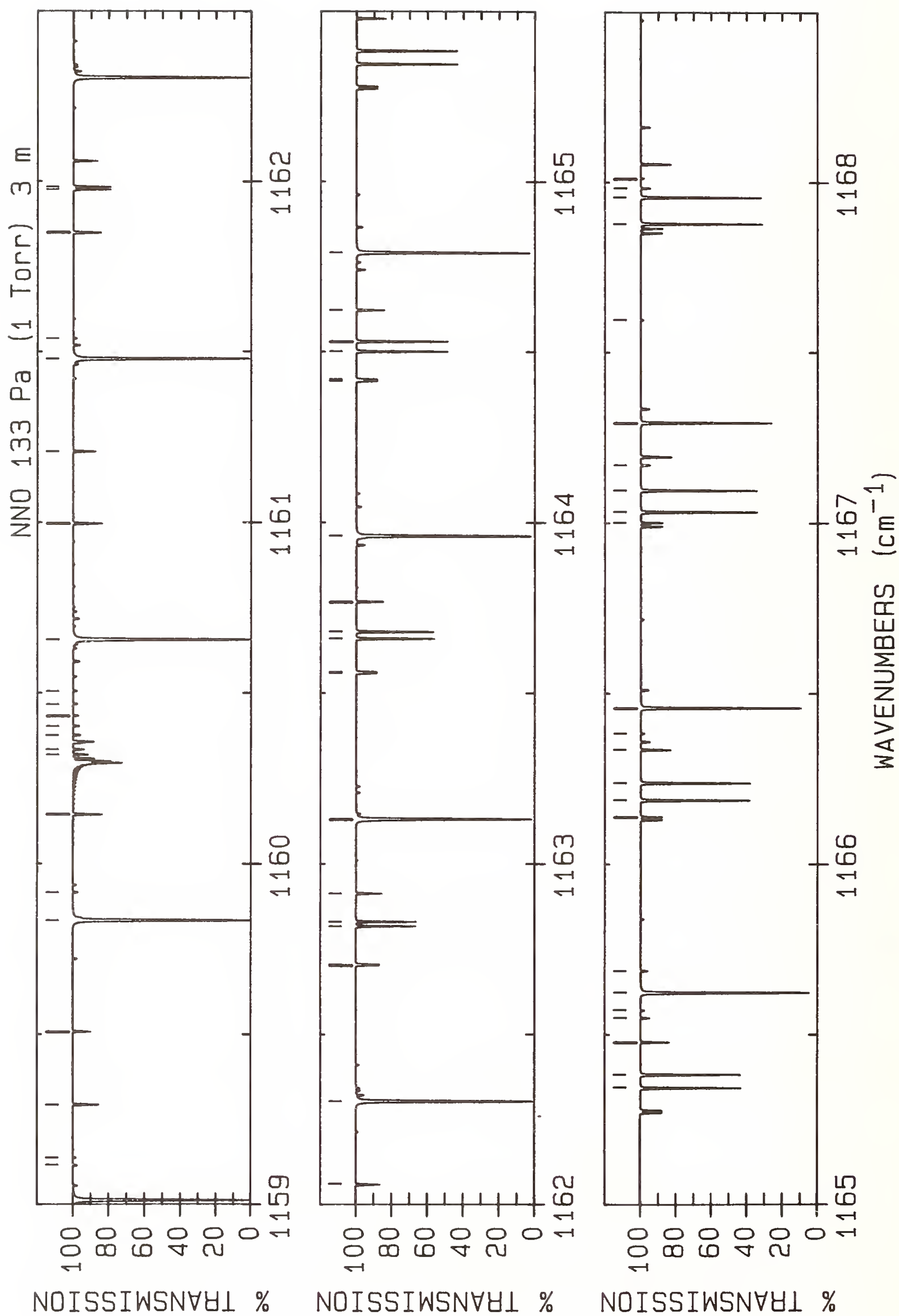
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1141.166 6	1282.33	0.614E-22	P(16)	g	36	1145.518 29(2)	732.38	0.509E-21	P(18)	c
2	1141.221 10(2)	820.10	0.427E-21	P(23)	b	37	1145.656 72(3)	138.44	0.306E-22	P(18)	r
3	1141.385 80(8)*	469.91	0.182E-20	P(33)	a	38	1145.861 8	1215.56	0.342E-22	P(9)	e
4	1141.538 70(2)	820.54	0.427E-21	P(23)	c	39	1146.123 30(8)*	316.67	0.311E-20	P(27)	a
5	1141.735 0	1265.97	0.428E-22	P(14)	e	40	1146.156 83(2)	717.02	0.517E-21	P(17)	b
6	1141.773 93(3)	223.43	0.260E-22	P(23)	r	41	1146.320 61(2)	717.26	0.516E-21	P(17)	c
7	1141.986 6	1268.90	0.615E-22	P(15)	g	42	1146.437 91(3)	123.87	0.310E-22	P(17)	r
8	1142.041 86(2)	800.83	0.448E-21	P(22)	b	43	1146.514 52(4)	52.21	0.169E-22	P(11)	t
9	1142.172 32(8)*	442.28	0.202E-20	P(32)	a	44	1146.691 5	1207.99	0.312E-22	P(8)	e
10	1142.330 39(2)	801.23	0.448E-21	P(22)	c	45	1146.869 02(3)	653.23	0.165E-22	P(39)	x
11	1142.502 09(3)	866.60	0.117E-22	P(45)	x	46	1146.917 44(8)*	294.06	0.334E-20	P(26)	a
12	1142.649 37(3)	107.58	0.189E-22	P(16)	t	47	1146.932 2	1205.92	0.504E-22	P(9)	g
13	1142.807 9	1256.31	0.611E-22	P(14)	g	48	1146.982 13(2)	702.77	0.520E-21	P(16)	b
14	1142.863 35(2)	782.39	0.467E-21	P(21)	b	49	1147.125 10(2)	702.99	0.520E-21	P(16)	c
15	1142.960 02(8)*	415.49	0.222E-20	P(31)	a	50	1147.220 70(3)	110.11	0.312E-22	P(16)	r
16	1143.124 18(2)	782.76	0.466E-21	P(21)	c	51	1147.291 66(4)	43.51	0.160E-22	P(10)	t
17	1143.322 49(3)	187.01	0.283E-22	P(21)	r	52	1147.522 5	1201.27	0.276E-22	P(7)	e
18	1143.381 3	1243.28	0.407E-22	P(12)	e	53	1147.712 98(8)*	272.28	0.356E-20	P(25)	a
19	1143.419 70(3)	94.93	0.188E-22	P(15)	t	54	1147.761 0	1198.37	0.465E-22	P(8)	g
20	1143.630 3	1244.55	0.601E-22	P(13)	g	55	1147.808 22(2)	689.36	0.520E-21	P(15)	b
21	1143.685 58(2)	764.79	0.484E-21	P(20)	b	56	1147.931 77(2)	689.55	0.520E-21	P(15)	c
22	1143.748 93(8)*	389.53	0.244E-20	P(30)	a	57	1148.005 09(3)	97.16	0.311E-22	P(15)	r
23	1143.920 08(2)	765.12	0.483E-21	P(20)	c	58	1148.509 95(8)*	251.34	0.378E-20	P(24)	a
24	1144.099 03(3)	170.01	0.292E-22	P(20)	r	59	1148.591 1	1191.65	0.420E-22	P(7)	g
25	1144.191 37(3)	83.06	0.186E-22	P(14)	t	60	1148.635 11(2)	676.79	0.515E-21	P(14)	b
26	1144.453 9	1233.63	0.586E-22	P(12)	g	61	1148.740 62(2)	676.95	0.515E-21	P(14)	c
27	1144.508 57(2)	748.03	0.498E-21	P(19)	b	62	1148.791 11(4)	85.01	0.308E-22	P(14)	r
28	1144.539 08(8)*	364.41	0.266E-20	P(29)	a	63	1149.096 18(3)	557.81	0.177E-22	P(36)	x
29	1144.718 11(2)	748.33	0.497E-21	P(19)	c	64	1149.308 38(8)*	231.24	0.399E-20	P(23)	a
30	1144.877 10(3)	153.82	0.300E-22	P(19)	r	65	1149.422 5	1185.77	0.371E-22	P(6)	g
31	1144.964 39(4)	71.99	0.182E-22	P(13)	t	66	1149.462 79(2)	665.05	0.506E-21	P(13)	b
32	1145.033 6	1223.96	0.368E-22	P(10)	e	67	1149.551 67(2)	665.20	0.505E-21	P(13)	c
33	1145.278 7	1223.56	0.564E-22	P(11)	g	68	1149.578 76(4)	73.68	0.302E-22	P(13)	r
34	1145.330 53(8)*	340.12	0.288E-20	P(28)	a	69	1149.844 80(3)	527.67	0.179E-22	P(35)	x
35	1145.332 31(2)	732.11	0.509E-21	P(18)	b	70	1150.023 7	1186.15	0.139E-22	P(4)	e

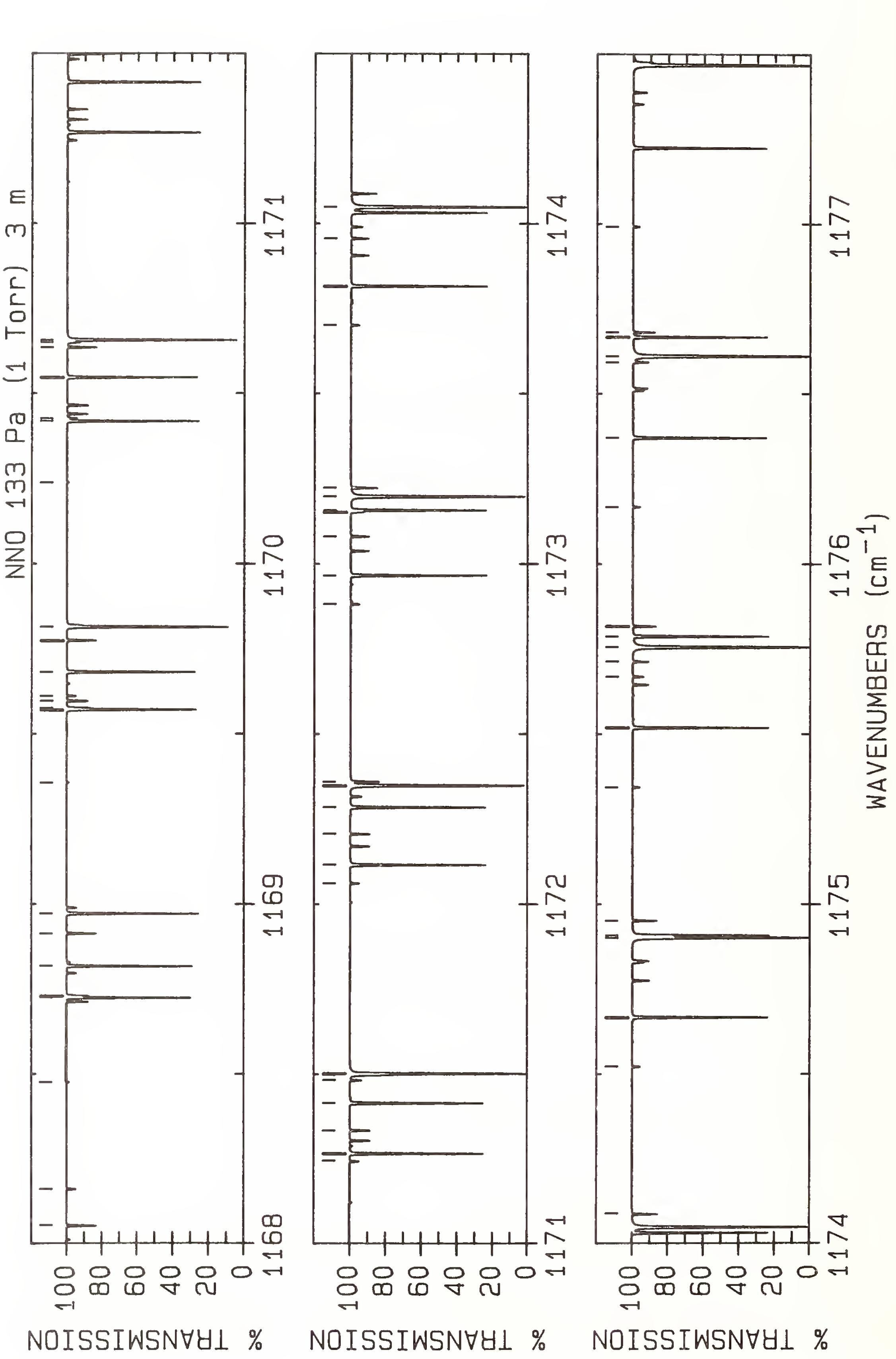

NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
1150 1151 1152 1153
1153 1154 1155 1156
1156 1157 1158 1159
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1150.108 31(8)*	211.97	0.418E-20	P(22)	a
2	1150.291 28(2)	654.15	0.491E-21	P(12)	b
3	1150.364 92(2)	654.28	0.491E-21	P(12)	c
4	1150.368 07(4)	63.15	0.211E-22	P(12)	r
5	1150.414 12(5)	16.61	0.110E-22	P(6)	t
6	1150.596 49(3)	498.37	0.179E-22	P(34)	x
7	1150.860 0	1182.79	0.786E-23	P(3)	e
8	1150.860 0	1182.79	0.785E-23	P(3)	f
9	1150.909 77(8)*	193.54	0.436E-20	P(21)	a
10	1151.089 6	1176.53	0.259E-22	P(4)	g
11	1151.120 59(1)	644.10	0.472E-21	P(11)	b
12	1151.159 05(4)	53.44	0.203E-22	P(11)	r
13	1151.180 38(2)	644.20	0.472E-21	P(11)	c
14	1151.230 21(9)*	1725.33	0.364E-23	P(32)	d
15	1151.351 19(3)	469.91	0.177E-22	P(33)	x
16	1151.712 79(8)*	175.95	0.452E-20	P(20)	a
17	1151.925 2	1173.17	0.198E-22	P(3)	g
18	1151.950 71(1)	634.88	0.448E-21	P(10)	b
19	1151.951 70(4)	44.53	0.192E-22	P(10)	r
20	1151.958 22(5)	30.17	0.744E-23	R(8)	p
21	1151.998 06(1)	634.96	0.448E-21	P(10)	c
22	1152.108 87(4)	442.28	0.174E-22	P(32)	x
23	1152.517 40(8)*	159.20	0.465E-20	P(19)	a
24	1152.746 03(4)	36.44	0.180E-22	P(9)	r
25	1152.781 65(1)	626.49	0.419E-21	P(9)	b
26	1152.817 95(1)	626.56	0.419E-21	P(9)	c
27	1152.869 51(4)	415.49	0.169E-22	P(31)	x
28	1153.323 61(8)*	143.28	0.476E-20	P(18)	a
29	1153.540 3	1278.56	0.153E-23	Q(15)	f
30	1153.542 06(5)	29.15	0.166E-22	P(8)	r
31	1153.544 8	1292.01	0.135E-23	Q(16)	e
32	1153.613 41(2)	618.95	0.385E-21	P(8)	b
33	1153.633 06(4)	389.53	0.163E-22	P(30)	x
34	1153.640 07(1)	619.00	0.385E-21	P(8)	c
35	1154.131 47(8)*	128.20	0.483E-20	P(17)	a

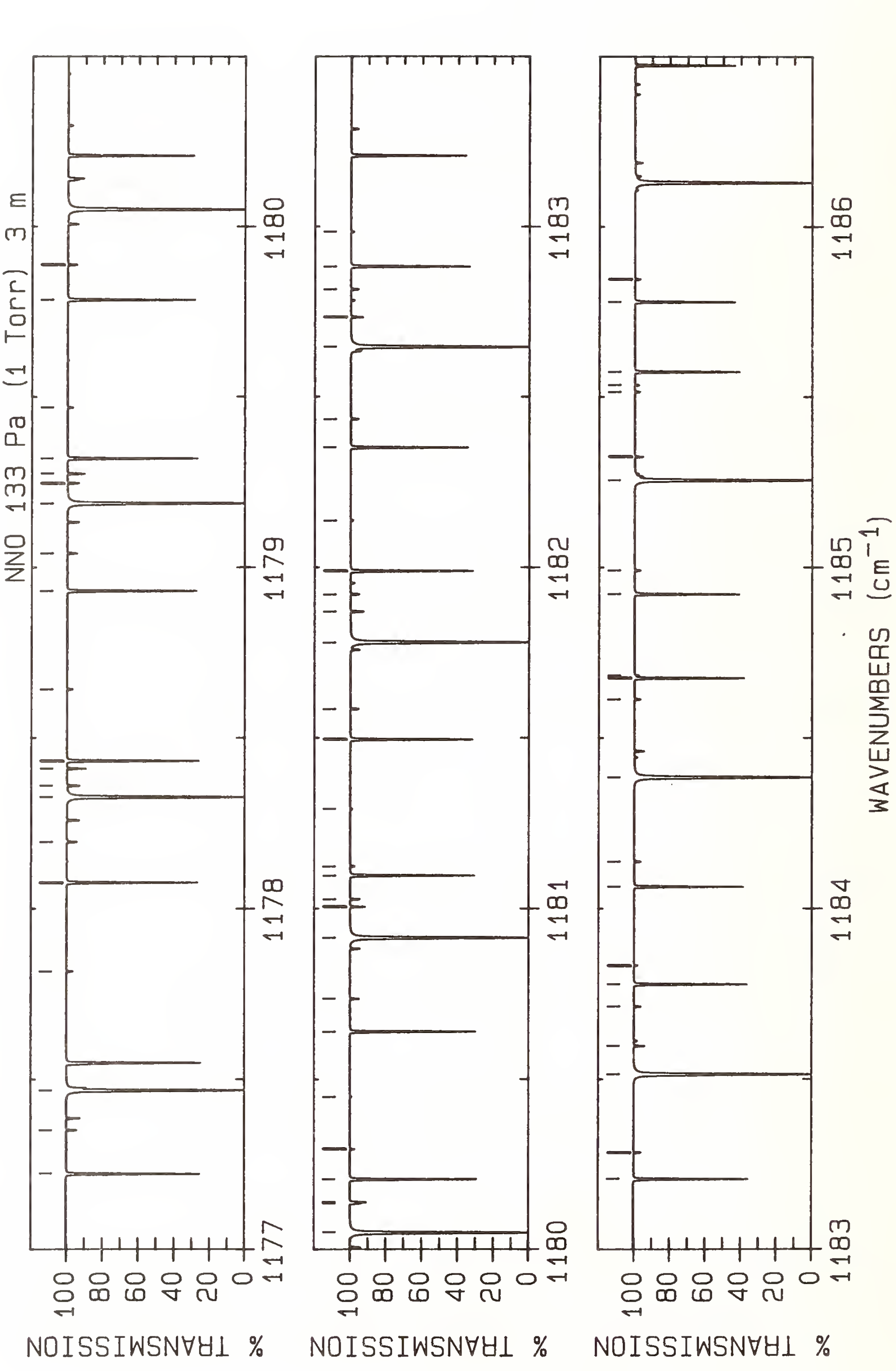
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1154.339 79(5)	22.67	0.149E-22	P(7)	r
37	1154.399 49(4)	364.41	0.155E-22	P(29)	x
38	1154.446 00(2)	612.24	0.346E-21	P(7)	b
39	1154.464 41(1)	612.29	0.346E-21	P(7)	c
40	1154.531 58(4)	55.30	0.882E-23	R(11)	p
41	1154.940 98(8)*	113.96	0.487E-20	P(16)	a
42	1155.139 23(5)	17.00	0.132E-22	P(6)	r
43	1155.279 42(2)	606.37	0.303E-21	P(6)	b
44	1155.290 98(2)	606.41	0.303E-21	P(6)	c
45	1155.392 68(4)	65.36	0.912E-23	R(12)	p
46	1155.752 18(8)*	100.55	0.487E-20	P(15)	a
47	1156.113 66(2)	601.34	0.256E-21	P(5)	b
48	1156.119 79(2)	601.37	0.256E-21	P(5)	c
49	1156.124 4	1168.97	0.135E-22	R(1)	g
50	1156.255 38(4)	76.25	0.933E-23	R(13)	p
51	1156.565 08(8)*	87.98	0.482E-20	P(14)	a
52	1156.715 68(4)	294.06	0.126E-22	P(26)	x
53	1156.743 23(5)	8.10	0.917E-23	P(4)	r
54	1156.948 73(2)	597.15	0.204E-21	P(4)	b
55	1156.950 82(2)	597.17	0.204E-21	P(4)	c
56	1156.968 4	1170.65	0.201E-22	R(2)	g
57	1157.119 64(4)	87.98	0.946E-23	R(14)	p
58	1157.379 71(8)*	76.25	0.474E-20	P(13)	a
59	1157.784 08(2)	593.81	0.147E-21	P(3)	c
60	1157.784 62(2)	593.80	0.147E-21	P(3)	b
61	1157.813 7	1173.17	0.265E-22	R(3)	g
62	1158.196 08(8)*	65.36	0.461E-20	P(12)	a
63	1158.273 57(4)	251.34	0.104E-22	P(24)	x
64	1158.445 2	1190.35	0.244E-22	R(5)	f
65	1158.445 5	1190.35	0.244E-22	R(5)	e
66	1158.619 57(2)	591.29	0.840E-22	P(2)	c
67	1158.621 34(2)	591.28	0.840E-22	P(2)	b
68	1158.660 4	1176.53	0.326E-22	R(4)	g
69	1158.852 68(4)	113.95	0.949E-23	R(16)	p
70	1159.014 20(8)*	55.31	0.444E-20	P(11)	a


NNO 133 Pa (1 Torr) 3 m
% TRANSMISSION
WAVENUMBERS (cm^{-1})
1159
1160
1161
1162
1162
1163
1164
1165
1165
1166
1167
1168
100
80
60
40
20
0

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1159.116 61(5)	7.91	0.959E-23	R(4)	t
2	1159.138 90(9)*	1495.99	0.716E-23	P(22)	d
3	1159.294 4	1195.39	0.287E-22	R(6)	f
4	1159.294 8	1195.39	0.287E-22	R(6)	e
5	1159.508 4	1180.73	0.384E-22	R(5)	g
6	1159.834 10(8)*	46.09	0.422E-20	P(10)	a
7	1159.916 07(5)	11.87	0.113E-22	R(5)	t
8	1160.144 7	1201.27	0.326E-22	R(7)	f
9	1160.145 5	1201.27	0.326E-22	R(7)	e
10	1160.146 17(2)	748.33	0.273E-23	Q(19)	c
11	1160.320 04(2)	593.80	0.323E-22	Q(3)	b
12	1160.335 24(2)	597.15	0.245E-22	Q(4)	b
13	1160.377 01(1)	606.37	0.162E-22	Q(6)	b
14	1160.403 57(1)	612.24	0.136E-22	Q(7)	b
15	1160.433 90(1)	618.95	0.116E-22	Q(8)	b
16	1160.468 01(1)	626.49	0.100E-22	Q(9)	b
17	1160.505 87(2)	634.88	0.871E-23	Q(10)	b
18	1160.655 77(8)*	37.71	0.395E-20	P(9)	a
19	1160.996 3	1207.99	0.360E-22	R(8)	f
20	1160.997 5	1207.99	0.360E-22	R(8)	e
21	1161.208 3	1191.65	0.486E-22	R(7)	g
22	1161.479 25(8)*	30.17	0.364E-20	P(8)	a
23	1161.539 32(8)*	1443.43	0.795E-23	P(19)	d
24	1161.849 1	1215.55	0.390E-22	R(9)	f
25	1161.850 9	1215.56	0.390E-22	R(9)	e
26	1161.976 37(2)	589.61	0.849E-22	R(1)	b
27	1161.983 76(2)	589.61	0.849E-22	R(1)	c
28	1162.060 1	1198.37	0.530E-22	R(8)	g
29	1162.304 52(8)*	23.46	0.329E-20	P(7)	a
30	1162.703 0	1223.96	0.415E-22	R(10)	f
31	1162.705 7	1223.96	0.415E-22	R(10)	e
32	1162.817 15(2)	591.28	0.150E-21	R(2)	b
33	1162.830 33(2)	591.29	0.150E-21	R(2)	c
34	1162.913 0	1205.92	0.567E-22	R(9)	g
35	1163.131 61(8)*	17.60	0.290E-20	P(6)	a
36	1163.558 2	1233.20	0.435E-22	R(11)	f
37	1163.561 8	1233.20	0.435E-22	R(11)	e
38	1163.658 73(2)	593.80	0.208E-21	R(3)	b
39	1163.679 11(2)	593.81	0.208E-21	R(3)	c
40	1163.767 1	1214.32	0.600E-22	R(10)	g
41	1163.960 51(8)*	12.57	0.248E-20	P(5)	a
42	1164.414 5	1243.28	0.451E-22	R(12)	f
43	1164.419 4	1243.28	0.451E-22	R(12)	e
44	1164.501 09(2)	597.15	0.263E-21	R(4)	b
45	1164.530 08(2)	597.17	0.263E-21	R(4)	c
46	1164.622 4	1223.56	0.626E-22	R(11)	g
47	1164.791 24(8)*	8.38	0.203E-20	P(4)	a
48	1165.344 23(2)	601.34	0.313E-21	R(5)	b
49	1165.383 23(1)	601.37	0.313E-21	R(5)	c
50	1165.478 7	1233.63	0.646E-22	R(12)	g
51	1165.549 43(3)	61.71	0.194E-22	R(12)	t
52	1165.572 01(9)*	1372.52	0.833E-23	P(14)	d
53	1165.623 79(8)*	5.03	0.154E-20	P(3)	a
54	1165.687 22(5)	17.00	0.155E-22	R(6)	r
55	1166.139 0	1265.97	0.470E-22	R(14)	e
56	1166.188 14(2)	606.37	0.360E-21	R(6)	b
57	1166.238 55(1)	606.41	0.360E-21	R(6)	c
58	1166.336 0	1244.55	0.660E-22	R(13)	g
59	1166.383 54(9)*	1360.84	0.822E-23	P(13)	d
60	1166.458 17(8)*	2.51	0.104E-20	P(2)	a
61	1167.001 1	1278.57	0.473E-22	R(15)	e
62	1167.032 81(1)	612.24	0.402E-21	R(7)	b
63	1167.096 04(1)	612.29	0.402E-21	R(7)	c
64	1167.170 45(3)	83.06	0.203E-22	R(14)	t
65	1167.294 36(8)*	0.84	0.526E-21	P(1)	a
66	1167.596 08(5)	294.04	0.643E-23	R(26)	p
67	1167.878 23(1)	618.95	0.440E-21	R(8)	b
68	1167.955 67(1)	619.00	0.440E-21	R(8)	c
69	1167.982 79(3)	94.93	0.205E-22	R(15)	t
70	1168.011 76(9)*	1339.98	0.777E-23	P(11)	d

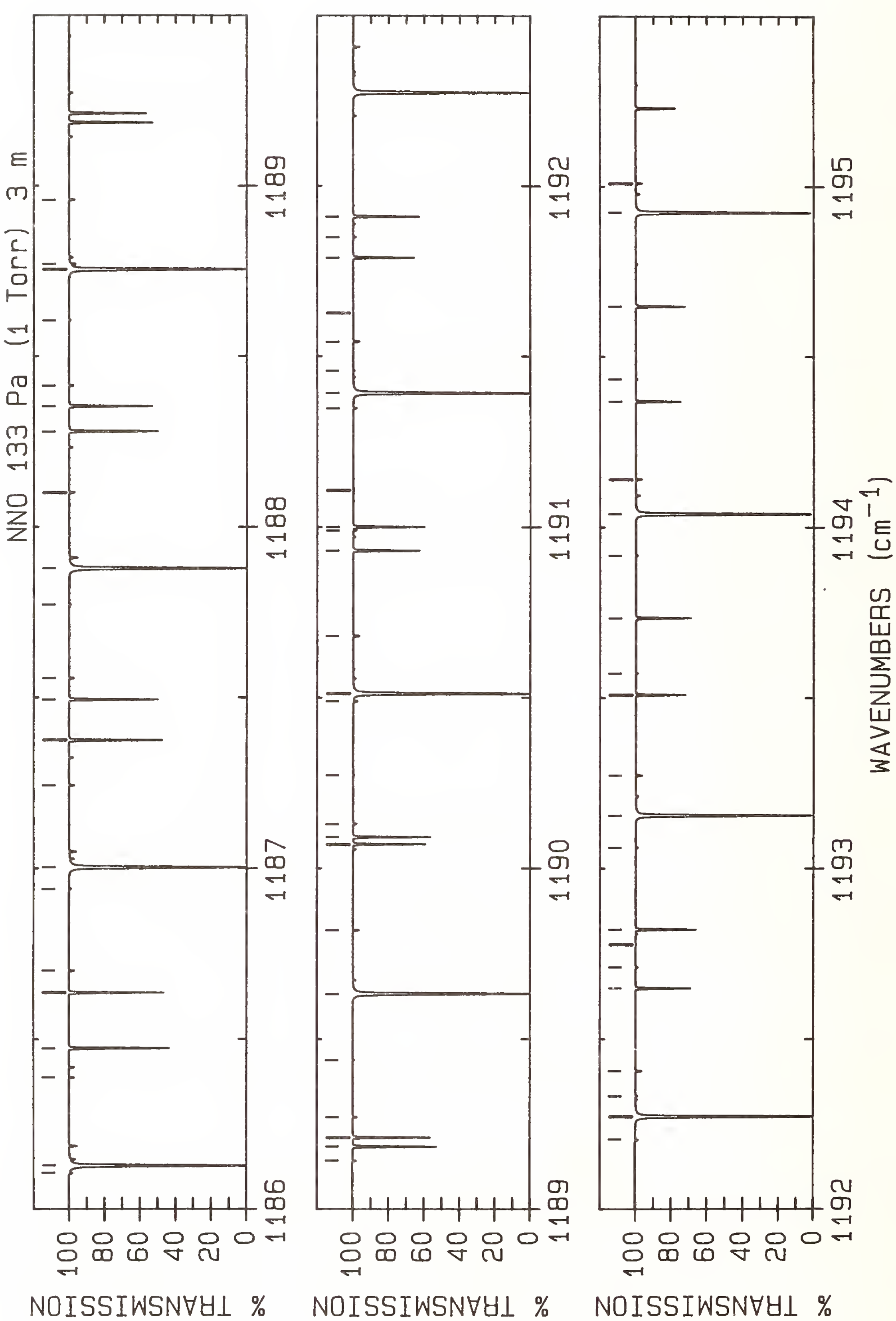

NNO 133 Pa (1 Torr) 3 m
% TRANSMISSION
100 80 60 40 20 0
1168 1169 1170 1171
1171 1172 1173 1174
1174 1175 1176 1177
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1168.053 4	1268.90	0.671E-22	R(15)	g
2	1168.161 53(4)	36.44	0.203E-22	R(9)	r
3	1168.476 32(5)	316.65	0.599E-23	R(27)	p
4	1168.724 40(1)	626.49	0.473E-21	R(9)	b
5	1168.729 8	1306.29	0.467E-22	R(17)	e
6	1168.817 45(2)	626.56	0.473E-21	R(9)	c
7	1168.913 4	1282.33	0.668E-22	R(16)	g
8	1168.972 23(8)*	0.00	0.529E-21	R(0)	a
9	1169.357 39(5)	340.10	0.555E-23	R(28)	p
10	1169.571 28(2)	634.88	0.502E-21	R(10)	b
11	1169.575 9	1321.41	0.459E-22	R(18)	f
12	1169.596 6	1321.41	0.459E-22	R(18)	e
13	1169.611 01(3)	121.03	0.204E-22	R(17)	t
14	1169.681 34(2)	634.96	0.501E-21	R(10)	c
15	1169.774 2	1296.61	0.661E-22	R(17)	g
16	1169.813 88(8)*	0.84	0.106E-20	R(1)	a
17	1170.239 25(5)	364.38	0.511E-23	R(29)	p
18	1170.418 89(2)	644.10	0.525E-21	R(11)	b
19	1170.426 84(3)	135.27	0.201E-22	R(18)	t
20	1170.547 35(2)	644.20	0.525E-21	R(11)	c
21	1170.635 7	1311.72	0.648E-22	R(18)	g
22	1170.650 17(4)	63.15	0.232E-22	R(12)	r
23	1170.657 33(8)*	2.51	0.157E-20	R(2)	a
24	1171.243 79(3)	150.30	0.198E-22	R(19)	t
25	1171.267 19(2)	654.15	0.543E-21	R(12)	b
26	1171.335 1	1354.18	0.434E-22	R(20)	e
27	1171.415 46(2)	654.28	0.543E-21	R(12)	c
28	1171.482 81(3)	73.68	0.238E-22	R(13)	r
29	1171.497 9	1327.67	0.632E-22	R(19)	g
30	1171.502 58(8)*	5.03	0.207E-20	R(3)	a
31	1172.061 84(3)	166.12	0.193E-22	R(20)	t
32	1172.116 18(2)	665.05	0.556E-21	R(13)	b
33	1172.206 9	1371.82	0.418E-22	R(21)	e
34	1172.285 64(2)	665.20	0.556E-21	R(13)	c
35	1172.349 61(8)*	8.38	0.255E-20	R(4)	a
36	1172.360 7	1344.45	0.612E-22	R(20)	g
37	1172.880 95(3)	182.72	0.187E-22	R(21)	t
38	1172.965 83(2)	676.79	0.564E-21	R(14)	b
39	1173.080 5	1390.30	0.400E-22	R(22)	e
40	1173.152 60(3)	97.16	0.244E-22	R(15)	r
41	1173.157 88(2)	676.95	0.564E-21	R(14)	c
42	1173.198 42(8)*	12.57	0.300E-20	R(5)	a
43	1173.224 0	1362.08	0.588E-22	R(21)	g
44	1173.701 11(3)	200.12	0.180E-22	R(22)	t
45	1173.816 15(2)	689.36	0.568E-21	R(15)	b
46	1173.955 8	1409.62	0.380E-22	R(23)	e
47	1174.048 97(8)*	17.60	0.342E-20	R(6)	a
48	1174.087 8	1380.55	0.563E-22	R(22)	g
49	1174.522 27(3)	218.31	0.172E-22	R(23)	t
50	1174.667 10(2)	702.77	0.567E-21	R(16)	b
51	1174.901 27(8)*	23.46	0.381E-20	R(7)	a
52	1174.908 47(2)	702.99	0.567E-21	R(16)	c
53	1174.951 9	1399.85	0.535E-22	R(23)	g
54	1175.344 42(3)	237.29	0.164E-22	R(24)	t
55	1175.518 68(2)	717.02	0.562E-21	R(17)	b
56	1175.668 17(3)	138.44	0.239E-22	R(18)	r
57	1175.712 1	1450.78	0.338E-22	R(25)	e
58	1175.755 30(8)*	30.17	0.415E-20	R(8)	a
59	1175.786 79(2)	717.26	0.561E-21	R(17)	c
60	1175.816 4	1420.00	0.505E-22	R(24)	g
61	1176.167 52(3)	257.06	0.155E-22	R(25)	t
62	1176.370 86(2)	732.11	0.553E-21	R(18)	b
63	1176.593 0	1472.61	0.316E-22	R(26)	e
64	1176.611 02(8)*	37.71	0.445E-20	R(9)	a
65	1176.667 08(2)	732.38	0.552E-21	R(18)	c
66	1176.681 0	1440.98	0.474E-22	R(25)	g
67	1176.991 54(3)	277.62	0.147E-22	R(26)	t


NNO 133 Pa (1 Torr) 3 m
% TRANSMISSION
100
80
60
40
20
0
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1177.223 62(2)	748.03	0.540E-21	R(19)	b
2	1177.352 17(3)	170.01	0.228E-22	R(20)	r
3	1177.468 43(8)*	46.09	0.471E-20	R(10)	a
4	1177.816 46(3)	298.97	0.138E-22	R(27)	t
5	1178.076 95(2)	764.79	0.524E-21	R(20)	b
6	1178.196 16(3)	187.01	0.220E-22	R(21)	r
7	1178.327 50(8)*	55.31	0.492E-20	R(11)	a
8	1178.360 8	1518.81	0.272E-22	R(28)	e
9	1178.410 8	1485.45	0.412E-22	R(27)	g
10	1178.433 53(2)	765.12	0.523E-21	R(20)	c
11	1178.642 23(3)	321.11	0.128E-22	R(28)	t
12	1178.930 83(2)	782.39	0.506E-21	R(21)	b
13	1179.041 43(3)	204.82	0.212E-22	R(22)	r
14	1179.188 20(8)*	65.36	0.509E-20	R(12)	a
15	1179.247 7	1543.16	0.250E-22	R(29)	e
16	1179.275 8	1508.94	0.380E-22	R(28)	g
17	1179.319 63(2)	782.76	0.505E-21	R(21)	c
18	1179.468 82(3)	344.03	0.119E-22	R(29)	t
19	1179.785 24(2)	800.83	0.485E-21	R(22)	b
20	1179.887 96(3)	223.43	0.202E-22	R(23)	r
21	1180.050 51(8)*	76.25	0.521E-20	R(13)	a
22	1180.136 6	1568.36	0.229E-22	R(30)	e
23	1180.140 7	1533.28	0.350E-22	R(29)	g
24	1180.207 63(2)	801.23	0.484E-21	R(22)	c
25	1180.296 21(3)	367.75	0.110E-22	R(30)	t
26	1180.448 95(9)*	1289.91	0.426E-23	R(3)	d
27	1180.640 16(2)	820.10	0.462E-21	R(23)	b
28	1180.735 70(3)	242.85	0.192E-22	R(24)	r
29	1180.914 40(8)*	87.98	0.528E-20	R(14)	a
30	1181.005 4	1558.45	0.320E-22	R(30)	g
31	1181.027 6	1594.39	0.208E-22	R(31)	e
32	1181.097 48(2)	820.54	0.461E-21	R(23)	c
33	1181.124 35(3)	392.26	0.101E-22	R(31)	t
34	1181.292 30(9)*	1293.25	0.533E-23	R(4)	d
35	1181.495 56(2)	840.21	0.438E-21	R(24)	b

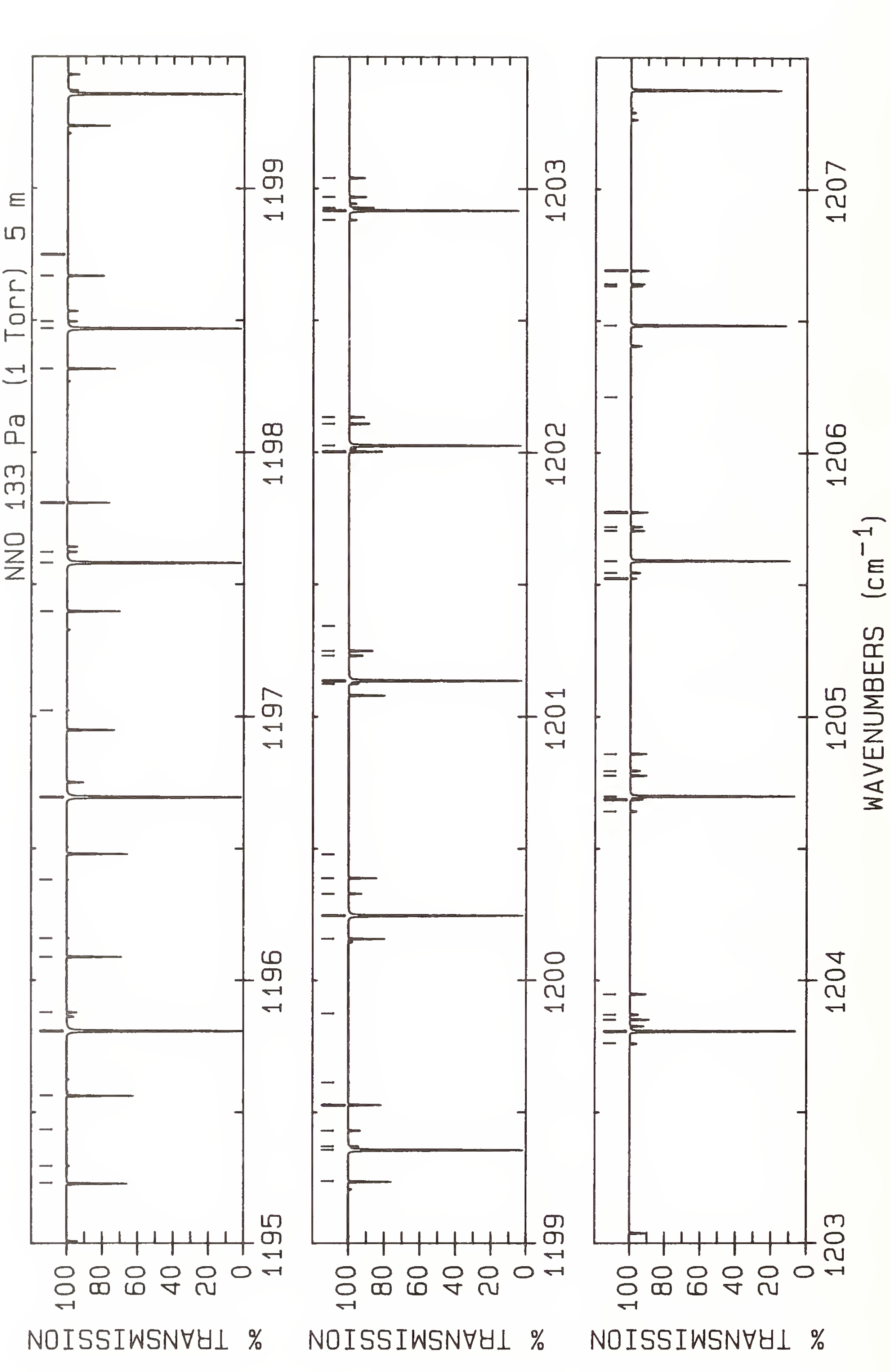
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1181.584 63(3)	263.09	0.182E-22	R(25)	r
37	1181.779 85(8)*	100.55	0.531E-20	R(15)	a
38	1181.870 0	1584.45	0.291E-22	R(31)	g
39	1181.920 7	1621.26	0.188E-22	R(32)	e
40	1181.989 17(2)	840.68	0.437E-21	R(24)	c
41	1182.137 40(9)*	1297.42	0.637E-23	R(5)	d
42	1182.351 42(2)	861.16	0.413E-21	R(25)	b
43	1182.434 71(3)	284.13	0.171E-22	R(26)	r
44	1182.646 81(8)*	113.96	0.530E-20	R(16)	a
45	1182.734 3	1611.29	0.263E-22	R(32)	g
46	1182.815 9	1648.97	0.170E-22	R(33)	e
47	1182.882 67(2)	861.67	0.412E-21	R(25)	c
48	1182.984 22(9)*	1302.43	0.739E-23	R(6)	d
49	1183.207 73(2)	882.94	0.387E-21	R(26)	b
50	1183.285 89(3)	305.98	0.160E-22	R(27)	r
51	1183.515 27(8)*	128.20	0.525E-20	R(17)	a
52	1183.598 2	1638.97	0.237E-22	R(33)	g
53	1183.713 3	1677.52	0.152E-22	R(34)	e
54	1183.777 95(2)	883.50	0.386E-21	R(26)	c
55	1183.832 75(9)*	1308.27	0.836E-23	R(7)	d
56	1184.064 45(2)	905.56	0.361E-21	R(27)	b
57	1184.138 15(3)	328.64	0.149E-22	R(28)	r
58	1184.385 18(8)*	143.28	0.516E-20	R(18)	a
59	1184.612 8	1706.91	0.136E-22	R(35)	e
60	1184.674 97(2)	906.16	0.360E-21	R(27)	c
61	1184.682 97(9)*	1314.94	0.927E-23	R(8)	d
62	1184.921 57(2)	929.02	0.334E-21	R(28)	b
63	1184.991 44(3)	352.10	0.138E-22	R(29)	r
64	1185.256 52(8)*	159.20	0.504E-20	R(19)	a
65	1185.324 8	1696.84	0.189E-22	R(35)	g
66	1185.514 5	1737.13	0.121E-22	R(36)	e
67	1185.534 87(9)*	1322.45	0.101E-22	R(9)	d
68	1185.573 71(2)	929.66	0.333E-21	R(28)	c
69	1185.779 07(2)	953.32	0.308E-21	R(29)	b
70	1185.845 72(3)	376.38	0.127E-22	R(30)	r



NNO 133 Pa (1 Torr) 3 m
% TRANSMISSION
100 80 60 40 20 0
1186 1187 1188 1189
1189 1190 1191 1192
1192 1193 1194 1195
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1186.107 05(3)	555.87	0.555E-23	R(37)	t
2	1186.129 23(8)*	175.95	0.489E-20	R(20)	a
3	1186.388 41(9)*	1330.80	0.109E-22	R(10)	d
4	1186.474 14(2)	954.01	0.307E-21	R(29)	c
5	1186.636 91(2)	978.45	0.283E-21	R(30)	b
6	1186.700 95(3)	401.46	0.116E-22	R(31)	r
7	1186.939 46(3)	585.90	0.494E-23	R(38)	t
8	1187.003 30(8)*	193.54	0.472E-20	R(21)	a
9	1187.243 59(9)*	1339.98	0.116E-22	R(11)	d
10	1187.376 22(2)	979.18	0.282E-21	R(30)	c
11	1187.495 08(2)	1004.42	0.258E-21	R(31)	b
12	1187.557 10(3)	427.35	0.106E-22	R(32)	r
13	1187.772 32(3)	616.72	0.438E-23	R(39)	t
14	1187.878 67(8)*	211.97	0.452E-20	R(22)	a
15	1188.100 37(9)*	1349.99	0.122E-22	R(12)	d
16	1188.279 92(2)	1005.20	0.258E-21	R(31)	c
17	1188.353 55(2)	1031.22	0.235E-21	R(32)	b
18	1188.414 11(3)	454.04	0.964E-23	R(33)	r
19	1188.605 59(3)	648.32	0.386E-23	R(40)	t
20	1188.755 31(8)*	231.24	0.431E-20	R(23)	a
21	1188.770 9	1822.61	0.114E-22	R(39)	g
22	1188.958 73(8)*	1360.84	0.128E-22	R(13)	d
23	1189.143 3	1866.41	0.715E-23	R(40)	e
24	1189.185 20(2)	1032.06	0.234E-21	R(32)	c
25	1189.212 29(2)	1058.86	0.212E-21	R(33)	b
26	1189.271 95(3)	481.55	0.871E-23	R(34)	r
27	1189.439 25(3)	680.72	0.339E-23	R(41)	t
28	1189.633 17(8)*	251.34	0.408E-20	R(24)	a
29	1189.818 65(8)*	1372.52	0.132E-22	R(14)	d
30	1190.071 28(2)	1087.34	0.191E-21	R(34)	b
31	1190.092 03(2)	1059.75	0.212E-21	R(33)	c
32	1190.130 58(3)	509.86	0.783E-23	R(35)	r
33	1190.273 23(3)	713.90	0.297E-23	R(42)	t
34	1190.489 7	1890.51	0.858E-23	R(41)	g
35	1190.512 22(8)*	272.28	0.384E-20	R(25)	a

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1190.680 09(8)*	1385.04	0.135E-22	R(15)	d
37	1190.930 50(2)	1116.65	0.171E-21	R(35)	b
38	1190.989 94(3)	538.98	0.701E-23	R(36)	r
39	1191.000 37(2)	1088.28	0.190E-21	R(34)	c
40	1191.107 51(3)	747.87	0.259E-23	R(43)	t
41	1191.347 8	1925.71	0.740E-23	R(42)	g
42	1191.392 41(8)*	294.06	0.360E-20	R(26)	a
43	1191.457 26(4)	100.55	0.358E-23	R(15)	x
44	1191.543 03(8)*	1398.38	0.138E-22	R(16)	d
45	1191.627 37(5)	1592.40	0.819E-24	P(63)	T
46	1191.789 91(2)	1146.80	0.153E-21	R(36)	b
47	1191.850 00(3)	568.91	0.625E-23	R(37)	r
48	1191.910 18(2)	1117.64	0.170E-21	R(35)	c
49	1192.205 1	1961.75	0.635E-23	R(43)	g
50	1192.273 69(8)*	316.67	0.336E-20	R(27)	a
51	1192.333 68(4)	113.96	0.452E-23	R(16)	x
52	1192.407 44(8)*	1412.57	0.140E-22	R(17)	d
53	1192.649 50(2)	1177.78	0.135E-21	R(37)	b
54	1192.710 72(3)	599.64	0.554E-23	R(38)	r
55	1192.776 78(4)	818.17	0.194E-23	R(45)	t
56	1192.821 42(2)	1147.85	0.152E-21	R(36)	c
57	1193.061 4	1998.62	0.543E-23	R(44)	g
58	1193.156 02(8)*	340.12	0.311E-20	R(28)	a
59	1193.273 27(9)*	1427.58	0.140E-22	R(18)	d
60	1193.509 23(2)	1209.60	0.119E-21	R(38)	b
61	1193.572 04(3)	631.18	0.489E-23	R(39)	r
62	1193.734 06(2)	1178.89	0.135E-21	R(37)	c
63	1193.916 8	2036.33	0.461E-23	R(45)	g
64	1194.039 35(8)*	364.41	0.287E-20	R(29)	a
65	1194.140 51(9)*	1443.43	0.140E-22	R(19)	d
66	1194.369 09(2)	1242.25	0.105E-21	R(39)	b
67	1194.433 92(3)	663.53	0.430E-23	R(40)	r
68	1194.648 04(2)	1210.77	0.119E-21	R(38)	c
69	1194.923 64(8)*	389.53	0.263E-20	R(30)	a
70	1195.009 10(9)*	1460.12	0.139E-22	R(20)	d


NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
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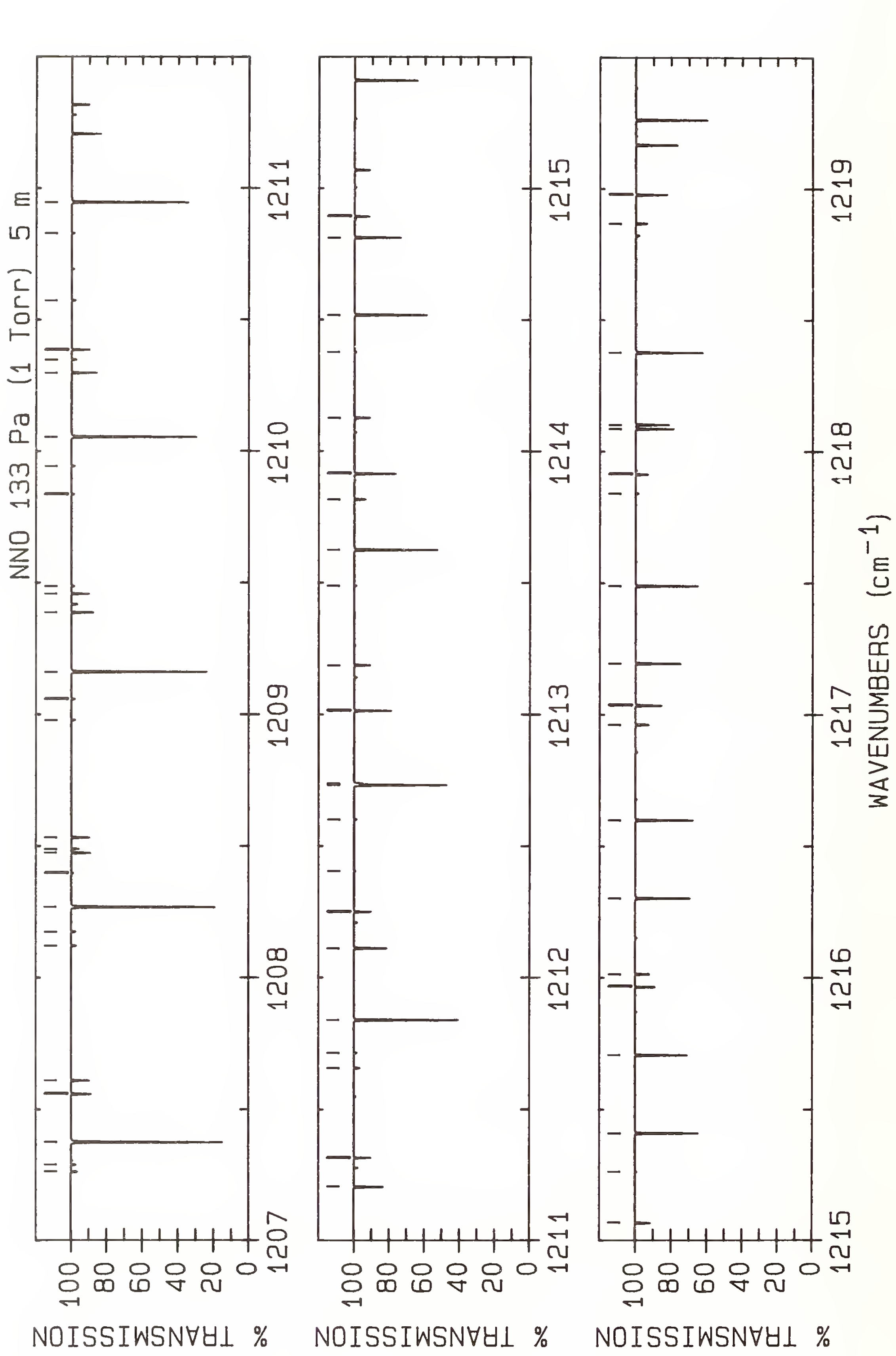
80
60
40
20
0
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
WAVENUMBERS (cm^{-1})

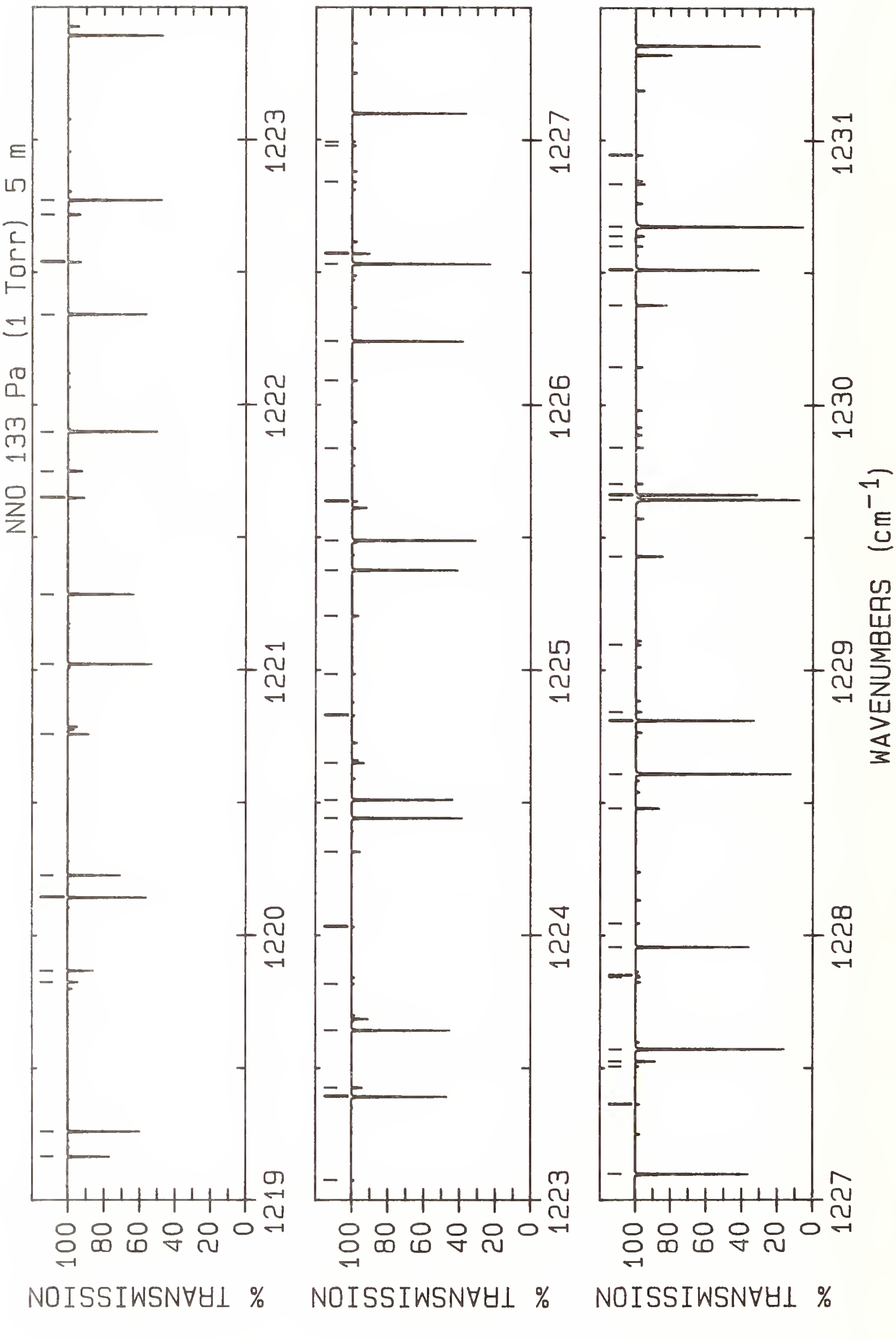
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1195.229 03(2)	1275.74	0.919E-22	R(40)	b	36	1201.230 64(4)	294.06	0.183E-22	R(26)	x
2	1195.296 32(3)	696.68	0.376E-23	R(41)	r	37	1201.248 96(2)	1533.53	0.318E-22	R(47)	b
3	1195.435 34(5)	1398.36	0.198E-23	P(59)	T	38	1201.343 82(5)	951.32	0.131E-23	R(48)	r
4	1195.563 34(2)	1243.48	0.104E-21	R(39)	c	39	1202.002 19(9)*	1623.60	0.106E-22	R(28)	d
5	1195.808 83(8)*	415.49	0.240E-20	R(31)	a	40	1202.003 31(2)	1495.90	0.371E-22	R(46)	c
6	1195.879 02(9)*	1477.64	0.136E-22	R(21)	d	41	1202.026 31(8)*	620.59	0.110E-20	R(38)	a
7	1196.089 04(2)	1310.06	0.800E-22	R(41)	b	42	1202.108 67(3)	1573.69	0.268E-22	R(48)	b
8	1196.159 19(3)	730.64	0.328E-23	R(42)	r	43	1202.134 09(4)	316.67	0.196E-22	R(27)	x
9	1196.381 84(5)	1351.81	0.244E-23	P(58)	T	44	1202.881 23(9)*	1647.79	0.997E-23	R(29)	d
10	1196.694 87(8)*	442.28	0.218E-20	R(32)	a	45	1202.916 93(8)*	653.23	0.969E-21	R(39)	a
11	1197.022 49(4)	765.40	0.284E-23	R(43)	r	46	1202.927 44(3)	1535.31	0.315E-22	R(47)	c
12	1197.397 68(2)	1311.42	0.795E-22	R(41)	c	47	1202.968 23(3)	1614.68	0.225E-22	R(49)	b
13	1197.581 72(8)*	469.91	0.197E-20	R(33)	a	48	1203.040 16(4)	340.12	0.207E-22	R(28)	x
14	1197.622 68(9)*	1515.18	0.130E-22	R(23)	d	49	1203.761 20(9)*	1672.80	0.936E-23	R(30)	d
15	1197.809 15(2)	1381.21	0.599E-22	R(43)	b	50	1203.808 00(8)*	686.70	0.847E-21	R(40)	a
16	1198.316 64(2)	1346.65	0.689E-22	R(42)	c	51	1203.852 45(3)	1575.55	0.265E-22	R(48)	c
17	1198.469 33(8)*	498.37	0.177E-20	R(34)	a	52	1203.871 02(3)	1007.69	0.112E-22	P(50)	T
18	1198.496 34(9)*	1535.19	0.126E-22	R(24)	d	53	1203.948 84(4)	364.41	0.218E-22	R(29)	x
19	1198.669 20(2)	1418.04	0.515E-22	R(44)	b	54	1204.642 07(9)*	1698.65	0.875E-23	R(31)	d
20	1198.750 19(4)	837.35	0.211E-23	R(45)	r	55	1204.686 76(3)	1699.17	0.157E-22	R(51)	b
21	1199.236 73(2)	1382.71	0.594E-22	R(43)	c	56	1204.699 47(8)*	721.01	0.737E-21	R(41)	a
22	1199.357 65(8)*	527.67	0.159E-20	R(35)	a	57	1204.778 30(3)	1616.62	0.223E-22	R(49)	c
23	1199.371 17(9)*	1556.05	0.122E-22	R(25)	d	58	1204.796 49(3)	968.22	0.134E-22	P(49)	T
24	1199.431 42(4)	251.34	0.154E-22	R(24)	x	59	1204.860 19(4)	389.53	0.226E-22	R(30)	x
25	1199.529 20(2)	1455.70	0.440E-22	R(45)	b	60	1205.523 78(9)*	1725.33	0.814E-23	R(32)	d
26	1199.614 50(4)	874.54	0.181E-23	R(46)	r	61	1205.545 69(3)	1742.67	0.130E-22	R(52)	b
27	1199.875 7	2323.60	0.131E-23	R(52)	g	62	1205.591 28(8)*	756.16	0.638E-21	R(42)	a
28	1200.157 91(2)	1419.61	0.510E-22	R(44)	c	63	1205.704 93(3)	1658.53	0.186E-22	R(50)	c
29	1200.246 61(8)*	557.81	0.141E-20	R(36)	a	64	1205.719 52(3)	929.52	0.158E-22	P(48)	T
30	1200.247 11(9)*	1577.73	0.117E-22	R(26)	d	65	1205.774 21(3)	415.49	0.233E-22	R(31)	x
31	1200.329 75(4)	272.28	0.169E-22	R(25)	x	66	1206.210 75(6)*	2775.30	0.175E-23	P(81)	A
32	1200.389 13(2)	1494.20	0.375E-22	R(46)	b	67	1206.483 39(8)*	792.14	0.550E-21	R(43)	a
33	1200.479 06(4)	912.53	0.154E-23	R(47)	r	68	1206.632 28(3)	1701.27	0.155E-22	R(51)	c
34	1201.124 13(9)*	1600.25	0.111E-22	R(27)	d	69	1206.640 10(3)	891.62	0.186E-22	P(47)	T
35	1201.136 18(8)*	588.78	0.125E-20	R(37)	a	70	1206.690 95(3)	442.28	0.238E-22	R(32)	x



NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
1207 1208 1209 1210 1211
% TRANSMISSION
100 80 60 40 20 0
1211 1212 1213 1214 1215
% TRANSMISSION
100 80 60 40 20 0
1215 1216 1217 1218 1219
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1207.262 72(3)	1832.15	0.884E-23	R(54)	b
2	1207.289 51(9)*	1781.19	0.694E-23	R(34)	d
3	1207.375 75(8)*	828.95	0.472E-21	R(44)	a
4	1207.558 20(3)	854.50	0.219E-22	P(46)	T
5	1207.560 31(3)	1744.84	0.129E-22	R(52)	c
6	1207.610 43(3)	469.91	0.240E-22	R(33)	x
7	1208.120 77(3)	1878.14	0.723E-23	R(55)	b
8	1208.173 44(9)*	1810.37	0.637E-23	R(35)	d
9	1208.268 30(8)*	866.60	0.403E-21	R(45)	a
10	1208.397 56(6)*	2641.11	0.329E-23	P(79)	A
11	1208.473 80(3)	818.17	0.255E-22	P(45)	T
12	1208.488 95(3)	1789.25	0.106E-22	R(53)	c
13	1208.532 67(3)	498.37	0.241E-22	R(34)	x
14	1208.978 47(3)	1924.97	0.590E-23	R(56)	b
15	1209.058 01(9)*	1840.38	0.581E-23	R(36)	d
16	1209.161 00(8)*	905.08	0.343E-21	R(46)	a
17	1209.386 90(3)	782.62	0.297E-22	P(44)	T
18	1209.457 70(3)	527.67	0.239E-22	R(35)	x
19	1209.486 91(6)*	2575.26	0.448E-23	P(78)	A
20	1209.835 80(3)	1972.62	0.478E-23	R(57)	b
21	1209.943 16(9)*	1871.22	0.528E-23	R(37)	d
22	1210.053 79(8)*	944.39	0.290E-21	R(47)	a
23	1210.297 46(3)	747.87	0.344E-22	P(43)	T
24	1210.347 87(3)	1880.57	0.712E-23	R(55)	c
25	1210.385 56(3)	557.81	0.236E-22	R(36)	x
26	1210.573 52(6)*	2510.22	0.607E-23	P(77)	A
27	1210.828 84(9)*	1902.90	0.477E-23	R(38)	d
28	1210.946 63(8)*	984.54	0.244E-21	R(48)	a
29	1211.205 49(3)	713.90	0.396E-22	P(42)	T
30	1211.316 26(3)	588.78	0.231E-22	R(37)	x
31	1211.657 38(6)*	2446.02	0.820E-23	P(76)	A
32	1211.715 01(9)*	1935.40	0.429E-23	R(39)	d
33	1211.839 48(8)*	1025.52	0.205E-21	R(49)	a
34	1212.110 95(3)	680.72	0.455E-22	P(41)	T
35	1212.249 85(3)	620.59	0.225E-22	R(38)	x

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1212.405 26(3)	2120.57	0.249E-23	R(60)	b
37	1212.601 60(9)*	1968.74	0.385E-23	R(40)	d
38	1212.732 28(8)*	1067.33	0.171E-21	R(50)	a
39	1212.738 47(5)*	2382.64	0.110E-22	P(75)	A
40	1213.013 84(3)	648.32	0.520E-22	P(40)	T
41	1213.186 33(3)	653.23	0.216E-22	R(39)	x
42	1213.488 56(9)*	2002.90	0.343E-23	R(41)	d
43	1213.624 99(8)*	1109.98	0.142E-21	R(51)	a
44	1213.816 76(5)*	2320.08	0.148E-22	P(74)	A
45	1213.914 13(3)	616.72	0.592E-22	P(39)	T
46	1214.125 75(3)	686.70	0.207E-22	R(40)	x
47	1214.375 84(9)*	2037.90	0.304E-23	R(42)	d
48	1214.517 56(8)*	1153.46	0.118E-21	R(52)	a
49	1214.811 83(3)	585.90	0.670E-22	P(38)	T
50	1214.892 23(5)*	2258.36	0.197E-22	P(73)	A
51	1215.068 12(3)	721.01	0.197E-22	R(41)	x
52	1215.263 39(9)*	2073.73	0.269E-23	R(43)	d
53	1215.409 96(8)*	1197.77	0.970E-22	R(53)	a
54	1215.706 90(3)	555.87	0.756E-22	P(37)	T
55	1215.964 86(5)*	2197.45	0.261E-22	P(72)	A
56	1216.013 47(3)	756.16	0.185E-22	R(42)	x
57	1216.302 14(8)*	1242.91	0.796E-22	R(54)	a
58	1216.599 35(3)	526.63	0.848E-22	P(36)	T
59	1216.961 82(3)	792.14	0.173E-22	R(43)	x
60	1217.034 64(5)*	2137.38	0.346E-22	P(71)	A
61	1217.039 07(10)*	2147.88	0.207E-23	R(45)	d
62	1217.194 05(8)*	1288.88	0.651E-22	R(55)	a
63	1217.489 14(3)	498.18	0.948E-22	P(35)	T
64	1217.840 86(8)	1383.51	0.408E-23	P(58)	R
65	1217.913 20(3)	828.95	0.161E-22	R(44)	x
66	1218.085 67(8)*	1335.69	0.529E-22	R(56)	a
67	1218.101 55(5)*	2078.13	0.455E-22	P(70)	A
68	1218.376 28(3)	470.51	0.105E-21	P(34)	T
69	1218.867 63(3)	866.60	0.149E-22	R(45)	x
70	1218.976 94(8)*	1383.33	0.429E-22	R(57)	a


NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
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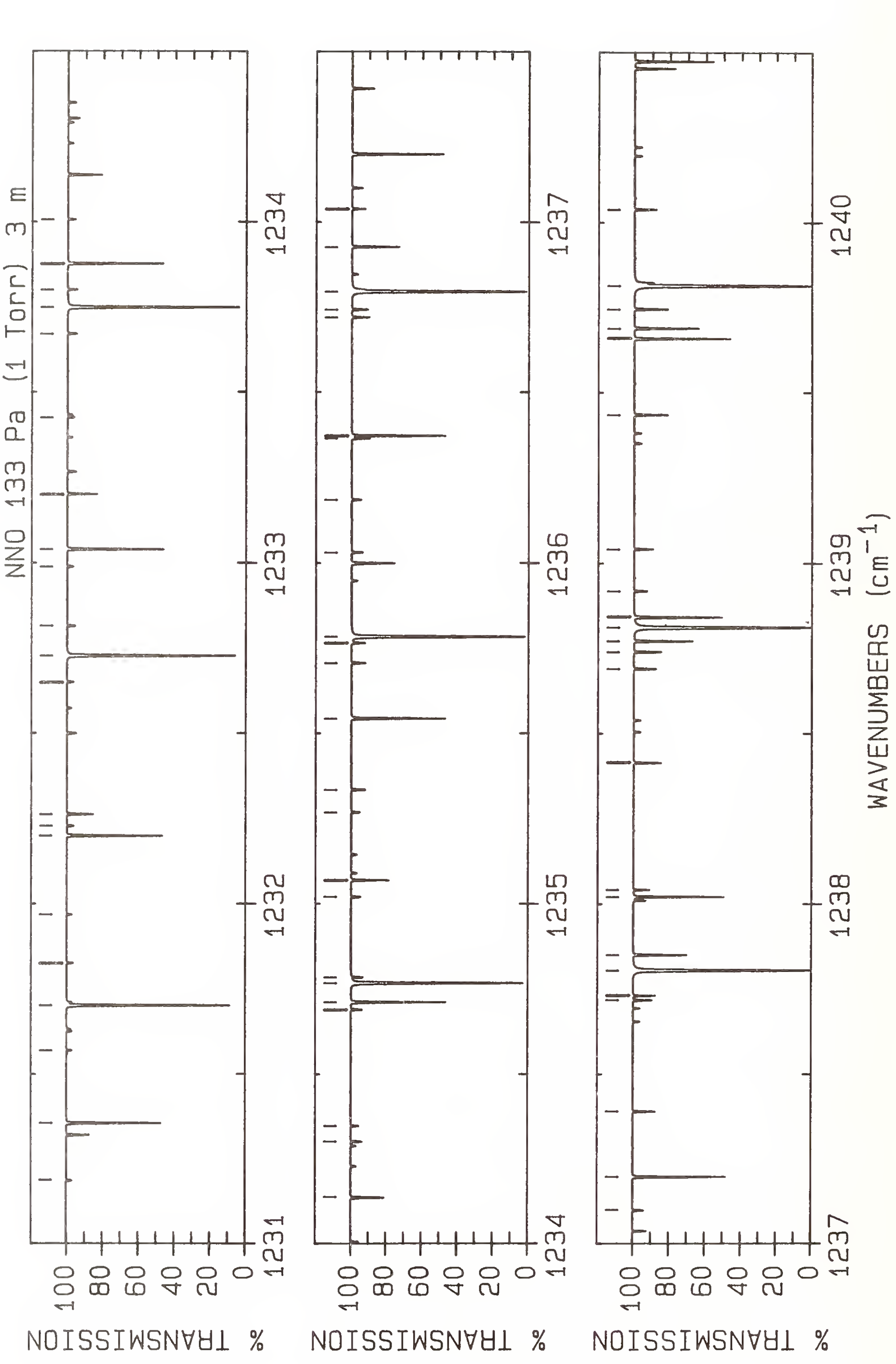
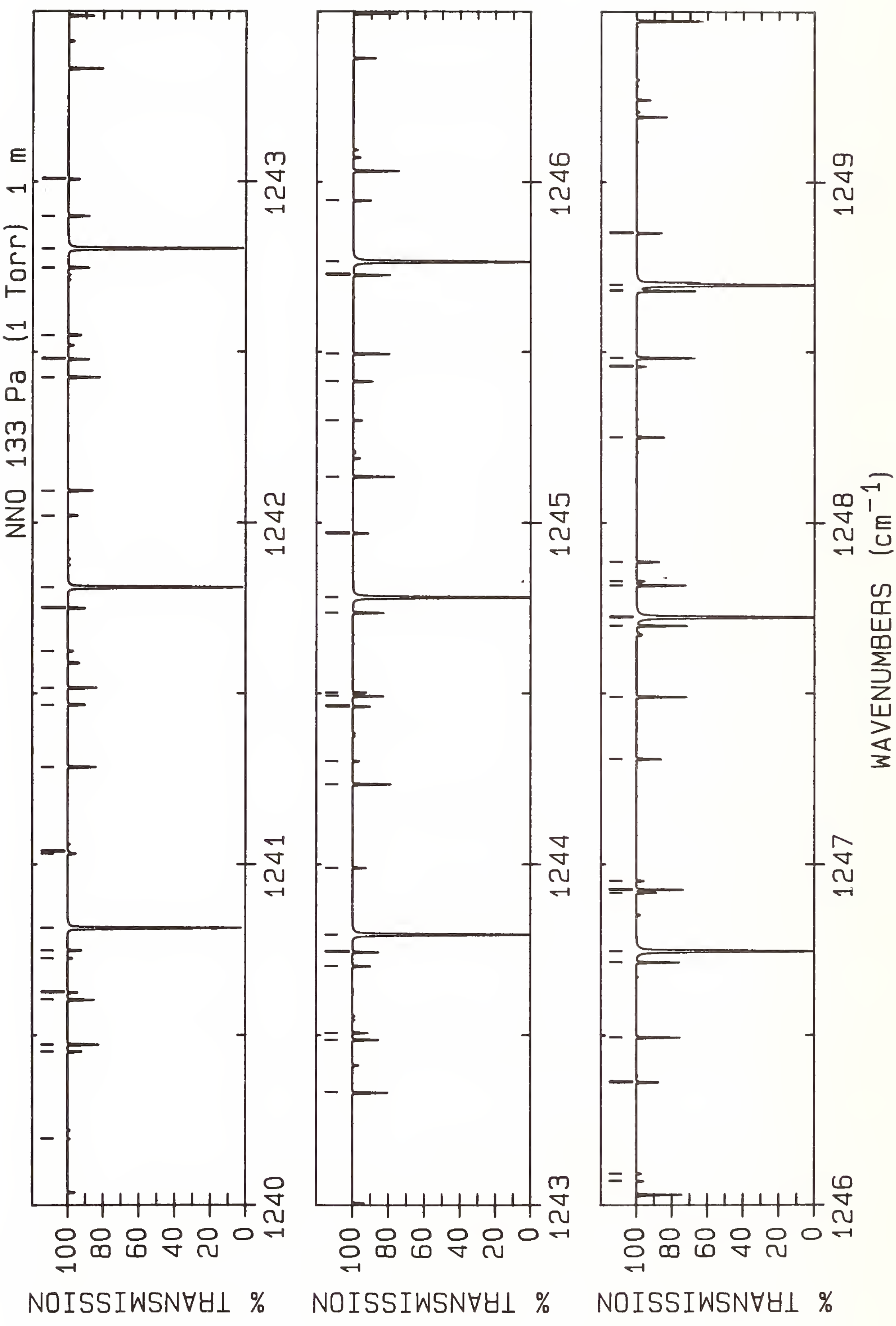
1223 1224 1225 1226 1227
1227 1228 1229 1230 1231
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1219.165 56(5)*	2019.71	0.597E-22	P(69)	A
2	1219.260 74(3)	443.64	0.117E-21	P(33)	T
3	1219.825 13(3)	905.08	0.137E-22	R(46)	x
4	1219.867 84(9)*	1431.79	0.346E-22	R(58)	a
5	1220.142 52(3)	417.55	0.128E-21	P(32)	T
6	1220.226 66(5)*	1962.12	0.779E-22	P(68)	A
7	1220.758 31(9)*	1481.09	0.277E-22	R(59)	a
8	1221.021 61(3)	392.26	0.141E-21	P(31)	T
9	1221.284 84(5)*	1905.36	0.101E-21	P(67)	A
10	1221.648 34(9)*	1531.22	0.222E-22	R(60)	a
11	1221.748 41(8)	1200.98	0.914E-23	P(54)	R
12	1221.749 42(4)	984.54	0.113E-22	R(48)	x
13	1221.897 99(3)	367.75	0.154E-21	P(30)	T
14	1222.340 07(5)*	1849.42	0.131E-21	P(66)	A
15	1222.537 88(9)*	1582.18	0.177E-22	R(61)	a
16	1222.716 25(4)	1025.52	0.102E-22	R(49)	x
17	1222.718 39(8)	1157.36	0.111E-22	P(53)	R
18	1222.771 65(3)	344.03	0.167E-21	P(29)	T
19	1223.076 37(5)	916.61	0.325E-23	P(47)	V
20	1223.392 34(5)*	1794.32	0.169E-21	P(65)	A
21	1223.426 91(9)*	1633.97	0.140E-22	R(62)	a
22	1223.642 58(3)	321.11	0.180E-21	P(28)	T
23	1223.816 27(6)*	2726.94	0.192E-23	P(71)	B
24	1223.818 56(8)*	2759.83	0.283E-23	P(59)	D
25	1224.031 75(5)	878.45	0.384E-23	P(46)	V
26	1224.315 38(9)*	1686.59	0.110E-22	R(63)	a
27	1224.441 64(5)*	1740.04	0.217E-21	P(64)	A
28	1224.510 76(3)	298.97	0.194E-21	P(27)	T
29	1224.649 95(8)	1072.53	0.160E-22	P(51)	R
30	1224.828 61(8)*	2710.73	0.353E-23	P(58)	D
31	1224.984 25(4)	841.10	0.450E-23	P(45)	V
32	1225.203 27(9)*	1740.04	0.868E-23	R(64)	a
33	1225.376 20(3)	277.62	0.207E-21	P(26)	T
34	1225.487 94(5)*	1686.59	0.277E-21	P(63)	A
35	1225.635 62(4)	1153.46	0.712E-23	R(52)	x
36	1225.836 11(8)*	2662.47	0.439E-23	P(57)	D
37	1226.090 55(9)*	1794.32	0.679E-23	R(65)	a
38	1226.238 88(3)	257.06	0.220E-21	P(25)	T
39	1226.531 24(5)*	1633.97	0.353E-21	P(62)	A
40	1226.570 25(8)	990.92	0.228E-22	P(49)	R
41	1226.841 02(8)*	2615.03	0.543E-23	P(56)	D
42	1226.977 18(9)*	1849.42	0.529E-23	R(66)	a
43	1226.992 38(6)*	2551.62	0.433E-23	P(68)	B
44	1227.098 78(3)	237.29	0.233E-21	P(24)	T
45	1227.363 8	1055.80	0.617E-23	P(34)	Z
46	1227.507 15(6)*	2555.32	0.433E-23	P(68)	C
47	1227.526 15(7)	951.32	0.270E-22	P(48)	R
48	1227.571 52(5)*	1582.18	0.447E-21	P(61)	A
49	1227.843 33(8)*	2568.41	0.669E-23	P(55)	D
50	1227.849 71(8)	1335.59	0.526E-23	P(56)	P
51	1227.955 91(3)	218.31	0.245E-21	P(23)	T
52	1228.045 37(6)*	2494.84	0.564E-23	P(67)	B
53	1228.479 19(7)	912.53	0.318E-22	P(47)	R
54	1228.608 76(5)*	1531.22	0.564E-21	P(60)	A
55	1228.810 25(3)	200.12	0.256E-21	P(22)	T
56	1228.843 01(8)*	2522.63	0.820E-23	P(54)	D
57	1229.095 48(6)*	2438.88	0.731E-23	P(66)	B
58	1229.429 37(7)	874.54	0.374E-22	P(46)	R
59	1229.642 96(5)*	1481.09	0.708E-21	P(59)	A
60	1229.661 78(2)	182.72	0.266E-21	P(21)	T
61	1229.703 18(4)	666.49	0.940E-23	P(40)	V
62	1229.840 03(7)*	2477.68	0.100E-22	P(53)	D
63	1230.142 69(6)*	2383.76	0.943E-23	P(65)	B
64	1230.376 68(7)	837.35	0.438E-22	P(45)	R
65	1230.510 51(2)	166.12	0.275E-21	P(20)	T
66	1230.600 07(6)*	2387.14	0.942E-23	P(65)	C
67	1230.638 16(4)	634.00	0.107E-22	P(39)	V
68	1230.674 10(5)*	1431.79	0.886E-21	P(58)	A
69	1230.834 37(7)*	2433.55	0.122E-22	P(52)	D
70	1230.943 57(7)	1197.68	0.978E-23	P(53)	P

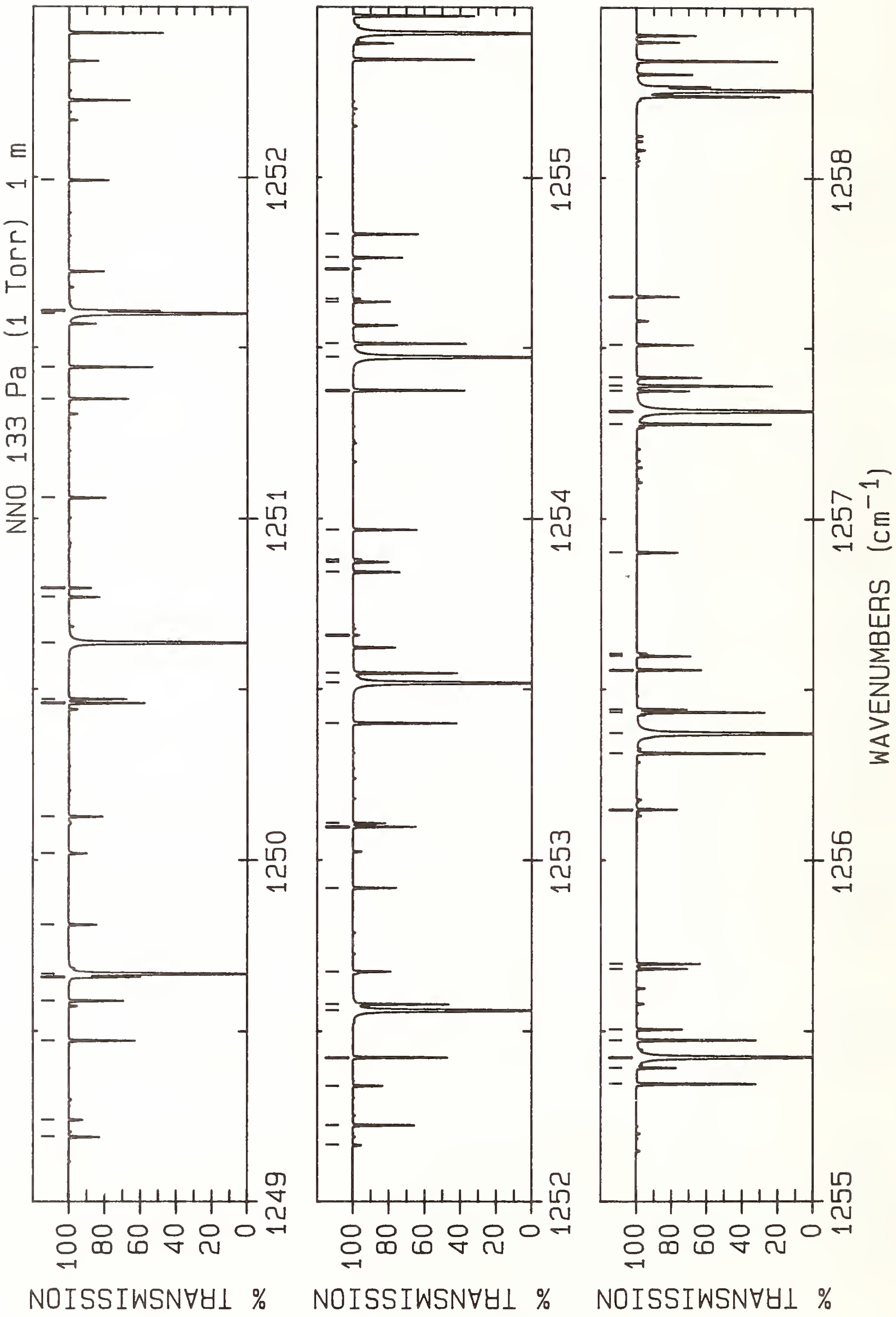

NNO 133 Pa (1 Torr) 3 m
% TRANSMISSION
100 80 60 40 20 0
1231 1232 1233 1234
% TRANSMISSION
100 80 60 40 20 0
1234 1235 1236 1237
% TRANSMISSION
100 80 60 40 20 0
1237 1238 1239 1240
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1231.187 00(6)*	2329.46	0.121E-22	P(64)	B
2	1231.356 43(3)	150.30	0.282E-21	P(19)	T
3	1231.570 18(5)	602.32	0.122E-22	P(38)	V
4	1231.702 15(5)*	1383.33	0.110E-20	P(57)	A
5	1231.826 01(7)*	2390.25	0.147E-22	P(51)	D
6	1231.967 98(7)	1153.37	0.119E-22	P(52)	P
7	1232.199 52(3)	135.27	0.288E-21	P(18)	T
8	1232.228 38(6)*	2275.99	0.155E-22	P(63)	B
9	1232.262 63(7)	765.40	0.592E-22	P(43)	R
10	1232.649 95(6)*	2279.17	0.155E-22	P(63)	C
11	1232.727 13(5)*	1335.69	0.137E-20	P(56)	A
12	1232.814 92(7)*	2347.78	0.178E-22	P(50)	D
13	1232.988 93(7)	1109.90	0.145E-22	P(51)	P
14	1233.039 78(3)	121.03	0.292E-21	P(17)	T
15	1233.201 25(7)	730.64	0.683E-22	P(42)	R
16	1233.425 29(5)	541.39	0.156E-22	P(36)	V
17	1233.671 19(6)*	2226.43	0.197E-22	P(62)	C
18	1233.749 00(5)*	1288.88	0.169E-20	P(55)	A
19	1233.801 08(7)*	2306.14	0.213E-22	P(49)	D
20	1233.877 20(3)	107.58	0.293E-21	P(16)	T
21	1234.006 43(7)	1067.26	0.175E-22	P(50)	P
22	1234.136 96(7)	696.68	0.785E-22	P(41)	R
23	1234.302 32(6)*	2171.55	0.250E-22	P(61)	B
24	1234.348 35(5)	512.14	0.175E-22	P(35)	V
25	1234.689 94(6)*	2174.53	0.250E-22	P(61)	C
26	1234.711 78(3)	94.93	0.292E-21	P(15)	T
27	1234.767 76(5)*	1242.91	0.208E-20	P(54)	A
28	1234.784 47(7)*	2265.33	0.255E-22	P(48)	D
29	1235.020 47(6)	1025.45	0.210E-22	P(49)	P
30	1235.069 74(7)	663.53	0.898E-22	P(40)	R
31	1235.268 41(5)	483.70	0.195E-22	P(34)	V
32	1235.334 85(6)*	2120.57	0.316E-22	P(60)	B
33	1235.543 50(3)	83.06	0.289E-21	P(14)	T
34	1235.706 18(6)*	2123.45	0.316E-22	P(60)	C
35	1235.765 08(7)*	2225.35	0.303E-22	P(47)	D
36	1235.783 39(5)*	1197.77	0.254E-20	P(53)	A
37	1236.031 03(6)	984.47	0.251E-22	P(48)	P
38	1236.185 46(5)	456.08	0.217E-22	P(33)	V
39	1236.364 40(6)*	2070.42	0.397E-22	P(59)	B
40	1236.372 36(3)	71.99	0.284E-21	P(13)	T
41	1236.719 88(6)*	2073.21	0.397E-22	P(59)	C
42	1236.742 87(7)*	2186.20	0.359E-22	P(46)	D
43	1236.795 89(5)*	1153.46	0.309E-20	P(52)	A
44	1236.926 49(7)	599.64	0.116E-21	P(38)	R
45	1237.038 13(6)	944.33	0.300E-22	P(47)	P
46	1237.099 48(5)	429.26	0.240E-22	P(32)	V
47	1237.198 36(3)	61.71	0.275E-21	P(12)	T
48	1237.390 97(6)*	2021.11	0.497E-22	P(58)	B
49	1237.717 84(7)*	2147.88	0.422E-22	P(45)	D
50	1237.731 03(6)*	2023.80	0.497E-22	P(58)	C
51	1237.805 24(5)*	1109.98	0.375E-20	P(51)	A
52	1237.850 45(6)	568.91	0.131E-21	P(37)	R
53	1238.021 48(3)	52.21	0.265E-21	P(11)	T
54	1238.041 74(6)	905.01	0.356E-22	P(46)	P
55	1238.414 54(6)*	1972.62	0.620E-22	P(57)	B
56	1238.689 96(7)*	2110.39	0.496E-22	P(44)	D
57	1238.739 60(6)*	1975.23	0.619E-22	P(57)	C
58	1238.771 43(6)	538.98	0.147E-21	P(36)	R
59	1238.811 43(5)*	1067.33	0.453E-20	P(50)	A
60	1238.841 72(3)	43.51	0.251E-21	P(10)	T
61	1238.918 41(4)	378.06	0.289E-22	P(30)	V
62	1239.041 86(6)	866.54	0.420E-22	P(45)	P
63	1239.435 10(6)*	1924.97	0.769E-22	P(56)	B
64	1239.659 08(3)	35.60	0.235E-21	P(9)	T
65	1239.659 21(7)*	2073.73	0.579E-22	P(43)	D
66	1239.689 45(6)	509.86	0.165E-21	P(35)	R
67	1239.745 58(6)*	1927.48	0.768E-22	P(56)	C
68	1239.814 45(5)*	1025.52	0.544E-20	P(49)	A
69	1240.038 50(6)	828.89	0.494E-22	P(44)	P



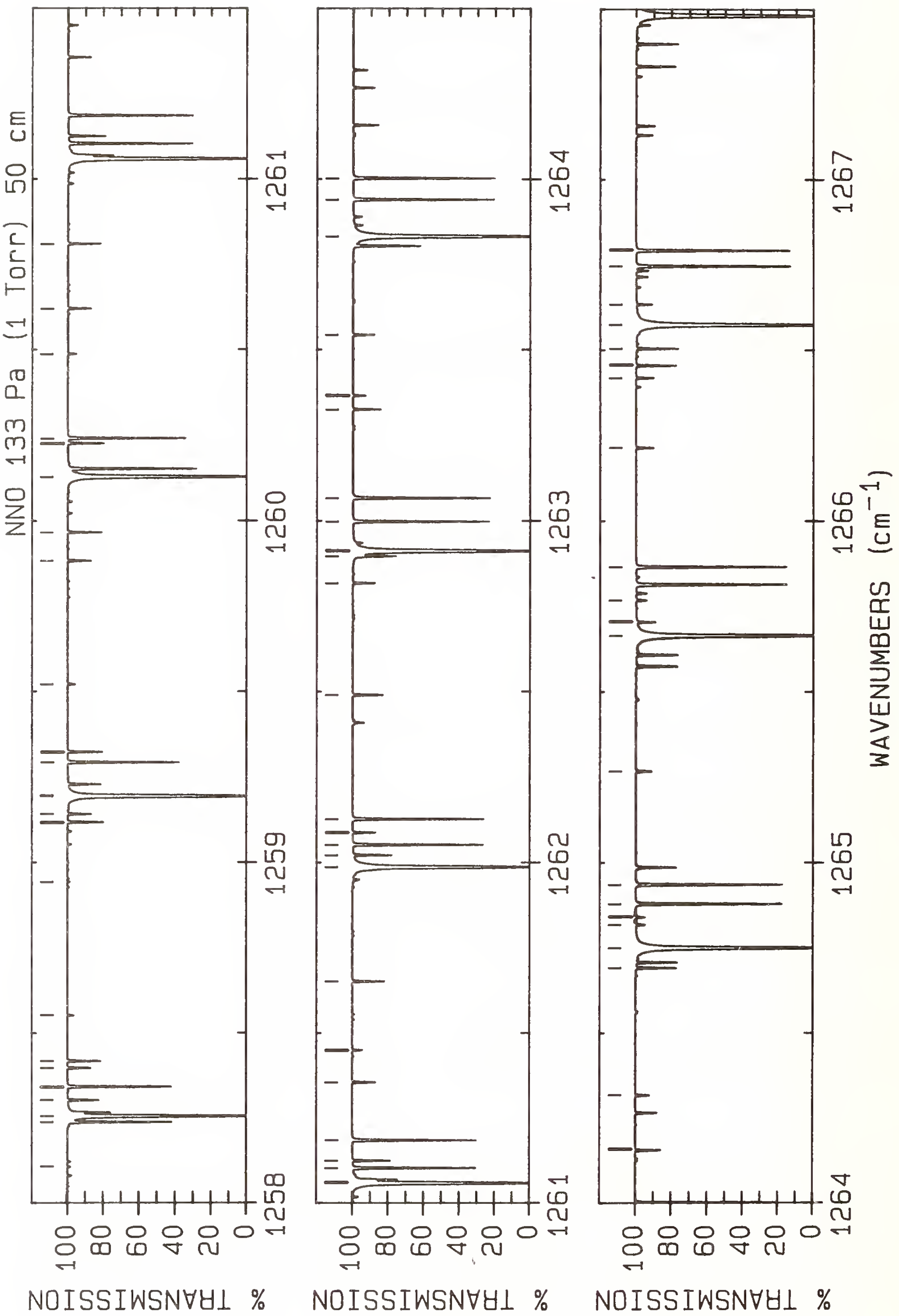
NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1240.195 7	734.59	0.166E-22	P(19)	Y
2	1240.452 63(6)*	1878.14	0.950E-22	P(55)	B
3	1240.473 54(3)	28.48	0.217E-21	P(8)	T
4	1240.604 49(6)	481.55	0.183E-21	P(34)	R
5	1240.625 58(7)*	2037.90	0.673E-22	P(42)	D
6	1240.725 14(4)	330.11	0.341E-22	P(28)	V
7	1240.748 94(6)*	1880.57	0.949E-22	P(55)	C
8	1240.814 29(5)*	984.54	0.652E-20	P(48)	A
9	1241.031 63(6)	792.08	0.578E-22	P(43)	P
10	1241.037 2	719.56	0.169E-22	P(18)	Y
11	1241.285 11(3)	22.15	0.196E-21	P(7)	T
12	1241.467 13(6)*	1832.15	0.117E-21	P(54)	B
13	1241.516 54(6)	454.04	0.203E-21	P(33)	R
14	1241.623 90(4)	307.35	0.367E-22	P(27)	V
15	1241.749 67(6)*	1834.50	0.117E-21	P(54)	C
16	1241.810 94(5)*	944.39	0.776E-20	P(47)	A
17	1242.021 26(6)	756.11	0.673E-22	P(42)	P
18	1242.093 78(4)	16.61	0.172E-21	P(6)	T
19	1242.425 59(6)	427.35	0.224E-21	P(32)	R
20	1242.478 58(6)*	1786.99	0.143E-21	P(53)	B
21	1242.549 59(7)*	1968.74	0.897E-22	P(40)	D
22	1242.747 75(6)*	1789.25	0.143E-21	P(53)	C
23	1242.804 39(5)*	905.08	0.920E-20	P(46)	A
24	1242.899 53(4)	11.87	0.147E-21	P(5)	T
25	1243.007 39(6)	720.96	0.781E-22	P(41)	P
26	1243.331 64(6)	401.46	0.246E-21	P(31)	R
27	1243.486 98(6)*	1742.67	0.174E-21	P(52)	B
28	1243.507 20(7)*	1935.40	0.103E-21	P(39)	D
29	1243.702 38(4)	7.91	0.120E-21	P(4)	T
30	1243.743 16(6)*	1744.84	0.174E-21	P(52)	C
31	1243.794 63(5)*	866.60	0.109E-19	P(45)	A
32	1243.989 99(6)	686.65	0.901E-22	P(40)	P
33	1244.234 68(6)	376.38	0.269E-21	P(30)	R
34	1244.301 68(4)	243.94	0.445E-22	P(24)	V
35	1244.461 87(6)*	1902.90	0.117E-21	P(38)	D
36	1244.492 31(6)*	1699.17	0.212E-21	P(51)	B
37	1244.502 31(4)	4.75	0.914E-22	P(3)	T
38	1244.735 88(6)*	1701.27	0.212E-21	P(51)	C
39	1244.781 65(5)*	828.95	0.128E-19	P(44)	A
40	1244.969 08(6)	653.18	0.104E-21	P(39)	P
41	1245.134 70(6)	352.10	0.292E-21	P(29)	R
42	1245.299 32(4)	2.37	0.617E-22	P(2)	T
43	1245.413 56(6)*	1871.22	0.133E-21	P(37)	D
44	1245.494 56(6)*	1656.51	0.256E-21	P(50)	B
45	1245.725 90(6)*	1658.53	0.256E-21	P(50)	C
46	1245.765 43(5)*	792.14	0.149E-19	P(43)	A
47	1245.944 64(6)	620.54	0.118E-21	P(38)	P
48	1246.071 37(4)	205.73	0.492E-22	P(22)	V
49	1246.093 40(4)	0.79	0.311E-22	P(1)	T
50	1246.362 28(6)*	1840.38	0.151E-21	P(36)	D
51	1246.493 72(6)*	1614.68	0.308E-21	P(49)	B
52	1246.713 20(6)*	1616.62	0.307E-21	P(49)	C
53	1246.745 98(5)*	756.16	0.174E-19	P(42)	A
54	1246.916 67(6)	588.74	0.135E-21	P(37)	P
55	1246.925 64(6)	305.98	0.339E-21	P(27)	R
56	1246.951 55(4)	187.85	0.513E-22	P(21)	V
57	1247.308 00(6)*	1810.37	0.170E-21	P(35)	D
58	1247.489 79(6)*	1573.69	0.369E-21	P(48)	B
59	1247.697 76(6)*	1575.55	0.368E-21	P(48)	C
60	1247.723 28(5)*	721.01	0.202E-19	P(41)	A
61	1247.816 55(6)	284.13	0.363E-21	P(26)	R
62	1247.828 60(3)	170.77	0.531E-22	P(20)	V
63	1247.885 17(5)	557.77	0.152E-21	P(36)	P
64	1248.250 71(6)*	1781.19	0.190E-21	P(34)	D
65	1248.458 06(4)	0.79	0.623E-22	R(1)	T
66	1248.482 74(6)*	1533.53	0.439E-21	P(47)	B
67	1248.679 57(6)*	1535.31	0.439E-21	P(47)	C
68	1248.682 81(7)	2195.49	0.183E-22	P(49)	G
69	1248.697 32(5)*	686.70	0.233E-19	P(40)	A
70	1248.850 12(5)	527.64	0.172E-21	P(35)	P



NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1249.190 40(6)*	1752.85	0.211E-21	P(33)	D
2	1249.240 41(4)	2.37	0.929E-22	R(2)	T
3	1249.472 58(6)*	1494.20	0.522E-21	P(46)	B
4	1249.589 22(5)	242.85	0.409E-21	P(24)	R
5	1249.658 61(6)*	1495.90	0.521E-21	P(46)	C
6	1249.668 10(5)*	653.23	0.267E-19	P(39)	A
7	1249.811 53(5)	498.34	0.193E-21	P(34)	P
8	1250.019 81(4)	4.75	0.122E-21	R(3)	T
9	1250.127 06(6)*	1725.33	0.234E-21	P(32)	D
10	1250.459 29(6)*	1455.70	0.616E-21	P(45)	B
11	1250.470 97(5)	223.43	0.430E-21	P(23)	R
12	1250.634 87(6)*	1457.34	0.616E-21	P(45)	C
13	1250.635 60(5)*	620.59	0.305E-19	P(38)	A
14	1250.769 38(5)	469.88	0.215E-21	P(33)	P
15	1250.796 26(4)	7.91	0.151E-21	R(4)	T
16	1251.060 66(6)*	1698.65	0.258E-21	P(31)	D
17	1251.349 64(5)	204.82	0.450E-21	P(22)	R
18	1251.442 86(6)*	1418.04	0.725E-21	P(44)	B
19	1251.599 82(5)*	588.78	0.347E-19	P(37)	A
20	1251.608 33(6)*	1419.61	0.724E-21	P(44)	C
21	1251.991 21(6)*	1672.80	0.284E-21	P(30)	D
22	1252.166 77(4)	97.59	0.570E-22	P(15)	V
23	1252.225 24(5)	187.01	0.468E-21	P(21)	R
24	1252.340 32(3)	16.61	0.203E-21	R(6)	T
25	1252.423 29(6)*	1381.21	0.848E-21	P(43)	B
26	1252.560 74(5)*	557.81	0.393E-19	P(36)	A
27	1252.578 98(6)*	1382.71	0.847E-21	P(43)	C
28	1252.674 41(5)	415.46	0.264E-21	P(31)	P
29	1252.918 68(6)*	1647.79	0.310E-21	P(29)	D
30	1253.097 75(5)	170.01	0.484E-21	P(20)	R
31	1253.107 93(3)	22.15	0.226E-21	R(7)	T
32	1253.400 57(6)*	1345.22	0.988E-21	P(42)	B
33	1253.518 37(5)*	527.67	0.443E-19	P(35)	A
34	1253.546 81(6)*	1346.65	0.987E-21	P(42)	C
35	1253.657 88(7)	1998.62	0.432E-22	P(44)	G
36	1253.843 07(6)*	1623.60	0.336E-21	P(28)	D
37	1253.872 57(3)	28.48	0.246E-21	R(8)	T
38	1253.879 95(4)	74.01	0.554E-22	P(13)	V
39	1253.967 18(5)	153.82	0.497E-21	P(19)	R
40	1254.374 68(6)*	1310.06	0.115E-20	P(41)	B
41	1254.472 69(5)*	498.37	0.496E-19	P(34)	A
42	1254.511 79(6)*	1311.42	0.115E-20	P(41)	C
43	1254.634 26(3)	35.60	0.265E-21	R(9)	T
44	1254.643 26(7)	1961.75	0.505E-22	P(43)	G
45	1254.731 78(4)	63.44	0.539E-22	P(12)	V
46	1254.764 36(5)*	1600.25	0.363E-21	P(27)	D
47	1254.833 51(5)	138.44	0.507E-21	P(18)	R
48	1255.345 61(5)*	1275.74	0.132E-20	P(40)	B
49	1255.392 99(3)	43.51	0.280E-21	R(10)	T
50	1255.423 69(5)*	469.91	0.554E-19	P(33)	A
51	1255.473 92(6)*	1277.04	0.132E-20	P(40)	C
52	1255.505 19(5)	340.10	0.344E-21	P(28)	P
53	1255.682 54(5)*	1577.73	0.390E-21	P(26)	D
54	1255.696 74(5)	123.87	0.514E-21	P(17)	R
55	1256.148 75(3)	52.21	0.293E-21	R(11)	T
56	1256.313 37(5)*	1242.25	0.152E-20	P(39)	B
57	1256.371 37(5)*	442.28	0.615E-19	P(32)	A
58	1256.433 18(6)*	1243.48	0.152E-20	P(39)	C
59	1256.441 62(5)	316.65	0.373E-21	P(27)	P
60	1256.556 86(5)	110.11	0.517E-21	P(16)	R
61	1256.597 61(5)*	1556.05	0.417E-21	P(25)	D
62	1256.604 33(7)	1890.51	0.683E-22	P(41)	G
63	1256.901 56(3)	61.71	0.304E-21	R(12)	T
64	1257.277 93(5)*	1209.60	0.174E-20	P(38)	B
65	1257.315 72(5)*	415.49	0.679E-19	P(31)	A
66	1257.374 47(5)	294.04	0.401E-21	P(26)	P
67	1257.389 57(5)*	1210.77	0.174E-20	P(38)	C
68	1257.413 87(5)	97.16	0.516E-21	P(15)	R
69	1257.509 55(5)*	1535.19	0.443E-21	P(24)	D
70	1257.651 40(3)	71.99	0.311E-21	R(13)	T



NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
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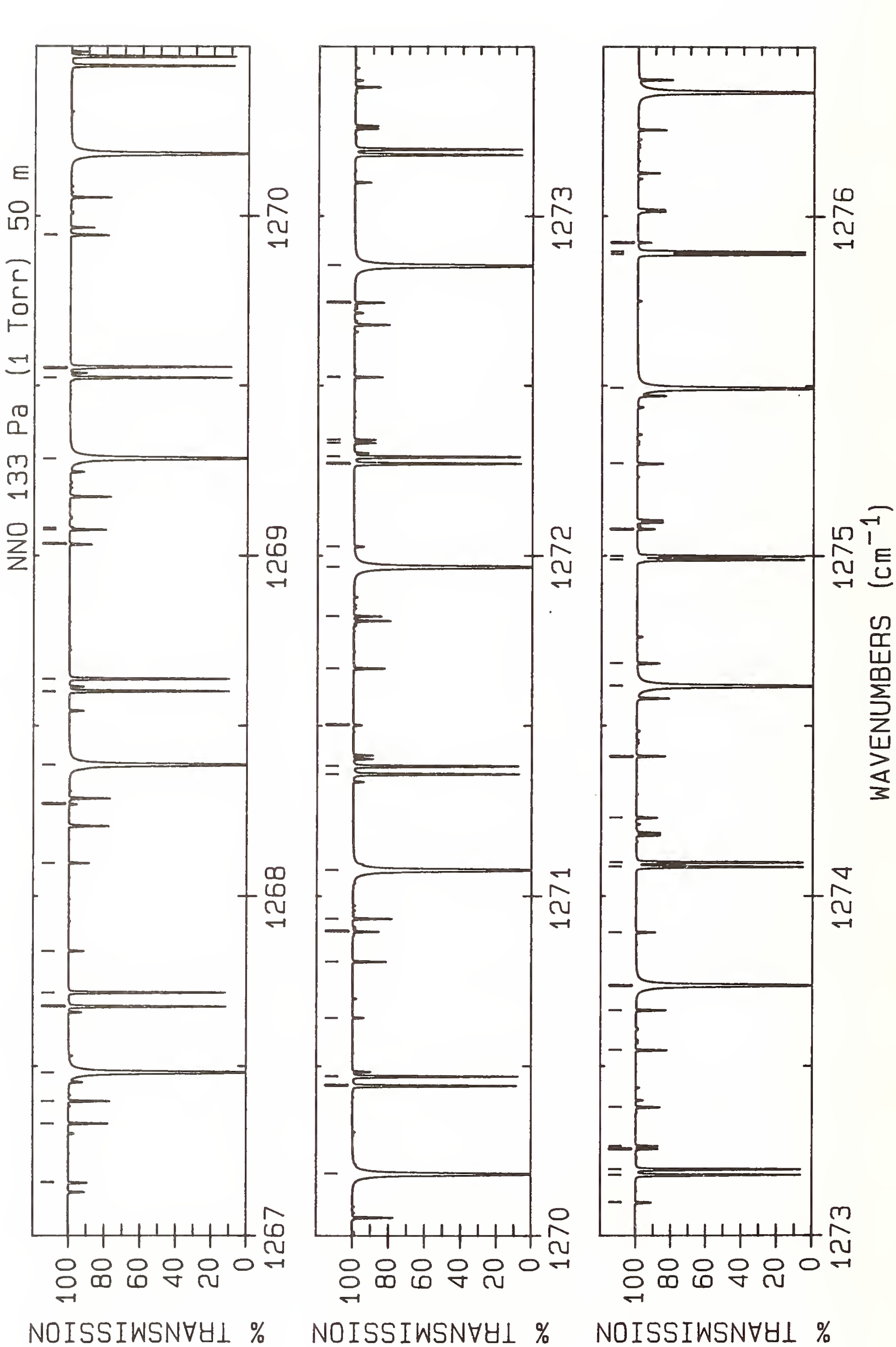
1258 1259 1260 1261
1261 1262 1263 1264
1264 1265 1266 1267
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1258.107 25(5)	29.28	0.425E-22	P(8)	V
2	1258.239 30(5)*	1177.78	0.198E-20	P(37)	B
3	1258.256 73(5)*	389.53	0.746E-19	P(30)	A
4	1258.303 72(5)	272.26	0.429E-21	P(25)	P
5	1258.343 06(5)*	1178.89	0.198E-20	P(37)	C
6	1258.398 28(3)	83.06	0.316E-21	R(14)	T
7	1258.418 35(5)*	1515.18	0.468E-21	P(23)	D
8	1258.552 45(6)	1822.61	0.906E-22	P(39)	G
9	1258.943 13(5)	22.77	0.384E-22	P(7)	V
10	1259.118 54(5)	73.68	0.501E-21	P(13)	R
11	1259.142 20(3)	94.93	0.319E-21	R(15)	T
12	1259.194 40(5)*	364.41	0.815E-19	P(29)	A
13	1259.197 46(5)*	1146.80	0.224E-20	P(36)	B
14	1259.293 64(5)*	1147.85	0.224E-20	P(36)	C
15	1259.324 01(5)*	1495.99	0.492E-21	P(22)	D
16	1259.521 64(6)	1789.92	0.104E-21	P(38)	G
17	1259.883 15(3)	107.58	0.319E-21	R(16)	T
18	1259.966 18(5)	63.15	0.486E-21	P(12)	R
19	1260.128 71(5)*	340.12	0.887E-19	P(28)	A
20	1260.226 51(5)*	1477.64	0.513E-21	P(21)	D
21	1260.241 31(5)*	1117.64	0.252E-20	P(35)	C
22	1260.487 57(6)	1758.06	0.118E-21	P(37)	G
23	1260.621 14(3)	121.03	0.316E-21	R(17)	T
24	1260.810 68(5)	53.44	0.467E-21	P(11)	R
25	1261.059 67(5)*	316.67	0.959E-19	P(27)	A
26	1261.104 14(5)*	1087.34	0.283E-20	P(34)	B
27	1261.125 84(5)*	1460.12	0.532E-21	P(20)	D
28	1261.186 06(5)*	1088.28	0.283E-20	P(34)	C
29	1261.356 16(2)	135.27	0.312E-21	R(18)	T
30	1261.450 24(6)	1727.03	0.134E-21	P(36)	G
31	1261.652 05(5)	44.53	0.443E-21	P(10)	R
32	1261.987 26(5)*	294.06	0.103E-18	P(26)	A
33	1262.022 00(5)*	1443.43	0.548E-21	P(19)	D
34	1262.052 64(5)*	1058.86	0.316E-20	P(33)	B
35	1262.088 22(2)	150.30	0.305E-21	R(19)	T

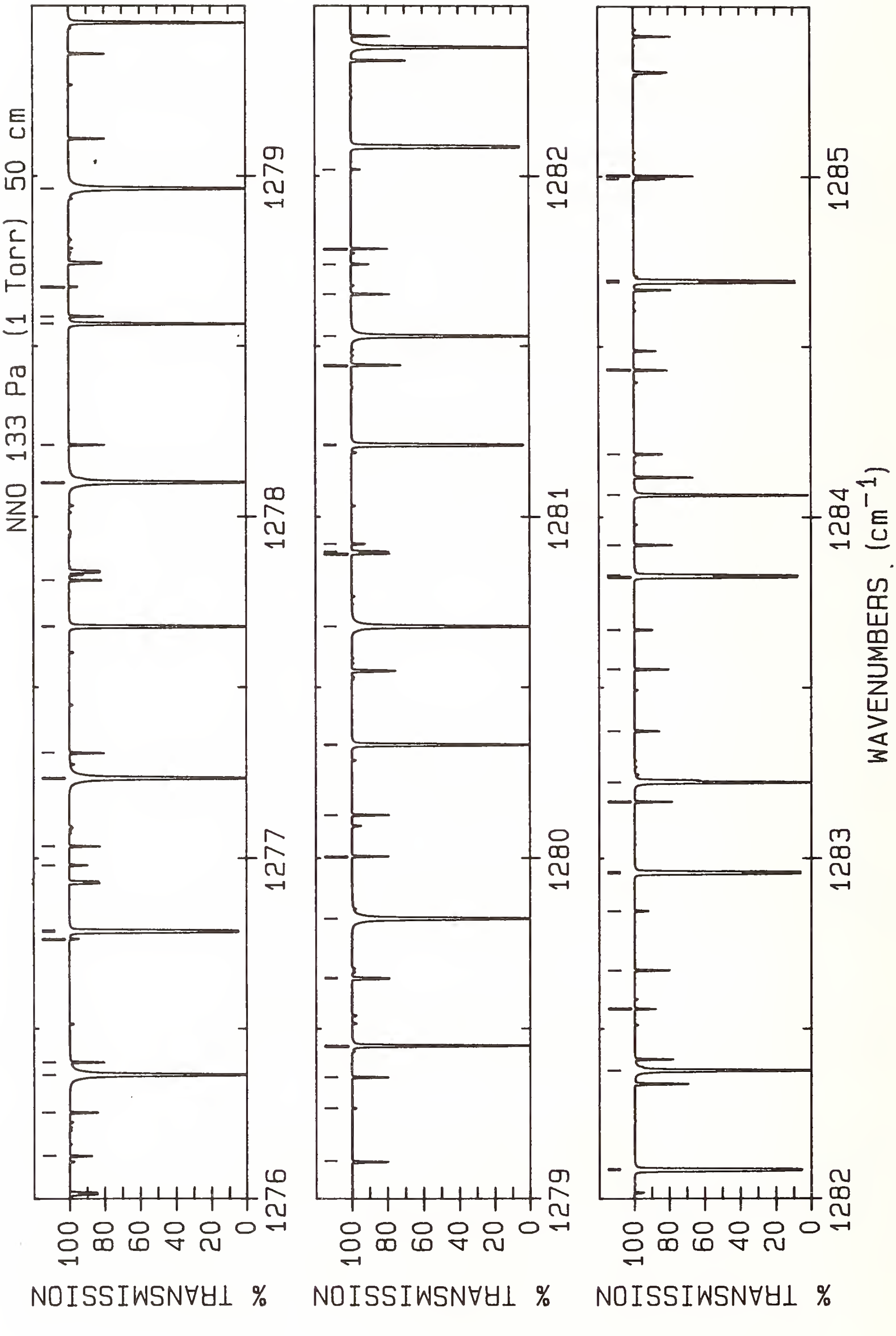
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1262.127 86(5)*	1059.75	0.316E-20	P(33)	C
37	1262.490 27(5)	36.44	0.415E-21	P(9)	R
38	1262.817 32(3)	166.12	0.297E-21	R(20)	T
39	1262.895 95(5)	175.94	0.550E-21	P(20)	P
40	1262.911 47(5)*	272.28	0.110E-18	P(25)	A
41	1262.914 97(4)*	1427.58	0.561E-21	P(18)	D
42	1262.997 90(5)*	1031.22	0.351E-20	P(32)	B
43	1263.066 72(5)*	1032.06	0.351E-20	P(32)	C
44	1263.325 34(5)	29.15	0.382E-21	P(8)	R
45	1263.365 74(6)	1667.49	0.169E-21	P(34)	G
46	1263.543 45(3)	182.72	0.287E-21	R(21)	T
47	1263.832 31(5)*	251.34	0.117E-18	P(24)	A
48	1263.939 92(5)*	1004.42	0.388E-20	P(31)	B
49	1264.002 61(5)*	1005.20	0.387E-20	P(31)	C
50	1264.157 26(5)	22.67	0.345E-21	P(7)	R
51	1264.318 57(6)	1638.97	0.189E-21	P(33)	G
52	1264.691 34(4)*	1398.38	0.575E-21	P(16)	D
53	1264.749 76(5)*	231.24	0.124E-18	P(23)	A
54	1264.817 75(13)	1737.13	0.123E-21	P(36)	E
55	1264.839 99(12)	1737.03	0.123E-21	P(36)	F
56	1264.878 68(5)*	978.45	0.426E-20	P(30)	B
57	1264.935 53(5)*	979.18	0.426E-20	P(30)	C
58	1265.268 10(6)	1611.29	0.209E-21	P(32)	G
59	1265.663 82(5)*	211.97	0.130E-18	P(22)	A
60	1265.704 10(3)	237.29	0.251E-21	R(24)	T
61	1265.767 79(12)	1706.91	0.139E-21	P(35)	E
62	1265.865 47(5)*	954.01	0.466E-20	P(29)	C
63	1266.214 32(6)	1584.45	0.231E-21	P(31)	G
64	1266.418 41(3)	257.06	0.237E-21	R(25)	T
65	1266.454 88(4)*	1372.52	0.571E-21	P(14)	D
66	1266.504 60(5)	113.95	0.597E-21	P(16)	P
67	1266.574 48(5)*	193.54	0.136E-18	P(21)	A
68	1266.634 05(5)	8.10	0.212E-21	P(4)	R
69	1266.746 43(5)*	929.02	0.507E-20	P(28)	B
70	1266.792 41(5)*	929.66	0.506E-20	P(28)	C



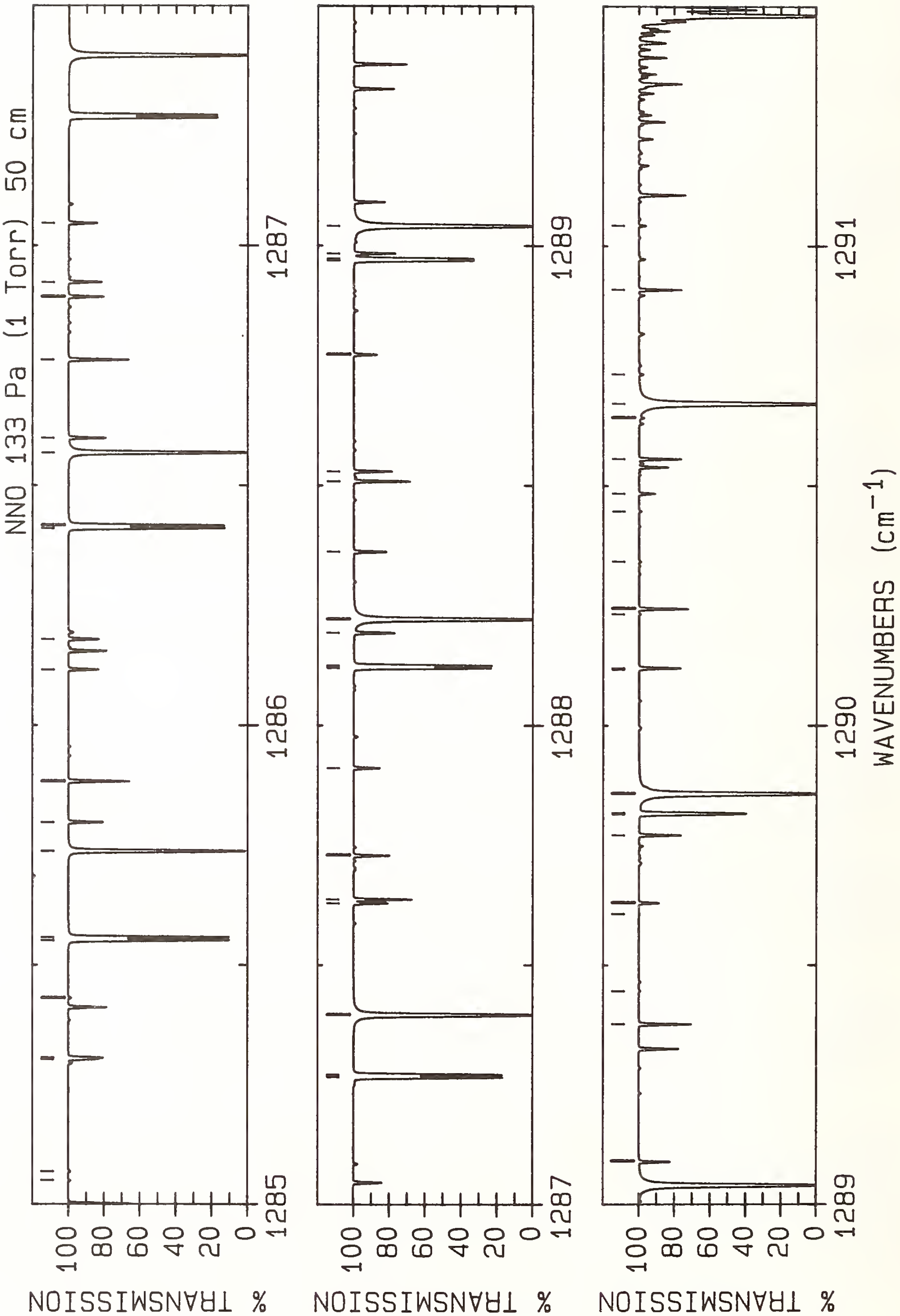
NNO 133 Pa (1 Torr) 50 m
% TRANSMISSION
100 80 60 40 20 0
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1267.157 23(6)	1558.45	0.254E-21	P(30)	G
2	1267.331 82(4)*	1360.84	0.561E-21	P(13)	D
3	1267.397 67(5)	100.55	0.598E-21	P(15)	P
4	1267.481 74(5)*	175.95	0.141E-18	P(20)	A
5	1267.675 14(11)	1648.90	0.175E-21	P(33)	F
6	1267.675 40(5)*	905.56	0.549E-20	P(27)	B
7	1267.716 36(5)*	906.16	0.548E-20	P(27)	C
8	1267.838 16(3)	298.97	0.209E-21	R(27)	T
9	1268.096 83(6)	1533.28	0.278E-21	P(29)	G
10	1268.269 38(5)	2.43	0.109E-21	P(2)	R
11	1268.385 58(5)*	159.20	0.146E-18	P(19)	A
12	1268.599 42(11)	1621.26	0.195E-21	P(32)	E
13	1268.601 09(5)*	882.94	0.590E-20	P(26)	B
14	1268.637 29(5)*	883.50	0.589E-20	P(26)	C
15	1269.033 09(6)	1508.94	0.303E-21	P(28)	G
16	1269.076 02(5)*	1339.98	0.525E-21	P(11)	D
17	1269.082 28(5)	0.81	0.549E-22	P(1)	R
18	1269.286 01(5)*	143.28	0.149E-18	P(18)	A
19	1269.523 49(5)*	861.16	0.631E-20	P(25)	B
20	1269.550 44(10)	1594.33	0.216E-21	P(31)	F
21	1269.555 20(5)*	861.67	0.631E-20	P(25)	C
22	1269.943 25(5)*	1330.80	0.500E-21	P(10)	D
23	1269.945 71(3)	367.75	0.166E-21	R(30)	T
24	1270.183 02(5)*	128.20	0.152E-18	P(17)	A
25	1270.442 60(5)*	840.21	0.672E-20	P(24)	B
26	1270.470 08(5)*	840.68	0.671E-20	P(24)	C
27	1270.471 72(10)	1568.36	0.238E-21	P(30)	E
28	1270.642 35(3)	392.26	0.152E-21	R(31)	T
29	1270.807 24(5)*	1322.45	0.468E-21	P(9)	D
30	1270.895 59(6)	1462.80	0.352E-21	P(26)	G
31	1270.933 50(5)	55.30	0.548E-21	P(11)	P
32	1271.076 60(5)*	113.96	0.153E-18	P(16)	A
33	1271.358 41(5)*	820.10	0.710E-20	P(23)	B
34	1271.381 92(5)*	820.54	0.709E-20	P(23)	C
35	1271.501 85(5)	0.81	0.110E-21	R(1)	R

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1271.667 97(5)*	1314.94	0.432E-21	P(8)	D
37	1271.821 82(6)	1440.98	0.377E-21	P(25)	G
38	1271.966 74(5)*	100.55	0.153E-18	P(15)	A
39	1272.026 84(3)	443.64	0.126E-21	R(33)	T
40	1272.270 91(5)*	800.83	0.747E-20	P(22)	B
41	1272.290 71(5)*	801.23	0.746E-20	P(22)	C
42	1272.331 62(9)	1518.81	0.285E-21	P(28)	E
43	1272.341 02(9)	1518.77	0.285E-21	P(28)	F
44	1272.525 45(5)*	1308.27	0.390E-21	P(7)	D
45	1272.744 68(6)	1420.00	0.401E-21	P(24)	G
46	1272.853 44(5)*	87.98	0.152E-18	P(14)	A
47	1273.098 93(5)	4.86	0.216E-21	R(3)	R
48	1273.180 10(5)*	782.39	0.780E-20	P(21)	B
49	1273.196 45(5)*	782.76	0.779E-20	P(21)	C
50	1273.256 91(9)	1495.29	0.309E-21	P(27)	E
51	1273.265 21(8)	1495.26	0.309E-21	P(27)	F
52	1273.379 66(5)*	1302.43	0.344E-21	P(6)	D
53	1273.546 94(6)	30.17	0.451E-21	P(8)	P
54	1273.664 17(5)	1399.85	0.424E-21	P(23)	G
55	1273.736 71(5)*	76.25	0.150E-18	P(13)	A
56	1273.892 66(5)	8.10	0.266E-21	R(4)	R
57	1274.085 98(5)*	764.79	0.810E-20	P(20)	B
58	1274.099 12(5)*	765.12	0.809E-20	P(20)	C
59	1274.230 59(5)*	1297.42	0.294E-21	P(5)	D
60	1274.410 74(6)	23.46	0.408E-21	P(7)	P
61	1274.616 51(5)*	65.36	0.146E-18	P(12)	A
62	1274.683 19(5)	12.15	0.312E-21	R(5)	R
63	1274.988 53(5)*	748.03	0.835E-20	P(19)	B
64	1274.998 72(5)*	748.33	0.834E-20	P(19)	C
65	1275.078 26(5)*	1293.25	0.240E-21	P(4)	D
66	1275.270 87(6)	17.60	0.360E-21	P(6)	P
67	1275.492 87(5)*	55.31	0.140E-18	P(11)	A
68	1275.887 75(5)*	732.11	0.856E-20	P(18)	B
69	1275.895 24(5)*	732.38	0.854E-20	P(18)	C
70	1275.922 64(5)*	1289.91	0.183E-21	P(3)	D

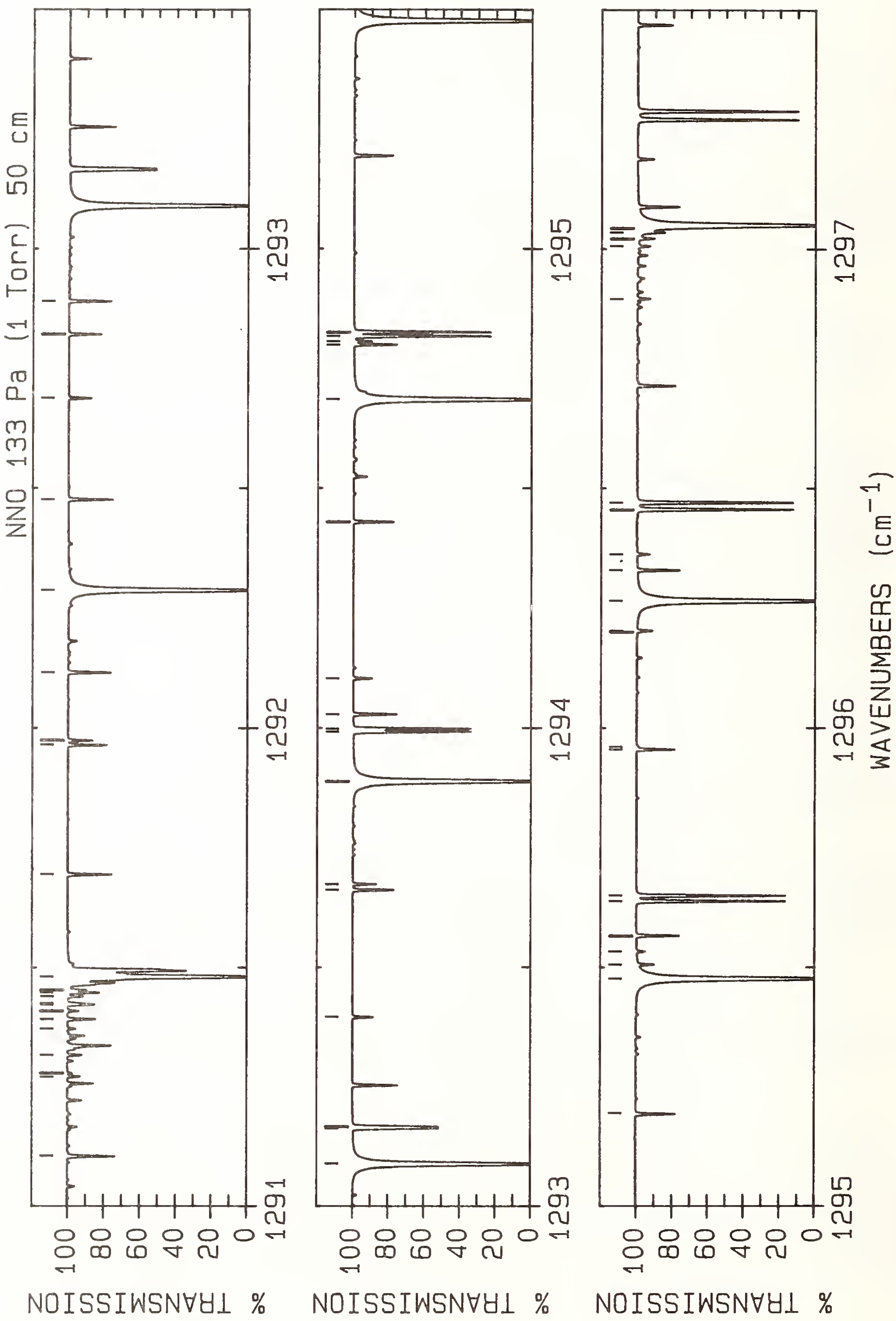

NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
1276
1277
1278
1279
1279
1280
1281
1282
1282
1283
1284
1285
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1276.127 31(6)	12.57	0.307E-21	P(5)	P
2	1276.254 61(5)	22.67	0.396E-21	R(7)	R
3	1276.365 76(5)*	46.09	0.134E-18	P(10)	A
4	1276.402 34(5)	1344.45	0.484E-21	P(20)	G
5	1276.763 73(5)*	1287.41	0.124E-21	P(2)	D
6	1276.783 63(5)*	717.02	0.870E-20	P(17)	B
7	1276.788 67(5)*	717.26	0.869E-20	P(17)	C
8	1276.980 06(6)	8.38	0.251E-21	P(4)	P
9	1277.035 50(5)	29.15	0.433E-21	R(8)	R
10	1277.235 19(5)*	37.71	0.125E-18	P(9)	A
11	1277.308 27(5)	1327.67	0.499E-21	P(19)	G
12	1277.676 17(5)*	702.77	0.878E-20	P(16)	B
13	1277.679 00(5)*	702.99	0.877E-20	P(16)	C
14	1277.813 16(5)	36.44	0.464E-21	R(9)	R
15	1278.101 15(5)*	30.17	0.116E-18	P(8)	A
16	1278.210 78(5)	1311.72	0.511E-21	P(18)	G
17	1278.565 36(5)*	689.36	0.878E-20	P(15)	B
18	1278.566 23(5)*	689.55	0.877E-20	P(15)	C
19	1278.587 61(5)	44.53	0.491E-21	R(10)	R
20	1278.674 49(6)	2.51	0.129E-21	P(2)	P
21	1278.963 63(5)*	23.46	0.105E-18	P(7)	A
22	1279.109 88(5)	1296.61	0.520E-21	P(17)	G
23	1279.267 26(5)*	1284.90	0.626E-22	R(0)	D
24	1279.358 83(5)	53.44	0.514E-21	R(11)	R
25	1279.450 35(5)*	676.95	0.870E-20	P(14)	C
26	1279.451 21(5)*	676.79	0.872E-20	P(14)	B
27	1279.646 66(8)	1354.18	0.461E-21	P(20)	E
28	1279.649 64(8)	1354.16	0.461E-21	P(20)	F
29	1279.822 63(5)*	17.60	0.922E-19	P(6)	A
30	1280.005 54(5)	1282.33	0.524E-21	P(16)	G
31	1280.126 83(5)	63.15	0.531E-21	R(12)	R
32	1280.331 35(5)*	665.20	0.856E-20	P(13)	C
33	1280.333 69(5)*	665.05	0.857E-20	P(13)	B
34	1280.678 14(5)*	12.57	0.788E-19	P(5)	A
35	1280.891 59(5)	73.68	0.544E-21	R(13)	R
36	1280.897 78(5)	1268.90	0.525E-21	P(15)	G
37	1280.919 77(5)*	1287.41	0.186E-21	R(2)	D
38	1281.209 23(5)*	654.28	0.832E-20	P(12)	C
39	1281.212 80(5)*	654.15	0.834E-20	P(12)	B
40	1281.444 14(8)	1321.41	0.487E-21	P(18)	E
41	1281.446 24(8)	1321.41	0.487E-21	P(18)	F
42	1281.530 17(5)*	8.38	0.644E-19	P(4)	A
43	1281.653 13(5)	85.01	0.552E-21	R(14)	R
44	1281.741 06(5)*	1289.91	0.244E-21	R(3)	D
45	1281.786 57(5)	1256.31	0.521E-21	P(14)	G
46	1282.018 91(6)	0.84	0.131E-21	R(1)	P
47	1282.083 98(5)*	644.20	0.801E-20	P(11)	C
48	1282.088 55(5)*	644.10	0.802E-20	P(11)	B
49	1282.378 70(5)*	5.03	0.491E-19	P(3)	A
50	1282.559 03(5)*	1293.25	0.301E-21	R(4)	D
51	1282.671 90(5)	1244.55	0.513E-21	P(13)	G
52	1282.845 73(6)	2.51	0.194E-21	R(2)	P
53	1282.955 59(5)*	634.96	0.760E-20	P(10)	C
54	1282.960 92(5)*	634.88	0.761E-20	P(10)	B
55	1283.166 49(5)	110.11	0.555E-21	R(16)	R
56	1283.223 73(5)*	2.51	0.331E-19	P(2)	A
57	1283.373 69(5)*	1297.42	0.354E-21	R(5)	D
58	1283.553 78(5)	1233.63	0.499E-21	P(12)	G
59	1283.668 83(6)	5.03	0.256E-21	R(3)	P
60	1283.824 06(5)*	626.56	0.712E-20	P(9)	C
61	1283.829 91(5)*	626.49	0.713E-20	P(9)	B
62	1283.918 31(5)	123.87	0.551E-21	R(17)	R
63	1284.065 26(5)*	0.84	0.167E-19	P(1)	A
64	1284.185 04(5)*	1302.43	0.403E-21	R(6)	D
65	1284.432 20(5)	1223.56	0.481E-21	P(11)	G
66	1284.689 38(5)*	619.00	0.654E-20	P(8)	C
67	1284.695 52(5)*	618.95	0.655E-20	P(8)	B
68	1284.993 06(5)*	1308.27	0.447E-21	R(7)	D
69	1285.001 43(10)	1265.97	0.496E-21	P(14)	E
70	1285.002 33(10)	1265.96	0.496E-21	P(14)	F

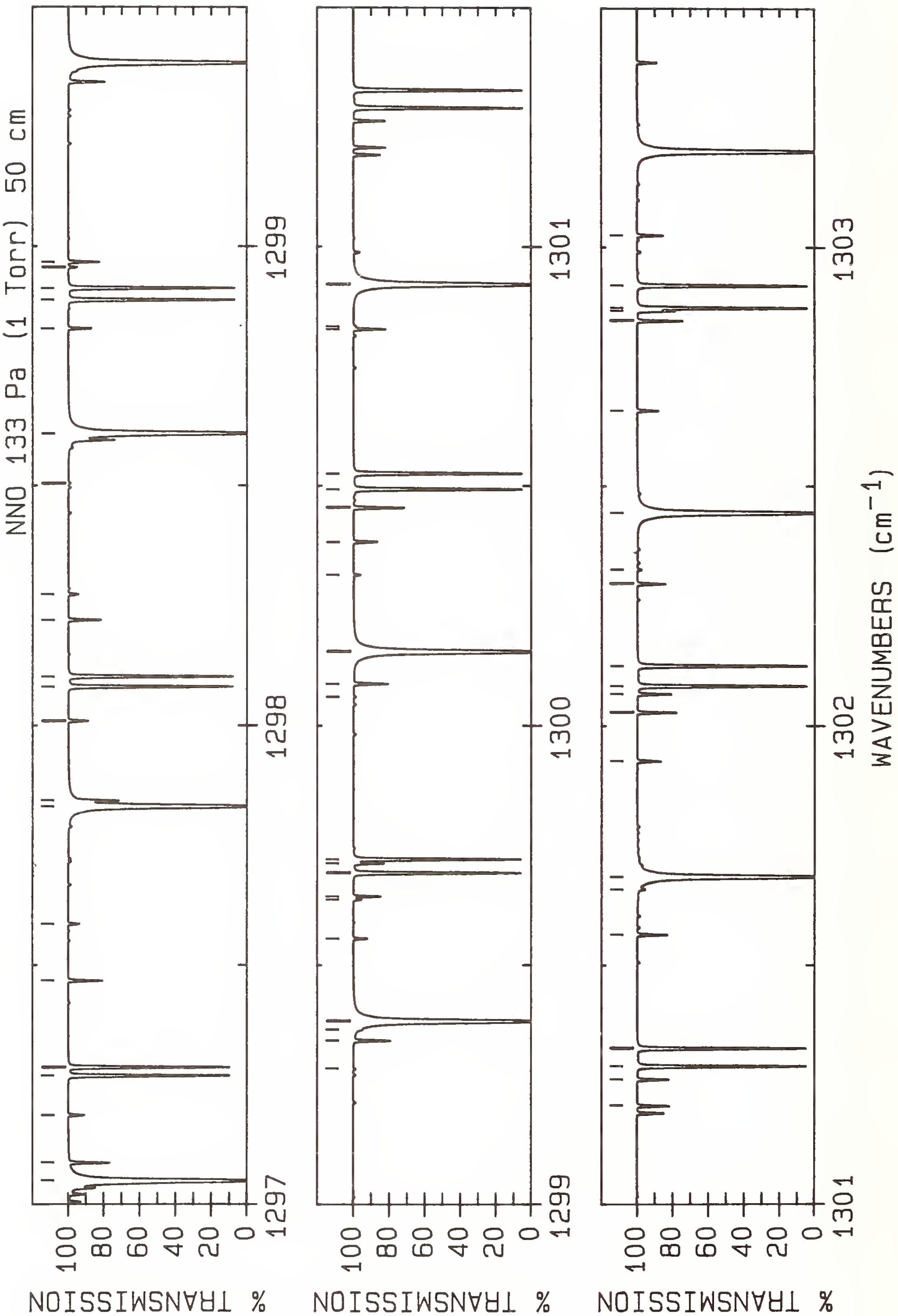

NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
1285
1286
1287
% TRANSMISSION
100 80 60 40 20 0
1287
1288
1289
% TRANSMISSION
100 80 60 40 20 0
1289
1290
1291
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1285.050 03(32)	1837.48	0.311E-22	P(14)	K
2	1285.069 41(32)	1837.17	0.312E-22	P(14)	J
3	1285.303 85(6)	12.57	0.370E-21	R(5)	P
4	1285.307 14(6)	1214.32	0.457E-21	P(10)	G
5	1285.431 34(4)	285.40	0.415E-22	R(26)	V
6	1285.551 55(5)*	612.29	0.589E-20	P(7)	C
7	1285.557 74(5)*	612.24	0.590E-20	P(7)	B
8	1285.737 79(5)*	0.00	0.168E-19	R(0)	A
9	1285.797 75(5)*	1314.94	0.487E-21	R(8)	D
10	1285.882 88(10)	1254.20	0.487E-21	P(13)	E
11	1285.883 59(10)	1254.20	0.487E-21	P(13)	F
12	1286.115 77(6)	17.60	0.421E-21	R(6)	P
13	1286.178 60(6)	1205.92	0.429E-21	P(9)	G
14	1286.410 55(5)*	606.41	0.516E-20	P(6)	C
15	1286.416 56(5)*	606.37	0.516E-20	P(6)	B
16	1286.568 79(5)*	0.84	0.334E-19	R(1)	A
17	1286.599 12(5)*	1322.45	0.522E-21	R(9)	D
18	1286.761 19(11)	1243.28	0.473E-21	P(12)	E
19	1286.761 73(11)	1243.28	0.473E-21	P(12)	F
20	1286.893 19(5)	187.01	0.498E-21	R(21)	R
21	1286.923 94(5)	23.46	0.468E-21	R(7)	P
22	1287.046 57(6)	1198.37	0.396E-21	P(8)	G
23	1287.266 39(5)*	601.37	0.435E-20	P(5)	C
24	1287.271 98(5)*	601.34	0.436E-20	P(5)	B
25	1287.396 26(5)*	2.51	0.498E-19	R(2)	A
26	1287.397 16(5)*	1330.80	0.552E-21	R(10)	D
27	1287.628 80(5)	204.82	0.478E-21	R(22)	R
28	1287.636 33(11)	1233.20	0.454E-21	P(11)	E
29	1287.636 74(11)	1233.20	0.454E-21	P(11)	F
30	1287.728 37(5)	30.17	0.510E-21	R(8)	P
31	1287.911 05(6)	1191.65	0.358E-21	P(7)	G
32	1288.119 06(5)*	597.17	0.347E-20	P(4)	C
33	1288.124 00(5)*	597.15	0.348E-20	P(4)	B
34	1288.191 87(4)*	1339.98	0.576E-21	R(11)	D
35	1288.220 21(5)*	5.03	0.656E-19	R(3)	A

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1288.361 16(6)	223.43	0.456E-21	R(23)	R
37	1288.508 32(11)	1223.96	0.429E-21	P(10)	E
38	1288.508 62(11)	1223.96	0.429E-21	P(10)	F
39	1288.529 06(5)	37.71	0.546E-21	R(9)	P
40	1288.772 03(6)	1185.77	0.316E-21	P(6)	G
41	1288.968 56(5)*	593.81	0.251E-20	P(3)	C
42	1288.972 61(5)*	593.80	0.251E-20	P(3)	B
43	1288.983 24(4)*	1349.99	0.594E-21	R(12)	D
44	1289.040 63(5)*	8.38	0.807E-19	R(4)	A
45	1289.090 27(6)	242.85	0.433E-21	R(24)	R
46	1289.377 14(12)	1215.56	0.399E-21	P(9)	E
47	1289.377 36(12)	1215.55	0.399E-21	P(9)	F
48	1289.446 24(36)	1786.96	0.255E-22	P(9)	K
49	1289.606 55(5)*	906.16	0.149E-22	Q(27)	C
50	1289.629 50(6)	1180.73	0.270E-21	P(5)	G
51	1289.771 29(4)*	1360.84	0.607E-21	R(13)	D
52	1289.814 87(5)*	591.29	0.143E-20	P(2)	C
53	1289.816 14(6)	263.09	0.409E-21	R(25)	R
54	1289.817 81(5)*	591.28	0.143E-20	P(2)	B
55	1289.857 52(5)*	12.57	0.949E-19	R(5)	A
56	1290.116 40(5)*	820.54	0.265E-22	Q(23)	C
57	1290.119 18(5)	55.30	0.602E-21	R(11)	P
58	1290.231 41(5)*	801.23	0.304E-22	Q(22)	C
59	1290.242 81(12)	1207.99	0.363E-21	P(8)	E
60	1290.242 95(12)	1207.99	0.363E-21	P(8)	F
61	1290.341 45(5)*	782.76	0.348E-22	Q(21)	C
62	1290.446 51(5)*	765.12	0.398E-22	Q(20)	C
63	1290.483 46(6)	1176.53	0.220E-21	P(4)	G
64	1290.556 00(4)*	1372.52	0.615E-21	R(14)	D
65	1290.641 65(5)*	732.38	0.518E-22	Q(18)	C
66	1290.670 88(5)*	17.60	0.108E-18	R(6)	A
67	1290.731 73(5)*	717.26	0.590E-22	Q(17)	C
68	1290.908 60(5)	65.36	0.621E-21	R(12)	P
69	1291.042 12(5)*	665.20	0.986E-22	Q(13)	C

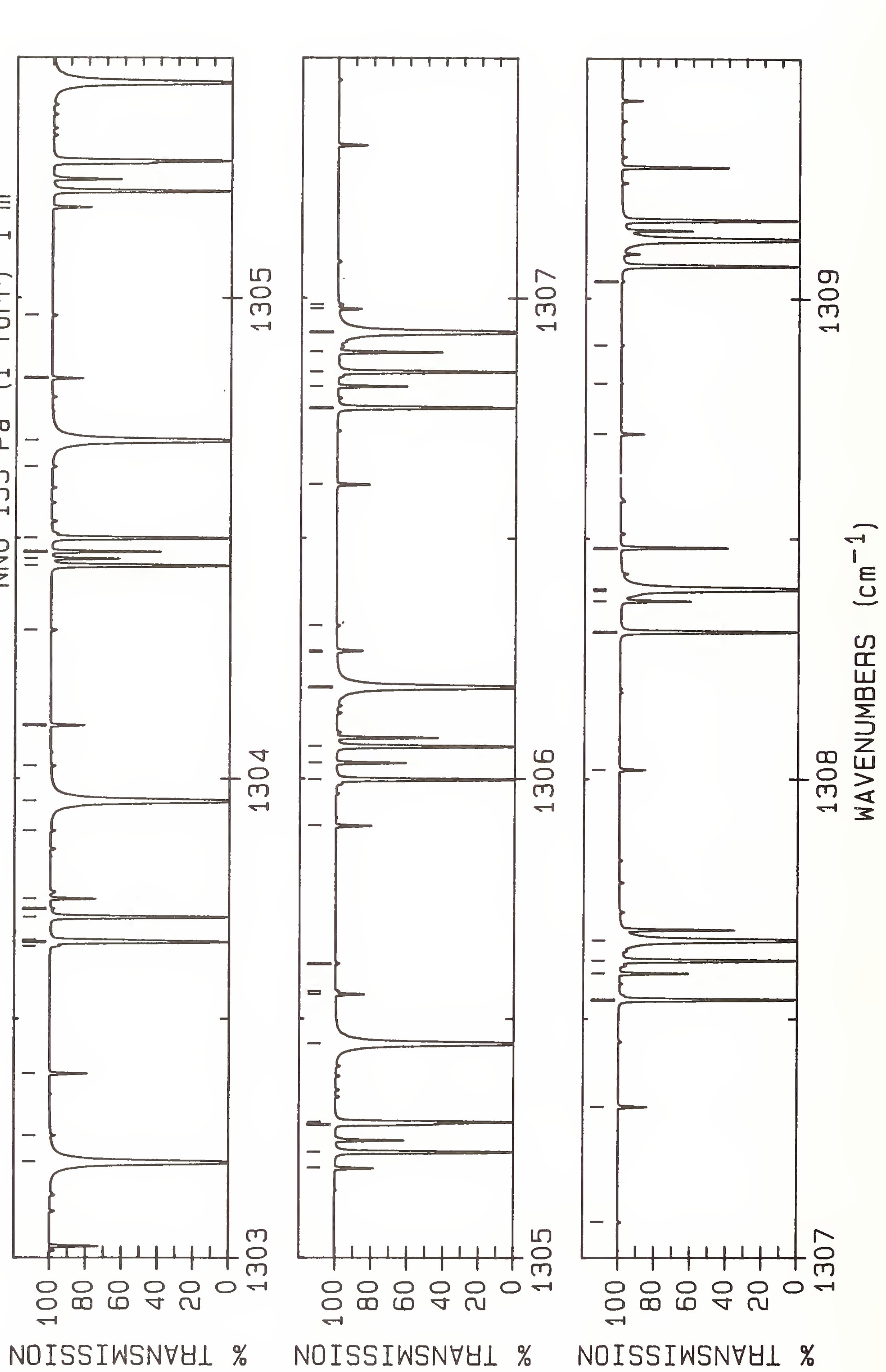

NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
1291
1292
1293
1294
1295
1296
1297
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1291.105 30(12)	1201.27	0.322E-21	P(7)	E	36	1293.992 43(5)*	591.28	0.255E-20	R(2)	B
2	1291.105 40(12)	1201.27	0.322E-21	P(7)	F	37	1293.998 58(5)*	591.29	0.255E-20	R(2)	C
3	1291.107 22(5)*	654.28	0.112E-21	Q(12)	C	38	1294.028 64(5)	113.95	0.641E-21	R(16)	P
4	1291.272 49(5)*	626.56	0.170E-21	Q(9)	C	39	1294.103 05(6)	401.46	0.260E-21	R(31)	R
5	1291.279 47(5)*	702.77	0.672E-22	Q(16)	B	40	1294.429 51(5)*	1443.43	0.582E-21	R(19)	D
6	1291.317 58(5)*	619.00	0.197E-21	Q(8)	C	41	1294.684 49(5)*	55.31	0.154E-18	R(11)	A
7	1291.372 52(5)*	654.15	0.113E-21	Q(12)	B	42	1294.799 22(5)	128.19	0.633E-21	R(17)	P
8	1291.391 80(5)*	644.10	0.128E-21	Q(11)	B	43	1294.806 15(6)	427.35	0.237E-21	R(32)	R
9	1291.392 72(5)*	606.41	0.274E-21	Q(6)	C	44	1294.817 05(5)*	593.80	0.354E-20	R(3)	B
10	1291.409 47(5)*	634.88	0.147E-21	Q(10)	B	45	1294.825 72(5)*	593.81	0.354E-20	R(3)	C
11	1291.422 78(5)*	601.37	0.333E-21	Q(5)	C	46	1295.194 21(5)*	1460.12	0.564E-21	R(20)	D
12	1291.425 55(5)*	626.49	0.170E-21	Q(9)	B	47	1295.476 56(5)*	65.36	0.159E-18	R(12)	A
13	1291.440 02(5)*	618.95	0.197E-21	Q(8)	B	48	1295.506 01(6)	454.04	0.214E-21	R(33)	R
14	1291.447 83(5)*	597.17	0.417E-21	Q(4)	C	49	1295.533 06(6)	1168.97	0.114E-21	R(1)	G
15	1291.452 88(5)*	612.24	0.231E-21	Q(7)	B	50	1295.566 01(5)	143.27	0.621E-21	R(18)	P
16	1291.480 69(5)*	23.46	0.120E-18	R(7)	A	51	1295.638 23(5)*	597.15	0.446E-20	R(4)	B
17	1291.694 26(5)	76.25	0.634E-21	R(13)	P	52	1295.649 65(5)*	597.17	0.445E-20	R(4)	C
18	1291.964 63(13)	1195.39	0.275E-21	P(6)	E	53	1295.955 57(5)*	1477.64	0.542E-21	R(21)	D
19	1291.964 69(13)	1195.39	0.275E-21	P(6)	F	54	1295.961 1	808.84	0.267E-22	R(23)	S
20	1291.974 22(6)	328.64	0.333E-21	R(28)	R	55	1296.200 25(7)	1945.53	0.339E-22	R(12)	I
21	1292.115 41(4)*	1398.38	0.615E-21	R(16)	D	56	1296.202 61(6)	481.55	0.193E-21	R(34)	R
22	1292.286 96(5)*	30.17	0.131E-18	R(8)	A	57	1296.265 07(5)*	76.25	0.163E-18	R(13)	A
23	1292.476 16(5)	87.98	0.642E-21	R(14)	P	58	1296.329 02(5)	159.19	0.605E-21	R(19)	P
24	1292.687 08(6)	352.10	0.308E-21	R(29)	R	59	1296.362 25(6)	1170.65	0.170E-21	R(2)	G
25	1292.820 78(13)	1190.35	0.223E-21	P(5)	E	60	1296.455 97(5)*	601.34	0.531E-20	R(5)	B
26	1292.820 82(13)	1190.35	0.223E-21	P(5)	F	61	1296.470 36(5)*	601.37	0.531E-20	R(5)	C
27	1292.890 11(5)*	1412.57	0.608E-21	R(17)	D	62	1296.895 97(6)	509.86	0.174E-21	R(35)	R
28	1293.089 69(5)*	37.71	0.140E-18	R(9)	A	63	1297.005 99(13)	1190.35	0.779E-22	Q(5)	E
29	1293.164 37(5)*	589.61	0.145E-20	R(1)	B	64	1297.006 09(13)	1190.35	0.779E-22	Q(5)	F
30	1293.168 23(5)*	589.61	0.144E-20	R(1)	C	65	1297.021 97(13)	1186.15	0.976E-22	Q(4)	E
31	1293.396 69(6)	376.38	0.284E-21	R(30)	R	66	1297.022 01(13)	1186.15	0.976E-22	Q(4)	F
32	1293.661 48(5)*	1427.58	0.597E-21	R(18)	D	67	1297.034 74(13)	1182.79	0.129E-21	Q(3)	E
33	1293.673 77(13)	1186.15	0.162E-21	P(4)	E	68	1297.034 75(13)	1182.79	0.129E-21	Q(3)	F
34	1293.673 78(13)	1186.15	0.162E-21	P(4)	F	69	1297.044 31(13)	1180.27	0.186E-21	Q(2)	E
35	1293.888 87(5)*	46.09	0.148E-18	R(10)	A	70	1297.044 31(13)	1180.27	0.186E-21	Q(2)	F



NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
1297
1298
1299
1301
1300
1303
1302
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1297.050 02(5)*	87.98	0.165E-18	R(14)	A
2	1297.088 24(5)	175.94	0.586E-21	R(20)	P
3	1297.187 88(6)	1173.17	0.224E-21	R(3)	G
4	1297.270 25(5)*	606.37	0.610E-20	R(6)	B
5	1297.287 87(5)*	606.41	0.609E-20	R(6)	C
6	1297.468 29(5)*	1515.18	0.493E-21	R(23)	D
7	1297.586 08(7)	538.98	0.155E-21	R(36)	R
8	1297.831 40(5)*	100.55	0.165E-18	R(15)	A
9	1297.843 66(5)	193.53	0.563E-21	R(21)	P
10	1298.009 93(6)	1176.53	0.275E-21	R(4)	G
11	1298.081 08(5)*	612.24	0.681E-20	R(7)	B
12	1298.102 15(5)*	612.29	0.680E-20	R(7)	C
13	1298.219 66(5)*	1535.19	0.466E-21	R(24)	D
14	1298.272 94(7)	568.91	0.138E-21	R(37)	R
15	1298.504 61(6)	1980.45	0.353E-22	R(15)	H
16	1298.609 21(5)*	113.96	0.164E-18	R(16)	A
17	1298.828 42(6)	1180.73	0.324E-21	R(5)	G
18	1298.888 45(5)*	618.95	0.744E-20	R(8)	B
19	1298.913 21(5)*	619.00	0.742E-20	R(8)	C
20	1298.956 56(7)	599.64	0.122E-21	R(38)	R
21	1298.967 70(5)*	1556.05	0.438E-21	R(25)	D
22	1299.284 07(6)	1993.80	0.352E-22	R(16)	H
23	1299.343 13(5)	231.22	0.511E-21	R(23)	P
24	1299.365 89(6)	1994.05	0.351E-22	R(16)	I
25	1299.383 46(5)*	128.20	0.163E-18	R(17)	A
26	1299.555 48(13)	1180.27	0.932E-22	R(2)	F
27	1299.555 49(13)	1180.27	0.932E-22	R(2)	E
28	1299.636 93(7)	631.18	0.108E-21	R(39)	R
29	1299.643 33(6)	1185.77	0.368E-21	R(6)	G
30	1299.692 36(5)*	626.49	0.799E-20	R(9)	B
31	1299.712 41(6)*	1577.73	0.410E-21	R(26)	D
32	1299.721 05(5)*	626.56	0.797E-20	R(9)	C
33	1300.060 25(6)	2007.99	0.348E-22	R(17)	H
34	1300.087 15(5)	251.32	0.483E-21	R(24)	P
35	1300.154 13(5)*	143.28	0.159E-18	R(18)	A
36	1300.314 06(7)	663.53	0.948E-22	R(40)	R
37	1300.382 95(13)	1182.79	0.166E-21	R(3)	F
38	1300.382 96(13)	1182.79	0.166E-21	R(3)	E
39	1300.453 79(6)*	1600.25	0.381E-21	R(27)	D
40	1300.454 65(6)	1191.65	0.409E-21	R(7)	G
41	1300.492 81(5)*	634.88	0.845E-20	R(10)	B
42	1300.525 65(5)*	634.96	0.843E-20	R(10)	C
43	1300.827 37(5)	272.26	0.454E-21	R(25)	P
44	1300.833 15(6)	2023.02	0.341E-22	R(18)	H
45	1300.921 23(5)*	159.20	0.155E-18	R(19)	A
46	1301.207 22(13)	1186.15	0.228E-21	R(4)	F
47	1301.207 24(13)	1186.15	0.228E-21	R(4)	E
48	1301.262 39(6)	1198.37	0.445E-21	R(8)	G
49	1301.289 78(5)*	644.10	0.882E-20	R(11)	B
50	1301.327 03(5)*	644.20	0.881E-20	R(11)	C
51	1301.563 78(5)	294.04	0.424E-21	R(26)	P
52	1301.658 60(7)	730.64	0.721E-22	R(42)	R
53	1301.684 74(5)*	175.95	0.150E-18	R(20)	A
54	1301.926 62(6)*	1647.79	0.324E-21	R(29)	D
55	1302.028 27(12)	1190.35	0.284E-21	R(5)	F
56	1302.028 31(12)	1190.35	0.284E-21	R(5)	E
57	1302.066 53(5)	1205.92	0.477E-21	R(9)	G
58	1302.083 29(5)*	654.15	0.911E-20	R(12)	B
59	1302.125 18(5)*	654.28	0.910E-20	R(12)	C
60	1302.296 37(5)	316.65	0.393E-21	R(27)	P
61	1302.326 02(7)	765.40	0.625E-22	R(43)	R
62	1302.444 68(5)*	193.54	0.145E-18	R(21)	A
63	1302.658 06(6)*	1672.80	0.297E-21	R(30)	D
64	1302.846 12(12)	1195.39	0.334E-21	R(6)	F
65	1302.846 17(12)	1195.39	0.334E-21	R(6)	E
66	1302.867 08(5)	1214.32	0.503E-21	R(10)	G
67	1302.873 32(5)*	665.05	0.932E-20	R(13)	B
68	1302.920 10(5)*	665.20	0.930E-20	R(13)	C
69	1303.025 15(5)	340.10	0.364E-21	R(28)	P


NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
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80
60
40
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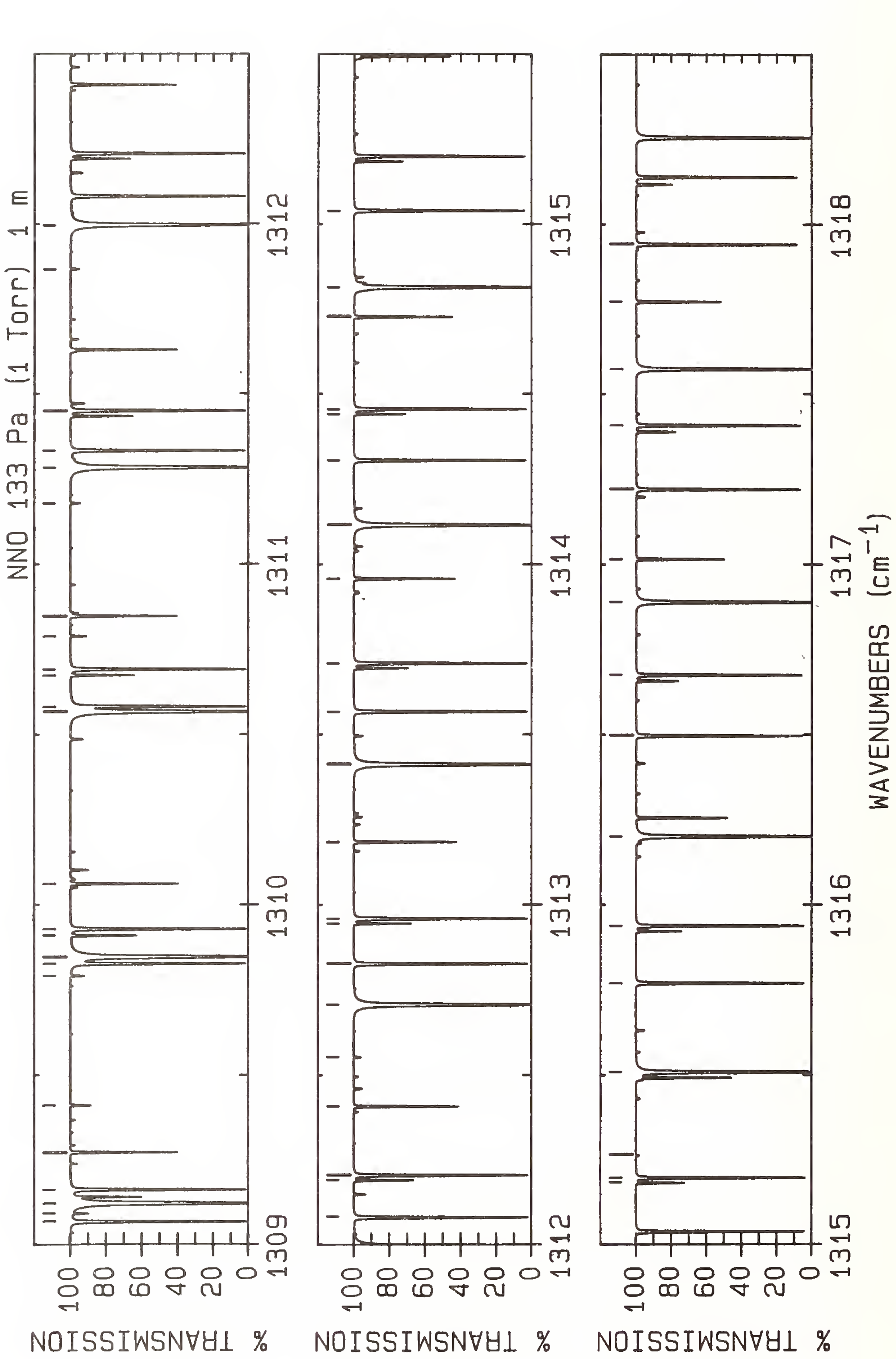
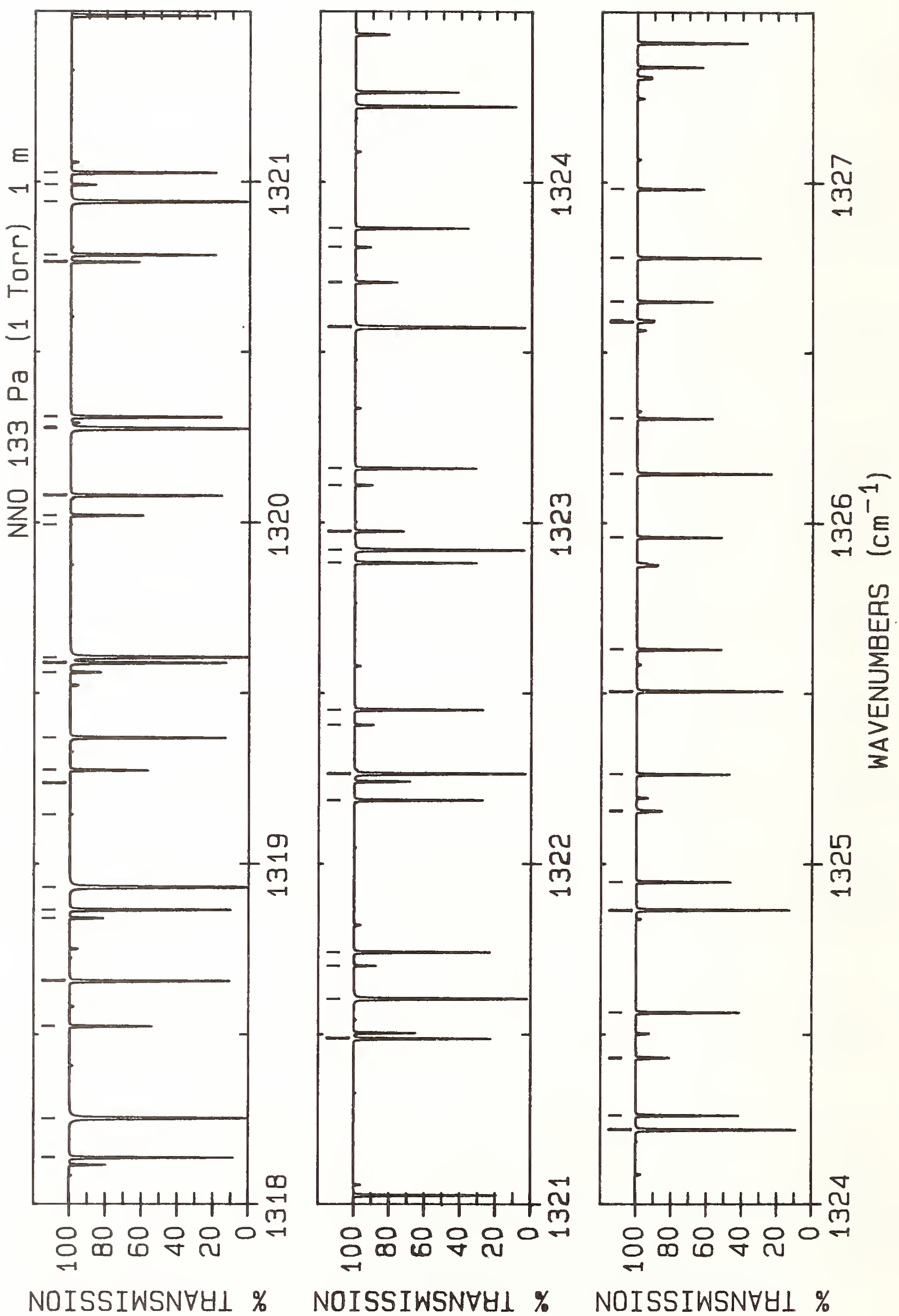
0
1303
1304
1305
% TRANSMISSION
100
80
60
40
20
0
1305
1306
1307
% TRANSMISSION
100
80
60
40
20
0
1307
1308
1309
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1303.201 04(5)*	211.97	0.138E-18	R(22)	A	36	1305.901 99(5)	442.25	0.251E-21	R(32)	P
2	1303.257 13(6)	2073.52	0.310E-22	R(21)	I	37	1305.998 64(5)*	717.02	0.932E-20	R(17)	B
3	1303.386 19(6)*	1698.65	0.270E-21	R(31)	D	38	1306.033 21(5)	1256.31	0.559E-21	R(14)	G
4	1303.651 16(7)	837.35	0.463E-22	R(45)	R	39	1306.067 39(5)*	717.26	0.930E-20	R(17)	C
5	1303.659 87(5)*	676.79	0.943E-20	R(14)	B	40	1306.190 59(5)*	294.06	0.109E-18	R(26)	A
6	1303.660 75(12)	1201.27	0.379E-21	R(7)	F	41	1306.262 75(8)	990.92	0.241E-22	R(49)	R
7	1303.660 83(12)	1201.27	0.379E-21	R(7)	E	42	1306.265 73(6)*	1810.37	0.177E-21	R(35)	D
8	1303.664 02(5)	1223.56	0.525E-21	R(11)	G	43	1306.317 69(7)	2152.14	0.250E-22	R(25)	I
9	1303.711 78(5)*	676.95	0.942E-20	R(14)	C	44	1306.611 62(5)	469.88	0.226E-21	R(33)	P
10	1303.729 10(36)	1772.56	0.243E-22	R(7)	J	45	1306.771 26(5)*	732.11	0.914E-20	R(18)	B
11	1303.750 10(5)	364.38	0.334E-21	R(29)	P	46	1306.815 71(5)	1268.90	0.560E-21	R(15)	G
12	1303.891 86(6)	2091.46	0.297E-22	R(22)	H	47	1306.846 12(5)*	732.38	0.913E-20	R(18)	C
13	1303.953 81(5)*	231.24	0.131E-18	R(23)	A	48	1306.887 05(10)	1233.20	0.504E-21	R(11)	F
14	1304.026 62(6)	2091.92	0.296E-22	R(22)	I	49	1306.887 28(10)	1233.20	0.504E-21	R(11)	E
15	1304.111 01(6)*	1725.33	0.245E-21	R(32)	D	50	1306.929 01(5)*	316.67	0.101E-18	R(27)	A
16	1304.308 89(7)	874.54	0.396E-22	R(46)	R	51	1306.977 39(6)*	1840.38	0.157E-21	R(36)	D
17	1304.442 95(5)*	689.36	0.947E-20	R(15)	B	52	1306.986 48(32)	1804.64	0.315E-22	R(11)	K
18	1304.457 36(5)	1233.63	0.541E-21	R(12)	G	53	1307.075 59(7)	2173.88	0.233E-22	R(26)	I
19	1304.471 23(5)	389.50	0.305E-21	R(30)	P	54	1307.317 42(5)	498.34	0.203E-21	R(34)	P
20	1304.472 16(11)	1207.99	0.418E-21	R(8)	F	55	1307.540 38(5)*	748.03	0.891E-20	R(19)	B
21	1304.472 27(11)	1207.99	0.418E-21	R(8)	E	56	1307.594 59(5)	1282.33	0.557E-21	R(16)	G
22	1304.500 22(5)*	689.55	0.945E-20	R(15)	C	57	1307.621 60(5)*	748.33	0.889E-20	R(19)	C
23	1304.648 32(7)	2110.65	0.282E-22	R(23)	H	58	1307.663 83(5)*	340.12	0.934E-19	R(28)	A
24	1304.702 99(5)*	251.34	0.124E-18	R(24)	A	59	1308.019 37(6)	527.64	0.181E-21	R(35)	P
25	1304.832 54(6)*	1752.85	0.221E-21	R(33)	D	60	1308.306 01(5)*	764.79	0.862E-20	R(20)	B
26	1304.963 39(8)	912.53	0.337E-22	R(47)	R	61	1308.369 84(5)	1296.61	0.550E-21	R(17)	G
27	1305.188 53(5)	415.46	0.278E-21	R(31)	P	62	1308.390 91(7)*	1902.90	0.122E-21	R(38)	D
28	1305.222 54(5)*	702.77	0.943E-20	R(16)	B	63	1308.393 84(5)*	765.12	0.861E-20	R(20)	C
29	1305.280 35(11)	1215.55	0.452E-21	R(9)	F	64	1308.395 05(5)*	364.41	0.859E-19	R(29)	A
30	1305.280 49(11)	1215.56	0.452E-21	R(9)	E	65	1308.480 84(9)	1254.20	0.534E-21	R(13)	F
31	1305.285 42(5)*	702.99	0.941E-20	R(16)	C	66	1308.481 16(9)	1254.20	0.534E-21	R(13)	E
32	1305.448 59(5)*	272.28	0.116E-18	R(25)	A	67	1308.717 47(6)	557.77	0.161E-21	R(36)	P
33	1305.550 78(6)*	1781.19	0.198E-21	R(34)	D	68	1308.822 98(8)	1157.36	0.117E-22	R(53)	R
34	1305.556 90(7)	2131.23	0.266E-22	R(24)	I	69	1308.902 2	965.05	0.187E-22	R(30)	N
35	1305.614 68(8)	951.32	0.286E-22	R(48)	R	70	1309.036 0	965.80	0.186E-22	R(30)	O


NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1309 1310 1311 1312
1312 1313 1314 1315
1315 1316 1317 1318
WAVENUMBERS (cm-1)

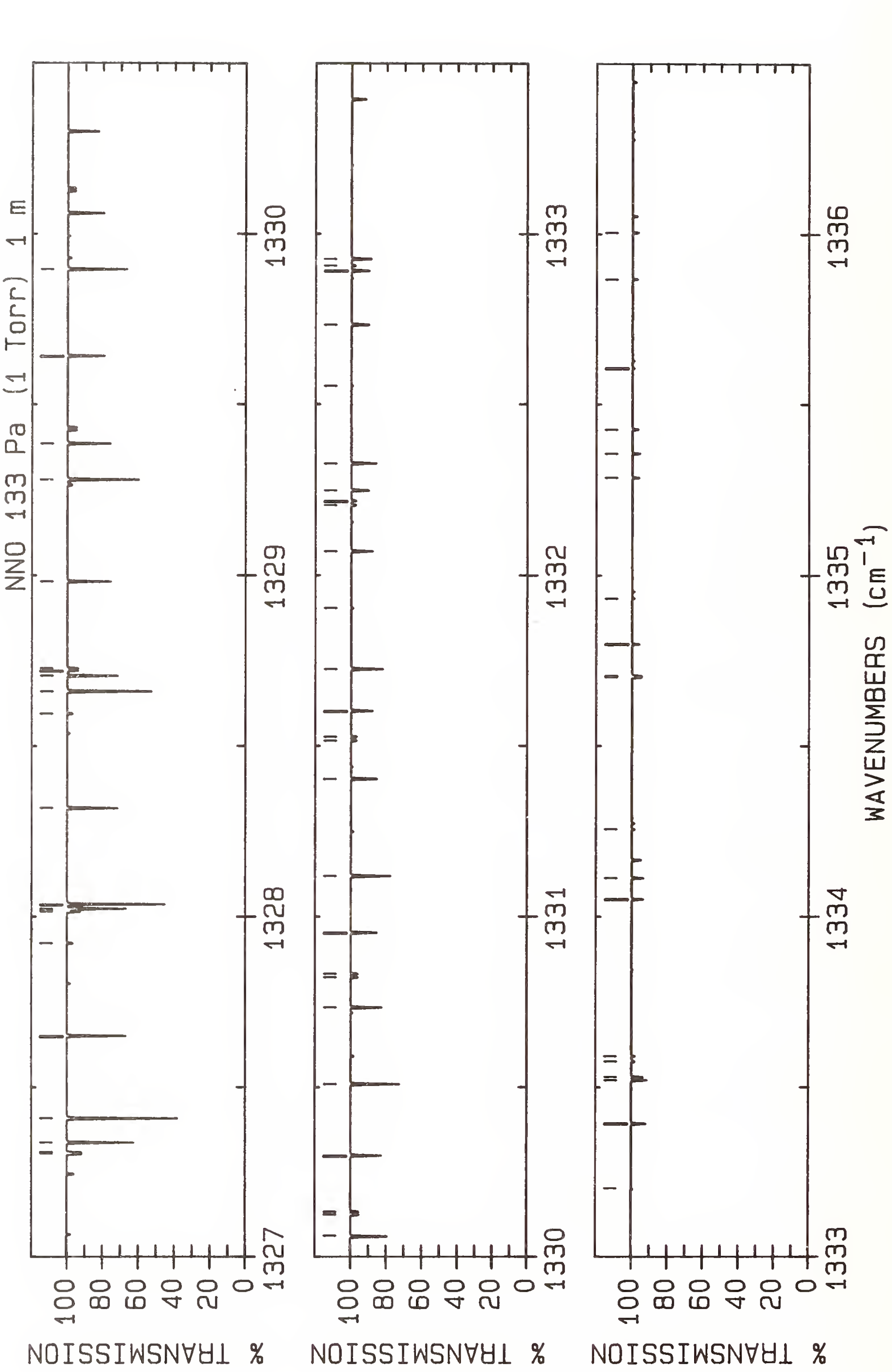
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1309.068 14(5)*	782.39	0.829E-20	R(21)	B
2	1309.092 77(7)*	1935.40	0.107E-21	R(39)	D
3	1309.122 69(5)*	389.53	0.785E-19	R(30)	A
4	1309.162 85(5)*	782.76	0.827E-20	R(21)	C
5	1309.272 89(9)	1265.96	0.541E-21	R(14)	F
6	1309.273 25(9)	1265.97	0.541E-21	R(14)	E
7	1309.411 73(6)	588.74	0.142E-21	R(37)	P
8	1309.791 38(7)*	1968.74	0.935E-22	R(40)	D
9	1309.826 78(5)*	800.83	0.792E-20	R(22)	B
10	1309.846 72(5)*	415.49	0.715E-19	R(31)	A
11	1309.909 45(5)	1327.67	0.525E-21	R(19)	G
12	1309.928 61(5)*	801.23	0.791E-20	R(22)	C
13	1310.061 70(9)	1278.56	0.544E-21	R(15)	F
14	1310.062 10(9)	1278.57	0.544E-21	R(15)	E
15	1310.567 15(5)*	442.28	0.647E-19	R(32)	A
16	1310.581 92(5)*	820.10	0.753E-20	R(23)	B
17	1310.673 81(5)	1344.45	0.508E-21	R(20)	G
18	1310.691 12(5)*	820.54	0.751E-20	R(23)	C
19	1310.788 69(6)	653.18	0.109E-21	R(39)	P
20	1310.847 27(8)	1292.01	0.542E-21	R(16)	F
21	1310.847 72(8)	1292.01	0.542E-21	R(16)	E
22	1311.178 89(7)*	2037.90	0.701E-22	R(42)	D
23	1311.283 99(5)*	469.91	0.583E-19	R(33)	A
24	1311.333 55(5)*	840.21	0.711E-20	R(24)	B
25	1311.450 40(5)*	840.68	0.710E-20	R(24)	C
26	1311.867 80(7)*	2073.73	0.603E-22	R(43)	D
27	1311.997 23(5)*	498.37	0.522E-19	R(34)	A
28	1312.081 68(5)*	861.16	0.668E-20	R(25)	B
29	1312.191 61(6)	1380.55	0.466E-21	R(22)	G
30	1312.206 44(5)*	861.67	0.666E-20	R(25)	C
31	1312.408 70(8)	1321.41	0.525E-21	R(18)	F
32	1312.409 21(8)	1321.41	0.525E-21	R(18)	E
33	1312.553 50(7)*	2110.39	0.516E-22	R(44)	D
34	1312.706 87(5)*	527.67	0.466E-19	R(35)	A
35	1312.826 30(5)*	882.94	0.623E-20	R(26)	B
36	1312.945 05(6)	1399.85	0.442E-21	R(23)	G
37	1312.959 23(5)*	883.50	0.622E-20	R(26)	C
38	1313.184 55(7)	1337.37	0.512E-21	R(19)	F
39	1313.185 09(8)	1337.38	0.511E-21	R(19)	E
40	1313.412 90(5)*	557.81	0.413E-19	R(36)	A
41	1313.567 41(5)*	905.56	0.579E-20	R(27)	B
42	1313.708 79(5)*	906.16	0.578E-20	R(27)	C
43	1313.957 16(7)	1354.16	0.495E-21	R(20)	F
44	1313.957 71(7)	1354.18	0.495E-21	R(20)	E
45	1314.115 34(5)*	588.78	0.365E-19	R(37)	A
46	1314.305 01(5)*	929.02	0.535E-20	R(28)	B
47	1314.440 98(6)	1440.98	0.392E-21	R(25)	G
48	1314.455 11(5)*	929.66	0.534E-20	R(28)	C
49	1314.726 52(7)	1371.80	0.475E-21	R(21)	F
50	1314.727 07(8)	1371.82	0.475E-21	R(21)	E
51	1314.814 18(5)*	620.59	0.321E-19	R(38)	A
52	1315.039 11(5)*	953.32	0.492E-20	R(29)	B
53	1315.183 48(6)	1462.80	0.366E-21	R(26)	G
54	1315.198 19(5)*	954.01	0.490E-20	R(29)	C
55	1315.264 38(7)*	2265.33	0.265E-22	R(48)	D
56	1315.509 41(5)*	653.23	0.281E-19	R(39)	A
57	1315.769 68(5)*	978.45	0.449E-20	R(30)	B
58	1315.938 04(5)*	979.18	0.448E-20	R(30)	C
59	1316.201 05(5)*	686.70	0.244E-19	R(40)	A
60	1316.496 75(5)*	1004.42	0.409E-20	R(31)	B
61	1316.674 66(5)*	1005.20	0.408E-20	R(31)	C
62	1316.889 09(5)*	721.01	0.212E-19	R(41)	A
63	1317.015 15(8)	1429.76	0.406E-21	R(24)	F
64	1317.015 57(8)	1429.78	0.406E-21	R(24)	E
65	1317.220 30(5)*	1031.22	0.370E-20	R(32)	B
66	1317.408 04(5)*	1032.06	0.369E-20	R(32)	C
67	1317.573 52(5)*	756.16	0.183E-19	R(42)	A
68	1317.771 53(8)	1450.75	0.381E-21	R(25)	F
69	1317.771 87(9)	1450.78	0.381E-21	R(25)	E
70	1317.940 33(5)*	1058.86	0.333E-20	R(33)	B



NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100 80 60 40 20 0
1318 1319 1320 1321
1321 1322 1323 1324
1324 1325 1326 1327
WAVENUMBERS (cm^{-1})

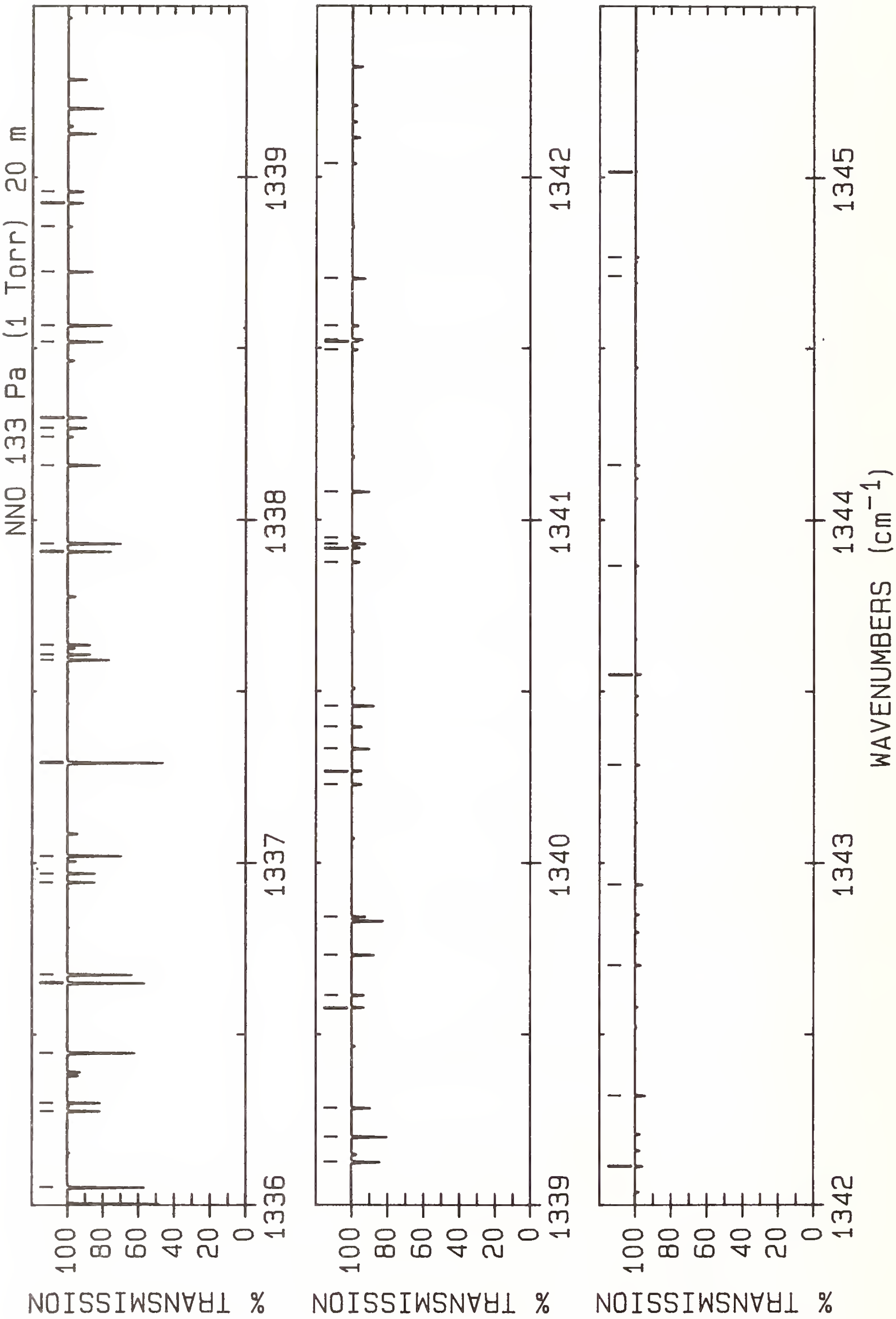
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1318.138 20(5)*	1059.75	0.332E-20	R(33)	C
2	1318.254 36(5)*	792.14	0.157E-19	R(43)	A
3	1318.524 66(9)	1472.58	0.355E-21	R(26)	F
4	1318.524 89(9)	1472.61	0.355E-21	R(26)	E
5	1318.656 85(5)*	1087.34	0.298E-20	R(34)	B
6	1318.841 12(6)	1584.45	0.239E-21	R(31)	G
7	1318.865 14(5)*	1088.28	0.298E-20	R(34)	C
8	1318.931 60(5)*	828.95	0.134E-19	R(44)	A
9	1319.144 93(35)	2066.15	0.207E-22	R(27)	J
10	1319.236 41(8)*	2522.63	0.855E-23	R(54)	D
11	1319.274 55(9)	1495.26	0.329E-21	R(27)	F
12	1319.274 63(9)	1495.29	0.329E-21	R(27)	E
13	1319.369 85(5)*	1116.65	0.266E-20	R(35)	B
14	1319.561 67(6)	1611.29	0.216E-21	R(32)	G
15	1319.588 85(5)*	1117.64	0.265E-20	R(35)	C
16	1319.605 25(5)*	866.60	0.114E-19	R(45)	A
17	1319.994 11(8)	1197.68	0.103E-22	R(53)	P
18	1320.021 08(10)	1518.81	0.304E-21	R(28)	E
19	1320.021 20(9)	1518.77	0.304E-21	R(28)	F
20	1320.079 33(5)*	1146.80	0.236E-20	R(36)	B
21	1320.275 30(5)*	905.08	0.968E-20	R(46)	A
22	1320.278 56(6)	1638.97	0.194E-21	R(33)	G
23	1320.309 34(5)*	1147.85	0.235E-20	R(36)	C
24	1320.764 25(10)	1543.16	0.279E-21	R(29)	E
25	1320.764 59(10)	1543.12	0.279E-21	R(29)	F
26	1320.785 29(5)*	1177.78	0.208E-20	R(37)	B
27	1320.941 76(5)*	944.39	0.816E-20	R(47)	A
28	1320.991 78(6)	1667.49	0.174E-21	R(34)	G
29	1321.026 62(5)*	1178.89	0.208E-20	R(37)	C
30	1321.487 73(5)*	1209.60	0.183E-20	R(38)	B
31	1321.604 63(5)*	984.54	0.685E-20	R(48)	A
32	1321.701 34(6)	1696.84	0.155E-21	R(35)	G
33	1321.740 68(5)*	1210.77	0.183E-20	R(38)	C
34	1322.186 66(5)*	1242.25	0.160E-20	R(39)	B
35	1322.263 91(5)*	1025.52	0.573E-20	R(49)	A

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	1322.407 23(6)	1727.03	0.137E-21	R(36)	G
37	1322.451 54(5)*	1243.48	0.160E-20	R(39)	C
38	1322.882 06(5)*	1275.74	0.139E-20	R(40)	B
39	1322.919 60(5)*	1067.33	0.476E-20	R(50)	A
40	1322.973 99(12)	1621.26	0.208E-21	R(32)	E
41	1322.975 30(11)	1621.19	0.208E-21	R(32)	F
42	1323.109 45(6)	1758.06	0.121E-21	R(37)	G
43	1323.159 20(6)*	1277.04	0.139E-20	R(40)	C
44	1323.571 71(5)*	1109.98	0.395E-20	R(51)	A
45	1323.573 95(6)*	1310.06	0.121E-20	R(41)	B
46	1323.703 97(12)	1648.97	0.187E-21	R(33)	E
47	1323.705 72(12)	1648.90	0.187E-21	R(33)	F
48	1323.808 00(6)	1789.92	0.106E-21	R(38)	G
49	1323.863 66(6)*	1311.42	0.120E-20	R(41)	C
50	1324.220 24(5)*	1153.46	0.325E-20	R(52)	A
51	1324.262 31(6)*	1345.22	0.104E-20	R(42)	B
52	1324.430 65(13)	1677.52	0.167E-21	R(34)	E
53	1324.432 89(12)	1677.44	0.167E-21	R(34)	F
54	1324.564 93(6)*	1346.65	0.104E-20	R(42)	C
55	1324.865 19(5)*	1197.77	0.267E-20	R(53)	A
56	1324.947 16(6)*	1381.21	0.893E-21	R(43)	B
57	1325.154 02(13)	1706.91	0.149E-21	R(35)	E
58	1325.156 82(13)	1706.82	0.149E-21	R(35)	F
59	1325.263 01(6)*	1382.71	0.891E-21	R(43)	C
60	1325.506 57(5)*	1242.91	0.218E-20	R(54)	A
61	1325.628 49(6)*	1418.04	0.763E-21	R(44)	B
62	1325.957 91(6)*	1419.61	0.761E-21	R(44)	C
63	1326.144 38(5)*	1288.88	0.178E-20	R(55)	A
64	1326.306 30(6)*	1455.70	0.649E-21	R(45)	B
65	1326.590 83(14)	1768.20	0.116E-21	R(37)	E
66	1326.594 96(13)	1768.08	0.116E-21	R(37)	F
67	1326.649 63(6)*	1457.34	0.647E-21	R(45)	C
68	1326.778 62(5)*	1335.69	0.144E-20	R(56)	A
69	1326.980 59(6)*	1494.20	0.549E-21	R(46)	B



NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
1327 1328 1329 1330
1330 1331 1332 1333
1333 1334 1335 1336
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1327.304 27(14)	1800.10	0.102E-21	R(38)	E
2	1327.309 17(14)	1799.97	0.102E-21	R(38)	F
3	1327.338 19(6)*	1495.90	0.548E-21	R(46)	C
4	1327.409 30(5)*	1383.33	0.116E-20	R(57)	A
5	1327.651 38(6)*	1533.53	0.463E-21	R(47)	B
6	1327.922 12(7)	1998.62	0.442E-22	R(44)	G
7	1328.014 38(14)	1832.84	0.885E-22	R(39)	E
8	1328.020 14(14)	1832.70	0.886E-22	R(39)	F
9	1328.023 58(6)*	1535.31	0.462E-21	R(47)	C
10	1328.036 42(5)*	1431.79	0.934E-21	R(58)	A
11	1328.318 64(6)*	1573.69	0.388E-21	R(48)	B
12	1328.594 92(7)	2036.33	0.375E-22	R(45)	G
13	1328.659 99(5)*	1481.09	0.747E-21	R(59)	A
14	1328.705 83(6)*	1575.55	0.387E-21	R(48)	C
15	1328.721 18(14)	1866.41	0.768E-22	R(40)	E
16	1328.727 89(15)	1866.26	0.769E-22	R(40)	F
17	1328.982 40(6)*	1614.68	0.324E-21	R(49)	B
18	1329.280 02(5)*	1531.22	0.595E-21	R(60)	A
19	1329.384 92(6)*	1616.62	0.324E-21	R(49)	C
20	1329.642 64(6)*	1656.51	0.270E-21	R(50)	B
21	1329.896 50(5)*	1582.18	0.472E-21	R(61)	A
22	1330.060 87(6)*	1658.53	0.269E-21	R(50)	C
23	1330.124 81(14)	1936.08	0.570E-22	R(42)	E
24	1330.133 68(16)	1935.90	0.571E-22	R(42)	F
25	1330.299 38(6)*	1699.17	0.223E-21	R(51)	B
26	1330.509 45(5)*	1633.97	0.372E-21	R(62)	A
27	1330.733 70(6)*	1701.27	0.223E-21	R(51)	C
28	1330.821 64(14)	1972.17	0.488E-22	R(43)	E
29	1330.831 74(17)	1971.97	0.488E-22	R(43)	F
30	1330.952 60(6)*	1742.67	0.184E-21	R(52)	B
31	1331.118 87(5)*	1686.59	0.293E-21	R(63)	A
32	1331.403 40(6)*	1744.84	0.183E-21	R(52)	C
33	1331.515 15(14)	2009.10	0.415E-22	R(44)	E
34	1331.526 57(18)	2008.88	0.416E-22	R(44)	F
35	1331.602 33(6)*	1786.99	0.151E-21	R(53)	B
36	1331.724 77(5)*	1740.04	0.229E-21	R(64)	A
37	1331.903 57(8)	2237.36	0.155E-22	R(50)	G
38	1332.070 00(6)*	1789.25	0.151E-21	R(53)	C
39	1332.205 33(14)	2046.86	0.352E-22	R(45)	E
40	1332.218 18(19)	2046.63	0.352E-22	R(45)	F
41	1332.248 55(6)*	1832.15	0.123E-21	R(54)	B
42	1332.327 15(5)*	1794.32	0.179E-21	R(65)	A
43	1332.554 20(8)	2280.07	0.129E-22	R(51)	G
44	1332.733 48(6)*	1834.50	0.123E-21	R(54)	C
45	1332.891 28(6)*	1878.14	0.100E-21	R(55)	B
46	1332.892 19(14)	2085.47	0.297E-22	R(46)	E
47	1332.906 57(20)	2085.21	0.297E-22	R(46)	F
48	1332.926 03(5)*	1849.42	0.139E-21	R(66)	A
49	1333.201 13(8)	2323.60	0.106E-22	R(52)	G
50	1333.393 88(6)*	1880.57	0.100E-21	R(55)	C
51	1333.521 40(5)*	1905.36	0.107E-21	R(67)	A
52	1333.530 50(6)*	1924.97	0.811E-22	R(56)	B
53	1333.575 72(14)	2124.90	0.249E-22	R(47)	E
54	1333.591 76(22)	2124.63	0.250E-22	R(47)	F
55	1334.051 19(6)*	1927.48	0.809E-22	R(56)	C
56	1334.113 29(5)*	1962.12	0.824E-22	R(68)	A
57	1334.255 94(15)	2165.18	0.208E-22	R(48)	E
58	1334.701 70(5)*	2019.71	0.632E-22	R(69)	A
59	1334.705 44(6)*	1975.23	0.653E-22	R(57)	C
60	1334.798 49(6)*	2021.11	0.525E-22	R(58)	B
61	1334.932 84(15)	2206.29	0.173E-22	R(49)	E
62	1335.286 63(5)*	2078.13	0.482E-22	R(70)	A
63	1335.356 62(6)*	2023.80	0.524E-22	R(58)	C
64	1335.427 25(6)*	2070.42	0.420E-22	R(59)	B
65	1335.606 41(16)	2248.24	0.144E-22	R(50)	E
66	1335.868 11(5)*	2137.38	0.366E-22	R(71)	A
67	1336.004 76(6)*	2073.21	0.419E-22	R(59)	C



NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
1336
1337
1338
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WAVENUMBERS (cm-1)

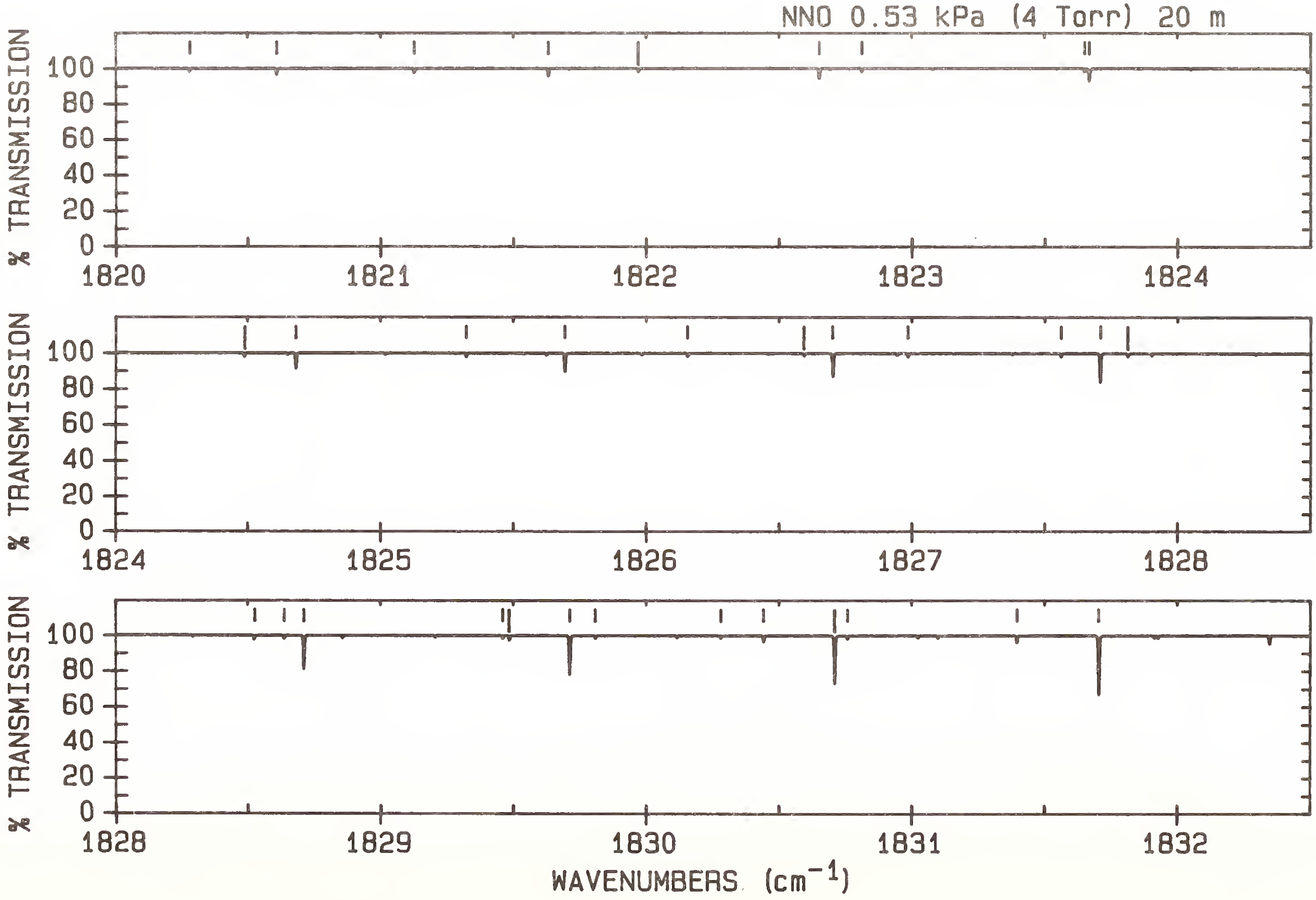
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1336.052 53(6)*	2120.57	0.334E-22	R(60)	B	31	1339.614 48(53)	2516.94	0.422E-23	R(56)	F
2	1336.276 68(17)	2291.02	0.118E-22	R(51)	E	32	1339.731 37(6)*	2438.88	0.774E-23	R(66)	B
3	1336.300 42(32)	2290.64	0.119E-22	R(51)	F	33	1339.842 45(6)*	2575.26	0.476E-23	R(78)	A
4	1336.446 13(5)*	2197.45	0.277E-22	R(72)	A	34	1340.228 94(34)	2565.26	0.338E-23	R(57)	E
5	1336.649 86(6)*	2123.45	0.333E-22	R(60)	C	35	1340.267 78(58)	2564.70	0.339E-23	R(57)	F
6	1336.674 33(6)*	2171.55	0.264E-22	R(61)	B	36	1340.332 42(6)*	2494.84	0.597E-23	R(67)	B
7	1336.943 64(19)	2334.64	0.971E-23	R(52)	E	37	1340.396 65(6)*	2641.11	0.349E-23	R(79)	A
8	1336.969 60(35)	2334.23	0.974E-23	R(52)	F	38	1340.457 50(6)*	2442.37	0.772E-23	R(66)	C
9	1337.020 71(5)*	2258.36	0.209E-22	R(73)	A	39	1340.876 15(38)	2613.89	0.270E-23	R(58)	E
10	1337.291 94(6)*	2174.53	0.264E-22	R(61)	C	40	1340.917 92(64)	2613.29	0.271E-23	R(58)	F
11	1337.292 66(6)*	2223.36	0.209E-22	R(62)	B	41	1340.930 03(6)*	2551.62	0.459E-23	R(68)	B
12	1337.591 86(6)*	2320.08	0.157E-22	R(74)	A	42	1340.947 51(6)*	2707.79	0.256E-23	R(80)	A
13	1337.607 29(21)	2379.09	0.793E-23	R(53)	E	43	1341.081 75(6)*	2498.43	0.596E-23	R(67)	C
14	1337.635 58(39)	2378.66	0.796E-23	R(53)	F	44	1341.495 04(6)*	2775.30	0.186E-23	R(81)	A
15	1337.907 53(6)*	2275.99	0.164E-22	R(63)	B	45	1341.520 10(43)	2663.35	0.214E-23	R(59)	E
16	1337.931 01(6)*	2226.43	0.208E-22	R(62)	C	46	1341.524 21(6)*	2609.24	0.351E-23	R(69)	B
17	1338.159 60(6)*	2382.64	0.117E-22	R(75)	A	47	1341.564 91(71)	2662.72	0.215E-23	R(59)	F
18	1338.242 59(9)	2701.85	0.191E-23	R(60)	G	48	1341.703 09(6)*	2555.32	0.458E-23	R(68)	C
19	1338.267 63(24)	2424.38	0.645E-23	R(54)	E	49	1342.039 26(6)*	2843.63	0.135E-23	R(82)	A
20	1338.298 39(43)	2423.92	0.647E-23	R(54)	F	50	1342.114 96(6)*	2667.68	0.268E-23	R(70)	B
21	1338.518 93(6)*	2329.46	0.128E-22	R(64)	B	51	1342.321 53(6)*	2613.04	0.351E-23	R(69)	C
22	1338.567 09(6)*	2279.17	0.164E-22	R(63)	C	52	1342.702 30(6)*	2726.94	0.203E-23	R(71)	B
23	1338.723 93(6)*	2446.02	0.870E-23	R(76)	A	53	1342.937 09(6)*	2671.59	0.267E-23	R(70)	C
24	1338.855 95(10)	2752.87	0.151E-23	R(61)	G	54	1343.286 23(6)*	2787.04	0.154E-23	R(72)	B
25	1338.924 69(27)	2470.51	0.522E-23	R(55)	E	55	1343.549 78(6)*	2730.97	0.203E-23	R(71)	C
26	1338.958 02(48)	2470.01	0.524E-23	R(55)	F	56	1343.866 76(6)*	2847.96	0.116E-23	R(73)	B
27	1339.126 87(6)*	2383.76	0.998E-23	R(65)	B	57	1344.159 64(6)*	2791.17	0.153E-23	R(72)	C
28	1339.200 19(6)*	2332.74	0.128E-22	R(64)	C	58	1344.711 29(6)*	3197.62	0.255E-24	R(87)	A
29	1339.284 88(6)*	2510.22	0.645E-23	R(77)	A	59	1344.766 68(6)*	2852.21	0.115E-23	R(73)	C
30	1339.578 46(30)	2517.47	0.421E-23	R(56)	E	60	1345.017 65(6)*	2972.28	0.647E-24	R(75)	B

ATLAS OF N_2O ABSORPTION LINES FROM 1820 cm^{-1} to 1925 cm^{-1}

key:

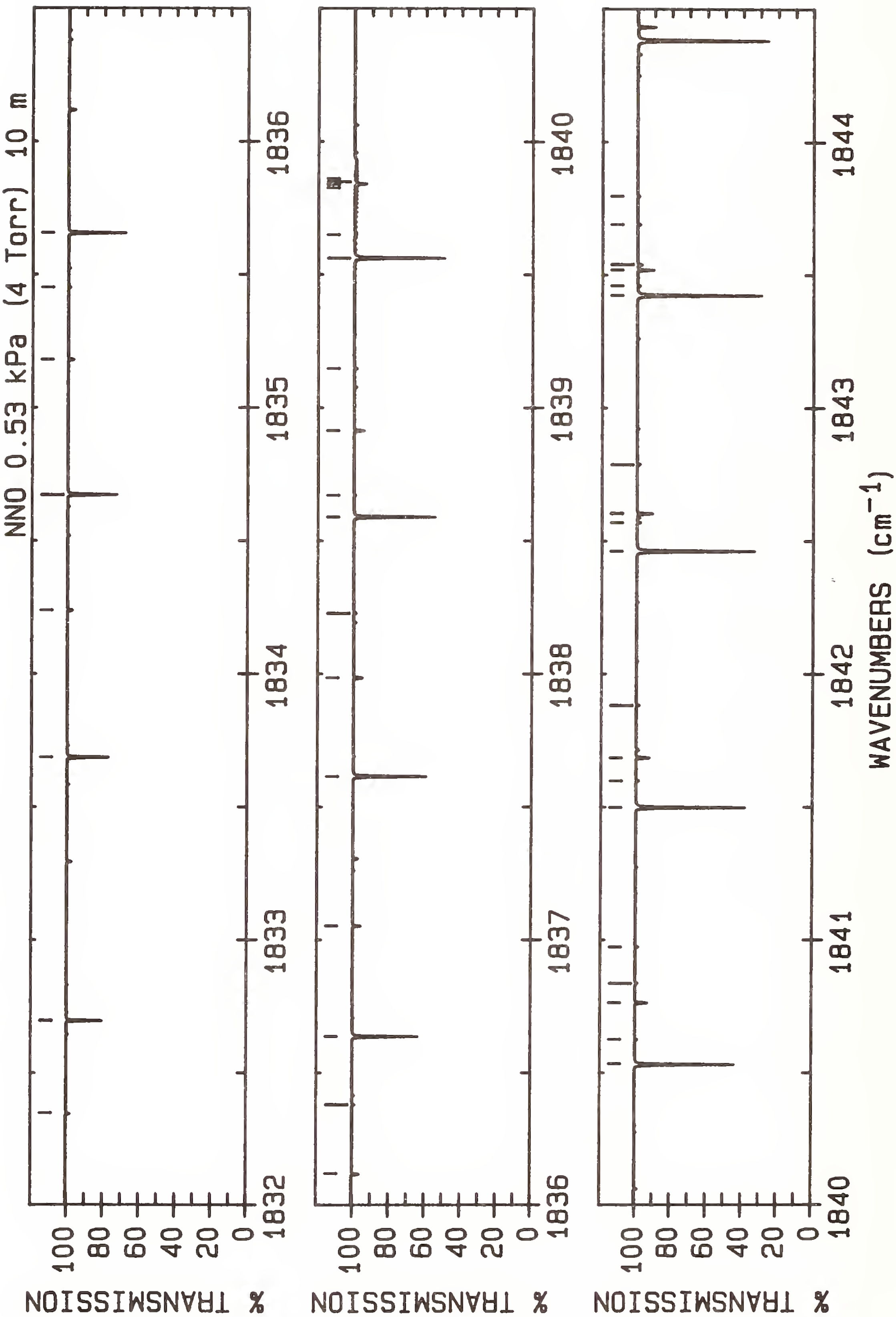
Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	$01^11\text{-}00^00$
B		$02^21\text{-}01^{1e}0$
C		$02^21\text{-}01^{1f}0$
D		$01^12\text{-}00^01$
E		$03^31\text{-}02^{2e}0$
F		$03^31\text{-}02^{2f}0$
G		$03^11\text{-}02^00$
H		$02^01\text{-}01^10$
I		$03^11\text{-}02^{2e}0$
J		$03^11\text{-}02^{2f}0$
P	$^{14}N^{15}N^{16}O$	$01^11\text{-}00^00$
R	$^{15}N^{14}N^{16}O$	$01^11\text{-}00^00$
T	$^{14}N^{14}N^{18}O$	$01^11\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.00548 debye at a temperature of 296 K. For the H band a transition moment of 0.00406 debye was used. A Herman-Wallis constant of ξ_1 = -0.0107 is included in the intensity calculation for the lines of all bands.



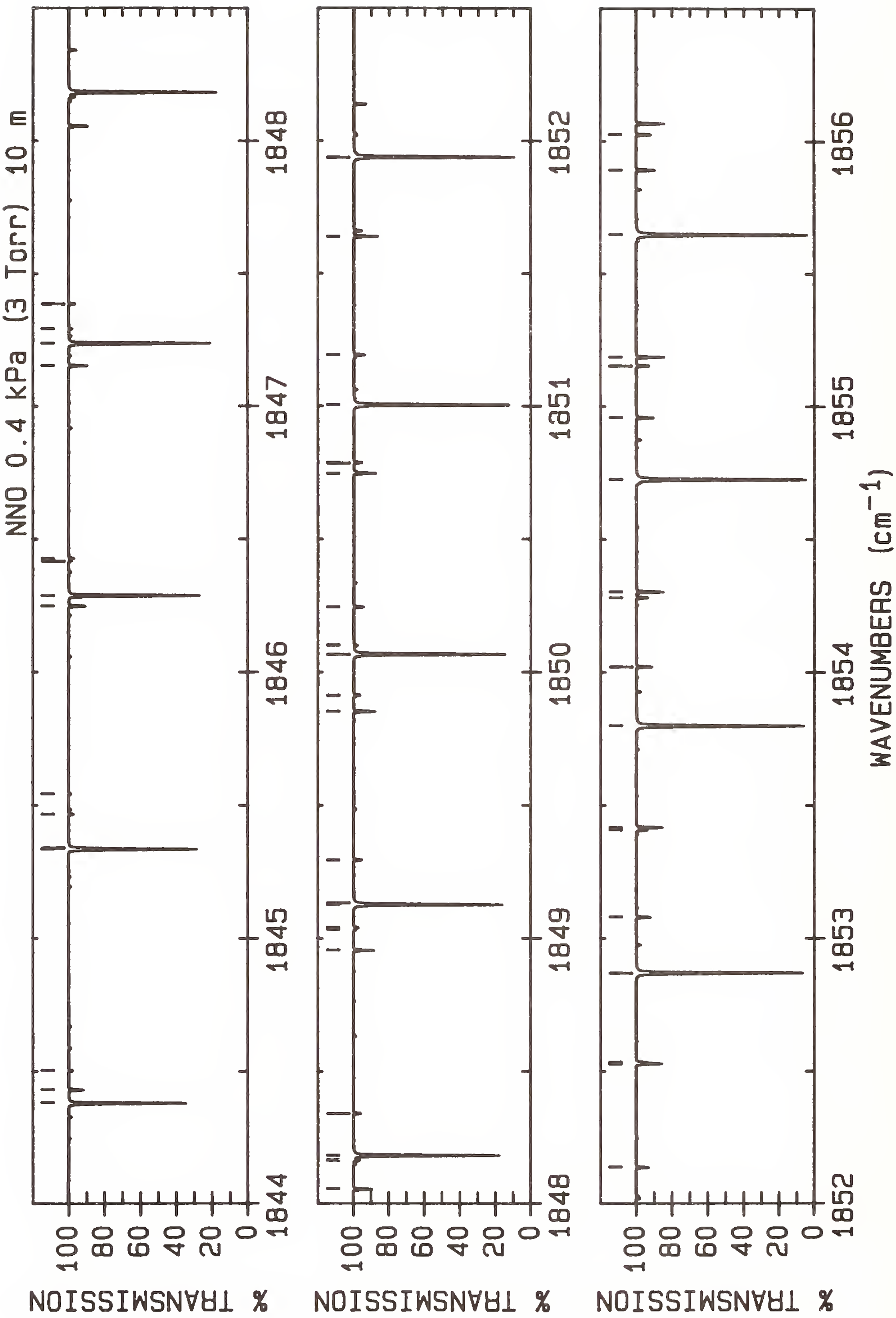
NNO 0.53 kPa (4 Torr) 20 m
% TRANSMISSION
100
80
60
40
20
0
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1820.280 7	237.29	0.441E-24	P(24)	T
2	1820.610 57(14)*	1740.04	0.772E-24	P(64)	A
3	1821.127 1	218.31	0.455E-24	P(23)	T
4	1821.632 91(14)*	1686.59	0.973E-24	P(63)	A
5	1821.971 1	200.12	0.466E-24	P(22)	T
6	1822.652 54(13)*	1633.97	0.122E-23	P(62)	A
7	1822.812 8	182.72	0.475E-24	P(21)	T
8	1823.652 2	166.12	0.481E-24	P(20)	T
9	1823.669 45(13)*	1582.18	0.153E-23	P(61)	A
10	1824.489 1	150.30	0.484E-24	P(19)	T
11	1824.683 63(12)*	1531.22	0.190E-23	P(60)	A
12	1825.323 7	135.27	0.483E-24	P(18)	T
13	1825.695 08(12)*	1481.09	0.235E-23	P(59)	A
14	1826.156 0	121.03	0.479E-24	P(17)	T
15	1826.595 57(54)	1742.67	0.387E-24	P(52)	H
16	1826.703 78(11)*	1431.79	0.290E-23	P(58)	A
17	1826.985 8	107.58	0.471E-24	P(16)	T
18	1827.562 31(49)	1699.17	0.460E-24	P(51)	H
19	1827.709 72(11)*	1383.33	0.356E-23	P(57)	A
20	1827.813 3	94.93	0.459E-24	P(15)	T
21	1828.525 73(44)	1656.51	0.544E-24	P(50)	H
22	1828.638 4	83.06	0.444E-24	P(14)	T
23	1828.712 90(11)*	1335.69	0.435E-23	P(56)	A
24	1829.461 0	71.99	0.424E-24	P(13)	T
25	1829.485 88(40)	1614.68	0.640E-24	P(49)	H
26	1829.713 30(10)*	1288.88	0.530E-23	P(55)	A
27	1829.810 6	498.34	0.406E-24	P(34)	P
28	1830.281 3	61.71	0.401E-24	P(12)	T
29	1830.442 78(37)	1573.69	0.750E-24	P(48)	H
30	1830.710 92(10)*	1242.91	0.642E-23	P(54)	A
31	1830.759 1	469.88	0.445E-24	P(33)	P
32	1831.396 47(34)	1533.53	0.874E-24	P(47)	H
33	1831.704 3	442.25	0.486E-24	P(32)	P
34	1831.705 75(9)*	1197.77	0.774E-23	P(53)	A



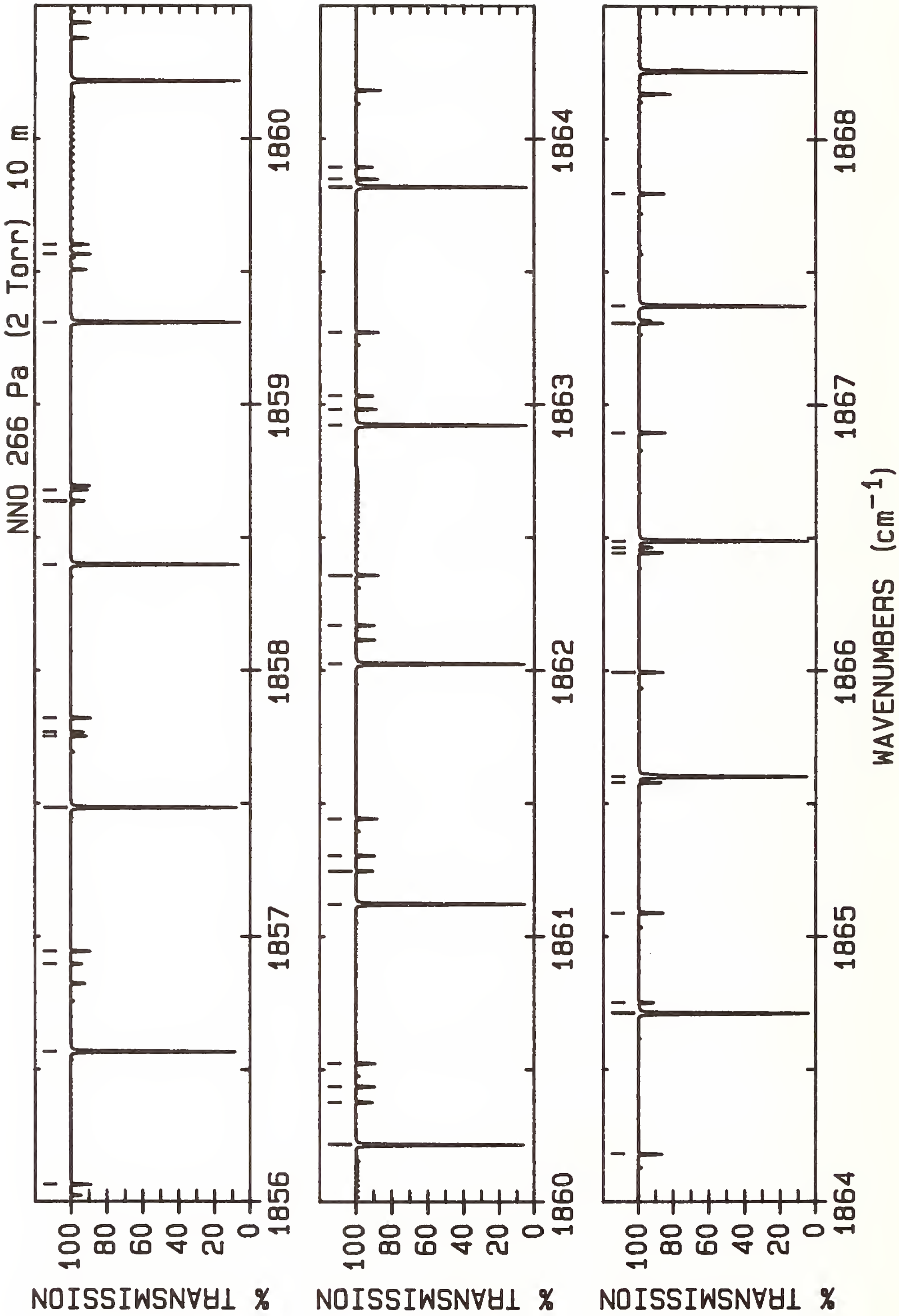
NNO 0.53 kPa (4 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1832 1833 1834 1835 1836
1836 1837 1838 1839 1840
1840 1841 1842 1843 1844
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1832.346 99(32)	1494.20	0.102E-23	P(46)	H
2	1832.697 78(9)*	1153.46	0.929E-23	P(52)	A
3	1833.687 01(9)*	1109.98	0.111E-22	P(51)	A
4	1834.238 66(27)	1418.04	0.135E-23	P(44)	H
5	1834.673 42(9)*	1067.33	0.132E-22	P(50)	A
6	1835.179 88(25)	1381.21	0.154E-23	P(43)	H
7	1835.452 1	340.10	0.653E-24	P(28)	P
8	1835.657 00(8)*	1025.52	0.157E-22	P(49)	A
9	1836.118 07(24)	1345.22	0.176E-23	P(42)	H
10	1836.380 8	316.65	0.693E-24	P(27)	P
11	1836.637 76(8)*	984.54	0.185E-22	P(48)	A
12	1837.053 27(22)	1310.06	0.199E-23	P(41)	H
13	1837.615 68(8)*	944.39	0.217E-22	P(47)	A
14	1837.985 52(20)	1275.74	0.225E-23	P(40)	H
15	1838.228 2	272.26	0.769E-24	P(25)	P
16	1838.590 76(8)*	905.08	0.253E-22	P(46)	A
17	1838.671 58(38)	1744.84	0.507E-24	P(52)	C
18	1838.914 86(19)	1242.25	0.253E-23	P(39)	H
19	1839.146 9	251.32	0.802E-24	P(24)	P
20	1839.562 98(8)*	866.60	0.294E-22	P(45)	A
21	1839.650 07(34)	1701.27	0.605E-24	P(51)	C
22	1839.825 7	121.03	0.756E-24	Q(17)	T
23	1839.838 1	107.58	0.760E-24	Q(16)	T
24	1839.841 32(18)	1209.60	0.283E-23	P(38)	H
25	1839.849 7	94.93	0.760E-24	Q(15)	T
26	1839.860 5	83.06	0.753E-24	Q(14)	T
27	1840.532 35(8)*	828.95	0.340E-22	P(44)	A
28	1840.626 05(31)	1658.53	0.720E-24	P(50)	C
29	1840.764 95(17)	1177.78	0.315E-23	P(37)	H
30	1840.838 5	284.13	0.748E-24	P(26)	R
31	1840.974 4	211.96	0.858E-24	P(22)	P
32	1841.498 85(8)*	792.14	0.392E-22	P(43)	A
33	1841.599 51(28)	1616.62	0.852E-24	P(49)	C
34	1841.685 77(16)	1146.80	0.349E-23	P(36)	H
35	1841.883 2	193.53	0.879E-24	P(21)	P
36	1842.462 48(7)*	756.16	0.449E-22	P(42)	A
37	1842.570 44(27)	1575.55	0.100E-23	P(48)	C
38	1842.603 82(16)	1116.65	0.384E-23	P(35)	H
39	1842.606 0	1568.31	0.315E-24	P(30)	J
40	1842.788 6	175.94	0.894E-24	P(20)	P
41	1843.423 23(7)*	721.01	0.513E-22	P(41)	A
42	1843.460 5	223.43	0.842E-24	P(23)	R
43	1843.519 15(15)	1087.34	0.421E-23	P(34)	H
44	1843.538 82(25)	1535.31	0.118E-23	P(47)	C
45	1843.540 9	2037.90	0.176E-24	P(42)	D
46	1843.690 7	159.19	0.903E-24	P(19)	P
47	1843.796 50(27)	1614.68	0.622E-24	P(49)	B

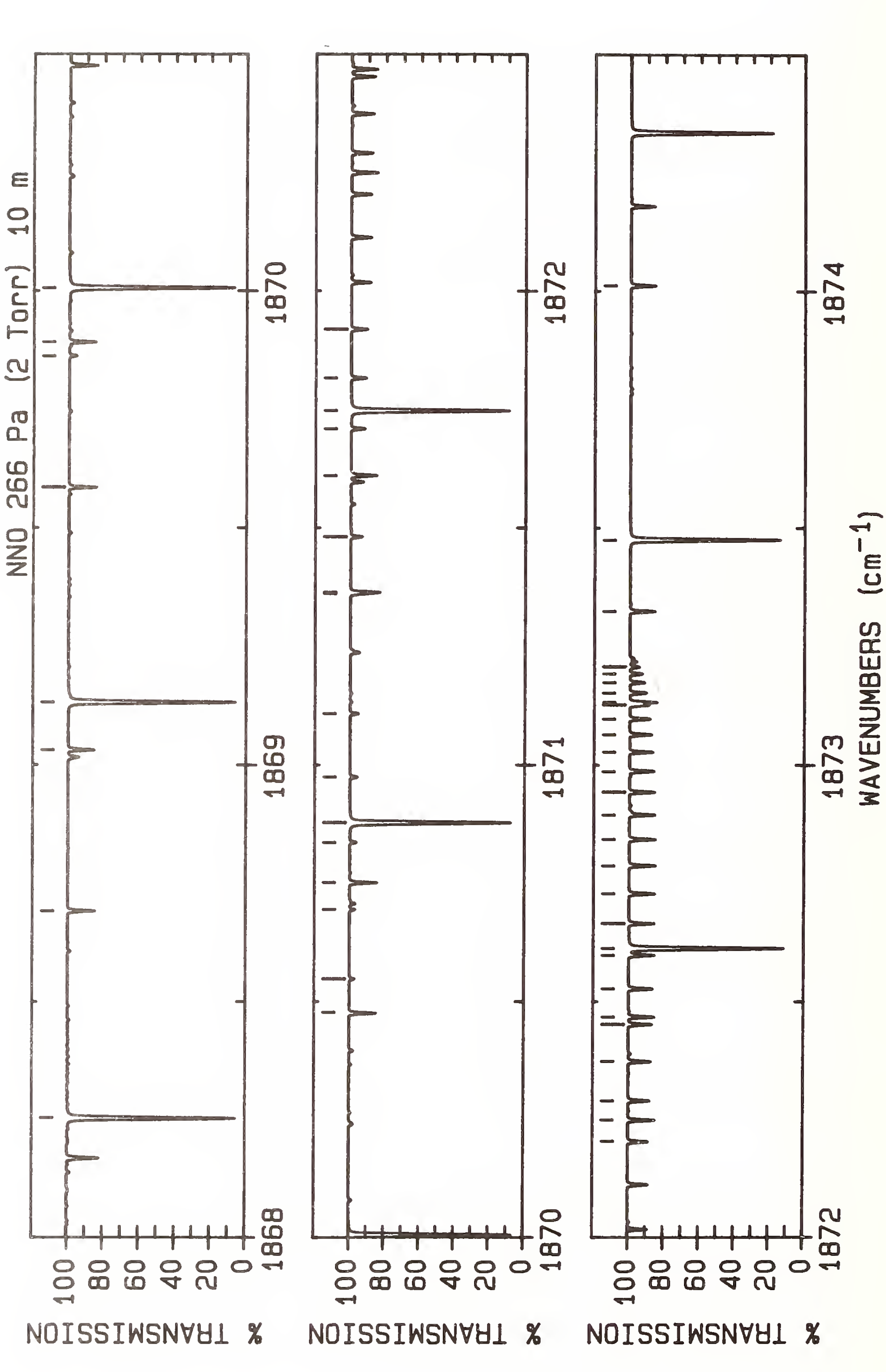


NNO 0.4 kPa (3 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1844 1845 1846 1847 1848
% TRANSMISSION
100 80 60 40 20 0
1848 1849 1850 1851 1852
% TRANSMISSION
100 80 60 40 20 0
1852 1853 1854 1855 1856
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1844.381 10(7)*	686.70	0.582E-22	P(40)	A
2	1844.431 79(15)	1058.86	0.460E-23	P(33)	H
3	1844.504 65(24)	1495.90	0.137E-23	P(46)	C
4	1845.336 08(7)*	653.23	0.658E-22	P(39)	A
5	1845.341 77(15)	1031.22	0.500E-23	P(32)	H
6	1845.467 93(24)	1457.34	0.160E-23	P(45)	C
7	1845.544 63(27)	1533.53	0.881E-24	P(47)	B
8	1846.249 14(15)	1004.42	0.540E-23	P(31)	H
9	1846.288 15(7)*	620.59	0.740E-22	P(38)	A
10	1846.418 76(27)	1494.20	0.104E-23	P(46)	B
11	1846.428 63(24)	1419.61	0.185E-23	P(44)	C
12	1847.153 91(15)	978.45	0.581E-23	P(30)	H
13	1847.237 33(7)*	588.78	0.828E-22	P(37)	A
14	1847.292 88(28)	1455.70	0.122E-23	P(45)	B
15	1847.386 75(23)	1382.71	0.213E-23	P(43)	C
16	1848.056 14(15)	953.32	0.621E-23	P(29)	H
17	1848.164 2	1638.97	0.916E-24	P(33)	G
18	1848.166 96(28)	1418.04	0.143E-23	P(44)	B
19	1848.183 59(7)*	557.81	0.922E-22	P(36)	A
20	1848.342 28(23)	1346.65	0.244E-23	P(42)	C
21	1848.955 85(15)	929.02	0.661E-23	P(28)	H
22	1849.032 9	76.25	0.810E-24	P(13)	P
23	1849.040 96(29)	1381.21	0.167E-23	P(43)	B
24	1849.126 94(7)*	527.67	0.102E-21	P(35)	A
25	1849.134 1	1611.29	0.995E-24	P(32)	G
26	1849.295 21(23)	1311.42	0.278E-23	P(41)	C
27	1849.853 08(15)	905.56	0.700E-23	P(27)	H
28	1849.911 5	65.36	0.768E-24	P(12)	P
29	1849.914 84(29)	1345.22	0.193E-23	P(42)	B
30	1850.067 37(7)*	498.37	0.112E-21	P(34)	A
31	1850.100 3	1584.45	0.108E-23	P(31)	G
32	1850.102 6	1810.37	0.399E-24	P(35)	D
33	1850.245 54(23)	1277.04	0.315E-23	P(40)	C
34	1850.747 85(15)	882.94	0.737E-23	P(26)	H
35	1850.786 8	55.30	0.720E-24	P(11)	P
36	1850.788 56(28)	1310.06	0.223E-23	P(41)	B
37	1851.004 87(7)*	469.91	0.123E-21	P(33)	A
38	1851.193 25(23)	1243.48	0.356E-23	P(39)	C
39	1851.640 20(15)	861.16	0.772E-23	P(25)	H
40	1851.939 44(7)*	442.28	0.135E-21	P(32)	A
41	1852.138 33(23)	1210.77	0.400E-23	P(38)	C
42	1852.527 2	37.71	0.604E-24	P(9)	P
43	1852.530 16(15)	840.21	0.805E-23	P(24)	H
44	1852.535 37(27)	1242.25	0.291E-23	P(39)	B
45	1852.871 07(7)*	415.49	0.146E-21	P(31)	A
46	1853.080 78(23)	1178.89	0.447E-23	P(37)	C
47	1853.408 38(26)	1209.60	0.330E-23	P(38)	B
48	1853.417 76(15)	820.10	0.833E-23	P(23)	H
49	1853.799 75(7)*	389.53	0.158E-21	P(30)	A
50	1854.020 59(23)	1147.85	0.497E-23	P(36)	C
51	1854.281 07(25)	1177.78	0.373E-23	P(37)	B
52	1854.303 02(15)	800.83	0.858E-23	P(22)	H
53	1854.725 48(7)*	364.41	0.170E-21	P(29)	A
54	1854.957 75(22)	1117.64	0.549E-23	P(35)	C
55	1855.153 41(24)	1146.80	0.419E-23	P(36)	B
56	1855.185 97(15)	782.39	0.879E-23	P(21)	H
57	1855.648 26(7)*	340.12	0.181E-21	P(28)	A
58	1855.892 25(22)	1088.28	0.605E-23	P(34)	C
59	1856.025 36(23)	1116.65	0.468E-23	P(35)	B

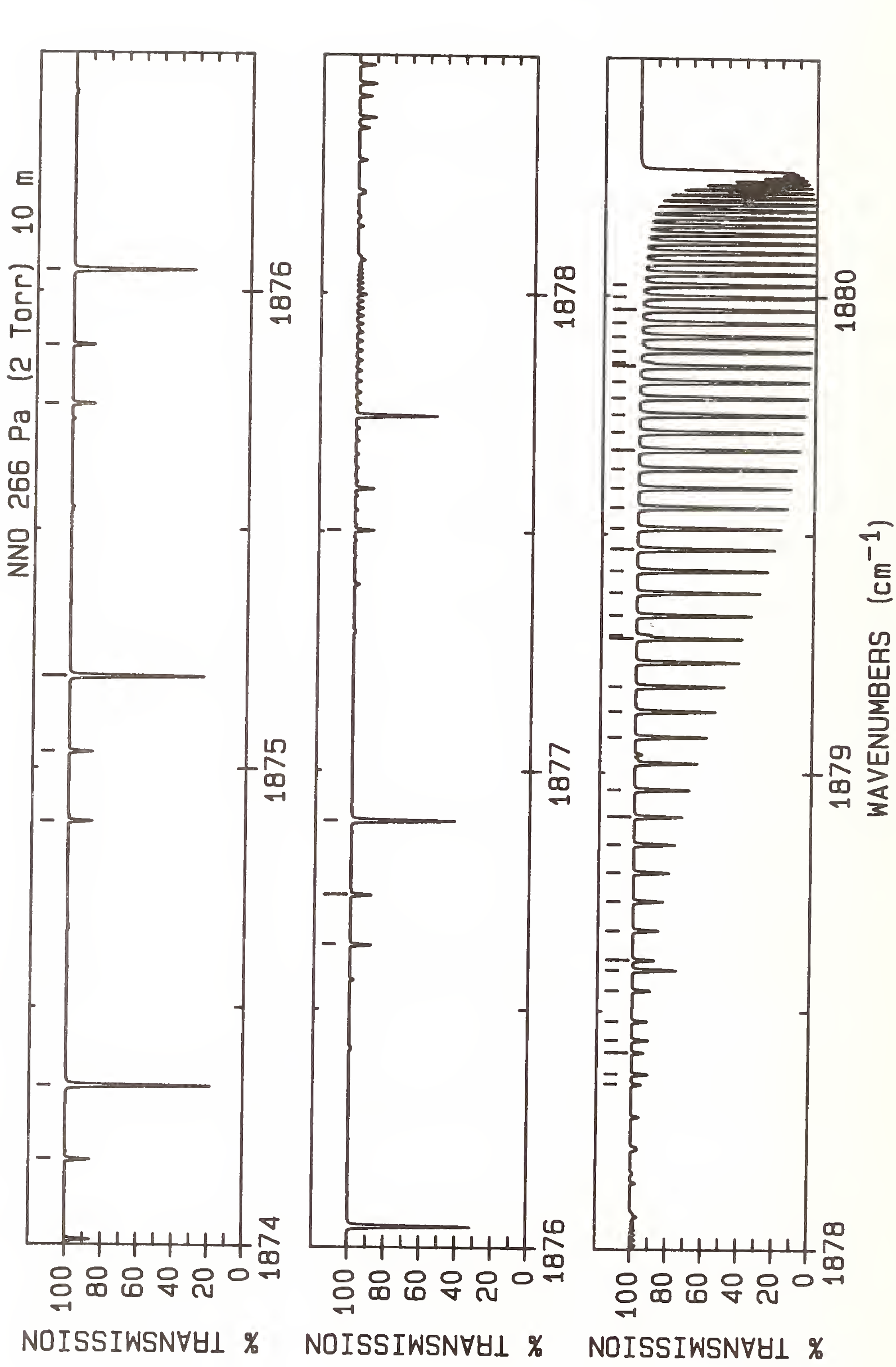

NNO 266 Pa (2 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1856 1857 1858 1859 1860
1860 1861 1862 1863 1864
1864 1865 1866 1867 1868
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1856.066 64(14)	764.79	0.894E-23	P(20)	H
2	1856.568 08(7)*	316.67	0.192E-21	P(27)	A
3	1856.896 87(22)	1087.34	0.520E-23	P(34)	B
4	1856.945 05(14)	748.03	0.904E-23	P(19)	H
5	1857.484 93(7)*	294.06	0.203E-21	P(26)	A
6	1857.753 23(20)	1032.06	0.721E-23	P(32)	C
7	1857.767 91(21)	1058.86	0.574E-23	P(33)	B
8	1857.821 23(14)	732.11	0.908E-23	P(18)	H
9	1858.398 81(7)*	272.28	0.213E-21	P(25)	A
10	1858.638 44(20)	1031.22	0.631E-23	P(32)	B
11	1858.679 70(19)	1005.20	0.782E-23	P(31)	C
12	1859.309 72(7)*	251.34	0.222E-21	P(24)	A
13	1859.566 96(13)	702.77	0.898E-23	P(16)	H
14	1859.603 48(19)	979.18	0.842E-23	P(30)	C
15	1860.217 64(7)*	231.24	0.231E-21	P(23)	A
16	1860.377 81(17)	978.45	0.748E-23	P(30)	B
17	1860.436 56(13)	689.36	0.883E-23	P(15)	H
18	1860.524 55(18)	954.01	0.902E-23	P(29)	C
19	1861.122 58(7)*	211.97	0.238E-21	P(22)	A
20	1861.246 58(16)	953.32	0.808E-23	P(29)	B
21	1861.304 00(13)	676.79	0.862E-23	P(14)	H
22	1861.442 93(17)	929.66	0.961E-23	P(28)	C
23	1862.024 52(7)*	193.54	0.244E-21	P(21)	A
24	1862.169 31(13)	665.05	0.833E-23	P(13)	H
25	1862.358 58(16)	906.16	0.102E-22	P(27)	C
26	1862.923 47(7)*	175.95	0.248E-21	P(20)	A
27	1862.982 10(15)	905.56	0.925E-23	P(27)	B
28	1863.032 49(13)	654.15	0.799E-23	P(12)	H
29	1863.271 52(15)	883.50	0.107E-22	P(26)	C
30	1863.819 41(7)*	159.20	0.250E-21	P(19)	A
31	1863.848 77(14)	882.94	0.981E-23	P(26)	B
32	1863.893 56(13)	644.10	0.758E-23	P(11)	H
33	1864.181 72(15)	861.67	0.112E-22	P(25)	C
34	1864.712 35(7)*	143.28	0.251E-21	P(18)	A
35	1864.714 68(13)	861.16	0.103E-22	P(25)	B
36	1864.752 54(13)	634.88	0.712E-23	P(10)	H
37	1865.089 19(14)	840.68	0.117E-22	P(24)	C
38	1865.579 78(13)	840.21	0.108E-22	P(24)	B
39	1865.602 27(7)*	128.20	0.250E-21	P(17)	A
40	1865.993 92(13)	820.54	0.121E-22	P(23)	C
41	1866.444 05(13)	820.10	0.112E-22	P(23)	B
42	1866.464 23(14)	618.95	0.603E-23	P(8)	H
43	1866.489 18(7)*	113.96	0.247E-21	P(16)	A
44	1866.895 89(13)	801.23	0.124E-22	P(22)	C
45	1867.307 46(12)	800.83	0.116E-22	P(22)	B
46	1867.373 07(7)*	100.55	0.241E-21	P(15)	A
47	1867.795 11(13)	782.76	0.126E-22	P(21)	C


NNO 266 Pa (2 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1868
1869
1870
% TRANSMISSION
100 80 60 40 20 0
1870
1871
1872
% TRANSMISSION
100 80 60 40 20 0
1872
1873
1874
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1868.253 93(7)*	87.98	0.234E-21	P(14)	A
2	1868.691 56(13)	765.12	0.128E-22	P(20)	C
3	1869.031 53(13)	764.79	0.121E-22	P(20)	B
4	1869.131 77(7)*	76.25	0.225E-21	P(13)	A
5	1869.585 25(13)	748.33	0.128E-22	P(19)	C
6	1869.862 85(15)	597.15	0.343E-23	P(4)	H
7	1869.892 15(13)	748.03	0.122E-22	P(19)	B
8	1870.006 56(7)*	65.36	0.213E-21	P(12)	A
9	1870.476 15(13)	732.38	0.128E-22	P(18)	C
10	1870.548 12(18)	1178.89	0.232E-23	Q(37)	H
11	1870.694 80(17)	1147.85	0.266E-23	Q(36)	H
12	1870.751 6	1349.99	0.824E-24	P(12)	D
13	1870.751 77(13)	732.11	0.123E-22	P(18)	B
14	1870.836 96(16)	1117.64	0.302E-23	Q(35)	H
15	1870.878 32(7)*	55.31	0.200E-21	P(11)	A
16	1870.974 62(16)	1088.28	0.342E-23	Q(34)	H
17	1871.107 84(15)	1059.75	0.385E-23	Q(33)	H
18	1871.361 10(15)	1005.20	0.480E-23	Q(31)	H
19	1871.364 27(14)	717.26	0.126E-22	P(17)	C
20	1871.481 22(15)	979.18	0.532E-23	Q(30)	H
21	1871.610 39(14)	717.02	0.122E-22	P(17)	B
22	1871.708 62(15)	929.66	0.642E-23	Q(28)	H
23	1871.747 03(7)*	46.09	0.184E-21	P(10)	A
24	1871.815 97(15)	906.16	0.700E-23	Q(27)	H
25	1871.919 15(15)	883.50	0.758E-23	Q(26)	H
26	1872.203 96(15)	820.54	0.932E-23	Q(23)	H
27	1872.249 60(14)	702.99	0.124E-22	P(16)	C
28	1872.290 76(15)	801.23	0.986E-23	Q(22)	H
29	1872.373 56(15)	782.76	0.104E-22	Q(21)	H
30	1872.452 37(15)	765.12	0.108E-22	Q(20)	H

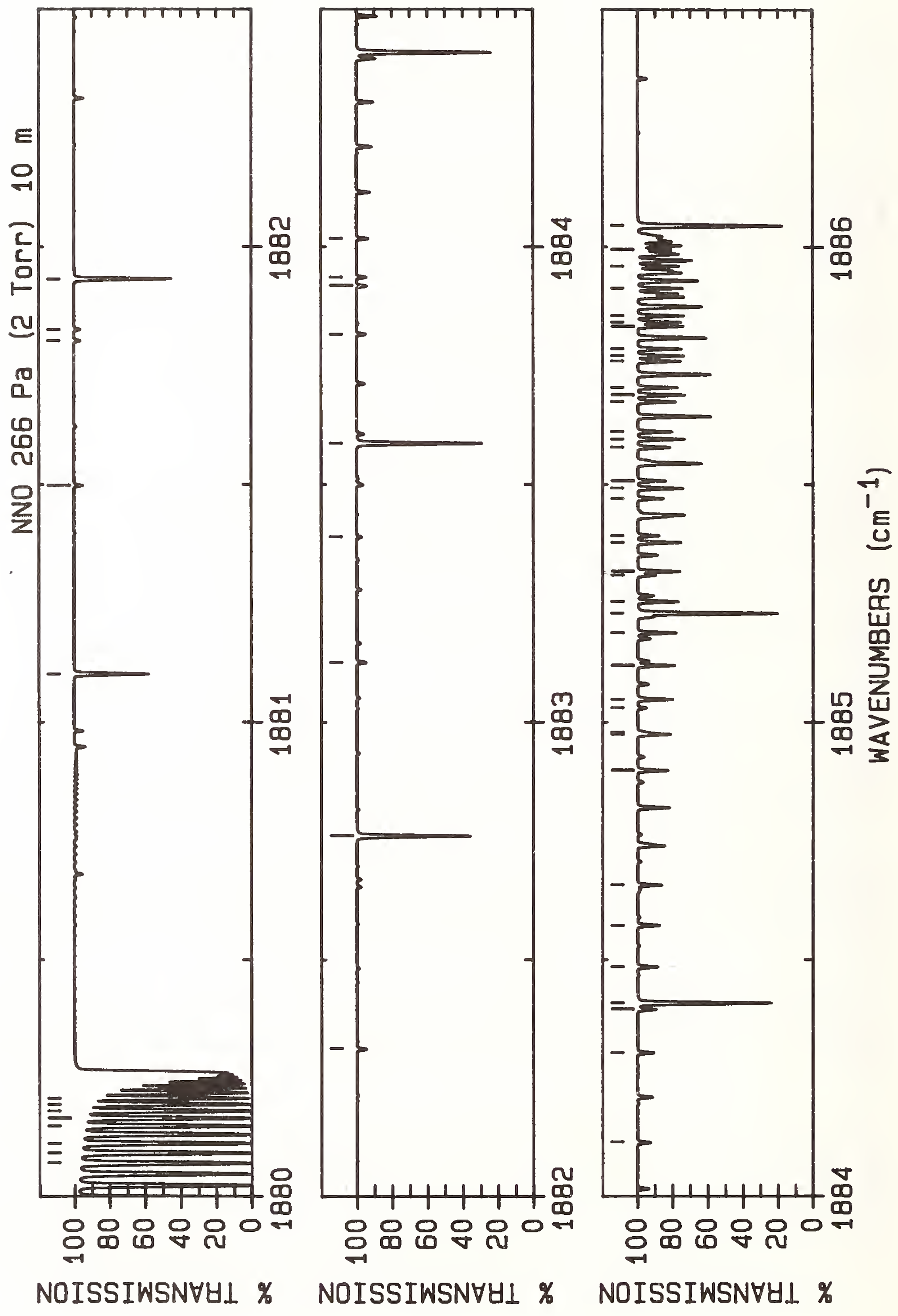
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
31	1872.467 96(14)	702.77	0.120E-22	P(16)	B
32	1872.527 23(14)	748.33	0.112E-22	Q(19)	H
33	1872.598 17(14)	732.38	0.116E-22	Q(18)	H
34	1872.612 69(7)*	37.71	0.167E-21	P(9)	A
35	1872.665 21(14)	717.26	0.118E-22	Q(17)	H
36	1872.728 39(14)	702.99	0.120E-22	Q(16)	H
37	1872.787 71(13)	689.55	0.121E-22	Q(15)	H
38	1872.843 21(13)	676.95	0.121E-22	Q(14)	H
39	1872.894 92(13)	665.20	0.120E-22	Q(13)	H
40	1872.942 84(13)	654.28	0.117E-22	Q(12)	H
41	1872.987 00(13)	644.20	0.114E-22	Q(11)	H
42	1873.027 42(13)	634.96	0.109E-22	Q(10)	H
43	1873.064 11(13)	626.56	0.103E-22	Q(9)	H
44	1873.097 09(14)	619.00	0.956E-23	Q(8)	H
45	1873.126 37(14)	612.29	0.874E-23	Q(7)	H
46	1873.132 14(15)	689.55	0.120E-22	P(15)	C
47	1873.151 96(14)	606.41	0.781E-23	Q(6)	H
48	1873.173 88(14)	601.37	0.678E-23	Q(5)	H
49	1873.192 13(14)	597.17	0.567E-23	Q(4)	H
50	1873.206 72(15)	593.81	0.449E-23	Q(3)	H
51	1873.324 46(15)	689.36	0.116E-22	P(15)	B
52	1873.475 30(7)*	30.17	0.149E-21	P(8)	A
53	1874.011 88(15)	676.95	0.115E-22	P(14)	C



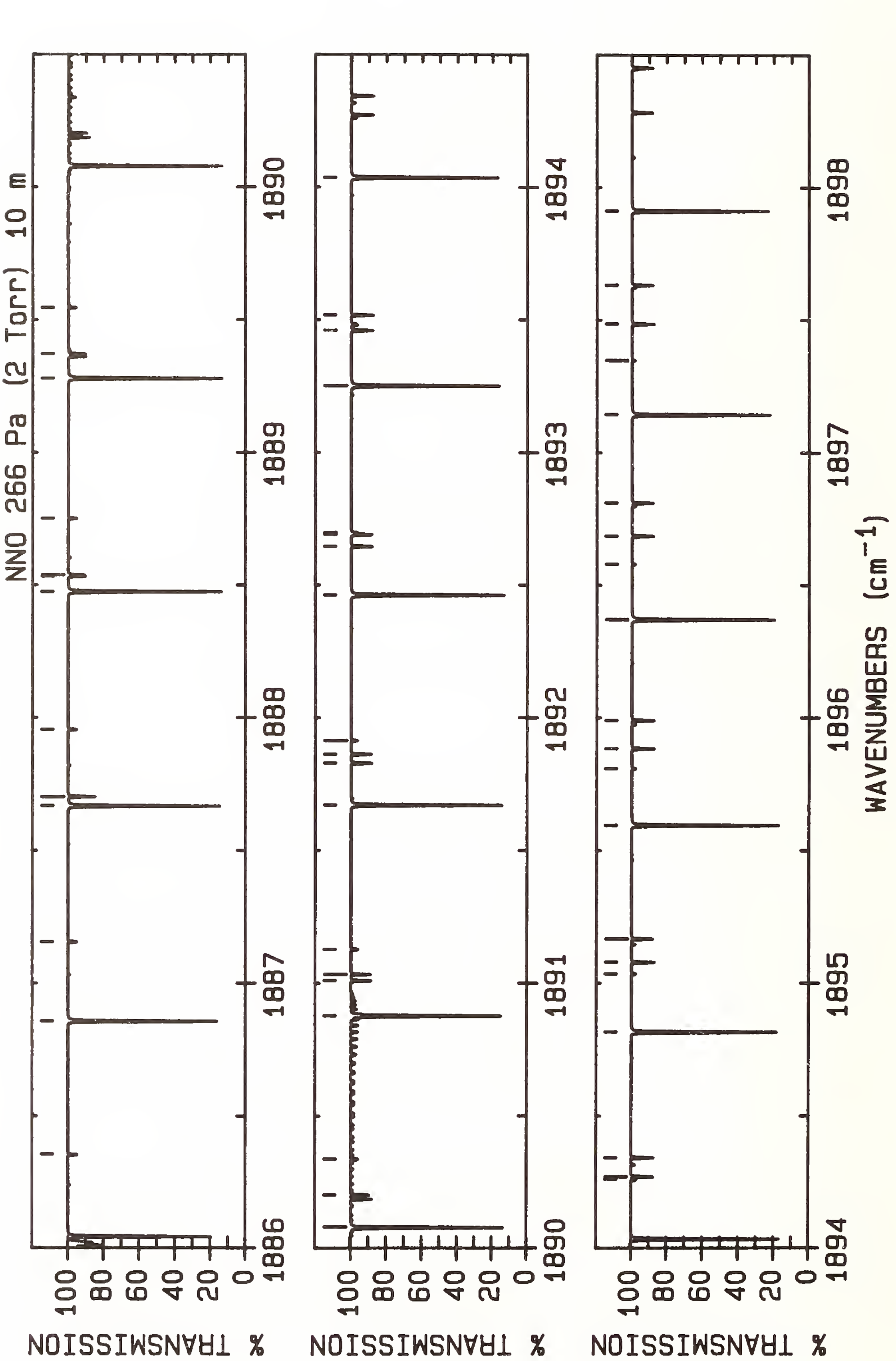
NNO 266 Pa (2 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
1874
1875
1876
1877
1878
1879
1880
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1874.179 88(16)	676.79	0.112E-22	P(14)	B
2	1874.334 85(7)*	23.46	0.129E-21	P(7)	A
3	1874.888 80(16)	665.20	0.109E-22	P(13)	C
4	1875.034 18(16)	665.05	0.106E-22	P(13)	B
5	1875.191 34(7)*	17.60	0.109E-21	P(6)	A
6	1875.762 91(17)	654.28	0.102E-22	P(12)	C
7	1875.887 35(17)	654.15	0.999E-23	P(12)	B
8	1876.044 76(7)*	12.57	0.875E-22	P(5)	A
9	1876.634 21(18)	644.20	0.937E-23	P(11)	C
10	1876.739 36(18)	644.10	0.922E-23	P(11)	B
11	1876.895 11(7)*	8.38	0.657E-22	P(4)	A
12	1877.502 68(18)	634.96	0.846E-23	P(10)	C
13	1878.346 70(10)*	1288.88	0.443E-23	Q(55)	A
14	1878.368 32(19)	626.56	0.748E-23	P(9)	C
15	1878.413 42(10)*	1242.91	0.544E-23	Q(54)	A
16	1878.439 85(19)	626.49	0.739E-23	P(9)	B
17	1878.479 08(10)*	1197.77	0.665E-23	Q(53)	A
18	1878.543 66(9)*	1153.46	0.810E-23	Q(52)	A
19	1878.586 58(7)*	2.51	0.216E-22	P(2)	A
20	1878.607 16(9)*	1109.98	0.981E-23	Q(51)	A
21	1878.669 56(9)*	1067.33	0.118E-22	Q(50)	A
22	1878.730 86(9)*	1025.52	0.142E-22	Q(49)	A
23	1878.791 04(8)*	984.54	0.170E-22	Q(48)	A
24	1878.850 11(8)*	944.39	0.202E-22	Q(47)	A
25	1878.908 04(8)*	905.08	0.240E-22	Q(46)	A
26	1878.964 84(8)*	866.60	0.283E-22	Q(45)	A
27	1879.075 00(8)*	792.14	0.389E-22	Q(43)	A
28	1879.128 35(8)*	756.16	0.452E-22	Q(42)	A
29	1879.180 53(8)*	721.01	0.524E-22	Q(41)	A
30	1879.281 38(7)*	653.23	0.693E-22	Q(39)	A

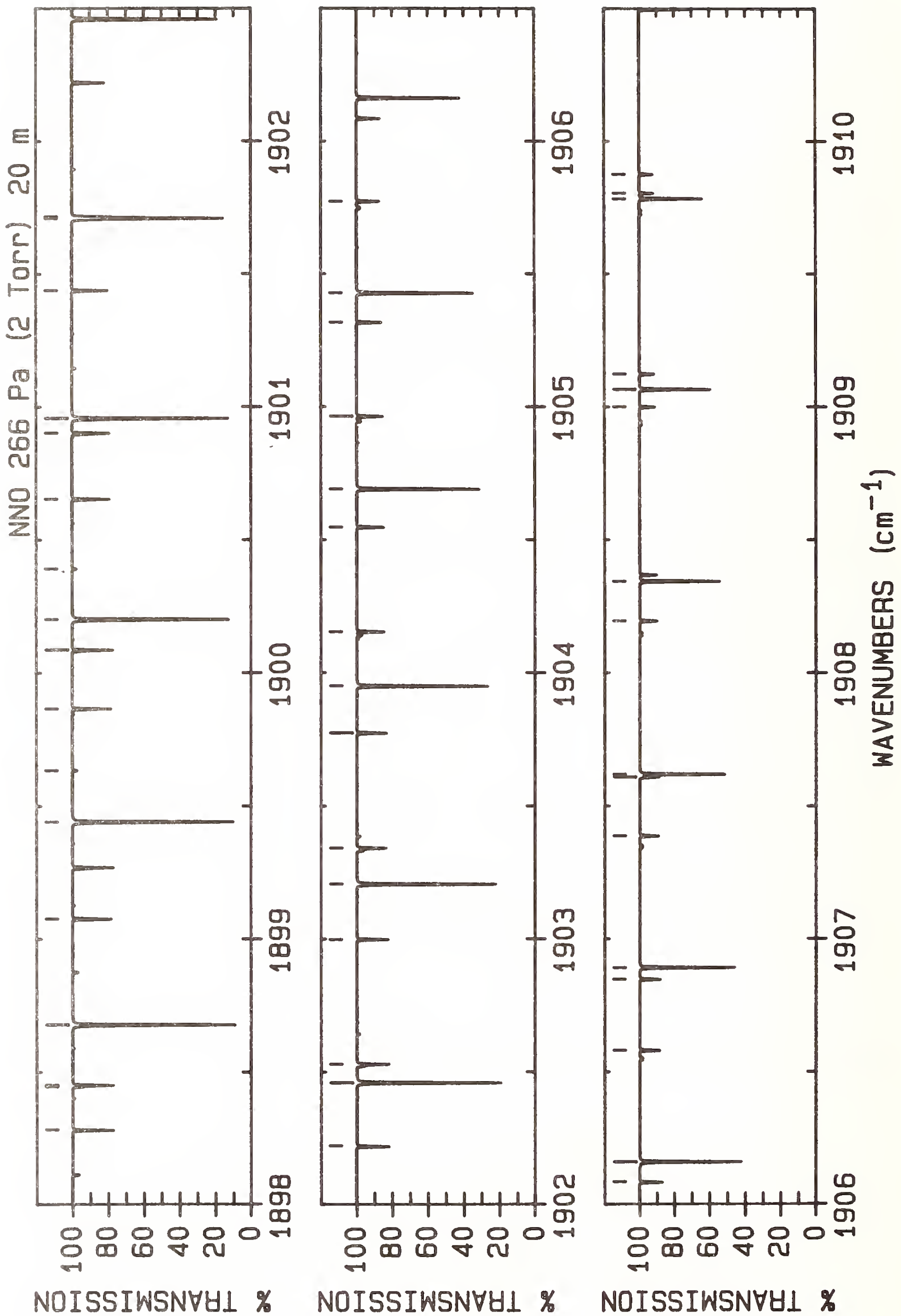
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
31	1879.288 30(19)	618.95	0.636E-23	P(8)	B
32	1879.330 04(7)*	620.59	0.792E-22	Q(38)	A
33	1879.377 51(7)*	588.78	0.900E-22	Q(37)	A
34	1879.423 79(7)*	557.81	0.102E-21	Q(36)	A
35	1879.468 87(7)*	527.67	0.115E-21	Q(35)	A
36	1879.512 74(7)*	498.37	0.128E-21	Q(34)	A
37	1879.555 41(7)*	469.91	0.143E-21	Q(33)	A
38	1879.596 87(7)*	442.28	0.159E-21	Q(32)	A
39	1879.637 11(7)*	415.49	0.176E-21	Q(31)	A
40	1879.676 13(7)*	389.53	0.193E-21	Q(30)	A
41	1879.713 93(7)*	364.41	0.211E-21	Q(29)	A
42	1879.750 50(7)*	340.12	0.229E-21	Q(28)	A
43	1879.785 85(7)*	316.67	0.248E-21	Q(27)	A
44	1879.819 95(7)*	294.06	0.267E-21	Q(26)	A
45	1879.852 82(7)*	272.28	0.285E-21	Q(25)	A
46	1879.860 59(14)	612.24	0.349E-23	R(7)	H
47	1879.884 45(7)*	251.34	0.303E-21	Q(24)	A
48	1879.914 83(7)*	231.24	0.321E-21	Q(23)	A
49	1879.943 97(7)*	211.97	0.337E-21	Q(22)	A
50	1879.971 86(7)*	193.54	0.353E-21	Q(21)	A
51	1879.998 49(7)*	175.95	0.366E-21	Q(20)	A
52	1880.023 88(7)*	159.20	0.378E-21	Q(19)	A


NNO 266 Pa (2 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1880
1881
1882
1883
1884
1885
1886
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1880.070 87(7)*	128.20	0.394E-21	Q(17)	A
2	1880.092 48(7)*	113.96	0.398E-21	Q(16)	A
3	1880.112 83(7)*	100.55	0.399E-21	Q(15)	A
4	1880.149 73(7)*	76.25	0.391E-21	Q(13)	A
5	1880.166 28(7)*	65.36	0.382E-21	Q(12)	A
6	1880.181 57(7)*	55.31	0.369E-21	Q(11)	A
7	1880.195 58(7)*	46.09	0.353E-21	Q(10)	A
8	1880.208 32(7)*	37.71	0.332E-21	Q(9)	A
9	1881.100 64(7)*	0.00	0.411E-22	R(0)	A
10	1881.497 37(13)	626.49	0.401E-23	R(9)	H
11	1881.802 46(21)	601.37	0.302E-23	P(5)	C
12	1881.826 24(21)	601.34	0.300E-23	P(5)	B
13	1881.932 47(7)*	0.84	0.602E-22	R(1)	A
14	1882.312 49(13)	634.88	0.419E-23	R(10)	H
15	1882.761 20(7)*	2.51	0.779E-22	R(2)	A
16	1883.125 40(13)	644.10	0.432E-23	R(11)	H
17	1883.389 65(28)	1419.61	0.232E-23	Q(44)	C
18	1883.586 83(7)*	5.03	0.941E-22	R(3)	A
19	1883.815 79(28)	1277.04	0.411E-23	Q(40)	C
20	1883.917 57(28)	1243.48	0.468E-23	Q(39)	C
21	1883.936 09(13)	654.15	0.440E-23	R(12)	H
22	1884.017 38(27)	1210.77	0.531E-23	Q(38)	C
23	1884.115 18(26)	1178.89	0.600E-23	Q(37)	C
24	1884.304 60(24)	1117.64	0.754E-23	Q(35)	C
25	1884.396 16(23)	1088.28	0.839E-23	Q(34)	C
26	1884.409 34(7)*	8.38	0.109E-21	R(4)	A
27	1884.485 56(22)	1059.75	0.929E-23	Q(33)	C
28	1884.572 78(21)	1032.06	0.102E-22	Q(32)	C
29	1884.657 77(20)	1005.20	0.112E-22	Q(31)	C
30	1884.899 05(16)	929.66	0.144E-22	Q(28)	C
31	1884.974 81(16)	906.16	0.155E-22	Q(27)	C
32	1884.979 48(23)	1275.74	0.346E-23	Q(40)	B
33	1885.030 30(23)	1242.25	0.397E-23	Q(39)	B
34	1885.048 17(15)	883.50	0.166E-22	Q(26)	C
35	1885.119 10(14)	861.67	0.176E-22	Q(25)	C
36	1885.187 59(13)	840.68	0.186E-22	Q(24)	C
37	1885.228 75(7)*	12.57	0.122E-21	R(5)	A
38	1885.253 58(13)	820.54	0.196E-22	Q(23)	C
39	1885.309 37(22)	1058.86	0.821E-23	Q(33)	B
40	1885.317 06(13)	801.23	0.205E-22	Q(22)	C
41	1885.378 00(12)	782.76	0.213E-22	Q(21)	C
42	1885.392 47(20)	1004.42	0.100E-22	Q(31)	B
43	1885.470 58(19)	953.32	0.121E-22	Q(29)	B
44	1885.492 13(13)	748.33	0.226E-22	Q(19)	C
45	1885.507 76(18)	929.02	0.131E-22	Q(28)	B
46	1885.578 33(16)	882.94	0.153E-22	Q(26)	B
47	1885.595 76(13)	717.26	0.233E-22	Q(17)	C
48	1885.611 72(15)	861.16	0.163E-22	Q(25)	B
49	1885.674 71(14)	820.10	0.184E-22	Q(23)	B
50	1885.688 71(14)	689.55	0.234E-22	Q(15)	C
51	1885.704 30(13)	800.83	0.193E-22	Q(22)	B
52	1885.759 67(13)	764.79	0.209E-22	Q(20)	B
53	1885.770 79(16)	665.20	0.227E-22	Q(13)	C
54	1885.785 44(13)	748.03	0.216E-22	Q(19)	B
55	1885.833 14(13)	717.02	0.225E-22	Q(17)	B
56	1885.841 86(17)	644.20	0.212E-22	Q(11)	C
57	1885.855 08(14)	702.77	0.227E-22	Q(16)	B
58	1885.913 18(15)	665.05	0.222E-22	Q(13)	B
59	1885.959 70(18)	634.88	0.199E-22	Q(10)	B
60	1885.994 62(19)	612.24	0.156E-22	Q(7)	B
61	1886.045 03(7)*	17.60	0.132E-21	R(6)	A


NNO 266 Pa (2 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
1886 1887 1888 1889 1890
1890 1891 1892 1893 1894
1894 1895 1896 1897 1898
WAVENUMBERS (cm^{-1})

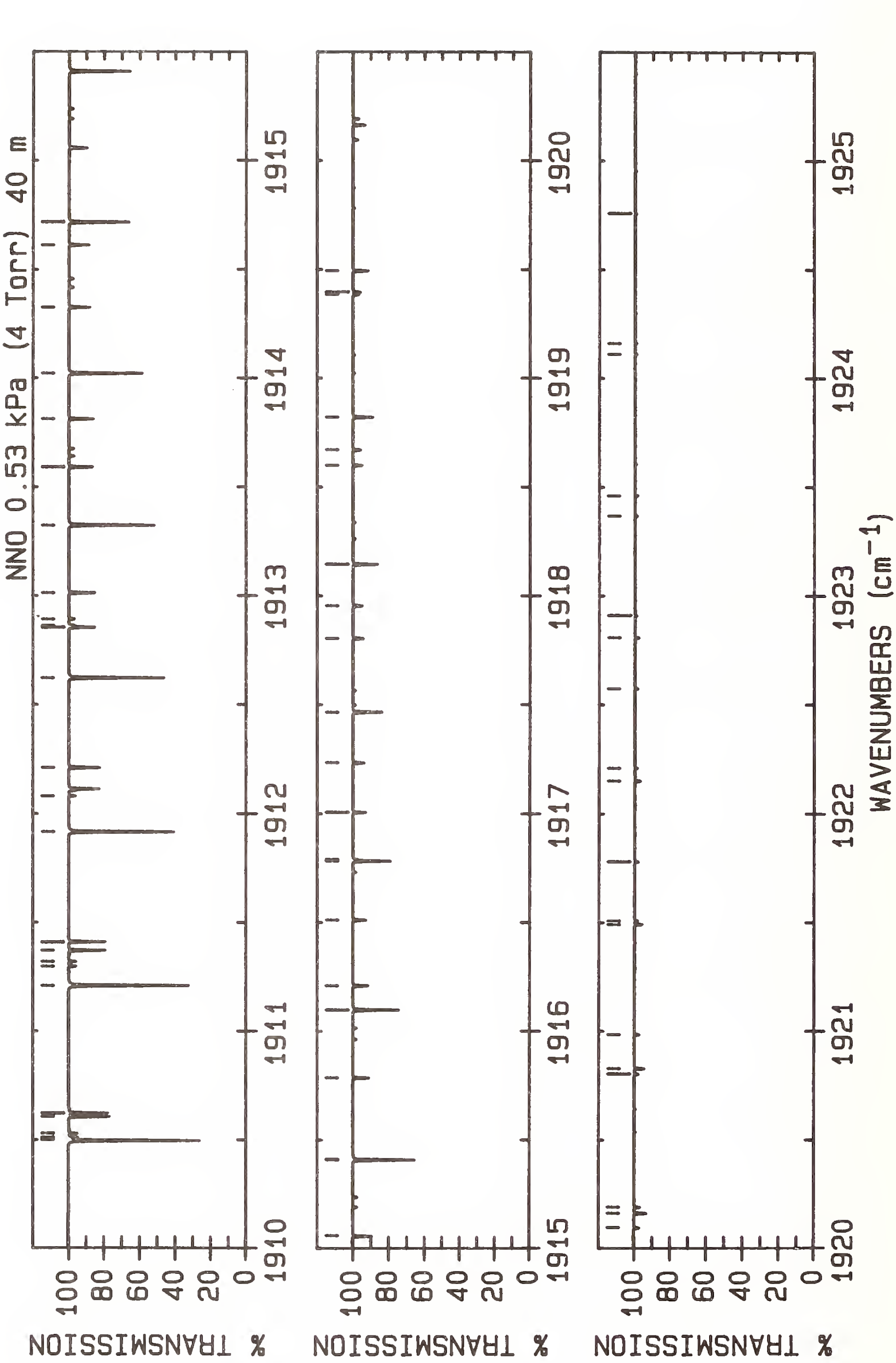
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1886.354 51(14)	689.36	0.435E-23	R(15)	H
2	1886.858 19(7)*	23.46	0.141E-21	R(7)	A
3	1887.156 02(14)	702.77	0.425E-23	R(16)	H
4	1887.668 23(7)*	30.17	0.149E-21	R(8)	A
5	1887.702 09(21)	589.61	0.691E-23	R(1)	C
6	1887.703 68(21)	589.61	0.691E-23	R(1)	B
7	1887.955 17(14)	717.02	0.413E-23	R(17)	H
8	1888.475 14(7)*	37.71	0.154E-21	R(9)	A
9	1888.533 38(21)	591.29	0.745E-23	R(2)	C
10	1888.538 14(21)	591.28	0.745E-23	R(2)	B
11	1888.751 92(14)	732.11	0.398E-23	R(18)	H
12	1889.278 91(7)*	46.09	0.158E-21	R(10)	A
13	1889.371 31(21)	593.80	0.809E-23	R(3)	B
14	1889.546 25(15)	748.03	0.380E-23	R(19)	H
15	1890.079 55(7)*	55.31	0.159E-21	R(11)	A
16	1890.203 17(20)	597.15	0.871E-23	R(4)	B
17	1890.338 12(15)	764.79	0.361E-23	R(20)	H
18	1890.877 05(7)*	65.36	0.160E-21	R(12)	A
19	1891.009 90(20)	601.37	0.930E-23	R(5)	C
20	1891.033 75(20)	601.34	0.926E-23	R(5)	B
21	1891.127 49(15)	782.39	0.340E-23	R(21)	H
22	1891.671 40(7)*	76.25	0.158E-21	R(13)	A
23	1891.829 60(19)	606.41	0.978E-23	R(6)	C
24	1891.863 03(19)	606.37	0.972E-23	R(6)	B
25	1891.914 34(15)	800.83	0.319E-23	R(22)	H
26	1892.462 60(7)*	87.98	0.155E-21	R(14)	A
27	1892.646 40(19)	612.29	0.102E-22	R(7)	C
28	1892.691 02(19)	612.24	0.101E-22	R(7)	B
29	1892.698 63(15)	820.10	0.297E-23	R(23)	H
30	1893.250 65(7)*	100.55	0.151E-21	R(15)	A
31	1893.460 29(18)	619.00	0.104E-22	R(8)	C
32	1893.517 73(18)	618.95	0.103E-22	R(8)	B
33	1894.035 55(7)*	113.96	0.147E-21	R(16)	A
34	1894.259 36(15)	861.16	0.252E-23	R(25)	H
35	1894.271 27(18)	626.56	0.106E-22	R(9)	C
36	1894.343 17(18)	626.49	0.105E-22	R(9)	B
37	1894.817 28(7)*	128.20	0.141E-21	R(17)	A
38	1895.035 72(15)	882.94	0.231E-23	R(26)	H
39	1895.079 34(17)	634.96	0.107E-22	R(10)	C
40	1895.167 35(17)	634.88	0.105E-22	R(10)	B
41	1895.595 86(7)*	143.28	0.134E-21	R(18)	A
42	1895.809 36(15)	905.56	0.210E-23	R(27)	H
43	1895.884 48(16)	644.20	0.107E-22	R(11)	C
44	1895.990 28(16)	644.10	0.105E-22	R(11)	B
45	1896.371 26(7)*	159.20	0.127E-21	R(19)	A
46	1896.580 25(15)	929.02	0.189E-23	R(28)	H
47	1896.686 71(15)	654.28	0.106E-22	R(12)	C
48	1896.811 96(16)	654.15	0.104E-22	R(12)	B
49	1897.143 50(7)*	175.95	0.119E-21	R(20)	A
50	1897.348 32(15)	953.32	0.170E-23	R(29)	H
51	1897.486 01(15)	665.20	0.104E-22	R(13)	C
52	1897.632 42(15)	665.05	0.101E-22	R(13)	B
53	1897.912 56(7)*	193.54	0.111E-21	R(21)	A



NNO 266 Pa (2 Torr) 20 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100 80 60 40 20 0
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1898.282 38(14)	676.95	0.101E-22	R(14)	C
2	1898.446 20(0)	1207.99	0.108E-23	R(8)	E
3	1898.446 51(0)	1207.99	0.108E-23	R(8)	F
4	1898.451 66(14)	676.79	0.984E-23	R(14)	B
5	1898.678 44(7)*	211.97	0.103E-21	R(22)	A
6	1899.075 83(14)	689.55	0.978E-23	R(15)	C
7	1899.441 15(7)*	231.24	0.952E-22	R(23)	A
8	1899.635 31(15)	1031.22	0.119E-23	R(32)	H
9	1899.866 34(13)	702.99	0.939E-23	R(16)	C
10	1900.086 56(13)	702.77	0.907E-23	R(16)	B
11	1900.200 67(7)*	251.34	0.873E-22	R(24)	A
12	1900.391 74(16)	1058.86	0.105E-23	R(33)	H
13	1900.653 92(13)	717.26	0.896E-23	R(17)	C
14	1900.902 26(13)	717.02	0.862E-23	R(17)	B
15	1900.957 00(7)*	272.28	0.795E-22	R(25)	A
16	1901.438 56(13)	732.38	0.849E-23	R(18)	C
17	1901.710 14(7)*	294.06	0.720E-22	R(26)	A
18	1901.716 81(13)	732.11	0.813E-23	R(18)	B
19	1902.220 26(13)	748.33	0.799E-23	R(19)	C
20	1902.460 09(7)*	316.67	0.649E-22	R(27)	A
21	1902.530 24(12)	748.03	0.762E-23	R(19)	B
22	1902.999 02(13)	765.12	0.748E-23	R(20)	C
23	1903.206 85(7)*	340.12	0.581E-22	R(28)	A
24	1903.342 55(12)	764.79	0.710E-23	R(20)	B
25	1903.774 84(13)	782.76	0.696E-23	R(21)	C

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
26	1903.950 40(7)*	364.41	0.517E-22	R(29)	A
27	1904.153 79(13)	782.39	0.656E-23	R(21)	B
28	1904.547 72(14)	801.23	0.643E-23	R(22)	C
29	1904.690 75(7)*	389.53	0.458E-22	R(30)	A
30	1904.963 97(13)	800.83	0.603E-23	R(22)	B
31	1905.317 65(15)	820.54	0.591E-23	R(23)	C
32	1905.427 90(7)*	415.49	0.403E-22	R(31)	A
33	1905.773 11(13)	820.10	0.551E-23	R(23)	B
34	1906.084 63(15)	840.68	0.540E-23	R(24)	C
35	1906.161 84(7)*	442.28	0.353E-22	R(32)	A
36	1906.581 23(14)	840.21	0.500E-23	R(24)	B
37	1906.848 66(16)	861.67	0.490E-23	R(25)	C
38	1906.892 57(7)*	469.91	0.308E-22	R(33)	A
39	1907.388 37(15)	861.16	0.452E-23	R(25)	B
40	1907.609 75(17)	883.50	0.443E-23	R(26)	C
41	1907.620 08(7)*	498.37	0.266E-22	R(34)	A
42	1908.194 55(16)	882.94	0.405E-23	R(26)	B
43	1908.344 38(7)*	527.67	0.229E-22	R(35)	A
44	1908.999 80(16)	905.56	0.361E-23	R(27)	B
45	1909.065 46(7)*	557.81	0.197E-22	R(36)	A
46	1909.123 06(19)	929.66	0.355E-23	R(28)	C
47	1909.783 32(7)*	588.78	0.167E-22	R(37)	A
48	1909.804 14(17)	929.02	0.320E-23	R(28)	B
49	1909.875 28(19)	954.01	0.316E-23	R(29)	C



NNO 0.53 kPa (4 Torr) 40 m
% TRANSMISSION
100 80 60 40 20 0
1910 1911 1912 1913 1914 1915
1915 1916 1917 1918 1919 1920
1920 1921 1922 1923 1924 1925
WAVENUMBERS (cm-1)

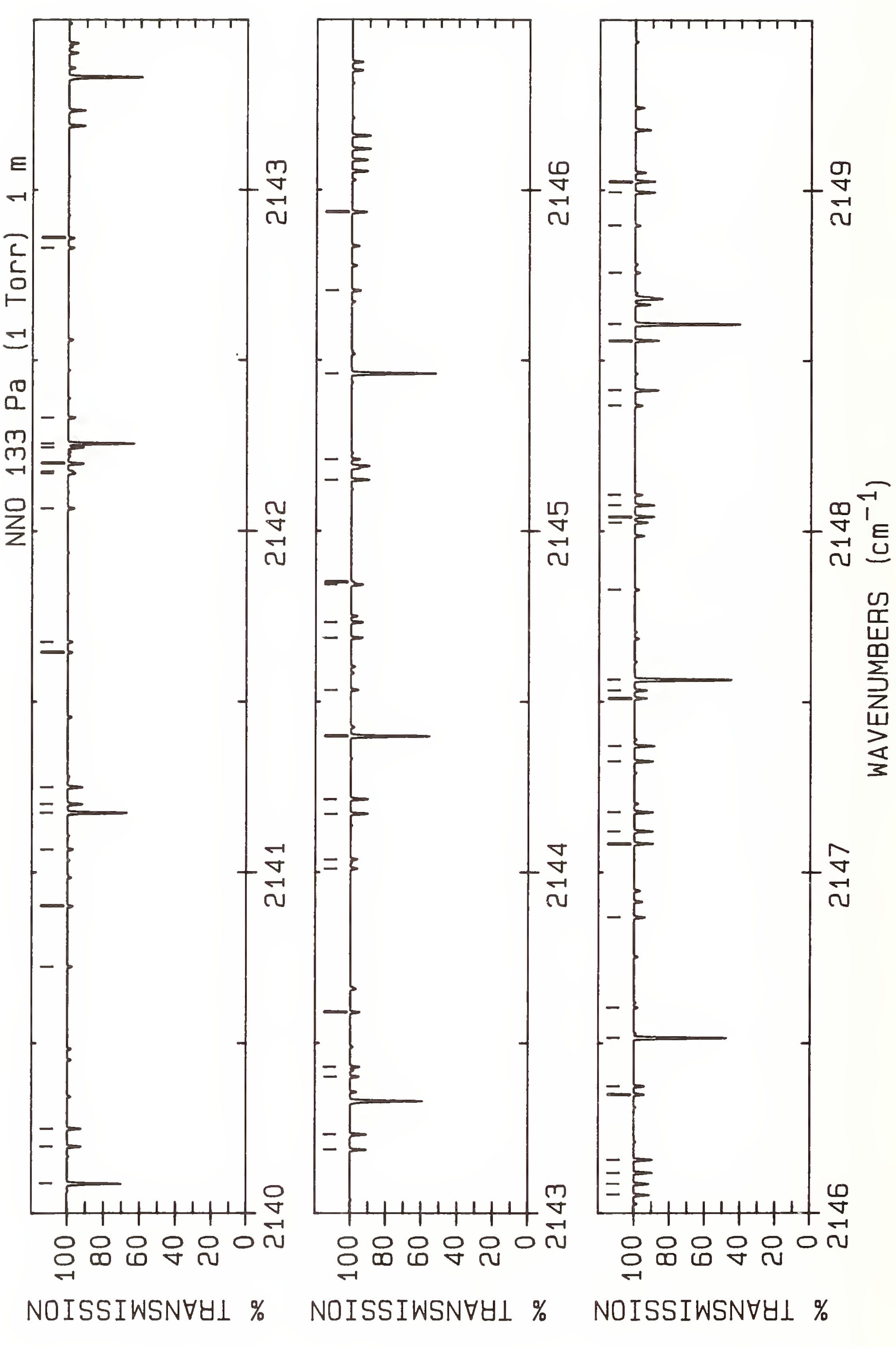
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1910.497 96(7)*	620.59	0.142E-22	R(38)	A
2	1910.511 9	1409.62	0.539E-24	R(23)	E
3	1910.530 2	1409.60	0.539E-24	R(23)	F
4	1910.607 61(19)	953.32	0.282E-23	R(29)	B
5	1910.624 55(20)	979.18	0.279E-23	R(30)	C
6	1911.209 37(7)*	653.23	0.120E-22	R(39)	A
7	1911.298 1	1429.78	0.490E-24	R(24)	E
8	1911.319 7	1429.76	0.490E-24	R(24)	F
9	1911.370 87(21)	1005.20	0.245E-23	R(31)	C
10	1911.410 22(20)	978.45	0.248E-23	R(30)	B
11	1911.917 55(7)*	686.70	0.100E-22	R(40)	A
12	1912.081 9	1450.78	0.443E-24	R(25)	E
13	1912.212 02(21)	1004.42	0.216E-23	R(31)	B
14	1912.622 50(8)*	721.01	0.837E-23	R(41)	A
15	1912.854 64(22)	1059.75	0.186E-23	R(33)	C
16	1912.863 2	1472.61	0.399E-24	R(26)	E
17	1912.892 7	1472.58	0.398E-24	R(26)	F
18	1913.013 03(22)	1031.22	0.187E-23	R(32)	B
19	1913.324 23(8)*	756.16	0.695E-23	R(42)	A
20	1913.592 08(23)	1088.28	0.161E-23	R(34)	C
21	1913.813 28(23)	1058.86	0.161E-23	R(33)	B
22	1914.022 72(8)*	792.14	0.573E-23	R(43)	A
23	1914.326 57(23)	1117.64	0.138E-23	R(35)	C
24	1914.612 80(24)	1087.34	0.138E-23	R(34)	B
25	1914.717 97(8)*	828.95	0.471E-23	R(44)	A
26	1915.058 11(23)	1147.85	0.118E-23	R(36)	C
27	1915.409 99(8)*	866.60	0.384E-23	R(45)	A
28	1915.411 62(25)	1116.65	0.118E-23	R(35)	B
29	1915.786 69(23)	1178.89	0.101E-23	R(37)	C
30	1916.098 77(8)*	905.08	0.312E-23	R(46)	A
31	1916.209 77(26)	1146.80	0.997E-24	R(36)	B
32	1916.512 31(23)	1210.77	0.851E-24	R(38)	C
33	1916.784 32(8)*	944.39	0.252E-23	R(47)	A
34	1916.791 5	1594.33	0.215E-24	R(31)	F
35	1917.007 29(27)	1177.78	0.840E-24	R(37)	B
36	1917.234 97(23)	1243.48	0.716E-24	R(39)	C
37	1917.466 62(9)*	984.54	0.202E-23	R(48)	A
38	1917.804 21(28)	1209.60	0.704E-24	R(38)	B
39	1917.954 67(23)	1277.04	0.600E-24	R(40)	C
40	1918.145 68(9)*	1025.52	0.162E-23	R(49)	A
41	1918.600 54(28)	1242.25	0.586E-24	R(39)	B
42	1918.671 43(23)	1311.42	0.500E-24	R(41)	C
43	1918.821 50(9)*	1067.33	0.129E-23	R(50)	A
44	1919.385 22(24)	1346.65	0.414E-24	R(42)	C
45	1919.396 34(29)	1275.74	0.486E-24	R(40)	B
46	1919.494 07(9)*	1109.98	0.102E-23	R(51)	A
47	1920.096 06(24)	1382.71	0.341E-24	R(43)	C
48	1920.163 41(10)*	1153.46	0.798E-24	R(52)	A
49	1920.191 62(29)	1310.06	0.401E-24	R(41)	B
50	1920.803 95(24)	1419.61	0.280E-24	R(44)	C
51	1920.829 50(10)*	1197.77	0.623E-24	R(53)	A
52	1920.986 41(28)	1345.22	0.328E-24	R(42)	B
53	1921.492 34(10)*	1242.91	0.484E-24	R(54)	A
54	1921.508 88(25)	1457.34	0.228E-24	R(45)	C
55	1921.780 75(28)	1381.21	0.267E-24	R(43)	B
56	1922.151 95(11)*	1288.88	0.374E-24	R(55)	A
57	1922.210 86(26)	1495.90	0.185E-24	R(46)	C
58	1922.574 67(27)	1418.04	0.217E-24	R(44)	B
59	1922.808 31(11)*	1335.69	0.287E-24	R(56)	A
60	1922.909 90(28)	1535.31	0.149E-24	R(47)	C
61	1923.368 19(27)	1455.70	0.175E-24	R(45)	B
62	1923.461 42(12)*	1383.33	0.219E-24	R(57)	A
63	1924.111 29(12)*	1431.79	0.167E-24	R(58)	A
64	1924.161 34(26)	1494.20	0.140E-24	R(46)	B
65	1924.757 92(13)*	1481.09	0.126E-24	R(59)	A

ATLAS OF N_2O ABSORPTION LINES FROM 2140 cm^{-1} to 2269 cm^{-1}

key:

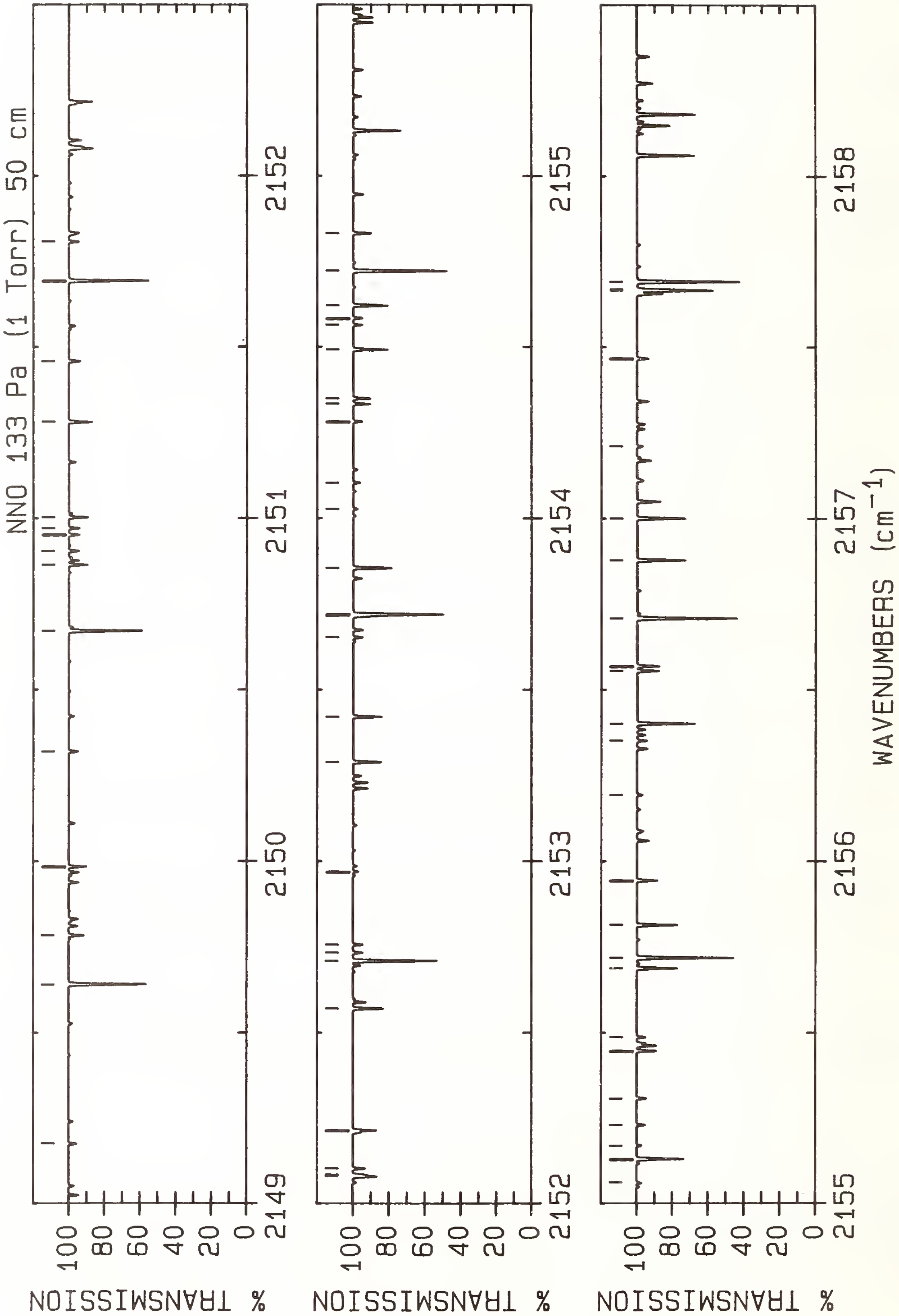
Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	$10^00\text{-}00^00$
B		$11^10\text{-}01^{1e}0$
C		$11^10\text{-}01^{1f}0$
D		$10^01\text{-}00^01$
E		$12^20\text{-}02^{2e}0$
F		$12^20\text{-}02^{2f}0$
G		$12^00\text{-}02^00$
H		$11^11\text{-}01^{1e}1$
I		$11^11\text{-}01^{1f}1$
J		$13^10\text{-}03^{1e}0$
K		$13^10\text{-}03^{1f}0$
L		$13^30\text{-}03^{3e}0$
M		$13^30\text{-}03^{3f}0$
P	$^{14}N^{15}N^{16}O$	$10^00\text{-}00^00$
N		$11^10\text{-}01^{1e}0$
O		$11^10\text{-}01^{1f}0$
R	$^{15}N^{14}N^{16}O$	$10^00\text{-}00^00$
S		$11^10\text{-}01^{1e}0$
W		$11^10\text{-}01^{1f}0$
T	$^{14}N^{14}N^{18}O$	$10^00\text{-}00^00$
Y		$11^10\text{-}01^{1e}0$
Z		$11^10\text{-}01^{1f}0$
V	$^{14}N^{14}N^{17}O$	$10^00\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.244 debye at a temperature of 296 K. The Herman-Wallis constants used in the calculations were C_1 = -0.00012 and C_2 = -0.0000098 as given by Boissy *et al.* **[5.187]**.



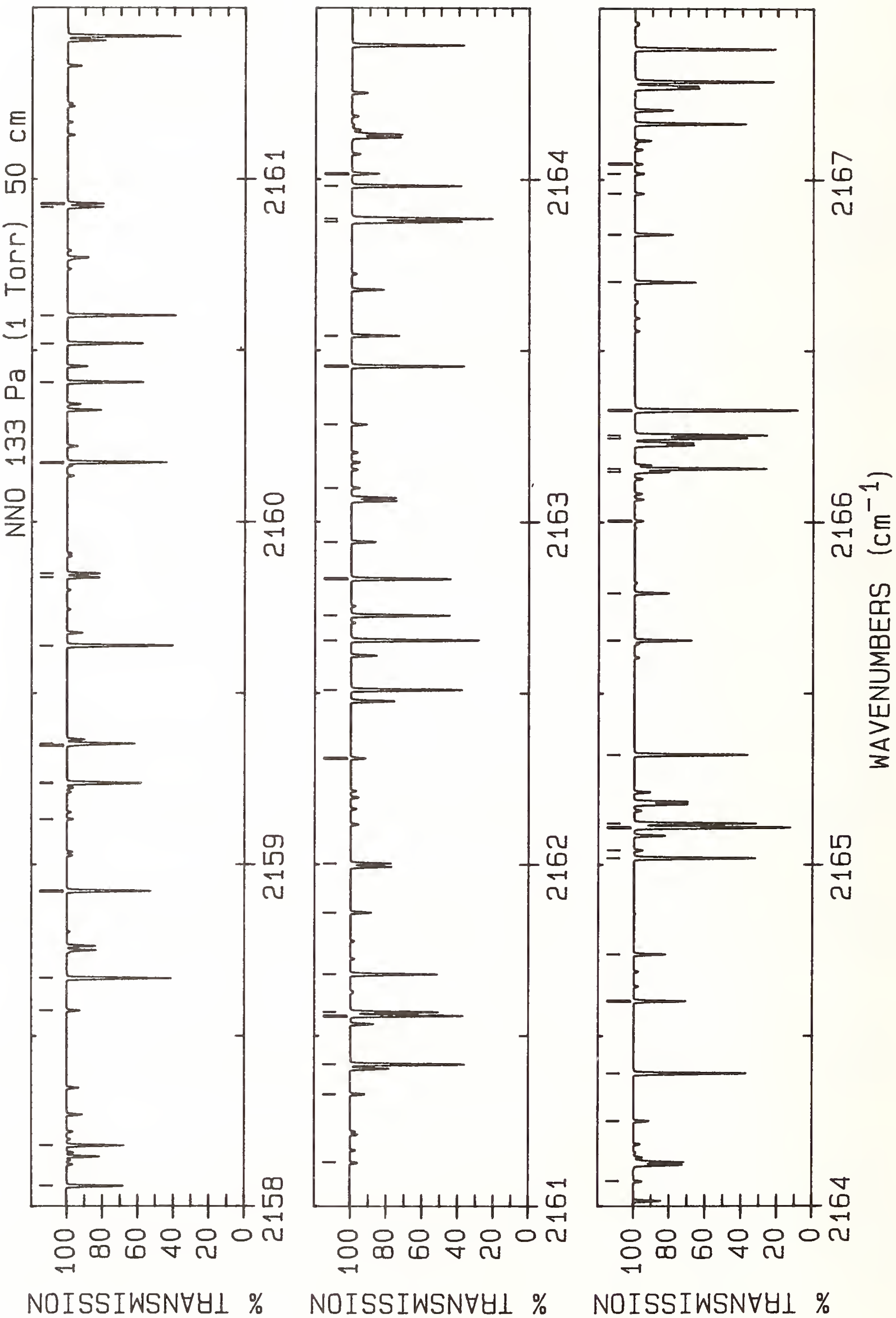
NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
100 80 60 40 20 0
2140 2141 2142 2143
2143 2144 2145 2146
2146 2147 2148 2149
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2140.087 86(3)	653.18	0.558E-21	P(39)	P	36	2145.149 3	769.40	0.172E-21	P(21)	O
2	2140.197 6	870.13	0.130E-21	P(26)	O	37	2145.209 6	2247.89	0.839E-22	P(50)	F
3	2140.249 8	869.56	0.131E-21	P(26)	N	38	2145.460 92(3)	498.34	0.104E-20	P(34)	P
4	2140.723 78(5)*	2446.02	0.471E-22	P(76)	A	39	2145.704 6	2237.36	0.885E-22	P(50)	G
5	2140.900 70(8)*	2387.14	0.545E-22	P(65)	C	40	2145.934 91(8)*	2174.53	0.145E-21	P(61)	C
6	2141.067 71(8)*	2383.76	0.554E-22	P(65)	B	41	2146.054 87(5)*	2197.45	0.151E-21	P(72)	A
7	2141.175 45(3)	620.54	0.638E-21	P(38)	P	42	2146.087 58(8)*	2171.55	0.147E-21	P(61)	B
8	2141.200 9	848.30	0.139E-21	P(25)	O	43	2146.120 1	751.77	0.179E-21	P(20)	O
9	2141.250 7	847.78	0.140E-21	P(25)	N	44	2146.158 5	751.43	0.179E-21	P(20)	N
10	2141.644 3	2379.09	0.468E-22	P(53)	E	45	2146.350 4	2206.29	0.101E-21	P(49)	E
11	2141.674 6	2378.66	0.469E-22	P(53)	F	46	2146.374 9	2205.96	0.101E-21	P(49)	F
12	2142.066 37(5)*	2382.64	0.634E-22	P(75)	A	47	2146.516 04(3)	469.88	0.116E-20	P(33)	P
13	2142.169 07(8)*	2332.74	0.700E-22	P(64)	C	48	2146.604 30(28)	2340.67	0.401E-22	P(37)	K
14	2142.174 7	2367.97	0.495E-22	P(53)	G	49	2146.868 3	2195.49	0.106E-21	P(49)	G
15	2142.197 7	827.32	0.148E-21	P(24)	O	50	2147.084 5	734.98	0.185E-21	P(19)	O
16	2142.245 2	826.83	0.149E-21	P(24)	N	51	2147.120 6	734.67	0.185E-21	P(19)	N
17	2142.256 55(3)	588.74	0.726E-21	P(37)	P	52	2147.177 09(8)*	2123.45	0.183E-21	P(60)	C
18	2142.332 43(8)*	2329.46	0.712E-22	P(64)	B	53	2147.326 27(8)*	2120.57	0.185E-21	P(60)	B
19	2142.830 6	2334.64	0.571E-22	P(52)	E	54	2147.371 27(5)*	2137.38	0.199E-21	P(71)	A
20	2142.859 4	2334.23	0.572E-22	P(52)	F	55	2147.510 5	2165.18	0.121E-21	P(48)	E
21	2143.188 1	807.17	0.157E-21	P(23)	O	56	2147.533 7	2164.88	0.121E-21	P(48)	F
22	2143.233 2	806.73	0.157E-21	P(23)	N	57	2147.564 66(3)	442.25	0.129E-20	P(32)	P
23	2143.402 42(5)*	2320.08	0.850E-22	P(74)	A	58	2147.827 56(60)	2307.58	0.458E-22	P(36)	J
24	2143.430 89(8)*	2279.17	0.896E-22	P(63)	C	59	2148.025 5	2154.45	0.128E-21	P(48)	G
25	2143.590 66(8)*	2275.99	0.910E-22	P(63)	B	60	2148.042 3	719.02	0.189E-21	P(18)	O
26	2144.010 4	2291.02	0.693E-22	P(51)	E	61	2148.076 2	718.75	0.189E-21	P(18)	N
27	2144.037 7	2290.64	0.695E-22	P(51)	F	62	2148.106 3	2265.33	0.739E-22	P(48)	D
28	2144.171 9	787.87	0.165E-21	P(22)	O	63	2148.368 24(4)	1200.98	0.519E-22	P(54)	R
29	2144.214 8	787.46	0.165E-21	P(22)	N	64	2148.412 71(8)*	2073.21	0.230E-21	P(59)	C
30	2144.399 29(3)	527.64	0.926E-21	P(35)	P	65	2148.558 43(8)*	2070.42	0.233E-21	P(59)	B
31	2144.534 4	2280.07	0.733E-22	P(51)	G	66	2148.606 76(3)	415.46	0.142E-20	P(31)	P
32	2144.686 18(8)*	2226.43	0.114E-21	P(62)	C	67	2148.757 59(24)	2279.28	0.512E-22	P(35)	K
33	2144.731 92(5)*	2258.36	0.113E-21	P(73)	A	68	2148.896 03(59)	2277.41	0.517E-22	P(35)	J
34	2144.842 37(8)*	2223.36	0.116E-21	P(62)	B	69	2148.993 6	703.91	0.192E-21	P(17)	O
35	2144.849 06(5)	1336.67	0.282E-22	P(57)	R	70	2149.025 4	703.66	0.192E-21	P(17)	N



NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
WAVENUMBERS (cm^{-1})

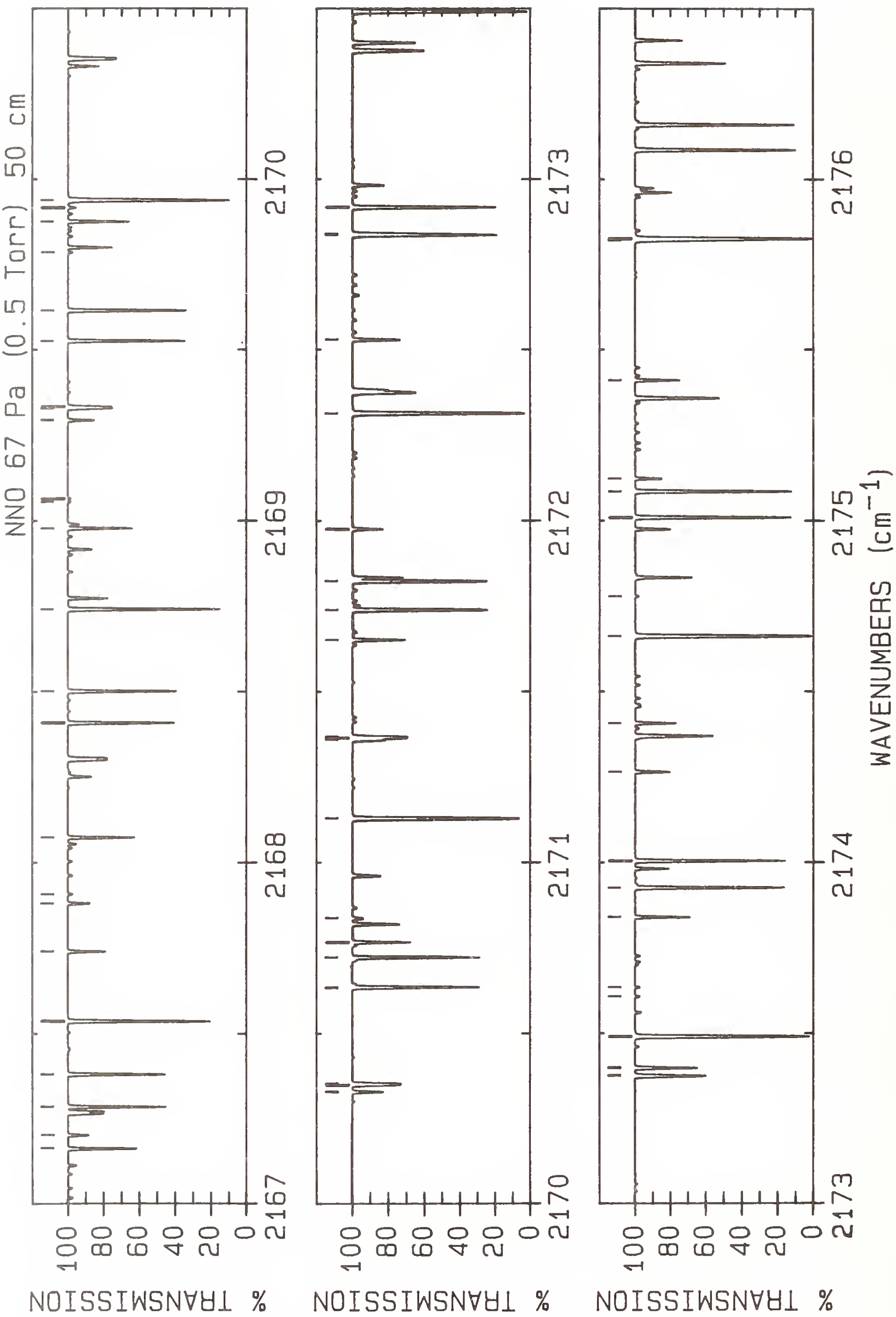
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2149.176 2	2114.24	0.152E-21	P(47)	G
2	2149.641 76(8)*	2023.80	0.288E-21	P(58)	C
3	2149.642 35(3)	389.50	0.156E-20	P(30)	P
4	2149.784 06(8)*	2021.11	0.292E-21	P(58)	B
5	2149.984 36(5)*	2019.71	0.344E-21	P(69)	A
6	2150.320 5	2074.87	0.180E-21	P(46)	G
7	2150.671 41(3)	364.38	0.171E-20	P(29)	P
8	2150.864 24(8)*	1975.23	0.359E-21	P(57)	C
9	2150.904 2	676.01	0.194E-21	P(15)	N
10	2150.951 6	2046.86	0.202E-21	P(45)	E
11	2150.971 0	2046.63	0.202E-21	P(45)	F
12	2151.003 17(8)*	1972.62	0.363E-21	P(57)	B
13	2151.281 05(5)*	1962.12	0.450E-21	P(68)	A
14	2151.458 2	2036.33	0.213E-21	P(45)	G
15	2151.693 95(3)	340.10	0.186E-20	P(28)	P
16	2151.808 4	663.61	0.193E-21	P(14)	O
17	2152.080 15(8)*	1927.48	0.445E-21	P(56)	C
18	2152.085 5	2009.10	0.238E-21	P(44)	E
19	2152.103 7	2008.88	0.238E-21	P(44)	F
20	2152.215 73(8)*	1924.97	0.451E-21	P(56)	B
21	2152.571 15(5)*	1905.36	0.585E-21	P(67)	A
22	2152.709 96(3)	316.65	0.201E-20	P(27)	P
23	2152.733 6	651.85	0.189E-21	P(13)	O
24	2152.757 1	651.71	0.189E-21	P(13)	N
25	2152.969 58(4)	1031.32	0.110E-21	P(50)	R
26	2153.289 48(8)*	1880.57	0.550E-21	P(55)	C
27	2153.421 74(8)*	1878.14	0.557E-21	P(55)	B
28	2153.652 2	640.94	0.184E-21	P(12)	O
29	2153.714 2	1961.75	0.293E-21	P(43)	G
30	2153.719 43(3)	294.04	0.216E-20	P(26)	P
31	2153.854 68(5)*	1849.42	0.758E-21	P(66)	A
32	2154.026 74(18)	2140.48	0.865E-22	P(30)	K
33	2154.103 65(3)	990.92	0.132E-21	P(49)	R
34	2154.282 10(32)	2132.77	0.861E-22	P(29)	M
35	2154.282 30(32)	2132.77	0.861E-22	P(29)	L
36	2154.333 5	1936.08	0.324E-21	P(42)	E
37	2154.349 5	1935.90	0.324E-21	P(42)	F
38	2154.492 22(8)*	1834.50	0.677E-21	P(54)	C
39	2154.564 4	630.86	0.177E-21	P(11)	O
40	2154.583 9	630.75	0.177E-21	P(11)	N
41	2154.621 21(8)*	1832.15	0.684E-21	P(54)	B
42	2154.722 36(3)	272.26	0.231E-20	P(25)	P
43	2154.832 4	1925.71	0.342E-21	P(42)	G
44	2155.060 97(18)	2115.24	0.947E-22	P(29)	K
45	2155.131 61(5)*	1794.32	0.978E-21	P(65)	A
46	2155.170 89(50)	2113.94	0.953E-22	P(29)	J
47	2155.231 20(3)	951.32	0.157E-21	P(48)	R
48	2155.308 59(30)	2108.39	0.936E-22	P(28)	M
49	2155.308 75(30)	2108.39	0.936E-22	P(28)	L
50	2155.447 6	1900.83	0.376E-21	P(41)	E
51	2155.487 5	621.53	0.168E-21	P(10)	N
52	2155.688 37(8)*	1789.25	0.829E-21	P(53)	C
53	2155.718 75(3)	251.32	0.246E-20	P(24)	P
54	2155.814 12(8)*	1786.99	0.838E-21	P(53)	B
55	2155.944 1	1890.51	0.396E-21	P(41)	G
56	2156.194 00(48)	2089.63	0.104E-21	P(28)	J
57	2156.352 23(3)	912.53	0.186E-21	P(47)	R
58	2156.401 95(5)*	1740.04	0.126E-20	P(64)	A
59	2156.555 2	1866.41	0.434E-21	P(40)	E
60	2156.569 1	1866.26	0.435E-21	P(40)	F
61	2156.708 59(3)	231.22	0.260E-20	P(23)	P
62	2156.877 92(8)*	1744.84	0.101E-20	P(52)	C
63	2157.000 47(8)*	1742.67	0.102E-20	P(52)	B
64	2157.210 61(46)	2066.15	0.112E-21	P(27)	J
65	2157.466 75(3)	874.54	0.219E-21	P(46)	R
66	2157.665 69(5)*	1686.59	0.161E-20	P(63)	A
67	2157.669 1	1832.70	0.499E-21	P(39)	F
68	2157.691 87(3)	211.96	0.273E-20	P(22)	P



NNO 133 Pa (1 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
2158 2159 2160 2161
2161 2162 2163 2164
2164 2165 2166 2167
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2158.060 88(8)*	1701.27	0.123E-20	P(51)	C
2	2158.180 25(8)*	1699.17	0.124E-20	P(51)	B
3	2158.574 73(3)	837.35	0.257E-21	P(45)	R
4	2158.668 60(3)	193.53	0.285E-20	P(21)	P
5	2158.922 83(5)*	1633.97	0.204E-20	P(62)	A
6	2159.132 34(15)	2022.67	0.128E-21	P(25)	K
7	2159.237 22(8)*	1658.53	0.148E-20	P(50)	C
8	2159.240 0	1789.92	0.601E-21	P(38)	G
9	2159.348 95(24)	2019.25	0.124E-21	P(24)	M
10	2159.349 03(24)	2019.25	0.124E-21	P(24)	L
11	2159.353 47(8)*	1656.51	0.150E-20	P(50)	B
12	2159.638 76(3)	175.94	0.296E-20	P(20)	P
13	2159.838 1	1768.20	0.649E-21	P(37)	E
14	2159.849 3	1768.08	0.650E-21	P(37)	F
15	2160.173 35(5)*	1582.18	0.259E-20	P(61)	A
16	2160.406 96(8)*	1616.62	0.178E-20	P(49)	C
17	2160.520 10(8)*	1614.68	0.180E-20	P(49)	B
18	2160.602 35(3)	159.19	0.306E-20	P(19)	P
19	2160.919 2	1737.13	0.735E-21	P(36)	E
20	2160.929 5	1737.03	0.736E-21	P(36)	F
21	2161.128 63(14)	1981.43	0.145E-21	P(23)	K
22	2161.329 73(20)	1979.73	0.137E-21	P(22)	M
23	2161.329 78(20)	1979.73	0.137E-21	P(22)	L
24	2161.417 26(5)*	1531.22	0.327E-20	P(60)	A
25	2161.559 38(3)	143.27	0.313E-20	P(18)	P
26	2161.570 08(8)*	1575.55	0.214E-20	P(48)	C
27	2161.680 15(8)*	1573.69	0.215E-20	P(48)	B
28	2161.859 45(3)	730.64	0.404E-21	P(42)	R
29	2162.003 2	1706.82	0.829E-21	P(35)	F
30	2162.310 25(19)	1961.23	0.143E-21	P(21)	M
31	2162.310 29(19)	1961.23	0.143E-21	P(21)	L
32	2162.509 82(3)	128.19	0.318E-20	P(17)	P
33	2162.654 54(5)*	1481.09	0.411E-20	P(59)	A
34	2162.726 58(8)*	1535.31	0.255E-20	P(47)	C
35	2162.833 62(8)*	1533.53	0.257E-20	P(47)	B

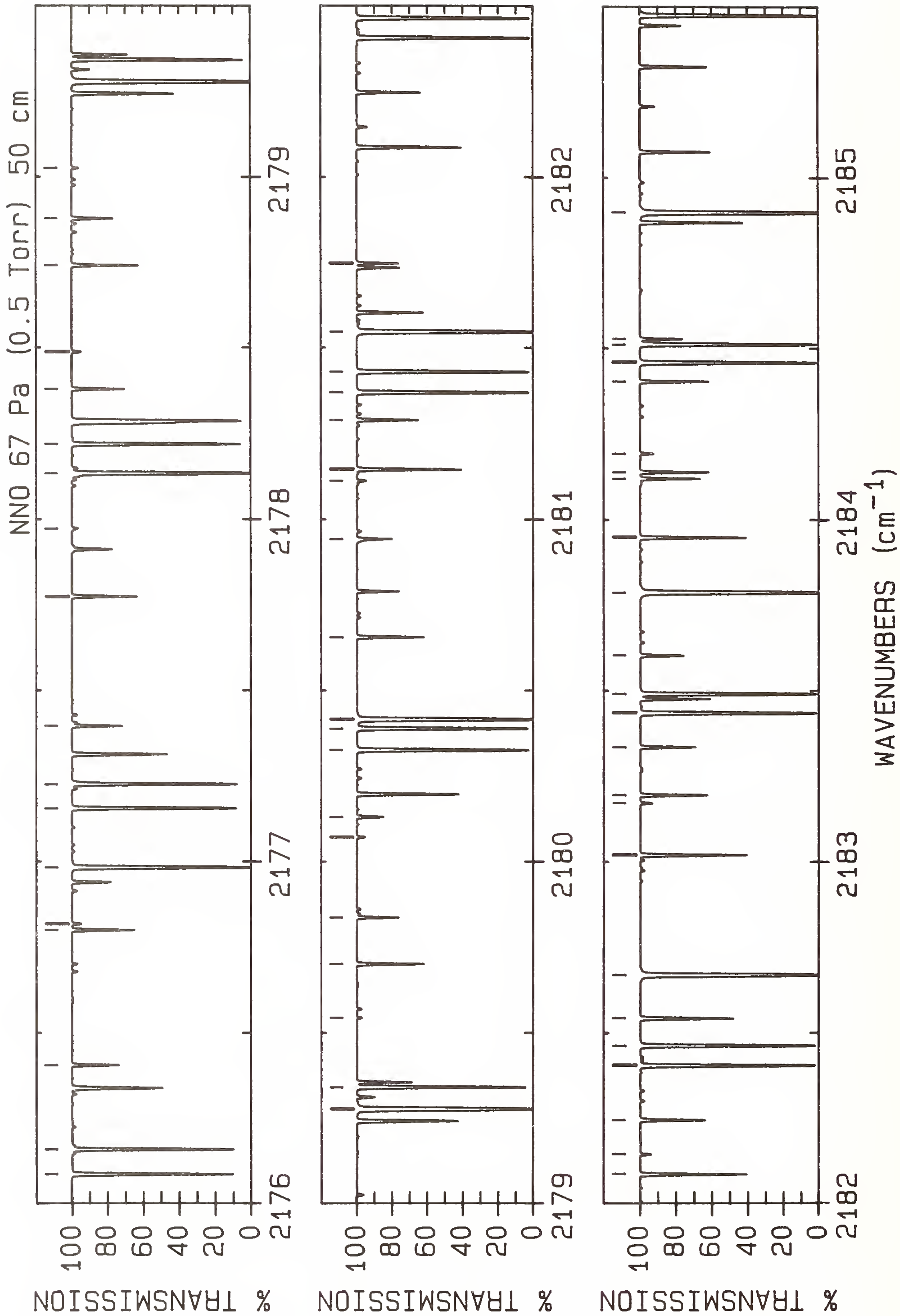
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2162.941 26(3)	696.68	0.466E-21	P(41)	R
37	2163.098 60(13)	1943.56	0.159E-21	P(21)	K
38	2163.284 18(17)	1943.56	0.148E-21	P(20)	M
39	2163.284 22(17)	1943.56	0.148E-21	P(20)	L
40	2163.453 68(3)	113.95	0.321E-20	P(16)	P
41	2163.542 9	1667.49	0.980E-21	P(34)	G
42	2163.876 46(8)*	1495.90	0.302E-20	P(46)	C
43	2163.885 20(5)*	1431.79	0.514E-20	P(58)	A
44	2163.980 49(8)*	1494.20	0.305E-20	P(46)	B
45	2164.016 53(3)	663.53	0.534E-21	P(40)	R
46	2164.073 70(12)	1925.88	0.165E-21	P(20)	K
47	2164.251 53(16)	1926.74	0.153E-21	P(19)	M
48	2164.251 56(16)	1926.74	0.153E-21	P(19)	L
49	2164.390 96(3)	100.55	0.322E-20	P(15)	P
50	2164.602 3	1638.97	0.109E-20	P(33)	G
51	2164.738 6	1752.85	0.624E-21	P(33)	D
52	2165.019 70(8)*	1457.34	0.357E-20	P(45)	C
53	2165.042 20(12)	1909.04	0.170E-21	P(19)	K
54	2165.108 87(29)	1908.48	0.171E-21	P(19)	J
55	2165.109 23(5)*	1383.33	0.641E-20	P(57)	A
56	2165.120 77(8)*	1455.70	0.360E-20	P(45)	B
57	2165.321 65(3)	87.98	0.319E-20	P(14)	P
58	2165.655 1	1611.29	0.121E-20	P(32)	G
59	2165.792 9	1725.33	0.693E-21	P(32)	D
60	2166.004 10(12)	1893.05	0.174E-21	P(18)	K
61	2166.147 39(3)	599.64	0.694E-21	P(38)	R
62	2166.156 30(8)*	1419.61	0.420E-20	P(44)	C
63	2166.245 74(3)	76.25	0.314E-20	P(13)	P
64	2166.254 44(8)*	1418.04	0.423E-20	P(44)	B
65	2166.326 62(5)*	1335.69	0.795E-20	P(56)	A
66	2166.701 3	1584.45	0.134E-20	P(31)	G
67	2166.840 4	1698.65	0.765E-21	P(31)	D
68	2166.959 39(12)	1877.89	0.177E-21	P(17)	K
69	2167.018 07(25)	1877.44	0.178E-21	P(17)	J
70	2167.046 5	809.25	0.153E-21	P(23)	W



NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
WAVENUMBERS (cm^{-1})

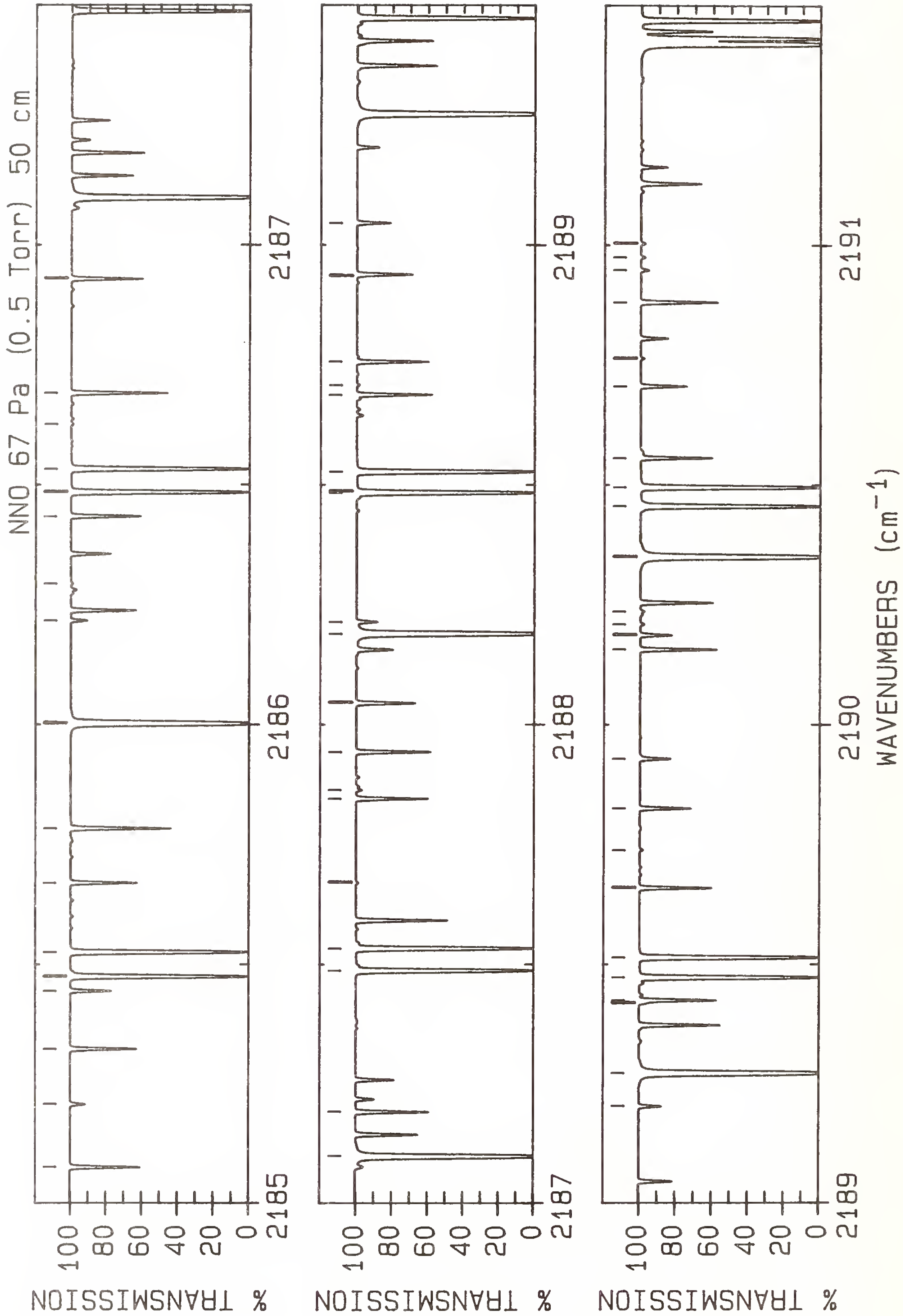
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2167.163 23(3)	65.36	0.306E-20	P(12)	P
2	2167.202 97(3)	568.91	0.785E-21	P(37)	R
3	2167.286 27(8)*	1382.71	0.492E-20	P(43)	C
4	2167.381 51(8)*	1381.21	0.495E-20	P(43)	B
5	2167.537 37(5)*	1288.88	0.981E-20	P(55)	A
6	2167.740 9	1558.45	0.147E-20	P(30)	G
7	2167.880 8	1672.80	0.840E-21	P(30)	D
8	2167.908 07(12)	1863.58	0.179E-21	P(16)	K
9	2168.074 12(3)	55.30	0.294E-20	P(11)	P
10	2168.409 59(8)*	1346.65	0.573E-20	P(42)	C
11	2168.501 96(8)*	1345.22	0.577E-20	P(42)	B
12	2168.741 47(5)*	1242.91	0.121E-19	P(54)	A
13	2168.978 40(3)	46.09	0.280E-20	P(10)	P
14	2169.055 7	588.01	0.117E-21	R(5)	N
15	2169.064 7	588.03	0.117E-21	R(5)	O
16	2169.294 42(3)	509.86	0.992E-21	P(35)	R
17	2169.295 5	1140.35	0.261E-22	P(37)	Y
18	2169.328 41(3)	1007.69	0.666E-22	P(50)	T
19	2169.329 0	1518.81	0.166E-20	P(28)	E
20	2169.334 1	1518.77	0.166E-20	P(28)	F
21	2169.526 26(8)*	1311.42	0.665E-20	P(41)	C
22	2169.615 79(8)*	1310.06	0.669E-20	P(41)	B
23	2169.785 56(12)	1837.48	0.178E-21	P(14)	K
24	2169.876 07(3)	37.71	0.263E-20	P(9)	P
25	2169.917 00(11)	1843.47	0.152E-21	P(13)	M
26	2169.917 01(11)	1843.47	0.152E-21	P(13)	L
27	2169.938 92(5)*	1197.77	0.148E-19	P(53)	A
28	2170.328 8	1956.24	0.920E-22	P(13)	H
29	2170.330 28(3)	481.55	0.111E-20	P(34)	R
30	2170.350 4	1495.29	0.180E-20	P(27)	E
31	2170.354 9	1495.26	0.180E-20	P(27)	F
32	2170.633 4	598.90	0.150E-21	R(7)	N
33	2170.636 27(8)*	1277.04	0.767E-20	P(40)	C
34	2170.723 00(8)*	1275.74	0.772E-20	P(40)	B
35	2170.767 12(4)	30.17	0.242E-20	P(8)	P

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2170.838 11(11)	1832.53	0.147E-21	P(12)	M
37	2170.838 11(11)	1832.53	0.147E-21	P(12)	L
38	2171.129 71(5)*	1153.46	0.180E-19	P(52)	A
39	2171.359 56(3)	454.04	0.123E-20	P(33)	R
40	2171.365 0	1472.61	0.193E-20	P(26)	E
41	2171.369 1	1472.58	0.193E-20	P(26)	F
42	2171.651 55(4)	23.46	0.219E-20	P(7)	P
43	2171.739 62(8)*	1243.48	0.882E-20	P(39)	C
44	2171.823 59(8)*	1242.25	0.887E-20	P(39)	B
45	2171.975 8	1577.73	0.116E-20	P(26)	D
46	2172.313 84(5)*	1109.98	0.218E-19	P(51)	A
47	2172.529 36(4)	17.60	0.193E-20	P(6)	P
48	2172.836 31(8)*	1210.77	0.101E-19	P(38)	C
49	2172.840 3	1440.98	0.218E-20	P(25)	G
50	2172.917 54(8)*	1209.60	0.101E-19	P(38)	B
51	2173.374 4	1429.78	0.220E-20	P(24)	E
52	2173.377 6	1429.76	0.220E-20	P(24)	F
53	2173.398 34(3)	401.46	0.149E-20	P(31)	R
54	2173.400 53(4)	12.57	0.165E-20	P(5)	P
55	2173.491 30(5)*	1067.33	0.264E-19	P(50)	A
56	2173.608 5	695.67	0.185E-21	P(16)	W
57	2173.635 7	695.47	0.185E-21	P(16)	S
58	2173.840 4	1420.00	0.232E-20	P(24)	G
59	2173.926 32(8)*	1178.89	0.115E-19	P(37)	C
60	2174.004 85(8)*	1177.78	0.115E-19	P(37)	B
61	2174.265 07(4)	8.38	0.135E-20	P(4)	P
62	2174.407 84(3)	376.38	0.164E-20	P(30)	R
63	2174.662 09(5)*	1025.52	0.317E-19	P(49)	A
64	2174.778 59(3)	818.17	0.151E-21	P(45)	T
65	2175.009 67(8)*	1147.85	0.130E-19	P(36)	C
66	2175.085 52(8)*	1146.80	0.131E-19	P(36)	B
67	2175.122 97(4)	5.03	0.103E-20	P(3)	P
68	2175.410 75(3)	352.10	0.178E-20	P(29)	R
69	2175.820 7	1380.55	0.258E-20	P(22)	G
70	2175.826 20(5)*	984.54	0.380E-19	P(48)	A

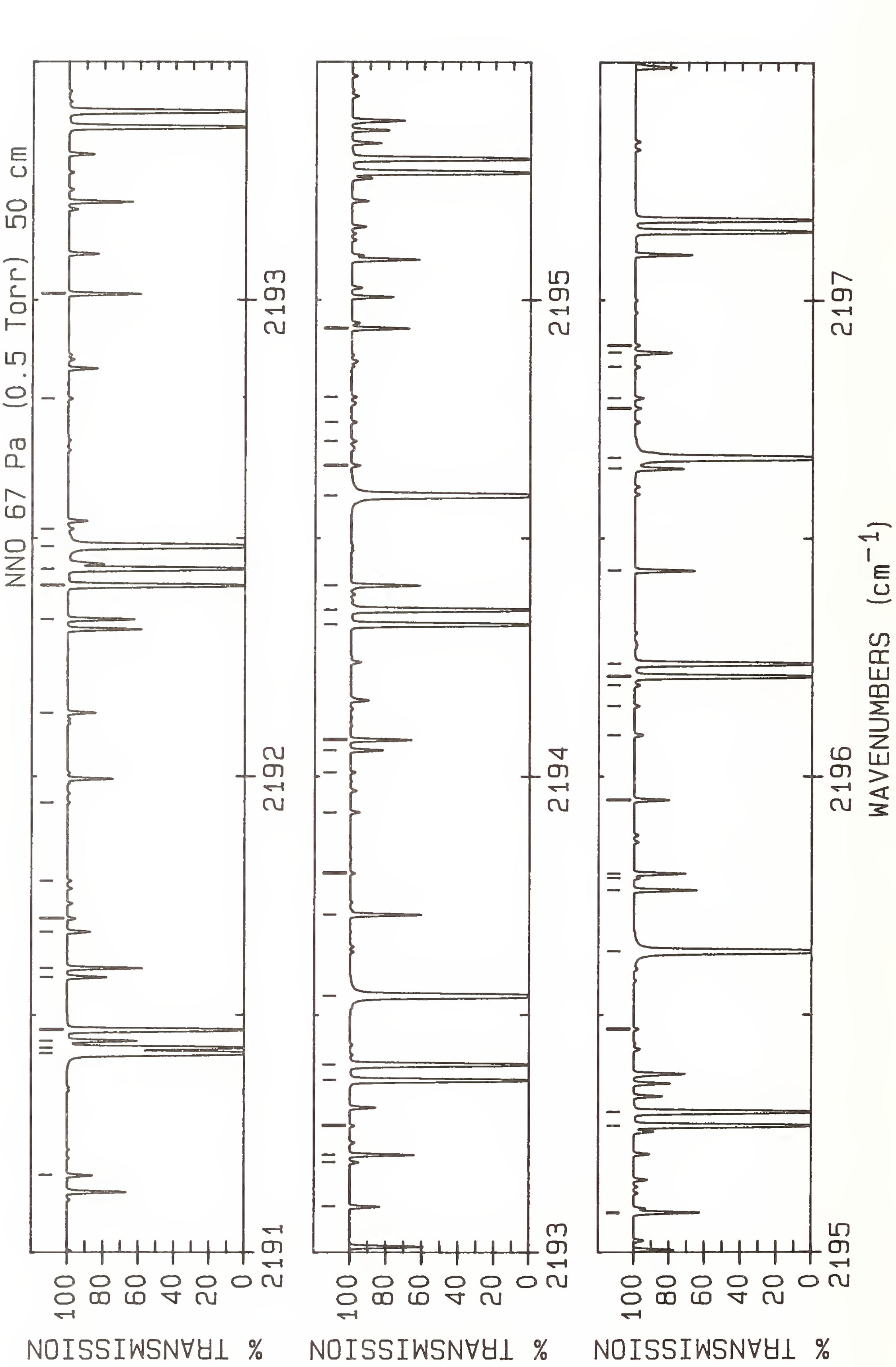


NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
2176 2177 2178 2179
2179 2180 2181 2182
2182 2183 2184 2185
WAVENUMBERS (cm^{-1})

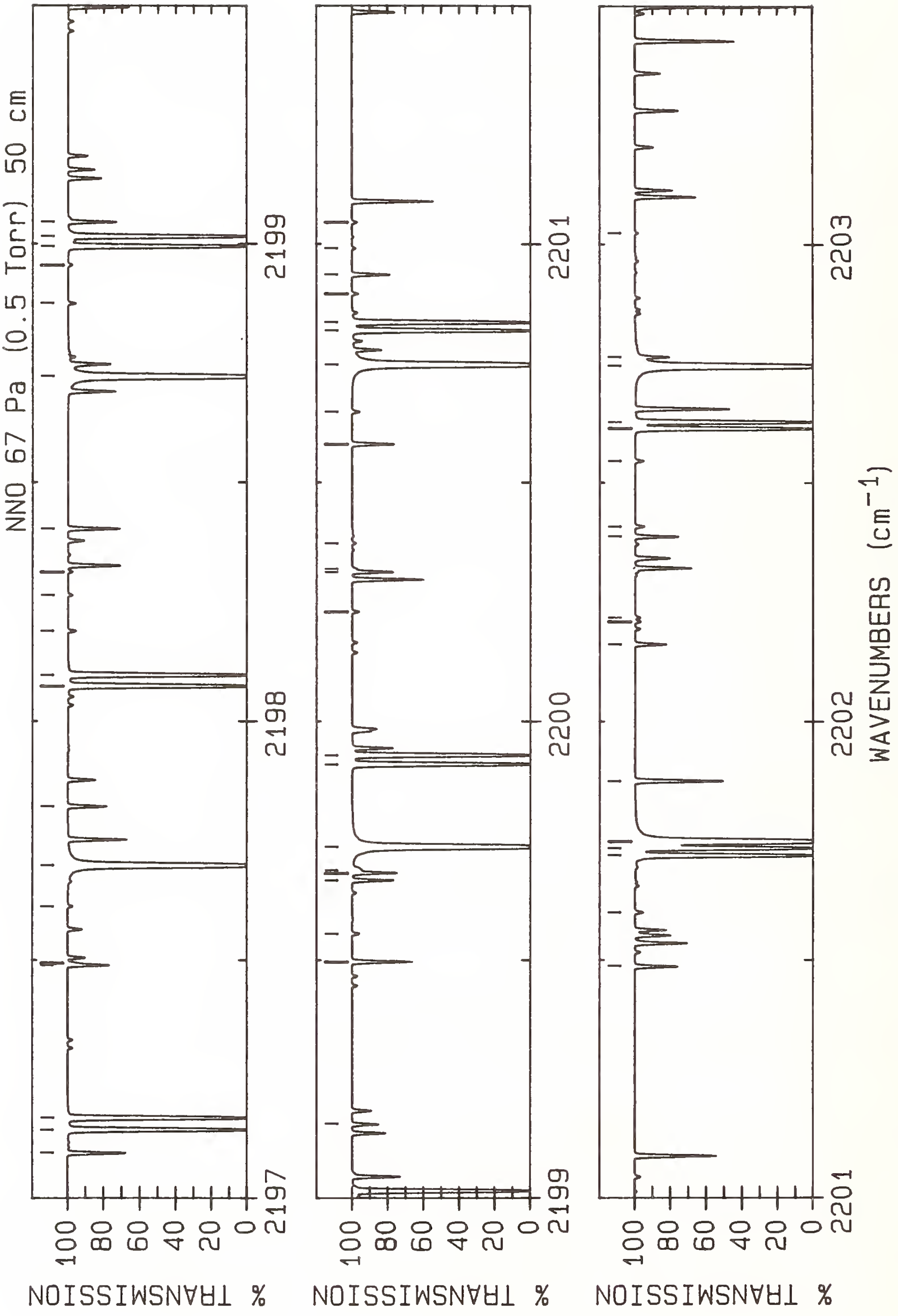
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2176.086 33(8)*	1117.64	0.146E-19	P(35)	C	36	2181.289 32(3)	223.43	0.265E-20	P(23)	R
2	2176.159 53(8)*	1116.65	0.147E-19	P(35)	B	37	2181.369 26(8)*	979.18	0.247E-19	P(30)	C
3	2176.407 04(3)	328.64	0.193E-20	P(28)	R	38	2181.429 74(8)*	978.45	0.248E-19	P(30)	B
4	2176.800 9	1362.08	0.270E-20	P(21)	G	39	2181.546 42(5)*	792.14	0.873E-19	P(43)	A
5	2176.818 85(4)	0.84	0.350E-21	P(1)	P	40	2181.746 70(4)	8.38	0.169E-20	R(4)	P
6	2176.983 63(5)*	944.39	0.453E-19	P(47)	A	41	2182.085 7	1278.57	0.286E-20	P(15)	E
7	2177.156 30(8)*	1088.28	0.164E-19	P(34)	C	42	2182.086 5	1278.56	0.286E-20	P(15)	F
8	2177.226 90(8)*	1087.34	0.165E-19	P(34)	B	43	2182.145 31(3)	585.90	0.399E-21	P(38)	T
9	2177.396 73(3)	305.98	0.208E-20	P(27)	R	44	2182.245 90(3)	204.82	0.278E-20	P(22)	R
10	2177.774 5	1344.45	0.280E-20	P(20)	G	45	2182.405 75(8)*	954.01	0.270E-19	P(29)	C
11	2177.973 48(3)	713.90	0.236E-21	P(42)	T	46	2182.463 76(8)*	953.32	0.271E-19	P(29)	B
12	2178.134 37(5)*	905.08	0.537E-19	P(46)	A	47	2182.542 8	1268.90	0.305E-20	P(15)	G
13	2178.219 59(8)*	1059.75	0.183E-19	P(33)	C	48	2182.544 66(4)	12.57	0.199E-20	R(5)	P
14	2178.379 81(3)	284.13	0.223E-20	P(26)	R	49	2182.670 36(5)*	756.16	0.102E-18	P(42)	A
15	2178.488 11(4)	0.00	0.352E-21	R(0)	P	50	2183.020 1	1265.97	0.283E-20	P(14)	E
16	2178.741 4	1327.67	0.289E-20	P(19)	G	51	2183.020 8	1265.96	0.283E-20	P(14)	F
17	2178.878 4	1443.43	0.164E-20	P(19)	D	52	2183.172 53(3)	555.87	0.450E-21	P(37)	T
18	2179.025 88(3)	680.72	0.271E-21	P(41)	T	53	2183.195 85(3)	187.01	0.290E-20	P(21)	R
19	2179.276 18(8)*	1032.06	0.204E-19	P(32)	C	54	2183.335 95(4)	17.60	0.226E-20	R(6)	P
20	2179.278 42(5)*	866.60	0.634E-19	P(45)	A	55	2183.435 51(8)*	929.66	0.294E-19	P(28)	C
21	2179.341 66(8)*	1031.22	0.204E-19	P(32)	B	56	2183.491 11(8)*	929.02	0.295E-19	P(28)	B
22	2179.544 4	734.67	0.197E-21	R(19)	N	57	2183.603 2	1372.52	0.171E-20	P(14)	D
23	2179.701 7	1311.72	0.296E-20	P(18)	G	58	2183.787 59(5)*	721.01	0.118E-18	P(41)	A
24	2179.837 1	1427.58	0.168E-20	P(18)	D	59	2183.947 9	1254.20	0.277E-20	P(13)	E
25	2180.071 98(3)	648.32	0.309E-21	P(40)	T	60	2183.948 4	1254.20	0.277E-20	P(13)	F
26	2180.130 74(4)	2.51	0.104E-20	R(2)	P	61	2184.120 55(3)	23.46	0.251E-20	R(7)	P
27	2180.326 08(8)*	1005.20	0.225E-19	P(31)	C	62	2184.139 17(3)	170.01	0.300E-20	P(20)	R
28	2180.326 11(3)	242.85	0.252E-20	P(24)	R	63	2184.193 44(3)	526.63	0.505E-21	P(36)	T
29	2180.389 03(8)*	1004.42	0.226E-19	P(31)	B	64	2184.403 5	1244.55	0.298E-20	P(13)	G
30	2180.415 77(5)*	828.95	0.746E-19	P(44)	A	65	2184.458 56(8)*	906.16	0.318E-19	P(27)	C
31	2180.655 4	1296.61	0.301E-20	P(17)	G	66	2184.511 77(8)*	905.56	0.319E-19	P(27)	B
32	2180.942 06(4)	5.03	0.137E-20	R(3)	P	67	2184.527 5	1360.84	0.168E-20	P(13)	D
33	2181.111 80(3)	616.72	0.352E-21	P(39)	T	68	2184.898 10(5)*	686.70	0.136E-18	P(40)	A
34	2181.144 5	1292.01	0.286E-20	P(16)	E	69	2184.898 46(3)	30.17	0.274E-20	R(8)	P
35	2181.145 5	1292.01	0.286E-20	P(16)	F						


NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2185
2186
2187
2188
2189
2190
2191
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2185.075 84(3)	153.82	0.308E-20	P(19)	R	36	2188.527 43(8)*	820.10	0.413E-19	P(23)	B
2	2185.208 03(3)	498.18	0.565E-21	P(35)	T	37	2188.687 55(3)	76.25	0.341E-20	R(13)	P
3	2185.323 8	1233.63	0.290E-20	P(12)	G	38	2188.707 56(4)	483.70	0.116E-21	P(34)	V
4	2185.445 0	1349.99	0.164E-20	P(12)	D	39	2188.756 02(3)	97.16	0.321E-20	P(15)	R
5	2185.474 89(8)*	883.50	0.342E-19	P(26)	C	40	2188.934 6	1910.39	0.796E-22	R(8)	I
6	2185.525 73(8)*	882.94	0.343E-19	P(26)	B	41	2188.938 4	1198.37	0.230E-20	P(8)	G
7	2185.669 68(3)	37.71	0.293E-20	R(9)	P	42	2189.045 8	1314.94	0.129E-20	P(8)	D
8	2185.783 2	1233.20	0.258E-20	P(11)	E	43	2189.203 22(3)	392.26	0.840E-21	P(31)	T
9	2185.783 5	1233.20	0.258E-20	P(11)	F	44	2189.272 88(5)*	557.81	0.230E-18	P(36)	A
10	2186.001 89(5)*	653.23	0.156E-18	P(39)	A	45	2189.419 12(12)	1804.77	0.137E-21	R(9)	L
11	2186.005 86(3)	138.44	0.315E-20	P(18)	R	46	2189.419 12(12)	1804.77	0.137E-21	R(9)	M
12	2186.216 31(3)	470.51	0.628E-21	P(34)	T	47	2189.425 24(3)	87.98	0.344E-20	R(14)	P
13	2186.293 41(15)	1757.49	0.909E-22	R(4)	K	48	2189.472 88(8)*	801.23	0.433E-19	P(22)	C
14	2186.434 20(3)	46.09	0.310E-20	R(10)	P	49	2189.514 58(8)*	800.83	0.434E-19	P(22)	B
15	2186.484 49(8)*	861.67	0.366E-19	P(25)	C	50	2189.659 43(3)	85.01	0.318E-20	P(14)	R
16	2186.533 00(8)*	861.16	0.367E-19	P(25)	B	51	2189.738 55(4)	456.08	0.129E-21	P(33)	V
17	2186.626 03(4)	541.39	0.926E-22	P(36)	V	52	2189.825 3	1191.65	0.208E-20	P(7)	G
18	2186.690 8	1223.96	0.243E-20	P(10)	E	53	2189.928 8	1308.27	0.117E-20	P(7)	D
19	2186.691 1	1223.96	0.243E-20	P(10)	F	54	2190.156 22(3)	100.55	0.346E-20	R(15)	P
20	2186.929 24(3)	123.87	0.319E-20	P(17)	R	55	2190.186 20(3)	367.75	0.917E-21	P(30)	T
21	2187.098 95(5)*	620.59	0.179E-18	P(38)	A	56	2190.186 84(11)	1813.18	0.147E-21	R(10)	L
22	2187.192 02(3)	55.30	0.323E-20	R(11)	P	57	2190.186 84(11)	1813.18	0.147E-21	R(10)	M
23	2187.487 36(8)*	840.68	0.390E-19	P(24)	C	58	2190.208 73(17)	1786.83	0.163E-21	R(9)	J
24	2187.533 57(8)*	840.21	0.391E-19	P(24)	B	59	2190.235 37(13)	1786.96	0.163E-21	R(9)	K
25	2187.670 06(4)	512.14	0.104E-21	P(35)	V	60	2190.349 74(5)*	527.67	0.259E-18	P(35)	A
26	2187.845 96(3)	110.11	0.322E-20	P(16)	R	61	2190.455 52(8)*	782.76	0.452E-19	P(21)	C
27	2187.863 55(13)	1790.47	0.111E-21	R(7)	L	62	2190.495 01(8)*	782.39	0.453E-19	P(21)	B
28	2187.863 55(13)	1790.47	0.111E-21	R(7)	M	63	2190.556 16(3)	73.68	0.312E-20	P(13)	R
29	2187.943 14(3)	65.36	0.333E-20	R(12)	P	64	2190.705 5	1185.77	0.183E-20	P(6)	G
30	2188.044 8	1205.92	0.249E-20	P(9)	G	65	2190.763 00(4)	429.26	0.142E-21	P(32)	V
31	2188.189 29(5)*	588.78	0.203E-18	P(37)	A	66	2190.880 48(3)	113.95	0.344E-20	R(16)	P
32	2188.213 91(3)	417.55	0.766E-21	P(32)	T	67	2190.947 85(11)	1822.44	0.155E-21	R(11)	L
33	2188.483 49(8)*	820.54	0.412E-19	P(23)	C	68	2190.947 85(11)	1822.44	0.155E-21	R(11)	M
34	2188.485 9	1207.99	0.206E-20	P(8)	E	69	2190.974 54(18)	1795.22	0.172E-21	R(10)	J
35	2188.486 0	1207.99	0.206E-20	P(8)	F	70	2191.003 51(13)	1795.38	0.172E-21	R(10)	K


NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
2191 2192 2193
2193 2194 2195
2195 2196 2197
WAVENUMBERS (cm-1)

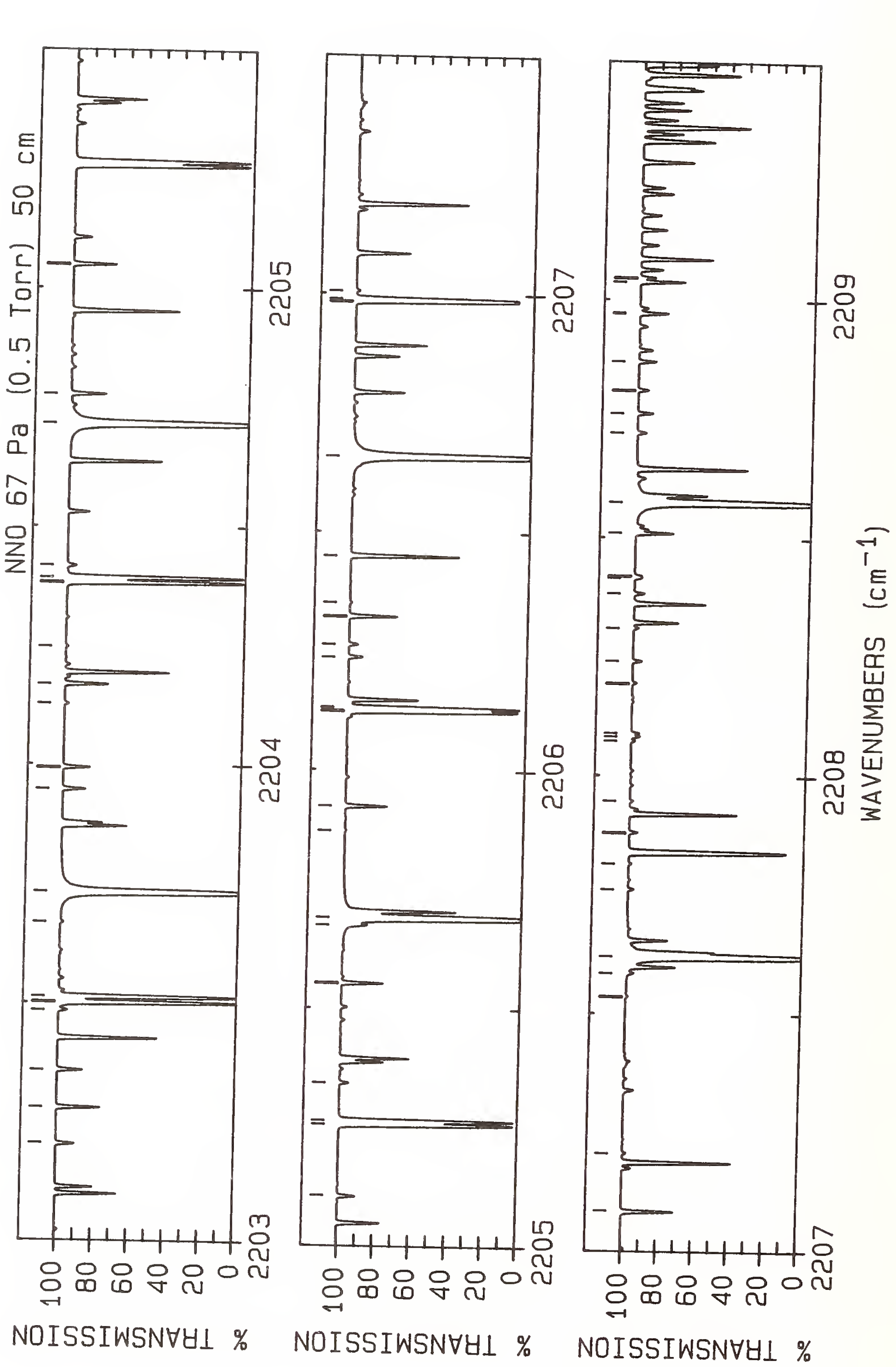
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2191.162 84(3)	344.03	0.995E-21	P(29)	T
2	2191.419 84(5)*	498.37	0.291E-18	P(34)	A
3	2191.431 41(8)*	765.12	0.470E-19	P(20)	C
4	2191.446 23(3)	63.15	0.304E-20	P(12)	R
5	2191.468 73(8)*	764.79	0.471E-19	P(20)	B
6	2191.579 0	1180.73	0.157E-20	P(5)	G
7	2191.598 01(3)	128.19	0.340E-20	R(17)	P
8	2191.674 0	1297.42	0.882E-21	P(5)	D
9	2191.702 14(11)	1832.53	0.162E-21	R(12)	L
10	2191.702 14(11)	1832.53	0.162E-21	R(12)	M
11	2191.780 93(4)	403.25	0.157E-21	P(31)	V
12	2191.945 2	1945.39	0.976E-22	R(12)	H
13	2192.133 15(3)	321.11	0.107E-20	P(28)	T
14	2192.329 62(3)	53.44	0.292E-20	P(11)	R
15	2192.400 55(8)*	748.33	0.485E-19	P(19)	C
16	2192.435 72(8)*	748.03	0.485E-19	P(19)	B
17	2192.483 20(5)*	469.91	0.324E-18	P(33)	A
18	2192.519 53(12)	1814.75	0.185E-21	R(12)	K
19	2192.792 31(4)	378.06	0.172E-21	P(30)	V
20	2193.012 89(3)	159.19	0.325E-20	R(19)	P
21	2193.097 11(2)	298.97	0.116E-20	P(27)	T
22	2193.190 56(12)	1855.24	0.170E-21	R(14)	L
23	2193.190 56(12)	1855.24	0.170E-21	R(14)	M
24	2193.206 33(3)	44.53	0.277E-20	P(10)	R
25	2193.267 38(12)	1825.69	0.190E-21	R(13)	K
26	2193.362 93(8)*	732.38	0.496E-19	P(18)	C
27	2193.395 98(8)*	732.11	0.497E-19	P(18)	B
28	2193.539 80(5)*	442.28	0.360E-18	P(32)	A
29	2193.710 22(3)	175.94	0.314E-20	R(20)	P
30	2193.797 16(3)	353.68	0.187E-21	P(29)	V
31	2193.924 68(13)	1867.86	0.171E-21	R(15)	L
32	2193.924 69(13)	1867.86	0.171E-21	R(15)	M
33	2194.008 46(12)	1837.48	0.192E-21	R(14)	K
34	2194.054 72(2)	277.62	0.124E-20	P(26)	T
35	2194.076 36(3)	36.44	0.260E-20	P(9)	R
36	2194.318 54(8)*	717.26	0.505E-19	P(17)	C
37	2194.349 50(8)*	717.02	0.505E-19	P(17)	B
38	2194.400 81(3)	193.53	0.302E-20	R(21)	P
39	2194.589 65(5)*	415.49	0.398E-18	P(31)	A
40	2194.652 06(14)	1881.32	0.171E-21	R(16)	L
41	2194.652 08(14)	1881.32	0.171E-21	R(16)	M
42	2194.703 04(25)	1849.75	0.193E-21	R(15)	J
43	2194.742 76(12)	1850.11	0.193E-21	R(15)	K
44	2194.795 46(3)	330.11	0.203E-21	P(28)	V
45	2194.939 71(4)	29.15	0.239E-20	P(8)	R
46	2195.081 3	1285.74	0.187E-21	P(1)	D
47	2195.084 66(3)	211.96	0.289E-20	R(22)	P
48	2195.267 39(8)*	702.99	0.509E-19	P(16)	C
49	2195.296 29(8)*	702.77	0.510E-19	P(16)	B
50	2195.470 27(12)	1863.58	0.192E-21	R(16)	K
51	2195.632 72(5)*	389.53	0.437E-18	P(30)	A
52	2195.761 77(3)	231.22	0.274E-20	R(23)	P
53	2195.787 21(3)	307.35	0.218E-21	P(27)	V
54	2195.796 37(4)	22.67	0.216E-20	P(7)	R
55	2195.950 87(2)	237.29	0.139E-20	P(24)	T
56	2196.086 63(17)	1910.76	0.167E-21	R(18)	L
57	2196.086 66(17)	1910.76	0.167E-21	R(18)	M
58	2196.147 41(29)	1877.44	0.190E-21	R(17)	J
59	2196.190 99(12)	1877.89	0.189E-21	R(17)	K
60	2196.209 46(8)*	689.55	0.509E-19	P(15)	C
61	2196.236 33(8)*	689.36	0.510E-19	P(15)	B
62	2196.432 12(3)	251.32	0.259E-20	R(24)	P
63	2196.646 33(4)	17.00	0.191E-20	P(6)	R
64	2196.669 03(5)*	364.41	0.478E-18	P(29)	A
65	2196.772 41(3)	285.40	0.234E-21	P(26)	V
66	2196.793 81(19)	1926.74	0.163E-21	R(19)	L
67	2196.793 85(19)	1926.74	0.163E-21	R(19)	M
68	2196.859 50(31)	1892.54	0.186E-21	R(18)	J
69	2196.889 42(2)	218.31	0.146E-20	P(23)	T
70	2196.904 92(12)	1893.05	0.186E-21	R(18)	K



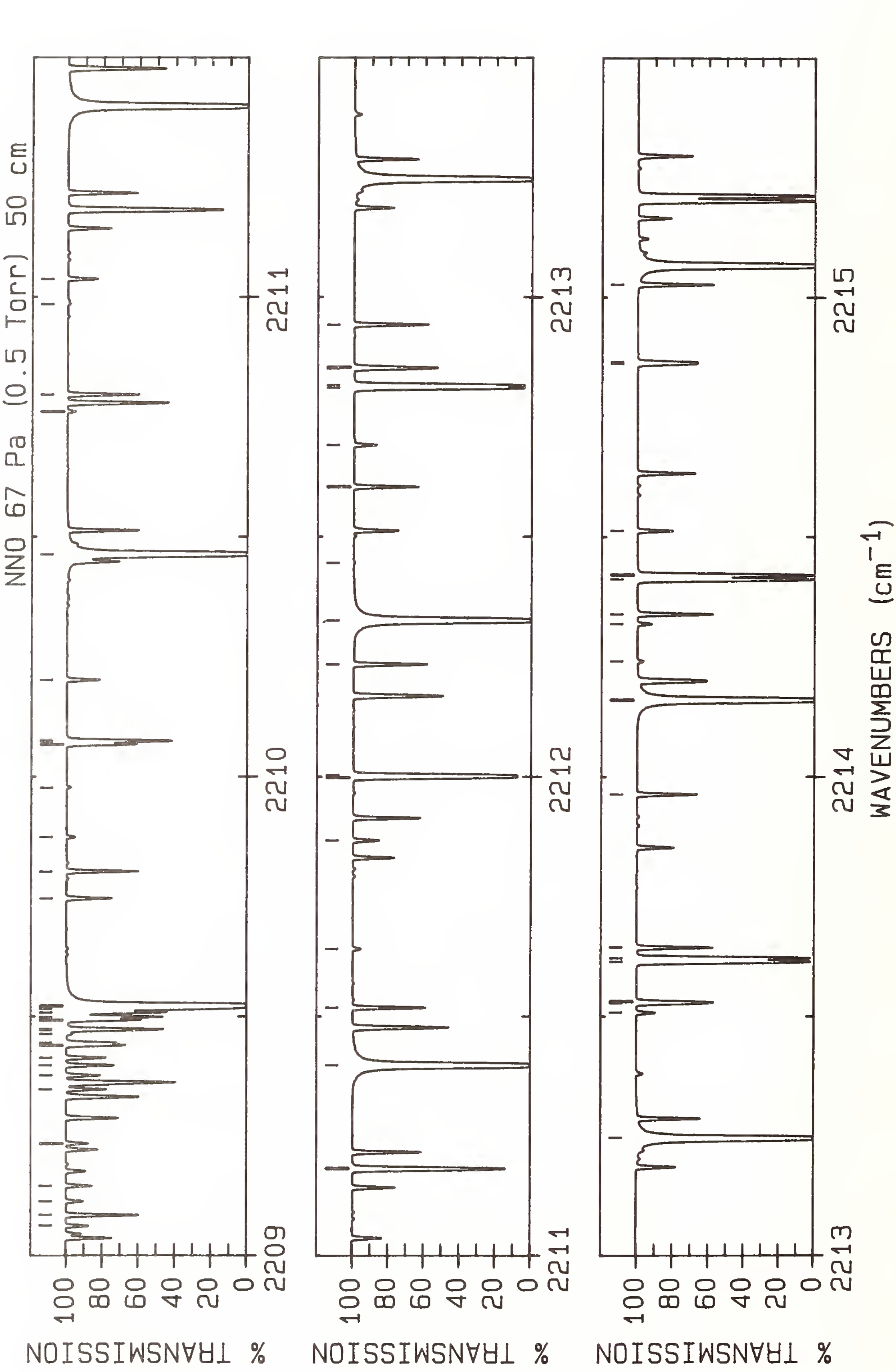
NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2197
2198
2199
% TRANSMISSION
100
80
60
40
20
0
2199
2200
2201
% TRANSMISSION
100
80
60
40
20
0
2201
2202
2203
WAVENUMBERS (cm⁻¹)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2197.095 71(3)	272.26	0.243E-20	R(25)	P
2	2197.144 75(8)*	676.95	0.505E-19	P(14)	C
3	2197.169 63(8)*	676.79	0.506E-19	P(14)	B
4	2197.489 59(4)	12.15	0.163E-20	P(5)	R
5	2197.494 24(20)	1943.56	0.158E-21	R(20)	L
6	2197.494 29(20)	1943.56	0.158E-21	R(20)	M
7	2197.612 04(13)	1909.04	0.181E-21	R(19)	K
8	2197.698 57(5)*	340.12	0.520E-18	P(28)	A
9	2197.821 59(2)	200.12	0.153E-20	P(22)	T
10	2198.073 26(8)*	665.20	0.497E-19	P(13)	C
11	2198.096 17(8)*	665.05	0.497E-19	P(13)	B
12	2198.187 92(22)	1961.23	0.152E-21	R(21)	L
13	2198.187 99(22)	1961.23	0.152E-21	R(21)	M
14	2198.263 47(35)	1925.25	0.176E-21	R(20)	J
15	2198.312 36(13)	1925.88	0.175E-21	R(20)	K
16	2198.402 61(3)	316.65	0.211E-20	R(27)	P
17	2198.721 32(5)*	316.67	0.562E-18	P(27)	A
18	2198.874 86(24)	1979.73	0.145E-21	R(22)	L
19	2198.874 94(24)	1979.73	0.145E-21	R(22)	M
20	2198.955 33(38)	1942.87	0.169E-21	R(21)	J
21	2198.994 99(8)*	654.28	0.483E-19	P(12)	C
22	2199.015 95(8)*	654.15	0.484E-19	P(12)	B
23	2199.045 92(3)	340.10	0.195E-20	R(28)	P
24	2199.156 01(4)	4.86	0.101E-20	P(3)	R
25	2199.496 6	1186.15	0.129E-20	R(4)	F
26	2199.496 6	1186.15	0.129E-20	R(4)	E
27	2199.555 03(26)	1999.07	0.138E-21	R(23)	L
28	2199.555 13(26)	1999.07	0.138E-21	R(23)	M
29	2199.666 83(2)	166.12	0.164E-20	P(20)	T
30	2199.682 45(3)	364.38	0.179E-20	R(29)	P
31	2199.688 64(3)	224.43	0.279E-21	P(23)	V
32	2199.737 29(5)*	294.06	0.605E-18	P(26)	A
33	2199.909 92(8)*	644.20	0.465E-19	P(11)	C
34	2199.928 98(8)*	644.10	0.465E-19	P(11)	B
35	2200.228 45(27)	2019.25	0.131E-21	R(24)	L

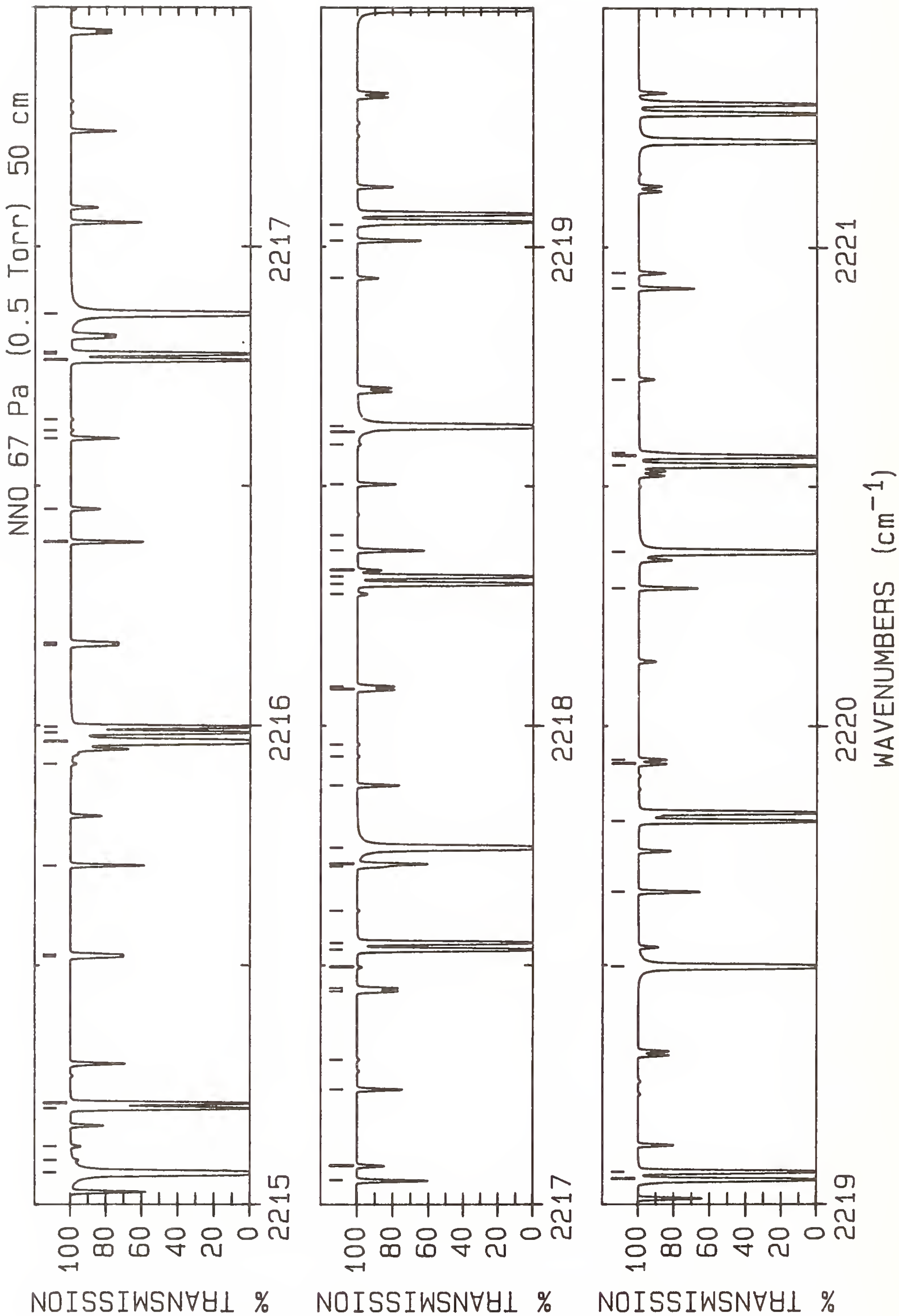
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2200.228 58(27)	2019.25	0.131E-21	R(24)	M
37	2200.312 21(3)	389.50	0.164E-20	R(30)	P
38	2200.318 81(42)	1980.61	0.153E-21	R(23)	J
39	2200.372 42(15)	1981.43	0.153E-21	R(23)	K
40	2200.579 89(2)	150.30	0.169E-20	P(19)	T
41	2200.647 58(3)	205.73	0.293E-21	P(22)	V
42	2200.746 47(5)*	272.28	0.647E-18	P(25)	A
43	2200.818 06(8)*	634.96	0.441E-19	P(10)	C
44	2200.835 24(8)*	634.88	0.442E-19	P(10)	B
45	2200.895 11(29)	2040.28	0.123E-21	R(25)	L
46	2200.895 26(29)	2040.28	0.123E-21	R(25)	M
47	2200.935 19(3)	415.46	0.149E-20	R(31)	P
48	2200.990 41(44)	2000.74	0.145E-21	R(24)	J
49	2201.044 2	2152.14	0.716E-22	R(25)	I
50	2201.045 46(15)	2001.63	0.144E-21	R(24)	K
51	2201.486 57(2)	135.27	0.172E-20	P(18)	T
52	2201.599 94(3)	187.85	0.305E-21	P(21)	V
53	2201.719 40(8)*	626.56	0.413E-19	P(9)	C
54	2201.734 72(8)*	626.49	0.413E-19	P(9)	B
55	2201.748 87(5)*	251.34	0.688E-18	P(24)	A
56	2201.875 3	1201.27	0.213E-20	R(7)	F
57	2201.875 4	1201.27	0.213E-20	R(7)	E
58	2202.160 80(3)	469.88	0.121E-20	R(33)	P
59	2202.208 12(32)	2084.84	0.106E-21	R(27)	L
60	2202.208 35(32)	2084.84	0.106E-21	R(27)	M
61	2202.216 8	739.49	0.189E-21	R(19)	W
62	2202.386 86(3)	121.03	0.174E-20	P(17)	T
63	2202.408 29(4)	0.00	0.346E-21	R(0)	R
64	2202.545 72(3)	170.77	0.316E-21	P(20)	V
65	2202.613 93(8)*	619.00	0.380E-19	P(8)	C
66	2202.627 43(8)*	618.95	0.380E-19	P(8)	B
67	2202.744 46(5)*	231.24	0.728E-18	P(23)	A
68	2202.763 42(3)	498.34	0.109E-20	R(34)	P
69	2203.023 56(18)	2067.28	0.117E-21	R(27)	K


NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
2203
2204
2205
% TRANSMISSION
100 80 60 40 20 0
2205
2206
2207
% TRANSMISSION
100 80 60 40 20 0
2207
2208
2209
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2203.204 56(4)	0.81	0.689E-21	R(1)	R	36	2206.351 23(8)*	906.16	0.870E-22	Q(27)	C
2	2203.280 77(3)	107.58	0.175E-20	P(16)	T	37	2206.449 4	1254.20	0.302E-20	R(13)	F
3	2203.359 25(3)	527.64	0.969E-21	R(35)	P	38	2206.450 0	1254.20	0.302E-20	R(13)	E
4	2203.484 93(3)	154.51	0.325E-21	P(19)	V	39	2206.658 76(5)*	159.20	0.856E-18	P(19)	A
5	2203.501 66(8)*	612.29	0.342E-19	P(7)	C	40	2206.984 38(8)*	593.81	0.146E-19	P(3)	C
6	2203.513 37(8)*	612.24	0.342E-19	P(7)	B	41	2206.989 22(8)*	593.80	0.146E-19	P(3)	B
7	2203.669 24(18)	2090.84	0.108E-21	R(28)	K	42	2207.005 91(8)*	840.68	0.134E-21	Q(24)	C
8	2203.733 25(5)*	211.97	0.765E-18	P(22)	A	43	2207.084 87(4)	17.00	0.223E-20	R(6)	R
9	2203.948 28(3)	557.77	0.860E-21	R(36)	P	44	2207.207 37(8)*	820.54	0.154E-21	Q(23)	C
10	2203.994 09(4)	2.43	0.103E-20	R(2)	R	45	2207.536 26(8)*	905.56	0.873E-22	Q(27)	B
11	2204.126 84(36)	2157.99	0.827E-22	R(30)	L	46	2207.585 12(8)*	782.76	0.203E-21	Q(21)	C
12	2204.127 21(36)	2157.99	0.827E-22	R(30)	M	47	2207.620 30(5)*	143.28	0.876E-18	P(18)	A
13	2204.168 28(3)	94.93	0.175E-20	P(15)	T	48	2207.761 41(8)*	765.12	0.232E-21	Q(20)	C
14	2204.246 86(54)	2113.94	0.100E-21	R(29)	J	49	2207.815 09(8)*	861.16	0.117E-21	Q(25)	B
15	2204.382 57(8)*	606.41	0.299E-19	P(6)	C	50	2207.880 91(3)	792.08	0.326E-21	R(43)	P
16	2204.392 52(8)*	606.37	0.300E-19	P(6)	B	51	2207.946 62(8)*	840.21	0.135E-21	Q(24)	B
17	2204.417 54(3)	139.06	0.332E-21	P(18)	V	52	2208.072 87(8)*	820.10	0.155E-21	Q(23)	B
18	2204.715 23(5)*	193.54	0.799E-18	P(21)	A	53	2208.082 03(3)	85.39	0.336E-21	P(14)	V
19	2204.776 90(4)	4.86	0.135E-20	R(3)	R	54	2208.088 84(8)*	732.38	0.301E-21	Q(18)	C
20	2205.049 39(3)	83.06	0.173E-20	P(14)	T	55	2208.193 87(8)*	800.83	0.178E-21	Q(22)	B
21	2205.105 94(3)	620.54	0.667E-21	R(38)	P	56	2208.239 96(8)*	717.26	0.343E-21	Q(17)	C
22	2205.256 66(8)*	601.37	0.253E-19	P(5)	C	57	2208.309 61(8)*	782.39	0.203E-21	Q(21)	B
23	2205.264 88(8)*	601.34	0.253E-19	P(5)	B	58	2208.382 69(8)*	702.99	0.390E-21	Q(16)	C
24	2205.343 56(3)	124.43	0.337E-21	P(17)	V	59	2208.415 44(3)	828.89	0.278E-21	R(44)	P
25	2205.552 96(4)	8.10	0.166E-20	R(4)	R	60	2208.420 08(8)*	764.79	0.232E-21	Q(20)	B
26	2205.674 56(3)	653.18	0.583E-21	R(39)	P	61	2208.509 81(3)	43.51	0.150E-20	P(10)	T
27	2205.690 41(5)*	175.95	0.830E-18	P(20)	A	62	2208.575 01(5)*	128.20	0.891E-18	P(17)	A
28	2205.872 86(8)*	954.01	0.643E-22	Q(29)	C	63	2208.719 92(8)*	717.02	0.344E-21	Q(17)	B
29	2205.924 11(3)	71.99	0.169E-20	P(13)	T	64	2208.760 54(8)*	665.20	0.573E-21	Q(13)	C
30	2206.123 93(8)*	597.17	0.202E-19	P(4)	C	65	2208.809 35(8)*	702.77	0.390E-21	Q(16)	B
31	2206.130 45(8)*	597.15	0.202E-19	P(4)	B	66	2208.869 70(8)*	654.28	0.653E-21	Q(12)	C
32	2206.131 5	1349.99	0.178E-20	R(12)	D	67	2208.970 46(8)*	644.20	0.746E-21	Q(11)	C
33	2206.236 37(3)	686.65	0.508E-21	R(40)	P	68	2208.972 41(8)*	676.79	0.504E-21	Q(14)	B
34	2206.262 99(3)	110.60	0.339E-21	P(16)	V	69	2209.037 5	1398.38	0.184E-20	R(16)	D
35	2206.322 29(4)	12.15	0.196E-20	R(5)	R	70	2209.046 05(8)*	665.05	0.574E-21	Q(13)	B


NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2209
2210
2211
2212
2213
2214
2215
WAVENUMBERS (cm^{-1})

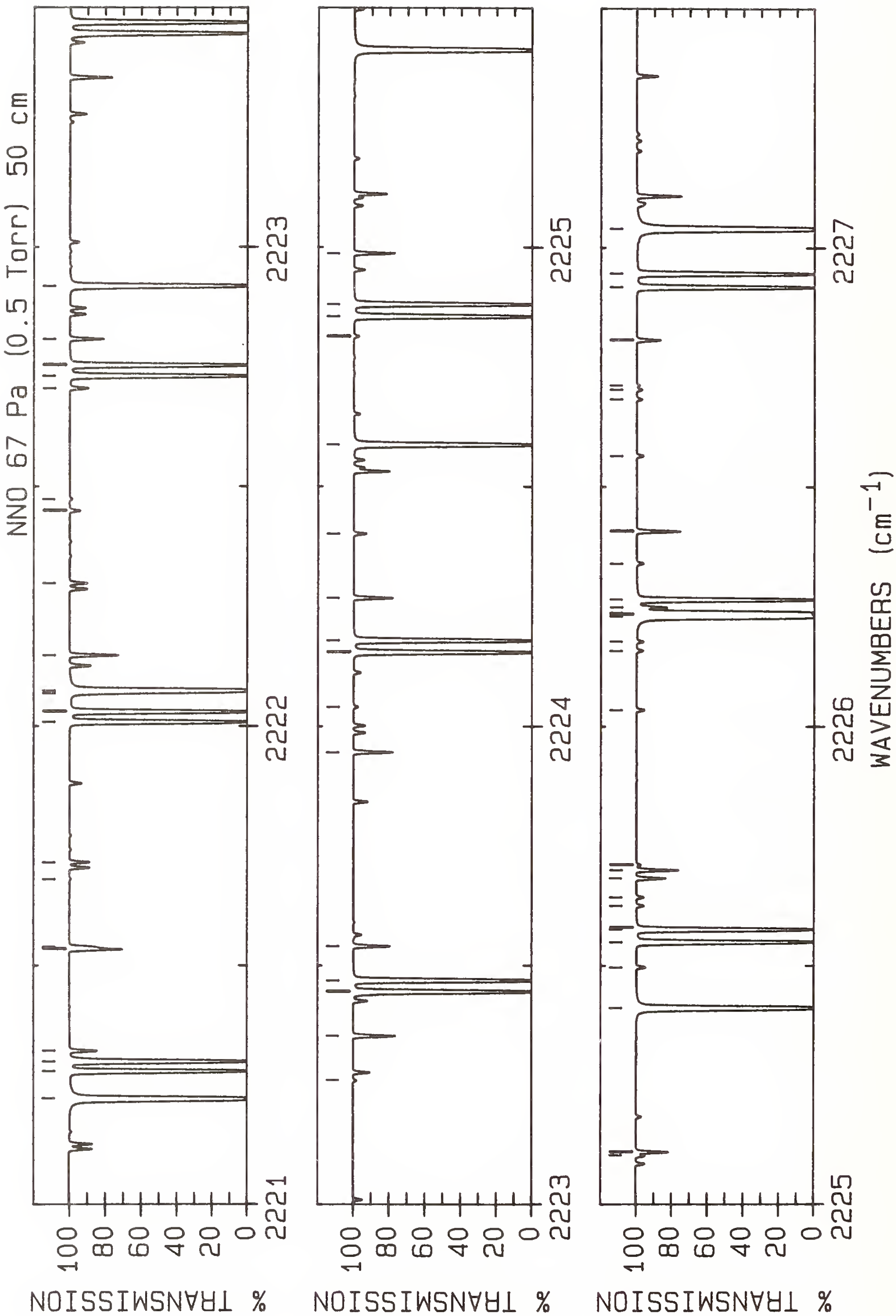
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2209.062 83(8)*	634.96	0.854E-21	Q(10)	C
2	2209.085 5	1282.33	0.326E-20	R(16)	G
3	2209.114 44(8)*	654.15	0.653E-21	Q(12)	B
4	2209.146 81(8)*	626.56	0.984E-21	Q(9)	C
5	2209.235 42(8)*	634.88	0.855E-21	Q(10)	B
6	2209.348 35(8)*	606.41	0.159E-20	Q(6)	C
7	2209.377 43(8)*	612.24	0.134E-20	Q(7)	B
8	2209.398 74(8)*	601.37	0.193E-20	Q(5)	C
9	2209.414 25(8)*	606.37	0.159E-20	Q(6)	B
10	2209.440 73(8)*	597.17	0.242E-20	Q(4)	C
11	2209.445 81(8)*	601.34	0.193E-20	Q(5)	B
12	2209.464 02(3)	905.01	0.200E-21	R(46)	P
13	2209.472 11(8)*	597.15	0.242E-20	Q(4)	B
14	2209.474 32(8)*	593.81	0.319E-20	Q(3)	C
15	2209.493 15(8)*	593.80	0.319E-20	Q(3)	B
16	2209.499 52(8)*	591.29	0.461E-20	Q(2)	C
17	2209.508 93(8)*	591.28	0.461E-20	Q(2)	B
18	2209.516 31(8)*	589.61	0.837E-20	Q(1)	C
19	2209.519 45(8)*	589.61	0.837E-20	Q(1)	B
20	2209.522 90(5)*	113.96	0.900E-18	P(16)	A
21	2209.746 5	1412.57	0.182E-20	R(17)	D
22	2209.803 0	1296.61	0.322E-20	R(17)	G
23	2209.874 65(4)	63.44	0.321E-21	P(12)	V
24	2209.978 06(3)	944.33	0.169E-21	R(47)	P
25	2210.067 66(3)	44.53	0.307E-20	R(10)	R
26	2210.073 9	1321.41	0.298E-20	R(18)	F
27	2210.075 5	1321.41	0.298E-20	R(18)	E
28	2210.201 53(3)	28.48	0.129E-20	P(8)	T
29	2210.463 95(5)*	100.55	0.901E-18	P(15)	A
30	2210.761 04(4)	53.68	0.309E-21	P(11)	V
31	2210.796 46(3)	53.44	0.320E-20	R(11)	R
32	2210.985 61(4)	1025.45	0.119E-21	R(49)	P
33	2211.037 76(3)	22.15	0.117E-20	P(7)	T
34	2211.180 97(8)*	589.61	0.837E-20	R(1)	B
35	2211.184 05(8)*	589.61	0.837E-20	R(1)	C
36	2211.398 16(5)*	87.98	0.894E-18	P(14)	A
37	2211.518 49(3)	63.15	0.331E-20	R(12)	R
38	2211.640 80(4)	44.73	0.293E-21	P(10)	V
39	2211.867 57(3)	16.61	0.103E-20	P(6)	T
40	2211.998 87(8)*	591.28	0.148E-19	R(2)	B
41	2212.003 45(8)*	591.29	0.148E-19	R(2)	C
42	2212.233 74(3)	73.68	0.339E-20	R(13)	R
43	2212.325 53(5)*	76.25	0.880E-18	P(13)	A
44	2212.445 60(4)	1153.37	0.673E-22	R(52)	P
45	2212.604 2	1362.08	0.286E-20	R(21)	G
46	2212.690 94(3)	11.87	0.875E-21	P(5)	T
47	2212.809 95(8)*	593.80	0.205E-19	R(3)	B
48	2212.815 99(8)*	593.81	0.205E-19	R(3)	C
49	2212.850 6	1390.28	0.259E-20	R(22)	F
50	2212.853 4	1390.30	0.259E-20	R(22)	E
51	2212.942 22(3)	85.01	0.343E-20	R(14)	R
52	2213.246 05(5)*	65.36	0.857E-18	P(12)	A
53	2213.507 87(4)	7.91	0.714E-21	P(4)	T
54	2213.527 6	1409.60	0.246E-20	R(23)	F
55	2213.530 9	1409.62	0.246E-20	R(23)	E
56	2213.614 19(8)*	597.15	0.259E-19	R(4)	B
57	2213.621 66(8)*	597.17	0.259E-19	R(4)	C
58	2213.643 92(3)	97.16	0.345E-20	R(15)	R
59	2213.963 5	1399.85	0.259E-20	R(23)	G
60	2214.159 73(5)*	55.31	0.825E-18	P(11)	A
61	2214.240 34(4)	22.77	0.229E-21	P(7)	V
62	2214.318 37(4)	4.75	0.544E-21	P(3)	T
63	2214.338 84(3)	110.11	0.344E-20	R(16)	R
64	2214.411 60(8)*	601.34	0.308E-19	R(5)	B
65	2214.420 47(8)*	601.37	0.308E-19	R(5)	C
66	2214.512 9	1535.19	0.139E-20	R(24)	D
67	2214.861 2	1450.75	0.218E-20	R(25)	F
68	2214.865 3	1450.78	0.218E-20	R(25)	E
69	2215.026 97(3)	123.87	0.341E-20	R(17)	R



NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2215
2216
2217
2218
2219
2220
2221
WAVENUMBERS (cm^{-1})

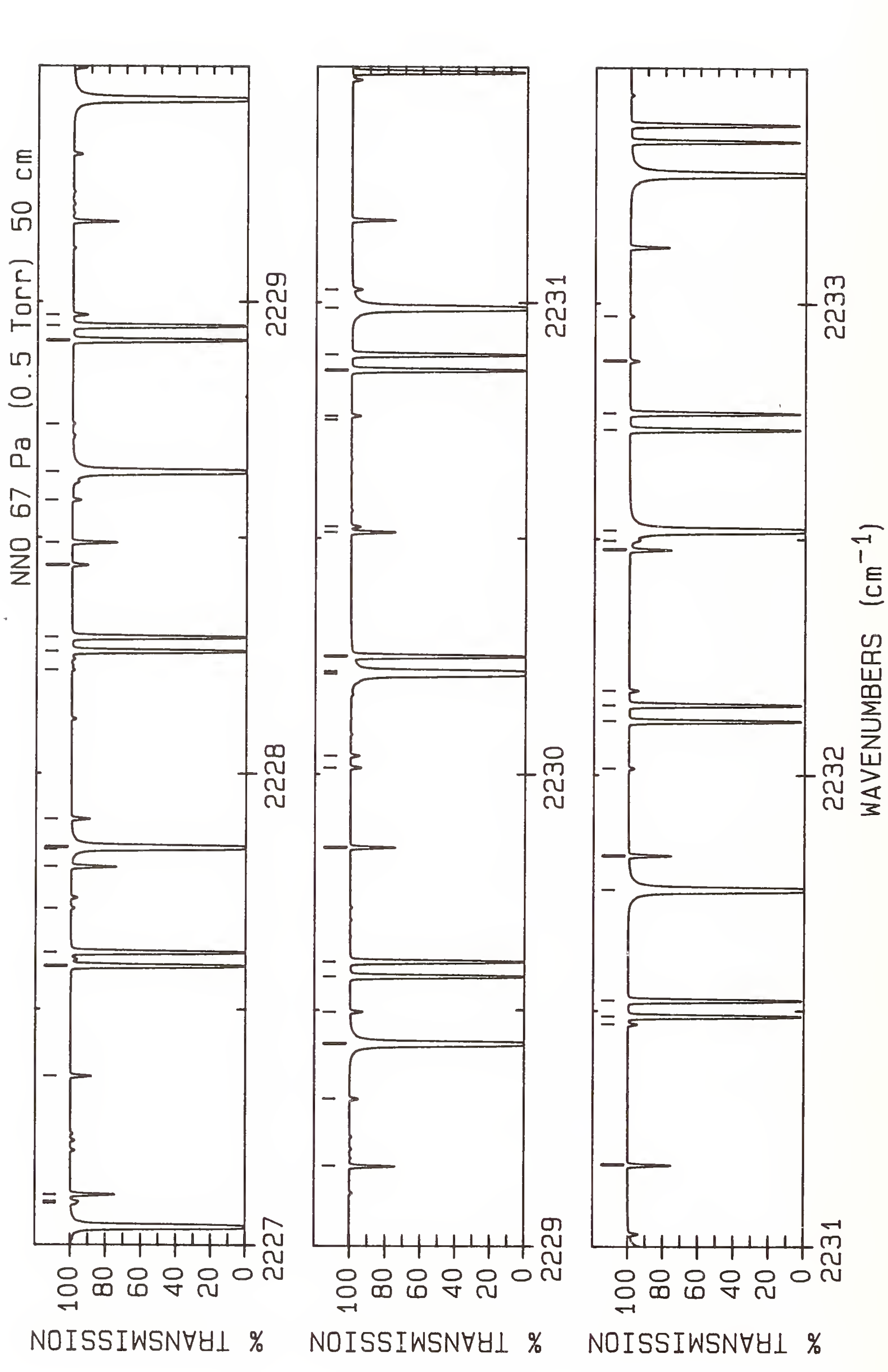
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2215.066 54(5)*	46.09	0.785E-18	P(10)	A
2	2215.093 58(5)	17.08	0.202E-21	P(6)	V
3	2215.122 42(4)	2.37	0.367E-21	P(2)	T
4	2215.202 16(8)*	606.37	0.353E-19	R(6)	B
5	2215.212 42(8)*	606.41	0.353E-19	R(6)	C
6	2215.517 7	1472.58	0.204E-20	R(26)	F
7	2215.522 3	1472.61	0.204E-20	R(26)	E
8	2215.708 31(3)	138.44	0.335E-20	R(18)	R
9	2215.920 02(4)	0.79	0.185E-21	P(1)	T
10	2215.966 50(5)*	37.71	0.736E-18	P(9)	A
11	2215.985 89(8)*	612.24	0.394E-19	R(7)	B
12	2215.997 49(8)*	612.29	0.394E-19	R(7)	C
13	2216.167 4	1495.26	0.189E-20	R(27)	F
14	2216.172 5	1495.29	0.189E-20	R(27)	E
15	2216.382 86(3)	153.82	0.327E-20	R(19)	R
16	2216.451 8	1600.25	0.113E-20	R(27)	D
17	2216.599 5	1485.45	0.199E-20	R(27)	G
18	2216.615 9	719.56	0.106E-21	R(18)	Y
19	2216.638 6	719.80	0.106E-21	R(18)	Z
20	2216.762 76(8)*	618.95	0.431E-19	R(8)	B
21	2216.775 68(8)*	619.00	0.431E-19	R(8)	C
22	2216.780 15(5)	8.13	0.141E-21	P(4)	V
23	2216.859 59(5)*	30.17	0.679E-18	P(8)	A
24	2217.050 60(3)	170.01	0.318E-20	R(20)	R
25	2217.081 5	1623.60	0.105E-20	R(28)	D
26	2217.241 2	1508.94	0.184E-20	R(28)	G
27	2217.302 9	734.86	0.104E-21	R(19)	Z
28	2217.446 0	1543.12	0.161E-20	R(29)	F
29	2217.452 3	1543.16	0.161E-20	R(29)	E
30	2217.495 88(4)	0.00	0.186E-21	R(0)	T
31	2217.532 79(8)*	626.49	0.463E-19	R(9)	B
32	2217.546 99(8)*	626.56	0.462E-19	R(9)	C
33	2217.613 46(5)	4.88	0.107E-21	P(3)	V
34	2217.706 3	1647.79	0.963E-21	R(29)	D
35	2217.711 55(3)	187.01	0.306E-20	R(21)	R

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2217.745 81(5)*	23.46	0.614E-18	P(7)	A
37	2217.876 0	1533.28	0.169E-20	R(29)	G
38	2217.936 1	750.41	0.101E-21	R(20)	Y
39	2217.960 8	750.71	0.101E-21	R(20)	Z
40	2218.075 1	1568.31	0.147E-20	R(30)	F
41	2218.081 9	1568.36	0.147E-20	R(30)	E
42	2218.274 12(4)	0.79	0.370E-21	R(1)	T
43	2218.295 96(8)*	634.88	0.489E-19	R(10)	B
44	2218.311 41(8)*	634.96	0.489E-19	R(10)	C
45	2218.323 9	1672.80	0.881E-21	R(30)	D
46	2218.365 69(3)	204.82	0.294E-20	R(22)	R
47	2218.397 9	1498.23	0.112E-22	R(47)	S
48	2218.503 9	1558.45	0.155E-20	R(30)	G
49	2218.586 6	767.03	0.975E-22	R(21)	Y
50	2218.612 1	767.36	0.974E-22	R(21)	Z
51	2218.625 16(5)*	17.60	0.542E-18	P(6)	A
52	2218.934 4	1698.65	0.802E-21	R(31)	D
53	2219.013 01(3)	223.43	0.280E-20	R(23)	R
54	2219.045 90(4)	2.37	0.551E-21	R(2)	T
55	2219.052 26(8)*	644.10	0.511E-19	R(11)	B
56	2219.068 95(8)*	644.20	0.511E-19	R(11)	C
57	2219.497 64(5)*	12.57	0.463E-18	P(5)	A
58	2219.653 53(3)	242.85	0.265E-20	R(24)	R
59	2219.801 71(8)*	654.15	0.528E-19	R(12)	B
60	2219.920 9	1648.90	0.109E-20	R(33)	F
61	2219.929 8	1648.97	0.109E-20	R(33)	E
62	2220.287 23(3)	263.09	0.250E-20	R(25)	R
63	2220.363 23(5)*	8.38	0.378E-18	P(4)	A
64	2220.544 29(8)*	665.05	0.539E-19	R(13)	B
65	2220.563 33(8)*	665.20	0.539E-19	R(13)	C
66	2220.570 05(3)	7.91	0.895E-21	R(4)	T
67	2220.723 4	1781.19	0.586E-21	R(34)	D
68	2220.914 11(3)	284.13	0.234E-20	R(26)	R
69	2220.946 1	1667.49	0.103E-20	R(34)	G



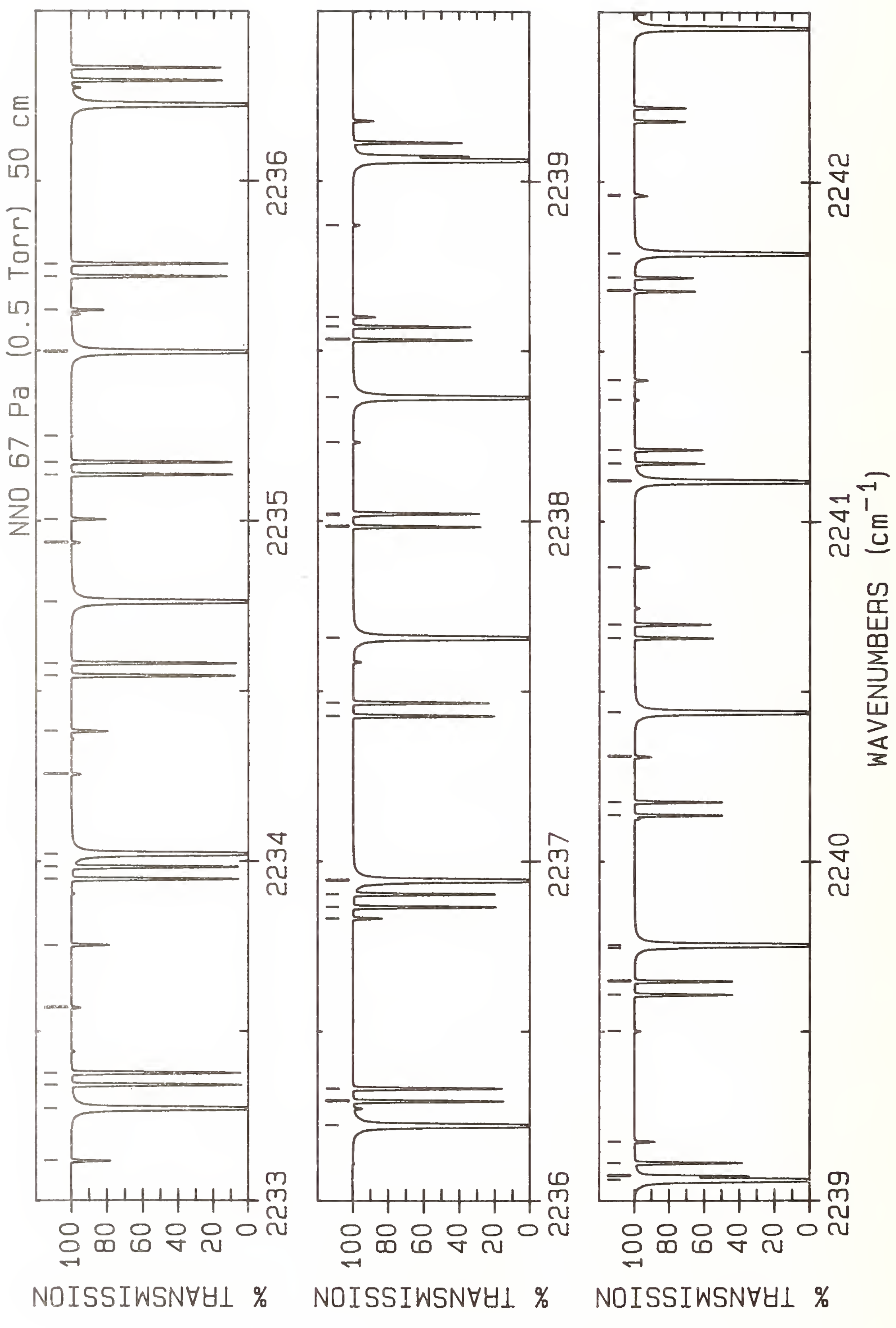
NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
2221
2222
2223
2224
2225
2226
2227
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2221.221 93(5)*	5.03	0.288E-18	P(3)	A
2	2221.279 99(8)*	676.79	0.546E-19	R(14)	B
3	2221.300 16(8)*	676.95	0.546E-19	R(14)	C
4	2221.322 42(3)	11.87	0.105E-20	R(5)	T
5	2221.534 16(3)	305.98	0.218E-20	R(27)	R
6	2221.539 3	1696.84	0.914E-21	R(35)	G
7	2221.680 15(5)	0.81	0.729E-22	R(1)	V
8	2221.716 0	1737.13	0.770E-21	R(36)	E
9	2222.008 82(8)*	689.36	0.548E-19	R(15)	B
10	2222.030 10(8)*	689.55	0.548E-19	R(15)	C
11	2222.068 32(3)	16.61	0.120E-20	R(6)	T
12	2222.073 75(5)*	2.51	0.195E-18	P(2)	A
13	2222.147 39(3)	328.64	0.202E-20	R(28)	R
14	2222.297 7	1768.20	0.680E-21	R(37)	E
15	2222.449 2	1871.22	0.410E-21	R(37)	D
16	2222.473 49(5)	2.44	0.109E-21	R(2)	V
17	2222.704 9	1758.06	0.716E-21	R(37)	G
18	2222.730 77(8)*	702.77	0.546E-19	R(16)	B
19	2222.753 11(8)*	702.99	0.546E-19	R(16)	C
20	2222.753 78(3)	352.10	0.187E-20	R(29)	R
21	2222.807 73(3)	22.15	0.134E-20	R(7)	T
22	2222.918 67(5)*	0.84	0.981E-19	P(1)	A
23	2223.260 15(5)	4.88	0.143E-21	R(3)	V
24	2223.353 34(3)	376.38	0.171E-20	R(30)	R
25	2223.445 83(8)*	717.02	0.540E-19	R(17)	B
26	2223.469 22(8)*	717.26	0.539E-19	R(17)	C
27	2223.540 66(3)	28.48	0.146E-20	R(8)	T
28	2223.946 06(3)	401.46	0.157E-20	R(31)	R
29	2224.040 14(5)	8.13	0.176E-21	R(4)	V
30	2224.154 01(8)*	732.11	0.529E-19	R(18)	B
31	2224.178 41(8)*	732.38	0.529E-19	R(18)	C
32	2224.267 10(3)	35.60	0.156E-20	R(9)	T
33	2224.401 1	1856.14	0.479E-21	R(40)	G
34	2224.587 81(5)*	0.00	0.985E-19	R(0)	A
35	2224.813 43(4)	12.20	0.207E-21	R(5)	V
36	2224.855 29(8)*	748.03	0.516E-19	R(19)	B
37	2224.880 67(8)*	748.33	0.515E-19	R(19)	C
38	2224.987 05(3)	43.51	0.166E-20	R(10)	T
39	2225.102 9	1936.08	0.339E-21	R(42)	E
40	2225.110 98(3)	454.04	0.129E-20	R(33)	R
41	2225.412 02(5)*	0.84	0.196E-18	R(1)	A
42	2225.497 0	1925.71	0.357E-21	R(42)	G
43	2225.549 68(8)*	764.79	0.499E-19	R(20)	B
44	2225.576 01(8)*	765.12	0.498E-19	R(20)	C
45	2225.580 04(4)	17.08	0.236E-21	R(6)	V
46	2225.625 5	1971.97	0.291E-21	R(43)	F
47	2225.643 2	1972.17	0.291E-21	R(43)	E
48	2225.683 16(3)	481.55	0.116E-20	R(34)	R
49	2225.700 50(3)	52.21	0.173E-20	R(11)	T
50	2225.711 5	2073.73	0.177E-21	R(43)	D
51	2226.034 5	1961.75	0.307E-21	R(43)	G
52	2226.157 9	2008.88	0.249E-21	R(44)	F
53	2226.176 7	2009.10	0.249E-21	R(44)	E
54	2226.229 32(5)*	2.51	0.292E-18	R(2)	A
55	2226.233 7	2110.39	0.151E-21	R(44)	D
56	2226.237 17(8)*	782.39	0.480E-19	R(21)	B
57	2226.248 49(3)	509.86	0.104E-20	R(35)	R
58	2226.264 41(8)*	782.76	0.479E-19	R(21)	C
59	2226.339 96(4)	22.77	0.262E-21	R(7)	V
60	2226.407 45(3)	61.71	0.179E-20	R(12)	T
61	2226.565 1	1998.62	0.262E-21	R(44)	G
62	2226.683 4	2046.63	0.212E-21	R(45)	F
63	2226.703 3	2046.86	0.211E-21	R(45)	E
64	2226.712 1	2147.88	0.129E-21	R(45)	D
65	2226.806 97(3)	538.98	0.925E-21	R(36)	R
66	2226.917 75(8)*	800.83	0.459E-19	R(22)	B
67	2226.945 88(8)*	801.23	0.458E-19	R(22)	C
68	2227.039 70(5)*	5.03	0.385E-18	R(3)	A


NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100 80 60 40 20 0
2227
2228
2229
2229
2230
2231
2231
2232
2233
WAVENUMBERS (cm-1)

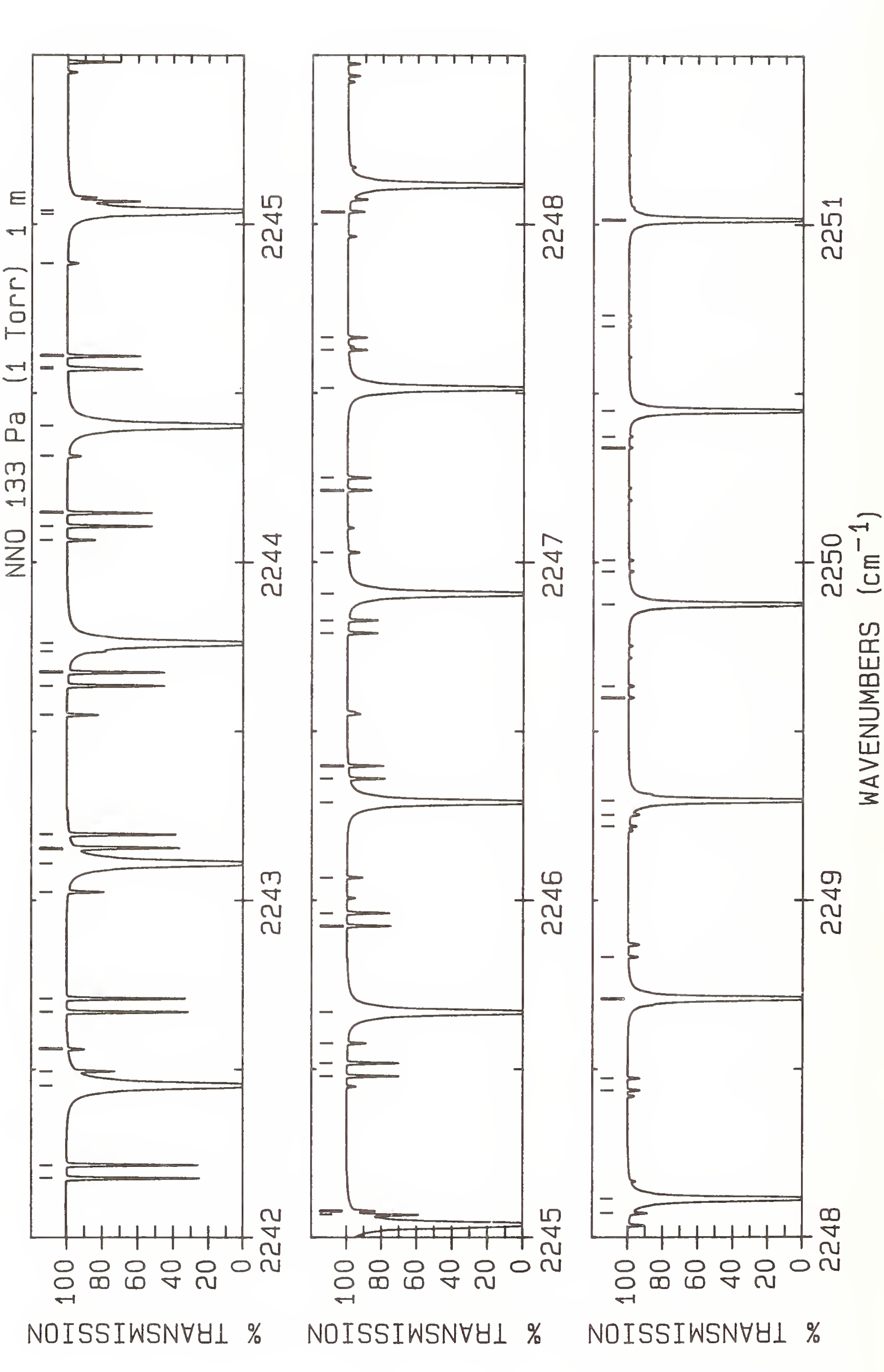
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2227.088 7	2036.33	0.223E-21	R(45)	G
2	2227.093 18(4)	29.28	0.286E-21	R(8)	V
3	2227.107 90(3)	71.99	0.183E-20	R(13)	T
4	2227.358 59(3)	568.91	0.821E-21	R(37)	R
5	2227.591 43(8)*	820.10	0.436E-19	R(23)	B
6	2227.620 41(8)*	820.54	0.435E-19	R(23)	C
7	2227.713 6	2124.63	0.151E-21	R(47)	F
8	2227.801 84(3)	83.06	0.186E-20	R(14)	T
9	2227.839 70(4)	36.60	0.307E-21	R(9)	V
10	2227.843 17(5)*	8.38	0.473E-18	R(4)	A
11	2227.903 34(3)	599.64	0.725E-21	R(38)	R
12	2228.218 3	2164.88	0.126E-21	R(48)	F
13	2228.258 19(8)*	840.21	0.412E-19	R(24)	B
14	2228.288 00(8)*	840.68	0.411E-19	R(24)	C
15	2228.441 23(3)	631.18	0.638E-21	R(39)	R
16	2228.489 28(3)	94.93	0.188E-20	R(15)	T
17	2228.579 52(4)	44.73	0.324E-21	R(10)	V
18	2228.639 71(5)*	12.57	0.557E-18	R(5)	A
19	2228.740 4	2206.29	0.106E-21	R(49)	E
20	2228.918 04(8)*	861.16	0.387E-19	R(25)	B
21	2228.948 64(8)*	861.67	0.386E-19	R(25)	C
22	2228.972 25(3)	663.53	0.558E-21	R(40)	R
23	2229.170 20(2)	107.58	0.187E-20	R(16)	T
24	2229.312 63(3)	53.68	0.339E-21	R(11)	V
25	2229.429 32(5)*	17.60	0.634E-18	R(6)	A
26	2229.496 40(3)	696.68	0.486E-21	R(41)	R
27	2229.570 98(8)*	882.94	0.361E-19	R(26)	B
28	2229.602 0	2237.36	0.926E-22	R(50)	G
29	2229.602 33(8)*	883.50	0.360E-19	R(26)	C
30	2229.844 60(2)	121.03	0.186E-20	R(17)	T
31	2230.013 67(3)	730.64	0.422E-21	R(42)	R
32	2230.039 03(3)	63.44	0.350E-21	R(12)	V
33	2230.212 00(5)*	23.46	0.704E-18	R(7)	A
34	2230.216 99(8)*	905.56	0.335E-19	R(27)	B
35	2230.249 07(8)*	906.16	0.334E-19	R(27)	C

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2230.512 48(2)	135.27	0.183E-20	R(18)	T
37	2230.524 07(3)	765.40	0.364E-21	R(43)	R
38	2230.750 7	1298.44	0.143E-22	R(42)	Y
39	2230.758 71(3)	74.01	0.358E-21	R(13)	V
40	2230.856 07(8)*	929.02	0.310E-19	R(28)	B
41	2230.888 85(8)*	929.66	0.309E-19	R(28)	C
42	2230.987 74(5)*	30.17	0.767E-18	R(8)	A
43	2231.026 2	2367.97	0.518E-22	R(53)	G
44	2231.027 58(3)	800.98	0.313E-21	R(44)	R
45	2231.173 83(2)	150.30	0.179E-20	R(19)	T
46	2231.471 67(3)	85.39	0.363E-21	R(14)	V
47	2231.488 22(8)*	953.32	0.285E-19	R(29)	B
48	2231.521 66(8)*	954.01	0.284E-19	R(29)	C
49	2231.756 55(5)*	37.71	0.821E-18	R(9)	A
50	2231.828 66(2)	166.12	0.174E-20	R(20)	T
51	2232.013 94(3)	874.54	0.228E-21	R(46)	R
52	2232.113 44(8)*	978.45	0.260E-19	R(30)	B
53	2232.147 51(8)*	979.18	0.259E-19	R(30)	C
54	2232.177 91(3)	97.59	0.365E-21	R(15)	V
55	2232.476 96(2)	182.72	0.168E-20	R(21)	T
56	2232.496 79(4)	912.53	0.194E-21	R(47)	R
57	2232.518 41(5)*	46.09	0.868E-18	R(10)	A
58	2232.731 72(8)*	1004.42	0.237E-19	R(31)	B
59	2232.766 39(8)*	1005.20	0.236E-19	R(31)	C
60	2232.877 42(3)	110.60	0.364E-21	R(16)	V
61	2232.972 74(4)	951.32	0.164E-21	R(48)	R



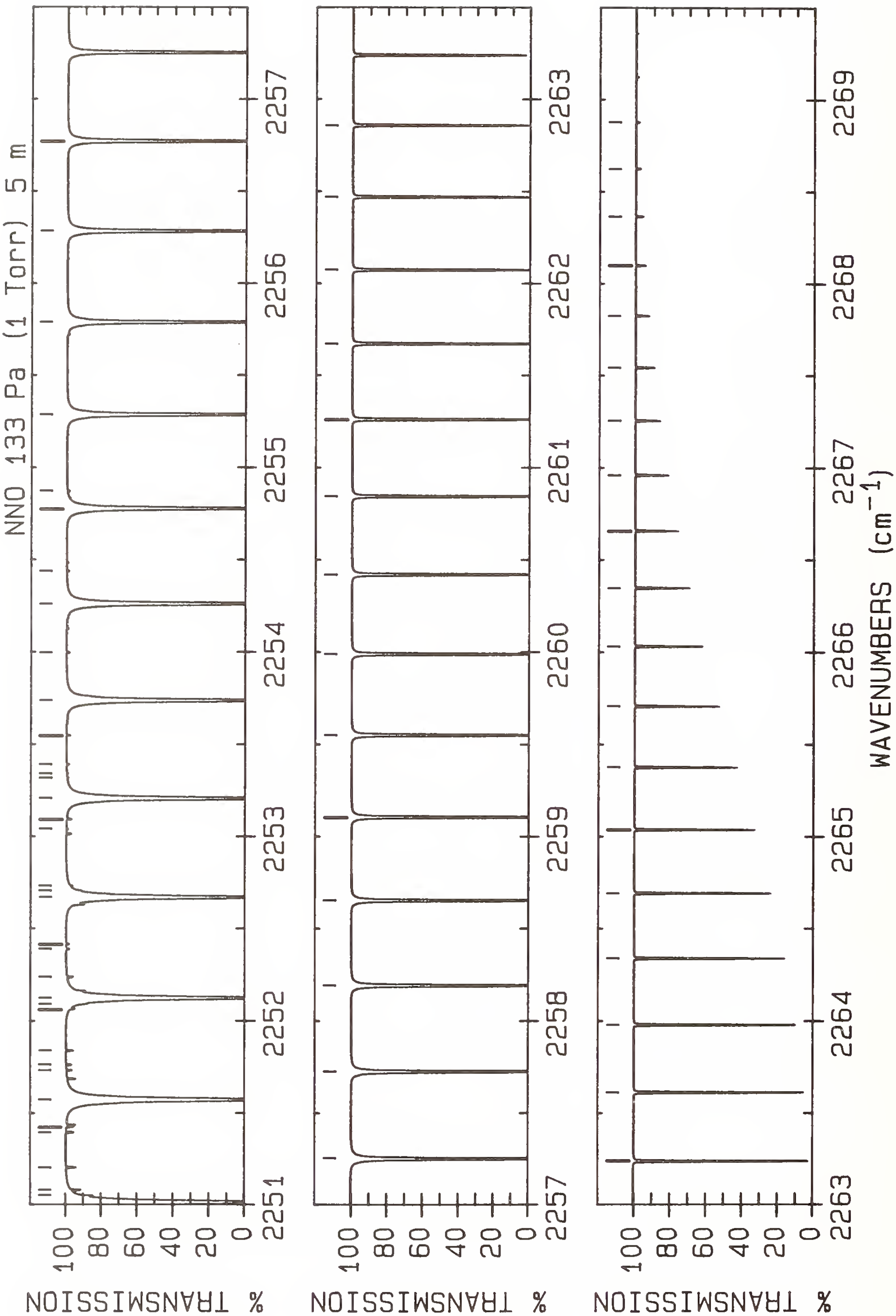
NNO 67 Pa (0.5 Torr) 50 cm
% TRANSMISSION
100
80
60
40
20
0
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2233.118 72(2)	200.12	0.161E-20	R(22)	T
2	2233.273 32(5)*	55.31	0.905E-18	R(11)	A
3	2233.343 06(8)*	1031.22	0.214E-19	R(32)	B
4	2233.378 29(8)*	1032.06	0.213E-19	R(32)	C
5	2233.570 20(3)	124.43	0.360E-21	R(17)	V
6	2233.753 94(2)	218.31	0.154E-20	R(23)	T
7	2233.947 45(8)*	1058.86	0.193E-19	R(33)	B
8	2233.983 21(8)*	1059.75	0.192E-19	R(33)	C
9	2234.021 28(5)*	65.36	0.934E-18	R(12)	A
10	2234.256 25(3)	139.06	0.354E-21	R(18)	V
11	2234.382 62(2)	237.29	0.146E-20	R(24)	T
12	2234.544 90(8)*	1087.34	0.173E-19	R(34)	B
13	2234.581 16(8)*	1088.28	0.172E-19	R(34)	C
14	2234.762 28(5)*	76.25	0.953E-18	R(13)	A
15	2234.935 55(3)	154.51	0.345E-21	R(19)	V
16	2235.004 75(2)	257.06	0.138E-20	R(25)	T
17	2235.135 39(8)*	1116.65	0.154E-19	R(35)	B
18	2235.172 11(8)*	1117.64	0.153E-19	R(35)	C
19	2235.248 98(5)	1157.36	0.659E-22	R(53)	R
20	2235.496 32(5)*	87.98	0.965E-18	R(14)	A
21	2235.620 33(3)	277.62	0.130E-20	R(26)	T
22	2235.718 93(8)*	1146.80	0.137E-19	R(36)	B
23	2235.756 08(8)*	1147.85	0.136E-19	R(36)	C
24	2236.223 39(5)*	100.55	0.968E-18	R(15)	A
25	2236.295 51(8)*	1177.78	0.121E-19	R(37)	B
26	2236.333 06(8)*	1178.89	0.120E-19	R(37)	C
27	2236.831 83(3)	321.11	0.113E-20	R(28)	T
28	2236.865 13(8)*	1209.60	0.106E-19	R(38)	B
29	2236.903 03(8)*	1210.77	0.105E-19	R(38)	C
30	2236.943 50(5)*	113.96	0.964E-18	R(16)	A
31	2237.427 75(3)	344.03	0.104E-20	R(29)	T
32	2237.427 78(8)*	1242.25	0.927E-20	R(39)	B
33	2237.466 01(8)*	1243.48	0.922E-20	R(39)	C
34	2237.656 64(5)*	128.20	0.952E-18	R(17)	A
35	2237.983 46(8)*	1275.74	0.807E-20	R(40)	B
36	2238.017 10(3)	367.75	0.960E-21	R(30)	T
37	2238.021 98(8)*	1277.04	0.802E-20	R(40)	C
38	2238.230 85(3)	243.94	0.279E-21	R(24)	V
39	2238.362 80(5)*	143.28	0.934E-18	R(18)	A
40	2238.532 16(8)*	1310.06	0.699E-20	R(41)	B
41	2238.570 95(8)*	1311.42	0.695E-20	R(41)	C
42	2238.599 88(3)	392.26	0.879E-21	R(31)	T
43	2238.869 64(3)	264.27	0.263E-21	R(25)	V
44	2239.061 98(5)*	159.20	0.909E-18	R(19)	A
45	2239.073 89(8)*	1345.22	0.603E-20	R(42)	B
46	2239.112 90(8)*	1346.65	0.599E-20	R(42)	C
47	2239.176 09(3)	417.55	0.802E-21	R(32)	T
48	2239.501 66(3)	285.40	0.246E-21	R(26)	V
49	2239.608 64(8)*	1381.21	0.518E-20	R(43)	B
50	2239.647 83(8)*	1382.71	0.514E-20	R(43)	C
51	2239.745 73(3)	443.64	0.727E-21	R(33)	T
52	2239.754 17(5)*	175.95	0.880E-18	R(20)	A
53	2240.136 40(8)*	1418.04	0.442E-20	R(44)	B
54	2240.175 75(8)*	1419.61	0.439E-20	R(44)	C
55	2240.308 79(3)	470.51	0.657E-21	R(34)	T
56	2240.439 38(5)*	193.54	0.846E-18	R(21)	A
57	2240.657 18(8)*	1455.70	0.376E-20	R(45)	B
58	2240.696 64(8)*	1457.34	0.373E-20	R(45)	C
59	2240.865 27(3)	498.18	0.590E-21	R(35)	T
60	2241.117 59(5)*	211.97	0.809E-18	R(22)	A
61	2241.170 96(8)*	1494.20	0.319E-20	R(46)	B
62	2241.210 51(8)*	1495.90	0.316E-20	R(46)	C
63	2241.357 11(4)	353.68	0.196E-21	R(29)	V
64	2241.415 16(3)	526.63	0.528E-21	R(36)	T
65	2241.677 76(8)*	1533.53	0.268E-20	R(47)	B
66	2241.717 35(8)*	1535.31	0.266E-20	R(47)	C
67	2241.788 81(5)*	231.24	0.768E-18	R(23)	A
68	2241.958 47(3)	555.87	0.470E-21	R(37)	T
69	2241.962 03(4)	378.06	0.180E-21	R(30)	V



NNO 133 Pa (1 Torr) 1 m
% TRANSMISSION
100
80
60
40
20
0
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2242.177 55(8)*	1573.69	0.225E-20	R(48)	B	36	2245.961 92(8)*	1927.48	0.466E-21	R(56)	C
2	2242.217 15(8)*	1575.55	0.223E-20	R(48)	C	37	2246.067 40(3)	818.17	0.158E-21	R(45)	T
3	2242.453 03(5)*	251.34	0.725E-18	R(24)	A	38	2246.291 12(5)*	389.53	0.458E-18	R(30)	A
4	2242.495 19(3)	585.90	0.416E-21	R(38)	T	39	2246.360 27(8)*	1972.62	0.380E-21	R(57)	B
5	2242.560 17(4)	403.25	0.164E-21	R(31)	V	40	2246.398 26(8)*	1975.23	0.375E-21	R(57)	C
6	2242.670 34(8)*	1614.68	0.188E-20	R(49)	B	41	2246.789 91(8)*	2021.11	0.305E-21	R(58)	B
7	2242.709 91(8)*	1616.62	0.186E-20	R(49)	C	42	2246.827 53(8)*	2023.80	0.301E-21	R(58)	C
8	2243.025 32(3)	616.72	0.367E-21	R(39)	T	43	2246.906 23(5)*	415.49	0.417E-18	R(31)	A
9	2243.110 24(5)*	272.28	0.681E-18	R(25)	A	44	2247.028 53(3)	891.62	0.115E-21	R(47)	T
10	2243.151 53(4)	429.26	0.149E-21	R(32)	V	45	2247.212 51(8)*	2070.42	0.244E-21	R(59)	B
11	2243.156 13(8)*	1656.51	0.156E-20	R(50)	B	46	2247.249 73(8)*	2073.21	0.241E-21	R(59)	C
12	2243.195 64(8)*	1658.53	0.155E-20	R(50)	C	47	2247.514 31(5)*	442.28	0.377E-18	R(32)	A
13	2243.548 84(3)	648.32	0.323E-21	R(40)	T	48	2247.628 08(8)*	2120.57	0.194E-21	R(60)	B
14	2243.634 91(8)*	1699.17	0.130E-20	R(51)	B	49	2247.664 85(8)*	2123.45	0.191E-21	R(60)	C
15	2243.674 32(8)*	1701.27	0.128E-20	R(51)	C	50	2248.036 61(8)*	2171.55	0.154E-21	R(61)	B
16	2243.736 09(4)	456.08	0.135E-21	R(33)	V	51	2248.072 89(8)*	2174.53	0.152E-21	R(61)	C
17	2243.760 45(5)*	294.06	0.636E-18	R(26)	A	52	2248.115 36(5)*	469.91	0.340E-18	R(33)	A
18	2244.065 77(3)	680.72	0.282E-21	R(41)	T	53	2248.438 10(8)*	2223.36	0.121E-21	R(62)	B
19	2244.106 68(8)*	1742.67	0.107E-20	R(52)	B	54	2248.473 85(8)*	2226.43	0.120E-21	R(62)	C
20	2244.145 95(8)*	1744.84	0.106E-20	R(52)	C	55	2248.709 37(5)*	498.37	0.304E-18	R(34)	A
21	2244.313 86(4)	483.70	0.121E-21	R(34)	V	56	2248.832 54(8)*	2275.99	0.953E-22	R(63)	B
22	2244.403 64(5)*	316.67	0.591E-18	R(27)	A	57	2249.219 94(8)*	2329.46	0.746E-22	R(64)	B
23	2244.571 44(8)*	1786.99	0.876E-21	R(53)	B	58	2249.254 50(8)*	2332.74	0.734E-22	R(64)	C
24	2244.576 09(3)	713.90	0.246E-21	R(42)	T	59	2249.296 34(5)*	527.67	0.271E-18	R(35)	A
25	2244.610 53(8)*	1789.25	0.867E-21	R(53)	C	60	2249.600 28(8)*	2383.76	0.581E-22	R(65)	B
26	2244.884 83(4)	512.14	0.109E-21	R(35)	V	61	2249.634 19(8)*	2387.14	0.571E-22	R(65)	C
27	2245.029 18(8)*	1832.15	0.716E-21	R(54)	B	62	2249.876 26(5)*	557.81	0.241E-18	R(36)	A
28	2245.039 82(5)*	340.12	0.546E-18	R(28)	A	63	2249.973 57(8)*	2438.88	0.450E-22	R(66)	B
29	2245.068 05(8)*	1834.50	0.708E-21	R(54)	C	64	2250.006 79(8)*	2442.37	0.443E-22	R(66)	C
30	2245.079 81(3)	747.87	0.213E-21	R(43)	T	65	2250.339 80(8)*	2494.84	0.348E-22	R(67)	B
31	2245.479 90(8)*	1878.14	0.582E-21	R(55)	B	66	2250.372 28(8)*	2498.43	0.342E-22	R(67)	C
32	2245.518 52(8)*	1880.57	0.575E-21	R(55)	C	67	2250.449 13(5)*	588.78	0.213E-18	R(37)	A
33	2245.576 91(3)	782.62	0.184E-21	R(44)	T	68	2250.698 98(8)*	2551.62	0.267E-22	R(68)	B
34	2245.668 98(5)*	364.41	0.501E-18	R(29)	A	69	2250.730 67(8)*	2555.32	0.263E-22	R(68)	C
35	2245.923 60(8)*	1924.97	0.472E-21	R(56)	B	70	2251.014 96(5)*	620.59	0.187E-18	R(38)	A


NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100
80
60
40
20
0
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2251.051 09(8)*	2609.24	0.205E-22	R(69)	B
2	2251.081 96(8)*	2613.04	0.201E-22	R(69)	C
3	2251.205 20(5)	916.61	0.201E-22	R(47)	V
4	2251.396 13(8)*	2667.68	0.156E-22	R(70)	B
5	2251.426 14(8)*	2671.59	0.153E-22	R(70)	C
6	2251.573 72(5)*	653.23	0.163E-18	R(39)	A
7	2251.734 10(8)*	2726.94	0.119E-22	R(71)	B
8	2251.763 21(8)*	2730.97	0.116E-22	R(71)	C
9	2251.840 53(4)	1351.81	0.149E-22	R(58)	T
10	2252.065 01(9)*	2787.04	0.896E-23	R(72)	B
11	2252.093 16(8)*	2791.17	0.878E-23	R(72)	C
12	2252.125 43(5)*	686.70	0.142E-18	R(40)	A
13	2252.238 10(5)	1398.36	0.121E-22	R(59)	T
14	2252.388 84(9)*	2847.96	0.674E-23	R(73)	B
15	2252.415 99(8)*	2852.21	0.660E-23	R(73)	C
16	2252.670 07(5)*	721.01	0.123E-18	R(41)	A
17	2252.705 59(9)*	2909.71	0.505E-23	R(74)	B
18	2252.731 70(9)*	2914.07	0.495E-23	R(74)	C
19	2253.040 28(9)*	2976.77	0.369E-23	R(75)	C
20	2253.093 52(6)	1077.32	0.993E-23	R(51)	V
21	2253.207 65(5)*	756.16	0.106E-18	R(42)	A
22	2253.317 85(9)*	3035.69	0.280E-23	R(76)	B
23	2253.341 74(9)*	3040.29	0.274E-23	R(76)	C
24	2253.390 86(5)	1542.71	0.628E-23	R(62)	T
25	2253.548 50(6)	1119.52	0.824E-23	R(52)	V
26	2253.738 15(5)*	792.14	0.912E-19	R(43)	A
27	2253.996 63(6)	1162.53	0.680E-23	R(53)	V
28	2254.261 58(5)*	828.95	0.779E-19	R(44)	A
29	2254.437 92(6)	1206.35	0.559E-23	R(54)	V
30	2254.777 94(5)*	866.60	0.663E-19	R(45)	A
31	2254.872 37(7)	1250.97	0.458E-23	R(55)	V
32	2255.287 21(5)*	905.08	0.561E-19	R(46)	A
33	2255.789 40(5)*	944.39	0.473E-19	R(47)	A
34	2256.284 50(5)*	984.54	0.397E-19	R(48)	A
35	2256.772 51(5)*	1025.52	0.332E-19	R(49)	A
36	2257.253 42(5)*	1067.33	0.276E-19	R(50)	A
37	2257.727 24(5)*	1109.98	0.228E-19	R(51)	A
38	2258.193 95(5)*	1153.46	0.188E-19	R(52)	A
39	2258.653 56(5)*	1197.77	0.154E-19	R(53)	A
40	2259.106 06(5)*	1242.91	0.126E-19	R(54)	A
41	2259.551 45(5)*	1288.88	0.103E-19	R(55)	A
42	2259.989 73(5)*	1335.69	0.831E-20	R(56)	A
43	2260.420 88(5)*	1383.33	0.670E-20	R(57)	A
44	2260.844 92(5)*	1431.79	0.538E-20	R(58)	A
45	2261.261 83(5)*	1481.09	0.430E-20	R(59)	A
46	2261.671 60(5)*	1531.22	0.342E-20	R(60)	A
47	2262.074 25(5)*	1582.18	0.271E-20	R(61)	A
48	2262.469 77(5)*	1633.97	0.214E-20	R(62)	A
49	2262.858 14(5)*	1686.59	0.168E-20	R(63)	A
50	2263.239 38(5)*	1740.04	0.131E-20	R(64)	A
51	2263.613 47(5)*	1794.32	0.102E-20	R(65)	A
52	2263.980 41(5)*	1849.42	0.795E-21	R(66)	A
53	2264.340 20(5)*	1905.36	0.614E-21	R(67)	A
54	2264.692 84(5)*	1962.12	0.472E-21	R(68)	A
55	2265.038 32(5)*	2019.71	0.361E-21	R(69)	A
56	2265.376 64(5)*	2078.13	0.275E-21	R(70)	A
57	2265.707 80(5)*	2137.38	0.209E-21	R(71)	A
58	2266.031 79(5)*	2197.45	0.158E-21	R(72)	A
59	2266.348 61(5)*	2258.36	0.119E-21	R(73)	A
60	2266.658 26(5)*	2320.08	0.892E-22	R(74)	A
61	2266.960 74(5)*	2382.64	0.666E-22	R(75)	A
62	2267.256 03(5)*	2446.02	0.495E-22	R(76)	A
63	2267.544 15(5)*	2510.22	0.366E-22	R(77)	A
64	2267.825 08(5)*	2575.26	0.270E-22	R(78)	A
65	2268.098 83(5)*	2641.11	0.198E-22	R(79)	A
66	2268.365 38(5)*	2707.79	0.145E-22	R(80)	A
67	2268.624 74(5)*	2775.30	0.106E-22	R(81)	A
68	2268.876 91(5)*	2843.63	0.765E-23	R(82)	A

ATLAS OF N_2O ABSORPTION LINES FROM 2400 cm^{-1} to 2520 cm^{-1}

key:

Band	Isotopomer	Vibrational Transition
a	$^{14}N^{14}N^{16}O$	$02^01\text{-}00^00$
x		$02^{2e}1\text{-}00^00$
b		$03^11\text{-}01^{1e}0$
c		$03^11\text{-}01^{1f}0$
d		$02^02\text{-}00^01$
e		$04^21\text{-}02^{2e}0$
f		$04^21\text{-}02^{2f}0$
g		$04^01\text{-}02^00$
p	$^{14}N^{15}N^{16}O$	$02^01\text{-}00^00$
r	$^{15}N^{14}N^{16}O$	$02^01\text{-}00^00$
t	$^{14}N^{14}N^{18}O$	$02^01\text{-}00^00$
v	$^{14}N^{14}N^{17}O$	$02^01\text{-}00^00$

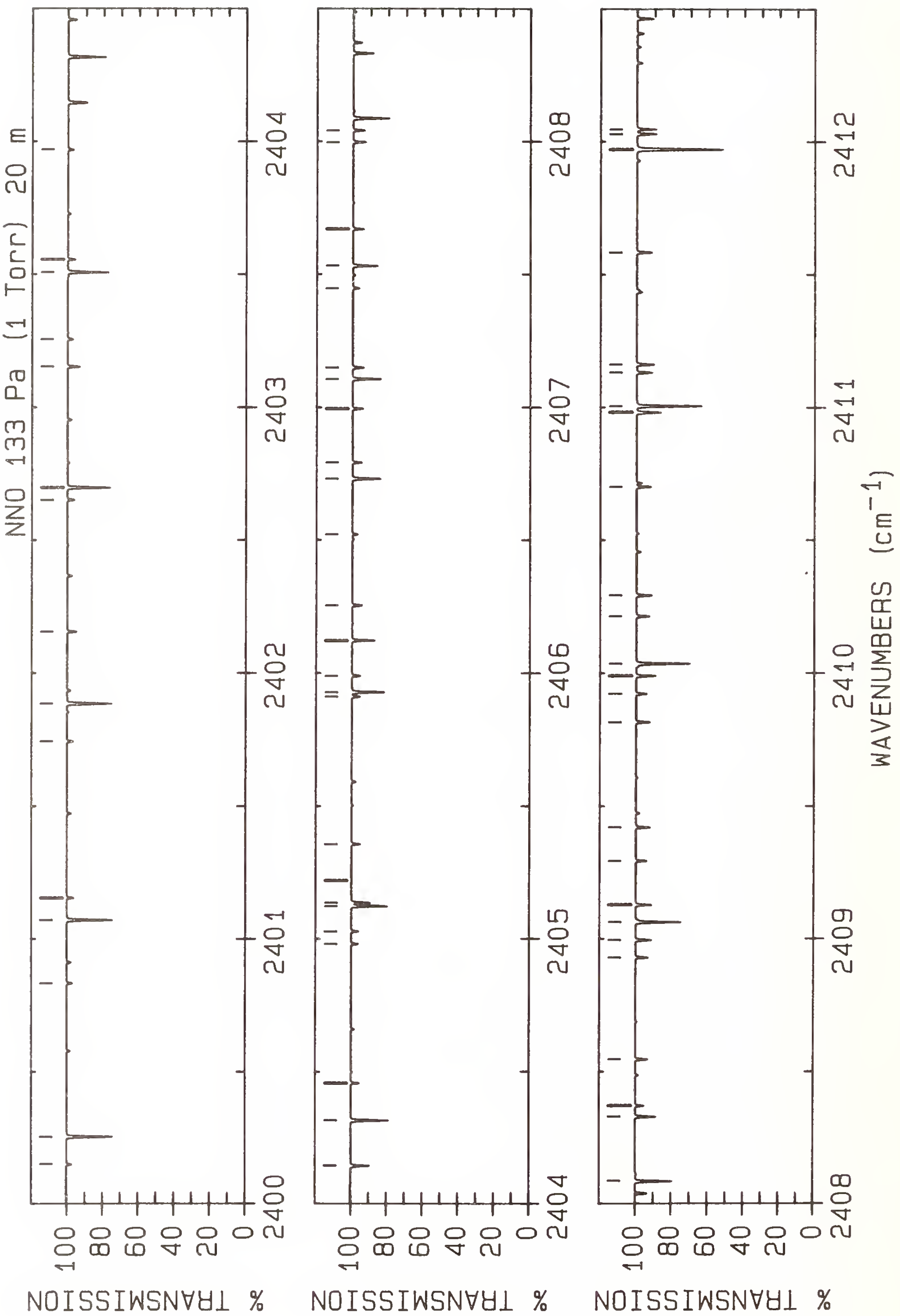
If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, *J*. Spectra are given for a slitwidth of 0.002 cm^{-1} and a temperature of 296 K. For all bands, except the **x** band, the Herman-Wallis constant $\xi_2 = 0.3 \times 10^{-4}$ was used. For the **a** band a transition moment of 0.017 debye was used, for the **b** and **c** bands 0.0155 debye, for the **d** band 0.024 debye, for the **e**, **f**, and **g** bands 0.014 debye, for the **p** band 0.013, for **r** 0.021, for **t** 0.030, and for **v** 0.023 debye. In the case of the **x** band a Herman-Wallis constant of $C_2 = 0.0007$ was used along with the intensity given by the normal *l*-type doubling intensity borrowed from the **a** band.

ATLAS OF N_2O ABSORPTION LINES FROM 2450 cm^{-1} to 2607 cm^{-1}

key:

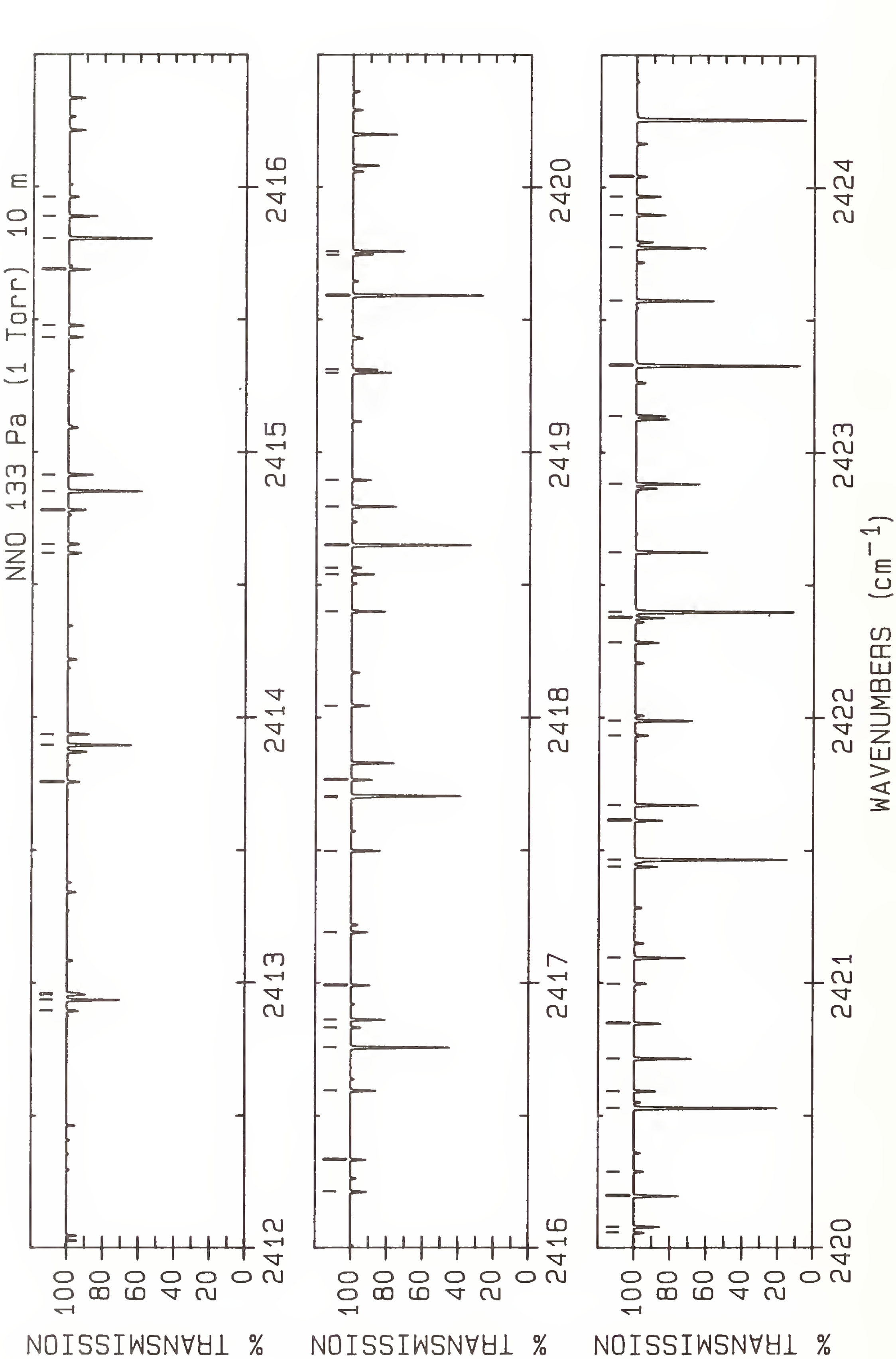
Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	$00^02\text{-}00^00$
B		$01^12\text{-}01^{1e}0$
C		$01^12\text{-}01^{1f}0$
D		$00^03\text{-}00^01$
E		$02^22\text{-}02^{2e}0$
F		$02^22\text{-}02^{2f}0$
G		$02^02\text{-}02^00$
P	$^{14}N^{15}N^{16}O$	$00^02\text{-}00^00$
R	$^{15}N^{14}N^{16}O$	$00^02\text{-}00^00$
T	$^{14}N^{14}N^{18}O$	$00^02\text{-}00^00$
V	$^{14}N^{14}N^{17}O$	$00^02\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of about 0.037 debye at a temperature of 296 K. No Herman-Wallis constants were used in the calculations. For the T and V bands respectively, transition moments of 0.042 and 0.0395 debye were used.


NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
2400 2401 2402 2403 2404
2404 2405 2406 2407 2408
2408 2409 2410 2411 2412
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2400.150 61(16)*	1962.12	0.311E-23	P(68)	a
2	2400.255 0	83.06	0.288E-22	P(14)	t
3	2400.834 1	527.64	0.319E-23	P(35)	p
4	2401.071 4	71.99	0.282E-22	P(13)	t
5	2401.154 82(14)*	1905.36	0.402E-23	P(67)	a
6	2401.744 3	498.34	0.356E-23	P(34)	p
7	2401.885 8	61.71	0.273E-22	P(12)	t
8	2402.155 48(13)*	1849.42	0.517E-23	P(66)	a
9	2402.651 7	469.88	0.395E-23	P(33)	p
10	2402.698 2	52.21	0.262E-22	P(11)	t
11	2403.152 60(13)*	1794.32	0.663E-23	P(65)	a
12	2403.153 5	2565.26	0.280E-24	P(57)	e
13	2403.256 0	765.40	0.324E-23	P(43)	r
14	2403.508 7	43.51	0.248E-22	P(10)	t
15	2403.556 4	442.25	0.437E-23	P(32)	p
16	2403.969 24(97)	2021.11	0.325E-23	P(58)	b
17	2404.143 6	730.64	0.373E-23	P(42)	r
18	2404.146 22(12)*	1740.04	0.846E-23	P(64)	a
19	2404.317 3	35.60	0.232E-22	P(9)	t
20	2404.458 4	415.46	0.480E-23	P(31)	p
21	2404.981 32(86)	1972.62	0.402E-23	P(57)	b
22	2405.028 9	696.68	0.428E-23	P(41)	r
23	2405.123 9	28.48	0.213E-22	P(8)	t
24	2405.136 35(12)*	1686.59	0.108E-22	P(63)	a
25	2405.221 1	2423.92	0.512E-24	P(54)	f
26	2405.357 8	389.50	0.526E-23	P(30)	p
27	2405.911 8	663.53	0.489E-23	P(40)	r
28	2405.928 6	22.15	0.192E-22	P(7)	t
29	2405.989 94(77)	1924.97	0.496E-23	P(56)	b
30	2406.123 03(11)*	1633.97	0.136E-22	P(62)	a
31	2406.254 6	364.38	0.572E-23	P(29)	p
32	2406.521 4	2023.80	0.320E-23	P(58)	c
33	2406.731 3	16.61	0.169E-22	P(6)	t
34	2406.792 4	631.18	0.555E-23	P(39)	r
35	2406.995 12(68)	1878.14	0.608E-23	P(55)	b

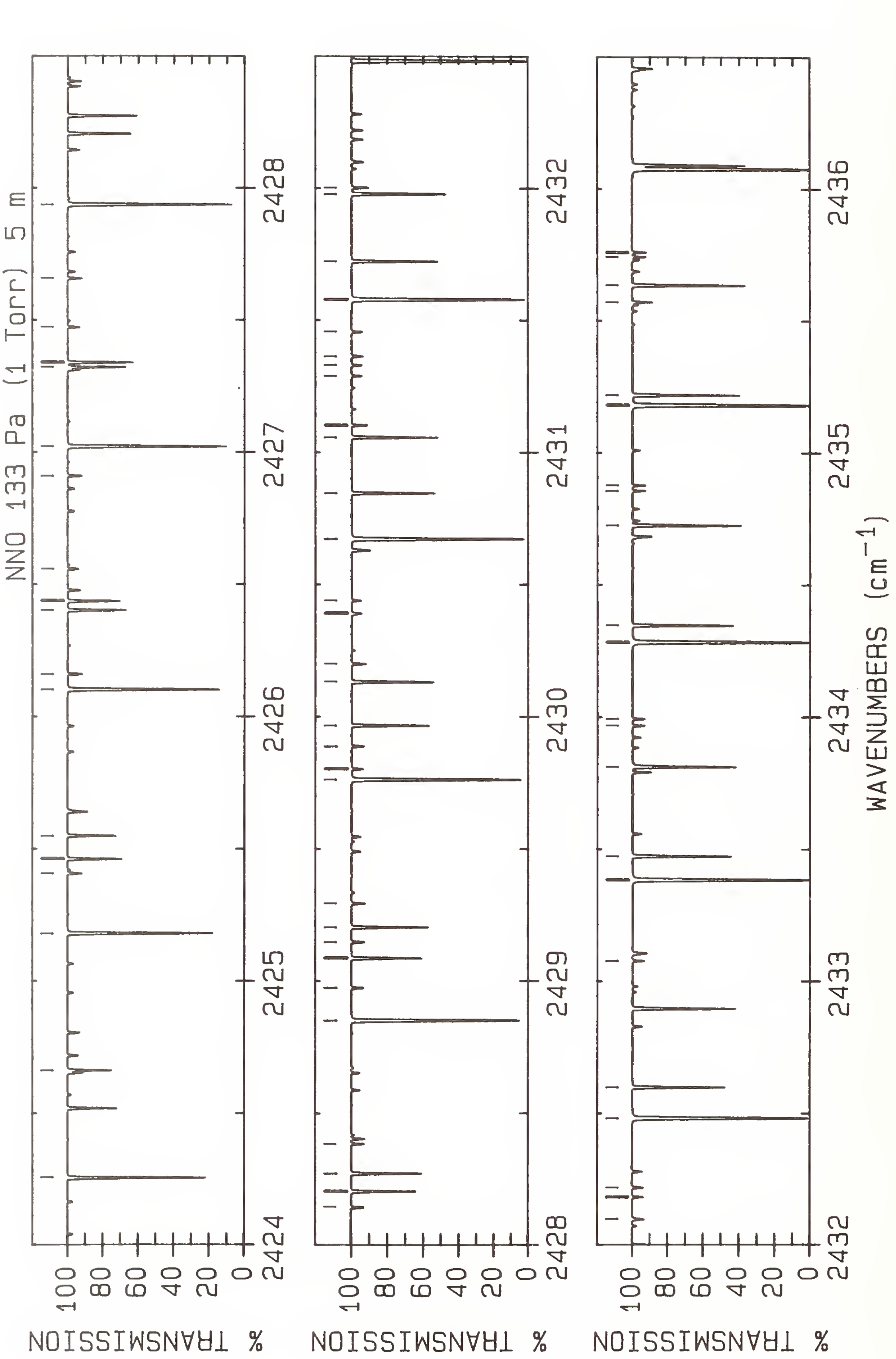
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2407.106 28(11)*	1582.18	0.172E-22	P(61)	a
37	2407.148 8	340.10	0.620E-23	P(28)	p
38	2407.447 87(92)	1975.23	0.396E-23	P(57)	c
39	2407.532 1	11.87	0.144E-22	P(5)	t
40	2407.670 7	599.64	0.628E-23	P(38)	r
41	2407.996 86(62)	1832.15	0.742E-23	P(54)	b
42	2408.040 6	316.65	0.668E-23	P(27)	p
43	2408.086 13(11)*	1531.22	0.215E-22	P(60)	a
44	2408.331 0	7.91	0.118E-22	P(4)	t
45	2408.372 08(82)	1927.48	0.489E-23	P(56)	c
46	2408.546 7	568.91	0.707E-23	P(37)	r
47	2408.930 0	294.04	0.716E-23	P(26)	p
48	2408.995 20(56)	1786.99	0.903E-23	P(53)	b
49	2409.062 61(11)*	1481.09	0.269E-22	P(59)	a
50	2409.127 9	4.75	0.895E-23	P(3)	t
51	2409.294 07(74)	1880.57	0.600E-23	P(55)	c
52	2409.420 6	538.98	0.793E-23	P(36)	r
53	2409.817 0	272.26	0.763E-23	P(25)	p
54	2409.923 0	2.37	0.604E-23	P(2)	t
55	2409.990 15(52)	1742.67	0.109E-22	P(52)	b
56	2410.035 75(11)*	1431.79	0.335E-22	P(58)	a
57	2410.213 86(66)	1834.50	0.733E-23	P(54)	c
58	2410.292 2	509.86	0.885E-23	P(35)	r
59	2410.701 6	251.32	0.809E-23	P(24)	p
60	2410.981 72(48)	1699.17	0.132E-22	P(51)	b
61	2411.005 58(11)*	1383.33	0.415E-22	P(57)	a
62	2411.131 51(60)	1789.25	0.892E-23	P(53)	c
63	2411.161 7	481.55	0.983E-23	P(34)	r
64	2411.583 9	231.22	0.853E-23	P(23)	p
65	2411.969 94(46)	1656.51	0.158E-22	P(50)	b
66	2411.972 14(11)*	1335.69	0.512E-22	P(56)	a
67	2412.029 1	454.04	0.109E-22	P(33)	r
68	2412.047 04(55)	1744.84	0.108E-22	P(52)	c



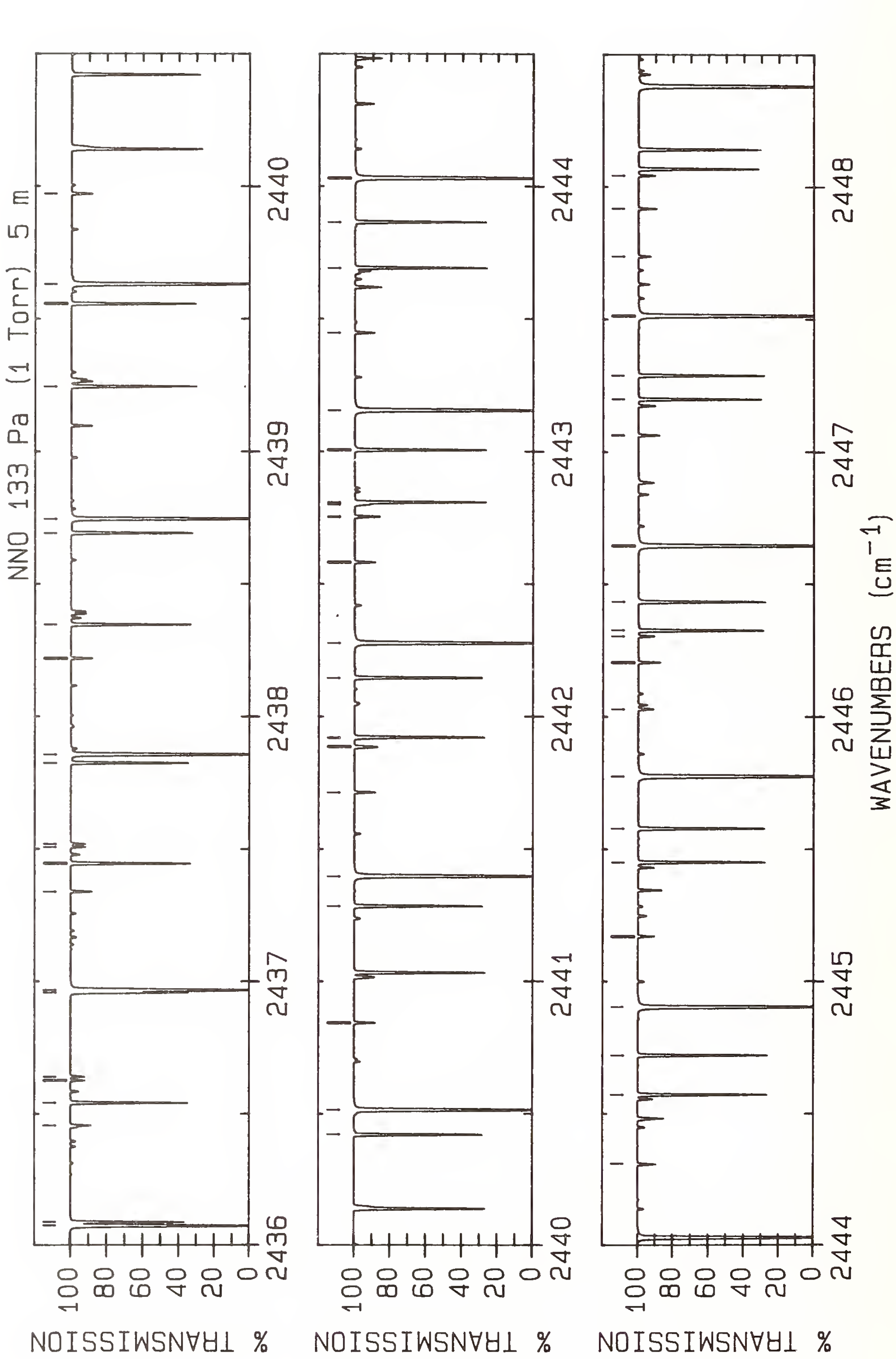
NNO 133 Pa (1 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2412.894 4	427.35	0.119E-22	P(32)	r
2	2412.935 46(11)*	1288.88	0.628E-22	P(55)	a
3	2412.954 81(44)	1614.68	0.189E-22	P(49)	b
4	2412.960 49(51)	1701.27	0.130E-22	P(51)	c
5	2413.757 6	401.46	0.131E-22	P(31)	r
6	2413.895 57(11)*	1242.91	0.768E-22	P(54)	a
7	2413.936 37(44)	1573.69	0.225E-22	P(48)	b
8	2414.618 8	376.38	0.143E-22	P(30)	r
9	2414.652 4	4.75	0.120E-22	R(3)	t
10	2414.781 32(46)	1616.62	0.187E-22	P(49)	c
11	2414.852 51(11)*	1197.77	0.935E-22	P(53)	a
12	2414.914 62(43)	1533.53	0.266E-22	P(47)	b
13	2415.433 8	7.91	0.147E-22	R(4)	t
14	2415.478 0	352.10	0.155E-22	P(29)	r
15	2415.688 76(44)	1575.55	0.223E-22	P(48)	c
16	2415.806 31(11)*	1153.46	0.113E-21	P(52)	a
17	2415.889 59(43)	1494.20	0.314E-22	P(46)	b
18	2415.962 7	143.27	0.101E-22	P(18)	p
19	2416.213 2	11.87	0.174E-22	R(5)	t
20	2416.335 2	328.64	0.167E-22	P(28)	r
21	2416.594 27(43)	1535.31	0.264E-22	P(47)	c
22	2416.757 01(11)*	1109.98	0.137E-21	P(51)	a
23	2416.832 1	128.19	0.103E-22	P(17)	p
24	2416.861 29(43)	1455.70	0.369E-22	P(45)	b
25	2416.990 7	16.61	0.198E-22	R(6)	t
26	2417.190 5	305.98	0.179E-22	P(27)	r
27	2417.497 89(43)	1495.90	0.312E-22	P(46)	c
28	2417.699 6	113.95	0.103E-22	P(16)	p
29	2417.704 65(11)*	1067.33	0.164E-21	P(50)	a
30	2417.766 1	22.15	0.221E-22	R(7)	t
31	2418.043 9	284.13	0.191E-22	P(26)	r
32	2418.399 65(43)	1457.34	0.366E-22	P(45)	c
33	2418.539 6	28.48	0.241E-22	R(8)	t
34	2418.565 0	100.55	0.103E-22	P(15)	p
35	2418.649 27(11)*	1025.52	0.197E-21	P(49)	a

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2418.794 95(44)	1381.21	0.502E-22	P(43)	b
37	2418.895 4	263.09	0.203E-22	P(25)	r
38	2419.299 57(43)	1419.61	0.428E-22	P(44)	c
39	2419.311 0	35.60	0.259E-22	R(9)	t
40	2419.590 89(11)*	984.54	0.234E-21	P(48)	a
41	2419.745 0	242.85	0.215E-22	P(24)	r
42	2419.756 95(44)	1345.22	0.582E-22	P(42)	b
43	2420.058 49(15)	1758.06	0.110E-22	P(37)	g
44	2420.080 4	43.51	0.275E-22	R(10)	t
45	2420.197 70(44)	1382.71	0.498E-22	P(43)	c
46	2420.290 0	76.25	0.101E-22	P(13)	p
47	2420.529 57(11)*	944.39	0.278E-21	P(47)	a
48	2420.592 8	223.43	0.226E-22	P(23)	r
49	2420.715 75(44)	1310.06	0.671E-22	P(41)	b
50	2420.847 8	52.21	0.288E-22	R(11)	t
51	2420.997 65(14)	1727.03	0.124E-22	P(36)	g
52	2421.094 06(44)	1346.65	0.578E-22	P(42)	c
53	2421.438 8	204.82	0.236E-22	P(22)	r
54	2421.465 35(11)*	905.08	0.328E-21	P(46)	a
55	2421.613 0	61.71	0.299E-22	R(12)	t
56	2421.671 37(44)	1275.74	0.770E-22	P(40)	b
57	2421.933 19(14)	1696.84	0.139E-22	P(35)	g
58	2421.988 68(44)	1311.42	0.667E-22	P(41)	c
59	2422.283 0	187.01	0.245E-22	P(21)	r
60	2422.376 2	71.99	0.306E-22	R(13)	t
61	2422.398 25(11)*	866.60	0.385E-21	P(45)	a
62	2422.623 82(44)	1242.25	0.880E-22	P(39)	b
63	2422.881 60(44)	1277.04	0.766E-22	P(40)	c
64	2423.137 3	83.06	0.312E-22	R(14)	t
65	2423.328 33(11)*	828.95	0.451E-21	P(44)	a
66	2423.573 13(43)	1209.60	0.100E-21	P(38)	b
67	2423.772 84(44)	1243.48	0.875E-22	P(39)	c
68	2423.896 3	94.93	0.314E-22	R(15)	t
69	2423.966 1	153.82	0.259E-22	P(19)	r
70	2424.041 30(16)	1677.44	0.111E-22	P(34)	f


NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
2424 2425 2426 2427 2428
2428 2429 2430 2431 2432
2432 2433 2434 2435 2436
WAVENUMBERS (cm-1)

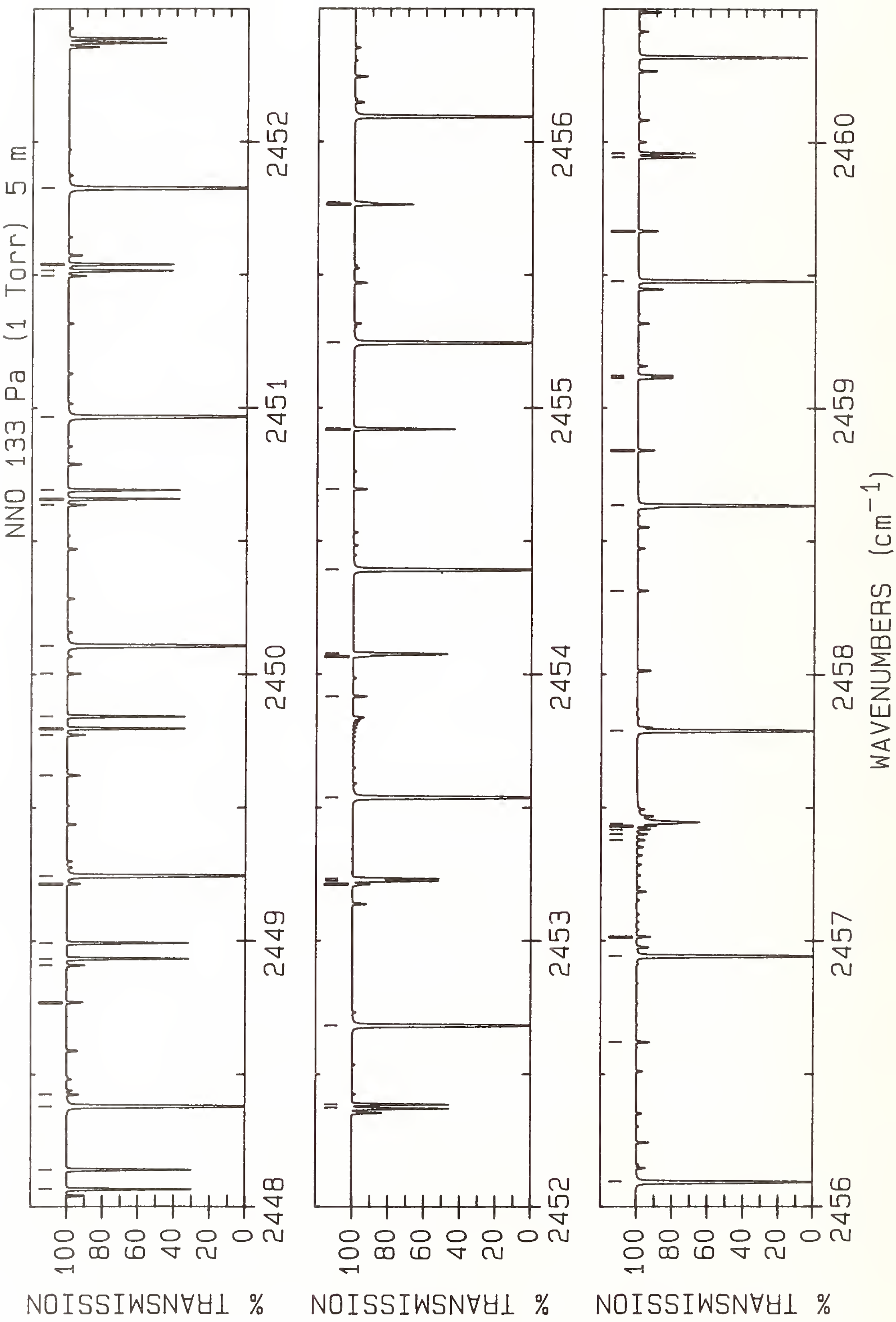
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2424.255 61(11)*	792.14	0.525E-21	P(43)	a	36	2430.439 23(13)	1495.29	0.209E-22	P(27)	e
2	2424.662 44(44)	1210.77	0.996E-22	P(38)	c	37	2430.671 96(11)*	557.81	0.134E-20	P(36)	a
3	2425.180 15(11)*	756.16	0.609E-21	P(42)	a	38	2430.845 73(38)	1005.20	0.215E-21	P(31)	c
4	2425.407 7	121.03	0.313E-22	R(17)	t	39	2431.056 18(36)	978.45	0.237E-21	P(30)	b
5	2425.462 36(42)	1146.80	0.128E-21	P(36)	b	40	2431.101 93(13)	1440.98	0.335E-22	P(25)	g
6	2425.550 42(44)	1178.89	0.113E-21	P(37)	c	41	2431.288 31(14)	1472.58	0.224E-22	P(26)	f
7	2426.101 99(11)*	721.01	0.703E-21	P(41)	a	42	2431.329 91(13)	1472.61	0.224E-22	P(26)	e
8	2426.160 2	135.27	0.309E-22	R(18)	t	43	2431.363 9	257.06	0.239E-22	R(25)	t
9	2426.402 32(41)	1116.65	0.143E-21	P(35)	b	44	2431.456 1	44.53	0.229E-22	P(10)	r
10	2426.436 80(43)	1147.85	0.127E-21	P(36)	c	45	2431.578 40(10)*	527.67	0.151E-20	P(35)	a
11	2426.558 49(13)	1558.45	0.230E-22	P(30)	g	46	2431.723 08(37)	979.18	0.236E-21	P(30)	c
12	2426.910 4	150.30	0.303E-22	R(19)	t	47	2431.977 87(35)	953.32	0.257E-21	P(29)	b
13	2427.021 15(11)*	686.70	0.807E-21	P(40)	a	48	2432.001 45(13)	1420.00	0.355E-22	P(24)	g
14	2427.321 62(42)	1117.64	0.143E-21	P(35)	c	49	2432.097 9	277.62	0.225E-22	R(26)	t
15	2427.339 20(40)	1087.34	0.160E-21	P(34)	b	50	2432.183 67(13)	1450.75	0.238E-22	P(25)	f
16	2427.473 49(13)	1533.28	0.250E-22	P(29)	g	51	2432.219 05(12)	1450.78	0.238E-22	P(25)	e
17	2427.658 4	166.12	0.296E-22	R(20)	t	52	2432.482 41(10)*	498.37	0.168E-20	P(34)	a
18	2427.937 69(11)*	653.23	0.923E-21	P(39)	a	53	2432.599 01(36)	954.01	0.257E-21	P(29)	c
19	2428.143 8	85.01	0.265E-22	P(14)	r	54	2433.076 73(13)	1429.76	0.252E-22	P(24)	f
20	2428.204 90(42)	1088.28	0.159E-21	P(34)	c	55	2433.384 03(10)*	469.91	0.187E-20	P(33)	a
21	2428.273 01(39)	1058.86	0.178E-21	P(33)	b	56	2433.473 52(35)	929.66	0.278E-21	P(28)	c
22	2428.385 27(13)	1508.94	0.271E-22	P(28)	g	57	2433.812 28(32)	905.56	0.301E-21	P(27)	b
23	2428.851 65(11)*	620.59	0.105E-20	P(38)	a	58	2433.967 52(12)	1409.60	0.266E-22	P(23)	f
24	2428.974 3	73.68	0.259E-22	P(13)	r	59	2433.992 55(11)	1409.62	0.266E-22	P(23)	e
25	2429.086 66(41)	1059.75	0.177E-21	P(33)	c	60	2434.283 30(10)*	442.28	0.207E-20	P(32)	a
26	2429.147 6	200.12	0.276E-22	R(22)	t	61	2434.346 66(34)	906.16	0.300E-21	P(27)	c
27	2429.203 76(38)	1031.22	0.196E-21	P(32)	b	62	2434.725 02(31)	882.94	0.322E-21	P(26)	b
28	2429.293 90(13)	1485.45	0.292E-22	P(27)	g	63	2434.856 03(12)	1390.28	0.279E-22	P(22)	f
29	2429.763 06(11)*	588.78	0.119E-20	P(37)	a	64	2434.876 82(11)	1390.30	0.279E-22	P(22)	e
30	2429.803 2	63.15	0.252E-22	P(12)	r	65	2435.180 26(10)*	415.49	0.227E-20	P(31)	a
31	2429.888 8	218.31	0.265E-22	R(23)	t	66	2435.218 42(33)	883.50	0.321E-21	P(26)	c
32	2429.966 93(40)	1032.06	0.196E-21	P(32)	c	67	2435.570 80(12)	1344.45	0.423E-22	P(20)	g
33	2430.131 48(37)	1004.42	0.216E-21	P(31)	b	68	2435.634 81(31)	861.16	0.344E-21	P(25)	b
34	2430.199 44(13)	1462.80	0.314E-22	P(26)	g	69	2435.742 30(11)	1371.80	0.290E-22	P(21)	f
35	2430.390 65(14)	1495.26	0.209E-22	P(27)	f	70	2435.759 40(10)	1371.82	0.290E-22	P(21)	e



NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100
80
60
40
20
0
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
WAVENUMBERS (cm^{-1})

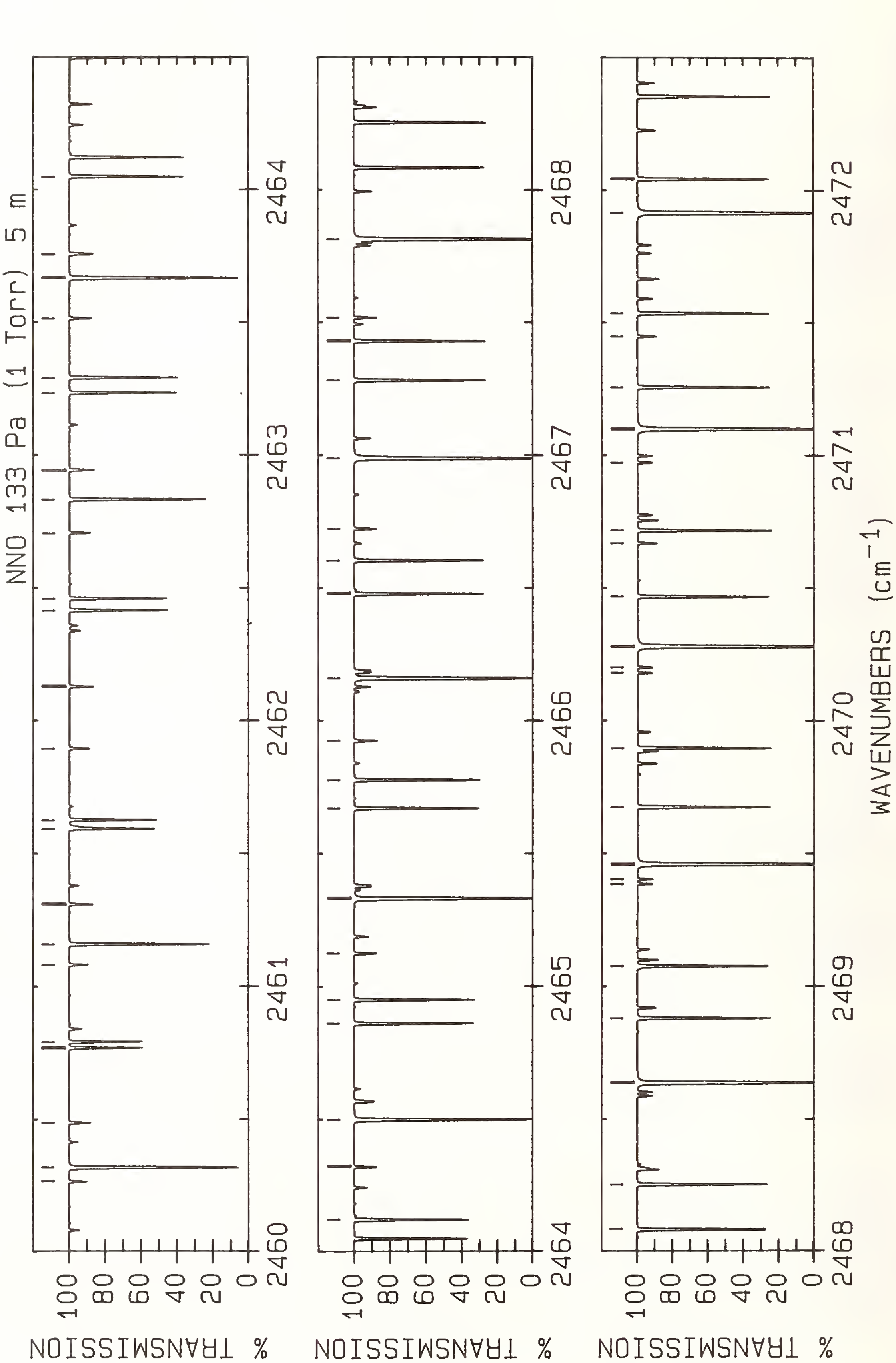
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2436.074 95(10)*	389.53	0.249E-20	P(30)	a
2	2436.088 83(32)	861.67	0.343E-21	P(25)	c
3	2436.456 23(12)	1327.67	0.436E-22	P(19)	g
4	2436.541 66(30)	840.21	0.364E-21	P(24)	b
5	2436.626 31(11)	1354.16	0.300E-22	P(20)	f
6	2436.640 23(10)	1354.18	0.300E-22	P(20)	e
7	2436.957 91(31)	840.68	0.363E-21	P(24)	c
8	2436.967 39(10)*	364.41	0.271E-20	P(29)	a
9	2437.338 98(12)	1311.72	0.445E-22	P(18)	g
10	2437.445 57(29)	820.10	0.384E-21	P(23)	b
11	2437.508 10(11)	1337.37	0.309E-22	P(19)	f
12	2437.519 30(10)	1337.38	0.309E-22	P(19)	e
13	2437.825 67(30)	820.54	0.383E-21	P(23)	c
14	2437.857 63(10)*	340.12	0.294E-20	P(28)	a
15	2438.219 11(12)	1296.61	0.452E-22	P(17)	g
16	2438.346 57(29)	800.83	0.402E-21	P(22)	b
17	2438.692 13(30)	801.23	0.402E-21	P(22)	c
18	2438.745 70(10)*	316.67	0.317E-20	P(27)	a
19	2439.244 65(29)	782.39	0.419E-21	P(21)	b
20	2439.557 30(29)	782.76	0.418E-21	P(21)	c
21	2439.631 63(10)*	294.06	0.339E-20	P(26)	a
22	2439.971 66(12)	1268.90	0.455E-22	P(15)	g
23	2440.421 20(29)	765.12	0.433E-21	P(20)	c
24	2440.515 45(10)*	272.28	0.362E-20	P(25)	a
25	2440.844 16(12)	1256.31	0.451E-22	P(14)	g
26	2441.283 84(29)	748.33	0.445E-21	P(19)	c
27	2441.397 20(10)*	251.34	0.384E-20	P(24)	a
28	2441.714 20(12)	1244.55	0.443E-22	P(13)	g
29	2441.883 77(13)	1265.96	0.316E-22	P(14)	f
30	2441.886 75(13)	1265.97	0.316E-22	P(14)	e
31	2441.918 91(12)	1556.05	0.281E-22	P(25)	d
32	2441.921 55(29)	732.11	0.456E-21	P(18)	b
33	2442.145 22(29)	732.38	0.455E-21	P(18)	c
34	2442.276 91(10)*	231.24	0.405E-20	P(23)	a
35	2442.581 79(12)	1233.63	0.430E-22	P(12)	g

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2442.752 30(14)	1254.20	0.309E-22	P(13)	f
37	2442.754 45(14)	1254.20	0.309E-22	P(13)	e
38	2442.800 11(12)	1535.19	0.297E-22	P(24)	d
39	2442.808 09(30)	717.02	0.462E-21	P(17)	b
40	2443.005 37(30)	717.26	0.461E-21	P(17)	c
41	2443.154 60(10)*	211.97	0.424E-20	P(22)	a
42	2443.446 98(12)	1223.56	0.414E-22	P(11)	g
43	2443.691 77(30)	702.77	0.465E-21	P(16)	b
44	2443.864 29(30)	702.99	0.465E-21	P(16)	c
45	2444.030 31(10)*	193.54	0.442E-20	P(21)	a
46	2444.309 79(13)	1214.32	0.393E-22	P(10)	g
47	2444.572 59(31)	689.36	0.464E-21	P(15)	b
48	2444.721 99(31)	689.55	0.464E-21	P(15)	c
49	2444.904 05(10)*	175.95	0.458E-20	P(20)	a
50	2445.170 24(13)	1205.92	0.368E-22	P(9)	g
51	2445.450 56(32)	676.79	0.460E-21	P(14)	b
52	2445.578 47(31)	676.95	0.460E-21	P(14)	c
53	2445.775 86(10)*	159.20	0.471E-20	P(19)	a
54	2446.028 36(13)	1198.37	0.339E-22	P(8)	g
55	2446.204 63(16)	1215.55	0.251E-22	P(9)	f
56	2446.205 02(16)	1215.56	0.251E-22	P(9)	e
57	2446.303 45(12)	1460.12	0.354E-22	P(20)	d
58	2446.325 69(32)	665.05	0.451E-21	P(13)	b
59	2446.433 76(32)	665.20	0.451E-21	P(13)	c
60	2446.645 76(10)*	143.28	0.481E-20	P(18)	a
61	2447.062 27(17)	1207.99	0.228E-22	P(8)	f
62	2447.062 49(17)	1207.99	0.228E-22	P(8)	e
63	2447.197 97(33)	654.15	0.438E-21	P(12)	b
64	2447.287 84(33)	654.28	0.438E-21	P(12)	c
65	2447.513 78(10)*	128.20	0.488E-20	P(17)	a
66	2447.737 66(14)	1185.77	0.270E-22	P(6)	g
67	2447.917 74(18)	1201.27	0.202E-22	P(7)	f
68	2447.917 85(18)	1201.27	0.202E-22	P(7)	e
69	2448.042 65(12)	1427.58	0.372E-22	P(18)	d

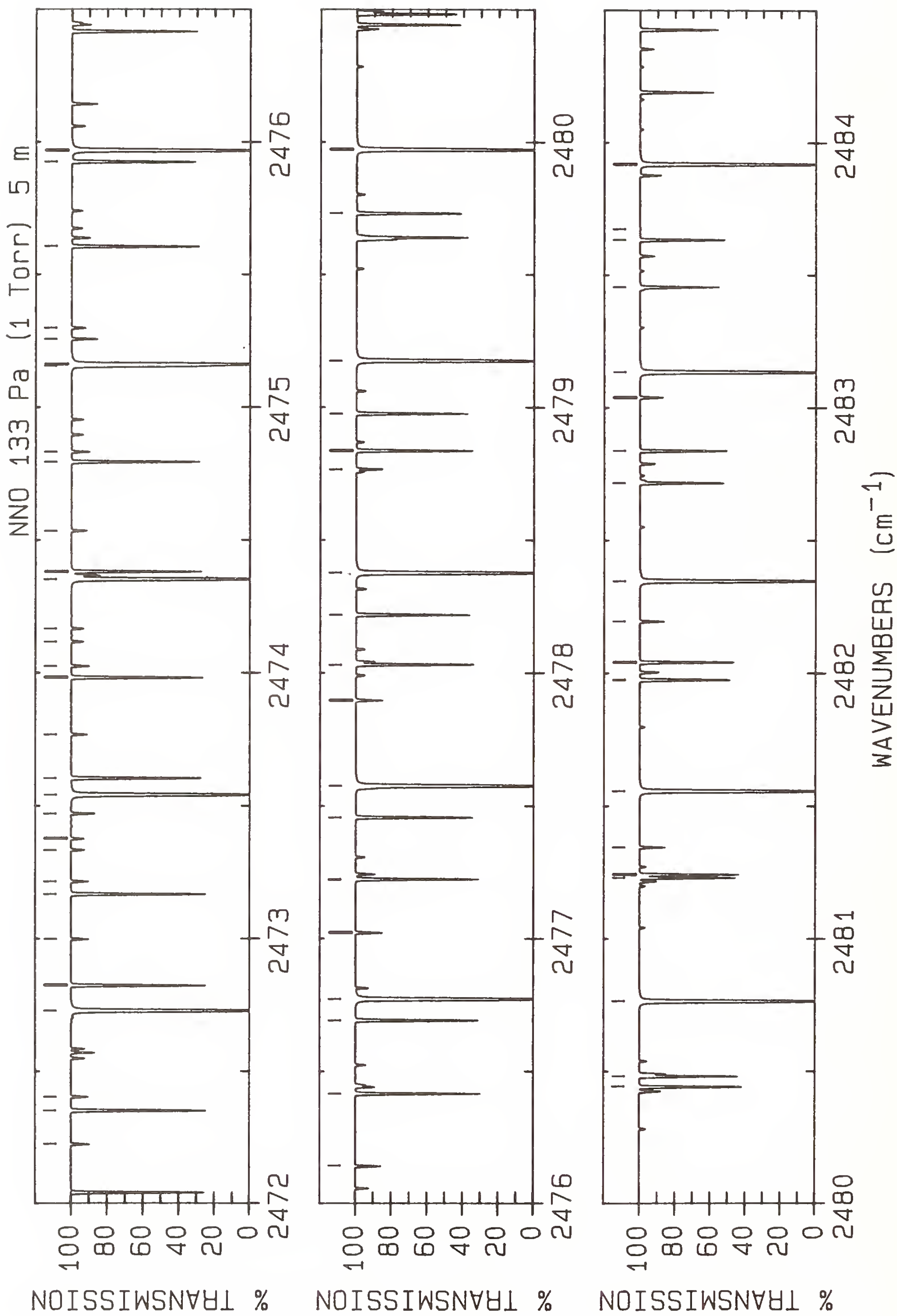


NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
2448 2449 2450 2451 2452
2452 2453 2454 2455 2456
2456 2457 2458 2459 2460
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2448.067 42(34)	644.10	0.421E-21	P(11)	b
2	2448.140 74(34)	644.20	0.421E-21	P(11)	c
3	2448.379 93(10)*	113.96	0.492E-20	P(16)	a
4	2448.424 7	44.53	0.254E-22	R(10)	r
5	2448.771 04(18)	1195.39	0.172E-22	P(6)	f
6	2448.771 08(18)	1195.39	0.172E-22	P(6)	e
7	2448.909 22(12)	1412.57	0.377E-22	P(17)	d
8	2448.934 04(35)	634.88	0.399E-21	P(10)	b
9	2448.992 45(35)	634.96	0.399E-21	P(10)	c
10	2449.214 6	53.44	0.266E-22	R(11)	r
11	2449.244 23(10)*	100.55	0.491E-20	P(15)	a
12	2449.622 17(19)	1190.35	0.139E-22	P(5)	f
13	2449.622 18(19)	1190.35	0.139E-22	P(5)	e
14	2449.773 80(12)	1398.38	0.379E-22	P(16)	d
15	2449.797 83(36)	626.49	0.373E-21	P(9)	b
16	2449.842 98(36)	626.56	0.373E-21	P(9)	c
17	2450.002 9	63.15	0.275E-22	R(12)	r
18	2450.106 70(10)*	87.98	0.487E-20	P(14)	a
19	2450.636 40(13)	1385.04	0.379E-22	P(15)	d
20	2450.658 79(36)	618.95	0.342E-21	P(8)	b
21	2450.692 33(36)	619.00	0.342E-21	P(8)	c
22	2450.967 36(10)*	76.25	0.478E-20	P(13)	a
23	2451.497 05(13)	1372.52	0.376E-22	P(14)	d
24	2451.516 93(37)	612.24	0.308E-21	P(7)	b
25	2451.540 50(37)	612.29	0.308E-21	P(7)	c
26	2451.826 23(10)*	65.36	0.464E-20	P(12)	a
27	2452.372 25(38)	606.37	0.269E-21	P(6)	b
28	2452.387 50(38)	606.41	0.269E-21	P(6)	c
29	2452.683 32(10)*	55.31	0.447E-20	P(11)	a
30	2453.212 58(13)	1349.99	0.358E-22	P(12)	d
31	2453.224 74(38)	601.34	0.227E-21	P(5)	b
32	2453.233 33(38)	601.37	0.227E-21	P(5)	c
33	2453.538 64(10)*	46.09	0.424E-20	P(10)	a
34	2453.917 2	123.87	0.287E-22	R(17)	r
35	2454.067 48(13)	1339.98	0.344E-22	P(11)	d
36	2454.074 41(38)	597.15	0.181E-21	P(4)	b
37	2454.077 98(38)	597.17	0.181E-21	P(4)	c
38	2454.392 21(10)*	37.71	0.397E-20	P(9)	a
39	2454.694 6	138.44	0.283E-22	R(18)	r
40	2454.920 49(14)	1330.80	0.327E-22	P(10)	d
41	2454.921 26(39)	593.80	0.131E-21	P(3)	b
42	2454.921 46(39)	593.81	0.131E-21	P(3)	c
43	2455.244 03(10)*	30.17	0.366E-20	P(8)	a
44	2455.763 76(39)	591.29	0.745E-22	P(2)	c
45	2455.765 28(39)	591.28	0.745E-22	P(2)	b
46	2455.771 62(14)	1322.45	0.306E-22	P(9)	d
47	2456.094 11(10)*	23.46	0.331E-20	P(7)	a
48	2456.620 89(14)	1314.94	0.282E-22	P(8)	d
49	2456.942 47(10)*	17.60	0.292E-20	P(6)	a
50	2457.014 36(8)	193.54	0.397E-23	P(21)	x
51	2457.015 1	187.01	0.261E-22	R(21)	r
52	2457.378 47(38)	601.37	0.173E-22	Q(5)	c
53	2457.400 59(38)	597.17	0.217E-22	Q(4)	c
54	2457.418 29(38)	593.81	0.286E-22	Q(3)	c
55	2457.431 55(39)	591.29	0.414E-22	Q(2)	c
56	2457.440 40(39)	589.61	0.751E-22	Q(1)	c
57	2457.789 09(10)*	12.57	0.249E-20	P(5)	a
58	2458.313 85(14)	1302.43	0.225E-22	P(6)	d
59	2458.634 00(10)*	8.38	0.203E-20	P(4)	a
60	2458.840 62(18)	1190.35	0.177E-22	R(5)	f
61	2458.840 86(18)	1190.35	0.177E-22	R(5)	e
62	2459.113 01(39)	589.61	0.752E-22	R(1)	b
63	2459.121 13(39)	589.61	0.752E-22	R(1)	c
64	2459.477 18(10)*	5.03	0.155E-20	P(3)	a
65	2459.665 44(17)	1195.39	0.209E-22	R(6)	f
66	2459.665 86(17)	1195.39	0.209E-22	R(6)	e
67	2459.942 84(38)	591.28	0.133E-21	R(2)	b
68	2459.957 49(38)	591.29	0.133E-21	R(2)	c

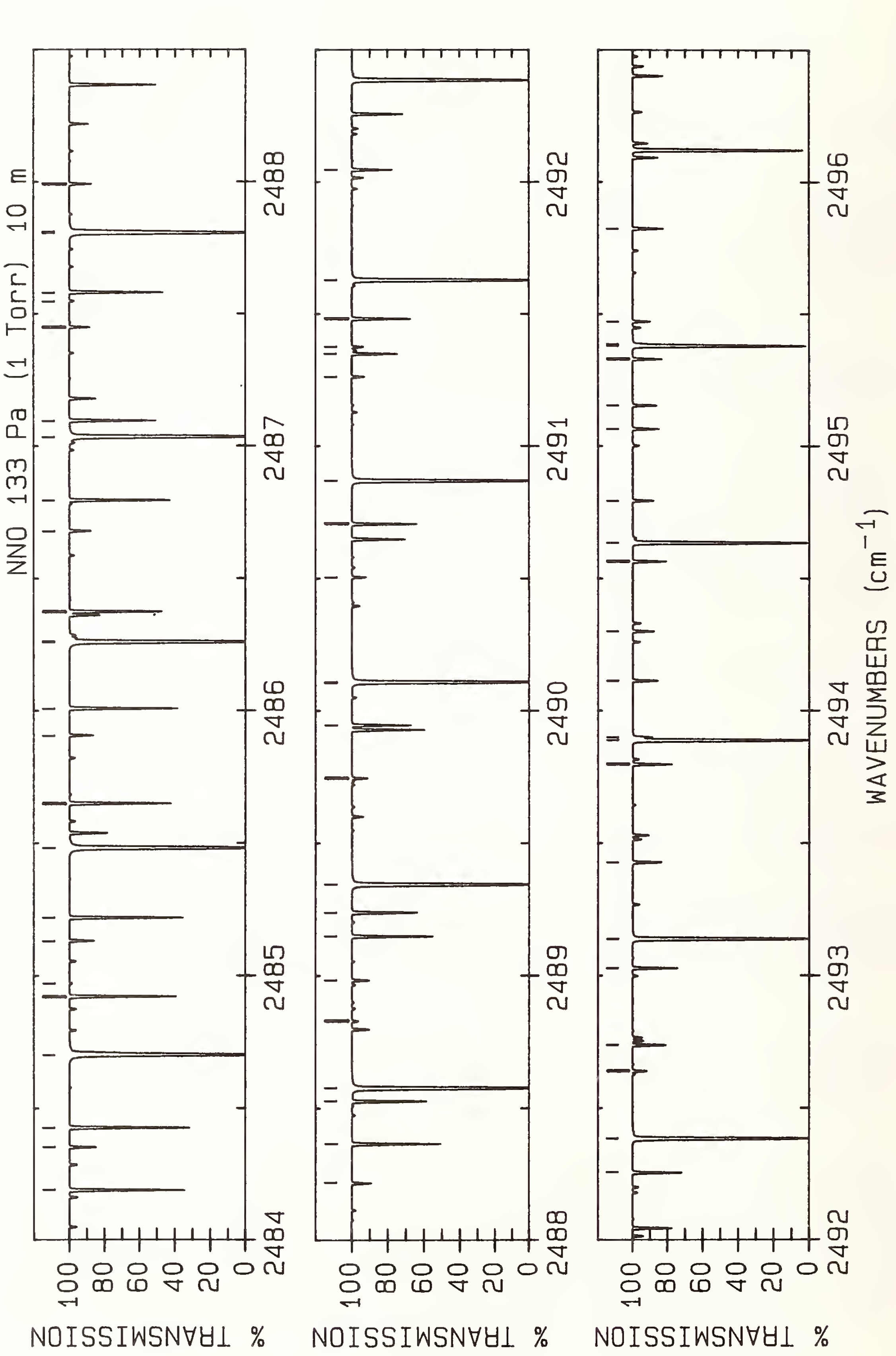

NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
2460 2461 2462 2463 2464
2464 2465 2466 2467 2468
2468 2469 2470 2471 2472
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2460.265 04(13)	1198.37	0.384E-22	R(8)	g
2	2460.318 65(10)*	2.51	0.105E-20	P(2)	a
3	2460.488 02(16)	1201.27	0.237E-22	R(7)	f
4	2460.488 70(16)	1201.27	0.237E-22	R(7)	e
5	2460.769 81(38)	593.80	0.184E-21	R(3)	b
6	2460.792 65(38)	593.81	0.184E-21	R(3)	c
7	2461.081 32(12)	1205.92	0.412E-22	R(9)	g
8	2461.158 39(10)*	0.84	0.527E-21	P(1)	a
9	2461.308 35(16)	1207.99	0.262E-22	R(8)	f
10	2461.309 41(16)	1207.99	0.262E-22	R(8)	e
11	2461.593 92(38)	597.15	0.232E-21	R(4)	b
12	2461.626 60(38)	597.17	0.232E-21	R(4)	c
13	2461.895 09(12)	1214.32	0.436E-22	R(10)	g
14	2462.126 43(15)	1215.55	0.283E-22	R(9)	f
15	2462.127 99(15)	1215.56	0.283E-22	R(9)	e
16	2462.415 16(37)	601.34	0.277E-21	R(5)	b
17	2462.459 32(37)	601.37	0.277E-21	R(5)	c
18	2462.706 32(12)	1223.56	0.456E-22	R(11)	g
19	2462.832 71(10)*	0.00	0.530E-21	R(0)	a
20	2462.942 24(14)	1223.96	0.302E-22	R(10)	f
21	2462.944 46(14)	1223.96	0.302E-22	R(10)	e
22	2463.233 52(36)	606.37	0.318E-21	R(6)	b
23	2463.290 81(36)	606.41	0.318E-21	R(6)	c
24	2463.514 96(12)	1233.63	0.471E-22	R(12)	g
25	2463.667 27(10)*	0.84	0.106E-20	R(1)	a
26	2463.755 76(14)	1233.20	0.317E-22	R(11)	f
27	2463.758 84(14)	1233.20	0.317E-22	R(11)	e
28	2464.049 00(36)	612.24	0.356E-21	R(7)	b
29	2464.121 07(36)	612.29	0.356E-21	R(7)	c
30	2464.320 98(12)	1244.55	0.482E-22	R(13)	g
31	2464.500 09(10)*	2.51	0.157E-20	R(2)	a
32	2464.861 57(35)	618.95	0.389E-21	R(8)	b
33	2464.950 07(35)	619.00	0.389E-21	R(8)	c
34	2465.124 32(12)	1256.31	0.488E-22	R(14)	g
35	2465.331 16(10)*	5.03	0.207E-20	R(3)	a
36	2465.671 23(34)	626.49	0.418E-21	R(9)	b
37	2465.777 81(34)	626.56	0.418E-21	R(9)	c
38	2465.924 94(12)	1268.90	0.491E-22	R(15)	g
39	2466.160 47(10)*	8.38	0.255E-20	R(4)	a
40	2466.477 98(33)	634.88	0.443E-21	R(10)	b
41	2466.604 27(33)	634.96	0.443E-21	R(10)	c
42	2466.722 78(12)	1282.33	0.490E-22	R(16)	g
43	2466.988 01(10)*	12.57	0.300E-20	R(5)	a
44	2467.281 79(32)	644.10	0.464E-21	R(11)	b
45	2467.429 44(32)	644.20	0.464E-21	R(11)	c
46	2467.517 80(12)	1296.61	0.485E-22	R(17)	g
47	2467.813 76(10)*	17.60	0.342E-20	R(6)	a
48	2468.082 65(32)	654.15	0.480E-21	R(12)	b
49	2468.253 30(31)	654.28	0.480E-21	R(12)	c
50	2468.637 71(10)*	23.46	0.380E-20	R(7)	a
51	2468.880 55(31)	665.05	0.491E-21	R(13)	b
52	2469.075 85(31)	665.20	0.491E-21	R(13)	c
53	2469.385 37(11)	1321.41	0.338E-22	R(18)	f
54	2469.402 79(10)	1321.41	0.338E-22	R(18)	e
55	2469.459 84(10)*	30.17	0.415E-20	R(8)	a
56	2469.675 48(30)	676.79	0.499E-21	R(14)	b
57	2469.897 06(30)	676.95	0.498E-21	R(14)	c
58	2470.180 11(11)	1337.37	0.330E-22	R(19)	f
59	2470.201 27(10)	1337.38	0.330E-22	R(19)	e
60	2470.280 14(10)*	37.71	0.445E-20	R(9)	a
61	2470.467 41(30)	689.36	0.502E-21	R(15)	b
62	2470.668 40(13)	1362.08	0.435E-22	R(21)	g
63	2470.716 92(30)	689.55	0.501E-21	R(15)	c
64	2470.972 43(12)	1354.16	0.321E-22	R(20)	f
65	2471.098 58(10)*	46.09	0.471E-20	R(10)	a
66	2471.256 34(29)	702.77	0.501E-21	R(16)	b
67	2471.448 38(13)	1380.55	0.417E-22	R(22)	g
68	2471.535 41(29)	702.99	0.500E-21	R(16)	c
69	2471.915 15(10)*	55.31	0.492E-20	R(11)	a
70	2472.042 25(29)	717.02	0.496E-21	R(17)	b



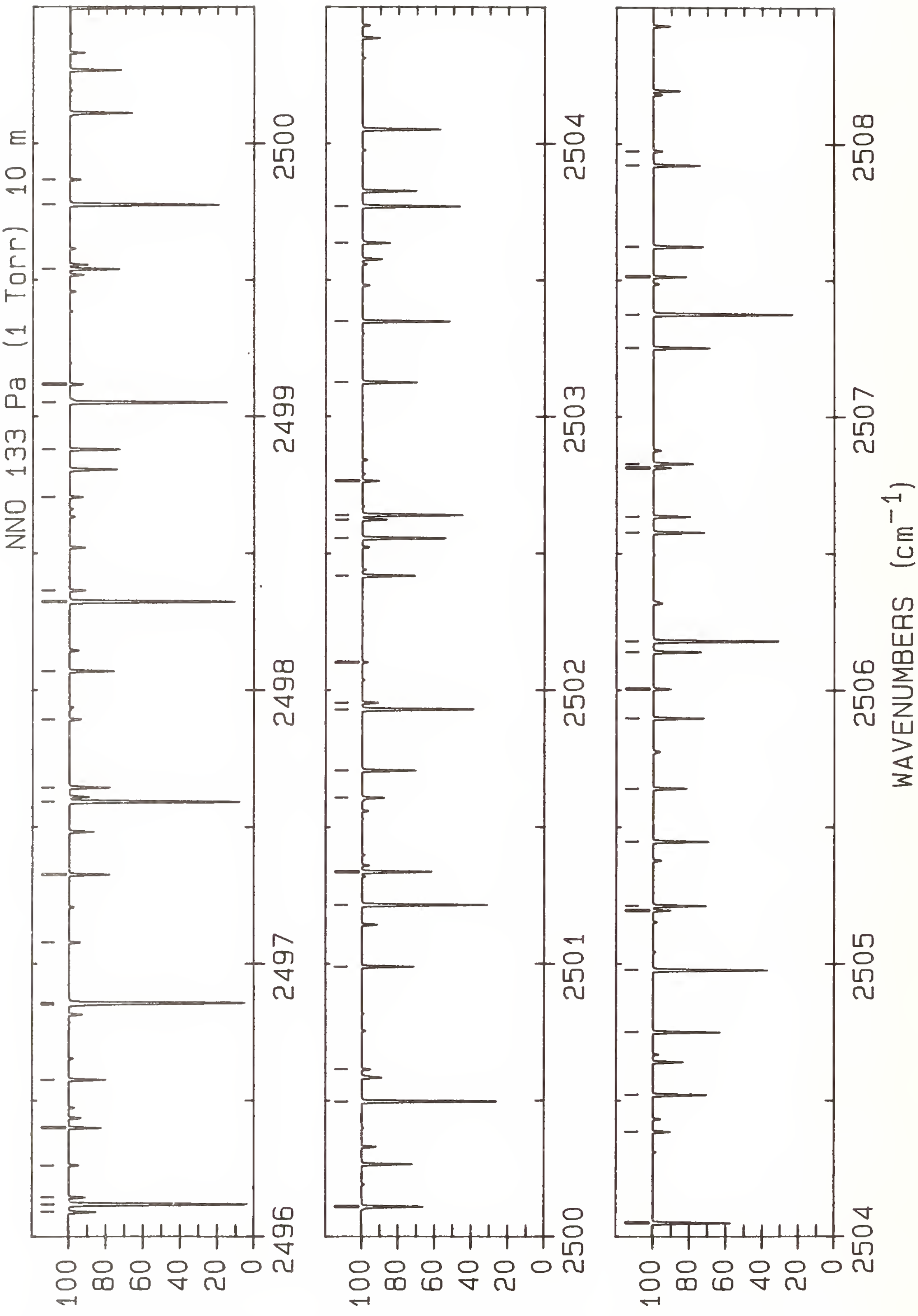
NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
2472 2473 2474 2475 2476
% TRANSMISSION
100 80 60 40 20 0
2476 2477 2478 2479 2480
% TRANSMISSION
100 80 60 40 20 0
2480 2481 2482 2483 2484
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2472.225 16(13)	1399.85	0.398E-22	R(23)	g
2	2472.352 51(29)	717.26	0.496E-21	R(17)	c
3	2472.404 20(13)	1330.80	0.363E-22	R(10)	d
4	2472.729 81(10)*	65.36	0.508E-20	R(12)	a
5	2472.825 12(29)	732.11	0.488E-21	R(18)	b
6	2472.998 68(13)	1420.00	0.377E-22	R(24)	g
7	2473.168 19(29)	732.38	0.488E-21	R(18)	c
8	2473.215 82(13)	1339.98	0.379E-22	R(11)	d
9	2473.334 64(13)	1409.60	0.283E-22	R(23)	f
10	2473.376 90(12)	1409.62	0.283E-22	R(23)	e
11	2473.471 5	182.72	0.531E-22	P(21)	T
12	2473.542 55(10)*	76.25	0.520E-20	R(13)	a
13	2473.604 93(29)	748.03	0.477E-21	R(19)	b
14	2473.768 87(13)	1440.98	0.355E-22	R(25)	g
15	2473.982 45(29)	748.33	0.476E-21	R(19)	c
16	2474.025 42(13)	1349.99	0.392E-22	R(12)	d
17	2474.117 07(14)	1429.76	0.268E-22	R(24)	f
18	2474.166 39(13)	1429.78	0.268E-22	R(24)	e
19	2474.353 34(10)*	87.98	0.527E-20	R(14)	a
20	2474.381 67(29)	764.79	0.463E-21	R(20)	b
21	2474.535 66(13)	1462.80	0.332E-22	R(26)	g
22	2474.795 26(30)	765.12	0.462E-21	R(20)	c
23	2474.832 97(13)	1360.84	0.401E-22	R(13)	d
24	2475.155 31(29)	782.39	0.447E-21	R(21)	b
25	2475.162 16(10)*	100.55	0.530E-20	R(15)	a
26	2475.257 3	150.30	0.562E-22	P(19)	T
27	2475.298 98(13)	1485.45	0.310E-22	R(27)	g
28	2475.606 60(30)	782.76	0.446E-21	R(21)	c
29	2475.925 84(30)	800.83	0.428E-21	R(22)	b
30	2475.968 97(10)*	113.96	0.529E-20	R(16)	a
31	2476.142 5	135.27	0.573E-22	P(18)	T
32	2476.416 44(31)	801.23	0.427E-21	R(22)	c
33	2476.693 24(31)	820.10	0.408E-21	R(23)	b
34	2476.773 74(10)*	128.20	0.524E-20	R(17)	a
35	2477.022 6	121.03	0.581E-22	P(17)	T
36	2477.221 27(15)	1518.77	0.205E-22	R(28)	f
37	2477.224 76(32)	820.54	0.407E-21	R(23)	c
38	2477.457 48(31)	840.21	0.387E-21	R(24)	b
39	2477.576 44(10)*	143.28	0.515E-20	R(18)	a
40	2477.897 6	107.58	0.584E-22	P(16)	T
41	2478.031 53(33)	840.68	0.386E-21	R(24)	c
42	2478.218 55(32)	861.16	0.365E-21	R(25)	b
43	2478.377 05(10)*	159.20	0.503E-20	R(19)	a
44	2478.767 4	94.93	0.582E-22	P(15)	T
45	2478.836 74(34)	861.67	0.364E-21	R(25)	c
46	2478.839 09(12)	1427.58	0.398E-22	R(18)	d
47	2478.976 43(34)	882.94	0.342E-21	R(26)	b
48	2479.175 52(10)*	175.95	0.488E-20	R(20)	a
49	2479.731 09(35)	905.56	0.319E-21	R(27)	b
50	2479.971 83(10)*	193.54	0.471E-20	R(21)	a
51	2480.442 33(36)	906.16	0.318E-21	R(27)	c
52	2480.482 51(36)	929.02	0.295E-21	R(28)	b
53	2480.765 93(10)*	211.97	0.451E-20	R(22)	a
54	2481.230 67(37)	953.32	0.273E-21	R(29)	b
55	2481.242 66(37)	929.66	0.295E-21	R(28)	c
56	2481.345 8	61.71	0.548E-22	P(12)	T
57	2481.557 78(10)*	231.24	0.430E-20	R(23)	a
58	2481.973 06(18)	1677.52	0.117E-22	R(34)	e
59	2481.975 55(38)	978.45	0.250E-21	R(30)	b
60	2482.041 32(38)	954.01	0.272E-21	R(29)	c
61	2482.194 8	52.21	0.526E-22	P(11)	T
62	2482.347 36(10)*	251.34	0.408E-20	R(24)	a
63	2482.717 12(39)	1004.42	0.229E-21	R(31)	b
64	2482.838 26(40)	979.18	0.249E-21	R(30)	c
65	2483.038 7	43.51	0.499E-22	P(10)	T
66	2483.134 62(10)*	272.28	0.384E-20	R(25)	a
67	2483.455 36(40)	1031.22	0.208E-21	R(32)	b
68	2483.633 46(41)	1005.20	0.228E-21	R(31)	c
69	2483.674 59(24)*	2320.08	0.237E-23	P(74)	A
70	2483.919 51(10)*	294.06	0.360E-20	R(26)	a

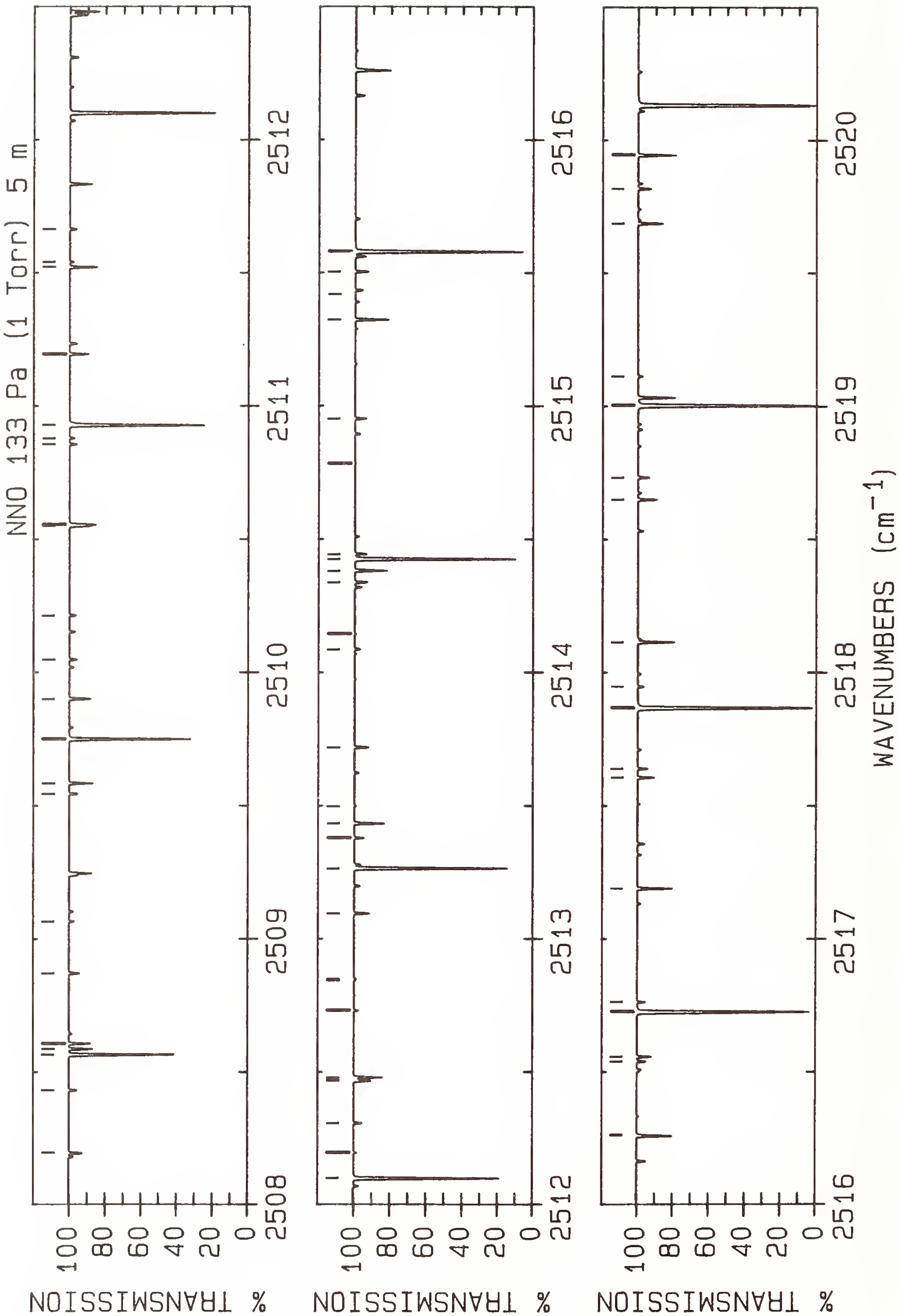


NNO 133 Pa (1 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
2484
2485
2486
2487
2488
% TRANSMISSION
100
80
60
40
20
0
2488
2489
2490
2491
2492
% TRANSMISSION
100
80
60
40
20
0
2492
2493
2494
2495
2496
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2484.190 24(41)	1058.86	0.188E-21	R(33)	b
2	2484.353 23(13)	1556.05	0.298E-22	R(25)	d
3	2484.426 89(42)	1032.06	0.207E-21	R(32)	c
4	2484.702 00(10)*	316.67	0.335E-20	R(27)	a
5	2484.921 75(42)	1087.34	0.169E-21	R(34)	b
6	2484.971 22(21)*	2258.36	0.316E-23	P(73)	A
7	2485.131 34(13)	1577.73	0.279E-22	R(26)	d
8	2485.218 51(42)	1059.75	0.187E-21	R(33)	c
9	2485.482 04(10)*	340.12	0.311E-20	R(28)	a
10	2485.649 85(43)	1116.65	0.152E-21	R(35)	b
11	2485.906 92(13)	1600.25	0.260E-22	R(27)	d
12	2486.008 30(43)	1088.28	0.168E-21	R(34)	c
13	2486.259 60(10)*	364.41	0.287E-20	R(29)	a
14	2486.262 66(18)*	2197.45	0.419E-23	P(72)	A
15	2486.374 52(43)	1146.80	0.135E-21	R(36)	b
16	2486.679 94(13)	1623.60	0.242E-22	R(28)	d
17	2486.796 21(44)	1117.64	0.151E-21	R(35)	c
18	2487.034 62(10)*	389.53	0.263E-20	R(30)	a
19	2487.095 75(44)	1177.78	0.120E-21	R(37)	b
20	2487.450 34(13)	1647.79	0.223E-22	R(29)	d
21	2487.548 86(15)*	2137.38	0.554E-23	P(71)	A
22	2487.582 22(44)	1147.85	0.135E-21	R(36)	c
23	2487.807 06(10)*	415.49	0.240E-20	R(31)	a
24	2487.813 49(44)	1209.60	0.106E-21	R(38)	b
25	2487.991 5	7.91	0.238E-22	P(4)	T
26	2488.218 09(13)	1672.80	0.205E-22	R(30)	d
27	2488.366 28(44)	1178.89	0.119E-21	R(37)	c
28	2488.527 73(44)	1242.25	0.931E-22	R(39)	b
29	2488.576 88(10)*	442.28	0.218E-20	R(32)	a
30	2488.829 76(14)*	2078.13	0.728E-23	P(70)	A
31	2488.983 14(13)	1698.65	0.187E-22	R(31)	d
32	2489.148 37(44)	1210.77	0.105E-21	R(38)	c
33	2489.238 45(44)	1275.74	0.815E-22	R(40)	b
34	2489.344 02(10)*	469.91	0.198E-20	R(33)	a
35	2489.745 45(13)	1725.33	0.170E-22	R(32)	d
36	2489.945 60(44)	1310.06	0.710E-22	R(41)	b
37	2490.105 32(12)*	2019.71	0.954E-23	P(69)	A
38	2490.108 45(11)*	498.37	0.178E-20	R(34)	a
39	2490.504 96(13)	1752.85	0.154E-22	R(33)	d
40	2490.706 45(44)	1277.04	0.810E-22	R(40)	c
41	2490.870 11(11)*	527.67	0.159E-20	R(35)	a
42	2491.261 64(13)	1781.19	0.139E-22	R(34)	d
43	2491.349 16(43)	1381.21	0.532E-22	R(43)	b
44	2491.375 48(11)*	1962.12	0.125E-22	P(68)	A
45	2491.482 37(44)	1311.42	0.705E-22	R(41)	c
46	2491.628 95(11)*	557.81	0.142E-20	R(36)	a
47	2492.045 50(43)	1418.04	0.457E-22	R(44)	b
48	2492.256 16(43)	1346.65	0.612E-22	R(42)	c
49	2492.384 94(11)*	588.78	0.126E-20	R(37)	a
50	2492.640 20(10)*	1905.36	0.162E-22	P(67)	A
51	2492.738 18(43)	1455.70	0.391E-22	R(45)	b
52	2493.027 78(43)	1382.71	0.528E-22	R(43)	c
53	2493.138 01(11)*	620.59	0.111E-20	R(38)	a
54	2493.427 18(44)	1494.20	0.333E-22	R(46)	b
55	2493.797 19(43)	1419.61	0.453E-22	R(44)	c
56	2493.888 12(11)*	653.23	0.975E-21	R(39)	a
57	2493.899 42(10)*	1849.42	0.209E-22	P(66)	A
58	2494.112 47(44)	1533.53	0.283E-22	R(47)	b
59	2494.299 5	4.75	0.242E-22	R(3)	T
60	2494.564 34(43)	1457.34	0.388E-22	R(45)	c
61	2494.635 22(11)*	686.70	0.853E-21	R(40)	a
62	2494.794 02(46)	1573.69	0.238E-22	R(48)	b
63	2495.064 1	7.91	0.298E-22	R(4)	T
64	2495.153 10(10)*	1794.32	0.269E-22	P(65)	A
65	2495.329 19(44)	1495.90	0.330E-22	R(46)	c
66	2495.379 27(11)*	721.01	0.742E-21	R(41)	a
67	2495.386 1	730.64	0.109E-22	P(42)	R
68	2495.471 81(48)	1614.68	0.200E-22	R(49)	b
69	2495.823 4	11.87	0.351E-22	R(5)	T

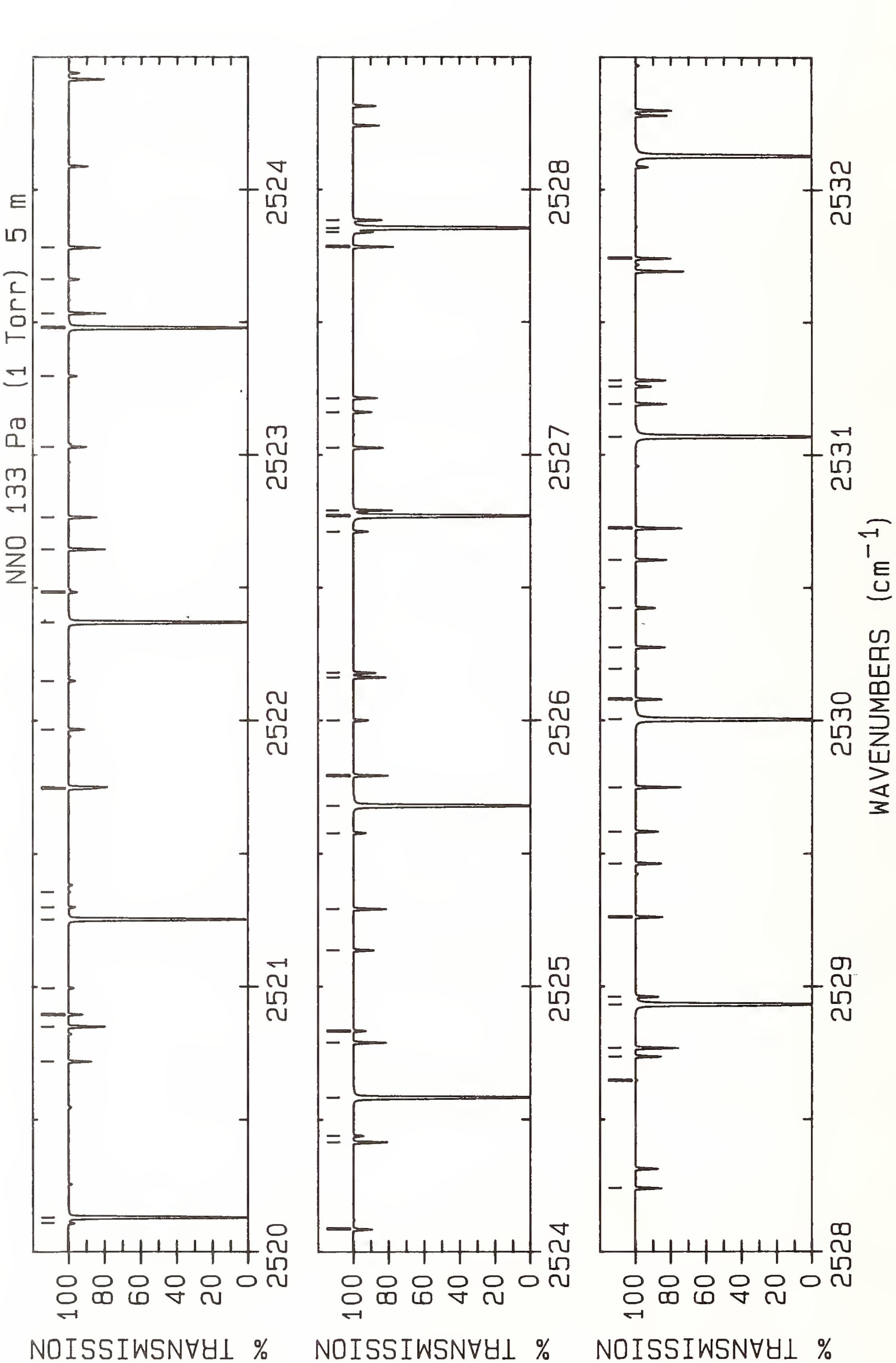

NNO 133 Pa (1 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2496 2497 2498 2499 2500
2500 2501 2502 2503 2504
2504 2505 2506 2507 2508
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2496.091 70(46)	1535.31	0.280E-22	R(47)	c
2	2496.120 20(11)*	756.16	0.644E-21	R(42)	a
3	2496.145 81(52)	1656.51	0.168E-22	R(50)	b
4	2496.263 74(9)	272.28	0.105E-22	R(25)	x
5	2496.401 20(10)*	1740.04	0.346E-22	P(64)	A
6	2496.577 4	16.61	0.400E-22	R(6)	T
7	2496.851 83(48)	1575.55	0.236E-22	R(48)	c
8	2496.857 99(11)*	792.14	0.555E-21	R(43)	a
9	2497.078 45(10)	294.06	0.116E-22	R(26)	x
10	2497.326 1	22.15	0.445E-22	R(7)	T
11	2497.592 56(11)*	828.95	0.477E-21	R(44)	a
12	2497.643 67(10)*	1686.59	0.441E-22	P(63)	A
13	2497.892 53(10)	316.67	0.127E-22	R(27)	x
14	2498.069 5	28.48	0.486E-22	R(8)	T
15	2498.323 88(11)*	866.60	0.407E-21	R(45)	a
16	2498.364 75(55)	1658.53	0.166E-22	R(50)	c
17	2498.706 02(11)	340.12	0.138E-22	R(28)	x
18	2498.880 46(10)*	1633.97	0.561E-22	P(62)	A
19	2499.051 91(11)*	905.08	0.347E-21	R(46)	a
20	2499.117 46(60)	1701.27	0.138E-22	R(51)	c
21	2499.540 4	43.51	0.553E-22	R(10)	T
22	2499.776 58(11)*	944.39	0.294E-21	R(47)	a
23	2499.867 60(66)	1744.84	0.115E-22	R(52)	c
24	2500.108 77(97)	1924.97	0.527E-23	R(56)	b
25	2500.111 55(10)*	1582.18	0.710E-22	P(61)	A
26	2500.497 85(11)*	984.54	0.248E-21	R(48)	a
27	2500.615 12(74)	1789.25	0.947E-23	R(53)	c
28	2500.990 1	61.71	0.598E-22	R(12)	T
29	2501.215 69(11)*	1025.52	0.208E-21	R(49)	a
30	2501.336 88(10)*	1531.22	0.896E-22	P(60)	A
31	2501.607 4	538.98	0.237E-22	P(36)	R
32	2501.707 0	71.99	0.613E-22	R(13)	T
33	2501.930 03(11)*	1067.33	0.174E-21	R(50)	a
34	2501.954 59(12)	442.28	0.172E-22	R(32)	x
35	2502.102 15(92)	1880.57	0.637E-23	R(55)	c
36	2502.418 6	83.06	0.622E-22	R(14)	T
37	2502.556 42(10)*	1481.09	0.112E-21	P(59)	A
38	2502.624 6	509.86	0.265E-22	P(35)	R
39	2502.640 83(11)*	1109.98	0.145E-21	R(51)	a
40	2502.765 52(13)	469.91	0.178E-22	R(33)	x
41	2503.125 0	94.93	0.627E-22	R(15)	T
42	2503.348 06(11)*	1153.46	0.120E-21	R(52)	a
43	2503.636 1	481.55	0.296E-22	P(34)	R
44	2503.770 13(10)*	1431.79	0.141E-21	P(58)	A
45	2504.051 66(11)*	1197.77	0.991E-22	R(53)	a
46	2504.386 13(13)	527.67	0.186E-22	R(35)	x
47	2504.522 0	121.03	0.621E-22	R(17)	T
48	2504.751 59(11)*	1242.91	0.814E-22	R(54)	a
49	2504.977 98(9)*	1383.33	0.175E-21	P(57)	A
50	2505.195 87(14)	557.81	0.188E-22	R(36)	x
51	2505.212 6	135.27	0.612E-22	R(18)	T
52	2505.447 81(11)*	1288.88	0.666E-22	R(55)	a
53	2505.641 9	427.35	0.363E-22	P(32)	R
54	2505.898 0	150.30	0.599E-22	R(19)	T
55	2506.005 27(14)	588.78	0.188E-22	R(37)	x
56	2506.140 28(11)*	1335.69	0.542E-22	R(56)	a
57	2506.179 92(9)*	1335.69	0.217E-21	P(56)	A
58	2506.578 1	166.12	0.583E-22	R(20)	T
59	2506.636 2	401.46	0.399E-22	P(31)	R
60	2506.814 35(14)	620.59	0.186E-22	R(38)	x
61	2506.828 95(11)*	1383.33	0.440E-22	R(57)	a
62	2507.252 3	170.77	0.944E-23	P(20)	V
63	2507.253 1	182.72	0.563E-22	R(21)	T
64	2507.375 93(9)*	1288.88	0.267E-21	P(55)	A
65	2507.513 79(11)*	1431.79	0.355E-22	R(58)	a
66	2507.623 16(14)	653.23	0.184E-22	R(39)	x
67	2507.624 8	376.38	0.436E-22	P(30)	R
68	2507.922 8	200.12	0.541E-22	R(22)	T
69	2507.974 46(15)	2147.88	0.100E-22	P(45)	D



NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
100 80 60 40 20 0
2508 2509 2510 2511 2512
2512 2513 2514 2515 2516
2516 2517 2518 2519 2520
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2508.194 75(11)*	1481.09	0.286E-22	R(59)	a	36	2513.434 2	242.85	0.669E-22	P(24)	R
2	2508.431 72(14)	686.70	0.180E-22	R(40)	x	37	2513.498 67(18)*	1905.36	0.428E-23	R(67)	a
3	2508.565 97(9)*	1242.91	0.328E-21	P(54)	A	38	2513.719 6	392.26	0.297E-22	R(31)	T
4	2508.587 4	218.31	0.517E-22	R(23)	T	39	2514.086 97(14)	944.39	0.126E-22	R(47)	x
5	2508.607 6	352.10	0.474E-22	P(29)	R	40	2514.143 18(20)*	1962.12	0.331E-23	R(68)	a
6	2508.871 81(11)*	1531.22	0.229E-22	R(60)	a	41	2514.338 3	417.55	0.271E-22	R(32)	T
7	2509.065 91(15)	2110.39	0.118E-22	P(44)	D	42	2514.382 0	223.43	0.705E-22	P(23)	R
8	2509.544 91(12)*	1582.18	0.182E-22	R(61)	a	43	2514.425 53(9)*	1025.52	0.859E-21	P(49)	A
9	2509.584 6	328.64	0.513E-22	P(28)	R	44	2514.444 35(13)	1935.40	0.245E-22	P(39)	D
10	2509.750 01(9)*	1197.77	0.401E-21	P(53)	A	45	2514.783 48(23)*	2019.71	0.255E-23	R(69)	a
11	2509.901 1	257.06	0.465E-22	R(25)	T	46	2514.952 1	443.64	0.246E-22	R(33)	T
12	2510.048 20(14)	756.16	0.168E-22	R(42)	x	47	2515.323 9	204.82	0.738E-22	P(22)	R
13	2510.214 03(12)*	1633.97	0.145E-22	R(62)	a	48	2515.419 54(26)*	2078.13	0.196E-23	R(70)	a
14	2510.550 2	277.62	0.437E-22	R(26)	T	49	2515.503 97(13)	1902.90	0.280E-22	P(38)	D
15	2510.555 7	305.98	0.553E-22	P(27)	R	50	2515.579 10(9)*	984.54	0.103E-20	P(48)	A
16	2510.856 18(14)	792.14	0.161E-22	R(43)	x	51	2516.259 8	187.01	0.769E-22	P(21)	R
17	2510.879 13(13)*	1686.59	0.114E-22	R(63)	a	52	2516.264 2	44.73	0.874E-23	P(10)	V
18	2510.928 02(9)*	1153.46	0.489E-21	P(52)	A	53	2516.540 6	588.74	0.198E-22	P(37)	P
19	2510.929 0	110.60	0.101E-22	P(16)	V	54	2516.558 12(13)	1871.22	0.318E-22	P(37)	D
20	2511.194 2	298.97	0.408E-22	R(27)	T	55	2516.726 50(9)*	944.39	0.122E-20	P(47)	A
21	2511.521 1	284.13	0.593E-22	P(26)	R	56	2516.764 0	526.63	0.179E-22	R(36)	T
22	2511.540 18(13)*	1740.04	0.900E-23	R(64)	a	57	2517.189 9	170.01	0.796E-22	P(20)	R
23	2511.664 01(14)	828.95	0.153E-22	R(44)	x	58	2517.606 79(12)	1840.38	0.360E-22	P(36)	D
24	2512.099 96(9)*	1109.98	0.592E-21	P(51)	A	59	2517.640 2	557.77	0.224E-22	P(36)	P
25	2512.197 14(14)*	1794.32	0.706E-23	R(65)	a	60	2517.867 69(9)*	905.08	0.145E-20	P(46)	A
26	2512.308 92(14)	2002.90	0.185E-22	P(41)	D	61	2517.947 5	585.90	0.141E-22	R(38)	T
27	2512.467 0	344.03	0.351E-22	R(29)	T	62	2518.114 0	153.82	0.818E-22	P(19)	R
28	2512.471 74(14)	866.60	0.145E-22	R(45)	x	63	2518.649 92(12)	1810.37	0.405E-22	P(35)	D
29	2512.480 6	263.09	0.631E-22	P(25)	R	64	2518.732 7	527.64	0.252E-22	P(35)	P
30	2512.731 5	85.39	0.100E-22	P(14)	V	65	2519.002 66(9)*	866.60	0.171E-20	P(45)	A
31	2512.844 27(17)	2223.36	0.322E-23	P(62)	B	66	2519.111 8	648.32	0.110E-22	R(40)	T
32	2512.849 98(16)*	1849.42	0.551E-23	R(66)	a	67	2519.686 9	680.72	0.961E-23	R(41)	T
33	2513.095 8	367.75	0.324E-22	R(30)	T	68	2519.687 48(12)	1781.19	0.453E-22	P(34)	D
34	2513.265 81(9)*	1067.33	0.715E-21	P(50)	A	69	2519.818 0	498.34	0.282E-22	P(34)	P
35	2513.379 32(14)	1968.74	0.214E-22	P(40)	D	70	2519.944 5	123.87	0.847E-22	P(17)	R



NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
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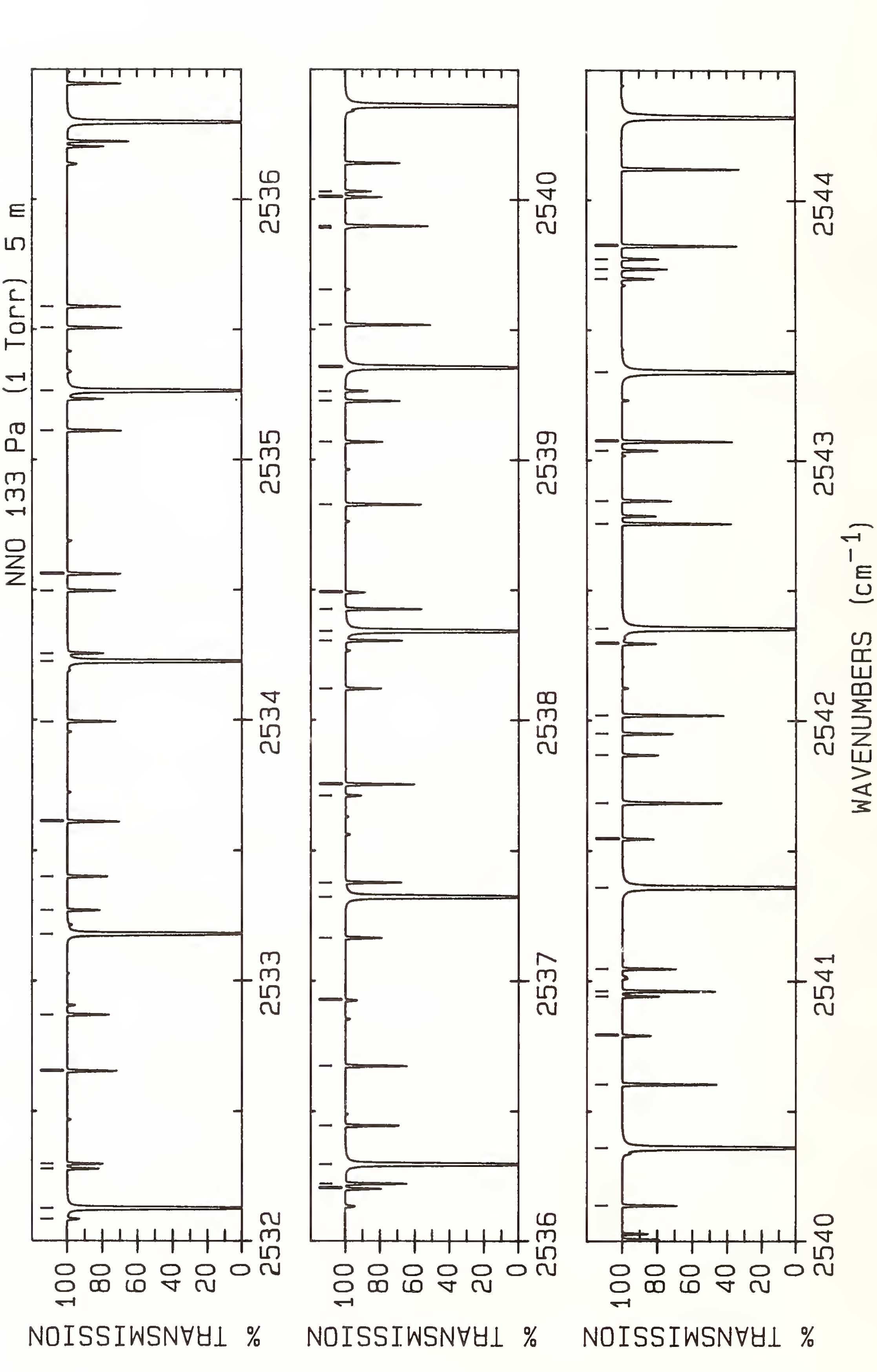
2524 2525 2526 2527 2528
2528 2529 2530 2531 2532
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2520.109 23(6)	1924.97	0.124E-22	P(56)	B	36	2526.000 79(6)	1699.17	0.340E-22	P(51)	B
2	2520.131 37(9)*	828.95	0.201E-20	P(44)	A	37	2526.162 7	44.53	0.735E-22	P(10)	R
3	2520.719 45(12)	1752.85	0.505E-22	P(33)	D	38	2526.178 9	340.10	0.503E-22	P(28)	P
4	2520.850 8	110.11	0.853E-22	P(16)	R	39	2526.711 39(5)	1701.27	0.337E-22	P(51)	C
5	2520.896 1	469.88	0.315E-22	P(33)	P	40	2526.771 03(8)*	620.59	0.479E-20	P(38)	A
6	2520.995 58(7)	1927.48	0.123E-22	P(56)	C	41	2526.791 78(13)	1600.25	0.869E-22	P(27)	D
7	2521.253 80(9)*	792.14	0.235E-20	P(43)	A	42	2527.026 9	36.44	0.688E-22	P(9)	R
8	2521.299 49(6)	1878.14	0.153E-22	P(55)	B	43	2527.161 04(5)	1656.51	0.410E-22	P(50)	B
9	2521.356 57(30)	1335.69	0.497E-23	R(56)	x	44	2527.213 8	316.65	0.544E-22	P(27)	P
10	2521.745 77(12)	1725.33	0.560E-22	P(32)	D	45	2527.783 66(13)	1577.73	0.935E-22	P(26)	D
11	2521.751 1	97.16	0.852E-22	P(15)	R	46	2527.839 31(5)	1658.53	0.407E-22	P(50)	C
12	2521.967 0	442.25	0.349E-22	P(32)	P	47	2527.855 34(8)*	588.78	0.545E-20	P(37)	A
13	2522.148 76(6)	1880.57	0.152E-22	P(55)	C	48	2527.885 1	29.15	0.634E-22	P(8)	R
14	2522.369 94(9)*	756.16	0.274E-20	P(42)	A	49	2528.241 5	294.04	0.585E-22	P(26)	P
15	2522.483 80(6)	1832.15	0.188E-22	P(54)	B	50	2528.646 8	8.13	0.525E-23	R(4)	V
16	2522.645 4	85.01	0.844E-22	P(14)	R	51	2528.737 3	22.67	0.572E-22	P(7)	R
17	2522.766 43(13)	1698.65	0.618E-22	P(31)	D	52	2528.769 70(13)	1556.05	0.999E-22	P(25)	D
18	2523.030 8	415.46	0.386E-22	P(31)	P	53	2528.933 23(8)*	557.81	0.616E-20	P(36)	A
19	2523.296 98(6)	1834.50	0.186E-22	P(54)	C	54	2528.962 07(5)	1616.62	0.489E-22	P(49)	C
20	2523.479 75(9)*	721.01	0.317E-20	P(41)	A	55	2529.262 0	272.26	0.625E-22	P(25)	P
21	2523.533 7	73.68	0.828E-22	P(13)	R	56	2529.463 32(5)	1573.69	0.590E-22	P(48)	B
22	2523.662 14(6)	1786.99	0.230E-22	P(53)	B	57	2529.583 5	17.00	0.505E-22	P(6)	R
23	2523.781 39(13)	1672.80	0.678E-22	P(30)	D	58	2529.749 88(12)	1535.19	0.106E-21	P(24)	D
24	2523.781 89(43)	1481.09	0.326E-23	R(59)	x	59	2530.004 67(8)*	527.67	0.694E-20	P(35)	A
25	2524.087 3	389.50	0.424E-22	P(30)	P	60	2530.079 63(5)	1575.55	0.585E-22	P(48)	C
26	2524.416 0	63.15	0.805E-22	P(12)	R	61	2530.194 0	17.08	0.704E-23	R(6)	V
27	2524.440 18(5)	1789.25	0.228E-22	P(53)	C	62	2530.275 3	251.32	0.665E-22	P(24)	P
28	2524.583 22(8)*	686.70	0.365E-20	P(40)	A	63	2530.423 5	12.15	0.431E-22	P(5)	R
29	2524.790 62(13)	1647.79	0.741E-22	P(29)	D	64	2530.605 29(5)	1533.53	0.702E-22	P(47)	B
30	2524.834 48(6)	1742.67	0.281E-22	P(52)	B	65	2530.724 17(12)	1515.18	0.112E-21	P(23)	D
31	2525.136 7	364.38	0.463E-22	P(29)	P	66	2531.069 65(8)*	498.37	0.778E-20	P(34)	A
32	2525.292 4	53.44	0.774E-22	P(11)	R	67	2531.191 95(5)	1535.31	0.697E-22	P(47)	C
33	2525.578 33(5)	1744.84	0.278E-22	P(52)	C	68	2531.257 6	8.10	0.351E-22	P(4)	R
34	2525.680 32(8)*	653.23	0.419E-20	P(39)	A	69	2531.281 3	231.22	0.703E-22	P(23)	P
35	2525.794 09(13)	1623.60	0.805E-22	P(28)	D	70	2531.741 11(5)	1494.20	0.833E-22	P(46)	B



NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
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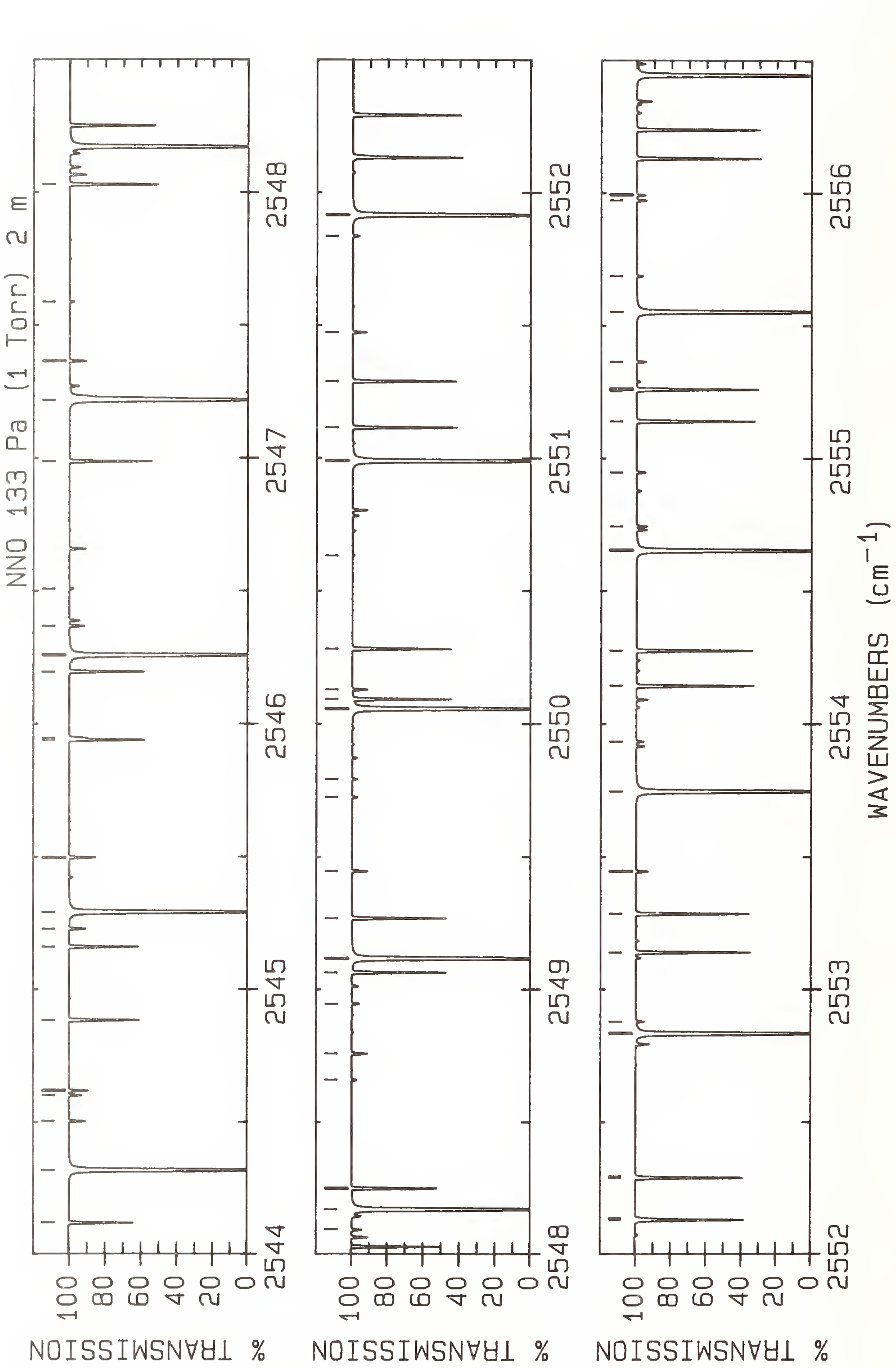
2536 2537 2538 2539 2540
2540 2541 2542 2543 2544
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2532.085 5	4.86	0.268E-22	P(3)	R	36	2538.828 65(4)	1277.04	0.209E-21	P(40)	C
2	2532.128 15(8)*	469.91	0.867E-20	P(33)	A	37	2539.068 1	100.55	0.868E-22	P(15)	P
3	2532.280 1	211.96	0.739E-22	P(22)	P	38	2539.224 61(11)	1372.52	0.137E-21	P(14)	D
4	2532.298 99(5)	1495.90	0.826E-22	P(46)	C	39	2539.263 3	12.15	0.519E-22	R(5)	R
5	2532.655 02(12)	1477.64	0.123E-21	P(21)	D	40	2539.354 94(7)*	294.06	0.161E-19	P(26)	A
6	2532.870 78(5)	1455.70	0.982E-22	P(45)	B	41	2539.518 33(5)	1242.25	0.241E-21	P(39)	B
7	2533.180 16(8)*	442.28	0.962E-20	P(32)	A	42	2539.653 8	154.51	0.103E-22	R(19)	V
8	2533.271 6	193.53	0.771E-22	P(21)	P	43	2539.890 13(13)	1890.51	0.108E-22	P(41)	G
9	2533.400 72(5)	1457.34	0.975E-22	P(45)	C	44	2539.897 87(4)	1243.48	0.240E-21	P(39)	C
10	2533.611 53(11)	1460.12	0.128E-21	P(20)	D	45	2540.008 7	87.98	0.861E-22	P(14)	P
11	2533.994 27(5)	1418.04	0.115E-21	P(44)	B	46	2540.030 3	17.00	0.591E-22	R(6)	R
12	2534.225 65(8)*	415.49	0.106E-19	P(31)	A	47	2540.138 98(11)	1360.84	0.135E-21	P(13)	D
13	2534.255 9	175.94	0.800E-22	P(20)	P	48	2540.361 06(7)*	272.28	0.172E-19	P(25)	A
14	2534.497 11(5)	1419.61	0.115E-21	P(44)	C	49	2540.604 33(5)	1209.60	0.275E-21	P(38)	B
15	2534.562 07(11)	1443.43	0.132E-21	P(19)	D	50	2540.791 3	22.67	0.657E-22	R(7)	R
16	2535.111 56(5)	1381.21	0.135E-21	P(43)	B	51	2540.942 0	76.25	0.847E-22	P(13)	P
17	2535.264 62(8)*	389.53	0.117E-19	P(30)	A	52	2540.961 57(4)	1210.77	0.274E-21	P(38)	C
18	2535.506 62(11)	1427.58	0.135E-21	P(18)	D	53	2541.047 26(12)	1349.99	0.131E-21	P(12)	D
19	2535.588 13(5)	1382.71	0.134E-21	P(43)	C	54	2541.360 57(7)*	251.34	0.183E-19	P(24)	A
20	2536.202 6	143.27	0.845E-22	P(18)	P	55	2541.546 1	29.15	0.717E-22	R(8)	R
21	2536.222 62(5)	1345.22	0.157E-21	P(42)	B	56	2541.684 04(5)	1177.78	0.313E-21	P(37)	B
22	2536.297 05(8)*	364.41	0.128E-19	P(29)	A	57	2541.868 0	65.36	0.825E-22	P(12)	P
23	2536.445 17(11)	1412.57	0.137E-21	P(17)	D	58	2541.949 45(12)	1339.98	0.126E-21	P(11)	D
24	2536.673 75(5)	1346.65	0.156E-21	P(42)	C	59	2542.019 73(4)	1178.89	0.311E-21	P(37)	C
25	2536.925 5	2.43	0.272E-22	R(2)	R	60	2542.294 8	36.44	0.769E-22	R(9)	R
26	2537.165 1	128.19	0.859E-22	P(17)	P	61	2542.353 45(7)*	231.24	0.194E-19	P(23)	A
27	2537.322 92(8)*	340.12	0.139E-19	P(28)	A	62	2542.757 42(5)	1146.80	0.354E-21	P(36)	B
28	2537.377 69(11)	1398.38	0.138E-21	P(16)	D	63	2542.845 53(13)	1330.80	0.120E-21	P(10)	D
29	2537.710 9	4.86	0.358E-22	R(3)	R	64	2543.037 5	44.53	0.813E-22	R(10)	R
30	2537.753 93(5)	1311.42	0.181E-21	P(41)	C	65	2543.072 31(4)	1147.85	0.352E-21	P(36)	C
31	2538.120 2	113.95	0.867E-22	P(16)	P	66	2543.339 71(7)*	211.97	0.203E-19	P(22)	A
32	2538.304 18(11)	1385.04	0.138E-21	P(15)	D	67	2543.698 0	46.09	0.755E-22	P(10)	P
33	2538.342 22(7)*	316.67	0.150E-19	P(27)	A	68	2543.735 49(13)	1322.45	0.113E-21	P(9)	D
34	2538.426 03(5)	1275.74	0.210E-21	P(40)	B	69	2543.774 0	53.44	0.850E-22	R(11)	R
35	2538.490 1	8.10	0.441E-22	R(4)	R	70	2543.824 46(5)	1116.65	0.399E-21	P(35)	B



NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
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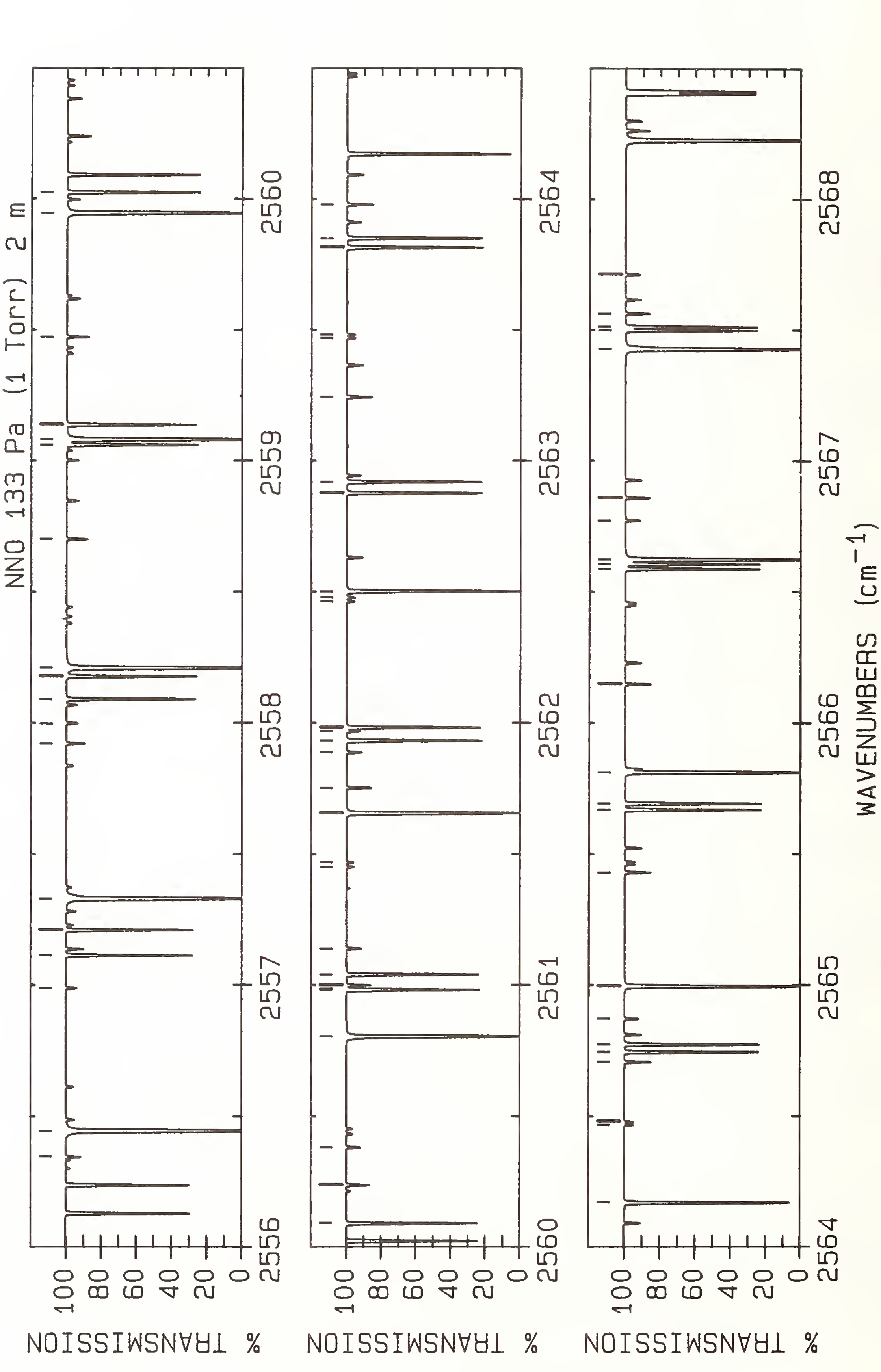
2552 2553 2554 2555 2556
WAVENUMBERS (cm^{-1})

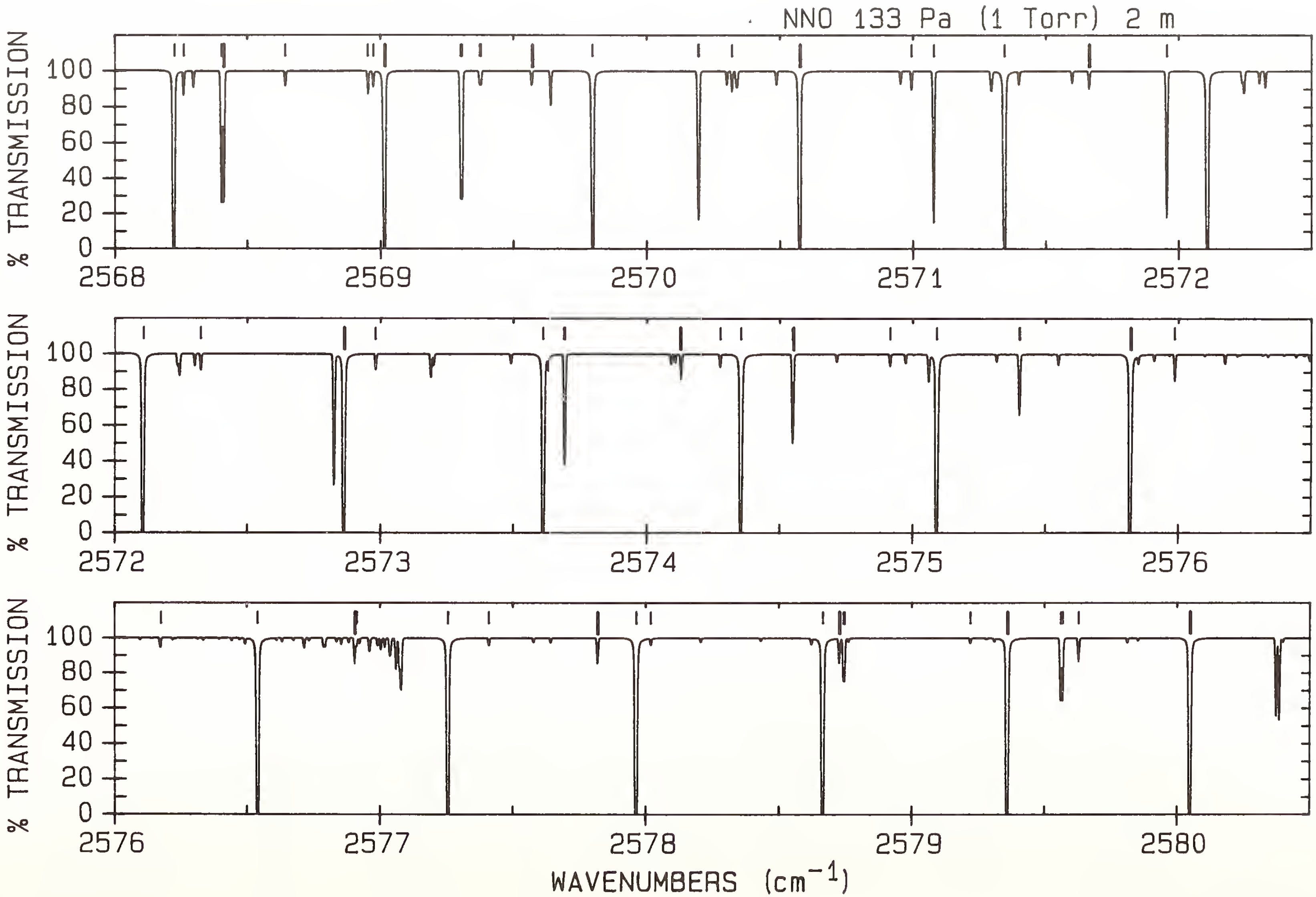
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2544.119 29(4)	1117.64	0.397E-21	P(35)	C	36	2550.092 79(4)	953.32	0.732E-21	P(29)	B
2	2544.319 31(7)*	193.54	0.213E-19	P(21)	A	37	2550.128 6	170.01	0.846E-22	R(20)	R
3	2544.504 4	63.15	0.879E-22	R(12)	R	38	2550.282 25(4)	954.01	0.730E-21	P(29)	C
4	2544.602 0	37.71	0.708E-22	P(9)	P	39	2550.633 83(16)	1285.74	0.150E-22	P(1)	D
5	2544.619 33(14)	1314.94	0.104E-21	P(8)	D	40	2550.989 58(7)*	87.98	0.237E-19	P(14)	A
6	2544.885 14(5)	1087.34	0.447E-21	P(34)	B	41	2551.115 06(4)	929.02	0.796E-21	P(28)	B
7	2545.160 65(4)	1088.28	0.445E-21	P(34)	C	42	2551.289 37(4)	929.66	0.794E-21	P(28)	C
8	2545.228 8	73.68	0.899E-22	R(13)	R	43	2551.473 8	204.82	0.783E-22	R(22)	R
9	2545.292 26(7)*	175.95	0.221E-19	P(20)	A	44	2551.834 98(13)	1558.45	0.401E-22	P(30)	G
10	2545.497 03(15)	1308.27	0.939E-22	P(7)	D	45	2551.915 64(7)*	76.25	0.233E-19	P(13)	A
11	2545.498 8	30.17	0.653E-22	P(8)	P	46	2552.130 89(4)	905.56	0.860E-21	P(27)	B
12	2545.939 46(5)	1058.86	0.498E-21	P(33)	B	47	2552.137 3	223.43	0.746E-22	R(23)	R
13	2545.947 0	85.01	0.912E-22	R(14)	R	48	2552.290 72(4)	906.16	0.858E-21	P(27)	C
14	2546.196 36(4)	1059.75	0.496E-21	P(33)	C	49	2552.296 65(16)	1284.90	0.151E-22	R(0)	D
15	2546.258 54(7)*	159.20	0.227E-19	P(19)	A	50	2552.834 98(7)*	65.36	0.227E-19	P(12)	A
16	2546.368 57(15)	1302.43	0.828E-22	P(6)	D	51	2552.879 61(13)	1533.28	0.438E-22	P(29)	G
17	2546.508 32(13)	1696.84	0.238E-22	P(35)	G	52	2553.139 40(8)	1768.20	0.178E-22	P(37)	E
18	2546.987 40(5)	1031.22	0.553E-21	P(32)	B	53	2553.140 27(4)	882.94	0.925E-21	P(26)	B
19	2547.218 14(7)*	143.28	0.233E-19	P(18)	A	54	2553.286 27(4)	883.50	0.923E-21	P(26)	C
20	2547.365 2	110.11	0.915E-22	R(16)	R	55	2553.446 2	263.09	0.667E-22	R(25)	R
21	2547.587 41(13)	1667.49	0.267E-22	P(34)	G	56	2553.747 58(7)*	55.31	0.219E-19	P(11)	A
22	2548.028 94(5)	1004.42	0.610E-21	P(31)	B	57	2553.934 70(16)	1287.41	0.447E-22	R(2)	D
23	2548.093 19(16)	1293.25	0.578E-22	P(4)	D	58	2554.143 17(4)	861.16	0.989E-21	P(25)	B
24	2548.171 06(7)*	128.20	0.237E-19	P(17)	A	59	2554.276 01(4)	861.67	0.987E-21	P(25)	C
25	2548.250 74(4)	1005.20	0.608E-21	P(31)	C	60	2554.653 42(7)*	46.09	0.208E-19	P(10)	A
26	2548.659 64(13)	1638.97	0.298E-22	P(33)	G	61	2554.744 43(15)	1289.91	0.589E-22	R(3)	D
27	2548.759 0	138.44	0.892E-22	R(18)	R	62	2554.948 07(13)	1485.45	0.515E-22	P(27)	G
28	2548.946 25(16)	1289.91	0.441E-22	P(3)	D	63	2555.139 59(4)	840.21	0.105E-20	P(24)	B
29	2549.064 08(4)	978.45	0.670E-21	P(30)	B	64	2555.253 69(8)	1706.91	0.227E-22	P(35)	E
30	2549.117 27(7)*	113.96	0.239E-19	P(16)	A	65	2555.259 91(3)	840.68	0.105E-20	P(24)	C
31	2549.269 36(4)	979.18	0.668E-21	P(30)	C	66	2555.364 3	328.64	0.542E-22	R(28)	R
32	2549.446 8	153.82	0.872E-22	R(19)	R	67	2555.552 52(7)*	37.71	0.195E-19	P(9)	A
33	2549.724 99(13)	1611.29	0.330E-22	P(32)	G	68	2555.686 5	5.03	0.371E-22	R(3)	P
34	2549.793 13(16)	1287.41	0.297E-22	P(2)	D	69	2555.971 88(12)	1462.80	0.554E-22	P(26)	G
35	2550.056 78(7)*	100.55	0.239E-19	P(15)	A	70	2555.991 7	352.10	0.500E-22	R(29)	R



NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
100 80 60 40 20 0
2556 2557 2558 2559 2560
2560 2561 2562 2563 2564
2564 2565 2566 2567 2568
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2556.345 27(15)	1297.42	0.852E-22	R(5)	D
2	2556.444 85(7)*	30.17	0.180E-19	P(8)	A
3	2556.988 73(12)	1440.98	0.593E-22	P(25)	G
4	2557.112 95(3)	800.83	0.117E-20	P(22)	B
5	2557.210 13(3)	801.23	0.117E-20	P(22)	C
6	2557.330 41(7)*	23.46	0.163E-19	P(7)	A
7	2557.921 31(13)	1308.27	0.108E-21	R(7)	D
8	2557.998 60(12)	1420.00	0.630E-22	P(24)	G
9	2558.089 87(3)	782.39	0.122E-20	P(21)	B
10	2558.176 42(3)	782.76	0.122E-20	P(21)	C
11	2558.209 20(7)*	17.60	0.144E-19	P(6)	A
12	2558.700 03(13)	1314.94	0.117E-21	R(8)	D
13	2559.060 27(3)	764.79	0.126E-20	P(20)	B
14	2559.081 20(7)*	12.57	0.123E-19	P(5)	A
15	2559.136 81(3)	765.12	0.126E-20	P(20)	C
16	2559.472 55(12)	1322.45	0.126E-21	R(9)	D
17	2559.946 42(7)*	8.38	0.100E-19	P(4)	A
18	2560.024 13(3)	748.03	0.130E-20	P(19)	B
19	2560.091 28(3)	748.33	0.130E-20	P(19)	C
20	2560.238 88(12)	1330.80	0.133E-21	R(10)	D
21	2560.382 2	37.71	0.792E-22	R(9)	P
22	2560.804 85(7)*	5.03	0.764E-20	P(3)	A
23	2560.981 46(3)	732.11	0.134E-20	P(18)	B
24	2560.986 28(12)	1362.08	0.732E-22	P(21)	G
25	2560.999 02(11)	1339.98	0.139E-21	R(11)	D
26	2561.039 82(3)	732.38	0.133E-20	P(18)	C
27	2561.138 9	46.09	0.837E-22	R(10)	P
28	2561.451 00(8)	1543.16	0.417E-22	P(29)	E
29	2561.468 56(8)	1543.12	0.417E-22	P(29)	F
30	2561.656 48(7)*	2.51	0.516E-20	P(2)	A
31	2561.752 98(11)	1349.99	0.143E-21	R(12)	D
32	2561.888 3	55.30	0.873E-22	R(11)	P
33	2561.932 23(3)	717.02	0.136E-20	P(17)	B
34	2561.968 16(12)	1344.45	0.760E-22	P(20)	G
35	2561.982 42(3)	717.26	0.135E-20	P(17)	C

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2562.462 62(8)	1518.81	0.453E-22	P(28)	E
37	2562.478 02(8)	1518.77	0.454E-22	P(28)	F
38	2562.500 75(11)	1360.84	0.146E-21	R(13)	D
39	2562.501 31(7)*	0.84	0.260E-20	P(1)	A
40	2562.876 45(4)	702.77	0.137E-20	P(16)	B
41	2562.919 06(4)	702.99	0.137E-20	P(16)	C
42	2563.242 35(11)	1372.52	0.148E-21	R(14)	D
43	2563.468 15(8)	1495.29	0.490E-22	P(27)	E
44	2563.481 60(8)	1495.26	0.491E-22	P(27)	F
45	2563.814 10(4)	689.36	0.137E-20	P(15)	B
46	2563.849 73(4)	689.55	0.137E-20	P(15)	C
47	2563.977 78(11)	1385.04	0.149E-21	R(15)	D
48	2564.170 54(7)*	0.00	0.261E-20	R(0)	A
49	2564.467 60(8)	1472.61	0.527E-22	P(26)	E
50	2564.479 29(8)	1472.58	0.527E-22	P(26)	F
51	2564.707 06(11)	1398.38	0.148E-21	R(16)	D
52	2564.745 18(4)	676.79	0.136E-20	P(14)	B
53	2564.774 41(4)	676.95	0.136E-20	P(14)	C
54	2564.871 62(12)	1296.61	0.816E-22	P(17)	G
55	2564.994 94(7)*	0.84	0.520E-20	R(1)	A
56	2565.430 18(11)	1412.57	0.147E-21	R(17)	D
57	2565.669 68(4)	665.05	0.134E-20	P(13)	B
58	2565.693 11(4)	665.20	0.133E-20	P(13)	C
59	2565.812 51(7)*	2.51	0.775E-20	R(2)	A
60	2566.147 17(11)	1427.58	0.144E-21	R(18)	D
61	2566.587 59(4)	654.15	0.130E-20	P(12)	B
62	2566.605 79(4)	654.28	0.130E-20	P(12)	C
63	2566.623 27(7)*	5.03	0.102E-19	R(3)	A
64	2566.772 02(13)	1268.90	0.824E-22	P(15)	G
65	2566.858 02(12)	1443.43	0.140E-21	R(19)	D
66	2567.427 20(7)*	8.38	0.126E-19	R(4)	A
67	2567.498 91(5)	644.10	0.125E-20	P(11)	B
68	2567.512 46(5)	644.20	0.125E-20	P(11)	C
69	2567.562 76(12)	1460.12	0.136E-21	R(20)	D
70	2567.711 61(13)	1256.31	0.818E-22	P(14)	G


NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
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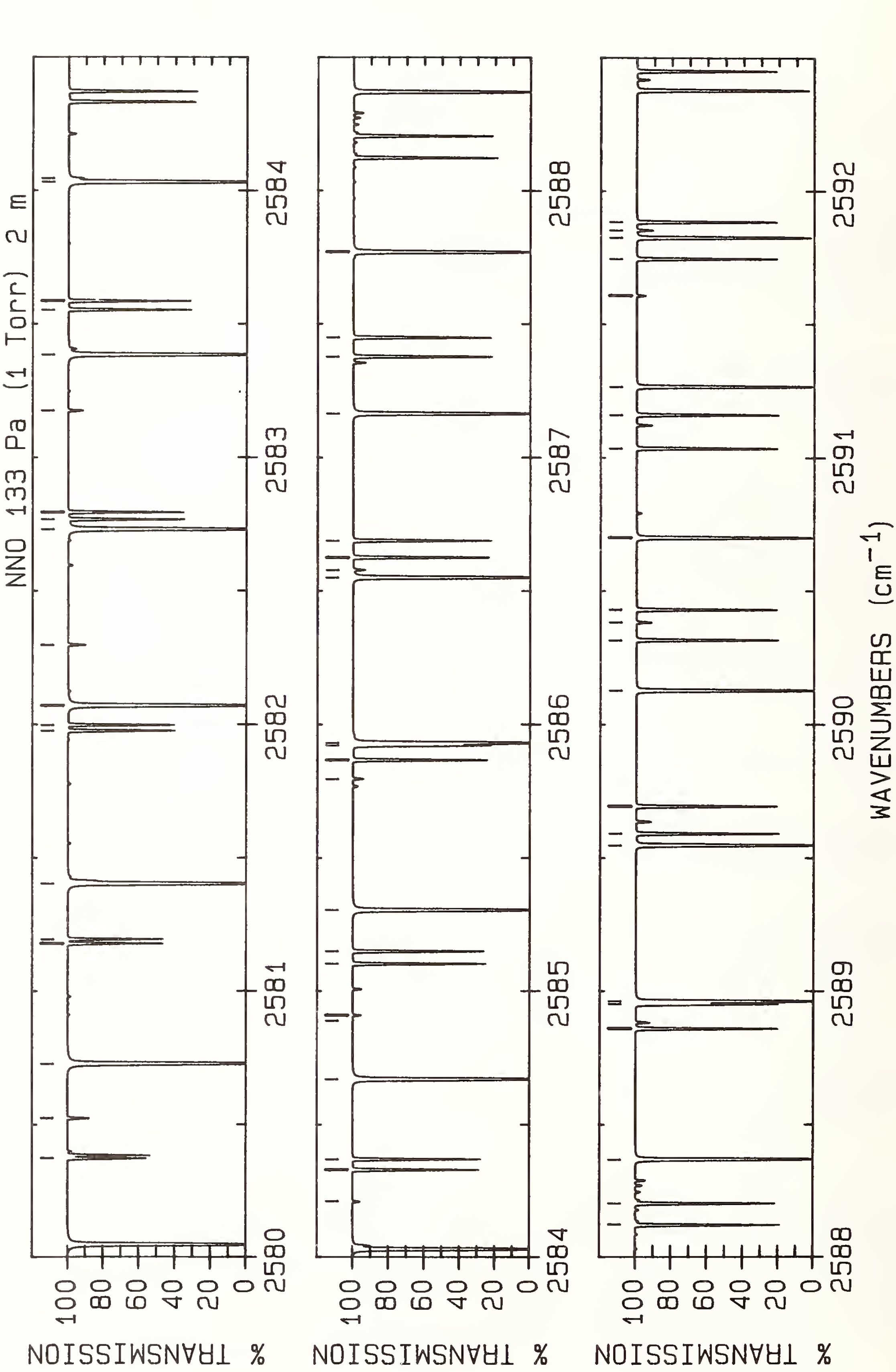
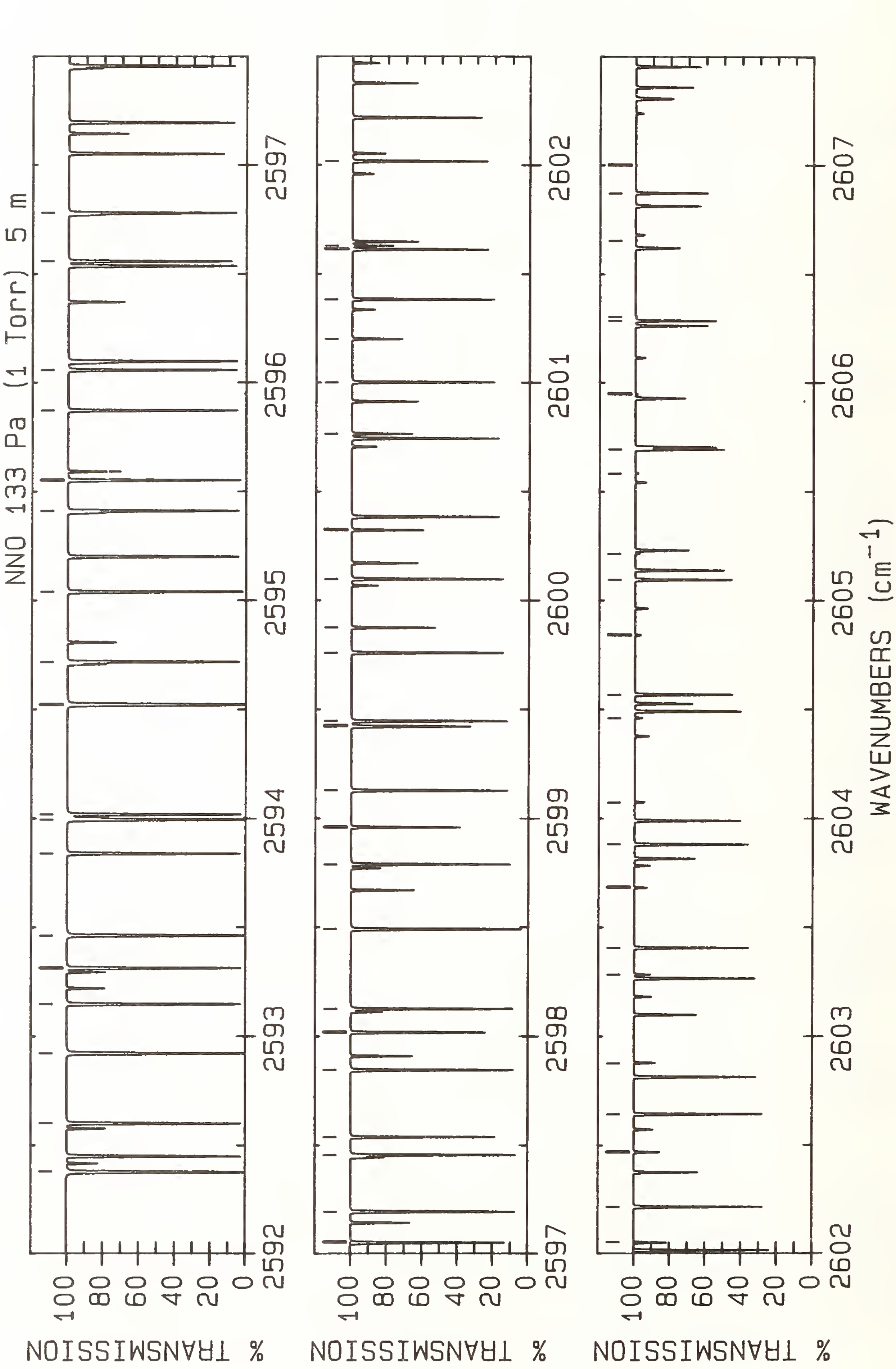
80
60
40
20
0
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
WAVENUMBERS (cm⁻¹)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2568.224 30(7)*	12.57	0.148E-19	R(5)	A
2	2568.261 39(12)	1477.64	0.131E-21	R(21)	D
3	2568.403 62(5)	634.88	0.118E-20	P(10)	B
4	2568.404 49(8)	1390.30	0.665E-22	P(22)	E
5	2568.410 80(8)	1390.28	0.665E-22	P(22)	F
6	2568.413 10(5)	634.96	0.118E-20	P(10)	C
7	2568.644 14(13)	1244.55	0.805E-22	P(13)	G
8	2568.953 92(12)	1495.99	0.125E-21	R(22)	D
9	2568.973 5	193.53	0.820E-22	R(21)	P
10	2569.014 58(7)*	17.60	0.168E-19	R(6)	A
11	2569.301 72(5)	626.49	0.111E-20	P(9)	B
12	2569.307 70(5)	626.56	0.111E-20	P(9)	C
13	2569.373 47(8)	1371.82	0.694E-22	P(21)	E
14	2569.378 79(8)	1371.80	0.694E-22	P(21)	F
15	2569.569 57(13)	1233.63	0.784E-22	P(12)	G
16	2569.798 02(7)*	23.46	0.187E-19	R(7)	A
17	2570.193 20(5)	618.95	0.102E-20	P(8)	B
18	2570.196 26(5)	619.00	0.102E-20	P(8)	C
19	2570.320 77(13)	1535.19	0.112E-21	R(24)	D
20	2570.574 63(7)*	30.17	0.204E-19	R(8)	A
21	2570.995 12(13)	1556.05	0.106E-21	R(25)	D
22	2571.078 07(5)	612.24	0.917E-21	P(7)	B
23	2571.078 77(5)	612.29	0.917E-21	P(7)	C
24	2571.344 40(7)*	37.71	0.218E-19	R(9)	A
25	2571.663 43(13)	1577.73	0.987E-22	R(26)	D
26	2571.955 22(6)	606.41	0.803E-21	P(6)	C
27	2571.956 30(6)	606.37	0.803E-21	P(6)	B
28	2572.107 33(7)*	46.09	0.230E-19	R(10)	A
29	2572.325 74(13)	1600.25	0.918E-22	R(27)	D
30	2572.863 43(7)*	55.31	0.240E-19	R(11)	A
31	2572.982 05(13)	1623.60	0.849E-22	R(28)	D
32	2573.612 69(7)*	65.36	0.248E-19	R(12)	A
33	2573.689 89(6)	597.17	0.540E-21	P(4)	C
34	2573.692 86(6)	597.15	0.540E-21	P(4)	B
35	2574.126 81(8)	1292.01	0.776E-22	P(16)	E
36	2574.128 80(8)	1292.01	0.776E-22	P(16)	F
37	2574.276 77(12)	1672.80	0.715E-22	R(30)	D
38	2574.355 11(7)*	76.25	0.253E-19	R(13)	A
39	2574.548 11(6)	593.81	0.391E-21	P(3)	C
40	2574.551 18(6)	593.80	0.391E-21	P(3)	B
41	2574.915 23(12)	1698.65	0.651E-22	R(31)	D
42	2575.090 69(7)*	87.98	0.257E-19	R(14)	A
43	2575.400 24(6)	591.29	0.223E-21	P(2)	C
44	2575.402 85(6)	591.28	0.223E-21	P(2)	B
45	2575.819 44(7)*	100.55	0.258E-19	R(15)	A
46	2575.985 36(8)	1265.97	0.767E-22	P(14)	E
47	2575.986 59(8)	1265.96	0.767E-22	P(14)	F
48	2576.174 46(12)	1752.85	0.532E-22	R(33)	D
49	2576.541 34(7)*	113.96	0.256E-19	R(16)	A
50	2576.905 45(8)	1254.20	0.752E-22	P(13)	E
51	2576.906 40(8)	1254.20	0.752E-22	P(13)	F
52	2576.913 05(5)	606.41	0.427E-22	Q(6)	C
53	2577.256 41(7)*	128.20	0.253E-19	R(17)	A
54	2577.410 29(13)	1810.37	0.426E-22	R(35)	D
55	2577.819 42(8)	1243.28	0.729E-22	P(12)	E
56	2577.820 14(8)	1243.28	0.729E-22	P(12)	F
57	2577.964 65(7)*	143.28	0.249E-19	R(18)	A
58	2578.019 49(13)	1840.38	0.378E-22	R(36)	D
59	2578.666 06(7)*	159.20	0.242E-19	R(19)	A
60	2578.727 27(8)	1233.20	0.699E-22	P(11)	E
61	2578.727 79(8)	1233.20	0.699E-22	P(11)	F
62	2578.742 94(6)	589.61	0.225E-21	R(1)	B
63	2578.747 79(6)	589.61	0.225E-21	R(1)	C
64	2579.220 64(14)	1902.90	0.294E-22	R(38)	D
65	2579.360 63(7)*	175.95	0.235E-19	R(20)	A
66	2579.561 29(6)	591.28	0.396E-21	R(2)	B
67	2579.569 41(6)	591.29	0.396E-21	R(2)	C
68	2579.628 98(8)	1223.96	0.660E-22	P(10)	E
69	2579.629 36(8)	1223.96	0.660E-22	P(10)	F
70	2580.048 37(7)*	193.54	0.226E-19	R(21)	A



NNO 133 Pa (1 Torr) 2 m
% TRANSMISSION
100
80
60
40
20
0
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2580.372 97(6)	593.80	0.551E-21	R(3)	B
2	2580.524 56(8)	1215.56	0.613E-22	P(9)	E
3	2580.524 82(8)	1215.55	0.613E-22	P(9)	F
4	2580.729 29(7)*	211.97	0.216E-19	R(22)	A
5	2581.177 97(6)	597.15	0.694E-21	R(4)	B
6	2581.194 31(6)	597.17	0.694E-21	R(4)	C
7	2581.403 39(7)*	231.24	0.205E-19	R(23)	A
8	2581.976 29(5)	601.34	0.826E-21	R(5)	B
9	2581.997 59(5)	601.37	0.826E-21	R(5)	C
10	2582.070 67(7)*	251.34	0.194E-19	R(24)	A
11	2582.297 31(8)	1201.27	0.494E-22	P(7)	E
12	2582.297 42(8)	1201.27	0.494E-22	P(7)	F
13	2582.731 14(7)*	272.28	0.182E-19	R(25)	A
14	2582.767 93(5)	606.37	0.948E-21	R(6)	B
15	2582.794 75(5)	606.41	0.948E-21	R(6)	C
16	2583.174 48(8)	1195.39	0.422E-22	P(6)	E
17	2583.174 54(8)	1195.39	0.422E-22	P(6)	F
18	2583.384 80(8)*	294.06	0.170E-19	R(26)	A
19	2583.552 88(5)	612.24	0.106E-20	R(7)	B
20	2583.585 79(5)	612.29	0.106E-20	R(7)	C
21	2584.031 66(8)*	316.67	0.158E-19	R(27)	A
22	2584.045 50(8)	1190.35	0.340E-22	P(5)	E
23	2584.045 53(8)	1190.35	0.340E-22	P(5)	F
24	2584.210 86(14)	1176.53	0.433E-22	R(4)	G
25	2584.331 15(5)	618.95	0.116E-20	R(8)	B
26	2584.370 72(5)	619.00	0.116E-20	R(8)	C
27	2584.671 72(8)*	340.12	0.146E-19	R(28)	A
28	2584.890 56(24)	2265.33	0.637E-23	R(48)	D
29	2584.910 37(8)	1186.15	0.248E-22	P(4)	E
30	2584.910 39(8)	1186.15	0.248E-22	P(4)	F
31	2585.102 72(5)	626.49	0.124E-20	R(9)	B
32	2585.149 52(5)	626.56	0.124E-20	R(9)	C
33	2585.304 99(8)*	364.41	0.134E-19	R(29)	A
34	2585.797 06(14)	1185.77	0.580E-22	R(6)	G
35	2585.867 60(4)	634.88	0.131E-20	R(10)	B
36	2585.922 21(4)	634.96	0.131E-20	R(10)	C
37	2585.931 47(8)*	389.53	0.123E-19	R(30)	A
38	2586.551 18(8)*	415.49	0.112E-19	R(31)	A
39	2586.579 34(14)	1191.65	0.645E-22	R(7)	G
40	2586.625 78(4)	644.10	0.137E-20	R(11)	B
41	2586.688 79(4)	644.20	0.137E-20	R(11)	C
42	2587.164 12(8)*	442.28	0.101E-19	R(32)	A
43	2587.377 27(4)	654.15	0.142E-20	R(12)	B
44	2587.449 25(4)	654.28	0.142E-20	R(12)	C
45	2587.770 29(8)*	469.91	0.913E-20	R(33)	A
46	2588.122 06(4)	665.05	0.145E-20	R(13)	B
47	2588.122 25(13)	1205.92	0.753E-22	R(9)	G
48	2588.203 60(4)	665.20	0.145E-20	R(13)	C
49	2588.369 71(8)*	498.37	0.819E-20	R(34)	A
50	2588.860 15(4)	676.79	0.147E-20	R(14)	B
51	2588.951 84(4)	676.95	0.147E-20	R(14)	C
52	2588.962 39(8)*	527.67	0.730E-20	R(35)	A
53	2589.548 34(8)*	557.81	0.649E-20	R(36)	A
54	2589.591 55(3)	689.36	0.148E-20	R(15)	B
55	2589.693 98(3)	689.55	0.148E-20	R(15)	C
56	2590.127 56(8)*	588.78	0.573E-20	R(37)	A
57	2590.316 25(3)	702.77	0.147E-20	R(16)	B
58	2590.382 41(13)	1233.63	0.856E-22	R(12)	G
59	2590.430 01(3)	702.99	0.147E-20	R(16)	C
60	2590.700 07(8)*	620.59	0.504E-20	R(38)	A
61	2591.034 24(3)	717.02	0.145E-20	R(17)	B
62	2591.159 95(3)	717.26	0.145E-20	R(17)	C
63	2591.265 88(9)*	653.23	0.441E-20	R(39)	A
64	2591.607 67(8)	1182.79	0.253E-22	R(3)	F
65	2591.607 68(8)	1182.79	0.253E-22	R(3)	E
66	2591.745 54(3)	732.11	0.143E-20	R(18)	B
67	2591.825 01(9)*	686.70	0.385E-20	R(40)	A
68	2591.853 01(12)	1256.31	0.885E-22	R(14)	G
69	2591.883 80(3)	732.38	0.142E-20	R(18)	C


NNO 133 Pa (1 Torr) 5 m
% TRANSMISSION
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2592 2593 2594 2595 2596 2597
2597 2598 2599 2600 2601 2602
2602 2603 2604 2605 2606 2607
WAVENUMBERS (cm^{-1})

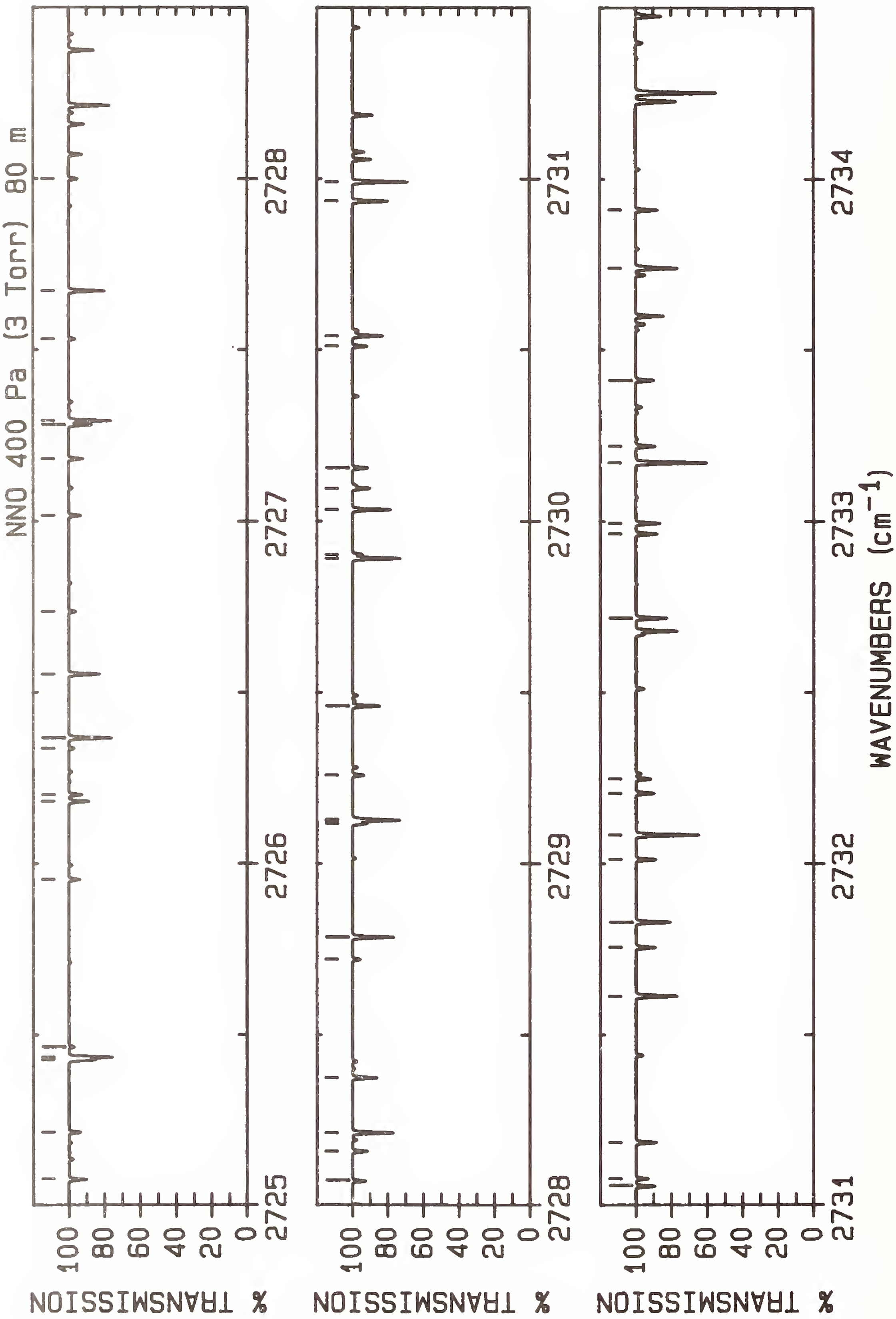
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2592.377 46(9)*	721.01	0.333E-20	R(41)	A
2	2592.601 57(3)	748.33	0.139E-20	R(19)	C
3	2592.923 25(9)*	756.16	0.288E-20	R(42)	A
4	2593.148 05(3)	764.79	0.135E-20	R(20)	B
5	2593.313 26(3)	765.12	0.134E-20	R(20)	C
6	2593.462 39(9)*	792.14	0.247E-20	R(43)	A
7	2593.839 26(3)	782.39	0.130E-20	R(21)	B
8	2593.994 91(9)*	828.95	0.211E-20	R(44)	A
9	2594.018 88(3)	782.76	0.129E-20	R(21)	C
10	2594.520 81(9)*	866.60	0.180E-20	R(45)	A
11	2594.523 78(4)	800.83	0.124E-20	R(22)	B
12	2594.718 43(3)	801.23	0.124E-20	R(22)	C
13	2595.040 12(9)*	905.08	0.153E-20	R(46)	A
14	2595.411 93(4)	820.54	0.118E-20	R(23)	C
15	2595.552 84(9)*	944.39	0.129E-20	R(47)	A
16	2595.872 73(4)	840.21	0.111E-20	R(24)	B
17	2596.059 01(9)*	984.54	0.108E-20	R(48)	A
18	2596.558 63(9)*	1025.52	0.905E-21	R(49)	A
19	2596.780 80(4)	861.67	0.104E-20	R(25)	C
20	2597.051 73(9)*	1067.33	0.753E-21	R(50)	A
21	2597.194 93(4)	882.94	0.977E-21	R(26)	B
22	2597.456 20(4)	883.50	0.975E-21	R(26)	C
23	2597.538 34(9)*	1109.98	0.625E-21	R(51)	A
24	2597.846 01(4)	905.56	0.908E-21	R(27)	B
25	2598.018 46(9)*	1153.46	0.515E-21	R(52)	A
26	2598.125 57(4)	906.16	0.906E-21	R(27)	C
27	2598.490 41(4)	929.02	0.840E-21	R(28)	B
28	2598.492 13(9)*	1197.77	0.423E-21	R(53)	A
29	2598.788 94(4)	929.66	0.837E-21	R(28)	C
30	2598.959 37(9)*	1242.91	0.346E-21	R(54)	A
31	2599.128 13(5)	953.32	0.772E-21	R(29)	B
32	2599.420 20(9)*	1288.88	0.282E-21	R(55)	A
33	2599.423 04(13)	1440.98	0.627E-22	R(25)	G
34	2599.423 48(8)	1254.20	0.820E-22	R(13)	E
35	2599.423 60(8)	1254.20	0.820E-22	R(13)	F
36	2599.446 32(4)	954.01	0.770E-21	R(29)	C
37	2599.759 18(5)	978.45	0.706E-21	R(30)	B
38	2599.874 66(10)*	1335.69	0.229E-21	R(56)	A
39	2600.097 72(4)	979.18	0.704E-21	R(30)	C
40	2600.322 76(10)*	1383.33	0.185E-21	R(57)	A
41	2600.764 54(10)*	1431.79	0.148E-21	R(58)	A
42	2601.001 30(5)	1031.22	0.582E-21	R(32)	B
43	2601.200 02(10)*	1481.09	0.119E-21	R(59)	A
44	2601.382 63(4)	1032.06	0.580E-21	R(32)	C
45	2601.612 38(5)	1058.86	0.525E-21	R(33)	B
46	2601.629 24(10)*	1531.22	0.947E-22	R(60)	A
47	2602.016 18(4)	1059.75	0.522E-21	R(33)	C
48	2602.052 23(10)*	1582.18	0.751E-22	R(61)	A
49	2602.216 80(5)	1087.34	0.470E-21	R(34)	B
50	2602.469 01(10)*	1633.97	0.594E-22	R(62)	A
51	2602.643 80(4)	1088.28	0.468E-21	R(34)	C
52	2602.879 63(10)*	1686.59	0.467E-22	R(63)	A
53	2603.284 12(10)*	1740.04	0.366E-22	R(64)	A
54	2603.405 73(5)	1146.80	0.373E-21	R(36)	B
55	2603.682 51(10)*	1794.32	0.285E-22	R(65)	A
56	2603.881 35(4)	1147.85	0.371E-21	R(36)	C
57	2604.074 85(11)*	1849.42	0.222E-22	R(66)	A
58	2604.461 16(12)*	1905.36	0.172E-22	R(67)	A
59	2604.568 15(5)	1209.60	0.290E-21	R(38)	B
60	2604.841 50(14)*	1962.12	0.132E-22	R(68)	A
61	2605.095 41(4)	1210.77	0.288E-21	R(38)	C
62	2605.215 91(15)*	2019.71	0.101E-22	R(69)	A
63	2605.584 43(18)*	2078.13	0.773E-23	R(70)	A
64	2605.693 68(5)	1243.48	0.252E-21	R(39)	C
65	2605.947 09(21)*	2137.38	0.588E-23	R(71)	A
66	2606.286 14(5)	1277.04	0.220E-21	R(40)	C
67	2606.303 96(24)*	2197.45	0.445E-23	R(72)	A
68	2606.655 08(28)*	2258.36	0.336E-23	R(73)	A
69	2606.872 81(5)	1311.42	0.190E-21	R(41)	C
70	2607.000 49(32)*	2320.08	0.252E-23	R(74)	A

ATLAS OF N_2O ABSORPTION LINES FROM 2725 cm^{-1} to 2842 cm^{-1}

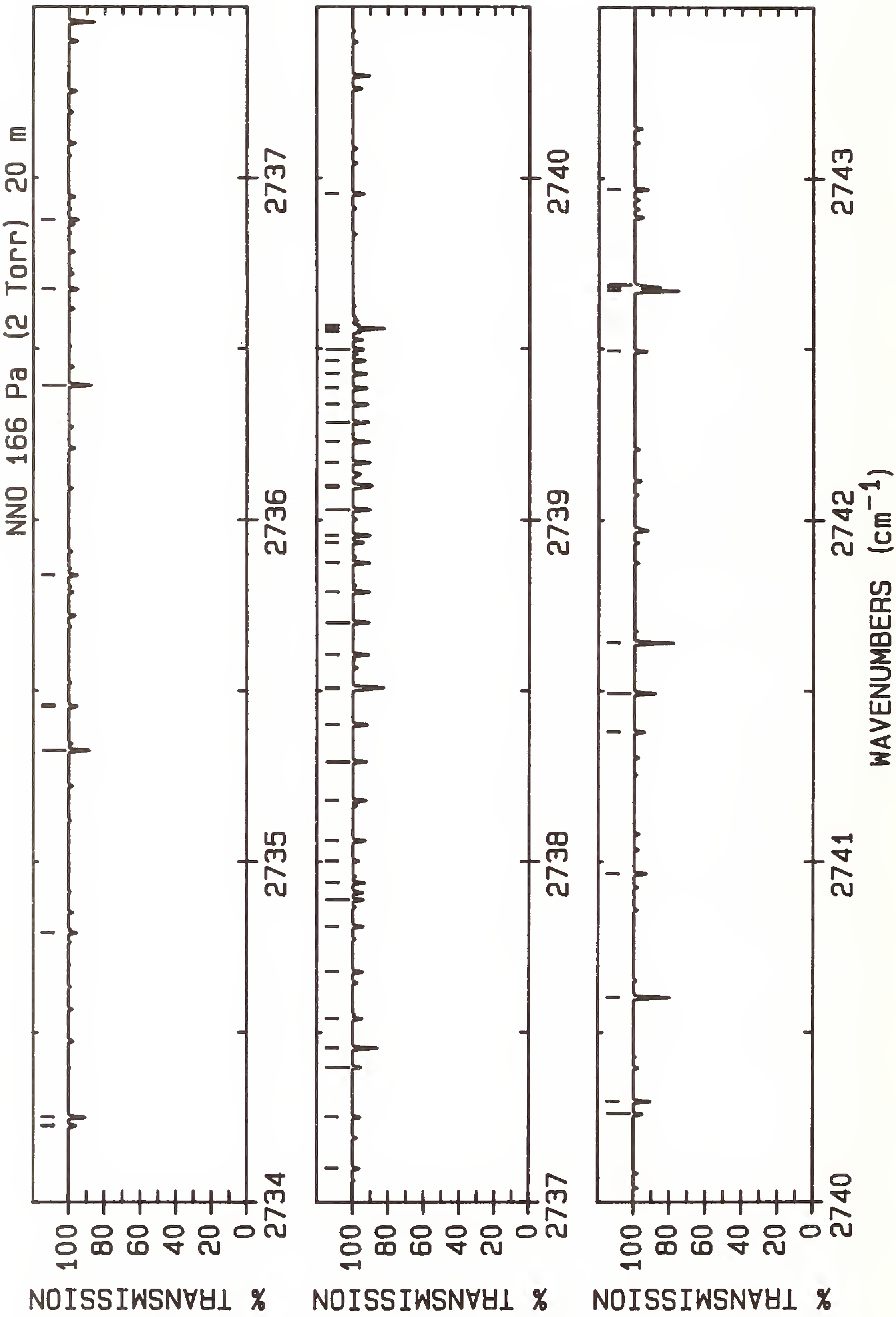
key:

Band	Isotopomer	Vibrational Transition
A	$^{14}N^{14}N^{16}O$	11^10-00^00
B		12^20-$01^{1e}0$
C		12^20-$01^{1f}0$
D		11^11-00^01
E		13^30-$02^{2e}0$
F		13^30-$02^{2f}0$
G		13^10-02^00
H		12^00-01^10
I		13^10-$02^{2e}0$
J		13^10-$02^{2f}0$
P	$^{14}N^{15}N^{16}O$	11^10-00^00
R	$^{15}N^{14}N^{16}O$	11^10-00^00
T	$^{14}N^{14}N^{18}O$	11^10-00^00

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1} and a transition moment of 0.0086 debye at a temperature of 296 K. No Herman-Wallis constants were included in the intensity calculations.

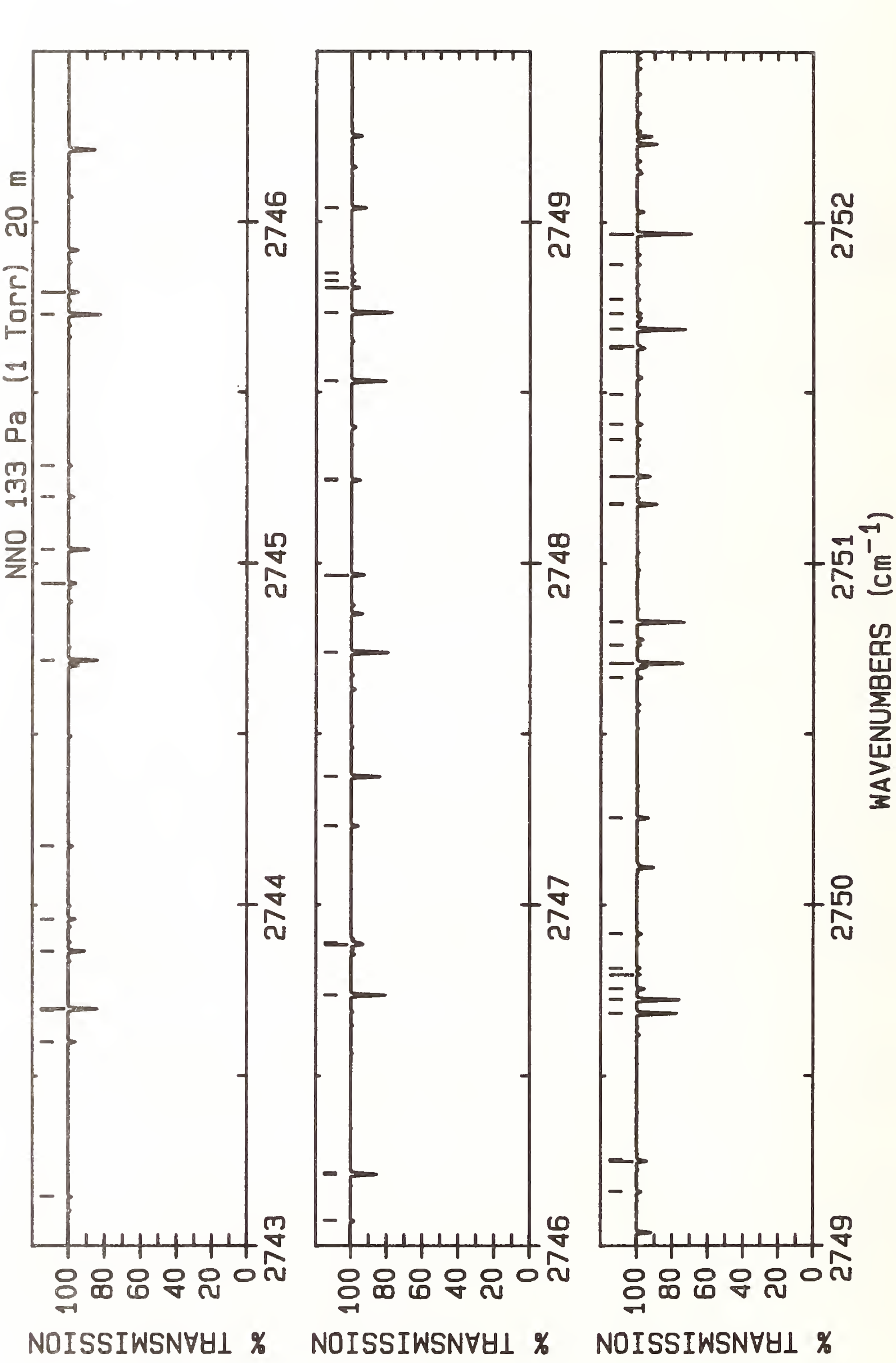

NNO 400 Pa (3 Torr) 80 m
% TRANSMISSION
100 80 60 40 20 0
2725 2726 2727 2728
2728 2729 2730 2731
2731 2732 2733 2734
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2725.076 61(75)	1822.61	0.908E-24	P(39)	G
2	2725.215 89(30)	1594.33	0.612E-24	P(31)	J
3	2725.428 30(7)	1699.17	0.136E-23	P(51)	H
4	2725.435 9	113.95	0.236E-23	P(16)	P
5	2725.465 99(18)*	2019.71	0.278E-24	P(69)	A
6	2725.954 14(63)	1543.16	0.558E-24	P(29)	I
7	2726.182 62(74)	1789.92	0.103E-23	P(38)	G
8	2726.201 94(29)	1568.31	0.669E-24	P(30)	J
9	2726.337 45(9)	1975.23	0.275E-24	P(57)	C
10	2726.368 1	100.55	0.235E-23	P(15)	P
11	2726.553 97(6)	1656.51	0.163E-23	P(50)	H
12	2726.736 53(17)*	1962.12	0.363E-24	P(68)	A
13	2727.017 04(61)	1518.81	0.617E-24	P(28)	I
14	2727.182 94(28)	1543.12	0.729E-24	P(29)	J
15	2727.282 07(73)	1758.06	0.117E-23	P(37)	G
16	2727.294 0	87.98	0.232E-23	P(14)	P
17	2727.532 15(8)	1927.48	0.340E-24	P(56)	C
18	2727.673 08(6)	1614.68	0.194E-23	P(49)	H
19	2728.000 81(16)*	1905.36	0.471E-24	P(67)	A
20	2728.071 55(59)	1495.29	0.678E-24	P(27)	I
21	2728.158 92(27)	1518.77	0.790E-24	P(28)	J
22	2728.213 6	76.25	0.227E-23	P(13)	P
23	2728.374 95(72)	1727.03	0.131E-23	P(36)	G
24	2728.720 61(7)	1880.57	0.419E-24	P(55)	C
25	2728.785 66(6)	1573.69	0.230E-23	P(48)	H
26	2729.117 71(57)	1472.61	0.740E-24	P(26)	I
27	2729.127 0	65.36	0.219E-23	P(12)	P
28	2729.129 89(26)	1495.26	0.852E-24	P(27)	J
29	2729.258 81(16)*	1849.42	0.609E-24	P(66)	A
30	2729.461 21(71)	1696.84	0.147E-23	P(35)	G
31	2729.891 75(5)	1533.53	0.272E-23	P(47)	H
32	2729.902 81(7)	1834.50	0.515E-24	P(54)	C
33	2730.034 1	55.30	0.209E-23	P(11)	P
34	2730.095 87(26)	1472.58	0.915E-24	P(26)	J
35	2730.155 57(54)	1450.78	0.804E-24	P(25)	I
36	2730.510 54(15)*	1794.32	0.784E-24	P(65)	A
37	2730.540 82(70)	1667.49	0.164E-23	P(34)	G
38	2730.935 0	46.09	0.197E-23	P(10)	P
39	2730.991 38(5)	1494.20	0.320E-23	P(46)	H
40	2731.056 89(25)	1450.75	0.977E-24	P(25)	J
41	2731.078 75(6)	1789.25	0.629E-24	P(53)	C
42	2731.185 17(52)	1429.78	0.868E-24	P(24)	I
43	2731.613 77(69)	1638.97	0.182E-23	P(33)	G
44	2731.756 00(15)*	1740.04	0.100E-23	P(64)	A
45	2731.829 6	37.71	0.183E-23	P(9)	P
46	2732.012 95(24)	1429.76	0.104E-23	P(24)	J
47	2732.084 58(5)	1455.70	0.374E-23	P(45)	H
48	2732.206 56(50)	1409.62	0.931E-24	P(23)	I
49	2732.248 44(6)	1744.84	0.766E-24	P(52)	C
50	2732.717 9	30.17	0.166E-23	P(8)	P
51	2732.964 08(24)	1409.60	0.110E-23	P(23)	J
52	2732.995 19(14)*	1686.59	0.128E-23	P(63)	A
53	2733.171 40(5)	1418.04	0.436E-23	P(44)	H
54	2733.219 77(47)	1390.30	0.994E-24	P(22)	I
55	2733.411 86(5)	1701.27	0.927E-24	P(51)	C
56	2733.739 53(66)	1584.45	0.221E-23	P(31)	G
57	2733.910 30(23)	1390.28	0.115E-23	P(22)	J



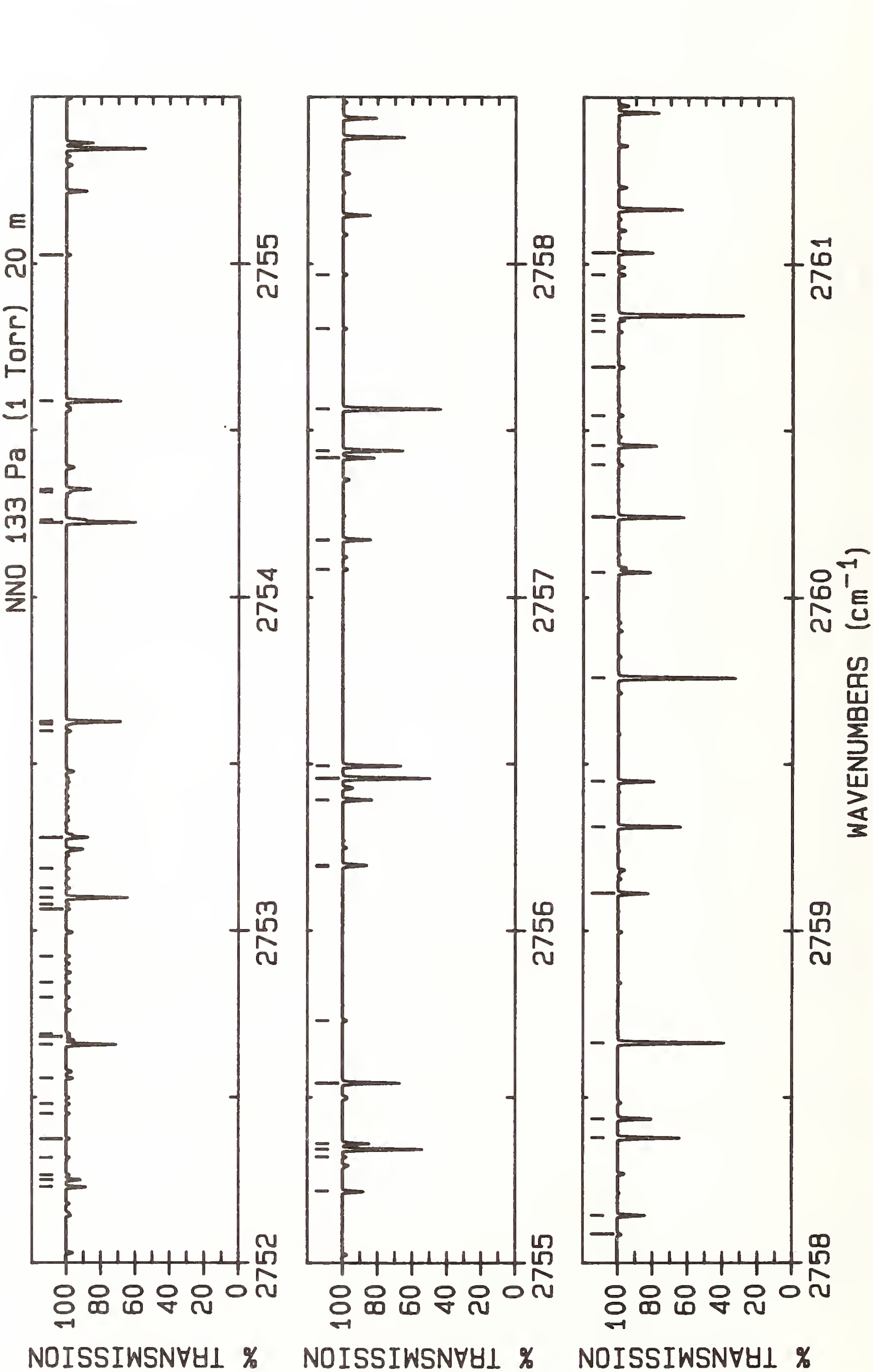
NNO 166 Pa (2 Torr) 20 m
% TRANSMISSION
100
80
60
40
20
0
2734
2735
2736
2737
2738
2739
2740
2741
2742
2743
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2734.224 84(45)	1371.82	0.105E-23	P(21)	I
2	2734.228 09(14)*	1633.97	0.163E-23	P(62)	A
3	2734.251 87(5)	1381.21	0.506E-23	P(43)	H
4	2734.792 30(64)	1558.45	0.241E-23	P(30)	G
5	2735.326 03(5)	1345.22	0.584E-23	P(42)	H
6	2735.454 71(13)*	1582.18	0.206E-23	P(61)	A
7	2735.455 8	663.53	0.414E-24	P(40)	R
8	2735.458 6	2073.73	0.132E-24	P(43)	D
9	2735.838 28(62)	1533.28	0.262E-23	P(29)	G
10	2736.393 92(5)	1310.06	0.671E-23	P(41)	H
11	2736.675 05(13)*	1531.22	0.260E-23	P(60)	A
12	2736.877 44(60)	1508.94	0.284E-23	P(28)	G
13	2737.101 1	442.25	0.208E-23	Q(32)	P
14	2737.252 6	415.46	0.230E-23	Q(31)	P
15	2737.399 4	389.50	0.252E-23	Q(30)	P
16	2737.455 57(5)	1275.74	0.767E-23	P(40)	H
17	2737.541 3	364.38	0.276E-23	Q(29)	P
18	2737.678 6	340.10	0.300E-23	Q(28)	P
19	2737.811 1	316.65	0.324E-23	Q(27)	P
20	2737.889 11(13)*	1481.09	0.327E-23	P(59)	A
21	2737.938 8	294.04	0.349E-23	Q(26)	P
22	2738.002 89(5)	1535.31	0.191E-23	P(47)	C
23	2738.061 8	272.26	0.373E-23	Q(25)	P
24	2738.180 0	251.32	0.397E-23	Q(24)	P
25	2738.293 5	231.22	0.420E-23	Q(23)	P
26	2738.402 3	211.96	0.441E-23	Q(22)	P
27	2738.506 3	193.53	0.461E-23	Q(21)	P
28	2738.511 03(5)	1242.25	0.874E-23	P(39)	H
29	2738.605 6	175.94	0.479E-23	Q(20)	P
30	2738.700 2	159.19	0.494E-23	Q(19)	P
31	2738.790 0	143.27	0.507E-23	Q(18)	P
32	2738.875 1	128.19	0.516E-23	Q(17)	P
33	2738.935 24(55)	1462.80	0.327E-23	P(26)	G
34	2738.955 4	113.95	0.521E-23	Q(16)	P
35	2739.031 0	100.55	0.523E-23	Q(15)	P
36	2739.096 87(12)*	1431.79	0.408E-23	P(58)	A
37	2739.101 9	87.98	0.520E-23	Q(14)	P
38	2739.168 0	76.25	0.512E-23	Q(13)	P
39	2739.229 5	65.36	0.500E-23	Q(12)	P
40	2739.286 2	55.30	0.483E-23	Q(11)	P
41	2739.338 1	46.09	0.461E-23	Q(10)	P
42	2739.385 4	37.71	0.435E-23	Q(9)	P
43	2739.427 9	30.17	0.404E-23	Q(8)	P
44	2739.465 7	23.46	0.368E-23	Q(7)	P
45	2739.498 7	17.60	0.328E-23	Q(6)	P
46	2739.550 7	8.38	0.238E-23	Q(4)	P
47	2739.560 33(5)	1209.60	0.990E-23	P(38)	H
48	2739.569 6	5.03	0.188E-23	Q(3)	P
49	2739.953 81(53)	1440.98	0.347E-23	P(25)	G
50	2740.260 77(5)	1457.34	0.266E-23	P(45)	C
51	2740.298 35(12)*	1383.33	0.508E-23	P(57)	A
52	2740.603 52(5)	1177.78	0.112E-22	P(37)	H
53	2740.965 47(51)	1420.00	0.367E-23	P(24)	G
54	2741.380 29(5)	1419.61	0.312E-23	P(44)	C
55	2741.493 53(12)*	1335.69	0.629E-23	P(56)	A
56	2741.640 63(5)	1146.80	0.125E-22	P(36)	H
57	2742.493 52(5)	1382.71	0.365E-23	P(43)	C
58	2742.671 70(5)	1116.65	0.140E-22	P(35)	H
59	2742.682 41(11)*	1288.88	0.775E-23	P(55)	A
60	2742.689 4	454.04	0.942E-24	P(33)	R
61	2742.967 93(46)	1380.55	0.404E-23	P(22)	G

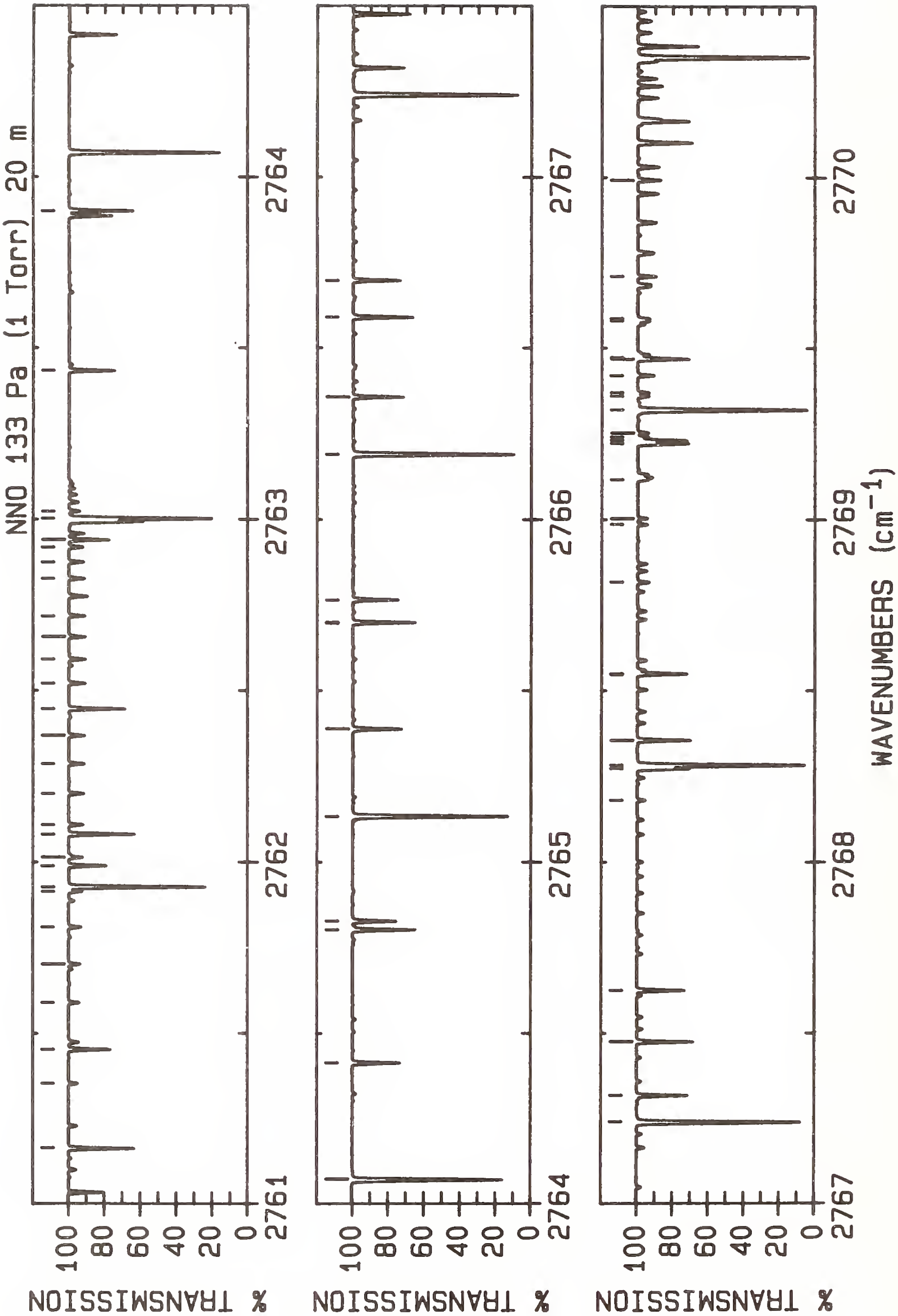


NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
2743
2744
2745
2746
% TRANSMISSION
100 80 60 40 20 0
2746
2747
2748
2749
% TRANSMISSION
100 80 60 40 20 0
2749
2750
2751
2752
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2743.145 55(5)	1418.04	0.223E-23	P(44)	B	31	2748.826 88(35)	1429.78	0.204E-23	P(24)	E
2	2743.600 47(4)	1346.65	0.424E-23	P(42)	C	32	2748.848 39(35)	1429.76	0.204E-23	P(24)	F
3	2743.693 0	8.38	0.159E-23	R(4)	P	33	2749.040 82(4)	1178.89	0.837E-23	P(37)	C
4	2743.696 78(5)	1087.34	0.156E-22	P(34)	H	34	2749.159 9	55.30	0.274E-23	R(11)	P
5	2743.698 1	427.35	0.104E-23	P(32)	R	35	2749.250 63(4)	1209.60	0.575E-23	P(38)	B
6	2743.865 00(11)*	1242.91	0.952E-23	P(54)	A	36	2749.254 65(25)	1190.35	0.979E-24	P(5)	J
7	2743.958 69(44)	1362.08	0.419E-23	P(21)	G	37	2749.683 38(10)*	1025.52	0.249E-22	P(49)	A
8	2744.172 39(5)	1381.21	0.264E-23	P(43)	B	38	2749.723 43(4)	929.02	0.267E-22	P(28)	H
9	2744.715 89(5)	1058.86	0.173E-22	P(33)	H	39	2749.755 21(31)	1268.90	0.455E-23	P(15)	G
10	2744.942 43(41)	1344.45	0.433E-23	P(20)	G	40	2749.796 75(33)	1409.62	0.214E-23	P(23)	E
11	2745.041 29(11)*	1197.77	0.116E-22	P(53)	A	41	2749.814 96(33)	1409.60	0.214E-23	P(23)	F
12	2745.195 54(5)	1345.22	0.312E-23	P(42)	B	42	2749.915 5	65.36	0.281E-23	R(12)	P
13	2745.286 7	17.60	0.202E-23	R(6)	P	43	2750.254 83(4)	1177.78	0.661E-23	P(37)	B
14	2745.729 09(5)	1031.22	0.190E-22	P(32)	H	44	2750.664 7	76.25	0.286E-23	R(13)	P
15	2745.795 50(4)	1277.04	0.565E-23	P(40)	C	45	2750.707 59(4)	905.56	0.287E-22	P(27)	H
16	2746.074 0	23.46	0.221E-23	R(7)	P	46	2750.760 86(31)	1390.30	0.223E-23	P(22)	E
17	2746.211 27(11)*	1153.46	0.142E-22	P(52)	A	47	2750.828 13(10)*	984.54	0.297E-22	P(48)	A
18	2746.214 98(5)	1310.06	0.366E-23	P(41)	B	48	2751.172 86(4)	1117.64	0.106E-22	P(35)	C
19	2746.736 40(5)	1004.42	0.209E-22	P(31)	H	49	2751.175 36(54)	1429.76	0.165E-23	Q(24)	J
20	2746.883 57(4)	1243.48	0.647E-23	P(39)	C	50	2751.255 12(4)	1146.80	0.756E-23	P(36)	B
21	2746.888 80(37)	1311.72	0.452E-23	P(18)	G	51	2751.362 38(52)	1409.60	0.175E-23	Q(23)	J
22	2747.230 67(4)	1275.74	0.428E-23	P(40)	B	52	2751.407 5	87.98	0.288E-23	R(14)	P
23	2747.374 95(10)*	1109.98	0.172E-22	P(51)	A	53	2751.494 02(28)	1518.81	0.154E-23	Q(28)	I
24	2747.737 88(4)	978.45	0.228E-22	P(30)	H	54	2751.630 50(27)	1244.55	0.437E-23	P(13)	G
25	2747.965 35(4)	1210.77	0.738E-23	P(38)	C	55	2751.636 58(27)	1495.29	0.165E-23	Q(27)	I
26	2748.242 56(4)	1242.25	0.497E-23	P(39)	B	56	2751.686 04(4)	882.94	0.307E-22	P(26)	H
27	2748.246 1	1698.65	0.586E-24	P(31)	D	57	2751.732 00(29)	1371.80	0.231E-23	P(21)	F
28	2748.532 32(10)*	1067.33	0.207E-22	P(50)	A	58	2751.773 50(26)	1472.61	0.176E-23	Q(26)	I
29	2748.733 54(4)	953.32	0.247E-22	P(29)	H	59	2751.876 03(45)	1354.16	0.203E-23	Q(20)	J
30	2748.806 85(32)	1282.33	0.458E-23	P(16)	G	60	2751.966 56(10)*	944.39	0.354E-22	P(47)	A

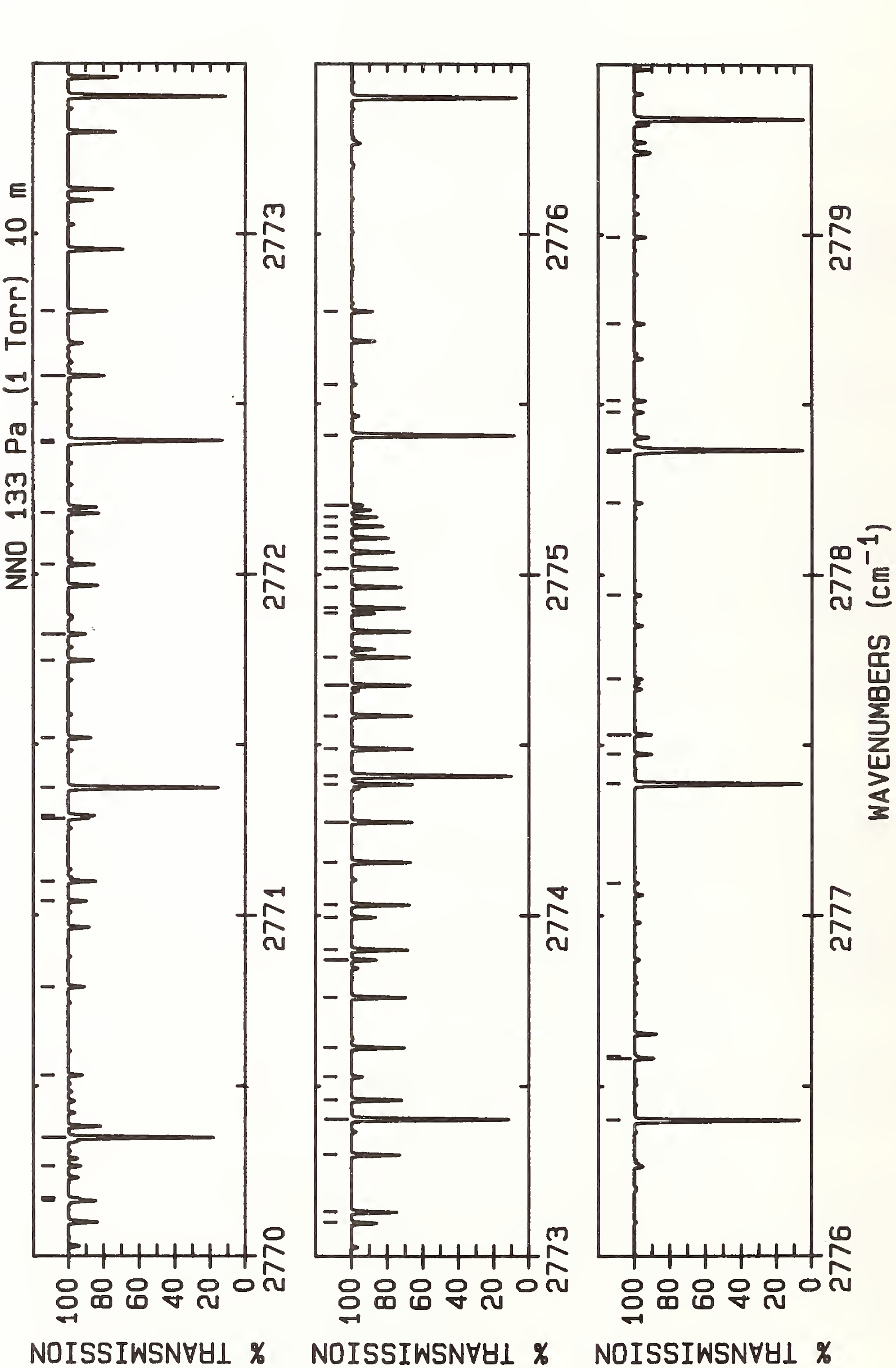

NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100 80 60 40 20 0
2752 2753 2754 2755
2755 2756 2757 2758
2758 2759 2760 2761
WAVENUMBERS (cm⁻¹)

LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2752.229 41(4)	1088.28	0.119E-22	P(34)	C
2	2752.251 48(3)	1116.65	0.860E-23	P(35)	B
3	2752.265 94(24)	1390.30	0.216E-23	Q(22)	I
4	2752.318 85(38)	1306.29	0.222E-23	Q(17)	J
5	2752.375 50(23)	1371.82	0.224E-23	Q(21)	I
6	2752.450 78(36)	1292.01	0.225E-23	Q(16)	J
7	2752.479 75(23)	1354.18	0.231E-23	Q(20)	I
8	2752.557 40(26)	1233.63	0.422E-23	P(12)	G
9	2752.658 83(4)	861.16	0.326E-22	P(25)	H
10	2752.682 45(27)	1354.16	0.237E-23	P(20)	F
11	2752.691 18(33)	1265.96	0.226E-23	Q(14)	J
12	2752.799 68(31)	1254.20	0.223E-23	Q(13)	J
13	2752.844 43(22)	1292.01	0.245E-23	Q(16)	I
14	2752.922 74(22)	1278.57	0.244E-23	Q(15)	I
15	2753.064 17(22)	1254.20	0.236E-23	Q(13)	I
16	2753.078 47(28)	1223.96	0.201E-23	Q(10)	J
17	2753.098 67(10)*	905.08	0.419E-22	P(46)	A
18	2753.127 36(23)	1243.28	0.229E-23	Q(12)	I
19	2753.185 58(23)	1233.20	0.220E-23	Q(11)	I
20	2753.279 65(4)	1059.75	0.132E-22	P(33)	C
21	2753.597 6	128.19	0.281E-23	R(17)	P
22	2753.618 87(26)	1337.38	0.241E-23	P(19)	E
23	2753.625 99(4)	840.21	0.345E-22	P(24)	H
24	2753.627 50(26)	1337.37	0.241E-23	P(19)	F
25	2754.224 46(9)*	866.60	0.494E-22	P(45)	A
26	2754.232 20(3)	1058.86	0.110E-22	P(33)	B
27	2754.314 9	143.27	0.276E-23	R(18)	P
28	2754.323 58(4)	1032.06	0.146E-22	P(32)	C
29	2754.587 54(4)	820.10	0.363E-22	P(23)	H
30	2755.025 8	159.19	0.268E-23	R(19)	P
31	2755.216 49(3)	1031.22	0.123E-22	P(32)	B
32	2755.320 6	170.01	0.223E-23	P(20)	R
33	2755.343 93(9)*	828.95	0.580E-22	P(44)	A
34	2755.361 18(3)	1005.20	0.161E-22	P(31)	C
35	2755.543 53(4)	800.83	0.380E-22	P(22)	H
36	2755.730 3	175.94	0.259E-23	R(20)	P
37	2756.192 98(23)	1198.37	0.317E-23	P(8)	G
38	2756.196 68(3)	1004.42	0.136E-22	P(31)	B
39	2756.392 46(3)	979.18	0.176E-22	P(30)	C
40	2756.457 07(9)*	792.14	0.678E-22	P(43)	A
41	2756.493 97(4)	782.39	0.395E-22	P(21)	H
42	2757.083 81(23)	1191.65	0.280E-23	P(7)	G
43	2757.170 9	138.44	0.233E-23	P(18)	R
44	2757.172 74(3)	978.45	0.151E-22	P(30)	B
45	2757.417 42(3)	954.01	0.192E-22	P(29)	C
46	2757.438 89(4)	764.79	0.409E-22	P(20)	H
47	2757.563 88(9)*	756.16	0.788E-22	P(42)	A
48	2757.805 2	231.22	0.225E-23	R(23)	P
49	2757.967 37(22)	1185.77	0.240E-23	P(6)	G
50	2758.086 8	123.87	0.236E-23	P(17)	R
51	2758.144 63(3)	953.32	0.166E-22	P(29)	B
52	2758.378 33(4)	748.03	0.420E-22	P(19)	H
53	2758.436 05(3)	929.66	0.208E-22	P(28)	C
54	2758.664 35(9)*	721.01	0.913E-22	P(41)	A
55	2759.112 31(3)	929.02	0.182E-22	P(28)	B
56	2759.312 31(4)	732.11	0.430E-22	P(18)	H
57	2759.448 34(3)	906.16	0.224E-22	P(27)	C
58	2759.758 49(9)*	686.70	0.105E-21	P(40)	A
59	2760.075 74(3)	905.56	0.198E-22	P(27)	B
60	2760.240 85(4)	717.02	0.436E-22	P(17)	H
61	2760.243 30(37)	1727.03	0.226E-23	Q(36)	G
62	2760.396 47(35)	1696.84	0.256E-23	Q(35)	G
63	2760.454 30(3)	883.50	0.239E-22	P(26)	C
64	2760.545 59(33)	1667.49	0.289E-23	Q(34)	G
65	2760.690 64(32)	1638.97	0.324E-23	Q(33)	G
66	2760.797 0	85.01	0.231E-23	P(14)	R
67	2760.831 60(30)	1611.29	0.361E-23	Q(32)	G
68	2760.846 30(9)*	653.23	0.121E-21	P(39)	A
69	2760.968 48(29)	1584.45	0.401E-23	Q(31)	G
70	2761.034 89(3)	882.94	0.213E-22	P(26)	B

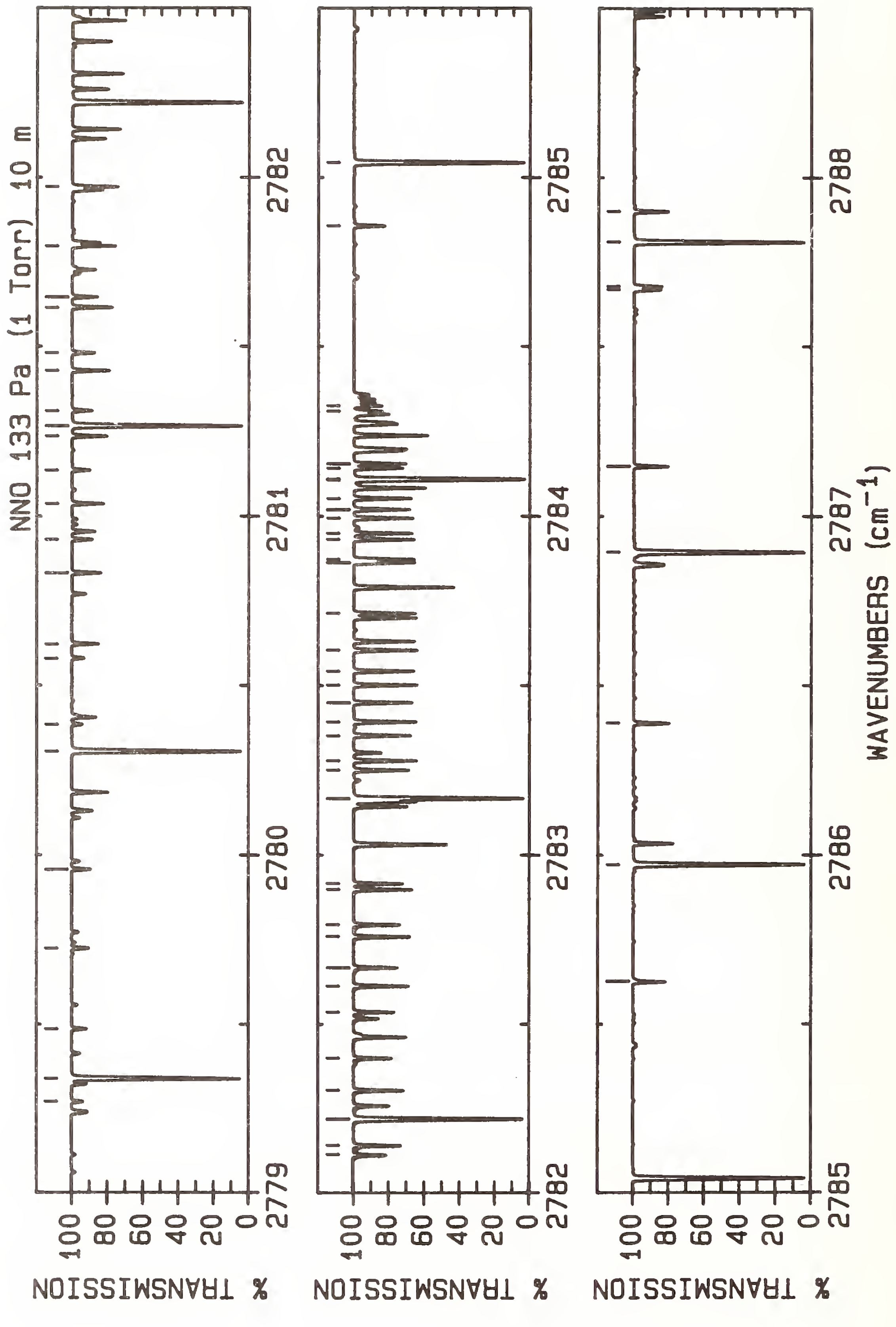


NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100
80
60
40
20
0
2761
2762
2763
2764
2765
2766
2767
2768
2769
2770
WAVENUMBERS (cm-1)

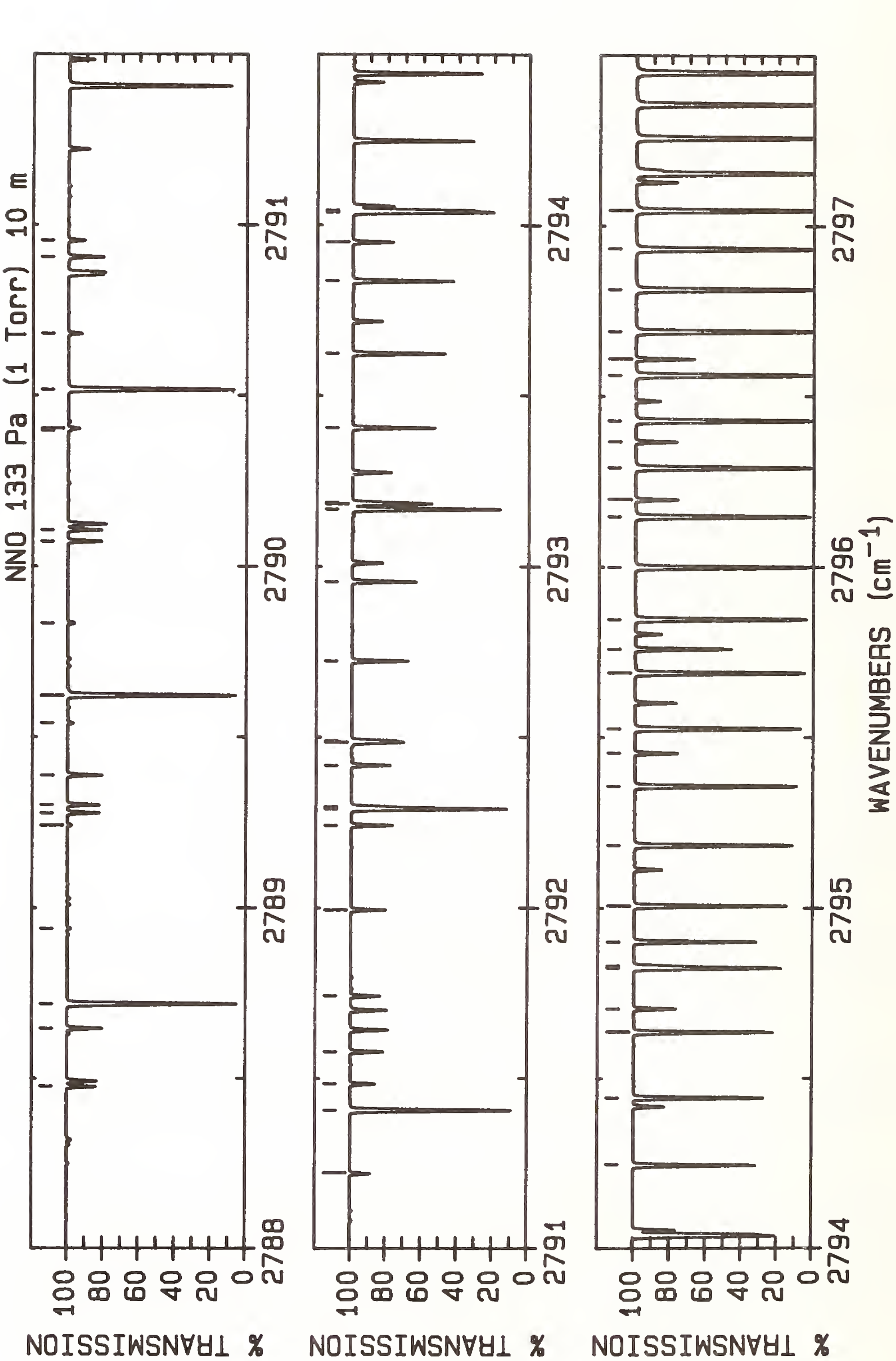
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2761.163 98(4)	702.77	0.439E-22	P(16)	H	36	2765.696 88(7)	1701.27	0.126E-23	Q(51)	H
2	2761.354 42(25)	1508.94	0.531E-23	Q(28)	G	37	2765.699 09(5)	644.10	0.405E-22	P(11)	H
3	2761.453 92(3)	861.67	0.255E-22	P(25)	C	38	2765.765 19(3)	782.39	0.285E-22	P(21)	B
4	2761.591 03(23)	1462.80	0.624E-23	Q(26)	G	39	2766.190 13(9)*	498.37	0.223E-21	P(34)	A
5	2761.703 08(22)	1440.98	0.670E-23	Q(25)	G	40	2766.356 82(3)	765.12	0.316E-22	P(20)	C
6	2761.810 96(21)	1420.00	0.716E-23	Q(24)	G	41	2766.590 13(5)	634.88	0.388E-22	P(10)	H
7	2761.914 63(20)	1399.85	0.760E-23	Q(23)	G	42	2766.697 93(3)	764.79	0.295E-22	P(20)	B
8	2761.927 76(9)*	620.59	0.138E-21	P(38)	A	43	2767.239 84(9)*	469.91	0.248E-21	P(33)	A
9	2761.989 72(3)	861.16	0.229E-22	P(25)	B	44	2767.318 33(3)	748.33	0.323E-22	P(19)	C
10	2762.014 10(20)	1380.55	0.802E-23	Q(22)	G	45	2767.475 87(5)	626.49	0.366E-22	P(9)	H
11	2762.081 71(4)	689.36	0.440E-22	P(15)	H	46	2767.626 15(3)	748.03	0.304E-22	P(19)	B
12	2762.109 35(19)	1362.08	0.842E-23	Q(21)	G	47	2768.181 34(5)	1419.61	0.484E-23	Q(44)	H
13	2762.200 37(18)	1344.45	0.877E-23	Q(20)	G	48	2768.273 48(3)	732.38	0.328E-22	P(18)	C
14	2762.287 13(18)	1327.67	0.909E-23	Q(19)	G	49	2768.283 19(9)*	442.28	0.275E-21	P(32)	A
15	2762.369 64(17)	1311.72	0.934E-23	Q(18)	G	50	2768.356 33(5)	618.95	0.341E-22	P(8)	H
16	2762.447 20(3)	840.68	0.270E-22	P(24)	C	51	2768.547 08(22)	1321.41	0.106E-23	R(18)	J
17	2762.447 88(17)	1296.61	0.954E-23	Q(17)	G	52	2768.549 84(3)	732.11	0.310E-22	P(18)	B
18	2762.521 84(17)	1282.33	0.967E-23	Q(16)	G	53	2768.817 36(5)	1346.65	0.680E-23	Q(42)	H
19	2762.591 51(17)	1268.90	0.972E-23	Q(15)	G	54	2768.986 45(35)	1409.62	0.577E-23	Q(23)	E
20	2762.656 88(17)	1256.31	0.969E-23	Q(14)	G	55	2769.004 08(35)	1409.60	0.576E-23	Q(23)	F
21	2762.717 93(18)	1244.55	0.957E-23	Q(13)	G	56	2769.116 82(33)	1390.30	0.605E-23	Q(22)	E
22	2762.827 07(18)	1223.56	0.907E-23	Q(11)	G	57	2769.222 26(3)	717.26	0.330E-22	P(17)	C
23	2762.875 13(19)	1214.32	0.868E-23	Q(10)	G	58	2769.231 51(5)	612.24	0.313E-22	P(7)	H
24	2762.918 85(20)	1205.92	0.819E-23	Q(9)	G	59	2769.241 37(31)	1371.82	0.631E-23	Q(21)	E
25	2762.940 20(3)	840.21	0.244E-22	P(24)	B	60	2769.253 79(31)	1371.80	0.630E-23	Q(21)	F
26	2763.002 87(9)*	588.78	0.157E-21	P(37)	A	61	2769.320 18(9)*	415.49	0.303E-21	P(31)	A
27	2763.023 87(21)	1185.77	0.620E-23	Q(6)	G	62	2769.360 14(29)	1354.18	0.653E-23	Q(20)	E
28	2763.434 13(3)	820.54	0.283E-22	P(23)	C	63	2769.370 43(29)	1354.16	0.653E-23	Q(20)	F
29	2763.901 08(5)	665.05	0.430E-22	P(13)	H	64	2769.421 15(5)	1277.04	0.937E-23	Q(40)	H
30	2764.071 65(9)*	557.81	0.177E-21	P(36)	A	65	2769.468 96(3)	717.02	0.314E-22	P(17)	B
31	2764.414 72(3)	801.23	0.296E-22	P(22)	C	66	2769.473 14(27)	1337.38	0.672E-23	Q(19)	E
32	2764.802 75(5)	654.15	0.419E-22	P(12)	H	67	2769.580 38(26)	1321.41	0.687E-23	Q(18)	E
33	2764.827 97(3)	800.83	0.273E-22	P(22)	B	68	2769.587 23(26)	1321.41	0.686E-23	Q(18)	F
34	2765.134 07(9)*	527.67	0.199E-21	P(35)	A	69	2769.711 06(5)	1243.48	0.109E-22	Q(39)	H
35	2765.388 94(3)	782.76	0.307E-22	P(21)	C	70	2769.993 04(5)	1210.77	0.126E-22	Q(38)	H


NNO 133 Pa (1 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2770 2771 2772 2773
2773 2774 2775 2776
2776 2777 2778 2779
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2770.164 67(4)	702.99	0.329E-22	P(16)	C
2	2770.171 13(20)	1233.20	0.631E-23	Q(11)	E
3	2770.172 15(20)	1233.20	0.631E-23	Q(11)	F
4	2770.267 13(5)	1178.89	0.146E-22	Q(37)	H
5	2770.350 81(9)*	389.53	0.333E-21	P(30)	A
6	2770.533 38(5)	1147.85	0.167E-22	Q(36)	H
7	2770.791 82(5)	1117.64	0.191E-22	Q(35)	H
8	2771.042 50(5)	1088.28	0.217E-22	Q(34)	H
9	2771.100 70(4)	689.55	0.325E-22	P(15)	C
10	2771.285 47(5)	1059.75	0.245E-22	Q(33)	H
11	2771.293 37(4)	689.36	0.312E-22	P(15)	B
12	2771.375 06(9)*	364.41	0.363E-21	P(29)	A
13	2771.520 76(5)	1032.06	0.275E-22	Q(32)	H
14	2771.748 42(5)	1005.20	0.307E-22	Q(31)	H
15	2771.825 45(6)	597.15	0.210E-22	P(4)	H
16	2772.030 36(4)	676.95	0.317E-22	P(14)	C
17	2772.181 00(4)	954.01	0.377E-22	Q(29)	H
18	2772.386 01(4)	929.66	0.414E-22	Q(28)	H
19	2772.392 94(9)*	340.12	0.394E-21	P(28)	A
20	2772.583 55(4)	906.16	0.452E-22	Q(27)	H
21	2772.773 66(4)	883.50	0.491E-22	Q(26)	H
22	2773.099 20(4)	665.05	0.297E-22	P(13)	B
23	2773.131 74(4)	840.68	0.569E-22	Q(24)	H
24	2773.299 79(4)	820.54	0.607E-22	Q(23)	H
25	2773.404 45(9)*	316.67	0.426E-21	P(27)	A
26	2773.460 55(4)	801.23	0.643E-22	Q(22)	H
27	2773.528 45(6)	591.28	0.129E-22	P(2)	H
28	2773.614 07(4)	782.76	0.678E-22	Q(21)	H
29	2773.760 37(4)	765.12	0.709E-22	Q(20)	H
30	2773.870 52(4)	654.28	0.291E-22	P(12)	C
31	2773.899 49(4)	748.33	0.737E-22	Q(19)	H
32	2773.995 09(4)	654.15	0.284E-22	P(12)	B
33	2774.031 45(4)	732.38	0.760E-22	Q(18)	H
34	2774.156 29(4)	717.26	0.779E-22	Q(17)	H
35	2774.274 04(4)	702.99	0.792E-22	Q(16)	H
36	2774.384 73(4)	689.55	0.798E-22	Q(15)	H
37	2774.409 58(9)*	294.06	0.457E-21	P(26)	A
38	2774.488 36(4)	676.95	0.798E-22	Q(14)	H
39	2774.584 98(5)	665.20	0.790E-22	Q(13)	H
40	2774.674 61(5)	654.28	0.775E-22	Q(12)	H
41	2774.757 26(5)	644.20	0.752E-22	Q(11)	H
42	2774.886 27(4)	644.10	0.268E-22	P(11)	B
43	2774.901 70(5)	626.56	0.681E-22	Q(9)	H
44	2774.963 54(5)	619.00	0.634E-22	Q(8)	H
45	2775.018 46(5)	612.29	0.580E-22	Q(7)	H
46	2775.066 49(5)	606.41	0.518E-22	Q(6)	H
47	2775.107 64(5)	601.37	0.450E-22	Q(5)	H
48	2775.141 91(6)	597.17	0.377E-22	Q(4)	H
49	2775.169 32(6)	593.81	0.298E-22	Q(3)	H
50	2775.203 57(6)	589.61	0.131E-22	Q(1)	H
51	2775.408 33(9)*	272.28	0.488E-21	P(25)	A
52	2775.557 20(34)	1268.90	0.555E-23	R(15)	G
53	2775.772 71(4)	634.88	0.247E-22	P(10)	B
54	2776.400 69(9)*	251.34	0.518E-21	P(24)	A
55	2776.582 83(4)	626.56	0.226E-22	P(9)	C
56	2776.589 2	1372.52	0.279E-23	Q(14)	D
57	2777.095 57(6)	1575.55	0.469E-23	Q(48)	C
58	2777.386 66(9)*	231.24	0.546E-21	P(23)	A
59	2777.474 13(4)	619.00	0.198E-22	P(8)	C
60	2777.531 33(4)	618.95	0.196E-22	P(8)	B
61	2777.693 88(6)	591.28	0.867E-23	R(2)	H
62	2777.940 73(5)	1457.34	0.761E-23	Q(45)	C
63	2778.211 82(5)	1419.61	0.887E-23	Q(44)	C
64	2778.359 03(4)	612.29	0.167E-22	P(7)	C
65	2778.366 24(9)*	211.97	0.573E-21	P(22)	A
66	2778.477 55(5)	1382.71	0.103E-22	Q(43)	C
67	2778.511 13(6)	593.80	0.129E-22	R(3)	H
68	2778.737 87(5)	1346.65	0.119E-22	Q(42)	C
69	2778.992 77(5)	1311.42	0.136E-22	Q(41)	C

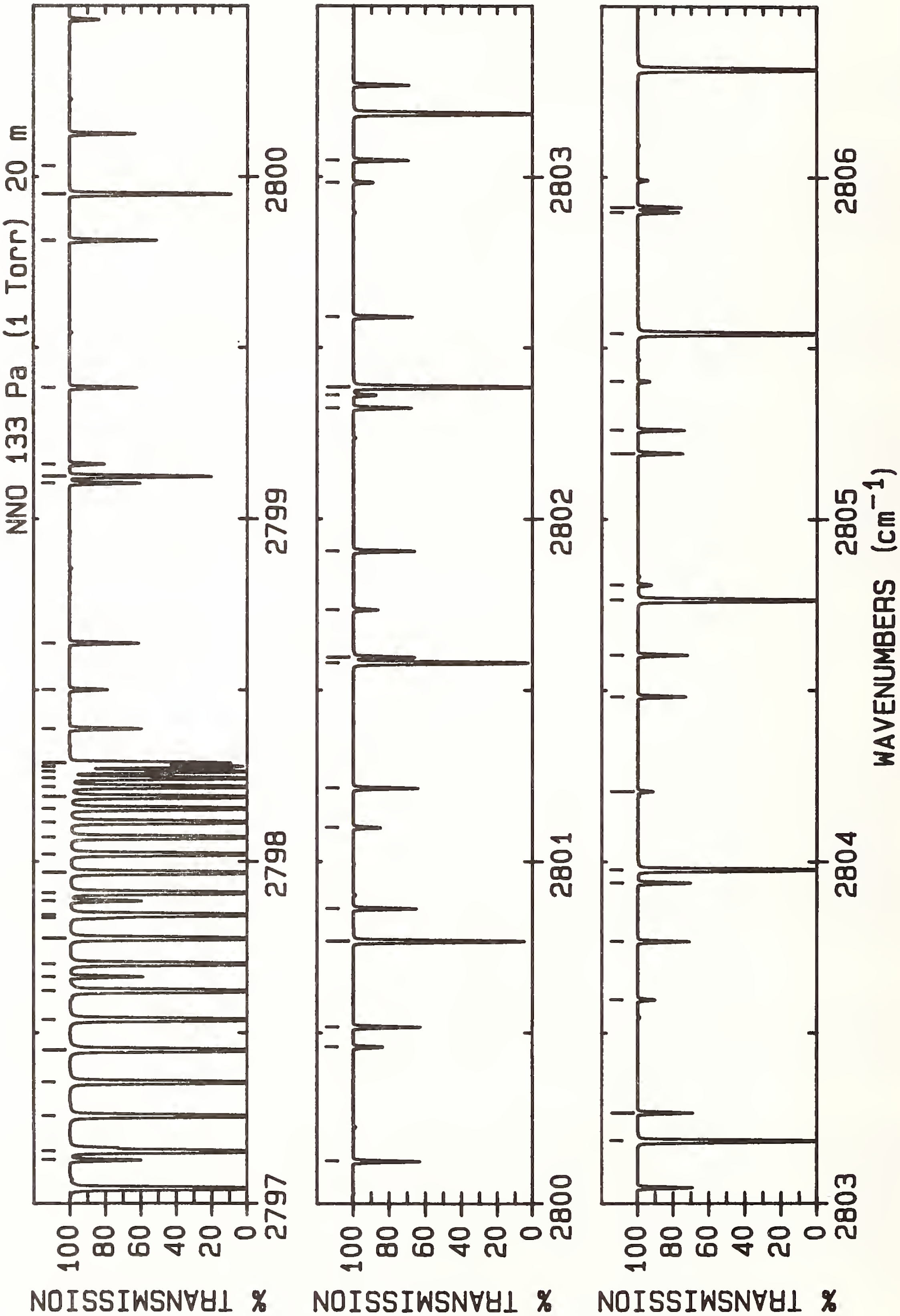

NNO 133 Pa (1 Torr) 10 m
% TRANSMISSION
100 80 60 40 20 0
2779
2780
2781
2782
% TRANSMISSION
100 80 60 40 20 0
2782
2783
2784
2785
% TRANSMISSION
100 80 60 40 20 0
2785
2786
2787
2788
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2779.270 83(5)	606.37	0.133E-22	P(6)	B
2	2779.339 43(9)*	193.54	0.597E-21	P(21)	A
3	2779.486 16(4)	1243.48	0.177E-22	Q(39)	C
4	2779.724 57(4)	1210.77	0.201E-22	Q(38)	C
5	2779.957 43(4)	1178.89	0.226E-22	Q(37)	C
6	2780.306 21(9)*	175.95	0.618E-21	P(20)	A
7	2780.385 40(4)	1275.74	0.126E-22	Q(40)	B
8	2780.580 25(4)	1242.25	0.144E-22	Q(39)	B
9	2780.622 28(3)	1088.28	0.315E-22	Q(34)	C
10	2780.832 54(3)	1059.75	0.349E-22	Q(33)	C
11	2780.931 06(5)	606.37	0.244E-22	R(6)	H
12	2781.037 06(3)	1032.06	0.384E-22	Q(32)	C
13	2781.135 42(4)	1146.80	0.212E-22	Q(36)	B
14	2781.235 82(3)	1005.20	0.420E-22	Q(31)	C
15	2781.266 60(9)*	159.20	0.635E-21	P(19)	A
16	2781.310 68(4)	1116.65	0.239E-22	Q(35)	B
17	2781.428 76(3)	979.18	0.458E-22	Q(30)	C
18	2781.481 05(4)	1087.34	0.268E-22	Q(34)	B
19	2781.615 87(3)	954.01	0.497E-22	Q(29)	C
20	2781.646 53(4)	1058.86	0.298E-22	Q(33)	B
21	2781.797 10(3)	929.66	0.536E-22	Q(28)	C
22	2781.972 43(3)	906.16	0.576E-22	Q(27)	C
23	2782.113 64(3)	978.45	0.401E-22	Q(30)	B
24	2782.141 81(3)	883.50	0.615E-22	Q(26)	C
25	2782.220 58(9)*	143.28	0.649E-21	P(18)	A
26	2782.305 22(3)	861.67	0.653E-22	Q(25)	C
27	2782.400 62(3)	929.02	0.477E-22	Q(28)	B
28	2782.536 80(3)	905.56	0.516E-22	Q(27)	B
29	2782.614 00(3)	820.54	0.724E-22	Q(23)	C
30	2782.668 09(3)	882.94	0.554E-22	Q(26)	B
31	2782.759 30(3)	801.23	0.756E-22	Q(22)	C
32	2782.794 51(3)	861.16	0.593E-22	Q(25)	B
33	2782.898 51(3)	782.76	0.785E-22	Q(21)	C
34	2782.916 05(3)	840.21	0.631E-22	Q(24)	B
35	2783.168 14(9)*	128.20	0.657E-21	P(17)	A
36	2783.251 45(3)	782.39	0.732E-22	Q(21)	B
37	2783.279 27(3)	732.38	0.847E-22	Q(18)	C
38	2783.353 50(3)	764.79	0.760E-22	Q(20)	B
39	2783.393 83(3)	717.26	0.857E-22	Q(17)	C
40	2783.450 69(3)	748.03	0.784E-22	Q(19)	B
41	2783.502 15(3)	702.99	0.861E-22	Q(16)	C
42	2783.543 01(3)	732.11	0.804E-22	Q(18)	B
43	2783.604 22(4)	689.55	0.858E-22	Q(15)	C
44	2783.713 06(3)	702.77	0.825E-22	Q(16)	B
45	2783.863 66(4)	676.79	0.821E-22	Q(14)	B
46	2783.872 73(4)	654.28	0.807E-22	Q(12)	C
47	2783.931 66(4)	665.05	0.808E-22	Q(13)	B
48	2783.949 60(4)	644.20	0.775E-22	Q(11)	C
49	2783.994 80(4)	654.15	0.788E-22	Q(12)	B
50	2784.020 12(4)	634.96	0.735E-22	Q(10)	C
51	2784.053 09(4)	644.10	0.759E-22	Q(11)	B
52	2784.106 51(4)	634.88	0.723E-22	Q(10)	B
53	2784.109 30(9)*	113.96	0.660E-21	P(16)	A
54	2784.142 07(4)	619.00	0.633E-22	Q(8)	C
55	2784.155 07(4)	626.49	0.678E-22	Q(9)	B
56	2784.309 22(5)	597.17	0.342E-22	Q(4)	C
57	2784.325 03(5)	597.15	0.341E-22	Q(4)	B
58	2784.857 17(5)	644.10	0.380E-22	R(11)	H
59	2785.044 04(9)*	100.55	0.658E-21	P(15)	A
60	2785.626 15(5)	654.15	0.396E-22	R(12)	H
61	2785.972 36(9)*	87.98	0.650E-21	P(14)	A
62	2786.389 67(4)	665.05	0.409E-22	R(13)	H
63	2786.390 0	107.58	0.284E-23	Q(16)	T
64	2786.894 25(9)*	76.25	0.635E-21	P(13)	A
65	2787.147 68(4)	676.79	0.418E-22	R(14)	H
66	2787.668 91(5)	593.81	0.321E-22	R(3)	C
67	2787.678 43(5)	593.80	0.321E-22	R(3)	B
68	2787.809 71(9)*	65.36	0.614E-21	P(12)	A
69	2787.900 17(4)	689.36	0.424E-22	R(15)	H



NNO 133 Pa (1 Torr) 10 m
% TRANSMISSION
100
80
60
40
20
0
2788
2789
2790
2791
% TRANSMISSION
100
80
60
40
20
0
2791
2792
2793
2794
% TRANSMISSION
100
80
60
40
20
0
2794
2795
2796
2797
WAVENUMBERS (cm^{-1})

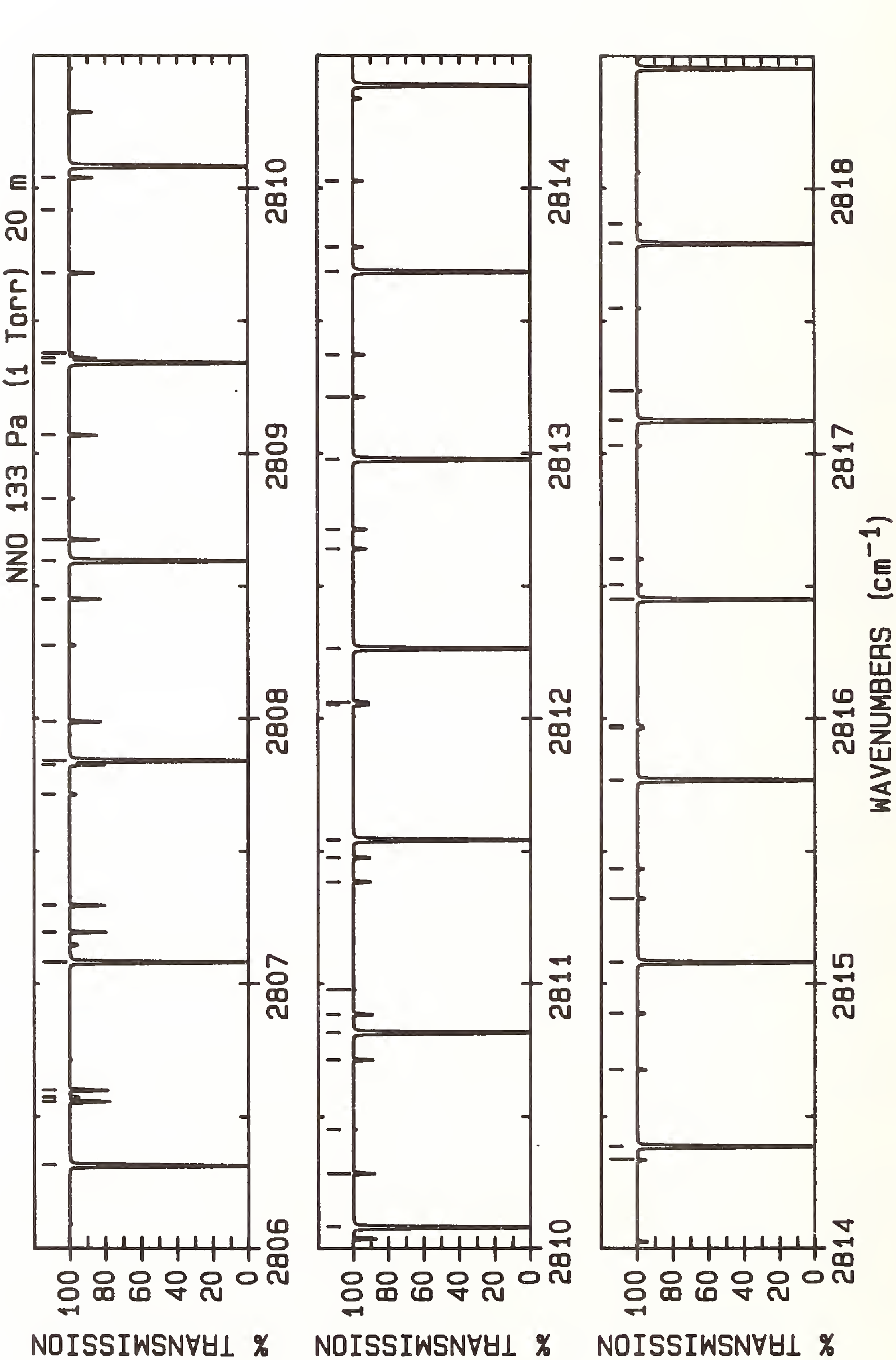
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2788.476 61(5)	597.17	0.354E-22	R(4)	C	36	2793.186 94(4)	634.96	0.498E-22	R(10)	C
2	2788.647 10(4)	702.77	0.426E-22	R(16)	H	37	2793.405 32(9)*	828.95	0.122E-21	Q(44)	A
3	2788.718 75(9)*	55.31	0.587E-21	P(11)	A	38	2793.622 97(9)*	792.14	0.142E-21	Q(43)	A
4	2788.939 53(13)*	1582.18	0.432E-23	Q(61)	A	39	2793.835 63(9)*	756.16	0.166E-21	Q(42)	A
5	2789.242 41(13)*	1531.22	0.544E-23	Q(60)	A	40	2793.949 31(4)	644.20	0.510E-22	R(11)	C
6	2789.277 84(4)	601.37	0.386E-22	R(5)	C	41	2794.037 66(9)*	12.57	0.289E-21	P(5)	A
7	2789.301 70(4)	601.34	0.384E-22	R(5)	B	42	2794.043 31(9)*	721.01	0.192E-21	Q(41)	A
8	2789.388 44(4)	717.02	0.425E-22	R(17)	H	43	2794.246 01(9)*	686.70	0.221E-21	Q(40)	A
9	2789.540 25(13)*	1481.09	0.683E-23	Q(59)	A	44	2794.443 73(9)*	653.23	0.254E-21	Q(39)	A
10	2789.621 34(9)*	46.09	0.552E-21	P(10)	A	45	2794.636 48(9)*	620.59	0.290E-21	Q(38)	A
11	2789.833 05(12)*	1431.79	0.853E-23	Q(58)	A	46	2794.705 19(4)	654.28	0.517E-22	R(12)	C
12	2790.072 61(4)	606.41	0.415E-22	R(6)	C	47	2794.824 25(9)*	588.78	0.330E-21	Q(37)	A
13	2790.106 06(4)	606.37	0.412E-22	R(6)	B	48	2794.830 71(4)	654.15	0.504E-22	R(12)	B
14	2790.397 55(40)	1450.78	0.305E-23	R(25)	E	49	2794.901 56(9)*	8.38	0.222E-21	P(4)	A
15	2790.403 56(12)*	1335.69	0.132E-22	Q(56)	A	50	2795.007 05(9)*	557.81	0.373E-21	Q(36)	A
16	2790.517 50(9)*	37.71	0.512E-21	P(9)	A	51	2795.184 89(9)*	527.67	0.420E-21	Q(35)	A
17	2790.681 27(11)*	1288.88	0.162E-22	Q(55)	A	52	2795.357 75(9)*	498.37	0.471E-21	Q(34)	A
18	2790.905 57(4)	612.24	0.437E-22	R(7)	B	53	2795.454 57(4)	665.20	0.521E-22	R(13)	C
19	2790.953 96(11)*	1242.91	0.199E-22	Q(54)	A	54	2795.525 66(9)*	469.91	0.525E-21	Q(33)	A
20	2791.221 63(11)*	1197.77	0.243E-22	Q(53)	A	55	2795.688 60(9)*	442.28	0.583E-21	Q(32)	A
21	2791.407 22(9)*	30.17	0.464E-21	P(8)	A	56	2795.759 00(9)*	5.03	0.150E-21	P(3)	A
22	2791.484 28(11)*	1153.46	0.296E-22	Q(52)	A	57	2795.846 58(9)*	415.49	0.643E-21	Q(31)	A
23	2791.578 62(4)	764.79	0.404E-22	R(20)	H	58	2795.999 60(9)*	389.53	0.707E-21	Q(30)	A
24	2791.741 92(10)*	1109.98	0.359E-22	Q(51)	A	59	2796.147 67(9)*	364.41	0.772E-21	Q(29)	A
25	2791.994 56(10)*	1067.33	0.433E-22	Q(50)	A	60	2796.197 44(4)	676.95	0.520E-22	R(14)	C
26	2792.242 18(10)*	1025.52	0.521E-22	Q(49)	A	61	2796.290 78(9)*	340.12	0.840E-21	Q(28)	A
27	2792.290 48(9)*	23.46	0.411E-21	P(7)	A	62	2796.367 18(4)	676.79	0.503E-22	R(14)	B
28	2792.297 28(4)	782.39	0.392E-22	R(21)	H	63	2796.428 95(9)*	316.67	0.908E-21	Q(27)	A
29	2792.418 08(4)	626.56	0.483E-22	R(9)	C	64	2796.562 16(9)*	294.06	0.977E-21	Q(26)	A
30	2792.484 80(10)*	984.54	0.622E-22	Q(48)	A	65	2796.609 96(9)*	2.51	0.760E-22	P(2)	A
31	2792.490 08(4)	626.49	0.476E-22	R(9)	B	66	2796.690 42(9)*	272.28	0.104E-20	Q(25)	A
32	2792.722 43(10)*	944.39	0.741E-22	Q(47)	A	67	2796.813 74(9)*	251.34	0.111E-20	Q(24)	A
33	2792.955 05(10)*	905.08	0.878E-22	Q(46)	A	68	2796.932 11(9)*	231.24	0.118E-20	Q(23)	A
34	2793.167 30(9)*	17.60	0.353E-21	P(6)	A	69	2796.933 81(3)	689.55	0.516E-22	R(15)	C
35	2793.182 68(10)*	866.60	0.104E-21	Q(45)	A	70	2797.045 53(9)*	211.97	0.124E-20	Q(22)	A



NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100
80
60
40
20
0
2797
2798
2799
2800
2801
2802
2803
2804
2805
2806
WAVENUMBERS (cm^{-1})

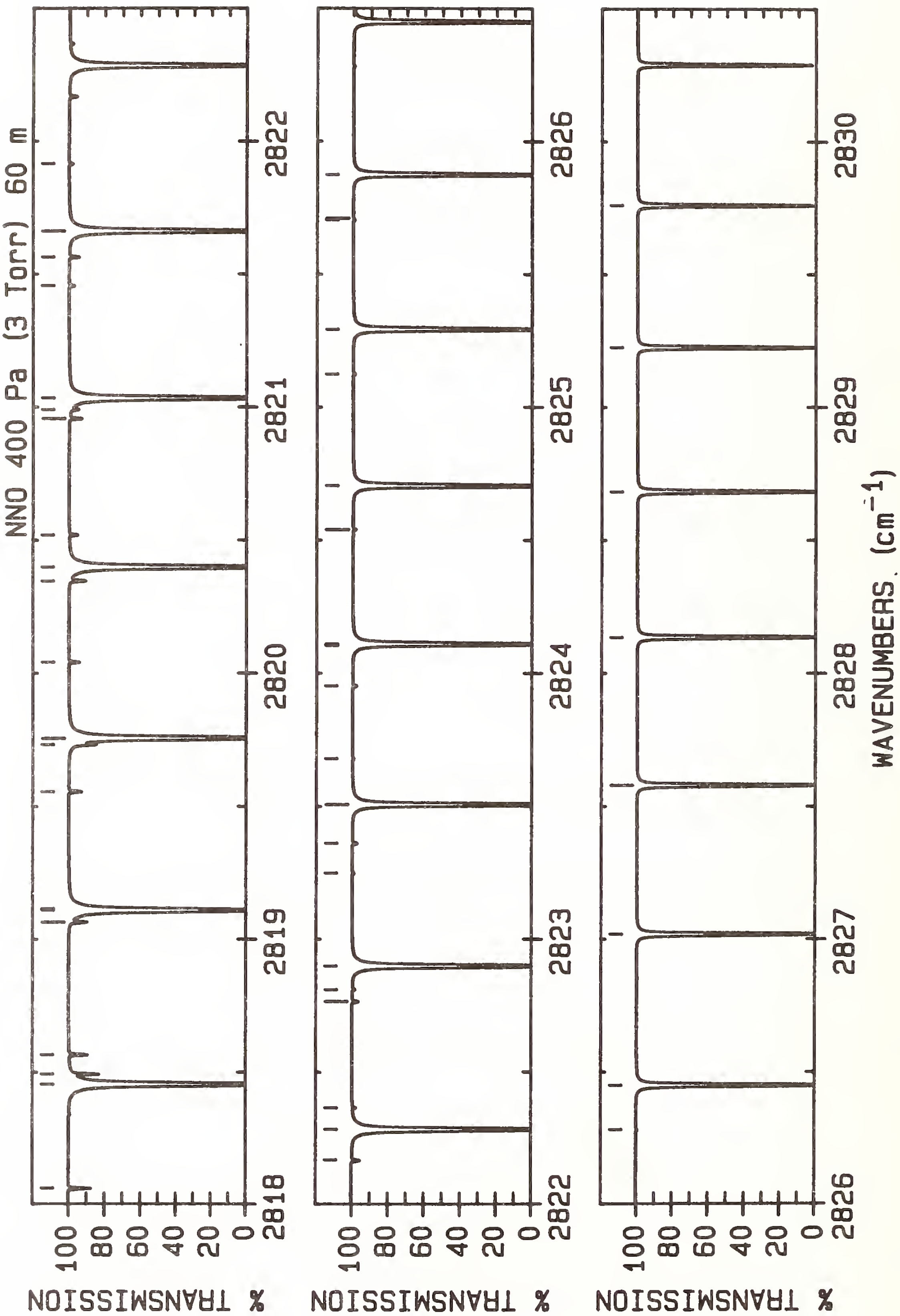
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2797.128 27(3)	689.36	0.497E-22	R(15)	B
2	2797.154 02(9)*	193.54	0.129E-20	Q(21)	A
3	2797.257 56(9)*	175.95	0.134E-20	Q(20)	A
4	2797.356 17(9)*	159.20	0.139E-20	Q(19)	A
5	2797.449 83(9)*	143.28	0.142E-20	Q(18)	A
6	2797.538 56(9)*	128.20	0.145E-20	Q(17)	A
7	2797.622 36(9)*	113.96	0.146E-20	Q(16)	A
8	2797.663 66(3)	702.99	0.509E-22	R(16)	C
9	2797.701 22(9)*	100.55	0.146E-20	Q(15)	A
10	2797.775 14(9)*	87.98	0.146E-20	Q(14)	A
11	2797.835 59(5)	953.32	0.251E-22	R(29)	H
12	2797.844 13(9)*	76.25	0.143E-20	Q(13)	A
13	2797.884 63(3)	702.77	0.487E-22	R(16)	B
14	2797.908 20(9)*	65.36	0.140E-20	Q(12)	A
15	2797.967 33(9)*	55.31	0.135E-20	Q(11)	A
16	2798.021 52(9)*	46.09	0.129E-20	Q(10)	A
17	2798.070 80(9)*	37.71	0.122E-20	Q(9)	A
18	2798.115 14(9)*	30.17	0.113E-20	Q(8)	A
19	2798.154 55(9)*	23.46	0.103E-20	Q(7)	A
20	2798.189 03(9)*	17.60	0.919E-21	Q(6)	A
21	2798.218 59(9)*	12.57	0.797E-21	Q(5)	A
22	2798.243 22(9)*	8.38	0.665E-21	Q(4)	A
23	2798.262 93(9)*	5.03	0.526E-21	Q(3)	A
24	2798.277 71(9)*	2.51	0.380E-21	Q(2)	A
25	2798.287 56(9)*	0.84	0.230E-21	Q(1)	A
26	2798.387 00(3)	717.26	0.498E-22	R(17)	C
27	2798.500 88(5)	978.45	0.232E-22	R(30)	H
28	2798.636 27(3)	717.02	0.474E-22	R(17)	B
29	2799.103 81(3)	732.38	0.485E-22	R(18)	C
30	2799.124 02(9)*	0.00	0.154E-21	R(0)	A
31	2799.160 01(5)	1004.42	0.213E-22	R(31)	H
32	2799.383 21(3)	732.11	0.459E-22	R(18)	B
33	2799.812 94(5)	1031.22	0.195E-22	R(32)	H
34	2799.814 10(3)	748.33	0.469E-22	R(19)	C
35	2799.949 08(9)*	0.84	0.230E-21	R(1)	A

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
36	2800.032 08(89)	1866.41	0.577E-24	R(40)	E
37	2800.125 46(3)	748.03	0.441E-22	R(19)	B
38	2800.459 62(5)	1058.86	0.177E-22	R(33)	H
39	2800.517 85(3)	765.12	0.451E-22	R(20)	C
40	2800.767 65(9)*	2.51	0.305E-21	R(2)	A
41	2800.863 06(3)	764.79	0.421E-22	R(20)	B
42	2801.100 02(5)	1087.34	0.160E-22	R(34)	H
43	2801.215 06(3)	782.76	0.431E-22	R(21)	C
44	2801.579 72(9)*	5.03	0.376E-21	R(3)	A
45	2801.596 03(3)	782.39	0.400E-22	R(21)	B
46	2801.734 07(5)	1116.65	0.145E-22	R(35)	H
47	2801.905 73(3)	801.23	0.410E-22	R(22)	C
48	2802.324 38(3)	800.83	0.377E-22	R(22)	B
49	2802.361 73(5)	1146.80	0.130E-22	R(36)	H
50	2802.385 30(9)*	8.38	0.444E-21	R(4)	A
51	2802.589 85(3)	820.54	0.388E-22	R(23)	C
52	2802.982 95(5)	1177.78	0.116E-22	R(37)	H
53	2803.048 15(3)	820.10	0.354E-22	R(23)	B
54	2803.184 38(9)*	12.57	0.508E-21	R(5)	A
55	2803.267 42(3)	840.68	0.364E-22	R(24)	C
56	2803.597 69(5)	1209.60	0.103E-22	R(38)	H
57	2803.767 35(3)	840.21	0.330E-22	R(24)	B
58	2803.938 42(3)	861.67	0.341E-22	R(25)	C
59	2803.976 94(9)*	17.60	0.567E-21	R(6)	A
60	2804.205 90(5)	1242.25	0.907E-23	R(39)	H
61	2804.482 02(3)	861.16	0.306E-22	R(25)	B
62	2804.602 87(3)	883.50	0.317E-22	R(26)	C
63	2804.763 00(9)*	23.46	0.620E-21	R(7)	A
64	2804.807 53(5)	1275.74	0.798E-23	R(40)	H
65	2805.192 17(3)	882.94	0.283E-22	R(26)	B
66	2805.260 74(3)	906.16	0.294E-22	R(27)	C
67	2805.402 53(5)	1310.06	0.699E-23	R(41)	H
68	2805.542 54(9)*	30.17	0.667E-21	R(8)	A
69	2805.897 85(3)	905.56	0.259E-22	R(27)	B
70	2805.912 05(3)	929.66	0.270E-22	R(28)	C

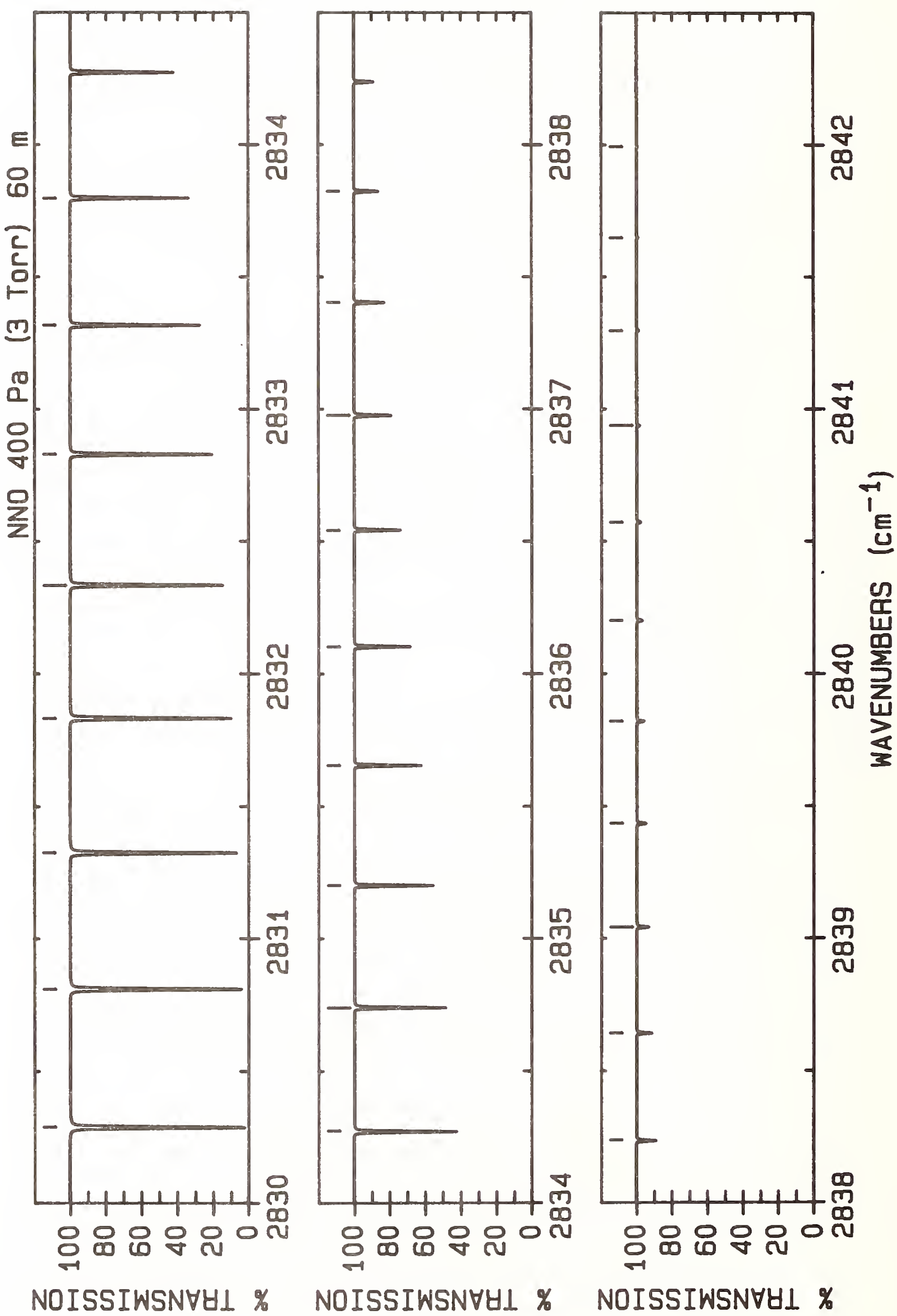


NNO 133 Pa (1 Torr) 20 m
% TRANSMISSION
100
80
60
40
20
0
2806
2807
2808
2809
2810
2811
2812
2813
2814
2815
2816
2817
2818
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2806.315 57(9)*	37.71	0.707E-21	R(9)	A
2	2806.556 77(3)	954.01	0.248E-22	R(29)	C
3	2806.572 45(5)	1381.21	0.528E-23	R(43)	H
4	2806.599 07(3)	929.02	0.236E-22	R(28)	B
5	2807.082 07(9)*	46.09	0.741E-21	R(10)	A
6	2807.194 90(4)	979.18	0.226E-22	R(30)	C
7	2807.295 87(3)	953.32	0.214E-22	R(29)	B
8	2807.715 31(5)	1455.70	0.392E-23	R(45)	H
9	2807.826 45(4)	1005.20	0.205E-22	R(31)	C
10	2807.842 03(9)*	55.31	0.768E-21	R(11)	A
11	2807.988 27(3)	978.45	0.193E-22	R(30)	B
12	2808.276 47(6)	1494.20	0.335E-23	R(46)	H
13	2808.451 40(4)	1032.06	0.185E-22	R(32)	C
14	2808.595 47(9)*	65.36	0.788E-21	R(12)	A
15	2808.676 31(3)	1004.42	0.174E-22	R(31)	B
16	2808.830 73(6)	1533.53	0.286E-23	R(47)	H
17	2809.069 74(4)	1059.75	0.166E-22	R(33)	C
18	2809.342 37(9)*	76.25	0.801E-21	R(13)	A
19	2809.360 01(3)	1031.22	0.155E-22	R(32)	B
20	2809.378 06(6)	1573.69	0.242E-23	R(48)	H
21	2809.681 48(4)	1088.28	0.149E-22	R(34)	C
22	2809.918 39(7)	1614.68	0.204E-23	R(49)	H
23	2810.039 40(3)	1058.86	0.138E-22	R(33)	B
24	2810.082 72(9)*	87.98	0.807E-21	R(14)	A
25	2810.286 61(4)	1117.64	0.132E-22	R(35)	C
26	2810.451 70(7)	1656.51	0.172E-23	R(50)	H
27	2810.714 51(4)	1087.34	0.122E-22	R(34)	B
28	2810.816 53(9)*	100.55	0.807E-21	R(15)	A
29	2810.885 12(4)	1147.85	0.117E-22	R(36)	C
30	2810.977 95(8)	1699.17	0.143E-23	R(51)	H
31	2811.385 38(4)	1116.65	0.107E-22	R(35)	B
32	2811.477 01(4)	1178.89	0.103E-22	R(37)	C
33	2811.543 78(9)*	113.96	0.800E-21	R(16)	A
34	2812.052 03(4)	1146.80	0.936E-23	R(36)	B
35	2812.062 26(4)	1210.77	0.906E-23	R(38)	C
36	2812.264 47(9)*	128.20	0.789E-21	R(17)	A
37	2812.640 88(4)	1243.48	0.791E-23	R(39)	C
38	2812.714 49(4)	1177.78	0.814E-23	R(37)	B
39	2812.978 61(9)*	143.28	0.772E-21	R(18)	A
40	2813.212 86(4)	1277.04	0.688E-23	R(40)	C
41	2813.372 79(4)	1209.60	0.705E-23	R(38)	B
42	2813.686 17(9)*	159.20	0.750E-21	R(19)	A
43	2813.778 20(5)	1311.42	0.595E-23	R(41)	C
44	2814.026 97(5)	1242.25	0.608E-23	R(39)	B
45	2814.336 88(5)	1346.65	0.513E-23	R(42)	C
46	2814.387 16(9)*	175.95	0.724E-21	R(20)	A
47	2814.677 04(5)	1275.74	0.521E-23	R(40)	B
48	2814.888 90(5)	1382.71	0.440E-23	R(43)	C
49	2815.081 58(9)*	193.54	0.696E-21	R(21)	A
50	2815.323 04(5)	1310.06	0.444E-23	R(41)	B
51	2815.434 26(5)	1419.61	0.376E-23	R(44)	C
52	2815.769 41(9)*	211.97	0.664E-21	R(22)	A
53	2815.964 99(5)	1345.22	0.377E-23	R(42)	B
54	2815.972 95(5)	1457.34	0.319E-23	R(45)	C
55	2816.450 66(9)*	231.24	0.630E-21	R(23)	A
56	2816.504 97(5)	1495.90	0.270E-23	R(46)	C
57	2816.602 93(5)	1381.21	0.319E-23	R(43)	B
58	2817.030 30(5)	1535.31	0.227E-23	R(47)	C
59	2817.125 31(9)*	251.34	0.594E-21	R(24)	A
60	2817.236 87(5)	1418.04	0.268E-23	R(44)	B
61	2817.548 95(5)	1575.55	0.191E-23	R(48)	C
62	2817.793 37(9)*	272.28	0.557E-21	R(25)	A
63	2817.866 84(6)	1455.70	0.224E-23	R(45)	B


NNO 400 Pa (3 Torr) 60 m
% TRANSMISSION
100 80 60 40 20 0
2818 2819 2820 2821 2822
2822 2823 2824 2825 2826
2826 2827 2828 2829 2830
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2818.060 90(5)	1616.62	0.159E-23	R(49)	C
2	2818.454 82(9)*	294.06	0.520E-21	R(26)	A
3	2818.492 87(6)	1494.20	0.187E-23	R(46)	B
4	2818.566 16(6)	1658.53	0.132E-23	R(50)	C
5	2819.064 70(6)	1701.27	0.110E-23	R(51)	C
6	2819.109 67(9)*	316.67	0.483E-21	R(27)	A
7	2819.114 97(6)	1533.53	0.155E-23	R(47)	B
8	2819.556 54(7)	1744.84	0.903E-24	R(52)	C
9	2819.733 18(6)	1573.69	0.128E-23	R(48)	B
10	2819.757 90(9)*	340.12	0.446E-21	R(28)	A
11	2820.041 66(7)	1789.25	0.741E-24	R(53)	C
12	2820.347 50(6)	1614.68	0.105E-23	R(49)	B
13	2820.399 52(9)*	364.41	0.409E-21	R(29)	A
14	2820.520 06(8)	1834.50	0.605E-24	R(54)	C
15	2820.957 96(7)	1656.51	0.855E-24	R(50)	B
16	2820.991 72(9)	1880.57	0.492E-24	R(55)	C
17	2821.034 51(9)*	389.53	0.374E-21	R(30)	A
18	2821.456 65(9)	1927.48	0.398E-24	R(56)	C
19	2821.564 57(7)	1699.17	0.695E-24	R(51)	B
20	2821.662 87(9)*	415.49	0.340E-21	R(31)	A
21	2821.914 84(10)	1975.23	0.321E-24	R(57)	C
22	2822.167 35(7)	1742.67	0.562E-24	R(52)	B
23	2822.284 60(9)*	442.28	0.308E-21	R(32)	A
24	2822.366 28(12)	2023.80	0.258E-24	R(58)	C
25	2822.766 32(8)	1786.99	0.453E-24	R(53)	B
26	2822.810 97(13)	2073.21	0.206E-24	R(59)	C
27	2822.899 69(9)*	469.91	0.277E-21	R(33)	A
28	2823.248 89(14)	2123.45	0.164E-24	R(60)	C
29	2823.361 48(8)	1832.15	0.363E-24	R(54)	B
30	2823.508 13(9)*	498.37	0.248E-21	R(34)	A
31	2823.680 05(16)	2174.53	0.130E-24	R(61)	C
32	2823.952 86(9)	1878.14	0.290E-24	R(55)	B
33	2824.104 44(17)	2226.43	0.102E-24	R(62)	C
34	2824.109 93(9)*	527.67	0.221E-21	R(35)	A
35	2824.540 45(10)	1924.97	0.230E-24	R(56)	B
36	2824.705 06(9)*	557.81	0.196E-21	R(36)	A
37	2825.124 27(11)	1972.62	0.182E-24	R(57)	B
38	2825.293 54(9)*	588.78	0.173E-21	R(37)	A
39	2825.704 33(12)	2021.11	0.143E-24	R(58)	B
40	2825.711 2	4009.87	0.421E-28	R(90)	H
41	2825.875 35(9)*	620.59	0.152E-21	R(38)	A
42	2826.280 62(13)	2070.42	0.112E-24	R(59)	B
43	2826.450 49(9)*	653.23	0.133E-21	R(39)	A
44	2827.018 94(9)*	686.70	0.116E-21	R(40)	A
45	2827.580 72(9)*	721.01	0.101E-21	R(41)	A
46	2828.135 81(9)*	756.16	0.868E-22	R(42)	A
47	2828.684 20(9)*	792.14	0.745E-22	R(43)	A
48	2829.225 89(10)*	828.95	0.637E-22	R(44)	A
49	2829.760 87(10)*	866.60	0.542E-22	R(45)	A



NNO 400 Pa (3 Torr) 60 m
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100
80
60
40
20
0
2830
2831
2832
2833
2834
2835
2836
2837
2838
2839
2840
2841
2842
WAVENUMBERS (cm^{-1})

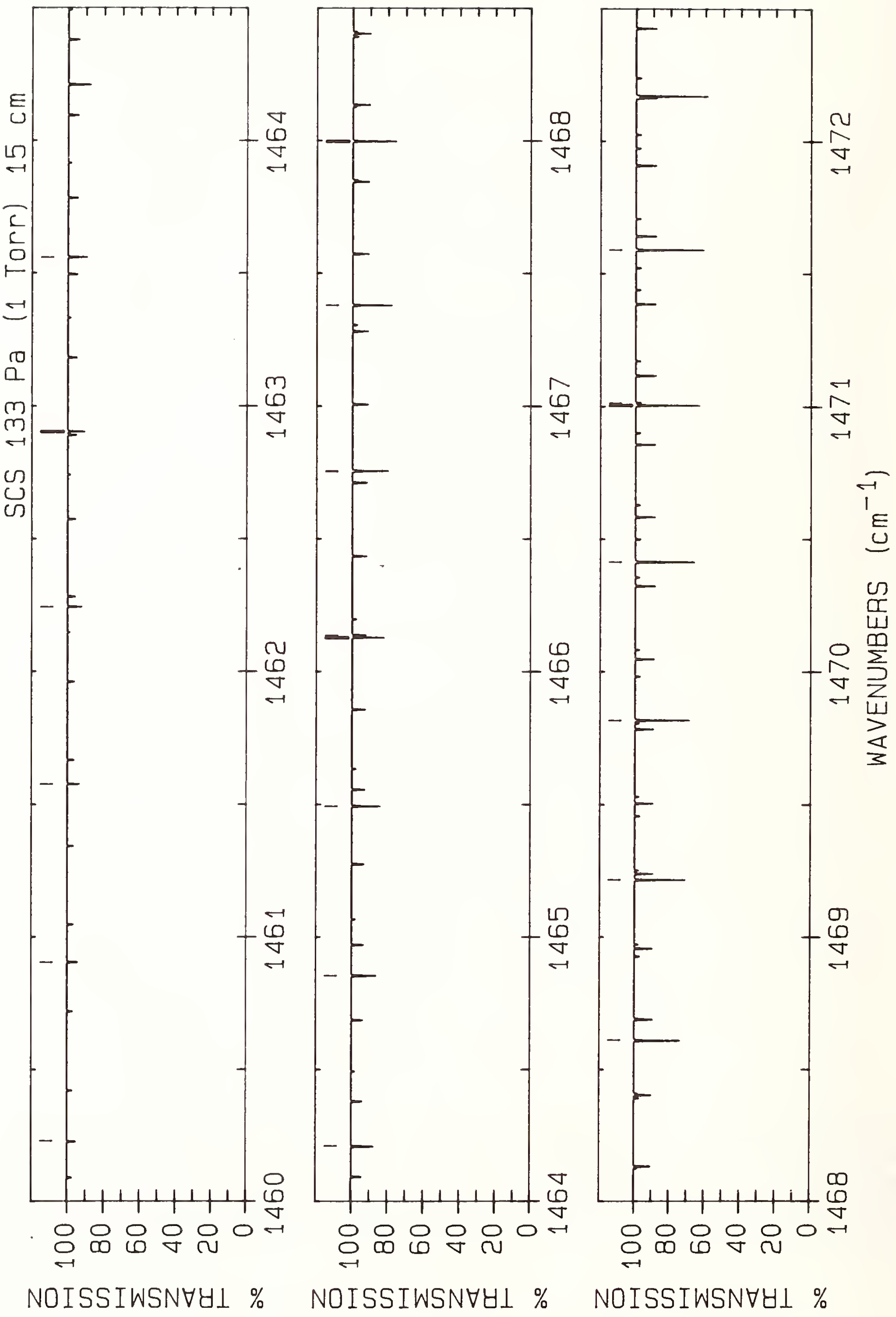
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	2830.289 14(10)*	905.08	0.459E-22	R(46)	A
2	2830.810 70(10)*	944.39	0.387E-22	R(47)	A
3	2831.325 53(10)*	984.54	0.325E-22	R(48)	A
4	2831.833 63(10)*	1025.52	0.272E-22	R(49)	A
5	2832.334 99(10)*	1067.33	0.226E-22	R(50)	A
6	2832.829 61(11)*	1109.98	0.187E-22	R(51)	A
7	2833.317 49(11)*	1153.46	0.155E-22	R(52)	A
8	2833.798 61(11)*	1197.77	0.127E-22	R(53)	A
9	2834.272 97(11)*	1242.91	0.104E-22	R(54)	A
10	2834.740 57(12)*	1288.88	0.846E-23	R(55)	A
11	2835.201 40(12)*	1335.69	0.686E-23	R(56)	A
12	2835.655 45(12)*	1383.33	0.553E-23	R(57)	A
13	2836.102 71(13)*	1431.79	0.445E-23	R(58)	A
14	2836.543 19(13)*	1481.09	0.356E-23	R(59)	A
15	2836.976 87(14)*	1531.22	0.283E-23	R(60)	A
16	2837.403 75(14)*	1582.18	0.225E-23	R(61)	A
17	2837.823 82(15)*	1633.97	0.178E-23	R(62)	A
18	2838.237 07(15)*	1686.59	0.140E-23	R(63)	A
19	2838.643 51(16)*	1740.04	0.109E-23	R(64)	A
20	2839.043 12(16)*	1794.32	0.853E-24	R(65)	A
21	2839.435 89(17)*	1849.42	0.663E-24	R(66)	A
22	2839.821 83(17)*	1905.36	0.512E-24	R(67)	A
23	2840.200 92(18)*	1962.12	0.395E-24	R(68)	A
24	2840.573 16(19)*	2019.71	0.303E-24	R(69)	A
25	2840.938 54(20)*	2078.13	0.231E-24	R(70)	A
26	2841.297 06(20)*	2137.38	0.176E-24	R(71)	A
27	2841.648 70(21)*	2197.45	0.133E-24	R(72)	A
28	2841.993 47(22)*	2258.36	0.100E-24	R(73)	A

ATLAS OF CS_2 ABSORPTION LINES FROM 1460 cm^{-1} to 1551 cm^{-1}

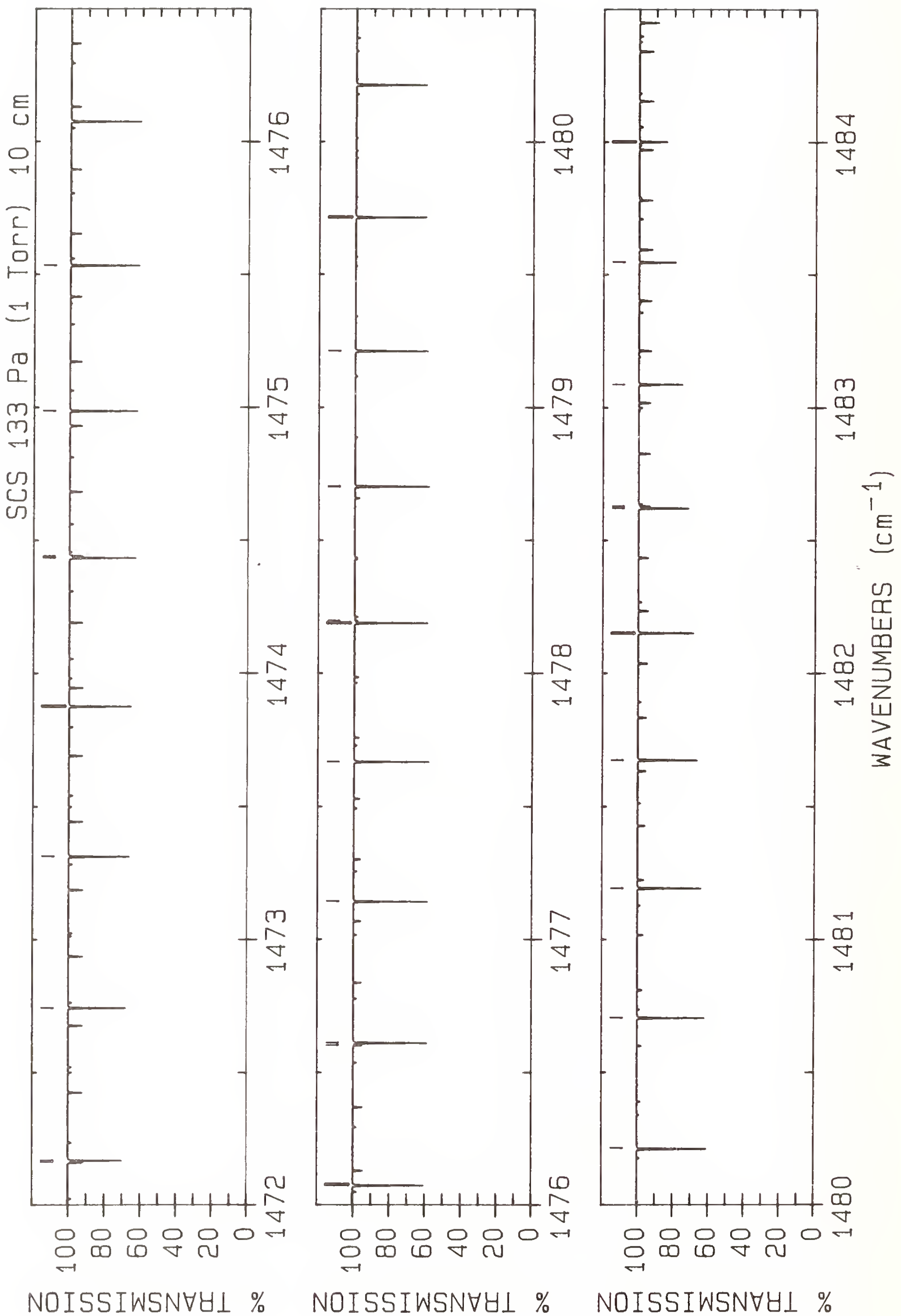
key:

Band	Isotopomer	Vibrational Transition
A	$^{32}S^{12}C^{32}S$	$00^01\text{-}00^00$
B		$01^11\text{-}01^{1e}0$
C		$01^11\text{-}01^{1f}0$
D		$10^01\text{-}10^00$
E		$02^21\text{-}02^{2e}0$
F		$02^21\text{-}02^{2f}0$
G		$02^01\text{-}02^00$
H		$11^11\text{-}11^{1e}0$
I		$11^11\text{-}11^{1f}0$
M	$^{34}S^{12}C^{32}S$	$00^01\text{-}00^00$
N		$01^11\text{-}01^{1e}0$
O		$01^11\text{-}01^{1f}0$
P		$10^01\text{-}10^00$
Q	$^{33}S^{12}C^{32}S$	$00^01\text{-}00^00$
R		$01^11\text{-}01^{1e}0$
S		$01^11\text{-}01^{1f}0$
V	$^{34}S^{12}C^{34}S$	$00^01\text{-}00^00$
a	$^{32}S^{13}C^{32}S$	$00^01\text{-}00^00$
b		$01^11\text{-}01^{1e}0$
c		$01^11\text{-}01^{1f}0$
d		$10^01\text{-}10^00$
m	$^{34}S^{13}C^{32}S$	$00^01\text{-}00^00$

If the e or f designation is not specified (for $l \neq 0$), then the transition is to either level, depending on the selection rules and the change in the rotational quantum number, J. Spectra are given for a slitwidth of 0.002 cm^{-1}, a temperature of 296 K, and a transition moment of 0.27 debye. No Herman-Wallis constant was included in the intensity calculation.

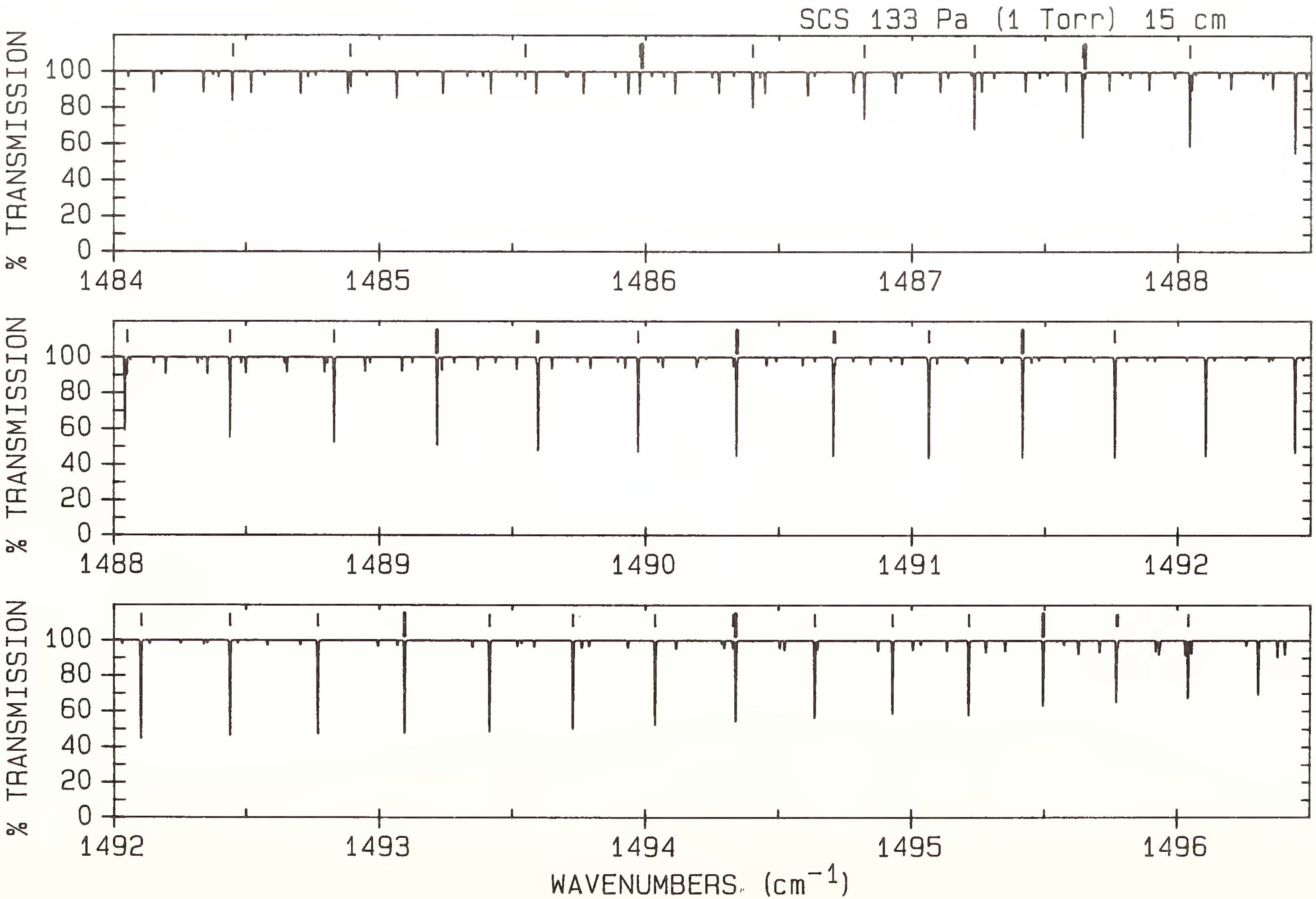

SCS 133 Pa (1 Torr) 15 cm
% TRANSMISSION
100 80 60 40 20 0
1460 1461 1462 1463 1464
1464 1465 1466 1467 1468
1468 1469 1470 1471 1472
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1460.228 08(15)*	892.98	0.377E-21	P(90)	a
2	1460.905 18(14)*	853.98	0.445E-21	P(88)	a
3	1461.576 88(13)*	815.85	0.524E-21	P(86)	a
4	1462.243 20(12)*	778.59	0.614E-21	P(84)	a
5	1462.904 12(12)*	742.19	0.715E-21	P(82)	a
6	1463.559 65(12)*	706.67	0.830E-21	P(80)	a
7	1464.209 78(11)*	672.01	0.958E-21	P(78)	a
8	1464.854 51(11)*	638.22	0.110E-20	P(76)	a
9	1465.493 84(11)*	605.31	0.126E-20	P(74)	a
10	1466.127 77(11)*	573.26	0.143E-20	P(72)	a
11	1466.136 6	684.34	0.603E-21	P(52)	c
12	1466.753 4	872.74	0.204E-21	P(44)	d
13	1466.756 29(11)*	542.08	0.162E-20	P(70)	a
14	1467.379 40(11)*	511.78	0.182E-20	P(68)	a
15	1467.997 11(11)*	482.34	0.204E-20	P(66)	a
16	1468.609 40(11)*	453.77	0.228E-20	P(64)	a
17	1469.216 27(10)*	426.08	0.252E-20	P(62)	a
18	1469.817 73(10)*	399.26	0.278E-20	P(60)	a
19	1470.413 77(10)*	373.30	0.306E-20	P(58)	a
20	1471.004 38(10)*	348.22	0.333E-20	P(56)	a
21	1471.013 5	745.49	0.241E-21	P(28)	d
22	1471.589 57(9)*	324.01	0.362E-20	P(54)	a

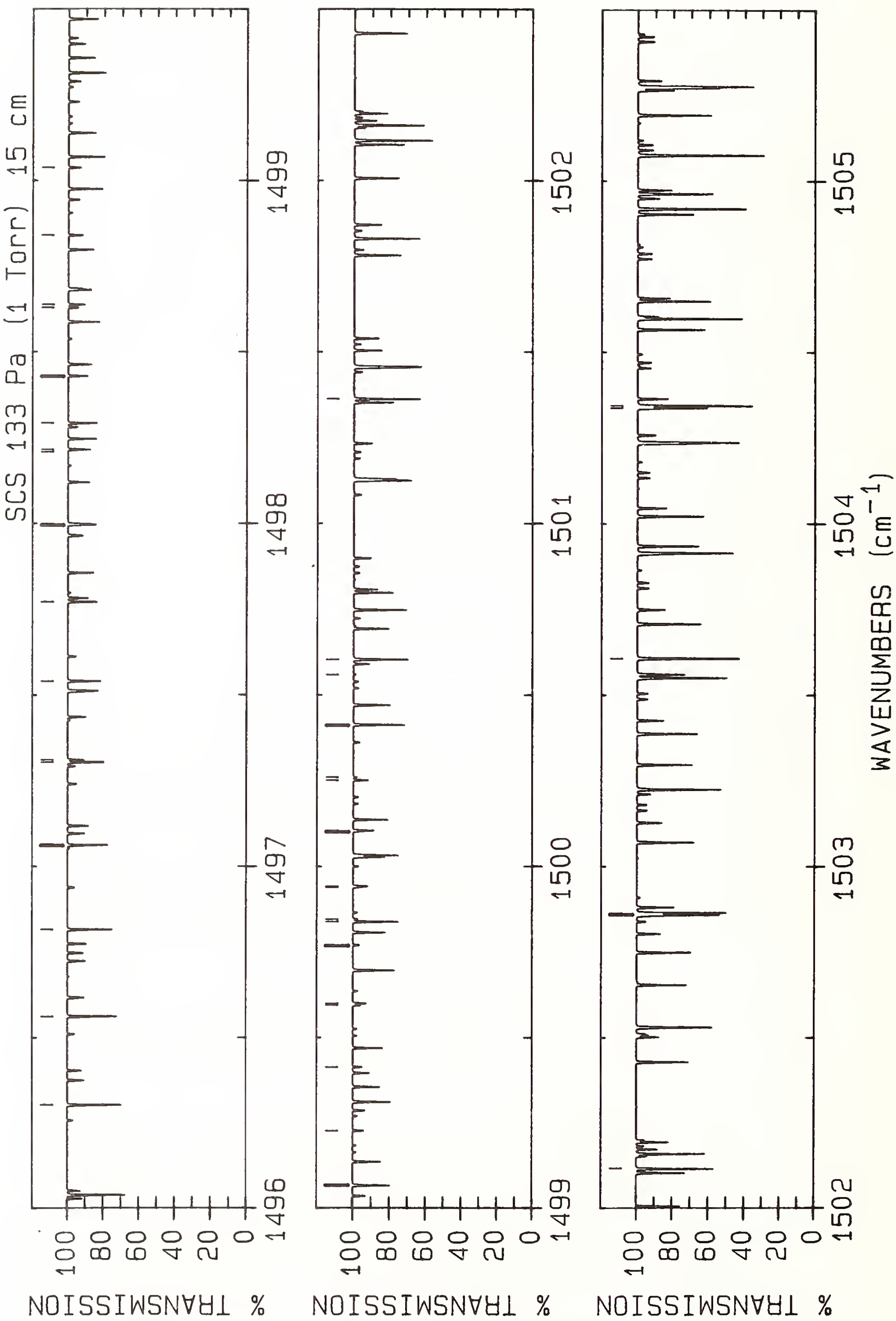


SCS 133 Pa (1 Torr) 10 cm
% TRANSMISSION
100 80 60 40 20 0
1472 1473 1474 1475 1476
1476 1477 1478 1479 1480
1480 1481 1482 1483 1484
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1472.162 0	484.71	0.922E-21	P(30)	c	16	1478.196 7	28.80	0.194E-21	P(16)	m
2	1472.169 34(9)*	300.67	0.390E-20	P(52)	a	17	1478.701 2	659.18	0.659E-22	R(4)	d
3	1472.743 68(9)*	278.20	0.419E-20	P(50)	a	18	1478.702 46(8)*	88.61	0.592E-20	P(28)	a
4	1473.312 59(9)*	256.61	0.447E-20	P(48)	a	19	1479.211 48(8)*	76.60	0.583E-20	P(26)	a
5	1473.876 06(8)*	235.88	0.474E-20	P(46)	a	20	1479.715 04(8)*	65.47	0.568E-20	P(24)	a
6	1474.434 10(8)*	216.03	0.499E-20	P(44)	a	21	1480.213 14(8)*	55.22	0.548E-20	P(22)	a
7	1474.441 2	433.49	0.828E-21	P(21)	b	22	1480.705 78(8)*	45.83	0.521E-20	P(20)	a
8	1474.986 70(8)*	197.05	0.523E-20	P(42)	a	23	1481.192 95(8)*	37.32	0.489E-20	P(18)	a
9	1475.533 86(8)*	178.94	0.544E-20	P(40)	a	24	1481.674 66(9)*	29.68	0.451E-20	P(16)	a
10	1476.075 58(8)*	161.70	0.562E-20	P(38)	a	25	1482.150 90(9)*	22.92	0.408E-20	P(14)	a
11	1476.602 8	400.06	0.555E-21	P(12)	c	26	1482.621 66(9)*	17.02	0.360E-20	P(12)	a
12	1476.611 85(8)*	145.34	0.577E-20	P(36)	a	27	1482.629 3	409.23	0.712E-21	R(15)	b
13	1477.142 68(7)*	129.85	0.588E-20	P(34)	a	28	1483.086 96(9)*	12.00	0.308E-20	P(10)	a
14	1477.668 06(7)*	115.23	0.594E-20	P(32)	a	29	1483.546 77(9)*	7.86	0.251E-20	P(8)	a
15	1478.187 99(8)*	101.48	0.596E-20	P(30)	a	30	1484.001 11(9)*	4.58	0.192E-20	P(6)	a

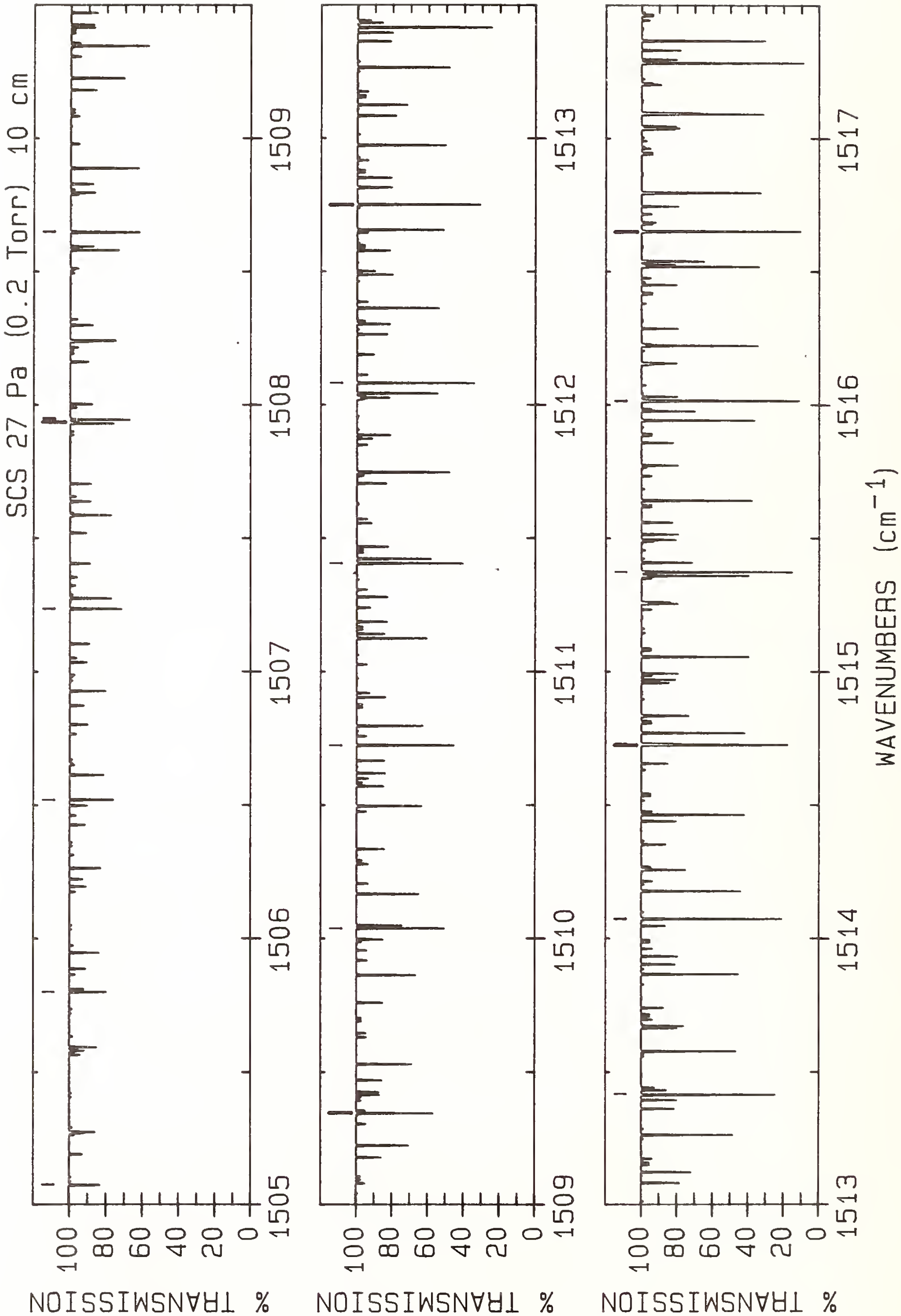

SCS 133 Pa (1 Torr) 15 cm
% TRANSMISSION
100
80
60
40
20
0
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1484.449 97(9)*	2.18	0.129E-20	P(4)	a
2	1484.893 34(9)*	0.66	0.651E-21	P(2)	a
3	1485.548 12(9)*	0.00	0.327E-21	R(0)	a
4	1485.977 78(9)*	0.66	0.977E-21	R(2)	a
5	1485.986 3	2531.48	0.206E-22	P(152)	A
6	1486.401 94(9)*	2.18	0.162E-20	R(4)	a
7	1486.820 62(9)*	4.58	0.224E-20	R(6)	a
8	1487.233 80(9)*	7.86	0.283E-20	R(8)	a
9	1487.641 48(9)*	12.00	0.339E-20	R(10)	a
10	1487.650 4	98.48	0.270E-21	R(30)	m
11	1488.043 66(9)*	17.02	0.392E-20	R(12)	a
12	1488.051 6	619.41	0.759E-21	R(46)	c
13	1488.440 34(8)*	22.92	0.439E-20	R(14)	a
14	1488.831 52(8)*	29.68	0.482E-20	R(16)	a
15	1489.217 19(8)*	37.32	0.519E-20	R(18)	a
16	1489.591 7	191.24	0.239E-21	R(42)	m
17	1489.597 35(8)*	45.83	0.551E-20	R(20)	a
18	1489.972 00(8)*	55.22	0.576E-20	R(22)	a
19	1490.341 13(8)*	65.47	0.596E-20	R(24)	a
20	1490.343 7	238.88	0.211E-21	R(47)	m
21	1490.704 75(8)*	76.60	0.610E-20	R(26)	a
22	1490.710 9	851.65	0.345E-21	R(65)	b
23	1491.062 2	291.81	0.181E-21	R(52)	m
24	1491.062 86(8)*	88.61	0.618E-20	R(28)	a
25	1491.415 44(8)*	101.48	0.621E-20	R(30)	a
26	1491.762 50(8)*	115.23	0.619E-20	R(32)	a
27	1492.104 04(8)*	129.85	0.611E-20	R(34)	a
28	1492.440 05(8)*	145.34	0.599E-20	R(36)	a
29	1492.770 53(9)*	161.70	0.583E-20	R(38)	a
30	1493.095 48(9)*	178.94	0.564E-20	R(40)	a
31	1493.414 89(10)*	197.05	0.542E-20	R(42)	a
32	1493.728 77(10)*	216.03	0.517E-20	R(44)	a
33	1494.037 11(10)*	235.88	0.491E-20	R(46)	a
34	1494.329 18(30)	1912.19	0.366E-21	P(132)	A
35	1494.339 92(11)*	256.61	0.463E-20	R(48)	a
36	1494.637 18(11)*	278.20	0.434E-20	R(50)	a
37	1494.928 89(12)*	300.67	0.404E-20	R(52)	a
38	1495.215 06(12)*	324.01	0.375E-20	R(54)	a
39	1495.215 3	1820.63	0.417E-21	P(96)	G
40	1495.495 68(13)*	348.22	0.345E-20	R(56)	a
41	1495.770 74(13)*	373.30	0.316E-20	R(58)	a
42	1495.775 6	1939.14	0.262E-21	P(108)	D
43	1496.040 25(14)*	399.26	0.288E-20	R(60)	a

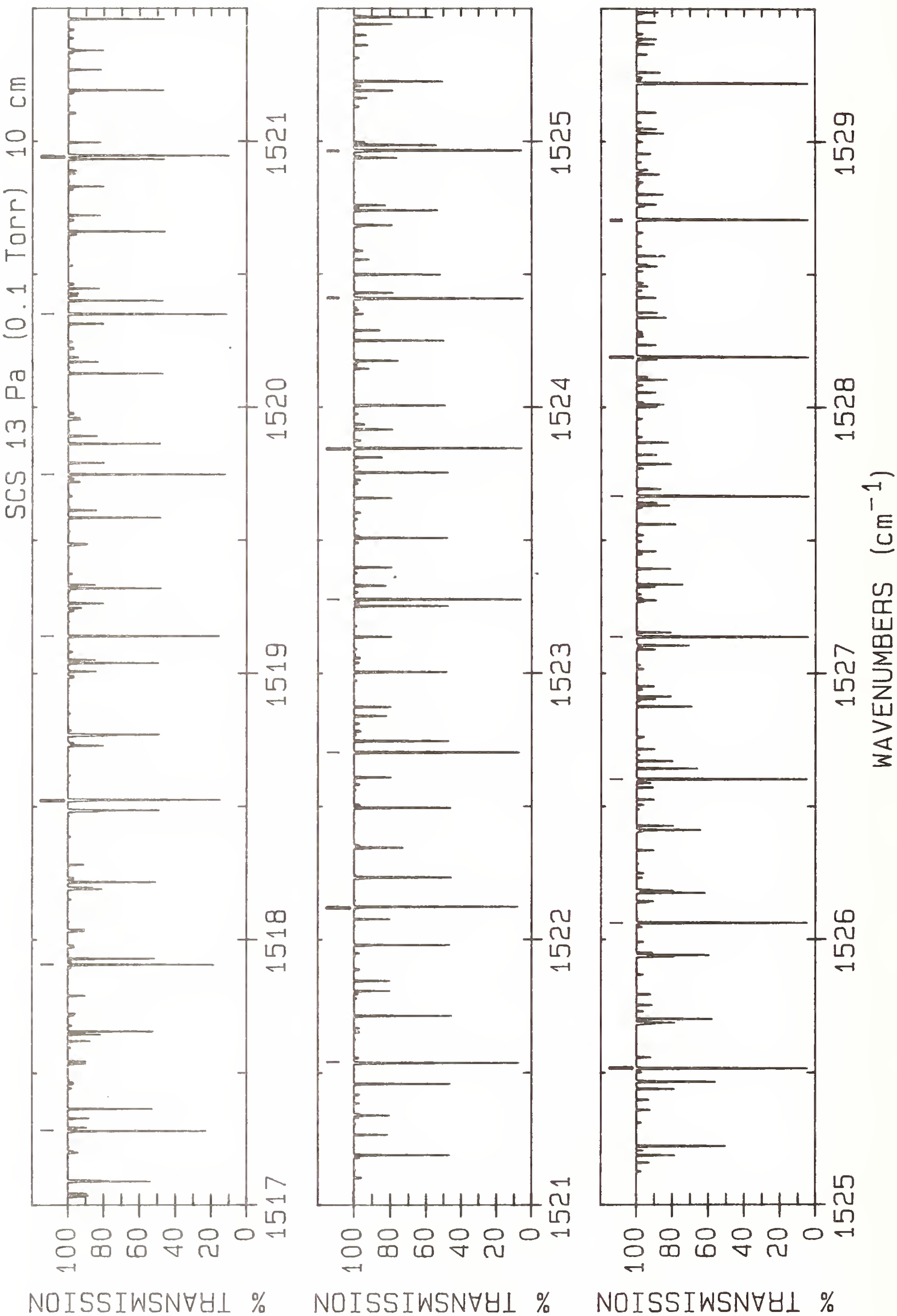


SCS 133 Pa (1 Torr) 15 cm
% TRANSMISSION
100 80 60 40 20 0
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1496.303 0	1560.99	0.792E-22	P(121)	M
2	1496.304 21(14)*	426.08	0.261E-20	R(62)	a
3	1496.562 61(15)*	453.77	0.236E-20	R(64)	a
4	1496.815 45(15)*	482.34	0.211E-20	R(66)	a
5	1497.062 72(15)*	511.78	0.189E-20	R(68)	a
6	1497.304 43(15)*	542.08	0.168E-20	R(70)	a
7	1497.311 4	1698.00	0.710E-21	P(90)	G
8	1497.540 58(15)*	573.26	0.148E-20	R(72)	a
9	1497.771 15(15)*	605.31	0.130E-20	R(74)	a
10	1497.996 15(15)*	638.22	0.114E-20	R(76)	a
11	1497.998 9	1658.87	0.840E-21	P(88)	G
12	1498.208 8	1532.34	0.162E-22	P(119)	Q
13	1498.215 58(15)*	672.01	0.993E-21	R(78)	a
14	1498.292 44(13)*	1634.90	0.130E-20	P(122)	A
15	1498.429 43(15)*	706.67	0.860E-21	R(80)	a
16	1498.628 7	1770.61	0.448E-21	P(81)	H
17	1498.637 70(15)*	742.19	0.742E-21	R(82)	a
18	1498.840 39(14)*	778.59	0.637E-21	R(84)	a
19	1499.037 50(14)*	815.85	0.544E-21	R(86)	a
20	1499.068 40(12)*	1582.03	0.166E-20	P(120)	A
21	1499.229 03(14)*	853.98	0.462E-21	R(88)	a
22	1499.414 96(13)*	892.98	0.391E-21	R(90)	a
23	1499.595 31(13)*	932.85	0.329E-21	R(92)	a
24	1499.600 8	1718.81	0.555E-21	P(78)	I
25	1499.770 06(13)*	973.59	0.276E-21	R(94)	a
26	1499.838 79(11)*	1530.03	0.210E-20	P(118)	A
27	1499.845 8	1323.11	0.194E-21	P(93)	O
28	1499.939 22(14)*	1015.20	0.230E-21	R(96)	a
29	1499.942 3	1701.27	0.597E-21	P(77)	H
30	1500.102 78(14)*	1057.67	0.191E-21	R(98)	a
31	1500.105 6	1671.70	0.858E-21	P(96)	D
32	1500.252 5	1684.98	0.638E-21	P(76)	I
33	1500.260 75(16)*	1101.01	0.158E-21	R(100)	a
34	1500.413 11(17)*	1145.22	0.130E-21	R(102)	a
35	1500.414 0	1476.90	0.229E-20	P(99)	B
36	1500.559 87(19)*	1190.29	0.106E-21	R(104)	a
37	1500.603 61(11)*	1478.89	0.265E-20	P(116)	A
38	1501.362 86(10)*	1428.62	0.333E-20	P(114)	A
39	1502.116 53(10)*	1379.22	0.416E-20	P(112)	A
40	1502.860 7	1133.21	0.542E-21	P(103)	M
41	1502.864 63(10)*	1330.68	0.518E-20	P(110)	A
42	1503.607 14(10)*	1283.00	0.641E-20	P(108)	A
43	1504.337 6	1305.73	0.363E-20	P(68)	E
44	1504.344 08(10)*	1236.19	0.790E-20	P(106)	A

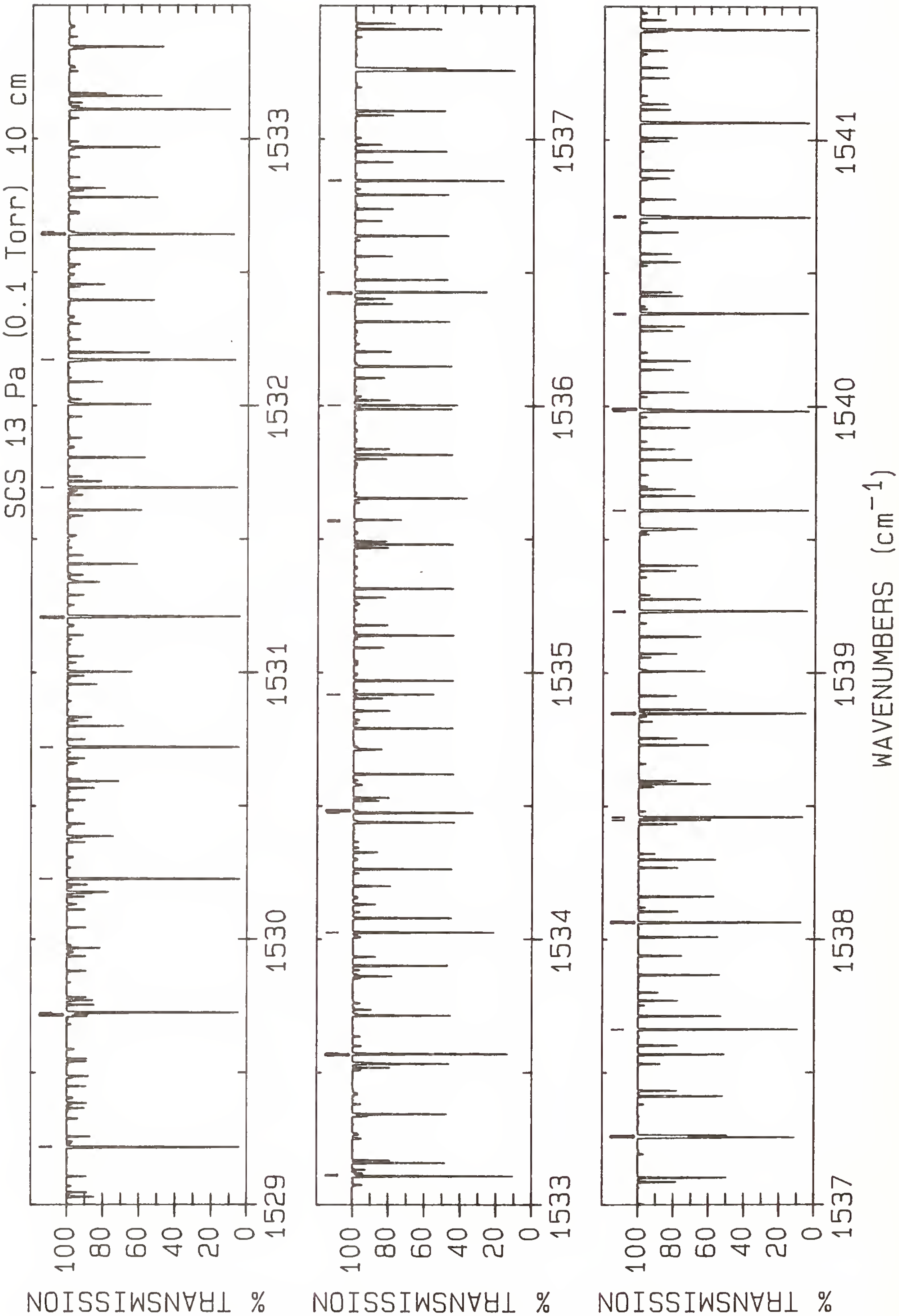

SCS 27 Pa (0.2 Torr) 10 cm
% TRANSMISSION
100 80 60 40 20 0
1505 1506 1507 1508 1509
1509 1510 1511 1512 1513
1513 1514 1515 1516 1517
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1505.075 43(10)*	1190.25	0.970E-20	P(104)	A
2	1505.801 20(10)*	1145.18	0.119E-19	P(102)	A
3	1506.521 38(10)*	1100.97	0.144E-19	P(100)	A
4	1507.235 96(10)*	1057.63	0.174E-19	P(98)	A
5	1507.936 5	1335.45	0.235E-20	P(51)	H
6	1507.944 96(10)*	1015.16	0.210E-19	P(96)	A
7	1507.950 5	918.67	0.250E-21	P(92)	Q
8	1508.648 36(10)*	973.56	0.252E-19	P(94)	A
9	1508.650 9	791.78	0.239E-20	P(86)	M
10	1509.346 16(11)*	932.82	0.301E-19	P(92)	A
11	1510.038 37(11)*	892.95	0.357E-19	P(90)	A
12	1510.724 97(11)*	853.95	0.422E-19	P(88)	A
13	1511.405 97(11)*	815.82	0.497E-19	P(86)	A
14	1512.081 36(11)*	778.56	0.582E-19	P(84)	A
15	1512.751 15(11)*	742.17	0.679E-19	P(82)	A
16	1513.415 32(10)*	706.64	0.787E-19	P(80)	A
17	1514.071 2	692.58	0.426E-21	P(52)	R
18	1514.073 89(10)*	671.99	0.909E-19	P(78)	A
19	1514.726 83(10)*	638.20	0.104E-18	P(76)	A
20	1514.727 1	1122.70	0.339E-20	P(26)	I
21	1514.731 1	907.67	0.119E-19	P(32)	E
22	1515.374 16(10)*	605.29	0.119E-18	P(74)	A
23	1516.013 8	890.90	0.113E-19	P(28)	G
24	1516.015 88(10)*	573.24	0.136E-18	P(72)	A
25	1516.651 97(10)*	542.07	0.154E-18	P(70)	A



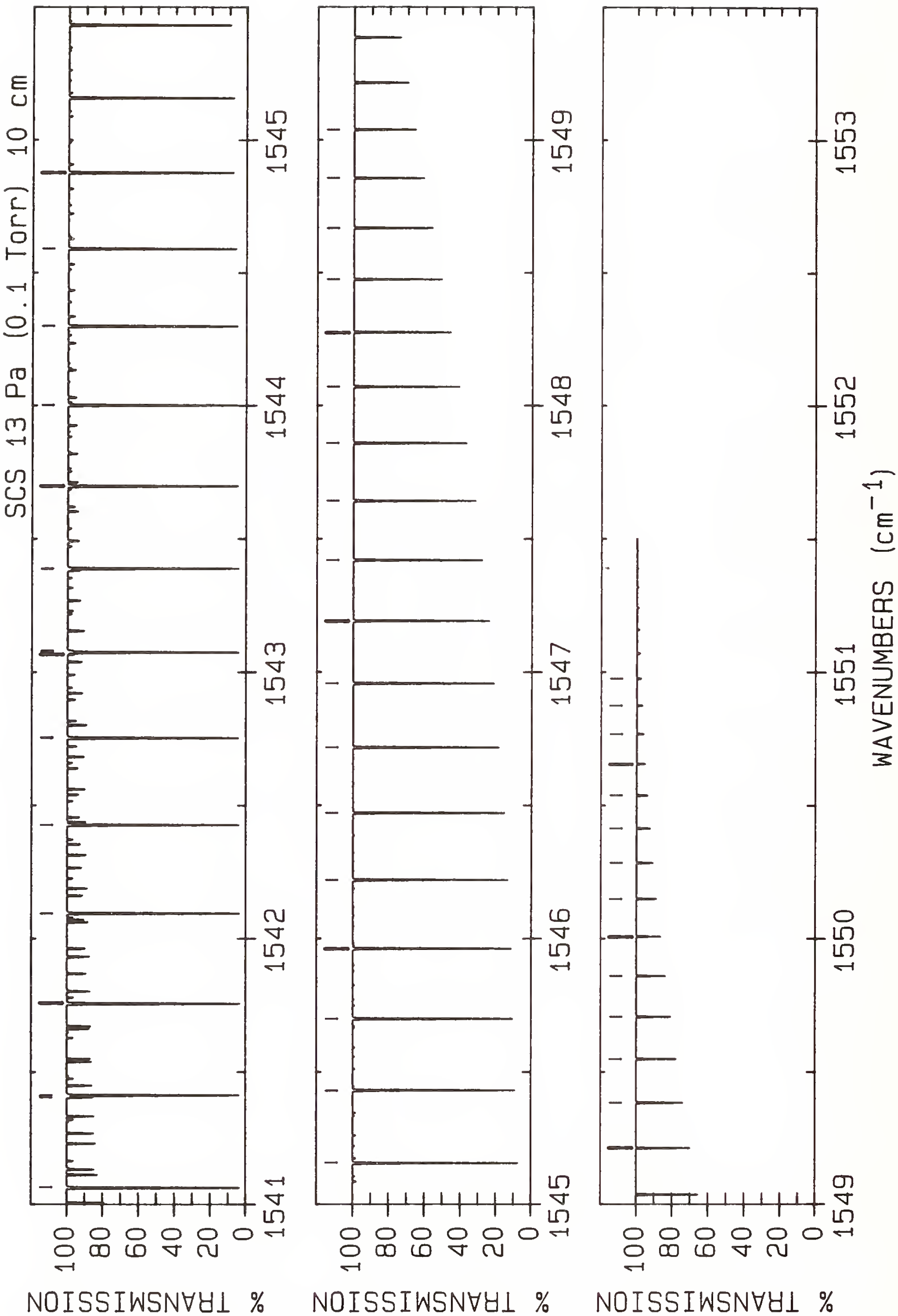
SCS 13 Pa (0.1 Torr) 10 cm
% TRANSMISSION
100 80 60 40 20 0
1517 1518 1519 1520 1521
% TRANSMISSION
100 80 60 40 20 0
1521 1522 1523 1524 1525
% TRANSMISSION
100 80 60 40 20 0
1525 1526 1527 1528 1529
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1517.282 43(10)*	511.76	0.173E-18	P(68)	A
2	1517.907 27(10)*	482.33	0.194E-18	P(66)	A
3	1517.909 3	337.94	0.142E-19	P(56)	M
4	1518.522 8	839.45	0.935E-20	P(18)	G
5	1518.525 5	825.52	0.942E-20	P(17)	F
6	1518.526 48(9)*	453.76	0.216E-18	P(64)	A
7	1519.140 07(9)*	426.07	0.240E-18	P(62)	A
8	1519.748 01(9)*	399.24	0.264E-18	P(60)	A
9	1520.350 33(9)*	373.29	0.290E-18	P(58)	A
10	1520.942 4	440.58	0.309E-20	P(20)	O
11	1520.945 4	440.55	0.309E-20	P(20)	N
12	1520.947 01(9)*	348.21	0.316E-18	P(56)	A
13	1521.538 04(9)*	324.00	0.343E-18	P(54)	A
14	1521.539 4	200.34	0.213E-19	P(43)	M
15	1522.120 8	421.48	0.254E-20	P(15)	O
16	1522.123 0	421.46	0.254E-20	P(15)	N
17	1522.123 44(9)*	300.66	0.370E-18	P(52)	A
18	1522.703 19(9)*	278.19	0.397E-18	P(50)	A
19	1523.277 30(8)*	256.60	0.424E-18	P(48)	A
20	1523.845 76(8)*	235.88	0.449E-18	P(46)	A
21	1524.408 57(8)*	216.02	0.473E-18	P(44)	A
22	1524.412 7	159.24	0.418E-20	P(38)	Q
23	1524.961 2	806.46	0.730E-20	R(11)	F
24	1524.965 72(8)*	197.04	0.496E-18	P(42)	A
25	1525.517 22(8)*	178.94	0.516E-18	P(40)	A
26	1526.063 07(8)*	161.70	0.533E-18	P(38)	A
27	1526.603 25(8)*	145.34	0.547E-18	P(36)	A
28	1527.137 77(8)*	129.84	0.557E-18	P(34)	A
29	1527.666 63(8)*	115.22	0.563E-18	P(32)	A
30	1528.189 82(8)*	101.48	0.565E-18	P(30)	A
31	1528.701 0	429.44	0.438E-21	Q(17)	B
32	1528.705 1	900.66	0.124E-19	R(31)	F
33	1528.707 34(9)*	88.60	0.561E-18	P(28)	A


SCS 13 Pa (0.1 Torr) 10 cm
% TRANSMISSION
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1529.217 7	922.35	0.122E-19	R(34)	E
2	1529.219 0	432.28	0.307E-20	R(18)	N
3	1529.219 20(9)*	76.60	0.553E-18	P(26)	A
4	1529.221 4	432.30	0.307E-20	R(18)	O
5	1529.717 3	946.00	0.118E-19	R(37)	F
6	1529.719 9	32.88	0.347E-20	P(17)	Q
7	1529.725 38(9)*	65.47	0.539E-18	P(24)	A
8	1530.225 88(9)*	55.22	0.519E-18	P(22)	A
9	1530.720 71(9)*	45.83	0.494E-18	P(20)	A
10	1531.207 2	408.03	0.465E-19	R(10)	C
11	1531.209 86(9)*	37.32	0.464E-18	P(18)	A
12	1531.693 32(9)*	29.68	0.428E-18	P(16)	A
13	1532.171 10(9)*	22.92	0.387E-18	P(14)	A
14	1532.172 7	529.73	0.363E-20	R(35)	O
15	1532.643 20(9)*	17.02	0.342E-18	P(12)	A
16	1532.647 4	553.18	0.351E-20	R(38)	N
17	1532.651 9	553.29	0.351E-20	R(38)	O
18	1533.109 61(9)*	12.00	0.292E-18	P(10)	A
19	1533.113 9	578.64	0.334E-20	R(41)	N
20	1533.567 8	605.99	0.314E-20	R(44)	N
21	1533.570 32(9)*	7.86	0.238E-18	P(8)	A
22	1533.572 9	606.13	0.314E-20	R(44)	O
23	1534.025 34(9)*	4.58	0.182E-18	P(6)	A
24	1534.474 67(10)*	2.18	0.122E-18	P(4)	A
25	1534.481 7	1351.71	0.314E-20	R(71)	F
26	1534.918 30(10)*	0.66	0.617E-19	P(2)	A
27	1535.567 5	1519.10	0.158E-20	R(81)	F
28	1535.573 06(10)*	0.00	0.310E-19	R(0)	A
29	1536.002 43(10)*	0.66	0.926E-19	R(2)	A
30	1536.422 0	1688.37	0.772E-21	R(90)	E

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
31	1536.426 10(10)*	2.18	0.153E-18	R(4)	A
32	1536.426 2	19.56	0.306E-20	R(13)	Q
33	1536.844 06(10)*	4.58	0.212E-18	R(6)	A
34	1536.845 8	1790.09	0.497E-21	R(95)	F
35	1537.256 31(10)*	7.86	0.269E-18	R(8)	A
36	1537.258 7	981.54	0.144E-19	R(54)	D
37	1537.261 0	80.06	0.252E-19	R(27)	M
38	1537.263 8	612.52	0.712E-19	R(44)	C
39	1537.662 85(10)*	12.00	0.322E-18	R(10)	A
40	1538.063 68(10)*	17.02	0.371E-18	R(12)	A
41	1538.064 5	1056.67	0.111E-19	R(60)	D
42	1538.448 4	697.36	0.556E-19	R(52)	C
43	1538.458 5	886.18	0.221E-21	R(67)	R
44	1538.458 79(10)*	22.92	0.416E-18	R(14)	A
45	1538.848 18(10)*	29.68	0.457E-18	R(16)	A
46	1539.228 4	165.19	0.238E-19	R(39)	M
47	1539.231 84(10)*	37.32	0.492E-18	R(18)	A
48	1539.609 79(10)*	45.83	0.522E-18	R(20)	A
49	1539.982 00(10)*	55.22	0.546E-18	R(22)	A
50	1539.989 0	209.65	0.216E-19	R(44)	M
51	1540.345 2	632.55	0.208E-21	R(78)	V
52	1540.348 49(10)*	65.47	0.565E-18	R(24)	A
53	1540.709 25(10)*	76.60	0.578E-18	R(26)	A
54	1540.714 8	259.41	0.189E-19	R(49)	M


SCS 13 Pa (0.1 Torr) 10 cm
% TRANSMISSION
100 80 60 40 20 0
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
WAVENUMBERS (cm-1)

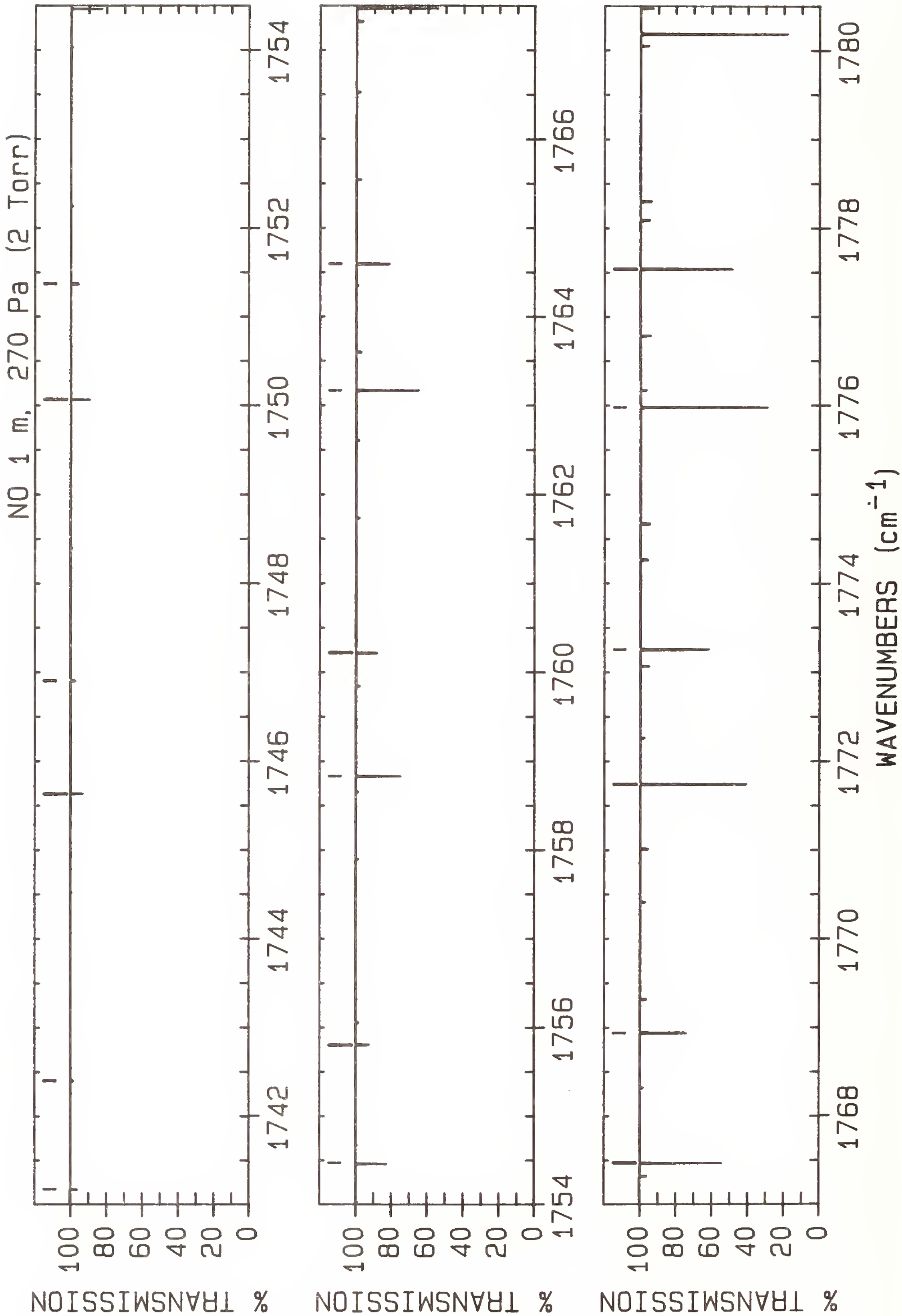
LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1541.064 28(10)*	88.60	0.586E-18	R(28)	A
2	1541.405 6	314.45	0.159E-19	R(54)	M
3	1541.413 57(10)*	101.48	0.589E-18	R(30)	A
4	1541.757 12(10)*	115.22	0.586E-18	R(32)	A
5	1541.759 5	1086.30	0.127E-19	R(79)	B
6	1542.094 94(11)*	129.84	0.579E-18	R(34)	A
7	1542.427 01(11)*	145.34	0.568E-18	R(36)	A
8	1542.753 34(11)*	161.70	0.553E-18	R(38)	A
9	1542.755 8	1986.75	0.221E-21	R(110)	D
10	1543.065 8	1350.59	0.413E-20	R(93)	B
11	1543.073 92(11)*	178.94	0.535E-18	R(40)	A
12	1543.079 9	307.48	0.293E-20	R(53)	Q
13	1543.387 0	1433.93	0.287E-20	R(97)	B
14	1543.388 76(11)*	197.04	0.514E-18	R(42)	A
15	1543.697 84(11)*	216.02	0.490E-18	R(44)	A
16	1544.001 17(12)*	235.88	0.465E-18	R(46)	A
17	1544.298 74(12)*	256.60	0.439E-18	R(48)	A
18	1544.590 56(12)*	278.19	0.411E-18	R(50)	A
19	1544.873 4	489.39	0.152E-20	R(67)	Q
20	1544.876 61(13)*	300.66	0.383E-18	R(52)	A
21	1545.156 91(13)*	324.00	0.355E-18	R(54)	A
22	1545.429 7	885.88	0.166E-20	R(91)	M
23	1545.431 44(13)*	348.21	0.327E-18	R(56)	A
24	1545.700 20(14)*	373.29	0.300E-18	R(58)	A
25	1545.963 19(14)*	399.24	0.273E-18	R(60)	A
26	1546.220 41(15)*	426.07	0.248E-18	R(62)	A
27	1546.471 86(15)*	453.76	0.223E-18	R(64)	A
28	1546.717 53(16)*	482.33	0.201E-18	R(66)	A
29	1546.957 43(16)*	511.76	0.179E-18	R(68)	A
30	1547.191 54(16)*	542.07	0.159E-18	R(70)	A
31	1547.419 87(17)*	573.24	0.140E-18	R(72)	A
32	1547.642 42(17)*	605.29	0.124E-18	R(74)	A
33	1547.859 17(18)*	638.20	0.108E-18	R(76)	A
34	1548.070 14(18)*	671.99	0.941E-19	R(78)	A
35	1548.275 32(19)*	706.64	0.815E-19	R(80)	A
36	1548.474 70(19)*	742.17	0.703E-19	R(82)	A
37	1548.668 28(20)*	778.56	0.603E-19	R(84)	A
38	1548.856 07(20)*	815.82	0.515E-19	R(86)	A
39	1549.038 05(20)*	853.95	0.438E-19	R(88)	A
40	1549.214 23(21)*	892.95	0.371E-19	R(90)	A
41	1549.384 61(21)*	932.82	0.312E-19	R(92)	A
42	1549.549 18(21)*	973.56	0.262E-19	R(94)	A
43	1549.707 93(22)*	1015.16	0.218E-19	R(96)	A
44	1549.860 88(22)*	1057.63	0.181E-19	R(98)	A
45	1550.008 01(22)*	1100.97	0.150E-19	R(100)	A
46	1550.149 32(23)*	1145.18	0.123E-19	R(102)	A
47	1550.284 81(23)*	1190.25	0.101E-19	R(104)	A
48	1550.414 48(23)*	1236.19	0.822E-20	R(106)	A
49	1550.538 33(23)*	1283.00	0.667E-20	R(108)	A
50	1550.656 35(24)	1330.68	0.539E-20	R(110)	A
51	1550.768 54(25)	1379.22	0.433E-20	R(112)	A
52	1550.874 90(26)	1428.62	0.347E-20	R(114)	A
53	1550.975 43(28)	1478.89	0.276E-20	R(116)	A

ATLAS OF NO ABSORPTION LINES FROM 1741 cm^{-1} to 1940 cm^{-1}

key:

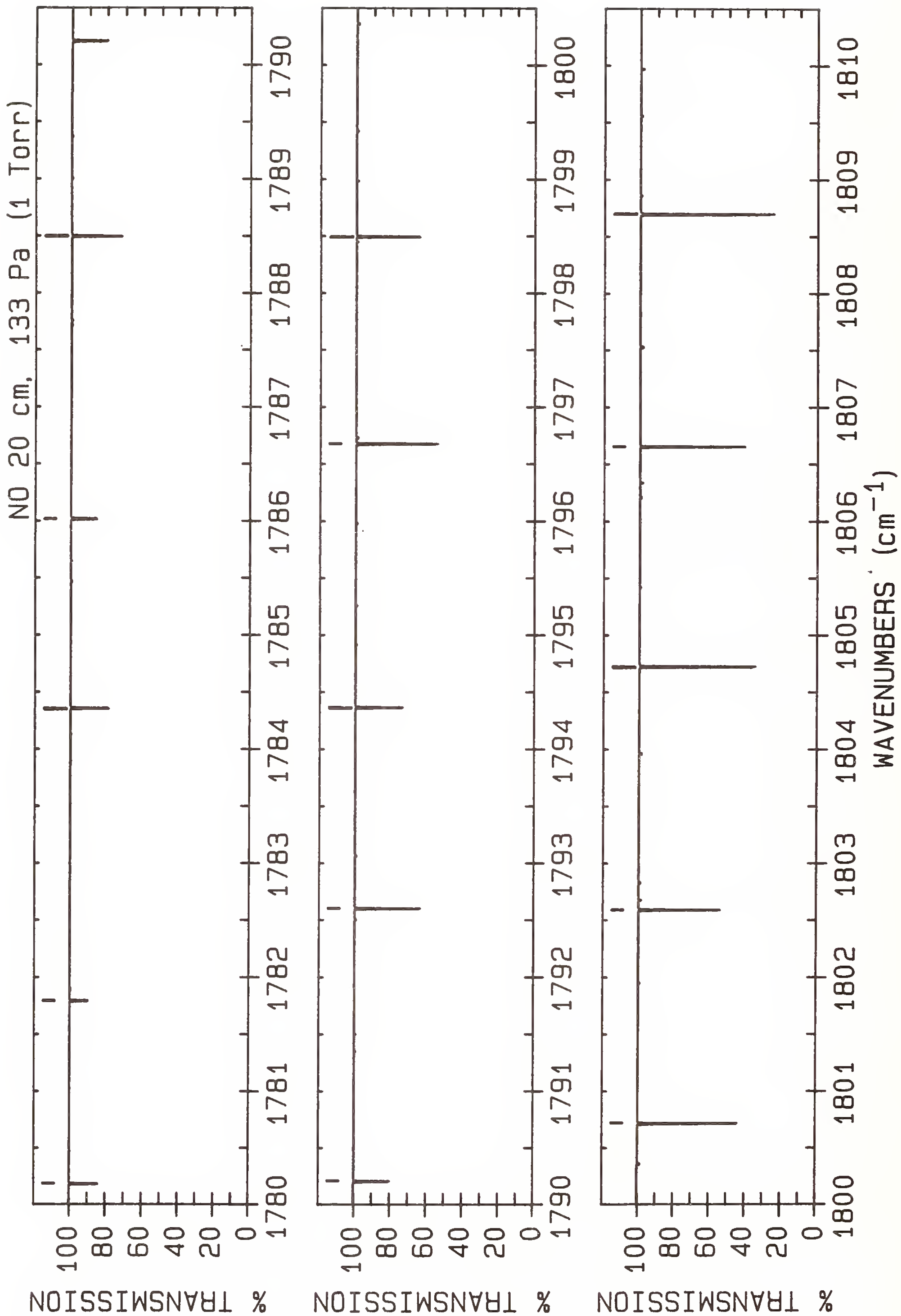
Band	Isotopomer	Transition
A	$^{14}N^{16}O$	$^2\Pi_{1/2}-{}^2\Pi_{1/2}(e)$
B	$^{14}N^{16}O$	$^2\Pi_{1/2}-{}^2\Pi_{1/2}(f)$
C	$^{14}N^{16}O$	$^2\Pi_{3/2}-{}^2\Pi_{3/2}(e)$
D	$^{14}N^{16}O$	$^2\Pi_{3/2}-{}^2\Pi_{3/2}(f)$

The e or f designation only refers to the lower level. The transition is to the appropriate upper level, depending on the selection rules and the change in the rotational quantum number. Spectra are given for a slitwidth of 0.003 cm^{-1} and a transition moment of 0.00412 debye at a temperature of 296 K.



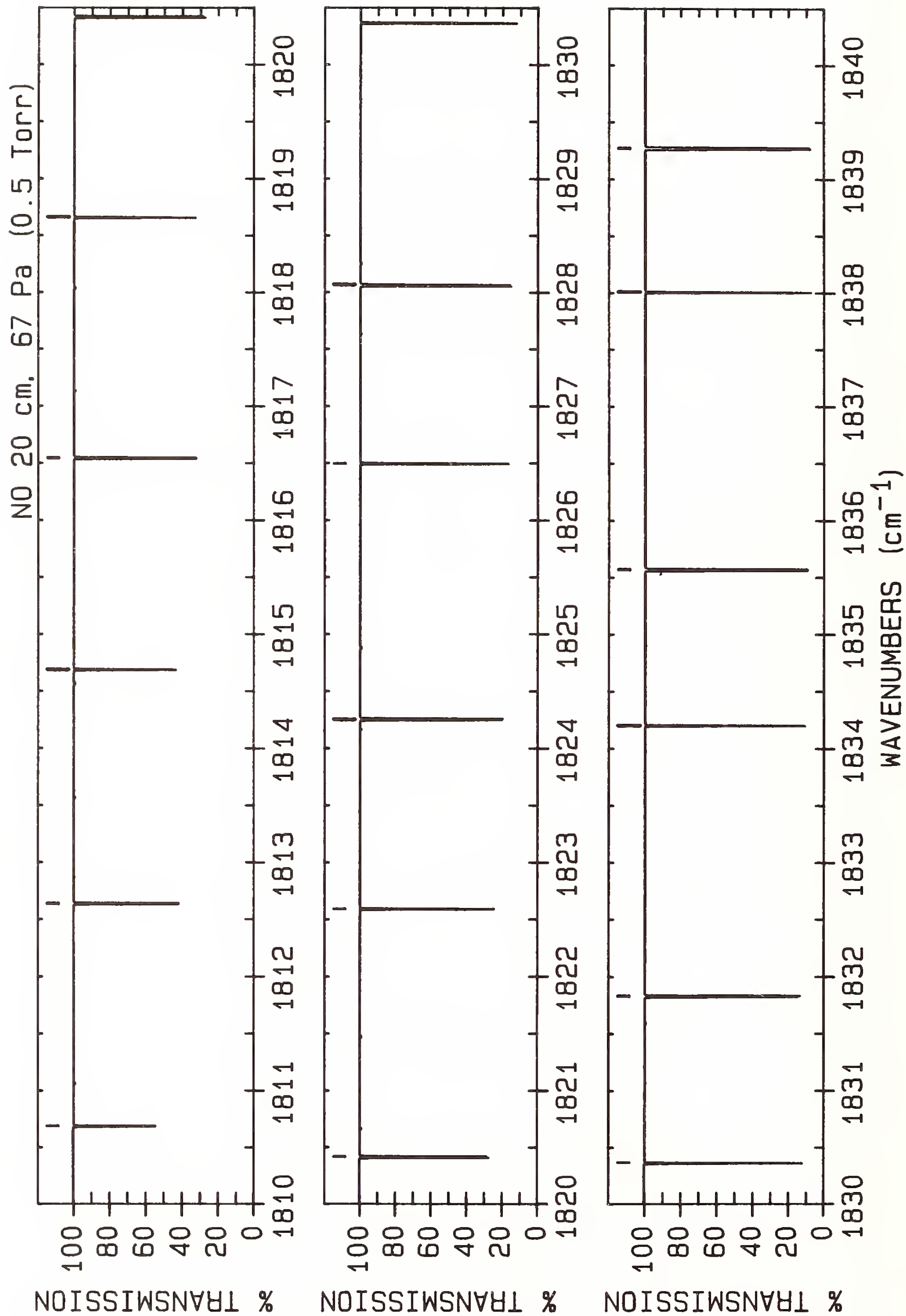
NO 1 m, 270 Pa (2 Torr)
% TRANSMISSION
100
80
60
40
20
0
1742
1744
1746
1748
1750
1752
1754
1756
1758
1760
1762
1764
1766
1768
1770
1772
1774
1776
1778
1780
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1741.172 11(50)	2043.78	0.204E-22	P(34.5)	B	21	1763.166 14(34)*	1501.94	0.247E-21	P(29.5)	B
2	1741.172 98(50)	2043.50	0.205E-22	P(34.5)	A	22	1763.169 13(34)*	1501.68	0.247E-21	P(29.5)	A
3	1742.398 24(--)	2094.53	0.155E-22	P(33.5)	D	23	1764.590 20(50)*	1558.15	0.181E-21	P(28.5)	D
4	1742.409 38(--)	2094.40	0.155E-22	P(33.5)	C	24	1764.599 10(50)*	1558.06	0.181E-21	P(28.5)	C
5	1745.634 54(45)	1928.80	0.348E-22	P(33.5)	B	25	1767.468 82(32)*	1403.50	0.385E-21	P(28.5)	B
6	1745.635 84(45)	1928.53	0.348E-22	P(33.5)	A	26	1767.472 24(32)*	1403.24	0.386E-21	P(28.5)	A
7	1746.897 49(90)	1980.57	0.262E-22	P(32.5)	D	27	1768.936 78(45)*	1460.92	0.281E-21	P(27.5)	D
8	1746.908 19(90)	1980.45	0.262E-22	P(32.5)	C	28	1768.945 25(45)*	1460.84	0.281E-21	P(27.5)	C
9	1750.065 30(40)*	1817.13	0.582E-22	P(32.5)	B	29	1771.739 14(31)*	1308.37	0.592E-21	P(27.5)	B
10	1750.067 01(40)*	1816.86	0.583E-22	P(32.5)	A	30	1771.743 00(31)*	1308.12	0.592E-21	P(27.5)	A
11	1751.366 41(80)	1869.94	0.436E-22	P(31.5)	D	31	1773.252 51(40)*	1367.06	0.428E-21	P(26.5)	D
12	1751.376 66(80)	1869.83	0.436E-22	P(31.5)	C	32	1773.260 54(40)*	1366.99	0.428E-21	P(26.5)	C
13	1754.464 23(38)*	1708.75	0.958E-22	P(31.5)	B	33	1775.976 97(30)*	1216.57	0.893E-21	P(26.5)	B
14	1754.466 38(38)*	1708.49	0.960E-22	P(31.5)	A	34	1775.981 26(30)*	1216.32	0.894E-21	P(26.5)	A
15	1755.804 91(70)	1762.66	0.713E-22	P(30.5)	D	35	1777.537 30(38)*	1276.57	0.640E-21	P(25.5)	D
16	1755.814 71(70)	1762.56	0.713E-22	P(30.5)	C	36	1777.544 88(38)*	1276.50	0.641E-21	P(25.5)	C
17	1758.831 23(36)*	1603.69	0.155E-21	P(30.5)	B						
18	1758.833 80(36)*	1603.43	0.155E-21	P(30.5)	A						
19	1760.212 87(60)	1658.73	0.115E-21	P(29.5)	D						
20	1760.222 22(60)	1658.63	0.115E-21	P(29.5)	C						

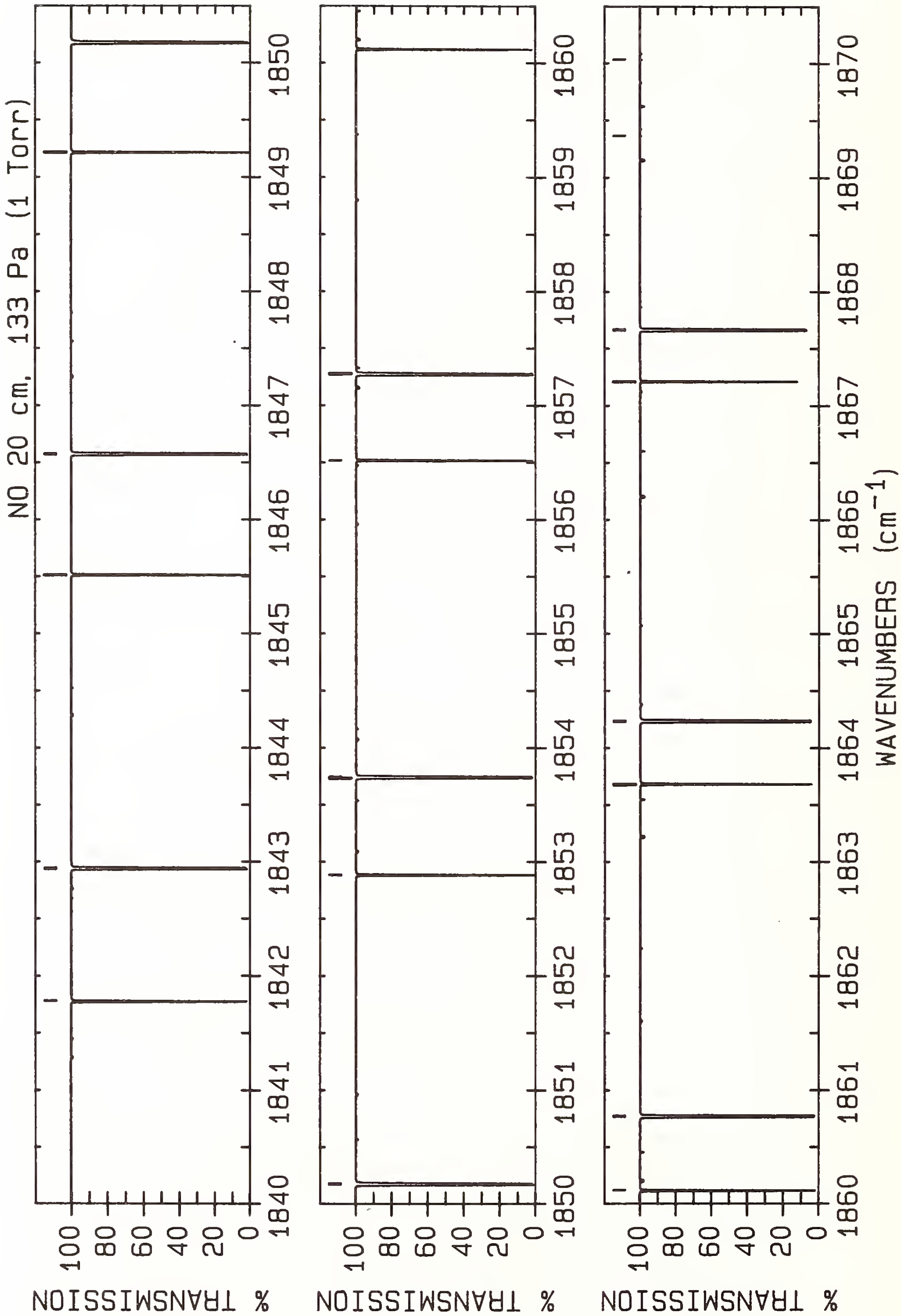


NO 20 cm, 133 Pa (1 Torr)
% TRANSMISSION
WAVENUMBERS (cm^{-1})

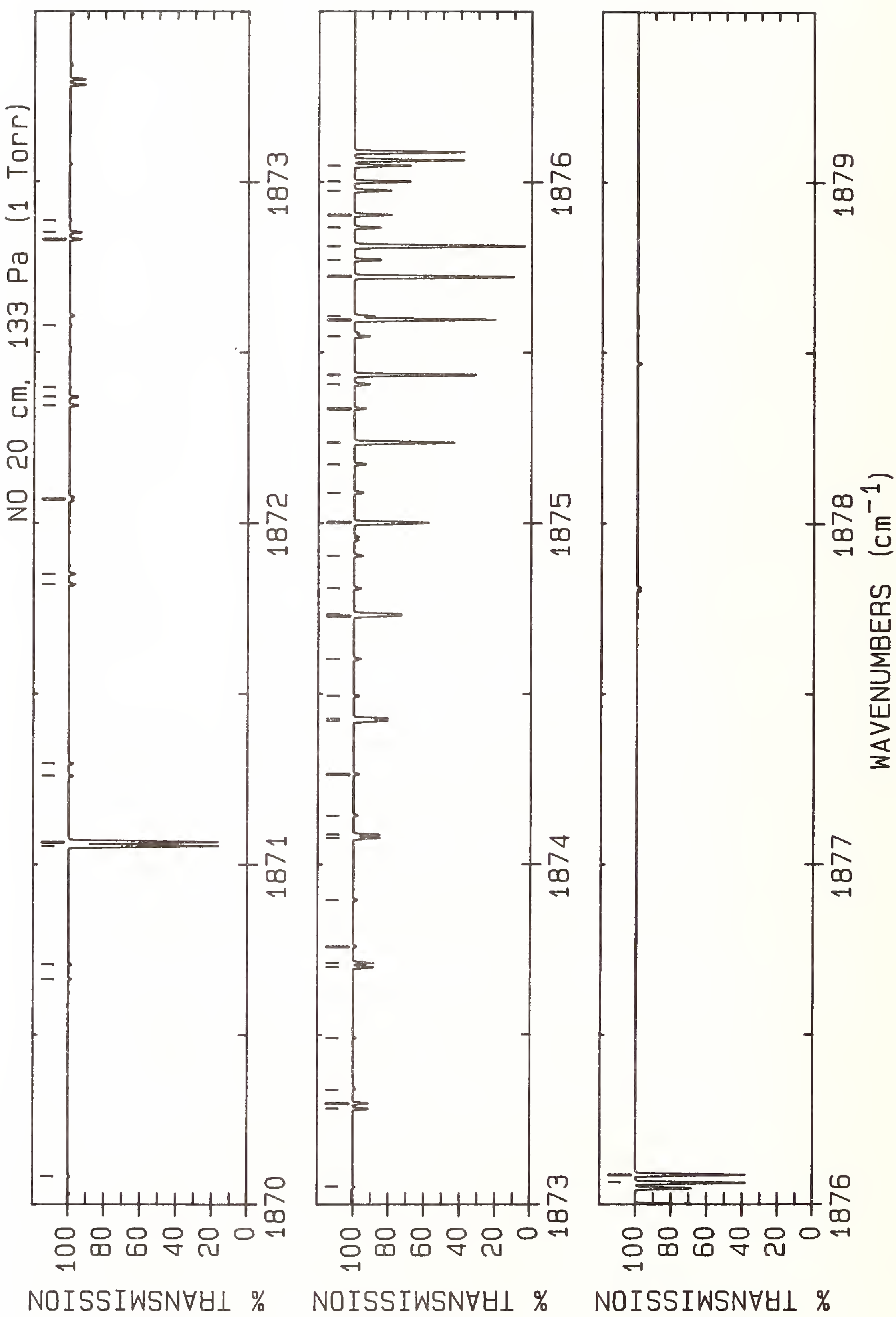
LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm⁻¹)	LOWER STATE (cm⁻¹)	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1780.182 17(30)*	1128.09	0.132E-20	P(25.5)	B	16	1794.370 34(30)*	948.30	0.268E-20	P(21.5)	C
2	1780.186 89(30)*	1127.84	0.133E-20	P(25.5)	A	17	1796.674 17(30)*	807.41	0.535E-20	P(21.5)	B
3	1781.791 00(36)*	1189.44	0.942E-21	P(24.5)	D	18	1796.680 59(30)*	807.20	0.536E-20	P(21.5)	A
4	1781.798 14(36)*	1189.38	0.942E-21	P(24.5)	C	19	1798.492 74(29)*	874.75	0.367E-20	P(20.5)	D
5	1784.354 62(30)*	1042.93	0.193E-20	P(24.5)	B	20	1798.498 12(29)*	874.72	0.367E-20	P(20.5)	C
6	1784.359 76(30)*	1042.69	0.193E-20	P(24.5)	A	21	1800.714 37(29)*	735.57	0.725E-20	P(20.5)	B
7	1786.013 53(34)*	1105.70	0.136E-20	P(23.5)	D	22	1800.721 20(29)*	735.36	0.726E-20	P(20.5)	A
8	1786.020 22(34)*	1105.64	0.136E-20	P(23.5)	C	23	1802.589 26(29)*	804.55	0.491E-20	P(19.5)	D
9	1788.494 18(30)*	961.09	0.276E-20	P(23.5)	B	24	1802.594 21(29)*	804.52	0.491E-20	P(19.5)	C
10	1788.499 76(30)*	960.86	0.276E-20	P(23.5)	A	25	1804.721 21(29)*	667.06	0.965E-20	P(19.5)	B
11	1790.204 74(32)*	1025.33	0.193E-20	P(22.5)	D	26	1804.728 45(29)*	666.86	0.966E-20	P(19.5)	A
12	1790.210 99(32)*	1025.28	0.193E-20	P(22.5)	C	27	1806.653 93(28)*	737.75	0.646E-20	P(18.5)	D
13	1792.600 74(30)*	882.59	0.388E-20	P(22.5)	B	28	1806.658 47(28)*	737.72	0.646E-20	P(18.5)	C
14	1792.606 74(30)*	882.36	0.388E-20	P(22.5)	A	29	1808.694 60(28)*	601.89	0.126E-19	P(18.5)	B
15	1794.364 52(30)*	948.35	0.268E-20	P(21.5)	D	30	1808.702 23(28)*	601.69	0.126E-19	P(18.5)	A


NO 20 cm. 67 Pa (0.5 Torr)
% TRANSMISSION
100 80 60 40 20 0
1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1820
1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1830
1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1810.686 61(28)*	674.35	0.833E-20	P(17.5)	D
2	1810.690 74(28)*	674.32	0.833E-20	P(17.5)	C
3	1812.634 42(28)*	540.05	0.161E-19	P(17.5)	B
4	1812.642 44(28)*	539.87	0.161E-19	P(17.5)	A
5	1814.687 15(27)*	614.35	0.105E-19	P(16.5)	D
6	1814.690 88(27)*	614.33	0.105E-19	P(16.5)	C
7	1816.540 59(27)*	481.55	0.202E-19	P(16.5)	B
8	1816.549 00(27)*	481.37	0.203E-19	P(16.5)	A
9	1818.655 38(27)*	557.76	0.130E-19	P(15.5)	D
10	1818.658 72(27)*	557.74	0.130E-19	P(15.5)	C
11	1820.413 02(27)*	426.39	0.249E-19	P(15.5)	B
12	1820.421 81(27)*	426.22	0.249E-19	P(15.5)	A
13	1822.591 13(26)*	504.58	0.158E-19	P(14.5)	D
14	1822.594 09(26)*	504.56	0.158E-19	P(14.5)	C
15	1824.251 64(26)*	374.57	0.300E-19	P(14.5)	B
16	1824.260 79(26)*	374.41	0.301E-19	P(14.5)	A
17	1826.494 21(26)*	454.81	0.187E-19	P(13.5)	D
18	1826.496 81(26)*	454.80	0.188E-19	P(13.5)	C
19	1828.056 38(26)*	326.09	0.355E-19	P(13.5)	B
20	1828.065 86(26)*	325.94	0.355E-19	P(13.5)	A
21	1830.364 44(26)*	408.46	0.217E-19	P(12.5)	D
22	1830.366 70(26)*	408.45	0.217E-19	P(12.5)	C
23	1831.827 16(26)*	280.95	0.410E-19	P(12.5)	B
24	1831.836 98(26)*	280.81	0.410E-19	P(12.5)	A
25	1834.201 62(25)*	365.54	0.246E-19	P(11.5)	D
26	1834.203 55(25)*	365.53	0.246E-19	P(11.5)	C
27	1835.563 93(25)*	239.15	0.463E-19	P(11.5)	B
28	1835.574 06(25)*	239.02	0.463E-19	P(11.5)	A
29	1838.005 55(25)*	326.03	0.272E-19	P(10.5)	D
30	1838.007 17(25)*	326.03	0.272E-19	P(10.5)	C
31	1839.266 66(25)*	200.70	0.510E-19	P(10.5)	B
32	1839.277 07(25)*	200.57	0.510E-19	P(10.5)	A

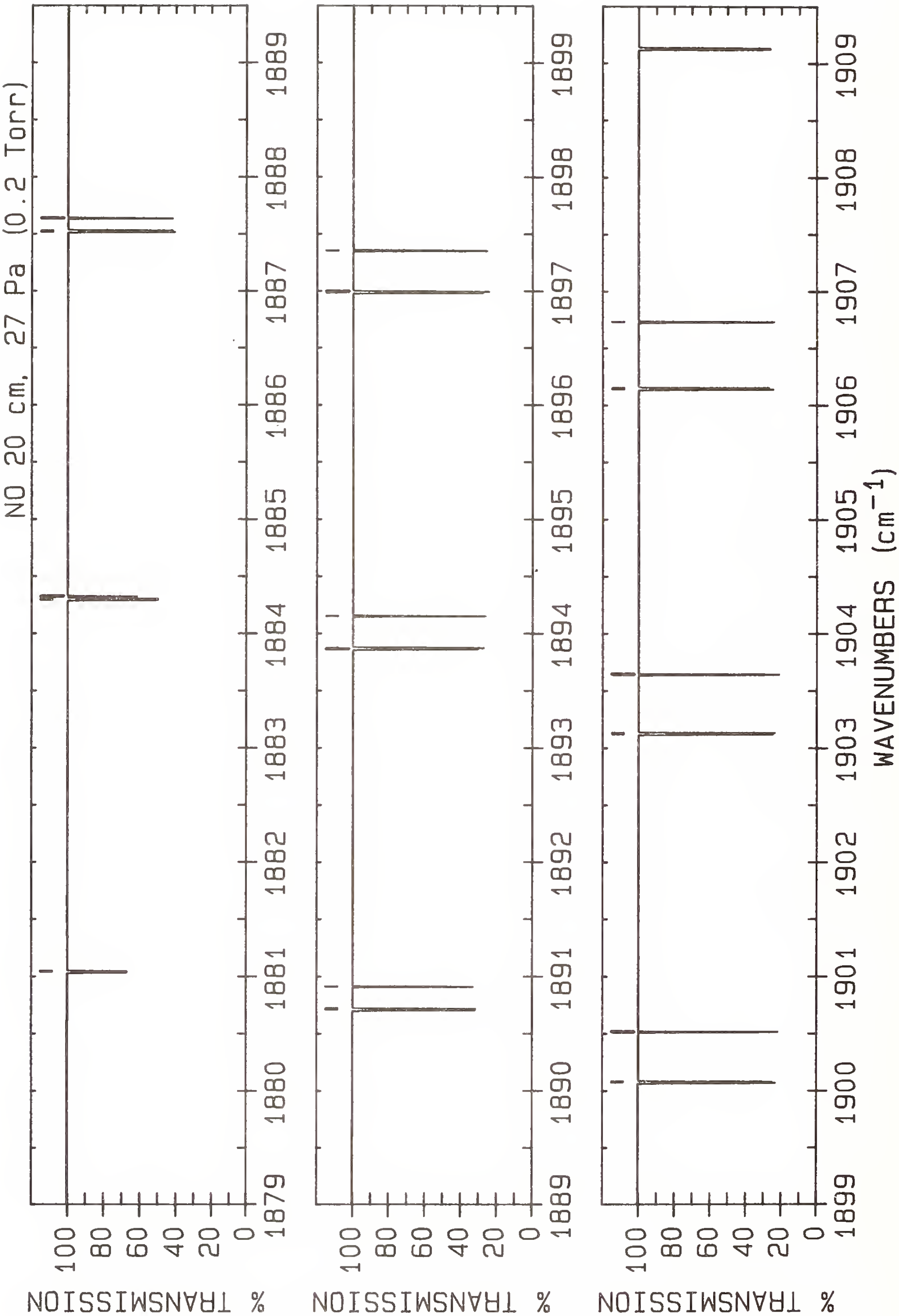

NO 20 cm, 133 Pa (1 Torr)
% TRANSMISSION
100 80 60 40 20 0
1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850
1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860
1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1841.776 00(25)*	289.96	0.293E-19	P(9.5)	D
2	1841.777 33(25)*	289.95	0.293E-19	P(9.5)	C
3	1842.935 28(25)*	165.58	0.548E-19	P(9.5)	B
4	1842.945 97(25)*	165.47	0.549E-19	P(9.5)	A
5	1845.512 75(24)*	257.31	0.306E-19	P(8.5)	D
6	1845.513 83(24)*	257.30	0.306E-19	P(8.5)	C
7	1846.569 80(24)*	133.81	0.573E-19	P(8.5)	B
8	1846.580 72(24)*	133.71	0.573E-19	P(8.5)	A
9	1849.215 58(24)*	228.09	0.309E-19	P(7.5)	D
10	1849.216 43(24)*	228.08	0.309E-19	P(7.5)	C
11	1850.170 15(24)*	105.38	0.581E-19	P(7.5)	B
12	1850.181 30(24)*	105.29	0.582E-19	P(7.5)	A
13	1852.884 24(23)*	202.30	0.300E-19	P(6.5)	D
14	1852.884 88(23)*	202.30	0.300E-19	P(6.5)	C
15	1853.736 35(23)*	80.30	0.569E-19	P(6.5)	B
16	1853.747 69(23)*	80.22	0.570E-19	P(6.5)	A
17	1856.518 49(23)*	179.95	0.277E-19	P(5.5)	D
18	1856.518 94(23)*	179.95	0.277E-19	P(5.5)	C
19	1857.268 36(23)*	58.56	0.535E-19	P(5.5)	B
20	1857.279 86(23)*	58.49	0.535E-19	P(5.5)	A
21	1860.118 08(22)*	161.03	0.239E-19	P(4.5)	D
22	1860.118 38(22)*	161.03	0.239E-19	P(4.5)	C
23	1860.766 19(22)*	40.16	0.478E-19	P(4.5)	B
24	1860.777 83(22)*	40.10	0.478E-19	P(4.5)	A
25	1863.682 75(22)*	145.55	0.184E-19	P(3.5)	D
26	1863.682 93(22)*	145.55	0.184E-19	P(3.5)	C
27	1864.229 83(22)*	25.11	0.397E-19	P(3.5)	B
28	1864.241 57(22)*	25.06	0.397E-19	P(3.5)	A
29	1867.212 25(21)*	133.51	0.110E-19	P(2.5)	D
30	1867.212 34(21)*	133.51	0.110E-19	P(2.5)	C
31	1867.659 26(21)*	13.40	0.295E-19	P(2.5)	B
32	1867.671 08(21)*	13.36	0.295E-19	P(2.5)	A
33	1869.364 08(28)*	737.75	0.862E-22	Q(18.5)	D
34	1870.032 16(28)*	674.35	0.124E-21	Q(17.5)	D



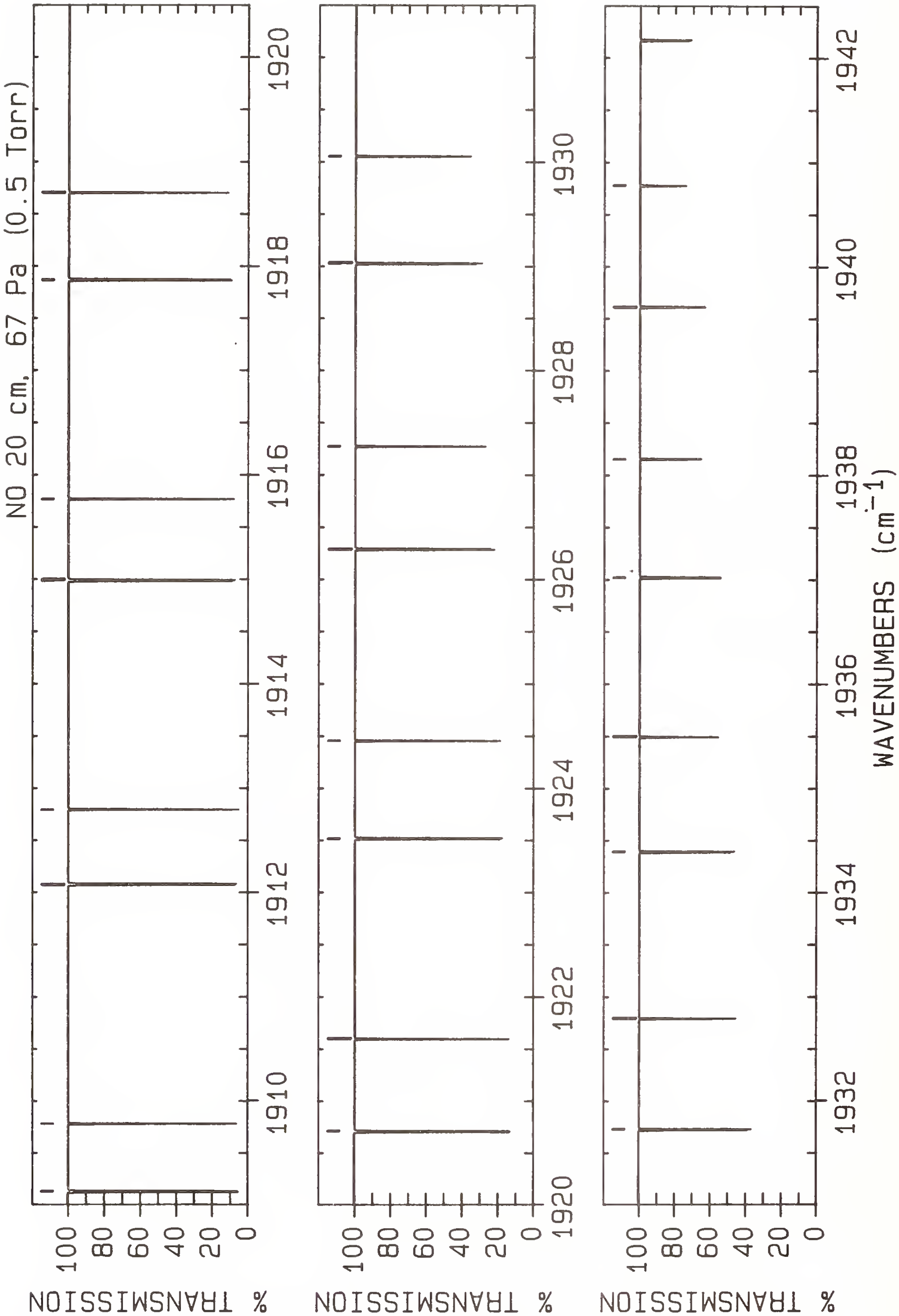
NO 20 cm, 133 Pa (1 Torr)
% TRANSMISSION
100 80 60 40 20 0
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1870.082 42(28)*	674.32	0.124E-21	Q(17.5)	C
2	1870.664 23(27)*	614.35	0.176E-21	Q(16.5)	D
3	1870.707 16(27)*	614.33	0.176E-21	Q(16.5)	C
4	1871.054 51(21)*	5.03	0.171E-19	P(1.5)	B
5	1871.066 37(21)*	5.01	0.171E-19	P(1.5)	A
6	1871.260 27(27)*	557.76	0.246E-21	Q(15.5)	D
7	1871.296 54(27)*	557.74	0.246E-21	Q(15.5)	C
8	1871.820 27(26)*	504.58	0.340E-21	Q(14.5)	D
9	1871.850 53(26)*	504.56	0.340E-21	Q(14.5)	C
10	1872.071 41(26)*	374.57	0.710E-22	Q(14.5)	B
11	1872.344 19(26)*	454.81	0.464E-21	Q(13.5)	D
12	1872.369 08(26)*	454.80	0.464E-21	Q(13.5)	C
13	1872.397 22(26)*	374.41	0.711E-22	Q(14.5)	A
14	1872.578 89(26)*	326.09	0.964E-22	Q(13.5)	B
15	1872.832 02(26)*	408.46	0.626E-21	Q(12.5)	D
16	1872.852 17(26)*	408.45	0.626E-21	Q(12.5)	C
17	1872.886 32(26)*	325.94	0.965E-22	Q(13.5)	A
18	1873.052 09(26)*	280.95	0.129E-21	Q(12.5)	B
19	1873.283 74(25)*	365.54	0.836E-21	Q(11.5)	D
20	1873.299 75(25)*	365.53	0.836E-21	Q(11.5)	C
21	1873.340 53(26)*	280.81	0.129E-21	Q(12.5)	A
22	1873.491 06(25)*	239.15	0.172E-21	Q(11.5)	B
23	1873.699 33(25)*	326.03	0.111E-20	Q(10.5)	D
24	1873.711 78(25)*	326.03	0.111E-20	Q(10.5)	C
25	1873.759 89(25)*	239.02	0.172E-21	Q(11.5)	A
26	1873.895 80(25)*	200.70	0.226E-21	Q(10.5)	B
27	1874.078 79(25)*	289.96	0.145E-20	Q(9.5)	D
28	1874.088 22(25)*	289.95	0.145E-20	Q(9.5)	C
29	1874.144 45(25)*	200.57	0.226E-21	Q(10.5)	A
30	1874.266 35(25)*	165.58	0.295E-21	Q(9.5)	B
31	1874.422 09(24)*	257.31	0.189E-20	Q(8.5)	D
32	1874.429 02(24)*	257.30	0.189E-20	Q(8.5)	C
33	1874.494 30(25)*	165.47	0.295E-21	Q(9.5)	A
34	1874.602 73(24)*	133.81	0.383E-21	Q(8.5)	B
35	1874.729 24(24)*	228.09	0.245E-20	Q(7.5)	D
36	1874.734 13(24)*	228.08	0.245E-20	Q(7.5)	C
37	1874.809 44(24)*	133.71	0.383E-21	Q(8.5)	A
38	1874.904 95(24)*	105.38	0.495E-21	Q(7.5)	B
39	1875.000 23(23)*	202.30	0.318E-20	Q(6.5)	D
40	1875.003 51(23)*	202.30	0.318E-20	Q(6.5)	C
41	1875.089 97(24)*	105.29	0.495E-21	Q(7.5)	A
42	1875.173 02(23)*	80.30	0.640E-21	Q(6.5)	B
43	1875.235 05(23)*	179.95	0.415E-20	Q(5.5)	D
44	1875.237 11(23)*	179.95	0.415E-20	Q(5.5)	C
45	1875.335 90(23)*	80.22	0.640E-21	Q(6.5)	A
46	1875.406 96(23)*	58.56	0.831E-21	Q(5.5)	B
47	1875.433 70(22)*	161.03	0.547E-20	Q(4.5)	D
48	1875.434 89(22)*	161.03	0.547E-20	Q(4.5)	C
49	1875.547 32(23)*	58.49	0.832E-21	Q(5.5)	A
50	1875.596 20(22)*	145.55	0.742E-20	Q(3.5)	D
51	1875.596 80(22)*	145.55	0.742E-20	Q(3.5)	C
52	1875.606 75(22)*	40.16	0.109E-20	Q(4.5)	B
53	1875.722 56(21)*	133.51	0.106E-19	Q(2.5)	D
54	1875.722 80(21)*	133.51	0.106E-19	Q(2.5)	C
55	1875.724 26(22)*	40.10	0.110E-20	Q(4.5)	A
56	1875.772 42(22)*	25.11	0.148E-20	Q(3.5)	B
57	1875.812 79(21)*	124.91	0.172E-19	Q(1.5)	D
58	1875.812 85(21)*	124.91	0.172E-19	Q(1.5)	C
59	1875.866 78(22)*	25.06	0.148E-20	Q(3.5)	A
60	1875.903 93(21)*	13.40	0.212E-20	Q(2.5)	B
61	1875.974 91(21)*	13.36	0.212E-20	Q(2.5)	A
62	1876.001 29(21)*	5.03	0.343E-20	Q(1.5)	B
63	1876.048 70(21)*	5.01	0.343E-20	Q(1.5)	A
64	1876.064 47(21)*	0.01	0.878E-20	Q(0.5)	B
65	1876.088 21(21)*	0.00	0.878E-20	Q(0.5)	A



NO 20 cm, 27 Pa (0.2 Torr)
% TRANSMISSION
100
80
60
40
20
0
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
WAVENUMBERS (cm^{-1})

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND	LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1881.034 99(21)*	0.00	0.176E-19	R(0.5)	A	21	1897.353 10(23)*	179.95	0.342E-19	R(5.5)	C
2	1881.046 80(21)*	0.01	0.176E-19	R(0.5)	B	22	1897.353 68(23)*	179.95	0.342E-19	R(5.5)	D
3	1884.293 37(21)*	5.01	0.310E-19	R(1.5)	A	23	1900.070 70(24)*	80.22	0.675E-19	R(6.5)	A
4	1884.305 12(21)*	5.03	0.310E-19	R(1.5)	B	24	1900.081 69(24)*	80.30	0.674E-19	R(6.5)	B
5	1884.323 16(21)*	124.91	0.115E-19	R(1.5)	C	25	1900.517 17(24)*	202.30	0.359E-19	R(6.5)	C
6	1884.323 25(21)*	124.91	0.115E-19	R(1.5)	D	26	1900.517 93(24)*	202.30	0.359E-19	R(6.5)	D
7	1887.517 50(22)*	13.36	0.426E-19	R(2.5)	A	27	1903.122 90(24)*	105.29	0.679E-19	R(7.5)	A
8	1887.529 14(22)*	13.40	0.426E-19	R(2.5)	B	28	1903.133 67(24)*	105.38	0.678E-19	R(7.5)	B
9	1887.636 25(22)*	133.51	0.198E-19	R(2.5)	C	29	1903.643 47(24)*	228.08	0.363E-19	R(7.5)	C
10	1887.636 43(22)*	133.51	0.198E-19	R(2.5)	D	30	1903.644 43(24)*	228.09	0.363E-19	R(7.5)	D
11	1890.707 34(22)*	25.06	0.522E-19	R(3.5)	A	31	1906.140 51(25)*	133.71	0.662E-19	R(8.5)	A
12	1890.718 85(22)*	25.11	0.522E-19	R(3.5)	B	32	1906.151 06(25)*	133.81	0.662E-19	R(8.5)	B
13	1890.912 42(22)*	145.55	0.262E-19	R(3.5)	C	33	1906.731 81(25)*	257.30	0.355E-19	R(8.5)	C
14	1890.912 71(22)*	145.55	0.262E-19	R(3.5)	D	34	1906.732 98(25)*	257.31	0.355E-19	R(8.5)	D
15	1893.862 86(23)*	40.10	0.597E-19	R(4.5)	A						
16	1893.874 21(23)*	40.16	0.597E-19	R(4.5)	B						
17	1894.151 45(23)*	161.03	0.310E-19	R(4.5)	C						
18	1894.151 87(23)*	161.03	0.310E-19	R(4.5)	D						
19	1896.983 99(23)*	58.49	0.648E-19	R(5.5)	A						
20	1896.995 17(23)*	58.56	0.648E-19	R(5.5)	B						



NO 20 cm, 67 Pa (0.5 Torr)
% TRANSMISSION
% TRANSMISSION
% TRANSMISSION
100 80 60 40 20 0
100 80 60 40 20 0
100 80 60 40 20 0
1910 1912 1914 1916 1918 1920
1920 1922 1924 1926 1928 1930
1932 1934 1936 1938 1940 1942
WAVENUMBERS (cm-1)

LINE #	WAVENUMBER(unc) (cm^{-1})	LOWER STATE (cm^{-1})	INTENSITY (cm/molecule)	ASSIGNMENT ROTATION	BAND
1	1909.123 44(26)*	165.47	0.628E-19	R(9.5)	A
2	1909.133 73(26)*	165.58	0.628E-19	R(9.5)	B
3	1909.782 00(26)*	289.95	0.337E-19	R(9.5)	C
4	1909.783 40(26)*	289.96	0.337E-19	R(9.5)	D
5	1912.071 58(27)*	200.57	0.581E-19	R(10.5)	A
6	1912.081 63(27)*	200.70	0.581E-19	R(10.5)	B
7	1912.793 90(27)*	326.03	0.311E-19	R(10.5)	C
8	1912.795 53(27)*	326.03	0.311E-19	R(10.5)	D
9	1914.984 82(28)*	239.02	0.525E-19	R(11.5)	A
10	1914.994 61(28)*	239.15	0.525E-19	R(11.5)	B
11	1915.767 33(28)*	365.53	0.280E-19	R(11.5)	C
12	1915.769 21(28)*	365.54	0.280E-19	R(11.5)	D
13	1917.863 04(29)*	280.81	0.464E-19	R(12.5)	A
14	1917.872 55(29)*	280.95	0.463E-19	R(12.5)	B
15	1918.702 15(29)*	408.45	0.247E-19	R(12.5)	C
16	1918.704 29(29)*	408.46	0.247E-19	R(12.5)	D
17	1920.706 09(30)*	325.94	0.401E-19	R(13.5)	A
18	1920.715 32(30)*	326.09	0.400E-19	R(13.5)	B
19	1921.598 22(30)*	454.80	0.212E-19	R(13.5)	C
20	1921.600 63(30)*	454.81	0.212E-19	R(13.5)	D
21	1923.513 83(31)*	374.41	0.339E-19	R(14.5)	A
22	1923.522 78(31)*	374.57	0.339E-19	R(14.5)	B
23	1924.455 42(31)*	504.56	0.179E-19	R(14.5)	C
24	1924.458 09(31)*	504.58	0.179E-19	R(14.5)	D
25	1926.286 11(32)*	426.22	0.281E-19	R(15.5)	A
26	1926.294 78(32)*	426.39	0.281E-19	R(15.5)	B
27	1927.273 62(32)*	557.74	0.147E-19	R(15.5)	C
28	1927.276 55(32)*	557.76	0.147E-19	R(15.5)	D
29	1929.022 78(33)*	481.37	0.228E-19	R(16.5)	A
30	1929.031 16(33)*	481.55	0.228E-19	R(16.5)	B
31	1930.052 71(33)	614.33	0.119E-19	R(16.5)	C
32	1930.055 91(33)	614.35	0.119E-19	R(16.5)	D
33	1931.723 65(34)*	539.87	0.182E-19	R(17.5)	A
34	1931.731 75(34)*	540.05	0.182E-19	R(17.5)	B
35	1932.792 57(34)	674.32	0.941E-20	R(17.5)	C
36	1932.796 04(34)	674.35	0.941E-20	R(17.5)	D
37	1934.388 57(36)	601.69	0.142E-19	R(18.5)	A
38	1934.396 39(36)	601.89	0.142E-19	R(18.5)	B
39	1935.493 10(36)	737.72	0.730E-20	R(18.5)	C
40	1935.496 84(36)	737.75	0.730E-20	R(18.5)	D
41	1937.017 36(38)	666.86	0.109E-19	R(19.5)	A
42	1937.024 89(38)	667.06	0.109E-19	R(19.5)	B
43	1938.154 20(38)	804.52	0.556E-20	R(19.5)	C
44	1938.158 20(38)	804.55	0.556E-20	R(19.5)	D
45	1939.609 82(40)	735.36	0.820E-20	R(20.5)	A
46	1939.617 08(40)	735.57	0.820E-20	R(20.5)	B
47	1940.775 78(40)	874.72	0.415E-20	R(20.5)	C
48	1940.780 03(40)	874.75	0.415E-20	R(20.5)	D

APPENDIX
Useful Equations and Formulas

Conversion factors

dipole moment or transition moment:
1 debye = $3.335\ 64 \times 10^{-30}$ coulomb meter
wavenumber:
1 cm^{-1} = 29 979.2458 MHz
pressure:
1 atm = 101 325. Pa (pascal)
1 torr = 133.322 Pa
absorption intensity:
1 cm^{-2} atm^{-1} at 296 K = 4.033×10^{-20} cm / molecule

Useful equations

Boltzmann factor:

$$N_i = N_j \exp(-1.439\, E_{ij}/T),$$

where N_i is the population of the *i'th* level and N_j is the population of the *j'th* level with energy difference in cm^{-1} of E_{ij} at a temperature of T kelvin.

Doppler half-width at half intensity, γ_D:

$$\gamma_D = 3.581 \times 10^{-7} \nu (T/M)^{1/2},$$

where ν is the frequency in the same units as γ_D, T is the temperature in kelvin, and M is the mass of the molecule in atomic mass units.

Peak intensity of a Doppler shaped line:

$$\%\ \text{transmission} = 100 \exp(-1.1494 \times 10^{14}\, S\, l\, p/\gamma_D),$$

where S is the intensity given in the tables, l is the pathlength in cm, and p is the pressure in Pa.

Peak intensity of a Lorentzian line:

$$\%\ \text{transmission} = 100 \exp(-0.7789 \times 10^{14}\, S\, l\, p/\gamma_L),$$

where S is the intensity given in the tables, γ_L is the Lorentzian half-width at half height, l is the pathlength in cm, and p is the pressure in Pa.

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T is new calibration atlas is based on frequency rather than wavelength calibration techniques for absolute references. Since a imited number of absolute frequency measurements is possible, additional data from alternate methodology is used for d ference frequency measurements within each band investigated by frequency measurement techniques. Data from these c nplementary techniques includes the best Fourier transform measurements available. Included in the text portion of the a is are a description of the heterodyne frequency measurement techniques, details of the analysis including the Hamiltonians a l least-squares-fitting and calculation procedures. Also included here are other relevant considerations such as intensities a l lineshape parameters. A 350 entry bibliography which contains all data sources used and a subsequent section on errors c iclude the text portion.

T e larger portion of the atlas consists of several hundred spectral-maps/facing-tables pages for the various calibration n lecules. The spectral maps (as well as the facing tables) are calculated from the molecular constants derived for the work. T e primary calibration molecules are the linear triatomics, carbonyl sulfide and nitrous oxide, which cover portions of the ii rared spectrum ranging from 488 to 2960 cm^{-1}. Some gaps in the coverage afforded by OCS and N_2O are partially covered b NO, CO and CS_2. An additional region from 4000 to 4500 cm^{-1} based on Co and N_2O is also included.

12. EY WORDS (6 TO 12 ENTRIES; ALPHABETICAL ORDER; CAPITALIZE ONLY PROPER NAMES; AND SEPARATE KEY WORDS BY SEMICOLONS)

c bration atlas; carbonyl sulfide; carbon monoxide; carbon disulfide; IR frequency calibrations; IR wavenumber calibrations; n ic oxide; nitrous oxide; wavenumber tables

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