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NATIONAL BUREAU OF STANDARDS

NBS SPECIAL PUBLICATION 426

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

Bibliography of Low Energy Electron and Photon Cross Section Data

(through December 1974)

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[1] Headquarters and Laboratories at Gaithersburg, Maryland, unless otherwise noted; mailing address Washington, D.C. 20234.

[2] Located at Boulder, Colorado 80302.

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Foreword

The National Standard Reference Data System was established in 1963 for the purpose of promoting the critical evaluation and dissemination of numerical data of the physical sciences. The program is coordinated by the Office of Standard Reference Data of the National Bureau of Standards but involves the efforts of many groups in universities, government laboratories, and private industry. The primary aim of the program is to provide compilations of critically evaluated physical and chemical property data. These tables are published in the *Journal of Physical and Chemical Reference Data,* in the NSRDS-NBS series of the National Bureau of Standards, and through other appropriate channels.

The task of critical evaluation is carried out in various data centers, each with a well-defined technical scope. A necessary preliminary step to the critical evaluation process is the retrieval from the world scientific literature of all papers falling within the scope of the center. Each center, therefore, builds up a comprehensive well-indexed bibliographical file which forms the base for the evaluation task. Bibliographies derived from these files are published when they appear to be of value to research workers and others interested in the particular technical area.

Further information on NSRDS and the publications which form the primary output of the program may be obtained by writing to the Office of Standard Reference Data, National Bureau of Standards, Washington, DC 20234.

David R. Lide, Jr., Chief
Office of Standard Reference Data

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Bibliography of Low Energy Electron and Photon Cross Section Data (through December 1974)

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A bibliography of original reports of measurements or calculations of electron, positron and photon cross sections and their ions is presented. A detailed index to the bibliography allows retrieval of cross section data for specific processes and atomic or molecular species. A comprehensive author index is included. The bibliography covers the period 1921 through calendar year 1974 but some references late in 1974 may not have been found and included. No references were found prior to 1921.

Key words: Atom; collision cross section; detachment; dissociation; elastic scattering; electron; excitation; fluorescence; ion; ionization; molecule; photon; positron.

Introduction

History

This bibliography is the result of a continuing literature survey which was begun in 1960 and originally encompassed only electron and positron collision cross section data. In 1967 the collection of photon cross section references was begun. The search for references in both cases was retrospective and included all papers reporting measurements or calculations of such cross sections or their equivalents (see below) for atoms and small molecules. This means that the earliest papers in our collection go back to the beginning of modern atomic and molecular physics in the 1920's. In fact the earliest papers in our collection are the classic electron transmission measurements of Ramsauer and electron drift tube measurements of Townsend which were published in 1921. The organization responsible for continuing this survey is the Low Energy Atomic Collision Cross Section Information Center which is located in the Joint Institute for Laboratory Astrophysics, University of Colorado, Boulder, Colorado 80302.

Scope

This bibliography contains references to original research papers which report measurements or theoretical calculations of cross sections for electron and photon collisions with free atoms and small molecules and their positive and negative ions. Free radicals are included. The choice of molecular species is somewhat arbitrary. The general criteria for inclusion were that the species be important in modeling planetary and stellar atmospheres, galactic gas clouds, gas discharges and lasers, or low temperature plasmas. There also is included a small but significant group of references containing positron scattering cross section data.

Papers reporting measurements or calculations of the following quantities are included, since under proper conditions cross sections have been or can be simply derived from them.

For electron impact: (1) scattering phase shifts
(2) scattering lengths
(3) ionization efficiencies
(4) excitation efficiencies

For photon impact: (1) absorption coefficients
(2) ionization coefficients

The energy range for electron cross section data is 0–10 keV. This should not be taken literally since in many cases measurements are made over a wide range and might only partly overlap this range. It is unlikely though that references will be found for primary electron energies above 50 keV.

The criterion that we have attempted to apply in our selection of the papers containing photon cross sections is that the data in the papers should be for wavelength regions of continuous absorption. For atoms, this clearly means those wavelength regions above the first ionization limit. Indeed, until elastic scattering becomes important, the absorption and ionization continua cross sections are identical. In the case of molecules this clear-cut distinction cannot be made since we now have ionization and dissociation continua overlaid in many cases by discrete structure with variable efficiencies for preionization, predissociation and photoexcitation. We have therefore restricted our search primarily to the wavelength range represented by the ultraviolet region of the spectrum (1.0 to

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300 nm).

In addition to references from the formal scientific literature we have included theses, reports given at meetings in some cases, and company or agency reports which have been printed and circulated. However, reference is not made to material that is unavailable either through library facilities or government document centers. No classified material is included. Very few items have been included from the published proceedings of national and international conferences, not only because of the enormous increase in the number of these conferences, but also because the data presented are usually published more formally later. There is also a tendency for authors to publish material which is identical to that which they have reported on at a meeting and also issued as a company or agency report. In some cases it is possible to verify that one of these situations is so and in those cases only one reference, the formal publication, if there is one, is kept in the bibliography. In many cases it is not possible to make a precise distinction among such documents. Because of this, there may be cases of duplication in the sense that there may be more than one reference to the same original data. We have tried to keep this to a minimum consistent with our aim of collecting references to all published data.

Inclusion of a reference in this bibliography does not imply a value judgment about the accuracy of the data. It is only asserted that the references included report a measured electron, positron, or photon scattering cross section.

References identified on or before 28 February 1975 and bearing a publication date on or before 31 December 1974 are included. This means that the bibliography is essentially complete through calendar year 1974. There are probably some references from obscure or nonstandard sources which have not been identified and included. These are normally found through abstracting services which in some cases are 6 months to 1 year behind publication dates.

The references are indexed by a hierarchy of terms which describe in detail the cross section data to be found in the reference. First of all there are three large groupings: the electron, positron and photon lists. Within each of these large groupings the order of the index terms is as follows:

(1) Process (see Contents).
(2) Experimental or Theoretical.
(3) Normalized or Relative (the data are considered normalized if given in absolute units.)
(4) Atomic or Molecular Species (including the degree of ionization of the target). The common chemical symbols for the atomic species come first and are alphabetically ordered. They are followed by diatomics, triatomics, etc. The molecular symbols are alphabetically ordered. If a subscript appears, one merely treats it as a repeating symbol for purposes of ordering.
(5) The states of the target and their ordering are as follows:
    (a) Neutral unexcited species.
    (b) Negative ions, indicated by a superscript minus sign following the atomic or molecular symbol.
    (c) Neutral excited species, indicated by a superscript asterisk following the atomic or molecular symbol.
    (d) Positively charged ions, indicated by a superscript plus sign and an integer indicating the degree of ionization following the atomic or molecular symbol.

The index categories are generally self-explanatory but a few comments about the process terms are in order. The terms that we have chosen are based more on experimental techniques than the, perhaps, more logical theoretical categories. Thus, for example, the category "Absorption" in the photon index has no theoretical subsection, as the theoretical papers will deal specifically with ionization or dissociation. However, in the laboratory, the quantities measured are usually the total absorption cross section and the photoionization or photodissociation yield. In these cases, a paper reporting total absorption cross sections is listed under "Absorption," while a paper reporting photoionization or dissociation yields is listed under "Ionization" or "Dissociation." This listing procedure has been followed even for papers which claim to measure "ionization" cross sections for atoms using absorption techniques. Those papers listed under the category "Photoionization, Experimental," have all measured the cross section by detecting the number of positive ions created.

A large amount of data is now becoming available using mass spectrometry and photoelectron techniques. These techniques measure a quantity which should yield the relative partial photoionization cross section for the production of ion fragments, or of the parent ion in a particular energy state. We have listed the papers using these techniques

under "Ionization, Relative."

Category "Total Scattering" in the electron index includes theoretical papers that give a total cross section which is the sum of elastic and inelastic cross sections. It also includes any references to experimentally determined cross sections in which the experiment does not distinguish between elastically and inelastically scattered electrons even if the experiment is carried out in an energy range in which only elastic scattering is expected.

Organization

This report consists of three parts: an index to the bibliography, the list of citations in the bibliography, and an author index.

Index

The index is a list of references which are identified by our accession number, the first author's surname and the last two digits of the year of publication. (For example, 66 means 1966.) The accession number identifies the reference in our list of citations.

Bibliography

In this section the complete citations for all references are given. The citations are listed in numerical order by accession number. All authors' surnames and initials and the title are given as well as journal name, volume, inclusive pages and year of publication. For non-journal references, standard identifying information used by libraries for cataloguing is given.

Author Index

In this section all authors are listed alphabetically by surname. After each author's name is a list of accession numbers indicating which references he authored or coauthored.

Acknowledgments

The Atomic Collision Cross Section Information Center is part of the National Standard Reference Data System of the National Bureau of Standards. The Center is supported by the Office of Standard Reference Data of the National Bureau of Standards.

The collection of this material began almost 14 years ago and during that long period many individuals have made major contributions. The author would like to especially thank Dr. R. D. Hudson of NASA-Johnson Space Craft Center for his invaluable help in collecting and classifying the references in the photon bibliography. Finally, the author would like to thank Patricia L. Ruttenberg who made this publication possible via computer assisted typesetting.

I. Electron Cross Section Index

TOTAL SCATTERING EXPERIMENTAL

Normalized

Ar	1 Brode, 25	10 Normand, 30
	72 Mayer, 21	73 Ramsauer, 21
	74 Ramsauer, 21	75 Ramsauer, 23
	76 Rusch, 26	82 Bruche, 27
	86 Ramsauer, 29	94 Ramsauer, 32
	95 Ramsauer, 32	116 Fuchtbauer, 34
	160 Green, 30	174 Kollath, 28
	175 Gaertner, 31	186 Ramsauer, 23
	197 Townsend, 22	199 Townsend, 22
	292 Engelhardt, 64	312 Phelps, 51
	454 Drawin, 56	530 Pack, 61
	538 Hammer, 56	637 Langmuir, 28
	819 Bowe, 60	846 Aberth, 63
	1007 Brode, 32	1041 Bulewicz, 62
	1062 Frost, 64	1473 Harris, 63
	1577 Daiber, 65	1591 Kozlov, 65
	1752 Wahlin, 31	1786 Kozlov, 65
	1891 Aberth, 63	1945 Daiber, 66
	1962 Golden, 66	2327 Ramsauer, 31
	2328 Ny, 37	2440 Baldwin, 67
	2906 Polushkin, 66	2956 Polushkin, 66
	2957 Gavallas, 67	3204 Tice, 67
	3568 Volkov, 68	4711 Delpech, 72
	6179 Schultes, 74	
Ar^{*}	4492 Celotta, 71	
C	305 Maecker, 55	
Cd	8 Brode, 30	46 Brode, 25
Cs	6 Brode, 29	16 Perel, 62
	132 Morgulis, 63	149 Mirlin, 62
	182 Chen, 62	764 Boeckner, 33
	768 Mullaney, 61	769 Flavin, 63
	785 Roehling, 63	850 Flavin, 63
	872 Meyerand Jr., 63	1473 Harris, 63
	2906 Polushkin, 66	3873 Postma, 69
	4397 Visconti, 71	5518 Kulik, 72
Cs^{+1}	764 Boeckner, 33	
F	559 Maecker, 56	
Fe	305 Maecker, 55	
H	305 Maecker, 55	322 Brackmann, 58
	454 Drawin, 56	493 Kolesnikov, 62
	502 Wiese, 63	538 Hammer, 56
	1018 Neynaber, 61	
He	1 Brode, 25	10 Normand, 30
	72 Mayer, 21	73 Ramsauer, 21
	74 Ramsauer, 21	82 Bruche, 27
	86 Ramsauer, 29	94 Ramsauer, 32
	116 Fuchtbauer, 34	160 Green, 30
	161 Palmer, 31	174 Kollath, 28

TOTAL SCATTERING EXPERIMENTAL

Normalized

He	186 Ramsauer, 23	192 Francis, 47
	201 Townsend, 23	233 Dougal, 58
	249 Chen, 61	306 Anderson, 55
	312 Phelps, 51	314 Gould, 54
	317 Anderson, 56	454 Drawin, 56
	530 Pack, 61	594 Hirshfield, 58
	637 Langmuir, 28	819 Bowe, 60
	869 Golden, 65	888 Phelps, 60
	995 Goodrich, 37	1041 Bulewicz, 62
	1062 Frost, 64	1348 Goldan, 65
	1473 Harris, 63	1489 Crompton, 65
	1591 Kozlov, 65	1786 Kozlov, 65
	2327 Ramsauer, 31	2328 Ny, 37
	2433 Crompton, 67	2440 Baldwin, 67
	2906 Polushkin, 66	2956 Polushkin, 66
	2957 Gavallas, 67	3204 Tice, 67
	3568 Volkov, 68	3702 Hoffmann, 69
	4355 Crompton, 70	6179 Schultes, 74
He^{*}	868 Neynaber, 63	
He^{+1}	233 Dougal, 58	306 Anderson, 55
Hg	21 Tate, 32	46 Brode, 25
	47 Brode, 29	69 Arnot, 35
	117 Fuchtbauer, 35	157 Jones, 28
	160 Green, 30	161 Palmer, 31
	172 Beuthe, 27	598 McCutchen, 58
	637 Langmuir, 28	675 Simons, 38
	1746 Maxwell, 26	
K	6 Brode, 29	16 Perel, 62
	2956 Polushkin, 66	3147 Collins, 68
	4397 Visconti, 71	5653 Kasdan, 73
Kr	75 Ramsauer, 23	86 Ramsauer, 29
	95 Ramsauer, 32	118 Fuchtbauer, 35
	174 Kollath, 28	186 Ramsauer, 23
	312 Phelps, 51	439 Pack, 62
	819 Bowe, 60	1062 Frost, 64
	2326 Ramsauer, 31	3568 Volkov, 68
	3702 Hoffmann, 69	
Li	16 Perel, 62	
N	26 Neynaber, 63	305 Maecker, 55
	2753 Hermann, 67	
Na	6 Brode, 29	16 Perel, 62
	5653 Kasdan, 73	
Ne	10 Normand, 30	74 Ramsauer, 21
	82 Bruche, 27	84 Bruche, 29
	86 Ramsauer, 29	94 Ramsauer, 32
	116 Fuchtbauer, 34	174 Kollath, 28
	186 Ramsauer, 23	312 Phelps, 51
	637 Langmuir, 28	819 Bowe, 60

Normalized

Ne	1019 Chen, 64	1041 Bulewicz, 62
	1400 Gilardini, 57	1473 Harris, 63
	2326 Ramsauer, 31	2328 Ny, 37
	2957 Gavallas, 67	3568 Volkov, 68
	3702 Hoffmann, 69	4183 Salop, 70
O	305 Maecker, 55	325 Lin, 59
	1013 Neynaber, 61	1490 Sunshine, 65
	1577 Daiber, 65	1945 Daiber, 66
	2170 Sunshine, 67	2178 Sunshine, 65
Rb	6 Brode, 29	4397 Visconti, 71
Tl	13 Brode, 31	
Xe	75 Ramsauer, 23	86 Ramsauer, 29
	95 Ramsauer, 32	117 Fuchtbauer, 35
	186 Ramsauer, 23	312 Phelps, 51
	439 Pack, 62	819 Bowe, 60
	1062 Frost, 64	2326 Ramsauer, 31
	3568 Volkov, 68	3702 Hoffmann, 69
Zn	8 Brode, 30	46 Brode, 25
Br_2	683 Bailey, 37	
CO	1 Brode, 25	10 Normand, 30
	87 Ramsauer, 30	94 Ramsauer, 32
	174 Kollath, 28	200 Skinker, 23
	259 Bruche, 27	439 Pack, 62
	2326 Ramsauer, 31	3203 Tice, 67
	6179 Schultes, 74	
Cl_2	37 Fisk, 37	682 Bailey, 35
CsCl	6303 Becker, 74	
CsF	4957 Slater, 72	6215 Slater, 74
D_2	188 Bernstein, 62	439 Pack, 62
	1375 Golden, 65	1428 Hall, 55
	1787 Golden, 66	3204 Tice, 67
HCl	80 Bruche, 26	2088 Bailey, 30
H_2	1 Brode, 25	10 Normand, 30
	72 Mayer, 21	73 Ramsauer, 21
	77 Bruche, 26	79 Bruche, 27
	87 Ramsauer, 30	93 Ramsauer, 30
	94 Ramsauer, 32	160 Green, 30
	174 Kollath, 28	175 Gaertner, 31
	181 Frost, 62	186 Ramsauer, 23
	188 Bernstein, 62	195 Townsend, 21
	199 Townsend, 22	240 Varnerin Jr., 51
	312 Phelps, 51	352 Crompton, 52
	360 Bekefi, 58	530 Pack, 61
	538 Hammer, 56	637 Langmuir, 28

TOTAL SCATTERING EXPERIMENTAL

Normalized

H_2	685 Forester, 61	1043 Frost, 62
	1375 Golden, 65	1507 Dubovoi, 60
	1787 Golden, 66	2327 Ramsauer, 31
	3204 Tice, 67	4062 Crompton, 69
	6179 Schultes, 74	
HF	84 Bruche, 29	
I_2	677 Healey, 38	
KI	6302 Slater, 74	
K_2	5900 Miller, 73	
N_2	1 Brode, 25	10 Normand, 30
	26 Neynaber, 63	37 Fisk, 37
	72 Mayer, 21	73 Ramsauer, 21
	77 Bruche, 26	79 Bruche, 27
	87 Ramsauer, 30	174 Kollath, 28
	181 Frost, 62	186 Ramsauer, 23
	195 Townsend, 21	218 Engelhardt, 64
	312 Phelps, 51	316 Anderson, 56
	352 Crompton, 52	530 Pack, 61
	637 Langmuir, 28	684 Haas, 57
	685 Forester, 61	687 Bayes, 62
	846 Aberth, 63	982 Stotz, 63
	1041 Bulewicz, 62	1043 Frost, 62
	1473 Harris, 63	1577 Daiber, 65
	1591 Kozlov, 65	1786 Kozlov, 65
	1891 Aberth, 63	1997 Golden, 66
	2326 Ramsauer, 31	3204 Tice, 67
	6002 Baldwin, 74	6179 Schultes, 74
NO	200 Skinker, 23	259 Bruche, 27
	6430 Zecca, 74	
Na_2	5900 Miller, 73	
O_2	87 Ramsauer, 30	195 Townsend, 21
	259 Bruche, 27	377 Silverman, 57
	846 Aberth, 63	1577 Daiber, 65
	1891 Aberth, 63	2078 Chantry, 66
	2170 Sunshine, 67	2178 Sunshine, 65
	4183 Salop, 70	6179 Schultes, 74
CO_2	72 Mayer, 21	81 Ramsauer, 27
	87 Ramsauer, 30	93 Ramsauer, 30
	94 Ramsauer, 32	174 Kollath, 28
	198 Skinker, 22	259 Bruche, 27
	439 Pack, 62	685 Forester, 61
	687 Bayes, 62	2326 Ramsauer, 31
	3203 Tice, 67	6179 Schultes, 74
HCN	687 Bayes, 62	3203 Tice, 67
H_2O	84 Bruche, 29	439 Pack, 62
	687 Bayes, 62	1450 Takeda, 60

TOTAL SCATTERING EXPERIMENTAL

Normalized

H_2O	2088 Bailey, 30	3203 Tice, 67
	6179 Schultes, 74	
N_2O	93 Ramsauer, 30	159 Bailey, 32
	174 Kollath, 28	200 Skinker, 23
	259 Bruche, 27	439 Pack, 62
	687 Bayes, 62	3203 Tice, 67
	6179 Schultes, 74	6430 Zecca, 74
SO_2	687 Bayes, 62	3203 Tice, 67
C_2H_2	85 Bruche, 29	
NH_3	84 Bruche, 29	439 Pack, 62
	687 Bayes, 62	2088 Bailey, 30
	3203 Tice, 67	
CCl_4	991 Holst, 31	
CD_4	3204 Tice, 67	
CF_4	3204 Tice, 67	
CH_3Cl	991 Holst, 31	
CH_4	1 Brode, 25	84 Bruche, 29
	87 Ramsauer, 30	89 Bruche, 30
	174 Kollath, 28	192 Francis, 47
	259 Bruche, 27	685 Forester, 61
	973 Frommhold, 59	1833 Fink, 65
	2326 Ramsauer, 31	3204 Tice, 67
C_2H_4	85 Bruche, 29	203 Bannon, 28
	685 Forester, 61	
C_2H_6	89 Bruche, 30	6198 Duncan, 74

Relative

Ar	126 Rusch, 25	171 Zachmann, 27
	4963 Sanche, 72	
Cd	180 Minkowski, 23	
He	469 Hughes, 35	4006 Golden, 70
	4963 Sanche, 72	
Hg	163 Pearson, 31	180 Minkowski, 23
	486 Kessler, 65	
K	16 Perel, 62	329 Rubin, 60
Kr	126 Rusch, 25	4963 Sanche, 72
Ne	126 Rusch, 25	4963 Sanche, 72

TOTAL SCATTERING EXPERIMENTAL

Relative

O	170 Baerwald, 25	
Xe	4963 Sanche, 72	
H_2	126 Rusch, 25	170 Baerwald, 25
	171 Zachmann, 27	4013 Hall, 70
O_2	1013 Neynaber, 61	4791 Gray, 72
CH_4	209 Glockler, 24	

TOTAL SCATTERING THEORETICAL

Normalized

Ar	60 O'Malley, 63	452 Gryzinski, 59
Cs	810 Damburg, 61	1023 Salmona, 61
	1282 Robinson, 62	
He	60 O'Malley, 63	
K	810 Damburg, 61	
Kr	60 O'Malley, 63	
Li	810 Damburg, 61	990 Karule, 64
Na	810 Damburg, 61	
Ne	60 O'Malley, 63	
Xe	60 O'Malley, 63	

ELASTIC SCATTERING EXPERIMENTAL

Normalized

Ar	187 Berman, 49	273 Allen, 37
	292 Engelhardt, 64	330 Westin, 49
	637 Langmuir, 28	734 Graham, 54
	1909 Mazing, 66	4087 Afrosimov, 69
	5035 Beynon, 72	5146 Choudhury, 69
	5989 Williams, 74	6247 Lewis, 74
	6311 Gupta, 74	
Cs	1346 Balling, 64	1909 Mazing, 66
	3202 Nighan, 67	5056 Nighan, 72
	5091 Beynon, 72	

Normalized

Cu	6194 Williams, 74	
H	1031 Gilbody, 61	5553 Teubner, 73
	5988 Williams, 74	6187 Teubner, 74
	6191 Lloyd, 74	
He	165 Hughes, 32	273 Allen, 37
	274 Goldan, 63	330 Westin, 49
	637 Langmuir, 28	734 Graham, 54
	995 Goodrich, 37	1277 Hughes, 36
	3209 Vriens, 68	3565 Schearer, 68
	3817 Bromberg, 69	3975 Gibson, 69
	4408 Chamberlain, 70	4560 Truhlar, 71
	5069 Crooks, 72	5146 Choudhury, 69
	6315 Sethuraman, 74	
Hg	21 Tate, 32	69 Arnot, 35
	486 Kessler, 65	637 Langmuir, 28
	1535 Kessler, 64	3811 Eitel, 68
	3983 Bromberg, 69	5541 Rockwood, 73
K	2822 Rubin, 59	4561 Collins, 71
	4689 Slevin, 70	4926 Slevin, 72
	5035 Beynon, 72	
Kr	739 Chen, 63	4087 Afrosimov, 69
	5146 Choudhury, 69	
Na	679 Dehmelt, 58	1944 Balling, 66
	5091 Beynon, 72	5612 Davis, 73
Ne	187 Berman, 49	273 Allen, 37
	330 Westin, 49	637 Langmuir, 28
	734 Graham, 54	4087 Afrosimov, 69
	4862 Robertson, 72	5146 Choudhury, 69
Rb	522 Balling, 64	5612 Davis, 73
Xe	739 Chen, 63	4087 Afrosimov, 69
	5146 Choudhury, 69	
CO	374 Lassettre, 53	3817 Bromberg, 69
	4112 Bromberg, 70	4967 Comer, 71
	5084 Truhlar, 72	5145 Truhlar, 72
D_2	260 Engelhardt, 63	
H_2	260 Engelhardt, 63	637 Langmuir, 28
	4137 Trajmar, 70	4388 Weingartshofer, 7
	4734 Linder, 71	5553 Teubner, 73
	6187 Teubner, 74	6191 Lloyd, 74
N_2	381 Lassettre, 57	637 Langmuir, 28
	3817 Bromberg, 69	4112 Bromberg, 70
	4672 Comer, 71	5084 Truhlar, 72
O_2	4724 Trajmar, 71	4735 Linder, 71

ELASTIC SCATTERING EXPERIMENTAL

Normalized

O_2	5135 Nelson, 72	6047 Bromberg, 74
CO_2	6047 Bromberg, 74	
H_2O	6066 Lassettre, 74	
C_2H_2	5200 Cottrell, 68	
CH_4	190 Edmisten, 49	5468 John, 49
C_2H_4	5200 Cottrell, 68	
C_2H_6	190 Edmisten, 49	5200 Cottrell, 68

Relative

Ar	11 McMillen, 30	20 Hughes, 32
	22 Webb, 35	49 Bullard, 31
	52 Arnot, 31	59 Mohr, 32
	129 Ramsauer, 31	837 Porteus, 63
	1347 Kuyatt, 65	2290 Mehr, 67
	3513 Schackert, 68	
Au	1111 Reichert, 63	
Bi	3570 Haug, 68	
Cd	62 Childs, 33	
H	230 Harnwell, 29	1512 McGowan, 65
	1593 Kleinpoppen, 65	3774 Tai, 69
He	3 Dymond, 27	11 McMillen, 30
	53 Bullard, 31	120 Poultney, 34
	158 Harnwell, 29	193 Werner, 31
	253 Dymond, 29	300 Schulz, 63
	517 Schulz, 63	518 Fleming, 63
	529 Schulz, 64	1001 Hughes, 34
	1347 Kuyatt, 65	1470 Ehrhardt, 65
	1529 Ehrhardt, 65	2290 Mehr, 67
	2912 Chamberlain, 67	3513 Schackert, 68
	3850 Gibson, 69	6346 Arnow, 74
Hg	50 Arnot, 31	137 Nicoll, 33
	144 Arnot, 32	164 Gagge, 33
	191 Arnot, 29	219 Jordan, 33
	245 Arnot, 33	1002 Jordan, 34
	1347 Kuyatt, 65	1425 Deichsel, 61
	1427 Deichsel, 65	1431 Steidl, 65
	1475 Rose, 30	1596 Deichsel, 66
	2823 Yeates, 67	4150 Gronemeier, 70
	4406 Eitel, 71	5114 Hanne, 72
K	30 McMillen, 34	329 Rubin, 60
	610 Franken, 58	2947 Collins, 67

ELASTIC SCATTERING EXPERIMENTAL

Relative

K	5000 Hils, 72	5314 Gehenn, 71
	5979 Hils, 71	
Kr	22 Webb, 35	52 Arnot, 31
	529 Schulz, 64	1347 Kuyatt, 65
	2290 Mehr, 67	3513 Schackert, 68
Na	4779 Andrick, 72	
Ne	52 Arnot, 31	53 Bullard, 31
	59 Mohr, 32	137 Nicoll, 33
	158 Harnwell, 29	300 Schulz, 63
	529 Schulz, 64	1004 Hughes, 33
	1347 Kuyatt, 65	2290 Mehr, 67
	3513 Schackert, 68	5317 Heindorff, 73
Xe	52 Arnot, 31	529 Schulz, 64
	1347 Kuyatt, 65	2290 Mehr, 67
	3513 Schackert, 68	
Zn	64 Childs, 33	
Br_2	65 Arnot, 34	
CO	52 Arnot, 31	3377 Ehrhardt, 68
D_2	1471 Kuyatt, 66	
HD	1471 Kuyatt, 66	
H_2	11 McMillen, 30	23 Hughes, 32
	31 Webb, 35	52 Arnot, 31
	53 Bullard, 31	59 Mohr, 32
	129 Ramsauer, 31	158 Harnwell, 29
	230 Harnwell, 29	1085 Kuyatt, 64
	1303 Geiger, 64	1471 Kuyatt, 66
	3252 Ehrhardt, 68	3377 Ehrhardt, 68
I_2	65 Arnot, 34	2628 Hilgner, 67
	3935 Hilgner, 69	
N_2	52 Arnot, 31	53 Bullard, 31
	59 Mohr, 32	138 Massey, 33
	158 Harnwell, 29	300 Schulz, 63
	1924 Schulz, 66	2179 Ehrhardt, 67
	4999 Gehenn, 72	5012 Shyn, 72
	5037 Kambara, 72	
O_2	4373 Boness, 70	4375 Spence, 70
CO_2	59 Mohr, 32	129 Ramsauer, 31
H_2O	3934 Hilgner, 69	5360 Trajmar, 73
	6423 Seng, 74	
H_2S	59 Mohr, 32	

ELASTIC SCATTERING EXPERIMENTAL

Relative

C_2H_2	1286 Childs, 34	
PH_3	59 Mohr, 32	
CCl_4	65 Arnot, 34	1287 Hill, 36
	3934 Hilgner, 69	
CF_4	1287 Hill, 36	
CH_4	52 Arnot, 31	53 Bullard, 31
	59 Mohr, 32	137 Nicoll, 33
C_2H_4	1286 Childs, 34	
C_2H_6	1286 Childs, 34	
C_2H_5I	3935 Hilgner, 69	

ELASTIC SCATTERING THEORETICAL

Normalized

Ar	60 O'Malley, 63	99 Holtsmark, 29
	106 Allis, 31	185 Holtsmark, 28
	397 Barbiere, 51	409 Tietz, 59
	449 Kivel, 59	450 Kivel, 59
	471 Moiseiwitsch, 61	495 Moiseiwitsch, 63
	657 Zwicky, 23	818 Martynenko, 63
	821 Bauer, 63	875 Karle, 64
	1059 Biberman, 64	1139 Thompson, 66
	1579 Brackett, 63	1650 Lenander, 66
	3248 Yates, 68	3802 Meister, 68
	3844 Sheorey, 69	3998 Gryzinski, 70
	4421 Fink, 70	4485 Berg, 71
	4553 Thompson, 71	4612 Fink, 70
	4687 Garbaty, 71	5086 Schwarz, 72
	5312 Furness, 73	5581 Geltman, 73
	5821 Furness, 73	5955 Pindzola, 74
	6000 Amusia, 74	6115 Khare, 74
	6236 Bromberg, 74	
Ar^*	3826 Robinson, 69	
Ar^{+1}	3825 Manson, 69	
Au	1646 Schonfelder, 66	4421 Fink, 70
	4612 Fink, 70	
Au^{+1}	3825 Manson, 69	
B	884 Pilyankevich, 60	2177 Snodgrass, 66
	4303 Hunt, 70	

Normalized

B^{+4}	4674 Shimamura, 71	
Ba	6075 Fabrikant, 73	6076 Fabrikant, 73
Be	884 Pilyankevich, 60	4303 Hunt, 70
	6075 Fabrikant, 73	6076 Fabrikant, 73
Be^{+1}	3348 Feautrier, 68	
Be^{+2}	884 Pilyankevich, 60	
Be^{+3}	3844 Sheorey, 69	4674 Shimamura, 71
Be^{+4}	3844 Sheorey, 69	
Bi	1646 Schonfelder, 66	4421 Fink, 70
	4612 Fink, 70	
Br	1152 Arnot, 34	2060 Robinson, 67
C	884 Pilyankevich, 60	1057 Cooper, 62
	1102 McDowell, 64	1110 Myerscough, 64
	1114 Malik, 61	1539 Myerscough, 65
	2060 Robinson, 67	2616 Smith, 67
	3260 Henry, 68	3700 Henry, 69
	3704 Smith, 69	4303 Hunt, 70
	4421 Fink, 70	4612 Fink, 70
	5581 Geltman, 73	6415 Thomas, 74
C^{+2}	884 Pilyankevich, 60	
C^{+4}	884 Pilyankevich, 60	
Ca	557 Kamenetskii, 62	1448 Bely, 63
	6075 Fabrikant, 73	6076 Fabrikant, 73
Ca^{+1}	3825 Manson, 69	
Cl	267 Bullard, 30	745 Tietz, 60
	1057 Cooper, 62	2060 Robinson, 67
Cs	36 Garrett, 63	359 Stone, 63
	810 Damburg, 61	1178 Basu, 66
	1343 Crown, 65	1469 Karule, 65
	1491 Karule, 65	1523 Garrett, 64
	1542 Karule, 65	1665 Wilkins, 66
	1864 Karule, 65	1865 Karule, 65
	1897 Crown, 65	2002 Peterkop, 65
	4421 Fink, 70	4612 Fink, 70
	5195 Karule, 72	5590 Burke, 73
	5696 Karule, 66	5996 Burke, 74
	6425 Walker, 74	
Eu^{+1}	3825 Manson, 69	
F	572 Hoerni, 53	1057 Cooper, 62
	1287 Hill, 36	2060 Robinson, 67

ELASTIC SCATTERING THEORETICAL

Normalized

F^{+1}	3825 Manson, 69	
Ga^{+1}	3825 Manson, 69	
Ge^{+1}	3825 Manson, 69	
H	25 Morse, 33	28 Corinaldesi, 63
	32 Gorshanova, 62	44 Burke, 62
	55 McDougall, 32	83 Burke, 63
	127 Huang, 49	151 Burke, 62
	162 Burke, 62	168 Saraph, 62
	220 Kamenetskii, 62	234 Massey, 56
	244 Geltman, 60	276 Akerib, 61
	287 Chandrasekhar, 46	296 Gailitis, 63
	301 O'Malley, 62	351 Bell, 63
	362 Kato, 51	369 Ochkur, 57
	384 Borowitz, 57	393 Boyet, 54
	398 Massey, 50	403 Altshuler, 53
	405 Massey, 51	408 Ohmura, 58
	412 Seaton, 57	416 Bransden, 58
	429 Bransden, 56	447 Schwartz, 61
	448 Krall, 60	457 Demkov, 58
	463 Ohmura, 59	490 Schwartz, 61
	495 Moiseiwitsch, 63	498 Temkin, 63
	503 Temkin, 63	511 Borowitz, 54
	512 Temkin, 63	520 Malik, 59
	537 Omidvar, 59	542 Damburg, 62
	543 Staver, 49	544 Moiseiwitsch, 59
	552 Hara, 61	553 Mittleman, 62
	560 Veklenko, 63	561 Ohmura, 60
	567 Wu, 60	571 McEachran, 61
	586 Percival, 57	706 Temkin, 61
	712 Burke, 61	716 Veklenko, 64
	722 Lawson, 61	744 McEachran, 63
	795 Kamenetskii, 61	812 Robinson, 61
	855 McEachran, 60	856 Damburg, 63
	859 Smith, 60	864 Malik, 63
	879 Malik, 60	896 Smith, 60
	897 Nutt, 64	899 John, 60
	903 Pu, 63	904 Kyle, 64
	908 Kyle, 63	918 Burke, 62
	935 Ochkur, 58	967 Greenberg, 57
	980 Schwartz, 62	981 Muravev, 63
	1009 Burke, 63	1015 Smith, 61
	1022 Smith, 62	1025 Kingston, 61
	1026 Saraph, 61	1030 Temkin, 61
	1033 Lippmann, 61	1051 Temkin, 62
	1074 Somerville, 63	1083 Waddington, 64
	1084 Rosenberg, 60	1087 Vainshtein, 63
	1092 Sloan, 64	1130 Klein, 55
	1169 Kraidy, 66	1414 Lane, 64
	1461 Scott, 65	1487 Gailitis, 65
	1496 Hahn, 62	1505 Damburg, 65
	1510 Tietz, 63	1511 Tietz, 61
	1524 Taylor, 65	1550 Damburg, 63
	1551 Damburg, 63	1552 Damburg, 63
	1553 Damburg, 63	1580 Armstead, 65

Normalized

H	1686 Levin, 66	1703 Banerjee, 65
	1708 John, 66	1747 Kang, 66
	1770 Moiseiwitsch, 65	1773 Rudge, 65
	1847 Burke, 66	1869 Gailitis, 65
	1898 Kyle, 64	1904 Gupta, 67
	1976 Ormonde, 63	2059 Houston, 68
	2126 Jha, 66	2129 Jha, 66
	2159 Holt, 68	2749 Jha, 67
	2754 Michels, 67	2758 Kelly, 67
	2959 Callaway, 68	2968 Banerjee, 67
	3058 Rabik, 67	3215 Sloan, 68
	3258 Armstead, 68	3370 Ball, 68
	3371 Madan, 68	3394 Jha, 67
	3404 Kelly, 68	3511 Schlessinger, 68
	3701 Garrett, 69	3728 Truhlar, 68
	3738 Mohr, 69	3742 Ormonde, 69
	3774 Tai, 69	3801 McDonald, 69
	3822 Franco, 68	3926 Peat, 68
	3938 Oberoi, 69	3949 Burke, 69
	3992 Ormonde, 70	4071 Birman, 69
	4075 Mohr, 70	4076 Moiseiwitsch, 70
	4121 Reinhardt, 70	4229 Callaway, 70
	4232 Steelhammer, 70	4335 Rudge, 70
	4403 Elsberry, 69	4421 Fink, 70
	4493 Garibotti, 71	4496 Shelton, 71
	4562 Seiler, 71	4612 Fink, 70
	4632 Shimamura, 71	4637 Garrett, 71
	4657 Hutton, 72	4717 Garibotti, 71
	4725 Shimamura, 68	4727 McDonald, 71
	4730 Peterkop, 71	4778 Burke, 72
	4844 Jamieson, 71	4845 Rudge, 72
	4861 Zarlingo, 72	4925 Sil, 72
	4958 Adelman, 72	4960 Truhlar, 72
	5007 Murtaugh, 72	5066 Alton, 72
	5153 Knirk, 72	5154 Knirk, 72
	5279 Burke, 73	5357 Holt, 73
	5543 Thomas, 73	5654 Byron Jr., 73
	5659 Saha, 73	5661 Winters, 73
	5733 Callaway, 73	5823 Saha, 73
	5848 Decoster, 73	5893 McWhirter, 73
	5952 Oberoi, 73	5954 Hahn, 74
	5991 Baer, 73	6003 Mathur, 74
	6004 Heller, 74	6046 Kouri, 74
	6113 Ghosh, 73	6120 Hahn, 74
	6184 Byron Jr., 74	6190 Chung, 73
	6192 Rescigno, 74	6265 Winters, 74
	6266 Flannery, 74	6267 Truhlar, 74
	6304 Callaway, 74	6348 Ajmera, 74
	6420 Chaudhuri, 74	6426 Zon, 74
	6461 Flannery, 74	6469 Abdallah Jr., 74
H^-	3522 McDowell, 68	
H^*	429 Bransden, 56	433 Swan, 54
	593 Omidvar, 64	722 Lawson, 61
	859 Smith, 60	904 Kyle, 64
	935 Ochkur, 58	1074 Somerville, 63

ELASTIC SCATTERING THEORETICAL

Normalized

H^*	5153 Knirk, 72	5154 Knirk, 72
	6469 Abdallah Jr., 74	
He	25 Morse, 33	54 Massey, 32
	55 McDougall, 32	60 O'Malley, 63
	106 Allis, 31	136 Mott, 29
	206 Tietz, 63	221 Feenberg, 32
	258 Kolos, 61	383 Sachl, 58
	388 Byatt, 56	397 Barbiere, 51
	409 Tietz, 59	449 Kivel, 59
	459 Moiseiwitsch, 53	462 Huzinaga, 60
	471 Moiseiwitsch, 61	495 Moiseiwitsch, 63
	515 Mukherjee, 62	544 Moiseiwitsch, 59
	562 Tietz, 59	565 Hashino, 63
	590 Kolos, 60	657 Zwicky, 23
	760 Matora, 60	818 Martynenko, 63
	821 Bauer, 63	822 Bell, 63
	849 Hashino, 63	866 Marriott, 63
	976 La Bahn, 64	977 Muravev, 63
	1024 Moiseiwitsch, 61	1048 Mukherjee, 61
	1056 Inokuti, 61	1114 Malik, 61
	1182 Banerjee, 66	1256 Williamson, 65
	1283 Kar, 37	1308 Ghosh, 35
	1376 La Bahn, 65	1407 Khare, 65
	1408 Khare, 65	1485 Kestner, 65
	1493 Khare, 64	1516 Gurchumeliya, 63
	1590 Williamson, 62	1659 Husain, 66
	1704 Banerjee, 65	1775 Zhikhareva, 65
	1817 Orient, 66	1827 La Bahn, 66
	1853 Zhikhareva, 66	1894 Schenter, 66
	1905 Peterkop, 65	2005 Pu, 66
	2059 Houston, 68	2075 Lawson, 66
	2114 Gupta, 66	2127 Banerjee, 66
	2714 Malinowska–Ada,67	2751 Banerjee, 67
	2959 Callaway, 68	3340 Herzenberg, 68
	3341 Kennedy, 68	3452 Jha, 67
	3567 Doughty, 68	3586 Houston, 68
	3683 Peterkop, 68	3686 Michels, 69
	3705 Roy, 68	3749 Khare, 69
	3772 La Bahn, 69	3844 Sheorey, 69
	3876 Tully, 69	3936 Burke, 69
	3972 Bransden, 69	3982 Bonham, 69
	3992 Ormonde, 70	4069 Bransden, 79
	4071 Birman, 69	4081 La Bahn, 69
	4122 Franco, 70	4208 Purcell, 70
	4231 Khare, 70	4307 La Bahn, 70
	4334 Bransden, 70	4342 La Bahn, 70
	4347 Mittleman, 70	4351 Bonham, 71
	4352 Johnson, 70	4421 Fink, 70
	4497 Khare, 71	4560 Truhlar, 71
	4612 Fink, 70	4665 Joachain, 71
	4673 Holt, 71	4686 Joachain, 71
	4717 Garibotti, 71	4722 Duxler, 71
	4755 Banerji, 70	4778 Burke, 72
	4991 Woollings, 72	5055 Sinfailam, 72
	5086 Schwarz, 72	5217 Yarlagadda, 73
	5282 Houston, 73	5283 Knowles, 73

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Normalized

He	5315 Berrington, 73	5581 Geltman, 73
	5601 Thomas, 73	5661 Winters, 73
	5823 Saha, 73	5893 McWhirter, 73
	5894 Oberoi, 73	5895 Smith, 73
	5910 Murtaugh, 73	6111 Thomas, 73
	6186 Byron Jr., 74	6236 Bromberg, 74
	6248 Wichmann, 74	6265 Winters, 74
	6307 Buckley, 74	6421 Jhanwar, 74
	6456 Inokuti, 74	6467 Maiti, 74
He^{*}	514 Bhattacharyya, 61	1364 Husain, 67
	1658 Marriott, 66	3516 Sklarew, 68
	3826 Robinson, 69	3936 Burke, 69
	6248 Wichmann, 74	
He^{+1}	422 Seaton, 57	670 McCarroll, 64
	845 Sloan, 63	1080 Burke, 64
	1092 Sloan, 64	1847 Burke, 66
	3825 Manson, 69	4660 Schneider, 71
	4674 Shimamura, 71	4844 Jamieson, 71
	5952 Oberoi, 73	5954 Hahn, 74
Hg	109 Bunyan, 63	557 Kamenetskii, 62
	562 Tietz, 59	592 Gajewski, 58
	1424 Bunyan, 65	1646 Schonfelder, 66
	3731 Walker, 69	3773 Yates, 69
	3802 Meister, 68	4201 Zhirnov, 69
	4222 Walker, 70	4421 Fink, 70
	4442 Walker, 70	4491 Fink, 71
	4612 Fink, 70	4956 Mohr, 72
	5082 Carse, 72	5150 Huo, 72
	5480 Gergory, 73	5711 Salo, 73
Hg^{+1}	3825 Manson, 69	
I	2060 Robinson, 67	3248 Yates, 68
K	810 Damburg, 61	821 Bauer, 63
	959 Garrett, 64	1469 Karule, 65
	1491 Karule, 65	1523 Garrett, 64
	1542 Karule, 65	1864 Karule, 65
	1865 Karule, 65	2002 Peterkop, 65
	3881 Damburg, 68	5195 Karule, 72
	5554 Walters, 73	5556 Sinfailam, 73
	5696 Karule, 66	
K^{+1}	3825 Manson, 69	
Kr	60 O'Malley, 63	104 Holtsmark, 30
	156 Arnot, 34	449 Kivel, 59
	471 Moiseiwitsch, 61	495 Moiseiwitsch, 63
	818 Martynenko, 63	821 Bauer, 63
	1199 Mukherjee, 61	3248 Yates, 68
	4421 Fink, 70	4485 Berg, 71
	4612 Fink, 70	4635 Dobay–Szegleth, 71
	5581 Geltman, 73	6236 Bromberg, 74
	6463 Lewis, 74	

ELASTIC SCATTERING THEORETICAL

Normalized

Kr^{*}	3826 Robinson, 69	
Li	810 Damburg, 61	821 Bauer, 63
	835 Veldre, 59	990 Karule, 64
	1097 Vinkalns, 64	1469 Karule, 65
	1491 Karule, 65	1498 Garrett, 65
	1515 Karule, 63	1542 Karule, 65
	1571 Stone, 66	1864 Karule, 65
	1865 Karule, 65	2002 Peterkop, 65
	2893 Garrett, 65	3057 Marriott, 67
	3348 Feautrier, 68	3838 Burke, 69
	4303 Hunt, 70	4556 Dai, 71
	4642 Lan, 71	4648 Mathur, 71
	4784 Tripathi, 72	4801 Norcross, 71
	5195 Karule, 72	5554 Walters, 73
	5556 Sinfailam, 73	5587 Sarkar, 73
	5600 Bardsley, 73	5696 Karule, 66
	6456 Inokuti, 74	
Li^{+1}	3522 McDowell, 68	3825 Manson, 69
Li^{+2}	4674 Shimamura, 71	
Mg	4223 Van Blerkom, 70	5904 Fabrikant, 74
	6075 Fabrikant, 73	6076 Fabrikant, 73
Mg^{*}	4223 Van Blerkom, 70	
N	387 Robinson, 57	399 Klein, 58
	407 Hammerling, 57	597 Byatt, 59
	1114 Malik, 61	1579 Brackett, 63
	1650 Lenander, 66	2211 Mjolsness, 67
	2616 Smith, 67	2714 Malinowska–Ada, 67
	3260 Henry, 68	3700 Henry, 69
	3704 Smith, 69	4303 Hunt, 70
	4553 Thompson, 71	5581 Geltman, 73
	5597 Ormonde, 73	6246 Wedde, 74
	6415 Thomas, 74	
Na	106 Allis, 31	499 Salmona, 59
	810 Damburg, 61	812 Robinson, 61
	959 Garrett, 64	1023 Salmona, 61
	1052 Salmona, 61	1469 Karule, 65
	1491 Karule, 65	1498 Garrett, 65
	1520 Salmona, 63	1523 Garrett, 64
	1542 Karule, 65	1587 Salmona, 65
	1864 Karule, 65	1865 Karule, 65
	2002 Peterkop, 65	2893 Garrett, 65
	3881 Damburg, 68	4642 Lan, 71
	4801 Norcross, 71	5006 Moores, 72
	5082 Carse, 72	5195 Karule, 72
	5273 Tripathi, 73	5554 Walters, 73
	5556 Sinfailam, 73	5696 Karule, 66
Na^{*}	5987 Moores, 74	
Na^{+1}	422 Seaton, 57	719 Seaton, 58

Normalized

Na^{+1}	3744 Peixoto, 69	3825 Manson, 69
Ne	60 O'Malley, 63	106 Allis, 31
	185 Holtsmark, 28	267 Bullard, 30
	409 Tietz, 59	449 Kivel, 59
	471 Moiseiwitsch, 61	495 Moiseiwitsch, 63
	821 Bauer, 63	944 Frenkiel, 60
	1059 Biberman, 64	1139 Thompson, 66
	3844 Sheorey, 69	4421 Fink, 70
	4553 Thompson, 71	4612 Fink, 70
	4687 Garbaty, 71	5581 Geltman, 73
	6111 Thomas, 73	6115 Khare, 74
	6236 Bromberg, 74	6456 Inokuti, 74
	6463 Lewis, 74	
Ne^{*}	3826 Robinson, 69	
Ne^{+1}	3744 Peixoto, 69	3825 Manson, 69
Ni^{+1}	3825 Manson, 69	
O	71 Bates, 47	169 Brehm, 59
	208 Yamanouchi, 47	387 Robinson, 57
	399 Klein, 58	400 Temkin, 57
	407 Hammerling, 57	409 Tietz, 59
	588 Henry, 67	597 Byatt, 59
	812 Robinson, 61	821 Bauer, 63
	878 Gingo, 66	928 Mitra, 40
	1057 Cooper, 62	1569 Myerscough, 65
	1579 Brackett, 63	1650 Lenander, 66
	1832 Seaton, 53	2016 Breig, 66
	2060 Robinson, 67	2071 Garrett, 67
	2211 Mjolsness, 67	2616 Smith, 67
	2714 Malinowska–Ada,67	3700 Henry, 69
	3704 Smith, 69	4303 Hunt, 70
	4837 Duncan, 72	5005 Lan, 72
	5581 Geltman, 73	5597 Ormonde, 73
	5664 Saraph, 73	6114 Rountree, 74
	6246 Wedde, 74	6415 Thomas, 74
O^{-}	3744 Peixoto, 69	
P	4553 Thompson, 71	
Pb	4421 Fink, 70	4612 Fink, 70
Rb	3771 Balling, 69	4421 Fink, 70
	4612 Fink, 70	
Rh^{+1}	3825 Manson, 69	
S	1176 Tietz, 60	2060 Robinson, 67
Sc^{+1}	3825 Manson, 69	
Si	2060 Robinson, 67	

ELASTIC SCATTERING THEORETICAL

Normalized

Si^{+1}	3825 Manson, 69	
Sr	6075 Fabrikant, 73	6076 Fabrikant, 73
Ta^{+1}	3825 Manson, 69	
Tl	106 Allis, 31	
U	572 Hoerni, 53	592 Gajewski, 58
	875 Karle, 64	
Xe	60 O'Malley, 63	449 Kivel, 59
	818 Martynenko, 63	3342 Karaivanov, 68
	3802 Meister, 68	4421 Fink, 70
	4485 Berg, 71	4612 Fink, 70
	5581 Geltman, 73	6236 Bromberg, 74
	6463 Lewis, 74	
Xe^{*}	3826 Robinson, 69	
Xe^{+1}	3825 Manson, 69	
Y^{+1}	3825 Manson, 69	
Zn	106 Allis, 31	
Zn^{+1}	3825 Manson, 69	
Br_2	1152 Arnot, 34	1191 Shaw, 40
CN	3707 Itikawa, 69	3871 Itikawa, 69
	4644 Allison, 71	
CO	4323 Singh, 70	4555 Crawford, 71
	4794 Gianturco, 72	5448 Szabo, 74
Cl_2	893 Sheppard, 66	
HCl	3707 Itikawa, 69	3871 Itikawa, 69
	4564 Itikawa, 71	
H_2	34 Fisk, 36	54 Massey, 32
	251 Massey, 30	411 Nagahara, 54
	421 Carter, 58	428 Massey, 56
	434 Carson, 54	893 Sheppard, 66
	1311 Roscoe, 38	1408 Khare, 65
	1452 Takayanagi, 65	1816 Oksyuk, 66
	1993 Lane, 67	2464 Hara, 67
	2777 Wilkins, 67	3843 Henry, 69
	3876 Tully, 69	3946 Hara, 69
	4088 Lane, 69	4116 Truhlar, 70
	4137 Trajmar, 70	4560 Truhlar, 71
	5013 Sams, 72	5083 Khare, 72
	5271 Ford, 73	5358 Demkov, 71
	5448 Szabo, 74	5727 Liu, 73
	6110 Onda, 74	6115 Khare, 74
	6328 Chang, 74	

Normalized

H_2^{+1}	2027 Temkin, 67	3411 Weinberg, 68
	4000 Temkin, 69	
N_2	34 Fisk, 36	893 Sheppard, 66
	895 Chen, 63	1452 Takayanagi, 65
	1816 Oksyuk, 66	1852 Chen, 66
	4128 Krauss, 70	5063 Truhlar, 72
	5071 Burke, 72	5448 Szabo, 74
	5990 Brandt, 73	6006 Sawada, 74
	6246 Wedde, 74	6328 Chang, 74
O_2	34 Fisk, 36	1666 Geltman, 66
	1816 Oksyuk, 66	6246 Wedde, 74
	6328 Chang, 74	
CO_2	4323 Singh, 70	
H_2O	385 Altshuler, 57	2057 Shimizu, 63
	3675 Crawford, 68	5448 Szabo, 74
N_2O	4323 Singh, 70	
NH_3	385 Altshuler, 57	2057 Shimizu, 63
	5448 Szabo, 74	
CH_4	70 Buckingham, 41	5448 Szabo, 74

Relative

Ar	655 Henneberg, 33	4003 Weiss, 69
Bi	4174 Fink, 70	
Cl	1287 Hill, 36	
F	1287 Hill, 36	
H	68 Massey, 34	
He	51 Massey, 31	54 Massey, 32
	68 Massey, 34	302 Fano, 61
	639 Morse, 32	
He^{+1}	440 Bransden, 53	
Hg	653 Henneberg, 32	655 Henneberg, 33
	4003 Weiss, 69	
Kr	113 Voss, 33	655 Henneberg, 33
	1294 Hughes, 35	4003 Weiss, 69
O	48 Mott, 30	
H_2	54 Massey, 32	194 Massey, 32
	863 Gryzinski, 63	

ELASTIC SCATTERING THEORETICAL

Relative

N_2	138 Massey, 33	194 Massey, 32
C_2H_2	726 Hughes, 33	
CCl_4	1287 Hill, 36	
CF_4	1287 Hill, 36	
CH_4	70 Buckingham, 41	726 Hughes, 33
C_2H_4	726 Hughes, 33	

IONIZATION EXPERIMENTAL

Normalized

Ag	1081 Lyubimov, 63	2729 Pavlov, 67
	2825 Crawford, 66	2917 Crawford, 67
	2918 Crawford, 67	6119 Piacente, 73
Al	3974 Hink, 69	
Ar	2 Compton, 25	12 Bleakney, 30
	225 Smith, 30	340 Lampe, 57
	357 Tozer, 60	613 Bennett, 66
	626 Asundi, 63	743 Asundi, 63
	831 Peterson, 63	946 Glick, 64
	1105 Englander–Gold, 64	1281 Schram, 65
	1329 Fox, 61	1459 Rapp, 65
	1705 Schram, 66	1748 Schram, 66
	1863 Schram, 66	2120 Srinivasan, 67
	2123 Hammer, 67	2744 Gaudin, 67
	2899 Melton, 67	3569 Peresse, 65
	3693 Dolgov–Savelev, 68	3767 Mercer, 67
	3819 Van Der Wiel, 69	4087 Afrosimov, 69
	4129 Latimer, 70	4133 Grissom, 70
	4204 Clout, 71	4305 Feltsan, 70
	4405 Opal, 71	4426 Van Der Wiel, 71
	4670 Van Der Wiel, 71	5116 Grissom, 72
	5140 Luyken, 72	5441 Van Raan, 73
	5658 Fletcher, 73	5810 Rostovikova, 73
	6306 Ogurtsov, 73	6347 Tan, 74
Ar^{+1}	723 Latypov, 64	5193 Hasted, 72
Ar^{+2}	723 Latypov, 64	5193 Hasted, 72
Ar^{+3}	5193 Hasted, 72	
Au	4709 Salem, 71	5544 Schroeer, 73
	6119 Piacente, 73	
Ba	1502 McFarland, 65	2713 McFarland, 67

Normalized

Ba	4866 Vainshtein, 72	
Ba^{+1}	3296 Peart, 68	4448 Feeney, 71
	5054 Feeney, 72	5214 Peart, 73
C	589 Glupe, 67	4551 Hink, 71
C^{+1}	4706 Aitken, 71	
C^{+4}	5085 Engelhardt, 72	
Ca	1502 McFarland, 65	2713 McFarland, 67
	3985 Rakhovskii, 69	4173 Schramm, 69
	4317 Karstensen, 70	4703 Okuno, 71
	4866 Vainshtein, 72	6220 Schneider, 74
Cd	1687 Pottie, 66	4212 Anderson, 70
	4353 Aleinikov, 70	5015 Varshavskii, 70
	6119 Piacente, 73	
Cs	1104 McFarland, 65	1217 Brink, 64
	1875 Heil, 66	1972 Zapesochnyi, 66
	2715 Korchevoi, 67	3455 Nygaard, 68
	3699 Zapesochnyi, 69	6497 Aleksakhin, 74
Cu	2729 Pavlov, 67	2917 Crawford, 67
	5544 Schroeer, 73	6119 Piacente, 73
F^{+7}	5085 Engelhardt, 72	
H	320 Fite, 58	491 Boyd, 60
	978 Rothe, 62	1106 Boksenberg, 62
	2784 McGowan, 68	2955 McGowan, 68
He	2 Compton, 25	29 Liska, 34
	225 Smith, 30	335 Boyd, 58
	340 Lampe, 57	373 Lassettre, 53
	626 Asundi, 63	674 Compton, 18
	743 Asundi, 63	787 Hughes, 63
	799 Silverman, 64	942 St. John, 64
	974 Harrison, 56	995 Goodrich, 37
	1105 Englander–Gold,64	1281 Schram, 65
	1329 Fox, 61	1459 Rapp, 65
	1706 Schram, 66	1748 Schram, 66
	1858 Adamczyk, 66	1863 Schram, 66
	1895 Zapesochnyi, 65	1942 Anderson, 67
	2690 Weaver, 67	2744 Gaudin, 67
	3541 MoustafaMoussa,67	3569 Peresse, 65
	3819 Van Der Wiel, 69	4113 Vriens, 68
	4133 Grissom, 70	4405 Opal, 71
	4426 Van Der Wiel, 71	4671 Peterson, 71
	4781 Peterson, 72	4842 Van Der Wiel, 71
	5008 Oda, 72	5062 Van Der Wiel, 72
	5069 Crooks, 72	5116 Grissom, 72
	5817 Tahira, 72	5818 Tahira, 72
	5981 Balashov, 73	6030 Samoilov, 73
	6344 Samoilov, 74	

IONIZATION EXPERIMENTAL

Normalized

He^{*}	280 Fite, 63	3589 Long, 67
	4007 Long, 70	
He^{+1}	907 Dolder, 61	3995 Peart, 69
Hg	2 Compton, 25	4 Jones, 27
	21 Tate, 32	29 Liska, 34
	40 Nottingham, 39	69 Arnot, 35
	224 Smith, 31	228 Bleakney, 30
	303 Riede, 54	974 Harrison, 56
	1329 Fox, 61	4212 Anderson, 70
	4213 Varshavskii, 70	
Hg^{+1}	723 Latypov, 64	
Hg^{+2}	723 Latypov, 64	
In	6262 Shimon, 74	
K	88 Funk, 30	773 Feldman, 63
	1104 McFarland, 65	1217 Brink, 64
	2715 Korchevoi, 67	3699 Zapesochnyi, 69
	6497 Aleksakhin, 74	
K^{+1}	1568 Hooper, 66	2977 Peart, 68
Kr	340 Lampe, 57	357 Tozer, 60
	626 Asundi, 63	743 Asundi, 63
	1105 Englander–Gold,64	1281 Schram, 65
	1459 Rapp, 65	1705 Schram, 66
	1748 Schram, 66	1863 Schram, 66
	3051 Srinivasan, 67	3569 Peresse, 65
	4087 Afrosimov, 69	4133 Grissom, 70
	4297 El–Sherbini, 70	4405 Opal, 71
	4452 Rozgachev, 70	5008 Oda, 72
	5140 Luyken, 72	5441 Van Raan, 73
	5818 Tahira, 72	6052 Rostovikova, 73
Kr^{+1}	723 Latypov, 64	
Kr^{+2}	723 Latypov, 64	
Li	773 Feldman, 63	1104 McFarland, 65
	3063 Aleksakhin, 67	3699 Zapesochnyi, 69
	5592 Jalin, 73	
Li^{+1}	1421 Lineberger, 66	2721 Wareing, 67
	3296 Peart, 68	3947 Peart, 69
	3995 Peart, 69	
Mg	4306 Okuno, 70	4866 Vainshtein, 72
	5731 Aleksakhin, 73	
Mg^{+1}	3400 Martin, 68	
Mg^{+2}	3948 Peart, 69	

Normalized

N	589 Glupe, 67	831 Peterson, 63
	1268 Smith, 62	
N^{+1}	261 Harrison, 63	5193 Hasted, 72
N^{+2}	4706 Aitken, 71	5193 Hasted, 72
N^{+5}	5085 Engelhardt, 72	
Na	88 Funk, 30	1104 McFarland, 65
	1217 Brink, 64	1683 Zapesochnyi, 65
	3699 Zapesochnyi, 69	6497 Aleksakhin, 74
Na^{+1}	1568 Hooper, 66	2977 Peart, 68
Ne	2 Compton, 25	12 Bleakney, 30
	225 Smith, 30	340 Lampe, 57
	589 Glupe, 67	626 Asundi, 63
	743 Asundi, 63	831 Peterson, 63
	1105 Englander–Gold,64	1281 Schram, 65
	1329 Fox, 61	1459 Rapp, 65
	1706 Schram, 66	1748 Schram, 66
	1858 Adamczyk, 66	1863 Schram, 66
	2744 Gaudin, 67	3569 Peresse, 65
	3819 Van Der Wiel, 69	4087 Afrosimov, 69
	4110 Hertz, 69	4133 Grissom, 70
	4405 Opal, 71	4426 Van Der Wiel, 71
	4842 Van Der Wiel, 71	4900 Smirnov, 72
	4959 Walker, 72	5039 Walker, 71
	5116 Grissom, 72	5140 Luyken, 72
	5441 Van Raan, 73	5551 Smirnov, 73
	5658 Fletcher, 73	
Ne^{+1}	264 Dolder, 64	723 Latypov, 64
	5193 Hasted, 72	
Ne^{+2}	5193 Hasted, 72	
Ne^{+3}	5193 Hasted, 72	
Ne^{+8}	5085 Engelhardt, 72	
O	323 Fite, 59	589 Glupe, 67
	978 Rothe, 62	1106 Boksenberg, 62
O^{+1}	4707 Aitken, 71	4848 Mahadevan, 72
O^{+2}	4707 Aitken, 71	
O^{+6}	602 Jahoda, 62	5085 Engelhardt, 72
Pb	2729 Pavlov, 67	3643 Wang, 69
	4333 Pavlov, 70	6119 Piacente, 73
Rb	773 Feldman, 63	1104 McFarland, 65
	1217 Brink, 64	1969 Zapesochnyi, 66
	2715 Korchevoi, 67	3699 Zapesochnyi, 69

IONIZATION EXPERIMENTAL

Normalized

Rb	5484 Nygaard, 73	6497 Aleksakhin, 74
Sn	6119 Piacente, 73	
Sr	1502 McFarland, 65	2713 McFarland, 67
	4703 Okuno, 71	4866 Vainshtein, 72
	6051 Starodub, 73	
Tl	1502 McFarland, 65	2713 McFarland, 67
	5593 Nepiipov, 73	
Xe	340 Lampe, 57	357 Tozer, 60
	626 Asundi, 63	743 Asundi, 63
	1105 Englander–Gold,64	1281 Schram, 65
	1459 Rapp, 65	1705 Schram, 66
	1748 Schram, 66	1863 Schram, 66
	3569 Peresse, 65	4087 Afrosimov, 69
	4133 Grissom, 70	4297 El–Sherbini, 70
	4405 Opal, 71	5140 Luyken, 72
	5441 Van Raan, 73	5591 Rostovikova, 73
	6465 Rostovikova, 73	
Xe^{+1}	723 Latypov, 64	
Xe^{+2}	723 Latypov, 64	
Zn	1687 Pottie, 66	4212 Anderson, 70
	4353 Aleinikov, 70	5630 Penkin, 72
CO	18 Tate, 32	340 Lampe, 57
	867 Craggs, 58	938 Asundi, 63
	1105 Englander–Gold,64	1329 Fox, 61
	1459 Rapp, 65	2120 Srinivasan, 67
	3064 Skubenich, 67	3374 Skubenich, 67
	4349 Aarts, 70	4405 Opal, 71
	4658 Holland, 72	4685 Ajello, 71
	4814 El–Sherbini, 72	4864 Koppe, 72
	5057 Tisone, 72	5903 Van Der Wiel, 72
Cl_2	5143 Center, 72	
D_2	260 Engelhardt, 63	1105 Englander–Gold,64
	1281 Schram, 65	1459 Rapp, 65
	1863 Schram, 66	5485 Cowling, 73
F_2	5143 Center, 72	
HCl	2 Compton, 25	340 Lampe, 57
HD	1396 Briglia, 65	
H_2	2 Compton, 25	18 Tate, 32
	41 Newhall, 42	260 Engelhardt, 63
	320 Fite, 58	335 Boyd, 58
	340 Lampe, 57	974 Harrison, 56
	1105 Englander–Gold,64	1281 Schram, 65
	1459 Rapp, 65	1748 Schram, 66

Normalized

H_2	1858 Adamczyk, 66	1863 Schram, 66
	2954 McGowan, 68	4405 Opal, 71
	5485 Cowling, 73	
N_2	2 Compton, 25	18 Tate, 32
	153 Cook, 62	333 Stewart, 56
	340 Lampe, 57	831 Peterson, 63
	857 Silverman, 65	946 Glick, 64
	992 Sheridan, 61	1105 Englander–Gold,64
	1106 Boksenberg, 62	1123 Hayakawa, 64
	1214 McConkey, 67	1281 Schram, 65
	1329 Fox, 61	1459 Rapp, 65
	1504 McConkey, 65	1748 Schram, 66
	1863 Schram, 66	1881 Daly, 66
	1968 Hayakawa, 65	2785 Holland, 67
	2923 Fowler, 67	2964 Srivastava, 68
	3024 Nishimura, 68	3051 Srinivasan, 67
	3064 Skubenich, 67	3524 Srivastava, 68
	3527 Peresse, 67	3710 Stanton, 69
	3769 Srivastava, 69	4080 Borst, 70
	4083 Koval, 69	4326 Lawrence, 70
	4405 Opal, 71	4428 Sheridan, 71
	4647 Koppe, 71	4658 Holland, 72
	4682 McConkey, 71	4749 Tisone, 72
	4800 Shemansky, 71	4814 El–Sherbini, 72
	4864 Koppe, 72	5070 Halas, 72
	5650 Mark, 73	5728 Crowe, 73
	5903 Van Der Wiel, 72	6142 VanDeRunstraat,74
NO	18 Tate, 32	340 Lampe, 57
	946 Glick, 64	1105 Englander–Gold,64
	1459 Rapp, 65	4405 Opal, 71
	4714 Stone, 72	4715 Mentall, 72
	4841 Aarts, 71	
O_2	18 Tate, 32	323 Fite, 59
	334 Stewart, 58	340 Lampe, 57
	377 Silverman, 57	853 Craggs, 57
	861 Prasad, 61	938 Asundi, 63
	946 Glick, 64	1075 Silverman, 64
	1105 Englander–Gold,64	1106 Boksenberg, 62
	1281 Schram, 65	1289 Schulz, 62
	1459 Rapp, 65	1748 Schram, 66
	1838 Nishimura, 66	1863 Schram, 66
	3024 Nishimura, 68	3064 Skubenich, 67
	3387 Korol, 68	3527 Peresse, 67
	3578 Skubenich, 68	3760 McConkey, 69
	4125 Borst, 70	4337 Srivastava, 70
	4405 Opal, 71	4683 Aarts, 71
	5057 Tisone, 72	5525 Koppe, 72
Te_2	1687 Pottie, 66	
CO_2	340 Lampe, 57	865 Craggs, 60
	938 Asundi, 63	948 Bhalla, 60
	1105 Englander–Gold,64	1459 Rapp, 65
	1700 Nishimura, 66	3024 Nishimura, 68

IONIZATION EXPERIMENTAL

Normalized

CO_2	3246 McConkey, 68	3527 Peresse, 67
	4336 Sroka, 70	4405 Opal, 71
	4684 Ajello, 71	4712 Mumma, 72
	4995 Adamczyk, 72	5088 Koval, 72
	5816 Mentall, 73	6388 Tsurubuchi, 74
H_2O	340 Lampe, 57	1782 Schutten, 66
	3212 Gomet, 67	4405 Opal, 71
H_2S	340 Lampe, 57	
N_2O	1105 Englander–Gold,64	1459 Rapp, 65
	1771 Latimer, 65	
C_2H_2	18 Tate, 32	340 Lampe, 57
	2744 Gaudin, 67	4405 Opal, 71
	5142 Azria, 72	
C_2N_2	5307 Korol, 72	
NH_3	340 Lampe, 57	4405 Opal, 71
CD_4	1690 Schram, 66	1863 Schram, 66
CH_3Cl	340 Lampe, 57	
CH_4	340 Lampe, 57	356 Tozer, 58
	946 Glick, 64	1105 Englander–Gold,64
	1459 Rapp, 65	1690 Schram, 66
	1858 Adamczyk, 66	1863 Schram, 66
	2899 Melton, 67	3527 Peresse, 67
	4405 Opal, 71	
C_2H_4	340 Lampe, 57	1459 Rapp, 65
	1690 Schram, 66	
SF_6	940 Asundi, 64	1459 Rapp, 65
C_2H_6	340 Lampe, 57	1690 Schram, 66

Relative

Ag	566 Blais, 60	1578 De Maria, 65
	4077 Rovner, 70	4429 Cabaud, 71
	4785 Abouaf, 71	
Al	659 Crawford, 62	4346 Gingerich, 70
Ar	12 Bleakney, 30	66 Mohr, 34
	213 Stevenson, 42	242 Morrison, 59
	280 Fite, 63	283 Fiquet–Fayard, 63
	304 Hanle, 52	339 Otvos, 56
	483 Cottin, 59	525 Krauss, 59
	539 Hayakawa, 55	550 Hagstrum, 56
	625 Jesse, 25	692 Kuyatt, 63

Relative

Ar	704 Hickam, 54	777 Brink, 61
	781 Fox, 60	958 Melton, 62
	986 Blanc, 62	1034 Foner, 61
	1038 Kaneko, 61	1069 Dorman, 59
	1070 Dorman, 61	1100 Becker, 64
	1124 Fiquet–Fayard, 62	1162 Fiquet–Fayard, 62
	1244 Morrison, 53	1373 Simpson, 65
	1453 Stuber, 65	1530 Fiquet–Fayard, 65
	1919 Fiquet–Fayard, 65	2349 Schram, 64
	3835 Marchand, 69	3990 Ziesel
	4127 Carlson, 70	4211 Okudaira, 70
	4238 McConkey, 70	4381 Van Der Wiel, 70
	4404 Yamamoto, 71	4557 Ehrhardt, 71
	4736 Bolduc, 71	4743 Bolduc, 71
	4751 Morrison, 71	4968 McConkey, 72
	5113 Zhukov, 72	5159 Crowe, 72
	5285 Weigold, 73	5814 Hood, 73
	5905 Ehrhardt, 74	
Ar^{*}	280 Fite, 63	
Ar^{+1}	713 Kupriyanov, 64	
Au	566 Blais, 60	
Ba	2761 Ziesel, 67	3990 Ziesel
	4300 Okudaira, 70	4703 Okuno, 71
Bi	2900 Kohl, 67	
C	659 Crawford, 62	5980 Wang, 70
Ca	283 Fiquet–Fayard, 63	1045 Kaneko, 63
	1124 Fiquet–Fayard, 62	2660 Kupriyanov, 66
	4077 Rovner, 70	4300 Okudaira, 70
Cd	313 Hickam, 54	1578 De Maria, 65
	4315 Abouaf, 70	5808 Newell, 73
Co	1874 Cooper Jr., 66	
Cr	4439 Rolinski, 70	
Cs	216 Tate, 34	5598 Nygaard, 73
Cs^{+1}	3050 Emelyanov, 67	
Cu	566 Blais, 60	
Fe	1874 Cooper Jr., 66	
Ga	4346 Gingerich, 70	
Ge	2944 Lin, 67	
H	1508 McGowan, 65	

IONIZATION EXPERIMENTAL

Relative

He	27 Hughes, 33	35 Bleakney, 36
	66 Mohr, 34	280 Fite, 63
	304 Hanle, 52	331 Stanton, 60
	339 Otvos, 56	353 Fox, 58
	525 Krauss, 59	539 Hayakawa, 55
	625 Jesse, 25	692 Kuyatt, 63
	704 Hickam, 54	777 Brink, 61
	986 Blanc, 62	1076 Zapesochnyi, 63
	1215 Hutchison, 63	1244 Morrison, 53
	1373 Simpson, 65	1530 Fiquet–Fayard, 65
	1538 Haidt, 65	1871 Lipeles, 65
	1919 Fiquet–Fayard, 65	3531 Krige, 68
	3747 Ehrhardt, 69	3835 Marchand, 69
	3878 Brion, 68	3999 Oda, 70
	4090 Suzuki, 70	4238 McConkey, 70
	4381 Van Der Wiel, 70	4557 Ehrhardt, 71
	4661 Quemener, 71	4968 McConkey, 72
	4998 Ehrhardt, 72	5705 Sutton, 71
	5814 Hood, 73	5999 Sutton, 74
	6230 McCarthy, 74	
He^{*}	4113 Vriens, 68	6001 Shearer–Izumi, 74
He^{+1}	4848 Mahadevan, 72	
Hg	12 Bleakney, 30	14 Haupt, 31
	66 Mohr, 34	211 McFadden, 46
	215 Bell, 39	313 Hickam, 54
	1070 Dorman, 61	1095 Bleakney, 29
	1244 Morrison, 53	1578 De Maria, 65
	3528 Zapesochnyi, 64	3872 Varshavskii, 69
Hg^{+1}	713 Kupriyanov, 64	
Hg^{+2}	713 Kupriyanov, 64	
In	4346 Gingerich, 70	4785 Abouaf, 71
K	150 Brink, 62	216 Tate, 34
	283 Fiquet–Fayard, 63	1039 Kaneko, 61
	1124 Fiquet–Fayard, 62	1530 Fiquet–Fayard, 65
	1919 Fiquet–Fayard, 65	3990 Ziesel
	6252 Vukstich, 74	
Kr	216 Tate, 34	283 Fiquet–Fayard, 63
	310 Fox, 53	339 Otvos, 56
	410 Burns, 61	523 Frost, 55
	524 Frost, 57	526 Frost, 58
	550 Hagstrum, 56	692 Kuyatt, 63
	704 Hickam, 54	781 Fox, 60
	958 Melton, 62	986 Blanc, 62
	1034 Foner, 61	1038 Kaneko, 61
	1070 Dorman, 61	1107 Morrison, 64
	1137 Kiser, 62	1215 Hutchison, 63
	1244 Morrison, 53	1453 Stuber, 65
	1530 Fiquet–Fayard, 65	1919 Fiquet–Fayard, 65
	2349 Schram, 64	2762 Ziesel, 67

Relative

Kr	2797 Mehlhorn, 65	3990 Ziesel
	4559 Lossing, 71	4751 Morrison, 71
Kr^{+1}	713 Kupriyanov, 64	1492 Baker, 65
	3768 Latypov, 68	
Kr^{+2}	713 Kupriyanov, 64	
Li	150 Brink, 62	5465 Adler, 73
Mg	1039 Kaneko, 61	1920 Ziesel, 65
	2969 Fiquet–Fayard, 68	4211 Okudaira, 70
	4300 Okudaira, 70	4744 Karstensen, 71
Mn	4315 Abouaf, 70	
N^{+1}	1881 Daly, 66	4848 Mahadevan, 72
Na	150 Brink, 62	216 Tate, 34
	466 Dibeler, 59	1039 Kaneko, 61
	1919 Fiquet–Fayard, 65	1920 Ziesel, 65
	3990 Ziesel	
Ne	12 Bleakney, 30	66 Mohr, 34
	213 Stevenson, 42	242 Morrison, 59
	280 Fite, 63	339 Otvos, 56
	481 Cloutier, 59	525 Krauss, 59
	625 Jesse, 25	692 Kuyatt, 63
	704 Hickam, 54	986 Blanc, 62
	1039 Kaneko, 61	1068 Dorman, 61
	1244 Morrison, 53	1373 Simpson, 65
	1453 Stuber, 65	1920 Ziesel, 65
	3990 Ziesel	4127 Carlson, 70
	4381 Van Der Wiel, 70	4751 Morrison, 71
	5824 Tahira, 73	
Ne^{*}	280 Fite, 63	
Ne^{+1}	713 Kupriyanov, 64	
Ni	1874 Cooper Jr., 66	
Pb	2944 Lin, 67	4077 Rovner, 70
Rb	216 Tate, 34	283 Fiquet–Fayard, 63
	2366 Shimon, 64	2762 Ziesel, 67
	2969 Fiquet–Fayard, 68	3990 Ziesel
Se	1578 De Maria, 65	
Sn	2944 Lin, 67	
Sr	283 Fiquet–Fayard, 63	2660 Kupriyanov, 66
	2762 Ziesel, 67	3990 Ziesel
	4300 Okudaira, 70	
Te	1578 De Maria, 65	

IONIZATION EXPERIMENTAL

Relative

Ti	4439 Rolinski, 70	
Tl	4077 Rovner, 70	4346 Gingerich, 70
U	1261 Mann, 64	4970 Blackburn, 72
V	4439 Rolinski, 70	
Xe	216 Tate, 34	242 Morrison, 59
	271 Fox, 54	304 Hanle, 52
	308 Kuyatt, 63	310 Fox, 53
	353 Fox, 58	481 Cloutier, 59
	525 Krauss, 59	550 Hagstrum, 56
	591 Burns, 63	692 Kuyatt, 63
	704 Hickam, 54	707 Fox, 60
	854 Clarke, 54	986 Blanc, 62
	1034 Foner, 61	1069 Dorman, 59
	1070 Dorman, 61	1107 Morrison, 64
	1137 Kiser, 62	1244 Morrison, 53
	1453 Stuber, 65	3874 Brion, 69
	4751 Morrison, 71	
Xe^{+1}	713 Kupriyanov, 64	
Xe^{+2}	713 Kupriyanov, 64	
Zn	283 Fiquet–Fayard, 63	313 Hickam, 54
	1167 Fiquet–Fayard, 63	1578 De Maria, 65
	2760 Ziesel, 67	2969 Fiquet–Fayard, 68
	3990 Ziesel	
Bi_2	2900 Kohl, 67	
Br_2	708 Frost, 60	
CO	17 Vaughan, 31	214 Hagstrum, 41
	271 Fox, 54	310 Fox, 53
	339 Otvos, 56	625 Jesse, 25
	941 Fineman, 62	1038 Kaneko, 61
	1068 Dorman, 61	1096 Hogness, 28
	1648 Zapesochnyi, 61	1742 Cuthbert, 66
	2969 Fiquet–Fayard, 68	
CO^{+1}	1742 Cuthbert, 66	
Cl_2	526 Frost, 58	708 Frost, 60
D_2	539 Hayakawa, 55	
HCl	339 Otvos, 56	707 Fox, 60
	1244 Morrison, 53	
HD	539 Hayakawa, 55	
H_2	9 Bleakney, 30	41 Newhall, 42
	66 Mohr, 34	170 Baerwald, 25
	255 Smyth, 24	339 Otvos, 56

Relative

H_2	539 Hayakawa, 55	570 Gryzinski, 63
	625 Jesse, 25	659 Crawford, 62
	660 Kallmann, 27	1164 Briglia, 65
	1292 Briglia, 65	1303 Geiger, 64
	1415 McGowan, 65	1508 McGowan, 65
	5595 Crowe, 73	5665 Weigold, 73
Hg_2	211 McFadden, 46	
IBr	708 Frost, 60	
ICl	708 Frost, 60	
I_2	526 Frost, 58	708 Frost, 60
N_2	17 Vaughan, 31	66 Mohr, 34
	214 Hagstrum, 41	271 Fox, 54
	339 Otvos, 56	523 Frost, 55
	625 Jesse, 25	660 Kallmann, 27
	778 Dorman, 60	854 Clarke, 54
	953 Stewart, 55	1038 Kaneko, 61
	1068 Dorman, 61	1108 Dorman, 63
	1244 Morrison, 53	1509 Fineman, 65
	1530 Fiquet–Fayard, 65	1648 Zapesochnyi, 61
	1888 Peresse, 65	2174 Koval, 66
	2614 Kieffer, 67	2969 Fiquet–Fayard, 68
	3878 Brion, 68	4117 Carlson, 70
	5286 Borst, 73	
N_2^{+1}	1881 Daly, 66	
NO	214 Hagstrum, 41	481 Cloutier, 59
	854 Clarke, 54	1068 Dorman, 61
	1530 Fiquet–Fayard, 65	1648 Zapesochnyi, 61
	2969 Fiquet–Fayard, 68	
O_2	167 Randolph, 58	214 Hagstrum, 41
	255 Smyth, 24	334 Stewart, 58
	339 Otvos, 56	341 Frost, 58
	526 Frost, 58	778 Dorman, 60
	985 Brion, 64	1089 McGowan, 64
	1108 Dorman, 63	1888 Peresse, 65
	2174 Koval, 66	2308 Turner, 68
	2870 Peresse, 67	3878 Brion, 68
S_2	1578 De Maria, 65	
Se_2	1578 De Maria, 65	
Te_2	1578 De Maria, 65	
UO	1261 Mann, 64	
CO_2	339 Otvos, 56	531 Collin, 60
	847 Asundi, 63	1068 Dorman, 61
	1244 Morrison, 53	1530 Fiquet–Fayard, 65
	1888 Peresse, 65	1919 Fiquet–Fayard, 65

IONIZATION EXPERIMENTAL

Relative

CO_2	2119 Sjogren, 66	6112 Jackson, 74
COS	2969 Fiquet–Fayard, 68	
CS_2	339 Otvos, 56	531 Collin, 60
	2969 Fiquet–Fayard, 68	
D_2O	4895 Appell, 73	
HCN	339 Otvos, 56	
H_2O	483 Cottin, 59	558 Schulz, 60
	924 Mann, 40	1919 Fiquet–Fayard, 65
	4895 Appell, 73	5359 Lindemann, 72
	5481 Morrison, 73	
H_2S	339 Otvos, 56	1530 Fiquet–Fayard, 65
	2969 Fiquet–Fayard, 68	5481 Morrison, 73
N_2O	339 Otvos, 56	1067 Curran, 61
	1916 Connolly, 65	
$SnCl_2$	4216 Buchanan, 69	
C_2H_2	3808 Brion, 69	4354 Lossing, 70
C_2N_2	339 Otvos, 56	
H_2O_2	1132 Foner, 62	
NH_3	924 Mann, 40	1068 Dorman, 61
	1530 Fiquet–Fayard, 65	2969 Fiquet–Fayard, 68
	5520 Morrison, 73	
PH_3	339 Otvos, 56	
CH_3Br	339 Otvos, 56	524 Frost, 57
CH_3Cl	339 Otvos, 56	524 Frost, 57
CH_3F	524 Frost, 57	
CH_3I	339 Otvos, 56	524 Frost, 57
CH_4	66 Mohr, 34	339 Otvos, 56
	524 Frost, 57	539 Hayakawa, 55
	625 Jesse, 25	2510 Ehrhardt, 67
	2658 Brehm, 67	4742 Appell, 71
	5516 Morrison, 73	
$SnCl_4$	4216 Buchanan, 69	
C_2H_4	339 Otvos, 56	539 Hayakawa, 55
C_2H_6	339 Otvos, 56	

Normalized

Ag	140 Burhop, 40	452 Gryzinski, 59
	455 Hill, 51	999 Wetzel, 36
	1014 Gryzinski, 65	2901 Kolbenstvedt, 67
Ag^{+1}	4340 Mathur, 70	
Al	3582 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	
Al^{+2}	3003 Bely, 68	
Ar	147 Neu, 58	881 Golant, 59
	1014 Gryzinski, 65	1159 Vriens, 64
	1457 Vriens, 65	1463 Robinson, 65
	1484 Kurepa, 63	1506 Kingston, 65
	1557 Bauer, 65	2076 Koozekanani, 66
	2640 Vainshtein, 67	2799 Vainshtein, 67
	3456 Koozekanani, 68	3582 Gaudin, 68
	3585 Peach, 68	4168 Peach, 70
	4339 Amusia, 70	4376 McGuire, 71
	4398 Manson, 71	4399 Tripathi, 70
	4782 Manson, 72	4890 Roy, 72
	4927 Omidvar, 72	5447 Furness, 73
	5582 Wallace, 73	6299 Khare, 74
$Ar^{\bullet}$	1159 Vriens, 64	
Ar^{+1}	4340 Mathur, 70	
Ar^{+2}	4340 Mathur, 70	
Au	2901 Kolbenstvedt, 67	
B	3581 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	4376 McGuire, 71
	5014 Stingl, 72	
Ba	1502 McFarland, 65	2713 McFarland, 67
	4866 Vainshtein, 72	
Ba^{+1}	4340 Mathur, 70	4728 Bely, 71
Be	1273 Peach, 65	1502 McFarland, 65
	1655 Peach, 66	2713 McFarland, 67
	3581 Gaudin, 68	3837 Tripathi, 69
	4376 McGuire, 71	
C	3581 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	4376 McGuire, 71
	4927 Omidvar, 72	
C^{+1}	4838 Moores, 72	5014 Stingl, 72
C^{+4}	2946 Beigman, 68	
C^{+5}	2946 Beigman, 68	

IONIZATION THEORETICAL

Normalized

Ca	1502 McFarland, 65	2713 McFarland, 67
	3837 Tripathi, 69	4866 Vainshtein, 72
Ca^{+1}	960 Zirin, 62	
Ca^{+9}	3003 Bely, 68	
Cd	3837 Tripathi, 69	
Cd^{+1}	4340 Mathur, 70	
Cl	3582 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	
Cs	1165 Michael, 63	1464 McFarland, 65
	1502 McFarland, 65	2713 McFarland, 67
	2905 Garcia, 67	3735 Tripathi, 69
	3877 Liepinsh, 68	4399 Tripathi, 70
	4615 Tripathi, 71	5479 Tiwary, 73
	5611 Roy, 73	5708 Liepinsh, 72
$Cs^{\bullet}$	1272 Sheldon, 65	
Cs^{+1}	4089 Mathur, 69	
F	3581 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	4376 McGuire, 71
Fe^{+13}	443 Schwartz, 59	455 Hill, 51
	1058 Kulander, 63	
Fe^{+14}	1849 Rudge, 66	
Fe^{+15}	1849 Rudge, 66	3003 Bely, 68
H	61 Massey, 33	101 Veldre, 62
	282 Yavorskii, 45	307 Stauffer, 63
	390 Geltman, 56	424 McCarroll, 57
	461 Morand, 59	533 Geltman, 63
	587 Kogan, 59	671 Stabler, 64
	825 Kingston, 64	829 Peterkop, 59
	844 Veldre, 63	848 Omidvar, 63
	852 Peterkop, 59	863 Gryzinski, 63
	892 Burgess, 63	913 Akerib, 61
	996 Akerib, 60	1014 Gryzinski, 65
	1044 Drawin, 61	1071 Omidvar, 64
	1115 Ochkur, 63	1129 Peterkop, 62
	1165 Michael, 63	1168 Abrines, 66
	1262 Prasad, 65	1273 Peach, 65
	1426 Veldre, 62	1436 Burke, 65
	1457 Vriens, 65	1458 Omidvar, 65
	1472 Veldre, 65	1476 Presnyakov, 65
	1541 Ochkur, 65	1544 Rudge, 65
	1547 Veldre, 63	1548 Veldre, 63
	1582 Veldre, 65	1595 Kingston, 65
	1655 Peach, 66	1848 Rudge, 66
	1878 Vinkalns, 65	1879 Vinkalns, 65

	IONIZATION	THEORETICAL
Normalized		
H	1951 McDowell, 66	2077 Omidvar, 67
	2736 Crothers, 67	2756 Bratsev, 67
	2901 Kolbenstvedt, 67	3580 Gaudin, 68
	3584 Vriens, 68	3737 Luffman, 69
	3745 Garcia, 69	3746 Omidvar, 69
	3987 Tavard, 69	4235 Bell, 70
	4239 Vriens, 70	4433 Kim, 71
	4440 Felden, 71	4746 Gryzinski, 72
	4840 Felden, 72	4859 Hidalgo, 72
	5066 Alton, 72	5068 Golden, 71
	5139 Felden, 72	5709 Tsuji, 73
	5822 Gryzinski, 73	5899 Schulz, 73
	5986 Gallaher, 74	6132 Golden, 74
	6182 Geltman, 74	
H^-	5284 Tweed, 73	
H^*	307 Stauffer, 63	413 McCrea, 60
	430 Swan, 55	848 Omidvar, 63
	1071 Omidvar, 64	1436 Burke, 65
	1458 Omidvar, 65	1526 Omidvar, 65
	1595 Kingston, 65	1656 Prasad, 66
	1694 Kingston, 66	1848 Rudge, 66
	2023 Kingston, 66	3507 Kingston, 68
	3526 Kyle, 68	3584 Vriens, 68
	4093 Banks, 69	5213 Percival, 73
	6342 Knapp, 74	
He	24 Wetzel, 33	61 Massey, 33
	147 Neu, 58	390 Geltman, 56
	452 Gryzinski, 59	455 Hill, 51
	765 Itoh, 60	838 Van De Walle, 61
	863 Gryzinski, 63	999 Wetzel, 36
	1014 Gryzinski, 65	1044 Drawin, 61
	1115 Ochkur, 63	1159 Vriens, 64
	1273 Peach, 65	1302 Sloan, 65
	1345 Lee, 65	1457 Vriens, 65
	1484 Kurepa, 63	1506 Kingston, 65
	1554 Lyash, 63	1555 Veldre, 63
	1557 Bauer, 65	1655 Peach, 66
	1788 Byron Jr., 66	1942 Anderson, 67
	2836 Catlow, 67	2837 Inokuti, 67
	2965 Pecul, 67	3062 Omidvar, 67
	3581 Gaudin, 68	3747 Ehrhardt, 69
	3932 Bell, 69	3941 Economides, 69
	3996 Oldham, 69	4001 Inokuti, 69
	4070 Aberg, 69	4235 Bell, 70
	4320 Khare, 70	4345 Bell, 70
	4376 McGuire, 71	4433 Kim, 71
	4782 Manson, 72	4890 Roy, 72
	4899 Tripathi, 72	4927 Omidvar, 72
	5002 Ishihara, 72	5003 Kim, 72
	5079 Stingl, 72	5080 Pavlichenkov, 72
	5081 Gillespie, 72	5092 Balashov, 72
	5284 Tweed, 73	5552 Roy, 73
	5589 Phillips, 73	5652 Tahira, 73
	5738 Lipovetskii, 73	5899 Schulz, 73

	IONIZATION	THEORETICAL
Normalized		
He	6233 Jacobs, 74	6410 Geltman, 74
He^*	1159 Vriens, 64	4393 Briggs, 71
He^{+1}	57 Burgess, 63	417 Burgess, 61
	735 Burgess, 60	892 Burgess, 63
	1159 Vriens, 64	1436 Burke, 65
	1772 Rudge, 65	3061 Kyle, 67
	3750 Thomas, 69	4433 Kim, 71
Hg	140 Burhop, 40	455 Hill, 51
	642 Prasad, 63	783 Yavorskii, 47
	1115 Ochkur, 63	1159 Vriens, 64
	1557 Bauer, 65	2695 Perlman, 60
	3062 Omidvar, 67	3837 Tripathi, 69
Hg^*	1159 Vriens, 64	
Hg^{+1}	4340 Mathur, 70	
Hg^{+2}	4340 Mathur, 70	
K	1272 Sheldon, 65	1464 McFarland, 65
	1502 McFarland, 65	2713 McFarland, 67
	2905 Garcia, 67	3735 Tripathi, 69
	3804 Tripathi, 69	3877 Liepinsh, 68
	4010 Stern, 70	4398 Manson, 71
	4399 Tripathi, 70	4927 Omidvar, 72
	5611 Roy, 73	
K^{+1}	3750 Thomas, 69	4089 Mathur, 69
	4619 Tripathi, 71	4966 Peach, 71
Kr	147 Neu, 58	1457 Vriens, 65
	1484 Kurepa, 63	1506 Kingston, 65
	2974 Koozekanani, 67	3249 Koozekanani, 68
	3456 Koozekanani, 68	4339 Amusia, 70
	4399 Tripathi, 70	4890 Roy, 72
	4927 Omidvar, 72	6299 Khare, 74
Kr^{+1}	4340 Mathur, 70	
Kr^{+2}	4340 Mathur, 70	
Li	570 Gryzinski, 63	873 Peach, 63
	1014 Gryzinski, 65	1044 Drawin, 61
	1146 Wu, 44	1190 Wu, 40
	1272 Sheldon, 65	1273 Peach, 65
	1299 McDowell, 65	1464 McFarland, 65
	1502 McFarland, 65	1655 Peach, 66
	1951 McDowell, 66	2836 Catlow, 67
	2905 Garcia, 67	3062 Omidvar, 67
	3581 Gaudin, 68	3804 Tripathi, 69
	3877 Liepinsh, 68	4010 Stern, 70
	4309 Liepinsh, 70	4376 McGuire, 71
	4927 Omidvar, 72	

	IONIZATION THEORETICAL Normalized	
Li^{+1}	1044 Drawin, 61	3750 Thomas, 69
	3941 Economides, 69	4074 Moores, 70
	4082 Kim, 70	4089 Mathur, 69
	4433 Kim, 71	4619 Tripathi, 71
	4927 Omidvar, 72	4966 Peach, 71
	5284 Tweed, 73	5552 Roy, 73
Li^{+2}	1044 Drawin, 61	
Mg	1502 McFarland, 65	1654 Peach, 66
	1655 Peach, 66	2713 McFarland, 67
	3582 Gaudin, 68	3837 Tripathi, 69
	4168 Peach, 70	4866 Vainshtein, 72
	4927 Omidvar, 72	
Mg^{+1}	3003 Bely, 68	4074 Moores, 70
	4089 Mathur, 69	4966 Peach, 71
Mg^{+2}	4838 Moores, 72	4966 Peach, 71
N	453 Seaton, 59	1463 Robinson, 65
	1557 Bauer, 65	2836 Catlow, 67
	3581 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	4376 McGuire, 71
	4927 Omidvar, 72	4966 Peach, 71
N^{+1}	3750 Thomas, 69	4089 Mathur, 69
	4838 Moores, 72	
N^{+2}	4838 Moores, 72	5014 Stingl, 72
Na	1183 Bates, 65	1272 Sheldon, 65
	1464 McFarland, 65	1476 Presnyakov, 65
	1502 McFarland, 65	1654 Peach, 66
	1655 Peach, 66	2905 Garcia, 67
	3582 Gaudin, 68	3735 Tripathi, 69
	3804 Tripathi, 69	3877 Liepinsh, 68
	4010 Stern, 70	4168 Peach, 70
	4376 McGuire, 71	4398 Manson, 71
	4927 Omidvar, 72	
Na^{+1}	3750 Thomas, 69	4089 Mathur, 69
	4619 Tripathi, 71	4838 Moores, 72
	4966 Peach, 71	
Na^{+2}	4838 Moores, 72	
Ne	147 Neu, 58	210 Inokuti, 62
	455 Hill, 51	1115 Ochkur, 63
	1159 Vriens, 64	1457 Vriens, 65
	1463 Robinson, 65	1484 Kurepa, 63
	1506 Kingston, 65	1557 Bauer, 65
	2974 Koozekanani, 67	3249 Koozekanani, 68
	3456 Koozekanani, 68	3581 Gaudin, 68
	3585 Peach, 68	4168 Peach, 70
	4339 Amusia, 70	4376 McGuire, 71
	4890 Roy, 72	4927 Omidvar, 72

	IONIZATION THEORETICAL Normalized	
Ne	4966 Peach, 71	5582 Wallace, 73
	5608 Saxon, 73	6299 Khare, 74
	6342 Knapp, 74	
Ne^{*}	1159 Vriens, 64	
Ne^{+1}	1159 Vriens, 64	3750 Thomas, 69
	4089 Mathur, 69	4838 Moores, 72
Ni	140 Burhop, 40	452 Gryzinski, 59
	455 Hill, 51	1014 Gryzinski, 65
	1044 Drawin, 61	1115 Ochkur, 63
	2695 Perlman, 60	2901 Kolbenstvedt, 67
O	453 Seaton, 59	1463 Robinson, 65
	1557 Bauer, 65	2836 Catlow, 67
	3062 Omidvar, 67	3581 Gaudin, 68
	3585 Peach, 68	4168 Peach, 70
	4376 McGuire, 71	4927 Omidvar, 72
	4930 Kazaks, 72	
O^{+1}	4838 Moores, 72	
O^{+2}	4838 Moores, 72	
O^{+3}	5014 Stingl, 72	
O^{+4}	143 Trefftz, 63	1046 Malik, 61
O^{+5}	143 Trefftz, 63	814 Varsavsky, 63
P	3582 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	
P^{+4}	3003 Bely, 68	
Rb	1272 Sheldon, 65	1464 McFarland, 65
	1502 McFarland, 65	2713 McFarland, 67
	2905 Garcia, 67	3735 Tripathi, 69
	4399 Tripathi, 70	5611 Roy, 73
Rb^{+1}	4089 Mathur, 69	
S	3582 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	
Si	3582 Gaudin, 68	3585 Peach, 68
	4168 Peach, 70	
Sn	2901 Kolbenstvedt, 67	
Sn^{+1}	4340 Mathur, 70	
Sn^{+49}	57 Burgess, 63	
Sr	1502 McFarland, 65	2713 McFarland, 67
	4866 Vainshtein, 72	

IONIZATION THEORETICAL

Normalized

Sr^{+1}	960 Zirin, 62	4340 Mathur, 70
Tl	1502 McFarland, 65	2713 McFarland, 67
Xe	147 Neu, 58	1457 Vriens, 65
	1484 Kurepa, 63	1506 Kingston, 65
	4339 Amusia, 70	4890 Roy, 72
	5847 Chiandusso, 73	6299 Khare, 74
Xe^{+1}	4340 Mathur, 70	
Xe^{+2}	4340 Mathur, 70	
Zn	3837 Tripathi, 69	4927 Omidvar, 72
Zn^{+1}	4340 Mathur, 70	
CO	642 Prasad, 63	1557 Bauer, 65
	1558 Bauer, 65	
H_2	147 Neu, 58	452 Gryzinski, 59
	455 Hill, 51	863 Gryzinski, 63
	1014 Gryzinski, 65	1044 Drawin, 61
	1115 Ochkur, 63	1457 Vriens, 65
	1557 Bauer, 65	1558 Bauer, 65
	3803 Prok, 69	4320 Khare, 70
	5216 Liu, 73	5305 Sharma, 72
	6298 Bottcher, 74	
H_2^{+1}	4120 Mathur, 70	
N_2	147 Neu, 58	642 Prasad, 63
	1457 Vriens, 65	1557 Bauer, 65
	1558 Bauer, 65	3803 Prok, 69
	4320 Khare, 70	5003 Kim, 72
	5305 Sharma, 72	
NO	1557 Bauer, 65	1558 Bauer, 65
O_2	642 Prasad, 63	1457 Vriens, 65
	1557 Bauer, 65	1558 Bauer, 65
	3574 Takayanagi, 67	4320 Khare, 70
CO_2	4002 Strickland, 69	
C_2H_2	1557 Bauer, 65	1558 Bauer, 65
CH_4	210 Inokuti, 62	

Relative

Ag	1144 De La Ripelle, 49	
Ar	1144 De La Ripelle, 49	

IONIZATION THEORETICAL

Relative

$Ar^{\bullet}$	3525 Koozekanani, 68	
H	1144 De La Ripelle, 49	
He	1144 De La Ripelle, 49	1673 Mittleman, 66
	5313 Salin, 73	
Kr	1144 De La Ripelle, 49	
$Kr^{\bullet}$	3525 Koozekanani, 68	
Na	1144 De La Ripelle, 49	
Ne	1144 De La Ripelle, 49	
$Ne^{\bullet}$	3525 Koozekanani, 68	
Xe	1144 De La Ripelle, 49	
D_2	5 Krauss, 57	
H_2	5 Krauss, 57	

DETACHMENT EXPERIMENTAL

Normalized

H^-	1880 Tisone, 66	2788 Dance, 67
	2904 Tisone, 68	4344 Peart, 70
	4437 Walton, 70	4503 Peart, 71
	4720 Walton, 71	5667 Peart, 73
O^-	2904 Tisone, 68	
O_3^-	4938 Wong, 72	

Relative

PH_2^-	4793 Smyth, 72

DETACHMENT THEORETICAL

Normalized

Cl^-	1300 Massey, 36	1463 Robinson, 65
Cs^-	5662 John, 73	

DETACHMENT THEORETICAL

Normalized

H^-	415 Geltman, 60	470 McDowell, 63
	576 Rudge, 64	1125 Geltman, 60
	1483 Tietz, 63	1764 Smirnov, 66
	2116 Rogalski, 66	3415 Inokuti, 68
	3736 Bely, 69	4433 Kim, 71
	4924 Faisal, 72	5478 John, 73
	6314 Roy, 74	
K^-	5662 John, 73	5897 John, 73
Li^-	5662 John, 73	5897 John, 73
Na^-	5662 John, 73	5897 John, 73
O^-	365 Watanabe, 50	
Rb^-	5662 John, 73	

ELECTRONIC EXCITATION EXPERIMENTAL

Normalized

Ar	187 Berman, 49	288 Herrmann, 36
	637 Langmuir, 28	755 Volkova, 59
	1823 Zapesochnyi, 66	2833 Feltsan, 67
	3767 Mercer, 67	3945 Schaper, 69
	4087 Afrosimov, 69	4129 Latimer, 70
	4204 Clout, 71	4305 Feltsan, 70
	4839 Lloyd, 72	5034 Winicur, 71
	5277 McConkey, 73	5441 Van Raan, 73
	5737 Ballou, 73	6005 Borst, 74
	6347 Tan, 74	
Ar^{+1}	5001 Imre, 72	5830 Zapesochnyi, 73
	6134 Tan, 74	
Ar^{+7}	4962 Datla, 72	
Ba^{+1}	929 Belousova, 61	2938 Bacon, 68
	4314 Bacon, 69	4331 Pace, 70
	4905 Beigman, 71	5557 Pace, 73
	6193 Crandall, 74	
C^{+4}	5085 Engelhardt, 72	
Ca	4115 Heyner, 69	4173 Schramm, 69
	4317 Karstensen, 70	5523 Ehlers, 73
	6466 Garga, 74	
Ca^{+1}	5831 Taylor, 73	
Cd	1758 Penkin, 66	2967 Penkin, 67
	4212 Anderson, 70	4353 Aleinikov, 70

ELECTRONIC EXCITATION EXPERIMENTAL

Normalized

Cd	4609 Newell, 71	5015 Varshavskii, 70
	5087 Vesnicheva, 72	5160 Newell, 72
	6254 Sovter, 74	
Cs	279 Mohler, 32	1467 Nolan, 65
	1517 Zapesochnyi, 65	1801 Zapesochnyi, 66
	1910 Korchevoi, 66	1972 Zapesochnyi, 66
	2069 Zapesochnyi, 66	2715 Korchevoi, 67
	2830 Zapesochnyi, 67	3777 Hertel, 69
	6497 Aleksakhin, 74	
Cu	6194 Williams, 74	
F^{+7}	5085 Engelhardt, 72	
Fe	929 Belousova, 61	
H	321 Fite, 58	326 Fite, 59
	327 Lichten, 59	332 Stebbings, 60
	936 Schulz, 60	1486 Smith, 65
	2021 Hils, 66	2902 Kleinpoppen, 68
	3027 Long, 68	3373 Williams, 68
	3836 McGowan, 69	4206 Kauppila, 70
	4495 Oed, 71	4770 Walker Jr., 70
	5655 Koschmieder, 73	5984 Williams, 74
H^*	5643 Banks, 73	
He	56 Lees, 32	123 Dorrestein, 42
	124 Dorrestein, 42	125 Woudenberg, 41
	192 Francis, 47	318 Schulz, 57
	336 Corrigan, 58	338 Stewart, 59
	373 Lassettre, 53	379 Silverman, 57
	464 Frisch, 58	477 Yakhontova, 60
	485 Lin, 62	554 Hughes, 63
	600 Phelps, 58	637 Langmuir, 28
	742 St. John, 60	787 Hughes, 63
	799 Silverman, 64	800 Lassettre, 64
	871 Fleming, 63	886 Gabriel, 60
	1049 St. John, 64	1088 Fleming, 64
	1265 Jones, 48	1323 Yakhontova, 59
	1455 Miller, 64	1528 Holt, 65
	1583 Zapesochnyi, 65	1677 Holt, 66
	1760 Lashmore–Davie, 65	1892 Holt, 65
	1895 Zapesochnyi, 65	2690 Weaver, 67
	2757 Shpenik, 67	2838 Jobe, 67
	2841 Vriens, 68	2903 Jobe, 67
	2916 Lucas, 63	2929 MoustafaMoussa, 67
	3583 Jobe, 68	3590 Zapesochnyi, 67
	3687 Aarts, 68	3729 MoustafaMoussa, 69
	3814 Lassettre, 69	3830 Brongersma, 68
	3846 Anderson, 69	3945 Schaper, 69
	4114 Truhlar, 70	4132 Bogdanova, 70
	4198 Lassettre, 70	4218 Van Eck, 70
	4408 Chamberlain, 70	4565 McConkey, 71
	4616 Van Raan, 71	4740 Rice, 72
	4771 Weaver, 70	4857 Opal, 72

Normalized

He	4952 Smirnov, 71	4992 Crooks, 72
	4997 Donaldson, 72	5011 Peresse, 72
	5069 Crooks, 72	5276 Madison, 73
	5572 Anderson, 73	5599 Trajmar, 73
	5815 Truhlar, 73	5819 Pochat, 73
	5820 Hall, 73	5898 Mathur, 73
	6005 Borst, 74	6030 Samoilov, 73
	6195 Van Raan, 74	6344 Samoilov, 74
	6411 Van Raan, 74	
He^{*}	759 Robben, 63	6253 Gerasimov, 74
He^{+1}	1805 Norcross, 66	5829 Dolder, 73
	6384 Dashchenko, 74	6464 Dashchenko, 74
Hg	21 Tate, 32	69 Arnot, 35
	176 Jongerius, 62	303 Riede, 54
	513 Jongerius, 50	623 Crozier, 28
	637 Langmuir, 28	877 Anderson, 66
	2626 Anderson, 67	2643 Frisch, 67
	2757 Shpenik, 67	2923 Fowler, 67
	3848 Borst, 69	4009 Skerbele, 70
	4135 Borst, 68	4167 Varshavskii, 69
	4212 Anderson, 70	4213 Varshavskii, 70
	4338 Korotkov, 70	4752 Skerbele, 72
	4946 Hanne, 72	5482 Skerbele, 73
	5541 Rockwood, 73	
In	6262 Shimon, 74	
K	141 Loveridge, 31	275 Fabrikant, 39
	344 Volkova, 59	505 Volkova, 62
	749 Volkova, 59	773 Feldman, 63
	1517 Zapesochnyi, 65	1533 Volkova, 63
	1680 Zapesochnyi, 65	2069 Zapesochnyi, 66
	2715 Korchevoi, 67	2759 Feldman, 67
	2830 Zapesochnyi, 67	3519 Hertel, 68
	3776 Hertel, 69	3778 Hertel, 69
	4689 Slevin, 70	4926 Slevin, 72
	6497 Aleksakhin, 74	
Kr	474 Volkova, 60	1823 Zapesochnyi, 66
	2795 Feltsan, 67	3945 Schaper, 69
	4087 Afrosimov, 69	4452 Rozgachev, 70
	5441 Van Raan, 73	
Kr^{+1}	5830 Zapesochnyi, 73	
Li	773 Feldman, 63	1072 Hughes, 64
	2726 Aleksakhin, 67	2759 Feldman, 67
	3063 Aleksakhin, 67	6351 Leep, 74
Mg	5731 Aleksakhin, 73	
N	4667 Stone, 71	5706 Stone, 71
N^{+3}	4903 Johnston, 71	

ELECTRONIC EXCITATION EXPERIMENTAL

Normalized

N^{+4}	5158 Boland, 70	6050 Bradbury, 73
N^{+5}	5085 Engelhardt, 72	
Na	141 Loveridge, 31	290 Christoph, 35
	414 Volkova, 61	1517 Zapesochnyi, 65
	1683 Zapesochnyi, 65	2830 Zapesochnyi, 67
	2971 Frisch, 67	3778 Hertel, 69
	4961 Enemark, 72	6497 Aleksakhin, 74
Ne	122 Milatz, 40	123 Dorrestein, 42
	124 Dorrestein, 42	187 Berman, 49
	205 Hadeishi, 63	288 Herrmann, 36
	637 Langmuir, 28	1094 Tien, 64
	1339 Hadeishi, 65	1531 Frisch, 63
	1584 Revald, 65	2725 Feltsan, 66
	2909 Zapesochnyi, 67	3322 Guk, 57
	3945 Schaper, 69	4087 Afrosimov, 69
	4110 Hertz, 69	4451 Sharpton, 70
	4900 Smirnov, 72	4953 Bogdanova, 71
	4959 Walker, 72	5039 Walker, 71
	5441 Van Raan, 73	5524 Bogdanova, 72
	5551 Smirnov, 73	5629 Sharpton, 68
	6134 Tan, 74	
Ne^{*}	3457 Khaikin, 68	
Ne^{+6}	4903 Johnston, 71	4906 Tondello, 71
Ne^{+7}	4904 Kunze, 71	
Ne^{+8}	5085 Engelhardt, 72	
O	4667 Stone, 71	5706 Stone, 71
	6181 Stone, 74	
O^{+4}	4903 Johnston, 71	
O^{+6}	5085 Engelhardt, 72	
Rb	773 Feldman, 63	1517 Zapesochnyi, 65
	1801 Zapesochnyi, 66	1969 Zapesochnyi, 66
	2069 Zapesochnyi, 66	2715 Korchevoi, 67
	2759 Feldman, 67	2830 Zapesochnyi, 67
	3776 Hertel, 69	3777 Hertel, 69
	6497 Aleksakhin, 74	
Si^{+10}	4903 Johnston, 71	
Sr	6051 Starodub, 73	6387 Aleksakhin, 74
Sr^{+1}	4905 Beigman, 71	
Tl	121 Strohmeier, 37	5089 Shimon, 72
	5593 Nepiipov, 73	5982 Zapesochnyi, 73
Xe	474 Volkova, 60	1823 Zapesochnyi, 66

Normalized

Xe	3000 Feltsan, 68	3945 Schaper, 69
	4087 Afrosimov, 69	4130 Allen, 69
	5441 Van Raan, 73	5591 Rostovikova, 73
	6465 Rostovikova, 73	
Xe^{+1}	474 Volkova, 60	
Zn	4212 Anderson, 70	4353 Aleinikov, 70
	4858 Newell, 72	5160 Newell, 72
	5268 Penkin, 71	5630 Penkin, 72
CN	5666 Korol, 73	
CO	372 Lassettre, 53	374 Lassettre, 53
	794 Lassettre, 64	803 Lassettre, 64
	968 Skerbele, 60	3064 Skubenich, 67
	3374 Skubenich, 67	3830 Brongersma, 68
	3989 Brongersma, 69	4220 Aarts, 70
	4326 Lawrence, 70	4349 Aarts, 70
	4387 Lassettre, 71	4420 Mumma, 71
	4653 Skerbele, 71	4658 Holland, 72
	4685 Ajello, 71	4864 Koppe, 72
	5833 Wells, 73	
D_2	3831 Vroom, 69	4694 Cox, 70
	4945 Cox, 72	
H_2	181 Frost, 62	260 Engelhardt, 63
	321 Fite, 58	327 Lichten, 59
	354 Corrigan, 58	637 Langmuir, 28
	652 Lunt, 62	804 Lassettre, 64
	921 Legler, 63	1265 Jones, 48
	3813 Kuppermann, 68	3831 Vroom, 69
	4131 Weaver, 70	4388 Weingartshofer, 7
	4487 McGowan, 69	4659 Mumma, 71
	4668 Kauppila, 71	4771 Weaver, 70
	4850 Stone, 72	5115 McConkey, 72
N_2	218 Engelhardt, 64	375 Lassettre, 53
	378 Silverman, 57	381 Lassettre, 57
	637 Langmuir, 28	652 Lunt, 62
	813 Lassettre, 64	857 Silverman, 65
	921 Legler, 63	1296 Williams, 35
	1989 Zapesochnyi, 66	2128 Jobe, 67
	2976 Holland, 68	3064 Skubenich, 67
	3687 Aarts, 68	3710 Stanton, 69
	3743 Hasted, 69	3769 Srivastava, 69
	3830 Brongersma, 68	3833 Sroka, 69
	3851 McConkey, 69	3943 Srivastava, 69
	3981 Simpson, 69	3984 Aarts, 69
	3989 Brongersma, 69	3991 Ajello, 69
	4080 Borst, 70	4083 Koval, 69
	4226 Ajello, 70	4326 Lawrence, 70
	4343 Skerbele, 70	4428 Sheridan, 71
	4647 Koppe, 71	4655 Aarts, 71
	4658 Holland, 72	4682 McConkey, 71
	4713 Mumma, 71	4788 Borst, 72

ELECTRONIC EXCITATION EXPERIMENTAL

Normalized

N_2	4800 Shemansky, 71	4853 Borst, 72
	4864 Koppe, 72	5215 Chutjian, 73
	5308 Kisker, 72	5706 Stone, 71
	6142 VanDeRunstraat,74	6235 Imami, 74
N_2^{+1}	3338 Lee, 68	6053 Dashchenko, 73
	6188 Crandall, 74	
NO	4326 Lawrence, 70	4714 Stone, 72
	4715 Mentall, 72	4841 Aarts, 71
O_2	376 Lassettre, 54	377 Silverman, 57
	381 Lassettre, 57	652 Lunt, 62
	794 Lassettre, 64	798 Lassettre, 64
	1310 Schulz, 62	3760 McConkey, 69
	4125 Borst, 70	4298 Konishi, 70
	4326 Lawrence, 70	4337 Srivastava, 70
	4659 Mumma, 71	4664 Cartwright, 71
	4683 Aarts, 71	4688 Ajello, 71
	4724 Trajmar, 71	4735 Linder, 71
	4851 Trajmar, 72	5033 Wells 71
	5525 Koppe, 72	5734 Wong, 73
	5832 Cartwright, 73	
CO_2	380 Shiloff, 57	1205 Meyer, 65
	3830 Brongersma, 68	3989 Brongersma, 69
	4336 Sroka, 70	4420 Mumma, 71
	4684 Ajello, 71	4748 Wells, 72
	6388 Tsurubuchi, 74	
D_2O	4487 McGowan, 69	
H_2O	382 Lassettre, 58	3812 Vroom, 69
	4326 Lawrence, 70	4487 McGowan, 69
	5267 Sushanin, 71	6065 Lassettre, 74
	6066 Lassettre, 74	6135 Tsurubuchi, 74
	6214 Morgan, 74	6468 Beenakker, 74
C_2H_2	3830 Brongersma, 68	6231 Koppe, 74
NH_3	4427 Sushanin, 69	4487 McGowan, 69
	4505 Harshbarger, 71	6214 Morgan, 74
CD_4	3832 Vroom, 69	
CH_4	190 Edmisten, 49	192 Francis, 47
	3832 Vroom, 69	3940 Sroka, 69
	4487 McGowan, 69	4646 Aarts, 71
	5468 John, 49	6214 Morgan, 74
	6231 Koppe, 74	
C_2H_4	3832 Vroom, 69	3989 Brongersma, 69
	4646 Aarts, 71	
C_2H_6	190 Edmisten, 49	3832 Vroom, 69

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Relative

Ag	289 Fuhrmann, 39	
Ar	20 Hughes, 32	58 Mohr, 32
	63 Nicoll, 33	67 Whiddington, 34
	115 Fischer, 33	119 Maier–Lelbnitz,35
	178 Minkowski, 23	304 Hanle, 52
	344 Volkova, 59	692 Kuyatt, 63
	837 Porteus, 63	968 Skerbele, 60
	1301 Olmsted III, 65	1411 Raff, 62
	1527 Chamberlain, 65	1776 Kupriyanov, 66
	2176 Dowell, 66	2911 Gavallas, 67
	2962 Pichanick, 68	4133 Grissom, 70
	4241 Brion, 70	4418 Grojean, 71
	5072 Lloyd, 72	5113 Zhukov, 72
	6178 Tam, 73	6237 Cvejanovic, 74
Ba	4783 Aleksakhin, 71	
Be	6312 Aleksakhin, 74	
Ca	3512 Karstensen, 68	4783 Aleksakhin, 71
Cd	105 Larche, 31	180 Minkowski, 23
	504 Zapesochnyi, 62	1079 Zapesochnyi, 63
	1648 Zapesochnyi, 61	2074 Zapesochnyi, 66
	2907 Zapesochnyi, 66	3419 Zapesochnyi, 60
Cd^{*}	6457 Mazing, 74	
Cs	476 Bogdanova, 60	1040 Zapesochnyi, 64
	1078 Zapesochnyi, 63	3514 Hertel, 68
	5809 Postoi, 73	
H	110 Ornstein, 33	269 Ornstein, 35
	532 Kleinpoppen, 62	609 Gailitis, 63
	629 Hughes, 23	922 Chamberlain, 64
He	3 Dymond, 27	11 McMillen, 30
	27 Hughes, 33	58 Mohr, 32
	63 Nicoll, 33	67 Whiddington, 34
	100 Ornstein, 30	108 Thieme, 32
	119 Maier–Lelbnitz,35	120 Poultney, 34
	158 Harnwell, 29	173 Van Voorhis, 34
	178 Minkowski, 23	223 Smit, 35
	226 Michels, 30	227 Lamb Jr., 57
	235 Glockler, 29	253 Dymond, 29
	263 Hanle, 29	293 Priestley, 35
	304 Hanle, 52	319 Schulz, 58
	328 Schulz, 59	361 Smit, 58
	492 McFarland, 63	510 McFarland, 62
	513 Jongerius, 50	516 Smit, 63
	519 Heddle, 63	521 McFarland, 62
	551 Lassettre, 64	564 St. John, 62
	612 Lassettre, 65	620 Coles, 37
	628 Hughes, 23	651 Lees, 29
	663 Hertz, 25	668 Womer, 34
	692 Kuyatt, 63	747 McFarland, 64

ELECTRONIC EXCITATION EXPERIMENTAL

Relative

He	753 Dolgov, 59	880 Maurer, 34
	912 St. John, 61	968 Skerbele, 60
	1027 Higginson, 61	1073 McFarland, 64
	1076 Zapesochnyi, 63	1090 Schulz, 64
	1140 Simpson, 66	1148 Elenbaas, 30
	1304 Chamberlain, 65	1411 Raff, 62
	1417 Chamberlain, 65	1513 Heddle, 65
	1521 Zapesochnyi, 65	1527 Chamberlain, 65
	1572 Cermak, 66	1588 Ehrhardt, 65
	1753 Boersch, 65	1776 Kupriyanov, 66
	1781 Cermak, 66	1839 Mehlhorn, 66
	1982 Doering, 66	2072 Soltysik, 67
	2074 Zapesochnyi, 66	2175 Dugan, 67
	2176 Dowell, 66	2541 McFarland, 67
	2642 Heddle, 67	2648 Heddle, 67
	2650 Ehrhardt, 67	2911 Gavallas, 67
	2912 Chamberlain, 67	2915 Doering, 67
	2962 Pichanick, 68	3391 Andrick, 68
	3410 Ehrhardt, 68	3748 Whitteker, 67
	3807 Ionikh, 69	3813 Kuppermann, 68
	3880 Brion, 68	3979 Wei, 67
	3980 Heideman, 69	3989 Brongersma, 69
	4113 Vriens, 68	4133 Grissom, 70
	4209 Heideman, 70	4227 Peresse, 70
	4228 Peresse, 70	4241 Brion, 70
	4242 Hall, 70	4380 Peresse, 70
	4382 Heideman, 71	4407 Burrow, 70
	4416 Hall, 71	4563 Kay, 71
	4750 Kisker, 72	4777 Hall, 72
	4790 Brongersma, 72	5067 Showalter, 71
	5072 Lloyd, 72	5309 Kisker, 72
	5521 Skerbele, 73	5634 Eminyan, 73
	5705 Sutton, 71	5994 Knoop, 73
	5998 Heddle, 73	6045 Heddle, 74
	6049 Heddle, 74	6237 Cvejanovic, 74
	6382 Heppner, 74	6385 Eminyan, 74
He^{+1}	2422 Daly, 67	3323 Redhead, 68
Hg	40 Nottingham, 39	58 Mohr, 32
	78 Zapesochnyi, 61	92 Hanle, 30
	96 Vetterlein, 39	108 Thieme, 32
	112 Ornstein, 33	114 Seller, 33
	115 Fischer, 33	137 Nicoll, 33
	142 Fabrikant, 37	164 Gagge, 33
	173 Van Voorhis, 34	179 Hanle, 29
	180 Minkowski, 23	191 Arnot, 29
	222 Bogdanova, 63	229 Ostensen, 29
	231 Brattain, 29	262 Schaffernicht, 30
	315 Jongerius, 56	319 Schulz, 58
	476 Bogdanova, 60	513 Jongerius, 50
	546 Smit, 56	634 Lee, 39
	635 White, 26	656 Bricout, 28
	665 Whitney, 29	808 Frisch, 54
	816 Siebertz, 31	882 Zapesochnyi, 54
	965 Bakis, 59	1077 Zapesochnyi, 63
	1079 Zapesochnyi, 63	1153 Ende, 29

Relative

Hg	1233 Frisch, 56	1275 Valasek, 27
	1290 Rozgachev, 58	1324 Bogdanova, 59
	1475 Rose, 30	1521 Zapesochnyi, 65
	1534 Bogdanova, 63	1570 Smit, 65
	1575 Fyodorov, 65	1988 Bogdanova, 66
	2074 Zapesochnyi, 66	2620 Bogdanova, 67
	2823 Yeates, 67	3418 Zapesochnyi, 65
	3528 Zapesochnyi, 64	3809 Skerbele, 69
	3980 Heideman, 69	4091 Bogdanova, 68
	4150 Gronemeier, 70	4406 Eitel, 71
	5114 Hanne, 72	
K	344 Volkova, 59	2074 Zapesochnyi, 66
	2757 Shpenik, 67	3849 Rubin, 69
	4787 Goldstein, 72	
K^{+1}	6341 Vukstich, 74	
Kr	178 Minkowski, 23	607 Devyatov, 55
	692 Kuyatt, 63	1301 Olmsted III, 65
	1325 Guk, 57	1776 Kupriyanov, 66
	2176 Dowell, 66	2962 Pichanick, 68
	4241 Brion, 70	4418 Grojean, 71
	4441 Bogdanova, 69	5309 Kisker, 72
	5995 Zhukov, 73	
Kr^{+1}	1325 Guk, 57	
Li	1586 Hafner, 65	1990 Aleksakhin, 66
	5111 Aleksakhin, 72	5465 Adler, 73
Mg	2907 Zapesochnyi, 66	4744 Karstensen, 71
N	2074 Zapesochnyi, 66	
Na	15 Michels, 31	111 Haft, 33
	506 Zapesochnyi, 62	1078 Zapesochnyi, 63
	1648 Zapesochnyi, 61	5111 Aleksakhin, 72
	5466 Hafner, 73	
Na^{+1}	6341 Vukstich, 74	
Ne	59 Mohr, 32	119 Maier–Lelbnitz,35
	137 Nicoll, 33	152 Hanle, 30
	158 Harnwell, 29	178 Minkowski, 23
	268 Milatz, 35	663 Hertz, 25
	692 Kuyatt, 63	1076 Zapesochnyi, 63
	1153 Ende, 29	1301 Olmsted III, 65
	1648 Zapesochnyi, 61	1776 Kupriyanov, 66
	2176 Dowell, 66	2911 Gavallas, 67
	2962 Pichanick, 68	3970 Grissom, 69
	4133 Grissom, 70	4241 Brion, 70
	4750 Kisker, 72	5309 Kisker, 72
	6178 Tam, 73	
Ne^{+1}	67 Whiddington, 34	

ELECTRONIC EXCITATION EXPERIMENTAL

Relative

Pb	289 Fuhrmann, 39	
Rb	1078 Zapesochnyi, 63	2366 Shimon, 64
Sr*	6383 Shafranosh, 74	
Tl	289 Fuhrmann, 39	5306 Shimon, 72
Xe	178 Minkowski, 23	304 Hanle, 52
	308 Kuyatt, 63	692 Kuyatt, 63
	1325 Guk, 57	1776 Kupriyanov, 66
	2176 Dowell, 66	2962 Pichanick, 68
	3874 Brion, 69	4241 Brion, 70
	5308 Kisker, 72	5995 Zhukov, 73
Xe^{+1}	1325 Guk, 57	
Zn	105 Larche, 31	1077 Zapesochnyi, 63
	1079 Zapesochnyi, 63	2074 Zapesochnyi, 66
	2757 Shpenik, 67	2907 Zapesochnyi, 66
Br_2	983 Swick, 61	
CO	328 Schulz, 59	475 Zapesochnyi, 60
	1301 Olmsted III, 65	1418 Meyer, 65
	1481 Skerbele, 65	1743 Silverman, 64
	1841 Koval, 66	1887 Skerbele, 66
	2694 Skerbele, 67	3205 Freund, 67
	3743 Hasted, 69	3813 Kuppermann, 68
	3834 Rempt, 69	3979 Wei, 67
	3989 Brongersma, 69	4109 Brion, 70
	4310 Rendina, 70	4379 Hubin–Franskin,70
	4418 Grojean, 71	4718 Newton, 71
	4847 Swanson, 72	5729 Collin, 73
CO^{+1}	39 Bundy, 37	
D_2	987 Coolidge, 44	2939 Dowell, 67
	3939 Hall, 69	
H_2	59 Mohr, 32	63 Nicoll, 33
	158 Harnwell, 29	173 Van Voorhis, 34
	232 Brasefield, 29	270 Kruithof, 35
	319 Schulz, 58	987 Coolidge, 44
	1301 Olmsted III, 65	1303 Geiger, 64
	1411 Raff, 62	1585 Boersch, 65
	1692 Heideman, 66	1889 Cahill, 67
	2939 Dowell, 67	3545 Trajmar, 68
	3939 Hall, 69	3944 Ehrhardt, 69
	3979 Wei, 67	4310 Rendina, 70
	4418 Grojean, 71	
N_2	59 Mohr, 32	108 Thieme, 32
	137 Nicoll, 33	158 Harnwell, 29
	328 Schulz, 59	334 Stewart, 58
	475 Zapesochnyi, 60	612 Lassettre, 65
	632 Langstroth, 34	752 Kishko, 59

Relative

N_2	953 Stewart, 55	968 Skerbele, 60
	989 Thompson, 34	1157 Rudberg, 30
	1298 Langstroth, 35	1301 Olmsted III, 65
	1312 Langstroth, 35	1406 Winters, 65
	1480 Lassettre, 65	1481 Skerbele, 65
	1597 Geiger, 65	1648 Zapesochnyi, 61
	1679 Meyer, 66	1693 Heideman, 66
	1983 Lassettre, 66	2174 Koval, 66
	2179 Ehrhardt, 67	2659 Skerbele, 67
	2827 Lassettre, 62	2915 Doering, 67
	3762 Burns, 69	3813 Kuppermann, 68
	3824 Ridge, 69	3875 Freund, 69
	3969 Williams III, 69	3971 Bensimon, 69
	3979 Wei, 67	3989 Brongersma, 69
	4111 Williams III, 69	4242 Hall, 70
	4310 Rendina, 70	4385 Freund, 71
	5036 Finn, 72	5157 Danilevskii, 72
	5308 Kisker, 72	5464 Lawton, 73
	5522 Mazeau, 73	5545 Mazeau, 73
	5555 Kurzweg, 73	6237 Cvejanovic, 74
N_2^{+1}	39 Bundy, 37	343 Zapesochnyi, 59
	757 Kishko, 60	
NO	612 Lassettre, 65	1841 Koval, 66
	3743 Hasted, 69	4418 Grojean, 71
	5112 Povch, 72	
O_2	2174 Koval, 66	3743 Hasted, 69
	3978 Sroka, 68	
CO_2	59 Mohr, 32	612 Lassettre, 65
	1047 Kishko, 63	1401 Lassettre, 63
	1841 Koval, 66	3989 Brongersma, 69
	4509 Foo, 71	
COS	4509 Foo, 71	
CS_2	4509 Foo, 71	
H_2O	558 Schulz, 60	968 Skerbele, 60
	1411 Raff, 62	1419 Skerbele, 65
	1481 Skerbele, 65	1824 Skerbele, 66
	3823 Miller, 69	4400 Trajmar, 71
	4723 Mielczarek, 71	4729 Azria, 71
	5360 Trajmar, 73	
N_2O	4509 Foo, 71	
NO_2	4418 Grojean, 71	4614 Bulger, 71
	4776 Edqvist, 70	
SO_2	4509 Foo, 71	4614 Bulger, 71
C_2H_2	1374 Bowman, 65	1812 Geiger, 65
	2172 Doering, 67	2915 Doering, 67
	3813 Kuppermann, 68	3979 Wei, 67

ELECTRONIC EXCITATION EXPERIMENTAL

Relative

H_2CO	4613 Weiss, 71	6386 Chutjian, 74
NH_3	968 Skerbele, 60	1481 Skerbele, 65
	4419 Harshbarger, 71	
CH_4	137 Nicoll, 33	1374 Bowman, 65
	1588 Ehrhardt, 65	2510 Ehrhardt, 67
	3810 Brongersma, 69	5280 Dicoum, 73
C_2H_4	1374 Bowman, 65	1411 Raff, 62
	3979 Wei, 67	3989 Brongersma, 69
	4304 Krauss, 69	4378 Hubin–Franskin, 70
SF_6	1856 Simpson, 66	
C_2H_6	1374 Bowman, 65	2696 Lassettre, 67
	3810 Brongersma, 69	

ELECTRONIC EXCITATION THEORETICAL

Normalized

Al^{+2}	4643 Davis, 71	4704 Mathur, 71
Al^{+4}	792 Varsavsky, 61	
Al^{+5}	792 Varsavsky, 61	3294 Czyzak, 67
Al^{+6}	792 Varsavsky, 61	
Al^{+7}	792 Varsavsky, 61	
Al^{+8}	792 Varsavsky, 61	
Al^{+9}	792 Varsavsky, 61	
Al^{+10}	792 Varsavsky, 61	
Al^{+11}	6133 Oran, 74	
Al^{+12}	6133 Oran, 74	
Ar	1867 Veldre, 65	1970 Veldre, 65
	4318 Bonham, 70	4339 Amusia, 70
	4639 Ganas, 71	4640 Sawada, 71
	5588 Amusia, 73	
Ar^{+1}	5656 Brandi, 73	
Ar^{+2}	3294 Czyzak, 67	
Ar^{+3}	2335 Czyzak, 67	4199 Czyzak, 70

Normalized

Ar^{+4}	442 Czyzak, 63 1992 Bely, 67	1696 Bely, 66 3294 Czyzak, 67
Ar^{+7}	792 Varsavsky, 61	4962 Datla, 72
Ar^{+10}	3294 Czyzak, 67	
Ar^{+11}	792 Varsavsky, 61	3294 Czyzak, 67
Ar^{+12}	792 Varsavsky, 61	1992 Bely, 67
Ar^{+13}	792 Varsavsky, 61	
B	884 Pilyankevich, 60	
B^{+1}	6422 Burgess, 74	
B^{+3}	3579 Lyash, 67	
Ba	6048 Kim, 73	
Ba^{+1}	1876 Petrini, 65	4014 Davis, 70
Be	884 Pilyankevich, 60	5059 Kulander, 72
Be^{+1}	775 Bely, 63 1850 Bely, 66 4008 Tripathi, 70 4230 Bely, 70 4965 Petrini, 72	1305 Bely, 64 2118 Bely, 66 4084 Blaha, 69 4704 Mathur, 71
Be^{+2}	884 Pilyankevich, 60 6116 Tully, 74	3579 Lyash, 67
C	884 Pilyankevich, 60 3700 Henry, 69 5009 Poshyunaite, 70	2616 Smith, 67 3704 Smith, 69
C^{+1}	714 Seaton, 58	909 Seaton, 55
C^{+2}	884 Pilyankevich, 60 5151 Flower, 72	2733 Beigman, 67 5983 Flower, 73
C^{+3}	775 Bely, 63 4704 Mathur, 71	4084 Blaha, 69 4965 Petrini, 72
C^{+4}	884 Pilyankevich, 60 2733 Beigman, 67	1546 Vainshtein, 63 3579 Lyash, 67
C^{+5}	1474 Vainshtein, 65	1546 Vainshtein, 63
Ca	1448 Bely, 63 4330 Vainshtein, 70 5155 Simsic, 72 6250 Robb, 74	3060 Beigman, 67 5059 Kulander, 72 6048 Kim, 73
Ca^{+1}	720 Van Regemorter,60	1054 Van Regemorter,61

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Ca^{+1}	1122 Van Regemorter,60 1876 Petrini, 65 4008 Tripathi, 70 4234 Saraph, 70 6422 Burgess, 74	1138 Bely, 66 3518 Burke, 68 4084 Blaha, 69 5304 Tully, 73
Ca^{+4}	3294 Czyzak, 67	
Ca^{+5}	2335 Czyzak, 67	4199 Czyzak, 70
Ca^{+6}	1992 Bely, 67	3294 Czyzak, 67
Ca^{+7}	792 Varsavsky, 61	
Ca^{+8}	792 Varsavsky, 61	
Ca^{+9}	792 Varsavsky, 61	4704 Mathur, 71
Ca^{+14}	792 Varsavsky, 61	1992 Bely, 67
Cd	3837 Tripathi, 69	4663 Savchenko, 71
Cl^{+1}	3294 Czyzak, 67	4244 Conneely, 70
Cl^{+2}	2335 Czyzak, 67	4199 Czyzak, 70
Cl^{+3}	442 Czyzak, 63 1992 Bely, 67	1696 Bely, 66 3294 Czyzak, 67
Cl^{+10}	792 Varsavsky, 61	
Cl^{+11}	792 Varsavsky, 61	
Cl^{+12}	792 Varsavsky, 61	
Co^{+10}	792 Varsavsky, 61	
Co^{+11}	792 Varsavsky, 61	
Co^{+12}	792 Varsavsky, 61	
Co^{+13}	792 Varsavsky, 61	
Co^{+14}	792 Varsavsky, 61	
Co^{+15}	792 Varsavsky, 61	
Co^{+16}	792 Varsavsky, 61	4372 Golshani, 70
Cr^{+7}	792 Varsavsky, 61	
Cr^{+8}	792 Varsavsky, 61	3294 Czyzak, 67
Cr^{+9}	792 Varsavsky, 61	4199 Czyzak, 70
Cr^{+10}	792 Varsavsky, 61 3294 Czyzak, 67	1992 Bely, 67

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Cr^{+11}	792 Varsavsky, 61	
Cr^{+12}	792 Varsavsky, 61	
Cr^{+13}	792 Varsavsky, 61	
Cs	1063 Hansen, 64	1072 Hughes, 64
	1456 Witting, 65	1469 Karule, 65
	1540 Vainshtein, 65	1813 Vainshtein, 64
	3709 Mathur, 69	4554 Karule, 71
	4738 Karule, 71	5651 Felden, 73
	5708 Liepinsh, 72	5710 Brandus, 73
Cs^{*}	1272 Sheldon, 65	
Cu^{+18}	4372 Golshani, 70	
F^{+1}	404 Seaton, 53	484 Seaton, 55
	3294 Czyzak, 67	
F^{+2}	404 Seaton, 53	484 Seaton, 55
	3294 Czyzak, 67	3739 Martins, 69
F^{+3}	404 Seaton, 53	484 Seaton, 55
F^{+5}	792 Varsavsky, 61	
F^{+6}	792 Varsavsky, 61	4704 Mathur, 71
Fe^{+1}	909 Seaton, 55	
Fe^{+7}	1943 Czyzak, 66	4084 Blaha, 69
Fe^{+9}	792 Varsavsky, 61	
Fe^{+10}	792 Varsavsky, 61	3294 Czyzak, 67
Fe^{+11}	792 Varsavsky, 61	2335 Czyzak, 67
	4199 Czyzak, 70	
Fe^{+12}	792 Varsavsky, 61	1992 Bely, 67
	2115 Bely, 66	3294 Czyzak, 67
	4608 Flower, 71	
Fe^{+13}	437 Blaha, 62	455 Hill, 51
	547 Bely, 62	792 Varsavsky, 61
	923 Woolley, 48	2832 Petrini, 67
	4608 Flower, 71	
Fe^{+14}	792 Varsavsky, 61	4608 Flower, 71
Fe^{+15}	775 Bely, 63	792 Varsavsky, 61
	1932 Krueger, 65	4084 Blaha, 69
	4372 Golshani, 70	4704 Mathur, 71
Fe^{+16}	3013 Bely, 67	4608 Flower, 71

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H	32 Gorshanova, 62	44 Burke, 62
	51 Massey, 31	83 Burke, 63
	91 Damburg, 62	97 Damburg, 62
	128 Peterkop, 62	154 Damburg, 62
	155 Seaton, 62	183 Elsasser, 27
	234 Massey, 56	277 Goldstein, 33
	278 Damburg, 62	296 Gailitis, 63
	350 Kingston, 60	351 Bell, 63
	389 Borowitz, 56	391 Hart, 56
	418 Khashaba, 58	420 Marriott, 58
	423 Bates, 57	424 McCarroll, 57
	425 Bransden, 57	429 Bransden, 56
	432 Opik, 55	435 Rothenstein, 54
	438 Massey, 53	446 McCoyd, 60
	458 Erskine, 52	507 Damburg, 63
	534 Somerville, 62	540 Milford, 60
	542 Damburg, 62	545 Robinson, 63
	549 Kingston, 60	563 Lynn, 59
	567 Wu, 60	580 Huck, 57
	593 Omidvar, 64	648 Damburg, 63
	671 Stabler, 64	712 Burke, 61
	721 Seaton, 61	722 Lawson, 61
	809 Hellund, 60	826 Presnyakov, 63
	828 Pomilla, 63	829 Peterkop, 59
	859 Smith, 60	874 Taylor, 63
	892 Burgess, 63	896 Smith, 60
	904 Kyle, 64	908 Kyle, 63
	913 Akerib, 61	914 Moiseiwitsch, 61
	919 Milford, 60	935 Ochkur, 58
	996 Akerib, 60	1009 Burke, 63
	1014 Gryzinski, 65	1037 Hummer, 61
	1050 Scanlon, 61	1061 Vainshtein, 64
	1074 Somerville, 63	1109 Cunningham, 64
	1115 Ochkur, 63	1130 Klein, 55
	1135 Peterkop, 60	1171 Crothers, 65
	1246 Stauffer, 65	1257 Moiseiwitsch, 65
	1409 Bell, 65	1416 Tait, 63
	1457 Vriens, 65	1461 Scott, 65
	1466 Omidvar, 65	1468 Vriens, 65
	1474 Vainshtein, 65	1479 Coleman, 65
	1532 Crothers, 65	1546 Vainshtein, 63
	1550 Damburg, 63	1551 Damburg, 63
	1552 Damburg, 63	1553 Damburg, 63
	1557 Bauer, 65	1560 Eissner, 63
	1581 Vainshtein, 65	1594 Vriens, 65
	1657 Kingston, 66	1697 Coleman, 66
	1718 Ormonde, 63	1747 Kang, 66
	1773 Rudge, 65	1793 Bielski, 65
	1813 Vainshtein, 64	1847 Burke, 66
	1851 Kingston, 66	1859 Ormonde, 66
	1868 Veldre, 65	1877 McCarroll, 65
	1886 Coleman, 65	1898 Kyle, 64
	1985 Faisal, 65	1999 Burke, 66
	2013 Stauffer, 66	2022 Morrison, 66
	2067 Omidvar, 64	2077 Omidvar, 67
	2126 Jha, 66	2159 Holt, 68
	2655 Inokuti, 67	2733 Beigman, 67

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H	2736 Crothers, 67	2749 Jha, 67
	2791 Burke, 67	2792 Taylor, 67
	3054 McDowell, 67	3055 Burke, 67
	3058 Rabik, 67	3065 Vainshtein, 67
	3388 Marriott, 68	3572 Peresse, 65
	3580 Gaudin, 68	3642 Kolodziejski, 68
	3728 Truhlar, 68	3742 Ormonde, 69
	3775 Kyle, 68	3805 Ochkur, 68
	3839 Kyle, 69	3924 Gumble, 69
	3933 Holt, 69	3942 Lloyd, 69
	3992 Ormonde, 70	4123 Tai, 70
	4215 Ghosh, 69	4224 Ghosh, 70
	4232 Steelhammer, 70	4233 Shelton, 70
	4318 Bonham, 70	4321 Perrott, 70
	4322 Jamieson, 70	4324 McCavert, 70
	4327 Geltman, 70	4330 Vainshtein, 70
	4377 Shelton, 71	4396 Bhadra, 71
	4417 Shimamura, 71	4435 Burke, 70
	4440 Felden, 71	4445 Mandelberg, 70
	4446 Beigman, 70	4669 Sheorey, 71
	4701 Thomas, 71	4708 Geltman, 71
	4721 Byron Jr., 71	4754 Ghosh, 70
	4840 Felden, 72	4845 Rudge, 72
	4854 Bransden, 72	4860 Smith, 72
	4923 Damburg, 72	4925 Sil, 72
	4964 Chen, 72	4996 Burnashev, 72
	5004 Ling, 72	5066 Alton, 72
	5068 Golden, 71	5139 Felden, 72
	5153 Knirk, 72	5154 Knirk, 72
	5156 Burnashev, 72	5162 Hutton, 72
	5279 Burke, 73	5281 Grujic, 73
	5316 Woollings, 73	5454 McDowell, 73
	5483 Joachain, 73	5657 Hambro, 73
	5659 Saha, 73	6054 Potapov, 73
	6185 McDowell, 74	6197 Baye, 74
	6234 Roy, 74	6266 Flannery, 74
	6267 Truhlar, 74	6304 Callaway, 74
	6458 Flannery, 74	6461 Flannery, 74
	6469 Abdallah Jr., 74	
H*	103 McCoyd, 63	413 McCrea, 60
	419 Boyd, 58	431 Seaton, 55
	445 Fisher, 60	446 McCoyd, 60
	593 Omidvar, 64	826 Presnyakov, 63
	859 Smith, 60	954 Saraph, 64
	1074 Somerville, 63	1103 Yavorskii, 47
	1466 Omidvar, 65	1468 Vriens, 65
	1522 Pomilla, 64	1657 Kingston, 66
	1674 Veldre, 65	1718 Ormonde, 63
	1851 Kingston, 66	1868 Veldre, 65
	1946 Pluta, 66	2063 Purcell, 52
	2786 Monnin, 67	3214 Van Blerkom, 68
	3933 Holt, 69	3997 Percival, 70
	4092 Podlubnyi, 69	4341 Flannery, 70
	4849 Omidvar, 72	5517 Sobeslavsky, 73
He	51 Massey, 31	61 Massey, 33

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He	139 Massey, 35	155 Seaton, 62
	234 Massey, 56	281 Yavorskii, 44
	311 Becker, 64	349 Massey, 60
	391 Hart, 56	395 Altshuler, 53
	396 Altshuler, 52	432 Opik, 55
	435 Rothenstein, 54	441 Massey, 52
	452 Gryzinski, 59	460 Massey, 54
	462 Huzinaga, 60	555 Becker, 63
	616 Massey, 31	676 Kar, 40
	718 Ochkur, 64	740 Percival, 58
	754 Vainshtein, 59	760 Matora, 60
	765 Itoh, 60	801 Lassettre, 64
	863 Gryzinski, 63	866 Marriott, 63
	892 Burgess, 63	1014 Gryzinski, 65
	1091 Silverman, 58	1115 Ochkur, 63
	1212 Becker, 64	1246 Stauffer, 65
	1265 Jones, 48	1546 Vainshtein, 63
	1557 Bauer, 65	1558 Bauer, 65
	1567 Lassettre, 65	1590 Williamson, 62
	1644 Joachain, 65	1645 Joachain, 65
	1663 Silverman, 66	1682 Ochkur, 65
	1695 Fox, 66	1710 Bell, 66
	1767 Fox, 65	1793 Bielski, 65
	1846 Burke, 66	1941 Joachain, 66
	2017 Vriens, 67	2685 Morrison, 67
	2733 Beigman, 67	2750 Banerjee, 67
	2837 Inokuti, 67	3002 Kennedy, 68
	3018 Bell, 68	3019 Bell, 68
	3059 Lyash, 67	3206 Miller, 68
	3208 Bell, 68	3211 Lin, 68
	3255 Kang, 68	3341 Kennedy, 68
	3344 Cartwright, 68	3521 Kim, 68
	3579 Lyash, 67	3587 Bell, 68
	3698 Vainshtein, 69	3730 Van Den Bos, 69
	3733 Bell, 69	3936 Burke, 69
	3973 Kim, 69	3992 Ormonde, 70
	4001 Inokuti, 69	4114 Truhlar, 70
	4181 Flannery, 70	4232 Steelhammer, 70
	4301 Vanderpoorten, 70	4316 Steelhammer, 70
	4318 Bonham, 70	4376 McGuire, 71
	4392 Schneider, 70	4507 Vriens, 70
	4560 Truhlar, 71	4654 Ojha, 71
	4662 Tripathi, 71	4719 Holt, 71
	4721 Byron Jr., 71	4739 Byron Jr., 72
	4740 Rice, 72	4782 Manson, 72
	4856 Hidalgo, 72	4921 Kohl, 72
	4991 Woollings, 72	4996 Burnashev, 72
	5081 Gillespie, 72	5090 Yates, 72
	5156 Burnashev, 72	5161 Ojha, 72
	5272 Ojha, 73	5315 Berrington, 73
	5316 Woollings, 73	5660 Nicholls, 73
	5725 Chan, 73	5735 Ormonde, 73
	5738 Lipovetskii, 73	5815 Truhlar, 73
	5825 Gillespie, 73	5852 Balashov, 73
	5894 Oberoi, 73	5895 Smith, 73
	5902 Franco, 73	5933 Terebey, 74
	5972 Banyard, 74	6183 Joachain, 74

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He	6189 Chan, 74	6196 Baye, 74
	6248 Wichmann, 74	6249 Mathur, 74
	6300 Huo, 74	6316 Thomas, 74
	6345 McCurdy Jr., 74	6349 Ojha, 73
	6350 Chan, 74	6417 Truhlar, 74
	6419 McCann, 74	6460 Seddon, 74
He^{*}	367 Moiseiwitsch, 57	1103 Yavorskii, 47
	1658 Marriott, 66	1804 Ochkur, 66
	2013 Stauffer, 66	3056 Burke, 67
	3847 Kim, 69	3936 Burke, 69
	4330 Vainshtein, 70	4393 Briggs, 71
He^{+1}	417 Burgess, 61	436 Bransden, 53
	669 Burke, 64	670 McCarroll, 64
	1080 Burke, 64	1340 Burke, 63
	1847 Burke, 66	2427 Ormonde, 67
	3061 Kyle, 67	3734 Burke, 69
	3992 Ormonde, 70	4119 Burgess, 70
	6185 McDowell, 74	
Hg	202 Yavorskii, 46	272 Yavorskii, 45
	452 Gryzinski, 59	1414 Lane, 64
	2769 Lin, 64	3216 McConnell, 68
	3616 Yavorskii, 52	3837 Tripathi, 69
	4663 Savchenko, 71	4782 Manson, 72
	5082 Carse, 72	5275 Madison, 73
Hg^{*}	1103 Yavorskii, 47	
K	1072 Hughes, 64	1469 Karule, 65
	1540 Vainshtein, 65	1813 Vainshtein, 64
	3709 Mathur, 69	4324 McCavert, 70
	4554 Karule, 71	4738 Karule, 71
	4782 Manson, 72	4863 McCavert, 72
	5155 Simsic, 72	5554 Walters, 73
	5651 Felden, 73	
K^{+3}	3294 Czyzak, 67	
K^{+4}	2335 Czyzak, 67	4199 Czyzak, 70
K^{+5}	3294 Czyzak, 67	
K^{+7}	792 Varsavsky, 61	
K^{+8}	792 Varsavsky, 61	
K^{+12}	792 Varsavsky, 61	
K^{+13}	792 Varsavsky, 61	1992 Bely, 67
Kr	1970 Veldre, 65	4318 Bonham, 70
	4339 Amusia, 70	4639 Ganas, 71
Li	830 Veldre, 59	836 Veldre, 59
	990 Karule, 64	1072 Hughes, 64

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Li	1146 Wu, 44	1190 Wu, 40
	1469 Karule, 65	1515 Karule, 63
	1540 Vainshtein, 65	1813 Vainshtein, 64
	3057 Marriott, 67	3709 Mathur, 69
	3838 Burke, 69	4324 McCavert, 70
	4422 Felden, 71	4554 Karule, 71
	4700 Tripathi, 71	4702 Felden, 71
	4738 Karule, 71	4780 Mathur, 72
	4863 McCavert, 72	5155 Simsic, 72
	5554 Walters, 73	5651 Felden, 73
	6029 Zhvirblis, 73	
Li^{*}	6029 Zhvirblis, 73	
Li^{+1}	1688 Sural, 66	2733 Beigman, 67
	3579 Lyash, 67	4082 Kim, 70
	4641 Sural, 69	6116 Tully, 74
	6460 Seddon, 74	
Mg	4223 Van Blerkom, 70	5059 Kulander, 72
	5155 Simsic, 72	5904 Fabrikant, 74
	6048 Kim, 73	6250 Robb, 74
Mg^{*}	4223 Van Blerkom, 70	
Mg^{+1}	775 Bely, 63	1053 Van Regemorter,61
	1122 Van Regemorter,60	3518 Burke, 68
	4008 Tripathi, 70	6422 Burgess, 74
Mg^{+4}	404 Seaton, 53	484 Seaton, 55
	792 Varsavsky, 61	3294 Czyzak, 67
Mg^{+5}	792 Varsavsky, 61	3294 Czyzak, 67
Mg^{+6}	792 Varsavsky, 61	2020 Saraph, 66
Mg^{+7}	792 Varsavsky, 61	
Mg^{+8}	792 Varsavsky, 61	
Mg^{+9}	775 Bely, 63	792 Varsavsky, 61
	4965 Petrini, 72	
Mn^{+8}	792 Varsavsky, 61	
Mn^{+9}	792 Varsavsky, 61	3294 Czyzak, 67
Mn^{+10}	792 Varsavsky, 61	4199 Czyzak, 70
Mn^{+11}	792 Varsavsky, 61	1992 Bely, 67
	3294 Czyzak, 67	
Mn^{+12}	792 Varsavsky, 61	
Mn^{+13}	792 Varsavsky, 61	
Mn^{+14}	792 Varsavsky, 61	

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N	1970 Veldre, 65	2616 Smith, 67
	3700 Henry, 69	3704 Smith, 69
	5597 Ormonde, 73	5813 Ganas, 73
	5907 Ganas, 73	
N^{+1}	404 Seaton, 53	484 Seaton, 55
	714 Seaton, 58	1696 Bely, 66
	1992 Bely, 67	2020 Saraph, 66
	3700 Henry, 69	4202 Seaton, 69
	5009 Poshyunaite, 70	5597 Ormonde, 73
	5826 Jackson, 73	5992 Saraph, 74
N^{+2}	5826 Jackson, 73	
N^{+3}	5597 Ormonde, 73	
N^{+4}	1536 Taylor, 65	1653 Burke, 66
	1850 Bely, 66	2118 Bely, 66
	4084 Blaha, 69	4124 Davis, 70
	4230 Bely, 70	4608 Flower, 71
	4704 Mathur, 71	6429 Henry, 74
N^{+5}	3579 Lyash, 67	
Na	155 Seaton, 62	431 Seaton, 55
	452 Gryzinski, 59	497 Somerville, 61
	1014 Gryzinski, 65	1023 Salmona, 61
	1072 Hughes, 64	1115 Ochkur, 63
	1251 Barnes, 65	1319 Veldre, 56
	1414 Lane, 64	1469 Karule, 65
	1474 Vainshtein, 65	1520 Salmona, 63
	1540 Vainshtein, 65	1546 Vainshtein, 63
	1581 Vainshtein, 65	1587 Salmona, 65
	1793 Bielski, 65	1813 Vainshtein, 64
	2065 Presnyakov, 66	3065 Vainshtein, 67
	3709 Mathur, 69	4324 McCavert, 70
	4329 Williamson Jr, 70	4330 Vainshtein, 70
	4554 Karule, 71	4610 Hertel, 71
	4702 Felden, 71	4738 Karule, 71
	4782 Manson, 72	4863 McCavert, 72
	5006 Moores, 72	5082 Carse, 72
	5155 Simsic, 72	5273 Tripathi, 73
	5274 Korff, 73	5554 Walters, 73
	5594 Brandus, 73	5651 Felden, 73
Na^{*}	568 Lane, 64	
Na^{+3}	404 Seaton, 53	484 Seaton, 55
	3294 Czyzak, 67	
Na^{+4}	404 Seaton, 53	484 Seaton, 55
	792 Varsavsky, 61	3294 Czyzak, 67
	3739 Martins, 69	
Na^{+5}	792 Varsavsky, 61	1992 Bely, 67
Na^{+6}	792 Varsavsky, 61	

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Na^{+7}	792 Varsavsky, 61	
Na^{+8}	792 Varsavsky, 61	
Ne	1576 Veldre, 65	1681 Boikova, 65
	1866 Veldre, 65	1867 Veldre, 65
	1970 Veldre, 65	3994 Vainshtein, 68
	4318 Bonham, 70	4339 Amusia, 70
	4639 Ganas, 71	4640 Sawada, 71
	4741 Collins, 71	5608 Saxon, 73
	5906 Albat, 74	
Ne^{+2}	404 Seaton, 53	484 Seaton, 55
	3294 Czyzak, 67	3879 Henry, 68
	6424 Pradhan, 74	
Ne^{+3}	404 Seaton, 53	484 Seaton, 55
	3294 Czyzak, 67	3739 Martins, 69
	3879 Henry, 68	
Ne^{+4}	404 Seaton, 53	484 Seaton, 55
	2020 Saraph, 66	
Ne^{+5}	792 Varsavsky, 61	
Ne^{+6}	792 Varsavsky, 61	1850 Bely, 66
Ne^{+7}	792 Varsavsky, 61	2118 Bely, 66
	4230 Bely, 70	4704 Mathur, 71
	4965 Petrini, 72	
Ni^{+11}	792 Varsavsky, 61	
Ni^{+12}	792 Varsavsky, 61	3294 Czyzak, 67
Ni^{+13}	792 Varsavsky, 61	
Ni^{+14}	792 Varsavsky, 61	1992 Bely, 67
	3294 Czyzak, 67	
Ni^{+15}	792 Varsavsky, 61	
Ni^{+16}	792 Varsavsky, 61	
Ni^{+17}	792 Varsavsky, 61	4372 Golshani, 70
O	248 Yamanouchi, 40	366 Yamanouchi, 50
	427 Percival, 57	484 Seaton, 55
	1832 Seaton, 53	1970 Veldre, 65
	2013 Stauffer, 66	2616 Smith, 67
	2824 Breig, 66	3700 Henry, 69
	3704 Smith, 69	4930 Kazaks, 72
	5005 Lan, 72	5065 Rountree, 72
	5287 Sawada, 73	5597 Ormonde, 73
	5664 Saraph, 73	6428 Tambe, 74
O^{+1}	404 Seaton, 53	484 Seaton, 55

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O^{+1}	843 Seaton, 57	1216 Aller, 48
	3294 Czyzak, 67	3700 Henry, 69
	3739 Martins, 69	3870 Martins, 69
	4004 Eissner, 69	5597 Ormonde, 73
O^{+2}	265 Hebb, 40	404 Seaton, 53
	484 Seaton, 55	714 Seaton, 58
	1696 Bely, 66	1992 Bely, 67
	2020 Saraph, 66	3069 Miyamoto, 41
	3700 Henry, 69	3732 Eissner, 69
	4004 Eissner, 69	4202 Seaton, 69
	5009 Poshyunaite, 70	5597 Ormonde, 73
	5826 Jackson, 73	6462 Eissner, 74
O^{+4}	3060 Beigman, 67	
O^{+5}	775 Bely, 63	792 Varsavsky, 61
	814 Varsavsky, 63	970 Bely, 62
	1017 Varsavsky, 62	4084 Blaha, 69
	4704 Mathur, 71	4965 Petrini, 72
O^{+6}	3579 Lyash, 67	6116 Tully, 74
P^{+1}	1992 Bely, 67	3294 Czyzak, 67
	4244 Conneely, 70	
P^{+4}	4704 Mathur, 71	
P^{+6}	792 Varsavsky, 61	
P^{+7}	792 Varsavsky, 61	
P^{+8}	792 Varsavsky, 61	
P^{+9}	792 Varsavsky, 61	
P^{+10}	792 Varsavsky, 61	
P^{+11}	792 Varsavsky, 61	
P^{+12}	792 Varsavsky, 61	
Rb	1072 Hughes, 64	1540 Vainshtein, 65
	1813 Vainshtein, 64	3709 Mathur, 69
	5651 Felden, 73	
S^{+1}	404 Seaton, 53	442 Czyzak, 63
	484 Seaton, 55	2335 Czyzak, 67
	4199 Czyzak, 70	4244 Conneely, 70
S^{+2}	442 Czyzak, 63	1696 Bely, 66
	1992 Bely, 67	3294 Czyzak, 67
S^{+3}	5196 Brocklehurst, 72	
S^{+8}	792 Varsavsky, 61	

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S^{+9}	792 Varsavsky, 61	
S^{+10}	792 Varsavsky, 61	2020 Saraph, 66
S^{+11}	792 Varsavsky, 61	
Sc^{+6}	792 Varsavsky, 61	
Sc^{+7}	792 Varsavsky, 61	
Sc^{+8}	792 Varsavsky, 61	
Sc^{+9}	792 Varsavsky, 61	
Sc^{+10}	792 Varsavsky, 61	
Si^{+1}	714 Seaton, 58	909 Seaton, 55
	4236 Roberts, 70	
Si^{+3}	775 Bely, 63	4084 Blaha, 69
Si^{+5}	792 Varsavsky, 61	
Si^{+6}	792 Varsavsky, 61	
Si^{+7}	792 Varsavsky, 61	
Si^{+8}	792 Varsavsky, 61	
Si^{+9}	792 Varsavsky, 61	
Si^{+10}	792 Varsavsky, 61	
Si^{+11}	792 Varsavsky, 61	4608 Flower, 71
	4954 Kastner, 72	
Sr	6048 Kim, 73	
Sr^{+1}	6422 Burgess, 74	
Ti^{+6}	792 Varsavsky, 61	
Ti^{+7}	792 Varsavsky, 61	
Ti^{+8}	792 Varsavsky, 61	
Ti^{+9}	792 Varsavsky, 61	
Ti^{+10}	792 Varsavsky, 61	
Ti^{+11}	792 Varsavsky, 61	
V^{+6}	792 Varsavsky, 61	
V^{+7}	792 Varsavsky, 61	3294 Czyzak, 67
V^{+8}	792 Varsavsky, 61	2335 Czyzak, 67

ELECTRONIC EXCITATION THEORETICAL

Normalized

V^{+8}	4199 Czyzak, 70	
V^{+9}	792 Varsavsky, 61 3294 Czyzak, 67	1992 Bely, 67
V^{+10}	792 Varsavsky, 61	
V^{+11}	792 Varsavsky, 61	
V^{+12}	792 Varsavsky, 61	
Xe	1970 Veldre, 65 4639 Ganas, 71	4339 Amusia, 70 4782 Manson, 72
Zn	3837 Tripathi, 69	4663 Savchenko, 71
Zn^{+24}	2020 Saraph, 66	
CO	5171 Szabo, 72	6117 Chung, 74
H_2	45 Roscoe, 41 2024 Khare, 66 2627 Khare, 67 2913 Miller, 67 3344 Cartwright, 68 3803 Prok, 69 5216 Liu, 73	194 Massey, 32 2066 Khare, 66 2773 Cartwright, 67 2914 Rozsnyai, 67 3545 Trajmar, 68 4232 Steelhammer, 70 5358 Demkov, 71
H_2^{+1}	1055 Peek, 64 2914 Rozsnyai, 67	1342 Callaway, 65 3842 Peek, 69
N_2	1557 Bauer, 65 2914 Rozsnyai, 67 4443 Cartwright, 70 5171 Szabo, 72	1558 Bauer, 65 4169 Cartwright, 69 5061 Chung, 72 5305 Sharma, 72
N_2^{+1}	1557 Bauer, 65	5514 Michels, 72
N_2^{+1}	1558 Bauer, 65	
NO	1557 Bauer, 65	1558 Bauer, 65
O_2	1557 Bauer, 65 3574 Takayanagi, 67	1558 Bauer, 65 5469 Julienne, 72
CO_2	4002 Strickland, 69	6345 McCurdy Jr., 74
H_2O	294 Niira, 49	3823 Miller, 69
CH_4	4432 Poshyunaite, 70	
C_2H_4	4328 Miller, 69	
C_2H_6	4432 Poshyunaite, 70	

ELECTRONIC EXCITATION THEORETICAL

Relative

Ar	68 Massey, 34	
Ca^{+1}	963 Jefferies, 54	
He	284 Massey, 33 639 Morse, 32 5152 Bonham, 72	386 Baranger, 57 1297 Llewellyn–Jone,36 6459 Joachain, 74
Hg	19 Penney, 32	
N	484 Seaton, 55	
Ne	68 Massey, 34	
O^{+1}	876 Aller, 50	
O^{+2}	876 Aller, 50	
D_2	987 Coolidge, 44	
H_2	987 Coolidge, 44	

DE–EXCITATION EXPERIMENTAL

Normalized

Cs^*	279 Mohler, 32	
He	5310 Gerasimov, 72	
He^*	569 Phelps, 55	
Hg^*	4067 Korotkov, 68	
Ne^*	2698 Khaikin, 66	4438 Sakurai, 71

Relative

Hg^*	102 Latyscheff, 30 3071 Burrow, 66	2646 Burrow, 67
N_2^*	3543 Burrow, 68	

DE-EXCITATION THEORETICAL

Normalized

Ba^{+1}	4072 Davis, 70	
Cs^{*}	1456 Witting, 65	
H^{*}	2063 Purcell, 52	
He^{*}	426 Marriott, 57	1658 Marriott, 66
	3936 Burke, 69	6263 Nesbet, 74
Hg^{*}	202 Yavorskii, 46	
Na^{*}	5987 Moores, 74	
O^{*}	366 Yamanouchi, 50	

DISSOCIATION EXPERIMENTAL

Normalized

CO	1460 Rapp, 65	4326 Lawrence, 70
	4685 Ajello, 71	4814 El-Sherbini, 72
D_2	260 Engelhardt, 63	3831 Vroom, 69
	4694 Cox, 70	4945 Cox, 72
D_2^{+1}	2171 Dunn, 67	
H_2	260 Engelhardt, 63	354 Corrigan, 58
	1566 Corrigan, 65	2945 De Heer, 67
	3831 Vroom, 69	4487 McGowan, 69
	4606 Mumma, 70	4659 Mumma, 71
	4668 Kauppila, 71	4771 Weaver, 70
	5038 Lucas, 69	5115 McConkey, 72
H_2^{+1}	1501 Dunn, 65	1502 McFarland, 65
	1503 Dunn, 65	2171 Dunn, 67
	2790 Dance, 67	4726 Peart, 71
	4865 Peart, 72	5016 Peart, 72
N_2	992 Sheridan, 61	3833 Sroka, 69
	4226 Ajello, 70	4606 Mumma, 70
	4617 Winters, 66	4647 Koppe, 71
	4655 Aarts, 71	4713 Mumma, 71
	4800 Shemansky, 71	4814 El-Sherbini, 72
	5070 Halas, 72	5706 Stone, 71
N_2^{+1}	2772 Van Zyl, 67	
NO	1460 Rapp, 65	4326 Lawrence, 70
	4714 Stone, 72	4715 Mentall, 72
O_2	376 Lassettre, 54	377 Silverman, 57
	1075 Silverman, 64	1460 Rapp, 65

DISSOCIATION EXPERIMENTAL

Normalized

O_2	2782 Sroka, 67	4326 Lawrence, 70
	4606 Mumma, 70	4659 Mumma, 71
	4683 Aarts, 71	4688 Ajello, 71
	5033 Wells, 71	5525 Koppe, 72
O_2^{+1}	2772 Van Zyl, 67	
CO_2	1460 Rapp, 65	3759 Corvin, 69
	4319 Barton, 70	4336 Sroka, 70
	4420 Mumma, 71	4606 Mumma, 70
	4684 Ajello, 71	4712 Mumma, 72
	4748 Wells, 72	4995 Adamczyk, 72
	5088 Koval, 72	
D_2O	4487 McGowan, 69	
H_2O	382 Lassettre, 58	3812 Vroom, 69
	4326 Lawrence, 70	4487 McGowan, 69
	5267 Sushanin, 71	5846 Bose, 73
	6135 Tsurubuchi, 74	6214 Morgan, 74
	6468 Beenakker, 74	
N_2O	1460 Rapp, 65	
C_2H_2	6231 Koppe, 74	
C_2N_2	5307 Korol, 72	
NH_3	4427 Sushanin, 69	4487 McGowan, 69
	6214 Morgan, 74	
CD_4	3832 Vroom, 69	
CH_4	2899 Melton, 67	3832 Vroom, 69
	4487 McGowan, 69	4646 Aarts, 71
	6214 Morgan, 74	6231 Koppe, 74
C_2H_4	3832 Vroom, 69	4646 Aarts, 71
C_2H_6	3832 Vroom, 69	

Relative

Br_2	708 Frost, 60	
CO	778 Dorman, 60	941 Fineman, 62
	4705 Locht, 71	6026 Smyth, 74
Cl_2	708 Frost, 60	
H_2	3001 Leventhal, 67	3756 Clampitt, 69
	4423 Czarnik, 71	4638 Misakian, 71
	4705 Locht, 71	5194 Misakian, 72
	5595 Crowe, 73	

DISSOCIATION EXPERIMENTAL

Relative

I_2	526 Frost, 58 778 Dorman, 60	708 Frost, 60
N_2	2737 Niehaus, 67 5908 Smyth, 73	5157 Danilevskii, 72
N_2^{+2}	1881 Daly, 66	
NO	481 Cloutier, 59	4705 Locht, 71
O_2	167 Randolph, 58 778 Dorman, 60 4633 Borst, 71 6074 Van Brunt, 74	526 Frost, 58 4490 Freund, 71 4705 Locht, 71
CO_2	3205 Freund, 67	
COS	4710 MacNeil, 69	
CS_2	4710 MacNeil, 69	
D_2O	4498 Freund, 71	4895 Appell, 73
H_2O	4498 Freund, 71 4895 Appell, 73	4729 Azria, 71 5356 Tsurubuchi, 73
N_2O	3205 Freund, 67	3756 Clampitt, 69
NH_3	5520 Morrison, 73	
CCl_4	950 Marriott, 54	1231 Craggs, 52
CH_4	4742 Appell, 71	5516 Morrison, 73

DISSOCIATION THEORETICAL

Normalized

HD^{+1}	4666 Rai Dastidar, 71	
H_2	194 Massey, 32 1862 Khare, 66	695 Edelstein, 58 3344 Cartwright, 68
H_2^{+1}	370 Ivash, 58 1465 Peek, 65 2691 Zare, 67 3842 Peek, 69 6232 Peek, 74	394 Kerner, 53 2210 Peek, 67 2966 Oksyuk, 67 4120 Mathur, 70 6251 Liu, 74
H_2O	294 Niira, 49	

DISSOCIATION THEORETICAL

Relative

HD^{+1}	4955 Saha, 72
H_2	33 Sasaki, 35

DISSOCIATIVE IONIZATION EXPERIMENTAL

Normalized

CO	1105 Englander–Gold,64	1410 Rapp, 65
D_2	1105 Englander–Gold,64	
H_2	41 Newhall, 42 1410 Rapp, 65	1105 Englander–Gold,64 1858 Adamczyk, 66
H_2^{+1}	5828 Peart, 73	
N_2	153 Cook, 62 1105 Englander–Gold,64 1881 Daly, 66 3833 Sroka, 69	946 Glick, 64 1410 Rapp, 65 3527 Peresse, 67 4226 Ajello, 70
NO	946 Glick, 64 1410 Rapp, 65	1105 Englander–Gold,64
O_2	946 Glick, 64 1410 Rapp, 65 3527 Peresse, 67	1105 Englander–Gold,64 2782 Sroka, 67 4683 Aarts, 71
CO_2	1105 Englander–Gold,64 3527 Peresse, 67 5985 Crowe, 74	1410 Rapp, 65 4606 Mumma, 70
H_2O	1782 Schutten, 66	
N_2O	1105 Englander–Gold,64	1410 Rapp, 65
C_2H_2	2744 Gaudin, 67	
CH_4	946 Glick, 64 1410 Rapp, 65 2899 Melton, 67	1105 Englander–Gold,64 1858 Adamczyk, 66 3527 Peresse, 67

Relative

H	465 Schaeffer, 50
Bi_2	2900 Kohl, 67
Br_2	708 Frost, 60

DISSOCIATIVE IONIZATION EXPERIMENTAL

Relative

CO	17 Vaughan, 31	107 Hagstrum, 51
	214 Hagstrum, 41	667 Tate, 32
	778 Dorman, 60	941 Fineman, 62
	1096 Hogness, 28	1742 Cuthbert, 66
Cl_2	526 Frost, 58	708 Frost, 60
D_2	456 Bauer, 47	465 Schaeffer, 50
	2647 Kieffer, 67	3023 Fiquet–Fayard, 68
	4449 Van Brunt, 70	
HCl	1518 Hanson, 37	
H_2	7 Sasaki, 35	9 Bleakney, 30
	41 Newhall, 42	107 Hagstrum, 51
	130 Sasaki, 41	135 Sasaki, 35
	214 Hagstrum, 41	255 Smyth, 24
	364 Dunn, 63	451 Stevenson, 60
	456 Bauer, 47	465 Schaeffer, 50
	660 Kallmann, 27	1106 Boksenberg, 62
	1402 Lozier, 30	2647 Kieffer, 67
	4449 Van Brunt, 70	5739 Crowe, 73
I_2	526 Frost, 58	708 Frost, 60
	778 Dorman, 60	
N_2	17 Vaughan, 31	107 Hagstrum, 51
	214 Hagstrum, 41	660 Kallmann, 27
	667 Tate, 32	854 Clarke, 54
	953 Stewart, 55	1543 Briglia, 64
	2614 Kieffer, 67	5728 Crowe, 73
	5811 Stockdale, 73	
NO	107 Hagstrum, 51	214 Hagstrum, 41
	481 Cloutier, 59	1518 Hanson, 37
	1691 Dorman, 66	
O_2	107 Hagstrum, 51	214 Hagstrum, 41
	255 Smyth, 24	341 Frost, 58
	526 Frost, 58	778 Dorman, 60
	2308 Turner, 68	5811 Stockdale, 73
	6074 Van Brunt, 74	6301 Van Brunt, 74
	6313 Schopman, 74	6381 Stockdale, 74
CO_2	2119 Sjogren, 66	6112 Jackson, 74
HCN	1224 Stevenson, 50	
H_2O	298 Sjogren, 63	483 Cottin, 59
	924 Mann, 40	
N_2O	1067 Curran, 61	1691 Dorman, 66
BCl_3	1118 Marriott, 57	
C_2N_2	1224 Stevenson, 50	

DISSOCIATIVE IONIZATION EXPERIMENTAL

Relative

H_2O_2	1132 Foner, 62	
NH_3	924 Mann, 40	
CCl_4	133 Fox, 61	950 Marriott, 54
	1231 Craggs, 52	
CF_4	2215 Dibeler, 48	
CH_2Br_2	2731 Gutbier, 54	
CH_2Cl_2	2731 Gutbier, 54	
CH_3Br	2731 Gutbier, 54	
CH_3Cl	2731 Gutbier, 54	
CH_4	527 Geerk, 50	539 Hayakawa, 55
	1691 Dorman, 66	2658 Brehm, 67
SiF_4	2215 Dibeler, 48	
C_2H_4	539 Hayakawa, 55	
SF_6	133 Fox, 61	2215 Dibeler, 48

DISSOCIATIVE IONIZATION THEORETICAL

Relative

D_2	342 Stevenson, 47	
H_2	342 Stevenson, 47	364 Dunn, 63
	1144 De La Ripelle, 49	3068 McCulloh, 68

DISSOCIATIVE ATTACHMENT EXPERIMENTAL

Normalized

CO	867 Craggs, 58	938 Asundi, 63
	988 Rapp, 64	1105 Englander–Gold,64
	1289 Schulz, 62	1460 Rapp, 65
DBr	3007 Christophorou, 68	
DCl	3007 Christophorou, 68	6264 Azria, 74
D_2	1372 Rapp, 64	1451 Rapp, 65
	1460 Rapp, 65	2763 Schulz, 67

Normalized

DI	3007 Christophorou, 68	
HBr	766 Buchelnikova, 59	3007 Christophorou, 68
HCl	766 Buchelnikova, 59	2088 Bailey, 30
	3007 Christophorou, 68	6264 Azria, 74
HD	1451 Rapp, 65	1460 Rapp, 65
	2763 Schulz, 67	
H_2	324 Schulz, 59	957 Khvostenko, 58
	988 Rapp, 64	1372 Rapp, 64
	1451 Rapp, 65	1460 Rapp, 65
	2763 Schulz, 67	4558 Spence, 71
HI	3007 Christophorou, 68	
I_2	134 Buchdahl, 41	541 Biondi, 58
	654 Keeffe, 62	1064 Biondi, 58
NO	988 Rapp, 64	1105 Englander–Gold,64
	1460 Rapp, 65	
O_2	131 Chanin, 59	134 Buchdahl, 41
	337 Tozer, 58	766 Buchelnikova, 59
	853 Craggs, 57	861 Prasad, 61
	938 Asundi, 63	943 Thompson, 59
	988 Rapp, 64	1105 Englander–Gold,64
	1289 Schulz, 62	1460 Rapp, 65
	1565 Christophorou, 65	3841 Henderson, 69
	3989 Brongersma, 69	4134 Spence, 69
	4892 Christophorou, 71	
O_2^*	5909 Burrow, 73	
CO_2	865 Craggs, 60	938 Asundi, 63
	988 Rapp, 64	1105 Englander–Gold,64
	1289 Schulz, 62	1460 Rapp, 65
	4134 Spence, 69	5278 Stamatovic, 73
	5993 Spence, 74	
D_2O	2560 Compton, 67	
D_2S	4846 Fiquet–Fayard, 72	
HDS	4846 Fiquet–Fayard, 72	
H_2O	766 Buchelnikova, 59	1016 Hurst, 61
	2088 Bailey, 30	2560 Compton, 67
	5144 Melton, 72	
H_2S	4846 Fiquet–Fayard, 72	4852 Azria, 72
	5707 Tronc, 73	
N_2O	988 Rapp, 64	1105 Englander–Gold,64
	1460 Rapp, 65	3845 Chaney, 69
	4892 Christophorou, 71	

DISSOCIATIVE ATTACHMENT EXPERIMENTAL

Normalized

NO_2	776 Fox, 60	
C_2D_2	5142 Azria, 72	
C_2H_2	5142 Azria, 72	
ND_3	3207 Sharp, 69	3763 Compton, 69
NH_3	2088 Bailey, 30	3207 Sharp, 69
	3763 Compton, 69	
$SbCl_3$	1270 Grob, 63	
CCl_4	3006 Christophorou, 68	4892 Christophorou, 71
CCl_3F	3006 Christophorou, 68	
CCl_2F_2	3006 Christophorou, 68	
CD_4	2205 Sharp, 67	
CH_4	2205 Sharp, 67	2899 Melton, 67
SF_6	858 Hickam, 56	1460 Rapp, 65
	4431 Lehmann, 70	4494 Christophorou, 70

Relative

Br_2	708 Frost, 60	
CO	17 Vaughan, 31	18 Tate, 32
	107 Hagstrum, 51	214 Hagstrum, 41
	481 Cloutier, 59	667 Tate, 32
	941 Fineman, 62	3292 Chantry, 68
	3834 Rempt, 69	4299 Stamatovic, 70
	5663 Harland, 72	
Cl_2	526 Frost, 58	708 Frost, 60
HBr	699 Frost, 58	
HCl	699 Frost, 58	1119 Fox, 57
	1518 Hanson, 37	
H_2	232 Brasefield, 29	1592 Schulz, 65
	2577 Dowell, 68	
HF	699 Frost, 58	
HI	699 Frost, 58	
I_2	467 Fox, 58	708 Frost, 60
	1120 Frost, 58	
InBr	3417 Khvostenko, 64	

DISSOCIATIVE ATTACHMENT EXPERIMENTAL

Relative

LiCl	2910 Ebinghaus, 64	
NO	18 Tate, 32	107 Hagstrum, 51
	214 Hagstrum, 41	481 Cloutier, 59
	1263 Frost, 58	1518 Hanson, 37
	3292 Chantry, 68	4302 Locht, 70
	4649 Paquet, 71	5663 Harland, 72
	6416 Van Brunt, 74	
NaCl	2910 Ebinghaus, 64	
O_2	18 Tate, 32	107 Hagstrum, 51
	166 Muschlitz Jr., 57	167 Randolph, 58
	214 Hagstrum, 41	280 Fite, 63
	341 Frost, 58	526 Frost, 58
	699 Frost, 58	1525 Fite, 65
	3878 Brion, 68	4302 Locht, 70
	4348 Van Brunt, 70	
O_2^*	280 Fite, 63	
TlBr	3416 Khvostenko, 65	
TlCl	3416 Khvostenko, 65	
CO_2	847 Asundi, 63	2975 Kraus, 61
	5058 Chantry, 72	5663 Harland, 72
CS_2	2975 Kraus, 61	
D_2O	5707 Tronc, 73	6427 Trajmar, 74
D_2S	5707 Tronc, 73	
H_2O	18 Tate, 32	298 Sjogren, 63
	324 Schulz, 59	483 Cottin, 59
	558 Schulz, 60	924 Mann, 40
	957 Khvostenko, 58	1117 Muschlitz Jr., 56
	1709 Trepka, 63	4073 Doumont, 69
	5707 Tronc, 73	6427 Trajmar, 74
H_2S	2730 Neuert, 53	2975 Kraus, 61
H_2Se	2730 Neuert, 53	
N_2O	347 Knox, 58	932 Schulz, 61
	1067 Curran, 61	1116 Rudolph, 59
	3986 Chantry, 69	
O_3	1066 Curran, 61	
SO_2	2975 Kraus, 61	5663 Harland, 72
AsH_3	1163 Ebinghaus, 64	
BCl_3	1118 Marriott, 57	

DISSOCIATIVE ATTACHMENT EXPERIMENTAL

Relative

C_2H_2	18 Tate, 32	
C_2N_2	1230 McDowell, 52	1231 Craggs, 52
NH_3	924 Mann, 40	2975 Kraus, 61
PH_3	1163 Ebinghaus, 64	
C_2H_2O	4214 Collin, 70	
CCl_4	133 Fox, 61	950 Marriott, 54
	1231 Craggs, 52	3878 Brion, 68
CF_4	1231 Craggs, 52	
CH_4	1709 Trepka, 63	
$SiCl_4$	2706 Vought, 47	3641 Jager, 68
SiH_4	1163 Ebinghaus, 64	
C_2H_4	1709 Trepka, 63	
SF_6	133 Fox, 61	481 Cloutier, 59
	699 Frost, 58	746 Buchelnikova, 58
	971 Curran, 61	1239 Ahearn, 53
C_2H_6	1709 Trepka, 63	

DISSOCIATIVE ATTACHMENT THEORETICAL

Normalized

D_2	5519 Dubrovskii, 67	
HD	5519 Dubrovskii, 67	
H_2	207 Chen, 63	2004 Bardsley, 66
	5519 Dubrovskii, 67	
O_2	4922 Birtwistle, 72	

VIBRATIONAL EXCITATION EXPERIMENTAL

Normalized

CO	984 Schulz, 64	3377 Ehrhardt, 68
	4136 Burrow, 69	4967 Comer, 71
	5084 Truhlar, 72	5141 Chutjian, 72

VIBRATIONAL EXCITATION EXPERIMENTAL

Normalized

CO	5901 Boness, 73	
D_2	260 Engelhardt, 63 4611 Comer, 71	4136 Burrow, 69
H_2	260 Engelhardt, 63 1043 Frost, 62 4136 Burrow, 69 4388 Weingartshofer, 7 4611 Comer, 71 6118 Wong, 74	984 Schulz, 64 3377 Ehrhardt, 68 4138 Trajmar, 70 4484 Crompton, 70 4734 Linder, 71
N_2	218 Engelhardt, 64 984 Schulz, 64 4672 Comer, 71 5064 Spence, 72 5901 Boness, 73	684 Haas, 57 4136 Burrow, 69 5010 Pavlovic, 72 5084 Truhlar, 72
NO	4566 Spence, 71	
O_2	1310 Schulz, 62 4735 Linder, 71	4724 Trajmar, 71 5734 Wong, 73
CO_2	1478 Geiger, 65 5064 Spence, 72	3389 Boness, 68 6109 Boness, 74
N_2O	1478 Geiger, 65	
C_2H_4	1478 Geiger, 65	
C_2H_6	6198 Duncan, 74	

Relative

CO	98 Harries, 27 3546 Skerbele, 68	328 Schulz, 59
H_2	686 Ramlen, 31	1977 Menendez, 66
N_2	98 Harries, 27 328 Schulz, 59 3343 Hall, 68	299 Schulz, 63 1021 Schulz, 62 3546 Skerbele, 68
NO	3546 Skerbele, 68	
O_2	3546 Skerbele, 68	4375 Spence, 70
CO_2	1065 Boersch, 64 3770 Andrick, 69 4126 Stamatovic, 69	3547 Skerbele, 68 4118 Larkin, 70
H_2O	3547 Skerbele, 68 6423 Seng, 74	5360 Trajmar, 73
N_2O	932 Schulz, 61	4118 Larkin, 70

VIBRATIONAL EXCITATION EXPERIMENTAL

Relative

N_2O	4126 Stamatovic, 69	
CH_4	5280 Dicoum, 73	

VIBRATIONAL EXCITATION THEORETICAL

Normalized

CO	1564 Breig, 65 2824 Breig, 66 4078 Itikawa, 70	2769 Lin, 64 3977 Itikawa, 69
H_2	43 Wu, 47 434 Carson, 54 962 Chen, 62 1564 Breig, 65 2824 Breig, 66 4116 Truhlar, 70 4444 Henry, 70 4747 Henry, 72 5271 Ford, 73 5736 Chang, 73	184 Massey, 35 724 Takayanagi, 64 1488 Takayanagi, 65 2798 Takayanagi, 65 3806 Abram, 69 4138 Trajmar, 70 4745 Faisal, 72 5060 Ritchie, 72 5596 Truhlar, 73
H_2^{+1}	3684 Boikova, 68	
HeH^{+1}	3684 Boikova, 68	
N_2	402 Kerner, 53 964 Chen, 64 1852 Chen, 66 5060 Ritchie, 72	895 Chen, 63 1564 Breig, 65 2824 Breig, 66 5063 Truhlar, 72
NO	2769 Lin, 64	
O_2	5515 Koike, 73	5951 Koike, 73
CO_2	1478 Geiger, 65	
H_2O	6180 Itikawa, 74	
N_2O	1478 Geiger, 65	
C_2H_4	1478 Geiger, 65	

Relative

N_2	1331 Herzenberg, 62	4502 Birtwistle, 71
CO_2	4424 Itikawa, 71	4552 Andrick, 71

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ROTATIONAL EXCITATION EXPERIMENTAL

Normalized

D_2	260 Engelhardt, 63	
H_2	260 Engelhardt, 63	1043 Frost, 62
	3252 Ehrhardt, 68	4062 Crompton, 69
	4450 Gibson, 70	4734 Linder, 71
	6118 Wong, 74	
N_2	181 Frost, 62	218 Engelhardt, 64
	316 Anderson, 56	

Relative

D_2	42 Bennett, 42	
H_2	42 Bennett, 42	

ROTATIONAL EXCITATION THEORETICAL

Normalized

CH^{+1}	6268 Chu, 74	
CN	3706 Takayanagi, 68	3707 Itikawa, 69
	3871 Itikawa, 69	4644 Allison, 71
CO	724 Takayanagi, 64	4323 Singh, 70
	4555 Crawford, 71	6283 Ray, 74
CsCl	6305 Rudge, 74	
CsF	6305 Rudge, 74	
D_2	4210 Takayanagi, 70	4634 Henry, 71
HCl	3707 Itikawa, 69	3871 Itikawa, 69
	4564 Itikawa, 71	
HD	4210 Takayanagi, 70	4414 Hara, 71
H_2	392 Gerjuoy, 55	434 Carson, 54
	702 Dalgarno, 65	1093 Takayanagi, 64
	1452 Takayanagi, 65	1573 Sampson, 65
	1666 Geltman, 66	1816 Oksyuk, 66
	1993 Lane, 67	2826 Sampson, 63
	3025 Ardill, 68	3349 Lane, 68
	3806 Abram, 69	3828 Chang, 69
	3843 Henry, 69	4079 Hara, 69
	4088 Lane, 69	4237 Burke, 70
	4444 Henry, 70	4447 Chang, 70
	4747 Henry, 72	4753 Shimamura, 71
	5013 Sams, 72	6418 Chang, 74

ROTATIONAL EXCITATION THEORETICAL

Normalized

H_2^{+1}	4308 Chang, 70	
KI	6305 Rudge, 74	
N_2	401 Gerjuoy, 55	402 Kerner, 53
	1082 Mjolsness, 64	1341 Dalgarno, 63
	1452 Takayanagi, 65	1573 Sampson, 65
	1666 Geltman, 66	1816 Oksyuk, 66
	1852 Chen, 66	2826 Sampson, 63
	4855 Hara, 72	5071 Burke, 72
	5827 Chandra, 73	
NO	6283 Ray, 74	
O_2	1477 Takayanagi, 65	1589 Takayanagi, 65
	1666 Geltman, 66	1676 Sampson, 66
	1816 Oksyuk, 66	
CO_2	4323 Singh, 70	
H_2O	385 Altshuler, 57	4737 Itikawa, 71
	4792 Itikawa, 72	
N_2O	4323 Singh, 70	
H_2CO	4737 Itikawa, 71	4792 Itikawa, 72
NH_3	385 Altshuler, 57	4415 Itikawa, 71
	4737 Itikawa, 71	

FREE–FREE EMISSION EXPERIMENTAL

Normalized

Ar	5467 Batenin, 71	
He	5467 Batenin, 71	

FREE–FREE EMISSION THEORETICAL

Normalized

H	1087 Vainshtein, 63	1414 Lane, 64
H^{+1}	1414 Lane, 64	
N	256 De Vore, 64	939 Breene Jr., 61
	2211 Mjolsness, 67	

FREE–FREE EMISSION THEORETICAL

Normalized

N^{+1}	256 De Vore, 64	
O	574 Breene Jr., 63	2211 Mjolsness, 67

RADIATIVE RECOMBINATION EXPERIMENTAL

Normalized

Ar^{+1}	355 Kenty, 28	969 Mies, 61
C^{+6}	6412 Irons, 74	
Cs^{+1}	1213 Mohler, 29	2888 Agnew, 66
H^{+1}	241 Fowler, 59	346 Craggs, 47
Kr^{+1}	969 Mies, 61	
O^{+7}	602 Jahoda, 62	
Xe^{+1}	969 Mies, 61	
He_2^{+1}	802 Johnson, 50	

Relative

Ar^{+1}	969 Mies, 61	
Kr^{+1}	969 Mies, 61	
Xe^{+1}	969 Mies, 61	

RADIATIVE RECOMBINATION THEORETICAL

Normalized

C^{+5}	4891 Bain, 71	
Ca^{+1}	960 Zirin, 62	
Cs^{+1}	1803 Dance, 66	
Fe^{+13}	455 Hill, 51	
H^{+1}	146 Bates, 62 358 Zanstra, 46 1010 Stueckelberg, 30	243 Bates, 39 444 Bates, 62 1414 Lane, 64

RADIATIVE RECOMBINATION THEORETICAL

Normalized

He^{+1}	715 Burgess, 60	960 Zirin, 62
Mg^{+9}	455 Hill, 51	
Ne^{+9}	4891 Bain, 71	
O^{+1}	243 Bates, 39 1180 Massey, 43	934 Breene Jr., 61 6413 Julienne, 74
O^{+7}	4891 Bain, 71	
Sr^{+1}	960 Zirin, 62	

Relative

H^{+1}	295 Cillie, 32	

RADIATIVE ATTACHMENT EXPERIMENTAL

Normalized

H	90 Branscomb, 62	1008 Branscomb, 62
Hg	1279 Hey, 30	
O	38 Branscomb, 58 1008 Branscomb, 62	90 Branscomb, 62
O_2	90 Branscomb, 62	1008 Branscomb, 62

Relative

F	1774 Popp, 65	
I	839 Steiner, 63	

RADIATIVE ATTACHMENT THEORETICAL

Normalized

Cl	1300 Massey, 36	
Cs	5953 Janev, 73	
H	1166 Jen, 33	1300 Massey, 36

RADIATIVE ATTACHMENT THEORETICAL

Normalized

H	1316 Lochte–Holtgre,58	6414 Callaway, 74
Hg	1300 Massey, 36	
K	5953 Janev, 73	
Li	5953 Janev, 73	
Na	297 Huang, 45 5953 Janev, 73	1300 Massey, 36
O	247 Yamanouchi, 40 1180 Massey, 43	1141 Bates, 43 1197 Branscomb, 57
Rb	5953 Janev, 73	

DISSOCIATIVE RECOMBINATION EXPERIMENTAL

Normalized

Ar_2^{+1}	1344 Biondi, 64	
Cs_2^{+1}	177 Hammer, 63	
D_2^{+1}	5896 Peart, 73	
H_2^{+1}	5997 Peart, 74	
Kr_2^{+1}	254 Richardson, 52	
N_2^{+1}	698 Faire, 58 1344 Biondi, 64	703 Bialecke, 58
NO^{+1}	920 Doering, 62	
Ne_2^{+1}	1344 Biondi, 64	
O_2^{+1}	1344 Biondi, 64	
CO_2^{+1}	5724 Gutcheck, 73	
H_3^{+1}	6343 Peart, 74	
NH_3^{+1}	887 Court, 64	
N_4^{+1}	1344 Biondi, 64	

DISSOCIATIVE RECOMBINATION THEORETICAL

Normalized

CH^{+1}	5631 Krauss, 73	5632 Bardsley, 73
H_2^{+1}	368 Bauer, 56	1665 Wilkins, 66
N_2^{+1}	5514 Michels, 72	
NO^{+1}	189 Nisbet, 63 1482 Gibbons, 63	579 Squires Jr., 61
O_2^{+1}	189 Nisbet, 63	

II. Positron Cross Section Index

TOTAL SCATTERING EXPERIMENTAL

Normalized

Ar	5366 Canter, 73	6008 Canter, 74
He	5017 Canter, 72 6008 Canter, 74	5366 Canter, 73
Kr	5366 Canter, 73	6008 Canter, 74
Ne	5366 Canter, 73	6008 Canter, 74
Xe	6008 Canter, 74	
CO	6177 Coleman, 74	
D_2	6177 Coleman, 74	
H_2	6177 Coleman, 74	
N_2	6177 Coleman, 74	

ELASTIC SCATTERING EXPERIMENTAL

Normalized

Ar	1196 Marder, 56 6143 Jaduszliwer, 74	6121 Jaduszliwer, 74
He	1196 Marder, 56 4757 Costello, 72 6308 Jaduszliwer, 74	4623 Rodionov, 71 5586 Jaduszliwer, 73
Ne	1196 Marder, 56 6143 Jaduszliwer, 74	6121 Jaduszliwer, 74

Relative

He	5163 Jaduszliwer, 72

ELASTIC SCATTERING THEORETICAL

Normalized

Ar	905 Massey, 58 1195 Teutsch, 56 4882 Hewson, 72	1121 Malik, 61 3937 Orth, 69
B^{+4}	4674 Shimamura, 71	

ELASTIC SCATTERING THEORETICAL

Normalized

Be^{+3}	4674 Shimamura, 71	
C	1121 Malik, 61	
F	1121 Malik, 61	
H	83 Burke, 63 204 Temkin, 62 709 Ruffine, 60 905 Massey, 58 917 Spruch, 60 1015 Smith, 61 1192 Drachman, 65 1422 McEachran, 65 1494 Allison, 61 1499 Hahn, 65 1571 Stone, 66 1900 Kleinman, 65 2059 Houston, 68 2959 Callaway, 68 3350 Drachman, 68 3840 Rahman, 69 4395 Bhatia, 71 4489 Kramer, 71 4550 Wakid, 71 4622 Doolen, 71 4632 Shimamura, 71 4730 Peterkop, 71 5019 Humberston, 72 5355 Banerji, 73 5892 Chan, 73 5911 Moussa, 73 6120 Hahn, 74	148 Damburg, 63 536 Rotenberg, 62 859 Smith, 60 906 Moussa, 59 933 Cody, 64 1025 Kingston, 61 1210 Moiseiwitsch, 58 1443 Hahn, 63 1495 Bransden, 62 1500 Kleinman, 65 1580 Armstead, 65 2012 Bransden, 66 2774 Fels, 67 3052 Drachman, 67 3701 Garrett, 69 4394 Houston, 71 4401 Matese, 71 4493 Garibotti, 71 4562 Seiler, 71 4624 Feautrier, 71 4637 Garrett, 71 4935 Fon, 72 5197 Stein, 72 5836 Wakid, 73 5893 McWhirter, 73 5956 Bhatia, 74
H^*	859 Smith, 60	
He	905 Massey, 58 1195 Teutsch, 56 1494 Allison, 61 2059 Houston, 68 2959 Callaway, 68 3053 Kraidy, 67 4402 Husain, 70 4755 Banerji, 70 5834 Humberston, 73 5893 McWhirter, 73 6269 Aulenkamp, 74 6309 Moussa, 74	1121 Malik, 61 1485 Kestner, 65 1819 Drachman, 66 2070 Hashino, 66 3052 Drachman, 67 4394 Houston, 71 4731 Drachman, 71 5266 Moussa, 73 5835 Wardle, 73 6007 Bransden, 74 6307 Buckley, 74
He^{+1}	4674 Shimamura, 71	
Kr	4882 Hewson, 72	
Li	4695 Dai, 71	5587 Sarkar, 73
Li^{+2}	4674 Shimamura, 71	

ELASTIC SCATTERING THEORETICAL

Normalized

N	1121 Malik, 61	
Ne	905 Massey, 58 1195 Teutsch, 56	1121 Malik, 61
O	1121 Malik, 61	
U^{+6}	1519 Singh, 62	
H_2	905 Massey, 58 6122 Baille, 74 6409 Darewych, 74	4434 Lodge, 71 6310 Hara, 74
N_2	5912 Darewych, 74	

IONIZATION THEORETICAL

Normalized

H	645 Cheshire, 64	4350 Dirks, 71
He	3827 Ferrante, 69	
H_2	5018 Mukherjee, 72	

DETACHMENT THEORETICAL

Normalized

H^-	576 Rudge, 64

ELECTRONIC EXCITATION THEORETICAL

Normalized

H	83 Burke, 63 859 Smith, 60 2937 Damburg, 66 5004 Ling, 72	148 Damburg, 63 1257 Moiseiwitsch, 65 4550 Wakid, 71 5197 Stein, 72
H^*	859 Smith, 60	
He	5725 Chan, 73	

VIBRATIONAL EXCITATION THEORETICAL

Normalized

H_2^{+1}	4697 Faisal, 71

ROTATIONAL EXCITATION THEORETICAL

Normalized

H_2	2783 Takayanagi, 67 6122 Baille, 74	4855 Hara, 72 6409 Darewych, 74
H_2^{+1}	4697 Faisal, 71	
N_2	2783 Takayanagi, 67	4855 Hara, 72
O_2	4855 Hara, 72	

III. Photon Cross Section Index

ABSORPTION EXPERIMENTAL

Normalized

Ag	2874 Wolf, 33	3016 Haensel, 68
Al	2621 Kozlov, 66	4165 Kozlov, 69
Ar	575 Samson, 63	691 Huffman, 63
	870 Rustgi, 64	1235 Lee, 55
	1355 Metzger, 65	1359 Cairns, 65
	1826 Wuilleumier, 65	2508 Huffman, 63
	2703 Lukirskii, 63	2722 Wuilleumier, 63
	2857 Parratt, 39	2898 Woernle, 30
	2973 Hudson, 68	3005 Henke, 67
	3253 Henke, 67	3401 Wheaton, 64
	3402 Blackwell, 64	3685 Dershem, 31
	3779 Madden, 69	4029 Levy, 69
	4149 Wuilleumier, 70	4152 Yoshino, 69
	5021 Starr, 72	5303 Carlson, 73
	5472 Brolley, 73	
Au	2874 Wolf, 33	3016 Haensel, 68
	3017 Jaegle, 66	
Ba	3754 Hudson, 70	4540 Kozlov, 70
	5740 Carlsten, 73	
Be	2705 Peterson Jr., 63	
Bi	3016 Haensel, 68	3020 Jaegle, 67
C	3378 Fomichev, 68	4453 Hofmann, 71
Ca	1717 Ditchburn, 60	1845 Newsom, 66
	2310 Jutsum, 54	2635 Kelm, 62
	2697 Hudson, 67	3506 Newsom, 68
	4139 Hudson, 67	4815 Carter, 71
	5098 McIlrath, 72	
Cd	1293 Ross, 65	3765 Marr, 69
Cs	1241 Mohler, 29	1242 Braddick, 34
	2666 Braddick, 35	3067 Marr, 68
Cu	3016 Haensel, 68	
Ga	2867 Startsev, 67	3337 Kozlov, 68
H	1732 Beynon, 65	2026 Beynon, 66
He	308 Kuyatt, 63	509 Axelrod, 59
	647 Baker Jr., 61	1235 Lee, 55
	1350 Lowry, 65	1351 Madden, 65
	1359 Cairns, 65	2301 Lukirskii, 64
	3005 Henke, 67	3253 Henke, 67
	3685 Dershem, 31	4818 Chow, 71
Hg	4459 Lincke, 70	
In	1225 Marr, 54	2867 Startsev, 67

ABSORPTION EXPERIMENTAL

Normalized

In	2961 Marr, 66	3337 Kozlov, 68
K	1228 Ditchburn, 43	1405 Hudson, 65
	1689 Ditchburn, 28	2862 Hudson, 67
	3067 Marr, 68	
Kr	575 Samson, 63	691 Huffman, 63
	1255 Rustgi, 64	1355 Metzger, 65
	2301 Lukirskii, 64	2426 Pery–Thorne, 60
	2507 Huffman, 63	3005 Henke, 67
	3253 Henke, 67	3402 Blackwell, 64
	3685 Dershem, 31	5472 Brolley, 73
	5548 Carter, 73	
Li	1353 Hudson, 65	2552 Marr, 63
	2619 Hudson, 67	2669 Tunstead, 53
	2704 Baker Jr., 62	
Mg	1740 Ditchburn, 53	
N	1769 Ehler, 55	2214 Morris, 66
Na	1377 Bott, 39	1719 Ditchburn, 50
	1739 Ditchburn, 53	2613 Hudson, 64
	2619 Hudson, 67	3004 Hudson, 68
	5475 Wolff, 72	
Ne	308 Kuyatt, 63	1226 Lee, 53
	1678 Ditchburn, 60	1755 Ederer, 64
	1826 Wuilleumier, 65	2512 Lee, 52
	2722 Wuilleumier, 63	2898 Woernle, 30
	3005 Henke, 67	3253 Henke, 67
	3685 Dershem, 31	4149 Wuilleumier, 70
	4159 Wuilleumier, 70	
O	1404 Cairns, 65	
Pb	3764 Heppinstall, 69	
Pt	2874 Wolf, 33	
Rb	3067 Marr, 68	
S	2898 Woernle, 30	4756 Tondello, 72
Si	2380 Rich, 67	
Si*	2380 Rich, 67	
Sn	3016 Haensel, 68	
Sr	3816 Hudson, 69	
Th	3293 Bezdenezhnykh, 67	
Tl	2480 Marr, 54	2621 Kozlov, 66

Normalized

U	3293 Bezdenezhnykh, 67	
Xe	691 Huffman, 63	1255 Rustgi, 64
	1355 Metzger, 65	1360 Matsunaga, 65
	1777 Lukirskii, 66	2301 Lukirskii, 64
	2508 Huffman, 63	2687 White, 34
	2717 Watanabe, 65	2872 Deslattes, 68
	3005 Henke, 67	3253 Henke, 67
	3346 Shardanand 68	3402 Blackwell, 64
	3577 Shardanand 68	3685 Dershem, 31
	4034 Wuilleumier, 69	5472 Brolley, 73
	5548 Carter, 73	
Xe^{+1}	2861 Cairns, 62	
Zn	3761 Marr, 69	
AgBr	4038 Davidovits, 69	
AgCl	4038 Davidovits, 69	
AgI	4038 Davidovits, 69	
Br_2	3012 Sulzmann, 67	3645 Seery, 64
	4929 Carver, 72	
BrCl	3645 Seery, 64	
CO	1245 Sun, 55	1271 Huffman, 64
	1359 Cairns, 65	1626 Cook, 65
	1702 Cairns, 66	2599 Messner, 33
	2718 Thompson, 63	2770 Watanabe, 53
	4358 Myer, 70	5021 Starr, 72
	5693 Lee, 73	
Cl_2	2844 Jacobs, 65	2898 Woernle, 30
	3645 Seery, 64	5311 Zakharyan, 72
	5841 Gibson, 33	
CsBr	2625 Davidovits, 67	
CsCl	2625 Davidovits, 67	
Cs_2	1707 Lapp, 66	3399 Creek, 68
	5074 Marr, 72	
CsI	2625 Davidovits, 67	
D_2	1149 Cook, 64	5472 Brolley, 73
HBr	2735 Romand, 49	3912 Huebert, 68
HCl	1393 Romand, 48	2735 Romand, 49
	4358 Myer, 70	4977 Hayes, 72
H_2	688 Cook, 63	1149 Cook, 64
	1561 Samson, 65	1756 Ehler, 57

ABSORPTION EXPERIMENTAL

Normalized

H_2	2026 Beynon, 66	2319 Lee, 52
	2379 Bunch, 58	2599 Messner, 33
	2770 Watanabe, 53	3257 Comes, 68
	4025 Comes, 68	4162 Comes, 70
	5021 Starr, 72	5192 Carlson, 72
	5472 Brolley, 73	
HI	2735 Romand, 49	3912 Huebert, 68
IBr	3645 Seery, 64	
ICl	3645 Seery, 64	
I_2	4152 Yoshino, 69	4363 Myer, 70
	4929 Carver, 72	
KBr	2625 Davidovits, 67	
KCl	2625 Davidovits, 67	
KI	2625 Davidovits, 67	
K_2	1228 Ditchburn, 43	1405 Hudson, 65
	1707 Lapp, 66	3399 Creek, 68
LiBr	2625 Davidovits, 67	
LiCl	2625 Davidovits, 67	
LiI	2625 Davidovits, 67	
N_2	500 Weissler, 52	636 Itamoto, 61
	688 Cook, 63	916 Cook, 64
	1187 Samson, 64	1232 Curtis, 54
	1234 Wainfan, 55	1252 Cook, 64
	1253 Cook, 65	1561 Samson, 65
	1641 Clark, 52	2431 Preston, 40
	2599 Messner, 33	2674 Watanabe, 56
	2699 Huffman, 63	2741 Astoin, 57
	2746 Huffman, 64	2770 Watanabe, 53
	2871 Ditchburn, 54	2898 Woernle, 30
	3005 Henke, 67	3253 Henke, 67
	3376 Greiner, 57	3685 Dershem, 31
	3784 Hudson, 69	3833 Sroka, 69
	3914 Lutz, 69	4362 Comes, 69
	4464 Cook, 70	4870 Carter, 72
	5021 Starr, 72	5472 Brolley, 73
	5549 Watson, 73	5693 Lee, 73
N_2^*	2216 Appleton, 67	
NO	622 Watanabe, 58	1060 Astoin, 57
	2062 Metzger, 67	2479 Marmo, 53
	2596 Granier, 56	2598 Mayence, 52
	2605 Sun, 55	2641 Watanabe, 67
	2672 Watanabe, 54	2675 Watanabe, 53
	2683 Walker, 55	2718 Thompson, 63

Normalized

NO	2770 Watanabe, 53	2850 Metzger, 63
	2851 Watanabe, 53	4982 Hasson, 71
	5021 Starr, 72	5693 Lee, 73
	5695 Gardner, 73	
NaBr	2625 Davidovits, 67	
NaCl	2625 Davidovits, 67	
NaI	2625 Davidovits, 67	
Na_2	1394 Hudson, 65	2613 Hudson, 64
O_2	508 Weissler, 52	622 Watanabe, 58
	641 Matsunaga, 61	774 Huffman, 64
	916 Cook, 64	1131 Heilpern, 46
	1187 Samson, 64	1234 Wainfan, 55
	1252 Cook, 64	1280 Metzger, 64
	1561 Samson, 65	1612 Aboud, 55
	1641 Clark, 52	1715 Ditchburn, 53
	1749 Ditchburn, 62	1797 Goldstein, 66
	1799 Hudson, 66	1967 Blake, 66
	2313 Ladenburg, 33	2314 Ladenburg, 32
	2318 Lee, 55	2384 Matsunaga, 67
	2431 Preston, 40	2599 Messner, 33
	2638 Watanabe, 52	2673 Watanabe, 53
	2674 Watanabe, 56	2688 Kosinskaya, 65
	2718 Thompson, 63	2746 Huffman, 64
	2770 Watanabe, 53	2778 De Reilhac, 64
	2782 Sroka, 67	2828 Sroka, 65
	2871 Ditchburn, 54	2898 Woernle, 30
	3005 Henke, 67	3253 Henke, 67
	3376 Greiner, 57	3542 Hudson, 68
	3573 Ogawa, 68	3638 Watanabe, 58
	3685 Dershem, 31	3758 Gaily, 69
	4151 Bixon, 69	4164 Losev, 69
	4177 Shardanand 69	4462 Ogawa, 70
	4470 Ackerman, 70	4523 Ogawa, 71
	4983 Hasson, 71	4984 Hasson, 71
	5021 Starr, 72	5472 Brolley, 73
	5693 Lee, 73	5694 Watson, 73
O_2^*	4457 Ogawa, 70	
RbBr	2625 Davidovits, 67	
RbCl	2625 Davidovits, 67	
RbI	2625 Davidovits, 67	
Rb_2	3399 Creek, 68	
SiO	3386 Main, 68	
TlBr	4038 Davidovits, 69	
TlCl	4038 Davidovits, 69	

ABSORPTION EXPERIMENTAL

Normalized

TlI	4038 Davidovits, 69	
Xe_2	3346 Shardanand 68	3577 Shardanand 68
CO_2	1042 Nakata, 65	1245 Sun, 55
	1359 Cairns, 65	1702 Cairns, 66
	1711 Cook, 66	1759 Wilkinson, 50
	2252 Inn, 53	2431 Preston, 40
	2599 Messner, 33	2718 Thompson, 63
	2770 Watanabe, 53	3533 Harward, 68
	3685 Dershem, 31	4523 Ogawa, 71
	4759 Shemansky, 72	5021 Starr, 72
	5096 De More, 72	5097 Samson, 72
	5165 Heimerl, 70	5693 Lee, 73
	5838 Carlson, 73	6471 Slanger, 74
COS	2654 Matsunaga, 67	2850 Metzger, 63
	3913 Cook, 69	4146 Breckenridge, 70
CS_2	2850 Metzger, 63	3916 Cook, 69
	4872 Okabe, 72	
D_2O	1060 Astoin, 57	1821 Laufer, 65
	2732 Johannin–Gille,55	2738 Johannin–Gille,55
	3639 Katayama, 73	
H_2O	688 Cook, 63	1060 Astoin, 57
	1143 Astoin, 56	1147 Watanabe, 64
	1172 Metzger, 64	1619 Astoin, 53
	1759 Wilkinson, 50	1821 Laufer, 65
	2431 Preston, 40	2597 Johannin–Gille,53
	2677 Watanabe, 53	2718 Thompson, 63
	2738 Johannin–Gille,55	2740 Johannin–Gille,56
	2770 Watanabe, 53	2871 Ditchburn, 54
	3639 Katayama, 73	3755 Schurgers, 68
H_2S	1147 Watanabe, 64	1855 La Villa, 66
	3005 Henke, 67	3253 Henke, 67
	4977 Hayes, 72	5021 Starr, 72
ICN	4358 Myer, 70	
N_2O	1060 Astoin, 57	1142 Astoin, 55
	1220 Zelikoff, 53	1371 Romand, 52
	2598 Mayence, 52	2610 Romand, 49
	2683 Walker, 55	2718 Thompson, 63
	2770 Watanabe, 53	2850 Metzger, 63
	2864 Cook, 68	4024 Holliday, 68
	4520 Weiss, 71	5021 Starr, 72
	5693 Lee, 73	
NOCl	3295 Lenzi, 68	
NO_2	622 Watanabe, 58	1328 Nakayama, 59
	2244 Hall, 52	3295 Lenzi, 68
O_3	862 Vassy, 48	1368 Vigroux, 52

Normalized

O_3	1369 Ny, 33	1430 Vigroux, 48
	2423 Ogawa, 58	2633 Inn, 53
	2668 Tanaka, 53	2684 Hearn, 61
	2700 Vigroux, 52	2701 Vigroux, 52
	2702 Vigroux, 52	2723 Vigroux, 50
	2734 Vigroux, 53	2770 Watanabe, 53
	2889 Vigroux, 50	2890 Ny, 32
	3508 Griggs, 68	5032 Stelman, 72
	5843 De More, 64	6080 Simons, 73
SO_2	2636 Golomb, 62	2637 Warneck, 64
	2718 Thompson, 63	2898 Woernle, 30
C_2D_2	4483 Person, 70	
C_2H_2	1172 Metzger, 64	2342 Schoen, 62
	2375 Moe, 52	2482 Nakayama, 64
	2599 Messner, 33	2682 Walker, 55
	4483 Person, 70	
H_2CO	4460 Gentieu, 70	4796 Mentall, 71
H_2O_2	2707 Holt, 48	3755 Schurgers, 68
HNCO	4458 Okabe, 70	
HN_3	3509 Okabe, 68	
NF_3	2801 La Paglia, 61	
NH_3	605 Thompson, 46	617 Tannenbaum, 53
	1172 Metzger, 64	2209 Watanabe, 65
	2604 Sun, 55	2671 Walker, 55
	2672 Watanabe, 54	2718 Thompson, 63
	2770 Watanabe, 53	5021 Starr, 72
O_4	4177 Shardanand 69	
PH_3	4977 Hayes, 72	
C_3O_2	2692 Roebber, 67	
C_2HCN	5741 Okabe, 73	
CCl_4	2898 Woernle, 30	3005 Henke, 67
	3253 Henke, 67	
CD_4	1821 Laufer, 65	
CF_4	1395 Cook, 65	2376 Moe, 52
CH_4	870 Rustgi, 64	1172 Metzger, 64
	1234 Wainfan, 55	1701 Ditchburn, 55
	1759 Wilkinson, 50	1821 Laufer, 65
	2301 Lukirskii, 64	2376 Moe, 52
	2599 Messner, 33	2604 Sun, 55
	2770 Watanabe, 53	2871 Ditchburn, 54

ABSORPTION EXPERIMENTAL

Normalized

CH_4	3914 Lutz, 69	4826 Koch, 71
	5021 Starr, 72	5693 Lee, 73
HNO_3	5164 Schmidt, 72	5353 Johnston, 73
	5851 Biaume, 74	
NCN_3	3919 Okabe, 69	
SiH_4	4977 Hayes, 72	
C_2D_4	2121 Wilkinson, 55	2121 Wilkinson, 55
	3544 Person, 68	
C_2H_4	1172 Metzger, 64	1229 Zelikoff, 53
	1759 Wilkinson, 50	2121 Wilkinson, 55
	2342 Schoen, 62	2599 Messner, 33
	2682 Walker, 55	3544 Person, 68
	5693 Lee, 73	
CD_3OD	4832 Person, 71	
CH_3OH	4832 Person, 71	
N_2H_4	3755 Schurgers, 68	
N_2O_4	2244 Hall, 52	
C_3D_4	4483 Person, 70	
C_3H_4	4483 Person, 70	
SF_6	1854 Codling, 66	1855 La Villa, 66
	1856 Simpson, 66	2663 Zimkina, 67
	5101 Vinogradov, 72	
C_2F_6	3005 Henke, 67	3253 Henke, 67
C_2H_6	1172 Metzger, 64	2342 Schoen, 62
	2599 Messner, 33	3005 Henke, 67
	3253 Henke, 67	4826 Koch, 71
	5693 Lee, 73	
C_3D_6	4483 Person, 70	
C_3H_6	4483 Person, 70	
C_2D_5OD	4832 Person, 71	
C_2H_5OH	4832 Person, 71	
C_3H_8	4826 Koch, 71	

Relative

Ar	577 Schnopper, 63	3566 Nakamura, 68

ABSORPTION EXPERIMENTAL

Relative

Be	3398 Swanson, 68	
Cs	1238 Mohler, 26	
Na	2245 Harrison, 24	2246 Harrison, 25
Ne	2381 Codling, 67	
Sr	2490 Garton, 68	
Xe	3688 Haensel, 69	
Ar_2	2970 Wilkinson, 68	
BeO	3398 Swanson, 68	
H_2	2485 Comes, 67	4040 Chupka, 69
NaBr	3247 Haensel, 68	
NaCl	3247 Haensel, 68	
NaF	3247 Haensel, 68	
NaI	3247 Haensel, 68	
Na_2	2246 Harrison, 25	
CO_2	691 Huffman, 63	
GeF_2	3918 Hauge, 68	
H_2O	1754 Patch, 65	
O_3	1370 Vigroux, 52	2511 Barbier, 42
CH_4	3532 Chun, 68	
C_2D_6	4031 Pearson, 69	
C_2H_6	4031 Pearson, 69	

SCATTERING EXPERIMENTAL

Normalized

Ar	4144 Cairns, 70	
H_2	5192 Carlson, 72	

SCATTERING EXPERIMENTAL

Relative

Ar	2689 Shardanand 67 2875 Wollan, 31	2720 Heddle, 62
He	2689 Shardanand 67	2875 Wollan, 31
Kr	2720 Heddle, 62	
Ne	2689 Shardanand 67	2875 Wollan, 31
Xe	2720 Heddle, 62	
H_2	2689 Shardanand 67 2875 Wollan, 31	2720 Heddle, 62
N_2	2689 Shardanand 67	2720 Heddle, 62
O_2	2875 Wollan, 31	

SCATTERING THEORETICAL

Normalized

Ar	741 Woo, 47	
C	4511 Tarafdar, 69	
Cl	741 Woo, 47	
H	672 Himmell, 67 3162 Gavrila, 67	2775 Gavrila, 67 4361 Miller, 70
H^*	2781 Zernik, 64	
He	2719 Chan, 65 4511 Tarafdar, 69	2842 Kim, 68
Kr	741 Woo, 47	
N	4511 Tarafdar, 69	
Na	2779 Heddle, 64	
Ne	741 Woo, 47	
O	741 Woo, 47	4511 Tarafdar, 69
Pr^{+3}	2963 Koningstein, 68	
Tm^{+3}	2963 Koningstein, 68	
Xe	741 Woo, 47	
N_2	2958 Dalgarno, 67	

Normalized

Ar	575 Samson, 63	926 Comes, 64
	993 Samson, 64	1234 Wainfan, 55
	1355 Metzger, 65	5169 Watson, 72
	5474 Lynch, 73	6200 Kemeny, 74
	6271 Samson, 74	6451 Houlgate, 74
$Ar^{\bullet}$	1835 Asinovskii, 65	
Ba	6131 Lutjens, 73	
$Ba^{\bullet}$	6201 Carlsten, 74	
C	4527 Marrone, 71	
Cd	4148 Cairns, 69	4969 Cairns, 70
Cs	1382 Cooke, 31	2312 Kunz, 34
	2320 Little, 27	
$Cs^{\bullet}$	4972 Klucharyev, 72	
H	2855 Beynon, 65	
He	1188 Samson, 64	4973 Krause, 72
	5169 Watson, 72	
$He^{\bullet}$	5476 Stebbings, 73	6145 Dunning, 74
Hg	6229 Dehmer, 74	
Kr	575 Samson, 63	1355 Metzger, 65
	4807 Ederer, 71	4893 El–Sherbini, 72
	6200 Kemeny, 74	6271 Samson, 74
$Mg^{\bullet}$	4918 Bradley, 73	
N	2942 Comes, 68	4527 Marrone, 71
Ne	926 Comes, 64	1562 Samson, 65
	5169 Watson, 72	6200 Kemeny, 74
No	4066 Peatman, 69	
O	2943 Comes, 68	
S	4756 Tondello, 72	
Sr	6131 Lutjens, 73	
U	6256 Cukier, 74	
Xe	1179 Ederer, 64	1189 Samson, 64
	1355 Metzger, 65	1360 Matsunaga, 65
	4035 Cairns, 69	4893 El–Sherbini, 72
	4969 Cairns, 70	6200 Kemeny, 74
	6271 Samson, 74	

IONIZATION EXPERIMENTAL

Normalized

Zn	4148 Cairns, 69	4969 Cairns, 70
Br_2	4929 Carver, 72	
CO	1359 Cairns, 65	1626 Cook, 65
	4877 Bahr, 72	4975 Judge, 72
	6452 Lee, 74	
D_2	1149 Cook, 64	
H_2	688 Cook, 63	1149 Cook, 64
	1234 Wainfan, 55	3257 Comes, 68
	4025 Comes, 68	4937 Samson, 72
I_2	4152 Yoshino, 69	4929 Carver, 72
	6270 Akopyan, 73	
N_2	582 Blake, 67	688 Cook, 63
	916 Cook, 64	1187 Samson, 64
	1234 Wainfan, 55	1253 Cook, 65
	3379 Judge, 68	3682 Samson, 59
	4362 Comes, 69	
$N_2^{\bullet}$	5024 Cook, 72	
NO	2062 Metzger, 67	2672 Watanabe, 54
	2675 Watanabe, 53	2683 Walker, 55
	2850 Metzger, 63	4877 Bahr, 72
O_2	582 Blake, 67	916 Cook, 64
	1187 Samson, 64	1234 Wainfan, 55
	1252 Cook, 64	1731 Blake, 65
	1798 Samson, 66	2384 Matsunaga, 67
	2674 Watanabe, 56	2943 Comes, 68
	3250 Frost, 68	3682 Samson, 59
	4521 Carlson, 71	4769 Carlson, 70
$O_2^{\bullet}$	4156 Clark, 70	
CO_2	1042 Nakata, 65	1234 Wainfan, 55
	1359 Cairns, 65	1711 Cook, 66
	3682 Samson, 59	4806 Wauchop, 71
	4877 Bahr, 72	5097 Samson, 72
	5148 Lee, 72	5174 Samson, 73
	5547 Carlson, 73	5838 Carlson, 73
COS	2654 Matsunaga, 67	2850 Metzger, 63
	3913 Cook, 69	
CS_2	2850 Metzger, 63	3916 Cook, 69
D_2O	3639 Katayama, 73	
H_2O	582 Blake, 67	688 Cook, 63
	1147 Watanabe, 64	1172 Metzger, 64
	1234 Wainfan, 55	3639 Katayama, 73
	4813 Cairns, 71	

Normalized

H_2S	1147 Watanabe, 64	
N_2O	2683 Walker, 55	2850 Metzger, 63
	2864 Cook, 68	4877 Bahr, 72
	6068 Lee, 74	
NO_2	1328 Nakayama, 59	
C_2D_2	4483 Person, 70	
C_2H_2	1172 Metzger, 64	2342 Schoen, 62
	2482 Nakayama, 64	2682 Walker, 55
	4483 Person, 70	
H_2CO	4796 Mentall, 71	
NH_3	1172 Metzger, 64	2209 Watanabe, 65
	2671 Walker, 55	2672 Watanabe, 54
	2676 Watanabe, 57	4877 Bahr, 72
CF_4	1395 Cook, 65	
CH_4	1172 Metzger, 64	1234 Wainfan, 55
C_2D_4	3544 Person, 68	
C_2H_4	1172 Metzger, 64	2342 Schoen, 62
	2682 Walker, 55	3544 Person, 68
CD_3OD	4832 Person, 71	
CH_3OH	4832 Person, 71	
C_3D_4	4483 Person, 70	
C_3H_4	4483 Person, 70	
C_2H_6	1172 Metzger, 64	2342 Schoen, 62
C_3D_6	4483 Person, 70	
C_3H_6	4483 Person, 70	
C_2D_5OD	4832 Person, 71	
C_2H_5OH	4832 Person, 71	

Relative

Ag	4835 Tegeder, 71	
Ar	1883 Villarejo, 67	2600 Schonheit, 61
	2622 Carlson, 67	2639 Comes, 61
	2678 Weissler, 59	3413 Samson, 68
	3591 Vroom, 65	4036 Vroom, 69

IONIZATION EXPERIMENTAL

Relative

Ar	4465 Vilesov, 70	4467 McGowan, 69
	4762 Mitchell, 72	4804 Carlson, 71
	4985 Niehaus, 72	6175 Dunning, 74
Ar^*	5844 Stebbings, 73	
Au	4835 Tegeder, 71	
Cd	3256 Berkowitz, 68	4359 Harrison, 70
Cs	496 Boeckner, 30	1238 Mohler, 26
	2222 Popescu, 66	2316 Lawrence, 29
Cu	4835 Tegeder, 71	
Eu	4528 Parr, 71	
H	4482 Jonathan, 70	
He	2622 Carlson, 67	2678 Weissler, 59
	3694 Samson, 69	
Hg	1699 Brehm, 66	2846 Frost, 67
	3256 Berkowitz, 68	4365 Cairns, 70
	4774 Blake, 71	4985 Niehaus, 72
K	2315 Lawrence, 25	2317 Lawrence, 29
	2840 Williams, 67	
Kr	1883 Villarejo, 67	2624 Berkowitz, 67
	3413 Samson, 68	3591 Vroom, 65
	3883 Krause, 69	4467 McGowan, 69
	4798 Codling, 71	4804 Carlson, 71
	4985 Niehaus, 72	6175 Dunning, 74
N	528 Comes, 67	4482 Jonathan, 70
	6079 Dehmer, 74	
Ne	2622 Carlson, 67	2678 Weissler, 59
	3413 Samson, 68	5022 Lynch, 72
No	4166 Baer, 69	
O	4482 Jonathan, 70	5914 Dehmer, 73
Rb	2316 Lawrence, 29	
Tm	4528 Parr, 71	
Xe	1699 Brehm, 66	1883 Villarejo, 67
	2386 Nicholson, 63	3413 Samson, 68
	3454 Brundle, 68	3591 Vroom, 65
	4467 McGowan, 69	4798 Codling, 71
	4804 Carlson, 71	4985 Niehaus, 72
Yb	3510 Parr, 68	4360 Parr, 70

Relative

Zn	3818 Harrison, 69	4359 Harrison, 70
Br_2	2377 Morrison, 60	3591 Vroom, 65
	4522 Dibeler, 70	4526 Cornford, 71
	4833 Potts, 71	
CO	1177 Schoen, 64	2624 Berkowitz, 67
	2678 Weissler, 59	3591 Vroom, 65
	4538 Hotop, 70	4804 Carlson, 71
	4978 Natalis, 72	
Cl_2	3591 Vroom, 65	4526 Cornford, 71
	4833 Potts, 71	
ClF	4454 Dibeler, 70	
CsBr	4037 Berkowitz, '69	
CsCl	4037 Berkowitz, 69	
Cs_2	2222 Popescu, 66	
CsF	4037 Berkowitz, 69	
CsI	4037 Berkowitz, 69	
DCl	4357 Weiss, 70	
D_2	1320 Dibeler, 65	2739 Spohr, 67
	3254 Villarejo, 68	3591 Vroom, 65
	5260 Browning, 73	
DF	4811 Berkowitz, 71	
F_2	3591 Vroom, 65	4039 Dibeler, 69
	4526 Cornford, 71	4811 Berkowitz, 71
	4819 Chupka, 71	4833 Potts, 71
HBr	3591 Vroom, 65	
HCl	2396 Nicholson, 65	3591 Vroom, 65
	3640 Krauss, 68	4357 Weiss, 70
HD	1320 Dibeler, 65	3591 Vroom, 65
H_2	930 Comes, 64	1320 Dibeler, 65
	2485 Comes, 67	2624 Berkowitz, 67
	2739 Spohr, 67	3254 Villarejo, 68
	3372 Chupka, 68	3396 Chupka, 68
	3453 Turner, 68	3591 Vroom, 65
	3915 Berkowitz, 69	4040 Chupka, 69
	4465 Vilesov, 70	4467 McGowan, 69
	4535 Asbrink, 70	4538 Hotop, 70
	4541 Brehm, 71	4804 Carlson, 71
	5260 Browning, 73	
HF	3591 Vroom, 65	4039 Dibeler, 69

IONIZATION EXPERIMENTAL

Relative

HF	4811 Berkowitz, 71	4819 Chupka, 71
HI	2377 Morrison, 60	3591 Vroom, 65
IBr	4833 Potts, 71	
ICl	4833 Potts, 71	
I_2	2377 Morrison, 60	3591 Vroom, 65
	4363 Myer, 70	4526 Cornford, 71
	4833 Potts, 71	
N_2	891 Comes, 61	931 Comes, 64
	1177 Schoen, 64	2624 Berkowitz, 67
	2678 Weissler, 59	3591 Vroom, 65
	3915 Berkowitz, 69	4467 McGowan, 69
	4537 Samson, 70	4538 Hotop, 70
	4804 Carlson, 71	4978 Natalis, 72
NO	237 Frost, 60	1664 Reese, 66
	2251 Hurzeler, 58	2386 Nicholson, 63
	2624 Berkowitz, 67	2641 Watanabe, 67
	2678 Weissler, 59	2739 Spohr, 67
	3575 Samson, 68	3591 Vroom, 65
	4524 Edqvist, 70	4809 Brion, 72
	4821 Edqvist, 71	4880 Bahr, 71
	5222 Killgoar Jr., 73	6448 Hertz, 74
NaI	1979 Berkowitz, 66	
O_2	1177 Schoen, 64	1699 Brehm, 66
	2386 Nicholson, 63	2624 Berkowitz, 67
	2678 Weissler, 59	2727 Dibeler, 67
	2739 Spohr, 67	2865 Vilesov, 67
	3453 Turner, 68	3549 Doolittle, 68
	3591 Vroom, 65	3820 Natalis, 68
	4467 McGowan, 69	4534 Branton, 70
	4536 Jonathan, 70	4537 Samson, 70
	4878 Bahr, 71	
O_2^*	4536 Jonathan, 70	
S_2	3886 Berkowitz, 69	
Se_2	3886 Berkowitz, 69	
Te_2	3886 Berkowitz, 69	
TlI	1979 Berkowitz, 66	
BrCN	3011 Dibeler, 67	
CO_2	2678 Weissler, 59	2727 Dibeler, 67
	2739 Spohr, 67	3571 Collin, 68
	4030 Bahr, 69	4911 Samson, 73
	5513 Sroka, 73	5839 Judge, 73
	5891 McCulloh, 73	

Relative

COS	2727 Dibeler, 67	3571 Collin, 68
CS_2	2727 Dibeler, 67	3571 Collin, 68
ClCN	3011 Dibeler, 67	
DCN	3781 Baker, 68	
D_2O	1699 Brehm, 66	3454 Brundle, 68
FCN	3011 Dibeler, 67	
HCN	3251 Dibeler, 68 3781 Baker, 68	3691 Berkowitz, 69
H_2O	1699 Brehm, 66 2739 Spohr, 67 4465 Vilesov, 70	2623 Dibeler, 66 3454 Brundle, 68
H_2S	3392 Dibeler, 68	
ICN	3011 Dibeler, 67	
MgI_2	1979 Berkowitz, 66	
N_2O	2678 Weissler, 59 2873 Dibeler, 67 5633 Sroka, 73	2739 Spohr, 67 3591 Vroom, 65 6199 Coppens, 74
NO_2	1840 Frost, 62 2873 Dibeler, 67 4776 Edqvist, 70	2678 Weissler, 59 3591 Vroom, 65 5691 Killgoar Jr., 73
SO_2	2636 Golomb, 62	3392 Dibeler, 68
XeF_2	4161 Brundle, 70	
C_2D_2	1684 Botter, 66 3781 Baker, 68 5840 Dibeler, 73	2612 Dibeler, 64 5257 Dibeler, 73
C_2H_2	1684 Botter, 66 2396 Nicholson, 65 2739 Spohr, 67 4163 Omura, 69 5257 Dibeler, 73 5840 Dibeler, 73	1699 Brehm, 66 2612 Dibeler, 64 3781 Baker, 68 4364 Omura, 68 5512 Sieck, 73
C_2N_2	3011 Dibeler, 67	
CF_3	2776 Lifshitz, 67	
CH_2Cl	2396 Nicholson, 65	
ND_3	4028 Branton, 69	4534 Branton, 70
NH_3	237 Frost, 60	2623 Dibeler, 66

IONIZATION EXPERIMENTAL

Relative

NH_3	3591 Vroom, 65 4534 Branton, 70	4028 Branton, 69
C_2HCN	5741 Okabe, 73	
CD_4	1357 Dibeler, 65 5512 Sieck, 73	2396 Nicholson, 65
CF_4	4041 Walter, 69	4539 Bull, 70
CH_3Cl	2219 Dibeler, 65 3640 Krauss, 68	2396 Nicholson, 65
CH_3F	3640 Krauss, 68	
CH_3I	2377 Morrison, 60	4166 Baer, 69
CH_4	1357 Dibeler, 65 2396 Nicholson, 65 4465 Vilesov, 70 5512 Sieck, 73	1699 Brehm, 66 3026 Chupka, 68 4808 Potts, 72
GeH_4	4808 Potts, 72	
SiF_4	4539 Bull, 70	
SiH_4	4808 Potts, 72	
SnH_4	4808 Potts, 72	
C_2D_4	4534 Branton, 70	
C_2F_4	4041 Walter, 69	
C_2H_4	1699 Brehm, 66 2396 Nicholson, 65 4534 Branton, 70	2025 Botter, 66 3757 Chupka, 69
CHDCHD	2025 Botter, 66	
CH_3CN	2396 Nicholson, 65	
CH_3OD	4370 Omura, 69	
CH_3OH	4370 Omura, 69	
CH_3NO_2	2396 Nicholson, 65	
SF_6	1857 Dibeler, 66	
C_2H_6	2396 Nicholson, 65 5512 Sieck, 73	2802 Chupka, 67

Normalized

Ag	2845 Matese, 65	3520 McGuire, 68
	4475 McGinn, 70	
Ag^{+1}	925 Cooper, 62	
Al	2652 Peach, 62	2670 Vainshtein, 60
	2843 Manson, 68	3520 McGuire, 68
	4244 Conneely, 70	4881 Chapman, 72
Al^{+1}	4516 McGinn, 71	
Al^{+2}	4475 McGinn, 70	6144 Shevelko, 74
Al^{+3}	5264 Farnoux, 73	
Al^{+4}	5264 Farnoux, 73	
Al^{+5}	5264 Farnoux, 73	
Ar	741 Woo, 47	925 Cooper, 62
	1660 Dalgarno, 52	2506 Cooper, 64
	2843 Manson, 68	2868 Conneely, 67
	3520 McGuire, 68	3766 Amusia, 69
	3884 Mendez, 68	4142 Amusia, 69
	4366 Starace, 70	4367 Thomas, 70
	4466 Amusia, 70	4468 Manson, 70
	4517 Amusia, 71	4763 Kirkpatrick, 72
	4764 Kennedy, 72	4881 Chapman, 72
	5223 Amusia, 71	5262 Kelly, 73
	5957 Lin, 74	6450 Monaghan, 74
	6496 Amusia, 74	
Ar^{+1}	4881 Chapman, 72	
Ar^{+2}	4881 Chapman, 72	
Ar^{+3}	4881 Chapman, 72	
Ar^{+4}	4881 Chapman, 72	
As	3520 McGuire, 68	
Au	2686 Farnoux, 67	2843 Manson, 68
	3917 Farnoux, 69	4879 Farnoux, 72
B	1321 Bates, 39	2742 Vainshtein, 54
	2829 Vainshtein, 53	3520 McGuire, 68
B^{+1}	4516 McGinn, 71	
B^{+2}	4027 McDowell, 69	4475 McGinn, 70
B^{+3}	4805 Bell, 71	4868 Bell, 72
Ba	3993 Drapatz, 69	5890 Wendin, 73
	6453 Fliflet, 74	

IONIZATION THEORETICAL

Normalized

Ba^{*}	3993 Drapatz, 69	
Ba^{+1}	6144 Shevelko, 74	
Be	1236 Bates, 46	2856 Altick, 64
	2999 Altick, 68	3520 McGuire, 68
	4516 McGinn, 71	4795 McGinn, 72
	5302 Dubau, 73	5692 Dubau, 73
Be^{+1}	4027 McDowell, 69	4475 McGinn, 70
Be^{+2}	4868 Bell, 72	
Bi	2686 Farnoux, 67	3917 Farnoux, 69
	4879 Farnoux, 72	
Br	3520 McGuire, 68	
C	1321 Bates, 39	1624 Bates, 49
	2359 Praderie, 64	2429 Praderie, 64
	2742 Vainshtein, 54	2829 Vainshtein, 53
	3520 McGuire, 68	4367 Thomas, 70
C^{*}	578 Norman, 63	
C^{+1}	1236 Bates, 46	
C^{+2}	3390 Hidalgo, 68	4516 McGinn, 71
C^{+3}	3390 Hidalgo, 68	4027 McDowell, 69
	4475 McGinn, 70	5172 Leibowitz, 72
	5742 John, 73	
C^{+4}	3390 Hidalgo, 68	4514 Stingl, 70
	4868 Bell, 72	
Ca	1330 Bates, 40	2221 Moores, 66
	2601 Seaton, 55	2742 Vainshtein, 54
	2856 Altick, 64	3520 McGuire, 68
	4795 McGinn, 72	6496 Amusia, 74
Ca^{+1}	1330 Bates, 40	2056 Burgess, 60
	2242 Green, 49	2243 Green, 50
	4475 McGinn, 70	5099 Black, 72
Cd	3520 McGuire, 68	4824 Hyman, 71
Cl	741 Woo, 47	3520 McGuire, 68
	4244 Conneely, 70	
Co	3520 McGuire, 68	
Cr	3520 McGuire, 68	
Cs	1288 McGuire, 67	2378 Moskvin, 63
	2602 Seaton, 51	2848 McGuire, 65
	4455 Beigman, 70	4867 Weisheit, 72

Normalized

Cs	4873 Chang, 72	5221 McGinn, 73
	5265 Norcross, 73	
Cs^{*}	5041 Weisheit, 72	
Cu	2843 Manson, 68	3520 McGuire, 68
	4475 McGinn, 70	
Cu^{+1}	925 Cooper, 62	
Eu	2843 Manson, 68	
F	1321 Bates, 39	3520 McGuire, 68
F^{+1}	1236 Bates, 46	
F^{+6}	4027 McDowell, 69	
F^{+7}	4868 Bell, 72	
Fe	3520 McGuire, 68	4766 Kelly, 72
	4825 Kelly, 71	5025 Kelly, 72
Fm	2843 Manson, 68	
Ga	2670 Vainshtein, 60	3520 McGuire, 68
Ge	2843 Manson, 68	3520 McGuire, 68
H	1258 Burgess, 64	1330 Bates, 40
	2218 Chow Chiu, 67	2432 Zernik, 65
	2849 Volkov, 65	3815 Lin, 68
	6033 Broad, 74	
H^{*}	2748 Yaakobi, 67	2849 Volkov, 65
	3815 Lin, 68	
He	925 Cooper, 62	1211 Johnston, 64
	1221 Stewart, 60	1288 McGuire, 67
	1545 Burke, 65	2056 Burgess, 60
	2213 Bell, 67	2249 Huang, 48
	2607 Stewart, 63	2649 Peach, 67
	2679 Wheeler, 33	2835 Byron Jr., 67
	2848 McGuire, 65	2852 Dalgarno, 57
	2859 Korwien, 34	2860 Vinti, 32
	2863 Salpeter, 62	3347 Dalgarno, 67
	3520 McGuire, 68	4141 Brown, 70
	4154 Brown, 70	4461 Wendin, 70
	4472 Jacobs, 71	4510 Brown, 71
	4519 Bell, 70	4716 Bell, 73
	4716 Bell, 73	4799 Brown, 71
	4805 Bell, 71	4868 Bell, 72
	4869 Jacobs, 72	5093 Dalgarno, 72
	5170 Hyman, 72	5219 Jacobs, 72
	6174 Rescigno, 74	
He^{*}	2249 Huang, 48	4514 Stingl, 70

IONIZATION THEORETICAL

Normalized

He^{*}	4830 Norcross, 71	5837 Bell, 73
	6094 Jacobs, 74	6176 Jacobs, 74
Hg	2845 Matese, 65	4824 Hyman, 71
I	1288 McGuire, 67	2848 McGuire, 65
	3520 McGuire, 68	
In	1288 McGuire, 67	1893 McGuire, 65
	2848 McGuire, 65	3520 McGuire, 68
K	1193 Bates, 47	1288 McGuire, 67
	2056 Burgess, 60	2378 Moskvin, 63
	2428 Phillips, 32	2602 Seaton, 51
	2848 McGuire, 65	3520 McGuire, 68
	4371 Smith, 70	4455 Beigman, 70
	4475 McGinn, 70	4867 Weisheit, 72
	4873 Chang, 72	5026 Smith, 71
	5221 McGinn, 73	6093 La Bahn, 74
K^{+1}	1219 Seaton, 50	
Kr	741 Woo, 47	925 Cooper, 62
	1288 McGuire, 67	2843 Manson, 68
	2848 McGuire, 65	2941 Comes, 68
	3520 McGuire, 68	3708 Cooper, 69
	4517 Amusia, 71	4764 Kennedy, 72
	5223 Amusia, 71	5473 Amusia, 73
	6496 Amusia, 74	
Li	842 Tait, 63	1288 McGuire, 67
	2056 Burgess, 60	2218 Chow Chiu, 67
	2378 Moskvin, 63	2478 Hargreaves, 29
	2608 Stewart, 54	2649 Peach, 67
	2728 Sewell, 67	2748 Yaakobi, 67
	2848 McGuire, 65	3520 McGuire, 68
	3523 Chang, 68	3890 Gezalov, 68
	4027 McDowell, 69	4145 Matese, 69
	4371 Smith, 70	4455 Beigman, 70
	4469 Cooper, 70	4475 McGinn, 70
	4801 Norcross, 71	4927 Omidvar, 72
	5026 Smith, 71	5117 Caves, 72
Li^{-}	4516 McGinn, 71	
Li^{*}	3890 Gezalov, 68	
Li^{+1}	2217 Bell, 67	2607 Stewart, 63
	2649 Peach, 67	2681 Zhirnov, 62
	4140 Gezalov, 68	4799 Brown, 71
	4805 Bell, 71	4868 Bell, 72
Mg	2652 Peach, 62	2856 Altick, 64
	3520 McGuire, 68	4516 McGinn, 71
	4795 McGinn, 72	5302 Dubau, 73
	5477 Bates, 73	6297 Thompson, 74

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Normalized

Mg^{+1}	2056 Burgess, 60	4475 McGinn, 70
	5099 Black, 72	6144 Shevelko, 74
Mg^{+2}	5264 Farnoux, 73	
Mg^{+3}	5264 Farnoux, 73	5742 John, 73
Mg^{+4}	5264 Farnoux, 73	
Mg^{+10}	4805 Bell, 71	4868 Bell, 72
Mn	3520 McGuire, 68	
Mo	3520 McGuire, 68	
N	1321 Bates, 39	1624 Bates, 49
	1661 Dalgarno, 60	1667 Dalgarno, 60
	1733 Breene Jr., 65	1830 Henry, 66
	2652 Peach, 62	2742 Vainshtein, 54
	2829 Vainshtein, 53	3213 Henry, 68
	3520 McGuire, 68	3992 Ormonde, 70
	4367 Thomas, 70	4786 Davis, 73
	4827 Koppel, 71	4831 Ormonde, 71
	5470 Ganas, 73	6146 Cherepkov, 74
N^{*}	578 Norman, 63	4831 Ormonde, 71
N^{+1}	1211 Johnston, 64	1236 Bates, 46
	3879 Henry, 68	3992 Ormonde, 70
N^{+2}	3390 Hidalgo, 68	
N^{+3}	3390 Hidalgo, 68	
N^{+4}	1627 Ivanova, 64	3390 Hidalgo, 68
	4027 McDowell, 69	
N^{+5}	4868 Bell, 72	
Na	925 Cooper, 62	1288 McGuire, 67
	1670 Rudkjobing, 40	2056 Burgess, 60
	2218 Chow Chiu, 67	2378 Moskvin, 63
	2602 Seaton, 51	2649 Peach, 67
	2665 Boyd, 64	2742 Vainshtein, 54
	2829 Vainshtein, 53	2843 Manson, 68
	2848 McGuire, 65	3520 McGuire, 68
	4371 Smith, 70	4475 McGinn, 70
	4801 Norcross, 71	4867 Weisheit, 72
	5026 Smith, 71	5221 McGinn, 73
	6093 La Bahn, 74	
Na^{+1}	1236 Bates, 46	5264 Farnoux, 73
Na^{+2}	5264 Farnoux, 73	
Na^{+3}	5264 Farnoux, 73	

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Normalized

Nb	3520 McGuire, 68	
Ne	741 Woo, 47	925 Cooper, 62
	1218 Seaton, 51	1321 Bates, 39
	1337 Sewell, 65	2058 Henry, 67
	2603 Seaton, 54	2742 Vainshtein, 54
	3520 McGuire, 68	4517 Amusia, 71
	4764 Kennedy, 72	4816 Chang, 71
	5149 Amusia, 72	5220 Luke, 73
	5223 Amusia, 71	5264 Farnoux, 73
Ne^{+1}	1236 Bates, 46	3390 Hidalgo, 68
	3879 Henry, 68	5264 Farnoux, 73
Ne^{+2}	3390 Hidalgo, 68	3879 Henry, 68
	5264 Farnoux, 73	
Ne^{+3}	3390 Hidalgo, 68	3879 Henry, 68
	5742 John, 73	
Ne^{+4}	3390 Hidalgo, 68	3879 Henry, 68
Ne^{+7}	4027 McDowell, 69	
Ne^{+8}	4805 Bell, 71	4868 Bell, 72
Ni	3520 McGuire, 68	
O	690 Dalgarno, 64	741 Woo, 47
	1321 Bates, 39	1624 Bates, 49
	1661 Dalgarno, 60	1667 Dalgarno, 60
	1733 Breene Jr., 65	2056 Burgess, 60
	2652 Peach, 62	2742 Vainshtein, 54
	2771 Henry, 67	2894 Stewart, 65
	2896 Yamanouchi, 40	3520 McGuire, 68
	3703 Henry, 68	4367 Thomas, 70
	4761 Missavage, 72	4786 Davis, 73
	4827 Koppel, 71	4979 Kennedy, 72
	5470 Ganas, 73	6173 Starace, 74
	6375 Manson, 74	
O^{+1}	1236 Bates, 46	1830 Henry, 66
	2895 Yamanouchi, 42	3213 Henry, 68
	4761 Missavage, 72	
O^{+2}	2891 Yamanouchi, 41	3390 Hidalgo, 68
	3879 Henry, 68	4761 Missavage, 72
O^{+3}	3390 Hidalgo, 68	4761 Missavage, 72
	5742 John, 73	
O^{+4}	3390 Hidalgo, 68	4761 Missavage, 72
O^{+5}	1627 Ivanova, 64	4027 McDowell, 69
	4761 Missavage, 72	
O^{+6}	4761 Missavage, 72	4805 Bell, 71

Normalized

O^{+6}	4868 Bell, 72	
P	3520 McGuire, 68	4244 Conneely, 70
P^{+4}	6144 Shevelko, 74	
Pb	2845 Matese, 65	
Pd	3520 McGuire, 68	
Pt	3917 Farnoux, 69	
Rb	1288 McGuire, 67	1903 Farnoux, 67
	2378 Moskvin, 63	2602 Seaton, 51
	2848 McGuire, 65	3520 McGuire, 68
	4475 McGinn, 70	4867 Weisheit, 72
	4873 Chang, 72	5221 McGinn, 73
Rh	2843 Manson, 68	3520 McGuire, 68
Ru	3520 McGuire, 68	
S	3520 McGuire, 68	4244 Conneely, 70
	4817 Chapman, 71	
S^{+1}	4817 Chapman, 71	
S^{+2}	4817 Chapman, 71	
S^{+3}	4817 Chapman, 71	
Sb	1288 McGuire, 67	1893 McGuire, 65
	2848 McGuire, 65	3520 McGuire, 68
Sc	3520 McGuire, 68	
Se	3520 McGuire, 68	
Si	2868 Conneely, 67	3520 McGuire, 68
	4244 Conneely, 70	4881 Chapman, 72
Si^{+1}	2056 Burgess, 60	
Si^{+2}	4516 McGinn, 71	
Si^{+3}	4475 McGinn, 70	6144 Shevelko, 74
Sn	1288 McGuire, 67	1903 Farnoux, 67
	2848 McGuire, 65	3520 McGuire, 68
Sr	2856 Altick, 64	3520 McGuire, 68
Ta	1903 Farnoux, 67	3917 Farnoux, 69
Tc	3520 McGuire, 68	
Te	1288 McGuire, 67	1893 McGuire, 65

IONIZATION THEORETICAL

Normalized

Te	2848 McGuire, 65	3520 McGuire, 68
Ti	3520 McGuire, 68	
U	2845 Matese, 65	
V	3520 McGuire, 68	
Xe	741 Woo, 47	1288 McGuire, 67
	1893 McGuire, 65	2079 Comes, 66
	2506 Cooper, 64	2618 Brandt, 67
	2843 Manson, 68	2848 McGuire, 65
	2941 Comes, 68	3520 McGuire, 68
	4366 Starace, 70	4468 Manson, 70
	4517 Amusia, 71	4758 Wendin, 72
	4764 Kennedy, 72	4775 Wendin, 71
	5149 Amusia, 72	5223 Amusia, 71
	5473 Amusia, 73	6092 Walker, 74
	6450 Monaghan, 74	6496 Amusia, 74
Y	3520 McGuire, 68	
Zn	3520 McGuire, 68	4824 Hyman, 71
	6092 Walker, 74	6228 Fliflet, 74
	6496 Amusia, 74	
Zn^{+1}	4475 McGinn, 70	
Zr	3520 McGuire, 68	
CH	5166 Walker, 72	
CO	6219 Huang, 74	6501 Rabalais, 74
Cl_2	4760 Thiel, 71	
D_2	6171 Itikawa, 73	
F_2	4760 Thiel, 71	
HCl	4760 Thiel, 71	
H_2	1599 Flannery, 65	2057 Shimizu, 63
	2869 Khare, 67	3412 Khare, 68
	3891 Kaplan, 69	4042 Tully, 68
	4981 Shaw, 72	5690 Kelly, 73
	6171 Itikawa, 73	6298 Bottcher, 74
	6449 Martin, 74	6501 Rabalais, 74
H_2^*	5023 Cohn, 72	
H_2^{+1}	2204 Bates, 53	3517 Bates, 68
HF	4760 Thiel, 71	
N_2	3889 Schneider, 69	4356 Tuckwell, 70
	6219 Huang, 74	6501 Rabalais, 74

IONIZATION THEORETICAL

Normalized

O_2	3821 Dixon, 69	4513 Tuckwell, 71
H_2O	6501 Rabalais, 74	
H_2S	6501 Rabalais, 74	
C_2H_2	3692 Kaplan, 68	
CH_4	1660 Dalgarno, 52	6501 Rabalais, 74

Relative

Ar	4471 Manson, 70	
He	2631 Byron Jr., 67	
Kr	2645 Krause, 67	4471 Manson, 70
Ne	4471 Manson, 70	
Xe	4471 Manson, 70	4473 Manson, 71
H_2	4976 Dill, 72	
O_2	4518 Smith, 70	

DETACHMENT EXPERIMENTAL

Normalized

Ag^-	5354 Hotop, 73	
Au^-	5354 Hotop, 73	
B^-	5845 Kaiser, 73	
Br^-	3780 Rothe, 69	
C^-	599 Seman, 62 4525 Feldmann, 70	1008 Branscomb, 62
Cl^-	3780 Rothe, 69 5094 Pietsch, 72	4829 Muck, 68
Cs^-	5845 Kaiser, 73	
F^-	949 Berry, 63 4476 Mandl, 71	2644 Popp, 67
Ga^-	5845 Kaiser, 73	

DETACHMENT EXPERIMENTAL

Normalized

H^-	1222 Smith, 59 1291 Bohn, 65	1223 Smith, 59
I^-	817 Steiner, 62 3780 Rothe, 69	3414 Steiner, 68
K^-	5845 Kaiser, 73	
Li^-	5845 Kaiser, 73	
O^-	38 Branscomb, 58 1632 Branscomb, 65	1628 Branscomb, 65 2667 Smith, 60
P^-	5845 Kaiser, 73	
Pb^-	5845 Kaiser, 73	
Pt^-	5354 Hotop, 73	
Sb^-	5845 Kaiser, 73	
Si^-	4822 Feldmann, 71	
CH^-	4525 Feldmann, 70	
MgH^-	5845 Kaiser, 73	
OD^-	1628 Branscomb, 65	1669 Branscomb, 66
OH^-	1628 Branscomb, 65	1669 Branscomb, 66
O_2^-	468 Burch, 58 5147 Burt, 72	1628 Branscomb, 65
PH^-	5845 Kaiser, 73	
PtN^-	5354 Hotop, 73	
SH^-	3548 Steiner, 68	
SO^-	4525 Feldmann, 70	
NH_2^-	4822 Feldmann, 71	
NO_2^-	1628 Branscomb, 65 6257 Herbst, 74	3887 Warneck, 69
O_3^-	4812 Byerly Jr., 71	5510 Burt, 72
SO_2^-	4525 Feldmann, 70	
CO_3^-	5168 Burt, 72	
O_4^-	5100 Burt, 72	

DETACHMENT EXPERIMENTAL

Relative

Ag^-	5716 Bennett, 72	
Ca^-	6473 Heinicke, 74	
Cs^-	5915 Patterson, 74	
H^-	979 Smith, 55 1386 Branscomb, 55	1386 Branscomb, 55
I^-	839 Steiner, 63	
K^-	5915 Patterson, 74	
O^-	979 Smith, 55	
Rb^-	5915 Patterson, 74	
S^-	4463 Lineberger, 70	
Se^-	5726 Hotop, 73	
C_2^-	4797 Lineberger, 72	
OD^-	6034 Hotop, 74	
OH^-	6034 Hotop, 74	
O_2^-	5716 Bennett, 72	
SH^-	5715 Smyth, 72	6374 Eyler, 74
SO^-	5716 Bennett, 72	
SeH^-	4980 Smyth, 72	5715 Smyth, 72
AsH_2^-	4871 Smyth, 72	5715 Smyth, 72
NH_2^-	4871 Smyth, 72	5715 Smyth, 72
NO_2^-	6081 Richardson, 74	
PH_2^-	5715 Smyth, 72	
$H_3O_2^-$	3564 Golub, 68	
CaH^-	6473 Heinicke, 74	

DETACHMENT THEORETICAL

Normalized

Br^-	2060 Robinson, 67	

DETACHMENT THEORETICAL

Normalized

C^-	666 Myerscough, 63 1101 Moskvin, 64 1295 Myerscough, 64 2060 Robinson, 67 3260 Henry, 68	1057 Cooper, 62 1266 Myerscough, 65 1830 Henry, 66 2787 Breene Jr., 59 6379 Ishihara, 74
Cl^-	1057 Cooper, 62 2060 Robinson, 67	1929 Moskvin, 65 4244 Conneely, 70
Cs^-	5075 John, 72	
F^-	1057 Cooper, 62 1929 Moskvin, 65 6379 Ishihara, 74	1101 Moskvin, 64 2060 Robinson, 67
H^-	371 Geltman, 62 894 Chandrasekhar, 58 1203 Tietz, 61 1243 Chandrasekhar, 45 1385 Chandrasekhar, 45 1629 Weinberg, 65 2241 Geltman, 56 2373 Massey, 40 2382 Bell, 67 2693 Rudkjobing, 43 2747 Krogdahl, 67 2803 Tietz, 62 4515 Dutta, 71 5170 Hyman, 72	561 Ohmura, 60 1166 Jen, 33 1227 Henrich, 44 1384 Chandrasekhar, 58 1392 John, 60 1794 Doughty, 66 2309 John, 60 2374 Mitchell Jr., 59 2680 Williamson, 42 2724 Jen, 36 2794 Macek, 67 4512 Postma, 71 5026 Smith, 71 6255 Jacobs, 74
I^-	2060 Robinson, 67	
K^-	1929 Moskvin, 65 6408 Moores, 74	5075 John, 72
Li^-	1203 Tietz, 61 2241 Geltman, 56 2803 Tietz, 62 5020 John, 72 5167 John, 72	1929 Moskvin, 65 2681 Zhirnov, 62 4158 Yaakobi, 69 5075 John, 72 6408 Moores, 74
N^-	1101 Moskvin, 64	3260 Henry, 68
Na^-	1929 Moskvin, 65 6408 Moores, 74	5075 John, 72
O^-	247 Yamanouchi, 40 588 Henry, 67 1057 Cooper, 62 1635 Breene Jr., 65 2071 Garrett, 67 3888 Schneider, 69 5073 Chase, 72	399 Klein, 58 885 Gillespie, 64 1101 Moskvin, 64 2060 Robinson, 67 2892 Bates, 46 5005 Lan, 72
Rb^-	5075 John, 72	
S^-	2060 Robinson, 67	4244 Conneely, 70

DETACHMENT THEORETICAL

Normalized

Si^-	2060 Robinson, 67	4244 Conneely, 70

Relative

S^-	4834 Rau, 71

FLUORESCENCE EXPERIMENTAL

Normalized

CO	5095 Monahan, 72	6452 Lee, 74
N_2	5095 Monahan, 72	6378 Lee, 74
O_2	4769 Carlson, 70 6067 Carlson, 74	5095 Monahan, 72 6378 Lee, 74
CO_2	5095 Monahan, 72 5174 Samson, 73 5261 Judge, 73 5547 Carlson, 73	5148 Lee, 72 5218 Lawrence, 72 5546 Gentieu, 73
N_2O	5095 Monahan, 72 6377 McEwan, 74	6068 Lee, 74
C_2HCN	5741 Okabe, 73	

Relative

K_2	5558 Alzetta, 73	
N_2	5471 Lee, 73	
NO	5977 Hertz, 74	6448 Hertz, 74
NaI	4765 Earl, 72	
NaK	5558 Alzetta, 73	
Na_2	5558 Alzetta, 73	
O_2	5575 Ridley, 73	
CO_2	5513 Sroka, 73 5839 Judge, 73	5575 Ridley, 73
N_2O	5575 Ridley, 73 6472 Hertz, 74	5633 Sroka, 73

FLUORESCENCE EXPERIMENTAL

Relative

O_3	5575 Ridley, 73
C_2N_2	6376 Jackson, 74

DISSOCIATION EXPERIMENTAL

Normalized

Br_2^-	6470 Rackwitz, 74	
Cl_2^-	6470 Rackwitz, 74	
CsF	4828 Mandl, 71	
D_2^{+1}	4936 Von Busch, 72	
F_2^-	6470 Rackwitz, 74	
H_2	2477 Beyer, 67 4162 Comes, 70 4937 Samson, 72	4025 Comes, 68 4368 Mentall, 70 5352 Fryar, 73
H_2^{+1}	4936 Von Busch, 72	
I_2	6447 Burde, 74	
I_2^-	6470 Rackwitz, 74	
N_2	3682 Samson, 59 5352 Fryar, 73	4179 Beyer, 69 6378 Lee, 74
O_2	1280 Metzger, 64 2384 Matsunaga, 67 3250 Frost, 68 4151 Bixon, 69 4769 Carlson, 70 5850 Lin, 74 6378 Lee, 74	1797 Goldstein, 66 2943 Comes, 68 3682 Samson, 59 4179 Beyer, 69 5352 Fryar, 73 6067 Carlson, 74
CO_2	3682 Samson, 59 5261 Judge, 73 5546 Gentieu, 73	4928 Lawrence, 72 5352 Fryar, 73 6471 Slanger, 74
H_2O	2477 Beyer, 67	4813 Cairns, 71
C_2H_2	2342 Schoen, 62	
CO_3	6172 Moseley, 74	
NH_3	2477 Beyer, 67	4877 Bahr, 72
PH_3	1313 Kley, 65	

Normalized

CH_4	1701 Ditchburn, 55	4974 Welch, 72
C_2H_4	2342 Schoen, 62	
C_2H_6	2342 Schoen, 62	

Relative

Br_2	2377 Morrison, 60	4522 Dibeler, 70
CO	2678 Weissler, 59	
Cl_2	4820 Diesen, 71	
ClF	4454 Dibeler, 70	
D_2	5260 Browning, 73	
DF	4811 Berkowitz, 71	
F_2	4039 Dibeler, 69 4819 Chupka, 71	4811 Berkowitz, 71
HCl	3640 Krauss, 68	
H_2	772 Beyer, 64 5260 Browning, 73	2866 Berkowitz, 67 6082 McCulloh, 74
H_2^{+1}	6009 Van Asselt, 74	
HF	4039 Dibeler, 69 4819 Chupka, 71	4811 Berkowitz, 71
I_2	2377 Morrison, 60	
KI	6323 Earl, 74	
LiI	6323 Earl, 74	
N_2	931 Comes, 64	2678 Weissler, 59
NO	772 Beyer, 64 6448 Hertz, 74	2678 Weissler, 59
NaBr	6323 Earl, 74	
NaI	1979 Berkowitz, 66	4765 Earl, 72
O_2	772 Beyer, 64 2727 Dibeler, 67 5575 Ridley, 73	2678 Weissler, 59 3549 Doolittle, 68 5958 Lawrence, 73
S_2	3886 Berkowitz, 69	
Se_2	3886 Berkowitz, 69	

DISSOCIATION EXPERIMENTAL

Relative

Te_2	3886 Berkowitz, 69	
TlI	1979 Berkowitz, 66	
BrCN	3011 Dibeler, 67	
CO_2	772 Beyer, 64 2727 Dibeler, 67 5040 Inn, 72 5575 Ridley, 73	2678 Weissler, 59 4836 Welge, 71 5258 Lee, 73
COS	2727 Dibeler, 67	
CS_2	2727 Dibeler, 67	4872 Okabe, 72
ClCN	3011 Dibeler, 67	
FCN	3011 Dibeler, 67	
HCN	3251 Dibeler, 68	3691 Berkowitz, 69
H_2O	772 Beyer, 64	2623 Dibeler, 66
H_2S	3392 Dibeler, 68	
ICN	3011 Dibeler, 67	
MgI_2	1979 Berkowitz, 66	
N_2O	2678 Weissler, 59 4823 Gilpin, 71 5633 Sroka, 73	2873 Dibeler, 67 5575 Ridley, 73
NOCl	4876 Busch, 72	
NO_2	2678 Weissler, 59 4874 Busch, 72	2873 Dibeler, 67 4875 Busch, 72
O_3	5575 Ridley, 73	
SO_2	3392 Dibeler, 68	
C_2D_2	1684 Botter, 66	
C_2H_2	1684 Botter, 66 5512 Sieck, 73	2025 Botter, 66
C_2N_2	3011 Dibeler, 67	
NH_3	2623 Dibeler, 66	2853 Okabe, 67
Na_2I_2	1979 Berkowitz, 66	
CD_4	1357 Dibeler, 65	5512 Sieck, 73
CF_4	4041 Walter, 69	

DISSOCIATION EXPERIMENTAL

Relative

CH_3Cl	2219 Dibeler, 65	3640 Krauss, 68
CH_3F	3640 Krauss, 68	
CH_4	1357 Dibeler, 65 5512 Sieck, 73	3026 Chupka, 68
C_2F_4	4041 Walter, 69	
C_2H_4	1699 Brehm, 66	3757 Chupka, 69
CHDCHD	2025 Botter, 66	
C_2H_6	5512 Sieck, 73	

DISSOCIATION THEORETICAL

Normalized

Cl_2	5842 Gibson, 33	5978 Wilkins, 64
D_2	4456 Allison, 69	
D_2^{+1}	2876 Dunn, 68	3259 Dunn, 68
HD	4456 Allison, 69	
H_2	3988 Dalgarno, 69 4810 Allison, 71	4456 Allison, 69
H_2^{+1}	2800 Oksyuk, 67 3259 Dunn, 68	2876 Dunn, 68 6407 Argyros, 74
O_2	2606 Stueckelberg, 32 5263 Allison, 71	4803 Smith, 71

Relative

F_2	6317 Eletskii, 74
H_2	4474 Julienne, 71
O_2	4151 Bixon, 69

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Curley, E. K. 1512 3836

Curran, R. K. 133 971 1066 1067

Curtis, J. P. 1232 1612

Cuthbert, J. 1742

Cvejanovic, S. 6237

Czarnik, J. W. 4423

Czyzak, S. J. 442 1932 1943 2335 3294

	4199				
Dahler, J. S.	311	555	5059		
Dai, B. T.	4556	4695			
Daiber, J. W.	1577	1945			
Dalgarno, A.	416	436	440	690	702
	1341	1660	1661	1667	2719
	2852	2958	3347	3988	4456
	4555	4644	4810	5093	5117
	5263	6268			
Dalton, B. J.	4042				
Daly, N. R.	1881	2422			
Damany–Astoin, N.	2778				
Damburg, R. Ya.	32	91	97	148	154
	278	296	507	542	609
	648	810	835	836	856
	1505	1550	1551	1552	1553
	2937	3881	4923		
Dance, D. F.	1803	2788	2790		
Danch, F. F.	5830	6464			
Danielson, P. M.	4970				
Danilevskii, N. P.	4864	5088	5157	5525	6231
Danner, D.	3770				
Darewych, J. W.	4434	5912	6122	6409	
Dashchenko, A. I.	78	5001	5830	6053	6384
	6464				
Datla, R. U.	4962				
Davidovits, P.	2625	3543	4038		
Davies, A. R.	5597	5895			
Davis, F. J.	5135				
Davis, J.	4014	4072	4124	4643	4786
	6133	6413			
Davis, S. J.	5612				
Davison, W. D.	3025				
De Heer, F. J.	1281	1690	1748	1782	2349
	2945	3541	3687	3729	3812
	3831	3832	3984	4220	4297
	4349	4646	4655	4683	4841
	5140	6142	6468		
De Jongh, J. P.	4218	4616			
De La Ripelle, F.	1144				
De Maria, G.	1578				
De More, W. B.	5096	5843	5850		
De Reilhac, L.	2778				
De Vore, R. V.	256				
Debies, T. P.	6501				
Decoster, A.	5848				
Degeilh, A.	986				
Degges, T.	2958				
Dehmelt, H. G.	679				
Dehmer, J. L.	6229				
Dehmer, P. M.	5914	6079			
Deichsel, H.	1425	1427	1431	1596	
Deleanu, L.	5811	6381			
Delpech, J.–F.	4711				
Delwiche, J.	4978				
Demeter, A. M.	6341				
Demkov, Yu. N.	457	5358			
Dershem, E.	3685				
Deslattes, R. D.	1855	2872			
Desprez–Rebaud, S.	461				
Devyatov, A. M.	474	607	755	1325	1533
	3322				
Dhez, P.	3020	6256			
Dibeler, V. H.	466	525	1320	1357	1684
	1857	2025	2215	2219	2612
	2623	2727	2873	3011	3251
	3392	3640	4039	4454	4522
	5257	5741	5840		
Dibelius, N. R.	768				
Dickson, H. W.	3007				
Dicoum, E. M.	5280				
Diesen, R. W.	4820				

Dill, D. 4976 6375

Dillon, M. A. 2659 2694 2696 3546 3547 3814 4198

Dirks, J. F. 4350

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Dixon, R. N. 3821

Dobay–Szegleth, A. 4635

Doering, J. P. 920 1982 2172 2915 3969 4111 5036

Dolder, K. T. 261 264 907 2721 2977 3296 3400 3850 3947 3948 3975 3995 4344 4437 4503 4720 4726 4865 5016 5214 5667 5828 5829 5896 5997 6343

Dolgov, G. G. 753 754

Dolgov–Savelev, G. G. 3693

Donaldson, F. G. 4565 4997 5115 5277 6134

Doolen, G. D. 4622 4859

Doolittle, P. H. 3549

Dorman, F. H. 778 1068 1069 1070 1108 1691

Dorrestein, R. 123 124

Dougal, A. A. 233 703 1450

Doughty, N. A. 1794 3567

Doumont, M. 4073

Dowell, J. T. 1310 2176 2205 2577 2939 3207

Doyle, H. 5093

Drachman, R. J. 1192 1819 3052 3350 4394 4395 4731

Drapatz, S. W. 3993

Drawin, H. W. 454 1044

Dronov, A. P. 4905

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Dubau, J. 5302 5692

Dubovoi, L. V. 1507

Dubrovskii, G. V. 5519

Dudko, D. Y. 2906 2956

Dugan Jr., J. V. 1272

Dugan, J. L. G. 2175

Dukelskii, V. M. 957

Duncan, A. B. F. 605 2375 2376 2801

Duncan, C. W. 6198

Duncan, D. P. 4837 4921

Duncanson, W. E. 2088

Dunn, G. H. 364 1501 1503 2171 2647 2772 2876 3259 4936 5831 6188 6193

Dunning, F. B. 5476 5844 6145 6175

Durup, J. 4895

Dutta, C. M. 4515

Dutta, N. C. 4515

Duxler, W. M. 2959 4722

Dymond, E. G. 3 253

Earl, B. L. 4765 6323

Eaton, C. R. 3874 3880

Ebinghaus, H. 1163 2910

Economides, D. G. 3941

Edelstein, L. A. 695

Ederer, D. L. 1179 1350 1755 2381 3779 4807

Edlefsen, N. E. 2316 2317

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Egbert, G. T. 5555

Ehler, A. W. 1756 1769 2379

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Ehrhardt, H. 1470 1529 1588 2179 2510 2624 2650 3252 3377 3391 3410 3747 3770 3944 4388 4557 4998 5905

Eiserike, H. 4395 5956

Eissa, H. 1710

Eissner, W. 1560 3732 4004 6462

Eitel, W. 3811 4406

Ejiri, A. 3566

El–Sherbini, Th. M. 3819 4297 4814 4893 5903

Elbert, D. D. 1384

Elder, F. A. 3510

Elenbaas, W. 100 1148

Eletskii, A. V. 6317

Elford, M. T. 2433 4355 5054

Elgin, R. L. 3005 3253

Ellison, F. O. 6219

Elsasser, W. 183

Elsberry, R. T. 4403

Elzer, A. 528 926 2942 2943

Emeleus, K. G. 1916

Emelyanov, A. M. 3050

Eminyan, M. 5634 6385

Emmanuel, C. B. 1058

Emmel, R. H. 4559

Ende, W. 1153

Enemark, E. A. 4961

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Engelhardt, W. 5085

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Erskine, G. A. 458

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Eyb, M. 3391 4779

Eyler, J. R. 6374

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Fabrikant, I. I. 5904 6075 6076

Fabrikant, V. 142 275

Fairchild, C. E. 4423

Faire, A. C. 698

Faisal, F. H. M. 4697 4745 4924

Faisal, F. 1985

Fajen, F. E. 4451 5737

Fano, U. 302 4834

Farnoux, F. C. 1903 2686 3917 4034 4879 5264 5847

Farren, J. 1742

Feautrier, N. 3348 4624 5005

Fedorova, G. M. 2729

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Feenberg, E. 221

Feeney, R. K. 4448 5054

Felden, M. A. 4702 5139 5651

Felden, M. M. 4422 4440 4702 4840 5139 5651

Feldman, P. 773 2759

Feldmann, D. 4525 4822 6470 6473

Fels, M. F. 2774

Feltsan, P. V. 1076 1583 1648 1823 1895 2725 2795 2833 2909 3000 4305 5113 5995

Fenner, W. R. 5192

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Fickes, M. G. 4957 6215 6302 6303

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Fineman, M. A. 941 1415 1508 1509 2784 2954

Fink, M. 3773 3982 4174 4421 4491 4612 4921 5480

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Finn, T. G. 5036

Fiquet–Fayard, F. 283 1124 1162 1167 1530 1919 2969 3023 4729 4846 5142 5707

Firsov, O. B. 818

Fischer, O. 115

Fishel, M. G. 6199

Fisher, E. I. 1255

Fisher, L. 445

Fisk, J. B. 34 37

Fite, W. L. 280 320 321 322 323 326 332 1031 1525 3841 4206 4668 6112

Fizgeer, B. M. 4647 4864

Flannery, M. R. 1599 4181 4341 6266 6419 6458 6461

Flavin, R. K. 769 850 872

Fleming, R. J. 518 871 1088

Fletcher, J. 5485 5658

Fliflet, A. W. 6228 6453

Flower, D. R. 4608 5151 5983

Fogel, Ya. M. 1841 2174 4083 4647 5157

Fomichev, V. A. 2663 3378

Fon, W. C. 4935

Foner, S. N. 1034 1132

Fong, J. C. 5472

Fontana, P. R. 672

Foo, V. Y. 4509

Foote, P. D. 1238

Ford, A. L. 5271

Forester, D. W. 685

Foster, T. C. 6379

Fournier, A. Y. 2072

Fowler, R. G. 241 742 912 2923

Fox, M. A. 1695 1767

Fox, R. E. 133 271 310 318 353 467 704 707 776 781 858 1064 1067 1119 1329

Fradkin, E. E. 1681

Francis, S. A. 192

Franco, V. 3822 4122 4123 5902

Franken, P. 610

Franklin, J. L. 340 5663

Fraser, P. A. 571 744 855 1022 1169 1422 1794 3053 5892

Fraun, J. C. 5139

Freeston, M. W. 4235

Frenkiel, P. 499 944

Freund, R. S. 3205 3875 4385 4490 4498 5908 6026

Frey, R. 4541

Fridkin, L. A. 1970

Friedman, S. I. 2440

Frisch, S. E. 464 808 1233 1531 2643 2971

Frish, M. S. 5310

Frommhold, L. 973 5013

Frost, D. C. 237 341 523 524 526 699 708 1120 1263 1840 2846 3250 4028 4526 4534

Frost, L. S. 181 888 1043 1062

Fryar, J. 5260 5352

Fuchtbauer, C. 116 117 118

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Fundingsland, O. T. 312 698

Fung, A. C. 4401

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Gallaher, D. F. 3949 4935 5986

Ganas, P. S. 4639 4930 5287 5470 5813 5907 6006

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Garcia, J. D. 2905 3745 3750

Gardner, A. B. 5022 5474 5695

Gardner, J. L. 4877 4878 4880 4911 4929 5097 5174 6271

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Garibotti, C. R. 4493 4717

Garrett, W. R. 36 959 1498 1523 2071 2893 3701 3970 4133 4637 5066 5116

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Gatsyuk, N. A. 5089

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Gentieu, E. P. 4368 4460 4796 5546

Geracitano, R. 3827

Gerasimov, G. N. 5310 6253

Gergory, D. 5480

Gerjuoy, E. 386 392 401 448 4123 4669 4701 5543

Gezalov, Kh. B. 3890 4140

Ghita, C. 2222

Ghosh, A. S. 4215 4224 4396 4754 4925 5355 5587 5659 5823 6113 6420 6467

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Gianturco, F. A. 4794

Gibbons, J. J. 1482

Gibson, D. K. 4062 4450 4484

Gibson, G. E. 5841 5842

Gibson, J. R. 3850 3975 6315

Giedt, R. R. 2844

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Gilardini, A. L. 1400

Gilbody, H. B. 1031

Gillespie, E. S. 5081 5825

Gillespie, J. 885

Gilpin, R. 4823 4836

Gingerich, K. A. 4346

Gingo, P. J. 878

Girnius, R. J. 4668

Givens, M. P. 509

Glaser, F. M. 612 2827

Glassgold, A. E. 2856

Glick, R. E. 946

Glockler, G. 209 235

Glupe, G. 589

Goddard III, W. A. 5832

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Golant, V. E. 881

Goldan, P. D. 274 1348

Golden, D. E. 869 1375 1787 1962 1997
4006 4992 5735 5895

Golden, J. E. 6132

Golden, L. B. 5068

Goldfinger, P. 1578

Goldman, A. 5164

Goldstein, L. 233 249 274 277 306
316 317 1348

Goldstein, M. 2947 3849 4561 4787

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Golomb, D. 2636

Golshani, M. 4372

Golub, S. 3564

Gomet, J. C. 3212

Goodings, J. M. 4614

Goodrich, M. 995

Gordeev, Yu. S. 4087

Gorden Jr., R. 5512

Gordon, S. M. 3531

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Grasdalen, G. L. 2490

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Grechukhin, D. P. 2849

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4640 4930 5582 5813 6006

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Grob, V. E. 1270

Groce, D. E. 4757

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Gruen, H. 5906

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Gryzinski, M. 452 570 863 1014 3998 4746 5822

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Gumble, R. S. 3924

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Gurevich, D. B. 929

Gutbier, H. 2731

Gutcheck, R. A. 5724

Guyon, P. M. 4811

Gyftopoulos, E. P. 1456

Haarhoff, P. C. 3531

Haas, R. 684

Haddad, G. N. 1967

Hadeishi, T. 205 1339

Haensel, R. 3016 3247 3688 5475

Hafner, H. 1586 5466

Haft, G. 111

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Hagstrum, H. D. 107 214 550

Hahn, Y. B. 5484 5598

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Halas, St. 5070

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Hall, T. C. 2244

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Harward, C. N. 3533

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Hasted, J. B. 1492 3743 4118 4509 5193

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Hendrickson, C. G. 1072

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Henke, B. L. 3005 3253

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Henrich, L. R. 1227

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Heppinstall, R. 2961 3764

Heppner, R. A. 6382

Herbst, E. 6257

Hergenrother, R. C. 1001

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Hermann, V. 4388

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Herring, D. F. 4757

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Herrmann, O. 288

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Hertz, G. 663

Hertz, H. 4110 5977 6448 6472

Herzenberg, A. 1331 2004 3340 3806 4502 5010

Hesselbacher, K. H. 4557 4998 5905

Hettel, H. J. 3803

Heubner, W. 3742

Hewson, P. W. 4882

Hey, W. 1279

Heyland, G. R. 5017 5366 6008 6177

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Hibbert, A. 6297

Hickam, W. M. 271 310 313 704 858

Hidalgo, M. B. 3390 4708 4856 4859 6182

Higginson, G. S. 518 871 1027 1088

Hilgner, W. 2628 3934 3935

Hill, E. R. 455

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Hils, D. 2021 5000 5979

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Hoerni, J. A. 572

Hoffmann, C. R. 3702

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Hofmann, M. 4779

Hofmann, W. 4453

Hogness, T. F. 1096

Holland, R. F. 2785 2976 4658

Holliday, M. G. 4024

Holloway, J. H. 4811

Holst, W. 991

Holt, A. R. 2159 3933 4673 4719 5357

Holt, H. K. 1528 1677 1892 1977

Holt, R. B. 802 2707

Holtsmark, J. 99 104 185 991

Hood, S. T. 4839 5072 5285 5665 5814

Hooker, W. J. 3386

Hooper, J. W. 1421 1568 2938 4314 4448 5054 5557

Hopwood, W. 346

Horie, T. 5356 6135

Hotop, H. 4538 5354 5726 5915 6034

Houlgate, R. G. 6451

Houston, S. K. 2059 3586 4394 5282

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Huang, K. 297

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Huber, P. 1833

Hubin-Franskin, M. J. 4378 4379 5729

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	1277	1294			
Hughes, R. H.	554	787	1072	2690	3846
	4131	5572			
Hughes, V. W.	1195				
Huijnen, M. L. H.	4209				
Hull, S. E.	3821				
Humberston, J. W.	5019	5834			
Hummer, D. G.	332	1037	4119		
Hunt, J.	4303	4673	4719		
Hunt, W. J.	5832				
Huo, W. M.	5150	6300			
Hurst, G. S.	1016	1565			
Hurzeler, H.	2251	2377			
Husain, D.	1364	1659	3840	4402	
Hustrulid, A.	924				
Hutchison, D. A.	1215				
Hutt, P. K.	6007				
Hutton, N. A.	4657	5162			
Huzinaga, S.	462				
Hyman, H. A.	613	4824	5170		
Ibers, J. A.	572				
Ida, A.	4152				
Iguchi, Y.	3566				
Imami, M.	5286	6235			
Imre, A. I.	5001	5830	6053	6384	6464
Inghram, M. G.	1883	2251	2377	4360	
Ingram, J. C.	4174				
Inn, E. C. Y.	1220	2252	2633	2638	2668
	2673	2675	2770	2851	5040
Innes, K. K.	4031				
Inokuti, M.	210	1056	2655	2783	2837
	2842	2945	3415	3521	3847
	3973	4001	4082	4433	6456
Inui, T.	248				
Iolin, Ye.	1426				
Ionikh, Yu. Z.	3807				
Irons, F. E.	6412				
Ishihara, T.	4816	4861	5002	5657	6379
Israilev, I. M.	3293				
Itamoto, F. K.	636				
Itikawa, Y.	3706	3707	3871	3977	4078
	4415	4424	4564	4737	4792
	6171	6180			
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16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

A bibliography of original reports of measurements or calculations of electron, positron and photon cross sections and their ions is presented. A detailed index to the bibliography allows retrieval of cross section data for specific processes and atomic or molecular species. A comprehensive author index is included. The bibliography covers the period 1921 through calendar year 1974 but some references late in 1974 may not have been found and included. No references were found prior to 1921.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

Atom; collision cross section; detachment; dissociation; elastic scattering; electron; excitation; fluorescence; ion; ionization; molecule; photon; positron.

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