

ENERGY FROM A BROWN DWARF STAR

Mr. DOMENICI. Mr. President, I rise today to congratulate scientists working with the Very Large Array, VLA, astronomical radio observatory near Socorro, New Mexico on detecting energy from a brown dwarf star. For over twenty years, the VLA has provided significant scientific knowledge to astronomers.

Working on a student project, scientists, graduate, and undergraduate students discovered the first sustained radio emission from a brown dwarf star, an object similar to a small star without enough mass to sustain nuclear fusion of hydrogen. Discovered only 5 years ago, brown dwarf stars were considered unable to emit persistent radio emissions. This finding helps astronomers study the link between large, gaseous planets and small stars.

I am proud to support the VLA and the contributions being made to our understanding of the cosmos. I also applaud the work and efforts of the scientists and students involved in making this noteworthy discovery.

I ask that the February 21, 2001, New York Times article entitled, "Surprise in the Heavens as Energy Is Detected in a Brown Dwarf" be printed in the RECORD.

The article follows:

[From The New York Times Wed., Feb. 21, 2001]

SURPRISE IN THE HEAVENS AS ENERGY IS DETECTED IN A BROWN DWARF

(By James Glanz)

A dim, fading object wandering alone through space, something between a large planet and a tiny star, turns out to be roiled by storms several times more powerful than the most energetic flares on the Sun, a team of radio astronomers has found.

The existence of such powerful, stormy radio emissions in this kind of celestial object, a brown dwarf, is highly unexpected and could shed light on the dividing line between stars and planets.

The research had been considered so unpromising that the discovery was made not as part of any large-scale astronomical search but an accidental find in a student project at the Very Large Array a set of radio-telescopes at the National Radio Astronomy Observatory near Socorro, NM.

The students happened to have the array trained on the brown dwarf when it flared. Two senior radio astronomers, Dr. Dale A. Frail of the National Radio Astronomy Observatory and Dr. Shrinivas Kulkarni of the California Institute of Technology, then became involved in follow-up observations, which were led by Edo Berger, a graduate student at Caltech.

The follow-up observations showed that the object's magnetic fields were extremely weak, another surprise, since flares are normally powered by the energy in magnetic fields.

A paper on the study has been accepted at the journal Nature and was posted Monday and a Web site at the Los Alamos National Laboratory where most astronomers place their new work.

The existence of brown dwarfs, which are cool, dim and difficult to observe, was confirmed only five years ago by a team led by Dr. Kulkarni. Thought to have masses less

than 8 percent that of the Sun, their cores never become hot enough to ignite the fusion process that allows ordinary stars to shine for billions of years.

Instead, brown dwarfs gradually cool and fade after they form. Because brown dwarfs have an identity somewhere between that of large, gaseous planets like Jupiter and that of the smallest ordinary stars, astronomers said the new discovery should illuminate the structure of a crucial link between the two better-known classes of astronomical objects.

Dr. Adam Burrows, an astrophysicist at the University of Arizona, said energetic particles and waves in the magnetic fields around Jupiter split out radio emissions that could be detected on Earth. But Dr. Burrows said that at the distance of the brown dwarf, more than a dozen light-years into deep space, those emissions could never be picked up.

"That they do see emission from a sister object at such a distance is quite amazing," he said.

Ordinary stars with relatively low masses do show energetic flaring, Dr. Burrows said, but their magnetic fields are also much stronger. Flares on the Sun often occur when magnetic fields "reconnect," or suddenly snap like rubber bands after they break and then splice together in new configurations. So a weak magnetic field would not be expected to create strong flaring.

Another astrophysicist, Dr. Jeffrey Linsky of the University of Colorado, said those apparent mysteries might carry a message about the difference between true stars and brown dwarfs. The cooler cores of brown dwarfs, like a pot of soup on a low flame, might create less turbulence inside the dwarfs, Dr. Linsky said. That relative quiescence might generate weaker magnetic fields—but possibly with conformations, or geometries, that make them more likely to reconnect.

If that is the case, Dr. Linsky said, then perhaps "the geometry is very different in such a way that it produces a few very large flares."

Dr. Lars Bildsten, an astrophysicist at the Institute for Theoretical Physics at the University of California at Santa Barbara, cautioned that because brown dwarfs were so different from the Sun, it was hard to know what to expect from them. The radio observations were at least consistent with sketchy observations in other bands of the spectrum, Dr. Bildsten said.

Other scientists said they were at a loss to explain the puzzling findings, whose authors include Mr. Berger, Dr. Kulkarni and Dr. Frail as well as about a dozen graduate and undergraduate students from places like Oberlin College in Ohio, Agnes Scott College in Decatur, Ga., and New Mexico State University in Las Cruces.

"This is a pretty amazing result," said Dr. Jill Knapp, a Princeton astronomer. "There seem to be some quite unexpected things going on with these very cool, low-mass objects."

THE AIRLINE CUSTOMER SERVICE IMPROVEMENT ACT OF 2001

Mr. FEINGOLD. Mr. President, I rise today to voice my support for the Airline Customer Service Improvement Act. I commend Senator MCCAIN for continuing to press this crucial consumer issue before the Senate in a bipartisan manner. I also applaud the efforts of Senator WYDEN. Both have been leading advocates for air travelers. I am confident that we can work

together to pass a pro-consumer bill into law.

I am sure that each and every one of us in this body has experienced his or her fair share of frustration with air travel as have millions of Americans. Whether it's late flights, long lines, or lost luggage, we've all gotten the short end of the stick at one point or another.

When it comes to air travel, we are all consumers. And this bill assures the protection of consumer interests. The Airline Customer Service Improvement Act would, among other things, ensure that passengers have the information that they need to make informed choices in their air travel plans.

I think we were all encouraged in 1999 when the airlines came out with their own plan to improve customer service. While many of the airlines made improvements and responded to suggestions from the Department of Transportation's Inspector General, much more remains to be done.

It is time air travelers' interests once again receive our attention. According to the Department of Transportation, consumer complaints about air travel went up by 14 percent from 1999 to 2000. This, coupled with a 25 percent increase from 1998 to 1999, adds up to an increase of almost 40 percent in two years. These complaints run the gamut: unstable ticket pricing; oversold flights; lost luggage; and flight delays, changes, and cancellations. In addition, in 2000 one in four flights was delayed, canceled, or diverted, affecting about 163 million passengers. Obviously, the airlines are not solely responsible as weather and mechanical breakdowns are part of the business, and of course we need to ensure that we maintain and improve airport infrastructure. But this bill addresses some problems that the airlines can fix.

Perhaps of more importance, this bill does so without forcing airlines to compile information that they don't already keep. The bill simply allows air travelers the right to that basic information and the ability to make informed decisions.

I am fortunate enough to be a customer of the premier airline when it comes to customer satisfaction and to represent most of its employees. For years, Midwest Express Airlines has been showered with some of the highest airline customer satisfaction ratings in the country. For those of my colleagues who have not yet experienced a flight on Midwest Express, I, and I am sure I speak for the senior Senator from Wisconsin, encourage you to do so.

How does Midwest Express continue to maintain these superlative ratings? The answer is simple, it already incorporates some of the provisions spelled out in this bill. Midwest Express already tries to notify its travelers if it anticipates a flight delay, flight change, or flight cancellation. The airline already attempts to make information on oversold flights available to

its customers. Midwest Express already makes efforts to allow its customers access to frequent flyer program information. People fly the airline because the airline cares about its customers.

These are some of the reasons the airline has been awarded the Consumer Reports Travel Letter Best Airline Award every year from 1992 to 2000; Zagat Airline Survey's #1 Domestic Airline award in 1994 and 1996; Travel & Leisure's World's Best Awards for Best Domestic Airline in 1997, 1998, and 2000; Conde Nast Traveler's Business Travel Awards for Best U.S. Airline in 1998 through 2000; and Conde Nast Traveler Reader's Choice Awards from 1995 through 2000; among many awards.

Other airlines should see this bill as a challenge to meet the lofty standards set by airlines like Midwest Express.

Air travel is on the rise, but so are air travel complaints. As we enter the summer travel season, we should do what we can to ensure that the flying public is treated fairly. This bill will give our constituents access to the information they need to make wise choices in air travel and help them to avoid frustration, inconvenience, and sometimes costly delays. Airlines truly concerned about their customers should already be making these efforts. I urge my colleagues to join in this effort.

Mr. DOMENICI. Mr. President, as we acknowledge the passing of an entire decade since the victory of coalition forces in Desert Storm, we must simultaneously admit that this military victory has not translated into achievement of desired objectives.

Recent events and intelligence assessments have once again focused attention on Iraq. Saddam Hussein has rebuilt any weapons production capabilities that were damaged or destroyed in the Desert Fox operations in late 1998. Despite military defeat, despite thwarted attempts by the U.N. Special Commission, and despite a decade of sanctions, Iraq under Saddam Hussein's leadership remains a threat.

Two weeks ago strikes at command and control centers outside of the no-fly zones reminded the American public that our pilots have been patrolling Iraqi skies for ten years. Although we haven't yet lost any pilots or planes in this ongoing operation, a decade of this routine and the wear and tear on the aircraft without any end in sight has caused many people to question the prudence of this policy and approach.

The reason for this attack underscored again the constant risk to British and U.S. pilots in this mission. This article entitled "Highly Dangerous" highlights that risk.

New Mexicans or New Mexico-based wings have been heavily involved in this mission. Cannon's 27th Fighter Wing and the 150th Fighter Wing, the "Tacos" of the New Mexico Air National Guard fly these patrols.

As Iraqi air defenses get upgraded and Iraqi pilots continue to violate the no-fly restrictions, we must do every-

thing possible to protect the U.S. personnel involved in these missions.

I am grateful that Secretary Powell took it upon himself to tour the Middle East and began formulating new policies for the Bush Administration on Iraq. The baton passed from the Clinton Administration on Iraq offered no exit strategy.

I guess as long as no one got killed, the previous Administration was comfortable wearing out our pilots and our military aircraft under the pretense that their policy was working.

It wasn't and it's not. We need a comprehensive rethink. If our pilots are over there, it should be more than to patrol airspace while Saddam rebuilds his weapons production capacity and starves his people on the ground.

I look forward to an enlightened and effective policy on Iraq. And I think daily about the safety of the pilots who continue to perform their duty.

I ask unanimous consent that an article from the Albuquerque Journal be printed in the RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

[From the Albuquerque Journal, Feb. 25, 2001]

HIGHLY DANGEROUS—NEW MEXICO-BASED FIGHTER PILOTS PATROL IRAQ NO-FLY ZONES KNOWING THEY COULD BE SHOT DOWN AT ANY TIME

(By John J. Lumpkin)

CANNON AIR FORCE BASE—The pilots call it "going to the desert."

Life is often dull. The work is repetitive. Yet danger always is in the air.

Most of the pilots with Cannon's 27th Fighter Wing have gone at least once, and some repeatedly. They, and their F-16 fighters, are prime tools in the United States' decade-long, low-intensity war against the machinations of Iraqi President Saddam Hussein.

The three F-16 combat squadrons at Cannon are part of the rotation for Operations Northern and Southern Watch, which patrol the no-fly zones over northern and southern Iraq. The squadrons take their turns with other fighter units from a U.S. and British coalition to enforce the zones, over which Iraq has been prohibited from flying military aircraft since the Gulf War.

They are called up for 90 to 120 days. Pilots, restricted to an air base, say the uneventful stays are punctuated by several long, usually uneventful patrols over Iraq.

But the routine gets exciting from time to time when Iraq tests its limits.

"The intensity is still there," said Lt. Col. Bob "Wilbur" Wright, commander of the 523rd Fighter Squadron, the "Crusaders," who returned from a tour with Southern Watch late last summer. "You're always flying with the chance of getting shot down. At any moment we could lose an aircraft."

U.S. and British aircraft struck an Iraqi air defense system near Baghdad on Feb. 16 in a move the Pentagon described as self-protection. The strikes were made to reduce the chances of losing aircraft to surface-to-air missiles or gunfire.

Iraq began regularly challenging the no-fly zones in December 1998, after the four-day "Desert Fox" Allied bombing campaign.

Cannon's 522nd Fighter Squadron, the "Fireballs," took part in the bombing. Cannon's third combat squadron, the "Hounds" of the 524th, also have taken frequent turns in the desert.

PLANES AND MISSILES

Since Desert Fox, Iraq has fired missiles or anti-aircraft guns at coalition planes about 700 times. Not a single one has been shot down.

Iraqi aircraft also have violated the no-fly zones more than 150 times. When Iraqi aircraft cross out of the no-fly zone, coalition aircraft chase them back.

Wright and a wingman were part of one of those encounters during his summer deployment, when an Iraqi fighter crossed the border into the southern no-fly zone. Wright and his wingman locked their radars on the plane, which fled.

"I think they test the water periodically," said Wright, who has been to the region five times in the last decade—three times over the north, twice over the south.

His plane, an F-16C Fighting Falcon, is a nimble, single-seat fighter that can both dog-fight and bomb targets.

When Iraq fires at U.S. or British planes, the aircraft usually return fire or bomb other elements of Iraq's air defense system. Usually those targets are within the no-fly zones.

The strikes happen almost weekly and usually rate little news coverage. But Iraq has said the attacks have killed 300 people and injured more than 800, including civilians.

The Washington Post reported in October that the United States scaled back the aggressiveness of its patrols after intelligence analysts misidentified a sheep-watering tank as a surface-to-air missile launcher on satellite photos. U.S. aircraft bombed and strafed the site, and Iraq said 19 people, shepherds and villagers, were killed.

Wright said intelligence officials, air staff and pilots make great efforts to avoid hitting civilians.

"What we go after and what we hit are militarily significant targets," he said. "I have a conscience, too. I want to be sure of what we're hitting."

SUPPORT FOR REBELS

With United Nations' approval, the two no-fly zones were born after the 1991 Gulf War in an attempt to limit Saddam's use of his air power against uprisings in the northern and southern reaches of his country. Iraq isn't allowed to fly aircraft in those regions.

Southern Watch flies out of air bases in Kuwait and Saudi Arabia, and planes patrol a region south of the 33rd parallel.

It was intended to support an uprising of Shiite Muslim rebels in the south. Saddam crushed that rebellion in the early 1990s.

Northern Watch flies out of Incirlik, an airbase in Turkey. Planes patrol a comparatively small part of Iraq north of the 36th parallel. The operation began in 1997.

Several F-16 fighters and a few hundred airmen of the 150th Fighter Wing—the "Tacos" of the Air National Guard from Kirtland Air Force Base—now fly patrols with Northern Watch.

Northern Watch was intended to support uprisings by the Kurdish minority.

Recent reports indicate some Kurdish towns are thriving. But the Kurds still face attacks from Turkey, which fears internal Kurdish dissent and uses U.S.-made jets to bomb Kurdish territory in Iraq.

The no-fly zones have grown less popular over the years among other nations, even those that were part of the coalition that opposed Iraq's invasion of Kuwait. China says the no-fly zones violate the territorial integrity of Iraq. Russia now says they don't have U.N. backing. France, once a partner in the coalition, stopped flying aircraft over the zones in 1998, declaring them "pointless and deadly."

Wright, for one, is a believer.

"We keep the area somewhat stable," he said. "We've prevented Saddam Hussein from further injuring his own people."

BETTER DEFENSES

Despite their inability to hit anything, Iraqi gunners and missile operators are getting better.

"There's some indications they have learned from their experience," Wright said. "They've seen us for 10 years now."

Pentagon spokesmen said that the Feb. 16 strikes were in response to the increased "frequency and sophistication of their (air defense) operations."

U.S. officials also have confirmed that China is supplying Iraq with a fiber-optic communications system that would integrate the operations of the country's air defenses.

Capt. Steve "Roid" Astor has been to the desert twice with F-16 units. He said the greatest danger is that pilots lose their focus on the long, uneventful patrols.

"Let's not get complacent," he said. "It can be deadly."

To hear the pilots tell it, life on an air base in these faraway lands is fairly dull. Threats of terrorism keep them restricted to the bases, especially for the Southern Watch pilots in Kuwait and Saudi Arabia.

Cannon pilot Capt. Shannon "Pinball" Prasek flew nine combat missions with Southern Watch from February to April 1998. She protected airborne radars should they be attacked by Iraqi aircraft.

"It was pretty quiet. It was a religious holiday (for the Iraqis)," she said. She describes with some humor the polite bewilderment of Kuwaiti fighter pilots at seeing a woman combat pilot at their joint airbase.

One of Wright's "Crusaders," 1st Lt. Trenea Emerson is waiting for her first rotation overseas. She is eager to fly her first missions in a combat area, although she said she hasn't heard much about the region from her more seasoned colleagues, and her impressions are limited: "Everyone comes back in shape and tan," she joked.

SADDAM'S BOUNTY

The Cannon pilots regard the conflict as one against Saddam, rather than the Iraqi people or even the country's armed forces.

When they fly over Iraq, the pilots have a price on their head. The Iraqi president has reportedly offered a reward to anyone who shoots down an aircraft.

Wright expects to return to the desert late this year. "I'll miss another Christmas. . . . It does have an effect on the family."

But he praises the "esprit de corps" in his squadron, brought on, in part, by the remoteness of Cannon Air Force Base. "This is almost like an overseas assignment."

Wright is a pilot of some renown in the Air Force. He was the first U.S. pilot since the Korean War to get three kills in a single mission when he shot down three Bosnian Serb Jastreb fighter-bombers violating a no-fly zone on Feb. 28, 1994, over Bosnia. This mission also marked NATO's first military strikes in its history, and Wright earned the Distinguished Flying Cross for his role.

Wright was also Capt. Scott O'Grady's wing-leader in June 1995 over Bosnia when O'Grady was shot down by a Bosnian Serb surface-to-air missile. O'Grady was rescued five days later.

ADDITIONAL STATEMENTS

COMMEMORATING MARIA MARGARITA "MARGARET" TAFOYA

● Mr. DOMENICI. Mr. President, I rise today to join the community of Santa Clara Pueblo, New Mexico in mourning the loss of Maria Margarita "Mar-

garet" Tafoya. New Mexico is comprised of imaginative people of many cultures who express their cultural values artistically and creatively. The people of New Mexico will miss the guidance of the "matriarch of Santa Clara potters."

Respected and renowned throughout the pottery community, Margaret inspired others to take up pottery. She crafted many pots and other forms in the tradition of Santa Clara polished blackware and redware. Her art is the fine workmanship of highly skilled hands.

For her quality work, Margaret received numerous awards. The National Academy of Western Art at the Cowboy Hall of Fame and Western Heritage Center in Oklahoma City awarded her the Lifetime Contribution Award. She was the only American Indian to receive this award. In 1984, the National Endowment for the Arts awarded her the National Heritage Fellowship Award. In addition, her works have been displayed on the Mall in Washington, D.C. at the Folklife Festival sponsored by the Smithsonian Institute. However, Margaret did not work for recognition, she worked to improve the quality of life for her family and children.

Her loss leaves a void for her family and the art community. Mr. President, I share the grief of the community of Santa Clara Pueblo and my heartfelt condolences go out to her family.

I ask that an article in today's New York Times be printed in the RECORD. The article follows.

MARGARET TAFOYA, PUEBLO POTTER WHOSE WORK FOUND A GLOBAL AUDIENCE, DIES AT 96
(By Douglas Martin)

Margaret Tafoya, whose nimble, ingenious hands turned the chocolate-colored clay of her New Mexico pueblo into black-on-black and red-on-red pottery of such profound and graceful beauty that it acquired a global reputation, died on Feb. 25 at her home in Santa Clara Pueblo near Santa Fe. She was 96.

Her name in Tewa, the language of seven Southwestern pueblos, six in New Mexico and one in Arizona, was Corn blossom. She was the matriarch of Santa Clara Pueblo potters, who are more numerous and produce more pottery than those of any other pueblo.

Her work, known for exceptionally large vessels, is exhibited in public and private collections around the world. She was named folk artist of the year by the National Endowment for the Arts in 1984.

The art form she practiced has long been dominated by women, and Corn Blossom was the last of a group of women who attained fame through their mastery of it. Gone are Blue Corn and Maria Martinez of the San Ildefonso Pueblo, Christina Naranjo of Santa Clara and Grace Chapella, a Hopi.

Today Indian arts command astronomical prices and space on museum shelves in faraway cities, but fewer and fewer Pueblo Indians can speak or ever understand Tewa. Mrs. Tafoya, though, was rooted in the old ways.

She spurned inventions like the potters' wheel. She kept chickens, milked her own cows, churned her own butter and rejected natural gas heat in favor of the traditional beehive fireplace.

After a brief fling with an Apache, she married a young man from the home pueblo, a distant relative with the same last name.

According to the Web site of the National Museum of American History (www.americanhistory.si.edu), Santa Clarans use the same word for clay and for people: nung.

Mrs. Tafoya always prayed to Mother Clay before working. "You can't go to Mother Clay without the cornmeal and ask her permission to touch her," the museum Web site quotes Mrs. Tafoya as saying. "Talk to Mother Clay."

Though she was one of the last to make pots with handles and criticized others for adding semiprecious gems to pottery, she also liked to experiment.

She used different colors of slips, or thinned clays applied to the outside of her vessels, and her later forms were thinner, lighter and more graceful. Her shiny finishes became ever more polished. She even adapted Greek and Roman forms to classic Santa Clara shapes.

Mrs. Tafoya clearly loved her art, but it was also how she supported her 10 children who survived their first year; 2 others did not. As she said, "I have dressed my children with clay."

Maria Margarita Tafoya was born in her pueblo on Aug. 13, 1904. Her mother, Sara Fina Gutierrez Tafoya, or Autumn Leaf, was "undoubtedly the outstanding Tewa potter of her time," Mary Ellen and Laurence Blair wrote in "Margaret Tafoya: A Tewa Potter's Heritage and Legacy" (Schiffer, 1986).

Her father, Geronimo, or White Flower, was mainly concerned with raising food for the family, but he was also the main marketer of his wife's pottery. He would load up his burros and make sales trips of up to 500 miles.

Five of the couple's eight children became excellent potters, driven and inspired by their perfectionist mother. Margaret's rigidly traditional approach was suggested by her insistence on using corn cobs, rather than sandpaper, for polishing. ●

MESSAGE FROM THE HOUSE

At 3:07 p.m., a message from the House of Representatives, delivered by Ms. Niland, one of its reading clerks, announced that the House has passed the following bill, in which it requests the concurrence of the Senate:

H.R. 333. An act to amend title 11, United States Code, and for other purposes.

MEASURES PLACED ON THE CALENDAR

The following bill was read the first and second times by unanimous consent, and placed on the calendar.

H.R. 333. An Act to amend title 11, United States Code, and for other purposes.

EXECUTIVE AND OTHER COMMUNICATIONS

The following communications were laid before the Senate, together with accompanying papers, reports, and documents, which were referred as indicated:

EC-899. A communication from the from the Railroad Retirement Board, transmitting, pursuant to law, the report under the Government in the Sunshine Act for calendar year 2000; to the Committee on Governmental Affairs.

EC-900. A communication from the Acting Chief of the Regulations Division, Bureau of Alcohol, Tobacco and Firearms, Department of the Treasury, transmitting, pursuant to