

NASA ROSAT Imager Returns Successful First Light Pictures

by: John J. Loughlin II

The NASA High Resolution Imager (HRI) instrument aboard the German Roentgen Satellite (ROSAT) has demonstrated its successful operation by sending back to Earth impressive first light pictures, according to Goddard officials.

The Goddard Space Flight Center is responsible for detailed implementation of the ROSAT program.

ROSAT, a cooperative program be-

tween the United States, West Germany and Great Britain, was launched June 1, 1990 to study cosmic x-ray emissions. X-rays are the signature of high energy processes (greater than about one million degrees). Scientists are interested in x-ray images because they specifically highlight regions in celestial systems where high energy phenomena exist.

The joint international team responsible

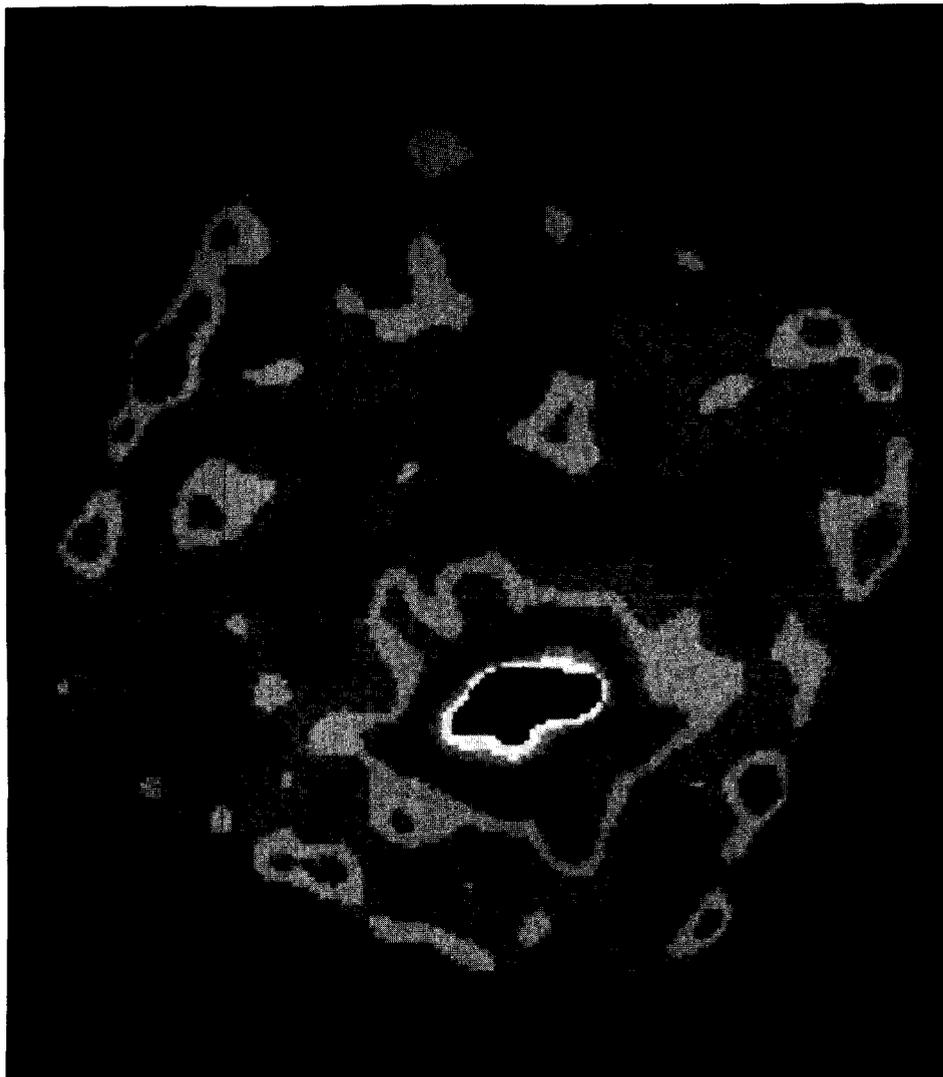
for ROSAT are excited about the images. The team reports that the spacecraft is functioning well, the scientific instruments are functioning better than expected and the image quality from the x-ray mirror is as good or better than previously indicated by ground testing. This adds up to what scientists expect will be very promising scientific results and discoveries.

The photograph of the Abell 2256 Galaxies cluster was among several photographs released to the national media. This HRI image is representative of those to be obtained during the pointing phase of the mission. The image represents x-rays in the energy range of 0.4 to 2.5 kilo electron volts.

Within NASA, the ROSAT program is managed by the Astrophysics Division of the Office of Space Science and Applications.

Goddard's ROSAT staff includes: Gilbert W. Ousley Sr., Code 404, project manager; Charles E. White, Code 404, deputy project manager; Dr. Stephen Holt, Code 600, project scientist; Dr. Robert Petre, Code 666, deputy project scientist and Dr. Robert Price, Code 900, director, ROSAT Science Data Center.

The spacecraft is currently in a circular orbit at an altitude of 358 miles, at an inclination of 53 degrees. It was launched from the Cape Canaveral Air Force Station, FL, aboard a Delta expendable launch vehicle.



IT'S A GAS, MAN—This photograph from NASA's HRI shows a cluster of galaxies known as Abell 2256. Galaxy clusters are traditionally strong x-ray emitters. The emission originates in the hot gas which is swept out of colliding galaxies and accumulates between the galaxies. These gasses are typically tens of millions degrees in temperature.

INSIDE

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COBE Enters New Phase of Operations After Helium Depletion

by Randee Exler

With the depletion of its liquid helium supply, September 21, Goddard's Cosmic Background Explorer (COBE) is beginning a new phase of operations, extending its search for structure in the early universe. "The helium depletion was an expected event in the life of the spacecraft," explained Dr. Nancy Boggess, COBE deputy project scientist.

The liquid helium was housed inside a dewar, a vacuum insulated "thermos," that provided a stable, low temperature environment for two instruments—the Far Infrared Absolute Spectrophotometer (FIRAS) and the Diffuse Infrared Background Experiment (DIRBE). The dewar contained 600 liters of liquid helium.

Built at Goddard and launched last November 18 into a polar orbit approximately 555 statute miles high, COBE was designed specifically to measure the remnant of the Big Bang, the primeval explosion that started the expanding universe. It completed one full-sky survey in mid-June and continued with a second survey before helium depletion.

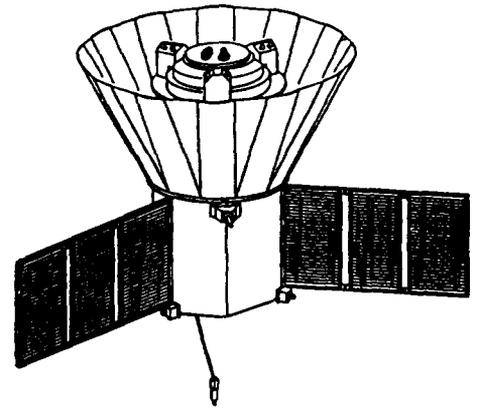
Both FIRAS and DIRBE require cooling to less than 2 degrees Kelvin (K) (two degrees above absolute zero), for full sensitivity. On the Kelvin scale, room temperature is 300 degrees K.

During the next few months, the inside of the dewar which held the cryogen, is expected to rise to approximately 80 degrees K. The near infrared bands in the DIRBE will continue to function at these higher temperatures.

Another instrument, the Differential Microwave Radiometer (DMR), consists of six separate receivers at three different frequencies located outside the dewar. The DMR does not require cryogenic cooling and will continue re-mapping the sky to further increase the sensitivity of its measurements.

Of the three instruments, only the FIRAS will no longer take data, since it requires a very low operating temperature. FIRAS, as well as the other instruments, have observed each part of the sky multiple times during the course of the year. The FIRAS already has produced the most sensitive, accurate measurements of the spectrum ever achieved, according to project officials.

Even at this early stage of data processing, the COBE data have made enormous contributions to the field of observational cosmology. The first peer-reviewed article on the spectrum results was called by referees "one of the most important cosmological experiments of this century."

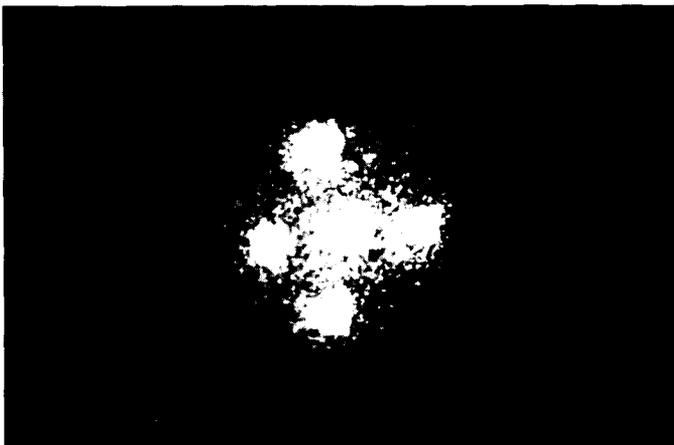


The COBE mission now has a great quantity of data that must undergo extensive processing. The challenge ahead is to reduce and analyze the data carefully to understand the conditions in the early universe. The great mystery still remains: how did the universe split itself into the great objects that exist today, including galaxies, clusters of galaxies and huge empty areas between them? The COBE data are expected to hold the basic evidence of this process when the analysis is complete.

Goddard is responsible for the COBE development, operation and data processing.

COBE Celebrates its First Anniversary November 18!

HST Breaking Ground with Spectacular Photos



HUBBLE DOES IT AGAIN—This photo shows the "Einstein Cross", or the gravitational lens G2237 + 0305, taken by NASA's Hubble Space Telescope using the European Space Agency's Faint Object Camera. The image is of one object, a very distant quasar which has been multiple-imaged by a relatively nearby galaxy acting as a gravitational lens. Gravitational lensing occurs when the light from a distant source passes through or close to a massive foreground object. Depending on the alignment of the foreground and background objects with line of sight to Earth, several images of the background appear.



BRINGING SATURN CLOSER—This image of Saturn, taken with the NASA Hubble Space Telescope's (HST) Wide Field Camera (WFC), on August 26, is resolved as clearly as Saturn would appear to the naked eye if it were only twice as far away as the Moon.

Image reconstruction techniques have yielded greater spatial detail in the planets ring system and cloud belts than can be achieved with ground based telescopes.

A special mathematical technique, developed in 1974 by Dr. L.B. Lucy (European Southern Observatory), largely corrects the effects of HST's imperfect optics. This is possible because the WFC's original pictures are of high quality with little extraneous noise.

Because Saturn's north pole is currently tilted toward Earth (24 degrees) the HST image reveals unprecedented detail in atmospheric features at the northern polar hood, a region not extensively imaged by the Voyager space probes.

Launch Update: Konus-ISTP

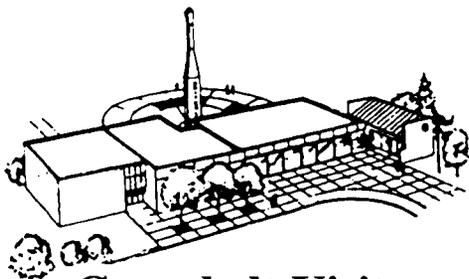
A team of Soviet scientists and engineers visited Goddard recently to receive training on the ground support equipment for Konus, a scientific instrument to be flown aboard the International Solar Terrestrial Physics project (ISTP)-Wind spacecraft.

Konus will perform gamma ray burst detection and measure time history. It is slated to be the first instrument from the USSR to fly on a NASA spacecraft. The Wind spacecraft is scheduled to be launched December 1992.

"Everything went very well," said Tom Taylor, instrument manager for Konus. "No problems developed."

While in the United States, Drs. Sergei Golenetskii, Vadim Ilinskii, Victor Panov and Dmitri Frederiks from the Ioffe Physical-Technical Institute at Leningrad also met with technicians from Engineering and Economic Research (EER), which constructed the ground support equipment to be used with the Wind spacecraft.

After the training, the ground support equipment was shipped to Leningrad for use during instrument testing. A team from GSFC was scheduled to visit the USSR at the end of October, Taylor said.



Greenbelt Visitor Center Events for October

Launch Site Goddard — Sunday, November 4, and 18, 1:00 p.m. For more than 15 years the Goddard Visitor Center has hosted the world's longest running model rocket demonstration program. Everyone is invited to bring a model rocket or watch the fun.

Saturday Videos — Saturday, November 10, 1:00 p.m. View "The X-Ray Timing Explorer (XTE)," a mission directed toward the discovery and study of the

NASA Pipeline

JET PROPULSION LABORATORY, Pasadena, CA — A joint NASA/U.S. Geological Survey team are working with a team of Soviet scientists to study volcanoes along Russia's Kamchatka Peninsula—one of the most active and least understood volcanic regions in the world. The joint study marks the first time western scientists have been allowed in the region since World War II and signals the start of a new U.S.-Soviet program to better define volcanoes in the Pacific's "Ring of Fire"—volcanoes and other tectonic features located along the edges of the Pacific Plate.

AMES RESEARCH CENTER, Mountain View, CA — The early Earth may have been much hotter when life first appeared on the planet than previously believed, Ames scientists report. During the first several hundred million years of the Earth's history, Ames scientists believe massive amounts of carbon monoxide and carbon dioxide were released into the primitive atmosphere through volcanic eruptions and the impact of meteorites and comets. This would have caused the surface temperature to soar to 190 degrees Fahrenheit. These searing temperatures may have destroyed the large organic molecules that are the building blocks of life. A number of scientists are looking at sites other than the Earth's surface for places where life could have originated, said Dr. James Kasting, leader of the NASA group.

JOHNSON SPACE CENTER, Houston, TX — Astronaut Michael J. McCulley, Captain, USN, is retiring from the Navy and leaving NASA in early October after the STS-41 Ulysses launch. McCulley has accepted the position of vice president and deputy director, KSC-Launch Site, with Lockheed Space Operations Company. In this position, he will be heavily involved in the day-to-day processing of space shuttle vehicles. McCulley was selected for the astronaut program in May 1984.

HEADQUARTERS, Washington, DC — Captain Bruce McCandless II, a NASA astronaut since April 1966 and mission specialist on two space shuttle flights, retired from NASA and the Navy on August 31. During his first space flight, STS 41-B in February 1984, McCandless made the first, untethered, free flight in the Manned Maneuvering Unit (MMU) which he developed with Charles E. "Ed" Whitsett of the Automation and Robotics Division, Johnson Space Center, Houston. McCandless' second flight, STS-31 in April 1990, deployed the Hubble Space Telescope.

New NASA Headquarters Shuttle Bus Schedule

Beginning October 15, the shuttle bus between NASA Headquarters and Goddard will make five trips a day. The extra mid-afternoon trip has been added to meet additional travel requirements. The new schedule will be:

DEPART GFSC BLDG. 8	ARRIVE NASA HQ FOB 10	DEPART NASA HQ FOB 10	ARRIVE GSFC BLDG. 8
7:45 AM	8:15 AM	8:30 AM	9:00 AM
9:45 AM	10:15 AM	10:30 AM	11:00 AM
11:45 AM	12:15 PM	12:30 PM	1:00 PM
1:45 PM	2:15 PM	2:30 PM	3:00 PM
3:45 PM	4:15 PM	4:30 PM	5:00 - 5:15 PM

For more information call Diane Wisniewski, Code 234, on x6-8240.

structure and dynamics of galactic and extragalactic compact x-ray sources through the use of an Earth-orbiting observatory.

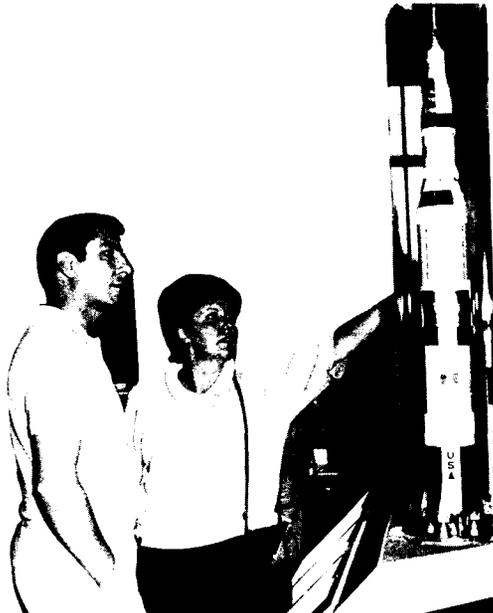
Know and Tell — Sunday, November 25, 1:00 p.m. "The Penetrating Power of X-Rays"—Did you know that some x-rays have traveled as far as 100,000 to 200,000 light years across our galaxy and that

x-rays come through the galactic dust as easily as through a piece of paper? Learn more about x-rays and join Dr. Jean Swank, project scientist for the X-Ray Timing Explorer (XTE) of Goddard's Laboratory for High Energy Astrophysics, and Dale Schelz, project manager for XTE, who will discuss the overall objectives of the XTE mission.

Goddard Opens its Doors to the Local Community

by Donna Drelick

A record crowd estimated at more than 5,000 people attended the annual "Community Day" event at Goddard on Sunday, September 9. According to Carl Poleskey, head of public services in the Office of Public Affairs, the day "was a tremendous success with an attendance turnout that was beyond our expectations. We could not have done this kind of event unless we had enthusiastic cooperation from many, many employees."



Approximately 5,000 people stopped by to experience the magic and excitement of the space program.

in addition, a Wallops weather balloon was also on display for viewing.

Throughout the day at the Visitor Center, special events were presented. Model rocket launches, NASA movies, the play, "Apollo to the Moon" and a barber-shop quartet entertained the many visitors of the Center. The Goddard Radio Club and the Model Airplane Club also participated in the event.

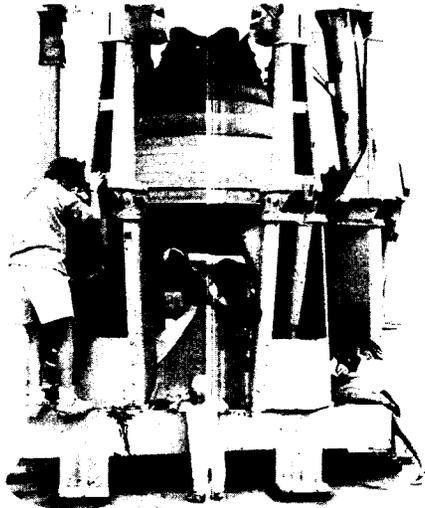


The event which was open to the public and free, featured guided tours of GSFC facilities. The tour included the NASA Machine Shop (Building 5); Spacecraft Systems Development and Integration Facility (Building 29); Flight Dynamics Facility and NASA Communication Center (Building 3/14); and the Spacecraft Test and Integration Facility (Building 7/10). In



A future astronaut tried to dock her ship without destroying it, while others waited for a chance.

Tex Baird, Code 667.1, propeller in hand, worked on a model airplane.



Children played on the base of the large Delta rocket outside the Visitor Center.



Carousel, a barbershop quartet, added some music to an already festive day. From left to right: Goddard employee Jerry Hodge, Code 253, Pat Shay, Art Anderson, and Charles Schlager.



Anxious to see the "real" Goddard, visitors waited for the tour that takes them inside the gates.

PHOTOS: D. McCALLUM/M. SMALL

Astro—Ready to Go, Thanks to Goddard's Hard Work

The launch of the Space Shuttle Columbia, carrying two Goddard-developed instruments, the Ultraviolet Imaging Telescope (UIT), and the Broad Band X-Ray Telescope (BBXRT), as well as two other ultraviolet telescopes included in the Astro 1 payload, was postponed September 17 when a hydrogen leak was discovered in the shuttle's aft main engine compartment. The next launch target is scheduled for December.

All four instruments that make up Astro were checked out at Goddard, said Dr. Ted Gull, Astro mission scientist. "Goddard has supported this project a lot more than people realize," he said.

Despite the disappointment caused by several postponements of the flight, there are examples of Goddard employees overcoming adversity.

BBXRT Repair

One example is the quick turnaround period when a BBXRT communication problem was discovered. The BBXRT telecommunications problem was first noticed late August 29. On August 30, the team came up with troubleshooting plans, said Dennis Andrucyk, deputy payload integration and test manager, Code 733. By September 2 they had installed a new avionics box and completed functional testing.

"There were four days, from broken (avionics) box to working unit," Andrucyk said. "It was an incredible feat for Goddard folks and KSC [Kennedy Space Center] folks. It was really good to see everyone pull together."

Approximately 25 people from Goddard, most of them in Code 733, worked on the turnaround, Andrucyk said. He cited Bob Kasa, Chuck Chidekel and Gerry Daelemans, all of Code 733, as key people in the effort. "They did an outstanding job," Andrucyk said. "We couldn't have asked for better."

The Astro 1 is the first shuttle mission dedicated to a single scientific discipline—astrophysics.

Target Changes

Most of the scientific program for UIT is unaffected, said Dr. Steve Maran, an UIT astronomer. The UIT scientists have lost their chance to observe three bright comets, Halley, Austin and Levy, but Maran added, there are lots of galaxies and star clusters to observe. "We have an alternative program for all our targets—

except for the comets—and each [target] is as good as the other," he said.

The BBXRT team will also lose some targets, said Dr. Peter Serlemitsos, principal investigator for BBXRT, primarily the galactic targets that will be too close to the Sun to observe. "Yes, we have lost

some targets and added some, of course, but we're never going to find ourselves in a situation where we won't have sources," he said.

"The payoff is still ahead," Serlemitsos added confidently. "It will be worthwhile no matter how many delays we've had."

CFC: Caring, Sharing, Helping

Every year around this time, a group of dedicated men and women donate their time to the Combined Federal Campaign (CFC). To those who do not know the CFC, it is a chance to make a difference in the local community, or throughout the world, according to Goddard's 1990 CFC Coordinator Dwaine Kronser, Code 201.

CFC allows federal workers to donate to specific charities in a very easy way. Employees assign donations to the charity of their choice. It's that easy. October 15 kicked-off the CFC campaign at Goddard. This year there are almost 1,300 organizations that can be designated as donation recipients.



PHOTO: D. McCALLUM

A LITTLE GOES A LONG WAY—Center Director Dr. John M. Klineberg meets Terry Morris from NASA's Langley Research Center, Langley, VA. Morris' story, of overcoming adversity with the help of caring people supported by the CFC is featured in the CFC videotape. The tape will be shown on Goddard closed-circuit television beginning October 15.

One of the stories in this year's CFC videotape, being shown on Goddard's closed-circuit television beginning October 15 and shown every Friday through November 9, follows Terry Morris, an employee at NASA's Langley Research Center, Langley, VA. Morris was at Goddard on October 3, to meet with Center

Director Dr. John M. Klineberg, and to spread his message—that the CFC really does change lives. Morris said, "Giving really does make a difference. Because someone helped me, it changed my life. I was a receiver, now I am a giver." His is a story of a life turned around by the help of others. "I'm an engineer, happiest behind a computer terminal," Morris said, then added, "I don't mind getting up to speak because people are being helped. That's what it's all about."

This year the Goddard goal is \$300,000. Last year, Goddard exceeded the expected contributions by 13 percent, with more than \$335,000 raised. Kronser asks that this year, when your contribution envelope is handed to you, take a minute and ask yourself if you can give; it really helps a lot.

Popular Misconceptions about giving to the CFC:

- 1) "Most of the money donated goes to administrative costs"—Untrue. Only *four cents* of every dollar given goes for CFC administrative costs. The rest is given to the group of your choice.
- 2) "If I designate money to a specific organization, my money might be given to a different one"—Untrue. If you designate an organization, *your money will go to that organization!* The only way your money will go to a group you haven't chosen, is if you don't specify where your money should go.
- 3) "My small donation won't make a difference"—Untrue. A bi-weekly donation of \$6.50 provides a stroke victim with transportation to therapy sessions for six months; a \$12.50 donation gives care to an abused infant for five days in a comprehensive residential setting; \$14.00 provides enough rice seed for 26 village families for one year; and \$25.00 gives shelter and counselling to a homeless person for two weeks.

INSIDE

High-Flying Test Engineer, Milam Makes Sure It's Right

By John J. Loughlin II

After surviving the pressures of a launch into orbit a spacecraft must be able to perform a variety of very complex and delicate tasks in the extreme heat and cold of space.

To be sure it can measure up in this hostile environment, the spacecraft is subjected to rigorous testing, much of it designed and performed by Laura Milam, code 754.4, an aerospace flight systems test engineer for the Space Simulations Test Engineering Section. Making absolutely sure a spacecraft and its associated instruments are fully prepared for the hazards of space is a difficult and demanding job and while Laura may be small in stature, her accomplishments are nothing short of spectacular.

A 1983 graduate of West Virginia University, accomplished airplane pilot with more than 500 flight hours, and vice president of the Goddard flying club (husband Bruce, a Goddard engineer, is the president), Laura says her proudest accomplishment is being the mother of 16 month old flying baby boy Joshua. "We take him everywhere," she says "he's been flying since he was two and one half weeks old and he's logged more time in one year than some private pilots do in ten," Milam said with pride.

The Earthwinds Project

Among Laura's responsibilities at Goddard is the testing for the Earthwinds project which she describes as, "Definitely one of the most interesting projects to come along in quite a while." Laura and her team were responsible for testing the liquid helium heat exchangers that will help keep the Earthwinds balloon aloft as it attempts to become the first balloon to circumnavigate the globe. "We installed the liquid helium dewar or vacuum container in our chamber and subjected it to high pressure and a very low temperature, approximately minus 60 degrees Fahrenheit" she said. These are just some of the extreme conditions the balloon and her crew will face at 35,000 to 40,000 feet (10.5 to 12.4 kilometers). The tank passed the test.

Laura is also responsible for the testing of the Explorer platform and points to successes such as the recent total "bake out" of electrical components, with a great deal of pride. "Baking out is a process where



PHOTO: D. McCALLUM

GETTING A BIT TESTY—Laura Milam supervises the installation of solar arrays on an explorer platform prior to their being subjected to high temperature testing in Building 5. Richard Stegeman, a solar panel engineer for EER systems, assists in the preparations.

we subject the components to extremely high temperatures and draw out contaminants using a liquid nitrogen cooled probe," she explained.

High in the Sky

On the wall of her office hang the many pictures of the twin engine Piper Comanche she and her husband own, as well as an interesting photo of her parachute-clad husband in mid free-fall.

Laura has also been known to take flight without the benefit of an airplane. "I enjoyed my parachute jump," she says, "but it's not something I would want to do every weekend."

Unlike most newlywed couples, the first major purchase the Milams made was their airplane. "The house came later," she said. The pair is certainly not afraid to use their airplane either. They completed a 30-day European trip including a treacherous trans-Atlantic crossing in July 1988.

Proud of her work and the facilities at Goddard, Laura is quick to offer her services as a tour guide. "I enjoy it," she says, "It's important to show people the work we do here, and I enjoy taking various groups around." During Goddard's recent Community Day she was a volunteer tour guide and put in more than a full day of show and tell. She had the opportunity recently to conduct a tour for Gordon Bax-

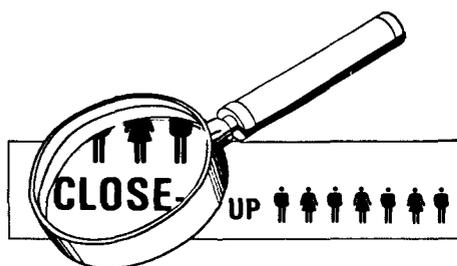
ter, editor and writer for Flying magazine. "I gave up my lunch time to take him around," she said. "It was great to have the opportunity to talk with him."

Encouraging Future Engineers

Laura's public relations activities are not limited to the confines of the Goddard Space Flight Center. As a member of the Goddard recruiting team, she has been the feature attraction at several career days and job fairs. "It's important to encourage young people, and young girls in particular, to pursue careers in engineering," she said. The soft spoken engineer is ideally suited to this role as she looks much younger than her 30 years and has accomplished much with her engineering background. These accomplishments read like a directory of Goddard projects in recent and future years.

"One of my biggest accomplishments was the testing of the instruments onboard the Cosmic Background Explorer (COBE), and I am quite proud of the many diverse projects I've had the opportunity to be a part of," she said.

Laura's newest horizon will bring her in closer contact with Earth. She's just taken up golf. Given her successes in the past, she'll probably do quite well. But for Laura Milam, that's par for the course.



Congratulations to the following employees on their recent appointments:



PHOTO: M. SMALL

WILLIAM S. GUION, Project Manager, Space Network Project Office, Code 504. Congratulations to the following people whose positions have changed with the creation of the Robotics Branch, Code 714:

GUION

JOHN D. AZZOLINI, Head of the Robotics Branch, Code 714, and Acting Head of the Robotic Applications Section, Code 714.3...

HAROLD FRISCH, Head of the Robotic Applied Research Section, Code 714.1... **MARIS JUBERTS**, Head of the Robotic Flight Systems Section, Code 714.2 and **JAMES M. RYAN**, Assistant Head of the Electromechanical Branch, Code 716. And congratulations to **PAUL D. LOWMAN, Jr.**, Code 922,

who was one of 35 recipients of the Silver Snoopy award handed out recently. Lowman is the first member of the science-side of Goddard (Codes 600 and 900) to receive a Silver Snoopy award.



PHOTO: M. SMALL

LOWMAN

Dr. Hanel Bids Farewell to Goddard

For more than 30 years, **Dr. Rudolf A. Hanel**, Code 690, senior scientist in the Laboratory for Extraterrestrial Physics, has been a mainstay of the Goddard community. Dr. Hanel retired from Goddard on September 28. To some this signifies the end of an era.

Dr. Hanel came to Goddard in 1959, after working for the U.S. Army in New Jersey. Before that, he was an assistant instructor at the Institute of Technology, Vienna, Austria. In his distinguished career at Goddard, he worked as a research scientist from 1959 to 1965, a chief scientist at the Laboratory for Atmospheric and Biological Sciences from 1965 to 1971, a senior scientist at the Laboratory for Planetary Atmospheres and Head of the Planetary Radiations Branch from 1971 to 1977, and finally as a senior scientist at the Laboratory for Extraterrestrial Physics from 1977 to 1990.



PHOTO: D. MCCALLUM

HANEL

Among his many awards, Dr. Hanel received the coveted NASA Medal for Exceptional Scientific Achievement five times, in 1969, 1972, 1979, 1981 and 1986.

Dr. Hanel also received a variety of other awards in his career at Goddard, including the Lloyd V. Berkner Award from the American Astronautical Society in 1969, the John C. Lindsay Award from GSFC in 1973 and the Gerard P. Kuiper Award from the American Astronomical Society in 1988.

Retirees

Congratulations to the following employees who recently retired!

Name	Code	Years	Name	Code	Years
Ronald E. Adkins	740.4	33	Andrew W. McCulloch	625	40
Charles E. Campbell	721	42	Roy E. Mears	293	31
Harry Chernikoff	311	30	Albert M. Moore	253.2	31
Melvin L. Donahoo	703	27	John Napora	254	24
John S. Fedor	915.1	32	Philip A. Newman, Jr.	712.2	39
Walter B. Fowler	683.1	39	Robert W. Owen	511	23
Arthur J. Goble	823.1	29	William M. Rice	532.1	25
Jack J. Gottlieb	743	32	David Suddeth	402	35
Charles R. Green	667.2	23	Glenn A. Thiel	292	30
Rudolf A. Hanel	690	31	Julian A. White	833.1	45
Allen Hosmer	683.1	23	John M. Williams	735.1	30
Henry Iuliano	534.1	34	Richard M. Windsor	300	34
William D. Kenney	407	41			

Donohue has the Right Attitude—Control That is

by Susie Marucci



DONOHUE

Imagine building a satellite that studies the Sun. The first thing that satellite has to do is look at the Sun; if it doesn't, it can't accomplish its mission. That's what attitude control is all about, keeping a spacecraft looking where it is supposed to look. **James H. Donohue**, Code 712.3, head of the Design Analysis Section, Guidance and Control

Branch, has been keeping all kinds of spacecraft looking in the right direction for 24 years, through his work at Goddard.

On September 10, Donohue was awarded the 1990 Moe I. Schneebaum Memorial Award for his significant contributions to the mission of Goddard in the area of spacecraft attitude control. Like its scientific counterpart the Lindsay award, the Schneebaum also recognizes outstanding contributions to Goddard, but in the field of engineering.

Donohue's award was not for one event, but for a career of important work. Some of his favorite projects include the Earth Radiation Budget Satellite (ERBS), the So-

lar Maximum Mission (SMM), the Orbiting Geophysical Observatory (OGO) and the recently successful Cosmic Background Explorer (COBE), Donohue said. He is currently working on NASA's Hubble Space Telescope. He is also working with young engineers in his section in the development of the attitude control system for one of the new Small Explorer (SMEX) spacecraft.

Donohue's section works both with in-house design of attitude control systems and with off-site contractors, verifying that they have designs that will provide for

(Continued on page 8)

Dr. Klineberg Opens Up a Dialogue

by Susie Marucci

“The purpose of this forum is really to start some kind of dialogue. I just wanted to say hello,” Center Director Dr. John M. Klineberg said. On September 6, Dr. John M. Klineberg held a Center Director’s Forum. The event, which was standing room only and carried over closed-circuit television, gathered people from all over the Center to hear what the new center director had to say.

Dr. Klineberg spoke for about 20 minutes on a number of topics, including his background, current Center projects, and the future of Goddard. He was very enthusiastic about coming here. He said, “I want you to know how proud and pleased I am of this assignment. It’s a very challenging one, a very exciting one.” He added, “This is a tremendous Center. I know that together we’re going to face many challenges and that means many opportunities to excel. I’m looking forward to us working together.”

After his remarks, he opened the floor for questions, and got them. The next 40 minutes were spent answering questions, ranging from the 1991 budget to the parking situation to retirement and union concerns to his management style. He said he was very good at delegating, and a few minutes later lived up to his word, when he asked for help in answering questions from the Executive Council.



NOT MEET THE PRESS, MEET THE PEOPLE—Center Director Dr. John M. Klineberg hosted a Center Director’s Forum on September 6, to open the lines of communication between his office and everyone on Center. “I just wanted to say hello,” the new center director said.

Dr. Klineberg also wants to have a continuing dialogue with the people at Goddard. He said, “I’d like us to talk, not just you and me, but with the entire senior staff on a regular basis. So we can hear what the issues are that concern you.”

Donohue

(Continued from page 7)

“stability, versatility, and good performance,” according to Donohue. “My section looks at what they’ve done. We determine if they’ve met our requirements. If these requirements are not satisfied, we recommend the appropriate design modifications.” If Donohue and his team didn’t review the designs, a spacecraft could potentially be lost.

Donohue had no idea he might win the Schneebaum award. “It came as a complete surprise,” he said. He was also quick to spread the glory to others in his section. “What I do here is a team effort. I’ve got some very good senior engineers working for me. My goal is to pass onto the younger engineers what we’ve learned over the years in terms of design analysis of attitude control systems.”

Space Travel Trivia

by John J. Loughlin II

Naming NASA spacecraft has been a time honored tradition since Freedom 7 carried Alan B. Shepard, Jr. on the first American suborbital flight on May 5, 1961. During the Apollo missions, there were two names for each mission, one for the Command Module and one for the Lunar Excursion Module (LEM).

1. How many of the Apollo missions have namesakes as STS orbiters?
2. Name them.

(Hint, one of the orbiters is still in production and has yet to be delivered.)

Trivia Answers
 1. Three
 2. Apollo 11 Command Module, Columbia, Apollo 15 Command Module, Endeavor and Apollo 17 Lunar Module, Challenger.

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OOPS!

While we at the Goddard News try to put everything in the paper without error, occasionally we make a mistake. In the September issue, under the Bloodmobile column, we inadvertently reversed Kaichi Maeda’s name (Code 696).