SSBUV is now a Primary Payload on STS-45!

NASA
National Aeronautics and Space Administration
Goddard Space Flight Center

Goddard News

Greenbelt, Maryland and Wallops Island, Virginia Vol. 38 No. 12 December 1991

The President of Argentina Visits GSFC

by Katie Brannigan

For the first time this decade, the president of another country came to Goddard. President Carlos Saul Menem of Argentina visited Goddard November 15 because Argentina's space program and NASA are involved in a joint project which is co-managed by GSFC.

Helicopters, the Secret Service, even a dog trained to find explosives were part of the excitement when President Menem arrived at Goddard. He was accompanied by D. Allan Bromley, Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy. Earlier this year, Argentina signed a cooperation in space agreement with the United States for a joint U.S./Argentine project. President Menem took the opportunity while he was in the Washington area to tour Goddard and received an introduction to the facilities of his country's new partner in space research.

Goddard and the Comision Nacional de Actividades Especial (CONAE), Argentina's civilian space agency, are working together on a satellite, the first for the Argentines. The joint U.S./Argentine Scientific Application Project (SAC) -B is due to launch from Wallops Flight Facility on an American Pegasus rocket in 1994. SAC-B will explore solar x-ray.

In the afternoon of November 15, Center Director Dr. John Klineberg, John E. O'Brien, Assistant Deputy Administrator, NASA Headquarters and members of the United States Marine Corps awaited the arrival of two presidential helicopters on the lawn in front of Building 3. Upon exiting the helicopter, President Menem was officially welcomed by Dr. Klineberg.

President Menem's tour began with a visit to Buildings 7/10 to see the mock-up of the Solar, Anomalous and Magnetospheric Particle Explorer (SAMPEX) due to launch in 1992. SAMPEX will collect data from unique parts of the Earth's magnetic field in order to study solar particles, anomalous cosmic rays, galactic cosmic rays and magnetic electrons.

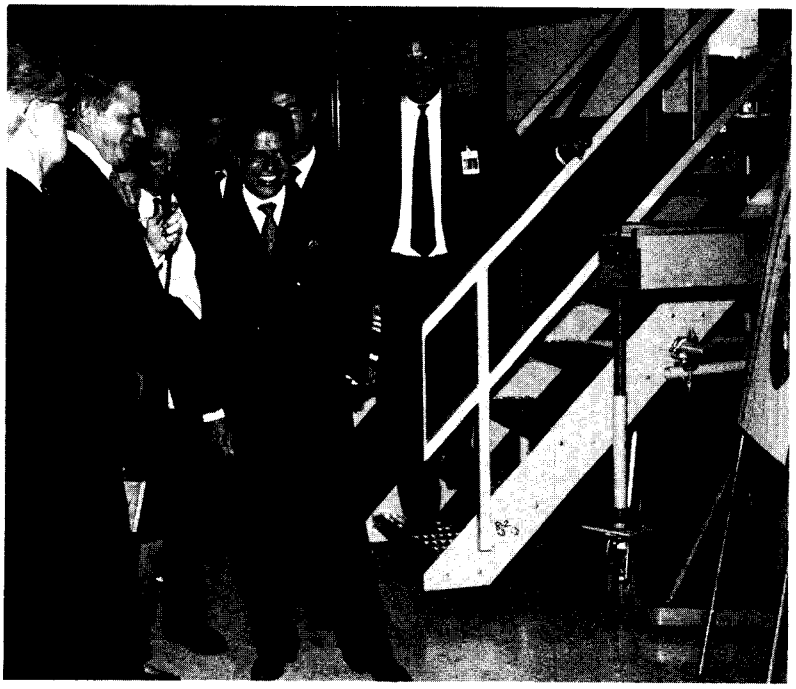


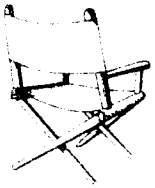
Photo: P. Izzo

Tom Huber, director of Engineering, left with microphone in hand, talks about EUVE to President Menem, center as Center Director Dr. John Klineberg, right, looks on.

President Menem also heard about SAC-B from Dr. Steve Holt, Director of Space Sciences, in Buildings 7/10 and went on from there to view the Extreme Ultraviolet Explorer (EUVE), which is in its final testing stage. The Argentine President viewed a full-scale model of the explorer and its positioning in the payload bay of the shuttle mock-up. The final stop on the tour was to the Building 29 clean room, the Spacecraft Systems Development and Integration Facility (SSDIF), the largest laminar-flow clean room in the free world, where activities for the Hubble Space Telescope servicing mission are taking place.

In a brief address to his Goddard hosts, the President showed satisfaction with what he had viewed. President Menem responded to the tour with confidence that the U.S. and Argentina are working toward a worthy cause in space research. He said the Earth sciences research that Goddard and CONAE are cooperating on will "answer questions [that have been asked] by humankind for years, and for that it's hard not to be committed to the cause."

INSIDE
Regina Cody: Other Worldy Chemist
Page 6



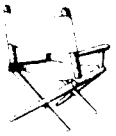
Director's Dialogue

Q. I want to know what is currently being done with COBE [the Cosmic Background Explorer] here at GSFC and who to contact regarding operations and development. What is the most current information received?

A. The COBE satellite continues to operate well, more than one year after its helium dewar was depleted. The dewar was required to keep the FIRAS (Far Infra-Red Absolute Spectrophotometer) and DIRBE (Diffuse Infra-Red Background Experiment) at 1.5 degrees Kelvin, while the DMR (Differential Microwave Radiometer) operates outside the dewar. Without helium, part of the DIRBE continues to obtain data on the near infra-red sky, while the new DMR data increases the accuracy of measurements of the isotropy of the microwave background radiation. The early results from FIRAS and DMR were successful in confirming the Big Bang with extraordinary precision by showing that the residual radiation has a nearly perfect blackbody spectrum and almost perfectly equal brightness in all directions.

The COBE project is now managed by Code 602, with satellite operations handled by Code 500. The lack of on-site space for the CDAC (Cosmology Data Analysis Center) has necessitated the creation of this facility off-site in Greenbelt in March of this year, where the data are being processed and analyzed. The first public release of COBE data products from all three instruments is planned for June 1993.

If you wish to receive COBE preprints and are not already on the distribution list, please contact Sue Adams at x6-4257. For more information on COBE please contact Dr. John Mather, the project scientist at x6-8720. [See story about Mather on page 4.]



Dr. Steve Holt, Director
Space Sciences Directorate
Code 600

Q. After the recent relocation of the GSFC "fitness lab" to Building 97, I was disappointed to find the facility seems even smaller than the one in Building 5. Certainly, the locker rooms are smaller and inadequate to support the number of people using the facility. It is significant to note that facilities at other centers, such as JSC [Johnson Space Center, TX] and KSC [Kennedy Space Center, FL], include a full-size gymnasium, and tennis and racquetball courts. In general, why doesn't GSFC invest more in high-quality fitness facilities and equipment?

A. We seriously tried not to oversell the move from Building 5 to Building 97. Because of project funding limitations there could be no expansion of the facility. The project was intended to move the Health Unit out of Building 5. In the process we hoped to improve the quality of the facility and to provide the opportunity for future expansion that did not exist in Building 5.

At KSC the fitness facility is justified partially by the Manned Space Flight Mission. The fitness facility at JSC is significantly subsidized by their local Employee Welfare organization. This is possible due to the large exchange and the heavy tourist trade. The good news is there is a project plan that has just been funded, to expand Goddard's fitness facility.

Sherry Foster, Director
Management Operations Directorate
Code 200

Let's Hear From You!!
To have your questions answered mail them in to:
Director's Dialogue / Code 130 or GSFCmail to: SMARUCCI

Goddard's Visitor Center Brings Space Down to Earth

"Wow, what a neat place!" "This is much better than Washington. It's not as crowded." "Does that rocket out there really work?" "This is great! We should have come here a long time ago!"

These are just some of the comments heard at Goddard's Visitor Center. Located on Soil Conservation Road in Greenbelt, MD, the Visitor Center is the public window to the world of NASA at Goddard. Opened in 1976, the Visitor Center has seen almost 1 million people walk through its doors.

What is so special about the Visitor Center? It's fun! Besides giving an inside look at Goddard through tours and special programs, the Visitor Center provides a hands-on learning experience for everyone. One can't help being caught up in the fun of designing a spacecraft and choosing the correct launch vehicle. The Manned Maneuvering Unit mock-up can open the imagination -- and either an executive or a sixth-grader is suddenly an astronaut on an important space mission. Sitting in the Gemini training spacecraft with the launch sequence count down feels like a real lift-off. Visitors can often be seen looking out the window to make sure they are still on Earth.

Photo: D. McCallum

Building a spacecraft takes lots of thought and concentration as one young visitor found out recently.

Working under the concept that visitor centers incorporating technology can be wonderful learning centers, all of the exhib-

(Continued on page 8)

Launch Update: SSBUV

When the Shuttle Solar Backscatter Ultraviolet (SSBUV) instrument heads for space on its fourth trip aboard a space shuttle on STS-45, scheduled for launch in March 1992, SSBUV will play a more important role than it has in the past. SSBUV has not changed, but it has been moved from secondary payload to primary payload status.

According to Don Williams, Code 916, experiment manager, SSBUV has been moved to a primary payload because it is in line with the primary science mission on that flight, the Atmospheric Laboratory for Applications and Science (ATLAS)-1. While ATLAS-1 is not a Goddard project, like SSBUV its goal is Earth science.

SSBUV will continue its regular requirement of calibrating similar ozone measuring space-based instruments on the National Oceanic and Atmospheric Administrations's TIROS satellites (NOAA-9 and -11) and Goddard's NIMBUS-7. SSBUV also will have a new requirement on this trip, doing correlative work with the Upper Atmosphere Research Satellite (UARS).

Photo: J. Semeraro

Satoshi Tateno, Executive Director of the National Space Development Agency of Japan (NASDA), right, visited Goddard on November 21. While he was here, Tateno presented a pictorial history of NASDA to Goddard. Admiring the gift, from left are Fumio Yamagata, Senior Engineer NASDA's Satellite Program Department; Dr. Gerald Soffen, Code 160, Director, Office of University Programs; Masanori Nagatomo, Director, NASDA's Washington Office; and Tateno.

What's Up ?

December 6, 1991

UARS -- *Days in Orbit :* 83
Target: The observatory is now flying backwards. The forward-to-backward yaw maneuver keeps the solar array on the Sun side of the spacecraft, the instruments in the correct orientation angle with respect to the Sun.
Interesting Fact: Early results have confirmed the link between chlorine and ozone depletion in the upper atmosphere.

Compton -- *Days in Orbit :* 243
Recently Observed Targets: The active galaxy NGC 1275 and the binary star SCO X-1. Goddard mission controllers successfully refilled the spark chamber of the Goddard Energetic Gamma Ray Experiment Telescope (EGRET) with neon gas. EGRET continues to operate smoothly.
Interesting Fact: As of December 6, Compton has observed 184 cosmic gamma ray bursts.

HST -- *Days in Orbit:* 592
Interesting Fact: During November, Science Operations scheduled 18 General Observer programs in addition to instrument science team observations, instrument calibrations, sky surveys and engineering tests.

Visitor Center Events for January

Start the new year off right with a trip to the Visitor Center! The Visitor Center is open to the public, Wednesday through Sunday, from 10:00 a.m. to 4:00 p.m. and will be closed for Christmas and New Year's Day. For more information, call x6-8981.

Launch Site Goddard -- January 5 and 19, 1:00 p.m. -- Model rockets have been around for a long time. Thousands of people each year, young and old alike, discover model rockets for the first time. Why do they come out and keep coming back? Because it's fun! If you have a rocket, bring it out. If you don't, come out to watch. All launches are supervised for safety and take place weather permitting.

Star Watch -- Saturday, January 11, 7:00 p.m. to 9:00 p.m. -- Now is your chance to glimpse the beauty of the evening sky at night. Join us the second Saturday evening of the month for a tour of your backyard sky. Star Watch is held on the grounds of the Visitor Center and will be canceled in case of inclement weather.

Know and Tell -- Sunday, January 26, 1:00 p.m. -- "NASCOM -- How Goddard Communicates with the World" -- The NASA Communications Division (NASCOM) is Goddard's link with the world. For each spacecraft mission, NASCOM provides the real-time communications channels to the global tracking network, as well as voice links before and after every shuttle mission. Join Charles Duignan, Code 542.2, of NASCOM, as he talks about missions and provides a look at the operations of this division.

COBE Team Wins Air & Space Award

by Susie Marucci

Some dreams cannot be stopped. The Cosmic Background Explorer (COBE) is one such dream. It began in 1974 when a young postdoctoral fellow named John Mather got together with six fellow scientists who all wanted a better understanding of cosmic background radiation and the beginning of the universe. Seventeen years later, COBE is a reality. For two years COBE has been circling the Earth, changing the world view of the origin of the universe and bringing unprecedented images of our galaxy. COBE and the COBE team have also garnered many honors. The most recent of which came on November 15, when COBE Project Scientist Dr. John Mather, Code 685, and the COBE team were presented with the National Air and Space Museum (NASM) Trophy for current achievement.

"The COBE was a tremendous group effort. We faced so many potential problems and overcame them all before launch," Mather said. One such problem was having to redesign the spacecraft for launch from a Delta rocket instead of from the space shuttle after the Challenger accident.

Photo: National Air and Space Museum

Cosmic Background Explorer (COBE) Project Scientist Dr. John Mather, Code 685, receives the National Air and Space Museum Trophy for current achievement

According to NASM, Mather and the COBE team were honored for "achieving dramatic and definitive measurements of the spatial and spectral distribution of the background radiation produced by the Big Bang."

In his acceptance speech before more than 300 people at the National Air and Space Museum, Washington, DC, Mather stressed how it was teamwork that made COBE the success it is. Mather also said that the science team has expanded over the years from six to 19.

The NASM award is one of two awards presented yearly by the museum. The panel of judges this year included former astronaut John Glenn, former NASA Administrator Thomas O. Paine and former Jet Propulsion Laboratory Director Lew Allen.

COBE was launched by a Delta rocket November 18, 1989, into a polar orbit. Last March, the Cosmology Data Analysis Center, a facility designed for the production of COBE data, opened in Greenbelt. COBE data analysis is expected to continue for years, according to Mather, and data will be publicly available to guest investigators in 1993.

UARS Data Illustrates Link Between Chlorine and Ozone Depletion

by Jessie Katz

Early results from the Goddard-managed Upper Atmosphere Research Satellite (UARS) have confirmed the link between the presence of chlorine monoxide and the depletion of ozone in Earth's upper atmosphere.

Data from the satellite have provided the first global-scale picture of the distribution of chlorine monoxide in the lower stratosphere.

The UARS, launched by Space Shuttle Discovery on September 12, 1991, is studying the upper atmosphere to better understand the processes at work in this vital region of the Earth's environment. According to Dr. Carl A. "Skip" Reber, UARS Project Scientist, these early results indicate "UARS is a powerful new tool for detecting and tracking ozone depletion and the factors that cause it."

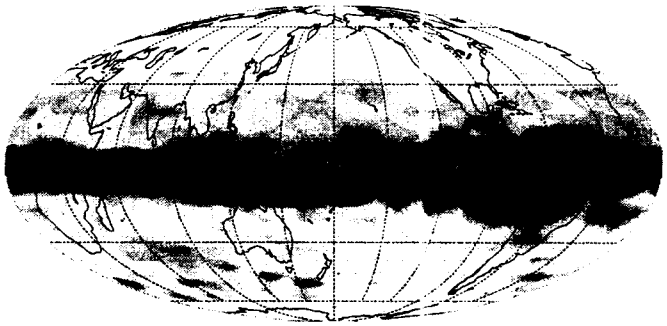
UARS has helped show that the more chlorine monoxide present, the less ozone will be observed. Chlorine monoxide, in the upper atmosphere, results from the breakdown of man-made chloroflourocarbons by the Sun's ultraviolet radiation. UARS has observed high chlorine monoxide over Antarctica, while simultaneously measuring the ozone depletion that accompanies it. These data confirm the relationship in the upper atmosphere between the two chemicals.

These first results from the UARS were obtained with the Microwave Limb Sounder (MLS), one of the 10 scientific instruments aboard the satellite. MLS detects microwave radiation emitted from chlorine monoxide, ozone, sulfur dioxide and water vapor in the atmosphere. That radiation is then analyzed to produce chemical concentration and temperature data at altitudes throughout the upper atmosphere.

The MLS also is seeing the effects of the large eruption of Mount Pinatubo in the Philippines on June 15, 1991. The volcano injected huge amounts of sulfur dioxide into the stratosphere, the remnants of which appear to the MLS as a band of high sulfur dioxide concentrations over the tropics.

MT. PINATUBO

Sulfur dioxide near 25 kilometers (15 miles) altitude from the eruption of Mt. Pinatubo as observed by the Goddard-managed Upper Atmosphere Research Satellite (UARS) on September 21, 1991. The volcanic plume appears as a belt of high concentration (dark areas) in the tropics.



[illegible] the Ground to study the Earth

U.S. Senator Barbara Mikulski and NASA Associate Administrator Lennard Fisk came to Goddard November 25 for a groundbreaking that was more than putting shovels into dirt. This occasion was a piece of history in the making. By breaking the ground to start the new Earth Observing System Data Information System (EOSDIS) building, Mikulski, Fisk and Center Director Dr. John Klineberg were changing the earth at Goddard to study the Earth.

During the keynote address, Mikulski commented, "The whole idea of a Mission to Planet Earth has captured the imagination of the American people. It has energized people in a variety of ways. That is why I'm so pleased that Mission to Planet Earth's base camp will be right here at Goddard."

Mikulski continued, "That is why we're so pleased that this groundbreaking today will deal with this very, very important system." She added, "My mission, my dream has always been, that Goddard will be the home to the Mission to Planet Earth. The data and information facility for which we are breaking ground today marks the beginning of the largest Earth science project in the history of the world."

The Earth Observing System is a key element in NASA's Mission to Planet Earth, which is the cornerstone contribution by the U.S. to the International Global Change Research program.

The goal of the Earth Observing System is to advance the understanding of the entire Earth on a global scale to determine which events can be predicted and to comprehend the consequences of human activities. One of the major objectives of EOS is the development of a comprehensive data and information system, the EOSDIS.

EOSDIS will allow scientists to access data about the Earth system quickly and easily. EOSDIS will command and control the EOS platform and instruments and process, archive and distribute the data from them.

EOSDIS will gather scientific data from a number of other orbiting spacecraft, including the Upper Atmosphere Research Satellite, the Tropical Rainfall Measuring Mission, the Sea-Viewing Wide-Field Sensor and others.

The three-story building will have 190,000 net square feet of office and data processing/archiving space to house state-of-the-art equipment. It will be staffed by as many as 550 prime shift personnel. Construction of the building will begin in April 1992 on the undeveloped 105-acre site on the east campus. The EOSDIS should be completed in March 1994.

Photo: R. Frisch

Opening a new era in data acquisition and processing, the Earth Observing System Data Information System (EOSDIS) ground was broken on November 25 by, from left, U.S. Senator Barbara Mikulski, NASA Associate Administrator Lennard Fisk, and Center Director Dr. John Klineberg.

[illegible] Wins Popular Science "Best of What's New" Award

What does the 17-ton orbiting Compton Gamma Ray Observatory (Compton) have in common with a thinking camera that anticipates composition, focus and image-size; the first pocket size personal computer with a built-in spread sheet; and a proposed wing-shaped commercial airliner designed to travel at Mach 1.5?

In addition to being among the most exciting technological developments of 1991, they are all among the 100 winners of the Popular Science "100 Best of What's New" award.

Each year, for the last four years, Popular Science Magazine has chosen the 100 most compelling scientific and technical advancements and recognizes them in a special edition of Popular Science Magazine.

According to Arthur Fisher, Popular Science Magazine Science and Technology Editor, Compton was chosen for the award because it represents "one of the single greatest advances in space physics."

"In addition to being one of NASA's four great observatories," he said, "Compton will help shed some light on the entire evolution of the cosmos."

This is the second time a Goddard project has won this award. The first was the Cosmic Background Explorer, which won the 1990 award.

The Compton Observatory is the second of NASA's "Great Observatories." The first was the Hubble Space Telescope, launched in April 1990. The others are the Advanced X-ray Astrophysics Facility (AXAF), expected to launch in 1997, and the Space Infrared Telescope Facility (SIRTF), scheduled for launch in 1999.

The Compton Observatory was deployed from the Space Shuttle Atlantis on April 7, 1991 and currently orbits Earth at an altitude of 270.4 x 263 statute miles (435.2 x 423.5 kilometers). The Compton Observatory was developed and is managed and operated by Goddard.

INSIDE

Regina Cody: Other Worldly Chemist

by John J. Loughlin, II

To get to the office of Regina Cody, Code 691, an astrophysicist in the Space Sciences Directorate, one must traverse the length of Building 2's long northern hallway. Along the way, there are tanks of super-cold cryogens, racks of electronic test equipment and white-coated scientists scurrying from room to room carrying electronic meters and computer printouts. The ambience suggest a sense of scientific urgency and hustle bustle. It seems unlikely that this seemingly chaotic framework would be the setting to find, hard at work, the diminutive and soft spoken Regina Cody. Yet, it is here that Cody calls home, at least during her work day.

"What I do," she explains, "is to recreate, in a laboratory setting, the chemical processes that take place in the atmospheres of planets and comets."

This is no small task. The extremes of other worldly temperatures and pressures will not allow some chemical compounds to exist Earth. Scientists must recreate these temperatures and pressures in the extremely complex and sophisticated Goddard laboratories.

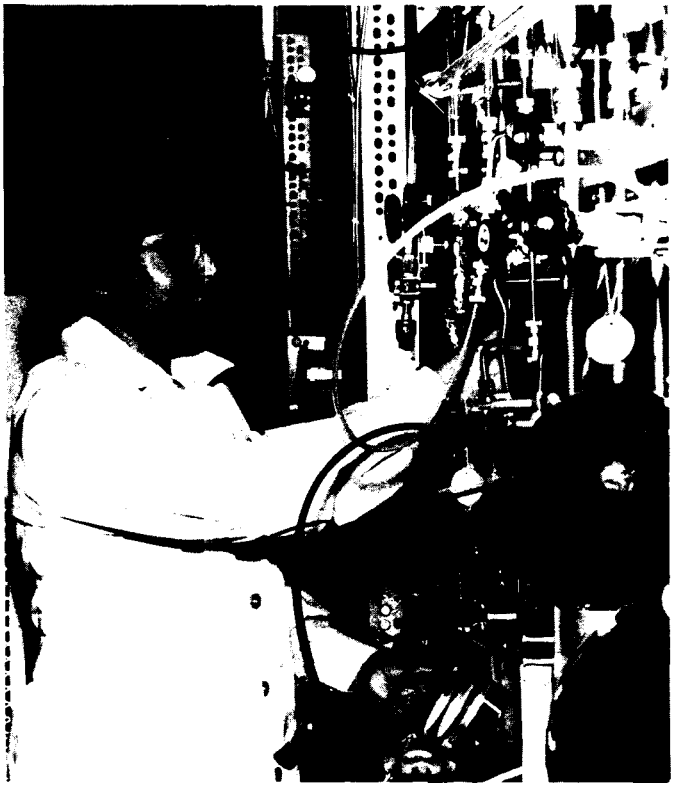


Photo: J. Semeraro

Regina Cody, Code 691, an astrophysicist in the Space Sciences Directorate, looks into the mysterious processes taking place on other worlds in a Building 2 laboratory. Her efforts to make labs safer places to work led to her receiving the Safety Award of Merit.

EXCITING WORK

"I'm very excited about what we are working on now," she says, "we are looking at forming hydrogen cyanide polymers in the lab and extracting data on how they react to different forms of energy." Cody goes on to explain, by miming the forming and breaking of complex molecules with her hand gestures, that these unusual polymers or chain molecules, may have been observed by the European spacecraft Giotto in March 1986 during its encounter with the comet Halley.

"The data we find will help confirm the existence of these ring polymers in the atmosphere of Halley," she said.

The reason for the excitement is that some scientists speculate that it was ancient comets colliding with the Earth that brought about the start of life itself.

"When hydrogen cyanide polymers combine with water they form peptide, the building blocks of the life-giving DNA molecule," she concluded.

In addition to her ability to unravel the mysterious atmospheres of comets and other planets, Cody has the unique ability to turn to more Earthly problems with the same intensity. In the wake of a chemical mishap May 24, 1991, (see Goddard News June 1991) in the Building 2 annex, Cody worked as the Chemical Safety Officer, and served on the Accident Investigation Board, conducting repeated and detailed inspections of all hazardous material handling procedures.

"Although these safety activities have delayed the progress of her own research projects, Dr. Cody has unselfishly worked for the good of her colleagues," said Dr. Joseph Nuth, Code 691, in his nomination of Cody for Goddard's highest safety award, The Safety Award of Merit.

Apparently, Goddard's Health, Safety and Security Office agrees. At press time, Cody was to receive her award at the Goddard FY 91 Safety Award Ceremony December 12.

A graduate of West Liberty State College, West Liberty, WV, and the University of Pittsburgh, PA, Cody first came to this area as a research fellow at the Naval Research Laboratory, Washington, DC, in the early 1970's. "I think it was during that stay that I really fell in love with the Washington area," she said. She and her husband now make their home in Laurel, MD.

EXTRA JOBS

When Cody is not at Goddard being addressed as "Chemist," you might hear her called, "Madam President" and "Toastmaster Cody." Cody is the new president-elect of the Chemical Society of Washington (CSW) which is a local chapter of the American Chemical Society. She also is involved with the Goddard Toastmasters, an on-site public speaking training program. "People sometimes ask me, 'why give yourself an extra job?'" she says, speaking of her job with the CSW, "but its a great way for me to grow as a professional chemist and besides, I enjoy working in organizations."

Based upon her work, it is very fortunate indeed that one of the organizations she enjoys working in is the National Aeronautics and Space Administration.

CLOSE-UP

Congratulations to the following employees for their recent appointments: **CHARLES RADSPINNER**, Associate Chief of the Institutional Support Office, Code 201...**THOMAS RUSSELL**, Explorer and Attached Payloads Procurement Manager, Code 284.5...**SUSAN**

RADSPINNER

HARDMAN

Photos: M. Small

SPARACINO, Engineering Procurement Manager, Code 287...**GARY DORMAN**, Center Network Environment Project Manager, Code 520...**RACHEL JANE HARDMAN**, Head of the Space Sciences Business Management Branch, Code 603.2.

Two from Goddard Win NASA's New Procurement Awards

Goddard was honored recently when two employees from Code 200 received NASA Procurement Awards for FY 91. These new awards for the best procurement personnel were awarded for the first time at the Procurement Officers' Conference in San Francisco. The awards were open to procurement personnel throughout NASA.

Pam A. McInerney, Code 284.4, and Kent Cockerham, Code 261, were Goddard's winners. McInereny received NASA's Contract Specialist of the Year for FY 91. She received this award for her effort to restructure and negotiate the Earth Observing System (EOS) Observatory/Space Station Freedom Work Package 3 Contracts. The negotiations resulted in an agreement on costs and fees between General Electric, the prime contractor and Goddard. McInerney worked for more than two years on these contracts. She also led the GSFC negotiation team.

Cockerham recieved NASA's Procurement Analyst of the Year Award. The award was given for his support to the NASA Office of Procurement in the development of the Document Generation System (DGS). The DGS is an automated method of preparing solicitations and contracts and is being implemented NASA-wide.

IN MEMORIAM

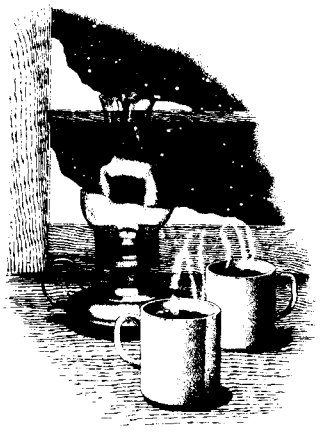
William "Bill" McAllister 1930-1991

Bill McAllister, Code 743.1, an electronics technician in the Payload Design Section, died November 30, of a heart attack. McAllister came to Goddard in 1969. He originally worked in the Sounding Rocket Instrumental Section in the old Technology Directorate. He began working in the Payload Design Section in 1971 and remained with that section until his death. At the time of his death he was working as Electrical Systems Manager for the Super Fluid Helium on Orbit Transfer Demonstration (SHOOT). According to Mark Steiner, Code 743.1, head of the Payload Design Section, McAllister was "very well respected. Everyone liked him in Code 743 and went to him for technical help." McAllister was an avid amateur radio operator and woodworker. He was active in the Goddard Gun Club.

Retirees

Congratulations to the following employees who recently retired!

Name	Code	Years
Kenneth A. Davis	442	31
Frederick Gordon Jr.	602	41
Kaichi Maeda	696	28
John P. Purcell	271	30
Toyo S. Dakamoto	272	32
Frances Shepherd	562	25
Dott W. Wells	751	39



Goddard Co-Sponsors Conference on "Building a Total Quality Community"

by Jessie Katz

More than 400 Marylanders gathered November 7 to learn how successful management models are transforming education and industry and the impact these models will have on the community.

The unique conference attracted leaders of government, education, civic and private sector groups to explore "Building a Total Quality Community," at the Turf Valley Country Club, Ellicott City, MD.

The meeting was co-sponsored by Goddard, its contractors and the Maryland Center for Quality and Productivity. The conference was conducted concurrently with the Eighth Annual NASA/Contractors Conference and National Symposium in Houston, TX.

Center Director Dr. John M. Klineberg chaired the "Focus on Total Quality in Education" session which examined two models for applying successful total quality techniques to the educational system. The session was broadcast live over NASA Select TV for interactive participation with audiences in Houston, TX, and Denver, CO.

Klineberg also gave the welcoming speech at the opening session and introduced keynote speaker Mark Wasserman, Secretary of the Maryland Department of Economic and Employment Development.

The conference also focused on such critical issues as "Community Partnerships--Improving Local Quality of Life" and "High Technology Applications for Community Improvement."

CENTER SIDE Lines

ANOTHER VISIT FROM NASDA -- Less than two weeks after the visit to Goddard of Satoshi Tateno, Executive Director of NASDA, the National Space Development Agency of Japan, [see page 3] other member's of NASDA, and NASDA contractors, came to Goddard. The sixteen visitors were at Goddard for technical interface meetings about the Tropical Rainfall Measuring Mission's (TRMM) radar and launch vehicle. NASDA is responsible for the Precipitation Radar, one of the five instruments on TRMM and for the launch vehicle, a Japanese H-II rocket. TRMM is part of the Mission to Planet Earth. TRMM's mission is to measure variations in precipitation and evaporation in the tropics. TRMM will launch in the mid-1990s.

Goddard's Visitor Center Brings Space Down to Earth

(Continued from page 2)

its in the Visitor Center present information about some aspect of the Goddard Space Flight Center that the public may not know. For instance, Goddard was involved in the Gemini program at the very beginning; the Explorer program, responsible for the design and launch of all the Explorer satellites, is based at Goddard; and the most important cosmological result of the past two decades was made by a Goddard spacecraft, the Cosmic Background Explorer. And how many people outside the scientific community know that Robert Goddard, for whom the Center was named, created the first liquid and solid fuel rockets?

Not only the exhibits, but the programs at the Visitor Center also reflect what happens inside the Goddard Space Flight Center. Every day except Monday and Tuesday, there are tours offered for all visitors. These tours allow the public to get a first-hand, inside look at how Goddard scientists work. Tour groups can see the Hubble Space Telescope Operations Control Center, Flight Dynamics Facility and the Payload Testing and Integration Facility. At any given time, there may be a spacecraft being tested at the payload facility or a shuttle mission that requires the support of Flight Dynamics. Once visitors have seen Goddard this way, they begin to understand the diversity of NASA. Those who have been on a tour of the Goddard Space Flight Center learn that NASA is much more than the manned space program!

Back at the Visitor Center, the programs include monthly lectures about Goddard scientists and their work, model rocket launches and Star Watches. In recent months, there have been presentations about Goddard's work with the environment and about Goddard astronaut Ron Parise's journey into space. The model rocket launches, held twice a month, allow the kid in anyone to come through. At the evening Star Watches, visitors get to see stars in a way they might never have imagined before. But through a telescope, stars can look very different.

The Visitor Center staff members also run the Teacher Resource Laboratory (TRL) on the second floor. The TRL offers teachers the opportunity to copy public domain material for use in the classroom. Video tapes, audio tapes, slides, and printed material are there for the taking (or copying, as the case may be). So children can experience the space program in two ways, through the exhibits and in their classrooms through the material in the TRL.

Visitors from other states and countries, as well as from Greenbelt have come to the Visitor Center. Goddard's role in the space program, as well as Goddard's specific emphasis on spacecraft development and design are displayed at the Visitor Center. But it isn't just for visitors, it's here for employees. If you haven't been to the Visitor Center recently, check it out. The Visitor Center is open Wednesday through Sunday. For more information call the Visitor Center at x6-8981.

NASA
National Aeronautics and Space Administration
Goddard Space Flight Center

Goddard News

The GODDARD NEWS is published monthly by the Office of Public Affairs, Goddard Space Flight Center, Greenbelt, MD 20771.

Deadline for submitted material is the fifteenth of each month. For additional information contact Code 130, (301) 286-7504.

The GODDARD NEWS Staff is:
Executive Editor: Randee Exler
Managing Editor: Susie Marucci
Contributing Editors: Dolores Beasley, Jessie Katz, Keith Koehler, John J. Loughlin II
Editorial Assistant: Katie Brannigan

Oops!

When listing the GSFC Centerwide Group Awards, the Subcollimator Development Team was inadvertently left off.

The Headquarters New Organization Codes listed Space Communications as Code N. This is incorrect. Space Communications is actually Code O.