NASA
National Aeronautics and Space Administration
Goddard Space Flight Center

Goddard News

Greenbelt, Maryland and Wallops Island, Virginia Vol. 37 No. 7 July 1991

NIMBUS-7 Tracks 4,000-Mile Volcanic Cloud from Mount Pinatubo

by Dolores Beasley

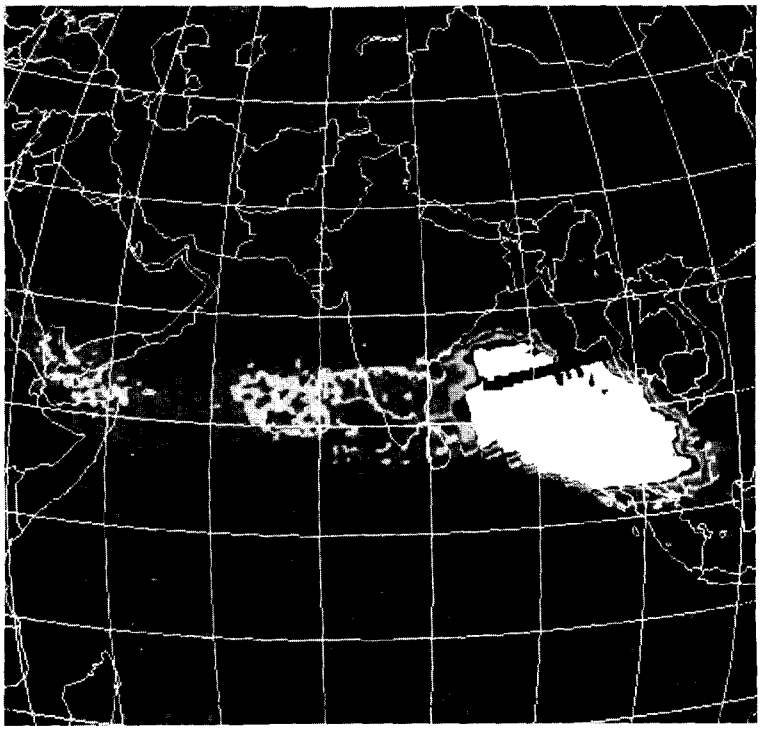
Preliminary data estimates from the Goddard-managed NIMBUS-7 satellite indicate a 4,000-mile (6,347-kilometer)-long cloud of sulfur dioxide has spread across the tropical Northern Hemisphere from the major eruption of Mount Pinatubo volcano in the Philippines.

Research by Atmospheric Scientist Dr. Arlin Krueger, Code 916, indicates the cloud has drifted 4,800 miles (7,724 kilometers) since the June 16, 1991, eruption.

The data were obtained from Goddard's Total Ozone Mapping Spectrometer (TOMS), an instrument on NIMBUS-7 that measures ozone levels and monitors sulfur dioxide emissions. Sulfur dioxide is a toxic gas known best as a major cause of air pollution.

"What people can expect this fall are rosy sunsets as a result of aerosol particles produced from the cloud," Krueger said. "There also is a possibility that the cloud will reflect back into space some of the sunlight that would have reached the ground, resulting in a small change in the heat balance of the Earth," he added.

The TOMS has monitored and measured ozone levels since 1978. Another TOMS is scheduled to be launched on a Soviet Meteor-3 satellite on August 15, 1991.



VOLCANIC CLOUD -- **This image, taken by Goddard's Total Ozone Mapping Spectrometer (TOMS), shows a gaseous cloud of sulfur dioxide caused by the major eruption of the Mount Pinatubo volcano in the Philippines. The cloud's center (white) is over the Bay of Bengal and extends across Southern India. A smaller cloud, toward the center of the image, is over the Arabian Sea. The cloud has drifted 4,800 miles (7,724 kilometers) since the June 16 eruption. The entire length of the cloud is 4,000 miles (6,437 kilometers). The black lines are missing data.**

Gamma Ray Obervatory Grabs Target of Opportunity

by John J. Loughlin II

Goddard's Gamma Ray Observatory (GRO) was maneuvered to point at a scientific target of opportunity, the Sun, on Friday, June 7, 1991, at 7:45 p.m. EDT. "Because of this pointing, GRO's instruments made the most sensitive high-energy measurements ever of the Sun," according to Project Scientist Dr. Neil Gehrels, Code 661.

Controllers on the ground at Goddard received data on increased solar flare activity that began earlier last month. Because of the re-pointing, the massive observatory gathered data from two X-class solar flares. The X-class is the largest and most powerful type of solar flare. Solar flares are temporary outbursts of intense solar gasses and radiation. They have been observed blasting hot plasma loops up to 434,960 miles (700,000 kilometers) into space. These high-energy outbursts have been known to disrupt the Earth's magnetic field and cause interference with advanced communications equipment.

While much is known about the composition and magnitude of solar flares surprisingly little is known about the thermonuclear processes underlying these solar temper tantrums.

The decision to observe the Sun was made by project scientists and engineers the day the observatory was maneuvered. "The Flight Operations Team was able to complete the maneuver in about nine hours," Gehrels said. He explained that the normal time for this type of maneuver is about 36 hours. "The fast action on the part of the Flight Operations Team gained 23 additional hours of observing time allowing

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INSIDE
Michele Dyson of CIS: Presidential Commitment to Quality Page 6

Q: I know a number of people who are interested in obtaining masters degrees in the space industry. Does Goddard have some type of career center to help employees, contractors, etc. decide on advantageous fields? I've also heard about on-site masters programs associated with George Washington University in Washington, DC. What can you tell me about this?

A: The Center supports career management and decision making in a number of ways. The Center offers individualized career counseling for those Goddard civil service employees seeking help in making career decisions. Personal, confidential interviews can be scheduled by calling Diane Hetherington at x6-7610. In addition, the Center sponsors several career-related workshops. For information on these workshops, call the Employee and Organizational Development Branch at x6-9122.

In response to your second question, the Center and George Washington University (GWU) have joined efforts to create two on-site graduate-level academic programs: the Cooperative Research and Education Program in Space Technology (CREST) and the Master of Engineering Management Program (MEM). In CREST, students can pursue graduate degrees in electrical engineering (with an area of concentration in communications), computer science (graphics and user interfaces/software engineering) or mechanical engineering (space systems/robotics). The next cycle of the MEM program will begin with the fall 1991 semester. Areas of concentration for MEM have not yet been finalized. Both MEM and CREST are open to contract employees on a space-available basis. For more information on CREST or MEM, contact Don Wolford at x6-9236.

Roger L. Jenkin, Director
Office of Human Resources
Code 110

Computers, Robots and a Shuttle Equal an Experiment to Remember

by Susie Marucci

When the Space Shuttle Discovery launched on the STS-39 mission on April 28, most of its payloads were for the Department of Defense, but not all. One of the six experiments mounted on the Hitchhiker carrier was a Goddard experiment. It's name was the Data System Experiment (DSE) and it accomplished several things that had not been performed before during the six-day flight.

"There has never been a system like the DSE before," said Danny Dalton, Code 735, head of the Flight Data Systems branch. It had a data system made up of a computer processor -- a SPACEVAX -- and an erasable optical disk, both located on the Hitchhiker in the shuttle. On the ground was a robot that was expected to respond to commands from the data system in the payload bay of the shuttle.

Did it work? "We accomplished far more than we were expecting," he said. "The experiment was virtually error-free."

The experiment using the robot was to have an object placed in the robot's work space and have the robot move around it. Once the experiment's power was turned on, a position for the robot to move to was transmitted to the SPACEVAX where the best path was calculated and transmitted back to the ground to move the robot. Once the object was placed in the work space and the object location was transmitted to the disk, move commands were repeated showing that the SPACEVAX would move the robot around the object without collision. The experiment was repeated several times, changing the position of the object. If there had been a problem, the robot would have suffered from jitters or not moved at all. No one had ever commanded a robot from space before. But it worked perfectly -- even though they did not have a chance to run the routine with the obstruction before launch. There was also no time for an end-to-end test from the hitchhiker payload to the robot before launch. So there could have been some unpleasant surprises, but for this experiment, the all surprises were pleasant.

Making the robot move was the visible demonstration, but there was more to the experiment than the robot moving in its work space. By using an erasable optical disk system, the first of its kind ever to fly in space as far as Dalton knows, he and his team were able to send up different computer commands. After launch, Dalton and his team noticed a small anomaly in the software that would have caused the computer to find a path for the robot that was not the closest path. "I don't think anyone would have noticed, but we knew it was there," Dalton said. This gave them the chance to uplink patches, or corrections, and fix the software. They even operated the disk as the shuttle flew through the South Atlantic Anomaly (SAA) while writing, reading and erasing on the disk. The SAA causes interference with digital circuits and most existing spacecraft have to take precautions either before entering or exiting the SAA. While the shuttle flew

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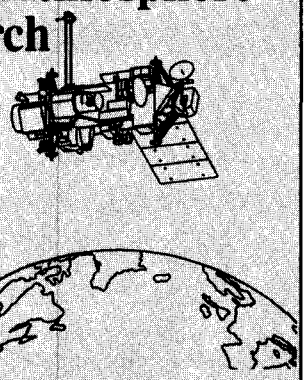
PHOTO: J. SEMERARO

JUST A SHOVEL A DAY **would take a long time to clear the ground behind Building 11. Actually, after the ground breaking ceremony June 7, the work on the new Quality Assurance and Detector Development Laboratory (QUADDL) really began. The new building, which will house the office and laboratory space for the Materials Quality Assurance Laboratory, Code 313, and a state-of-the-art clean room for the Electron Device Development Section's Detector Development Laboratory, Code 724.1, should be ready for occupancy in the summer of 1993. Shown here for the ground breaking are, from left, Robert Baumann, Code 300, Director, Office of Flight Assurance; Sherry Foster, Code 200, Director, Management Operations Directorate; Tom Huber, Code 700, Director, Engineering Directorate; and Loyal E. Gassman, President, Gassman Corporation, the prime construction contractor.**

Launch Update: Upper Atmosphere Research (UARS)



Goddard's Upper Atmosphere Research Satellite (UARS) is progressing rapidly toward a mid-September 1991 launch aboard the Space Shuttle Discovery on the STS-48 mission. The spacecraft was shipped to Kennedy Space Center, FL, in May. The instrument module was transported by NASA barge (normally used for transportation of external tanks for the space shuttle.) The observatory testing was completed on June 25. The final spacecraft checks were to be completed in early July. UARS is scheduled to be moved to the Vehicle Assembly Building before August 1. Among the variety of activities scheduled for UARS in August are end-to-end testing and installation in the payload canister.

UARS is the spearhead of the US Global Change Project, a long-term, national program of space-based research into global atmospheric change, and is the first in NASA's Mission to Planet Earth Series.

Using 10 instruments developed by US, Canadian, and United Kingdom principal investigators, UARS will measure and correlate data on upper atmospheric chemistry, composition, temperature, winds and dynamics.

The UARS Project Office is in Code 430, Charles E. Trevathan is the acting project manager. The UARS project scientist is Dr. Carl A. Reber, Code 910.

NASA Trivia

1. Name the NASA center with the most government personnel.
2. Name the center with the most scientists on board.
3. This school is called "the old Alma Mater" by more astronauts than any other.

ANSWERS:
1. JSC as of FY 89 3,704 on board.
2. You guessed it. GSFC.
3. The Massachusetts Institute of Technology, Cambridge, MA.

Greenbelt Visitor Center Events for August

Now that the Visitor Center is open seven days a week, it gives young and old alike more time to enjoy the many available activities. The hours are 10:00 a.m. to 4:00 p.m., until Labor Day. For more information call x6-8981.

Launch Site Goddard -- Sunday, August 4 and 18, 1:00 p.m. Join the world's longest running model rocket demonstrations program. If you are launching your first rocket or your 50th, you'll enjoy the excitement and the crowds who come out to watch.

Saturday Videos -- Saturday, August 10, 1:00 p.m. View "COBE" -- a look at the Cosmic Background Explorer satellite. COBE was built at Goddard and specifically designed to study the remnants of the "Big Bang," the primeval explosion that started the expansion of the universe. COBE was launched on November 18, 1989 on board the last Goddard-managed Delta rocket. The 5,000-pound spacecraft and its three infrared and microwave-measuring instruments were designed and built at Goddard.

Know and Tell -- Sunday, August 25, 1:00 p.m. "COBE Looks at the Big Bang" -- Join Dr. Nancy W. Boggess, COBE deputy project scientist, as she discusses COBE results and new data about our own Milky Way Galaxy and objects within our solar system. Results from COBE led to major advances in our understanding of the formation of our Universe.

GIVE

On June 5, the Bloodmobile was held in the Building 8 auditorium, and 187 prospective donors volunteered to donate blood. The following is a list of the Goddard employees who were cited by the American Red Cross with gallon pins at the Bloodmobile.

# of Gallons	Name	Code	# of Gallons	Name	Code
5	Keith Evans	--	2	Diane Kolos	313
4	Robert Austin	--	1	Mark Beckman	544
3	Scott Douglass	541	1	Tom Clement	512
3	Paul Newman	--	1	Harold Geller	--
2	Lenard Jiles	--	1	Lou Noordzy	663
2	Pat Kilroy	311			

The next Bloodmobile is scheduled for August 7 in the Building 8 auditorium. Watch Dateline Goddard for more details.

An Experiment to Remember

(Continued from page 2)

through the SAA "we were writing, erasing, and writing, and we didn't get any hits," said Dalton.

The main reason for doing the experiment was to demonstrate that NASA could take technology already created by the Department of Defense and modify it for space use. The computer and the optical erasable disk were Mil Spec units (built to military specifications) and modified for space by contractors. The actual modifications were to convert the equipment from use on aircraft to use on spacecraft, so the equipment would survive the constraints of shuttle launch and landing.

According to Dalton, one of the problems in data systems for space is that the spacecraft take so long to design and build that the data technology is often dated before launch. Dalton said the average data system aboard a spacecraft is five to six years old by the time of launch. Technology is changing so fast that major advances in data systems can take place in that time. The DSE equipment was ready to fly in less than two years.

The DSE was a challenge to Dalton. Because no payload like this had ever gone up before, he wasn't quite sure what might happen. "We could have run without the robot and still proved the system. The robot allowed us to challenge the computer. It was merely a way to measure how the project was performing," said Dalton.

Dalton laughed as he talked about the way the project got on the shuttle manifest. "Originally the payload had a high center of gravity. They needed the weight." He smiled as he talked about the project, then he voiced what his face was already saying, "It was a lot of fun...It was a lot of fun, but it wasn't easy."

Goddard's Strategic Plan Nears Completion

Facing the future can be a daunting task. For the last eight months, Goddard personnel have been involved in looking at the Center's future to develop a strategic plan to be used as a guide for Goddard management and employees. The process is now nearing completion. A draft of the plan was sent to Executive Council members last month, and the final version is scheduled to be given to all Center personnel in September.

The Strategic Planning Committee, chaired by Dr. Allan Sherman, Code 700, consists of a representative from each directorate. The other members are Wayne Boswell, Code 100; John Scully, Code 200; Brian Keegan, Code 300; Dr. Dale Harris, Code 400; William Dickinson, Code 500; Dr. Michael Hauser, Code 680; Cary Milliner, Code 830; Charles Cote, Code 910 and Charles Schnetzler, Code 922.

The committee was aided by ten task teams focusing on specific issues. The task team committees and their chairmen were the Role of Science at GSFC, Dr. Daniel Baker, Code 690; Mission from Planet Earth, William Tumulty, Code 700; Mission to Planet Earth, Dr. Dorothy Zukor, Code 900; Role of Operations, Louis Koschmeder, Code 560; Technology Development, William Barnes, Code 925; Goddard as a Space and Earth Science Data Center, Dr. James Green, Code 930; End to End Project Management, Abigail Harper, Code 303; Systems Engineering, Dr. H. Richard Freeman, Code 400 and Henry Price, Code 700, co-chairmen; Role of In-house Work, John Mangus, Code 600; and Knowledge: Documentation and Transfer, Dr. Jaylee Mead, Code 930.

MICHENER KEEPS STUDENTS GOING -- Pulitzer Prize-winning author James A. Michener posed with three of the NASA College Scholarship Fund, Inc. recipients, all dependents of Goddard employees. The scholarship fund was endowed by Michener in 1982. Since then, financial assistance has been given to 18 students. Michener presented an additional $25,000 to the fund at Johnson Space Center, Houston, TX, where this photo was taken. From left, Erin McNutt, daughter of the late Arthur Edward McNutt; John Birmingham, son of Dr. Tom J. Birmingham, Code 695; and Jennifer Muhonen, daughter of Dan P. Muhonen, Code 407.

Engineer Honored for Developing Directional Hearing Aid System

by Cheryll Madison

A hearing loss can be devastating. Especially for people who suffer from a severe hearing loss in one ear. They experience great difficulty discerning the direction from which sounds originate. Today, there is help for these individuals. Dr. Murzy D. Jhabvala, Code 724, Chief Engineer, Solid State Device Development Branch, was recognized recently for adapting aerospace technology to aid the hearing impaired significantly. He developed a direction-discriminating hearing aid system for individuals who suffer a severe hearing loss in one ear.

AWARD FOR EXCELLENCE

Jhabvala received the Federal Laboratory Consortium's (FLC) Award for Excellence in Technology Transfer at the FLC's spring meeting in San Diego, CA. The FLC works to enhance the transfer of federal technology results to domestic users in industry and state and local governments, and honors those whose contributions are the basis for new commercial products and processes developed from government research.

AWARD-WINNING DEVICE

Jhabvala's award-winning hearing device is mounted in the eyeglasses of the user. Buried in the stems are a microchip, batteries and discreet components, including miniature microphones which detect the audio signal. The signal received from the microphone more closely facing the audio source will be stronger than the signal from the other microphone. A specially-designed chip compares the signals and makes a variety of decisions. The microchip decides which microphone received the stronger audio signal and the loudness of the signal. Once the decision is made, one of three light emitting diodes (LEDs) on one or the other eyeglass lens will be illuminated (red=loud, green=medium, yellow=low, clear=equal) based on the direction and loudness of the signal received.

Gamma Ray Observatory

(Continued from page 1)

GRO to capture data on Saturday's flare that would have been lost," he said.

All four of GRO's instrument teams report that they received good data on the solar activity including Goddard's Energetic Gamma Ray Experiment Telescope (EGRET).

After taking a significant amount of information from the flare activity, the observatory was re-pointed toward its next scientific target, Supernova 1991T.

"This maneuver demonstrates not only the flexibility of the spacecraft but also the efficiency of the planned target of opportunity program," Gehrels said. "This program," he continued, "allows the scientific community to direct the spacecraft toward significant celestial events that cannot be predicted." Other examples of this type of event include supernovae, novae, or other unplanned gamma-ray events, he said.

The Gamma Ray Observatory was launched April 5, 1991 aboard the Space Shuttle Atlantis and deployed April 7, 1991. The mission of GRO is to search for highly energetic gamma rays emitted by some of the most violent processes in the universe. John Hrastar, Code 490, is the project manager for GRO.

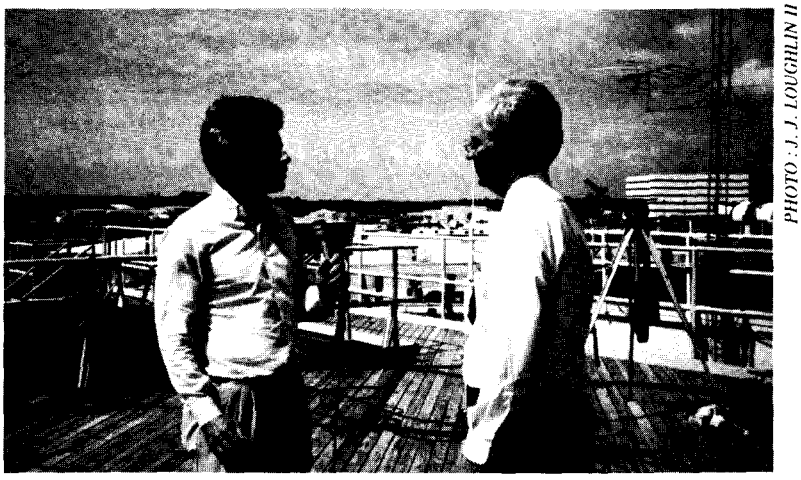


PHOTO: J. J. LOUGHLIN II

A FOND FAREWELL -- **Dr. Donald Kniffen, project scientist for the Gamma Ray Observatory (GRO), right, retired in June after more than 30 years with the Goddard Space Flight Center. Seen here being interviewed at the Kennedy Space Center, FL, by NBC's science correspondent, Robert Bazell during the STS-37 GRO mission, Kniffen has accepted a professorship at Hampden-Sydney College, Hampden-Sydney, VA. Dr. Kniffen's replacement as GRO project scientist is Dr. Neil Gehrels**

New Visitor Center Exhibit To Broadcast NASA Select TV

by John J. Loughlin II

A living exhibit is being created at the Goddard Visitor Center. This exhibit is the new automated NASA Select TV master control room being installed in the large-windowed building on the Visitor Center grounds (south lawn, near the Delta rocket) and it's more than just something of interest for visitors to see. The automated master control machine, built by Odetics, Inc., Anaheim, CA, is capable of storing and playing back more than 250 hours of programing without human intervention. This storage and playback is done using the D-2, digital video tape format. Tapes are manipulated with a sophisticated robotic arm that physically places the tape into one of the four state-of-the-art video cassette machines. This format is so new and revolutionary that only a handful of television broadcast stations worldwide have the updated technology.

According to Television Manager Jeffrey Elliott, Bendix Field Engineering Corp. (BFEC), Code 543, the new equipment in the exhibit will be used to broadcast NASA Select's new programming. "The term NASA Select comes from the very thing that makes the satellite channel work so well," he said. "In the past, the centers would share the time that they transmitted programing depending upon what was going on at each center," Elliott continued. "The operable term became which center will the satellite select for program origination? This became shortened to NASA Select." Elliott became visibly animated when he went on to describe the strengths of NASA Select and the new look the network adopts this month. "The main thing that makes the network interesting to watch is this synergistic process that makes a total larger than the sum of the pieces," he said. "When all the centers contribute, you end up with a much larger and better product," he added.

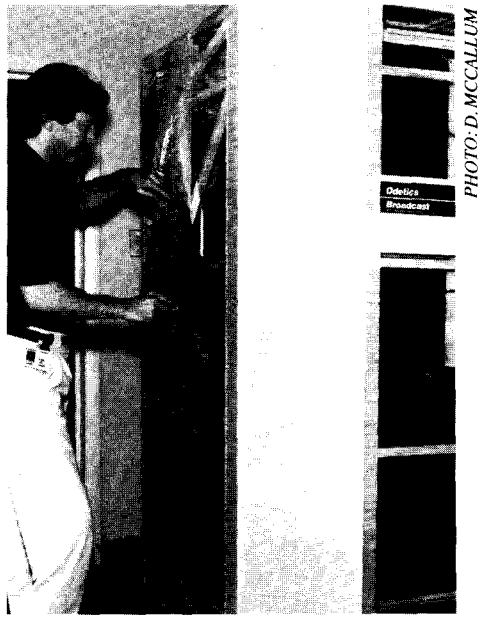


PHOTO: D. MCCALLUM

OPEN CAREFULLY -- **Patrick Kennedy, Bendix Field Engineering Corp., Code 543, television engineer, cuts through the shrink wrap plastic encasing the Odetics machine's robotic video tape tower now located in the Goddard Visitor Center AMSAT building.**

"It's NASA's goal to interest young people in continuing their education in the math and science fields. With the programing we have already produced, we are in unique position to help reach that goal," said Carl Roberts, Code 543, telecommunications branch head. "We had everything in place except the scheduling and programming management, and the Odetics machine allows us to add these functions without significantly increasing our staff."

NASA Select's new programing schedule will be aimed at having something of interest on the satellite twenty four hours a day basis. The programing will consist of four-hour blocks repeated four times throughout the day starting at 12:00 noon Eastern time. From 4:00 a.m. until 12:00 noon when the next day's programing starts, the network will show Spacelink computer network information along with a program schedule. "There will always be something for the viewer to watch on the Select," Elliott said.

INSIDE

Michele Dyson of CIS . . . A Presidential Commitment to Quality

by John J. Loughlin, II

Michele Dyson is twice a president. She is the self-described "hands on" president of a thriving high-tech company, Computer Information Specialists (CIS), which manages Goddard's Visitor Center, as well as president of the National Business League of Montgomery County.

"Sometimes the lines between my commitment to my business and my commitment to the community tend to blur," she said. Dyson went on to explain that "my business gives me the opportunity to get out into the community, and my getting out into the community can generate work for my business."

PHOTO: D. MCCALLUM

TUNED IN TO THE SOUND OF TODAY -- **and with an eye on the future, Michele Dyson stands in front of one of the many exciting displays in the Goddard Visitor Center. Dyson's firm, Computer Information Specialists, Silver Spring, MD, manages under contract, the Goddard Visitor Center, and the Visitor Center at the Wallops Flight Facility, Wallops Island, VA.**

A LOGISTICAL NIGHTMARE

Dyson's firm has the difficult task of managing Goddard's two visitor centers. The company runs the Goddard Visitor Center, Greenbelt, MD, and the Wallops Flight Facility Visitor Center, Wallops Island, VA. While it might seem like a logistical nightmare to manage two facilities more than one hundred miles apart, Dyson credits her employees for being able to pull it off. "We have excellent managers in both locations, and that has been the key to our success in the contract," she said.

In addition to the tasks of managing visitors center operations, CIS, under the Dyson administration, is also actively involved in providing cost-effective information resource solutions to complex business problems. "We have gotten quite active in the use of local area computer networks for both business and government," she said. CIS has more than 40 employees and uses a who's who of engineering professionals as sub-contractors and consultants. Her company boasts its own engineering and design facilities, an optical research facility, electronics and tool fabrication capabilities and even a clean room.

"I think its important for young people, especially in the minority community, to have solid role models to use as a foundation for their own success," Dyson said. "That's the reason I am so proud of our involvement in NASA's Summer High School Apprenticeship Research Program (SHARP). It gives us a chance to bring something back to the community," she continued. Dyson's firm offers a scholarship to students from the SHARP program who wish to pursue higher education in science and engineering. Goddard has participated in the SHARP program for 12 years. SHARP pairs an academically-talented minority student with a Goddard mentor for an eight or nine week program to encourage a course of study and hopefully a career in science or technology.

AWARD WINNING COMMITMENT TO QUALITY

While Dyson helps deserving students on their quest for high-tech education, she is also on a quest of her own -- a quest for quality in every facet of her business. "It's very important, when you sign a contract, that you give your best effort to do a good job for the customer," Dyson said. "When you have a commitment to quality, you hire the best, you do your best. It will show through in everything you do and word gets around that you run a quality operation."

"I think its important for young people, especially in the minority community, to have solid role models to use as a foundation for their own success."

Dyson's corporate commitment to quality has not gone unnoticed. CIS Inc., is the winner of the 1991 Minority Small Business Advocate Award for region three, and the Small Business Administration's National Award of Excellence. The firm has recently installed a sophisticated computer system for the Department of Commerce which was nominated for the Smithsonian Technology award. "I'm quite proud of our awards but I think it is important to always have an eye on the future," she said, down-playing the significance of her accomplishment.

Dyson speaks with great pride about the high-tech nature of her work and the expansion of her enterprises into even more challenging areas of space technology. "When I think about the future, and I see the top quality engineering and scientific talent we can bring to bear, I can't help but to be optimistic," she concluded. Given Dyson's track record, she has every reason to be optimistic.

"Sometimes the lines between my commitment to my business and my commitment to the community tend to blur."

She has also been able to balance the many facets of her life with the apparent skill and precision of a diamond cutter. Dyson started her professional life as a management consultant for big business. For ten years, before starting CIS she provided computer expertise to the likes of Boeing, and Johns Hopkins University. She is married and her two children are pursuing post-graduate degrees, one in english the other law.

CLOSE-UP

Congratulations to the following employees on their recent appointments: **JAMES GATLIN,** Assistant Chief for Instrument Technology, Code 720...**GARY BANKS,** Head of the Instrument Systems Branch, Code 725...**THOMAS MAGNER,** Head of the Instrument Programs Office, Code 721...**ROGER NAVARRO,** Head of the Aircraft Programs Branch, Code 831...**JOHN JACINTHO,** Assistant Branch Head of the Network Control Systems Branch, Code 532...**DONALD JAMISON,** Head of the Systems Development Section, Code 532.3...**DR. JAMES WEINMAN,** Head of the Microwave Sensors and Data Communication Branch, Code 975...**BARBARA PRATHER,** Head of the Travel Section of the Financial Management Division, Code 214.2...**PRESTON BURCH,** Deputy Project Manager of the Hubble Space Telescope (HST) Operations and Ground Systems Project, Code 441...**HOWARD EISERIKE,** Head of the Software and Operations Support Section of the Flight Dynamics Division, Code 551.2...**TIMOTHY RYKOWSKI,** Head of the Mission Support Section, Code 563.1...**LEE NEARHOOF,** Head of the Advanced Packaging Section, 724.2...**MARK STEINER,** Head of the Payload Design Section, Code 743.1...**FREDERICK HUEGEL,** Head of the Payload Development Section, Code 743.3...**THOMAS SAVAGE JR.,** Associate Chief of the Engineering Division, Code 820...**WALTER MELSON,** Head of the Project Support Section, Code 831.1...**DR. RITVA KESKI-KUHA,** Head of the Optical Research Section, Code 717.1...**DR. EDWARD GADDY,** Head of the Energy Conversion and Analysis Section, Code 711.4, within the newly- reorganized Space Power Applications Branch.

BURCH

GADDY

Summer Program keeps Kids SHARP

by Tanya Jones

For more than a decade academically-talented students have benefitted from NASA's Summer High School Apprenticeship Research Program (SHARP). SHARP is designed to recruit under represented minority high school students, like blacks and Hispanics, who excel in math and science, with the purpose of encouraging these students to take a serious interest in college fields of study and careers in science and technology. This is done through an eight- or nine-week research apprenticeship at Goddard. This year there are 32 participants, bringing the total for SHARP's 12 years at Goddard to 191.

Each student is paired with a mentor and, during the course of the summer, completes a research project and paper on a topic agreed on by the student and the mentor. Through the one-on-one working relationship with a mentor, and the research process, students get an idea of what a technological career might be like. Oral presentations, career workshops and visits to other NASA centers round out the experience.

The summer of research culminates at the annual VIP night during when the students explain their projects to parents, mentors, and community leaders in an open-house setting as they stand next to poster displays of their projects.

Since the program's first year in 1980, 100 percent of SHARP participants have gone on to college and many have continued their education in graduate school at some of the most prestigious institutions in the country.

Participants in SHARP at Goddard have benefitted from developing an "intimate directory of resources people," as well as a sense of tradition, according to Cyn Gosier, the coordinator of Goddard's program since 1984. This is achieved by allowing students to return to the program and by keeping track of their progress after they leave, she said.

Goddard's 1991 SHARP Mentors:

Peter Arsenovic, Code 313.4
Jeannette Benavides, Code 313.2
Howard Branch, Code 713.3
Janice Buckner, Code 303
Dave Carter, Code 924
Emmett Chappelle, Code 923
Ray Di Silvestre, Code 924
Tom Field, Code 714.3
Jay B. Garvin, Code 303.3
Patrick Hennessy, Code 532.2
Tonjua Hines, Code 563.3
Dan Hoff, Code 924
Evelyn Hopkins, Code 931
Dr. Barry Jacobs, Code 934
Nathan James, Code 933
Bob Joyce, Code 663
Ken Kirks, Code 924
Dr. L. David Kuykendall, Code 923
Jim McMurtrey, Code 923
Hugh O'Donnell, Code 515.2
Roger Pearson, Code 931
William Reaves, Code 732.2
Michael Rhee, Code 713.3
Eric Richmond, Code 532.3
Gregory Robinson, Code 303
Doug Ross, Code 728
Henry Sampler, Code 717.3
Fred Shaffer, Code 931
Robert Tice, Code 933
Dr. Peter Wasilewski, Code 691
Jim Weinman, Code 975
Terri Wood, Code 552

PHOTO: D. MCCALLUM

WORDS OF WISDOM -- **Goddard Center Director Dr. John M. Klineberg addressed business and community leaders at the Prince George's County Economic Development Corporation's annual Luncheon Meeting on June 5 at the Sheraton Hotel in New Carrollton. Klineberg's keynote address was on the impact of Goddard Space Flight Center on Prince George's County and the rest of the Baltimore/Washington corridor.**

CENTER SIDE Lines

GODDARD WELDER RECEIVES AWARD -- Sidney McClure, Code 752.1, an award-winning welder and engineering technician at Goddard considers his recent commendation for Excellence in Federal Service as his highest honor to date. That's quite a statement considering McClure has been welding for more than 40 years, 28 of those as a civil service employee. McClure received the award for his welding expertise, contributions to the success of Goddard missions and contributions to the community. In one example of his technical expertise, McClure was able to repair a cold plate on an Office of Space Science payload, OSS-1, that had been declared unrepairable by a team of engineering experts. With a delicate weld repair he averted a possibly substantial launch delay. McClure shares his knowledge by teaching welding skills to high school students with learning deficiencies in an effort to help them secure employment.

SILVER SNOOPY AWARDS RETURN TO CENTER -- Four Goddard employees recently received Manned Flight Awareness (MFA) Silver Snoopy awards. The awards are given by astronauts to recognize individuals at NASA, other government agencies and industry who have made an exceptional contribution to the success of manned space flight missions. The four employees who received the awards were Arthur J. Bradley, Allied-Signal Corp., Code 440.8; David F. DeRenzis, Lockheed Technical Operations Company, Inc., Code 440.8; Roger J. Flaherty, Code 534: and Angelita C. Kelly, Code 501. The awards for Bradley and DeRenzis were presented by astronaut Jay Apt. The awards for Flaherty and Kelly were presented by astronaut Ken Cameron. Both astronauts flew on the STS-37 mission which deployed Goddard's Gamma Ray Observatory (GRO).

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.

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Goddard Establishes Contractor Association

Balancing the needs of contracting companies and the needs of Goddard is not always easy -- problems in contracts and communication may arise. To work more effectively with contractors, Goddard, at the request of Center Director Dr. John M. Klineberg, has established the Goddard Contractors' Association (GCA). The GCA held its first meeting June 11.

The four officers of the association were elected. All from Prince George's County, Maryland businesses, they are Richard J. Backe, Unisys Corp., Lanham, Chairperson; Philip H. Johnson, Bendix Field Engineering Corp., Seabrook, Vice-Chairperson; Tom Amacher, NSI Technology Services, Glenn Dale, Secretary; and Michael Plett, Computer Sciences Corp., Beltsville, Program Chairperson.

The purpose of the GCA is to allow contractors to exchange information with members of Goddard management. The GCA will also give the contractors an outlet to discuss with GSFC personnel areas of common concern. Goddard has more than 8,000 contract employees, almost half of them are located on-site.

The GCA is made up of representatives from 19 contracting companies, both large and small businesses, as well as Klineberg, and Deputy Director Pete Burr. Angela Ewell-Madison, Code 201, Goddard's Industrial Relations Officer, is the NASA Facilitator.

The June 11th meeting had presentations from local community colleges as well as a discussion on how to enhance their roles at Goddard and meet Goddard's technical work force needs. Future topics for the monthly meetings may include a variety of procurement issues, on-site contractor housing and community outreach initiatives.

The GCA was created to replace the Goddard Contractors' Council that was disbanded in the fall of 1990. The intent of the newly-established association is to reach a broader portion of the contractor community and to serve as a forum where issues of mutual concern can be reviewed together with actions to enhance the partnership of the total Center work force.

Ewell-Madison says the association will serve an important Center need. "We are providing a mechanism which will encourage two way communication between the contractor and the civil service communities," she said.