

Goddard Welcomes New Center Director, Dr. Ed Weiler

By Nancy Neal

After only a month on the job, Center Director Ed Weiler made time on his busy schedule to sit down with Goddard News to discuss his plans and goals for the Center's future.

Dr. Weiler is not a newcomer to the NASA family. Prior to becoming NASA Goddard's Center Director, he served as the Associate Administrator for NASA's Space Science Enterprise from 1998 to 2004. Under his leadership, the Enterprise had numerous successes, including the Chandra, NEAR, WMAP, FUSE, Spitzer, Mars Odyssey, and Mars Exploration Rover missions.

Below is a transcript of the interview with our new Center Director.

Based on NASA's Transformation, where do you see NASA Goddard fitting into the New Vision?

There are some obvious places where we fit into the Vision, for example the Robotic Lunar Program; we have overall responsibility for the program. In addition, we are trying to extend the life of the Hubble. Technology applications from the robotic Hubble servicing mission can be applied to the needs of the human side of the exploration initiative.

Also, the President's Commission Report listed critical science areas that NASA should focus its efforts; JWST, dark energy and Earth science. We are a prime center for JWST and Earth science. In fact some things we have learned from Earth science has helped us to understand what Earth-like planets will look like around other stars.

In addition, models that were developed by studying the Earth's atmosphere have helped us to understand the Martian atmosphere for the recent Martian landings. Finally, NASA Goddard's program and project management skills will be used in other aspects of the Vision's implementation.

Photo by Chris Gunn/293



NASA Goddard Center Director, Dr. Ed Weiler

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NASA's Mission:

- *To understand and protect our home planet
- *To explore the Universe and search for life
- *To inspire the next generation of explorers as only NASA can

For further detail of the NASA mission, go to:
<http://www.nasa.gov/bios/vision.html>

Editor: Trusilla Steele
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NASA Partners with NFB to Get Blind Students Involved in Science

By Tomeika Blackwell

Photo by Bill McAllen

During the week of August 15-21, NASA Goddard partnered with the National Federation of the Blind (NFB) and hosted the Rocket On science camp. The camp is composed of twelve smart, bright, intelligent blind high school students who are interested in science or have the potential to do well in science.

The week was full of hands on exercises that allowed each student to learn more about technology, science, engineering and mathematics. NASA engineers and instructors with the NFB Jernigan Institute presented workshops at the Institute on the history of rocketry, basic rocket physics and basic electronics.

"Blind people have been excluded in science. Many people have misconceptions that the blind cannot dissect or observe the stars. Because of these misconceptions blind people start tracking out of the science field. That is why this partnership is so important; it shows that blind people are capable of doing science," said Mark Riccobono Manager of Education Programs for the NFB Jernigan Institute.

The week began at the NFB Jernigan Institute where the twelve students were grouped into 3 teams: Trajectory Analysis or the "Ego Squad;" Launch Pad Operations or "Team Action Reaction;" and Sensor Facilitation or "Circuiteers." Each team served an important mission for launch preparation.

Team Ego Squad used the graphing calculator to position the rocket to optimize flight. The calculations allowed the students to forecast the height, speed and the positioning of the landing. Alyshe Jeans, a 16 year old from Wichita, Kansas, said, "This week has been an amazing opportunity. Through the use of the graphing calculator, our group was able to make sound predictions regarding flight."

Team Action Reaction was responsible for all physical aspects of positioning and launching the rocket. "I have learned a lot in this group. We learned electronics, physics and mathematics," said 16-year-old Amy Herstein from Ellicott City, Maryland.

Team Circuiteers installed the four sensors into the payload. The four sensors consisted of thermistor, photo resistor, accelerometer and transducer. The thermistor is used to test the temperature change around the rocket. The photo resistor analyzed the motion of the payload depending upon the sunlight. The accelerometer accessed the acceleration of the rocket. Lastly, the transducer tested atmospheric pressure. Hoby Wedler, a 17 year old from Petaluma, California, said, "In this group you learn about basic physics and Newton's Law. I am really excited that I was assigned to this team. I am fascinated with circuitry."

On Wednesday and Thursday of that week, the students transported their payload and knowledge to NASA Wallops Flight Facility, Wallops Island, Virginia to prepare for launch. The students launched their ten and a half foot rocket on Thursday at 8:33 a.m. Through audible signals the students were able to determine the readiness of their experiments and the rocket. Their rocket reached an altitude of 4,902 feet.



Phil Eberspaker, chief Sounding Rocket Program Office at Wallops (left) and Lindsay Yazzolino (right), NFB student.

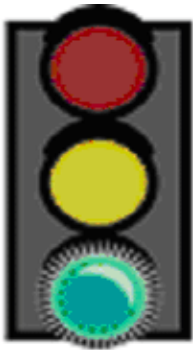
"The kids were focused on their task and they really got into it. Each student worked hard with the launch personnel. They were stationed at the blockhouses at 4:00 a.m. in order to prepare for their rocket launch. Overall they really did a fantastic job," said Keith Koehler, public affairs specialist at Wallops.

The intent of the Wallops experience was to allow each student to safely participate in as many launch activities as possible. This included preparing the payload, loading the rocket on the launch rail and other pad operations, engaging in payload and rocket checks and conducting the launch.

The week ended with a visit to Goddard by the twelve children to reveal their findings at a mock press conference. Dr. Nancy Maynard, Director of the NASA Initiative of the Blind at Goddard, delivered the welcoming address. "This is the very first bold step to improve the opportunities for careers in technology, mathematics, engineering and science. NASA needs more smart, bright minds to carry out the mission," says Dr. Maynard.

"I am anxious to see the data these fine students discovered. We need young, intelligent people to work at NASA. I would love to see each of these students come back and do a co-op with us. NASA has an exciting future. This generation will be able to answer the question, 'Are we alone in the Universe?'" said Dr. Ed Weiler, Center Director, during the opening remarks for the Goddard visit. While at Goddard the students also had the opportunity to tour other facilities to really get an overall understanding of NASA's activities.

"This partnership is a start to get blind children in the pipeline to add value to NASA. This camp allows us to do training with NASA; it is a teaching approach more than a helping approach," added Riccobono. ■



e-Payroll is a Go!

The e-Payroll project has received the green light to proceed with its implementation of a new Personnel and Payroll System and payroll provider. This decision followed a strong fifth test of the system's functionality. Starting August 8th, the Department of Interior (DOI) became NASA's payroll provider, and their system, the Federal Personnel and Payroll System (FPPS), will be used to process all of NASA's HR and Payroll transactions.

Below are some transition notes for employees:

**GETTING
TO
GREEN
IMPROVING
GOVERNMENT
PERFORMANCE**

- This transition does not affect the WebTADS process. Employees will still enter time and attendance information into WebTADS as they have done previously.
- On August 8th, employees gained the ability to charge or accrue leave in WebTADS in quarter hours. (e.g. 8.25)
- All employees were asked to save their last NASA-issued Leave and Earnings Statement (LES) from pay date, August 17th to keep a record of their NASA-tracked, pre-August 8th cumulative retirement and pay information.
 - DOI's statements will not include pre-August 8th pay or retirement data, as DOI cannot be held accountable for NASA-tracked retirement and pay data.
 - NASA's Liaison Payroll office (LPO) in Marshall has retained a backup copy of each employee's last NASA Leave and Earnings Statement as well.
- All employees should have received their first DOI-issued Leave and Earnings Statement at their home address on August 31st. This statement was printed in the DOI format. Details about the new format can be found at: <http://epayroll.gsfc.nasa.gov/communcations.htm>, "Click on Sample DOI Leave and Earnings Statement.doc.
- In January, NASA and DOI will issue W-2s covering the portions of the year for which each processed NASA's pay information.
- The mandatory use of Employee Express for personnel and payroll changes went into effect at Goddard on

August 8, 2004. The Employee Express system, implemented in 1996, can be found at <https://www.employeeexpress.gov/>. A tutorial on how to log into and use the system is available at: <http://epayroll.nasa.gov/training.htm>, "Click on EmployeeExpressTutorial.ppt.

- After January 2005, the GSFC e-Payroll Project team will begin implementing a new online SF-52 process for managers and administrative personnel to process all requests for promotions, awards, details, etc. The online SF-52 process will be available by logging into the new personnel and payroll system, FPPS, and is will be rolled out at GSFC, Directorate by Directorate. Managers and administrative personnel should stay tune for more information from the team regarding this upcoming transition.

e-Payroll Contacts (post Go-Live):

- **General Questions** - Contact either Felicia White at 301-614-6964, fwhite@pop400.gsfc.nasa.gov or the IFMP help desk at 301.286-4IFM (4436) for general questions about e-Payroll and/or FPPS after go-live.
- **LES/Payroll Questions** - Contact Center Payroll Office Representatives (see below) assigned to your Directorate
 - Codes 100, 200, 300 - Mary Cooper at 301-286-4234
 - Codes 400, 600, 800, 900 - Angie McDonald at 301-286-5141
 - Code 500 - Dina Tomas at 301-286-8045
 - or contact the Special Payroll Hotline at Marshall at 1-888-235-7946, until October 7th.
- **FPPS Process/System Access Questions** - Contact LaTonyia Guyton at 301-614-6942, Latonya.N.Guyton@nasa.gov
- **NASA-tracked Cumulative Retirement Benefits Questions** -
 - Contact the Special Payroll Hotline at Marshall at 1-888-235-7946, until October 7th for questions or to obtain NASA-tracked cumulative retirement benefits.
 - After that timeframe, contact the LPO at 256-544-4PAY (4729). Please don't contact Office of Personnel Management (OPM) directly, because the LPO is not planning to turn over the retirement cards to OPM until several months after the transition. ■

Congressional Staffers Visits, Insight into NASA Efforts

By Tomeika Blackwell

Goddard was host to some very important informational visits during the month of August. Congressional staffers visited on three different occasions to gain a better understanding of NASA and Goddard. Congressional staff visits serve as a legislative outreach strategy to intimately convey NASA's many missions and services to Congress. These visits educate, inform and provide resources to congressional members and staffers. It is a great way to establish a two-way communication system, cultivate positive relationships, and to raise the visibility of NASA worldwide. Additionally, these visits serve as a vehicle to maximize involvement and disseminate accurate up-to-date information on NASA activities with Congress.

The Office of Public Affairs in conjunction with Headquarters Legislative Affairs Office, has the responsibility to coordinate congressional staff visits. These visits usually consist of extensive overview of Goddard by senior management, VIP tour of the facilities, and briefings with the main scientists and engineers of various Goddard missions. Each tour and briefing is contoured to meet the congressional staffers needs and wants.



Left: Frank Cepollina, Project Manger HST Development Project; Coley O'Brien, Headquarter's Legislature Affairs Office; Chris Scolese, Deputy Director, Jim Sartucci Senator Trent Lott's Office; Ken Cummings Congressman Chris Van Hollen's Office; Tim Hughes House Science Committee; and Ken Monroe House Science Committee

The visit included a tour of the SOHO Experimenter Operations Facility, Scientific Visualization Studio, Spacecraft Systems Development and Integration Facility where Hubble Space Telescope Robotics servicing is planned.

"This is an amazing place. I had no idea that NASA does so much. This visit is a lot more than I thought it was going to be," Marston said as his guided VIP tour came to a close.

Blair Jones from Congressmen Scott McInnis office visited on August 18. He too was amazed by NASA's activities. "You can read this in the paper, but it becomes more real when you are able to actually see the payload and talk to the many scientists and engineers that have dedicated their time and energy into the mission. Congressional visits sheds light on exactly what NASA does; it is a hands on opportunity to look at what NASA is trying to accomplish," lamented Jones.

On the 26 of August, Goddard embraced eight congressional staffers, an effort lead by the Office of Legislative Affairs at Headquarters to promote NASA activities. The all day visit permitted Goddard to showcase what happens at the Center in detail.

"I found it very beneficial to hear and see the actual work that the Hubble Space Telescope is doing. It makes it easier for me to explain to my boss the significance and outstanding work being done on Hubble," said DeWayne Davis from Congressman Steny Hoyer's office. ■



Left: Dr. Horace Mitchell, Visualization Project Manager gives a demonstration to Rori Marston Senator Ted Steven's Office; Richard Irving, Headquarters Legislative Affairs Office; Nina Harris, Senior Protocol Officer in Scientific Visualization Studio.

During the month of August, Goddard hosted a marathon of tours that began on the 9th. Rori Marston from Senator Ted Steven's Office, was greeted and welcomed by Dr. Ed Weiler, Center Director, and Bill Townsend, Deputy Director. Townsend presented the overview and gave a detailed presentation about NASA's mission and vision. He expressed the importance NASA's exciting work. "NASA does exciting work and that is why people stay here," said Townsend "We explore things that have never been explored before. Our employees are right there in the center of it."

Fond Memories of A Friend and Colleague, William Reid “Bill” Bandeen

By Cynthia O’Carroll and David Atlas

William Reid (“Bill”) Bandeen died suddenly at his home in Brinklow, Maryland, of cardiac arrest, on July 2, 2004. He was 77 years old and had been in apparent good health.

Contributions to Earth Science

During his 45-year career at Goddard Space Flight Center, Bandeen and his colleagues were among the pioneers who launched satellite meteorology, arguably the most preeminent development in meteorology. The series of Television and Infrared Observatory Spacecraft (TIROS) and NOAA satellites (now up to NOAA 15 and 16) and the Defense Meteorological Satellite Program are all descendents of this early research.

Bandeen was also a pioneer in the development of the Nimbus research satellite series that produced wide ranging advances in space-borne observations of the earth and its atmosphere. Among his most impressive achievements was the first published analysis of the global earth radiation budget at the top of the atmosphere.

Early Life

Bandeen was born in Escanaba, Michigan, the younger son of Orren I. and Jeanette G. Bandeen. Growing up in Flint and Midland, Michigan, music was his favorite pursuit. He devoted himself to his role as clarinetist and saxophonist in the renowned Midland big band, Freddie Blackhurst and the Blackout Blasters, emulating his favorite popular music artist, Benny Goodman. Bandeen’s father was a Chevrolet dealer, a profession ultimately passed on to Bandeen’s brother, James G. Bandeen.

Coming of age during World War II, his plans to enlist in the Army Air Corps were pre-empted when he learned of his acceptance to join the Corps of Cadets at the United States Military Academy (USMA), West Point, NY. His sketch from the USMA yearbook, the *Howitzer*, evidences his continuing love of music: “Bandeen, the Corps troubadour was born with a song and he has given forth with it regularly and frequently ever since.”

Bandeen led the Glee Club in his senior year at West Point. His nickname there was Quasimodo, earned through his service as Chimer, ringing the carillon bells from high atop Cadet Chapel tower.

Following his 1948 graduation from USMA and subsequent Signal Corps training at Fort Riley, KS and Fort Monmouth, NJ, he served with the occupation army in Japan (1949-50) and then with the 7th Division in the Korea, ultimately earning the Combat Infantryman’s Badge for his participation in battles along the 38th parallel. Providentially, he and a few companions opted to depart the Chosin Reservoir three hours before the

Chinese attack of the site on the night of November 27, 1950. Had they not made this chance decision, it is altogether possible that none of them would have survived.

Education and Research

After his years in the Army, Bandeen seized upon opportunities to pursue his interests in science, earning an M.S. in Meteorology from New York University in 1955. He then served as an Army Captain in Bill Stroud’s section of the Meteorology Branch, Signal Corps Engineering Laboratory, at Fort Monmouth. Here, the “three Bills” - Stroud, Nordberg, and Bandeen, were using rocket-launched grenades at Ft. Churchill, Canada to measure winds and temperature in the upper atmosphere during the International Geophysical Year, from 1957 to 1958.



Bill Bandeen

The International Geophysical Year (IGY) was a worldwide collaborative experiment to measure the aurora and airglow, cosmic rays, geomagnetism, glaciology, gravity, ionospheric physics, longitude and latitude determination, meteorology, oceanography, rocketry, seismology, and solar activity. The most dramatic of the new technologies available to the IGY was the rocket. Post-World War II developments in rocketry for the first time made the exploration of space a real possibility. The early work with rockets

by the “three Bills” and Rudy Hanel and Rudy Stampfl all of whom moved to NASA in 1959 – gave NASA a head start in space borne observations.

Their main project was aimed at measuring cloud cover from a satellite and after Sputnik, this project took on high priority. The satellite was scheduled for launch on a Vanguard rocket. After President Eisenhower founded NASA, Bill Stroud’s section of the Signal Corps Meteorology Group moved to the Washington area in 1959. Meanwhile Bandeen continued in the Army Reserve and ultimately retired as a major in 1967. At NASA, the entire group participated in the design of the Vanguard II instrument to generate a cloud cover map. Although the instrument worked, the spherical spacecraft did not spin as planned and so it was not possible to generate a coherent cloud map.

The emphasis of the group shifted to the TIROS (Television and Infrared Observatory Spacecraft) and especially to the five-channel radiometer. TIROS 1, flown in April 1960 carried only television cameras, providing cloud cover data during the day. Thanks to the five-channel MRIR (Medium Resolution Infrared Radiometer) instrument, flown in November 1960 on TIROS 2, cloud cover data became available also from the night side of the earth.

Bandeen (cont'd from page 5)

Photo Credit: B. Bandeen

The resulting cloud pictures were spectacular and represented the beginning of satellite meteorology. Bandeen and his colleagues were thus among the pioneers who gave birth to this seminal advance in meteorology.

Bandeen soon became a key leader in the development of the NIMBUS research satellite series that produced wide ranging advances in space-borne observations of the earth and its atmosphere. Among his most impressive achievements was the first published analysis of the global earth radiation budget at the top of the atmosphere. This was done with the Temperature Humidity Infrared Radiometer (THIR). His revolutionary findings showed where and when the earth's infrared radiation is lost to space. Subsequently Bandeen and others used more advanced radiometers on the Nimbus series to gain a great deal more information on the radiation budget and the detection of rain, clouds, ice, soil moisture and other features of the earth.

To provide background information to the satellite data, a vigorous aircraft program was initiated.

Bill Bandeen and Bill Nordberg flew many prototype radiometers on the NASA Convair 990 airplane. Flights were conducted in the northern and southern hemisphere over tropical forests, deserts and oceans and in virtually all weather. These data were particularly valuable for the calibration of the satellite observations.

The development of instruments for the measurement of temperature and humidity profiles, and winds by tracking the motion of clouds from geosynchronous satellite was accompanied by impressive developments in numerical weather prediction by large mainframe computers. It was then evident that there were new opportunities for enhancing the skill of weather forecasts.

It was in January 1977 that David Atlas was recruited by Goddard Director Bob Cooper and Director of Applications Bill Nordberg to head the newly formed Laboratory for Atmospheric Sciences. Cooper also provided the unprecedented opportunity to hire new staff without limit. Bandeen was Atlas' Associate Chief and joint leader in every sense of the word. Bill was invaluable because he had the corporate memory, and he knew the ropes, especially the NASA bureaucracy.

These were busy and exciting times for Atlas and Bandeen. They oversaw the preparation and selling of numerous research projects. They enthused over the thrilling studies done by the staff – with aircraft, a variety of satellites, and ground based instruments. It was a rebirth of enthusiasm and a thrilling time for all the staff that set a tone and substance for research excellence in the many years that followed.

Bandeen also tempered Atlas' excessive enthusiasm by his calm and efficient manner under difficult pressures. He was



Bill Bandeen and Bill Nordberg on the NASA Convair 990 testing the Microwave Scanner That Eventually Led to the Flight of the Electrically Scanning Microwave Radiometer (ESMR) on Nimbus 5, Launched Dec. 11, 1972. Photo taken May 11, 1967.

also immensely well organized, and there was never a document that he could not retrieve promptly from the piles that were stacked along the walls of his office in chronological order. He was familiar with every Research and Technology Plan (RTOP). He took responsibility for program management and budgeting. He knew the quirks and strengths of all the staff and how to keep them motivated. His presentations were epitomes of lucidity and brevity. His only weakness was his tendency to do too much on his own.

“Bill Bandeen is at the top of the list of those who must be credited with the considerable success that the laboratory achieved,” stated David Atlas. “He made all those with whom he interacted look good, and he did it all with exceptional professionalism, modesty, and poise.”

After Atlas' 1984 retirement Bandeen continued his NASA career until his own retirement in 1989, rising to Associate Director of Space and Earth Sciences. But he could not stop even then. Instead, he continued part-time as a consultant at the Earth Observing System Project Science Office at Goddard. Over his career he published a number of papers in the field of atmospheric radiation. He must also be recognized for his contributions to the hundreds of papers published by the staff. He was elected Fellow of the American Meteorological Society (AMS), the American Geophysical Union, and the American Association for the Advancement of Science. He was a member of the AMS for about 50 years.

Bandeen Bandeen was an extraordinarily generous, kind, loving, and honorable man. He will be profoundly missed, not only by his family, but also by the countless colleagues and friends at NASA and around the world. ■

2003-2004 NASA Leadership Development Program Graduates Honored

By Chris Williams

Photo by NASA/Headquarters

On July 26, 2004, the 19 members of the 2003-2004 Leadership Development Program (LDP) celebrated the completion of their developmental year with a ceremony at NASA Headquarters. The program participants, who represented nine Centers, were the first graduates of the NASA Leadership Development Program. The LDP replaced the NASA Professional Development Program in support of the Agency's emphasis on improving leadership skills and effectiveness.

In his address to the graduates, Deputy Administrator Gregory thanked the participants for the contributions they made to the Agency as part of their developmental assignments. He also praised them on the completion of their class project "Achieving Mission Success in the 21st Century through Collaboration." Mr. Gregory stated that he was particularly thankful and impressed that the class did not recommend the Agency take on a collaboration initiative, but rather they took what they learned about collaboration and infused it into existing initiatives and efforts such as One NASA, the APPL curriculum and many other efforts. As a result of their project the 2003-2004 class identified 75 collaboration best practices. (See box below). A link to the full report of their findings and recommendations can be found on the Leadership Development Program home page at <http://ldp.nasa.gov/>.

Three participants from the class Judy Robinson, Steven Goodman and Reginald Alexander were elected to speak at the graduation to share their reflections of the year and their thoughts on leadership. All three spoke of how, through the LDP, they became aware of how their personal vision and values aligned with NASA's vision, mission and values and how this alignment was key in helping strengthening their ability to be more effective leaders.

2003-2004 Leadership Development Program Graduates:

Dr. Jill J. Bauman, ARC	Gail A. Skowron, JSC
Dr. Orlando Santos, ARC	Dr. Orlando Melendez, KSC
Brent R. Cobleigh, DFRC	Kathleen S. Potter, KSC
Wei-Yen Hu, GRC	Melvin J. Ferebee, Jr., LaRC
Scott R. Thomas, GRC	Shawn T. Gallagher, LaRC
Gary L. Cox, GSFC	Elizabeth B. Plentovich, LaRC
Jeffery M. Lupis, HQ	Paul W. Roberts, LaRC
Dr. Judith L. Robinson, JSC	William L. Willshire, Jr., LaRC
Reginald A. Alexander, MSFC	Dr. Steven J. Goodman, MSFC



Left, Deputy Administrator, Fred Gregory gives 2004 LDP graduate, Gary Cox his completion certificate.

The vision of the LDP is to create powerful leaders who align with NASA's vision, mission and values and who create results that matter to the American people. Program elements include developmental assignments, a class project, individual coaching, training and briefings by NASA and outside leaders. Participants must be grades 13-15 and are competitively selected at the Agency level.

Collaboration Best Practices

How does your project rate?

- Managers should recognize that efficient and effective collaborations are the product of relationships.
- Face-to-face interactions, especially as the collaboration forms, improves the formation of relationships, establishment trust, and issue resolution.
- Interpersonal interaction substantially improves the ability to overcome inter-center conflicts.

Partnership agreements must have clearly defined

- Roles and responsibilities
- Shared vision, goals, and objectives
- Flexibility to deal with changes over time
- Means for decision making and conflict resolution between the parties.
- Funding processes
- Buy-in !

Continued on page 8

Center Director, Weiler (cont'd from front page)

What challenges does NASA Goddard need to overcome to make it a more competitive institution?

We have to find ways to streamline our infrastructure. We have to become more efficient in how we manage that infrastructure. We have to encourage our scientists and engineers to produce competent proposals so that we can compete for new business in a broad number of areas. Our livelihood lies in being able to compete for new missions.

What strengths do you see that NASA Goddard already possesses?

I would say that our strength lies in our project and program management skills, in large and small system engineering and in Earth and space science, including solar system exploration. I don't think that it is widely known that NASA Goddard has put more instruments on planetary missions than any other NASA center. Last but not least, our greatest strength is the people and the talents that they possess.

What do you have to say to those here at NASA Goddard, who are frightened that the center will become a FFRDC?

As the Administrator has said no decisions will be made rapidly. We have to remember one size does not fit all. What is right for one center may not be right for another. Ultimately, whatever decision is made, will take some time. It will take new legislation. Nothing will happen immediately. Recognizing that employees have concerns about this topic, I asked Judy Bruner to initiate an open dialogue with employees. We are committed to continuing these open dialogues and all-hands meetings.

Where do you see NASA Goddard in 2 years, 5 years?

My goal is to see NASA Goddard as a major force in the implementation of the new Vision for Exploration. In addition, I would like to see NASA Goddard more visible in the eyes of the American public. I want to build up our public outreach efforts including education and public affairs. We will be launching the first lunar mission and extending the life of the Hubble in the next five years. These activities should increase the visibility of NASA Goddard.

I want us to maintain our science and engineering excellence. We should do everything in our power to attract the best and the brightest, so that we can continue to be a first rate science institution.

You've been on the job for a month, what has surprised you about NASA Goddard?

People are more willing to express complaints and concerns to me than I originally thought. I was told that people would be scared to speak up, but I have not found that to be the case at all. In fact, one person asked why the center still has jersey barriers between buildings 3/14 when people can drive behind them anyway. The barriers are taking up needed parking spaces. I asked Diane Williams to give me a tour of

the area to find out what the concerns are and how we can address them.

What would people be surprised to know about you?

They would be surprised to know that I am really a cream puff. My reputation is that of a hard-edged, tough manager. I am not that tough, but that is not commonly known.

I believe in family. I am a single father. I put my family way before my work. Most people don't see that side of me.

Also, I am intensely interested in science, the Earth, and the Universe in which we live. I always have been. Since the time I was 8 or 9, I have been fascinated with the question of *are we alone?* This is more than just a science question, it is a question that affects everyone. It's a question that has been asked ever since Fred and Wilma Flintstone first looked up at the night sky and pondered what might be out there. I believe that we will have an answer to this question within this century and NASA Goddard will have a major role in that endeavor. ■

Collaboration Best Practices (cont'd from page 6)

- ❑ Processes and procedures should be agreed upon, understood, and documented
- ❑ Points of contact should be established to manage and resolve issues.
- ❑ Successful collaborations require sufficient travel
- ❑ Health of collaborations should be measured, continually assessed, and discussed at management reviews.

Managers and Leaders should

- ❑ Encourage and model respect and appreciation for each other's capabilities and knowledge.
- ❑ Recognize and reward team members timely and peer driven most effective
- ❑ Consider personality compatibility
- ❑ Assure that difficult personalities are not in position to disrupt collaboration
- ❑ Have collaboration as a performance plan element

Senior Managers should

- ❑ Review projects, support funding, and avoid micromanagement
- ❑ Personally visit project staff and facilities and play an active role in the development of collaboration agreements
- ❑ Setting of project expectations
- ❑ Management of inter-center difficulties

Explorer School Teams 2004 Provided Back to School Experience

By Dewayne Washington

Photos By: Pat Izzo/293

It was back to school during summer vacation for NASA Goddard's 2004 Explorer School team members. Eight, five-member teams spent a week at Goddard becoming familiar with all that NASA has to offer in support of inspiring the next generation of explorers.

The week of study for educators and administrators is part of the Explorer School program designed to provide team members mission-based programs, content, education support and cutting-edge science unique to NASA.

During the week of July 18-23, team members from Eastern Middle School, Silver Spring, Maryland; Smyrna School District, Smyrna, Delaware; Biddeford School Department, Biddeford, Maine; Mascoma Valley Regional School District, Canaan, New Hampshire visited Goddard.

The following week, July 25-30, members from Middle School 44, New York City, New York; Woodbury Public Schools, Woodbury, New Jersey; Greencastle-Antrim School District, Greencastle, Pennsylvania; and Anna Howard Shaw Middle School, Philadelphia, Pennsylvania spent time at Goddard. These were eight of a total of 50 new schools selected for the NASA Explorer School Program.

Throughout the six days of training, various Goddard scientists, engineers and members of Goddard's education office exposed the educators and administrators to more than 45 hours of classroom training in math, science and technology. Training days included presentations by members of the Goddard research community, computer lab instruction, problem solving, discussions and



Dr. Antoinette Wells, GSFC Education, talks to Explorer School teams.



There were many hands on opportunities for team members.



There was always something else to see.

demonstrations. Each hour was designed to educate and inspire the educators and administrators who are now been charged to inspire as well as educate our next generation of potential explorers.

The Explorer School education initiative was launched on June 30, 2003. The program sends science and mathematics teachers "back to school" at NASA centers during the summer to acquire new resources and technology tools. The program also uses NASA's unique content, experts and resources to make learning science, mathematics and technology more appealing to students throughout the year.

Sponsored by NASA's Education Enterprise, the Explorer Schools Program is a three-year partnership between NASA and 100 Explorer School teams. There were 50 schools selected last year, the first year of the program. The teams of teachers and education administrators represent many diverse communities.

During the commitment period, NASA education specialists and scientists provide investigation opportunities and professional development for the teams to spark innovative science and mathematics instruction directed specifically at students in grades four through nine.

For more information about NASA Explorer Schools visit <http://explorerschools.nasa.gov> ■

In the Safety Corner

Backpack Related Injuries in Children

Overloaded backpacks used by children have received a lot of attention from parents, doctors, school administrators and the media in the past several years. According to the U.S. Consumer Product Safety Commission there were more than 21,000 backpack-related injuries treated at hospital emergency rooms, doctors' offices, and clinics in the year 2002. Injuries ranged from contusions, to sprains and strains to the back and shoulder, and fractures.

"Back pain in children is not so uncommon anymore," according to John Purvis, MD, pediatric orthopedic surgeon. "Orthopedic surgeons nationwide have seen an increase in children visiting their offices complaining of back and shoulder pain. If a child complains of back pain, parents should consider that it might be due to the backpack or perhaps something more serious. Back pain that persistently limits a child's activities, requires medication or alters sleep patterns warrants investigation."


The American Academy of Orthopedic Surgeons recommends that a child's backpack should weigh no more than 15 to 20 percent of the child's body weight. This figure may vary, however, depending on the child's body strength and fitness.

While some experts disagree on whether heavy backpacks are the source of back pain in children, most agree that using good judgment when wearing one will reduce the risk of backpack-related injuries. It is important to partner with your child on the selection, packing and caring of the backpack.

Warning Signs a Backpack is too Heavy:

- Change in posture when wearing the backpack.
- Struggling when putting on or taking off the backpack.
- Pain when wearing the backpack.
- Tingling or numbness.
- Red marks.

Tips for Safe Backpack Use:

- **Wear both straps:** Use of one strap shifts the weight to one side, causing muscle spasms and low back pain. This is true even with one-strap backpacks that cross the body. By wearing two shoulder straps, the weight of the backpack is better distributed, and a well-aligned symmetrical posture is promoted.
 - **Wear the backpack over the strongest mid-back muscles:** The size of the backpack should match the size of the child. It is also important to pay close attention to the way the backpack is positioned on the back. The backpack should rest evenly in the middle of the back. Shoulder straps should be adjusted to allow the child to put on and take off the backpack without difficulty and permit free movement of the arms. Make sure that the straps are not too loose and that the backpack does not extend below the low back.
- 
- **Lighten the load:** A heavy backpack forces the wearer to bend forward. Choose to carry only those items that are required for the day. Each night remove articles that can be left at home. When organizing the contents of the backpack, place the heaviest items closest to the back to reduce kinetic forces that cause postural misalignment and overwork muscles.
 - **Use proper lifting techniques:** Bend at the knees and use your legs to lift the backpack placing one shoulder strap on at a time.

Tips for Selecting a Backpack:

- Choose ergonomically designed features that enhance safety and comfort.
- A padded back to reduce pressure on the back, shoulders and under arm regions, and enhance comfort.
- Hip and chest belts to transfer some of the backpack weight from the back and shoulders to the hips and torso.
- Multiple compartments to better distribute the weight in the backpack, keep items secure, and ease access to the contents.
- Compression straps on the sides or bottom of the backpack to stabilize the articles and compress the contents so that the items are as close to the back as possible.
- Reflective material to enhance visibility of the child to drivers at night. ■

SHARP Students Speak About a Life Changing Experience

By Dewayne Washington

Participation in the poster session and performing the duties of master and mistress of ceremony were the final assignments for Kevin Chu and Sarah Allen, members of the 2004 NASA Goddard's Summer High School Apprenticeship Research Program (SHARP). They along with 17 colleagues gathered with family members, mentors and well wishers for a final session that officially concluded their participation in Goddard's 2004 program. The ceremony was held August 11, in the Building 8 auditorium.

"SHARP has been an incredible learning experience, proving to be more than a worthwhile eight weeks," said Kevin Chu, Thomas Wootton High School student. "I have certainly profited from the numerous enlightening experiences I encountered at Goddard. Likewise, through both the hardships and excitement that I stumbled upon at SHARP, I have developed great, enduring friendships and memories that I will undoubtedly cherish for a lifetime."

During their eight week stay, each student was assigned to a mentor and presented with opportunities to interact with the best NASA and Goddard has to offer. Student projects included a study of Project Apollo, Remote Sensing, the Effects of Solar Wind, and the spacecraft Aura.

"SHARP has been so much more than just a summer job," said Leah Anderson, Richard Montgomery High School student. "For eight weeks, it has given us the chance to earn experience that can be applied anywhere, and it has inspired me to work towards a career in science and engineering by showing exactly what these careers can offer. I am grateful to have had the opportunity to spend my vacation around such a great group of mentors and peers in the unique environment of NASA's Goddard Space Flight Center."

Initiated in 1980, NASA SHARP is an agency-wide program offering a select group of area high school students the opportunity to pair with scientists, engineers and technology specialists to work on research-based projects. SHARP was specifically designed to attract and increase the pool of underrepresented student participation and success rates in science, mathematics and technology.

"The SHARP program has contributed greatly to my understanding of what it means to be a scientist or an engineer working for a major institution like NASA," said Adam Clayton, a student at The Bullis School. "By providing me with countless opportunities to meet distinguished scientists and engineers, SHARP has provided me with the opportunity to learn what science is about in a way that would be very difficult to find anywhere else. It has exposed me to the responsibilities and duties associated with working on an engineering project and in a lab. I have SHARP to thank for an outstanding summer experience that could not have been found anywhere else."

To be eligible to participate in SHARP at Goddard, students must have completed the 10th grade and have an overall 3.0 grade-point average; demonstrate a strong interest in and aptitude for a career in mathematics, engineering or the sciences; be a permanent state resident; attend school within a 50-mile radius of Goddard; and be available on a full-time basis for the 8-week

Photo by Pat Izzo/293



The Sling Shot Competition team demonstrate their winning form.

duration of the program.

As apprentices, the students learn and earn. After participating in an orientation process, they are assigned to work with a NASA mentor in a specific technical area. During this apprenticeship, the students carry out assignments and participate in a variety of enrichment activities such as career counseling and field trips.

SHARP was not only designed to attract and increase underrepresented students' participation and success rates in mathematics and science courses, but to also build a pool of science and engineering professionals in the workplace.

"My SHARP experience has been a memorable one," said Sarah Allen, Roland Park Country Day School student. "From the enrichment activities to working with a mentor, SHARP has been a wonderful experience. I cannot believe how much I have learned in just a short eight weeks. I am very grateful to have participated in SHARP; I will carry with me what I have learned this summer for the rest of my life."

For more information about NASA SHARP check out the web site at <http://www.nasasharp.com>. ■

Safety Alerts

The Center receives information from the Government-Industry Data Exchange Program (GIDEP) concerning product recalls. In an effort to keep employees informed of recalls that may affect you at work and at home, Code 300 will provide alerts or recalls that have been issued by the Consumer Product Safety Commission (CPSC) along with web site links for retrieving further information on the recalls or alerts.

New Federal Web Site for Agency Recalls: <http://www.recalls.gov>

CPSC, Vornado Air Circulation Systems Announce Recall of Portable Electric Heaters.

<http://www.cpsc.gov/cpscpub/prerel/prhtml04/04191.html>

CPSC, Matsushita Electric Corporation of America Announce Recall of Combination TV/VCRs.

<http://www.cpsc.gov/cpscpub/prerel/prhtml04/04190.html>

CPSC, Apple Announce Recall of PowerBook Computer Batteries

<http://www.cpsc.gov/cpscpub/prerel/prhtml04/04201.html>

WWII Memories at Kwajalein Atoll

By Rebecca Hudson

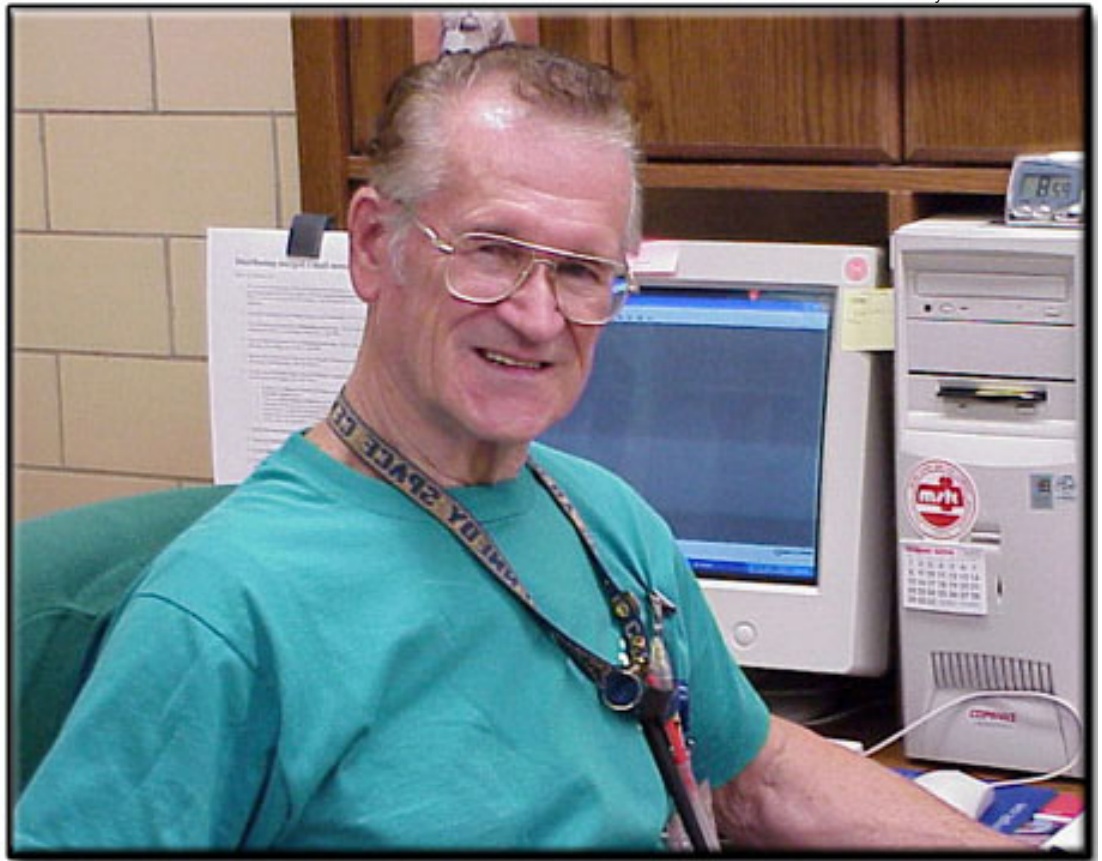
Photo by Rebecca Hudson

As part of the large-scale NASA EQUIS II sounding rocket campaign, many Wallops employees are going to Kwajalein Atoll in the South Pacific. Some are going for the first time, while others participated in the EQUIS campaign in 1990 from Kwajalein.

For one Computer Sciences Corporation (CSC) employee, however, this trip rekindles memories from over 60 years ago. Don Grant, a former United States Marine, will be returning to Roi-Namur after battling there in 1944.

On February 1, 1944, Grant, an 18 year old marine soldier with the 24th Marine Regiment unit, went ashore on Roi-Namur. The mission was to seize the Japanese held group of islands in the Kwajalein Atoll, which included Roi-Namur. The Americans were successful in their attempt to gain control of the territory from Japanese forces. This battle was part of the World War II "march" from Guadalcanal to Okinawa.

Because of security requirements, Grant was not able to take pictures or even keep a journal of his experiences on Roi-Namur. After 60 years, few memories remain. One of the most vivid memories is of a prodigious explosion. A Japanese



Don Grant

torpedo storage bunker exploded. Grant recalls the thunderous roar and sky that was blackened from smoke. "It was said that nearly 24 men perished in that explosion," Grant said. After the initial explosion, concrete and other debris began falling. Grant had to take shelter by crawling under palm trees. Remnants of the bombed buildings stand on Roi-Namur today. One is a memorial to soldiers who lost their lives during these battles. ■

Employee Spotlight



Photo by Code 293 / Technical Information Services Branch

Mr. Townsend former Deputy Director of NASA's Goddard Space Flight Center leaves the agency after serving 41 years. Townsend accepted a position with Ball Aerospace and Technologies Corp. in Boulder, Colorado, as the Vice President and General Manager for Civil Space.

As Deputy Director, Mr Townsend shared with the Director the responsibility for the executive leadership and overall direction and management of the Center and its assigned programs and activities. Additionally, he served as the principal operating official with general management responsibility for Center programmatic activities and management of resources.

During Mr. Townsend's tenure as Deputy Director, he developed a keen interest in creating an inclusive workplace environment that recognizes and respects individual talents that contribute to mission success. As chair of the GSFC Diversity Council and diversity champion for the Center, his commitment led to the development of the Goddard Diversity Action Team (GDAT), Diversity Dialogue Project (DDP), the Goddard Opportunity Bulletin Board System (GOBBS) and the rekindling of Celebrate Goddard-as a means

to celebrate the accomplishment of Goddard's mission due to the vast diversity we have on Center.

In addition, Mr. Townsend is the first Deputy Director to recognize the gay, lesbian, bisexual and transgender employees at Goddard. Townsend made this statement when opening for a Sexual Orientation Dialogue Workshop at Goddard, "I am not asking you to adopt anybody else's behavior or lifestyles or for that matter even agree with it. All I am asking is that you understand it and that we move toward an environment that respects people for the contributions they make, independent of their background or their sexual orientation. We have to have the most inclusive environment that we can possibly have."

Prior to his assignment to Goddard in March 1998, Mr. Townsend had served since August 1993 as the Deputy Associate Administrator (Programs) for the Office of Earth Science where he was responsible for the general management and direction of all Earth Science flight programs. For a 20-month period, beginning in June 1996, Mr. Townsend served as the acting Associate Administrator for the Enterprise.

Prior key positions within NASA included Deputy Director of the Earth Science Applications Division and Chief of the Flight Programs Branch. His first assignment at NASA Headquarters was to lead the development of TOPEX/POSEIDON, a cooperative program with France, whose purpose was to fully exploit the potential of altimetry for oceanography. During his tenure at Wallops, which began in 1963, Mr. Townsend was

Experiment Manager for the Seasat Radar Altimeter Experiment, which flew in 1978 and provided the first high precision altimeter data taken over the oceans from space.

Mr. Townsend said this about his career at NASA, "My proudest accomplishment is having been intimately associated with 59 missions launched throughout my career, and having experienced only one accountable mission failure. While Mission Success has always been foremost in my mind, we couldn't have accumulated this outstanding track record without the dedicated efforts of all the people that I have had the good fortune to have been associated with over these 41 years."

Mr. Townsend left a legacy of respect, inclusion and openness. Center Director, Ed Weiler and Deputy Director, Chris Scolese reiterated their commitment to diversity, with Mr. Scolese continuing to

champion the diversity process at Goddard, as well as continue in earnest what has been started under Mr. Townsend's tenure. We wish Mr. Townsend the best as he embarks on a new role. ■



Photo by Margie Smalls/Code 293

Bill poses at Celebrate Goddard event, an event rejuvenated through his efforts to create an inclusive workplace.

Interns Infected with NASA Virus

By Amy Pruett

During the summer months, Goddard teems with student interns interested in the fields of science, engineering, mathematics, and other disciplines. The center sponsors 17 programs affiliated with the Equal Employment Opportunity (EEO) Programs Office. For 10 weeks, 60 of the country's top graduate and undergraduate students participated in their programs. Competitively selected, they were chosen because they exhibited NASA's core values of diversity, excellence, and integrity.

environment, and have met beautiful people." When asked if he would like to continue working at NASA, he responded enthusiastically, "Provided the opportunity I would work at any site, any center, anywhere in the universe, I am flexible."

Photos by Chris Gunn/293



Lawrence Jackson, after giving a final presentation at the Visitor's Center.

Almarie Guerra was equally thrilled with her experience at Goddard and hopes to return next summer, perhaps as a co-op. An undergrad pursuing a degree in accounting and a minor in drama at the University of Puerto Rico, Rio Piedras, she is an individual who embraces new opportunities and challenges. Guerra "dreams of living in five different countries in [her] life-time." She can easily "relate to NASA's mission" and its values of ingenuity,

exploration, and innovation. Working with the Integrated Financial Management System in the Earth Science Technology Office has convinced her of Goddard's excellence.

As an intern participating in the Achieving Competence in Computing, Engineering, and Space Science (ACCESS) program, Beau Hollis can also see himself working at Goddard in the future. A Digital Arts and Science major at the University of Florida, Hollis refined the Instrument Remote Control Framework. At his internship, Hollis said "I have had a great learning experience. I can see myself coming back here, I have enjoyed the people around here, the working environment, and what I have been working on, it has been good."

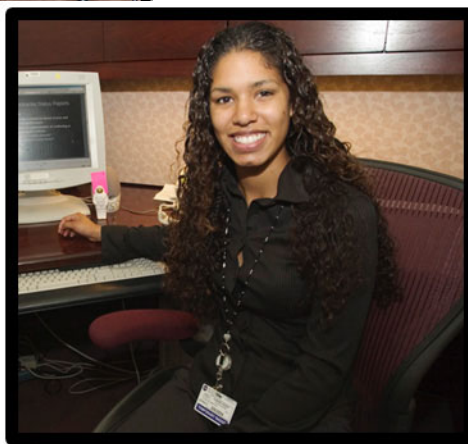


Daniel Chenet giving his final presentation.

Dan Krieger, the Summer Internship Program Manager, believes that "the goal of the Equal Employment Opportunity Intern Program is to provide a good work experience for potential employees. Their experience at Goddard is supposed to infect them with the NASA virus, making them never wanting to leave."

From speaking to six of the interns participating in the program, it is clear that Krieger's plan works.

Goddard has impressed Lawrence Jackson, a doctoral candidate in physics at Alabama A&M University. During his 10 weeks, Jackson worked with Dan Powell in nanotechnology, gaining real-world experience, and enriching his education. "In the short time that I have been here, I have received a tremendous amount of experience, had lovely opportunities, experienced a great



Almarie Guerra working in the Earth Science Technology Office.

Daniel Chenet, a mechanical engineering major at the University of Maryland, enjoyed his internship. "I have learned a lot from my mentor.

In college, classes are all theory based, but here I have had the opportunity to work with hardware and apply my knowledge. It has been a good experience; I can see myself doing this, working in this kind of an atmosphere in the future."

The 2004 summer interns, at the end of their 10 weeks, were excited about their experience and hopeful to return, and join the NASA family. ■

Solar Dynamics Observatory Moves Into Phase C of Development

By Jim Sahli

NASA's Solar Dynamics Observatory (SDO) project has past a critical milestone and is now in full development.

"We recently conducted a successful Preliminary Design Review and we are confirmed as a mission to move into Phase C. We are starting our detailed designs in preparation for the Critical Design Review which should occur next Spring," said Elizabeth Citrin, the SDO Project Manager, here at Goddard.

"It is an exciting time—actual hardware is coming together in the form of as breadboards and engineering test units. The mission becomes more real when you see pieces of the instruments and spacecraft up and running," said Citrin.

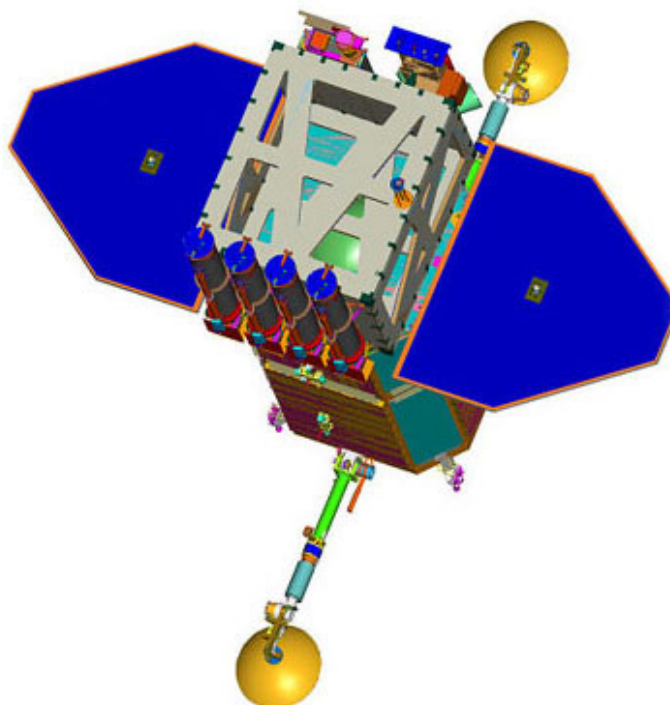
When asked to compare the on orbit solar observatories with the SDO mission Citrin said the following.

"Over the last few years thanks to such missions as SOHO and TRACE, we have learned much about the solar influences on global change and space weather. But we have also found that we do not fully understand all sources of the irradiance variations and we can't reliably predict energetic particle eruptions or solar wind variations," she said.

"We have learned much about the structure and dynamics of the solar interior and the evolution of the Sun's magnetic field, but we still don't understand the solar dynamo and can't reliably predict the size of the next solar cycle or the emergence of the next active region. The understanding of the mechanisms of solar variability that we have gained from previous missions, ground-based observations, and theoretical studies leads us to additional questions that require new observations.

"The SDO spacecraft instruments will have a much better resolution than previous solar observatories. The spacecraft also will take a lot more data than we did previously," said Citrin. "The big challenge of SDO is the amount of data. We will be taking data 100 times more data than other Sun observers while producing pretty high definition video images of the Sun," she said.

"The three instruments on SDO will teach us more about the sun so we can learn how the solar activity affects our space weather environment. This will lead to better predictions of space weather which is the end goal."



Artist concept of the Solar Dynamics spacecraft

"The HMI instrument is more capable than the MDI instrument on SOHO. It takes 10 times more data than the instrument on SOHO. We will be able to see smaller features and events that happen on a smaller time scale. The more patterns we can identify on the sun and will allow us to better extrapolate the patterns and how they affect us," said Citrin.

The high resolution, rapid cadence, and continuous coverage required for SDO observations lead to a design that places the satellite into an inclined geosynchronous orbit. This allows for a nearly continuous contact with a high data rate with a single dedicated ground station.

Photo by LWS/STP EPO Staff



Teachers at the STP/LWS Summer Institute in Mayaguez, Puerto Rico use a telescope as one of their workshop activities

Workshop Efforts To Give Sight Impaired New Access to NASA

By Dewayne Washington

Goddard was host to a NASA pilot workshop dedicated to explorers who are blind or visually impaired, August 9-13, in building 32. The week of activities was created to begin the process of developing a full curriculum guide for use in classrooms for the blind and visually impaired - and/or ALL classrooms - that will be accessible via the web.

This pilot workshop brought together educators of persons who are blind or have a visual impairment from across the country, with GSFC Sun-Earth Connection personnel, and educator-trainers from the National Science Teachers Association (NSTA). Together they are working to adapt the Student Observation Network (SON) materials for the Sun-Earth Connection, for use with the NSTA's Webwatcher's curriculum guide development program.

With support from the NASA Explorer School Program, Goddard's Office of Education, under the direction of Dr. Robert Gabrys, requested the assistance of the Southeast Regional Clearinghouse (SERCH) to coordinate this first of its kind effort for NASA. The partnerships in this effort also include the National



Dr. Robert Gabrys addresses workshop participants.

Funded by the Office of Space Science (OSS), SERCH is charged with promoting space science awareness and enhanced interest of students with special needs in science, math, and technology. SERCH, under the guidance of their Director, Dr. Cassandra Runyon, was contracted to facilitate this effort at Goddard. The goal of SERCH has been to partner with all NASA facilities, state science coordinators, schools, teachers, parents, industry and others to inspire the next generation of explorers with special needs.

Peggy Steffen, NASA Explorer Schools Program Manager, began the session on Day One, thanking each participant for their involvement in this effort. "One thing we don't need is more education products," Steffen told the group of educators who are directly involved with visually impaired students. "We want to look at what we have already created and make sure we can parallel that with future efforts." NASA participants for the workshop also included Explorer School Coordinators, and Aerospace Education Services Program Specialists.

Dr. Gabrys told the group, "What you are doing will have an impact for generations because you will impact the teachers who will impact students for years to come."

Day One also included an introduction to Webwatchers by Mark Bosveld, NSTA, and an introduction to SON with a look at content available for tracking a solar storm. Webwatchers is a web site created by NSTA, the National Science Foundation and corporate sponsors,

designed to provide guidance for science teachers in grades K-12. The SON team members included Elaine Lewis, Don Robinson-Boonstra, Lou Mayo, Jim Thieman and Troy Cline.



Plenty of activities to test their use with visually impaired students.

Science Teachers Association (NSTA), The National Federation of the Blind (NFB), and the Sun-Earth Connection Forum.

Solar Dynamics (cont'd from page 15)

The spacecraft is scheduled to launch in April of 2008 from Cape Canaveral Air Force Station for a nominal five-year mission. "We are in the middle of the launch services procurement, so I can't comment on which launch vehicle, but it will be in the EELV class," said Citrin.

Photo by LWS/STP EPO Staff



A group of teachers at the STP/LWS Summer Institute use a Sunspotter to observe activity on the sun.

The mission will be delivered into a geosynchronous transfer orbit (GTO) by the heavy launch vehicle. SDO's propulsion system will then perform a circularization maneuver to boost the spacecraft into geosynchronous orbit (GEO).

"The SDO team is formed and engaged in the mission development, said Citrin. "We have a solid team working towards a launch just over three years away. The spacecraft and ground system are being developed in-house at GSFC with an experienced team of engineers and administrative personnel, who also mentor new and new-to-GSFC people. I've worked with these folks on previous missions and you couldn't put together a better team," said Citrin.

"Our instruments are being built by University of Colorado, Lockheed-Martin Solar and Astrophysics Laboratory and Stanford University. Many of our instrument colleagues worked on the TRACE and SOHO missions. Having those experienced solar scientists on SDO makes it a great mission to work on," said Citrin.

SDO spacecraft and ground system work is going on all over the Center in the labs of the various discipline engineers. But as the pieces come together activities will be centralized in the Building 7/15/29 complex for integration and testing. As the hardware comes together, we are also attempting to co-locate the team in Building 29. "Having the core team working together

in the same facility is by far the most efficient way to get things done," said Citrin. The instruments are being built in parallel with the spacecraft at the instrument team facilities. They will then be brought to Goddard for integration with the spacecraft and environmental testing, a joint effort between Goddard and the instrument teams."

"Building a spacecraft in-house allows us to develop the core competencies essential to the Center's mission. Young team members have the opportunity to experience a mission development from beginning to end. And our approach is to allow team members to not only develop in their own disciplines, but to gain broader experience in other aspects of the mission that fit their interests and career plans."

"I can't claim any credit for assembling this great team and leading the mission through such a smooth confirmation. Ken Schwer, the prior Project Manager is responsible for that. I feel I inherited the best job at Goddard. The SDO mission has the right people, the right plan and processes, and loads of enthusiasm to carry us through any problems that arise. SDO will be a premier observatory for Living With a Star Space Weather Network," she concluded. ■

Impaired Workshop (cont'd from page 16)

Photo by Chris Chris/293



Individual work stations were available

Day Two and Three of the workshop included discussion and hands on activities surrounding SON, and a tour of NFB in Baltimore, Maryland. The remainder of the week was devoted to a further explanation of Webwatchers by members of NSTA.

This is an ongoing goal of developing an on-line writing component that will provide

students the opportunity to do research using NASA data within SON that was designed to provide the context by which SEC missions tell their interrelated stories. The on-line writing component will instruct students in writing a proposal for research and separately, a final report. The component will develop student's ability for causal explanations through a foundation of factual knowledge utilizing missions' data including those with disabilities....as only NASA can. ■

Saturn Tourist Packs Instruments from Goddard

By Cynthia O'Carroll

Much has appeared in the news recently regarding Saturn's biggest tourist, the Cassini Spacecraft, as it has begun its tour of Saturn, but not many realize that Goddard scientists have made major contributions to this mission. Although NASA's Jet Propulsion Laboratory (JPL) is the lead Center, Goddard scientists have played a key role, building three of the instruments entirely and partially building a fourth instrument.

The Cassini Mission is an international collaboration between three space agencies. Two spacecraft actually comprise the Cassini Mission: the Saturn Orbiter and the Huygens Probe, the latter of which is attached to the Orbiter. The Orbiter was built and managed by NASA JPL in Pasadena, Calif. The European Space Agency (ESA) built the Huygens Probe and the Italian Space Agency provided Cassini's high-gain antenna and Huygens Probe to Cassini spacecraft communications system.

"It has been a long seven year wait for our instruments to finally reach the amazing planet of Saturn and its moon, Titan," stated Dr. Hasso Niemann, the head of Goddard's Atmospheric Experiment Branch (AEB), Code 915. "We are anxious to see the results of all of our hard work."

The Saturn Orbiter includes 12 instruments that will spend four years taking an extensive survey of Saturn, its rings and moons. The instruments on board the Saturn Orbiter that Goddard scientists and researchers built are the Ion and Neutral Mass Spectrometer (INMS) and the Composite Infrared Spectrometer (CIRS). Goddard scientists also assisted in building the Cassini Plasma Spectrometer (CAPS) that is also on board the Orbiter.

Gas Chromatograph Mass Spectrometer

The Huygens Probe was developed by the ESA to descend through the atmosphere of Saturn's largest moon – Titan. The only Goddard instrument on board the Probe is the Gas Chromatograph Mass Spectrometer (GCMS), which was built by Goddard's AEB, Code 915, led by the Principal Investigator, Dr. Hasso Niemann. This instrument will investigate the chemical composition, origin, and evolution of the atmosphere of Titan. By sampling gas directly from the atmosphere as the Huygens Probe descends by parachute, the GCMS will continuously measure the atmospheric composition and the isotope ratios of the major gases until the Probe reaches the surface, a time of approximately 2 1/2 hours. Once the Probe reaches the surface of Titan, the



Eric Raaen, Heidi Manning and Wayne Kasprzak of the Atmospheric Experiment Branch, Code 915, working on the INMS instrument.

GCMS will continue to operate as long as the Huygens Probe is functioning. A surface operating time of seconds or minutes is hoped for but is not a major goal of the mission.

Once the scientists in Code 915 completed the GCMS, it was delivered to the ESA's European Space Research and Technology Center contractor facility near Munich, Germany where it was assembled and tested with the Huygens Probe.

"The long process of designing, fabricating and testing the GCMS was an exciting challenge and one that no one involved will soon forget," stated Stanley Way, the GCMS Instrument Manager. "It involved all of the Branch employees, many others around Goddard in technical, quality and administrative areas, many contractors, both local and around the U.S., and university support. This was the most complex instrument ever attempted in the long history of the Branch development of planetary mass spectrometers."

Ion and Neutral Mass Spectrometer

The same team of scientists, engineers and technicians from Goddard's AEB, Code 915 designed, fabricated and tested the Ion and Neutral Mass Spectrometer (INMS) that is onboard the Saturn Orbiter. It is intended to measure positive ion and neutral species composition in the upper atmosphere of Titan. It will also investigate the interaction of Titan's upper atmosphere with the magnetosphere and solar wind, and will measure ion and neutral species compositions during ring plane crossings and icy satellite flybys. After the calibration and environmental testing at Goddard the INMS instrument was delivered to NASA JPL where it was mounted onto the Cassini spacecraft. Since the launch, a facility team, headed by the University of Michigan has been directing the operation of INMS.

Composite Infrared Spectrometer

The third instrument built at Goddard is the Composite Infrared Spectrometer (CIRS) managed by the Systems Technology and

Cassini - Huygens (cont'd from page 18)

Advanced Concepts Directorate, with significant hardware contributions from personnel at Oxford University (UK), CEA/Service d'Astrophysique (France), and Karlsruhe University (Germany).

The CIRS is a Fourier-transform spectrometer spanning the thermal infrared over wavelengths 7 microns to 1 mm. It is a remote-sensing thermometer as its spectra provide information on temperatures and composition of planetary objects. The CIRS science team consists of 31 official investigators and six associates. Approximately half are European, from France, the United Kingdom, and Italy and eight team members are from the Laboratory for Extraterrestrial Physics, Code 693. Dr. Virgil Kunde, now retired from NASA, was the Principal Investigator originally, but Dr. Mike Flasar now fills the position.

CIRS proved its mettle during Cassini's swing by of Jupiter at the end of 2000. The acquired spectra allowed the first detection of the methyl radical and diacetylene in Jupiter's stratosphere. These hydrocarbons are key products in the breakup of methane by solar UV photons. CIRS temperature maps also led to the discovery of an intense stratospheric jet on Jupiter at the equator. This is thought to be related to a 4-year oscillation in equatorial temperatures that has been monitored in ground-based observations.

"We're in the sweet spot," said Flasar, PI for the CIRS instrument. "We have a great instrument, largely built here, it is giving us superb spectra, and we've already obtained results on Jupiter and the Saturn system that have surprised us. We're trying to understand and explain what we found, turning ideas over in our minds. This will be a nice way to spend the next four years of Cassini's nominal mission."

The CIRS observations of Titan during a distant flyby on July 2, 2004, right after Cassini's Saturn orbital insertion, are being used to provide a "weather report" to the Huygens project, to help it in last minute plans for deploying the probe that will be released from the Cassini spacecraft on Dec. 24 and descend through Titan's atmosphere on January 14. The CIRS team is hosting a Cassini-Huygens workshop at GSFC on Sept. 8-9, at which Cassini-Huygens scientists and engineers will discuss the latest results from Cassini and other experiments, as an aid to the final Huygens planning.

Cassini Plasma Spectrometer

Also on board the Saturn Orbiter is the Cassini Plasma Spectrometer (CAPS), an instrument suite managed by Southwest Research Institute and developed in collaboration

with Goddard and a host of other national and international partners. Goddard's Electrical Engineering Division, Code 560, played a major role in designing and developing this instrument. Dr. Ed Sittler of the Laboratory for Extraterrestrial Physics, Code 692, is a Co-Investigator for this instrument. The Principle Investigator for the CAPS instrument is Dr. David Young of Southwest Research Institute.

The CAPS instrument is a Direct Sensing Instrument (think touch, taste, smell) that measures the energy and electrical charge of particles such as ions and electrons that the instrument encounters. CAPS will perform an in-situ study of Saturn, its magnetosphere, its rings, and its satellites, including Titan, by measuring a variety of plasma phenomena. The primary instrument in the suite is the Ion Mass Spectrometer (IMS) for which Goddard provided both hardware and flight software sub-systems. The IMS is designed to measure the composition of the plasma within Saturn's magnetosphere which is expected to provide information about what Saturn, its icy satellites, rings and Titan are made of.

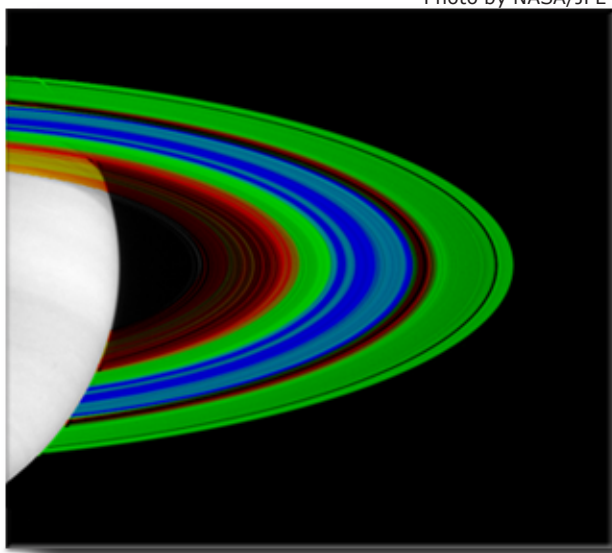
Goddard engineers and scientists worked very diligently over many years to provide two major sub-systems of the IMS, which includes a ± 15 kV high voltage supply for the time-of-flight section of the IMS and the Spectrum Analyzer Module (SAM). The SAM accumulates ion mass spectra that are then analyzed using a high-speed algorithm to produce the ion abundances of the plasma sampled by the IMS. Goddard also provided the

flight software for the IMS. Overall, the instrument is working at its expected capabilities and is expected to provide very exciting scientific results over the next four-year tour.

Cassini Mission

The Cassini spacecraft was launched on October 15, 1997, at the Kennedy Space Center aboard a Titan IVB/Centaur, the largest and most powerful American expendable launch vehicle available. Within days of liftoff, the GCMS, INMS, CIRS and CAPS underwent their first post-launch checkouts with excellent results. After a seven-year flight, Cassini entered Saturn's orbit on July 1, 2004 and began collecting data. The Cassini spacecraft has traveled 2 billion miles to reach Saturn and will travel another 1.1 billion miles while in orbit around Saturn. During its orbital tour, the Saturn Orbiter will conduct many flybys of Titan and the IMS (of the CAPS instrument) will be operated to measure the chemical composition and structure of the upper atmosphere of Titan, above approximately 559 miles (900 km) altitude.

ESA's primary contribution to the mission is the Huygens probe which will be released from the spacecraft on December 24, 2004 and take 20 days of unmonitored travel before it descends



This new false-color image of Saturn's rings was made from data taken by Cassini's CIRS instrument.

Cassini - Huygens (cont'd from page 19)

through the atmosphere of Titan on January 14, 2005, collecting aerosol samples, measuring the physical and chemical properties of the thick and hazy atmosphere and making images of the clouds and surface. The Huygens Probe will enter the upper layers of Titan's atmosphere at a speed of about 12,400 mph (20,000 km/h) miles per hour. It is designed to withstand the extreme cold of space about -330 F (-200 C) and the intense heat it will encounter during its atmospheric entry of more than 21,600 F (12,000 C).

The Huygens Probe descent to Titan will last between 120 and 150 minutes.

Five batteries onboard the probe are sized for a Huygens mission duration of 153 minutes, corresponding to a maximum descent time of 2.5 hours plus at least three additional minutes (and possibly a half hour or more) on Titan's surface. These batteries are capable of generating 1800 Watt-hours of electricity. During its descent, Huygens' camera will capture more than 1,100 images, while the Probe's five other instruments will directly sample Titan's atmosphere and determine its composition. Data from Huygens will be relayed to the Cassini Orbiter passing overhead. The data will be stored onboard Cassini's solid-state recorders for playback to Earth. The data gathered will be transmitted by the JPL control center to the Huygens Probe Operation Center in Darmstadt, Germany and from there it will be distributed to each instrument team.

Why Are We Studying Saturn?

Saturn is the second largest planet in the solar system, and has a larger ring system and more known moons than any other planet. Like Jupiter, it is a gas giant, with no solid surface below its clouds. Its winds move with speeds up to 1100 mph at the cloud tops. The solar wind, the rings of Saturn, these moons, and the ionosphere and magnetosphere of Saturn all comprise a complex system with interactions that are not yet fully understood.

The largest of Saturn's moons, Titan, is unique in the solar system. It possesses a dense atmosphere consisting primarily of nitrogen with several percent methane, possibly argon, and very low concentrations of complex hydrocarbons and nitrogen-containing species such as nitriles. It is assumed that the complex molecules are produced high in the atmosphere from methane and nitrogen by reactions driven by ultraviolet radiation, cosmic particle bombardment, and electrons entering the atmosphere from Saturn's magnetosphere. Many of these

complex molecules become the building blocks for small particles, aerosols, which slowly settle down to the surface and give Titan its distinctive hazy orange appearance. The surface pressure on Titan is approximately 1.5 times that of the sea-level atmospheric pressure on Earth, and the surface temperature is approximately 94 K (-292° F). Titan's day is long, about 16 terrestrial days. Its stratospheric winds, 250 mph and higher, spin around the moon ten times faster than its surface rotates.

The rings of Saturn are unique in the solar system in their extent and brightness and they are the signature feature by which Saturn

is known. The planet and the ring system serve as a physical model for the disc of gas and dust that surrounded the early Sun and from which the planets formed.

Detailed knowledge of the history and processes now occurring on Saturn's elaborately different moons may provide valuable data to help understand how each of the solar system's planets evolved to their present states. Represented among Saturn's collection of moons is a huge variety of chemical, geologic and atmospheric processes. Physics and chemistry are the same everywhere, and the knowledge gained about Saturn's magnetosphere or Titan's atmosphere will have applications here on Earth.

In our solar system, only Earth and Titan have atmospheres rich in nitrogen. Earth's siblings in the inner solar system, Venus and Mars, possess carbon-dioxide atmospheres, while Jupiter and Saturn resemble the Sun in their high

content of hydrogen and helium. Hydrocarbons like the methane present on Titan may have been abundant on the young Earth.

The importance of Titan in this connection is that it may preserve, in deep-freeze, many of the chemical compounds that preceded life on Earth. Some scientists believe we will find that Titan more closely resembles the early Earth than Earth itself does today.

Mission Information Websites

For more information on the Cassini Mission and its instruments see the following web sites. These websites will be updated as the mission progresses.

<http://saturn.jpl.nasa.gov/home/index.cfm>

<http://sci.esa.int/science-e/www/object/index.cfm?fobjectid=34956>

<http://caps.space.swri.edu/caps/>

<http://lep694.gsfc.nasa.gov/caps/>

<http://cirs.gsfc.nasa.gov/>

<http://huygensgcmcs.gsfc.nasa.gov>

<http://inms.gsfc.nasa.gov> ■



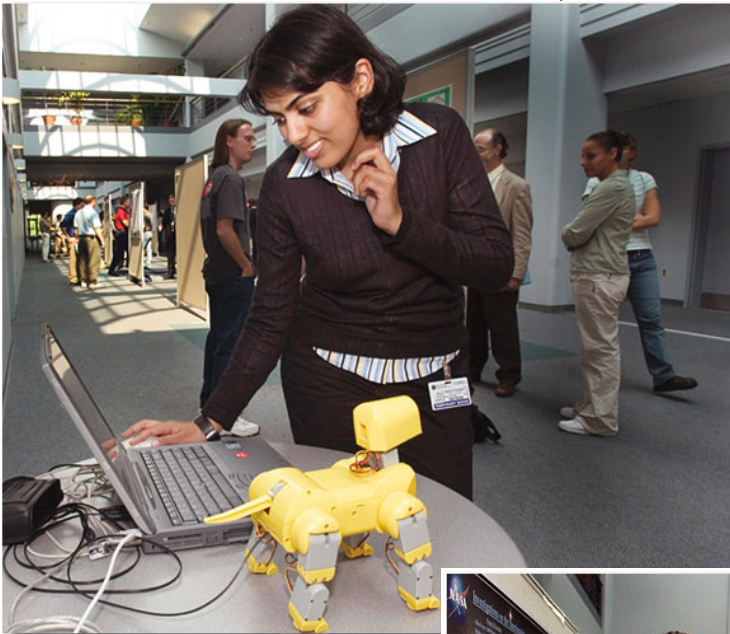
Cassini and Huygens Probe assembled at Kennedy Space Center prior to launch.

Photo by NASA/KSC

Goddard Summers Present A Haven For the Next Generation of Explorers

By Dewayne Washington

Photos by Chris Gunn/293



Sarah Chaudary used a laptop to operate a mechanical dog

During the summer months, the Goddard population is infused with a wealth of our nation's best and brightest who are involved in real world opportunities. The Student Internship Program (SIP) coordinated by the University Programs office is another example of Goddard's success in recruiting outstanding undergraduate students from across the country.

The Office of University Programs at Goddard, oversees activities and programs here designed to maintain and broaden the Center's interaction with the university community. Special attention is directed to local colleges, and universities along the northern and eastern seaboard and aerospace-oriented institutions nationwide having programs of mutual interest to Goddard.

SIP was created for students whose primary interest is in space research. The program recognizes exploration as the common thread throughout NASA and research is the underlying foundation. From across the country, the 10 week program attracts students from colleges and universities to Goddard, in support of ongoing research projects. These projects are able to meet the expense of having a student because of being awarded endowment from the Director's Discretionary Fund. These funds are allocated competitively to Goddard's most innovative researchers.

Students team with a Principal Investigator (PI) for extraordinary research in science or engineering. Research is conducted in areas such as Cosmic Rays, Global Change, Magnetospheric Physics, and Virtual Environments to name a few.

This year the SIP attracted 27 undergraduates from across the country. Dr. Vigdor Teplitz, Chief, Office of University Programs, says these students bring a lot to Goddard with the work they do with their mentors. "The most valuable thing the students bring are the questions they ask," said Teplitz.

He explained that often the mentor may see their work in a different light because of the questions the students posed to them. He gave the example of a student asking the question about the soldering on to a circuit board. "That person will have to make the mental connection of that board, to its place within the spacecraft to answer the question," said Teplitz.

"Students hear a lot about the space experience," said Teplitz.

"But the experiences of being in an environment where things are being built to go into space, only a small percentage ever get that unique opportunity, and they really appreciate it."

According to Teplitz, SIP is a natural feeder for another program under the Office of

University Programs. To be considered for Goddard's NASA Academy, you must previously have had some interaction with a space program. "SIP can fulfill that requirement," said Teplitz.

"Both SIP and NASA Academy contributes to NASA Goddard's continuing efforts of increasing the participation of the underrepresented minority population," concluded Teplitz.

For more information about NASA's University Program and SIP visit the web site at <http://university.gsfc.nasa.gov>.

For more information about NASA Academy visit the web site at <http://www.nasa-academy.nasa.gov> ■



Students explain their projects during a poster session

Goddard in the News

Earth Science Press Releases and Media Coverage in August, 2004

By Rob Gutro, NASA's Earth Science News Team

Earth science press releases from NASA Goddard received some good media attention during the month of August. Following is a brief description of each release, the link to the full stories, and some of the news outlets that picked up the story!

Moist Soil 'Hot Spots' May Affect Rainfall

While the Earth is moistened by rainfall, scientists believe that the water in soil can, in turn, influence rainfall both regionally and globally. Forecasters, water resource managers and farmers may benefit once this connection is better understood. For the full story:

<http://www.gsfc.nasa.gov/topstory/2004/0819soilrain.html>

This story received media attention from outlets around the world, including: *Innovations-Report (Germany)*, *National Geoscience Database of Iran*, *PhysOrg*, *ScienceBlog*, *ScienceDaily*

Scientists Studying Desert Air to Understand Weather and Climate (UAE2 Mission)

The United Arab Emirates Unified Aerosol Experiment (UAE2) mission runs from August 5 through September 30. Scientists are using satellites, computer models and ground stations to understand the unique "mixing bowl" of desert dust, smoke and other aerosols created by the complex atmospheric circulations. For the full story:

<http://www.gsfc.nasa.gov/topstory/2004/0818uae2.html>

This story received media attention from outlets both scientific and political, including: *Environment News Service*, *Science Daily*, *U.S. Politics Today*

TRMM Sees Rain From Hurricanes Fall Around the World

Since rain and freshwater flooding are the number one causes of death from hurricanes in the United States over the last 30 years, better understanding of these storms is vital for insuring public safety. A recent study funded by NASA and the National Science Foundation offers insight into patterns of rainfall from tropical storms and hurricanes around the world. For the full story: <http://www.gsfc.nasa.gov/topstory/2004/0817trmmhurricane.html>

TRMM Made news in a lot of media outlets with this story, including: *Astrobiology News*, *Astronomy Now*, *Embassy of the United States-Japan*, *SpaceWire*, *Universe Today* and many others.

Web Feature: NASA's Improved Computer Model Recreates Ocean Behavior

Scientists have long recognized the importance of oceans in our climate. In fact, the unique physical characteristics of our oceans are largely responsible for making the Earth a livable environment. Oceans are major "climate-controllers" because of their large heat capacity. For instance, it requires four times the amount of energy to raise the temperature of water by one degree than it does soil. As a result, over a long period, oceans can store and transport heat from one location to another. Furthermore, water reacts slowly to the surrounding atmosphere. While this means our oceans may exert relatively little influence in short-term weather, they have a large effect on long-term climate. For the full story: <http://www.gsfc.nasa.gov/topstory/2004/0625oceanbehavior.html> Although this story was a web feature, it received attention from a number of sources, including *U.S. Politics Today!*

Retreating Glaciers Spur Alaskan Earthquakes

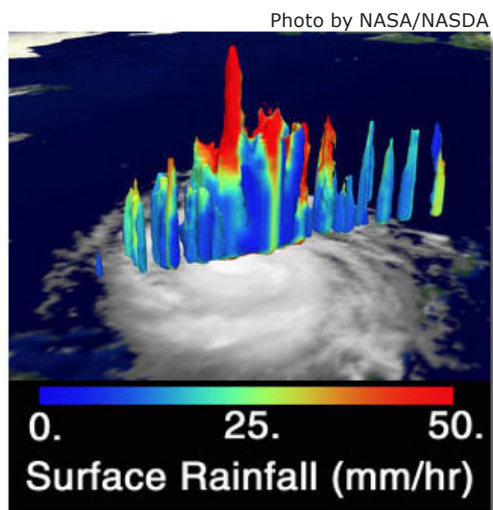
In a new study, NASA and United States Geological Survey (USGS) scientists found that retreating glaciers in southern Alaska may be opening the way for future earthquakes. For the full story: <http://www.gsfc.nasa.gov/topstory/2004/0715glacierquakes.html> This story received worldwide coverage including on the: *Alaska Public Radio Network*, *Cox News Service*, *Discovery.com*, *Washington Post*, *Yahoo News* and many more.

Scientists Showdown with Soil Moisture Near the O.K. Corral - SMEX (Soil Moisture Experiment)

Tombstone, Ariz., is a dusty place known for Wyatt Earp's famous 1881 "Shootout at the O.K. Corral." This year, from August 2 to 27, it will be known as the place where scientists from NASA, the U.S. Department of Agriculture (USDA), the National Oceanic and Atmospheric Administration (NOAA), and other institutions gather and study soil moisture to improve weather forecasts and the ability to interpret satellite data. For the full story: <http://www.gsfc.nasa.gov/topstory/2004/0729soilshowdown.html>

[0729soilshowdown.html](http://www.gsfc.nasa.gov/topstory/2004/0729soilshowdown.html)

This story was picked up by outlets such as: *Ascribe Public Interest Newswire*, *Arizona Daily Star Newspaper*, and *Spacedaily*



In 1998, TRMM observed some of the largest chimney clouds seen from above inside Hurricane Bonnie, showing a (cumulonimbus) storm cloud, towering like a skyscraper, 59,000 feet into the sky from the eyewall



GEWA Activities

Attention Bowlers

Dig out that bowling bag from the back of the closet. The GSFC Wednesday Night Men's Tenpin Bowling League began the 2004-2005 season on Wednesday, 9/1/2004 at 5:30pm at the Fort George G. Meade Lanes in Odenton, MD. Last year, the league bowled with ten (10) 5-man teams. The cost is \$15 per night with a cash prizes at the end of the year. The season is from 9/04 to 4/05. This year the league has openings for full teams as well as individuals to round out the existing teams. For more information, please contact either: Walt Moleski at 301-286-7633 or email him at Walter.F.Moleski@nasa.gov or Chuck DuChon at 301-805-0466 or email him at Chuck.Duchon@lmco.com

GEWA Jazz and Java Party

GEWA will host a Jazz and Java Party on Wednesday, September 8th, 2004 at the Barney and Bea Recreation Center. It will feature the Octoberworld Jazz band. There will be finger food, different coffee blends, and an open bar. Dancing is optional. The cost is \$6/person. Come and relax while listening to Jazz from 5-9pm. This is something new from the Special Events Committee. Tickets are available at the GEWA store.

GEWA SPECIAL EVENTS FOR 2004

TBA - Free Lunchtime Concerts - with Guest Chefs and Special Sales throughout the year
 September 8 - Jazz and Java Party w/ the Octoberworld Band
 September 30 - EOY Shrimp Feast w/ the Gary and the Groove Band
 October 1 - GEWA Appreciation Dinner
 November 9 - 14th Annual Fall Crafts Fair
 December 9 - Toy Wrap for Children's Holiday Party
 December 11 - Children's Holiday Party
 December 13 - Toy Liquidation Sale

Please go to <http://gewa.gsfc.nasa.gov/SpecEvents/> for more information.

Goddard Bible Club

The Goddard Bible Club meets on Tuesdays at noon in building 21, room 242. We have both speakers and videos, details may be found in Dateline. You are welcome to eat your lunch during the meeting. If you have questions, please call Bill 6-7756.

City of Angels - Ticket Sales!

The sales kick-off will be on Tuesday, **September 21, 11am-1pm**, at the **off-site NASA Credit Union (note new location!)** on Greenbelt Road. There will be a second in-person sale on Thursday, **October 7, from 11 am-1pm, in the Building 1 Cafeteria**. As always, you can call **240.475.8800** for information or go to the web site (in September) for an online ticket order form. Visit the MAD website at <http://gewa.gsfc.nasa.gov/> for more information on the cast and scheudeled performances.

GEWA Art of Living Club Offers Guided Meditation

Come and feel more peaceful and less stressed; be more focused and energetic - no training required! Our mental and emotional state affects those around us, and by culturing a state of mental stillness we bring that peacefulness into our environment, one mind at a time. There are some things that effort cannot accomplish. Meditation is the delicate art of doing nothing - letting go of everything and being who you are. It gives your mind such a wonderful rest. Come get a charge, and help make Goddard a better place to work. We meet in Bldg. 23, Rm S300. On Monday we meet at 12:15 pm, and on Wednesday we meet at 12:00 noon. Please call Bill Hayden at 6-4267 or Chris Smythe-Macaulay at 6-2490 if you have any questions. For new folks, we will be there 5 minutes early for a quick orientation.

Goddard Ski Club Party

The Goddard Ski Club will be holding their annual Ski Season Kick-off Party on Friday, September 17-th at the Recreation Center starting at 6:30-pm. A catered selection of items from Chanan's Buffet, including Beef/Broccoli; Sweet/Sour Chicken; and Shrimp Lo Mein and two rice dishes will be served along with wine, beer, and soft drinks and desserts at a price of \$10./person - or free with payment of 2004-5 club membership dues. Guests are welcome and the \$10 dinner charge will be applied to 2004-5 member dues if they join by 9/30/04! The \$15 member/\$25 new-member annual dues includes the cost of our End-of-Season Party in May!

Trip leaders for the four currently planned Ski Trips will present information on and sign up participants for the limited capacity trips to Sunday River, ME; Park City, Utah; Mount Snow, VT; and the Jungfrau region of Switzerland. Please contact your prospective Trip Leader for Kick-off Party reservations - or contact Curtis Emerson, Club Secretary, at 301-286-7670. Trip details/leaders are listed on the Club website at <http://www.goddardskiclub.com>.

Announcements

Second Joint NASA Earth Science Data System Working Group Public Meeting Announcement and Call for Posters

NASA's Earth Science Data System Working Groups are holding their Second Joint Meeting on October 18 and 19, 2004 at the Greenbelt Marriott in Greenbelt, MD. This open meeting focuses on the activities of the working groups established in January 2004. The working groups currently established are the Standards Processes, Metrics Planning and Reporting, Technology Infusion, and Software Reuse Working Groups. These working groups are community-based organizations that make recommendations to NASA HQ on issues of importance to earth science data systems. Working group membership is open to any interested Earth science professional. Currently-funded ES data system activities and interested community members are encouraged to attend and share their experiences.

REASoN members are especially encouraged to prepare posters or demonstrations highlighting their progress or accomplishments to date via a poster or demo, however all attendees are welcome to present work or results of interest during the poster/demo session on the afternoon of the first day. The deadline for hotel registration is September 22; the poster submission deadline is **October 1**.

The draft agenda, registration, and other logistics information, as well as more detailed information on working group activities, are available via our home page at <http://lennier.gsfc.nasa.gov/seeds/index.html> or at http://www.infonetic.com/tis_conferences/esdswg/ For information or questions, please contact Kathy Fontaine at kathy.fontaine@nasa.gov.

Goddard Referral Service

Looking for information on issues such as adult care, child care, legal or financial assistance, health & wellness, or education, but don't know where to start? Let Goddard's Referral Service do the work for you! This service includes a website as well as Specialists available 24 hours a day/7 days a week - whenever the need arises. Check it out at: www.worklife4you.com, and enter the following information: Agency Code: GSFC; password: last name + last 4 digits of SSN. Don't worry - the site is very secure & you're information remains confidential. Please contact Khrista White at X6-9059, khrista.n.white@nasa.gov, or <http://ohr.gsfc.nasa.gov/family/home.htm> for assistance.

Register for the NASA Aeronautics and Space Database

The NASA Aeronautics and Space Database is the Scientific and Technical Information (STI) Programs new repository for

documents relevant to NASAs mission. From your own workstation, you have free access to over 3.5 million metadata records that include citations and abstracts of NASA journal articles, technical reports, conference papers and proceedings, preprints, theses, and other forms of STI. Content ranges from the early NACA publications to today's latest research. Innovative features include full-text images in PDF format, custom display formats, saved search capability, and on-line document and video purchase. Register for free at www.sti.nasa.gov.

Dateline Newsletter

The Dateline Newsletter is a daily bulletin that highlights current GSFC events and announcements. The newsletter is e-mailed daily to subscribers only. To subscribe to Dateline send an e-mail message to Majordomo@listserv.gsfc.nasa.gov in the text area type subscribe dateline_daily_copy and within a few days you should start receiving dateline. To submit announcements direct e-mails to dateline@listserv.gsfc.nasa.gov For more information, contact Natile Simms at x6-8955.

Notice on the Parkway Gate

The Baltimore-Washington Parkway Bridge is nearing completion. Starting today **Tuesday, Sept. 7** and for approximately three weeks, new guardrails will be installed. This work will be done during regular business hours with no lane closures expected, so be mindful of the crews working in the area.

Building 9 Lobby Closure

The public lobby of Bldg. 9 (the Main Gate) will be undergoing renovation from **Monday, Sept. 20 - Sunday, Oct. 17**. The lobby and interior stairway between floors will be closed during this time. All temporary badging activities for both employees and visitors will be relocated to Bldg. 88 Visitor's Center. All security services on the first floor of Bldg. 9 must be accessed via the outside entrance on the northwest end of the building (closest to Bldg. 8, adjacent to the location where special vehicle inspections occur at the Main Gate). Uniformed Security Operations will remain open in the basement and will be accessible through the basement entrance. All functions are expected to resume on Monday, Oct. 18. After the completed renovation, the I.D. Section, currently located in the basement of Bldg. 9, will be relocated to the renovated lobby area.

Events

Can We Talk - Sept Session Cancelled

The Thursday's, **September 9** Can We Talk session has been cancelled. To sign up for the next session in October, visit the Goddard Internal home page at <http://internal.gsfc.nasa.gov/canwetalk.cfm> or call the Office of Public Affairs at x6-8955.

Engineering Colloquium

Please note that all of the Engineering Colloquia are held on Mondays in the Building 3 Goett Auditorium at 3:30 p.m. unless stated otherwise.

Who/What: The Fall session of the Engineering Colloquia will begin with Annual Schneebaum Award Ceremony and Lecture. Jennifer Trospen of JPL will deliver the lecture entitled, *The Mars Exploration Rover*. This talk will describe the MER team's experiences and challenges in the development and operations of the Spirit and Opportunity rovers.

When: Monday, Sept. 13

For more information, visit: <http://ecolloq.gsfc.nasa.gov/announce.trospen.html>

Who: Roald Sagdeev, Univ of Md will discuss, *The International Dimension of the New Space Initiative*.

When: Monday, Sept 20

For more information, visit: <http://ecolloq.gsfc.nasa.gov/announce.sagdeev.html>

Center Director's Colloquium

The 2004 Fall series of the Center Director's Colloquia will held in the Building 3 Goett Auditorium from 10 a.m. to 11 a.m. with afternoon group discussion at 2 p.m. in the bldg 1 training facility.

Who: Mr. Doug Krug, co-author will discuss the best selling Simon & Schuster book, *Enlightened Leadership: Getting to the HEART of Change* (in its 30th printing). Doug Krug will share a new thinking approach, a way of creating a 'change-friendly' culture one time. Doug Krug will share insights learned from successfully leading change with top executive teams in organizations private and public sector organizations.

When/Where: Tuesday, Sept 21 from 10 a.m. to 11:30 a.m. in the bldg. 3 Goett Auditorium. Afternoon discussion at 1:15 p.m. in bldg. 8, room 429

For more information, check out: <http://centerdircolloq.gsfc.nasa.gov/>

Information Science and Technology (IS&T) Colloquium

What: This Fall's IS&T colloquia will begin with "10-Minutes of Madness," a panel discussion consisting of six of Goddard's most exciting IS&T projects will be showcased.

When/Where: Wednesday, Sept 15 at 3 p.m. in the Bldg 3 auditorium

For more information, visit: <http://isandtcolloq.gsfc.nasa.gov/>

eNTRe Training Session

The Office of Technology Transfer (OTT) is sponsoring a NASA eNTRe Training session on **Tuesday, October 5, 2004**. This course is open to NASA inventors and contractors who disclose or would like to know how to disclose their technologies.

What is eNTRe?

eNTRe is an acronym for electronic New Technology Reporting System, which is a web-based invention disclosure tool for innovators. eNTRe supports e-gov/paperless environment, "One NASA" initiatives and more efficiently fulfill NTR requirements

Main Features of eNTRe:

- Secure (requires registration and login)
- Secure Socket Layer (SSL) 128 bit encryption protocol
- Easy step-by-step form fill out
- Online help
- Displays status and assigned case # information

To access eNTRe, please visit the GSFC OTT website at <http://techtransfer.gsfc.nasa.gov> and Click on the eNTRe tab.

When/Where: Tuesday, October 05, 2004 in bldg 26, Room 212-.G-Conference Room at 1:30 p.m. - 5:00 p.m.

Registration is required to attend this training session. The registration forms and additional details are available on the following website. <http://entrepraining.knowledgesharing.com>.

For further information, please contact Mr. Abdul Ibrahim at 301-286-8017.

Upcoming Training

Individual Development Planning (IDP) for Employees

September 30, 2004; 9:30 a.m. - 11:30 a.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=842>

Writing KSA Statements

September 2, 2004; 1:30 p.m.- 2:30 p.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=1236>

Managing Effective Meetings

September 16, 2004; 1:30-2:30 p.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=1241>

Five Steps to Managing Your Career

September 21, 2004; 1:30-2:30 p.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=1237>

Individual Development Planning (IDP) for Employees

September 30, 2004; 9:30-11:30 a.m.

For additional information, visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=842>

Interviewing as the Interviewer

October 21, 2004; 1:30-2:30 p.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=1247>

Individual Development Planning (IDP) for Supervisors

October 26, 2004; 9:30-11:30 a.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=865>

Career Decision-Making

October 28, 2004; 1:30-2:30 p.m.

For additional information visit, <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=1250>

You may also contact Tracey White at x6-7823 or Tracey.C.White.1@gsfc.nasa.gov to enroll in any of the listed courses.

One-On-One Career Coaching...

Whether you are contemplating a career change, in need of assistance with resume writing, interviewing techniques, or trying to develop an Individual Development Plan (IDP), a career coach can help. To schedule a confidential one-on-one appointment, contact Tracey White at x6-7823. This service is provided to civil servants only.

African American Advisory Committee Presentation

Who: Dr. Lonise Bias, a recognized educational presenter and motivational speaker will deliver a talk tailored for today's youth entitled, *Reversing Learned Helplessness: All Children Are Valuable*. All civil servants and contractors are invited to hear this special presentation.

When/Where: Wednesday, September 29 in the Building 3 Goett Auditorium

NIMBUS 40th Reunion Colloquium and Dinner

What: There will be a colloquium and dinner on to celebrate the 40th anniversary of the August 28, 1964 launch of the Nimbus-1 observatory, built under the NASA/GSFC 30-year long Nimbus program. Current and retired government and contractor personnel are invited to participate in both events.

When/Where: Tues, October 26 from 1:30 p.m. to 4 p.m. at Goddard's Visitor Center on Soil Conservation Road.

The prime objective of the colloquium is to present the Nimbus program contributions to the public welfare, such as the revolutionizing of weather forecasting techniques, the public awareness of the danger resulting from ozone depletion in the upper atmosphere, and satellite system technology support of the world-wide search and rescue program. Speakers for this event have not been finalized. If you are interested in speaking at this event or attending the colloquium, please contact Cynthia M.O'Carrroll at 301-614-5563 or email her at: Cynthia.M.Ocarroll@nasa.gov

What/Where: The dinner will be held at the Goddard Recreation Center on Soil Conservation Road from 5 p.m. to 9 p.m. The menu includes Prime Rib, Spiced Shrimp, beer/wine, soft drinks and appetizers. The cost for the dinner is \$27.00.

If you are interested in attending the dinner or know of someone who may be interested, please contact Michael L. Forman at 301-286-9287 or email him at: Michael.L.Forman@nasa.gov. For information about this event and other Nimbus facts, log on to www.nimbus-sat.org

Alfred T. C. Chang Memorial Symposium

What: In memory of Dr. Alfred T.C. Chang's contribution to Earth Science, there will be an IEEE-sponsored memorial symposium entitled The Alfred T. C. Chang Memorial Symposium, will consist of invited and contributed presentations dealing with microwave remote sensing.

When/Where: Tuesday, October 12, 2004 at NASA's Goddard Space Flight Center Visitor Center in Greenbelt, Md

For registration and more information as it becomes available go to the following web site:<http://neptune.gsfc.nasa.gov/chang/>

Women's Networking Luncheons

The Women's Advisory Committee (WAC) would like to invite all Goddard women (civil servant and contractor) to WAC Women's Networking Luncheons. The luncheons provide an opportunity to meet and greet new people, as well as, share ideas and experiences. More importantly, the luncheons offer Goddard women an opportunity to relax and enjoy regular social time with other women.

The biweekly luncheons will take place the second and fourth Tuesday of every month, beginning at 11:30 a.m. The luncheon on the second Tuesday of the month will be an on site event in the Bldg. 1 cafeteria, while the luncheon on the fourth Tuesday of the month will be an off site event, location changes every month. For updated information about luncheon locations, visit the WAC web site at <http://wac.gsfc.nasa.gov/> and click on upcoming events. There is no commitment involved at all, participants can come when they can and stay as long as they want.

Expendable Launch Vehicle Payload Safety and Mission Success Conference

What: The Office of System Safety and Reliability, NASA Goddard Space Flight Center, Code 302, is pleased to announce the NASA Expendable Launch Vehicle (ELV) Payload Safety and Mission Success Conference. The conference will emphasize the safety and mission success aspects of ELV Payloads. It will also highlight the exciting future of ELV Payload programs and provide a forum for current, past and future ELV Payload customers and suppliers to interact with other members of the ELV Payload community in structured and casual settings.

When/Where: November 16-18, 2004 in Santa Barbara, California.

Additional conference details are available at the following web address: <http://www.tisconferences.com/elv/>

Second Annual NASA Project Management Conference

Project team members interested in learning new concepts during a full 2-days of high-quality, high-intensity professional interaction. Teach, learn, and network about Project Management. This conference includes:

- Major keynote speakers daily
- Highly informative speaker sessions
- Thought-provoking case studies
- Engaging panel discussions
- Innovative project management tool demonstrations

Conference Registration will open in early fall

When/Where: March 22-23, 2005 at the University of Maryland University College Inn and Conference Center College Park, MD

Conference website (pmchallenge.gsfc.nasa.gov) still has the presentations from the 2004 Conference. Check back soon for the new 2005 website.

Contact Conference Chairpersons: Dorothy J. Tiffany - NASA GSFC 301-386-5917 Walt Majerowicz, PMP – CSC 301-286-5622

To add names to our mailing list: Sandy Adorney 301-286-3413
