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# Goddard View

## GOES-N Safely in Orbit

Pg 2

## NASA Scientist Finalist for Service to America Medal

Pg 6

## Pride Month 2006

Pg 9

# GOES-N Satellite Safely in Orbit

By Rob Gutro and Cynthia O'Carroll

The National Oceanic and Atmospheric Administration's (NOAA) spacecraft, Geostationary Operational Environmental Satellites (GOES)-N is safely in orbit. The nation's most advanced environmental satellite was launched on May 24 from Cape Canaveral Air Force Station, Fla. The successful launch marked the fifth overall flight of a Boeing Delta IV rocket that carried the Boeing-built spacecraft.

GOES-N was renamed "GOES-13" on June 4 when it achieved orbit of approximately 22,300 miles.

Recently, Boeing's Mission Operations team in Suitland, Md., handed over control of the spacecraft to NASA to begin six months of operational testing from the NOAA Satellite Operations Control Center also in Suitland. Once completed, the satellite will be placed in an on-orbit storage mode where it will be able to rapidly replace any existing operational GOES satellite in case one fails.

Currently GOES-10 and GOES-12 are watching the east and west coasts of the U.S. along with adjacent oceans, and Central and South America. This summer, GOES-11, currently "in storage" (safely in orbit and waiting to be activated over the U.S.), will be moved into position to replace GOES-10. GOES-10 will be moved eastward to provide additional weather coverage for Central and South America. During an active hurricane season, GOES East (currently GOES-12) is frequently placed in a "rapid scan" mode which blacks out all data in Central and South America.

**What is the GOES Mission?**

GOES-N is the latest in a series of Earth monitoring satellites. The GOES system provides the kind of continuous monitoring necessary for data analysis and forecasting.

The word "Geostationary" describes an orbit in which a satellite is always in the same position with respect to the rotating Earth. This allows GOES to hover continuously over one position on the Earth's surface, appearing stationary. As a result, GOES provide a constant vigil for the atmospheric triggers" for severe weather conditions such as tornadoes, flash floods, hailstorms, and hurricanes.

GOES O and P satellites will complete the existing series. This series will be a vital contributor to weather and water forecasting, solar and space operations, and enhance safe and efficient commerce and transportation.

Continued on Page 3.

## Table of Contents



Cover Caption: A photo of the nation's most advanced environmental satellite GOES-N launching from Cape Canaveral Air Force Station, Fla.

Photo Credit: Carleton Bailie for Boeing.

## GoddardView Info

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Managing Editor: Trusilla Steele
Editor: Alana Little

Deadlines: News items and brief announcements for publication in the *Goddard View* must be received by noon of the 1st and 3rd Wednesday of the month. You may submit contributions to the editor via e-mail at alittle@pop100.gsfc.nasa.gov. Ideas for new stories are welcome but will be published as space allows. All submissions are subject to editing.

# GOES-N Satellite Safely in Orbit

Continued from Page 2.

**The Goddard Involvement in the GOES Program**

Since 1983 NASA has been actively engaged in a cooperative program with the National Oceanic and Atmospheric Administration (NOAA) to develop and perfect the GOES system. The GOES Project Science Office at Goddard provides science data and animations from GOES imagery. Their website, (http://goes.gsfc.nasa.gov/), includes many resources such as daily full-color Real-Time images, Full-Resolution images, and calibrated and navigated GOES images. The site includes the latest U.S. East and West images, scrapbooks of images from GOES-8 through 12, NOAA GOES websites, brochures, animations, Frequently Asked Questions (FAQs), and more.

NOAA defines the program requirements and milestones, and provides the program budget.
NASA builds and launches the satellites. NOAA operates the satellites after the checkout period and uses the data in weather forecasts, disaster management, public health, and aviation safety.

The GOES program grew out of the successful use of geostationary weather satellites with the experimental SMS-1 & -2. The provision of timely weather information, including advance warning of developing storms, is the primary function of the GOES. GOES imagery is commonly featured on many TV weather reports across the United States and throughout the world. The GOES Program maintains 2 satellites operating in conjunction to provide observational coverage of 60 percent of the earth.

**Public Affairs Support of the GOES Launch Day Activities**

The Launch Readiness Review (LRR) was held on L-1, the day before the launch, and it included discussion concerning action items by Boeing, NASA, NOAA, the 45th Air Force Squadron meteorologist and others. Items were “closed” and representatives from some 20-plus areas gave their approval for proceeding to launch GOES-N on May 24th.

The GOES Pre-Launch Press Conference was held after the LRR, which included NASA, NOAA, National Weather Service, Boeing and the US Air Force representatives. It was televised on NASA-TV, with call-in capability for reporters off-site. Related stories appeared in Florida Today, Space.com, and Spaceflightnow.com.

The engineers worked overnight to wrap up remaining technical issues on the launch vehicle. At dawn, a photographer from KSC took pictures of the GOES-N atop the Delta IV rocket as it sat on the launch pad. The public affairs staff arranged interviews with media and updated the NASA.gov and the GOES mission web pages with pre-launch images. Weather conditions for launch were closely monitored and the NASA News phone line was updated often. At 4:30 p.m., reporters and public affairs staff drove to the NASA Causeway for an unobstructed view of the pad. Television trucks lined the causeway with cameras facing the launch pad. A tent was set up for the media, where the press could watch NASA-TV on a large screen and hear the live commentary.

After the successful launch, a reception was held at a local hotel for the GOES-N Mission employees and their invited guests. There was a large screen projecting simulations of the sequence of events associated with the Delta IV as they happened.

The launch received excellent news coverage from a variety of media outlets in all 50 states and internationally. Highlights included: Associated Press, Reuters, ABC, CBS, CNN, MSNBC, Discovery.com, Forbes.com, Houston Chronicle, Los Angeles Times, Miami Herald, New Orleans Times-Picayune, Newsday, Seattle Post-Intelligencer, USA Today, and Washington Post. International coverage: Bulgaria, Canada, China, France, Germany, India, Japan, Malaysia Sun, Romania, South Africa, South Korea, Spain, United Kingdom, and others. ■

For more information please visit:

GOES-N SUCCESSFULLY LAUNCHED
http://www.nasa.gov/mission_pages/goes-n/main/index.html

# GSFC Recognizes Gay and Lesbian Pride Month

By Alana Little

Photo credit: Chris Gunn

Caption: l-r: Liz Matzinger (GLBTAC chair), Congressman Barney Frank, Scott Starin (GLBTAC vice chair), and Mike Ryschkewitsch, associate director, GSFC.

Goddard joined other federal agencies and organizations in recognizing Pride Month as part of our commitment to creating an inclusive workplace in which all employees are valued and respected for the contributions they make to the mission of NASA. Goddard is committed to creating a respectful workplace environment and seeks to increase knowledge, awareness and sensitivity on GLBT issues and how we can include all members of our GSFC family.

Life is more than the sum of its parts. Or so goes the tag line for the 2005 movie *Transamerica* starring Felicity Huffman as Bree a pre-operative male to female transsexual who suddenly finds out he has fathered a son. The movie presented by the Gay, Lesbian, Bisexual and Transgender Advisory Committee (GLBTAC), in recognition of Gay and Lesbian Pride Month is a celebration of family, gender and expectations.

A lunch-time showing of the movie, and a subsequent dialogue wasn't the only activity sponsored by GLBTAC during June which has been recognized as National Gay and Lesbian Pride month. On June 16th the committee also hosted a dinner dance in which over 70 people from different federal agencies attended, with a performance by the Rock Creek Singers at the Barney and Bea Recreation Center.

On June 12, the group hosted Congressman Barney Frank, the first openly gay member of Congress for an afternoon lecture titled "Welcoming Differences in the Federal Government: Progress to Date and the Work Ahead."

Congressman Frank spoke about the efforts to obtain equal rights for gay, lesbian, bisexual and transgender (GLBT) Americans including a historical perspective beginning with the first gay rights legislation in the early seventies.

GLBT employees can face blatant or subtle discrimination in the workplace and face even greater challenges in seeking redress. In many states, lesbians and gay men can be (and are) fired from their jobs, denied housing, credit, or insurance solely because of their sexual orientation.

The GSFC Gay, Lesbian, Bisexual and Transgender (GLBT) Advisory Committee is an organization sponsored by the Goddard Diversity Council as part of the Center's effort to create a more inclusive workplace environment. The GLBTAC website states that the goal of the GLBT Advisory Committee is to support Goddard in valuing and maintaining a diverse workforce by increasing knowledge, awareness and sensitivity on the issues of sexual orientation and gender identity. We hope to foster a sense of community among GLBT employees and supporters at Goddard as well as work to promote a safe environment and equitable benefits for all members of our GSFC family.

Core Messages:

- All employees, including GLBT employees, have a right to be openly who we are and expect a discrimination-free and harassment-free workplace.
- Diversity is not an either-or choice. We recognize the validity of all points of view.
- The GLBTAC serves as a catalyst for equitable access to employee services.

For more information about the GLBTAC please visit http://glbtac.gsfc.nasa.gov. ■

# NASA Enters Agreement to Attract High-Tech Companies

By Nancy Pekar

In the future, the Maryland state motto could become "To Boldly Go" with some of NASA's forthcoming exploration efforts having a very home grown feel.

Officials from NASA have entered into an agreement with the Maryland Department of Business and Economic Development (DBED) to attract high-technology companies to the state. Also designed to foster growth of new technology start-up companies with skills specific to NASA's technology needs, the agreement enables collaboration between NASA Goddard Space Flight Center (GSFC) and DBED. The mutually beneficial agreement will help bolster economic growth in the state while helping to support NASA's numerous missions.

According to GSFC officials, the agreement will help supplement the Center's research skills by facilitating technical exchanges with local organizations to study new aerospace trends, methods and challenges that may benefit NASA missions.

"DBED can certainly help us bolster the skills and expertise at Goddard by bringing technology collaborators with similar research interests to the state," said Nona Cheeks, Chief of GSFC's Office of Technology Transfer (OTT). And by leveraging local technical labor and education resources, GSFC may also strengthen its strategic technical advantage.

The State of Maryland stands to reap significant benefits from the agreement as well. With a strong interest in stimulating local economic growth, DBED can leverage collaboration with GSFC to demonstrate educational, financial and business resources that technology companies require.

"We can help each other," said Cheeks. "DBED can help us find scientists in industry that may help us further our missions. And at the same time, by demonstrating the need for those researchers in Maryland, we can help DBED meet some of its economic milestones."

DBED Deputy Secretary, Chris Foster was equally enthusiastic about the agreement. According to Foster: "The NASA Goddard Space Flight Center is a critical component of Maryland's internationally recognized technology and space based industry. The increased partnership between the state and NASA provides Governor Ehrlich with another tool to sell Maryland in the global marketplace. This agreement will help to ensure that NASA and the Goddard Space Flight Center will continue to be one of the state's most important scientific, technological and economic partners.

To achieve these goals, the agreement calls for the two organizations to collaborate and develop outreach programs, workshops, and other meetings related to GSFC's technology needs. GSFC will also provide DBED with information related to its facilities and technological expertise that will be of interest to technology companies. In turn, DBED will facilitate collaboration between GSFC researchers and regional labs, as well as academic and business organizations, to develop joint technology ventures.

The agreement was facilitated by GSFC's OTT, a goal of which is to transfer technology into and out of NASA for use in the space program and beyond to benefit industry and other organizations. ■

For more information about Goddard's technology transfer program, visit:

http://techtransfer.gsfc.nasa.gov

For more information about DBED and its programs visit:

http://www.choosemaryland.org

## Did You Know?

### NASA Does Win EMMY's:

On Saturday June 21, 2003 the NASA Connect program "Data Analysis and Measurement: Having a Solar Blast!," received a regional Emmy award in the children/Youth Program category. This was the 10th Emmy nomination and 8th Emmy award for NASA Connect.

NASA also won in 1969 for transmitting the first live TV pictures from space.

# Goddard Integrates Its Technology-Investment Program

By Lori Keesey

The Goddard Space Flight Center is consolidating its three research and technology-development funding programs into a single investment program to foster a more integrated decision-making process and help make the Center more competitive in the future.

The Director's Discretionary Fund, (DDF), Core Capabilities (CC), and the Internal Research & Development (IRAD) programs are being merged into a single investment program that will target research efforts that advance the Center's strategic "Lines of Business." The business areas include Solar System Exploration, Astrophysics, Heliophysics, Earth Science, Communications & Navigation and Exploration Systems.

Bid and Proposal and Technical Equipment will remain separate, but program administrators will use the same selection criteria.

"We must continuously assess and evolve our investment strategy in order to achieve our goals for the Center's future business," said Center Director, Ed Weiler, in a Center-wide announcement. "The current fiscal environment requires that we sharpen our competitive edge to ensure that we capture the quality and quantity of work that we have enjoyed in the past."

The FY07 GSFC Internal Research and Development Program (IRAD) will feature two primary elements — a "top-down" directed program that targets near-term "must wins" and a more traditional call for proposals that solicits proposals for technology-development concepts that support Goddard's strategic business areas. The competed program is expected to kick off by the end of June.

**Directed and Competed Elements**

Through the "directed" portion, leads have been appointed to identify technologies and capabilities necessary to win anticipated Announcements of Opportunity (AOs) or to capture other strategically important work. "I look to the directed investment leads to employ the best people across the Center to get the job done, to ensure that the most strategically advantageous work is being performed," Weiler said. About half of the integrated investment programs will fall under this category.

The competed program, on the other hand, will be carried out like a traditional solicitation for proposals. The solicitation will ask technologists to submit proposals that support Goddard's Lines of Business as well as innovative, high-impact investments for longer-term opportunities. "These high-payoff technologies are very similar to the type that the Center formerly funded through DDF," said Chief Technologist Peter Hughes. "These long-lead technologies are still very important to Goddard, but investigators must be clear on how they can be used."

The call is being issued in late June and proposals are due August 2. By September 15, program administrators expect to announce FY07 awards. The program is expected to start on October 2.

**Evaluation Criteria**

Hughes said evaluators would judge proposals on technical merit and whether they directly support Goddard's strategic Lines of Business, enhance the Center's competitive posture, and represent an effective and efficient use of resources. Evaluators also will consider whether the technology has a realistic future and the extent and significance of progress as result of this investment. ■

# Have Fun with "The Sun"

By Alana Little


Photo credit: SOHO/NASA/ESA

Caption: A view of the Sun's surface, showing two prominences blasting off the southeastern and southwestern hemispheres. This is also the cover of the Hill and Carlowicz's new book *The Sun.*

"The Sun, with all the planets revolving around it, and depending on it, can still ripen a bunch of grapes as though it had nothing else in the universe to do…"
-Attributed to Galileo Galilei

So begins Chapter 1 of The Sun, a new book by Steele Hill and Michael Carlowicz.

We know Steele Hill as the media specialist for the Solar and Heliospheric Observatory (SOHO), a role he's been in for about 10 years. He is also heavily involved in education outreach for NASA and has consulted on several documentary and broadcast news productions about the sun. If you have a question about the sun, this is the man to ask.

For SOHO, Hill has produced numerous posters, stickers, image sets, and even a CD *The Dynamic Sun*, aimed at teachers that is now in its 5th version. More recently, Hill partnered with Michael Carlowicz, author of *Storms from the Sun: The Emerging Science of Space Weather* to write *The Sun*, a book for sun enthusiasts and people who love photography.

Visually rich with images and photos of the sun in its every mood, the 6x6 book captures exactly what makes us fall in love with the sun in the first place—its warmth. Every page is in itself a miniature monument to the sun with only one breathtaking image per page. The text on each page sits unobtrusively, explaining the simplicity and intricacies of sun science without being overbearing or techie.

Each chapter, (seven in all) , begins with a quote about the sun from noted poets and scientists. Versions are also being printed in German and French.

The bulk of the book's photo's come from amateur photographers with a few coming from Goddard scientists such as Fred Espenak, a Goddard Astrophysicist who has images on pages 94 and 99 of the book. Troy Cline of the Sun-Earth Connection Education Forum provided the photo's on pages 81 and 86-88. When looking for images for his book, Hill said he "patiently scoured" the internet and then contacted the photographers. He knew that "each picture had to be strong enough to stand on its own," and while doing his research, realized that this book could easily cross the line from astronomy book to art book.

Currently, Hill is working on other sun-related projects. The International Heliophysical Year (IHY) is coming up and he is working on producing a traveling art exhibit based on the SOHO contest "Sun Works." ■

For more information about SOHO please visit: http://solarsystem.nasa.gov or http://soho.nascom.nasa.gov

Photo credit: Chris Linder

Caption: Crepuscular rays, shown above at sunset in Ontario, Canada form as clouds create columns of shadow that interrupt and surround columns of light. This photo is one of many that display the sun's beauty in Hill's book.

# NASA and Universities Join to Fight Diabetes

By Bill Steigerwald

NASA image processing technology used to explore orbital images of Earth and distant worlds is being modified for diabetes research. Scientists at The George Washington University, Washington, and Cornell University, Ithaca, N.Y., helped modify the technology, which has greatly increased the speed of the research. "NASA technology combined with our modifications has provided us with new tools for fighting diabetes," said Murray Loew, director of the Biomedical Engineering Program and professor of engineering at The George Washington University's School of Engineering and Applied Science.

Diabetes afflicts more than 20 million Americans. It is caused by the body's inability to regulate glucose, a sugar that cells use for energy. The hormone insulin regulates blood glucose levels by unlocking the interior of cells and allowing glucose in blood to pass through the cell wall. Insulin is manufactured in beta cells in the pancreas. Microscopic structures called granules carry insulin toward the cell wall of the beta cells, where it is secreted in response to glucose levels in the blood.

Two types of diabetes exist. In Type I diabetes, pancreatic cells are destroyed. In Type II diabetes, either pancreatic cells don't secrete enough insulin, or cells in the body lose their responsiveness to insulin, or both problems happen at once. Both types of diabetes cause glucose to build up in the blood instead of being delivered to the interior of cells, where it is needed or would be stored. Life-threatening effects include coma, heart disease, kidney damage, nerve damage, blindness, and loss of limbs. In the research, the team analyzed electron photomicrographs (images from an electron microscope) of beta cells from rats.

The original NASA technology helps scientists to classify image elements (pixels) and identify different types of landforms, geology and vegetation. In the laboratory, it's been adapted to identify biological structures, the insulin granules, in electron photomicrographs. The research team observed the number, size, and position of insulin granules in the beta cells in response to glucose. "Previously, the analysis of each electron micrograph took an assistant several hours to complete. Now, with the image processing software, we can automatically analyze several dozen electron micrographs overnight," said Tim McClanahan, a scientist at NASA's Goddard Space Flight Center in Greenbelt, Md.

"We plan on an extensive collaboration in the future. The potential for this research is excellent," said Geoffrey Sharp, a diabetes expert in the Department of Molecular Medicine at Cornell University. The team has submitted proposals to the National Institutes of Health and the American Diabetes Association to further validate the technology with additional data and to extend the work to identify and characterize other microscopic cellular structures.

The research is being funded by Goddard's Part Time Graduate Study Program, NIH, and the Juvenile Diabetes Research Foundation. ■

# 2006 NASA Records Management Conference

By Patricia Southerland

Photo credit: Courtesy of Patricia Southerland

Caption: Goddard Records Management Conference attendees First Row, Left to Right: Donna Read, Patti Stockman, Janice Justice. Second Row, Left to Right: Margie Pharr, Barbara Davis, Debbie Demaline, Cathy Westfeldt, Yvonne Wilson, John Hulmston. Third Row, Left to Right: Andrea Loiselle, Rhonda Benning, Jennifer Terrelonge, Rachel Oster, Nannette Atkins, Carla Snow-Broadway, Baruti Jahi. Fourth Row, Left to Right: Pat Southerland, Anne Power, Kay Schardein, Dennis Mahon, Holly Malecki, Deborah Wills.

Goddard Records Manager Patricia Southerland hosted the 2006 NASA Records Managers Conference at the Greenbelt Marriott and at GSFC June 5-8. The records managers heard briefings to assist them with challenges in managing Agency information assets known as federal records, including transfer of electronic NASA records to the National Archives as required by law.

The records managers heard from Goddard's Flight Programs and Projects Directorate on its approach to managing project records. NASA Records Officer Patti Stockman commended Code 400 as an example for the Agency of sound managerial foresight. "The directorate demonstrates exemplary management of today's information assets so as to assure their availability to not only today's project personnel, but also to future NASA scientists and projects," Stockman said.

The records managers' week was highlighted by a tour of the National Archives at College park where so many NASA records are held for generations of researchers still to come. ■

# Students Participated in NASA Rocket Launch

By Elizabeth Flowers

Students from as far away as Alaska participated in the launch of a suborbital rocket on June 8 at the NASA Wallops Flight Facility, Wallops Island, Va., when more than 35 students and teachers from across the country converged on Wallops for Flight Week.

During Flight Week, students got a behind-the-scenes look at the preparations for a NASA rocket mission and participated in the final reviews to clear the rocket and experiments for launch.

Thirteen schools and organizations flew 14 experiments on the single stage Orion sounding rocket. They are: Parkside High School and Cub Scout Pack 151, both in Salisbury, Md.; Columbus (Ga.) High School; Glenbrook North High School, Northbrook, Ill.; Key Peninsula Middle School, Lakebay, Wash.; Wendover (Utah) High School;Graham High School, St. Paris, Ohio; Franke Park Elementary School, Fort Wayne, Ind.; James River High School, Midlothian, Va.; and Sterling (Alaska) Elementary School.

Photo credit: Justin Senter

Caption: A NASA single-stage Orion sounding rocket carrying student experiments is launched from Wallops.

In addition, the students that traveled to Wallops participated in workshops on rocketry and Range Control Center operations, and toured the rocket, scientific balloon and aircraft facilities.

In its ninth year, this program provides students the unique opportunity to participate in all aspects of a science mission. Five of the experiments flew in the main body of the rocket's payload section, called the Suborbital Student Experiment Module, while the other nine were placed in the nose cone. Launched at 7:11 a.m., EDT, the 20-foot rocket carried the experiments more than 25 miles above the Earth. After descending by parachute and landing in the Atlantic Ocean, the experiments were recovered and returned to the students later in the day. The students had an opportunity to examine and analyze their experiment data before departing for home.

Wireless communications, magnetic fields, fluids and payload temperatures during flight was the focus of the main payload experiments. Students also studied the effects of the flight environment, such as radiation and high gravitational forces, on a variety of materials placed in the nose cone and the payload section.

For further information about NASA education programs on the Internet, visit: http://education.nasa.gov/home/index.html ■

# NASA Goddard Ready for Launch!

By Rani Chohan

When Discovery STS-114 landed August 21, the people inside the Goddard Control room cheered. It was a very successful mission, "All the communications and upgrades worked perfectly," said Jim Bangerter Network Director for Human Space Flight.

Houston's mission control never had a problem communicating with astronauts on the shuttle. A new camera on the space shuttle's external tank transmitted real time video of the shuttle ascent. Goddard provided the technology that allowed the camera to stream the video to NASA TV.

Goddard designed tools performed flawlessly during a space walk. Astronauts, used a thermal sensor during a tile repair test to check the temperature of a gooey material that was applied to tile cracks . "We are hoping for more of the same," says Jim Bangerter. Network Director for Human Space Flight.

**Discovery is expected to launch again July 1. The crew will continue to test new equipment and procedures that increase the safety of space shuttles during STS-121. The flight to the International Space Station also will deliver critical supplies and cargo to the complex for repair and future expansion of the outpost.**

Two spacewalks are planned. They are devoted to the maintenance of the space station and additional testing of heat shield inspection and repair materials, tools and techniques.

Discovery will deliver a third crew member to live aboard the station. It will be the first time a three-person crew will reside on station since the Expedition 6 crew returned to Earth May 4, 2003, in Kazakhstan.

For the last year Goddard employees monitored the space network and tweaked connections so that they would ready for the next launch.

More astronaut tools were delivered to the crew to experiment with during spacewalks.

# Intern Spotlight: Suzy Jondreau, DeAnna Hadden and Tabitha Miller

By Amy Pruett and Debbie Jensen

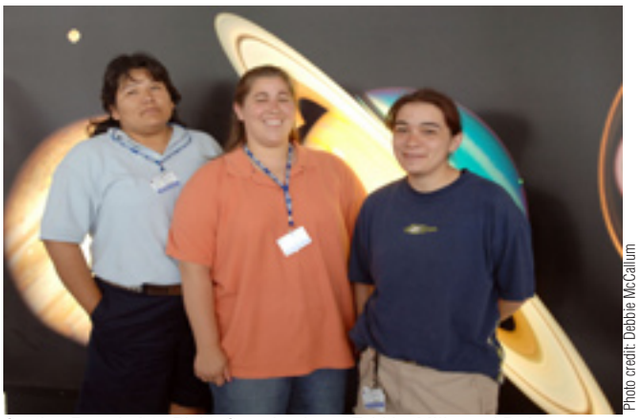

Photo credit: Debbie McCallum

Caption From Left to Right: Suzy Jondreau, Tabitha Miller and DeAnna Hadden.

Venture through the doors of the Goddard Visitor Center and you will be greeted with the smiles of three summer interns. The grins belong to Suzy Jondreau, DeAnna Hadden and Tabathia Miller, college students that are spending their summer assisting Visitor Center guests.

The Visitor Center staff and employees in the Goddard Education Office make every effort to contribute to the students' experience. They have taken tours of the Center and have met several scientists and engineers working on NASA projects, revealing to them the limitless opportunities NASA offers.

Their roles include supporting viewings of the Science on a Sphere, maintaining the ozone garden, helping with large tours and answering visitors' general science and Goddard related questions. In particular, working with high-tech exhibits such as the Science on a Sphere have been especially rewarding, comment the students.

"I would much rather [work here] than [on a single project] because we can see everything Goddard has to offer," Hadden said.

All three students are with Keweenaw Bay Ojibwa Community College in Baraga, Mich., and came to NASA as a part of the American Indian Higher Education Consortium's summer program. Hadden recently graduated with her Associate of Arts degree in Liberal Studies, Jondreau is pursuing a degree in liberal studies and Native American awareness and Miller is working for a degree in liberal studies.

"[I would recommend this program] especially to people interested in science and engineering to gain the experience and knowledge gained from working here," Jondreau said.

The students are enjoying the unique, exciting, memorable experience that their internship at Goddard has provided and they look forward to what the rest of the summer holds in store for them. ■

# Research Opportunities in Space and Earth Science (ROSES)

For more information please visit https://nspires.nasaprs.com

**Solicitations**

**Near-Earth Object Detection, Characterization, and Threat Mitigation**

Released: 2006-05-12

Proposal Due: 2006-07-07

**Mars Scout 2006 and Missions of Opportunity**

Released: 2006-05-01

Proposal Due: 2006-08-01

**NASA ARMD Research Opportunities in Aeronautics (ROA) NRA**

Released: 2006-05-24

Proposal Due: See Announcement.

**Observing at the NASA Infrared Telescope Facility - Call for Proposals**

Released: 2006-02-03

Proposal Due: 2006-10-02

**Research Opportunities in Space and Earth Sciences - ROSES 2006**

Released: 2006-01-03

Proposal Due: See Announcement

# NASA Scientist a Finalist for Service to America Medal

By Nicole Quinnell

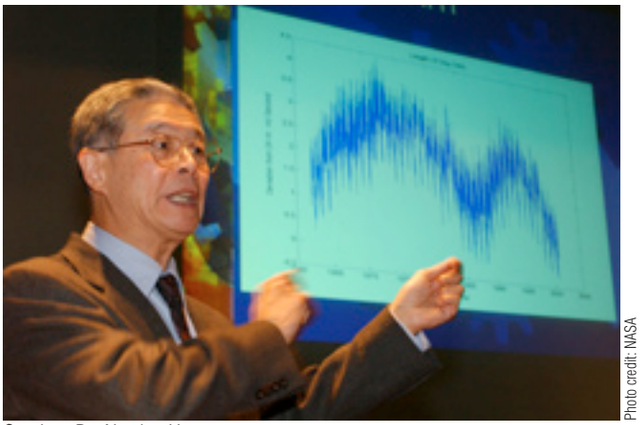

Photo credit: NASA

Caption: Dr. Norden Hunag

When you win NASA's Invention of the Year, chances are you're working on some pretty complex issues that anyone without a Ph.D. might have difficulty understanding.

That is certainly the case with Dr. Norden Huang, chief scientist for oceanography at NASA's Goddard Space Flight Center. But while the details of Dr. Huang's work may be difficult to comprehend, anyone who sees the practical applications of his work can grasp its importance.

That is why the Partnership for Public Service has selected Dr. Huang as a finalist for its Service to America Medals.

The awards pay tribute to America's dedicated federal workforce, highlighting those who have made significant contributions to our country. Honorees are chosen based on their commitment and innovation as well as the impact of their work on addressing the needs of the nation.

Dr. Huang's pioneering research led to the development of the Hilbert-Huang Transform (HHT) technology, a revolutionary, adaptive set of signal-analysis algorithms. Unlike precursor technologies, HHT provides an effective method for analyzing nonlinear and nonstationary signals (such as those occurring in natural phenomena) while improving the accuracy of linear and stationary signal analysis. In winning the 2003 NASA Government Invention of the Year award, HHT was cited as "one of the most important discoveries in the field of applied mathematics in NASA history."

"It is an honor to be selected as a finalist for this award," said Dr. Huang. "It's been an pleasure and a privilege to work with so many great people—both inside and outside NASA—over the years. I am lucky to have found the HHT method so simple and yet versatile, and I am really pleased to have that work recognized."

The importance of Dr. Huang's research on HHT is well demonstrated by the benefits and versatility the technology offers to a wide variety of fields. As noted by Nona Cheeks, chief of Goddard's Office of Technology Transfer, "HHT has been one of our most successful technology transfer projects. Hundreds of researchers from all over the world have downloaded the software and we have signed nearly a dozen partnerships for its use."

For example, within NASA, Dr. Huang's work with HHT is benefiting analysis of wing-flutter tests and the next generation of aircraft design. His research has also contributed to shuttle mission safety by using HHT to test the tiles that insulate the shuttle in space for the Shuttle Return to Flight Project. HHT also helps NASA look for planets and black holes.

HHT also is applicable outside of NASA. The technology might become a useful weapon in the war on terror. Federal investigative organizations are working to incorporate HHT into systems to analyze speech patterns and identify individuals in recordings in forensic examinations.

And the applications go on. The Navy is using HHT in its research to improve submarine design and to more easily identify and locate different types of submarines. The Federal Highway Administration is using HHT in a variety of research areas, including monitoring the vibration of bridges to determine how safe they are and highway design and engineering studies. According to FHWA, HHT has been a critical element for accurate data analysis.

For the medical field, HHT is helping researchers understand biomedical and physiological phenomena, which enables them to improve diagnoses and treatments, including drug design, sensors, devices, imaging, and tissue engineering. Specifically, Dr. Huang is involved in research at Johns Hopkins University's Bloomberg School of Public Health, using HHT to better understand how a wide variety of diseases, including avian flu and Dengue Fever, are propagated. HHT is also being used at Harvard Medical School's Beth Israel Deaconess Medical Center (BIDMC) to help sharpen the diagnosis of sleep apnea and to detect patients with impaired blood flow regulation in the brain, a condition that may increase the risk for stroke.

Looking at the list of ways that Dr. Huang's work has the potential to improve the quality of life for all Americans and to meet critical national needs, there is one other thing that is easy for anyone to understand: Dr. Norden Huang is an extraordinary public servant.

"Dr. Huang has received many accolades for his innovative technology over the years, but it is great to see that he is also being recognized for his commitment to public service through his sharing of the HHT," said Franco Einaudi, director of the Earth-Sun Exploration Division at NASA Goddard Space Flight Center.

The final Service to America Medals will be awarded in September. ■

## **Employee** Spotlight:

# Bob Lutz

By Alana Little

Bob Lutz is all about empowerment. Whether as the Associate Branch Head for the Science Data Systems Branch, Code 586 , helping branch members develop their careers: or advocating diversity acceptance as a founding member of GSFC's FedGLOBE ( Gay, Lesbian, Bisexual and Transgender Employee Organization) , Bob Lutz enjoys getting involved and helping people.

When discussing Goddard. Lutz expresses excitement and appreciation for the many positive aspects of the Center including the campus-like atmosphere, the seminars, the library which he frequented while completing his doctoral degree, the cutting edge science and the atmosphere of learning, all of which set Goddard apart from other organizations.

However, what most impresses Lutz is the dedication Goddard management has to diversity, specifically a commitment to acknowledging acceptance of all sexual orientations. Lutz perceived their efforts as proof Goddard does more than just 'talk' about diversity. In December 2003, Bill Townsend, former Deputy Director of GSFC, arranged a town-hall meeting to discuss issues related to sexual orientation. Lutz and others realized from this dialogue that a forum was needed within GSFC to allow gay federal employees to meet, network and socialize. FedGLOBE was borne shortly thereafter, followed by the establishment of the Gay, Lesbian, Bisexual and Transgender Committee (GLBTAC) .

Two years later, FedGLOBE and GLBTAC remain active Goddard groups and a representative of these groups is now on the Diversity Council. "Goddard is very pro-active. We are leading the way within the other NASA centers in terms of surfacing and working GLBT issues. The current GSFC administration has been excellent," Lutz said.

As June is national Gay Pride Month, Lutz, FedGLOBE and GLBTAC resolved to celebrate it in a special way. In addition to organizing other Gay Pride activities, Lutz helped in coordinating Congressman Barney Frank's visit. Other celebratory activities included a dinner dance that enjoyed an attendance of about 50 people and a showing of the movie Transamerica.

In addition to being an active member of the Goddard Community, Bob enjoys outdoor activities. He is one of those guys who calls backpacking 500 miles on the Appalachian Trail 'fun.' He has completed two Marine Corps marathons and does his best to get in at least 30 days of skiing a year. He and his partner, Brian, have been together over 20 years.

Goddard is lucky to have individuals such as Bob Lutz who are dedicated to maintaining and furthering the Center's diverse environment. ■

Photo Courtesy of Bob Lutz

Caption above: Bob Lutz enjoying a day on the slopes.