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# GoddardView

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## Get Ready to Celebrate Goddard

By Anetra Tucker

With the recent Folklife Festival, Coupled Ion Neutral Dynamic Investigation (CINDI) and Gamma-ray Large Area Space Telescope (GLAST) launches, and the Future Forums Kickoff, Goddard has already had an active year so far. To add to the list of exciting events is this year's Celebrate Goddard Day, coming July 31, from 10 a.m.–2 p.m.

Celebrate Goddard Day is an annual event, held during the summer, which celebrates the vast diversity represented at Goddard. Regardless of your professional, educational, or personal background, your uniqueness and everything you bring as an individual are recognized and appreciated at Goddard.

This year's Celebrate Goddard Day will feature fun-filled activities on the Goddard Mall (the grassy area in front of Building 8) including Faces of Goddard (a photography activity), a car show and competition, entertainment featuring Goddard's own array of talented employees, and delicious food from various nationalities and cultures.

Inside the Building 8 Auditorium, scheduled activities include directorate and advisory exhibits where you can obtain posters, stickers, brochures, and informative handouts on many of Goddard's programs, missions, and advisory committees. Also in the Building 8 Auditorium will be the first annual Diversity Jeopardy, similar to the television show "Jeopardy" but with an emphasis on diversity-related themes.

Celebrate Goddard Day will host Center tours for employees. The locations included on the Center tour are the Building 28 television studio, Science on a Sphere at the Visitor Center, and the Building 7/10/29 complex.

Come out to relax for a while, meet a new colleague or see an old friend, get information on some of Goddard's outstanding missions and programs, and learn more about about the Center's diverse workforce. You will be glad you did!

For more information, visit: <http://diversity.gsfc.nasa.gov>, or contact the Committee Co-Chairs, Darlene Mayo at [darlene.h.mayo@nasa.gov](mailto:darlene.h.mayo@nasa.gov), Sue Pierpoint at [susan.e.pierpoint@nasa.gov](mailto:susan.e.pierpoint@nasa.gov), or Anetra Tucker at [anetra.m.tucker@nasa.gov](mailto:anetra.m.tucker@nasa.gov). ■



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Cover caption: Children contribute their concepts of what a galaxy looks like at the Great Observatories tent at the 42<sup>nd</sup> Annual Smithsonian Folklife Festival. The featured artist, Abigail Brooks, age 7, calls hers "The Rainbow Galaxy."

Photo Credit: NASA.

## GoddardView Info

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## 2008 Smithsonian Folklife Festival Succeeds with Goddard Support

By Michelle Jones

The 42nd Annual Smithsonian Folklife Festival was held June 25–July 6 on the National Mall in Washington, D.C. The Goddard community and its mission were represented in a positive, enlightening, and engaging way to over one million festival attendees.

Goddard employees geared up to support this worthwhile effort by bringing out the best of Goddard to tell our story. From the 1/5 scale model of the *Hubble Space Telescope* (HST) to images taken from *LandSat*, the Goddard team was meticulous in making sure that a vivid picture was painted of the work that goes on at Goddard.

Dr. Kenneth Carpenter, HST Operations Project Scientist and festival participant, shared his insights on Goddard's involvement in the festival. "Goddard was a well-represented and integral part of NASA's exhibit at the Smithsonian Folklife Festival. The Festival was an amazing opportunity for Goddard to reach out to the public and tell them about the NASA and Goddard missions, and I think we did that very well." Carpenter went on to say, "I think the Festival and NASA/GSFC benefited tremendously from the event. It was good to see the participation of a large number of GSFC personnel at the event, representing a broad range of topics and projects. Thanks should go to all who helped to organize and support the various exhibits."

Goddard further contributed to this historic event by providing over 150 participants, which included scientists, engineers, and education and public outreach professionals to work this event over the entire 10-day duration. In fact, Goddard supplied roughly half of the scientists and engineers who participated at the festival. Goddard's people and research were well-represented under several tents (themed areas) throughout the festival, including Space Science, Earth Science, Future Missions, Great Observatories, and at both Narrative Stages.

In addition to all of the breathtaking exhibits, images, and models, there were also plenty of activities for the young and young at heart, as well as educational presentations on the research that is done at the Center. "The most gratifying part of my time at the Folklife Festival was talking to the kids working on their mission assignment in the Earth Science tent. They were surprisingly interested in the images from our Earth Observing System showing change in the land, atmosphere, and ocean," said Dr. Jim Irons, *LandSat* Data Continuity Mission Project Scientist.

Goddard was heavily involved with managing several logistical requirements that contributed to the success of this event. In addition to coordinating the schedules of all of the volunteer participants, Goddard also managed the transportation requirements for all of its exhibits and materials and implemented a shuttle bus that ran between the Greenbelt Center, NASA Headquarters in Washington, D.C., and the National Mall.

The Smithsonian Folklife Festival is produced by the Center of Folklife and Cultural Heritage, a research and educational unit of the Smithsonian Institution. It is an international exposition of living cultural heritage, annually produced outdoors on the National Mall in Washington, D.C.



Photo Credit: NASA

*Caption: Visitors line up to learn about NASA's Space Science missions.*

James Deutsch, Smithsonian curator for the NASA program, characterized the Folklife Festival as an opportunity to, "highlight the people we call participants—the bearers of knowledge, the bearers of skills, and the bearers of tradition." Deutsch went on to say, "We are delighted to have gotten people from all 10 [NASA] field Centers."

Besides NASA's exhibits, the Mall was filled with tents highlighting the state of Texas and the country of Bhutan. Both exhibitions were populated with educational activities, presentations, food, and entertainment.



Photo Credit: NASA

*Caption: Visitors head for the NASA exhibits at the 42nd Annual Smithsonian Folklife Festival.*

NASA made history in partnering with the Smithsonian on such a huge endeavor. NASA's Goddard Space Flight Center was a definite force in ensuring the success of this momentous event.

For additional information on the Smithsonian Folklife Festival and NASA's role at the festival, visit: <http://www.folklife.si.edu/festival/2008/index.html> and <http://www.nasa.gov/50th/Folklife>. ■

## Gamma-ray Large Area Space Telescope (GLAST) Mission Operations at NASA Goddard Powered Up

By Rob Gutro

Several bases of operations for NASA's *Gamma-ray Large Area Space Telescope* (GLAST) are gearing up to receive data from the recently launched satellite.

Operations Centers preparing for data from GLAST include NASA's Goddard Space Flight Center in Greenbelt, Md.; NASA's Marshall Space Flight Center in Huntsville, Ala.; and the Stanford Linear Accelerator Center in Menlo Park, Calif.

Goddard is responsible for several aspects of GLAST's mission as it begins transmitting data for the world to see. The GLAST Mission Operations Center (MOC) and the GLAST Science Support Center (GSSC) were provided by, and are located at, Goddard.

The second operation is the Large Area Telescope (LAT) Instrument Science Operations Center (ISOC) at the Stanford Linear Accelerator Center (SLAC) in Menlo Park, Calif. The ISOC is responsible for maximizing the LAT's science performance in the areas of flight operations, science operations, and the development of science analysis systems.

The ISOC's key functions include command planning, generating and validating commands and command sequences, monitoring the LAT's health and safety, maintaining and modifying flight software, verifying and optimizing

LAT performance, processing and archiving LAT science data, maintaining and optimizing the software that produces science data products, and distributing science data products and instrument analysis tools to the LAT collaboration and the GLAST Science Support Center (GSSC).

ISOC Manager Rob Cameron from SLAC said, "Powering up the LAT has been even smoother than we had hoped. Everything has worked well—in fact, it's going great. We're already receiving high-quality data that we can use to get the instrument ready for the best science return."

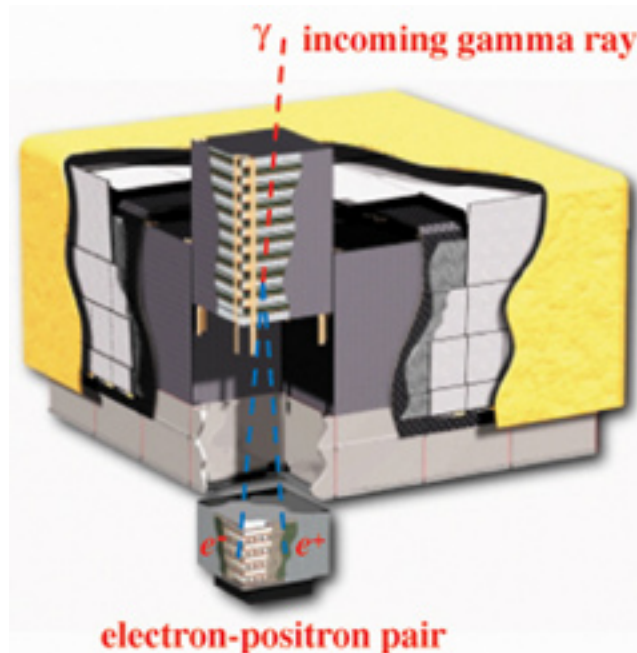
The observatory is commanded from the Mission Operations Center (MOC) at Goddard Space Flight Center and, during the present initial on-orbit commissioning phase, is staffed by a team from across the mission, including members from SLAC.

The third operations area is at NASA's Marshall Space Flight Center. Marshall hosts the GLAST Burst Monitor (GBM) Instrument Operations Center. Located at the National Space Science and Technology Center (NSSTC) in Huntsville, Ala., operations personnel and scientists working in the GBM Instrument Operations Center will scrutinize the health of the monitor and enjoy a first-hand peek at ground-breaking gamma-ray science. The NSSTC is a partnership between NASA, the state of Alabama, and several universities.

GSSC will serve as the primary interface between the GLAST mission and the scientific community. GSSC will support the planning and scheduling of science observations, as well as establishing and maintaining a publicly accessible archive of all GLAST data products. Data analysis software and documentation will also be maintained and disseminated by GSSC. In addition, GSSC administers the Guest Investigator Program for NASA Headquarters providing proposal preparation tools, documentation, as well as technical and scientific support.

"As manager of the GLAST Science Support Center, my most important responsibility is to facilitate broad community involvement in the science," said Chris Schrader of NASA Goddard. "The GSSC will provide access to the GLAST data, the software to analyze those data, and [will] assist scientists from the U.S. and abroad who wish to become involved in this exciting new endeavor."

NASA's GLAST mission is an astrophysics and particle physics partnership, developed in collaboration with the U.S. Department of Energy, along with important contributions from academic institutions and partners in France, Germany, Italy, Japan, Sweden, and the United States. ■

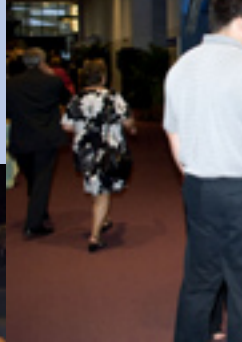


*Caption: Cutaway of the LAT instrument showing an inside view of one of the towers as an incoming gamma ray interacts, producing an electron-positron pair.*

Photo Credit: LAT Collaboration.

# Goddard Supports “Expanding Our Universe” Event at The National Air and Space Museum

Pictures by Bill Hrybyk



## Proposed NASA Mission Could Explore Twisted Space Around Black Holes

By Bill Steigerwald

A new NASA mission could discover the shape of space that has been distorted by a spinning black hole's crushing gravity, and explore the structure and effects of the formidable magnetic field around magnetars—dead stars with magnetic fields trillions of times stronger than Earth's.

Current missions either don't have the resolution to do this, or, in the case of magnetic field imaging, simply can't do this because magnetic fields are invisible. The proposed new mission, called Gravity and Extreme Magnetism (GEMS), will use a new technique to accomplish what has been impossible until now. It will build up a picture indirectly by measuring the polarization of X-rays emitted from these violent regions.

X-rays are a powerful kind of light. Like all light, X-rays have a vibrating electric field. When light travels freely through space, it can vibrate in any direction. Under certain conditions, however, it becomes polarized, meaning it is forced to vibrate in only one direction. This happens, for example, when light scatters off of a surface.

We take advantage of this phenomenon when we use polarized glasses to reduce road glare. The glare is simply light that has become polarized by scattering off the road. The glasses are made to block polarized light, so they eliminate the glare.

"The extreme environments around black holes, magnetars, and the shocks from exploding stars, called supernovae, all produce X-rays," said GEMS Principal Investigator Dr. Jean Swank of NASA's Goddard Space Flight Center in Greenbelt, Md. "GEMS will be the first mission designed just to measure the polarization of these X-rays, which will enable us to explore these exotic places in an unprecedented way."

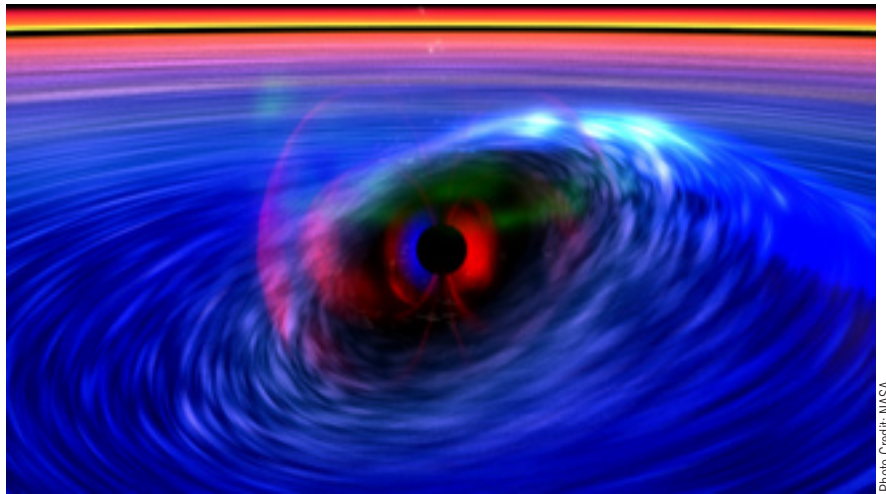
GEMS could reveal:

- How spinning black holes affect space-time and matter as it is drawn in and compressed by strong gravitational fields;
- What happens in the super strong magnetic fields near pulsars and magnetars; and
- How cosmic rays are accelerated by shocks in supernova remnants.

"GEMS will be able to tell the shapes of the X-ray-emitting matter trapped near black holes better than existing missions can. In particular, whether matter around a black hole is confined to a flat disk or puffed into a sphere or squirting out in a jet," said Swank.

"Since X-rays are polarized by the space swirling around a spinning black hole, GEMS also provides a method of determining black hole spin independent of other techniques, which is needed to check their accuracy," said Swank.

The heart of GEMS will be a small chamber filled with gas. As X-rays travel through the gas, they release a cloud of electrons along their path. Because the electrons tend to move in the same direction as the electric field produced by the X-ray, the instrument will measure the electron cloud to get the direction of the X-ray's electric field, which is the same as its polarization.



*Caption: This is a still image from a computer artist's animation of hot iron gas riding upon a wave in space-time around a black hole. Based on a Rossi X-ray Timing Explorer spacecraft observation, this animation depicts how extreme gravity can cause light to stretch and how a spinning black hole can drag the very fabric of space around with it.*

Photo Credit: NASA

Goddard's GEMS proposal is part of NASA's Explorer program. The proposal was submitted in response to NASA's Announcement of Opportunity for Small Explorers (SMEX) and Missions of Opportunity issued on September 28, 2007. Six proposals, including GEMS, were selected for detailed concept study, following which NASA will select two of them for development in the spring of 2009. One selected mission is scheduled to launch in 2012, and the other is planned for launch in 2015.

If approved, NASA Goddard will be responsible for the GEMS instrument and the overall program management. Orbital Sciences Corporation, Dulles, Va., will be responsible for building the spacecraft and mission operations. ATK Space, Goleta, Calif., will build a boom to place the X-ray telescopes the proper distance from the detectors. NASA's Ames Research Center, Moffett Field, Calif., will assist the project by managing the spacecraft development contract and by providing simulations of how the data will appear. The University of Iowa will provide instrument calibration assistance, and will have students prepare an experiment that could be part of the mission. The Massachusetts Institute of Technology, Cambridge, Mass., will provide help with determining the mission requirements. ■

## Goddard's ADR Technology Chosen for Two New Missions Funded at \$44 Million

By Nancy Pekar

An adiabatic demagnetization refrigerator (ADR) technology developed at Goddard has been chosen to be flown on two missions selected by NASA Headquarters as the Agency's next Explorer Program Mission of Opportunity investigations, with funding totaling more than \$44 million. This achievement is the result of more than 10 years of work on ADR technology development and the efforts of the Technology Development Team, as well as Goddard's Innovative Partnerships Program (IPP) Office.

The two missions will use state-of-the-art X-ray telescopes and cooled microcalorimeter arrays to study black holes and dark energy. NASA plans to fly a two-stage ADR unit on both missions, demonstrating a significant improvement over ADR technology flown on previous missions.

"Only single-stage ADRs have been flown in the past, and for the last 10 years we've actually been developing a four-stage ADR that runs continuously—a CADR," said Peter Shirron, who leads the ADR and CADR development efforts for Goddard. "The two-stage ADR we're developing for these newly funded investigations is not as advanced as the four-stage CADR we've been working on, but it meets the requirements of the missions very successfully, and we're excited that it is an improvement on ADR technology flown in the past."

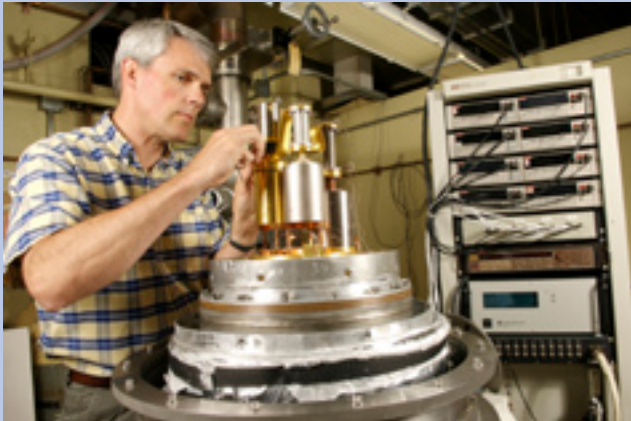


Photo Credit: Chris Gunn

*Caption: Peter Shirron and the adiabatic demagnetization refrigerator (ADR).*

ADR and CADR technologies provide cryogenic cooling capabilities for space-based applications such as infrared and X-ray detectors that must be cooled close to absolute zero. Built by a team led by Shirron, a two-stage ADR will be flown on the *Spektrum Roentgen Gamma* (SRG), which will be launched on a Russian rocket in 2011 to conduct all-sky surveys to identify prime targets for more intensive observations. Just over a year later, the technology will fly on the Japan Aerospace Exploration Agency's *New Exploration X-Ray Telescope* (NeXT). The ADR unit (along with a liquid helium cooler provided by JAXA for NeXT) will provide noncontinuous cooling for the mission-critical components on the telescopes.

Because both X-ray instruments use sufficiently small detector arrays, the heat loads that must be dealt with are small enough that continuous cooling—and therefore a CADR—is not needed for the two missions, according to Shirron. The work being funded under these two proposals

is opening up research and development (R&D) doors that may in turn increase the advancement of both ADR and CADR technologies for future NASA missions.

"This funding opportunity is a huge breakthrough," said Shirron. "Over the last 10 years, through the efforts of our research team and the folks in the Innovative Partnerships Program Office, we've been able to get incremental amounts of funding that have kept our work going and helped us establish a worldwide reputation as the leader in ADR technologies."

Shirron himself has been a great champion of technology transfer and funding acquisition efforts, working closely with the IPP Office to advance cryo-cooling technologies. Goddard's IPP Office provided Shirron and his team with R&D funding in 2001 and 2002 under its Commercial Technology Development (CTD) program and, more recently, helped him prepare a Partnership Seed Fund proposal that was awarded funds in 2006, allowing Goddard to partner with Lake Shore Cryotronics and Lockheed Martin.

Shirron leads this ongoing partnership with the goal of increasing the technology readiness level of Goddard's CADR technology in preparation for future missions. Although the two new Explorer Program missions will fly an ADR rather than a CADR, the hardware performance improvements made possible by the Seed Fund are applicable to the ADR technology as well, and therefore, were instrumental to its infusion into these two missions.

Shirron has worked alongside the IPP Office to promote Goddard's cryo-cooling technologies at various symposia and events, such as the Society for the Advancement of Material and Process Engineering (SAMPE) annual conference. These efforts led to Shirron being awarded the 2005 James Kerley Award for excellence in technology transfer.

"It has been a pleasure to work with Peter to mature the CADR technology," said Darryl Mitchell of Goddard's IPP Office. "His dedication to technology transfer and partnerships played a big role in the many small wins along the way that have now led to this major accomplishment."

Shirron said that staying in close connection with the IPP Office and playing an active role in these technology transfer efforts has been a large factor leading to incremental funding opportunities and partnerships, which ultimately led to ADR's infusion in the two new Exploration Program missions.

"Funding is always a challenge and it often seems like you're getting just enough to stay afloat. But all those small steps along the way are what helped us get a foot through this very large door—to move the last 10 years of work forward," said Shirron. "Now, we're standing on the edge of exactly what we've been waiting for."

For more information on Goddard's Innovative Partnerships Program, visit: <http://techtransfer.gsfc.nasa.gov>. ■

## Local Media Attend *Hubble Space Telescope* Event at Goddard

By Susan Hendrix

With nearly 11 tons of *Hubble Space Telescope* (HST) hardware and support equipment about to ship to NASA's Kennedy Space Center in Florida for final processing, media representatives gathered July 1 at NASA's Goddard Space Flight Center in Greenbelt, Md. to hear details about the final Shuttle servicing mission to *Hubble*.

Acting Deputy Center Director Laurie Leshin provided opening remarks to the audience, which included correspondents from the *Baltimore Sun*, Discovery.com, Space.com, the *Washington Post*, and other news outlets.

The science of *Hubble*, both today and what scientists are eager to obtain after SM4, rounded out the morning's presentations. Panelists included HST Senior Scientist Dave Leckrone of Goddard, Wide Field Camera 3 Scientist Randy Kimble of Goddard, Space Telescope Science Institute (STScI) Director Matthew Mountain, and Cosmic Origins Spectrograph Scientist Ken Sembach of STScI. In addition to installing two new science instruments, the panelists addressed the first ever on-orbit repair attempt of two existing instruments—the Advanced Camera for Surveys and the Space Telescope Imaging Spectrograph.



Photo Credit: Pat Izzo

*Caption: HST Program Manager Preston Burch presents a mission overview to reporters attending the Hubble Servicing Mission 4 Media Day at Goddard on July 1.*

Preston Burch, Associate Director and Program Manager for *Hubble* at Goddard, offered a technical presentation that covered the mission from A to Z. Reporters frantically took notes as diagrams and data appeared on a large overhead screen in the Goett Auditorium in Building 3.

Mike Kienlen, HST Deputy Project Manager at Goddard, described the grueling ground tests that every piece of HST flight hardware undergoes prior to launch. Such tests, he stressed, ensure that the new science instruments, carriers, and crew aids and tools destined for *Hubble* can endure the noise and vibration of a Shuttle launch and the extreme temperature variations in space. He also talked to the extravehicular activity (space-walking task) timeline currently in place for Servicing Mission 4 (SM4).

According to Leckrone, if all goes as planned, *Hubble* will have a full complement of instruments available for use for the first time since 1993, bringing it to the apex of its capabilities.

Reporters wrapped up the day with guided, behind-the-scenes tours of two onsite facilities. First stop was the Space Telescope Operations Control Center where a team of about 90 engineers will control *Hubble* during the servicing mission. Next stop was the class 10,000 clean room, the largest of its kind anywhere in the world. Here the reporters watched as members of the STS-125 crew practiced techniques they will use when upgrading the telescope later this year.

For more information about *Hubble* Servicing Mission 4, please visit: <http://www.nasa.gov/hubble>. ■



Photo Credit: Pat Izzo

*Caption: Mission Operations Manager Keith Walyus discusses details of the Hubble servicing mission and the Space Telescope Operations Center's role in the upcoming mission to reporters attending the Servicing Mission 4 Media Day at Goddard.*



## Solar Shield Experiment Aims to Keep the Power On

By Laura Layton

When you flip a switch to illuminate the pages of your favorite book or reach for that last piece of key lime pie, you expect the electric current coursing through the outlets to power everything from your lights to your refrigerator to your big-screen, high definition television. When the power goes out, it can be more than just an inconvenience.

NASA's Solar Shield experiment explores how timely space weather forecasts can help power companies keep the power flowing to the appliances and electronic gadgets we rely on every day.

We consume electricity at an ever-increasing pace. As power companies try to keep up with the demand, they operate ever closer to the limit of their capabilities, leaving little margin for error. Just as these companies rely on advanced warning of severe weather that could disrupt the North American power grid, they also may soon come to rely on near-real time forecasts of severe space weather.

Space weather originates on the Sun. Solar eruptions, such as solar flares or coronal mass ejections (CMEs), can spew billions of tons of electrically charged particles toward Earth on the solar wind. When this space storm of particles interacts with Earth's magnetosphere and upper atmosphere, the particles release their energy and sometimes cause a geomagnetically induced current (GIC). GICs are currents flowing in power transmission lines generated by geomagnetic space storms.

Like an unexpected surge of power that overloads your computer if not properly protected, GICs can saturate high-voltage power transformers, causing damage or electric blackouts on a much larger scale. Such an event happened in March 1989, when a space storm took out Canada's Hydro-Quebec power grid for more than nine hours and resulted in significant economic losses.

The experimental Solar Shield system forecasts what effects earthbound space weather is likely to have on the North American power grid.

"The Solar Shield experiment explores providing advance warning of severe space weather to North American power utility companies in a way that is tailored to their specific needs and locations," says Dr. Antti Pulkkinen, an assistant research scientist at the University of Maryland Baltimore County's Earth Science and Technology Center, which is operated at NASA's Goddard Space Center in Greenbelt, Md.

Researchers use data from observations of the Sun and solar wind to estimate the probability of GICs impacting individual power grid nodes. Observations of CMEs from the *Solar and Heliospheric Observatory* (SOHO)

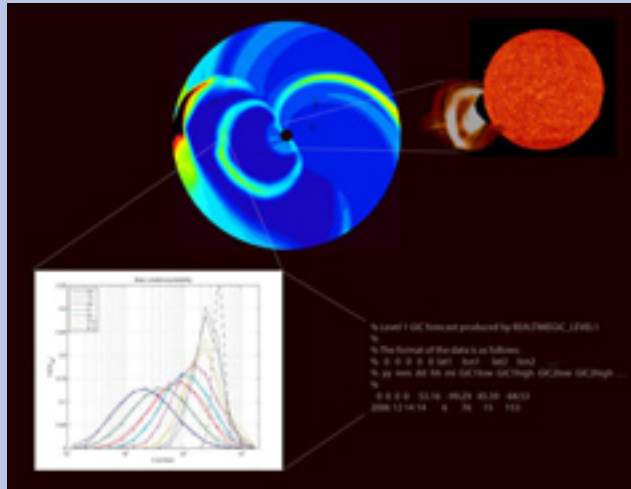


Photo Credit: NASA/CCMC

*Caption: NASA researchers use SOHO observations of coronal mass ejections (CMEs) to drive their Solar Shield experimental models and create a space weather forecast days in advance of the CME's effects near Earth.*

—a joint NASA/European Space Agency (ESA) mission—and observations of the solar wind from NASA's *Advanced Composition Explorer* (ACE) spacecraft, drive computer models that generate a space weather forecast.

"Using observations of the Sun and solar wind to drive our space physics models, we generate advanced warning of space weather that can affect high-voltage power transmissions," says Pulkkinen.

Dr. Pulkkinen and his team use computer models at the Community Coordinated Modeling Center (CCMC) at NASA's Goddard Space Flight Center in Greenbelt, Md., to provide two types of space weather forecasts. Long-term (1–2 days) forecasts use SOHO data and take a few hours to generate. Short-term forecasts (30–60 minutes) use solar-wind observations from ACE and can be generated in just 10–15 minutes.

The CCMC, which hosts various models provided by the space physics community, tests and evaluates models and supports space weather forecasters as the models transition into operation. The Solar Shield experiment, now undergoing such testing and evaluation, may be transitioned into actual space weather operations by non-NASA entities in the near future.

The Solar Shield project is a collaborative effort between NASA and the Electric Power Research Institute.

For more information on SOHO, visit: <http://sohowww.nascom.nasa.gov/home.html>. To see NASA's CCMC real-time tool Web page, visit: [http://ccmc.gsfc.nasa.gov/cgi-bin/display/RT\\_t.cgi](http://ccmc.gsfc.nasa.gov/cgi-bin/display/RT_t.cgi). ■

## Exceptional Goddard Personnel Receive Astronaut's Personal Award

By Amy Pruet

On Tuesday, July 1, members of the *Hubble* Servicing Mission 4 crew presented their personal award, the Silver Snoopy award, to Clay Fulcher, Thomas Griffin, Jackie Johnson, and Victoria Stewart. Each individual was honored for his or her exceptional support of NASA's human spaceflight program.

Along with certificates and letters of commendation signed by the *Hubble* crew, the Silver Snoopy awardees were presented with sterling silver Snoopy pins flown in space. Fulcher, Griffin, and Johnson received pins flown on STS-109, *Hubble* Servicing Mission 3B. Stewart received a pin flown on STS-103, *Hubble* Servicing Mission 3A.

The Silver Snoopy award, part of the Space Flight Awareness program, is the personal award given by NASA astronauts. After the loss of the *Apollo 1* crew in 1967, NASA sought to promote greater awareness among its employees and contractors of the impact they had on flight safety, the flight crews, and their missions.

Inspired by the U.S. Forest Service's mascot, Smokey the Bear, NASA looked for a similar symbol for spaceflight that would be well known and accepted



by the public. The idea for the Silver Snoopy award came from Al Chop, who was Director of the Public Affairs Office for the Manned Spacecraft Center (now called the Lyndon B. Johnson Space Center). He wanted to create an award featuring Snoopy as an astronaut to be given by astronauts in recognition of outstanding contributions by employees.

"Peanuts" creator Charles Schulz supported NASA's goal and agreed to let the Administration use "Snoopy the Astronaut" at no cost. Schulz drew the image upon which the award pin was based. He also drew promotional art for posters to promote the award program.

To qualify for the prestigious Silver Snoopy award, candidates must have made a significant contribution beyond their normal work requirements to NASA's human spaceflight programs or payload teams. They must have performed a single specific achievement that contributed towards attaining a particular program goal; contributed to one or more major cost saving/cost avoidance; been instrumental in developing program modifications that increase quality, reliability, safety, efficiency, or performance; developed or assisted with an operational improvement that increases efficiency and performance; or developed a process improvement of significant magnitude.

An individual is permitted only one Silver Snoopy award in a lifetime. Less than 1% of the NASA population receives the Silver Snoopy award each year. Nominations for the Silver Snoopy award are solicited biannually.

Dr. Clay Fulcher is the Goddard Space Flight Center representative with primary responsibilities for extravehicular activity (EVA) engineering development testing at Johnson Space Center for *Hubble Space Telescope* (HST) servicing missions and the Space Shuttle missions during Return to Flight. He is described as the primary reason such an effective inter-Center team and a strong spirit of cooperation exist between Goddard and Johnson EVA personnel. His many contributions to these cooperative efforts have been essential to making the HST servicing missions and Return-to-Flight astronaut EVA missions so successful.



*Caption: NASA astronauts present Goddard personnel with Silver Snoopy awards. Left to right: astronaut Andrew Feustel, astronaut Michael Massimino, Victoria Stewart, Thomas Griffin, Clay Fulcher, Jackie Johnson, astronaut John Grunfeld, and astronaut Michael Good.*

Mr. Thomas J. Griffin is the *Hubble Space Telescope* Observatory Manager. His knowledge, experience, and dedication ensure that *Hubble* will remain NASA's world-class observatory. His work with the HST life-extending hardware components and the flight-like crew trainers has proved indispensable to the *Hubble* Servicing Mission 4.

Mr. Jackie L. Johnson is the Principal Engineer overseeing the Space Support Equipment extravehicular activity hardware development and the Neutral Buoyancy Laboratory hardware planning, preparations, hardware modifications, diver support, debrief, and overall evaluations. His proven and recognized accomplishments in providing safe, reliable, and high performance tools and equipment for three separate teams of astronauts, and his unflinching dedication to his duties epitomize the engineer that has made HST one of NASA's most successful programs.

Ms. Victoria L. Stewart is the Mission Communications Manager at the NASA Communications (NASCOM)/NASA Integrated Services Network (NISN) Operations Center at Goddard. She monitors the 145 contractors that man the consoles 24 hours a day, 7 days a week and performs essential duties such as upgrading the communications operations room. She is described as the backbone of the Operations Center. She is an invaluable asset for Goddard and NASA because she is reliable, competent, and always personable during launches, landings, and other critical flight events. ■

## Pilot Program Welcomes New Family Members

By Dewayne Washington

As they entered the room, 41 newly selected Goddard community members were greeted with a sign that read, "Welcome to the NASA/Goddard Family." It was the start of another day at Goddard and the beginning of a redesigned orientation program created to engage, inform, inspire, and officially welcome recently hired civil servants into the Goddard community.

Entitled "Welcome to the NASA Goddard Family: Captivating, Cultivating, and Challenging You," the newly structured two-day orientation is the result of many months of collaborative efforts led by the Code 114 Talent Cultivation Office, within the Office of Human Capital Management (OHCM).

"Comments expressed during several 'Can We Talk' sessions convinced then-Center Director Dr. [Ed] Weiler that the New Employee on-boarding process needed to be redesigned," says Pamela Barrett, New Employee Orientation Program Manager. Barrett set up a diverse, cross-functional team to create an orientation event that better reflects who and what Goddard is. Team members included Odessia Becks, Tim Sauerwein, Mary Jones, Duc Dang, Gil Del Valle, Leigh James, Melodia Stewart, Sybil Rodriguez, Shannon Rodrigues, Karla Kahler, Sherri Tepper, and Gail Williams, who served as the team's champion.



Photo Credit: Clay Templaton

*Caption: Acting Center Director Rick Obenschain welcomes new employees with an overview of Goddard's mission.*

activities, presentations, and personal anecdotes designed to expose career possibilities within the Goddard community.

The second day included an overview of OHCM, and a special "Can We Talk" session with Obenschain. A leadership management panel discussion completed the morning session. Over lunch, Goddard aerospace engineer and successful after-hour DJ, Mark Branch, alias "DJ Scientific," provided insight about his love of work inside and outside the gates of Goddard. The afternoon session included Equal Employment Opportunity and diversity presentations. The new community members were also given a two-hour tour of Goddard before concluding at the Visitor's Center.

"One of the hardest things about starting a new job is the sense of feeling lost your first couple of months," says participant Craig Keish. "It [the orientation] gave me insight on how Goddard works and helped me immediately feel part of the community. The speakers did an excellent job and the opportunity to hear Acting Center Director Rick Obenschain speak not only once, but have him come back to host 'Can We Talk' was truly special."

After a careful review of comments and a few adjustments, future orientations will resemble this format, according to Barrett. The expectation is to conduct the newly designed orientation several times a year.

"You know the new employee is not always the fresh out," Barrett insists. "They could have been with another agency for years, they could have been a contractor, or they could be coming from a student program." Barrett also talked about diversity within the new employee ranks, which includes work responsibilities. "This group included scientists, engineers, administrative specialists, and supervisors," Barrett says.

"Every other Monday I welcome new employees to their first day of work here," Barrett says. "I think this pilot was a complete success and this additional orientation adds a new dimension to their on-boarding process. It gives the participants a connection and I believe they will all walk away feeling that they are definitely an integral part of our family." ■



Photo Credit: Debora McCallum

*Caption: New Goddard employees listen to a presentation.*

One team member, Sybil Rodriguez, human resources specialist, had only been at Goddard for six months prior to joining the team. She had fresh memories of her experience and offered valuable contributions about what enhancements could be made to the original orientation. Her expectations were different than most having been through orientations with several other Federal agencies. "I initially thought a two-day event would be too long," says Rodriguez. "But two days provided time to present a complete overview about all that Goddard has to offer. There was also time to show that there is life outside of your office at Goddard."

The opening session began with an overview of the orientation by Barrett. Rick Obenschain, Acting Center Director, welcomed the new members on behalf of the Goddard community. Senior leaders' presentations included a NASA Goddard history lesson, explanations, and updates of current and future Goddard missions. Goddard's resident astronaut, Paul Richards, spoke about his time in space. The afternoon session was filled with

## New Faces:

A semimonthly feature spotlighting new members of the Goddard community.

By John Putman



Photo credit: Debra McCallum

*Caption: Holly Gilbert.*

Holly Gilbert is the Associate Director of Science for Heliophysics, Code 670.

Holly is originally from Colorado and received her B.S. in physics from the University of Colorado in Boulder. She received her Ph.D. in theoretical astrophysics from the University of Oslo in Norway.

At the start of her career, she worked for the High Altitude Observatory at the National Center for Atmospheric Research (NCAR), where she was a scientist working in solar physics. From there, she went to Rice University in Houston, Texas as a research scientist to help run the University's solar group. Holly moved here from Houston a mere three weeks ago to work at Goddard.

Holly came to work at Goddard to take advantage of the "opportunity to lead the Education and Public Outreach efforts for the Heliophysics Division, coupled with the chance to pursue a high level of scientific research surrounded by a large group of well respected scientists." She says, "I always appreciate and embrace new opportunities and challenges."

When asked what she finds most rewarding at Goddard, she replies, "I would have to say that meeting and working with such a large and diverse group of extremely bright people has been the most rewarding. I'm finding there is a great wealth of resources here."

When not at Goddard, Holly loves to run, hike, read, and play the cello. She also notes that this is a great region of the country for one of her hobbies in particular—competitive pool. ■



Photo credit: Pat Izzo

*Caption: Katherine Seminara.*

Katherine Seminara is a Contract Specialist in the Office for Institutional Programs, Code 210.1.

Katherine is originally from Boston, Mass. She graduated from Northeastern University in Boston with a B.S. in education. Katherine most recently attended the College of Southern Maryland to supplement her degree in the areas of business and accounting to meet the current requirement for Contract Specialist.

Katherine began working for the U.S. Government in 1975 as a co-op student with the National Park Service, first in Brooklyn, N.Y., then in Washington, D.C. She worked with the U.S. Navy in Philadelphia, Pa. from 1986 to 1990.

In October of 1990, Katherine came to NASA and stayed until March 1998 when she left to take care of her son, then 3, and her new baby daughter. She stayed home until May 2008, when she returned to NASA Goddard.

Both Katherine's mother and her father-in-law worked at NASA from the 1960s through the 1990s. She says, "I've always enjoyed listening to their stories and also hearing about the work that NASA does."

The most rewarding part of Katherine's job is, she says, "Being able to buy the things that our customers need."

When not at the office, Katherine likes most crafts, such as paper crafting, rubber stamping, and scrapbooking. She also enjoys baking bread and being at home with her family. ■