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GoddardView

Can We Talk

By Sharon Wong and Trusilla Steele

Photo credit: Chris Gunn

Caption: Mike Ryschkewitsch, Deputy Director

The Oct. 24, 2006 "Can We Talk" was held in recognition of National Disability Employment Awareness Month. Although attendees were mainly individuals with disabilities, the "Can We Talk" discussion was carried on in its regular format and all employees were invited to attend.

Deputy Director Mike Ryschkewitsch and Deputy Director–Technical, Dolly Perkins hosted the dialogue, which began with concerns regarding the impact of proposed budget cuts to the People with Disabilities (PWD) community. Of particular concern were the closing of the Health Unit and reductions in the Employee Assistance Program (EAP). Ryschkewitsch explained how the budget reductions present a number of funding challenges, and a major challenge is to ensure continued employment for civil servants, which equates to a thorough examination of programs and services to be considered for reduction or elimination.

He provided examples of programs and services being considered, such as the decision to go to an electronic library, and closure of the Health Unit and Fitness Center. Goddard's management is working with NASA Headquarters to mitigate some of the impacts. Ryschkewitsch further explained that even when the Health Unit is closed, services will still be available on-call offsite with a standby emergency medical technician. An example was provided on how previous cuts to the Shuttle service impacted the PWD community but the Center was able to mitigate the impact. The community was advised to provide a Memorandum for the Record on the adverse impact to the PWD of these budget cuts.

The topic then focused on recruitment of people with disabilities. Lori Simmons, Chief of the Equal Opportunity Programs Office, explained that much of the entry level recruiting comes from conversion of co-ops from summer programs. Unfortunately, due to budget cuts, the next few years' present constraints on the numbers of students that are recruited into the co-op program. There are several programs, however, that specifically target the recruitment of students with disabilities and all of our student programs encourage participation of students with disabilities. There will still be a pipeline of qualified candidates with disabilities.

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Cover Caption: The Banana River reflects the brilliant launch of the Delta II carrying the STEREO spacecraft.
Photo Credit: NASA

GoddardView Info

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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.

NASA's First 3-D Solar Imaging Mission Soars Into Space

By Rani Gran

NASA's twin Solar Terrestrial Relations Observatories mission, known as STEREO, successfully launched on October 25 at 8:52 p.m. EDT from Cape Canaveral Air Force Station, Fla.

STEREO's nearly identical twin, golf cart-sized spacecraft will make observations to help researchers construct the first-ever three-dimensional views of the Sun. The images will show the star's stormy environment and its effects on the inner solar system, vital data for understanding how the Sun creates space weather.

"The stunning solar views the two observatories will send back to Earth will help scientists get a better understanding of the Sun and its activity than we've ever been able to obtain from the ground or any of our other missions," said Nick Chrissotimos, STEREO project manager at Goddard.

The two observatories were launched on a Delta II rocket in a stacked configuration and separated from the launch vehicle approximately 25 minutes after lift-off. After receiving the first signal from the spacecraft approximately 63 minutes after launch, mission control personnel at the Johns Hopkins University Applied Physics Laboratory (APL), confirmed that each observatory's solar arrays were successfully deployed and were providing power. NASA's Deep Space Network antennas in Canberra, Australia received the initial radio signals.

Photo credit: KSC

Caption: After the mobile service tower has rolled away, the Delta II rocket with the STEREO spacecraft at top stands alone next to the launch gantry.

NASA and APL mission engineers continue to maneuver STEREO's twin observatories into orbit. Mission engineers report that early mechanical tests and boom deployments have been a success. The spacecraft are currently in orbit about the Earth.

In about a month and a half, STEREO's orbits will be synchronized to encounter the Moon. The "A" observatory will use the Moon's gravity to redirect it to an orbit "ahead" of Earth.

The "B" observatory will encounter the Moon again for a second swing-by about one month later to redirect its position "behind" Earth.

STEREO is the first NASA mission to use separate lunar swing-bys to place two observatories into vastly different orbits around the Sun.

Just as the slight offset between human eyes provides depth perception, this placement will allow the STEREO observatories to obtain 3-D images of the Sun.

The arrangement also allows the two spacecraft to take local particle and magnetic field measurements of the solar wind as it flows by.

During the observatories' two-year mission, they will explore the origin, evolution and interplanetary consequences of coronal mass ejections, some of the most violent explosions in our solar system. These billion-ton eruptions can produce spectacular aurora, disrupt satellites, radio communications, and Earth's power systems. Energetic particles associated with these solar eruptions permeate the entire solar system and can be hazardous to spacecraft and astronauts.

Better prediction of solar eruptions provides more warning time for satellite and power grid operators to put their assets into a safe mode to weather the storm. A better understanding of the nature of these events will help engineers build better and more resilient systems.

"We're becoming more and more reliant on space technologies in our everyday lives and are hatching ambitious plans to explore our outer space surroundings," said Michael Kaiser, STEREO Project Scientist at Goddard. "But nature has a mind of its own and STEREO is going to help us figure out how to avoid those surprises the Sun tends to throw at us and our best-laid plans."

Goddard manages the STEREO mission. APL designed and built the spacecraft. The laboratory will maintain command and control of the observatories throughout the mission, while NASA tracks and receives the data, determines the orbit of the satellites, and coordinates the science results. Each observatory has 16 instruments, including imaging telescopes and equipment to measure solar wind particles and to perform radio astronomy.

The STEREO mission includes significant international cooperation with European partners in instrument development, data sharing, and analysis.

For more information about STEREO, visit: http://www.nasa.gov/stereo ■

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Can We Talk

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Simmons also added that although people with disabilities can be hired without competition through a special hiring authority, the determining factors are still based on the available Full-Time Employees (FTE) and directorate needs.

The Equal Employment Opportunity Commission (EEOC) requires Federal agencies to have a numeric goal for hiring individuals with severe disabilities.

Recently, the EEOC provided the goal of 2.27% participation of individuals with severe disabilities. This number reflects the highest level of representation of any Federal agency. Goddard is about 1% short of reaching this numeric goal.

Goddard is doing fairly well with accommodating employees who have requested special accommodations. Simmons claims that her office receives positive feedback in this area. Most employees in attendance stressed the importance of communicating such needs with supervisors to ensure their accommodations are met. PWD Program Manager, Michael Hartman, encouraged feedback from all employees and emphasized reviewing helpful publications available at: http://eeo.gsfc.nasa.gov/disability/publications.html

An area that continues to pose a challenge is computer accessibility. In particular, NASA uses some software programs that are not fully accessible to all individuals. Though efforts are made to correct or compensate for the problem, it is especially difficult to do so after a software program is institutionalized.

The community also raised a concern regarding a feeling of invisibility and how to change people's perceptions of the capabilities of people with disabilities. Both Ryschkewitsch and Perkins shared that perceptions change when people become aware of PWDs and become exposed to working with them.

Other issues raised that were not specific to the PWD community included the Senior Fellows Program in which Perkins explained that the designation of Goddard Senior Fellow represents the highest level of achievement for scientists and engineers in the research and development portion of NASA's dual career ladder. The Fellows also play a vital role in reviewing the Director's Discretionary Fund proposals.

Ryschkewitsch brought the discussion to a conclusion by requesting members of the People with Disabilities Advisory Committee to assist him with encouraging group and team projects to include a voice from employees with disabilities. "Everyone needs to be mindful of employees with disabilities so matters won't be overlooked so as to ensure an inclusive working environment."

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NASA Shares Hubble Discoveries with Teachers

By Susan Hendrix

Several teachers, some soaked from the cold rain that fell for much of the day, filed into a small, dark auditorium. They came from various area schools to participate in a monthly science presentation, sponsored by the Maryland Science Center in Baltimore.

Held on Thursday evenings from 6–8 p.m., the museum's "Teachers Thursdays" programs attract K-12 science educators from near and far for lively discussions and lots of hands-on science lessons for their classrooms.

Their diligence this particular night was rewarded with two incredible science presentations. Dr. David Leckrone, Senior Scientist for the Hubble Space Telescope at NASA Goddard Space Flight Center (GSFC), was first to present. He took the teachers on a stunningly visual journey to the far reaches of the universe, where mysterious dark energy abounds and stars are born and die in fiery glory. Leckrone's passion for Hubble discoveries was clearly evident as he discussed one Hubble "first" after another. His presentation was peppered with science questions from the teachers and ended in time for a short break before the next speaker took center stage. Leckrone was appointed Senior Project Scientist for the overall Hubble Program in 1992 and has served as the scientific lead on four servicing missions to this world-renowned observatory.

For more information about the Hubble Space Telescope newly announced servicing mission, visit: www.nasa.gov/hubble

Dr. Clifford Mitchell from the Maryland Department of Health and Mental Hygiene lead the evening's second presentation, which focused on the agency's latest efforts regarding the Avian Flu Virus.

According to the Maryland Science Center's Web site, their "Teachers' Thursdays" program is another way for educators to stay current with the latest scientific developments, enabling them to bring educational activities into their classrooms.

Teachers who cannot attend in person can participate via the Maryland Interactive Distance Learning Network (MIDLN), an Internet-based service that brings the museum to them. ■

NASA Works with New Company to Bring Nanotube Technology to the Commercial Marketplace

By Nancy Pekar

Researchers gathered for the National Nano Engineering Conference in Boston on November 9–10, where they had the opportunity to learn about how a NASA-developed innovative process is making a big impact in nanotechnology.

Earlier this year, Goddard—a sponsor of, and exhibitor at, the NASA Tech Briefs conference—licensed its patented technique for manufacturing high-quality, single-walled carbon nanotubes (CNTs) to Idaho Space Materials (ISM) in Boise. Now the CNTs based on this process are being used by researchers and companies that are working on the next generation of composite polymers, metals, and ceramics that will impact almost every facet of life.

One of the basic nanotechnology structures, a carbon nanotube, is a graphite sheet one atomic layer thick of carbon that is wrapped on itself to create an extraordinarily long, thin, strong tube. Although CNTs were discovered 15 years ago, their use has been limited because of the complex, dangerous, and expensive methods for their production.

However, Goddard researcher Dr. Jeannette Benavides developed a simpler, safer, and much less costly manufacturing process for single-walled CNTs. The key to the innovation developed by Dr. Benavides was the ability to produce bundles of CNTs without using a metal catalyst, dramatically reducing pre- and post-production costs while generating higher yields of better quality product. This capability was of particular interest to Wayne Whitt, founder of ISM, who was looking for an innovation with which to start an advanced materials company.

"Licensing NASA's technology allowed us to begin operations and rapidly commercialize an innovative product without the traditional R&D costs and time," said Mr. Whitt.

Photo credit: Goddard's Innovative Partnerships Program Office

Caption: Goddard's Dr. Jeannette Benavides prepares to run her simple, safe, and inexpensive manufacturing process for single-walled CNTs.

"We were able to focus on process enhancement and commercialization, which resulted in significant improvements in yield and production capacity without sacrificing product quality."

Having successfully commercialized NASA's manufacturing process to increase production capacity while maintaining quality, ISM can produce single-walled CNTs at a rate of 50 grams per hour. These CNTs can then be used in a wide range of applications.

"ISM believes that carbon nanotubes will be a building block for a better world, making people's lives better through a wide range of uses, including medical advances, fuel cells, video displays, solar cells, and a host of other applications," explained ISM Vice President Roger Smith. "Getting single-walled CNTs into the hands of researchers will help accelerate their transition from a conceptual idea to a practical product, and that's why we offer our product at a reduced price for researchers."

"I'm very excited to see that this agreement is now making CNTs more readily available, particularly for academic and other research programs," said Dr. Benavides, who demonstrated the technology to ISM and provided expertise during the company's commercialization of her technology. "The fact that they now have access to lower cost CNTs bodes well for the future of nanotechnology."

This technology transfer success story was made possible by the efforts of NASA's Innovative Partnerships Program (IPP), which has a two-part focus: (1) forming partnerships between NASA and industry, academia, or other government agencies to support the space program and (2) transferring NASA technology to new applications.

"NASA is committed to working with small businesses so they may be successful. It's good for technology, for NASA, and for the U.S. economy," said Nona Minnifield Cheeks, Chief of IPP's office at Goddard. ■

Vesper Could Explore Earth's Fiery Twin

By Bill Steigerwald

Earth has a twin sister, and she's gone bad.

The planet Venus is almost the same size as Earth, so it has been called Earth's twin. It's only about 30 percent closer to the Sun than Earth, and at the dawn of the space age, scientists thought its cloudy atmosphere might hide a steamy jungle planet teeming with life. However, when the first American and Russian space probes visited Venus in the 1960s, it became clear that something had gone terribly wrong with the planet's ability to support life. The spacecraft revealed Venus as a searing desert, its waterless surface crushed under a thick atmosphere almost 100 times the pressure of Earth's. The clouds that shroud the planet contain droplets of deadly sulfuric acid, not life-sustaining water. The surface temperature hovers around 800 degrees Fahrenheit, hot enough to melt lead. All known forms of life would be broiled alive.

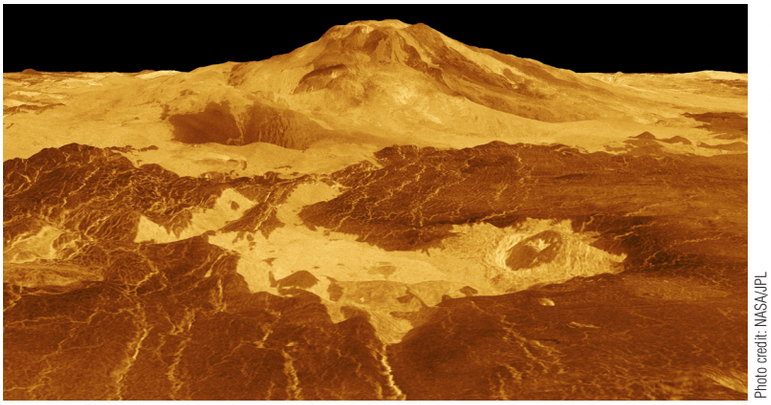

Photo credit: NASA/JPL

Caption: The volcano Maat Mons is displayed in this computer generated three-dimensional perspective of the surface of Venus. Radar data is combined with radar altimetry from NASA's Magellan mission to develop a three-dimensional map of the surface. The viewpoint is located 634 kilometers (393 miles) north of Maat Mons at an elevation of 3 kilometers (2 miles) above the terrain. Lava flows extend for hundreds of kilometers across the fractured plains shown in the foreground, to the base of Maat Mons. The vertical scale in this perspective has been exaggerated 10 times. Simulated color and a digital elevation map developed by the U.S. Geological Survey are used to enhance small-scale structure.

Yet, both Venus and Earth may have had similar climates shortly after they formed. "The big mystery Vesper will help answer is how these two similar worlds ended up with such different outcomes," said Gordon Chin, Principal Investigator for the proposed mission at NASA's Goddard Space Flight Center (GSFC).

Vesper, the Latin name for "Evening Star" or Venus, is a proposed NASA Discovery-class mission that would increase our knowledge of what the planet's atmosphere is made of and how it changes. Understanding the atmosphere of Venus will help scientists learn how a world that might have been a tropical Eden became instead a close approximation of Hell. The Vesper proposal was among approximately two dozen submitted in response to NASA's Discovery Program 2006 Announcement of Opportunity in April. NASA selected three new mission proposals for concept studies, including Vesper. As a new mission, the Vesper team will receive $1.2 million to conduct further study of the concept. If selected for continuation beyond the concept phase, Vesper must complete its mission, including archiving, and analyzing data, for less than $425 million.

If approved, Vesper would observe Venus for two days. They are Venus days, which are 243 Earth days long. Venus rotates so slowly that its day is longer than its year (which lasts 224.7 Earth days).

The many mysteries Vesper will investigate include:

- How the atmosphere evolved from a supposed Earth-like beginning to its current, unimaginably hostile state.
- Understanding what happened can provide insight to climate change on Earth.

Although the surface hardly rotates, the cloud tops swirl around the planet at over 200 miles per hour. This is called "superrotation," and scientists want to understand what drives it.

Vortices of spinning clouds resembling twin hurricanes, side by side, exist at each pole. Scientists want to understand how and why they form, and whether they produce unusual chemical reactions, similar to the polar vortices on Earth that set up conditions which allow the ozone holes to form.

Vesper will also investigate whether long-term changes in atmospheric sulfur dioxide compounds are evidence of active volcanoes on Venus.

The planet's atmosphere is mostly carbon dioxide (CO_2), which should get broken down by sunlight into carbon monoxide (CO) and oxygen. That's not happening, at least not on a large scale, or scientists would have seen it by now. There must be some as yet unknown chemistry stabilizing the atmosphere. Vesper will complement past and current missions to Venus like the European Space Agency's Venus Express. That mission arrived at Venus on April 11, 2006, and will explore the planet for two Venus days, or 486 Earth days. Vesper could enter Venus orbit in March 2015. By observing the planet's atmosphere at different times, scientists can get a more complete record of how the atmosphere is changing.

Goddard will manage the Vesper project if it is approved. NASA may select one or more investigations to continue into a development effort after detailed review of the concept studies. Decisions about which mission concepts are further developed are expected next year. ■

The Truth About Bottles and Cans

By Darlene Squibb

Photo credit: Debora McCallum

Caption: Goddard Child Development Center who sang recycling songs to the catchy tunes of "Itsy Bitsy Spider" and "If You're Happy and You Know It."

The Goddard recycling program has been in existence since the early 1990s.

Recycling provides raw materials to the marketplace, and uses less energy and natural resources to recreate into new products. For example, plastic No. 1, PET, bottles are chipped, melted, and turned into fibrous material that makes fleece wearables.

For GSFC, recycling reduces the amount of waste going into the landfill, therefore, less is paid for disposal. Recycling provides raw materials to the marketplace after sorting and bundling at a recycling processing facility. While recycling markets are up and down, GSFC receives some rebates from recycling to continue to run the recycling program.

GSFC has recycled over 522 tons of materials combined from the Center last year fiscal year. This is in contrast to the 1,850 tons of trash that went to the landfill.

Every building has receptacles for recycling drink containers (aluminum, glass, and plastic), white paper, and mixed (colored) paper. You may have noticed that the most abundant and visible containers are for white office paper. This was based on the first establishment of recycling on the Center and is valuable in the marketplace.

There will be containers marking changes in the near future. You are now able to mix drink containers—plastic, glass, and aluminum and place them in the same bin. White paper will remain separate.

Mixed paper will now consist of any paper that is not white—newspaper, colors, magazines, and glossies. Each employee has a responsibility to get their recyclables to a central outlet. Recyclables are not picked up with personal trash.

Cardboard is also a big commodity and should be labeled for recycling. Follow the same procedures for laser toner cartridges. Place the old toner cartridge back in the same box it came from and mark it for recycling and place near your trash, or in your copier room. This will allow the custodial staff to identify items to be taken. Please do not take cardboard or laser toner cartridges to the dumpsters or throw them in the trash. Once recyclables are badly contaminated they do often have to be trashed.

The custodial staff is in charge of moving recyclables to central locations. The trash hauler collects the recyclables and the products go to various recycling processing facilities in the area where they are marketed to create other goods.

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Can We Talk

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Photo credit: Bill Engel

Caption: Dr. Weiler

The November 6, 2006 "Can We Talk" discussion centered around budget concerns, direct reassignments, and the possible closing of the Health Unit and Fitness Center. Dr. Weiler, Center Director and Dolly Perkins, Deputy Center Director hosted the discussion.

The discussion began with concerns about the policy for directed reassignments. Although some procurement positions were reassigned to the NSSC last year, affected employees were voluntarily reassigned to other positions at Goddard. Some term employees appointments were not extended. Weiler stated that he didn't believe directed reassignments would occur again.

Weiler emphasized that budget constraints were causing everything—from producing publications to employees going on travel—to be reviewed in order to curtail spending. Unfortunately, the Goddard Fitness Center and Health Unit fell within the category of examination for possible elimination or severe reduction in services. Weiler encouraged the President of the GEWA Council who was present, to begin discussion on a possible take over of the management of the Fitness Center.

Tom Paprocki, Deputy Director of the Management Operations Directorate, mentioned that Code 200 was convening a Town Hall meeting to discuss possible scenarios to keep the Fitness Center operating. He further explained that the Fitness Center equipment is provided under the contract to maintain the Fitness Center and if the contract isn't maintained, the equipment in the Fitness Center would no longer be available.

[NOTE: Since the time of this "Can We Talk," the Center has received funding to maintain operation of the Health Unit and Fitness Center for another year.]

Noting that 40 percent of every dollar goes to utilities, conservation is one way Weiler feels employees can help with reducing utility expenditures. An example is Security personnel's role in energy conservation by turning off lights as they patrol the buildings in the evenings. Another possible reduction suggested was the operational hours of the new North gate. Paprocki was tasked to examine the hours and to make alterations where feasible.

A suggestion was made to have all Centers work collectively to reduce the appearance of competing for funds. Weiler clarified that many Centers have a higher need for funds with many of them unable to afford the maintenance of their buildings.

Paprocki addressed the difficulties associated with controlling the temperature in buildings. Many buildings have old HVAC systems and/or are now occupied but weren't meant for an office environment, resulting in extremely cold temperatures in some parts of the building. Such is the case with Building 16W. The high ceilings make heating difficult because hot air rises. Paprocki was tasked to examine possibilities for controlling the temperature in Building 16W.

Other discussion points included a reminder from Weiler that employees with excess "Use or Lose" should consider donating to employees who are in need of it the most. He also reminded second level supervisors of their authority to recognize first line managers, who are sometimes overlooked in the recognition process.

When asked about the greatest challenge he foresees for Goddard, Weiler remarked that resistance to change is the biggest challenge he sees. He concluded by emphasizing how unique Goddard is because of the nature of our work in managing numerous projects and that everyone should work together to have a culture that is fair and equitable.

This will be the last "Can We Talk" Session reported in 2006. The "Can We Talk" Sessions will resume monthly in January 2007.

The "Can We Talk" Sessions with Drs. Weiler and Ryschkewitsch are held monthly and has no set agenda topic or prepared questions.

These discussions are frank and inclusive to those in attendance. All civil servants and contractors are invited to come gain knowledge of the latest happenings at the Center or Agency. Registration is required to ensure proper accommodations. You may register at: http://internal.gsfc.nasa.gov/canwetalk. ■

UK University Commissions CHARMS Facility for Optics Testing

By Dwayne Washington

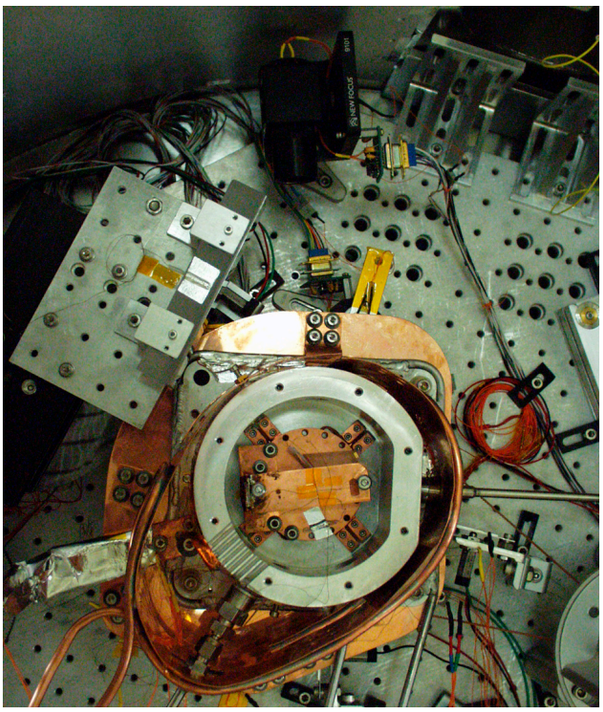

Photo credit: NASA

Caption: An overhead view inside of CHARMS.

A new partnership formed between Goddard and the University of Oxford in the United Kingdom will be generating data to improve optical designs for instruments operating at cryogenic temperatures. These data will be generated using Goddard's unique Cryogenic High Accuracy Refraction Measuring System (CHARMS).

"No other facility in the world offers the accuracy and measurement capabilities that the CHARMS facility provides," explained Goddard Optical Engineer and CHARMS Co-Investigator Brad Frey. "Researchers from all over the world are interested in CHARMS because of the high-quality refractive index data we can generate here."

Developed in 2003 by Optics Branch engineers Doug Leviton and Brad Frey, the CHARMS facility surpasses other refractometer facilities in its versatility—providing measurements at cryogenic temperatures and over a wide range of wavelengths—and its unsurpassed accuracy. CHARMS first demonstrated its value to NASA in testing the lens materials used in the all-refractive design of the Near Infrared Camera (NIRCam) instrument for the James Webb Space Telescope (JWST). The data enabled the development of a design that would reach its scientific goals and will improve the efficiency of cryogenic testing of NIRCam on the ground, adding to CHARMS's world-class reputation. (For more information about CHARMS, see page 4 of the September 2005 issue of Goddard View [Vol. 1, No. 5].)

An International Partnership

Under the Space Act Agreement, the CHARMS facility is being used to test a prismatic sample provided by the University of Oxford, characterizing its material properties by measuring its refractive index—that is, how the glass will process light.

Unlike NASA's applications for the capabilities provided by CHARMS, Oxford's application is not for optics that will actually fly in space. Rather, this work will benefit a ground-based infrared (IR) instrument: the K-band Multi-Object Spectrometer (KMOS), which will be used on one of the European Southern Observatory's Very Large Telescopes.

"There are lots of ground-based applications for our CHARMS data," Frey explained. Many IR instruments are used at cold temperatures to reduce the "background" light emitted from the instrument itself. "All things—people, buildings, and even telescope optics—emit infrared light simply due to their warm temperature. If you don't cool the telescope mirrors and lenses, the camera will be overwhelmed from the infrared light coming from the optics, and you won't be able to see the thing you're pointing the telescope at. If you cool the optics, this background goes away and you can better see your science target."

Through this partnership and the testing in CHARMS, the University will obtain knowledge of the optical properties of its sample material at cryogenic temperatures, thus improving the KMOS instrument's design and performance as well as simplifying the integration and test phase of development.

Benefits for NASA

But the University of Oxford is not the only one benefiting from this agreement. "Technology transfer at NASA benefits the outside organizations, but the resulting data can provide returns to NASA missions as well," explained Ted Mecum of Goddard's Innovative Partnerships Program Office, who negotiated the agreement with the University of Oxford. NASA will be able to use the refractive index data generated for the University without investing research funds in performing additional measurements of this material in the future for its own missions.

CHARMS testing of the Oxford sample is scheduled to conclude by the end of 2006, with Goddard providing a report of the findings. The results also will be published in scientific papers, notably the proceedings of the International Society for Optical Engineering (SPIE). NASA—and indeed the larger optics and aerospace industries—will benefit from these newly published data. ■

The Truth About Bottles and Cans

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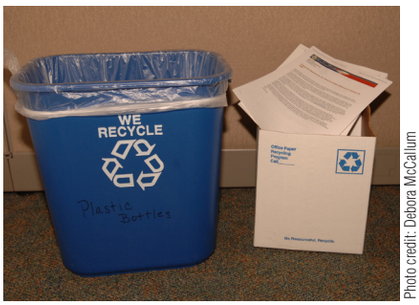

Photo credit: Débora McCallum

Caption: A paper recycling bin, typically seen around Goddard's offices.

The custodial staff is not tasked with recycling for individuals. The custodial staff processes recyclables and trash on alternating scheduled days from the trash.

Often it may look like it is being collected as trash because they are using the same containers however; there are designated places for the recyclables.

To broaden awareness of Goddard's recycling program and to convey the benefits from recycling, Goddard held its annual "America Recycles Day" on November 15, 2006.

This event was filled with information on the recycling services provided by the Facilities Management Division, Safety and Environmental Division, and the Information and Logistics Management Division.

Encouraging the purchase of products made from recycled material, employees from Store Stock were present with samples of office products made from recycled material. Pencils, highlighters, and T-shirts that contained recycled materials were giveaways to employees who correctly answered the Goddard Recycling Jeopardy Game question.

Goddard astronaut, Paul Richards who flew on STS-102 in 2001, gave a vivid and engaging discussion with the students from the GCDC. Richards spoke of views from space of polluted air, oil spills, and other environmental mishaps that eventually affects us all. He explained the importance of practicing good recycling habits just as he had to practice getting accustomed to the G-force and working in space experience. Richards further explained when in space they recycle fuel cells of batteries to acquire water.

Richards concluded by stating that from space you can actually see that Earth isn't as big as you think it is which means, there isn't much room. Therefore, we need to recycle to preserve what we need and to conserve whenever possible.

This message was brought to you by the GSFC Green Team, a cross directorate group of people who meet each month for the purpose of providing education on waste reduction and recycling. For membership information, contact Darlene Squibb, Code 250, 6-6137, or Darlene.E.Squibb@nasa.gov.

For more information on Goddard's recycling program, review the following pdf: http://internal.gsfc.nasa.gov/announcement_images/Recycling_trifold.pdf or contact Darlene Squibb, Code 250 at 6-6137. ■

NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES)

Supporting research in science and technology is an important part of NASA's overall mission. NASA solicits this research through the release of various research announcements in a wide range of science and technology disciplines. NASA uses a peer-review process to evaluate and select research proposals submitted in response to these research announcements. Researchers can help NASA achieve national research objectives by submitting research proposals and conducting awarded research. This site facilitates the search for NASA research opportunities.

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

Solicitations:

Hubble Space Telescope - Cycle 16 Call for Proposals Call for Proposals
Released: 2006-10-13
Proposal Due: 2007-01-26

NASA ARMD Research Opportunities in Aeronautics (ROA)
Released: 2006-05-24
Proposal Due: 2 2007-08-24

NASA Earth and Space Science Fellowship
Released: 2006-11-01
Proposal Due: See Announcement

Research Opportunities in Space and Earth Sciences - 2005
Released: 2005-01-27
Proposal Due: 2007-02-17

Rossi X-ray Timing Explorer Guest Observer Program - Cycle 12
Released: 2006-10-23
Proposal Due: 2007-01-26
■

County Executive Declares November 9th Dr. John C. Mather Day

By Dwayne Washington

Prince George's County Executive Jack Johnson presented Hyattsville resident John C. Mather, Ph.D. with a proclamation in honor of receiving the 2006 Nobel Prize in physics, shared with George F. Smoot for "their discovery of the black body form and anisotropy of the cosmic microwave background radiation."

"Dr. Mather, I wanted to personally congratulate and present you with a proclamation on behalf of the residents and citizens of Prince George's County for achieving the coveted 2006 Nobel Prize in physics," said Johnson. "You are an inspiration to our children and aspiring scientists throughout the world."

Mather is a Senior Astrophysicist in the Observational Cosmology Laboratory at NASA Goddard Space Flight Center. His research centers on infrared astronomy and cosmology. Mather has a B.A. in physics from Swarthmore College with highest honors (Phi Beta Kappa) and holds a Ph.D. in Physics from the University of California at Berkeley (4.0 GPA).

Mather and Smoot helped cement the big-bang theory of the universe using the Cosmic Background Explorer (COBE) satellite.

Photo credit: NASA

Caption: Prince George's County Executive Jack B. Johnson presents Dr. John C. Mather with a proclamation on behalf of the residents and citizens of Prince George's County for receiving the 2006 Nobel Prize in Physics.

The pair will receive the prize from King Carl Gustav XVI on December 10. Mather is the first NASA employee to win for work performed at a NASA research center. The award amount is $1.365 million. ■

Photo credit: Pat Izzo

Caption: Dr. John Mather addresses the crowd at the October 10th celebration in Building 8 at Goddard.

Employee Spotlight:

Chris Gunn

By Alana Little

"I love science. It's utilizing the full power of photography," said Chris Gunn, the new Stinger Ghaffarian Technologies (SGT) photographer.

Gunn picked up a book on photo chemistry from the library at age seven and became hooked on how light and chemicals could make images on photo paper. It would be a few more years before Gunn was introduced to a camera through an after school program at Ann Beers Elementary School (now a NASA Explorer School). At this program, a passionate young teacher inspired him, and several years after that while matriculating at The University of the District of Columbia, he decided to pursue photography seriously. Gunn originally majored in Political Science, but received confirmation that becoming an artist was the right move for him, after walking into his first college-level photography class where that same passionate teacher who first introduced him to a camera in that long-ago after school program was the professor.

The rest is history, but unlike the kind of history you have to read, you can see Gunn's growth and progression as a serious photographer right here on Goddard's campus. His arresting images have graced the cover of *Goddard View* and *Tech Trends* and his black and white work has been displayed in the Building 8 Code 200 corridor for over a year.

Gunn began his career at Goddard on the Technical Information and Management Services (TIMS) contract six years ago and continues with his new assignment working in the Photographic and Video Documentation Office (Code 400) for the Hubble project. His group, the Video Imaging & Photographic Requirements Group (VIPER), including counterparts Eric Foster and Billy Parks will be primarily responsible for documenting the Hubble mission. When asked why he made the move, Gunn responded, "I didn't want to be on the fringes anymore. Shooting events and portraits only allowed me 20–30 minutes to get to know people and the work they do at Goddard, then it was time to move on to another assignment. With Hubble, I am on the flagship project for Goddard and that's exciting."

If Gunn continues to give us stunning images like the ones below, the Goddard community will truly be in for some truly eye-popping photojournalism. ■

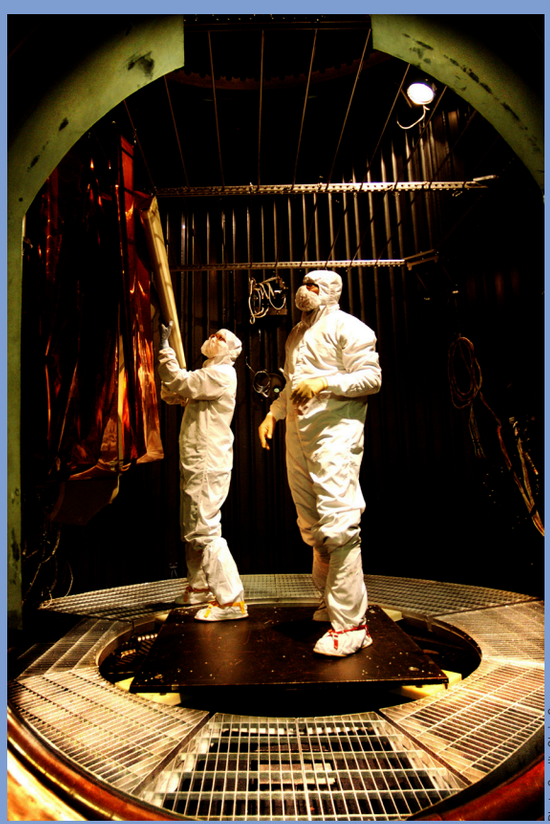

Photo Credit: Chris Gunn

Caption: Goddard employees hang material in a chamber for vacuum testing. Originally shot for a Goddard annual report.

Photo Credit: Chris Gunn

Caption: Goddard Scientist Rafael Rincon kneels in a field of disdrometers and rain gauges at the Wallops flight facility shot for the Directors Discretionary Fund annual report.