

Goddard Host Leader Led Workshop

By Natalie Simms

Photos by Pat Izzo/293

On Wednesday, Nov. 3, the Goddard Space Flight Center hosted their One NASA Leader-Led Workshop in the Bldg. 3 Goett Auditorium. This workshop included a panel discussion with some of NASA's top key leaders: Ed Weiler, GSFC Center Director; Fred Gregory, Deputy Administrator; Craig Steidle, Associate Administrator for



Steidle addresses GSFC employees

for Exploration Systems and Al Diaz, former GSFC Center Director and Associate Administrator for the Science Mission Directorate.

The GSFC community actively participated in the day's activities, with the morning, all-hands session being standing room only, while the afternoon breakout sessions were fully attended as well. This led to a tremendous success on the part of the One NASA team. Participation was high and the various questions from the audience gave the overall workshop a dialogue approach.

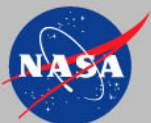
Center Director, Ed Weiler welcomed all guests and the Goddard community to the all-hands portion of the workshop. He then introduced NASA's Deputy Administrator, Fred Gregory, who touched on broadening our understanding of the Agency's Transformation.

He was followed by Associate Administrator for Exploration Systems, Craig Steidle, who expanded upon our understanding of the progress toward achievement of the Vision for Space Exploration and a further understanding of the Mission Directorate and our Center's role in Exploration. Following Mr. Steidle's presentation, Associate Administrator for the Science Mission Directorate, Al Diaz, briefly addressed the audience on science-related topics. Ed Weiler finalized the all-hands portion of the workshop with concluding remarks and introduced the panel to begin the question and answer discussion.

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NASA's Mission:

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

For further detail of the NASA mission, go to:
http://www.nasa.gov/missions/solarsystem/explore_main.html

Editor: Trusilla Steele
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Automated SF52 Implementation at Goddard Space Flight Center

As mandated by the e-Payroll initiative, NASA successfully adopted the Department of Interior's (DOI) Federal Personnel Payroll System (FPPS) in replacement of NASA's Personnel and Payroll System (NPPS) on Aug 08, 2004. There are three phases of the e-Payroll rollout at Goddard Space Flight Center (GSFC) include:

- Phase I – Implementation of WebTADS
- Phase II – Implementation of FPPS
- Phase III – Implementation of Automated SF52 Functionality via FPPS

Phase I and II of the project are complete. Phase III of the e-Payroll implementation will focus on implementing a new online process for managers and administrative staff to process personnel actions (like promotions, awards, details, etc) electronically via FPPS. Today, these actions are completed using the NASA standard form 52, (i.e. SF52). Automated SF52s will:

- Provide a web-based interface for processing personnel requests
- Eliminate duplicative manual entry
- Reduce the number of error follow-up and rework
- Allow for easier SF52/50 tracking
- Provide a standard process across Directorates for initiating SF52s

The new functionality will be available to end users by logging into FPPS with an assigned user ID and password.

All employees who submit SF52 forms will be impacted by this change and must learn the new online process. This includes administrative officers, secretaries, and managers, commonly known in FPPS as the Requesting Office (RO).

The e-Payroll team at Goddard recently launched their process of online SF52 processing with a kick-off presentation to the administrative officers on October 28th. The team is implementing the automated functionality to Center organizations in a phased rollout. To assist the RO in getting

up to speed on the SF52 processes, three types of training will be offered during rollout:

- Instructor-Led Training (ILT)
- Computer-based Training (CBT)
- Web-based Training (WBT)

Rollout to all GSFC organizations will continue through April 2005.

Contact Felicia M. White at 301.614.6964 or fwhite@pop400.gsfc.nasa.gov with any questions about the rollout process. ■

e-Payroll Year End Reminders

Year End Delay in EFT Deposits

Due to end of year processing, EFT deposits that employees may expect on Dec. 30 or Dec.31 will be delayed until **Jan. 3, 2005**. This will be pay period 01 for the 2005 Tax Year. Employees who receive paper checks can still expect to get their pay checks by NASA's official pay day, Tuesday **Jan 4, 2005**.

2004 Form W-2 Information and Timeline

All NASA employees will receive two W-2s for the 2004 Fiscal Year; one from NASA and one from the Department of Interior (DOI).

The 2004 NASA W-2's will be mailed from the Liaison Payroll Office in Alabama by Jan. 31, 2005. The 2004 DOI W-2's will be mailed from the National Business Center in Colorado also by Jan. 31, 2005.

All W-2's will be mailed to the address of record in the system at the end of pay period 0426. Employee's, who do not receive their W-2, may request a duplicate W-2 beginning Feb. 7, 2005.

All employees need to review their Leave and Earnings Statement to verify that their mailing address and county information is correct to ensure timely receipt of their NASA and DOI Form W-2s. Any address change may be made through the Goddard Payroll Office or Employee Express. **All address changes must be completed by Dec. 11, 2004.**

If you have any questions or concerns, please call your payroll representative at the Goddard Payroll Office. ■

In the Safety Corner

Holiday Safety Tips

The holiday season is upon us, and for many of us that means lots of celebration and fun. To help ensure that you have a safe and joyous holiday season, here are some tips that can help prevent accidents and illnesses:

Christmas Trees & Decorations

- When buying a natural tree, purchase one that is as fresh as possible. The higher the moisture content it has, the less likely it is to dry out and become a fire hazard. The more brittle the needles are, the dryer the it is.
- Water trees often, remembering to first trim the trunk before setting it up. Immediately following a cut, sap collects and hardens, creating a natural patch similar to a scab. Liquid will not be able to easily penetrate this, so slicing off an additional layer before positioning the tree inside one's house will prolong its life.
 - Do not block stairs or doorways.
 - Dispose of the tree when needles begin to fall off in large quantities.
 - Artificial trees should bear the UL label.
 - Always turn off all lights on your tree whenever you leave your home.
 - Use only UL approved lighting.
 - Inspect lights for broken or cracked sockets and frayed wires, replace if necessary.
 - Don't overload extension cords, and do not connect more than three sets of lights on one cord.
 - Think twice before climbing ladders to hang decorations or plugging in lights this winter season. A faulty ladder or frayed extension cord could result in an accident that could be avoided if you take precautions.
 - Before working with outdoor wiring, turn off the electricity to the supply outlet and unplug the connection. Make sure that light strings, cords, spotlights and floodlights are certified for outdoor use or wet locations.

■ When hanging lights outdoors, keep electrical connectors above ground and out of puddles and snow as well as away from metal eaves troughs. To prevent moisture from entering bulb sockets, position the bulbs pointing toward the ground, if possible.

Toy Safety

- Follow recommended age ranges on toy packages. Toys that are too advanced could be a safety hazard for younger children.
- Before buying a toy, or allowing your child to play with a toy that he has received as a gift, read the instructions carefully. If the toy is appropriate for your child, show him how to use it.
 - Be careful of holiday gift-wrapping, like bags, paper, ribbon and bows. These items can pose suffocation and choking hazards to small children.
 - Children under age four can choke on small parts contained in toys or games and balls with a diameter of one and three-quarters of an inch or less.



- Children under age eight can choke or suffocate on uninflated or broken balloons. Remove strings and ribbons from toys before giving them to young children.
 - Watch for pull toys with strings that are more than 12 inches in length. They could be a strangulation hazard for babies.

Outdoor Fun

- Cutting down your own tree for the holiday may start a wonderful family tradition. Young children can pick out the tree while an adult does the chopping or cutting.
 - Make sure gloves and shoes stay dry. If either pair becomes wet, change into dry ones.



Food Safety

- Bacteria are often present in raw foods. Fully cook meats and poultry, and thoroughly wash raw vegetables and fruits.
 - Be sure to keep hot liquids and foods away from the edges of counters and tables, where they could be easily knocked over.
 - Wash your hands frequently, and make sure your children do the same.
 - Never put a spoon used to taste food back into food without washing it.
 - Always keep raw foods and cooked foods separate, and use separate utensils when preparing them.
 - Always thaw meat in the refrigerator, never on the countertop.
 - Foods that require refrigeration should never be left at room temperature for more than two hours.



Candles

- Never use lighted candles on or near a Christmas tree, or leave the house with candles burning.
 - Use dripless candles to avoid the potential hazard of hot wax; make certain candlesticks and any candle holders are steady and safely out of your guests' path (and out of kids' reach).
 - Always keep an eye on lit candles to make sure they don't burn down to the wick.



Fireplaces

- Before starting a fire, remove all decoration in the immediate area and open the flue.
 - Keep a tight fitting screen on your fireplace.
 - Have your chimney cleaned regularly.
 - Do not burn wrapping paper or evergreen boughs. They burn fast, and may throw off sparks and burning debris.

Portable Heaters

- Keep all portable heaters at least three feet away from flammable items.
 - Turn off space heaters before leaving a room or going to sleep.
 - Use only manufacturer's recommended fuel in portable kerosene heaters. Shut down and cool off equipment before refueling.

Keep your holiday merry and safe.

For more information see: <http://www.nsc.org/> ■

Goddard Ski Club Hosts Olympian Diann Roffe

By Adam Mahone

On Friday, Nov. 5, Olympic gold medal winner, Diann Roffe, was on-hand at the Goddard Space Flight Center Recreation Center to discuss the impact that skiing has in her life. The event was attended by adventurous Goddard employees as well as members of the Goddard Ski Club.

At the age of 16 and as a resident of Rochester, New York, Roffe became the first US competitor to medal in the 1984 World Junior Championships, winning the silver medal in Giant Slalom. A year later, she amazed the world by winning the FIS World Championship Giant Slalom in Bormio, Italy, the World Cup Giant Slalom at Whiteface Mountain, New York, and was second in the final World Cup Giant Slalom of the 1985 season. After a few years of combating nagging injuries she contemplated retirement in 1987 before rebounding to tie for the silver medal in the Giant Slalom at the 1992 Olympics in Albertville, France. Refusing to give up on her Olympic dreams she continued her ascension in the sport by winning the Olympic gold medal in the Super G at the 1994 Olympics in Lillehammer, Norway, and the World Cup Super G at Vail, Colorado.

Following her distinguished Olympic career, Diann Roffe, established the Roffe Training Center in 2003 at Ski Roundtop in Lewisberry, Pennsylvania. Her facility offers group and private skiing lessons, women's clinics, racing clinics, and other programs to promote the sport of skiing. Ski Roundtop is the only venue on the east coast, which allows you to ski with an Olympic Gold Medalist.

Photo by Chris Gunn/293



Olympic gold medalist, Diann Roffe speaks to Goddard Ski Club about her facility in Pennsylvania

For more information about programs and discounts offered at the Diann Roffe Training Center at Ski Roundtop please contact Diann Roffe at droffe@skiroundtop.com or visit the Goddard Ski Club website at <http://www.goddardskiclub.com> ■

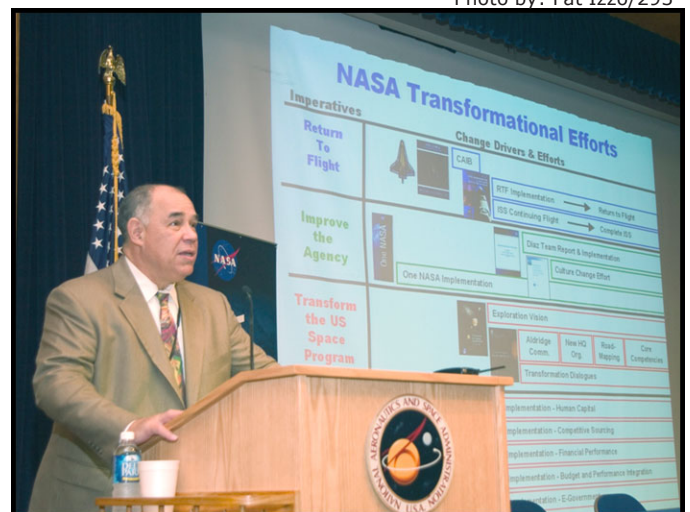
Leader Led Workshop (cont'd from frontpage)

The first of the breakout session featured a full presentation from Mr. Diaz. Adding to Steidle's comments earlier, he elaborated on the role of science in the Vision for Exploration. The second breakout session was presented by the Associate Deputy Administrator for Systems Integration, Mary Kicza. She conducted an informal dialogue on transforming for technical excellence. Last but not least, Chairperson of the NASA Organizational Model Evaluation Team, Joan Salute discussed the evaluation of Federally Funded Research Development Center's (FFRDC) and other organizational models.

The entire day was filled with much anticipated focus on the Agency's ongoing transformation activities and GSFC's role in the Vision for Space Exploration.

A broadcast of this workshop is available in the Office of Public Affairs. To reserve a copy, contact Natalie Simms at x6-8955 or Natalie.L.Simms@nasa.gov.

Photo by: Pat Izzo/293



Fred Gregory provides an energizing segment on transformational efforts

For more information about One NASA, visit <http://www.onenasa.nasa.gov>. ■

Investigating Our Molecular Origins: The Discovery of Interstellar Sugar

By Lara Clemence and Jarrett

Cohen

When people take a sabbatical, they often joke that they are going to ponder the meaning of life. In 1998, Jan M. Hollis, a senior scientist in NASA Goddard Space Flight Center's Earth and Space Data Computing Division, chose a different focus for his sabbatical. He decided to study the molecular origin of life in the universe. "There are some researchers, like those in the SETI effort, who hope that E.T. phones home," Hollis says. "What I am doing is investigating whether the conditions for the molecular origins of life as we know it exist in space." His recent discoveries have provided new clues to this age-old mystery and offer support for an alternate theory about how life began on our planet.

Scientists generally hypothesize that life must have begun with the evolution of simple molecules into the more complex molecules such as sugars, amino acids and other prebiotic molecules that are regarded as life's molecular building blocks – the so-called biomolecules. Hollis, an astrophysicist, decided to conduct a search in space for these key molecules that are necessary for the origin of life. He concluded that the most likely class of molecules to search for in our galaxy would be simple sugars in the giant molecular clouds from which stars and planets form. Because sugars are associated with both metabolism and the genetic code, two of the most basic aspects of life, Hollis rationalized the discovery of any sugar in space would increase the likelihood that life may exist elsewhere in our galaxy.

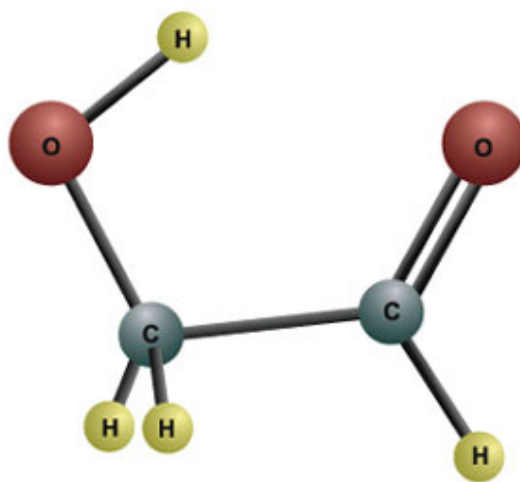
Hollis chose for the search the simplest monosaccharide sugar, glycolaldehyde. A molecule comprised of two carbon, two oxygen and four hydrogen atoms, it is an important biomarker that can react to form glycolaldehyde phosphates and more complex sugars such as ribose (which contains 5 carbon atoms). Ribose is a building block of nucleic acids such as RNA and DNA – the carriers of the genetic code in living organisms.

Hollis formed an observing team, wrote a competitive proposal for time on a 12-meter-diameter radio telescope and waited for more than a year before the experiment was finally scheduled. In 2000¹ the research efforts of Hollis' team were rewarded. In the star-forming region near the center of our galaxy, at a position known as SgrB2 (N-LMH), they found glycolaldehyde – the first evidence of an interstellar sugar molecule.

Molecules rotate end-for-end, and as they change from one rotational energy state to another, they emit radio waves at

precise frequencies. The "family" of radio frequencies emitted by a molecule forms a unique set of "fingerprints" that scientists can use to identify that particular molecule. Hollis' team detected glycolaldehyde by observing faint radio emission in the 71 to 103 GHz range from a large ensemble of the molecules in the interstellar cloud. However, while glycolaldehyde was identified, there was no information in the original experiment regarding its spatial extent.

Photo by: Bill Saxton, NRAO/AUI/NSF



GLYCOLALDEHYDE

Model of the Glycolaldehyde Molecule

In 2001² Hollis and collaborators conducted a second experiment using a multiple radio telescope system, called an interferometer, which permits spatial imaging of molecular emission. The interferometer experiment showed that, unlike most other large interstellar molecules, glycolaldehyde is not confined to the hot core of SgrB2 (N-LMH). This hot core, known as the Large Molecule Heimat or Homeland (LMH), has a spatial diameter of only 5 arcseconds on the sky and a characteristic temperature of 200 Kelvin (K), which is actually quite hot for interstellar molecules since all molecular motion stops at 0 K. Comparison of the single-antenna data and the interferometer data indicated that the glycolaldehyde gas has a temperature of about 50 K and a much larger spatial scale at

least twelve times the size of the LMH. Moreover, the large spatial extent of glycolaldehydes spawned the mapping of simpler aldehydes, which indicates that these molecules are very widespread.

Hollis and collaborators again probed the same interstellar cloud in 2002³ and discovered the sugar alcohol of glycolaldehyde known as ethylene glycol, a 10-atom species that is the primary ingredient of automobile antifreeze. The importance of finding two sugar-related molecular species together indicates that the synthesis of more complex sugars is likely occurring in interstellar clouds. Hollis and his team further discovered in 2003⁴ that the source containing these interstellar sugar-related molecules is centered on a star-forming region that contains enough mass to make approximately 2,600 new stars as massive as our Sun.

Most recently, in April 2004⁵, Hollis and collaborators again probed interstellar glycolaldehyde using a new single-antenna, 100-meter-diameter telescope with a collecting area of more

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Exploring More in 2004

By Trusilla Steele and Amy Pruett



The year 2004 was a time for transformation and renewed commitments at NASA. All of which began with President George Bush announcing the new Vision for Space Exploration at NASA Headquarters on January 14, 2004. The vision consists of four main goals – return the Space Shuttle to flight status, complete the construction of the International Space Station, send robotic spacecraft and then humans back to the moon in order to bridge the way for the final of the four goals - human exploration of Mars and beyond.

At the end of January, former GSFC Center Director Al Diaz and his team, released their report - *A Renewed Commitment to Excellence, An Assessment of the Agency-Wide Applicability of the Columbia Accident Investigations Board (CAIB) Report* – which identified the recommendations, observations and findings in Volume I of the CAIB report that may have application across the Agency.

For the entire NASA family, February began with a time of remembrance for Space Shuttle Columbia and the STS-107 crew who perished over central Texas on February 1, 2003. A ceremony was held at Arlington National Cemetery honoring the seven crewmembers with a permanent memorial just a few feet away from the one honoring the STS 51-L Challenger crew.

Chuck Bennett received a prestigious recognition with a nomination for WIRED Magazine's Rave Award, scientist of the year. Bennett was acknowledged for his leadership in the WMAP (Wilkinson Microwave Anisotropy Probe) mission which took the renown "baby" picture of the universe; capturing the afterglow of the big bang from the cosmic microwave background thus revealing the universe being 13.7 billion years old.



Also in February explorer school students in North Carolina, Vermont and Washington, D.C. were visited by Goddard and NASA Headquarters personnel to help inspire the next generation by emphasizing their opportunities in the new exploration initiatives.

February also saw Goddard scientist and scientists from the Canadian Institute for Theoretical Astrophysics present findings from their observations with NASA's Rossi Explorer of a massive and rare explosion on the surface of a neutron star. Data showed the star was pouring out more energy in three hours than the Sun does in 100 years which illuminated the region and allowed the scientists to spy on details never before revealed.

Exploring continued in February at Wallops Flight Facility with the completion of the operational flights for small unmanned airplanes that fly NASA instruments that measures Global Position System signals along with Aerosonde North America instruments to measure temperature, pressure, humidity and wind speeds.

The announcement of the Vision for Space Exploration brought a record crowd to the Goddard Memorial Symposium in March. The symposium is sponsored by the American Astronautical Society and

focused on *Exploration – To the Moon and Beyond*. The distinguished guest for the event, Congressman and Space and Energy House subcommittee member, Nick Lampson, (D-Tx), spoke to the record crowd about the benefits of space exploration and encouraged everyone to assist with shaping the attitudes of U.S. citizens about the continuing gains and benefits from space exploration.

March was also a time for discovery as a Goddard scientist and a physicist from the New Mexico Institute of Mining and Technology participated in a NASA funded study revealing that some climate models might be overestimating the amount of water vapor entering the atmosphere as the Earth warms which may result in climate forecasts overestimating future temperature increases.

In a case where the hope is that science will prevent history from repeating itself, Goddard scientists and colleagues used a computer model with modern-era satellite data to examine the climate conditions that created "The Great Dust Bowl" event of the 1930s. The researchers found that cooler than normal tropical Pacific Ocean surface temperatures combined with warmer tropical Atlantic Ocean temperatures created the conditions in the atmosphere that turned America's breadbasket into



one of the worst climatic events ever seen from 1931 to 1939.

We sprang into April with the release of *Our Renewed Commitment to Excellence, The Implementation of the NASA Agency-Wide Application of the Columbia Accident Report*. The implementation of the assessment was led by the One NASA Team, along with members of senior management and their staff completed the implementation plan.

Supporting the Vision for Space Exploration, various NASA and university researchers made the discovery that future Mars explorers might be confronted with dust devils that have high-voltage electric fields. This discovery is helping to understand what challenges the Martian environment presents to explorers, both robotic and eventually human.



Dramatic changes in the North Atlantic climate due to the weakening North Atlantic circulation system was revealed in a NASA study led by a Goddard scientist in April. Whether the trend is part of a natural cycle or the result of other factors related to global warming is unknown but if it continues in such a way, there may be a need for reorganization of the ocean climate system.



April concluded with Goddard being in the spotlight of Bollywood, India's film industry. Ashutosh Gowariker, one of India's most respected and acclaimed film directors wrote and directed *Swades: We The People*. The film tells the story of a NASA engineer from India working on the Global Precipitation Measurement satellite. Although most of the film was shot in India, the film crew came to Goddard to shoot some of the NASA scenes. The movie stars India's top male international superstar, Shah Rukh Khan

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Review of 2004 (cont'd from pg 6)

and actress Gayatri Joshi. The crew was at Goddard for nearly a week, filming in various buildings.

Goddard welcomed eight new Explorer Schools in May, bringing to 13 the number of schools GSFC is supporting. Center Director Al Diaz went back to school to give remarks at the Commencement



exercise for Capitol College during which he was awarded a Doctor of Science, Honoris Causa. From the Goddard and Capital College partnership, accomplishments range from achieving the Space Operations Institute where control of five NASA satellites have taken place and more than one hundred students from the NASA funded Pre-College Minority

Engineering Program have gained from the opportunity to work in aerospace at Goddard.

In May, pollution catching a ride from a wind current was discovered from a study conducted by Goddard and Ames scientists. The study showed that half of the ozone pollution above the Atlantic Ocean hitches a ride speeding down a "train" track of air from the Indian Ocean while picking up more smog as it travels all the way to the southern Atlantic Ocean. The study used the NASA-Japan Tropical Rainfall Measuring Mission Satellite to view fires and lightning and utilized sensors on balloons in Southern Hemisphere Additional Ozonesondes (SHADOZ) network to confirm the movement of smog.

Catching a great deal occurred at the Goddard Warehouse as they held their first reutilization clearance. The three-day event transferred over 600 items, totally over a \$1,000,000 to other agencies and schools.

June was revitalizing for the Hubble Space Telescope team as they announced the release of a Request for Proposals, initiating the first step toward the decision to pursue the feasibility of a robotic servicing mission to the Hubble Space Telescope (HST).



The NASA's SeaWiFS instrument assisted university researchers with discovering that after a hurricane crosses the Atlantic Ocean phytoplankton will bloom which may also affect the Earth's climate and carbon cycle. Summer students began their process for blooming into the next generation of explorer as participants of the various student internships at Goddard.

Administrator, Sean O'Keefe announced the transformation of NASA's organizational structure to streamline the agency and position it to better implement the Vision for Space Exploration. The transformation restructured NASA's Strategic Enterprises into Mission Directorates.

At the end of June, Center Director Al Diaz announced his reassignment to NASA Headquarters to serve as the Associate Administrator of the new Science Mission Directorate.

The busy month of July began with the first 3-D view of the Coronal Mass Ejections (CME). Images from the joint NASA/European Space Agency Solar and Heliospheric Observatory (SOHO) spacecraft were used to create the 3-D view giving way to a complete understanding of CMEs, which, when directed at Earth, may disrupt radio communications, satellites and power systems.

An international team of scientists found more evidence that massive black holes are surrounded by a doughnut-shaped gas cloud which, depending on our line of sight, blocks the view of the black hole in the center. Using two European Space Agency orbiting observatories, INTEGRAL and XMM-Newton, scientists looked "edge on" into this doughnut, to see features never before revealed in such clarity.



The third time was indeed the charm for NASA's Aura spacecraft which launched successfully on July 15, 2004. As the third of a constellation of six Earth observing satellites, Aura will assist scientists with understanding and protecting the air we breathe.

The Agency held the first in a series of "Transformation Dialogue" broadcast from Goddard. The broadcast in front of a live audience was designed to be an open dialogue between the Agency leadership and the NASA Family to discuss the Clarity Team Report and the Agency's new organizational structure.

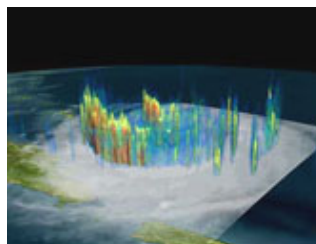
Celebrating Goddard's accomplishments through diversity was also done in July. *Many Faces, Many Places, Many Voices: One Goddard* was this year's theme that was carried throughout the three-day event featuring two days of outdoors activities between a day with a drama performance. The interactive performance depicted today's multicultural, assorted skilled and diverse work groups. The winner of the renowned Karaoke contest was the Office of the Chief Financial Officer.

New beginnings and endings occurred in August with the Goddard's top management. While new the Center Director, Ed Weiler acquainted Goddard with an All Hands Meeting, Deputy Director, Bill Townsend announced his retirement from NASA. After 40 years with NASA, Bill Townsend, announced his decision to accept a position with Ball Aerospace & Technologies Corp. in Boulder, Colorado as the vice president and general manager for Civil Space. Chris Scolese was selected to serve as



Deputy Director of Goddard. In addition, Dolly Perkins was selected for the Deputy Director, Technical. Krista Paquin was named the Associate Center Director Rick Obenschain, the new Director of Flight Programs and Projects and Vicki Pendergrass was named as Chief Information Officer.

A different kind of NASA "launch" took place in August with the new payroll systems, Federal Personnel and Payroll System, going into effect. Goddard continued the center's partnership with the National Federation for the Blind by hosting a "Rocket On" science camp. The week long exercises allowed each student to learn more about technology, science, engineering and mathematics.



Data from the TRMM assist with providing insight into patterns of rainfall from tropical storms and hurricanes around the world.

Tracking hurricanes with NASA's Earth Observing satellites began the month of September with NASA's TRMM satellite demonstrating the unique capability to display hurricanes in three dimensions, to show aspects of the storm's inner structure.



An Interview with the Deputy Director as New Champion for Diversity

By Trusilla Steele and Sharon Wong

With even stronger credentials that demonstrate his capability to lead, Chris Scolese returns to Goddard serving as Deputy Center Director after holding the position of Deputy Associate Administrator in the Office of Space Science at NASA Headquarters (HQ).

Previously at Goddard, Scolese held several lead positions which include serving as both the EOS Program and Terra Project Managers, as well as Deputy Director of Flight Programs and Projects for Earth Science.

Scolese's career also includes holding industry positions serving as senior analyst at the General Research Corp. of McLean, Va. where he participated in several SDIO programs. In addition, was involved with the development of instrumentation, instrument systems and multi-processor systems for the U.S. Navy and the Department of Energy while working for NAVSEA.

As Deputy Director at Goddard, Scolese also serves as the Champion for Diversity. Sharon Wong, Special Assistant for Diversity and I, took the time to get his views and insight into where he wants to take the level of diversity as he holds this position. Deputy Center Director, Chris Scolese returns to Goddard after serving as Deputy Associate Administrator in the Office of Space Science at NASA Headquarters (HQ). Below is the first of a two part interview

As the Center's Diversity Champion please share your thoughts on Goddard's Diversity's efforts and goal.

Goddard is the leader at NASA in Diversity management and creating an inclusive workforce. I saw that while at Headquarters and I know Bill Townsend and Sharon Wong have done an outstanding job with leading those efforts.

Also, I think it is fair to say it is recognized, definitely by Dr. Dorothy Hayden Watkins, head of the Office of Diversity and Equal Opportunity at Headquarters. When I was at HQ, Goddard's leadership in this area was mentioned more than once. I certainly hope I can continue to positively influence it. It has definitely been the leader within NASA and I hope to keep it the leader within NASA. I think it's a model for not just NASA but for many organizations for what we need to do to include the workforce in all of the Center's or organizations' activities.

What are some of the ways or activities that Goddard approaches Diversity and how Goddard is involving employees?

Diversity is about ensuring everyone is provided opportunity to perform to the best of their ability. Goddard does a good job of inviting people to participate through the Goddard Opportunities Bulletin Board System (GOBBS). People who wouldn't normally

Photo by Debbie McCallum/293



Deputy Center Director, Chris Scolese says Goddard is the leader in Diversity and he will do all that he can to have it continue in that way.

be called on for review teams or other high visibility projects will get the opportunity to see what is out there and participate. I would also like and strongly encourage people who are asked to serve on a board, commission or some Center activity, to consider including inexperienced people, young people, and others who wouldn't traditionally be associated with or selected for that activity. I would like to see senior people asking these folks to join them and at least participate in support if not as a full member of that particular effort. That way you will get different viewpoints, and clearly that's important. As I have discovered when you move to certain levels you get certain views and you don't always recognize what that action is going to have on the rest of the workforce or a certain segment of the workforce. So that needs to be understood since people are going to have

viewpoints both based on their organizational or cultural backgrounds they can offer insights to make better solutions or provide assistance to get a goal accomplished.

Having someone young on a review team is going to bring the latest knowledge of whatever topic it may be. If you're trying

Employee Spotlight



Goddard Researcher Receives Medal from the Crown Prince of Denmark

By Cynthia O'Carroll

Photo by Royal Danish Geographical Society

Dr. Compton J. Tucker was awarded the Galathea Medal of the Royal Danish Geographical Society on November 2 in Copenhagen, Denmark. His Royal Highness (HRH) Prince Frederik, the Crown Prince of Denmark, presented the award to Tucker in the presence of 120 invited guests.

The Galathea Medal is given to scientists that have contributed significantly to the development of geography, and Danish geography specifically. The use of Earth observation from space plays an ever-increasing role in geography all over the world.

"NASA has played a leading role in the development of Earth observation and Dr. Tucker has had a key position in this development," stated the HRH Prince Frederik, President of the Royal Danish Geographical Society. "Dr. Tucker and his co-workers have made great contributions to our understanding of environmental change in many parts of the world, including the study of tropical deforestation using satellite images from Landsat and other satellites. Some of the major Danish geographical research activities in the Sahel-zone of Africa directly build on and continue his work from some 20 years ago."

Tucker is a senior Earth scientist at NASA Goddard's Laboratory for Terrestrial Physics and has been a pioneer in the use of satellite data to study the Earth. He has been internationally recognized for developing the use of spectral vegetation indices to study green vegetation and primary production through time. This work was first developed from ground-based experiments and subsequently applied by Earth-orbiting satellites to the entire terrestrial surface. Spectral vegetation indices are the most widely used type of Earth science data about vegetation on land. Tucker has also used Landsat data to study tropical deforestation and habitat fragmentation, to establish accurate information for understanding the carbon cycle and preventing further loss of terrestrial biological diversity. He and his co-workers were among the first to use Landsat data to study habitat fragmentation of tropical forests.

"The gratitude expressed towards Professor Tucker and to NASA for a significant contribution to science, specifically the geographical sciences, was warmly sustained by all Danish participants at the awards ceremony," stated Sofus Christiansen, Vice President of the Royal Danish Geographical Society. "This well deserved medal is also a recognition of the American generosity that has allowed our little nation to benefit from NASA's tremendous technical achievements."

Tucker began his career at Goddard in 1975 as a National Research Council postdoctoral fellow and subsequently joined NASA in 1977. He has specialization in using satellite observations to study the Earth's vegetation, including questions about the carbon cycle, tropical deforestation and



Dr. Compton J. Tucker receives the Galathea Medal from His Royal Highness the Crown Prince of Denmark.

desertification. Some areas of recent and continuing work include quantifying the expansion and contraction of the major deserts of Africa and Asia; studying terrestrial vegetation from space including tropical deforestation, studying global photosynthesis and how it varies with climate; studying ecologically linked diseases and using satellite data to reduce human suffering as in the Famine Early Warning System for Africa and Central America

Tucker has traveled extensively during his career as a NASA Goddard research scientist. Some of his more unusual trips have been to the Amazon Basin of South America, in Brazil and Bolivia, all associated with studying tropical deforestation there.

In 1998 and again in 2002, Tucker was involved in the Iturralde Crater Expeditions and spent weeks in Bolivia hiking in a very remote portion of the Amazon rainforest studying a possible meteorite crater. The Amazon is a salt-limited area since the rain leaches most of the salt away. In the rain forest, the team was deluged with many insects, including bees and wasps, looking for a source of salt. Because bees and wasps are social insects, they communicate the location of salt to their fellow insects causing them to swarm and sting humans. The scientists received as many as 10 to 20 stings a day as the insects converged, feeding off of them like walking salt licks.

Continued on page 10

Tucker (cont'd from pg 8)

Bathing in the rivers to wash the salt off their bodies and clothes was necessary on a daily basis but it posed many other risks. The murky water hides many dangers, such as manta rays and electric eels, and the former can deliver deadly stings.

“People have lost their legs from being stung by manta rays. If you step on an electric eel, you are in for a big shock – about 600 volts,” says Tucker. “That discharge will paralyze you and you could drown if you aren’t with a friend. “Electric eels are the most dangerous animal you can encounter, much more so than piranhas, snakes, or jaguars.”

Photo by: P. Wasilewski



Tucker and Tim Killeen in motorized canoe on the Rio Manupare in Bolivia, returning to Puerto Araona after the first expedition to the crater in 1998.

As for Piranhas, Tucker says that they are over-rated as far as being really dangerous. “I’ve only been nibbled on once or twice by piranhas, but they are good to eat, although pretty bony,” remarked Tucker. While on their first expedition to the meteor crater, Tucker and Peter Wasilewski, also of Goddard, along with their friend from Bolivia, Tim Killeen, had nothing to eat but piranhas for three days. “They were pretty tasty especially since we didn’t have a choice,” laughed Tucker.

Another risk of these adventures is the possibility of contracting an unusual disease. Tucker’s good friend, Tim Killeen, came down with a strange tropical virus on their second expedition to the meteor crater and had to be flown for treatment to Brazil to the best hospital in South America.

“He lapsed into a coma on the hospital ambulance plane and had to be kept alive in flight with periodic shots of adrenalin. He was unconscious for five weeks in the Einstein Hospital in Sao Paulo Brazil. We thought he was gone for good, but he recovered,” remarked Tucker. Why Tucker and Wasilewski did not come down with the same disease is anyone’s guess.

The only time Tucker was in serious physical trouble was in 1996 in tropical Bolivia where his team ran out of water under the hot tropical sun in Noel Kempff National Park. Tucker and another researcher began to suffer severe heat stroke and

headed to a seasonal small stream that was dry. “We were lucky to find one pool of stagnant water, completely surrounded by animal droppings from tapirs, anteaters, monkeys, jaguars, you name it—it was there. What do you think we did? We jumped in and drank as much of the water as we could. Best water I’ve ever tasted,” Tucker said.

Another of Tucker’s research activities concerns documenting the expansion and contraction of the major deserts in Africa and Asia using the NOAA Advanced Very High Resolution Radiometer. In 1993 a trip to the Gobi Desert in Mongolia was plagued by tremendous rains, terrible roads and washed out bridges that forced the researchers to return to the area later that year. What should have been a 10-day trip became a trip of more than three weeks.

The Mongolian people are traditionally very generous with visitors and often fed the team meals of boiled sheep meat and khomis, fermented mare’s milk. As honored guests at one Mongolian feast, the men were required to eat first from the main dish of boiled sheep stomach and intestines, both stuffed with blood, before anyone else could partake. Another memorable, and now comical event on this trip was Tucker’s frantic attempt to get away from an aggressive camel that chased him into a car and then tried to bite him through the open window. “Camels have nasty dispositions and can deliver a bad bite. They also have very bad breath,” said Tucker.

“In spite of all the dangers encountered during my many adventures, I enjoy traveling to these remote areas to study the environment and learn about the people and their culture,” remarked Tucker. “My research for NASA allows me the freedom to pursue many interests at the same time.

Tucker is also an adjunct professor at the University of Maryland in College Park and he often lectures at other universities. After receiving the Galathea Award in Denmark, he gave lectures in Norway, Sweden and Belgium.

Other awards received by Tucker include NASA’s medal for Outstanding Scientific Achievement awarded in 1987, the Henry

Photo by: P. Wasilewski



Here in the tropical rainforest the true Compton is revealed. Tim Killeen at left, and two Araona natives guides, travel with Tucker to the edge of the Iturralde crater in Bolivia.

Tucker (cont'd from pg 8)

Shaw Medal from the Missouri Botanical Garden in 1992, and the National Air and Space Museum Trophy for Current Achievement in 1993. In 1995, Tucker was the first American, along with his friend and former astronaut Mary Cleave, to receive the Mongolian Medal of Friendship for their work in Mongolia. Also in 1995, he received the William Nordberg Memorial Award for Earth Science for his studies of the Earth's vegetation from space. Tucker was honored to meet William Nordberg in 1975, since Nordberg was a visionary and a pioneer in the study of the Earth with satellite data. In 1997 he received the William T. Pecora Award presented annually to recognize outstanding contributions by individuals or groups toward understanding of the Earth by means of remote sensing. In 2000, he received the International Society for Optical Engineering Outstanding Achievement award for his pioneering work in earth resource management using multispectral remote sensing instrumentation and data.

"It has also been an honor to have been associated with many dedicated engineers, scientists, and other people at NASA/Goddard and the University of Maryland over the years." Tucker added. "I never could have achieved what I have if it wasn't for the dedicated and extraordinary work of many colleagues."

Tucker lives in University Park, Md. and has a 25-year-old son name Corey who is currently pursuing his undergraduate degree in physics at the University of Colorado. He took off from the University of Colorado for three years to deliver pizzas. This experience "encouraged" Corey to reconsider college. ■

Visit the Astrophotography Exhibit by Goddard's Own Amateur Astronomers

By Natalie L. Simms

The Goddard Astronomy Club (GAC), an employee organization at NASA's Goddard Space Flight Center (GSFC), has played an instrumental role in the success of many events and lectures held at the GSFC Visitor Center. Club members frequently augment space chats and have been extremely supportive in their endeavor to communicate a broad message to the public and maintain the NASA mission - to understand and protect our home planet, to explore the universe and search for life, to inspire the next generation of explorers, as only NASA can.

The Goddard Astronomy Club provides a focal point for amateur astronomers in the GSFC community and the general public - an amateur astronomer being someone who loves the sky and the various components of it. Armen Caroglanian, current president of GAC, commented, "For our part, we love to promote educational outreach activities by really getting the public involved." And this they do. The latest event for the general public, held the night of Oct. 27, was completely

dedicated to amateur astronomy. The GAC was on hand with star charts and telescopes to instruct visitors in finding and viewing celestial objects. This same night, they unveiled their exhibit on astrophotography – astronomical images of constellations, planets and more, all taken by club members. A wide-field color image of the constellations, Cygnus and Orion, are one among ten, 30 x 40 photos that make up the display.

"The level of work that went into this exhibit was vast," says Kevin Hartnett, astrophotographer and long-time club member. "Various medium formats were used, such as digital and film photography with short-and long-timed exposures." The film photography was taken through a telescope "piggy-backed" on a second larger tracking scope; while other images were captured using a telescope as a super telephoto lens. All images were later enhanced through image processing software. Two notable photos Hartnett contributed to the exhibit are the dazzling planet Venus captured just above the pre-dawn crescent Moon and the comet Hale-Bopp, imaged against a dark, star-glittered sky of a rural Virginia countryside.

Other images in the montage that demonstrate the alternative techniques amateurs are now using to capture the heavens include two marvelous, collage-style displays by Nelis du Toit, also a GAC member. Two displays he contributed was one of the planets Mars, Jupiter and Saturn and the other, an annular eclipse of the Sun. These were both achieved by using digital photography in conjunction with a telescope and computer processing techniques.

This astrophotography exhibit is a clear demonstration of the brilliance of our heavens and what can be seen through an amateur telescope versus the naked eye alone. "It simulates a visual experience," says Caroglanian. All are encouraged to take a look at this exhibit, currently on display until the end of December, at NASA's Goddard Space Flight Center Visitor Center.

Photo by Chris Gunn/293



Visitors explore the Universe with the Goddard Astronomy Club's Exhibit

To learn more about the Goddard Astronomy Club, visit their website at <http://gewa.gsfc.nasa.gov/clubs/astronomy/>. The club meets on the second Tuesday of every month, at noon in Bldg. 21, Room 191. ■

Educator Astronaut Candidates Recruited for NEAT

By Dewayne Washington

Photo by Chris Gunn/293

The introduction of the first NASA educator astronauts on May 6, 2004 was just one facet of NASA's Educator Astronaut Program. NASA believes that the educator astronauts will serve as a role model to encourage students to pursue careers in science, technology, engineering and mathematics (STEM), thus broadening their quest for knowledge in these fields.

Additionally, there are 194 additional teachers that have been asked to become a part of the Network or Educator Astronaut Teachers (NEAT). These teachers were also selected from a group of 1,600 educators who applied for the Educator Astronaut Program and received a superior evaluation.

If they are willing to accept the challenge, these members of NEAT will work within their regional NASA center, and in their communities and schools, conducting regular activities to help spark interest in NASA missions and encourage students to consider STEM careers.

In the NASA/Goddard region, 37 NEAT members representing eight states in Goddard's region have been identified. Locally they include teachers Art Colton, a teacher at Bowie High School; Trena Ferrell, a former Montgomery County teacher and currently an aerospace education specialist at NASA headquarters; and Traci Wasson of New Market, Maryland.

This unique group of educators will be invited to work with the Goddard Education Office to develop and conduct activities within their communities as "informed advocates" for NASA. Goddard's proposal includes a number of ways that NEAT members can use their enthusiasm for and extensive knowledge of NASA missions and educational materials that would increase community awareness and interest, especially with the New Vision for Space Exploration.

Carolyn Harden, Goddard Education Specialist responsible for coordination within the Goddard region had an opportunity to meet with some of the NEAT members in June during a workshop at the Johnson Space Center. "I was very impressed with their superior educational credentials, genuine enthusiasm for teaching and learning, and interest in sharing the wealth of resources that NASA offers with their fellow educators and with other members of their local communities."

"Goddard's NEAT members are clearly what we would refer to as "A" teachers—energized, innovative, always looking for new and interesting material to use in their classes, and dedicated



Educator Astronaut Candidates, Richard Arnold, Dorothy Metcalf-Lindenburger and Joseph Acaba met Trena Ferrell (second from left) during a visit to Goddard.

to assuring that their students are well-versed and capable of pursuing careers in the fields of science, technology, engineering, and mathematics," said Harden.

Current Goddard plans include inviting NEAT members here in early 2005 for an orientation workshop that will include presenting more about NASA's missions and the New Vision for Space Exploration. Goddard may also provide NASA related materials to assist NEAT members to host local activities such as Sun-Earth Day, Earth Science Week and Space Day. NEAT members are expected to spend time at NASA Explorer Schools and encourage other schools or community groups to participate in NASA related STEM challenges and competitions.

"I am very excited about working with this group and look forward to the challenge. I think they are a really cool group," said Harden.

The NEAT participants represent a powerful complement to the Educator Astronauts and will provide a wonderful opportunity to strengthen the NASA network with schools across the country," said Dr. Adena Williams Loston, NASA's Chief Education Officer. "It is expected that the content areas of science, math, technology and engineering will be improved in the schools where the NEAT participants become involved." ■

Scolese Interview (cont'd from page 9)

to develop a policy that is going to affect how people work, obviously including people from all levels of the organization and having all levels of backgrounds should tell you if what you believe is beneficial truly is beneficial. And if it is beneficial, what and how is the best way to implement it.

One of the activities I like was Community Day which I didn't realize was done by a whole volunteer team that involved numerous people. I brought my family here and it was wonderful; really well done. It was nice to see how well it worked and to see people so enthusiastic. There were so many things for people to do. That was really well done, and is an example of what we need to do more.

Goddard's former champion for Diversity was very committed to creating an inclusive work environment as set forth in Goddard's Business Case. How do see yourself continuing the effort?

I hope I can do at least as well. I will try to do even better as I certainly believe in it and am committed. I was at Goddard for 14 years prior to going to Headquarters and I had talked to Bill before he left about how to be more inclusive. It was something I tried to do at Headquarters as well and I would talk to Bill about it occasionally. So when I came back to Goddard it was something I was looking forward to help Bill with and now I get the opportunity to lead it.

I want to do at least as well as Bill. I have Sharon (Wong) (Special Assistant for Diversity) here to make sure I do as well as Bill. She is really the person that makes all of this happen. Early in my career I had opportunities because people included me in things. I didn't come from a family or an area where there were a lot of professionals, in fact my family had no professionals and I'm the first to go through college. Had it not been for other people giving me opportunities, including me into things that they really didn't need to, I don't think I would be where I am today.

I recognized that because other people included me, that is something that I really want to do. That is something that I have always reached out to try and find; people that can use an opportunity should be included.

We're successful because we have our diverse backgrounds, whatever they may be. If you can harness that toward the common good you get the best product. That's what I want to do, that's why I want to include people.

Sitting in any place making decisions on your own, unless you are the most brilliant person in the world and I doubt that even the most brilliant person in the world can't come up with the right answer all the time or even most of the time. So having people included will allow us to have a better Goddard, a better product and accomplish what we want to accomplish for the future.

Now it's going to be challenging in the future because of all the changes. The agency is transforming and we're moving into

exploration. People don't want to do things the way we did things before and having people that are sensitive to people needs, understand the technology and understand from different vantage points of how to solve a particular problem or engage a particular portion of the population, is going to be critical to our success.

There is going to be a lot of people who are not going to be happy with where we are going. There are going to be a lot of people who are going to love where we are going. We have to comfort those who love it and encourage those who may not like it. We need to find ways to creatively engage the workforce and the local community and harness those talents to do what we want to do. ■

Please tune in to Jan.'05's issue of Goddard for the second part of this interview.

For more information on the Diversity Council and diversity efforts at Goddard, please visit <http://diversity.gsfc.nasa.gov>

2005 Diversity Theme Contest



The Goddard Diversity Action Team (GDAT)* is now accepting submissions for its annual Diversity Theme Contest. The winning theme will be used in all promotional material for Diversity Awareness and Celebrate Goddard activities that will occur next year. Additionally, the theme will be used throughout the remainder of 2005 to

promote diversity at Goddard. The winning 2004 Diversity theme was, **"Many Faces, Many Places, Many Voices: One Goddard."**

Entries for the contest should be e-mailed to: gdat@listserv.gsfc.nasa.gov. The winning theme and its author will be recognized during the first GDAT event of 2005. The contest is open to all Goddard employees (civil servants and contractors). Theme entries must focus on diversity and be consistent with GSFC's Workplace Vision and the Diversity Strategic Plan, and be 10 words or less. Please visit our Diversity website at <http://diversity.gsfc.nasa.gov> for information regarding these items. You may submit more than one entry. GDAT Committee Members will judge all entries submitted for the contest.

Submission deadline is COB, Monday, January 10, 2005.

*GDAT is an all-volunteer committee of Center employees who serve as a resource for the Diversity Council to implement year-long activities to educate and outreach to the Goddard community, and recognize and celebrate the diversity of the workforce. ■

Safety Alerts

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

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

CPSC, Zippo Announce Recall of Multi-Purpose Utility Lighters.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05019.html>

CPSC, Robertshaw Controls Company Announce Recall of TS-11 Thermal Safety Control Gas Valves.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05031.html>

CPSC, Schneider Electric North American Division Announce Recall of AFCIs.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05035.html>

CPSC, Aloha Housewares Inc. Announce Voluntary Recall of Radiant Heaters.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05041.html>

CPSC, RMM Corporation Announce Recall of Black CAT Electric Pressure Washers.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05045.html>

CPSC, Black Diamond Equipment Announce Recall of Headlamp Batteries.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05043.html>

CPSC, Robert Bosch Tool Corp. Announce Recall of Abrasive Cut-Off Wheels.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05046.html>

CPSC, York International Corp. Announce Recall of Gas Furnaces.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05047.html>

CPSC, Lakewood Announce Recall of Fan-Forced Mini-Personal Heaters.
<http://www.cpsc.gov/cpscpub/prerel/prhtml05/05056.html>

A Day At The Redskins Park

By Brian Lizzie

For those of you who came to the main cafeteria on October 20th and October 27th, you may have noticed The Washington Group of MassMutual, raffled off Redskin's tickets. The game is on Jan. 2, 2005 versus the Minnesota Vikings. For Reg Mitchell, the winner of the tickets, it will be a view that he will never forget. "I can't believe it, I never win anything. I haven't been to the new stadium yet. Thanks." As I continue to talk with Reg, he seems more and more excited with each time we talk. In lieu of the Redskins down season, we are all hoping that the Skins will pull it out for the last game of the season.

The Washington Group, an agency of The MassMutual Financial Group, is a financial services firm that specializes in insurance, investments, and financial planning. They frequently work with government employees to educate them on how their existing benefits with the government work, and to show them how these benefits can be enhanced. NASA employees are currently meeting with professionals from this firm on a weekly basis. If you would like to schedule an appointment, or if you

simply would like some more information about the many services they offer, call Brian Lizzie, CLTC or Arnold Waldman at (301) 581-7245.

Congratulations to Reg Mitchell and thank you to The Washington Group. Be on the lookout for future events sponsored by The Washington Group! ■

Key Personnel Appointments

Effective Sept. 5, 2004 Sandra A. Buffalano was named Deputy Director of Human Resources, Code 110.

Effective Oct. 3, 2004, David L. Foertschbeck was named Chief of the Business, Planning and Integration Office, Code 110.1

Effective Oct. 3, 2004, Craig J. Hegemann was named Chief of the Information Services Division, Code 290.

Effective Oct. 31, 2004, Nichole L. Richmond was named Deputy Chief of the Career Development and Employee Worklife Office, Code 114. ■

Capitol College, 2005 Remote Venue for FIRST Kick-Off

By Dewayne Washington

The 2005 FIRST Robotics local remote kickoff will be hosted at Capitol College, 11301 Springfield Road, Laurel, Maryland, Saturday, January 8, 2005, from 10 am until 3 pm. The kick-off event will be broadcast live from FIRST headquarters in Manchester, New Hampshire.

This is the third year the Chesapeake Regional Steering Committee has coordinated a satellite venue within the state of Maryland for the kick-off event. The event will be telecast live on NASA TV from 10 am to 12:30 p.m.

Local teams will gather at Capitol College to watch the telecast that will include an overview of any rule changes and a special message from founder Dean Kamen. The highlight of the telecast will be the introduction of the 2005 game challenge. Following the broadcast, each team will be issued their robot kit and given an opportunity to attend several workshops that will include electrical, pneumatic and programming. Teams will have six weeks to build their robot for participation in any of the 30 regional events across the country.

NASA is a major supporter of FIRST and Goddard is a major player in support of the Chesapeake Regional Competition, which is endorsed by the state of Maryland. The 2005 local regional, the Chesapeake Regional, will be held March 18, 19, and 20 at the historic United States Naval Academy.

Teams will be competing for honors and recognition in the categories of design excellence, competitive play, sportsmanship and high-impact partnerships between schools, businesses and communities. Teams can also earn a spot for the FIRST Robotics Championship to be held April 21-23 at the Georgia Dome, Atlanta, Georgia.

The FIRST Robotics Competition is an exciting, multinational competition that teams professionals and young people to solve an engineering design problem in an intense and competitive way. Each robot is designed and built in just six weeks by teams

of students, teachers, corporate engineers, and other corporate professionals. The responsibility of corporations in the competition is not to teach science and technology, but rather to inspire students to pursue careers in these fields.

In 2004, the competition reached more than 20,000 students in more than 900 teams in 27 competitions. Team members traveled from Canada, Brazil, Ecuador, Mexico, Great Britain, and almost every U.S. state to participate in the regional competition. The competitions are high-tech spectator sporting events, the result of lots of focused brainstorming, real-world teamwork, dedicated mentoring, project timelines, and deadlines.

The Chesapeake Regional hosted 53 teams comprised of more than 1,500 students throughout the state of Maryland, 11 other states and the District of Columbia. In 2004, the Chesapeake Regional

Photos by Chris Gunn/293

also saw a major increase in local involvement doubling the number of volunteers.

According to John Murdock, chairperson for the Regional Steering Committee, "The 2004 regional was our most successful. I am grateful to everyone that participated and am looking forward to continuing our success in 2005."

FIRST was founded in 1989 by accomplished inventor Dean Kamen to inspire an appreciation for science and technology among young people, their schools and their communities. Based in Manchester, N.H., the non-profit organization designs accessible, innovative programs to build self-confidence, knowledge and life skills while motivating young people to pursue academic opportunities.

"The FIRST Robotics Competition is not just about the design and building of sophisticated robots. These

students also develop maturity, professionalism, teamwork and mentoring skills that enrich their lives," said Kamen. "Many of our students develop an affinity for their science and math courses, go on to study engineering, technology or science in college, and also to pursue employment opportunities with sponsoring companies."

If you are interested in volunteering for the Chesapeake Regional, contact Desiree Taminelli at 301-286-8593.

For more information about the FIRST community and the 2005 competition visit www.usfirst.org or www.mitc.org.first. ■



Images are from the 2004 Chesapeake Regional playing field which included robotic participation

NASA Goddard Spreads Wings of Warmth this November

By Sarah Macpherson

NASA Goddard Flying Club's (NGFC) annual Wings of Warmth event was a huge success this year! The event began with donation collection Monday morning, Nov 1 and culminated in a fly-out Saturday, Nov. 6 to the Reading Mid-Atlantic Air Museum to drop off the goods to the Salvation Army. Tom Paradis and Sarah Macpherson completed the bagging and tagging process, weighing about 2,000 pounds worth of goods. That's a little over 1900 pounds more than Wings of Warmth last year! Upon receiving the update via e-mail, NGFC Vice President, John Majane joked he'd have to bring his DC-3.

By Thursday, co-coordinator Courtney Smith recruited extra help from NGFC members to unload the donation trailer in the parking lot west of Building 8, as donations were piling up fast. Friday night, Nick Galassi, Sarah Macpherson, Bruce Milam, Steve Walter and Deane Charlson gathered to do the final bagging and tagging. The final total came to over 3,000 pounds!

Saturday morning, pilots and airplanes, trailers and trucks, including one graciously contributed by Swales, gathered in the cold at Tipton to load the donations. Co-coordinator Ratna Sengupta warmed and fueled the pilots with coffee, doughnuts and Indian tea and then they were off. The flight out to Reading was uneventful, although John Majane reported back that the controllers at BWI and Reading (RDG) were "a little surprised at the number of aircraft in the sky at once."

On rollout at Reading, one of the airplanes got a flat tire, but the only damage was that the pilot missed lunch at West Reading Tavern on Penn Street. The other seven people

Photo by Deane Charlson



Left to Right: Nick Galassi, Matt Jurotich, Mike Strieter, co-coordinators Courtney Smith and Ratna Sengupta pause outside the Reading Mid-Atlantic Air Museum for a picture in front of Mike's 1934 Straight Wing Reliant during NASA Goddard Flying Club's annual Wings of Warmth event, Nov. 6 2004.

"packed into a car like sardines" as reported by Ratna Sengupta and after a brief, shall we call it, tour of residential Reading, found the restaurant. John reports back, "Great pretzels. Even better food. And reasonable." Thanks for the commercial.

Thank you to all who helped donate, bag, tag, weigh and fly our way to a very successful Wings of Warmth 2004! More information on the NASA Goddard Flying club can be found at: <http://garc.gsfc.nasa.gov/~ngfc>

Review of 2004 (cont'd from pg 7)

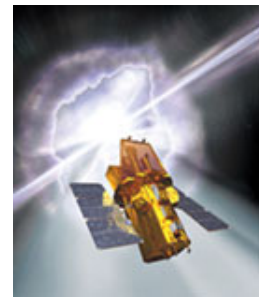
Dr. Anne Thompson, a research scientist in the Atmospheric Chemistry and Dynamics Branch at Goddard was honored in September by the Women in Aerospace with the International Achievement Award for her work contributions to aerospace in the international arena, her commitment to professional growth and her service as a role model that shows dedication to the advancement of women in aerospace.



Wallops made an achievement by completing the 2004 EQUatorial Ionospheric Study (EQUIS II) sounding rocket campaign by launching 14 suborbital sounding rockets over five weeks that was conducted from a launch complex on the island located near the equator. Experiments on the various rockets were designed to study disturbances in the ionosphere created by interactions between the Sun and the Earth's magnetic field.

The Independent Verification and Validation (IV&V) facility in collaboration with the West Virginia High Technology Consortium Foundation held an educational event encouraging approximately 850 seventh graders to pursue careers in science, technology, engineering and mathematics.

Nov. was another exciting month with the launch of the Swift satellite. Scientists hope that it will shed new light on the illusive gamma-ray bursts. Each one lasts for only a few milliseconds, leaving scientists an extremely short time to divulge information. The three quick-response instruments on board of Swift will hopefully reveal new and exiting data on the bursts. Scientists speculate that the bursts could be responsible for the formation of black holes.



Continued on page 17

Interstellar Sugar (cont'd from pg)

than 2 acres and receivers operating at lower frequencies in the range of 13 to 22 GHz. The results were surprising because the emission was strong relative to the original detection and the gas has an extremely low temperature – only 8 K. This result contrasted with the 50 K reading in the original observations, which used higher frequencies. “We expected the glycolaldehyde molecules to exist at the same temperature, but we were wrong,” Hollis says. Using these new glycolaldehyde results along with results of other investigators, Hollis and his team have a much clearer picture of what produces the biomolecules they have studied.

Such large molecules are first produced on surfaces of dust grains when an interstellar cloud of gas and dust experiences a shock wave. This can easily happen during the collapse phase of star formation when material collides. The dust grains are typically about a micrometer in size and are coated with a variety of ices that contain simple molecules, which can include water, formaldehyde, methane, ammonia, carbon dioxide, and methanol. The resulting shock of the colliding material provides the energy required to produce glycolaldehyde from simpler molecular species that reside on the grains. In turn, the ethylene glycol is produced from the glycolaldehyde when two hydrogen atoms successively react with a glycolaldehyde molecule. The shock also serves to free molecules from the dust grains, distributing glycolaldehyde and ethylene glycol into the gas on a widespread spatial scale. After the shock wave passes, the glycolaldehyde and ethylene glycol that have been released into the gas phase rapidly cools, forming the so-called post-shock gas.

Sugar formation, as with much of the complex molecular chemistry in space, occurs in the solid phase on or in a variety of ices that coat interstellar grains. Most terrestrial chemistry occurs in the liquid phase, primarily with water, thus the widely accepted theory that life on Earth began in a “primordial soup.” While these two chemistry scenarios are very different, the end results can be very similar. “One thing is clear – a lot of prebiotic chemistry occurs in an interstellar cloud long before that cloud collapses to form a new solar system with a central star and orbiting planets and comets,” Hollis says. “This suggests that the molecular building blocks necessary for life to arise on a newly formed planet get a head start in interstellar clouds.” Planetary formation is such a hot process that biomolecules would be destroyed in the process. However, comets are formed in a much colder process within the same interstellar cloud, and are frequent space visitors that can supply fresh molecules to a new planet that has finally cooled down. Supporting the notion of complementary theories for the molecular origins of life, Hollis maintains, “Many of the interstellar molecules discovered to date are the same species detected in laboratory experiments specifically designed to synthesize prebiotic molecules. This fact suggests a universal prebiotic chemistry.”

References:

1. **Interstellar Glycolaldehyde: The First Sugar**, by J.M. Hollis, F.J. Lovas, & P.R. Jewell, 2000, *Astrophysical Journal Letters*, 540, L107.

2. **The Spatial Scale of Glycolaldehyde in the Galactic Center**, by J.M. Hollis, S.N. Vogel, L.E. Snyder, P.R. Jewell, & F.J. Lovas, 2001, *Astrophysical Journal Letters*, 554, L81.

3. **Interstellar Antifreeze: Ethylene Glycol**, by J. M. Hollis, F. J. Lovas, P. R. Jewell, & L.H. Coudert, 2002, *Astrophysical Journal Letters*, **571**, L59.

4. **Kinematics of the SgrB2(N-LMH) Molecular Core**, by J.M. Hollis, J.A. Pedelty, D.A. Boboltz, S.-Y. Liu, L.E. Snyder, P. Palmer, F.J. Lovas, & P.R. Jewell, 2003, *Astrophysical Journal Letters*, **596**, L235.

5. **Green Bank Telescope Observations of Interstellar Glycolaldehyde: Low Temperature Sugar**, by J.M. Hollis, P.R. Jewell, F.J. Lovas, & A. Remijan, 2004, *Astrophysical Journal Letters*, **613**, L45. ■

Review of 2004 (cont'd from pg 16)



In addition, NASA's X-43A Scramjet research vehicle zoomed into the record books by achieving a top speed of nearly 7000 mph, 10 times the speed of sound. Engineers are optimistic that its revolutionary engine will improve the future of commercial

aviation technology and make the goals of the Vision for Space Exploration increasingly attainable. The supersonic combustion ramjets (scramjets) will hopefully allow for launches of large and critical payloads in as efficient means as possible.

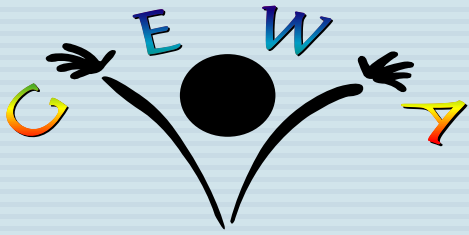
For the first time, two NASA scientists received the Scientific American Top 50 Award. Dr. Drew Shindell and Dr. Gavin Schmidt of NASA's Goddard Institute for Space Studies received recognition for their research in climatology. Using computer climate models models, they compared the Earth's current temperature with a similar peak that occurred 55 million years ago. Through their analysis of the past, they hope to divulge what climatologists can expect to observe in the future.

Over 1,500 images of worldwide coral reefs are now available online, making information on the popular subject only a click away. NASA partnered with the University of South Florida, Tampa, Fla. and the National Oceanic and Atmospheric Administration (NOAA) pieced together an extensive internet-based library. It offers a wide range of data such as the health and location of the world's precious coral reefs.

Teachers and students from Forest Oak Middle School in Gaithersburg, Md. had the opportunity to converse with the new International Space Station Crew. Expedition 10 Commander Leroy Chiao and Flight Engineer Salizhan Sharipov were two of the individuals on board that answered questions.

Experienced NASA astronaut John Phillips and Russian Cosmonaut Sergeir Krikalev have been named to join to crew on the International Space Station. Their six month mission is scheduled to launch in April 2005.

As for Dec., a recent study investigating the world's fastest glacier, Greenland's Jakobshavn Isbrae, has concluded that there is a direction correlation between ice sheets, sea level rise, and climate warning. The outlet glacier's stream accounts for the rise of the sea level by about four percent of the entire 20th century increase. ■



GEWA Activities

Children's Holiday Party

GEWA's annual holiday party will be held on **Saturday, Dec. 11**, from **11am til 4:30 p.m.**, in the Bldg. 8 auditorium. The party is open to children and grandchildren of Goddard government and contractor employees and retirees. Includes a personalized gift from Santa for children 0 to 8 years old, color photo with Santa, there will be a **Magic Show is at 12:45pm**, Clowns with bunny rabbit, face painting, and more for only **\$11** per child (**\$1** per person 9 years old and above). Registration forms and tickets are at the GEWA Store. Hurry — Tickets must be purchased by COB December 7th. Come out and have some fun with the kids!

Volunteers are also needed for the Toy Wrap on Friday, Dec 10 and for the actual Party. Reminder that the Toy Liquidation Sale is on Monday, 12/13. If any questions or special arrangements then please call Kenny Dearth at 301-286-3003 or email him at [http://kdearth@pop500.gsfc.nasa.gov](mailto:kdearth@pop500.gsfc.nasa.gov).

GEWA Special Events for 2004

Dec. 10 - Toy Wrap for Children's Holiday Party
Dec. 11 - Children's Holiday Party
Dec. 13 - Toy Liquidation Sale

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

Goddard Bible Club

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

GEWA Art of Living Club Offers Free Guided Meditation Every Monday and Wednesday at Noon

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

Announcements

Checkout the New Goddard Homepage!

The Goddard homepage has moved! We've relocated as of December 1 to our new home on the NASA Portal. The Goddard site is now available at: <http://www.nasa.gov/goddard>

We hope you like the new site that incorporates the look and feel of the NASA Portal. The migration is an ongoing effort, so there are still pages to be migrated to the Portal from our old site. Should you require archived information from our old site, sections of it will remain for another 6 to 12 months.



Image of new Goddard homepage

If you are looking for the internal home page (for employees only), please note that we have not included that link on our new page. The reason behind this is that with the move to the NASA Portal our audience has changed and become more diverse. But rest assured, the internal page still exists! The URL for the Goddard internal site is: <http://internal.gsfc.nasa.gov> We suggest you bookmark this page for easy access in the future!

Please enjoy the new and improved Goddard site. Should you have any comments or questions about the site, please feel free to submit them at this URL:

http://www.nasa.gov/centers/goddard/about/contact_us.html

QASAR Award Nomination Call Extended

QASAR nominations are now due to Patricia.A.Huber@nasa.gov by COB Monday, Jan 3. The QASAR brochure and nomination form are posted at <http://www.hq.nasa.gov/office/codeq/qasar/index.htm>

NASA Engineering Training Web Site

You are invited to visit the newly-launched NASA Engineering Training (NET) Web site at <http://net.larc.nasa.gov>. The NET Web site will provide NASA engineers with information and links to the training and career-development resources necessary for success. The site will also serve as a forum for news, discussions, lessons, and strategies.

On the site you will discover information (sponsored by NET

through NASA Headquarters) about the engineering training that is available to the NASA engineering community, including a comprehensive list of all NET courses, course descriptions, syllabi, and class schedules. The site also features news articles, testimonials, and links to NASA, Government, and other training and educational facilities. Future features will include information on career growth opportunities, training workshops and conferences, discussion groups, a "course workshop area", and an online subscription engineering newsletter.

The NET curriculum will continue to grow and expand to meet the needs of the engineering community. The Web site will also provide NASA engineers with a forum for discussing items of interest and a conduit for suggestions that will go directly to Headquarters engineering management. Please join other engineers often at this Meeting Place and send your comments and suggestions!

Dateline Newsletter

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

Want To Challenge Students to Focus On Their Futures?

The Maryland Business Roundtable for Education needs volunteers from the working world to participate in its nationally renowned Speakers Bureau. The Bureau is part of a comprehensive program that informs and motivates middle and high school students about the rigorous coursework they will need to take and complete while in high school in order to succeed in the future, whether they go on to college or directly into the workplace.

Volunteer speakers are asked to commit to making 3-5 classroom presentations. Before entering the classroom, they are equipped with a lesson plan and receive 3 hours of training on facilitating the Achievement Counts presentation. The messages they deliver are based on their own personal and work experiences, with each speaker bringing his or her own unique perspective. If you are interested please contact Charles Mercer at 301-286-7478 or by email at cmercer@pop100.gsfc.nasa.gov so we can set-up a training session for employees here at Goddard.

To sign up to be a speaker visit our website: <http://www.mbrt.org/speak> or contact LaTara Harris at 410/727-0448 or latara@mbrt.org.

Continued on page 20

Goddard Referral Service

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

GSFC Software Assurance Website Launched

The Goddard Space Flight Center (GSFC) Software Assurance Website <http://sw-assurance.gsfc.nasa.gov> provides tools, procedures and training materials for software and safety assurance personnel, software engineers, as well as program and project managers.

Practitioner assets can be found for each of the five Software Assurance disciplines, including:

- * Software Quality
- * Software Reliability
- * Software Safety
- * Software Verification and Validation
- * Software IV and V

For more information, please contact Susan Sekira (<mailto:Susan.J.Sekira@nasa.gov>) at 301-286-6160, or visit the website at <http://sw-assurance.gsfc.nasa.gov>.

Register for the NASA Aeronautics and Space Database

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

LTC, FSA & LTP Reminders

Long Term Care Insurance is available throughout the year to Goddard civil servants & eligible family members. You may enroll at any time on the LTC website at: www.ltcfeds.com. New employees may submit an abbreviated underwriting application, while all others must complete the full underwriting application.

Flexible Spending Accounts (FSA's) for medical & dependent care expenses in 2005 must be set up during the open season now through Dec. 13. Enroll directly at www.fsafeds.com. Also, don't forget to submit claims for 2004 within 120 days after the Dec. 31 services/costs. It's "use it or lose it".

Got extra annual leave to spare? Consider donating it to a Goddard employee in need! A list of Leave Transfer Program recipients and the form to complete a donation may be found on OHR's website at: <http://ohr.gsfc.nasa.gov>

Events

Engineering Colloquium

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

Who: Glen Adamson, Curator at Chipston Foundation, will discuss, *Industrial Strength Design: How Brooks Stevens Shaped Your World*. Brooks Stevens (1911-1995) was a noted industrial designer who was responsible for such American icons as the Miller Brewery logo, the Willys Jeepster automobile, and the Oscar Mayer Wienermobile. Equally famous was his notion of "planned obsolescence," which guided his own work as a designer and has been one of the flash points of debate about consumerism since. In this lecture, Adamson will provide an overview of Stevens' work and life, and consider some of the ramifications that his optimistic Cold War designs have for us today.

When: Monday, Dec. 6

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

Who: Dr. Donald E. Jennings, astrophysicist in Goddard's Laboratory for Extraterrestrial Physics, Planetary Systems Branch will discuss, *The Composite Infrared Spectrometer on Cassini*. Cassini carries the Composite Infrared Spectrometer (CIRS), built and operated by Goddard Space Flight Center with international collaboration. CIRS is mapping the composition, temperature, and dynamics of the atmospheres of Saturn and its largest moon Titan. The rings and smaller icy moons are also mapped in temperature and composition. At this early phase of the mission a richly varied picture of the Saturnian system is already emerging from Cassini.

When: Monday, Dec. 13

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

Mark Your Calendars for the Space Communications Customer Forum #10

Formerly Mission Services Customer Forum (MSCF)

What: Sponsored by the Customer Commitment Office, Code 451, the SCCF is an opportunity for Space Communications Program (Code 450) representatives to discuss with our customers, available Space Network and Ground Network services and plans, as well as issues of concern to them and the service providers.

Please visit the SCCF website <http://scp.gsfc.nasa.gov/sccf> to pre-register. Requests for specific agenda items, or any other issues related to your participation, may be directed to

the SCCF host, Mr. Al Levine/Code 451 Service Planning Manager, at x6-9436, via email Allen.J.Levine@nasa.gov or website forms.

When/Where: Dec 9, from 1 to 4 p.m. in the Building 3, Goett Auditorium

Systems Engineering Seminar

Who: Kimberly Gavaletz, Vice President, Corporate Internal Audit, Lockheed Martin Corporation will discuss *Engineering Connections/Reflections/Opportunities*. Take some time to explore the potential synergies between the engineering world and the audit function. Reflect on interactions from past interactions and voyage into a new world of possibilities. Examine the tool box of resources available to the engineering profession that can be called upon to supplement your team and further your success. Also, during this time you will be able to connect with and ask questions of a woman that has spent over two decades in the aerospace business. In addition to discussing the path so far, where we are today and the opportunities ahead, and how everyone is a part of the growing diversity journey.

The seminar will be webcast live to the NASA domain at: http://128.183.174.165/Colloquia_asx/NASA/Live/B3NASALive.aspx

For more information call Tom Bagg, 301-867-0063, email at Thomas.C.Bagg.1@gsfc.nasa.gov, or visit: http://seacd.gsfc.nasa.gov/SE_Seminar/

When/Where: Tuesday, Dec. 7 at 1 p.m in the Bldg. 3 Goett Auditorium

Drug Testing Training

What: Drug Testing Training for the "Drug Free Workplace Program," is required to be taken by supervisors. The purpose for these training sessions are to familiarize supervisors and employees with NASA Policy 3792.1A. Subject matter will include NASA's authorized testing and procedures and the selection process for testing designated positions.

Drug Testing Awareness Training (cont'd)

When/Where: Wednesday, Dec. 15 (note change in date) in the Bldg. 3 Auditorium. Employee training will be from **9 a.m. - 10 a.m.** Supervisors training will be from **11 a.m. - 12 noon.** Please call Linda Breeze on X-64249 to register for the class.

Goddard System Administrator Exchange

What: The next GSAE meeting will be a discussion on will be email encryption (PKI, PGP, etc).

When/Where: Thursday, Dec. 9, from 10 a.m. – 12 p.m. in Bldg. 26, Rm 205.

For more information, contact Jim Wiedman at James.W.Wiedman.1@gsfc.nasa.gov

Information Science and Technology (IS&T) Colloquium

All IS&T colloquia are held in building 3 Goett Auditorium at (3:00 p.m. for refreshments) with the colloquium 3:30 p.m. unless stated otherwise

Who: Ella Atkins, assistant professor Aerospace, University of Maryland will talk about *IS an Space Robotics*.

When: Wed, Dec 15

Scientific Colloquium

All colloquia are held on Fridays in building 3 Goett Auditorium at 3:30 p.m. unless otherwise noted.

Who: Mike Maunder, Fairchild Tropical Garden will explore the topic, *Invasive Foliage*. Maunder will provide an overview of the problem that invasive species pose the biggest threats to biological diversity, by looking at the various types of invasive organisms (viruses, algae through to parrots and snakes), their impacts and some of the possible responses. So far the isolated oceanic islands have suffered the greatest impact from invasives; however it is clear that this impact is expanding to encompass continental ecosystems and urban areas.

When: Dec 10

Who: Steve Squyers, Cornell University will discuss *Science Results from the Mars Exploration Rover Missions*.

When: Jan 7, 2005

Upcoming Training

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

One-On-One Career Coaching...

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

Is Your Resume Marketing You?

When: Dec 16, from 1:30 p.m. to 2:30 p.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=1249> or contact Tracey White at x6-7823 or Tracey.C.White.1@gsfc.nasa.gov to enroll.

Individual Development Planning (IDP) for Supervisors

When: Dec 28 from 9:30 a.m. to 11:30 a.m.

For additional information please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/description.cfm?course=865> or contact Tracey White at x6-7823 or Tracey.C.White.1@gsfc.nasa.gov to enroll.

Please visit <http://ohrcoursecatalog.gsfc.nasa.gov/search/search.cfm?search=2&category=1> for a complete listing of Professional Development Center workshops.

Center Director's Colloquium

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

Who: Amanda Trosten-Bloom, co-author of *The Power of Appreciative Inquiry: A Practical Guide to Positive Change and The Encyclopedia of Positive Questions*, will offer us insights on how we can become a more appreciative organization and employ these powerful principles based on what gives life to human systems when they are at their best. It is based on the assumption through inquiry and dialogue people can draw attention and action away from problem analysis and by focusing their energy and attention on creating new possibilities for the future.

When: Tues. Jan. 24, 2005

Who: Mr. Seth Kahan, author of the recently published book *Building Beehives: A Handbook for Creating Communities that Generate Returns*. Kahan will offer us a key tool for growing and sustaining a community and jumpstarting organizational change - storytelling - an age-old practice that is one of the most effective tools a leader can use. It's hard to imagine the future.

When: Wed, Feb. 2, 2005

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

ION DC Section Meeting

Who: Dr. Svenja Knappe, The National Institute of Standards and Technology (NIST) in Boulder, CO. will discuss *Chip-Scale Vapor-Cell Atomic Clocks*. Dr. Knappe will review the NIST program on chip-scale atomic clocks (CSAC) has developed an atomic clock physics package that displays an improvement over the previous state-of-the-art by a factor of 100 in volume and a factor of 10 in power dissipation. The device demonstrates convincingly that individual components such as microfabricated alkali vapor cells, micro-optics, and semiconductor lasers can be assembled into a compact structure with an output frequency tied to a highly stable atomic transition. With the addition of control circuitry and a local

ION Meeting Cont'd

oscillator, it appears feasible to construct a complete atomic frequency reference with a volume below 1 cm³, a power dissipation below 30 mW, and a fractional frequency instability below 10⁻¹¹ at one hour of integration and longer, allowing timing precision at the microsecond level over a day

When/Where: Monday, Dec 13, at the US Naval Observatory (USNO), 3450 Massachusetts Avenue, NW, Washington, D.C. from 6p.m. to 8 p.m.

Cover Charge: \$20 per person. Students will have no cover charge. Registration Deadline: RSVP by Thursday, December 9, 2004 would be appreciated. You may RSVP to this event by contacting the ION National Office. Please send an email to membership@ion.org with your name and the number of people in your party who plan to attend. Or call the ION National Office at (703) 383-9688.

Additional questions about this event may be sent to Jim Simpson at James.E.Simpson@nasa.gov or (301) 286-1139 or Jim Doherty at jdoherly@ida.org

More information regarding this technology can be found at: <http://www.boulder.nist.gov/timefreq/ofm/smallclock/index.htm>

Security Note:

When registering for this event, please provide the following to the ION National Office who will forward it to the USNO Security Office

1. Name
2. Email address
3. Country of Citizenship
4. Date of birth
5. If not a US citizen, please provide green card or passport number

Second Annual NASA Project Management Conference

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

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

Conference Registration will open in early fall

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

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

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

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