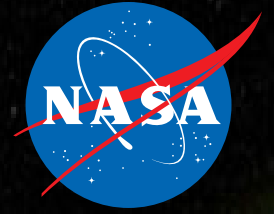


National Aeronautics and Space Administration
www.nasa.gov
Volume 2 Issue 10
June 2006



GoddardView

First Images from NASA's Cloudsat

Pg 2

Unintentional Intolerance

Pg 3

Astronomy Hits the Theater with "Galactika"

Pg 10

First Images From NASA'S Cloudsat Have Scientists Sky-High

By Allan Buis (JPL)

The first images from NASA's new CloudSat satellite are already revealing never-before-seen 3-D details about clouds.

"CloudSat's radar performed flawlessly, and although the data are still very preliminary, it provided breathtaking new views of the weather on our planet," said Dr. Graeme Stephens, CloudSat principal investigator and a professor at Colorado State University, Fort Collins. "All major cloud system types were observed, and the radar demonstrated its ability to penetrate through almost all but the heaviest rainfall. "We have now begun continuous radar operations, and we look forward to releasing our first validated data to the science community within nine months, hopefully sooner," he added.

Just 30 seconds after radar activation, CloudSat obtained its first image – a slice of the atmosphere from top to bottom showing a warm storm front over the North Sea in the North Atlantic approaching Greenland. Unlike other satellite observations, the CloudSat radar image shows the storm's clouds and precipitation simultaneously. The front's warm air can be seen rising over colder air, with precipitation below.

The remaining orbits of the test recorded unique observations of other weather types on a scale never seen before. The radar obtained first-time observations of clouds and snow storms over the Antarctic. Until now, clouds have been hard to observe in polar regions using satellite remote sensing, particularly during the polar night season. The CloudSat observations also provided new views of sloping, frontal clouds and thunderstorms over Africa, both as individual storms and as part of larger tropical storm systems.

"We're seeing the atmosphere as we've never seen it before," said Deborah Vane, CloudSat deputy principal investigator at NASA's Jet Propulsion Laboratory, Pasadena, Calif. "We're no longer looking at clouds like images on a flat piece of paper, but instead we're peering into the clouds and seeing their layered complexity."

The first-ever spaceborne millimeter wavelength radar, CloudSat's Cloud-Profiling Radar is more than 1,000 times more sensitive than typical weather radar. It can observe clouds and precipitation in a way never before possible, distinguishing between cloud particles and precipitation. Its measurements are expected to offer new insights into how fresh water is created from water vapor and how much of this water falls to the surface as rain and snow.

Continued on Page 3

Table of Contents

Goddard Updates

First Images from NASA's Cloudsat - 2

Unintentional Tolerance- 3

Inexpensive Detector Sees the Invisible, In Color - 4

NASA Enters Agreement with NIST - 5

Goddard Education

The EPA and the GSFC Fitness Center Host the 2006 Health Fair - 6

New Name, New Code, Same Great Service - 6

Quality of work Life Expo 2006 - 8

Honeywell Receives NASA Excellence Award - 8

Can We Talk - 9

Astronomy Hits the Theater with Galactika - 10

Goddard Family

In Memoriam 11

Employee Spotlight

Cindy Trapp - 12

Cover caption: This artist's concept shows NASA's CloudSat spacecraft and its Cloud Profiling Radar using microwave energy to observe cloud particles and determine the mass of water and ice within clouds. The mission will collect information about the vertical structure of clouds that will help answer key questions about how they form, evolve and affect our weather, climate and water supply. Photo Credit: NASA/JPL

GoddardView Info

Goddard View is an official publication of the Goddard Space Flight Center. It is published bi-weekly by the Office of Public Affairs in the interest of Goddard employees, contractors, and retirees. A PDF version is available online at: <http://www.nasa.gov/centers/goddard/news/index.html>

Managing Editor: Trusilla Steele

Editor: Alana Little

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

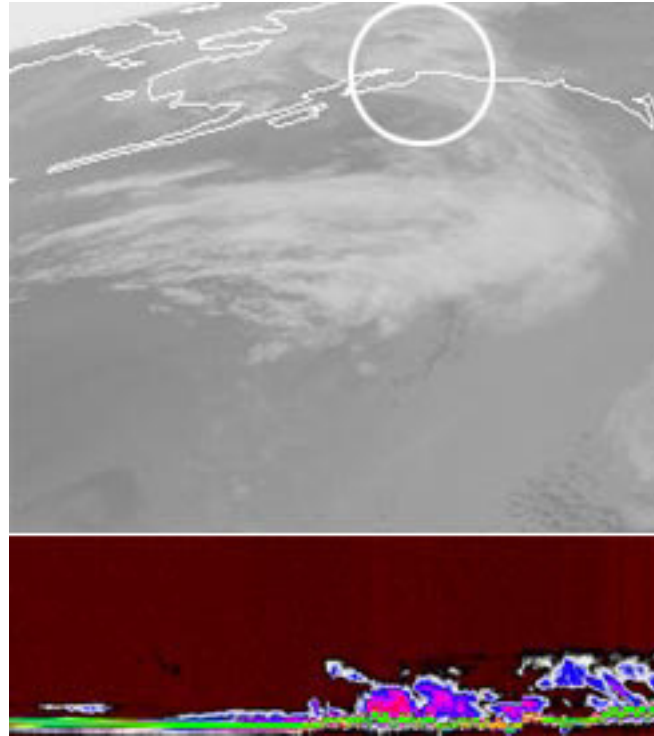
First Images From NASA'S Cloudsat Have Scientists Sky-High

[Continued from Page 2](#)

CloudSat was launched April 28 from Vandenberg Air Force Base, California and is managed by JPL, which developed the radar instrument with hardware contributions from the Canadian Space Agency. Colorado State University provides scientific leadership and science data processing and distribution. Ball Aerospace and Technologies Corp., Boulder, Colo., designed and built the spacecraft. The U.S. Air Force and U.S. Department of Energy contributed resources. U.S. and international universities and research centers support the mission science team.

For more information on CloudSat on the Web, visit: <http://www.nasa.gov/cloudsat>.

JPL is managed for NASA by the California Institute of Technology. ■



Caption: Image taken by Cloudsat of storm over central Alaska.

Unintentional Intolerance

By Julia Knight

To kickoff "Celebrate Goddard" events this year, the Diversity Council has invited Dr. Steve Robbins, a sought-after national speaker, consultant, and writer on issues of diversity, inclusion, and cultural competence to serve as the keynote speaker. Dr. Robbins has consulted with and conducted numerous workshops across the nation for a variety of organizations, large and small, for-profit and not-for-profit. His style is inviting, insightful and challenging.

Born in Vietnam, Dr. Robbins immigrated to the United States when he was five years old. He and his mother faced many challenges as Vietnamese immigrants in a new land, during a time when there was much anti-war and anti-Vietnamese sentiment. Working through and rising out of the challenges of poverty, discrimination and the tough streets of Los Angeles, Dr. Robbins now brings an insightful perspective on issues of diversity, inclusion and the power of caring.

In addition to having Dr. Robbins' address the Center in the morning, we are privileged to host one of his workshops in the afternoon from 1:00 to 3:00 p.m. Please plan to join other employees in this opportunity that is described below.

Workshop Overview

The vast majority of people have a sincere and honest disgust towards prejudice that's based on superficial factors. Indeed, most people agree that racism, sexism and other "isms" are "bad" things that we, as a society, should attempt to eliminate. Most people believe, and like to believe that they are tolerant and inclusive of others who may look, act or think differently than themselves. The bottom line is that most people perceive themselves as "good" people!

But what if "NICE" people are, on a regular basis, intolerant of others solely on the basis of non-substantive factors? What if the reality in which most people perceive themselves to live is not as inclusive as they think it is? What if many people make decisions about and attributions of others based on false, half-true, or incomplete information? Could this lead to the very things that most people abhor things like racism, sexism, ageism, etc.? The answer is a resounding yes! Unintentional intolerance is as real as the consequences it heaps on those at the receiving end of such intolerance. In his presentation, Dr. Robbins explores the concept of unintentional intolerance. He examines the process behind the concept and how it lulls people into believing in a reality that is often only partially real and sometimes not real at all.

[Continued on Page 8](#)

Inexpensive Detector Sees the Invisible, In Color

By Bill Steigerwald

An inexpensive detector developed by a NASA-led team can now see invisible infrared light in a range of “colors,” or wavelengths.

The detector, called a Quantum Well Infrared Photodetector (QWIP) array, was the world’s largest (one million-pixel) infrared array when the project was announced in March 2003. It was a low-cost alternative to conventional infrared detector technology for a wide range of scientific and commercial applications. However, at the time it could only detect a narrow range of infrared colors, equivalent to making a conventional photograph in just black and white. The new QWIP array is the same size but can now sense infrared over a broad range. “The ability to see a range of infrared wavelengths is an important advance that will greatly increase the potential uses of the QWIP technology,” said Dr. Murzy Jhabvala of NASA’s GSFC, Principal Investigator for the project.

Infrared light is invisible to the human eye, but some types are generated by and perceived as heat. A conventional infrared detector has a number of cells (pixels) that interact with an incoming particle of infrared light (an infrared photon) and convert it to an electric current that can be measured and recorded. They are similar in principle to the detectors that convert visible light in a digital camera. The more pixels that can be placed on a detector of a given size, the greater the resolution, and NASA’s QWIP arrays are a significant advance over earlier 300,000-pixel QWIP arrays, previously the largest available.

NASA’s QWIP detector is a Gallium Arsenide (GaAs) semiconductor chip with over 100 layers of detector material on top. Each layer is extremely thin, ranging from 10 to 700 atoms thick, and the layers are designed to act as quantum wells.

Quantum wells employ the bizarre physics of the microscopic world, called quantum mechanics, to trap electrons, the fundamental particles that carry electric current, so that only light with a specific energy can release them. If light with the correct energy hits one of the quantum wells in the array, the freed electron flows through a separate chip above the array, called the silicon readout, where it is recorded. A computer uses this information to create an image of the infrared source. NASA’s original QWIP array could detect infrared light with a wavelength between 8.4 and 9.0 micrometers. The new version can see infrared between 8 to 12 micrometers. The advance was possible because quantum wells can be designed to detect light with different energy levels by varying the composition and thickness of the detector material layers.

“The broad response of this array, particularly in the far infrared -- 8 to 12 micrometers -- is crucial for infrared spectroscopy,” said Jhabvala. Spectroscopy is an analysis of the intensity of light at different colors from an object. Unlike a simple photograph that just shows the appearance of an object, spectroscopy is used to gather more detailed information like the object’s chemical composition, speed, and direction of motion. Spectroscopy is used in criminal investigations; for example, to tell if a chemical

found on a suspect’s clothing matches that at a crime scene, and it’s how astronomers determine what stars are made of even though there’s no way to take a sample directly, with the stars many trillions of miles away.

Other applications for QWIP arrays are numerous. At NASA Goddard, some of these applications include: studying troposphere and stratosphere temperatures and identifying trace chemicals. Other potential commercial applications for QWIP arrays include: location of forest fires and residual warm spots; location of unwanted vegetation encroachment; monitoring crop health; monitoring food processing contamination, ripeness, and spoilage; locating power line transformer failures in remote areas; monitoring effluents from industrial operations such as paper mills, mining sites, and power plants; infrared microscopy; searching for a wide variety of thermal leaks, and locating new sources of spring water.

The development effort was led by the Instrument Systems and Technology Center at NASA Goddard. The Army Research Laboratory (ARL), Adelphi, Md., was instrumental in the theory, design, and fabrication of the QWIP array, and L3/Cincinnati Electronics of Mason, Ohio, provided the silicon readout and hybridization. This work was conceived for, and funded by, the Earth Science Technology Office as an Advanced Component Technology development project. ■



Caption Above: A false color image with the QWIP camera of engineers and a seeing-eye dog (named Denver). This image illustrates the slight difference in temperatures of the scene – dark red being coldest and orange the warmest. Note the hand visible inside the labcoat pocket and the very warm tongue of Denver, curled in a yawn. Also note the different hand temperatures of the people, some warm some cold.

Photo credit: NASA

NASA Enters Agreement with NIST

By Nicole Quinelle

NASA officials have signed a memorandum of understanding (MOU) with the National Institute of Standards and Technology (NIST), a government research organization that collaborates with industry and other government organizations to promote innovation. The agreement will enable collaboration between GSFC and NIST researchers to further advances in nanotechnology. The agreement is also expected to save taxpayer money by enabling NASA scientists to use NIST's new \$350 million research facilities rather than duplicate these facilities for their own organization.

Nanotechnology focuses on the creation of useful or functional materials, structures, or devices in the nanometer length scale (thousands of times smaller than the average human hair). Goddard researchers have already made strides in nanotechnology research, both within their own organization and through collaboration with scientists at NASA Ames Research Center. For example, they have developed an innovative method of manufacturing carbon nanotubes that is much cheaper and yields more tubes of higher quality than typical processes. Such advancements are applicable to NASA's space missions as well as to the development of improved materials for chemical sensors, biosensors, electronic devices and circuits and architectures for use in everything from computers and electronics to advanced health care.

Through this new collaborative agreement, researchers from Goddard and NIST will be able to work together using joint expertise and NIST's state-of-the-art nanotechnology fabrication facilities to further their individual and joint research goals.

"By having access to these state-of-the-art facilities and capabilities at NIST, GSFC can focus its resources on the validation of these miniaturized technologies to accelerate their maturity for space flight applications supporting scientific research and NASA's vision for space exploration," said Peter Hughes, Goddard's Chief Technologist.

The agreement calls for the two organizations together to define and manage research projects in nanoscience and microelectromechanical systems (MEMS) device design, technologies, operational protocols, fabrication technologies and device metrology for use in chemical and biological detectors, power generation, thermal management systems, radio frequency electronics, electro-optic devices and distributed sensor networks.

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

Hughes said the collaborative research could have far-reaching benefits for many scientific areas. "Specific progress can be made in radiation-tolerant memory devices for all space missions, biological sensors to detect the presence of life at distant bodies and multi-functional materials for next-generation robotics and vehicles," Hughes said. "The applications and target mission uses in this emerging technology area are diverse, compelling and exciting."

For more information about Goddard's technology transfer program, visit: <http://techtransfer.gsfc.nasa.gov> ■

Did You Know?

Sports Helmet:

Shock-absorbing "memory foam," which lines the inside of sports helmets, was first developed for use in aircraft seats. Aerodynamic bicycle helmets evolved from the design of an airfoil system.

The 2006 Health Fair is a Success!

By Trusilla Steele

Wouldn't you agree that a healthy employee is an effective employee? A healthy employee equates to fewer absences and contributes to a safe working environment. NASA's Occupational Health policy is to "minimize sick absences and reduced productivity due to marginal physical disability, permanent disability, or premature death." As an effort to increase health awareness which contributes to an effective working environment, Goddard held its Annual Health Fair on May 4, 2006.

The Health Unit, Employee Assistance Program and Fitness Center sponsored the Health Fair, which offered many screenings such as, vision, skin, blood pressure and even spinal screening. In addition, health professionals were on hand to discuss various aspects of general health such as sleep issues, lung function and blood pressure.

For employees who were fitness conscious or ready to become physically fit, health professionals offered insight on exercising, nutrition and conducted body fat analyses. Body fat analysis provides a clear understanding of one's body composition of lean tissue and fat. High percentage of body fat increases risk of diabetes, heart disease, high cholesterol and other illnesses. High body fat coupled with stress is a sure way to increase visits to your doctor.

Ways to manage stress were another highlight of the fair, and based on the number of people in the massage line, this may be what employees need the most. Yes, free massages were given, relaxing employees before they returned to their offices. In addition, health professionals offered information about the benefits of acupuncture, mental health and meditation. Details on the benefits of meditation were provided by

members of Goddard's Art of Living Club. The Club meets every Monday and Wednesday in Building 23, Room S300 and invites all to come and discover the healing power of meditation. For more information about the Art of Living Club visit the GEWA clubs website at: <http://gewa.gsfc.nasa.gov/clubs/index.html>

Feedback on the Health Fair was very positive, and next year we will look into incorporating information on nutrition, natural remedies, fitness and of course, more massage! The sponsoring staff hopes to see everyone next year, and advises keep taking steps to a healthier you!

If you missed this years health fair, feel free to stop by the Health and Fitness Centers to visit with one of Goddard's trained health and fitness professionals. ■



Photo credit: Deborah McCallum

Caption Above: American Screening technician Rosalie Matthews gives a Goddard employee a vision screening

New Name, New Code, Same Great Service

By Elaine Firestone

Effective May 15, 2006 the Technical Information Services Branch (known as "TISB" to many at Goddard), Code 293, changed its name and code. TISB has joined forces with the former Management Services Branch, Code 231, to form the Technical Information and Management Services (TIMS) Branch, Code 271.

We will continue to offer the services you depend on—graphics, editing, photography, duplicating, printing, conferencing and audiovisual support, directives management, records management, interior design services, forms management, furniture and carpet repair and mail communications management—but now as one united branch, instead of two separate ones.

Every one of our staff remains as committed as they've always been to bringing our customers—you—the excellent service you've come to expect from us. ■

For more information contact Carol Ladd at (301) 286-3612.

Quality of Work Life Expo 2006

By Alana Little and Danielle Tolbert

“Worklife” as defined by the Quality of Work Life (QWL) website refers to “the things that contribute to the quality of our work life at Goddard Space Flight Center. Beyond the valuable work that we do, there are programs, activities and other amenities that help us balance our work and personal lives, develop our careers and generally enhance our work experience.”

The Quality of Work Life (QWL) initiative was launched to foster such amenities and to assure that all employees are aware of all the special things that Goddard has to offer.

In support of this goal, the Office of Human Capital Management (OHCM) hosted the Quality of Work Life (QWL) Expo on Wednesday, May 17, in the Building 1 Training Facility.

The Expo was held from 10:00am-3:00pm and enjoyed the attendance of over 240 employees. The Expo served as a forum for 39 groups and organizations to showcase their services and products. It provided employees an opportunity to inquire about services and organizations they wanted to know about but did not have an opportunity to research. Some of the most popular aspects of the Expo included the Benefits, Dance Club, Learning Center, NASA FCU and Workife4You tables. Employees were also able to view a demonstration and ask questions about the new SATERN program and were entertained by performances from the Child Development Center and the Dance Club.

If you missed the QWL Expo, you can find out how the QWL initiatives can enhance your work life by visiting the website at <http://qwl.gsfc.nasa.gov>. ■



Photo credit: Pat Izzo

Caption : Members of the Goddard Dance Club from left to right: Chris Zincke, Kate Perrie, Martha O'Bryan and Mark Hanak.

Unintentional Intolerance

Continued from Page 3

In a very humorous, interactive, non-threatening, but powerful presentation, he shows listeners how “bad” information often leads to “bad” behavioral decisions, and how such decisions can negatively impact individuals, organizations and communities.

Dr. Robbins shows his audience that even well-trained “diversity professionals” are not immune to unintentional intolerance. Finally, he challenges people to be less certain and more curious. His message urges people to be more intentional about acceptance and inclusion.

Dr. Robbins’ presentation leaves people motivated, and with a new understanding of intolerance AND inclusion one that often leads people to be more mindful about their daily thoughts and actions, and more inspired to “do better.” ■

Proposal Opportunities

Research Opportunities in Space and Earth Science (ROSES)

Solicitations

Ground-Based Studies in Radiation Biology

Released: 2006-03-15

Proposal Due: 2006-06-19

Motivating Undergraduates in Science and Technology

Released: 2006-04-21

Proposal Due: 2006-06-05

NASA ARMD Research Opportunities in Aeronautics NRA

Released: 2006-05-23

Proposal Due: Not Yet Released ■

Honeywell Receives NASA Excellence Award

By Louanne Sargent

Honeywell announced today that its Aerospace wholly-owned subsidiary Honeywell Technology Solutions Inc. (HTSI) has been awarded the 2006 Goddard Contractor Excellence Award in the “Large Company, Service” category. This is the highest quality award given by a NASA Center, and the fourth time in 18 years that Honeywell has received the Contractor Excellence award from the Goddard Space Flight Center.

Honeywell’s performance on the Mission Operations and Mission Services contract (MOMS), the Near-Earth Networks Services contract (NENS), as well as other programs performed for GSFC, were evaluated by NASA for this award. As part of the evaluation, Honeywell demonstrated the implementation of systems to monitor and improve customer satisfaction, maintain exceptional operational efficiency, manage costs, enhance productivity, introduce innovation and partner with NASA on community outreach.

“We believe our NASA evaluators recognize our performance on Return to Flight, our outstanding operations proficiency on MOMS and our overall improvement culture,” said Wayne Friedman, Vice President, Civil Segment. “Our implementation of Six Sigma and Lean process improvement methodologies is a real differentiator for us.”

With this award, Honeywell is now in the running for NASA’s George M. Low Award, the highest quality award given by NASA agency-wide. Stinger Ghaffarian Technologies (SGT) won the award for 2005. Honeywell last won the Low Award in 1998.

Honeywell International is a \$30 billion diversified technology and manufacturing leader, serving customers worldwide with aerospace products and services; control technologies for buildings, homes and industry; automotive products; turbochargers and specialty materials.

Based in Phoenix, Honeywell’s aerospace business is a leading global provider of integrated avionics, engines, systems and service solutions for aircraft manufacturers, airlines, business and general aviation, military, space and airport operations.

For additional information, please visit www.honeywell.com ■

“Can WeTalk”

By Trusilla Steele and Sharon Wong

In recognition of Asian Pacific American Heritage Month, Goddard’s Asian Pacific employees were invited to attend a “Can We Talk” with the Center Deputy Director, Mike Ryschkewitsch who filled in for the Center Director, Dr. Ed. Weiler.



Photo credit: Chris Gunn

Caption : Mike Ryschkewitsch

Discussion at this “Can WeTalk” session centered on the decreasing budget. Ryschewitsch explained the budget as a balancing act due to the “strains and stresses” of the costs associated with the Space Station, Exploration missions and the transition from the Space Shuttle program. Ryschewitsch and Associate Director, Krista Paquin, further explained that a part of that balancing includes civil servants taking responsibility for some of the duties

that weren’t contracted out. This will be based on examining the yearly Statement of Work. The 25 percent training budget cut that was made in an effort to maintain competitive G&A rates was also a topic of discussion.

The budget discussion was followed by concerns for a possible Reduction In Force (RIF). Paquin explained that it couldn’t be considered until 2007 and it would take time to put such an action in effect. However, since the agency is competitive, it will be advantageous to re-balance positions to maintain needed skills. Since there is a fluctuation in competencies, targeting particular skill classes is not possible when conducting a RIF. Paquin emphasized that having a RIF will be a last resort and would occur at other Centers prior to affecting employees at Goddard. In regards to buyouts, Paquin stated the Center has received this request but, only as a “way to assess quantities of eligibility.” She continued, by saying the Agency doesn’t concur with buyouts since they aren’t beneficial.

Increasing the amount of system engineers was another topic for discussion. Since we have a Full Time Equivalent (FTE) ceiling, in order to increase one skill class another skill class will have to be decreased and trying to balance that creates another challenge.

The topic of the new accretion promotion process and the issue of whether Resources Analysts (RA) were a declining or growth area was also raised. Paquin explained that directorates handled the recruitment and training of RAs differently (e.g., Code 600 grows their own) but it was still considered a growth area. Ron Brade, acting deputy director of Office of Human Capital Management (OHCM), said that since the accretion promotion is a fairly new process, it is still too early to tell. However, OHCM will be monitoring the process and the results.

The session concluded with discussion on Goddard’s Internal communication. There was a concern voiced about the accuracy of directorate’s web personnel rosters. It was noted that Goddard’s internal page houses a link to Goddard organizations and projects. Within the organization and project links some organizational web pages are outdated which makes finding information a tedious task. Brade encouraged employees to use the online telephone book which is available on Goddard internal page or <http://internal.gsfc.nasa.gov> or by visiting <http://phonebook.gsfc.nasa.gov/> to receive the most current directorate listing. The Office of Public Affairs is working with OHCM and the Information Technology and Communications directorate to decrease these discrepancies.

Center Director, Ed Weiler will be hosting the “Can We Talk” discussions throughout the remaining year, in the spirit of NASA’s commitment to enhance communication. While there are additional channels such as the Ombuds Program, the Equal Opportunity Program, Alternative Disputes Resolution (ADR) Program and others for raising individual/personal issues and concerns, the “Can We Talk” sessions are an opportunity for employees to share with the Center’s leadership regarding what’s on their minds regarding issues/concerns affecting the NASA/GSFC community, or questions on Center matters. The sessions are intended to provide constructive dialogue that will respond to existing anxieties and heightened concerns of employees and to achieve improved communications within NASA. These informal dialogues are held each month, and have no agenda or set topics. The “Can We Talk” sessions are open to all employees including contractors and civil servants.

Stay informed by visiting <http://internal.gsfc.nasa.gov/canwetalk.cfm> to attend and register for the next “Can We Talk.” ■

Astronomy Hits the Theater with Galactika

By Amy Pruett

Forget star-crossed lovers, the original play Galactika, opening June 10 at the Classika Theater in Shirlington, Va., features dancing celestial beings. The play, a product of a NASA educational outreach grant and co-written by Goddard astrophysicist Dr. Ilana Harrus, provides audiences with a perfect blend of entertainment and education. It uses aspects of the arts, such as the notion of motion, to convey astronomy concepts. During the month following June 10, Galactika will run for a month at the Classika and will also be performed in several Virginia middle schools.

Galactika is a play unlike any other. It tells the story of two galactic news anchors, Halley and Tempel-1, reporting the latest news from outer space. In their sincere yet occasionally bungled reporting, they introduce young theater audiences to astronomy notions like eclipses, solar flares, solar structure and the NASA probe, Deep Impact.

“The audience will have a great time,” says Nicholas Allen, the director and choreographer of the production.

“There is beautiful music, tons of dance, stunning costumes and, yes, even astronomy. This is a production for the whole family. Kids will love the sights and sounds, the chase scenes and people falling down. For the parents, there are some journalism jokes to keep them amused.”

Beginning June 19, Galactika will be performed in several Virginia middle schools. “Our extensive partnership with the Virginia school system allows us to reach kids that would not otherwise be exposed to the magic of the theater,” says Alyona Ushe, the managing director of the Classika-Synetic Theatre.

In addition, Dr. Harrus has written a companion guide for teachers to use after their students have seen Galactika. She presented the guide to enthusiastic teachers at a workshop in January and will distribute it when she tours the schools with the theater group.

Galactika was co-written by Dr. Ilana Harrus, an astrophysicist at NASA Goddard Space Flight Center, in collaboration with Catherine Gasta and Nicholas Allen from Classika-Synetic Theatre, with inputs and comments from Dr. Ravi Sankrit from Johns Hopkins University and Professor Lawrence Rudnick from University of Minnesota.

Support for Galactika was provided by a NASA OSS Hubble Space Telescope Cycle Education Public Outreach grant through the Space Telescope Science Institute awarded to Dr. Harrus. Dr. Sankrit is the Principal Investigator on the HST science grant.



Caption Above: A Poster Advertising Galactika

The production will be performed every Saturday and Sunday starting June 10 at 3 p.m. at the Classika Theater until July 16.”

For additional information and show times, visit: <http://www.classika.org/classika3.html> ■

In Memoriam: Yoram Kaufman

By David Herring



Courtesy of the Kaufman Family

Teams for the MISR and CERES instruments did not record data for a full minute on Sunday, June 4, as NASA's Terra and Aqua satellites flew over Goddard Space Flight Center in Greenbelt, Md. Likewise, the POL DER instrument aboard the European Space Agency's PARASOL satellite and a global network of upward-looking sensors (called sun photometers) within NASA's Aerosol Robotic Network (AERONET) remained inactive during that same span. Each of these instruments observed a moment of data "silence" in honor of Dr. Yoram J. Kaufman. A senior atmospheric scientist at Goddard Space Flight Center, Kaufman died on Wednesday, May 31, from injuries he received in a collision with a car while biking near the GSFC campus on May 26.

Kaufman was a highly regarded Senior Fellow in the Earth-Sun Exploration Division. Kaufman worked on a number of high-profile Earth Science missions developed by NASA or its international partners, especially CNES (French Space Agency) and ISA (Israel Space Agency).

"We lost Yoram Kaufman, a superstar," said Dr. Franco Einaudi, Director of the Earth-Sun Exploration Division at NASA's Goddard Space Flight Center, Greenbelt, Md. "His colleagues at NASA mourn the loss of an exceptional scientist, a compassionate man, a charismatic leader.

He received his B.S. and M.S. degrees in physics from the Technion - Israeli Institute of Technology and his Ph.D. from the Tel-Aviv University in Israel. He came to NASA Goddard Space Flight Center in 1979 on a National Research Council resident research fellowship.

Among his many accomplishments, he served as the Project Scientist for NASA's very successful Terra mission for four years, carrying this leadership role through its launch in December 1999 and into its first year of Earth observations. He developed methods for remote sensing of fires and aerosols and he conducted field research on how emissions from fires play a major role in Earth's climate system. Kaufman wrote or co-authored over 200 scientific papers published in refereed journals, including several papers in *Science*, *Nature* and the *Proceedings of the National Academy of Sciences*.

Kaufman served as program manager for NASA's Earth Observatory Website (earthobservatory.nasa.gov) from its original publication date of April 29, 1999, through January 2006. Today, the Earth Observatory's readership is almost 700,000 unique visitors per month with about 45,000 subscribers worldwide. It was his creative genius and leadership that led to the site's conception and establishment.

His recent research included theoretical and experimental research on atmospheric radiative transfer and remote sensing, including remote sensing of aerosol particles on a global scale, water vapor and their interaction with clouds, their impact on climate and their relationship to their sources, for example, fires due to biomass burning in the tropics. From 1993-1995 he conducted the Smoke/Sulfate, Clouds and Radiation (SCAR) field experiments in both Brazil and the U.S. to characterize smoke aerosol properties, their emissions from fires, and their effect on clouds and radiation.

In the days before his untimely death, Kaufman was not yet aware that he had been selected by the American Meteorological Society to receive its prestigious Verner E. Soumi Award, which is granted to one individual each year in recognition of highly significant technological achievement in the atmospheric (or related) sciences. He was also a recipient of the NASA/GSFC William Nordberg Award for Earth Science and has received the NASA Medal for Exceptional Scientific Achievement. In 2005, Kaufman was presented with the NASA/GSFC Special Act Award, and he was elected a Fellow of the American Meteorological Society bestowed on less than 0.5% of the 11,000 members of this society. Additionally, during his career at NASA, he received six meritorious awards, including the Peer Award, Exceptional Achievement, Exceptional Performance and Best Mentor Awards.

His colleagues at NASA and the worldwide Earth science community mourn the loss of an exceptional scientist, a compassionate man, a charismatic leader, and a true visionary with a passion for protecting our home planet.

Kaufman was born on June 1, 1948, in Wroclaw, Poland. He is survived by his wife Jean, his son Nadav, and his daughter Daphne. ■

Employee Spotlight:

Cindy Trapp

By Elaine Firestone



Photo credit: Chris Gunn

Many people in the Goddard community know this face and the person it belongs to—Cindy Trapp. Cindy is usually the first person you speak to or see at the Customer Service Desk in Building 28, Room W280, when you submit various types of jobs (printing, editing, graphics, photography, duplicating, etc.) for production or processing.

She is uniquely qualified for this position. Cindy has extensive experience working in graphics and photo labs. She started her career retouching senior portraits for high schools and colleges, and gradually transitioned to air brush restorations of old or damaged photographs—and at time when the art form was accomplished by hand! When digital technology surfaced, around 1993, the Photoshop software became the tool of choice. Cindy learned it and was so proficient in using it that she became the resident expert. She then later brought those competencies to Goddard.

Recently the Technical Information and Services Branch (TISB) merged with the Management Services Branch to form Code 271, the Technical Information and Management Services (TIMS) Branch. Now when you call the Customer Service Desk at (301) 286-3000 you'll hear: "TIMS Service Desk, Cindy speaking." ■

Caption: Above: Cindy Trapp

Cindy continues to provide an effective and refreshing level of customer service in these days of menu driven 'press button' connection systems. A contractor with Information Network, Inc. (INFONETIC), Cindy has been the "face of the Customer Service Desk" since May 2000 when she became a member of the Goddard family.

Photo of the Month



Photo credit: Pat Izzo

Caption: Above: Students look in awe upon the Science on a Sphere exhibit at the Visitors Center during Space Day 2006