NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
ASTROGRAM
Newsletter of NASA Ames Research Center, Moffett Field, California

October 2008

Scientists selected for new airborne eye on the universe

by Michael Mewhinney and Nicholas Veronico

On behalf of NASA, the Universities Space Research Association, Columbia, Md., has selected three astronomers to participate in the first scientific observations to be conducted by the Stratospheric Observatory For Infrared Astronomy (SOFIA), a highly modified Boeing 747SP aircraft that carries a 2.5-meter (98-inch) diameter airborne infrared telescope.

Naming researchers from the astronomy community is a milestone on SOFIA's journey to become the most versatile airborne telescope in the world. The flying observatory will begin its short science, or "first light" observations, in early summer 2009, and will continue its program of celestial observations for the next 20 years.

"We are extremely pleased at the level of enthusiasm and the number and scope of the applications we received for the SOFIA short science program," said Eric Becklin, SOFIA chief scientific advisor. "The proposals we received set a high standard for future observation projects onboard SOFIA."

David Neufeld of Johns Hopkins University, Baltimore, Md., was selected to study the chemistry of warm

continued on page 10

Lewis Braxton III named Ames' deputy center director

Ames' Lewis S. G. Braxton, III has been confirmed as Ames Deputy Center Director effective Oct. 12, 2008. Braxton has been acting in the position since the end of July.

Braxton holds a bachelor of science degree in accounting from California State University, Fresno, a degree in general management from the Harvard Graduate School of Business and has been recognized by NASA for his management and service excellence. He also received a Meritorious Presidential Rank Award (2007).

Braxton has served as NASA Ames' chief financial officer and the center's director for center operations. He also is qualified as a certified government financial manager (CGFM) through the Association of Government Accountants and maintains the certification.

Braxton received NASA's Exceptional Service Award in 1998 and a NASA Group Achievement Award for his involvement with the Dryden Separation Team in 1996.

In 1995, he received the NASA CFO Award for development and presentation of the agency's Financial Management Crosscutting Report. He also has been recognized in numerous group achievement awards and for his contributions to the Ames African-American Advisory Group.

NASA photo by Tom Trower

Lewis S. G. Braxton, III, recently confirmed as Ames' deputy center director.

Ames, NHU sign historic agreement

NASA photo by Eric James

NASA Ames and the National Hispanic University (NHU) have signed a Memorandum of Understanding (MOU) which identifies areas of mutual interest leading to unique educational and research collaborations between the two organizations. The official signing of the MOU by the President of NHU Dr. David López, right, and Paul Agnew, Ames' chief financial officer, left, served as a kick-off for the Sixth Annual Hispanic Heritage Golf Tournament at the Golf Club at Moffett on Sept. 26, 2008. Also present in the audience from NHU were the Provost, the Vice-Provost, the Chairman of the Math and Science Department and two students who participated in the Pre-Service Teachers Institute (PSTI) program held at Ames this summer. For full story, please see page 3.

On the Inside . . .

Ames 2008 Combined Federal Campaign launched

by Miriam Glazer

The Combined Federal Campaign (CFC) supports and promotes philanthropy through an employee-focused, cost-efficient and effective program by providing all federal employees an opportunity to improve the quality of life for all of those who are disadvantaged.

NASA photo by Dominic Hart

The NASA Ames 2008 Combined Federal Campaign Team, left to right, Don Durston, Jeff Cross, Paul Espinosa, Lupe Sanchez, Ames Center Director S. Pete Worden, Deputy CFC Chair Miriam Glazer, Deputy Center Director Lewis Braxton III, CFC Chair Paul Pinaula and Gerald DePerio. Not pictured: Diana Frontella and Tony Gross.

The campaign was established in 1961 by President John F. Kennedy to consolidate numerous charitable campaigns, allowing for a single annual campaign in all federal, postal and military agencies. Donations to the CFC support more than 4,000 local, national and international charities.

This year's campaign theme is "Be a Star in Someone's Life." An employee's donation, regardless of size, can make a difference. Employees can save lives, feed the hungry, fight diseases, comfort, heal, mentor, encourage, preserve, enlighten, enable and enrich the lives of people here at home and around the world by giving through payroll deduction or cash donation.

The 2007 CFC campaign at NASA Ames kicked off on Oct. 15 and will wrap up on Nov. 19. The kick-off event for the 2008 campaign was held Oct. 15 in the Main Auditorium at the center. During this time, a group of volunteers facilitated contributions through WebTADS or via cash donation.

All of the information about the CFC charities, as well as an employee's pay period contributions, is on the WebTADS site, making it extremely easy and convenient to click in an employee's contribution. The goals for the 2008 campaign are total contributions of $285,000 and 100 percent participation by the Ames civil service employees.

Last year, federal employees and retirees at Ames contributed more than $280,000 to CFC, exceeding the Ames campaign goal by more than $35,000. The center can do even better this year, particularly since even the smallest contributions can make a big difference to the receiving organizations. Ames Center Director S. Pete Worden and all organization directors at Ames enthusiastically support a successful 2008 Campaign.

The center has a terrific CFC team this year, including CFC Chair Paul Pinaula (Code J); Deputy CFC Chair Miriam Glazer (Code QH); CFC publicity Paul Espinosa (Code PX); CFC recorder Gerald DePerio (Code JS); CFC advisor Don Durston (Code AOX); CFC advisor Tony Gross (CodeT); CFC advisor Jeff Cross (Code VCE); CFC gift distribution Lupe Sanchez (Code SS); and CFC finances Diana Frontella (Code SS). Together the team will provide employees with all of the relevant information to facilitate their contributions, keep them informed as to how the center is doing toward meeting its goals and bring in representatives from some of the many CFC organizations to help employees see how effective CFC contributions really are. There will be special CFC events during the campaign period.

Note that the Combined Federal Campaign has been designed to allow employees to easily specify the agencies of their choice to donate to, or employees may wish to give to the CFC in general, which then distributes the money in proportion to the monies received by the charities designated by other donors. The CFC brochure lists hundreds of agencies to consider and can be viewed on the Inside Ames Web site.

NASA photo by Eric James

Ames employee Mary Williams and her Delta Society Pet Partner Vader (CFC ID 11650, Pet Partners) were guest presenters at the CFC keyworker training/kick-off that took place Oct. 15 at Ames. Other presenters were Jim Hill from Global Impact and Kim Reeves of the United Way, Santa Clara.

Here are just a few of the good reasons to give to the CFC:

Assist the military who are returning from Iraq and their families; assist the Gulf states hurricane and flood relief effort; help struggling families in our communities; and benefit from IRS deductions for your charity donation.

Finally, the center pays special tribute to Don Durston again this year for his incredibly long service to the CFC and to Ames. Since 1991, he has been the thread of continuity for a succession of chairpersons, developing detailed procedures and tracking tools, and most importantly, providing advice and council through the years. In addition, the center would like to acknowledge Diana Frontella for her 12 years of service to the CFC. Congratulations, to both Don and Diana for a job very well-done.

For further information, or the answers to any questions about the 2007 CFC, contact the campaign chair Paul Pinaula, at ext. 4-1122 or by e-mail at Paul.A.Pinaula@nasa.gov. Employees can also contact the deputy chair Miriam Glazer at ext. 4-5172 or by e-mail at Marjorie.M.Glazer@nasa.gov.

Ames successfully observes and documents spacecraft re-entry

BY RACHEL PRUCEY

What weighed 13 tons, took four minutes to re-enter Earth's atmosphere at more than 170 miles an hour and could be seen almost 250 miles away? Was it a bird? A plane? It was the European Space Agency (ESA)'s "Jules Verne" spacecraft.

During the week before "Jules Verne" was scheduled to re-enter Earth's atmosphere, NASA Ames' Peter Jenniskens, who also works for the SETI Institute in Mountain View, Calif., and a team of more than 30 international scientists from across NASA, ESA and astronomical institutes began to prepare for their mission: to capture four minutes of flame and fragmentation as "Jules Verne" descended over the South Pacific Ocean.

This was no small feat – pulling together a mission like this requires immense amounts of coordination. Ames' Dave Jordan, the observation campaign manager, along with NASA's Headquarters, Washington; Dryden Flight Research Center, Edwards, Calif.; and ESA's automated transfer vehicle (ATV) spacecraft control center in Toulouse, France; worked to ensure everything went smoothly and according to plan – from fueling the planes to feeding the crewmembers.

"The spectacular success of the mission validates the time we devoted to preparation," Jordan said.

NASA photo by Eric James

Chris Kitting of California State University, East Bay in Hayward, Calif., peers through his telescope-imaging camera during the recent transit flight from Dryden Aircraft Operations Facility in Palmdale, Calif., to Tahiti in French Polynesia. This camera was used to study the small trailing fragments during the later stages of fragmentation during the re-entry of the European Space Agency's "Jules Verne" spacecraft.

Preparation included hanging up black curtains to block out in-cabin lights inside NASA's Douglas DC-8 airborne laboratory and a Gulfstream V jet; checking camera stands; plugging in laptops and camera controllers; addressing the global positioning satellite and timing signals; testing communications with ESA's ATV control center and between the two observation airplanes. It also meant installing time inserters for the video cameras; using bright calibration lamps to measure the cameras' sensitivity and wavelength response; completing instrument check-outs; and adjusting the team members' biological clocks to a "graveyard shift" since "Jules Verne" was scheduled to make its grand entrance at 3 a.m. (6 a.m. PDT), and everyone needed to be alert.

On Tuesday, Sept. 23, 2008, with a little less than a week before re-entry, Jenniskens, the "Jules Verne" airborne campaign principal investigator and science team lead, and the team boarded the DC-8 for a two-hour evening test flight. The science team flew two hours to verify all the spectroscopes, high-frame-rate and infrared cameras were working properly onboard the aircraft, and to be sure the windows did not ice over when flying at high altitudes – a simple but serious show-stopper.

By Thursday, Sept. 25, 2008, both the DC-8 and Gulfstream V aircraft

continued on page 11

Motivating Hispanic youth is goal of NASA University agreement

BY RUTH DASSO MARLAIRE

Motivating Hispanic youth to pursue science and engineering careers is one of the main thrusts of a joint agreement signed Sept. 26 by NASA and the National Hispanic University (NHU), San Jose, Calif. The memorandum of understanding (MOU) identifies areas of mutual interest leading to unique educational and research collaborations between the two organizations.

"We are delighted to work with the National Hispanic University," said Ames Center Director S. Pete Worden. "We look forward to sharing elements of our world-class facilities, people and educational and technical resources with NHU. For NASA Ames, it is an important priority to ensure that we reach out to all of our citizens and inspire our youth to pursue careers in science, mathematics and technology."

NHU is a private, four-year university that was founded to meet the specific education needs of Hispanic-American students at both the college and college preparatory levels. The signing of this MOU expresses the intention of NHU and NASA Ames to work together in pursuing definitive agreements between NHU and Ames.

"We will perform joint research and educational outreach with the National Hispanic University to develop information technology in support of students of Hispanic background," said Adriana Cardenas, Ames' chief of the Equal Opportunity Programs Office, who is the NASA Ames main point of contact for the agreement.

According to the agreement, the parties recognize that their collaboration may lead to significant scholastic advancement for Hispanic students as well as technical, scientific and economic benefits.

"Pete's Hot Topics" useful venue for center updates

NASA photos by Eric James

Ames Center Director S. Pete Worden (right, at microphone) recently presented another "Pete's Hot Topics" as part of the series of informational update sessions for the center. Ames Deputy Center Director Lewis Braxton, III, sits to his left. Worden gave the status on NASA programs in a short overview and opened the floor up to questions from attendees during the informal event held at Mega Bites Cafeteria at the center. Snacks and beverages were provided.

NASA Ames Hall of Fame, 70th anniversary class members named

In honor of its 60th anniversary, Ames inducted 12 of its most distinguished colleagues, past and present, into the NASA Ames Research Center Hall of Fame.

In honor of the 70th, their ranks have been bolstered by the addition of nine new members "whose contributions have had the most sustained and far-reaching influence on the direction and mission of NASA Ames, and/or whose work at NASA Ames has generated fundamental advancements in either a scientific or engineering field."

Here are the 70th anniversary class members of the NASA Ames Hall of Fame:

John Billingham
John W. Boyd
Estelle P. Condon
Alfred J. Eggers
Heinz Erzberger
Henry McDonald
Emily Morey-Holton
Alvin Seiff
Paul F. Yaggy

They stand in excellent company. The 60th anniversary class of Hall of Fame inductees included Harvey Allen, Bill Ballhaus, Dean Chapman, George Cooper, Smith DeFrance, Charlie Hall, R.T. Jones, Chuck Klein, Harvard Lomax, Hans Mark, Jim Pollack and Sy Syvertson.

The Hall of Fame provides an informative and friendly venue where the entire Ames community can reflect upon the careers of outstanding leaders and difference-makers who have shaped our center and paved the way for our future – and perhaps inspire us to do the same.

More information about the newly-inducted members, as well as the current members, can be found at http://history.arc.nasa.gov.

An induction ceremony is being planned soon to kick off a year of special events leading up to Ames' 70th anniversary on Dec. 20, 2009.

British minister of science visits Ames

NASA photo by Jon-Pierre Wiens

British Minister of Science Lord Drayson viewed the Hover Test Vehicle with Ames Center Director S. Pete Worden, Programs and Projects Director Alan Weston and Small Spacecraft Division Chief Butler Hine in Building 45 on Oct. 16, 2008.

Drayson also toured NASA Research Park, watched an autonomous robotic demonstration at the Marscape and visited hyperwall-2 at the NASA Advanced Supercomputing facility.

NASA reinstalls main mirror in SOFIA Airborne Observatory

by Michael Mewhinney

Engineers and technicians from NASA, the German Space Agency and the Deutsches SOFIA Institut recently reinstalled the German-built primary mirror assembly into NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA).

Technicians removed the glass mirror from the modified Boeing 747SP airborne observatory in April 2008 and transported to NASA's Ames where it received its reflective aluminum coating in a vacuum chamber in June 2008. The coating, five one-millionths of an inch thick, will be reapplied as necessary during the 20-year life of the program.

"We had completed system tests of our mirror coater but this is the first time we've actually coated SOFIA's mirror. The team and equipment performed flawlessly and the results are magnificent," said Ed Austin, SOFIA science project manager at NASA Ames.

The mirror assembly was transported back to NASA's Dryden Aircraft Operations Facility in Palmdale, Calif., in mid-September and reinstalled Oct. 8, 2008.

"The reinstallation of the mirror is a significant program milestone on the path to science observations with the SOFIA observatory in the summer of 2009," said Bob Meyer, SOFIA program manager at NASA's Dryden Flight Research Center, Edwards, Calif.

In coming months, both the telescope and the aircraft's telescope cavity door system will be adjusted, leading to open-door ground operational testing. These activities will be followed by six to eight open-door flight tests next spring to study the

continued on page 14

NASA photo by Carla Thomas

Engineers and technicians from NASA, the German Space Agency and the Deutsches SOFIA Institut reinstalled the German-built primary mirror assembly into NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA).

NASA and SOFIA featured at "Salute to Youth" Career Day

by Nicholas Veronico

Photo by Nicholas Veronico

Darlene Mendoza, right, assistant to the the Stratospheric Observatory for Infrared Astronomy (SOFIA) education and public outreach office director, discussed the capabilities of SOFIA's infrared telescope with two students from the local area during the recent 19th annual "Salute to Youth" career day held at Los Angeles Palmdale Regional Airport.

NASA Ames staff from the Stratospheric Observatory for Infrared Astronomy (SOFIA) education and public outreach (E&PO) office supported the Dryden Public Affairs Office's participation at the 19th annual "Salute to Youth" career day held Sept. 26 at the Los Angeles Palmdale Regional Airport in Palmdale, Calif.

During the event, students were able to see the SOFIA 747 aircraft inside its hangar at the Dryden Aircraft Operations Facility at U.S. Air Force Plant 42. A Dryden-based NASA F/A-18 Hornet was also on display outside the hangar.

More than 2,500 Antelope Valley high school 11th and 12th grade students attended the event and met with a variety of employers, ranging from public service agencies, information technology companies, aerospace and agriculture business to discuss potential education and career paths.

Sally Ride Festival brings science, fun to Ames

by Rachel Prucey

Brightly colored balloons tussled in the warm, gentle breeze to form a playful fence around the Sally Ride Science Festival held on the green grass of Shenandoah Plaza at NASA's Ames Research Park on a sunny Saturday afternoon.

On Sept. 27, 2008, more than 500 San Francisco Bay Area middle school girls, their parents and teachers, attended the fourth-annual interactive exploration of science, technology, engineering and mathematics. As part of the festival, they heard from former NASA astronaut, Wendy Lawrence, a veteran of four space flights, including the STS-114 Shuttle Discovery Return to Flight mission in 2005 and who has logged more than 1,225 hours in space.

During the festival's street fair, girls built toothpick and sugar-coated gum drop structures that sparkled and glowed in the sunshine, constructed spaghetti noodle and marshmallow bridges, tried on a space helmet and gloves, experimented with dry ice and launched brightly colored paper rockets they constructed into clear, blue skies by jumping onto bright pink and blue air bags.

Girls then spent two hours in Discovery Workshops, with enticing topics that ranged from astrobiology to veterinary medicine, such as 'Rocks, Mud and Bones: Reading the Diary of Earth's Past;' 'Explosive Volcanic Eruptions: Rockets Made of Rocks?;' 'Meteorites: Rocks from Outer Space!!!;' 'Solar Technology and How Big is BIG?'

Workshops and exhibits were led by professionals at the Federal Aviation Administration, GaryAir, Moffett Field; Google Inc., Mountain View; Marine Science Institute, Redwood City; Planners Collaborative Inc., Boston, Mass.; Roche Palo Alto LLC, Palo Alto; San Jose State University (SJSU), San Jose; Santa Clara University, Santa Clara; Stanford University, Stanford; the Universities of California, Santa Cruz and Berkeley; Temecula Rocket Group, Temecula, Calif.; and the Women in Science and Engineering at San Jose State University.

More than 500 girls attended the recent Sally Ride Festival recently held at Ames. Attendees participated in many educational and fun scientific activities and met former Astronaut Wendy Lawrence.

NASA photos by Dominic Hart

Popular Ames Chili Cook-Off turns up the heat

The Exchange offers hearty congratulations to the trophy winners and sincere thanks to all of the teams and tasters who participated in the 12th annual Exchange-sponsored Ames Chili Cook-Off in October. Hard work, creativity and enthusiasm made this year's 50's-themed event one of the best the center has ever held.

First place in the prized People's Choice category went to the 'Wild Ones' led by John Torres of Code RMX. The Wild Ones were double winners, also taking the award in the Five Alarm category. The second place People's Choice winners were the 'Go Green' team from the Center for Engineering Innovation led by Michael Hines. Go Green also impressed the panel of judges, landing first place in that category. Finally, third place in

continued on page 8

NASA photo by Eric James

The "Hawaii 5-0" team earned the trophy for best presentation/theme at the recent chili cook-off held at the center.

NASA photo by Eric James

Attendees at the recent chili cook-off tasted the variety of chili samples to help decide which team's chili they prefered the most.

NASA photo by John Schultz

Samples of chili were passed out by the various teams at the chili cook-off to help attendees pick their favorite.

NASA photo by Eric James

First place in the prized People's Choice category went to the 'Wild Ones' led by John Torres of Code RMX. The Wild Ones were double winners, also caring the award in the Five Alarm category.

NASA photo by Eric James

The People's Choice award went to the creative 'Adventures in Wonderland' team and their amazing Alice (Terry Brugger, third from left) representing OpenAmes and captained by Bert Beattie.

NASA photo by Jon-Pierre Wiens

Overhead view of the recent chili cook-off.

A day on the Bay and the sounds of freedom

BY SHIRLEY BUREK

photo by Melinda Burnside

Above photo: Anchored near Alcatraz Island on a recent trip to San Francisco Bay during Fleet Week, the crew aboard Jeff Smith's boat, Iansa, left to right, Shirley Burek, Anna Bui, Jeff Smith,(Skipper) Ames Center Director S. Pete Worden (at the helm), Dave Hoffman and Nate Burnside.

Ames Sailing Club members were joined by Ames Center Director S. Pete Worden during the 100th anniversary of San Francisco's Fleet Week celebration Sunday, Oct. 12.

One hundred years ago, in May 1908, 16 U.S. Navy battleships and 14,000 sailors entered San Francisco Bay for two months. Called the "Great White Fleet" because the ships were painted white, this was considered the first San Francisco Fleet Week.

The objective then was to ensure Americans were aware of the reasons for having a strong and capable Navy and to let them see those capabilities first-hand. This same objective remains 100 years later: to provide a spectacular air show featuring the U.S. Naval Flight Demonstration Squadron, the Blue Angels F/A-18 U.S. and many opportunities to celebrate San Francisco's rich naval history.

A View of San Francisco Bay from Jeff Smith's boat, Iansa, with the Navy's Blue Angels seen in the upper right hand corner of the sky during Fleet Week held in October.

photo by Shirley Burek

Extra-solar planets discussed at recent colloquium

Recently, the Ames Center for Exoplanet Studies (ACES) hosted a colloquium by Dr. David Latham of the Harvard-Smithsonian Center for Astrophysics entitled "Super Earths and Life." Latham spoke about observations of extra-solar planets that pass in front of their host stars. This unique geometry has allowed us to learn much about the atmospheres of the giant planets of other stars and is expected to soon reveal whether small Earth-sized planets are common or not. The Ames-led Kepler mission, of which Latham is a co-investigator, will be the first observatory capable of making this determination.

NASA photo by Dominic Hart

Popular Ames Chili Cook-Off turns up the heat

continued from page 7

People's Choice went to the creative 'Adventures in Wonderland' team and their amazing Alice (Terry Brugger) representing OpenAmes and captained by Bert Beattie. Perennial favorites the Moffett Field/NASA Ames Fire Department was the second place winner in the Judge's category, while the fashion-conscious team from 'Hawaii 5-0' took home the trophy for best presentation/theme.

Sincere thanks to all of the entrants from the Native American Advisory Group, the NASA Lunar Science Institute, the UARC, NFAC, Procurement, Logistics, Hazmat

Congratulations to James Brown and his winning 1970 SS Chevelle in the 'car show' that featured 32 spectacular vehicles, both cars and motorcycles. The response was terrific and the center looks forward to sponsoring future such events.

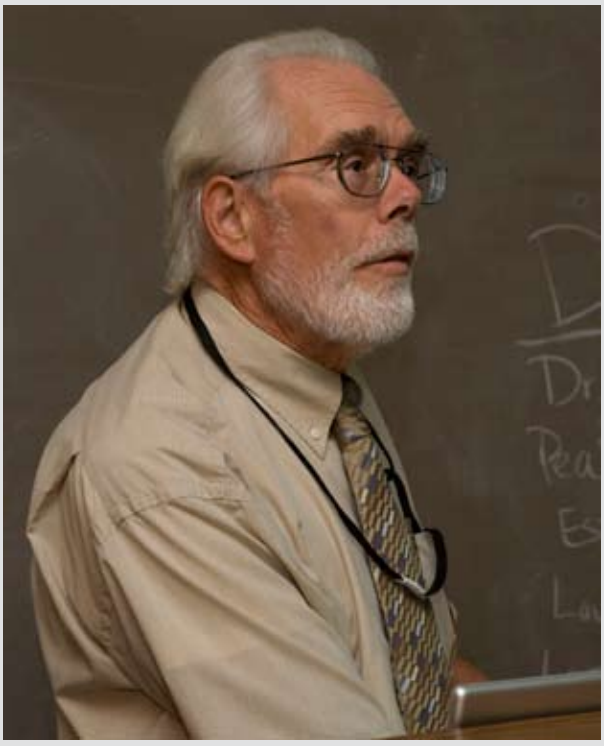
British chief science advisor tours Ames

On Sept. 26, 2008, the United Kingdom's Government Chief Scientific Adviser, John Beddington, visited NASA Ames. He met with Ames Center Director S. Pete Worden and toured the NASA Research Park, Building 45 (aka "Area 51"), and the hyperwall-2 at the NASA Advanced Supercomputing facility. At Building 45, Ames' Small Spacecraft Division's Chief Technologist John Hines shows Professor Beddington an example of the small payload satellite projects Ames is pioneering.

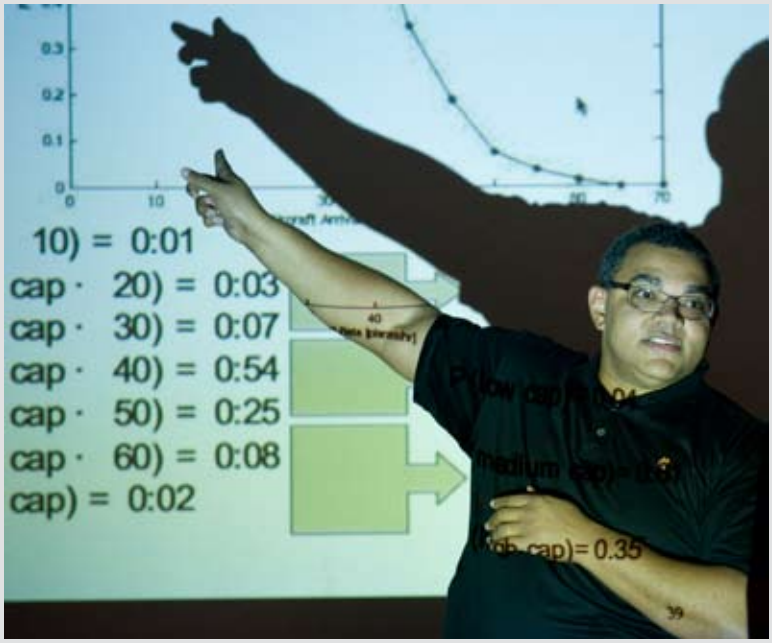
NASA photos by Dominic Hart

Thought-provoking aeronautics technical seminars held

An Aeronautics Technical Seminar presentation recently was held at the center with Rodger Mueller, pictured below, entitled,"Pilot Force Measurement with Inertia and Gravity Compensation." The NASA Ames Vertical Motion Simulator is world renowned for flight control research. In this seminar, he offered an interesting behind-the-scenes look at some of the research that goes into creating high-fidelity, pilot-control loader simulation experiences for pilots and astronauts.



NASA photo by Eric James



NASA photo by Dominic Hart

Ames employees were invited to another Aeronautics Technical Seminar presentation in mid October to listen to Dr. John-Paul Clarke, pictured above, an associate professor in the School of Aerospace Engineering and the Director of the Air Transportation Laboratory at the Georgia Institute of Technology (Georgia Tech). Clarke is well known for his work in optimization and robustness in aircraft and airline operations and air traffic management, as well as his research on the environmental impact of aviation.

Discussion held about rover exploration of Earth, Moon and Mars

NASA photo by Eric James

Chris McKay of Ames, standing left, recently hosted a discussion in the Exploration Center at Ames about the use of rovers in the exploration of Earth, the moon and Mars. This was a unique opportunity to discuss the latest findings on Mars and plans for the moon for those who attended the event. In addition, attendees had the opportunity to visit the latest exhibits on display throughout the Exploration Center before and after the event.

Scientists selected for new airborne eye on the universe

continued from front page

interstellar gas using data obtained by the German Receiver for Astronomy at Terahertz Frequencies (GREAT). The instrument is a spectrometer developed specifically for the SOFIA program by a consortium of German research institutes, led by Rolf Güsten at the Max Planck Institute for Radioastronomy in Bonn, Germany. Neufeld will use data from GREAT to probe the chemistry of the warm gas by observing emissions from molecules, such as carbon monoxide (CO). The study will help researchers understand the nature of chemical reactions taking place in the warm gas, which is found around forming stars as well as other regions in the interstellar medium.

The other two researchers selected to participate in the "first light" flights, Mark Morris of the University of California at Los Angeles, and Paul Harvey of the University of Colorado, Boulder, will join the team using the Faint Object InfraRed Camera for the SOFIA Telescope (FORCAST), a mid-spectrum infrared camera developed by Terry Herter of Cornell University, Ithaca, N.Y.

Morris will collaborate with the FORCAST team to study the center of the Milky Way Galaxy, a dynamic region of extreme gas densities and high-energy content. In the central region which spans a distance of 1,000 light years, the high concentration of molecular gas results in a high rate of massive star formation.The FORCAST instrument will be used to develop the clearest view of the hot dust in the region. Harvey will work with the FORCAST team to interpret observations of bright star-forming regions to determine the current and future imaging capabilities of the SOFIA telescope.

SOFIA observes radiation generated by cosmic objects across the widest wavelength range of any observatory, from 0.3 microns to 1.0 millimeters, spanning the visible, infrared, and sub-millimeter portions of the electromagnetic spectrum. Missions typically will last between 10 and 12 hours, and the aircraft flies from 40,000 to 45,000 feet (12 to 14 km). Flying at these altitudes puts SOFIA's infrared telescope above 99.8 percent of the water vapor in Earth's atmosphere. This enables a greater range of observations in the infrared spectrum.

Following the first light observations, SOFIA will begin its "basic science" program in late 2009 with approximately 15 flights. Proposals for the basic science flights will be solicited in December 2008.

SOFIA is a joint program between NASA and the German Space Agency, Deutsches Zentrum fur Luft- und Raumfahrt (DLR). Bonn, Germany. The SOFIA program is currently managed at NASA's Dryden Flight Research Center, Edwards, Calif., and the aircraft is based at the Dryden Aircraft Operations Facility, Palmdale, Calif. NASA's Ames Research Center, Moffett Field, Calif., manages the SOFIA science and mission operations in cooperation with the Universities Space Research Association (USRA), Columbia, Md., and the Deutsches SOFIA Institut (DSI) Stuttgart, Germany.

NASA photo by Tony Landis

NASA's Stratospheric Observatory for Infrared Astronomy, SOFIA, lifted off from Edwards Air Force Base at mid-day Oct. 11, 2008, on the first in a series of flight tests intended to verify the flight performance of the highly modified Boeing 747SP to its design capability.

Prognostics Industry Day scheduled at Ames Nov. 19

Prognostics Industry Day will be held Nov. 19, 2008 from 8:30 a.m. - 3:30 p.m., in Building 943. The Prognostics Center of Excellence at NASA Ames develops cutting-edge approaches to damage-propagation mechanisms in safety-critical electrical, electronic and mechanical systems for aeronautics, as well as space exploration. It is also in the process of extending a test bed that will allow the comparative analysis of different prognostic algorithms.

Prognostics enables a better understanding of component and systems health issues and provides the ability to estimate the remaining life of a particular component or system enabling intelligent decision-making for life- and mission-critical applications. Prognostics offers significant benefits for NASA mission applications, as well as for industry and other government agencies.

Kai Goebel, a senior scientist and lead at NASA Ames for the Prognostics Center of Excellence, and Serdar Uckun, manager of the Embedded Reasoning Area at Palo Alto Research Center, are the keynote speakers.

Attendees will learn the importance and scope of prognostics in the engineered systems of today and the future. The industry day will also feature demonstrations of various experiments where the latest diagnostic and prognostic technology is at work.

Attendees will also learn how to leverage NASA's resources to develop system health management programs relevant to their own domains and to NASA's broad research and development directives. For more information, contact Shirley Fauth, mailto: Shirley.A.Fauth@nasa.gov

Ames successfully observes and documents spacecraft re-entry

continued from page 3

were fully outfitted and on Friday, Sept. 26, 2008, instruments, researchers and scientists were ready to begin the mission. Later that evening, a crew of photographers from NASA's Ames Research Center arrived at NASA's Dryden Aircraft Operations Facility at Palmdale, Calif., and loaded their HD video, still cameras and gear onto the two airplanes for their "red-eye" flight to Papeete, Tahiti in French Polynesia.

"We loaded up, strapped in and went," said Jesse Carpenter, a videographer at NASA Ames who helped document the re-entry. "The attitude was like, OK let's do it!"

In his mission blog, Jenniskens said, "A sense of anticipation is rising…We all very much want to make this mission a success. This morning's moon was just a sliver, reminding us that the entry is just days away." The re-entry was scheduled to happen at 3:34 a.m. (6:34 a.m. PDT) over a new moon night sky, free of anything but starlight. The observers would be free to witness the spectacle in ideal and virtually unchanging conditions far above the clouds.

On the way to Papeete, the scientists took spectra of stars through the planes' windows and practiced aircraft positioning maneuvers before landing in Tahiti the following morning. To adjust their internal clocks, team members slept during the day and started their final preparations by holding crew briefings for that night's flight at 5 p.m. (8 p.m. PDT). At 11 p.m. (2 a.m. PDT) on Sunday, Sept. 28, 2008, the two aircraft took off and headed southwest to rendezvous with the "Jules Verne" spacecraft during its fiery descent.

"Since it was so humid and hot on the ground, we super-refrigerated the cabin after buttoning up the plane to try to prevent the windows from fogging up with ice," said Carpenter. "It was a bizarre temperature shift."

"Even though it was cold in the airplane, that didn't stop the sweat from flowing," said Bill Moede, an Ames videographer on the documentation team. During the four-hour flight to the target safe zone, the NASA Ames video team set-up a custom-designed camera rig on an off-set plate, similar to the rig they used during the Stardust observation campaign, featuring a pivot point near the front of the camera's long zoom, image-stabilized lens.

"Operating the camera was like holding a wheel barrel with all the weight in the back," Carpenter explained. "Or maybe more like painting fine brush stokes with a 50-pound paintbrush," he joked.

Even though both aircraft were positioned to give everyone onboard a prime view of the event, many researchers and scientists weren't able to see the 3:34 a.m. to 3:38 a.m. (6:34 a.m. to 6:38 a.m. PDT) re-entry with their naked eyes, because they were too busy capturing it with their cameras and equipment.

"I just can't get my head around what we saw right in front of us," said Ed Schilling, lead videographer for the mission. "A tiny glittering red star grew into this huge Roman candle, like at a fourth of July fireworks show – then vanished into the night."

"The final minutes of ATV were more glorious than we had expected," wrote Jenniskens in his mission blog. "It was just beautiful; very majestic. It looked like a bright green fireball with a veil of hundreds of vivid orange fragments."

With the observation complete, the crew headed back to Dryden and Ames Research centers with a wealth of new spectrographic and re-entry data. During the flight, the video team played back their re-entry tape multiple times for entranced mission members.

"We had the pilots, the mission managers and almost every researcher on board watching our little monitor as we played back the re-entry," said Moede. "'Oohs' and 'Aahs' were very common during the playback!"

"Documenting in so much detail how ATV broke upon entry in such an exciting international mission was a fitting contribution to NASA's 50th anniversary today," Jenniskens reflected on his Oct. 1, 2008 return.

Ames Ongoing Monthly Events Calendar

Ames Amateur Radio Club, third Thurs., of ea. month, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BFK, at ext. 4-6262.

Ames Ballroom Dance Club, Classes on Tuesdays. Beginning classes meet at 5:15 p.m. Higher-level class meets at 5:50 p.m. Held in Bldg. 944, the Rec. Center. POC: Helen Hwang at helen.hwang@nasa.gov, ext. 4-1368.

Ames Bicycling Club, every third Wednesday of each month, 12 noon - 1 p.m., Bldg. N-245 Auditorium. POC: Julie Nottage at jnottage@mail.arc.nasa.gov, ext. 4-3711.

Ames Bowling League, Homestead Lanes on Thursday nights at 6:20 p.m. Seeking substitute bowlers. Questions to sign up: Mike Liu at ext. 4-1132.

Ames Child Care Center Board of Directors Mtg., every other Monday, 1 - 2:30 p.m., Bldg. N-262/Rm 180. POC: Sally Miller, ext. 4-5411.

Ames Contractor Council Mtg., first Wednesday of ea. month, 11 a.m., Bldg. N-200, Committee Room. POC: Kathleen Starmer, ext. 4-6959

Environmental Forum, first Thursday every other month, 9 a.m. - 10 a.m., T20-G conference Rm. 129. URL: http://q/qe/events/EHS-series/ POC: Stacy St. Louis, ext. 4-6810.

Ames Federal Employees Union (AFEU) Mtg, third Wednesday ea. month, noon. Bldg. N-247, Rm. 109.. Guests welcome. Info at: http://www.afeu.org. POC: Paul K. Davis, ext. 4-5916.

The Hispanic Advisory Committee for Excellence (HACE) Mtg., first Thursday of each month, 11:45 a.m. - 12:45 p.m., Bldg. N-255, Rm. 101C. POC: Eric Kristich, ext. 4-5137 and Mark Leon, ext. 4-6498.

Jetstream Toastmasters, Mondays, 12 p.m. - 1 p.m., Bldg. N-269/Rm.179. POC: Miwa Hayashi, ext. 4-1397, mhayashi@mail.arc.nasa.gov. Web: http://jetstream.freetoasthost.com

Ames Mac Support Group Mtg., third Tuesday of each month, 11:30 a.m.to 1 p.m., Bldg. N-262, Rm 180. POC: Tony ext. 4-0340.

Ames Model Aircraft Club, flying radio-controlled aircraft at the north end of Parsons Ave. on weekend mornings. POC: Mark Sumich, ext. 4-6193.

Moffett Aikido Club, Monday and Wednesday evenings, 6:30 p.m., Bldg. 944, across from former McDonalds. Aikido is a non-competitive, defensive martial art known as the "Way of Harmony." POC: Diane Pereda (650) 575-9070 or Robert Dean (650) 787-1007, email: mfaikido@aol.com

Native American Advisory Committee Mtg., fourth Tuesday each month, 12 noon - 1 p.m., Bldg. 19, Rm 1096. POC: Mike Liu, ext. 4-1132.

Ames Nimble Knitters Club, every Tuesday at 11:30 a.m., Bldg. N-241/Rm 237. POC: Rosalyn Jung, knitfan2@yahoo.com or Diane Alexander at ext. 4-3140. URL: http://knit.arc.nasa.gov

Ames Safety Committee, third Thursday of each month, 10 a.m. - 11 a.m., Bldg. N-237, Rm. 201. POC: John Livacich, jlivacich@mail.arc.nasa.gov, ext. 4-3243 or Terry Reichert, treichert@mail.arc.nasa.gov, ext.-4-0375.

Ames Sailing Club Mtg., second Thursday of each month (March through November), from 12 p.m. - 1 p.m., Bldg. N-260, Rm. 113. URL: http://sail.arc.nasa.gov/. POC: Clif Horne, ext. 4-4571.

Ames emergency announcements

To hear the centerwide status recording, call (650) 604-9999 for information announcements and emergency instructions for Ames employees. You can also listen to 1700 KHz AM radio for the same information.

Safety Data

NASA-Ames Occupational Illness-Injury Data for Calendar Year-to-Date 2008 Jan. 1, 2008 - Sept. 30, 2008

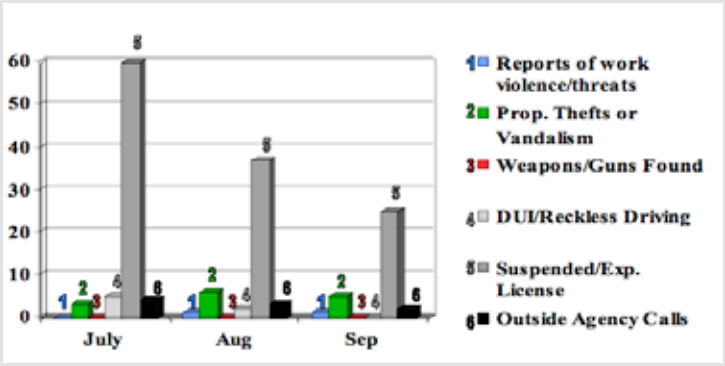
	Civil Servants	Contractors
First aid cases	18	15
Lost Workday cases	1	2
Recordable cases	2	5
Restricted duty days	0	3

Above data are as of Sept. 30, 2008. May be subject to slight adjustment in the event of a new case or new information regarding an existing case.

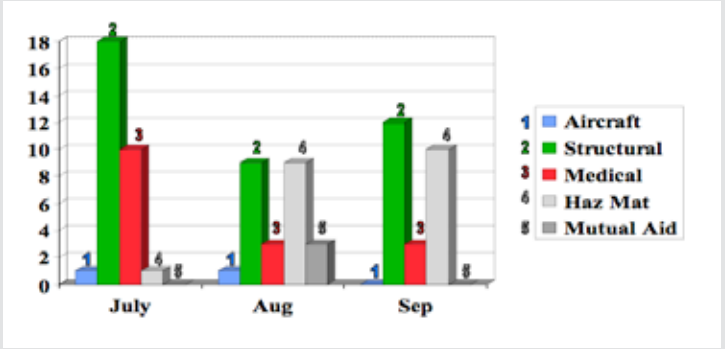
Protective Services monthly activity

A statistical summary of activities of the Protective Services Division's Security/Law Enforcement and Fire Protection Services units for the month of September 2008 is shown below.

Security/Law Enforcement Activity



Fire Protection Activity



Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on a space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost and found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads. Caveat emptor!

None for this issue.

Make a Wish Golf Tournament Set

Golf Tournament At Ruby Hill Golf Course on Nov. 3, 2008 which also benefits Make a Wish foundation. With $1,000,000 Shootout and $50,000 Hole in one. Fees $250 which includes green and cart fees, breakfast, lunch and dinner with music and dance. Monty (408) 930-9180, or email gswaiss@yahoo.com for a PDF file .

Project Management Challenge 2009

Sixth Annual NASA Project Management Challenge

by Mike Ryschkewitsch, NASA Chief Engineer

Many questions regarding the impact on the PM Challenge of the recent direction regarding conferences in the NASA Authorization Bill have been asked. Since PM Challenge is clearly a training event, we are cautiously optimistic that the event will be held at the time and place scheduled with only minor modifications.

NASA Management is currently developing instructions to implement the bill direction. Final instructions should be in place soon. In the meantime, please save the date, Feb. 24-25, 2009 and check back for updates on the status at http://pmchallenge.gsfc.nasa.gov/index.htm

Astrogram deadlines

Please submit articles, calendar and classified advertisements to astrogram@mail.arc.nasa.gov no later than the 10th of each month. If this falls on a weekend or holiday, then the following business day becomes the deadline. For Astrogram questions, contact Astrid Olson at the aforementioned e-mail address or ext. 4-3347.

Exchange Information

Information about products, services and opportunities provided to the employee and contractor community by the Ames Exchange Council. Visit the web site at: http://exchange.arc.nasa.gov

Beyond Galileo Gift Shop N-235 in the cafeteria , 8 a.m. to 2 p.m., ext. 4-6873

Don't forget to purchase your baby shower, birthday, holiday gifts at Ames' two gift shops!

Visitor Center Gift Shop N-943 M-F, 10 a.m. to 4 p.m., ext. 4-5412

NASA logo merchandise, souvenirs, toys, gifts and educational items.

Tickets, etc... N-943 outside the main gate, 10 a.m. to 3:30 p.m., ext. 4-5412 and Beyond Galileo, 8 a.m. to 1:30 p.m. ext. 4-6873

Mega Bites Cafeteria N-235, 6 a.m. to 2 p.m., ext. 4-5969/Catering ext. 4-2161

See daily menu at: http://exchange.arc.nasa.gov

Moffett Field Golf Club with 'Tee minus 1' Grill and Sports Bar. Call (650) 603-8026.

RV Lots Available Call to reserve a space at (650) 603-7100/01.

Civilian/Contractors, $50/mo; military $25/mo

NASA Lodge (N-19) 603-7100

Where to stay when you're too tired to drive home? What about the lodge?! Two types of rooms: Bldg. 19 (43 rooms), rate: $55/night ($5 ea add'l adult); Bldg. 583 (150 rooms), rate: $45/night ($5 ea. add'l adult)

Ames Swim Center (N-109) 603-8025

The pool is heated year round! The pool is currently available for lap swim, pool parties and special events. POC -Chana Langley, Pool Manager (650) 603-8025. Memberships: single memberships: $40/yr. Family memberships: $60/yr. After purchasing a membership, there is an entrance fee: daily entrance fee - $3/day or lap pass fee - $40 for 20 uses. Platinum membership - $360/yr. (no daily fee). Special events: include military training, swim team events, kayak role practice, etc. The cost for special events is $50/hr.

Ongoing Vacation Opportunities

Lake Tahoe-Squaw Valley Townhse, 3bd/2ba, View of slopes, close to lifts. Per night: $250, plus $145 cleaning fee. Two night minimum. Includes linens, propane fireplace, fully equipped. Call (650) 968-4155, DBMcKellar@aol.com.

Bass Lake vacation rental, 4 mls south of Yosemite. 3bd/1.5 ba, TV, VCR, MW, frplc, BBQ, priv. boat dock. Sleeps 8. $1,050/wk. Call (559) 642-3600 or (650) 390-9668.

Big Sur vacation rental, secluded 4bd/2ba house in canyon setting. Fully eqpd kitchen. Access to priv. beach. Tub in patio gdn. Halfway between Carmel and Big Sur. $175/night for 2; $225 for 4 and $250 for more, plus $150 cleaning dep. Call (650) 328-4427.

Pine Mountain Lake vacation home. Access to golf, tennis, lake, swimming, horseback riding, walk to beach. Three bedrooms/sleeps 10. $100/night. Call (408) 799-4052 or (831) 623-4054.

Incline Village, Forest Pines, Lake Tahoe condo, 3 bdrms/2 ba, sleeps 8, fireplace, TVs/VCR/DVD, stereo w/CD player, microwv, W/D, jacuzzi, sauna, outdoor pool. Walk to lake. Close to ski areas. Visit web site for pictures: http://www.ACruiseStore.com $135/night spring and fall, $173/night summer and winter (holidays higher) plus $125 cleaning fee and 12 percent Nevada room tax. Charlie (650) 743-8990.

New York, 5th Ave., one fully furnished bedroom apt. in 24 hour security fbldg. overlooking Washington Square Park, $1,000/week or 3,000/month, negotiable. Call (650) 430-6977.

Paris/France: Fully furnished studio. 5th arr, Latin Quarter, Notre Dame and Lie-St. Louis, $1,400/week, negotiable. Call (650) 430-6977.

Santa Cruz townhouse, 2 bedrooms plus study, 2 baths, decks, totally furnished, 3 blocks from beach, available July, August, September; $1,600 per month. Call (831) 423-5777 (H) or (831) 277-8476 (C).

Lake Tahoe cabin rental in Agate Bay, North Shore. 4bd/3ba tri-level, AEK, cable TVs, fireplace, BBQ, deck, sleeps 10. Closest skiing is Northstar, Alpine and Squaw. Rates are $375 a weekend, $1,000 a week. Call (408) 867-4656.

Florida west coast vacation in St. Petersburg, beautiful 2bd/2ba condo, fully equipped kitchen and furnished, sunset views, 1/4 mile from St. Pete Beach, monthly or 2 week minimum rentals only. Call (703) 299-8889 or e-mail: jdgoehler@aol.com

Monterey Bay vacation rental at Pajaro Dunes, 20 miles south of Santa Cruz, 3bd/2ba beach house with distinctive architecture. Beautiful ocean and valley views, only 150 ft from the beach, first-class tennis courts. $700/wkend, $2,100/wk including cleaning by the maid service when you depart. Call (408) 252-7260.

South Lake Tahoe large cabin surrounded by protected forest, 8 miles from Stateline Sleeps 12 comfortably, 4 bd/3ba. Hot tub/pool table/65" TV Matt (408) 482-5286

South Lake Tahoe cozy home backs up to large open meadow, 1 mile from Heavenly Valley. Sleeps 11, 3 bd/2.5 ba. Large deck with hot tub. Matt (408) 482-5286.

Ames Cat Network

The Ames Cat Network needs help finding homes for cats trapped at Moffett. They range from feral to abandoned/lost pets. Tested, altered and inoculated. Call Iris at ext. 4-5824 if you or someone you know are interested in fostering or adopting a cat.

NASA reinstalls main mirror in SOFIA airborne observatory

continued from page 5

handling qualities of the aircraft as air flows over and into the telescope cavity.

The upper rigid cavity door will be opened incrementally at various altitudes to determine the aero-acoustic effects, or buffeting, on the aircraft and telescope systems. NASA and Deutsches SOFIA Institut (DSI) engineers considered the challenges of aero-acoustic effects on the telescope when designing the cavity system, completing wind tunnel tests and computational fluid dynamics analyses to minimize these effects.

SOFIA's state-of-the-art infrared telescope and some of the observatory's scientific instruments will be tested on the ground in the next few months in preparation for the first open-door test flights.

The optical performance of the telescope system will be checked using the High-speed Photometer for Occultations, or HIPO, science instrument built for SOFIA at the Lowell Observatory in Flagstaff, Ariz. HIPO takes images of the sky rapidly at wavelengths the human eye can see. Once HIPO has been used to check the basic characteristics of the SOFIA observatory, the two infrared instruments intended for the first scientific flights will be mounted for more ground observation tests.

After these ground tests are complete, a short series of initial astronomical science flights are planned. During the six scheduled flights, the Faint Object Infrared Camera, (FORCAST), from Cornell University, Ithaca, N.Y., and the German Receiver for Astronomy at THz Frequencies (GREAT) from the Max Planck Institute for Radioastronomy in Bonn, Germany, will conduct SOFIA's first science observations.

SOFIA incorporates a 2.5-meter diameter infrared telescope in a 747SP aircraft that will carry the telescope into the stratosphere to conduct astronomical research. The observatory also includes a ground-based science center.

SOFIA is a joint program between NASA and the German Space Agency, Deutsches Zentrum fur Luft- und Raumfahrt (DLR). The SOFIA program is currently managed at NASA Dryden and the aircraft is based at the Dryden Aircraft Operations Facility, Palmdale, Calif. NASA Ames manages the SOFIA science and mission operations in cooperation with the University Space Research Association (USRA) and the DSI.

For more information about SOFIA, visit: http://www.nasa.gov/sofia For information about SOFIA's astronomical science mission, visit: http://www.sofia.usra.edu

ASTROGRAM

The Ames Astrogram is an official publication of Ames Research Center, National Aeronautics and Space Administration.

Managing Editor.....Michael Mewhinney
Editor, Layout and Design.....Astrid Olson

You can reach the Astrogram Office at: astrogram@mail.arc.nasa.gov or by phone at (650) 604-3347. Astrogram Web site: http://www.nasa.gov/ames/astrogram.

NASA Account Management System (NAMS) replaces ARC Form 772

The NASA Account Management System (NAMS) is a new Web-based application that provides account management for NASA. It is a replacement of ARC Form 772.

NAMS allows NASA employees, contractors and remote users such as educators and other collaborators to request new application accounts, modify and close existing accounts. Users and managers can submit account requests and track progress online easily through this new system. Employees may access NAMS via https://idmax.nasa.gov .

Ames employees can use NAMS instead of ARC Form 772 to apply for center application accounts such as VPN/RSA or Brio Reports access.

By the end of FY2010, employees will use NAMS to request and manage all of their center and agency application accounts. However, their existing accounts will be "grandfathered" into NAMS so they won't have to reapply for accounts they already have.

The NAMS training also is available on SATERN at https://satern.nasa.gov for the following modules: Overview, First Time User and User. Civil servant and contractor supervisors should complete the Sponsor module.

For more information, visit the NAMS information Web site at http://nams.arc.nasa.gov .

What's on InsideNASA . . .

NASA Deputy Administrator Shana Dale's corner on InsideNASA this month features an article entitled, "Transforming Airspace One Plane at a Time." Following is an excerpt from the article.

An innovation in aeronautics technology has already made flying in challenging terrain safer for thousands of pilots and may help our future national airspace accommodate more planes.

Today, the positions of most aircraft in flight are tracked by radar. Antennas on the ground bounce radio waves off an airplane in the sky, interpret the signals reflected back from the airplane and send them to air traffic controllers.

For the past decade, aeronautics researchers at NASA's Ames Research Center and NASA's Langley Research Center have been supporting research and testing of a new tracking system called Automatic Dependent Surveillance-Broadcast, or ADS-B, and how it can be used for air traffic management.

The biggest plus of ADS-B is that it uses satellite-based Global Positioning System signals instead of ground-based radar signals. The system automatically provides information with pinpoint accuracy about how far one airplane is from another in the sky, as well as an airplane's position to the control tower. This exchange of information occurs real-time, so both the pilot in the cockpit and the air traffic controller on the ground "see" the same data at the same time. To learn more about this system, visit http://insidenasa.nasa.gov/nasa_stories/AP_Transforming_Airspace.html