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

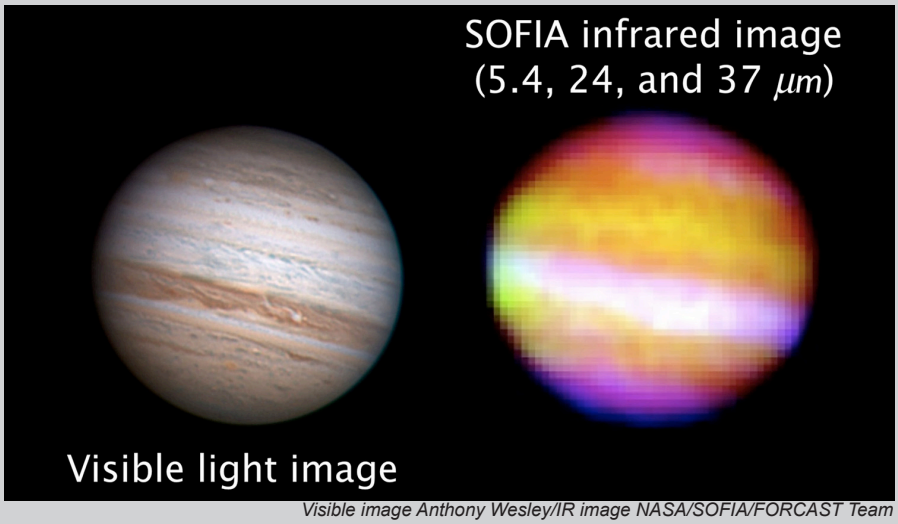
June 2010 - A Quarterly Publication

SOFIA successfully completes its 'first light' flight

BY CATHY WESELBY

The Stratospheric Observatory for Infrared Astronomy, or SOFIA, achieved a major milestone May 26, with its first in-flight night observations. Astronomers call this event for a new observatory "first light."

The highly modified Boeing 747SP jetliner fitted with a 100-inch diameter reflecting telescope took off from its home base at the Aircraft Operations Facility in Palmdale, Calif., of NASA's Dryden Flight Research Center. The in-flight personnel consisted of an international crew from NASA, the Universities Space Research Association in Columbia, Md., Cornell University and the German SOFIA Institute (DSI) in Stuttgart. During the six-hour flight, at altitudes up to 35,000 feet, the crew of 10 scientists, astronomers, engineers and technicians gathered telescope performance data at consoles in the aircraft's main cabin.



Visible image Anthony Wesley/IR image NASA/SOFIA/FORCAST Team

This composite infrared image of Jupiter was made by Cornell University's FORCAST camera during the SOFIA observatory's "first light" flight. A recent visual-wavelength picture of approximately the same side of Jupiter is shown for comparison.

NASA photo by Jim Ross

Its primary mirror covered by a protective sun shade, the German-built infrared telescope nestled in the rear fuselage of NASA's SOFIA flying observatory is easily visible in this close-up image taken during a recent test flight.

"Wind tunnel tests and supercomputer calculations made at the start of the SOFIA program predicted we would have sharp enough images for front-line astronomical research," said SOFIA project scientist Pam Marcum of Ames. "A preliminary look at the first light data indicates we indeed accomplished that."

The stability and precise pointing of the German-built telescope met or exceeded the expectations of the engineers and astronomers who put it through its paces during the flight.

"The crowning accomplishment of the night came when scientists on board SOFIA recorded images of Jupiter," said USRA SOFIA senior science advisor Eric Becklin. "The composite image from SOFIA shows heat,

continued on page 14

We're back!

By popular demand, the Astrogram is resuming publication this month as a quarterly newsletter. It will be available online and in hard-copy format and mailed to onsite mailstops and Ames retirees. The Astrogram will be published every three months. The Astrogram will be available online at http://www.nasa.gov/centers/ames/news/astrogram/index.html

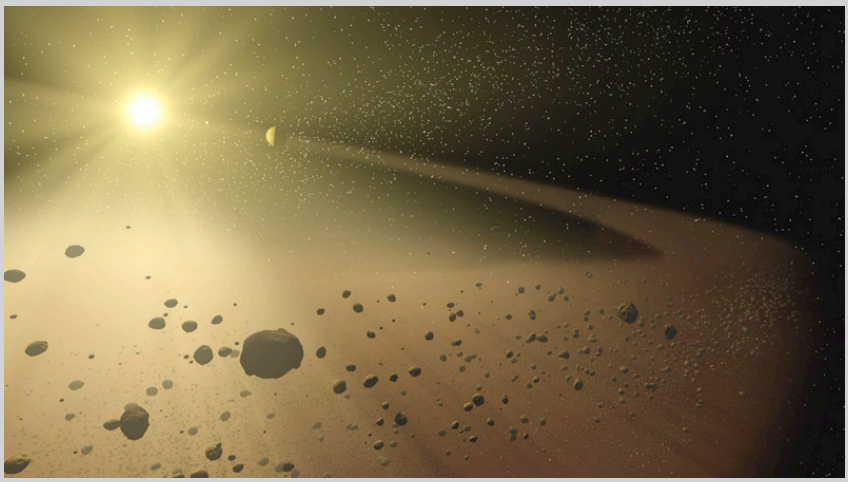
Ames Public Affairs is soliciting short articles (600 word maximum) with photos and captions for the Astrogram, which need to be submitted to Astrid Olson at A.Olson@nasa.gov. Articles should be Ames related and also may include human interest stories. Photos may be submitted and will be evaluated based on quality and suitability for publication.

Obituaries and ongoing club announcements also will be accepted. Classifieds will continue to be posted on InsideAmes at: http://insideames.arc.nasa.gov/life.php

NASA scientist confirms water ice on asteroid

BY RUTH DASSO MARLAIRE

Scientists, using NASA's Infrared Telescope Facility (IRTF) at the observatory on Mauna Kea, Hawaii, have detected water-ice and carbon-based organic compounds on the surface of an asteroid. The discovery of the frozen water on one of the asteroid belt's largest occupants, called Asteroid 24 Themis, suggests that some asteroids, as well as comets, were the water carriers for a primordial Earth.



Although conditions in asteroids are not favorable for life, primitive asteroids may have been "fertilizers," creating conditions for early life on Earth, and possibly other planets (artist conception, NASA).

The research paper titled, "Water ice and organics on the surface of the asteroid 24 Themis," was published April 29, 2010 in the journal Nature.

For the first time, infrared measurements showed characteristics of frozen water on Themis.

"We calculated a synthetic spectrum using water ice and other materials we thought could be present on the asteroid," said Noemi Pinilla-Alonso, a research scientist at NASA Ames and co-author on the Nature paper. "Through a process of elimination and repeated calculations, we confirmed the presence not only of frozen water, but of complex organic materials as well."

While scientists generally agree that asteroids and comets probably brought some water to Earth, and even the carbon-based materials thought to be necessary for the origin of life on our planet, finding clear examples has proven difficult. When these materials and water arrive on the warm Earth, the conditions for the formation of living organisms some four billion years ago were met.

"Finding widespread water ice on an asteroid so close to the sun was a completely surprising result. We expect ice to evaporate quickly into space from the surfaces of asteroids," said Pinilla-Alonso.

Other scientists have been scouring the solar system for other worlds where ice and organic materials occur, including the moons of Saturn and Jupiter. Dale Cruikshank, a research scientist at NASA Ames experienced in these studies, and a colleague of Pinilla-Alonso, noted that "Dr. Pinilla-Alonso is one of a small band of planetary scientists pushing the limits of our knowledge of the tiny rocks and icy lumps in the solar system. These small objects are of growing importance in our understanding of the current state of all the planets, including our own planet Earth."

"Artist conception of asteroid 24 Themis and two small fragments of this dynamical family, which resulted from a large impact more than one billion years ago. Note that one of the small fragments is inert (as most asteroids are) and the other has a comet-like tail, produced by the sublimation of water ice from its surface." Figure credit: "Gabriel Pérez, Servicio MultiMedia, Instituto de Astrofisica de Canarias, Tenerife, Spain."

Pinilla-Alonso is featured in this issue of the Astrogram's Science Q&A section, appearing on page 3.

SETI Institute Science Series offers opportunity to learn about space

BY ADRIAN BROWN

Have you ever wished you could find out more about the work of scientists at NASA Ames and the SETI Institute? Well now you can. The SETI (Search for Extraterrestial Intelligence) Institute runs a weekly talk series of cutting edge scientists from around the Bay Area and films the talks and puts them up on YouTube.

Speakers are from NASA Ames, SETI Institute, Stanford, University of California Berkeley, University of California Santa Cruz and other Bay Area institutions. Topics include the LCROSS Mission, SETI, the Allen Telescope Array, the Kepler Mission, climate change and a variety of Mars, moon and outer planets.

Videos are available at: http://youtube.com/setiinstitute. The SETI archives of the talks are available at: http://seti.org/colloquium

If you are in the Bay Area and want to hear to the talks in person, they are presented at noon at the SETI offices at 515 N. Whisman Road, Mountain View. Visit the Web site at http://www.seti.org/csc/lectures for more information.

Science Q&A with Noemi Pinilla-Alonso, NASA astrophysics researcher

Interview by Ruth Dasso Marlaire

It's a match! It really is water ice on that asteroid!

Noemi Pinilla-Alonso grew up in a city called Oviedo, in northern Spain, and specialized in astronomy and astrophysics at the University of La Laguna, Santa Cruz de Tenerife, Spain. As a graduate student, she worked at El Instituto de Astrofisica de Canarias and the International Observatory of El Roque de los Muchachos also in the Canary Islands. In 2009, she won a NASA post doctoral fellowship.

NASA photo by Eric James

Noemi Pinilla-Alonso, NASA astrophysics researcher at NASA Ames.

Question: You are the co-author of a research paper titled, "Water ice and organics on the surface of asteroid 24 Themis," recently published in the British-American scientific journal Nature. What was the discovery, and why was it so important?

This was an amazing discovery. We thought asteroid 24 Themis was orbiting the sun too closely (~3.1 AU) to keep ice on the surface. We really expected ice to evaporate quickly into space from the surfaces of asteroids. We were looking for traces of water, such as hydrated silicates, which have been found on other asteroids.

What we found was a paper-thin layer of water ice, covering the entire asteroid. This discovery means there must be a mechanism replenishing the water.

Question: Is it possible to estimate how much water is in the asteroid?

It is not possible from our observations to estimate the size of the reservoir. We can only see the coating on the surface, which is microns thick. We are not sure of the mechanism that is replenishing it, although we make suggestions in the paper. This will be a goal of future studies.

Question: Since water and organics were found on the asteroid, could it support simple life-forms?

Possibly. It is widely accepted that asteroids and comets may have brought the building blocks of life to Earth. The conditions in asteroids are not favorable for life; however, studying primitive asteroids as "fertilizers" for life, may become an area of greater interest to astrobiologists.

Question: What type of laboratory experiment did you perform to make your discovery?

My doctoral thesis was on icy objects in the solar system. I used models containing mixtures of icy materials to study their surface compositions. My contribution to this paper was modeling and interpretation; I am the group's modeling expert.

In the case of 24 Themis, we produced a synthetic spectrum with a band around 3.1, which was similar to the observed spectrum. We were surprised to find our synthetic and observed spectra matched the spectra for water ice, and even more surprised to find our spectra matched a residue that could be complex organic material: this is an amazing result!

Question: What inspired you to work for NASA?

I received a NASA postdoctoral fellowship to study the nature of organic materials in the solar system. At NASA, I work with a small group of planetary scientists who study minor bodies in the solar system, such as asteroids, trans-neptunian objects, dwarf planets and icy satellites. These objects are growing in importance to our understanding of the origin and evolutionary history of the solar system.

From Spain, working for NASA was a dream too big to think it could come true. NASA is known all across the world as a reference for astrophysical research. I was inspired by NASA's high-level scientists, and the opportunity to broaden my knowledge by talking and working with them.

Jeff Cuzzi wins prestigious 2010 Gerard P. Kuiper Prize

by Ruth Dasso Marlaire

Jeff Cuzzi, a planetary scientist at NASA Ames, is the winner of the 2010 Gerard P. Kuiper Prize, the most prestigious individual award in planetary sciences.

The Kuiper Prize is presented by the American Astronomical Society's Division of Planetary Sciences (DPS). The annual award honors outstanding lifetime contributions to planetary sciences, regardless of nationality or DPS membership. Previous winners include Carl Sagan, Eugene Shoemaker and James van Allen.

"In the 27-year history of the Kuiper Prize, the award has been won by three NASA Ames researchers: Jim Pollack (1989), Dale Cruikshank (2006) and Jeff Cuzzi (2010). No institution, within government or academia, has more Kuiper Prize winners," said S. Pete Worden, director of NASA Ames.

NASA photo by Dominic Hart

Jeff Cuzzi, recent winner of the 2010 Gerard P. Kuiper Prize, the most prestigious individual award in planetary sciences.

Cuzzi is being honored because of his many pioneering contributions to our understanding of the formation and evolution of planetary rings and small planets. Spanning four decades, his work includes early observational and theoretical work on rings, participation in NASA's Voyager and Cassini missions, and his most recent state-of-the art fluid dynamic-modeling efforts that will help solve the mysteries of planet formation. During this long search, he has mastered several disciplines, including (but not limited to) radiative transfer, nebular dynamics, and cosmochemistry, and often crossed into other fields of research, such as astrophysics and meteoritics. Cuzzi also is an expert observational astronomer, planetary theoretician, and planetary modeler – a rare combination indeed.

Cuzzi works in NASA Ames' Planetary Systems Branch. "He is one of the most respected, admired, and sought after individuals in our field. And, of course, Jeff's long list of awards, clearly signify exceptional scientific achievement," said Robert Haberle, Planetary Systems Branch chief at NASA Ames.

After receiving a bachelor of science degree in engineering physics from Cornell University, Ithaca, N.Y., he studied planetary science at California Institute of Technology, Pasadena, Calif., receiving his Ph.D. in1972. Trained as a radio astronomer, with an initial focus on thermal emissions from Mars and Mercury, he observed Saturn from the U.S. National Radio Astronomy Observatory (NRAO), using its radar interferometer in 1973. Inspired by the excitement of new discovery, he became increasingly motivated to learn all aspects of Saturn's mysterious rings, and ultimately rings around other planets as well.

During his early years at Ames, Cuzzi served as study scientist for the first engineering studies of a Titan entry probe, and also worked on the first ultra-narrowband Search for Extra-Terrestrial Intelligence (SETI) research using Mark I Very Long Baseline Interferometer (VLBI) technology. Invited to join the Voyager Imaging team in 1978, he led the team's rings subgroup through planning of all Saturn, Uranus, and Neptune ring encounter observations. In 1989, he was selected as Interdisciplinary Scientist for Rings on the NASA-European Space Agency (ESA) Cassini-Huygens mission. His current ring focus is on the composition of the rings and their evolution with time, and the possibly chaotic dynamics of the F ring region.

Recognized for his outstanding achievements on planetary rings, Cuzzi received the American Institute of Aeronautics and Astronautics' Lawrence Sperry Award, and two NASA Exceptional Scientific Achievement medals.

In the early 1990s, Cuzzi started studying fluid dynamics and turbulence in the early protoplanetary nebula, using three dimensional turbulence models on NASA's largest computers. For this early nebula research, Cuzzi received another NASA Exceptional Scientific Achievement medal, and was elected Fellow of the American Geophysical Union in 2002. He served as chief of the Planetary Systems Branch of Ames' Space Science Division from 1992-1996.

"His election as a Kuiper Prize winner is a richly deserved external acknowledgement of this legacy of groundbreaking contributions -- a legacy, which continues today," said Haberle.

NASA 'Smart Skies' software sparks students' interest in science, math

BY KAREN JENVEY

The Silicon Valley Education Foundation and the Hispanic Foundation of Silicon Valley have embarked on a journey to collaborate with NASA that is a perfect marriage between the three organizations.

All three organizations are striving to achieve the same thing – stimulating students with an interest in Science, Technology, Engineering and Math (STEM).

To celebrate this collaboration, a group of young 20 Hispanic students from ACE Charter School, San José, Calif. attended an event in the Ames Exploration Encounter on June 1, 2010. This school is uniquely qualified to participate in the collaboration because its mission is to help middle school students with a history of poor grades change their academic path towards success.

At the event, Ron Gonzales, chief executive officer of the Hispanic Foundation of Silicon Valley, talked about his parents driving by NASA Ames every day and how he always was fascinated by NASA. "Today is the first day that I have been able to visit Ames. The students here today are very lucky to have the opportunity to visit this center," smiled Gonzales.

NASA photo by Eric James

Ames Deputy Center Director Lewis Braxton III (far right) and Jonas Dino of the Ames Education Office (second from right) assist students from the ACE Academy, San José, Calif. to solve air traffic management problems using NASA's Smart Skies software.

Lew Braxton, Ames deputy center director, marveled at the "Smart Skies" software, which is at the core of this collaboration. "This is a great NASA product and by collaborating with these two wonderful foundations we are getting it into the hands of the students who will benefit from it," said

continued on page 11

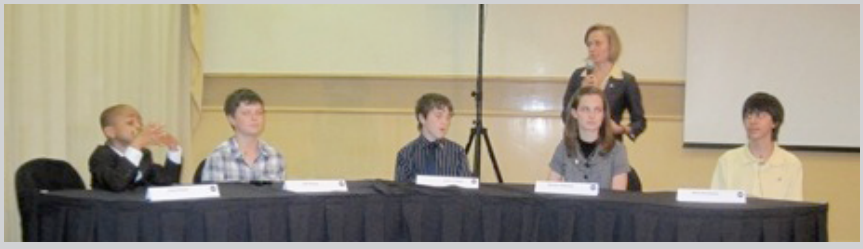
Future space explorers attend Masters Forum in Florida

A 13 year-old student from St. Andrews School in Saratoga was invited by NASA to be a panel member of a Masters Invitational Technical Forum with four other teenagers.

Zachary Hovey, grandson of Mr. and Mrs. John Boyd of Saratoga, and son of Carol and Gary Hovey of San Jose, participated in a forum in Florida at the same time as the space shuttle Atlantis' last launch on May 14, 2010. The panel was held so that the young participants could tell NASA what they thought the space agency should do in the future. They spoke to a group of senior NASA managers before viewing the space shuttle launch. Later they toured Kennedy Space Center.

"I had a great time and learned a lot about NASA," said Zachary Hovey. "It was fun talking to the NASA officials. The shuttle launch was seriously cool."

photo by Jack Boyd



Masters Invitational Technical Forum Panel members, with Zachary Hovey, second from left.

photo by Lewis Peach

Zachary Hovey at the space shuttle Atlantis launch site, May 14, 2010. He attended the Masters Invitational Technical Forum which was held the same time as the launch.

Spaceward Bound scientists study fog in African Desert

BY CHRIS MCKAY

The Spaceward Bound Expedition to the Namib Desert in April 2010 brought together scientists from the United States, Australia, South Africa, Hong Kong, and the United Kingdom as well as teachers from the United States, Australia, South Africa, and Namibia.

The team of Spaceward Bound scientists and teachers who investigated the role of fog in supporting microbial ecosystems in extreme deserts in the Namib Desert in April 2010.

The scientific goal of the expedition was to investigate the role of fog in supporting microbial ecosystems in extreme deserts. In most places on Earth, life on land lives on water from rain. Previous Spaceward Bound expeditions in the Atacama Desert of Chile investigated life in the driest desert on Earth – where the rain averages, less than 1 mm a year and often there are many consecutive years with no rain. For comparison, the rain in the dry core of the Atacama is 50 times less than in Death Valley, Calif. – another site studied by Spaceward Bound expeditions.

While Earth is a planet of rain, Mars is not. On Mars, life may survive on non-rain sources of water such as melting ice, fog, and dew. The Namib Desert is possibly the best location in the world to study the relative effects of fog versus rain in supporting desert life.

Our study site in the Namib Desert is located about 23ºS on the western coast of Africa. This is similar to the arid core of the Atacama, which is at this same latitude on the western coast of South America. In both coastal areas there is little rain, but a marine fog comes in from the cold ocean. However, in the Atacama high coastal mountains block the fog within a few kilometers from the coast. In the Namib, the lands slopes gradually from the coast up to 1,800 meters elevation near the capital, Windhoek, 300 km inland. The fog rolls up this slope, diminishing gradually with distance and elevation.

As a result of the different geographies between the two deserts, fog is absent from the interior of the Atacama, but is present in the interior of the Namib. Our scientific goal is to compare the resulting potential for life. The organisms of primary interest to us are simple one-celled photosynthetic organisms that are found living under translucent stones in arid deserts. The stone holds moisture and if translucent, allows some light to penetrate.

In the Atacama, we found that the colonization of stones dropped off to essentially zero in the arid core. We expected that in the Namib the stones would be colonized near the coast as a result of the fog and far inland as a result of the rain but there would be a zone of no colonization in between.

To our surprise, we found that the colonization remained high across the desert.

Our team of scientists and teachers stayed at the Gobebeb Desert Research station. This was our base of operations for the entire trip. We had shared cabins, a common dining and kitchen area, and science labs. Each morning and evening the team would assemble to go over plans and results.

Our primary task was to cross the desert and inspect the translucent stones to determine colonization rate. To do this, we had a team of about 10 people – both scientists and teachers fan out in groups of three and find, charaterize, and count the translucent quartz stones and the colonization of organisms beneath the stone. A typical colonized stone is shown in the photo above.

In addition to mapping out the colonization of quartz stone, the team also investigated salt deposits associated with groundwater flows, moisture gradients in the subsurface, and clays in the sand sea to the south of the Station. Michael Wing, a high school teacher from the United States brought some artificial quartz stones which he placed on the desert floor. Over the next few years, we will monitor these stones to see if they become colonized. Wing has a website that shows his experiments, http://drake.marin.k12.ca.us/staff/wing/index.htm

During the week, several of the scientists traveled to a school in Windhoek and to a school in Walvis Bay to present lectures about the work being conducted and the relevance to Mars exploration. One of the teachers from the school in Walvis Bay was with the expedition during the entire week and his students were particularly interested in what we were doing and why we had come to Namibia.

More information on Spaceward Bound can be found at http://quest.nasa.gov/projects/spacewardbound/

NASA photos by Matthew Reyes

Populated quartz rock, a typical colonized stone.

Ames' Bike to Work Day pedals its way to success

BY JOHN SCARBORO

The Ames Bicycle Club hosted an energizer station during the morning of Bike to Work Day, May 13, 2010.

During the morning, 115 people joined thousands of other bike commuters around the Bay Area. In Santa Clara County, participation was up by 12.5 percent since last year. Most of the bike commuters at Ames stopped by to chat and pick up some refreshments and prizes.

People rode in from all over. Vince Chan and Richard Kolyer each rode 30 miles. James Snow had the shortest ride at two miles. The average bike commute was 13 miles. The mental and physical health benefits of biking to work were evident in the riders. People talked about their rides-even the bikers who plowed through swarms of insects on the Bay Trail-had a good time.

NASA photo

This is the fifth year that the Ames Bike Club has hosted a Bike to Work station and the ninth year that Julie Nottage has coordinated or helped with the event. This year, she was assisted by her husband, Richard Nottage, John Scarboro, Crystal Lee, and Maureen Cruzen of ISSi and Luke Metz and Armando Jimenez of SAIC.

If you would like more information on biking at Ames, see the Ames Bicycle Club page at http://ames.clubexpress.com/. For more information about biking to work and Bike to Work Day, see http://www.youcanbikethere.com/.

Thousands turn out for Yuri's Night celebration

BY CATHY WESELBY

NASA Ames hosted a mega Yuri's Night celebration April 9 and April 10, 2010. A 40-foot futuristic rocket ship, air show and top music acts, including Common and N.E.R.D. were among the highlights.

On Friday, April 9, 2010, an estimated 6,000 students from all over the Bay Area gathered for Education Day. (See photos this page.) During this free event, students between grades 4-12 engaged in hands-on learning activities that included interactive exhibits, workshops and presentations by leading scientists, engineers and technology experts.

Students made and launched rockets, drove a Mars Rover replica, learned how an infrared camera works and created music with various sound effects in an immersive environment. Guest speakers included musician DJ Q-Bert, who led a workshop on vinyl record scratches and science, video game artist Android Jones demonstrated digital painting, and Apple co-founder Steve Wozniak, who talked about the secrets to his success.

On Saturday, April 10, 2010, an estimated 6,000 space enthusiasts came to celebrate Yuri's Night at NASA's Ames. The celebration – one of the largest of 210 held around the world – commemorated the anniversary of the first human space launch by Yuri Gagarin in 1961 and the first space shuttle mission in 1981.

Musical acts performed on large two stages, including N.E.R.D, The Black Keys, Les Claypool, Common, The Glitch Mob, Hamsa Lila and DJ Qbert.

The celebration had more than 120 exhibits, including groups as diverse as Google Earth, Zero Gravity Arts Consortium, California Academy of Sciences, the Russian Consulate, Loco Bloco, Wonderfest, Aerospace Education Specialists and the Astronomical Society of the Pacific.

Please see the following two pages for additional Yuri event photo coverage.


NASA photo by Eric james


NASA photo by Eric James


NASA photo by Paul Langston

Yuri's Night 2010 draws thousands to NASA Ames

NASA photo by John Schultz

NASA photo by John Schultz

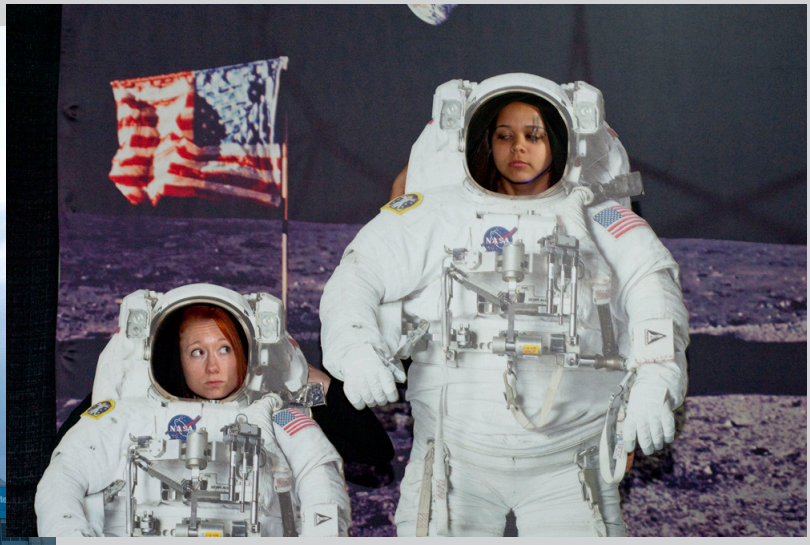
NASA photo by John Schultz

NASA photo by John Schultz

NASA photo by Kyle Cavallaro

NASA photo by Eric James

NASA photo by Eric James



NASA photo by Jon-Pierre Wiens

NASA photo by Jon-Pierre Wiens

NASA photo by Kyle Cavallaro

NASA photo by John Schultz

NASA photo by John Schultz

Ames holds annual Hispanic Heritage Golf Tournament

by Herman Santos, Gerald DePerio, and Jeanette Zamora

"The NASA Ames 8th Annual Hispanic Heritage Golf Tournament was a Great Success!"

That was the expression of Eric Kristich, chairperson of the Ames Hispanic Advisory Committee for Employees (HACE), which hosted the event at the Ames Golf Course May 7, 2010. Kristich said this event is part of HACE's continuing goals of formally recognizing the Hispanic youths for achieving academic excellence in their schools.

The students' recognition comprised of presenting them with five awards in the form of stipends, four of which went to students from the National Hispanic University (NHU).

Every year, HACE, in collaboration with NHU, selects students who continued to demonstrate academic excellence from the Computer Science or Mathematics and Science departments. The prerequisite for the awards was to be enrolled in the aforementioned departments, with a minimum GPA of over 3.0, and be selected for the best essay addressing the topic on "Latinos in Science and Mathematics."

This year's award recipients were Ruth Castro, Beatriz Ayala, Miguel Ortega, and Diego Candia. The fifth stipend was awarded to Principal Antonio Fuentes on behalf of the Latino College Preparatory Academy (LCPA). Fuentes accepted this award, which will assist in purchasing much-needed math books for the students.

Kristich also conveyed how proud he felt to be able to contribute towards the education of the future leaders of the world. His contribution parallels HACE's vision to reach out to the younger generation of Hispanics and to raise awareness about the value of Science, Technology, and Mathematics.

Overall, the event drew more than 100 golf players and a good public turnout who enjoyed a variety of foods and snacks. Music was performed and dancing was accompanied by professional DJs. The event was made possible by significant efforts by members of HACE, Ames management led by Lew Braxton III., Ames staff volunteers and contributors that supported this event.

For additional information relating to the HACE's mission statement, please visit the HACE Web page at: http://eo.arc.nasa.gov/hace/hace.htm.

From left to right: Miguel Ortega, Dr. Yazmin Rosa-Bauza (Chairperson of the NHU Mathematics and Science Department), Beatriz Ayala, Ruth Castro, and Diego Candia. The students were recognized for achieving academic excellence in their schools.

NASA photos by Dominic Hart

Eric Kristich (left) and Lewis Braxton III (second from left) congratulate the award recipients.

Aeronautics Associate Administrator visits Ames

NASA photo by Dominic Hart

Dr. Jaiwon Shin, associate administrator for the Aeronautics Research Mission Directorate, held an all-hands address on Tuesday, June 8, in the Ames Main Auditorium. Shin discussed the exciting developments within NASA's Aeronautics programs.

Ames Director's Colloquium 2010 Summer Series begins

NASA Ames has launched the Director's Colloquium 2010 Summer Series.

All colloquiums will be from 2 - 3 p.m. in the Main Auditorium (N201). A punch and cookies reception will immediately follow each colloquium. Each colloquium lasts 60 minutes including a question-and-answer session.

• Tuesday, July 6, Ramakrishna Nemani will discuss, "Earth Science Collaborative for Ecological Forcasting"

• Tuesday, July 13, Ames Center Director S. Pete Worden will discuss, "Protecting the Earth from Asteroids"

• Tuesday, July 20, Laura Kushner will discuss, "Experimentation in Aerodynamics"

• Tuesday, July 27, Tori Hoehler will discuss, "A 'Follow the Energy' Approach in Astrobiology"

• Tuesday, Aug. 3, Andrew Watson will discuss," Vision Science and Visual Technology

• Tuesday, Aug. 10, Stuart Rogers will discuss, "Aerodynamics and Debris Transport for the Space Shuttle Launch Vehicle

NASA 'Smart Skies' software sparks students' interest in science, math

continued from page 5

Braxton.

Braxton isn't the only fan of Smart Skies.

"NASA's 'Smart Skies' software is a fun and challenging way to get kids to learn how math and science can help them pursue their dreams," said Gonzales.

Is it fun for the students? You bet. Just ask Teodolinda Aguirre, one of the students from ACE Charter School who attended the event. "I want to play that game again," she said enthusiastically peering towards the computers.

The software will be featured in SVEF's "Stepping Up to Algebra" program.

"The Silicon Valley Education Foundation strives to prepare students for high school algebra. Software such as NASA's Smart Skies, which we are proud to include in our 'Stepping Up to Algebra program, is an excellent example of how to get students excited about science, technology, engineering and math," said Muhammaed Chaudhry, chief executive officer of the Silicon Valley Education Foundation.

2010 Presidental Rank awards presented at Ames

The 2010 Presidential Rank and NASA Honor Awards Ceremony for Ames was held June 9, 2010, in the Main Auditorium (N201). Ames management presented Presidential Rank and NASA Honor Awards to 48 employees who were selected for individual awards, and to 31 groups which were selected for the NASA Group Achievement Award. The names of the honorees are listed below.

2010 PRESIDENTIAL RANK AND NASA HONOR AWARDEES

Presidential Rank of Distinguished Senior Professional
Mark B. Tischler

Presidential Rank of Meritorious Senior Professional
David Morrison

Presidential Rank of Meritorious Senior Executive
Eugene L. Tu

Equal Employment Opportunity Medal
Eric A. Kristich

Exceptional Achievement Medal
Khaled Galal
Michael R. Haas
David R. Hunt
David G. Koch
Benton H. Lau
Natalie R. Lemar
Millie G. Lo
Patti P. Powell
Cheryl M. Quinn
John E. Robinson
Michael M. Rogers
Yvonne Simonsen
George C. Tung

Exceptional Administrative Achievement Medal
Susan C. Nelson

Exceptional Engineering Achievement Medal
Robin A. Beck

Exceptional Public Service Medal
William G. Bousman
Christopher Youngquist

Exceptional Scientific Achievement Medal
David W. Schwenke
Aaron Zent

Exceptional Service Medal
Bryan A. Biegel
Kenneth R. Hamm
Ronald M. Hovland
Michael R. Landis
Marjorie J. Pierre
Terrence K. Rager
Vivian Torres

Exceptional Technology Achievement Medal
Jon Jenkins
Wayne R. Johnson

Outstanding Leadership Medal
Daniel R. Andrews
William J. Borucki
Daniel M. Bufton
Anthony Colaprete
James P. Connolly
Charles W. Duff
Roger Hunter
Kelly J. James
Francis J. Kmak
Parimal H. Kopardekar
Mary E. Livingston
B. D. McNally
Piyush Mehrotra
Ethiraj Venkatapathy
William G. Warmbrodt
Steven F. Zornetzer

Group Achievement Award
Advanced Aircraft Hardware Development Team
Ames Environmental Sustainability Report 2009
Ames Facility Study Team
Ames HSPD-12 Team
Ames Negotiation Team for UA Lease
CASIE Team
CEV Orion Launch Abort Motor Test Measurement Team
CEV TPS Advanced Development Project
ESMD HEC Prioritization Team
Human Vibration Team
International Space University Project Team
Jules Verne Team
Kepler Launch and Commissioning Team
Kepler Science Office
Kepler Science Operations Center
Kepler Science Team
LAX North Airfield Safety Study Simulation Team
LCROSS Science and Payload Team
Lunar Regolith Excavation Challenge
OCAMS Design, Develop, Test, and Eval Team
Orion Re-entry Handling Qualities Simulation Team
PharmaSat Team
Pleiades Supercomputer Team
Robotic Recon Experiment Team
Scheduling, Training Admin and Records (STAR) Team
Simulation Assisted Risk Assessment (SARA) Team
Solar Array Constraint Engine (SACE) Team
TPS Model Processing and Fabrication Team
UH-60A Individual Blade Control Project Team
VMS Space Shuttle Visual Database Development Team
XSearch Design, Development, Test & Eval Team

The Astrogram will return in September

The Astrogram staff hopes you all enjoy this issue of the current newsletter in its new quarterly publication format. Our next issue will be published in September 2010. If you want to submit a story and/or photo for consideration, please email them to Astrid Olson at A.Olson@nasa.gov by Aug. 15, 2010. In the meantime, have a great summer!

Ames Ongoing Monthly Events Calendar

African American Advisory Group (AAAG) Mtg., every fourth Wednesday of each month, 12 - 1 p.m., Bldg. N255 Rm 101C. POC: Chair - Jim Busby, ext. 4-2792.

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. For information on the club go to the website https://ames.clubexpress.com. POC: Julie Nottage at jnottage@mail.arc.nasa.gov, ext. 4-3711.

Ames Bowling League, Homestead Lanes Thursdays at 6:20 p.m. Need substitute bowlers. Sign up questions: 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 Weds. of ea. month, 11 a.m., Bldg. N-200, Committee Room. POC: Elisa Taube (408) 541-2838.

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: Estelle Dodson, ext. 4-4145, estelle.dodson@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.

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.

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.

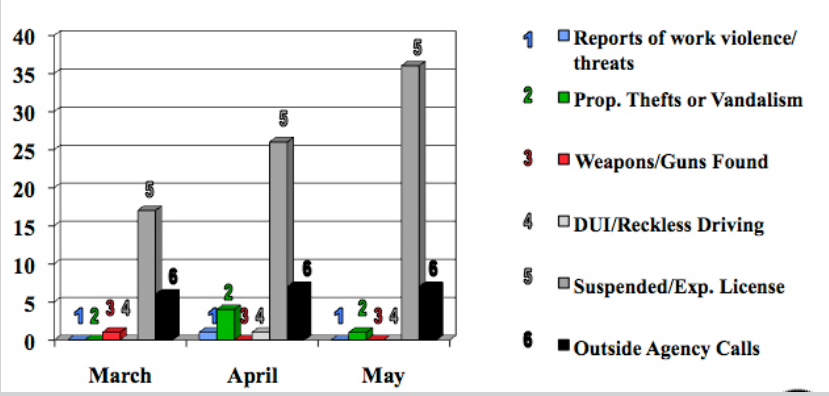
Ames Cat Network

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.

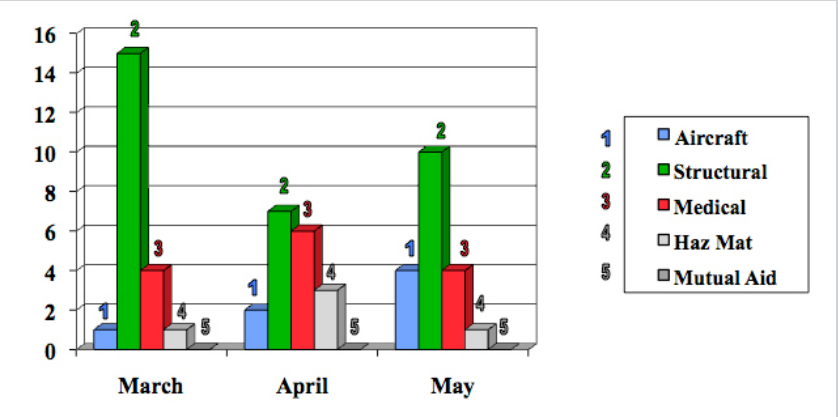
Protective Services monthly activity

A statistical summary of activities of the Protective Services Division's Security/Law Enforcement and Fire Protection Services units for the month of May 2010 is show below.

Security/Law Enforcement Activity



Fire Protection Activity



SOFIA 'first light' flight

continued from front page

trapped since the formation of the planet, pouring out of Jupiter's interior through holes in its clouds."

The highly sensitive Faint Object infraRed CAmera for the SOFIA Telescope (FORCAST) captures in minutes images that would require many hour-long exposures by ground-based observatories blocked from a clear infrared view by water vapor in the Earth's atmosphere. SOFIA's operational altitude, which is above more than 99 percent of that water vapor, allows it to receive 80 percent or more of the infrared light accessible to space observatories.

SOFIA is a joint program by NASA and the German Aerospace Center. The SOFIA program is managed at Dryden and Ames manages the SOFIA science and mission operations in cooperation with USRA and DSI.

National Aeronautics and Space Administration
ASTROGRAM
Newsletter of NASA Ames Research Center, Moffett Field, California

National Aeronautics and Space Administration
Ames Research Center
Moffett Field, CA 94035-1000

FIRST-CLASS
U.S. POSTAGE
PAID
PERMIT NO. 85
MOUNTAIN VIEW, CA

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.

PLEASE RECYCLE
Printed on recycled and recyclable paper with vegetable-based ink.