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ASTROGRAM

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NASA and Google to bring space exploration down to Earth

NASA Ames Research Center and Google recently signed a Space Act Agreement that formally establishes a relationship to work together on a variety of challenging technical problems ranging from large-scale data management and massively distributed computing, to human-computer interfaces.

NASA photo by Tom Trower

Ames signed a Space Act Agreement with Google that initiated a joint venture between the two entities in making NASA's most useful information available on the Internet. From left to right: Director of Business Development at Ames, Chris C. Kemp; Ames Center Director S. Pete Worden; Tiffany Montague, director of new business development, Google; and Dan Clancy, engineering director, Google, address the audience during the Space Act Agreement signing event in the Ames Exploration Center.

As the first in a series of joint collaborations, Google and Ames will focus on making the most useful of NASA's information available on the Internet. Real-time weather visualization and forecasting, high-resolution 3-D maps of the moon and Mars, real-time tracking of the International Space Station and the space shuttle will be explored in the future.

"This agreement between NASA

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NASA images suggest water still flows in brief spurts on Mars

NASA photographs have revealed bright new deposits seen in two gullies on Mars that suggest water carried sediment through them sometime during the past seven years.

"These observations give the strongest evidence to date that water still flows occasionally on the surface of Mars," said Michael Meyer, lead scientist for NASA's Mars Exploration Program, Washington.

Liquid water, as opposed to the water ice and water vapor known to exist at Mars, is considered necessary for life. The new findings heighten intrigue about the potential for microbial life on Mars. The Mars Orbiter Camera on NASA's Mars Global Surveyor provided the new evidence of the deposits

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Season's Greetings from the Director

It's hard to believe that 2006 is coming to an end....I guess that's what they mean by "time flies when you're having fun!" It seems only appropriate at this time of year for each of us to take stock of what we have, and one thing I know I have is a great job with even better people. After seven months here, I'm more convinced than ever that Ames is the coolest place to be in NASA. The dedication, innovation and opportunity at this center are truly outstanding, and I know that our accomplishments in 2006 have really set the stage for what we will do in 2007!

I wish you all a happy new year and holiday season spent with family and friends!

S. Pete Worden

NASA photo by Tom Trower

In the spirit of the holiday season, NASA Ames recently mounted a star on top of Hangar One. The star is made of aluminum with LED lights and is operated by remote control.

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NASA unveils its Global Exploration Strategy and lunar architecture plans

In early December, NASA unveiled the initial elements of the Global Exploration Strategy and a proposed U.S. lunar architecture, two critical tools for achieving the nation's vision of returning humans to the moon.

NASA Deputy Administrator Shana Dale, who is guiding the long-term strategy development effort among 14 of the world's space agencies, said, "This strategy will enable interested nations to leverage their capabilities and financial and technical contributions, making optimum use of globally available knowledge and resources to help energize a coordinated effort that will propel us into this new age of discovery and exploration."

The Global Exploration Strategy focuses on two overarching issues: Why we are returning to the moon and what we plan to do when we get there. The strategy includes a comprehensive set of the reasons for embarking upon human and robotic exploration of the moon. NASA's proposed lunar architecture focuses on a third issue: How humans might accomplish the mission of exploring the moon.

In April 2006, NASA initiated development of the Global Exploration Strategy in order to meet a congressional mandate, as well as to accomplish goals outlined in the agency's strategic plan and the Vision for Space Exploration. The strategy is evolving from a lengthy dialogue among more than 1,000 individuals, including experts from NASA and 13 other space agencies, as well as non-governmental organizations and commercial interests. Experts from the Australian, Canadian, Chinese, European, French, German, British, Indian, Italian, Japanese, Russian, South Korean and Ukrainian space agencies participated.

NASA planners used the international group's deliberations as well as input from academia, private sector and private citizens as the basis for sketching a U.S. blueprint for a return to the moon. NASA's Lunar Architecture Team, chartered in May 2006, concluded that the most advantageous approach is to develop a solar-powered lunar base and to locate it near one of the poles of the moon. With such an outpost, NASA can learn to use the moon's natural resources to live off the land, make preparations for a journey to Mars, conduct a wide range of scientific investigations and encourage international participation.

Artist's concept of future lunar base.

"The architecture work has resulted in an understanding of what is required to implement and enable critical exploration objectives," Dale said. "This is all important as we continue the process we have begun and better define the architecture and our various exploration roles in what is a very exciting future for the United States and the world."

As currently envisioned, an incremental buildup would begin with four-person crews making several seven-day visits to the moon until their power supplies, rovers and living quarters are operational. The first mission would begin by 2020. These would be followed by 180-day missions to prepare for journeys to Mars.

The proposed lunar architecture calls for robotic precursor missions designed to support the human mission. These precursors include landing site reconnaissance, natural resource assays and technology risk reduction for the human lander.

To kick off the quest for lunar water ice, NASA announced April 10, 2006, that a small, 'secondary payload' spacecraft, to be developed by a team at NASA Ames Research Center, would begin a trip to the moon in October 2008 to look for precious water.

The water-seeking spacecraft is called the Lunar CRater Observation and Sensing Satellite (LCROSS). It is known as a 'secondary payload spacecraft' because it will begin its trip to the moon on the same rocket as the Lunar Reconnaissance Orbiter (LRO), which is on a different mission to the moon. The rocket, the Evolved Expendable Launch Vehicle (EELV), will launch from Kennedy Space Center, Florida.

Moving into 2007, NASA will continue to refine its lunar architecture, maintaining the open dialogue initiated in 2006, to enhance further the Global Exploration Strategy. NASA's goal is to enable a sustainable space exploration effort in which participating organizations can achieve individual goals with mutually beneficial results.

NASA Ames r also is supporting the Orion and the Ares launch vehicles that NASA is developing for future space exploration directly with the several efforts including development of Thermal Protection System technology, computational modeling and wind tunnel testing, Integrated System Health Management (ISHM) expertise, crew cockpit design expertise, software validation and verification expertise and Simulation Assisted Risk Assessment (SARA) expertise. Many of these activities use unique national assets at NASA Ames such as the Arc Jet, the Unitary Wind Tunnel and the Columbia supercomputer.

For more on NASA's exploration plans, visit the Internet at: http://www.nasa.gov/exploration

Students visit Ames for science adventure

NASA photo by Tom Trower

NASA Ames Education Division, in partnership with the San Jose Rotary Club and the Ames Hispanic Advisory Committee, hosted more than 100 predominately Hispanic students for a day of excitement and adventure on Dec. 14. The students toured the Unitary Wind Tunnel, the Ames Exploration Encounter (AEE) and the MicroRover Lab. Students are seen here getting a lesson in orbital mechanics at the Ames Exploration Encounter, where they try to toss bean bags as they spin on the AAE's orbital mechanics demonstrator.

NASA study finds new kind of organics in Stardust mission

A team of scientists found a new class of organics in comet dust captured from Comet Wild 2 in 2004 by NASA's Stardust spacecraft.

The discovery is described in the Dec. 15, 2006, issue of Science Express, the on-line edition of the journal Science, in a technical paper, "Organics Captured from Comet Wild 2 by the Stardust Spacecraft." The lead author is Scott Sandford of Ames' Astrophysics Branch.

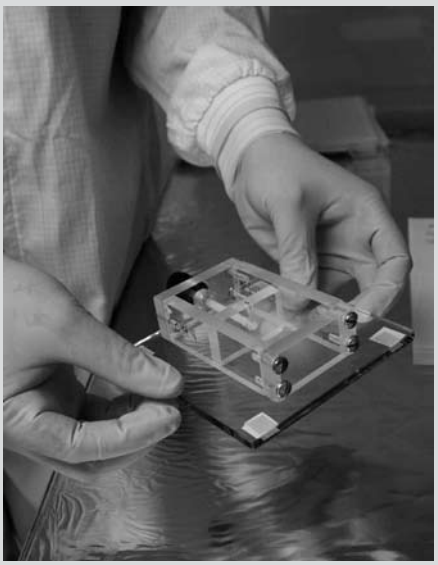
A team of scientists have found a new class of organics in the comet dusk captured from Comet Wild 2 in 2004 by NASA's Stardust spacecraft. Here a researcher is examing a Stardust aerogel tile under a stereo microscope.

In January 2004, the Stardust spacecraft flew through comet dust and captured specks of it in a very light, low-density substance called aerogel. Stardust's return capsule parachuted to the Utah desert on Jan. 15 after a seven-year mission. The science canister with the Comet Wild 2 and interstellar dust particles samples arrived at JSC on Jan. 17. From there, the cometary samples have been processed and distributed to about 150 scientists worldwide who are using a variety of techniques to determine the properties of the cometary grains.

"A portion of the organic material in the samples is unlike anything seen before in extraterrestrial materials," Sandford said. "Capturing the particles in aerogel was a little bit like collecting BBs by shooting them into Styrofoam."

The comet organics collect by the Stardust spacecraft are more 'primitive' than those seen in meteorites and may have formed by processes in nebulae, either in space clouds between the stars, or in the disk-shaped cloud of gas and dust from which our solar system formed, the study's authors found.

"Comets are a major source of the water and carbon on the moon," said S. Pete Worden, Ames center director. "Therefore, understanding comets will help scientists learn what natural resources to search for on our nearest neighbor in space -- resources that will aid astronauts in exploration beyond Earth," Worden explained.



A piece of Stardust aerogel collector material in a special container that is designed to protect and secure it during cutting and sample preparation.

The study's scientists used many highly sophisticated, state-of-the-art techniques to analyze the Stardust samples.

Several of the analyses indicated that the samples contain polycyclic aromatic hydrocarbons (PAHs), scientists said. PAHs are molecules made of carbon and hydrogen that are common in interstellar space - and in barbeque grill soot.

Certain PAHs chemical varieties also contain oxygen and nitrogen. Some scientists believe that these PAHs variants exist in interstellar space as well. They are of interest to astrobiologists because these kinds of compounds play important roles in terrestrial biochemistry, according to Sandford.

"Our studies of the comet dust show that the organics are very rich in oxygen and nitrogen," Sandford said. "The data are not incompatible with some of it being in the PAHs, but we still have a lot to learn in this area."

Although some of the other organics captured by the Stardust spacecraft look somewhat similar to the fairly stable organics found in meteorites, Sandford noted that many of the organic compounds appear to be very volatile. One sample even showed an abundance of material containing alcohols.

Many scientists believe that comets are largely made of the original material from which our solar system formed and could contain pre-solar system, interstellar grains. According to scientists, continued analysis of these celestial specks may well yield important insights into the evolution of the sun, its planets and possibly, even the origin of life.

"I anticipate that people will be asking for and working on these samples for decades to come," said Sandford. "What we report in the papers that appear this week is just the beginning of what we will learn from these samples. One of the advantages of returned samples is that they are available to study into the future, a gift that keeps on giving."

The organics paper is one of seven in the journal Science reporting the findings of the preliminary examination team that made the initial study of the cometary samples.

For more information about Stardust studies and other mission information, visit: http://www.nasa.gov/centers/ames/research/2006/stardust_feature.html

BY JOHN BLUCK

NASA images suggest water still flows in brief spurts on Mars

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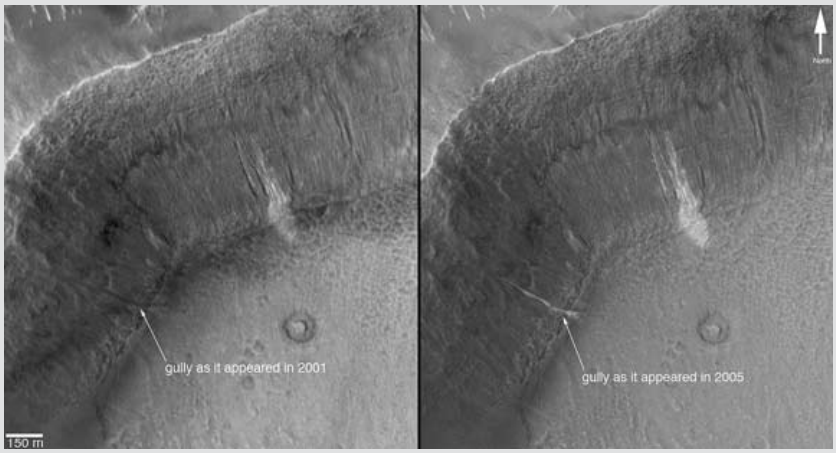
in images taken in 2004 and 2005.

"The shapes of these deposits are what you would expect to see if the material were carried by flowing water," said Michael Malin of Malin Space Science Systems, San Diego. "They have finger-like branches at the downhill end and easily diverted around small obstacles." Malin is principal investigator for the camera and lead author of a report about the findings published in the journal Science.

The atmosphere of Mars is so thin and the temperature so cold that liquid water cannot persist at the surface. It would rapidly evaporate or freeze. Researchers propose that water could remain liquid long enough, after breaking out from an underground source, to carry debris downslope before totally freezing. The two fresh deposits are each several hundred meters or yards long.



Before and after views, taken by NASA's Mars Global Surveyor, of a second site where a gully flowed. On the left, the site as it appeared in 2001. On the right, the same site in 2005. This is in the Terra Sirenum crater on Mars.

The light tone of the deposits could be from surface frost continuously replenished by ice within the body of the deposit. Another possibility is a salty crust, which would be a sign of water's effects in concentrating the salts. If the deposits had resulted from dry dust slipping down the slope, they would likely be dark, based on the dark tones of dust freshly disturbed by rover tracks, dust devils and fresh craters on Mars.

NASA's Mars Reconnaissance Orbiter (MRO) will utilize its HiRise camera and CRISM near-infrared spectrometer to follow up on this exciting discovery. Ames scientists Ted Roush, Virginia Gulick and David Des Marais are participating scientists with MRO. The ultra-high resolution observations by HiRise and high resolution infrared mapping by CRISM promise additional discoveries and insights into the origins of these active gullies.

Ames researchers also will help NASA to "follow the water" down on the martian surface and search for environments that might have supported life. David Blake is the principal investigator of the CheMin X-ray diffraction/fluorescence spectrometer that will accompany the 2009 Mars Science Laboratory rover. By far the most powerful instrument for mineral identification ever flown in space, CheMin will support a rigorous investigation of the chemical and environmental legacy of liquid water in the martian crust. Ames members of the CheMin team include Des Marais and Tori Hoehler.

Ames staff is also actively participating in Mars program planning for the next decade, which will feature orbiters, landers and preparations for returning samples to Earth.

Mars Global Surveyor has discovered tens of thousands of gullies on slopes inside craters and other depressions on Mars. Most gullies are at latitudes of 30 degrees or higher. Malin and his team first reported the discovery of the gullies in 2000. To look for changes that might indicate present-day flow of water, his camera team repeatedly imaged hundreds of the sites. One pair of images showed a gully that appeared after mid-2002. That site was on a sand dune, and the gully-cutting process was interpreted as a dry flow of sand.

The Dec. 4, 2006 announcement is the first to reveal newly deposited material apparently carried by fluids after earlier imaging of the same gullies. The two sites are inside craters in the Terra Sirenum and the Centauri Montes regions of southern Mars.

"These fresh deposits suggest that at some places and times on present-day Mars, liquid water is emerging from beneath the ground and briefly flowing down the slopes. This possibility raises questions about how the water would stay melted below ground, how widespread it might be, and whether there's a below-ground wet habitat conducive to life. Future missions may provide the answers," said Malin.

Besides looking for changes in gullies, the orbiter's camera team assessed the rate at which new impact craters appear. The camera photographed approximately 98 percent of Mars in 1999 and approximately 30 percent of the planet was photographed again in 2006. The newer images show 20 fresh impact craters, ranging in diameter from 7 feet (2 meters) to 486 feet (148 meters) that were not present approximately seven years earlier. These results have important implications for determining the ages of features on the surface of Mars. These results also approximately match predictions and imply that martian terrain with few craters is truly young.

Mars Global Surveyor began orbiting Mars in 1997. The spacecraft is responsible for many important discoveries. NASA has not heard from the spacecraft since early November. Attempts to contact it continue. Its unprecedented longevity has allowed monitoring Mars for several years past its projected lifetime. NASA's Jet Propulsion Laboratory, Pasadena, manages the Mars Global Surveyor mission for the NASA Science Mission Directorate, Washington.

NASA and Google to bring space exploration down to Earth

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and Google will soon allow every American to experience a virtual flight over the surface of the moon or through the canyons of Mars," said NASA Administrator Michael Griffin at Headquarters in Washington. "This innovative combination of information technology and space science will make NASA's space exploration work accessible to everyone," added Griffin.

"Partnering with NASA made perfect sense for Google, as it has a wealth of technical expertise and data that will be of great use to Google as we look to tackle many computing issues on behalf of our users," said Eric Schmidt, chief executive officer of Google. "We're pleased to move forward to collaborate on a variety of technical challenges through the signing of the Space Act Agreement."

Recently, teams from NASA and Google met to discuss the many challenging computer science problems facing both organizations and possible joint collaborations that could help address them.

NASA and Google intend to collaborate in a variety of areas, including incorporating agency data sets in Google Earth, focusing on user studies and cognitive modeling for human computer interaction, and science data search utilizing a variety of Google features and products.

"Our collaboration with Google will demonstrate that the private and public sectors can accomplish great things together," said S. Pete Worden, Ames Center Director. "I want NASA Ames to establish partnerships with the private sector that will encourage innovation, while advancing the Vision for Space Exploration and commercial interests," Worden added.

"NASA has collected and processed more information about our planet and universe than any other entity in the history of humanity," said Chris C. Kemp, director of strategic business development at Ames. "Even though this information was collected for the benefit of everyone, and much is in the public domain, the vast majority of this information is scattered and difficult for non-experts to access and to understand.

"We've worked hard over the past year to implement an agreement that enables NASA and Google to work closely together on a wide range of innovative collaborations," said Kemp. "We are bringing together some of the best research scientists and engineers to form teams to make more of NASA's vast information accessible."

NASA and Google also are finalizing details for additional collaborations that include joint research, products, facilities, education and missions.

Google's innovative search technologies connect millions of people around the world with information every day. Google is headquartered in Silicon Valley close to Ames with offices throughout the Americas, Europe and Asia.

BY MICHAEL MEWHINNEY

NASA ice images aid study of Pacific walrus arctic habitats

The Arctic ice pack is home to thousands of Pacific walrus. Their preferred habitat is an ice floe that has enough density and surface area to support a herd of 12-foot-long, 3,000 pound mammals. In the spring, walrus 'haul out' on this floating ice to rest, mate and rear their young. Recently, NASA collaborated with the U.S. Fish and Wildlife Service in Alaska to determine the usefulness of satellite imagery for studying the effect of climate change on the Pacific walrus ice habitat in the Bering and Chukchi seas.

Pacific walrus (Odobenus rosmarus divergens) is the only subspecies of walrus that inhabits U.S. waters. Native Alaskans rely on a bountiful walrus population for their food, clothing and shelter, and as a spiritual totem, making it an important part of Alaska's economy and cultural subsistence. Because the walrus is vital to these native

Photo courtesy of NOAA

Pacific walrus (Odobenus rosmarus divergens) is the only subspecies of walrus that inhabits U.S. waters. Native Alaskans rely on a bountiful walrus population for their food, clothing and shelter, and as a spiritual totem, making it an important part of Alaska's economy and cultural subsistence. Because the walrus is vital to these native people, a stable walrus population is crucial to their survival and way of life. NASA recently collaborated with the U.S. Fish and Wildlife Serice in Alaska to determine the usefulness of satellite imagery for studying climate change effects on the Pacific walrus ice habitat in the Bering and Chukchi seas.

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NASA Ames and partners honored for supporting disaster response

A team of researchers from NASA Ames, Carnegie Mellon University, Google and the National Geographic Society has been honored by the Tech Museum of Innovation in San Jose for its innovative uses of technology that helps rescue organizations respond more rapidly to global disasters.

As part of the Global Connection Project, Ames partnered with education and private industry to develop software that uses aerial and satellite imaging for a more rapid response to global disasters. The software combines spatial image processing and a 3-D browser that provide geographically located, high-resolution images to relief and government agencies for time-critical decision making.

The Global Connection Project team of researchers, consisting of NASA Ames, Carnegie Mellon Unversity, Google and the National Geographic Society, was recently honored by the Tech Museum of Innovation in San Jose for its innovative uses of technology that helps rescue organizations respond more rapidly to global disasters.

"We believe that technology can be used to connect, inspire and inform global communities, as well as encourage understanding and appreciation of the Earth worldwide," said Dr. Terry Fong, leader of the Intelligent Robotics Group at Ames. "By meeting with and learning about our global neighbors, we become better equipped to solve issues that transcend national boundaries, such as resource shortages, pollution and climate change."

The Global Connection Project seeks to spread understanding of the world's people, cultures and environments. It started in May 2005, and initially focused on embedding high-resolution aerial imagery from conservationist Mike Fay's "Africa MegaFlyover" project, National Geographic stories, and panoramic images into Google Earth. The 'geospatial' results allow the public to experience and better understand remote parts of the world.

Last fall, the Global Connection team adapted its software tools to support disaster response. In the aftermath of Hurricane Katrina, for example, the team processed and geo-located 7,900 post-disaster fly-over images taken by the National Oceanic and Atmospheric Administration. These images enabled relief workers to better assess damage and make critical decisions during response efforts.

Global Connection also provided similar aerial and satellite imagery that supported the disaster response after Hurricane Rita and the October 2005 earthquake in Pakistan.

"The Global Connection Project team is making a significant impact on how citizens of the Earth learn about and interact with their global neighbors. Our software tools invite active participation; provide accurate, rich and engaging information; and allow for easily updated and increasingly real-time information," said Fong. "By making information about our planet and its inhabitants more accessible, we are making it easier for human beings to interact with each other and nature."

The prestigious Tech Museum award is part of the Tech Museum Awards Program, which celebrates the development of technology to benefit humanity. The international award was presented at the Tech Museum awards gala, hosted by Steve Young, former National Football League legend and member of the Tech Museum of Innovation's board of directors; leaders from Silicon Valley; and delegates from the United Nations. Global Connection received its award in the economic development category.

Former San Francisco 49r quarterback Steve Young spoke at the recent Tech Museum Awards 2006 ceremony, where a team of reseachers from NASA Ames, Carnegie Mellon University and Google was honored.

Global Connection team members include co-principal investigators Illah Nourbakhsh, associate professor of robotics at Carnegie Mellon's Robotics Institute and Randy Sargent, a project scientist at the university's West Coast Campus, along with Anne Wright, QSS Group, Inc.; Leila Hasan, Carnegie Mellon University; A. J. Antony Chettupuzha, Carnegie Mellon University; and Dr. Larry Barone, Bay Area Economic Group. Google participants included Brian McClendon, director of engineering, and Michael Jones, chief technology officer for Google Earth.

For more information about the Global Connection Project, visit the Web at http://www.cs.cmu.edu/~globalconn/

BY RUTH MARLAIRE

Ames wins funding for innovative technology partnerships

NASA's Vision for Space Exploration calls for robots and humans to return to the moon, Mars and beyond. And NASA Ames' innovative partnerships with industry and academia will ensure cost-effective development of the breakthrough technologies needed.

Responding to a call from the NASA Headquarters' Innovative Partnerships Program (IPP), Ames and its collaborators recently submitted eight proposals for seed fund consideration. On the basis of technical merit, feasibility and leveraging of internal and external resources, Ames' proposals were selected for award in four technically diverse areas encompassing the Science, Exploration Systems, Space Operations and Aeronautics mission directorates.

"It is a tribute to our researchers that four of our eight proposals were selected for funding," said Ames Center Director S. Pete Worden. "The quality of the proposals was uniformly high and reflected extremely well upon the entire Ames scientific and research community. At Ames, we are charting new strategic directions and ensuring that we will be a critical player as NASA implements its Vision."

In response to the IPP seed fund call, the Ames Technology Partnerships Office received 32 proposals. These were narrowed to eight based on the headquarters-established criteria that proposals had to be directly relevant to mission directorate technology priorities and had to demonstrate a substantial leveraging of external resources. The winning Ames proposals will provide critical support to multiple missions in a highly cost-effective manner.

One such proposal studies the development of an innovative multi-mission telescope that uses large, lightweight silicon carbide mirrors in space. The proposed telescope would lower mission costs by using low-cost silicon carbide mirrors, and their light weight would reduce the spacecraft's cargo weight. Its field of vision can be wide or narrow, and is capable of detection, observation and characterization of various phenomena. Several innovative partnerships will be leveraged to develop this technology -- General Dynamics Advanced Information Systems, the Air Force Research Laboratory and Subaru.

For the astronauts to exist on the moon, they will use lunar resources to possibly make oxygen and water, create radiation shielding and building materials. Ames proposed equipping small rovers (25 to 50 kg in mass) with sensors for surface prospecting. These small robots identify and map key resources such as water ice and minerals for oxygen production. This project leverages the Ball Aerospace Inc. and the University of Tennessee for their sensor development experience.

Specifically, the University of Tennessee will provide a compact neutron spectrometer for the detection of near-surface water (liquid and ice), and Ball Aerospace will provide a volatile water extraction and purification system from regolith analog samples.

Sorties to the moon would hone astronaut skills and appraise equipment. For the success of this experiment, ground control would need the skill to support outposts on the moon. The third proposal characterizes the technical parameters for lunar communications between the Earth and the moon, focusing on the Internet protocol (IP) network, laser communications and small satellites. Three recommendations from NASA's 2006 Space Communications Architecture Working Group will be studied: 1. schedule and planning; 2. network services, and protocol selection and governance; and 3. lunar communications.

The key benefit to NASA is the development of a network solution for lunar communications and navigation that supports future missions with low-cost connectivity, while leveraging the best solutions from the telecommunications industry. Partners include Ball Aerospace, which will provide access to its internal spacecraft hardware development activities; and Cisco, which will provide networking protocols and support integration of the IP network functions into existing spacecraft communications.

The last proposal improves the Integrated Systems Health Management techniques and processes for avionics systems, which promises to boost in-flight performance, reduce maintenance costs, and improve aircraft reliability. Its application is relevant to multiple Exploration Systems Mission Directorate vehicles, including Orion, Ares, and future vehicles such as LSAM. The partner is Impact Technologies, which will provide its experience with prognostics for electronics.

BY RUTH DASSO MARLAIRE

ISU discusses past, present and future

NASA photo by Tom Trower

Ames employees were invited to learn about the International Space University in early December. NASA has had a long and special relationship with ISU since its founding in 1985. Representatives from ISU (shown above) were on hand to discuss the past, present and future of this unique international organization. One of ISU's signature programs is the 9-week Summer Session Program (SSP). Each year, universities from around the world compete to host the SSP for 120 - 150 students from around the world. Ames is vying to be the first NASA center to host a summer session program (for 2009). Ames submitted a compelling proposal in September under the leadership of the Strategic Communications and Development Directorate and the New Business Office. The visiting ISU leadership, Gary Martin, SSP director, and Mathieu Gruber, SSP logistics manager, visited Ames in conjunction with Ames' bid. ISU will make its site selection announcement in late January 2007. To learn more about ISU and its programs, visit their Web site: www.isunet.edu For additional information about Ames' proposal to host ISU SSP 2009, contact the Ames project manager, Donald James, at ext. 4-4967.

Ames employees honored with Presidential Rank Awards

Each year, the president recognizes and celebrates a small group of career senior executives and senior technical employees with the Presidential Rank Award for exceptional long-term accomplishments. Winners of this prestigious award are strong leaders, professionals and scientists who achieve results and consistently demonstrate strength, integrity, industry and a relentless commitment to excellence in public service.

The three Ames outstanding individuals listed here, G. Scott Hubbard, Bonnie Dalton and Louis Allamandola, were awarded the Meritorious Presidential Rank Award for 2006. They were recognized by Associate Administrator Rex Geveden at an agency Rank Award luncheon in Washington, D.C.

G. Scott Hubbard (Senior Executive Service)

Former Ames Center Director G. Scott Hubbard has been at the forefront of the Ames transition from its historic aeronautical roots to its current position of strength in Silicon Valley, pursuing strategic research and advanced technology to support NASA's missions.

Hubbard is one of the founders of the internationally recognized field of astrobiology, the study of life in the universe. His record in innovation extends from early research in novel radiation detector development to the airbag approach for landing spacecraft on Mars, to current efforts in the emerging entrepreneurial space industry.

Hubbard honed his leadership skills as the founder of a small, high tech company in the 1980s and brought all those skills to bear in his 20-year career at NASA. He became the manager of NASA's return to the moon after an absence of 25 years with the successful Lunar Prospector mission. Soon after, he restructured the entire NASA Mars Program. His success earned him the nickname of 'Mars Czar' and is measured by the fact that his mission queue remains essentially intact and successful to this day. In early 2006, a highly respected European institution, the 46,000 student Universidad Polytechnic of Madrid, honored him with a Doctor Honoris Causa, an acknowledgement of the highest caliber.

As NASA's sole representative on the Columbia accident investigation board, his leadership initiated the impact test program that established the definitive physical cause of the accident. Hubbard has earned seven NASA medals in addition to numerous other awards in recognition of his service and dedication as a NASA leader. Under Hubbard's leadership, Ames has transitioned from emphasis on wind tunnels and traditional computational fluid dynamics to its current stature as a cutting-edge research and technology institution.

NASA photo by Tom Trower

Former NASA Ames Center Director G. Scott Hubbard, recent recipient of a Senior Executive Service Presidential Rank Award.

Bonnie P. Dalton (Senior Executive Service)

Over three decades, Bonnie Dalton, deputy director of Science, has handled progressively greater challenges in leading the space life science organizations at Ames. Since coming to the center, Dalton's career has become synonymous with NASA science missions on a variety of platforms.

As an exobiology researcher, she studied extremophiles in preparation for the first Mars landing Viking. As a project manager, branch chief and deputy division chief, she was responsible for life sciences payloads on more than 20 shuttle missions, eight Spacelab missions and five Mir missions representing approximately 400 scientific experiments for life sciences in microgravity.

With NASA's future and the Exploration Initiative at the forefront, Dalton has worked actively toward the development of leaders to carry forward NASA's goals. She has mentored and developed members of the Ames Strategic Leadership Bootcamp and supported the Inland Northwest Space Alliance (which was a non-profit) to further rural engineering and science students' ability to fly scholastic projects with NASA, the military and private industry and was instrumental in implementing a 'small sat' utilization for the Ames GeneSat.

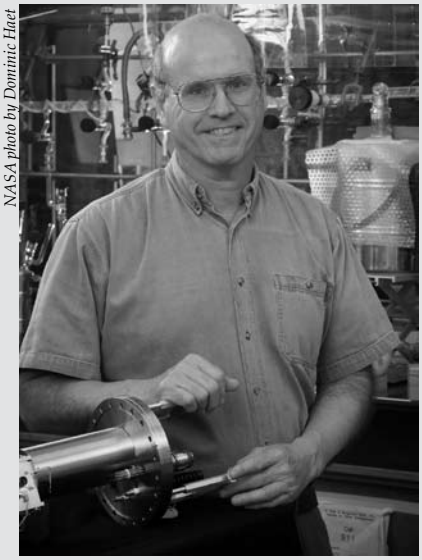
Her successes have led to further collaborations with the external community for flight support in testing technology development focused toward the Vision for Space Exploration.

NASA photo by Dominic Hart

Bonnie Dalton, deputy director of Science at NASA Ames, recent recipient of a Senior Executive Service Presidential Rank Award.

Ames employees honored with Presidential Rank Awards

Louis Allamandola (Senior Scientific and Technical)



NASA photo by Dominic Hart

Louis Allamandola, senior scientist in the Space Science Divsion at Ames, and recent recipient of the Senior Scientific and Technical Presidential Rank Award.

Louis Allamandola, senior scientist in the Space Science Division, is among the pioneers of laboratory astrophysics. He is the founder and director of the Ames Astrochemistry Laboratory, a laboratory in which the cold, deep vacuum and harsh radiation conditions of deep space are realistically duplicated.

Work from this group has revolutionized our understanding of chemistry in space, showing it to be far richer and far more complex than people thought possible.

Within the first year of his becoming a civil servant, he won the H. Julian Allen Award, the center's highest award for a scientific publication.

To his credit, Allamandola is among the most highly cited authors in space science, has over 200 peer-reviewed papers and presented over 140 invited seminars at universities and symposia around the world.

He has been interviewed by and has contributed to articles for national magazines and newspapers including Newsweek, Popular Mechanics and Discover.

Allamandola has sat on NASA advisory councils, many NASA space mission development teams and scientific organizing committees.

He has been a chair or co-chair for 13 international conferences or symposia. His awards and recognition - winning contributions to fundamental and theoretical science have focused the spotlight on Ames as the world's premier research center in laboratory astrochemistry and astrobiology.

NASA ice images aid study of Pacific walrus arctic habitats

continued from page 5

people, a stable walrus population is crucial to their survival and way of life.

To study the population dynamics and supporting habitats of the Pacific walrus, students from the NASA Develop program worked with the U.S. Fish and Wildlife Service (USFWS) in Alaska to determine the relationship between polar sea ice formations and the preferred habitat of the Pacific walrus. For the first time, radar sensors were used to study the walrus in the Alaskan Yukon-Kuskokwim Delta.

Walrus live on sea ice where wind-driven rills and flats vary in thickness and landscape. The dynamic nature of sea ice and its uniform appearance pose unique challenges to remote-sensing studies. In the past, researchers were literally in the dark when searching for walrus.

"Last spring, the largest census ever performed on the walrus population was undertaken," said Jay Skiles, senior research scientist in biosphere science at Ames. "The count took almost two months, required the use of ships and smaller craft, airplanes and helicopters with thermal sensors. Russia provided valuable support by supplying an ice-breaker for the study," said Skiles.

Skiles co-manages the Develop program with Cynthia Schmidt at Ames. The Develop program, supported by the NASA Science Mission Directorate Applied Sciences Program, encourages student teams to investigate the use of NASA science research results and observations relevant to societal concerns and perform advanced, analytical experiments demonstrating their contribution to national policy and decision-making.

Researchers say there are big advantages to knowing where to find the walrus. When conducting surveys, researchers know where to go to make the count and fewer resources are used, which make the studies more cost-effective.

During the USFWS survey, a low-flying aircraft with a thermal sensor onboard scanned for thermal signatures or walrus. Since walrus are warmer than the ice surrounding them, each point on the flight path, or scanline, represented the presence of walrus. Satellite imagery is used to supplement the airborne thermal data to classify ice types, which is difficult to do because of its contiguous nature.

Once the two sets of data were collected, flight-path imagery was overlaid on satellite imagery of the same region and similar time period. Understanding certain sea ice features such as density and proximity to open water is key to identifying areas where the walrus can be found. Results from analysis of the synthetic aperture radar (SAR) data suggest that walrus seem to prefer regions composed almost entirely of medium thickness approximately 2 - 4 ft. (70 -120 cm.) first-year ice.

"This study is by no means exhaustive. Our data suggest the possibility that sea ice features may be critical factors for the walrus when choosing a habitat. Using techniques developed during this project, the U.S. Fish and Wildlife Service may be able to determine, over time, if climate change is affecting Pacific walrus populations," said Skiles.

For related images and more information, please visit on the Web: http://www.nasa.gov/

For more information about the U.S. Fish and Wildlife Service on the Web, visit: http://alaska.fws.gov/fisheries/mmm/index.htm

For more information about the use of SAR on the Web, visit: http://www.sandia.gov/RADAR/whatis.html

BY RUTH DASSO MARLAIRE

Protective Services Office hosts safety day for kids

NASA photos by Tom Trower

The Ames Protective Services Office (Code JP) recently hosted a Safety Day presentation at the Ames Child Care Center. With their parents consent, the kids were fingerprinted and digitally photographed by Code JP personnel. These items were then returned to the parents for their family records. 'McGruff' the crime dog also came to visit the kids to help teach them how to be safe.

Upcoming Events . . .

Desktop Showcase scheduled for Jan. 23.

Do you know about the Desktop Outsourced Services provided at Ames Research Center? Please join Lockheed Martin and some of Ames' vendors, for a Desktop Showcase on Tuesday, Jan. 23, 2007 in the NASA Ames Conference Center located in Bldg. 3 in the main ballroom. This event will run from 10:00 a.m. to 2:00 p.m.

Come spend some time with our ODIN team, as we will have representatives from engineering, desktop support and asset management to meet with you and clarify questions you may have.

There will be representatives from Apple Computer, HP and Verizon (among others) on hand to demonstrate their new equipment and answer questions that you may have -- a tradeshow for NASA Ames.

We also will have representatives from other Lockheed Martin functional organizations who will be available to demonstrate such things as our new e-catalog from central operations (ODIN Help Desk). Light refreshments will be served during the day, so take a few minutes and come on down and join us for the Lockheed Martin Desktop Showcase coming this January.

Want to learn more about the Hubble Space Telescope?

Astronomer Bruce Margon, vice chancellor of research at the University of California, Santa Cruz, will give a non-technical, illustrated talk on: 'Glimpsing the Edge of the Universe: Results from the Hubble Space Telescope.' Margon arrived at the university in the fall of 2006 after working at the Space Telescope Science Institute. He was a key member of the team that built one of the Hubble's instruments, and also served as scientific director of the Sloan Digital Sky Survey.

Date: Wednesday, Jan. 24, 2007
Time: 7 p.m.
Place: Smithwick Theater
Foothill College
El Monte Road
and Freeway 280,
Los Altos Hills

The talk is free and open to the public and is part of the Silicon Valley Astronomy Lecture Series. No background in science is required for this talk. Parking on campus cost $2. Call the series hot-line at (650) 949-7888 for more information and driving directions.

Ames' Nimble Knitters club help the homeless keep warm

Some of the members of the Nimble Knitters Club modeling the pocket scarves that they knitted for their latest charity project. Seated, left to right, Lynda Haines, Rosalyn Jung, Rekha Dolas. Standing, left to right, Joanne MacArthur, Mary Walsh, Sandy Hart, Katharine Lee, Lou Ann Hong, Susan Nelson, Susan Lee, Diane Alexander, Maria Triarsi and Arelene Spencer.

The Ames Nimble Knitters learned to knit and were able to help some homeless members of the community at the same time. Under Ames Exchange sponsorship, the club donated 20 much-welcomed pocket scarves to the Santa Clara County InnVision homeless shelters.

Come join the Nimble Knitters to learn to knit or to share your skills in the art of knitting. Website: http://knit.arc.nasa.gov

WIFI and coffee available at Moffett's Tee Minus 1 Grill Clubhouse

Have you visited the Tee Minus 1 Grill Clubhouse lately? New changes include the addition of wi-fi!

"NASA Research Park partner Advanced Wireless Communication (AWC) project manager Michael Blankenship coordinated the installation of the service in less than 2 1/2 hours and we are thrilled," said Terry Del Vecchio, Ames Exchange operations manager.

"This is just the first of what we hope to be many mutually beneficial agreements with the NASA community," said AWC CEO Andrew Gold.

A super automatic espresso/cappuccino machine was also installed at Tee Minus 1 Grill. The trained baristas will soon be delighting the specialty coffee connoisseurs in the Ames community!

Tee Minus 1 Grill Clubhouse, located at Moffett Field, now has wi-fi and a new super automatic espresso/cappuccino machine.

The wi-fi at the clubhouse is not part of the NASA network. Be aware that all network traffic between your laptop and the Tee Minus One wi-fi service is un-encrypted, so you will need to take steps to ensure the level of security required by NASA. For more information about how to secure your NASA laptop when connecting to non-NASA networks, go to the following link: http://computer-security.arc.nasa.gov/laptopsecurity.cfm For more information, contact Terry Del Vecchio at Teresa.M.DelVecchio@nasa.gov

NASA photos by Tom Trower

Ames Ongoing Monthly Events Calendar

Ames Amateur Radio Club, third Thursday of each 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 3rd Wednesday of the month. The meeting location is Building 19, Conference Room 1083 and the meeting time is 12 noon - 1 p.m. Contact Julie Nottage at jnottage@mail.arc.nasa.gov, ext. 4-3711. Bylaws of Ames Bicycling Club can be found at http://zen.arc.nasa.gov; the link is right under the picture.

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 Tuesday in N-229/Rm 117 from 12 - 1:30 p.m. POC: Julie Schonfeld, ext. 4-6504.

Ames Contractor Council Mtg, first Wednesday each month, 11 a.m., N-200, Comm. Rm. POC: Doreen Cohen, ext. 4-5203.

Ames Diabetics (AAD), 1st & 3rd Weds, 12 noon to 1 p.m., at Ames Mega Bites, Sun room. Support group discusses news affecting diabetics. POC: Bob Mohlenhoff, ext. 4-2523/e-mail at: bmohlenhoff@mail.arc.nasa.gov.

Ames Federal Employees Union (AFEU) Mtg, third Wednesday of ea. month, 12 p.m. to 1 p.m., Bldg. 221, Rm 104. Guests welcome. Info at: http://www.afeu.org. POC: Marianne Mosher, ext. 4-4055.

Ames Mac Support Group Mtg, third Tuesday of ea. month, 11:30 a.m.to 1 p.m., Bldg. N262, 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.

Ames Sailing Club Mtg, second Thursday of ea. month (Feb through Nov), from 12:00 p.m. -1:00 p.m. in Bldg. N-262, Rm 100. URL: http://sail.arc.nasa.gov/. POC: Becky Hooey, ext. 4-2399.

Environmental Forum, first Thursday every other month, 9:00 a.m. to 10:00 a.m., Bldg. 218/2nd floor training room. URL: http://q/qe/events/EHSseries/ POC: Stacy St. Louis at ext. 4-6810.

The Hispanic Advisory Committee for Excellence (HACE) Mtg, first Thurs of month in N255 room 101C from 11:45 a.m. to 12:45 p.m. POC: Eric Kristich at ext. 4-5137 and Mark Leon at ext. 4-6498.

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

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

Look for changes to upcoming editions of the Astrogram. The Astrogram team believes these changes, which will be implemented in early 2007, will make the employee newsletter more timely and user friendly.

Safety Data

NASA-Ames Occupational Illness-Injury Data for Calendar Year-to-Date 2006 Jan. 1, 2006 – Nov. 30, 2006

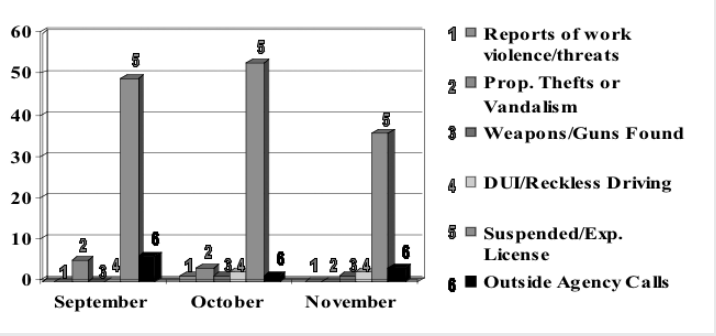
	Civil Servants	Contractors
First aid cases	15	20
Lost Workday cases	0	6
Recordable cases	3	10
Restricted duty days	0	0

Above data are as of 11/30/06. May be subject to slight adjustment in the event of a new case or new information regarding an existing case.

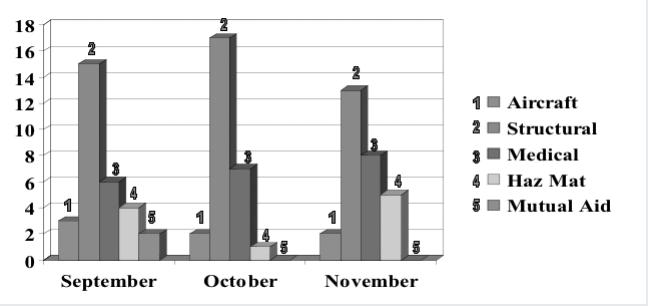
Protective Services monthly activity

A statistical summary of activities of the Protective Services Division's Security/Law Enforcement and Fire Protection Services units for the month of Nov 2006 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!

Miscellaneous

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.

Piano for sale. Upright white maple Wurlitzer in excellent condition. You arrange pick up from San Jose. $500 or B/O. Marilyn (408) 629-7889.

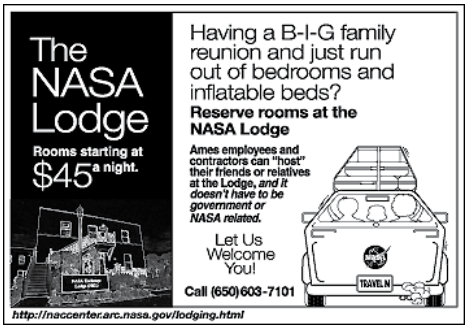
Steamer EuroproX Professional Model EP961, $50. Rotisserie/BBQ Ronco Showtime, seldom used, $50. Power Juicer, Jack LaLanne, never used, $50. Exercise equipment: Lifestyler Cardio 930 low impact, $50. Call (408) 765-4935.

Automotive

'89 Ford Bronco- full size 4wd, 155K miles, offroad interior pkg, strt 6 4.9l engine, 5spd.man. transmission, new alternator,battery,recently passed smog. Extra parts. $1,800 or B/O. Kyle (510) 504-2163.

NASA Project Management (PM) Challenger 2007

Online registration for NASA's Fourth PM Challenge conference to be held in Galveston Texas on Feb. 6-7, 2007 is now open: Visit http://pmchallenge.gsfc.nasa.gov/registration2007.htm. The conference theme is 'Knowledge Sharing.' Speaker abstracts and biographies are now posted at on the Web at http://pmchallenge.gsfc.nasa.gov/program.htm#Programsummary



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. and Sat 12 p.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 4 p.m., ext. 4-5412 and Beyond Galileo, 8 a.m. to 2 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/Contrators, $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.

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

Vacation rental, Bass Lake, 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 in 24 hour security bldg. overlooking Washington Square Park, $1,000/wk or $3,000/mo. negotiable. Call (650) 349-0238.

Paris/France: Fully furnished studio, 5th Arr, Latin Quarter, Notre Dame and Lie-St. Louis., $1,400/wk. negotiable. Call (650) 349-0238.

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

Maui luxury oceanfront resort one-bedroom condo available one week. Rents for $345/night now, $495/night in the summer. We will rent to an Ames family for $1,750 for the week. See the condo at http://www.starwoodvo.com/resorts/villafeatures.jsp?resortID=12 Call (650) 572-8877 for availabilty and questions.

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.

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 the 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.

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 to offer earlyout/buyout opportunities

Ames Research Center will be offering buyout and earlyout opportunities to employees in selected competencies. The buyout application period will continue through Feb. 16, 2007. Acceptances/rejections will be issued each Monday for applications received by the close of business on the preceding Friday. Employees may separate at any time after receiving notification of acceptance of their application up to March 3, 2007.

The buyout will be in the form of a lump sum payment made to eligible employees who separate by resigning or retiring. The maximum payment will be $25,000 and is dependent on grade, length of service and age.

The early out allows eligible employees to retire early, before meeting the normal age and years of service requirement. Employees taking the early out can also receive the buyout.

An centerwide announcement will be issued when this buyout/earlyout opportunity opens and when applications can be submitted. Further information about this opportunity, the eligible competencies, and the application form, will be available on the HR Web site http://ameshr.arc.nasa.gov/transformation/buyout.html .

Since the number of opportunities will be limited, and will vary by competency, grade, occupation and organization, employees with a strong desire to take advantage of this opportunity should not delay in submitting their applications.

Employees should contact their Human Resources Manager with questions concerning the buyout/early out opportunity.

ACC 2007 historical calendar on sale

Photo by Gerri Stephenson

Chris Johnson, ACC vice president; and Doreen Cohen, ACC president, shown selling the 2007 historical calendars at the Mega Bites Cafeteria.

The Ames Contractor Council (ACC) 2007 historical calendar is now available for sale at the Ames gift shops. The 2007 calendar features Ames historical aviation photographs and costs $10 each. As part of the ACC fundraising efforts, proceeds will benefit Ames community programs. This year's ACC calendar committee chair is Joy Colucci.Members of the ACC sold calendars recently at the Ames Mega Bites Cafe.

To learn more about the Ames Contractor Council, visit the website at:http://contractorcouncil.arc.nasa.gov/

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