



# ASTROGRAM

Newsletter of NASA Ames Research Center, Moffett Field, California

June 2007

## Research supports presence of large oceans on early Mars

NASA-funded astrobiologists at the University of California, Berkeley have discovered evidence supporting the presence of large oceans of liquid water on early Mars.

One of the most obvious surface features on Mars is a large plain surrounding the north pole that resembles a sediment-filled ocean basin with shoreline-like features. But the purported shoreline isn't level, an observation that has been used as an argument against the presence of an ocean. This new study shows that the undulations can be explained by movement of Mars' spin axis, and thus its poles, and that a liquid water ocean could indeed have existed there. The scientists' research is scheduled to be published in the June 14 issue of *Nature* magazine.

"This work strongly supports the idea that there were large standing bodies of water on the Martian surface," said Carl Pilcher, director of the NASA Astrobiology Institute at Ames, which co-funded the study. "Interpreting this topography as an ancient northern ocean could have a great impact on current and future Mars exploration," he added.

"When the spin axis moves relative to the surface, the surface deforms, and that is recorded in the shoreline," said study co-author Michael Manga, a professor of Earth and planetary science at UC Berkeley, and member of the NASA Astrobiology Institute Team there. "On planets like Mars and Earth that have an outer shell or lithosphere that behaves elastically, the solid surface will deform differently than the sea surface, distorting the topography," added primary author Taylor Perron, a former UC Berkeley graduate student, now a postdoc-

toral fellow in Harvard University's Department of Earth and Planetary Sciences. Perron's calculations show that the resistance of the elastic crust

could create elevation variations for topographic features like the shoreline, in accord with observations.

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## Worden says Ames is "Cool"



NASA photo by Paul Langston

Ames has come a long way in the past year and the future looks bright for NASA's Silicon Valley jewel, according to Ames Center Director S. Pete Worden.

During an All Hands meeting held June 7, Worden delivered an upbeat assessment of the center's current status and its future. His wide-ranging remarks delivered to a capacity crowd gathered in the main auditorium, were

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*Ames Research Center Director S. Pete Worden is seen here during his recent assessment of the State of the Center in early June. He gave his perspective about how Ames is doing after his first year here at the center.*

## Lisa Porter speaks at Ames



NASA photo by Dominic Hart

*Lisa Porter, associate administrator for the Aeronautics Research Mission Directorate, recently visited Ames.*

Dr. Lisa Porter, associate administrator for the Aeronautics Research Mission Directorate, (ARMD), along with program directors and other ARMD staff, recently visited Ames. During her visit, Porter spoke at an All Hands meeting to provide an update on the status of ARMD research activities and answer questions.

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## Kepler spacecraft designed to detect Earth-size planets

NASA's new Kepler spacecraft will greatly expand the quest for planets orbiting stars - not just giant, Jupiter-size planets -- but smaller, Earth-size worlds that might well contain liquid water and so could harbor life.

Kepler is a NASA 'Discovery' mission that scientists have designed to survey our region of the Milky Way galaxy to detect potentially hundreds of Earth-size and smaller planets in or

craft is scheduled to launch in November 2008 on a Delta II rocket from NASA's Kennedy Space Center, Fla. Kepler will look for periodic dimming of stars, or transits, as clues that would reveal the presence of intervening planets along the craft's line of sight.

Looking for planets orbiting other stars is difficult with Earth-based telescopes that have to peer through Earth's atmosphere. The starlight is 'polluted' by the nocturnal lights cast by cities, and the smoke and smog of civilization and by other natural distortions created by our atmosphere. Even the Hubble Space Telescope, which orbits Earth, is limited because it is not designed to stare intently for years at just one small section of the Milky Way. To

After launch in 2008, Kepler will soar away from the Earth, and in a few days the spacecraft will be past the moon's orbit. Kepler's final orbit will be around the sun, trailing Earth.

Scientists designed the orbit to give the spacecraft a stable view of the 100,000 stars being examined and to keep Kepler's view of those stars from being blocked by the sun or moon. Researchers planned the Kepler mission to last four years with the potential to extend it an additional two years.

"If you're thinking about the Earth traveling around the sun, Earth goes around once a year. So, you need to observe for at least three years, and preferably four years, to be more certain statistically that a planet has been spotted," Borucki explained.

Like a photographer's light meter, the CCD array will not capture actual images of planets, but instead will look for starlight that dims and brightens again on a regular timetable. This periodic variation of starlight may indicate that planets could orbit these stars. Planets would be passing between their stars and Earth, causing the starlight reaching the Kepler spacecraft to be weakened, once for each planet's 'yearly' orbit. Planets' years will vary in comparison to Earth years, depending on how far away from their home star they orbit, and how fast they orbit.

According to Koch, Kepler would look at the same field of view in space, a region along the Orion arm of the galaxy for at least four years. "The chances of detecting a planet in the habitable zone of a star are about a half of a percent. Therefore, tens of thousands of stars need to be monitored continuously (at least once every hour) in order to detect hundreds of planets," Koch said.

Kepler will transmit its data to Earth every 30 days via NASA's Deep Space Network. The network will carry the data to the mission operations center at the University of Colorado, Boulder. The center staff will use the engineering data to monitor the health of the spacecraft and its key component, the CCD photometer. The science data will travel to the Space Telescope Science Institute in Baltimore,

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*Artist's rendition of the Kepler spacecraft.*

near habitable zones. A habitable zone is the distance from a star where liquid water could exist on the surface of a planet orbiting that star.

"It's the most important endeavor NASA is undertaking, in my opinion," ventured William Borucki, a space scientist and Kepler's principal investigator who works at Ames where the mission was conceived and where science operations will be conducted. "We are trying to find man's place in the universe. The first step in doing that is finding Earth-like planets. Ultimately, we'll travel to the stars to see who is there," Borucki predicted.

"Since we first proposed Kepler in 1994, scientists have detected more than 200 extra-solar planets," said astrophysicist David Koch of Ames, Kepler's deputy principal investigator. However, almost all of these are gas-giant planets, and the virtue of Kepler is that it is able to find Earth-size and smaller planets, Koch observed.

Kepler will be the first space telescope specifically designed to find Earth-size planets in the habitable zones around distant stars. The space-

overcome these and other problems encountered by Earth-bound telescopes, astronomers suggested that a new telescope that can detect Earth-size and smaller planets in habitable zones be launched into space. This new telescope would be expressly designed to look for star-dimming 'transits.'

Kepler will include a lens, a primary mirror and a charge-coupled device (CCD) array for collecting light. The CCD array is similar, but bigger than, the CCDs that replace film in consumer, digital cameras.

"The Kepler focal plane is made up of 95 megapixels, unlike a digital home camera, which might be five megapixels," Koch explained. As of February 2007, the CCD photometer array was nearing completion, and engineers were planning for spacecraft assembly and testing at Ball Aerospace, Boulder, Colo. The new optics system on Kepler, including its mirror and telescope, will focus pinpoints of light from 100,000 Milky Way stars onto the light-sensitive CCD array, according to Koch.

## NASA computer programs help engineers find machine defects

Finding defects in rotating machinery will be quicker and easier, thanks to two new NASA computer programs and an award-winning technical paper that describes them.

Two Ames computer scientists who wrote about software that can find faults in gearing, received an award for their technical paper from the Society of Automotive Engineers (SAE, International), Warrendale, Pa. SAE represents engineers in mobility-related professions.

"The significance of this technology is that from sensory data, it can predict if, and at what location, a given moving part of a mechanical system may fail during operation," said Upendra Kaul, one of the two authors and principal investigator of the project.

SAE gave computer scientists Kaul and Nikunj Oza, also of NASA Ames, the Arch T. Colwell Merit Award at the SAE 2007 World Congress in Detroit in April 2007. Kaul and Oza co-authored the research paper, 'Machine Learning for Detecting and Locating Damage in a Rotating Gear.' The paper explains how the software analyzes stress and other data from normal gears, and then can detect damaged gear teeth.

The article not only describes a method to detect and locate damage in a rotating gear using the two programs, but also notes that the detection process is not limited to gearing. One program involves modeling and simulation software that can simulate machine subsystems. The second program involves software that can predict how well a machine will operate.

"Based on this technology, we can create damage detectors and locators that can be more robust," Oza said.

Kaul developed the simulation and machine-learning software. Oza fine-tuned the machine-learning software to enable the computer programs to detect faults more efficiently. The work reflected in the technical paper was primarily funded by the NASA's Computing, Information and Commu-

nications Technology (CICT) program managed by Eugene Tu of NASA Ames.

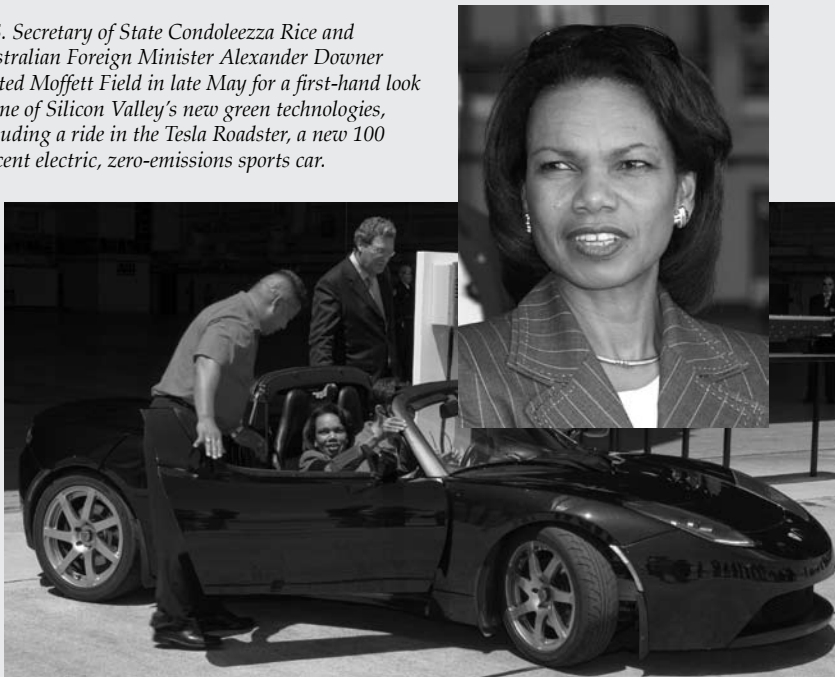
Kaul has more than 27 years of research and development experience in the field of computational sciences and has published more than 60 technical documents, including papers in peer-reviewed conferences and journals. Oza wrote more than 20 papers in peer-reviewed conferences and journals.

According to SAE, the society creates and manages more aerospace and ground vehicle standards than any other entity in the world. "Today, as SAE approaches its 100th anniversary, we represent the collective wisdom of nearly 85,000 engineers, technical professionals, academics and governmental representatives in 97 countries around the globe," the society Web site observes.

BY JOHN BLUCK

## Secretary of State tests car at Ames

U.S. Secretary of State Condoleezza Rice and Australian Foreign Minister Alexander Downer visited Moffett Field in late May for a first-hand look at one of Silicon Valley's new green technologies, including a ride in the Tesla Roadster, a new 100 percent electric, zero-emissions sports car.



NASA photos by Dominic Hart

## Clarification

In a story published in the May 2007 issue of the Astrogram, entitled 'Google representative discusses impressive solar program,' Steve Frankel, Plant Engineering branch chief, requested clarification to his statement.

Referring to the article in which Frankel gave details on the effort to install solar panels at Ames and said "seeing a payback on the investment of the panels is a challenge," -- Frankel said this is true for the recently installed photovoltaic (PV) on N-245 and N-235 .

The May article continued, "Panels were installed on two buildings at Ames in the past and they were unsuccessful; they were not maintained and became unusable." Frankel said this refers to the solar water heating systems installed in the 1970s on N-235 and N-203.

According to Frankel, these statements cannot be combined. The PV panels are very successful systems, generating 16,500 kwh per year of free electricity for Ames.

## NASA's Phoenix to assess chance for life on Mars

In 2008, NASA's Phoenix spacecraft is scheduled to land in the northern plains of Mars to determine if that environment could support life in the past or in geologically recent times.

Like a detective, NASA scientist and Phoenix co-investigator Carol



Stoker of Ames will piece together clues radioed to Earth from the spacecraft to try to determine if conditions on Mars in the icy north could support life either today (unlikely, she says), or in the relatively recent past, when warmer conditions occurred.

"My role is to try to help pull the story together from all different instruments," said Stoker. She will lead the science-working group that will evaluate the biological potential of the landing site.

"We are trying to learn whether conditions allowing life to grow ever occur at this site," she explained. The possibility of life revolves around the question of whether or not liquid water forms in the region as a result of warming due to climate change, according to Stoker.

During the 90-day mission, Phoenix will deploy its robotic arm that can dig trenches as deep as 1.6 feet (one half meter) into the soil, or to the top of an ice boundary. According to Stoker, scientists are expecting to take a small sample from icy soil covered with a thin layer of dry soil.

To analyze soil samples collected by the robotic arm, Phoenix will carry eight "ovens" in a "portable laboratory." Martian samples will be heated to release volatiles that can be examined for their chemical composition. Scientists will look for the building blocks of life that include carbon, hydrogen, nitrogen, oxygen and sulfur among other things.

NASA has scheduled the Phoenix spacecraft for launch in August 2007. In May 2008, Phoenix is to land in an ice-rich area in the northern polar region of Mars between 65 and 72-north latitude. Phoenix is not a 'rover,' and will remain where it lands.

"Why land in the northern plains?" Stoker said. "When Phoenix was being proposed, the Mars-orbiting Odyssey spacecraft had just discovered that in the high latitude

regions of Mars, at 60 degrees north and south, there is a high concentration of hydrogen molecules, indicating that there is up to 50 percent ice in the soil," she explained.

The climate on Mars is governed strongly by the intensity of sunlight energy hitting each area of Mars. Sunlight intensity changes over time in each region because Mars' orbit

changes, and the tilt of the planet's axis of rotation changes.

"Recent missions -- Mars Exploration Rovers -- have explored environments that may have been habitable billions of years ago, but are not today. Phoenix is the first mission to explore an environment that might be capable of supporting modern life," she explained. "We think the ice may preserve organic compounds that are otherwise destroyed by harsh ultraviolet light and strong oxidants found on Mars," Stoker said.

"Currently, Mars is tilted 25.3 degrees, which is nearly the same as the tilt of the Earth's axis," Stoker said. This is just a coincidence, Stoker said. "If you were to take a snapshot in any other epoch of Mars' history, the tilt of the axis could be anywhere from 15 degrees to 35 degrees."

Globally, Mars does not get warmer as orbital parameters change,

explained Stoker, but a particular location could be much warmer. "The change of the tilt of the axis is cyclical," she said. "The time scale for an obliquity (tilt) cycle is about 100,000 years, and the size of the variation increases as you go back in time. Between five and 10 million years ago, the solar energy was almost three times higher in the northern plains than it is now."

Another factor Stoker noted is that the martian orbit is slightly noncircular. Currently, when it is summer in the north Mars is furthest from the sun, the time of year when Mars is closest to the sun changes over time and goes through a complete cycle in 50,000 years. So, in 25,000 years, the northern summer will occur when Mars is closest to the sun. That effect alone will increase the amount of sunlight in high northern latitudes by roughly 50 percent, according to Stoker.

"The near-surface ground ice at the Phoenix landing site could have become warm enough to melt as recently as 25,000 years ago, and these melting periods recur on 50,000-year cycles," Stoker noted. "So, that region is possibly habitable for periods of time lasting a few thousand years, separated by periods where it is too cold, lasting roughly 50,000 years or so," she added.

BY JOHN BLUCK

## Kepler spacecraft designed to detect Earth-size planets

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Md., where researchers will archive Kepler's raw science information.

Researchers in Baltimore will relay raw science data to the science operations center at Ames for analysis and interpretation. Computers will examine the data from the stars to locate any potential dimming caused by planetary transits.

Kepler scientists will be able to calculate the size of the planet by noting how much the brightness of the star drops in relation to how large the star is. Scientists will use the size of the planet's orbit and the temperature of the star to estimate the planet's temperature.

"If there are many planets around a star, we should know how many planets there are, how big and how far away from the star they are, and if they are in the habitable zone," Borucki observed. "That happens if all the planets are in the same orbital plane."

According to Borucki, scientists will find out how frequently Earth-size planets form around stars. "From that, one will know whether, potentially, life is widespread or rare," Borucki said. Scientists hope the Kepler mission will detect Mars-size to Jupiter-size planets in an estimated 700 planetary systems, according to Koch.

BY JOHN BLUCK

## 2007 Forum on Environmental Sustainability held at Ames

Environmental initiatives at NASA and the regulatory issues that govern them were the focus of the 2007 Sustainability Forum held at Ames on June 13.

The forum included opening remarks from Ames Center Director S. Pete Worden, a keynote address from David Crane, special advisor to Governor Schwarzenegger and access to interagency experts. It provided Ames staff with updates on legislation establishing the most extensive carbon dioxide emission controls in the United States, and regulatory efforts at state and local levels impacting Ames operations.

Winners of the 2007 Ames Sustainability Awards were recognized for their leadership in pursuing practices to conserve energy, buy "green" renewable/recycled products, preserve resources and educate employees on ways to become more environmentally aware. The 2007 projects and honorees were:

- The NASA Advanced Life Support Research and Adaptations for Sustainable Practices presentation. Dr. John Hogan discussed similarities and differences between advanced life support in space and on Earth; proposing

*David Crane, senior advisor to Governor Arnold Schwarzenegger, is seen here at right, presented the keynote address at the 2007 Forum on Environmental Sustainability, held June 13 at the center. Ames Center Director S. Pete Worden also spoke at the event. Ames employees learned more about how Ames is pursuing environmental excellence in support of Vision for Space Exploration and how these activities support California's economic environment of innovation and entrepreneurship.*



NASA photo by Dominic Hart

a mission to save the planet utilizing top talent in scientific research and project management.

- The 14-Foot Wind Tunnel Demolition Debris Recycling project, led by Peter Goldsmith, Phase I achieved significant reductions in landfill waste and successful recycling/recovery of more than 40 tons copper/brass/aluminum; 3,000 tons ferrous metals; and 2,500 tons concrete.

- The Ames Bicycling Club. Julie Nottage, Pat Grant, Ted Roush and

Chris Hlavka teamed up to establish the club; setting up a board, community/Earth Day outreach, safety courses, bike tours, city council visits, commuter support and refurbished bikes for Ames employees.

- The Carpet Square Installation at the cafeteria. Mike Stock and Plant Engineering coordinated recycled carpet tile installation at the entrances to the cafeteria to test the durability of this new 'green product.'

BY APRIL NEILSON

## NASA selects new members of Astrobiology Institute

NASA is awarding five-year grants to four research teams that will become new members of the NASA Astrobiology Institute (NAI).

The new multidisciplinary teams are led by the University of Wisconsin, Madison; the California Institute of Technology, Pasadena; Montana State University, Bozeman; and the Massachusetts Institute of Technology (MIT), Cambridge. For the first 18 months of research, teams will receive \$350,000 in funding. The five-year average grant size is approximately \$7 million per team.

"These teams have proposed exciting research that is complementary to work being done by other NAI members," said NAI Director Carl Pilcher, NASA Ames Research Center, Moffett Field, Calif. "The selection of these teams forms an excellent foundation for entering the institute's second decade."

Astrobiology is the study of the origin, evolution, distribution and future of life in the universe. In 1998, NASA founded the Astrobiology Institute, a virtual research institution based at Ames, to stimulate and support this multidisciplinary field of research and education as part of NASA's overall science portfolio.

The University of Wisconsin team, headed by Clark Johnson, proposes to study organic and mineralogical signatures and environments of life on Earth and other planets. This team's work focuses on technologies for the detection of microbial life from its subtle effects on rock chemistry. These technologies will examine ancient rocks on Earth, paving the way for eventual instruments to search for signatures of life on Mars.

The California Institute of Technology team, led by Victoria Meadows, will extend research done within the

NAI from 2001 to 2006. This team has developed a Virtual Planetary Laboratory to explore the habitability and biosignatures of extrasolar, Earth-like planets. These scientists use computer models of planets with different sizes, temperatures and atmospheres to investigate how the presence of life on such planets could be detected telescopically.

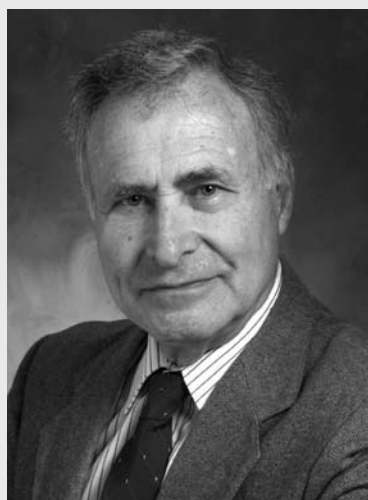
The Montana State University team is headed by John Peters. Its focus is on the origin of life, investigating the role of iron-sulfide compounds in the transition from the non-living to the living world. This work will support the mission of NASA in the area of prebiotic chemistry and the development of signatures for terrestrial and extraterrestrial life.

Roger Summons leads the MIT team. The team will investigate requirements for the development of

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## Ames establishes the Alvin Seiff Memorial Award

Each summer since 2003, a group of scientists, technologists and mission planners have attended International Planetary Probe Workshops, dedicated to exploring our solar system using high-speed atmospheric entry probes.



NASA photo by Roger Brimmer

The first recipient of the Alvin Seiff Memorial Award was named this year. Named after Alvin Seiff (shown above) the award honors an individual for outstanding contributions to understanding the atmospheres of planets and moons.

This year, the workshop leadership will bestow the first annual Alvin Seiff Memorial Award. The award honors

development of mass spectrometer technology and its use to measure the composition of planetary atmospheres. Niemann's work began in



Artist's concept of the Galileo Probe's entry to Jupiter.

collaboration with Seiff on the 1971 Planetary Atmospheric Experiments Test (PAET).

Niemann remained a close colleague of Seiff's in the development of atmospheric probes as a research platform, and his accomplishments include landmark determinations of the compositions of the atmospheres of Jupiter, with the Galileo probe, and Titan, during the Cassini/Huygens flights.

This new award recognizes Seiff's legendary contributions to entry technology and its use in solar system ex-

planetary atmosphere. This concept was demonstrated with the Planetary Atmospheric Entry Test (PAET) in the Earth's atmosphere.

Later, Seiff was the principal investigator on probe missions to determine the structure of the atmospheres of Mars (Viking), Venus (Pioneer Venus) and Jupiter (Galileo). He was the co-investigator on the Huygens atmospheric structure experiment, but did not live to see the results of his work. Seiff is also known for his work with



NASA photo

Shadowgraph of a PAET model in the Hypersonic Free-Flight Ballistic Range.

Tom Canning, for the development of the Hypersonic Free-Flight Ballistic Range Facilities, still operating at Ames.

Seiff won the NASA Medal for Exceptional Scientific Achievement three times and was honored with the Dryden Lectureship by the AIAA. He



NASA photo

Standing beside a model of the Galileo probe, in 1997, are the scientists who analyzed and interpreted data from their Probe instruments. From left to right, they are David H. Atkinson, Doppler Wind Experiment, University of Idaho, a co-founder of the IPPW and co-investigator on the Galileo Atmospheric Structure Experiment with Alvin Seiff; Larry A. Sromovsky, Net Flux Radiometer (NFR); Hasso B. Niemann, Neutral Mass Spectrometer (NMS); Richard Young, Probe Scientist; Alvin Seiff, Atmosphere Structure Instrument (ASI); Ulf von Zahn, Helium Abundance Detector (HAD); Louis J. Lanzerotti, Lightning and Radio Emissions Detector and Energetic Particles Instrument (LRD/EPI); Boris Ragent, Nephelometer (NEP); Klaus Rinnert, LRD; and Harald M. Fischer, Energetic Particles Instrument (EPI).

an individual for outstanding contributions to understanding the atmospheres of planets or moons, and is meant to encourage new generations of solar system explorers to follow Seiff's lead.

The recipient of the first Seiff Memorial Award is Dr. Hasso B. Niemann, recently retired from the NASA Goddard Space Flight Center. Niemann devoted his career to the

ploration. Early in his career at Ames, Seiff led a group of young researchers to define the aerodynamics and aerothermodynamics of the Apollo vehicle. Then, Seiff developed the concept of inverting the entry physics "problem" into a "solution" for understanding planetary atmospheres, whereby the response of an entry probe is used to determine the structure and composition of an unknown

and those he led truly "soared to the stars," literally touching three planets and Titan with his experiments.

We acknowledge the contributions of Glen Bugos, Jack Boyd and Lynn Albaugh for the research and preparation of this article.

BY JIM ARNOLD  
AND ETHIRAJ VENKATAPATHY

## New e-mail system is just around the corner!

In the next few months, NASA Ames employees will migrate to the NOMAD (NASA Operational Messaging and Directory) system. There are numerous benefits of the NOMAD system across the agency, including unified messaging and calendaring, instant messaging, file-sharing capabilities, and an agency-wide global address list. In addition, the new system will provide single password sign-on for scheduling, email and file sharing capabilities.

Ames is scheduled to migrate to NOMAD by November 2007. The center will no longer support the current e-mail client Eudora. The vendor of the Eudora e-mail client (Qualcomm) will no longer support this client commercially after November 2007.

Employees will continue to receive communication regarding the NOMAD system including scheduling specifics for the migration of your system. For more information, please see the Ames NOMAD Web site for details

about the transition process as well as training materials for the use of the NOMAD software. There will also be events to offer demonstrations of features and assistance to all users. If you have questions, please contact help@mail.arc.nasa.gov or visit the Web site at <http://nomad.arc.nasa.gov>.

BY VONNIE SIMONSEN

## Lemon tree planted at Ames in Johnny Green's name



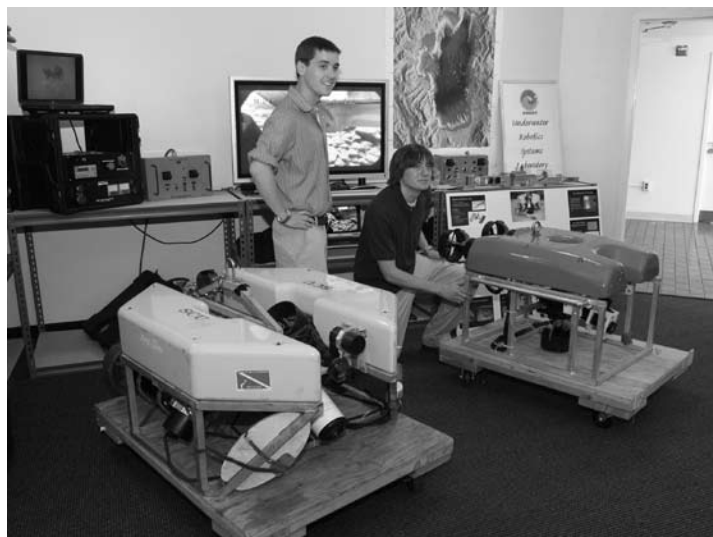
NASA photo by Dominic Hart



photo by Jonas Dino

*A lemon tree was recently planted inside the NASA complex just east of the Arnold gate, directly across from Building N-200, (see far left photo) in remembrance of Johnny Green, the much-loved Ames security guard who passed away in March. He is seen here with his unfailingly positive attitude. If Johnny were still with us today, he would have been able to see the lemon tree from his post at the gate and he would have been able to stroll over during his break to pick lemons for his famous lemonade. Hopefully, this tree will remind us all of Johnny, his lemonade and his cheerful grin as we drove into the center each day.*

## CREST holds open house at NASA Research Park



NASA photo by Dominic Hart

*The Center for Robotic Exploration and Space Technologies (CREST) held its inaugural open house in early June in its new student research facility in Bldg. 583C at the NASA Research Park. During its open house, CREST showcased current partner projects that demonstrated the power of university collaborations, both within the academic arena and within the sectors of industry and government agencies. Activities included live robotic demonstrations and student-led tours of the Small Spacecraft Assembly lab and the Mission Ops center. CREST partners discussed their programs including the Entrepreneurial Space program and the DEVELOP program, where students work in collaboration with other federal partner agencies using cutting-edge NASA Earth science satellite data to address community issues.*

## 2007 Presidential Rank and NASA Honor Awards Ceremony held

The 2007 Presidential Rank and NASA Honor Awards Ceremony for Ames was held in early June. Ames presented Presidential Rank and NASA Honor Awards to the 26 employees who were selected for individual awards and to the managers of the 16 groups selected for the NASA Group Achievement Award. The names of the honorees are listed below.

### 2007 Presidential Rank and NASA Honor Awards

#### Presidential Rank of Meritorious Senior Professional

Louis J. Allamandola

#### Presidential Rank of Meritorious Executive

Bonnie P. Dalton  
G. Scott Hubbard

#### Exceptional Achievement Medal

Michael J. Aftosmis  
Howard N. Cannon  
Kevin J. Carey  
Todd C. Farley  
Gregory A. Josselyn  
Lisa L. Lockyer  
Stuart E. Rogers  
Michael H. Sims  
Ashok N. Srivastava  
William R. Van Dalsem  
Ethiraj Venkatapathy

#### Exceptional Engineering Achievement Medal

David L. Iverson  
Joseph P. Lavelle

#### Exceptional Public Service Medal

Dinesh K. Prabhu



NASA photo by Dominic Hart

The European Modular Cultivation Systems (EMCS) Project team, one of the recipients of the group achievement awards, are shown during the recent 2007 Presidential Rank and NASA Honor Awards ceremony held at Ames.

#### Exceptional Service Medal

Dale P. Cruikshank  
Steve A. Frankel  
G. J. Hartman  
Nelson T. Hsu  
Andrew Kerr  
Sylvia S. Longchamps  
Suet Kwun C. Poon  
Phillip T. Snyder

#### Outstanding Leadership Medal

Donovan L. Mathias  
Irving C. Statler  
Gloria K. Yamauchi

#### Exceptional Scientific Achievement Medal

Mark S. Marley

#### Group Achievement Award

Airborne Observation of Stardust Entry  
Ames Workforce Realignment Team  
Animal Care Facility Extended Use Lease Team  
CLV Simulation Assisted Risk Assessment Team  
Columbia Data Life-Cycle Systems Team  
European Modular Cultivation Systems (EMCS) Project  
FIT Project Team  
Heavy Lift Rotorcraft Systems Integration Team  
Intercontinental Chemical Transport Experiment  
NASA African Monsoon Multidisciplinary Activities  
NASA/ ARMY UH-60A Airloads Program Team  
Orion TPS ADP Phase I Test Team  
PRM Technique Development Team  
Spaceward Bound 2006 Expedition: Chile  
Stardust Thermal Protection System (TPS) Team  
TUFROC TPS Team



## Way to Go! Recognizing the deeds of Ames employees

This monthly feature recognizes contractor and civil service staff for tasks and deeds that may otherwise go unacknowledged. When you witness a commendable action, please take a moment to write up a few sentences about the event, mentioning

the person who went that 'extra mile' by name. You can choose to remain anonymous; just indicate your preference when sending in your write-up. Thank you for taking the time to recognize the stellar actions of your fellow employees. Together, we make

NASA Ames more than just a research center; we make it a community. Please submit your employee commendations to the Astrogram office by the 10th of each month to: [astrogram@mail.arc.nasa.gov](mailto:astrogram@mail.arc.nasa.gov)

### **Recognizing the Contractor Cost Reporting (CCR) Working Group**

*I would like to give a "Way to Go" to our Contractor Cost Reporting (CCR) Working Group. This team is made up of our center's top CCR subject material Experts. The CCR process is a complex contract structure within the SAP accounting system used to cost contractor (533) information.*

*The group was established when NASA changed our accounting system from COAD to SAP. They are the actual center experts who test, provide feedback, solve problems/issues hand-in-hand with the Competency Center and then train our center CCR analysts, using training materials and job aids which they developed. They were instrumental when the agency recently updated SAP with the System Version Upgrade (SVU). Information would go through this group and get to the users quickly and effectively.*

*I found out about this group when we were experiencing some issues with the CCR process. We met with the group, solved the problems, and were pointed in the right direction with the added benefit of job aids. I was impressed with the knowledge each member had with the system, process, their willingness to help, and the overall goal of getting the center to be successful with each and every CCR transaction.*

*The working group members include: Nguyen (Wing) Trang - lead, Brent Bertsch, Perla Blancett, Veneranda (Veny) Jubilo, Homa Knojkav, Barbara McCalment, Sherri Shore, Jack Stanley and Long Truong.*

*Thank you and "Way to Go" team.  
-- Pam Chavira*

## Research supports presence of large oceans on early Mars

*continued from front page*

Perron, Manga and their colleagues calculate that on Mars, an initial shift of 50 degrees from today's pole would be sufficient to disrupt the shoreline. Manga theorizes that the shift that precipitated the tilt of Mars' rotation axis is related to the presence (and great mass) of an ocean at one of the poles. If a flood of water had filled an ocean at the northern pole on Mars about 3 billion years ago, its mass might have been enough to shift the pole 50 degrees to the south. Once the water disappeared, the pole could have shifted back.

Manga also said the source of the water, while unknown, may have produced a flood or deluge greater than any that have been observed on Earth, evidenced by huge canyons in

the flanks of the Tharsis rise, site of the solar system's largest volcano. The water may have evaporated, but it may also have sunk back into underground dikes, frozen near the surface but possibly liquid below.

Additional coauthors of the study include Mark Richards, professor of Earth and planetary science and dean of physical sciences at UC Berkeley; Jerry Mitrovica from the Department of Physics at the University of Toronto in Ontario, Canada; and Isamu Matsuyama from the Department of Terrestrial Magnetism at the Carnegie Institution of Washington in Washington, D.C. The work is part of UC Berkeley's BioMars project, funded by NASA's Astrobiology Institute (<http://cips.berkeley.edu/biomars/>).

The research also was supported by UC Berkeley's Miller Institute for Basic Research in Science, the Natural Sciences and Engineering Research Council of Canada and the NASA Mars Data Analysis Program.

The NASA Astrobiology Institute (NAI), founded in 1997, is a partnership between NASA, 16 major U.S. teams, and six international consortia. NAI's goal is to promote, conduct and lead integrated multidisciplinary astrobiology research and to train a new generation of astrobiology researchers.

For more information about the NASA Astrobiology Institute, visit the Web at: <http://nai.nasa.gov/>

BY MICHAEL MEWHINNEY

## In memory of . . .

### Charles F. Coe, former aerodynamic structural engineer

It is with much sadness that the Coe family announces the passing of beloved father, grandfather, uncle and friend, Charles F. Coe on April 17. A California native, Coe was born on March 15, 1923 in San Mateo. In 1945, he married Shyrle Uhalt and together they built their lifetime home in Los Altos. In 1947, he graduated from the University of Nevada, Reno in Mechanical Engineering.

During WWII, Coe flew 31 missions as a navigator on B-17s in the European theater as a member of the 303rd Bomb Group - the Hell's Angels. On several occasions, the crew relied on him to find alternate landing sites on the British coast because their aircraft was too shot up to make it all the way back to the airfield at Molesworth. He was awarded the Distinguished Flying Cross, Air Medal with three Oak Leaf Clusters and a European Theater of Operations Medal. He returned to the U.S. and became a navigator instructor on B-29s and then an instructor of instructors.

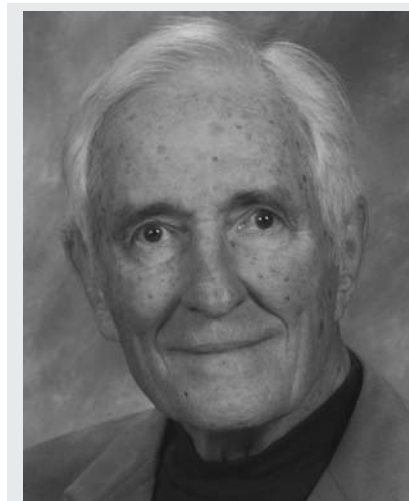
Coe retired from Ames in 1981 after 32 years of research on subjects of aerodynamics, dynamic loads, aero-elasticity, structural dynamics and instrument design. He authored over 40 NASA reports primarily on the subjects of dynamic airloads and buffeting.

He was a member of the NASA team to assess structural dynamics research requirements during the 1980s, a member of the Space Shuttle Advisory Subgroup on loads and dynamics, a guest lecturer on the subject of dynamic aerodynamic measurements, and the NASA representative to the joint DOD and UK MOD technical panel on transonic maneuverability.

As a member of the Shuttle Structure Team, he ran wind-tunnel tests of tiles that provided the first measurements of steady-state and dynamic aerodynamic forces and moments that could be used to validate airload predictions. He designed the unique tile airload instrumentation that made these tests a success. In recognition for this work, Coe received NASA's Exceptional Engineering Achievement Medal in 1981.

After retirement from NASA in 1981, he started COE Engineering, Inc., and worked on the correlation of wind tunnel and flight measurements of buffet loads and the prediction of aircraft as well as Titan IV and Delta launch vehicle buffet, design and development of a patented electronic pressure scanner, and research on flexible thermal protection materials in an aerodynamic environment.

Two years prior to his death, NASA requested his participation in a



Charles F. Coe

select group of experts (known as the "greybeards") to support wind-tunnel tests to measure and specify the aeroacoustic and buffet loads on the space shuttle orbiter and external tank.

Coe will be remembered as a committed "do-it-yourself-er" and for his keen intellect, love of travel, wry sense of humor, extraordinary kindness and loving heart. Besides his many friends, Coe will be deeply missed by his daughters Lizabeth Coe and Francesca Coe Sherrill; and grandsons Charles Alexei Coe and Peter Frederick Coe.

## Ames Diversity Day held to reinforce concepts of inclusion

The Ames Diversity Day event was held at the center on June 14. Ames employees were encouraged to participate in a day of events dedicated to reinforcing the center's commitment to the concepts of inclusion and a value-based work force.

Diversity Day events included a kick-off with opening remarks from Ames Research Center Director S. Pete Worden, a presentation, 'The Evolution of Diversity: Past, Present and Future,' by Byron Kunisawa; a diversity fun run/walk at noon; and a diversity seminar presented by Joyce Hammel and Therese Leone.

Last November, Ames Center Director S. Pete Worden and the Ames Diversity Implementation Plan subcommittee presented the Ames Diversity Implementation Plan to the center.



NASA photo by Eric James

Byron Kunisawa spoke at the center recently on Ames' Diversity Day.

The Ames Diversity Implementation Plan demonstrates the business case for diversity and delineates a series of events designed to establish a long range process for organizational culture change across the Ames community with regard to diversity.

The Ames Diversity Implementation Plan can be found on the Office of Diversity and Equal Opportunity Web site located at <http://eo.arc.nasa.gov/>. The plan is located under the 'Diversity & Equal Opportunity Board' heading. Questions concerning the Ames Diversity Implementation Plan should be directed to the Diversity Plan Sub-Committee, via the co-chair, Darlene Gross, to: Darlene.F.Gross@nasa.gov.

## Worden says Ames is “Cool”

*continued from front page*

punctuated with humor and amusing anecdotes.

Worden kicked off his presentation with a humorous slide showing him wearing a robe and holding a wooden staff while tending to the “goat lawn maintenance herd” at Ames.

“We’ve got 1,800 acres here and I’m the landlord,” Worden quipped.

***Worden said Ames’ “coolness-factor” is on the rise, as evidenced by the highly successful Yuri’s Night celebration held in April . . .***

Another humorous slide showed Deputy Center Director Marvin (Chris) Christensen holding Worden steady as he reeled in a large fish. “The close relationship at the top will land big fish for Ames,” Worden joked.

Among other things, Worden said Ames’ “coolness-factor” is on the rise, as evidenced by the highly successful Yuri’s Night celebration held in April to commemorate humankind’s first flight into space by Russian cosmonaut Yuri Gagarin. Worden donned a wizard costume for the festive celebration held in the N-211 Hangar. More than 3,000 people attended, many of them in the 18-34 year age demographic that Ames is striving to reach.

As another example of Ames’ success, Worden pointed out that the latest Federal Human Capital Survey of physical working conditions showed that NASA was the fourth best place to work in the federal government and that Ames was in the top three NASA centers. He also noted proudly that Ames was the most improved center since 2004.

A major accomplishment mentioned by Worden is the resolution of the center’s unfunded workforce problem. Worden also said that with help from NASA Headquarters and program offices, Ames has secured funds for virtually all its uncovered workforce.

“When I started here a year ago, there were 290 unfunded employees, but we now have assigned work for essentially everyone at the Center,” Worden said.

Another example of Ames’ success cited by Worden is the approval by NASA Headquarters of the construction of a new Collaborative Support Facility. The new four-story, 75,000-square foot steel framed structure will replace 12 aging, substandard facilities and trailers and provide workspace for 288 people.

“For the first time in 20 years, we have received approval for \$29 million for construction of a new building,” Worden noted, adding there was stiff competition from other field centers for construction projects.

He also cited numerous other successes, including the Lunar Crater Observation Sensing Satellite (L-

CROSS) project (“a really, really cool mission” that is co-manifested with the Lunar Reconnaissance Orbiter (LRO). Also cited were Ames’ Arc-jets, which he said were “on the critical path” for the Orion capsule. Last December’s successful launch of the Genesat-1 mission also was cited as a recent success.

Worden also said Ames has strong support in all the mission directorates at NASA Headquarters. In Exploration Systems for example, he said Ames’ Thermal Protection Systems were continuing to “provide critical support”

to the Orion capsule and that there was “strong and growing demand for Ames’ Information Technology capabilities. He also said there was a strong recognition of Ames’ capabilities in developing tools for advanced mission operations and training.

Turning to the Aeronautics Research Mission Directorate, Worden said that Congress has increased aeronautics budget for FY 2007 to provide a stable funding level for aeronautics research in which Ames is a major contributor, and that Ames was “well on its way” to meeting the hiring targets established by the mission directorate. He said the recent visit by the Aeronautics Directorate’s senior staff demonstrated “a strong endorsement to Ames as a contributor to its mission.”

Worden noted that Ames has significant roles in fundamental aeronautics research, including subsonic rotary wing, subsonic fixed wing, supersonics and hypersonics, as well as in aviation safety, airspace systems (including the software of the year award recently won by the FACET team) and wind tunnel tests in support of aeronautics research.

Worden also pointed out that Ames is making significant contribu-

tions to the Science Mission Directorate. He said in addition to a new management team at NASA Headquarters led by Associate Administrator Alan Stern, formerly of the Southwest Research Institute, Ames now has a significant presence at Headquarters, with five scientists, including Yvonne Pendleton, Max Bernstein, Doug Hudgins and Cassie Conley in the Science Mission Directorate, and Jeff Smith in Program Analysis and Evaluation. He said the directorate’s new leadership offers “significant opportunities” for Ames.

Among the examples of Ames science contributions Worden cited were the Stratospheric Observatory for Infrared Astronomy (SOFIA) and the Kepler mission, as well as Ames’ work in Earth Sciences. He also pointed out there were new science opportunities in Small Explorers (SMEX) Missions of Opportunity costing less than \$105 million, new opportunities in extra-solar planet finding and a new Lunar Science Research Program. Worden

***“When I started here a year ago, there were 290 unfunded employees, but we now have assigned work for essentially everyone at the center,” -- Worden said.***

also said there were opportunities for Ames to excel in development of small satellites to support sustainable, cost-effective space missions.

Other Ames successes mentioned by Worden included the recent award by the NASA Astrobiology Institute to four new teams, the recent Lunar Regolith Bio-mining workshop held at Ames in May, the continuing high demand for Ames supercomputing capabilities. He also lauded the numerous partnerships that Ames is developing through the center’s Strategic Business Development and Partnerships Offices, the Innovative Partnerships Program, Small Business Innovative Research Program (SBIR) and its wide variety of educational programs, such as the International Space University Program.

Concluding his well-received remarks, Worden local political support is growing and that he was “cautiously optimistic” that NASA would rebound in 2008 from the budgetary problems faced under the continuing resolution in 2007.

BY MICHAEL MEWHINNEY

## ELS' Online Project Information System (OPIS) 1.0 released

OPIS, a new Web application developed at Ames and accessible by

all members of the NASA Exploration Life Support (ELS) Project, is now

available on the Web at <https://opis.arc.nasa.gov>. Driven by a grassroots demand for better project reporting and collaboration tools, OPIS will help managers, principal investigators, and analysts communicate project developments, make informed technology advancement decisions and close research and technology development gaps.

The ELS project provides research and development for next-generation life-support technology in the areas of cabin air revitalization, water recovery, waste management and thermal control. ELS research and development is spread among multiple NASA centers, industry partners and university institutions. Users incur no costs, as OPIS is based on open source software, including the cutting-edge QCode PHP development framework. Furthermore, while OPIS was developed with the ELS Project as a focal point, it has a flexible and modular architecture which will allow expansion and evolution throughout the agency.

For more information about OPIS, contact the author, the OPIS site responsible civil servant, at [julie.a.levri@nasa.gov](mailto:julie.a.levri@nasa.gov) or call her at ext. 4-6917.

BY JULIE LEVRI



photo by Julie Levri

Online Project Information System (OPIS) team members. OPIS is a new Web application developed at Ames. Team members are, front, left to right: Julie Levri, Mike Ho, John Hogan, back, left to right: Jon Welch, Bob Kaehms and Bruce Deng.

## NASA selects new members of Astrobiology Institute

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multicellular life in Earth's ancient past. They will concentrate on organic biosignatures preserved in the rock record and the state of the Earth's early atmosphere, and will investigate the critical genetic pathways that constrained and supported early life while multicellularity developed.

"Each of these teams brings something important to NASA's overall portfolio in astrobiology, and to the future success of missions in planetary science, astronomy and Earth science," said Colleen Hartman, deputy associate administrator for NASA's Science Mission Directorate, NASA Headquarters, Washington.

The addition of these new teams brings the membership of the NASA Astrobiology Institute to 16, selected with staggered 5-year terms. The astrobiology teams are widely distributed throughout nearly 150 universities and other research institutions, including numerous international affiliates.

More than 500 research scientists work in these teams, and there is a strong focus on public education and

the training of the next generation of astrobiologists. The basic research carried out in the institute directly supports many NASA missions, such

as exploration of Mars and the search for planets around other stars, including investigations of the habitability of other worlds.

BY MICHAEL MEWHINNEY

### Douglas Shane talks about SpaceShipOne



A Director's Colloquium was given in early June at Ames by Douglas Shane entitled 'Risk Management in the Deep End of the Pool - Winning the X-Prize.' Shane is vice president/business development, director of Flight Operations and test pilot for Scaled Composites. He has 21 years of experience in aircraft flight test, design, program management, and business development, with particular expertise in research aircraft developmental flight test. Shane is seen here, left, during his presentation at the center. In 2004, Scaled Composites won the Ansari X-Prize for flying two flights with the equivalent payload of three people, above 100 km altitude twice within two weeks. The presentation described the origins of the SpaceShipOne program, design considerations, ground testing, crew training and flight test results.

NASA photo by Dominic Hart

## Please keep garbage lids closed and recycle cardboard

Federal regulations require that Ames store trash in closed trash containers. So why should Ames employees be interested in this? NASA Headquarters auditors recently issued a citation to Ames for not complying with this requirement, and a similar citation was issued for failure to recycle all cardboard.

### Is Cardboard Recycling Required?

EPA regulations require all federal agencies to separately collect and sell corrugated material for the purpose of recycling. There are currently 45 cardboard collection bins placed strategically throughout the center for this purpose. (See top right photo.) However, the auditors observed that Ames personnel failed to separate all cardboard from other refuse and estimated that 20 percent of the trash bins across the center contained some cardboard materials.

### What about the Trash Bin Lids?

Under federal regulations, federal facilities are required to store all

refuse with food waste in closed containers. During an environmental self-assessment, the Ames Environmental Services Division found roughly one-third of the outdoor refuse bins had open lids.

Ames Logistics and Documentation Services



directed the janitorial staff to close the lids when they deposit trash.

### What You Can Do

Next time you make a trip to the trash bin, toss your cardboard in the cardboard recycling bin and close the lids on

the trash bins. If you have questions about cardboard or other recycling at Ames, call Mark Lacy, ext. 4-1406.

the trash bins. If you have questions about cardboard or other recycling at Ames, call Mark Lacy, ext. 4-1406.

BY MARK LACY



### DR. WISE OWL

The Environmental Services Division is introducing Dr. Wise Owl with the intent of raising environmental awareness in a friendly, engaging, but condensed format. For example, the strip here presents a scenario (improper storage of flammable liquids) that is a recurring source of violations in County inspections and could have devastating consequences to researchers and others. Please send your feedback or ideas for future strips to Roger Ashbaugh at (650)604-5660.

### DR. WISE OWL



"LATE FOR MY MEETING... I'LL JUST STORE MY OXIDIZER HERE IN THE CLOSEST CABINET."



AS MINUTES TICK BY, LEAKING "FLAMMABLE" FLUID MIXES ON THE SHELF WITH EXCESS FLUID ON THE OXIDIZER BOTTLE.



"OH, I FORGOT SOMETHING IN MY OFFICE... AAHHHHH!!!"



OH NO, I IMPROPERLY STORED AN OXIDIZER NEXT TO A FLAMMABLE. NOW I'VE CONTAMINATED THE LAB, LOST PRODUCTION AND PUBLICATION TIME.

# 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, KG6BFB, 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. By-laws 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, Committee Room. POC: Chris Johnson, ext. (650) 938-8017.

**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 (March 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://qqe/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.

## Ames emergency announcements

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

## Safety Data

### NASA-Ames Occupational Illness-Injury Data for Calendar Year-to-Date 2007 Jan. 1, 2007 – May 31, 2007

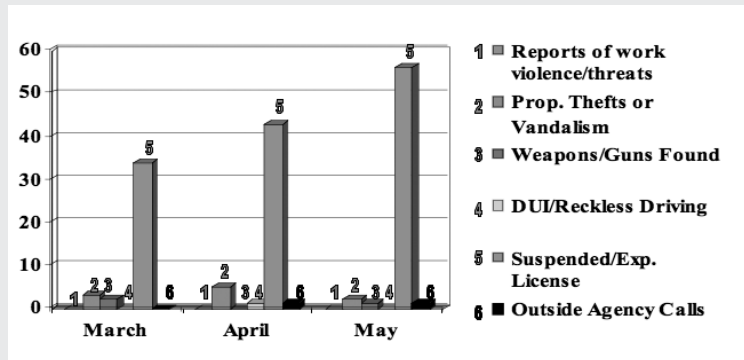
	Civil Servants	Contractors
First aid cases	4	8
Lost Workday cases	0	1
Recordable cases	0	1
Restricted duty days	0	0

Above data are as of 5/31/07. May be subject to slight adjustment in the event of a new case or new information regarding an existing case.

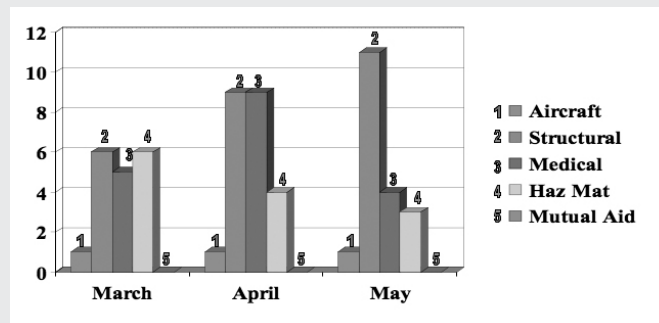
## Protective Services monthly activity

A statistical summary of activities of the Protective Services Division's Security/Law Enforcement and Fire Protection Services units for the month of May 2007 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](mailto: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!

### Housing

Furnished medium-sized room for rent in home nr. downtown Los Gatos. Nice size closet. \$650 a mo./incl. most utils. Deposit is \$350. House near all fine parks/bike paths. Kitchen, living room privileges inc. Cleaning lady is avail. to hire. No animals and N/S. Chris (408) 354-7126.

2bd/1 ba apt, completely remodeled in Sunnyvale. Upstairs apartment duplex. Unit includes new cabinets, new tile counter tops, new stove, new refrigerator, microwv, storage area. \$1,250. Great location nr. downtown Sunnyvale at N. Frances. Avail. now. Mike (408) 736-5900.

### Automotive

'80 528i BMW, 4 dr, blue, stndrd trans., strong 6 cyl. engine. Leather, sun roof, AM/FM, cass., A/C (nds rechrge). Engine, rear end (differential, etc.) completely rebuilt about 150K mls ago. Runs very strong. 'Rest' of car ca. 293K mls old, so some small older car issues. Hood, top, trunk stripped, repainted. Many parts replaced (water pump, hoses, belts (incl. timing), fan, radiator) in last 5 yrs, \$2,500, B/O. Kevin (408) 209-0768.

'01 Toyota Celica, white, 2D, 5 spd manual transmission, \$7,595. A fun, responsive car, good on gas. Est. 28 mpg city/34 MPG freeway. 84K mls. Dark gray interior; condition B minus. 4-Cyl, 1.8 liter. A/C, power windows, doors, steering, radio/tape deck and driver-side air bag. Call (415) 971-0051

### 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.

We are looking to share days with another child at the NASA Ames Child Care Center. Our child is currently 21 months and is on the waiting list. If interested, call (408) 394-7114.

Ikea 'TROMSO' platform bed, twin size, mattress not included, \$50. Joan (650) 493-3382.

Compassionate care giver available to live in or for hourly work, seven days a week.. References available. Call Molini at (408) 836-9271.



**The NASA Lodge**  
Rooms starting at \$45 a night.

Having a B-I-G family reunion and just run out of bedrooms and inflatable beds? Reserve rooms at the NASA Lodge

Ames employees and contractors can "host" their friends or relatives at the Lodge, and it doesn't have to be government or NASA related.

Let Us Welcome You!

Call (650) 603-7101

<http://ncccenter.arc.nasa.gov/lodging.html>

### 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.

### Vacation Opportunities

Lake Tahoe-Squaw Valley Townhse, 3bd/2ba-equipped, Balcony view, hiking, biking, golf, river rafting, tennis, ice skating, and more. Summer rates. Call (650) 968-4155, DBMcKellar@aol.com

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

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

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

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

New York, 5th Ave. One fully furnished bedroom in 24 hour security bldg. overlooking Washington Square Park. \$2,000/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](mailto: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 availability 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.

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

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

## Astrogram deadlines

Please submit articles, calendar and classified advertisements to [astrogram@mail.arc.nasa.gov](mailto: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.

## Ombuds Office services available to Ames personnel

The Ames Ombuds Office is available to the workforce to all civil servants, contractors and students at the center. The office provides a supplemental, confidential and informal channel of communication to raise significant issues and concerns that you perceive could impact safety, organizational performance or mission success.

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The Ombuds' power rests on their reputation for confidentiality,

fairness, objectivity, tact and respectful concern for the welfare of all



*John Boyd, Ames Ombuds*

individuals of the NASA community and for the well-being of the agency.

John Boyd continues to serve as Ames Ombuds and Dr. Geoffrey Briggs continues to serve as the alternate Ames Ombuds.

The Ombuds office is located in Building 207, Room 107, Mail Stop 207-1. Boyd can be reached at ext. 4-5222 and Briggs can be reached at



*Dr. Geoffrey Briggs, alternate Ames Ombuds*

ext. 4-0218. The Ombuds Web site is <http://insideames.arc.nasa.gov/life-ombudsoffice.php>



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