

# Astrogram

Communication for the Information Technology Age

## Flynt joins NASA Ames as deputy center director

On May 30, the Ames senior management team welcomed a new member with the naming of G. Allen Flynt as



NASA Johnson Space Center photo

G. Allen Flynt

deputy center director, effective Aug. 3. Dr. Steven Zornetzer, who has been acting deputy center director since November 2002, was named Ames' deputy director for research.

Flynt comes to Ames from the NASA Johnson Space Center in Houston, where he served as manager of the Extra-Vehicular Activity (EVA) Project Office. In that capacity, Flynt developed hardware, integration standards, capabilities, services, techniques, templates and other information necessary to provide space-walking services to the space shuttle and International Space Station programs. More recently, Flynt was among the senior NASA officials tasked to help direct debris recovery efforts for the space shuttle Columbia in Lufkin, Texas.

"Allen's leadership was vital in the unprecedented cooperation we witnessed between federal, state and local organizations during the Columbia recovery effort," said NASA Administrator Sean O'Keefe. "His management and technology integration experience will be invaluable to our colleagues at Ames."

"Allen brings a wealth of experience from the human space flight community at NASA," added Dr. Jeremiah F. Creedon, associate administrator for the

Office of Aerospace Technology at NASA Headquarters in Washington. "He's clearly demonstrated a capacity to conquer management challenges. Scott Hubbard knows he's fortunate to have a proven leader on his Ames management team."

Flynt began his NASA career in 1986 as an analyst in the National Space Transportation System program control office at JSC. He next worked as an analyst in the Orbiter Project Office before moving on to serve in the space shuttle program control arena. He managed the extra-vehicular activity mobility unit project from 1992 until 1995 and has held various leadership and management roles in the International Space Station Program and EVA project offices.

"I am delighted to have Allen join us as part of the senior management team at NASA Ames," said Center Director G. Scott Hubbard. "This appointment

and Allen's expertise and perspective provide us with a tremendous opportunity to develop a closer working relationship between the human space flight and research and technology worlds."

"I am honored and excited by this opportunity to take on this important new leadership assignment at a premier NASA research facility such as Ames," said Flynt. "I am very optimistic that this will open up new avenues for collaboration, partnership and technology infusion into NASA missions."

Flynt holds a bachelor's degree in industrial engineering from Texas A&M University, College Station, Texas, and has been honored with numerous awards. Those awards include the NASA Exceptional Achievement medal, the Victor Prather award, outstanding and superior performance awards, and the 'Silver Snoopy,' which is presented by the astronaut corps for outstanding service.

BY DAVID MORSE ▲

## NASA seeks improved earthquake forecasts

Advanced computer simulation tools being developed by NASA and university researchers may soon give scientists new insights into the complex and mysterious physics of earthquakes and enable vastly improved earthquake forecasting.

Scientists at the NASA Jet Propulsion Laboratory, Pasadena, Calif., together with NASA Ames; NASA Goddard Space Flight Center, Greenbelt, Md.; and several universities, are developing an advanced earthquake modeling system called QuakeSim. When completed in late 2004, QuakeSim's simulation tools will help scientists learn more about what makes earthquakes happen.

"At Ames Research Center, we are using the world's largest single system image computer to help JPL develop the software that will be used to create QuakeSim," said Dr. Walt Brooks, chief of the NASA Advanced Supercomputing Division at Ames. "This one-of-a-kind supercomputer is the result of a three-year joint development

effort by NASA's Office of Earth Science and the Office of Aerospace Technology," Brooks added.

The tools are based on the latest technologies. For example, one uses finite element analysis, which solves complex computer-modeling problems by breaking them into small pieces. For QuakeSim, the finite elements are comprised of tens to hundreds of thousands of measurements that show how Earth's crust deforms in response to movement of the giant tectonic plates Earth's landmasses ride upon. The measurements are gathered through both ground- and space-based techniques. The latter include a global positioning system and interferometric synthetic aperture radar, which measure the 'quiet' (non-earthquake) motions associated with plate tectonics and the quake cycle.

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*Ring out the old*

## NASA seeks improved earthquake forecasts

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QuakeSim principal investigator Dr. Andrea Donnellan of JPL calls QuakeSim a vital step toward eventual earthquake forecasting. "The deformation of Earth's crust and the interaction between quake faults is a complex 3-D process happening on timescales of minutes to thousands of years," she said. "Studying it requires sophisticated simulation models and high-performance supercomputers. The availability of space-based data and our current limited understanding of quake processes make this an ideal time to develop a system for studying deformation processes such as tectonics, quakes and volcanoes."

"New quake models developed under QuakeSim are expected to yield future earthquake forecasts that will be used by a variety of federal and state agencies to develop decision support tools to help mitigate losses from future large earthquakes," Donnellan added.

QuakeSim's three major simulation tools are Park, Virtual California and the Geophysical Finite Element Simulation Tool (Geofest).

Park simulates the evolution of a quake on a single, unstable fault over time. It is based on current knowledge of the rate of movement (or 'slip') and friction on a well-studied section of the San Andreas Fault in Parkfield, Calif.,

but it is applicable to any fault or collection of faults. Park will be the tool of choice for researchers seeking to determine the nature and detectability of quake warning signals. It will determine how stress is distributed over a fault and how it is redistributed by quakes or 'quiet' seismic motion. It also can be used to compute the history of slip, slip speed and stress on a fault. Up to 1,024 computer processors will be used in parallel to demonstrate Park's capability.

Virtual California simulates how California's hundreds of independent fault segments interact and allows scientists to determine correlated patterns of activity that can be used to forecast seismic hazards, especially for quakes of magnitude 6 or greater. Patterns from the simulated data are compared to patterns in real data to strengthen understanding of the quake process. The approach's potential is already being demonstrated. Under a joint NASA/Department of Energy study lead by Dr. John Rundle, director of the Center for Computational Science and Engineering at the University of California at Davis, Virtual California was used to identify regions of the state with elevated probabilities of quakes over the next decade. Since the study was completed in 2000, all of California's five

largest quakes of magnitude 5 or greater have occurred within 11 kilometers (6.8 miles) of these sites. The probability of this occurring randomly is about one in 100,000. The last three of these quakes occurred after the forecast map was published in the Proceedings of the National Academy of Sciences in February 2002.

Geofest creates 2-D and 3-D models of stress and strain in Earth's crust and upper mantle in a complex geologic region with many interacting fault systems. It shows how the ground will deform in response to a quake, how deformation changes over time following a quake and the net effects to the ground from a series of quakes. The entire southern California system of interacting faults will be analyzed, covering a portion of the crust approximately 1,000 kilometers (621 miles) on a side. The simulation will require millions of equations and hundreds of computer processors.

In addition to JPL, the QuakeSim team includes the Davis and Irvine campuses of the University of California; Brown University, Providence, R.I.; Indiana University; and the University of Southern California. An independent review board provides oversight. Codes will be run on supercomputers at NASA's Goddard, Ames and JPL facilities and other institutions. The California Institute of Technology in Pasadena manages JPL for NASA.

NASA's Earth Science Enterprise is dedicated to understanding Earth as an integrated system and applying Earth system science to improve prediction of climate, weather and natural hazards using the unique vantage point of space. A primary goal of NASA's solid Earth science program is assessment and mitigation of natural hazards. QuakeSim supports the enterprise's goal of developing predictive capabilities for quake hazards.

To learn more, see: <http://quakesim.jpl.nasa.gov> and <http://pat.jpl.nasa.gov/public/RIVA/>

BY JOHN BLUCK ▲

## Academic expo held at Ames



NASA photo by Tom Trower

The Ames Training Office hosted an academic expo in May in the Moffett Training and Conference Center. The expo provided a unique opportunity for Ames employees to meet representatives from several local colleges and universities and learn more about specific academic programs.

# NASA family comes together through the SBIR program

*Editor's note: This is one in a series of articles that feature an employee from each NASA center who has a 'One NASA' story to share. This article is from NASA Glenn Research Center.*

When Walter Kim talks about the way NASA's Small Business Innovation Research (SBIR) Program operates, the phrase *E Pluribus Unum* -- Out of many, one -- comes to mind.



NASA Glenn photo

Glenn's SBIR Manager Walter Kim and Chief of Power and Propulsion Sandra Reehorst hold Hall thrusters, a technology area where NASA's SBIR has contributed to improvements in electric propulsion for space applications.

"While each NASA center has its unique capability and technical expertise, we all follow the same process under the SBIR Program," explained Kim, Glenn Research Center's SBIR program manager in the Commercial Technology Office. "The process involves headquarters and all NASA centers working across the six strategic enterprises for one common goal."

Congress established the SBIR Program in 1982 to ensure that the best and most innovative concepts become part of federal research and development efforts that benefit the nation.

Under the program, NASA field centers identify critical technologies that are needed to enhance the agency's ability to meet mission goals. Once those needs are established, companies submit proposals explaining how their innovations would support NASA's mission and how they plan to pursue commercial applications for their products. SBIR companies then develop and commercialize their innovations through a three-phase process.

"The center(s) who collaborate with these small businesses are chosen solely

for their technical expertise," Kim explained. "Operating under this 'One NASA' philosophy through the years has required the cross-center team to consider all decisions within the context of what is best for the agency rather than for any one center."

Kim stressed the value of strong communication among SBIR managers throughout the centers. Managers meet monthly through videoconferences and

attend semiannual program management gatherings, where they invite personnel involved in the SBIR process.

"Many people within and throughout the centers play a vital role in the SBIR process," Kim said. "In fact, more than half of NASA's yearly procurement activities are

SBIR-related and Glenn has oversight for all agency SBIR procurement policies and guidelines."

Fiscal year 2002 ended with another successful season for the SBIR Program. NASA awarded more than 450 Phase I (feasibility and technical merit) Phase II (promising development), and Phase III (commercialization) contracts. Kim noted that throughout the years, SBIR companies have worked with several centers on portions of the same contract.

ViGYAN, Inc., Hampton, Va., for example, developed the Federal Aviation Administration-certified Pilot Weather Advisor system using satellite technology to substantially increase the amount of weather information available to aircraft pilots in flight. Phase I and II, funded by Langley Research Center, resulted in the development and patent of the original system concept. Phase III, funded by Glenn, developed and demonstrated an affordable, commercially viable satellite data link system for the dissemination of weather information. The Phase III effort led to a spin-off company, WeatherStream, which has since been acquired by

Weather Services International, Inc.

Kim, who began his career at Glenn as a researcher in 1979, is proud to be part of the SBIR Program. "I feel that I'm making a contribution to the agency and to small businesses by helping to find a place for technological innovation," explained Kim, who received NASA's Exceptional Achievement Medal for outstanding leadership of the SBIR Program and in the area of technology transfer and commercialization in 1996.

Working in the SBIR Program for the past 13 years, Kim has gotten to know and respect his colleagues throughout all of NASA's field centers. He sees the program as a prime example of how cooperation and collaboration breed success.

Kim affirmed, "We all have our roles, but come together as one."

By DOREEN B. ZUDELL,  
NASA GLENN RESEARCH CENTER ▲

## Girvan showcase held at Ames

The Girvan Institute of Technology recently held an information technology showcase at NASA Ames. It was presented by Ames and The Aerospace Corporation. Gopal Patwardhan, of the Girvan Institute of Technology, was the guest speaker.



NASA photo by Eric James

Gopal Patwardhan speaking at the recent information technology showcase held at Ames by the Girvan Institute of Technology.

## If it's not safe, Say so! NASA Safety Reporting System (NSRS)

To ensure that all employees have ample opportunity to report any type of safety hazard, NASA established the NASA Safety Reporting System (NSRS). The NSRS was set up in 1987 in response to the Challenger shuttle accident. It has supported all shuttle flights and has since been expanded to cover all NASA related operations. Safety reporting is anonymous, voluntary and responsive. It establishes a link between upper management at NASA with you, the individual, if a safety issue arises. NSRS is a continuation of NASA's solid commitment to safety. NSRS is part of NASA's safety effort to reduce risks in the design, manufacture and operation of programs and facilities.

You might ask who may submit a report to the NSRS? Any NASA or contractor employee working in support of NASA may submit a report. It was established to supplement your local hazard reporting channels and provides you with an anonymous, voluntary, and responsive reporting channel to notify NASA's upper management of your concerns about hazards. You should initially report any hazardous safety operation performed by NASA that can affect the public, the NASA workforce or NASA assets using your established safety reporting procedures.

Use the NSRS if you have seen no action taken in response to a hazard that you reported locally; if you are not satisfied with the response that you received regarding your report; and/or you are concerned that you may be reprimanded if you report a safety hazard through your local reporting channels.

When you are writing the report, make sure that you describe the safety hazard in detail, including as much information as you can, to ensure that the situation is clearly understood. Classified information should not be included in your report. Include the following information:

- The scope of the hazard--whether the hazard affects NASA assets, and/or the NASA workforce, and/or the general public.
- The manufacturing sources and/or part numbers--if hardware is involved.
- The physical location of the safety hazard.
- Whether or not you have reported the hazard elsewhere.
- Whether the hazard relates to a single event or recurring process.
- What you believe initially caused the hazard.
- What you think can be done to correct the hazard and

prevent a recurrence.

- What you believe the consequences may be if the hazard remains unresolved.

To submit a hazard report, you can obtain a NSRS reporting form at the NSRS Web site at: <http://www.hq.nasa.gov/nsrs>. Once you have completed the form, mail it to:

NSRS  
P.O. Box 5826  
Bethesda, MD 20824

The NSRS contractor who receives and processes your report will remove your identifying information and forward a summary of the report to the NSRS chairperson at NASA Headquarters Office of Safety and Mission Assurance, so that it can receive immediate attention to rectify the situation. The NSRS chairperson will then review the

safety hazard report summary and will assign an action to the technical advisory group (TAG) member at the appropriate NASA facility. TAG then has 30 days to investigate the safety hazard report findings to the NSRS chairperson, who will continue to work with the TAG until the safety hazard has been appropriately addressed. If the chairperson needs to have the report clarified, then the NSRS contractor will contact the reporter to provide the needed information to the NSRS chairperson. At no time will your identity be shared with NASA.

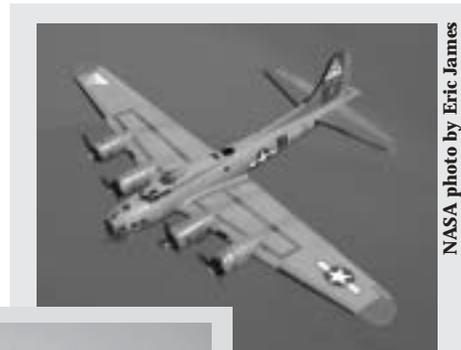
When both the NSRS chairperson and the director of Safety and Mission Assurance at NASA Headquarters agree with the corrective action taken in response to the safety hazard, the report will be finalized and closed.

BY ASTRID TERLEP ▲

## Vintage World War II bombers at Ames

Two fully restored World War II vintage bombers, a B-17 Flying Fortress and a B-24 Liberator, were on display in May at Moffett Field to commemorate World War II and the 100th year of powered flight. Tours and 30-minute flights aboard the vintage bombers were made available to the public.

The exhibition was part of the 'Wings of Freedom' tour organized and sponsored by the non-profit Collings Foundation. Founded in 1979, the orga-



NASA photo by Eric James

Top right: The B-17 in flight as it left Ames on the next leg of its tour. Eric James was aboard the B-24 photographing the B-17 air to air. Lower left: The B-17 at Moffett Field.



NASA photo by Tom Trower

nization presents 'living history' events nationwide to teach Americans about the legacy of World War II.

"The 'Wings of Freedom' tour is in honor of the men and women who fought and died defending the principles of this country," explained Kory Stendell of the Collings Foundation. "World War II was a significant period in this

country's history and the B-17 Flying Fortress and the B-24 Liberator both played major roles in winning the war. Participating in the nationwide 'living history' events with these historic bombers is an honor."

Donations from tours and flights are used to maintain the Collings Foundation's vintage aircraft. For further information, visit the foundation's Internet site at: <http://collingsfoundation.org>

BY JONAS DINO ▲

## Plan adopted to improve health and safety

Earlier this year, center management adopted a plan for continuous improvement of our safety and health program. The plan has six goals.

One goal is to improve safety and health training through increased oversight of the training needs assessment process.

Compliance is measured with regulatory-required training by tracking the completion of courses assigned to employees by their supervisors. The training needs assessment survey supporting this process was designed to make this as easy as possible for the supervisor to select the courses that an employee needs. The survey includes questions such as 'Does the employee work in construction (construction trades or inspectors), or as a maintenance employee?' If the answer is 'Yes,' then the following classes are listed for that employee as assigned classes:

- Asbestos awareness
- Decontamination procedures
- Groundwater and soil contamination overview
- Hazard communication for chemical users
- Hazardous waste and environmental essentials
- Lead awareness
- Personal protective equipment
- PCB awareness
- Storm water pollution prevention

The ASAP metric for training shows how many of the assigned classes are complete for all employees in a branch, division or directorate. As individuals are assigned new tasks or jobs, these training needs assessments may become outdated. Consequently, supervisors should recheck and resubmit the survey

anytime the duties for the person change.

Supervisor actions that are needed to meet this goal are to update training needs assessments for each supervised employee and communicate the training needed as part of the annual performance review. A convenient way to show that this was completed is to include a copy of a printed record of the employee's training needs assessment in the employee's personnel file.

Code QH is also working on two actions to support completion of this goal. First, Code QH is modifying the needs assessment survey so that in the future, an update can be accomplished more easily. The modification will preserve a record of the most recent survey, to which responses can be added or deleted. The current process requires

the supervisor to start with a blank survey form each time it is changed. Second, Code QH is changing the method used to update employee rosters in the training data base to improve the accuracy of the roster. The new method will require supervisors to notify Code QH of transfers into or out of their branch.

This improvement in the training system is one of six continuous improvement goals that the center adopted in March. Supervisors can view the status of progress on each goal when they log onto the ASAP Web site. All employees can view a list of the six goals on the VPP Web site at: <http://q//qh/vpp/index.html>

BY STAN PHILLIPS ▲

## Former employee, Trieve Tanner, dies

Trieve A. Tanner Jr., died suddenly and unexpectedly May 1 at his Nevada City home. He was a retired NASA psychologist and active in his local community.

Tanner was born in 1929 and was a lifelong Californian. He received a doctorate in psychology from UCLA in 1962. That same year, he went to work for NASA Ames, where he studied behavioral aspects of aeronautics, including how astronauts respond to space flight and the role of human error in aviation.

He retired from NASA in 1986 and moved to Nevada City where he and

his wife, Barbara, were proprietors of the Piety Hill Inn bed and breakfast from 1986 to 1991, then owned the Paper Wheel stationery store from 1993 to 1996.

In the early 1990s, he was president of the Child Advocates of Nevada County.

He recently served as vice president and treasurer of the Sierra Nevada Group of the Sierra Club and was an active volunteer with the Yuba Watershed Council and the South Yuba River Citizens League. Tanner is survived by his wife, Barbara and three daughters Lindsey, Robin and Dana.

## Need assistance performing your job in Travel Manager?

Bring your work to the Travel Manager entry labs and a Travel Manager team member will assist you. Entry



labs will be offered in June on Mondays, Wednesdays and Fridays.

If you are an approver, reviewer or traveler and are in need of training, hands-on training classes are now being offered, in addition to demonstration style courses.

For more information on training and entry labs, visit the Travel Manager Web site at: [www.travelmanager.arc.nasa.gov](http://www.travelmanager.arc.nasa.gov) and click on training courses.

## Old books needed

Got a bunch of old books, CDs or movies that you no longer look at? If so, please donate them to the Ames Child Care Center fundraiser.

You will receive a donations receipt for your taxes at the same time! All books, CDs, VHS tapes and DVDs (not just for kids) are accepted.

Items can either be dropped off at the ACCC across from Gate 17 or picked up by contacting Maja at e-mail [maja@sbcglobal.net](mailto:maja@sbcglobal.net) or call (650) 988-6993 or Sally at (650) 224-9268.

*Ring in the new*

## Ames celebrates Asian/Pacific American Heritage month

Ames commemorated Asian/Pacific American Heritage Month by hosting a luncheon in May.

This year's theme at Ames was 'Being brave and courageous.' The guest speaker, Guy Kawasaki, CEO of 'Garage Technology Ventures' and an Apple evangelist, gave an entertaining and enlightening presentation. The Bharatanatyam Indian and O'tea'Api Tahitian dancers both gave splendid performances during the luncheon.



NASA photos by Dominic Hart

Counter clockwise from upper left: Guest speaker Guy Kawasaki at the recent Asian/Pacific American heritage month luncheon at Ames. Ames employees enjoying the catered food at the luncheon. Bharatanatyam Indian and O'tea'Api Tahitian dancers performing during the luncheon festivities.



## Dyson conducts book signing

Marianne Dyson, former NASA flight controller and author of the children's book 'Home on the Moon, Living on a Space Frontier,' was at Ames on May 23 signing her books.

Dyson's book combines a vivid description of humankind's race to the moon with a detailed vision of the moon as our next frontier.

Dyson packs lots of moon science into this futuristic vision, presenting kids with key facts in many fields -- from geology to engineering to astronautics. Four hands-on activities make even the most difficult concepts easy for kids to grasp.

Many Ames employees met the author who autographed their copy of the children's book.



NASA photo by Tom Trower

# NASA Ames and Palo Alto Internet exchanges link up

In 2002, NASA's connectivity to the Internet faced potential serious problems caused by the rapid changes and

Here's the problem in a nutshell. With the rapid restructuring in the telecommunications industry and the fail-

major Internet peering point that brought together major research networks (NASA Science Internet, NSFnet), government networks, a regional research network (BARRnet) and emerging commercial Internet providers. The Gateway continues to enable NASA research in a variety of ways. The Space Act Agreement preserves the Gateway's ability to facilitate NASA's networking and science research and provides essential, cost-effective services to NASA's operational networks."

Bobby Cates, a member of the Gateway staff who led the Ames effort with PAIX to a successful conclusion, said "The recent project to distribute our NASA-operated Internet exchanges out to the PAIX was very successful. Research participation has increased 100 percent, NASA peering difficulties have been resolved without performance degradation or increased cost and server access problems can now be addressed.

"It was a remarkable team effort," said Cates. "The various groups involved demonstrated tremendous cooperation. NREN (in particular), ARCLAN, NISN, cable plant and many others provided valuable support without which this project would still be pending. I haven't seen such a collective effort since I began here in 1985. I'd like to send my appreciation to everyone involved."

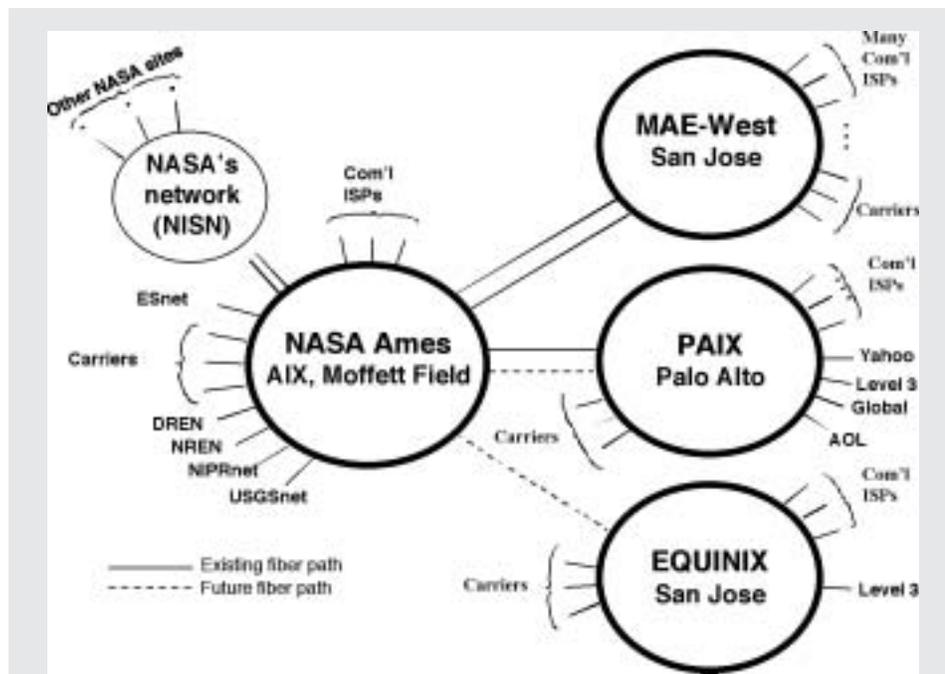
Bill Jones, recently retired external interface manager, also noted that the NASA's Moffett partners and tenants will now also have access to additional ISPs of their choice, enhancing collaboration and R&D opportunities. For example, Carnegie-Mellon University-West is having a fiber link installed from their Moffett facility to the Gateway, where they can connect to one of the high-capacity ISPs located at the Gateway or at the PAIX.

The Applied Information Technology Division and the Ames Telecommunications Gateway will continue to support Ames and NASA to serve as an Internet research testbed and to participate in the development of new Internet technologies that will benefit NASA programs.

Contributors to the successful transition of the AIX-PAIX Link include George Alger, Rich Andrews, Bobby Cates, Dennis Ferguson, Mark Foster, Sandy Hannah, William P. Jones, Tom Kalaskey, Hugh LaMaster, Lana Lansdown, Karen Petraska, Al Ross, Steve Shultz and Lance Tatman.

For further information, you can contact Bobby Cates at e-mail: bcates@nsipo.arc.nasa.gov

BY PAT KASPAR AND WILLIAM JONES



Schematic of AIX-PAIX links

restructuring occurring in the telecommunications industry. Anticipating the impending issues, the Applied IT division, which manages the Ames Telecommunications Gateway, developed a creative solution with the help of the Ames Legal Office and in collaboration with industry to head off these looming issues. A new capability is now about to come online offering improved services at no out-of-pocket expense to NASA.

The Ames Telecommunications Gateway houses the center's telecommunications interfaces, including the Ames Internet eXchange (AIX). This system bridges NASA's networks, along with those of several other federal agencies, with several common carriers, and with the commercial Metropolitan Area Internet Exchange in San José (MAE-West San José). By means of this exchange ('peering') capability, the participating networks and carriers are able to exchange Internet traffic at high speed with no delay.

By being directly connected to the exchange, NASA enjoys excellent Internet access to the widest range of potential collaborators. The Ames AIX serves NASA in routing approximately 50 percent of the agency's traffic destined for the commercial Internet; other East Coast exchanges serve the other 50 percent.

ure of many Internet service providers due to the dot com collapse, the AIX was losing access to some key providers and carriers. This loss of access could have significantly impacted the flow of NASA's traffic to the global Internet.

A relationship is now in place establishing an AIX link to the recently constructed Palo Alto Internet Exchange (PAIX) which will preserve and expand NASA's connectivity. A trilateral Space Act Agreement among NASA, the PAIX, and IPNetworks, facilitated by the NASA legal staff, is enabling major access improvements. IPNetworks is a new communications carrier developed to complete new fiber connectivity from Palo Alto into the Ames Gateway. This link has four gigabits per second of capacity and will create a distributed exchange. Via the PAIX, NASA will have access to Internet service providers (ISPs) who are not connected at other Metropolitan Area Exchanges in the Bay Area. This improved capability is important in providing increased bandwidth, greater diversity of connections and increased potential for research collaboration with industry.

"The Gateway facility has been extremely valuable to NASA," said Hugh LaMaster, Code IN network group leader. "It was of great significance in the history of the Internet, being the first

## Biomass team celebrates science mission success

The Biomass Production System (BPS) awards ceremony celebrated a successful space mission of exploration of fundamental space biology of the Increment 4 of the International Space Station (ISS) mission of the Life Sciences Division and SSBRP. This special ceremony, during which the BPS team met with a distinguished guest speaker Astronaut Dan Bursch, presented an excellent opportunity for all the contributors of the

periment--Photosynthesis Experiment System Testing and Operations (PESTO) led by Gary Stutte. More plant growth and photosynthesis data from a flight experiment were collected than ever before.

During the 73 days of in-flight BPS operations, in addition to ascent and descent of shuttle flights, Bursch and the project team provided continuous support of the experiment. This included

he made from the Shuttle, and presented the BPS awards to over 80 Ames Research Center team members and many other BPS team members from Kennedy Space Center, Marshall Space Flight Center, Dryden Flight Research Center, Johnson Space Center and Orbitec, which



NASA photos by Tom Trower

The Biomass Production System (BPS) team shown during the recent awards ceremony.



Astronaut Dan Bursch spoke at the recent BPS award ceremony.



Left to right: Charlie Wade, George Sarver and Randy Berthold hand Dan Bursch a gift from Ames.

mission to meet, discuss the results of the important scientific experiments and reward their hard work.

NASA astronaut Daniel W. Bursch, a Navy captain, has received many special honors, such as the Defense Superior Service medal and NASA Space Flight medals and currently holds the U.S. space flight endurance record of 196 days in space. He has been a NASA astronaut since 1991 and has logged more than 2,900 flight hours in more than 35 different aircraft. During the ISS mission from April 8, 2002 to June 19, 2002 Bursch performed all of the BPS hardware and science operations onboard the ISS. He operated the Ames payload, which included the BPS ex-

periment--Photosynthesis Experiment System Testing and Operations (PESTO) led by Gary Stutte. More plant growth and photosynthesis data from a flight experiment were collected than ever before. During the 73 days of in-flight BPS operations, in addition to ascent and descent of shuttle flights, Bursch and the project team provided continuous support of the experiment. This included constant monitoring of the hardware, responding to anomalies, filling seeds and planning to accommodate the science and engineering requirements of the complex experiments. The experiments were mainly performed with wheat and brassica.

The ceremony, organized by Victoria Callor of Lockheed Martin, took place in May. Charlie Wade, acting chief of the Life Sciences Division, opened the ceremony by welcoming all the team members. Other distinguished speakers at the ceremony were Jack Boyd, executive assistant to the center director; Bonnie Dalton, deputy director of Code S; George Sarver, project manager of the Space Station Biological Research Project (SSBRP); and Randy Berthold, project manager. They congratulated everyone on the great success of this important scientific mission. As a special feature, Bursch gave an overview of the mission, showed a video and aerial photographs of the Bay Area

collaborated on this mission and contributed greatly to the success of the experiments.

The BPS team members had an opportunity to meet Bursch, ask questions, discuss the results and hear first-hand report of the in-flight scientific experiments. The core group of the contributors received a certificate and an acrylic plaque.

"This ceremony is very special to Ames because it celebrated the astronaut's and team's collaboration and dedication to the complex scientific mission, which ensured great success. Many hours of hard work of all the contributors were spent to accomplish this mission and we are glad to reward everyone for their achievements," said Callor.

Following the ceremony, team members and their families were treated to a reception. During the reception, Bursch and the team members shared their experiences about the mission. The team members also posed for photos with Bursch.

As part of the tradition, Bursch signed the 'astronaut wall' in N240A, where most of the astronauts who flew and performed the life sciences experiments on a mission have previously signed their names. To conclude the ceremony, Bursch was presented a framed picture collage of what life sciences represents at Ames.

BY VERONIKA SOUKHOVITSKAYA ▲

## Center Briefs

### NASA finds soot impacts climate

A team of researchers, led by NASA and Columbia University scientists, recently found that airborne, microscopic, black-carbon (soot) particles are even more plentiful around the world, and contribute more to climate change, than was previously assumed by the Intergovernmental Panel of Climate Change.

The researchers concluded if these soot particles are not reduced, at least as rapidly as light-colored pollutants, the world could warm more quickly.

### Snapshot shows Earth from Mars

Have you ever wondered what you would see if you were on Mars looking at the Earth through a small telescope? Now you can find out, thanks to a unique view of our world recently captured by NASA's Mars Global Surveyor spacecraft currently orbiting Mars.

This first-ever image of its kind not only shows Earth as a tiny alien world in the vast darkness of space, but also includes a view of the giant planet Jupiter and some of its larger moons. The camera aboard MGS photographed both planets in an alignment, as seen in the evening sky of Mars on May 8.

### Rhessi captures gamma ray burst

A chance observation by a NASA satellite, designed to study the sun, may have uncovered one of the most important clues yet obtained about the mechanism for producing gamma ray bursts, the most powerful explosions in the universe.

The Reuven Ramaty High-Energy Solar Spectroscopic Imager (RHESSI) satellite was snapping pictures of solar flares on Dec. 6, 2002. Unexpectedly, RHESSI caught an extremely bright gamma ray burst in the background, over the edge of the sun. The image revealed, for the first time, gamma rays in such a burst are polarized. The result indicates intense magnetic fields may be the driving force behind these awesome explosions.

### Space Station modules arrive at KSC

After traveling thousands of miles, two major components of the International Space Station completed the first leg of a journey that will eventually end 240 miles above the Earth.

NASA's Node 2, built for the agency by the European Space Agency (ESA) in Italy, and the pressurized module of the Japanese Experiment Module (JEM) arrived in Florida and were transported to the Kennedy Space Center (KSC) during the first week of June.

## IFMP continues with budget module

The Integrated Financial Management Program (IFMP) is a NASA-wide effort to modernize and standardize the agency's financial and administrative systems and processes. Ames and other NASA centers are now using various modules of IFMP, including the NASA Staffing and Recruitment System (NASA StARS); Position Description Management (PDM); WebTADs, Core Financial (CF) and Travel Manager (TM). Preparations are progressing to implement the latest module, Budget Formulation (BF).

The mission of the Budget Formulation module is to provide a single, integrated, agency-wide budget formulation process/system. Identified as a 'OneNASA' tool, BF enables the bottoms-up formulation of institutional, program, enterprise and agency-level budget formulation requirements. It will also support top-down decision making, link supporting data to the resources estimates and redistribute top-down decisions back through the bottoms-up formulation as a basis for creating operating plans.

The benefits of the BF module to NASA include: implementation of standard and efficient processes to provide budget data for management analysis and reporting; provision of timely, consistent and reliable information to enhance management decision-making; integration of budget data with the IFM Core Financial module to support budget execution; repository of a consistent

source of information to facilitate sharing of data across the various levels of NASA; improvement of NASA accountability agency-wide; and enablement of full-cost management.

The BF module will support six stages of the budget cycle, including pre-program operating plan (POP), center POP, enterprise review, agency POP, OMB release and congressional budget.

There will be two BF releases. The first release (0.5) is scheduled for October 2003 and will support the centers in developing the agency FY06 budget. The second release (1.0) is scheduled for February 2004 and will add additional headquarters functionality to enable guideline distribution and top-down changes to center operating plans.

Training for the BF module end-users will start in late August 2003 with a course on full cost, including an overview of the NASA budget process. Hands-on training on the module is planned to begin in September. Budget Formulation end-users crosscut all Ames organizations and consist of resources analysts, budget/integration staff and program/project managers.

Ames Budget Formulation project manager is Teri Nogales-Liang, Deputy project manager is Tim Howell.

For more information on the Budget Formulation module, access the Ames IFMP Internet Web site at: <http://ifmp.arc.nasa.gov/budgetformulation.html>.

BY DARLENE GROSS AND ELY COOPER ▲

## Lunar eclipse observed at Ames



NASA photo by Brian Day

On May 15, the first total lunar eclipse in more than two years, shown here over NASA Ames, provided a fascinating 3-1/4 hour spectacle for skywatchers in North and South America, Europe and Africa. In northern California, the celestial event began just after 8 p.m. pacific standard time, when the moon gradually rose, already in partial eclipse. The eclipse reached its full darkness (called 'totality') at 8:14 p.m. and the total eclipse lasted until 9:07 p.m. A total lunar eclipse occurs when the sun, Earth and moon form a straight line in space and the full moon passes through Earth's shadow.

## Vinton Cerf presents first Leiner lecture



NASA photo by Tom Trower

Vinton Cerf speaking at the recent Leiner Lecture Series held at Ames.

The Research Institute in Advanced Computer Science (RIACS) and NASA Ames presented the Leiner Lecture Series in May. This is a series of lectures in applied information technology, with a focus on the impact of information technology on science and society, including its contributions to NASA science goals.

Vinton Cerf, known as the 'father of the Internet' presented the inaugural lecture entitled 'Networking the science community: past and future.' Cerf has contributed significantly to the evolution, growth and acceptance of the

Internet and related technologies. He was the original designer of the TCP/IP protocols and Internet architecture. He also played a key role leading the development of the Internet and related technologies while at DARPA, led the engineering of MCI Mail (the first commercial Internet e-mail service) and founded the Internet Society.

The lecture series is dedicated to the memory of Barry Leiner, former director of RIACS and one of the pioneers of the Internet revolution. A memorial service for Leiner was held prior to the lecture series.

## 'Buy Green' when purchasing construction products

Do you purchase any of the construction products listed here on behalf of the U.S. government? If so, you are required to purchase those products with the highest recovered (recycled) material content. These products can be found through GSA Advantage on the Web at: <http://www.gsaadvantage.gov>.

More information on specific available products and the U.S. EPA's comprehensive procurement guidelines can be found at: <http://www.epa.gov/cpg/products.htm#construct>.

If the environmentally preferable product does not meet your requirements, you must file a waiver with Environmental Services, Code QE.

Waivers are available at: <http://server-mpo.arc.nasa.gov/Services/CDMSDocs/Centers/ARC/Dirs/APG/APG8800.3C2A11.html>. Waivers should be sent to Christel VanArsdale of Code QE at Mail Stop 218-1 for the necessary approval. This process is a regulatory requirement.

For more information on this process and the products, contact VanArsdale at ext. 4-1175 or browse the U.S. EPA's Web site located at: <http://www.epa.gov/cpg/index.htm>.

Compliance with these affirmative procurement ('buying green') regulations are greatly appreciated.

### Designated products:

Building insulation products

Carpet

Carpet cushion

Cement and concrete containing:

- Coal fly ash

- Ground granulated blast furnace slag

Consolidated and reprocessed

latex paint

Floor tiles

Flowable fill

Laminated paperboard

Patio blocks

Railroad grade crossing surfaces

Shower and restroom dividers/  
partitions

Structural fiberboard

Proposed products:

Cement and concrete containing:

- Cenospheres

- Silica fume

Modular threshold ramps

Nonpressure pipe

Nylon carpet and nylon carpet  
backing

Roofing materials

## Writer, filmmaker featured at Foothill



NASA photo by Dominic Hart

Award-winning writer, filmmaker and PBS commentator Timothy Ferris discussed 'Seeing in the Dark: How Backyard Astronomers are Probing Deep Space and Guarding Earth from Interplanetary Peril,' in May at Foothill College's Smithwick Theater in Los Altos Hills. During his presentation, Ferris explored amateur astronomers' discovery of new and exploding stars and their search for ancient asteroids that might be on a collision course with Earth. This was a free lecture and the sixth in this year's Silicon Valley Astronomy Lecture Series. The series is sponsored by NASA Ames, Foothill College's Division of Physical Science, Mathematics and Engineering, the Astronomical Society of the Pacific and the SETI Institute. After the lecture, Ferris signed copies of his widely praised new book, 'Seeing in the Dark.'

## Exploring the limits of life in the highest lake on Earth

The first DDF Licancabur multi-disciplinary expedition in October and November of 2002 to the highest lake on Earth at the summit of Licancabur volcano (6,017 meters) in Chile was highly successful. The expedition launched a deep exploration into life's existence and its limits, biology in extreme environments, and evolution of Earth's ancient

high altitude and tropical latitude. Licancabur Lake is unique in the research of the response of living organisms to the effects of high UV radiation and will provide exceptional and promising results to the astrobiology community," said Cabrol.

The Eocene Lake (formed 500 million years ago as evident from the youngest lava flow) presents an extreme but unique environment for astrobiological studies. At such high altitude conditions of low oxygen, low atmospheric pressure, high-UV radiation and low average temperature resemble martian paleolakes of 3.5 billion years ago. Moreover, its geographic position in the trop-

ics, where the sun's rays are the strongest, causes even more ultraviolet radiation to penetrate the shallow lake of the ancient volcano. Such extreme conditions are comparable to environments on Mars and other planets, yet here on Earth, evidence of ancient life has been found there. Cabrol's research group is seeking to learn how life could survive there.

"The focus of the 2003 field season will be to conduct a more thorough exploration of the summit lake and continue characterization of the basal lakes," said Cabrol.

The central experiment of the study is the UV experiment, where the team tests the effects of UV radiation on periphyton organisms located on the sediments in the lake. The periphyton includes immobile species that cannot hide from UV radiation, unlike sediment-dwelling organisms, which use vertical



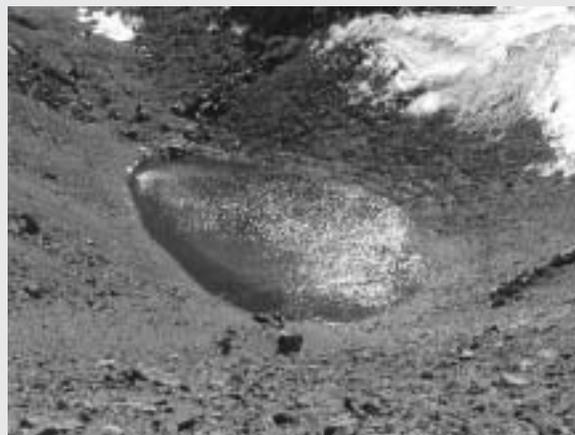
Team at the summit of Licancabur volcano.

terrains. The principal investigator is Nathalie Cabrol of NASA Ames/SETI Institute, and co-investigators are Edmond Grin of NASA Ames/SETI Institute; Christopher McKay of NASA Ames; Imre NASA Ames; Roseli Friedmann NASA Ames/SETI Institute; Andy Hock NASA Ames GSRP; David Fike, MIT, former NASA Ames Astrobiology intern; Marc Murbach NASA Ames; Brian Grigsby of the Schreder Planetarium/Project ARISE; and two hungarian collaborators, Istvan Grigorszky of Kossuth Lajos University and Keve Kisse of the Hungarian Academy of Sciences. Also collaborating with the team was the Chilean Universidad Catolica del Norte in Antofagasta; a geologist, Guillermo Chong; a biologist, Cecilia Demergasso; and two students, Lorena Escudero and Cristian Tambley. The Bolivian partners included SERGEOMIN and SERNAP, the Bolivian National Parks, as Licancabur is located at the boundary of Chile and Bolivia and the two countries share the volcano.

"The significance of the 2002 expedition is that this is the first time that the summit lake ecosystem is being thoroughly investigated. This will give us a first view on how life defends itself against ultraviolet (UV) radiation at this

goal is to understand what strategies life is using to defend itself against killer-level UV radiation and environmental extreme conditions at this altitude. Results will provide critical keys to help search and identify potential sites for life (extant/extinct) on Mars," said Cabrol.

Even though the lake is ice-covered during most of the year with temperatures of -40 to +3 degrees Celsius, geothermal sources are suspected at the



Licancabur volcano lake in Chile.

continued characterization of the basal lakes," said Cabrol.

The central experiment of the study is the UV experiment, where the team tests the effects of UV radiation on periphyton organisms located on the sediments in the lake. The periphyton includes immobile species that cannot hide from UV radiation, unlike sediment-dwelling organisms, which use vertical

*continued on page 14*

## Ames scientist journeys to 'ends of the Earth'

*Editor's note: In late April, Dr. David Morrison, senior scientist at the NASA Astrobiology Institute, took a 5-day trip to "the ends of the Earth," onto the frozen Arctic Ocean. He attended the Arctic Ice Field Conference, which was sponsored by the NASA Astrobiology Institute and organized by the Europa Focus Group. The conference's objective was to gain direct experience with sea ice and to look for possible analogues with Jupiter's moon Europa and other icy moons in the outer solar system. Morrison provided the account below of his journey, which we felt would be of interest to the Ames community.*

Twenty scientists interested in Europa attended the conference, ranging from graduate students to senior citizens, and covering disciplines primarily in geology, planetary science and microbiology. During our three days in Barrow, Ala., we spent two mornings in science sessions, made two trips onto the ice (one for a full day), chartered small planes to view ice features from above and met with elders of the local Inupiat Eskimo culture.

At 72 degrees north latitude, Barrow is a very isolated community, reach-

forming. The Inupiat maintain some of their traditional lifestyle, but with the substitution of snow machines for dogs as a means of crossing the ice. At this season they are hunting the large bowhead whale, still using skin boats and hand-thrown harpoons.

The ice fields themselves are awesome -- a grand and frightening wilderness. I can best compare them (psychologically) to the Sahara desert, a wind-swept, trackless and constantly shifting landscape that seems to go on forever. We also were impressed, however, by the variety of ice and the complex morphology on the ice flows. We traveled on the ice with snow machines (snowmobiles) and sledges -- I spent much of my time standing on the back of a sledge holding tight as we negotiated smooth snow and rough ice. The newest ice is flat (and thin), but with age it fractures and builds up pressure ridges and hills several meters high, made of upended slabs of ice. In addition to traveling across the ice, we took several ice cores, of interest primarily to the biologists in our

group. We had local guides, who also carried guns to protect us from polar bears. We saw lots of bear tracks, but no actual bears (unfortunately).

For someone from the Mediterranean climate of California, dealing with cold itself was an interesting experience. When the wind blew, the chill factor was well below zero degrees Fahrenheit, and a facemask was necessary to keep skin protected. This is a polar desert with low precipitation rates, but the wind is continually redistributing the light, dry snow and makes fantastic drifts and dunes.



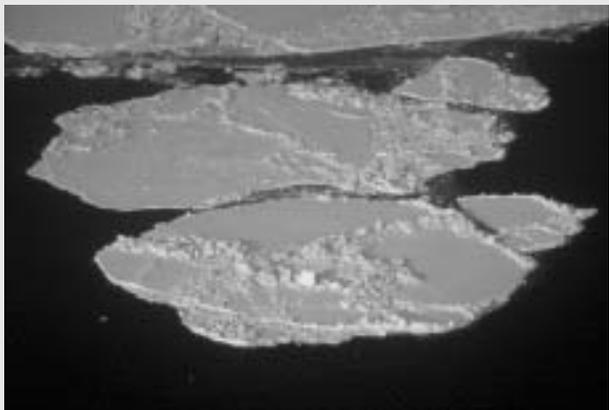
*Ice core extraction. Team members coring into the fast ice (ice attached to the shore) in the Chukchi Sea northeast of the town of Barrow. The ice here is a little more than 1 meter thick.*

Our flights gave us a complementary perspective. The two small planes swooped to within 100 meters of the surface and performed figure-eights so we could see the interesting ice features.

We also were lucky to be addressed by two of the local elders, both of whom grew up in the traditional culture before World War 2. One had been a reindeer herder, the other a hunter and trapper -- spending months alone in the wilderness. Today they are a valuable resource on changing conditions, where global warming is having major effects on the behavior of the Arctic sea ice. They told us that the ice is both thinner and less predictable than it was in previous decades.

While we learned a great deal about our own planet, we must be careful in applying this knowledge to icy moons such as Europa. While there are superficial similarities, the ice on Europa is thousands of times thicker and probably millions of years older than the sea ice near Barrow. Trip leader Ron Greeley of Arizona State University, the chair of the Europa Focus Group, noted that one purpose of this field trip was for us to see and experience the great complexity of sea ice, and thus to be more wary of making assumptions about other worlds based on gross appearances alone. Perhaps one thing we learned was humility.

BY DAVID MORRISON 



*Beaufort Sea from air. Fragmented edge of the fast ice (ice attached the shore) just north of Point Barrow. Pressure ridges cross-cut the floating ice, with upended slabs of ice as much as 5 meters high.*

able only by air except during the short summer when the ice breaks free. Barrow is the northern-most point in the U.S. There is no harbor. A Distant Early Warning radar and some modest research facilities are all that are left from a once substantial U.S. military presence during the cold war. In mid-May, the sun sets for only a couple of hours and the temperature rarely rises above freezing; indeed, the ocean ice is still

group. We had local guides, who also carried guns to protect us from polar bears. We saw lots of bear tracks, but no actual bears (unfortunately).

For someone from the Mediterranean climate of California, dealing with cold itself was an interesting experience. When the wind blew, the chill factor was well below zero degrees Fahrenheit, and a facemask was necessary to keep skin protected. This is a polar desert

## GEM vehicles donated to Ames

Global Electric Motors (GEM) recently made a generous donation of electric vehicles to NASA Ames. These non-highway carts were distributed to numerous centers at no cost. The NASA Ames motor pool received 20 and was able to replace older electric vehicles and inefficient gas vehicles, which reduced our repair costs and fuel consumption (mandated by Executive Order 13149).

The GEM carts provide a number of significant advantages. They are lightweight, convenient and have low maintenance costs. Ames' GEM vehicles are not designed for high speeds or public

highways, but can be used within the Moffett Federal Airfield and Ames' perimeter.

When fully charged, they travel from 25 to 30 miles per hour, for approximately 8 to 10 hours. The charging system requires a standard 110 volt outlet, found in any home or work area. They are available in two- and four-passenger models. Detachable enclosed rear carriers, detachable short beds with fences or factory mounted long beds are optional. Additional accessories are also available. To learn more about GEM vehicles, visit their Web site at [www.gemcar.com](http://www.gemcar.com).



Electric vehicles donated to Ames by Global Electric Motors (GEM).

## Ames celebrates national health and fitness week

The Safety, Health and Medical Services Division prepared several activities and educational opportunities to help Ames employees jump into National Health and Fitness Week. The Health Unit provided medical clearance exams required for use of the Fitness Center throughout the week. Clearance



NASA photo by Dominic Hart

The start of the Spring Fun, Walk and Run held in May at Ames.



NASA photo by Dominic Hart

Ames employees participating in the recent Spring Fun Walk and Run.



NASA photo by Tom Trower

The weight room at the fitness center.

Congratulations to all those who crossed the finish line.

The Fitness Center had an Open House on May 21. The doors were unlocked to anyone interested in seeing the facility and equipment. Instructors were available to answer questions about the many services and the 36 classes/week that are offered at the Fitness Center.

On May 22, the Health Unit sponsored a nutritional talk presented by Concern, Employee Assistance Services. This educational session discussed how food and exercise are interrelated and practical ways to incorporate exercise into your daily life.



NASA photo by Tom Trower

The Ames Fitness Center hosted an open house in May. Fitness Center staff were on hand to answer questions about their services and their 36 fitness classes.

forms for the Fitness Center can be downloaded from the Web at: <http://fitnesscenter.arc.nasa.gov> or hard copies are available at the door of the Fitness Center (building N-221). There was health information on display in the Health Unit, in the cafeteria and after the Fun Run. Come by the Health Unit any time to pick up new information.

On May 20, runners and walkers from the Spring Fun Walk and Run finished with some impressive results. Around 300 folks, either sprinted, strolled, skipped or danced across the finish line. The top three male and female runners were Steve Stowers (10:18 minutes), Ahrect Gokcek (10:57 minutes), A.J. Gokcek (11:25 minutes); Lina Khatib (13:10 minutes), Dimitra Giannakopoulou (14:26 minutes) and

Cynthia Tao (15:00 minutes). The winning walkers were Charles DeRoshia (19:42 minutes), Carla Kearin (23:13 minutes), Mark Betzina (23:28 minutes), Kenneth Laws (23:38 minutes), Lilly Spirkovka (23:42 minutes) and Cindy Havens (24:29 minutes). A display of Fun Walk and Run activities will be up in the hallway of the Fitness Center.

*We're waiting for ideas*

## Event Calendar

**Ames Amateur Radio Club**, third Thursday of each month, 12 noon, N-T28 (across from N-255). POC: Michael Wright, KG6BKF, at ext. 4-6262.

**Ames Ballroom Dance Club**. Classes on Tuesdays. Begin classes at 6:15 p.m. Higher-level class meets at 5:15 p.m. Held in Bldg. 944, the Rec. Center. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

**Ames Bowling League**, Palo Alto Bowl on Tuesday nights. Seeking full-time bowlers and substitutes. Questions to sign up: Mike Liu at ext. 4-1132.

**Ames Child Care Center Board of Directors Mtg**, every other Thursday (check Web site for meeting dates: <http://acc.arc.nasa.gov>), 12 noon to 1:30 p.m., N-215, Rm. 212. POC: Tom Maier, ext 4-3643.

**Ames Contractor Council Mtg**, first Wednesday each month, 11 a.m., N-200, Comm. Rm. POC: Anita Fogtman, ext. 4-4432.

**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](mailto:bmohlenhoff@mail.arc.nasa.gov).

**Ames Federal Employees Union (AFEU) Mtg**, third Wednesday of ea. month, 12 p.m. to 1 p.m., Bldg. 19, Rm 1042. Info: <http://www.afeu.org>. POC: Marianne, 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: Julie ext. 4-4694 or 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**, 2nd Thurs of ea. month (Feb through Nov), 11.30 a.m. - 1 p.m. Bldg. 223, Ames Visitor Center & Gift Shop, special events room. All are welcome. POC: Jeff Smith, ext. 4-2586.

**Environmental, Health and Safety Information Forum**, first Thursday of each month, 8:30 a.m. to 9:30 a.m., Bldg. 221/Rm 155. URL: <http://q.arc.nasa.gov/qe/events/EHSseries/> POC: Julie Morsellino 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: Cathy Payne at ext. 4-0003.

**Model HO/HON3 Railroad Train Club**, Bldg. 126, across from south end of Hangar One. Work nights: usually Fridays, 7:30 p.m. to 9:30 p.m. Play time: Sundays, 2 p.m. - 4 p.m. John (408) 735-4954 (W) or (408) 281-2899 (H).

**Nat'l Association of Retired Federal Employees (NARFE)**, Former and current federal employees. Your only contact with Congress. Join to protect your federal retirement. Chptr #50 meets the first Fri. of each month at HomeTown Buffet, 2670 El Camino (at Kiely), S. Clara, 11 a.m., lunch \$6.70. POC Earl Keener (408) 241-4459 or NARFE 1-800-627-3394.

**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.

## Exploring the limits of life in the highest lake on Earth

*continued from page 11*

migration. Upon the selection of biologically promising sites along the lakes' shoreline, the team undertook the construction of a gazer chamber formed by 'Acrylite' submersed sheets in shallow water. The sheets include UV transmitting and filtering aquaplates.

The shallow and deep-water samples and sediment samples from the lakes will be analyzed using gas chromatograph-mass spectrometry to characterize the structure of lipids, chlorophyll and carotenoids. Genetic analyses will be conducted on DNA extracted

from the samples, which will identify specific adaptations in the structure of these organic molecules to the high UV environment. The team collected the organisms living at various depths in the lake, which will provide an idea of the distribution of the biological populations in the summit lake.

As part of the expedition, the team collected a large number of physiological data including heart rate in an oxygen depleted environment, to understand how the human organism adjusts to altitude. The activities of the team involved free diving at 4,300 meters and climbing at 2,000 meters to San Pedro de Atacama, an oasis between Chile and Bolivia, and then to 5,200 meters, 5,400 meters, and finally the summit (6,017 meters) with strong winds.

"The results of this data could be of the utmost interest for the preparation of high-altitude mountaineering and for the prevention of acute mountain sickness," said Cabrol.

The team produced 1,500 pictures and five hours of video, including underwater footage. Brian Grigsby was the first teacher to climb the volcano with a science team to cover the trip. Another inspiring story is that of 82-year-old scientist, Edmond Grin, who participated with the team activities during the expedition at the summit and set a record for his age.

Collaborating with the team were teachers and more than 250 students as part of a one-year education and outreach project 'Life at Licanabur,' sponsored by the NASA IDEAS program.

The project engaged teachers and students in an internet-based, virtual field trip with scientists as they investigated planetary analogs.

"One of the main goals of this collaboration project was to allow access to scientists in the field, to the experiments they were conducting and allow communication between students and the scientists," said Cabrol.

At the foot of the volcano, the team found ancient remains of an Inca city. There is evidence that Incas came to this volcano and built fires at the summit to worship and communicate.

More information about the 2002 expedition or the lake at the Licanabur volcano can be found at [www.extremeenvironment.com/](http://www.extremeenvironment.com/)

BY VERONIKA SOUKHOVITSKAYA ▲

## Safety Data

|  | Civil Servants | Contractors |
|--|----------------|-------------|
| Not recordable first aid cases   | 1              | 3           |
| Recordable no lost time cases  | 0              | 2           |
| Lost time cases (Under new OSHA rules, lost time is defined as restricted duty and or days away from work (lost work days) | 0              | 1           |
| Restricted duty days   | 0              | 0           |
| Lost work days   | 0              | 1           |

Data above is for May 2003.

## VPP STAR Tip

*Documentation and interviews provide evidence that employees are taught the general safety and health rules of the worksite, the specific hazards involved in their work and the safe work practices needed to control exposure at the same time they are taught their jobs.*

*...Margaret Richardson, in Preparing for the Voluntary Protection Programs, Copyright © 1999 by John Wiley & Sons*

## 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

Duplex:2bd/1ba and 1bd/1ba, gar. large back yard,pet OK. In Mt. View 5 min to Ames. Call (650) 962-8728,ask for Long.

Room with large closet in 4 bd/2 ba home in excellent, quiet Mtn View area close to Ames. W/D, microwv, fireplace, wired for cable modem. Tidy person and N/S. Easy access to Ames, H85, 237 and 101. \$425/mo. plus dep. and share utils. Avail. July 1 or earlier. Call (650) 964-1900.

3 bd/2ba recently remodeled house for rent in Milpitas. Close to H237/880/680 for easy commute. A/C, new appliances, W/D, incl gardener. Cats OK. \$1,795/mo. Todd Flesner (408) 921-0669 or e-mail Toddular@aol.com.

For rent: 3 bd/2 1/2 ba townhouse in South San José/. Near H85 and H87. No pets or smokers. \$1,500/mo. Call (408) 281-7011.

For rent: 3 bd/2 ba., single fam. hm. in S. Clara. 2 car gar. Central air/heating, patio, deck, storage shed. Close to schools/shopping. \$2,350/mo. plus dep. Call (408) 983-2438.

Room available in quiet Fremont house. Share w/one adult. Room has bathrm, cable, priv. phn hookup. Quiet nghbrhd, near H880, Dumbarton Bridge and bus. W/D. N/S only; must be OK w/sharing house w/my cats (cautious ex-ferals). \$480 plus 1/2 utils plus dep. Avail. July 1. Call (510) 797-7442 or e-mail wormhole@animail.net.

Mountain View, 4bd/2.5ba 2,200 sq. ft. house, large yard, pool/jacuzzi, a/c, appliances, 5 miles from Ames \$2,900/mo. Call (650) 962-1142.

### Transportation

'89 Jeep Cherokee Lardo. Clean interior, custom tires and wheels, tinted windows, Smitty built step bars, Flow master, K&N air filter, CD player and new stock speakers, Runs good. \$3,500 or B/O. Call (408) 431-7324 (cell).

'90 BMW 325i convertible: white w/tan interior. Power windows, locks, mirrors, heated seats, cd changer, A/C., leather seats, new convertible top, new tires. Very clean, runs perfect! 95K mls. \$8,700. Tim (408) 406-8242 or e-mail pohle7@yahoo.com

'91 Toyota Previa LE AllTrac; 4-Cyl. 2.4L, automatic, AC, PS, PW, CC, AM/FM/cass./CD, premium sound, ABS (4-Wheel), roof rack, 130K mls, \$5,900. Call (408) 863-0835.

'96 Honda Civic EX, loaded, outstanding cond., white, 12 pack CD. VTEC engine, 5-speed. Dealer maintained, all records. 68K mls. \$7,950. Call (408) 257-2930.

'97 Yamaha motorcycle, Virago XV 1100 Special, black and chrome, 5,300 mls, windshield, saddlebags, tank bag and 'T' bag storage, service records, immaculate. \$4,950. Call (408) 846-1016.

'99 Ford Taurus wagon, V6 3.0L automatic, A/C, power everything (incl. driver's seat), 3rd row seat, alloy wheels, very good condition, 77K mls. \$6,250 or near offer. Roy (408) 482-8611.

#### Ames Public Radio & Phone

1700 KHz AM radio -- information announcements and emergency instructions, when appropriate, for Ames employees. The emergency information phone number for Ames is (650) 604-9999.

'00 Buick Lesabre Limited sedan; fully loaded; prestige option package; 3.8 liter V6 engine; AM/FM/cass/CD with concert sound; 35K mls; sterling silver on gray leather; 10-way pwr, heated seats. \$15,800 or B/O. Call (925)484-9744 or e-mail at: [Kmdaniel@aol.com](mailto:Kmdaniel@aol.com).

### Miscellaneous

Wood bedroom set: Twin bed w/trundle. 5 drawer dresser wall unit: Desk, two 6-foot pier cabinets, light bridge, and custom cork bulletin board (total width: 9'8"). Excellent condition. \$500. Call (408) 257-2930.

Assorted ice hockey equipment. Included in package two pairs of skates sizes 7 1/2 and 8 1/2. All \$50. Call (408) 847-9106 after 6:00 p.m.

12 ft Porta-Bote, used very little, exc. cond., covered storage, wt 68 pds, cap. 670 pds. Includes mtg brackets as shown on motor home at: <http://www.porta-bote.com/index.html>. Price new \$1,449; asking \$950. Trolling motor: 12V, variable speed foot control and steering, 15 pd thrust, \$100. T. Bridges (408) 725-0249.

19" Sharp color television with remote control. \$35. Call (408) 295-2160.

Burly d'Lite bicycle trailer--recognized the world over as the safest, most durable two-child trailer available. A top-of-the-line Burly trailer. Seats two children with max payload of 90lbs. 5 years old but hardly used. Original price \$400; selling for \$100. Azi (650) 740-3671.

Credenza/hutch, 20in x 30in x 46in, beautiful honey-laquer finish, exc. condition, \$350. Call (650) 473-0604.

1/2 carat diamond pendant with chain \$2,000. 1 carat tw 14K solid gold custom made women's ring \$3,500. B/O negotiable. Ching (209) 679-1542.

Miscellaneous Items for sale in Sunnyvale. Sony 27 and 19 inch TV; student table, office desk, twin size bed set, bikes, sega genesis, games, books, toys, cloths, etc. All in good condition. B/O accepted. Call (408) 720-1641.

Pump-In-Style breast pump '98 model (gently used), \$150; Infant vibrator chair w/musical activity bar, \$10; drafting table, \$20; Thule bike rack Fairing, \$15; Bontrager titanium (118g) mountain bike handerbar w/BERTS, \$15; Cinelli 66 road bike handlebars (40 and 44 cm), \$8; Campy front derailleur, \$5; Karhu XCD X-country skis, \$20; Weber barbecue w/cover, \$10; Tire chains, \$8. Kris (408) 243-3348.

Wanted: folding bike for travel; prefer Dahon, Bike Friday or Giant brands. Brian (650) 940-1673 or send e-mail to [brian@landsurfing.com](mailto:brian@landsurfing.com)

### Car Pool

Car pool from Pleasanton. Contact Natalio Mingo, [mingo@nas.nasa.gov](mailto:mingo@nas.nasa.gov), ext. 4-1776 or Deepak Kulkarni, [kulkarni@ptolemy.arc.nasa.gov](mailto:kulkarni@ptolemy.arc.nasa.gov), ext. 4-4869.

### Ames Retirements

| Name              | Code | Date     |
|-------------------|------|----------|
| Patric L. Lewis   | JTN  | 05/02/03 |
| William P. Jones  | JTN  | 05/03/03 |
| Herbert J. Finger | FOI  | 05/23/03 |
| Chester N. Chin   | JFS  | 05/31/03 |
| John Humbert      | JT   | 06/03/03 |
| Bohdan Cmaylo     | JTS  | 06/03/03 |

## 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.

## 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 N-235 (8 a.m. to 2 p.m.)**  
ext. 4-6873

Ask about NASA customized gifts for special occasions. Make your reservations for Chase Park

**Mega Bites N-235 (6 a.m. to 2 p.m.)**  
ext. 4-5969

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

**Visitor Center Gift Shop N-223**  
(10 a.m. to 4:00 p.m.) ext. 4-5412

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

**Tickets, etc...(N-235, 8 a.m. to 2 p.m.)**  
ext. 4-6873

Check web site for discounts to local attractions, <http://exchange.arc.nasa.gov> and click on tickets.

**NASA Lodge (N-19) 603-7100**

Open 7 days a week, 7:00 a.m. to 10 p.m. Rates from \$40 - \$50.

### Vacation Opportunities

Lake Tahoe-Squaw Valley Townhse, 3br-2ba-equipped, Balcony view, horseback riding, hiking, biking, golf, river rafting, tennis, ice skating, and more. Summer rates. (650) 968-4155, [DBMcKellar@aol.com](mailto:DBMcKellar@aol.com)

South Lake Tahoe Cottage w/wood fireplace and hot tub. Rates from \$50 to \$130 per night. Call (650) 967-7659 or (650) 704-7732.

Vacation rental, Bass Lake CA 14 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 lovely canyon setting. Fully eqpd kitchen. Access to priv. beach. Tub in patio gdn. Halfway between Carmel & Big Sur. \$175/night for 2; \$225 for 4 and \$250 for more, plus \$150 cleaning dep. Call (650) 328-4427.

Incline Village: Forest Pines, Lake Tahoe condo, 3 bd/2 ba, sleeps 8. Fireplc, TV/VCR, MW, W/D, jacuzzi, sauna, pool. \$120/night low season; \$155/night high season. \$90 cleaning fee and 12% Nevada room tax. Charlie (650) 366-1873.

Tahoe Donner vacation home, 2 bd/2ba. trees, deck, sun, fun. Access to pools, spa, golf, horseback riding, \$280 wkend, \$650 week. Call (408) 739-9134.

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.

From you...

[af2m.arc.nasa.gov](http://af2m.arc.nasa.gov)

# NASA Ames employees open their hearts and wallets

On April 30, a small celebration was held to recognize the efforts of the Ames Combined Federal Campaign (CFC) volunteers for another successful CFC fund-raising effort at NASA Ames.

tors, whose efforts definitely contributed to the success of the campaign. They all helped to 'Change Tomorrow Today,' " said Daryl Wong, chairman of the Ames 2003 CFC campaign.

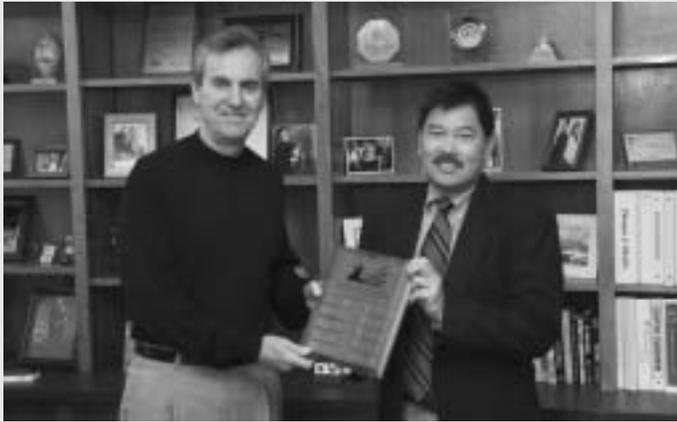
Despite difficult economic times, Ames once again displayed its compassion for our community and the country. Ames employees contributed a total of \$236,000, which was nearly one third of the amount raised in the Santa Clara and San Benito Counties Combined Federal Campaign this year.

This year, Center Operations, Code J, was recognized as being the most charitable organization at Ames.

"Code J has won the CFC award four of the past seven years. I am very proud to be associated with an organization that is so consistently willing to help those that need it most," said Tommy Moyles.

The Combined Federal Campaign supports and promotes philanthropy through an employee-focused, cost-efficient and effective program by providing all federal employees the opportunity to improve the quality of life for all. The campaign was established in 1961 by President John F. Kennedy to consolidate numerous charitable campaigns, allowing for a single annual campaign in all federal, postal and military agencies. Donations to the CFC support more than 2,000 local, national and international charities.

BY JONAS DINO



NASA photo by Tom Trower

Daryl Wong, chief, Acquisition Branch for Aeronautics and chairman of the Ames 2003 CFC campaign (right) presents Tommy Moyles of Code J with a plaque that states '2003 winner of the CFC Inter-Directorate Competition' for being the most charitable organization at Ames this year. The award is based on percentage of staff contributions. Code A was the second most charitable organization this year at Ames.

"I'd like to say that the 2003 Campaign was a successful one with a high level of contribution. This is especially remarkable given the current economic situation and the impact on those in our area. Many thanks to all the deputies, the coordinators, the captains, and the keyworkers, as well as to the contribu-

tions. Though we are the third largest federal agency in the campaign, Ames' generosity is nearly 50 percent greater than the second-place organization," said Herb Finger, chief, Wind Tunnel Systems Branch and Ames representative to the Local Federal Coordinating Committee (LFCC) for CFC.

"Nearly every year, Ames Research Center leads all federal agencies in the county in dona-

## Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: [astrogram@mail.arc.nasa.gov](mailto:astrogram@mail.arc.nasa.gov) on or before the deadline.

| Deadline: | Publication: |
|-----------|--------------|
| June 24   | July 2003    |
| July 28   | Aug 2003     |
| Aug 26    | Sept 2003    |



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Editor, Layout and Design.....Astrid Terlep

You can reach the Astrogram Office at:  
[astrogram@mail.arc.nasa.gov](mailto:astrogram@mail.arc.nasa.gov) or by phone at  
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