

## NASA developing computerized breast cancer diagnostic tool

A NASA-Stanford University team is in the preliminary stages of developing a smart probe that can be used for breast cancer detection and analysis.



Closeup of smart probe.

photo by Dominic Hart

The probe is designed to 'see' a lump; determine by its features if it is cancerous; and then quickly predict how the disease may progress. Researchers say surgeons may be able to insert the computerized tool's needle-like tip into breast lumps to

make instant diagnoses and long-term cancer predictions.

"This device will permit us to make real-time, detailed interpretations of breast tissue at the tip of the needle," said Robert Mah of Ames. Mah works in the Ames Neuroengineering Laboratory. "The instrument may allow health care providers to make expert, accurate diagnoses as well as to suggest proper, individualized treatment, even in remote areas."

"To enable the instrument to recognize cancer and predict its progress, we use special neural net software that is trained and learns from experience," he said. Scientists can teach

the breast cancer diagnosis device to predict how aggressive the disease may be.

"We hope to use this device not only to detect cancer, but to understand the nature of an individual cancer," said Dr. Stefanie Jeffrey, Assistant Professor of Surgery

and Chief of Breast Surgery, Stanford University School of Medicine, Stanford, CA.

"This information may help us determine the distinctive features of a malignancy and how the disease may progress; more knowledge about the cancer may guide us to better individualizing treatment."

Jeffrey and Mah are working together to develop the new device. The researchers say that, once the smart probe has been adequately tested in the laboratory, Dr. Jeffrey will begin testing the device on human beings, perhaps by early 1999.

"Ultrasound will help guide the doctor to properly insert the smart probe into a breast lump," said Dr. Robyn Birdwell, Assistant Professor of Radiology, Breast Imaging Section at Stanford.

"The computer software uses pattern recognition to look for tell-tale characteristics of the lump," Mah said.

"The same technology used in the portable, smart probe could be used in other instruments to help in diagnosing and treating cancers found in other parts of the body, including the prostate and colon," neuroengineering team computer engineer Alex Galvagni said.

The breast cancer tool is a spinoff from a computerized robotic brain surgery assistant that was previously developed by Mah and neurosurgeon Dr. Russell Andrews.

The larger brain surgery device is a simple robot that can 'learn' the physical characteristics of the brain and may soon give surgeons finer control of surgical instruments during delicate brain operations.

BY JOHN BLUCK

## Dr. McDonald kicks off Safety Week

Dr. Henry McDonald kicked off Safety Week with a Safety & Quality Meeting for civil servant supervisors and on-site contractors' managers in the N-201 Auditorium on October 26. Ames dedicated the full week of Oct 26 through Oct. 30 to Safety Week, with Safety Stand Down Day on October 28 as a day for employees to take a break from their normal work duties to focus their attention to safety matters. Stand Down Day events included the Safety Fair, a tasty polish sausage lunch with free refreshments. Gary Plummer, alum. of the San Francisco 49ers, and several of the Gold Rush Cheerleaders, were some of the guests who attended the event. Plummer spoke on the importance of Safety. The keynote speaker was Chuck Yeager, aerospace pioneer. Yeager gave an exhilarating speech on his past experiences with various test planes and the importance on placing safety first.



photo by Dominic Hart



see related story on page 3

Ames ISO Web-site address:  
<http://dqa.arc.nasa.gov/iso9000>

## Ames Awards

# NASA's '98 Software of the Year Award Winners honored

An award ceremony was held on October 21 to honor the winners of NASA's Software of the Year Award. It was hosted by the Commercial Technology Office. General Spence (Sam) Armstrong, Associate Administrator for the Office of Aero-Space Technology (Code R) and Dr. Henry McDonald extended their congratulations to the winners. Individuals from the Center TRACON Automation System software team took top honors and the OVERSET Tools for CFD Analysis group received honorable mention for Computational Fluid Dynamics Analysis. Over \$80,000 was distributed among the two teams.

### Center TRACON Automation System Software (Co-Winner)

Michelle M. Eshow, ARC  
Xavier Bouyssounouse, ARC  
Diana A. Chan, ARC  
Liang Chen, Raytheon STX  
Zheng Chen, Raytheon STX  
Danny Chiu, Raytheon STX  
Joseph R. Cisek, Logicon  
Stephane L. Couillaud, Raytheon STX  
Thomas J. Davis, ARC  
Paul H. Decker, Sterling Software  
Shawn A. Engelland, ARC  
Tsung-Chou Fang, Raytheon STX  
John D. Foster, ARC  
Karen R. Heere, Raytheon STX  
Susan E. Hinton, Raytheon STX  
Douglas R. Isaacson, ARC  
Thomas N. Kilsdonk, Sterling Software  
Richard G. Looney, Computer S. Corp.  
Wardell Lovett, ARC  
Mathias Ma, Raytheon STX  
Azadeh Olia, Raytheon STX  
Mayank B. Patel, Sterling Software  
Michael C. Pruznick, Hewlett Packard  
Ronald J. Reisman, ARC  
T. Francis Richason, Jr., Raytheon STX  
John E. Robinson, III, ARC  
Michael S. Schueller, Raytheon STX  
Donald W. Shawver, Jr., Computer S. Corp.  
George J. Soler, Raytheon STX  
Mark D. Slater, Raytheon STX  
Philippe A. Stassart, Raytheon STX  
Harry N. Swenson, ARC  
William W. Thigpen, Sterling Software  
Karen Y. Tung, ARC  
Joseph C. Walton, Raytheon STX  
Forrest E. West, Raytheon STX  
Gregory L. Wong, ARC  
Darrell L. Wooten, Raytheon STX

### Overset Tools for CFD Analysis (Honorable Mention)

Pieter G. Buning, LaRC  
Jasim Ahmad, MCAT Inc.  
Chris Atwood, Sun Microsystems  
Timothy J. Barth, ARC  
William M. Chan, MCAT Inc.  
Ing-Tsau Chiu, Kiwi Computer  
M. Jahed Djomehri, Calspan Corp.  
Reynaldo J. Gomez, JSC  
Ferhat Hatay, Fujitsu/HAL  
Computers Sys. Inc.  
George Huang, U. of Kentucky  
Dennis C. Jespersen, ARC  
Steven E. Krist, LaRC  
Robert Meakin, U.S. Army

Steven Nash, MCAT Inc.  
Shigeru Obayashi, Tokoku Univ.  
Steve Parks, General Motors  
Thomas H. Pulliam, ARC  
Kevin J. Renze, Boeing  
Yehia M. Rizk, ARC  
Stuart E. Rogers, ARC  
Tom Shieh, Ford Motor Co.  
Jeffrey P. Slotnick, Boeing  
Merritt Smith, Hewlett-Packard  
Douglas L. Sondak, Boston Univ.  
Joseph L. Steger, deceased  
James R. Taft, MRJ, Inc.



From left to right:  
Dr. Henry McDonald,  
General Armstrong,  
with some of the  
TRACON winners:  
Michelle Eshow, Stephane  
Couillaud, Xavier  
Bouyssounouse,  
Greg Wong, Karen Tung-  
Cate, Doug Isaacson,  
John Foster, John  
Robinson and  
Sue Hinton

photo by Roger Brimmer

## General Armstrong visits Ames

General Spence (Sam) Armstrong, NASA Associate Administrator for the Office of Aero-Space Technology (OAT) spoke at an all-hands meeting in the Main Auditorium (Bldg. N201), on October 21. General Armstrong shared with Ames employees his experience with the "Communicate Knowledge" (CK) process, which is documented in the report, "Communicating NASA's Knowledge", NP-1998-08-240-HQ.



photo by Tom Trower

## Center Briefs

### Antarctic ozone depletion sets new size record

NASA and NOAA satellites show that the Antarctic ozone thinning covers the largest expanse of territory since the depletion developed in the early 1980s. The measurements were obtained this year between mid-August and early October using the Total Ozone Mapping Spectrometer (TOMS) instrument aboard NASA's Earth Probe (TOMS-EP) satellite and the Solar Backscatter Ultraviolet Instrument (SBUV) aboard the NOAA-14 satellite.

"This is the largest Antarctic ozone hole we've ever observed, and it's nearly the deepest," said Dr. Richard McPeters, Principal Investigator for Earth Probe TOMS.

Preliminary data from the satellites show that this year's ozone depletion reached a record size of 10.5 million square miles (27.3 million square kilometers) on Sept. 19, 1998. The previous record of 10.0 million square miles was set on Sept. 7, 1996.

### NASA helps "hot" cities cool down

Environmental planning for the 2002 Olympic games, strategies to reduce ozone levels, focused tree-planting programs and identification of cool roofs are early spinoffs from a NASA urban study just concluding in three U.S. cities.

Researchers from NASA's Marshall Space Flight Center, Huntsville, AL, flew a thermal camera mounted on a NASA aircraft over Baton Rouge, LA; Sacramento, CA; and Salt Lake City, UT. The thermal camera took each city's temperature and produced an image that pinpoints the cities' "hot spots."

The researchers are using the images to study which city surfaces contribute to bubble-like accumulations of hot air, called urban heat islands. The bubbles of hot air develop over cities as naturally vegetated surfaces are replaced with asphalt, concrete, rooftops and other man-made materials.

### Jupiter's "white ovals" take scientists by storm

As powerful hurricanes pummel coastal areas on Earth, NASA space scientists are studying similar giant, swirling storms on distant Jupiter that have combined to spawn a storm as large as Earth itself.

Three separate cold storms, called "white ovals" because of their color and egg shapes, have been observed in one band around Jupiter's mid-section for half a century. Two of the storms recently merged to form a larger white oval, according to scientists studying data from NASA's Galileo spacecraft, the Hubble Space Telescope, and the Agency's Infrared Telescope Facility atop Mauna Kea, HI.

### New Shuttle Press Kit makes on-line debut

The STS-95 press kit is now online, inaugurating a new service that will enable members of the news media and the public to obtain access to each mission's information earlier and with more detail than ever before. The press kit can be accessed on the world wide web at: [www.shuttlepresskit.com](http://www.shuttlepresskit.com).

## ISO implementation guideline #1

As we implement the Quality Management System at Ames, guidelines will be issued for interpretation and implementation of the System Level Procedures (SLPs) as the need arises. This Guideline addresses the following commonly asked questions:

- 1) When do I start following the SLPs?
- 2) Do we have to go back and collect records from the past to establish objective evidence of compliance?
- 3) How are contractors included in the Quality System?

### ISO Baselining

- Existing organizations and projects within the Ames Quality System shall comply with the Center's quality manual and newly revised system level procedures (SLP) as of October 1, 1998.

- Corrective and preventive action requests and document change requests initiated prior to October shall be executed per the newly revised SLPs 53.ARC.00014, Corrective and preventive action and 53.ARC.0005, document and data control dated September 24 and September 2, respectively.

- Projects and organizations in existence prior to October 1998 are not required to retroactively conform to the quality record requirements in the SLPs. (For example, projects performing design activities do not have to create quality records for design reviews/design verification held prior to October). However, if quality records or other objective evidence do exist and they comply with the recently revised SLPs and local procedures then they can be used to demonstrate compliance.

### Contractor Inclusion Clarification

- The Ames Quality Management System defines our core business and how we are applying the ISO 9001 quality assurance requirements. The performance of on-site contractors in our core business is

critical to meeting the objectives of providing world-class quality products.

Contractors who are mandated by contract to follow ARC procedures to support the accomplishment of the Center's core business objectives, shall fall within the scope of the ARC ISO 9001 certification process, and are subject to internal and external auditing. This includes the requirement for establishing and maintaining appropriate quality records of training. Organizations need to establish with their contractors and Contracting Officer's Representative those processes and activities that are within the scope to be audited.

- For other contractor activities where the contractor follows its own procedures and has been given the authority to determine how the work is done and delivers an end product or service, its internal process is not to be audited. However, the contractor shall be required to provide proof of employee training if specified in the contract statement of work. Additionally, ARC organizations and the Acquisition Division can be audited per the Purchasing SLP (53.ARC.0006) to show that they have 1) evaluated and selected the contractor on the basis of their ability to meet requirements, 2) defined the extent of control exercised over the contractor, 3) reviewed/approved the contract technical requirements prior to release, and 4) evaluated the contractor's performance against the requirements.

- In the context of our Quality Management System, purchasing goods and services is governed by the Purchasing SLP which applies to civil servants and the Acquisition Division. Purchasing activities by contractors are governed by their internal procedures; therefore contractor purchasing is excluded from ISO audits.

Please contact the author at ext. 4-4092 if you have any questions concerning these guidelines

BY RICK SERRANO 

## Presidential visit



President Clinton lands and is greeted by Ames Deputy Director Bill Berry, on September 25 for a fund raising trip in the Bay Area that included a tour and dinner at the New San Jose Tech Museum.

photo by Dominic Hart

# NASA 'software scalpel' helps doctors practice operations

A "software scalpel," combined with clear, accurate, three-dimensional (3-D) images of the human head, is helping doctors practice reconstructive surgery and visualize the outcome more accurately.

Using the new approach, a physician wearing 3-D glasses can see an image of a patient's head from all angles on a computer monitor, or on the surface of a large "immersive virtual reality work bench."

Virtual reality is a computer-created environment that simulates real-life situations.

"To predict what the result will be in a real operation, the surgeon uses a computer mouse to mark the incision location and to ask the computer to 'cut' bone," said Muriel Ross of NASA's Ames Research Center, Moffett Field, CA. Ross is director of the Ames Center for Bioinformatics, which uses computer technology to improve medical practices. "The doctor can then remove the simulated piece of bone or can place it at a new angle or in a new position."

"Because some patients have severe injury to the head or diseases such as cancer, there are times when physicians must rebuild a person's head or face," Ross said.

"We are working on an addition to the scalpel software that will allow us to 'snap' a face back onto the 3-D image of the skull on which a doctor has practiced an operation," she said. "The doctor and the patient can then get a better idea of how the face will look after the actual operation."

"Eventually, we want to provide a virtual tool for surgeons to practice many sorts of surgery," said Aaron Lee, a student from Princeton University, who worked in Ross' lab to develop the Virtual Surgery Cutting Tool.

Each high-fidelity 3-D picture of a hu-

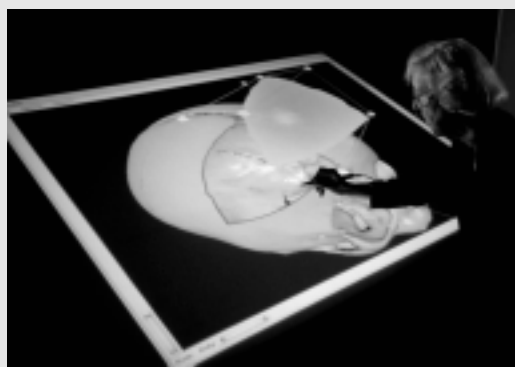


photo by Tom Trower

*Dr. Muriel Ross demonstrating the 'software scalpel' used with clear, accurate three-dimensional (3-D) images made from a series of scans of the human head will help doctors practice reconstructive surgery and better predict the outcome.*

man head is known as a 'reconstruction,' or a computerized object. "The computerized reconstructions are highly accurate, 3-D visual models of the head, but can be made of any part of the human body," said Ross.

In the technique, a series of computed tomography (CT) scans are combined to make the 3-D image using Reconstruction of Serial Sections (ROSS) software previously developed by researchers at the Ames Center for Bioinformatics. The Ames team also combined features of the ROSS software with the CT scan version to reconstruct a breast tumor from magnetic resonance images.

The NASA Center for Bioinformatics at Ames is part of a larger National Biocomputation Center established by NASA and Stanford University, Palo Alto, CA, according to Ross. "The new center is a national resource to further the use of virtual reality in medicine," Ross said.

The Ames bioinformatics team is working on a variety of virtual reality computer tools to aid in complex facial reconstructive surgery and other procedures. Surgeons

can use the big-screen workbench, special gloves, as well as computer tracking wands and other devices to manipulate 3-D computer images of patients.

The team is also interested in working with mastectomy patients who require breast reconstruction, and with children who need reconstructive surgery to correct deformities of the head and face.

Eventually, software systems could be used in other medical specialties or surgical procedures.

In the future, virtual reality will allow surgeons to rehearse a great many complex procedures before operations, according to Ross.

The team expects that, eventually, virtual reality will become a powerful teaching tool for medical students. A digital library of computerized "virtual patients" will be created that physicians can use to share information about uncommon procedures, according to researchers.

BY JOHN BLUCK

## Former employee from Ames passes away

Jack E. Cayot, the first Director of the FAA Liaison Office at NASA Ames, died at his home in Lake Wildwood, Ca. on October 2 following a lengthy bout with cancer. He was 76.

Cayot was born in Oroville, Ca. on May 16, 1922. He graduated from Livermore High School and joined the Army Air Corp. After receiving his wings in 1943, he flew B-26 aircraft in WWII. He was shot down in Italy and spent two years as a Prisoner of War in Germany, eventually being liberated by the Russian army. Upon his return to the U.S., he received a BS Degree in Aeronautical Engineering from Texas A&M and a Master's Degree in Foreign Affairs from George Washington University. Cayot began his career in the FAA as a Flight Test Engineer and served as the Director of the

FAA Liaison Office at Ames from its inception in 1970 until he retired in 1985. He was directly responsible for the development of airworthiness standards for Supersonic Transport aircraft as well as Powered-Lift vehicles. During his working career, he also attended the Air War College and served an appointment to AGARD.

Cayot is survived by his wife of 53 years, Bonnie; his son Jackson; a daughter Leslie Luhmann; three grandchildren; and his sister, Janet Claire Cayot. A memorial service in Cayot's honor was held on October 9 in Penn Valley, Ca. Memorial donations in his memory may be made to the Hospice of the Foothills, 12399 Nevada City Highway, Grass Valley, Ca. 95945.



Jack E. Cayot

### NASA unveils "Superstars of Modern Aeronautics" painting

Twelve NASA scientists and engineers, selected as "Superstars of Modern Aeronautics," were recognized today in a special ceremony at NASA's Lewis Research Center, Cleveland, OH, where a painting portraying their images was unveiled.

The painting, by artist Alexander Bostic, was created to highlight NASA's Aeronautics program and to recognize a few of the many talented individuals who have contributed to the excellence of the United States' civil and military aircraft and air transportation system.

The "superstars," former or current NASA employees, representing the four aeronautics centers, were chosen for their significant contributions to NASA's aeronautics programs over the past 50 years. Recognized on the painting are: Dr. Robert T. Jones, Dr. Jolen Flores and Dr. Karen L. Gundy-Burlet from NASA's Ames Research Center, Moffett Field, CA; Edwin J. Saltzman, Marta Bohn-Meyer and Dr. Kenneth W. Iliff from NASA's Dryden Flight Research Center, Edwards, CA; Dr. Richard Whitcomb, Dr. Kathy H. Abbott and Dr. James C. Newman, Jr., from NASA's Langley Research Center, Hampton, VA; and Dr. John J. Adamczyk, Albert L. Johns and Dr. Simon Ostrach from NASA's Lewis Research Center, Cleveland, OH.

A poster has also been designed, from the original painting, that will be used by educators to encourage their students to consider the many exciting and diverse career choices in the aeronautics field. Biographical sketches highlighting the subjects' educational background, technical achievements and contributions, current work assignment and interests are printed on the back of the poster. This "Superstars of Modern Aeronautics" poster is the third in a series of career awareness posters created by the Education Division at NASA Headquarters, Washington, DC.

Copies of the poster are available to educators. For more information, call (440) 774-1151, ext. 249 or 293.

### Flow over helicopter carriers

In collaboration with Stanford University and the U.S. Navy, a group of Ames researchers are studying ship aerodynamics and rotorcraft blade airflow to learn how to prevent accidents involving helicopters aboard amphibious assault ships.

Project scientists from Stanford's Aeronautics Department, Mechanical Engineering Department and the Center for Turbulence Research, and Ames' Fluid Mechanics Lab, the National Rotorcraft Technology Center (NRTC) and the Army Aeroflightdynamics Directorate (AFDD) are studying how "tunnel strikes" damage helicopters aboard ships. Under certain wind conditions during what is called a "tunnel strike," the helicopter's rotor blades spin out of control and strike the helicopter's fuselage.

"It's a very interesting problem that doesn't look hard to solve, but the Navy hasn't been able to in the past 35 years," explained Kurt Long, a U.S. Navy flight test engineer and masters graduate student at Stanford who is part of the project team. In the past 35 years, according to Long, there have been 120 incidents of tunnel strikes aboard ships that have caused millions of dollars of damage, fatalities and injuries to personnel.

There are many factors which can affect a helicopter's performance aboard a ship, including the ship's motion, the airwake caused by the ship's superstructure and the confined landing area of most ship flight decks.

Since the \$100,000 project's inception last December, scientists have studied how the H-46 Sea Knight, a twin rotor helicopter used by the U.S. Marine Corps to transport 15-20 troops in full battle gear, reacts to wind while aboard Navy amphibious assault ships.

"Some within the Navy believes tunnel strikes are caused by ship motion, but we just don't know enough about air flow," Long said. To learn more about airflow, project scientists are studying models in Stanford's 30-inch by 30-inch flow visualization wind tunnels and Ames' 32-inch by 48-inch wind tunnel, as well as the 7-foot by 10-foot wind tunnel.

"We have now measured air wake characteristics of ships and we anticipate that when this data is used in helicopter simula-

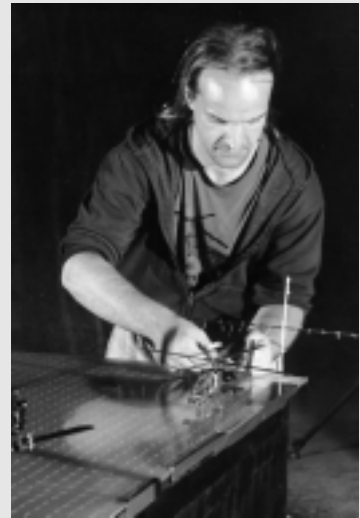


photo by Tom Trower

Kurt Long with helicopter flow over model

tions, we will be able to predict tunnel strikes" said Principal Investigator Greg Zilliack of NASA Ames. The one-year project is scheduled to continue until December.

BY MICHAEL MEWHINNEY



### ISO 9001 event held

Left: Lee Norbraten, ISO Executive, Johnson Space Center spoke at an Ames special ISO 9001 event on October 6. His presentation was "NASA and ISO 9001 - Benefits and Lessons."

photos by Roger Brimmer



Right: John Naber, Olympic Gold Medal Swimmer, also spoke at the ISO 9001 event giving his presentation on "An Eight Step Process For Success." He is seen here speaking at the event with Charlotte Sladek, American Society of Quality.

## Glenn memorabilia available at the Ames Exchange Gift Shop

This limited edition poster, designed by Dave Faust of Quantum Services, is now available at the NASA Exchange Gift Shop in the Ames Visitors Center.

Also available are t-shirts, pins and patches commemorating this historic flight.

More than thirty six years after he made history as the first American to orbit the Earth, Senator John H. Glenn, Jr. returns to space as part of a multi-national crew with the launch of Space Shuttle Discovery. STS-95 will involve more than eighty scientific experiments investigating mysteries that span the realm from the inner universe of the human body to studies of our own Sun and its solar activity.

Back on February 20, 1962, when Glenn flew in his Friendship 7 Mercury capsule, the largest mystery facing the young NASA space program was whether humans could even survive in the hostile environment of space.

In the 121 space missions since Glenn's flight during the Mercury, Gemini, Apollo, Skylab and Shuttle programs, more than 200 Americans have flown - and thrived - in space. Glenn, who inspired many current astronauts to pursue space flight as a career, continues to inspire people of all generations as he prepares for a return to space.

The Ames Exchange designed a special limited edition T-shirt and the poster for this historic mission. The Gift Shop is located in Bldg. 233 and is open from 8am-4:30 p.m. every day. This design is only available at Ames. Patches and pins are available for STS-95 and the historic Friendship 7.



## NASA recognizes lunar prospector minority contractor

NASA recently recognized Symtech Corporation as NASA's minority contractor of the year for its work at Ames in presenting real time data on the Internet from the Lunar Prospector spacecraft. This was the first time real-time information has been sent to the Internet in a sustained data stream from a spacecraft. The web site received more than 75 million "hits" from around the world.

Symtech, based in, Alexandria, VA, was nominated by Ames for the honor. Awards are given annually to minority contractors and subcontractors for their exceptional contributions to the nation's space program.

"Symtech and particularly Ken Bollinger have used the Internet to break ground to communicate the excitement of our scientific discoveries to the public," Lunar Prospector Mission Manager Scott Hubbard said. "This was a particularly challenging task because the spacecraft did not have a camera aboard, and complex scientific data had to be translated into a form readily understandable by the average citizen."

The Internet audience can also view NASA documentaries, short video clips and hundreds of thousands of archived Moon

pictures from all previous lunar missions on the web site. In addition, the audience is able to monitor the health of the Lunar Prospector spacecraft while it orbits the Moon. The web site is located at: <http://lunar.arc.nasa.gov/>

The web site audience continues to view actual data coming from the spacecraft which discovered evidence of ice deposits in polar Moon craters.

"For most past missions, data belonged to the principal investigator for up to a year or two before being released," said Deputy Lunar Prospector Mission Manager Sylvia Cox. "Now, with Prospector and many other new missions, we are releasing data at the same time the scientists see it."

"We have received thousands of e-mails from students, teachers, professors, and scientists around the world about the web site and the instant release of mission information and Moon data," said Lunar Prospector outreach specialist Lisa Chu-Thielbar of Ames.

Two other companies were also given awards. Stanford Mu Corporation, Harbor City, CA, minority subcontractor awardee, designed and developed special pressure regulator components for the Cassini

spacecraft's propulsion module subsystem; Mars Global Surveyor; the Mars Surveyor 1998 Mars Climate Orbiter and Mars Polar Lander.

Dynamac Corporation, Rockville, MD, won the Women-Owned Small Business of the Year award, and was nominated by NASA's Kennedy Space Center, FL. Dynamac provides technical support for Kennedy's biological research and environmental monitoring programs, life science flight experiments, biomedical operations and Agencywide occupational health programs.

NASA honored the companies on Sept. 23, during a NASA Headquarters ceremony in Washington, DC.

BY JOHN BLUCK 

# Events & Classifieds

## Calendar

**Jetstream Toastmasters**, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Jenny Kahn at ext. 4-6987 or Pam Walatka at ext. 4-4461.

**Ames Bowling League** meets at Palo Alto Bowl every Tuesday at 6 p.m. The league is in need of substitute bowlers. POC: Mina Cappuccio at ext. 4-1313.

**Ames Ballroom Dance Club**, Tuesdays, November, 3, 10, 17, 24. Beginning Rumba, 5:15 p.m. - 6:15 p.m., Practice 6:15 p.m. - 7:15 p.m., Moffett Training and Conference Center, Bldg. 3/Showroom. POC: Deb Narasaki at [dnarasaki@mail.arc.nasa.gov](mailto:dnarasaki@mail.arc.nasa.gov). ABDC Website: <http://infosysd1.arc.nasa.gov/Info/BallroomDance/Welcom.html>

**Ames Child Care Center Board of Directors Meeting**, Wednesdays, 12 noon to 1 p.m., N-213/Rm. 204. POC: Debbie Wood at ext. 4-0256.

**Ames Contractor Council Meeting**, Nov 4, 11 a.m., N-200/Comm. Rm. POC: Greg Marshall at ext. 4-4673.

**Hispanic Advisory Committee for Employees**, Nov 5, 11:45 a.m. to 12:30 p.m., N-239/Rm. 177. POC: Carlos Torrez at ext. 4-5797.

**Environmental, Health & Safety Monthly Information Forum**, Nov 5, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm. 1078. POC: Linda Vrabel at ext. 4-0924.

**Ames African American Advisory Group Meeting**, Nov 5, 11:30 a.m. to 12:30 p.m., N-241/Rm. 237. POC: Mary Buford Howard at ext. 4-5095.

**Nat'l Association of Retired Federal Employees, S.J. Chapter #50, Meeting**, Nov 6, at the Elk's Club, 44 W. Alma Avenue, San Jose. Social hour: 10:30 a.m. Prog. & bus. mtg. follow lunch at 11:30 a.m. POCs: Mrs. Leona Peery, Pres., (650) 967-9418 or Earl Keener, Public Relations, (408) 241-4459.

**Professional Administrative Council (PAC) Meeting**, Nov 12, 10:30 a.m. to 11:30 a.m., Location TBD. POC: Janette Rocha, ext. 4-3371.

**Ames Sailing Club Meeting**, Nov 12, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Greg Sherwood at ext. 4-0429. Website: <http://sail.arc.nasa.gov>

**NFFE Local 997 Union General Meeting**, Nov 18, 11:30 a.m. to 12:30 p.m., Bldg. 19/Rm. 1040. POC: Marianne Mosher at ext. 4-4055.

**Ames Multicultural Leadership Council Meeting**, Nov 18, 11:30 a.m. to 12:30 p.m. in the Galileo Room of the Ames Cafe. POC: David Morse at ext. 4-4724 or Sheila Johnson at ext. 4-5054.

**Java Users Group Meeting**, Nov 18, 1:30 p.m. to 3 p.m., N-238/NAS auditorium. POC: Sonia Kao at ext. 4-6312.

**Ames Asian American Pacific Islander Advisory Group Meeting**, Nov 19, 11:30 a.m. to 1 p.m., N-241/Rm. B2. POC: Daryl Wong at ext. 4-6889 or Brett Vu at ext. 4-0911.

**Ames Amateur Radio Club**, Nov 19, 12 noon, N-260/Conf. Rm. POC: Walt Miller, AJ6T at ext. 4-4558.

**Native American Advisory Committee Meeting**, Nov 24, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

## Ames Classifieds

Ads for the next issue should be sent to [astrogram@mail.arc.nasa.gov](mailto:astrogram@mail.arc.nasa.gov) by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; no commercial/third-party ads and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; however, Ames extensions will be accepted for carpool and lost and found ads only.

### Housing

For sale - Mobilehome located in the Santiago Villa Mobilehome Park, Mountain View (less than 1 mile from Ames). Features: double-wide with screen porch, 2 bedrooms, 2 baths w/handicap toilets, air-conditioning, kitchen, family room, living room, dining room. Special surge-protected electric circuits installed in two rooms last year. Cost \$75,000; space rent \$695/mo plus \$12.30 garbage. Call (650) 968-6102 or e-mail at: [robin@gardenscape.com](mailto:robin@gardenscape.com)

Available now: If you like nature or have an interest in a holistic lifestyle, picture yourself watching the creek rush by from the window of your private room (furnished and phone) near Castro in Mtn. View. Share kitchen/bathroom/laundry/garden/treehouse. Easy transportation: 5 miles from Stanford by bike/bus/train - Central Expressway/El Camino/Hwy. 101/237/85. \$580 (includes utils). Lv. msg. at (650) 969-3932 or email at: [solemate@best.com](mailto:solemate@best.com)

Share 3 bd/2 ba home in Sunnyvale. Furnished room, full access to amenities. \$450 mo. plus 1/3 utils. Near H85 and Homestead, 8 mins from Ames. N/S. no pets. Avail. 11/7. Call (408) 730-0686.

Large spacious room for rent in Mountain View Heatherstone Apartments behind the Americana. Gym, jacuzzi, sauna, pool, clubhouse, utilities (gas, water and garbage), laundry, carport parking included. This 2-bdrm apartment also includes huge living room, storage room, dishwasher, garbage disposal, private deck, and cable. Easy access to H85, H280, H101, El Camino Real, Lucky's, Safeway, and various other specialty shops. 5 minutes drive from Ames. \$850/mo. Females only. Call (650) 962-8651 or email at: [fyuan@mail.arc.nasa.gov](mailto:fyuan@mail.arc.nasa.gov)

For sale: Charming 2 bd/1 ba bungalow, easy access to Ames, \$249,950, 1035 Newhall St., San Jose. Call (408) 265-5616.

Spacious townhouse in Palo Alto for rent - 2 bd/2 1/2 ba, large kitchen, dining room, family room, plus separate room for office/extra bedroom. Attached 2-car garage, excellent neighborhood for children, close to elementary schools. Cable TV included. Desirable mid-town location, easy access to freeway. \$1,850/mo. Call (408) 255-7346 or (408) 345-3263.

### Transportation

'84 Corvette, black, 4 speed, 89K mls, runs/looks great, new tires/exhaust, records. \$8,800. Call (650) 969-0420

'88 VW Vanagon-GL, org. owner, gd condition, low mileage: 80K mls. A/C. \$6,800 (blue book: \$7,800). Sleeps 4 with cruise control, reclined seats. Tom (408) 249-0780.

'88 Chrysler Lebaron Convertible, with 58K mls. New top. Lthr, clean. \$4,500. Lisa (408) 895-0540.

'90 Plymouth Voyager, good condition, 116K miles, \$5,000. Call (408) 741-8183.

'91 Plymouth Voyager LE, 3.3L V6 engine, 7pass, AT, AC, ABS, power door/seat/ lock, cruise, tilt wheel, Infinity stereo, only 76K mls, exc. cond, \$6,999. Call (510) 656-7369 or (408) 397-4583 (pager).

### Miscellaneous

Women's dress shoes: sz. 10 to 10 1/2 Narrow. Various colors. Seldom worn. Trametria (TR) (707) 556-9542.

Sharks tickets (2): December 6 (Anaheim Mighty Ducks) and December 12th (Washington), 7:30 p.m. Excellent seats, Row 16 corner of goal side. \$94/pr. Call (408) 395-8326.

Theater tickets to "Bring in 'Da Noise/Bring in 'Da Funk" in San Francisco at the Golden Gate Theatre, Sat., Nov. 21, 8:00 p.m., lower balcony, center, row B, seats 108/110. Ticket (pr) for \$105, including all handling fees. Call (408) 395-8326.

AudioSource Dolby ProLogic surround sound processor, model SS Three, power rear channels w/ subwoofer output, \$45; VHS tape carousel, black, wood, swivel base, holds 70 tapes, 1'x1'x4'. \$20; Koss headphones, model K/6A. \$20. Call (408) 295-2160.

Beautiful countertop KitchenAid microwave oven. Brand new in box for half price...\$216! Bought the wrong type and can't return it to store because it's past 30 days. Gary (650) 254-0614.

### Vacation rental

Lake Tahoe-Squaw Valley Townhse, 3bd/2ba, View of slopes, close to lifts. Wkend \$400, midwk \$150 night. Includes linens, firewd, cleaning service. Call (650) 968-4155 or email at: [DBMKellar@aol.com](mailto:DBMKellar@aol.com)

### Carpool

Carpooling: Reduce cost, stress, and smog by becoming a rider in our vanpool. From San Francisco/ Colma Bart to Moffett Field/Mt. View area. Work hours are 7a.m. to 4 p.m. Ruth at ext. 4-5247 or (415) 681-2176.

### Lost & Found

Moffett Field Lost and Found may be reached via ext. 4-5416 at any time. Residents and employees at Ames Research Center/Moffett Federal Airfield may also use Internet browser at: <http://ccf/arc.nasa.gov/codejpl/lostFound.html> to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. You may also contact Moffett Field Security Police Investigations Section: ext. 4-1359 or email at: [mfine@mail.arc.nasa.gov](mailto:mfine@mail.arc.nasa.gov).

Stolen bicycle, from building 213, rear stairs, sometime during September. Bike is 20" wheel delivery bicycle, square steel construction, big Wald front basket, hi-rise bars, ugly tan paint with stickers, flat tires, lock thru chainwheel. This bike was not abandoned, please return-no questions. x4-0938.

### 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
MON, NOV 2	FRI, NOV 13
MON, NOV 16	FRI, NOV 27
MON, NOV 30	FRI, DEC 11
MON, DEC 28	FRI, JAN 8

# Chilli Cookoff held Oct. 1 was hot!



The "Dr. Dave's Demons" chilli team, were the winners of the Grand Prize People's Choice Award.



A NASA 40th Anniversary cake was provided by the Ames Exchange.

photos by Dominic Hart

# Health Fair set

The 1998 Federal Employees Health Benefits (FEHB) "Health Fair" will be held on Nov. 4, in the Atrium of the Ames Cafe from 9:00 a.m. to 3:00 p.m.. All federal civilian employees are invited to attend. Attending the "Health Fair" and talking to the various plan representatives are excellent opportunities for obtaining information to assist you in making important health plan decisions. The Health Benefits Open Season will be held from Nov. 9 through Dec. 14. The 1999 FEHB Guide and plan brochures will be available in the near future. If you have any questions about the Health Fair, call Lita Que at ext. 4-1019.

# Childcare available

GeoKids is a parent cooperative federal childcare center for kids aged 3 months through pre-kindergarten. Located in Menlo Park, GeoKids mission states "children are best cared for when their families are cared for." GeoKids has play based programs based on the philosophy that kids are capable, competent learners who construct their own knowledge through interactions with other children, adults and the environment. Visit our website at <http://GeoKids@wr.usgs.gov>, or for a wait list application call (650) 329-4236.

THE AMES **Astrogram**

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

**Managing Editor.....David Morse**  
**Editor.....Astrid Terlep**

# THE AMES **Astrogram**

National Aeronautics and Space Administration

Ames Research Center  
Moffett Field, California 94035-1000

Official Business  
Penalty for Private Use, \$300



FIRST CLASS MAIL  
POSTAGE & FEES PAID  
NASA  
Permit No. G-27



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