

## Famed NASA Pioneer Project Manager Charles Hall dead at 79

Charles (Charlie) F. Hall, manager of three of NASA's most daring and exciting early scientific space missions, died August 26 in a Mountain View hospital following a

The spacecraft produced an outstanding record of technical accomplishments, including: first Solar Wind Observatories (Pioneer 6-9) which produced useable data for over 30 years; first spacecraft to traverse the asteroid belt (Pioneer 10); first spacecraft to fly by Jupiter (Pioneer 10); first spacecraft to fly by Saturn (Pioneer 11); coordinated orbiter, bus and entry probe measurements of Venus' atmosphere.

A native of San Francisco, Hall graduated cum laude in 1942 from the University of California at Berkeley with a Bachelor of Science degree in mechanical engineering. He joined NASA's predecessor agency, the National Advisory Committee for Aeronautics (NACA), in May of 1942. Hall resided in Palo Alto for 7 years before moving to Los Altos in 1950.

During his NACA career, Hall made important research contributions to aeronautics, including performance improvements for the P-51 fighter and increased efficiency of swept-back wings. He also contributed to the development of conically cambered wings to improve the lift-to-drag ratio of delta-wing aircraft.

Soon after NASA was formed, Hall helped persuade the Agency to develop the Pioneer 6-9 series of spacecraft, which examined the solar environment from orbits separate from the Earth's. Under his leadership, the reliability of spacecraft far exceeded performance requirements and resulted in more than 25 years of service from Pioneer 6.

"Space exploration projects managed by Charles Hall were executed with outstanding performance and economy, bringing world attention to Ames Research Center for its accomplishments," said Center Director Dr. Henry McDonald. "Ames quickly became a major participant in NASA's space exploration because of the excellence of his Pioneer interplanetary probes."

Under Hall's management, the first mission into space beyond Mars, the Pioneer 10 and Pioneer 11 projects, completed a successful inspection of Jupiter. Pioneer 11 became the first spacecraft to reach Saturn. Instruments aboard Pioneer 10 and 11 conducted valuable scientific research over the next two decades about the Sun's influence in this part of the galaxy.

Hall also managed Pioneer Venus, consisting of an orbiter and a set of four probes that were sent into Venus' atmosphere. In addition to nearly perfect engineering and many scientific accomplishments, the Pioneer Venus project was completed within its budget.

During his career, Hall received numerous national and international awards for his role in NASA's early space exploration. He received two NASA Distinguished Service Medals, one for the Pioneer 10 project and one for the Pioneer Venus project. In 1974, Hall received the American Astronautic Society, Inc., Achievement Award and in 1976, he received a Special Achievement Award from the National Civil Service League. The National Space Club selected him for an Astronautics Engineer of the Year Award in 1979. The following year, Hall received the American Institute of Astronautics and Aeronautics (AIAA) Space Systems Award. Hall also was selected for the NASA Ames Hall of Fame, which was established this year.

"Charles Hall was nominated for Ames' Hall of Fame for his personal brilliance and dedication in establishing management techniques and in guiding development of the Pioneer series of projects through complex technical challenges," said William Berry, Deputy Center Director at NASA Ames. "In spite of his tight controls on resources, he consistently enjoyed the highest esteem of each of the many world-class scientists whose instruments and studies were developed and supported via his spacecraft and management. His accomplishments are legendary among space project managers."

A funeral mass was celebrated on Tuesday, August 31 at St. Simons Church in Los Altos, CA.

BY MICHAEL MEWHINNEY 



Photo by Tom Trower

Charlie Hall during the Pioneer Venus encounter.

brief illness. He was 79.

Hall managed NASA's Pioneer Project Office, which he established in 1962 at NASA's Ames Research Center. The Pioneer Office was the first and most successful spacecraft project office ever established at Ames. During its 18 years of existence, 12 spacecraft were launched by the office, contributing to the success of subsequent Ames' space projects, including the Galileo Probe and Lunar Prospector.

"The entire NASA family mourns the loss of Charles Hall," said NASA Administrator Daniel S. Goldin. "His intelligence, persistence and leadership throughout his career at NASA - and particularly as the original Program Manager for the Pioneer Project - continue to inspire us to reach to the stars and beyond. Charlie Hall's Pioneer 10 craft may be over 6.8 billion miles from Earth, but his spirit will always be with us at NASA."

Under Hall's leadership, the Pioneer Project Office managed the development of and operation of the Pioneer 6-9 series of Solar Wind Observatories, the Pioneer 10 and 11 interplanetary spacecraft, and the Pioneer Venus orbiter, bus and entry probes.

## Ames' ISO follow-on challenges

Ames has proven to a certified third party, DNV, that it can meet the requirements of the ISO 9001:1994 ISO standard for quality management and assurance. In



*photo by Dominic Hart*

*Rick Serrano, ISO program manager, presents Bill Berry, Center Deputy Director, with a brass ISO 9001 Quality System certificate.*

other requirements of a supplier's quality system and shall be documented in a format to suit the supplier's method of operation. This requirement may be met by referencing the appropriate documented procedures that form an integral part of the quality management system.

The point is that there should be a flow down from the quality policy through the quality objectives to tangible plans to implement improvements into the quality system. This whole process should be management driven and conducted in the light of other pertinent business decisions. These plans, once instituted, lead to the core Quality Management System (QMS) structural process, which drives continual improvement.

Once the quality policy, quality objectives and quality plans are instituted, all the conditions are set for the core quality im-

tem; process audits – audits of processes such as manufacturing, servicing, and design; product audits – auditing products compared to their specifications; project audits – auditing the effectiveness of projects for completeness; and compliance audits – auditing the management system versus the specifics of the QMS.

Audits provide valuable information to management as to the status of the essential functioning of all quality processes. Management, in turn, is required to review the performance of the quality system as a basis for improvement, and internal audit results are a prime metric that is to be considered. Central to these audits is to determine if the QMS is capable of "preventing nonconformity at all stages from design through to servicing." This is the scope and purpose of the ISO standard. Every six months DNV will perform a periodic audit of Ames' QMS to verify the effectiveness of these processes.

The purpose of the corrective action system is to ensure that problem areas in the QMS are identified, analyzed, solved

and brought to the attention of those who have the responsibility to act on the documented issues. As a company's QMS improves, there should be evidence of system improvements. Trends should be identified and preventive actions documented. This system should show involvement by the executive management in issues that impact process, product and service quality. A good corrective/preventive action system will have the following components: product and process defect detection, customer complaints, internal and external audit results and improvement actions.

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*photo by Tom Trower*

*Members of the certification team look on as Bill Berry, Center Deputy Director (left), and Rick Serrano, ISO program manager (right), raise the ISO flag in front of building 200 on August 31.*

provement process to take over and drive further quality improvement. This quality improvement system is driven by the interaction of internal audits, corrective actions, management reviews and training.

Internal audits become the eyes and ears of the QMS. They come in various flavors: system audits – auditing the effectiveness of the quality management sys-

tem; process audits – audits of processes such as manufacturing, servicing, and design; product audits – auditing products compared to their specifications; project audits – auditing the effectiveness of projects for completeness; and compliance audits – auditing the management system versus the specifics of the QMS.

The Management Responsibility element is the most important component of this process of continual improvement. As stated above, executive management must set the vision and tone of the quality system. They are the custodians and drivers of the system and, as such, are intimately tied to the QMS, its promise and problems. They must pass judgement on all the data collected and presented to them. They need to review the results of the internal audits, corrective and preventive actions, and customer issues

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# NASA developing autonomous robot for future space missions

Scientists at Ames are developing an autonomous robot to support future space missions. This month they completed a key test of the robot's components.

About the size of a softball, the Personal Satellite Assistant (PSA) will be equipped with a variety of sensors to monitor environmental conditions in a spacecraft such as the amount of oxygen, carbon dioxide and other gases in the air, the amount of bacteria growth, air temperature and air pressure. The robot will also have a camera for video conferencing, navigation sensors, wireless network connections, and even its own propulsion components enabling it to operate autonomously throughout the spacecraft.

"We're developing an intelligent robot that essentially can serve as another set of eyes, ears, and nose for the crew and ground support personnel," explained NASA Ames researcher Yuri Gawdiak, principal investigator for the project. "Our research objective is to test intelligent autonomous systems that use advanced sensors and monitoring technologies for supporting current and future spacecraft operations."

The little round robot's compact design will enable it to operate in the cramped confines of the Space Shuttle's flight deck and Space Station modules, while keeping out of the astronauts' way. Since it will operate autonomously, the astronauts' hands will be free for other tasks.

The Personal Satellite Assistant represents the next generation of advanced Information Technologies that follows the Wireless Network Experiment (WNE) developed at NASA Ames in 1995 for the International Space Station. As the astronauts aboard Atlantis discovered during the STS-76 mission, wireless computer networks work well in a space environment and the wireless computers' radio signals did not interfere with either the Space Shuttle's or the Russian Space Station Mir's other electronic equipment.

Based on the success of the WNE experiment, the crew recommended handheld wireless portable data assistants that could support their mission operations onboard the International Space Station. The Ames research scientists took their recommendation several steps further by designing the handheld data assistants into autonomous intelligent robots.

This design approach has several key advantages. Besides data assistant capabilities to the onboard crew, payload scientists and mission controllers on the ground, the PSA would be able to remotely monitor their payloads, especially when onboard



*Autonomous robot being developed at Ames to support future space missions.*

crew members are not available.

Another key benefit of the design would be the ability to have several PSAs conduct collaborative environmental trouble-shooting activities. In order to accomplish this complicated task, at least three PSAs would use formation flying techniques to zero in on the location of an environmental problem, such as a pressure leak, temperature spike, off-gassing, etc.

The PSA is also being designed to handle more mundane house-keeping chores so as to free the crew to focus on their research activities. The type of routine tasks handled by the PSA would include independent environmental sensor calibration checks, as well as inventory monitoring.

Beyond crew support operations onboard the Space Shuttle and Space Station, the long-term future goals of the Personal Satellite Assistant are to support remote diagnostic operations and to substitute as necessary for damaged or nonfunctioning sensors on future spacecraft.

"We hope to launch a Personal Satellite Assistant in about two years aboard a Space Shuttle and in about three years aboard the International Space Station," Gawdiak said. "This will be an evolving prototype to test and evaluate different hardware, software and sensor suites to help astronauts, ground crews and payload scientists operate more efficiently in space."

Further information about the PSA is available at the project website: <http://ic.arc.nasa.gov/ic/psa>

BY MICHAEL MEWHINNEY



## NASA Exchange Swimming Pool new hours set

The swimming pool will begin its new winter hours this week! Monday through Friday the pool will be offering lap swimming time from 10 am - 1 pm and 3:30 pm - 6 pm. On weekends the pool will be open for lap swim from 10 am - 12 pm (Saturday and Sunday) and open swimming from 12 pm - 5 pm (Saturday and Sunday).

Please call Jodi Neal at (650) 603-8025 for more information.

Remember the swimming pool facility may be rented for any special occasion. It's a great place for a children's party or retirement bash!

### Ames Aerospace Encounter Employee Day held August 18



The Ames Aerospace Encounter hosted their 10th Ames Employee Day on August 18. All on-site personnel were invited to come, along with family and friends for a self-paced tour. Over 170 adults and children, representing over 25 codes and departments from NASA and Moffett Field attended.

This was a special opportunity for employees and their children and guests to see and experience this unique interactive facility that makes math and science come alive. The Encounter is booked year round with 4th, 5th & 6th grade student fieldtrips.



photos by Tom Trower

### In Remembrance

Maxine (Max) Ovetz, secretary for the Atmospheric Chemistry and Dynamics Branch and the Atmospheric Physics Branch, died August 29 in a Santa Clara, CA hospital following a brief illness. She was 62 years old.

Max contributed 13 years to government service. She was a valued member of Code SG the past 2 1/2 years; always bringing innovative ideas and a pleasant attitude to her work. She also worked previously in various organizations at Ames and the US Geological Survey in Menlo Park, CA.

Max was a humanitarian also. She and her husband, Arye, were foster parents providing guidance and loving care to children from disadvantaged families.

## Center Briefs

### **NASA and Canada join forces to combat aircraft icing**

In an effort to enhance aircraft safety, NASA and the National Research Council of Canada signed a protocol on August 10 at the Aerospace North America conference in Vancouver, British Columbia, to focus their world-class talent and resources on aircraft icing technology development.

### **NASA selects miniature spacecraft to test space technology**

They're each about the size of a large birthday cake, weigh about as much as a desktop computer, and are smart enough to fly in formation far from Earth while they test new technologies. They are three very small satellites, called the Nanosat Constellation Trailblazer mission, and on August 19, NASA selected them as the agency's latest New Millennium mission.

The mission will validate methods of operating several spacecraft as a system, and test eight technologies in the harsh space environment near the boundary of Earth's protective magnetic field, or magnetosphere.

### **NASA, Thiokol complete \$1.7 Billion Shuttle Motor agreement**

NASA and Thiokol Propulsion of Brigham City, UT, have completed negotiations for a contract worth up to \$1.73 billion for 73 Space Shuttle Reusable Solid Rocket Motors. The motors -- two are used per flight -- are the primary component of the Shuttle Solid Rocket Boosters, providing 6.6 million pounds of thrust or 71.4 percent of what the Shuttle needs for liftoff.

### **NASA unveils first images from Chandra X-RAY observatory**

Extraordinary first images from NASA's Chandra X-ray Observatory trace the aftermath of a gigantic stellar explosion in such stunning detail that scientists can see evidence of what may be a neutron star or black hole near the center. Another image shows a powerful X-ray jet blasting 200,000 light years into intergalactic space from a distant quasar.

Released Aug. 26, both images confirm that NASA's newest Great Observatory is in excellent health and its instruments and optics are performing up to expectations.

### **NASA selects 103 innovative small business projects**

In an attempt to stimulate the development of new technologies, NASA has selected 103 research proposals for negotiation of Phase II contract awards for its Small Business Innovation Research Program. The selected projects have a total value of approximately \$62 million and will be conducted by 90 small, high-technology firms in 27 states.

In addition to stimulating innovation, the SBIR program aims to increase the number of small businesses, including women-owned and disadvantaged firms, conducting federal research and commercializing the results of federally funded research.

## SHARP students awarded



1999 Ames SHARP students in front of building 200.

photos by Dominic Hart

On Thursday, August 12, the Development and Communication Office, Code DX, hosted the closing ceremony for the

Kobayashi and Hans Thomas, mentors for Ana Papsin were both SHARP apprentices. Linda was a SHARP apprentice at Ames and



SHARP students during the awards ceremony held on August 12 in N201 Auditorium. From left to right are: Linda Kobayashi, SHARP mentor 1999 & ex-SHARP apprentice; Hans Thomas, SHARP mentor 1999 and ex-SHARP apprentice; Michael Guerrero, SHARP Mentor and Ana Papsin, SHARP apprentice 1999. All work in Code IC.

Summer High School Apprenticeship Research Program (SHARP).

Christopher Ortiz, a SHARP Apprentice in 1996, gave his reflection of his participation in SHARP. Chris said the program helped clarify his career goals. Also, he was able to network with NASA professionals and is continuing to work at ARC during his summer breaks from UCLA.

Thirty high school juniors and seniors were selected to participate in this science and engineering apprenticeship program. The students are selected on the basis of having shown the aptitude for and interest in science and engineering careers.

The program was initiated in 1980 and is sponsored by NASA's education division and participating NASA field installations. Since 1980, approximately 2,500 SHARP apprentices have participated in the program and more than 2,600 NASA employees have served as SHARP mentors.

The eight-week program started on June 21 and ended August 13. The Ames SHARP apprentices worked in various projects ranging from Space and Life Sciences Division to Information Systems.

A couple of the SHARP mentors were themselves SHARP Apprentices. Linda

Hans was a SHARP apprentice at Goddard Space Flight Center. Both Linda and Hans work in the Computational Science Division.

BY MARICELA VARMA

## Shopping trip planned

On November 13 the NASA Exchange is planning a Shopping Trip to San Francisco's great outlets! This trip will be hosted by "Ann's Shopping" and promises to bring many great bargains in time for the Holidays!

Join us in this fun filled day on a trip to San Francisco and leave the driving and parking to us. Plan on leaving from Moffett Field in the morning and returning by 5pm. Contact Jodi Neal at ext. 3-8025 for more information.



photo by Tom Trower

## National Women's Equality Day celebrated

*Ms. Rolanda Pierre-Dixon, Deputy District Attorney for Santa Clara, spoke at the Women's Equality Day event held at Ames on August 25. During her speech, she mentioned that she was a former Ames employee, working as an intern for the Legal office. She left Ames to pursue her law degree, passing the bar exam on her first time around.*

## Dr. McKay named to Planetary Society Board of Directors

Christopher McKay, a planetary scientist with Ames' Space Science Division, who specializes in Mars studies, has been named to the Board of Directors of The Planetary Society, based in Pasadena, CA.

McKay is not new to the Planetary Society having worked on various projects with the agency for 15 years. "Chris McKay has been a leading creative force in planetary science; (he) will .... challenge us to create new adventures in planetary exploration," said Louis Friedman, Executive Director of the Planetary Society. Also named to the board of directors is Bill Nye, a popular science educator with an Emmy-Award-winning weekly television series on science called "Bill Nye the Science Guy".

McKay has been at Ames since 1982. His current research focuses on the evolution of the solar system and life's origins. He is actively involved in planning for future Mars missions, including potential human settlements on the red planet. McKay travels extensively to study Mars-like harsh environments on Earth--most recently to the Siberian and Canadian Arctic to conduct research.

The Planetary Society has on its Board many well-known figures from the worlds of space exploration, sci-fiction and entertainment, including cinema director Steven Spielberg, astronaut Buzz Aldrin, author Ray Bradbury and futurist Arthur C. Clarke.

BY KATHLEEN BURTON 

## Ames' ISO follow-on challenges

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along with all the other business-related issues that drive the quality improvement engine. This is an executive management issue because the results of this activity can mean changes will have to be made — starting with the organization and right down to individual employees controlling internal processes. These decisions may include assigning ownership, as well as allocating resources and capital to ensure the success of the identified actions.

Central to the effective functioning of any QMS is training. Without proper training, even the best QMS will function at some level below peak efficiency. The importance of training is beginning to be noticed at third-party registrars. Most registrars are beginning to look at training as a core element in the effective functioning of a quality system. It is hard to imagine any QMS that does not undergo changes over time. Procedure, process, specifications, and customer requirements all change and, without training, an organization cannot keep pace. Training provides the glue that holds the quality management system together. In terms of actual time allotted to creating a QMS, training is a major element. Lack of training is easy to spot, particularly in third-party audits. The moral of the story is simple — training is central to the effective functioning of any QMS.

For an ISO QMS to function properly and provide value to a company, all the above processes must function properly. Without executive management establishing the quality direction and goals of the enterprise, all that follows is bound for stagnation and failure.

In summary, NASA and Ames must develop their quality policy in close alignment with the business philosophy of the Agency.

This alignment is essential to all that follows. From quality policy comes the translation of these policies into achievable objectives. Achievable objectives are next transformed into quality plans which are assigned to various functions within the organization as action items. These quality plans may lead to process, product, or service changes with the sole purpose of improving the functioning of the enterprise over time. Process changes will be put into place and their success measured by the conduct of internal audits. Documentation of the internal audit results is one of the inputs to the management review process. Acting in conjunction with the internal audits is the corrective and preventive action process. Constant documentation of all corrective and preventive actions supplies information effectively to executive management on the health of the quality management system. The combination of these two processes provides the data that executive management needs to make its improvement decisions.

It is the above interaction of processes that DNV will evaluate every six months on their periodic audits at Ames. The ISO scope statement says the following: "The requirements specified are aimed primarily at achieving customer satisfaction by preventing nonconformity at all stages from design through to servicing." A system design to meet these requirements will have all the above processes functioning under the guidance of a dedicated executive staff.

BY KARL BALL 

## Calendar

**Ames Bowling League** will be starting the 99/00 season at Palo Alto Bowl every Tuesday at 6pm on Sept. 7. The season is 33 weeks long and ends April 25 with a banquet the week after. The league is in need of bowlers to join teams, as well as substitutes. POC: Mina Cappuccio, mcappuccio@mail.arc.nasa.gov, at ext. 4-1313 or Mike Liu, mliu@mail.arc.nasa.gov, at ext. 4-4357.

**Ames Ballroom Dance Club**, Tuesdays: Hustle 8/31, 9/7, East Coast Swing 9/14, 9/21, 9/28. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Moffett Training and Conference Center, Bldg. 3/Showroom. Women dancers are especially encouraged to join. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

**Model HO/HOn3 Railroad Train Club at Moffett Field** invites train buffs to visit and join the club in Bldg. 126, across from the south end of Hangar One. The club is in particular need of low voltage electricians and scenery builders and maintainers. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (work) or (408) 281-2899 (home).

**Jetstream Toastmasters**, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Jenny Kahn at ext. 4-6987 or Karen Matsuoka at ext. 4-6184.

**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.

**NFFE Local 997 Union General Meeting**, Sep 15, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

**Ames Amateur Radio Club**, Sep 16, 12 noon, N-260/Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

**Ames Asian American Pacific Islander Advisory Group Meeting**, Sep 16, 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.

**Java User Group**, Sep 23, 10 a.m. to 11:30 a.m., Bldg. 258, Rm. 127. Topic: Improving Java Performance - Tips and Tools. POC: Sharon Marcacci, ext. 4-1059 or email at: nasalib@mail.arc.nasa.gov.

**Native American Advisory Committee Mtg**, Sep 28, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

**Nat'l Association of Retired Federal Employees, San Jose Chapter #50 Meeting**, Oct 1, 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: Mr. Rod Peery, Pres., (650) 967-9418 or NARFE 1-800-627-3394.

**Ames Contractor Council Meeting**, Oct 6, 11 a.m., N-200 Comm. Rm. POC: Jack Stanley at ext. 4-2345.

**Environmental, Health and Safety Monthly Information Forum**, Oct 7, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1078. POC: Linda Vrelat at ext. 4-0924.

**Hispanic Advisory Committee for Employees**, Oct 7, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

**Ames African American Advisory Group Meeting**, Oct 7, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

**Professional Administrative Council (PAC) Meeting**, Oct 14, 10:30 a.m. to 11:30 a.m. Location TBD. POC: Janette Rocha, ext. 4-3371.

**Ames Sailing Club Meeting**, Oct 14, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Greg Sherwood, ext. 4-0429.

## 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; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

### Housing

Professional non-smoking couple with one child seek temporary housing during their house remodel. Must be out of house by October 1, and need housing through February. Alison (408) 267-8190.

Furnished room. Share bath/kitchen/garden/laundry. Easy transport: bus/train + El Camino + H101/237/85 + Central Expressway. Rent: \$560/mo. Call (650) 969-3932 or email at: [solemate@best.com](mailto:solemate@best.com)

Available immediately for commuter and/or intern; a semi-private temporary space in the same location as above. Weekly \$100 (+ one month). Call (650) 969-3932 or email at: [solemate@best.com](mailto:solemate@best.com)

Master bdrm available in Mt. View. Large apartment of professional lady; El Camino & Rengstorff. Gated bldg w/pool; convenient to bus 20 mins to downtown Palo Alto. Safe. \$750. Fontella (650) 962-8411.

Studio apartment one mile from Nasa. No pets. \$670 a month includes utilities. Month to month lease. Call (650) 965-0775.

2 bd/1.5 ba Mountain View townhouse. 2 gated parking spaces. Patio & balcony. Orange & lemon trees. W/D hookups. Quiet. Easy access to H101, 85, and 237. No smoking or pets. \$1,775/mo. Available now. Joyce (650) 965-1511 or (650) 725-2908.

Need a room for rent Mon-Fri in Mt.View- Santa Clara area. Call (415) 668-0167 or email at: [pechersk@aol.com](mailto:pechersk@aol.com)

Roommate wanted (N/S, prof) to share a great, sunny, 2 master bdrm/2 ba end-unit condo (Sunnyvale) with gar, W/D, lrg rooms, storage, central air, low/mod utilities, jac/pool, balcony, 3 miles from Ames, \$675 plus 1/2 utils (approx \$25). Steve (408) 737-1924.

Roommate wanted to share spacious 2bd/2ba apartment. N/S. \$900 a mo., including utils & cable. Priv. bath, share living room & kitchen, w/easy-going female & friendly dog. Located in Redwood Shores, quiet cul-de-sac. Next to wildlife refuge & walking distance of stores & restaurants. Access to freeway. W/D in unit. New. Call (650) 593-8507 or (650) 637-3923.

Room for rent. Share 4bd/2ba home in N San Jose Berryessa Area. 12 mi. from Ames. Responsible NS Professional. \$450/mo +dep +util Kevin (408) 259-7684 Lv Msg.

Looking to rent/lease a 1-2 bedroom house, duplex, or apartment with a 1 car enclosed garage in the San Carlos, Redwood City, Palo Alto, Portola Valley, La Honda, Pescadero or Woodside area. Approx. \$1,200/mo. Ask for Diane at 650-851-7056 or 650-371-3457 VM/PGR.

Easy commute to Ames. 2 Bedroom, 1 Bathroom, includes washer/dryer inside unit. Very quiet complex includes swimming pool and hot tub. \$1,300 month plus security deposit. Please mention that you read this ad in the Astrogram. Call (408) 732-5254 or (408) 738-2625.

Condo for sale in West San Jose, Cupertino schools. 2 bd/1ba, 2 patios. \$175,000. Lloyd (408) 345-3015.

### Miscellaneous

Saxophone, alto by Yamaha, \$500, original cost \$1,000. Mike (408) 257-3175.

Complete living room set for sale: - American South-West colored fabric with oak/brass trim - sofa, love-seat, chair, coffee table, end tables, 2 lamps. \$800/ or B/O. Pat (408) 249-0583.

Dooney & Bourke Handbag, small equestrian style, bone w/tan trim color, never used, \$100. Eilene (408) 979-9107.

BBQ Rotisserie, fully enclosed, electric, countertop model. Will roast a full turkey, two chickens or similar portions of meat and vegetables. Includes vegetable steamer and an assortment of accessories. New, never been used. \$250 Call (650) 969-7876.

Free recliner chair in working condition, could use upholstery. Call Janet and Jack at (650) 961-6117 or email: [jjarmann@aol.com](mailto:jjarmann@aol.com)

Wanted: donated aviation pictures or posters, preferably of aircraft, to mount on the walls of our ATC simulation lab in Moffett bldg N-210. Forrest (510) 656-1299.

Kirby/Generation 4 vacuum, all attachments, \$600 or B/O, paid \$1,400. 3 bike motorcycle trailer, no license plate, \$250 or B/O. Call (831) 335-4801.

Surfboard, hand crafted in Santa Cruz. 7' 7" Used 4 times. Guns ends. Extra fiberglass. Beautiful. \$625 + new O'Neil cover. Call (408) 777-8048.

Nordic Track "WalkFit" treadmill, \$400. Call Ken at (415) 386-6881.

Sears/Amana Washer/Dryer 6 years old; excellent condition; features; each: \$175 set: \$300. Call (408) 378-2350.

### Transportation

'72 Mercedes Benz 280 SE (4.5 L, gas engine), 180K miles. Silver and black classic, single owner for 27 years! Sunroof, power windows/doors, leather and wood interior, mechanically solid. Perfect for the home classic car restorationist. \$3,500 or b/o. David, 650-851-9202.

'85 Mercedes 190E, low miles, one owner, custard color, 4-dr/sunroof/automatic/AC/excellent cond. \$6,900. Call (650) 328-4331.

'90 Mitsubishi Mirage; 2dr hatchback, 101K mls, automatic transmission, A/C, AM/FM Cassette. Good student commute car. \$1,700. Mark (408) 295-2078.

'91 Plymouth Voyager LE, 7seat, 3.3L V6, AT, AC, infinity sound, cruise, tilt, pwr windows/ doors/ driver seat, excellent condn, 88K miles one 397-4583 pager.

'96 Dodge Intrepid, Excellent condition. New tires, built-in baby car seat, Kirkwood sound system upgraded speakers, 7-CD changer, built-in alarm with two controls PS/PB/PD dual air bags. Mechanically solid. Great performance automobile. 55K, Asking \$11.3K or B/O. Christine (408) 945-1152 or email: [cortez@ricochet.net](mailto:cortez@ricochet.net).

### Carpool

Riders needed now for a vanpool from San Francisco to Moffett Field/Mt View area. Work hours are 7 a.m.-4 p.m. Reduce the stress, cost, and pollution caused by commuting. Ruth at ext. 4-5247 or email: [rglobus@mail.arc.nasa.gov](mailto:rglobus@mail.arc.nasa.gov).

### Vacation rental

Lake Tahoe-Squaw Valley townhse, 3bd/2ba, balcony view, horseback riding, hiking, biking, golf, river rafting, tennis, ice skating, and more. Summer rates. Call (650) 968-4155 or email at: [DBMcKellar@aol.com](mailto:DBMcKellar@aol.com)

San Juan, Puerto Rico, 3 bdrm ocean side apartment. School headmaster wishes to trade for a 3-4 bedroom home/apartment in the Menlo Park/Palo Alto area for Dec 21, 1999 -Jan 7, 2000 inclusive. Joe (650) 969-6119 or Russ (787) 726-5745 or email [rbeecheer@caribe.net](mailto:rbeecheer@caribe.net)

### Lost & Found

Moffett Field Lost and Found may be reached via ext. 4-5416 at any time. Residents and employees at Ames may also use Internet Browser at: <http://ccf.arc.nasa.gov/codeip/pages/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. Call Moffett Field Security Police Investigations Section at ext. 41359 or email at: [mfine@mail.arc.nasa.gov](mailto:mfine@mail.arc.nasa.gov).

FOUND on 8/26: Black leather gloves in front of Ames Café. Identify specific characteristics. Collect from Security at Lost & Found

## Hey football fans!

The NASA Exchange will be hosting a NASA Day at a football game this season. We have chosen the OAKLAND RAIDERS game vs. NEW YORK JETS on Sunday, October 24. This is a great opportunity for office groups, church groups and others to get together for some fun! Stay tuned for more information or call Jodi Neal for more information at ext. 3-8025.

## Events & Meetings

### Cooperative ventures discussed between Ames and JPL



Members of the Ames/JPL Remote Agent Software team are pictured here, from left to right: Nicola Muscettola (Ames), Jack Hansen (Ames), Pandu Nayak (Ames), Dave Lehman (JPL), Doug Bernard (JPL), Ben Smith (JPL), and Larry Dumas (JPL).

During a recent meeting at the Jet Propulsion Laboratory, Pasadena, CA, JPL's Deep Space 1 Project Manager David Lehman, presented certificates of recognition honoring the cooperative effort by JPL and Ames resulting in the successful demonstration of the Remote Agent artificial software intelligence experiment onboard the Deep Space 1 spacecraft in May.

Ames and JPL also signed a memorandum of cooperation covering technologies that Ames' Automated Software Engineering Group will infuse into JPL's Mission Data System Project.

Steve Zornetzer, director of information sciences and technology at Ames, discussed the Intelligent Systems Program Ames is leading for NASA. Ames is inviting significant participation in this program by JPL. Efforts are underway to create a joint-center team to establish

better alignment between the program and JPL's mission communities.

Dr. Leon Alkalai, manager of JPL's Center for Integrated Space Microsystems, discussed possible collaborations between CISM and Ames. Possibilities included the use of several high-performance, real-time embedded computer test beds, such as the X2000 First Delivery Avionics, the Remote Exploration and Experimentation parallel computer, and the DARPA-funded distributed Reliable Computing test beds. He also briefed Ames on the status of the partnership between NASA and the National Cancer Institute on biomolecular nanotechnologies.

Ames representatives included Jack Hansen, Deputy Director for research, and Peter Norvig, manager of the Computational Sciences Division.

BY MARK WHALEN, JPL

### Apollo astronaut to visit Space Camp

Space Camp will be hosting a book signing for Gemini and Apollo Astronaut, Capt. Eugene Cernan. Capt. Cernan was the last man to walk on the moon on the final Apollo mission in 1972.

Date: October 7

Time: 2:00 p.m. to 5:30 p.m.

Place: Space Camp

(located outside the front gate)

Books: His new release, "Last Man on the Moon" will be for sale in the Space Camp Gift Shop.

Call Valerie Bunnell at ext. 3-8905 if you have any questions.

### THE AMES *Astrogram*

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