

## Lunar Prospector to get unprecedented view of Moon's features

By the time you read this article, mission controllers at the Lunar Prospector mission control in building 244 at Ames should have commanded the Lunar Prospector spacecraft into a 30-kilometer (approximately 19-mile) lunar polar mapping orbit. At press time, the maneuver was still on schedule to occur at 11:00 p.m. on January 28.

Earlier, on December 19, the spacecraft was commanded to enter a transitional orbit that was 25 miles above the surface of the Moon. The closer, the better, however, so this new 19-mile, lower mapping orbit will provide an unprecedented close-up "view" for the science instruments during the next 6-month extended mission. The orbit adjustment maneuver officially completes the very successful primary mission that began with Prospector's launch on January 6, 1998.

"This one-year anniversary of the Lunar Prospector mission represents an opportunity to reflect on the wonderful science accomplishments of the mission, the spacecraft and the dedicated individuals that made it all possible," said Sylvia Cox, NASA's mission manager for Lunar Prospector. "Lunar Prospector, across the board, has been a complete success."

The extended mission is expected to continue through July 1999, during which time the five science instruments on board will gather additional data at significantly higher resolutions. This enhanced data will enable scientists to refine their estimates concerning the concentration and form of the hydrogen detected at the north and south lunar poles. Mission scientists interpreted the detection of hydrogen as deposits of water ice. Mapping of the Moon's magnetic and gravity fields will also benefit greatly from the lower orbit. Addi-

tionally, initial global maps of the Moon's elements will be confirmed with the close-up data.

"The Lunar Prospector instruments gathered such superior data in the one-year primary mission at the 100-kilometer (63-

well defined, and the height of lunar mountain ranges is unclear. The 30-kilometer orbit will require that adjustments be made every two weeks due to the gravitational fields that pull the spacecraft closer to the Moon. For this reason, the spacecraft could approach as close as 6 kilometers to the surface.



artwork by Boris Rabin

Artwork of the Lunar Prospector spacecraft over the Moon

mile) orbit; we are very excited to get an even closer look," said Alan Binder, principal investigator and director of the Lunar Research Institute, Gilroy, CA. "In the six weeks at the lower transitional 40-kilometer orbit, the data return is already looking tremendous. This raises our expectations about getting an even closer look at the lunar surface, collecting data at higher resolutions, and gaining further insights about the Moon."

The lower orbit of the extended mission will not be without risks. The extended mission orbit is designed to provide no less than a 6-kilometer (approximately 4 mile) margin above the high points of the Moon's surface. These measurements are based on data provided by the Department of Defense's Clementine mission. However, the terrain at the southern lunar pole is not

**LP honored!**  
(see page 6)

"We only hope that there are no peaks that reach that high in regions that Lunar Prospector is passing over," said Marcie Smith of Ames, operations manager for Lunar Prospector.

Ames manages the Lunar Prospector mission for NASA. The spacecraft was built by Lockheed Martin Missiles and Space in Sunnyvale and was launched on an Athena II spacecraft built by Lockheed Martin Corporation, Denver.

Further information on the success of the orbit adjustment maneuver and additional information about Lunar Prospector, its science data return, and other charts and graphics can be found at the following websites:

<http://lunar.arc.nasa.gov>  
<http://george.arc.nasa.gov/dx>

BY BETSY CARTER



see related story on page 2

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

## ISO 9001 -- Into the home stretch

During the last two years, Ames has planned, developed, documented and implemented a quality management system that center management believes will produce a payback in operating effectiveness and efficiency. In April, Ames will seek independent certification to the ISO 9001 standard to ensure that the management system is functioning as intended.

With less than four months to go, the center is undertaking a two-prong approach to ensure that we are ready for the certification audit. Managers and supervisors will use the following checklist to ensure that critical processes have been implemented and tangible evidence of implementation exists. In addition, a comprehensive round of internal audits will begin in mid January to identify any soft spots in time to correct them.

### Audit Preparation Checklist:

1. Personnel are aware of the Quality Policy and know how they contribute to meeting it. Ref 53.ARC.0000 section 2. Quality Policy.

2. Quality management review meetings (if required by Directorate Work Instruction) are properly documented. Actions from meetings are tracked through completion. Ref 53.ARC.0001 paragraph 6.3.4.

3. Organization charts are current, complete, and readily available. The responsibility and authority of personnel who manage, perform and verify work affecting product quality is documented in your procedures. Ref 53.ARC.0001 paragraph 6.3.2.

4. Annual budgets are developed and available. Funding covers all aspects of work that affects product quality (e.g., necessary staffing, inspections, calibrations, ...) Ref 53.ARC.0001 paragraph 6.3.5.

5. Customer agreements are developed, approved, and amended per SLPs 53.ARC.0003 Acceptance and Amendment of Customer Agreements, 53.ARC.0009.2 Management and Performance of Research, or 53.ARC.0009.4 Program and Project Management.

6. Customer Agreements are signed and retained as Quality records. Ref 53.ARC.0003 paragraph 6.3.

7. Design plans are written for software and hardware product developments and updated as the project evolves. Ref 53.ARC.0004.1 and 4.2.

8. Records of design review and design verification are treated as Quality Records.

9. Personnel are aware of their responsibility to use current procedures and work instructions by checking the Master List at <http://dqa.arc.nasa.gov/iso9000/>.

10. Procedures and work instructions are shown correctly on the Master List. Ref 53.ARC.0005 Appendix A

11. Your organization uses a documented procedure for controlling changes to your procedures, work instructions and

forms. Ref 53.ARC.0005 Appendix A.

12. If your organization uses documents of external origin to develop your product, then your document control procedures need to include a description of how:

- your staff knows they have the correct versions

- who is responsible for providing the correct version, and

- making sure obsolete versions are removed to prevent inadvertent use

Ref 53.ARC.0005 Appendix A #9.

13. Forms used as quality system documentation are uniquely identified and available to personnel. Ref 53.ARC.0005 Appendix A #10.

14. Purchase orders/statements of work/contracts clearly identify the product or services required. Ref 53.ARC.0006 paragraph 6.1.3.

15. Contractor performance Data is collected, reviewed by the appropriate Responsible Manager, and is maintained as a Quality Record by Procurement. Ref 53.ARC.0006 paragraph 6.3.10.

16. Customer supplied products (CSP) are properly controlled and personnel know what to do if products are lost or damaged. Any specific handling of CSP needs to be addressed in the Customer Agreements. Ref 53.ARC.0007 paragraph 6.2.1. and 6.2.6

17. If CSP is lost or damaged, a survey report NF 598 is completed and maintained as a Quality Record. Ref 53.ARC.0007 paragraph 6.2.6.

18. Work processes that directly affect product quality are sufficiently documented. Any special processes are identified and carried out by qualified personnel. Ref 53.ARC.0000 Quality Manual paragraph 4.9.

19. Equipment maintenance program procedures and/or critical equipment maintenance procedures that could directly affect product quality are under document control. Ref 53.ARC.0000 Quality Manual paragraph 4.9.1.

20. Research plans are developed per 53.ARC.0009.2, and program/project plans are developed per 53.ARC.0009.4.

21. Inspection and testing procedures exist that cover incoming materials, in-process checks and final release of your product. Ref 53.ARC.0010.

22. Quality records are maintained for urgently needed materials released before verification. Ref 53.ARC.0010 paragraph 6.2.1.

23. Quality records are maintained of the final inspection/test of product prior to release to the Customer, and these records identify who authorized the release. Ref 53.ARC.0010 paragraph 6.4.2.

24. Systems are in place to identify the status of inspected parts/products (tags, travelers, ...). Ref 53.ARC.0012

25. Personnel are aware of and follow calibration requirements for equipment used

in their area. Ref 53.ARC.0011

26. Equipment in laboratories, shops, facilities used for inspecting, measuring and testing the product to verify conformance to requirements is calibrated and labeled. If the equipment is not calibrated, it is segregated or labeled as such to prevent its unintended use. Ref 53.ARC.0011

27. Quality records are maintained for 1) equipment calibrations and 2) checks of software or hardware used to verify acceptability of the product. Ref 53.ARC.0011 paragraphs 6.4.4 and 6.1.3, respectively.

28. Determine if your organization requires a system for control of nonconforming product. If yes, then follow the procedures in SLP 53.ARC.0013 Control of Nonconforming Product, section 6.2, or use/create your own that complies with the general requirements in section 6.1 of that SLP.

29. Quality records are maintained of 1) Nonconformance Report ARC 758 or equivalent and 2) Quality System Request for Deviation/Waiver ARC 762 or equivalent

30. Your staff is aware of the Corrective Action System and its use. Appropriate root cause analysis is accomplished when processing Corrective Action Requests (CAR). Ref 53.ARC.00014 paragraph 6.1.1

31. Objective evidence (including Quality Records as required) for all your closed CARs is easily accessible to demonstrate corrective actions were implemented and effective.

32. For organizations that interact with Customers, procedures are in place to solicit and evaluate Customer feedback of delivered products. Corrective Action Reports are generated based on Customer complaints. Ref 53.ARC.00014 paragraph 6.1.1

33. Your organization has performed some review/analysis of your processes to determine whether or not preventive action is warranted to eliminate future product nonconformances. Ref 53.ARC.0014 paragraph 6.1.2.

34. Materials used to produce deliverable products are properly handled and stored to prevent damage or loss prior to use. Ref 53.ARC.0015 paragraph 6.1. and 6.2.

35. Labs/shops with special handling requirements such as electrostatic discharge (ESD) mitigation have complete procedures and are following them.

36. Quality records are identified in a Quality Records Matrix or other controlled procedures. Ref 53.ARC.0016 paragraph 6.1.

37. Quality records and other objective evidence are collected and filed as required by your procedures. Make sure the records content is consistent with the description in the procedures. For example, meeting minutes must show that all required topics

*continued on page 6*

## Center Briefs

### **Garver named Associate Administrator for Policy and Plans**

NASA Administrator Daniel S. Goldin on Jan. 25 named Lori B. Garver as Associate Administrator for NASA's Office of Policy and Plans, effective immediately. Garver has served as acting Associate Administrator of the office since September 1998.

Garver will be responsible for agency-wide policy requirements; oversight, coordination, and direction for NASA's strategic planning and management system; and NASA's history program. In addition, Garver will serve as Executive Secretary of the NASA Advisory Council.

"Lori Garver has demonstrated both the management skills and policy leadership that this position demands. Her experience both inside and outside the agency has proven invaluable for this important role, and I am pleased she has agreed to serve on a permanent basis," Goldin said.

### **NASA selects 125 innovative small business projects**

NASA has selected 125 research proposals for negotiation of Phase 2 contract awards for NASA's Small Business Innovation Research (SBIR) Program. The selected projects, which have a total value of approximately \$73 million, will be conducted by 113 small, high-technology firms located in 26 states.

### **NASA hurricane study reveals intriguing results**

NASA and other weather researchers have gained intriguing new information about upper-level winds that drive hurricanes and the devastating impact of the storms as they collide with mountains.

The research is from a seven-week study conducted last summer during the third Convection and Moisture Experiment (CAMEX-3) that involved NASA, the National Oceanic and Atmospheric Administration (NOAA) and several universities.

This was a concentrated effort to gauge the strength of Atlantic hurricane winds and rainfall.

### **Hubble technology benefits new satellite phone system**

Computer software developed for NASA's Hubble Space Telescope will soon help operate a worldwide, satellite-based phone system called Globalstar™. This software is a key feature of NASA Goddard Space Flight Center's "Vision 2000," a forward-looking effort to optimize the ground system operations and control of the Hubble Space Telescope. The "Vision 2000" software allows scientists and engineers to access and display Hubble spacecraft and ground-systems data through the Internet. Now, engineers can log on from home or other remote locations via their personal computers.

This Hubble spinoff will provide Globalstar, LP, San Jose, CA, with the technology to aid in delivering voice, data, fax and other telecommunications services to users worldwide.

## NASA-SGI team builds first 256-processor parallel supercomputer

The world's first working 256-processor supercomputer is now being tested at Ames after the machine was built and programmed by a NASA-Silicon Graphics, Inc. team. The computer is a collection of 256 individual microprocessors linked together to make one huge supercomputer.

With the new supercomputer, called "Steger," NASA scientists will attempt to work out the largest aeronautical problems that the agency has tried to solve by using calculations ten times bigger than used before. Steger is named after Joseph Steger, a deceased NASA Ames computer scientist.

"Our new parallel supercomputer has the potential to cut months from the design cycle of a new airplane," said Tom Lasinski, an Ames computer scientist. "Steger also can make higher fidelity computer simulations of aircraft more cost-effectively than other supercomputers."

"With our new parallel supercomputer, we can better predict how a future airplane might fly even before we build it," Lasinski said. "We get a better vision of what the plane will do, because this supercomputer allows us to use a finer grid. Having more grid points on a simulated airplane, is like using a fine-grained film to take pictures. You can see a lot more, and you see it more clearly."

"Users will get solutions to very complex 100-million-point problems in eight hours instead of eight days," said Ames computer scientist Mark Tangney. "Smaller problems will be interactive."

"Steger not only performs four times better than our best conventional supercomputer at Ames, but it does it at one-fourth the cost," Lasinski said. "We've been trying to do parallel computing since 1986 in a real commercial way, and we've finally done it."

Steger is a 256-node single system image Origin2000 supercomputer, the world's largest "shared memory" machine of its type. The Steger supercomputer was assembled by Silicon Graphics, Inc., Mountain View, CA, using 256 computer processors. It is about as big as 20 refrigerators.

Ames developed the aeronautical com-

puter program that enables the Steger supercomputer to solve the most complex computer problems attempted to date. Ames computer scientists modified NASA aeronautical computer code to take advantage of the unique features of the Steger Silicon Graphics machine.



photo by Tom Trower

Steger--Ames' 256-processor supercomputer

"Parallel computers have had great economic promise in the past, but were hard to program; programmers had to track where computer data would be stored in the numerous separate processors," said Bill Feiereisen, the Ames manager responsible for Steger. "But the Silicon Graphics design keeps track of the data location for the programmer, making his job more like conventional programming."

The new parallel supercomputer is about 500 times faster than a 400-megahertz home computer, and Steger has a thousand times more random access memory, or RAM, than a 64 megabyte Pentium personal computer.

The parallel supercomputer project is a result of cooperation between Ames and Silicon Graphics, Inc. In 1996, the company and Ames signed a memorandum of understanding that allowed them to begin to work closely together on the parallel supercomputer project.

BY JOHN BLUCK



### A note of thanks from the Shaw family

**Editor's Note:** *Tianna and Ross Shaw sent this update to the Astrogram to keep the Ames community apprised of recent developments with their son Trey.*

Trey was recently asked by a new doctor, "What is it about you that makes people like you so much?" While we don't know the whole answer, the question certainly captures the essence of people's reaction to our son. Trey is a very happy and friendly person. Seldom does he lack a big smile for someone or start talking (or flirting with the ladies) when someone stops to talk with him. He is very strong, and he lets you know what he wants. He has had a pretty rough life so far, but with each medical treatment and procedure, he has responded better than expected. He always manages to let whoever is holding him know what he wants and needs.

Trey Kenneth Shaw was born on July 2, 1998. He joined big brothers Chris and Tyler. He is named for being the third son and after Tianna's doctor who spent so much time worrying about him over the weekend of his birth. After a normal pregnancy, Trey entered the world via an emergency C-section. Mom had gone in for a normal check up about two weeks before his due date. The doctor determined that he was in the breech position and recommended turning him to make sure that he would be in the proper position when it was time to be born.

Later that evening at El Camino Hospital, Trey was easily turned, but he went into fetal distress, his heart rate dropped and wouldn't pick up even after being turned back. After the birth, some obvious abnormalities were noticed, but the immediate problem was dealing with his lungs. Apparently, earlier he must have had another event that stressed him. His lungs were filled with meconium aspiration, the amount and depth of which meant that the event happened much earlier than the turn or delivery. Characteristic of Trey, he recovered; so this was unknown. If he had been born much later, he may not have made it. As it turned out, he had to undergo the most extreme treatment for his lung disease, endocorporeal membrane oxygenation or ECMO. Trey was transferred to the Lucile Packard Children's Hospital at Stanford. Mom didn't even get to see him for three days, and by then he was already responding to treatment. He was removed from the ECMO machine on his fourth day (typical run 4-7 days), and was off the ventilator the next day.

Trey also has a condition known as Apert Syndrome. This is a genetic disorder characterized by the premature fusion of the sutures (plates) of the skull and fusion of the fingers and toes, or syndactily. Apert kids often also exhibit disorders in other organs including the brain, the heart and kidneys.

After Trey recovered somewhat from his lung disease, his VSD (ventricle septal defect) also called "hole in the heart" became a major concern. This combined



*Trey Kenneth Shaw*



*Tianna holding Trey*

with his lung problems meant that he had to work very hard to breathe because he was pumping about twice as much blood. His heart is very strong. He should be in good shape when his big brothers want to play ball. He had to be treated with several medications to deal with his heart condition. He spent the next weeks in the Neonatal Intensive Care Unit (NICU), burdened with the difficult tasks of gaining weight and learning to feed.

Trey was able to come home after three-and-one-half weeks, but only for the same amount of time. Trey began having seizures. He went back into the hospital for what looked like apnea. It took about five days to determine that he was actually experiencing what is called absence seizures. Since then, they have been controlled with medication, without incidents, even during his most difficult times. While he was in the hospital, he also developed

pneumonia - probably due to a cold virus he picked up at home. It looked like he was developing a pattern; after another three and a half weeks, he came home again.

Unfortunately, this visit was a lot shorter. After a week, he was admitted for another pneumonia which required a short time on a ventilator. At that point, it was decided

that he needed to stay in the hospital until his heart was repaired. It took a while for him to get well, grow and be placed on the surgeon's schedule. Finally, on October 23, Trey had his heart surgery. We were very lucky that his cardiologist convinced Dr. Hanley at UCSF to squeeze

him in. Surgery went well and recovery even better. Mom and Dad were very nervous about his being sent home after only five days. It seemed amazing after he had spent practically his whole life in the hospital. But Trey was ready, he was the smiliest and talkingest I have ever seen him. Trey's heart and lungs are in pretty good shape now. He just needs time for the tissue to grow over the patch and for new lung tissue to grow.

Today, Trey is happy and growing well at home, but he still has a number of issues with which to deal. The immediate problems include getting him to eat by mouth rather than through a feeding tube. He also has been undergoing physical therapy for a torticollis (tilting and tightening one side of his neck) and to get him more on track physically to where a healthier baby his age might be. Things are moving forward in these areas. Trey still has a number of rough years ahead. Once he gets to about 10 kg, he will need to have two sutures in his head opened. Also, at about 5-7 years, he will need the faces (front plate) moved forward. In addition, he will be undergoing a number of surgeries, probably starting very soon, for his syndactily.

The family is extremely grateful for all the support we have received from the Ames community, especially in the areas of leave donations as well as time and emotional support from so many.

BY TIANNA AND  
ROSS SHAW

## Outstanding Achievements

### Ames' contractor selected as elite Rhodes scholar

Karen Yoshiko Matsuoka, an employee of Johnson Controls supporting the Earth Sciences division at Ames, was selected as a Rhodes Scholar to attend Oxford University, England, beginning in the fall of this year.

The Rhodes Scholarship is a very competitive international study award. Matsuoka's application was endorsed by Stanford University, and she seemed most modest about being one of only 32 American scholars (1 of 2 from California) selected from an application field of about 1000 highly qualified applicants.

Matsuoka will pursue a BA in English Language and Literature at Oxford, supplementing her previous training and degrees in philosophy, religious studies and art. Although Matsuoka cannot venture to guess what paths will be open to her upon completion of the Oxford degree, she is anxious to utilize her education to do something for society.

"I want to spend my life being engaged with the world's greatest thinkers (artists and writers included among them), and in the dissemination of that learning to a larger audience," Matsuoka said.

She is bothered that art, literature, philosophy and religious studies are the kinds of subjects the general public perceives as



photo by Roger Brimmer

Karen Matsuoka standing by an Earth science satellite imagery poster.

the "exclusive domain of the elite few," and she dreams of utilizing her Oxford experience to learn ways of breaking down these barriers, particularly through literature. In the area of art, she has a track record of delivering art and poetry to the masses. Matsuoka recently designed a public art

project for San Francisco's most-frequented BART stations — juxtaposing the poetry of T.S. Elliot with images of the commuter culture.

"I wanted to explore all the ways we conceive of movement in our society, particularly social mobility and the idea that happiness comes from climbing the social ladder," she explained, "...I wanted to ask my fellow human beings to think about where we are going as a society..." This project certainly must have made an impression on the Rhodes selection committee.

Matsuoka has been at Ames working as a graphic designer for a year and a half. "I will find it hard to leave...I love this job and working here has been one of my proudest accomplishments," said Matsuoka. On the other hand, she believes that the fact that she's been away from academia and in the "real world" helped set her apart from many of the applicants. Matsuoka plans to continue working at Ames until her departure for England in the fall.

BY BETSY CARTER

### Ames researcher wins prestigious early-career award

On February 10, Azadeh Tabazadeh, a researcher with the Earth Science division at Ames, will be awarded a Presidential Early Career Award for Scientists and Engineers (PECASE) at a White House ceremony. The PECASE is the highest honor bestowed by the U.S. Government on outstanding scientists and engineers who are beginning their independent careers. Awardees are selected annually based upon the recommendations of 10 federal agencies that comprise the National Science and Technology Council (NSTC).

Azadeh won the award for her research investigating how aerosols, both natural and human-made, may impact the Earth's

composition and climate. She is focusing her research on the Earth's stratosphere, a region 15-50 kms above the Earth's surface where the ozone layer is located. Specifically, she's investigating how aerosols turn into polar stratospheric clouds, which in turn play a crucial role in the formation of the Antarctic ozone hole and the Arctic ozone dent. Ozone depletion results in more harmful UV radiation at the planet's surface, which has important implications for life on Earth.

Azadeh is also investigating how changes in aerosol composition and properties may impact cloud coverage and chemistry in the

troposphere, and the implications these effects have on global climate change. The PECASE Award provides Azadeh with five years of funding, at about \$120K per year, to pursue her research.

To be eligible for the PECASE Award, an individual must be a U.S. citizen, national or permanent resident and have no more than 5 years career-track research experience since completing postdoctoral research training or its equivalent. NASA selects its awardees based on exceptionally meritorious proposals funded through the traditional research grant process or the unsolicited proposal process. Selections are based on the innovative and integrative character of proposed research in areas that will benefit NASA's understanding of the Earth, the solar system and the universe, the human exploration and development of space, or the development of advanced aeronautics and space technologies.

BY LAURA LEWIS

## Lunar Prospector mission and team members rake in awards

The resounding success of the Lunar Prospector Mission, particularly the discovery of water ice, has been recognized in a number of recent awards, honors and nominations.

Popular Science Magazine highlighted the LP's water/ice discovery as one of one hundred "Best of What's New" greatest achievements in science and technology for 1998. Scott Hubbard represented the Ames team at an awards ceremony in New York

Moon."

The Lunar Prospector principal investigator Alan Binder, Director of the Lunar Research Institute in Gilroy, was presented the National Space Society's "Space Pioneer of the Year" award.

In addition, the Space Frontier Foundation presented the "From Vision to Reality" award to Alan Binder.

The prestigious Space Act Award was presented to the LP Web

site feature "Real-Time LP Data Visualization." The individuals cited were Glenn Deardorff, Ken Bollinger, Larry Kellogg, Bryan Green and Ling-Jen Chiang.

The Northwest Mining Association presented to Scott Hubbard, on behalf of the LP project, the "Exploration Geophysicist of the Year," recognizing the contribution made by the Lunar Prospector mission through the use of geophysics.

NASA Headquarter's "Top Ten Science Stories of 1998" included the Lunar Pros-



Scott Hubbard receiving Popular Science's "Best of What's New" award on behalf of the Lunar Prospector team.



Scott Hubbard accepts award on behalf of the Lunar Prospector Team

pector Mission. Lockheed Martin Corporation's Tom Dougherty, received Public Broadcasting's NOVA award for leadership for his role as Lockheed Martin Missiles and Space Lunar Prospector program manager.

Lockheed Martin also received a NOVA award for teamwork. Individuals cited were Bob Garner, Dan Swanson, Kim Foster, Tim Maloney and Tom Dougherty.

The LP project has been nominated for a number of additional awards to be announced in the near future, so stay tuned. Congratulations to all LP team members!

BY BETSY CARTER

## ISO 9001 - into the home stretch

continued from page 2

that were listed in the defining procedure were discussed.

38. Research organizations have complete files showing proposals, acceptance documentation, research results or summaries, and forms ARC 310 and NASA 1676.

39. Training requirements for employees are established using the Performance Plan (EPCS) and other customized spreadsheets, forms, etc. as determined appropriate by the responsible manager. Ref 53.ARC.0018 paragraph 6.1

40. Employee position descriptions are correct. Ref 53.ARC.0018 paragraph 6.1.1.

41. Personnel are made aware and trained when changes are made to local

Quality System procedures. Ref 53.ARC.0018 paragraph 6.1.3.

42. The Quality Records are maintained by the Responsible Manager: 1) Performance Plan (EPCS Form ARC 33), and 2) Other training records that are not included in the Employees Training History. The Quality Records maintained by the Human Resources Division are: 3) Position Description and 4) Employee Training History. Ref 53.ARC.0018 section 8.

43. Documented procedures are in place to denote the type of service required to support delivered products, if called out in Customer Agreements. Ref 53.ARC.0019 paragraph 6.3.

Ames has carefully developed and documented the policies and procedures that will support its operational objectives. In the past few months significant training and auditing have been completed to ensure understanding and implementation of those policies and procedures. Now we need to focus on the above check list to ensure Ames has a fully implemented quality management system, and can prove it.

BY RICK SERRANO



# 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 Karen Matsuoka at ext. 4-6184.

**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 Hanger One. The club is in particular need of low voltage electricians and scenery builders & 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).

**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**, Beginning and Intermediate East Coast Swing, Tuesdays from 5:15 p.m. to 6:30 p.m. Moffett Training and Conference Center, Bldg. 3 in the Showroom. POC: Deb Narasaki at email: dnasasaki@mail.arc.nasa.gov. New ABDC website: <http://arcapps.arc.nasa.gov/Info/BallroomDance/Welcome.Htm>

**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.

**Southbay FEW Chapter Meeting**, Feb 2, 11:30 a.m. to 1:00 p.m., Bldg. 241, Rm B1. POC: Christine Munroe at ext. 4-4695.

**Ames Contractor Council Meeting**, Feb 3, 11 a.m., N-200/Comm. Rm. POC: Greg Marshall at ext. 4-4673.

**Hispanic Advisory Committee for Employees**, Feb 4, 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**, Feb 4, 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**, Feb 4, 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**, Feb 5, 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.

**Java Users Group**, Feb. 10, 1:30 p.m. to 2:30 p.m., Bldg. 258, Rm. 127. POC: Sharon Marcacci, ext. 4-1059; <http://jlug.arc.nasa.gov>

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

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

**Ames Multicultural Leadership Council Meeting**, Feb 17, 11:30 a.m. to 1 p.m., Galileo Rm/Ames Cafe. POC: David Morse at ext. 4-4724 or Sheila Johnson at ext. 4-5054.

**NFFE Local 997 Union General Meeting**, Feb 17, 11:30 a.m. to 12:30 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

**Ames Asian American Pacific Islander Advisory Group Meeting**, Feb 18, 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**, Feb 18, 12 noon, N-260/Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

**Native American Advisory Committee Meeting**, Feb 23, 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

Room available Feb. 1 in 3bd/2ba house in Mt View, 6 blocks from Castro. Rent \$735/mo + 1/3 expenses. Close to Ames, H101/85/237. Share home w/ two prof. males, both 40+, and one small dog. Nice, safe location. Separate large office room for computers. Prefer quiet, neat prof. person. Call (650) 969-5581 or e-mail at: [human\\_dynamics@mindspring.com](mailto:human_dynamics@mindspring.com).

Prof. female, w/cat, seeks to share townhouse in Moffett/Middlefield area of Mt View. Must be clean, responsible N/S. Townhouse has master bd/ba w/priv patio; W/D; storage; rose garden; safe, quiet neighborhood. \$650 + 1/2 util. Call (650) 969-7009.

Sunnyvale (Homestead/Hollenbeck) - Two bdrm apartment in 4-Plex, Avail. 2/15 (poss. early move-in); New carpet/paint/appliances; 1-block to shopping, 15 min. from Ames, \$1,220 mo + dep. Call (408) 738-1447.

Furnished room for rent in Los Gatos: \$750. Responsible professional (N/S, no drugs/drinking, healthy lifestyle) for nicely furnished townhouse on a hill, security gate, pools, tennis courts. Own bath, laundry and kitchen privileges, garage. Room has twin bed, chest of drawers, computer table, desk, phone hookup, cable. Valerie (408) 379-7000 days or (408) 374-1046 evens.

For rent: 4 Plex, Southwest Mtn. View (near El Camino & Hwy 85) 2bd/1ba. Bright upstairs unit. AEK. Enclosed garage & second parking space. Priv. storage closet. Central laundry rm. No pets. No smoking. One year lease: \$1,200/mo; \$1,300 dep. Call (650) 948-7542.

Room for rent. Share 4bd/2ba home in N. San Jose Berryessa area. 12 mls. to Ames. Respons. NS Pref. \$450/mo + utils. Avail. Feb 1. Kevin (408) 259-7684.

Wanted: Clean, 1 bd/1ba apartment in/near Mt View for a Mon-Fri commuter. Mike (650) 404-4861.

Roommate wanted (male preferred) to share 2bd/2 ba condo in South Fremont (near Milpitas, H237, 680, 880). W/D, D/W, large deck, vaulted ceilings, completely furnished (except for the bdrm--plan to rent out), gated complex w/pool and jacuzzi. \$500/mo + utils. Julie (510) 770-1251 (hm) or [maccgirl@mac-addict.com](mailto:maccgirl@mac-addict.com). Kevin (408) 259-7684. Lv msg.

Santa Clara duplex, 2bd/1ba, backyard, 1 car ga, laundry rm, storage rm. Available Mar 1. \$1,400. Call (650) 814-8666.

2bd/1ba condo for sale, fireplace, 924 sq.ft end lowerlevel w/patio in 8-plexed one story bldg. Built 1985. Beautiful w/trees/shrubs/pool and club house. Shopping areas nearby. S. San Jose Makati Circle near IBM. One block to H101 and 85. Chuck Hanna (408) 927-7112 (selling for retiree Georgia Crenshaw.)

### Miscellaneous

RAM: Four 16M, 60ns, 72pin SIMMs (total = 64Mbytes), \$45. Call (408) 295-2160

Yamaha Clavanova model CVP-10PE; exc cond.; full size keyboard; polished ebony; digital verb. unit; MIDI; RAM music books, bench and much more. Call Dave at (510) 471-3466 or e-mail at [yobow1@yahoo.com](mailto:yobow1@yahoo.com)

IMATION LS-120 Superdisk 120MB parallel port external disk drive; new, unopened box with two additional 120MB disks. \$110. Chris (650) 968-5465 or email at: [cdateo@mail.arc.nasa.gov](mailto:cdateo@mail.arc.nasa.gov)

Wood burning fireplace insert--Fisher brand; glass doors; ex. cond. Cost \$800, make offer; Sears router w/ router table; bits & carrying case; used twice, ex. cond. \$100 or B/O; fax/modem--external 33.6 KbpsTelePort model by Global Village for Mac; Internet ed; power supply, serial cable & phone line included, used 2 mos, like new in box. \$75 or B/O. Dave (510) 471-3466 or e-mail at: [yobow1@yahoo.com](mailto:yobow1@yahoo.com)

External fax/modem, U.S. Robotics Sportster 33.6 Kbps, upgradable to X2 standard (56Kbps). Never been used. \$45. Gene (408) 245-8789.

Tent, 6-person, outside frame, exc. cond, spacious, w/3 screen windows & door/front entry canopy & canvas ground tarp, \$75. Will deliver Call (707) 546-0898 or email at: [mascy@jps.net](mailto:mascy@jps.net)

Free to good home. Black, female, corgi-cocker spaniel mix. Spayed, current shots, house trained, about 9 years old. Sandy (408) 927-7586.

Wanted: Softride road bike @ 50cm. Call (408) 390-0427.

Iomega zip drive--external. SCSI w/parallel port adaptor card for use w/either Mac or PC. All original documentation, software and cables as well as powerbook adaptor and padded nylon case. \$300 value for \$100. Call (408) 390-0427.

Stereo System, 480 watt Kenwood receiver, 5 cd changer, and equalizer. 3-way speakers (2) with 12" woofers + 60 watt powered subwoofer. 5 months old & barely used. \$700 or B/O. Call (408) 257-3175.

'89-'98 Holiday Barbies (all caucasian) NRRF. '89 & '90 in gd cond all other in exc cond. \$1,000 for all or: '89/225, '90/195, '91/240, '92/170, '93/150, '94/175, '95/80, '96/60, '97/100, '98/40. Call (510) 785-7223.

Snowboard boots, men's size 9. Virtually new. "Custom" brand. \$50, firm. Call (650) 941-3396 or email at: [walatkawildhorses.com](mailto:walatkawildhorses.com)

Sony 19 in. TV; Sony Dolby ProLogic receiver. Orig. remotes, docs. \$125 pkg./\$75 ea. Jeff (650) 324-1967.

### Transportation

'84 Corvette, black, 4 speed, 90K mls, great condition, garaged. \$8,800. Call (650) 969-0420.

'87 Honda Prelude Si 5SP white ext/grey & black int., PW, PS, PB, moonroof/sunroof, CD, runs and looks great. \$4,200. Julie (510) 770-1251 or [maccgirl@mac-addict.com](mailto:maccgirl@mac-addict.com)

'88 Nissan Sentra 4-door hatchback. Well maintained, new tires, A/C, luggage rack, 5spd, excellent gas mileage, just smogged and registered, 110K mls. \$2,800 or B/O. Call (650) 964-8201.

'88 Mazda RX-7 Convertible. Leather, BBS wheels, factory CD player, service records. Excellent condition. (650) 966-1206 nights or (831) 648-1423 weekends.

'92 Colt, great commute/teen car (30+MPG), mech. sound, very responsive pwr. & handling, plus extras (4 spkr. stereo cas., racks, side molding) new clutch & 5 spd. trans. gd. cond., must sell, \$2,995. Tony (831) 338-4551.

### 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: [DBMcKellar@aol.com](mailto:DBMcKellar@aol.com)

### Carpool

Need ride home from NASA to San Mateo. I leave at 4:30 p.m. I pay three dollars a ride. You get to use the commute lane if you car pool. My name is Maria Triarsi, located at Bldg 262, ext. 4-4394.

### 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. You may also contact Moffett Field Security Police Investigations Section at ext. 4-1359 or email at: [mfine@mail.arc.nas.gov](mailto:mfine@mail.arc.nas.gov).

### 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, FEB 1	FRI, FEB 12
MON, FEB 15	FRI, FEB 26
MON, MAR 1	FRI, MAR 12

## Black History Month

# African American heritage month luncheon to be held February 10

Dr. Marquita L. Byrd, Professor of Communications at San Jose State University, will be the keynote speaker at the center's annual African American Heritage Month Luncheon on February 10, from 11 a.m. to 1 p.m., in the Grand Ballroom of the Moffett Training and Conference Center, Bldg. 3. For ticket information, contact Patricia Powell at ext. 4-6988.

Dr. Byrd is a faculty member at San Jose State University in the Communication Studies department. In January 1998, Professor Byrd published her second book, "Multicultural Communication and Popular Culture: Racial and Ethnic Images in Popular Culture." The text was published by McGraw-Hill. In her book, Dr. Byrd helps students become critical viewers of screen images by helping students to become aware of stereotypes of African, Asian, European, Hispanic and Native American characters. The theoretical work in the book was applied to the four Star Trek series: Star Trek the Original, The Next Generation, Deep Space Nine and Voyager. Her first book, "Intracultural Communication," focused on communication and diversity in the United States.

Dr. Byrd has also published several articles and convention papers on a wide range of topics including male identity, Asian stereotypes and communication ap-

prehension. She teaches courses in Interpersonal Communication, Multicultural and Intercultural Communication, Critical



Dr. Marquita L. Byrd

Thinking, Public Speaking and Interviewing. She designed the course, "Intercultural Communication," as presented in Star Trek for her department.

Dr. Byrd has received numerous awards. In the spring of 1998, she was listed in the Who's Who of America's Teachers. She has been honored as an Unsung Heroine by the Women's Resource Center at San Jose State University. In the fall of 1998, Dr. Byrd was recognized by the African Methodist Episcopal Church (A.M.E.) for her work in Christian Education. She is listed in Who's Who

of Intellectuals and was recognized for her work for Martin Luther King, Jr. Day by Alpha Phi Alpha Fraternity at Whiteman Air Force Base, MO.

Dr. Byrd received her Ph.D. from the University of Missouri at Columbia, her Master of Arts from Southern Illinois University at Edwardsville and a Bachelor of Science at Central Missouri State University. Her areas of study included speech, communication, drama, English and education. Dr. Byrd is President and chief executive officer of MockingByrd Communication Services, a diversity training company which prepares professionals to bring clarity and vision to organizations through diversity-focused lectures, seminars, workshops and training sessions. In addition to being a teacher and writer, Dr. Byrd is also studying to become an ordained minister. She resides in San Jose.

BY MARY BUFORD HOWARD

THE AMES **Astrogram**

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