

Ames invention enters Space Hall of Fame

Temper Foam, a material first developed by NASA in the 1970s to improve seat cushioning and crash protection for airplane pilots and passengers, was recently inducted into the United States Space Foundation's Space Technology Hall of Fame, Colorado Springs, CO.

Developed at Ames, the material eventually found its way into commercial products such as orthopedic support cushions, operating table pads, ear plugs, football helmets and furniture cushions. The foam is also used in Space Shuttle seats. Temper Foam takes the shape of impressed objects, but returns to its original form even after 90 percent compression.

"I was trying to develop seating for aerospace vehicles so people could better survive any crashes or impacts,"

said co-inventor Charles (Chuck) Kubokawa of Palo Alto, now retired from Ames. "We crash-tested several seats at the Civil Aeromedical Institute in Oklahoma City to validate them for impact survival, and we found the foam was good for 36 g's. The seat can out-survive the aircraft in a crash."

"If you think about the potential uses for this material for passenger protection and comfort, infant protection and use by handicapped persons, the future for this product is almost unlimited," Kubokawa said.

Temper Foam retains its form in its natural state, but when the material comes under pressure, such as when someone sits on a cushion, it contours to the natural curves of the contacted surface without any pressure points, Kubokawa said. "In other words, the weight is evenly distributed along the contacted surfaces," he said. "If there is an impact, the total surface evenly

absorbs the impact force." The material is also non-flammable, non-toxic and inexpensive.

Dynamic Systems, Inc., Leicester, NC, a private company that produces Temper Foam, for industry, including toy companies.

The Space Technology Hall of Fame was established in 1988 in cooperation with NASA. The U.S. Space Foundation administers the program which honors technologies originally designed for aerospace programs and later adapted for commercial use. The program also recognizes innovators who have transferred aerospace technology to industry.

To date, 27 technologies have been inducted into the Hall of Fame.

NASA actively encourages commercialization of its technologies. To learn more about NASA innovations, commercialization efforts and the agency's technology transfer programs, call 1-800-678-6882 or access

the NASA Commercial Technology Network web page at URL: <http://nctn.hq.nasa.gov/>.

BY JOHN BLUCK



Accepting the award for Temper Foam's Space Technology Hall of Fame induction are: (Left to right) Charles J. Laenger and Dan Bates of Southwest Research Institute; Charles Castellano of Ames Commercial Technology Office, and Chuck Kubokawa, retired Ames project director

Kubokawa is the first Japanese-American to be inducted into the United States Space Foundation Hall of Fame. His co-inventor, Charles Yost, now runs



photo by Roger Brimmer

An ISO flag proudly waves alongside 'Old Glory' in front of the main Ames administration building

ISO countdown begins...



Europa: world of ice and mystery -- Free evening open to the public

A non-technical program with scientific experts discussing Jupiter's most intriguing moon will be presented on Monday, May 18, from 7:30 p.m. to 9 p.m., at the Smithwick Theater, Foothill College (just off Freeway 280 on the El Monte Rd. Exit) in the Los Altos Hills (south of Palo Alto). Featured Speakers will include:

- * Dr. Michael Carr, astro-geologist, U.S. Geological Survey
- * Dr. Jeffrey Moore, of Ames (a member of the Galileo spacecraft science team)
- * Dr. Jack Farmer, exobiologist, from Ames

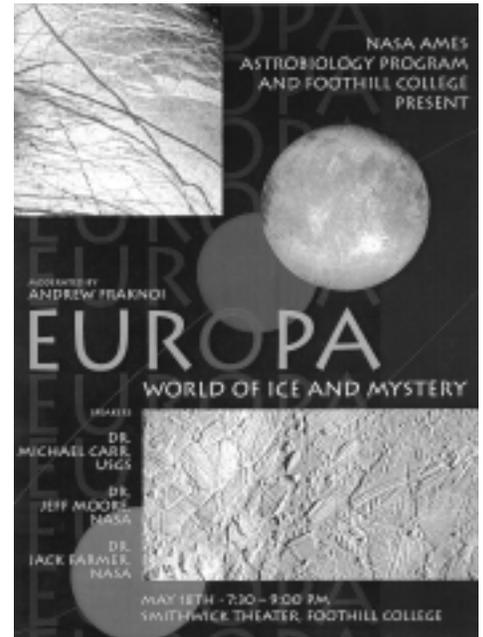
The moderator will be Dr. Andrew Fraknoi, Chair of the Astronomy Department at Foothill College (and public radio commentator).

In the last two years, the Galileo spacecraft in orbit around Jupiter has sent back intriguing new evidence that Europa, the second of Jupiter's giant moons, may harbor a liquid ocean under its complex, cracked crust of ice. This sheltered ocean may be just the sort of

place where conditions are right for beginning life. Europa's icy surface is in a constant process of renewal, its huge icebergs and ice flows are twisted in strange ways, and its system of fractures and ridges has complexity that puts the Los Angeles freeway system to shame.

This special evening symposium will discuss the new observations of Europa (which are still continuing), show some dramatic close-up views from Galileo's instruments, and examine the meaning of the new results in the context of exploration of the solar system and the search for life elsewhere.

- No background in science or math will be assumed
- The program is free and open to the public
- Children older than 12 are welcome to attend with their parents
- Seating will be first-come, first-served
- You are advised that 8 quarters are required to feed the parking meters



Ames establishes first cross-directorate organization

The newly restructured Center for Mars exploration will support the integrated robotic/human exploration program.

How can humans go where no humans have gone before -- without the help of intelligent and friendly technology?

The Center for Mars exploration (CMEX), established at Ames in 1992 and supported until now primarily by the Space Directorate, is now the combined Space/Information Systems Center for Mars Exploration.

The new S/I Center for Mars Exploration, directed by Geoffrey Briggs (Code S) and Anthony Gross (Code I), will support NASA's integrated Mars exploration program, initiated by Headquarters over a year ago. NASA's new approach to Mars features a series of robotic missions, beginning with the Mars Surveyor missions to be launched in 2001. These will serve as both science missions and as precursors to the planned human exploration of the red planet that could begin a decade later.

"Even with 30-year's experience in space, human Mars exploration is bound to be challenging and thus expensive," said Briggs, head of CMEX since 1992. The revolution in information systems technology is the only way to reduce costs while providing the improved

performance and reliability needed; it is where the faster, better, cheaper mantra becomes real."

"What you need for long duration missions is equipment that can take care of itself and an 'autonomous' crew with powerful, intelligent tools they can carry into the field--the harsh windblown terrains of Mars. Ames has special expertise in each of these areas. The new CMEX is now drafting an Information Systems technology roadmap for the integrated Mars exploration program. We will start with demonstrations of information systems technology applicable to the space shuttle and space station programs," said Briggs.

Using robotic missions as precursors to human missions on Mars is "a natural" for scientists at Ames, exobiology and Mars climate history experts who have led the search for evidence of life on Mars.

"It may take human explorers to gain access to Mars' most interesting niches, like its deep and warmer interior, and to search for traces of life, extant or extinct. We have to go where we think there was water, like ancient hydrothermal springs, or where we think water is today, deep under the permafrost or, possibly, closer to the surface in areas of still active volcanism. It will take human explorers, aided by advanced robots, to

get samples from these depths in Mars' harsh environment.

"The 40-minute round-trip light time delays also makes exploring Mars from Earth painfully slow," Briggs said. "Although we can create virtual environments from the robot images we need telepresence, with astronauts seeing through the eyes of the robot, in real-time, to make powerful, knowledge-based decisions for immediate interaction with the environment. Astronauts in person could explore but a 100-mile radius from a base on Mars, but using telepresence robots, they could, in telepresence, explore the whole planet from that same base. We need the combined power of the astronaut and robot exploring in real-time," he said.

Since Ames personnel have been playing a central role in the planned exploration of Mars for many years, Ames astrobiology and information systems technology expertise can now make key programmatic contributions to the integrated Mars program. The new cross-directorate CMEX is intended to increase the efficiency, effectiveness and quality of the diverse and innovative contributions from both the Space and Information Systems Directorates.

BY DIANE FARRAR

Anderson recalls emergency landing in experimental aircraft

May 19, 1996, was a day to remember for Ames Aeronautical Engineer Seth Anderson; it was the day the veteran pilot tarried with death and lived to tell about it.

Anderson, who has flown airplanes for half a century, needed all of his accumulated piloting skill in order to make an emergency landing while flying his small BD-5 airplane.

"Some time before, I had decided to switch from a piston engine to a turbine engine for my private experimental plane," Anderson recalled. "That May day was the date of my plane's maiden flight with its newly installed turbine engine."

Anderson also had installed short size "A" wings, which had been modified to a 17-foot span in order to increase lift and improve stall behavior. Stall is a condition of an airplane flying at an angle of attack that results in airflow breakdown and loss of effective control of the aircraft. A controllable pitch propeller was also new to the airplane.

"I took several practice high-speed taxi runs up to take off speed, 80 mph, to check speed-distance relationships," Anderson said. "This was quite thrilling since speed sensations are magnified when you are sitting only 12 inches from the ground. Equally impressive was the strong deceleration due to the zero propeller blade angle I selected that caused windmilling drag."

Then he aligned his small airplane at the start of the 3,000-foot runway, set turbine speed up to 100 percent and increased the propeller pitch angle to provide forward thrust. He released the brakes, and not quite half way down the runway the airplane reached take-off speed and was still briskly accelerating as the craft rose.

"Immediately after gear and flap retraction, I noticed that the rate of climb had more than tripled compared to previous flights with the other engine," Anderson said. "At 3,000 feet in level flight, I switched to the right fuel tank to help even the fuel load, and I began to make a speed performance check."

He noticed that the left wing was heavier than the right as the airplane continued to accelerate at 170 mph. He needed to use "appreciable right lateral control" to keep the plane level.

"I had forgotten what I had learned five years earlier, that the short wings had a twist that limited top speed. So, I decided to land immediately and install

the long "B" wings, so I could explore the flight envelope further," he explained.

He was planning a normal landing at the Watsonville Airport's active runway, when he heard the sound of a sudden reduction of engine rpm. Then the engine "flamed out."

"Being directly over the field, I planned a low stress, power-off landing. I had made a few of those over 50 years," he recalled. Then a landing gear problem suddenly confronted Anderson.



The BD-5 aircraft in flight

"I had slowed to 110 miles per hour by reducing the propeller pitch angle. Then I pushed the landing gear lever forward to extend the landing gear. There was a little movement in the landing gear cable system, but it stopped; it would go no further no matter how hard I pushed," he said.

Anderson now had to deal with a flameout and landing with no wheels. "Not too happy with the situation, I thought I could buy some time by restarting the engine. Remembering that the flameout happened after I switched to the right fuel tank, I decided to go back to the left. The engine immediately started," he related.

He climbed back up to 3,000 feet. "This gave me time to think about the gear hang-up problem. It had happened once before, some 10 years previously. At that time, it had been possible to dislodge a stuck nose gear by a combined turn and a very hard gear lever push — but not this time."

Each time Anderson tried to extend the gear, there was less and less movement of the gear cables. "I reluctantly accepted that a belly-scraping, gear-up landing was inevitable," he remembered. "After I received no response from my emergency radio call, I decided to attempt a landing at a shorter, inactive runway."

However, belly-landing on a concrete runway with the wing tanks

three-quarters full of fuel, posed a potential fire hazard.

"Plus aluminum airplanes suffer extensive damage during gears-up landings on cement," he said. "My next thought was to land on the grass next to the runway, but the grass had just been mowed for the upcoming Watsonville Air Show, and the ground looked rough."

As he flew, he noticed that the grass at the approach end of the runway had not been mowed.

"I decided to make a landing in the 300-foot section of grass between the metal airport fence and the concrete runway apron," he said. "As I began the turn to lead me to the landing, a second flameout caught me by surprise."

Anderson said a subconscious thought became suddenly clear to him. "I could increase the propeller pitch to 'feather' it, and I could reduce the drag on the plane to stretch the length of the glide. As the fence loomed closer, the benefit of reduced drag was apparent; I cleared the fence by a narrow margin. Just then the left wing dropped sharply, warning me that the plane would stall, and I would lose a lot of control."

He said he was very glad he had modified the wings to give him a bit more latitude in stall situations.

"I corrected the wings to level flight and raised the nose slightly, just before ground contact," he said. "I vaguely remember holding the propeller position switch towards the feather position through the 170-foot 'glide' along the ground."

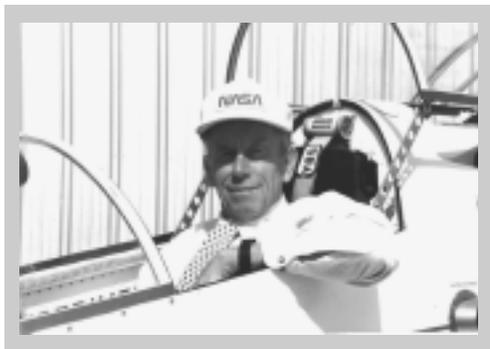
After Anderson climbed from the cockpit, he noticed that the propeller had stopped in a horizontal position, and was undamaged. The airplane had stopped, slightly askew, about 10 feet from the concrete runway lip.

Anderson discovered that his airplane sustained only slight damage during its slide through the grass. The gear lockup was due to a nose gear door hitting the nose tire during retraction. The flameout was due to a crimped fuel line.

A spectator asked Anderson why he was smiling. "I'm still alive," he said.

BY JOHN BLUCK

Editor's note: based on Seth Anderson's technical article, "That First Flight: A Turbine Powered BD-5."



Seth smiles from the cockpit of his BD-5

Briefs

Planet construction underway

NASA astronomers using the new Keck II telescope in Hawaii have discovered what appears to be the clearest evidence yet of a budding solar system around a nearby star.

Scientists released an image of the probable site of planet formation around a star known as HR 4796, about 220 light-years from Earth in the constellation Centaurus. The image, taken with a sensitive infrared camera developed at the Jet Propulsion Laboratory (JPL) in Pasadena, CA, shows a swirling disk of dust around the star. Within the disk is a telltale empty region that may have been swept clean when material was pulled into newly formed planetary bodies, the scientists said.

JPL's use of the Keck telescope is supported by NASA's Origins program, a series of missions to study the formation of galaxies, stars, planets and life, and to search for Earth-like planets around other stars that might have the right conditions for life.

Greenhouse gases worsening

In late 1997, larger levels of ozone depletion were observed over the Arctic than in any previous year on record. Now, using climate models, a team of scientists reports why this may be related to greenhouse gases.

The study suggests the increase in greenhouse gas emissions is one possible cause of the observed trends in Arctic ozone losses and that this may delay recovery of the ozone layer. The research team, from NASA's Goddard Institute for Space Studies (GISS) and Columbia University, NY, investigated the response of ozone to projected future emissions of greenhouse gases and ozone-depleting halogens over time, using the GISS climate model.

This is the first time that the interaction between ozone chemistry and the gradual buildup of greenhouse gases has been studied in a climate model.

New device detects plant stress

Thanks to a new imaging tool developed at NASA's Stennis Space Center in South Mississippi, farmers and foresters may now be better able to detect unhealthy crops and trees before the damage becomes visible to the naked eye -- information that may be used to increase crop production.

The Portable Multi-spectral Imaging System -- an evolution of the basic color television camera -- gives the viewer a picture of which plants are under stress.

One application of the imaging system being researched is the detection of plant stress in crops and forests. The new system currently is designed for use on the ground, but will soon be adapted for use in light aircraft. Another possible application of the device would be to identify ice on the Space Shuttle external tank prior to launch.

Astronomers track origin of solar system water

And you thought the Lunar Prospector was hot! A team of U.S. astronomers that included Ames astrophysicist Dr. Michael Kaufman, has just located a large concentration of water vapor in a cloud of interstellar gas close to the Orion nebula. This discovery of a large 'chemical factory' in interstellar space provides important evidence on the possible origin of water in our solar system.

The concentration of water vapor in Orion was measured using the Infrared Space Observatory satellite. That concentration proved to be 20 times larger than previously detected in other interstellar gas clouds. Astronomers made their observation of the data 'signature' characteristic of water vapor emission in the far-infrared region of the electromagnetic spectrum.

"We've known for some time that a young star in Orion is ejecting material into the surrounding gas and dust cloud causing violent shock waves," said Kaufman. "These new observations confirm our prediction that these shock waves produce large amounts of water."

Astronomers observed water vapor within the Orion molecular cloud, a giant interstellar gas cloud composed primarily of hydrogen molecules 1,500 light years from the Sun. The observations were made using the long-wavelength spectrometer, one of four science instruments aboard the Infrared Space Observatory satellite.

The observed high concentration of water in Orion may be key to the origin of solar system water, according to the research team. The shock waves given off by young stars in the interstellar gas cloud function as a huge 'chemical factory,' the team reported, generating enough water molecules in a single day to fill 60 Earth oceans. Eventually, the water vapor turns into ice particles, similar to those thought present within the gas cloud from which our solar system formed.

Water vapor concentrations measured were roughly one part in 2,000 by volume. The cloud's fast-moving shock waves were responsible for that concentration because they made the gas cloud abnormally warm. For more than 25 years, astrophysicists have predicted that, when the temperature exceeds 200 degrees Fahrenheit, chemical reactions will cause most oxygen atoms in the interstellar gas to

combine with hydrogen atoms to form water.

NASA researchers will continue to study water vapor in the Orion cloud to better understand the role water plays in the formation of stars and planetary systems. Ames' forthcoming Stratospheric Observatory for Infrared Astronomy (SOFIA) will begin science research flights in November 2001

looking, among other things, for this type of water emission. SOFIA will study water as it is formed in shock waves moving out from young stars and from material falling onto newly-formed stars.

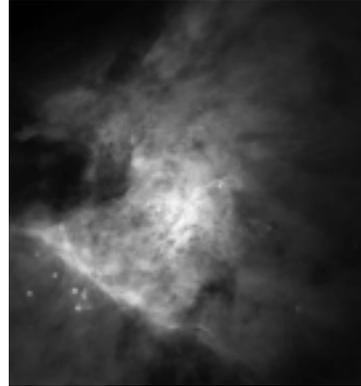
In addition to Ames' Kaufman, science team members included Dr. David Neufeld of the Johns Hopkins University Department of Physics and Astronomy and Dr. Gary Melnick of the Harvard-Smithsonian Center for Astrophysics.

The team was led by Dr. Martin Harwit of Cornell University, mission scientist for the Infrared Space Observatory satellite and lead author of the team's upcoming scientific publication. The strength of the water radiation detected within Orion agrees with predictions previously detailed in Kaufman's doctoral thesis at Johns Hopkins.

Astrobiology is the interdisciplinary study of the origin, evolution, distribution and future of life in the universe. Ames has been selected by Headquarters to be the agency's lead center for astrobiology. SOFIA is a next-generation flying research laboratory housed in a converted 747-SP aircraft that will conduct astronomical observations of the solar system, stars and galaxies in the infrared region beginning in 2001. SOFIA will be operated for NASA by the Universities Space Research Association.

The science team made their measurements in October 1997 using data from a satellite launched and operated by the European Space Agency with NASA participation. The team's findings was reported in the April 20 edition of the *Astrophysical Journal Letters*.

More information concerning the science team's findings can be located on the Internet at the website: <http://web99.arc.nasa.gov/~kaufman>



Orion Nebula

By KATHLEEN BURTON



Ames Community Event



Ms. Nikki Van Aken with her father, Dr. Johannas Van Aken, trying out one of the computers at the Ames Aerospace Encounter



photos by Tom Trower

The Ames Aerospace Encounter, "Take Our Daughters to Work Day" event was a big success. Five AAE docents and two staff members hosted the event on Thursday, April 23, from 1:00 p.m. to 3:00 p.m.

Seven women from Ames: Kathleen Fikentscher, Karen Gundy-Burlet, Linda Jensen, Nathalie Martimbeau, Julie Mikula, Annette Rodrigues, and Sukie Stanley, participated as Guest Experts and role models, interacting directly with the daughters and sons who participated.

Over 80 adults and children, representing over 25 codes & departments from NASA and Moffett Field attended.

Following is a letter from one of the attendees:

"I'd like to thank you for letting me come to work with my daddy. I helped my daddy (Greg Paulson) make some composite parts. I had a fun time! I went to go see the Space station. I thought it was fun! I also went to the 20G centrifuge! I'd like to go in there someday and ride it. I had a really fun time talking to Gina Clemente. She had the same problems as I have now.

Thanks again for letting me participate."

Gina Paulson



"Take Our Daughters to Work Day" guests at the opening session in N-204 Auditorium



Edith Barr (center), of the Office of External Affairs (Code DX), assists at the Ames Aerospace Encounter

Students observe impact of space travel on the nervous system

Students from around the world are learning about the next Space Shuttle mission, called Neurolab, by logging onto the Internet at: <http://quest.arc.nasa.gov/neuron>

They are learning how scientists, technicians and astronauts are preparing for the STS-90 mission, scheduled for liftoff April 16. Neurolab will study the effects of weightlessness on the nervous system.

"NASA is breaking a time barrier by enabling students to interact with Neurolab researchers via the Internet long before any new information is printed in textbooks," said Linda Conrad, NeurOn (Neurolab On-line) Project Manager at NASA Ames Research Center, Moffett Field, CA. "About 50 scientists, engineers and the Shuttle and ground crews are working with students and educators through the Internet project."

The NASA on-line mentors upload biographies and field journals to the NeurOn Internet pages. NASA employees from Ames, Johnson Space Center, Houston, TX, and Kennedy Space Center, FL, will answer students' e-mail questions and will participate in "web chats" with youngsters and teachers.

During Internet chats, young people use computers to converse with mentors by typing questions and reading responses and dialogue via the world wide web.

NASA scientists note that, even after 50 years, they know very little about the way the brain and nervous system are affected by space flight.

NASA's Neurolab mission is expected to answer many questions about the way the nervous system reacts to microgravity. There are 26 experiments scheduled for Neurolab.

"Lesson plans for teachers are available on the website so they can more easily integrate NeurOn activities related to the experiments into the classroom," Conrad said.

The young students monitor activities of ground crew members as they assemble hardware and prepare provisions such as food and water, for the 16-day mission aboard the Shuttle Columbia. A seven-member astronaut crew will conduct the experiments.

In their classrooms, students will simulate mission activities to better understand the Neurolab mission. The



Neurolab online website directory

NeurOn website includes a section that displays projects for youngsters and galleries of student work.

The NeurOn project is one of many Internet offerings from NASA's Quest Project at: <http://quest.arc.nasa.gov>.

These interactive projects connect students with NASA employees and are designed to inspire young people to pursue careers in high technology.

BY JOHN BLUCK

International Space University student at Ames

Rachel Zimmerman is helping to establish the new NASA Ames/Tetra project, which will match Ames engineers with disabled people who require custom designed assistive devices. With cooperation from the Commercial Technology Office, Zimmerman is hoping to facilitate the development of equipment which will make life easier for people with disabilities. She is designing a web page to inform people about the Ames/Tetra project.

Zimmerman is a Master of Space Studies student at the International Space University (ISU) in Strasbourg, France. She has been at Ames since February, pursuing a Professional Placement with mentor Dougal Maclise in the Electronic Systems Branch. Zimmerman will return to Strasbourg in mid-May to finish her degree at ISU.

The International Space University is an international, intercultural, interdisciplinary program which emphasizes the peaceful uses of space. Topics covered in the degree program include satellite and spacecraft design, international space policy and law, business, finance, management, space life sciences, telecommunications, GPS, remote sensing, and GIS. This year, the Master of Space Studies class is composed of 33 students from 23



Photo by Owen Nishioka

Rachel at work designing the Ames/Tetra project's web page

countries. Part of the Master's degree is a three-month internship at a space agency or space-related corporation anywhere in the world, to pursue individual projects of interest to the students.

Rachel Zimmerman is originally from London, Ontario, Canada, and she completed a bachelor's degree in physics at Brandeis University in 1995.

For more information about ISU, visit their web page at: <http://www.isunet.edu/>

BY OWEN NISHIOKA

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 Child Care Center Board of Directors Meeting, Tuesdays, 12 noon to 1 p.m., N-213/Rm. 220. POC: Lisa Reid at ext. 4-2760.

Ames Contractor Council Meeting May 6, 11 a.m., N-200/Comm. Rm. POC: Greg Marshall at ext. 4-4673.

Hispanic Advisory Committee for Employees, May 7, 11:45 a.m. to 12:30 p.m., N-239/Rm. 177. POC: Carlos Torrez at ext. 4-2797.

Environmental, Health & Safety Monthly Information Forum, May 7, 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, May 7, 11:30 a.m. to 12:30 p.m., N-241/Rm. 237. POC: Antoinette Price, at ext. 4-4270 and Mary Buford Howard at ext. 4-5095.

Ames Child Care Center 3rd Annual Golf Tournament, May 8, 11:30 a.m., Moffett Field golf course. POC: Gabrielle Babin, at ext. 4-4184.

Spring Fun Walk & Run, May 12, 12 noon, DeFrance & Warner. POC: Nancy Dunagan at ext. 4-5804.

Professional Administrative Council (PAC) Meeting, May 14, 10:30 a.m. to 11:30 a.m., N-244/Rm. 103. POC: Janette Rocha, ext. 4-3371.

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

Ames Multicultural Leadership Council Meeting, May 20, 11:30 a.m. to 1 p.m., Galileo Rm./Ames Café. POC: David Morse at ext. 4-4724 or Sheila Johnson at ext. 4-5054.

NFFE local 997 Union General Meeting, May 20, 11:30 a.m. to 12:30 p.m., Bldg. 19/Rm. 1040. POC: Marianne Mosher at ext. 4-4055.

Space Day, May 21, 7:30 a.m. to 4:00 p.m., Hanger One. POC: Lori Burkart at ext. 4-0494.

Ames Amateur Radio Club, May 21, 12 noon, N-260/conf. rm. POC: Walt Miller, AJ6T at ext. 4-4558.

Ames Asian American Pacific Islander Advisory Group Meeting, May 21, 11:30 a.m. to 1 p.m., N-213/Rm. 261. POC: Daryl Wong at ext. 4-6889 or Brett Vu at ext. 4-0911.

Native American Advisory Committee Meeting, May 26, 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 by the Monday following publication of the present issue.

Ads must involve personal needs or items; no commercial/third-party ads. Ads will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers. Ames extensions will be accepted for carpool and lost and found ads only. Ads must be resubmitted for each issue.

Housing

Room for rent in 2-bdrm apartment in Cupertino for female professional. Close to Valco mall. Sole apartment on second (top) floor of quiet and safe four-plex. Cats negotiable (extra dep. req.). W/D. \$450/mo. + 1/2 util. +\$300 dep. Available 6/1. Call (408) 446-9706.

2bd/1ba, tri-plex unit apartment for rent, with carport. \$1150/mo., water & garbage included. Good neighborhood, walking distance to downtown Mountain View. Accepting applications & referrals. Call (650) 964-3661.

Room to rent in spacious 4 bd/2ba home in San Jose, in the Campbell/Los Gatos area. Dependable, N/S, professional. No pets. \$625/mo + share utils. Available immediately. Call (408) 266-7272 and lv. message.

Room for rent in north San Jose home near 680/ Montague. 12 mi to Ames. NS. \$450/mo + 1/4 utils + dep. Kevin (408) 259-7684.

Room for rent in condo (Stevens Creek/Keily). Pool and hot tub available in complex. NS, M or F, prof., \$500/mo. + 1/2 util. Avail 5/1. Harry (408) 244-6309.

Transportation

'77 Datsun 280Z. Runs great. Well maintained. 5 speed. Full records since '91. 172K mi. \$2300. Jeff (650) 968-4999.

'85 VW Jetta GL, 4-dr, 111K mi, very gd. cond., AC, AT, AM/FM cass. stereo, sunroof, clean, paint shines!, \$3,500 or B/O. Steve (510) 828-1484 or (408) 563-1855.

'87 BMW 325, 2-door, 5speed, 155K mi, exc. cond. Must see. \$4,800. Call (650) 968-7715.

'87 Honda Accord, 2-door, 5speed, 138K mi, new paint, A/C, very clean. \$3,100 or B/O. Matt Paryani (909) 861-1810.

'87 Jeep Wrangler, black soft top, 4 cyl, 5speed, alloys, new brakes, AAA diagnostic, \$5,995 or B/O. Call (925) 254-9637.

'88 Cadillac El Dorado Biarritz, Gold series. Fully loaded, lots new, 120k. Asking \$5,300 or B/O. Bob (408) 736-4039.

'89 Vacationeer camper, fully self-contained, extended cabover, shower, oven, range, frig & freezer, w/ Chevy 1-ton Crew Cab Dually truck, 78, rebuilt AT, new tires and brakes, \$13,000. Call (650) 968-1899.

'90 Toyota Tercel EZ. Runs well. Needs new tires. Gd transportation car. 105K mi. \$2300. Jeff (650) 968-4999.

Miscellaneous

Two Dunlop tennis rackets, slightly used, just like brand new. \$80 or B/O. Frances (650) 965-7443.

Cuff links. Green Jade. Round-1" diameter. Gold Script initials - "W.A.L." or "W.L.A." Great Father's Day gift \$75. Call (650) 968-8650.

67" slalom waterski blank (no bindings), Connelly Concept, never used, in box, \$115; Connelly ski case \$35, both for \$135. Call (408) 955-9122.

O'Neill full wetsuit, "The Edge", size large, never used, \$65. Call (408) 955-9122.

Slalom water ski and knee board. \$60 ea. or \$100 for both. John (408) 737-8209.

Wanted: Used dark room equipment. Call (650) 574-0501.

Executive desk, walnut woodgrain laminate finish, double pedestal, 60" by 30" surface area, \$150; Peugeot bike, 10 speed, \$75. Call (408) 252-0963.

486-66MHz VLB motherboard & CPU, 256K cache w/ "green" BIOS & manual. \$40; SVGA VLB video card, Orchid Fahrenheit 1280 w/ 2MRAM & driver software, \$20. Call (408) 295-2160.

Windsurfer, Mistral Screamer, mast, boom, 3 sails and lots more. \$350 or B/O. Call (650) 367-7651.

Two large rabbit hutches, exc. cond. Both for \$150. Buyer picks up. Call (650) 968-1899.

Two 4-ft red tail boas, 1 male, 1 female. Serious inquiries only. Best offer. Call (408) 246-8483.

Colonial style furniture: Cherry/white fabric living room set, includes sofa, loveseat, easy chair and coffee table, \$400. Cherry bedroom set, includes 4-post queen bed frame, highboy dresser, 2 night stands, \$500. Call (408) 272-5003.

Craftsman 10" Radial Saw with table & stand \$200. Call (510) 795-6548.

PowerMac 7100/80: 40mb RAM, 1Gig HD, CD - \$695; NEC 15" Mon. - \$275; both \$895; with HP Printer - \$995. Call (408) 955-9122.

Laptop - TI Extensa 650, 75mhz Pent., Active Matrix, CD, warranty; SCSI PCMCIA card; HP Portable Printer; \$1150 (408) 955-9122.

Somma "Elegance" queen size floation sleep set, like new. Orig. cost \$750 w/guarantee. Asking \$350. Tom (408) 248-1281.

Cardioglode exercise machine, 2 yrs old; pedal needs minor repair. \$50. Linda (408) 735-8193 after 4 p.m. or lv. msg.

Cement mixer, electric-powered, \$150 or B/O. Long, stable, beginner's windsurfer, \$50 or B/O. Both items in Sunnyvale. Call (408) 737-0988.

Vacation rental

Lake Tahoe-Squaw Valley townhse, 3br/2ba. View of slopes, close to lifts. Wkend \$400, midwk \$150 per night. Includes linens, firewd, cleaning service. Call (650) 968-4155, DBMcKellar@aol.com

So. Lake Tahoe home rental. 10 min. from casinos and skiing. Sleeps 14, 4bd/2ba. Fireplace, cableTV. Rates: \$450 per week; \$200 per wkend; \$75 per day; \$100 per day on holidays. Call (408) 248-4861.

Carpool

Wanted: carpool from Gilroy (near Mantelli/ Longmeadow) to Ames. Duty hours approx. 7:30 a.m. to 4:30 p.m., Monday through Friday. Please call Anita at ext. 4-6541.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When you submit stories or ads for publication, make sure to check the publication deadline and submit your material by e-mail to astrogram@mail.arc.nasa.gov on or before the deadline. Stories should be sent as enclosures in MS Word.

If you have questions about items for publication, contact the editor at the above email address.

| DEADLINE | PUBLICATION |
|--------------|--------------|
| MON., MAY 4 | FRI., MAY 15 |
| MON., MAY 18 | FRI., MAY 29 |
| MON., JUN 1 | FRI., JUN 12 |
| MON., JUN 15 | FRI., JUN 26 |

Miscellaneous News

SpaceDay event at Hangar One scheduled for May 21

Imagine you are an elementary school student with an opportunity to learn about the Lunar Prospector while doing hands-on science activities at NASA Ames Research Center.

As a SpaceDay volunteer you can excite, motivate and inspire these young students to pursue their science education by volunteering for a full day or a half day at this landmark event to celebrate and introduce students to a new age of space exploration.

Students from Sunnyvale and Mountain View schools, an estimated 2,500, are being invited to come to Hangar 1 on Thursday, May 21 to participate in 25 hands-on science activities relevant to the Lunar Prospector mission. They will also have an opportunity to meet an astronaut, sign up for a mission command and control simulation experience, and present a SpaceDay skit.

SpaceDay is jointly sponsored by Ames Research Center, Lockheed Martin Missiles & Space, American Institute of Aeronautics and Astronautics (AIAA), and the Astronomical Society of the Pacific (ASP).

It will take 300 individuals to create this experience. Take a break from your daily routine and volunteer to come out for the day and be a captain or co-captain of one of the activity areas. You'll learn one of the activities, train eight responsible student leaders (ages 14-17) and manage your activity area on the day of the event. Or, become an Activity Director by learning five activities, training volunteer captains and co-captains, and being an on-site resource on the day of the event.

Two hundred local junior and senior high school students will serve as

student mentors, taking on the leadership role of teacher for the day. They will have an opportunity to demonstrate and develop their leadership skills while working at the activity tables with the 3rd through 6th graders.

What a great opportunity SpaceDay will be to connect your knowledge and enthusiasm of science with the young minds that may follow in your footsteps.

Call Lori Burkart, Volunteer Program Manager, at ext. 4-0494 or e-mail her at: lburkart@mail.arc.nasa.gov to sign up. Then come out to one of the volunteer orientations from 12 noon to 1:00 p.m. in the Ames Visitor Center on May 6, 12, or 14.

If you are interested in signing up a Sunnyvale or Mountain View class of 3rd, 4th, 5th, or 6th graders contact Lisa Chuthielbar at ext. 4-0182 or email her at: lchu-thielbar@mail.arc.nasa.gov. You can also register on-line at: <http://lunar.arc.nasa.gov>

Blood Pressure Screening in May

May is National Hypertension month. During this month, many organizations are involved in educating the public on the nature of hypertension and its treatment. The Ames Health Unit staff will be available in the Health Unit (N-215) to conduct blood pressure checks on Tuesdays and Thursdays from 2:30 p.m. to 3:30 p.m. from May 5 to 28. All resident staff is welcome and educational information will be distributed.

Early treatment for high blood pressure, often called "the silent killer"

because it usually has no symptoms, can greatly reduce the incidence of illness and early death.

For your family, friends, and most importantly, for yourself, stop by and get your blood pressure checked. For more information, call the Health Unit at ext. 4-5287.

Spring Fun Walk and Run

All Ames personnel and their guests are invited to participate on May 12. The 2 mile walk/run begins at 12 noon on DeFrance & Warner. Ribbons and refreshments will be handed out at the finish line (near the cafeteria).

Registered participants are eligible to win one of the fun door prizes. Registration is \$2 or purchase a Fun Run T-shirt for \$11 and pay no race fee. Register with any of the event coordinators or at the Fitness Center.

Sign-up forms are now available and must be submitted with the registration fee for each participant. Registration will also take place at the starting line on race day. Please make a note that the Starting Line has been changed to DeFrance and Warner for this race. Call Nancy Dunagan at ext. 4-5804 for more information.

THE AMES *Astrogram*

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Editor.....Astrid Terlep

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