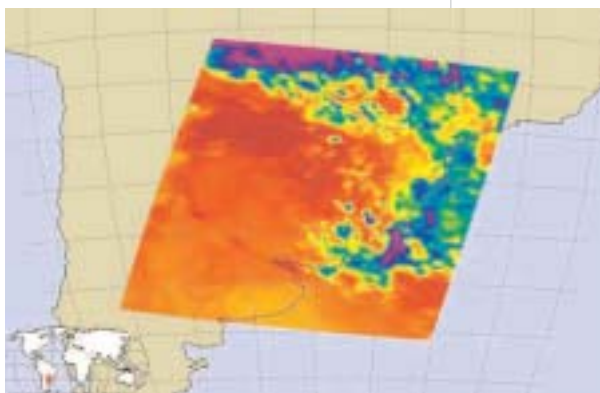


News Briefs . . . . . 2	Kids Have Their Day on Lab . . . . 4
Special Events Calendar . . . . . 2	Letters, Passings . . . . . 4
Welcome to Our House . . . . . 3	Retirees, Classifieds . . . . . 4

## Aqua data help with forecasts

By Alan Buis



Data from Atmospheric Infrared Sounder experiment shows various levels of brightness over southeastern South America.

Your weatherperson's job just got a little easier, thanks to new data now available from advanced weather instruments aboard NASA's Aqua satellite. The new data are the most accurate, highest-resolution measurements ever taken from space of the infrared brightness (radiance) of Earth's atmosphere. This information can be used to make more accurate predictions of weather and climate.

The data come from two microwave sounding instruments that are part of the JPL-managed Atmospheric Infrared Sounder experiment: the Atmospheric Infrared Sounder and the Advanced Microwave Sounding Unit.

With its visible, infrared and microwave detectors, the Atmospheric Infrared Sounder experiment provides a three-dimensional look at Earth's weather. Working in tandem, its instruments can make simultaneous observations from space all the way to Earth's surface, even in the presence of heavy clouds. With more than 2,400 channels sensing different regions of the atmosphere, the system creates a global, three-dimensional map of atmospheric temperature and humidity and provides information on clouds, greenhouse gases and many other atmospheric phenomena.

"The Atmospheric Infrared Sounder experiment is demonstrating high sensitivity and accuracy," said Dr. Moustafa Chahine, science team leader at JPL. "Meteorologists around the world have been eagerly awaiting the availability of this processed Atmospheric Infrared Sounder data, and are already reporting measurable increases in the accuracy of their short-term weather predictions. NASA and the world's weather prediction agencies can now also use Atmospheric Infrared Sounder experi-

ment data to better track severe weather events, like hurricanes."

Scientists from various organizations echoed Chahine's views.

Dr. Tony McNally of the European Center for Mid-range Weather Forecasts in Reading, England, reported that the use of Atmospheric Infrared Sounder experiment data resulted in "a small but consistent positive impact on forecast quality in all areas."

Dr. Hank Revercomb, director of the Space Science and Engineering Center at the University of Wisconsin, called the experiment "a virtual gold mine of information."

Dr. Louis Ucellini, director of the National Oceanic and Atmospheric Administration's National Centers for Environmental Prediction, said adopting data from the Atmospheric Infrared Sounder experiment is "our number one priority."

Chahine said more advanced data products are expected to become available later this year. The data will include atmospheric temperature and humidity profiles as well as additional environmental measurements on various types of clouds, particularly the thin veil of cirrus clouds that cover Earth. He also expects new data on concentrations of greenhouse gases, such as carbon dioxide, methane, carbon monoxide and volcanic sulfur dioxide.

The National Oceanic and Atmospheric Administration is continuing to evaluate the new data, learning how to integrate it and gaining confidence in its accuracy. When that process is completed this summer, the agency will begin integrating the data into existing weather prediction models used by its National Centers for Environmental Prediction. Six of the world's leading weather-prediction centers will do the same.

## Galex is off and flying

The JPL-managed Galaxy Evolution Explorer spacecraft was successfully launched April 28 from a Pegasus XL rocket released by an L-1011 aircraft off the coast of Florida's Cape Canaveral Air Station.

On Saturday, May 3, engineers began turning on the science instrument. So far, they have powered up both the digital processing unit, which houses the main computer, and the detector front-end electronics box, which contains the photon discrimination and processing logic. The spacecraft computer, mechanisms and heaters are operating properly, and telemetry and data have been routinely transmitted to Earth.

Galex successfully opened its telescope cover the morning of May 6. The cover is now safely stowed against the side of the spacecraft, where it will remain for the duration of the mission.

The telescope will begin gathering photons—a milestone known as first light—on or about May 19.

## Loston offers lesson on NASA's education plans

By Mark Whalen

Dr. Adena Williams Loston, NASA's Associate Administrator for Education, visited JPL last month for the first time since her appointment to the job about six months ago. Loston met with education, public engagement and communications representatives to discuss current initiatives and also spelled out the efforts to organize and enhance agency education programs.

"NASA Administrator Sean O'Keefe is very interested in

work was handled in 17 different locations at the agency, she said, "the focus now is on a unifying voice and direction for NASA, a national agenda."

Working with teachers, students and parents has never been more important for NASA, she said. In the next three to five years, 60 percent of the agency's workforce will be eligible for retirement, which is a "crucial problem for the agency," she said.

In order to help overcome this, Loston mentioned four major initiatives underway in her office:

- NASA's educational goals for both pre-college and post-secondary education will focus on a pipeline called "STEM," an acronym for science, technology, engineering and math.
- One of Loston's goals is to have NASA employees to go out to schools and "share why we do what we do."
- Ensure that the NASA Education Program is properly investing taxpayers' resources.
- Engage underrepresented students, educators and researchers.

In addition, several programs are underway to reach out to students and educators:

Science and Technology Scholarship Program. In what she termed a "corporate recruitment strategy," Loston will ask each NASA associate administrator about their workforce needs over the next three to five years. Her office will identify institutions that will provide students with the needed skill sets, and NASA will fully fund students' tuition for a commitment come back and work for the agency.

Loston said she will work with NASA's human resources and equal opportunity leadership on this initiative. A report on its progress is due to be presented to O'Keefe by September.

NASA Explorer Schools. Each NASA center will host five schools for a week during the summer. Each school will send four teachers plus an administrator, such as a principal or assistant principal.

NASA will provide curriculum targeted for students in grades 5 through 8, and teachers will come up with an implementation plan for their school. This is a three-year partnership.

Educator Astronaut Program. An effort to recruit K-12 teachers to be in the astronaut corps. Participants can qualify with a degree in education, but must also take a required number of hours of in-

struction in the STEM subjects.

More than 4,000 teachers were nominated. Between 200 and 300 will be down-selected by a group of teachers, then 2 to 6 will be approved as astronauts. Nominations closed May 2.

"Teachers want the resources you have developed," Loston said. "We want to engage as many students as we can, and make a difference."

Students will begin to notice a difference in their textbooks soon, she said, noting that some publishers have included chapters on NASA in their upcoming publications.

Loston also lauded the efforts put forth in informal education, where the agency works with planetariums, museums, etc. "Not all education takes place in the classroom," she acknowledged.

She noted the only three federal departments with education as part of their mandate are NASA, the Department of Education and the National Science Foundation.

"NASA is not trying to overtake the role of the Department of Education," she said. "The Department of Education wants us at the table. We at NASA have the tools that can delight, inspire and excite the next generation."



JPL Director Dr. Charles Elachi with Dr. Adena Williams Loston during her April 24 visit to JPL.

inspiring the next generation of explorers," she said. O'Keefe seeks a strategic focus and leadership across the agency.

Noting that in the past, education



# News Briefs



Dr. Gerard Holzmann

**JPL welcomes software specialist**  
DR. GERARD HOLZMANN, a leader in software verification and validation, has joined JPL to further develop the newly established Laboratory for Reliable Software.

The Laboratory for Reliable Software will study technology, methods, tools and techniques to ensure high quality in JPL's mission critical software systems. The studies will extend from the beginning of the software lifecycle, through the design and testing stages, and ultimately to the operations monitoring aboard highly autonomous spacecraft.

Holzmann will lead and conduct research, development and applications as principal computer scientist in the research program, and will provide project consulting in software verification and validation.

Holzmann previously served as director of Computing Principles Research at Lucent Technologies' Bell Labs in Murray Hill, NJ.

"The pioneering research of Dr. Holzmann and the proof of its effectiveness on projects of significant size and complexity, as well as his worldwide leadership, make him the obvious choice to lead our new initiatives in this area," said DR. DAVID ATKINSON, leader of Computing Area Initiatives and deputy manager of the Information Technology and Software Systems Division. "JPL will provide him with the hardest problems he can imagine, and this is exciting for both him and JPL."

The Association for Computing Machinery presented Holzmann with the prestigious Software Systems Award for development of Spin, a program devoted to the efficient detection of defects in network computers. Software engineers at JPL who develop systems for both flight and ground applications have used Spin.

"JPL has some of the most difficult software challenges on the planet, and these will certainly drive my research," said Holzmann. "I look forward to working with the talented and motivated team at JPL on the noble goals of space exploration."

Holzmann received his master's degree in electrical engineering and his doctorate in technical sciences from Delft University of Technology, the Netherlands.

**Solar System Ambassador honored**

LOUISE STIVERS, a teacher in the Los Angeles Unified School District and a JPL Solar System Ambassador, recently received the Presidential Award for Excellence in Science Teaching, the nation's highest teaching honor.

Stivers teaches second grade at Buchanan Street Magnet Center in Highland Park. She was honored in a week-long series of special ceremonies in Washington, D.C. along with a select group of teachers from throughout the United States.

The Solar System Ambassadors Program is a informal education effort accomplished by motivated volunteers in all 50 states, Puerto Rico, and the Kadena Air Force Base in Okinawa

who communicate information about JPL's exciting discoveries and plans for future exploration. These space enthusiast volunteers are trained using online materials and interact with key mission personnel, thereby personalizing each ambassador's involvement with the program. Ambassadors are considered as extended members of each mission's team.

Recipients of the Presidential Award of Excellence are nominated by principals, teachers, students and members of the public, and are reviewed first at the state/jurisdiction level; at the national level a committee of distinguished scientists, educators, administrators and past awardees rank the finalists, the National Science Foundation then presents the committee's recommendations to the White House.

Stivers was a state finalist for the 1999 Presidential Awards for Excellence in Science and the 2000 California Science Teachers Association's Distinguished Science Teacher.

**Systems engineering conference set**

The Los Angeles Chapter of the International Council on Systems Engineering is conducting a one-day conference at the Boeing Division Conference Center in Long Beach on Saturday, June 7, from 8:30 a.m. to 5 p.m. Registration begins at 8 a.m.

Numerous technical presentations and a panel discussion are planned. Keynote speaker will be Lieutenant General BRIAN ARNOLD, commander of the Space and Missile Systems Center, Air Force Space Command, Los Angeles Air Force Base.

Presentations were solicited for the conference in the areas of education and research; systems architecture; measurement; modeling and tools; processes and materials; applications; initiatives; management; and standards.

TONY FREEMAN, manager of JPL's Mission and Systems Architecture Section (311), is the event's technical co-chair. For more information, reach him at ext. 4-1887 or visit <http://www.incose-la.org>.

**New space-related books available**

The NASA History Office notes the publication of three new space-related books, including "Voyager's Grand Tour: To the Outer Planets and Beyond," published by the Smithsonian Institution Press. It is available for purchase online from [http://www.sipress.si.edu/books/titles\\_books/1-58834-124-0.html](http://www.sipress.si.edu/books/titles_books/1-58834-124-0.html).

"Testing Aircraft, Exploring Space: An Illustrated History of NACA and NASA" is the latest volume in the Johns Hopkins New Series in NASA History, available online at <http://www.press.jhu.edu/press/books/titles/s03/s03bite.htm>.

"On the Frontier: Experimental Flight at NASA Dryden" has also been published by Smithsonian Press. It is available for purchase at [http://www.sipress.si.edu/books/titles\\_books/1-58834-134-8.html](http://www.sipress.si.edu/books/titles_books/1-58834-134-8.html).

For more information, visit <http://www.hq.nasa.gov/office/pao/History/on-line.html>.

# Special Events Calendar

Ongoing Support Groups

**Alcoholics Anonymous**—Meetings are available. Call the Employee Assistance Program at ext. 4-3680 for time and location.

**Caregivers Support Group**—Meets the first Thursday of the month at noon in Building 167-111 (The Wellness Place). For more information, call the Employee Assistance Program at ext. 4-3680.

**Codependents Anonymous**—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319.

**Gay, Lesbian and Bisexual Group**—Meets the first Friday and third Thursday of the month at noon in Building 111-117. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at ext. 3-0664.

**Parents Group for Children With Special Needs**—Meets the second Thursday of the month at noon in the Wellness Place, Building 167-111.

**Working Parents Support Group**—Meets the third Thursday of the month at noon in Building 167-111. For more information, call the Employee Assistance Program at ext. 4-3680.

Friday, May 9

"How Asian American Values Can Be Transmitted through Cultural Tales"—Dr. Jeffrey Mio, professor of behavioral science at Cal Poly Pomona, will speak at noon in the 167 conference room. The event is presented by JPL's Asian American Council in celebration of Asian Pacific American Heritage Month.

Saturday, May 10

**Caltech Bands**—This concert will feature the combined efforts of the Caltech-Occidental Concert Band, the two Caltech Jazz Bands and the Caltech Chamber Singers. The free show will be held at 8 p.m. in Beckman Auditorium. For more information, call (626) 395-4652.

**Folk Music**—Sparky and Rhonda Rucker, who specialize in Americana music with an African American perspective, will perform at 8 p.m. in Caltech's Dabney Lounge. Tickets are \$15 for adults, \$5 for children under 12. For more information, call (626) 395-4652 or check the Folk Music Society website at <http://www.folkmusic.caltech.edu>.

Tuesday, May 13

**JPL Stamp Club**—Meeting at noon in Building 183-328.

Wednesday, May 14

**JPL Amateur Radio Club**—Meeting at noon in Building 238-543.

**JPL Toastmasters Club**—Meeting at 5 p.m. in the 167 conference room. Call Roger Carlson at ext. 4-2295 for information.

Thursday, May 15

"A Woman's Money, A Woman's Future"—This TIAA/CREF workshop, held in Building 180-101 from 10 a.m. to noon, will help women make the most of their money no matter their phase of life, just starting out, married with a family, starting over, or in the golden years.

**Conference Registration**—Early registration deadline for the International Conference on Space Mission Challenges for Information Technology, the first forum to gather system designers, engineers, scientists, practitioners and space explorers for the objective of advancing information technology for space missions. The event will be held July 13-16 at the Pasadena Conference Center and will provide an excellent opportunity for fostering technical interchange on all hardware and software aspects of information technology applications in space missions. For registration and other information, log on to <http://smc-it.jpl.nasa.gov>.

**TIAA/CREF Enrollment**—This workshop from noon to 1 p.m. in Building 180-101 is designed to assist employees newly eligible for the JPL/Caltech TIAA/CREF retirement plan with selection of investment options and the completion of their enrollment forms.

Tuesday, May 20

**Investment Advice**—Fidelity will offer one-on-one counseling. For an appointment, call (800) 642-7131.

Wednesday, May 21

"Quaoar and the Edge of the Solar System"—Dr. Michael Brown, Caltech associate professor of planetary astronomy, will lecture at 8 p.m. in Caltech's Beckman Auditorium. Free admission. For more information, call (626) 395-4652.

Thursday, May 22

**Caltech Architectural Tour**—The Caltech Women's Club presents this free service, which is open to the public. The tour begins at 11 a.m. and lasts about 1 1/2 hours. Meet at the Athenaeum front hall, 551 S. Hill St. For reservations, call Susan Lee at (626) 395-6327.

Friday, May 23

**At the Keyboard**—James Boyk will celebrate his 30th anniversary as Caltech pianist-in-residence with an 8 p.m. show in Dabney Lounge. For more information, call (626) 395-4652.

Ongoing

The Social Security representative will no longer offer one-on-one counseling appointments on Lab. Call the Benefits Office at ext. 4-3760 to arrange a telephone counseling appointment.

Dr. Charles Elachi, left, presents Dr. Greg Bearman with a Space Act Award. Bearman, Rusty Lansford and Scott Fraser were awarded \$9,600 for their Two-Photon Microscope Imaging Spectrometer For Multiple Fluorescent Probes.

## Space Act Awards bestowed

More than \$131,000 was awarded to about 100 JPL technologists and contractors during April 22 ceremonies honoring winners of the NASA

Space Act Award. The Space Act Award recognizes scientific and technical innovation that is of significant value to aeronautical or space activities. A monetary award and a

presented to each contributor of the technology.

Award money to JPL technologists and contractors increased from \$21,000 in fiscal year 2001 (when five cases were submitted) to \$306,000 in fiscal year 2002 (89 cases were submitted). The \$131,750 awarded to the JPL winners by Director DR. CHARLES ELACHI represents the amount awarded since the beginning of fiscal year 2003, last October.

The awards are classified into three categories: Standard (less than \$2,000), Major (\$2,000 to \$5,000) and Exceptional, where at least one of the innovators receives \$5,000 or more. In 2002, JPL received eight Exceptional Awards, the highest number of all the NASA centers.

The awards were created as an incentive to disclose the technologies in a timely manner to maximize the benefits for NASA and society. The NASA Invention and Contributions Board determines award amounts. Congress gives NASA the authority to grant awards up to \$100,000 for each innovation. Recent awards have ranged from \$500 to more than \$50,000 for some truly valuable contributions, such as the recent winners of the NASA Invention of the Year and

A requirement for the award is that the government must have the right to use the innovation without payment of royalties. Most NASA-funded efforts automatically convey government royalty-free rights with the funding for contracts, grants or partnerships.

Other criteria include:

- New technology must be reported through the NBS website (<http://nbs>).
- The technology is used or will be used in a mission or program that relates to NASA's space and aeronautical activities.
- A recommendation for NASA Tech Briefs, a Software Available for Public Release Award must have been received, or a NASA Patent Award. In the absence of any of these, the Innovative Technology Assets Management Office may make a recommendation based on the state of the technology.

The Invention and Contributions Board reviews applications on a quarterly basis. The next deadline for consideration is May 20, 2003. If you meet the criteria, call RANI KAMARGA at ext. 3-7995 for a preliminary questionnaire.

For more information, visit [http://icb.nasa.gov/Annual\\_Report](http://icb.nasa.gov/Annual_Report).





## Lab prepares for May 17–18 showcase

For the first time in two years, JPL will soon welcome the public for an Open House celebration. The event will be held May 17-18, from 9 a.m. to 5 p.m. each day. Highlighted by exhibits, models and displays from the Earth, Mars, Solar System, Technology and Universe theme areas, visitors will have a great opportunity to learn about everything that is JPL. Lab staff members will be available to

answer questions about their work at many of the exhibits.

Kids will have the opportunity to design their own constellation inside a plastic-bag “planetarium,” build an interplanetary spacecraft, be “run over” by a lightweight, eight-wheeled rover, and more. Fun hands-on activities for preschool-age children will also be available.

Here’s a sampling of what’s coming up:

### Earth

Research on oceans, solid Earth and the atmosphere

- Numerous Earth Science projects
- Kids can visit their “corner” to play an adventure game and come discover the planet we call home

Image Processing

Unique capabilities of the nine cameras on MISR, the Multi-angle Imaging Spectro-Radiometer. Stereo and 3-D images of Earth, along with videos and animation. Find out what a new instrument will tell us about Earth’s surface, clouds, and particles in the air.

### Universe

The Visible and Beyond

• Discover how invisible radiation from space may hold the clues as to how galaxies, stars, and planets formed. Learn how scientists have already detected more than 100 planets orbiting stars outside of our solar system.

- Science demonstrations: see yourself through a heat-sensitive infrared camera, or learn how scientists experiment with weightlessness without going into space.

Fun Physics

Experience the strange world of cyrogenics phenomena, where balloons shrink and magnets levitate.

### Technology

Robots, Cutting-Edge Technology, New Methods

- Watch URBIE the rover climb stairs; Spiderbot the robot walk; a moving android head; and a robotic hand with artificial muscles

- The latest in optical infrared cameras; an ultrasonic motor and water jet (low-power alternatives for future missions); demonstrations of an ultrasonic drill designed for use on surfaces of other planets, such as Mars

- Visit with Southern California high school teams that built robots with JPL engineers and volunteers

Instrument Systems Laboratory

- Animations, 3-D imaging, high-definition television, and image processing.

### Solar System

Cassini-Huygens, Deep Impact, Genesis and Stardust

See models of the Huygens probe that will parachute through Titan’s murky atmosphere; the first mission to look inside a comet; and both JPL sample return missions. Touch a meteorite and see the world lightest solid, aerogel.

New Millennium Program

Future technologies and a demonstration of an ion propulsion engine, the most fuel-efficient way to cruise the solar system as successfully demonstrated by Deep Space 1.

### Other Exhibits

Welcome to Outer Space

View this multimedia production about JPL’s missions in von Kármán Auditorium, along with various space exhibits and a full-scale model of the Voyager spacecraft.

Deep Space Operations

Learn about the multiple roles of the huge antennas of the Deep Space Network from the gallery in the Space Flight Operations Facility. See a scale model of a possible array antenna of the future, an exhibit of space images and students’ murals.

Regional Planetary Image Facility

An archive of images in many types of formats from past and present JPL missions. Part of a network of 18 NASA image facilities, RPIF has one of the largest collections of original Mars images and a full collection of planetary maps.

Spacecraft Assembly Facility

Visit High Bay 2, the largest clean room at JPL.

Spacecraft Fabrication Facility

Where a spacecraft goes from “Art-to-Part”—from technical drawings to precision spacecraft components.

### Mars

Mars Exploration Rover Mission

Get an in-depth look at the In-Situ Instrument Laboratory, which houses an indoor simulated Martian landscape. Engineers will explain full-scale models and simulate the pyrotechnic process that deploys the rovers from their landers. Kids will have fun being “run over” by a lightweight rover and coloring their own rover.

Odyssey and Global Surveyor

See models of the spacecraft and an impressive display from their Martian photo albums.

### General Information and Security

Parking, Lab Access

• Employees and volunteers may park on Lab but must drive through the South Gate. Access to the Blue Lot will only be available from the west side of the lot; normal on-Lab access will be closed.

• Visitor parking will be in the West, Blue, East and Arroyo lots. Visitors may enter the East Lot via Arroyo Ave.

• Main Gate traffic will be restricted to outbound tour buses and emergency vehicles

• The Visitors Lot will be restricted to guests requiring parking for the disabled

• The primary pedestrian checkpoint will be at the Main Gate

• Visitors must ride parking lot buses from the East and Arroyo lots to the Main Gate; walking in from the East or South gates will be prohibited

Security

Security for the Open House is being enhanced for the safety and enjoyment of the public and JPL staff, with an increased presence of security guards and fire department personnel, as well as additional support from outside local law enforcement. Security will be supplemented by JPL’s Urban Search and Rescue Team.

• All vehicles, persons and possessions will be subject to inspection

• Prohibited items include backpacks, ice chests, alcohol, illegal drugs, weapons, dangerous devices, explosives, skateboards, skates (including inline) and animals

• Personnel should secure all sensitive items and lock all interior office and lab doors prior to event

Assistance

• For emergencies, from on-Lab phones dial 911; from cell phones, dial 818-393-3333.

• For non-emergencies, from on-Lab phones dial 4-3530; from cell phones, dial 818-354-3530.

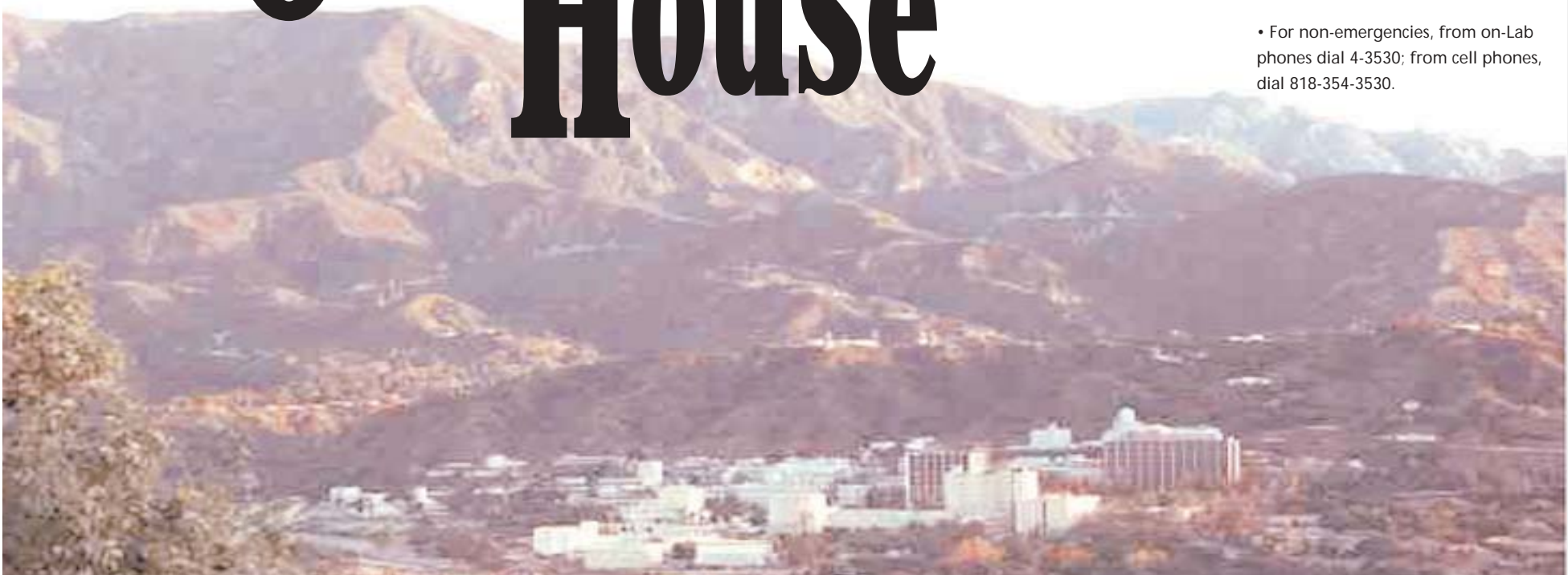


It’s not too late to help make this Open House an even greater event.

If you can volunteer a half-day, full day or both days, call Public Services at ext. 4-0112.

Welcome to

# Our House





## JPLers' kids have their day



About 700 children of JPL staff members attended "Take Our Daughters and Sons to Work Day" on April 24. In addition to seeing how mom and dad do their work, kids enjoyed a number of exhibits and activities. At left, children and adults play hydrogen and oxygen atoms during a fuel cell demonstration; at center, a balloon is inflated to power a Mars Rover; at right, a visitor checks out a solar telescope.



Photos by Bob Brown / JPL Photolab

## Letters

My family and I would like to thank everyone for the kindness and thoughtfulness after the passing of my mother. We would like to extend our sincere and deep appreciation for the flower sent by JPL.

Adriana Vicente and family

## Passings

**VICTOR WHISENAND**, retired from Section 614, died Feb. 13. Whisenand, who worked at the Lab from 1957 to 1977, is survived by his wife, Mildreth, and sons Alan and Gary.

**JOSEPH BRUMAN**, 80, passed away March 30. Bruman worked at JPL from 1975 to 1987. He is survived by his daughter Janet, son Ray and sister Pauline McKim.

## Classifieds

### For Sale

**BABY ITEMS:** stroller, Aprica, \$35; infant car seat, \$10; soft toys for car seat and stroller, \$5/ea.; large baby bathtub, \$5. 626/850-4378.

**BEDROOM SET**, exc. cond., queen-size bed, 9-draw dresser w/3-piece mirrors, bedside units, all w/inlay light fruit-wood veneer, pictures avail., \$1,800; HARP, Triplet Axline full Loveland levers, fleece carrying case, deluxe tuning key, exc. cond., \$2,400. 626/351-9150.

**BIKE**, Schwinn tandem, five speed, exc. cond., \$300. 626/355-3201.

**BREAST PUMP**, Medala Pump-In-Style, attractive black case w/complete kit and manual, used moderately for 2 yrs., \$150/obo. 957-7623.

**BRIDAL GOWN SLIP**, white, size 8, with netting underneath for fullness, exc. cond., worn once, retails for \$60, sell for \$25. 992-0921.

**BUNK BED**, queen bed/futon couch, navy blue, convertible below, twin above, black tubular metal frame, exc. cond., \$180. 952-8455.

**CARD SHUFFLER**, Johnson, collectible item, all-metal construction with the exception of the friction wheels which drive the cards and the carved-wood dowel handles, stands ~6" handle-high, and ~9" by 6", flanges and handle inclusive, \$35; **PORT REPLICATOR**, for IBM Thinkpad, works with T20, T21, A20, A21, or X, R series, like new, \$85; **DIET TAPES**, Jenny Craig, set of 14, \$50. 790-3899.

**CD CHANGERS**, 100 disc AIWA DX-C100M \$75; 200 disc, Sony CDP-CX240, \$150, 400 disc, Sony M555ES \$300/obo. 790-7129, Bill.

**CLOTHING**, 2 pc./jacket & slacks, Jones of New York, jacket fully lined and slash pockets, new with tags, size 12, dark olive, retail 200+, \$100/obo; 2 pc./jacket & slacks, Rena Rowan for Saville, white, lined, size 14 never worn, pockets still stitched, \$50/obo; **JEWELRY**, earrings, bracelets, rings, includes vintage, turquoise and gemstones. 626/398-4960.

**COFFEE MAKER**, Braun 10-cups, white/black, like new, \$30/obo. 626/791-6101.

**COUCH AND CHAIR**, sleeper, queen, solid wood frames, velour fabric, beige with large floral print, rust and brown colored, great cond., very clean, \$25 for the set. 909/948-942.

**CRIB**, wooden portable, w/mattress, exc. cond., made by NU-Line, also used as a playpen, \$30. 626/797-3310, evenings and weekends.

**DESK**, cherry, 3 drawers, 24" x 48", like new, \$150; **TABLE**, maple butcher block, 2" thick, 30" x 60", exc. cond., \$200. 626/798-6588.

**DIGITAL CAMERA**, Sony Cybershot DSC-P1, 3.3M pixels, tiny, hi res., movie capability, never used, \$329/obo. 687-8627, Alberto.

**DINING SET**, 5-piece maple, 48" round, incl. two 11" expansion leaves and 4 armchairs, \$225. 248-2876.

**DOG**, Akita purebred, neutered female, 7 years old, price negotiable. 626/791-7800, John.

**DOG HOUSE**, Dogloo XT for small dog, up to 45#, good cond., \$40. 626/303-1927.

**DOG HOUSE**, Dogloo II, igloo style, vent in roof, outside dimensions about 36" x 36", for

medium-size dog, good cond., about 3 years old, \$40/obo. 909/596-4390.

**ENTERTAINMENT CTR CABINET**, exc./new cond., space-saver, 2 ft. x 2 ft. x 5 ft. high, wood w/smoky glass, 4 shelves w/bottom drawer for CDs/DVDs, \$100. 626/445-6677, after 6 p.m.

**FILM SCANNER**, Olympus 35 mm, 4 megapixel, SCSI interface, PC and Mac compatible, includes cables, manuals and Camedia Pro Software, model ES-10, \$150. 626/797-5672.

**GLASS HORSE**, seen on Internet for \$60, \$35; **HEPA FILTER**, #13503, exc. cond., \$60; **TYPEWRITER**, Smith Corona, electric, circa 1980, \$25; **CAR COVER**, Covercraft Spundra, 15'-16', almost new, \$25; **BRACELET**, gold, large, new, \$60. 618-6682.

**LAWN MOWER**, McLane, 7-blade, 17-inch reel type, looks ugly but works, recently sharpened, recent rebuilt motor, \$20; **VACUUM CLEANER**, Dirt Devil upright, all tools attached, new, \$45. 661/297-0219.

**MOVING SALE:** dining table, large, rose wood, classical Oriental style, w/8 chairs; armoire, decorative shelves, bookshelf, entertainment unit; washer, dryer, frig, stove, microwave. 626/840-4983, Chau.

**MOVING SALE:** computer desk, 3 drawer, blond wood w/keyboard drawer, 43" w x 30" x 22" d, \$59; microwave, 1.3kw, white, very clean, \$49; free delivery to curbside in Pasadena area. vona@ai.mit.edu or 626/796-0610.

**MOVING SALE:** nearly new furniture in very good condition, all prices are obo; desk, pine, 2-drawer, \$200; chairs, 2 cafe-style, black metal w/ off-white cushions, \$80; TV/stereo cabinet, large, teak, \$850; bookcases, 2 Bonde style from Ikea, cherry finish, 14 x 86" & 28 x 86", \$275; end tables, 2 Indonesian teak with iron details, \$130; tables, small bedside, wood with drawer & shelf, \$225. 323/664-2672.

**PHONE ACCESSORIES:** Nokia 8290 and comparable phone, new, never used Li-Ion battery, \$29.95; battery, like new, \$19.95; car charger, new, \$9.95; home charger, \$19.95; swivel clip, \$14.95; leather case, new, \$9.95; Nokia 8290 Phone, with battery, \$59.95; buy all for \$125. 366-6134.

**PRINT**, signed by R.C. Gorman, "Woman in Orange," circa 1977; **FILE CABINET**, rolling, with shelf, \$10. 626/398-4960.

**DVD PLAYER**, Toshiba SD-3750 progressive scan, like new, features: 3:2 digital cinema progressive conversion, enhanced audio mode/dialogue expander, 540-line output, 4x digital picture zoom, CD/DVD text display for titled discs, plays audio CD, CD-R, CD-RW, video CD, cheapest price on web is \$199.95, sacrifice for \$100; **ORGAN**, Yamaha 415 electronic organ w/13 pedals, 3 keyboards, 144 rhythm patterns, \$2,000. 790-3899.

**RUG**, Chinese, mainly blue, about 10 x 14, \$400. 790-7129, Bill.

**SCROLL SAW**, 16" Sears Roebuck with blades and extras, \$50. 626/358-6810.

**STAIR CLIMBER**, Tunturi 401, variable resistance, with electronic display, you pick up, \$20. 323/268-6645, Priscilla.

**SUITCASES**, 2, Samsonite, full size, \$20/each; **GARMENT BAGS**, 2, Valpac, \$15/each. 352-3588.

**TABLES**, 2, custom designed, rod iron, glass top, indoor/outdoor, \$1,500; **COMPUTER DESK**, \$100; **OFFICE CHAIR**, \$35/obo. 248-1102.

**TABLE TOP**, butcher-block hardwood, 60 x 28 x 1 inch, with legs, \$60. 248-9418.

**TEA SET**, pottery, made by Maine artisan, nautical theme, matching lighthouse design on all pieces, incl. tea pot, creamer, sugar, platter, small serving bowl, 2 mugs, 2 Japanese tea cups, never used, \$100/set. 249-4316.

**TOOL BOX**, standard size truck, pewter gray, VG cond., \$75. 661/269-8877.

**TOY WOOD CONSTRUCTION SET**, Brio Mech Set 4, 152 pieces plus work board, vg cond., original cost ~\$150, sell for \$70; **STEAM VACUUM**, Hoover, good cond., \$50. 626/303-1927.

**TREES:** red banana plant 5' tall, \$60/obo; Fish tail, 6' tall, \$80 obo. Ficus, >10' tall, braided, in 30" plastic pot, \$250/obo; ceramic bowl, gray, 2' diameter with planted geraniums, \$40/obo. 626/791-6101.

**WASHER**, Frigidaire Crown series, front load, stackable, controls on front, 5 cycle, heavy-duty, extra large capacity, 1.5 years old, originally pd \$550, selling due to move, low water usage, \$300/obo. 626/627-7772.

**WASHER AND DRYER**, apartment/condo size, Whirlpool, VG cond., \$75/each. 661/269-8877.

**WASHER & DRYER**, both in good cond., Maytag extra lg. capacity washer \$190/obo; General Electric, heavy-duty, extra lg. capacity, 5-cycle, automatic dryer, \$190/obo. 545-0455, Lucia.

**WEDDING GOWN**, white duchess satin sheath by Amsale, low back, gorgeous detachable train, fit ~sz. 4-6, elbow length white tulle veil, \$1,000 for set; **FIGURINE**, Lenox porcelain, bride & groom "wedding cake topper," 7", never used, original box,

wonderful wedding gift, \$50. 249-4316.

### Vehicles / Accessories

'99 CHRYSLER LHS, 4 dr., white, 26K mi., exc. cond., \$12K/obo. 415-5444.

'94 COACHMAN Econoline, RV, 250-Ford, 56K miles, gen. refrig, dc & propane, 2 a/c, sleeps 4, 1 ba., kitchen, new tires, has all repair paperwork, exc. cond., \$20,000. 892-7140.

'95 FORD Taurus LX wagon, only 56K mi., deep green/tan leather, loaded, moonroof, elect. temp. control, ABS all-disc brakes, dual airbags, pwr. front seats, third seat, exc. cond., \$6,900. 626/798-2925.

'93 HONDA Accord 10th Aniv, green, 4 dr., a/c, 144K mi., priced to sell, \$3,900. 909/896-7396, Alex.

'85 KOUNTRY Lite 5th wheel trailer, 30 ft., orig. owner, alum. frame, 13.5K btu a/c, side bath, microwave, new tires & water pump, sleeps 6, exc. cond., kitchen equip. included, \$5,800/obo. 626/963-5727.

'93 MAZDA Miata, vg cond., one owner, low miles, many extras, \$4,500. 626/351-9150.

'90 MERCURY 4 HP outboard, 2-stroke motor, internal tank, great for Dinky, \$499. 661/255-5645.

'90 NISSAN 240 SX, silver, vg cond., 69K mi., a/c, pwr., tilt wheel, new stereo w/CD, \$4,000/obo. 768-4379.

'99 OLDSMOBILE Cutlass GLS, under 60K mi., 4 door silver with gray leather interior, loaded, alloy wheels, power everything, great cond., \$8,500/obo. 626/287-8047.

'96 PONTIAC Firebird/Formula, 3.8L V6, dark grn mtlc./graphite cloth, 53,559 mi., 1 owner, 16" alloys, limited slip, 4 spd. auto, pwr. windows, 10-spr. sound, pwr. ant., dash and car cover, V8 package w/0 V8, all receipts, \$8,700. dahun@pacbell.net or 661/252-9777, eves. and weekends.

'95 SAAB 9000CS hatchback, 4-dr, black w/tan leather interior, 97K mi., 5-sp, AM/FM+cassette+6-CD changer; sunroof, great cond., \$6,200/obo. 323/664-2672.

'02 SUBARU Forester L, take over lease, small all wheel drive SUV, only 4,500 mi., showroom condition, red with beige interior, moving to NYC, no down payment, 38 months at \$362.74, 12,000 miles/year. will subsidize payments. 949/248-4201, Sandy or 626/695-9250, Carl.

'91 TOYOTA Tercel LE, 1 owner, very reliable, economical to drive, clean, well maintained, a good student or second car, white, 4 dr., 5-sp, stick shift, am/fm/cass., only 91K miles, 2WHP768, \$2,000/obo. 323/222-0485, Joe.

'98 TOYOTA Sienna van, earth-toned exterior and interior, 2 sliding doors, captain chairs, loaded w/features, alarm & keyless entry, low mileage, exc. cond., \$13,500. 626/850-4378.

'98 TOYOTA Tacoma PreRunner Xtra Cab, 4 cyl. auto, 77K mi., a/c, am/fm/cassette, dual front air bags, running boards, shell, bed liner, very good cond., \$10,500/obo. 626/296-9073.

'97 HONDA Valkyrie motorcycle, exc. cond., extra chrome, garage kept, purple/white, studied seats, 2 seats and backrest, leather bags, many accessories, 23K mi., see to appreciate. \$7,600. 957-2852.

### Lost & Found

**FOUND:** Bicycle tail light, on Arroyo hiking trail on May 1. 626/395 1857, Steve.

**FOUND:** Sheet metal, small roll, shiny, perhaps stainless steel, roughly 0.005" thick, 1/2" wide, 2" in diameter; found on sidewalk near Bldg. 318. Ext. 4-6271, Van Snyder.

### Free

**DOG**, female shepard mix needs an active, loving home, 1.5 years old, great, fun, playful. 370-4680.

**ROCKING RECLINER**, rust colored, fabric is faded but in good-to-fair condition, rocker and recliner work great, non-smoking house in Ontario. 909/948-9942.

### Wanted

**APARTMENT** sought by JPL employee, 1 bd., in greater Pasadena area, need from mid-or late May for at least 1 year, probably more. 909/920-0044 or cell 716/553-8047, Kevin.

**CAT FURNITURE**, carpeted, good cond., <\$25. scuddy717@yahoo.com.

**DESK**, maple, roll top, maple dresser, maple-framed full-length freestanding mirror or large maple-framed mirror to hang on wall. 248-2602, Patricia

**MATH TUTOR**, Jr. & Sr. High school level classes (geometry, algebra, SAT math, etc.), eves./weekends. 888/784-1639, David, leave msg.

**SPACE INFORMATION/memorabilia** from U.S. & other countries, past & present, for personal use. 790-8523, Marc Rayman.

**VANPOOL RIDERS**, for Lancaster/Palmdale/Litlerock/Acton area, van Leaves Angeles Forest

Park & Ride at 5:30 a.m. and leaves from JPL at 4 p.m., \$150. Ext. 3-0505, Frank Shanklin.

### For Rent

**ALTADENA** guesthouse, 1 bd., 1 ba., restored 1930s craftsman cottage, clean, priv. fenced yard/garden w/fruit trees, new central a/c heat, wainscoting in kitchen, vintage Wedgwood stove, period wood cabinets, pantry, walk-in closet, new tile in kitch., window box over sink, approx. 2 mi./JPL, no pets, safe st. parking, water-refuse removal included, security deposit \$1,800, 1-yr lease, \$1,380. 376-5068.

**MONTROSE**, detached 2 rm., .75 ba., garage apartment, heater and a/c, utilities included, no pets, \$450 + deposit. 957-6821.

**PASADENA**, nice Upper Hastings Ranch home, 3 bd., den, 2 ba., w/pool, spa, large yd., overlooking golf course, remodeled kitchen and baths, 1-yr. lease required, furn. \$3,600, unfurn. \$3,200, incl. gardener and pool service, avail. 6/28. 626/351-9641, leave message.

**PASADENA** apt., 2 bd., 2 ba., close to JPL and Caltech, central air/heat, laundry, 2 parking spaces, \$1,100. 626/304-0065 or 626/676-6307, cell.

**PASADENA**, 3 bd., 1 ba., formal dining rm., living rm., family rm., laundry, garage, orange trees and roses, \$2,000. 626/794-1598.

**PASADENA**, spacious 2 story condo, 3 bd., 2.5 ba., prestigious community, beautiful inter., bright kitch., prof. landscape, ctrl. air & heat, close to shop., cozy LR w/FP, end unit, frml DR, hdwd. flrs., immac. cond., close to schls., \$1,750. 626/396-9024.

**SAN MARINO** house, 3 bd., 2 ba., 2-car gar. w/automatic opener, newly painted, remodeled kitch., dishwasher, a/c, laundry hookups, spacious family rm. overlooking yd, fireplace, close to bus, exc. neighborh'd + school district, water/trash/gardener incl., \$2,850. 626/576-7333.

### Real Estate

**GLENDALE** townhouse, desirable area, 2 bd., 2.5 ba., 2-car garage, built 1995, 6 total units, low \$135 assoc. fee for water/insurance/trash/maint, granite counters, tile/Prego except one bd., exc. cond. 9.3 miles to JPL., \$289,000, continging to seller closing on already selected home, photos: <http://www.letscheerup.com>, 500-0507, agent, ask for JPL discount, or home@letscheerup.com, 246-7847, seller.

**MT. WASHINGTON** house, next to Glendale/Pasadena/Eagle Rock/Occidental College, 2,000 sq ft., large custom 3 bd., 2.5 ba., 2-car garage, lots of storage, excellent Mt. Washington elementary school, 12 minutes from JPL, canyon view, quiet neighborhood, available summer 2003, ask for JPL discount, virtual tour at <http://www.circlepix.com/site/tour/index.htm?searchtourid=63-39461>, \$450,000. 626/403-0446.

### Vacation Rentals

**BALBOA ISLAND**, cute beach apt., fully furn., 2 bd., 1 ba., patio, washer/dryer, parking, slps. 5, steps to bay, avail. weekly thru summer, \$1,000-\$1,500/week depending on week. 626/351-9641.

**BIG BEAR LAKEFRONT**, lux. townhome, 2 decks, tennis, pool/spa, nr. skiing, beaut. master bd. suite, slps. 6. 949/786-6548.

**CAMBRIA**, ocean front house, sleeps up to 4, excellent view. 248-1102.

**COSTA RICA**, Pueblo Real, Quepos, 2 bd., 2 ba. condo, fully eq'p'd kitch, tv, vcr, slps. 6, air, remodeled, lg. pool, tennis, nr. Manuel Antonio, next to river w/mangroves & monkeys, close to beach, JPL rates, see at Photoisland.com, Andalusian password "condo." luisalfaro@earthlink.net or 760/723-8522.

**HAWAII**, Maui condo, NW coast, ocean front view, 25 ft. fr. surf, 1 bd w/loft, compl. furn. phone, color TV, VCR, microwave, d/w, pool, priv. lanai, slps 4, laundry fac., Low Season rate \$105/nite/2, High Season rate \$120/nite/2. \$15/nite/add'l person. 949/348-8047, or jackandrandy@cox.net.

**MAMMOTH**, Snowcreek, 2 bd., 2 ba., -loft, slps 6-8, fully eq'p'd kitch. incl. microwave, D/W, cable TV, VCR, phone, balcony w/mtn. vw. Jacuzzi, sauna, streams, fishponds, close to Mammoth Creek, JPL discount. 626/798-9222 or 626/794-0455 or valerie@gps.caltech.edu

**OCEANSIDE**, on the sand, charming 1-bd. condo, panoramic vw., walk to pier/harbor, pool/spa, game rm., sleeps 4. 949/786-6548.

**ROSARITO BEACH** condo, 2 bd., 2 ba., ocean view, pool, tennis, short walk to beach on priv. rd., 18-hole golf course 6 mi. away, priv. secure parking. 626/794-3906.

**SANTA CRUZ**, fully furn. house nr beach & harbor, 2 bd., 2 ba., lg. deck, modern kitch., washer/dryer, walk to gd. restaur. & beach, slps. 4. \$900/wk. 831/464-5031 or wns111@pacbell.net.

**VENTURA** beach house, 3 bd., 1 full ba., located near Marina Park, with TV, VCR, CD, washer-dryer, enclosed landscaped backyard with covered porch and sun deck, BBQ, short walk to beach on private rd. 248-0521.

View this and previous issues of Universe at

<http://universe.jpl.nasa.gov>

E-mail us at

[universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov)

BOB BROWN

### Editor

Mark Whalen

### Design + Layout

Adriane Jach, Audrey Steffan/  
Design Services

### Chief Photographer

Bob Brown/Photo Lab

### Advertising

Susan Braunheim-Kalogerakos

Universe is published every other Friday by the Office of Communications and Education of the Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, CA 91109.

### Notice to Advertisers

Advertising is available for JPL and Caltech employees, contractors and retirees and their families. No more than two ads of up to 60 words each will be published for each advertiser. Items may be combined within one submission. Ads must be submitted via e-mail to [universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov) and are due at 2 p.m. on the Monday after publication for the following issue.

All housing and vehicle advertisements require that the qualifying person(s) placing the ad be listed as an owner on the ownership documents.



# Universe

Jet Propulsion Laboratory

I n s i d e

May 23, 2003  
Volume 33 Number 11

News Briefs . . . . . 2	One NASA . . . . . 3
Special Events Calendar . . . . . 2	Passings, Letters . . . . . 4
Send Your Name to a Comet . . . . . 3	Retirees, Classifieds . . . . . 4

## Our best to the public

An estimated 24,000 people attended JPL's Open House May 17-18. Lab Director Dr. Charles Elachi thanked the dozens of volunteers who helped make the Open House such a great success. Security Manager Joe Charles called the event the "safest, most enjoyable Open House we could deliver as a Laboratory team," and commended those who helped to make Security's job easier.

Visitors check out a robot built by high school students.



Philip West, deputy chief of education at Johnson Space Center, shows off an astronaut suit.



Photos: Dutch Slager / JPL Photolab



Richard Webster of Section 352 describes the spacecraft and airbags from the Mars Exploration Rovers mission.



Section 312's Charles Acton Jr. shows the aerogel display to visitors.

## Air Force lieutenants learn the JPL way

By Susan Braunheim-Kalogerakos

FIVE AIR FORCE LIEUTENANTS from the Space and Missile Systems Center (SMC) at Los Angeles Air Force Base in El Segundo are working on Lab as part of an Air Force/Industry Employee Exchange Program. The aim of the program is to facilitate the exchange of information and institutional wisdom between the Air Force and NASA and JPL. The program will provide benefits to both institutions including the rejuvenation of systems engineering skills, which have

by Lynn Baroff of the Mission and Systems Architecture Section. Cox said the program will allow Air Force personnel to "work hand in hand with JPL scientists and engineers and take that experience and knowledge back to the Air Force space program and enrich it by making more meaningful contributions." Deputy Lab Director Eugene Tattini is an enthusiastic supporter. "Bringing these individuals on Lab gives them an opportunity to understand the engineering and

high quality and dedication of these Air Force men and women. We are all going to be better off because of these kinds of programs," Tattini said. When the call for applications went out last November, Lt. Mark Scherbarth said he "jumped at the chance." During his six months in the program, Scherbarth is completing his master's degree as well as sharpening his engineering skills working with rigidizable inflatable structures in the Structure and Materials Technology Group. Lt. Heidi Budd is working on the Cassini Project in the attitude articulation and control subsystem area. She is amazed at how much goes into making a project happen. "I hope to leave JPL with a greater appreciation and understanding of all that goes into a project like Cassini and take the lesson back to SMC," she said.

who is working in the Mars Exploration Engineering Group, has been working directly on the design of a project and applying engineering concepts to it. This is something he doesn't often get to do at the SMC. "I hope to be able to incorporate some of the things I learn here to enhance my job skills back in the Air Force," Janik said. The lieutenants enjoy the relaxed atmosphere JPL provides, but it has taken some getting used to. Lt. Amanda Jones, who works in the Near Earth Mission Architecture Group, finds JPL's people and the on-Lab environment interesting. "JPL is a very different environment from the Air Force in many ways. The atmosphere is much more relaxed and seems less structured. The people have been fantastic, very friendly, and always willing to help when they can." Although the effort is considered an exchange program, no JPLers are currently working at SMC. "As the program matures, and professional development issues are resolved with NASA, JPL employees will be eligible to do a similar career broadening tour at SMC," Cox said. This set of lieutenants is scheduled to leave in mid-September when another group of young Air Force officers will arrive at JPL to begin a new six-month exchange rotation.



JPL Deputy Director Eugene Tattini chats with (from left) lieutenants Tony Marquez, Heidi Budd, Amanda Jones and Jason Janik.

been in need of improvement in the Air Force in years past, as well as improving JPL's skills in program/project management. Robert Cox, assistant director for the National Space Technology Applications Office in the Earth Science and Technology Directorate, directs the program for JPL. The program was developed

technology capabilities of JPL. It also gives them insight into the civil side of space as well as an opportunity to do hands on engineering work which they may not get to practice in the military." Prior to joining JPL in 2001, Tattini served as SMC commander. "The program gives the JPL work force some appreciation for the



# News Briefs



Gaylord Hammerwold

**Hammerwold gets La Cañada honor**  
JPL computer programmer GAYLORD HAMMERWOLD has been named La Cañadan of the Year by the Kiwanis Club of La Cañada.

Hammerwold, who works on ground data systems for Section 3193, received the honor for his volunteer and leadership efforts in the La Cañada Flintridge community. Among his efforts cited by Kiwanis are those with the La Cañada Flintridge Chamber of Commerce, American Cancer Society Foothill Relay for Life, Foothill Summer Theatre and Roger Barkley Community Foundation.

Hammerwold was also acknowledged for his many volunteer efforts on behalf of JPL, including Science Bowl, Oceans Science Bowl, FIRST robotics and Open House.

**Travel team wins improvement award**

The JPL Travel Services Team won a NASA Continual Improvement team award at the agency's recent Continual Improvement and Reinvention Conference in Alexandria, Va.

KEN GREEN, manager of JPL travel accounting, accepted the award on behalf of the team. His presentation at the conference illustrated how process improvements made during the 2002 fiscal year helped eliminate barriers and streamline Travel Services, resulting in increased customer satisfaction and substantial cost savings.

The award recognizes NASA and contractor teams that by improving their work processes have made significant, positive impacts on their centers and the agency. A board of NASA quality management associates had selected five teams last year from nominations submitted by NASA Headquarters offices and each center.

**Discovered star may be third closest**

The local celestial neighborhood just got more crowded with a discovery of a star that may be the third closest to the Sun. The star, "SO25300.5+165258," is a faint red dwarf star estimated to be about 7.8 light-years from Earth in the direction of the constellation Aries.

"Our new stellar neighbor is a pleasant surprise, since we weren't looking for it," said DR. BONNARD TEEGARDEN, an astrophysicist at NASA's Goddard Space Flight Center, Greenbelt, Md. Teegarden is lead author of a paper announcing the discovery to be published by the *Astrophysical Journal*. This work has been done in close collaboration with JPL's DR. STEVEN PRAVDO.

If its estimate of distance is confirmed, the newfound star will be the Sun's third-closest stellar neighbor, slightly farther than the Alpha Centauri system, actually a group of three stars a bit more than four light-years away, and Barnard's star, about six light-years away. One light-year is almost 6 trillion miles, or nearly 9.5 trillion kilometers.

The new star has only about 7 percent of the mass of the Sun, and it is 300,000 times fainter. The star's feeble glow is the reason why it has not been seen until now, despite being relatively close.

**University subcontracting help offered**

In an effort to strive for greater collaboration between JPL and the university community, the Acquisition Division has created the Universities Subcontract Section (269). The new section consists of two new groups, in which negotiators are assigned to specific universities within geographical areas: Eastern State Universities and Western State Universities. Having a single point of contact with a given university introduces efficiency and effectiveness in communications between JPL and the universities.

The section handles subcontracting of JPL work with universities on research, investigations, data analysis and concept development.

To assist JPL technical customers, the section has established a Web page directory. For points of contact and other information related to

university subcontracting, visit <http://acquisition.jpl.nasa.gov/crei> or call any member of the section's leadership team: RICHARD PARKER, manager, ext. 4-2330; FRAN FISHER, Western States group supervisor, ext. 3-7266; DELLA BORLUND, Eastern States group supervisor, ext. 3-5251 or LAURA WHITE, section secretary, ext. 3-5441.

**Savings Bonds drive June 3-6**

A representative from National Bond and Trust Company will be on Lab June 3-6 from 9 a.m. to 3 p.m. to provide information to JPL employees interested in signing up for U.S. Savings Bonds through payroll deduction. Locations are as follows:

- Tuesday, June 3, 167 cafeteria tent
- Wednesday, June 4, 190 cafeteria
- Thursday, June 5, 303 cafeteria
- Friday, June 6, 601 lobby

The current interest rate on "I" bonds is 4.66%, with 2.66% offered on "EE" bonds. Interest is adjusted May 1 and Nov. 1.

There is no state tax on bonds' interest; federal tax on interest is deferred; and interest is generally tax-free if used for college tuition.

For more information, contact the JPL Savings Bonds representative via e-mail at [bkritlow@Pacbell.net](mailto:bkritlow@Pacbell.net), by phone at (714) 775-4525 or by fax at (714) 775-1370. For any changes to existing deductions, call (800) 321-8024.

**Wine tasting benefit June 21**

The JPL/Caltech Child Educational Center will hold its annual wine tasting benefit on Saturday, June 21.

The event, held from 6:30 to 11 p.m. at Caltech's Avery House, 293 S. Holliston Ave. in Pasadena, will include fine wines, great food and live jazz music from the Chad Edwards Quartet. In addition, guests may bid on unique auction items and take their chances at the gaming tables. All proceeds from the evening will directly benefit the non-profit organization, which has been providing high-quality child care and educational outreach services since 1979.

General admission tickets are \$35; Connoisseur tickets, which include entry into a private tasting room with premium wines, are \$65.

Tickets are available at the JPL Store and at the Child Educational Center, 140 Foothill Blvd. in La Cañada. Tickets may also be purchased at the door the evening of the event for an additional \$10. For more information, call ext. 4-3418.

**Credit union offers scholarship**

The Caltech Employees Federal Credit Union is offering \$500 scholarship prizes to graduating high school students.

To be eligible, applicants must be a high school senior in good standing and a Caltech Credit Union member, and must complete a Personal Statement Essay.

For application information, log on to <http://www.cefcu.org>, call (800) 592-3328 or stop by any Caltech Credit Union office. Application deadline is May 31.

**Tennis, anyone?**

Caltech Athenaeum members and their families are invited to join the Athenaeum's managed singles and doubles tennis ladders. Monthly matches are formed between players of comparable level.

The Athenaeum Tennis Ladder is a forum designed to facilitate tennis play among similarly skilled players. All levels of play are welcome. Each month, ladder managers schedule matches between players of similar ladder rank. Depending on the outcome, rankings are updated, with better play resulting in upward movement on the ladder.

The program, which supports both singles and doubles tennis play, is open to all Athenaeum members and their immediate families. One doubles team member must belong to the Athenaeum.

For more information, contact Rich Dekany at [rgd@astro.caltech.edu](mailto:rgd@astro.caltech.edu).

# Special Events Calendar

Ongoing Support Groups

**Alcoholics Anonymous**—Meetings are available. Call the Employee Assistance Program at ext. 4-3680 for time and location.

**Caregivers Support Group**—Meets the first Thursday of the month at noon in Building 167-111 (The Wellness Place). For more information, call the Employee Assistance Program at ext. 4-3680.

**Codependents Anonymous**—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319.

**Gay, Lesbian and Bisexual Group**—Meets the first Friday and third Thursday of the month at noon in Building 111-117. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at ext. 3-0664.

**Parents Group for Children With Special Needs**—Meets the second Thursday of the month at noon in the Wellness Place, Building 167-111.

**Working Parents Support Group**—Meets the third Thursday of the month at noon in Building 167-111. For more information, call the Employee Assistance Program at ext. 4-3680.

Friday, May 23; Sunday, May 25

**At the Keyboard**—James Boyk celebrates his 30th anniversary as Caltech pianist-in-residence with an 8 p.m. show Friday and a 2:30 p.m. show Sunday, both in Dabney Lounge. For more information, call (626) 395-4652.

Tuesday, May 27

**The Netherlands**—A slide show will be presented at noon in Building 238-543 by Pieter Kok of the Quantum Computing Technologies Group. Learn more about the land famous for wooden shoes, tulips and windmills. Go beyond the traditional images with a Dutch native and see Holland's famous art, surprising architecture, and canals defining the famous flatlands. The talk is sponsored by the JPL Hiking+ Club.

Wednesday, May 28

**"Chimpanzees, Bonobos and the Problem of Human Violence"**—Biological anthropologist Richard Wrangham will lecture at 8 p.m. in Caltech's Beckman Auditorium. Free admission. For more information, call (626) 395-4652.

**JPL Toastmasters Club**—Meeting at 5 p.m. in the 167 conference room. Call Roger Carlson at ext. 4-2295 for information.

**Volunteer Professionals for Medical Advancement**—Meeting at 10:30 a.m. at the Caltech Credit Union, 528 Foothill Blvd., La Cañada.

Thursday, May 29

**JPL Golf Club**—Meeting at noon in Building 306-302.

**JPL Stories**—Retired JPL public information officer Jurrie van der Woude presents "Could I Have Been This Lucky?" at 4 p.m. in the Library, Building 111-104. For information about the JPL Story series, call Teresa Bailey at ext. 4-9233.

Saturday, May 31

**Folk Music**—Singer/guitarist Priscilla Herdman will perform at 8 p.m. in Caltech's Winnett Student Center. Tickets are \$15 for adults and \$5 for Caltech students and children under

12. For more information, call (626) 395-4652 or check the Folk Music Society website at <http://www.folkmusic.caltech.edu>.

Sunday, June 1

**CEC Celebration of Community**—The Child Educational Center's annual party to honor teachers, parents, alumni and community members who have provided invaluable service to the center will be held from 3 to 6 p.m. at 140 Foothill Blvd. The event features children's entertainment and activities, dinner and an awards presentation. Two of the award recipients are from JPL: Eric Fuller will receive the center's Community Service Award for his work on behalf of emergency preparedness, and Don Sevilla will receive the Alumni Service Award for volunteering twice weekly with children since May 2001. For additional details, call ext. 4-3418.

Monday, June 2

**Fitness Classes**—The next six-week session of classes offered by Employee Services & Recognition begins. Classes are yoga (including advanced), tai chi, pilates and aerobic kickboxing. Visit <http://eis.jpl.nasa.gov/hr/esr/wellness/schedule.htm> for the schedule and registration information.

Tuesday, June 3

**JPL Information Providers' Fair**—The Library, Archives and Records Section hosts from 10 a.m. to 2 p.m. in Building 111-104. Enjoy refreshments, participate in a \$50 raffle, and meet information providers Labwide. For more information, visit [http://beacon/WhatsNew/InfoFair\\_flyer.pdf](http://beacon/WhatsNew/InfoFair_flyer.pdf) or call Susan Hendrickson at ext. 4-2883 or Teresa Bailey at ext. 4-9233.

**JPL Gamers Club**—Meeting at noon in Building 301-227.

**JPL Genealogy Club**—Meeting at noon in Building 301-271.

Wednesday, June 4

**Associated Retirees of JPL/Caltech**—Meeting at 10 a.m. at the Caltech Credit Union, 528 Foothill Blvd., La Cañada.

Thursday, June 5

**JPL Gun Club**—Meeting at noon in Building 183-328.

Monday, June 9

**Search & Rescue Orientation**—JPL's Urban Search & Rescue Team seeks new volunteers and offers this session at noon in Building 180-101. See examples of the many advanced techniques the group employs to respond to major disasters, both on and off Lab. For more information, call Eric Fuller, ext. 4-1091.

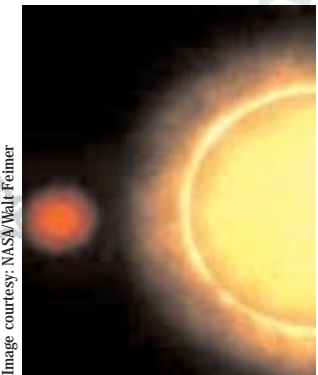


Monday-Thursday, June 16-19

**American Heritage Week**—The Lab's traditional spring event celebrating diversity. "International Cuisine Night" is scheduled for Thursday. For updates, log on to <http://dailyplanet>.

Ongoing

The Social Security representative will no longer offer one-on-one counseling appointments on Lab. Call the Benefits Office at ext. 4-3760 to arrange a telephone counseling appointment.



Size comparison of new star "SO25300.5+165258" and the Sun.

Image courtesy: NASA/Wall Feimer





Send your  
name  
for 'Deep  
Impact'  
with a comet

"When the craft is launched in December 2004, your name — and those of your loved-ones — can hitch along for the ride and be part of what may be the best space fireworks show in history."

*Dr. Don Yeomans,  
member of Deep Impact's  
science team*

**P**ople worldwide may celebrate July 4, 2005, as the day their names reach a comet. NASA is launching a campaign to send hundreds of thousands of names to comet Tempel 1.

The names will be carried on board JPL's Deep Impact spacecraft, the first deep-space mission designed to really reach out and touch a comet. Mission scientists are confident an impact on a comet's nucleus will answer basic questions about the nature and composition of these celestial wanderers.

"This is an opportunity to become part of an extraordinary space mission," said JPL astronomer Dr. Don Yeomans, a member of Deep Impact's science team. "When the craft is launched in December 2004, your name — and the names of your loved-ones — can hitch along for the ride and be part of what may be the best space fireworks show in history."

Deep Impact's larger flyby spacecraft will carry a smaller impactor spacecraft to Tempel 1 for release into the comet's path for a planned collision. The flyby spacecraft will take pictures as the 370-kilogram (816 pound) copper-tipped impactor plunges into Tempel 1 at about 37,000 kilometers (22,990 miles) per hour. The impactor is expected to make a spectacular, football field-sized crater, seven to 15 stories deep, in the speeding comet. Carried aboard the impactor will be a standard mini-CD containing the names of comet, space and other enthusiasts from around the world.

By D.C. Agle

"This campaign will allow people from around the world to become directly involved with Deep Impact and through that get them thinking about the scientific reasons for the mission," said University of Maryland astronomy professor Dr. Michael A'Hearn, Deep Impact's principal investigator. "We particularly hope to capture the interest of young students, as they will become the explorers of the next generation."

People may submit their names for this historic one-way mission by visiting NASA's Deep Impact website, now through February 2004, at <http://deepimpact.jpl.nasa.gov>.

The collision between the impactor and Tempel 1 is not forceful enough to make an appreciable change in the comet's orbital path around the Sun. The comet poses no threat to Earth.

Deep Impact was selected in 1999 as a NASA Discovery mission. The goal of the Discovery Program is to launch many smaller missions with fast development times, each for a fraction of the cost of NASA's larger missions. The main objective is to enhance our understanding of the solar system by exploring the planets, their moons, and small bodies, such as comets and asteroids.

JPL's John McNamee is the Deep Impact project manager. The Lab manages and operates the mission for NASA's Office of Space Science. Ball Aerospace & Technologies Corp. in Boulder, Colo., manages spacecraft development.

For more information about the Deep Impact mission, visit <http://deepimpact.jpl.nasa.gov>.

## KSC engineer supports One NASA principles

This article is the fourth in a series that describes how NASA centers are realizing the One NASA goal.



Well before NASA Administrator Sean O'Keefe focused NASA on the concept, Cheryl Malloy, Kennedy Space Center mission integration manager for the Launch Services Program (formerly the Expendable Launch Vehicles Program) was actually putting the One NASA principles into practice. Malloy, a 15-year NASA veteran, has had several first-hand experiences in working with other NASA centers on projects at KSC.

"I've been lucky in that all of the Launch Services Program missions we work on require integration with other centers," Malloy said. For example, as mission integration manager on the Kodiak Star mission in 2001, she coordinated launch site activation, mission integration and launch activities with the Wallops Flight Facility, the U.S. Air Force and Coast Guard and Lockheed Martin, bringing together one Kodiak launch team to ensure a smooth mission flow and successful first launch in Alaska. The launch coordination was a prime example of NASA's Core Values and KSC's Guiding Principles. It

emphasized the importance of building reliance and teamwork everywhere, which has been a KSC Guiding Principle for more than five years and demonstrates One NASA, which is all about teamwork. Malloy started at KSC as a summer appointment in 1987 and then worked full-time in Shuttle Payloads, starting in 1990. Among others, she worked on Spacelab-Japan, Microgravity Life Sciences and Space Life Sciences payloads. She especially enjoyed working in this area because, in addition to her electrical engineering degree, she first earned a degree in lab technology. Working on these payloads utilized both degrees and provided her the opportunity to meet and work with many scientists and experimenters inside and outside of NASA.

It was during her time in Shuttle Upgrades, from 1996 to 1998, that Malloy's work required her to become involved in projects rather than missions with other NASA centers. She transferred to Expendable Launch Vehicles in 1998 and has remained there ever since. "I like the synergy that exists when you work with the NASA centers and others

outside of KSC," said Malloy.

She so strongly believes in drawing on all resources to successfully complete a project that she took it one step further and participated in NASA's Industry Exchange Program, which temporarily places personnel from commercial business into NASA, and vice versa.

Malloy recently completed an industry exchange assignment with Science Applications International Inc. in Cape Canaveral while still maintaining some of her responsibilities with the Launch Services Program. "I wanted to benchmark their project management and compare the private sector with government," she said. Malloy will be able to bring back project management practices from the private sector in the same way she shared NASA's perspectives with them. She was not surprised to find that, since Science Applications International is a global company, they had practices in place similar to One NASA.

Returning from her industry exchange to KSC, Malloy is working on the Marshall Space Flight Center-managed X-37 Flight Demonstration Project, comprised of a team including Dryden Flight Research Center, Langley Research Center, Johnson Space Center, Ames Research Center and the Fairmont Independent Verification and Validation Facility. She and the KSC team will provide launch service and launch service integration. "This is a perfect example of the One NASA concept," Malloy said, "where we draw from other centers for their experience and expertise."

With any new concept there are always hurdles to overcome. "It's so much better to work under the 'agency hat' than just the 'KSC hat,'" Malloy noted. "One NASA is predominantly a culture change and it's the perfect opportunity for our leadership to set the stage for guidance and support."



## Passings

**JOHN SMALL**, 83, a retired JPL engineer and manager, died May 9.

A Caltech graduate, Small joined JPL in 1951 and worked at the Lab for almost 30 years. He served as manager of the Missile Engineering Section within the Design Division, manager of the Special Projects Office in the Flight Projects Division and as section chief for Preliminary Design and Research. Services were private.



John Small

**JESS FLOREZ**, 84, retired from Section 645, died April 16. Florez worked at the Lab from 1980-84. He is survived by his wife, Carmen.

**PATRICIA ARCHIBALD**, who had worked in the Astronomy and Physics since 1997, died April 23. She had been on long-term disability.

She is survived by her husband, Ed Stine, daughters Linda and Laura, and six grandchildren.

Services were held at 1st Church of Nazarene in Pasadena.

**LESTER LYLE PROVANCE**, 81, retired from the Lab's reproduction services department, died May 8 of natural cause. He worked at JPL for 30 years.

## Letters

My husband, Ian Gordon, and I would like to thank all of our friends at JPL for their thoughtfulness after the passing of Ian's mother, Sylvia Gordon. Sylvia had a real green thumb so we will always remember her when we look at the beautiful plant JPL sent us. Mimi Paller, Ian Gordon and family

We would like to express our appreciation for the plant sent from the Laboratory after the passing of my husband's mother, Gladys Herrell. She is remembered fondly, and we appreciate the expressions of sympathy from co-workers. Linda and Ken Herrell

## Retirees

The following JPL employees retired in May:

Walter Mushagian, 42 years, Section 331; Robert Kinkade, 31 years, Section 266; Gilbert Yanow, 29 years, Section 186; Martha Hanner, 26 years, Section 322; James Rooney, 21 years, Section 823; Richard Benninger, 15 years, Section 333.

## Classifieds

### For Sale

ART, R.C. Gorman signed print, "Woman in Orange" circa '77; FILE CABINET, metal, rolling, w/shelf, & folders, \$10; AROMATHERAPY KIT, new in box, \$15; FRANCISCANWARE, Desert Apple pattern, misc. pieces. 626/398-4960.

BICYCLE, won in raffle, Diamond Back, 21-speed mtn. bike, approx. retail value \$450, never used, in sealed carton, needs to be assembled, \$165. 323/654-0387.

CHAIR, "Ame's" replica, reclines, brown leather with footstool, \$50. 790-4455.

CHUCKER LATHE, type T-SPL1, Precision Tsugami Works, \$500. 353-1914.

COFFEE MAKER, Braun 10-cups, white/black, like new, \$30/obo. 626/791-6101.

COFFEE TABLE, lovely, black, solid wood, round Chinese with carved sides, 45" diam., \$260. 545-0455.

COUCH, beautiful white satin, 94" long, \$320; LOVE SEAT, matching, 70" long, \$230, both like new, \$550. 545-0455, Maria.

DAYBED, twin, metal frame with railing, white enamel, gold trim, \$50/obo. 970-8456, Steve.

DESK, large, 6 drawers, \$125. 957-6821.

DINING ROOM SET, table, leaf and 6 upholstered chairs, \$150. 626/447-6423.

DINING ROOM TABLE/CHAIRS, antique, beautiful solid oak, draw-leaf table with two pullout leaves, six solid oak arrow back chairs, excellent cond., \$625/obo. 353-6369.

DINING TABLE, smoked glass top, 72" x 42", with 6 upholstered fabric chairs, exc. cond., \$299. 909/592-2279.

DISH SATELLITE TV SYSTEM w/up to 2 free receivers, free installation + \$49.99 off first bill, only 2 certificates avail., expires 5/31. 897-1203, Valerie.

DODGER TICKETS, selected games from season ticket package, Loge level (orange), aisle 132 (inside first base), 2 tickets/game at face value of \$29/ticket, see www.delunac.net/tickets for details. 626/296-1253.

DOG HOUSE, Dogloo II igloo style, vent in roof, outside dimensions about 36" x 36", for med.-sz. dog, gd. cond., about 3 yrs/old, \$40/obo. 909/596-4390.

DOG HOUSE, Dogloo XT for small dog, up to 45#, good cond., \$40. 626/303-1927.

DRYER, electric, Maytag, in good working order, \$30/obo. 249-5529, evenings.

ELECTRONICS: Cerwin Vega Center channel speaker, 100 W. exc. cond., \$35; Infinity Overtures composition matched surround speaker system, fantastic sound, exc. cond.; 2 front towers, built in 150W powered subwoofers, center channel, Quadropole surround pair, all for \$1099; Denon Dolby digital receiver, fan-tastic sound, exc. cond., 85 w/ch x 5, remote, \$199; Denon CD player, remote, exc. sound/cond., \$69; Sony 27" TV, exc. cond, \$149. 909/592-2279.

GOLF CLUBS, complete men's Dunlop set w/bag, most clubs never been used, \$150. 661/313-4557.

GITAR, Hohner steel string dreadnought, aba-lone trim, vg cond. and sound, newly installed ovation preamp for connection to PA. w/strap, case & pick, \$250. 626/840-0955, leave msg.

HARDWOOD FLOORING, 350 sq. feet, 3/8 thick t&g, pre-finished, dark walnut, \$150. 626/355-6077, after 5 p.m.

HIGH CHAIR, great cond., \$15. 626/448-8809.

JEWELRY: earrings, bracelets, rings, incl. vintage, turquoise & gemstones (lots of clip and pierced earrings), amethyst & diamond ring, set in 14K gold, sz. -5-1/2, pearl ring, 8 mm, set in 14K gold, sz. -6; CLOTHING, Jones of NY 2 pc./Jacket & Slacks, fully lined & slash pockets, new w/tags, sz. 12, dark olive, \$200+ retail, \$100/obo; 2 pc./jacket & slacks, Rena Rowan for Saville, white, lined, sz. 14, never worn; pockets still stitched, \$50/obo. 626/398-4960.

LAWN TRACTOR, Wheel Horse, with 42" mower deck & snowplow attachment, exc. cond., e-mail photo available, \$6,000 new, \$2,000/obo. 661/253-1183.

MOVING SALE: furn., Pottery Barn/Plummers/custom, living room tables, chair \$75+; dining table, bakers rack, china cabinet, \$25-225; queen waterbed, \$325; Lane cedar chest, \$125; desks, bookcases \$60+; patio tables/ chairs \$25-300; black Royale Lenox china, Univega mtn. bike, \$25; Rossignol kids skis, \$25; more. bbon@earthlink.net or 952-2581.

NEIL YOUNG TICKETS, w/Crazy Horse, Greek Theatre, July 22, 2 exc. seats, sect. A, row U, \$150/ea. 310/804-1858 or cagey444@yahoo.com.

POWER AMP, Pioneer bridgeable, 4 channel, GM-X304, 30w x 4, 70w x 2, \$50/obo; Laguna high-current amp, with built-in switchable lowpass crossovers, 100w x 4, \$80/obo. 323/548-4554, pager.

PRINTER, HP Deskjet 3420, New in box, never opened. Was purchased as part of a package. Color ink-jet with photo quality up to 2400 color dpi. Up to 10 ppm bw and 8 ppm color. Great entry level printer. Retail for \$79.99, sell for \$50.00. 259-5526 Sandy.

RE-DECORATING SALE, square coffee table and end table, hard wood with beveled glass tops and brass trim. 39" x 39" 15" and 26" x 26" x 20", good quality, family treasure, \$700 for both/obo; chandelier, white porcelain and gold, for pictures susanneb@onebox.com. 626/577-6638, Suzanne.

SAW, 16-inch scroll, Sears, with extras, exc. cond., \$50. 626/358-6810.

SINK, lavatory pedestal, oval, white porcelain, 22" x 25" O.D. chrome faucets with white porcelain handles, almost never used, \$60/obo. 626/358-7390.

SKI EQUIPMENT: ski rack, used once, \$25; men's boots, used once, exc. cond., \$30. 626/449-6799, Bob.

TABLES, 2 custom designed rod iron, glass top indoor/outdoor tables, \$1,500; COMPUTER DESK, \$100; OFFICE CHAIR, \$35/obo. 248-1102.

TABLE LAMP, large, beautiful, with new 3-waybulb and nearly new shade, ivory color, \$15; CROCK POT, 1-gallon electric, like new, exc. cond., \$9. 626/793-1895, Albert.

TEA SET, pottery, made by Maine artisan, nautical theme, matching lighthouse design on all pieces, incl. tea pot, creamer, sugar, platter, small serving bowl, 2 mugs, 2 Japanese tea cups, never used, \$100/set. 249-4316.

TELEVISION, 26" Sylvania console color, \$35. 626/359-7666.

TICKETS, 2, for 'A Prairie Home Companion with Garrison Keillor', Friday, June 6, 7:30 @Greek Theatre, vg seats: 14 & 16, Section A, Row V, top of the first section in front of stage, \$200/the pair. 653-6429, John.

TOY WOOD CONSTRUCTION SET, Brio Mech Set 4, 152 pieces + work board, vg cond., original cost ~\$150, sell for \$70; HOOVER STEAM VACUUM, good cond., \$50. 626/303-1927.

TREES: red banana plant 5' tall, \$60/obo; fish tail, 6' tall, \$80 obo. ficus, >10' tall, braided, in 30" plastic pot, \$250/obo; ceramic bowl, gray, 2' diameter with planted geraniums, \$40/obo. 626/791-6101.

WEDDING GOWN, white duchess satin sheath by Amsale, low back, gorgeous detachable train, fit ~sz. 2-4, elbow length white tulle veil, \$1,000 for set/obo;

FIGURINE, Lenox porcelain, bride & groom "wedding cake topper," 7", never used, orig. box, wonderful wedding gift, \$50. 249-4316.

### Vehicles / Accessories

'99 BMW 323i sedan, steel blue w/gray int., auto, sunroof, lux. package; leather, pwr. seats, cruise control, premium sound, single CD player, alloy wheels, 67,000 mi., \$18,000. 626/576-7196.

'94 CADILLAC Eldorado touring coupe, dark cherry, 4.6L Northstar engine, loaded, power everything, Michelin tires, 53,000 mi., exc. cond., \$9,000. 626/355-6077, after 5 p.m.

'89 CADILLAC Fleetwood, exc. cond., well maintained, \$2,200/obo. 661/253-1183.

'68 CHEVROLET Corvette coupe, 4-speed manual, 427 CID, 390 HP motor, QJet carb., blue ext./blue int., T-top (2 sets), mag wheels, alarm, car cover, owned 24 years, rarely driven, retired senior, \$18,000/firm. 626/792-9053, Ray.

'00 FORD Mustang, silver ext., gray int., 30,000 mi., \$8,400. 323/582-2109 or 323/708-7659.

'94 FORD F-150, exc. cond, a/c, PS, PB, ABS, am/fm stereo, tow package, diamond pattern rail caps, running boards and bed-mounted tool box, CB radio, copper, 101K mi., \$5,500. 909/948-0049.

'94 FORD Econoline Coachman RV 250, 56K mi., gen. refrig, dc & propane, 2 a/c, sleeps 4, kitch, exc. cond., \$20,000. 892-7140.

'93 FORD Aerostar XL, 7 passenger, auto, a/c, PS, PW,PL, cassette, good cond., 103,000 miles, \$2,200. 626/683-8855.

'92 FORD Crown Victoria LX sedan, V8, 4.6L, AT, all power, a/c, dual exhaust, pwr. seats, AM/FM/cassette, cruise, tilt, ABS, lt. blue, dk. blue int., cloth seats, new brakes and water pump, \$3,500/obo. 248-8283.

'90 FORD Probe GT, 156,000 mi., 5 spd., turbo, ABS, pwr. drs. & win, cruise, trip comp, runs great, very clean, \$1,500/obo. 626/676-7678.

'97 HONDA Valkyrie motorcycle, exc. cond., extra chrome, garage kept, purple/white, studded seats, leather bags, many accessories, 23K miles, \$7,600. 957-2852.

'93 HONDA Del Sol, great cond., 80K mi., blue, manual 5-speed, 16-inch alloy wheels, Sony radio/CD, removable top with weather strip retrofit, \$5,000. 626/798-4032.

'93 INFINITI J30, blk/blk, Bose am/fm/cd stereo, auto air, 94K, good cond., removable ski rack, \$5,885. 790-6122.

'88 JEEP Cherokee Chief, red, 4-wheel drive, clean inside and out, approx. 30K on engine, transmission and transfer case, \$2,800. 626/359-7666.

'85 KOUNTRY Lite 5th wheel trailer, 30 ft., orig. owner, alum. frame, 13.5K btu a/c, side bath, microwave, new tires & water pump, sleeps 6, exc. cond., kitchen equip. included, \$5,500/obo. 626/963-5727.

'96 LAND ROVER Discover SD, power everything, V8, green/tan leather, new hose and belts, 93,000 mi., ready for family vacation or off-road fun, \$9,200/obo. 501-8161.

'97 MAZDA Miata MX-5, exc. cond., 37,000 mi., Montego Blue, new rear plastic window, new smog and registration, CD/cassette player, black fabric interior, 5-speed manual transmission, power windows, Clifford alarm system, added speakers in headrests, \$8,499/obo. 626/299-0845, Maura.

'02 MERCEDES BENZ C240 sedan, silver w/gray int., auto, pwr wnds, seat, sunroof, exc. cond., 21,000 mi., \$27,000. 626/576/7196.

'95 NISSAN Pathfinder XE, 4 x 4, clean, exc. running cond., Lojack, V6, tow pkg. a/c, P/S, PDL, tilt, cruise, CD, roof rack, tint, running boards, alloys, 135K mi., \$5,900. 909/596-9007.

'69 OLDSMOBILE Cutlass convertible, classic "muscle car," power steering/windows, original Delco AM radio, new top, interior, too many items to mention, red w/black interior, see and drive. 952-1538 or tlynch41@aol.com.

'87 PORSCHE WHEELS/RIMS, four, 930, 9" rears, 7" fronts, superb cond., \$1,500 for all four. 714/390-5616.

'97 SATURN SW1 wagon, 83K mi., 5 spd, a/c, cruise control, pwr locks w/remote key fob, am/fm/cass., roof rack, orig. owner, well maintained, \$3,800/obo. bbon@earthlink.net or 952-2581.

'01 TOYOTA Celica GT, 23,000 mi., like new, pwr. sunroof/mirrors/locks/windows, alarm, tinted windows, 17" rims, carbon blue, 5-sp, a/c, tape/cd deck, tilt, plus original tires, \$16,000/obo. 909/202-7934, Ronnie.

99 TOYOTA Avalon XLS, all automatic, leather, CD, sunroof, champagne with beige interior, 64K miles, \$15K. 818/249-4053.

'98 TOYOTA Tacoma PreRunner Xtra Cab, 4 cyl, auto, 77K mi., a/c, am/fm/cassette, dual front air bags, running boards, shell, bed liner, very good cond., \$10,500/obo. 626/296-9073.

'91 TOYOTA Tercel LE, 1 owner, very reliable, economical to drive, great for student or as a 2nd car, clean & well maint., white, 4 dr., 5-sp, stick, am/fm, only 91K miles, 2WHP768, must sell, reduced to \$1,500/obo. 323/222-0485, Joe.

'02 VW Passat, auto, moon roof, 5K mi., power doors/windows, heated mirrors, blue, \$14,000. 909/599-3230.

'73 VW Bug, classic orange, good cond., runs great, 28 to 35 mpg, CD/fm/am, \$2,800/obo. 626/791-3797.

### Lost & Found

LOST: HP 48SX calculator, brown, lost in Bldg. 300 or 303 on week of April 14. 4-3273.

### Wanted

HOT TUB, portable, in good condition, price negotiable. 248-6062, Elizabeth.

LAPTOP COMPUTER, used, decent condition, with working battery pack, A/C cord; PC or Mac OK. 626/792-0904.

LIFE VESTS, for 10 month old, and children 6 and 9 years old. 248-3912.

SPACE INFORMATION/memorabilia from U.S. & other countries, past & present, for personal use. 790-8523, Marc Rayman.

THREE-RING BINDERS, size 6 x 9 1/2, with blue or gray cloth covers, will pay to \$7 each if in very good condition. 626/793-1895.

YIDDISH TRANSLATOR for handwritten old fam-ily letters; see at http://64.227.47.46/sample. 980-1638 or hkline2@msn.com, Henry.

### Free

CAT, 2.5 yrs old, gray female, shorthaired, very affectionate & friendly, healthy, fixed, would like loving home. 626/403-0875, Nas.

CATS, 2, young, need adoption, rescued,

both are fixed, litter trained. 626/255-1330 or 760/633-3857.

GRASS, St. Augustine, very healthy organically grown sod, dig up what you need, just don't leave a mess. 626/794.9470, Nancy or bigcatlov@aol.com

### For Rent

ALTADENA guest house, 1 bd., 1 ba., restored 1930s craftsman cottage, very clean, private fenced yd/garden w/flowers & fruit trees, wood deck, spectacular mtn. vw., new cent. a/c, heat, wainscoting in kitch., vintage Wedgwood stove, period wood cabinets, pantry, walk-closet, new tile in kitchen, window box over sink, approx. 2 mi./JPL, no pets, safe st. parking, water/refuse removal incl., security deposit \$1,800, 1-yr. lease, reduced to \$1,175. 376-5068.

ARCADIA apt., 2 bd. + den, 1 ba., garage, remodeled, refrig./washer/dryer in unit, a/c, dishwasher; spacious, walking dist. to shops, exc. neighborhood, water/gardener/trash included, \$1,350. 626/576-7333.

ATWATER, 2 bd., 1 ba., spacious, unfurn. up- per in 6-unit building, no pets, \$900. 323/660-4223 or 1xh250@msn.com.

BURBANK, 3 bd., 1 ba., garage, priv. back-yard, walk to shopping, schools, excellent neighborhood, remodeled kitchen, hardwood floors, f/p, c/a, gardener paid, avail. June 1, \$2,150. 952-1538 or tlynch41@aol.com.

COVINA, house in Charter Oaks area, 3 bd. 1.5 ba, C/A, fireplace, w/d hookups, fenced yard, no pets, \$1,550. 323/228-1496.

LA CRESCENTA, large 2 bd., 1.5 ba. duplex, above Foothill, 1,050 sq. ft., quiet and well maintained, fireplace, 2 unit a/c, washer/dryer hookups, garage, yard, water and garden- er included, \$1,400. 249-8511, Bill.

PASADENA, spacious 2 story condo, 3 bd., 2.5 ba., prestigious community, beautiful interior, bright kitch., prof. landscape, ctrl. air & heat, close to shop., cozy LR w/FP, end unit, frm! DR, hdvd. flrs., immac. cond., close to schls., \$1,750. 626/396-9024.

MONTROSE home, 2 bd., 1 ba., xtra room, 2-car garage, yard, hardwood floors, fireplace, laundry provided, quiet, 4 min to JPL, close to shopping areas, \$1,575. 248-5068.

MONTROSE triplex, 2 bd., office, 2 ba., new paint, new carpet, very private, non-smoker, no pets, must be clean person. 248-9110, Ron.

PASADENA, nice home in Upper Hastings Ranch, 3 bd., den, 2 ba., pool and spa, large yard, overlooks golf course, remodeled kitchen and ba., cent. air & heat, washer/dryer, refrigerator, 1-year lease required, includes gardener and pool service, available 6/28, furnished \$3,600, unfurnished \$3,200. 626/351-9641, leave msg.

SAN MARINO house, 3 bd., 2 ba, 2-car garage w/automatic opener, newly painted, remodeled kitchen, dishwasher, A/C, laundry hookups, fireplace, spacious family rm. overlooking yard, excellent neighborhood and school district, water/gardener included, \$2,850. 626/576-7333.

### Real Estate

ALPINE FOREST, 3.2 acre view lot, 25 min. from Tehachapi, property sits among pine and oak trees at 6,300 ft., 4 seasons are part of the enjoyment, buildable for a vacation retreat or secluded home site, property ass'n is responsible for road maintenance and security, gated w/guard, closest neighbor is 3/4 mile, \$40,000. 249-6071.

### Vacation Rentals

BALBOA ISLAND, cute beach apt., fully furn. 2 bd., 1 ba., patio, washer/dryer, parking, slps. 5, steps to bay, avail. weekly July & August, \$1,200-\$1,500/wk. depending on week. 626/351-9641.

BIG BEAR LAKEFRONT, luxury town home, 2 decks, tennis, pool/spa, beautiful master bd. suite, sleeps 6. 949/786-6548.

CAMBRIA, ocean front house, sleeps up to 4, excellent view. 248-1102.

ESCONDIDO time share, golfers' paradise, Lawrence Welk Villa, fixed week #23 with high RC/trading value, Wild Animal Park/Zoo/Sea World are close by, spacious 1,600 sq. ft., 2 bd., and 2 full ba., all amenities, cathedral vaulted ceiling and outside veranda overlooking a beautiful 18-hole golf course, \$17,000. 249-6071.

HAWAII, Kauai condo, 1 bd., full kitchen, on beach in Kapa'a, \$575 for 8 days, 7 nights. 626/351-1532.

HAWAII, Maui condo, NW coast, ocean front view, 25 ft. fr. surf, 1 bd. w/loft, compl. furn. phone, color TV, VCR, microwave, d/w, pool, priv. lanai, slps 4, laundry fac., Low Season rate \$105/nite/2, High Season rate \$120/ nite/2, \$15/nite/add'l person. 949/348-8047, or jackandrandy@cox.net.

MAMMOTH, Snowcreek, 2 bd., 2 ba., +loft, sleeps 6-8, fully equipped kitchen incl. microwave, D/W, cable TV, VCR, sauna, balcony w/view to mtns., Jacuzzi, sauna, streams, fishponds, close to Mammoth Creek, JPL discount. 626/798-9222 or 626/794-0455 or valerie@gps.caltech.edu.

OCEANSIDE condo, fully furn., 2 bd., 2 ba., fireplace, full kitch., quiet, relaxing, beautiful beachside setting, BBQ/pool/spa/game rm., great ocean view, easy walk to pier and restourants, slps 8, avail. weekly or monthly. 909/981-7492, Darlene or dfhauge@yahoo.com.

OCEANSIDE, on the sand, charming 1 bd. condo, panoramic view, walk to pier & harbor, pool/spa, game rm., sleeps 4. 949/786-6548.

ROSARITO BEACH condo, 2 bd., 2 ba., ocean view, pool, tennis, short walk to beach on priv. rd., 18-hole golf course 6 mi. away, pwr. secure parking. 626/794-3906.

SOLANA BEACH, 1 bd., timeshare condo, RCI resort of international distinction, avail. May 24-31, 7 days, sleeps 4, full kitchen, pool, spa, game room, 1 block from beach, near Del Mar and San Diego, perfect for the Memorial Day getaway, \$500/week. 909/263-9868, Allen or achowka@netscape.net.

TIMESHARE, 1 week, 1 br., fully furnished w/kitchen, book by June 30 & use by Dec. 30, 2003, U.S. (including Hawaii), Bermuda, Mexico locations, \$550; 1 week (1/2 br.) anywhere in the world based on availability, \$650. 897-1203.

JPL'S ONLINE NEWS SOURCE



Classified ads will be available the day before Universe is published at

<http://dailyplanet>

View this and previous issues of Universe at

<http://universe.jpl.nasa.gov>

E-mail us at

[universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov)

### Editor

Mark Whalen

### Design + Layout

Adriane Jach, Audrey Steffan/  
Design Services

### Chief Photographer

Bob Brown/Photo Lab

### Advertising

Susan Braunheim-Kalogerakos

Universe is