

# universe

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## MARS

### NASA HAS RELEASED THE FIRST SET OF DATA

taken by the Mars Odyssey spacecraft to the Planetary Data System, which will now make the information available to research scientists through a new online distribution and access system.

"This release is a major milestone for Mars scientists worldwide, since the first validated data from our instruments are now available to the entire scientific community," said Odyssey Project Scientist Dr. R. Stephen Saunders of JPL. "There are fundamentally new kinds of information in these data sets, including day and night infrared images, maps of hydrogen in the soil, and radiation hazard data for future Mars missions."

The information includes the first six weeks of mapping data through the end of March, as well as the observations made during the cruise phase to Mars. The archive consists of formatted instrument data from the gamma-ray spectrometer and high-energy neutron spectrometer; Mars maps from the neutron detectors; about 800 visible and infrared images taken by the camera system; and radiation measurements from the Martian radiation environment experiment. New data will be released to the science community every three months.

The Odyssey data are available through a new online access system established by the Planetary Data System at <http://starbrite.jpl.nasa.gov/pds>.

The Odyssey data release, coupled with the availability of this new system, marks a significant improvement in access to data from solar system exploration missions. Now, validated data from all Odyssey instruments will be available for search and retrieval immediately upon delivery to the Planetary Data System.

THE SYSTEM will soon integrate data sets from all Mars missions so researchers can obtain all the data they need at a "one-stop shopping" Internet site. A guide to the Odyssey data sets can be found at the Planetary Data System geosciences node at <http://wufs.wustl.edu/missions/odyssey>.

JPL manages the 2001 Mars Odyssey mission for NASA's Office of Space Science. Investigators at Arizona State University, the University of Arizona and NASA's Johnson Space Center, Houston, operate the science instruments. Additional science partners are located at the Russian Aviation and Space Agency and at Los Alamos National Laboratories, New Mexico. Lockheed Martin Astronautics, Denver, is the prime contractor for the project, and developed and built the orbiter. Mission operations are conducted jointly from Lockheed Martin and from JPL.

Additional information about Mars Odyssey is available online at <http://mars.jpl.nasa.gov/odyssey>.

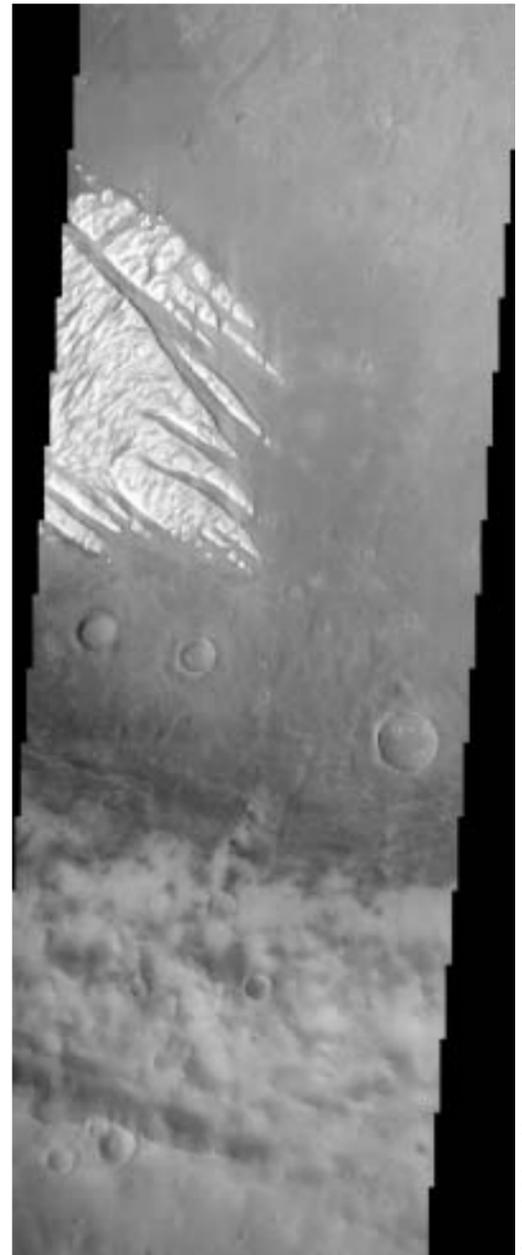


Photo: NASA / JPL / Arizona State University

## Odyssey releases first data archive

By Mary Hardin

*Mars Odyssey image shows the "White Rock" feature in visible wavelengths. The image was acquired simultaneously with infrared images on March 11, 2002. This unusual landform was first observed during the Mariner 9 mission in the early 1970s.*

## New center will help in technology transfer

By Carolina Martinez

*Guests Chris Hughes (left) of HighTower Software and Jim Davidson of E-Views Safety Systems chat during the dedication of JPL's Commercialization Center Oct. 4.*

Many technologies developed at JPL have skyrocketed on Earth due to strategic business alliances.

And on Friday, Oct. 4, the grand opening of JPL's Commercialization Center created a one-stop shop for U.S. companies that would like to work with JPL's Commercial Technology Program to develop and transfer technologies for public use.

"It will literally be the front door to companies who wish to work with us but who don't



Photo by Bob Brown / JPL Photolab

know quite where to go," said Merle McKenzie, manager of the Commercial Technology Program at JPL. "The Commercialization Center will provide access to information on JPL's unique capabilities and technologies, exper-

tise, research and development and services geared toward business."

On average, JPL reports nearly 300 innovations per year and roughly 150 new business partnerships.

"JPL is one of the special institutions that make this region different," said Jack Kyser, senior vice president and chief economist of the Los Angeles Economic Development Corporation. "JPL is on the cutting edge of space exploration and expands our overall knowledge of technology that makes all our lives better."

JPL Deputy Director Eugene Tattini gave the keynote address for the opening, and the Lab's chief technologist, Dr. Erik Antonsson, moderated a panel on partnering experiences featuring representatives from companies that have collaborated with JPL, including Boeing, PhotoBit, E-Views Safety Systems and Dubbs & Severino. A networking reception allowed participants to learn more about the ins-and-outs of working with JPL to commercialize a technology.

The Commercialization Center will be the gateway to the following programs and opportunities for businesses:

**LICENSING JPL TECHNOLOGY** The Caltech Office of Technology Transfer is responsible for the

licensing and transfer of technologies from Caltech and JPL. In 2000, more than 120 patents were issued to Caltech.

**TECHNOLOGY AFFILIATES** Any U.S.-owned organization can access JPL's special technological expertise and specialized equipment through the Technology Affiliates Program. This program is structured to provide technology transfer and customized help for developing new or improved products and manufacturing processes, where JPL does not compete with U.S. industry.

**TECHNOLOGY COOPERATION AGREEMENTS** These agreements create dual-use technology development arrangements with no exchange of funds. JPL and its partner company leverage each other's intellectual property and expertise for NASA goals and commercial use.

**SMALL BUSINESS TECHNOLOGY TRANSFER** This program provides funding, on a competitive basis, to small businesses interested in undertaking research and technology development, on the topics of interest identified by five U.S. Government agencies.

More information about the Commercialization Center is available at [http://techtransfer.jpl.nasa.gov/index\\_flash.html](http://techtransfer.jpl.nasa.gov/index_flash.html).

# News Briefs

The Mid-Infrared Large-Well Imager recently imaged the center of the Milky Way Galaxy (right) and the image at left (below). A Hubble Space Telescope image of Jupiter's north pole is shown at right.

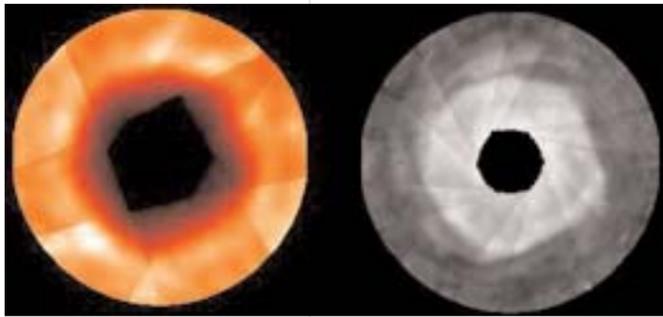
## Infrared camera eyes galaxy, Jupiter

The JPL-built Mid-Infrared Large-Well Imager on NASA's Infrared Telescope Facility has produced significant new images showing the center of our Milky Way galaxy and a cold vortex over Jupiter's north pole.

The camera, located at the Keck II telescope in Hawaii, provided the highest resolution mid-infrared picture ever taken of the center of the Milky Way, revealing details about dust swirling into the black hole that



dominates the region. The camera's Jupiter images, used in composite with Hubble Space Telescope images, showed that Jupiter's vortex in the upper atmosphere over its north pole resembles the vortex over Earth's south pole that enables depletion of Earth's stratospheric ozone.



The Milky Way image was taken by a team led by DR. MARK MORRIS of UCLA. The camera used three different infrared wavelengths to build the color composite image available online at <http://irastr.jpl.nasa.gov/GalCen/galcen.html>.

The mid-infrared part of the electromagnetic spectrum comprises the wavelengths at which room temperature objects glow most brightly. Seeing celestial objects through this glow is like trying to see stars during daylight; special techniques are

needed to tease the stars from this glow to build a recognizable picture.

Near the center of the image, but not apparent at these wavelengths, is a black hole 3 million times heavier than our Sun. Its gravitational pull, so powerful that not even light can escape from its surface, affects the motion of dust, gas, and even stars, throughout the region.

Composite versions of the Jupiter images, which resemble cats' eyes, were presented last week by JPL astronomer DR. GLENN ORTON at the annual meeting of the American Astronomical Society's Division of Planetary Sciences, in Birmingham, Ala.

A cold air mass, which maintains a roughly hexagonal shape, extends vertically from Jupiter's stratosphere down into the next-lower layer of the atmosphere and rotates at a rate that takes about 300 days to complete a full circle. Scientists can refine models of how Earth's atmosphere works by comparisons with atmospheric dynamics on other planets, such as Jupiter.

The images are available online at <http://photojournal.jpl.nasa.gov/catalog/PIA03864>.

## Uncrewed vehicles conference set

NASA Ames Research Center will host a workshop on uncrewed air vehicles on Oct. 29-30 in Palo Alto.

"Applications, Concepts and Technologies for Future Tactical UAVs" will present emerging technologies and future systems concepts, and will discuss development and evaluation of uncrewed air vehicle system design (not the air vehicle itself) and application criteria.

Guidance will be provided on future directions in tactical system architectures, mechanization and technologies, pertinent system design considerations, trade-offs and alternatives for exploiting the full potential of uncrewed air vehicles.

A block of rooms has been held for participants. To reserve a room, call the Crowne Plaza Cabana Hotel at (888) 422-2264, ext. 114/157 before Oct. 18. After this date, availability and rate cannot be guaranteed. Mention the "NATO Lecture Series" to receive the government rate of \$150 per night.

Registration is due by Oct. 18. Contact MARCIA REDMOND at [mredmond@mail.arc.nasa.gov](mailto:mredmond@mail.arc.nasa.gov) for more information.

Although construction on JPL's Optical Interferometry Development Lab was just completed last month and the facility is not yet occupied, the new Building 318 has already reaped substantial rewards for the Lab.

For installing energy-efficient equipment in the new structure, JPL was presented with a rebate check of \$48,276 last week by Southern California Edison.

Larry Reynolds, Edison technical specialist for new construction services, said the award was given under the utility's "Savings by Design" program, offered to commercial and industrial customers as a one-time incentive to install energy-efficient equipment. He said the energy savings will be realized through the installation of variable-frequency drives on pump motors and air handler motors, which handle the building's air conditioning and heating systems. The drives work to vary

the amount of load during different types of demand.

Reynolds added that the energy-efficient systems could save JPL more than \$30,000 annually in energy costs.

The new laboratory, which is located across from the credit union, will be dedicated to interferometry experiments in the Origins Program.

The building began construction in June 2001 and is expected to be fully operational by early next year. A dedication ceremony is scheduled for Monday, Nov. 4, at 1:30 p.m.

## Energy savings nab Lab a cool \$48K

By Mark Whalen



From left, Fred McNutt, JPL director of Business Operations and Human Resources; Carl Simon, Building 318 construction project manager; Mike Anthony, Edison account executive; and Larry Reynolds, Edison new construction services.

# 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 and third Fridays 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.

Working Parents Support Group—Meets the third 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.

## Friday, October 11

Folk Music—Singer/songwriter David Mallett will appear at 8 p.m. in Caltech's Dabney Lounge. Tickets are \$15 for adults and \$5 for children under 12. For information, call (626) 395-4652 or log on to <http://www.folkmusic.caltech.edu>.

## Saturday, October 12

The Reduced Shakespeare Company—The great literary works of the world are condensed into only two hours, beginning at 8 p.m. in Caltech's Beckman Auditorium. Tickets are \$29, \$25 and \$21, youth high school age and under, \$10. For more information, call (626) 395-4652.

## Sunday, October 13

Chamber Music—The Takacs String Quartet will perform at 3:30 p.m. in Caltech's Beckman Auditorium. Tickets are \$29, \$25, \$21 and \$17. For information, call (626) 395-4652.

## Wednesday, October 16

Caltech Women's Club Fall Gathering—New and returning members are welcome to sign up for club events. The gathering is held in the gardens of the Caltech president's residence from 11:30 a.m. to 1:30 p.m. Lunch is available for \$12.50. For more information, call Andree Helou at (626) 798-2327.



## Thursday, October 17

Sally Ride—The former astronaut will give a talk at 4 p.m. in Caltech's Ramo Auditorium as part of the Caltech Lecture Series on Achieving Diversity in Science, Math and Engineering. Admission is free. Call (626) 395-4652.



Dr. Sally Ride

## Thurs.-Fri., Oct. 17-18



Dr. Michelle Thaller

Von Kármán Lecture Series—"A Billion Suns: The Lives and Deaths of the Stars" will be presented by JPL astronomer Dr. Michelle Thaller on

Thursday in von Kármán Auditorium and Friday in the Vosloh Forum at Pasadena City College, 1570 E. Colorado Blvd. Both lectures begin at 7 p.m. Thursday's lecture will also be webcast live at <http://www.jpl.nasa.gov/events/lectures/oct02.html>, and will be archived online for later viewing. Thaller will discuss how new stars emerge from giant clouds of dust and gas in our galaxy, unravel into nebulae and often die in violent explosions.

## Saturday, October 19

Beakman Live—Paul Zaloom as Beakman, the zany, high-energy scientist, uses children and the occasional adult to demonstrate

scientific principles.

He will appear at 2 p.m. in Caltech's Beckman Auditorium. Tickets are \$10 for adults, \$5 for youth. For more information, call (626) 395-4652.



Paul Zaloom

## Sunday, October 20

Chamber Music—Pianist Christine Azzoni Dow will perform at 3:30 p.m. in Caltech's Dabney Lounge. Admission is free. For more information, call (626) 395-4652.

## Wednesday, October 23

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

"The Response to Nicotine"—Caltech biology professor Dr. Henry Lester will lecture at 8 p.m. in Beckman Auditorium. Admission is free. For more information, call (626) 395-4652.

## Friday, October 25

Vienna Choir Boys—The choir will perform a program of costumed operettas, sacred songs, and secular and folk music at 8 p.m. in Caltech's Beckman Auditorium. Tickets are \$32, \$28 and \$24. For more information, call (626) 395-4652.

## Saturday, October 26

Altadena Old Fashioned Day Parade—JPL Director Dr. Charles Elachi is the grand marshal for the annual event, which celebrates the history of the community of Altadena and includes a day-long festival of family fun activities. Starting at 11 a.m. at Santa Rosa and Mariposa Streets, the parade heads east to Lake Avenue, where it turns south and continues to Alameda Street.



# POSITIVE SIGNS

JPL Director Dr. Charles Elachi met with employees Oct. 2 to discuss the broader picture within NASA, internal issues at the Lab, and some of the actions that were either taken in the past year or are in the works.

By Mark Whalen

**“I think the future for JPL is very, very positive,”**

Elachi said. “We have a lot of opportunity over the next decade to tell our successors, ‘Look what we have done,’ and I think this will easily match what our predecessors have done over the last 10 years or 25 years.”

Noting with pride that JPL now has 14 spacecraft operating across the solar system, Elachi lauded the Lab’s accomplishments over the past year and outlined the challenges for FY ’03. SeaWinds is scheduled for launch Dec. 10, followed in the first couple of months of the new year by the Space Infrared Telescope Facility (SIRTF), Galaxy Evolution Explorer and Rosetta instruments; Mars Express instruments in May and Mars Exploration Rovers in May and June.

Department of Defense and NASA,” he said. “Our focus is on doing a technology demo. This will allow a whole new way of doing large telescopes, and will literally put us well ahead of anybody else.”

**Additional opportunities will be available** under such programs as Scout, Discovery, New Frontiers and Earth System Science Pathfinder. “The message,” Elachi said, “is don’t be afraid of competition—the reward is worth it.”

Elachi also discussed the development of the Lab’s strategic plan, which will be published by the end of the calendar year. JPL’s work is part of the overall NASA vision and mission, which seeks “To understand and protect our home planet, to explore the Universe and search for life, and to inspire the next generation of explorers ... as only NASA can.” From this statement, Elachi explained, flows the JPL mission:

- Explore our own and neighboring planetary systems
- Search for life outside of Earth’s confines
- Further our understanding of and the origins and evolution of the universe and the laws that govern it
- Make critical measurements to understand our home planet and help protect its environment

- Apply JPL’s unique skills to help solve problems of national security and national significance
- Inspire the next generation of explorers

In response to the challenge, Elachi related six new areas of strategic focus, which are equal in importance:

- Scientific and technical excellence
- Business and management excellence
- Strong partnerships
- Contributing to national security
- Our employees
- Public engagement

In addition, there will be 30 initiatives (with a two-year goal) that will address this strategic focus, and 80 specific actions (to be completed within a year).

Section managers and group supervisors will have the opportunity over the next month to provide input to the strategic plan.

Although JPL experienced a significant drop in personnel over the last decade, in the last two years about 320 people have been hired, Elachi said, but “the capacity of the facility is near its limit. The right size for the Lab is in the 5,200 to 5,500 range, even if we acquire new business, and I think it’s essential to bring everyone to the Oak Grove site, to keep the team spirit here on the facility.”

“We need to do regular assessments and ask if we have the right talent mix. The positive side is that any organization in the world will envy us if our workforce variation is only 3 to 4%.”

In the attempt to create the right kind of environment for employees to succeed, Elachi stressed the success of the Research and Technology Development Program, the Director’s Research and Development Fund, and the Centers of Excellence. These areas are budgeted with competed, internal funding. Projected funding for these areas in FY ’03 is \$21 million, and Elachi pledged to increase the funding by \$10 million each year until it reaches about \$50 million.

Total investment funding, targeted toward all of JPL’s infrastructure, will see an increase of \$3 million in FY ’03, to \$58 million.

In discussing other institutional activities, Elachi noted the establishment of the new Senior A and Fellow grades. “It’s based on your interests, talents, capabilities and goals. If you get to the Fellow grade, you’ll be on the same level and salary range as a division manager.”

One of the benefits of the Senior A level is on-Lab parking, a hot Labwide issue that has gained a lot of attention. (Editor’s note: see the article in the Sept. 27 issue of Universe on the new parking policies.)

“I could have taken the easy way and said, ‘Let’s forget it,’ but that’s not my nature or the EC’s nature,” Elachi said. “This was not done lightly. When we see something is not fair, we need to try and improve it, even if we can’t make it perfect.”

To possibly create more parking spaces on Lab, Elachi said a master plan developed by Facilities includes searching for locations on Lab for parking structures. He said the Lab would consider the option of JPL staff paying for parking to finance the structures.

The director also touched on the following points:  
**AWARDS** The process will be simplified, including reducing the number of awards, but the total budget is being increased by about 20 percent. There will be more emphasis on team awards.

**KUDOS** Elachi complimented the Travel Group for reducing their policies from 125 to 17 pages, and the Acquisition Division was lauded for its new Contract Purchasing System Review, under which contracts of \$25 million or more will be reviewed by NASA; formerly, contracts of \$1 million or more were so reviewed.

**RESOURCES** Appointments will be made this fiscal year for deputy project managers for resources, and a project financial practices document is being developed to complement an analogous JPL document for flight project practices.

**FACULTY APPOINTMENTS** “With Caltech, we are looking at ways of having long-term, joint appointments between the campus and JPL,” Elachi said. Preliminary discussions have also taken place with UCLA, and plans call for discussions with USC.

**DIRECTORATE 300 REORGANIZATION**

The EC was briefed in late September about a number of options, and director John Beckman will soon meet with section managers to get their inputs. If there are any changes they will be implemented in late fiscal ’03, probably next summer, after open discussion with the organizations involved.

**HEALTH BENEFITS** There will be an increase in the cost of health services next year. Also, an additional benefit will be offered for orthodontia for children.

**TUITION REIMBURSEMENT** Starting in January, undergrad tuition reimbursement will be increased from \$3,000 to \$5,250.

**BUILDING DELAY** Construction of the new project center was delayed to FY ’04 or ’05, due to budget constraints and the need for funds for Mars Exploration Rovers.

**JPL FAMILY DAY** “I was ecstatic,” Elachi said. “I hope you enjoyed it. We intend to do more events to recognize employees and teams. It’s important we all feel part of the JPL family. We really do care about each other.”

“I am proud and privileged to be your director,” he concluded. “All of us have done a superb job over the last year, but we need to—and we are going to—do an even better job over the next year, particularly in the area of cost management.”



Photo by Bob Brown / JPL Photolab

Elachi added that calendar years 2003-04 would be the busiest period in JPL’s history, with 11 launches or encounters of spacecraft or major payloads in addition to the Mars landings.

Although the FY ’03 NASA budget has not yet been approved by Congress, the proposed NASA plan contains an upward stroke after a number of years of decline in the late 1990s. “We have about \$1.3 billion a year for the next five years, a significant part of which was won competitively,” the director noted. “So we have a very solid base to build upon.”

**Elachi highlighted JPL’s recent success** in acquiring new work via the competitive process. The Lab submitted four proposals for the In-Space Propulsion Technology Program, and three of them were selected. JPL submitted eight in collaboration with co-investigators; seven were selected. JPL proposals received \$12 million, or 32 percent of the \$38 million provided by NASA, in the competition open to NASA centers, universities and industry.

In addition, of the 14 national awards for the recent Advanced Component Technologies competition, JPL received six awards, representing 43 percent of the funding available.

Elachi also noted JPL’s recent acquisition of the Nanolaminate Mirror and Actuated Hybrid Mirror Program. “This technology is highly relevant to both the

## Mailroom offers postal tips

FROM JPL MAIL SERVICES

Ever wonder why your mail is late in being delivered by the U.S. Postal Service? Take a look at the delivery address. If the address format is incorrect, or some of the address missing your mail will be delayed. Here are some guidelines for sending mail through the USPS as well as internal Lab mail.

The USPS is using more automated equipment and the need for correct addressing is very important. The Optical Character Reader (OCR) reads addresses from the bottom up & left to right. It prefers typed, upper case addresses, although with advancements in technology, the OCR can read some hand-printed addresses. If a piece of mail rejected by the OCR it takes longer to sorted manually.

Always provide a return name and mail stop on all your outgoing business mail. The U.S. Postal Service provides a mail-forwarding service to a recipient's new address, for which JPL is charged a fee. A Postal Service form is mailed back to the JPL Mail Center with the new address information. But, in order for the Mail Center to mail the new information to you, they need to know who sent it.

When sending mail throughout the Laboratory please ensure that all mail has the correct mail stop, otherwise your mail could be sitting in the JPL Mail Center waiting to be hand processed in the "look-up" area. To avoid this, don't use room numbers, telephone numbers or just the building number with the floor number, e.g. 2nd floor. Also, print or write the full name of the recipient clearly. If you use a nickname (or middle name), be sure your mail is addressed to the correct mail stop. Correct information is available from the Perform address book or the Boss directory.

The Mail Center is notified of large personnel moves, but in most cases is not notified of individual moves. It is up to the individual to notify his/her section administrator of their new mail stop as soon as possible. If you receive mail for employees who have changed their address or have left the Laboratory, return the mail to the sender, advising them that this person is no longer at this address.

For more information on outside mail, check out the U.S. Postal Service home page at <http://www.usps.com>, and if you have any questions, contact the JPL Mail Center at ext. 4-2380 or 4-2381.

**DailyPlanet**  
online for the JPL community

Classified ads will be available the day before Universe is published, at <http://dailyplanet>

JPL's online news source

View this and previous issues of Universe online  
<http://universe.jpl.nasa.gov>

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### 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 on ad cards, available at the JPL Store and the Universe office, Bldg. 186-118, or via e-mail to [universe@jpl.nasa.gov](mailto:universe@jpl.nasa.gov).

Ads 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.

## Letters

We want to thank our co-workers and the ERC for the kindness expressed at the recent passing of Arlene's mother. We were very touched by the plant and your kind words and cards.

Arlene and Harold Minuskin

## Passings

**PHILIP GWINN**, 77, a retired illustrator in the former Section 648, died June 12.

Gwinn worked at JPL from 1967-82. Services were private.

## Classifieds

### For Sale

**BATTERY BACKUP**, for your PC/server, brand new American Power Conversion ES Series, model no. BE350U, \$25. 956-3745, Steve.  
**BEDROOM SET**, romantic contemporary queen size pine headboard and footboard w/decorative iron work; matching 9-drawer dresser and detachable mirror; mint cond., includes box spring and mattress; see to appreciate; paid \$2,000 new, sacrifice at \$850/obo. 626/441-0338, Cynthia, eves.  
**BIKES**: Huffly boy's, great cond., \$45; girl's \$15, 20-25; PLATES, porcelain collectible, \$30. 626/359-7666.

**CAMERA**, used Pentax K1000 with 28-210 zoom, case/strap, compact flash, good student camera, \$150/obo. 626/583-8232.

**CEMETERY PLOTS** (5), Rosehills Garden of Autumn; this garden is developed and plots are valued at \$2,100 each, sell for \$1,800/each; will sell each plot separately if necessary. 562/404-3464 x230, Janelle, betw. 7-4, or 909/986-4611 after 6 p.m.

**CHAIR**, overstuffed power recliner, La-Z-Boy luxury lift, off white upholstery (like new); remote lifts person out of chair, foot raises with remote; may need small elec. work; a must see; \$300/obo. 626/442-6361.

**CHAIR**, lady's Lazy Boy lift 1 year old, rose color, wooden arms, perfect condition, will accept best offer. 626/577-7818.

**CLARINET**, Yamaha YCL-20 resinite, gd playable cond., \$300 obo, list \$600. 952-8455.

**COMPUTER**, HP Jornada handheld PC, model 728, 64 MB RAM, 206 MHz strong arm processor, built-in 56 Kbps V.90 modem, full-size keyboard, 6.5" color screen, brand new in unopened box, will sacrifice, \$750/obo. 310/266-5460.

**COMPUTER MEMORY**, RAM for laptop, 64 MB PC100, \$20. albertobig@libero.it.

**COUCH**, large, clean, comfy, custom made w/plush pillows, \$500/obo. 468-8658.

**COUNTRY CLUB MEMBERSHIP**, Silver Lakes, Calif. resort, 4 wks. free golf each yr. at priv. PGA-rated course, 2-bd. condo, 2 beautiful lakes, many amenities, less than 2 hrs. from Pasadena, exchange rights w/3,000 resorts, illness forces sale, \$15,000. 805/967-7725.

**DESK**, oak, w/3 drawers & hutch, \$50, orig. purchased as bedroom furniture, gd. cond., \$50. 626/791-2464.

**DRYER**, gas, Whirlpool, old but works/looks good, \$75. 248-9708.

**FISH TANK**, 60 gal., w/stand and hood, acrylic, filters, pumps, heater, plants, etc.; take all for \$120. 353-4400, Brian.

**FURNITURE**: sofa, 91", black, \$100; bookshelf, ~30" wide, >6" tall, \$40; stereo component cabinet, glass doors, storage, barely used, \$50; sliding mirror closet doors, 2 doors cover up to 8' wide opening, ~5.5' tall, with track, \$30; pictures or info at [john.oswald@alum.mit.edu](mailto:john.oswald@alum.mit.edu).

**FURNITURE**: Spanish oak desk & 2 matching bookcases, \$700; mission sideboard w/mirror, \$1,200; mission library desk, \$400; Techline office furn. in white (6 pieces), \$500; drop leaf hall table, \$250; butcher block utility table, unfin., \$200; several mirrors, 2 Ikea golden oak bookcases, unopened, \$100; Spanish handmade rug, bright colors, \$250; orig. Nordic Track, \$50. 626/584-0860, Donna.

**HALLOWEEN COSTUMES**, assorted, exc. cond., \$5/each. 626/850-4378.

**HEADBOARD** (queen size, covered, half moon shape) with 2 matching shams, duvet cover, 3 pillows, and skirt; custom designed and almost new; tan & white with rust stripes on heavy cotton, \$600. 626/795-4856.

**KEYBOARD**, for Sony Web wireless; Sony Web TV remote; quick setup guide, reference card & smart card; exc. cond., selling to upgrade computer; all for \$100. 626/442-6361.

**KEYBOARD AMP** (with speaker), Fender KXR-100, exc. cond., has seen very little use, instructions and schematic provided, \$150/obo. 468-8756.

**LOVE SEAT**, leather, claret in color, brand new in package, no room to put it, newly bought from Robinsons May on 9/18 at \$1088 + tax, sell \$850; **RECLINER**, fabric, strip dark green, 3 yrs, \$120. 626/462-9597 or 626/298-1017.

**MATTRESS**, California King size, good condition, \$200. 626/850-4378.

**MOVING BOXES**, U-Haul, used once, xlg-5, lg-5, md-11, sm-9, ShortWardrobe-2, DishBar-rel-1; \$50 for all; see <http://www.uhaul.com/boxes/index.html>. 626/359-9991, James.

**PHONE SYSTEM**, Comdial Digital Impact SCS 24; includes: 4 line/8 station DCS II, 4-12 line LCD speakerphones, 1-12 line speakerphone, intergraded page interface, 2 wall speakers and 3 dropdown ceiling speakers & panels; \$850/obo. 626/301-9331, Eric.

**PIANO**, upright, needs TLC, \$300/obo. 661/266-9863.

**PRINTER**, Epson Stylus Color 880i, for PC or Mac, hardly used, \$40. 626/577-0068, Lou.

**REFRIGERATOR**, Hot Point 15.7, frost free, w/ice maker, white, \$100. 626/445-1013.

**SPEAKERS**, pair of 3 way, unfinished cabinets, excellent sound, 8-inch woofers, need new cones, \$30/obo. 500-0488.

**TABLES**: antique oak drawleaf table/w delicately carved base & 4 carved matching chairs; vg cond., \$800/obo; 2 antique Italian side tables/ end dark brown w/mahogany red leather top accentuated w/gold etching & small brass lion heads; \$300/pair/obo. 626/441-0338, Cynthia, eves.

**TICKETS**, San Diego Wild Animal Park, 4 adult @ \$20/ea., 2 children @ \$10/ea., must go. 661/269-0754.

**TICKETS** (2), L.A. Kings hockey, 16 rows from the ice, \$100/pair. 626/852-0821.

**TILE SAW**, w/Wet Diamond blade, exc. cond., MK470, cost \$300 new, used 6 days, \$200. 661/297-0219.

**TRAMPOLINE**, mini, \$50; **SEWING MACHINE**, Kenmore, \$50; both good cond. 248-6062, Elizabeth.

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

**TV**, Magnavox 24" diagonal, gd cond., \$80. 500-0488.

**VIDEO CAMERA**, SV8, 8mm Sunpack Ready-cam with carrying case; features include wireless controller, lens hood, sports finder, microphone, title features, manual/auto focus & zoom, \$100; Velbon tripod, \$35. 353-5671.

**WICKER SCREEN**, 3-panel, natural rattan, 72" high x 54" wide, \$60; **ELECTRIC TYPEWRITER**, Smith-Corona, with memory, \$50; **PLANT STAND**, indoor/outdoor, white coated metal, 29" high x 14" wide x 12" deep, still in box, \$10. 352-3112.

### Vehicles / Accessories

'87 ACURA Int, 5 dr., 70K mi., 4-speed man, pwr. windows/doorlocks, cruise cont., am/fm/tape, tilt wheel, int. trunk & gas rel, low-mileage tires, original owner now disabled, all service records, beige ext, exc. cond., \$3,500/firm. 204-1255, leave number.

'97 CHEVROLET Cavalier, white, 2 door, a/c, driver and passenger air bags, 50,000 mi., excellent condition, \$5,790/obo. 949/654-7750.

'88 CHEVROLET Suburban Silverado 4x4, white, dual A/C, vg cond., bought 9 yrs ago from orig. owner, power windows, cruise control, 10 CD changer, \$4,000. 626/577-2882.

'00 COACHMAN Futura travel trailer, 28 ft, Model 2790TB; all welded alum. frame, very light (4,366 lbs.) for its length; slps 6, 2 bunks, queen bed; used less than 10 times; covered at all times; \$16,500. 661/255-7958, eves.

'94 DODGE Stealth R/T, white exterior, black interior, exc. cond., great running cond., 94,000 miles. 909/989-7563.

'00 HONDA Accord LX, 20,000 miles, \$11,800. 323/582-2109.

'98 HONDA Civic EX, 70K mi., black, sunroof, pwr. door locks/windows, tinted windows, alloy wheels, V-tec engine, stick shift, \$8K/obo. 310/384-2904.

'97 HONDA Accord EX, power steering/brakes, moonroof, CD, alarm, loaded, new brakes, 112K miles, runs great, \$9,500/obo.

'95 HONDA Civic DX, 5-speed man., 4D, dark blue, 100K mi, custom Alpine sound system, Thule bike racks, great commuter car, \$5,750/obo. 626/301-9331, Eric.

'94 HONDA Nighthawk 250cc, 2,500 mi., exc. cond., kept in garage, \$1,500. 562/693-1136.

'90 HONDA Accord EX, auto, a/c, AM/FM/cass. stereo, pwr. windows/locks/sunroof mirrors, orig. owner, 167K mi., \$3,000. 626/287-8685.

'85 HONDA Accord sedan, gd. cond., well-maintained, 4 door, automatic, white w/blue interior, 167K miles, \$1,850. 626/914-7853.

'91 INFINITI G-20, sunroof, auto, air, cassette/stereo, 957-3675.

'93 JEEP Grand Cherokee, auto, 4WD, 4 dr., V8, CD, 4-wheel ABS, leather interior, power locks/windows, factory tinted windows, fog lamps, 88,000 mi., \$6,995/obo. 323/661-9068.

'92 JEEP Wrangler, 4 WD, 5 speed, CD, new soft top, 83,800 miles, gd. cond., rebuilt trans- mission, reduced to \$5,000/obo. 626/335-7179.

'00 KAWASAKI Prairie 300 ATV, auto/rev., less than 8 hrs. ride time, moving, must sell, \$3,900/obo. 661/269-0754.

'85 KOUNTRY LITE 5th wheel trailer, 30 ft., orig. owner, alum. frame, 13.5K a/c, side bath, microwave, TV/VCP avail., new tires & water pump, sleeps 6, exc. cond., renewed lic.-Mar. \$7,200/obo. 626/963-5727.

'90 MAZDA MPV, 170K miles, new trans- mission, new full spare tire, runs well, all maintenance records, 1 owner, top package, loaded, \$2,750/obo. 310/274-7275.

'95 MERCEDES-BENZ C-280, exc. cond., automatic, ABS, a/c, power locks/windows/ mirrors/ seats, AM/FM/cassette/CD, white, \$4,000 mi., \$17,500/obo. 323/254-5685.

'99 MERCURY Cougar, 5 spd., sport package w/16" wheels, tan leather interior, dark green metallic, 67K mi, \$10,500. 952-8163.

'94 NISSAN Sentra XE, 5-spd. manual, a/c, power door locks, remote keyless entry, tinted glass, 10-disc CD changer w/cass. stereo, 170K miles, perfect for student, good gas mileage, runs great, \$2,200. 590-2793.

'91 NISSAN Sentra, black 2 door, gd. cond., 5 speed, strong engine, needs rear brakes, 168K miles, \$800/obo. 249-6331.

'95 PONTIAC Bonneville, exc. cond., V6, fully powered, a/c, pdl, pw etc., forest green, tan interior, only 98,000 miles, all service records, a great car for \$5,200/obo. 790-0875.

'99 TOYOTA Solara SLE V6, automatic, 2 dr., black interior/exterior, sunroof, spoiler, leather bucket seats, power seats, a/c, am/fm stereo/cass., CD, pwr windows/locks/ mirrors, cruise control, tilt wheel, driver/passenger air bags, anti-lock brakes, 86,000 miles, immac. cond., \$15,500/obo. 626/967-3200.

'89 TOYOTA Camry LE wagon 4 cyl. auto, 163K miles, a/c, cruise control, pwr windows/locks, am/fm cass., ext. metallic light blue, int. dk blue, Michelin tires, 1 owner, all repair records, runs beautifully, \$1,500/firm. 626/449-4326.

'89 TOYOTA shortbed pickup, white, 5-spd. manual, a/c, 162K mi, engine fine, new transmission, \$1,300. 626/355-4224.

'96 VOLVO 960 wagon, top of the line, auto, leather & white w/gray int., 6-disc CD, heated seats, 3rd seat, all power windows/doors/seats, moonroof, exc. cond., no accidents, 97,000 miles, \$12,000/firm. 626/296-3441.

'01 VW Beetle GLS, silver/black leatherette, 5 spd, pwr. locks/windows/mirrors, cruise, alloys, am/fm cass, CD changer, fog lights, ABS, remote keyless entry, 11.5K miles, \$16K. 626/449-0997.

'87 VW syncro Vanagon, 4WD, 5 speed, white, a/c, am/fm/cass., 130K mi., good cond., \$4,500. 687-3915 or 790-8702, eves.

### Wanted

**HOUSING**, JPL employee, older single man, no pets, no smoke, needs small apartment or cottage near JPL for weekdays only. 393-7368.

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

**SPONSORS for AIDS Walk L.A.**: I will join over 25,000 people on Sunday, Oct. 20 and will walk, jog, wog, or run 6 miles; I will get up at 6 a.m. on my day off to support AWLA; any and all donations gratefully accepted. 897-1203, Valerie.

**VOLLEYBALL PLAYERS**, coed, no beginners please, Tuesday nights 8-10:00 at Eagle Rock High School, \$3/night. 956-1744, Barbara.

### Free

**CATS**: Kitten rescued, needs permanent home, male, fluffy, pale gray Tabby, very playful, 12 weeks old, healthy, litter trained; Mama kitty, rescued, approx. 1 year old, short hair, gray Tabby named Pearl, very loving, healthy, litter trained. 626/287-9433.

**CLEAN FILL DIRT**, 30 cu. yds. avail., haul as little or as much as you like, near Los Robles/Jackson, Pasadena. 791-3103.

**SATELLITE DISH**, 8 ft., condition unknown, appears to be functional, you must remove from hillside in Whittier. 562/947-1670.

### For Rent

**ALTADENA**, room in private home, walk to JPL, private bath and entrance, washer/dryer, kitchen privileges, \$600 + \$600 deposit. 626/794-4069.

**ALTADENA**, 1940s traditional, 3 bd., 1 full & (2) 1/2 ba., living room and detached studio/office, skylights and fireplace; refrigerator, stove, dishwasher, washer and dryer included; quiet neighborhood next to mtns. and hiking trails, less than 10 minutes from JPL; \$1,850, flexible lease. 323/309-8953, Marcia.

**LA CANADA**, 3 bd., 2 ba., family rm., gardener and pool service included, \$2,250. 790-2710.

**LA CRESCENTA** house above Foothill, 3 bd., 2 ba, 2 fp, new carpeting, stove, freshly painted inside and outside, newly landscaped, fenced backyard, 2 1/2 car garage, quiet cul-de-sac, no pets, \$2,250. 249-4146, Bob.

**PASADENA**, lg. condo, 1 bd., 1 ba., 2 blocks from Caltech, \$1,100. 626/396-1554.

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

**SUNLAND**, fully furn. rm in condo, share kitch./bath/laundry, garage parking, a/c, fireplace, pool, Jacz., tennis court; 10 miles to JPL; prefer upper classman/grad student, non-smoking; \$450 + security dep., references. 352-3112.

**SYLMAR**, rent to own, new 5 bd., 3 ba., 2-level view, Cameron Glen, \$10,000 credit toward buy after 1 year, 20 miles to JPL, \$2,295. 626/584-6526, Fred.

### Real Estate

**ARCADIA** townhouse, quiet and clean, 3 bd., 2.5 ba. w/master suite, family rm., dining area, living rm., patio, cent. air/gas heating, 2-car attached gar., Arcadia schools, 7 yrs. old, 10 min. to JPL. \$319K. 626/294-0049.

**LAKE TAHOE** view from a beautiful 2-story, 2-bd., 2 ba., slps. 6; timeshare in Incline Village near Tahoe; Unit 36, Week 37; great time of year for annual Reno Air Races (if you're a fan), \$3,000. 562/404-3464 x230, Janelle, betw. 7-4, or 909/986-4611 after 6 p.m.

**N. MONROVIA** home, quiet cul-de-sac, 4 blks. north of Foothill, 3 bd., 2.25 ba., 1v. rm. w/vaulted ceiling & skylights, fireplace, din. room + breakfast nook, master suite w/dressing area/vanity, plenty closet space, 1,615 sq. ft., cent. heat/air, 2-car attached garage, new roof, beautifully landscaped, priv. back-yard, auto sprinklers, \$479K. 818/415-3814, cell.

### Vacation Rentals

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

**CAMBRIA**, ocean front house, sleeps up to 4, exc. view. 248-8853.

**HAWAII**, Kona, ocean front on Keauhou Bay; house/guest house comfortably sleep 6; 3 bd., 2 ba.; rustic, relaxing, beautiful; swimming, snorkeling, fishing, spectat. vw., nr. restaurants, golf. other attractions. 626/584-9632.

**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., 4/15-12/14 \$105/nite/2, 12/15-4-14 \$120/nite/2, \$15/nite/add'l person. 949/348-8047, jackandrandy@cox.net.

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

**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, priv. secure parking. 626/794-3906, Patrick DeCarolis (retired).