Rover science team gets ready

By Mary Hardin

With less than a year to go before the launch of JPL’s Mars Exploration Rover mission, scientists have spent the last few weeks at a high-tech summer camp, rehearsing their roles for when the spacecraft take center stage.

“The purpose of this test is really to teach the science team how to remotely conduct field geology using a rover, rather than to test the rover hardware,” said Dr. John Callas, science manager for the Mars Exploration Rover mission at JPL. “We sent one of our engineering development rovers out to a distant, undisclosed desert location, with the science team back at JPL planning the operations and sending commands, just as they’ll do when the actual rovers are on Mars.”

The 10-day blind test, which ran from Aug. 10 to 19, used the Field Integrated Design Operations tested, called Fido, which is similar in size and capability to the Mars Exploration Rovers. Although important differences exist, the similarities are great enough that the same types of challenges exist in commanding these rovers in complex realistic terrain as are expected for the rovers on Mars.

“The scientific instruments on this test rover are similar to the Athena science payload that will be carried by the Mars Exploration Rovers,” said Dr. Steve Squyres, principal investigator for the Mars Exploration Rover mission at Cornell University, Ithaca, N.Y. “We’re using the test rover now to learn how to do good field geology with a robot. When we get to real Mars rover operations in 2004, we’ll be able to use everything we’re learning now to maximize our science return.”

“The test rover has received and executed daily commands via satellite communications between JPL and the remote desert field site,” said Dr. Eddie Tunstel, the rover’s lead engineer at JPL. Each day, they have sent images and science data to JPL that reveal properties of the desert geology.”

The Mars Exploration Rovers will be launched in May and June 2003. Upon their arrival at Mars in January 2004, they will spend at least three months conducting surface operations, exploring Mars for evidence of past water interaction with the surface and looking for other clues to the planet’s past.

The science team of more than 60 scientists from around the world will tell the rovers what to do and where to go from the mission control room at JPL.

The August test is one of several training operations that are planned before landing.

The rovers are currently being built at JPL and will be shipped to the Kennedy Space Center in Florida early next year to begin preparations for landing. Shortly before the launch, NASA will select the landing sites.


Family Day set for Sept. 21

Family members of JPL employees and contractors will have a unique opportunity to get a close-up view of the Laboratory and its activities during JPL Family Day, scheduled for Saturday, Sept. 21.

The event will be held from 10 a.m. to 3 p.m. Tickets are required for JPL staff and their guests, and will be available from Sept. 3-13 at the following locations:

• JPL Store (Building 114-104)
• Credit union (218)
• Employee Services and Recognition (310-203)
• Public Services (186-113)
• Mechanical prototype and hardware fabrication (170-115C)
• Mars Exploration Program (T172-146)
• Human Resources (180-200)

“Family Day is a great way for JPL families to see where and how work gets done on Lab, something they normally can’t do when they visit,” said Nancy Kapell of the Employee Services and Recognition Office.

Astronaut Dr. John Grunsfeld will give 25-minute presentations in von Kármán Auditorium starting at 10 a.m. The multimedia presentation “Welcome to Outer Space” will be shown in von Kármán every hour half past starting at 1 p.m.

Additional presentations will be offered by the Mars Exploration Program (Buildings 303, 317, 179), Mechanical Prototype and Hardware Fabrication (170), Space Flight Operations Facility (230), Regional Planetary Image Facility (202), Solar System Ambassadors (167), von Kármán visitor center (186) and Telescopes In Education (near credit union, Building 218).

In addition, the Child Educational Center will offer children’s activities on the mall; the credit union will be open on the mall to offer new accounts to JPL family members; and the JPL Store will be open for JPL and NASA souvenirs.

Free lunch will be served on the mall from 10:30 a.m. to 2:30 p.m. The menu will include hamburgers, hot dogs, a variety of sandwiches, ice cream, snacks and beverages.

JPL staff must wear their JPL picture badge and must escort their family at all times. Parking is available in the West Lot and Blue Lot only. Staff and their families will bring their tickets to Guest Services on the mall for registration, at which point they will be provided with an event program and lunch ticket.

For more information, call Kapell at ext. 4-9432.
The next six-week session of fitness classes at JPL's Wellness Place is set to begin Sept. 3. Classes offered are yoga (including advanced), Tai Chi (including mini-sessions), pilates, and aerobics (ultimate gluts and abs, body immersion in things it took him a career). The Planetary Science Summer School was organized by Sohus and Robert Gershman.

Sign up now for September fitness classes at JPL's Wellness Place. 

Friday, September 6
Folk Music—The Scottish quintet Old Blind Dogs will appear at 8 p.m. in Caltech's Dabney Lounge. Tickets are $20 for adults and $12 for students. For more information, see http://www.jpl.nasa.gov/events/caltech.

Two P/L instruments that will fly aboard NASA Earth-orbiting Aura spacecraft underwent environmental testing in August. The first time two instruments on one mission were tested at the same time. Above, technician Chuck Prichett checks out the Tropospheric Emission Spectrometer (TES) during thermal balance and system level tests in Building 306. At left, instrumentation engineer Doug Perry and thermal engineer Bud VanBlack work on the Microwave Limb Sounder's (MLS) thermal vacuum tests in Building 240. Aura is scheduled for launch in January 2004.
Let’s Work Together

RECENTLY SIGNED COLLABORATIVE AGREEMENT between JPL and NASA’s Marshall Space Flight Center is the fourth such alliance JPL has forged with other NASA centers in the past 15 months.

JPL Director Dr. Charles Elachi joined Marshall Director Art Stephenson in signing the agreement in early August. The objective is to build an interdependent relationship for infusing Marshall’s research and technology development capabilities into JPL’s Space and Earth Science flight missions.

Also participating in the signing at the Huntsville, Ala. center were Leslie Livesay, manager of the Avionic Systems and Technology Division; Phil Garrison, manager of the Mechanical Systems Engineering and Research Division; and Jack Stocky, chief technologist for the New Millennium Program.

The Lab had previously agreed to similar alliances with Ames Research Center in northern California, Glenn Research Center in Ohio and Langley Research Center in Virginia.

“We and our alliance partners in NASA can now proactively look for new initiatives in space research and development,” noted JPL’s Art Murphy, who manages NASA Intercenter Alliance Development.

The collaborations match the centers’ expertise in their areas of “core competencies”—in JPL’s case, robotic spacecraft; large apertures, interferometry, wavefront sensing and control; sensors, detectors and microdevices; and in-situ life detection—for the centers’ mutual benefit.

While JPL commits to having the alliance centers’ personnel and technology participate in the Lab’s future flight missions, the partner institutions commit to having JPL participate in early fundamental research and technology in their core technology areas.

The JPL/Marshall alliance focuses on the areas of autonomous rendezvous and docking, in-space propulsion, avionics and risk modeling. The integration of JPL’s and Marshall’s capabilities will provide NASA with an aligned approach to in-space transportation technologies and the development of scientific flight missions. The alliance will also incorporate JPL’s expertise in unmanned guidance, navigation and control with Marshall’s capabilities in rendezvous and docking systems that support human exploration. The centers also will cooperate to enable a more comprehensive assessment and understanding of the risks related to the development of new space transportation systems.

The other JPL alliances, with each center’s areas of specialty, are:

• Langley: materials and structures, atmospheric flight technology, system analysis
• Ames: engineering of complex systems, mission data systems, information technology, bio-nanotechnology
• Glenn: electric power, propulsion, spacecraft communications and risk models

While there is sometimes an overlap in centers’ responsibilities, “It’s here where we can develop new and exciting opportunities, working as one NASA,” Murphy said. “It’s planned cooperation rather than our past competition.”

“JPL and the other NASA centers will in the future present to NASA headquarters joint technology program proposals.”

In fact, Murphy said, JPL and Langley are developing a joint proposal to NASA and the Department of Defense for research and development of a spacecraft technology called Intronics. The alliance with Ames has resulted in that center’s development of a software planning/visualization tool for the Mars Exploration Rovers once they land, and Ames has also provided significant contributions to JPL’s Mission Data System activities.

JPL’s alliance with Glenn Research Center is presently being directed at future electric propulsion and other fundamental propulsion system technologies.

To augment the existing agreements, plans are underway to develop new JPL alliances with Dryden Flight Research Center at Edwards Air Force Base and Stennis Research Center in Mississippi.

JPL’s intercenter agreements are reviewed about every six months by Elachi or Deputy Director Eugene Tattini. “It’s almost like a review of a major mission or project,” Murphy said. He added that JPL technical leaders who have signed “sub-agreements” to aid in carrying out the alliances also report achievement milestones to Elachi every six months.

This story was adapted in part from an article in Marshall Space Flight Center’s Marshall Star.

JPL, Marshall Space Flight Center seal collaboration deal, one of a number of agreements the Laboratory has throughout the agency

By Mark Whalen

Service awards

The following JPL 2002 third quarter Service recipients celebrating 20 or more years of service were invited to attend a luncheon and ceremony in their honor on Sept. 20.

45 years: John Casani, Jay Schmuecker.
40 years: John Beedy, Arvydas Kliore, Gary Kunstmann, Richard Parker, Frederick Sturh, Dale Thornton, Donald Wetton.
35 years: Bruce Conroy, James Miller, Ellis Miner, Richard Nonaka, John Rohr, W. Van Snyder, James Stultz, David Swenson, William Weber III.
30 years: Camille Hayes, George Purcell Jr., E.M. Standsch J., Bruce Tsurutani, Kathleen Ulrich, Gene Wester, Chen-Wan Yen.
25 years: Robert Barry, William Blume, James Collier, Minoo Dastoor, Govind Deshpande, Jean Dickey, Robert Easter, Martha Hanner, Satish Khanna, Bruce McLaughlin, Larry Preheim, Ronald Reene, Annie Richardson, Eddy Shalom, Robert Stehlin, Jan Tarsala, Catherine Yee, Jose Zavala.
Classifieds

For Sale


BAY MOTO: Bicycle, 52 cm frame, 10 speed, 100 miles, $250. Call 467-9785.

BED: king, solid wood beam headboard, white, queen, 16 inches high, with rails, $350. Call 467-1051, John.

BIRD, Finch, small, tame, needs a new home, $20. Call 467-0104.

CAMERON: Sony Hi-m, model CCD-TR1, remote, carry case, 5 tapes, new, $150. Contact 467-3925.

CULTURAL: Various, native, figurines, $100-250. Contact 467-3925.

DINING TABLE, rectangular, 6x3.5 ft., heavy teak, new, $1,300. Contact 467-4519.

DINING SET, spinout, 9pc, cherry, $300. Contact 467-3925.

DOCKSIDE: Used combo, $125. 790-7600.

DRYER, Kenmore, heavy duty, gas, 4 cycles, 8 years old, $50. 805/967-7725.

ENTERTAIN: LEXUS ES300, 11,200 mi., exc. cond., all power, $16,800. 626/449-0997.

FIREWOOD at house near JPL. 790-6395.

FISHERIES, including a microwave radiometer, an infrared radiometer and a cosmo dust detector. In addition to being the first spacecraft to cruise interplanetary space, it also measured solar wind for the first time. This stream of charged particles emanating from the Sun could hold keys to the formation of the universe.

Interplanetary spacecraft a final check in one of the high bays.

A Mariner 2 team member desires to be contacted by the Mariner 2 project for a special post at JPL. The project is expected to begin in August 1962 and works on Venus for 14 days.

Calling all Mariner 2 team members to be contacted by the Mariner 2 project for a special post at JPL. The project is expected to begin this autumn and works on Venus for 14 days.

For Sale

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