A Message from Doug

When people ask me how the mission is going, my verb of choice is “escalating.”

Over 400 people are currently working on the mission, the peak in person-power during our four years of mission activities. At Lockheed Martin, engineers are rigorously testing the spacecraft and preparing to integrate science instruments onto the deck. Instrument teams are busily finishing both flight and engineering models. Here in Tucson, we are preparing both the Science Operations Center and Payload Interoperability Testbed as we get set for the two year long “rehearsal” before Phoenix lands on Mars.

Our E/PO activities are also increasing in intensity. We are pleased to open two exhibits at Pima Air and Space Museum featuring Phoenix and a tour of the Solar System paying special attention to its most common compound: water. The final touches are being put on the Phoenix Interactive Exhibit, which will join MarsQuest, a traveling museum show. Although, MarsQuest will remain in England until September 2006, Fiske Planetarium in Boulder, Colorado has graciously agreed to house the Phoenix Interactive until it can join MarsQuest when it returns to the U.S. We are continuing to provide educational outreach to teachers and students with our exciting MarsBots learning materials.

E/PO Partner Highlight

What do ice worms, trans-Saturnian objects, and the Phoenix Mars Lander have in common? They are all part of two new Solar System exploration exhibits at the Pima Air & Space Museum (PASM) in Tucson, Ariz.

PASM, a Phoenix E/PO partner, recently opened the spectacular exhibits featuring the Phoenix Mars Lander Mission and the quest to “Follow the Water” throughout our Solar System.

Visitors entering the Follow the Water exhibit are greeted with a flurry of colorful images and interesting facts about the properties of water and why we are so interested in investigating water throughout our Solar System. The relationship between water and life is explained and a foundation is built for visitors to better understand the story of why the search for water is so fascinating.

The results of our search for water in a variety of objects in our Solar System are illustrated from the Sun and planets to moons and Kuiper Belt objects. An interactive exhibit takes it a step further by describing different life forms on Earth which live or have lived in extreme conditions. Visitors can look through a microscope at ice worms that can only survive in ice and read about how these worms will melt when they get above five to ten degrees. A bright yellow scorpion is accompanied with a story about being one of the first creatures on Earth to make the move from water to dry land. A connection is then made between these unique creatures’ habitats and the implications for extra-terrestrial life given the environments we see in our Solar System.

At-A-Glance

In Progress- NASA CONNECT™ Educational Guide- “Why Water?” is in the communication review process
In Progress- MarsBots, Mars and robotics learning module for grades 3 and 4 is in the NASA educational product review process.
December 2005- Pima Air and Space Museum exhibit opened
February 2006- The Phoenix Interactive part of MarsQuest (Space Science Institute) opens at Fiske Planetarium, Boulder, Colorado (the exhibit will join the traveling MarsQuest exhibit when it returns to the U.S. from England)
April 22, 2006- 2nd Changes in Altitudes BalloonSat launch
August 2006- Revised Phoenix Web site goes live
October 2006- 1st Phoenix Open House in Tucson

When we Follow the Water on Earth we find life, what will following the water in the Solar System reveal?
Editor’s Note: As this is your newsletter, we welcome any suggestions regarding what you would like to read about, as well as your personal Phoenix stories. Please contact Lisa Tidwell (ltidwell@lpl.arizona.edu or 520-626-1974) with any questions, comments, or suggestions.

Testbed Construction

As the countdown clock ticks towards the Phoenix launch, the Science Operations Center (SOC) in Tucson continues to grow. One of the most noticeable changes is the construction of the Payload Interoperability Testbed (PIT).

Once a vast empty warehouse, the physical PIT construction is nearly complete. This facility will eventually become the proving ground for Phoenix surface operations.

Last November, the first noticeable construction took place with the laying of the PIT floor. Just last month, the blue cubical walls and furniture arrived. A conference room with a large working table sits on the concrete floor. Just outside the conference room door is a ramp that leads up to a room of offices and a large work area with windows that, this September, will allow PIT personnel to watch over the testbed lander and monitor its investigation of the simulated Martian soil.

In mid-March the first major operational component, the Payload Testbed Lab (PTL) will arrive in Tucson from Lockheed Martin. The PTL is the “brains” behind the testbed. Within days of the PTL’s arrival, the first testing will begin the process of integrating and testing the payload using software models of the instruments.

The PIT lander structure with a bare payload deck will arrive in March. Next, the science instruments will begin arriving and one-by-one they will be integrated and tested with the PTL. The final component of the PIT lander, the robotic arm, will arrive in late July. The robotic arm will be integrated and tested without the newly designed ice drilling tool the Robotic Arm Sample Provider (RASP). However, the arm will return to JPL in August to have the RASP installed before the PIT begins full operations in September 2006.

While the PIT in itself is quite large there is still a lot of unoccupied space in the massive room. Plans for this area are currently underway. Two museum exhibits are being built by our Education and Public Outreach partner, the Pima Air & Space Museum. The exhibits focus on the Phoenix Mars Mission and the search for water throughout our Solar System. The public will be invited to view the exhibits and observe the PIT lander perform tasks through a series of Phoenix Mission Open Houses. Look for the first open house, featuring the PIT, coming this fall.

Partner Highlight

The Phoenix Mars Lander exhibit gives museum visitors an understanding of how we are searching for water. A 5:1 scale model of Phoenix is situated with the robotic arm poised to begin digging into a layer of Martian soil covering water-ice. Pictures and captions tell the story of Phoenix describing science instrument details, how it will launch in a Delta II rocket, and finally arrive on the surface of Mars in 2008 to continue the quest to Follow the Water.

This spring, similar exhibits will be added to the Phoenix Science Operations Center. The large room where the Payload Interoperability Testbed is located (see PIT article) will house the incoming exhibits. Visitors will be able to learn about the Phoenix Mission through an expanded Phoenix exhibit and gain insight into our quest to follow the water.

The Pima Air & Space Museum on the Web: www.pimaair.org/

Web logs

Are you interested in getting an inside view of what’s happening with different parts of the Phoenix mission? Check out our Web logs (blogs) at: http://phoenix.lpl.arizona.edu/features/weblogs/. Current bloggers include:

Deborah Bass: Project Science Systems Engineer, shares her views about the inner workings of the Phoenix Mars Mission.
Suzanne M. M. Young: Researcher on the MECA team, keeps us informed on her team’s progress.
John Moores: Graduate research scientist, discusses special science projects of the Phoenix Mars Mission.
Jesse Cornia: Web developer and NASA Space Grant intern at the U of A, shares updates to the web page and interesting space related news.
Students: Spring 2005 Engineering 450 class at the University of Michigan, relates experiences as they conduct research for the Phoenix Mission.
Arizona Schools: Changes in Altitudes participants, students and teachers build space payloads launched to 30.5 km via a high altitude balloon.

To learn more visit: http://phoenix.lpl.arizona.edu