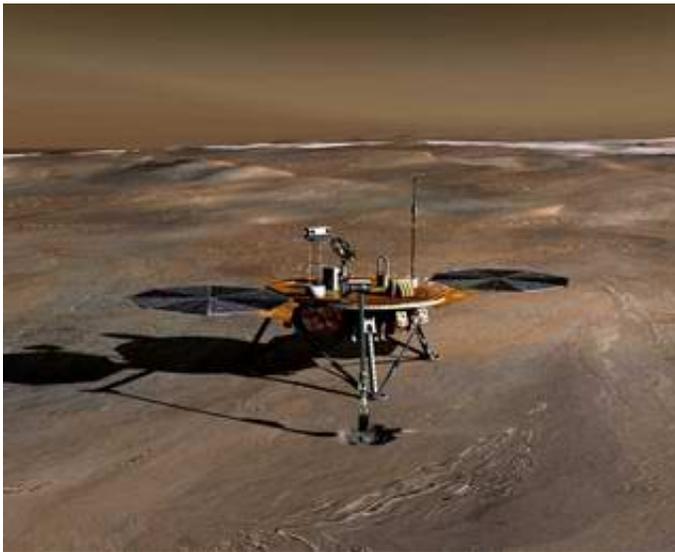


# NASA says Phoenix Mars mission has ended (Update 2)

November 10 2008

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(PhysOrg.com) -- NASA's Phoenix Mars Lander has ceased communications after operating for more than five months. As anticipated, seasonal decline in sunshine at the robot's arctic landing site is not providing enough sunlight for the solar arrays to collect the power necessary to charge batteries that operate the lander's instruments.

Mission engineers last received a signal from the lander on Nov. 2. Phoenix, in addition to shorter daylight, has encountered a dustier sky, more clouds and colder temperatures as the northern Mars summer

approaches autumn. The mission exceeded its planned operational life of three months to conduct and return science data.

The project team will be listening carefully during the next few weeks to hear if Phoenix revives and phones home. However, engineers now believe that is unlikely because of the worsening weather conditions on Mars. While the spacecraft's work has ended, the analysis of data from the instruments is in its earliest stages.

"Phoenix has given us some surprises, and I'm confident we will be pulling more gems from this trove of data for years to come," said Phoenix Principal Investigator Peter Smith of the University of Arizona in Tucson.

Launched Aug. 4, 2007, Phoenix landed May 25, 2008, farther north than any previous spacecraft to land on the Martian surface. The lander dug, scooped, baked, sniffed and tasted the Red Planet's soil. Among early results, it verified the presence of water-ice in the Martian subsurface, which NASA's Mars Odyssey orbiter first detected remotely in 2002. Phoenix's cameras also returned more than 25,000 pictures from sweeping vistas to near the atomic level using the first atomic force microscope ever used outside Earth.

"Phoenix not only met the tremendous challenge of landing safely, it accomplished scientific investigations on 149 of its 152 Martian days as a result of dedicated work by a talented team," said Phoenix Project Manager Barry Goldstein at NASA's Jet Propulsion Laboratory in Pasadena, Calif.

Phoenix's preliminary science accomplishments advance the goal of studying whether the Martian arctic environment has ever been favorable for microbes. Additional findings include documenting a mildly alkaline soil environment unlike any found by earlier Mars missions; finding

small concentrations of salts that could be nutrients for life; discovering perchlorate salt, which has implications for ice and soil properties; and finding calcium carbonate, a marker of effects of liquid water.

Phoenix findings also support the goal of learning the history of water on Mars. These findings include excavating soil above the ice table, revealing at least two distinct types of ice deposits; observing snow descending from clouds; providing a mission-long weather record, with data on temperature, pressure, humidity and wind; observations of haze, clouds, frost and whirlwinds; and coordinating with NASA's Mars Reconnaissance Orbiter to perform simultaneous ground and orbital observations of Martian weather.

"Phoenix provided an important step to spur the hope that we can show Mars was once habitable and possibly supported life," said Doug McCuistion, director of the Mars Exploration Program at NASA Headquarters in Washington. "Phoenix was supported by orbiting NASA spacecraft providing communications relay while producing their own fascinating science. With the upcoming launch of the Mars Science Laboratory, the Mars Program never sleeps."

Provided by NASA

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