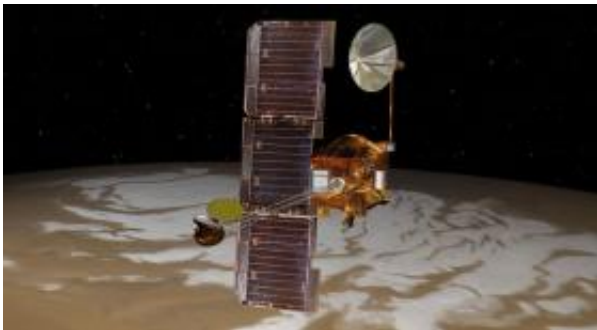


Odyssey Flight Team to Check Status of Backup System

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Artist concept of Odyssey. Image credit: NASA/JPL

(PhysOrg.com) -- The team operating NASA's Mars Odyssey orbiter plans a procedure next week to address a long-known, potential vulnerability of accumulated memory corruption.

The procedure requires rebooting the spacecraft's computer. This is not a risk-free event, but the Odyssey team and NASA have carefully weighed the risks of performing a cold reboot compared with the risk of doing nothing, and determined that the proper course of action is to proceed with the reboot.

The chief concern about the potential memory vulnerability stems from the length of time that the spacecraft has been exposed to the accumulated effects of the space radiation environment since the last reboot, which occurred on Oct. 31, 2003.

As an additional benefit, the cold-reboot procedure will demonstrate whether Odyssey's onboard backup systems will be available should they ever be required.

"We have lost no functionality, but there would be advantages to knowing whether the B side is available," said Odyssey Mission Manager Gaylon McSmith of NASA's Jet Propulsion Laboratory, Pasadena, Calif. "We have developed a careful plan for attempting to determine that."

In all the years since its April 7, 2001, launch, Odyssey has not needed to use its set of spare components. The spares are called the spacecraft's "B side," which includes an identical set of a computer processor, navigation sensors, relay radio and other subsystems. To use any of them, Odyssey would have to shift to all of them at once from its primary set of components, called the "A side."

On March 21, 2007, the B-side spare of an electronic component for managing the distribution of power, called the high-efficiency power supply, became inoperable. If it is permanently disabled, then none of the B side is available for use. Engineers have investigated the inoperability of the B-side high-efficiency power supply. They concluded that the component can probably be made to work properly again by rebooting the orbiter's computer, although the memory-vulnerability issue that is the current concern is not directly related to the March 2007 event that affected the power supply.

Odyssey is in the third two-year extension of its mission at Mars. Some A-side components, such as the UHF radio used for communications with spacecraft on the surface of Mars, have worked as long as they were designed to last.

In addition to its own major scientific discoveries and continuing studies of the planet, the Odyssey mission has played important roles in

supporting the missions of the Mars rovers Spirit and Opportunity and the Phoenix Mars Lander.

Provided by NASA

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