

Computer swap on Curiosity rover

March 1 2013, by Guy Webster



This artist concept features NASA's Mars Science Laboratory Curiosity rover, a mobile robot for investigating Mars' past or present ability to sustain microbial life. Credit: NASA/JPL-Caltech

(Phys.org) —The ground team for NASA's Mars rover Curiosity has switched the rover to a redundant onboard computer in response to a memory issue on the computer that had been active.

The intentional swap at about 2:30 a.m. PST today (Thursday, Feb. 28) put the rover, as anticipated, into a minimal-activity precautionary status called "safe mode." The team is shifting the rover from [safe mode](#) to operational status over the next few days and is troubleshooting the

condition that affected operations yesterday. The condition is related to a [glitch](#) in [flash memory](#) linked to the other, now-inactive, computer.

"We switched computers to get to a standard state from which to begin restoring routine operations," said Richard Cook of NASA's Jet Propulsion Laboratory, project manager for the Mars [Science Laboratory](#) Project, which built and operates [Curiosity](#).

Like many spacecraft, Curiosity carries a pair of redundant main computers in order to have a backup available if one fails. Each of the computers, A-side and B-side, also has other redundant subsystems linked to just that computer. Curiosity is now operating on its B-side, as it did during part of the flight from Earth to Mars. It operated on its A-side from before the August 2012 landing through Wednesday.

"While we are resuming operations on the B-side, we are also working to determine the best way to restore the A-side as a viable backup," said JPL engineer Magdy Bareh, leader of the mission's anomaly resolution team.

The spacecraft remained in communications at all scheduled communication windows on Wednesday, but it did not send recorded data, only current status information. The status information revealed that the computer had not switched to the usual daily "sleep" mode when planned. Diagnostic work in a testing simulation at JPL indicates the situation involved corrupted memory at an A-side memory location used for addressing memory files.

Scientific investigations by the rover were suspended Wednesday and today. Resumption of science investigations is anticipated within several days. This week, laboratory instruments inside the rover have been analyzing portions of the first sample of rock powder ever collected from the interior of a rock on Mars.

NASA's [Mars Science](#) Laboratory Project is using Curiosity to assess whether areas inside Gale Crater ever offered a habitable environment for microbes. JPL, a division of the California Institute of Technology in Pasadena, manages the project for NASA's Science Mission Directorate in Washington.

Provided by JPL/NASA

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