

Mars Orbiter in Safe Mode Increases Communication Rate

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Artist concept of Mars Reconnaissance Orbiter. Image credit: NASA/JPL

(PhysOrg.com) -- Engineers for NASA's Mars Reconnaissance Orbiter project have stepped up the communication rate being received from the orbiter as an early step in the process of determining why the spacecraft spontaneously rebooted its computer on Aug. 26.

The latest reboot occurred at 5:42 a.m. Pacific Daylight Time (12:42 Universal Time) on Wednesday, Aug. 26.

Data received from the orbiter indicate that this reboot had a different signature from reboots in February and June of this year.

Three new pieces of information are available to guide the investigation. This latest reboot affected some memory locations that had not been affected by the earlier ones. Also, unlike those earlier reboots, this event

occurred while the spacecraft was using its backup, "B Side," main computer. In early August, the orbiter unexpectedly switched itself from the "A Side" main computer to the "B Side" computer. And finally, the decreasing intervals between the four safe-mode events this year are also providing clues to the problem.

To help in identifying a root cause in case of a recurrence, engineers had programmed the spacecraft this month to frequently record engineering data onto non-volatile memory. That large amount of data now being received could give an improved record of spacecraft events leading up to the latest reboot.

The Mars Reconnaissance Orbiter currently has normal power, temperatures and battery charge. It remains in proper sun-pointed attitude and in high-rate communication with Earth. [Safe mode](#) is a precautionary status that spacecraft are programmed to enter when they sense conditions for which they do not know a more specific response. While in this mode, a spacecraft suspends non-essential activities pending further instructions from ground controllers.

"The spacecraft is stable and our priority now is to carefully work our way to understanding this [anomaly](#), with the intent of preventing recurrences," Mars Reconnaissance Orbiter Project Manager Jim Erickson, at NASA's Jet Propulsion Laboratory, Pasadena, Calif., said Friday.

The [Mars Reconnaissance Orbiter](#) has been investigating Mars with six science instruments since it reached that planet in 2006. It has returned more data than all other current and past Mars missions combined.

Provided by JPL/NASA ([news](#) : [web](#))

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