

Massive Martian dust storm silences NASA rover

An artist's rendering of Curiosity on Martian surface | Photo Credit: [AP](#)

An immense dust storm that may soon encircle Mars is threatening one of NASA's rovers on the planet's surface, with the vehicle becoming dormant and unresponsive at a site called Perseverance Valley, U.S. space agency officials said on June 13.

The officials, however, expressed optimism that the Opportunity rover, which was built to operate for three months but has thrived on Mars since January 2004, will be able to survive and continue its scientific mission.

John Callas, Opportunity project manager at NASA's Jet Propulsion Laboratory in California, said the solar-powered rover, with the sun blotted out by an intensifying dust storm already engulfing a quarter of Mars, is no longer responding to commands. The six-wheeled robotic explorer relies upon electricity that its solar panels generate from sunlight.

"The project team is very concerned," Callas told reporters, adding that a "spacecraft emergency" has been declared. "Our expectation at this point is that the rover has gone to sleep, it's in this low-power mode, and that it will remain in that low-power mode until there is sufficient energy to charge the batteries back above a certain threshold."

With its thin atmosphere and desert conditions, Mars is prone to dust storms that can last months. Opportunity weathered a planet-wide storm in 2007. Beyond power loss, there is concern about frigid conditions, though Callas said Opportunity should stay above its minimum-allowable operating temperatures "for the long term." "So we should be able to ride out the storm. When the skies clear and the rover begins to power up, it should begin to communicate with us," Callas said, expressing confidence that Opportunity will not be buried in dust. NASA engineers received a transmission from Opportunity on Sunday but no response when they attempted to contact it since.

Another NASA rover called Curiosity, which arrived on Mars in 2012, does not face the same level of threat from the storm, which was detected on May 30.

Opportunity's scientific findings include evidence that Mars may have had conditions favourable for sustaining microbial life. Opportunity has been examining whether the Perseverance Valley geological feature was carved out by flowing water, wind erosion or both. Opportunity and its twin rover, Spirit, which arrived the same month, both carrying a suite of scientific instruments to study the terrain, operated on opposite sides of the planet. Spirit ceased communications in 2010 after becoming stuck in sand.

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