Mars' Atmosphere Destructive to Methane, NASA Curiosity Rover Fails to Detect the Gas on the Red Planet

By James Paladino | First Posted: Nov 02, 2012 09:00 PM EDT

NASA's Curiosity rover has failed to find proof of methane on Mars, yet scientists attribute the absence of the gas to the Red Planet's atmosphere, reports Discovery News.

University of Michigan's Sushil Atreya explains, "Everybody is excited about the possibility about methane from Mars, because life as we know it produces methane."

Discovery notes that chemicals in Mars' atmosphere and the planet's dust storms are highly...
destructive to methane molecules, which would account for the dearth of evidence for biological processes.

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"The oxidation process could start in the atmosphere and diffuse into the surface of Mars. There possibly are oxidants in the surface of Mars, including hydrogen peroxide...that could potentially result in the rapid destruction of methane," Atreya said to the publication.

Michael Mumma of NASA's Goddard Space Flight Center told Discovery, "Maybe it's understandable because it's a very early measurement and they're just really still learning the idiosyncrasies of the instrumentation."

Space.com clarifies that methane can also be produced through abiotic processes or transported to the planet though comet collisions.

Atreya states, "The conventional destruction mechanism of methane is photochemistry, as on Earth, and that results in a several-hundred-year lifetime of methane on Mars."

Interestingly, traces of methane, thought to be leftovers from Earth, were discovered during the rover's first and second atmospheric samples.

"A year-and-a-half after we published our results, we noted that the global mean average had decreased to about three parts per billion. That was only half of what we expected it to be if there was no rapid destruction of the methane we saw," said Mumma.