

TOP 6 SCIENCE DISCOVERIES

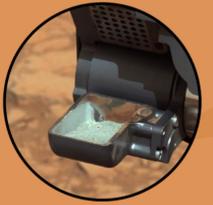
FROM NASA'S CURIOSITY ROVER

[Updated May 18, 2015]



1 A Suitable Home for Life

Ancient Mars could have the right chemistry to have supported living microbes. Curiosity found carbon, hydrogen, oxygen, phosphorus and sulfur – key ingredients necessary for life – by studying many rocks that formed in water. The first sample from inside a rock also revealed clay minerals and not too much salt, which suggests fresh, possibly drinkable water once flowed there.



2 Organic Carbon Found in Mars Rocks

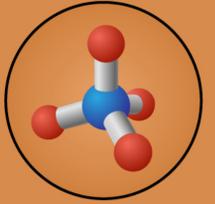
Organic molecules are the building blocks of life, and Curiosity found them after analyzing powdered rock samples. The finding doesn't necessarily mean there is past or present life on Mars, but it shows that raw ingredients for life to get started existed there at one time. It also means that ancient organic materials can be preserved for us to recognize and study today.



3 Present and Active Methane in Mars' Atmosphere

Curiosity detected a background level of atmospheric methane, and observed a ten-fold increase in methane over a two-month period.

The discovery of methane is exciting because methane can be produced by living organisms or by chemical reactions between rock and water, for example. Which process is producing methane on Mars? What caused the brief and sudden increase?



4 Radiation Could Pose Health Risks for Humans

During her trip to Mars, Curiosity experienced radiation levels exceeding NASA's career limit for astronauts. NASA will use Curiosity's data to design missions to be safe for human explorers.

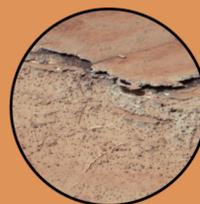


5 A Thicker Atmosphere and More Water in Mars' Past

Measurements from Curiosity have shown Mars' present atmosphere to be enriched in the heavier forms (isotopes) of hydrogen, carbon, and argon. These measurements indicate that Mars has lost much of its original atmosphere and inventory of water. This loss occurred to space through the top of the atmosphere, a process currently being observed by the MAVEN orbiter.



6 Evidence of an Ancient Streambed



Smooth and rounded rocks found by Curiosity likely rolled downstream for at least a few miles. They look like a broken sidewalk, but they are actually layers of exposed bedrock made of smaller fragments cemented together. They tell a story of a steady stream of flowing water about knee deep.

What mysteries lie ahead on the slopes of Mount Sharp?

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