NASA finds an ancient lake that may have been a home for Martian life

By Los Angeles Times, adapted by Newsela staff
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They haven’t found any little green men yet. But scientists now believe there could once have been life on Mars.

NASA’s Curiosity rover landed on the Red Planet in August 2012 to look for signs of living things. The rover can drive around the planet like a car. Last Monday, scientists said it had found the remains of an ancient lake. This lake had just the right chemicals for life to thrive.

The things the rover found were tiny and existed billions of years ago. It was around the same time that early life was starting on Earth.

The Curiosity rover drilled into a crater and discovered that it had been once full of water. A crater is a hole in the surface of a planet. Some simple animals may have lived there. These very small lifeforms feed on chemicals found in rocks. The same tiny lifeforms also exist on Earth.
Curiosity Reads Martian History

John Grotzinger is the lead scientist for the Curiosity mission. He said that it might have been easy for simple animals to live on Mars.

The findings were announced on Dec. 9 in San Francisco. Other scientists who didn’t work on the mission were very impressed. “They’re really quite amazing,” said Malcolm Walters, who works at the University of New South Wales in Australia.

The history of Mars is written in its many layers of rock. Curiosity set out to discover this history. The rover was planning to visit Mount Sharp, a 3-mile-high mountain.

The goal was to search for places that could support life.

But the rover didn’t head straight to Mount Sharp. Instead it first visited an interesting spot called Yellowknife Bay. Curiosity drilled into two rocks there. It was a risk to turn away from the planned mission. But it paid off, Grotzinger said.

These rocks contained a lot of the chemicals needed for life. These include hydrogen, oxygen and sulfur.

What’s more, the water that was once in the lake there would have been drinkable. Water that had been found on the other side of the planet wasn’t safe to drink.

David Catling is a scientist at the University of Washington. He thinks that the water in this old lake could have supported different types of life.

Signs Of Carbon Still Missing

Curiosity has not yet found any carbon. Carbon is the most important element for all life on Earth. But life on Mars could have thrived without carbon, and some lifeforms would have done just fine with what was already here.

Yet scientists do want to find some carbon. This would mean that Mars once had more places that could have supported life.

The Curiosity team feared that the surface of Mars had been damaged too much over the years. Bits of high energy have been hitting the planet from space. This would have also destroyed any carbon that was once on the planet.

One scientist said it was “a pretty serious concern” that it had been lost over time.
Then Curiosity took some soil samples. The rover discovered gases that helped pin down the age of the planet’s surface. It was only about 78 million years old, much younger than the scientists had expected. That meant the amount of damage to the soil was also lower than they had expected.

**Curiosity Now Heading For A Cliff**

The team then noticed a small cliff located some distance from where Curiosity landed. The scientists realized that the cliff had once covered the rocks they wanted to sample. But over time the cliff had worn away, showing the new, younger rock underneath.

The team will now send the rover to dig at one of these cliffs. They hope to find some carbon. If any carbon exists on Mars, this is the best place to search for it.

So the scientists plan to take this information and run with it. But, they can only run as fast as the rover’s top speed, which is 1.57 inches per second on flat ground.

Curiosity will visit an interesting cliff called KMS-9. Scientists don’t know if there was also a lake there. But they will ride the rover up to a rock. Then they will use Curiosity’s drill for more testing and hopefully some more exciting findings.

NASA scientist Douglas Ming led the study. He said you never know what you are going to find. “One thing I’ve come to expect, doing Mars research, is to expect the unexpected,” Ming said.