

New Research Indicates Life on Mars a Possibility

Scientists analyzing data from a NASA spacecraft have found the first evidence that briny water flowed on the surface of Mars as recently as last summer, a paper published on Monday showed, raising the possibility that the planet could support life.

Although the source and the chemistry of the water is unknown, the discovery will change scientists' thinking about whether the planet that is most like Earth in the solar system could support present day microbial life.

"It suggests that it would be possible for life to be on Mars today," John Grunsfeld, NASA's associate administration for science, told reporters.

"Mars is not the dry, arid planet that we thought of in the past. Under certain circumstances, liquid water has been found on Mars," said Jim Green, the agency's director of planetary science.

The discovery was made when scientists developed a new technique to analyze chemical maps of the surface of Mars obtained by NASA's Mars Reconnaissance Orbiter spacecraft.

They found telltale fingerprints of salts that form only in the presence of water in narrow channels cut into cliff walls throughout the planet's equatorial region.

The slopes, first reported in 2011, appear during the warm summer months on Mars, then vanish when the temperatures drop.

Scientists suspected the streaks, known as recurring slope lineae, or RSL, were cut by flowing water, but previously had been unable to make the measurements.

“I thought there was no hope,” Lujendra Ojha, a graduate student at Georgia Institute of Technology and lead author of a paper in this week’s issue of the journal Nature Geoscience, told Reuters.

Mars Reconnaissance Orbiter makes its measurements during the hottest part of the Martian day, so scientists believed any traces of water, or fingerprints from hydrated minerals, would have evaporated.

Also, the chemical-sensing instrument on the orbiting spacecraft cannot home in on details as small as the narrow streaks, which typically are less than 16 feet (5 meters) wide.

But Ojha and colleagues created a computer program that could scrutinize individual pixels. That data was then correlated with high-resolution images of the streaks. Scientists concentrated on the widest streaks and came up with a 100 percent match between their locations and detections of hydrated salts.

The discovery “confirms that water is playing a role in these features,” said planetary scientist Alfred McEwen, with the University of Arizona. “We don’t know that it’s coming from the subsurface. It could come from the atmosphere.”

Whatever the water’s source, the prospect of liquid water, even seasonally, raises the intriguing prospect that Mars, which is presumed to be a cold and dead planet, could support life today.

However, McEwen said much more information about the water’s chemistry would be needed before scientists could make that assessment.

“It’s not necessarily habitable just because it’s water – at least to terrestrial organisms,” he said.

The evidence that there was water on the planet recently was the key finding in the study released on Monday. NASA's ongoing Mars rover Curiosity has already found evidence that Mars had all the ingredients and suitable habitats for microbial life to exist at some point in its past.

Scientists have been trying to figure out how it transformed from a warm, wet and likely Earth-like planet early in its history into the cold, dry desert that exists today.

Billions of years ago, Mars, which lacks a protective, global magnetic field, lost much of its atmosphere. Several initiatives are under way to determine how much of the planet's water was stripped away and how much remains locked in ice in underground reservoirs. {eoa}

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