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Usable water could be found on Mars

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One of the crucial issues for mankind to solve before landing humans on Mars is that they must find usable water on the barren, reddish planet for the explorers to consume.

A recent finding by Chinese scientists based on data obtained by China's Martian rover Zhurong

may have brought that goal closer to reality.

According to a group of researchers at the National Space Science Center of the Chinese Academy of Sciences, after analyzing shortwave infrared spectral data obtained by the rover, they have identified hydrated sulfate/silica materials on the Amazonian terrain at Zhurong's landing site in the southern part of an impact

basin called Utopia Planitia.

"These hydrated minerals are associated with bright-toned rocks and are interpreted to be duricrust developed locally. The lithified duricrusts suggest that formation with substantial liquid water originates by either groundwater rising or subsurface ice melting. In situ evidence for aqueous activities identified at Zhurong's landing site indicates a more active Amazonian

hydrosphere for Mars than previously thought," reads a paper written by the scientists and published on Wednesday in the newest issue of the scientific journal *Science Advances*.

Liu Yang, a scientist at the State Key Laboratory of Space Weather of the National Space Science Center and lead author of the paper, said their findings indicate that liquid water activities might have been more active than previously thought during the Amazonian epoch, which began about 3 billion years ago and remains ongoing.

"There is likely to be a large amount of usable water in hydrous minerals around the landing site of Zhurong as well as the vast areas in Mars' northern lowlands. That resource can be used in manned explorations on Mars in the future," the researcher said.

Zhurong is the core component of Tianwen 1, the country's first interplanetary mission, and is also the sixth rover on the Red Planet, following five from the United States. It is tasked with surveying Mars' landforms, geological structures, soil characteristics, potential

locations of water and ice, and atmospheric and environmental characteristics, as well as magnetic, gravitational and other physical fields.

As of Thursday, the 1.85-meter-tall, 240-kilogram Zhurong has worked on Mars for nearly a year — far outliving its three-month life expectancy. The rover has traveled nearly 2,000 meters and obtained a great deal of data, mission controllers at the China National Space Administration said, adding it still has sufficient energy and is in good condition.