

Curiosity finds rocks similar to Earth's crust on Mars

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Madrid: Rocks rich in silica similar to those in the oldest part of Earth's continental crust are scattered throughout the area where NASA's Curiosity probe is exploring on Mars, according to a study published on Monday in Nature Geoscience.

The discovery comes amid growing evidence that, in the past, Mars may have been much more similar to the ancient Earth than scientists had thought.

The robotic exploratory vehicle has been moving through the area surrounding Gale Crater, which was formed about 3.6 billion years ago, and there it has discovered light-coloured, quartzlike rocks that contrast with the ones of basaltic composition it had encountered in geologically younger areas so far on its Martian trek.

The continental crust, which is less dense and of a different composition than that beneath the oceans, had been thought to be unique to Earth and had been attributed to the complex magmatic process possibly related to the appearance of our planet's tectonic plates.

In the case of the Martian crust, however, scientists had thought that there was never any magmatic process at work and, thus, the crust must have been formed mainly of basalt, although recent missions to Mars have discovered isolated examples of materials rich in silica, casting doubt on the basalt-only hypothesis.

An international team analysed the geochemical data from more than 22 rocks examined with Curiosity's ChemCam instrument - which uses a laser to zap rock samples and analyses the resulting vapour puff - while the small wheeled robot vehicle has been traversing an ancient landscape near Gale Crater.

The experts, headed by Violaine Sautter, with the French Museum of Natural History, found that the light rocks are rich in silica and are of different compositions.

The composition of some of those rocks is similar to some of the Earth's oldest continental crust materials.

The scientists suggest that the light rocks rich in silica could be the remains of an ancient Martian crust similar to Earth's first continental crust, although they said that more data is needed to be able to confirm that.

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