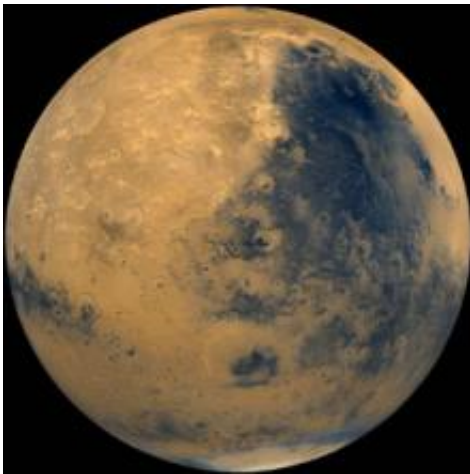


Rocks on Mars may provide link to evidence of living organisms 4 billion years ago

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Mars. Image: NASA

A new article in press of the journal *Earth and Planetary Science Letters* unveils groundbreaking research on the hydrothermal formation of Clay-Carbonate rocks in the Nili Fossae region of Mars. The findings may provide a link to evidence of living organisms on Mars, roughly 4 billion years ago in the Noachian period.

The paper "Hydrothermal formation of Clay-Carbonate alteration assemblages in the Nili Fossae region of Mars", by Adrian J. Brown et al, suggests that carbonate bearing rocks found in the Nili Fossae region of Mars are made up of hydrothermally altered ultramafic (perhaps komatiitic) rocks.

It also shows that the carbonates at Nili Fossae are not pure Mg-carbonate. Moreover, the study explains that talc is present in close proximity to the carbonate locations - rather than previously suggested saponite - and talc-carbonate alteration of high-Mg precursor rocks has taken place.

Adrian Brown, corresponding author, explains: "We suggest that the associated hydrothermal activity would have provided sufficient energy for [biological activity](#) on early Mars at Nili Fossae. Furthermore, in the article we discuss the potential of the Archean volcanics of the East Pilbara region of Western Australia as an analog for the Nochian Nili Fossae on Mars. They indicate that [biomarkers](#) or evidence of [living organisms](#), if produced at Nili, could have been preserved, as they have been in the North Pole Dome region of the Pilbara craton."

"[Earth and Planetary Science Letters](#) is delighted to be publishing this exciting new scientific finding, which marks a significant finding in the Nili Fossae region of Mars, highlighting similarities between traces of life on early Earth and early Mars, and suggests a landing site for an exobiology mission to [Mars](#)", remarked Tilman Spohn, Editor, Earth and Planetary Sciences."

More information: The article title is "Hydrothermal formation of Clay-Carbonate alteration assemblages in the Nili Fossae region of Mars" ([doi:10.1016/j.epsl.2010.06.018](https://doi.org/10.1016/j.epsl.2010.06.018)) by Adrian J. Brown et al.

Provided by Elsevier

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