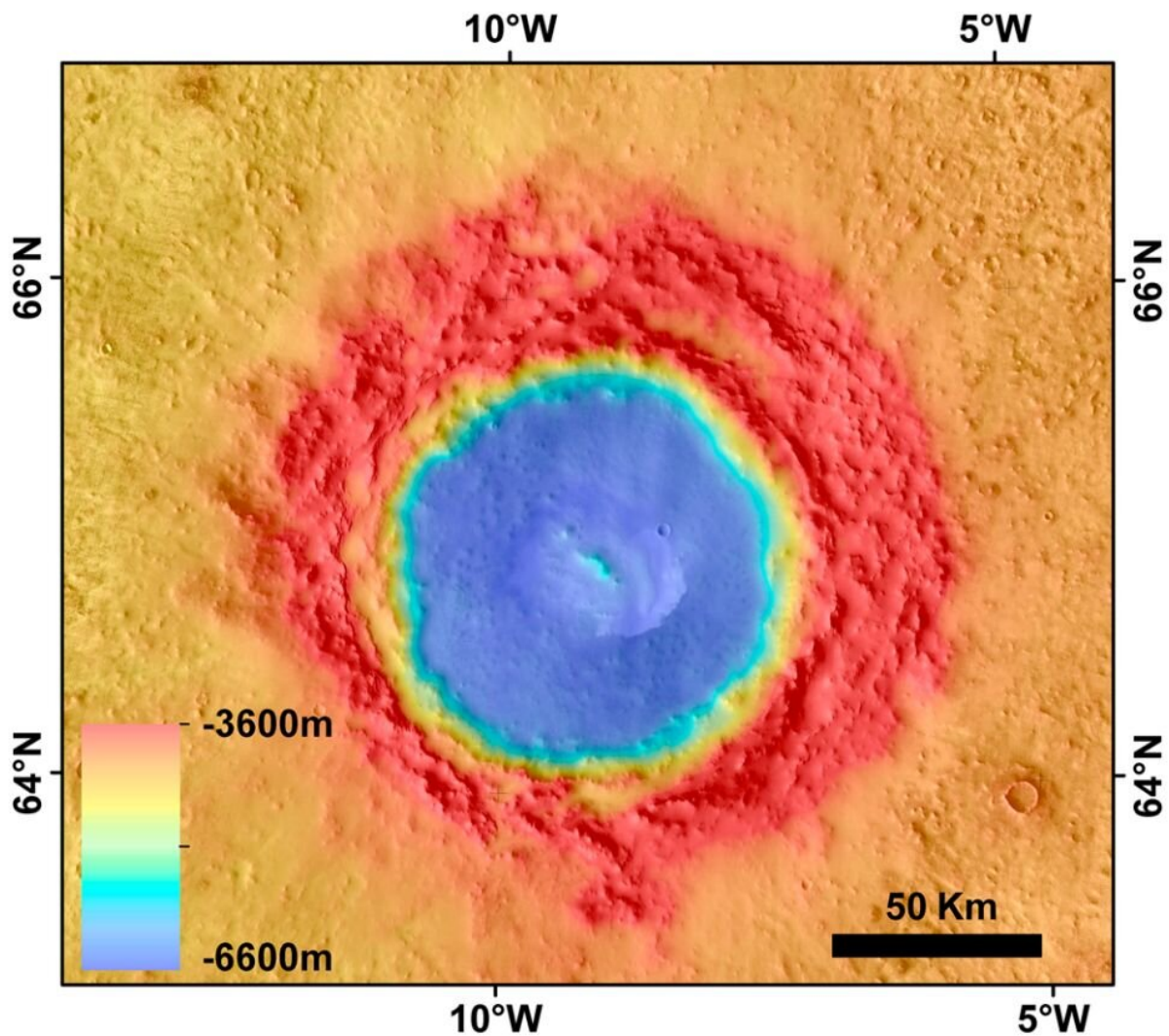


# Researchers suggest Lomonosov crater could be more evidence of mega-tsunami on Mars

August 6 2019, by Bob Yirka



Topography of Lomonosov crater (Mars Orbiter Laser Altimeter digital elevation background). Credit: NASA/JPL/USGS

A team of researchers from France, Australia and Spain has found evidence that suggests the Lomonosov crater impact event on Mars could have been the source of a mega-tsunami on the Red Planet billions of years ago. In their paper, published in *Journal of Geophysical Research*, the group outlines their study of the crater and the evidence that suggests it could have been ground zero for a massive tsunami.

Three years ago, a team of researchers found evidence on Mars that suggested a giant tsunami had occurred billions of years ago—not long after the formation of the planet. The evidence consisted of geological formations that resembled some on Earth that had been formed by a tsunami. That led the researchers with this new effort to try to trace back the possible origin of such a tsunami.

Suspecting that it was likely due to a celestial body of some sort impacting the planet, the team began looking for craters in the area that might fit with their prior observations. After studying several candidates, the researchers settled on Lomonosov because it appeared to be both from the same [time period](#) as the possible tsunami and the right size. It was also in the right place and bore a striking resemblance to marine craters on Earth. A closer look at the crater showed that part of its rim was missing, possible evidence that it was worn down by backwash as displaced water returned. The researchers also noted that the crater appeared to be approximately the same theoretical depth as the ancient Mars [ocean](#).

The arguments for a tsunami and now a possible source provide new evidence for a longer-lasting ocean on Mars—a topic that is still very much under debate by Mars scientists. Most agree that an ocean existed over 3 billion years ago, but there are a variety of opinions about how long it lasted. The researchers with this new effort suggest it lasted long

enough for an ocean to exist as late as the time of the impact that formed the Lomonosov [crater](#), resulting in the proposed [tsunami](#).

**More information:** F. Costard et al. The Lomonosov Crater Impact Event: A Possible Mega-Tsunami Source on Mars, *Journal of Geophysical Research: Planets* (2019). [DOI: 10.1029/2019JE006008](https://doi.org/10.1029/2019JE006008)

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