

Enhanced 3D Model of Mars Crater Edge Shows Ups and Downs

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A digital terrain model generated from a stereo pair of images provides this synthesized, oblique view of a portion of the wall terraces of Mojave Crater in the Xanthe Terra region of Mars. Image credit: NASA/JPL-Caltech/University of Arizona

A dramatic 3D Mars view based on terrain modeling from NASA's Mars Reconnaissance Orbiter data shows "highs and lows" of Mojave Crater.

The vertical dimension is exaggerated three-fold compared with horizontal dimensions in the synthesized images of a portion of the crater's wall. The resulting images look like the view from a low-altitude aircraft. They reflect one use of digital modeling derived from two observations by the orbiter's High Resolution Imaging Science Experiment camera.

This enhanced view shows material that has ponded and is backed up

behind massive blocks of bedrock in the crater's terrace walls. Hundreds of Martian impact craters have similar ponding with pitted surfaces. Scientists believe these "pitted ponds" are created when material melted by the crater-causing impacts is captured behind the wall terraces.

Mojave [Crater](#), one of the freshest large craters on [Mars](#), is about 60 kilometers (37 miles) in diameter. In a sense, it is like the Rosetta Stone of Martian craters, because it is so fresh. Other craters of this size generally have already been affected by erosion, sediment and other geologic process. Fresh craters like Mohave reveal information about the impact process, including ejecta, melting and deposits.

Provided by JPL/NASA

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