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# The Moon's Tsiolkovskiy Crater's Boulders

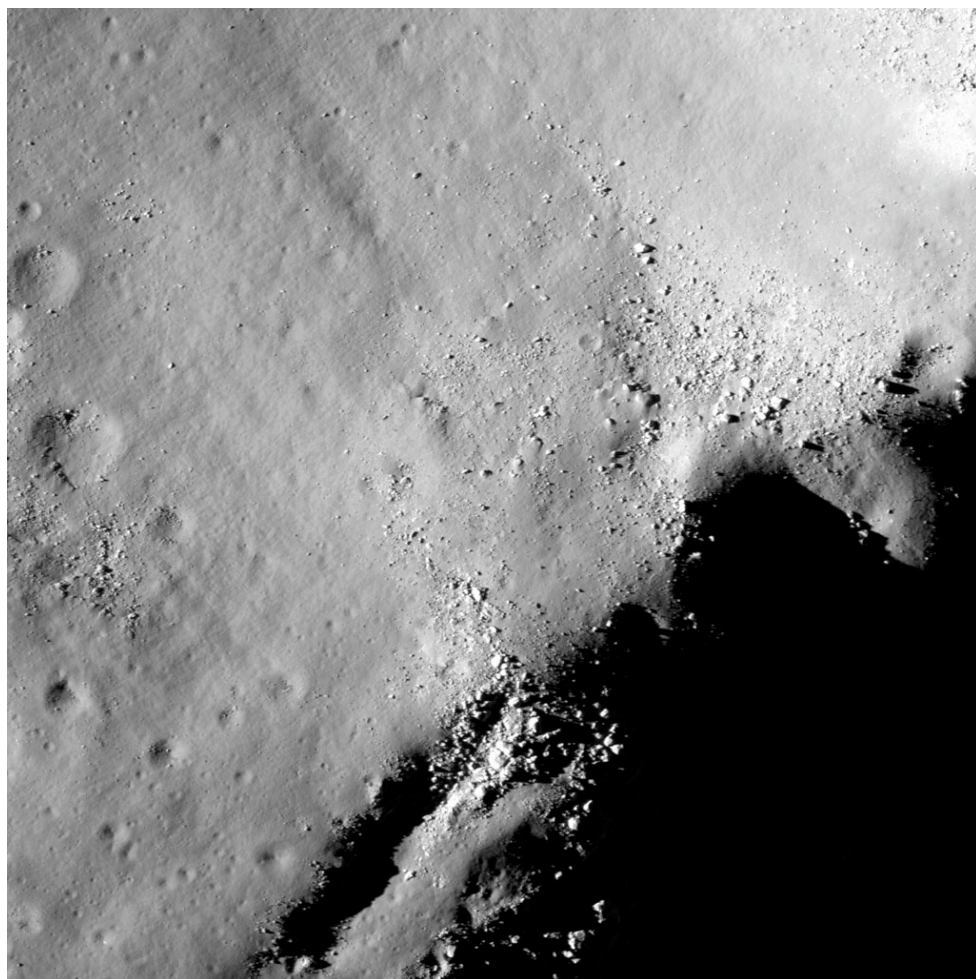
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Tsiolkovskiy is a spectacular example of complex impact crater. It has a terraced rim, a central peak, and a floor flooded with mare basalts, dark rock formed by long-passed volcanic activity. Impact events release tremendous amounts of energy and can result in large changes in the local landscape.

Just after the initial impact, the central peak was uplifted from lower crustal rock, forming a giant mountain in the middle of the crater. Later, large and small pieces of that uplifted rock rolled down and accumulated at the base of the slope — just waiting for future lunar explorers to examine. Apollo 17 astronauts used this strategy as a way to sample nearby mountain tops without having to climb to the top.



This image shows boulders perched on the summit of the central peak of the 185-km-wide (115 miles) Tsiolkovskiy Crater. This close-up image is about 14.4 km (9 miles) wide. North is toward the top of the image. Credit: NASA/Goddard Space Flight Center/Arizona State



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Frequently it is easy to see where a boulder came from by following its tracks, a great clue to geologists reconstructing the local geology. The largest boulder in this image is about 40 meters (131 feet) wide — half as big as a soccer field! The dark area in the lower right is the tip of the enormous shadow cast by the central peak.

Even though the central peak formed before the mare (comparatively flat areas on the moon's surface, formed by pooling lava in the distant past), it has fewer craters due to its steep slope which tends to slump and slide, erasing small craters. In this case, that's an apparent violation of the rule that older surfaces have more craters!

Tsiolkovskiy Crater is named after Russian scientist Konstantin Tsiolkovsky, 1857-1935.

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