

# Perseverance discovers a doughnut-shaped rock on Mars

July 3 2023

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Credit: NASA/JPL-Caltech/ASU/MSSS/LANL/CNES/IRAP

NASA's Perseverance Mars rover captured this doughnut-shaped rock in Jezero Crater from about 328 feet (100 meters) away using its Remote Microscopic Imager (RMI), part of the SuperCam instrument, on June 22, 2023, the 832nd Martian day, or sol, of the mission.

Oddly shaped rocks aren't uncommon, either on Earth or Mars; they're often formed over eons as winds sandblast [rock](#) faces. This particular rock may have formed after a smaller rock (or multiple rocks) eroded near its center. That left behind a cavity that was later enlarged by the wind.

The figure below shows the same rock in its broader context, when it was first spotted by the rover's Mastcam-Z instrument from about 1,312 feet (400 meters away) on April 15, 2023, the 765th Martian day, or sol, of the mission.



Credit: NASA/JPL-Caltech/ASU/MSSS/LANL/CNES/IRAP

SuperCam is led by Los Alamos National Laboratory in New Mexico, where the instrument's body unit was developed. That part of the instrument includes several spectrometers as well as control electronics and software. The mast unit, including RMI, was developed and built by several laboratories of the CNRS (the French research center) and French universities under the contracting authority of Centre National d'Études Spatiales (CNES), the French space agency.

Arizona State University leads the operations of the Mastcam-Z instrument, working in collaboration with Malin Space Science Systems in San Diego, on the design, fabrication, testing, and operation of the cameras, and in collaboration with the Niels Bohr Institute of the University of Copenhagen on the design, fabrication, and testing of the calibration targets.

A key objective for Perseverance's mission on Mars is astrobiology, including the search for signs of ancient microbial life. The rover will characterize the planet's geology and past climate, pave the way for human exploration of the Red Planet, and be the first mission to collect and cache Martian rock and regolith (broken rock and dust).

Subsequent NASA missions, in cooperation with ESA (European Space Agency), would send spacecraft to Mars to collect these sealed samples from the surface and return them to Earth for in-depth analysis.

The Mars 2020 Perseverance [mission](#) is part of NASA's Moon to Mars exploration approach, which includes Artemis missions to the Moon that will help prepare for human exploration of the Red Planet.

Provided by JPL/NASA

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