National Aeronautics and Space Administration

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Celebrating 10 Years of Exploration

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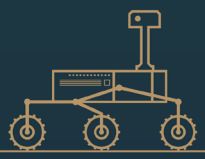
CURIOSITY:

10 Years of Martian Mountain Climbing



NASA's Mars Science Laboratory's Curiosity rover landed in Gale Crater in August 2012. To achieve its primary goal of determining whether Mars was ever suitable for life, Curiosity is exploring Mount Sharp (formally Aeolis Mons), a 3-mile-high mountain built from layered sedimentary rock in the center of Gale crater. The rover has found that the crater floor and lowest strata of Mount Sharp formed in ancient rivers and lakes that contained organic carbon, other nutrients, and energy sources suitable for life. These discoveries tell us that Mars was habitable in the ancient past.

Curiosity has climbed more than 2,000 ft (612 meters), accessing progressively younger rocks that record Mars' evolution from a wet, habitable planet to its current cold desert conditions. Higher on the mountain, Curiosity is revealing how lake sediments that built lower Mount Sharp were replaced by sediments deposited in drier environments, like sand dunes. The rover's ongoing observations will teach us how long habitable conditions persisted through dramatic changes in Mars' climate.

Curiosity has also tracked multiple years of Martian meteorological data and atmospheric composition over the seasons, and discovered high-altitude clouds. Its measurements of space radiation at the Martian surface will benefit future human Mars explorers.

STATS

- Distance driven: 28.2km
- Total elevation change: 612m
- Samples drilled: 35
- Samples scooped: 6
- Rover commands sent: 4,027,432
- Images acquired: 494,540
- Data volume returned: 310.2 GB
- Published science papers: 883

Stats as of Sol 3530 (July 11, 2022)
Learn more: mars.nasa.gov/msl