



Curiosity Weathers the Storm



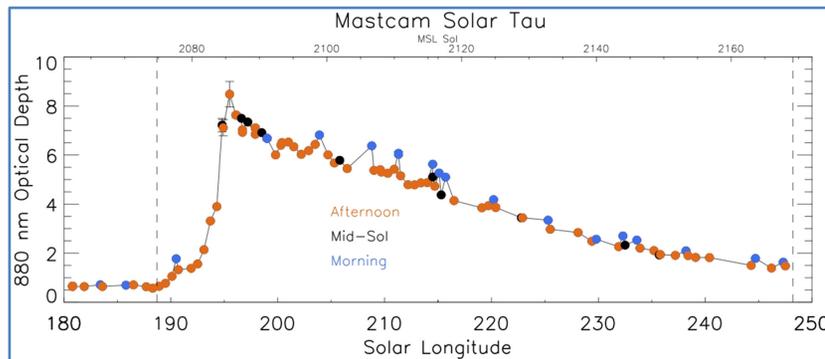
Author Scott Guzewich

What is the science question? How do atmospheric and surface conditions change during a global Martian dust storm?

What were your findings? Local and global atmospheric processes were radically altered by the storm. Atmospheric opacity reached 8.5, the 2nd highest value recorded on Mars (Opportunity's last measurement is the highest). Dust devil activity ceased for weeks. Global atmospheric air pressure waves had unprecedented magnitude.

What was the impact? Observing the storm on the surface and near the equator lets us understand how these major events shape Mars' surface features (such as dunes) and disrupt its climate for months at a time.

Why does it matter to non-scientists? Mars global dust storms are unique in the Solar System! Mars is the only world where a single storm can envelop the planet. Understanding them is key to preparing for future human exploration of Mars.



Atmospheric opacity during the dust storm measured with Curiosity's Mast Camera. The bottom axis is about 4 months of time. The storm quickly blocked out sunlight, then dissipated slowly.



May 28



July 1

NASA/JPL-Caltech/MSSS



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Top: The dust storm enveloped the entire planet; Bottom: Curiosity's Mars Hand Lens Imager camera takes a "selfie" at the "Duluth" drill hole during the dust storm.

S.D. Guzewich, M. Lemmon, C.L. Smith, G. Martínez, Á. de Vicente-Retortillo, C.E. Newman, et al. (2019), Mars Science Laboratory Observations of the 2018/Mars Year 34 Global Dust Storm. *Geophys. Res. Lett.*, 46(1), 71-79.