

Three craters on Mars discovered by PRL Scientist: International Astronomical Union named them after PRL Former Director and two small towns in India

The scientists of Physical Research Laboratory (PRL) in Ahmedabad, a Unit of Department of Space, Govt. of India, have discovered three new craters on Mars around the 21.0 S, 209 W. These craters are situated in the Tharsis volcanic region on Mars. On the recommendation of the PRL, the International Astronomical Union (IAU) Working Group for Planetary System Nomenclature approved naming the three craters on Mars as following:

1. **Lal crater:** <https://planetarynames.wr.usgs.gov/Feature/16288>

It is about 65 km wide crater, centered at -20.98° and 209.34°.

The name is given after the renowned Indian geophysicist and former Director of PRL, Prof. Devendra Lal. He was the director of PRL during 1972-1983.

About Prof.Lal : <https://www.geochemsoc.org/news/2012/12/14/devendra-lal-1929-2012>

2. **Mursan crater:** <https://planetarynames.wr.usgs.gov/Feature/16289>

It is a ~10 km wide crater and superimposed on the eastern side of the rim of the **Lal crater**. It is named after a town in Uttar Pradesh, India.

3. **Hilsa crater:** <https://planetarynames.wr.usgs.gov/Feature/16290>

It is also a ~10 km wide crater and superimposed on the western side of the rim of the **Lal crater**. It is named after a town in Bihar, India.

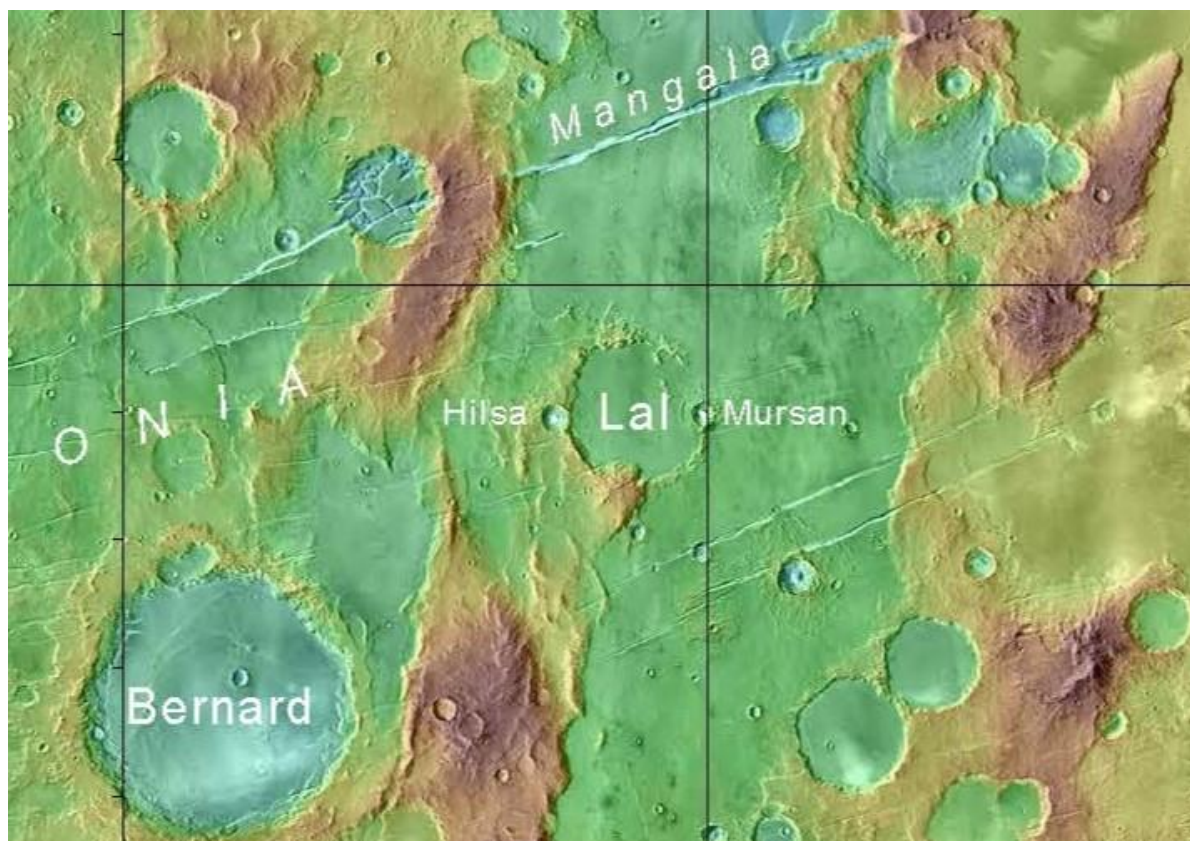


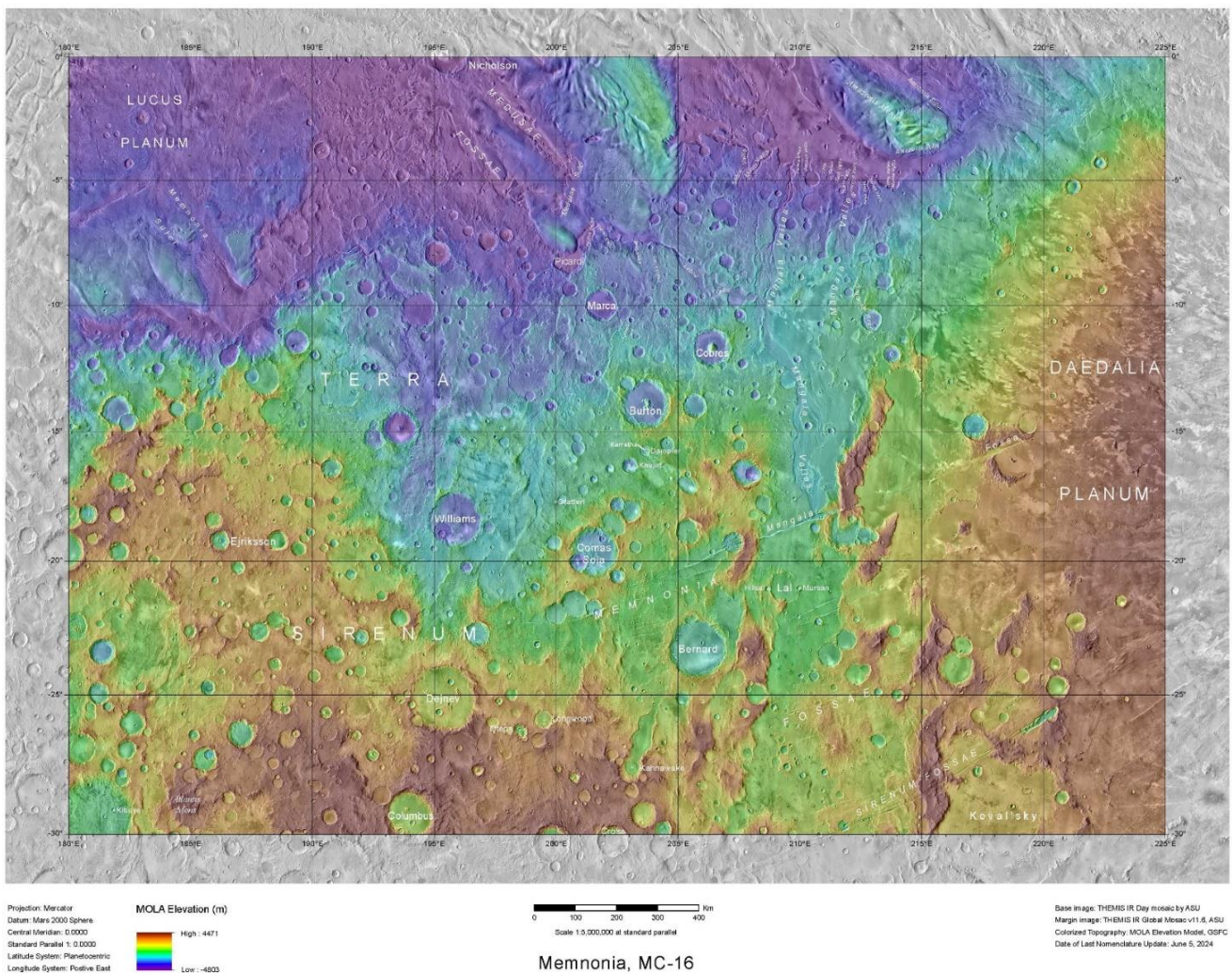
Figure Caption : The new craters Lal, Mursan and Hilsa on Mars.

Scientific importance:

The entire area of Lal crater, in the Tharsis volcanic region on Mars, is covered with lava. There are geophysical evidence of material other than lava in this crater, with a 45-m thick sedimentary deposit in the subsurface of the crater, obtained using subsurface radar SHARAD/MRO. This discovery provides compelling evidence that the water has moved large volumes of sediment into the crater now named as “Lal Crater”. This finding also confirms that Mars was once wet and water has flown on the surface. Two small superimposed craters, on either side of Lal Crater, named as Mursan and Hilsa, provide the timeline for the infilling process of the Lal Crater and suggest that the infilling has been episodic.

Link to the scientific article:

Bharti, R. R., Smith, I. B., Mishra, S. K., Srivastava, N. & Shukla, S. H. SHARAD detection of sedimentary infilling within an unnamed crater near Mangala Fossa region, Mars, *Icarus*, **371**, 114713 (2022). <https://doi.org/10.1016/j.icarus.2021.114713>



Caption: The location of the Lal, Mursan, and Hilsa craters on the Mars [from https://asc-planetarynames-data.s3.us-west-2.amazonaws.com/mc16_2014.pdf]