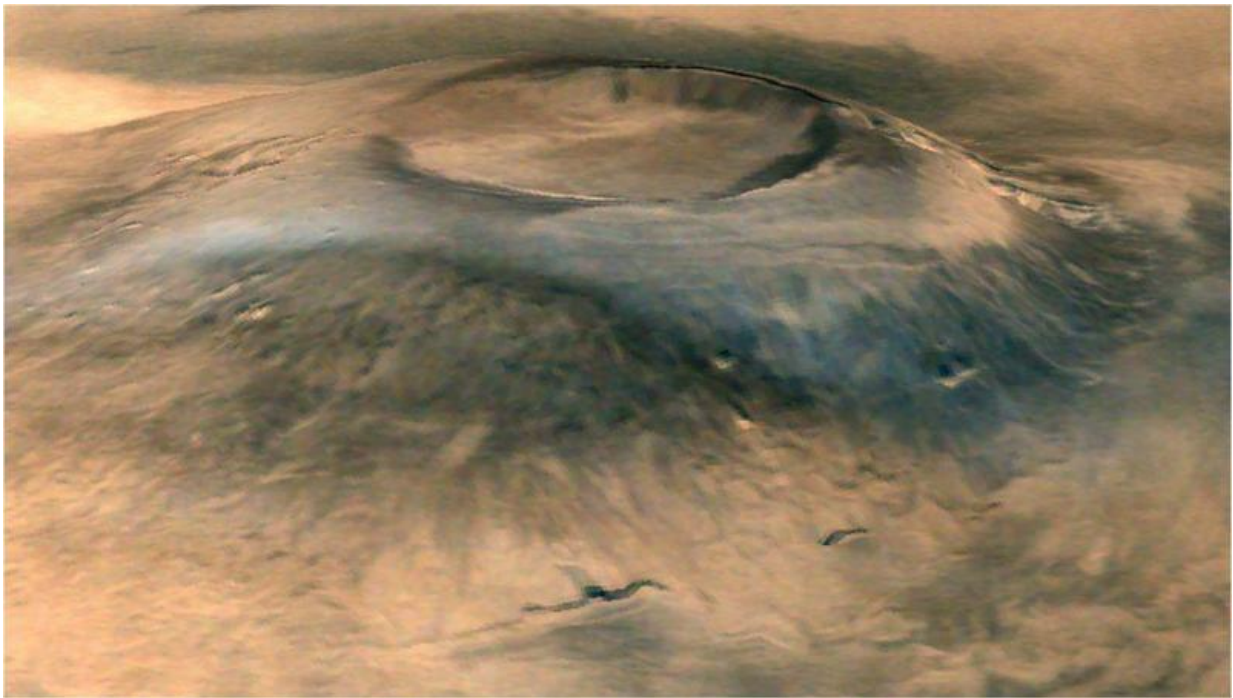


# Dazzling gallery from India's MOM Mars Orbiter Camera

June 8 2015, by Ken Kremer

---



Spectacular 3D view of Arsia Mons, a huge volcano on Mars, taken by camera on India's Mars Orbiter Mission (MOM). Credit: ISRO

India's first ever robotic explorer to the Red Planet, the Mars Orbiter Mission, more affectionately known as MOM, has captured an absolutely dazzling array of images of the fourth rock from the Sun.

The Indian Space Research Organization (ISRO), India's space agency,

has recently published a beautiful gallery of images featuring a variety of picturesque Martian canyons, volcanoes, craters, moons and more.

We've gathered a collection here of MOM's newest imagery snapped by the probes Mars Color Camera (MCC) for the enjoyment of Martian fans worldwide.

The spectacular 3D view of the Arsia Mons volcano, shown above, was "created by draping the MCC image on topography of the region derived from the Mars Orbiter Laser Altimeter (MOLA), one of five instruments on board NASA's Mars Global Surveyor (MGS) spacecraft.

The Arsia Mons image was taken from Mars orbit on 1 April 2015 at a spatial resolution of 556 meters from an altitude of 10707 km. Volcanic deposits can be seen located at the flanks of the Mons, according to ISRO.

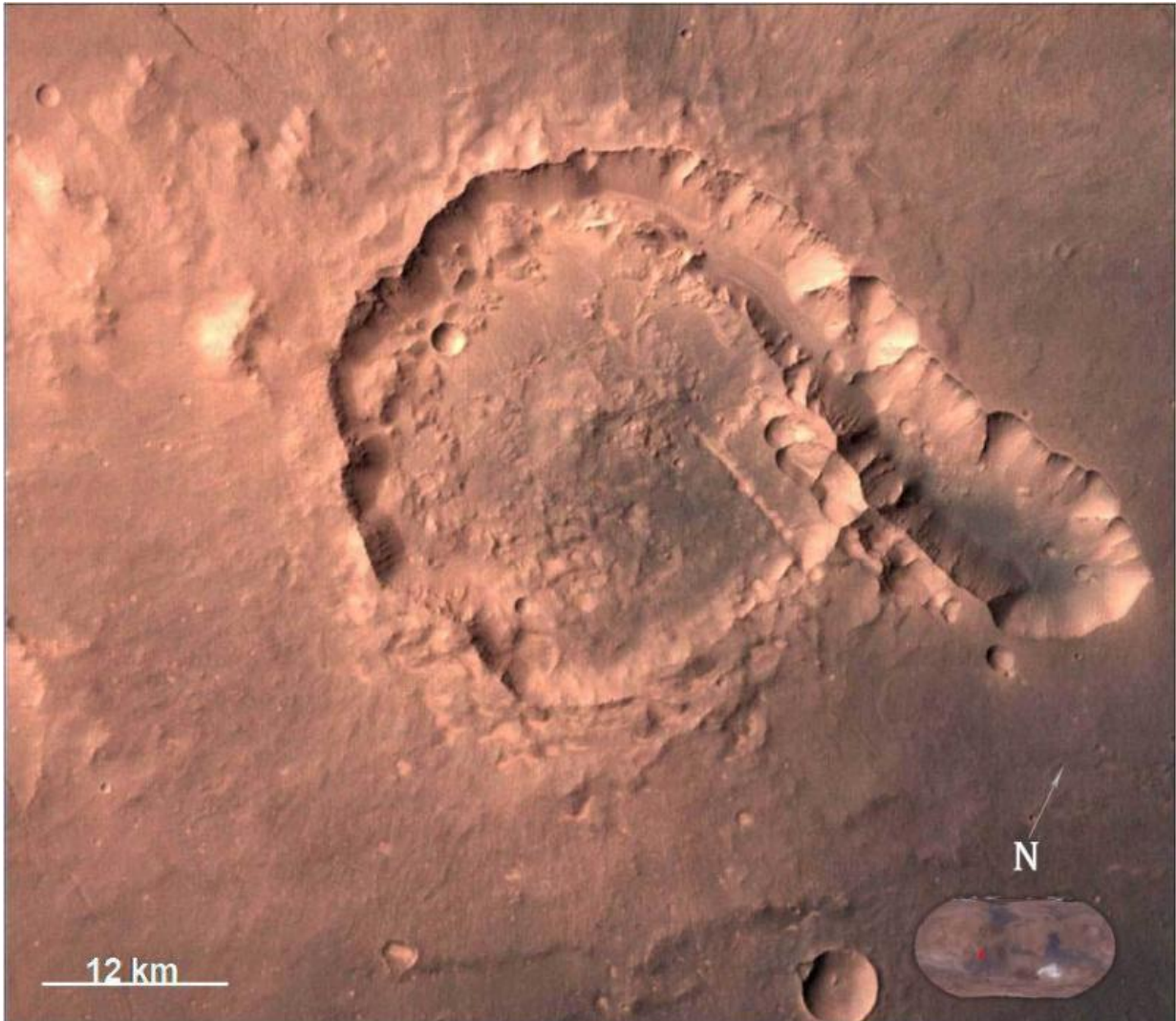
The view of Pital crater below was released in late May and taken on 23 April 2015. Pital is a 40 km wide impact crater located in the Ophir Planum region of Mars and the image shows a chain of small impact craters. It is located in the eastern part of Valles Marineris region, says an ISRO description. MCC took the image from an altitude of 808 km.

It is an odd shaped crater, neither circular nor elliptical in shape, possibly due to "regional fracture in the W-E trending fracture zone."

A trio of images, including one in stunning 3D, shows various portions of Valles Marineris, the largest known canyon in the Solar System.

Valles Marineris stretches over 4,000 km (2,500 mi) across the Red Planet , is as much as 600 km wide and measures as much as 7 kilometers (4 mi) deep.

For context here's a previously taken global image of the [red planet](#) from MOM showing Valles Marinaris and Arsia Mons, which belongs to the Tharsis Bulge trio of shield volcanoes. They are both near the Martian equator.



Pital crater is an impact crater located in Ophir Planum region of Mars, which is located in the eastern part of Valles Marineris region. This image is taken by Mars Color Camera (MCC) on 23-04-2015 at a spatial resolution of ~42 m from an altitude of 808 km. Credit: ISRO

Valles Marineris is often called the "Grand Canyon of Mars." It spans about as wide as the entire United States.

A gorgeous view of Phobos, the largest of Mars' two tiny moons, silhouetted against the surface is shown below.

MOM's goal is to study Mars atmosphere, surface environments, morphology, and mineralogy with a 15 kg (33 lb) suite of five indigenously built science instruments. It is also sniffing for methane, a potential marker for biological activity.

MOM is India's first deep space voyager to explore beyond the confines of her home planets influence and successfully arrived at the Red Planet after the "history creating" orbital insertion maneuver on Sept. 23/24, 2014 following a ten month journey from Earth.

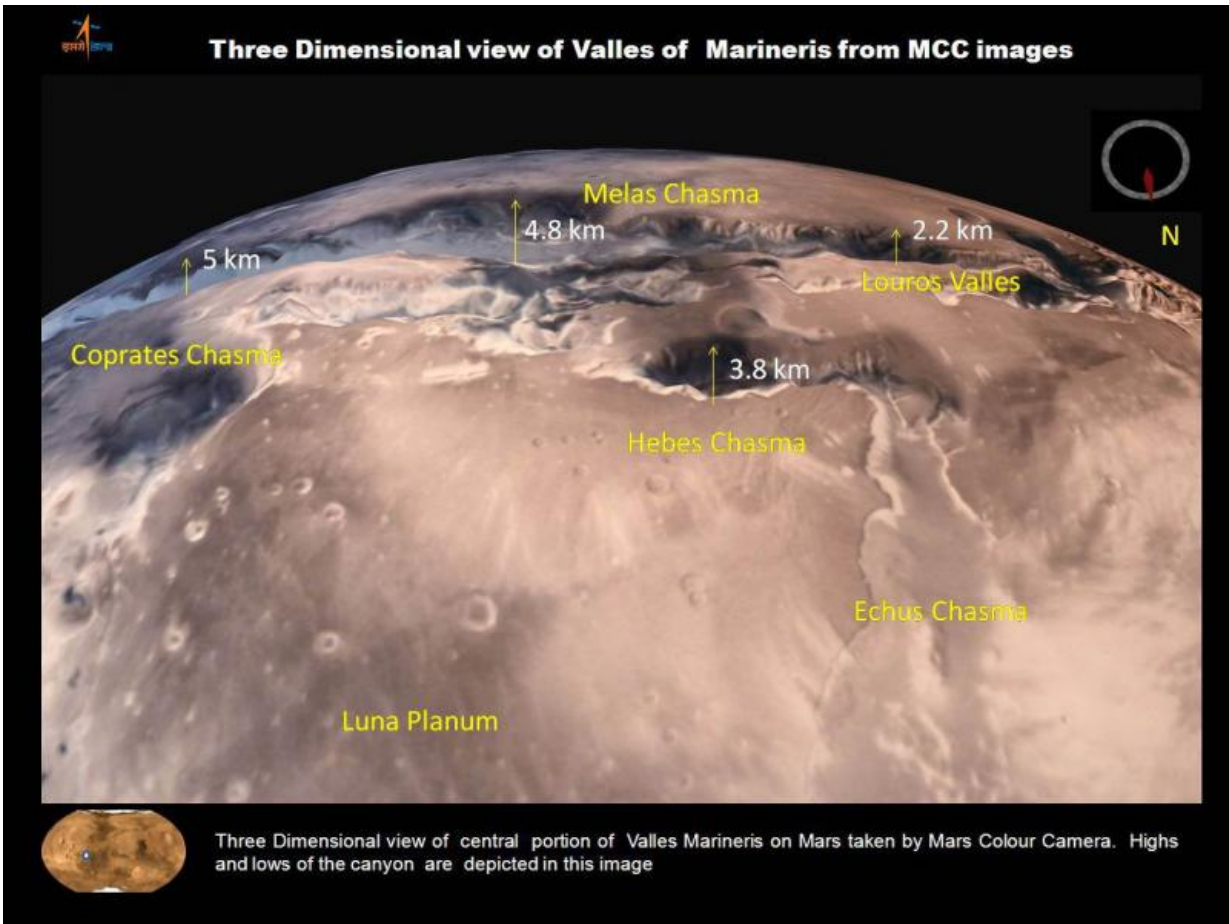
MOM swoops around Mars in a highly elliptical orbit whose nearest point to the planet (periapsis) is at about 421 km and farthest point (apoapsis) at about 76,000 km, according to ISRO.

It takes MOM about 3.2 Earth days or 72 hours to orbit the Red Planet.

MOM was launched on Nov. 5, 2013 from India's spaceport at the Satish Dhawan Space Centre, Sriharikota, atop the nations indigenous four stage Polar Satellite Launch Vehicle (PSLV) which placed the probe into its initial Earth parking orbit.

The \$73 million MOM mission was expected to last at least six months. In March, ISRO extended the mission duration for another six months since its healthy, the five science instruments are operating fine and it has sufficient fuel reserves.





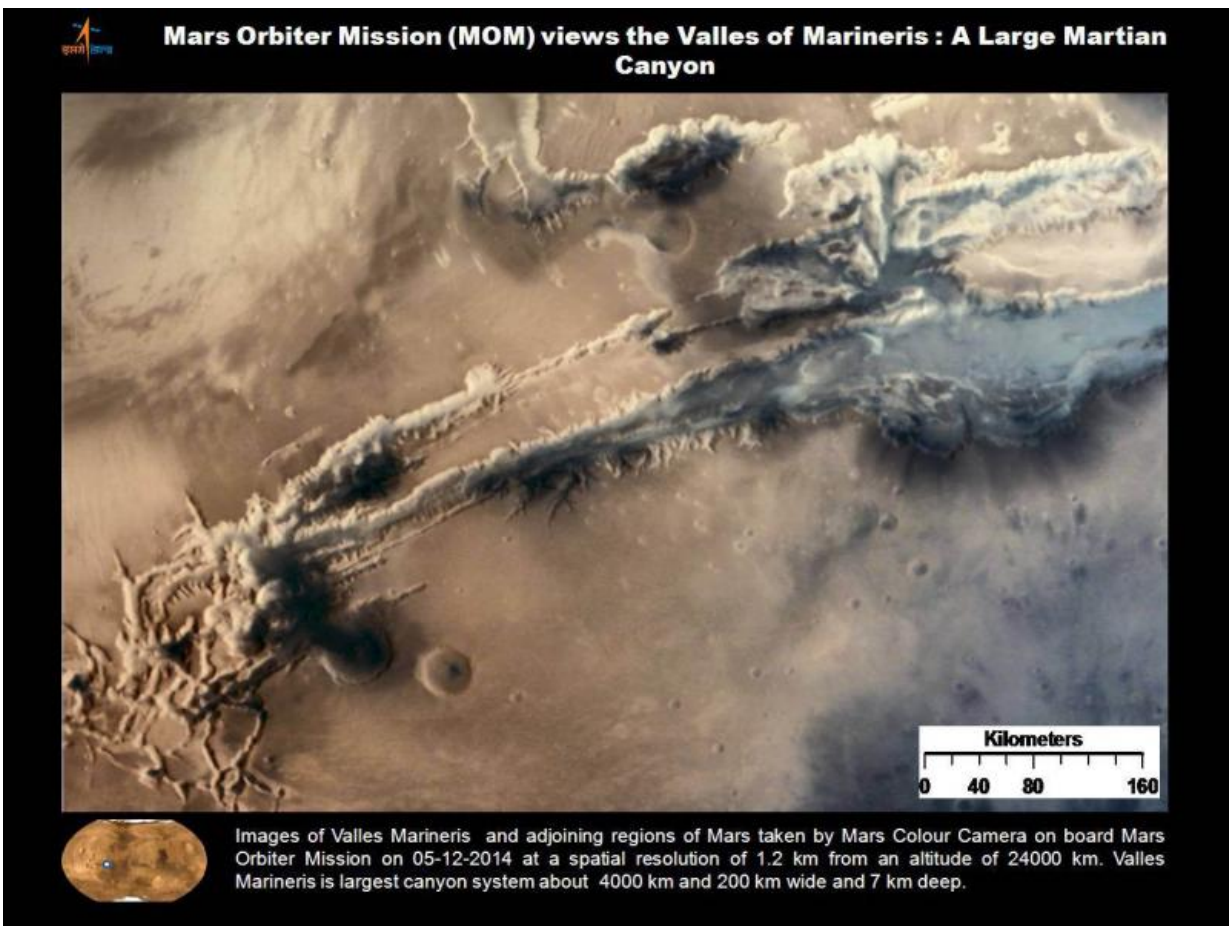
Three dimensional view of Valles Marineris center portion from India's MOM Mars Mission. Credit: ISRO

And with a communications blackout between Mars and Earth imminent as a result of nature's solar conjunction, it's the perfect time to catch up on all things Martian.

Solar conjunctions occur periodically between Mars and Earth about every 26 months, when the two planets line up basically in a straight line geometry with the sun in between as the two planets travel in their sun-centered orbits.

Since Mars will be located behind the Sun for most of June, communications with all the Terran spacecraft at the planet is diminished to nonexistent.

"MOM faces a communication outage during June 8-25," according to The Hindu.

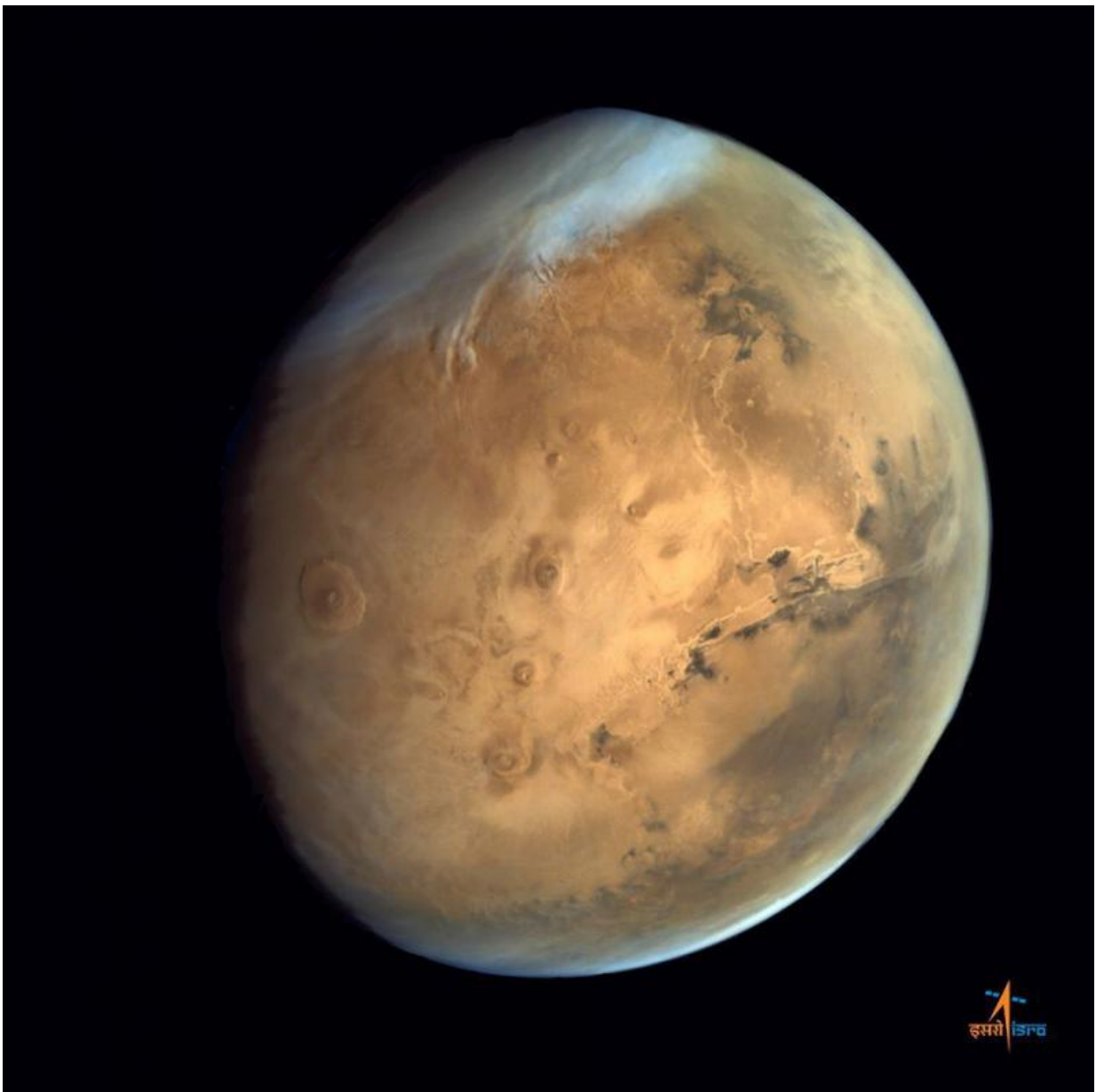


Valles Marineris from India's Mars Mission. Credit: ISRO

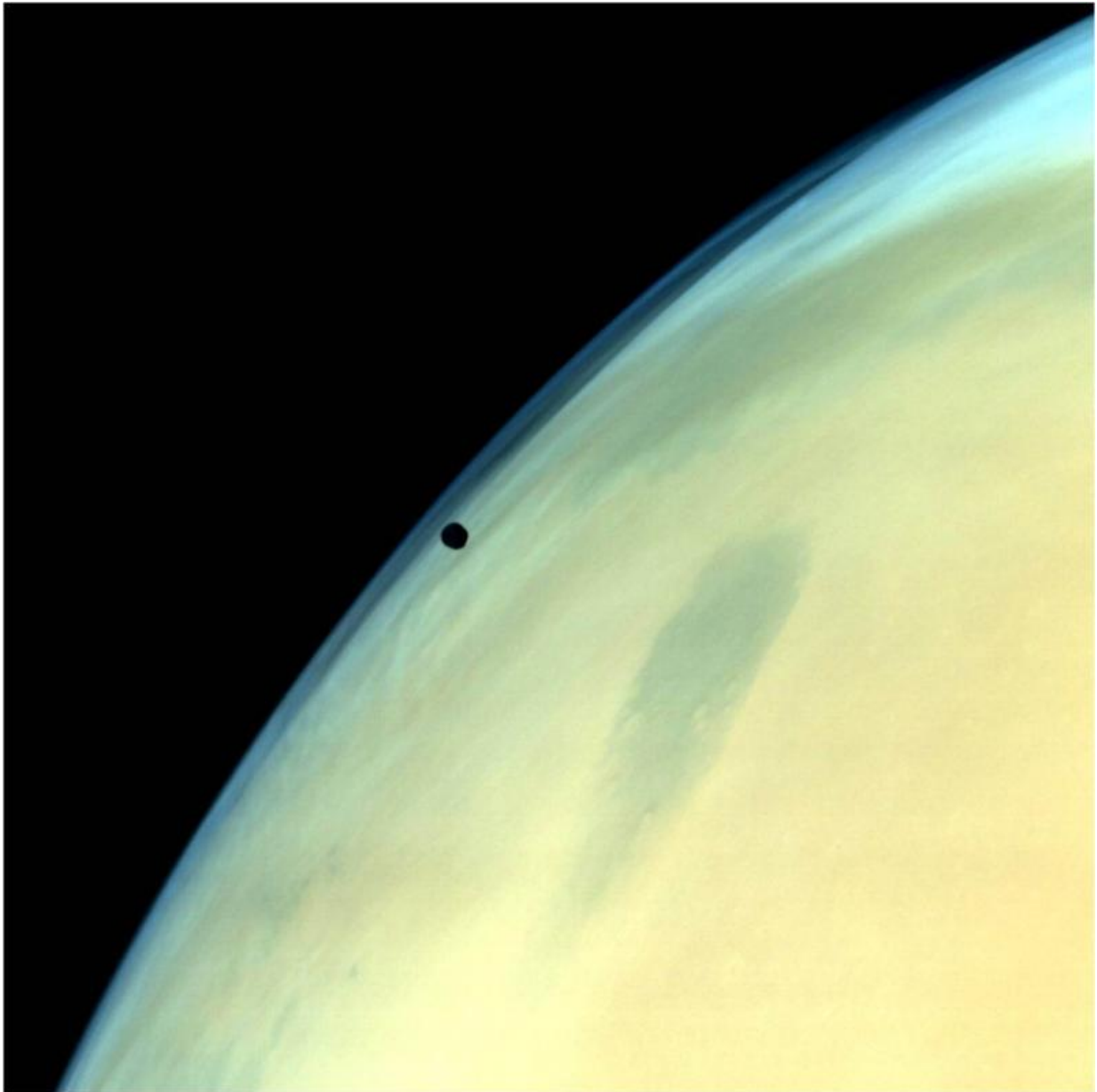
Normal science operations resume thereafter.

"Fuel on the spacecraft is not an issue," ISRO Satellite Centre Director M. Annadurai told The Hindu.

Including MOM, Earth's invasion fleet at the Red Planet numbers a total of seven spacecraft comprising five orbiters from NASA, ESA and ISRO as well as the sister pair of mobile surface rovers from NASA – Curiosity and Opportunity.



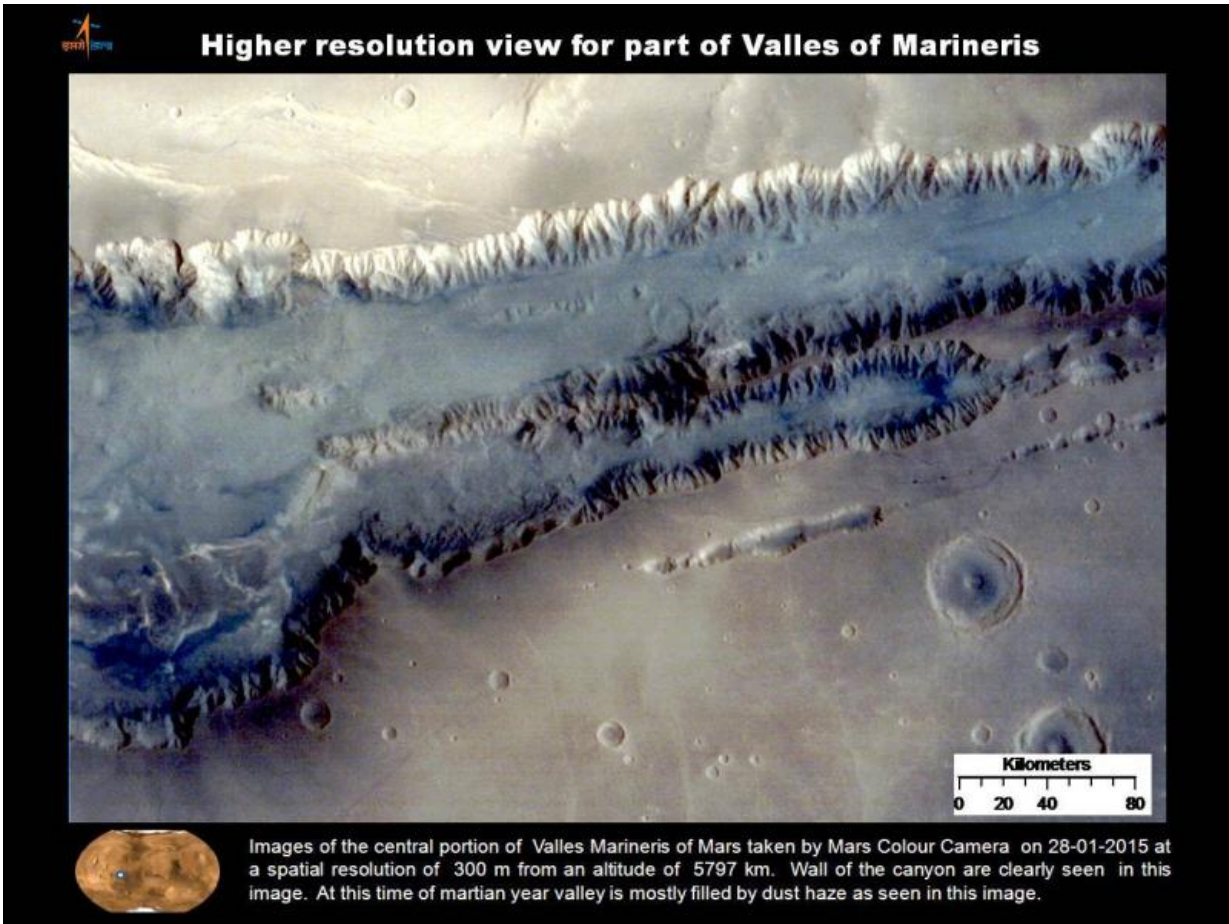
Olympus Mons, Tharsis Bulge trio of volcanoes and Valles Marineris from ISRO's Mars Orbiter Mission. Note the clouds and south polar ice cap. Credit: ISRO



Phobos, one of the two natural satellites of Mars silhouetted against the Martian



surface. Credit: ISRO



Higher resolution view of a portion of Valles Marineris canyon from India's MOM Mars Mission. Credit: ISRO

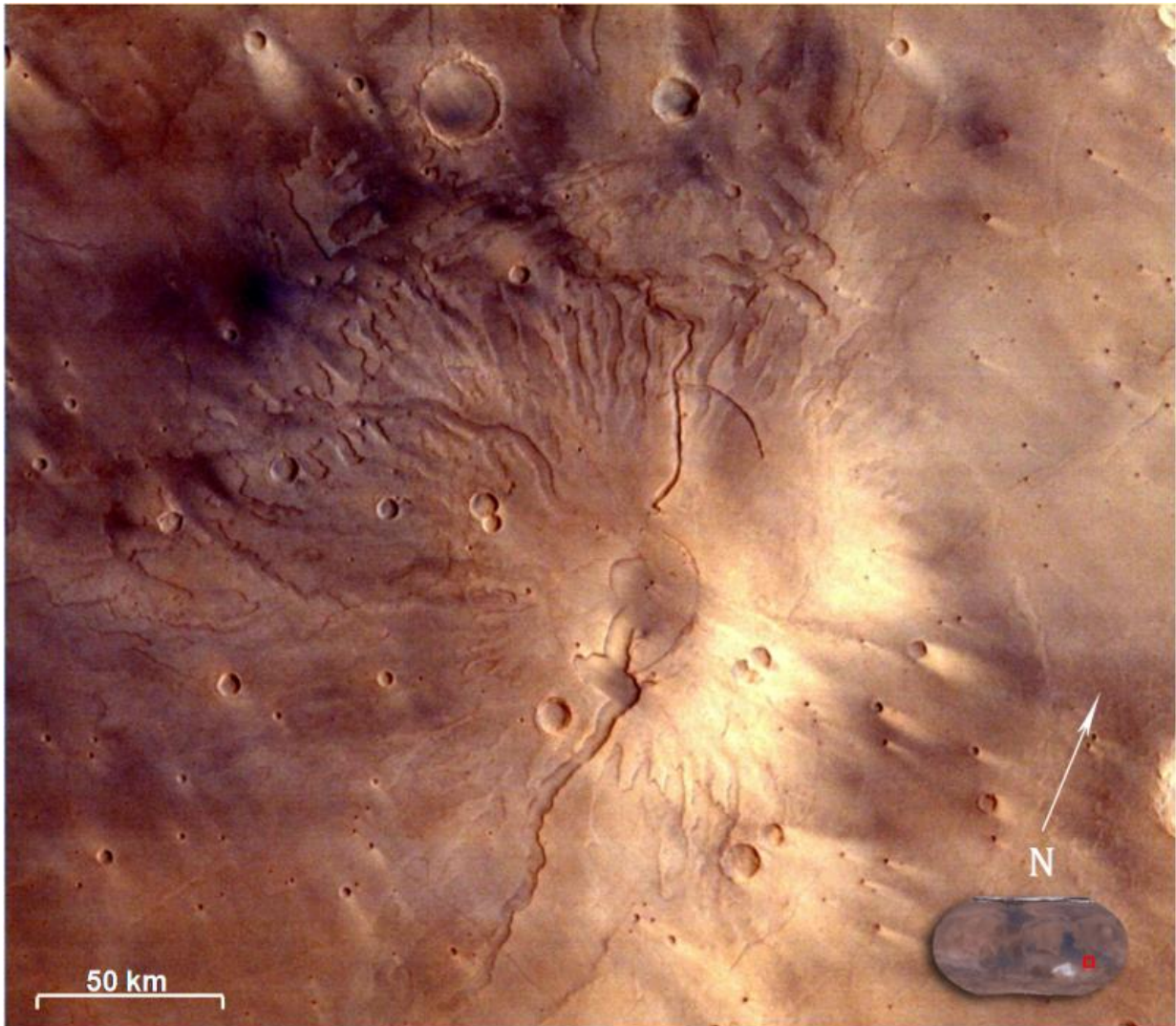


Image of Tyrrhenus Mons in Hesperia Planum region taken by Mars Color Camera (MCC) on 25-02-2015 at a spatial resolution of 166m from an altitude of 3192km. Tyrrhenus Mons is an ancient martian volcano and image shows its timeworn gullies and wind streaks. Credit: ISRO

Source: [Universe Today](#)

Citation: Dazzling gallery from India's MOM Mars Orbiter Camera (2015, June 8) retrieved 4 May 2024 from <https://phys.org/news/2015-06-dazzling-gallery-india-mom-mars.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.