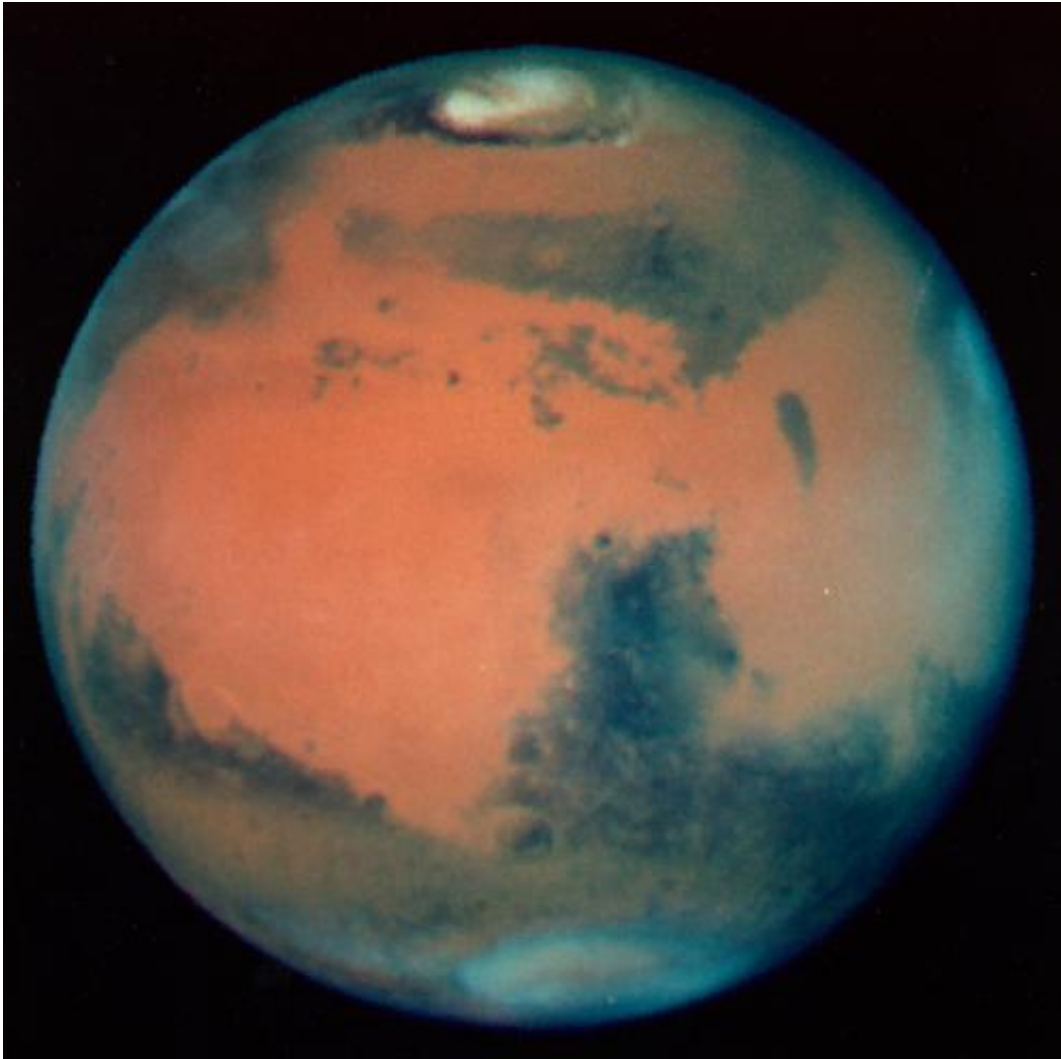


India has Red Planet Fever

January 16 2012, By Amy Shira Teitel



Mars, the possible focal point for India's future space endeavours. Credit: NASA/courtesy of nasaimages.org

Mars fever has gripped India. In a recent report from the Planetary Science and Exploration conference that was held in December 2011, scientists from the Indian Space Research Organization (ISRO) are making preliminary plans for a robotic mission to the Red Planet sometime next year.

The possibility of an Indian mission to [Mars](#) first came up during a brainstorming session at the Physical Research Laboratory (PRL), an affiliate of the ISRO, last March. For two days, scientists and students developed their plans and proposals for a mission to the [red planet](#).

A Mars Mission Study Team has been established to review proposed scenarios for the future mission, and an Indian chapter of the Mars Society formed last year at IIT-Mumbai.

The report from the meeting last month gives a concrete look at what Indian scientists have on their Martian wish list. In all, ten instruments and experiments comprise the ultimate mission.

En route to Mars, a Mars Radiation Spectrometer (Maris) will measure and characterize background levels of charged particles in interplanetary space. This data will play a vital role in determining radiation levels facing humans going to Mars.

Once at Mars, the proposed Indian mission will focus on the Martian atmosphere.

A Probe For Infrared Spectroscopy for Mars (Prism) is designed to study the spatial and seasonal variations of atmospheric gases on Mars' atmosphere throughout the mission's lifetime. The Mars Exospheric Neutral Composition Analyzer (Menca) is designed to analyze the planet's upper atmosphere-exosphere, the region roughly 400 km (248 miles) above the surface.

Specific instruments are designed to study the composition of the atmosphere. A Methane Sensor For Mars (MSM) has been proposed to detect traces of the gas in the atmosphere. Another instrument, Tis, will measure thermal emissions to help scientists generate a map reflecting the composition and mineralogy of the planet. It will also help the team monitor carbon dioxide levels.

A Plasma and Current Experiment (Pace) will assess the escape rate of the atmosphere and the structure of the “tail” this escaping atmosphere creates. Radio and microwave instruments will also be on board the spacecraft to measure the planet’s surface activity. A suite of instruments will also be on hand to detect plasma waves in the atmosphere.

Visual measurements are also part of the proposed mission. The Mars Color Camera (MCC) is designed to photograph the Martian surface from a highly elliptical orbit, roughly 500 km by 80,000 km (310 miles by 49,700 miles). The camera will be able to take high resolution images of the topography of the surface and map the polar caps, both of which are expected to help scientists understand surface events like dust storms.

According to ISRO scientists, the proposed mission could launch as early as November 2013, which would have the spacecraft enter into orbit around Mars in September 2014. A launch so relatively soon is appealing to many Indian scientists, many of whom argue that a mission to Mars should take priority over a mission to the Moon.

After all, [India](#) has already reached the Moon with the successful Chandrayaan-2 spacecraft. Why not keep the momentum going and aim for a new and exciting target with the next mission?

Source: [Universe Today](#)

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