

India Satellite Reaches Mars Orbit at First Attempt

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India put a satellite into Mars orbit early Wednesday, the only nation to have done so on a maiden voyage and the first in Asia to reach the red planet.

As the country's Prime Minister Narendra Modi looked on, space scientists at mission control in Bangalore, India's tech capital, announced that the Mangalyaan orbiter had entered Mars orbit after a 10-month voyage from Earth.

Mangalyaan, Hindi for Mars craft, cost \$74 million to send into space, making it by far the cheapest of recent missions to Mars. The U.S. spent \$671 million getting its Maven satellite to Mars orbit, where it arrived late Sunday.

Mr. Modi boasted in June that India had spent less than Hollywood had on producing the film "Gravity" to reach the red planet. On Wednesday, Mr. Modi, wearing a bright red jacket, hugged Mr. Radhakrishnan before addressing ISRO scientists in Hindi and English. "History has been created today, we have dared to reach out into the unknown and have achieved the near impossible," Mr. Modi said. "I congratulate all ISRO scientists as well as all my fellow Indians on this historic occasion."

"We have gone beyond the boundaries of human enterprise and imagination. We have navigated our spacecraft through a route known to very few," the prime minister added.

India now joins a small club of nations — the U.S., Russia and those in the European Space Agency — to have mastered interplanetary travel, giving it bragging rights over Asian rivals China and Japan whose attempts to get to Mars failed.

"Domestically this will boost the morale of the people that India has gained tremendous economic and technical development and is on the way pretty fast to becoming a developed country," said Ram Jakhu, a professor at the Institute of Air and Space Law at McGill University in Canada. "Externally, India will have its head held high to say that it is capable of such a complex task."

The mission, which took just four years from feasibility study to arrival at Mars orbit, will now study the surface of the planet to establish the presence of methane, among other tasks using the five instruments in its 15-kilogram payload.

The primary aim of the mission was to see if India had the technological capability to get to Mars. Now that it's done so, the next step will be to complete a moon landing before possibly attempting manned missions, Mr. Radhakrishnan of ISRO told India's NDTV on Tuesday.

Critics of the mission have questioned whether India, where 40% of children are malnourished, should have a space program at all. But advocates argue that development in space in turn drives innovation on Earth.

“India’s space program has a socio-economic basis for purposes like remote sensing and medical advancement. From that perspective, none of the money has gone in an extravagant way where it isn’t used for the benefit of the common man,” said Ajey Lele, author of “Mission Mars: India’s Quest for the Red Planet.”

To hold costs down, India relied on technologies it has used before and saved on fuel by using a smaller rocket to put its spacecraft into Earth orbit first to gain enough momentum to slingshot it toward Mars. India spends \$1.2 billion a year on its space program: a dollar for every member of its population. On Wednesday, for many Indians cheering their country’s achievement, that looked like a bargain.