India launches first mission to Mars

5 November 2013, by Katy Daigle

The Polar Satellite Launch Vehicle (PSLV-C25) rocket lifts off carrying India's Mars spacecraft from the east coast island of Sriharikota, India, Tuesday, Nov. 5, 2013. India on Tuesday launched its first spacecraft bound for Mars, a complex mission that it hopes will demonstrate and advance technologies for space travel. The 1,350-kilogram (3,000-pound) Mangalyaan orbiter was headed first into an elliptical orbit around Earth, after which a series of technical maneuvers and short burns will raise its orbit before it slingshots toward Mars. (AP Photo/Arun Sankar K)

India on Tuesday launched its first spacecraft bound for Mars, a complex mission that it hopes will demonstrate and advance technologies for space travel.

Hundreds of people watched the rocket carrying the Mars orbiter take off from the east-coast island of Sriharikota and streak across the sky. Many more across the country watched live TV broadcasts.

Officials at the space center described it as a "textbook launch." If the mission is successful, India will become only the fourth space program to visit the red planet after the Soviet Union, the United States and Europe.

"Capturing and igniting the young minds of India and across the globe will be the major return from this mission," mission director P. Kunhikrishnan said from the launch site.

After 44 minutes, the orbiter separated from the rocket and entered into an elliptical path around Earth. Over the next 20-25 days, it will perform a series of technical maneuvers and short burns to raise its orbit before it slingshots toward Mars.

"With teamwork and the kind of dedication we have today, any mission is not beyond our capability," said S. Ramakrishnan, head of the space center and launch authorization board.

The 1,350-kilogram (3,000-pound) orbiter Mangalyaan, which means "Mars craft" in Hindi, must travel 780 million kilometers (485 million miles) over 300 days to reach an orbit around the red planet next September.

Indians watch the live telecast of the launch of Polar Satellite Launch Vehicle (PSLV-C25) rocket carrying India's Mars spacecraft from the east-coast island of Sriharikota Tuesday, Nov. 5, 2013, in New Delhi, India. India on Tuesday launched its first spacecraft bound for Mars, a complex mission that it hopes will demonstrate and advance technologies for space travel. The 1,350-kilogram (3,000-pound) Mangalyaan orbiter was headed first into an elliptical orbit around Earth, after which a series of technical maneuvers and short burns will raise its orbit before it slingshots toward Mars. (AP Photo/Altaf Qadri)

"The biggest challenge will be precisely navigating the spacecraft to Mars," said K. Radhakrishnan, chairman of the Indian Space and Research Organization. "We will know if we pass our examination on Sept. 24, 2014."

He congratulated the scientists for putting the mission together "in a very limited time." The project began after the space agency carried out a feasibility study in 2010 after successfully launching a lunar satellite in 2008. Prime Minister Manmohan Singh announced the planned voyage to Mars only last year during his annual address to the nation.

"It's a really big thing for India!" said 13-year-old Pratibha Maurya, who gathered with her father and about 50 others to watch the launch at the Nehru Planetarium in New Delhi.

Some have questioned the $72 million price tag for a country of 1.2 billion people still dealing with widespread hunger and poverty. But the government defended the Mars mission, and its $1 billion space program in general, by noting its importance in providing high-tech jobs for scientists and engineers and practical applications in solving problems on Earth.

Decades of space research have allowed India to develop satellite, communications and remote sensing technologies that are helping to solve everyday problems at home, from forecasting where fish can be caught by fishermen to predicting storms and floods.

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"These missions are important. These are things that give Indians happiness and bragging rights," said Raghu Kalra of the Amateur Astronomers Association Delhi. "Even a poor person, when he learns that my country is sending a mission to another planet, he will feel a sense of pride for his country, and he will want to make it a better place."

The orbiter will gather images and data that will help in determining how Martian weather systems work and what happened to the large quantities of water that are believed to have once existed on Mars. It also will search Mars for methane, a key chemical in life processes that could also come from geological processes. Experts say the data will improve understanding about how planets form,

what conditions might make life possible and where else in the universe it might exist.

The orbiter is expected to have at least six months to investigate the planet's landscape and atmosphere. At its closest point, it will be 365 kilometers (227 miles) from the planet's surface, and its furthest point will be 80,000 kilometers (49,700 miles) away.

More information: Indian Space and Research Organization: www.isro.org/

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