India launches spacecraft to study the sun after successful landing near the moon's south pole

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India's Aditya-L1 spacecraft travels after it was launched from the Satish Dhawan Space Centre in Sriharikota, India, Saturday, Sept. 2, 2023. India launched its first space mission to study the sun on Saturday, less than two weeks after a successful uncrewed landing near the south polar region of the moon. Credit: AP Photo/R. Parthibhan

India launched its first space mission to study the sun on Saturday, less than two weeks after a successful uncrewed landing near the south polar region of the moon.

The Aditya-L1 spacecraft took off on board a satellite launch vehicle from the Sriharikota space center in southern India on a quest to study the sun from a point about 1.5 million kilometers (930,000 miles) from earth, known as L-1.

The spacecraft is equipped with seven payloads to study the sun's corona, chromosphere, photosphere and solar wind, the Indian Space Research Organization said.

After over an hour, the ISRO said the launch was "accomplished successfully."

"The vehicle has placed the satellite precisely into its intended orbit. India's first solar observatory has begun its journey to the destination of Sun-Earth L1 point," ISRO posted on the X platform, formerly known as Twitter.

The satellite is scheduled to take 125 days to reach the L1 point.

The screengrab from Indian Space Research Organisation (ISRO) Youtube channel shows the Aditya-L1 spacecraft lifts off on board a satellite launch vehicle from the space center in Sriharikota, India, Saturday, Sept. 2, 2023. Credit: Indian Space Research Organisation via AP

India became the first country to land a spacecraft near the moon's south pole on Aug. 23—a historic voyage to uncharted territory that scientists believe could hold vital reserves of frozen water. After a failed attempt to land on the moon in 2019, India joined the United States, the Soviet Union and China as only the fourth country to achieve this milestone.

Jitendra Singh, India's junior minister for science and technology, praised the ISRO officials for their work on the launch.

"Congratulations India. Congratulations ISRO," he said while being present at the ISRO control room. "It's a sunshine moment for India."

The sun study, combined with India's successful moon landing, would completely change the image of the ISRO in the world community, said Manish Purohit, a former scientist at the research organization.

The Aditya-L1 was headed for the L1 point of the Earth-Sun system, which affords an uninterrupted view of the sun, ISRO said. "This will provide a greater advantage of observing solar activities and their effect on space weather in real-time."

This image provided by the Indian Space Research Organisation (ISRO) shows the Aditya-L1 spacecraft lifts off on board a satellite launch vehicle from the space center in Sriharikota, India, Saturday, Sept. 2, 2023. India launched its

first space mission to study the sun on Saturday, less than two weeks after a successful uncrewed landing near the south polar region of the moon. Credit: Indian Space Research Organisation via AP

Once in place, the satellite would provide reliable forewarning of an onslaught of particles and radiation from heightened solar activity that has the potential to knock out power grids on Earth, said B.R. Guruprasad, a space scientist, in an article in The Times of India newspaper. The advanced warning can protect the satellites that are the backbone of the global economic structure as well as the people living in space stations.

"Those seven payloads are going to study the sun as a star in all the possible spectrum positions that we have visible, ultraviolet, and X-ray. … It's like we're going to get a black and white image, the color image and the high-definition image, 4K image of the sun, so that we don't miss out on anything that is happening on the sun," Purohit said.