

Japan's 'Moon Sniper' mission looks to match Indian success

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Hot on the heels of India's historic lunar landing, Japan's space program is hoping to rebound from a string of setbacks next week with the launch of its own mission: "Moon Sniper".

The rocket will carry a lander expected to reach the Moon's surface in

four to six months as well as an X-ray imaging satellite designed to investigate the evolution of the universe.

The launch is scheduled to take place Monday after bad weather pushed it back by a day, the Japan Aerospace Exploration Agency (JAXA) said Friday.

Japan's space program is one of the world's largest, but its first attempt to put a lander on the Moon failed in November 2022, and a new type of rocket exploded during a test last month.

JAXA's hopes are now centered on the "Smart Lander for Investigating Moon".

As its acronym suggests, SLIM is small and light, standing 2.4 meters (7.9 feet) high, 2.7 meters wide and 1.7 meters long, and weighing around 700 kilograms (1,545 pounds).

Dubbed the "Moon Sniper" for its precision, JAXA is aiming to land it within 100 meters of a specific target on the Moon, far less than the usual range of several kilometers.

Using a palm-sized mini rover that can change shape, the probe—developed with a toy company—aims to investigate how the Moon was formed by examining exposed pieces of the lunar mantle.

"Lunar landing remains a very difficult technology," Shinichiro Sakai from the SLIM project team told reporters on Thursday while paying homage to India's success.

"To follow suit, we will do our best in our own operations," Sakai said.

India success

On Wednesday, India landed a craft near the Moon's south pole, a historic triumph for the world's most populous nation and its low-cost space program.

Previously, only the United States, Russia and China had managed to put a spacecraft on the [lunar surface](#), and none on the south pole.

India's success came days after a Russian probe crashed in the same region and four years after the previous Indian attempt failed at the last moment.

Japan has also tried before, attempting last year to land a lunar probe named Omotenashi, carried on NASA's Artemis 1, but the mission went wrong and communications were lost.

And in April, Japanese start-up ispace failed in an ambitious attempt to become the first private company to land on the Moon, losing communication after what the firm called a "hard landing".

Japan has also had problems with launch rockets, with failures after liftoff of the next-generation H3 model in March and the normally reliable solid-fuel Epsilon the previous October.

Last month, the test of an Epsilon S rocket, an improved version of the Epsilon, ended in an explosion 50 seconds after ignition.

Plasma wind

The workhorse H2-A rocket launching from Tanegashima in southern Japan on Monday will also carry the X-Ray Imaging and Spectroscopy Mission (XRISM) developed by JAXA, NASA and the European Space Agency.

The satellite's high-resolution X-ray spectroscopic observations of the hot gas plasma wind that blows through the universe will help study the flows of mass and energy as well as the composition and evolution of celestial objects.

"There is a theory that [dark matter](#) is preventing galaxies from expanding," explained XRISM project manager Hironori Maejima.

"The question of why dark matter does not converge, and what are the forces that spread it, is expected to be clarified by measuring plasma with XRISM."

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