

ANOTHER GIANT LEAP

Relevant for: Science & Technology | Topic: Space Technology & related matters

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After aborting a countdown because of a technical fault on July 15, the Indian Space Research Organisation has put its second lunar mission in earth orbit, using a challenging launch window. That's 11 years after the first moonshot in 2008, which had sent back data answering one of the oldest questions about our satellite: Does it have water? This mission was originally planned for 2014, but was delayed because the Russian space agency, Roscosmos, a partner in the project, failed to deliver a rover. The setback has actually worked to the advantage of Indian space science. Just as it had developed indigenous cryogenic engines when it was starved of dual-use technologies, the industry has innovated an indigenous rover, Pragyan. On September 6, India expects to become the fourth nation, after the US, Russia and China, to make a soft landing on the lunar surface. [Chandrayaan 1](#) had only crash-landed a probe on the moon, and a soft landing using retro-rockets would be a crucial demonstration of capabilities. A lander must arrive at its destination with its payload (the rover, in this case) and instrumentation intact in order to remain in service for extended periods. The next stage would be a demonstration of the ability to take off again from the lunar surface, necessary for a manned lunar mission.

Equipped with a rover, Chandrayaan 2 revisits many of the mapping projects of its predecessor, and retains an interest in water ice, an important resource in the long term. But the effects of a successful lunar mission will be felt immediately on Earth, as India gains prestige as a space power. India has a cost advantage in the space race, more so than China, the other Asian nation which has developed an ambitious programme taking advantage of the falling costs of reaching space. Chandrayaan 2, which will demonstrate the ability to navigate the lunar surface, is part of a series of achievements. The most publicised is ISRO's ability to send multiple payloads into orbit at the most competitive rates. But the most recent demonstration of power is equally remarkable: In March, an anti-satellite missile was tested live. Again, India was only the fourth nation to demonstrate the capability to deploy arms in space.

But as the Indian space industry booms, it may need to exercise fiscal prudence. Several projects are being talked about, including a manned mission to Earth orbit and the moon, and even a space station. Besides, Mangalyaan has already shown a commitment to planetary science. At some point, initiatives of immediate practical value, like the launch vehicle industry, must vie for funds with prestige projects like a manned lunar mission, and strategic considerations would have to be carefully calibrated.

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