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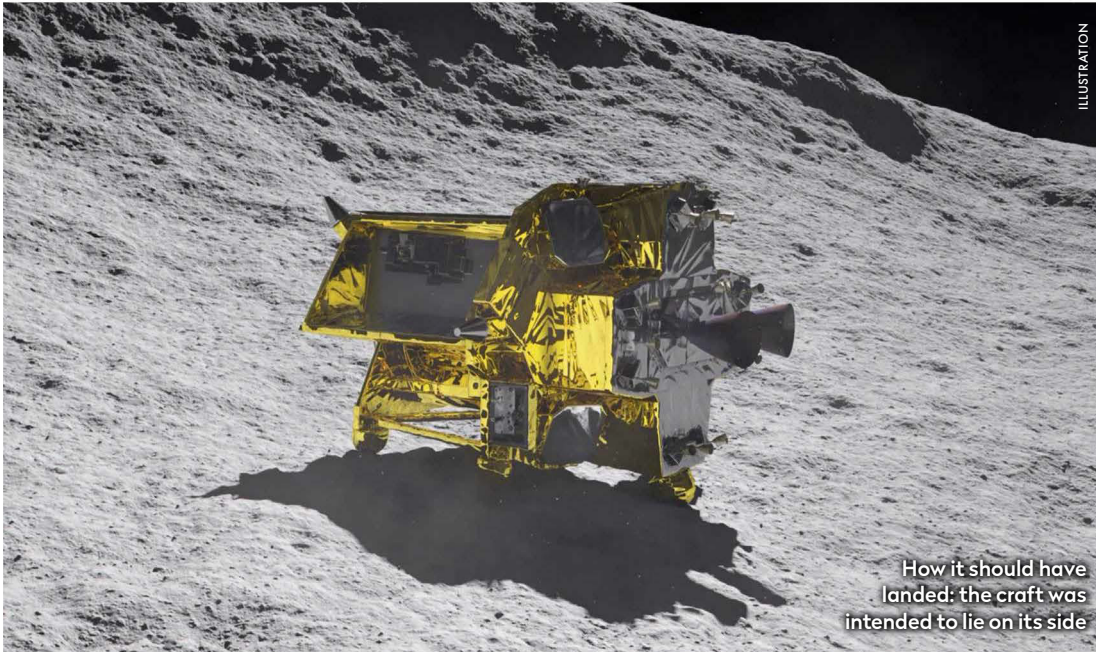
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The latest astronomy and space news, written by Ezzy Pearson

BULLETIN



How it should have landed: the craft was intended to lie on its side



Comment

by Chris Lintott

Faster, cheaper, better: NASA's slogan from the 1990s has come to haunt anyone who dreams of lobbing satellites into space.

Though the aim was for more rapid mission design, failures like Mars Climate Orbiter (which crashed after an infamous mix-up over metric and imperial units) made the approach something of a joke. Engineers muttered that you could only have two of the three – faster and cheaper inevitably meant riskier.

Now NASA is handing off responsibility to companies like Astrobotic, while JAXA uses missions like SLIM to experiment with new technology, risky missions seem accepted – and sometimes, like SLIM, pay off in the end.

Chris Lintott
co-presents
The Sky at Night

Japan's Moon mission a success in the end

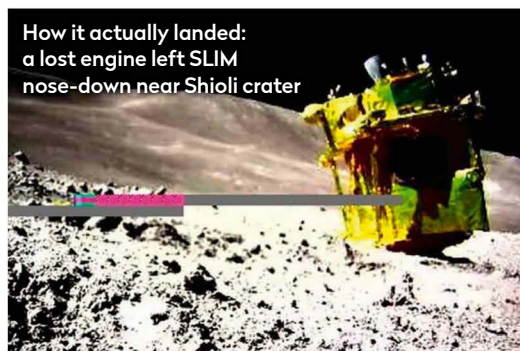
SLIM lander's power system failed after touchdown but then recovered

Japan became the fifth nation to successfully soft-land a spacecraft on the Moon, on 19 January at 15:20 UT. Initially it seemed celebrations would be short-lived due to a problem with the spacecraft's solar power system, but the team were able to re-establish contact nine days later.

The Smart Lander for Investigating Moon (SLIM), from the Japanese Aerospace Exploration Agency (JAXA), launched on 6 September 2023 and entered lunar orbit on 25 December. Its primary goal was to conduct a precision landing near Shioli crater.

Soon after the expected touchdown time, NASA's Deep Space Network received telemetry from the spacecraft, confirming it had landed in one piece. Unfortunately, the spacecraft had landed on its nose, angling its solar panels away from the Sun, and was only able to operate under battery power for a few hours. The team hoped to re-establish contact when the Sun moved into a more favourable position. SLIM came back online on 28 January and the team immediately recommenced science observations as there were only a few days left until the Sun set, and SLIM is not designed to survive the lunar night.

The spacecraft was also carrying two rovers, a small hopper and a basketball-sized rolling rover.



How it actually landed: a lost engine left SLIM nose-down near Shioli crater

Both are believed to have deployed successfully. The hopper rover was designed to communicate directly with Earth, and so JAXA was able to use its cameras to photograph SLIM's position.

SLIM's partial success comes just after the failure of the Peregrine mission, a lunar lander from US spaceflight company Astrobotic. Shortly after launching on 8 January, its fuel tank ruptured. The team were able to safely deorbit the spacecraft 11 days later. The setback could delay the launch of NASA's water-hunting VIPER rover that Astrobotic was due to ferry to the Moon in November.

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