Japan readies its Martian Moons eXploration (MMX) mission to Mars' moon Phobos for launch on an H3 rocket

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News

JAXA's Martian Moons eXploration (MMX) spacecraft was scheduled to launch on H3 flight No. 10 (H3-24L configuration) from the Yoshinobu Launch Complex, Tanegashima Space Center, at 04:41 JST on 20 Oct 2026 (01:11 IST, 20 Oct); the reserve window runs to 7 Nov. After about a year's cruise it will reach the Mars system in 2027 and study both Phobos and Deimos; it will land on Phobos to collect at least 10 g of regolith, and deploy the French-German 'IDEFIX' rover there. Its sample capsule will land in Australia in 2031. The original 2024 launch slipped because of H3 problems.

Key facts

Mission	Martian Moons eXploration (MMX) – JAXA; Phobos sample return
Launch	H3 flight 10 (H3-24L), Tanegashima; 20 Oct 2026, 04:41 JST (scheduled)
Sample	≥10 g from Phobos; capsule lands in Australia in 2031
Rover	IDEFIX (~25 kg) – CNES (France) + DLR (Germany); named after the dog in 'Asterix'
Other partners	NASA – MEGANE gamma-ray/neutron spectrometer; ESA – communications support

Phobos / Deimos	~22 km / ~12 km; discovered by Asaph Hall (USA) in 1877

Background

- Moons of Mars: Phobos ('fear') and Deimos ('dread') are named after the sons of the Greek war god Ares (Roman 'Mars'); discovered in 1877 by Asaph Hall at the US Naval Observatory. MMX seeks to settle whether they are captured asteroids or formed from debris of a giant impact on Mars. Earth–Mars launch windows open about every 26 months.
- JAXA: formed on 1 Oct 2003 by merging ISAS, NAL and NASDA. Hayabusa – sample from asteroid Itokawa (returned 2010); Hayabusa2 – sample from asteroid Ryugu (capsule landed in Australia, Dec 2020). If MMX succeeds, it will be the first sample return from the Mars system.
- India: Mangalyaan (Mars Orbiter Mission – MOM) was launched on 5 Nov 2013 by PSLV-C25 from Sriharikota and entered Mars orbit on 24 Sep 2014. India became the first country to reach Mars orbit on its maiden attempt and the first Asian nation to do so.

Tamil Nadu link: Mangalyaan's Programme Director Mylswamy Annadurai was born at Kothavadi, Coimbatore district; he was Project Director of Chandrayaan-1 and received the Padma Shri (2016). S. Arunan, the Project Director who built the Mangalyaan spacecraft, is also from Tamil Nadu.

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