Mangalyaan launch (5 Nov 2013, PSLV-C25): India first to reach Mars orbit on its maiden attempt, and first in Asia

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News

India's first interplanetary mission, the Mars Orbiter Mission (MOM – Mangalyaan), was launched on 5 Nov 2013 by PSLV-C25 from the Satish Dhawan Space Centre, Sriharikota. After a roughly 300-day journey it entered Mars orbit on 24 Sep 2014 – India became the first nation to do so on its maiden attempt and the first Asian nation to reach Mars. Designed for six months, the craft worked for about eight years; after contact was lost during a long eclipse in April 2022, ISRO declared it non-recoverable on 3 Oct 2022. 5 Nov 2026 marks 13 years since the launch.

Key facts

Launch	5 Nov 2013 – PSLV-C25, Satish Dhawan Space Centre, Sriharikota
Mars orbit	24 Sep 2014 – after a ~300-day journey
Feat	First nation to succeed on maiden attempt; first Asian nation at Mars
Payloads (5)	MSM (methane), MCC (colour camera), LAP (D/H ratio), MENCA (exosphere gases), TIS (thermal infrared)
End	Designed for 6 months – worked ~8 years; end declared 3 Oct 2022
₹2,000 note	Reverse of the ₹2,000 note (Nov 2016) shows Mangalyaan

Background

- Science: Mars is the fourth planet from the Sun and home to Olympus Mons, the tallest volcano in the Solar System. Since methane can signal biological or geological activity, MOM's 'MSM' was designed to measure it at ppb accuracy and map its sources. The LAP instrument studied Mars' water loss through the deuterium-to-hydrogen (D/H) ratio.
- World efforts: before MOM only the Soviet Union, NASA (USA) and the European Space Agency (ESA) had reached Mars. In Asia, Japan's 'Nozomi' (launched 1998) failed to enter orbit (2003), and China's 'Yinghuo-1' was lost with Russia's 'Phobos-Grunt' in 2011. Later, in 2021, the UAE's 'Hope' and China's 'Tianwen-1' reached Mars.
- Economy: the ₹2,000 note issued by the RBI in Nov 2016 carries a motif of Mangalyaan on its reverse, 'depicting the country's first venture into interplanetary space'. The note was withdrawn from circulation in May 2023 but remains legal tender.
- Organisation: ISRO was formed on 15 Aug 1969; HQ Bengaluru; it is part of the Department of Space (DoS) under the Prime Minister. The Mangalyaan spacecraft was built at the ISRO Satellite Centre (now U R Rao Satellite Centre), Bengaluru.

Tamil Nadu link: Tamil faces of Mangalyaan – Project Director Subbiah Arunan, who led the building of the spacecraft, is from Kothaiseri, Tirunelveli district (Padma Shri 2015); Programme Director Mylswamy Annadurai is from Kothavadi, Coimbatore district. The present ISRO Chairman, Dr V. Narayanan (since 14 Jan 2025), is from Melakattuvilai, Kanniyakumari district.

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