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Isro: Chandrayaan-3 inserted into lunar orbit successfully

Soumya Pillai
letters@hindustantimes.com

NEW DELHI: After completing more than half of its 40-day journey after being launched on July 14 date, Chandrayaan-3 was successfully inserted into a lunar orbit on Saturday evening, the Indian Space Research Organisation said, marking an important milestone in India's third mission to the moon.

The insertion into the moon's orbit was done through commands transmitted from the space agency's Mission Operation Complex in Bengaluru. The next manoeuvre of reducing the orbit, which will bring the spacecraft closer to the moon, is scheduled for Sunday night, Isro said in a statement.

"Chandrayaan-3 has been successfully inserted into the moon's orbit. In the coming days, it will be brought down to 100km circular. The journey continues uninterrupted as the moon draws closer and closer," science minister Jitendra Singh said.

The injection into lunar orbit lasted for about 30 minutes. After the insertion, the spacecraft was guided into an elliptical orbit. Minor adjustments will now be made to ensure the craft achieves the right inclination, as it makes its descent to the moon's surface by first completing four lunar-bound manoeuvres in the coming days.

With each orbit manoeuvre, the spacecraft will move closer to the moon's surface. The lander will then attempt a soft landing near the moon's south pole and its rover will move around and carry out experiments for 14 days on the lunar surface, mainly looking for water ice, among other scientific observations.

Lunar orbit injection is a key manoeuvre that adjusts the spacecraft's trajectory to achieve a lunar orbit. In this manoeuvre, the spacecraft's velocity is significantly increased to ensure its orbit adapts from a low earth orbit to an eccentric orbit, targeting the moon as it revolves around the earth.

The next lunar-based manoeuvre of Chandrayaan-3 is scheduled for Sunday. AP

On August 17, the lander and rover are due to be separated from the propulsion module, rocket scientists said, with Chandrayaan-3 aiming at a soft landing near the lunar south pole on August 23, as planned.

Although the lunar orbit insertion was a crucial and complex part of the mission, space scientists were confident of achieving the feat as they had previously done so in 2008 for Chandrayaan-1 and then again in 2019 for Chandrayaan-2, they said, declining to be named.

The lander of India's second lunar exploration mission crashed on the moon's surface in September 2019 due to a last-minute software glitch.

Chandrayaan-3 is a follow-up mission to Chandrayaan-2, which aims to demonstrate India's capability in safe landing and roving on the lunar surface. The spacecraft comprises a lander and rover, which is being carried by a propulsion module till 100km above the moon's surface.

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