

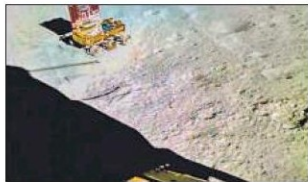


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[MY INDIA] MOON MISSION

Chandrayaan-3: First seismic readings picks up 'rumbles'



India's lunar exploration mission, Chandrayaan-3, took its first seismic readings on the moon, detecting the mild rumble of not just the rover and other scientific instruments probing the surface of the moon but also what appeared to be a "natural event" now under investigation. Now in its eighth day of its 14-day mission where it will study, for the first time for any country, the region near the south pole, the Chandrayaan-3's Vikram lander and Pragyan rover also conducted the first in-situ measurements of the surface-bound lunar plasma environment, and confirmed the presence of sulphur (S) in the region via another technique, the Indian Space Research Organisation (ISRO) said on Thursday.

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Chandrayaan-3 takes seismic readings from lunar surface

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NEW DELHI: India's lunar exploration mission, Chandrayaan-3, took its first seismic readings on the moon, detecting the mild rumble of not just the rover and other scientific instruments probing the surface of the moon but also what appeared to be a "natural event" now under investigation.

Now in its eighth day of its 14-day mission where it will study, for the first time for any country, the region near the south pole, the Chandrayaan-3's Vikram lander and Pragyan rover also conducted the first in-situ measurements of the surface-bound lunar plasma environment, and confirmed the presence of sulphur (S) in the region via another technique, the Indian Space Research Organisation (ISRO) said on Thursday.

"Instrument for the Lunar Seismic Activity (ILSA) payload on Chandrayaan 3 Lander – the first Micro Electro Mechanical Systems (MEMS) technology-based instrument on the moon – has recorded the movements of rover and other payloads. Additionally, it has recorded an event appearing to be



Chandrayaan-3's Vikram lander and Pragyan rover held the first in-situ measurements of surface.

a natural one on August 26, 2023. The source of this event is under investigation," said a post by the space agency on X. In a statement hours earlier, it had said: "Chandrayaan-3 Mission: In-situ Scientific Experiments Radio Anatomy of Moon Bound Hypersensitive Ionosphere and Atmosphere - Langmuir Probe (RAMBHA-LP) payload onboard Chandrayaan-3 lander has made first-ever measurements of the near-surface lunar plasma environment over the south polar region..."

The space agency said initial assessment indicated relatively sparse plasma near the lunar surface, characterised by a number density ranging from approximately 5 to 30 million electrons

per cubic meter. This evaluation specifically pertains to the early stages of the lunar daytime, ISRO scientists explained. "These quantitative measurements potentially assist in mitigating the noise that lunar plasma introduces into radio wave communication. Also, they could contribute to the enhanced designs for upcoming lunar visitors," ISRO said.

The Langmuir (after Irving Langmuir) probe – a device used for characterising a plasma – features a 5cm metallic spherical probe mounted on a 1-meter boom attached to Vikram lander's upper deck. The probe is deployed using a hold-release mechanism after the lander's lunar touchdown. The developers of the instruments at Space Physics Laboratory (SPL), Vikram Sarabhai Space Centre (VSSC), said that probe aims to explore the changes occurring in the near-surface plasma environment throughout the lunar day – from August 23 to September 6. These ongoing observations hold significant implications for comprehending the process of charging within the lunar surface, particularly in response to the fluctuations in solar space weather conditions.