

INDIA'S INTER PLANETARY QUEST

India goes to the Moon again, seeking to venture out to Venus after Mars. The union cabinet has approved the mission to the Moon, named Chandrayaan-4, to develop and demonstrate the technologies to return to Earth after successfully landing on the Moon, collecting moon samples, and analyzing them on Earth. This Chandrayaan-4 mission will eventually achieve the foundational technologies and capabilities for an Indian landing on the Moon (planned by 2040) and return safely to Earth. Major technologies required for docking/undocking, landing, safe return to Earth, and accomplishing lunar sample collection and analysis will be demonstrated.

The Union Cabinet has also approved the development of the **Venus Orbiter Mission (VOM)**, which will be a significant step towards the Government's vision of exploring and studying Venus beyond Moon and Mars. Venus, the closest planet to Earth and believed to have formed in conditions similar to Earth's, offers a unique opportunity to understand how planetary environments can evolve very differently.

The journey towards Venus:

The mission will not only enable India for future planetary missions with larger payloads and optimal orbit insertion approaches, but also foster significant collaboration with the Indian Industry. The involvement of various academic institutions and the training of students in the pre-launch phase, which includes design, development, testing, test data reduction, calibration, etc., is also a key aspect of the mission. Through its unique instruments, the mission will provide the Indian Science



community with new and valuable scientific data, thereby opening up emerging and novel opportunities for scientific research and discovery.

The Knowledge and Learning Enterprise