

Human Outer Planet Exploration

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Human Outer Planet Exploration Latest News

Bengaluru-based space tech company Protoplanet, along with the Indian Space Research Organisation (ISRO), has developed the analogue station, called the Human Outer Planet Exploration (HOPE) station in Ladakh's Tso Kar region.

About Human Outer Planet Exploration

- HOPE is an **analogue site**, closely mimicking the **geological and environmental conditions** found on the Moon and Mars.
- It is developed by Bengaluru-based space tech company Protoplanet, along **with the Indian Space Research Organisation** (ISRO), has developed the analogue station.
- It is developed with the aim of conducting "**critical research for future crewed interplanetary journeys**".
- The **site at Tso Kar**, located at an **altitude of over 14,500 feet**, was chosen because of its terrain and environment, which closely mimics conditions on the Moon and Mars

- An **analogue research station** is a site with conditions closest to a planet or planetary body with regard to the topography, environment, etc.
- These stations usually act as **testing grounds for relevant technologies**, help advance technology readiness levels (TRL) and engineering integration, and facilitate human studies, crew training and research around geological, geomorphological, habitability, and life detection.
- Currently, there are **33 analogue research stations** in the world. Some of the prominent ones are the **BIOS-3 in Russia, HERA at the US' Johnson Space Centre, SHEE in Europe**, and the **Mars Desert Research Station** (MDRS) in the US' Utah.
- **Significance to India:** The station marks a significant step **towards India's human space exploration ambitions**, helping scientists and researchers understand the physiological and psychological aspects of long-duration space travel.

Source: TH

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