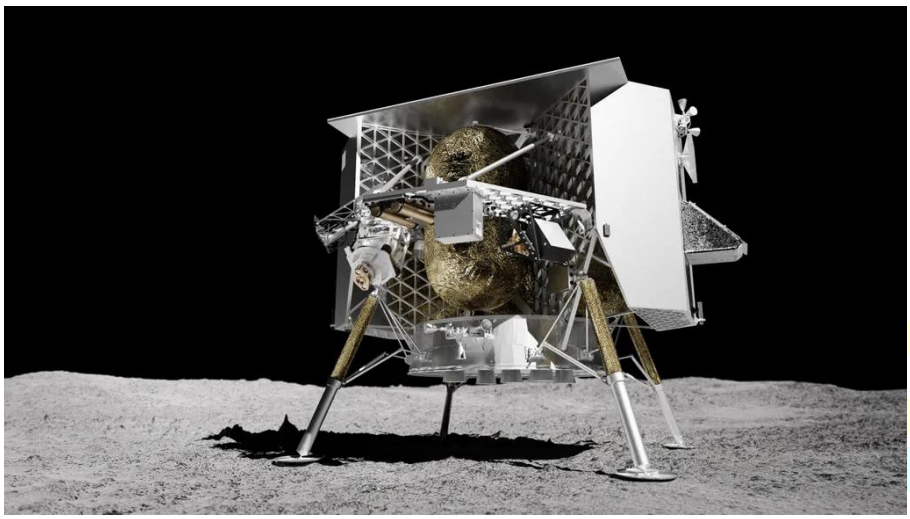
US 1st Private Moon Lander Mission Fails

Why In News

- An historic commercial **US mission to the Moon will fail** after suffering a **critical loss of fuel,** organizers admitted Tuesday, ending for the time being America's hopes of placing its first spacecraft on the lunar surface since the Apollo era.



- A **mission to put the first commercial craft on the moon appears** to be in jeopardy after the spacecraft suffered a “critical loss” of fuel in a major blow to the United States’s hopes of **placing its first robot on the lunar surface** in five decades.

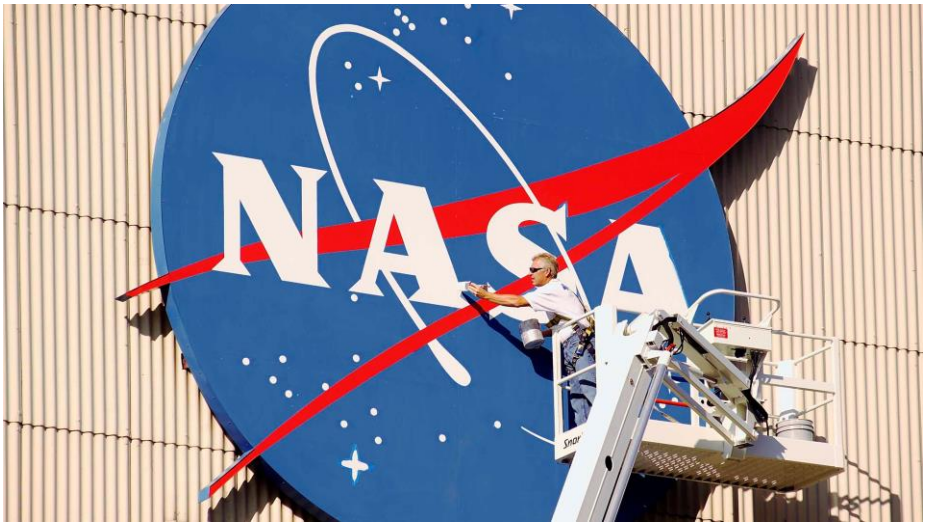
Peregrine-1

- **Vulcan – a United Launch Alliance** (ULA) rocket carrying the robotic lunar lander Peregrine, built by space robotics firm **Astrobotic Technology** – was launched by private firm Astrobotic, successfully launched from **Cape Canaveral**, marking the first American lunar mission in **51 years**.
- Scheduled to land on February 23, the mission, conducted under **NASA’s Commercial Lunar Payload Services** (CLPS) initiative, aims to study the Moon’s **surface environment in preparation** for upcoming human missions.

- But a few hours later, **Astrobotic began reporting malfunctions**, starting with an inability to orient Peregrine's solar panel towards the Sun and keep its battery topped up, owing to a propulsion glitch that also damaged the spacecraft's exterior.
- The company said it had **"no chance of soft landing" on the Moon.**
- Peregrine has about **40 hours of fuel remaining** and Astrobotic said it planned to operate the spacecraft until it ran out of propellant.

ASTROBOTIC

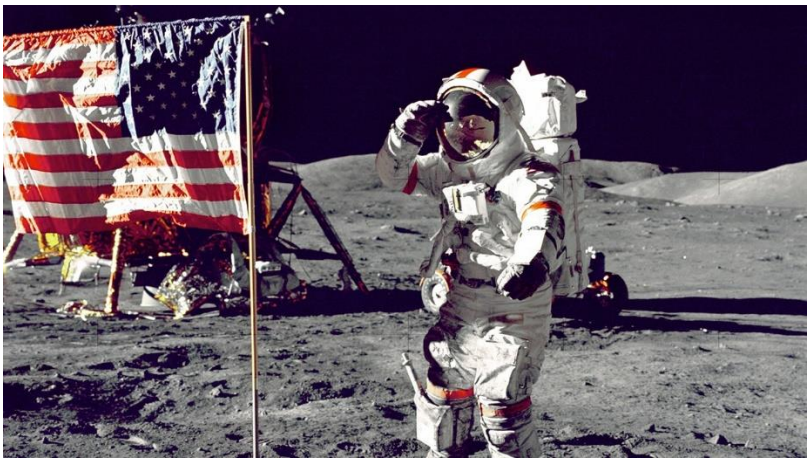
- **NASA had paid the company more than $100 million** to ship scientific hardware to a mid-latitude region of the Moon to **answer questions about the surface composition and radiation** in the surrounding environment, as it prepares to send astronauts back to Earth's nearest neighbor later this decade.



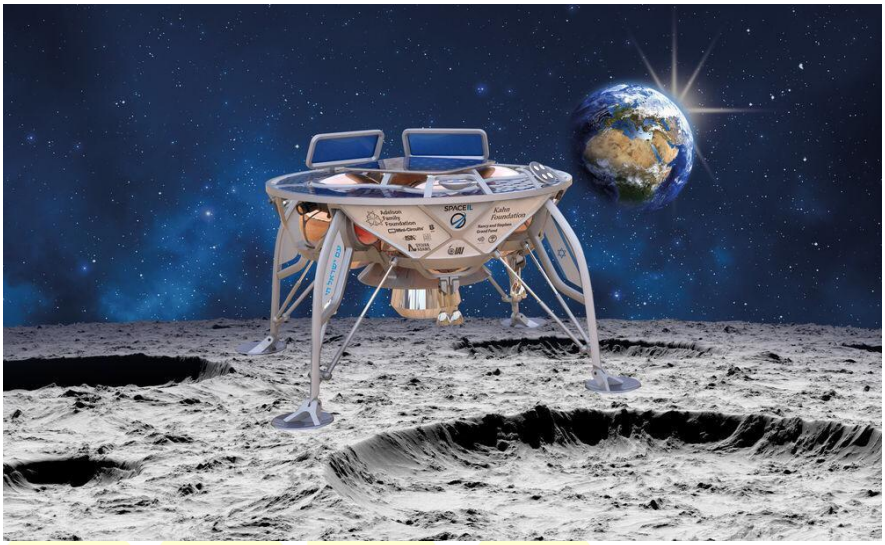
- In addition to its scientific instruments, **Peregrine is carrying more colorful cargo** on behalf of its own private clients. These include a physical Bitcoin and cremated remains and DNA, including those of Star Trek creator Gene Roddenberry, legendary sci-fi author and scientist Arthur C. Clarke and a dog.

Commercial Space Race

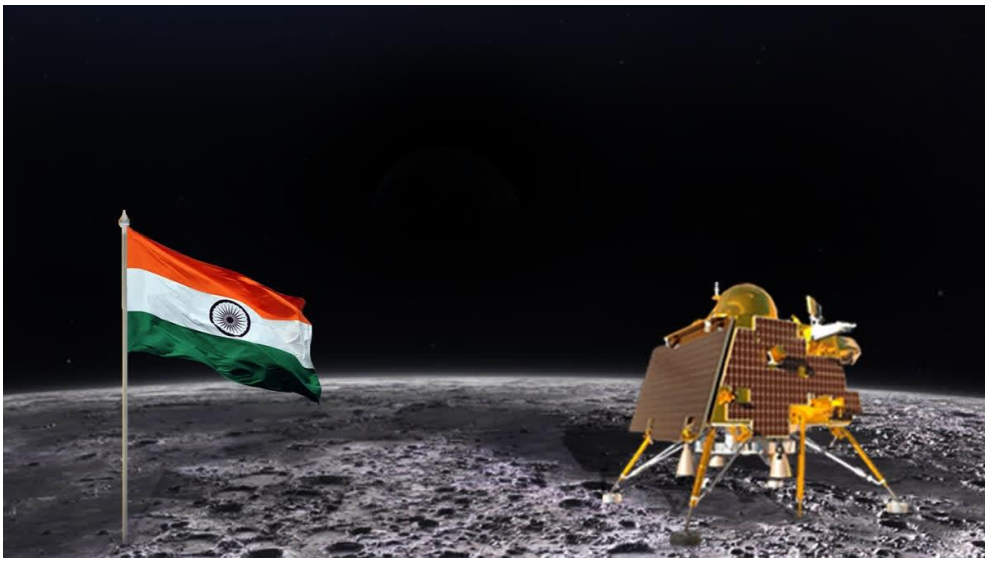
- Mission is part of an **accelerating space race among private companies**, and if it is eventually able to reach the moon, it would be the **first-ever lunar landing** by a private company.
- It would also be the **first US landing on the moon** in more than half a century – since the final **Apollo landing in 1972.**



- It is the latest private company to have tried and failed to achieve a soft lunar landing.
- **Israel's Beresheet lander**, the first attempt by a non-government entity, was destroyed on impact with the Moon in April 2019, while **Japan's private Hakuto mission**, operated by iSpace, crashed in April 2023.



- For now, the feat has only been accomplished by a handful of national space agencies: the **Soviet Union was first,** in 1966, followed by the **United States,** which is still the only country to put people on the Moon.
- **China has successfully** landed three times since 2013, while **India was the most recent to achieve the feat** on its second attempt, last year.
- The next commercial attempt will be by **Houston-based Intuitive Machines**, which is launching in February, bound for the Moon's south pole.



- The **United States is turning to the commercial sector** to stimulate a broader lunar economy and cut costs, but Astrobotic's failure could increase scrutiny about the strategy.
- Astrobotic however said it was continuing to **receive valuable data to prepare** for its next contracted mission, sending the Griffin lander transporting a NASA rover to the lunar south pole, later this year.