Blue Ghost Mission 1

Why in News?

Firefly Aerospace, U.S. Company successfully landed its spacecraft on the Moon recently.

- It is the ***second private mission*** to make a soft lunar landing.
- It is Nicknamed ***'Ghost Riders in the Sky'.***
- **Aim** - To land for a site near ***Mons Latreille***, a volcanic feature in Mare Crisium on the Moon's northeastern near side.

Mare Crisium, once an ancient asteroid impact site, formed around 3 billion years ago when volcanic eruptions filled the basin with basaltic lava.

- **Launch Vehicle -** SpaceX Falcon 9 rocket.
- **Size -** 2 metres tall and 3.5 meters wide.
- **Instruments –** It carries 10 instruments, including
  - A lunar soil analyzer,
  - A radiation-tolerant computer and
  - An experiment testing the feasibility of using the existing global satellite navigation system to navigate the moon.
- It is engineered for stability with shock-absorbing feet, a low centre of mass, and a broad footprint. It incorporated flight-proven technologies.
- Its Reaction Control System (RCS) thrusters fired as needed, ensuring a controlled and smooth landing.
- **Functions -** It will operate its payloads for a full lunar day (14 Earth days).
- On March 14, it will capture high-definition images of a total eclipse, where Earth blocked sunlight from reaching the Moon.
- On March 16, it will record the lunar sunset, gathering data on how solar activity causes lunar dust to levitate, a phenomenon first observed by ***Apollo 17 astronaut Eugene Cernan***.
- As part of ***NASA's Commercial Lunar Payload Services (CLPS)*** initiative, Blue Ghost Mission 1 delivered 10 scientific and technological instruments to the lunar surface.
- **Scientific contributions -** Blue Ghost's payloads will contribute to lunar research through groundbreaking experiments, including
  - Testing regolith collection,
  - Global navigation satellite system capabilities,
  - Radiation-resistant computing, and
  - Lunar dust mitigation.

Commercial Lunar Payload Services (CLPS) program

• It is a collaboration with commercial companies to deliver science and technology to the Moon.
• **Agency** – National Aeronautics and Space Administration (NASA).
• The program is intended to support NASA's Artemis lunar program.
• **Functions** - NASA contracts with companies to deliver payloads to the Moon.
• Companies bid on the services, including launching, landing, and payload integration.
• The contracts are indefinite delivery, indefinite quantity contracts.

References

1. The Hindu | Blue Ghost Mission 1
2. Hindustan Times | 'Ghost Riders in the Sky'

SHANKAR IAS PARLIAMENT
Information is Empowering