



International Lunar Research Station: Russia and China

 drishtiias.com/printpdf/international-lunar-research-station-russia-and-china

Why in News

China and Russia have agreed to build a **International Lunar Research Station (ILRS)**, possibly on the moon's surface, marking the start of a new era in space cooperation between the two countries.

Russia is a part of **International Space Station** which is a **habitable artificial satellite** - the single largest man-made structure in low earth orbit.

Key Points

- **International Lunar Research Station (ILRS):**
 - **About:**
 - The ILRS is a comprehensive scientific experiment base with the capability of **long-term autonomous operation**.
 - The station would be **built on the lunar surface and/or on the lunar orbit** that would **carry out scientific research activities** such as the lunar exploration and utilization, lunar-based observation, basic scientific experiment and technical verification.
 - **Principle:**
 - Russia and China will adhere to the principle of **co-consultation, joint construction, and shared benefits**.
 - They will facilitate **extensive cooperation** in the ILRS, **open to all interested countries** and international partners.
 - **Significance:**

ILRS will strengthen scientific research exchanges, and promote humanity's exploration and use of outer space for peaceful purposes.

- **Other Programmes Related to Moon:**

- **NASA's Artemis:** Earlier, in 2020, **National Aeronautics and Space Administration's (NASA)** published the outline for its **Artemis program**, which plans to **send the next man and first woman to the lunar surface** by the year 2024.

The **Gateway is an outpost around the Moon** to support human and scientific exploration in deep space.

- **UAE's Rashid:**

The United Arab Emirates (UAE) has decided to send an unmanned spacecraft named Rashid to the moon in 2024.

- **China's Chang'e-4 and Chang'e-5 Missions :**

- Chang'e-4 is the first probe ever to explore the far side of the moon by China.
- Chang'e-5 mission will seek to collect lunar material to help scientists understand more about the moon's origins and formation.

- **India's Similar Initiatives:**

- **Chandrayaan-3:**

India is working on **Chandrayaan-3** which is successor to the Chandrayaan-2 mission and it will likely attempt another soft-landing on the lunar surface.

- **Space Station:**

India has set its eye on building its **own space station** in **low earth orbit** to conduct microgravity experiments in space in 5 to 7 years.

Moon

- **Facts about Moon:**

- The Moon is Earth's **only natural satellite** and the fifth largest moon in the solar system.
- The Moon's presence **helps stabilize our planet's wobble, which helps stabilize our climate.**
- The Moon's distance from Earth is about **3,85,000 km.**
- The Moon has a very **thin atmosphere** called an exosphere.
- The Moon's **entire surface is cratered and pitted** from impacts.
- The **Earth and Moon are tidally-locked.** Their rotations are so in sync we only see one side of the Moon all the time.

- **Reasons for Studying Moon:**

- **Understanding Early Earth:**

- As it is made of remnants of Earth, **clues about the composition of an early Earth** could very well be hidden between layers of Moon dust.
- Further, the Moon holds potential **clues to how life began on Earth.**

- **To Understand Seismic Activity on Earth :**

Studying **Moonquakes** can help us understand what seismic activity on Earth could have been like during times with less liquid water on the surface, such as during major ice ages or during the Earth's early history, when the surface was much too hot to preserve liquid oceans.

- **Composition of Earth's Atmosphere:**

By measuring **Earth's glow from the Moon**, scientists can accurately estimate how much Earth itself shines, and even the composition of Earth's atmosphere.

- **To Understand Tides, Seasons and Climate:**

- Measuring the **mass, size and orbital properties of the Moon is essential for predicting** rhythms of **tides and seasons.**
- Studying these **tidal and orbital interactions** between Earth and the Moon is extremely important for understanding possible **effects on Earth's climate.**

Source: FE