



UNCHARTED TERRITORY OF OUTER SPACE

Focus: GS-III Science and Technology, GS-II International Relations

Introduction

Several space events planned well in advance have proceeded amidst the COVID-19 pandemic without much attention. The launch of missions to Mars by China and the U.S. along with the UAE's Mars orbiter; the first astronaut trip to orbit on a commercial enterprise built by Space X; the completion of the Chinese 'BeiDou' satellite navigation system; and the U.S. Space Command statement that Russia conducted a "non-destructive test of a space-based anti-satellite weapon" all portray a trend that outer space is witnessing a welter of new activity.

Growth of the space industry

- Technological changes augur well for the peaceful use of outer space.
- The price tag for reaching low Earth orbit has declined by a factor of 20 in a decade.
- The reducing cost of traveling to space not only enhances human space travel possibilities by leveraging new commercial capabilities but will usher in applications dismissed earlier as science fiction.
- Various companies are using orbital vantage points to collect and analyse data to deliver fresh insights in weather forecasting, global logistics, crop harvesting and disaster response.
- Space could prove attractive for high-tech manufacturing too.
- In short, an exciting new platform is opening up for entrepreneurs.

Challenges in fulfilling potential

Gaps in Space Laws



- As outer space becomes democratised, commercialised and crowded, the multilateral framework for its governance is becoming obsolescent.
- The Outer Space Treaty of 1967 enshrines the idea that space should be “the province of all mankind” and “not subject to national appropriation by claims of sovereignty”.
- The Rescue Agreement, Space Liability Convention, and the Space Registration Convention expanded provisions of the Outer Space Treaty.
- The Moon Treaty of 1979 was not ratified by major space-faring nations. Space law does not have a dispute settlement mechanism, is silent on collisions and debris, and offers insufficient guidance on interference with others’ space assets.
- These gaps heighten the potential for conflict in an era of congested orbits and breakneck technological change.

State-Centric rules

- The legal framework is state-centric, placing responsibility on states alone.
- However, non-state entities are now in the fray for commercial space exploration and utilisation.
- Some states are providing frameworks for resource recovery through private enterprises based on the notion that this is not expressly forbidden for non-state actors. (E.g., U.S. Executive Order on Encouraging International Support for the Recovery and Use of Space Resources 2020).
- On the other hand, some scholars and governments view this as skirting the principle of national non-appropriation, violating the spirit if not the letter of the existing space law.
- The lack of alignment of domestic and international normative frameworks risks a damaging free-for-all competition for celestial resources involving actors outside the space framework.

Military in space

- Military Strategists extol the virtues of holding the high ground, and Space is the highest ground.
- States are investing in military space systems for communications, navigation, and reconnaissance purposes, so as to ensure operability of a range of capabilities.
- Reliance of militaries on satellite systems means that space assets become potential targets.
- So, investment in technologies that can disrupt or destroy space-based capabilities is under way.
- The space arms race is difficult to curb, especially since almost all space technologies have military applications.
- Despite concerns about military activity in outer space for long, not much progress has



been made in addressing them.

- The UN General Assembly passes a resolution on Prevention of an Arms Race in Outer Space since 1982.
- Chinese- and Russian-backed Treaty proposals were initiated in 2008 and updated in 2014. For various legal, technical, and political reasons these have not advanced at the Conference on Disarmament.

Need for a space legislation

- India has invested enormous resources in its space programme through the Indian Space Research Organisation (ISRO).
- More importantly, our space assets are crucial for India's development and India's future plans are ambitious (including a landing on the Moon; the first Indian solar observatory; the first crewed orbital spaceflight mission; and installation of a modular space station in 2030).
- **The proposed involvement of private players and the creation of an autonomous body IN-SPACE (Indian National Space Promotion and Authorisation Centre) under the Department of Space for permitting and regulating activities of the private sector are welcome efforts.**
- **We need a space legislation enabling coherence across technical, legal, commercial, diplomatic and defence goals.**
- Our space vision also needs to address global governance, regulatory and arms control issues. As space opens up our space vision needs broadening too.

-Source: The Hindu