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SPACE TOURISM

This article covers "Daily current events" and the topic is about 'Space Tourism' which is in the news. It covers "Science and Tech" In GS-3, the following content has relevance for UPSC.

For Prelims: Space Tourism.

For Mains: GS-3, Science and Tech.

Why in news:

ISRO Plans to start 'Space Tourism' at a cost of ₹6 crore per passenger by 2030.



About Space Tourism

- The Indian Space Research Organization (ISRO) is developing a space tourism module that would allow enthusiasts to travel to space.
- The trip is expected to cost Rs 6 crore, and aficionados would be able to travel to space by 2030.

- At this time, it is unknown whether the module will include sub-orbital or orbital space travel.
- Space tourism is a novel concept that entails traveling to space for recreational purposes while also assuring safety and reusability.

Major highlights of the proposal:

- **Costing of Space travel:** The cost of a single ticket is believed to be over Rs 6 crore, and those who participate would be able to call themselves astronauts.
- **Classification of Space travel:** The module is likely to include sub-orbital space travel, which typically involves spending 15 minutes at the edge of space, followed by a few minutes in a low-gravity environment before returning to Earth.
- **Collaboration with Private Companies for Space travel:** ISRO is anticipated to collaborate with private companies to create the space travel module through the Indian National Space Promotion and Authorisation Centre (IN-SPACe).
- **Safety precautions in Space Travel:** ISRO will also use the Reusable Launch Vehicle—Technology Demonstrator (RLV-TD) to learn more about the safety of spaceflights when space experiences are made available to the general public.

Major challenges in Space tourism:

- **Costing of Space tourism:** Space tourism is now prohibitively expensive, with only a tiny number of people able to afford it, which is a big barrier for the majority of people.
- **Safety issues in Space tourism:** Space tourism carries a high level of risk, and safety will be a key issue for both tourists and operators. Spacecraft and launch vehicles must be reliable, and emergency protocols must be in place in the event of an emergency.
- **Medical issues in Space tourism:** Tourists may face severe medical issues as a result of space tourism, including changes in gravity, radiation exposure, and other physiological and psychological impacts.
- **Lack of Regulations in Space tourism:** There is presently no worldwide regulatory framework for space tourism, and nations will need to collaborate to develop standards and rules to assure the industry's safety and viability.

The significance of space tourism:

- **Economic gains:** Space tourism can help the space sector flourish by generating money for space enterprises, as well as providing jobs, stimulating innovation, and attracting investment in allied industries such as hospitality and entertainment.
- **Encouraging space exploration:** It has the potential to enhance public interest in space exploration and motivate more people to learn about the universe, astronomy, and space technology, ultimately leading to more financing for space research and development.
- **Technological advancements:** The advancement of space technology and infrastructure, such as spacecraft, launch vehicles, and space habitats, is required for the growth of space tourism, which can have positive spillover effects on other sectors including as transportation, energy, and communication.

- **Environmental benefits:** By providing an alternative destination for passengers, space tourism has the potential to assist lessen the environmental effect of tourism on Earth by reducing the burden on natural resources and ecosystems.

Other countries with their Space Tourism modules:

- **United States:** It is a leader in space tourism, with many private businesses like SpaceX, Blue Origin, and Virgin Galactic, which has already performed several test flights and aims to commence commercial trips soon.
- **Russia:** Since 2001, it has been involved in space tourism, sending many paying tourists to the International Space Station (ISS) on its Soyuz spacecraft.
- **China:** It is a relatively new player in the space tourism market, but it has big aspirations to develop its own space station and maybe offer space travel in the future.
- **United Arab Emirates:** The UAE recently deployed its first astronaut to the International Space Station and has expressed interest in growing space tourism as part of its economic diversification initiatives.
- **Japan:** It has dispatched many astronauts to the International Space Station (ISS) and is participating in the development of space tourism through commercial companies like PD Aerospace.

Conclusion

- ISRO's space tourism module, which is both safe and reusable, is a huge step forward in expanding India's space exploration missions and allowing the general public to experience space travel.
- As technology continues to advance, space tourism could become more accessible and affordable, in future and thus allowing more people to experience the wonder and excitement of space exploration.

Source: The Hindu

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