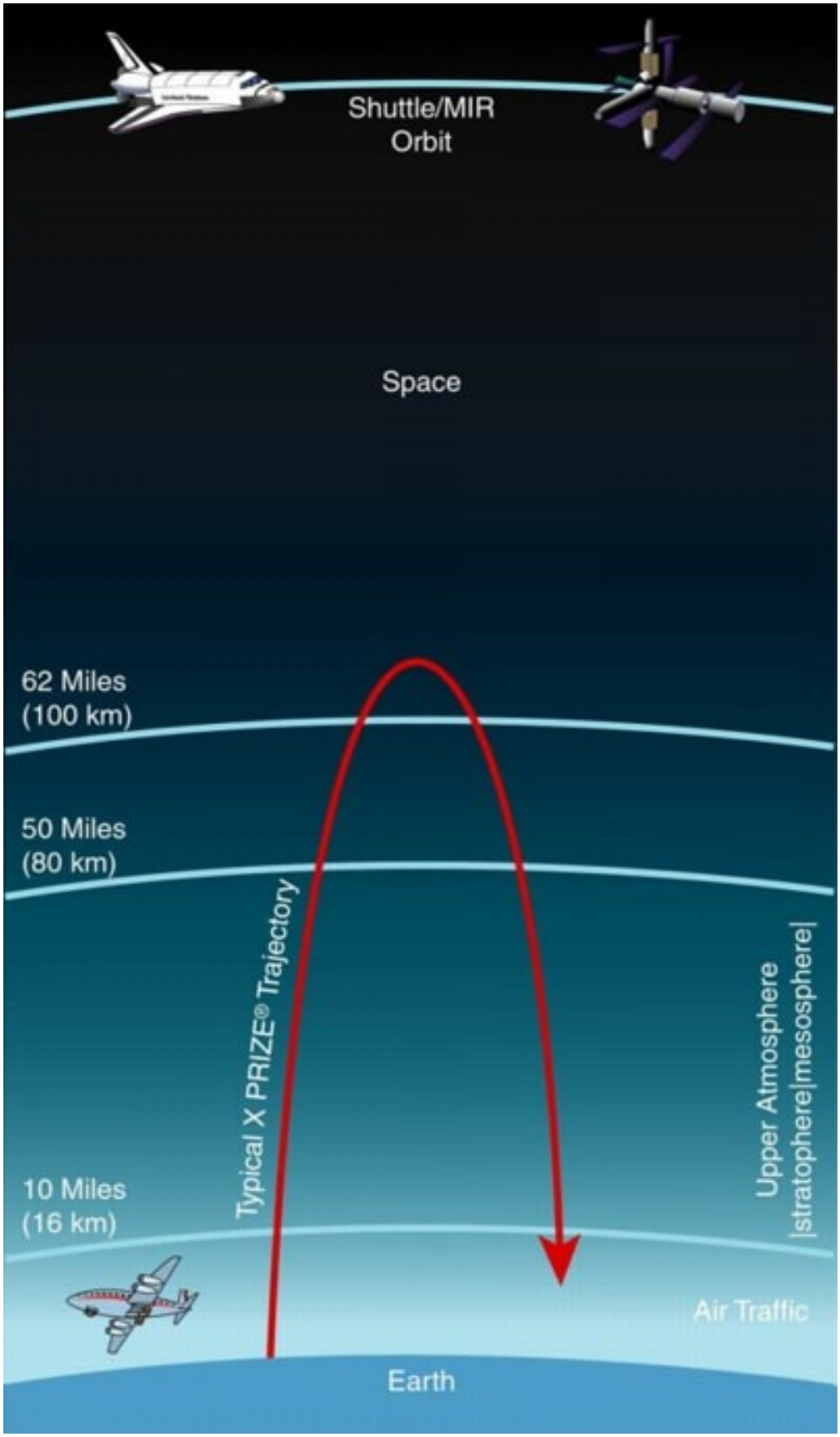
Suborbital Tourism

Prelims: *Current events of national and international importance | Space Technology*

Why in News?

Recently, Blue Origin announced the suspension of its New Shepard suborbital space tourism programme for at least two years to focus on developing its lunar capabilities.

- **Aim –** To provide private individuals with a brief experience of space travel and weightlessness as a part of space tourism.
- **Objectives –**
  - Offer views of Earth's curvature and space.
  - Enable paying passengers to experience spaceflight.
- **Service Providers – Blue Origin –** Private space company owned by Jeff Bezos that operates the New Shepard suborbital flights.
- **Virgin Galactic –** Another commercial spaceflight company developing suborbital spacecraft for tourists, aiming to make space accessible.
- **Altitude – *Around 100–105 km above Earth*** (Kármán line region).
- **Key Features – Trajectory** – A spacecraft does not complete an orbit around Earth but ***follows a parabolic path and returns due to gravity.***
- **Duration** – Flight lasts about 10–15 minutes. Hence, considered one of the *shortest and quickest trips to space*.
- **Microgravity** – Engines shut down at peak, allowing a few minutes of weightlessness.
- **Technology –** Requires less energy and simpler heat shielding than orbital missions.



- **Significance –** Suborbital flights are simpler and cheaper because they operate at
  - They ***operate at only about 13% of orbital speed.***
  - Reach just one-quarter to one-fifth of orbital altitude.

Quick Facts

• **The Kármán line –** It is a boundary 62 miles (100 kilometres) above mean sea level that borders Earth's atmosphere and the beginning of space.
• **Orbits –** An orbit is the curved path a satellite follows around the Earth due to gravitational force.
• **Types –** There are three common classes of orbits,
  - **Low-Earth orbit –** Approximately 160 to 2,000 km above Earth.
  - **Medium-Earth orbit –** Approximately 2,000 to 35,500 km above Earth.
  - **High-Earth orbit –** Above 35,500 km above Earth.
• **Geosynchronous orbit (GSO) –** Platforms orbiting at 35,786 km are at an altitude at which their *orbital speed matches the planet's rotation.*

Reference

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