



# New Shepard: Taking Tourists to Space

## Why in News

Recently, a company called **Blue Origin** concluded the online auction for the **first seat on New Shepard**, a rocket system meant to take tourists to space.

- It takes its first human flight on 20<sup>th</sup> July, 2021, which marks the **52<sup>nd</sup> anniversary of [Neil Armstrong and Buzz Aldrin's moon landing](#)**.

## Key Points

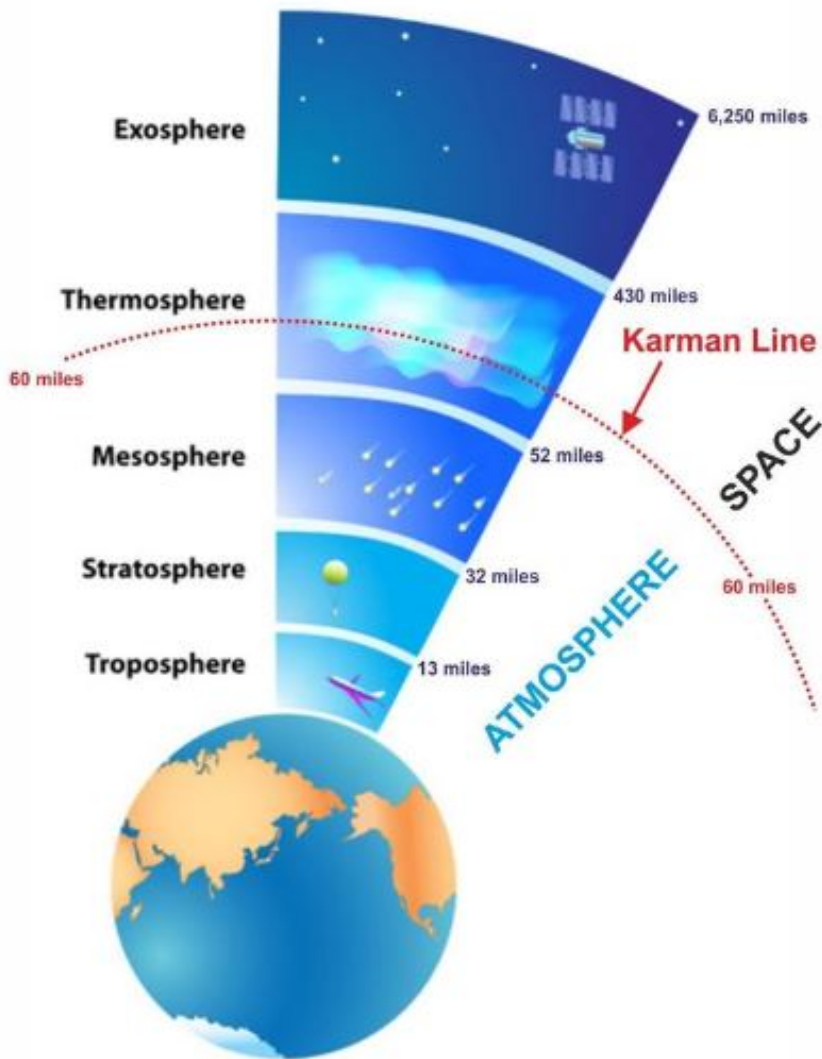
### ▪ New Shepard:

- New Shepard has been named after **astronaut Alan Shepard - the first American to go to space** - and **offers flights to space over 100 km above the Earth** and accommodation for payloads.
- It is a **rocket system that has been designed to take astronauts and research payloads past the Karman line**.
- The idea is to provide **easier and more cost-effective access to space** meant for purposes such as academic research, corporate technology development and entrepreneurial ventures among others.
- It will **also allow space tourists to experience microgravity** by taking them 100 km above the Earth.
  - **Microgravity** is the condition in which people or objects appear to be weightless. The effects of microgravity can be seen when astronauts and objects float in space.

## Karman Line

- The Karman line is the **internationally recognized boundary of space**.

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- The line is named after **Theodore von Kármán (1881-1963)**, a Hungarian American engineer and physicist, who was active primarily in aeronautics and astronautics.
    - He was the first person to calculate the altitude at which the atmosphere becomes too thin to support aeronautical flight and arrived at 83.6 km himself.
  - The **Fédération Aéronautique Internationale (FAI)** defines **Karman Line as the altitude of 100 kilometres** above Earth's mean sea level.
    - FAI is the world **governing body for air sports, and also stewards definitions regarding human spaceflight.**
  - However, other organizations do not use this definition. **There is no international law defining the edge of space, and therefore the limit of national airspace.**
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- **Space Tourism**
    - **About:**
      - Space tourism is about **humans travelling into space for recreational purposes.** It seeks to **give laypeople the ability to go to space for recreational, leisure or business purposes.**
      - It will **make space more accessible to those individuals who are not astronauts** and want to go to space for non-scientific purposes.

- Three private companies – Blue Origin, Virgin Galactic and SpaceX are now spearheading the human endeavour to explore space.
- Their progress will decide whether space travel will one day become as accessible as air travel.
- **Previous Space Tourists:**
  - The first space tourist was **US millionaire Dennis Tito**, who in 2001 paid USD 20 million to hitch a ride on a [Russian Soyuz spacecraft](#) to visit the international space station and spent eight days there.
    - After Tito, there were **only seven other private citizens who travelled to space until 2009** when the Russian space agency wound up the business of selling tickets to private citizens.
  - **Space Adventures** is the **only private company** to send paying customers to orbital space so far. In 2004, test pilot **Mike Melville became the first private astronaut to fly beyond the Karman Line.**
- **Significance:**
  - **Huge Market:**
    - There is an estimated market of 2.4 million people for such flights.
  - **Base for Testing:**
    - It **can provide a base for testing supersonic travel** between different destinations on earth, significantly compressing travel time. Besides, **it heralds the entry of the private sector into this arena.**
- **Concerns:**
  - **Climate Change:** Soot or black carbon that results from rocket emissions accumulated in the stratosphere (approximately 5 to 31 miles above the Earth) cannot be washed away by rain or winds, as it is in the lower atmosphere. As a result, black carbon may linger in the stratosphere for years, **causing exponentially more climate change.**
  - **Health:** It can cause health concerns as passengers could also face motion sickness and disorientation, which can **affect vision, cognition, balance and motor control.**

## Way Forward

- There are **crucial safety, comfort and health factors to consider.** Training, medical screenings and liability waivers will need to be examined before tourists head to space.
- Space tourism will be a small subsector of the industry, but **it will bolster the entire New Space industry.**
- Once space tourism does become mainstream, it will also positively impact many socioeconomic factors on Earth: **creating jobs, educating citizens about space and fostering a new solar-based energy infrastructure.**

**Source:IE**