# Supermoon

***Prelims:*** *Current events of national and international events*

## Why in news?

*According to NASA, the first supermoon of 2025 will rise on October 7.*

- **Supermoon –** It occurs when a ***full moon coincides with a perigee***, or the closest point in its elliptical orbit to Earth.
- When the moon is near its perigee and also directly opposite the sun, the full moon appears about ***14% larger and 30% brighter*** than when it is at its farthest point (apogee).
- **Scientific name –** "Perigee-syzygy of the Earth-Moon-Sun system".
- **Key characteristics –**
  - **Orbital mechanics –** The moon's orbit around Earth is not a perfect circle, but an ellipse, so the supermoon occurs when the full moon coincides with a perigee.
  - **Enhanced appearance –** A supermoon's enlarged and brightened appearance is most noticeable to the naked eye when it is low on the horizon, where the "moon illusion" makes it seem even bigger.
  - **Effects on tides –** The moon's gravitational pull is strongest during a supermoon, causing higher-than-usual tides, known as perigean spring tides.
  - **Frequency –** Supermoons occur three to four times a year, always in consecutive months.
- **Supermoon variations –**
  - **Super Blood Moon –** A combination of a total lunar eclipse and a supermoon. During the eclipse, the moon passes into Earth's shadow and takes on a reddish hue, appearing both larger and redder than usual.
  - **Super Blue Blood Moon –** Extremely rare event combines a supermoon, a total lunar eclipse, and a Blue Moon (the second full moon in a calendar month).

### Reference

The Hindu | Supermoon