



# Blue Moon

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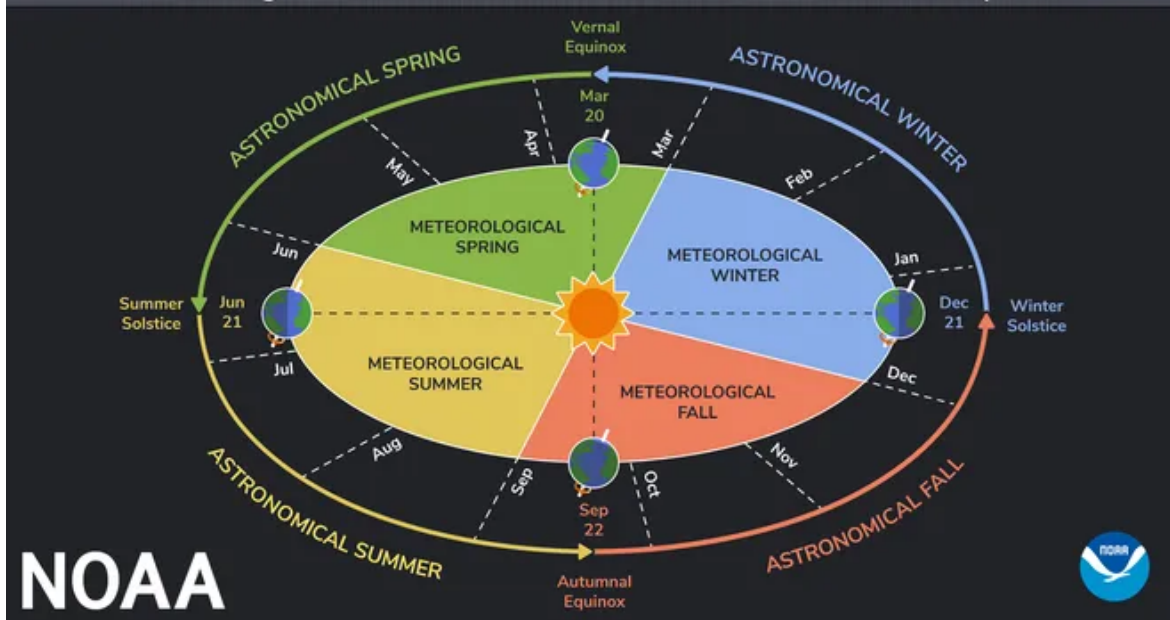
## Why in News?

Recently, the phenomenon of the "blue moon" occurred in August 2024. This has prompted discussions regarding its origins, significance, and the diverse interpretations associated with it.

## What is the Blue Moon?

- **About:** A blue moon is the **second full moon** that **occurs within a single calendar month**.
  - The next Blue Moon will occur on 31st May 2026.
- **Types:** There are 2 types of Blue Moons, neither of which involve the moon's colour.
  - **Seasonal Blue Moon:** A Seasonal Blue Moon happens when there are **4 full moons** in a single astronomical season- **spring, summer, autumn (fall), or winter**, rather than the usual 3. The **third full moon** in this series is referred to as a "**Blue Moon**."
    - Typically, each season spans about 3 months, allowing for 3 full moons. However, due to the [lunar cycle's](#) duration (about 29.5 days), occasionally, 4 full moons can occur within one season.
    - When this happens, the **third of these four full moons is called a "Seasonal Blue Moon."**

Meteorological and astronomical seasons in the Northern Hemisphere



- **Monthly Blue Moon:** It is the **second full moon in a single calendar month**.
  - Since **full moons typically happen once a month**, having two in the same month is rare, making the **second one a "Blue Moon"**.

- The upcoming Blue Moon on 31<sup>st</sup> May 2026, will be a monthly Blue Moon.

▪ **Formation:**

- The moon phases complete a cycle in 29.5 days, resulting in **12 lunar cycles** over 354 days.
  - Consequently, approximately **every 2.5 to 3 years**, a 13th full moon occurs within a calendar year, known as a **Blue Moon**, which **does not follow the standard naming** conventions.
- Since **February** has only 28 days in a regular year and 29 days in a leap year, **it can never have a Blue Moon.**

**Instances When Moon Actually Appeared Blue Due to Atmospheric Conditions**

- **Eruption of Mt. Tambora in Indonesia (1815):** It was the most powerful eruption following the prior eruption of **Mayon volcano** in the Philippines.
  - This, **along with other climatic factors**, resulted in a significant **global temperature drop of 0.4-0.7° C** in 1816, leading to the phenomenon known as the 'year without summer.'
  - The **volcanic ash and particles** in the atmosphere during this time may have also **caused the moon to appear blue.**
- **Eruption of the Indonesian volcano Krakatoa (1883):** It produced ash that reached an altitude of 80 kilometers. The minute ash particles, approximately one micron in size, **filtered the light and caused the moon to appear in a noticeable blue-green hue.**
- **1983 El Chichon eruption** in Mexico and those of **Mt. St. Helens in 1980** and **Mount Pinatubo in 1991**, have also been associated with the phenomenon of blue moons.



**UPSC Civil Services Examination Previous Year Question (PYQ)**

**Prelims**

**Q. Recently, scientists observed the merger of giant 'blackholes' billions of light-years away from the Earth. What is the significance of this observation? (2019)**

- (a) 'Higgs boson particles' were detected.
- (b) 'Gravitational waves' were detected.
- (c) Possibility of inter-galactic space travel through 'wormhole' was confirmed.
- (d) It enabled the scientists to understand 'singularity'.

**Ans: (b)**

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