



Leonids Meteor Shower

Why in News

The **annual Leonids Meteor Shower** has begun and will be active between **6th and 30th November**, with peak activity expected on **17th November**.

Key Points

- **Meteor:** It is a **space rock or meteoroid** that enters Earth's atmosphere.
 - **Meteoroids are objects in space** that range in size from dust grains to small asteroids.
 - Most are pieces of other, larger bodies that have been broken or blasted off. These come from **comets, asteroids**, planets and the Moon.
 - When **meteoroids enter Earth's atmosphere** (or that of another planet, like Mars) at high speed and burn up, the **fireballs or "shooting stars"** are called meteors.
 - **Fireballs are larger explosions of light and color** that can persist longer than an average meteor streak. This is due to the fact that fireballs originate from larger particles of cometary material.
 - **When a meteoroid** survives its journey through the atmosphere and **hits the ground, it's called a meteorite.**
- **Meteor Shower:**
 - When **Earth encounters many meteoroids at once**, it is called a meteor shower.
 - Comets, like Earth and the other planets, also orbit the sun. Unlike the nearly circular orbits of the planets, the **orbits of comets are usually quite lop-sided.**
 - As a **comet gets closer to the sun**, some of its icy surface boils off, releasing lots of particles of dust and rock (meteoroids).
 - This comet debris gets scattered along the comet's path, **especially in the inner solar system** (including planets Mercury, Venus, Earth and Mars).
 - Then, several times each year as **Earth** makes its journey around the sun, **its orbit crosses the orbit of a comet**, which means Earth encounters a bunch of comet debris.
 - Meteor showers are **named for the constellation where the meteors appear to be coming from**. So, for example, the Orionids Meteor Shower, which occurs in October each year, appears to be originating near the constellation 'Orion the Hunter'.
- **Leonids Shower:**
 - The debris that forms this meteor shower **originates from a small comet called 55P/Tempel-Tuttle in the constellation Leo**, which takes 33 years to orbit the sun.
 - The Leonids are **considered to be a major shower** that features the fastest meteors which typically travel at speeds of 71 km per second, although the rates are often as low as 15 meteors per hour.
 - The Leonids are **also called fireballs and earthgrazer meteors.**

- Fireballs, because of their bright colours, and earthgazer, because they streak close to the horizon.
- A **Leonid shower turns into a meteor storm every 33 years** and when it happens hundreds to thousands of meteors can be seen every hour. The **last Leonid meteor storm took place in 2002.**
- A **meteor storm** should have at least 1,000 meteors per hour.

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