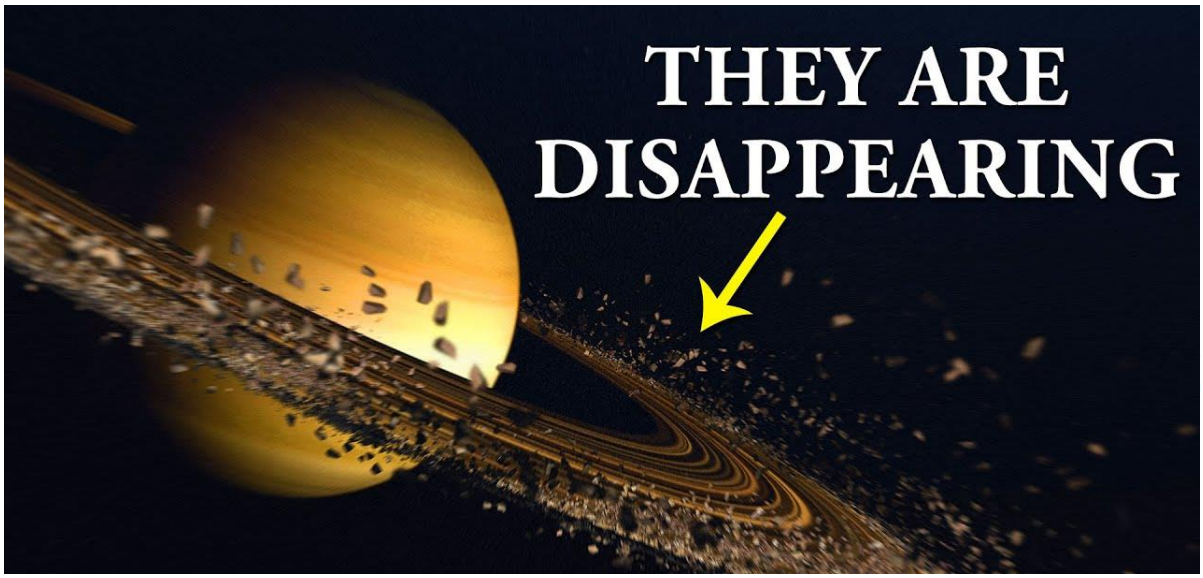
Saturn’s Rings To Disappear In March 2025

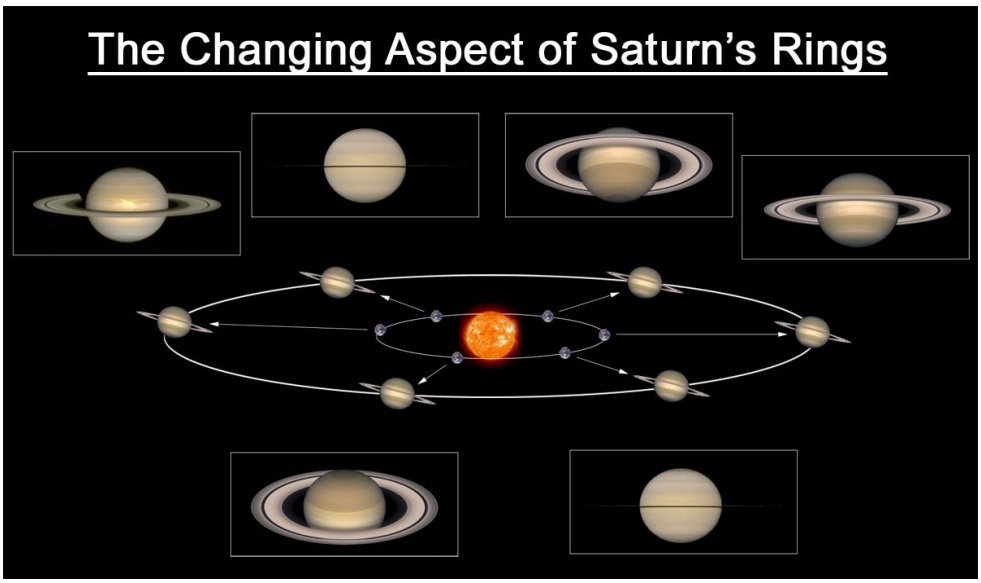
Why In News

- In March 2025, **Saturn’s rings will seem to “disappear”** when viewed from Earth. This is an optical illusion caused by the way Saturn tilts and moves around the Sun. The **planet’s tilt and orbit** make its rings visible at different angles over time, and for a brief period, only the thin edge of the rings will be visible, making them look like they have vanished.

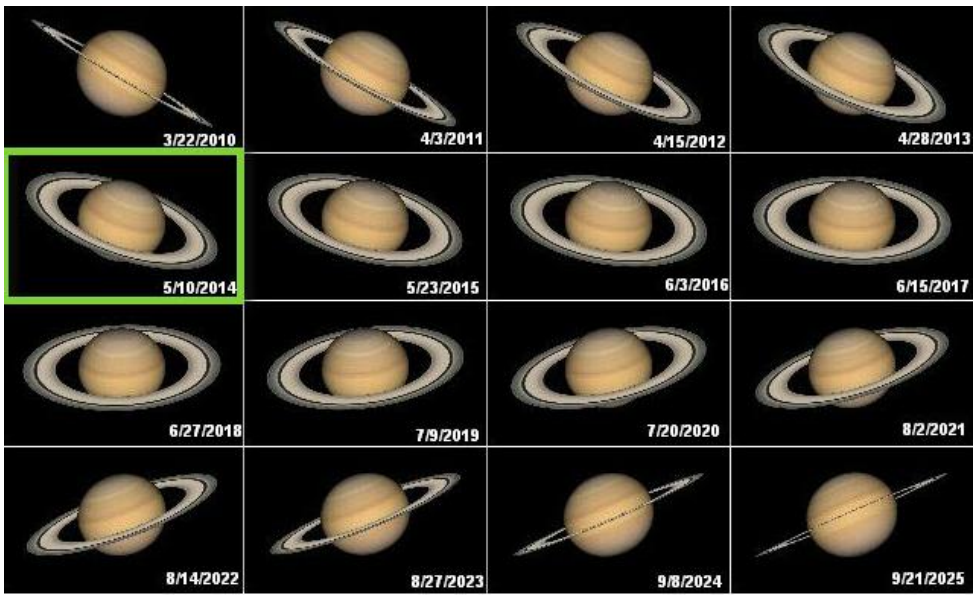


An Optical Illusion

- It is not as if the rings will cease to exist. **Their “disappearance”** — when viewed from Earth — will be an optical illusion.
- Saturn, which is **tilted at an angle of 26.73 degrees**, takes about 29.4 Earth years to complete a single orbit of the Sun. This means that for half of a Saturn year (roughly 15 years), the **gas giant is tilted towards the Sun**, and for the other **half it is tilted away from it.**
- Its rings too **are tilted at the same angle,** and as the planet revolves, they appear to change their orientation when viewed from Earth.



- **Every 13 to 15 years**, the edge of Saturn's rings aligns directly with Earth. This is what will happen in March 2025 when only the edges of the ring will be visible from our planet. Since Saturn's rings are very thin — just tens of metres thick in most places — at this position, they will reflect very little light, essentially making them invisible.
- **But as Saturn continues** to go around the Sun, its rings will gradually reappear. This phenomenon last occurred in 2009.
- **NASA confirmed in 2018** that Saturn will indeed lose its rings for good. In fact Saturn's rings are constantly being pulled towards the planet because of its gravity and magnetic field.



- At this rate, **Saturn will completely lose** its rings in the next 300 million years — or perhaps sooner.
- Data from **NASA's Cassini spacecraft revealed** that Saturn's rings are made of billions of chunks of ice and rock, whose size varies from as small as grains of dust to as large as mountains.

- According to current consensus, the **rings evolved just a 100 million years** ago due to the collision of two icy moons.
- The debris from **this event created Saturn's signature rings**. It is possible that other gas giants like Jupiter, Uranus, and Neptune too had rings once. Today they have only thin ringlets, hard to capture even with a telescope.