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Jupiter Saturn Great Conjunction

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Why in News

In a rare celestial event, Jupiter and Saturn will be seen very close to each other (conjunction) on 21st December 2020, appearing like one bright star.

Key Points

- **Conjunction:** If **two celestial bodies visually appear close to each other from Earth**, it is called a conjunction.
- **Great Conjunction:** Astronomers use the term great conjunction to **describe meetings of the two biggest worlds** in the solar system, **Jupiter and Saturn**.
 - It happens **about every 20 years**.
 - The conjunction is the **result of the orbital paths of Jupiter and Saturn coming into line**, as viewed from Earth.
 - **Jupiter** orbits the sun about every **12 years**, and **Saturn** about every **29 years**.
 - The conjunction will be on **21st December, 2020**, also the date of the December solstice.
 - It **will be the closest alignment** of Saturn and Jupiter **since 1623**, in terms of distance. The **next time** the planets will be this close is **2080**.
 - They will **appear to be close** together, however, they will be **more than 400 million miles apart**.

- **Jupiter:**

- Fifth in line from the Sun, Jupiter is, by far, the **largest planet in the solar system** – more than twice as massive as all the other planets combined.
Jupiter, Saturn, Uranus and Neptune are called **Jovian or Gas Giant Planets**. These have thick atmosphere, **mostly of helium and hydrogen**.
- Jupiter's iconic **Great Red Spot** is a giant storm bigger than Earth that has raged for hundreds of years.
- Jupiter **rotates once about every 10 hours** (a Jovian day), but takes about **12 Earth years** to complete **one orbit of the Sun** (a Jovian year).
- Jupiter has **more than 75 moons**.
 - The planet Jupiter's **four largest moons are called the Galilean satellites** after Italian astronomer Galileo Galilei, who first observed them in 1610.
 - These large moons, named **Io, Europa, Ganymede, and Callisto**, are each distinctive worlds.
- In 1979, the **Voyager mission** discovered Jupiter's faint **ring system**.
- **Nine spacecraft** have visited Jupiter. Seven flew by and two have orbited the gas giant. **Juno**, the most recent, arrived at Jupiter in 2016.

- **Saturn:**

- Saturn is the **sixth planet from the Sun** and the **second largest** planet in the solar system.
- Saturn takes about **10.7 hours to rotate** on its axis once - a Saturn "day" - and **29 Earth years to orbit** the sun.
- Saturn has **53 known moons** with **an additional 29 moons** awaiting confirmation of their discovery - that is a total of **82 moons**. It has the **giant moon 'Titan'**.
- Saturn has the **most spectacular ring system**, with seven rings and several gaps and divisions between them.
- **Few missions** have visited Saturn: **Pioneer 11** and **Voyagers 1 and 2** flew by; But **Cassini** orbited Saturn 294 times from 2004 to 2017.