## Jupiter Saturn Great Conjunction

## Why in News

In a rare celestial event, Jupiter and Saturn will be seen very close to each other (conjunction) on $21^{\text {st }}$ 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 $\mathbf{2 1}^{\text {st }}$ 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 $\mathbf{4 0 0}$ 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 $\mathbf{1 0 . 7}$ hours to rotate on its axis once - a Saturn "day" - and $\mathbf{2 9}$ Earth years to orbit the sun.
- Saturn has $\mathbf{5 3}$ known moons with an additional $\mathbf{2 9}$ moons awaiting confirmation of their discovery - that is a total of $\mathbf{8 2}$ 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.

