

“Jupiter at Opposition”

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Called the King planet of our solar system, Jupiter doesn't do anything small. For starters, Jupiter is the largest planet in our solar system. How big is it? About 1000 Earths could fit inside Jupiter. That's big! To show off even more, for the next month, Jupiter will appear even bigger than normal, shining as big and bright as it gets.

On October 28/29th, the Earth will pass directly between the Sun and Jupiter. When Jupiter, the Earth and the Sun align in a straight line with the Earth in between, the event is called the opposition of Jupiter. At opposition, Jupiter shines its brightest and is viewable from dusk until dawn.

You might be asking yourself, “How far is Jupiter from Earth?” Well, the answer can change on a daily basis. The closest Jupiter can get to Earth is 365 million miles away. The farthest is a little over 600 million miles away. On October 28/29th, Jupiter will only be 369 million miles away. You won't see Jupiter this close again until it has finished another orbit around the Sun, which is in 2022!

Since viewing will be optimal for the next month, I want to share with you some of the interesting features to observe on the giant gas planet. Most of the features will be visible every night.

The first thing you might observe is the shape. With a good telescope you can see that Jupiter is not perfectly round. If you were to measure from the North to the South pole, then measure along the equator, you would find a discrepancy of almost 3,000 miles. Jupiter actually bulges at the equator. Why? A day for Jupiter is only 10 hours long. The fast spinning causes the gas ball to bulge out the sides.

Next, you might notice the many moons. Look to the left and the right of the amazing orb. You can usually pick out the four Galilean moons that circle the planet -- Ganymede, Io, Europa and Callisto. They're easy to spot with most amateur telescopes. Just so you don't think that there are only 4 moons, there are actually 64 known moons (and counting!) in orbit around Jupiter. Many of the moons were probably asteroids that were captured by Jupiter's gravity when they wandered too close. On some nights, you can witness the shadow of one of the larger moons crossing Jupiter. This is called a transit, and it's quite fun to see.

You should also be able to detect colorful bands. The surface of Jupiter that you see is actually the top of a continuous cloud layer. The colors correlate with the cloud's altitude: blue lowest, followed by browns and whites, with reds highest. The winds that push the clouds have been clocked at 400 miles per hour. If you look long enough, you can watch the clouds move across the surface.

If you are lucky enough to be viewing Jupiter on a night when the Great Red Spot is facing the Earth, you're in for a real treat. The Great Red Spot is a raging storm, over twice as wide as Earth, which has been continuously observed for almost 350 years. The spot was named around 1878 when it turned a vivid brick red. What color do you see? Changes in color usually happen over a year or two. Expect to see a pale salmon or tan color. To try to locate the spot, look in Jupiter's southern hemisphere. There are websites that predict when the spot will be visible at night – simply use your favorite search engine to search for “Transit Times of Jupiter's Great Red Spot”.

Late October and all of November will be a great time to visit the Cameron Park Rotary Club - Community Observatory to observe Jupiter. Come on out and have a look through our two 14” reflector telescopes. For more information about the observatory go to www.communityobservatory.com. Please LIKE us on Facebook.