

COLUMNISTS

Find the celestial jewels of the night sky

Michael Richins Special to the Reporter-News

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The Earth's gold and silver are beautiful and precious, but arguably can't compare with the night sky's richest jewels. On a clear evening, find a spot with a southern view and look up. That bright "star" is actually not a star at all. It is Jupiter, and just to its left is another planet, Saturn.

Jupiter, the largest planet in our solar system, is 318 times the mass of earth and twice as massive as all other planets in the solar system combined.

The gas giant is mostly hydrogen and helium gases and does not have a solid surface. If Jupiter does have an inner solid core, it is probably no larger than Earth.

The planet makes one rotation on its axis in just 10 hours (a short Jupiter day) but takes 12 years to orbit the sun (a long Jupiter year).

After our moon and Venus, Jupiter is the third brightest object in the night sky and its true beauty is best seen through a telescope. The face of Jupiter has many eye-catching bands running parallel to its equator. These bands are ammonia clouds varying in width, color and darkness. Dark bands ("belts") and light bands ("zones") create incredibly beautiful and colorful contrasts on Jupiter's face.

A telescope will also reveal four tiny points of light forming a line along Jupiter's equator. These Galilean moons (Io, Europa, Ganymede and Calisto) were discovered by the great astronomer Galileo in 1610. The Galilean moons are just Jupiter's four largest; NASA estimates Jupiter has more than 75 moons total!

Jupiter is also known for its Great Red Spot, which is actually an enormous storm which has rotated around the planet's southern hemisphere for more than a century.

Saturn is the next largest planet in the solar system, and the next planet from the sun after Jupiter. It's also a gas giant, with a mass 95 times that of Earth. From Earth, Saturn appears dimmer than Jupiter because it is smaller and further away.

The planet takes approximately 10.7 hours to rotate once on its axis (again, a short Saturn day) and 29 years to orbit the sun (an exceptionally long Saturn year). There are 53 known Saturn moons with others still under investigation.

The planet is best known for its magnificent rings which are made up of tiny chunks of ice and rock, forming a series of seven concentric ringlets separated by varying sized gaps. Seeing Saturn and its rings through any telescope is a thrill for everyone from a young child to even the most seasoned astronomer. That is why Saturn is nicknamed, the “Jewel of the Solar System.”

For the next few months, Jupiter and Saturn will be coming closer together, until Dec. 21 when they will form a conjunction – or two planets (or other celestial objects) aligned closely in the sky from Earth’s perspective. This phenomenon occurs commonly with other stars and planets, but Jupiter and Saturn conjunctions occur only once every 20 years, and the last one was May 21, 2000. That is why the alignment of these two planetary giants is called the “great conjunction.”

Between now and Dec. 21, watch the southern skies to observe these two awesome planets converging in the night sky. Hopefully, the Abilene State Park and the Big Country Master Naturalists will be able to resume hosting their monthly star parties where you can get an up close and personal view of these heavenly gems. In the meantime, try downloading a free stargazing app, like Google Sky, for your smartphone to see a map of the night sky to help you find constellations, planets and even track the International Space Station.

Mike Richins is a Texas Master Naturalist, Big Country Chapter. Master Naturalists focus on the native riches of Texas as well as the skies above, including spiny lizards, red-tailed hawks, coyotes, rock roses and more. They are sponsored by Texas Parks and Wildlife and Texas A&M AgriLife Extension. Training classes for new members are scheduled for next spring. For information, go to txmn.tamu.edu or the BCTXMN Facebook page.