STAR TRAK for January 2011

January 4 2011

Jupiter. Photo courtesy of NASA

As the new year begins, Jupiter will be the only planet visible after sunset, about halfway up the sky in the south-southwest. It will dominate the evening sky as the brightest object in view. January will be the last month to take advantage of Jupiter's position by observing the giant planet with a telescope. It will start sinking closer to the horizon in February, so its light will have to pass through more of Earth's turbulent atmosphere. It will set around 11 p.m. EST at the beginning of January and before 9:30 p.m. by month's end.

Jupiter will serve as a marker for the planet Uranus this month, for both will appear in the same field of view in binoculars. For the first few days of the month, Uranus will be less than 1 degree north of Jupiter. Not until 2038 will these two planets again be so close.

Saturn will rise around 12:30 a.m. EST as January begins and about two hours earlier by month's end. The planet will be at its highest in the south by the start of morning twilight, the best time to view it with a telescope. Its rings will be tilted 10 degrees to our line of sight, the widest they have appeared since 2007. Saturn's biggest moon, Titan, will be due south of the planet on Jan. 12 and Jan. 28 and due north on Jan. 4 and Jan. 20.

Venus will rise more than three hours before the sun in January, becoming a brilliant object high in the southeast well before the start of morning twilight. It will reach its greatest separation from the sun on Jan. 8.

Mercury will arrive at its own greatest elongation from the sun the next day. Though much fainter than Venus, Mercury will still be brighter than any star visible. Look for it low in the southeast about an hour before sunrise.

Mars will be out of sight in the solar glare during January.

Meteor shower

The Quadrantid meteor shower will be active for the first week of January, with a sharp peak during the hours before dawn on Jan. 4. The moon was new that same morning, providing ideal viewing conditions under a clear sky. The rate of this shower varies considerably and unpredictably from year to year, but observers may see up to 100 meteors per hour during the brief peak.

The Quadrantids will appear to come from a point called the radiant near the end of the handle of the Big Dipper, which will rise in the northeast. The radiant is in the constellation Bootes the Herdsman, which contains the bright orange star Arcturus as a conspicuous marker.

Try facing northeast toward the Big Dipper. If you extend the curve formed by the handle's three stars, it forms an "arc to Arcturus." Meteors should be visible in all parts of the sky, but the higher Arcturus is above the eastern horizon, the more meteors there will be. More information about viewing meteor showers, including the Quadrantids, is available from the American Meteor Society at www.amsmeteors.org/showers.html .

Perihelion

Earth reached the closest point to the sun in its orbit, the position called perihelion, on Jan. 3 at 2 p.m. EST (19:00 Universal Time). A common misconception is that our seasons are caused by Earth's changing distance from the sun. The actual cause is the tilt of Earth's axis. Winter in the Northern Hemisphere happens when the North Pole is tilted away from the sun, so that sunlight must pass through a greater amount of Earth's atmosphere to reach the surface. We experience the coldest time of year when we are closest to the sun.

Moon phases

The moon will be new on Jan. 4, at first quarter on Jan. 12, full on Jan. 19 and at third quarter on Jan. 26.

Provided by Indiana University

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