

SEPTEMBER 2009 ASTRONOMY

From the Trackman Planetarium at Joliet Junior College.

The first day of fall (Autumnal Equinox) is on September 22nd. At 4:18 pm, the sun will cross the celestial equator and begin shining on the Southern Hemisphere. The celestial equator is an imaginary line across the sky that is directly above the earth's equator.

On the equinox, the sun rises directly east and sets directly west, and also on the equinox the hours of day and night are supposed to be equal. (Actually, because of the earth's movement in its orbit, the closest to equal hours of day and night is on the 24th.) After the equinox, as you go farther north, there are fewer hours of daylight. The opposite is true before the equinox. The sun sets at the North Pole on the equinox, not to return until next March and the Vernal (spring) Equinox. And you may hear that you can stand a hard-boiled egg on its edge during an equinox. That is true - but you can do it any other day of the year, too!

Have you ever wondered how tall that tree is in front of your house? The sun will appear to cross the sky lower each day until December. On the weekend of October 3rd & 4th, it will cross the meridian - be directly south - at 45 degrees above the horizon. That means that one leg of the right triangle (the tree) is as long as the other leg of the right triangle (the tree's shadow). So, measure the shadow and you will know the height of the tree. The sun transits (is directly south) at 12:40 pm so that's the time to measure the shadow! (Note: This only works in the Midwest. If you live elsewhere, e-mail me your location and I'll send you the right times and dates.)

That very bright object in the southern sky every evening is Jupiter, the largest of the planets. If you are a morning person, the bright object in the eastern sky is Venus. Jupiter will be with us until December. Mars is in the early morning sky but not nearly as bright as Venus or Jupiter. On September 13th, Mars will be just above the moon.

The three stars of the summer triangle are directly above us in mid-evening. Sagittarius - the teapot - is low in the southern sky. The Milky Way runs through the summer triangle and down to Sagittarius. High in the northeast is the "W" of Cassiopeia, and about three hand widths below Cassiopeia is the big square of Pegasus.

We are well into the new sunspot cycle, but at the end of August, we had not had a sunspot in over seven weeks. What does this mean? No one really knows for sure.

The International Space Station resumes evening crossings of the sky on September 5th. The space station is easily visible to the naked eye as it makes its ninety minute orbit of the earth. For crossing times and locations, go to Heavens-above.com.

Our first show of the new season is on September 8th at 7:30 pm. The show is about the skies of September and if the skies are clear, we will finish with an outdoor tour of the sky.

If you are a teacher and you have not received a packet with reservation materials for the 2009-2010 season, please e-mail cmckittr@jjc.edu with your name and address and phone number. Christine will be glad to send you the information.

NASA's Lunar Reconnaissance Orbiter is currently circling the moon looking for the perfect place to land on our return to the moon in 2010. The orbiter, along with the Lunar Crater Observation and Sensing Satellite (LCROSS), is searching for water that may be hidden in the permanent shadows of the moon's craters. LCROSS will crash into the moon on October 9th and it is expected to send a plume of moon material six miles above the moon's surface. (You'll need a large telescope to see it.) That plume will be analyzed for water content. This is all in anticipation of our building a permanent facility on the moon. Somewhere in our country is a young woman who will be lucky enough to claim the title "First Woman on the Moon".

You do not really understand something unless you can explain it to your grandmother.

-- Albert Einstein

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