

# OCTOBER 2008 ASTRONOMY

*From the Trackman Planetarium at Joliet Junior College.*

The month of October is one of the best months for studying the night sky, because the sun sets early, the clear skies are usually very "transparent", and the mosquitoes have taken off to wherever mosquitoes go in the winter. This October, the night sky features Jupiter low in the southern sky in the constellation of Sagittarius, and Venus in the western sky after sunset.

Jupiter is larger than all the planets combined, and is therefore very bright even though it is 482 million miles away. If you have good binoculars, you should be able to see some of the four Galilean moons orbiting Jupiter. These moons are named after Galileo who discovered them and used them as his argument for a sun-centered solar system. (Versus an earth-centered universe). The oceans of Europa, one of the Galilean moons, are considered to be one of the few places in our solar system where microscopic life could exist.

Venus is easy to find because it is the third brightest object in the sky after the sun and moon. It owes its high reflective value to the clouds of carbon dioxide and sulfuric acid that completely cover the planet. Because of these clouds, Venus has the ultimate "hot house" syndrome and its surface temperature is the highest of all the planets - about 850 degrees.

In the eastern sky in mid-evening is a tight group of stars called the Pleiades or seven sisters. Take a look at the Pleiades through your binoculars and you will see that it is hundreds of new stars still held together by gravity and surrounded in a thin cloud of dust.

By the end of October, the great winter constellation of Orion will be rising in the mid-evening sky. Meanwhile, the Summer Triangle of Deneb, Vega, and Altair is still high in the sky right after dark. For those of you who are up before daybreak, Saturn is in the eastern sky in the early morning hours. To get a complete star map of your sky for any evening, and a list of objects transiting through the sky, go to [Heavens-Above.com](http://Heavens-Above.com) and enter your town from their database.

The old laptop computer that ran all the projectors for the planetarium shows gave up on us in September. Fortunately, we had new software and a new computer installed and we are waiting for the tech's visit. We should be back to normal by mid-month. In the interim, we will be doing special presentations along the same theme as the scheduled shows.

This will be the first October that we do not set the clocks back to standard time. The ritual "fall back" changing of time won't be observed until November 2nd.

October 31st is Halloween. Halloween is a "cross-quarter day" in astronomy, meaning it is one of the days marking the middle between two seasons. These days were celebrated by many cultures - most notably the Celts. We have renamed the days and we know them as Ground Hog Day, Lammas Day (August 1st), May Day and Halloween - Halloween being the most important. If you are looking for some interesting tidbits to spice up your late October

conversations, *Google* "Halloween" and read how ancient cultures created and celebrated this holiday. Halloween was the most important of the "cross-quarter days because the old year ended on Halloween. It was because of the "crack" in the cycle of the calendar between the old year and the new year that past spirits could come back to earth. For the ancient Mayans, the Pleiades were directly overhead at midnight on Halloween and they marked the occasion by sacrificing a couple of teenagers to the gods. (Marking Halloween by revisiting this custom is now frowned upon by local authorities.)

The full moon in October is on the 14th, and the Orionids meteor shower is on the 21st. The Orionids are best seen after midnight in the eastern sky, near the constellation of Orion.

On November 1st, Joliet Junior College will hold an open house for students who are about to enter college, and for their parents. The hours are 10am until 1pm. You can take a tour of the campus and meet the faculty and students. You can also find out about financial aid and registration. There will be mini-demonstrations of the planetarium throughout the event.

Phoenix, the NASA probe that landed in the upper latitudes of Mars last May, is finishing its successful probe of ice in the soil of Mars. The probe has determined that the ice is indeed water ice. Because of the very low atmospheric pressure on Mars - only five percent of earth's - when the ice melts, it goes directly into gas. Phoenix was able to put some of the soil in its heaters and melt it while capturing the gases. We now know that there were probably large oceans of water on the red planet at one time and it may even have had a greenhouse atmosphere like Venus. Lack of a magnetosphere and low gravity - 38% of earth's - allowed the solar wind to strip the planet of almost all of the atmosphere and water it once had. Meanwhile, the cameras on Phoenix captured snow falling in the thin atmosphere but vaporizing before it hit the surface.

Our sun has been very slow in entering the new sunspot cycle. The cycles last eleven years and the latest cycle started last January. So far there have been fewer than a half dozen very small sunspots. The same can be said about the solar prominences, gases protruding from the sun's surface. There is no need to worry about this phenomenon yet, but it will be worth watching.

And, sad to say, the Hubble Telescope seems to have lost contact with earth. The amazing pictures we have from Hubble are a testament to one of the finest pieces of astronomy equipment ever produced.

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