

OCTOBER OBSERVING NEWS

We would like to take this opportunity to welcome 16 new leaders from the October Astronomy Camp group to our Newsletter. For our newest members, we have compiled the sky stories and supporting materials from the previous three years of our Newsletter. They can be found, arranged by appropriate season, on the NIRCcam web site, <http://zeus.as.arizona.edu/~dmccarthy/GSUSA/index.htm>

We hope all of you have been observing Venus in the mornings and Jupiter in the evenings over the last few weeks. Both planets are available throughout October. We are just at the very end of our monsoon season, with cloud cover the past few evenings. Therefore, the times listed below for early evening stars and Jupiter are approximate; we have not actually seen them for several days!

Summer constellations are rapidly disappearing, fall constellations are available for viewing, and before you know it, the bright constellations of the winter sky will be rising. Remember, if you are in Arizona and not on Daylight Saving Time, subtract one hour from our listed viewing times!

NIGHT SKY VIEWING:

For those of us on Mountain Standard Time, the Sun is setting at about 6:15 p.m. (7:15 p.m. for most of you). We are able to see Jupiter very shortly after sunset. As the sky darkens, watch for the bright stars of autumn: Antares (the red star in Scorpius) in the south, then Arcturus in the west, and Vega nearly overhead. At about 6:45 p.m., look for Altair and Deneb nearly overhead.

When you look north, Cassiopeia is to the right (east) of Polaris. Depending on your northern horizon, you may begin to lose sight of part of Ursa Major and its asterism, the Big Dipper. Just east of Cassiopeia, Andromeda and Pegasus are now visible once the sky is dark.

We've been observing Scorpius and Sagittarius along the southern horizon since early summer. By mid-September, Scorpius was already beginning to set around 9:00 p.m. By mid-October, Sagittarius will begin to set around 9:00 p.m. In the early evening, also to the south, Fomalhaut (in Piscis Austrinus) is the only first magnitude (very bright) star at this time of year in the southern sky.

In the eastern sky, the characters from the story of Andromeda (Perseus, Pegasus, Cetus, and, of course, Andromeda) move across the sky from east to west, including the circumpolar constellations of Cepheus and Cassiopeia.

Looking to the west at about 9:00 p.m., Ophiuchus and Hercules are visible, and as the evening goes on, the Summer Triangle also moves west and sets.

As always, check for exact times and locations for celestial events on a computer planetarium program (e.g., Starry Night), in an astronomy magazine (e.g., *Sky & Telescope*, *Astronomy*), or online at SkyandTelescope.com/ataglance.

TELESCOPE VIEWING:

Jupiter is the obvious choice at this time. Look for Jupiter's Galilean satellites (Io, Europa, Ganymede, Callisto) aligned along the planet's equator, which is also the plane of their orbits.

If you are observing from a site with fairly dark skies, try to find the Andromeda Galaxy (M31) with either a telescope or binoculars. Andromeda trails off the bottom left corner of the Great Square of Pegasus in a line of stars. M31 is between these stars and Cassiopeia to the northwest. Start at the bottom corner of the Great Square. Go to the second bright star in the line, picturing it as the center of a clock. Use binoculars to find another bright star at 11:00, then look from this star to about 10:00 for a slightly fainter star. Right above it you will see a fuzzy patch which is the Andromeda Galaxy, our nearest neighbor at two million light years away. Consult a computer planetarium program or a reference book such as *Turn Left at Orion* for specific directions for locating M31 and for viewing times.

EARLY MORNING VIEWING:

Between October 10 and 12, look east/northeast at about 1:00 a.m. to see one of the winter constellations, Gemini, and the Moon. The waning gibbous Moon will be above Gemini (near the feet of one twin, Castor) on Oct. 10; the third quarter Moon will be lower in the sky at the waist of the other twin, Pollux, on October 11; and by October 12, the waning crescent will be nearly to the horizon, just below Mars.

On October 15 and 16, about 45 minutes before sunrise, look in the east/southeast for Mercury just above the horizon, bright Venus above Mercury, and Saturn above Venus. On October 15, a thin crescent Moon can be seen above and to the right (south) of these planets. On October 16, the even thinner crescent will be much lower in the sky, almost directly opposite Venus. All three planets are near the constellation Leo.

THE ORIONID METEORS

The Orionid meteor shower takes place this month, from about the 17th to the 25th. The best time to watch for meteors is between midnight and dawn. Since New Moon is on Oct. 18, the sky should be dark for the entire meteor shower. The Orionid meteor shower is named for the constellation Orion, and the meteors will appear to emanate from that constellation.

SKY STORIES:

In his book *The New Patterns in the Sky*, author Julius W. D. Staal describes variations on the constellations we know as interpreted by different cultures throughout history. For example, the figure we see as the Great Square of Pegasus was thought to be a huge barbecue grill in parts of South America. The "Big W" that we call Cassiopeia sometimes looks more like a "Big M" and

in that position, it was interpreted as a group of 5 moose or 5 reindeer in northern Scandinavia and Siberia.

Sometimes the 5 stars we see as a “W” are combined with stars from other nearby constellations to form a completely different sky picture. For example, in the Middle East the 5 stars form a hand with stars from Perseus providing the forearm and upper arm. Combined with stars from both Perseus and Andromeda, the stars of Cassiopeia provide the hump and lower back of a camel. Andromeda’s stars provide the neck and front leg, while a few stars from Perseus provide the hind leg.

The author reports that, in the Marshall Islands, the “W” stars of Cassiopeia form the tail of a dolphin with the stars of Andromeda forming the dorsal fin and body, the 3 stars of Triangulum forming the pelvic fin, and the stars of Aries forming the head and mouth.

Cetus, the sea monster (or whale) in the Andromeda story, was seen as a jaguar in parts of Brazil. The jaguar represented the god of violent storms and hurricanes. In China, the head of Cetus represented a circular grain storehouse, while the back of the sea monster was a square grain storehouse.

When you look at the autumn stars, what do you see?