The Night Sky of August

Dr. Wayne Wooten
Professor of Astronomy

August 2016, the new moon is on August 2nd. On the evening of August 4th, the waxing crescent moon will be just south of Mercury at 8 PM, with brighter Venus to the lower right near the horizon, and Jupiter to their upper left. The Moon passes just below Jupiter on the evening of August 5th. The moon is first quarter on August 10th, and will not interfere with the peak of the Perseid meteor shower on the mornings of August 12-13th this year. From a dark observing site, you can expect about a meteor a minute from 11 PM until dawn, with the radiant, Perseus, rising in the NE about 11 PM. The waxing gibbous moon passes 8 degrees north of Mars on August 12th, then 4 degrees north of Saturn as well. The full moon, the Green Corn moon, occurs on August 18th. The last quarter moon is August 25th, rising about midnight.

While the naked eye, dark adapted by several minutes away from any bright lights, is a wonderful instrument to stare up into deep space, far beyond our own Milky Way, binoculars are better for spotting specific deep sky objects. For a detailed map of northern hemisphere skies, about July 31st visit the www.skymaps.com website and download the map for August 2016; it will have a more extensive calendar, and list of best objects for the naked eyes, binoculars, and scopes on the back of the map. Available as each month begins is wonderful video exploring the August 2016 sky, featuring many different objects, found at the Hubble Space Telescope website at: http://hubblesite.org/explore_astronomy/tonights_sky/.

Mercury is low in the western evening sky as August begins with the crescent moon south of it on the 4th. Venus returns to the evening sky in late July, and rises higher and brighter in SW as August continues. Jupiter by contrast is soon getting lost in the sun’s glare. Mercury passes it on August 20th, and a more spectacular
conjunction of the two brightest planets, Venus and Jupiter, comes up in the twilight on August 27th. Fianter Mercury may still be seen below them, if sky is clear enough. Mars is easy to spot moving eastward now, moving through the claws of Scorpius in the second week of August, then passing just north of Antares on August 24th (which looks brighter and redder to you then?) while 5 degrees south of Saturn. This spectacular alignment of two planets and Antares should be a great photo op!. Much more distant Saturn moves a little east this month, just north of Antares; Enjoy the rings, now 26 degrees open and tilted toward earth and sun; the most beautiful planet falls closer to the western horizon each evening, to be lost in the sun’s glare in October.

The Big Dipper rides high in the NW at sunset, but falls lower each evening. Good scouts know to take its leading pointers north to Polaris, the famed Pole Star. For us, it sits 30 degrees (our latitude) high in the north, while the rotating earth beneath makes all the other celestial bodies spin around it from east to west.

Taking the arc in the Dipper’s handle, we "arc" SE to bright orange Arcturus, the brightest star of Spring. Cooler than our yellow Sun, and much poorer in heavy elements, some believe its strange motion reveals it to be an invading star from another smaller galaxy, now colliding with the Milky Way in Sagittarius in the summer sky. Moving almost perpendicular to the plane of our Milky Way, Arcturus was the first star in the sky where its proper motion across the historic sky was noted, by Edmund Halley.

Spike south to Spica, the hot blue star in Virgo. From Spica curve to Corvus the Crow, a four sided grouping. It is above Corvus, in the arms of Virgo, where our large scopes will show members of the Virgo Supercluster, a swarm of over a thousand galaxies about 50 million light years away from us.

Hercules is overhead, with the nice globular cluster M-13 marked on your sky map and visible in binocs. It is faintly visible with the naked
eye under dark sky conditions, and among the best binoc objects on the map back page when you download the SkyMap pdf file.

The brightest star of the northern hemisphere, Vega dominates the NE sky. Binoculars reveal the small star just to the NE of Vega, epsilon Lyrae, as a nice double. Larger telescopes at 150X reveal each of this pair is another close double, hence its nickname, the "double double"...a fine sight under steady sky conditions.

Below Vega are the two bright stars of the Summer Triangle; Deneb is at the top of the Northern Cross, known as Cygnus the Swan to the Romans. It is one of the most luminous stars in our Galaxy, about 50,000 times brighter than our Sun. To the south is Altair, the brightest star of Aquila the Eagle. If you scan the Milky Way with binocs or a small spotting scope between Altair and Deneb, you will find many nice open star clusters and also a lot of dark nebulae, the dust clouds from which new stars will be born in the future.

To the south, Antares rises about the same time in Scorpius. It appears reddish (its Greek name means rival of Ares or Mars to the Latins) because it is half as hot as our yellow Sun; it is bright because it is a bloated red supergiant, big enough to swallow up our solar system all the way out to Saturn’s orbit! Just above the tail of the Scorpion are two fine naked eye star clusters, M-7 (discovered by Ptolemy and included in his catalog about 200 AD) and M-6, making one of the best binocular views in the sky. Your binoculars are ideally suited to reveal many fine open star clusters and nebulae in this region of our Galaxy. Get a dark sky site, and use the objects listed on the back of the August 2016 SkyMap printout to guide you to the best deep sky wonders for binocs.

East of the Scorpion’s tail is the teapot shape of Sagittarius, which marks the heart of our Milky Way galaxy. Looking like a cloud of steam coming out of the teapot’s spout is the fine Lagoon Nebula, M-8, easily visible with the naked eye. In the same binocular field just north of the Lagoon is M-20, the Trifid Nebula. The Trifid is indeed
broken into three parts by the dust lanes he has shown so well. Just east of the pair is the fine globular cluster M-22, faintly visible to the naked eye and spectacularly resolved in scopes of 8" or larger aperture.