The Night Sky of January

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For January 2012, the Moon will be first quarter on January 1st. The first two weeks find the moon waxing in the evening sky. The waxing gibbous moon passes just north of Jupiter on January 2nd. It sets about 3 AM on the morning of January 4th, which is the peak for the short duration but often intense Quadrantid Meteor shower. Bundle up, get a dark site, and you may spot about a meteor a minute coming out of the NE sky between then and dawn on that Wednesday morning, with eastern North America getting the best view of the cometary debris. The full moon is on January 9th, for northern Indian tribes, this was the Wolf or Snow Moon….before global warning, obviously….. The waning gibbous moon passes 8 degrees south of brightening Mars in the morning sky on January 14th. The last quarter moon passes 2 degrees south of Saturn on January 16th. The new moon is on January 23rd, and the waxing crescent moon passes six degrees north of Venus in SW twilight on January 26th, then the first quarter moon passes 4 degrees north of Jupiter on January 30th. Note that the first quarter moon marks the synodic or phase based month of 29.5 days for this month, at the beginning and end of the month.

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 January 1st visit the www.skymaps.com website and download the map for January; 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. Also available as the next month begins is wonderful video exploring the January sky, featuring many different objects, available from the Hubble Space Telescope website at: http://hubblesite.org/explore_astronomy/tonights_sky/.

Venus dominates the western evening sky for the first five months of 2012. She now appears as a small, gibbous disk, but will get larger and closer as she overtakes earth in the next months, to pass directly between us and the sun on the afternoon of June 5, 2012, a rare and historic Transit of Venus. At that moment, she is as close to earth as any planet can get. Mars is also getting closer, to come to opposition in Leo on March 3, 2012, which will be the closest he can get to us for the next two years. He is now rising about 10:15 PM as January begins, but will be coming up about 8:30 PM by month’s end, and much closer and brighter by then as well. Jupiter is still well placed in the SW sky through March, and its four moons and their transits across his face a fine telescopic treat for all observers and star gazes. Saturn rises about 1 AM as January begins, and will reach opposition on April 15th this year. It will be close to the bright star Spica in Virgo all year.

The square of Pegasus dominates the western sky. The constellation Cassiopeia makes a striking W in the NW. She contains many nice star clusters for binocular users in her outer arm of our Milky Way, extending to the NE now. Her daughter, Andromeda, starts with the NE corner star of Pegasus’” Square, and goes NE with two more bright stars in a row. It is from the middle star, beta Andromeda, that we proceed about a quarter the way to the top star in the W of Cassiopeia, and look for a faint blur with the naked eye. M-31, the Andromeda Galaxy, is the most distant object visible with the naked eye, lying about 2.5 million light years distant. Overhead is Andromeda’s hero, Perseus, rises. Between him and
Cassiopeia is the fine Double Cluster, faintly visible with the naked eye and two fine binocular objects in the same field. Perseus contains the famed eclipsing binary star Algol, where the Arabs imagined the eye of the gorgon Medusa would lie. It fades to a third its normal brightness for six out of every 70 hours, as a larger but cooler orange giant covers about 80% of the smaller but hotter and thus brighter companion as seen from Earth.

Look at Perseus’ feet for the famed Pleiades cluster; they lie about 400 light years distant, and over 250 stars are members of this fine group. East of the seven sisters is the V of stars marking the face of Taurus the Bull, with bright orange Aldebaran as his eye. The V of stars is the Hyades cluster, older than the blue Pleiades, but about half their distance. Near the tip of the southern horn of Taurus is the famed Crab Nebula, Messier 1. It is the remains of a supernova seen widely in July of 1054 AD; the Chinese indicated it outshone Venus, and was visible in broad daylight for weeks. Today this expanding stellar funeral wreath is still visible in good binoculars, and this fine shot of it by Ed Magowan of the Escambia Amateur astronomers not only catches the red tendrils of rapidly expanding ionized hydrogen, but also the pulsar in its center, spinning 30 times a second!

Yellow Capella, a giant star the same temperature and color as our much smaller Sun, dominates the overhead sky. It is part of the pentagon on stars making up Auriga, the Charioteer (think Ben Hur). Several nice binocular Messier open clusters are found in the winter milky way here. East of Auriga, the twins, Castor and Pollux highlight the Gemini. UWF alumni can associate the pair with Jason and the Golden Fleece legend, for they were the first two Argonauts to sign up on his crew of adventurers.

South of Gemini, Orion is the most familiar winter constellation, dominating the eastern sky at dusk. The reddish supergiant Betelguese marks his eastern shoulder, while blue-white supergiant Rigel stands opposite on his west knee. Just south of the belt, hanging like a sword downward, is M-42, the Great Nebula of Orion, an outstanding binocular and telescopic stellar nursery. It is part of a huge spiral arm gas cloud, with active star birth all over the place. You should be able to glimpse this stellar birthplace as a faint blur with just your naked eyes!

Last but certainly not least, in the east rise the hunter’s two faithful companions, Canis major and minor. Procyon is the bright star in the little dog, and rises minutes before Sirius, the brightest star in the sky. Sirius dominates the SE sky by 7 PM, and as it rises, the turbulent winter air causes it to sparkle with shafts of spectral fire. Beautiful as the twinkling appears to the naked eye, for astronomers this means the image is blurry; only in space can we truly see “clearly now”. At 8 light years distance, Sirius is the closest star we can easily see with the naked eye from West Florida. You must be in south Florida to spot Alpha Centauri on June evenings. Below Sirius in binoculars is another fine open cluster, M-41, a fitting dessert for New Year’s sky feast.

For more information on the Escambia Amateur Astronomers and our local star gazes for the public, visit our website at www.eaaa.net or call our sponsor, Dr. Wayne Wooten at PJC at (850) 484-1152, or e-mail him at wwooten@pensacolastate.edu.

Please note our NEW EMAIL ADDRESS: @pensacolastate.edu. Pensacola State College is the new name for Pensacola Junior College.
Illustration 1: Crab Nebula – M1 – NGC 1952

Text 1: Taken by Ed Magowan – 01/2012 issue