The Evening Sky Map

Sky Calendar – January 2016

2 Last Quarter Moon at 5:30 UT.
2 Moon at apogee (farthest from Earth) at 12h UT (distance 404,277 km; angular size 29.6°).
2 Earth at Perihelion (closest to Sun) at 23h UT. The Sun-Earth distance is 0.983304 a.u. or 147.1 million kilometers.
3 Moon near Spica (78° from Sun, morning sky) at 7h UT.
3 Moon near Mars (73° from Sun, morning sky) at 20h UT. Mag. +1.2.
4 Quadrantid Meteor Shower peaks at 8h UT. Active between December 28 and January 12. Produces up to 120 meteors per hour. Radiant is in northern Boötes.
7 Moon, Venus and Saturn within a 3.6° circle (36° from Sun, morning sky) at 4h UT. Mags. –4.0 & +0.5.
9 Venus 0.08° N of Saturn (36° from Sun, morning sky) at 4h UT. Mags. –4.0 & +0.5.
10 New Moon at 1:31 UT. Start of lunation 1151.
14 Mercury at inferior conjunction with the Sun at 14h UT. Not visible. The elusive planet passes into the morning sky.
15 Moon at perigee (closest to Earth) at 2h UT (369,619 km; angular size 32.3°).
16 First Quarter Moon at 23:26 UT.
19 Moon near the Pleiades (evening sky) at 9h UT.
20 Moon very near Aldebaran (evening sky) at 2h UT. Occultation visible from USA and Canada.
24 Full Moon at 1:46 UT.
24 Moon near Beehive cluster (midnight sky) at 10h UT.
26 Moon near Regulus (morning sky) at 4h UT.
28 Moon near Jupiter (135° from Sun, morning sky) at 0h UT. Mag. –2.3.
30 Moon at apogee (farthest from Earth) at 9h UT (distance 404,553 km; angular size 29.5°).
30 Moon near Spica (106° from Sun, morning sky) at 15h UT.

More sky events and links at http://skymaps.com/skycalendar/
All times in Universal Time (UT). (USA Eastern Standard Time = UT – 5 hours.)

The Evening Sky Map
FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

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About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars. They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it’s always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today’s large cities. You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (″).

Ecliptic – The path of the Sun’s center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.

Variable Star – A star that changes brightness over a period of time.

Easily Seen with the Naked Eye


Sirius CMa – The brightest star in the sky. Also known as the “Dog Star”. Dist=8.6 ly.

Procyon CMi – Greek name meaning “before the dog” – rises before Sirius (northern latitudes). Dist=11.4 ly.

β Cephei Cep – Cepheid prototype. Mag varies between 3.5 & 4.4 over 5,366 days. Mag companions.

Deneb Cyg – Brightest star in Cygnus. One of the greatest known supernovae. Dist=1,400 ±200 ly.

Castor Gem – Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly.

Pollux Gem – With Castor, the twin sons of Leda in classical mythology. Dist=34 ly.

Vega Lyrae Lyr – The 5th brightest star in the sky. A blue-white star. Dist=29.0 ly.

Rigel Ori – The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.

Betelgeuse Ori – One of the largest red supergiant stars known. Distance=300 times that of Sun. Dist=430 ly.

Algol Per – Famous eclipsing binary star. Magnitude varies between 2.1 and 3.4 over 2.867 days.


Hyades Tau – Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.

Aldebaran Tau – The brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.


Easily Seen with Binoculars

M31 And – The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.

M2 Aqr – Resembles a fuzzy star in binoculars. Dist=4.300 ly.

M38 Aur – Stars appear arranged in “gir” or cross shape. Dist=4.300 ly.


M44 Cnc – Praesepe or Beehive Cluster. Visible to the naked eye. Dist=950 ±20 ly.

M41 CMA – First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.

μ Cephei Cep – Herschel’s Garnet Star. One of the reddest stars. Mag 5.4 to 5.1 over 730 days.

Mira Cet – Famous long-period variable star. Mag varies between 3.0 & 10.1 over 332 days.

ζ Cygni Cyg – Long period pulsating red giant. Magnitude varies between 3.3 & 14.2 over 407 days.

M39 Cyg – May be visible to the naked eye under good conditions. Dist=900 ly.

ν Draconis Dra – Wide pair of white stars. One of the finest binocular pairs in the sky. Dist=1,100 ly.

M35 Gem – Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.


R Lyrae Lyr – Semi-regal variable. Magnitude varies between 3.9 & 5.0 over 46.0 days.

2232 Mon – A large scattered star cluster of 20 stars. Dist=1,300 ly.

2244 Mon – Surrounded by the rather faint Rosette Nebula. Dist=8,500 ly.

M50 Mon – Visible with binoculars. Telescope reveals individual stars. Dist=3,000 ly.

Cr 69 Ori – Lambda Orionis Cluster. Dist=1,630 ly.


M15 Peg – Only globular known to contain a planetary nebula (Mag 14, d=1 °). Dist=30,000 ly.


253 Scl – Fine, large, cigar-shaped galaxy. Requires dark sky. Member of Sculptor Group.

Mizar & Alcor UMa – Good eyeweight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.

Telescopic Objects

γ Andromedae And – Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8 °.


M67 Cont – Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly.

η Cassiopeiae Cas – Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orb=480 years. Sep=12 °.


κ Delphini Del – Appear yellow & white. Mag 4.3 & 5.2. Dist=100 ly. Struve 2725 double in same field.


β Monocerotis Mon – Triple star. Mag 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3 °.

2264 Mon – The Christmas Tree Cluster. Associated with the Cone Nebula. Dist=2,450 ly.

ν Orionis Ori – Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.

M1 Tau – Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.

M33 Tri – Fine face-on spiral galaxy. Requires a large aperture telescope. Dist=3.2 million ly.

M81 UMa – Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope.

M82 UMa – Close to M81 but much fainter and smaller.

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