Sky Calendar – October 2022

3  First Quarter Moon at 0:14 UT.
4  Moon at perigee (closest to Earth) at 16:41 UT (distance 369,325km; angular size 32.4').
5  Moon near Saturn at 19h UT (evening sky). Mag. 0.5.
8  Moon near Jupiter at 21h UT (evening sky). Mag. -2.9.
8  Mercury at greatest elongation west at 21h UT (18° from Sun, morning sky). Mag. -0.5.
9  Full Moon at 20:54 UT.
12  Moon near Uranus at 7h UT (morning sky).
   Occultation visible from NW USA, Alaska, Canada and Greenland. Mag. 5.7.
13  Moon near the Pleiades at 7h UT (morning sky).
14  Moon near Aldebaran at 0h UT (morning sky).
15  Moon near Mars at 4h UT (morning sky). Mag. -0.9.
17  Moon at apogee (farthest from Earth) at 10h UT (distance 404,328km; angular size 29.6').
17  Last Quarter Moon at 17:15 UT.
18  Moon near Beehive cluster M44 at 21h UT (morning sky).
20  Moon near Regulus at 18h UT (morning sky).
21  Orionid meteor shower peaks at 10h UT. Arises from the debris field of Comet Halley. Active from October 2 to November 7. Produces very fast (67 km/sec), generally faint meteors (20 per hour). Radiant located near Orion’s club asterism.
22  Venus at superior conjunction with the Sun at 21h UT (not visible). Venus is passing into the evening sky.
25  New Moon at 10:47 UT. Start of lunation 1235.
25  Partial Eclipse of the Sun at 11:00 UT (greatest). Visible from Europe, NE Africa, Middle East and west Asia. Begins 8:58 UT. Ends 13:02 UT.
28  Moon near Antares at 5h UT (evening sky).
29  Moon at perigee (closest to Earth) at 14:27 UT (distance 368,291km; angular size 32.4').
30  Moon at southermost declination (−27.5°) at 1h UT.

More sky events and links at http://Skymaps.com/skycalendar/
All times in Universal Time (UT). (Australian Eastern Daylight Time = UT + 11 hours.)

THE SKY MAP SHOWS HOW THE NIGHT SKY LOOKS
EARLY OCT  9 PM
LATE OCT  8 PM
(Add 1 Hour For Daylight Saving)
SKY MAP DRAWN FOR A LATITUDE OF 35° SOUTH AND IS SUITABLE FOR LATITUDES UP TO 65° SOUTH OR SOUTH OF THIS
eclesTic

Symbols
Galaxy ◆
Double Star ★
Variable Star ★
Diffuse Nebula □
Planetary Nebula ●
Open Star Cluster ○
Globular Star Cluster ●

Star Magnitudes
1 2 3 4

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All sales support the production and free distribution of The Evening Sky Map.
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. Australian Eastern Standard Time (Sydney, Australia) is UT plus 10 hours.

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

Easily Seen with the Naked Eye

Altair

Aquila

Brightest star in Aquila. Name means “the flying eagle”. Dist=16.7 ly.

Canopus

Car

Second brightest star in the sky. In 14,000 times more luminous than the Sun. Dist=309 ly.

β Centauri

Centauri

With Alpha Centauri, forms the so-called “Pointers-to-the-Cross”. Dist=825 ly.

γ Centauri

Nearby brightest star to Sun at 44.4 ly. Brilliant double star in a telescope. 80 year period.

Coalsack

Cru

Most famous naked-eye dark nebula. Requires dark sky. Dist=600 ly.

Deneb

Cyg

Brightest star in Cygnus. One of the greatest known supergiants. Dist=1,400x200 ly.

Achernar

Eri

Brightest star in Eridanus. The River. Arabic name meaning “end of river”. Dist=140 ly.

Fomalhaut

Psc

Brightest star in Pisces Austrinus. In Arabic the “fish’s mouth”. Dist=25 ly.

Antares

Sco

Red, supergiant star. Name means “rival of Mars”. Dist=135.9 ly.

Easily Seen with Binoculars

M31

And

The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.93 million ly.

M2

Aqr

A reefsy fuzzy star in binoculars.

η Aquilae

Aql

Bright cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 ly.

6397 Ara

Thought to be the nearest globular. Dist=7,000 ly.

Mira

Cet

Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 days.

γ 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.

LMC

Dor

Large Magellanic Cloud. A neighboring galaxy of the Milky Way. Dist=180,000 ly.

IC 6665

Oph

Large, scattered open cluster. Visible with binoculars.

6333 Oph

Scattered open cluster. Visible with binoculars.

κ Pavonis

Pav

Cepheid-type. Magnitude varies between 3.9 & 4.8 over 9,088 days.

6752 Pav

Pav

One of the better globular star clusters in the sky. Dist=14,000 ly.

M15

Peg

Only globular known to contain a planetary nebula (Mag 14, d=71°). Dist=30,000 ly.

ζ Phoenicis

Phe

Eclipsing binary star and double (mag 8). Varies between 3.9 & 4.4 over 1,667 days.

M8

Sgr


M25

Sgr

Bright cluster located about 6DegN of “teapot’s” lid. Dist=1,900 ly.

M22

Sgr

A spectacular globular star cluster. Telescope will show stars. Dist=10,000 ly.

M4

Sco

A close globular. May just be visible without optical aid. Dist=7,000 ly.

6231 Sco

Sco

Easy to see in binoculars. Dist=5,900 ly.

M6

Sco

Butterfly Cluster. 30+ stars in 7x binoculars. Dist=1,960 ly.

M7

Sco


253

Scl

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

47 Tucanae

Tuc

Spectacular object. Telescope will reveal stars. Near edge of SMC. Dist=15,000 ly.

β Tucanae

Tuc

Complex multiple star. Binoculars show one pair. Telescope required to split primary star.

SMC

Tuc


Cr 399

Vul

Coathanger asterism or “Brochic’s Cluster”. Not a true star cluster. Dist=218 to 1,140 ly.

Telescopic Objects

7009

Aqr

Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.

7293

Aqr


γ Arietis

Ari


Albireo

Cyg

Beautiful double star. Contrasting colours of orange and blue-green. Sep=34.4°.

γ Delphini

Del

Appear yellow & white. Mag=4.3. Dist=100 ly. Struve 2725 double in same field.

2070

Dor

Tarantula Nebula. A bright nebula located in LMC. A star-forming region.

β Eridani

Eri


5822

Lup

Large, attractive cluster. Dist=1,800 ly. Open cluster NGC 5823 to the south.

M57

Lyr


M23

Sgr

Elongated star cluster. Telescope required to show stars. Dist=2,100 ly.

M20

Sgr

Trifid Nebula. A telescope shows 3 dust lanes tracing nebula. Dist=5,200 ly.

M21

Sgr

A fine and impressive cluster. Dist=4,200 ly.

M17

Sco

Omeq Nebula. Contains the star cluster NGC 6618. Dist=4,900 ly.

6124

Sco

Contains 5 bright tightly packed stars near centre. 7 star chain. Dist=1,600 ly.

M11

Sct


M16

Ser

Dumbbell Nebula. Large, twin-lobe shape. Most spectacular planetary. Dist=975 ly.

M27

Vul

Dumbbell Nebula. Large, twin-lobe shape. Most spectacular planetary. Dist=975 ly.