Sky Calendar – June 2022

2 Moon at apogee (farthest from Earth) at 2h UT (distance 406,192km; angular size 29.4°).
4 Moon near Beehive cluster M44 at 11h UT (evening sky).
6 Moon near Regulus at 8h UT (evening sky).
7 First Quarter Moon at 14:48 UT.
10 Moon near Spica at 12h UT (evening sky).
13 Moon near Antares at 16h UT (evening sky).
14 Full Moon at 11:51 UT.
16 Mercury at greatest elongation west at 15h UT (23° from Sun, morning sky). Mag. -0.5.
18 Moon near Saturn at 16h UT (morning sky). Mag. 0.7.
21 Last Quarter Moon at 3:11 UT.
21 June solstice at 9:17 UT. The time when the Sun reaches the point farthest north of the celestial equator marking the start of summer in the Northern Hemisphere and winter in the Southern Hemisphere.
21 Moon near Jupiter at 17h UT (morning sky).

Moon at apogee (farthest from Earth) at 6h UT (distance 406,580km; angular size 29.4°).
Moon at perigee (closest to Earth) at 23:24 UT (distance 357,432km; angular size 33.4°).
Mercury at greatest elongation west at 15h UT (23° from Sun, morning sky). Mag. -2.4.
Moon at apogee (farthest from Earth) at 2:52 UT (distance 406,192km; angular size 29.4°).
Moon at perigee (closest to Earth) at 2h UT (distance 406,580km; angular size 29.4°).
About the Celestial Objects
Listed on this page are several of the brightest, 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

6397 Ara ☉ Thought to be the nearest globular. Dist=7,000 ly.
M3 CVn ☉ Easy to find in binoculars. Might be glimpsed with the naked eye.
2516 Car ☉ Spectacular open star cluster of 100 stars spanning 1/2 deg. Dist=1,300 ly.
2808 Car ☉ Located 4 deg W of Nu Carinae. Visible to the naked eye on clear nights.
R Carinae Car ☉ Long period variable. Magnitude varies between 3.9 & 10 over 309 days. Dist=≈100 ly.
3114 Car ☉ Stunning open cluster, 40+ stars visible through 7x binoculars. Dist=2,900 ly.
IC 2602 Car ☉ The “Five of Diamonds”. Bright cluster twice diameter of full Moon. Dist=491 ly.
3372 Car ☉ Eta Carinae Nebula. Enormous glowing cloud in rich star field. Dist=≈800 ly.
3532 Car ☉ Herschel - “most brilliant cluster”, 60+ stars in 7x binoculars. Dist=1,300 ly.
ω Centauri Cen ☉ Largest and brightest globular star cluster in sky. 1 million stars. Dist=17,000 ly.
Mel 111 Com ☉ Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=283 ly. Age=400 million years.
LMC Dor ☉ Large Magellanic Cloud. A neighbouring galaxy of the Milky Way. Dist=180,000 ly.
R Hydrae Hya ☉ Long period variable. Mag varies between 3.0 & 11.0 over 390 days. Brilliant red.
ν Pavonis Pav ☉ Cepheid-type. Magnitude varies between 3.9 & 4.8 over 9,088 days.
6752 Pav ☉ One of the better globular star clusters in the sky. Dist=14,000 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 ☉ Easy to see in binoculars. Dist=5,900 ly.
M6 Sco ☉ Butterfly Cluster. 10+ stars in 7x binoculars. Dist=1,960 ly.
M5 Ser ☉ Fine globular star cluster. Telescope will reveal individual stars. Dist=25,000 ly.
6025 TrA ☉ A small open star cluster in the Milky Way. Dist=2,700 ly.
2547 Vel ☉ Fine open cluster visible through binoculars. Dist=1,300 ly.
IC 2391 Vel ☉ Omicron Velorum Cluster. Superb object for binoculars. Dist=450 ly.

Telescopic Objects
κ Boötis Boo ☉ Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8″. Difficult to split.
3918 Cen ☉ The Blue Planetary. Visible in a small telescope as a round blue disc.
M64 Com ☉ Black-Eye Galaxy. Discovered by J.E. Bode in 1775 -- “a small, nebulous star”.
M83 Hya ☉ Classic face-on spiral. Discovered in 1752 by Lacaille. In attractive star field.
5822 Lup ☉ Large, attractive cluster. Dist=1,800 ly. Open cluster NGC 5823 to the south.
M23 Sgr ☉ Elongated star cluster. Telescope required to show stars. Dist=2,100 ly.
M21 Sgr ☉ Fine and impressive cluster. Dist=≈400 ly.
M17 Sgr ☉ Omega Nebula. Contains the star cluster NGC 6618. Dist=490 ly.
6124 Sco ☉ Contains 5 bright tightly packed stars near centre. 7 star chain. Dist=1,600 ly.
M16 Ser ☉ Eagle Nebula. Requires a telescope of large aperture. Dist=8,150 ly.
3132 Vel ☉ One of the brightest planetaryes. Magnitude 10 central star. Dist=2,600 ly.
M87 Vir ☉ Superb giant galaxy with a massive black hole at its core. Dist=53.5 million ly.
M104 Vir ☉ Sombrero Galaxy. Almost edge-on spiral galaxy. Promoting central core.
γ Virginis Vir ☉ Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005.