Sky Calendar – July 2018

4  Mercury 0.4° SSW of Beehive cluster M44 (25° from Sun, evening sky) at 13h UT. Mag. 0.1.
6  Last Quarter Moon at 7:52 UT.
6  Earth at Aphelion (farthest from Sun) at 17h UT. The Sun-Earth distance is 1.016696 a.u. or about 152.1 million km.
10  Venus 1.0° NNE of Regulus (42° from Sun, evening sky) at 5h UT. Mags. –4.1 and 1.4.
10  Mercury at greatest elongation east (26° from Sun, evening sky) at 8h UT. Mag. –2.8.
10  Mars nearest to Earth (evening sky) at 19:53 UT.
11  Mars at opposition at 5h UT. Mag. –2.8. At its brightest.
13  First Quarter Moon at 19:53 UT.
13  Moon near Aldebaran (morning sky) at 9h UT.
24  Moon near Regulus (morning sky) at 9h UT.
24  Moon at apogee (farthest from Earth) at 6h UT (distance 406,223 km; angular size 29.4°).
27  Total Eclipse of the Moon begins at 18:24 UT and ends at 22:19 UT. Mid-eclipse at 20:23 UT. Partial phases begin at 17:15 UT and end at 23:29 UT. Moon appears red-orange in color during totality (the color of Earth’s sunsets). Visible from South America, Europe, Africa, India, Asia, and Australia. Mars nearby.
27  Full Moon at 20:21 UT.
31  Mars nearest to Earth at 8h UT. Mag. –2.8.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (Singapore Standard Time = UT + 8 hours.)
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. Singapore Standard Time is UT plus 8 hours.

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