

[Astronomy Things To See During July 2017 \(For UK Observers\)](#)

Earth reaches aphelion (furthest point from the Sun) on 3rd July

Moon:

First Quarter: 1st July 1:51am
Full: 9th July 5:06am
Last Quarter: 16th July 8:26pm
New: 23rd July 10:45am
First Quarter: 30th July 4:23pm

The Lunar “X” and “V” are visible twice in July, but only one of these is observable from the UK. The first time they are visible is around 8:00am UT (9am BST) which is several hours before the Moon rises from the UK. However, we get a second chance on 30th July at around 8pm UT (9pm BST) which is 3 hours before the Moon sets. The X and V will be visible for about 2 hours

Lunar conjunctions & occultations:

Note: When the Moon is waxing it is visible in the western sky after sunset. When near Full Moon it is visible most of the night. When it is waning, it is visible in the eastern sky before sunrise

1 st July	First Quarter Moon lies near to Jupiter & Spica
5 th July	Waxing Gibbous Moon lies near to Antares
6 th / 7 th July	Waxing Gibbous Moon lies near to Saturn
8 th July	Nearly Full Moon lies near to The Teaspoon asterism
14 th July	Waning Gibbous Moon lies near to Neptune & Lambda Aquarii
17 th July	Waning Crescent Moon lies near to Uranus
18 th July	Waning Crescent Moon lies near to Mu Ceti
20 th July	Waning Crescent Moon lies near to Aldebaran & Venus
25 th July	Waxing Crescent Moon forms triangle with Mercury and Vesta, with daytime occultation of Mercury
28 th July	Waxing Crescent Moon lies near to Jupiter & Spica
29 th July	Waxing Gibbous Moon lies near to Spica

Planetary Observations:

Mercury – if you have a clear north western horizon, you may catch Mercury after sunset this month around an hour after sunset. It reaches greatest wester elongation on 30th July. It begins the month at mag -1.0 but will fade to mag -0.5 by the end of July. On 9th & 10th July Mercury lies close to M44 the Beehive Cluster. On the evening of 25th July, look for Mercury, Vesta & the Waxing Crescent Moon forming a small triangle

Venus – located in Taurus, it will be difficult to miss mag -4.0 Venus as it dominates the dawn sky this month, rising around 3 hours before the Sun. On the morning of 13th July, it passes extremely close to Aldebaran. On 20th July the Waning Crescent Moon lies close to Venus

Mars – is not observable this month

Jupiter – located in Virgo, Jupiter is visible after sunset, setting at around midnight. At mag -1.8 it should be easy to spot

Saturn – located in Ophiuchus, mag +0.2 Saturn is visible after sunset, setting at around 3am. With binoculars or a small telescope, you should be able to observe Saturn’s rings and also its largest moon, Titan. On 7th July Saturn lies just 3 degrees from the Waxing Gibbous Moon

Neptune – located in Aquarius, Neptune rises at around 11pm and remains visible until dawn. At mag +7.8 you will need binoculars or a small telescope to spot it. On 14th July the Waning Gibbous Moon lies close to Neptune

Uranus – located in Pisces, Uranus rises at around midnight and remains visible until dawn. At mag +5.8 you will need binoculars or a small telescope to spot it. On 17th July the Waning Crescent Moon lies near to Uranus

Pluto – located in Sagittarius, Pluto reaches opposition this month, so it is well placed for observation. It rises at around 11pm and remains visible until dawn. At mag +14.1 you need a moderate telescope to spot it. Overnight on 11th/12th July it lies close to the Waning Gibbous Moon

Ceres – located in Gemini, Ceres rises at around 3:30am & sits to the lower left of Venus, low in the north east. At mag +8.5 you will need binoculars or a telescope to spot it

Vesta – located in Leo, Vesta lies not far from Mercury, very low in the west-north-west after sunset. It sets at around 10:30pm. At mag +7.6, you will need binoculars or a small telescope to spot it. On the evening of 25th May, look for Mercury, Vesta & the Waxing Crescent Moon forming a small triangle

Juno – located in Scutum, this minor planet reaches opposition this month so is well placed for observation. It is visible all night long. At mag +9.6 you will need binoculars or a small telescope to spot it

Other Observations:

Noctilucent Cloud Season is Here! – June/July is the peak of northern hemisphere noctilucent cloud season. They sit at an altitude of around 8 times higher than other clouds, which puts them on the edge of space. They are the edge of polar stratospheric clouds which are believed to be seeded by meteor dust. They can sometimes be seen around 60 – 120 minutes after sunset in the north west or 60 – 120 minutes before sunrise in the north east, but only between the end of May and mid August. They appear to glow a gorgeous white/blue whilst all the other clouds are in shadow, giving them their name “night shining clouds”. They are unpredictable, but if you get a good display, you will agree that they are well worth staying up late or getting up early for!

Lunar Occultation of Mercury – this occultation occurs in daylight so it will be a challenge! The Waxing Crescent Moon and Mercury rise about 3 hours after the Sun. At 8:30am BST, Mercury disappears behind the shadow side of the Moon, and it reappears again on the western limb at 9:00am BST. Exact timings will vary depending on your location

Southern Delta Aquarid Meteor Shower – if you have a flat southern horizon you may catch a few meteors from this shower overnight on 28th/29th July. The First Quarter Moon will set at around midnight giving us a better chance of seeing fainter meteors as well as brighter ones

Perseid Meteor Shower – the peak of the Persids isn't until the middle of August, but the shower begins to become active at the end of July, so keep your eye out for early Perseids. Rates will be low at first but will begin to increase as we move into August

Binocular Tour – This month's Sky at Night Binocular Tour by Stephen Tonkin is focused on the sky around the southern Milky Way. There are 5 targets if you have 10 x 50 binoculars. First is M11 the Wild Duck Cluster, an open cluster which contains nearly 3,000 stars. Another open cluster is M25, which contains a Cepheid variable star U Sagittarii. If you have dark, transparent sky, see if you can spot M8 the Lagoon Nebula with its associated open cluster NGC 6530. Next is the globular cluster M4, which will show some lovely detail even in small binoculars. The final target is Rho Ophiuchi, which is part of a triple star system which gives it the characteristic Mikey Mouse appearance. If you have 15 x 70 binoculars, look for M17 the Swan Nebula. For full details on how to find these objects, look at this month's edition of Sky at Night Magazine

Deep Sky Tour – This month's Sky at Night Deep Sky Tour is centred on the area around Cygnus. The first 4 targets are all within the veil nebula region. NGC 6960 is the Western Veil (also known as the Witches Broom). This object is just visible with a 6" telescope, but the use of an OIII or UHC filter and averted vision will help visually. NGC 6992 is the eastern side of the Veil and this is easier to see visually. To the south of NGC 6992 is NGC 6995. Both are observable with small telescopes, but larger apertures will reveal more detail. If you have a larger aperture telescope, see if you can spot NGC 6974, Pickering's Triangle. Away from the Cygnus Loop, look for NGC 7013. It is a galaxy which has been classified as both a spiral with restricted arms or as a lenticular. At mag +12.1 you will need a large aperture to see it. Finally is NGC 6040, an open cluster which contains about 170 stars. As this is quite a large cluster you can observe it with a smaller aperture. For full details of where to find these objects and how best to see them, pick up the current issue of Sky at Night magazine

Crescent Nebula – Astronomy Now's object of the month is NGC 6888 the Crescent Nebula. It is a Wolf-Rayet nebula which more closely resembles a bubble than a crescent. Visually you will probably need at least an 8" telescope to see the crescent shape. Use of OIII or UHC filters will aid visual observations. Due to its size, it can be imaged with most telescopes. It responds well to imaging with DSLRs and CCD cameras, but best results come from imaging through narrowband filters, particularly OIII and H-alpha. For more information on how to observe, image or sketch this object, take a look at the current edition of Astronomy Now magazine

Sky Tour – Astronomy Now’s sky tour this month takes us on a tour of the summer nebulae. There are 10 nebulae in the region of sky between Sagittarius and Draco, including M8 the Lagoon Nebula, M20 the Trifid Nebula, M27 the Dumbell Nebula, M57 the Ring Nebula, as well as the North America, Pelican, Cat’s Eye and Veil Nebulae. For more information about these summer nebulae and where to find them, take a look at the current edition of Astronomy Now magazine

Solar Observations – the long days this month give us plenty of hours for solar observing. A white light filter will show sunspots, faculae and maybe some granulation. A specialist hydrogen-alpha telescope will show filaments, prominences and if you are lucky you may catch a solar flare in action. Also, if there is a lot of high level cirrus cloud around, keep a look out for solar optical phenomena such as parhelia (sundogs), 22 degree haloes and the various arcs associated with ice haloes

SAFETY WARNING: Never attempt to observe or photograph the Sun without the correct equipment. Failure to do so will result in permanent damage to your eyes or even blindness!

International Space Station –The ISS returns to our skies during the 2nd week of July for some early morning passes and by the last week of the month there will be some evening passes. For the exact timings of the passes from your location, visit www.heavens-above.com You can also check the Iridium flare times for your location at Heavens Above

Comets Visible This Month:

Comet C/2015 V2 Johnson – located in Virgo, at the beginning of July this comet becomes visible at dusk about 20 degrees above the south western horizon, then sets at around 1:30am. However, it rapidly sinks lower as the month progresses & by mid-July it will become very difficult to observe. The last reported visual observation had this comet at mag +8.2 and fading. Click here to view the finder chart: <http://bit.ly/2kcgAN3>

Comet C/2015 ER61 (PanSTARRS) – located in Aries, at the start of July this comet rises at around 1:30am in the north east and remains visible until dawn. As the month progresses it rises earlier and by the end of July it will be rising at around 12:30am. The last reported visual observation had this comet at mag +9 and fading. Click here to view the finder chart: <http://bit.ly/2kL122C>

There are several other comets in the mag +11 to +15 range. Details of these can be found in the links below.

For up to date information about the fainter comets which are visible, please visit:

<https://in-the-sky.org/data/comets.php>, the BAA Comets Section: <https://www.ast.cam.ac.uk/~jds/> or Seiichi Yoshida’s home page: <http://www.aerith.net/index.html>

NB: All of the information in this sky guide is taken from Night Scenes 2017 by Paul L Money, Philips Stargazing 2017 by Heather Couper and Nigel Henbest, 2017 Yearbook of Astronomy by Richard Pearson and Brian Jones, Astronomy Now Magazine, Sky at Night Magazine, Stellarium, the BAA Comets Section website <https://www.ast.cam.ac.uk/~jds/>, www.inthesky.org and www.heavens-above.com

Information collated by Mary McIntyre. For regular updates about the events happening in the sky this month, follow the Nightscenes Monthly Night Sky Facebook page at www.facebook.com/AstrospacePublications