Astronomy News

Night Sky 2022 - August

Sunrise	Sunset	Mercury Sets	Venus Rises
1st – 5:36am 10th – 5:50am 20th – 6:05am 30th – 6:21am	1st – 8:57pm 10th – 8:42pm 20th – 8:22pm 30th – 8:01pm	1st – 9:36pm 10th – 9:22pm 20th – 8:57pm 30th – 8:25pm	1st – 3:42am 10th – 4:03am 20th – 4:30am 30th – 5:00am
Moon Rise	**Moon Set**	**Moon Rise**	**Moon Set**
1st – 9:20am 2nd – 10:33am (E) 3rd – 11:48am 4th – 1:05pm 5th – 2:25pm (ESE) 6th – 3:50pm 7th – 5:15pm 8th – 6:35pm (SE) 9th – 7:41pm (SE) 10th – 8:30pm 11th – 9:03pm 12th – 9:28pm (ESE) 13th – 9:46pm 14th – 10:02pm (E) 15th – 10:16pm 16th – 10:30pm 17th – 10:45pm (ENE) 18th – 11:03pm 19th – 11:26pm 20th – 11:55pm	1st – 10:47pm 2nd – 11:00pm (W) 3rd – 11:13pm 4th – 11:29pm (WSW) 5th – 11:47pm 7th – 12:13am 8th – 12:48am 9th – 1:40am (SW) 10th – 2:51am (SW) 11th – 4:16am 12th – 5:47am 13th – 7:17am (WSW) 14th – 8:43am 15th – 10:05am (W) 16th – 11:24am 17th – 12:41pm (WNW) 18th – 1:56pm 19th – 3:10pm 20th – 4:21pm 21st – 5:25pm (NW)	22nd – 12:33am (NE) 23rd – 1:23am (NE) 24th – 2:23am 25th – 3:30am 26th – 4:42am 27th – 5:56am (ENE) 28th – 7:10am 29th – 8:24am 30th – 9:38am (E) 31st – 10:55am ---------- All times in notes are set for Somerton unless stated	22nd – 6:21pm (NW) 23rd – 7:05pm (NW) 24th – 7:39pm 25th – 8:05pm 26th – 8:25pm 27th – 8:41pm (WNW) 28th – 8:55pm 29th – 9:08pm (W) 30th – 9:21pm 31st – 9:35pm (WSW) ---------- Moon Phases First Quarter – 5th Full Moon – 12th Last Quarter – 19th New Moon – 27th
A useful site: www.heavens-above.com	A S Zielonka		

There is a planned launch this month of the Artemis 1 mission. The Orion spacecraft, Space Launch System (SLS) rocket will launch Artemis 1 from Kennedy Space Centre in Cape Canaveral, Florida. It will be the first integrated test of NASA's deep space exploration systems. The first in a series of increasingly complex missions, Artemis 1 will be an uncrewed flight test that will provide a foundation for human deep space exploration, and demonstrate our commitment and capability to extend human existence to the Moon and beyond. During this flight, the spacecraft will travel 280,000 miles from Earth, thousands of miles beyond the Moon over the course of about a three-week mission. Orion will stay in space longer that any ship for astronauts has done without docking to a space station and return home faster and hotter than ever before.

From the 31st July – 4th August Mars passes close to Uranus. On the 2nd at 4:30am in the ESE Uranus will be just 1¼ degrees above Mars and ½ a degree to the left.

From the 1st – 4th Venus passes close to the star Wasat (3.5 mag) in Gemini. On the 2nd at 4:30am Wasat will be just a ¼ of a degree below Venus.

On the 1st at 10:06pm the crescent Moon is due west and just 5½ degrees above the horizon. The star Nu Virginis (4 mag) in Virgo is just 2¼ degrees to the right of the Moon and 1 degree above.

At 10:15pm on the 2nd the star Porrima (2.7 mag) in Virgo is just 1¼ degrees to the upper left of the crescent Moon low in the west.

On the 3rd at 10:00pm the star Spica (1 mag) in Virgo is 4 degrees to the lower left of the crescent Moon in the WSW. The star Theta Virginis (4.3 mag) is 3½ degrees to the right of the Moon.

At 10:00pm on the 4th the star Kappa Virginis (4.1 mag) is 2½ degrees above the crescent Moon and 1 degree to the right.

From the 5th – 27th Saturn passes within 1½ degrees of the star Nashira (1.6 mag) in Capricornus. At midnight from the 15th – 17th Nashira will be just 1¼ degrees below Saturn.

On the 5th at 10:15pm low in the south west, the star Zubenelgenubi (2.7 mag) in Libra is 3¾ degrees to the right of the First Quarter Moon and ½ a degree above.

From 10.00pm – 10:10pm on the 6th the star Dschubba (2.2 mag) in Scorpius is just a ¼ of a degree above the Moon. There is a lunar occultation of the star Dschubba. It starts at 10:40:30 and ends at 11:10:45. (These times are set for Yeovilton so there will be minor differences from your different locations).

At 10:15pm on the 7th the star 84405 ‘Hipparcus Catalog ID’ (4.3 mag) in Scorpius is just 3 degrees to the left of the Moon.

On the 8th at 10:00pm the star Alnasl (2.9 mag) in Sagittarius is 2¾ degrees below the Moon and a ¼ of a degree to the right.

At 10:00pm on the 9th the star Tau Sagittarii (3.3 mag) is just 1½ degrees to the right of the Moon and a ¼ of a degree above.

The stars Castor (1.5 mag) and Pollux (1.1 mag) point to the planet Venus on the mornings of the 10th & 11th in the ENE around 4:30am.

The Moon is at perigee (359,828km) on the 10th at 6:09pm. At 10:37pm the Moon is 10½ degrees above the horizon and due SSE.

On the 11th at 10:15pm the star Zeta Capricorni (3.7 mag) is just 1 degree below the Moon. The star 106039 ‘Hipparcus Catalog ID’ (4.5 mag) is 1 degree to the lower left of the Moon. Saturn is 6 degrees to the left of the Moon and 4 degrees above. The star Nashira (3.6 mag) is just 1¼ degrees to the lower right of Saturn.

At 10:15pm on the 12th the full Moon is 5½ degrees above the south east horizon at 124.5 degrees azimuth. Saturn is 8½ degrees to the right of the Moon and 6 degrees above.

The Perseids meteor shower reaches its peak on the 12th – 13th though they can be seen from the 17th July – 24th August. With the full Moon at this time, only the brighter ones may be seen.

On the 13th at 10:22pm the Moon will be 4½ degrees above the horizon due ESE amongst some fainter stars of Aquarius. Neptune is 9 degrees to the left of the Moon and 2 degrees above.

Saturn is at opposition on the 14th.

At 11:00pm on the 14th Jupiter is 8 degrees to the left of the Moon and 1 degree above. Neptune is 7 degrees upper right of the Moon.

On the 15th at 10:40pm the Moon is due east and just 3 degrees above the horizon. Jupiter is 6¾ degrees above right of the Moon.

At midnight on the 16th the star Omicron Piscium (4.2 mag) is just 1 degree above the Moon and a ¼ of a degree to the right.

On the 17th at midnight Uranus is 7½ degrees to the left of the Moon and 2 degrees below.

At midnight on the 18th the Moon is low in the ENE at 69 degrees azimuth. Mars is 5¾ degrees lower left of the Moon. Uranus is 4½ degrees to the right of the Moon and two degrees above. The Pleiades star cluster is 7½ degrees to the left of the Moon and 1½ degrees above.

On the 19th at midnight the last quarter Moon is low in the north east and just 3½ degrees above the horizon with Mars 6½ degrees to the right of the Moon and just ½ a degree above. The Pleiades star cluster is 7 degrees above right of the Moon.

At 1:00pm on the night of the 20th the star Elnath (1.6 mag) in Taurus is 5½ degrees to the left of the crescent Moon and 1 degree above. The star Aldebaran (0.8 mag) is 11 degrees to the right of the Moon and 2 degrees below and by 5:00am on the 21st their just 3¾ degrees apart.

From the 20th – 25th Comet C/2017 K2 Panstarrs (8.5 mag – 23rd July) passes close to the star Acrab (2.5 mag) in Scorpius. On the 22nd at 10:00pm Comet Panstarrs is just ½ of a degree to the right of Acrab and a ¼ of a degree above low in the south west. (For further information on this comet or others please see the "Comet" section of the website above). The Moon is at apogee (405,418km) on the 22nd at 11:53pm.

Mercury is at aphelion on the 23rd.

On the 23rd at 5:00am the star Mebsuta (3 mag) in Gemini is 4 degrees to the right of the crescent Moon and 2 degrees above.

At 4:00am on the 24th the two stars Castor and Pollux point the way to the crescent Moon in the ENE. The star Kappa Geminorum (3.5 mag) is just 2 degrees to the upper right of the Moon.

On the 25th at 5:30am Venus is 8¾ degrees below the thin crescent Moon and 1½ degrees to the left. Venus is at 71 degrees azimuth and 6¼ degrees above the horizon.

At 5:30am on the 26th Venus is 4½ degrees to the right of a very thin crescent Moon low in the ENE. Their around 5½ degrees above the horizon.

Mercury is at maximum eastern elongation on the 27th.

On the 28th at 8:35pm a very thin crescent Moon is very low in the west, and just 2½ degrees above the horizon at 276.5 degrees azimuth.

At 8:45pm on the 29th the star Porrima (2.7 mag) in Virgo is 4¾ degrees to the left of a thin crescent Moon and 2 degrees above.

On the 30th at 8:45pm the star Zeta Virginis (3.3 mag) is less than ½ a degree above left of the crescent Moon.

At 8:45pm on the 31st the star Spica (1 mag) in Virgo is 6½ degrees to the right of the crescent Moon and 4 degrees below, and low in the WSW.

*= Dates and times are subject to change.

News: A recent lunar science mystery has provided an interesting result. After a months-long search, the Lunar Reconnaissance Orbiter mission team recently found a pair of new craters on the lunar farside, formed when an object hit the Moon on March 4th 2022. Observers had spotted the object on its moonbound trajectory, though the impact itself was of course out of Earth's line of sight. Observers later refined the trajectory and identified the object as a Long March 3C upper stage from China's Chang'e 5 T1 mission. Chang'e 5 T1 flew past the Moon in late 2014 to demonstrate capsule re-entry ahead of the full Chang'e 5 lunar-sample return. To date, however, China has not confirmed that the object was related to the Chang'e 5 T1 mission.

Rubble piles in space aren't like the solid ones that gravity holds on the ground. New analysis shows that NASA's OSIRIS-REX probe punched right through the surface of asteroid 101955 Bennu while on its way to collect a sample. If the probe hadn't been programmed to lift itself back into orbit a few seconds after landing, the half-kilometre asteroid could have swallowed it whole. Although the first images from OSIRIS-REX's sampling manoeuvre on October 20th 2020, took only 18 minutes to reach Earth, it took time for the team to sort out what had happened during the brief touch-and-go. The team estimates the probe was able to fill its hopper with 250 grams of material to take home. Observations of Bennu so far have shown this near-Earth asteroid is a strange world of its own right. The 5.4-gram sample returned from Ryugu in December 2020 by Hayabusa 2 is now being studied. Analysis of the much larger Bennu samples, to be returned to Earth late next year, will reveal further details.

Astronomers have found a dormant black hole in the Tarantula Nebula in the Large Magellanic Cloud which is a satellite galaxy of the Milky Way. The system is composed of a hot blue star, with 25 times the Sun's mass, and a black hole, which is at least nine times the mass of the Sun.

Facts: The largest crater on Mercury is Caloris Planitia. Its informally named Caloris and is 1,550 km in diameter. Its one of the largest impact basins in the Solar System.

Extra: If you havn't managed to see Horizon: Super Telescope: Mission to the Edge of the Universe, do watch it. Its on BBC iPlayer. It is an excellent programme on the James Webb Space Telescope.