

Astronomy News

Night Sky 2020 - October

Sunrise	Sunset	Mercury Rises	Venus Rises
1 st – 7:12am 10 th – 7:27am 20 th – 7:43am 30 th – 7:01am	1 st – 6:48pm 10 th – 6:28pm 20 th – 6:07pm 30 th – 4:48pm	28 th – 6:30am 29 th – 6:19am 30 th – 6:09am 31 st – 5:59am	1 st – 3:26am 10 th – 3:49am 20 th – 4:15am 30 th – 3:43am
Moon Rise	Moon Set	Moon Rise	Moon Set
----- 1 st – 7:10pm (E) 2 nd – 7:26pm 3 rd – 7:41pm 4 th – 7:58pm (ENE) 5 th – 8:19pm 6 th – 8:43pm 7 th – 9:15pm 8 th – 9:55pm 9 th – 10:47pm 10 th – 11:51pm 12 th – 1:04am 13 th – 2:25am (ENE) 14 th – 3:49am 15 th – 5:15am 16 th – 6:42am (E) 17 th – 8:10am 18 th – 9:40am (ESE) 19 th – 11:07am 20 th – 12:30pm	1 st – 6:21am 2 nd – 7:28am (W) 3 rd – 8:35am 4 th – 9:42am 5 th – 10:50am (WNW) 6 th – 11:57am 7 th – 1:04pm 8 th – 2:07pm 9 th – 3:05pm 10 th – 3:53pm 11 th – 4:33pm 12 th – 5:04pm 13 th – 5:30pm (WNW) 14 th – 5:53pm 15 th – 6:13pm (W) 16 th – 6:33pm 17 th – 6:55pm (WSW) 18 th – 7:21pm 19 th – 7:52pm 20 th – 8:32pm	21 st – 1:43pm 22 nd – 2:42pm 23 rd – 3:26pm 24 th – 4:00pm 25 th – 3:25pm 26 th – 3:46pm (ESE) 27 th – 4:03pm 28 th – 4:19pm 29 th – 4:33pm (E) 30 th – 4:48pm 31 st – 5:05pm ----- All times in notes are set for Somerton unless stated ----- Please Note Clocks go back one hour on the night of the 24 th	21 st – 9:23pm 22 nd – 10:24pm 23 rd – 11:32pm 25 th – 12:43am 26 th – 12:54am (WSW) 27 th – 2:04am 28 th – 3:12am 29 th – 4:19am (W) 30 th – 5:26am 31 st – 6:33am ----- Moon Phase Full Moon - 1 st Last Quarter - 10 th New Moon - 16 th First Quarter - 23 rd Full Moon - 31 st

A useful site: www.heavens-above.com	A S Zielonka		
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From the 30th September - 4th October Venus passes close to the star Regulus (1.3 mag) in Leo. On the 2nd they are just ½ a degree apart.

At the beginning of the month Saturn and Jupiter are 7¼ degrees apart and by the 31st their 2 degrees closer.

Mercury reaches maximum eastern elongation from the Sun on the 1st.

The stars Fomalhaut (1.1 mag) and Epsilon Piscis Austrini (4.1 mag) in Piscis Austrinus are low in the south at 11:00pm on the 1st. They point the way to the asteroid Ceres (8 mag). From EPA to Ceres is just 3¼ degrees and slowly moving upper right during this month. At this date and time Ceres is 182 degrees azimuth and 13½ degrees above the horizon. (For details on this asteroid or others please see the 'Asteroid' section in the website above).

At midnight on the 2nd Mars is 3 degrees above left of the moon. The star Nu Piscium (4.4 mag) in Pisces is just 1½ degrees below left of Mars. An Occultation of Mars by the moon occurs in the early hours of the 3rd. This will be visible from the southern section South America and southern Africa.

On the 3rd at 10:00pm Mars will be 9 degrees to the upper right of the moon. Uranus is 7½ degrees to the left of the moon and 1¾ degrees above. The moon is at Apogee (406,321km) at 6:23pm.

At 10:00pm on the 4th Uranus is 6¼ degrees to the upper right of the moon.

On the 5th at 10:00pm the Pleiades star cluster is 8 degrees to the upper left of the moon.

At 10:00pm on the 6th the star Ain (3.5 mag) in Taurus is just ¾ of a degree to the right of the moon.

On the 7th at midnight the star Zeta Tauri (2.9 mag) in Taurus is 3¼ degrees to the lower left of the moon.

At midnight on the 8th the star Mu Geminorum (2.8 mag) in Gemini will be 1½ degrees below the moon.

The Draconids meteor shower reach their peak on the 8th/9th, though they can be seen from the 5th.

On the 9th at midnight the star Wasat (3.5 mag) in Gemini is 2½ degrees below the moon.

The stars Sabik (2.4 mag) and 85340 “Hipparcos Catalogue ID”(4 mag) in Ophiuchus point the way to Comet 88P Howell (9.1mag – 22nd Sept) on the 10th. At 9:00pm Comet 88P Howell is 2 degrees from 85340. (For details on this comet or others please see the 'Comet' section in the website above).

The Taurids meteor shower reach their peak on the 10th/11th November, though they can be seen from the 19th October - 9th December.

At 5:00am on the 11th the Beehive Star Cluster in Cancer is 5 degrees below the moon and 2 degrees to the right.

On the 13th at 5:00am the star Eta Leonis (3.4 mag) in Leo is 2½ degrees above the crescent moon. An occultation of Eta Leonis by the moon occurs over central east Africa, equatorial region of Asia and Australia.

There is a planned launch on the 14th* of Expedition 64 to the International Space Station (ISS). NASA astronaut **Kate Rubins** and cosmonauts **Sergey Ryzhikov** and **Sergey Kud-Sverchkov** of the Russian space agency Roscosmos, launch aboard a Soyuz spacecraft to the ISS. (See ISS News below for further information).

Mars is at opposition on the 14th and is at its best to view this month.

At 5:00am on the 14th Venus is 4 degrees to the right of the thin crescent moon. The star Chertan (3.3 mag) in Leo is 5¼ degrees to the upper left of the moon.

The Bepi Colombo mission to Mercury has its first flyby of Venus on the 15th.

On the 16th at 7:00am a very thin crescent moon may be seen 1½ degrees above the eastern horizon (96 degrees azimuth) with Porrima (2.7 mag) in Virgo, 6 degrees above right of the moon.

The moon is at Perigee (356,912km) on the 17th at 12:47am. At 6:40pm a very thin crescent moon will be 1½ degrees above the horizon in the WSW (249 degrees azimuth).

Comet C/2020 F3 Neowise (10.6 mag – Sept 22nd) is 1½ degrees from the moon in the constellation of Libra on the 18th at 7:00pm.

An occultation of the star Acrab occurs on the 19th. It will be visible from most of Europe (unfortunately not the UK) and the equatorial region of Asia.

The asteroid Vesta (8.4 mag) lies midway between the stars Regulus (1.3 mag) and Eta Leonis (3.4 mag) on the 20th at 4:00am. On November 2nd Vesta will be 5 degrees from Regulus towards the star Chertan (3.3 mag).

There is a planned launch on the 20th* to the asteroid Bennu. The OSIRIS-REx spacecraft will travel all the way to Bennu's surface during this sample collection attempt. The spacecraft will make contact with the asteroid's surface for several seconds, then collect a sample, which it will return to Earth in 2023.

At 7:00pm on the 20th the star Theta Ophiuchus (3.2 mag) in Ophiuchus is 1¼ degrees to the lower right of the crescent moon.

Comet C/2020 M3 Atlas (9.4 mag – Sept 22nd) is at perihelion (1.272AU) on the 25th. This month it travels through the constellations of Eridanus and Lepus. On the 21st at 1:00am its 1 degree from the star Epsilon Leporis low in the south east. On the 28th at midnight its ½ a degree from the star Mu Leporis (3.2 mag) in the south east.

On the 21st at 7:00pm the star Kaus Borealis (2.8 mag) in Sagittarius will be very close to the crescent moon. An occultation of Kaus Borealis by the moon occurs today. This will be visible from the UK. It disappears at 7:19:24pm and reappears at 8:22:46pm. These times are set from Yeovilton.

The Orionids meteor shower reach their peak on the 21st/22nd, though they can be seen from the 1st October - 6th November.

There is a planned landing on the 22nd of the Expedition 63 crew, in Kazakhstan. NASA astronaut Chris Cassidy and Russian space agency Roscosmos cosmonauts Anatoly Ivanishin and Ivan Vagner return to Earth aboard their Soyuz spacecraft from the ISS.

At 8:00pm on the 22nd Jupiter is 3 degrees above right of the crescent moon with Saturn 6 degrees above left of Jupiter.

There is a planned launch (No earlier than) 23rd* of SpaceX Crew-1 to the ISS. Crew Dragon commander **Michael Hopkins**, pilot **Victor Glover**, mission specialist **Shannon Walker** of NASA and Japan Aerospace Exploration Agency (JAXA) mission specialist **Soichi Noguchi** will launch on the Crew-1 mission from Kennedy Space Centre in Florida. (See ISS News below for further information).

Comet C/2020 P1 Neowise (10.7 mag) is at perihelion on the 20th when its just 0.343AU from the Sun. It's closest to the Earth (0.657AU) on 12th in the constellation of Corvus. On the 23rd at 6:45am its 4½ degrees to the lower left of the star Delta Virginis (3.3 mag) in Virgo and low in the east. During the latter part of the month its moving towards Arcturus but stays in Virgo this period.

On the 23rd at 7:00pm Saturn will be 8 degrees to the upper right of the moon with Jupiter 6 degrees to the right of Saturn.

At 7:00pm on the 24th the star Zeta Capricorni (3.7 mag) in Capricornus is just 2¼ degrees to the lower left of the moon.

Mercury is at inferior conjunction on the 25th.

On the 26th at 8:00pm the star Tau Aquarii (4th mag) in Aquarius is 2½ degrees to the right of the moon. Neptune is 8½ degrees to the upper left of the moon.

At 8:00pm on the 27th Neptune is 6 degrees to the right of the moon and 4 degrees above.

On the 28th at 8:00pm Mars is 11½ degrees to the left of the moon and 3½ degrees above.

At 7:30pm on the 29th Mars is $3\frac{3}{4}$ degrees above the moon.

Venus is at perihelion on the 30th.

The moon is at Apogee (406,394km) on the 30th at 6:46pm.

At 7:30pm on the 30th Uranus is 10 degrees to the left of the moon and 1 degree above.

Comet 88P Howell will be less than $\frac{1}{4}$ of a degree from the star Phi Sagittarii (3.1 mag) in Sagittarius on the 30th at 9:00pm.

Uranus is at opposition on the 31st and is at its best to view over October and November.

Comet C/2020 K8 Catalina-Atlas (10.3 mag – Aug 25th) was at perihelion on the Sept 14th. Its mainly in the area near the Sun this month. On the 31st at 6:00am its between Mercury and Venus in the constellation of Virgo and $5\frac{1}{2}$ degrees from Spica which is just 1 degree above the horizon and in the ESE.

On the 31st at 6:15am Mercury is $2\frac{1}{4}$ degrees above the ESE horizon at 108 degrees azimuth with the star Spica (1st mag) in Virgo $4\frac{1}{2}$ degrees to the upper right of it.

* = Dates and times are subject to change.

News: **Solar Orbiter:** The science payload is composed of 10 instruments.

7/10) SPICE - Spectral Imaging of the Coronal Environment (France): Performs extreme ultraviolet imaging spectroscopy to remotely characterize plasma properties of the Sun's ondisk corona. This will enable matching in situ composition signatures of solar wind streams to their source regions on the Sun's surface.

ISS News:

Kathleen Hallisey **Kate Rubins** (b.1978) became the 60th woman to fly into space when she launched on a Soyuz spacecraft to the ISS on July 7th 2016. This will be her second spaceflight.

Sergey Ryzhikov (b.1974) is a lieutenant colonel of the Russian Air Force and was selected as a cosmonaut in 2006. His first spaceflight (Soyuz MS-02) to the ISS was on the 19th October 2016.

Sergey Kud-Sverchkov (b.1983) became a Russian cosmonaut in April 2010. He is married and the father of one daughter. In 2014, he participated in the CAVES mission of the European Space Agency alongside Scott Tingle, Alexander Mirsurkin, Luca Parmitano and Matthias Maurer.

Michael Hopkins (b.1968) was selected in June 2009 as a member of the NASA Astronaut Group 20. He made his first spaceflight as a Flight Engineer in September 2013.

Victor Glover (b.1976) is married and has four children. He is the first African-American to stay on a long duration mission to the ISS.

Shannon Walker (b.1965) is an American physicist and was selected as an astronaut in 2004. Her first mission to the ISS was in June 2010. At graduate school, her area of study was the solar wind interaction with the Venusian atmosphere.

Soichi Noguchi (b.1965) first spaceflight was as a Mission Specialist aboard STS-114 on 26th July 2005, for NASA's first “return to flight” Space Shuttle mission after the Columbia disaster.

News: NASA is definitely targeting the moon's south pole for a crewed landing in 2024 – but that timeline will be difficult to achieve if Congress doesn't open its purse strings, and fast, agency chief Jim Bridenstine said. The astronauts who land there will do so aboard a private lander – one built by SpaceX, Dynetics or a team headed by Jeff Bezo's Blue Origin.

Facts: On September 22nd 2006, Japan launched a sun-observing satellite called Hinode, or Solar -B. It was named after the Japanese word for “sunrise”.