

# Astronomy News

## Night Sky 2021 - June

Sunrise	Sunset	Mercury Sets / Rises	Venus Sets
1 <sup>st</sup> – 5:02am 10 <sup>th</sup> – 4:57am 20 <sup>th</sup> – 4:56am 30 <sup>th</sup> – 5:00am	1 <sup>st</sup> – 9:17pm 10 <sup>th</sup> – 9:25pm 20 <sup>th</sup> – 9:29pm 30 <sup>th</sup> – 9:29pm	1 <sup>st</sup> – 10:08pm 11 <sup>th</sup> – Inf Conjunction 26 <sup>th</sup> – 4:18am 30 <sup>th</sup> – 4:05am	1 <sup>st</sup> – 10:40pm 10 <sup>th</sup> – 10:52pm 20 <sup>th</sup> – 10:57pm 30 <sup>th</sup> – 10:54pm
Moon Rise	Moon Set	Moon Rise	Moon Set
1 <sup>st</sup> - 2:05am 2 <sup>nd</sup> – 2:26am (ESE) 3 <sup>rd</sup> – 2:43am 4 <sup>th</sup> – 2:57am 5 <sup>th</sup> – 3:11am (E) 6 <sup>th</sup> – 3:25am 7 <sup>th</sup> – 3:41am (ENE) 8 <sup>th</sup> – 3:58 am 9 <sup>th</sup> – 4:20am 10 <sup>th</sup> – 4:48am 11 <sup>th</sup> – 5:25am 12 <sup>th</sup> – 6:11am 13 <sup>th</sup> – 7:09am 14 <sup>th</sup> – 8:16am 15 <sup>th</sup> – 9:29am 16 <sup>th</sup> – 10:44am (ENE) 17 <sup>th</sup> – 12:02pm 18 <sup>th</sup> – 1:20pm 19 <sup>th</sup> – 2:41pm (E)	1 <sup>st</sup> - 11:25am (WSW) 2 <sup>nd</sup> – 12:40pm 3 <sup>rd</sup> – 1:52pm 4 <sup>th</sup> – 3:01pm (W) 5 <sup>th</sup> – 4:09pm 6 <sup>th</sup> – 5:17pm 7 <sup>th</sup> – 6:26pm (WNV) 8 <sup>th</sup> – 7:34pm 9 <sup>th</sup> – 8:42pm 10 <sup>th</sup> – 9:47pm 11 <sup>th</sup> – 10:46pm 12 <sup>th</sup> – 11:35pm 14 <sup>th</sup> – 12:15am 15 <sup>th</sup> – 12:45am 16 <sup>th</sup> – 1:10am 17 <sup>th</sup> – 1:30am (WNV) 18 <sup>th</sup> – 1:48am 19 <sup>th</sup> – 2:04am (W) 20 <sup>th</sup> – 2:21am	20 <sup>th</sup> – 4:05pm 21 <sup>st</sup> – 5:32pm (ESE) 22 <sup>nd</sup> – 7:01pm 23 <sup>rd</sup> – 8:28pm 24 <sup>th</sup> – 9:45pm 25 <sup>th</sup> – 10:47pm 26 <sup>th</sup> – 11:33pm 28 <sup>th</sup> – 12:05am 29 <sup>th</sup> – 12:29am (ESE) 30 <sup>th</sup> – 12:48am  -----  All times in notes are set for <b>Somerton</b> unless stated	21 <sup>st</sup> – 2:40am (WSW) 22 <sup>nd</sup> – 3:04am 23 <sup>rd</sup> – 3:34am 24 <sup>th</sup> – 4:15am 25 <sup>th</sup> – 5:11am 26 <sup>th</sup> – 6:21am 27 <sup>th</sup> – 7:41am 28 <sup>th</sup> – 9:02am 29 <sup>th</sup> – 10:21am (WSW) 30 <sup>th</sup> – 11:36am  -----  <b>Moon Phases</b> Last Quarter – 2 <sup>nd</sup> New Moon – 10 <sup>th</sup> First Quarter – 18 <sup>th</sup> Full Moon – 24 <sup>th</sup>

A useful site: [www.heavens-above.com](http://www.heavens-above.com) A S Zielonka

From the 30<sup>th</sup> May – 1<sup>st</sup> June Mars passes close to the star Kappa Geminorum (3.5 mag). On the 31<sup>st</sup>

Kappa Geminorum will be just under 2 degrees to the upper right of Mars.

At 4:00am on the 1<sup>st</sup> in the south east Jupiter is 7 degrees to the upper left of the Moon. At the same time Saturn is 13 degrees to the right of the Moon and 5½ degrees above the Moon.

At 4:00am low in the SSE at the beginning of the month the star Theta Capricorni (4 mag) is barely ½ a degree to the left of Saturn. On the 30<sup>th</sup> low in the south they will be 1½ degrees apart.

On the 1<sup>st</sup> at 9:45pm Venus is 7 degrees above the horizon in the WNW at 300.5 degrees azimuth. Mercury is 5 degrees to the lower right of Venus at 303 degrees azimuth. The star Elnath (1.6 mag) in Taurus is 8 degrees to the right of Venus.

On the 2<sup>nd</sup> at 4:00am Jupiter is 9½ degrees to the upper right of the Moon. The star Tau Aquarii (4 mag) in Aquarius is 1¼ degrees to the upper right of the Moon.

There is a planned launch on the 3<sup>rd</sup>\* of SpaceX Commercial Resupply Mission-22 to the ISS. It will be launched from the Kennedy Space Centre in Florida.

At 4:00am on the 3<sup>rd</sup> Neptune is 5 degrees above the Moon and 1½ degrees to the left.

On the 6<sup>th</sup> at 4:00am a crescent Moon will be 4½ degrees above the eastern horizon and at 84 degrees azimuth.

From the 5<sup>th</sup> – 7<sup>th</sup> at midnight the two stars Zosma (2.5 mag) and Chertan (3.3 mag) in Leo point the way to the asteroid Vesta. On the 6<sup>th</sup> two degrees to the lower left of Chertan in the west is Vesta.

At 4:00am on the 7<sup>th</sup> a thin crescent Moon will be 2 degrees above the horizon at 73.5 degrees azimuth. Uranus is 3 degrees to the left of the Moon and 2½ degrees above.

On the 8<sup>th</sup> at 4:15am a very thin crescent Moon is 1½ degrees above the horizon at 66 degrees azimuth. The Pleiades star cluster is 9 degrees to the left of the Moon and 3½ degrees above.

From the 9<sup>th</sup> – 12<sup>th</sup> Venus passes close to Mabsuta (3 mag) in Gemini. On the 10<sup>th</sup> at 10:00pm Mabsuta is 1 degree upper right of Venus low in the WNW at 301.5 degrees azimuth and just 8 degrees above the horizon. Venus is at perihelion (closest point from the Sun in its orbit) on the 12<sup>th</sup>.

Mercury is at aphelion (furthest point from the Sun in its orbit) on the 10<sup>th</sup>.

There is an annular **Solar Eclipse** on the 10<sup>th</sup>. Totality will start in mid Canada and travel across north western Greenland, the Arctic, including the North Pole ending in Siberia. The partial phase of the eclipse for us starts at 10:04:07am and ends at 12:18:04pm. Mid-eclipse is at 11:08:31am.

At 10:00pm on the 11<sup>th</sup> a very thin crescent Moon will be 4½ degrees above the WNW horizon at 305 degrees azimuth. Venus is 5 degrees above left of the Moon. The star Mabsuta (3 mag) in Gemini is 1¾ degrees to the right of Venus.

On the 12<sup>th</sup> at 10:00pm Venus is 6 degrees lower right of the thin crescent Moon. The star Wasat (3.5 mag) in Gemini is 2¾ degrees to the lower left of the Moon.

At 10:00pm on the 13<sup>th</sup> Mars is 2 degrees to the lower left of the crescent Moon. The Beehive star cluster is 6½ degrees to the left of the Moon and 1 degree above.

Comet C/2020 T2 Palomar (11 mag – May 17<sup>th</sup>) is at perihelion on the 11<sup>th</sup> July and 2.055AU from the Sun. On the night of the 13<sup>th</sup> June looking approximately 45 degrees above the horizon in the south west the two stars Arcturus (0.05 Mag) and Muphrid (2.6 mag) in Bootes point the way to comet Palomar. At midnight Comet Palomar is 4 degrees to the lower right of Muphrid.

On the 14<sup>th</sup> at 10:00pm the Beehive star cluster is 6½ degrees to the lower right of the crescent Moon. Its approximately midway between the Moon and Mars.

At 12:30am on the night of the 15<sup>th</sup> the star Eta Leonis (3.4 mag) in Leo is ½ a degree above the crescent Moon low in the WNW at 290 degrees azimuth. The star Regulus (1.3 mag) is 2 degrees above the horizon at 266.5 degrees azimuth.

From the 16<sup>th</sup> – 18<sup>th</sup> Venus passes close to the star Wasat (3.5 mag) In Gemini. On the 17<sup>th</sup> at 10:15pm Wasat is just 1½ degrees to the lower left of Venus. Venus is 5½ degrees above the horizon at 301 degrees azimuth.

On the 17<sup>th</sup> at 11:30pm the star Nu Virginis (4 mag) in Virgo is ½ a degree upper left of the crescent Moon.

At 11.30pm on the 18<sup>th</sup> The star Porrima (2.7 mag) in Virgo is 2¾ degrees to the left of the Moon.

On the 19<sup>th</sup> at 11:30pm the star Spica (1 mag) in Virgo is 5½ degrees below left of the Moon. The star Theta Virginis (4.3 mag) is 4 degrees to the lower right of the Moon. Both of the stars to the Moon form a perfect 90 degree rightangle.

At 10.30pm on the 20<sup>th</sup> the star Kappa Virginis (4.1 mag) in Virgo is 1½ degrees to the upper right of the Moon.

The June solstice occurs on the 21<sup>st</sup> at 4:21am. The North Pole of the Earth will be tilted toward the Sun, which will have reached its northernmost position in the sky and will be directly over the Tropic of Cancer at 23.44 degrees north latitude, which marks the first day of summer.

On the 21<sup>st</sup> at 10:30pm the star Zubenelgenubi (2.7 mag) in Libra is 5½ degrees to the right of the Moon and 1 degree above.

At 11:30pm on the 22<sup>nd</sup> the star Sigma Scorpii (2.9 mag) in Scorpius is 4 degrees below the Moon and 1 degree to the left. The star Antares (1 mag) is 2 degrees to the lower left of Sigma Scorpii.

On the 23<sup>rd</sup> at 11:30pm the star Theta Ophiuchi (3.2 mag) in Ophiuchus is less than ½ a degree to the left of the Moon.

On the 24<sup>th</sup> and 25<sup>th</sup> Castor (1.5 mag) and Pollux (1.1 mag) point the way to Venus. At 10:15pm Venus will be 6 degrees above the horizon at 299 degrees azimuth.

At midnight on the 24<sup>th</sup> the star Kaus Borealis (2.8 mag) in Sagittarius is 1¼ degrees above the Moon low in the SSE.

On the night of the 26<sup>th</sup> at 12:05am the Moon is due south east and just 3 degrees above the horizon. Saturn is 8 degrees to the left of the Moon and 2½ degrees above. The star Theta Capricorni (4 mag) is 1¼ degrees to the left of Saturn.

At 12:30am on the night of the 27<sup>th</sup> the Moon is 2½ degrees above the south east horizon. Saturn is 9 degrees above right of the Moon. Jupiter is 13 degrees to the left of the Moon and 2 degrees above.

On the night of the 28<sup>th</sup> at 1:00am the Moon is 3½ degrees above the south east horizon with Jupiter 5½ degrees above the Moon... ..Then at 4:00am Jupiter is 6 degrees above right of the Moon.

On the 29<sup>th</sup> at 4:30am Mercury is low in the ENE at 63 degrees azimuth and just 3 degrees above the horizon. Aldebaran (0.8 mag) in Taurus is upper right of Mercury at 70.5 degrees azimuth and 5½ degrees above the horizon.

At 4:00am on the 30<sup>th</sup> Neptune is 7 degrees upper left of the Moon.

On the 30<sup>th</sup> at 10:15pm Mars will be 7 degrees left of Venus and 2½ degrees above with the Beehive Star cluster approximately midway between them.

\* = Dates and times are subject to change.

News: China launched the Tianhe module on the 29<sup>th</sup> April into orbit, which contains living quarters for crew members for a new space station which should be operational by 2022. The new, 66 tonne, multi-module is set to be operational for at least 10 years. Beijing plans to have at least 10 more similar launches, carrying all the additional equipment into orbit, before the completion of the station next year. It will orbit Earth at an altitude of 340 to 450km (210-280 miles) which is much the same as the ISS. The ISS is due to be retired after 2024, which could potentially leave Tiangong as the only space station in Earth's orbit. When the Tiangong is up and running, it will be only a quarter of the size of the ISS.

China and Russia have announced plans to build a lunar space station. It comes as Russia prepares to celebrate the 60<sup>th</sup> anniversary of its first-ever manned space flight. They will use their accumulated experience in space science, research and development and use of space equipment and space technology to jointly develop a road map for the construction of an “international lunar scientific research station” the statement (in Mandarin) said.

On the 15<sup>th</sup> May China successfully landed a spacecraft on Mars. The six-wheeled Zhurong robot was targeting the region Utopia Planitia, a vast terrain in the planet's northern hemisphere. Only the Americans have really mastered landing on Mars until now. All other countries that have tried have either crashed or lost contact soon after reaching the surface.

NASA's Osiris-Rex leaves asteroid Bennu, and heads for home. After five years on mission, including more than two years spent exploring the 500 metre asteroid 101955 Bennu Osiris-Rex fired its thrusters for 7 minutes on Monday 10<sup>th</sup> May. This burn set the spacecraft moving 600mph relative to the asteroid to start its 2½ year journey back to Earth.

Saturn is the only planet we know of whose magnetic field is almost exactly aligned with its axis of rotation. In a new analysis of data collected during the final orbits of the Cassini mission, astronomers propose the field's unique nature might come from a thick layer of helium "rain" that's falling slowly onto the planet's metallic hydrogen core.

In mid-May a star in the constellation of Cassiopeia that flared into view during mid-March has erupted to naked-eye visibility at 5.5 mag. The end two stars Schedar (2.2 mag) and Caph (2.2 mag) of the "W" shaped constellation point towards the Nova. The Nova is approximately 6 degrees from Caph.

Facts: China sent its first astronaut Yang Liwei (b.1965) into space in 2003 making it the third country to do so, after the Soviet Union and the United States.