

Astronomy News

Night Sky 2022 - January

Sunrise	Sunset	Mercury Sets / Rises	Venus Sets /Rises
1 st – 8:14am 10 th – 8:11am 20 th – 8:03am 30 th – 7:51am	1 st – 4:15pm 10 th – 4:26pm 20 th – 4:41pm 30 th – 4:58pm	1 st – 5:31pm 10 th – 5:59pm 20 th – 5:20pm ----- 30 th – 6:54am	1 st – 5:23pm ----- 20 th – 6:29am 30 th – 5:42am
Moon Rise	Moon Set	Moon Rise	Moon Set
1 st - 7:03am 2 nd – 8:22am (SE) 3 rd – 9:23am 4 th – 10:06am 5 th – 10:37am 6 th – 10:59am (ESE) 7 th – 11:17am 8 th – 11:32am (E) 9 th – 11:46am 10 th – 12:00pm 11 th – 12:15pm (ENE) 12 th – 12:32pm 13 th – 12:54pm 14 th – 1:22pm 15 th – 1:59pm 16 th – 2:47pm (NE) 17 th – 3:45pm 18 th – 4:52pm 19 th – 6:05pm	1 st - 2:37pm 2 nd – 3:36pm (SW) 3 rd – 4:52pm 4 th – 6:17pm 5 th – 7:43pm 6 th – 9:06pm (WSW) 7 th – 10:25pm 8 th – 11:39pm (W) 10 th – 12:51am 11 th – 2:02am 12 th – 3:12am (WNW) 13 th – 4:22am 14 th – 5:31am 15 th – 6:35am 16 th – 7:32am (NW) 17 th – 8:19am 18 th – 8:56am 19 th – 9:25am 20 th – 9:47am	20 th – 7:19pm (ENE) 21 st – 8:34pm 22 nd – 9:49pm 23 rd – 11:05pm (E) 25 th – 12:24am 26 th – 1:45am (ESE) 27 th – 3:10am 28 th – 4:36am 29 th – 5:57am 30 th – 7:06am (SE) 31 st – 7:57am ----- All times in notes are set for Somerton unless stated	21 st – 10:05am (WNW) 22 nd – 10:21am 23 rd – 10:36am (W) 24 th – 10:50am 25 th – 11:06am (WSW) 26 th – 11:26am 27 th – 11:51am 28 th – 12:26pm 29 th – 1:16pm (SW) 30 th – 2:22pm 31 st – 3:43pm ----- Moon Phases New Moon – 2 nd First Quarter – 9 th Full Moon – 17 th Last Quarter – 25 th

A useful site: www.heavens-above.com	A S Zielonka		
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On the 1st at 7:30am a very thin crescent Moon is just 2 degrees above the south east horizon at 137 degrees azimuth. Mars is 7½ degrees above right of the Moon at 142 degrees azimuth and at 8 degrees above the horizon. Mars rises at 6:17am. The Moon is at perigee (358,033km) on the 1st at 10:56pm.

The Quadrantids meteor shower reaches its peak on the 3rd / 4th. They can be seen from the 28th December to the 12th January.

At 5:00pm on the 4th a thin crescent Moon will be seen 7½ degrees above the horizon low in the south west at 218 degrees azimuth. Mercury is 8 degrees to the right of the Moon and 2 degrees below whilst Saturn is 5 degrees above the Moon and 2 degrees to the right.

On the 5th at 6:25pm Jupiter is 7½ degrees above the crescent Moon in the south west.

At 4:50pm on the 6th Jupiter is 9 degrees to the right of the crescent Moon and ½ a degree above. The star Tau Aquarii (4 mag) is ½ a degree to the right of the Moon.

Mercury reaches maximum eastern elongation from the Sun on the 7th.

On the 7th at 6:00pm Neptune is 4½ degrees to the right of the crescent Moon and 2 degrees above.

Venus is at inferior conjunction on the 9th.

At 9:00pm on the 10th the star Xi Ceti (4.3 mag) in Cetus is 2 degrees to the left of the Moon.

From the 11th – 15th Mercury passes close to Saturn. On the 13th at 5:30pm their just ¾ degrees apart. Saturn is 5¼ degrees above the horizon at 233 degrees azimuth with Mercury 4 degrees above the horizon and 236.5 degrees azimuth.

Comet C/2021 A1 Leonard (4.8 mag - 11th Dec) is at perihelion on the 3rd when its 0.615AU from the Sun. During December it was just about visible with the naked eye. Unfortunately it will only be visible from the southern hemisphere this month.

On the 11th at 8:00pm Uranus is 4 degrees to the right of the Moon.

Comet C/2019 L3 Atlas (9.8 mag - 12th Dec) is at perihelion on the 9th. It will be 3.554 AU from the Sun (within the orbit of Jupiter). Its distance from Earth is 2.582AU, and in the constellation of Gemini.

At 8:00pm on the 12th the Pleiades star cluster is 6 degrees to the upper left of the Moon.

On the 13th at 8:30pm the star Ain (3.5 mag) in Taurus is 3 degrees below the Moon.

The Moon is at apogee (405,805km) on the 14th at 9:27am. At 8:30pm the star Elnath (1.6 mag) in Taurus is 4½ degrees to the upper left of the Moon.

Mercury is at perihelion on the 15th.

From the 15th – 21st Saturn passes very close to the star Theta Capricorni (4 mag). On the 17th their less than a ¼ of a degree apart. At 5:15pm Saturn is 5 degrees above the horizon at 234 degrees azimuth. Mercury is 3 degrees above the horizon at 239.5 degrees azimuth.

On the 15th at 10:30pm the two stars Nu Geminorum (4.1 mag) and Mu Geminorum (2.8 mag) point the way to the Moon. Mu Geminorum is 4 degrees to the lower left of the Moon.

Pluto is at superior conjunction on the 16th.

At 6:35pm on the 17th the two stars Castor (1.1 mag) and Pollux (1.5 mag) in Gemini point the way to the Moon in the ENE. The star Kappa Geminorum (3.5 mag) is 2½ degrees to the upper right of the Moon.

On the 18th at 6:00pm the Beehive star cluster in Cancer is 2½ degrees to the right of the Moon and 1½ degrees below.

At 10:30pm on the 19th the star Regulus in Leo is $8\frac{1}{2}$ degrees below the Moon.

On the 21st at 10:30pm the star Iota Leonis (4 mag) is $1\frac{3}{4}$ degrees to the upper left of the Moon.

Mercury is at inferior conjunction on the 23rd.

Venus is at perihelion on the 23rd.

At 6:30am on the 24th the star Theta Virginis (4.3 mag) is 1 degree below the Moon.

On the 25th at 6:30am the star Kappa Virginis (4.1 mag) is $3\frac{1}{4}$ degrees to the left of the Moon and $\frac{3}{4}$ of a degree above.

At 5:30am on the 26th the star Zubenelgenubi (2.7 mag) in Libra is less than a $\frac{1}{4}$ of a degree to the lower right of the Moon.

On the 27th at 7:00am the star Dschubba (2.2 mag) in Scorpius is $2\frac{3}{4}$ degrees to the lower left of the crescent Moon.

At 6:30am on the 28th the star Antares (1 mag) in Scorpius is 5 degrees to the right of the crescent Moon in the SSE.

On the 29th at 6:30am Mars is due south east (135 degrees azimuth) and just 3 degrees above the horizon. It is $5\frac{1}{2}$ degrees left of the thin crescent Moon which is $2\frac{1}{2}$ degrees above the horizon at 140.5 degrees azimuth.

At 7:00am on the 30th Venus is 10 degrees above the south east horizon at 132 degrees azimuth. Mars is 10 degrees to the lower right of Venus at 141 degrees azimuth and just 6 degrees above the horizon. Mercury is barely a degree above the horizon at 119.5 degrees azimuth. The Moon is at perigee (362,252km) at 7:12am.

Mars is approximately midway between the two stars Kaus Borealis (2.8 mag) and Mu Sagittarii (3.8 mag) on the 31st around 7:00am in the south east. Mars is $9\frac{1}{2}$ degrees to the lower right of Venus.

News: NASA announced in December to end support for the International Space Station by 2030. The study notes, however, that the ISS is starting to show its age. It has multiple cracks and leaks found along the interior of the Service Module Transfer Tunnel, one of the areas where the crew live and work.

NASA has selected three companies to develop plans for possible commercial stations in low-Earth orbit. Blue Origin which will develop designs of **Orbital Reef**; Nanoracks will develop **Starlab**; and **Northrop Grumman**, which will upgrade the company's Cygnus delivery vehicle and work with Dynetics on a new modular station. "Starlab will launch on a single flight, targeted for 2027" quotes Jeffery Manber of Nanoracks LLC.

The company **Axiom Space** plans to begin sending commercial crew to the ISS starting in February 2022, with a goal of sending new modules to the ISS starting in September 2024. Arrival of the four Axiom modules in the following three years would also give the company a capability to detach from the ISS and form its own small space station.

Facts: The ISS began with the launch of the core Zarya module from the Baikonur Cosmodrome on November 20th 1998. It has hosted a continuous human presence since the arrival of Expedition 1 on November 2nd 2000. The final mission of the U.S. Space Shuttle Program in 2011 concluded the ISS's construction.