Astronomy News **Night Sky 2020 - January**

Sunrise	**Sunset**	**Mercury Sets**	**Venus Sets**
1st – 8:14am	1st – 4:14pm	20th – 4:59pm	1st – 7:05pm
10th – 8:12am	10th – 4:25pm	24th – 5:24pm	10th – 7:34pm
20th – 8:04am	20th – 4:40pm	28th – 5:49pm	20th – 8:05pm
30th – 7:52am	30th – 4:57pm	31st – 6:08pm	30th – 8:35pm
Moon Rise	**Moon Set**	**Moon Rise**	**Moon Set**
1st – 11:47am	1st – 10:56pm	20th – 3:55am	20th – 12:58pm
2nd – 12:04pm	3rd – 12:02am (W)	21st – 5:08am	21st – 1:34pm
3rd – 12:21pm (E)	4th – 1:08am	22nd – 6:15am	22nd – 2:19pm
4th – 12:38pm	5th – 2:15am	23rd – 7:13am	23rd – 3:13pm
5th – 12:57pm	6th – 3:24am (WNW)	24th – 8:00am	24th – 4:14pm
6th – 1:19pm (ENE)	7th – 4:35am	25th – 8:38am	25th – 5:20pm
7th – 1:46pm	8th – 5:47am	26th – 9:07am	26th – 6:28pm
8th – 2:21pm	9th – 6:56am	27th – 9:31am (ESE)	27th – 7:36pm (WSW)
9th – 3:07pm	10th – 7:59am	28th – 9:51am	28th – 8:43pm
10th – 4:05pm	11th – 8:52am	29th – 10:09am	29th – 9:48pm
11th – 5:15pm	12th – 9:35am	30th – 10:26am (E)	30th – 10:54pm (W)
12th – 6:34pm	13th – 10:09am (WNW)	31st – 10:42am	31st – 11:59am
13th – 7:56pm (ENE)	14th – 10:36am	- - - - - - -	- - - - - - -
14th – 9:19pm	15th – 10:59am	**Moon Phases**	All times
15th – 10:41pm (E)	16th – 11:21am (W)	First Quarter – 3rd	in notes at set
17th – 12:01am	17th – 11:42am	Full Moon – 10th	for
18th – 1:20am	18th – 12:04pm	Last Quarter – 17th	**Somerton**
19th – 2:38am (ESE)	19th – 12:29pm (WSW)	New Moon – 24th	unless stated
A useful site: www.heavens-above.com	A S Zielonka		

Om the 1st at 6:30pm in the SSW Neptune is 10 degrees to the right of the crescent Moon. Neptune is also 1 degree to the lower right of the star Phi Aquarii (4.2 mag) in Aquarius.

Venus passes through Capricornus at the start of the month. At 6:00pm on the 1st Theta Capricorni (4 mag) is 2 degrees to the right of Venus, on the 3rd Iota Capricorni (4.2 mag) is ¼ of a degree to the upper right, Nashira (3.6 mag) is 1 degree to the left, on the 8th Delta Capricorni (2.8 mag) is 1 degree lower left.

The Quadrantids meteor shower reaches its peak 0n the night of the 3rd – 4th. They can be seen from the 27th Dec to 10th Jan 2020.

At 6:50pm on the 4th Uranus will be 5¼ degrees directly above the Moon.

On the 4th* there is a planned launch from Kennedy Space Center in Florida. The test of SpaceX's Falco9 rocket and Crew Dragon spacecraft will launch from Launch Complex 39A . As part of the test, SpaceX will configure the spacecraft to trigger a launch escape shortly after liftoff and demonstrate Crew Dragon's capability to safely separate from the rocket in the unlikely event of an in-flight emergency.

On the 5th at 5:40pm the star Mu Ceti (4.2 mag) in Cetus is 1½ degrees to the right of the Moon.

From the 6th - 9th Mars passes close to the star Acrab (2.5 mag) in Scorpius. On the 8th Mars is just under a degree and below right of the star low in the south east at 6:00am.

At 5:30pm on the 6th the star named '16369' (4.1 mag) in Taurus is 2½ degrees to the right of the Moon and half a degree below.

On the 7th at 5:30pm the star Aldebaran (0.9 mag) in Taurus is 2½ degrees below the Moon.

On the 9th at 5:45pm the star Mu Geminorum (2.8 mag) in Gemini is ½ a degree above right of the Moon.

Mercury is at superior conjunction (with the Sun) on the 10th.

There is a **Penumbral Lunar Eclipse** on the 10th. The penumbral phase starts at 5:07:45pm and ends at 9:12:19pm. The greatest eclipse (as from Langport) occurs at 7:10:01pm. Its around the mid-eclipse you will see a hazy patch around the bottom half of the Moon though no clear shadow of the Earth will be seen.

At 6:00pm on the 10th the star Wasat (3.5 mag) in Gemini is 1½ degrees to the upper right of the Moon.

On the 11th at 10:00pm the Beehive star cluster (M44) is 1¼ degrees below the full Moon.

Saturn and Pluto are at superior conjunction on the 13th. At 4:58pm they are also in close conjunction and separated by 42.5' of a degree.

At 6:00am on the 13th the star Eta Leonis (3.4 mag) in Leo is 3½ degrees to the upper left of the Moon

On the 13th at 9:00pm the star Regulus (1.3 mag) is 5½ degrees to the right of the Moon and 3 degrees above.

The emersion of the star Nu Vir (4th mag) from behind the Moon occurs at 6:38am on the 15th.

At 7:00am on the 16th the star Porrima (2.7 mag) in Virgo is just 2 degrees to the lower left of the Moon.

On the 17th at 7:00am the star Zeta Virginis (3.3 mag) in Virgo is 4¾ degrees above the Moon and half a degree to the right.

From the 18th - 19th Mars passes to within 5 degrees of the star Antares (1st mag) in Scorpius low in the south east. Mars will be to the upper left of the star.

At 6:00am on the 20th the star Acrab (2.5 mag) in Scorpius is 2 degrees to the right of the crescent Moon. The star Nu Scorpii (4th mag) is ½ a degree below right of the Moon. Mars is 7 degrees below left of the Moon.

On the 21st at 6:00am the crescent Moon is 5 degrees above the south east horizon. Mars is 5½ degrees to the right of the Moon and 2½ degrees above. The star Xi Ophiuchi (4.3 mag) in Ophiuchus is 3 degrees to the left of the Moon.

At 7:00am on the 22nd the star Mu Sagittarii (3.8mag) in Sagittarius is 3 degrees to the upper left of the thin crescent Moon.

Venus is 1 degree to the left of the star.

On the 23rd at 7:20am a very thin crescent Moon is barely above the south east horizon at 131 degrees azimuth. Jupiter is at 132 degrees azimuth and 2½ degrees above the horizon. You may need optical aid.

At 5:30pm on the 26th a thin crescent Moon is in the south west. Mercury is to the lower right of the Moon and just 1 degree above the horizon and at 140 degrees azimuth. Bright Venus is to the upper left of the Moon with Neptune 1½ degrees to the upper right of Venus and less than ¼ of a degree from the star Phi Aquarii (4.2 mag) in Aquarius.

On the 27th at 5:30pm the star Tau Aquarii (4th mag) in Aquarius is ¾ of a degree to the left of the crescent Moon which is due south west.... At the same time 9½ degrees above left of the Moon Venus, Neptune and the star Phi Aquarii (4.2 mag) are in close conjunction. They are all within ½ of a degree of one another. By 7:30pm they will all be within ¼ of a degree of each other.

At 7:30pm on the 28th Venus will be 5½ degrees to the right of the crescent Moon. The star Phi Aquarii is just 1 degree below right of the Moon with Neptune a small fraction away from the star on its lower right.

On the 29th at 7:30pm Venus is 15 degrees below right of the Moon with Neptune 2½ degrees below right of Venus.

Mercury is low in the south west on the evening of the 31st. At 5:35pm Mercury is at 140 degrees azimuth and 5 degrees above the horizon.

At 7:50pm on the 31st Uranus is 7½ degrees above the Moon. The star Nu Piscium (4.4 mag) in Pisces is just 2 degrees to the lower right of the Moon.

* = Dates and times are subject to change.

News: It was announced on December 12th that Comet 2l/Borisov is the first identified comet to arrive here from another star system. The Sun's gravity is slightly deflecting its trajectory, but can't capture it because of the shape of its orbit and high velocity of about 100,000 miles an hour. The comet will make its closest approach to Earth in late December at a distance of 180 million miles. Crimean amateur astronomer Gennady Borisov discovered the comet on August 30th 2019.

Facts: In 2015, NASA astronauts ate food that had been grown in space for the first time, as part of NASA's experiment. They sampled Red Romaine Lettuce that had been grown in a specially designed chamber. The astronauts only got to eat half the lettuce as the other half was sent back to Earth for scientific analysis.