

Astronomy News

Night Sky 2021 - July

Sunrise	Sunset	Mercury Rises	Venus Sets
1 st – 5:01am	1 st – 9:29pm	1 st – 4:02am	1 st – 10:53pm
10 th – 5:08am	10 th – 9:24pm	10 th – 3:50am	10 th – 10:44pm
20 th – 5:20am	20 th – 9:14pm	20 th – 4:12am	20 th – 10:29pm
30 th – 5:34am	30 th – 9:00pm	25 th – 4:39am	30 th – 10:10pm
Moon Rise	Moon Set	Moon Rise	Moon Set
1 st – 1:04am	1 st – 12:48pm (W)	21 st – 7:23pm	22 nd – 2:54am
2 nd – 1:18am (E)	2 nd – 1 :57pm	22 nd – 8:31pm (SE)	(SW)
3 rd – 1:32am	3 rd – 3:06pm	23 rd – 9:24pm	23 rd – 3:58am
4 th – 1:47am	4 th – 4:14pm	24 th – 10:02pm	24 th – 5:13am
5 th – 2:04am (ENE)	(WNW)	25 th – 10:30pm	25 th – 6:35am
6 th – 2:24am	5 th – 5:23pm	26 th – 10:51pm	26 th – 7:56am
7 th – 2:50am	6 th – 6:32pm	(ESE)	(WSW)
8 th – 3:23am	7 th – 7:38pm	27 th – 11:08pm	27 th – 9:15am
9 th – 4:07am (NE)	8 th – 8:39pm	28 th – 11:23pm (E)	28 th – 10:30am
10 th – 5:02am	9 th – 9:32pm (NW)	29 th – 11:38pm	29 th – 11:41am (W)
11 th – 6:07am	10 th – 10:15pm	30 th – 11:52pm	30 th – 12:51pm
12 th – 7:19am	11 th – 10:49pm	-----	31 st – 2:01pm
13 th – 8:34am	12 th – 11:15pm		(WNW)
(ENE)	13 th – 11:36pm		-----
14 th – 9:52am	(WNW)	All times	
15 th – 11:09am	14 th – 11:54pm	in notes are set	Moon Phases
16 th – 12:28pm (E)	16 th – 12:11am (W)	for	Last Quarter – 1 st
17 th – 1:48pm	17 th – 12:27am	Somerton	New Moon – 10 th
18 th – 3:11pm	18 th – 12:45am	unless stated	First Quarter – 17 th
(ESE)	19 th – 1:06am		Full Moon – 24 th
19 th – 4:37pm	(WSW)		Last Quarter – 31 st
20 th – 6:02pm	20 th – 1:32am		
	21 st – 2:07am		
A useful site: www.heavens-above.com	A S Zielonka		

There is a planned launch this July* from the Wallops Flight Facility in Virginia to the International Space Station (ISS). Its the next in the series of Northrop Grumman commercial resupply missions.

On the 1st at 4:00am Neptune is $7\frac{1}{2}$ degrees to the right of the Moon and 5 degrees above. The star Iota Ceti (3.5 mag) in Cetus is $4\frac{1}{2}$ degrees below the Moon.

From the 1st - 4th Venus passes close to the Beehive star cluster. Low in the WNW at 10:00pm on the 1st Mars and Venus are 7 degrees apart. The Beehive star cluster is $1\frac{3}{4}$ degrees is to the upper left of Venus towards Mercury. On the 2nd Venus will be amongst the star cluster.

From the 1st - 5th the asteroid 4 Vesta is in the western region of the constellation of Virgo. On the 3rd at 11:00pm Vesta is 2 degrees from the star Nu Virginis (4 mag) in line and towards Denebola; another star is $\frac{1}{2}$ a degree lower left and back towards Nu Virginis from Vesta. On the 4th Vesta is approx halfway between the stars Zavijava (3.5 mag) and Denebola (2.1 mag) in Leo. Vesta is around 7.8 magnitude so it will be visible with binoculars.

On the 1st Comet C/2020 T2 Palomar (10.6 mag - 18th June) is approx halfway between Arcturus (0 Mag) in Bootes and Zeta Virginis (3.3 mag) in Virgo. Comet Palomar is at perihelion on the 11th July and 2.055AU from the Sun. For further information of this comet or others please visit the "Comet" section in the website above.

At 4:00am on the 4th Uranus is 7 degrees to the left of the crescent Moon and 1 degree above.

Mercury is at greatest western elongation from the Sun on the 4th.

On the 5th at 4:00am Uranus is $4\frac{1}{4}$ degrees above the crescent Moon and 4 degrees to the right. The Moon is at apogee (405,341km) at 3:47pm.

At 4:00am on the 6th the Pleiades star cluster is 6 degrees above the crescent Moon and $1\frac{1}{2}$ degrees to the left.

On the 7th at 4:00am the star Aldebaran (0.8 mag) in Taurus is 6 degrees to the right of the thin crescent Moon and 3 degrees below. Mercury is 13 degrees to the lower left of the Moon at 57 degrees azimuth and just 1 degree above the horizon. At 4:15am Mercury is at 60 degrees azimuth and 3 degrees above the horizon with the star Zeta Tauri (2.9 mag) 1 degree to the left of Mercury.

At 4:15am on the 8th a very thin crescent Moon will be $5\frac{1}{2}$ degrees above the horizon at 58 degrees azimuth. Mercury is 3 degrees to the lower right of the Moon at 60 degrees azimuth with the star Zeta Tauri (2.9 mag) just $\frac{1}{2}$ a degree upper right of it and just $3\frac{1}{2}$ degrees above the horizon.

From the 10th - 16th Venus passes close to Mars. On the 12th at 10:00pm they are in close conjunction and just $\frac{1}{2}$ a degree apart. Mars is to the lower left of Venus, with the thin crescent Moon 5 degrees above left of them. At 10:00pm on the 13th Mars is $\frac{1}{2}$ a degree below Venus. The star Regulus (1.3 mag) in Leo is 10 degrees to the left of Venus and 2 degrees above.

On the 11th at 10:00pm a very thin crescent Moon will be seen in the WNW. Venus is $7\frac{1}{2}$ degrees to the left of the Moon and $\frac{1}{2}$ a degree above, with Mars 1 degree to the left of Venus.

Comet 15P Finlay (11.6 mag - 15th June) is at perihelion on the 13th, at a distance of 0.992AU from the Sun which is close to the orbit of our Earth. Finlay is just 1 degree to the upper right of the crescent Moon in the east at 2.45am on the 5th. On the 24th at 2:45am Finlay will be $\frac{1}{2}$ a degree to the lower left of the star Kappa Tauri (4.2 mag) in Taurus. At 3:00am on the 27th and 28th Finlay passes close to the star Tau Tauri (4.2 mag).

Mars reaches aphelion on the 13th. At 10:00pm the star Regulus (1.3 mag) in Leo is $7\frac{1}{2}$ degrees to the lower right of the crescent Moon in the west. Venus and Mars are 17 degrees to the lower right of the Moon. Mars is less than $\frac{1}{2}$ a degree below Venus which is 6 degrees above the horizon at 289 degrees azimuth.

At 11:00pm on the 14th the star Denebola (2.1 mag) in Leo is 8 degrees above the crescent Moon and 1 degree to the right, low in the west.

Mercury passes close to the stars Propus (3.3 mag) and Mu Geminorum (2.8 mag) in Gemini on the 14th and 15th. At 4:15am on the 14th Propus is less than $\frac{1}{2}$ a degree to the upper left of Mercury which is 3 degrees above the horizon and at 56 degrees azimuth. On the 15th at the same time Mu Geminorum is less than $\frac{1}{2}$ a degree left of Mercury.

On the 15th at 11:00pm the star Porrima (2.7 mag) in Virgo is 6 degrees to the left of the crescent Moon and $\frac{1}{2}$ a degree above.

At 11:00pm on the 16th the star Spica (0.9 mag) in Virgo is 7 degrees to the left of the Moon and $3\frac{1}{2}$ degrees below.

On the 17th at 11:00pm the star Kappa Virginis (4.1 mag) in Virgo is $2\frac{1}{2}$ degrees to the left of the Moon and 1 degree above.

Pluto is at opposition on the 17th in the constellation of Sagittarius.

At 11:00pm on the 18th the star Zubenelgenubi (2.7 mag) in Libra is $1\frac{1}{4}$ degrees to the lower right of the Moon.

On the 19th at 11:00pm the star Acrab (2.5 mag) in Scorpius is $2\frac{1}{2}$ degrees to the left of the Moon and $1\frac{1}{2}$ degrees above.

From the 20th - 22nd Venus passes close to the star Regulus (1.3 mag). On the 21st Regulus is $1\frac{1}{4}$ degrees below left of Venus. Mars is 5 degrees to the lower right of Venus.

At midnight on the 20th the star Theta Ophiuchi (3.2 mag) in Ophiuchus is 6 degrees to the left of the Moon and 1 degree above.

The Moon is at perigee (364,520km) on the 21st at 11:25am. At midnight the star Alnasi (2.9 mag) in Sagittarius is 4 degrees below the Moon and $1\frac{3}{4}$ degrees to the left.

On the 22nd at midnight the star Tau Sagittarii (3.3 mag) is $1\frac{1}{4}$ degrees below the Moon.

Mercury is at perihelion on the 24th.

At midnight on the 24th Saturn is $5\frac{1}{2}$ degrees above the Moon and $2\frac{1}{2}$ degrees to the right in Capricornus.

On the 25th at midnight Jupiter is $5\frac{1}{2}$ degrees upper left of the Moon. The star Ancha (4.1 mag) in Aquarius is 5 degrees upper left of Jupiter.

At midnight on the 26th Jupiter is 12 degrees to the upper right of the Moon. The star Tau Aquarii is $2\frac{1}{2}$ degrees to the right and $\frac{3}{4}$ of a degree above.

From the 26th - 30th Mars passes close to the star Regulus (1.3 mag). At 9:35pm on the 29th Regulus will be $\frac{3}{4}$ degree below Mars. Mars is 3 degrees above the horizon at 286.5 degrees azimuth.

On the 27th at midnight Neptune is 5 degrees above the Moon and $\frac{1}{2}$ a degree to the right.

At 1:00am on the night of the 29th the star Nu Piscium (4.4 mag) in Pisces is $5\frac{1}{4}$ degrees to the left of the Moon and $1\frac{1}{2}$ degrees below.

The Delta Aquarids meteor shower reaches its peak on the 30th. They can be seen between the 13th July - 24th August. (Rate approx 25 per hour).

The Alpha Capricornids meteor shower also reach their peak on the 30th. They can be seen between the 2nd July - 14th August (Rate approx 5 per hour).

On the night of the 30th at 1:00am the star Omicron Piscium (4.2 mag) is 5 degrees to the upper right of the Moon.

There is a Boeing Orbital Flight Test on the 30th* at 7:53pm*. For this second uncrewed flight test, Boeing's CST-100 Starliner will launch atop a United Launch Alliance Atlas V rocket. OFT-2 will fly a new, reusable Starliner crew module providing additional on-orbit experience for the operational teams prior to flying missions with astronauts.

At 1:00am on the night of the 31st Uranus is 2½ degrees to the upper left of the Moon in the east.

* = Dates and times are subject to change

News: NASA's Juno probe flew pass Ganymede, Jupiter's largest satellite and the biggest moon in the solar system, on June 7th.

A new study of asteroid 16 Psyche suggests that ferrovulcanism volcanos that spew molten iron, may be present on this solar system object. NASA's Psyche mission is set to launch there in 2022. It is scheduled to arrive there in 2026.

NASA has announced that it has two missions later this decade to go to Venus. DAVINCI+ and VERITAS will head there to map and characterize the second planet from the Sun. The first selected mission is the Deep Atmosphere Venus Investigation of Noble gases, Chemistry and Imaging. This mission will study the composition and evolution of Venus's atmosphere. The second mission selected is the Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy mission. This mission will construct a complete 3D map of the planet's surface in an effort to trace the history of the planet's plate tectonics and determine whether Venus is still volcanically active. Another technology demonstrator will hitch a ride with VERITAS: The Jet Propulsion Laboratory's Deep Space Atomic Clock-2 will generate ultra-precise signals that will aid future radio observations and deep-space manoeuvres. Both probes planned to launch in the 2028-2030 time frame.

Facts: The Pluton radar system in Crimea consists of eight reflectors, each 16 metres in diameter. It serves as a working example of a compact dish array mounted on a plane. In 1961 it performed one of the world's first radar detection of the planet Venus. In 1962 it performed the world's first successful radar detection of the planet Mercury.