

# Astronomy News

## Night Sky 2021 - September

| Sunrise  | Sunset   | Mercury Sets   | Venus Sets   |
|--|--|--|--|
| 1 <sup>st</sup> – 6:25am<br>10 <sup>th</sup> – 6:39am<br>20 <sup>th</sup> – 6:54am<br>30 <sup>th</sup> – 7:10am  | 1 <sup>st</sup> – 7:56pm<br>10 <sup>th</sup> – 7:36pm<br>20 <sup>th</sup> – 7:13pm<br>30 <sup>th</sup> – 6:51pm  | 1 <sup>st</sup> – 8:27pm<br>5 <sup>th</sup> – 8:16pm<br>10 <sup>th</sup> – 8:02pm<br>15 <sup>th</sup> – 7:47pm   | 1 <sup>st</sup> – 8:58pm<br>10 <sup>th</sup> – 8:38pm<br>20 <sup>th</sup> – 8:18pm<br>30 <sup>th</sup> – 7:59pm  |
| Moon Rise  | Moon Set   | Moon Rise  | Moon Set   |
| -----<br>2 <sup>nd</sup> – 12:39am<br>(NE)<br>3 <sup>rd</sup> – 1:37am<br>4 <sup>th</sup> – 2:45am<br>5 <sup>th</sup> – 4:00am<br>6 <sup>th</sup> – 5:19am<br>(ENE)<br>7 <sup>th</sup> – 6:39am<br>8 <sup>th</sup> – 8:00am (E)<br>9 <sup>th</sup> – 9:22am<br>10 <sup>th</sup> – 10:46am<br>11 <sup>th</sup> – 12:11pm<br>(ESE)<br>12 <sup>th</sup> – 1:37pm<br>13 <sup>th</sup> – 2:59pm<br>14 <sup>th</sup> – 4:13pm (SE)<br>15 <sup>th</sup> – 5:14pm<br>16 <sup>th</sup> – 5:59pm<br>17 <sup>th</sup> – 6:33pm<br>18 <sup>th</sup> – 6:58pm<br>19 <sup>th</sup> – 7:17pm<br>(ESE) | 1 <sup>st</sup> - 5:17pm (NW)<br>2 <sup>nd</sup> – 6:07pm<br>3 <sup>rd</sup> – 6:48pm<br>4 <sup>th</sup> – 7:20pm<br>5 <sup>th</sup> – 7:45pm<br>6 <sup>th</sup> – 8:05pm<br>(WNW)<br>7 <sup>th</sup> – 8:23pm<br>8 <sup>th</sup> – 8:39pm (W)<br>9 <sup>th</sup> – 8:56pm<br>10 <sup>th</sup> – 9:15pm<br>(WSW)<br>11 <sup>th</sup> – 9:37pm<br>12 <sup>th</sup> – 10:05pm<br>13 <sup>th</sup> – 10:43pm<br>14 <sup>th</sup> – 11:34pm<br>(SW)<br>16 <sup>th</sup> – 12:38am<br>17 <sup>th</sup> – 1:53am<br>18 <sup>th</sup> – 3:12am<br>19 <sup>th</sup> – 4:32am<br>(WSW)<br>20 <sup>th</sup> – 5:50am | 20 <sup>th</sup> – 7:33pm<br>21 <sup>st</sup> – 7:48pm (E)<br>22 <sup>nd</sup> – 8:02pm<br>23 <sup>rd</sup> – 8:17pm<br>24 <sup>th</sup> – 8:33pm<br>(ENE)<br>25 <sup>th</sup> – 8:52pm<br>26 <sup>th</sup> – 9:17pm<br>27 <sup>th</sup> – 9:48pm<br>28 <sup>th</sup> – 10:29pm<br>(NE)<br>29 <sup>th</sup> – 11:21pm<br>-----<br>All times<br>in notes are set<br>for<br><b>Somerton</b><br>unless stated | 21 <sup>st</sup> – 7:04am<br>22 <sup>nd</sup> – 8:17am (W)<br>23 <sup>rd</sup> – 9:28am<br>24 <sup>th</sup> – 10:39am<br>(WNW)<br>25 <sup>th</sup> – 11:50am<br>26 <sup>th</sup> – 12:59pm<br>27 <sup>th</sup> – 2:06pm<br>28 <sup>th</sup> – 3:08pm<br>(NW)<br>29 <sup>th</sup> – 4:01pm<br>30 <sup>th</sup> – 4:45pm<br>-----<br><b>Moon Phases</b><br>New Moon – 7 <sup>th</sup><br>First Quarter –<br>13 <sup>th</sup><br>Full Moon – 21 <sup>st</sup><br>Last Quarter –<br>29 <sup>th</sup> |
| A useful site:<br><a href="http://www.heavens-above.com">www.heavens-above.com</a>   | A S Zielonka   |  |  |

On the night of the 1<sup>st</sup> there is an occultation of the star Mebsuta (3 mag) in Gemini. At the time 2:01:51am Mebsuta reappears from behind the crescent Moon. (Please note – times for this are set for Yeovilton).

On the 2<sup>nd</sup> at 5:00am the star Mebsuta (3 mag) in Gemini is 2 degrees to the upper right of the crescent Moon.

In the early hours of the 3<sup>rd</sup> there is an occultation of the star Kappa Geminorum (3.5 mag). At 3:38:16am K.G. disappears behind the Moon and then reappears at 4:33:51am. (Please note – times for this are set for Yeovilton).

At 5:00am on the 3<sup>rd</sup> the star Kappa Geminorum (3.5 mag) is  $\frac{3}{4}$  of a degree to the upper right of the crescent Moon.

On the 4<sup>th</sup> at 5:00am the Beehive Star Cluster is  $2\frac{1}{2}$  degrees below right of the crescent Moon in the east.

From the 4<sup>th</sup> - 6<sup>th</sup> Venus passes close to Spica (1 mag) in Virgo. On the 5<sup>th</sup> at 8:15pm Spica is  $1\frac{3}{4}$  degrees below Venus. Venus is 5 degrees above the [horizon.at](#) 247 degrees azimuth.

At 5:00am on the 5<sup>th</sup> the star Lambda Leonis (3.5 mag) is 4 degrees above a thin crescent Moon and 2 degrees to the left.

Mercury reaches aphelion (its most distant from the Sun in its orbit) on the 6<sup>th</sup>.

On the 6<sup>th</sup> at 5:40am a very thin crescent Moon may be seen low in the ENE horizon at 69.5 degrees azimuth and 2 degrees above the horizon.

At 8:15pm on the 8<sup>th</sup> a very thin crescent Moon will be low in the west at 265.5 degrees azimuth and just 3 degrees above the horizon. The star Porrima (2.7 mag) in Virgo is just 1 degree to the left of the Moon.

On the 9<sup>th</sup> at 8:15pm the thin crescent Moon is low in the WSW at 252 degrees azimuth and  $5\frac{1}{2}$  degrees above the horizon. Venus is 6 degrees to the left of the Moon and  $1\frac{1}{2}$  degrees below.

Asteroid 4 Vesta at the beginning is in the constellation of Virgo. On the 9<sup>th</sup> at 8:45pm Vesta is just  $2\frac{1}{2}$  degrees above the Moon low in the WSW. The Moon is 1 degree above the horizon at 258 degrees azimuth.

At 8:15pm on the 10<sup>th</sup> Venus is 8 degrees to the lower right of the crescent Moon in the WSW. Venus is 3½ degrees above the horizon.

The Moon is at perigee (368,461km) on the 11<sup>th</sup> at 11:04am. At 8:15pm the crescent Moon will be due south west. The star Zubenelgenubi (2.7 mag) in Libra is 7 degrees to the right of the Moon and 1 degree below.

At 9:20pm on the 12<sup>th</sup> the crescent Moon is due south west and only 4½ degrees above the horizon, amongst the stars of Scorpius.

On the 13<sup>th</sup> at 9:00pm the star Theta Ophiuchi (3.2 mag) is 1 degree above left of the first quarter Moon.

Mercury is at Maximum eastern elongation on the 14<sup>th</sup>.

Neptune is at opposition on the 14<sup>th</sup>. Around this date is the best time to view Neptune with binoculars or a small telescope. It will be brighter than any other time of the year

At 9:30pm on the 14<sup>th</sup> the star Kaus Borealis (2.8 mag) in Sagittarius is 2 degrees to the upper left of the Moon.

From the 15<sup>th</sup> - 30<sup>th</sup> Jupiter passes close to the star Delta Capricorni (2.8 mag). On the 20<sup>th</sup> at 9:00pm Delta Capricorni is 1½ degrees below Jupiter in the SSE.

There is a planned launch on the 16<sup>th</sup>\* from Vandenberg Air Force Base, California of a United Launch Alliance Atlas V rocket. The mission Landsat 9 continues the nearly 50-year old legacy of the Landsat series. Its an irreplaceable record of Earth's land surfaces as seen from space. The partnership between NASA and the U.S. Geological Survey, the Landsat program offers the longest continuous global record of the Earth's surface.

On the 16<sup>th</sup> at 9:30pm Saturn is 6½ degrees to the upper left of the Moon low in the south.

At 10:30pm on the 17<sup>th</sup> Jupiter is 8 degrees upper left of the Moon. The star Delta Capricorni (2.8 mag) is 1½ degrees below Jupiter. The star Zeta Capricorni (3.7 mag) is 1½ degrees below the Moon and ¼ of a degree to the left.

On the 18<sup>th</sup> at 10:30pm Jupiter is  $8\frac{1}{4}$  degrees to the upper right of the Moon.

At 10:30pm on the 19<sup>th</sup> Neptune is 9 degrees to the upper left of the Moon.

On the 20<sup>th</sup> at 10:30pm Neptune is 7 degrees to the upper right of the Moon.

From the 20<sup>th</sup> August - 20<sup>th</sup> September around 4:00pm the asteroid Ceres (8.8 mag) will pass below the Hyades star cluster in the east. On the 2<sup>nd</sup> Sept Ceres is  $\frac{1}{2}$  a degree below the star Theta Tauri (3.4mag). On the 13<sup>th</sup> & 14<sup>th</sup> Ceres is just under 1 degree below Aldebaran. The Hyades is the nearest open cluster and one of the best-studied star clusters.

At 10:30pm on the 22<sup>nd</sup> the star Nu Piscium (4.4 mag) is 3 degrees below left of the Moon.

From the 22<sup>nd</sup> - 24<sup>th</sup> Comet 67P Churyumov-Gerasimenko (11.3 mag – Aug 11th) will pass by the star Ain (3.5 mag) which is in the Hyades star cluster in Taurus. On the 23<sup>rd</sup> at midnight Chur-Gera is a quarter of a degree upper left of Ain in the east. Chur-Gera is 0.537AU from the Earth. Chur-Gera's closest approach to Earth is from the 8<sup>th</sup> - 14<sup>th</sup> Nov when it will be 0.418AU. Chur-Gera is at perihelion on the 2<sup>nd</sup> Nov. This comet is likely to brighten more over the next couple of months months, though by how much, is anybody's guess.

On the 23<sup>rd</sup> at 9:30pm the star Xi Ceti (4.3 mag) in Cetus is 1 degree below right of the Moon.

At 10:30pm on the 24<sup>th</sup> Uranus is 3 degrees above the Moon and  $1\frac{1}{2}$  degrees to the right.

On the 25<sup>th</sup> at 10:30pm the Pleiades star cluster is  $5\frac{1}{2}$  degrees to the upper left of the Moon.

At 10:30pm on the 26<sup>th</sup> the star Tau Tauri (4.2 mag) is  $1\frac{1}{2}$  degrees to the left of the Moon. The Moon is at apogee (404,640km) at 10:44pm.

On the 27<sup>th</sup> at midnight the star Zeta Tauri (2.9 mag) is  $3\frac{1}{2}$  degrees below the Moon and  $\frac{3}{4}$  of a degree to the right.

At midnight on the 28<sup>th</sup> the star Mu Geminorum (2.8 mag) is 3 degrees to the lower right of the Moon.

On the night of the 29<sup>th</sup> at 12:30am the star Wasat (3.5 mag) in Gemini is 3¼ degrees below right of the last quarter Moon.

\* = Dates and times are subject to change

News: Mission: Imaging X-Ray Polarimetry Explorer. This x-ray astronomy satellite will study active galactic nuclei, microquasars, pulsars and pulsar wind nebulae, magnetars, accreting X-ray binaries, supernova remnants and the galactic centre.

The first flight of NASA's X-57, a small, experimental airplane powered by electricity will take place this autumn. All-electric technology will make flying cleaner, quieter and more sustainable. The flight will take place at NASA's Armstrong Flight Research Centre in California.

CAPSTONE – Cubesat Pathfinder Mission will validate new navigation technologies and verify dynamics in Gateway's planned orbit. It will launch aboard a Rocket Lab Electron rocket this Autumn.

In August astronomers have discovered the two reddest objects in the asteroid belt. A team led by Sunao Hasegawa (Institute of Space and Astronautical Science, Japan) found the two objects. Their named 203 Pompeja and 269 Justitia. Objects this red must have journeyed inward from beyond Neptune's orbit, and their presence in the main belt strengthens the case for giant planet migration early in the solar system's history.

The recurrent nova RS Ophiuchi dramatically brightened from magnitude 11.2 to 4.8 over August 8<sup>th</sup> – 9<sup>th</sup>. Irish amateur Keith Geary was the first to report the surprise outburst of RS Ophiuchi, one of the few known recurrent novae. He captured photos of it glaring at magnitude 5 with his DSLR camera at 11:20pm on August 8<sup>th</sup>.

September Fact: The Hyades is the nearest open cluster and one of the best-studied star clusters. Its located about 153 light years away and consists of a roughly spherical group of hundreds of stars sharing the same age, place of origin and motion through space. The brightest star being Aldebaran is unrelated to the Hyades, as it is located much closer to Earth and merely happens to lie along the same line of vision