

Forthcoming CAWAS Meetings		
Friday 8th November	Dr. Julian Onions	One Gigayear at a Time and CAWAS Anniversary Celebrations
Friday 13th December	Christmas Meal	King's Hill Nurseries, King's Hill Lane, Coventry. CV3 6PS
Friday 10th January	Melissa Gilone	Surfing the Universe: Gravitational Waves

BAA		
Sunday 17th Nov all day		Equipment and Techniques Section Meeting Bedford School, De Parys Ave, Bedford. MK40 2TU.
Saturday 7th Dec 14:00 - 18:00		BAA Christmas Meeting Institute of Physics, 37 Caledonian Rod, London. N1 9BU.

Observing Sessions with RADAS at Barby Cricket Club at 19:00 clock time.
In general two dates are given, the one to be used will be notified the day before.
November Friday 22/23 Friday 29/30, **December** Friday 20/21, **January** Friday 3/4, 17/18

November	Event	
Monday	11th	Mercury transit
Tuesday	12th	Moon - full, Vesta opposition North Taurids peak
Saturday	16th	μ Geminorum occultation
Sunday	17th	Leonids peak
Tuesday	19th	Moon - last quarter
Sunday	24th	Venus near Jupiter, Moon near Mars
Tuesday	26th	Moon - new
Thursday	28th	Mercury greatest elongation west Jupiter occultation
Friday	29th	Moon near Saturn
December		
Wednesday	4th	Moon - first quarter
Wednesday	11th	Venus near Saturn
Thursday	12th	Moon - full
Friday	13th	Geminids peak

Coventry and Warwickshire Astronomical Society
The society usually meets on the second Friday in the month, at Earlsdon Methodist Church Hall. The meetings begin at 19:15 and end at 21:30.

Web Site: <http://www.covastro.org.uk>

Mailing list

Join the CAWAS mailing list and receive irregular information of astronomical events and CAWAS news.

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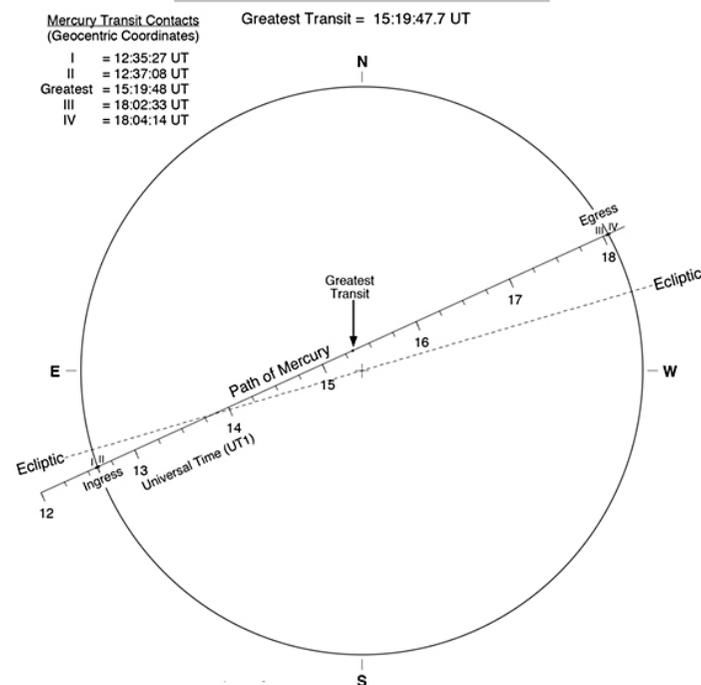
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Coventry and Warwickshire Astronomical Society

Sky Notes

November 8th to December 13th 2019 No. 266

Transit of Mercury: 2019 Nov 11



Transit of Mercury - 11th November

On Armistice Day Mercury can be seen passing in front of the Sun in a rare transit. The last transit was only three years ago, but if you miss this one you will have to wait until 13th November 2032. The transit starts at 12:35 and ends at 18:04, but our view is limited by the Sun setting at 16:20 before the end of the transit. As the angular size of Mercury is only 9.9" it is not visible with eclipses glasses alone, so the safest way to observe it is to project an image of the Sun from binoculars or a telescope on to a piece of paper.

Time given in these skynotes is Co-ordinated Universal Time (UTC) known as GMT here in the UK.

Sun moves south from Libra, through Scorpius into Ophiuchus this month.

November 8th Rise 07:14 Set 16:25 Dec $-16^{\circ} 40'$

December 13th Rise 08:08 Set 15:52 Dec $-23^{\circ} 01'$

Mercury ($+3.9 9.9''$ to $-0.6 5.2''$) moves from Libra into Scorpius and passes through inferior conjunction on Nov 11, transiting the Sun's disc (see front page) and moving into the morning sky. On Nov 28 it reaches its greatest elongation west of 20.1° , so around that date it can be seen low down in the SE just before dawn.

Venus ($-3.9 10.9''$ to $-3.9 12.1''$) moves from Ophiuchus into Sagittarius and gradually moves away from the Sun during the month so that it can be seen very low down in the SW just after sunset, setting an hour after the Sun at the beginning of the month and two hours at the end. On Nov 24 it passes just over 1° south of Jupiter, then on Nov 28 the two-day-old crescent Moon lies between Venus and Jupiter, about 2° from both. Later on Dec 11 Venus passes about 2° south of Saturn.

Mars ($+1.8 3.7''$ to $+1.7 4.0''$) moves from Virgo into Libra and can be seen low in the SE not long before sunrise, rising two hours before the Sun at the beginning of the month and three hours at the end. On Nov 24 the thin crescent Moon lies 4° to the north

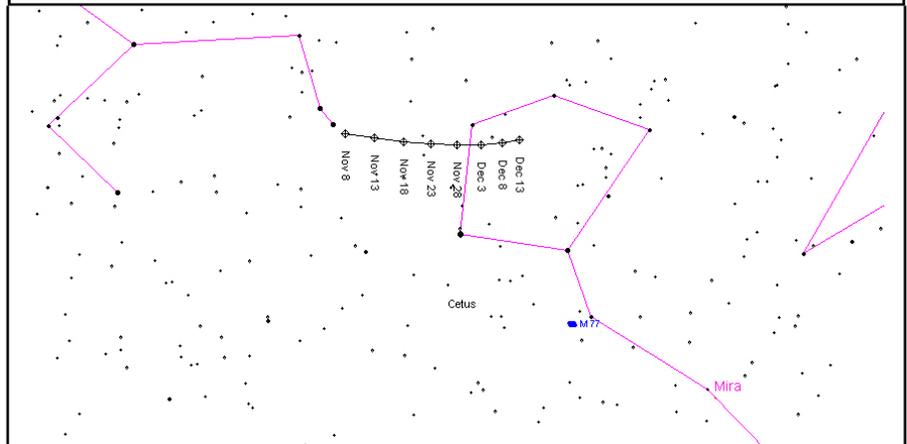
Jupiter ($-1.9 32.9''$ to $-1.8 31.8''$) moves from Ophiuchus into Sagittarius and gradually moves closer to the Sun throughout the month as it heads towards conjunction next month. It can be seen just after sunset very low down in the SW setting 2 hours after the Sun at the beginning of the month and one hour at the end.

Saturn ($+0.6 15.8''$ to $+0.6 15.2''$) lies in Sagittarius and can be seen low in the SSW in the early evening setting at 20:00 at the beginning of the month and 18:00 at the end. On Nov 29 the crescent Moon lies 3° to the south.

Uranus ($+5.7 3.7''$) lies in Aries and as it passed through opposition last month can be seen high in the southern sky all night, culminating at an elevation of about 50° .

Neptune ($+7.7 2.3''$ to $+7.8 2.2''$) lies in Aquarius and reaches its stationary point on Nov 27 when it starts to move prograde again. It can be seen in the south for the first half of the night setting at 01:00 at the beginning of the month and 23:00 at the end.

Asteroid (4) Vesta reaches opposition on Nov 12 when it will shine brightly at mag. $+6.8$ making it easily visible in binoculars. The chart below shows its path through Cetus. Also shown is the red giant variable star, Mira, which varies between mag. $+2.0$ and $+10.1$ over a period of 331.96 days and is currently at maximum brightness.



Occultation of μ Geminorum occurs on Nov 16. The occultation of the $+2.9$ mag star by the bright limb of the Moon starts at 01:30 and ends when the dark limb uncovers it again at 02:47.

Jupiter is occulted by the Moon on Nov 28, but the event starts when the planet is below the horizon and ends at 10:32 not long after it has risen in the SE. This would be a spectacular event except for the fact that it takes place in daylight with the Sun only 23° away making observations difficult.

Meteors The North Taurids are a weak shower associated with the debris from comet 2P/Enke and are predicted to peak on the night of Nov 12/13 with a ZHR of 10 meteors / hr. However, with a full Moon near the radiant conditions are at their worst.

The **Leonids** are active from November 15 to 20 and come from the debris of comet 55P/Tempel-Tuttle. The meteors appear to radiate from the sickle of Leo, many leaving persistent trails and are very swift (70km/s) due to their retrograde orbit. They are predicted to peak on the morning of Nov 17/18 with a ZHR of 20, but with a gibbous Moon in nearby Cancer conditions are not ideal.

The **Geminids** are active from Dec 7 to 16. They are unusual in having an asteroid (3200 Phaethon) as their source and their relatively low speed of 35km/s helps their trails to have longer durations. This year the peak ZHR of 120 is predicted for the night of Dec 13/14, but again with a full Moon near the radiant conditions are at their worst.