

**Forthcoming CAWAS Meetings**      **Suspended until further notice.**

**The Equation of Time** (the difference between time on a sundial and time on a clock) is only zero on four days in the year, one of these is June 12. On that day the Sun is directly south at noon on a clock and the shadow on a sundial will point directly north showing a time of 12 o'clock. However, that is only the case at Greenwich. That is because our clocks show the mean solar time at Greenwich, ie. Greenwich Mean Time (plus one hour in summer to give BST), but our sundials show the local apparent solar time at our homes. As we live west of Greenwich we will see the Sun due south a little while later and we can use that fact as a way of finding our longitude - Just look at your sundial and when it reads 12 o'clock look at your clock. As the Earth rotates by 1° in 4 minutes the time in minutes after noon (GMT) on the clock when divided by 4 gives your longitude in degrees.

**Noctilucent Clouds** are ethereal looking clouds of ice crystals that lie above the lowest layer of the ionosphere at altitudes of 75 - 85km. They become visible in the summer twilight when they are illuminated by the Sun below the horizon, so they might be seen from now until early August.

<u>June</u>	<u>Event</u>	
Saturday	13th	Moon - last quarter, Mars near Neptune, Moon near Mars
Friday	19th	Occultation of Venus
Saturday	20th	Summer solstice
Sunday	21st	Moon - new
Tuesday	23rd	Neptune stationary
Sunday	28th	Moon - first quarter
<b><u>July</u></b>		
Wednesday	1st	Mercury inferior conjunction
Saturday	4th	Earth aphelion
Sunday	5th	Moon - full, penumbral eclipse Moon near Jupiter

**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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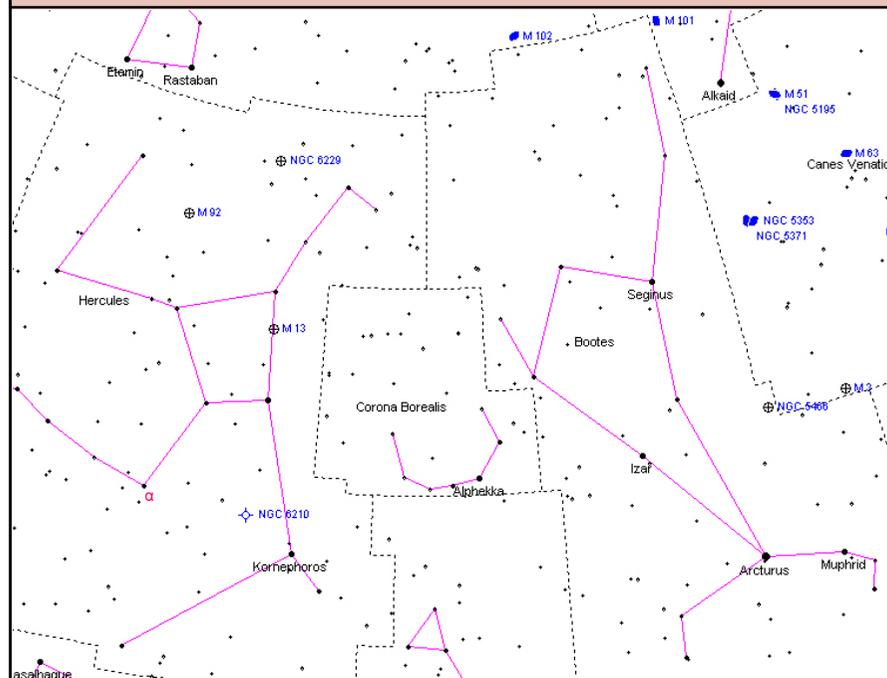
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# Coventry and Warwickshire Astronomical Society

## Sky Notes

June 12th to July 10th 2020 No. 273



### Hercules and the Herdsman surround the Northern Crown

With the light nights at this time of year it can be difficult making out the constellations. However **Boötes**, the Herdsman, is easily located high in the south as it contains the brightest star in the northern night sky, the red giant **Arcturus** at mag.  $-0.04$ . To its east is the Northern Crown, Corona Borealis, which leads to **Hercules**, recognised by its 'keystone' of stars and containing the brightest globular cluster in the northern hemisphere, M13, at mag.  $+5.8$ .  **$\alpha$  Herculis** is a multiple star system whose main components are separated by  $4.6''$ . The brightest of these is a semiregular variable red giant that varies between mags.  $+2.7$  and  $+4.0$ , the other a mag.  $+5.4$  binary star consisting of a yellow giant and a white dwarf.

**Time** given in these skynotes is Co-ordinated Universal Time (UTC) known as GMT here in the UK. Add one hour to get clock time in BST.

**Sun** continues its journey north moving from Taurus into Gemini until the summer solstice at 21:44 on June 20 after which it will start moving south again. Despite this, the earliest sunrise is at 03:43 on June 17 and the latest sunset 20:33 on June 24. On Jun 21 the Sun undergoes an annular eclipse, but it is only visible on a line from central Africa to Taiwan.

June 12th	Rise 03:44	Set 20:29	Dec +23° 12'
July 10th	Rise 03:56	Set 20:26	Dec +22° 09'

**Mercury** (+1.2 9.7" to +2.6 10.6") lies in Gemini and might be glimpsed just after sunset very low down in the north-west at the beginning of the month. As it passes through inferior conjunction on July 1 it rapidly gets lost in the Sun's glare as the month progresses.

**Venus** (-4.0 55.5" to -4.7 37.0" ) lies in Taurus and as it passed through conjunction last month has moved into the morning sky, being visible low in the ENE just before dawn. At the beginning of the month it rises 30 mins before the Sun and at the end 2 hours. On June 19 the Moon passes in front of Venus, normally this would be a great spectacle except that it starts at 07:39 and ends at 08:41, in daylight only 20° from the Sun.

**Earth** reaches aphelion (its furthest distance from the Sun) at 11:35 on July 4 when it will be 1.0167 AU (152,096,000 km) away.

**Mars** (-0.2 10.0" to -0.7 12.3") moves from Aquarius, through Pisces into Cetus and is visible in the early hours of the morning low down in the ESE. At the beginning of the month it rises at 00:45 and 23:25 at the end. On June 13 it passes just 1.5° to the south of Neptune, when the Moon also lies 3° to the south of Mars.

**Jupiter** (-2.6 45.8" to -2.7 47.6") lies in Sagittarius and is visible low (max altitude = 16°) in the southern sky all night as it heads towards opposition next month. On July 5 the Moon lies 3° to the south.

**Saturn** (+0.3 18.0" to +0.2 18.4") moves from Capricornus into Sagittarius and lies 6 degrees to the east of Jupiter. Saturn is visible all night, as like Jupiter it heads towards opposition next month.

**Uranus** (+5.9 3.4" to +5.9 3.5") lies in Aries and as it gradually moves away from the Sun is becoming more visible low in the east in the early hours of the morning, rising at 02:00 at the beginning of the month and midnight at the end.

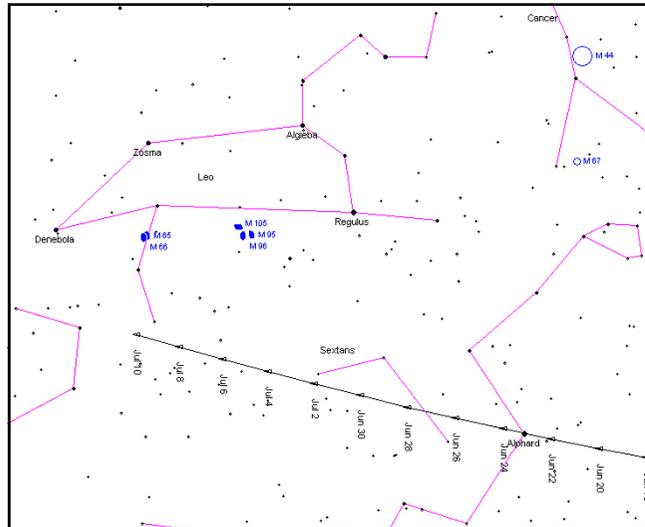
**Neptune** (+7.8 2.2" to +7.7 2.3") lies in Aquarius and is visible low in the SE in the early hours of the morning. On June 23 it passes through its stationary point and starts to move retrograde.

**Jupiter Red Spot** transit times:-

**June 17 00:28, 19 02:06, 21 23:35, 24 01:13, 26 22:43, 29 00:21**

**July 1 01:59, 3 23:28, 6 01:06, 8 22:36**

**Penumbral Eclipse of the Moon** starts at 03:07 on July 5, but like last month's eclipse will be interrupted by the horizon as the Moon sets at 03:46 before the eclipse finishes at 05:52. As with all penumbral eclipses it will be difficult to note any change in the Moon's appearance.



**Comet C/2019 U6 (Lemmon)** is currently in the southern hemisphere, but after it passes through perihelion on June 18 it should become visible towards the end of the month, low down in the west just after sunset when it should reach mag. +5.5. Let's hope the answer's a lemon!

**Gassendi** crater lies at the northern edge of Mare Humorum on the Moon (as shown in the diagram) and is interesting because of its delicate maze of hills, ridges, rilles and pits on its floor. The rilles, or channels, are particularly striking and are best observed about 3 days before full Moon.

