

Forthcoming CAWAS Meetings on Zoom at 7:00pm BST
 Friday July 9th Sandra Bratingham Aurorae, Noctilucent Clouds and STEVE
 Friday August 13th Steve Barrett The lighter side of Astronomy and Ancient Light

ISS passes July 13 22:33, 15 22:35, 16 21:48, 17 21:00 22:37, 18 21:50, 19 21:03 22:39, 20 21:52,
 July 21 21:05 22:42, 22 21:54, 23 21:07 22:44, 24 21:56, 25 21:09, 27 21:11

July	Event	
Saturday	10th Moon - new	●
Monday	12th Moon near Venus	📷
Tuesday	13th Venus near Mars	
Saturday	17th Moon - first quarter	☾
Saturday	24th Moon - full, Moon near Saturn	☉
Sunday	25th Moon near Jupiter	📷
Wednesday	28th Delta Aquarids maximum	⚡
Thursday	29th Mars near Regulus	
Saturday	31st Moon - last quarter	☾
August		
Sunday	1st Mercury superior conjunction	●
Monday	2nd Saturn opposition	
Sunday	8th Moon - new	●
Wednesday	11th Moon near Venus	📷
Thursday	12th Perseids maximum	⚡

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. **(Suspended until further notice)**

Web Site: <http://www.covastro.org.uk>
Mailing list - Note the change to groups.io
 Join the CAWAS mailing list and receive irregular information of astronomical events and CAWAS news.

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Chairman
 John 07762 061518 johndavis744@tiscali.co.uk

Mira editor
 Ivor 024 76319519 ivorclarke@btinternet.com

Secretary
 Geoffrey 01926 335399 gjohnstone@btinternet.com

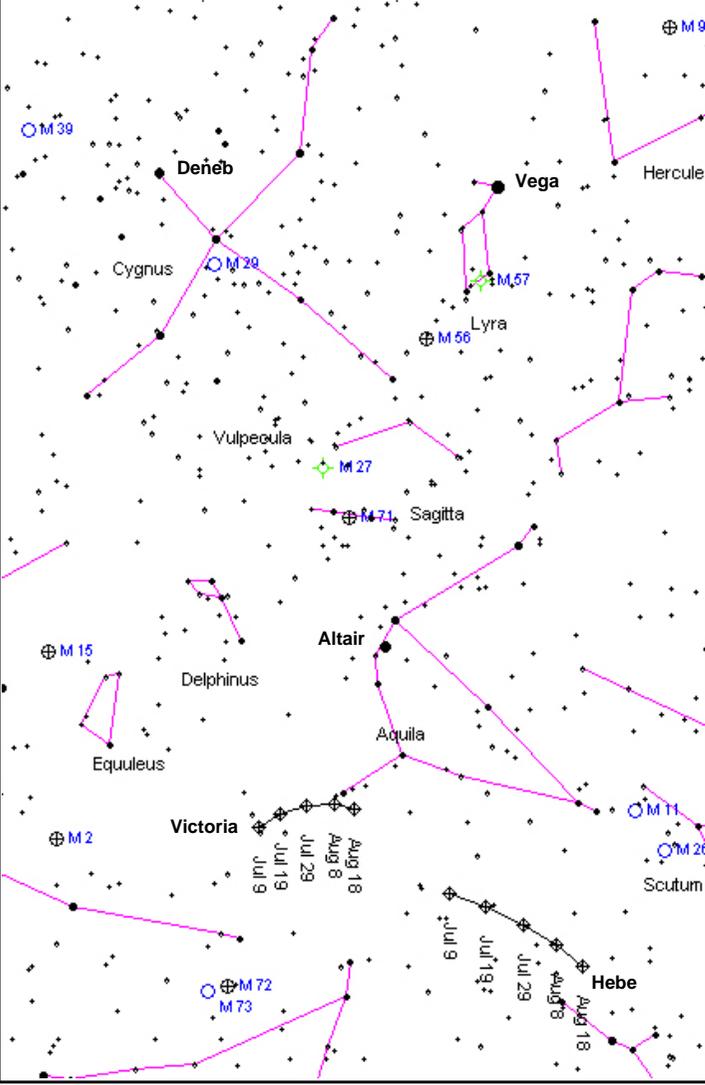
Vice Chairman
 Alan 024 76270169 alandocwho@yahoo.co.uk

Treasurer
 Vaughan 01926 402414

Skynotes
 Mark 024 76543689 mark@covastro.plus.com

Coventry and Warwickshire Astronomical Society

Sky Notes July 9th to August 13th 2021 No. 286



Once again our skies are dominated by the **Summer Triangle** formed by the bright stars Deneb, Vega and Altair. The triangle itself contains a host of wonders including the brightest part of the Milky way, visible directly overhead with a good deal of imagination! Not to be missed are the two planetary nebulae; M57, the Ring Nebula and M27, the Dumbbell Nebula. Below the triangle the asteroids Victoria and Hebe come to opposition this month.

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 moves south from Gemini, through Cancer into Leo and is gradually becoming more spotty and active.

July 9th	Rise 03:55	Set 20:26	Dec +22° 20'
August 13th	Rise 04:46	Set 19:34	Dec +14° 46'

Mercury (−0.1 7.0" 50.4% to −0.8 5.1" 92.2%) moves from Taurus, through Orion, Gemini and Cancer into Leo and might be glimpsed at the start of the month very low in the ENE just before dawn. However, as it passes through superior conjunction on August 1 it rapidly disappears from view for the rest of the month.

Venus (−3.9 11.5" 87.8% to −4.0 13.5" 78.6%) moves from Cancer through Leo into Virgo and is visible for about an hour after sunset very low in the west. Although its elongation from the Sun increases throughout the month its altitude at sunset actually decreases by 2°. During the month Venus gradually overtakes Mars passing 30' north of it on July 13. On July 11 the crescent Moon lies 7° to the north, on July 12 5° to the east and on Aug 11 6° to the east.

Mars (+1.8 3.8" to +1.8 3.6") moves from Cancer into Leo and is barely visible very low in the west at sunset at the beginning of the month as it gradually draws closer to the Sun and its conjunction in October. On July 29 Mars passes 39' north of Regulus, normally this would be an interesting sight as they are similar in colour and brightness, however with both only having an altitude of 8° at sunset it will be difficult to observe.

Jupiter (−2.7 46.3" to −2.9 49.0") lies in Aquarius and is visible for most of the night, low (max. altitude = 25°) in the southern sky as it heads towards opposition next month. It rises at 22:15 in the ESE at the beginning of the month and 19:50 at the end. On July 25 the Moon lies 6° to the south. On July 29 from 21:00 to 22:24 both Io, Callisto and Io's shadow are in transit.

Saturn (+0.3 18.4" to +0.2 18.5") lies in Capricornus and is visible low in the southern sky all night as it passes through opposition on Aug 2, but still only culminates at an altitude of 19°. Around opposition its rings brighten through the Seeliger effect. On July 24 the full Moon lies 6° to the south.

Uranus (+5.8 3.5" to +5.7 3.6") lies in Aries and can be seen at a reasonable altitude in the east in the early hours of the morning. As the month progresses it becomes visible in the evening sky rising at 22:00 at the end of the month.

Neptune (+7.9 2.3" to +7.8 2.3") lies in Aquarius and can be seen in the SE during the later part of the night, rising at 22:50 at the beginning of the month and 20:40 at the end.

Meteors

The **Southern Delta Aquarids** is a minor shower active from July 12 to August 23 with a maximum ZHR (zenith hourly rate) of 20 on July 28 - 29. The **Perseid** meteor shower runs from July 17 until August 24. The meteors originate from the tail of the great comet of 1862 (comet 109P/Swift-Tuttle) and at their peak normally produce a ZHR of 80. The peak of activity is usually over the night of 12 / 13, but good rates are also likely on the nights of 11 / 12 and 13 / 14. With a crescent Moon setting at 21:30 conditions for observing are good this year.

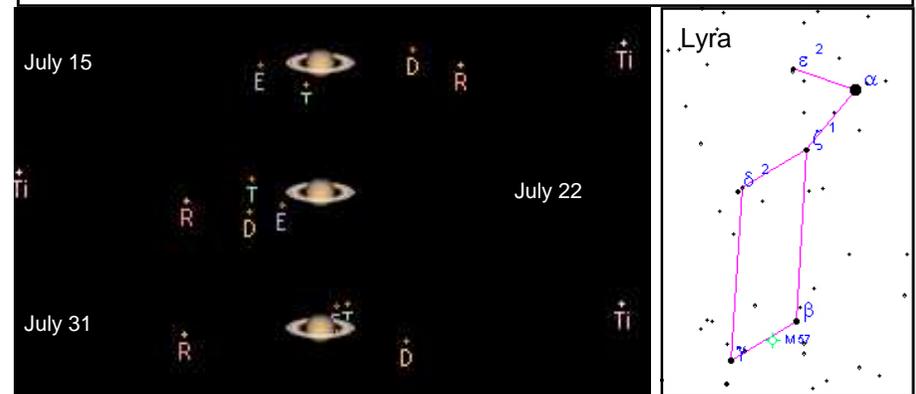
Asteroids reaching opposition this month are:-

(6) Hebe mag. +8.4 July 17 (12) Victoria mag.+8.8 July 29

Their paths through Aquila are shown in the chart on the cover.

Satellites of Saturn are shown in the diagram for the days when Titan is at its maximum distance from the planet (20 Saturn radii or 3') and at mag. +8.3 most easily seen. In the diagram the letters represent:-

D - Dione	mag. +10.4	E - Enceladus	mag. +11.7
R - Rhea	mag. +9.7	T - Tethys	mag. +10.2
Ti - Titan	mag.+8.3		



Lyra besides containing the Ring Nebula, M57 also has the famous double-double star ε. Located to the northeast of Vega (α Lyrae mag. +0.03) the double-double consists of two binary stars separated by 208" with ε¹ being of mags. +4.7 and +6.2 separated by 2.6" and ε² mags. +5.1 and +5.5 separated by 2.3". There is also a fifth star closely orbiting one of the ε² stars.

Another interesting object in Lyra is the multiple star system β Lyrae (consisting of 6 stars). The main components Aa1 and Aa2 make up an eclipsing binary of period 12.9414 days and as its magnitude varies between a maximum of +3.2, a primary minimum of +4.4 and a secondary minimum of +3.8 it is easily followed with the naked eye.