SPACEWATCH

the newsletter of the Abingdon Astronomical Society

Next Talk
9th September 2019
TBA
Alan Chapman
University of Oxford

EDITORIAL

Welcome to the last edition of Spacewatch for the 2018/19 session. It is unfortunate that the weather has not played ball over much of the second half of the session and even the summer, so far at least, seems poor. Certainly where I am the complete unreliability of the BBC forecasts for clear nights has been an issue and with the Sun in a deep minimum even the joy of watching sunspots and prominences seem to have gone. Hopefully the weather will improve and of course we have the Apollo 11 anniversary to look forward to on July 20th as well as a partial lunar eclipse on July 16th, for details see the whats up section. There are several astronomy programs on at the moment from the BBC with Professor Brian Cox dealing with The Planets on BBC 2 on Tuesdays and the BBC Podcasts 13 minutes to the Moon https://www.bbc.co.uk/programmes/w13xttx2. I would also like to thank Trevor Pitt for all his handwork at the beginners meetings and the Observing sessions over the last ten years as he has left the committee and plans to retire south over the next year. We have had some new volunteers at the AGM to help fill this rather large gap.

We had hoped to do a public lunar observing session to correspond with the Apollo anniversary but the low altitude of the Moon and its late rising time made this difficult. If we do manage to arrange something then it will be announced on the FB page and on the newsgroup.

I would like to thanks Steve and Cristina for writing the What's up column and taking over from Bob and Gwyneth for the meeting writeups. It would be a lot harder to put the newsletter together without them. I will look forward to the Stonehenge Solstice reports for the next issue ☺

BBC Stargazing Live special 15th July on Apollo Moon landing see https://www.bbc.co.uk/mediacentre/latestnews/2019/moon-landings-50

THE NIGHT SKY THIS MONTH

By Steve Creasey & Cristina Garcia Pozuelo Sanchez

We are now in that part of the year, were for a couple of months at least, some of the deeper sky observing and imaging is becoming very difficult, impractical if not impossible.
With the northern hemisphere now tilted towards the sun, the further north you are the longer your days will be.
The sun, from our latitude is only dipping to around 20 degrees below the horizon, leaving us with only an Astronomical Twilight at our darkest point of the night. Having no Astronomical darkness now until around the 22nd July, the night sky never really gets dark.

That said, there is still plenty to look at if you don't mind staying up late or getting up early for it.

The Planets

Mercury – is at greatest elongation on the 23rd June at 22h, and so there is the opportunity to observe this elusive planet in the bright summer twilight after the Sun has set. Look low in the NW sky close to the horizon using binoculars to spot this, the nearest planet to the Sun. Mercury sets around 22h15 mid-month. Use your binoculars on the evening of the 18th to see if you can spot Mercury in conjunction with Mars. They have a separation of 0.3°; Mercury by far the brighter of the two. On the evening of the 4th it may be possible, also using binoculars, to see Mercury with the very thin one-day old crescent Moon, which is located 4° to the lower left of the planet.
In ancient times, the evening apparition of the planet was referred to as Hermes, (the Greek name for Mercury), and the planet in its morning apparition was called Apollo, the harbinger of

sunrise. In mythology, Hermes carried Apollo on his chariot through the night.

Not visible through July

Rising an hour or so before the Sun from the middle of August

Venus – Rising less than an hour before the Sun, will be very difficult to spot in the summer twilight. Because of its close proximity to the Sun, take great care if attempting to view it.

Too close to the Sun through July and August

Mars is moving eastwards in Gemini the Twins, but is now an inconspicuous object at magnitude +1.7, about the same brightness as Castor, which is at a higher altitude. By the end of the month, Mars sets in the NW before 22h00, by which time it is very difficult to see in the bright evening twilight of midsummer. However, remember, to look for the close conjunction of Mercury and Mars on the evening of the 18th.

Due to its apparent proximity to the Sun from our position, Mars will not be a good target throughout July and August

Jupiter is at opposition and its nearest to Earth on the 10th June. It lies in the constellation of Ophiuchus, and is visible throughout the bright twilit night, rising in the SE as the Sun sets, and setting in the SW at sunrise. At astronomical midnight the planet culminates in the south, a mere 15° above the south point of the horizon. On the evening of the 16th, the gibbous waxing Moon, almost full, may be seen to the left of Jupiter; the separation between the two being 2° at 22h that evening. The reddish coloured star some 10° to the lower right of the pair is the fiery heart of the scorpion, Antares (alpha Scorpii). Keep an eye on the GRS as it seems to be unravelling

Rising earlier as we go through July and August, Jupiter will be observable at a more reasonable hour, however it is still going to be very low to the South.

Saturn, at a low southern declination in the constellation of Sagittarius, is always seen at a low altitude throughout the short nights of June. Throughout the month it rises in the late evening and culminates at an altitude of 15° at around 02h mid-month. The gibbous waning Moon has a close conjunction with Saturn on the 19th, when at 03h, Saturn lies 1° north of the Moon as seen from the latitude of Scarborough. The further south one goes, the closer the conjunction. The northern surface of the rings are presented towards the Earth and will be well seen through a small telescope. Titan, the largest of the Saturnian moons at magnitude +8 is at its greatest elongation east of Saturn on the 1st and 17th and at its greatest western elongation on the 9th and the 25th.
Rising earlier as we go through July and August, Saturn will be observable at a more reasonable hour, however it is still going to be very low to the South.

Both **Uranus** in Aries, and **Neptune** in Aquarius, rise during the early hours of June, and are difficult to observe in the bright twilight. Becoming better positioned as we get into July and August

Meteor Showers

There are no major meteor showers until the **Perseid Shower**, peaking in August.
The Perseid shower lasts from the 17th July – 24th August, when the Earth passes through the path of **Comet Swift-Tuttle,** peaking 12-13 August.
However, the Moon will be very close to full on the peak night, substantially reducing the number of observable meteors, taking the Moon into consideration, it might be that 1st – 7th August (New Moon – first quarter) is a better bet for seeing Perseid meteors this year.

Deep Sky Objects (DSOs)

With the plane of the Milky Way becoming more prominent and the lack of astronomical darkness, it makes sense to turn our attention away from the faint Galaxies and Nebulae and focus more, on the brighter Globular clusters that we find, mainly to either side of the Milky Way galactic plain, and the Open Clusters that we mainly see therein.

Globular Clusters

M3 in Canes Venatici
M5 in Serpens
M10 in Ophiucus
M13 in Hercules
M92 in Hercules
M71 in Sagitta

Open Clusters

NGC 6940 Mothra Cluster in Vulpecula
NGC 6939 in Cepheus, see if you can spot the nearby NGC 6946 The Fireworks Galaxy
NGC 6709 in Aquila
NGC 6871 in Cygnus
NGC 6811 in Cygnus
M29 or NGC 6913 in 6913

The Moon

Moon is at perigee (nearest to the Earth) on June 7th at 23h, and the lunar diameter is 32mins of arc.

New Moon occurs on the 3rd, at 10h03 when the Moon passes 3.5° to the south of the Sun in the constellation of Taurus.
First Quarter is on the 10th at 06h00 on the Leo/Virgo border.
The Midsummer Full Moon is at 08h31 on the 17th, in Ophiuchus, several degrees to the east of Jupiter. This is the lowest Full Moon of this year.
Last Quarter Moon is on the 25th at 09h47 near the Pisces/Cetus border.

July	**August**
New Moon occurs on the 2nd at 20:16 **First quarter** occurs on the 9th at 11:54 **Full Moon** occurs on the 16th 22:38 **Last quarter** occurs on the 25th 02:18	1st at 04:11 7th at 18:30 15th at 13:29 23rd at 15:56

Partial Lunar Eclipse on July 16th

Penumbral Eclipse begins16 Jul, 18:43:51 16 Jul, 19:43:51No, below the horizon

Partial Eclipse begins 16 Jul, 20:01:4316 Jul, 21:01:43No, below the horizon

Maximum Eclipse 16 Jul, 21:30:4416 Jul, 22:30:44Yes

Partial Eclipse ends16 Jul, 22:59:3916 Jul, 23:59:39Yes

Penumbral Eclipse ends17 Jul, 00:17:38
Just over half the moon will be covered at maximum eclipse

Have a great summer and Please share with us any images you get throughout June, July and August, maybe they will make it into the next SpaceWatch.

LAST MONTHS TALK

by Gwyneth Hueter

May's talk.

'The French Coudé telescope' , by ABAS member Graham Pinson

This was a telescope design (coudé = elbow) which enabled the observer to stay indoors and was easy to control. It is a Cassegrain with added optics that firstly direct the light sideways out between the main and secondary mirrors (Nasmyth design) and then adding further optics to send the light usually through the declination axis to a focus point that does not move. The tube is suspended through a beam supported by two piers.

The folded optics also meant a smaller observatory and the design is popular among large photographic telescopes.
The design first became popular in Paris from 1880 onwards.

Graham gave details of various observatories and I would be happy if he had some comments to make on my comments:

The observatory at Verdun was built on the Paris meridian that never was. (The Greenwich meridian won out.). It had two telescopes of 33" and 24" apertures respectively, one for visual observations and one for photography. Both had focal lengths of 16.5 metres. The telescopes were suspended from stone pillars. There is a model in the Science Museum.

The Grand Coudé in Paris with a 60cm mirror and an 18m focal length is the largest of its type ever built. It was used between 1891 and 1939 and was dismantled in 1980, although the building still exists. The operator setup was quite complicated. Maurice Loewy was the director at the turn of the century and was a big influence once he came over from the Vienna Observatory and adopted French nationality. A fine lunar atlas was made there, of which Graham is proud to have acquired five glass plates for himself. Only 15 complete and 10 incomplete sets remain. Graham is not sure how many were made in total, possibly 60.
In WWII the objective was reused for a folded refractor.

Graham mentioned other observatories with Coudé telescopes in that part of Europe. Most have been demolished or just have the buildings still standing. Algiers still has a functional one also, 32cm aperture, 6.78 focal length. Nice has one (40cm aperture, 10m focal length) which was in professional use between 1892—1935 and since then has been adapted for use by amateurs. As far as the UK is concerned, the wealthy benefactor Richard Sheepshanks (1794—1855) funded a telescope in Cambridge where he had been a student and Henry Norris Russell (1877—1957) managed to use it later for star parallax measurements. (He was in Cambridge from 1903—1905). It had a 12.5" mirror and the light path feeds into the corner of a house - do look at some pictures of it if you can, as it does look odd!
Another variation is the Turret Folding scope in Springfield, Vermont USA. There are two, designed by Russell Porter and funded by James Hartness. Well worth looking for photos again. The former has a 12" primary and the latter is a 10" refractor.

Graham's enthusiasm for certain aspects of historical astronomy continues to shine through, in spite of his struggles with disability. His passion stems partly from his grandfather's association with the BAA in the earlier years of the last century. He has also given several after tea talks on early observatories in and around Paris.

DATES FOR YOUR DIARY

17th June 8pm Beginners' Meeting in the Main Hall., talks to include Eyepieces, Apollo Missions and Noctilucent clouds , although subject to change

Observing evening: There will be no further regular Observing sessions until September. There maybe the odd special and look for information on the newsgroup and FB pages.

BAA Summer meeting at RAL June 22nd 2019. Details and how to book at https://www.britastro.org/RAL2019

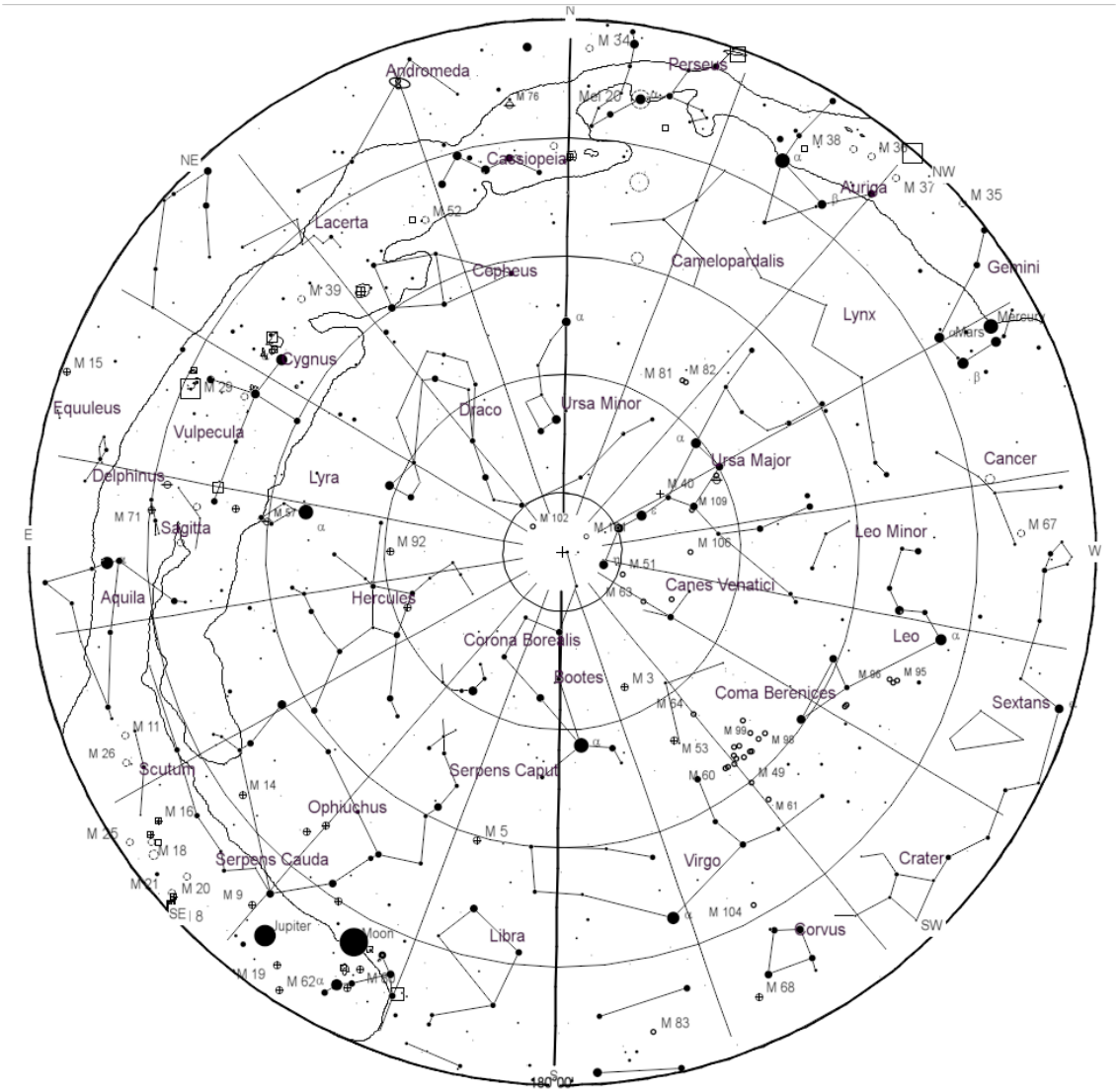
FURTHER DISCUSSION

If you are not already on our internet mailing list, then why not log on to YahooGroups. The list is called 'abingdonas'. Members use the list to alert each other about celestial events and to chat about amateur astronomy. The list is quite active, with several messages most weeks. To read through previous messages click on:
http://groups.yahoo.com/group/abingdonas/ .
To join the abingdonas list, please go to http://www.yahoogroups.com . You can also unsubscribe from the list here.

More information on society activities can also be found on the Facebook page - https://www.facebook.com/AbingdonAstroSoc/
Although confusingly we seem to have two groups on Facebook.

STAR CHART

The night sky at 22:00 (BST) Saturday 15th June 2019



MOON PHASES: 2019