

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

Next Talk
13th May 2019
AGM +
French Coude telescopes
Graham Pinson
AAS

EDITORIAL

I apologise for the late arrival of this months Spacewatch but I was away at the Kelling star party and did not get back in time. We are getting to a desperate situation with after tea speakers and we really need some volunteers to help out with these. I have noticed as well a rather high fall off in the numbers of people attending the main meetings. This is rather alarming for both those who organise the meetings as well as putting them on. If there is some issue that you feel the society should be addressing or that the talks are not right then please see myself or Ian Smith. We are a good way into planning next years program so if we are not offering what you want to hear then now is the time we need to hear about it.

Next month is our AGM and it is your chance to decide how you want the society to run. There could be major changes next year with some members retiring and we are going to need help to keep both the beginners meetings and the observing sessions going so if you have views on any of this or would like to offer your services then the AGM is a good time to bring this up. The formal AGM will be followed by a talk on French Coude telescope by Graham Pinson who has always proved to be a very interesting and amusing speaker in the past.



M51 – Steve Creasey

THE NIGHT SKY THIS MONTH

by Steve Creasey

British summer time has officially arrived, and with it the lighter evenings and shorter nights. I must admit, I have been enjoying the warmer than usual evenings when I have had the opportunity to be out in the observatory. However, those opportunities seem to be few and far between.

There is plenty to look at through April, with lots of Galaxies and Globular star clusters for the deep sky observers and imagers. Four of the five brightest planets gracing the morning sky and the Lyrid meteor shower.

The Planets

Mercury passed between the Sun and Earth on the 15th of March, It will therefore rise low over the east-south-eastern horizon at the beginning of April, it will reach its greatest western elongation on the 11th. **Mercury** will be joining **Venus** in the morning sky, which appears approximately 40x brighter than Mercury. Although having a magnitude of +0.9, it will only reach an elevation of only about 4 degrees.

Venus continues to sink slowly into the morning twilight, rising just before Mercury and only one hour before the Sun. Viewed through binoculars, it should be possible to see both the planets together. For much of April, Venus will be rising only 30 minutes or so before sunrise. So take great care when viewing through a telescope or binoculars.

Mars is passing through Taurus this month, with a good opportunity to see/image it passing between the Pleiades and the Hyades at the beginning of the month. On the night of the 16th, Mars will pass within about 7 degrees of

the red giant star, Aldebaran, and even though it remains easy to spot, its angular diameter will reduce from 4.6 seconds of arc to 4.2 seconds of arc. This means it will be impossible to spot even major surface features on the planet.

Jupiter begins April rising about one hour after midnight. Its brightness increases to magnitude -2.5 during the month and its angular diameter grows from 40 to 43 seconds of arc. However, it will not rise above about 14 degrees above the southern horizon when it crosses the meridian.

Saturn increases in brightness from magnitude +0.6 to magnitude +0.5 as the month progresses. However, the planet is now at its lowest point on the ecliptic, and will therefore not rise above about 14 degrees. Look for Saturn in the constellation Sagittarius when it rises close to the meridian just before dawn by month's end.

Uranus is not observable in this period.
Neptune is not observable in this period.

Meteor Showers

This year, the Lyrid meteor shower is expected to peak after midnight on the 23rd. The Lyrids is an average shower that rarely produces more than about 20 or so meteors during its peak. However, it does occasionally produce bright meteors that leave extended dust or smoke trails in the atmosphere. This year the waning gibbous Moon will extinguish most of the fainter meteors. But with some patience and perseverance it might still be possible to spot a few exceptionally bright ones. Note that while the radiant of the Lyrids shower is in the constellation Lyra, Lyrids meteors can appear from almost any point in the night sky.

Deep Sky Objects

M68 is a Globular Cluster located 33,000 light-years from Earth in the constellation Hydra. It has an apparent magnitude of 8 and can be spotted with a pair of binoculars.

NGC 4147 is a Globular Cluster located in the constellation of Coma Berenices. This is a relatively

small globular cluster, ranking 112th in luminosity among the Milky Way globular cluster population.

M67 nicknamed the King Cobra Cluster, is an open cluster located in the northern constellation Cancer. It is one of the oldest known open clusters and the single oldest open cluster listed by Messier in his catalogue. The estimated age of M67 is in the range from 3.2 to 5 billion years.

NGC 3242 commonly known as the Ghost of Jupiter, it is a planetary nebula located in the constellation Hydra.

NGC 3377 is an elliptical galaxy in the constellation Leo. It is a member of the M96 Group and is about 26 Mly away, with a diameter of approximately 40 000 ly.

NGC 2841 is an inclined unbarred spiral galaxy exhibiting a prominent inner ring structure in the constellation Ursa Major, it was discovered on 9 March 1788 by William Herschel.

NGC 3507 is an interacting galaxy in the constellation of Leo

M84 and Markarians Chain, M84 also known as NGC 4374, is an elliptical or lenticular galaxy in the constellation Virgo.

Markarians Chain is a stretch of galaxies that forms part of the Virgo Cluster. When viewed from Earth, the galaxies lie along a smoothly curved line. Charles Messier first discovered two of the galaxies, M84 and M86, in 1781. The other galaxies seen in the chain were first mentioned in John Louis Emil Dreyer's New General Catalogue, published in 1888. It was ultimately named after the Armenian astrophysicist, Benjamin Markarian, who discovered their common motion in the early 1960s.

Member galaxies include M84 (NGC 4374), M86 (NGC 4406), NGC 4477, NGC 4473, NGC 4461, NGC 4458, NGC 4438 and NGC 4435.

NGC 4606 is a spiral galaxy located about 55 million light-years away in the constellation of Virgo. NGC 4606 was discovered by astronomer

William Herschel on March 15, 1784. It has a disturbed stellar disk suggesting the actions of gravitational interactions

NGC 4394 is a barred spiral galaxy in the constellation Coma Berenices and is situated about 39.5 million light-years (12.1 megaparsecs) from Earth. It was discovered on 14 March 1784 by the German–British astronomer William Herschel. It is a presumed companion to the lenticular galaxy M85 / NGC 4382, which lies 8 arc minutes away. It is also a member of the Virgo Cluster.

Comets

Not much happening in 2019 Comet wise unfortunately, but there is always the possibility of something coming along to surprise us.

Moon

New moon 4th April
First quarter 12th April
Full moon 19th April
Last quarter 26th April

NOTICE OF ANNUAL GENERAL MEETING

The Annual General Meeting for 2018/19 will take place on **Monday 13th May 2019** at All Saints' Methodist Church Hall, Dorchester Crescent, Abingdon at **8.00 p.m.**, and will be followed by a talk *to be announced*.

Agenda

1. Apologies for absence
2. Minutes of the previous Abingdon AS AGM (held 14/5/2018)
3. Matters arising
4. Presentation of Committee's report
5. Presentation of Treasurer's report and Adoption of accounts
6. Setting of membership fees for 2019/2020
7. Election of officers
 - i) Chairman
 - ii) Secretary
 - iii) Treasurer
 - iv) Publicity Officer

8. Election of other committee members (between one and six in number)
9. Any other business

Chris Holt, Secretary, Abingdon Astronomical Society

NOMINATIONS FOR ELECTIONS TO COMMITTEE

Nominations are sought for the posts of Chairman, Secretary, Treasurer, Publicity Officer and between 1 and 6 other committee members.

Under the Constitution of the Society, the "candidates for election shall be proposed and seconded by ordinary members of the Society and the nomination, including the candidate's signature, submitted in writing to the Chairman at least four weeks prior to the Annual General Meeting"(para. 10.3.3). Ordinary members are all those who are not honorary members or affiliated members.

The Constitution goes on to say that, "in the event of there being no candidate for the election of an officer of the Society, or fewer than ten candidates for the election to the Committee, the Chairman may accept nominations given at the meeting" (para. 10.3.4).

Chris Holt, Secretary, Abingdon AS

LAST MONTHS TALK

by Gwyneth Hueter

Not last month's talk...

I missed that, but attended the first day of this year's Astrofest in London and one of the speakers, Simon Porter of the Southwest Research Institute (Boulder, Colorado) gave a most informative talk on 'The Campaign to catch Ultima Thule'.

Dr Porter studies Kuiper Belt objects, and when the New Horizons probe was due to finish its bypass of Pluto and Charon, the hunt was on to

see if any other object of interest might be in its path.

This search is well worth recounting.

The hunt was on for a suitable KB object. He calls them cold classicals, a great name for those lumps out there, unchanged from when they formed in the outer reaches of the Solar system. Hubble was on the case and five possibles were located. ESA's GAIA space observatory, which was busy mapping star positions, also provided information.

Of the five possibles, one was immediately discounted - moving too fast. Option one of the remaining four looked the best and this was 2014 MU 69. Discovered on 26/6/14, it was calculated to have a 297 year orbit and given a minor planet number 486958. But it was 44.3 AU distant, and only had a visual magnitude of 27.5 at this time. So the hunt began for stars that it might occult, so its size and shape could be determined, and whether it had a cloud of stuff around it. (mag 27.5 is roughly 140 photons per Hubble shot).

The first occultation attempt took place on 3/6/17, tracked from ground based telescopes in Argentina and South Africa, and unsuccessful.

The second was on 10/7/17. This was serious stuff, due to occur with an 80% full Moon up and the star to be occulted very faint anyway. As well as Hubble still being used, the airborne observatory SOFIA was deployed from its summer base in New Zealand. SOFIA carries a 2.5m scope at 45,000 feet and in this case its successful observations honed down the position of MU 69 so that on 17/7/17 calculations revealed it would occult a 12.6 mag star over quite a narrow track over Argentina and Patagonia. This seemed to be a last opportunity to determine its shape and size so lots of ground-based scopes were deployed to track it. Not all were successful. SOFIA was also sent over and just got the edge of the occultation. Results indicated now that it was not round, and possibly even a contact binary.

The long and short of it is that this amazing teamwork (and amateurs were involved in some of the ground-based observations) indicated that two more occultations were likely in 2018. The second one (4/8/18) was tracked mainly in Senegal, north of Dakar and by a large contingent of amateurs and professionals. Columbia also had opportunities, but they were limited by their rainy season. These final

results got the position, but not the size. The efforts of the Senegalese made good national news at the time, because of the citizen science element.

Thanks to all these amazing endeavours by professionals and amateurs alike, New Horizons made its successful flyby of Ultima Thule on 1/1/19. When it had gone by Pluto and Charon (on 14/7/15), its accuracy was 70 seconds off target. For Ultima Thule it was a mere 20 seconds off. The accuracy regarding distance was 7km. Remember also that its distance from Earth meant that its telemetry was taking six hours to reach us. And all that for an object roughly 34km long on its long axis.

Astrofesters were given two links to look up but they didn't work for me. Fortunately Wikipedia gives a really good and reliable account of the hunt for Ultima Thule. Well worth a look, and some really good pictures.

DATES FOR YOUR DIARY

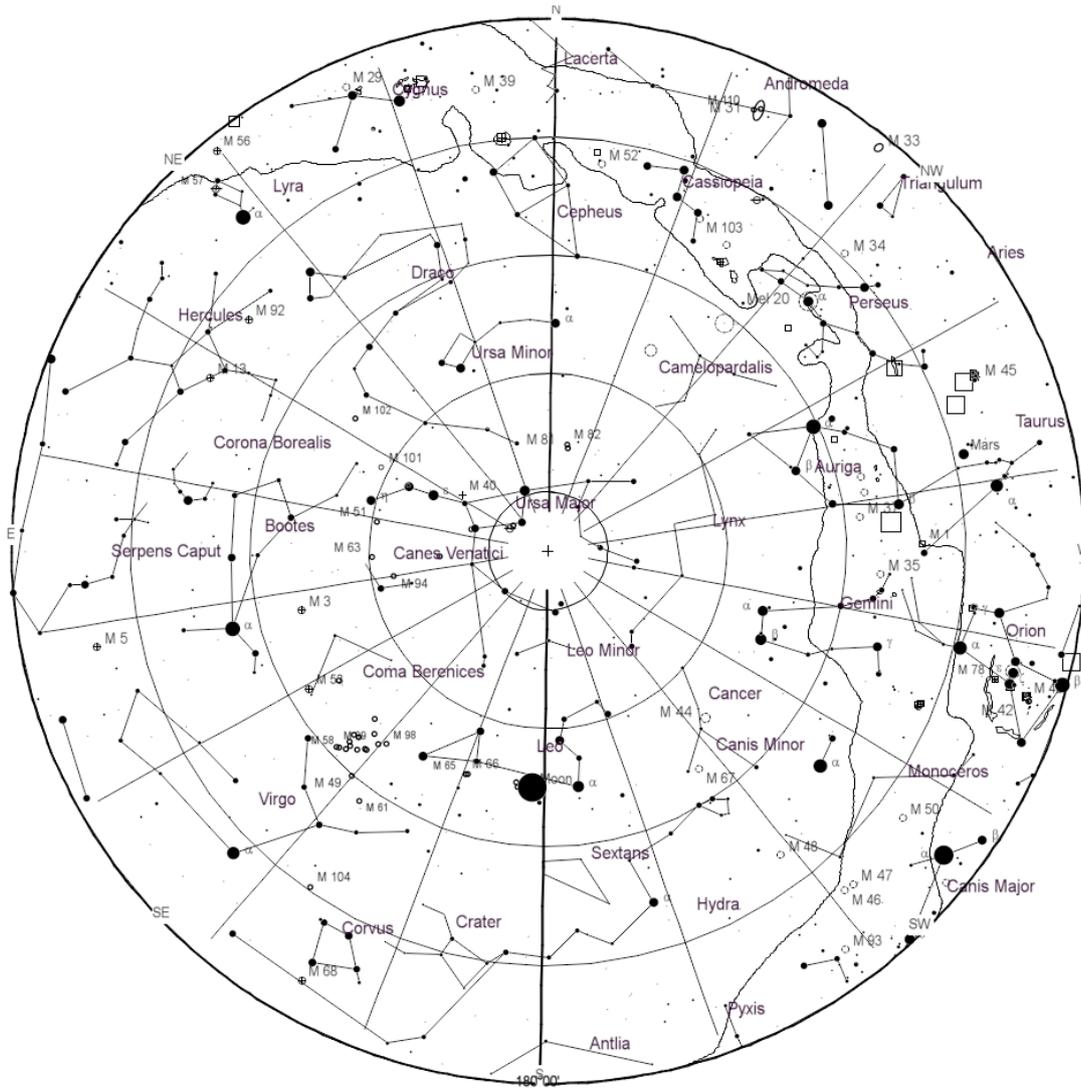
29th April 8pm Beginners' Meeting in the Main Hall., talks to include Variable stars, Gamma Bursts and setting up an equatorial mount, although subject to change

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>

STAR CHART

The night sky at 22:00 Monday 15th April 2019



MOON PHASES: 2019

