SPACEWATCH

the newsletter of the Abingdon Astronomical Society

Next Talk
12th March 2018
Comets: Ghostly Wanderers in Space
Ian Ridpath FRAS

EDITORIAL

Well after missing the January meeting to get a week of cloud in Devon I hope that many of you had a better start to the astronomical New year. The Oxford University Stargazing event went very well and although, as anticipated, there will be very little pull through for the society it was a useful event and perhaps 900 people came through despite the fact it was cloudy. Although of course it did clear on the way home ☹ My thanks to all those who helped out there. There will be some other outreach events later in the year for which we may need help, although it appears the clubs and societies fair will not be held this year.

Please note in the diary dates section that although there had not been an observing session originally planned for December we have put one in that will focus on the Moon again on the week of the 19th Feb.

We are also short of after tea talks so if you have anything that you would like to talk about or an observing programme you are working on then please see Chairman Clifford. Although it may seem like a worn record without participation in these then meetings may well start to end early.

M76 by Ian Smith

THE NIGHT SKY THIS MONTH

by Bob Dryden

Mercury: To start with Mercury cannot be seen as it is too close to the Sun. It reaches solar conjunction on17th February after which it reappears in the evening sky to give us a good apparition.
You should be able to find Mercury by the last week of February. On 25th February the planet will be shining at -1.4 magnitude at a height of 5° at sunset. You will not have long to scan for it in binoculars however as it sets about 30 minutes after sunset. Things improve greatly into March and by 12th March it will be easy to see Mercury in the evening sky. By then, at sunset Mercury will be -0.6 magnitude and at an altitude of 16°. It will take another 90 minutes before reaching the western horizon giving you plenty of time to find it.
Between 27th February and 8th March Mercury will be within 2° of Venus. They will be closest on the 3rd when they will be just 0.5° apart.

Venus: Venus also starts this session quite low down and a little difficult to see. It is now moving in to the evening sky after its conjunction with the Sun.
In mid-February the planet is just 5° high at sunset and you have barely 30 minutes in which to find it so binoculars will definitely be needed. Helpfully, Venus is very bright at -3.9 magnitude. By mid-March Venus will be 15° from the Sun, above the horizon for 90 minutes, and at a decent altitude of 16° at sunset, so will be very easily visible to the naked eye.

Mars: Mars brightens slightly, reaching +0.6 magnitude by mid-March, but it remains very low in the sky. It starts in the constellation of Ophiuchus, rising about 03.00 UT and reaching culmination (at an altitude of 17°) just before sunrise.
On 12th March the red planet moves in to Sagittarius, and despite a month going by, the rising and culmination times remain the same.
On the morning of 10th March the Last Quarter Moon is approximately 3° above Mars.

Jupiter: This is another planet that is now low in the sky. Jupiter is in Libra, shining at -2.1 magnitude which means despite the low altitude it will be very easy to see.
It is at its best just before dawn as it is currently rising around 01.30 UT and culminating at a height

of 21° near 06.00 UT (which is 90 minutes before sunrise). By mid-March it rises two hours earlier and culminates at approximately 04.00 UT.
On the morning of 11th March the waning gibbous Moon will be 2° above Jupiter.

Saturn: Yet another planet that is in the far south of the sky, this time in Sagittarius.
As with Jupiter, if you want to see Saturn then you will have to look just before dawn.
In mid-February it rises about 2 hours before the Sun and is around 13° above the south eastern horizon by sunrise. By mid-March the planet rises 3 hours before the Sun and is nearing culmination by sunrise.
Saturn shines at +0.6 magnitude which helps in finding it as it is easily seen with the naked eye. The rings continue to be wide open at an angle of 26° making them easy to see in a telescope.
If you need a guide to finding Saturn, on the morning of 11th March the crescent Moon will be about 2° away.

Uranus & Neptune: This is your last chance to get a decent look at Uranus before it gets too close to the Sun and the apparition comes to an end. Shining at +5.7 magnitude (so you will need binoculars to see it) in the constellation of Pisces, Uranus is 46° high just past culmination at sunset in mid-February. It reaches the south western horizon about 5 hours later at 23.00 UT. At sunset in mid-March the planet is much lower at an altitude of 28° and sets near 21.00 UT so you only have an hour or so to view it before it gets into the horizon murk.
Neptune is already too close to the Sun to be seen.

Occultations: Unusually, there are two occultations of first magnitude stars this session, but both will be difficult to see.
The first involves the +0.9 magnitude Aldebaran in Taurus. It is occulted by the First Quarter Moon on 23rd February at 16.37 UT. While the Moon is 49° high in the south east at the time, sadly the Sun is still 8° above the western horizon so it will still be daylight. However, Aldebaran reappears from behind the Moon at 17.44 UT by which time the Sun will be 3° below the horizon so the sky will be in very bright twilight. Even so, you should still see the event in a telescope or even binoculars.
The second occultation is of Regulus, the brightest star in Leo. It occurs on 1st March at 06.08 UT. The Moon will be one day before Full, and will be a low 5° above the western horizon. Morning twilight will be well underway and so, combined with the low altitude and bright Moon, you will need optical aid of some sort to see this occultation.

Dwarf planets/Asteroids: The dwarf planet Ceres continues to cross Cancer, but it fades slightly from +7.0 magnitude, reaching +7.6 by mid-March.
2 Pallas is found in Eridanus shining at +9.0/+9.1 magnitude.
4 Vesta brightens, going from +7.6 to +7.3 magnitude as it moves across Ophiuchus.
7 Iris starts in Aries and enters Taurus on 18th February. Iris starts at +9.3 magnitude but fades to +9.7.
8 Flora also fades, reaching +10.2 magnitude by mid-March after starting at +9.4. Flora can be seen in Gemini.

LAST MONTHS TALK

by Gwyneth Hueter

Last month's talk: 'Magnetospheres of the planets'

Catriona Jackman is an Associate Professor at Southampton, and her main interest is in the outer planets and Mercury.

She has worked on Cassini since the beginning of her doctoral studies, and reminded us first of our early misconceptions about the outer reaches of the Solar System.

She started off with a kind of 'did you know' session, so I'll continue in the same frame of mind, and hope someone reads this.

Did you know?

- Jupiter's magnetic field was first identified by Bernard Burke and Kenneth Franklin in 1955.
- Have you heard of Gary Flandro? Well? In the 1960s he realised that there would be a planetary alignment not to be repeated for 177 years. He was the one who got JPL to start putting together plans for the two Voyager missions. In 1966.
- Of course you'd have to run the gauntlet of the Asteroid Belt first. Well that was fake news in the end.
- Jupiter comes in very useful for gravity assists, because of its great mass. The lengthy Ulysses mission did a flyby of Jupiter in 1992 in order to get enough momentum to do an orbit over the Sun's poles. Ulysses was able to show how the Sun's magnetic field interacts with the Solar System, and that was far more complex than expected.
- The three Galilean satellites Io, Europa and Ganymede have an orbital resonance: four

orbits of Io equal two of Europa equal one orbit of Ganymede. This is one reason Io gets gravitationally churned up so much. Jupiter's magnetic field also affects Ganymede; Ganymede also has a magnetic field.

- The Cassini-Huygens mission as revealed that Enceladus is a possible harbour for life. (-even more so than Europa, according to Prof Jackman, because it has molecular hydrogen, and this could support life.)
- The Juno mission has provided us with some wonderful views, as has New Horizons, but it is still not known whether Saturn has a solid core.

Before you run off and google all this interesting stuff I just would like you to remember a familiar face of RAL, who I was surprised to find that she had only given two talks to us since 2013, but seemed far more public than that. She was very approachable and loved her science. She showed us round RAL when I went there for a tour some years ago. There is a wonderful write up on her in the latest SPA magazine. She was a stalwart of the SPA, having held posts as President and Treasurer. Let's remember her fondly, Dr Helen Walker (1953-2017).

Tulip Nebula (SH2-101) Clifford Marcus

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.

To post messages to the list, please send them to abingdonas@yahoogroups.com . Please note that you will need to sign up with a YahooID if you do not already have one. You can do this on the above page.

Further information about the mailing list can be found on the abingdonas webpage at : http://groups.yahoo.com/group/abingdonas/ .

Society Display at Oxford University Astronomy Event – more pictures on the society Facebook page - https://www.facebook.com/AbingdonAstroSoc/ Although confusingly we seem to have two groups on Facebook.

DATES FOR YOUR DIARY

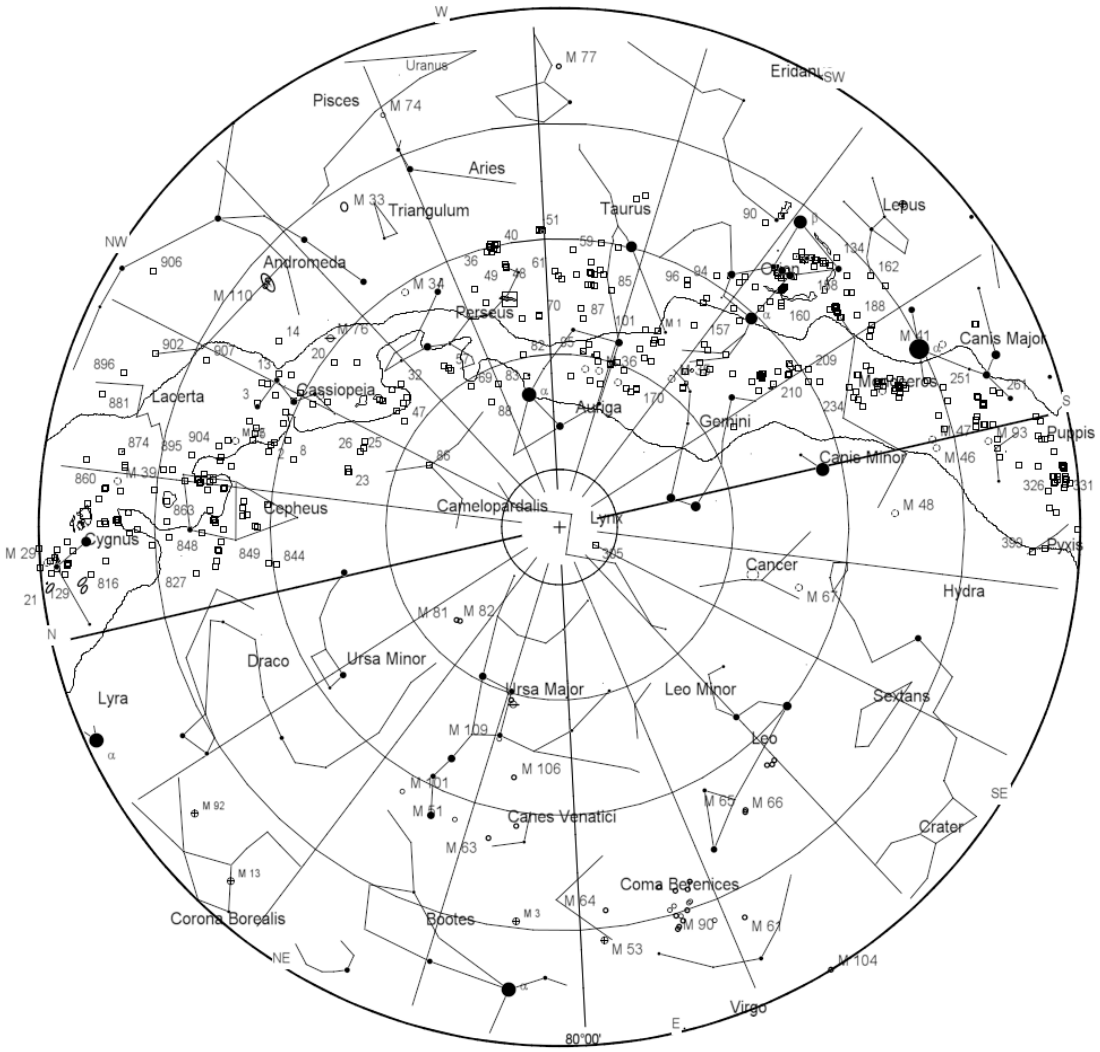
26th February 8pm Beginners' Meeting in the Main Hall., talks to include Astrophotography with a DSLR, Near Earth Objects and setting up an equatorial mount (although subject to change)

Observing evening: An extra Observing evening has been inserted on the 19th-21st Feb 2018, again focusing on the Moon at Frilford Heath Golf driving range. Contact Trevor Pitt or Steve Creasey for details.

The BAA Deep Sky Section has its annual meeting on Sunday March 4 at Bedford School. More details at https://www.britastro.org/node/11440. Note you have to book in advance for this meeting.

STAR CHART

The night sky at 10 pm (GMT) Monday 15th January 2018



MOON PHASES: