

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

Next Talk
11th November 2019
MeerKat
Dr Ian Heywood
University of Oxford

EDITORIAL

I apologise for the lack of meeting reports in the last few Spacewatch's but unfortunately Gwyneth has been unable to attend any of the recent meetings so if anybody else feels they can help with writing up meeting reports along with Gwyneth that would be useful. The society has also bought some new books for the library which should be available as soon as they have their tickets done. The worn record of helping out with after tea talks also continues and we really need some help with these or they will have to be wound up and the meetings finishing after the tea break, We had planned to do a public viewing of the Mercury transit on the 11th November from Abingdon town hall but unfortunately that has not worked out so we are going to try for one on Bury down. Details as soon as we finalize them. The transit starts at mid-day and will still be on going when the sun sets so we need a good southern and western horizon. The other news is that we are replacing the November beginners meeting with a social at the Packhorse pub at Milton Hill, details from Steve Creasey. Partners are welcome at this as well. I understand that the first observing session of the season was a success with a number of people and telescopes turning up at the Frilford site. Hopefully we can continue this run Unfortunately I was not able to make this as I was still unpacking after the Kelling star party, although I think my telescope spent much of its time under water there with terrible weather during the day at least. I did have the chance to try out a couple of interesting filters I have had for a long time, namely a He II filter and an anti- nebula filter If you have not be put off by the poor weather then the International Astronomy show in Coventry is worth visiting both for the lectures and the chance to spend some money, see the Diary column for details.

The poor weather has meant that I have not yet had a chance to try out any of the star trackers I have for night scape imaging but given my poor attempts at the lunar eclipse I do not hold out much hope for my skills as an imager, although yet another telescope purchase

means I may be catching up with Trevor on the number of telescopes owned. Maybe time to start off loading some!!

THE NIGHT SKY FOR OCTOBER 2019

By Steve Creasey & Cristina Garcia Pozuelo Sanchez

The observatory has been debugged (this isn't a technical term, it was literally removing insects and spiders from every nook and cranny!), the kit has been cleaned and the first images of the season have been taken as September brought us some clear skies and some unseasonably warm temperatures, which made being out comfortable for a change, but also for some turbulent seeing conditions. One of my imaging goals for this season is to try and do some more nightscape photography, combining wide field astro images with night time landscape. I will update on my successes and failures as they happen.

The Planets

Mercury & Venus

Mercury is at greatest eastern elongation (25°) east of the Sun on the 19th. Unfortunately, because of the shallow angle of the ecliptic, the planet lies very low in the bright evening twilight. In order to locate Mercury during October, it will be necessary to use binoculars, scanning just 5° above the horizon at around 17h30 above the WSW horizon. Beware not to confuse Mercury with **Venus**, which is nearby. Both planets are in conjunction on the 30th, when Mercury will be found 2.6° south of the much brighter Venus. The thin crescent Moon is in the same area around this time, and may be of assistance in locating the two planets, which are 4° below the Moon on the 29th.

Mars

Throughout October, Mars rises before the Sun at around 05h, so that as the month progresses and the Sun rises later each morning, the planet becomes more readily visible in the SE sky. The planet's visible magnitude is around +1.6. At the beginning of October, Mars lies near the star Zavijava (beta

Virginis), and moves rapidly eastwards towards Spica (alpha Virginis) a blue white star 260 light years away at visible magnitude +1.0 (brighter than Mars), and ends the month a degree or so from the star theta Virginis. On the morning of the 26th, the thin waning crescent Moon (with earthshine on its dark hemisphere), may be seen approaching Mars. Look in the ESE sky at 06h and you will see the Moon 8° above the 'Red Planet'.

Jupiter

Jupiter is still readily visible in the SSW sky at an altitude of 10° above the horizon at 18h00 on the 1st. It lies in southern Ophiuchus below the star Savik (eta Ophiuchi). The planet sets in the SW at 20h at the start of the month, and by 18h30 on Hallowe'en. The thin waxing crescent Moon is in conjunction with Jupiter on this last day of the month and at 17h00 the angular distance between the two is just less than one degree (two Moon widths), producing a good 'photo call' for photographers of celestial events. Jupiter's four Galilean moons can still be seen, changing positions around the planet on a nightly basis.

Saturn

Saturn is an evening object low in the constellation of Sagittarius, and should be looked for in the evening in the SSW sky. It sets at 22h on the 1st of October, and at 20h on November 1st. The rings continue to be favourably placed for observation, but atmospheric turbulence near to the horizon, may create an unsteady image of the planet through a small telescope. Saturn's altitude at the end of the month at 18h is just 10° above the SSW horizon. On the evening of the 5th, the first quarter Moon passes very close to Saturn, and at 20h of that night the Moon will be seen just 1° (two Moon widths) below Saturn. Observers in the southern hemisphere (South Africa) may see an occultation of the planet by the Moon

Uranus

Uranus is at Opposition (opposite the Sun in the sky), and at its closest distance to Earth on the 28th and is theoretically visible all night. It is at the threshold of naked eye visibility (+5.7), the planet lies in Aries, some 11° to the south of Hamal (alpha Arietis). The planet culminates at midnight at an altitude of 50° above the southern horizon.

Neptune

Neptune culminates at an altitude of 30° in the south during the mid-evening, in Aquarius, midway between the star phi, and 83 Aquarii. It is therefore visible, with optical aid in the evening sky. Its current magnitude is +7.9

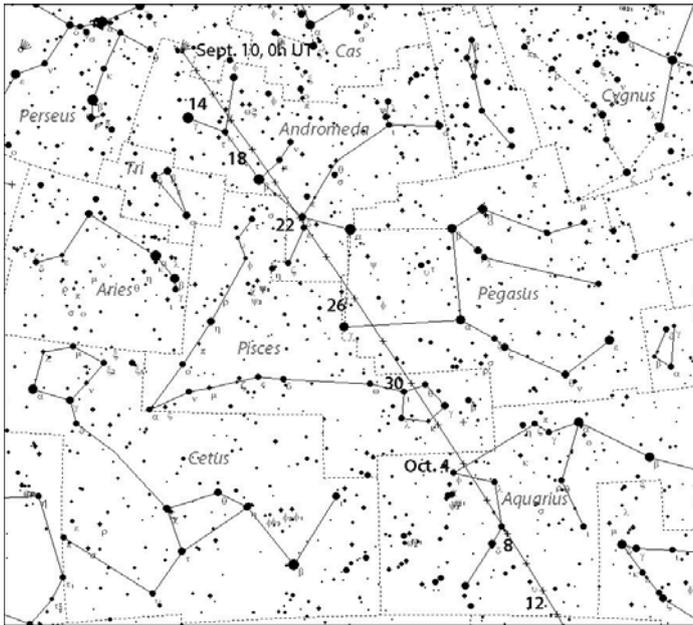
Meteor showers

The Orionids - Some more remnants of Halley's Comet may be seen in the early hours from the 22nd to 23rd, when the earth encounters the Orionid stream. Up to 25 shooting stars an hour are expected, and conditions for observation this year are favourable since the Moon is a waning crescent and out of the way. These meteors tend to be fast moving and often leave persistent trains. The biggest number of Orionids will be visible just before dawn, when the constellation of Orion is high in the south. The radiant, or point of origin of the shooting stars is some 10° above Betelgeuse, the star which marks the right shoulder of the Giant Hunter.

The Draconids - Earlier in the month, at between 23h and 00h on the 8th/9th an increase in the number of shooting stars overnight marks the peak of the Draconid or Giacobinid (whose parent body is the comet Giacobini-Zinner) meteor shower, with its radiant in the constellation of Draco the Dragon. Conditions are difficult, as the waxing gibbous Moon is in the sky adding light pollution to the sky.

Comets

Africano (C/2018 W2) is looking like it will still be well positioned for October. The comet is currently running about 8th magnitude so should be visible in small telescopes. It is a large asymmetric patch with an off centre nucleus. The other comets around at the moment will probably requires larger telescopes to see. I was lucky to see all three at Kelling but I was using my 22" Dobsonian so that is really cheating. We did see W2 clearly though in a 7" Mak-Cass



NGC 6543 Cats Eye nebula in Draco

NGC 188 OC in Cepheus – this one of the oldest know open clusters so is of interest because of that.

Another interesting target in Cepheus is the planetary nebula NGC 40, also known as the Bow tie nebula. This is one of the few planetary nebulae that does not respond well to an OIII filter as it has very little if any OIII emission so a UHC type or even an H-Beta filter would be the one of choice for this PN.

LAST MONTHS TALK

by Gwyneth Hueter

June's talk –

Rob Peeling: William Henry Smyth and the Bedford Catalogue

Deep Sky Objects

October is a good month for deep sky, we still have the Milky Way over head early in the evening, with all of the Nebulae and open star clusters contained therein, there are still some globular clusters around just outside the plane of the Milky Way, and there are now also some nice Galaxies to see even with a small telescope.

NGC 6822 Barnards Galaxy in Sagittarius 1.6 million light years away. Part of the local group of galaxies this is a dwarf irregular galaxy with only an estimated 10 million stars.. This will be a challenge to see because it is large and faint and although can be seen easily from lower latitudes it is a challenge to see from the UK

M33 Triangulum Galaxy in Triangulum 2.73 Mly

IC 342 The Hidden Galaxy. In the constellation of Camelopardalis. The nickname is given due to its location in a dusty area near the galactic equator, making it quite difficult to see. It is a fairly close neighbour at between 7 – 11 Mly

M30 Jellyfish Cluster GC in Capricornus 27070 LY

NGC 6934 GC in Delphinus

NGC 7662 Blue Snowball nebula PN in Andromeda

NGC 7027 Magic Carpet nebula in Cygnus

M57 Ring nebula in Lyra

WH Smyth has been described variously as ‘Naval officer, Cartographer, Gentleman Scientist’ and his early years were spent at sea. He also served in the Napoleonic wars. He had a full life, and my copious notes mean there are a lot of facts and names. Luckily I have Allan Chapman’s very revealing ‘The Victorian Amateur Astronomer (2017)’ to clarify some of my scribble.

He was born in 1788 from parents who had lost their land in America after the War of Independence. His earlier descendants appear to have come from Lincolnshire. According to Allan, it is said he ran away to sea as a lad. He went out to the Indies where (Rob’s info) he was rescued at sea after getting washed overboard. He travelled to Mauritius, Australia and New Zealand. He came back to India in 1808. Apparently he was still just one of the crew at that time, but by 1810 he was captain of a gunboat (really just a rowing boat with a cannon). He battled against the French in Cadiz in the Napoleonic wars.

And this was when he started charting the southern Spanish coast. After the ending of the Napoleonic wars he was promoted to lieutenant and began charting the coast around Naples and Sicily. He also fell in love with the daughter of the British Consul in Naples. He married Eliza

Anne (Anarela) Warington in 1815. He as knighted by the King of Naples, although this was not a British decoration.

He was in charge of a Brig called Scylla, and continued mapping in his spare time, but somewhere in all this time he bumped into the Roman Catholic priest Giuseppe Piazzi, known for his discovery of Ceres on the first day of 1801. Astronomy seems to have taken hold here. He proof read Piazzi's observations made using the five foot Palermo Circle. Smyth's son Charles Piazzi Smyth had Piazzi as his godfather.

Various other trips followed after that, including being part of the Beagle adventure to survey South America. After that he set up home in the UK with Anne in Bedford and also a house in Chelsea (FYI, now owned by Keith Richard, 3 Cheyne Walk). It was clear that, when he set up the Bedford Observatory with its nearly 5.9" refractor, that he had a wealth of experience and the clock drive he had in 1829 was one of the first in the UK. It was donated to him by Richard Sheepshanks (who featured in Graham's talk in May) and ended up on various trips round the world including the Venus transit of 1874, Jamaica and Hong Kong. Its optical tube assembly (9' long) ended up in the Science Museum in 1924 after a stint at the RGO. He also had a transit instrument and two circles, for measuring RA and declination, respectively. He had a Dollond micrometer, made from Icelandic calcite. He trialled the Barlow lens too, courtesy of Peter Barlow.

In 1839 he moved to Cardiff to supervise the building of the dock at West Bute and was dismissed rather coldly when he was late for work after his wife died. He had sold his aforementioned 5.9" refractor to Dr John Lee (more about him below).

Allan's book (p78ff) describes the energy and passion of Smyth as he compiled the advice for amateurs in his 1844 part one Cycle of Celestial Objects, of which part two is the Bedford Catalogue. In part two he recorded what he observed and measured. He did a lot of extensive observations of Porrima in an attempt to work out the orbit, but was slagged off some years after his death in 1865 because of accusations of inaccuracy

of some of his conclusions. Luckily he had already explained that it was difficult to make accurate estimations of orbits of double stars. He had concluded Porrima's orbit to be between 143 and 180 years (corrected by today's observations to 169 years). John Herschel had previously given two estimates of 513 years and 629 years. He also left hand written observations of M11 and M66 (and lots more, I daresay).

Smyth died in 1865 at his home (St John's Lodge) in Stone, near to Dr John Lee, his friend and benefactor. Dr Lee was a wealthy and magnanimous magistrate whose interest in astronomy was fired by visits to Smyth's observatory. He had inherited Hartwell House, between Stone and Aylesbury, and had built an observatory using measurements from Smyth (by now upgraded to Admiral).

Hartwell House is now a posh National Trust hotel and the observatory is no more. St John's Lodge, renamed Stone House is now an old people's home run by Peverel Care.

DATES FOR YOUR DIARY

21st October 8pm Beginners' Meeting in the Main Hall., talks to include Meteorites, The Mercury Transit and collimation , although subject to change

Observing evening: Observing evening: The next observing session will be on the FCN 28th Oct - 30th Oct at Frilford Heath Tubney Golf driving range, note that this is a new location and maps will be on the website. As always go/no go notes will be posted on the newsgroup as well as the Facebook page so please look there for more info or contact Steve Creasey for details.

International Astronomy Show 15-16th November (Warwick) for more details see <https://www.ukastroshow.com/>

