

SPACEWATCH

the newsletter of the Abingdon Astronomical Society

14th September
Famous Women in Astronomy
Mike Frost
BAA
Talk will be online

EDITORIAL

I hope that you all had a good Summer (well as good as it could be) We were graced by Comet C/2020 F3 (NEOWISE) and after the disappointments of Y4 and F8 earlier in the year I hope you all managed to see the brightest comet since Hale-Bopp. For those that didn't we have a selection of images in this newsletter. Unfortunately, The Perseids were mostly clouded out and from other reports the display did not seem to be that good anyway.

Unfortunately as everyone is well aware, the Covid situation has not really improved and the social distancing regulations have meant that we cannot get access to our usual meeting place, for how long is unclear, but we have assumed that this will be until at least Christmas. As such the committee have worked together to put together a program of talks that can be delivered by Zoom for both the main meetings and the beginner's meetings. The format of the meetings will of course change and we will have only two talks at the beginner's meetings and a truncated format at the main meetings as the feeling was it is very difficult to concentrate looking at a screen for long periods. We are also going to try doing some virtual observing sessions. It is also now seems unlikely that any of the outreach events planned in November will go ahead either. I understand that this is not ideal and the interactions that took place at the meetings and afterwards at the Spread Eagle will be missed but in order to keep some form of interaction going this is the best we can do. I understand that there has been a vast increase in people doing things over YouTube and other formats and the wish for public adulation by some members of the wider amateur astronomy community has only increased during lock down which is sad. However, at this time, we do not intend to record talks and put them up for viewing after meetings. We may revisit this option for the beginners meetings but not for the main meetings. It is not yet clear how we will send out the Zoom details for meetings but this will be almost certainly be by e-mail so it is vital that

we have a current e-mail address for you. We are going to try and get Spacewatch out at the beginning of every month so it becomes a vehicle for giving out information on upcoming meetings and observing sessions. We have decided to hold the delayed AGM in October so if you have anything you would like raised at that meeting or would like to consider standing for the committee please bring it to the attention of the committee. This may be an unusual session in that we will have two AGM's in it 😊 We are working on understanding how we can do voting at the AGM with Zoom and how the proposals will be raised and voted on. Obviously we hope that we may be back having real meetings next year and as soon as we have some news on this and when we can actually meet again then we will communicate it via SpaceWatch. We will also try and keep the FB page and the mailing list up-to-date with what is going on. It is worth noting however that many of the committee or not on FB so messages posted there may get a delayed response. As you will see the images in this Spacewatch mostly come from Steve and it has been a little disappointing that given the clearish skies in June/July we did not get more. August of course has been poor but hopefully September may be better so time to dust off those cameras and start getting some images for the next Spacewatch.

As expected, the PAS show has been cancelled and it is unclear, to me at least, that even the European AstroFest will take place in January



C/2020 F3 Neowise over Long Wittenham Clumps – Chris Cook

The editor of "SpaceWatch" is Owen Brazell, who would very much appreciate your stories & contributions. In particular whilst many fine images are being posted on the discussion group it would be nice to have some in the SpaceWatch. Please send any news, observations, photos, etc. to:

Mail: Owen Brazell, 15 Spinage Close,
Faringdon, Oxfordshire SN7 7BW or
owenb1367@gmail.com

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

NOTICE OF ANNUAL GENERAL MEETING

THE NIGHT SKY FOR SEPTEMBER 2020

The Annual General Meeting for 2019/20 will take place on **Monday 12th October 2020** by **Zoom** at **8.00 p.m.**, and will be followed by a talk by Andrew Steel (Abingdon AS) on Edwin Hubble. Zoom details to follow.

Agenda

1. Apologies for absence
2. Minutes of the previous Abingdon AS AGM (held 13/5/2019)
3. Matters arising
4. Presentation of Committee's report
5. Presentation of Treasurer's report and Adoption of accounts
6. Membership fees for 2020/2021
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.

Well this surreal situation we find ourselves in continues. I hope you are all ok and had a great summer break, despite all that is going on. This summer has been a memorable one for lots of reasons, some amazing and spectacular and some very sad.

The Perseid meteor shower produced some beautiful bright meteors (some of which left a glowing tail for a second or two) for those of us lucky enough to have some clear skies. I saw quite a few, between the clouds, in the couple of weeks either side of the peak, and Cristina got to see some in the clearer skies of Spain.

We have had a glut of incredible NLC (Noctilucent Cloud) displays

The Comet C2020 F3 (NEOWISE) turned out to be spectacular in mid July, and the weather was kind to us for most of the best week for viewing it.

One particular night we were out to view and image the comet, we also had visible, Saturn and Jupiter, the Milky Way Galaxy stretching across the sky, Mars, then the best NLC display I have ever seen, with the comet right next to it, we then saw Venus rise, and finally, as if by request, a fly by of the ISS (International Space Station)! I think that was probably a once in a lifetime astronomical evening of events, and I feel very lucky to have seen it.

It did make up for all the other times that we have been let down by a promising Comet, or

been clouded out when there has been.....a meteor shower, lunar eclipse, solar eclipse, transit, occultation, conjunction and any other event that always seems to get ruined by our weather.

Lets hope we get as lucky in this upcoming Astronomy season

The Planets

Mercury is too close to the Sun in the evening sky to be observed during the whole of September.

Venus is the brightest 'stellar' object in the morning sky, rising between 01h and 02h throughout September. The planet's visual magnitude is -4.2, and through a telescope exhibits a gibbous phase. It lies at a distance of just less than 1 astronomical unit (the mean Sun-Earth distance). The waning crescent Moon with earthshine is in conjunction with Venus during the morning of the 14th, when the two are almost 4° apart. This takes place in the constellation of Cancer the Crab, with the beautiful Praesepe cluster, M44, between the two. The star just to the north of the Moon is Ascellus Borealis (Northern Ass), and the star just 1° to the upper left of Venus is Ascellus Australis (the Southern Ass). This conjunction should be an interesting photographic target despite the early morning time.

Mars grows brighter as the month progresses as it heads towards its opposition on October 13th. The planet's visual magnitude increases from -2.0 to -2.5. The 'Red Planet' is a conspicuous object in the September night sky, rising soon after sunset in the western part of the constellation of Pisces, where it stays till after opposition. The planet has an angular diameter of around 21 secs of arc during September. During the morning of the 6th, there is a beautiful close conjunction between the waning gibbous Moon and Mars. The planet lies less than a degree to the north of the Moon, and this will give astrophotographers the chance to capture the two on a single image. The sight of the two together in the sky will be spectacular to the unaided eye and in binoculars. From the Mediterranean and North Africa, including Turkey, southern Greece, Cyprus, Malta, Sicily, southern Italy, southern Spain and

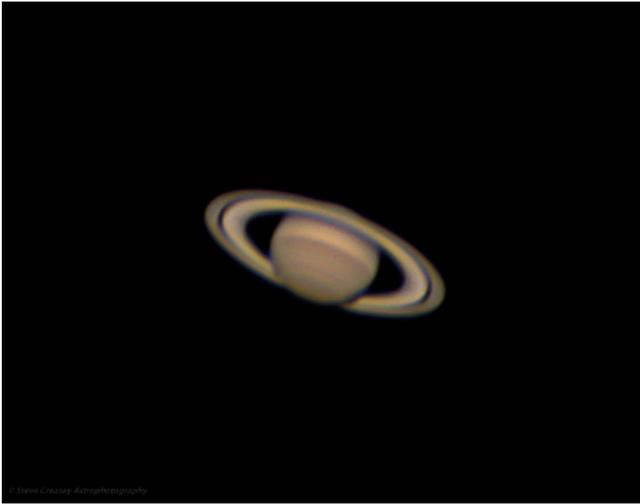
southern Portugal, an occultation of the planet by the Moon may be observed.



Mars – Steve Creasey

Jupiter - During September, Jupiter is an evening object, setting at midnight as the month begins and at 22h00 at the end of the month. It lies in the constellation of Sagittarius and so never attains a great altitude as seen from the UK. Saturn lies some 8° to the east of Jupiter. Jupiter's visual magnitude is -2.4 during the month. The Moon, just after first quarter may be seen approaching Jupiter on the evening of the 24th; on that evening Jupiter lies 6° to the upper left of the Moon. Take the opportunity to observe the Galilean satellites; Io, Europa, Ganymede and Callisto as the configuration changes on a nightly basis.

Saturn - As mentioned above, both Jupiter and Saturn, are in the constellation of Sagittarius, however Saturn is much fainter than Jupiter, with a visual magnitude of +0.4. Saturn and the Moon are in conjunction in the evening of the 25th, when at 21h Saturn is 3.5° north of the waxing gibbous moon.



Saturn – Steve Creasey

Uranus at magnitude +5.69 lies in Aries and is visible most of the night. Through an astronomical telescope has the appearance of a tiny greyish green disc. Uranus lies just over 10° to the south of Hamal, the constellation's brightest star.

Neptune comes into opposition and its nearest to the earth on the evening of the 11th. It lies in the constellation of Aquarius, just south of the Pisces border. The planet's magnitude is +7.83, too faint to be seen by the unaided eye, but visible in binoculars less than a moon-width to the lower left of the +5.5 magnitude star 96 Aquarii as a bluish point of light.

September is the best month to observe the ethereal **Zodiacal Light** during the early mornings when the Moon is not present in the sky, and you are well away from light pollution. Look towards the east before the onset of morning twilight, around 03h30, and you should see a faint cone of light pointing southwards at a steep angle of 60° . This phenomenon is caused by the Sun illuminating the disc of fine dust, which is the remnant of solar system formation 4.5 thousand million years ago. The best days to observe this morning cone are from Sept 17th to the end of the month.

The **Autumnal Equinox** on Sept 22d at 13h31 marks the official start of Autumn. Day and night are almost equal in length again, and in the northern hemisphere, autumn lasts for 89.85 days. The Earth-Sun distance at this time is 150 125 903 km.

Meteor showers

The amount of meteors you are likely to see at the peak of a meteor shower, is given as the ZHR (zenithal hourly rate), this is a guide, it is calculated for an optimal dark sky, so the amount you actually see will depend a lot on the level of light pollution you have in your area. There have been plenty of occasions where the peak has thrown up a surprise and the numbers have been way above the predicted ZHR, so always worth a look if you get the chance.

The **Aurigid** meteor shower will be active from 28 August to 5 September, producing its peak rate of meteors around 31 August, however it is a fairly low ZHR at only around 6 at its peak.

The September ϵ -**Perseid** meteor shower will be active from 5 September to 21 September, producing its peak rate of meteors around 9 September, this is also another shower with a low ZHR at only 5 at its peak.

The Daytime **Sextantid** meteor shower will be active from 9 September to 9 October, producing its peak rate of meteors around 27 September.

The shower will not be visible before around 04:39 each night, when its radiant point rises above your eastern horizon. It will then remain active until dawn breaks around 06:20.

Comets

We were obviously truly spoilt with the views of comet F3 NEOWISE in July, and may not see another like that for years, however there are always new comets being discovered and the next one may be even better (unlikely, but we have to keep telling ourselves that).

C2020 F3 (NEOWISE) - is a long period comet with a near-parabolic orbit discovered on March 27, 2020, by astronomers during the NEOWISE mission of the Wide-field Infrared Survey Explorer space telescope.

It has an Orbital period of 6766 years and is currently in the constellation of Virgo. Its latest observed magnitude is around 7



F3 – Steve Creasey

COMET 88P(HOWELL) – is a periodic comet with a 5.5 year orbital period. It was discovered on 29 August 1981. In 1975 the comet's perihelion was 1.9 AU, but a close approach to Jupiter in 1978 perturbed the perihelion distance closer to the Sun. During the 2009 apparition the comet became as bright as apparent magnitude 8. Currently low in the south in the early evening, in the constellation of Libra. Its current observed magnitude is around 9.7. Next perihelion is the 26 September 2020.

C/2017 K2 (PANSTARRS) - is an Oort cloud comet with a hyperbolic orbit, discovered in May 2017 at a distance beyond the orbit of Saturn when it was 16 AU from the Sun. Preccovery images from 2013 were located by July. It has been in the constellation of Draco since July 2007. With an observed mag of 15.7 this will be very difficult to find even for those with larger scopes.

C/2020 P1 (NEOWISE) – yes NEOWISE is at it again. This small comet was discovered by NEOWISE in August and is currently in the deep southern hemisphere. However, if it survives perihelion (and this is a big if as the nucleus appears to be smaller than the Bortle limit for survival) then it could be a 8th magnitude comet in October. More details in the October SpaceWatch.

C/2020 M3 (ATLAS) – it seems that there is maybe another comet inbound that may get up to 8th mag or so in October in C /2020 M3 (ATLAS). Again this is currently in the southern hemisphere but will come north in October. More details in the October SpaceWatch.

Deep Sky Objects

This month we have a nice selection of Planetary Nebulae and Open Clusters

NGC 6741 The Phantom Streak nebula in Aquila, mag 11

NGC 7009 Saturn Nebula in Aquarius, mag 8

NGC 6790 Planetary Nebula in Aquila, mag 10.45

M27, NGC 6853 The Dumbbell Nebula in Vulpecula, mag 7.5

M57, NGC 6720 The Ring Nebula in Lyra, mag 8.8

NGC 6629 Planetary Nebula in Sagittarius, mag 11.3

NGC 6604 Open Cluster in Serpens, 2 degrees north of the Eagle Nebula, mag 6.5

M18, NGC 6613 Open Cluster in Sagittarius, mag 7.5

M11, NGC 6705 The Wild Duck Cluster, OC in Scutum, mag 5.8

M16, NGC 6611 The Eagle Nebula Star Cluster, in Serpens

OTHER ONLINE TALKS

All meetings for the first half of the session will now be online using Zoom.

The Virtual Astronomy Club:

<https://www.star-gazing.co.uk/WebPage/virtual-astro-club/> who are offering free 7 pm Zoom meetings on a Tuesday and Thursday. PDFs of recent talks are here:

<https://www.dropbox.com/sh/9k7medirj1gkwlt/AA-C4dqakRuUiYIJHgz0KKqma?dl=0>

The BAA are also doing virtual webinars which are open to all at <https://www.britastro.org/meetings>

Look for the webinars page. They are also doing some presentations via Zoom as well which can be seen on their web page. If you miss them then they are available on their YouTube channel afterwards

There are a number of other organisation such as the RASC (Royal Astronomical Society of Canada) who are also putting presentations up on their YouTube channels and YouTube is also a library for an awful lot of other astronomical presentations so there is no excuse not to get your fill over the summer.

Observing evening: As the Covid situation has not really improved and physical observing sessions cannot meet social distancing guidelines we have decided to look at virtual observing sessions for the near future, starting in October

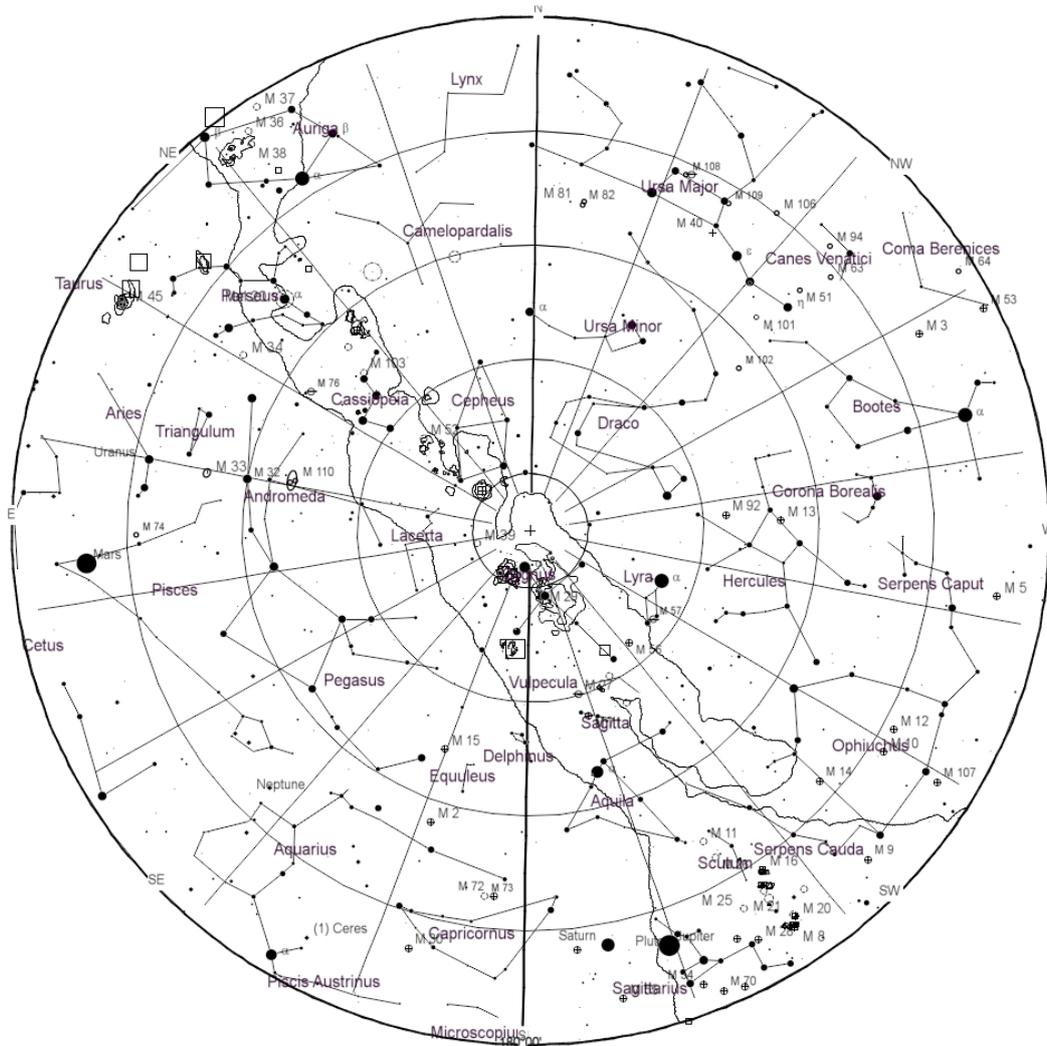
Beginners meetings: As we no longer have access to our hall due to the Covid situation we are going to be running a series of Zoom beginners meetings. The next one will take place on Sep 28th and the topics to be covered include Mars and Visual vs Imaging telescopes. Zoom details will be published nearer the time

New Mailing List: If you have not already done so, why not subscribe to our new email mailing list. The list is called 'aaslist'. 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. This will also in the current circumstances be the main form of information going forward To subscribe to aaslist and to read through previous messages click on:

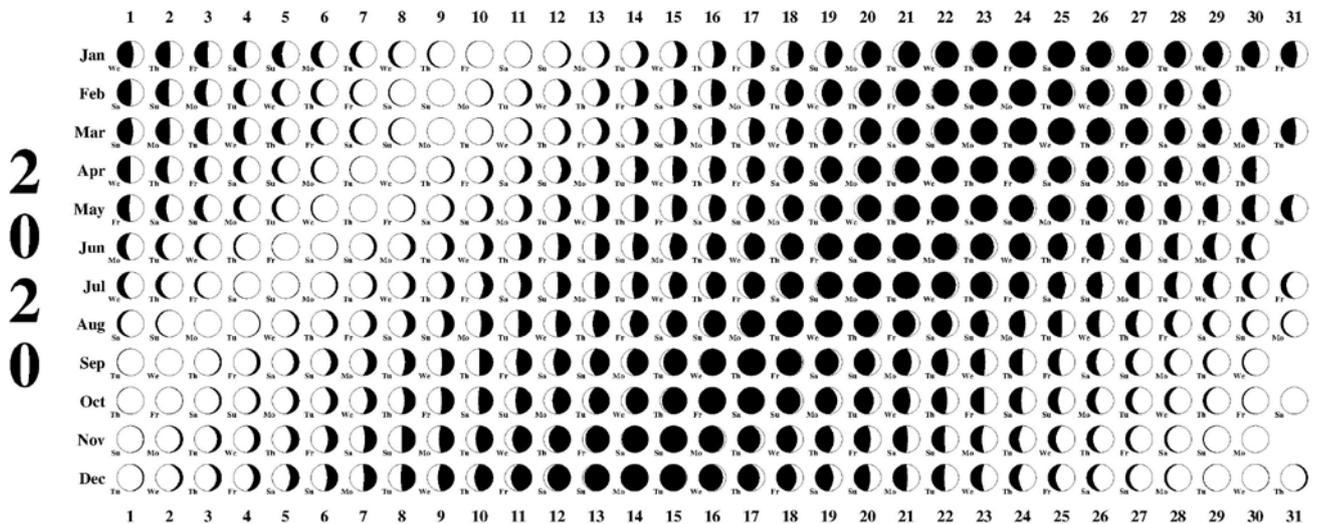
<http://lists.abingdonastro.org.uk/mail.cgi/list/aaslist>

STAR CHART

The night sky at 22:00 (BST) Tuesday 15th September 2020



MOON PHASES: 2020





C/2020 F3 (NEOWISE) – Steve Creasey



Noctilucent clouds – Steve Creasey



Noctilucent clouds – Owen Brazell





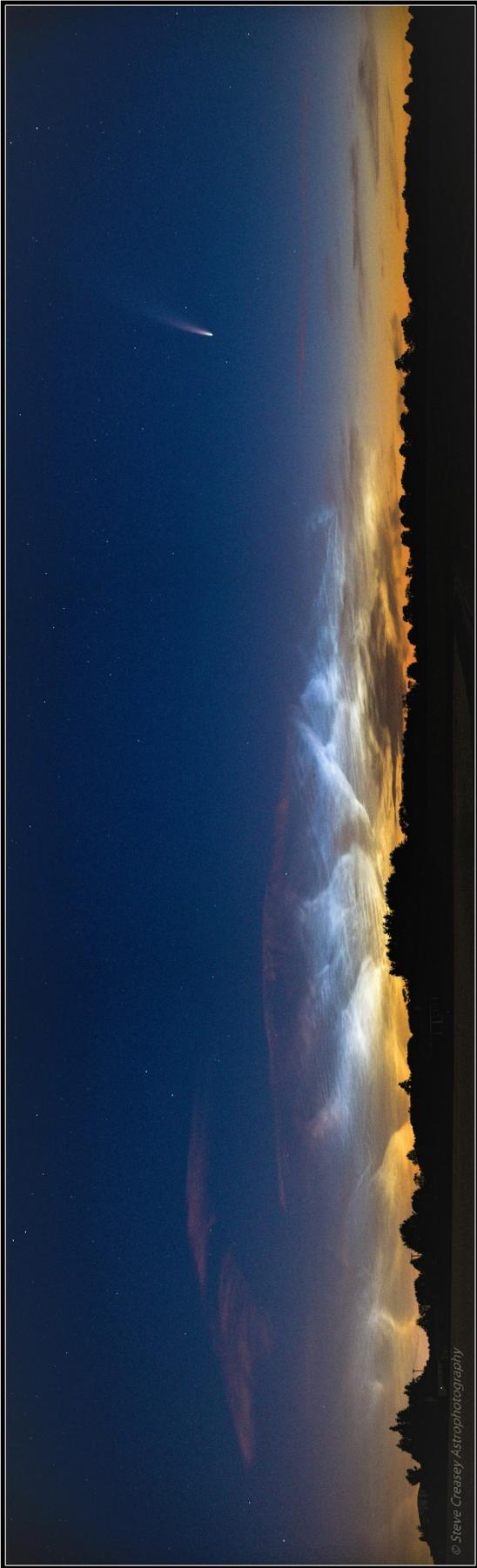
Arp 286 – John Napper



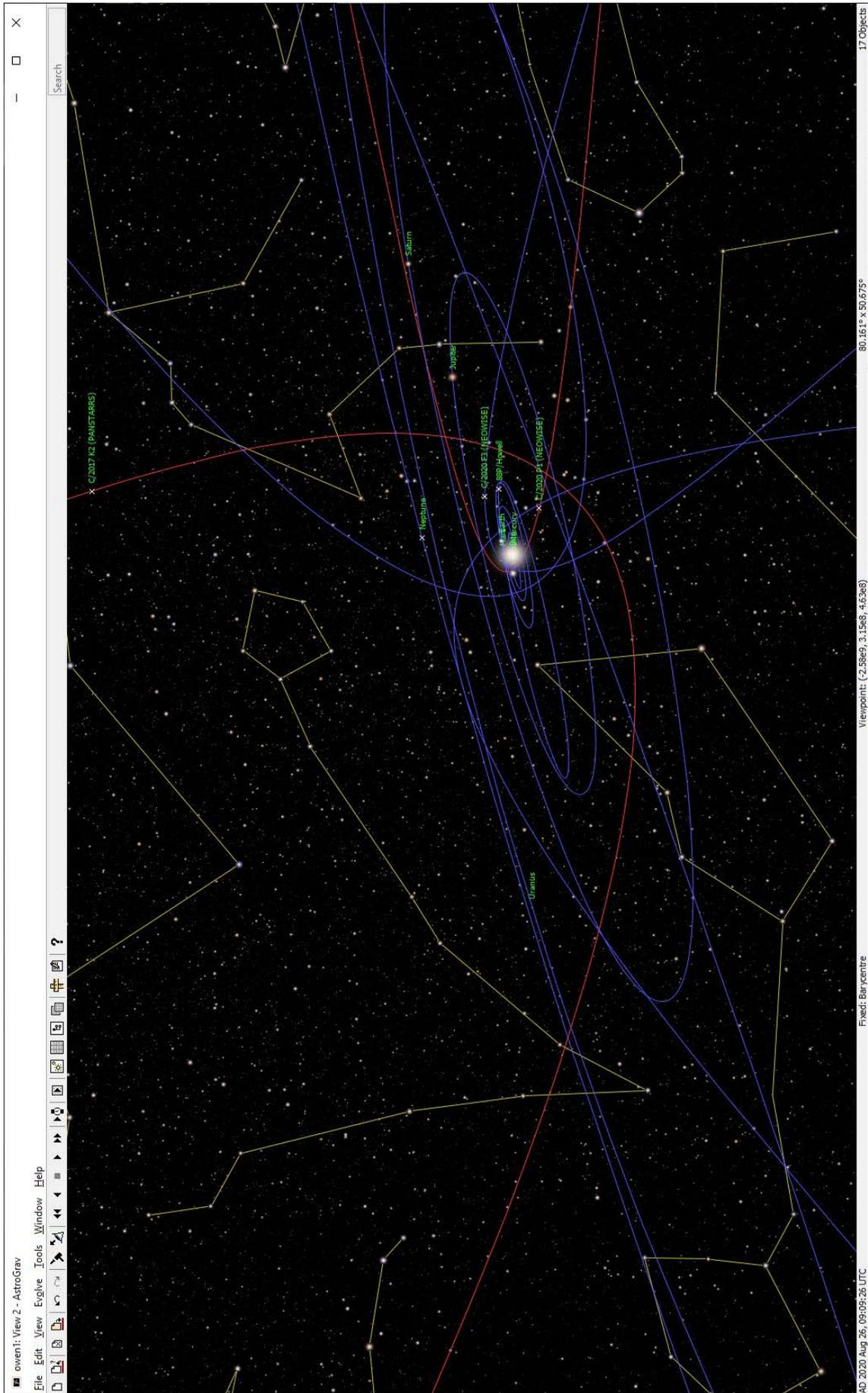
Good bye F3 – Owen Brazell



IC 5070 – John Napper



C/2020 F3 (NEOWISE) and Noctilucent clouds – panorama by Steve Creasey



Orbits for current comets - mentioned