JANUS

THE NEWSLETTER OF EWELL ASTRONOMICAL SOCIETY

December 2020 EDITION

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Editorial

Welcome to the final edition of Janus for 2020 - what an eventful year it's been!

Short of material, I decided to delay the November edition by a week or so. I then received a number of items, so I decided to put them all together in a bumper pre-Christmas edition for December.

Covid-19 restrictions continue to preclude physical meetings and group observing sessions. They seem set to remain in place until at least Easter next year - more than a year after our last physical meeting. Who would have predicted this back in March!!

Our first virtual meeting on 9 October was cut short due to technical problems but will continue with "Part 2" on 10 December. A second virtual meeting on 13 November was successful, and a virtual AGM will be held on 11 December. Given the impossibility of holding physical meetings, it's as well that we have grasped this new form of meeting. Although, maybe, not everyone's cup of tea, they do provide a way of keeping in touch.

This month, along with notes of his observations, Gary Walker contributes his thoughts on how imaging has changed over the years. Stephen contributes no less than 4 pieces, and there is another light-hearted piece from Adrian Bourne, plus an item from myself.

I rely on members' contributions to keep Janus going - no contributions = no Janus! - so please keep them coming. Members can also share their observing experiences on social media.

John

The Solar System December

MERCURY: will soon pass behind the Sun. It begins the month not observable, reaching its highest point in the sky during daytime and no higher than 2° above the horizon at dawn. By the end of the month, having recently passed behind the Sun at superior solar conjunction, it is still not readily observable since it is very close to the Sun, at a separation of only 6° from it.

VENUS: remains just about visible as a morning object, now well past greatest elongation W and returning closer to the Sun. At the start of the month, it is visible in the dawn sky, rising at 05:04UT– 2 hours and 39 minutes before the Sun – and reaching an altitude of 15° above the SE horizon before fading from view as dawn breaks around 07:17. By month's end, however, it is not observable – it will reach its highest point in the sky during daytime and is no higher than 6° above the horizon at dawn.

MARS: recently passed opposition and begins the month visible in the evening sky, becoming accessible around 16:18UT as the dusk sky fades, 23° above the E horizon. It will then reach its highest point in the sky at 20:19, 45° above the S horizon and will continue to be observable until around 02:04, when it sinks below 8° above the W horizon. By month's end it becomes accessible around 16:35UT as the dusk sky fades, 40° above thew SE horizon. It will then reach its highest point in the sky at 18:56, 49° above the S horizon and will continue to be observable until around 00:55, when it sinks below 9° above the W horizon.

JUPITER: will soon pass behind the Sun at solar conjunction. It begins the month visible around 16:18UT as the dusk sky fades, 15° above the S horizon. It will then sink towards the horizon, setting 3 hours and 24 minutes after the Sun at 19:16. By the end of the month, it will become visible around 16:24UT as the dusk sky fades, 9° above the SW horizon. It will then sink towards the horizon,

setting 1 hour and 57 minutes after the Sun at 17:54.

SATURN: will soon pass behind the Sun at solar conjunction. At the start of the month, it will become visible around 16:39UT as the dusk sky fades, 15° above the S horizon. It will then sink towards the horizon, setting 3 hours and 37 minutes after the Sun at 19:29. By the end of the month, it is not observable, reaching its highest point in the sky during daytime and no higher than 6° above the horizon at dusk.

URANUS: recently passed opposition and begins the month visible in the evening sky, becoming accessible around 17:22UT as the dusk sky fades, 26° above the E horizon. It will then reach its highest point in the sky at 21:37, 52° above the S horizon, and will continue to be observable until around 02:31, when it sinks below 21° above the W horizon. By the end of the month, it is an early evening object, receding into evening twilight. Visible in the evening sky, it becomes accessible around 17:29UT as the dusk sky fades, 43° above the SE horizon. It will then reach its highest point in the sky at 19:36, 51° above the S horizon, and will continue to be observable until around 00:28, when it sinks below 21° above the W horizon.

NEPTUNE: is currently an early evening object, now receding into evening twilight. It starts the month visible in the evening sky, becoming accessible around 17:22UT as the dusk sky fades, 30° above the S horizon. Reaching its highest point in the sky at 18:34, 32° above the S horizon, it will continue to be observable until around 21:27, when it sinks below 22° above the SW horizon. By the end of the month, it will become visible around 17:29UT as the dusk sky fades, 32° above the S horizon. It will then sink towards the horizon, before setting at 22:12.

MOON PHASES:

Full Moon	30 November
Last Quarter	8 December
New Moon	14 December
First Quarter	21 December
Full Moon	30 December

Notable Events

Close approach of the Moon and Venus - 12 Dec

On 12 Dec, the Moon and Venus will make a close approach, passing within only 45 arcminutes of each other. The pair will be visible in the dawn sky, rising at 05:44 UT – 2 hours and 16 minutes before the Sun – and reaching an altitude of 12° above the SE horizon before fading from view as dawn breaks around 07:33.

The Moon will be at mag -9.5; and Venus will be at mag -4.0. Both objects will lie in Libra. Although too widely separated to fit comfortably within the field of view of a telescope, they will be visible to the naked eye or through a pair of binoculars.
At around the same time, the pair will also share the same right ascension - called a conjunction.

Great conjunction of Jupiter and Saturn - 21 Dec

On 21 Dec, as their 2020 apparition draws to a close, Jupiter and Saturn will make a close approach, passing within 6.1 arcminutes of each other. This will be the closest approach of the two planets since the year 1623. It offers a once-in-a-lifetime chance to see the two planets within the same telescopic field of view.

Close approaches of the two planets are called great conjunctions because they are the rarest of all conjunctions between the planets that are visible to the naked eye. The last time such a conjunction was observable was in 1980. The most recent great conjunction, in 2000, was not observable since it took place while the two planets were only 3° away from the Sun.

The rarity of great conjunctions is due to the slow motion of Jupiter and Saturn across the sky. Among the planets that are visible to the naked eye, they are the two most distant from the Sun, taking 11.86 years and 29.5 years respectively to orbit it. As the two planets gradually move through the constellations at different speeds, they follow almost the same path across the sky - the ecliptic. Periodically, Jupiter catches up with Saturn and overtakes it, resulting in a great conjunction, on average once every 19.6 years.

Not all of these great conjunctions are equally dramatic. Sometimes they happen when the planets are too close to the Sun to be observable, as happened in 2000. At other times they may not pass any closer than five degrees (the width of ten full moons) apart. The 2020 great conjunction will be the closest approach of the two planets since 1623, and they will not come so close again until their 2080 great conjunction.

The two planets will lie deep in the southern sky at the time of this year's conjunction, at a declination of 20°S, and so the best views will be had from the southern hemisphere. But they will nonetheless still be accessible to any northern observers who are willing to travel to find a clear SW horizon. Since the pair will be several months past opposition, they will only be visible in the early evening sky and will be well on their way to setting at sunset.

From the Sutton area, the pair will become visible around 16:20UT as the dusk sky fades, 12° above the SW horizon. They will then sink towards the horizon, setting 2 hours and 29 minutes after the Sun at 18:22. Jupiter will be at mag -2.0; and Saturn will be at mag 0.5. Both objects will lie in the constellation Capricornus and will be close enough to fit within the field of view of a telescope. They will also be visible to the naked eye or through a pair of binoculars.

Collected Observations (and thoughts) – Gary Walker

Planetary Images

Nowadays, it's perfectly possible for amateur astronomers to take images of the Planets using relatively small telescopes. The thing that I find astonishing is that these images easily rival photographs taken in the fifties and sixties by professional astronomers using giant telescopes.

Thus, a modern 14" SCT scope allows images to be taken that are superior to those from the Mount Palomar 200" telescope (once the largest telescope in the world!). Even smaller scopes can allow perfectly acceptable images to be produced.

One notable amateur astronomer is Damien Peach who, with his 14" SCT, takes astoundingly clear images of all of the Planets - not only images of Jupiter, Saturn, and Mars, but even ones of the distant Uranus and Neptune, which actually show cloud features too.

I grew up with planetary images in astronomical books coming from the Lick, Wilson and Palomar observatories. Though impressive at the time, by today's standards they appear very crude, and blurry, showing (in the case of Mars) only a few albedo features. In contrast, modern amateur images can be much clearer, with outstanding detail, almost as good as the Hubble Space Telescope.

So how is this apparent contradiction possible?

Telescopes always have to battle with the Earth's atmosphere which, because of its turbulence, blurs details on the planets, both with the human eye, and with cameras. This is why old photographs are blurred, as the exposure times required to take them could not compete with the atmosphere spoiling them. As a result, these photographs could only show basic features.

Ironically, the best way to record fine detail upon the planets was the ancient technique of observing them over an extended period of time, waiting for the momentary times when the atmosphere steadied enough for fine details to be glimpsed. Many outstanding sketches were (and still are) made by this method.

Nowadays, amateurs can image planets over a period of time, and then stack the images. In this way, only the sharpest and best images are retained, with the result that the planets appear in far sharper detail than they do to the naked eye.

This is not to say that amateur images are superior to those from modern professional telescopes. These too have advanced and have instrumentation that is not yet available to amateurs. For example, they can use Adaptive Optics, which can compensate for the blurring effects of the atmosphere.

The main reason why the Hubble Space Telescope is in space, above the Earth's atmosphere, is to get rid of the problems of atmospheric distortion.

The idea of “canals” on Mars mainly resulted from astronomers trying to resolve Martian details at the limits of resolution, which made various dark features tend to join up. Hence, old Martian charts were criss-crossed by a network of fine lines - the "canals".

Modern amateur (and professional) images of Mars do not show these canals although, surprisingly enough, some short canal-like dark features do show up on some images and drawings, which may have made former observers think that they were seeing canals. Even the old professional photographs did not show any canals, and I have never seen any "canals" either!

Regrettably, despite all the wonderful modern amateur images, many (like me) still have to contend with the Earth's atmosphere, so we cannot always see the finer details!

Huge Prominence on the Sun

Over the period 19-22 October, I was observing a huge Prominence on the Sun, at about the 10 o'clock position. On 20 October, it appeared as a large detached banana shaped object, but by 22 October, it was a long, thin, scimitar like object, accompanied and flanked by 2-3 smaller prominences either side.

Later, in the afternoon, it seemed to be starting to fragment, a bit.

It is not often that one gets to see a large Prominence!

Mars Again

Mars remained very good for observation throughout October, being over 20' arcseconds in angular size. Towards the end of the month, I observed the dark feature of Mare Erythraeum. It appeared as a large, ovalish, shape, which nearly filled the disk of the planet, from one side to the other, so it is quite an extensive area.

Again, the North limb was blue in colour, due to haze (probably the North Polar Hood), whilst the South Polar Cap, was now hard to see, (this is because it has shrunk in the Martian Summer!).

I was glad that, unlike 2 years ago, no global dust storm appeared at Opposition to mar the view. It was also really good that Mars was so high in the sky at this apparition. It is worth noting, when seeing Jupiter and Saturn low in the South all this year that, in 2018, Mars was this low in the sky.

More observations of Mars!

After nearly a week of cloudy skies, some colder, frosty (and inevitably clearer!) skies returned on 2 November. On this, and the following evening, I saw Syrtis Major centered on Mars. Over several hours, I could see the upward “hump” of Syrtis Major move from one side of Mars to the opposite side, thus showing evidence of its rotation.

I thought that I could just make out the impact basin of Hellas, as a dim, circular area, below Syrtis Major.

I have frequently seen a bluish-violent coloured haze on the Northern limb of Mars, which must be the Northern Polar Hood.

The Southern Polar Cap had now shrunk to a very small area.

At this time, Mars was still large, being now just under 20' arcseconds in size. I find that the 222X magnification on my scope is the best one for observing it!

Mars in Mid-November and Comets

I have continued observing Mars into Mid-November when it was about 17' arcseconds in size. I could still see dark features on it, but it was noticeably harder to see them as Mars shrunk in size. Nonetheless, with the naked eye, it was still very bright!

I hunted for Comet C/2020 M3 Atlas, and eventually found it, in Mid-November, but although it was reported as being of magnitude 8, it was so diffuse, that it was very hard to see - I had to look hard for a time, and then only saw it, with the astronomers’ time-honoured method of "averted vision" It appeared as a very dim, diffuse, but large fuzzy ball, possibly brighter in the centre. It was in the constellation of Orion, near the star, Bellatrix.

Some of you may be getting a strong sense of déjà vu at this point, as I described seeing Comet Atlas back in April. However, this is

not the same comet Atlas! - The April one was C/2019 Atlas - Confused?

This is because, nowadays, a lot of comets are discovered by large telescopes and robotic systems, such as Pan-STARRS, LINEAR, NEOWISE (of which the most recent was the wonderful comet in July), and ATLAS. Not surprisingly, then, that is why there are a lot of comets, all with these same names!

This can get rather stupid, as in April there were no less than 4 different ATLAS comets in the sky, at the same time!

I only saw one of them, but as there was a second comet Atlas, not far away, I mistakenly put the coordinates of that comet into my GPS set-up, but did not see it, as it was far too faint!

So, this year, I have seen 4 comets - this latest one being my 39th comet.

Report of November Meeting - Stephen

Our November meeting was held via Zoom, and was attended by 31 members. This was our second Zoom meeting.

The Chair thanked all for attending, then introduced our speaker - Professor Peter Doel from UCL. Professor Doel is an Astro-Instrumentation specialist, who has been working on The Dark Energy Spectroscopic Instrument for the Mayall Telescope in Arizona. This is a multi-object spectrometer, designed to make a 3D map of the Universe, in order to measure the expansion of the Universe.

Professor Doel explained that 68.3% of the mass of the Universe is thought to be the mysterious Dark Energy, about which we know virtually nothing, while only 26.8% is Dark Matter.

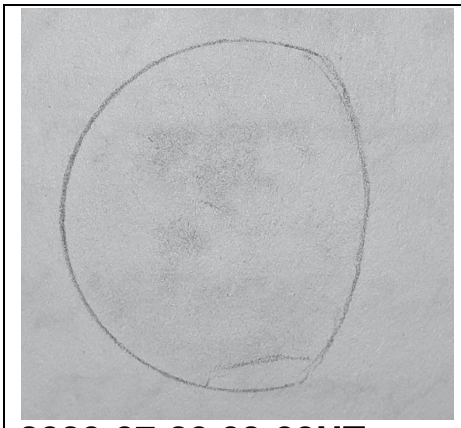
Professor Doel gave an intellectually challenging talk covering the theory of Dark Energy, and the technical principles and construction of The Dark Energy Spectroscopic Instrument, that was very well received by our members. We very much hope that he will return to EAS at a later date, to update us on the findings of the project.

Left: The 4m Mayall Telescope, Arizona

The Chair thanked our speaker, and announced that the next Zoom meeting will be on 10 December, when Bob Mizon will present the second half of his talk on astrophotographers. Also, Stephen will present the Sky at Night for December.

Our AGM will be held via Zoom the next day, on 11 December.

Observing Mars during its 2020 Opposition - Stephen



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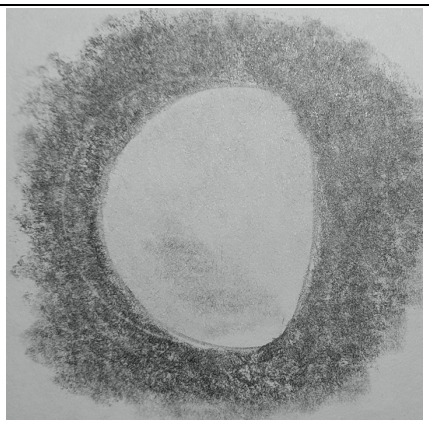

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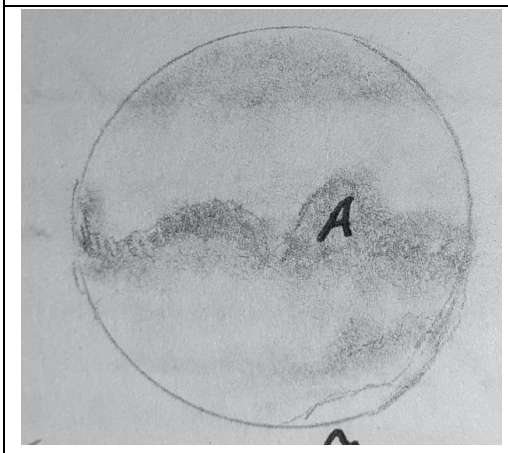

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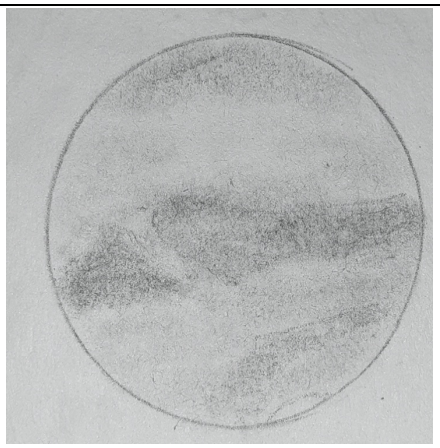

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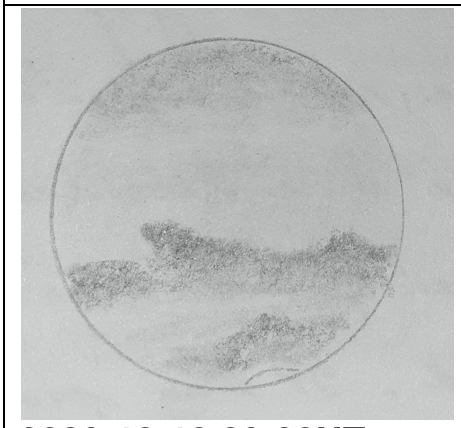
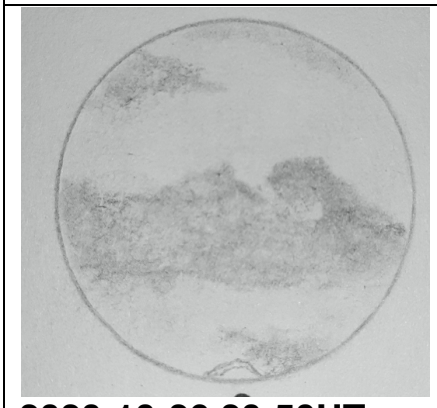


2020-10-10 00:30UT

2020-10-21 22:00UT



2020-10-26 20:50UT

127/1500mm Maksutov + 2X Barlow + Bresser CMOS camera + flip-mirror diagonal. Observing from Worcester Park.

I have spent many hours observing Mars over the years, and I have always found it a great disappointment, so I didn't have any particular expectations when the red planet approached opposition in the latter part of this year. A first look back in July though, was promising, with perhaps more surface detail visible than I had ever seen before, and it inspired me to persevere and make the effort to observe through to opposition in mid-October, which mostly involved staying up for half the night!

My mission was to acquire a reasonable image of Mars, so my observing was done via a Bresser Mikr Ocular Full HD CMOS eyepiece camera + 2X Barlow lens, through a flip-mirror diagonal, which had a crosshair eyepiece – essential for targeting Mars in the camera, due to the high magnification involved.

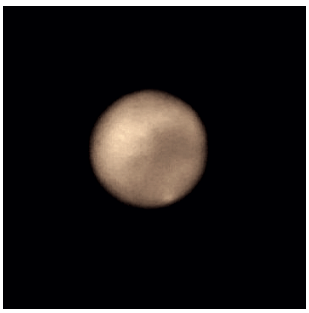
In all observations it was noted that significantly more surface detail was visible via the camera than visually at the eyepiece, though the latter was a better view than I have ever experienced previously. The series of sketches above from my field-journal are all made off the monitor screen, and not through the eyepiece.

Dark surface details were plainly visible on all occasions, despite the significant challenges of poor seeing, and where comparison was made with previous observations, interval changes of planetary rotation were noted. Also plainly visible, and quite conspicuous, was a partial polar ice cap. This was markedly displaced to the East of the geographic pole, though in the sketch from 2020-10-26, it appears more centred on the pole, but this is due to the image not being fully erect in the eyepiece, and it is therefore oriented ever so slightly NE/SW from true.

Despite many hours examining maps of Mars, I have to admit that I found it almost impossible to identify any of the dark surface features with any certainty.

A number of acceptable images, and video clips were also captured. None of my images are stacked – they are all single exposures, which I prefer, as they represent much more closely, what is actually seen visually at the eyepiece.

2020-10-07



2020-10-21

These images are best viewed on a computer screen, and I doubt whether they will be well reproduced in print, but they are included here as an example of the quality of the images acquired.

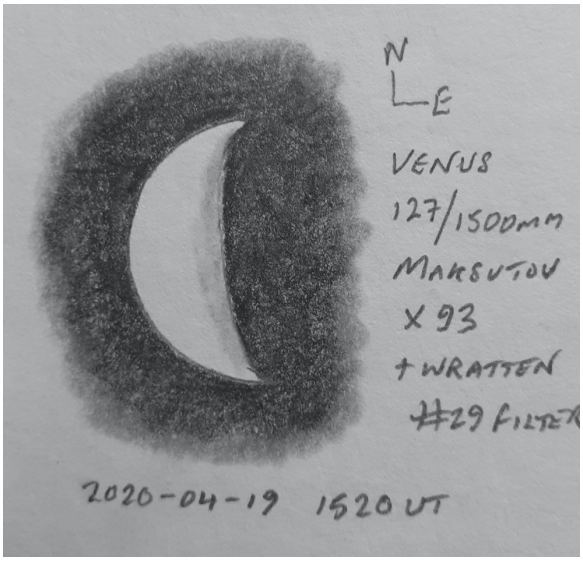
We have been very fortunate during this opposition, that the accursed dust storms that often obscure the surface for months on end, did not manifest themselves, and so we have been treated to a spectacular view of the planetary surface. For the remainder of Mar's current apparition, I intend to concentrate solely upon visual observations and sketching at the eyepiece, until Mars diminishes in size once again, into a tiny salmon-pink dot. If I never see another Mars opposition, I will die content that I have, at last, really seen Mars in all its glory. Not a canal in sight though, which was disappointing.

2020 - A Year of Planets - Stephen

2020 will be etched in our memories forever. It will be remembered by most, of course, as the year of COVID and lockdown. But for amateur astronomers it will also be remembered as the year of endless clear Summer nights, loads of free time for observing, crystal clear pollution-free skies, a naked eye comet, and a spectacular parade of planets across the sky. Venus, Jupiter, Saturn and Mars were all at their best in 2020 and, in the case of Jupiter, Saturn and Mars - the best we've seen them in quite a few years.

I'm still a little perplexed as to exactly *how* the UK Government managed to arrange such fantastic weather, and such a brilliant line-up of celestial objects to take our minds off the misery of lockdown, but what a triumph of political strategy it was - especially for astronomers!

I was fortunate (or unfortunate - depending on how you look at it) enough to be laid-off (without pay!) for 5 months, and I can honestly say that I've never done so much astronomy, so intensively, as I did during those precious months. If you had told me - an ex-shift worker - that I would ever find myself voluntarily pulling all-nighters in my observatory, I would have laughed out loud, and yet, in lockdown, with nothing to get up for in the morning, I was doing on average two full nights' observing every week, and shorter sessions in between.

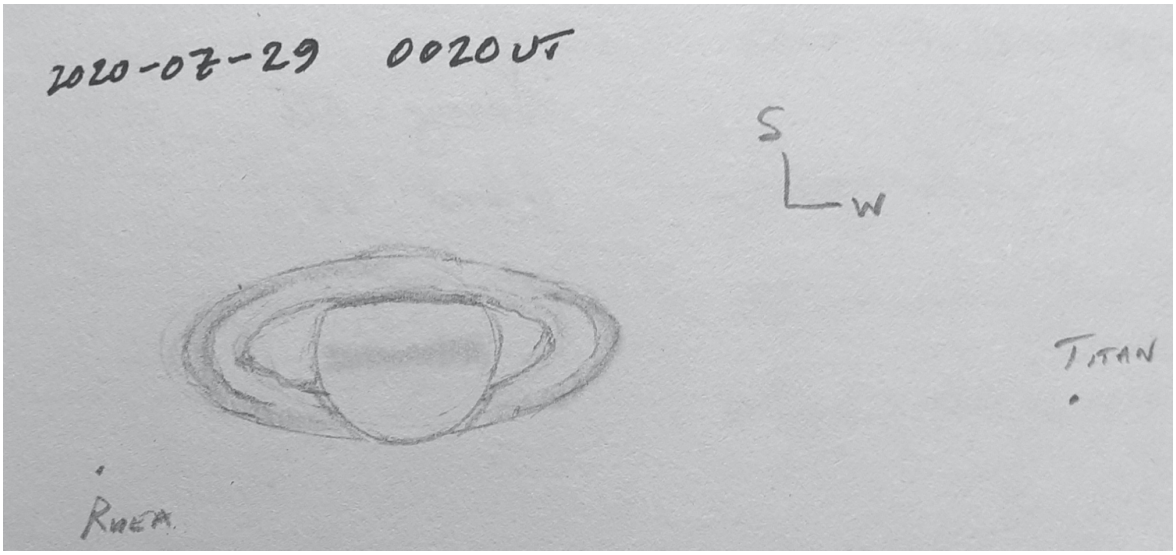


Venus put on a show for us as it hurtled toward solar conjunction, first picked up as a daylight object in the Spring, showing a small gibbous disk, and then heading inexorably West, increasing in angular diameter and reducing in phase, until it finally presented low in the twilight sky to the West, as a bright, thin crescent, around the middle of May.

How often in the UK do we have weather conditions, and time in our normally busy lives, to watch this entire performance of the heavenly dance of Venus?

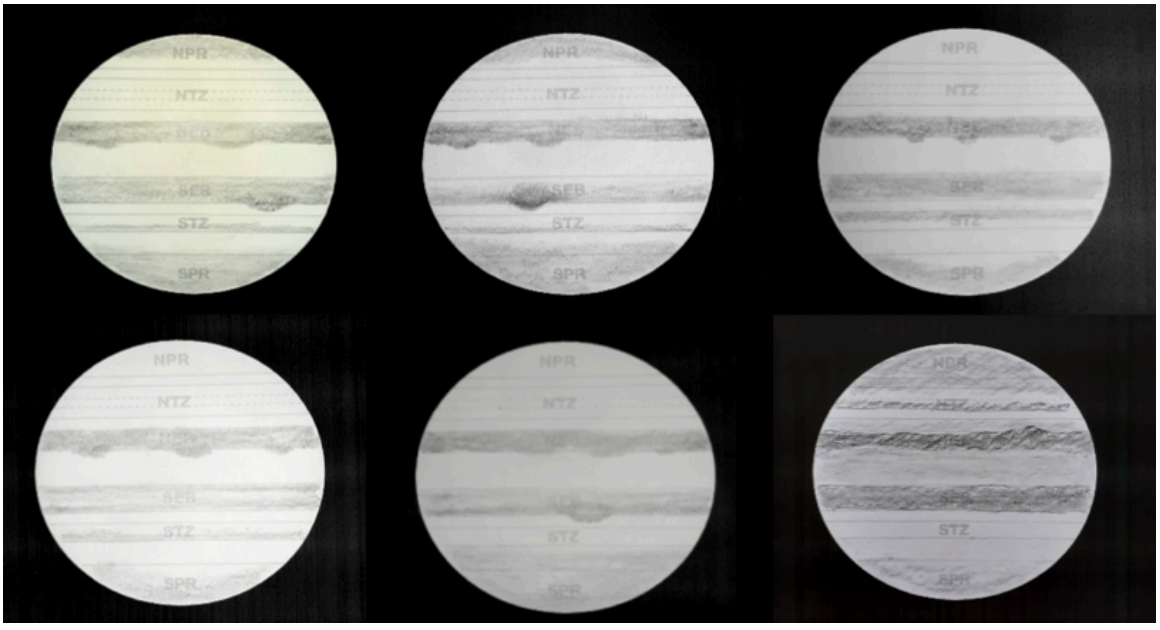
Jupiter and Saturn remained close companions in the sky all year, so the two were usually observed together.

Saturn, I have to say, whilst spectacular, is rather like looking at a photograph in a book. It is not the most dynamic of objects. It sat there all Summer with its rings wide open, the A and B rings well defined and the Cassini Division seen with ease. It showed a prominent dark cloud belt, and I managed to see no more than three of its satellites. Other than that, it was relatively unchanging, and I found myself spending less and less time observing it. It just did what Saturn does best - looked magnificent!



Jupiter, on the other hand, demanded more attention. Jupiter was at opposition during July, placing it at the closest part of its orbit to Earth, thus making it appear bigger in the eyepiece, and making the detail of its cloud belts clearer than ever.

Night after night I watched as the planet rotated, sometimes revealing the Great Red Spot, and at other times showing of great bulges (barges) in the Northern Equatorial Belt. I was struck by the fact that Jupiter's rate of rotation is so fast (about 10 hours), that in a full night's observing, you can actually watch it rotate before your eyes. I watched the beautifully choreographed dance of the four Galilean satellites around the great planet - like an animated demonstration of orbital dynamics in action, and again, the orbits of the inner satellites were so rapid that I could literally watch them move over the course of several hours. It is so rare in this country, to be able to observe Jupiter on consecutive nights, and for whole nights at a time, and to be able to watch these features changing.



Above: changing aspects of Jupiter, sketched at the eyepiece.

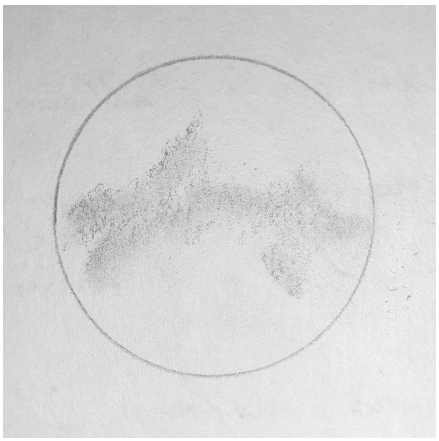
Later in the year, Mars moved to centre stage, reaching opposition in October, and although LockDown1 was now over, I had become re-enthused about observing, and was determined to

keep up my hours in the observatory. At first I had to get up in the middle of the night to observe Mars, but as it gradually moved West, I was able to get my telescope on it earlier and earlier in the evening.

Observing Mars was very different. My mission had been to capture a decent image of the red planet for the first time, but I also quickly found that I could *see* far more detail via the CMOS camera than by looking through the eyepiece, so as well as capturing images I made observational sketches from the computer monitor, rather than by direct vision.

Once opposition was passed, and I had succeeded in capturing a number of good images of Mars, I decided to persevere with visual observations, and although I never managed to see quite as much detail visually as I had via the camera, I noticed that I was gradually seeing more detail each time I observed, and I was able to make more detailed sketches at the eyepiece. This, it seemed, was very much a case of training my eye.

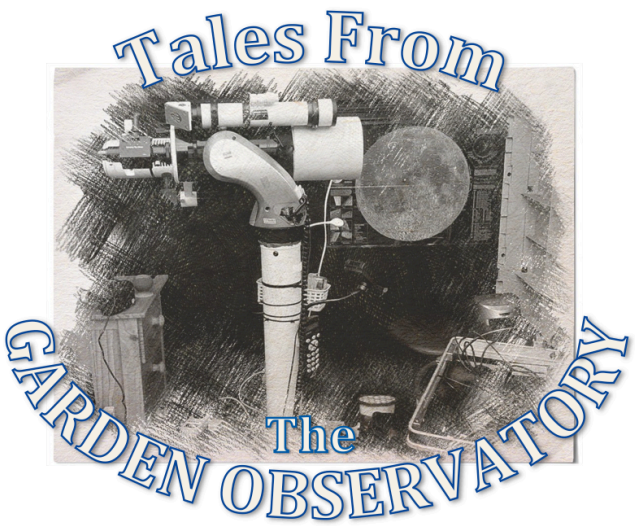
I included a series of sketches made from the computer monitor in my article on observing Mars, but here (*Right*) is a sketch made at the eyepiece on 2020-11-02 at 20:30UT for comparison. The dark surface features were at first seen only with difficulty and with sustained effort. It was, however, interesting to note that after half an hour of staring at the planet, those dark surface features suddenly jumped out at me in stunning clarity, and once seen, were impossible not to see. It is almost as if the eye has to tune in to them. Of the polar ice cap that had been so conspicuous in imaging however, there was no sign visually.



Throughout the Summer and Autumn, I not only made visual observations of the planets, but also captured literally hundreds of images, as well as short sections of video footage. I refuse to stack images, as I want to capture images that reflect what is actually *seen* at the eyepiece, and I think I have succeeded in doing this for Venus, Jupiter, Saturn and,to some extent, Mars this year. As admirable as a stacked image of one of these planets may be, I believe that it is important to manage people's expectations, particularly if they are new to astronomy, and to demonstrate to them what they can expect to *see* at the eyepiece. Otherwise, we run the risk of them being disappointed and discouraged when they don't see a textbook image through a telescope. (Also, I am far too lazy and set in my ways to learn how to stack…!)

As we ease into LockDown2 then, it is already apparent that it is going to be nothing like Lockdown1. Most people will be at work as usual, and when they are not, they will still be able to carry out most of the usual domestic tasks (for the moment). So there will be no surplus of time to spend on astronomy. No days filled with nothing, to spend sleeping after being up observing all night. The weather has reverted to type, the sky is again filled with contrails, and once again we are all left struggling to balance our time, trying to fit our observing around work and the weather.

I am thankful though, for the best Summer of astronomy that I have ever experienced, and I believe that the memory of it will sustain me through the months of uncertainty that undoubtedly lie ahead.



The Very Strange Tale of Things that go “Thud” in the Night

The design of my observatory is such that when the telescope is in use, it extends above the roofline of the structure, and in order to safely close the roof, the telescope has to be parked in a safe position pointing East with the tube horizontal. The roof then safely hinges closed with small clearance from the telescope underneath. This is not an unusual arrangement, and in particular, many roll-off roof designs require the telescope to be parked before opening or closing the roof.

Usually all is well with this arrangement, but one night last month, I had just fired-up and aligned the telescope, when I realised that I had left something vital indoors. In the time it took me to run inside and grab the culprit item, I heard an ominous “thud”, and returned to the observatory to find that the roof had slammed shut! On its way down, of course, it had hit the telescope, knocking it down against its altitude drive, and dislodging both the dew shield, and the Hydrogen-alpha scope that sits piggyback on the main scope.

Now, this is the second time that this has happened since I set up the observatory, and both times it has been on windless nights. I have been out working in the observatory on quite windy nights, but there has never been a hint of the roof even moving in the wind, let alone slamming shut.

On inspection, the roof is held open by a strong spring arrangement, and I have tested the tension, and can't believe that even a freak gust could slam it shut. So it is a mystery, and the only possible explanation that I can come up with, is that an animal - perhaps a fox - had jumped from the neighbour's shed, onto the open observatory roof. If this was the case, it must have had quite a shock when the roof moved under its weight.

None of this helped me with the deranged telescope though. Fortunately, I was able to realign the telescope, and it seemed to track as well as ever, so hopefully there was no damage to the drive. The optics seemed fine too. The dew shield went back easily, but I had to reattach the bracket that holds the Hydrogen-alpha scope, and there were some deep scrapes in the paintwork of the main telescope, where the piggyback mount had moved. The Hydrogen-alpha scope itself seemed undamaged though, and I have used it since, and it seems to work fine.

Mystery solved then, I have had to come up with a means of preventing a third occurrence, as the telescope has now twice escaped without serious damage, and I'm sure it won't survive a third time. So, I have cut two lengths of plastic pipe to use as stay-bars, propping up the roof when it is open. That way, I can set everything up, and then safely leave the observatory unattended until I'm ready to start observing.

I have often told those new to astronomy, that due to the nature of what we do (fragile optical equipment outside in the cold, dark night etc.) - no matter how careful you try to be - stuff sometimes happens to telescopes! No matter how experienced, or how precious our equipment, accidents happen, or equipment gets lost. Often these are classic "didn't know the gun was loaded" type incidents, rather than carelessness, though I have to admit that as I get older, I am becoming awfully clumsy and absent-minded. Also, when one is tired at the end of an all-night observing session, it is all-to-easy to drop things, or leave them somewhere stupid – I even left my laptop outside after one session - and I didn't notice for 24 hours!

Unwrapping the Northern Lights for Christmas Adrian Bourne

Before Zoom shutdown interrupted him in his talk on 9 October, I think Bob Mizon said he had seen 20 Aurora in UK, mostly from dark sky sites, though he stated that in March 1989 "Northern" lights were visible from London.

How many of EAS have stood and watched the Lights live, I wonder?

It's been a long-held ambition of mine, having read the books, seen the photos and lived the TV voyages of those presenters lucky enough to persuade broadcasters to pay for their trips up North. Hard to forget Joanna Lumley being overwhelmed when the lights appeared just as her trip was finishing (amazing how often the natural world delivers its pictures just when the crew are packing up!)

So, at the end of 2018, a few days before Christmas I travelled in great hope. We were flying to Oslo, and on from there to join a Hurtigruten cruise down the coast of Norway, North to South, (Kirkenes to Bergen). Aurora not guaranteed ….but perhaps?

The flight North from Oslo gave the first signs of the changes in time and weather we were going to see. To the West, through the plane window, the sun seemed to be continually set just below the horizon, while the moon stayed visible at the point where the bed of clouds met the blue sky.

We were not going to see the sun at all for four days, and lots more of the moon….and the Aurora…perhaps?

Kirkenes is near where Norway, Finland and Russia all meet, the land of the reindeer that gets shown every Christmas on “slow TV”. When we landed, the temperature was -13°, snow was thick on the ground, the lights of the airport blazed in the dark…and it was midday!

Not much to see in the “day/night” sky with much cloud cover and an eerie silver-grey light, which we were going to get used to as a replacement for daylight.

Still, perhaps the skies would clear at night and then…?

And in the cabin, the phone had a special Aurora alert button that could be activated, so that you could be woken any hour of the night, to pull on your thermals and stumble onto the deck (or sneak a look through the porthole under the duvet). Putting ambition before sleep and comfort I set the alarm.

The days of silver-grey skies, fjords, open sea, snow covered mountains and excursions on land were very calm and enjoyable. You could see why the locals had such great displays of Christmas lights, as they were living without natural sunlight for so many months!

Christmas Eve is the big celebration day in Norway; we joined an excursion inland with flaming torches, a drone flying overhead for the ship’s video, and a full moon shining on the Christmas trees and the ship at anchor.

Back on board, as I did most days, I checked the “Aurora forecast”….possible?....and reset the alarm so I could be up with Santa as he steered his sleigh through the green and yellow wonderland!!! .....but the alarm did not ring, the sky did not clear (where’s that last minute film crew when you need them!)

As you cross the Arctic Circle heading South, there’s a ceremony on deck at what would have been dawn, with passengers fully wrapped in anoraks and woolly hats, hoping for a toasty warm drink but instead toasting with almost frozen champagne. Still, I’m not complaining - if you cross the Circle heading North, apparently, they push ice down your neck! (there’s also an opportunity to swim in a cage off the back of the boat, dipping in for as long as the body can take it…no, I didn’t!)

Two other things marked by crossing the Circle are the increasing prospect of seeing the sun rising and the decreasing chance of seeing Aurora! Sleep was not a problem, undisturbed by the phone alert……but…….?

For an excursion to Trondheim Cathedral, we rose early to be there in the dark at 0900 (spot the moon in the photo) but we came out to find the sun rising at 1030. A familiar pattern was re-emerging….but no Northern Lights!

By the time we finally disembarked at Bergen, day and night were re-established.

On our last night, what were the chances of a last minute spark in the sky, followed by a greenish tinge, yellow and green clouds, and undulating green curtains of light? Only in my dreams and on TV.

We learnt that Hurtigruten offer a free week's cruise if you don't see the lights…but only if you book a two week trip, going up and down the coast (our fellow passengers who had been on the cruise for two weeks qualified for the free week this time!)

We were also told by the crew that the best direction for taking the cruise is South to North so you have more daytime excursions (including the Lofoten islands, which we regretted missing). The best time is apparently Spring, when you get longer days, still have the snow landscapes and there's still a good chance of witnessing the Aurora. Well, now you tell us!

Still, we had experienced unfamiliar skies and unusual geography and learnt a lot about life north of the Arctic Circle. Just have to wait for the Aurora to visit London again! That would be a good trip to Ranmore Common!

Merry Christmas and happy new year to all at EAS or as they say in Norway ……

Aurora in Iceland - John Davey

Just to show that Adrian was unlucky - sorry Adrian! - and to give an idea of how good the Aurora can be, these images were taken on 30 January 2015, standing on a frozen carpark in a biting wind a few km outside Reykjavik. Conditions were challenging. Despite removing my gloves only briefly to operate the camera, I couldn't feel my fingers - and the lightweight tripod provided inadequate support for the lengthy exposures. Hence the trails and blurred figures!

To further illustrate the element of luck involved in seeing Aurora, the evening before we saw them, a party had visited a site in the same general area and seen nothing. It was only because our guide was in contact with others that we got to be in the right place at the right time.

Up Next:

NEXT MEETING: 8pm Thursday 10 December 2020 - Virtual meeting via Zoom

Bob Mizon with deliver the second part of his virtual talk about "Astrophotographers

ANNUAL GENERAL MEETING: 8 pm Friday 11 December - Virtual meeting via Zoom

Following the Chairman's Report and other AGM busines there will be a quiz.

Stephen will also give a presentation on the sky at night for the coming month.

NEXT USER GROUP:

Date to be advised – check EAS web site.

This is an informal session for members to meet and discuss anything related to their telescopes and sky events and, if weather permits, to go up on the roof for observing.
Enter via the Main Entrance opposite the Car Park

NEXT DENBIES OBSERVING SESSION:

Date to be advised – please check EAS web site.

AD HOC OBSERVING AT WARREN FARM:

These will be at short notice when the weather is favourable. Please watch our Whats App feed for alerts.