SPACEWATCH
the newsletter of the Abingdon Astronomical Society

MAIN Meeting

10th June 2024

Astrophotography

Dr. Russell Discombe

EDITORIAL

Well the weather barely improved in May either for imaging or visual observing but we were lucky that it was clear on the 10/11th May for the best auroral display in over 20 years. Most of the country got to see it and we have seen lots of wonderful images. I was lucky to be in darkest mid-Wales and got a lot of images taken with an iPhone, though unfortunately the stars were not so good😊 We also got many images from Oxfordshire/Wiltshire and perhaps as expected we have lots in Spacewatch. The storm reached the highest level on the disturbance scale at G5.

We now take a break for a couple of months, and your editor needs it before we start meetings again in September. Hopefully at some point this miserable weather will break and we get a decent Noctilucent cloud season. If you want to know more about what these are then come to the June beginners meeting and there will be a talk about them. For those interested, by the time you get this edition of Spacewatch AR 3664, the sunspot that gave rise to the aurora should be back on the earth facing side of the Sun. It recently let off a X2.8 flare that was seen on the Sun's limb so it is still active

I note that the EUCLID satellite has released another round of images showing galaxy clusters and M78 as well as this one of NGC 6744. Although we are now shutting down for the summer there are several events worth looking out for including the Perseid meteor shower on Aug 12/13th. The Moon should be down for this one so we can hope for a good shower. As covered in the Whats Up section we have another month to look at comet C/2023 A3 until it goes into solar conjunction and won't be out again until late September so we will have to hope it continues to brighten, it seems to have slowed down in that at the moment.

NGC 6744 from Euclid

It appears that the reported issue with one of the gyroscopes on Hubble has been fixed and it is now back in operation.

We are also now entering noctilucent cloud season, although there are no reports that I am aware of so far, apart from some from a satellite but it was inside the arctic circle.

Anyway I hope you all have a pleasant summer break and we will see you back again in September

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:

owenb1367@gmail.com

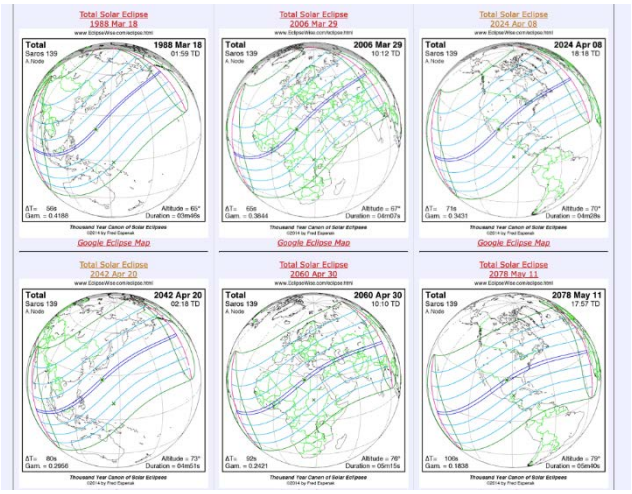
REPORT OF LAST MEETING

May 2024

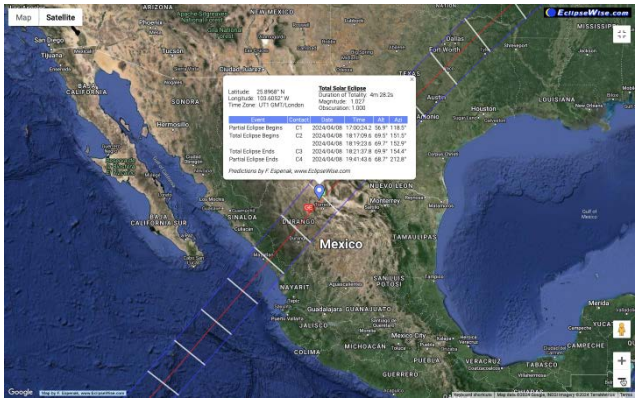
8/4/24. Latest episode: Eclipse chasing in Mexico

Gwyneth Hueter

If you were at the AGM, you will have seen that my trip to Mexico didn't have a huge amount of astronomical material to show, as sky conditions were never that good even when the sky was clear. So I have limited my account to the day of the eclipse itself and used shots that were freely available through my friends and through the internet to illustrate the event. Also, since my first eclipse in 1983, I've become more interested in the Saros cycles of eclipses which mean the Sun, Moon and Earth come into realignment every 18 years 11 days (depending on how many intervening leap years occur) and eight hours. But the eclipses in each Saros change, because the Moon's orbit is inclined to our own and its orbit shifts it slightly above or below the point where it was in the previous cycle. The Earth will also be at a slightly later stage in its orbit around the Sun each time. You get a merry dance of cycles that recur.



I have used Fred Espenak's site many times. At the AGM I used his depictions of various Saros cycles that would be of interest, such as the Cornwall 1999/USA 2017 Saros 145, the Egypt 2027 Saros 136, and my beloved Saros 127, of which I saw the last three eclipses (Java 1983, Zimbabwe 2001 and Chile 2019). The American eclipse of Saros 139 was the return of the Libya/Turkey eclipse of 29/3/06. A few Society members will be a bit nostalgic over that one. Total solar eclipses can occur only when the Moon is crossing the ecliptic while it's between us and the Sun. Depending on whether the Moon is going up or down in its orbit as it crosses, we say the Moon is on an ascending node or descending node, respectively. At present we get more eclipses when the Moon is on an ascending node because of the Earth's northern hemisphere being tilted towards the Sun in summer. The Sun is furthest away from us in July and it makes the Moon's job easier to eclipse it. I've put a few illustrations from the AGM in.



We flew from Mexico City on 7/4/24 to Torreón. Conditions had been forecast to be dodgy, even though we were meant to be situated on the best bit of the track (longest duration, best chance of good conditions). The track came up from the southwest to northeast of the North American continent. Many people all across the track had made arrangements years in advance and were now making last minute changes because of the poor weather predictions. As we were part of a large group, we didn't have that luxury.

We set off in six buses (three in our group and three from another tour organised by the same company and headed north to what I called an agricultural spur of a university in Mexico in a place called Chapingo, where they do research on plants that do well in desert conditions.

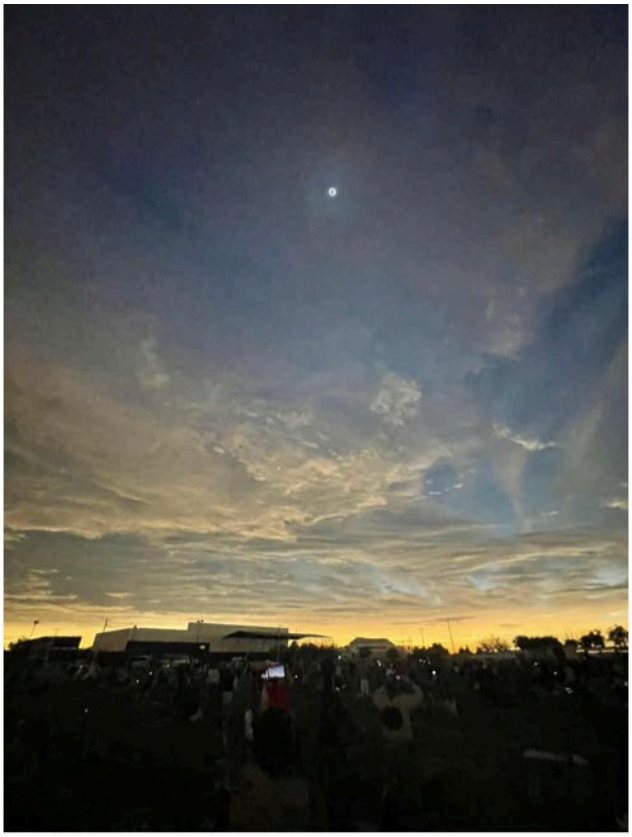
The 45 minute journey took us through very arid conditions onto a land of very whitish soil and we were let out to park ourselves in a football field in the middle of an ancient dusty running track. It was quite cloudy and not promising. I set up my spot (minimal equipment to prepare) and as there was nothing to see, tested my legs on the old track, in spite of having had a huge breakfast…. Luckily that enabled one of my old eclipse buddies, Adam Rosenberg, to spot me so we had a warm reunion and I was able to use his pictures and those of some of his contacts. (He is an American who I got to know at the Libya eclipse.)

The early partial phases were intermittently visible. The northeastern horizon was clearing but nothing was changing above us.

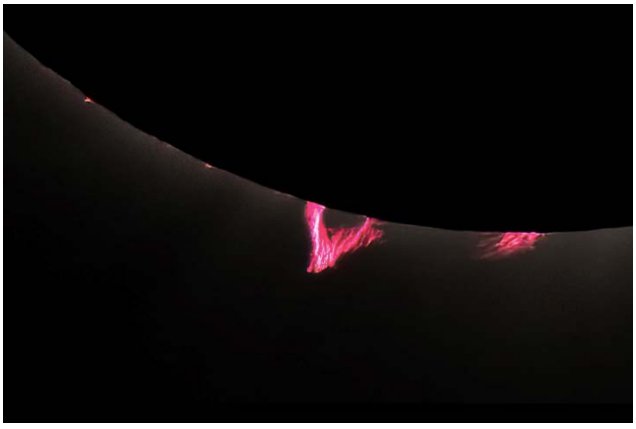
The air was surprisingly still. Then the light started dropping and that gave the impression of clouds thinning. Because the Sun was quite high by then the light was becoming more bluish. As the eclipse past half way, the sky did actually clear more, and I was able to see the Moon's lumpy edge creeping towards quite a large sunspot group (using my 15x70 binoculars + Baader solar filter paper). The drop in light in the final few minutes brought on a strange wide-angle effect to my eyes, almost making me feel a bit dizzy as I looked around. My phone picked up a bit of this too. The lack of wind and the very few birds was rather surreal; I've always found that the wind rises dramatically just before totality. The crescent was now shortening and fragmenting and there was some fine cloud, not visible in my filtered binoculars. Those final seconds are unreal. The crescent is there, shortening into a stub, everyone is drawing in breath, then suddenly there is this release and the Moon just pops into place. It's so immediate, just that final push that blocks the last spit of light that peeps through a crater top and wham - the corona springs out. The high cloud probably made it more sudden, as usually you can get a hint of the corona even before the Sun gets completely

hidden. The high cloud hid the finer details of the corona, but I could see a pink prominence where the leading edge of the Moon was. There was already a pink point where the Moon's following edge was. This became the triangular feature that was a highlight of this eclipse.

The eclipse was almost 4 and a half minutes long. The Sun was 70° up and I was looking north, so that my views were as people present it in a telescopic view. I had the luxury of being able to look around at the horizon, which was yellowish and the Moon's shadow was above us but already moving northeastwards towards the end of the track, where evening views would (hopefully) be gained in Canada, finishing with a very late small partial view from the NW British Isles.

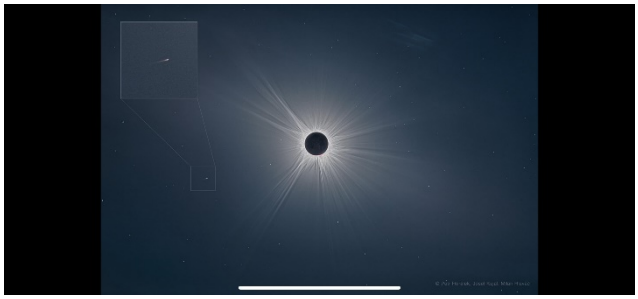


It was a threatening black shadow and as we reached the final seconds of the eclipse you could see the north east turning black and the west turning yellow and regaining colour. The following edge of the Moon was now revealing a bright pink band of prominences above (south of) that large triangular prominence and I have never seen anything so dazzling pink.



I couldn't see long streamers in the corona but could just make out the south polar region because it was not as active as the rest of the disc. The reappearance of the Sun came as a very sharp stab of light through a lunar valley

and my dark adapted eyes had to look away instinctively.



Then the relief/deflation/satisfaction - whatever - hits you and you're unable to take in the emotional overload you've just experienced. But then everyone else is the same. Record anyone's comments straight after an event like this and you'll hear incoherent nonsense!

Seeing conditions continued to improve and there were some good views of the 'waxing' crescent, but everyone was subdued. I celebrated with some running on the track. A bit heavy legged at 3,000ft altitude but what the heck!

Total solar eclipses are definitely something for anyone's bucket list, and there is one the tracks into northern Spain in 2026. Conditions are likely to be good. Be there!

THE NIGHT SKY FOR JUNE 2024

What's up for June 2024

Steve Creasey and Cristina Garcia-Pozuelo Sanchez

For many of us May was all about the Sun and the Aurora display it produced for us on the 10th, thanks to a Coronal Mass Ejection (CME) from the very large Sunspot group AR3664.

For once all the stars aligned (excuse the pun), with clear skies, the arrival timed to happen after dark and me looking in the right direction for a change. My first experience of an Aurora happened about 11 or 12 years ago, I had taken my gear to a darker site than the garden I had at the time. As I was unloading my equipment from the van I noticed that the sky was a redish colour to the north, assuming this was some light pollution from a party or festival, I proceeded to spend the evening taking pictures to the south, not once looking back at the red/pink glow in the sky. When I got home later that night I saw all the notifications on Facebook of the Aurora!!!

We also went to Iceland last year hoping to see some, but were clouded out the whole time, so to see such an incredible Aurora from our own house was very special indeed, to say I was excited would be an understatement, I was jumping around like a Kid!

There was visible Aurora for much of the night, but for around 20 – 30 minutes there were huge red/pink rays emanating from the zenith, the green areas were more grey to the naked eye, but bright green in the camera images.

With no astronomical dark during June, seeing any deep sky objects means waiting until the darkest part of the night which is Astronomical twilight.

This time of year does bring the opportunity to look out for Noctilucent Clouds (NLCs), not an astronomical event but still a stunning sight if you are lucky enough to see a good display.

The Planets

Mercury Mercury - Superior conjunction 14 June, after which it moves into the evening sky - making it one of the best planets to see. Best in the evening sky at the end of June when it can be seen shining at mag. -0.5, located 10° east of Venus.

Venus - Unlikely to be seen this month.

Mars - Improving morning planet, rises nearly three hours before sunrise at the end of June.

Jupiter - Improving morning planet, close daylight conjunction on 4 June 2024, Mercury and Jupiter can be seen half-a-degree apart.

Saturn - Morning planet with poor visibility.

Uranus - Not visible this month.

Neptune – Will be very low in the twilight and as such very hard to see. It is not far from Saturn in the morning sky.

Meteor Showers

June 27: June Bootids – is usually only a very weak shower, and occurring just after full moon, probably won't be worth looking out for.

Comets

Comet C/2023 A3 seems to be having a dip in its brightness but this will be the last month we see it before it goes into conjunction with the Sun and it won't reappear until late September. We can only hope it keeps brightening but things are not looking so good for a naked eye comet in October now.

Deep Sky Objects

M101 The Pinwheel Galaxy in Ursa Major

M83 - The Southern Pinwheel galaxy in the constellation of Hydra

NGC 5897 - Globular cluster in Libra

IC 4592 - The Blue Horsehead Nebula in Scorpius

M5 - The Rose cluster, Globular cluster in Serpens

IC 4593 - The White Eyed Pea, Planetary nebula in Hercules

IC 4665 - The Summer Beehive cluster, open cluster in Ophiuchus

NGC 6572 - The Blue Racquetball. Planetary nebula in Ophiuchus

NGC 6229 - Globular cluster in Hercules

IC 1138 - Lenticular galaxy in Corona Borealis

Clear Skies
Steve and Cristina

Upcoming Meeting Notes

Observing evening: Due to the fact we have no offers for running observing meetings. As from April there will be no attempts at observing seasons as it does not get dark until too late

Beginners' meetings: The next beginners meeting is on Monday 17th June 2024 at the usual meeting place. Topics to include Noctilucent Clouds and Dwarf Planets, although as always subject to change depending on speaker availability

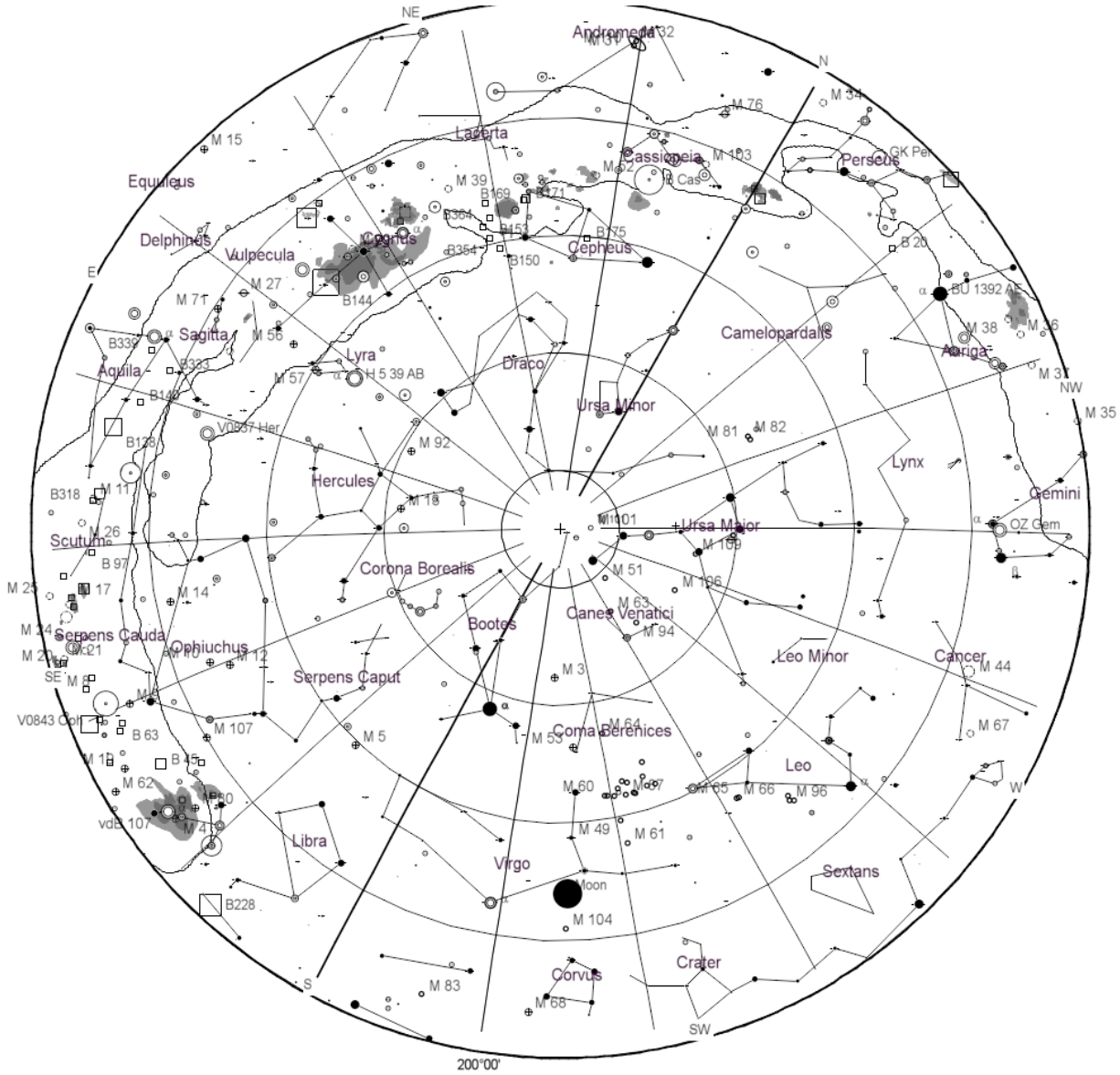
Mailing List: If you have not already done so, why not subscribe to our email mailing list. The list is called 'aaslist'. Members use the list to alert each other about celestial events and to chat about amateur astronomy. The list is quite active, with several messages most weeks. This will also in 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

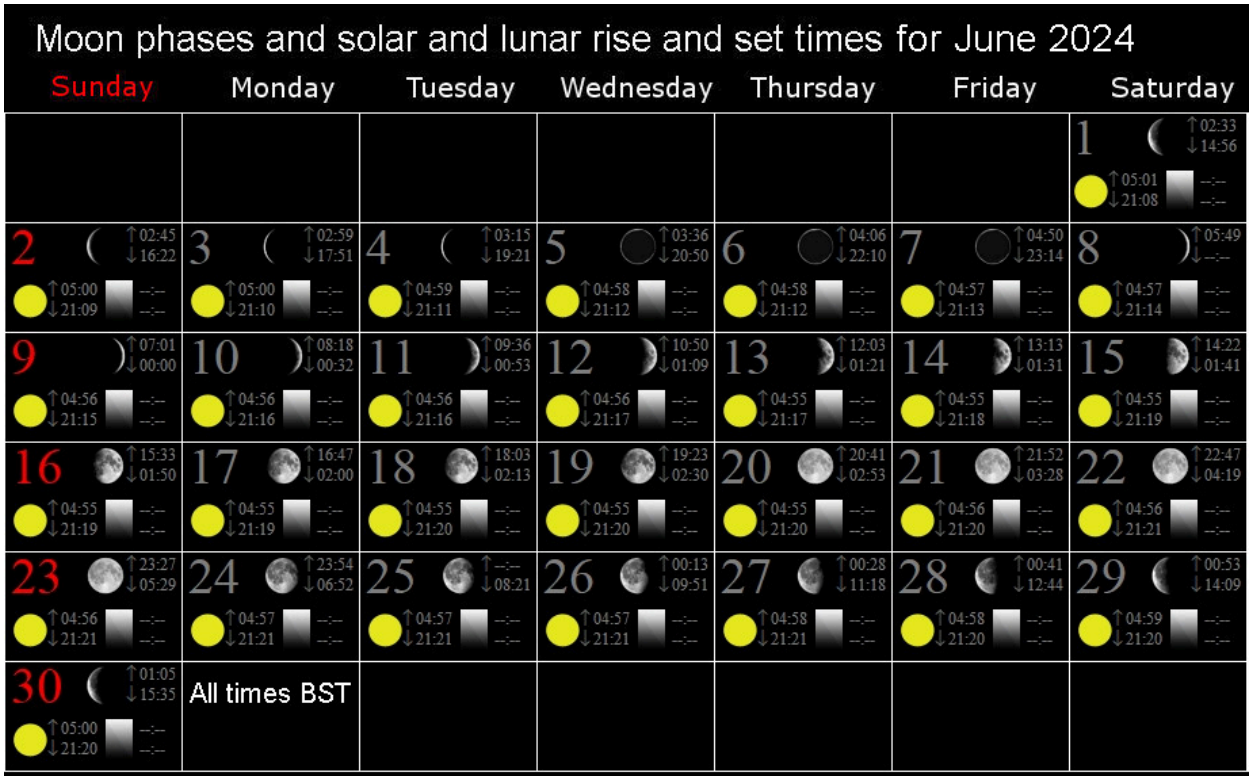
We also operate two Facebook groups so you can also keep in touch with the society through those.

STAR CHART

The night sky at 22:00 (BST) Saturday 15th June 2024

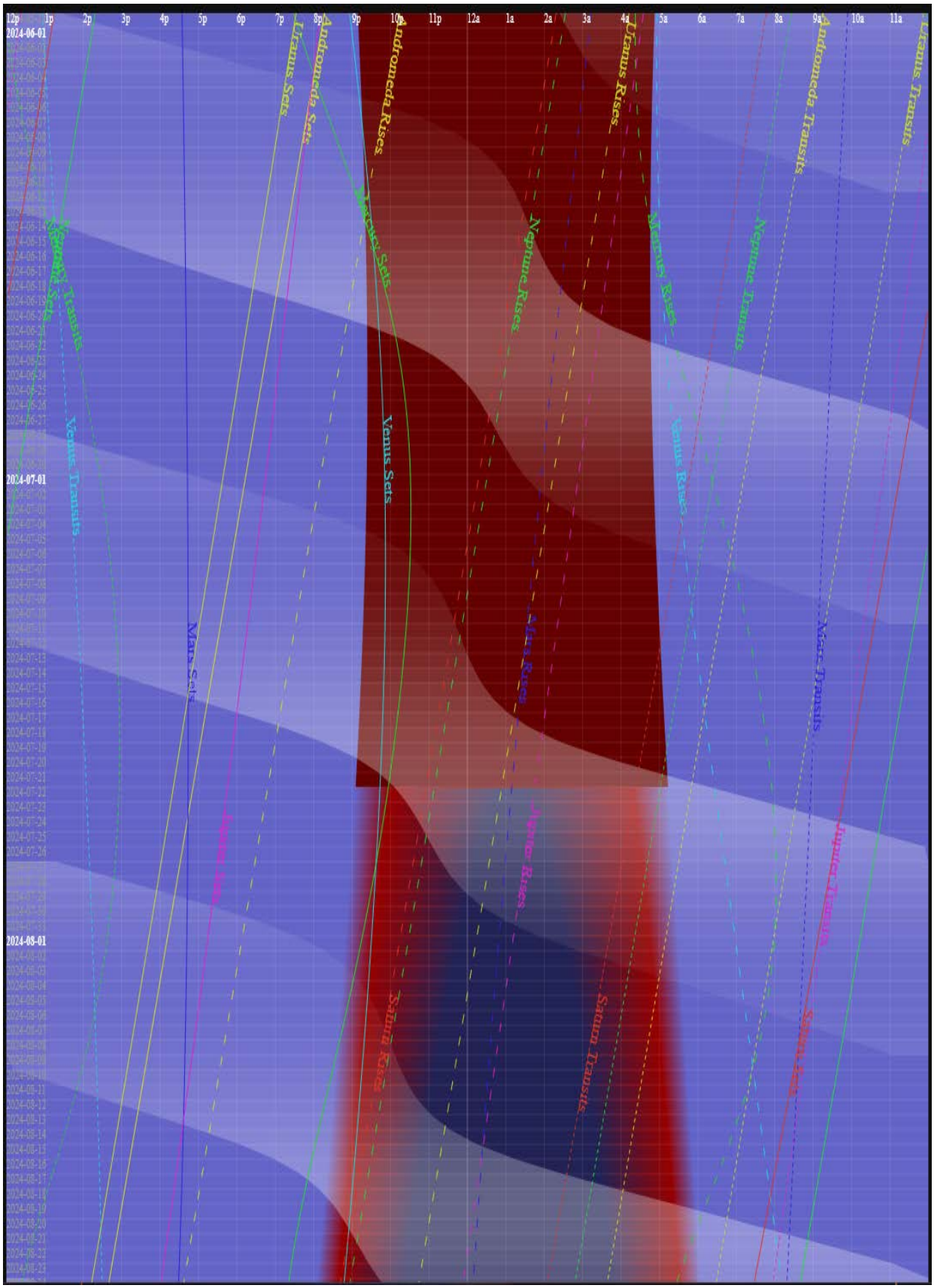


MOON PHASES JUNE 2024



Beginners Meeting Talks 2023/24

Date	Long Talk	Speaker	Long Talk	Speaker
JUN	Noctilucent Cloud	Bob	Dwarf Planets	John



Planet rise and set times through August 2024

Recent images from Members

M13 – Cristina

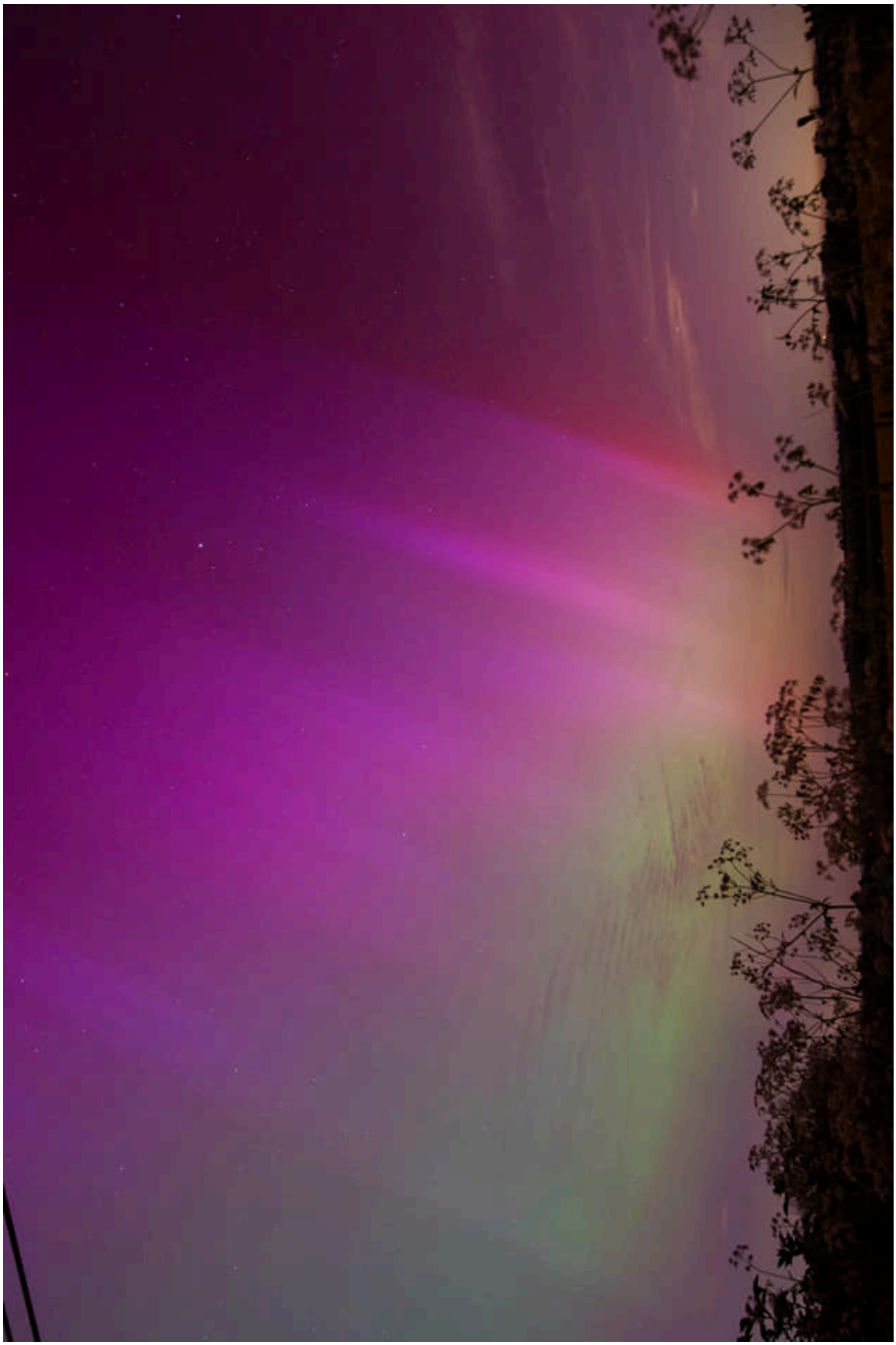
Moon – Cristina

Moon - Owen

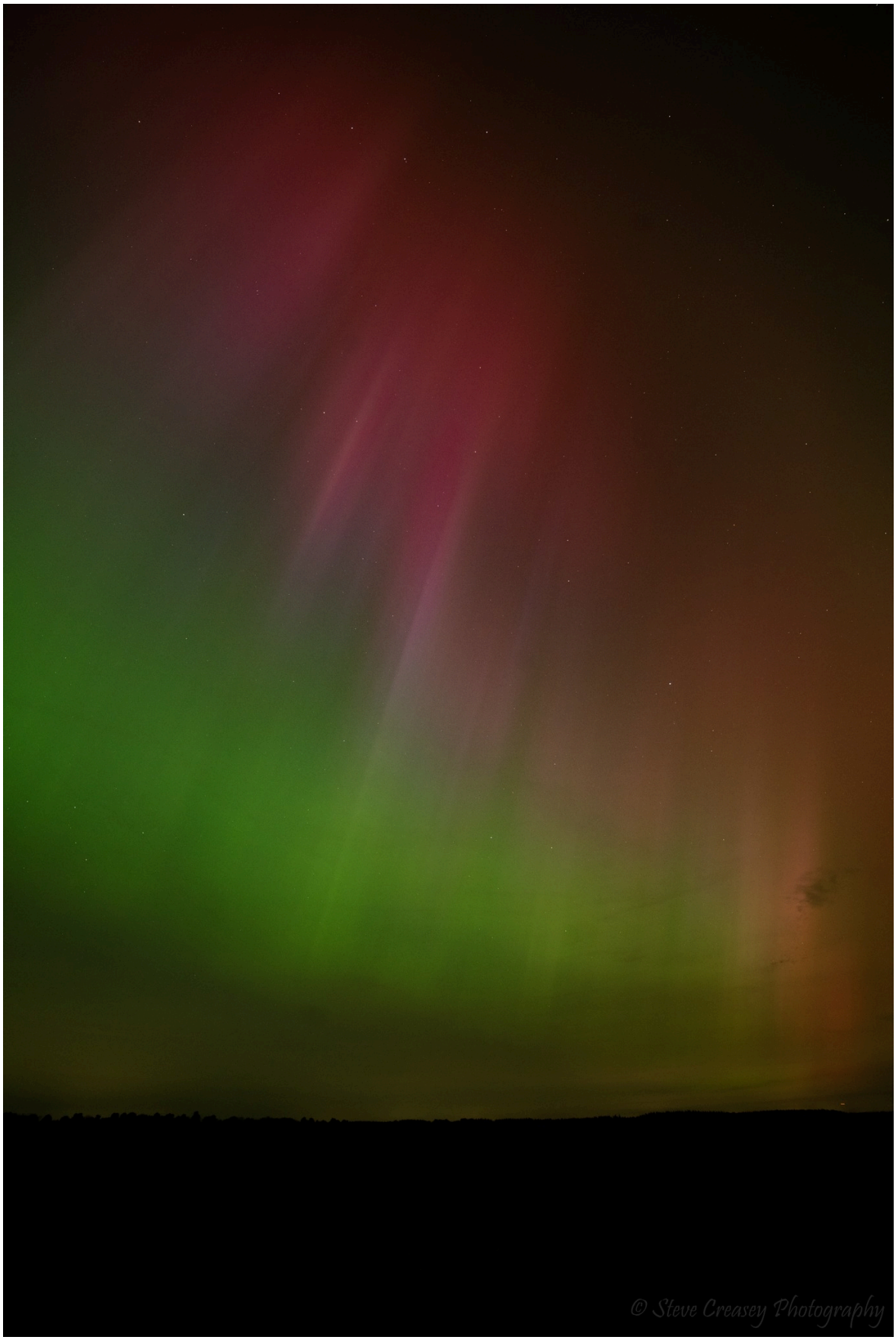
NGC 5466 – globular cluster in Bootes – Owen

Aurora causing Sunspot – Owen

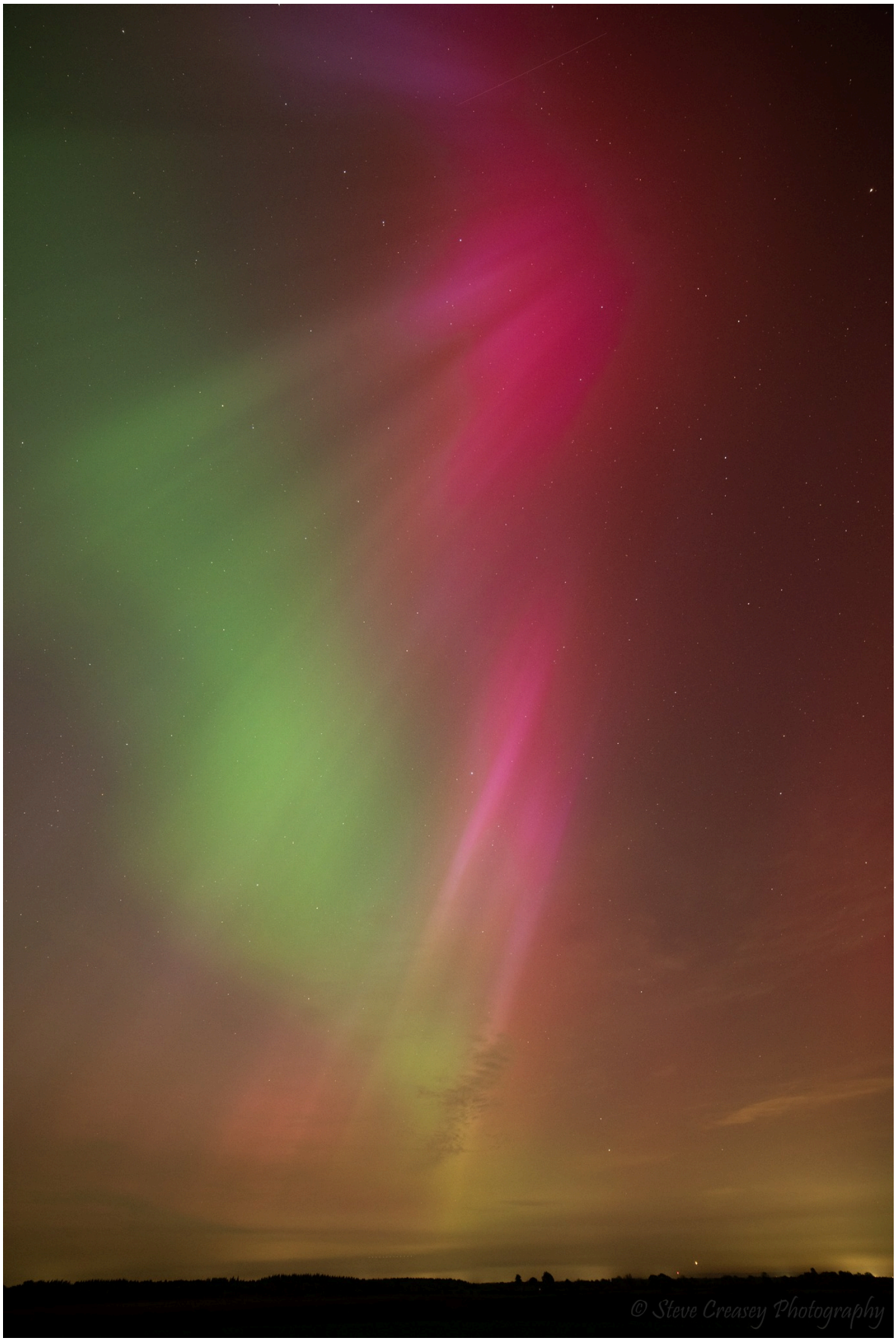
Apr 104 – Clifford Marcus



Aurora Chris Pickford



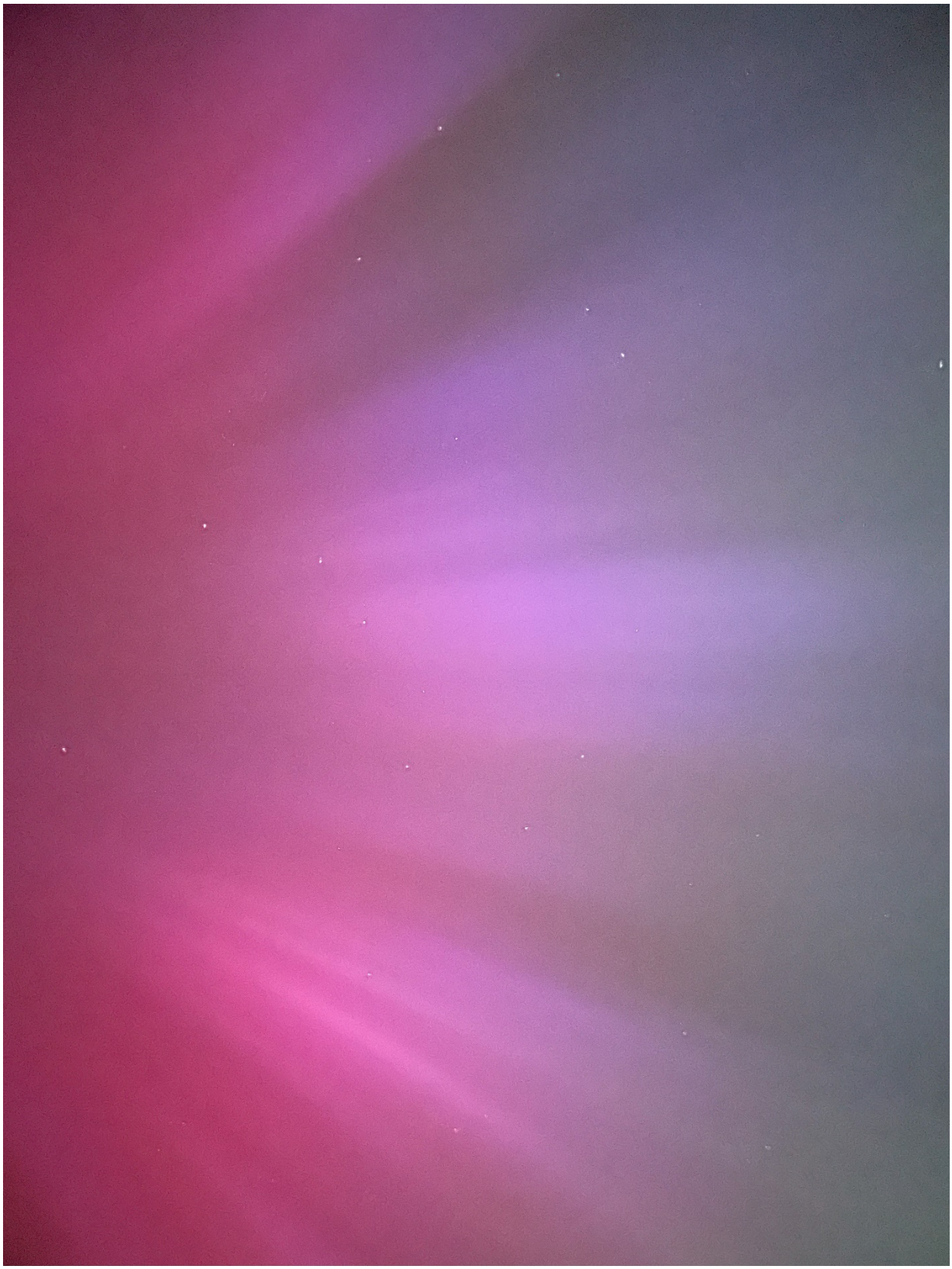
Aurora - Steve Creasey



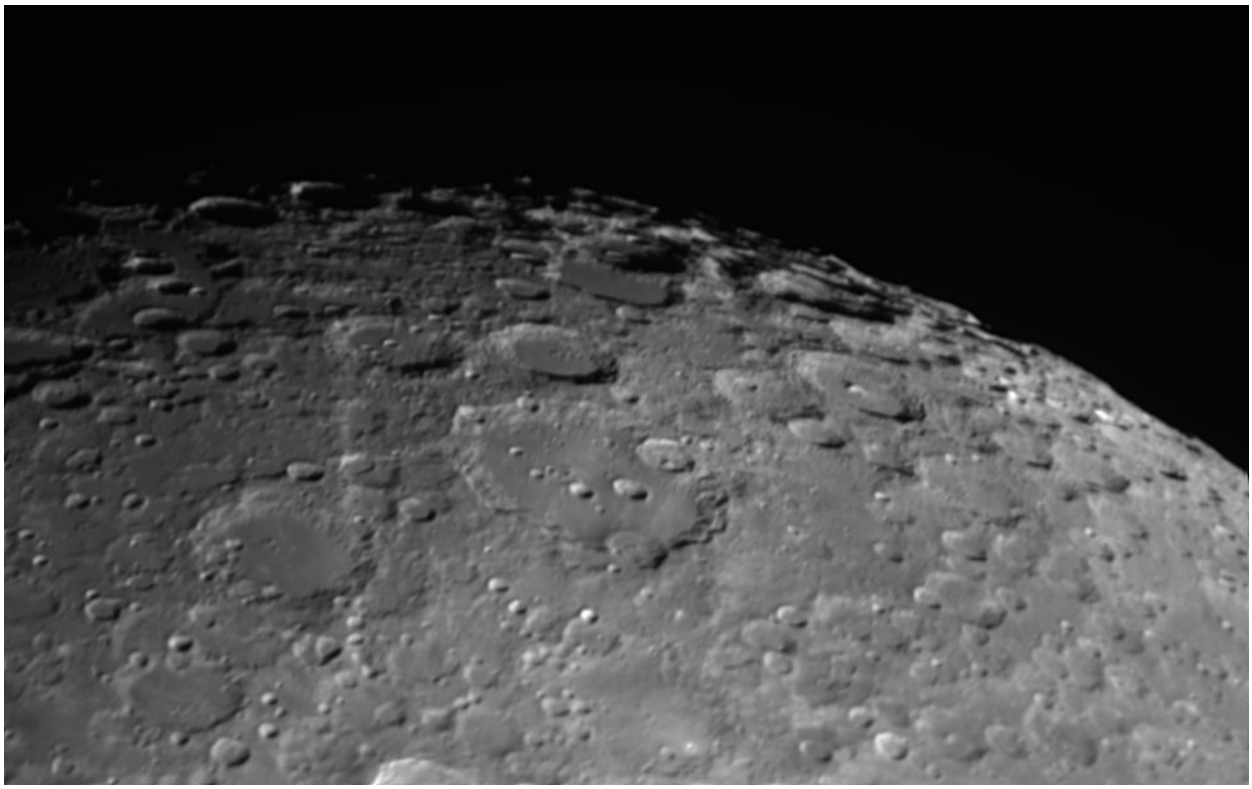
Aurora – Steve Creasey

Aurora – Swindon – Ian Smith

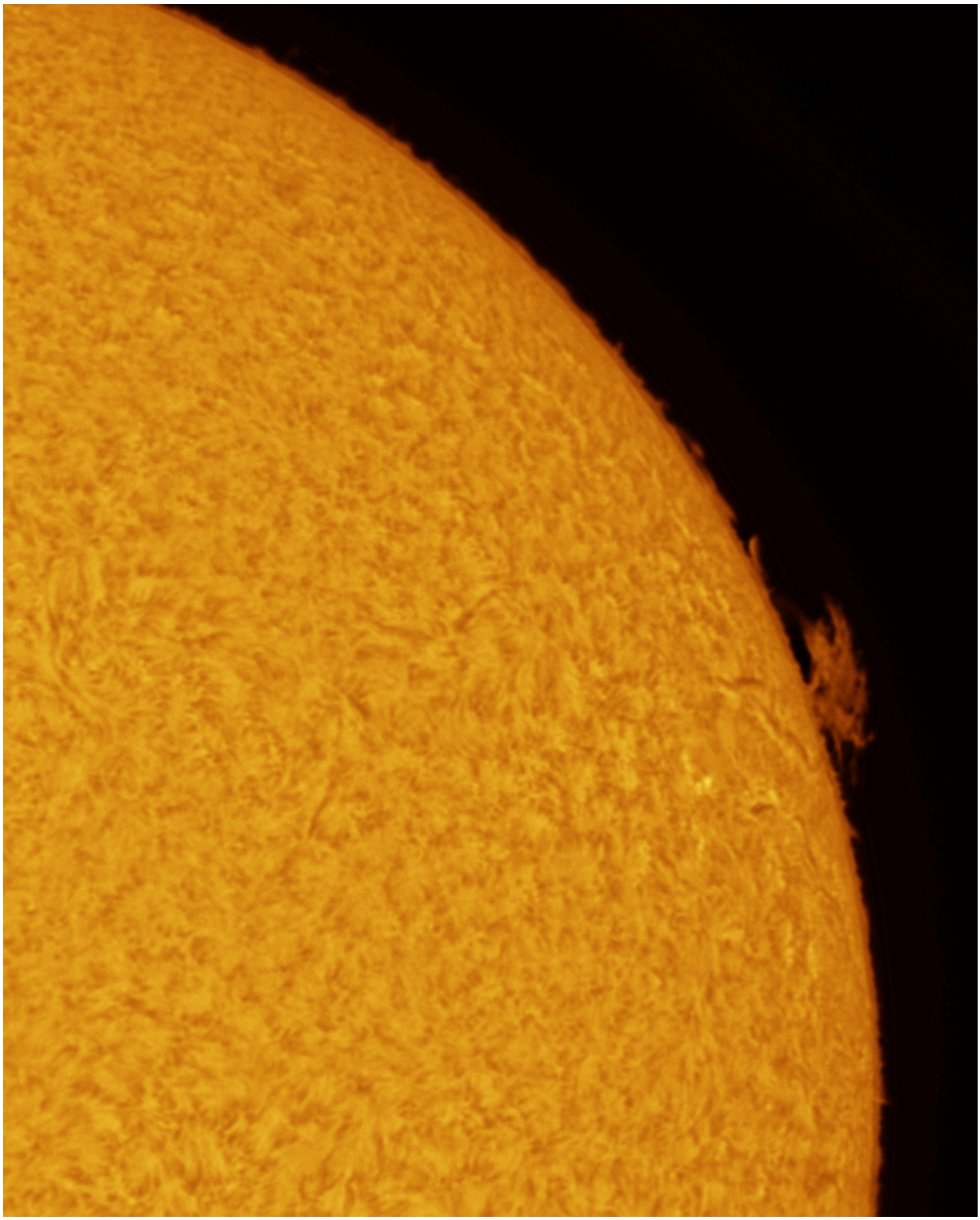
Aurora - Owen



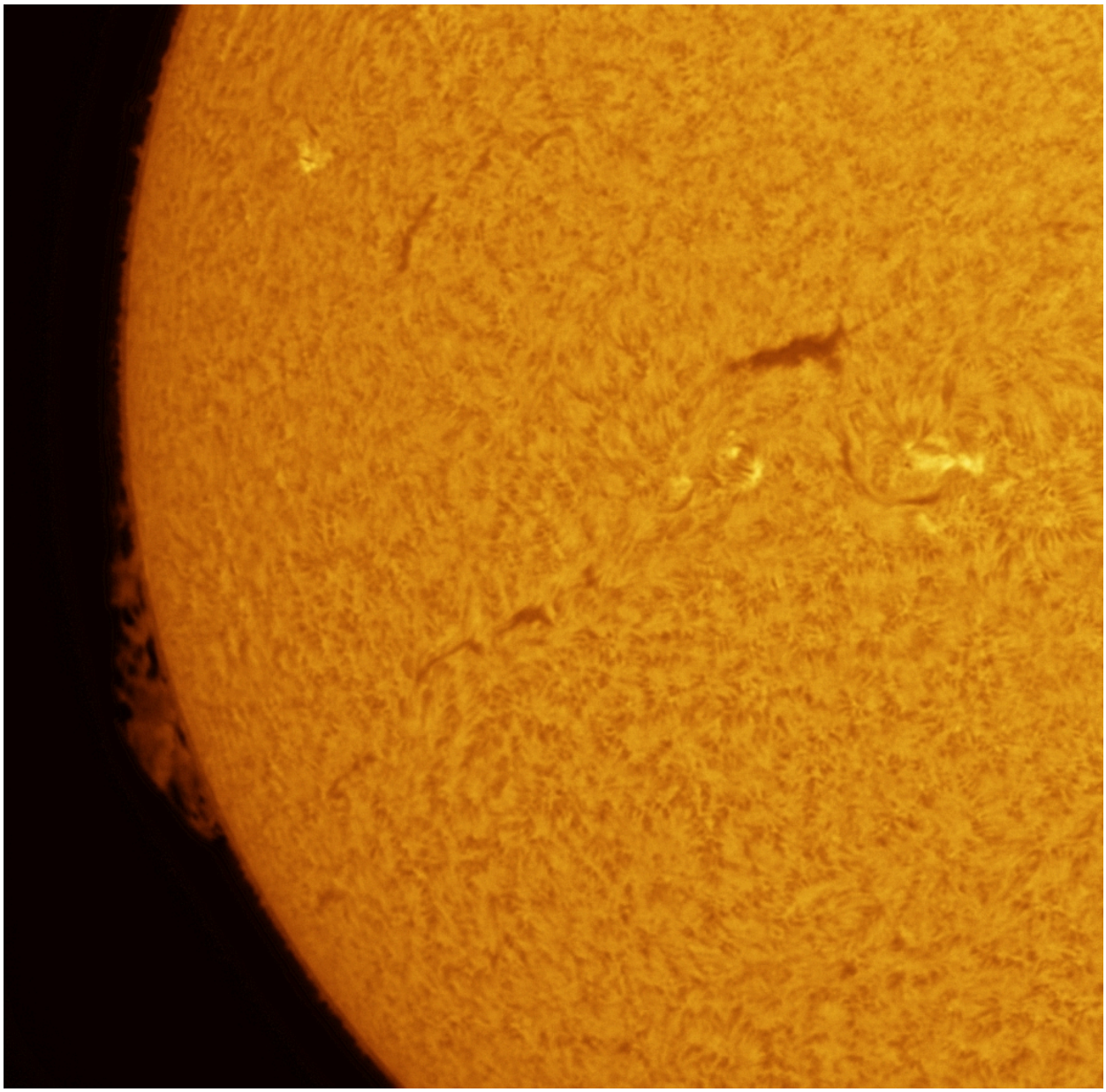
Aurora – Wales – Owen



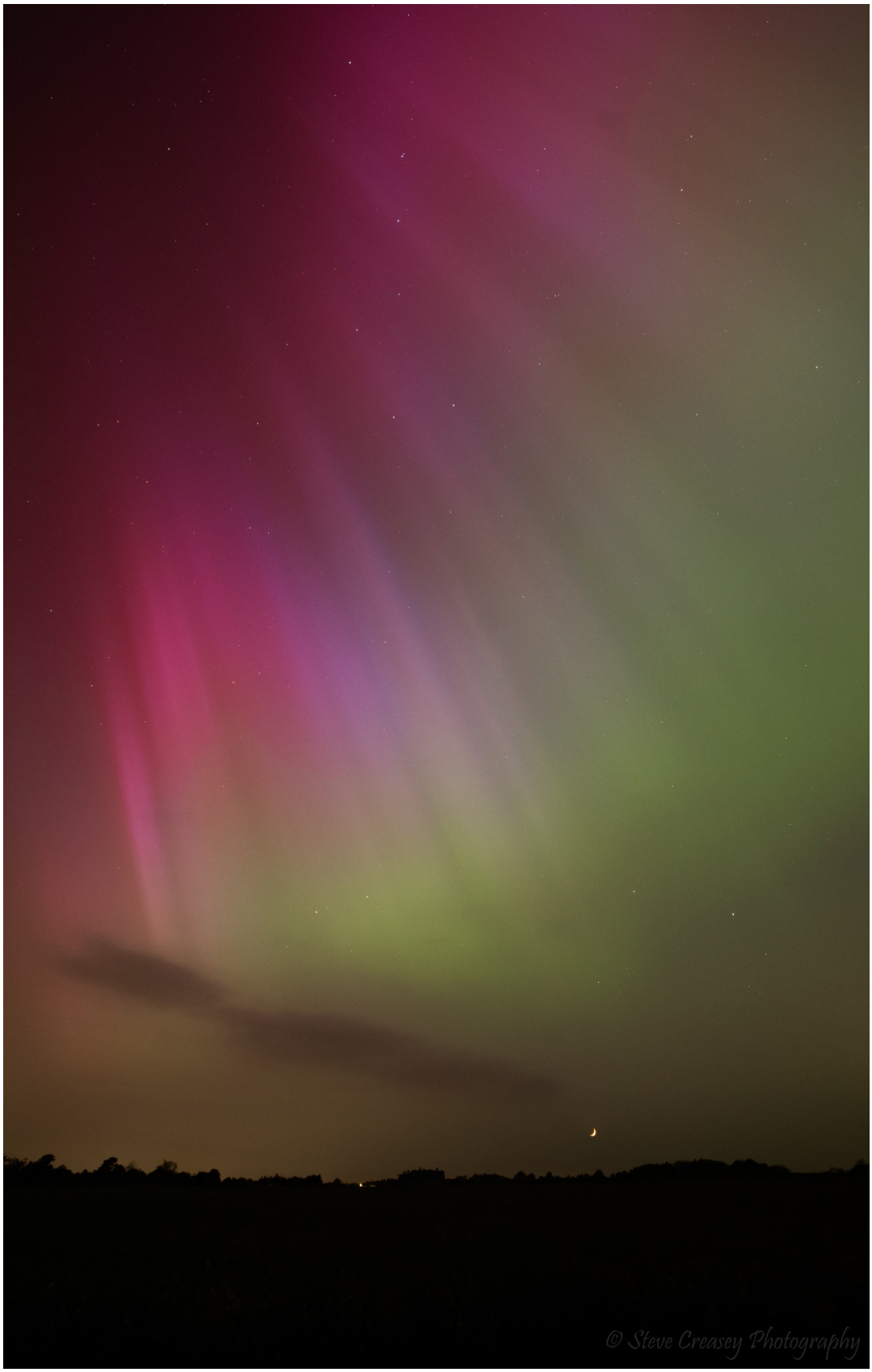
Moon – Ian Smith



Sun – Ian Smith (in H-Alpha)



Sun – Ian Smith (in H-Alpha)



Aurora – Steve Creasey

Part of NGC 7000 – North America Nebula - Cristina