



# Newsletter October 2023

Next Meeting: **Monday 23<sup>rd</sup> October at 7pm**

Location: **Kyle Academy,  
Overmills Road,  
Ayr KA7 3LR**

**Topic: "Beginners Night - Bring Your Questions, Equipment and Tips"**

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## Presidents Word

### Beginners Night

This month we have our beginners night, which longstanding members will know, is the night when you bring your kit to the meeting, telescopes, cameras, eyepieces, electronics etc etc, and explain your problems to other or tell them how marvellous it is and how it works. The idea is to spread knowledge and help others get the correct kit for them and perhaps avoid some expensive and annoying pitfalls, It is however primarily for new comers to astronomy to show them what is available and, if they already have kit, how to use it. We have quite a number of beginners in the Society already and a few have contacted us to come along for the first time. So, the more kit the better and the more people the greater the spread of knowledge. Come along, set up and get chatting!

### Partial Lunar Eclipse

On Saturday 28<sup>th</sup> of October, that is the Saturday following the normal Society meeting, there will be a partial eclipse of the moon as the Earth’s shadow passes over it. Not quite as exciting as a Solar eclipse perhaps but still worth seeing. The Elders of “Dunure Church” (Fisherton Parish Church on the A719 between Alloway and Dunure) have kindly given us permission to use the church carpark and will open the church to allow the use of the toilet. In return we have invited Church members to come along and will make a small donation to the Church as a thank you. To that end we will be asking for a £2 donation from attendees.

The eclipse begins at 19:01:08 and ends at 23:26:25 London time, it will be a little different up here so arrive early. We are planning on gates open at 6pm and everyone in place by 6:45. Call off arrangements will be made in advance for unfavourable weather but the intention is to go if there is any chance of even a fleeting view.

**PLEASE NOTE that, due to limited space this event is only available to members of the Society and members of the Church. If you want to bring your wife and kids along that’s fine but it is not an open event.**

### Christmas Meal

We have set aside the 11 December for our usual Christmas Meal. This will be in Ayr and most likely at the Chestnuts Hotel as we have had several successful meals there. In order to help with planning and booking an early indication of numbers will be helpful so there will be a list circulating at the meeting to gauge interest. Please put your name down if interested – it is not a final commitment at this stage!



## Alex's Space



What happens when our Sun dies? First of all don't worry, it won't happen for a v-e-r-y long time, but in a few billion years it will start to run out of hydrogen which is the fuel that keeps it "working". Strangely it will start to grow larger and will fill half the sky, it will have become a Red Giant type star. Soon an even greater change will happen, it will throw off a huge cloud of gas which will encircle it. This is called a planetary nebula, which, curiously enough, has nothing to do with planets! Finally it will cool down and just become a glowing ember but that will be billions of years in the future. By that time there will be very few stars left in the sky, the Cosmic stage will be empty. The cast has gone, the props have gone, the lights are dimming and the curtain is closing --- the show is over.

Alex Baillie



## Gordon Jenkins Monthly Blog

October's blog from the uni...

*A wee blog about how an old geezer is getting on at Glasgow University studying Physics with Astrophysics.*

Well folks, I've survived the first four weeks or so, but boy do they work the Science students hard. Three, one hour lectures every morning and then labs and/or tutorials on three of the afternoons. I'm finding the maths hard, not because it is too difficult - it's challenging but it is doable, no, it's the sheer volume of assessment that is taking up all my time.

In Physics it's as you would expect, Newton's laws of motion, Thermal Physics, and Optics. The optics course had a very interesting section on Telescopes.

In Astronomy we have been studying Positional Astronomy, zeniths, the observer's horizon, the celestial horizon, azimuth etc. I confess I need to study this a lot more before I'll be able to do the calculations with any degree of confidence.

Solar System physics has been about the Sun, the Earth and the other planets and their moons, and how it's all held together by gravity. We have also been calculating escape velocities and the physics of planetary atmosphere's as well as calculating the tidal forces on satellites and the rings of Saturn.

Dynamical Astronomy, as its name suggests, has had us looking at planetary motion, Kepler's Laws of planetary motion, circular motion and angular momentum. At the moment we are looking at the relationship between angular momentum and the 'semi-latus rectum', - yes. that is what it is called, and I do believe you can talk about it in polite company!

Next, we are moving onto Hohmann transfer orbits and the Cassini mission, with Voyager (not he Start Trek one) and the two body problem to come.

We had a trip up to the university's observatory for some Radio Astronomy last week. Satellite dishes in the pouring rain, what fun. I think I might have contacted the mother ship and invited them to land, who knows. I did estimate the temperature of the sun to be 11,000K, a tad hot, (tad being the universally recognised unit of wrongness) but managed to get the observatories latitude and longitude to within my error limits. Still waiting on the marks back.

As I wrote above, they are working us hard, so hard I'm going to have to miss our meeting on the 23<sup>rd</sup>, I have a physics lab to turn in... I'll let you know how things are progressing next month.



## October/November Observing

### General

The Milky Way is still well placed early in the evening for observing (weather permitting...). It is a good time to catch objects such as M13, the great globular cluster in Hercules and M57, the Ring Nebula in Lyra before the sink too low in the sky. Andromeda and Triangulum are well placed in the evening to see their respective galaxies M31 and M33, and Cassiopeia, Perseus and Auriga climb higher in the sky with the numerous open clusters. Cygnus is high in the sky making the North America nebula (NGC 7000) an enticing target for Astro photographers.

### Planets

Venus is currently high in the morning sky reaching its greatest elongation on the 24<sup>th</sup> of October, at just over 46°. Mercury is unfortunately lost on the sun's glare, likewise for Mars. Jupiter reaches opposition on the 2<sup>nd</sup> of November and is very well placed for observing, also being high in the sky in Ares. Saturn is further to west and about 18 degrees lower in the sky, but is still readily observable in Aquarius. Uranus reaches opposition on the 13<sup>th</sup> of November and will be less than 10 degrees to the left of Jupiter. Neptune is also well placed in Pisces near the border with Aquarius. The moon will occult Venus in daylight on the 9<sup>th</sup> of November at roughly 9:35am to re-emerge at about 10:32 (times approximate).

### Comets

There are no easily observable comets, though there are some that can be observed with large enough optics or photographically with smaller scopes. Comet 21P/Pons-Brooks is one of them at magnitude 11.8 in Hercules. It is moving towards Lyra and will cross over into it in late November. It could brighten to magnitude 4.5 by the spring, so it might be visible to the naked eye in dark skies. For early risers Comet 103P/Hartley 2 is moving through Cancer on its way to Hydra, at about magnitude 8.3 it is perhaps an easier target.

### Meteor Showers

There is one major meteor shower, the Leonids peaking on the evening of 17/18 November, though they can be seen from about the 10<sup>th</sup> to the 20<sup>th</sup> of the month. These meteors move fast at about 77km per second, so keep your eyes peeled! They have ZHR of about 15. The radiant rise at about 10pm and they are perhaps best seen in the early morning.

### ISS

Consult <https://www.heavens-above.com> for specific times and location. Check out <https://transit-finder.com/> for details and any possible solar and lunar transits.

### Definitions

ZHR: Zenithal Hourly Rate, the number of meteors an observer in a hour at the peak of the shower, assuming perfect seeing conditions (no moon, cloud or light pollution).

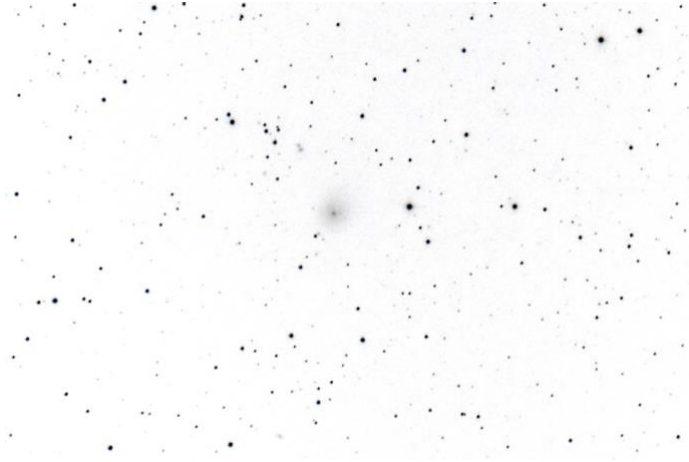


## Member Images

**Marc Charron**

The weather hasn't been kind for those doing astrophotography, however, I did manage to take a few images.

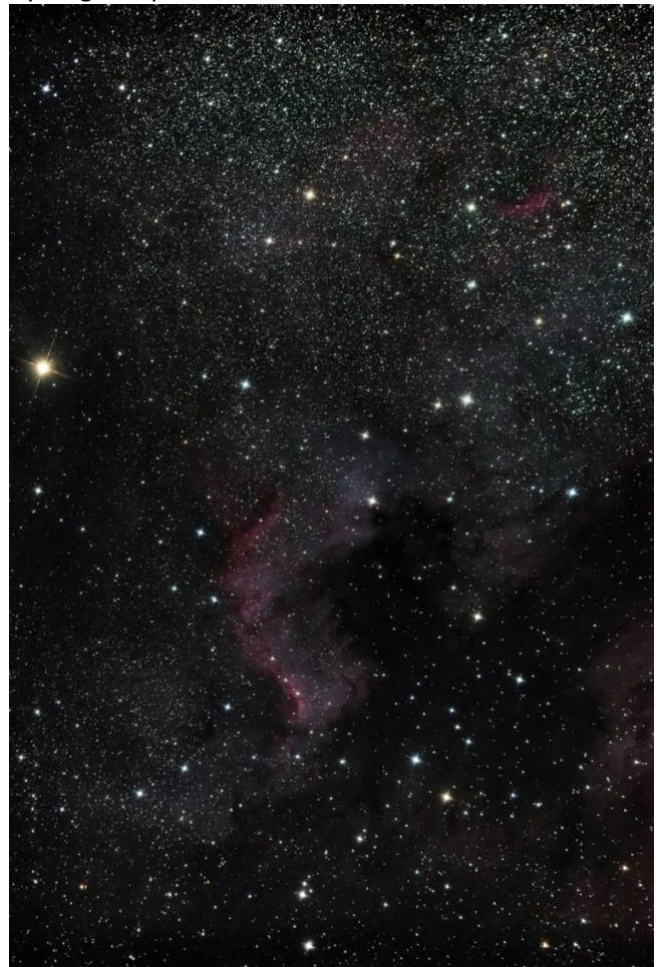
Comet 12P Pons-Brooks taken on the 14<sup>th</sup> with a StellaLyra 150mm Newtonian with 1.1x flattener, with Nikon D5600, all on an AZEQ6 mount. Stack of 40 frames, 20 seconds each at ISO 6,400. There was quite a bit of light pollution in that part of the sky and the comet was almost completely lost in it, so I was happy to recover this. Inverting it makes it easier to see.



Messier 33 taken with the same set-up and exposures as for the comet above.



North America Nebula taken with StellaLyra 150mm with Starizona 0.75x reducer, Nikon D5600 on an AZEQ6 mount. I was only able to take 15 exposures, 25 seconds each at ISO 5,000, so perhaps I did not do it justice. The camera is not modified, so much of the hydrogen alpha emission is not recorded.



Lastly, M31 the Andromeda Galaxy taken with the same set up, this time a stack of 47 frames, 20 seconds each at ISO 6,400. There was quite a bit of light pollution present and I had a hard time removing the background glow. Shortly after I saw a video by Cuiv's the Lazy Geek talking about GraXpert AI (beta version), which is free open source software, so I decided to give it a try, and yes, it did a superb job cleaning up my image.

Before

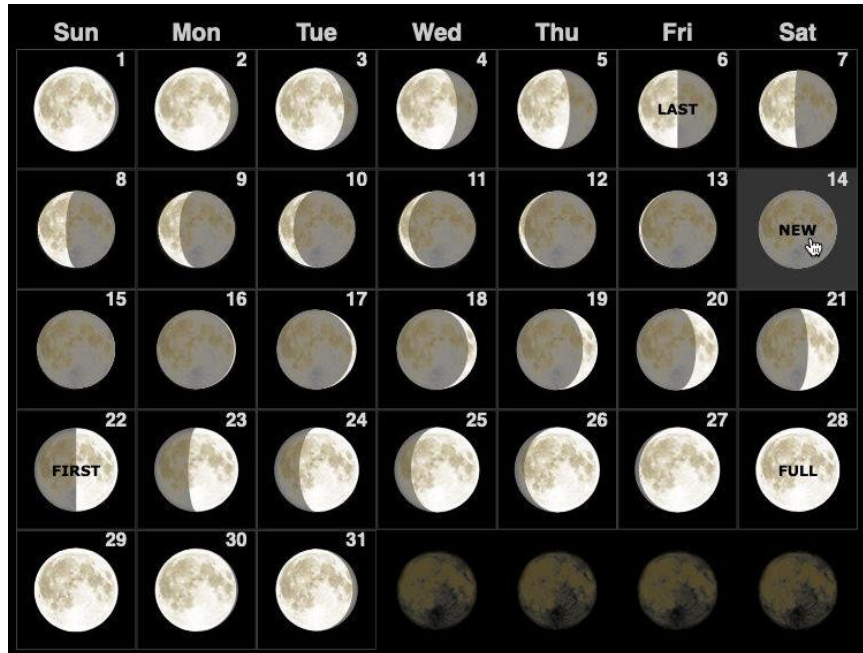


After

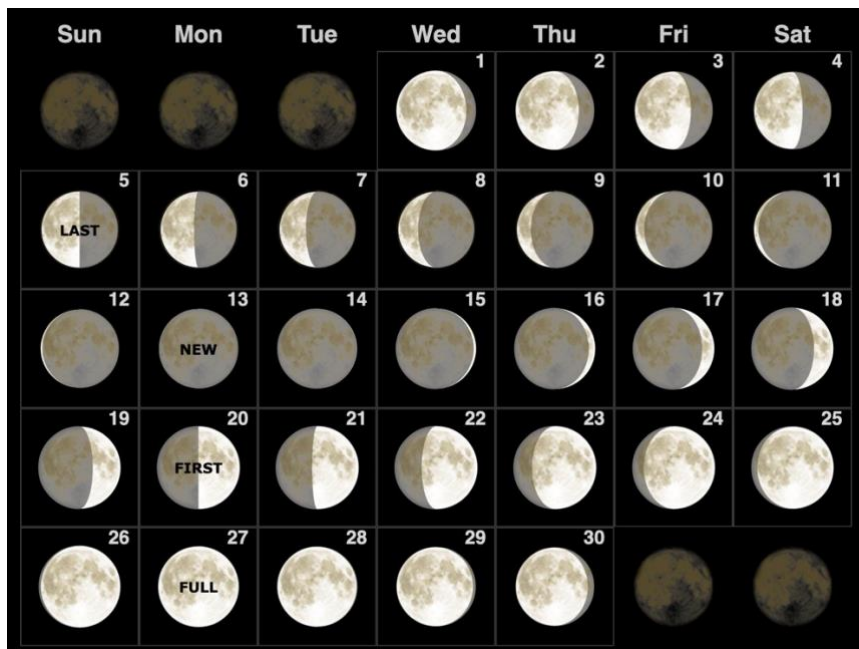


## Moon Phases

October 2023



November 2023

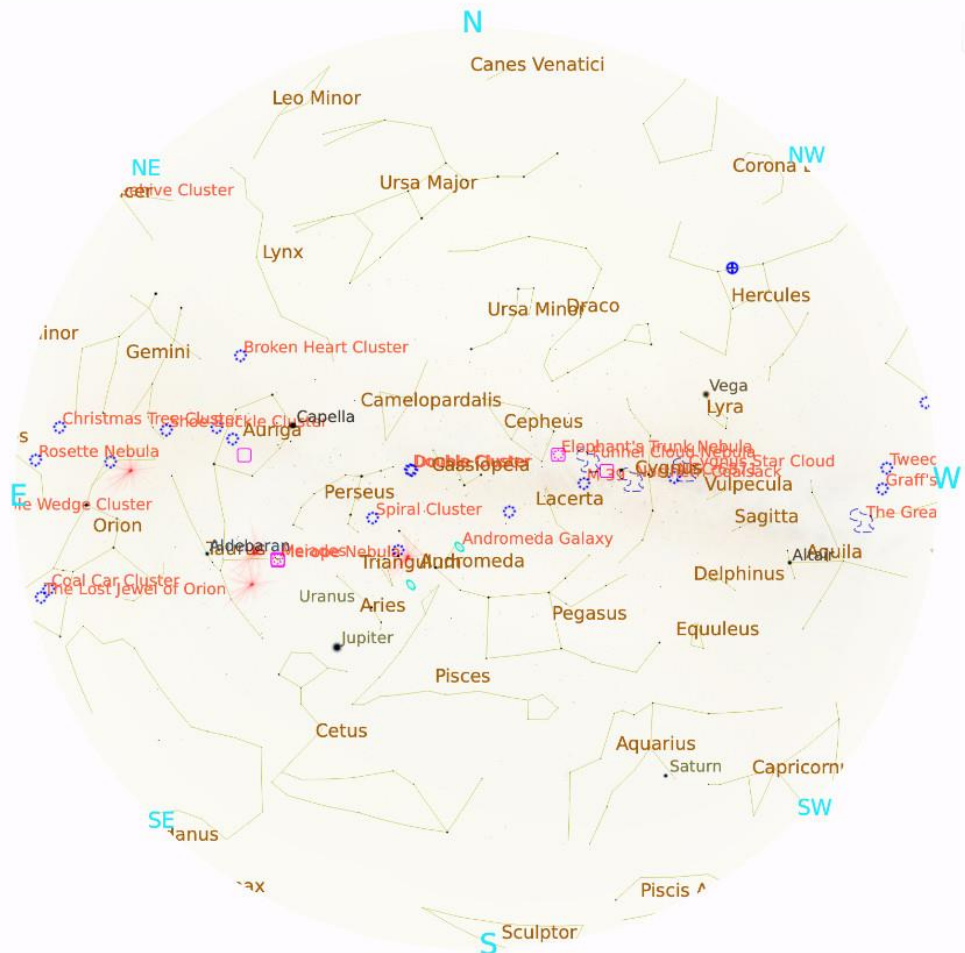


Credit: <https://www.moongiant.com/calendar/>





# November 2023 Sky Chart



Earth, Ayr, 13 m      FOV 189°      32.1 FPS      2023-11-15 21:01:00 UTC+00:00

Taken from: Stellarium

