



Stargazing under the dark skies of Northern Scotland

Presented by Caithness Astronomy Group

Question and Answer Session

1. I live in Thurso; will I see the Aurora borealis?

This is a definite yes, when the conditions are right - which can be quite often (several evenings a month during the darker nights) around the time of solar maximum activity. We've just past solar minimum activity and will be at solar max in 3 to 4 years. The frequency of aurora sightings will increase over the next few years.

2. Where on the Bortle Scale is the surrounding area of Thurso?

Thanks for the question Ann, I must say I'm not sure. What I can say is that the location we use in Castletown (nearby) is a Dark Sky Discovery Site and the criteria for that are at [Dark Sky Discovery](#).

[Gordon] Where I live towards the edge of Thurso it is ~Bortle 4. On a crystal-clear night my ageing eyesight can see magnitude 6 stars from my back garden. The usual event venue for CAG at Castlehill Heritage Centre in Castletown is bordering between Bortle 4 to 3. Dunnet Head, away from the lighthouse glare is Bortle 3. At Loch More in Caithness is probably Bortle 2. Many parts of Sutherland, well away from the streetlights in the bigger villages are possibly bordering on Bortle 1 quality.

Information on the Bortle Scale can be found here - [Bortle Scale - Wikipedia](#)

3. How often do you get Aurora in Thurso?

Quite often, we normally dash out if we get an alarm from the [Aurora Watch](#) app. Sometimes it looks great on camera and sometimes by eye. See also, the answer to Q1.

4. Do you have any webcams set up so that we can watch the skies when we cannot get outside?

No, I'm afraid not. Although, CAG is getting set up with a few more online "sky casting" events, we've had some first attempts recently, check out our [Facebook](#) to keep up to date. There are more events planned for this year. For Aurora, there are a couple of cameras on the [Aurora Watch](#) app. Hope that is of interest!

5. My Wife and I visit the Cairngorms every February (we have never been lucky enough to see the Northern Lights) how does this area compare with Caithness. From Paul Adamson Chair Somerset Levels Stargazers (The other end of the country)

Caithness is a touch further north and so can sometimes see slightly fainter events that just get washed out further south. The [Aurora Watch](#) app has a nice 30-minute ovation model forecast and it works nicely to show how far south the aurora is sometimes visible.

Other useful websites are www.spaceweatherlive.com and www.aurora-service.eu/aurora-forecast. Spaceweatherlive also has a useful free phone app.

6. What is the best telescope to use?

That would depend on what object in the sky you would like to observe. For example, the relatively cheap telescope Lidl's is offering from time to time works for observing planets such as Jupiter, Saturn or Mars.

[Gordon] As stated this very much depends on a number of things, such as price limit, will it be used for terrestrial viewing, how portable you need it to be, whether you wish to photograph objects with it, but mostly what astronomical objects you wish to observe or photograph using it. There is no simple answer, but there is lots of guidance online (some links included on the below). It would be well worthwhile contacting your local astronomy club to see if you can attend an observing night to see their equipment, get some advice and a flavour of what the different options are.

[Jodrell Bank Centre for Astrophysics
Scope Reviews
Sky and Telescope - Buying Guide](#)

[Sky and Telescope - Types of Telescope
Sky at Night Magazine](#)

7. Is there an Android app I can install to take sequence photos and star trails?

You could check out the following Android app for night sky photos - AstroCam by SL\SH. They also do an android app for generating star trails. For the PC I use the StarStaX freeware.

8. What kit are you using on live skies please?

CAG is currently using a ZWO 290MC camera with fisheye lens for "live" all sky views

9. Where is the best place near Thurso to go stargazing?

There are several places, but Thurso East is fairly good. Head down Sir Archibald Road to the car park at the path to the castle.

Thurso East is a good option. If you wish somewhere you can drive to and step out the car to observe from then you could also try Thurso river mouth (<https://goo.gl/maps/8HyhuKiq3pqbHsMh7>), the road to Harold's Tower (<https://goo.gl/maps/dEvMPPUbZ12sQ8w49>), Scrabster Hall, or the car park at Naver Gym (as long as the football floodlights are off!). However, a short journey to Castlehill Heritage Centre car park in Castletown, or the woodland walk at Sibster / Georgemas will provide a much darker viewing location.

10. When I spot the northern lights, I never have my camera just a mobile phone, what setting would you suggest, my pictures are always rubbish.

High ISO and probably the longest exposure length you can take. Most phone camera apps don't allow long exposures, so you may have to download one aimed at astrophotography which will allow exposure lengths of several seconds.

11. What lens would be best to start with for night-time photography with a DSLR?

A lens with a nice low F stop, preferably below F3.6. For Aurora you would be better with a wide-angle lens e.g., 14mm up to 50mm.

A fast wide-angle lens would be strongly preferred. Kit lenses that are bundled with cameras are often approx. 28mm focal length equivalent and F3.5. This is a perfectly good starting point, but if you are keen to do more of this type of photography (or daytime landscape photography) then a faster wider-angle lens will soon appear on your Christmas list!

12. Gordon mentioned a mid-price smartphone - what do you mean mid-price?

The camera phone used to illustrate the potential capabilities of a camera phone for night-time photography was a Google Pixel 3a, which costs £300-350. So certainly not the current top of the range type model.

13. What sort of exposure do I need using a DSL's camera for capturing the Aurora?

It depends on how bright the show is, but a good start point would be as low an F stop as your lens will allow, ISO 1600- and 10-seconds exposure. You will be able to adjust your setting once you get an image. A tripod and using the camera manual settings mode and manual focus is essential. CAG often have night photography events / talks due to the increasing popularity - keep a watch out for these once restrictions are lifted allowing gathering in groups. As it happens one of our members, Maciej Winiarczyk, gave a detailed talk on this on Friday evening to the north of Scotland astronomy clubs.

14. Which is the best telescope to see nebulas and the northern lights?

Your eyes and DSRL camera for the Aurora and binoculars or a small telescope for the Orion Nebula

15. Looking at the picture of the milky way, is there a difference between what you see when looking 'in' towards the middle of the milky way or looking 'out' towards our arm of the galaxy? and do these happen at particular times of the year?

In addition to the live answer included in the recording, I would point out that the band of the Milky Way visible from Caithness at night changes position during the night (due to the Earth's rotation), and during the year (due to the Earth orbiting the Sun and the night side of the Earth facing a different direction). For example, on an autumn evening the Milky Way stretches from the SW horizon to overhead, but on a late Spring evening it arches across the northern half of the sky.

16. What size telescope do you recommend for beginners?

See above telescope advice. It is important to take account of who will be setting it up and operating it. If the beginner is a child, then weight and complexity of use will be a big factor if you wish them to largely use it by themselves.

17. In normal times does Caithness Astronomy Group have events that the public can come to?

We have events roughly on a monthly basis with about half open to the public to attend. It depends largely on the topics being covered at the event, you can find more information about CAG on our [website](#) and on [Facebook](#).

18. Is West or East best for Borealis?

The aurora is always to the North but can extend from west to east if it is a big enough event.

19. Does Caithness Astronomy Group share anywhere online if there is an Aurora visible in Caithness?

Facebook is an excellent place to look. Orkney have an aurora page that is very good for giving a heads up of it appearing. Check out [Orkney Aurora Group](#).

Comments

- ◇ Really stunning photos guys!
- ◇ Great talk/photos, many thanks!
- ◇ Very interesting thank you!
- ◇ An excellent presentation, Gordon. I have learnt so much. Thank you for your time.
- ◇ Thank you - I really enjoyed learning more about stargazing! I would love to see the Aurora!
- ◇ Thank you for a very interesting presentation - great photos and information.
- ◇ Fantastic talk thank you so much!
- ◇ Very interesting, thank you Gordon & Caithness Astronomy Group. For us, an introduction to stargazing. We're based in Sutherland, with all the beauty of the universe around us to explore.
- ◇ Thanks for a great presentation guys. Especially the different picture scales & the constellations.
- ◇ Thanks, great presentation to see on my birthday!
- ◇ Thank you for a great presentation, I'll definitely be up in Thurso when restrictions allow, you've given me some great ideas.
- ◇ Excellent, thanks for the kit answer and great photos - really made the show – thanks!
- ◇ Excellent presentation, Gordon! You have definitely made me want to get up to the north of Scotland to see these stunning phenomena, and you've provided inspiration for future photos! Thank you!
- ◇ Thanks for your time tonight Gordon & team, great presentation. I'm just west of London so have little chance of seeing such beauty.
- ◇ Thank you for a really interesting talk and some stunning photos.
- ◇ Excellent start to the Caithness International Science Festival. Very informative and inspirational presentation. Thank you.
- ◇ Thanks for a super presentation!
- ◇ Thank you very much, really enjoyed the session.
- ◇ Great presentation, thanks so much!
- ◇ Thanks most interesting.
- ◇ Thank you! Excellent pictures and explanations :-)
- ◇ Thank you for the fantastic presentation and well done to the whole team :)
- ◇ Thanks to Gordon and the team for a really well-prepared presentation.
- ◇ Thanks Gordon and CAG team!
- ◇ Thanks a lot - I learned a few things.