

A proposal for a joint venture between the Cresswell Village Hall Committee and Northumberland-Astro.



Proposal prepared by Cllr Chris Haworth and Gary Woodburn presented to Cresswell Village Hall Committee.

A proposal for a joint venture between Cresswell Village Hall Committee and Northumberland-Astro.



Introduction

Cresswell is a small village located in Northumberland, England, situated along the North Sea coast. It lies approximately 5 miles north of the larger town of Ashington, and is known for its coastal beauty and proximity to nature reserves like the Druridge Bay Country Park. The area is ideal for enjoying outdoor activities like walking, birdwatching, and coastal exploration.

In terms of the northern lights, while they are most commonly visible in higher latitudes near the Arctic Circle, Cresswell's location in Northumberland (around 55.3°N) does offer the chance to witness this stunning phenomenon, especially during periods of heightened solar activity.

The dark skies and natural landscape around Cresswell make it a good spot for aurora watching if the conditions are right—clear skies and solar storms. To enhance your chances, check aurora forecasts, and head out to less light-polluted areas for optimal viewing.



Proposal

To install a live video camera to monitor for Aurora Borealis activity to the North of the village along the coast line. This will provide both villagers and visitors the opportunity to look at the conditions along our coast.

Commitments

Mr G Woodburn of Northumberland Astro will provide kit (summarized in appendix 1) to allow the village hall to host an Aurora Web Cam. Once installed Northumberland Astro will host the camera on line.

The village Hall Committee will provide access to run cables to the external camera and enable power supply to the camera. They will house the necessary equipment in the secure store cupboard.

Initial Measurable Outcomes

- Webcam installed and up and running.
- Images available through Northumberland Astro U Tube channel.
- Visitors and Residents are on line accessing the facility.

First Steps

1 - Agreement from the hall committee to install the camera and equipment.

2 - Establish a route for cables with support from Cllr Chris Haworth.

3 – Village Council are asked to consider upgrading the internet connection, the current connection speed might just about work with the camera and PC combo I intend to install. Ideally, 15mbps + upload speed is more suitable for this camera, the speed test we did measured 7.8mbps. To run the camera at this speed should be possible but we may have to lower the output quality, which isn't ideal.

Next Steps

Once we've managed to get the stream running and stable, Northumberland Astro will aim to maintain the stream remotely via remote desktop software. Once set up it is usually low maintenance, but from time to time there may be a problem where Mr G Woodburn would have to physically access the PC, for example, sometimes automatic windows updates will throw a spanner in the works. This will be supervised by a member of the village Hall committee or nominated person.

Northumberland Astro will show interested individuals how it all works, it would be beneficial to have someone closer who is able to reset things if there is a problem with a windows update or something.

To consider embedding the livestream into the village hall website.

Sustainability Future funding opportunities to extend the project

If this venture is effective in observing the Aurora the village Hall might consider applying for a grant to provide an upgrade to the loaned equipment, cover running costs. (Example installation in Appendix 2).

Background Northumberland Astro Mr G Woodburn

My background is in Nature Conservation, working for environmental charities. I worked for RSPB for 17 years. About 10 years ago I gave up work to care for my wife. I am now her full-time carer. I volunteer for the Northumberland Coast National Landscape and am heavily involved in their Dark Sky Protection/Promotion. I advise them regarding dark sky friendly lighting, carry out dark sky surveys and also do surveys to help them identify and designate new Dark Sky Sites.

My interest in the night sky has developed over the last 15 years. I am lucky enough to live in a dark spot and so I started spending my evenings in the garden stargazing and looking for auroras. This interest soon turned into exploring the night sky with a telescope and astrophotography. I thought it would be good to be able to check the sky conditions without having to step outside and adjust my eyes to the darkness, so I set up a small camera that took a photograph every 60 seconds and uploaded it to a simple web page. I noticed quite a few people using the web page and this spurred me on to set up a live stream video camera too, the Aurora Cam. Then another live stream, the Meteor Cam. These have proved popular and Northumberland Coast National Landscape approached me to set up a similar camera for their website to promote the areas dark skies/auroras, I am working with them at the moment to try and find a suitable site for a camera. My vision is to set up a small network of live stream aurora cams across Northumberland, the Cresswell Village Hall camera could become part of this network.

My skills setting up live stream cameras are self-taught. I've learned a lot over the last year from my existing cameras and am now experienced with the various hardware/software/settings required. Although the process to set up a stable livestream is often quite complicated, I have worked through this with my own cameras, they now run 24/7 and are low maintenance. The only real problems occur with power cuts or drops in internet speed/service.

Organizations reviewed in drawing up this proposal:-

Northumberland Coast National Landscape

<https://www.northumberlandcoast-nl.org.uk/>

Stargazerslounge

<https://stargazerslounge.com/topic/418506-live-aurora-cam-northumberland/>

Cresswell Village Hall

Dark Sky International

<https://darksky.org/>

Cresswell Parish Council

Northumberland Community & Voluntary Action (potential Grant Support)

Nadra Sisters and North Steads Community Windfarm: Spring 2025 (Potential Grant Opportunity)

Appendix 1

The kit to be installed is:

TPLink Tapo C325WB extreme low light colour security camera.

Dell Optiplex 3050 Small Form Factor PC with all the required streaming software + meteor detection software – this uses a 180w power supply (low power compared to other PCs).

30m Cat6 cable from camera to PC.

Ethernet splitter box (1 cable to router, 1 cable to PC, 1 cable to camera). A plug will be required near the router for this.

12v power supply with a 20m cable to the camera.

Monitor, keyboard + mouse. The monitor will be turned off and only turned on if I need to access the PC on site.

If we can get this setup working on your current internet connection then I hope you will be pleased with it. My aurora cam on the website uses the same camera at the moment, you can see it here...

<https://northumberland-astro.space/sky-cameras/>

The camera I will install is a very capable low light camera and very good for auroras, you can see a couple of my old recordings here...

https://www.youtube.com/watch?v=yh_-UOJwVKk
<https://www.youtube.com/watch?v=17bCGgKXMxM>

I hope this covers the information you need for your proposal to the committee at the Hall.

Appendix 2

Potential Upgrade (Grant funded)

Camera Annke NC800 Camera (8mp) (turret version is probably best)

A Windows PC. This needs:

1 - A modern processor with a decent clock speed and multiple cores and threads (For example I use the i7 10700 for my stream with this Annke NC800 camera).

2 - 32gb ram.

3 - A dedicated graphics card. This needs to be a Nvidia turing microarchitecture GPU (I use the GTX 1660ti but there are other turing models).

4 - A suitable power supply with enough power to run the graphics card.

12v Power Supply for CCTV 2.1mm x 5.5mm DC Power Male to Female 12 Volt Extension Cable for CCTV (15-20m ?)

Gigabit Network switch/Ethernet splitter box.

30m Cat6 ethernet cable.