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Space Weather Unplugged



“Space Weather Unplugged” project was started with the aim to address the existing gap in space weather education for the general public. Hosted by Marybeth Kiczenski, Christian Harris, and Tanya Melnik, these short educational videos are streamed and posted on a weekly basis. They address both current events and relevant topics in space weather as just-in-time learning opportunities. Learner feedback occurs both formally, with posted surveys, as well as informally, with questions posted in live chat and comments for the posts/recorded sessions. Additional reading is suggested for learners as references to the relevant scientific publications. In addition to weekly short videos, monthly featured talks by academic and operational space weather professionals focus on topics of interest in greater detail, such as the impacts of space weather events on important industries like precision farming.

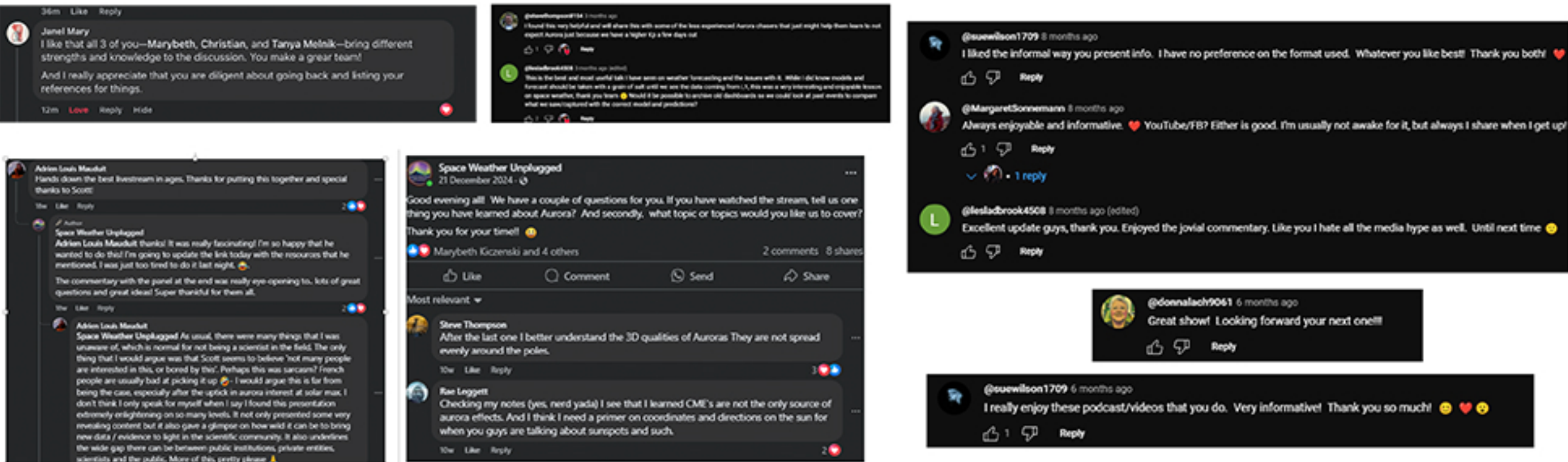
https://www.youtube.com/@Shelbydiamondstar/podcasts



Methods

Space Weather Unplugged follows a general structure of covering current events, then the topic of interest, and a conclusion that answers any questions as well as a preview of the next discussion. If there is a larger space weather event of interest, then a stream dedicated to that event will take precedence. Once again, leaning into the adult education theory of applying current events to research.. Streams also include invited guests from the academic world, operational world, and social media. This provided insight into the ongoing research, as well as how operations work. We have found there's quite a bit of confusion regarding the operation's role in aurora forecasting.

From there, we will gather feedback, either from the live chat, comments on social media, or surveys, and plan for future streams. Information from research papers and how they apply to real world scenarios increases a person's chance of seeing the Aurora.



Data Analytics

YouTube metrics, in addition to social media discussions, are used to drive the direction of the videos. Each video typically sees 20-30 people live, as of this writing. The guest speakers can drive quite a bit more. Videos tend to range from a couple hundred views to over a thousand.

Next steps include growing the audience, as well as finding a good date and time to host the streams. This is still a work in progress. Creating a searchable catalog, reaching out to scientists, citizen scientists, photographers, ect for interviews, as well as keeping up on current event forensics are all important. The emphasis on education and current best practices for aurora chasing remain the integral core focus. Adapting as needed.

|  |                                     |                    |        |      |              |       |
|--|-------------------------------------|--------------------|--------|------|--------------|-------|
|  | Space Weather Unplugged - BIGGEST   | Streaming software | Public | None | Oct 3, 2024  | 1,271 |
|  | Space Weather Unplugged - BIGGEST   | Streaming software | Public | None | Oct 3, 2024  | 1,271 |
|  | Space Weather Unplugged - MAGNETIC  | Streaming software | Public | None | Feb 16, 2025 | 289   |
|  | Space Weather Unplugged - I LUX RDP | Streaming software | Public | None | Feb 9, 2025  | 337   |
|  | Space Weather Unplugged - Solar Sp  | Streaming software | Public | None | Feb 2, 2025  | 196   |
|  | Space Weather Unplugged - Nordic A  | Streaming software | Pub... | None | Jan 25, 2025 | 218   |
|  | Space Weather Unplugged - Nordic A  | Streaming software | Public | None | Jan 19, 2025 | 284   |



Introduction

The Aurora Borealis has been a source of inspiration, interest, and mystery to humans since ancient times. However, with the recent advances in technology and space weather awareness, this “once in a lifetime” phenomena has become accessible to anyone. In fact, the May 2024 Gannon Storm\*\*\* boosted google searches of “northern lights” to an all-time high\*. This has led to a need for a source of information that is more aurora-specific. Most information out there, while great, is focused on operational use for space weather. A handful of figures have emerged as leaders in this world, such as Dr. Tamatha Skov aka “Space Weather Woman” and SolarHam. However, they are global, and more focused on general space weather.

Citizen science has become an integral part of Auroral research. Collaborations between NASA's Aurorasaurus had proven to aid in discoveries like STEVE, and help collect much needed data to further the development of models like OVATION. The Auroral Research Coordination: Towards Internationalised Citizen Science (ARCTICS)\*\* group is a collaboration of scientists and citizen scientists who created an Aurora Field Guide and Aurora Handbook. As even terms to describe types of aurora are not agreed upon yet.

This is where the idea of “Space Weather Unplugged” came from. We wanted to provide a reliable resource for people to search and find information, as well as focus more on Aurora-specific topics. As citizen scientists, we want to help bridge the gap between academics and the general public. Presented in a way that is digestible and understandable using Adult Learning Theory. These shorter form videos, targeted to thirty-minute segments, tackle space weather topics, and then apply these topics to real-world applications such as post-event forensics. Then follow up with the audience to assess their own understanding and for ideas on future topics based on interest level. Applicable research papers are cited to back up the discussion.

Just how popular have the northern lights become? Take a look at some of these groups on Facebook:  
Northern Lights Alert - 1.3Million  
Aurora Borealis Notification - 133K  
Aurora Australis Tasmania - 334K  
Alberta Aurora Chasers - 286K  
Great Lakes Aurora Hunters - 81K  
Michigan Aurora Chasers - 127K  
Upper Midwest Aurora Chasers - 28k  
Northern Lights of Wisconsin - 68K  
Aurora Borealis Washington State - 101K  
Manitoba Aurora and Astronomy - 75K



\*https://www.space.com/sun-space-weather-search-trends-may-2024-analysis  
\*\*https://kherli.github.io/Aurora-Field-Guide-And-Handbook/index.html  
\*\*\*https://gc.copernicus.org/articles/7/7/2024/

Themes

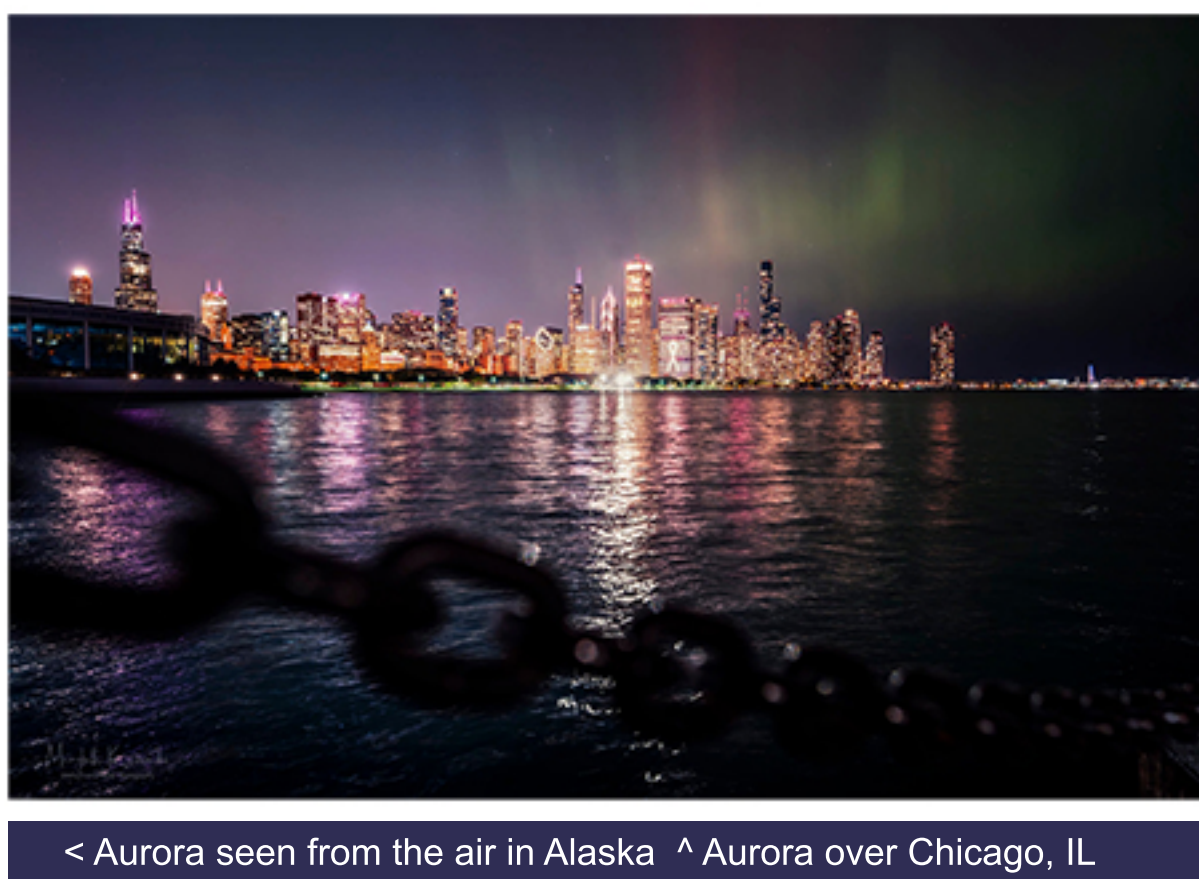
AURORA!! Creating and fostering the excitement around Space Weather phenomena.



< Glacier National Park, MT ^ Eagle Harbor Lighthouse, MI

Takeaways

The northern lights are one of earth's most amazing and inspiring natural phenomena. Every person should see them at least once in their life. With the advent of advances in technology and forecasting, what used to be “sheer luck” can actually be forecasted to a degree. Our goal is to help people gain enough insight to be able to make informed decisions on their next chase.



< Aurora seen from the air in Alaska ^ Aurora over Chicago, IL