

# Aurora Trip Tromsø (Norway) 14-20<sup>th</sup> November 2025

Mike Whybray

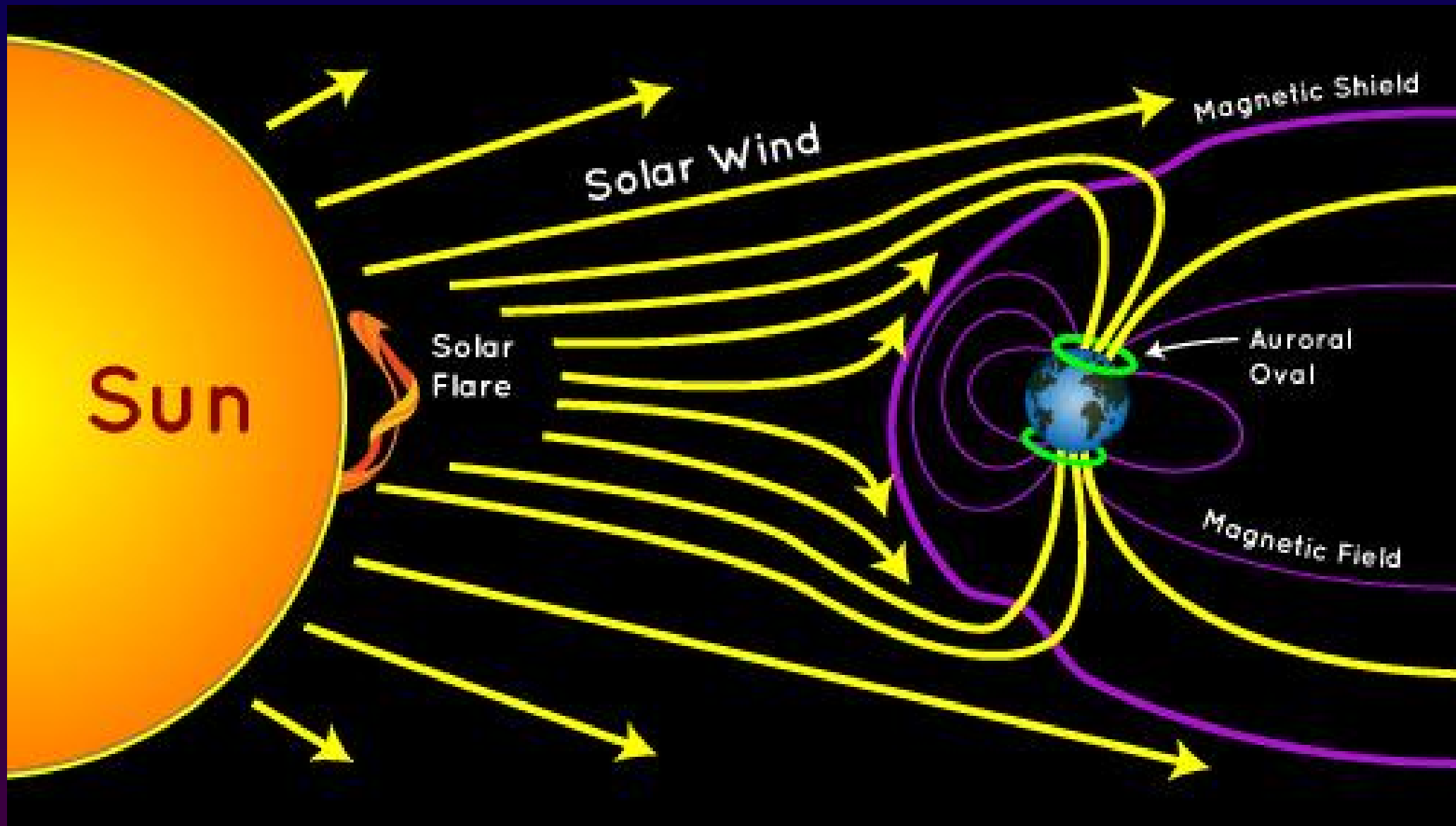


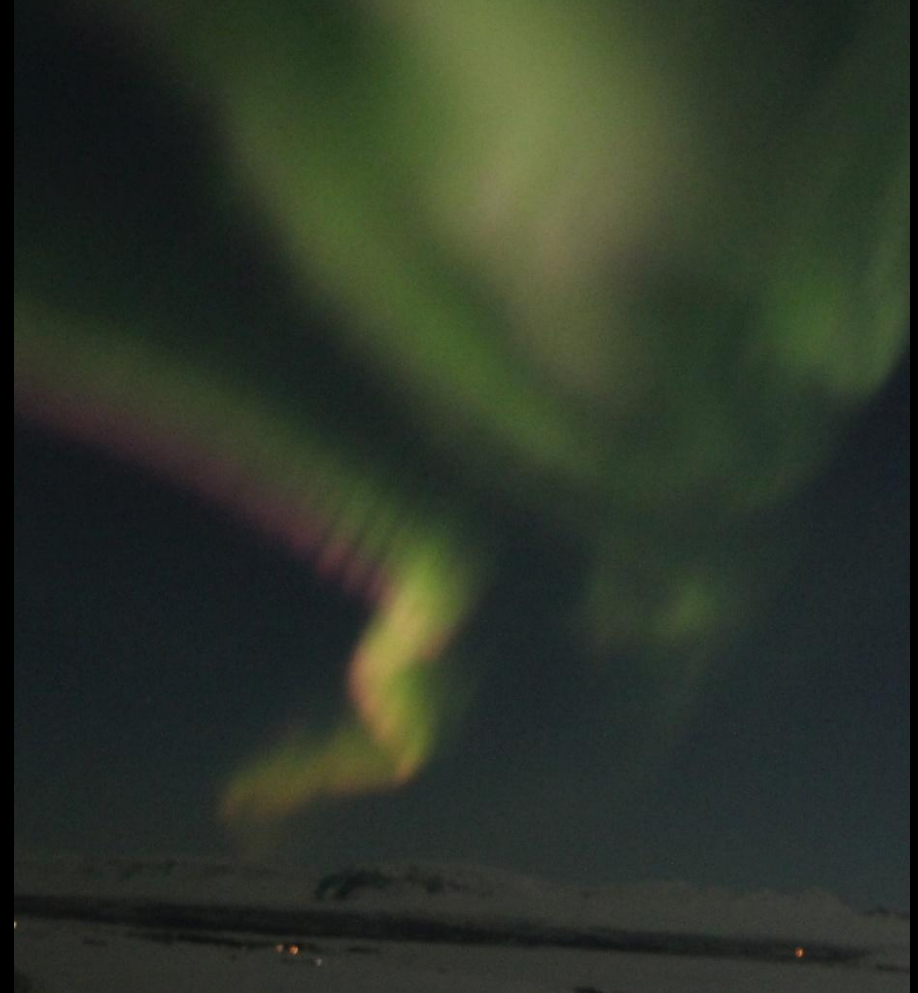
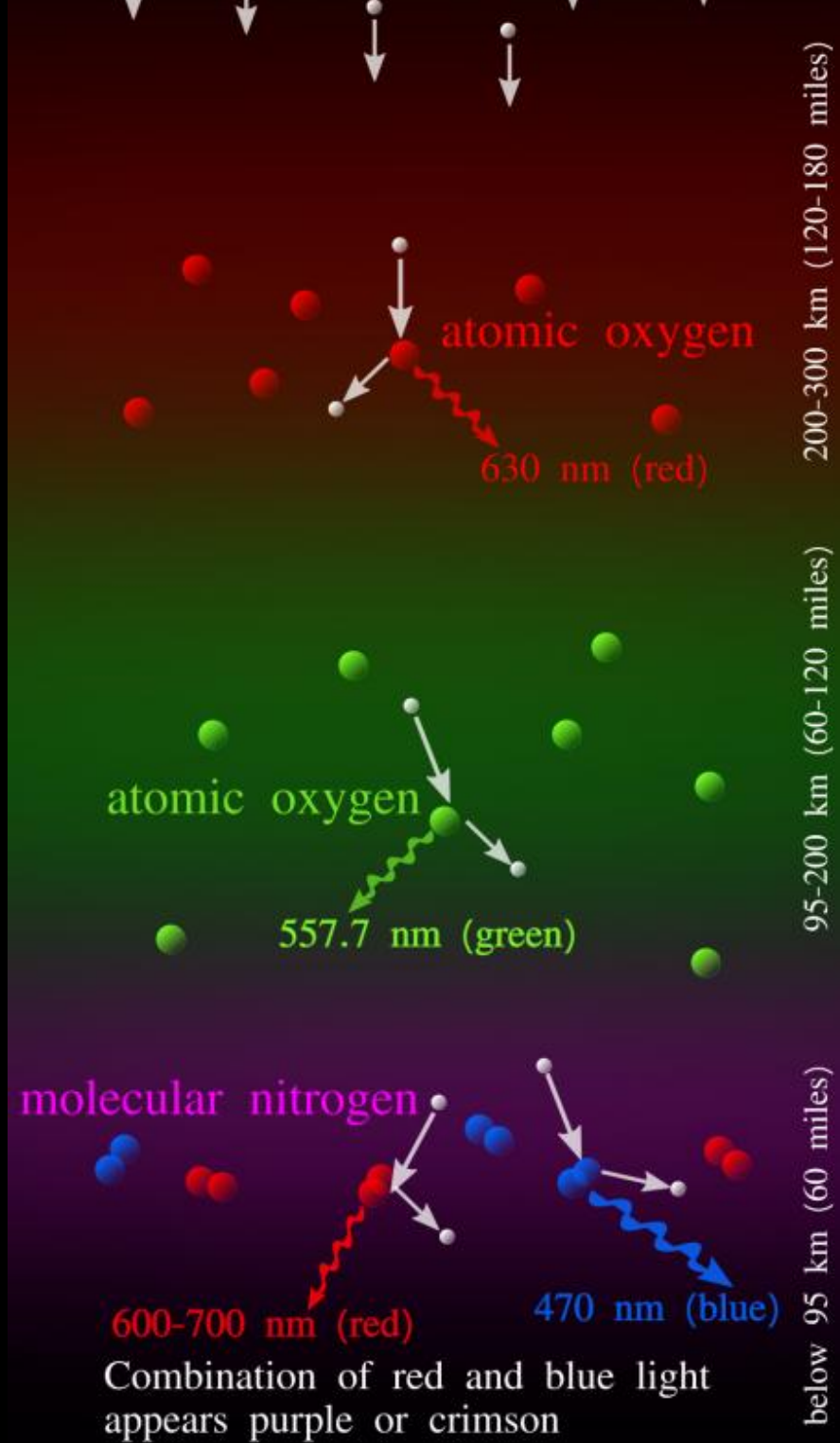
# Talk overview

- What causes aurora
- Planning
- Equipment
- Images and time-lapse videos
- Other sights in Tromsø




# Aurora mechanism





# When to go for aurora?

- **Dark skies** - September - March
- **Moon** - ideally none near midnight
  - between 3rd and 1st quarter 
  - <https://moonphases.co.uk/moon-calendar>
- **Weather** - ideally a clear sky!
  - 10 day forecast e.g. [weather-forecast.com](http://weather-forecast.com)
- **Solar Wind** - ideally fast/dense expected
  - Google “space weather enthusiasts dashboard”

# <https://www.swpc.noaa.gov/communities/space-weather-enthusiasts-dashboard>

:Product: 01031230three\_day\_forecast.txt

:Issued: 2026 Jan 03 1230 UTC

# Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center  
#

## A. NOAA Geomagnetic Activity Observation and Forecast

The greatest observed 3 hr Kp over the past 24 hours was 5 (NOAA Scale G1).

The greatest expected 3 hr Kp for Jan 03-Jan 05 2026 is 5.67 (NOAA Scale G2).

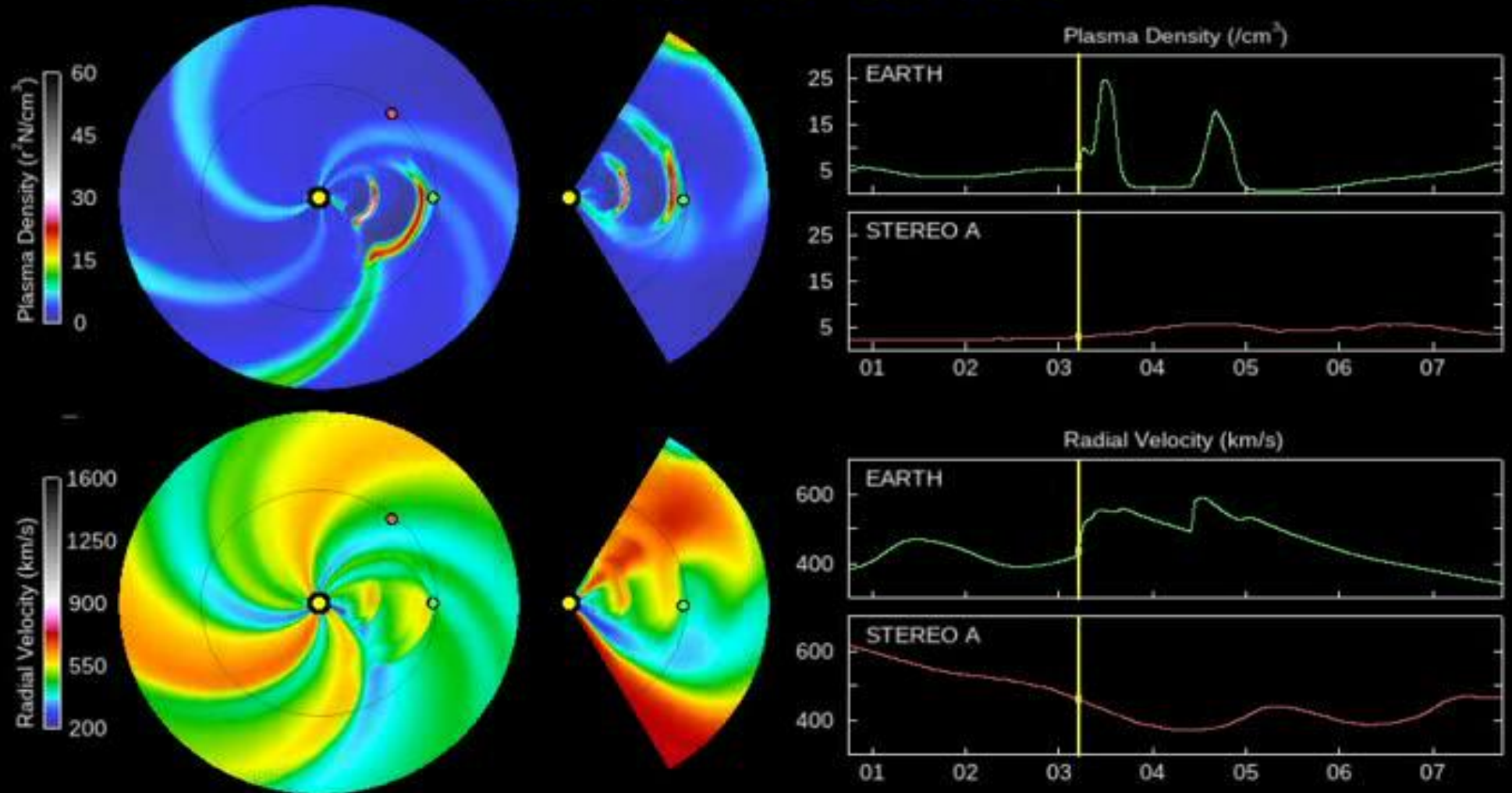
### NOAA Kp index breakdown Jan 03-Jan 05 2026

|         | Jan 03    | Jan 04    | Jan 05 |
|---------|-----------|-----------|--------|
| 00-03UT | 3.33      | 3.67      | 3.00   |
| 03-06UT | 3.33      | 3.33      | 2.00   |
| 06-09UT | 2.00      | 2.00      | 2.00   |
| 09-12UT | 2.00      | 3.00      | 2.67   |
| 12-15UT | 3.67      | 3.00      | 2.67   |
| 15-18UT | 3.00      | 2.00      | 2.67   |
| 18-21UT | 3.00      | 4.67 (G1) | 2.67   |
| 21-00UT | 5.67 (G2) | 3.67      | 3.00   |

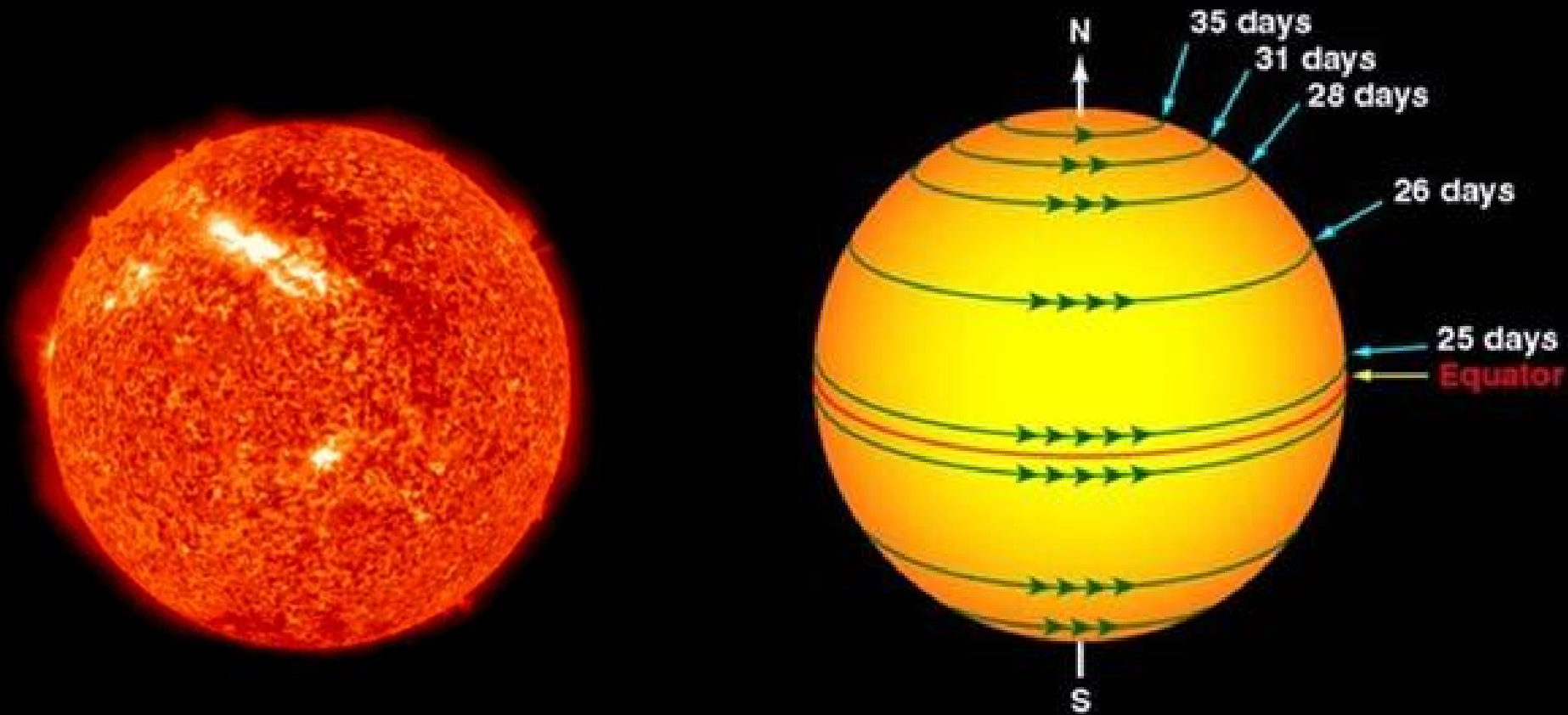
Rationale: G2 (Moderate) storming is likely on 03 Jan due to the combination of the ongoing HSS activity and the peak impact of the 31 Dec CME. G1 (Minor) storming levels are then likely on 04 Jan due to the anticipated arrival of the 02 Jan CME.

# 'Solar Wind' forecast animation

2026-01-03 05:00Z

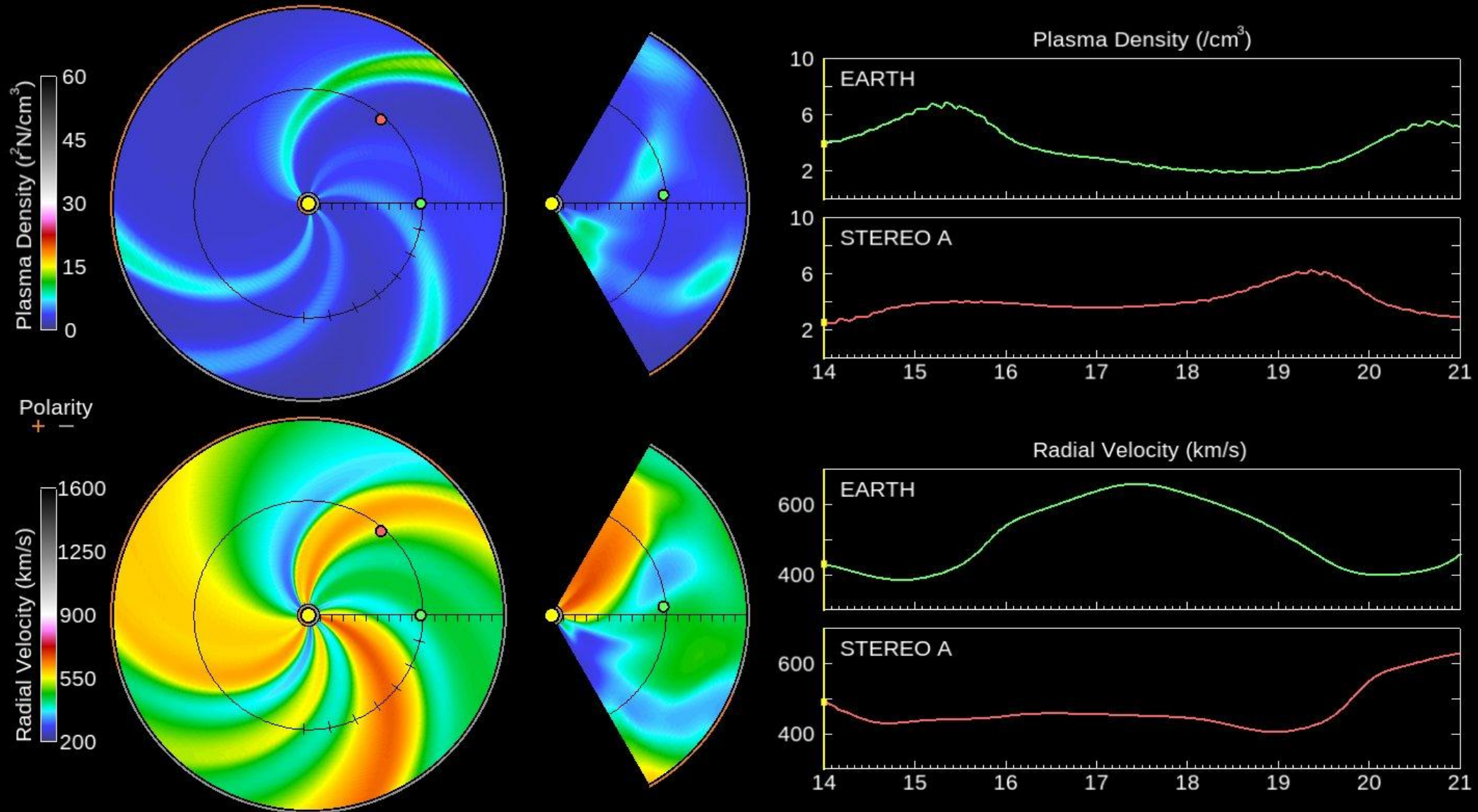


# Solar Rotation



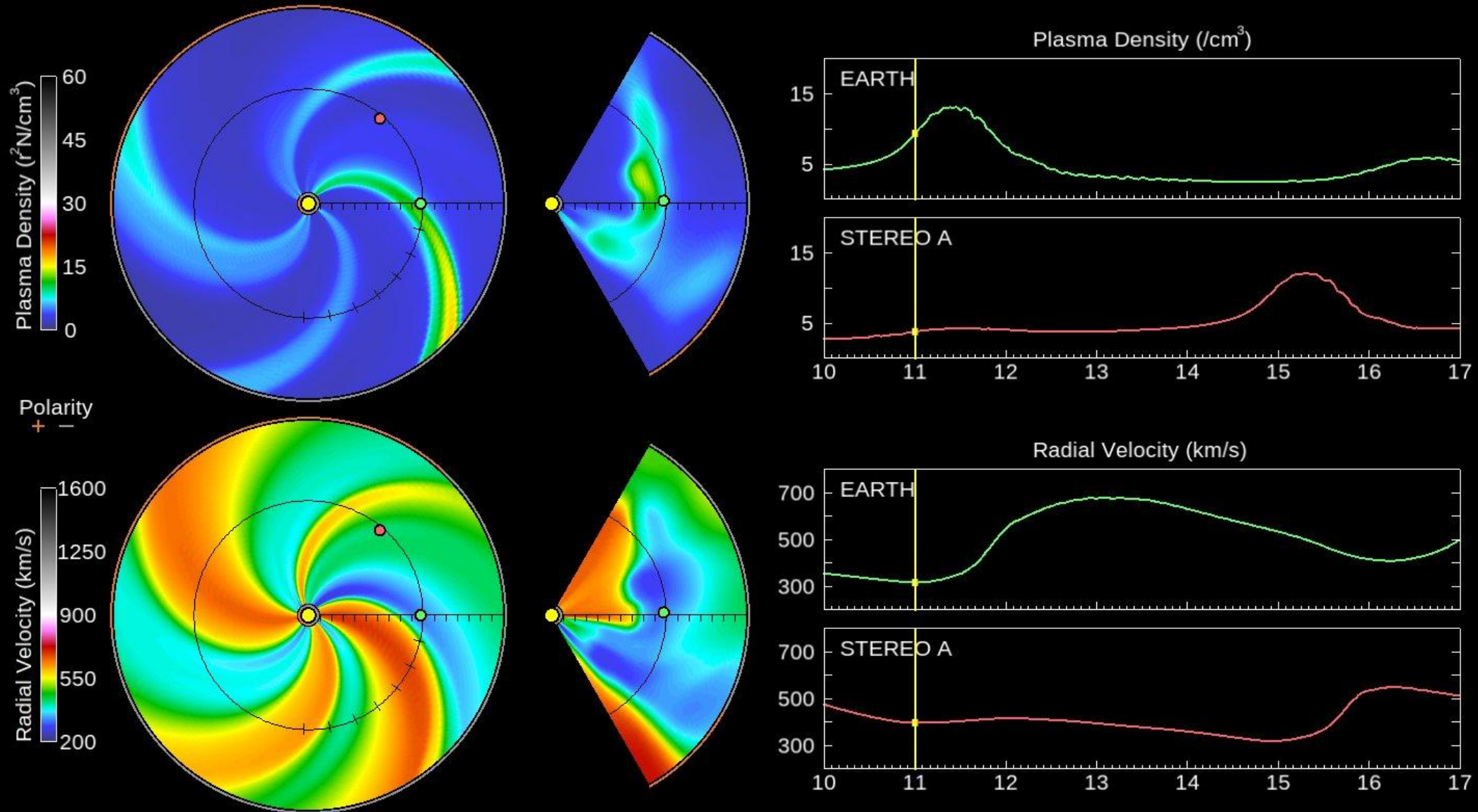
# Forecast during my visit to Tromsø

2025-11-14 00:00Z

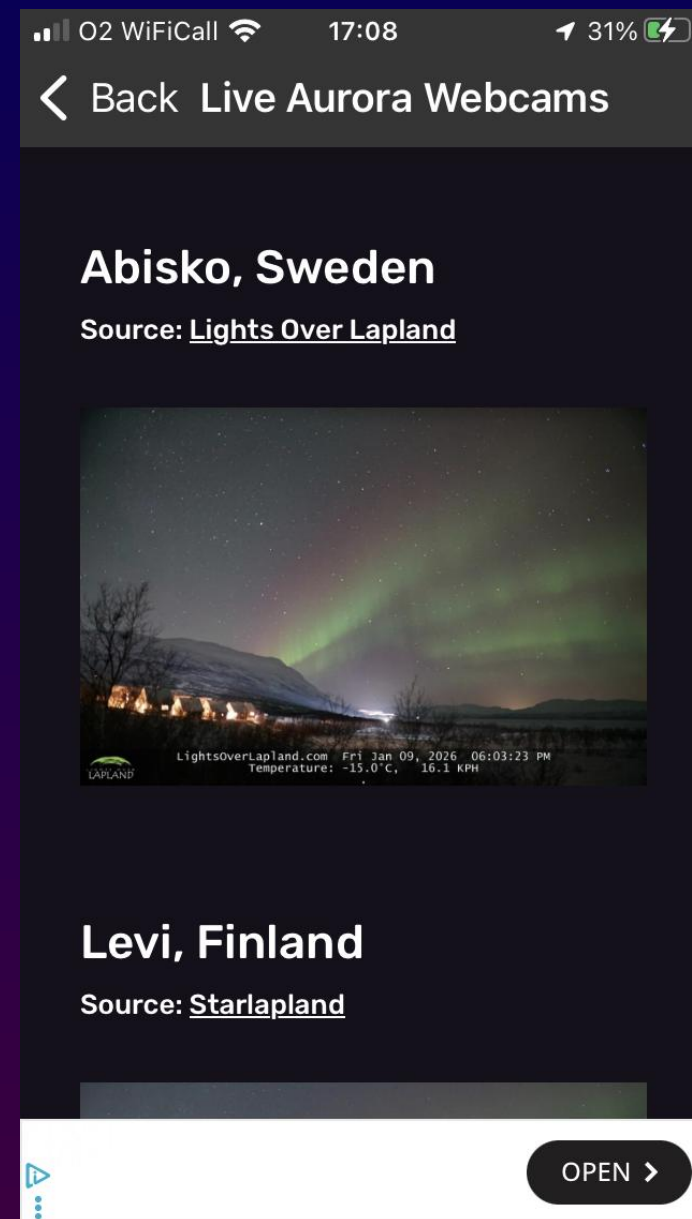
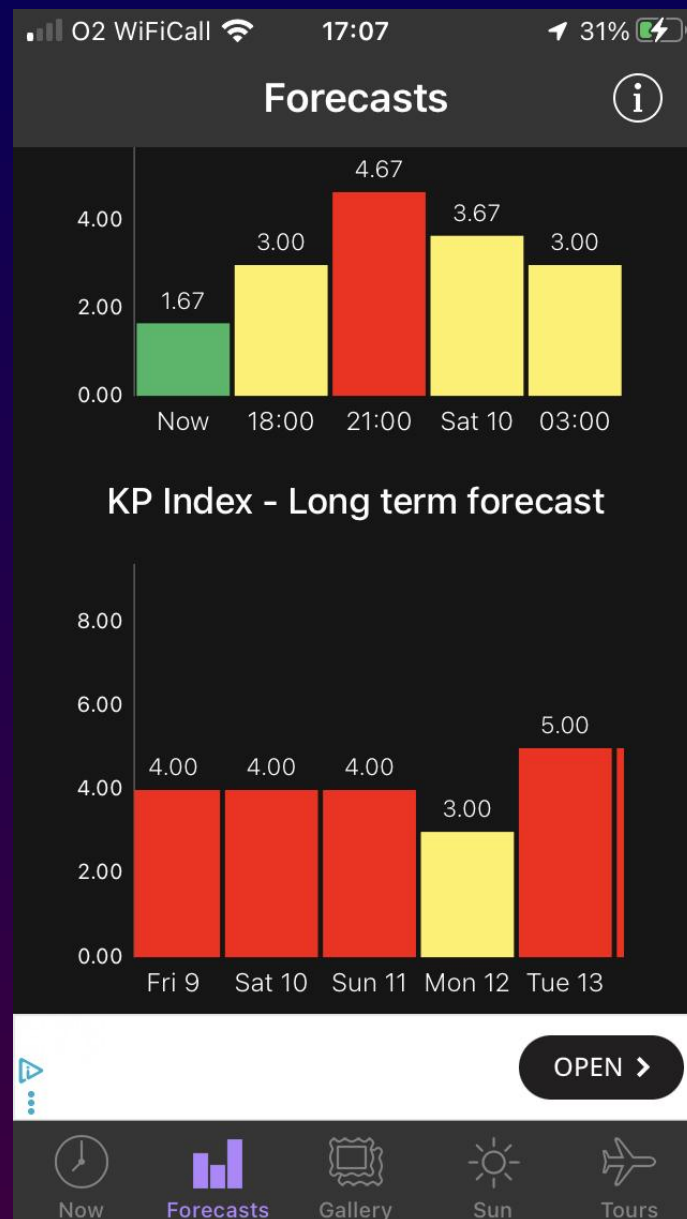
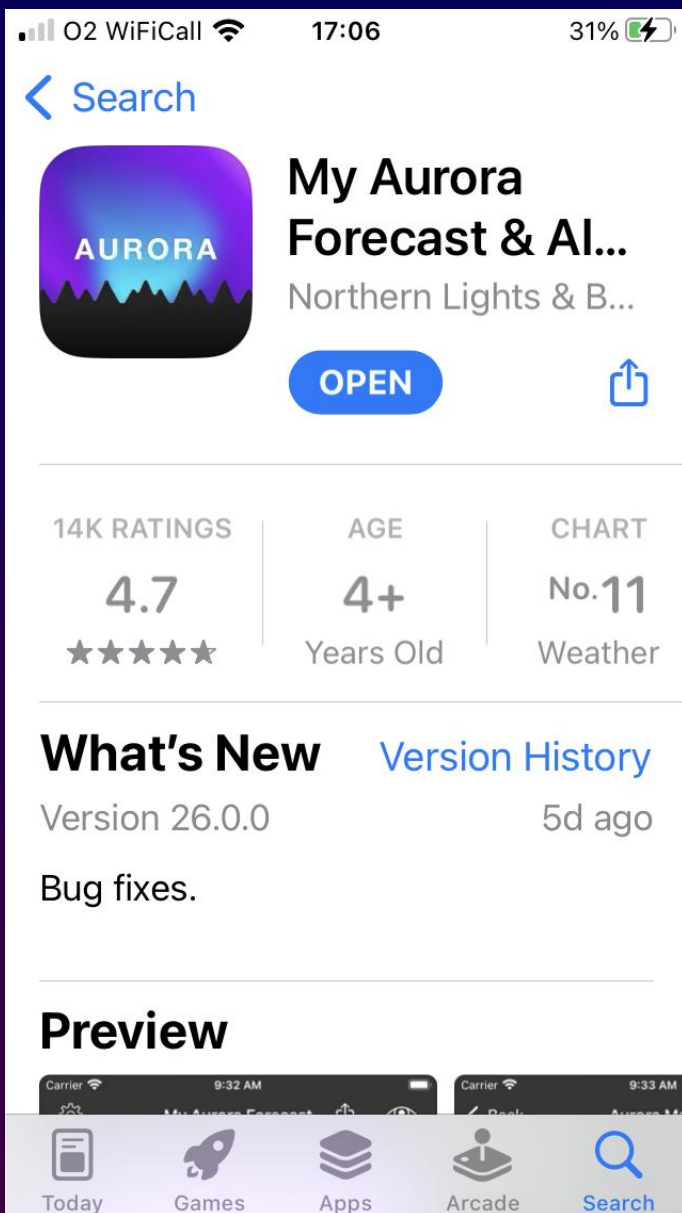


# Forecast 27 days later

2025-12-11 00:00Z



# Phone app – My Aurora Forecast



# Where to go – get away from city lights





# Aurora photography equipment

- Canon EOS 550D digital SLR (18-55mm lens)
- Samyang 14mm F2.8 lens (taped to lock focus!)
- Tripod
- Wired remote control
- 20000 mAh USB battery pack
- USB voltage converter to power camera
- USB powered lens heater + controller
- Spare SD card
- iPhone 8 + stand + remote control



# EOS 550D Photos

- 5184 x 3456 pixels = 18Mp
- ISO-1600
- 14mm F2.8 Samyang lens
- Stopped down to F3.4
- Exposure mostly 5 seconds
- Dark frames taken using lenscap











# Time-lapse Video

- 5 second exposures taken every ~8 seconds
- RawTherapee used to subtract dark frames  
adjust black level, downscale, output as  
JPEGs
- VirtualDub used to convert JPEG series into a  
video
- 4 frames/sec display rate with linear  
interpolation to smooth the flow
- Speedup ~ 32 times

# Things I've learnt

- Tape lens to infinity focus before you set off
- Practice using the camera and remote control in the cold and dark
- Use dark frames rather than inbuilt long exposure noise reduction
- Don't go for the smallest/cheapest hire car, and take black bin bags and tape to cover the lights
- Take mobile phone stand and remote control
- You may not even see the aurora – so plan to enjoy other activities and sights













# Lights over Lapland

- Real time cameras at Abisko, Sweden
- <https://www.twitch.tv/lightsoverlapland>
- <https://www.twitch.tv/lightsoverlaplandlive>