

SIDC Space Weather Briefing

15 December 2024-22 December 2024

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& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2024-12-15 12:00 to 2024-12-22 23:59

Active regions	SIDC 288 (NOAA 3917) To SIDC 345 (NOAA 3934)
Flares	# C-class flare: 50 # M-class flare: 10 # X-class flare: 0
Coronal Holes	1 small equatorial, negative polarity
CMEs	Several wide CMEs, partial halos, full halos. 1 with Earth-directed component

Proton flux	Below threshold (but elevated)
Electron flux	Below threshold

Solar wind and geomagnetic conditions

ICMEs	1 at the beginning of the week (from CME in previous week)
Solar wind conditions	B : 2.18 - 31.89 nT //Bz: -21.35 nT to 27.78 nT //Speed: 349.1 - 793.5km/s
Geomagnetic conditions	max K _{Bel} : 5.0, max K _p (NOAA): 5.33, Minor Storm conditions

All Quiet Alert: Off

Solar Activity



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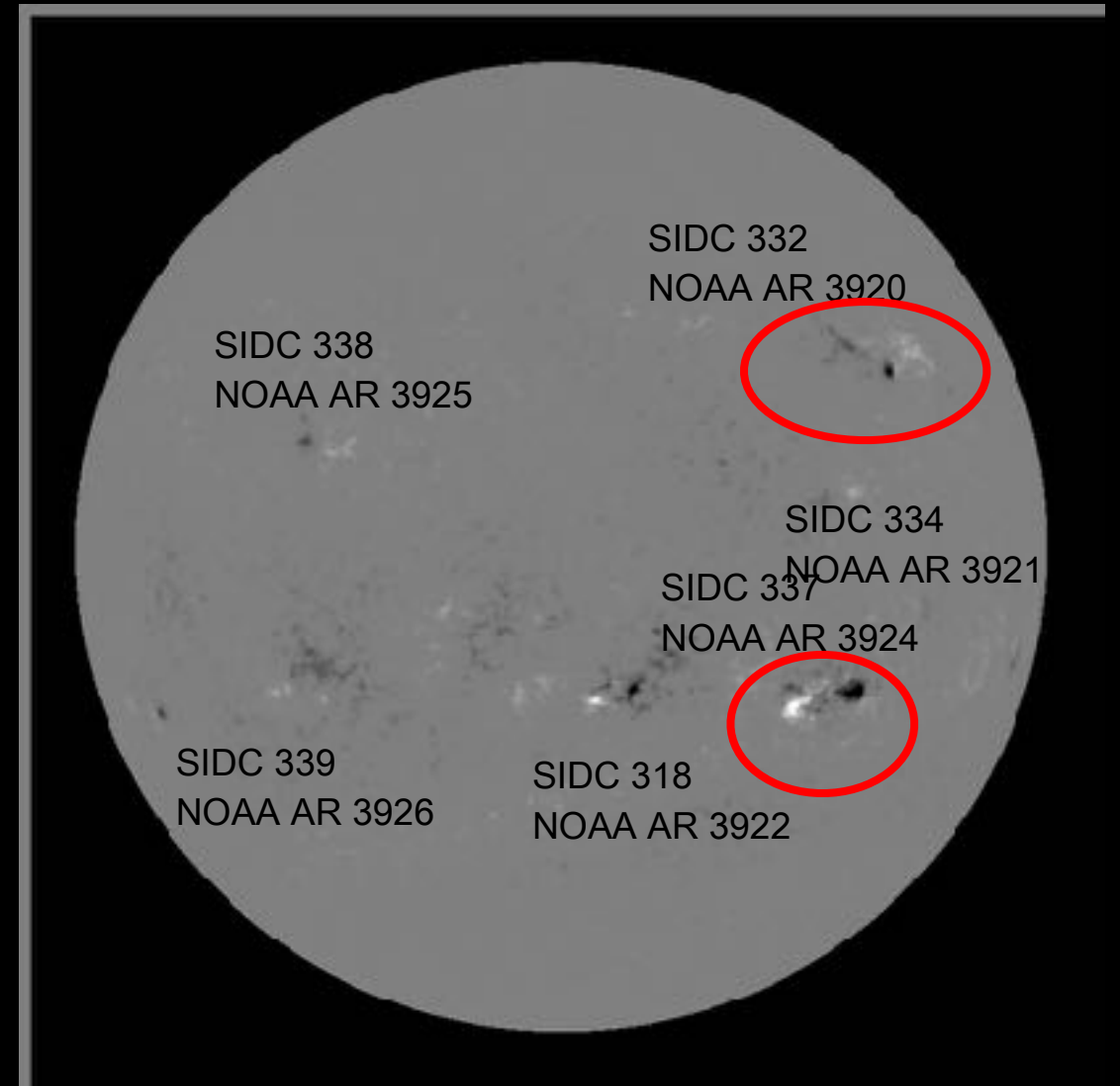
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Solar active regions

GONG 677 nm 2024-12-16



GONG Magnetogram 2024-12-16



Solar active regions

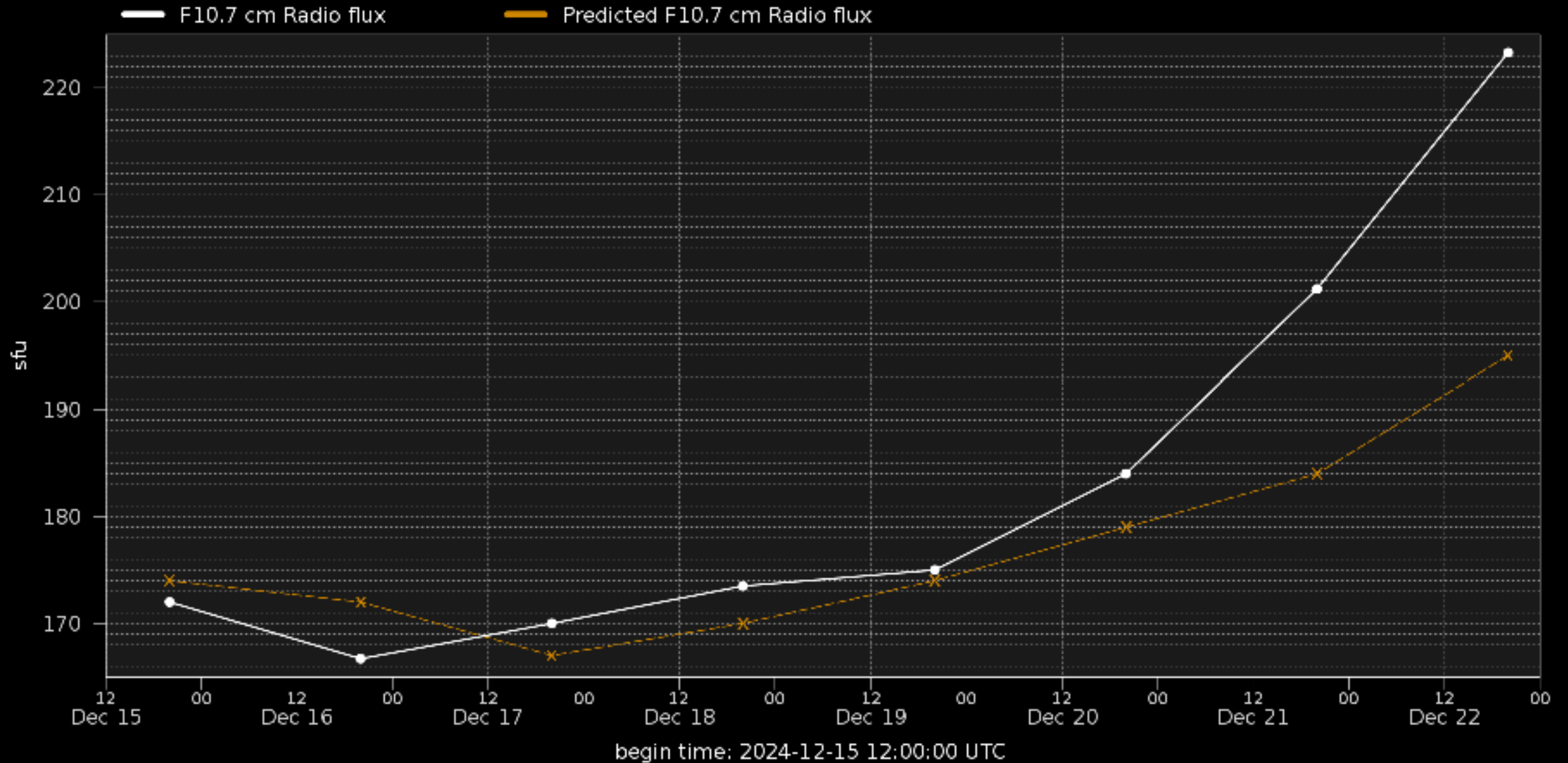
GONG 677 nm 2024-12-22



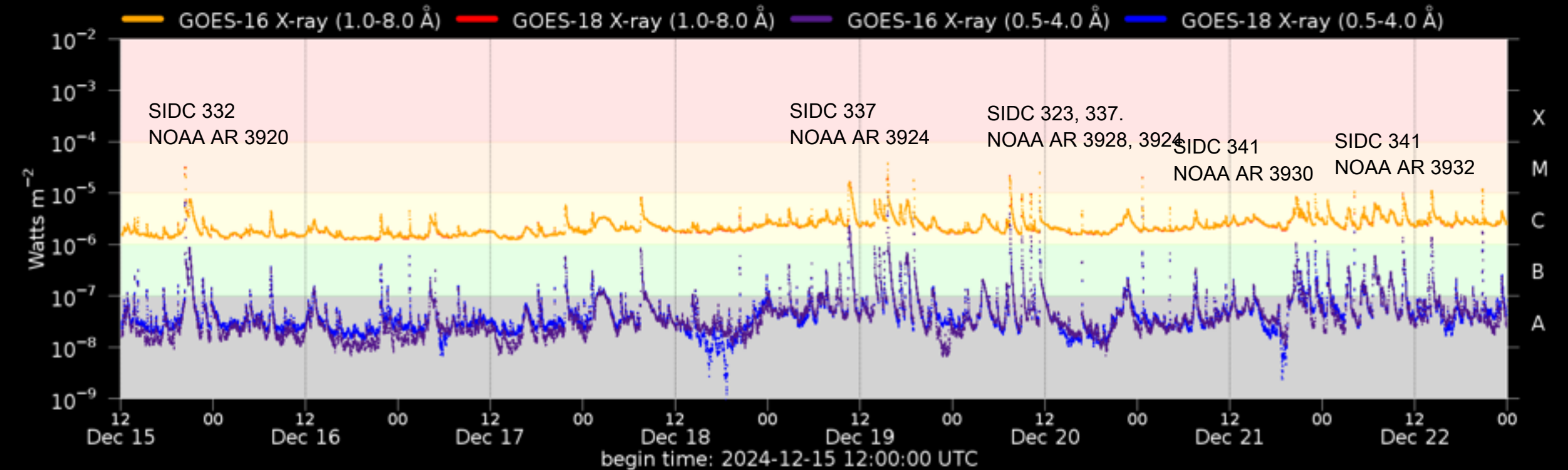
GONG Magnetogram 2024-12-22



Solar F10.7cm radio flux



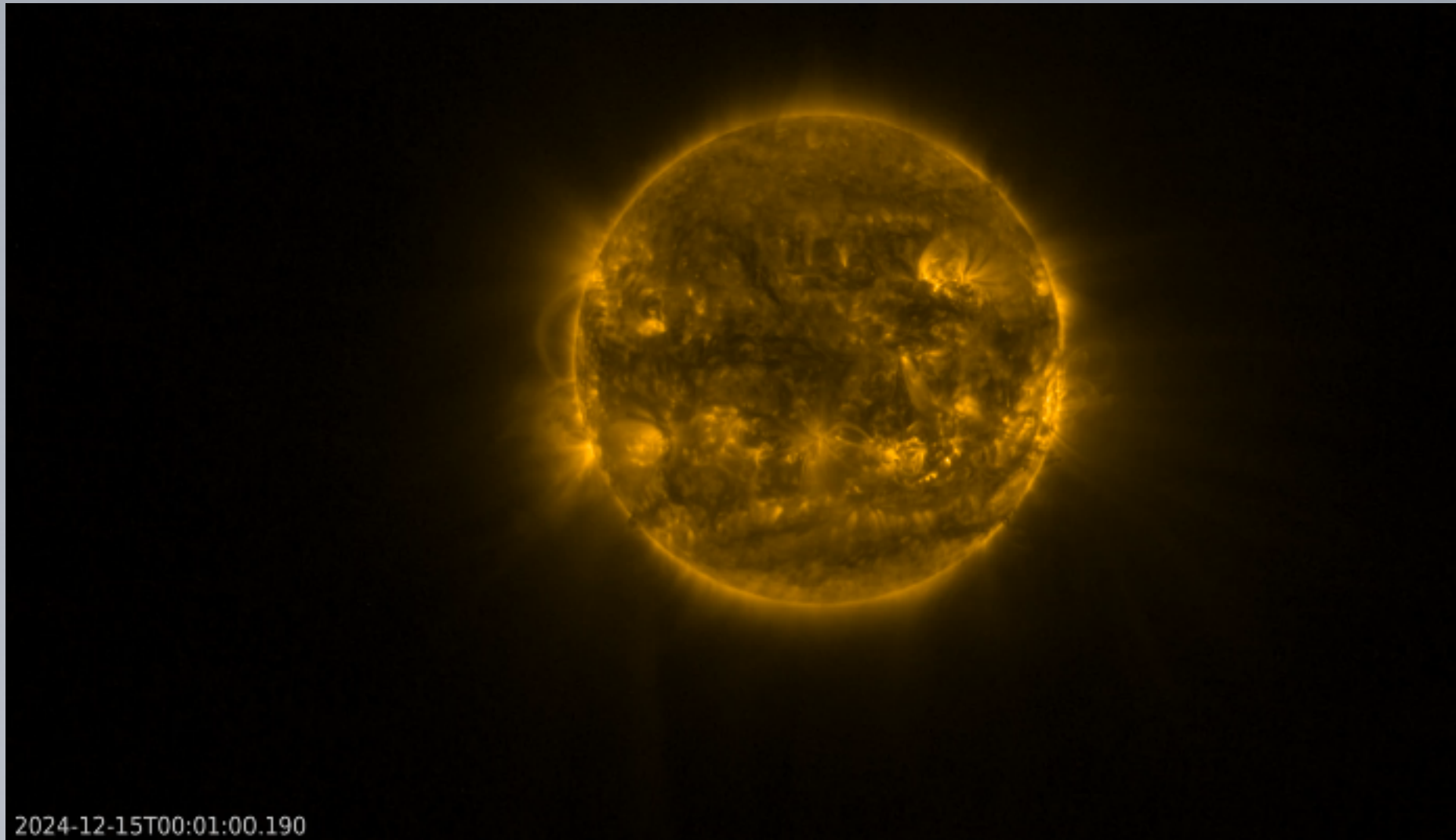
Flaring activity



Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

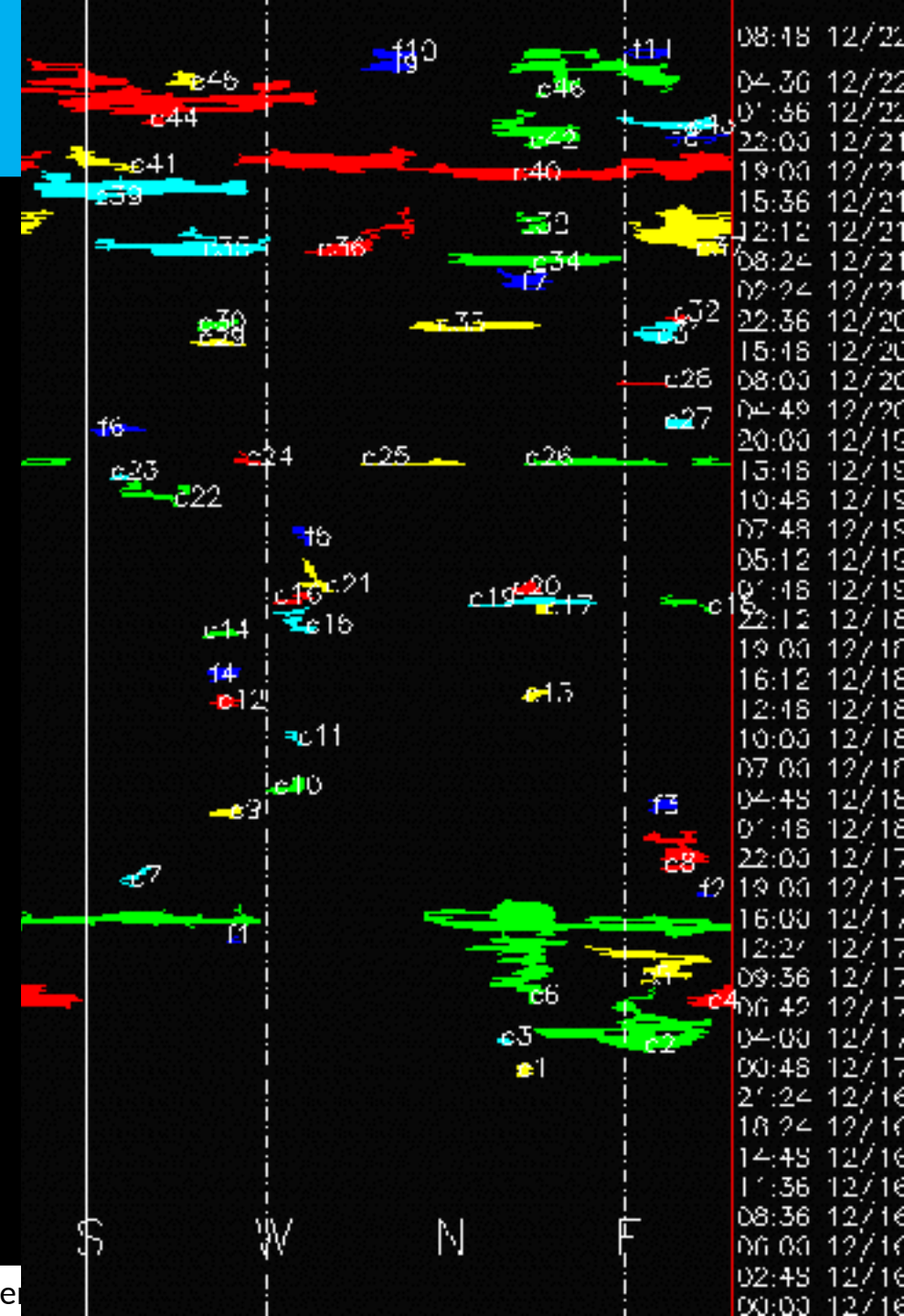
Issue date	2024-12-15	2024-12-16	2024-12-17	2024-12-18	2024-12-19	2024-12-20	2024-12-21	2024-12-22
Probability (%)	98 61 11	99 43 08	89 23 01	95 41 07	99 70 19	95 75 15	99 60 15	99 72 15
Observed (#)	10 01 00	05 00 00	04 00 00	06 01 00	10 04 00	03 01 00	09 01 00	03 02 00

Solar Orbiter - EUI

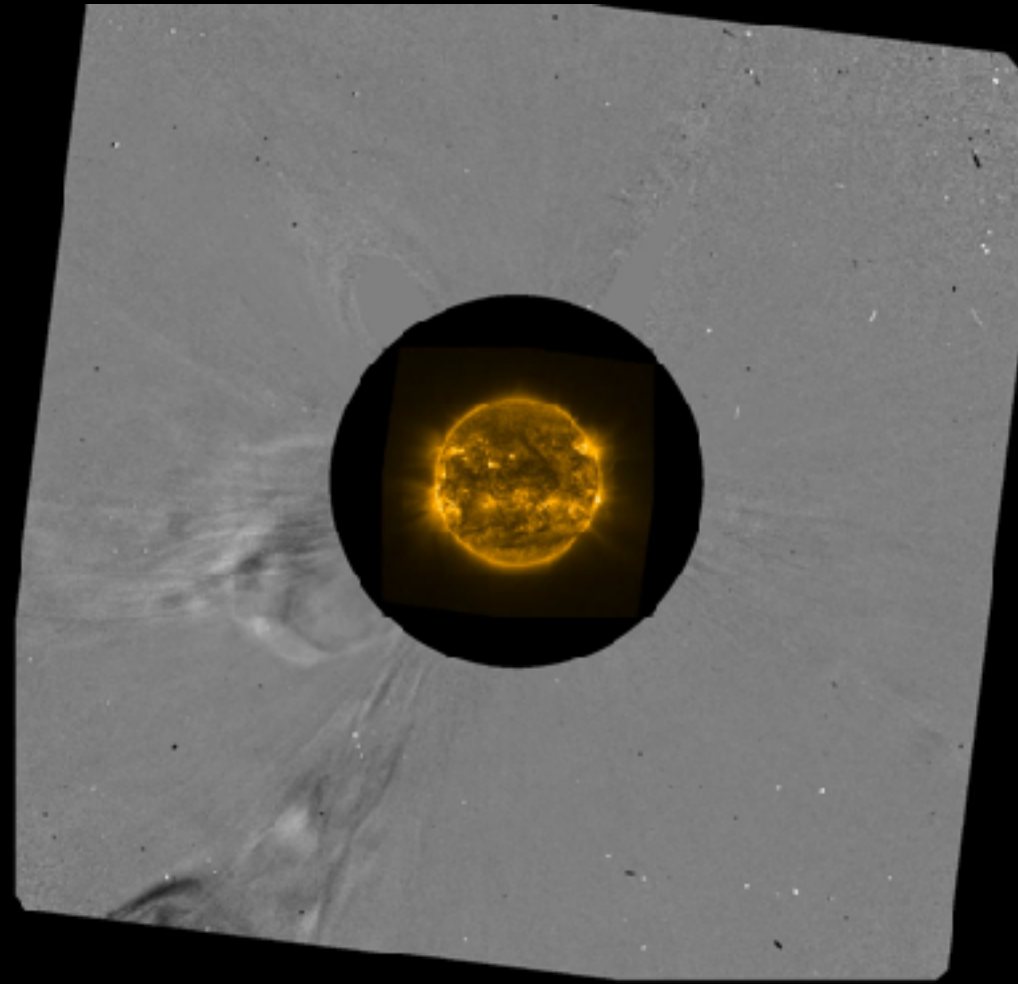


Coronal Mass Ejections

- 17 December: Full fast halo, backside
- 19 December: wide CME in C2 (full halo in C3), backside
- 21 December: 2 partial halos, both backside
- 22 December: faint CME(s) to the south from the group of ARs in the SE (mostly SIDC 341, NOAA 3932), starting at 00:21 UTC (LASCO C2). **Probable Earth arrival on 25 December.**
- 22 December: Partial halo towards the SE (4:00 UT), backside

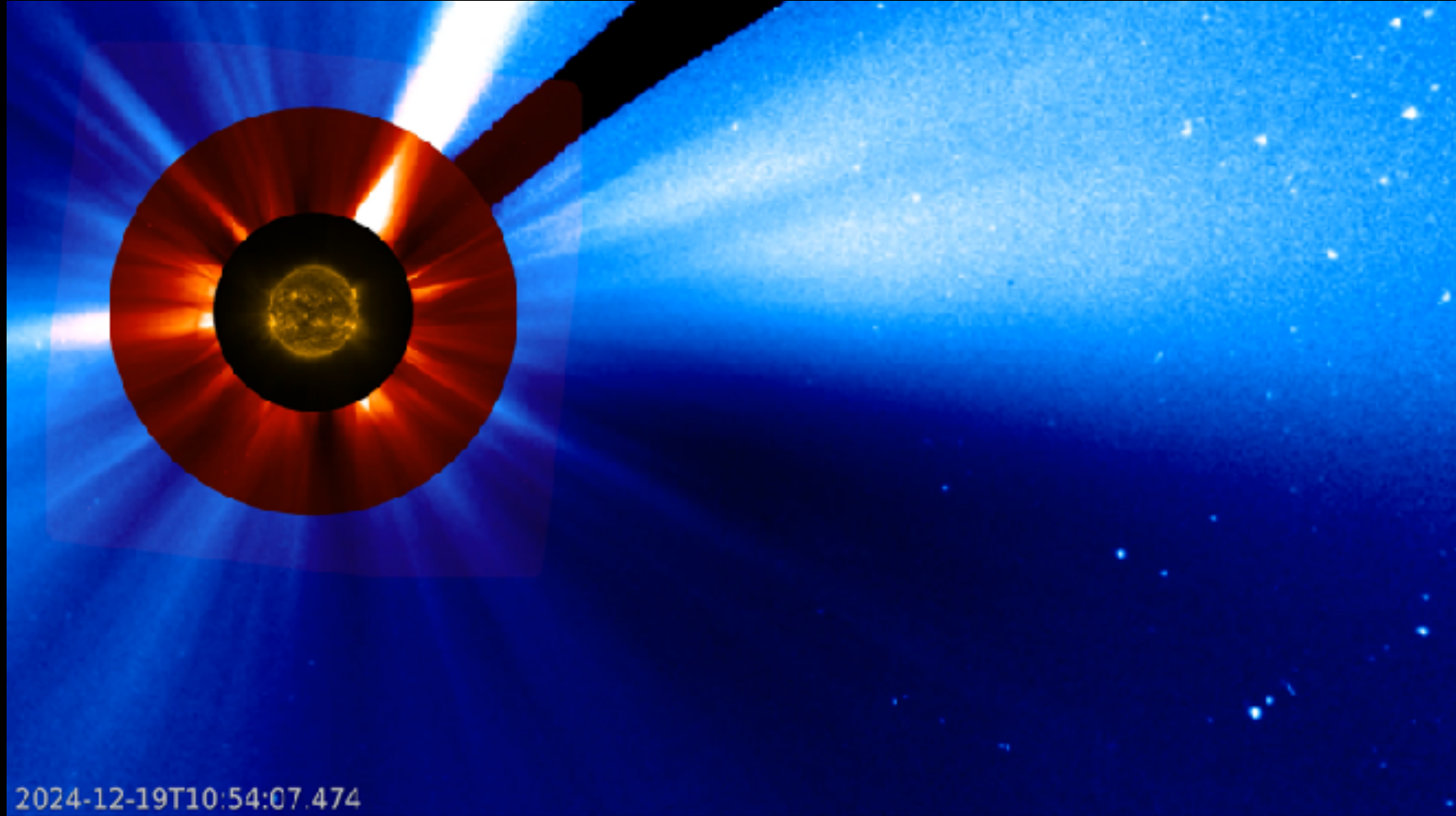


17 December: Full fast halo, backsided (LASCO C2 / SWAP)

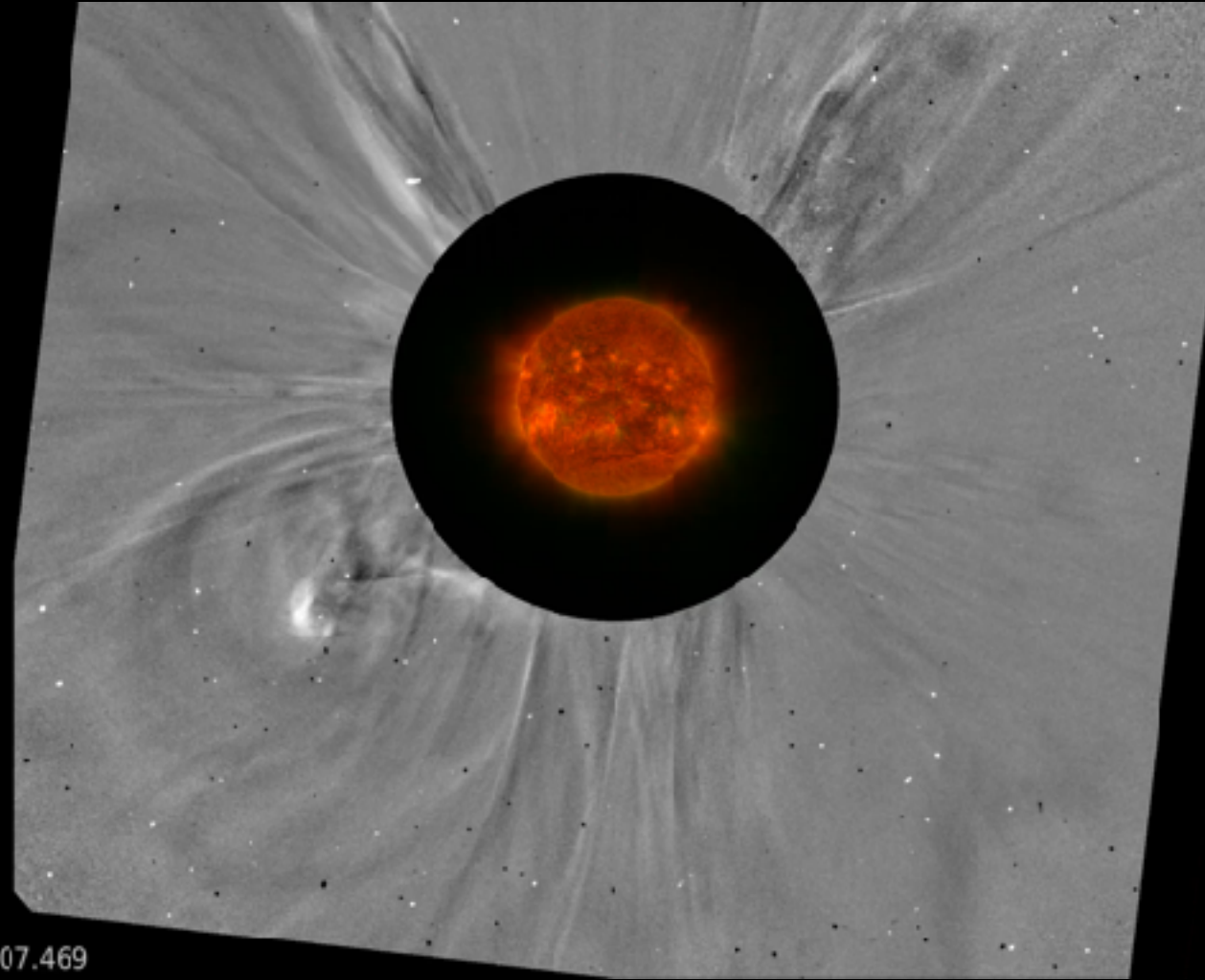


2024-12-17T12:12:07.470

- 19 December: wide CME in C2 (full halo in C3, EUI), backside



- 21-22 December (LASCO C2 – SoLO EUI 174+304)



2024-12-21T12:12:07.469

Solar Wind and

Geomagnetic Activity



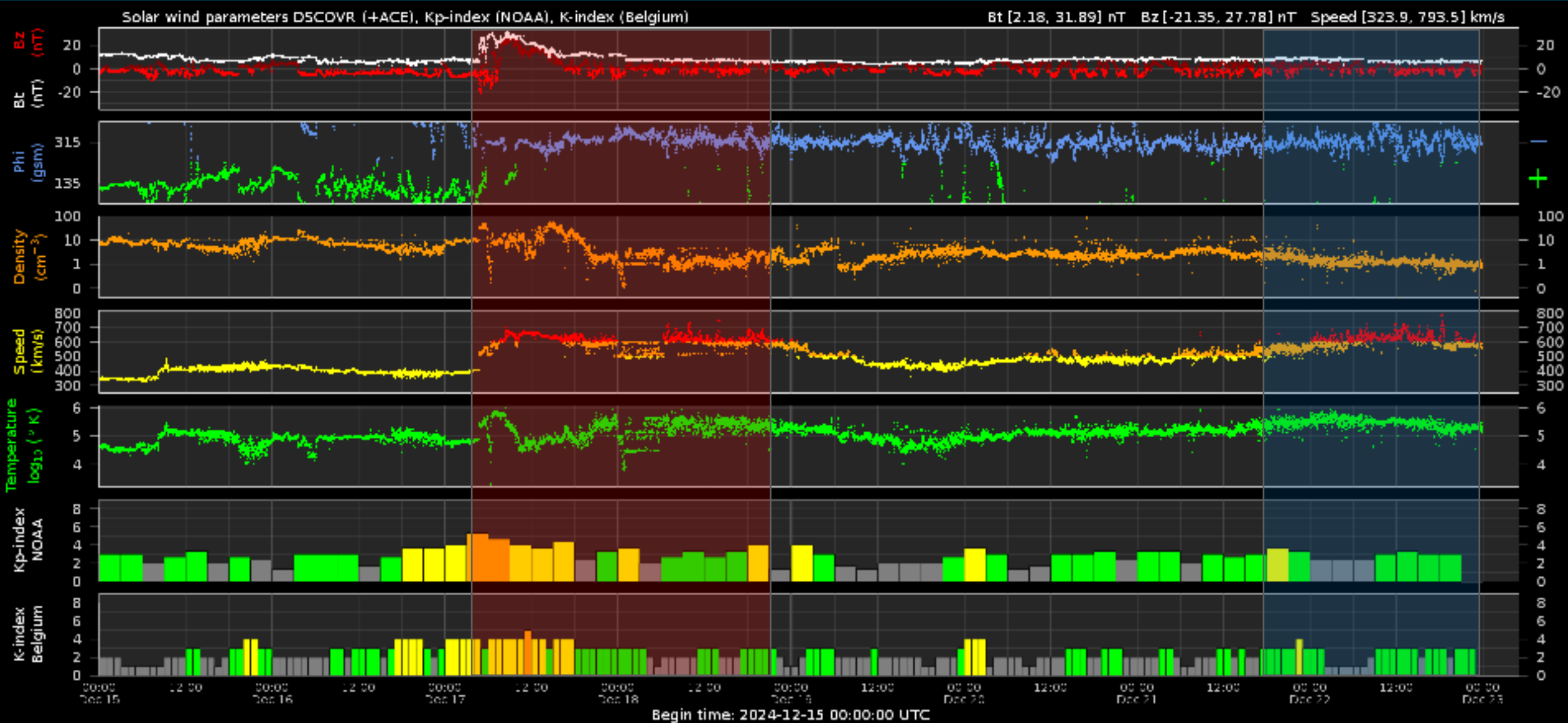
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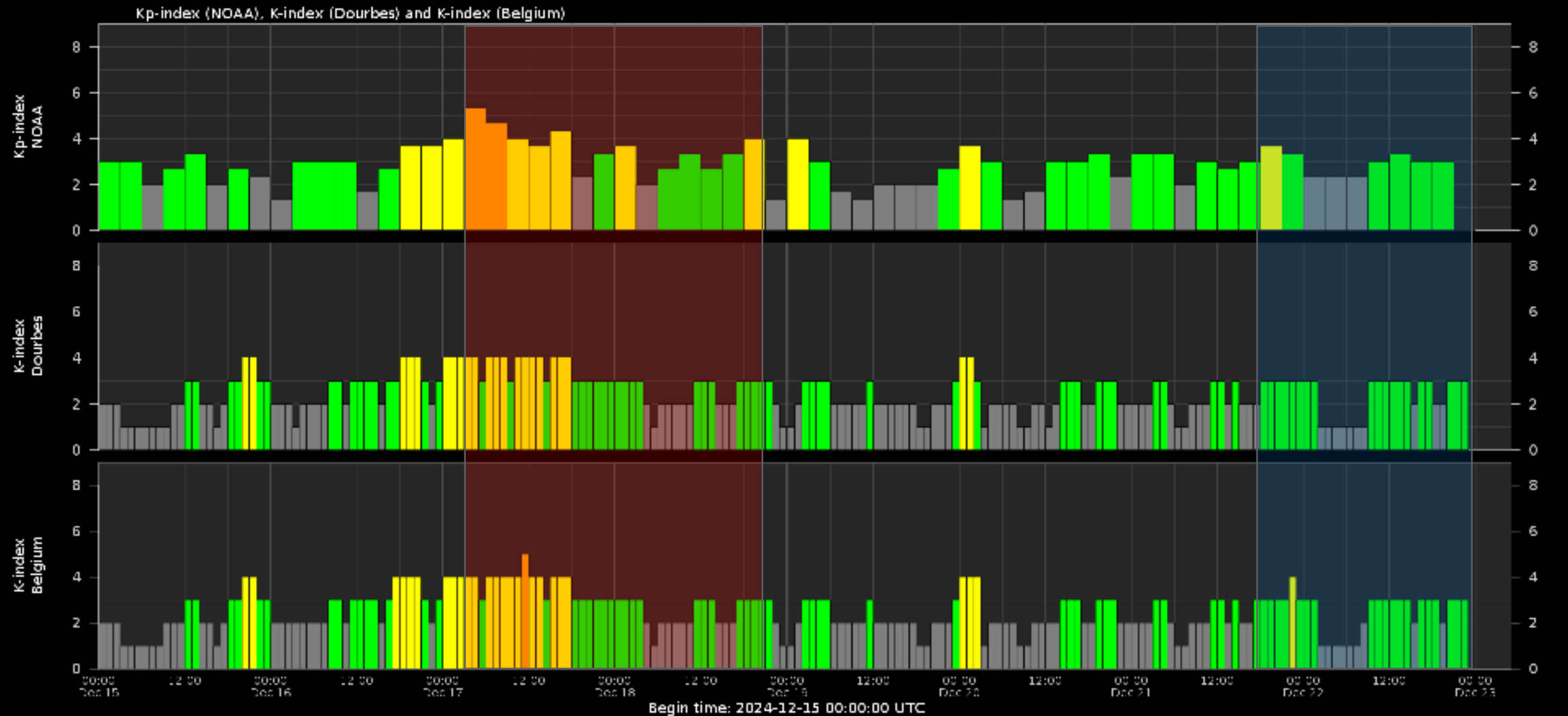
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



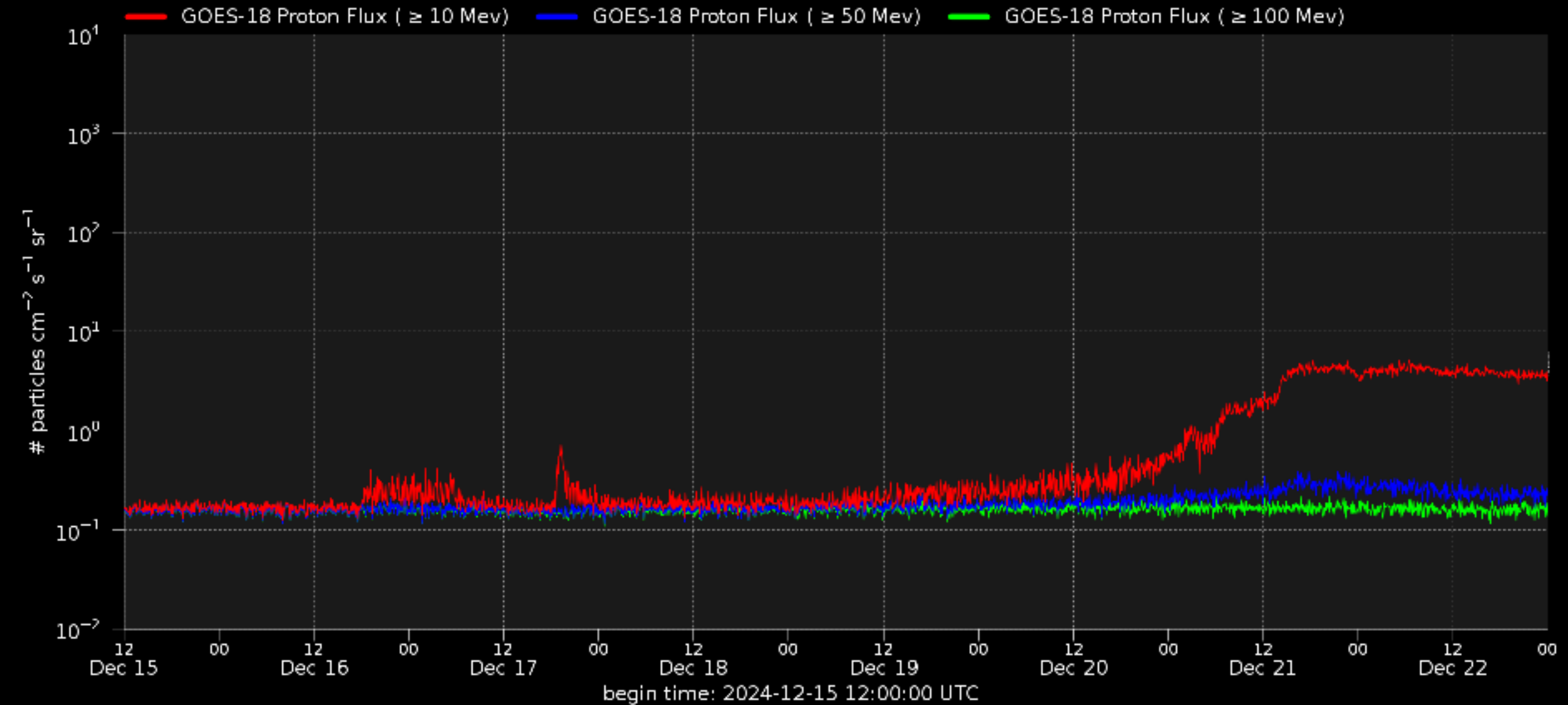
Energetic Particles



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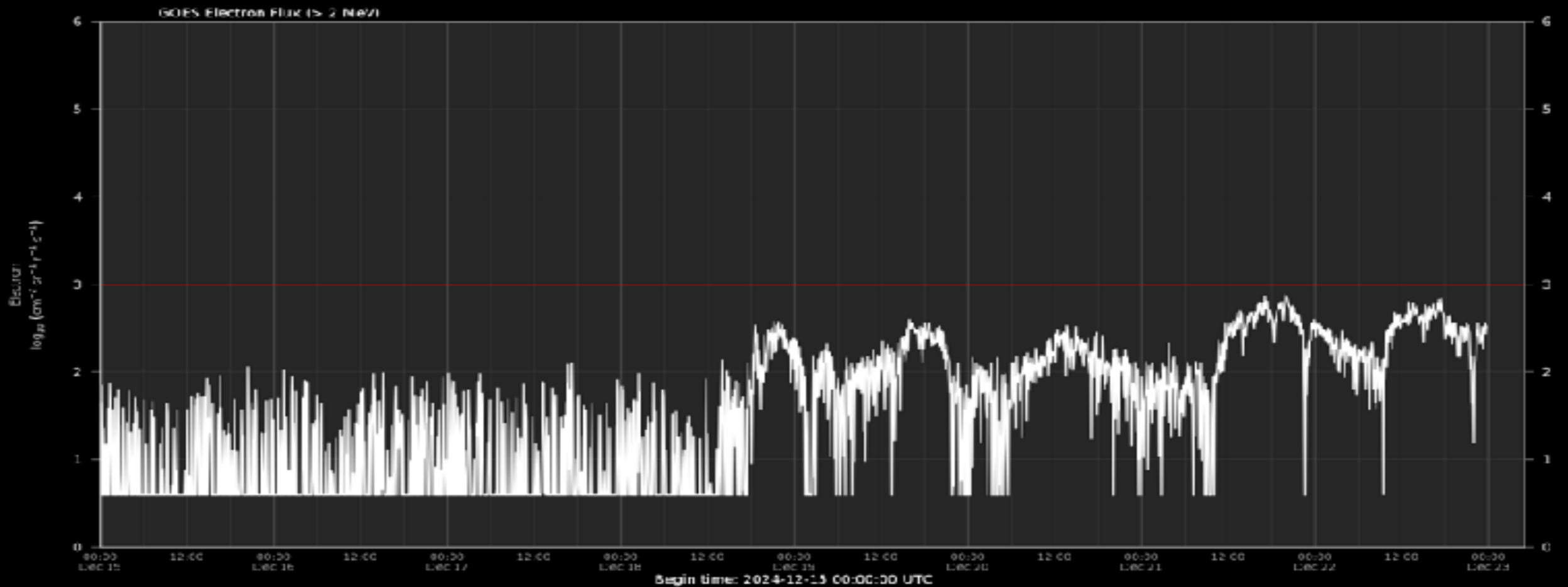
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php



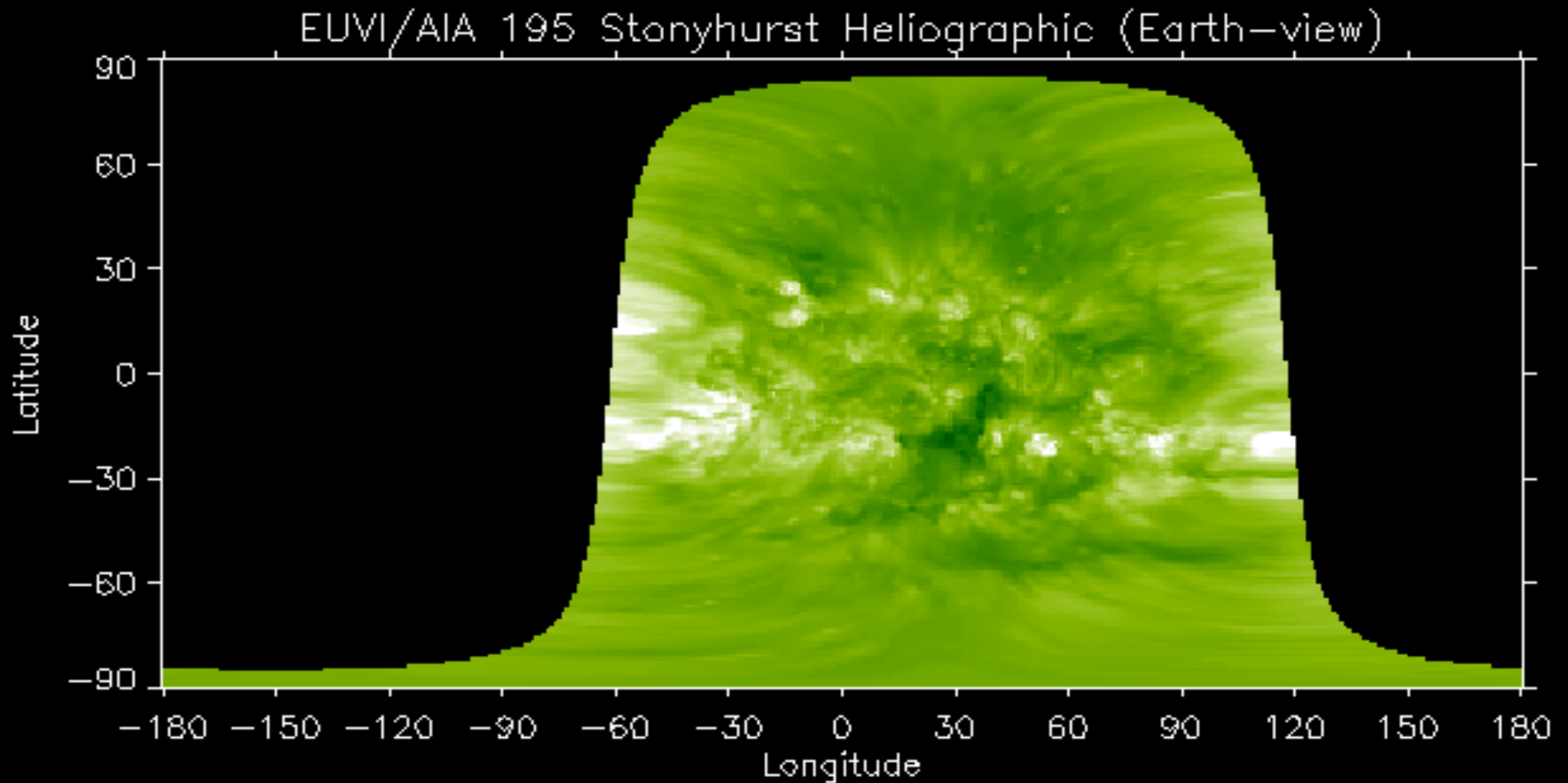
Outlook



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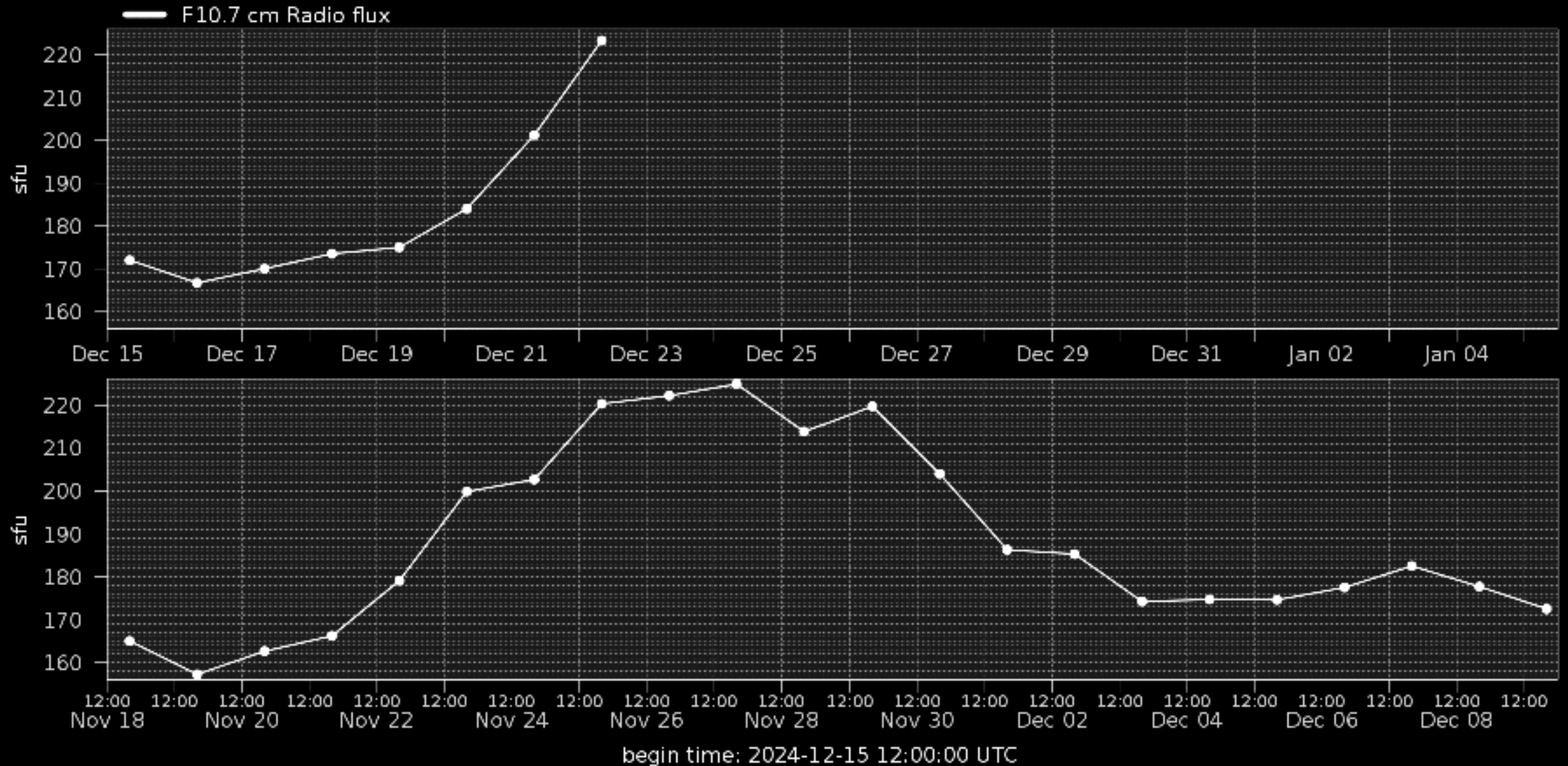
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Outlook: Solar activity

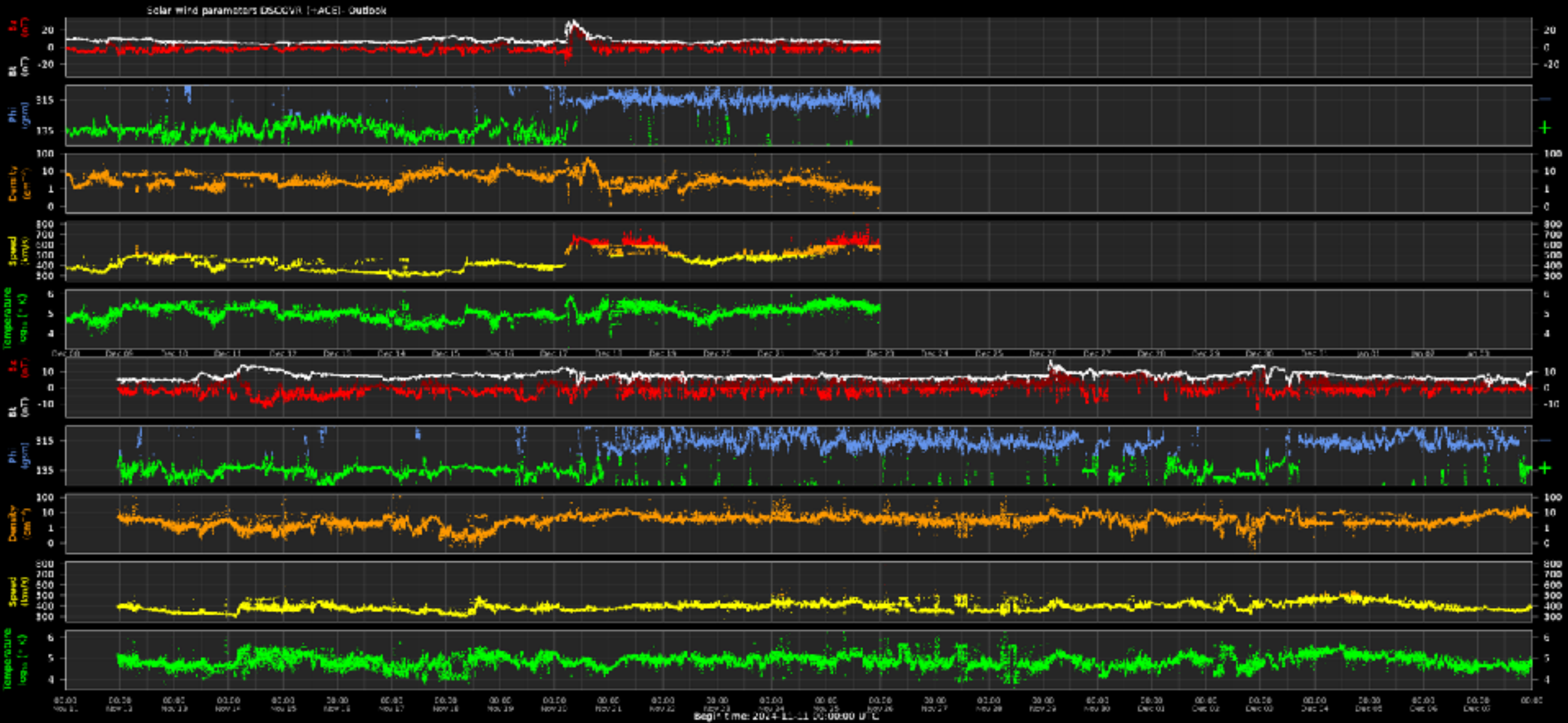


Observation date: 2024/12/22 11:35:00

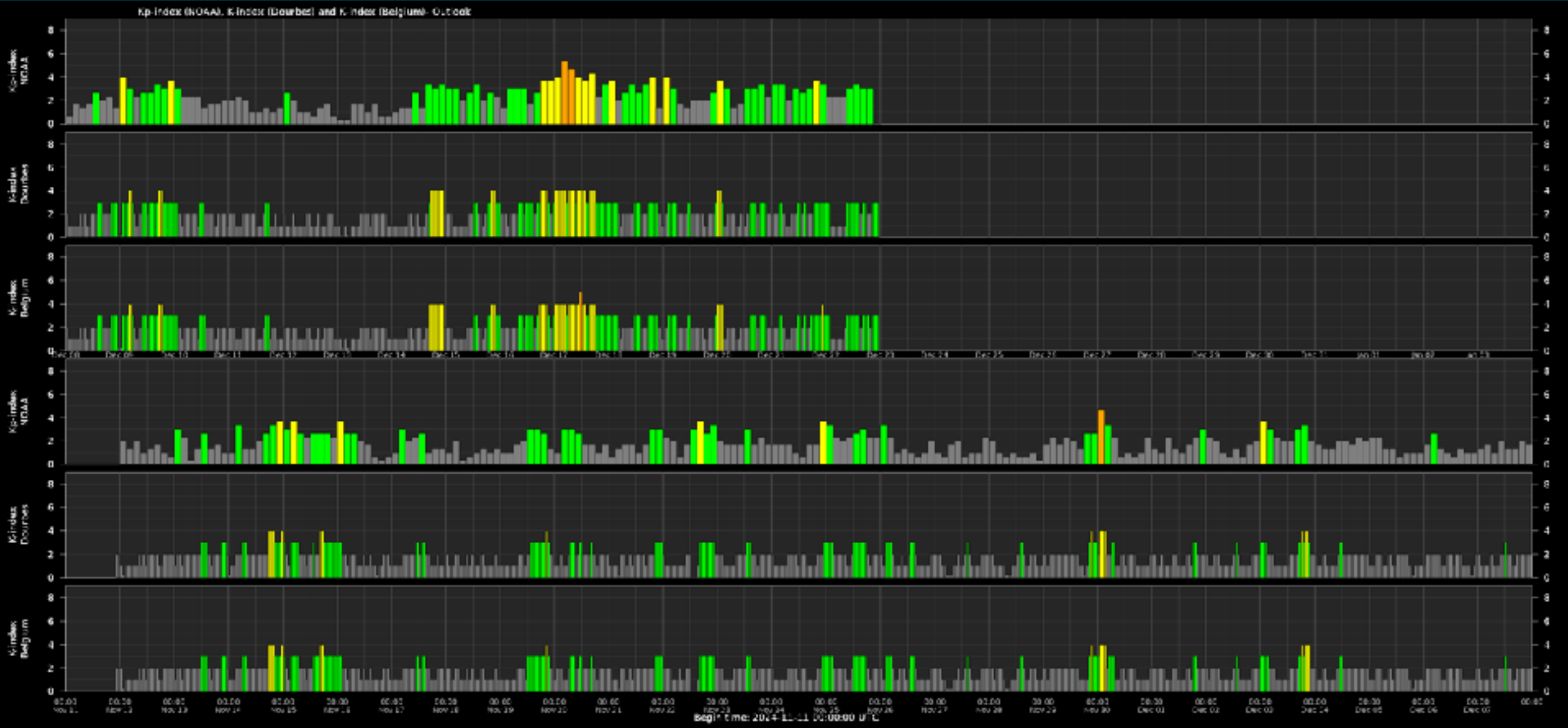
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



PECASUS



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Pecasus related events

PSD advisories sent due to the ICME

Regular scintillation advisories

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