SIDC Space Weather Briefing

04 August 2024-11 August 2024

Jennifer O’Hara

& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
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Summary Report

Solar activity from 2024-08-04 12:00 to 2024-08-11 23:59

Active regions	18 active regions on disk over the week: NOAA AR 3780 and 3777 were most active
Flares	# C-class flare: 19 # M-class flare: 29 # X-class flare: 3
Coronal Holes	A small + and – polarity CH crossed central meridian
CMEs	Multiple CME's with possible Earth directed components predicted

Proton flux	Below 10 pfu threshold
Electron flux	Below 1000 pfu threshold

Solar wind and geomagnetic conditions

ICMEs	ICME arrival(s) on from 12 UTC August 10
Solar wind conditions	|B|: 1.21 - 23.36 nT //Bz: -19.96 nT to 19.07 nT //Speed: 349.3 - 590.9km/s
Geomagnetic conditions	max KBel: 5.0, max Kp(NOAA): 7-, Major Storm conditions

All Quiet Alert: Not all quiet

Solar Activity

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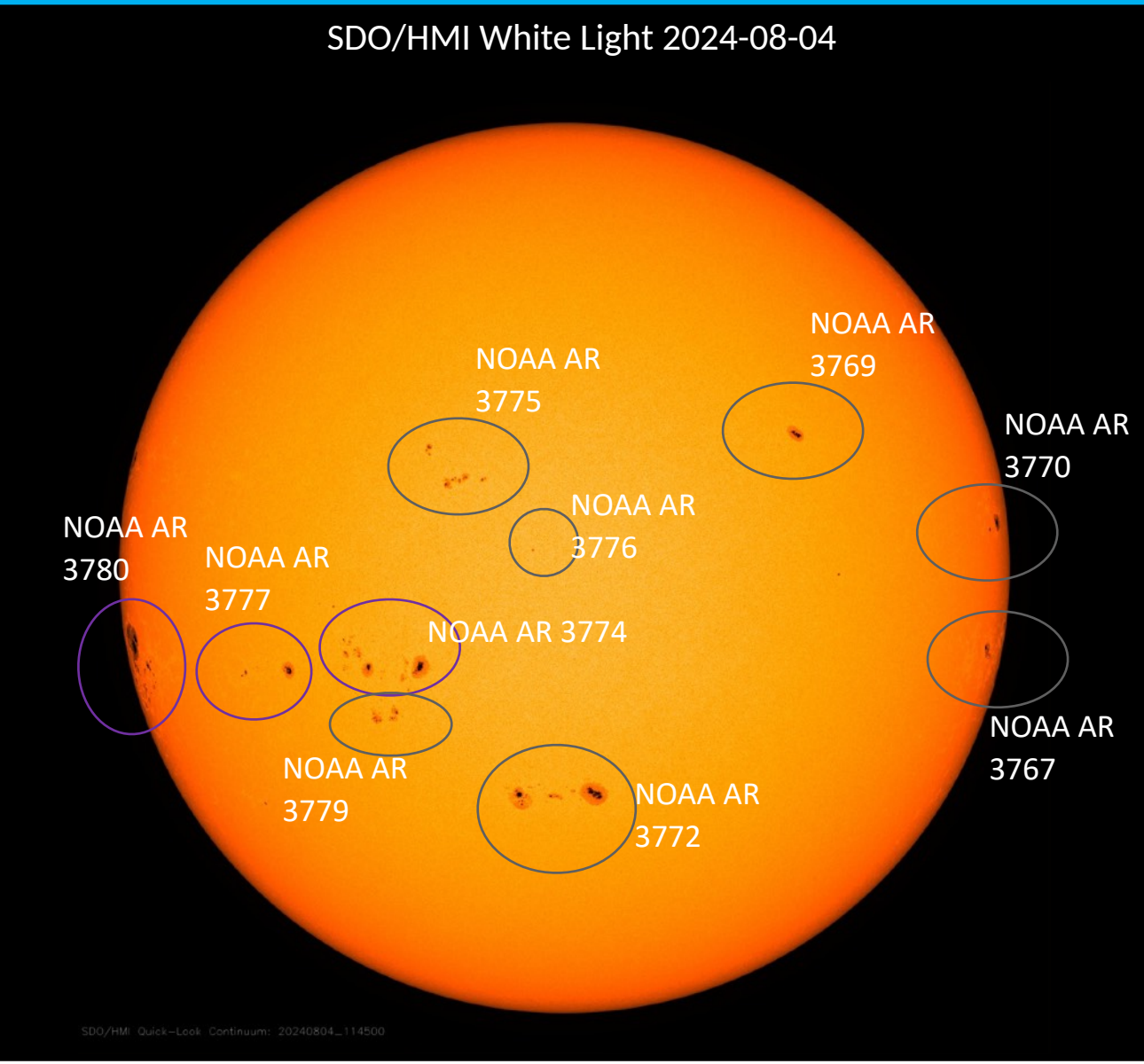
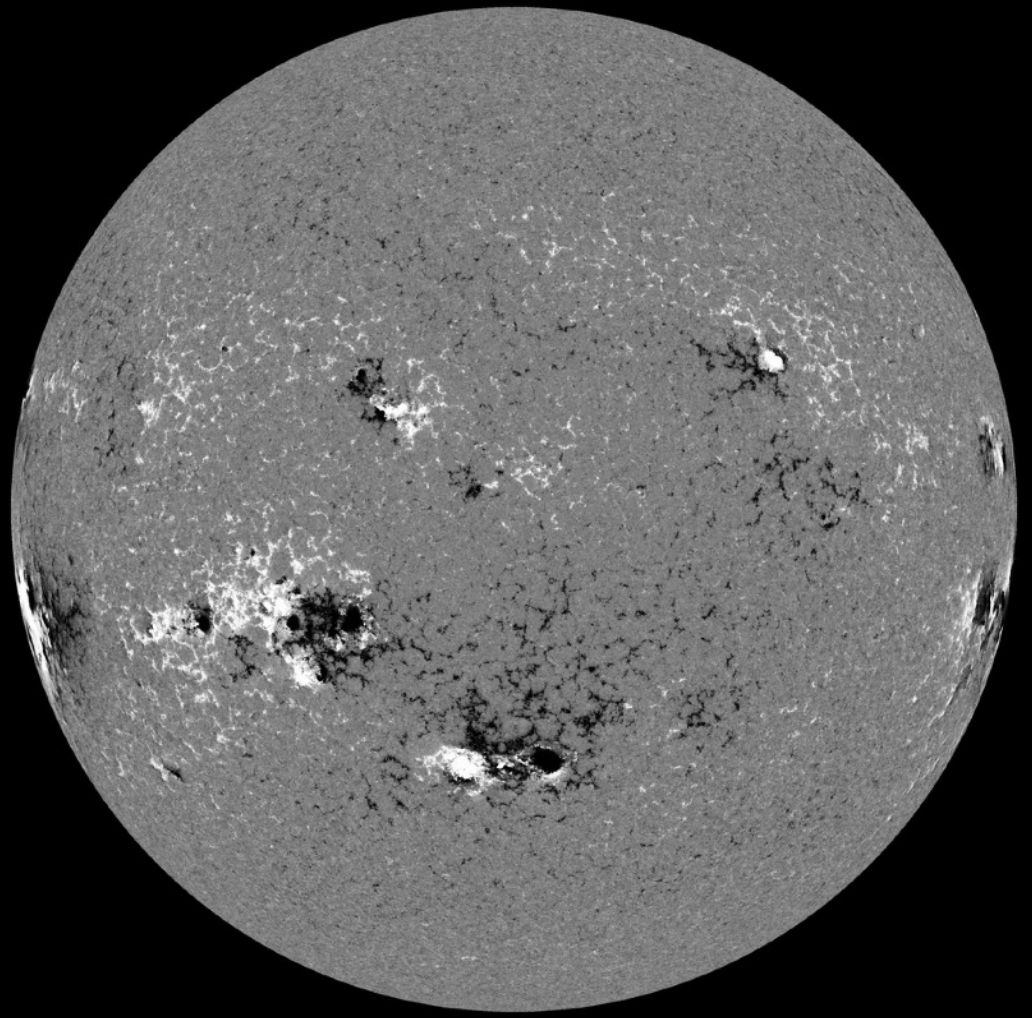
Solar active regions

SDO/HMI White Light 2024-08-04

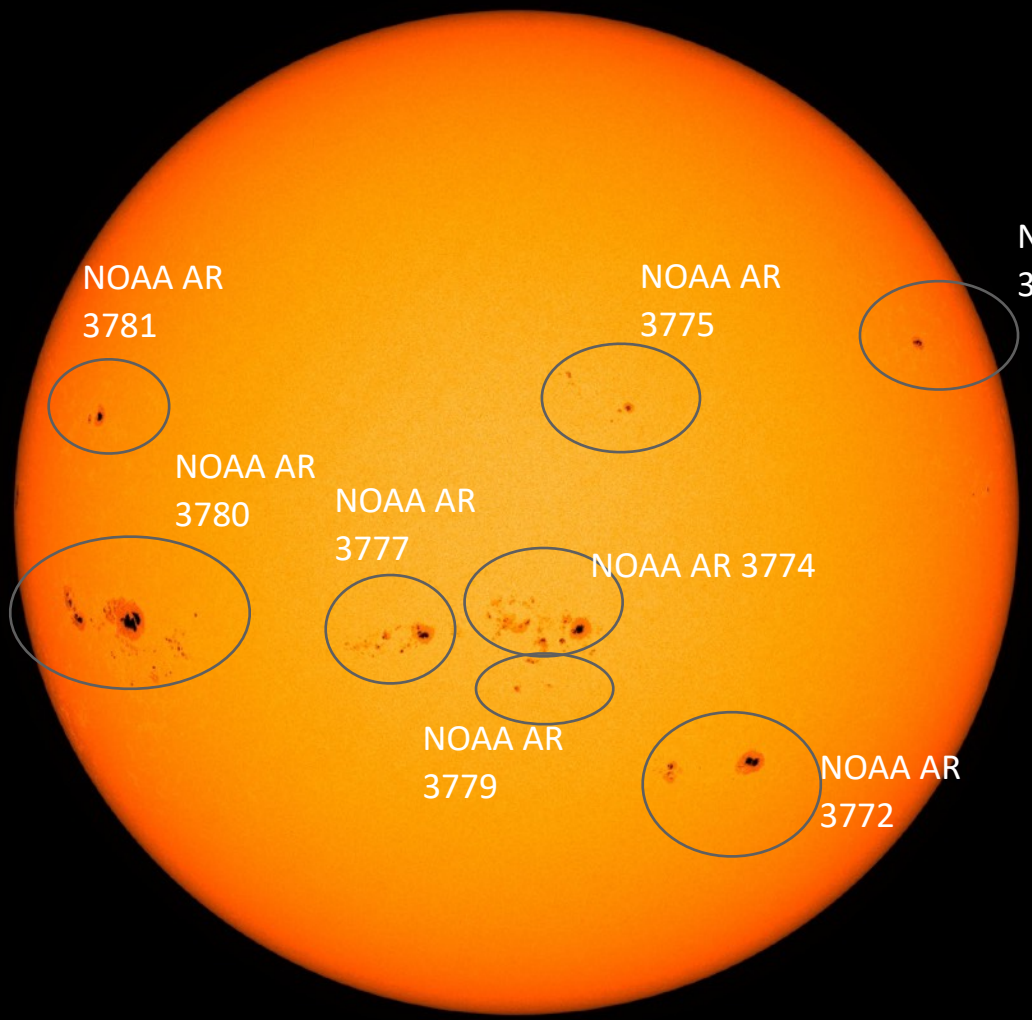


SDO/HMI Magnetogram 2024-08-04

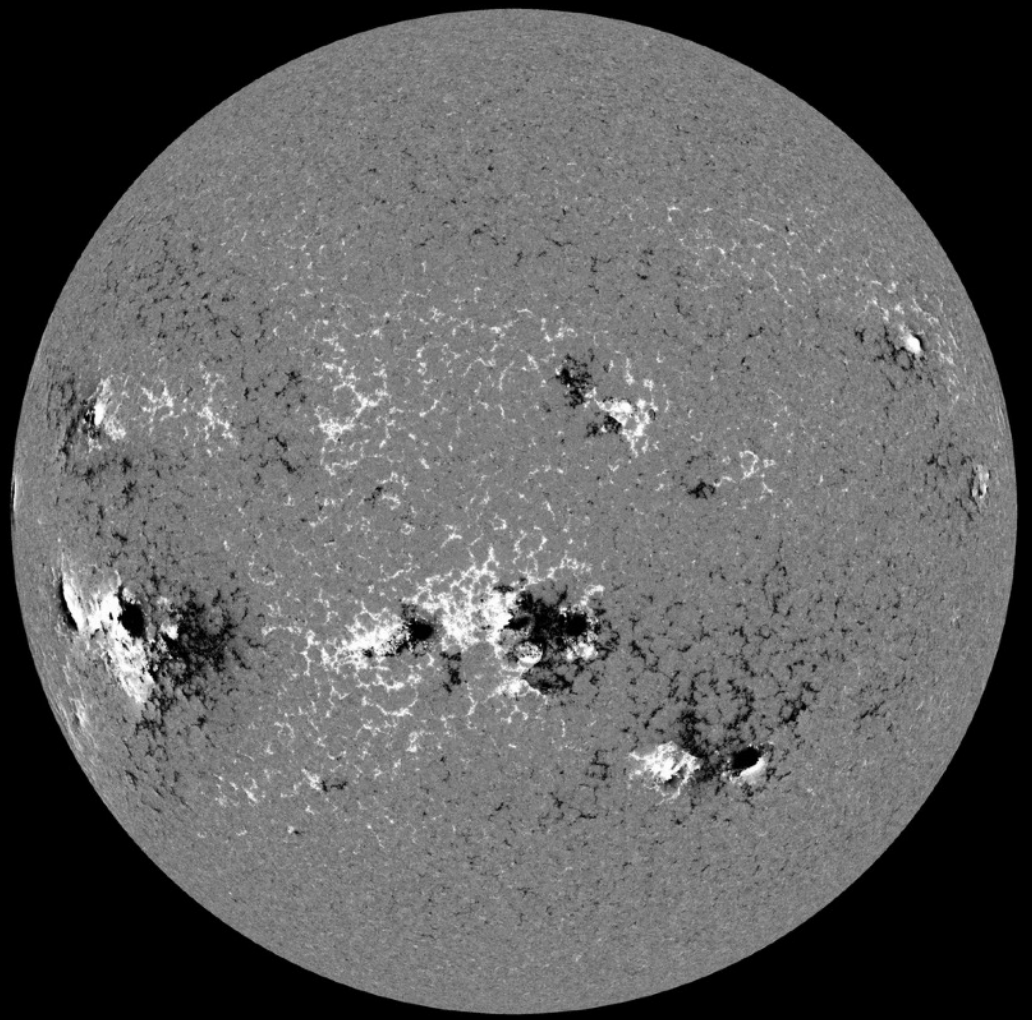


Solar active regions

SDO/HMI White Light 2024-08-06

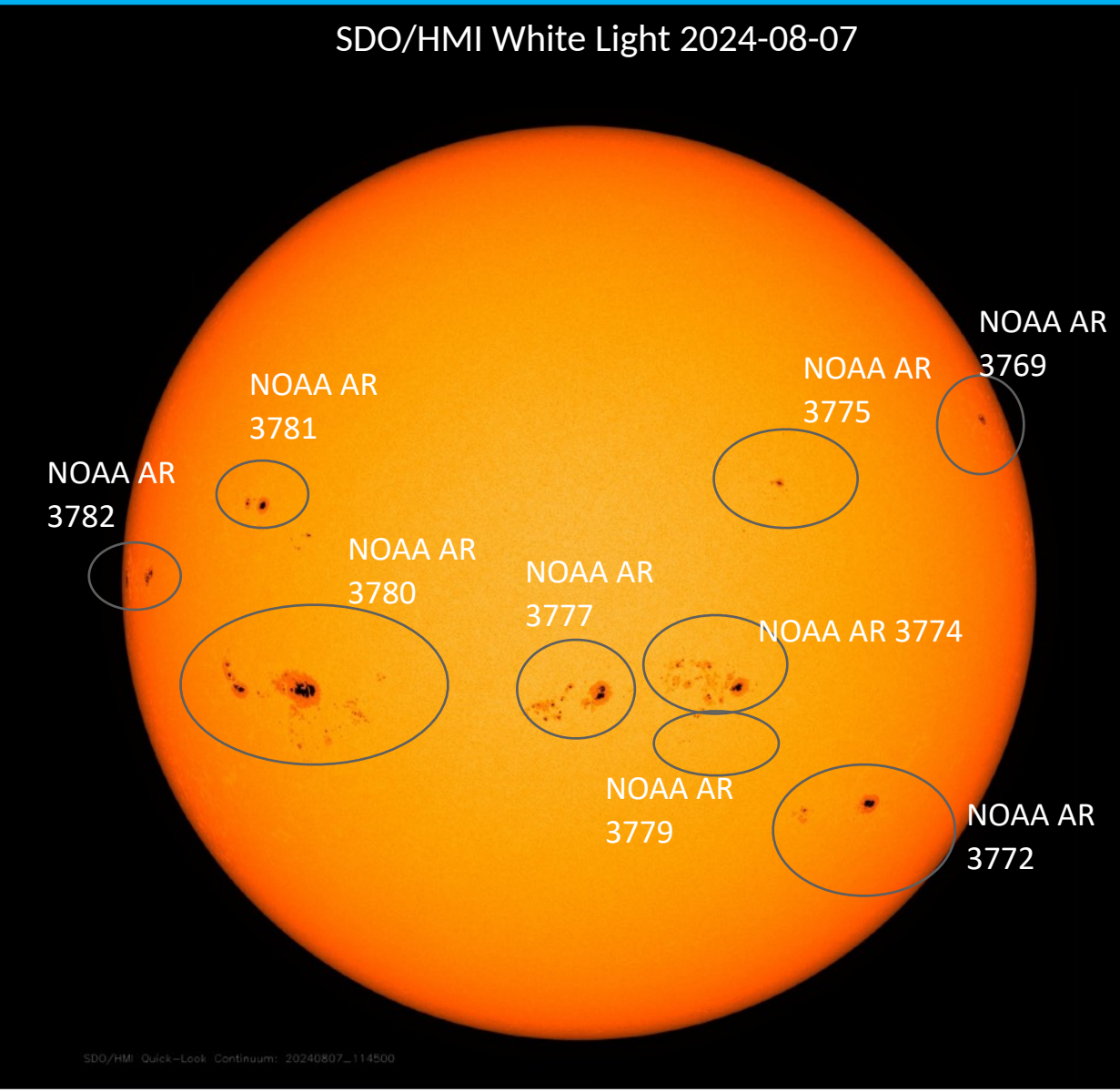


SDO/HMI Magnetogram 2024-08-06

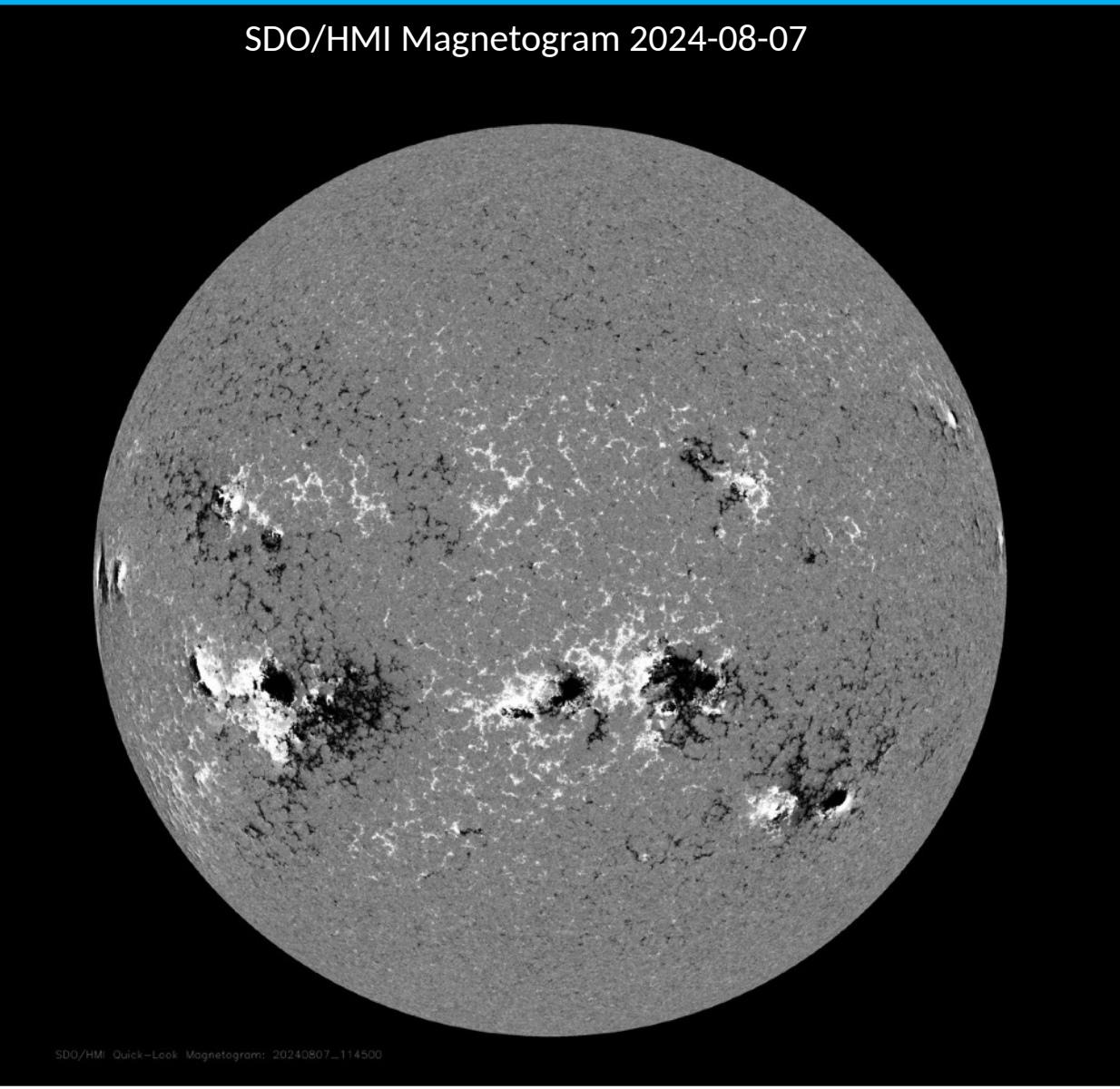


Solar active regions

SDO/HMI White Light 2024-08-07

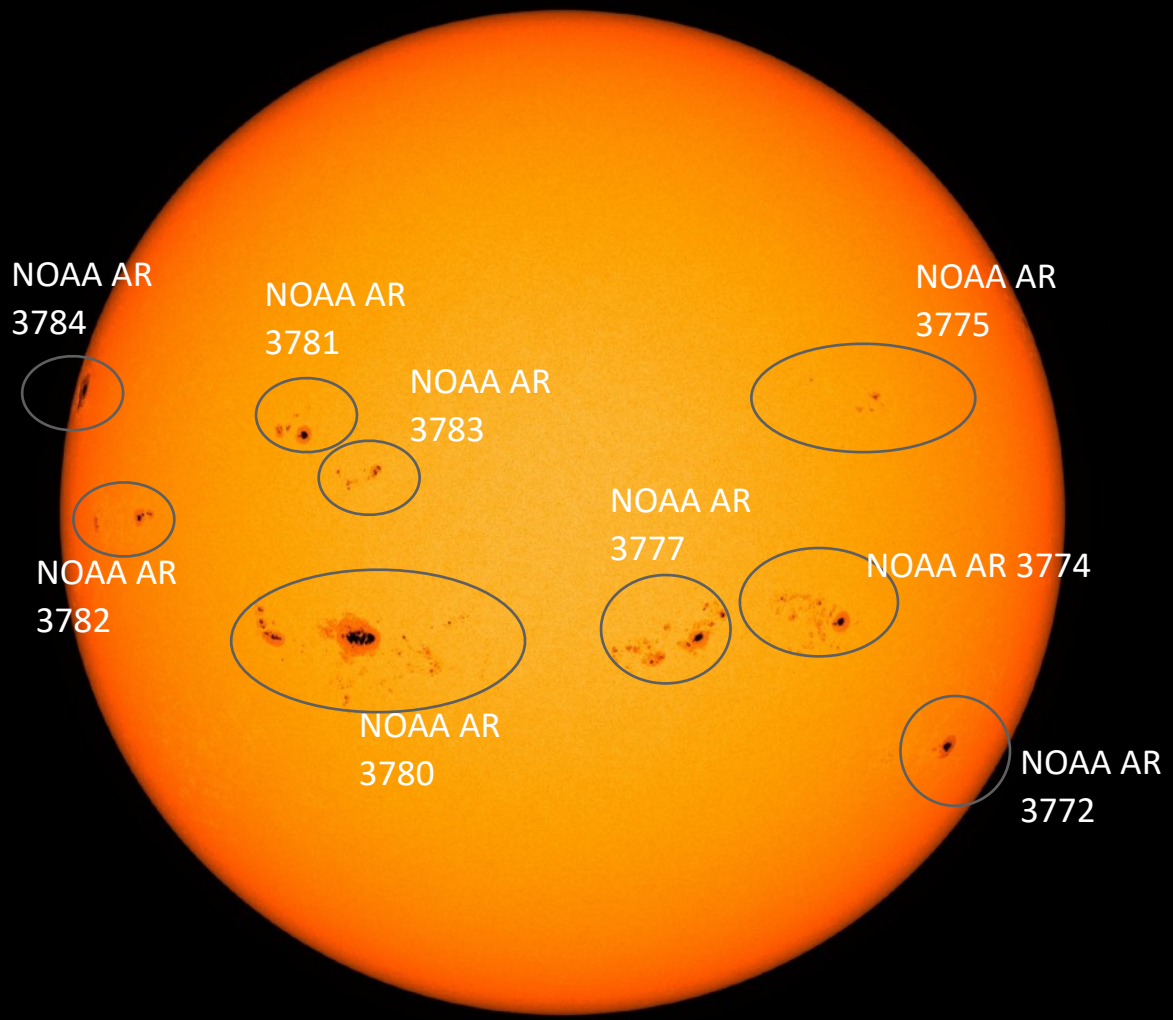


SDO/HMI Magnetogram 2024-08-07

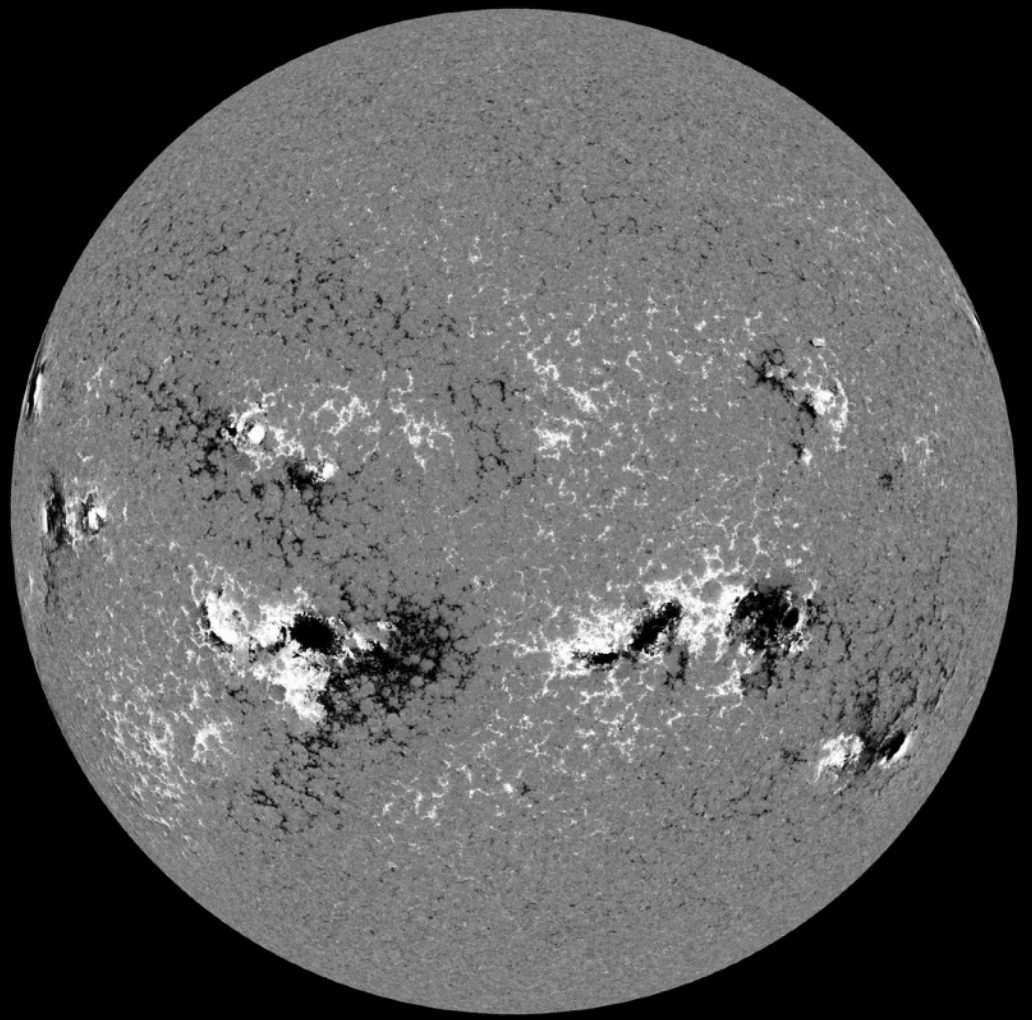


Solar active regions

SDO/HMI White Light 2024-08-08

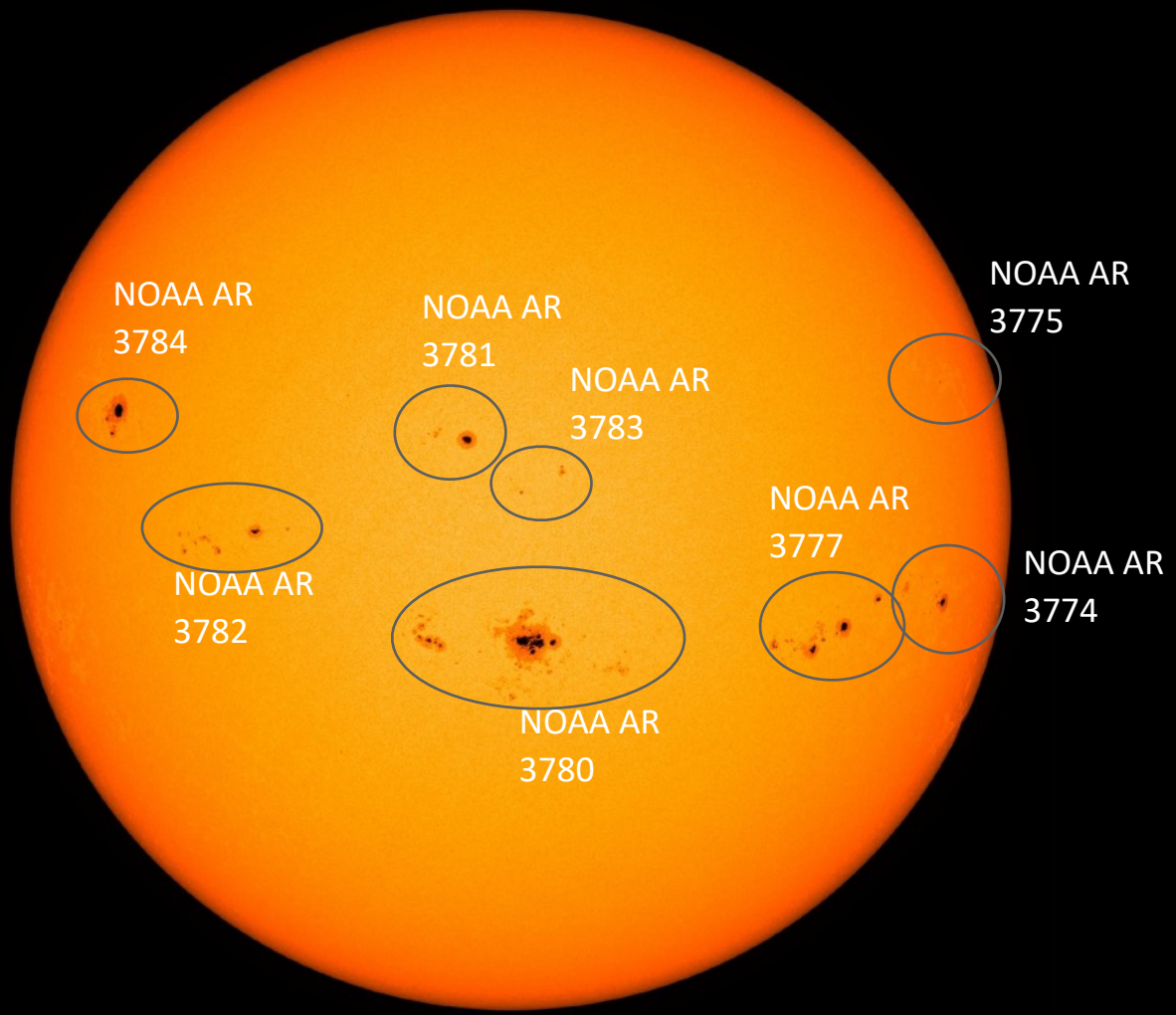


SDO/HMI Magnetogram 2024-08-08

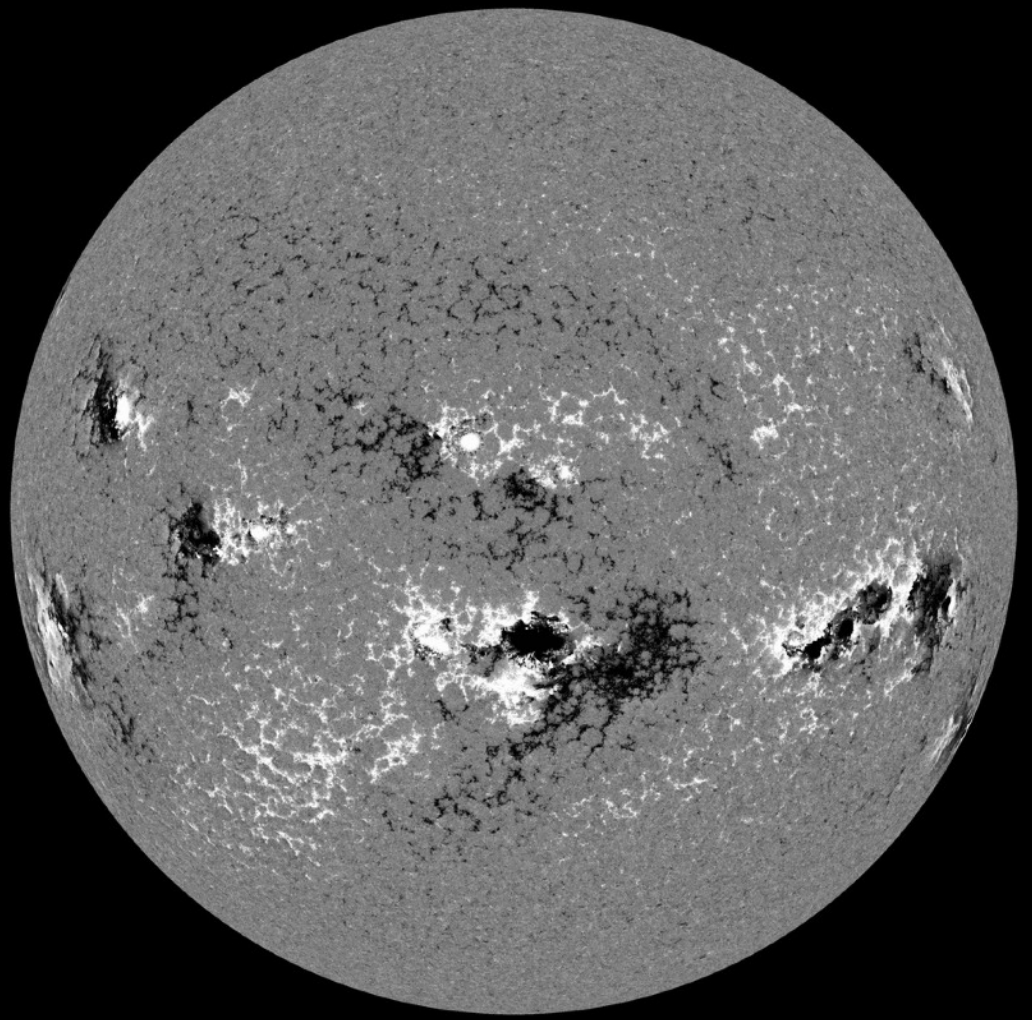


Solar active regions

SDO/HMI White Light 2024-08-10

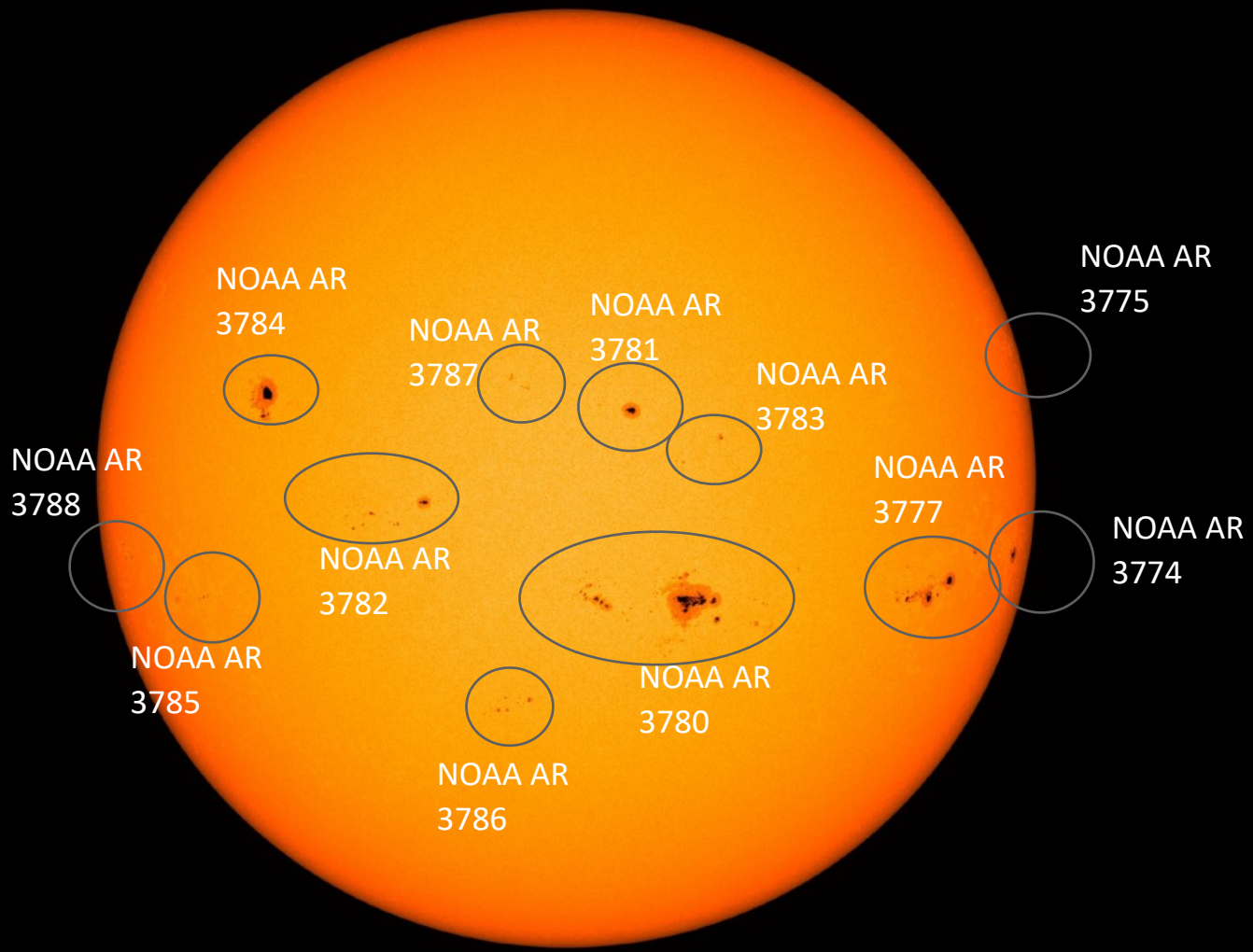


SDO/HMI Magnetogram 2024-08-10

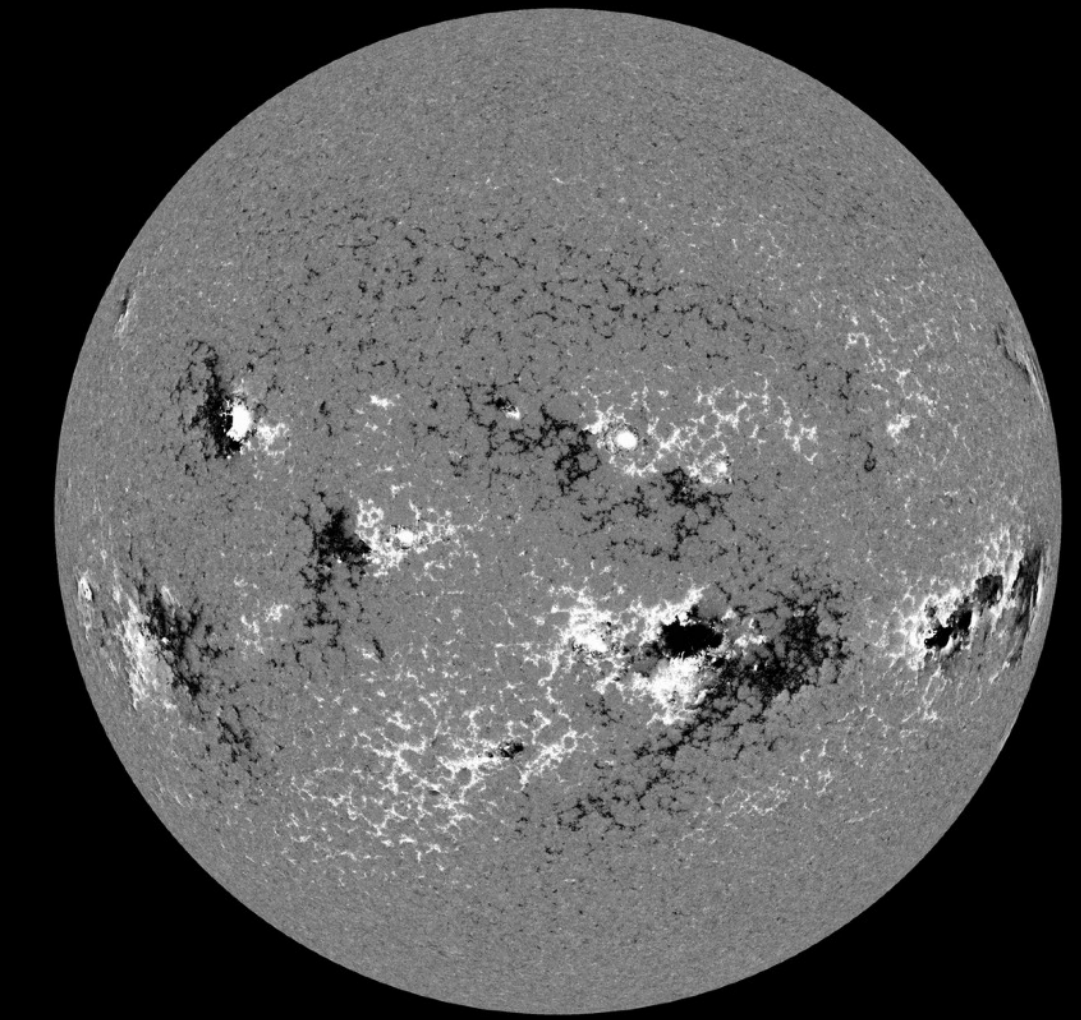


Solar active regions

SDO/HMI White Light 2024-08-11

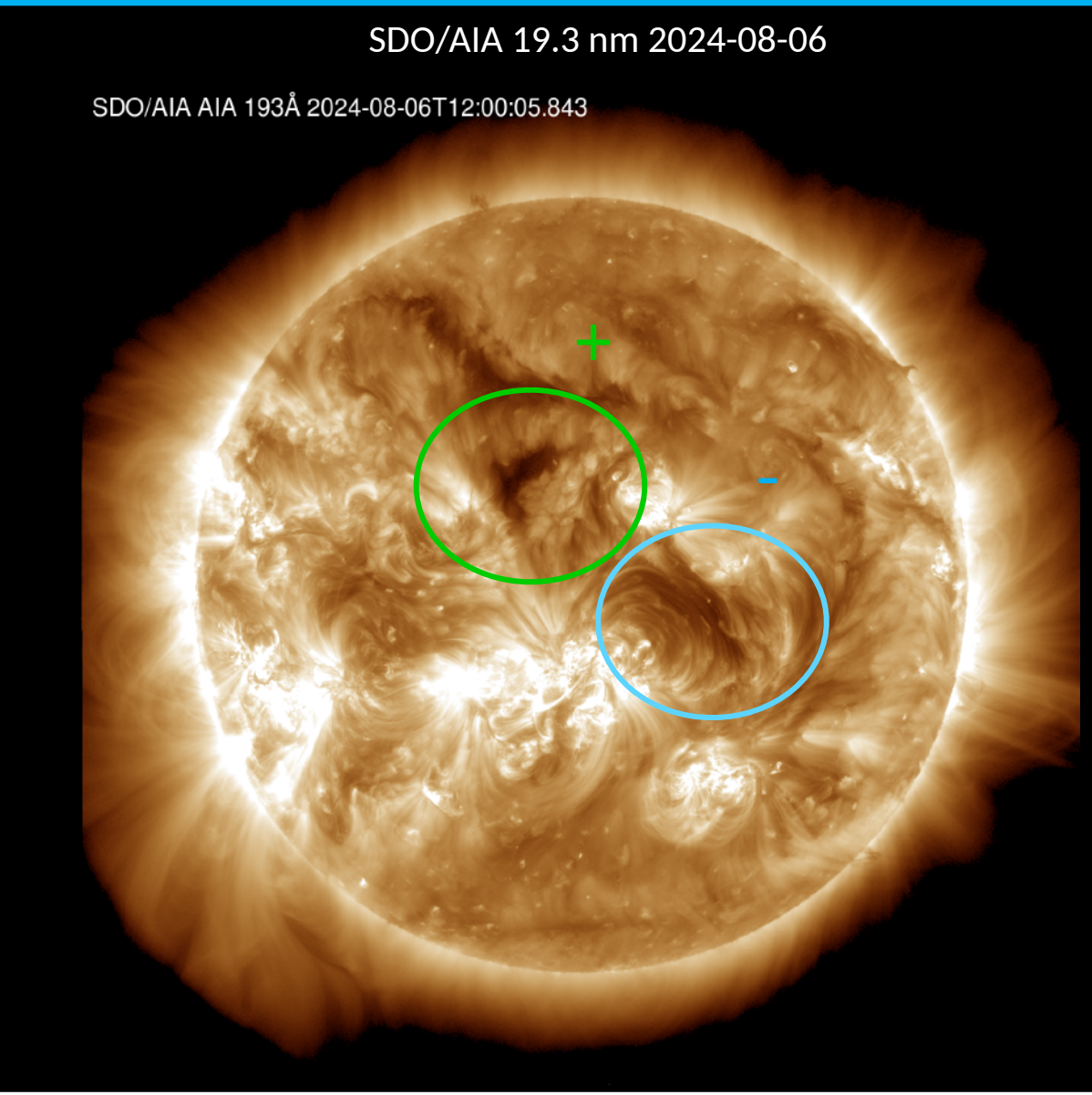


SDO/HMI Magnetogram 2024-08-11

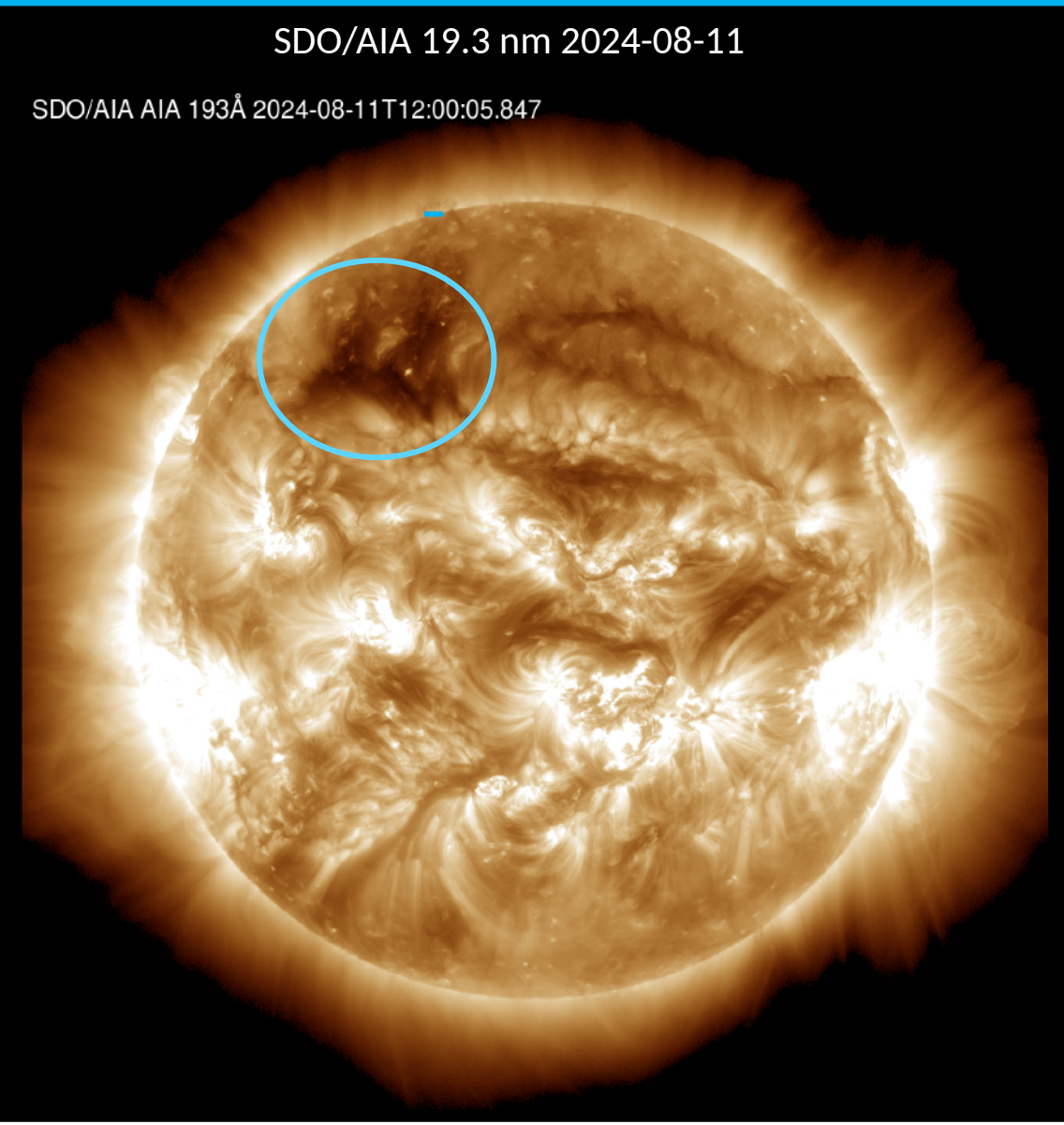


Coronal holes

SDO/AIA 19.3 nm 2024-08-06

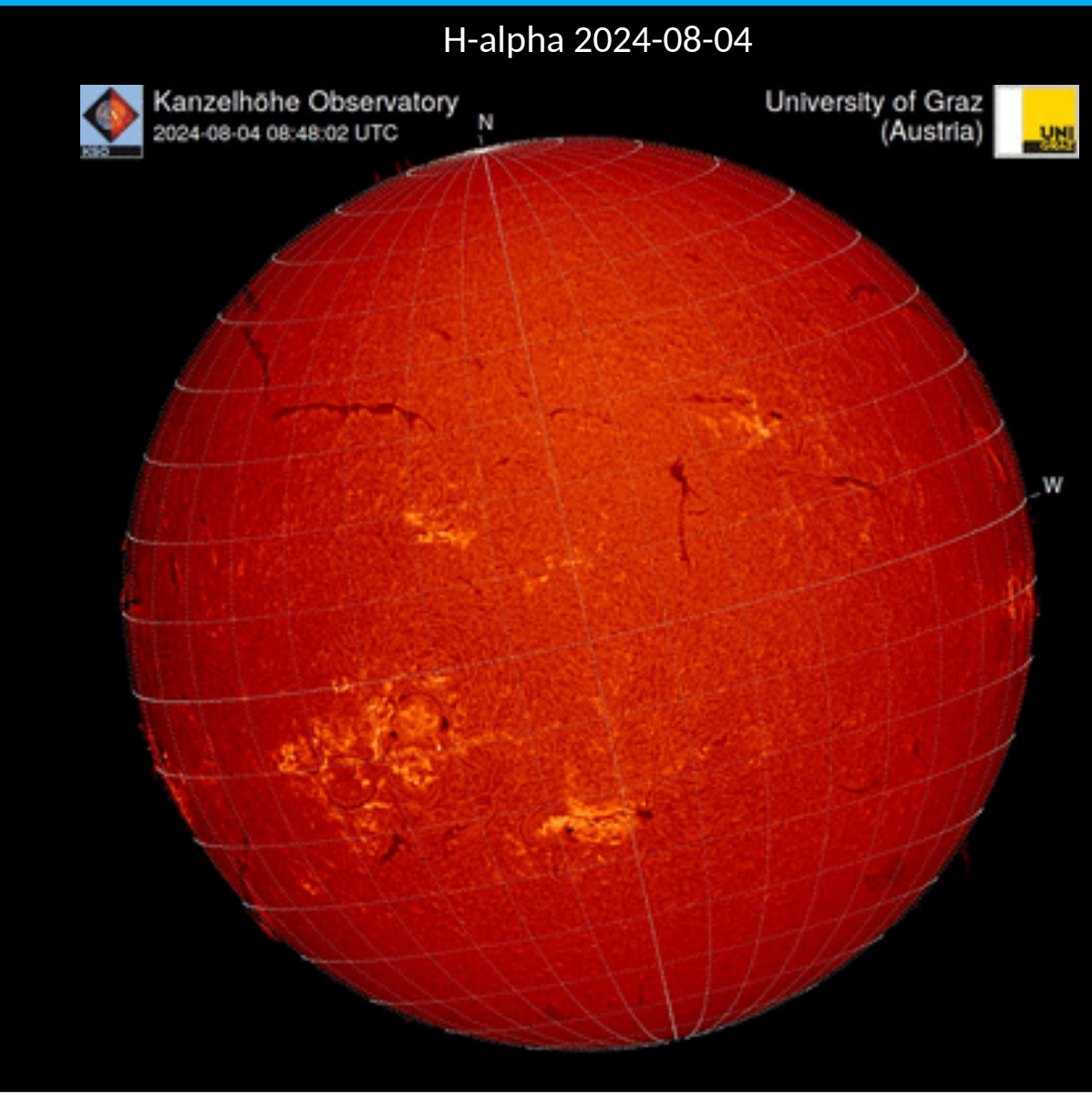


SDO/AIA 19.3 nm 2024-08-11

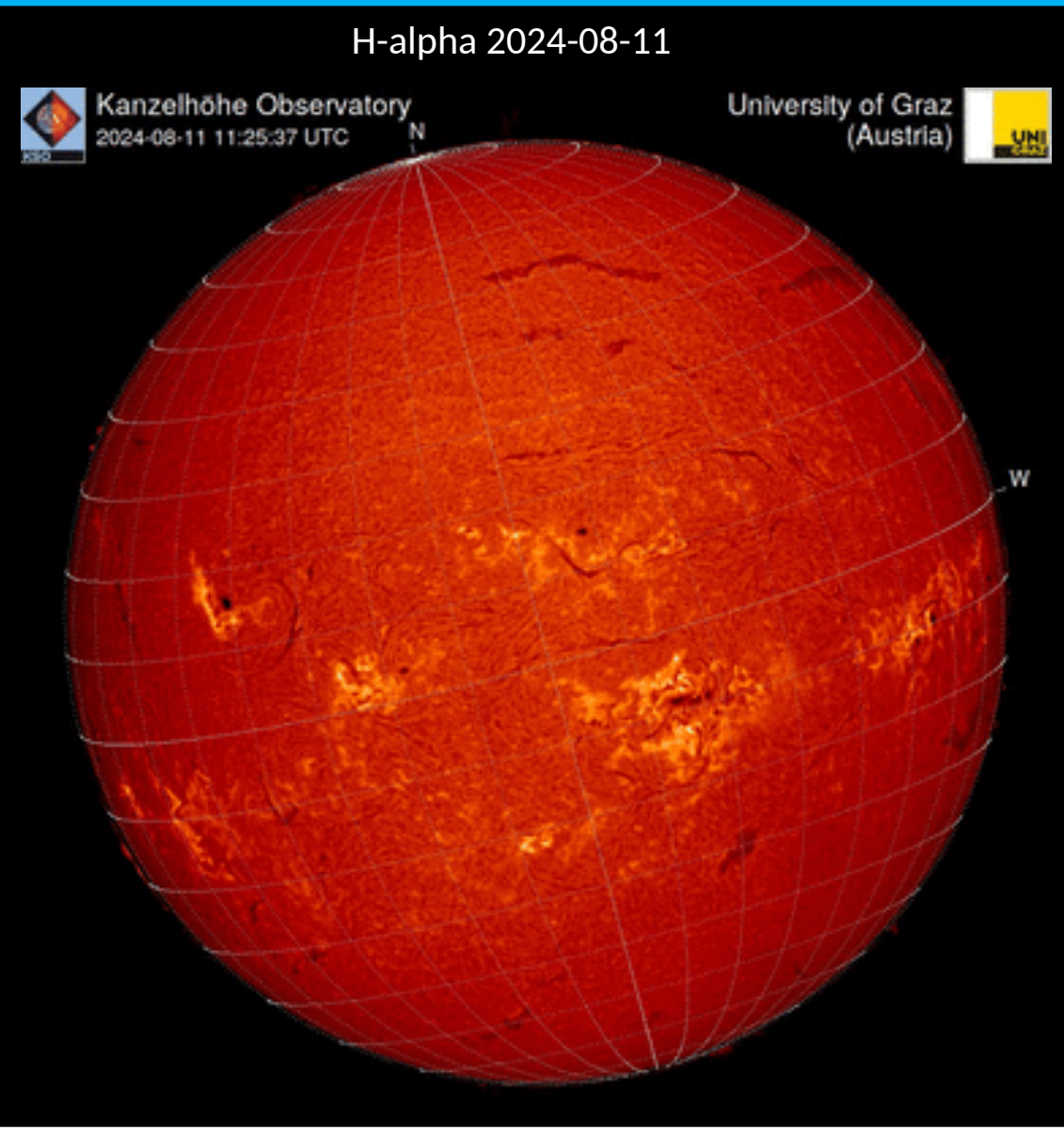


Filaments & Filament eruptions

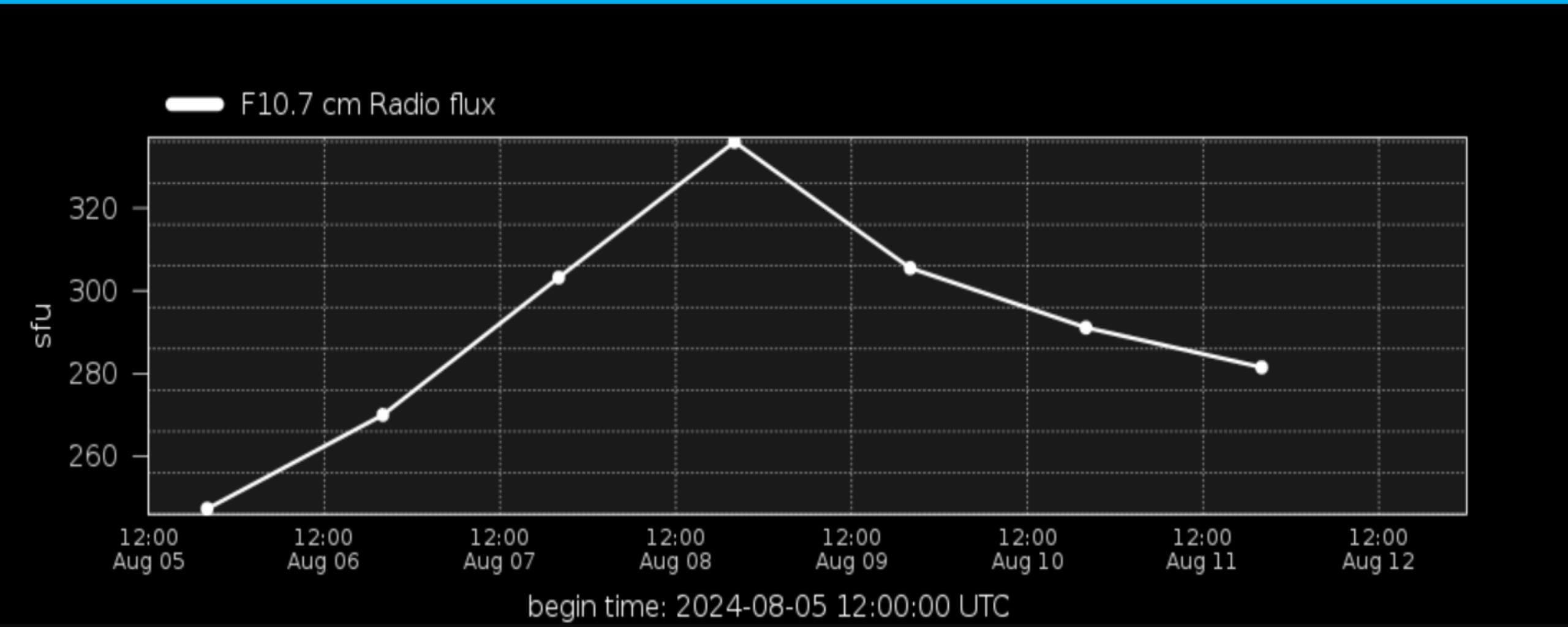
H-alpha 2024-08-04



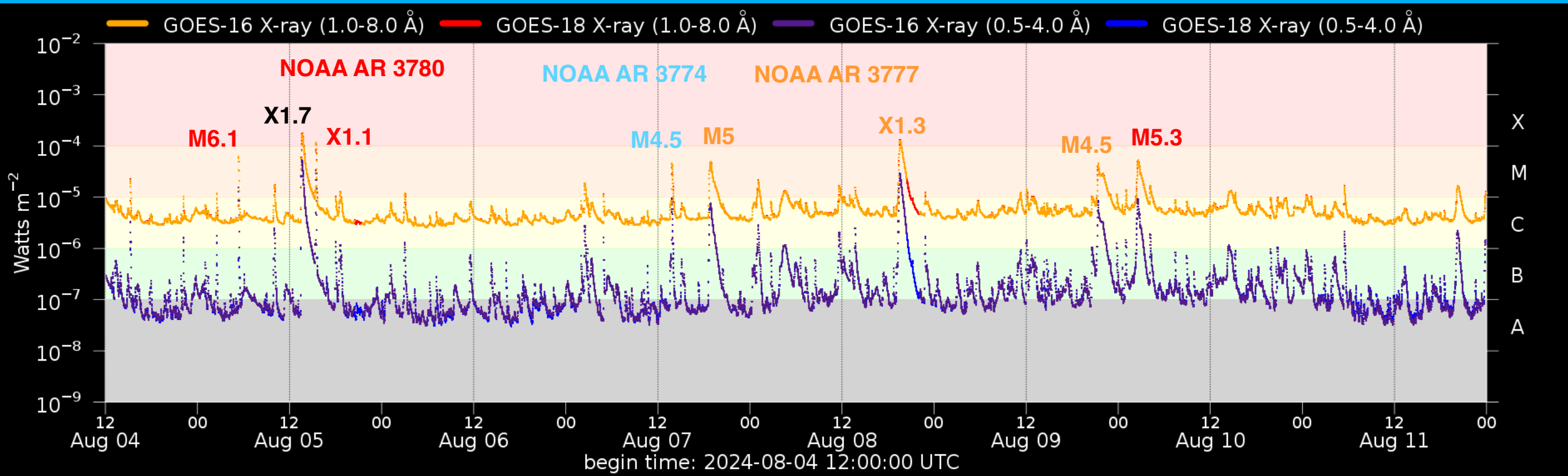
H-alpha 2024-08-11



Solar F10.7cm radio flux



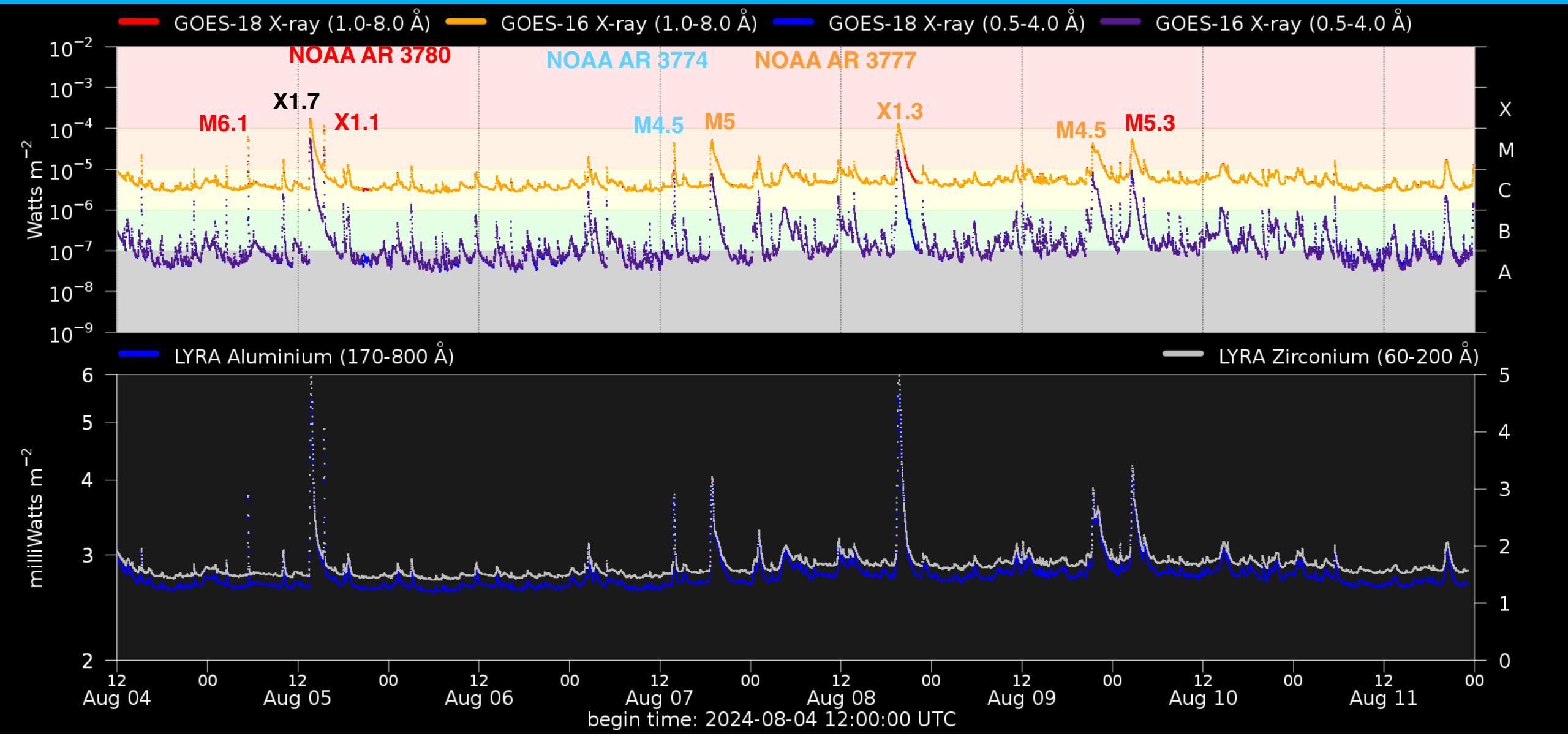
Flaring activity



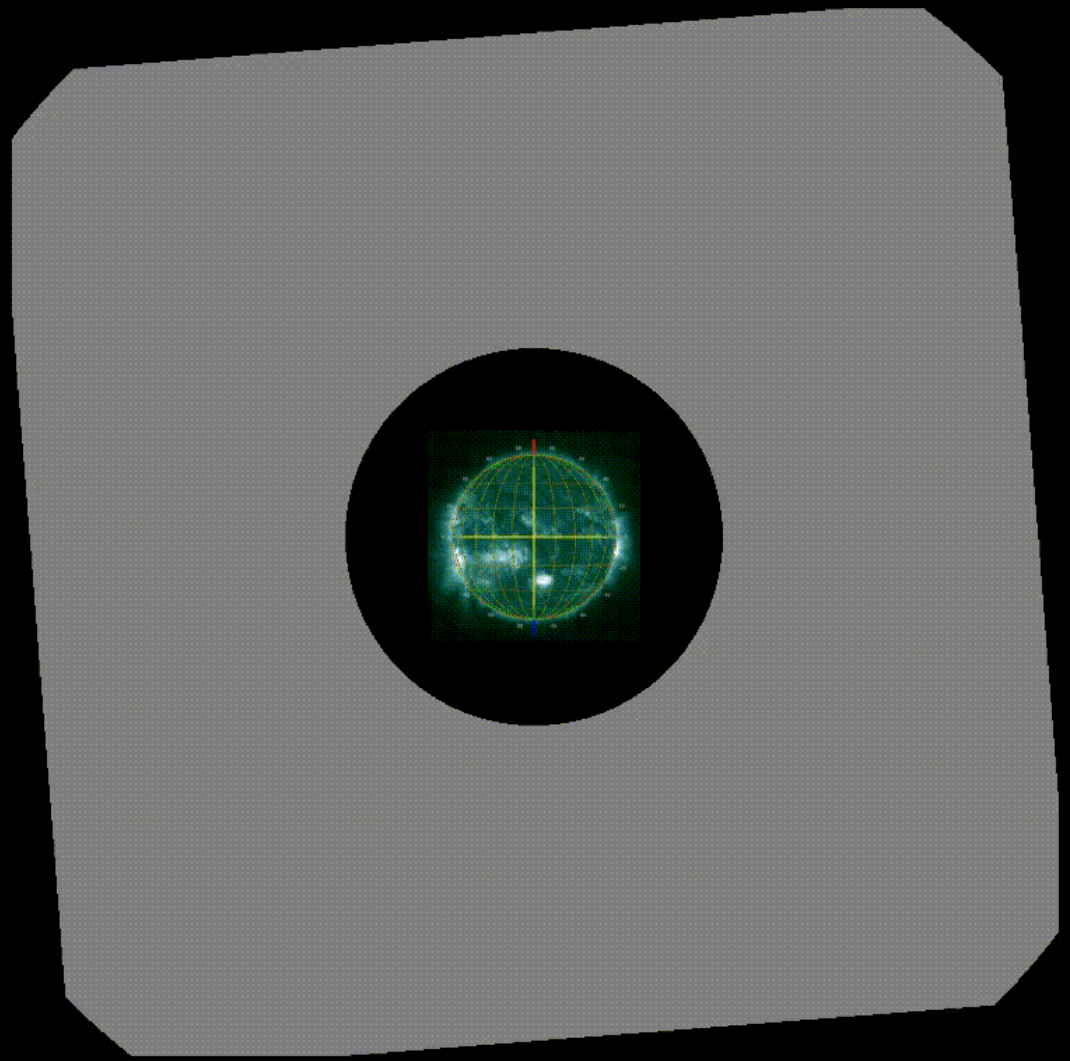
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-08-04	2024-08-05	2024-08-06	2024-08-07	2024-08-08	2024-08-09	2024-08-10	2024-08-11
Probability (%)	99|75|30	99|75|25	99|80|25	99|80|25	99|80|25	99|80|25	99|80|25	99|75|25
Observed (#)	02|05|00	04|03|02	03|02|00	04|04|00	00|03|01	04|08|00	02|03|00	00|01|00

Solar X-Ray and UV flux



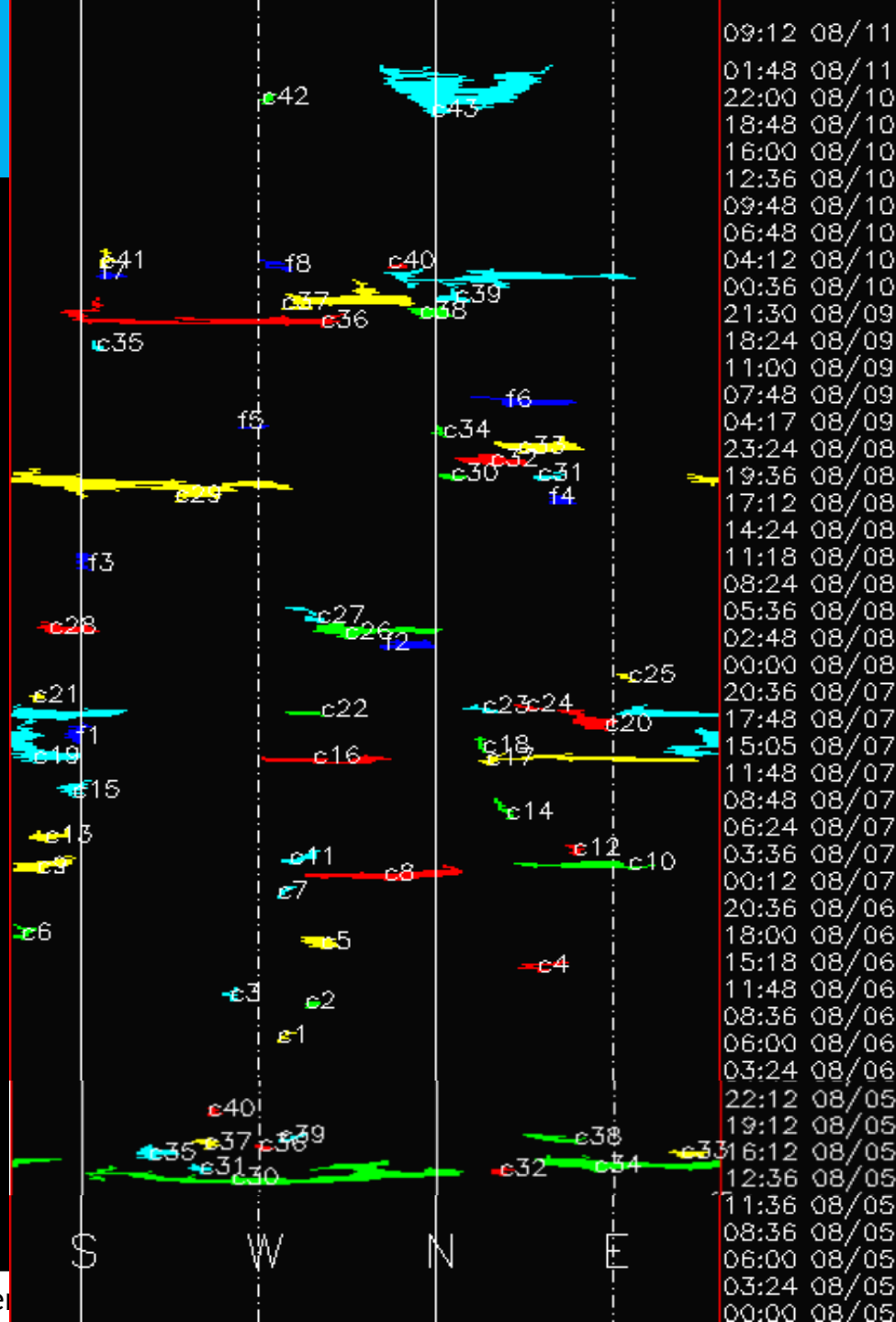
Coronal Mass Ejections



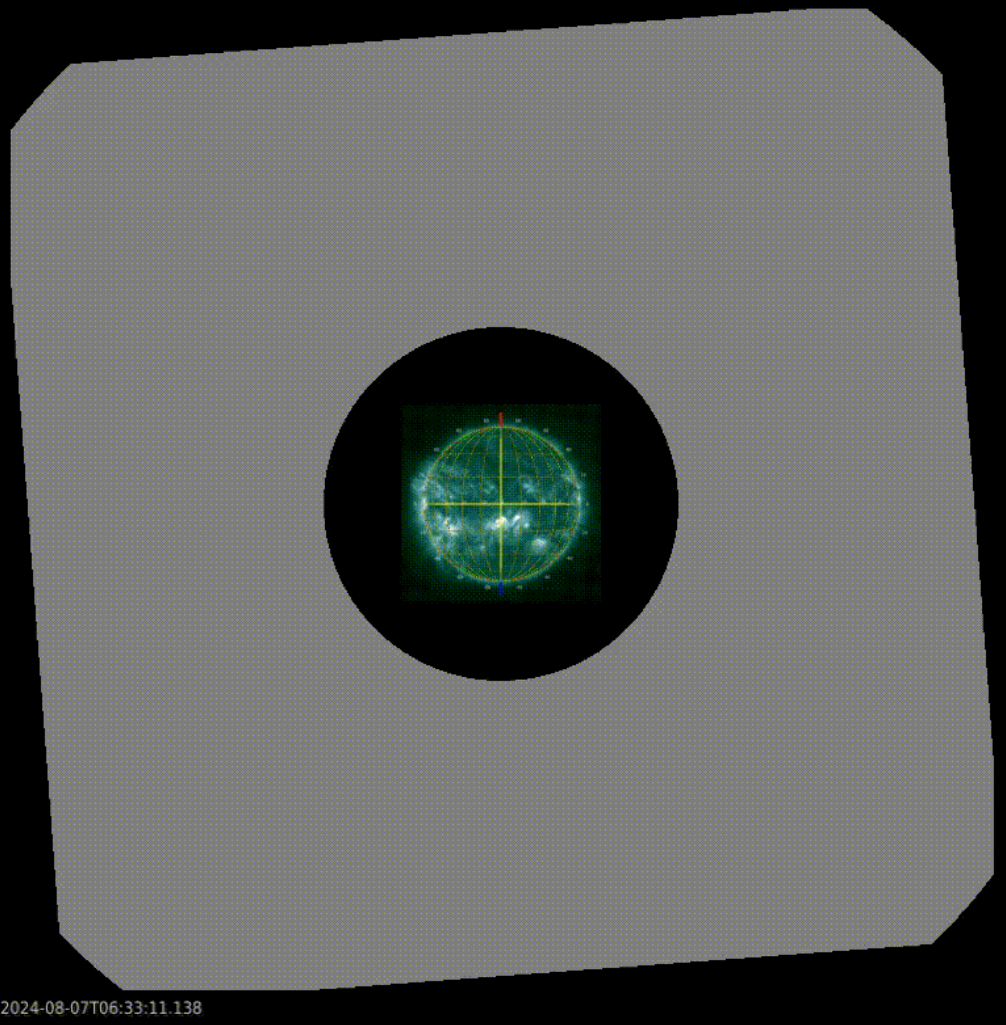
A partial halo CME Directed to the west
Observed in SOHO/LASCO-C2 data from 13:48 UTC on August 05.

Associated with the X1.7 flare with peak time 13:39 UTC on August 05, from beyond the west solar limb

Not Earth directed.



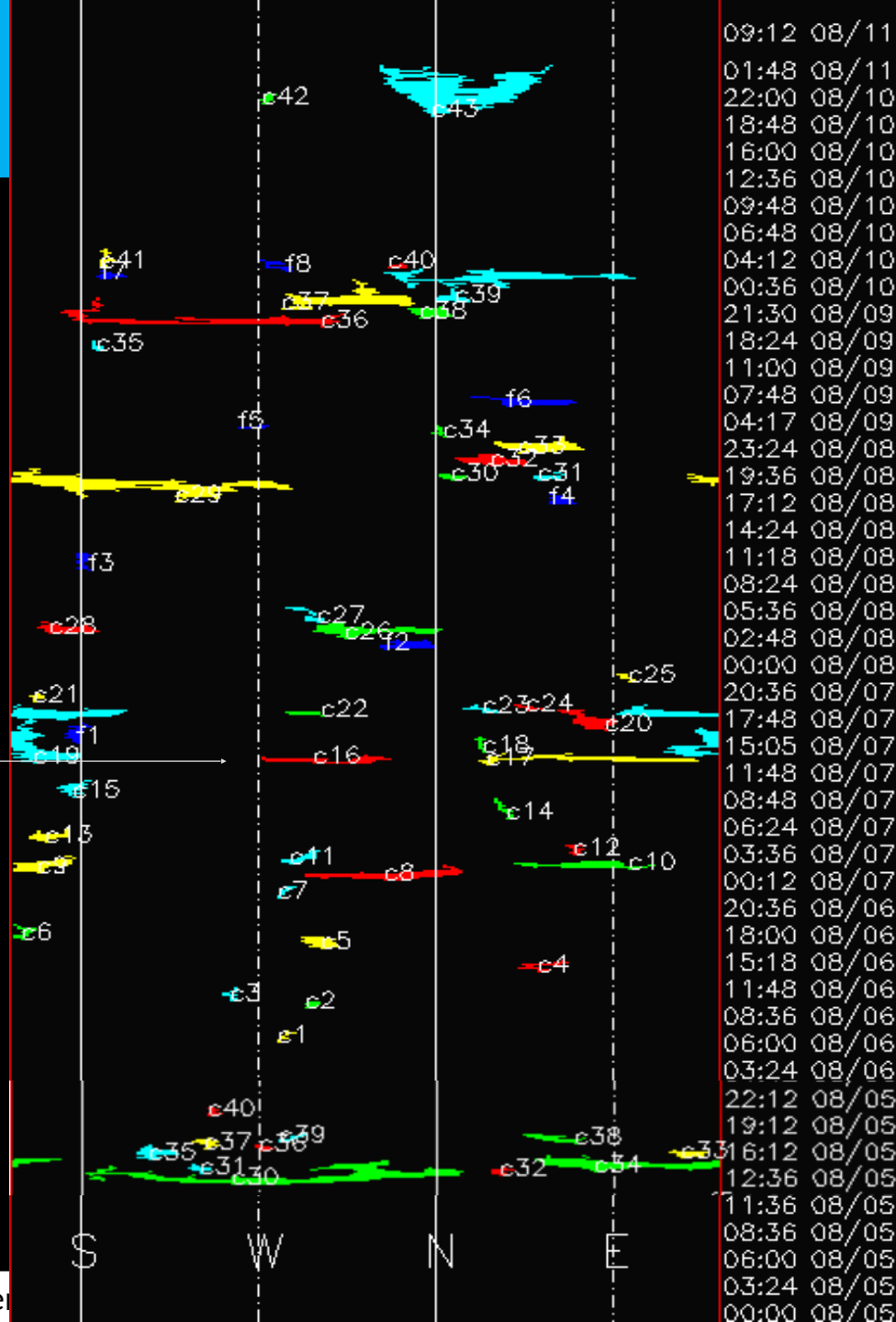
Coronal Mass Ejections



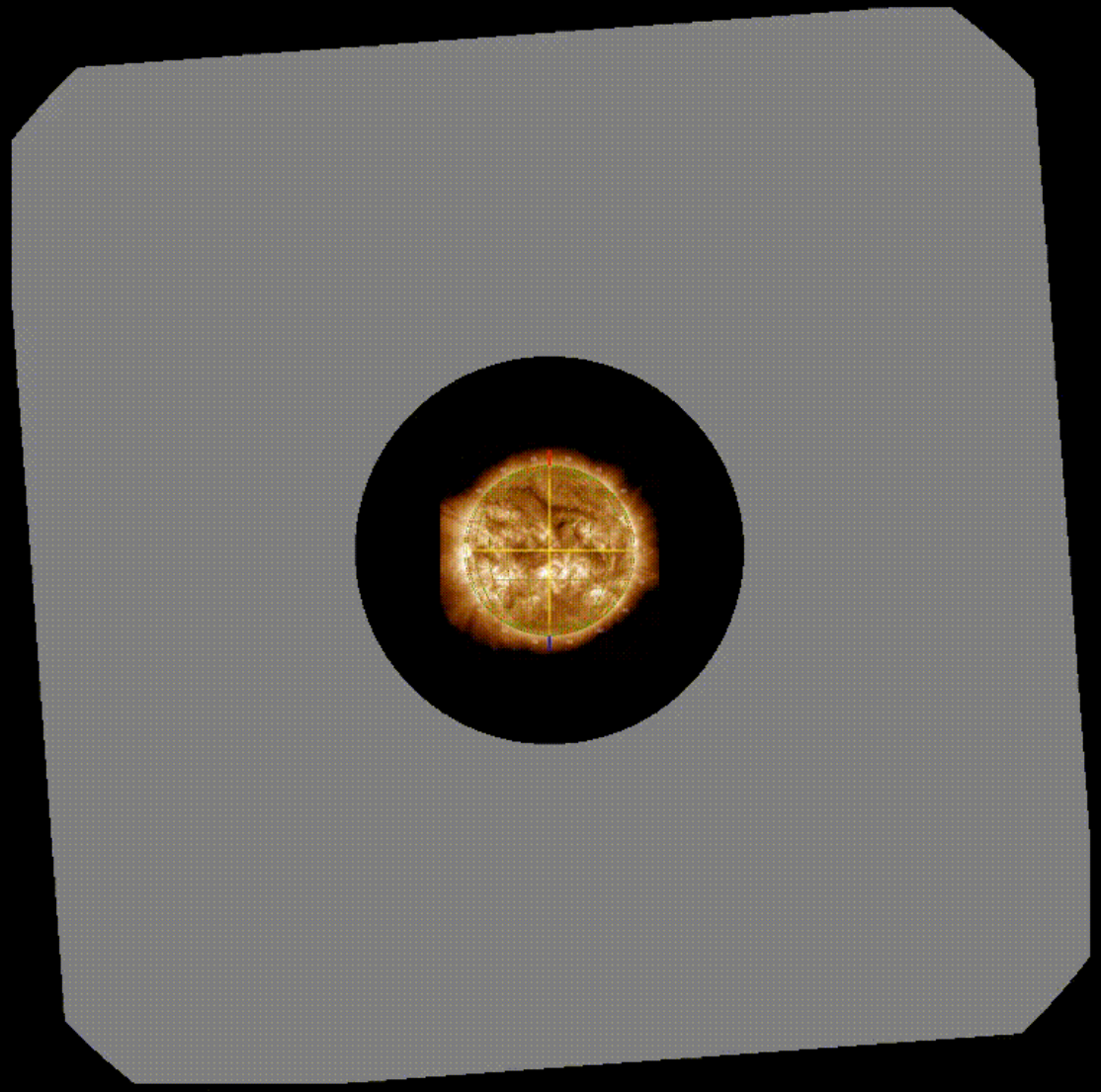
A faint halo CME was observed in SOHO/ LASCO-C2 data, first seen around 14:36 UTC August 07.

Possibly combination of a back side event as well as a CME associated with the M4.5 flare peaking at 13:40 UTC from NOAA 3774.

Predicted to arrive, glancing blow early August 10 (low probability)

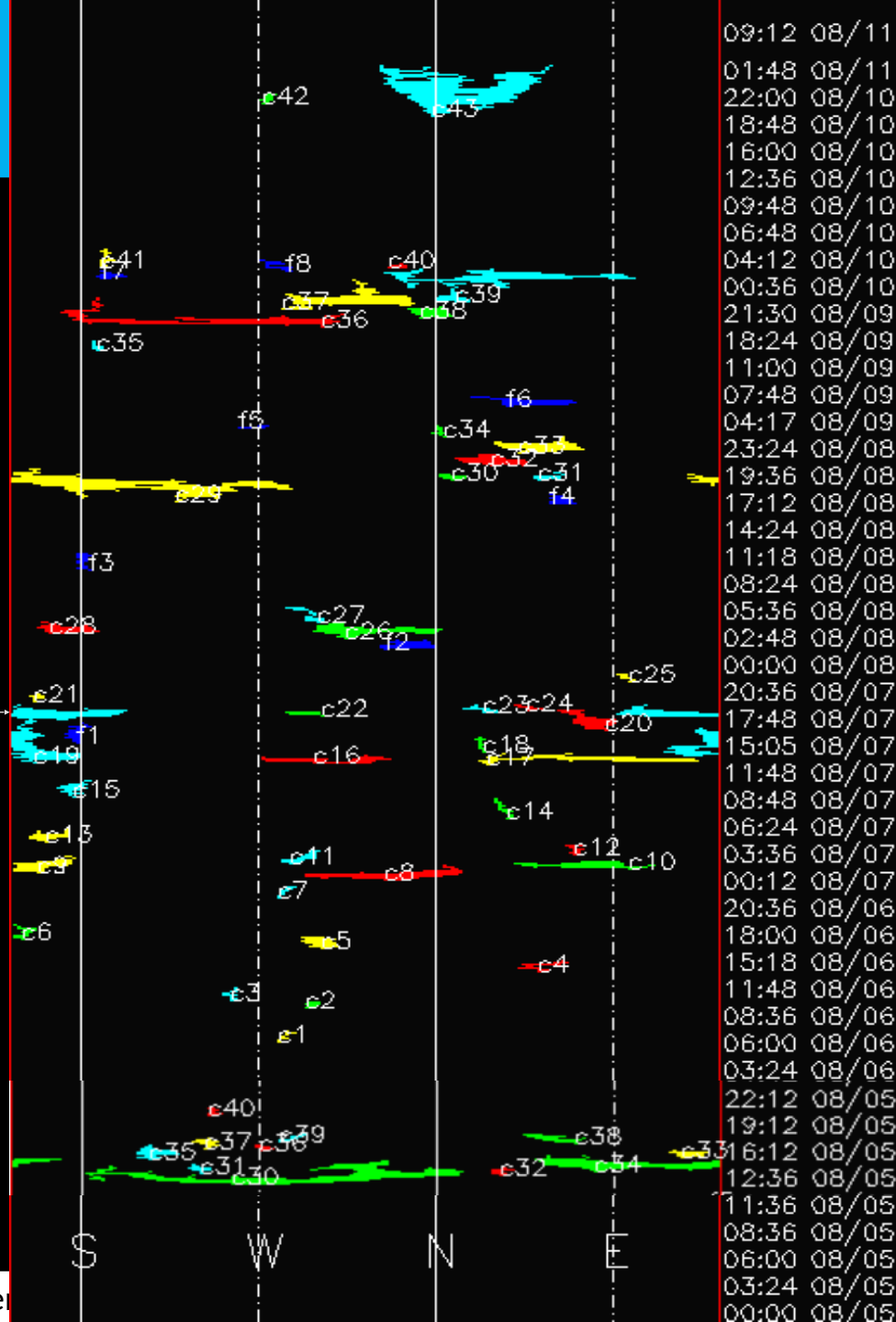


Coronal Mass Ejections

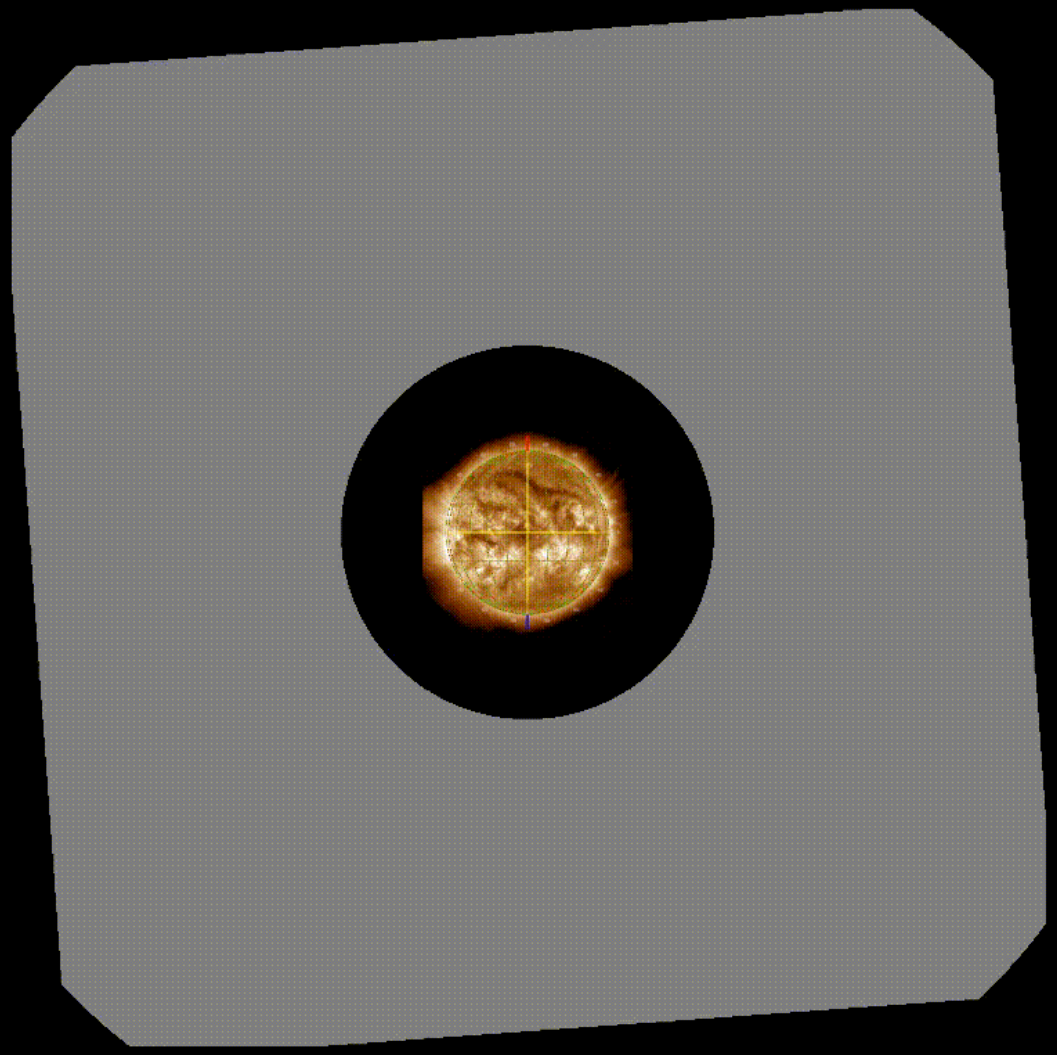


CME mostly directed to the south-east was observed in SOHO/LASCO-C2 data from 19:00 UTC. Possibly related to the M5 flare associated with NOAA AR 3777.

Predicted to arrive early August 10



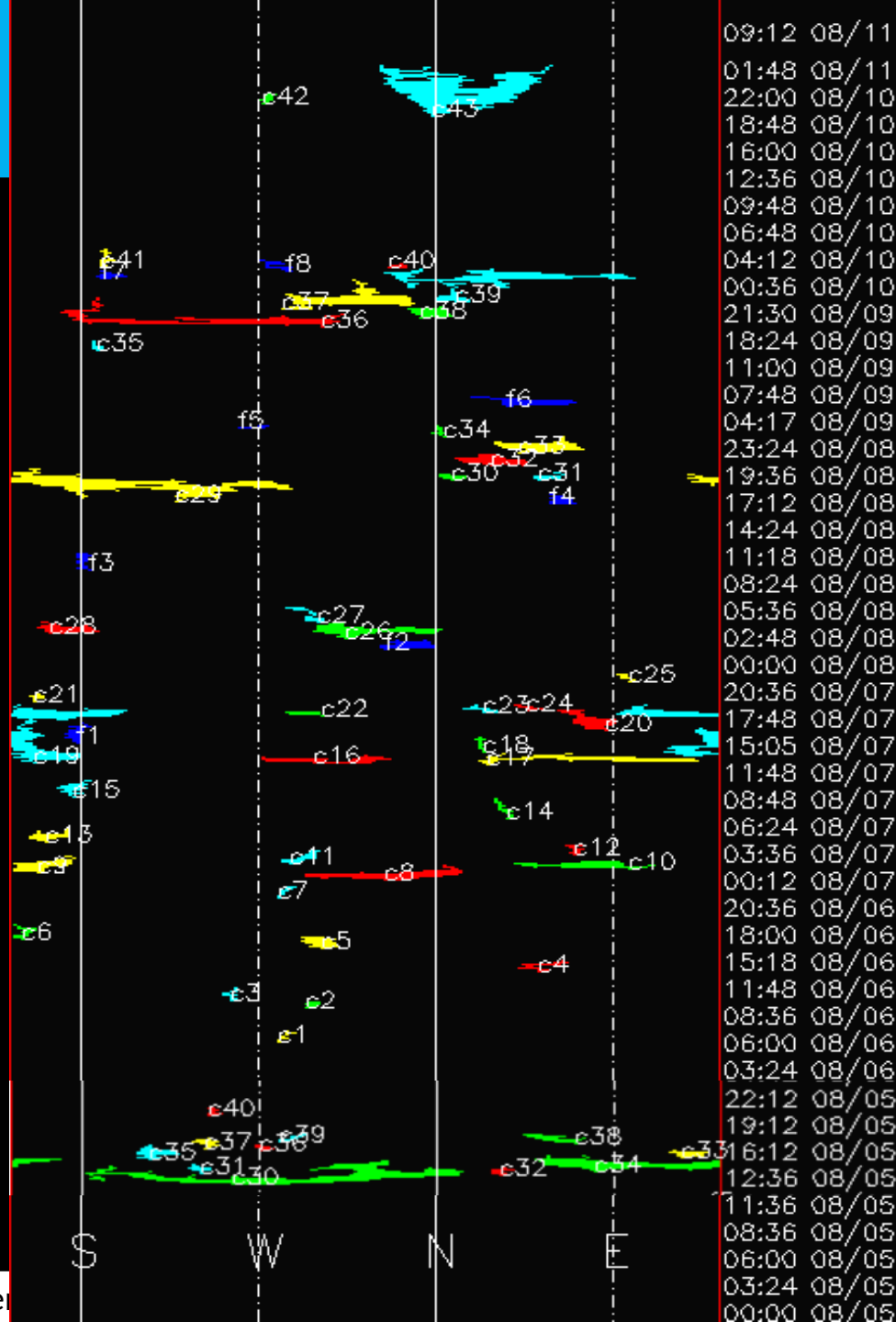
Coronal Mass Ejections



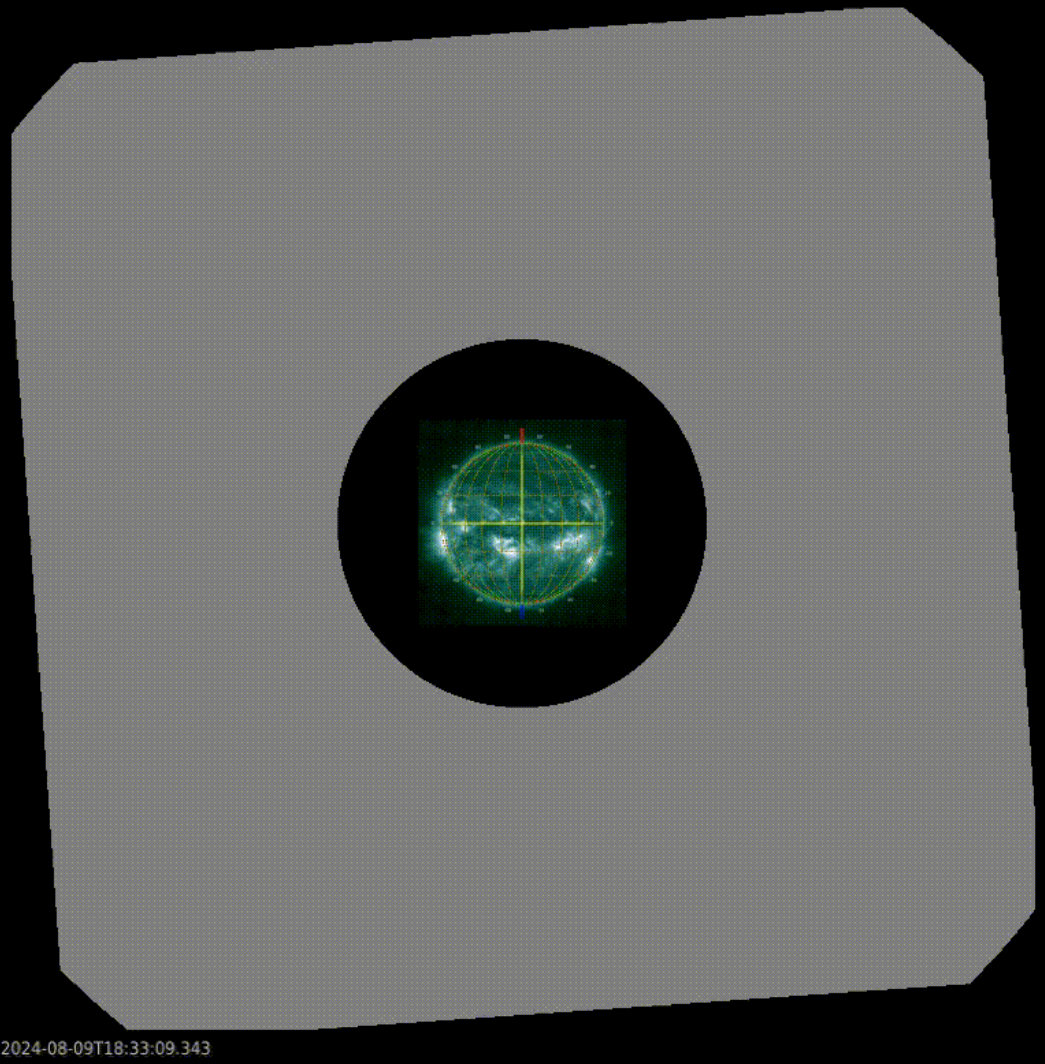
asymmetric halo CME mostly directed to the south-west, seen in LASCO-C2 data from 19:48 UTC August 08.

Related to X1.3 flare peak time 19:35 UTC on August 08, associated with NOAA AR3777.

Predicted to arrive at Earth on second half of August 11.



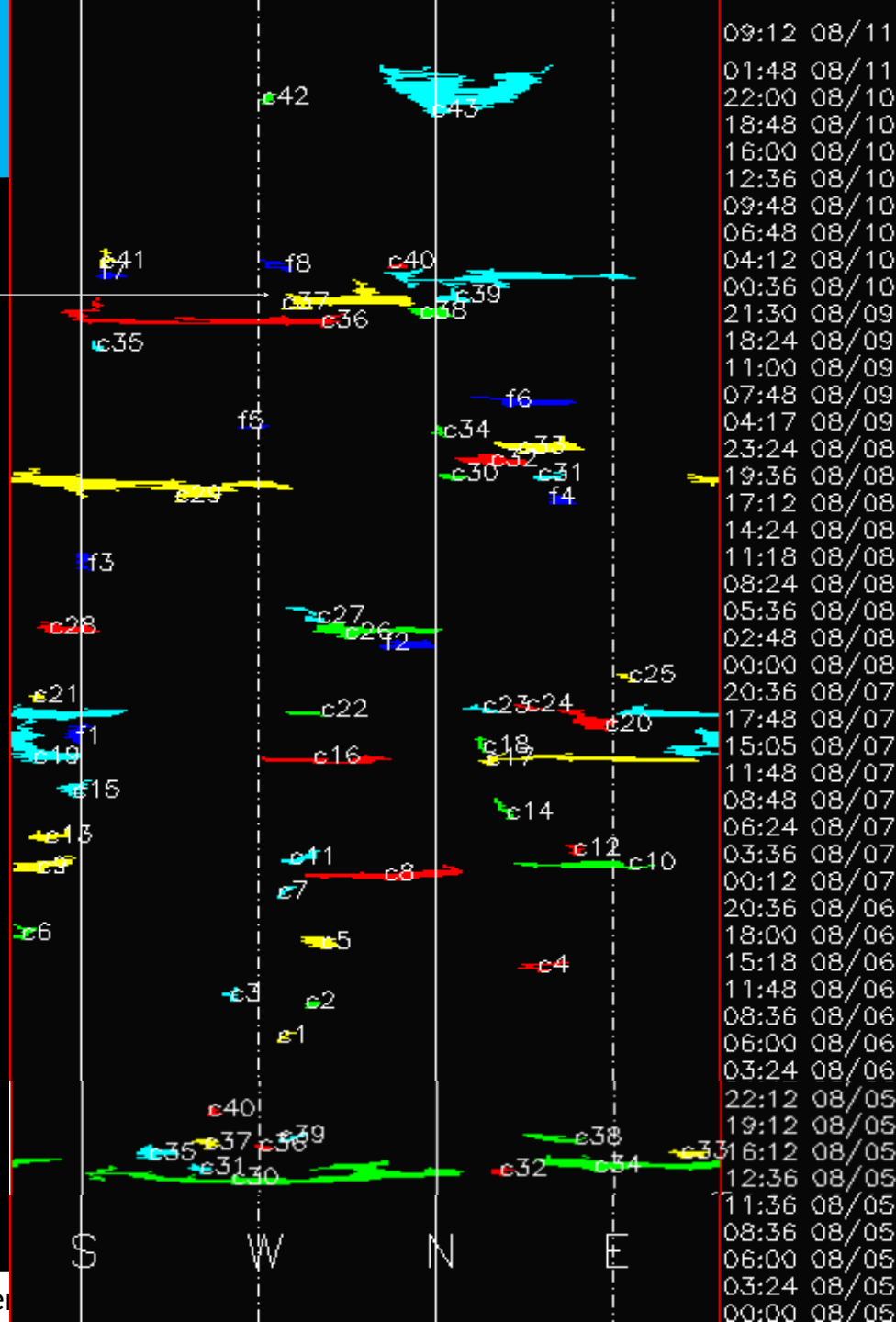
Coronal Mass Ejections



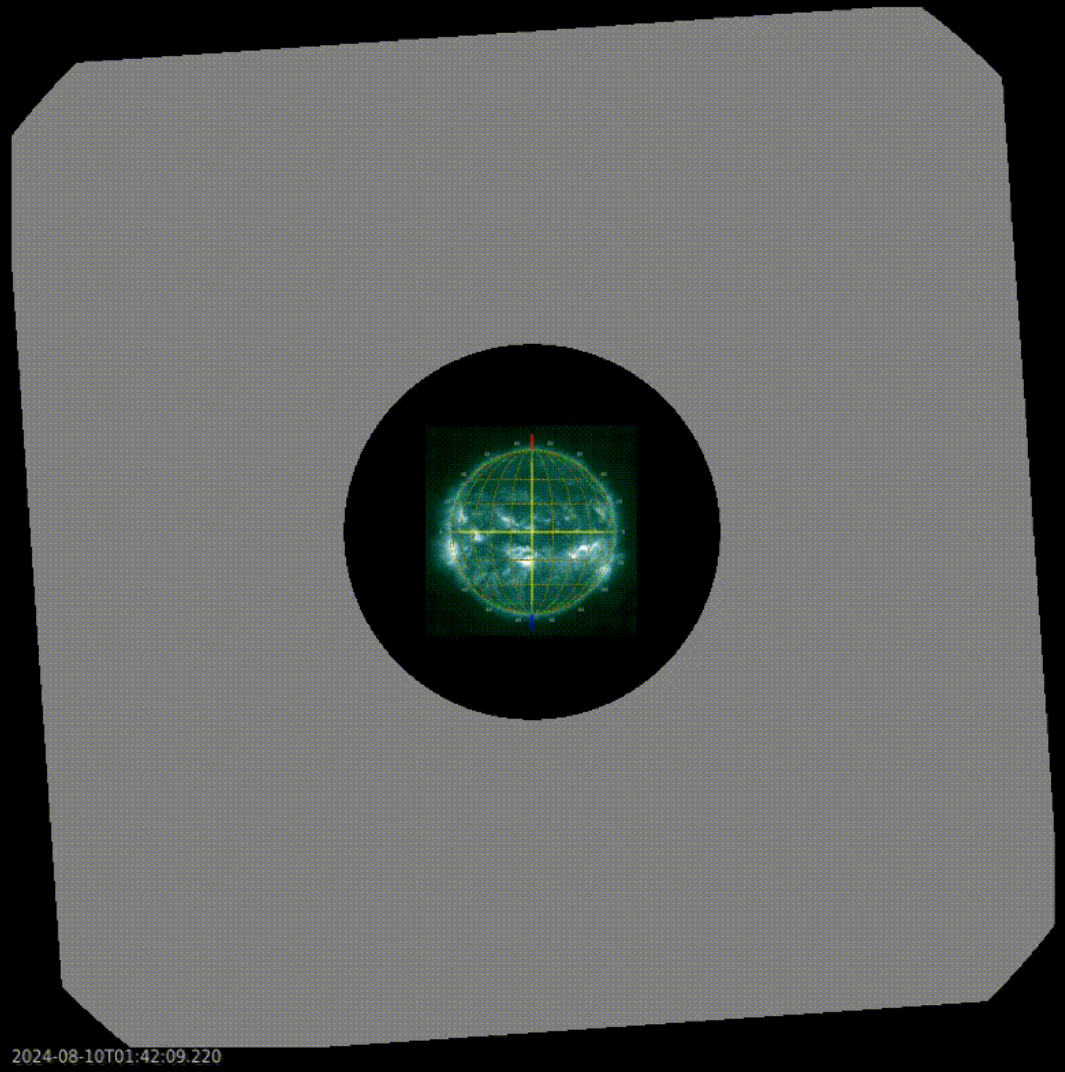
A CME mostly directed to the south-west, was detected in SOHO/LASCO-C2 data from 21:45 UTC on August 09.

Associated with the M4.5 flare with peak time 21:23 UTC.

Glancing blow at Earth predicted early on August 13.

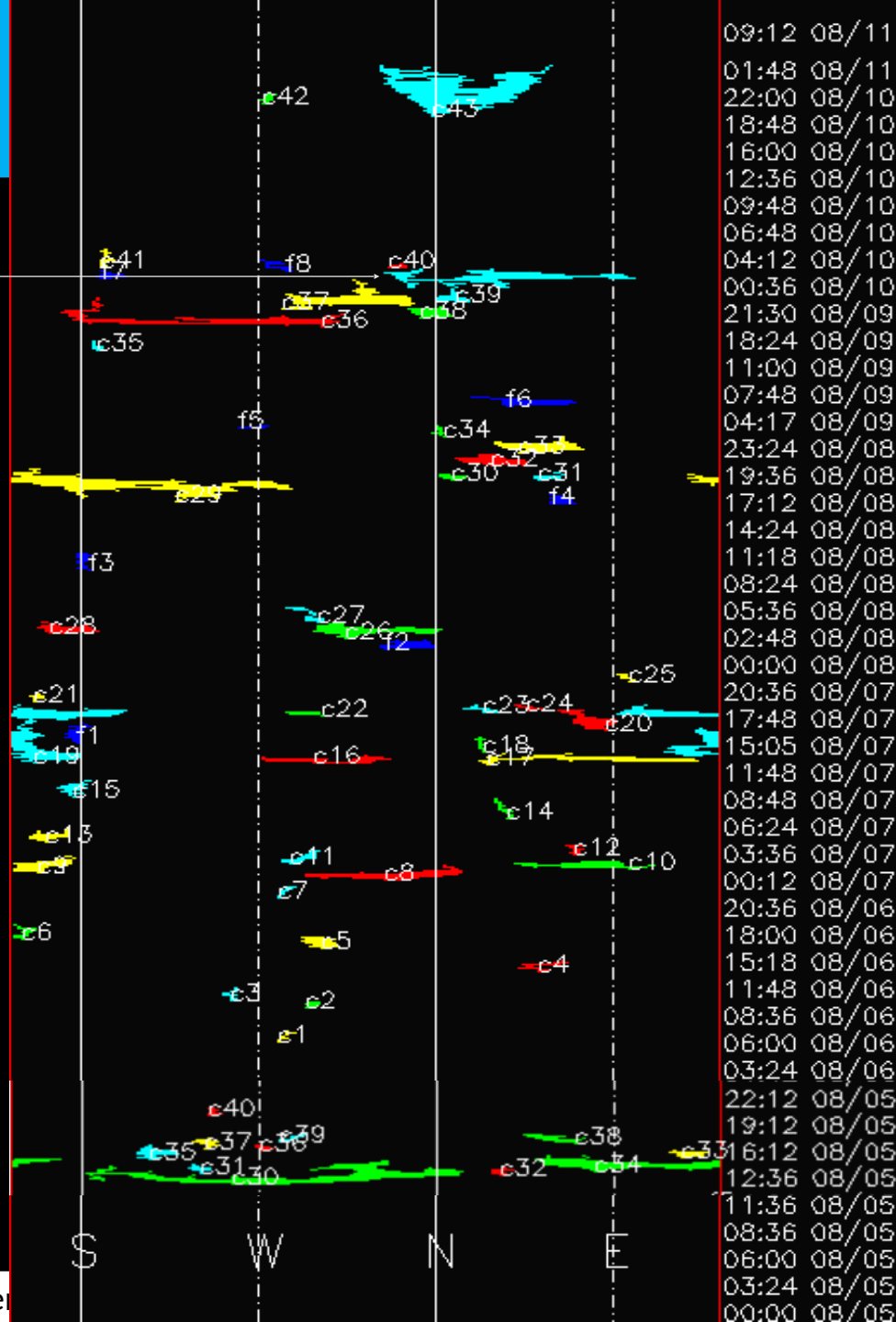


Coronal Mass Ejections



A faint CME to the north east in SOHO/LASCO-C2 data from 02:54 UTC August 10, possibly associated with the M5.3 flare at 02:37 UTC.

CME predicted to have a glancing blow at Earth early on August 13 (possibly combined with the previous CME)



Solar Wind and Geomagnetic Activity

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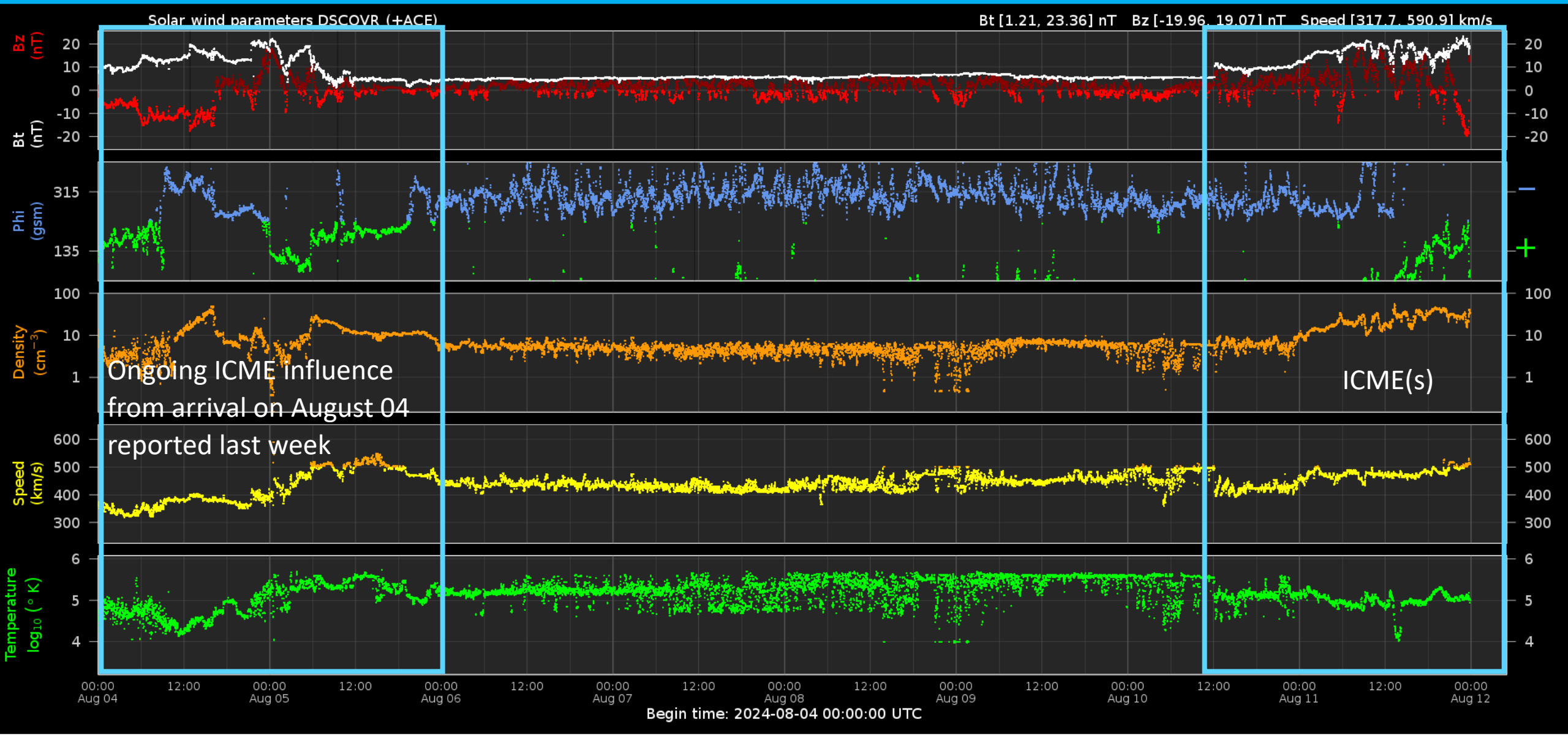
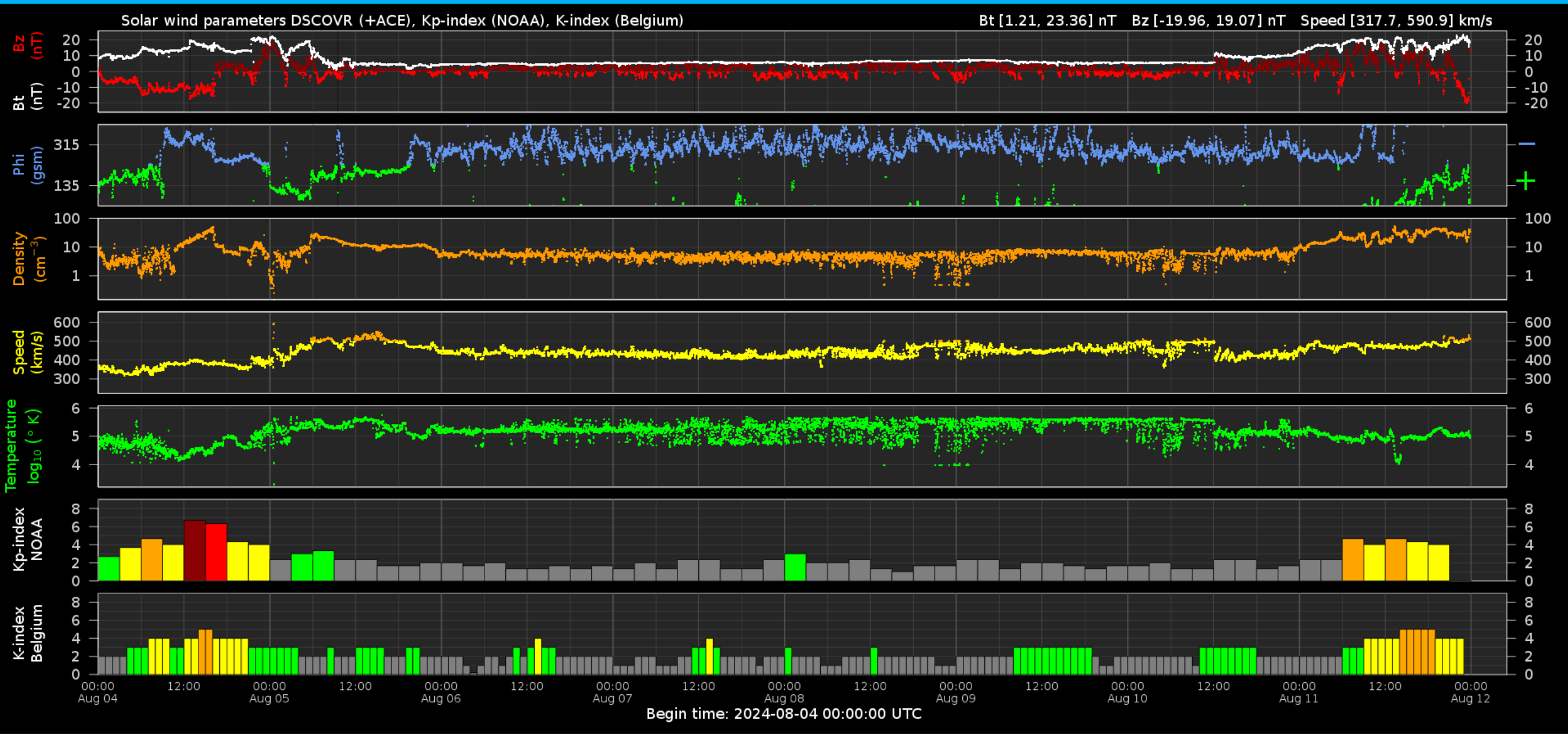
Solar wind parameters



Solar wind parameters & K-indices



Energetic Particles

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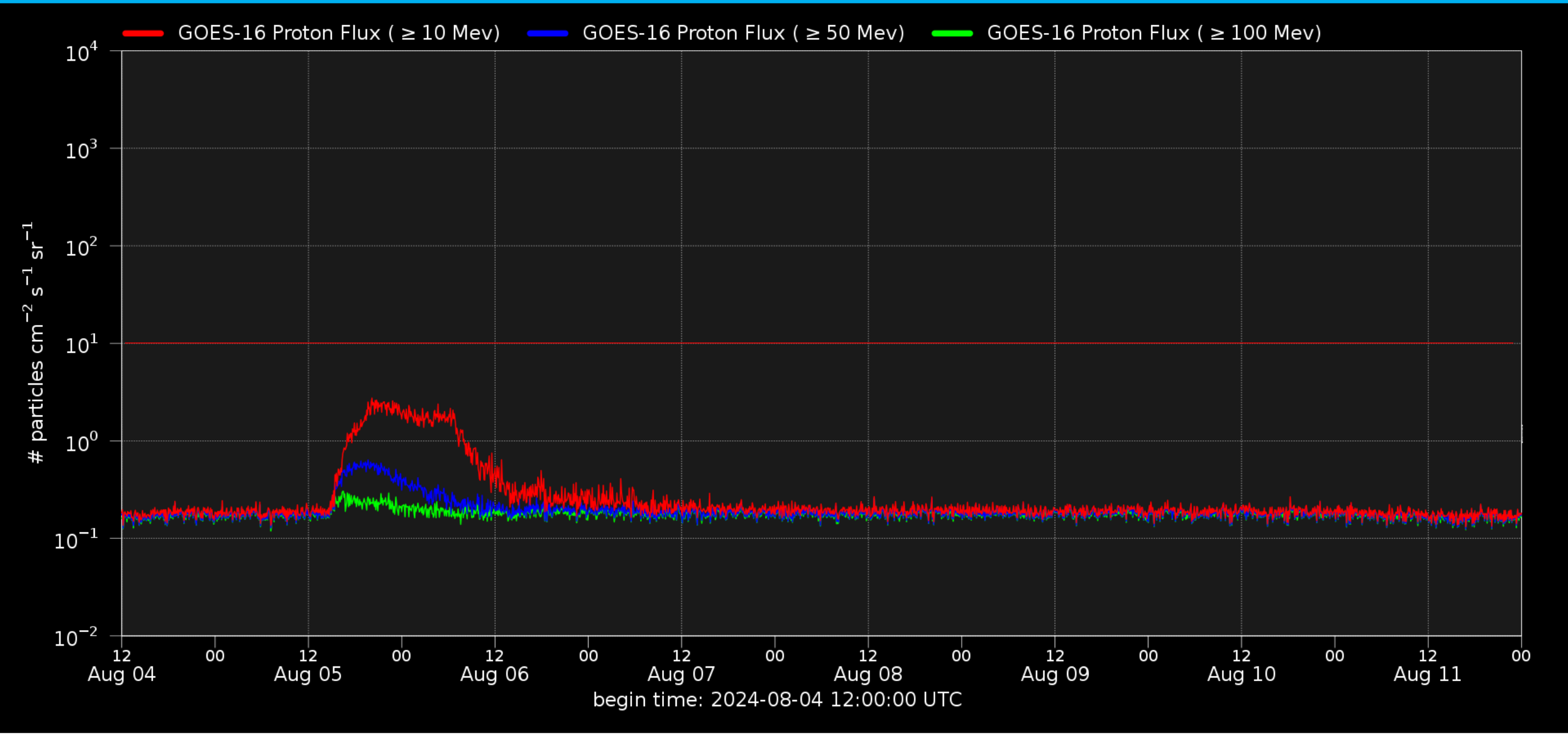
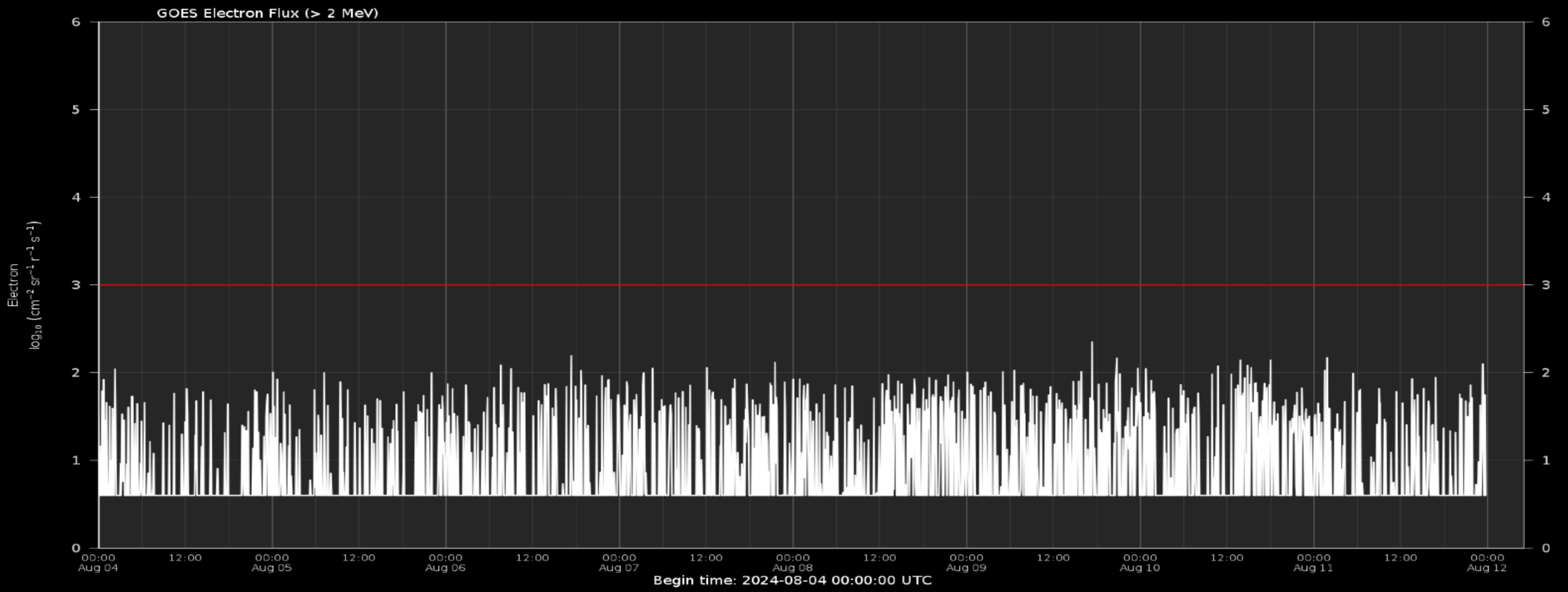
Solar proton flux



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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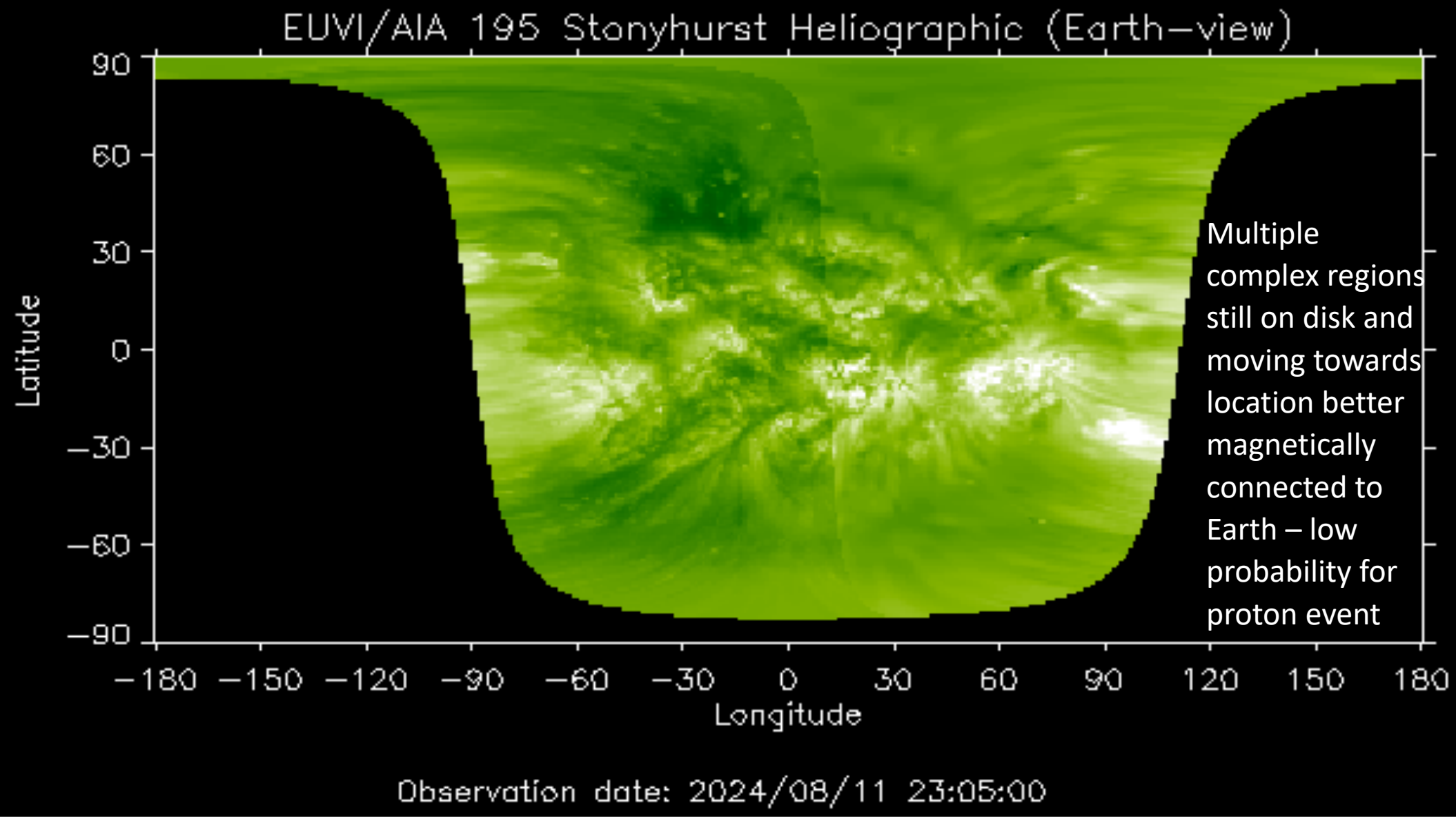
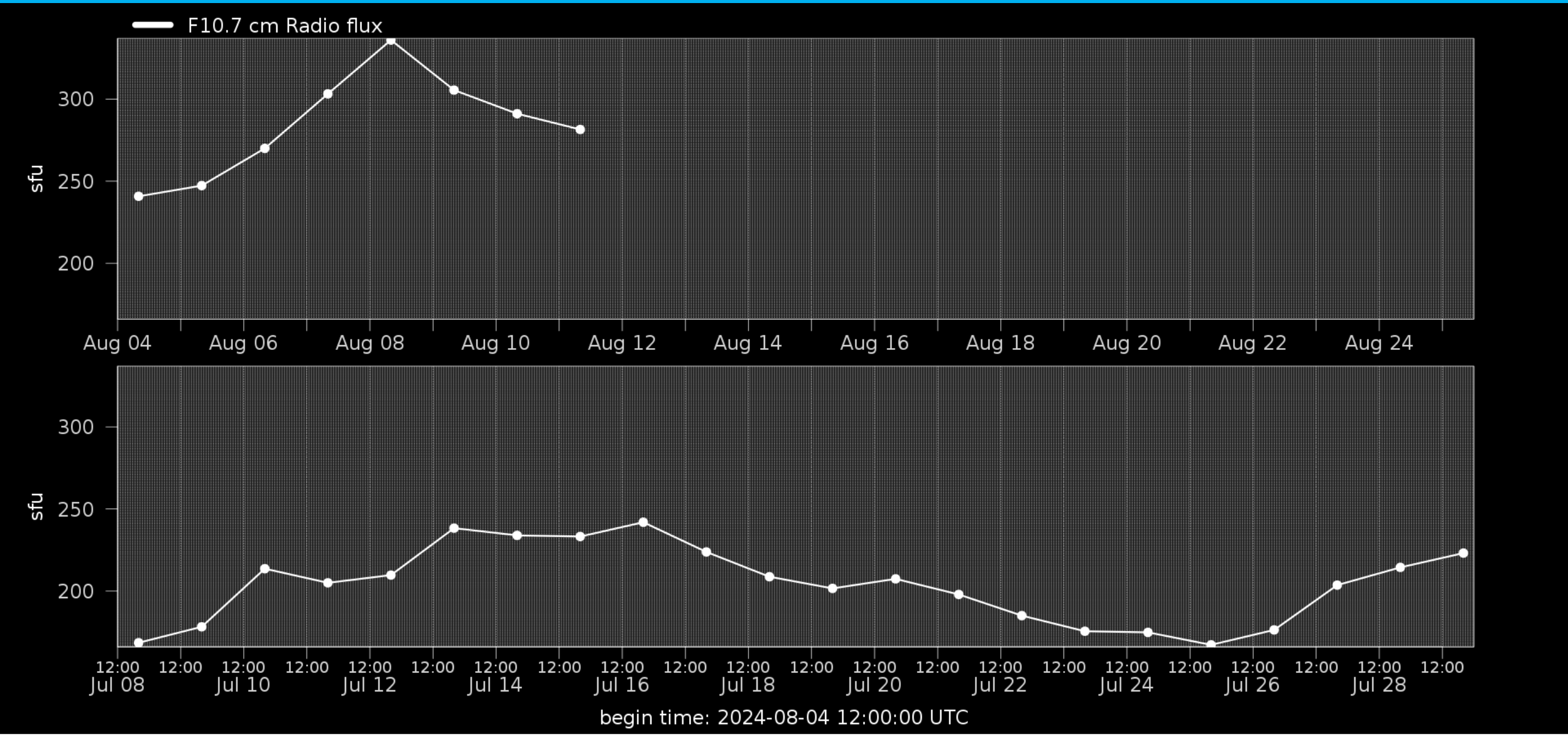
Outlook: Solar activity

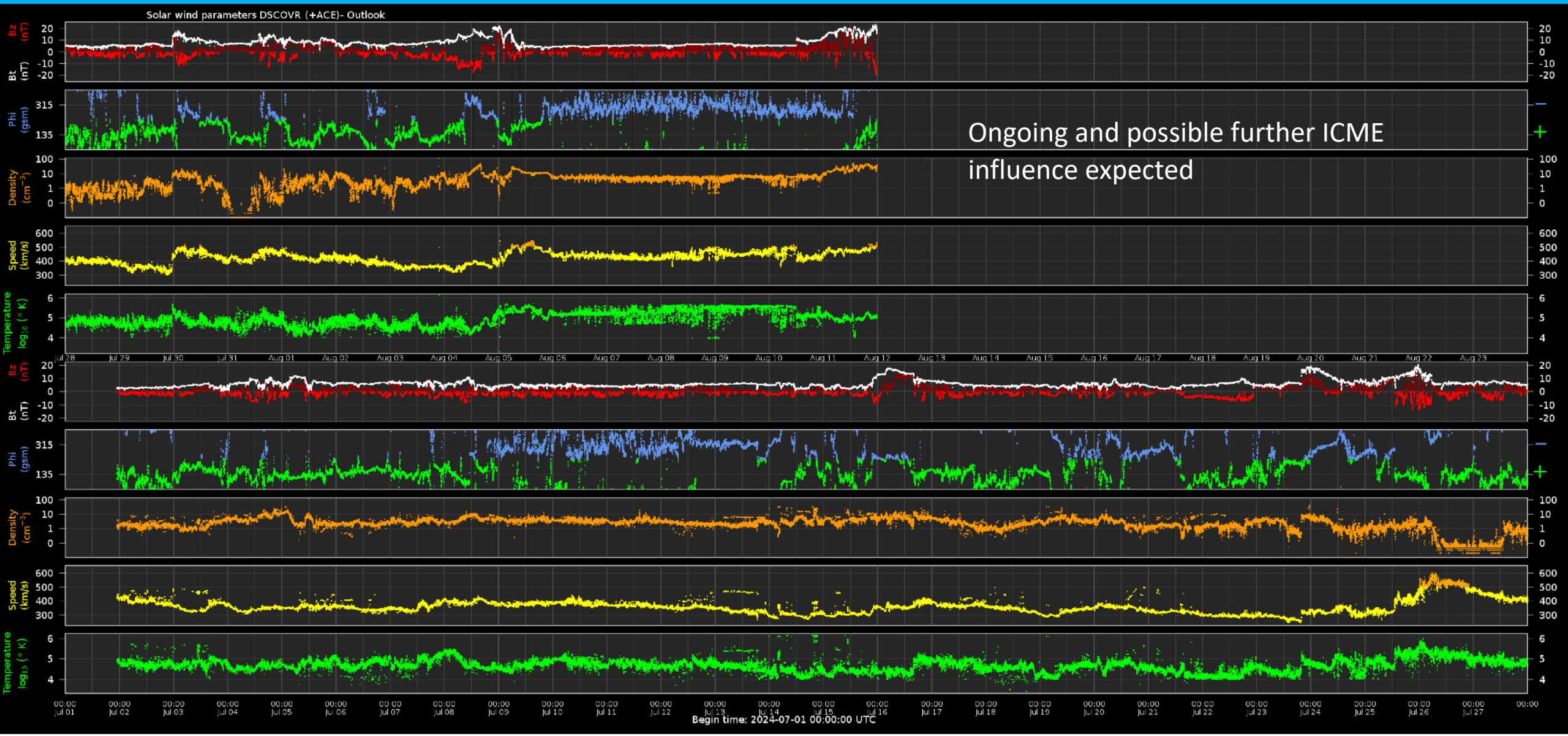


Multiple complex regions still on disk and moving towards location better magnetically connected to Earth – low probability for proton event

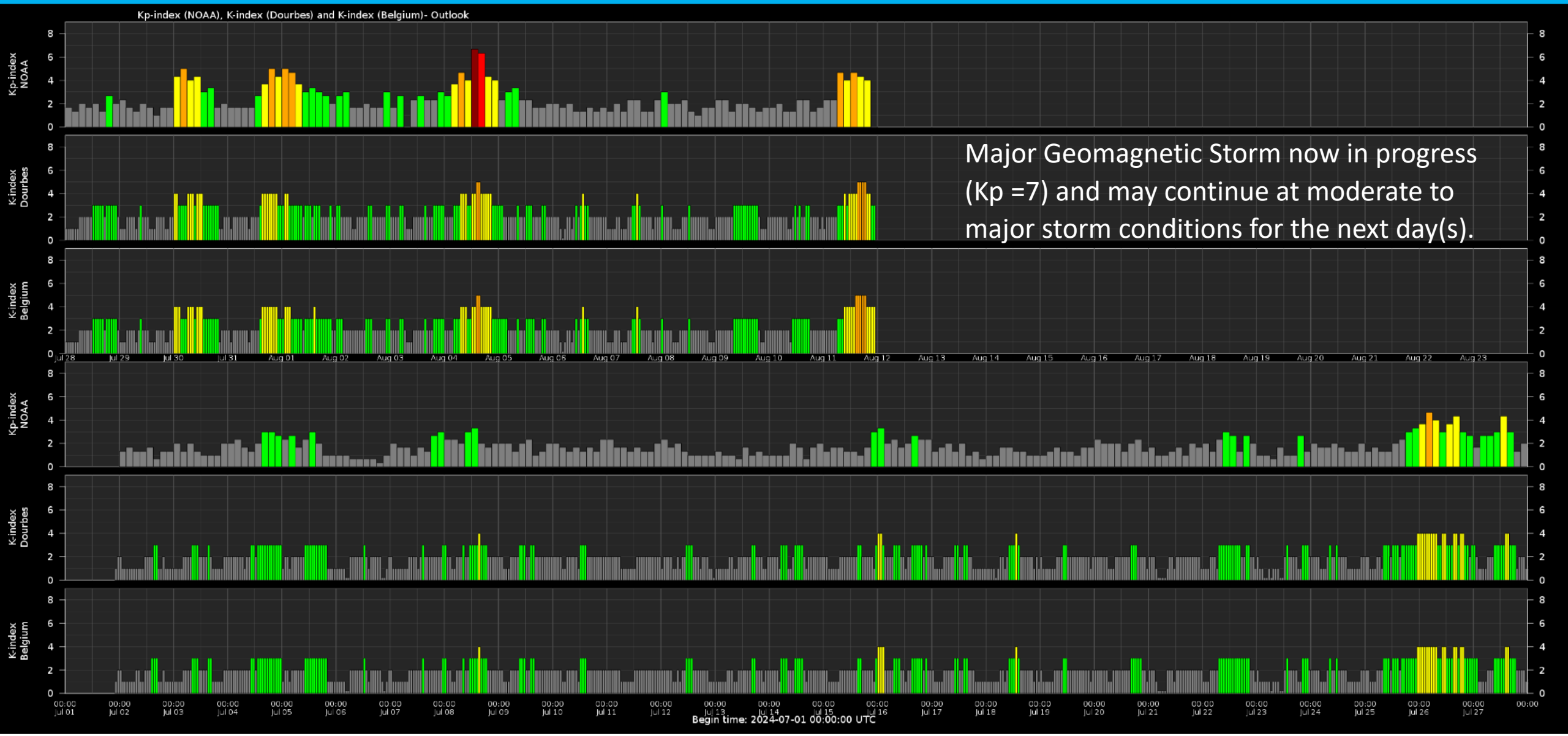
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters

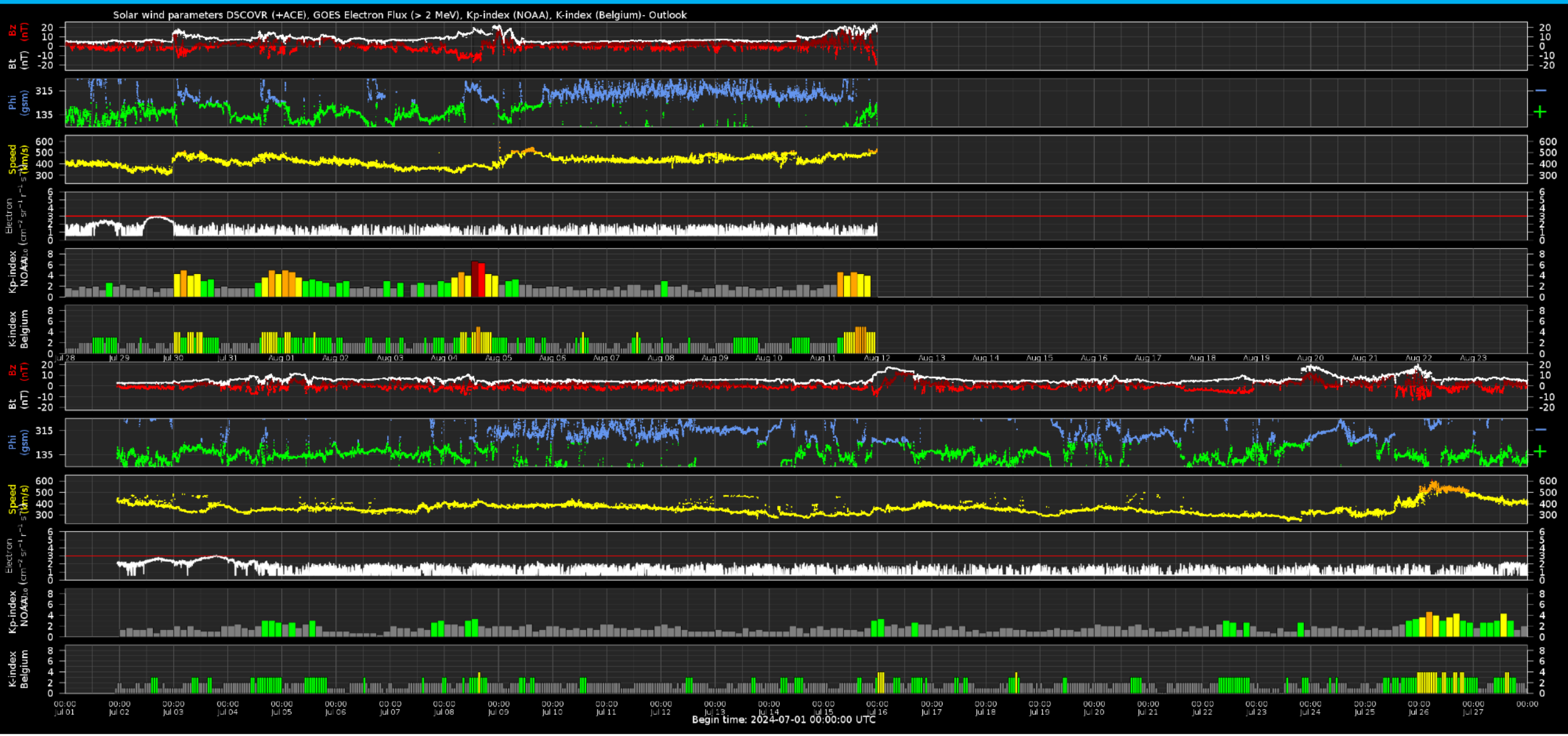


Outlook: Geomagnetic activity



Major Geomagnetic Storm now in progress (Kp =7) and may continue at moderate to major storm conditions for the next day(s).

Outlook: Electron Flux at GEO Outlook



PECASUS

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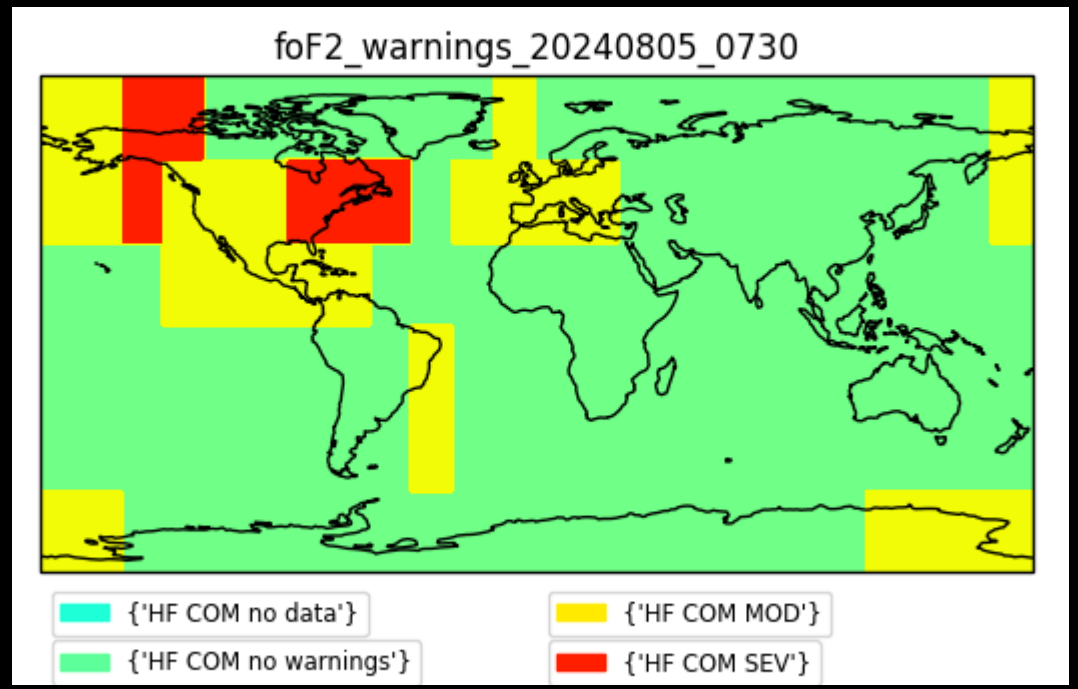
Pecasus related events

- Post storm depression advisories related to KP > 6 events



SRC PAS

- Scintillation advisories related to equatorial plasma bubbles

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