

SIDC Space Weather Briefing

28 July 2024-04 August 2024

Dimitrios Millas

& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2024-07-28 12:00 to 2024-08-04 23:59

Active regions	Multiple in total (≈ 20) / many complex ARs ($\beta\gamma$, $\beta\gamma\delta$, $\beta\delta$) / clustered
Flares	# C-class flare: 25 # M-class flare: 48 # X-class flare: 1
Coronal Holes	1 high latitude (-), 2 equatorial/low latitude (-,+)
CMEs	Multiple wide/partial halo/halo events

Proton flux	Background levels, small enhancements
Electron flux	Over the threshold (28/7), background levels after

Solar wind and geomagnetic conditions

ICMEs	At least 2 & 1 glancing blow
Solar wind conditions	B : 0.87 - 21.72 nT //Bz: -17.85 nT to 18.61 nT //Speed: 302.1 - 519.0km/s
Geomagnetic conditions	max K Bel: 5.0, max Kp(NOAA): 7-, Major Storm conditions

Solar Activity

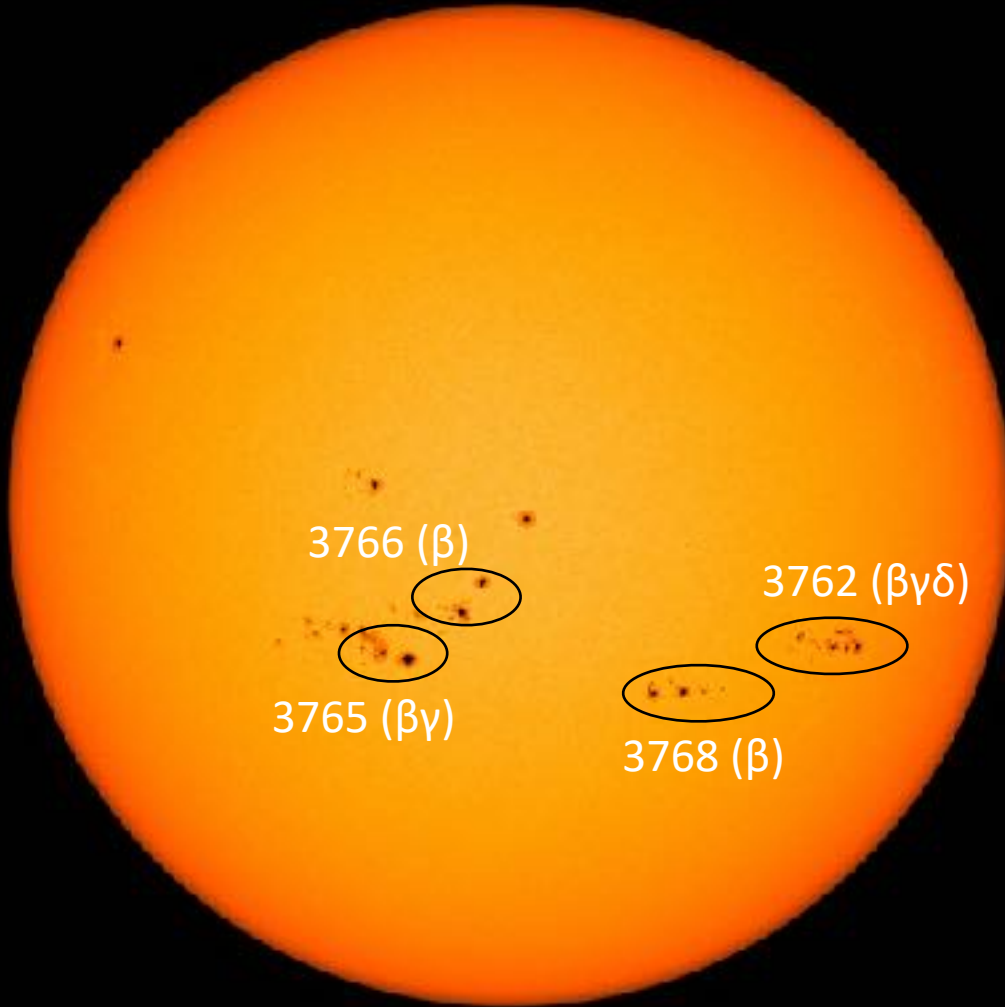


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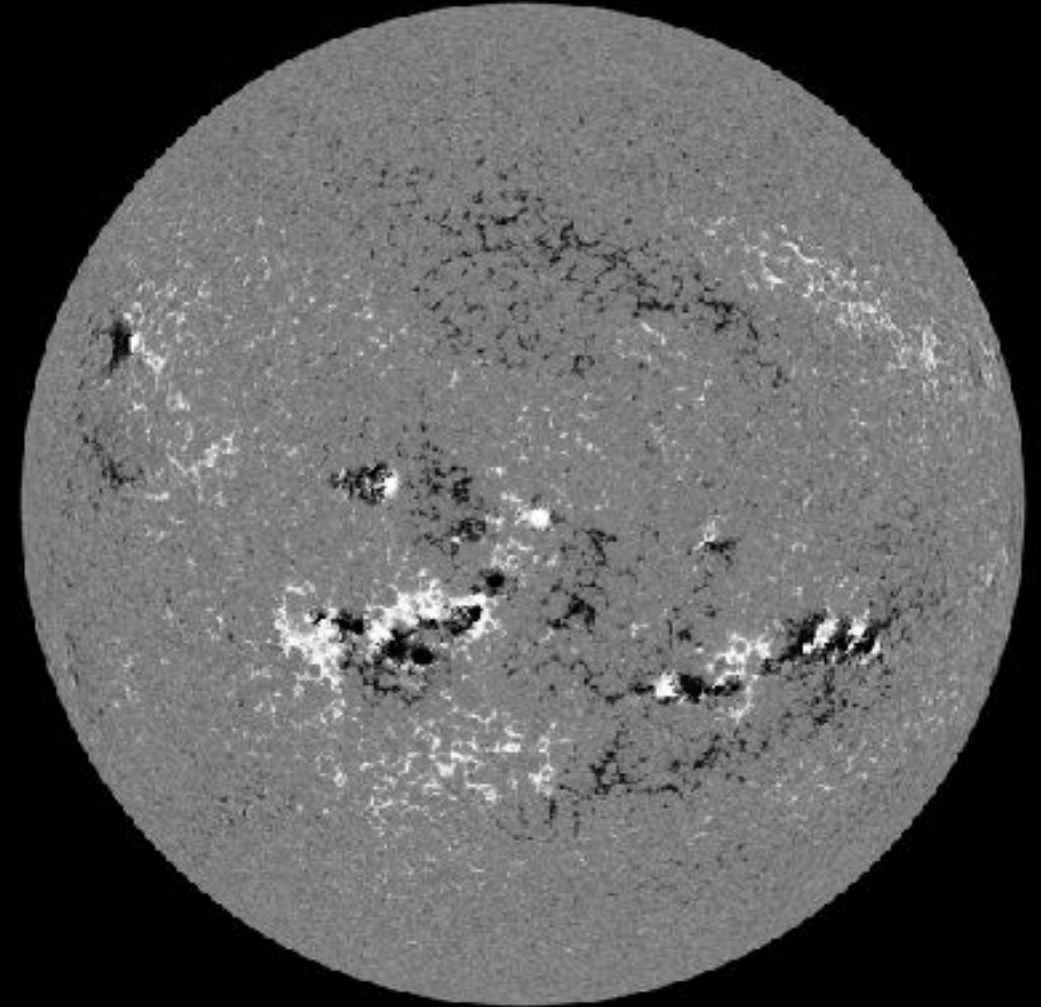
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Solar active regions

SDO/HMI White Light 2024-07-28

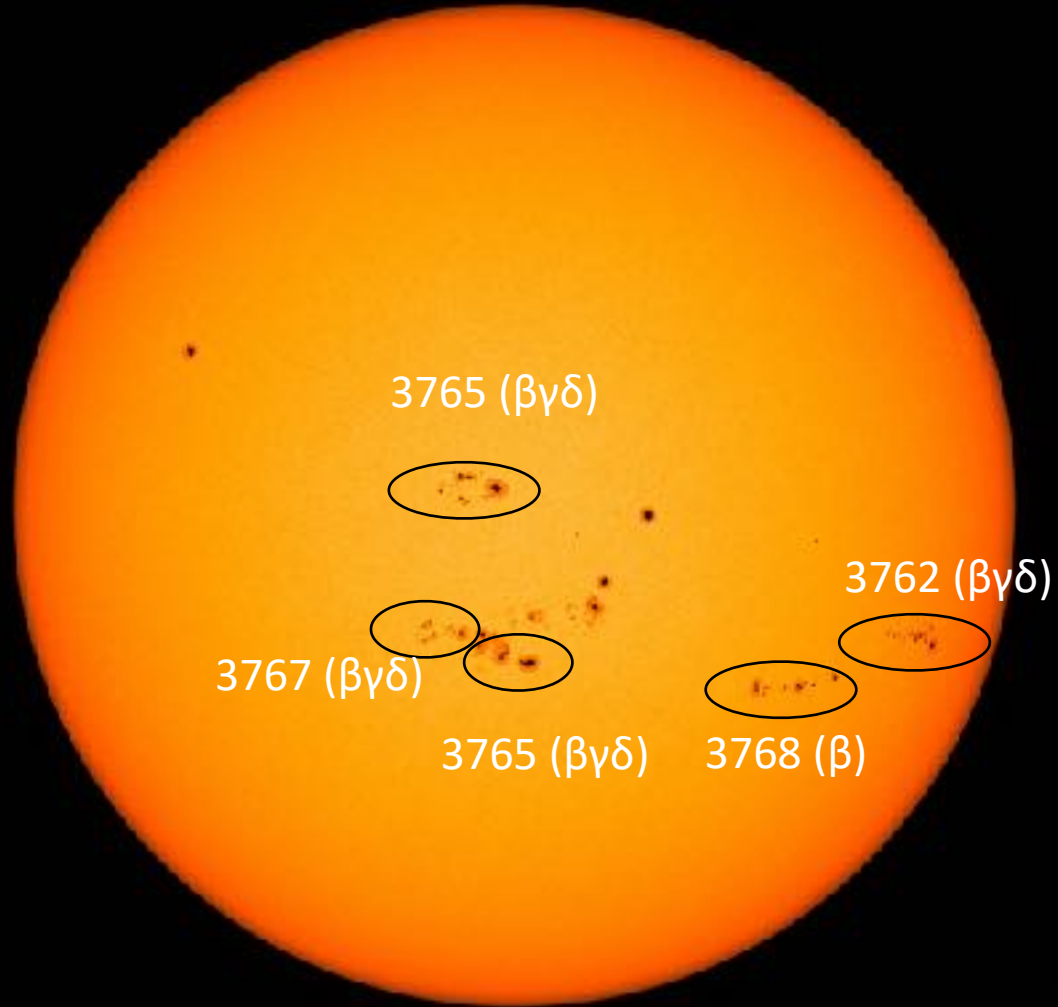


SDO/HMI Magnetogram 2024-07-28

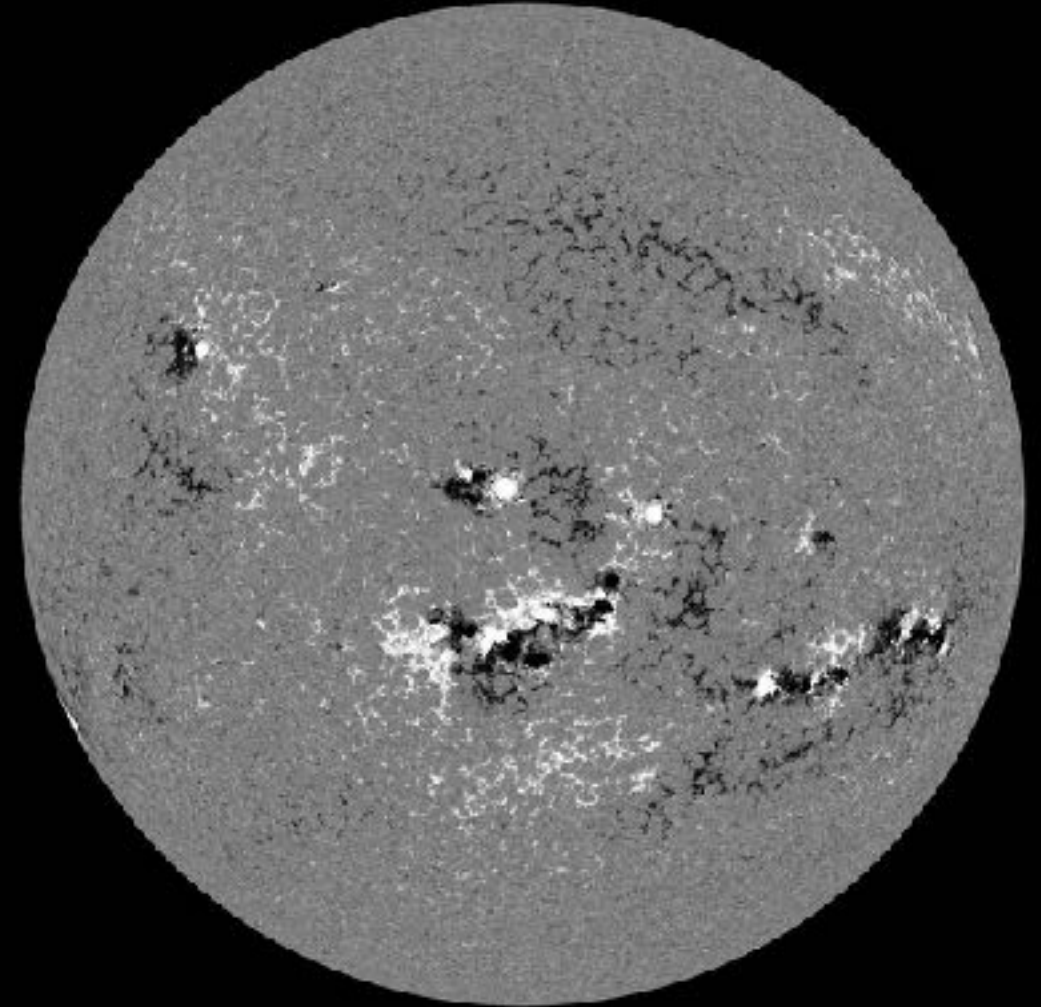


Solar active regions

SDO/HMI White Light 2024-07-29

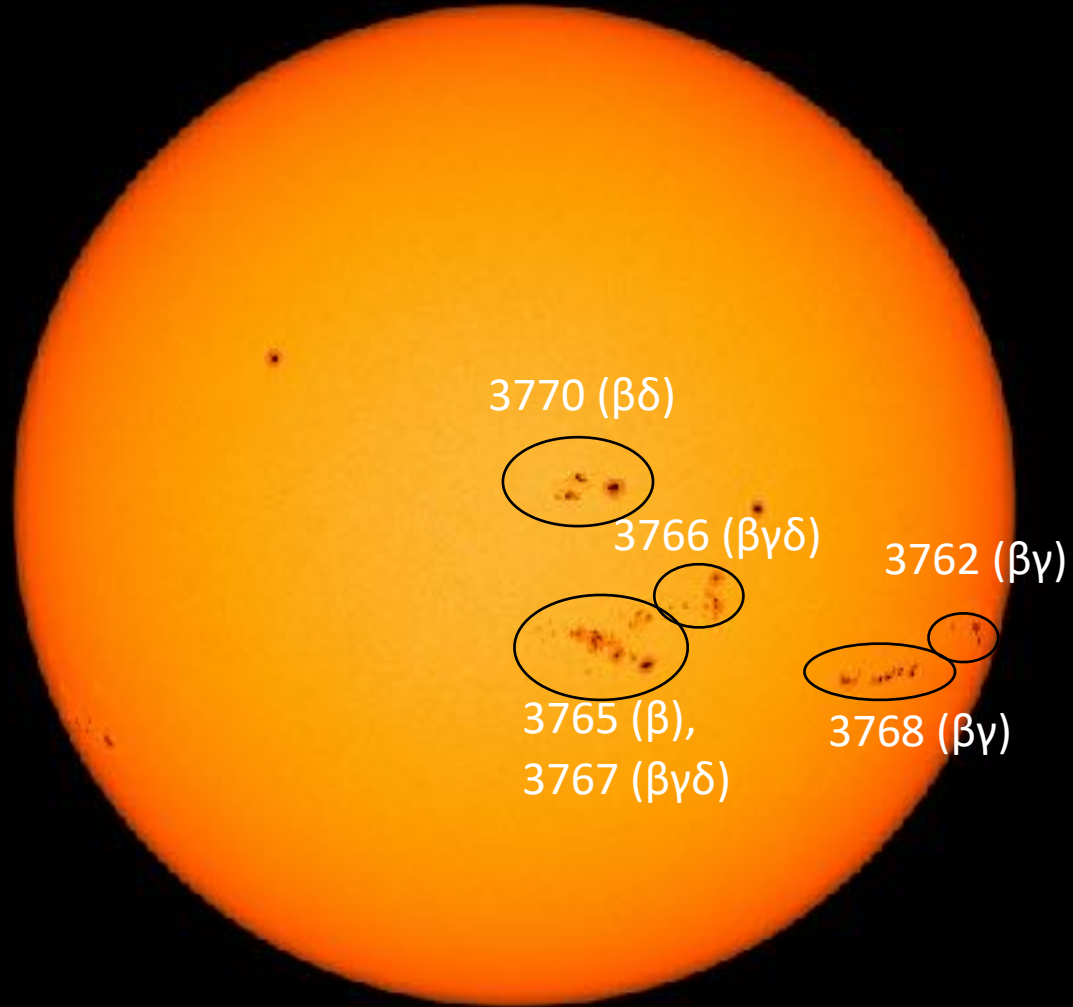


SDO/HMI Magnetogram 2024-07-29

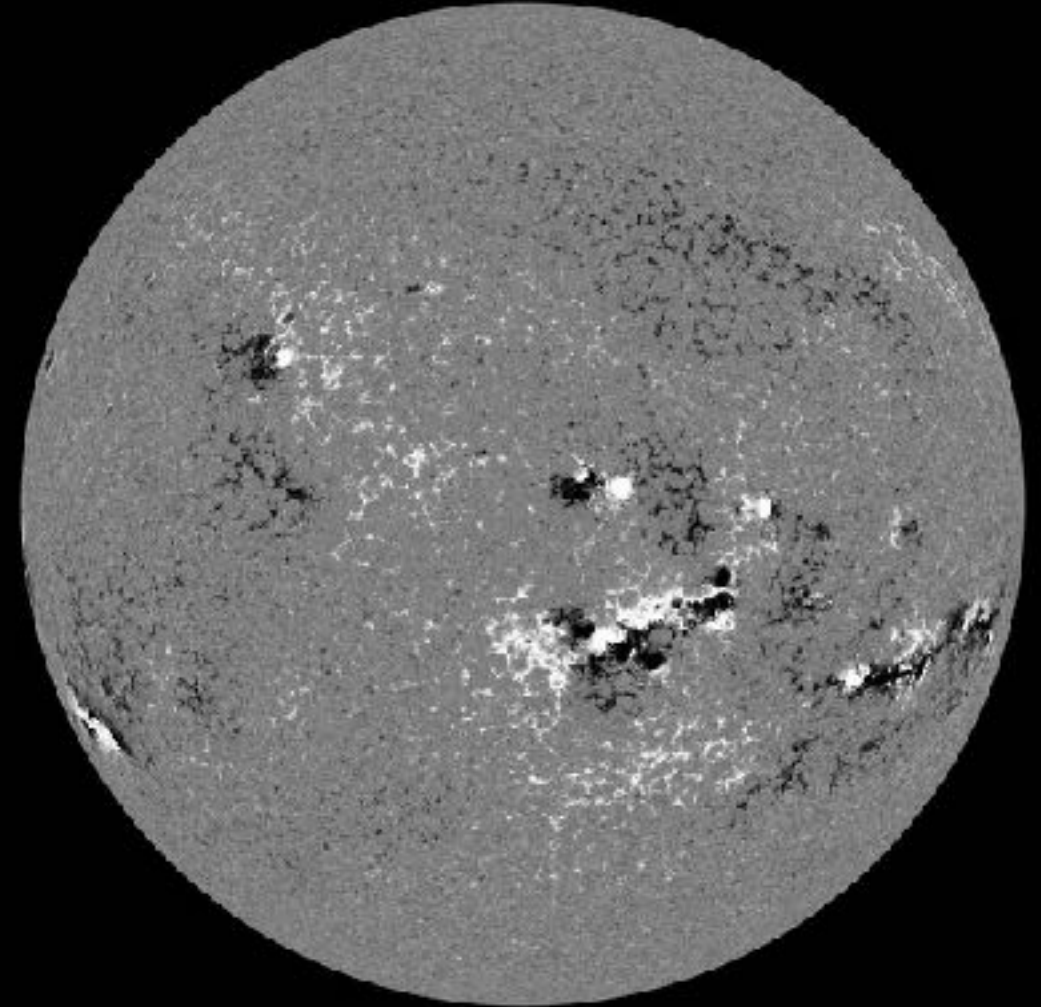


Solar active regions

SDO/HMI White Light 2024-07-30

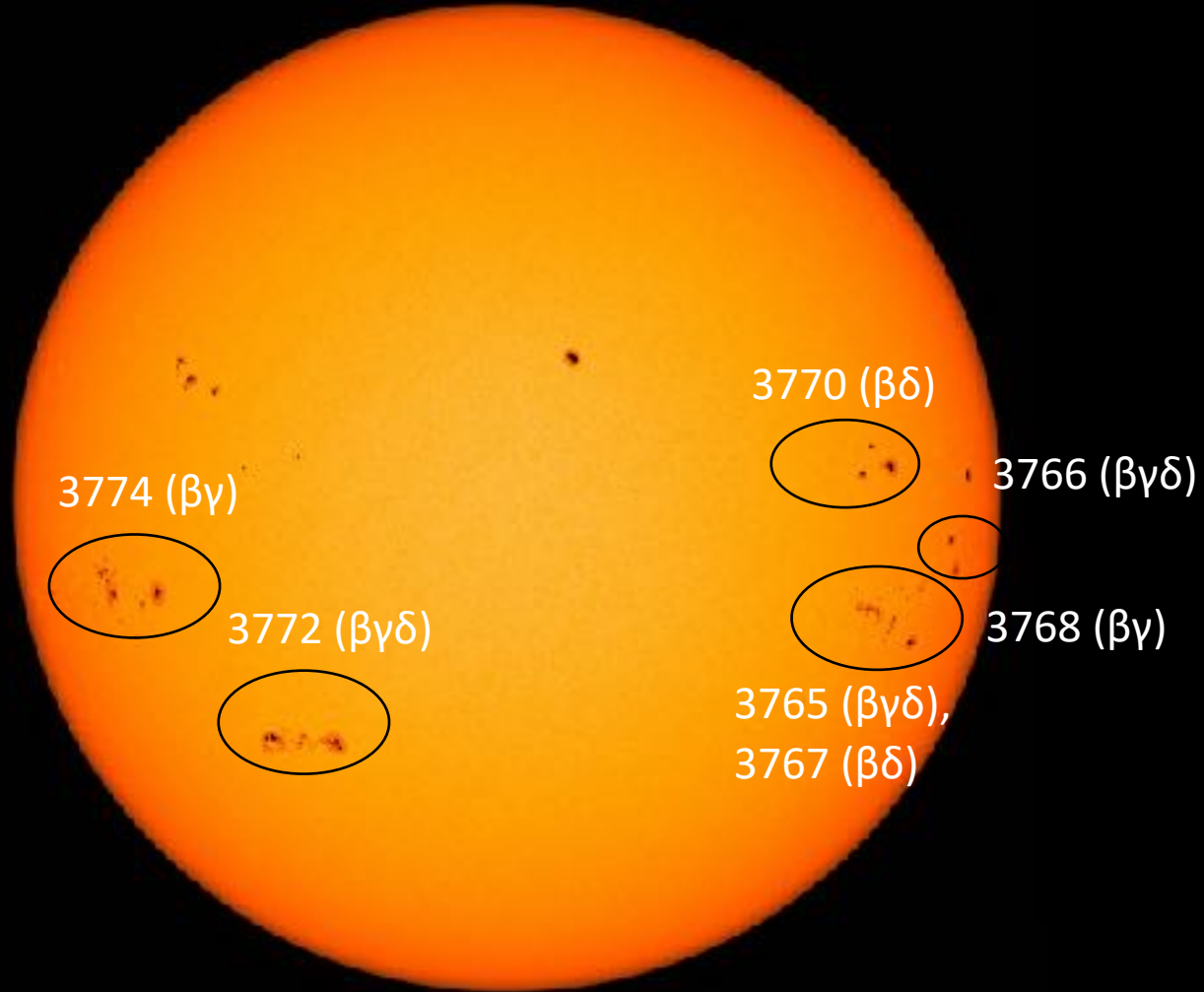


SDO/HMI Magnetogram 2024-07-30

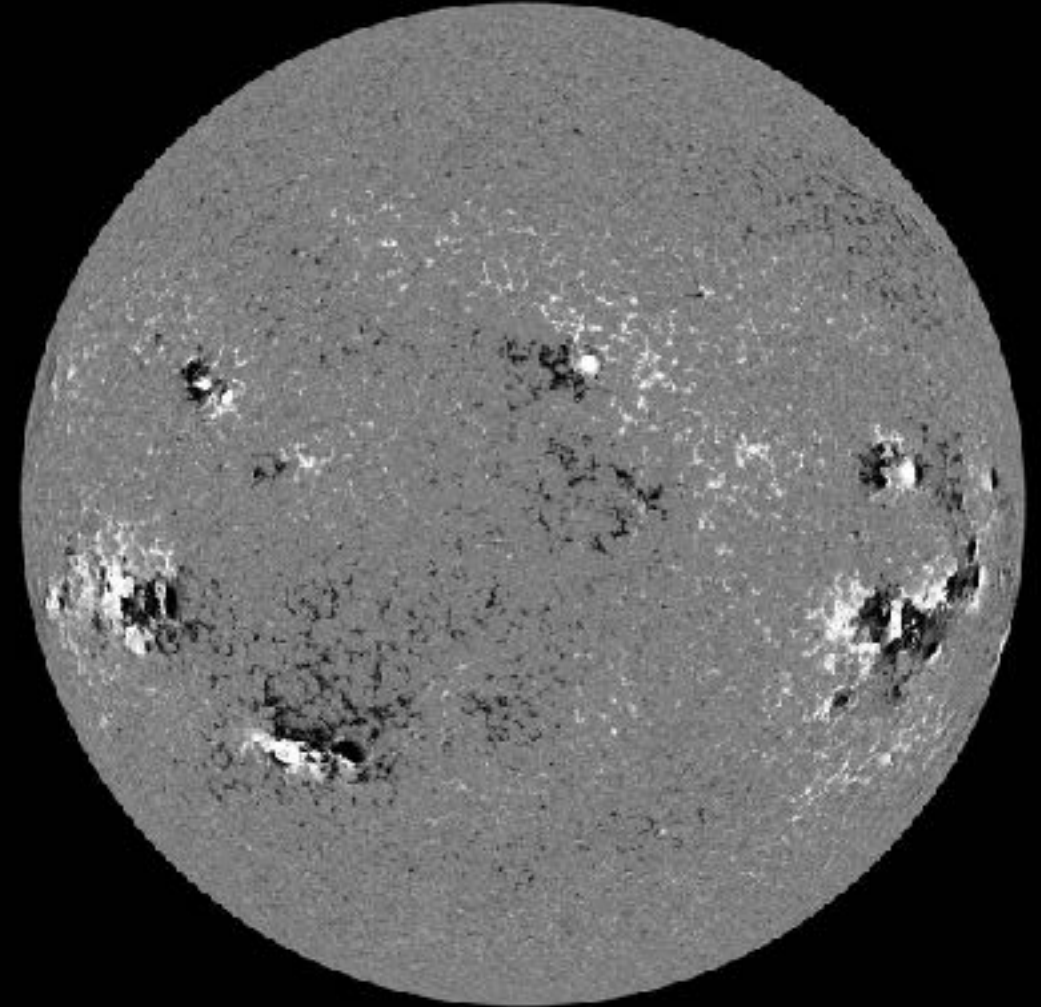


Solar active regions

SDO/HMI White Light 2024-08-02

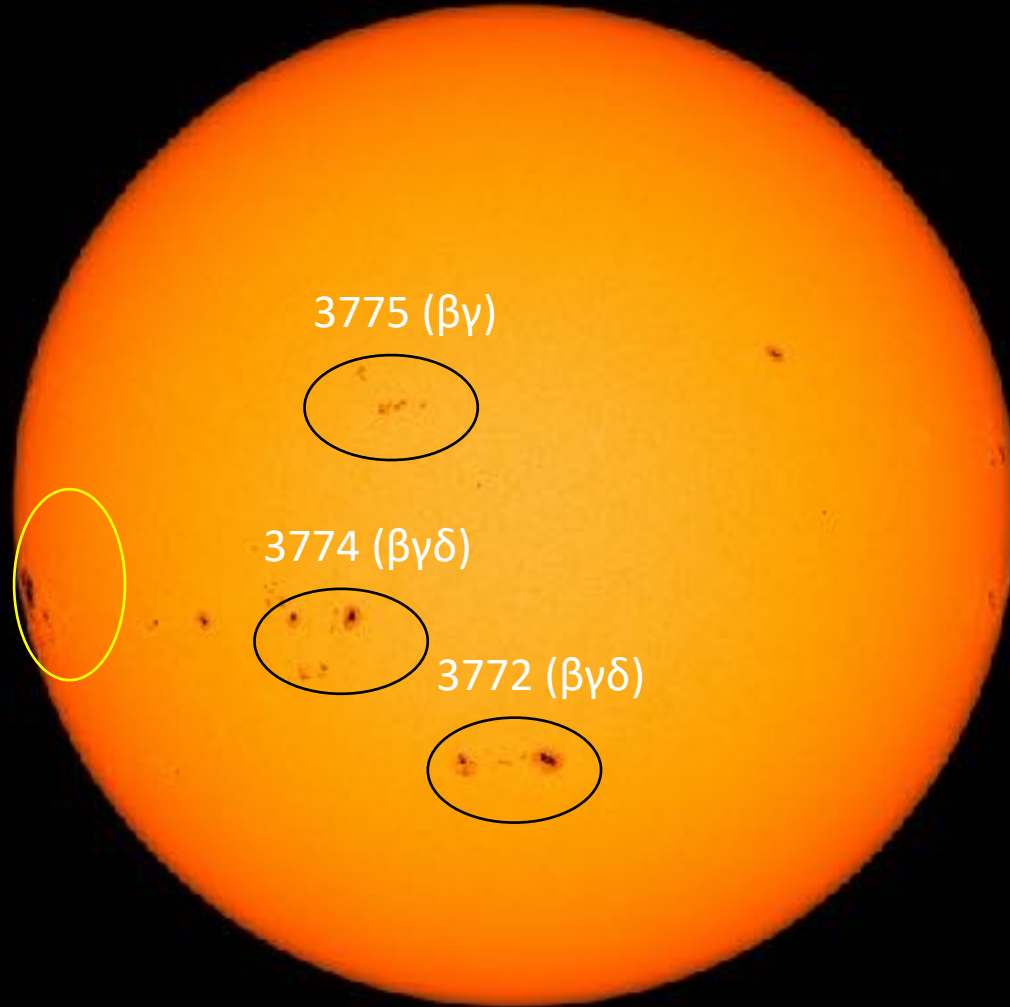


SDO/HMI Magnetogram 2024-08-02

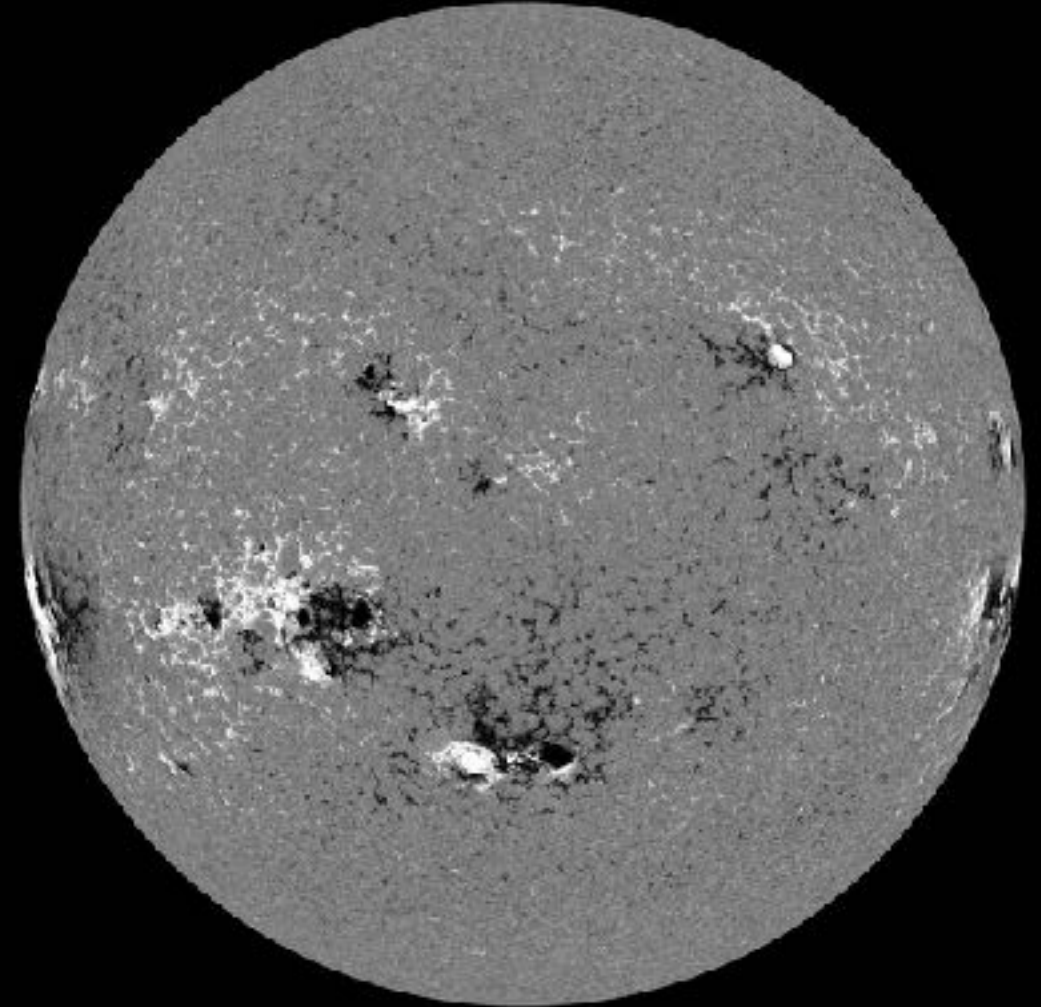


Solar active regions

SDO/HMI White Light 2024-08-04



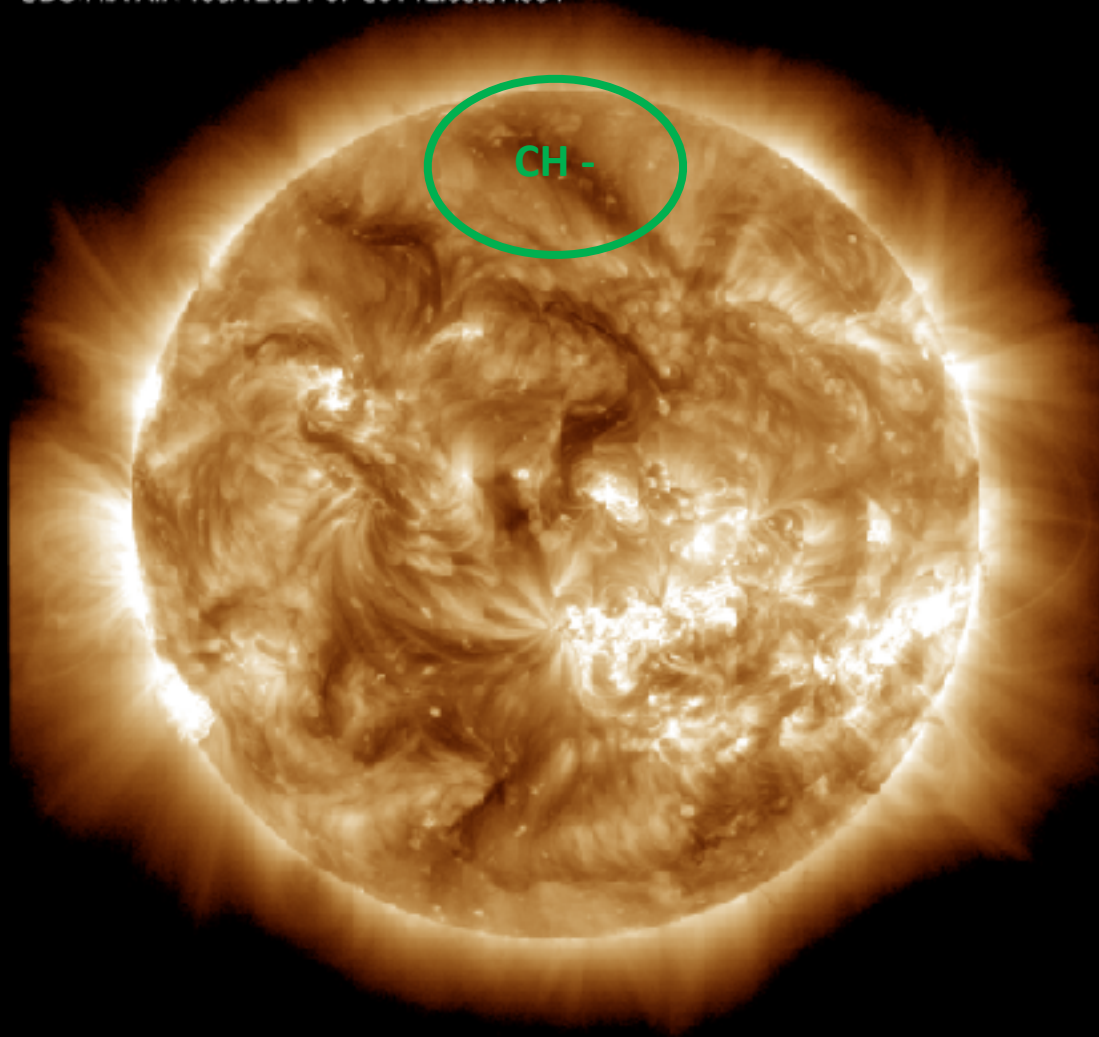
SDO/HMI Magnetogram 2024-08-04



Coronal holes

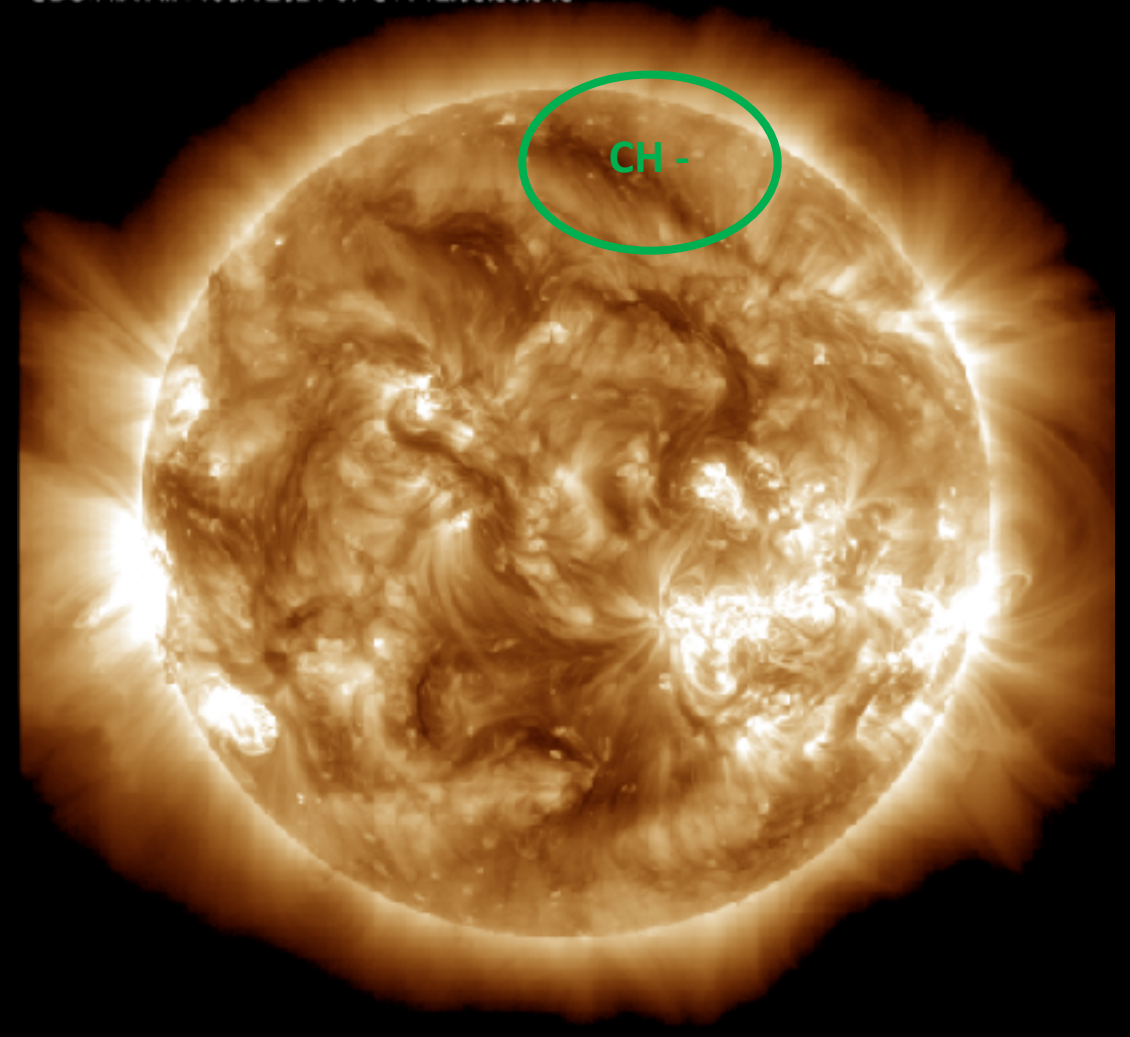
SDO/AIA 19.3 nm 2024-07-30

SDO/AIA AIA 193Å 2024-07-30T12:00:07.094



SDO/AIA 19.3 nm 2024-07-31

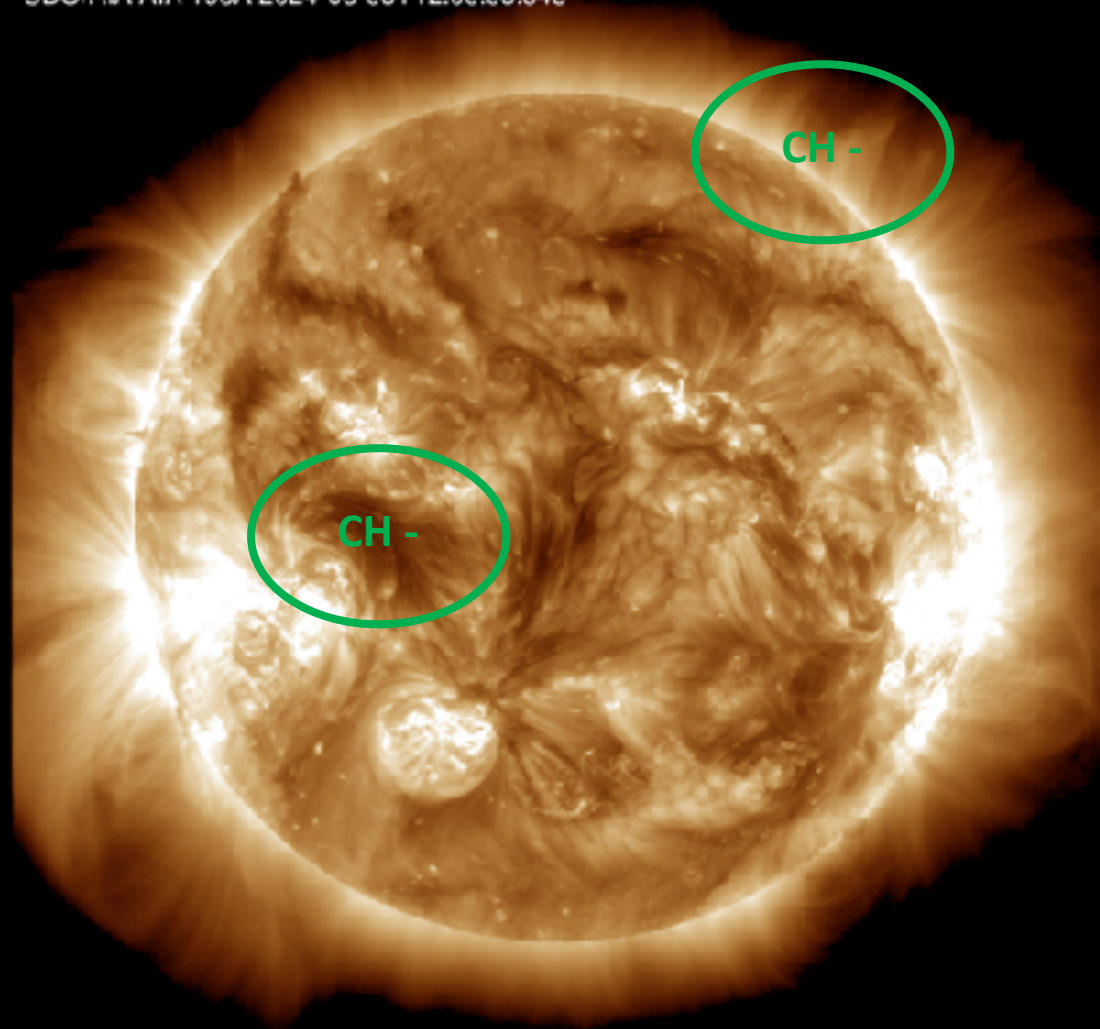
SDO/AIA AIA 193Å 2024-07-31T12:00:05.843



Coronal holes

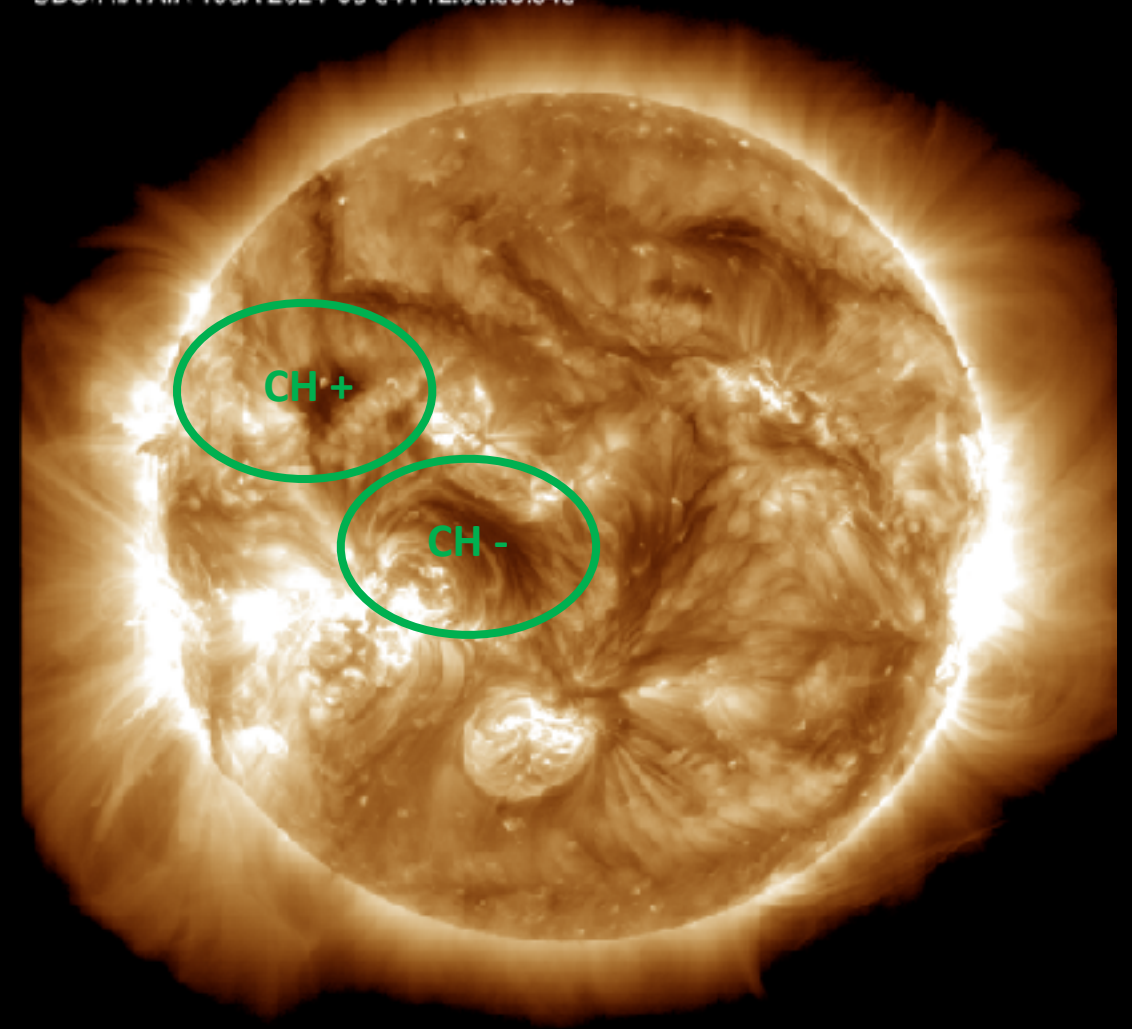
SDO/AIA 19.3 nm 2024-08-03

SDO/AIA AIA 193Å 2024-08-03T12:00:05.843



SDO/AIA 19.3 nm 2024-08-04

SDO/AIA AIA 193Å 2024-08-04T12:00:05.843



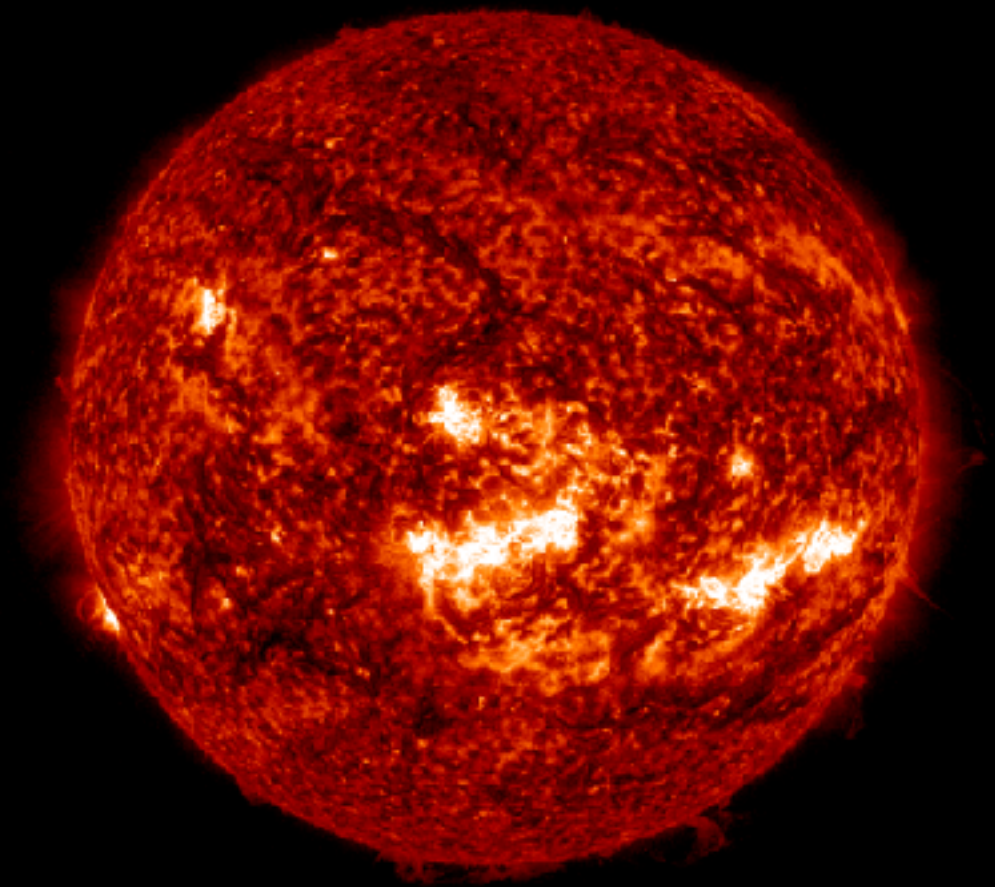
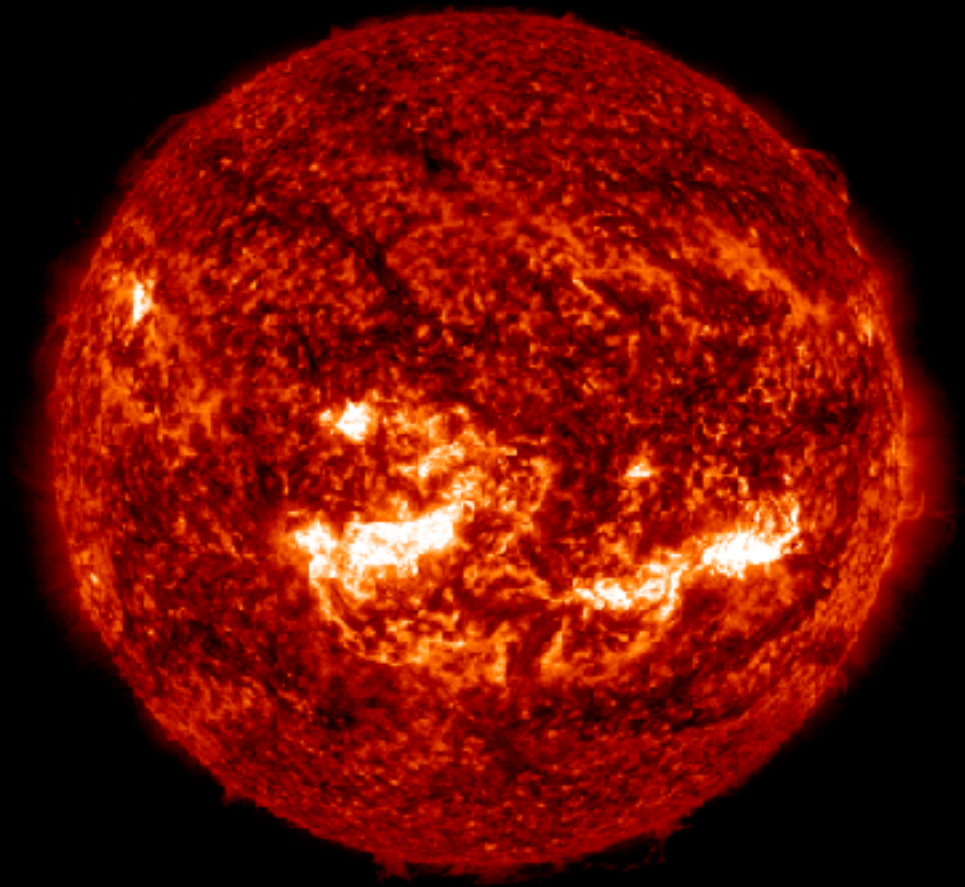
Filaments

SDO/AIA 30.4 nm 2024-07-28

SDO/AIA AIA 304Å 2024-07-28T12:00:06.584

SDO/AIA 30.4 nm 2024-07-29

SDO/AIA AIA 304Å 2024-07-29T12:00:06.588



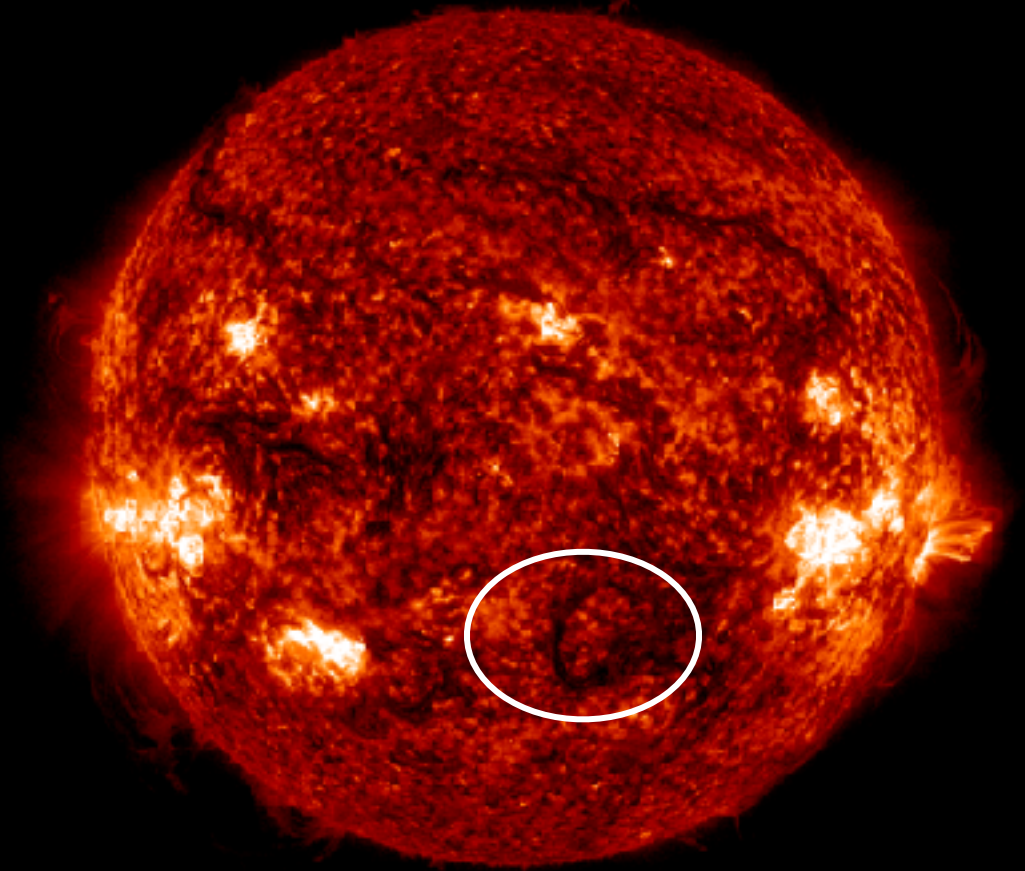
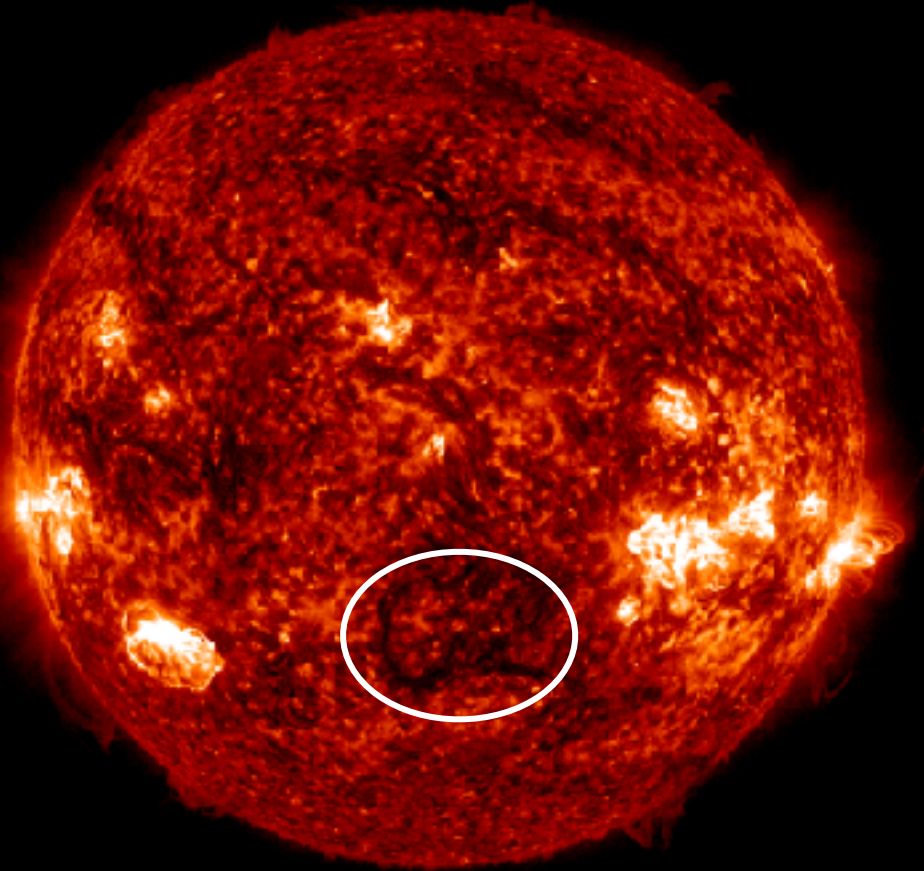
Filaments

SDO/AIA 30.4 nm 2024-08-01

SDO/AIA AIA 304Å 2024-08-01T12:00:06.580

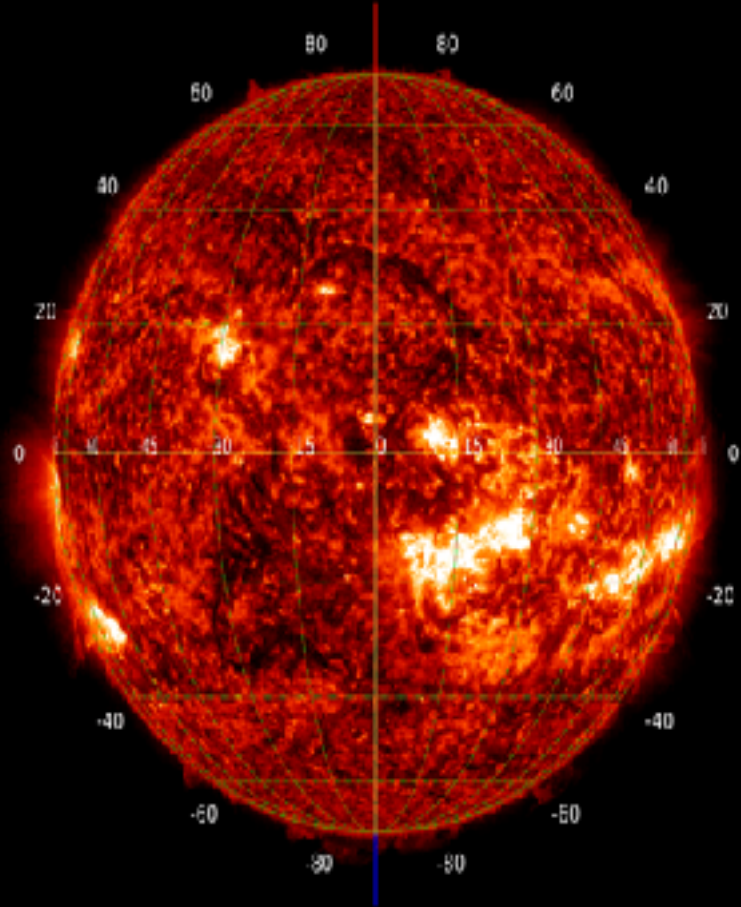
SDO/AIA 30.4 nm 2024-08-02

SDO/AIA AIA 304Å 2024-08-02T12:00:06.581

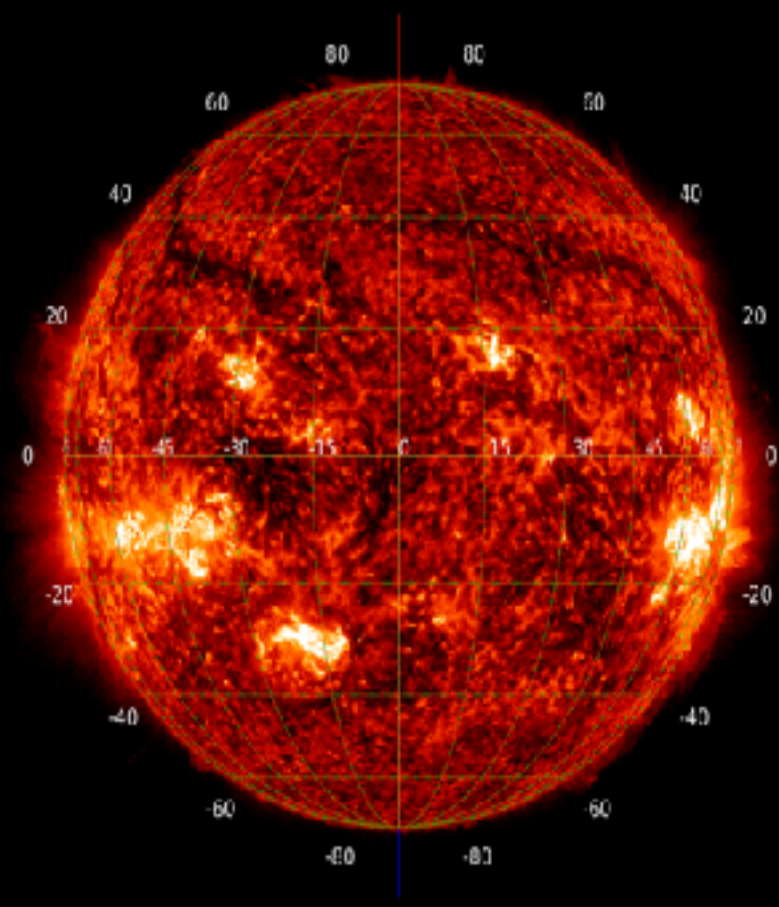


Filaments

SDO/AIA 30.4 nm



2024-07-30T18:00:29.130



2024-08-03T11:30:29.130

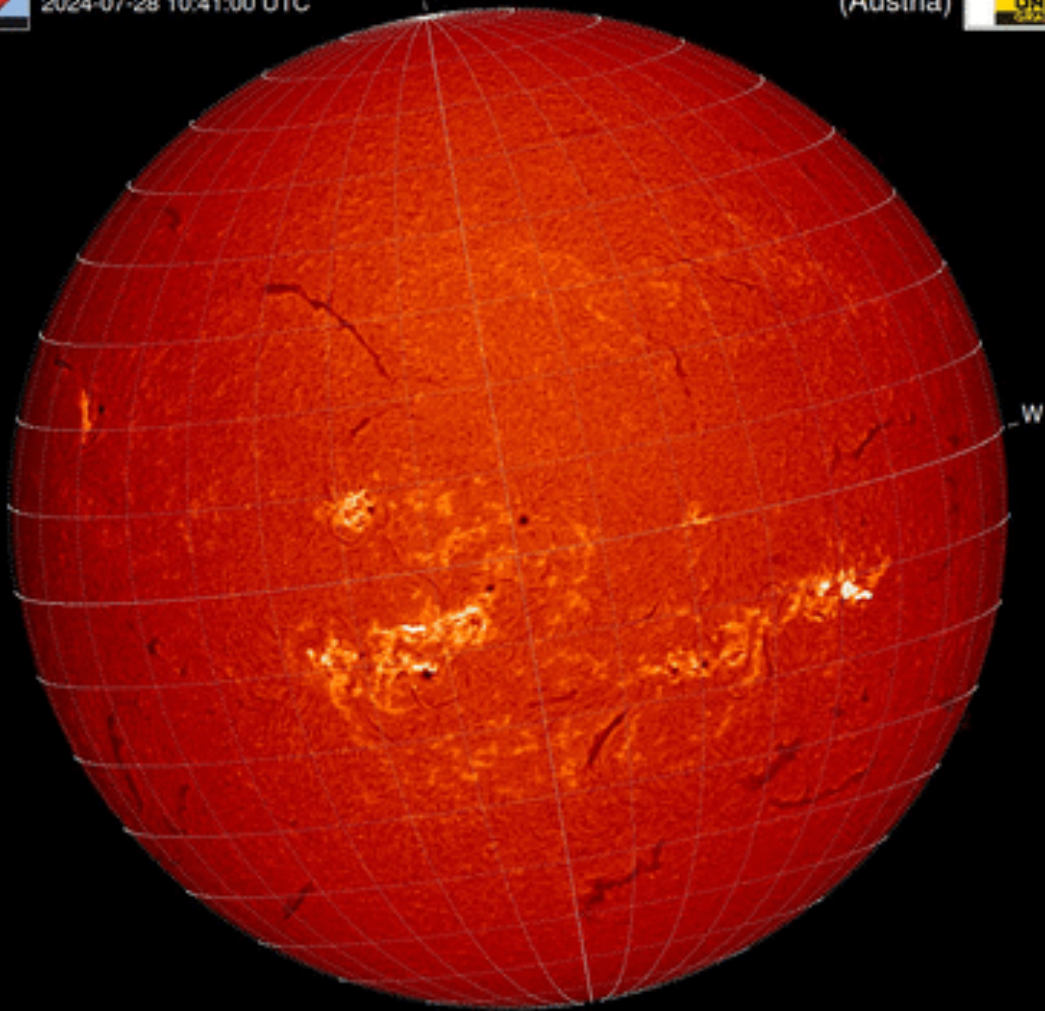
Filaments & Filament eruptions

H-alpha 2024-07-28



Kanzelhöhe Observatory
2024-07-28 10:41:00 UTC

University of Graz
(Austria)

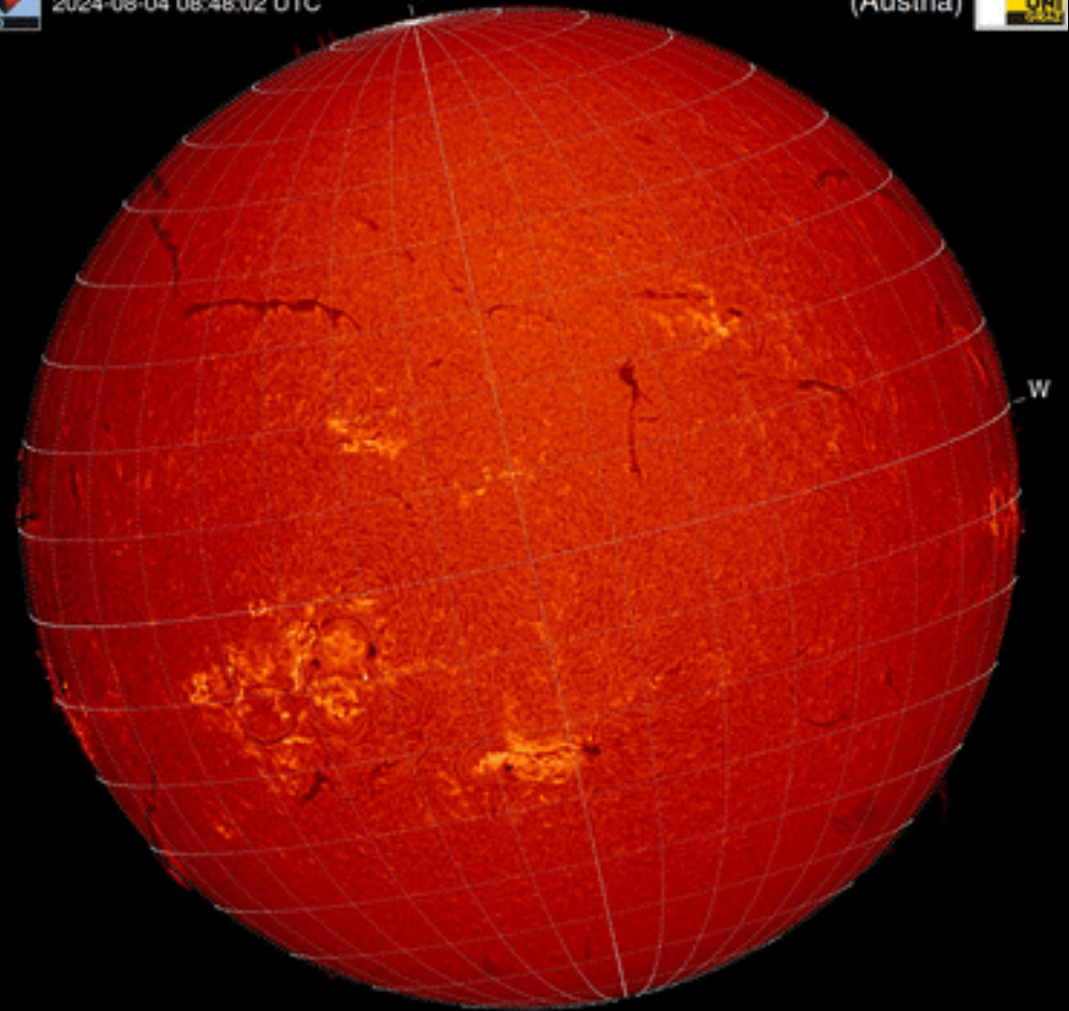


H-alpha 2024-08-04

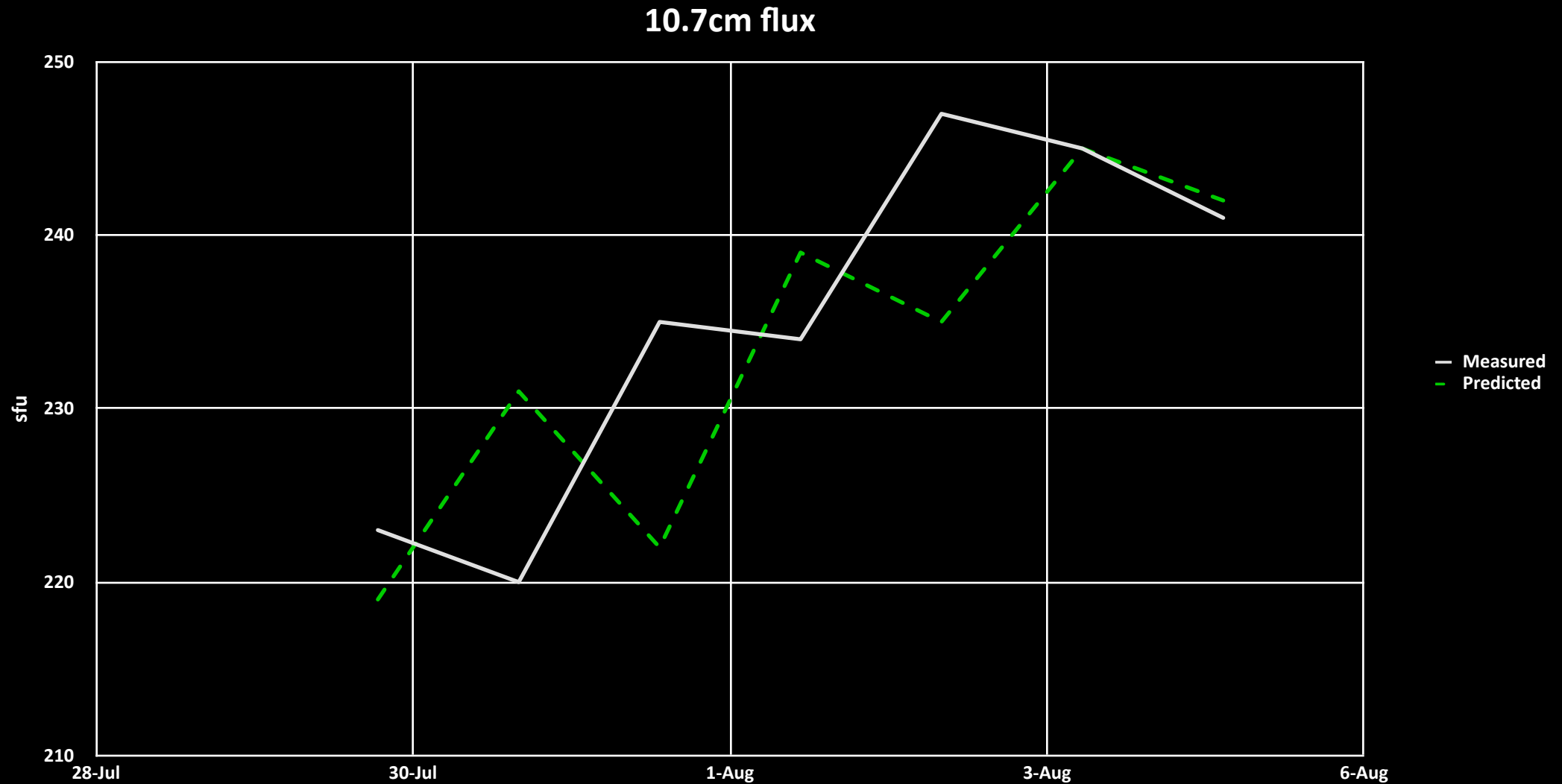


Kanzelhöhe Observatory
2024-08-04 08:48:02 UTC

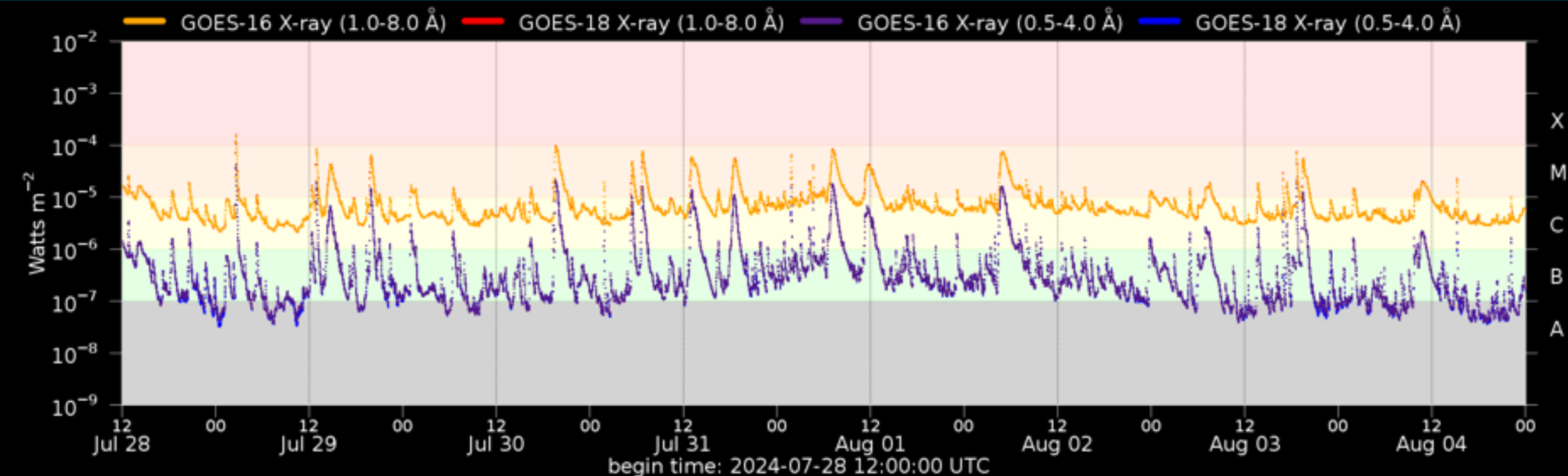
University of Graz
(Austria)



Solar F10.7cm radio flux



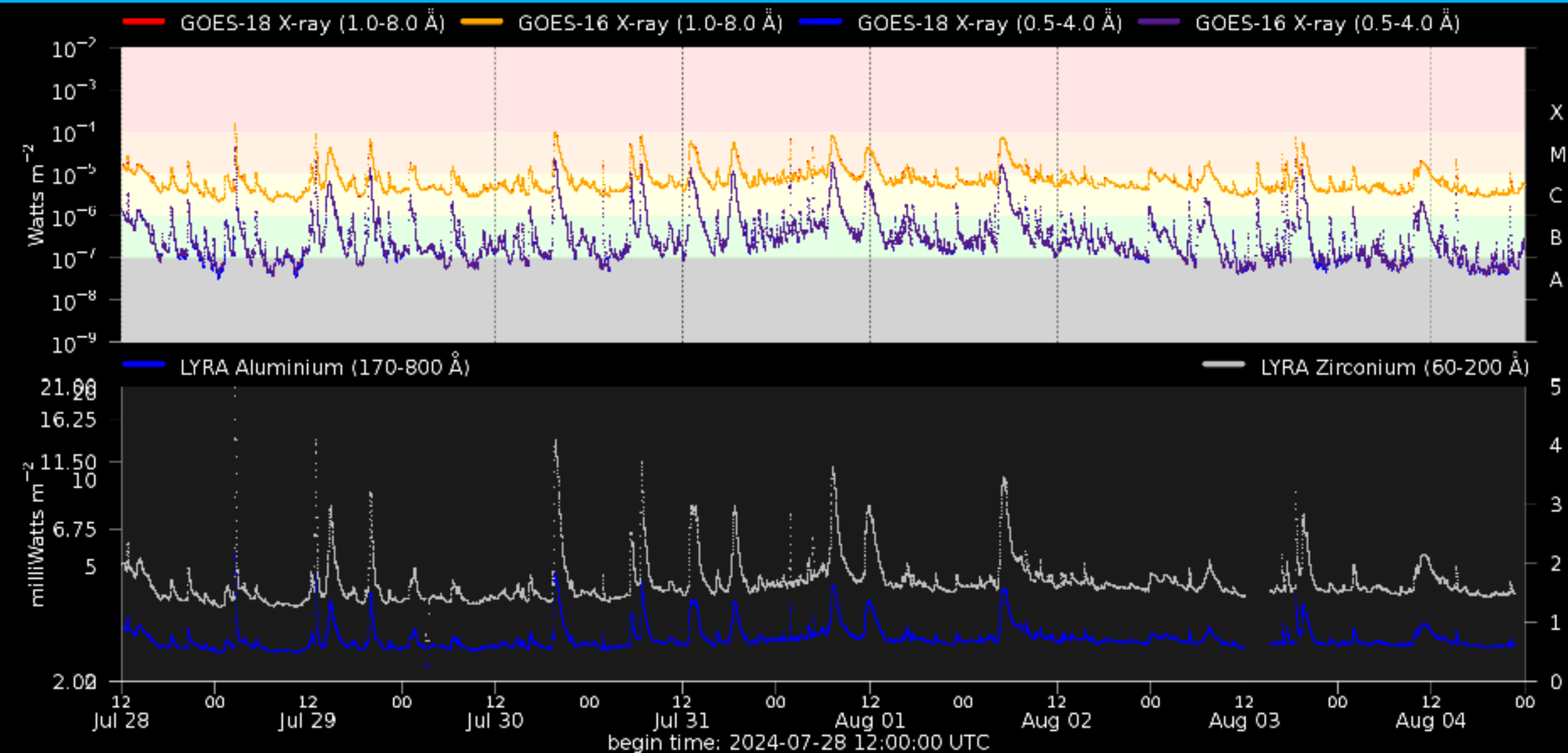
Flaring activity



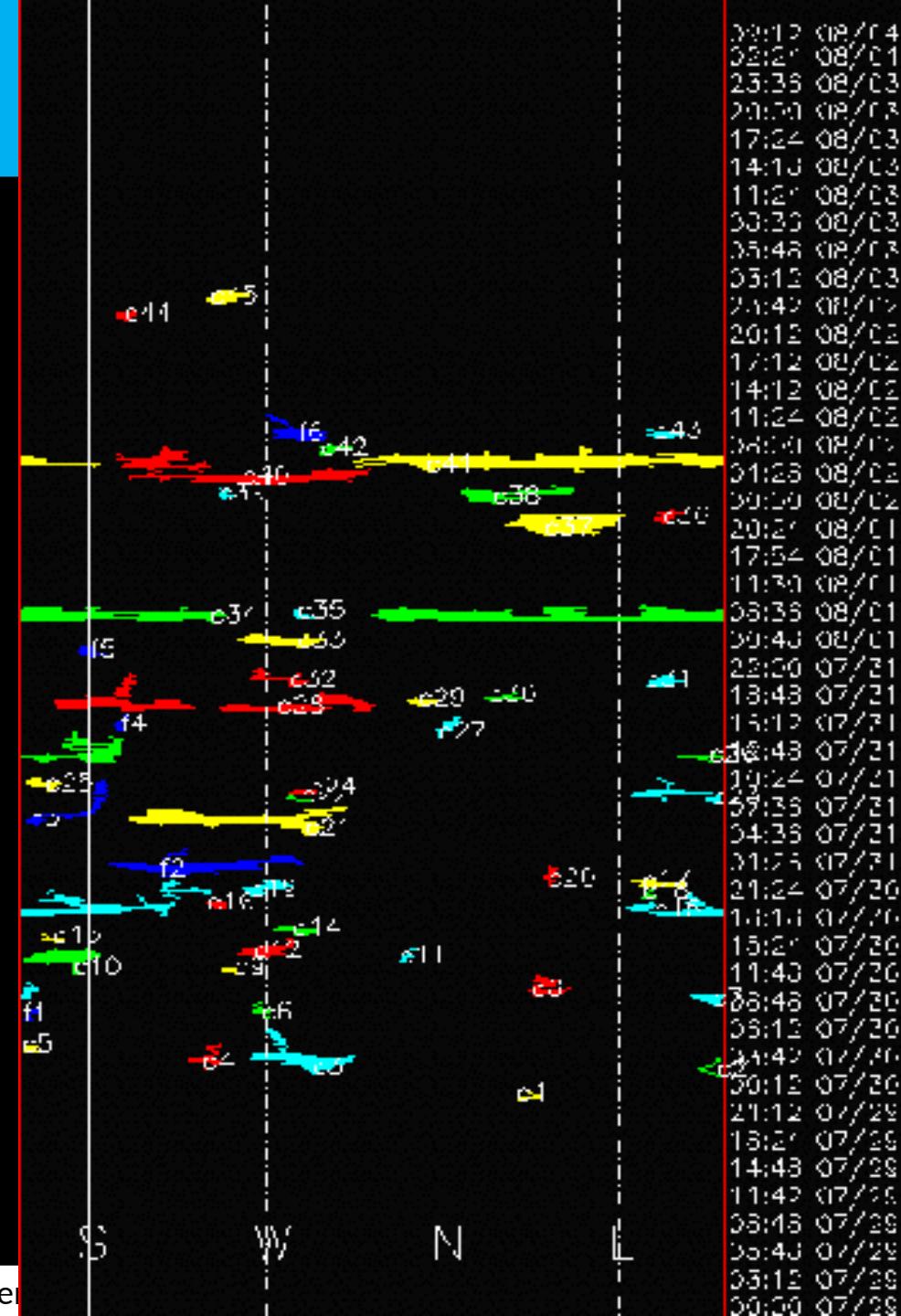
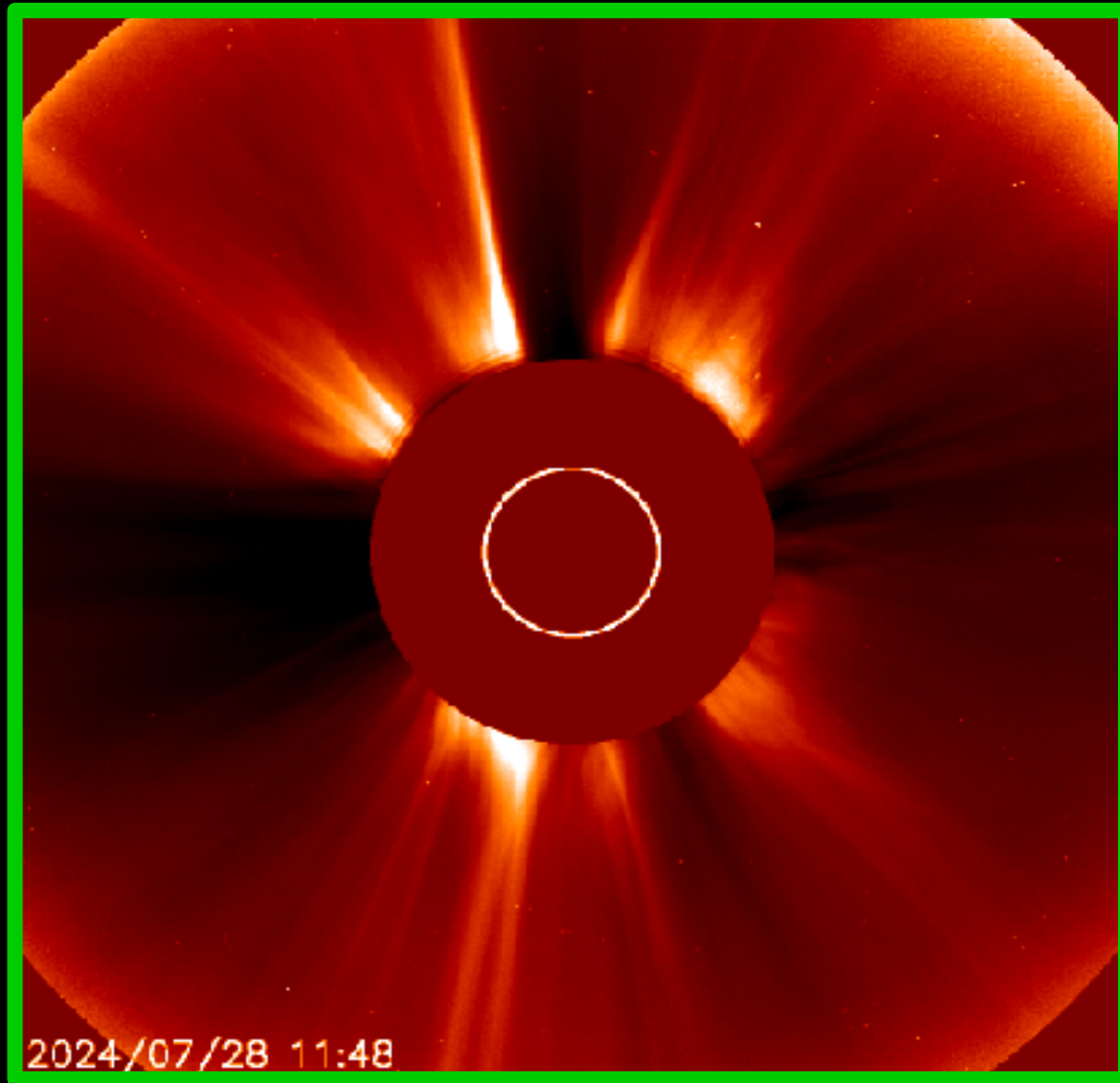
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-07-28	2024-07-29	2024-07-30	2024-07-31	2024-08-01	2024-08-02	2024-08-03	2024-08-04
Probability (%)	91 80 45	99 80 40	99 85 45	99 85 45	99 85 45	99 90 45	99 80 35	99 75 30
Observed (#)	03 04 01	05 05 00	03 05 00	02 10 00	02 11 00	04 04 00	05 07 00	01 02 00

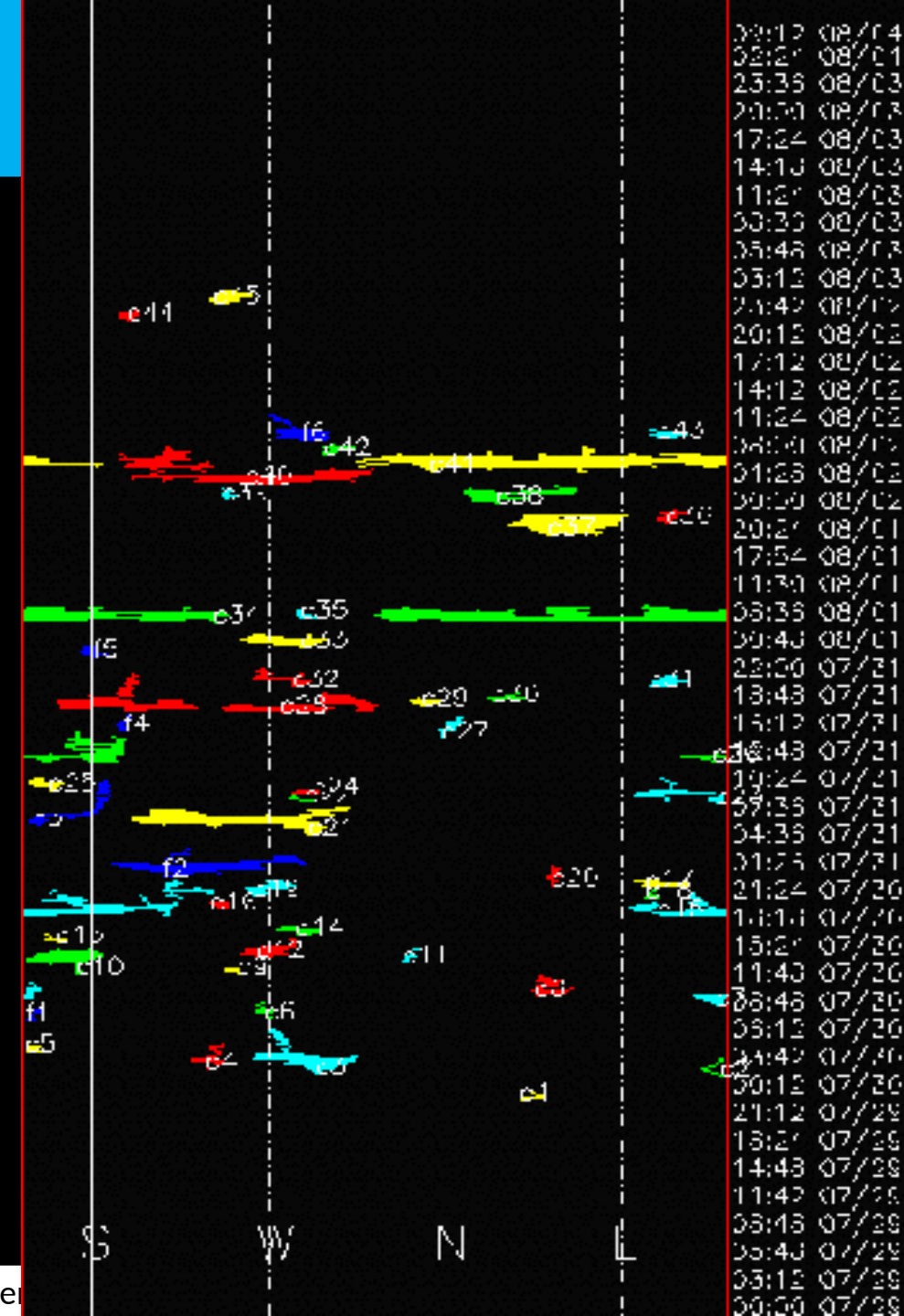
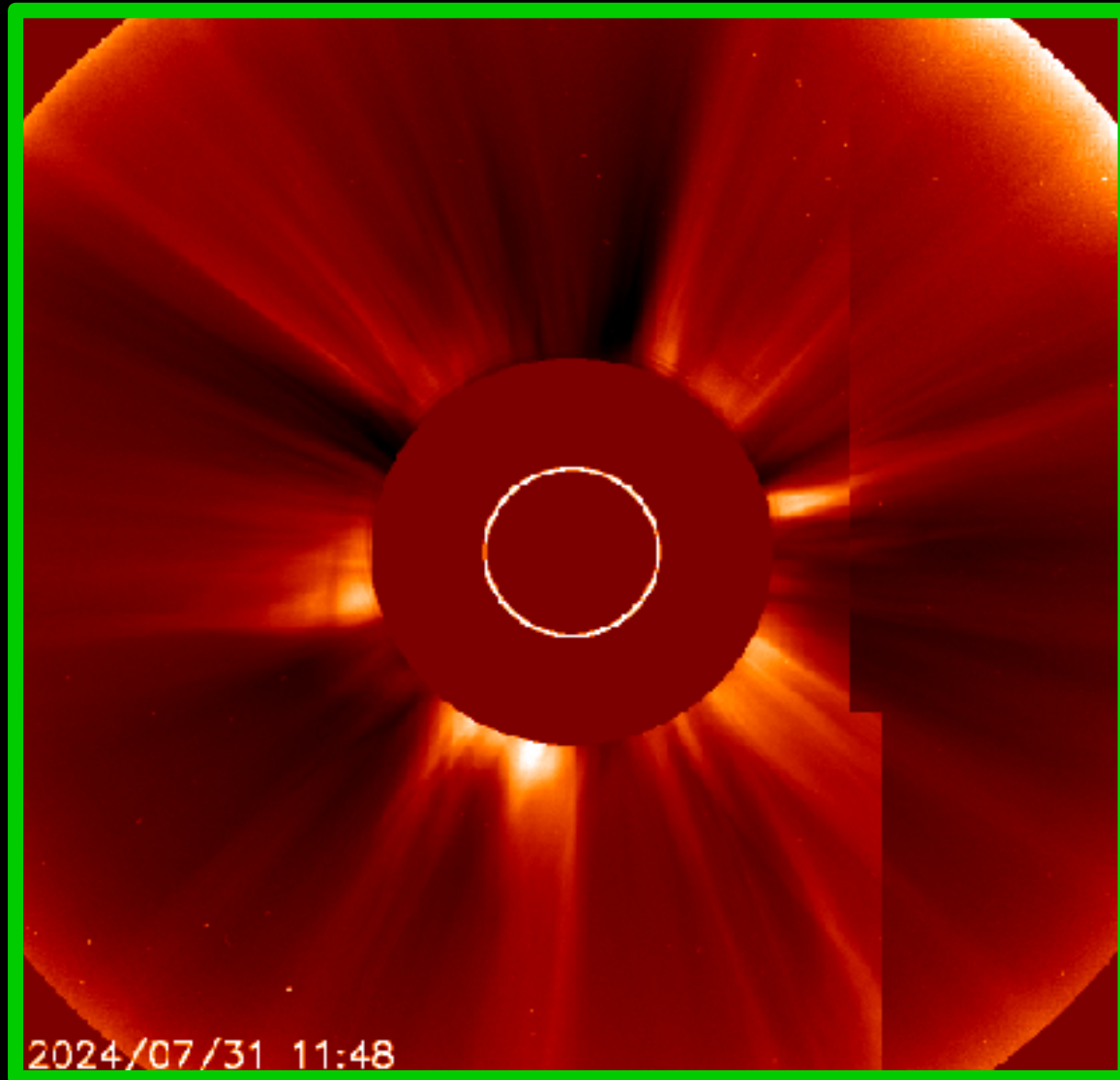
Solar X-Ray and UV flux



Coronal Mass Ejections



Coronal Mass Ejections



Solar Wind and

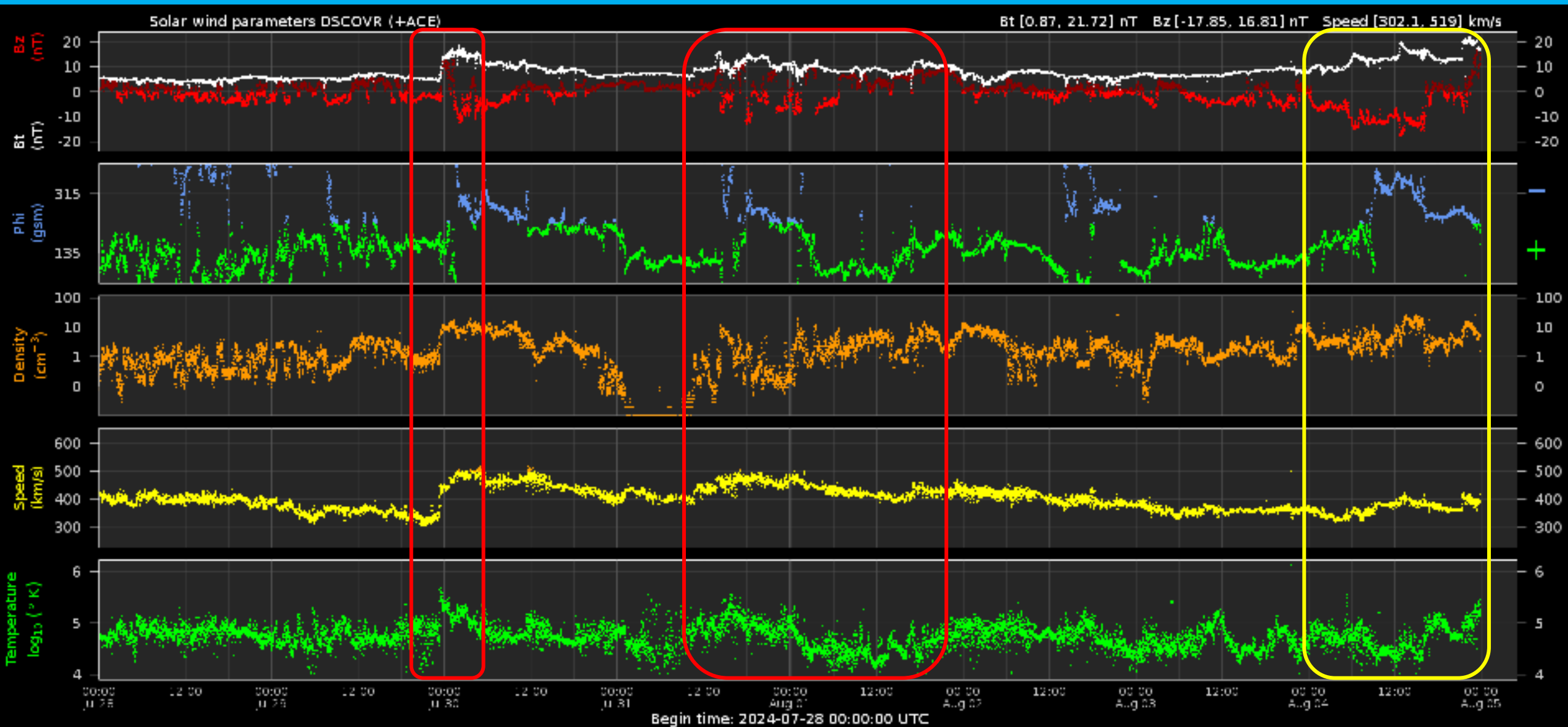
Geomagnetic Activity



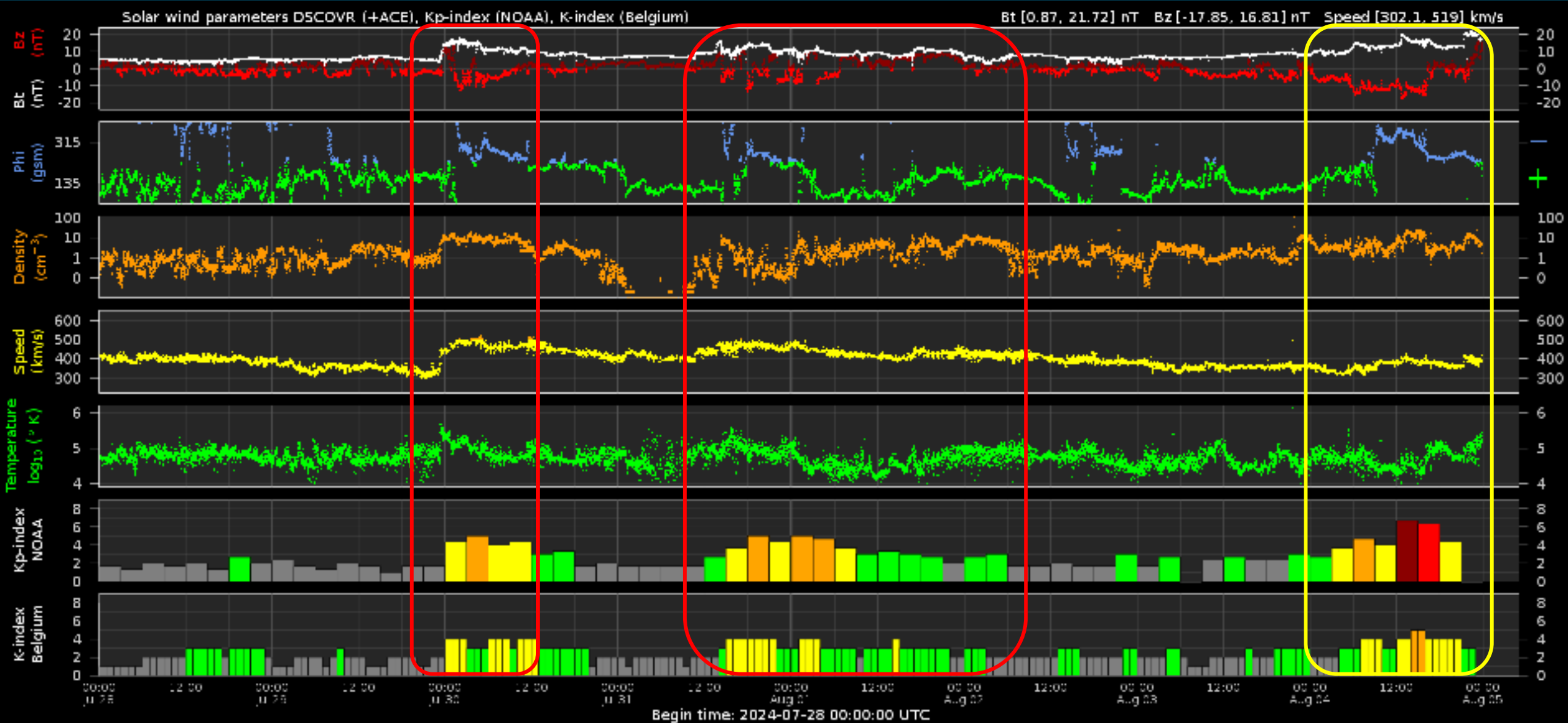
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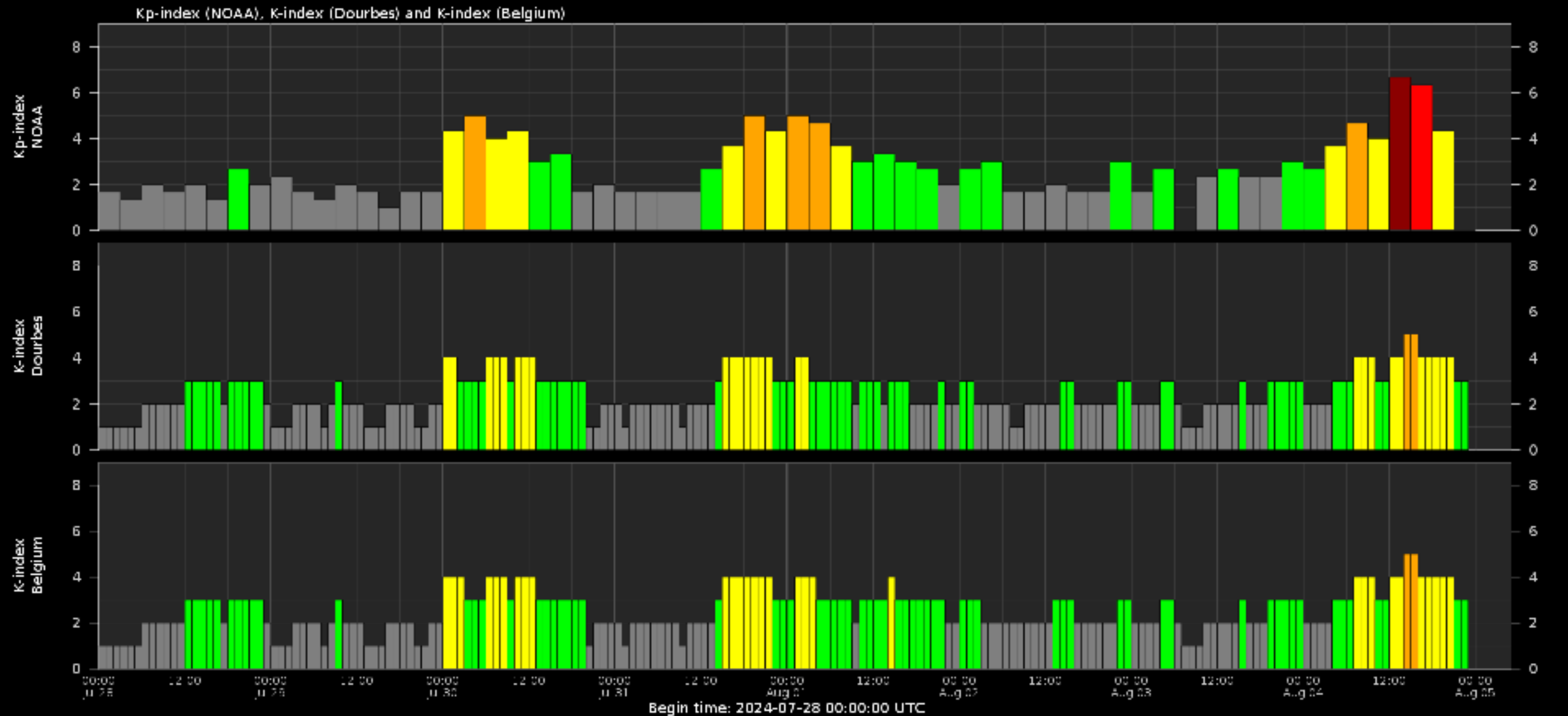
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



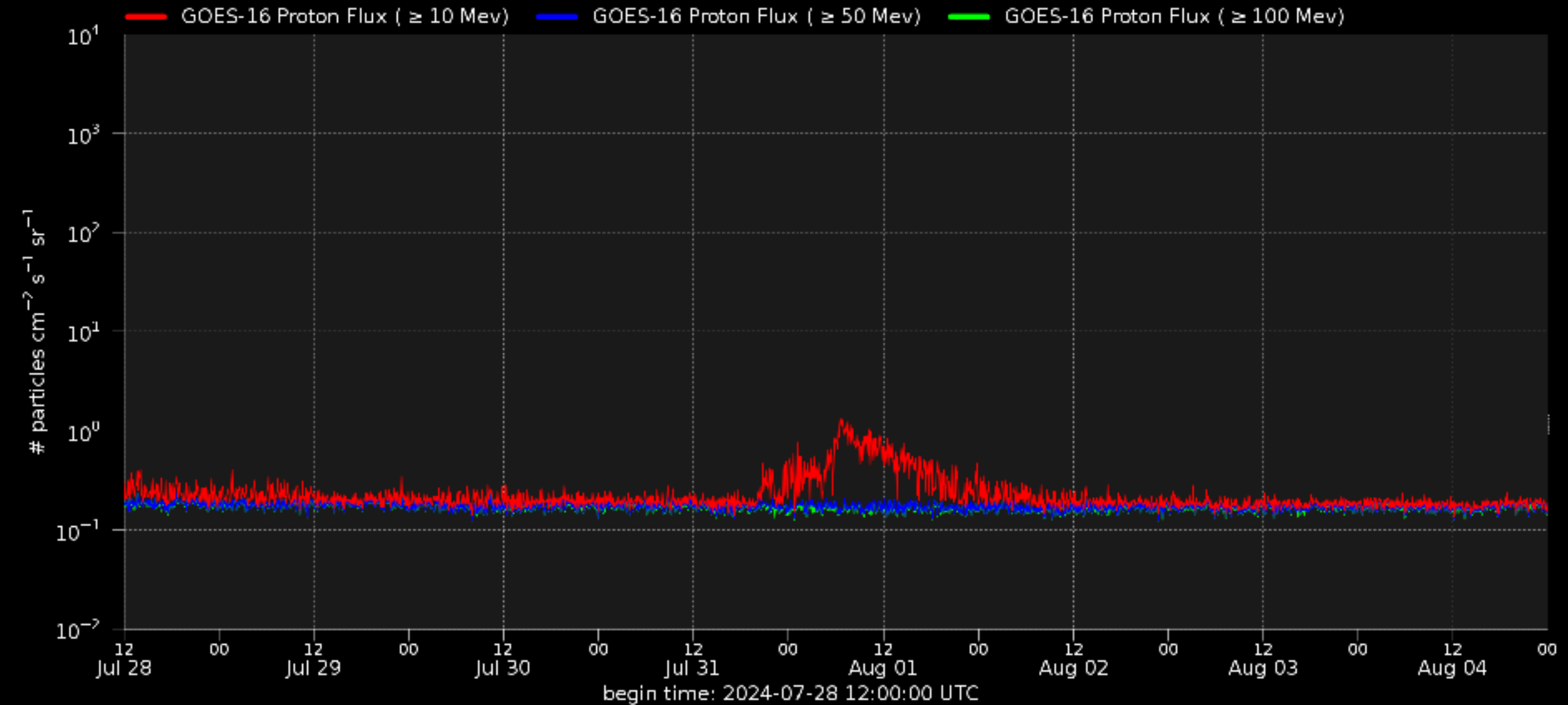
Energetic Particles



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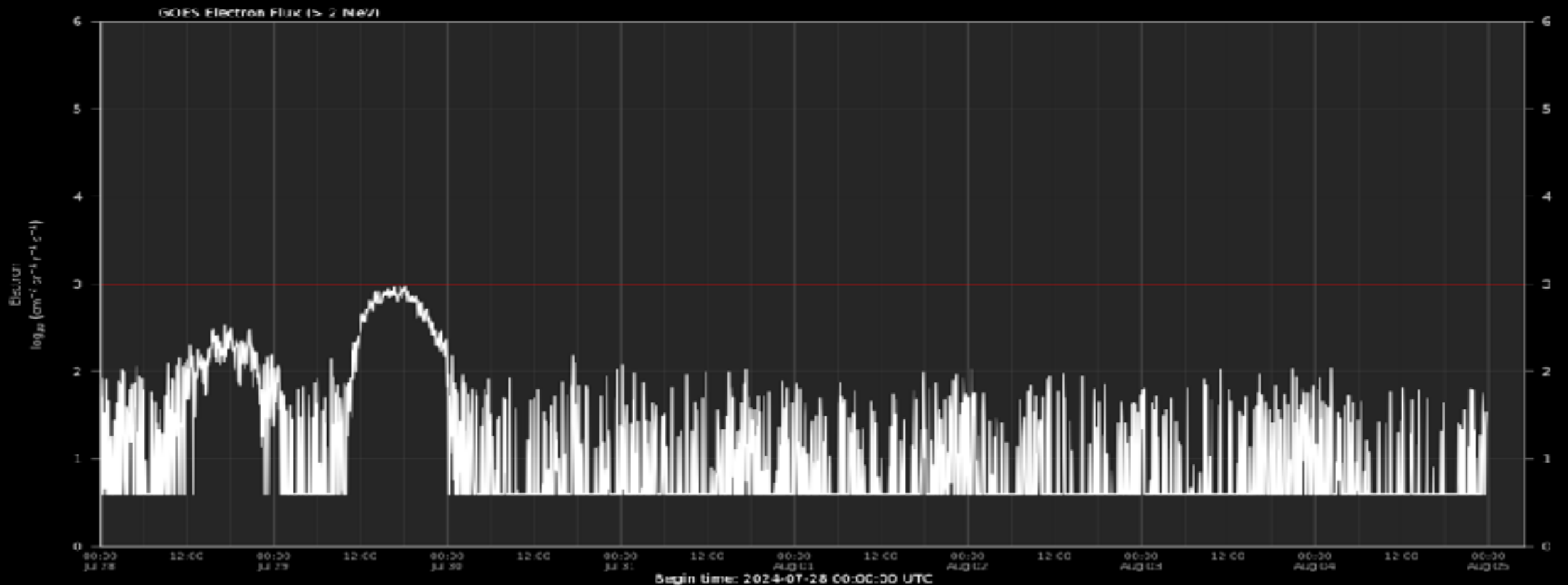
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



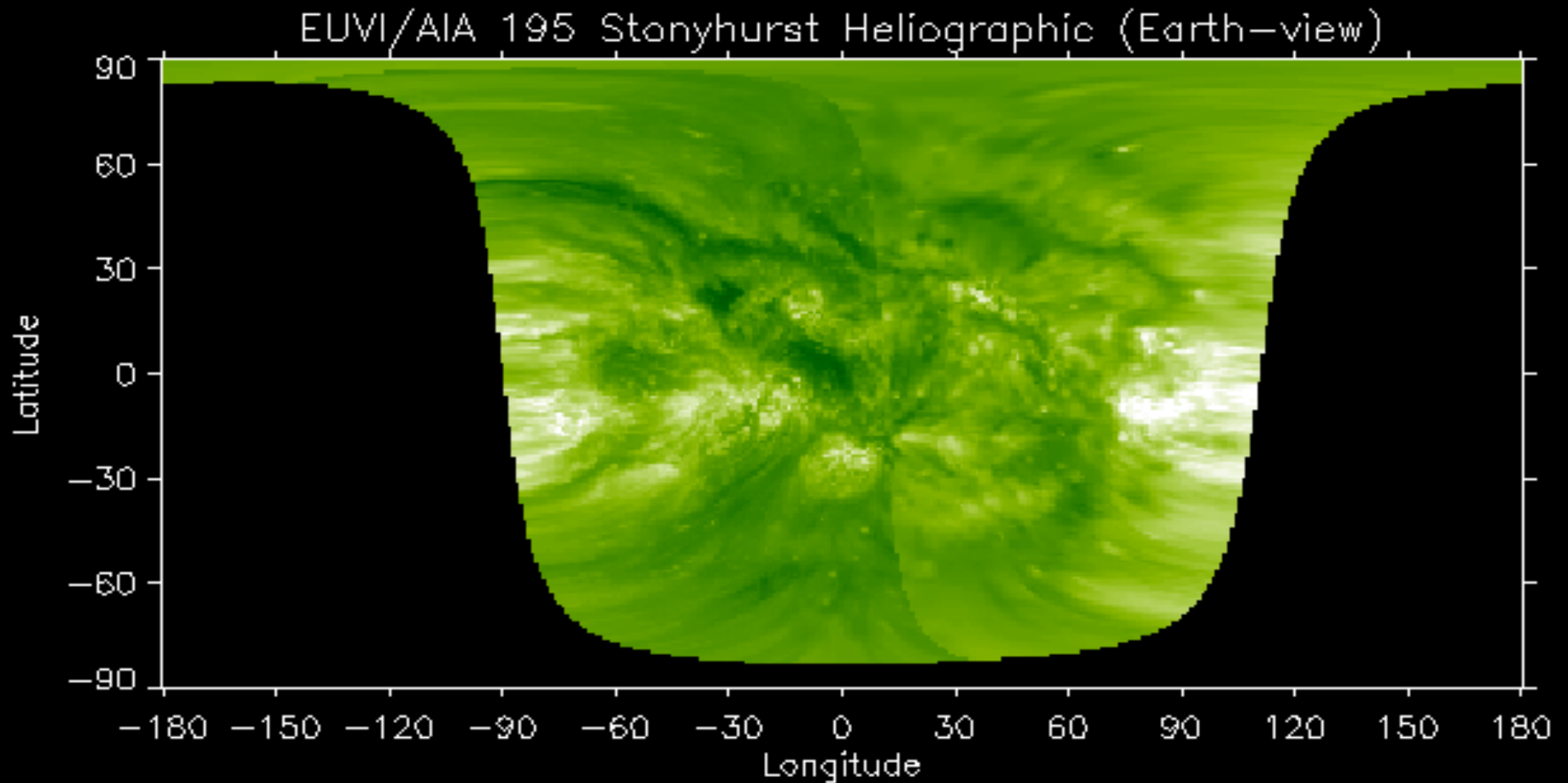
Outlook



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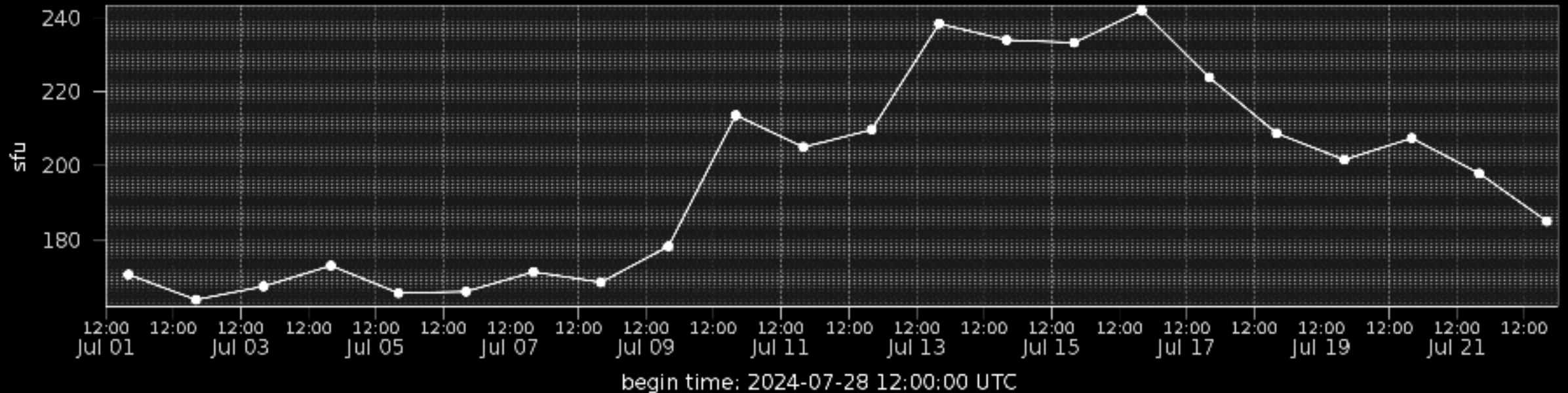
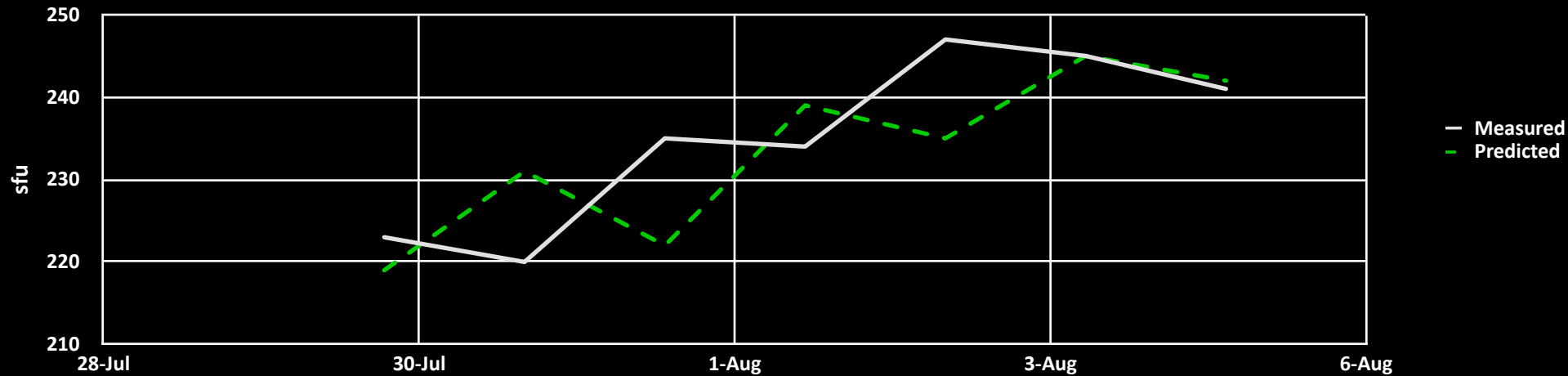
Outlook: Solar activity



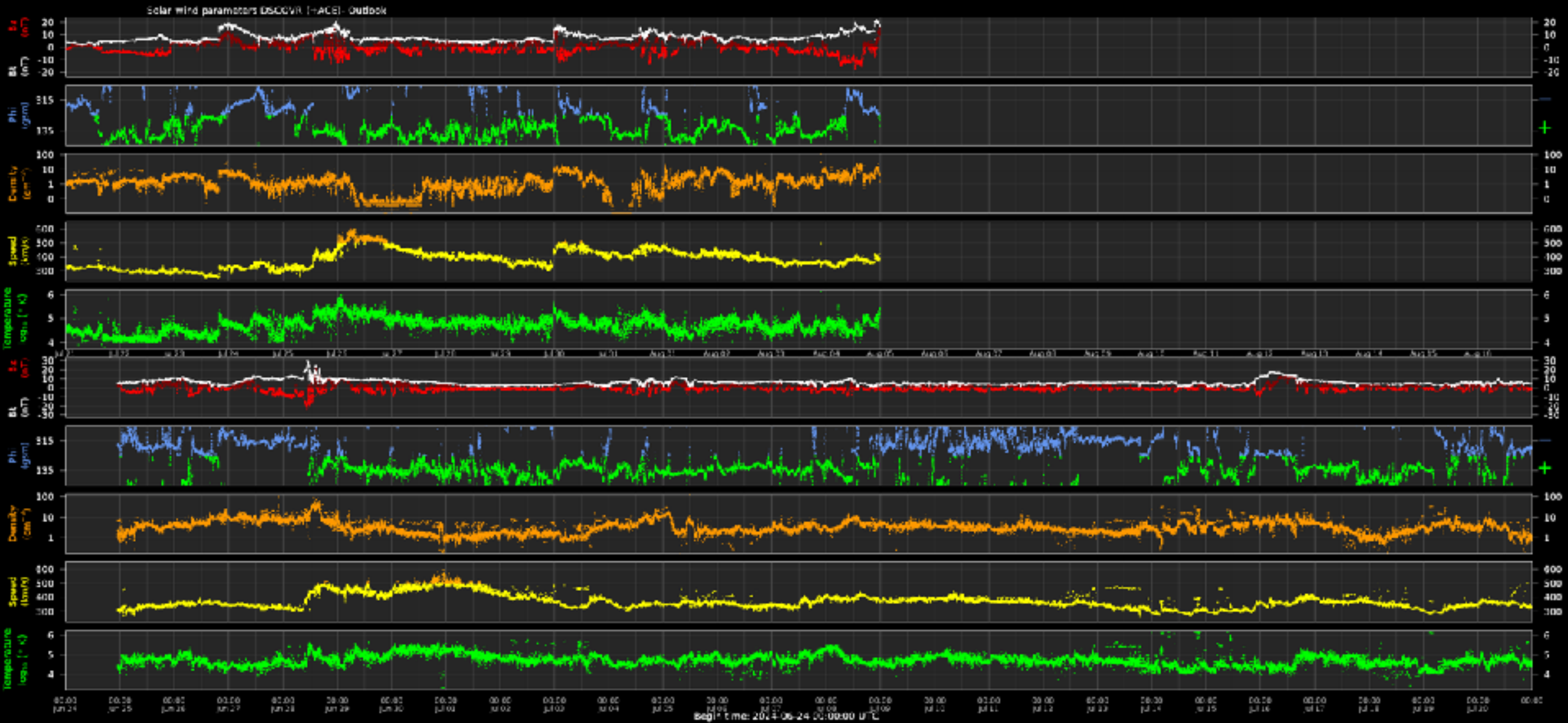
Observation date: 2024/08/04 23:05:00

Outlook: Solar F10.7cm radio flux

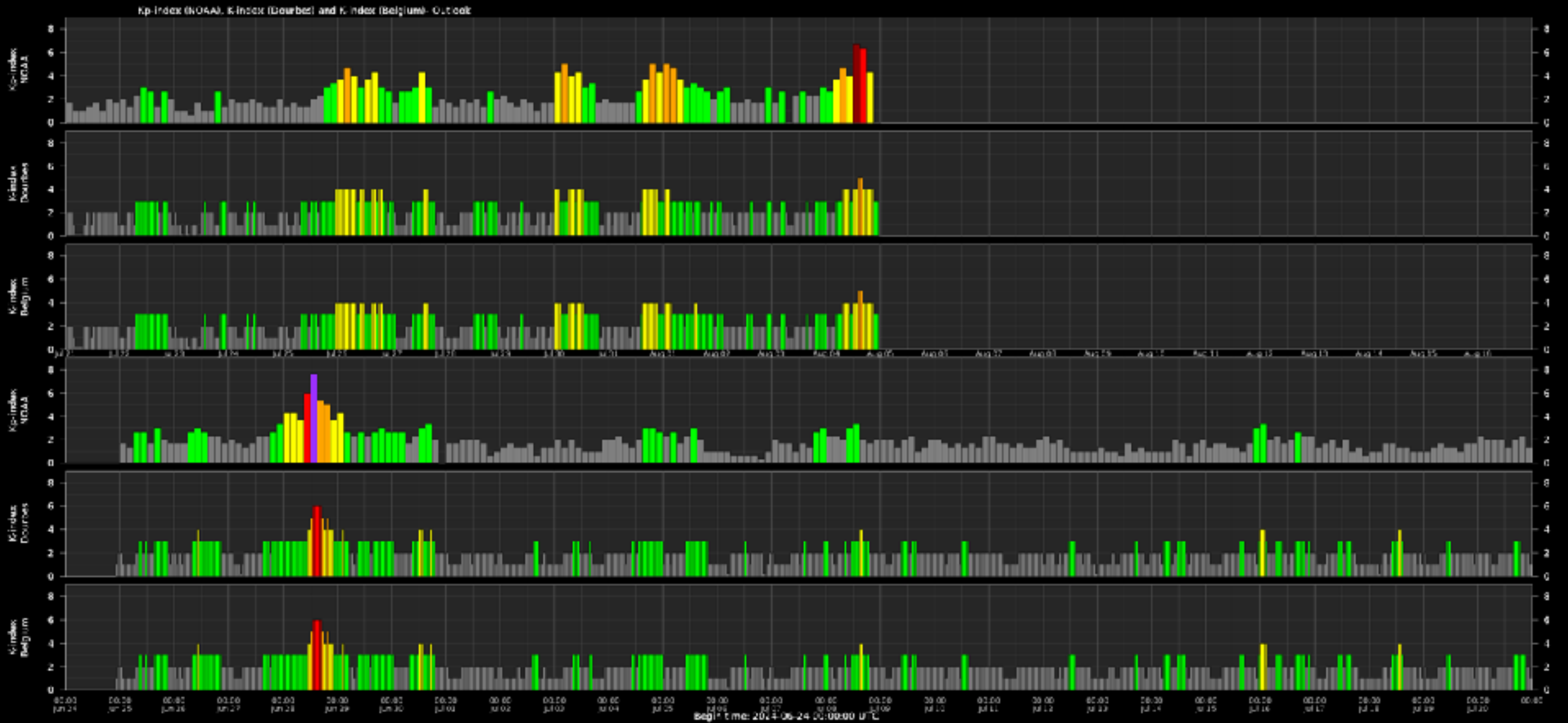
10.7cm flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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Pecausus related events

Advisories:

- Amplitude/Phase Scintillations
- Short wave fadeout (X flare)
- Auroral Absorption (AA)
- Post Storm Depression (PSD)

SIDC Space Weather Briefing

See you at our next briefing!

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