SIDC Space Weather Briefing

02 June 2025-08 June 2025

Daria Shukhobodskaia

& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2025-06-02 00:00 to 2025-06-08 23:59

Active regions	10 Active Regions on disk over the week: SIDC sunspot group 469 (NOAA AR 4100) and SIDC sunspot group 513 (NOAA Active Region 4105) most active
Flares	# C-class flare: 54 # M-class flare: 4 # X-class flare: 0
Coronal Holes	One negative and two positive polarity coronal holes transited central meridian
CMEs	Halo backsided CME on June 08 (SIDC CME 517), partially Earth directed on June 03 (SIDC CME 514)

Proton flux	Elevated, but below 10 pfu threshold
Electron flux	Above 1000 pfu threshold from June 02 until June 07

Solar wind and geomagnetic conditions

ICMEs	ICME arrival at 00:15 on June 07 associated with SIDC CME 514 and at 20:089 UTC on June 02 (possible source May 31 CME)
Solar wind conditions	|B|: 0.25 - 32.18 nT //Bz: -21.81 nT to 14.24 nT //Speed: 312.7 - 1133.1km/s
Geomagnetic conditions	max KBel: 6.0, max Kp(NOAA): 7.0, Major Storm conditions globally

All Quiet Alert: Not all quiet

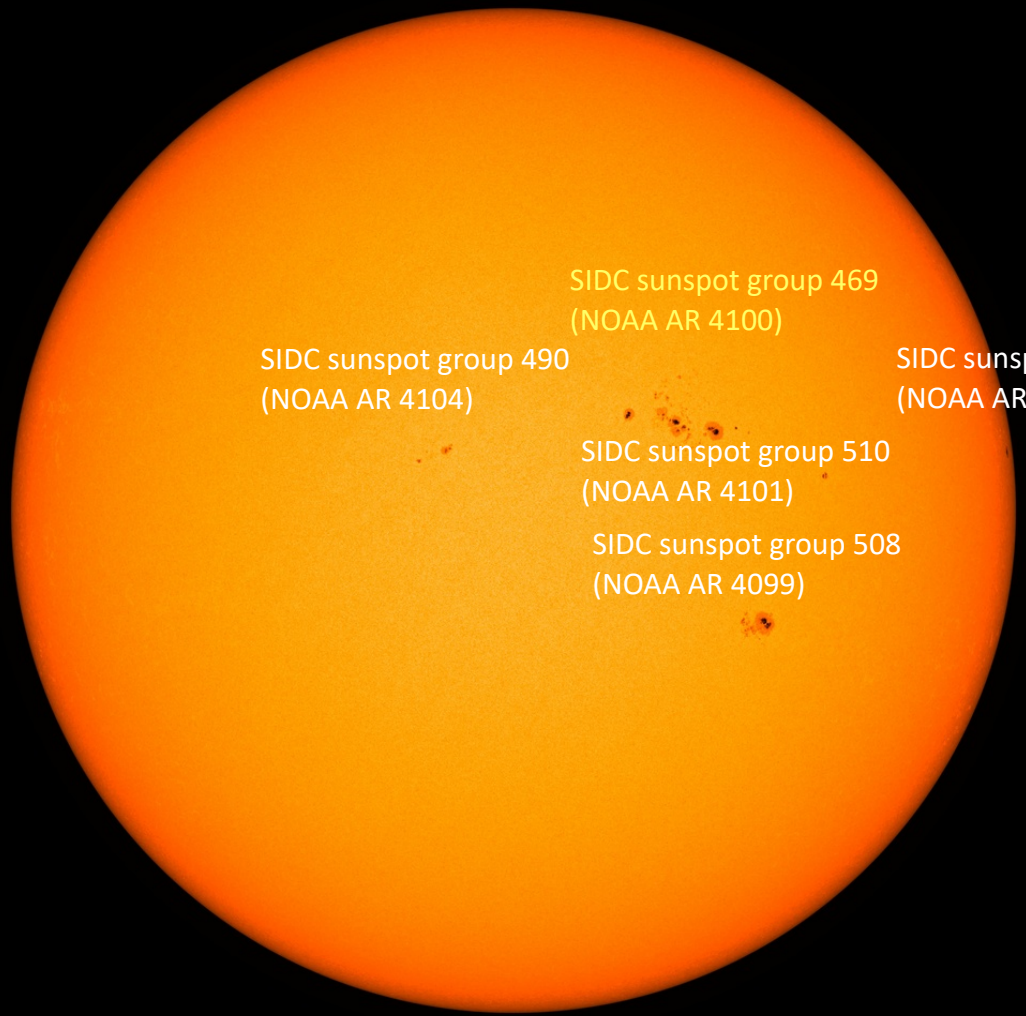
Solar Activity

Royal Observatory
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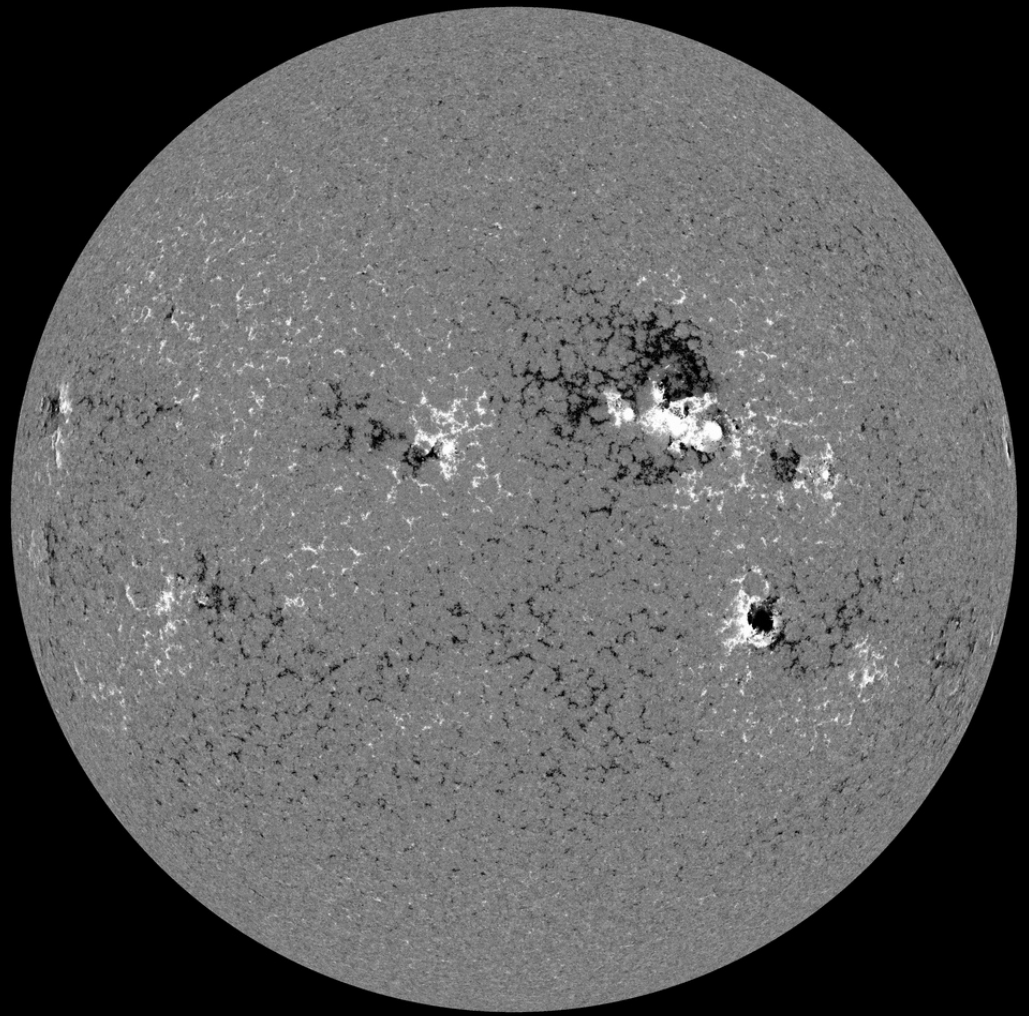
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Solar active regions

SDO/HMI White Light 2025-06-02

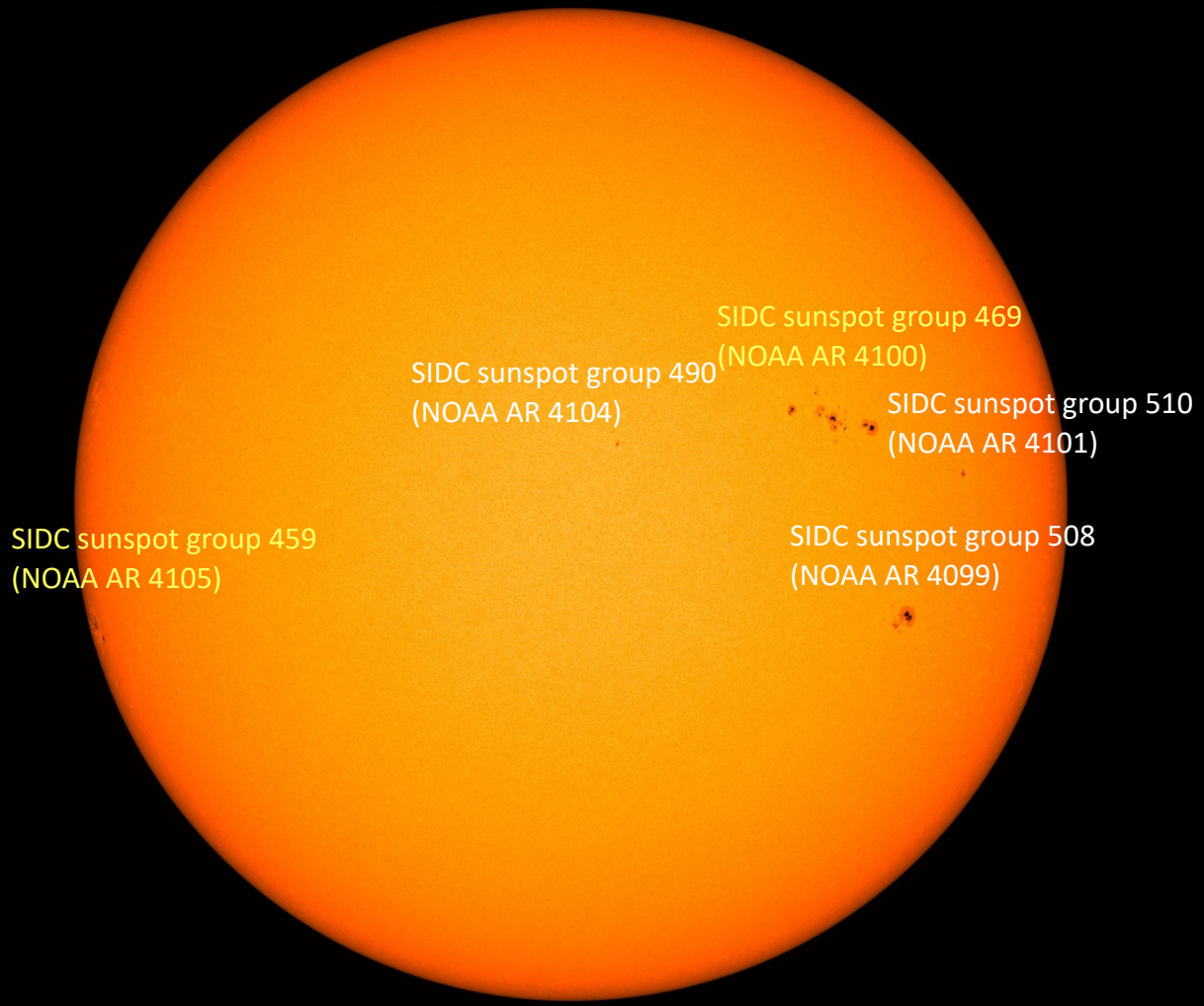


SDO/HMI Magnetogram 2025-06-02

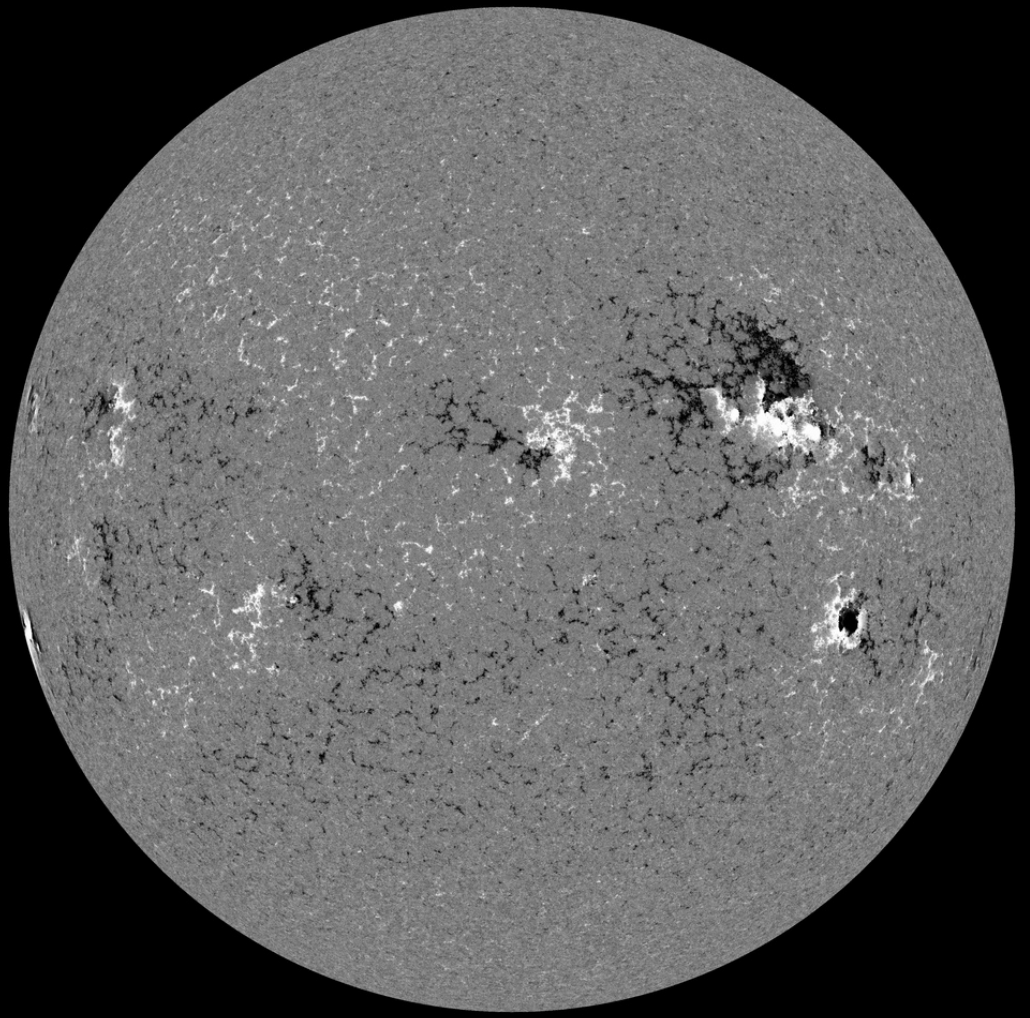


Solar active regions

SDO/HMI White Light 2025-06-03

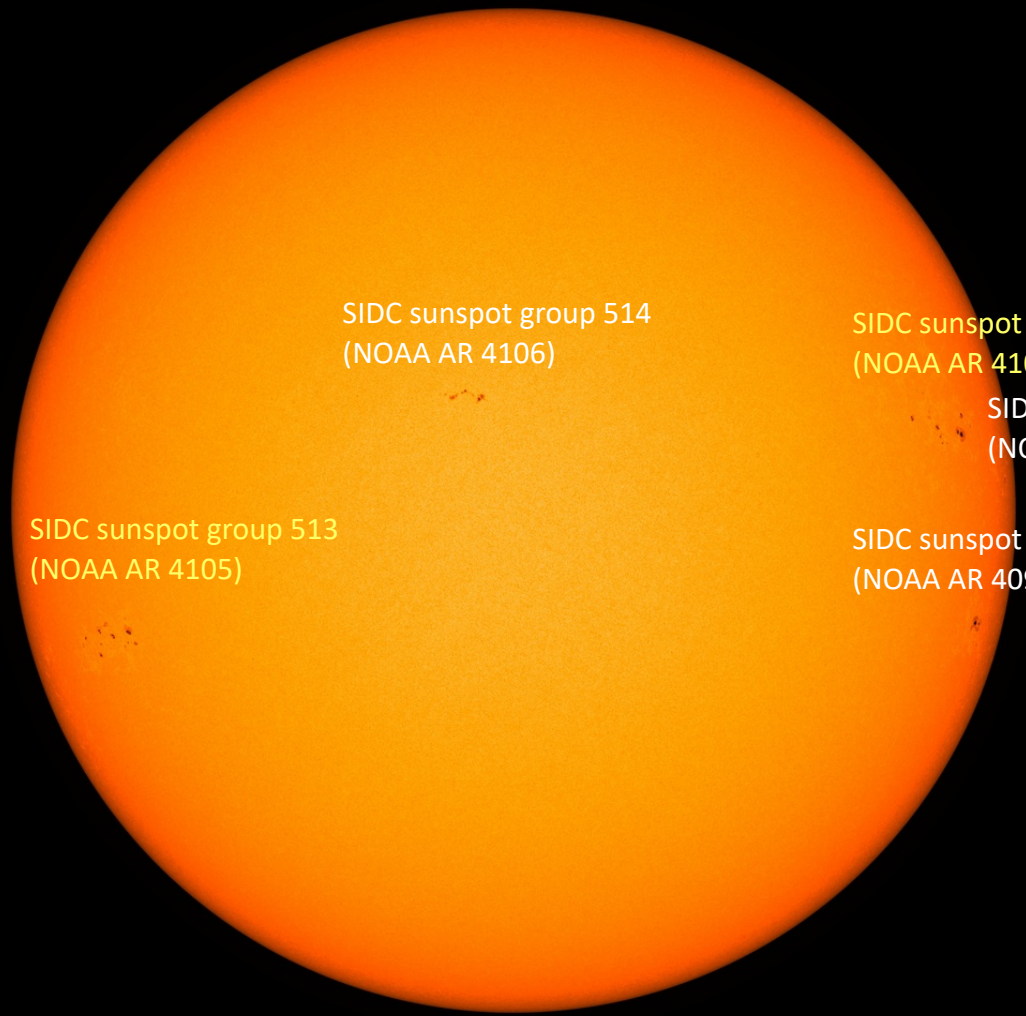


SDO/HMI Magnetogram 2025-06-03

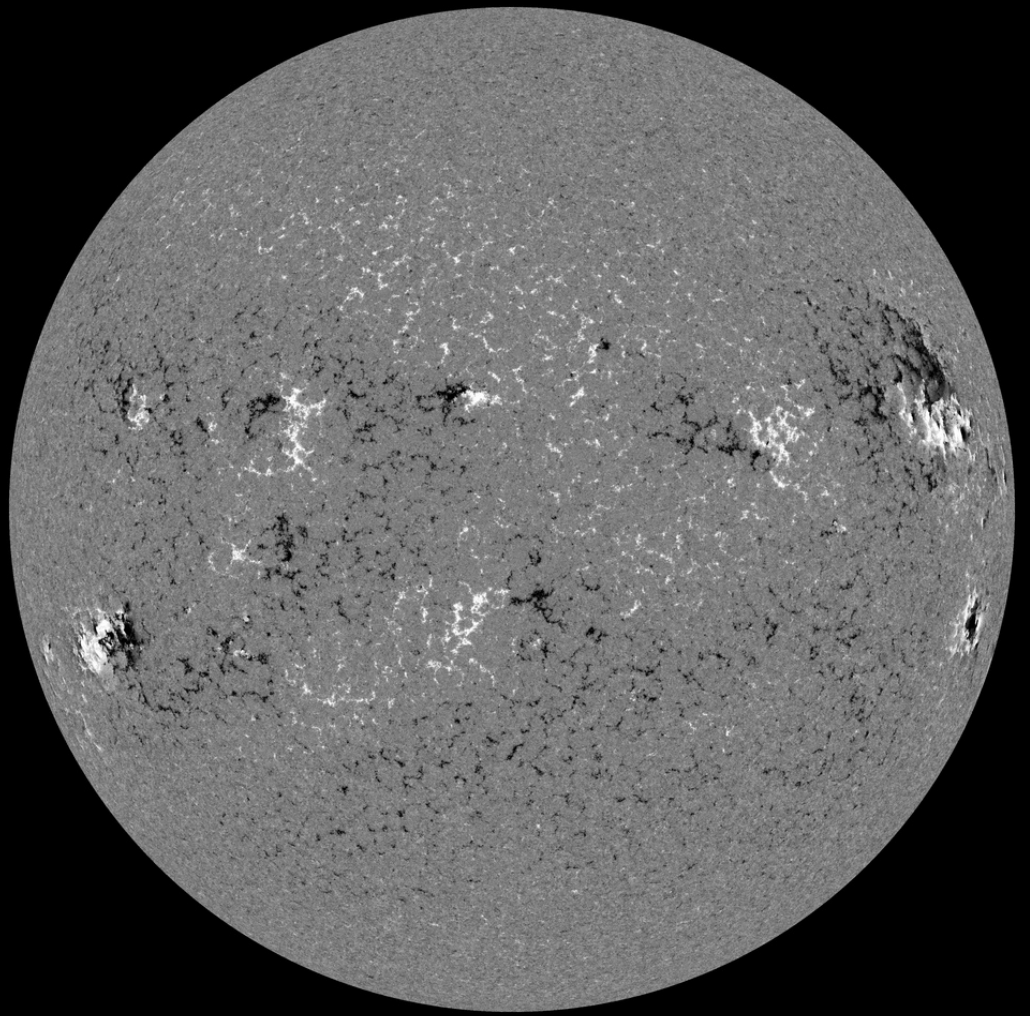


Solar active regions

SDO/HMI White Light 2025-06-05

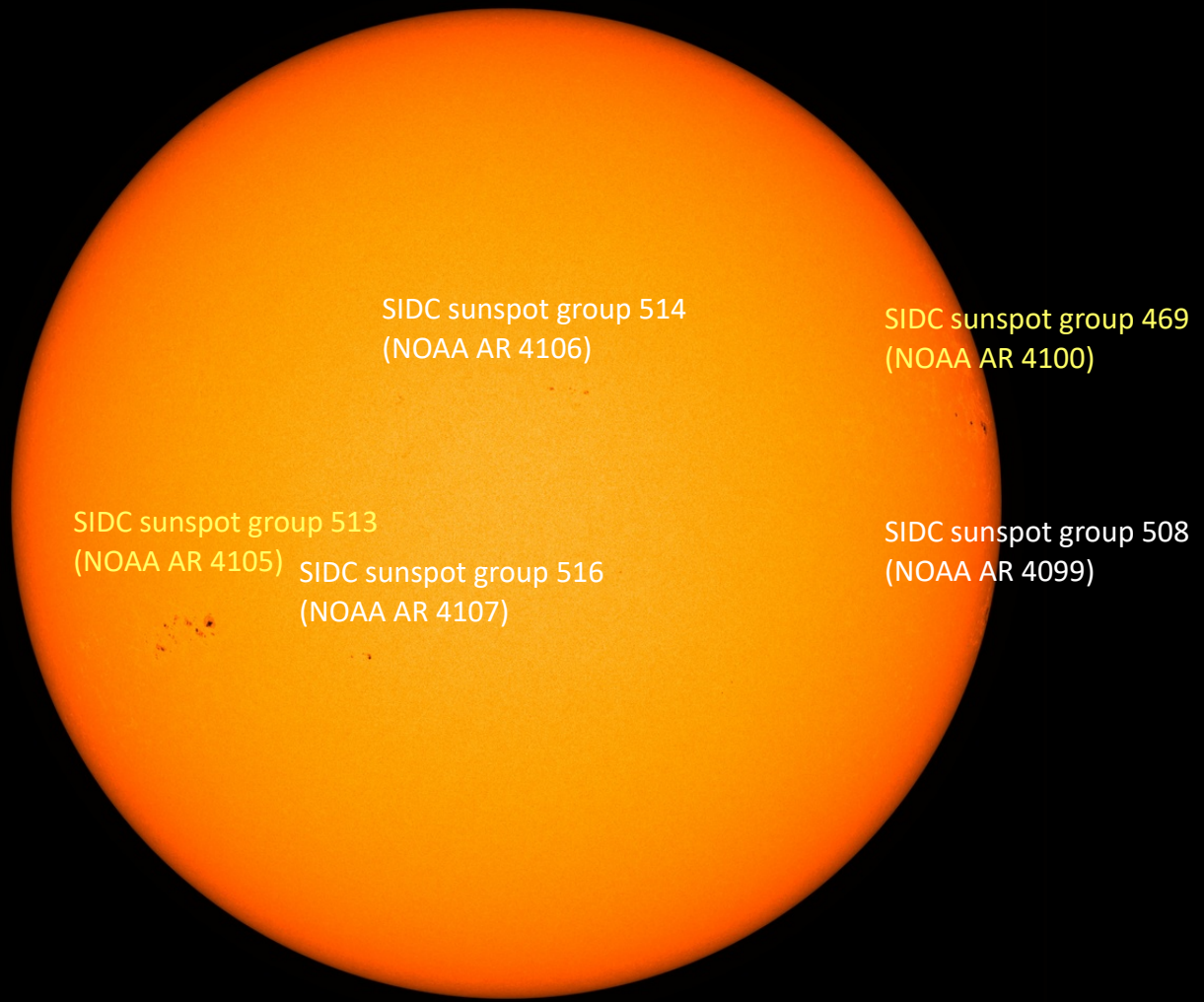


SDO/HMI Magnetogram 2025-06-05

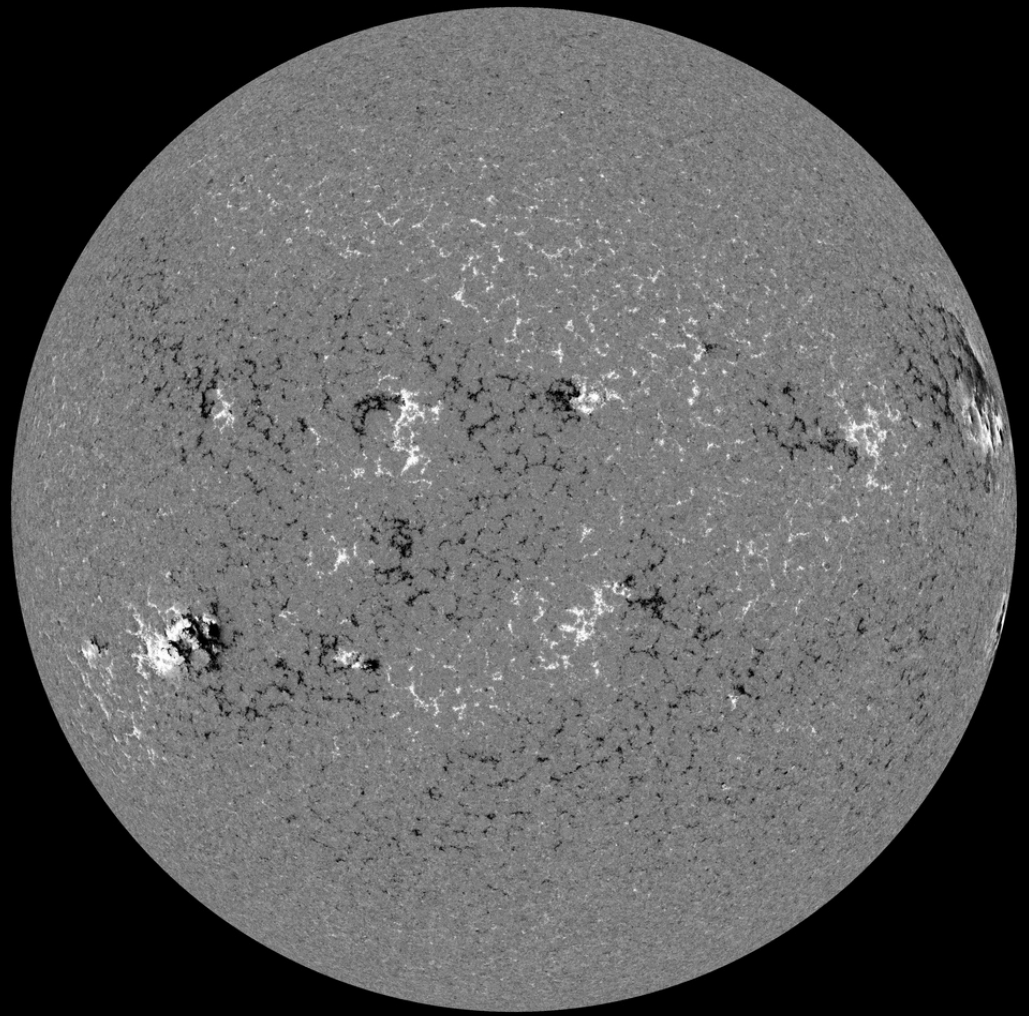


Solar active regions

SDO/HMI White Light 2025-06-06

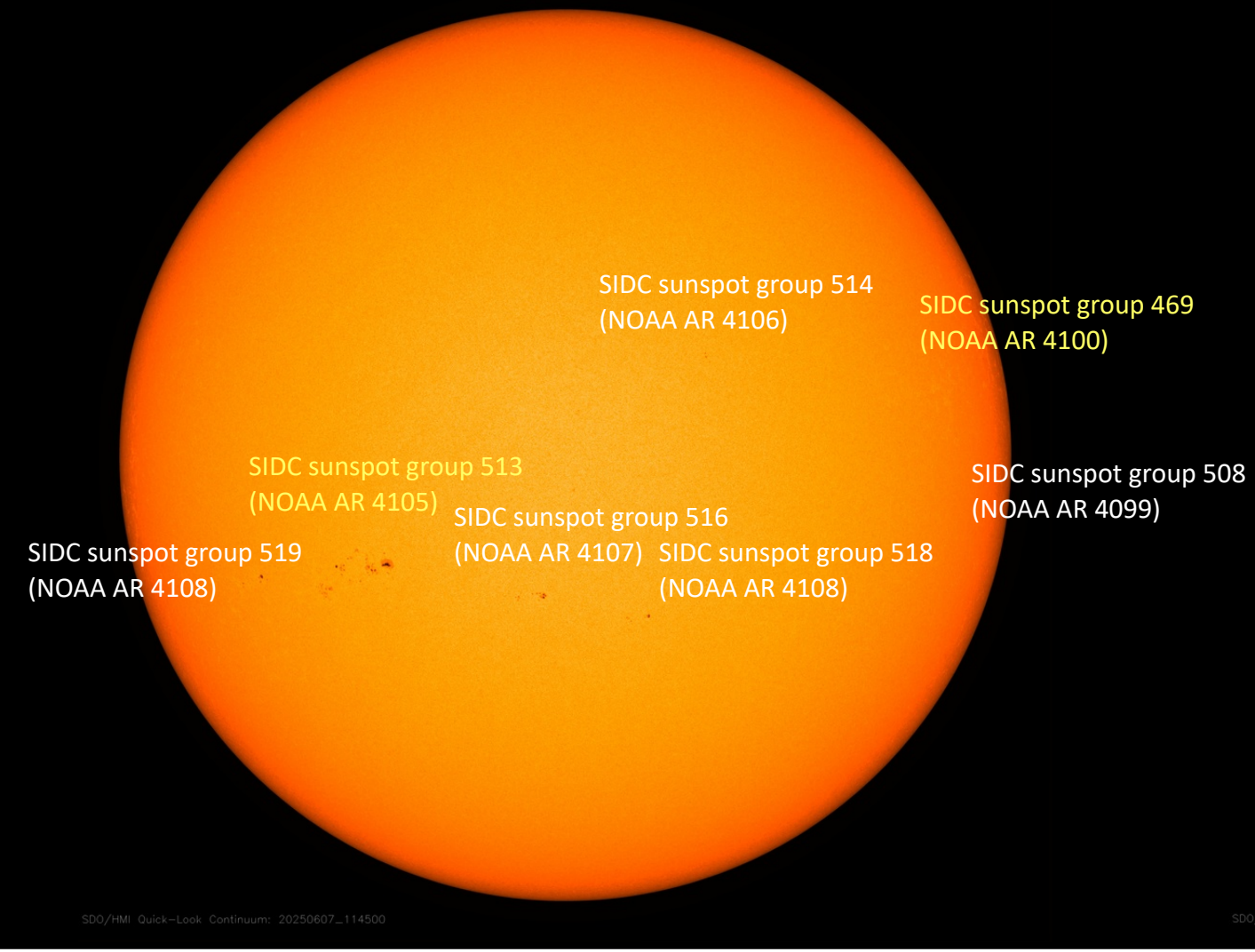


SDO/HMI Magnetogram 2025-06-06

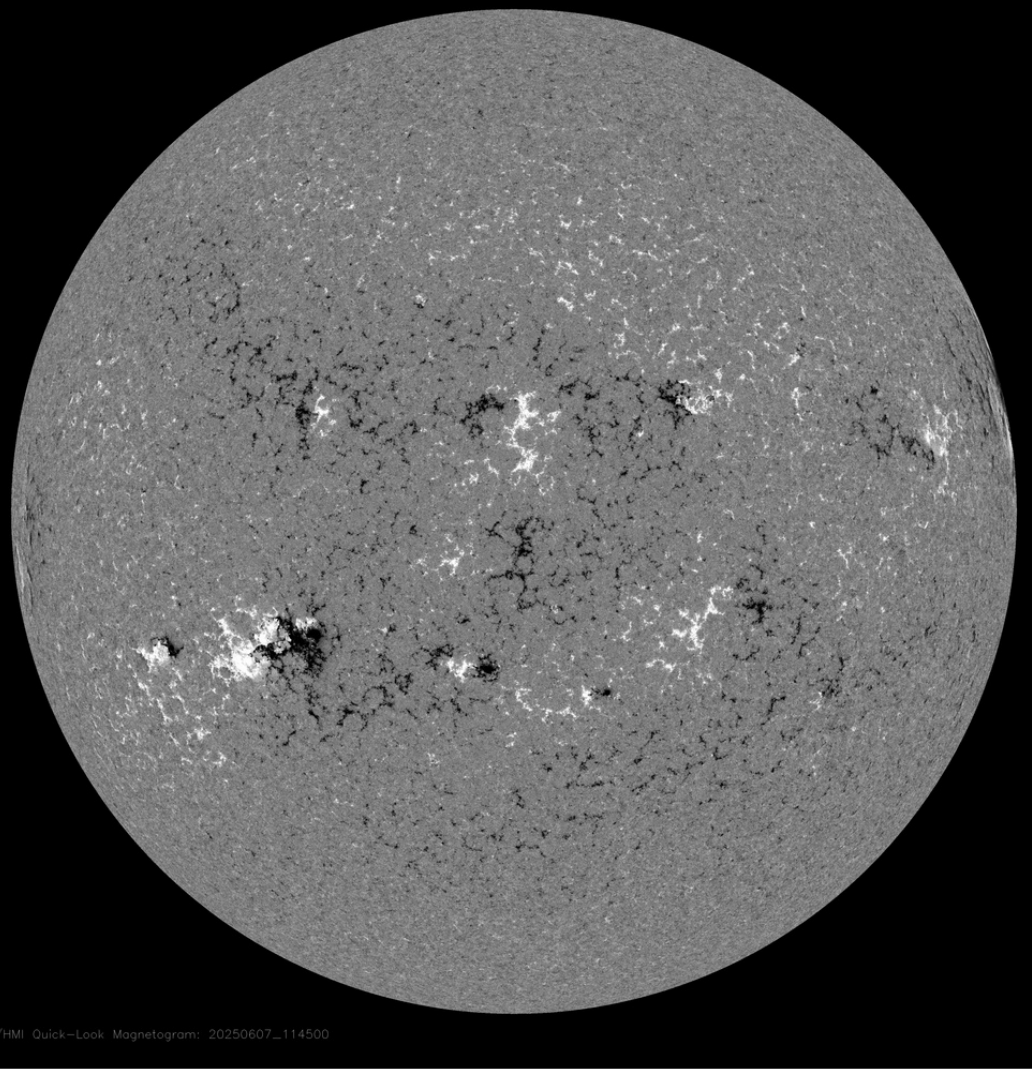


Solar active regions

SDO/HMI White Light 2025-06-07

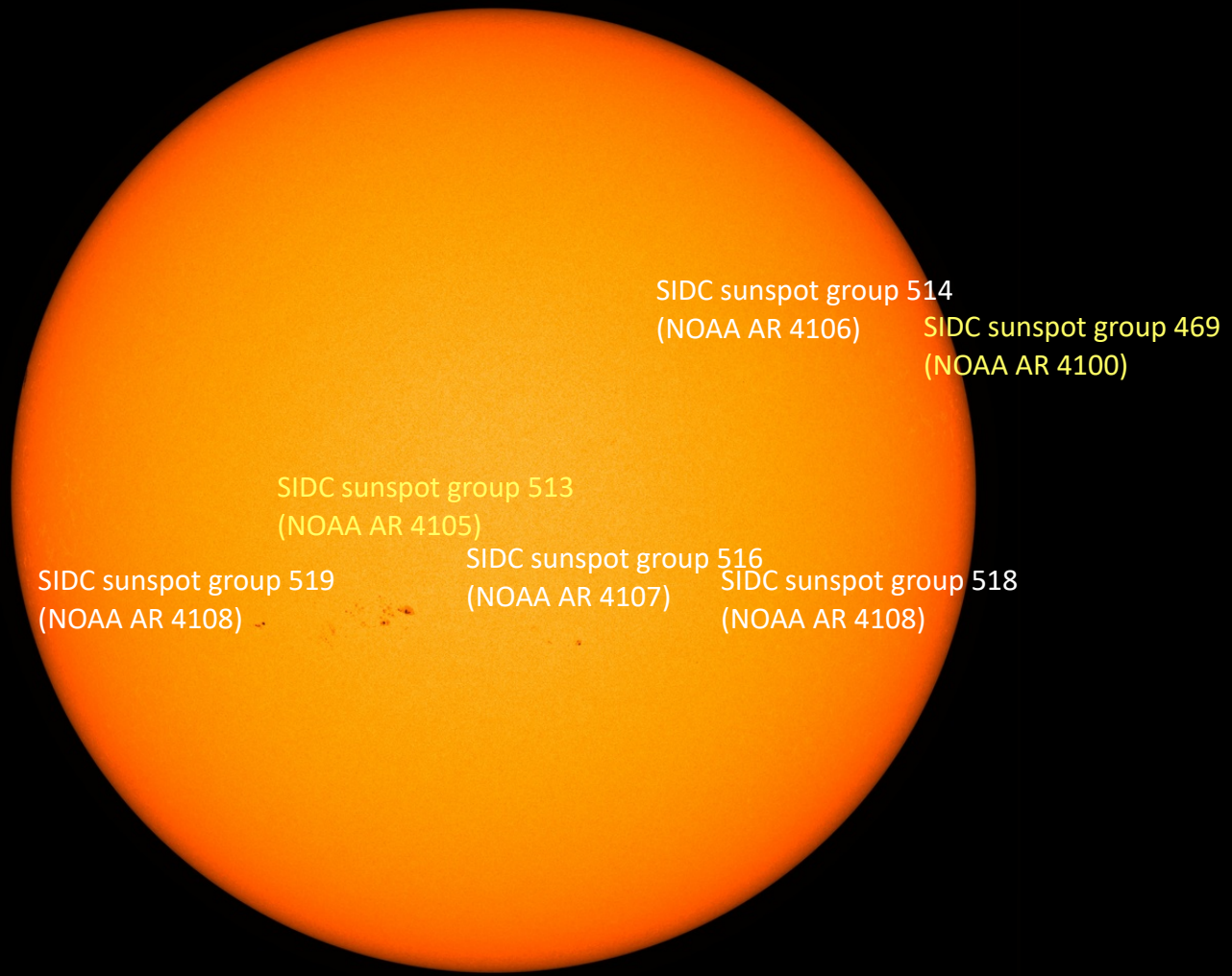


SDO/HMI Magnetogram 2025-06-07

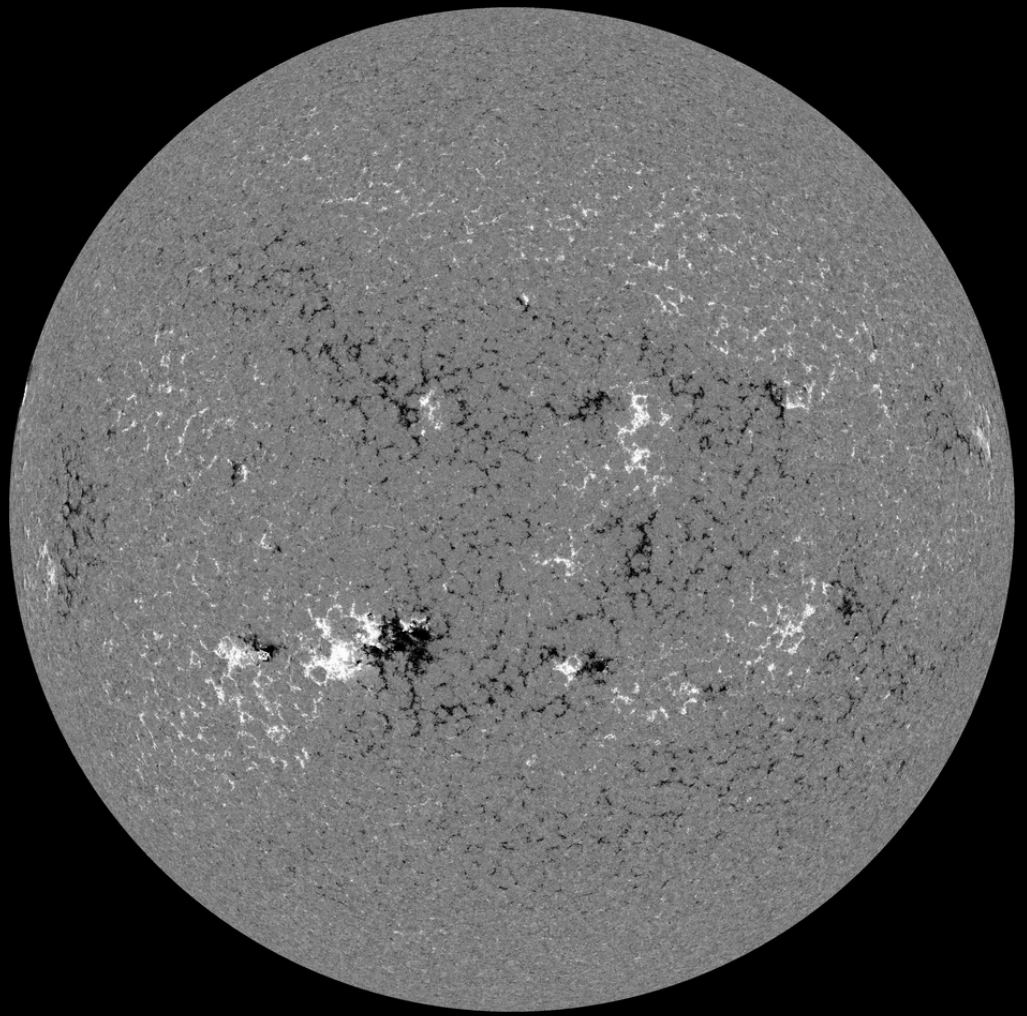


Solar active regions

SDO/HMI White Light 2025-06-08

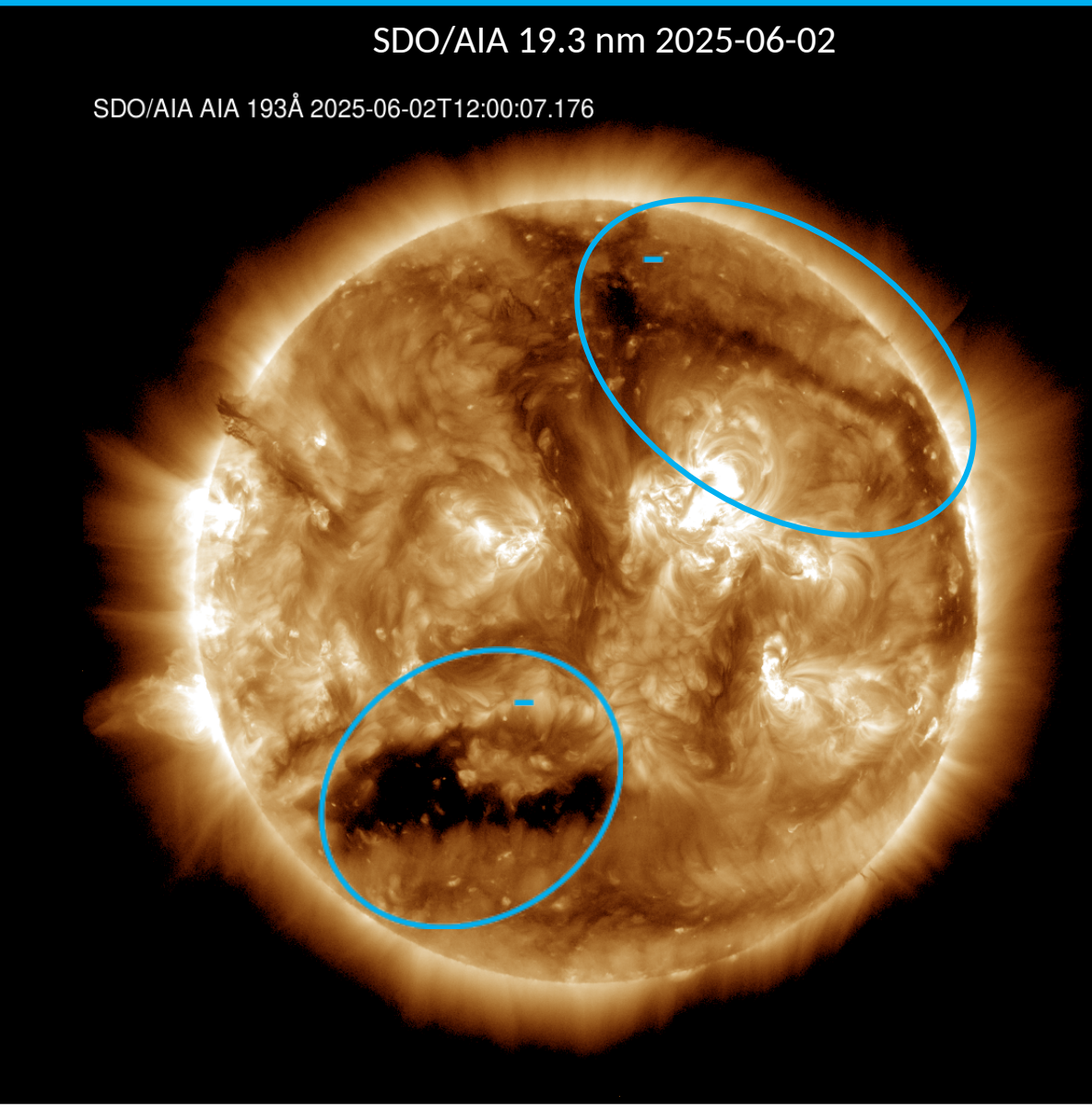


SDO/HMI Magnetogram 2025-06-08

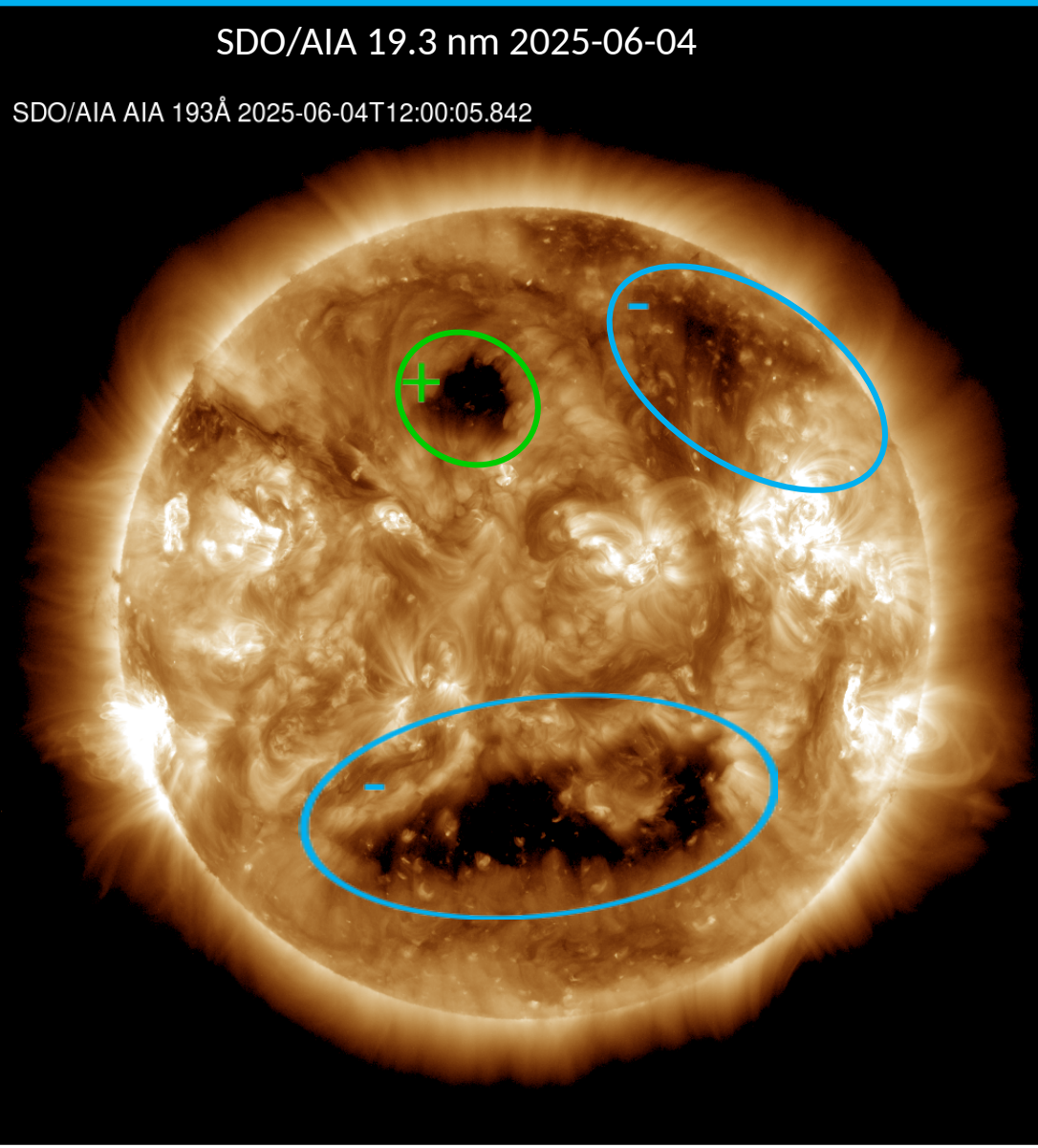


Coronal holes

SDO/AIA 19.3 nm 2025-06-02

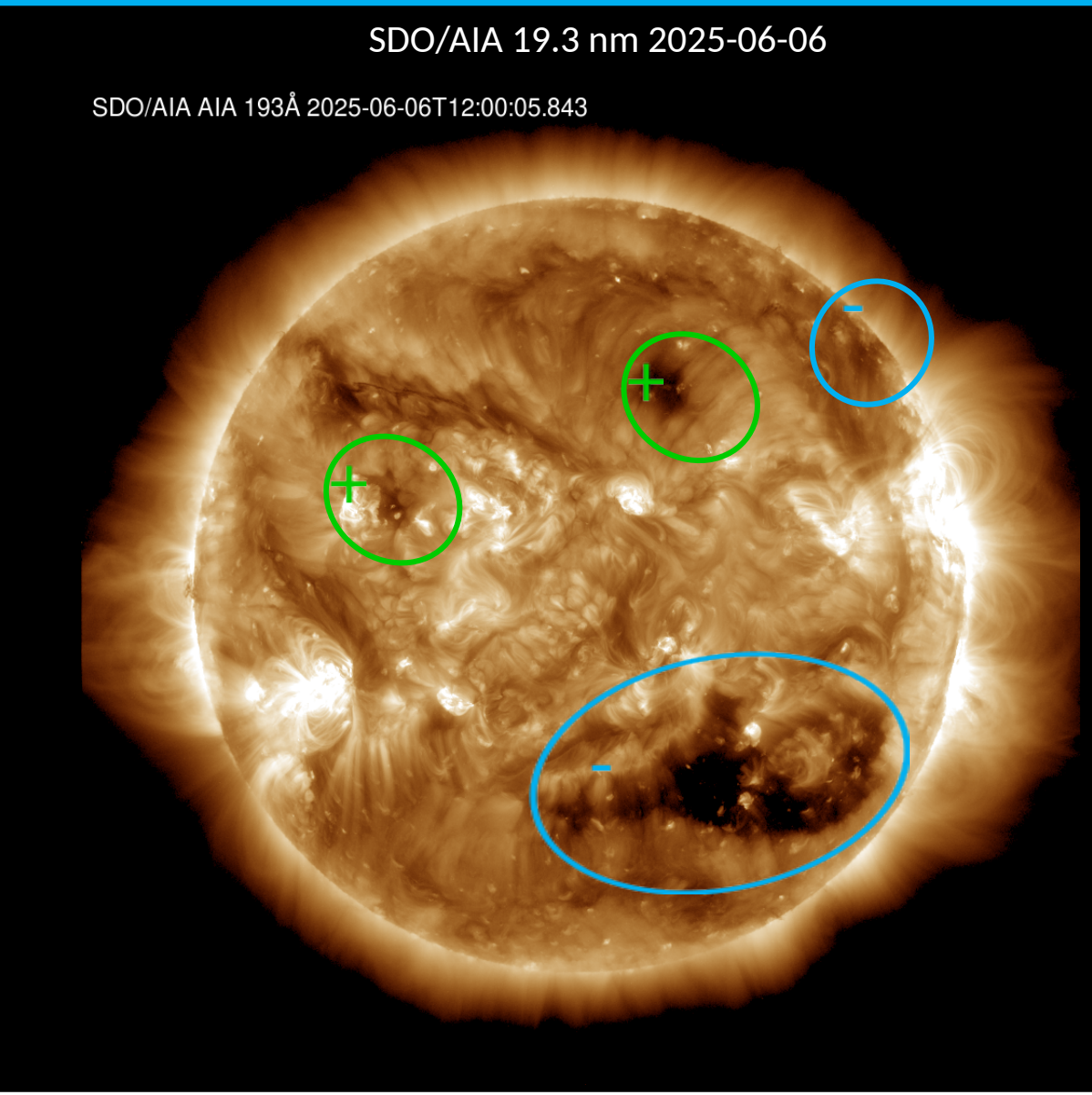


SDO/AIA 19.3 nm 2025-06-04

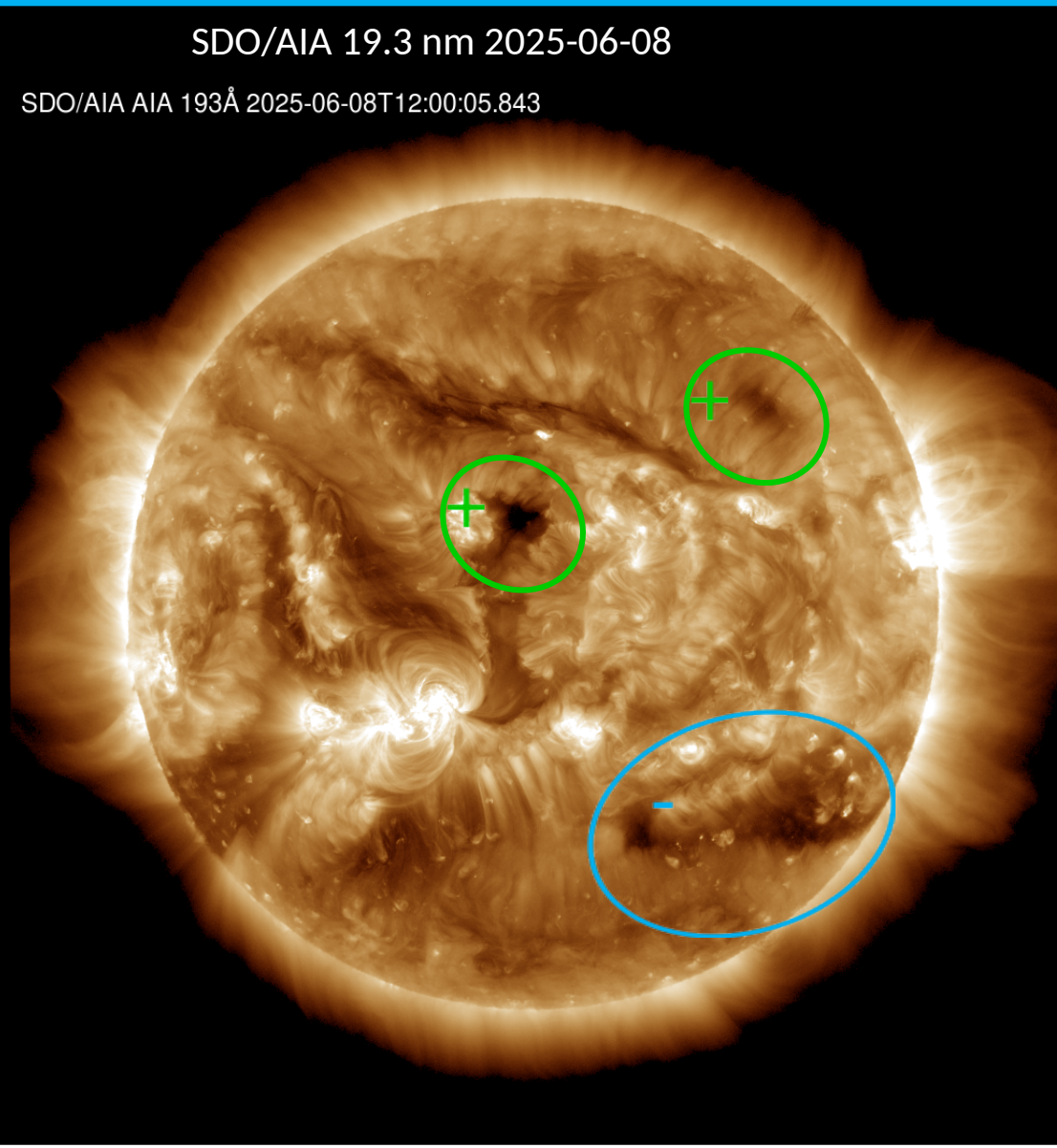


Coronal holes

SDO/AIA 19.3 nm 2025-06-06

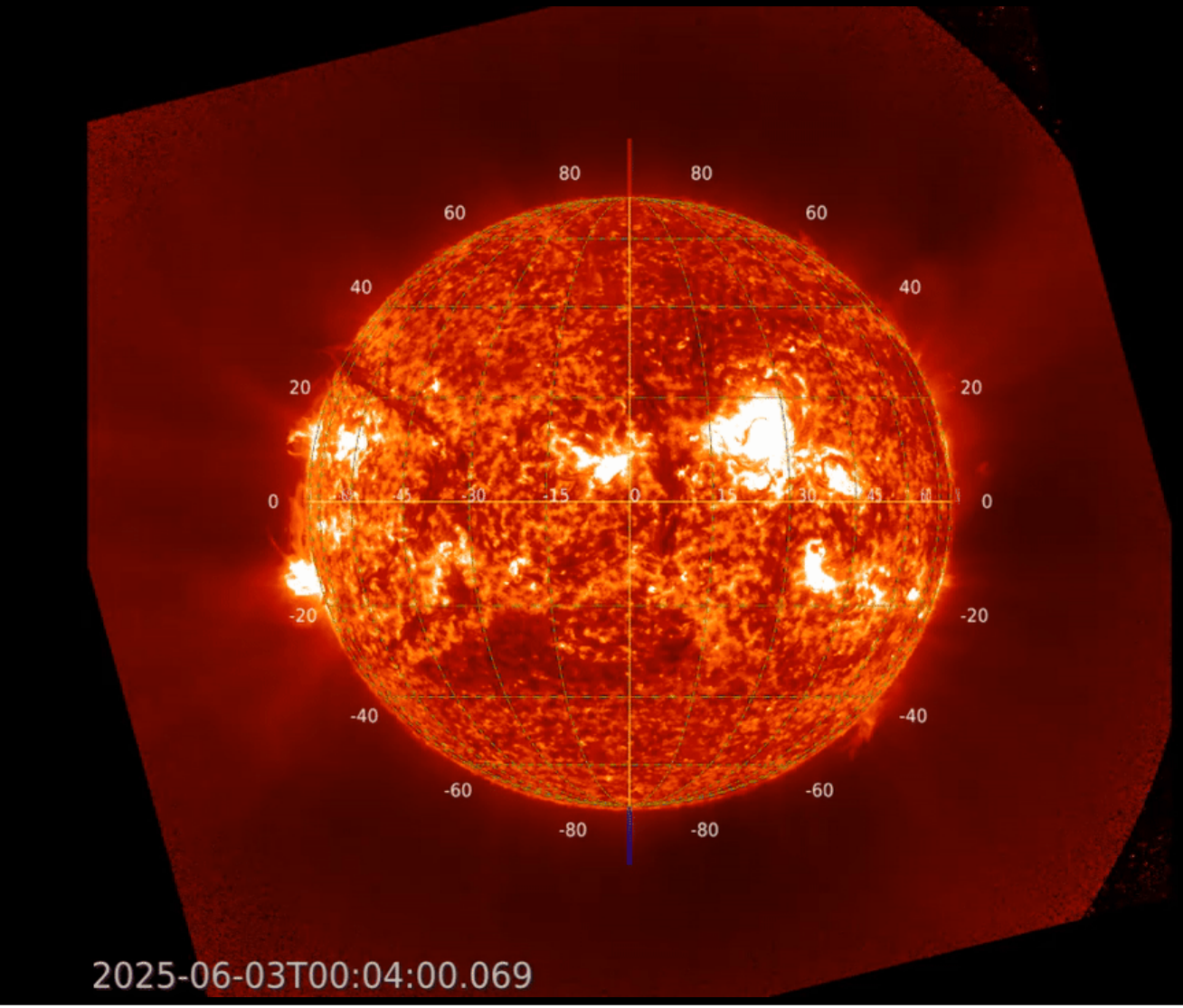


SDO/AIA 19.3 nm 2025-06-08

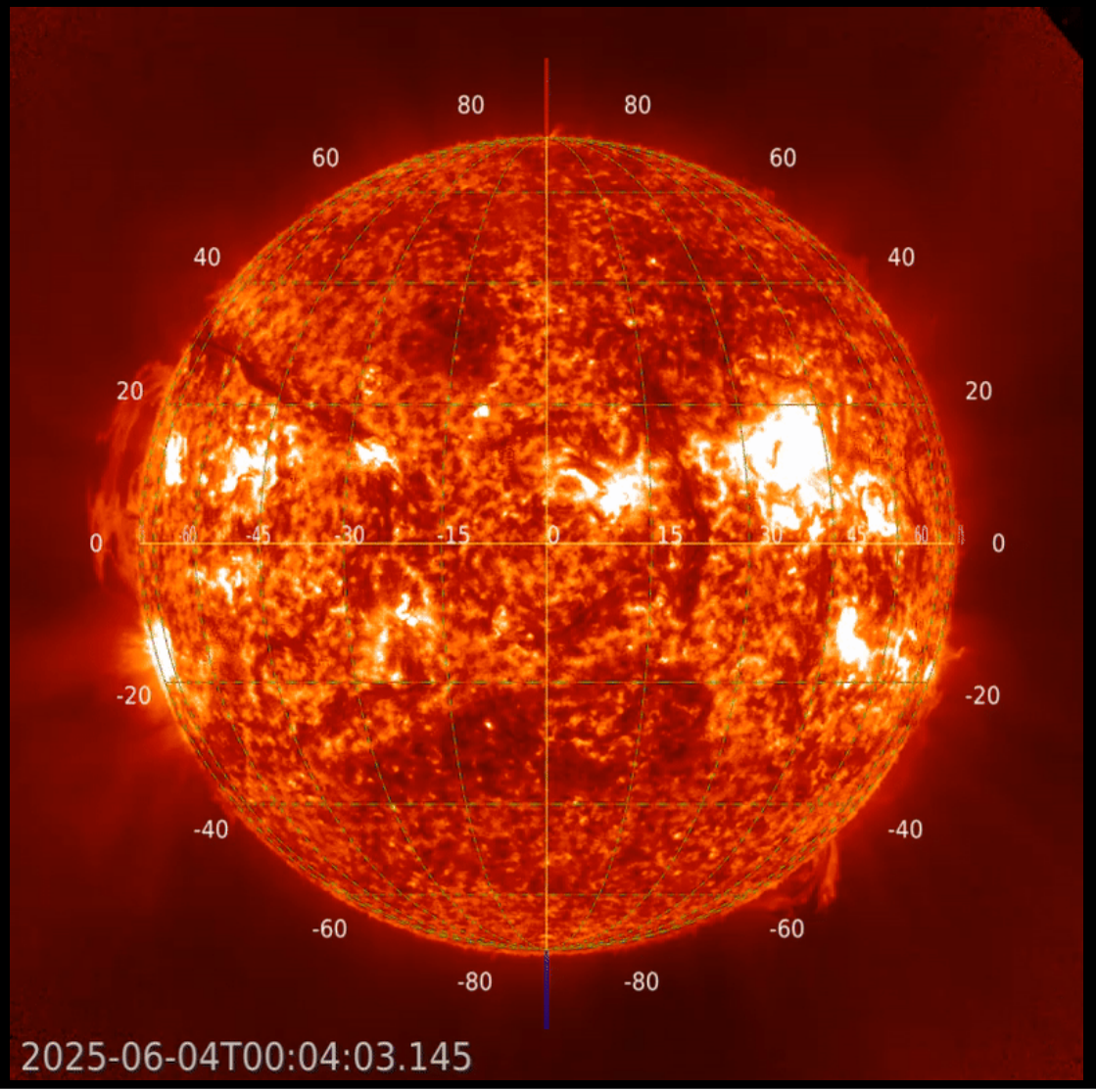


Filaments

GOES/SUVI 30.4 nm 2025-06-03

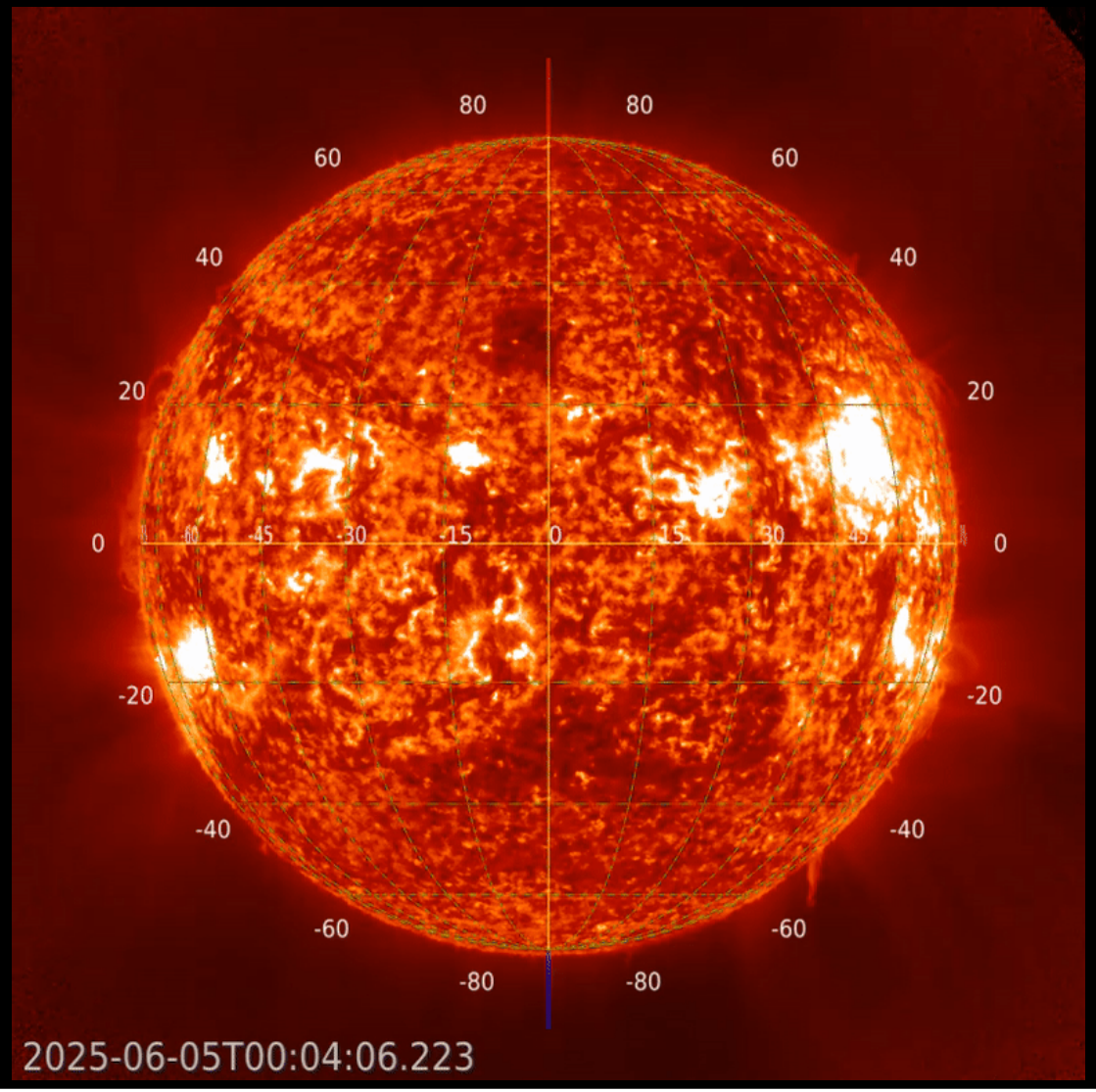


GOES/SUVI 30.4 nm 2025-06-04

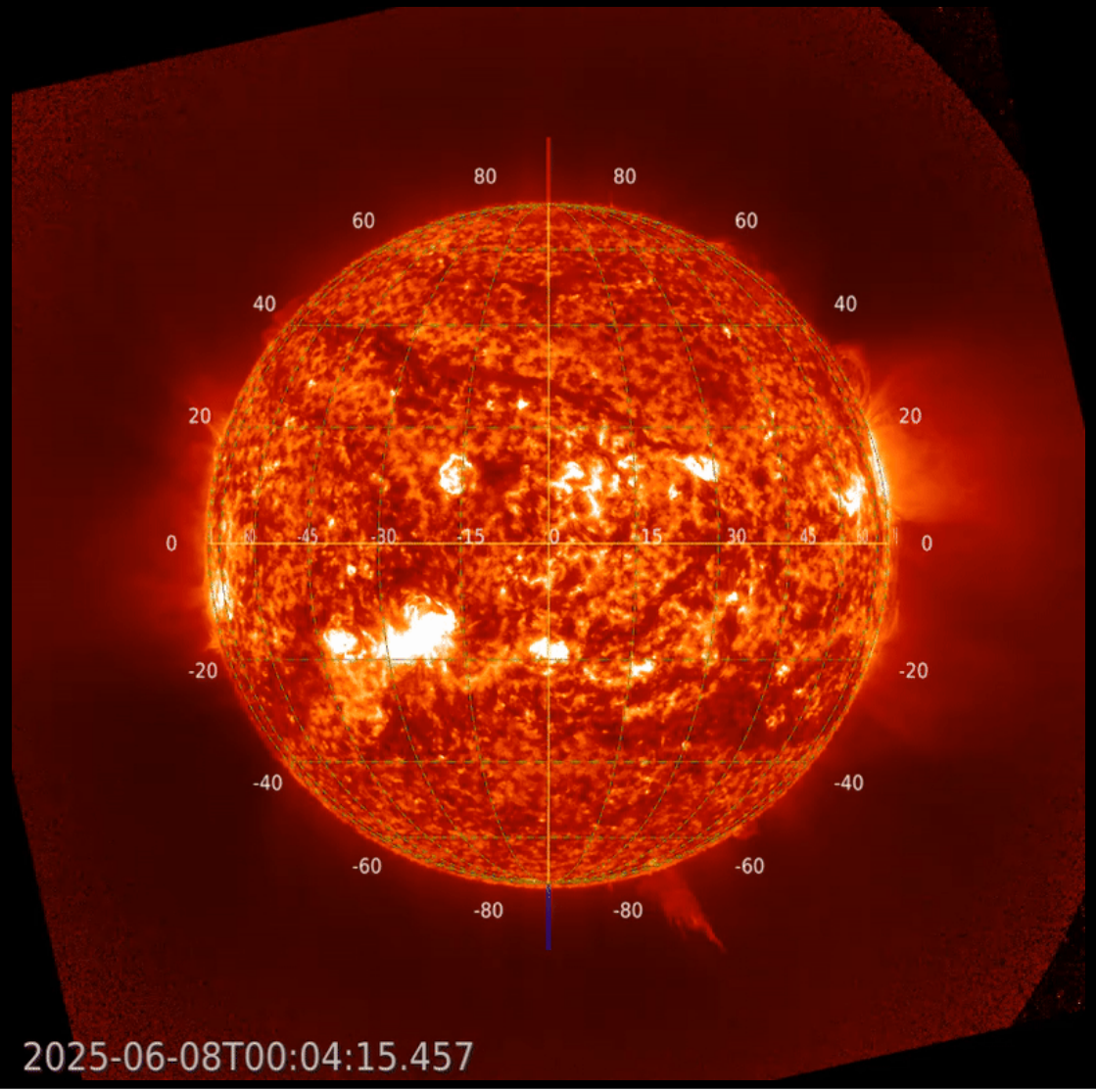


Filaments

GOES/SUVI 30.4 nm 2025-06-05

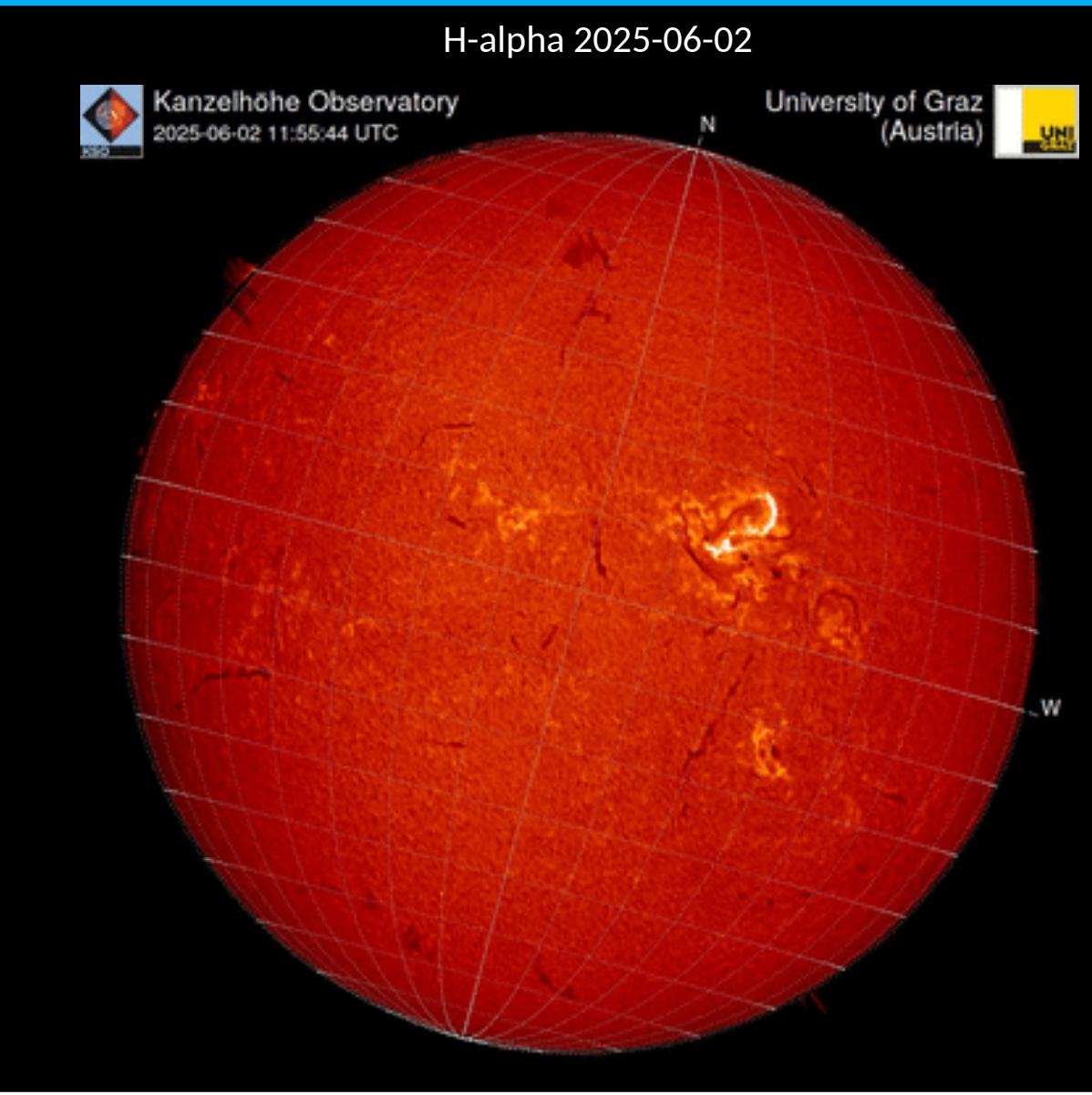


GOES/SUVI 30.4 nm 2025-06-08

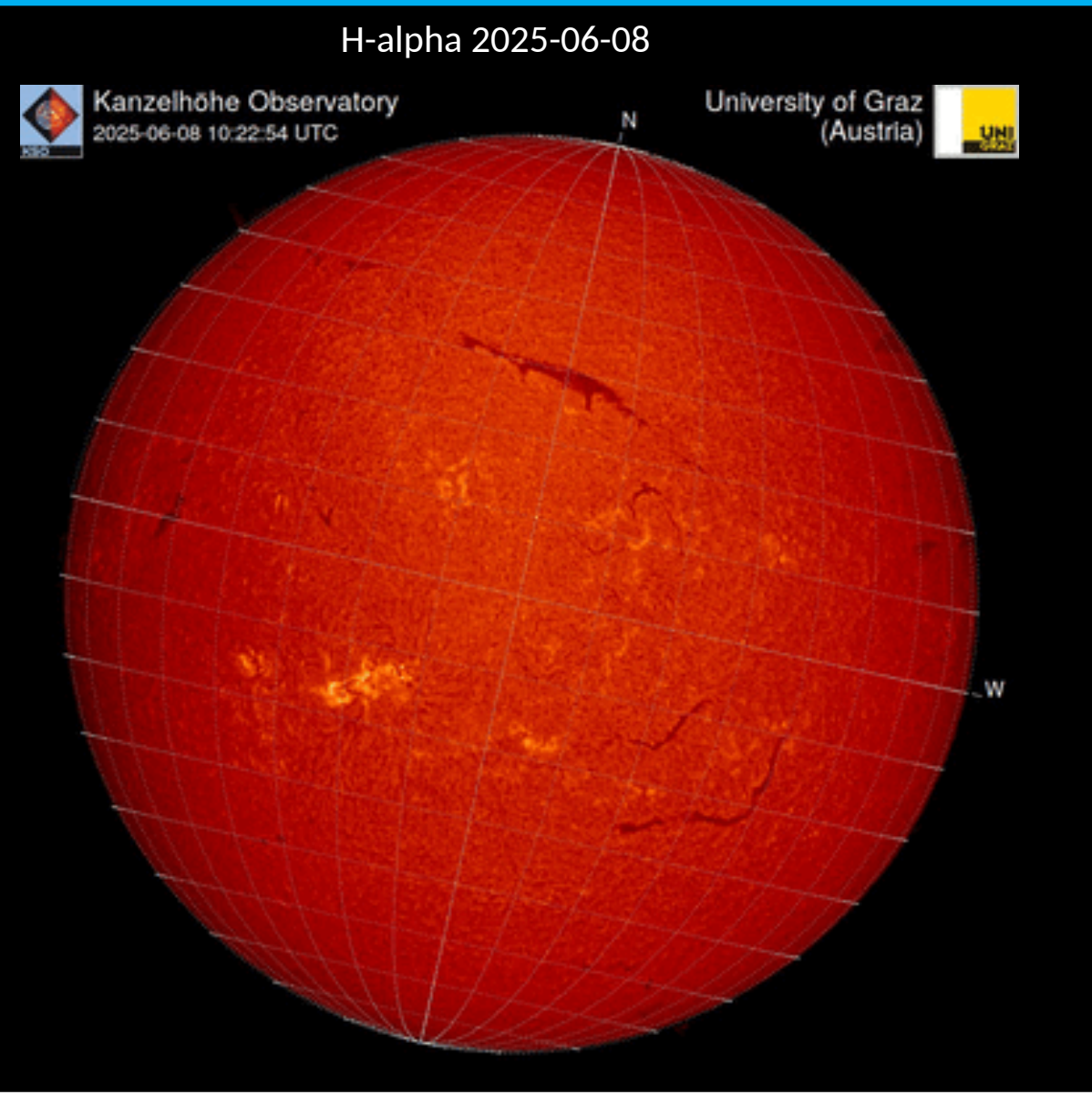


Filaments & Filament eruptions

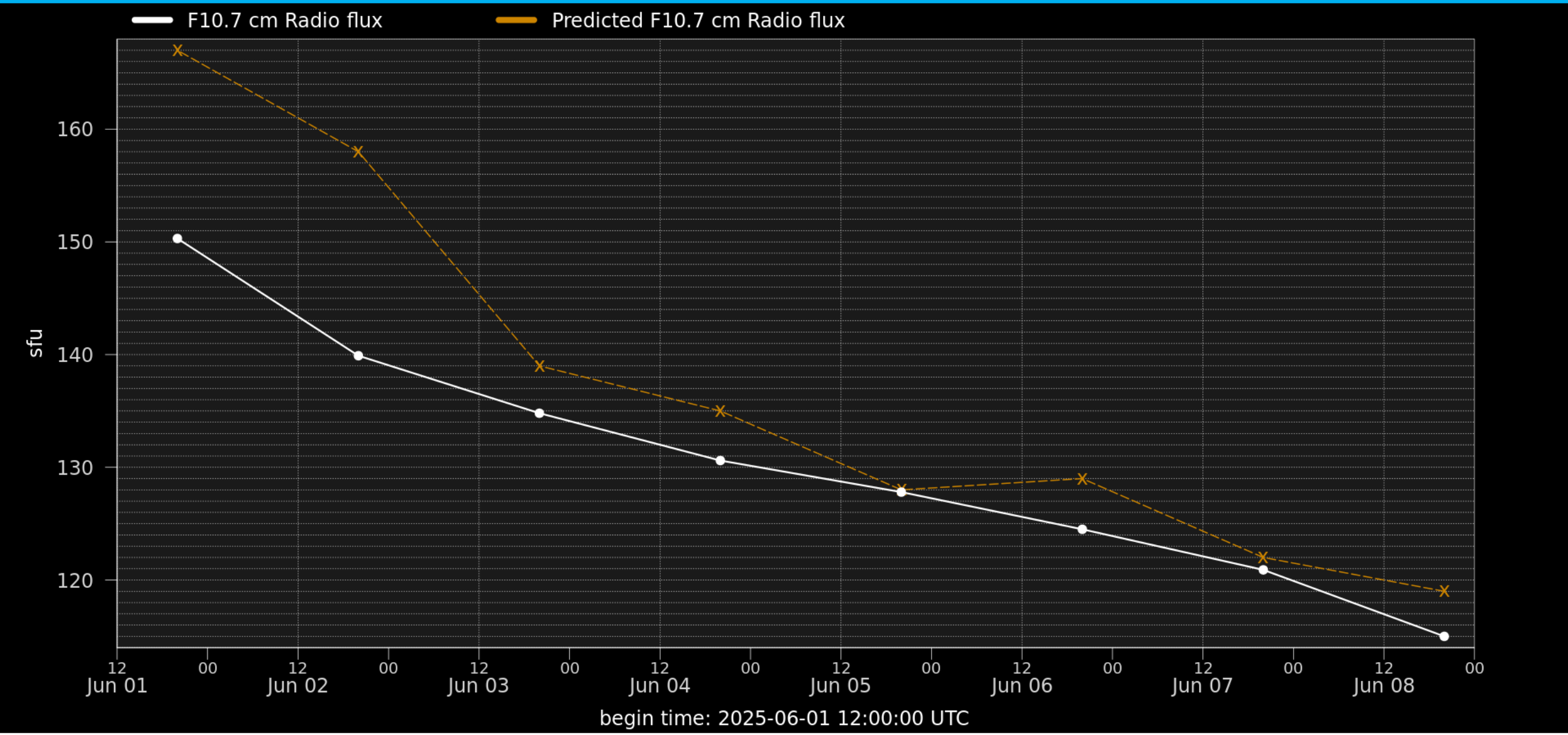
H-alpha 2025-06-02



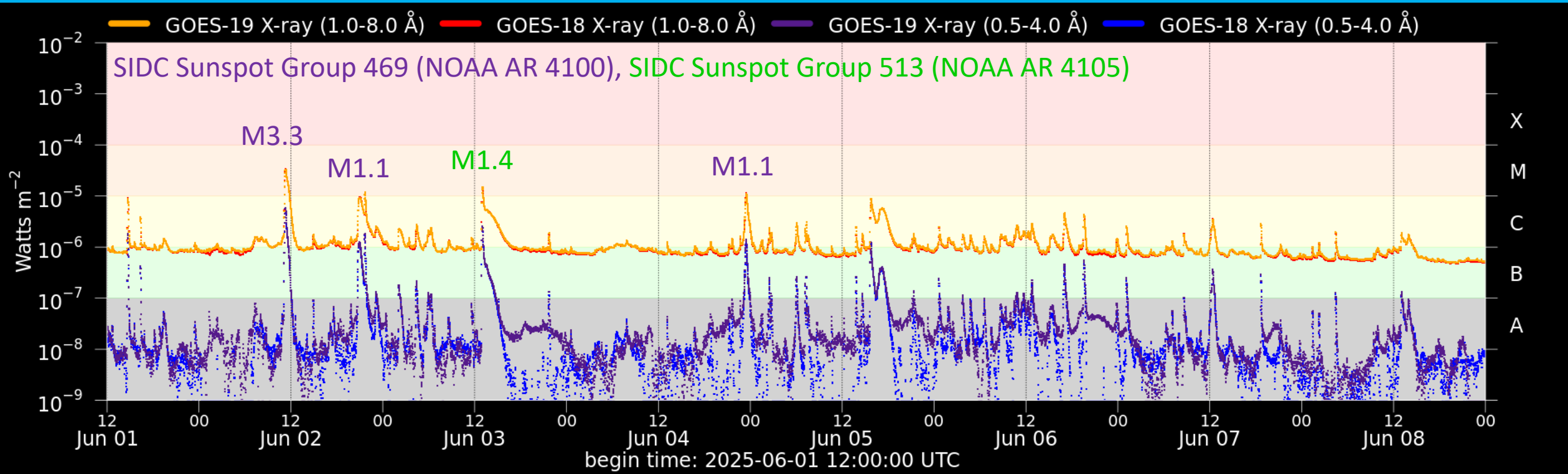
H-alpha 2025-06-08



Solar F10.7cm radio flux



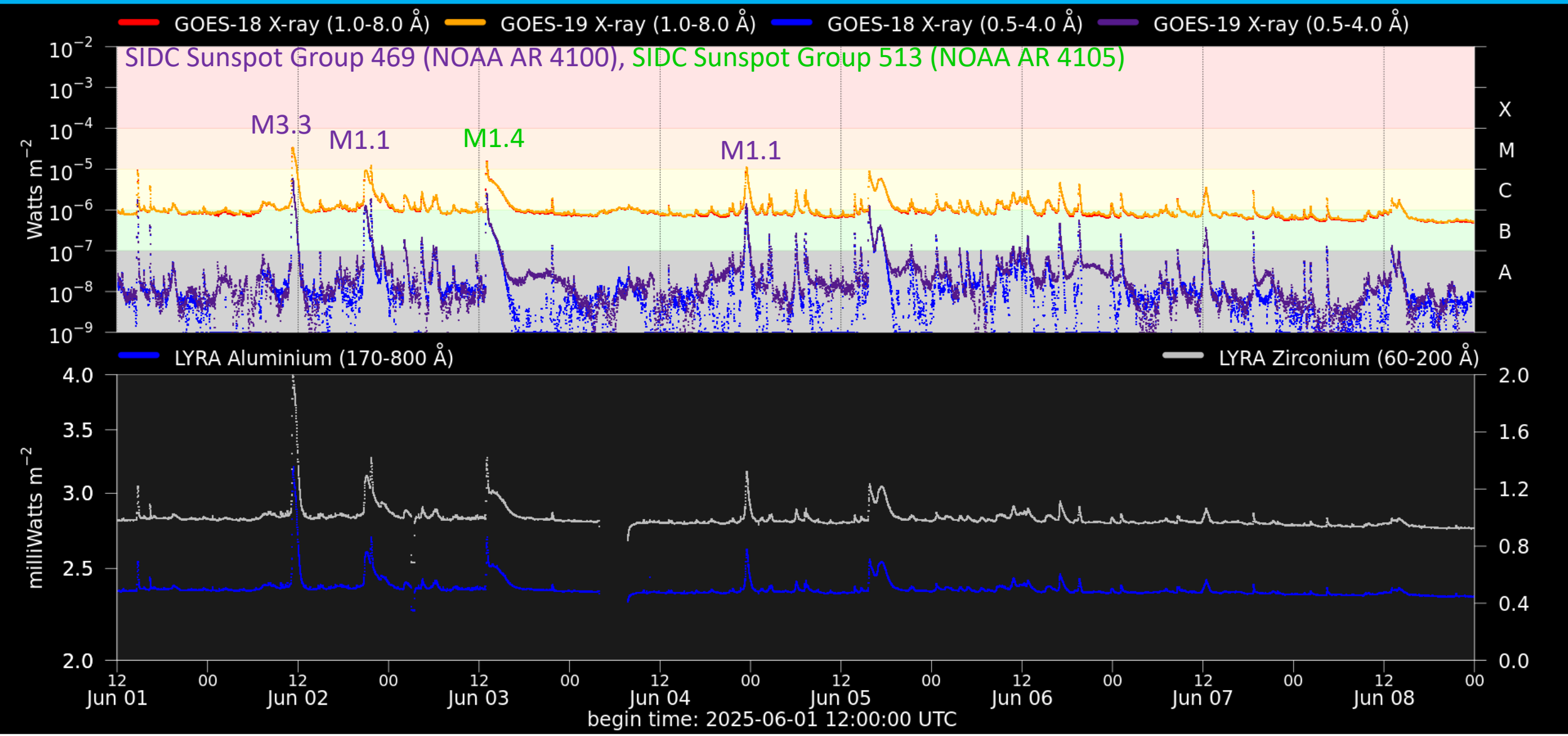
Flaring activity



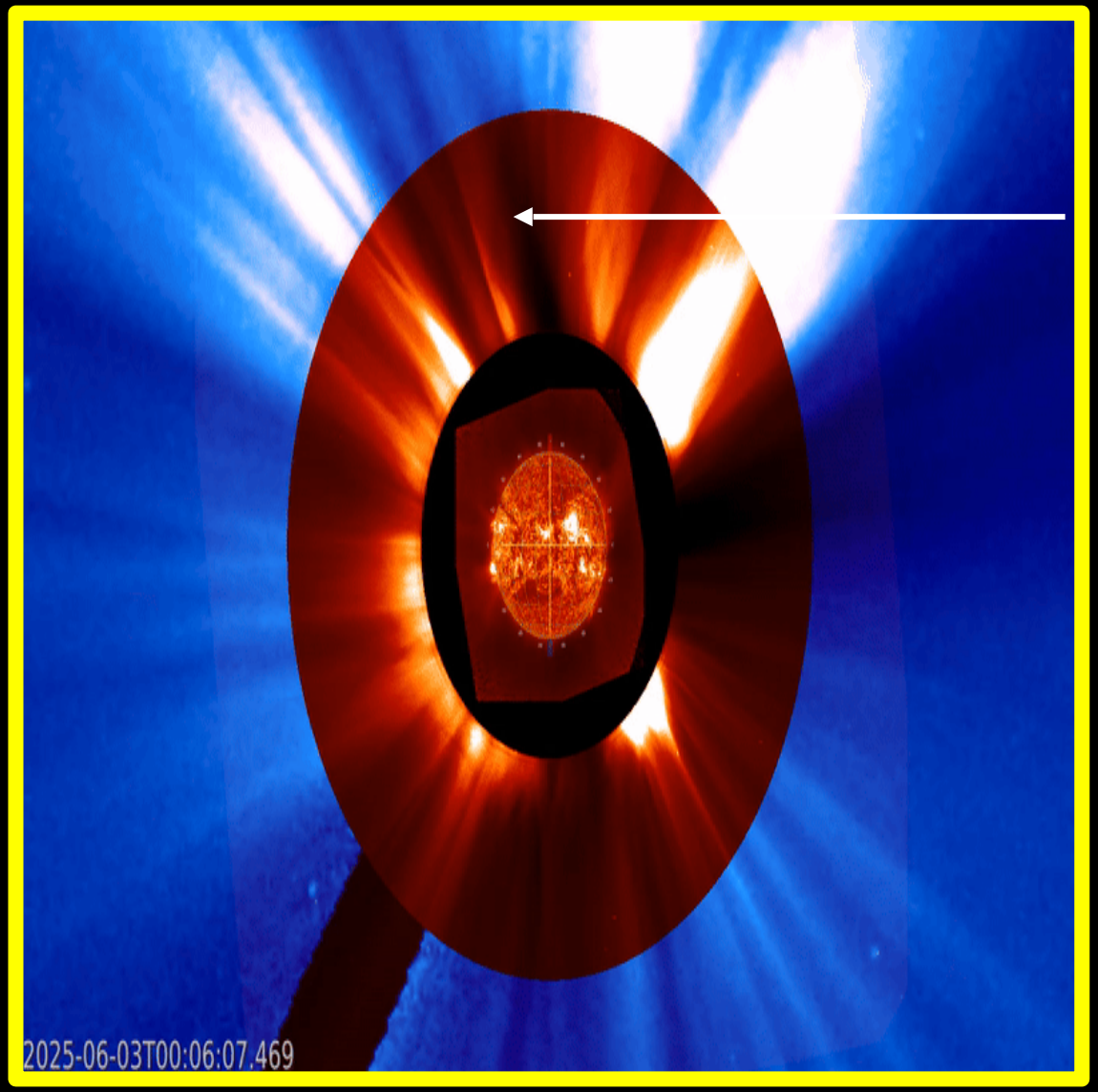
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2025-06-01	2025-06-02	2025-06-03	2025-06-04	2025-06-05	2025-06-06	2025-06-07	2025-06-08
Probability (%)	99|88|19	99|65|05	99|60|10	99|50|10	99|45|05	99|40|05	99|35|05	95|20|05
Observed (#)	03|01|00	10|01|00	01|01|00	11|01|00	15|00|00	10|00|00	06|00|00	01|00|00

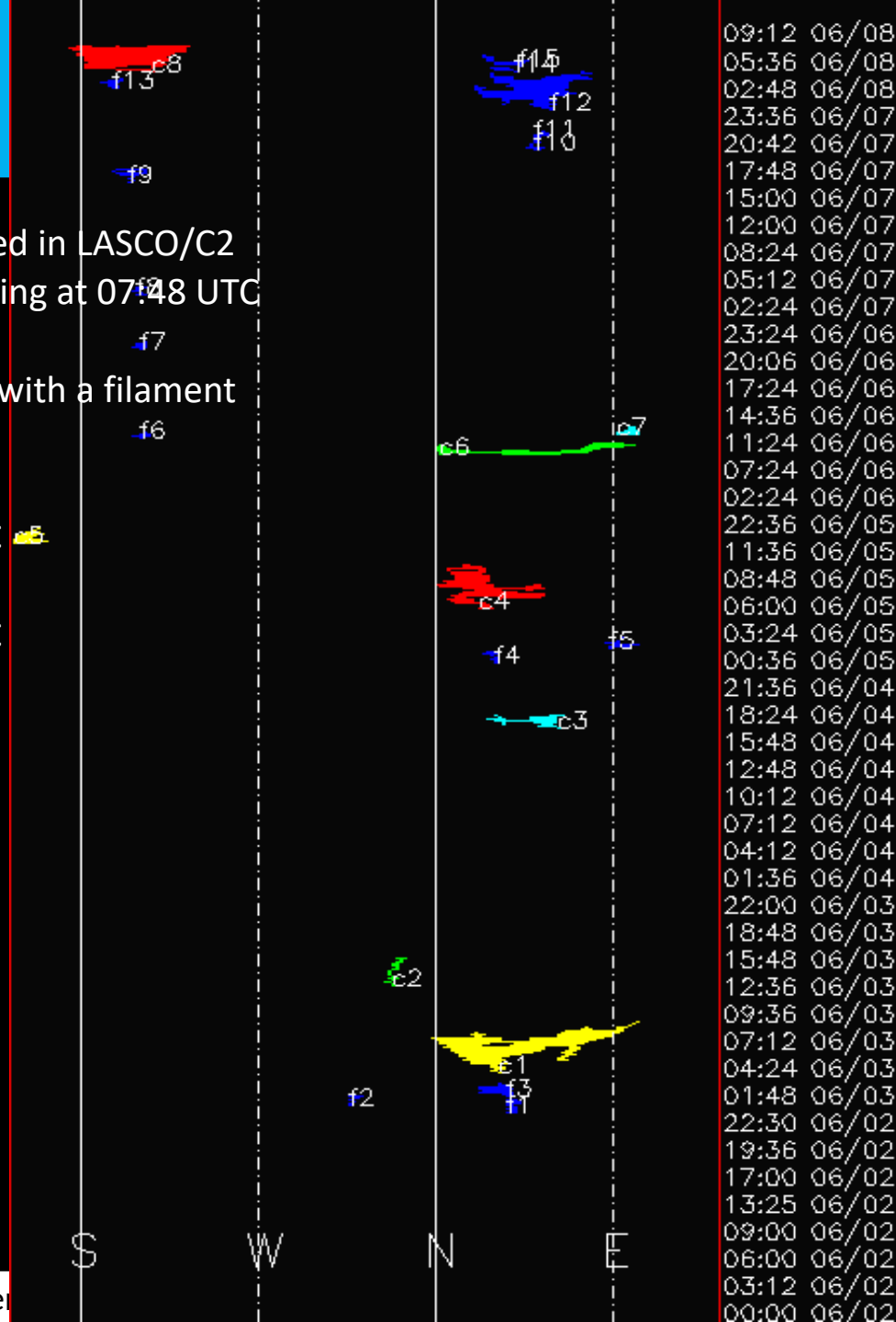
Solar X-Ray and UV flux



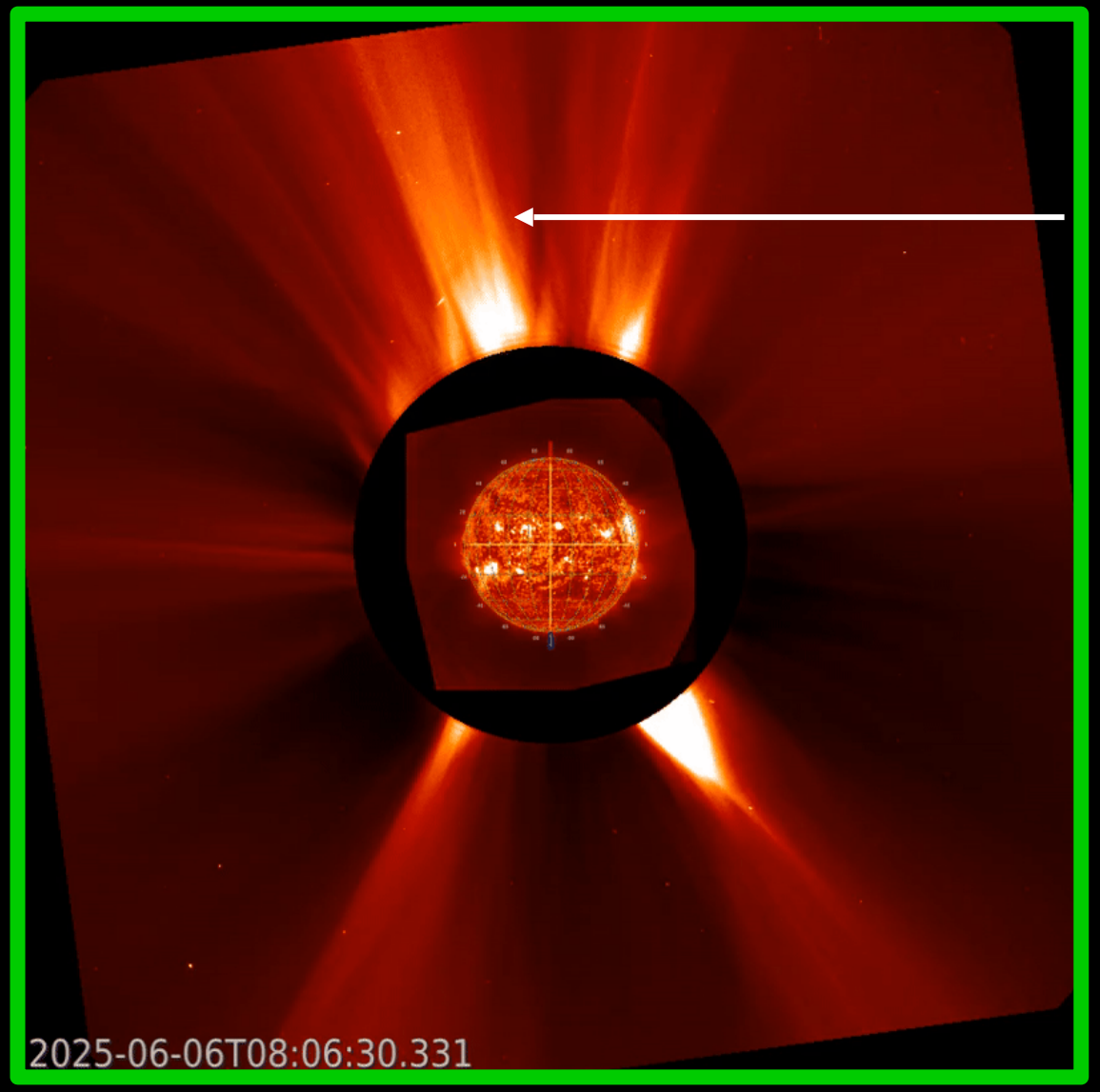
Coronal Mass Ejections



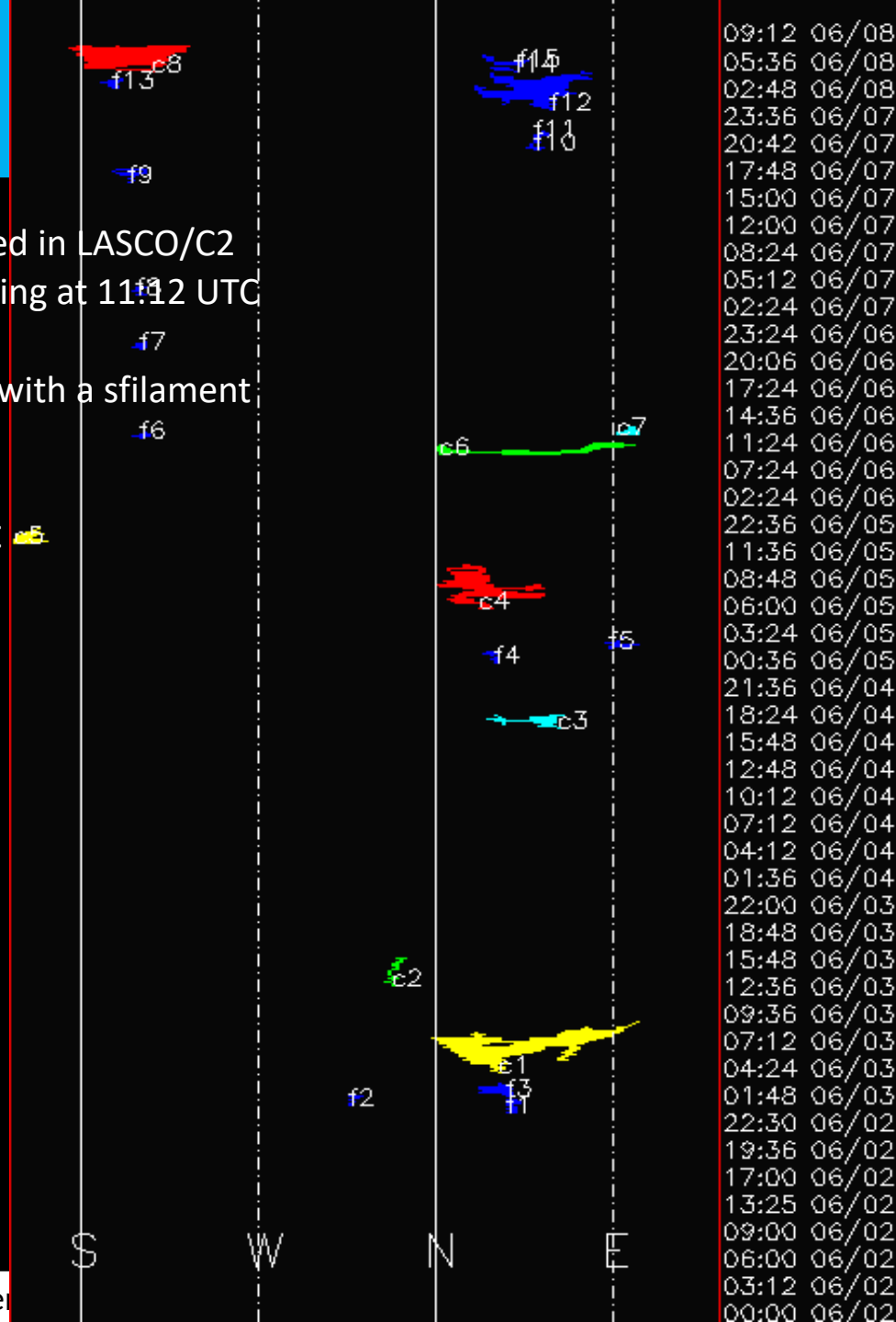
SIDC CME 514 (observed in LASCO/C2 coronagraph data starting at 07:48 UTC on June 03).
The CME is associated with a filament eruption.
Predicted arrival time:
2025-06-07T10:00 UTC
Observed arrival time:
2025-06-07T00:15 UTC



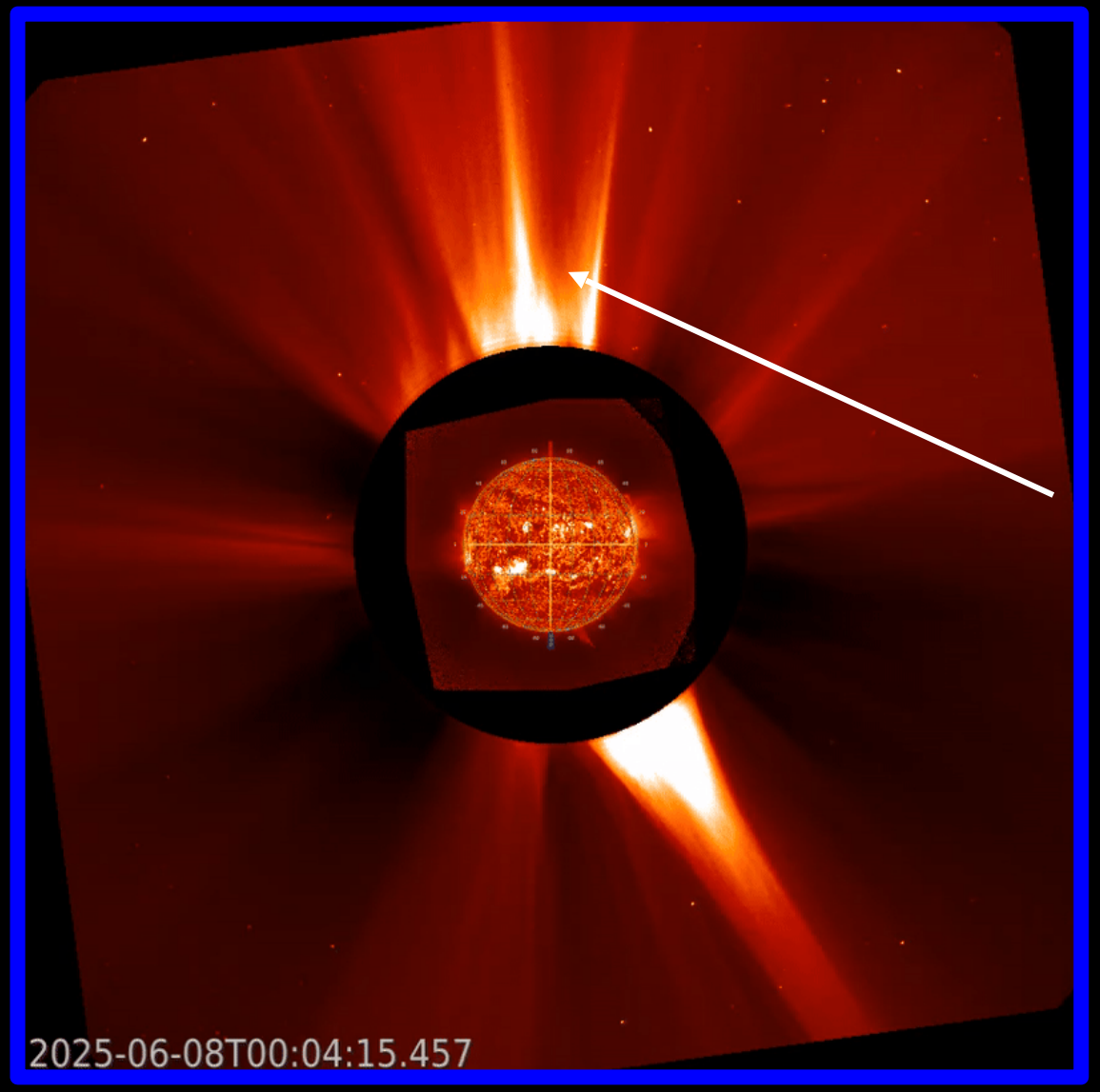
Coronal Mass Ejections



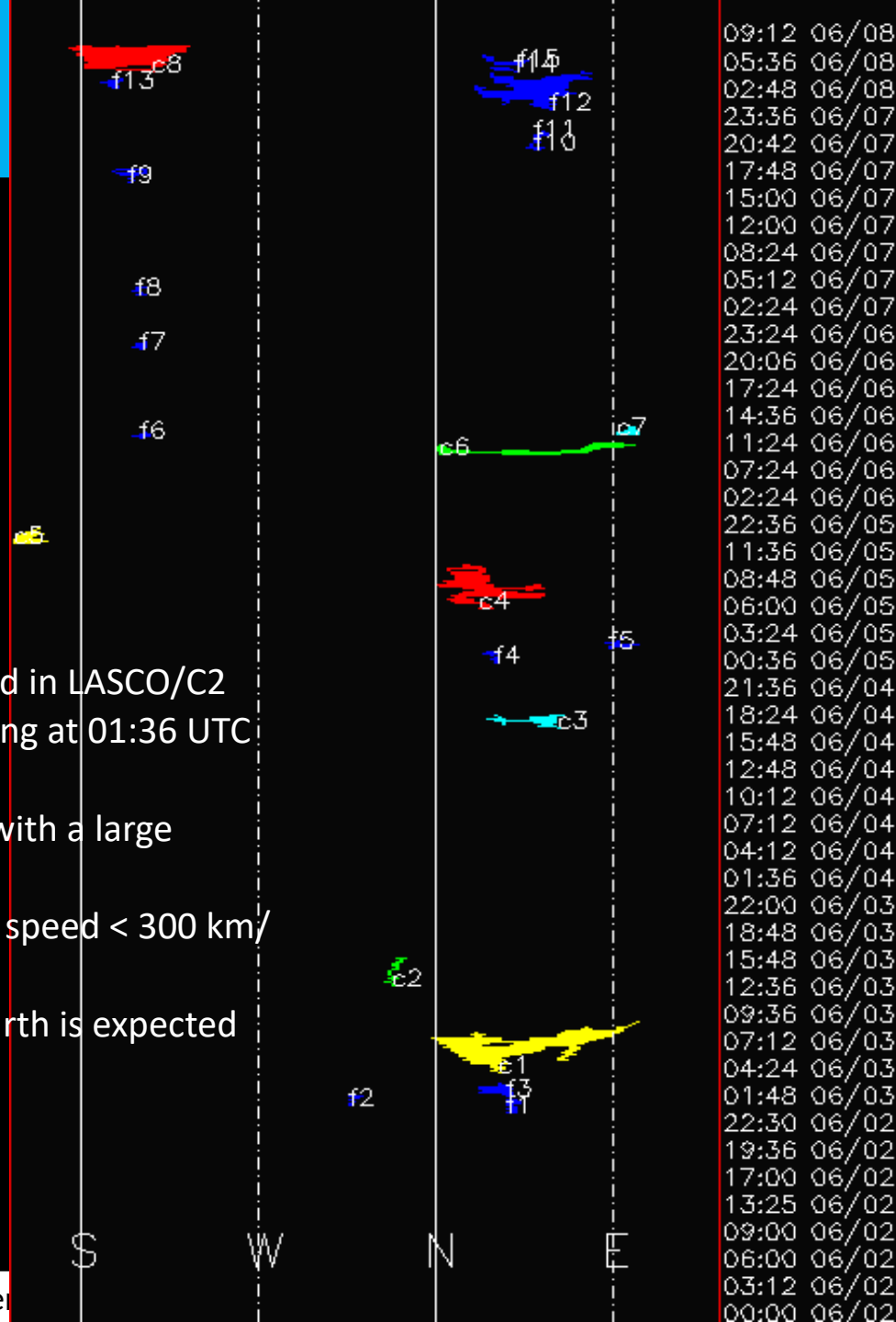
SIDC CME 515 (observed in LASCO/C2 coronagraph data starting at 11:12 UTC on June 06).
The CME is associated with a sfilament eruption.
Predicted arrival time:
2025-06-09T04:00 UTC



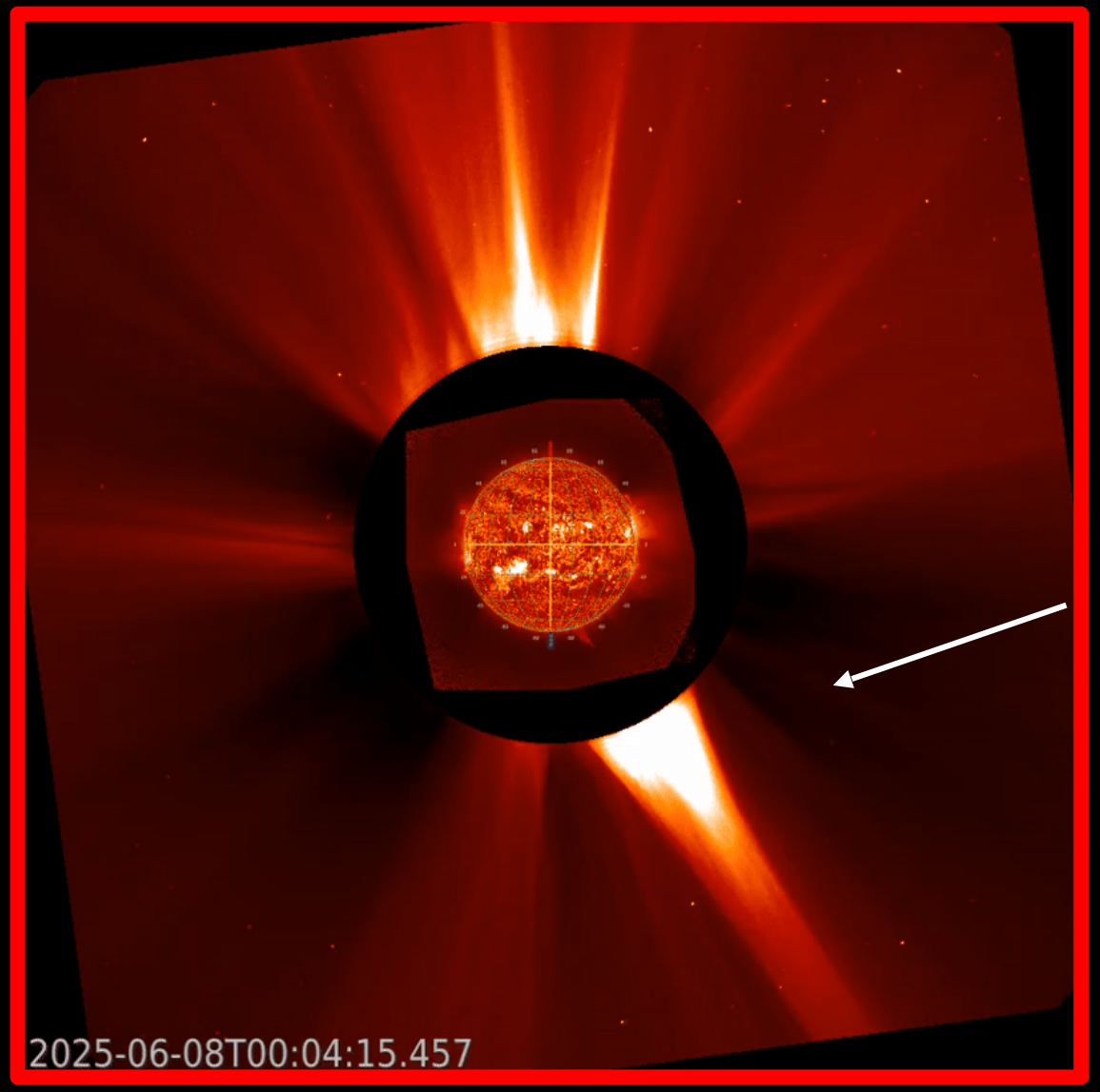
Coronal Mass Ejections



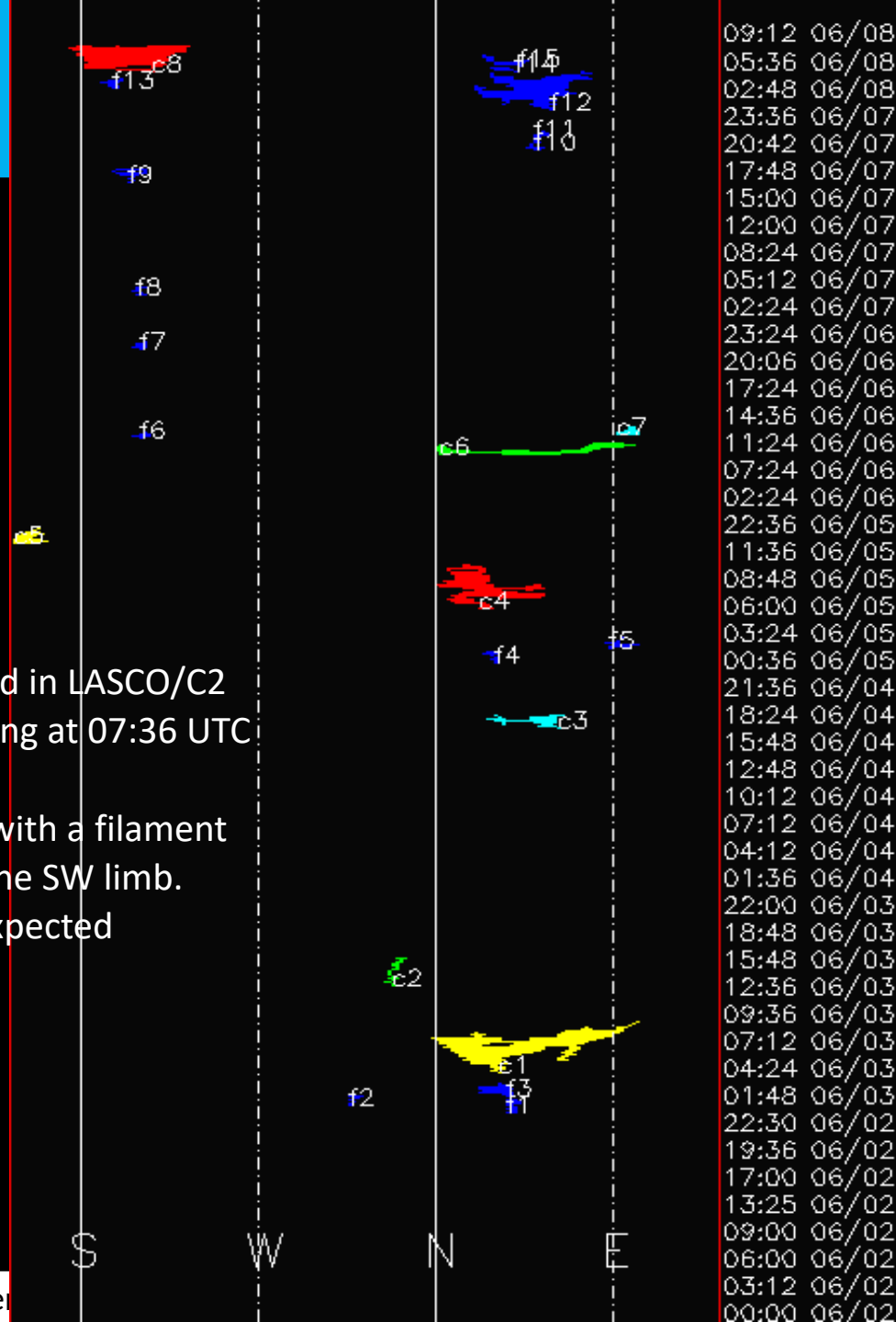
SIDC CME 516 (observed in LASCO/C2 coronagraph data starting at 01:36 UTC on June 08).
The CME is associated with a large dimming near N10E40.
CME is slow (estimated speed < 300 km/s)
No or little impact at Earth is expected



Coronal Mass Ejections



SIDC CME 517 (observed in LASCO/C2 coronagraph data starting at 07:36 UTC on June 08).
The CME is associated with a filament eruption from behind the SW limb.
No impact at Earth is expected



Solar Wind and

Geomagnetic Activity

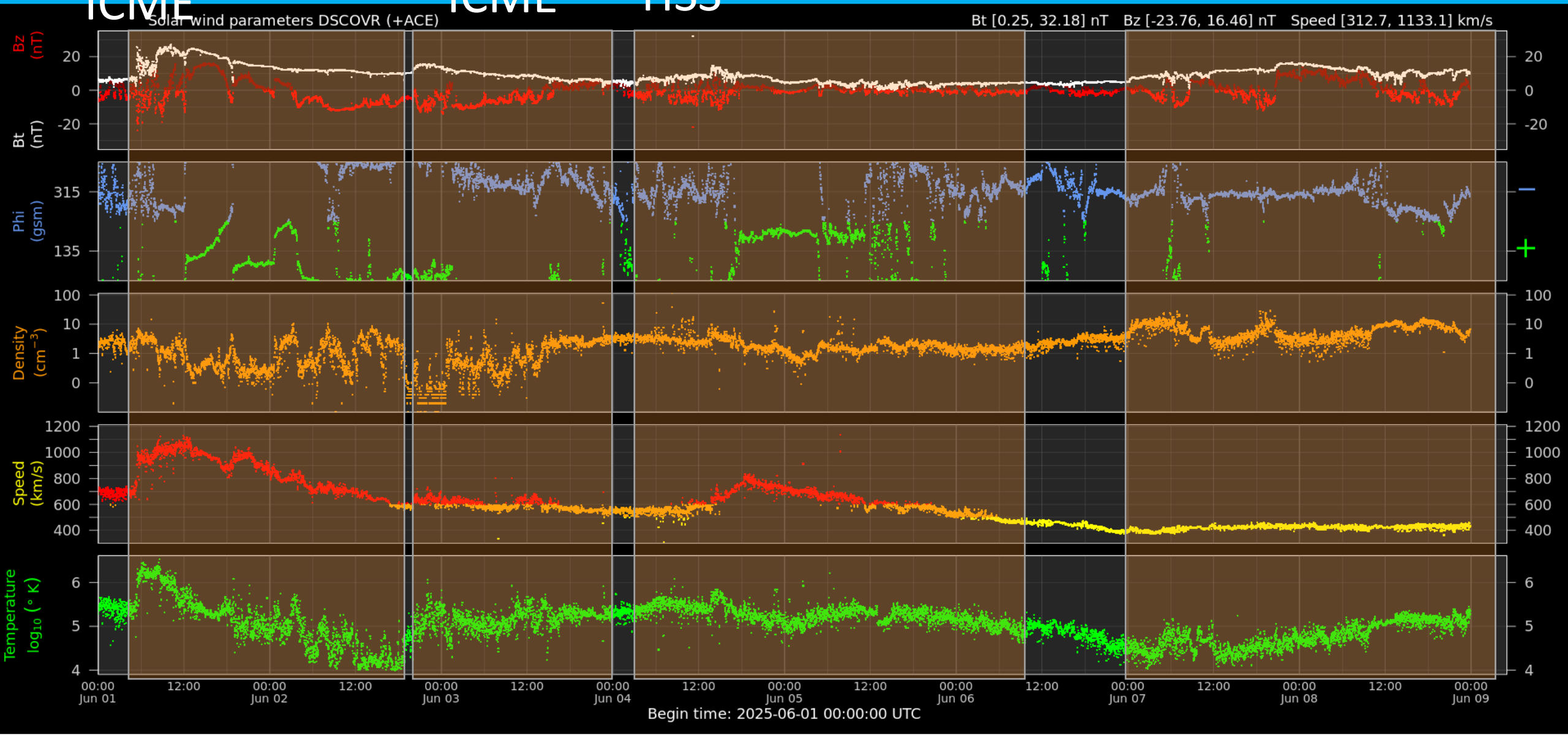


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Solar wind parameters

ICME ICME HSS ICME + HSS?



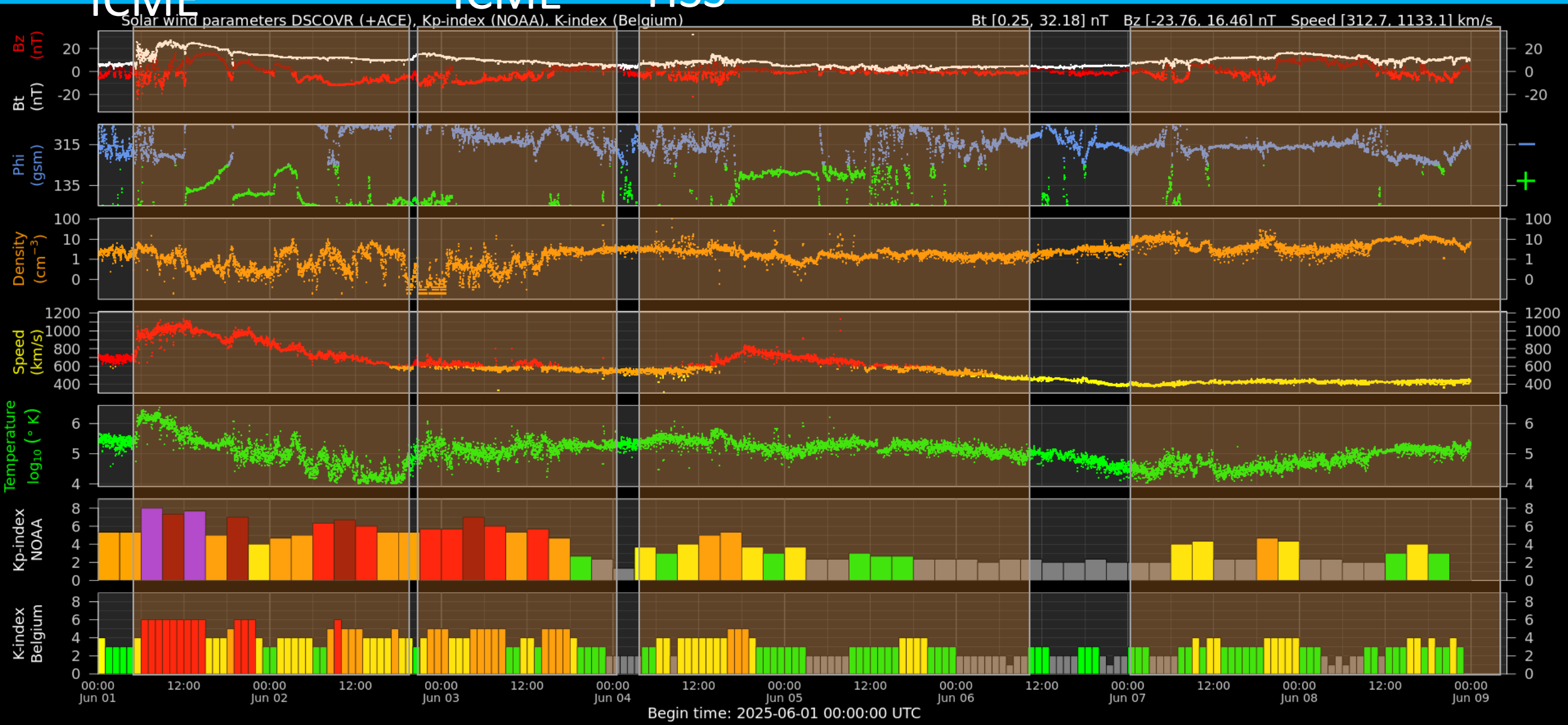
Solar wind parameters & K-indices

ICME

ICME

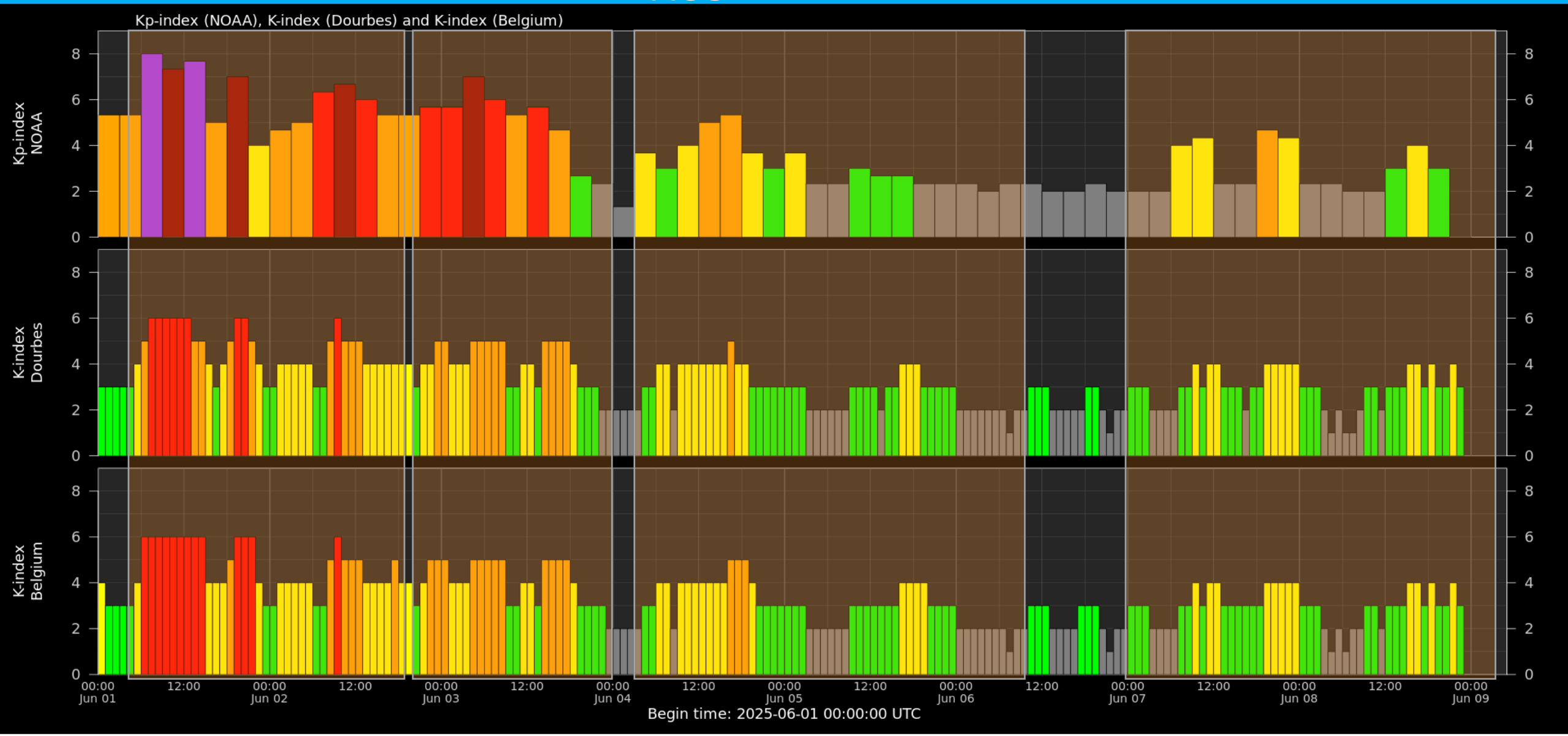
HSS

ICME + HSS?



Geomagnetic activity (K-indexes)

ICME ICME HSS ICME + HSS?



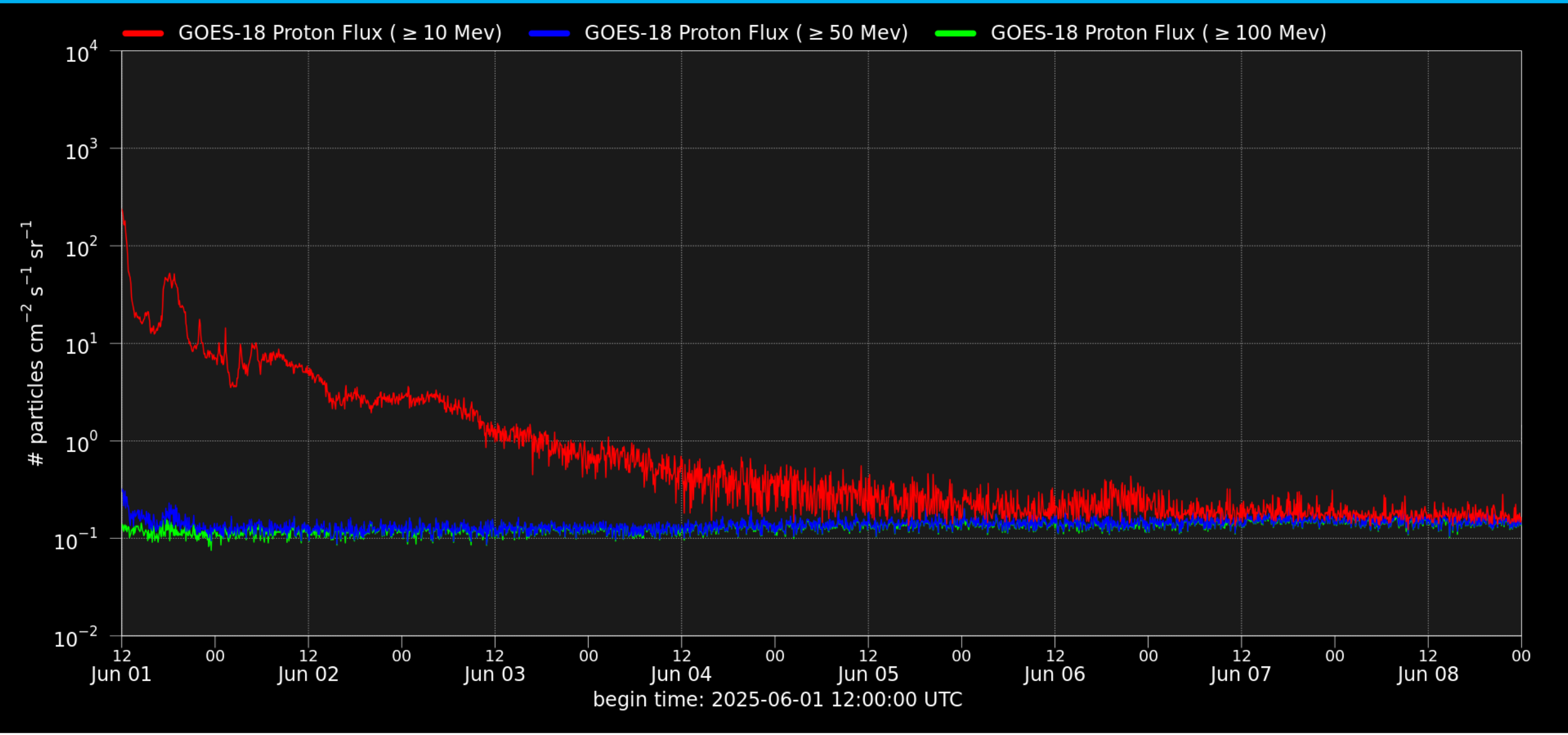
Energetic Particles



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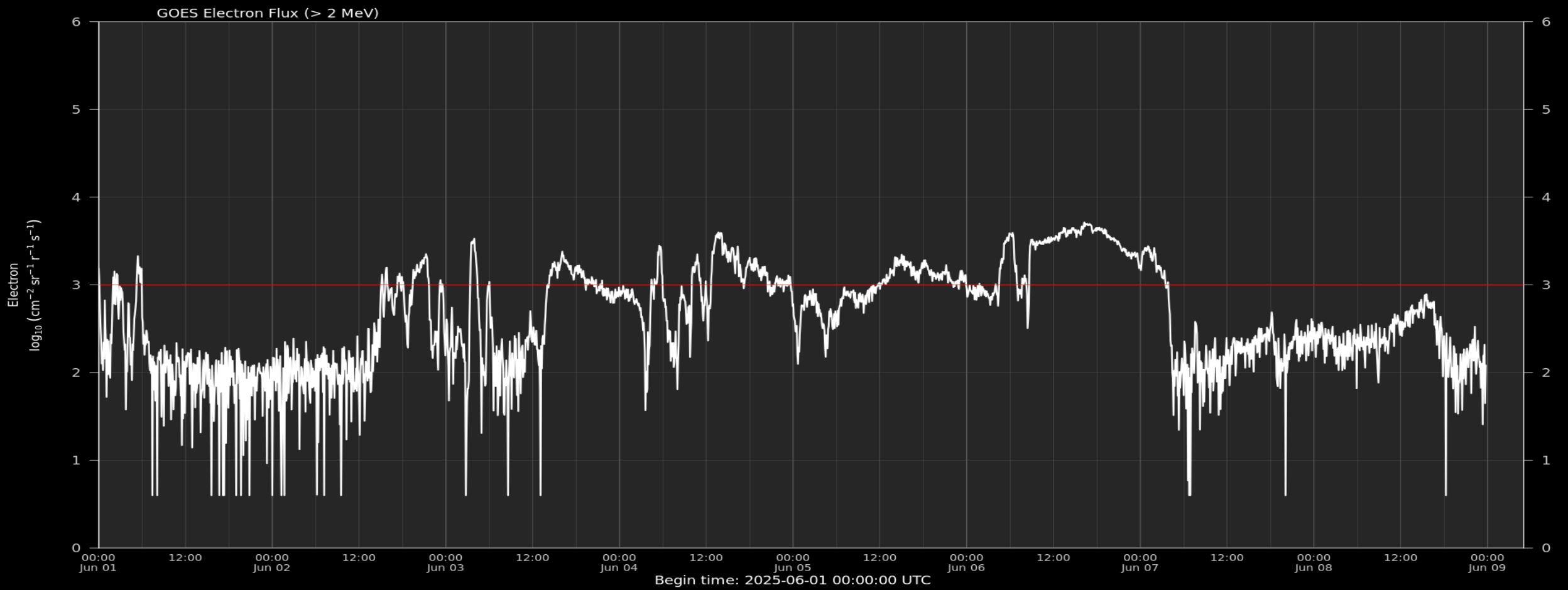
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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

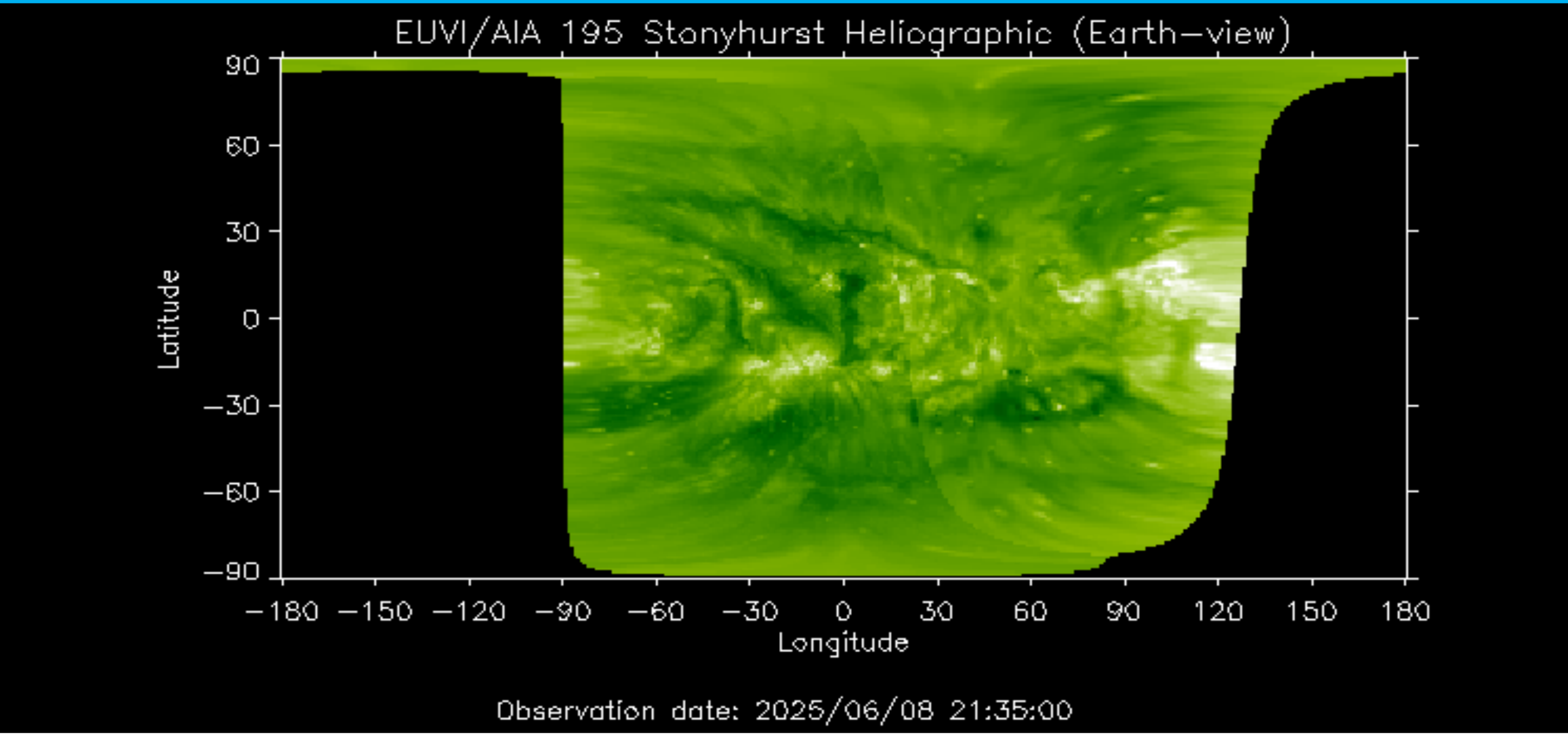


Outlook

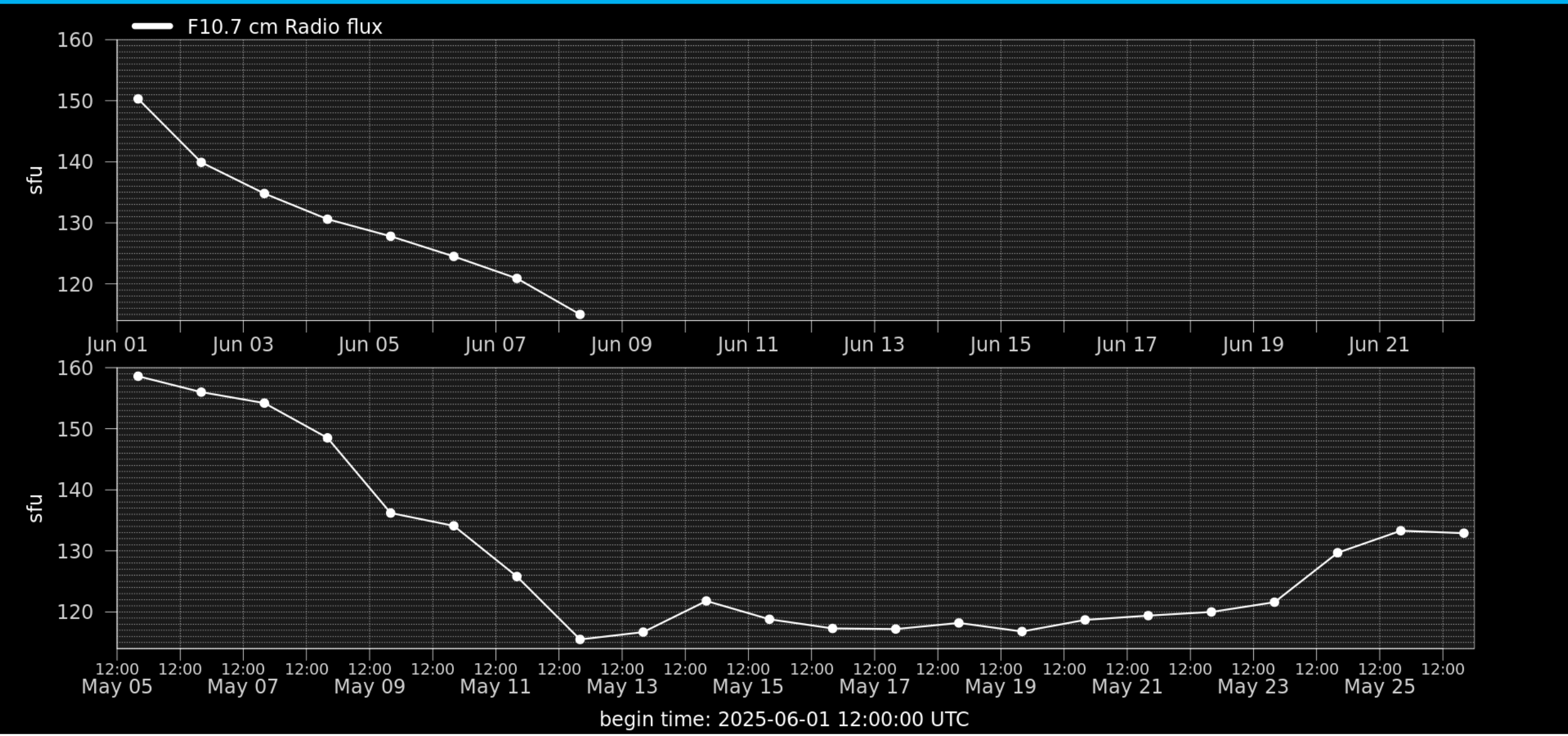
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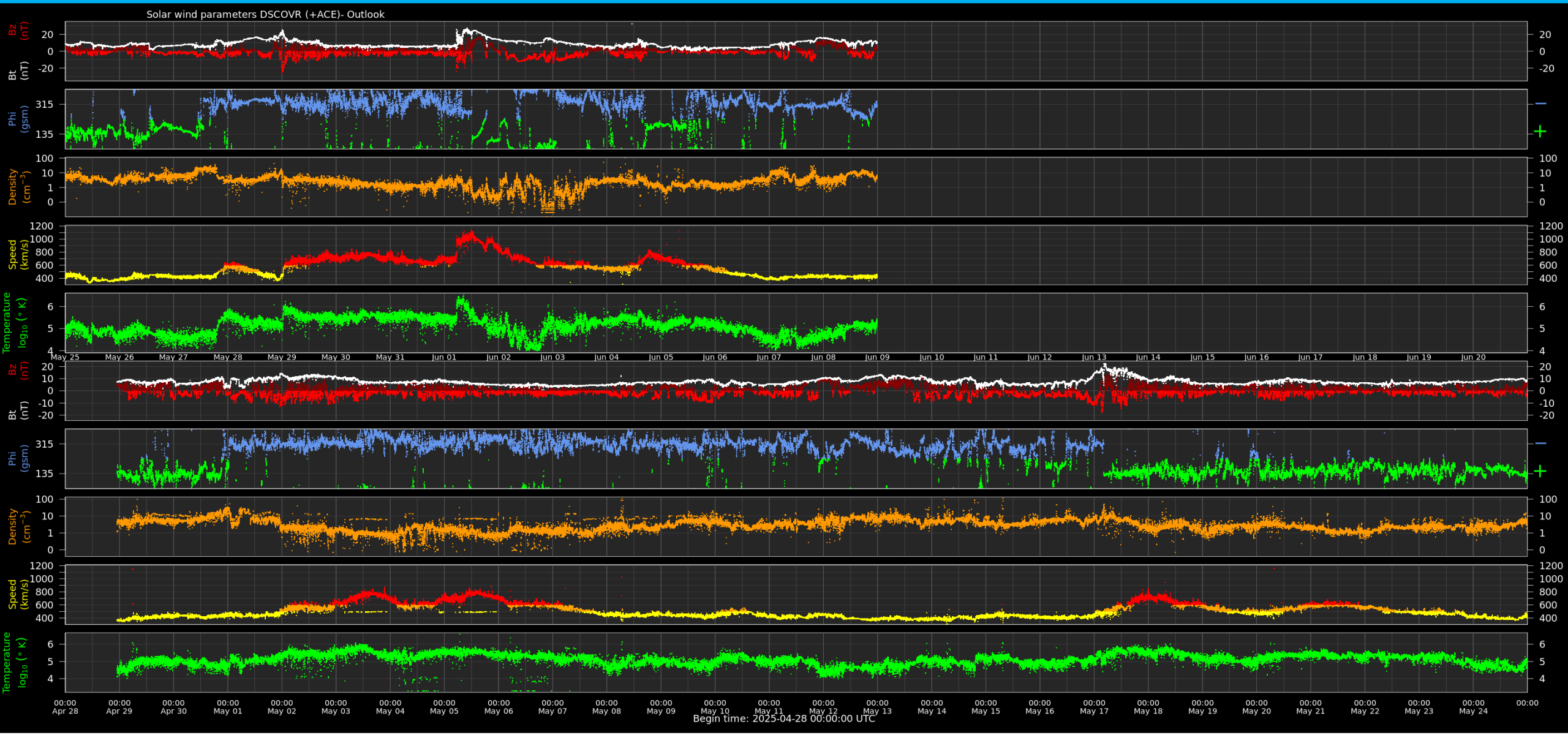
Outlook: Solar activity



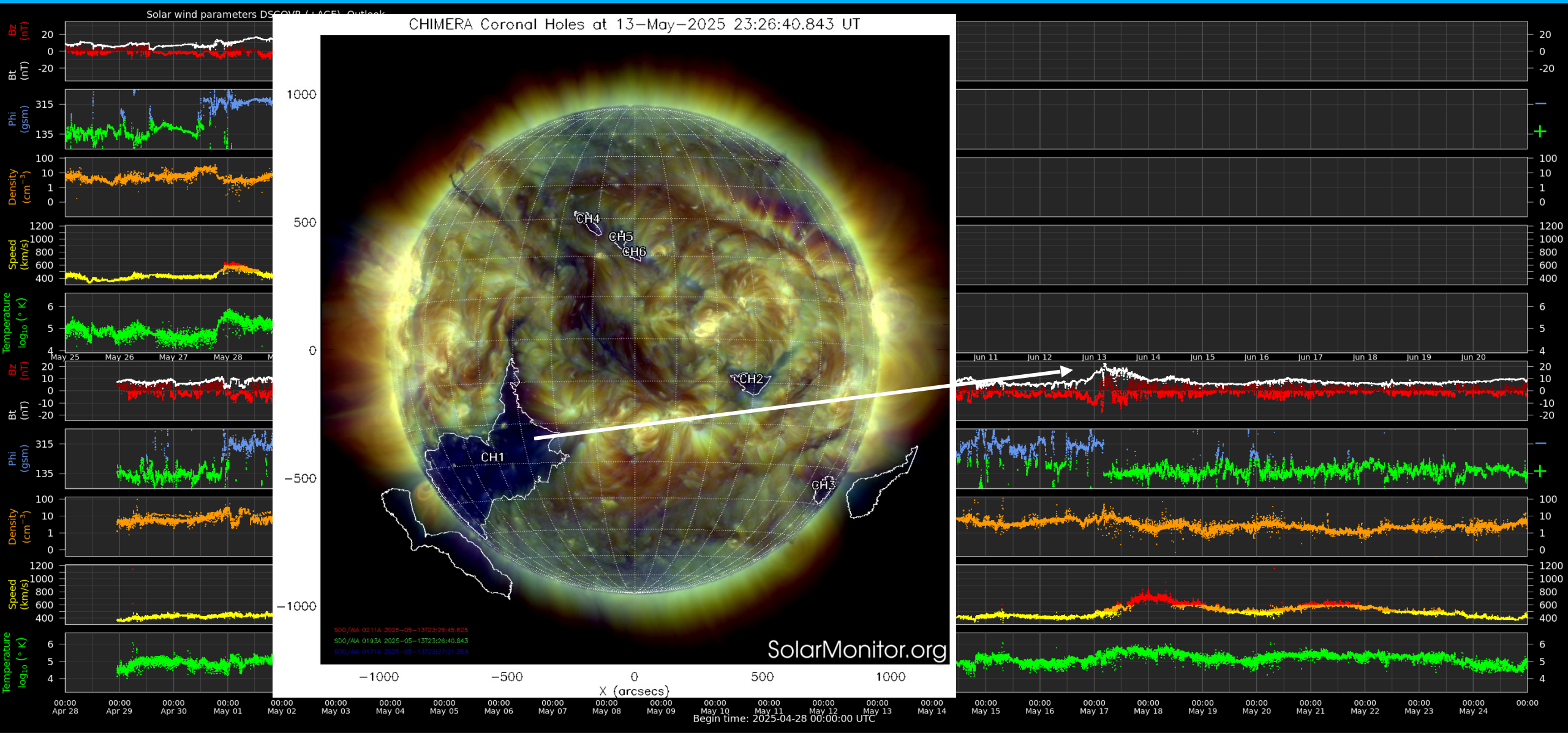
Outlook: Solar F10.7cm radio flux



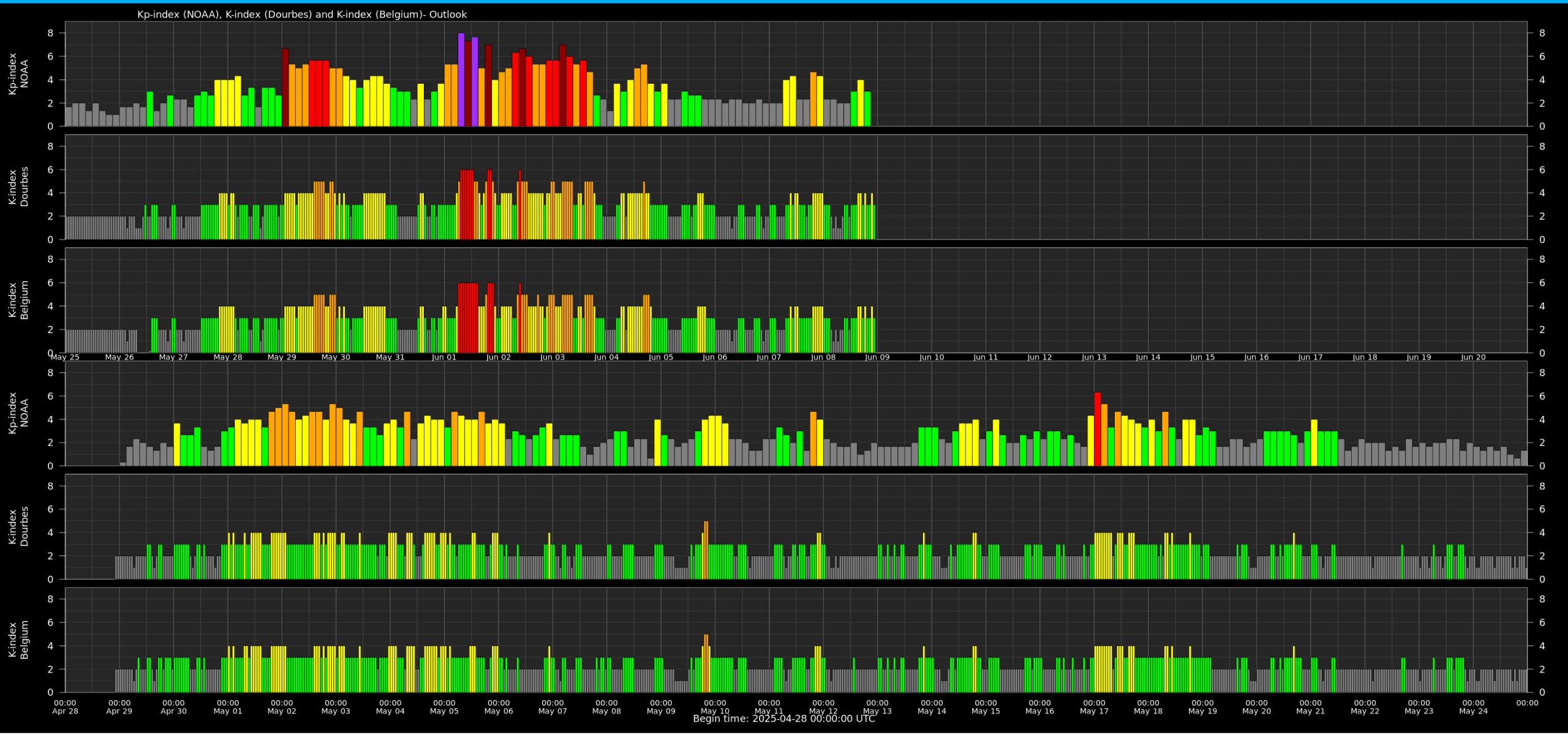
Outlook: Solar wind parameters



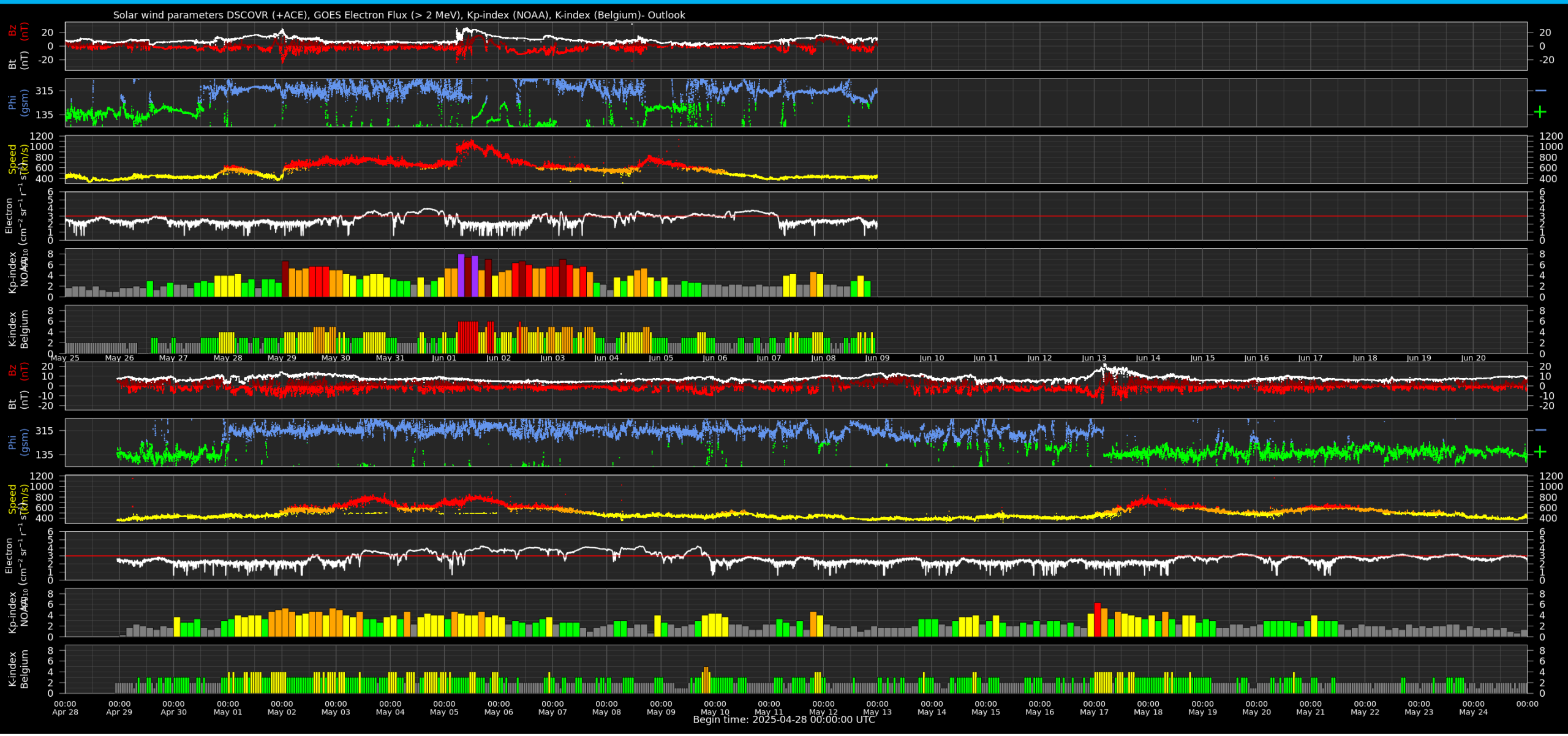
Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



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Pecasus related events

HF-COM/PSD, HF-COM/ PCA, GNSS

SIDC Space Weather Briefing

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