

SIDC Space Weather Briefing

25 June 2023-02 July 2023

de Patoul Judith & the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2023-06-25 12:00 to 2023-07-02 23:59

Active regions	NOAA Active Region AR-3354 & NOAA Active Region AR-3359
Flares	# C-class flare: 50 # M-class flare: 6 # X-class flare: 1
Coronal Holes	Small equatorial coronal holes
CMEs	No clear Earth-directed Coronal Mass Ejection

Proton flux	At background levels
Electron flux	Above the 1000 pfu threshold

Solar wind and geomagnetic conditions

ICMEs	None
Solar wind conditions	B : 1.36 - 11.33 nT //Bz: -9.48 nT to 6.35 nT // Speed: 392.6 - 559.0km/s
K-indices	max K-index (KBel): 4 max Kp-index (NOAA): 4

All Quiet Alert: OFF for the week

Solar Activity

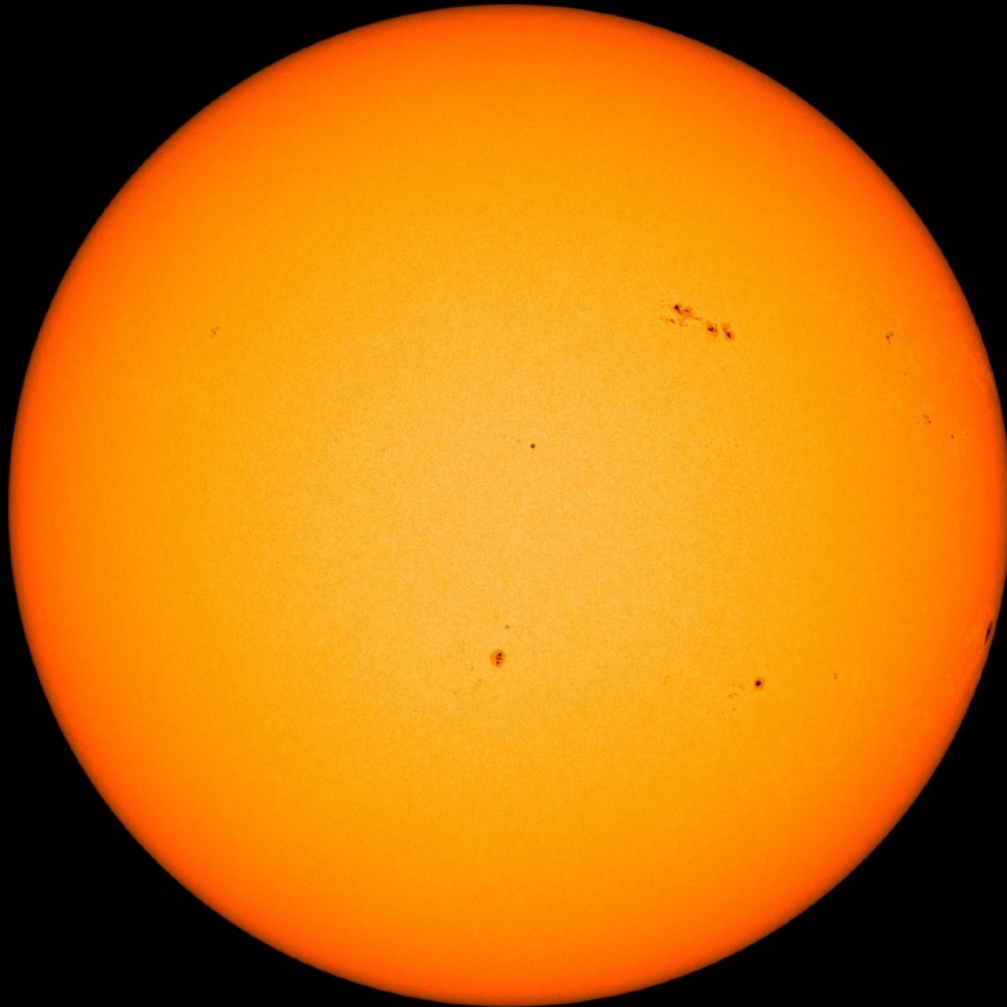


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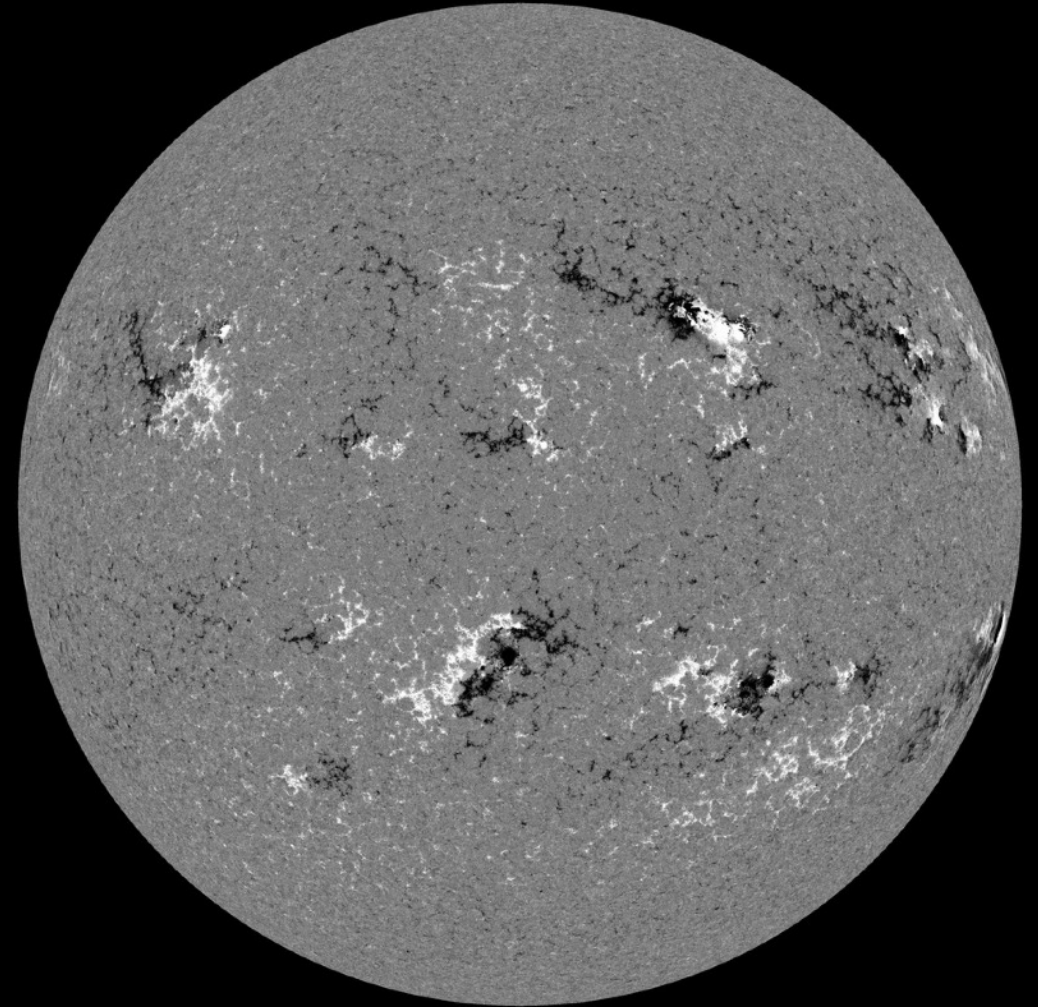
Solar active regions

SDO/HMI White Light 2023-06-25



SDO/HMI Quick-Look Continuum: 20230625_114500

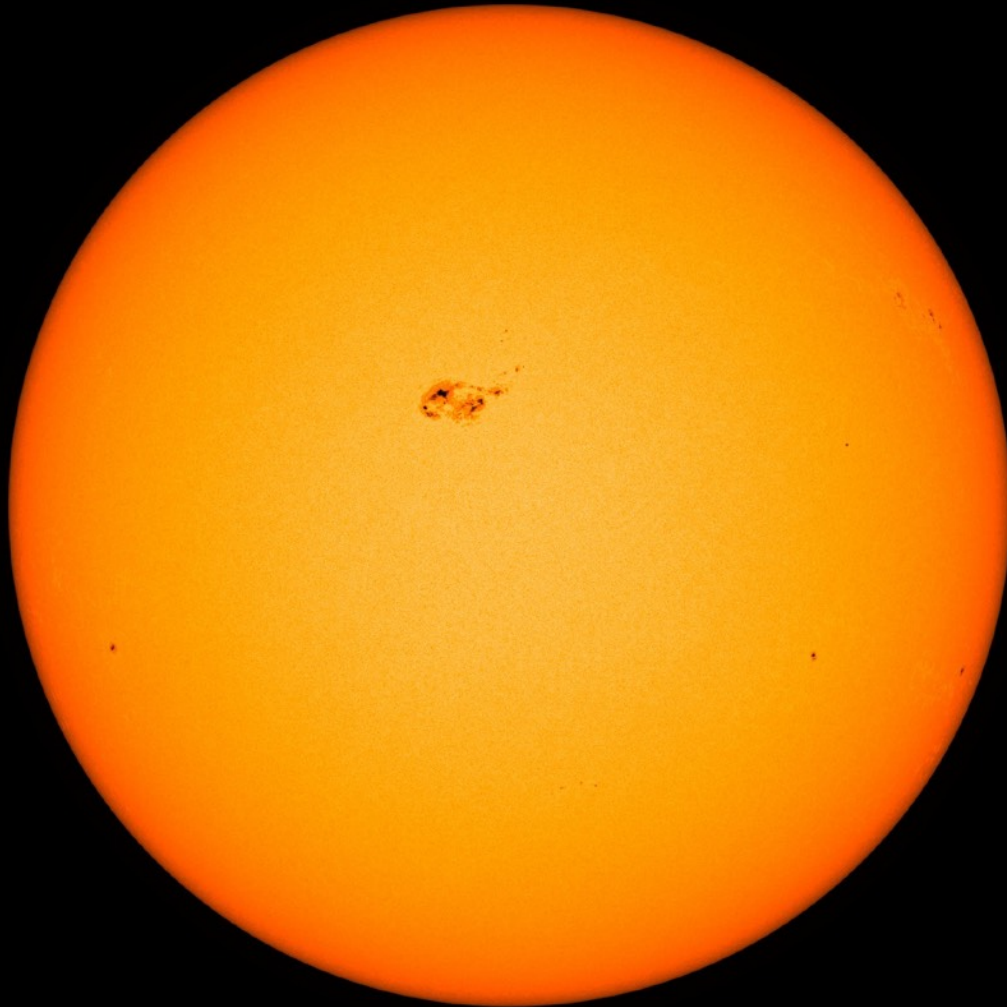
SDO/HMI Magnetogram 2023-06-25



SDO/HMI Quick-Look Magnetogram: 20230625_114500

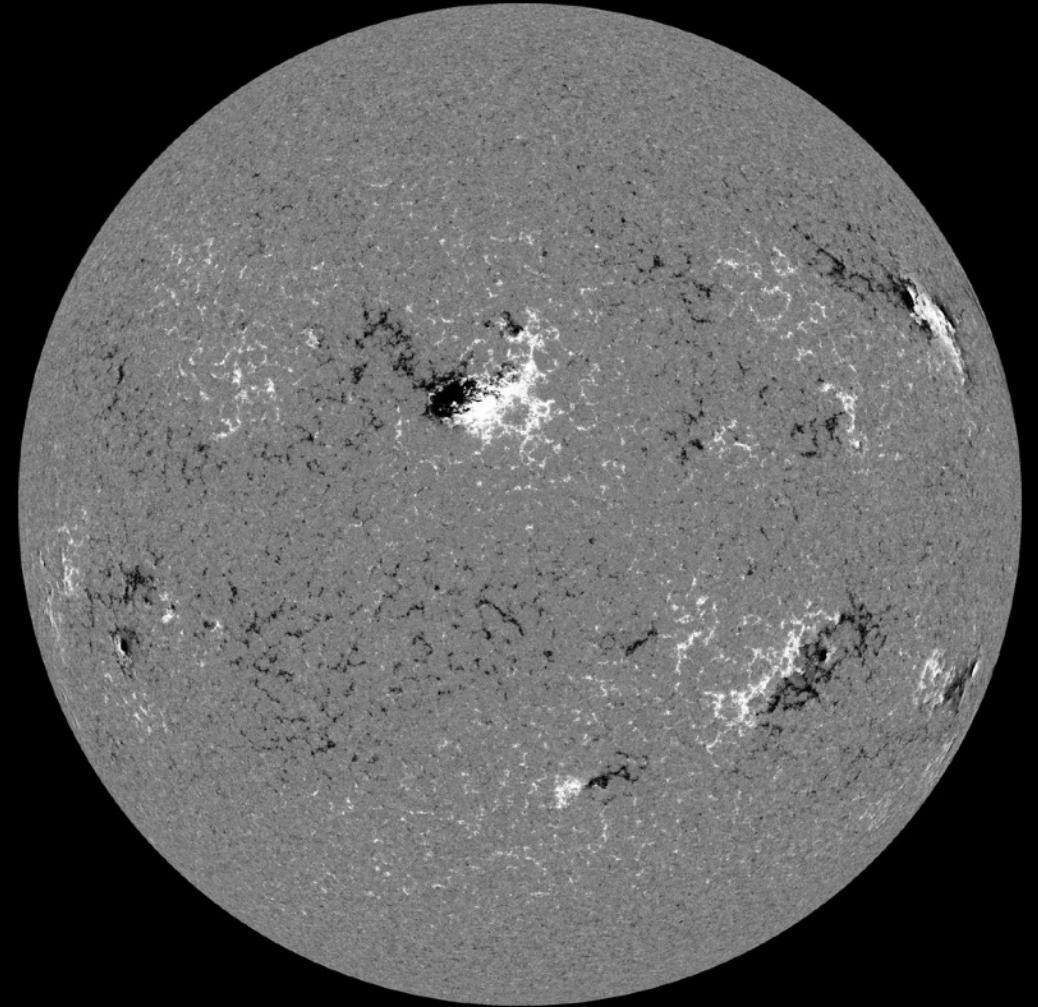
Solar active regions

SDO/HMI White Light 2023-06-28



SDO/HMI Quick-Look Continuum: 20230628_114500

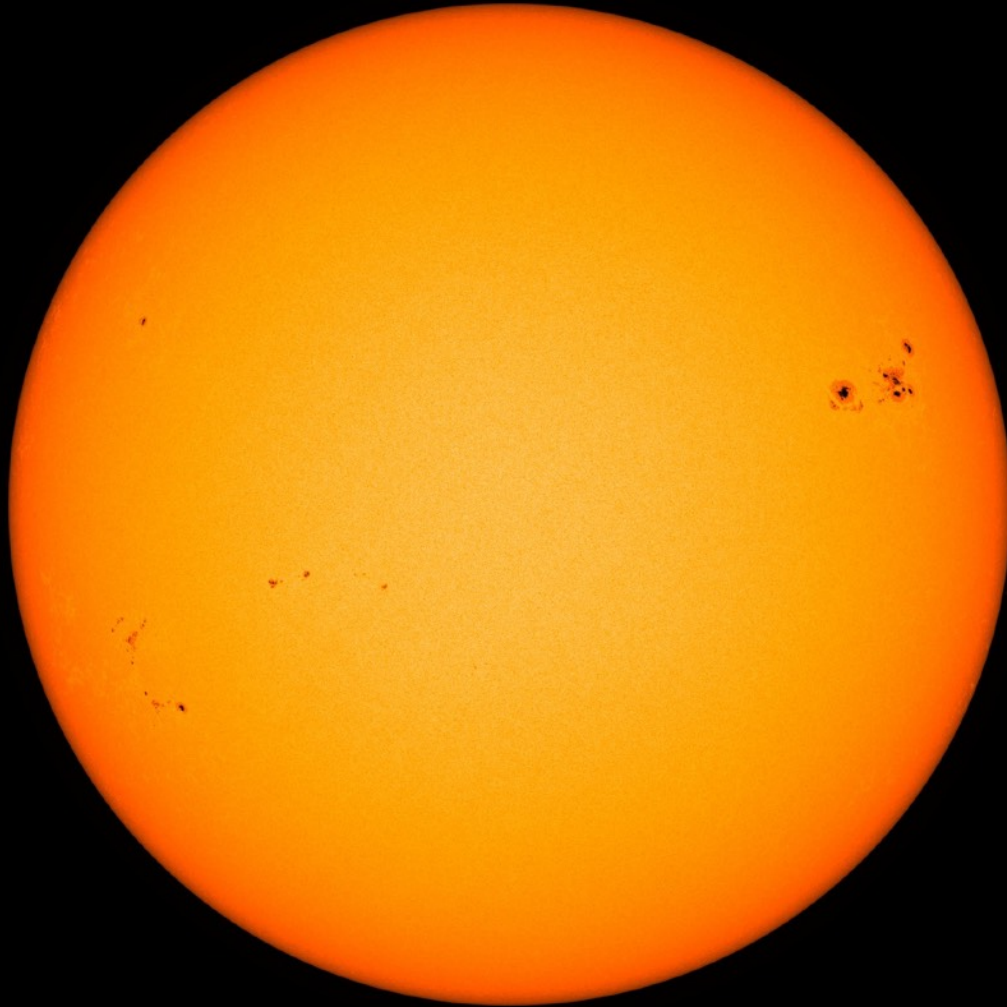
SDO/HMI Magnetogram 2023-06-28



SDO/HMI Quick-Look Magnetogram: 20230628_114500

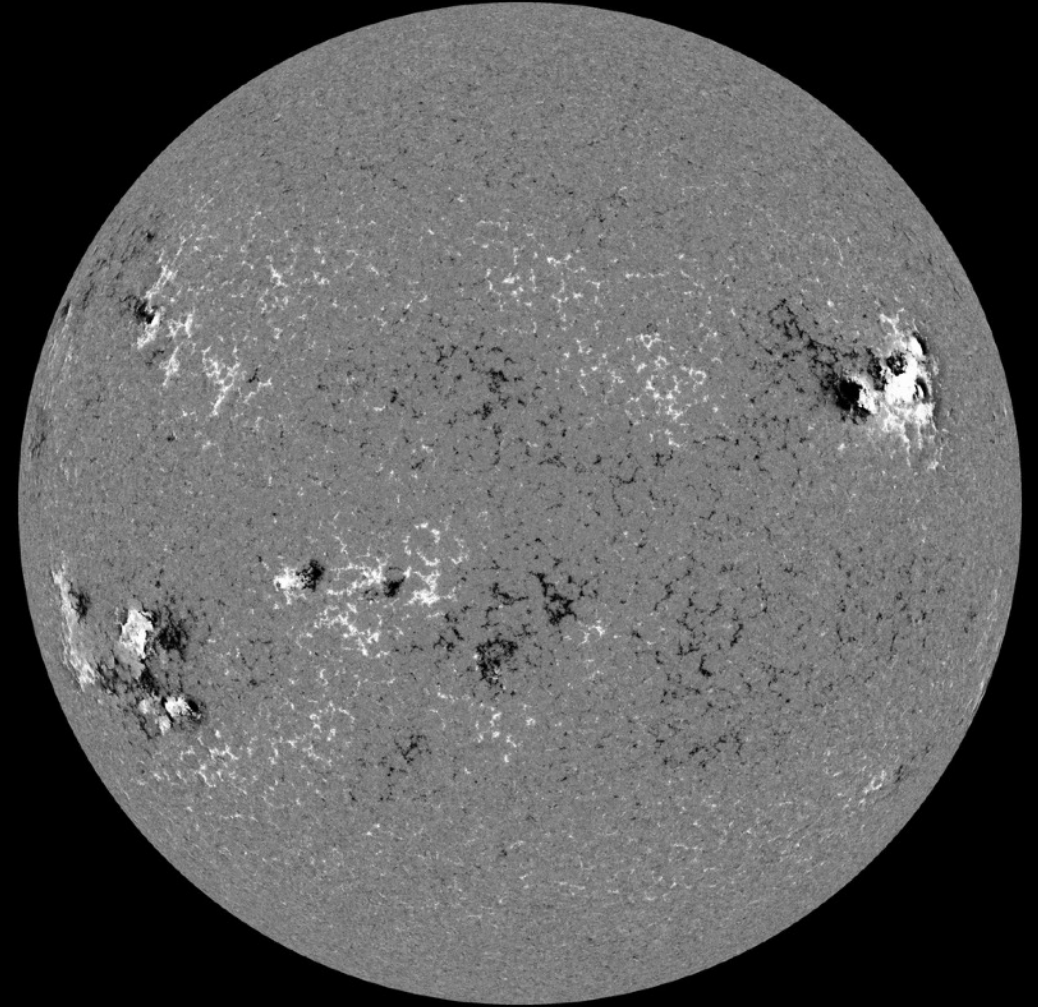
Solar active regions

SDO/HMI White Light 2023-07-02



SDO/HMI Quick-Look Continuum: 20230702_114500

SDO/HMI Magnetogram 2023-07-02

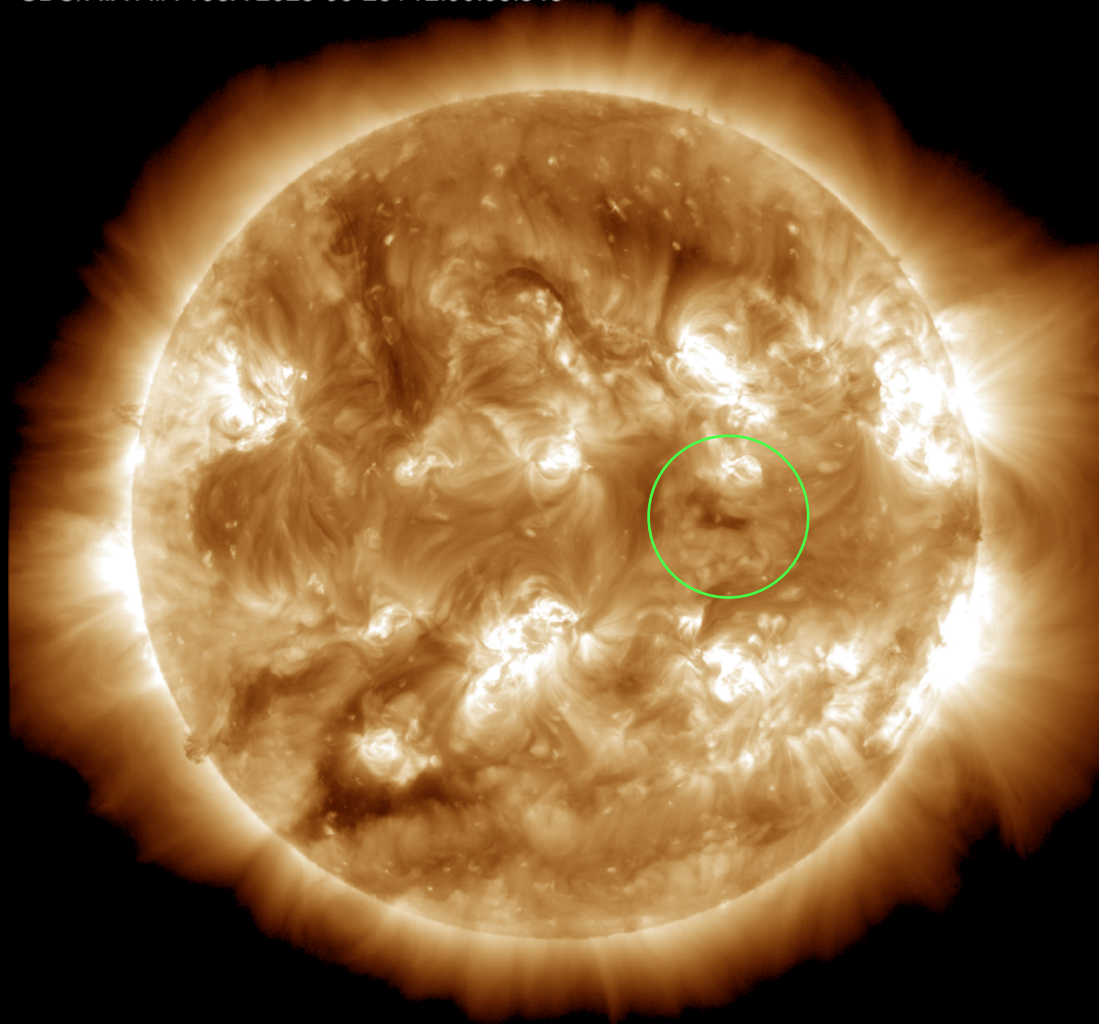


SDO/HMI Quick-Look Magnetogram: 20230702_114500

Coronal holes

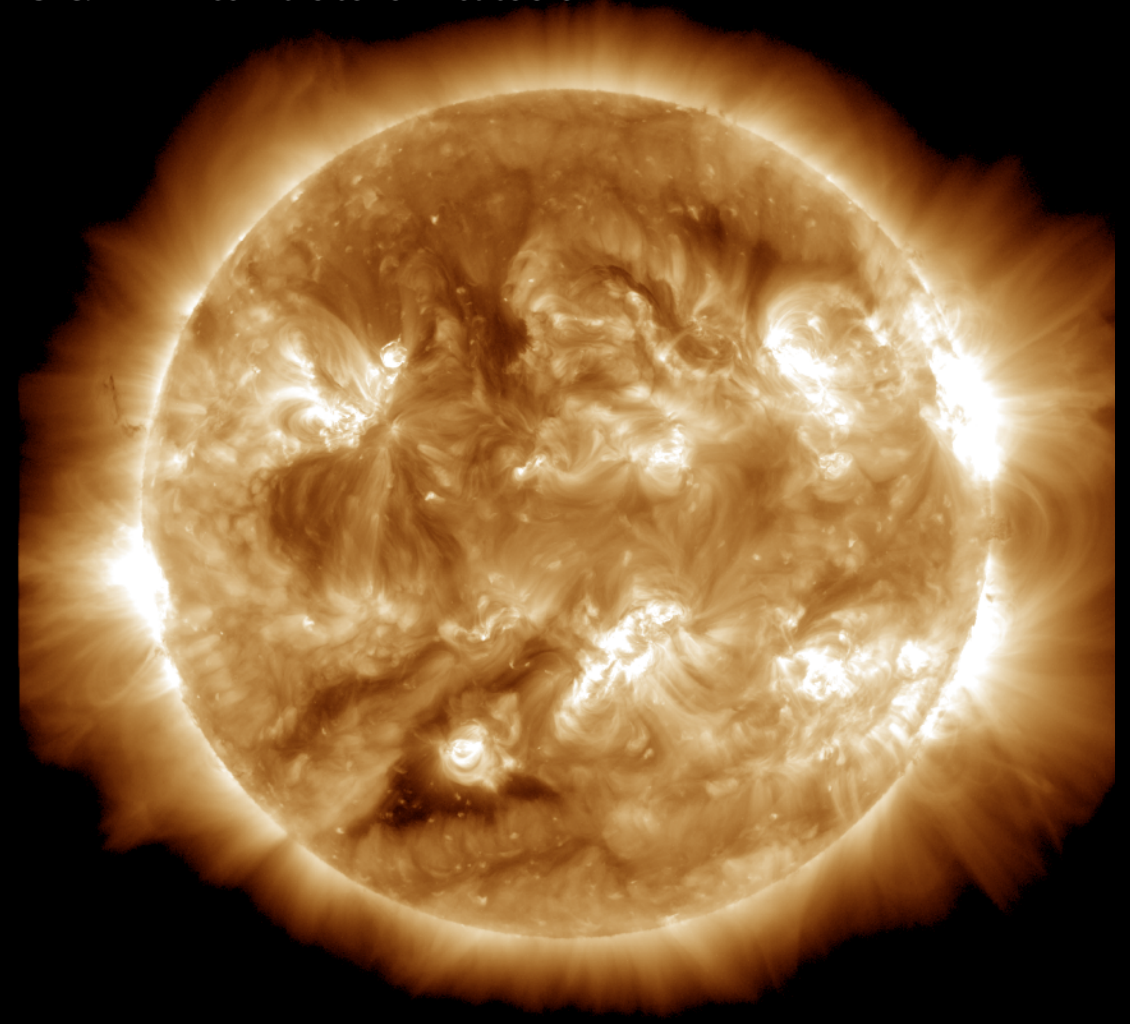
SDO/AIA 19.3 nm 2023-06-25

SDO/AIA AIA 193Å 2023-06-25T12:00:05.843



SDO/AIA 19.3 nm 2023-06-26

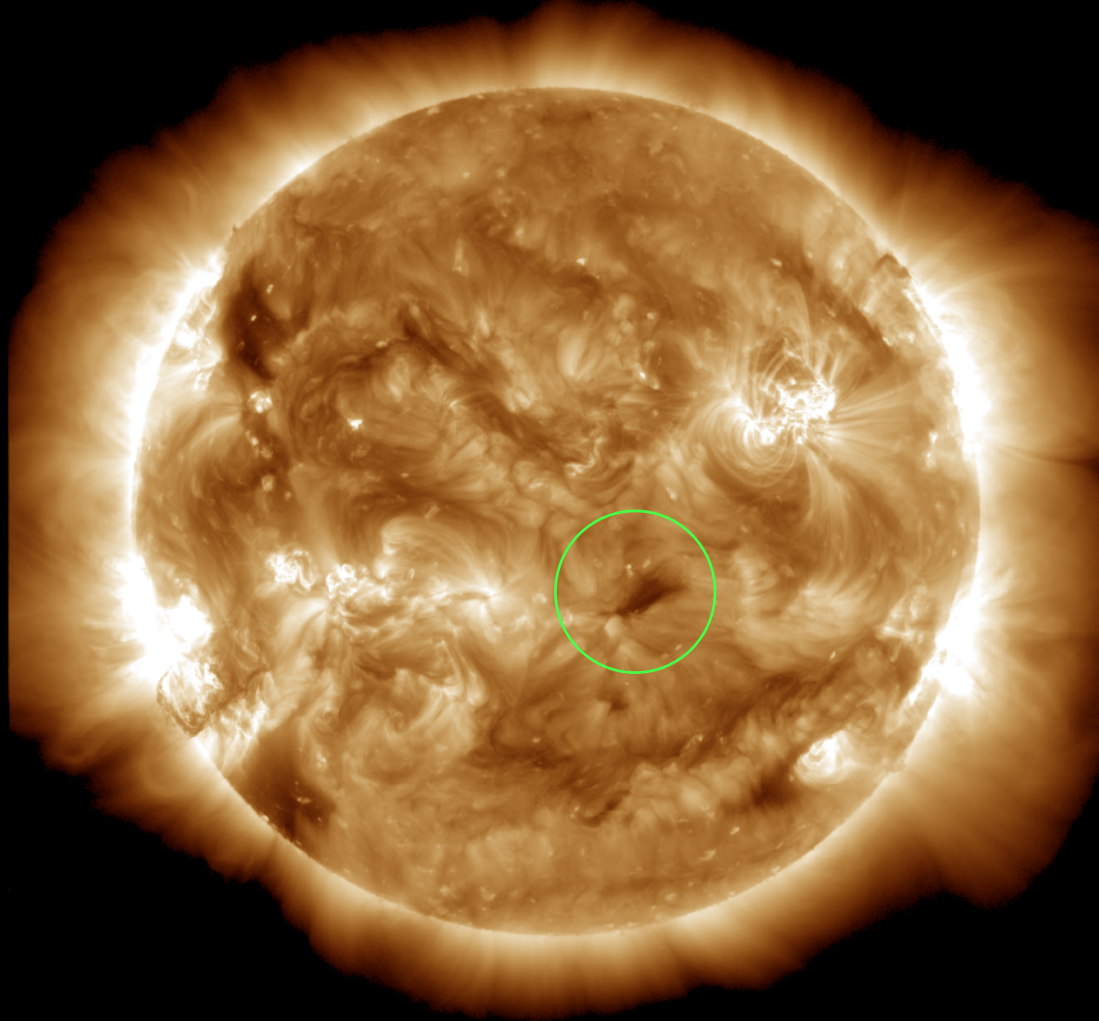
SDO/AIA AIA 193Å 2023-06-26T12:00:05.843



Coronal holes

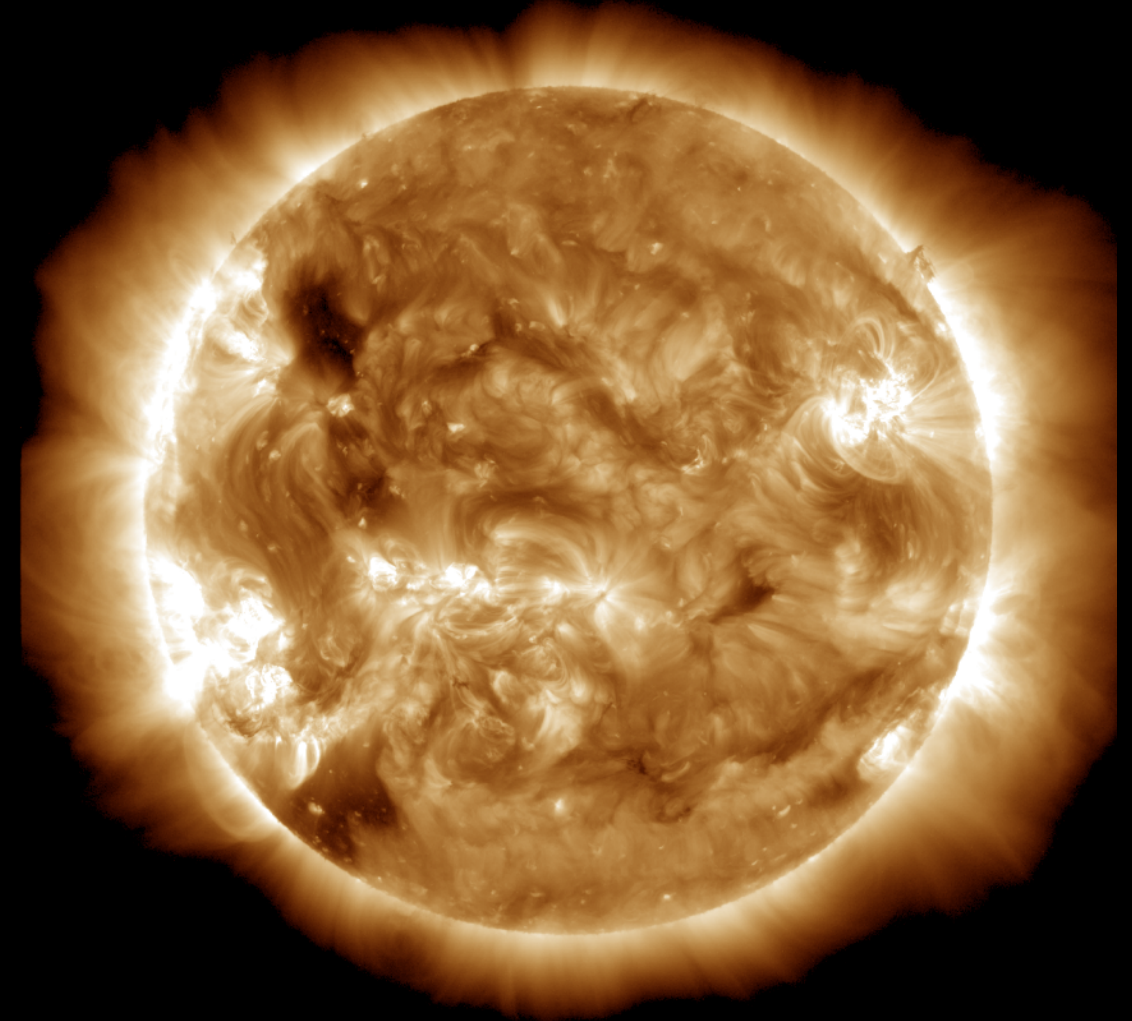
SDO/AIA 19.3 nm 2023-07-01

SDO/AIA AIA 193Å 2023-07-01T12:00:05.843



SDO/AIA 19.3 nm 2023-07-02

SDO/AIA AIA 193Å 2023-07-02T12:00:05.842



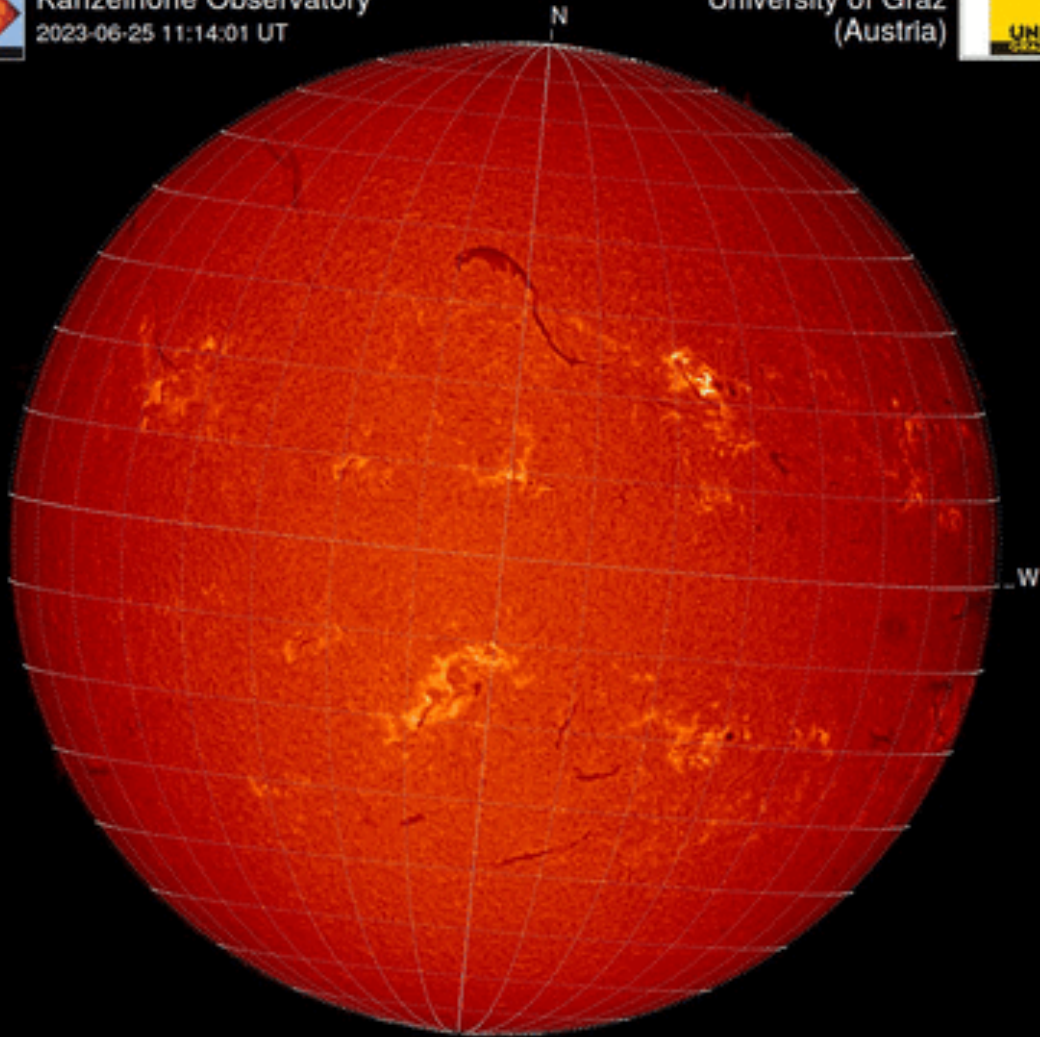
Filaments & Filament eruptions

H-alpha 2023-06-25



Kanzelhöhe Observatory
2023-06-25 11:14:01 UT

University of Graz
(Austria)

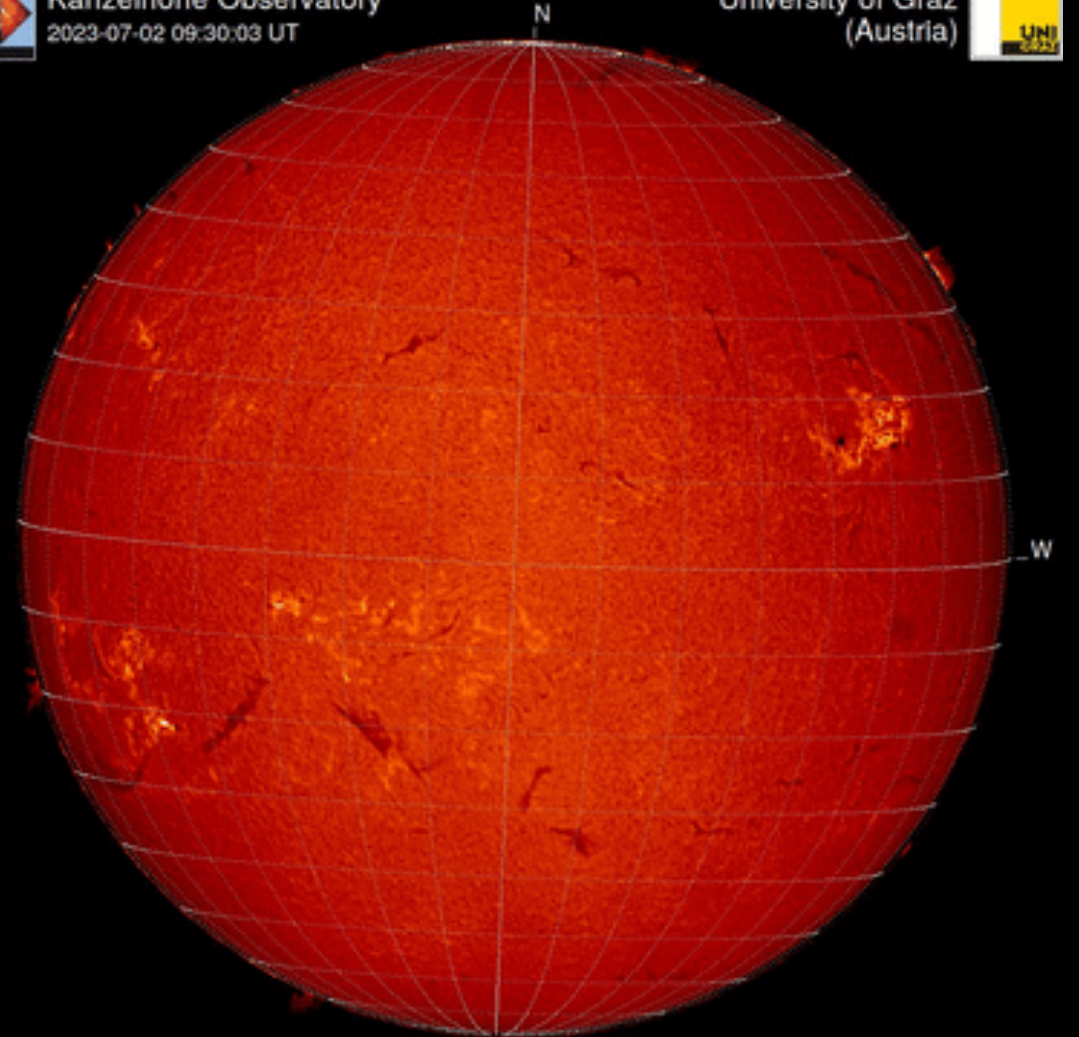


H-alpha 2023-07-02

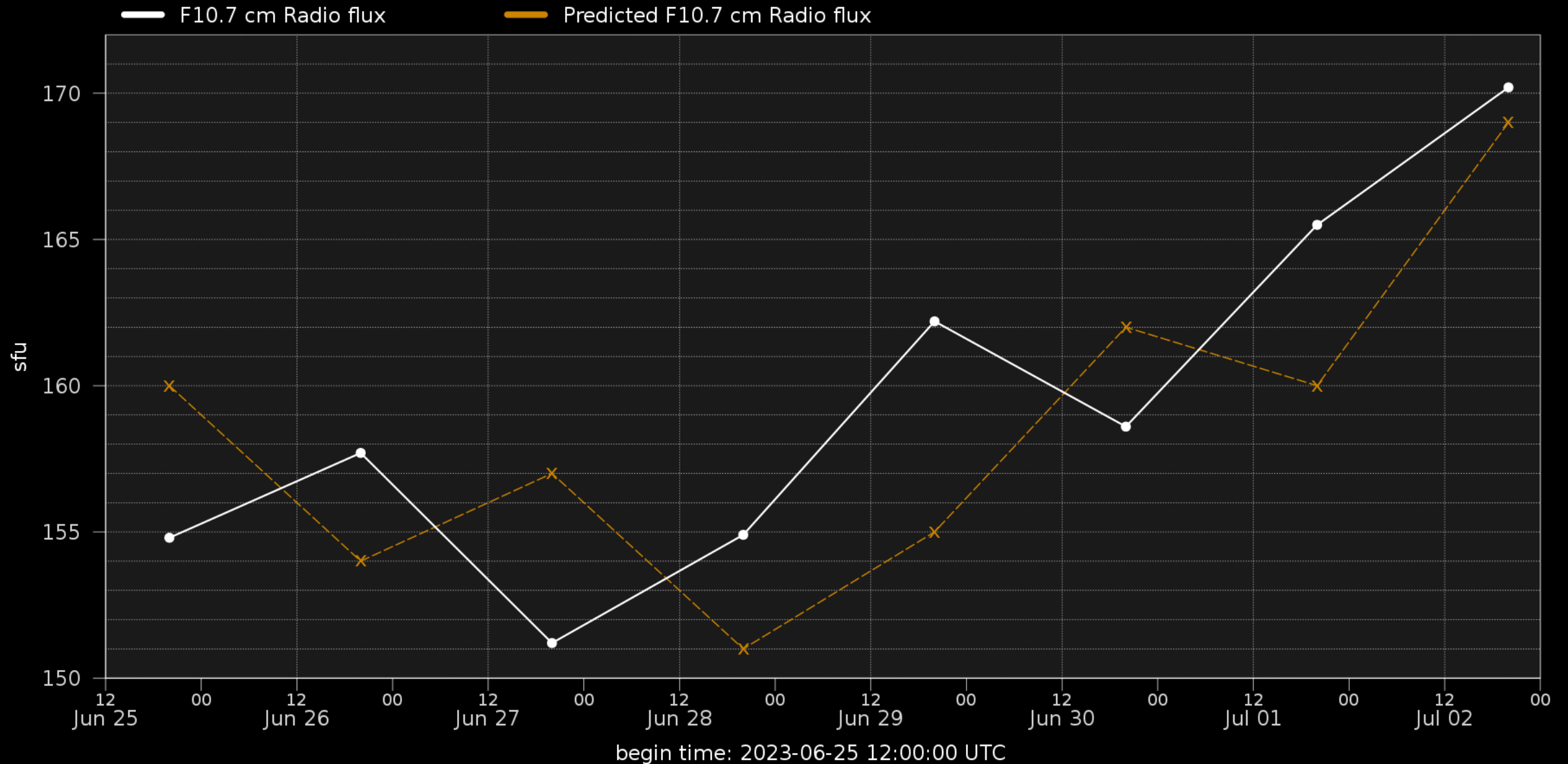


Kanzelhöhe Observatory
2023-07-02 09:30:03 UT

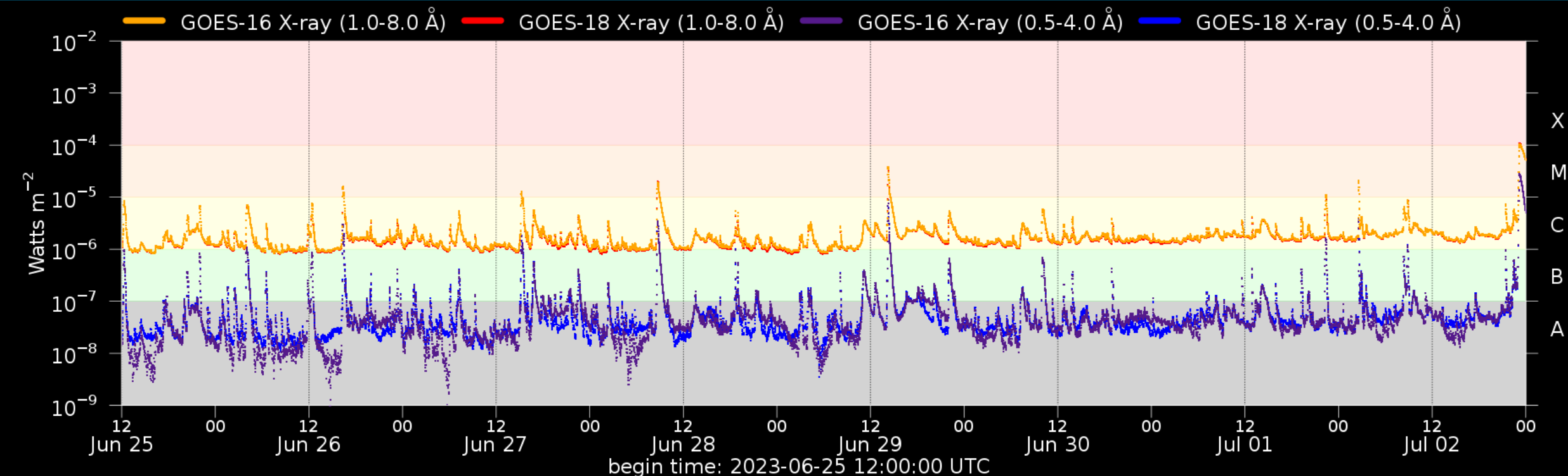
University of Graz
(Austria)



Solar F10.7cm radio flux



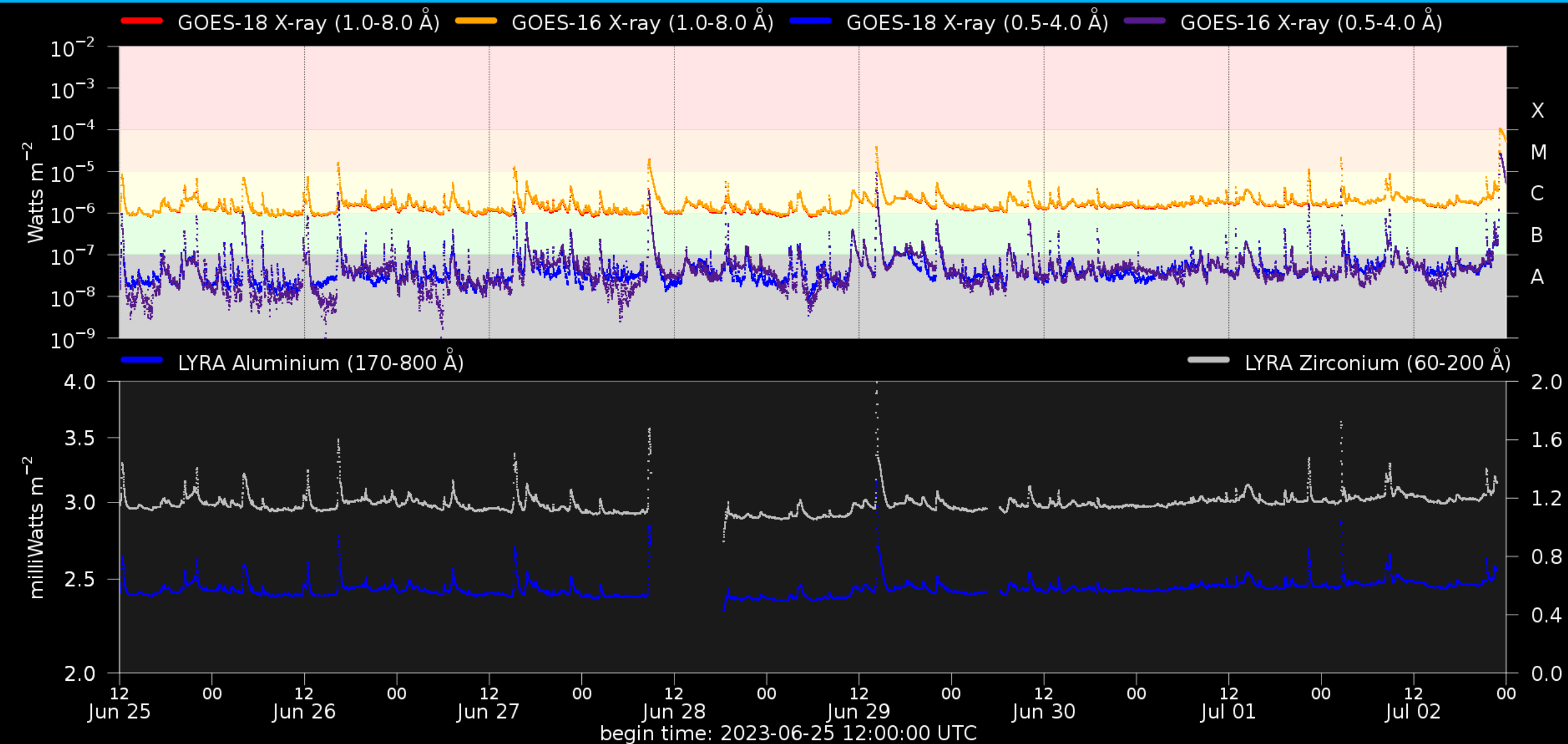
Flaring activity



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

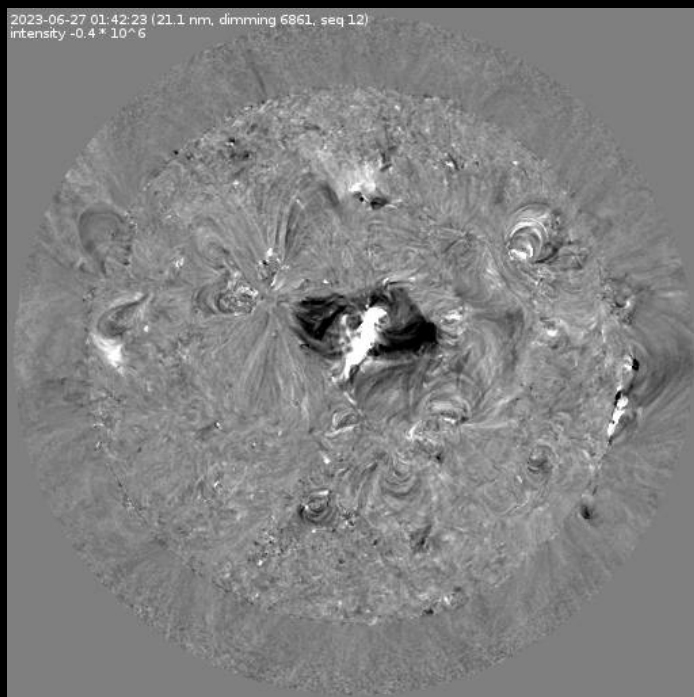
Issue date	2023-06-25	2023-06-26	2023-06-27	2023-06-28	2023-06-29	2023-06-30	2023-07-01	2023-07-02
Probability (%)	99 55 10	95 30 05	90 35 05	99 50 15	99 50 10	95 55 10	95 50 05	95 55 10
Observed (#)	12 00 00	10 01 00	07 02 00	07 00 00	03 01 00	04 00 00	05 02 00	02 00 01

Solar X-Ray and UV flux

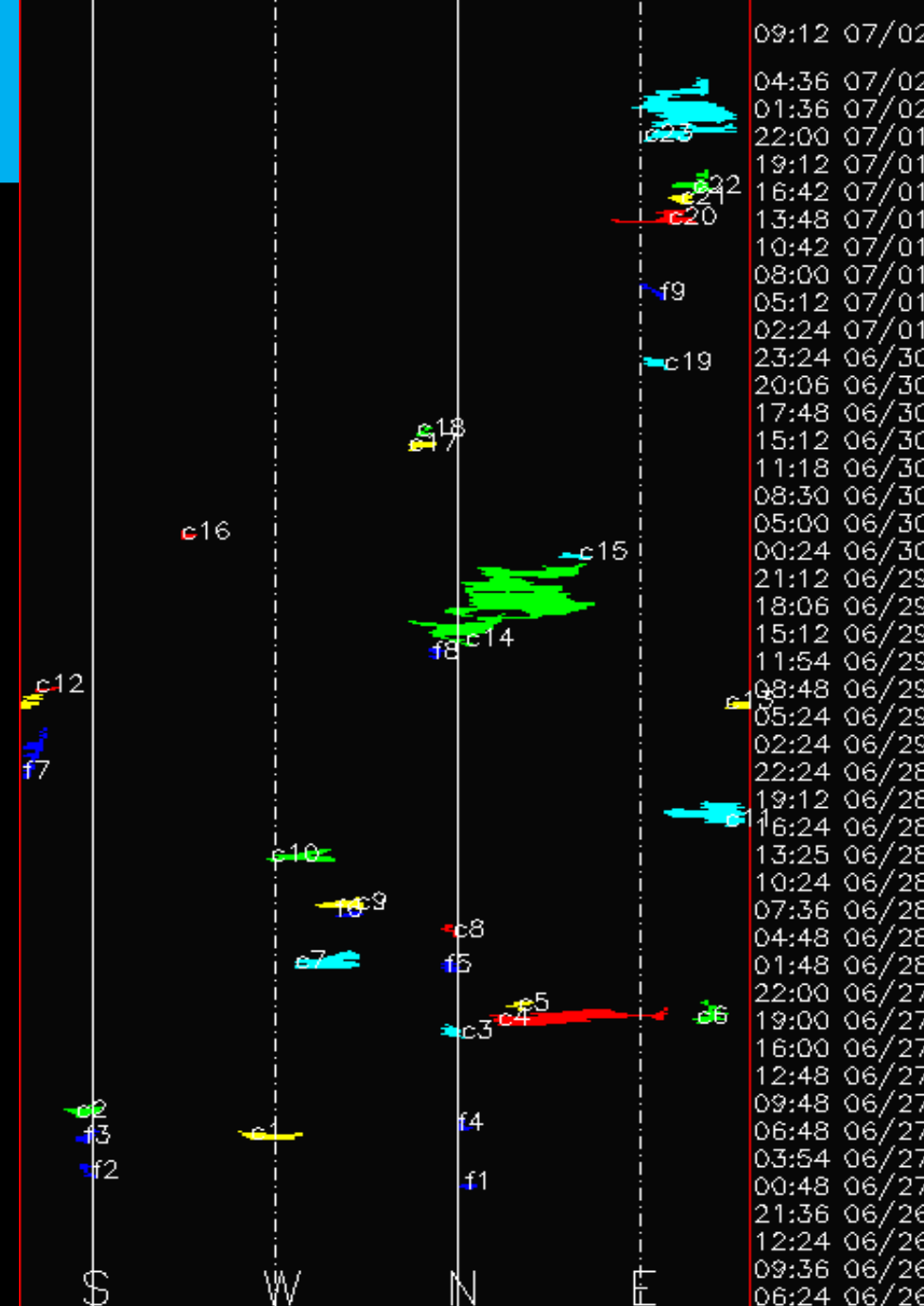


Coronal Mass Ejections

- 2023 Jun 27, 10:47 UTC: Solar coronal dimming was observed today starting at around 01:00 UTC and ending around 01:45 UTC. This coronal dimming was located on the disc centre close to the Sunspot region NOAA AR 3349. This type of coronal events are usually associated with the initiation of a coronal mass ejection. Analysis is ongoing to estimate the potential impact of this or this coronal mass ejection heading toward Earth, and its arrival time.



Solar Demon Dimming
Detection: <https://www.sidc.be/solardemon/dimmings.php?science=0&did=6861>



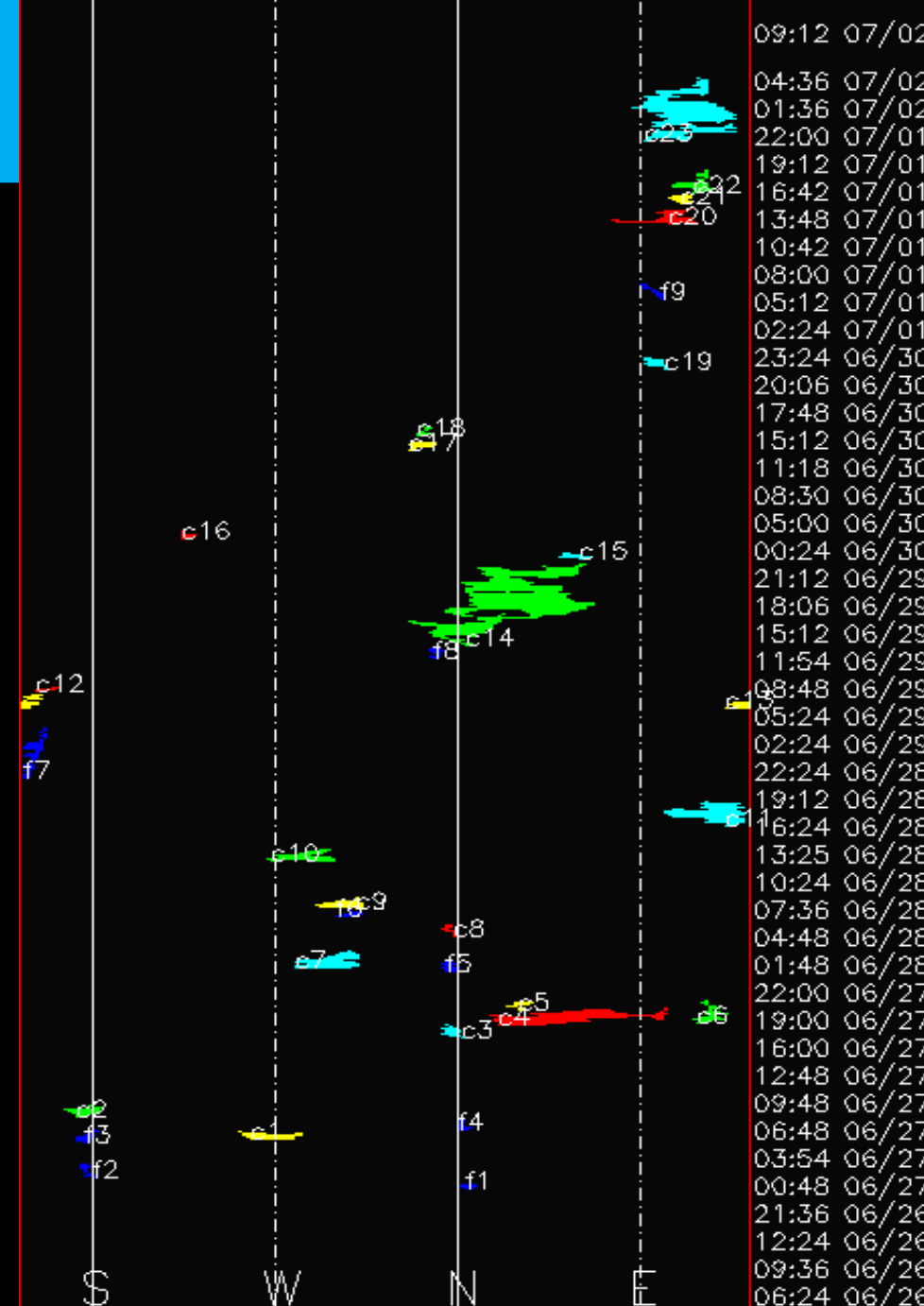
Coronal Mass Ejections

- 2023 Jul 03, 08:18 UTC: An X1.1 flare has occurred with a start time 22:54 UTC, end time 23:58 UTC and a peak time 23:14 UTC on July 2nd. Its source region, NOAA AR 3354, is currently the most complex region on the visible side of the solar disk with a beta-gamma-delta configuration of the photospheric magnetic field. The region is currently located near the North-West solar limb.

2023-07-02 23:12:00 (9.4 nm, flare 13223, seq 30)
brightness 352.5 * 10³



Solar Demon Flare
Detection: <https://www.sidc.be/solardemon/flares.php?fid=13223&science=0>



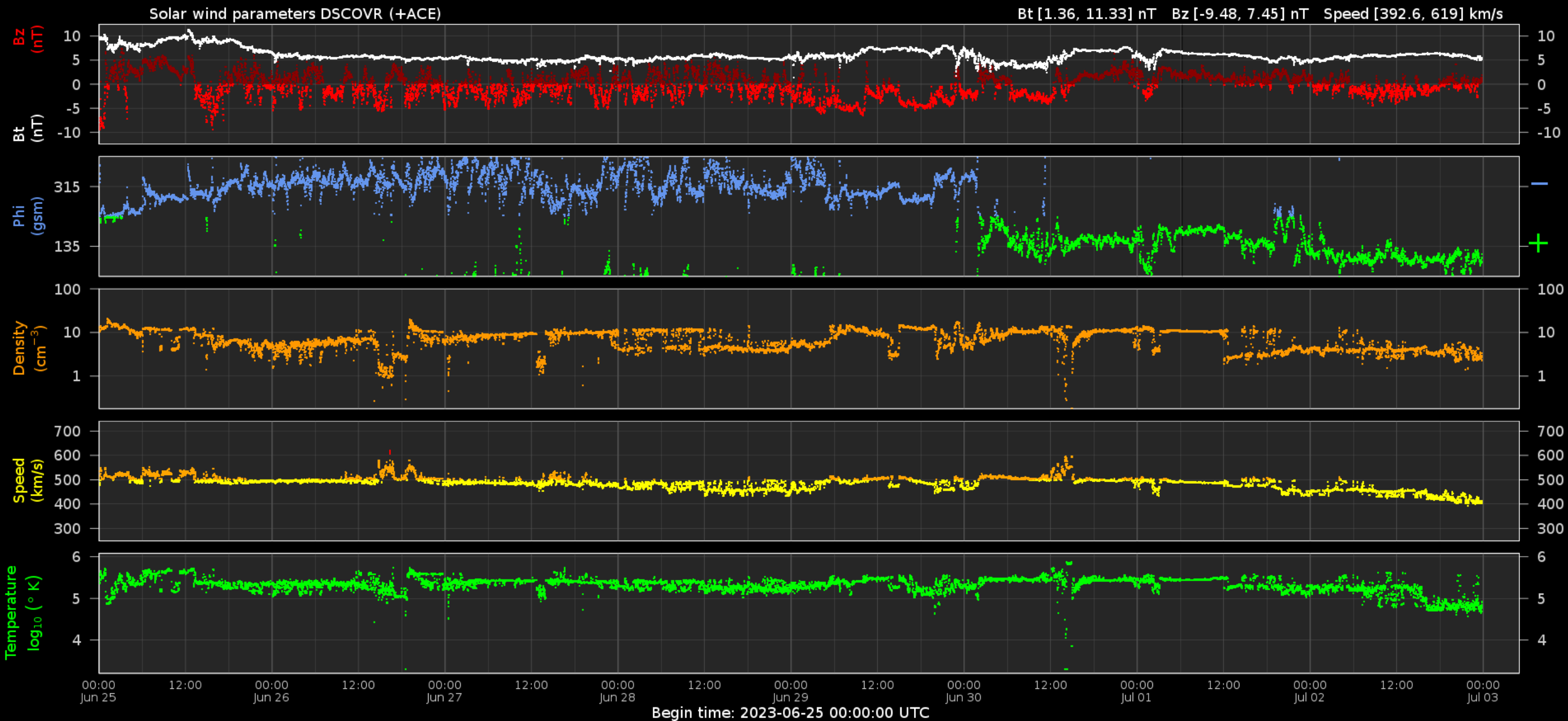
Solar Wind and Geomagnetic Activity



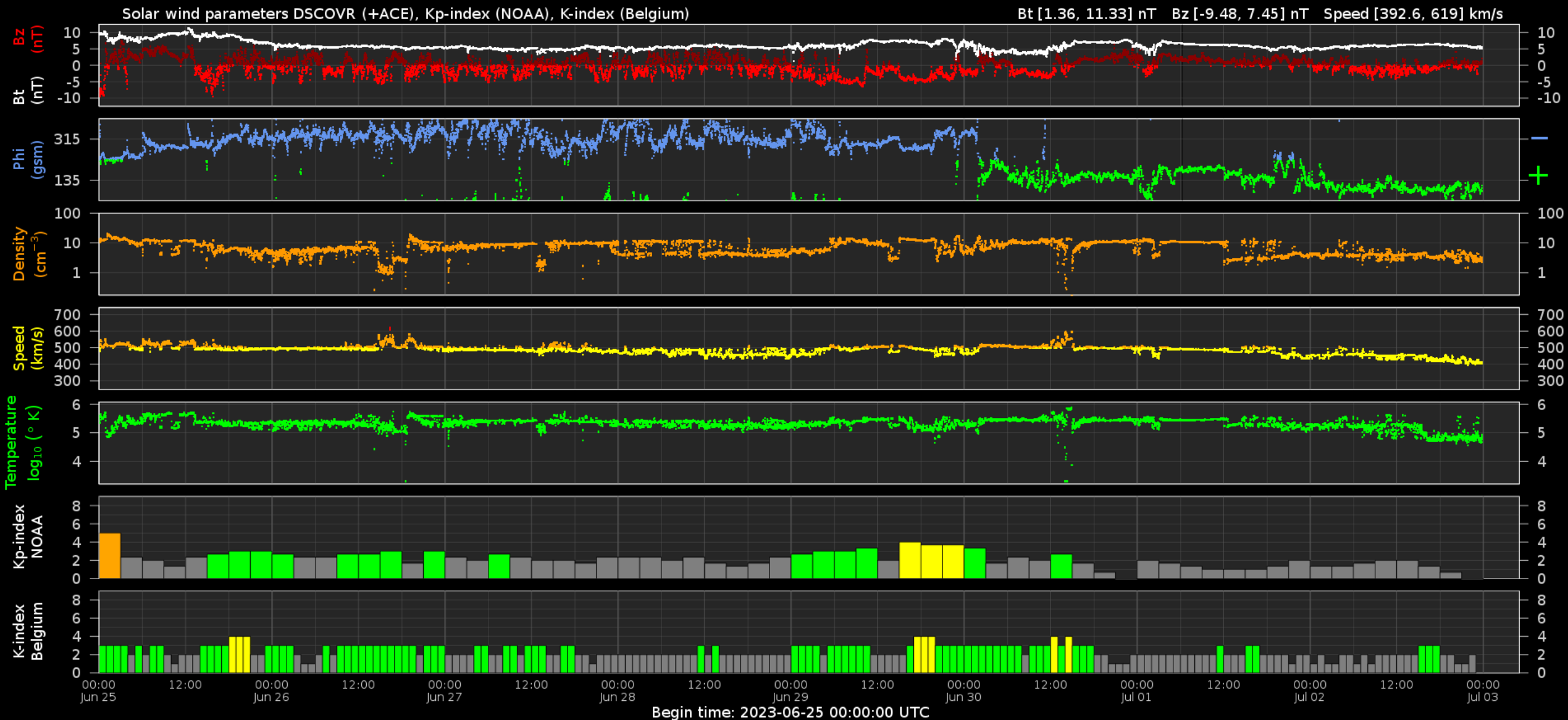
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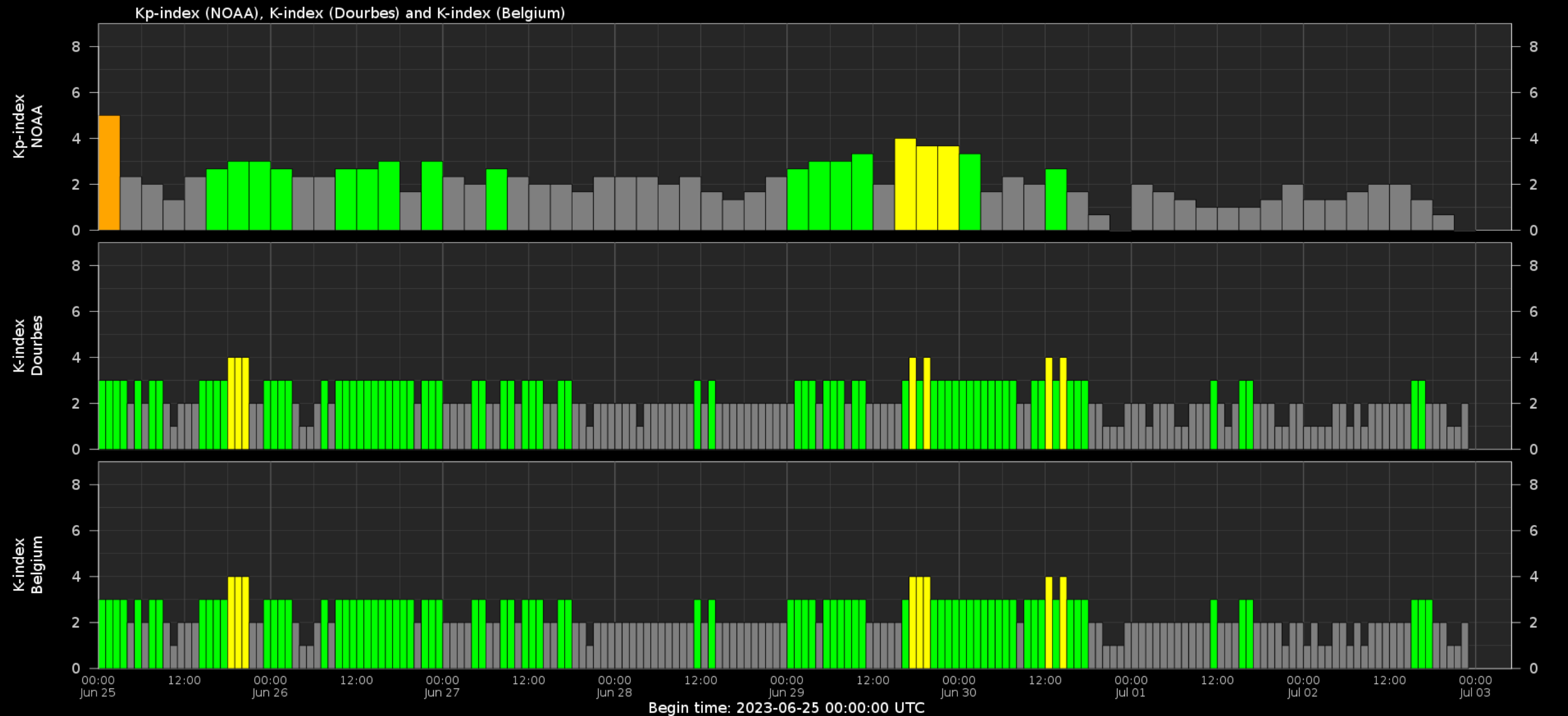
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



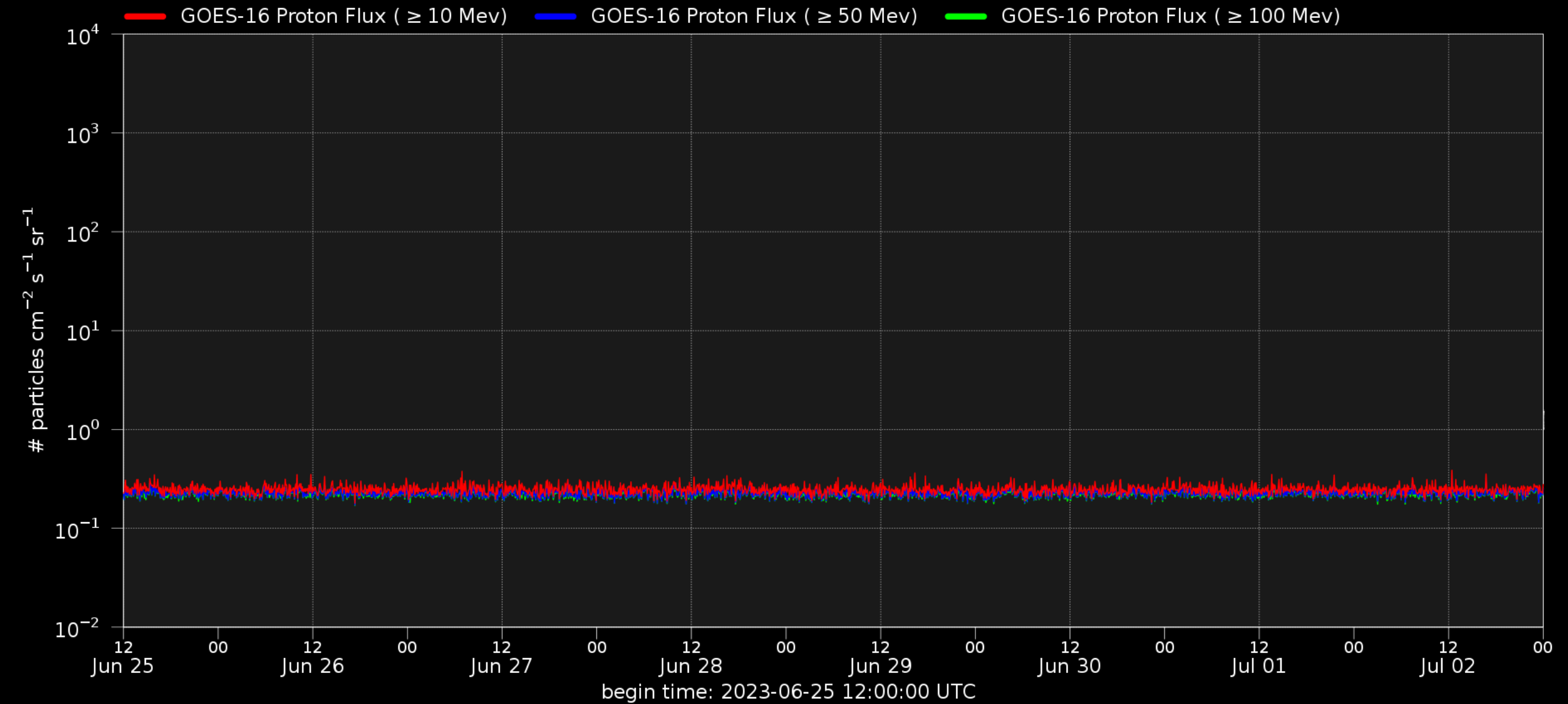
Energetic Particles



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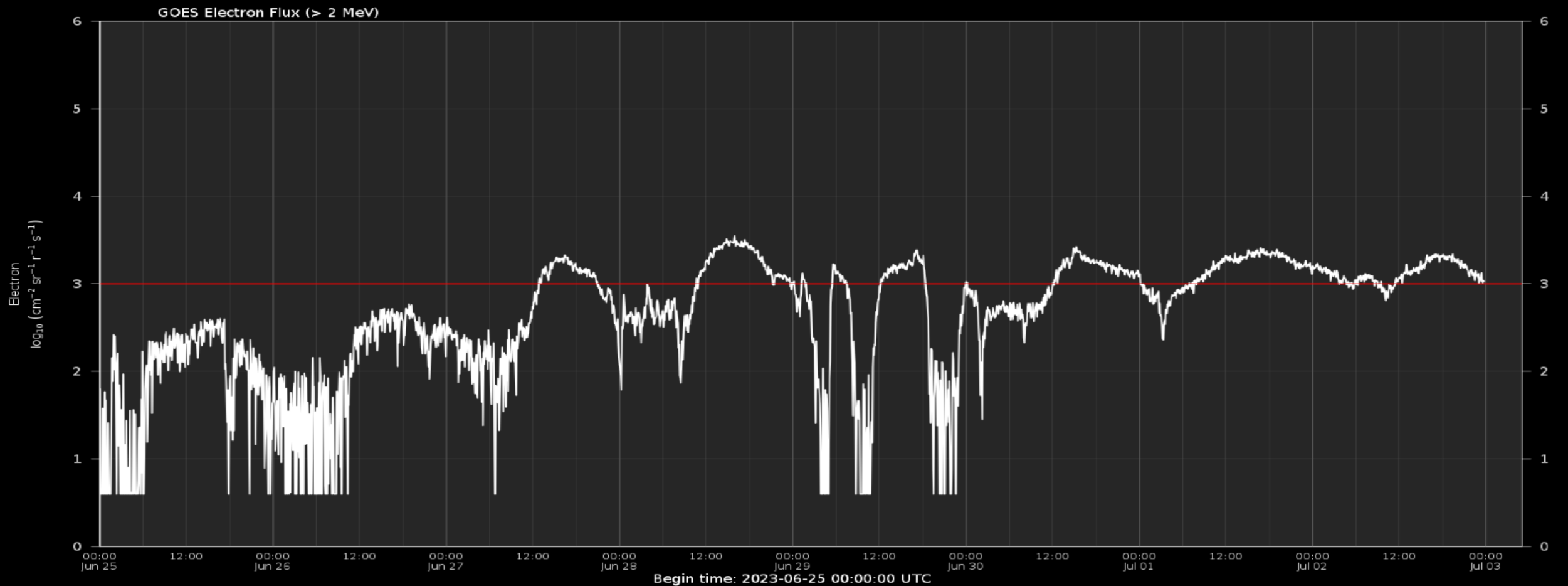
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



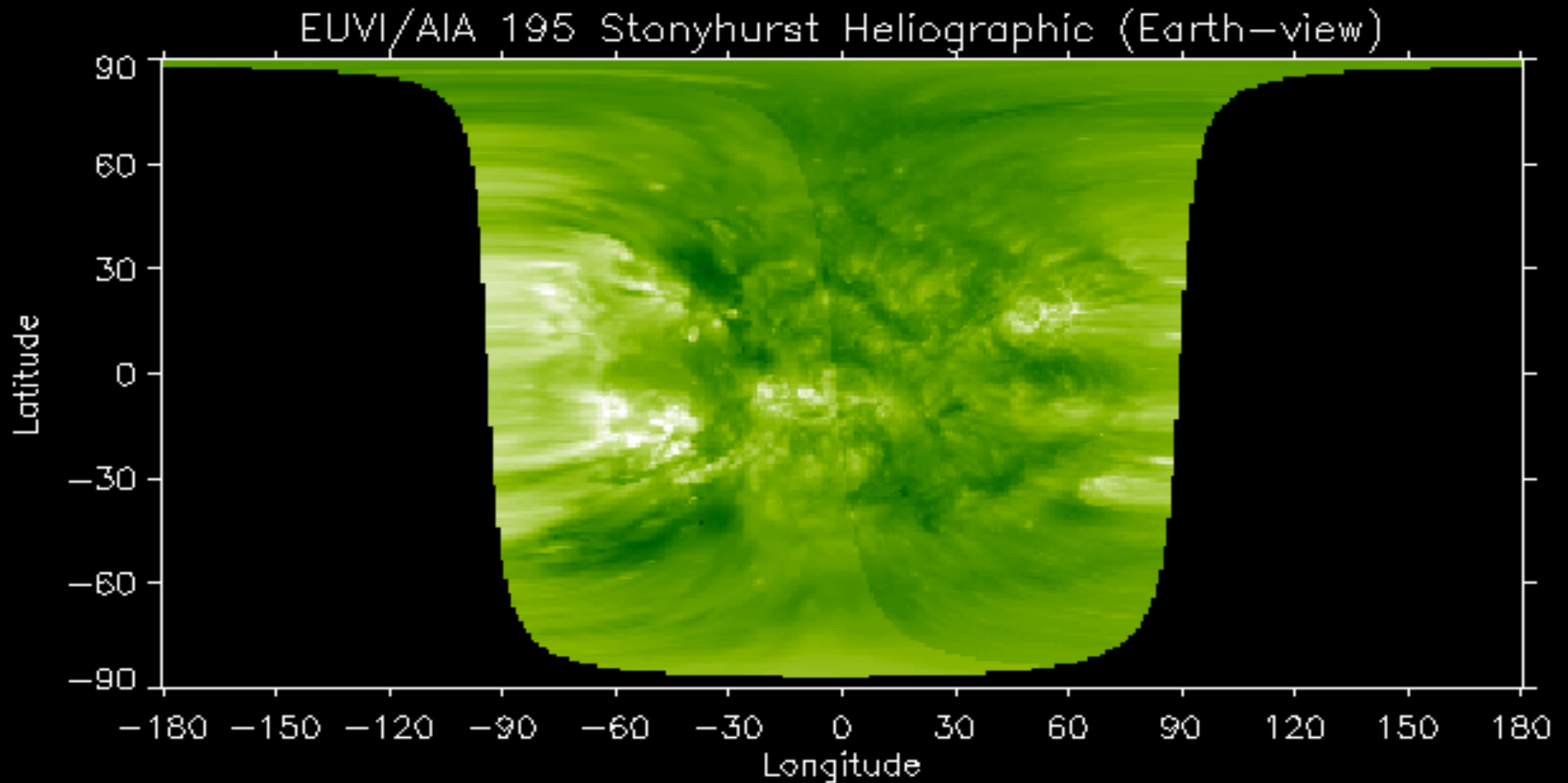
Outlook



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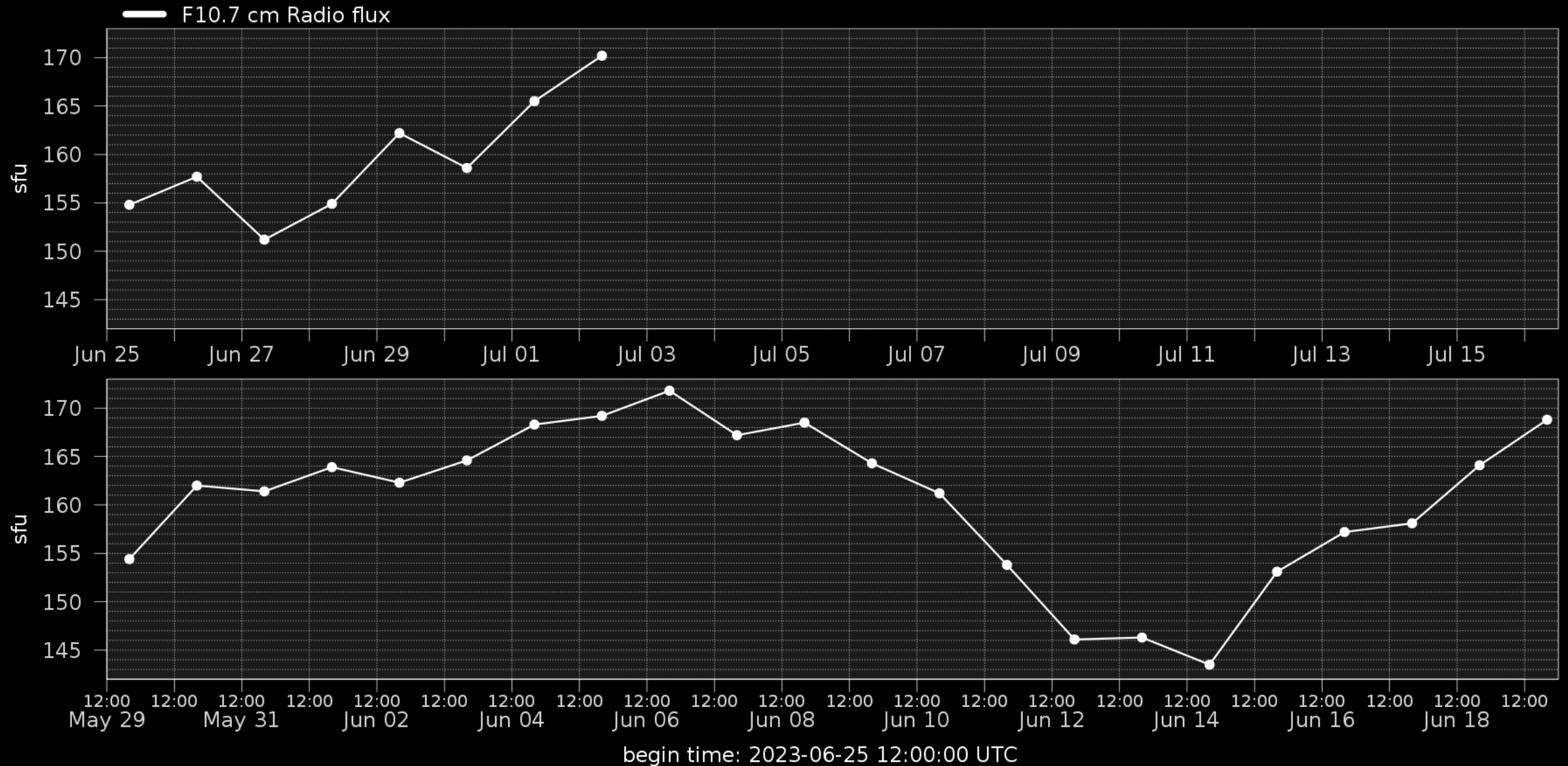
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Outlook: Solar activity

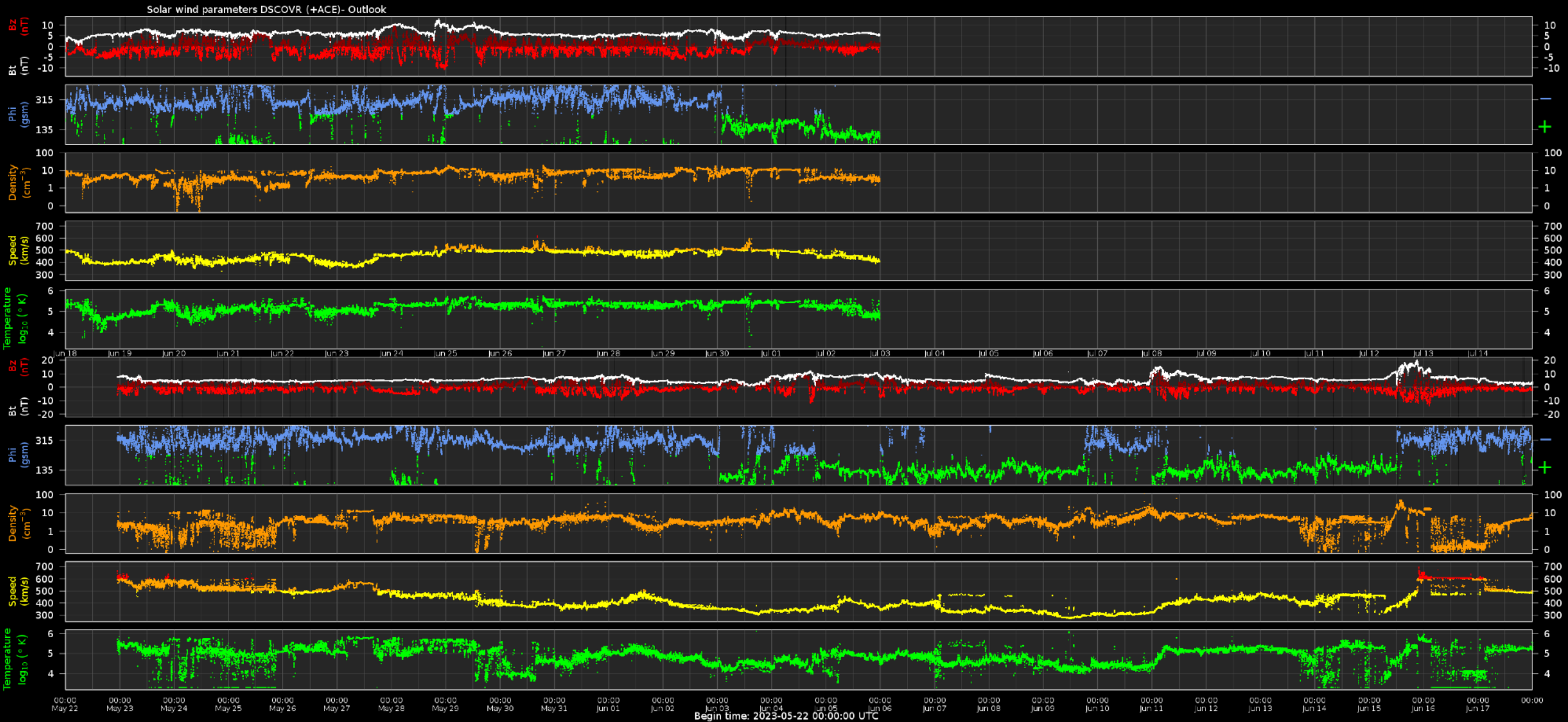


Observation date: 2023/07/02 21:35:00

Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



SIDC Space Weather Briefing

See you at our next briefing!

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