

# SIDC Space Weather Briefing

02 July 2023-09 July 2023

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& the SIDC forecaster team



Royal Observatory  
of Belgium

Solar Influences  
Data analysis Centre  
[www.sidc.be](http://www.sidc.be)

# Summary Report

Solar activity from 2023-07-02 12:00 to 2023-07-09 23:59

Active regions	14 Active Regions NOAA AR 3354 – 3367
Flares	# C-class flare: 40 # M-class flare: 5 # X-class flare: 1
Coronal Holes	CH+ HSS effecting Earth since July 05, CH- - HSS expected to effect Earth from July 13
CMEs	One partially Earth directed on July 04

Proton flux	Nominal levels
Electron flux	Exceeded 1000pfu threshold

## Solar wind and geomagnetic conditions

ICMEs	None
Solar wind conditions	B : 0.61 - 11.83 nT //Bz: -9.31 nT to 9.64 nT //Speed: 332.2 - 553.7km/s
K-indices	max K-index (KBel): 4 max Kp-index (NOAA): 4

All Quiet Alert: Not all quiet

# Solar Activity

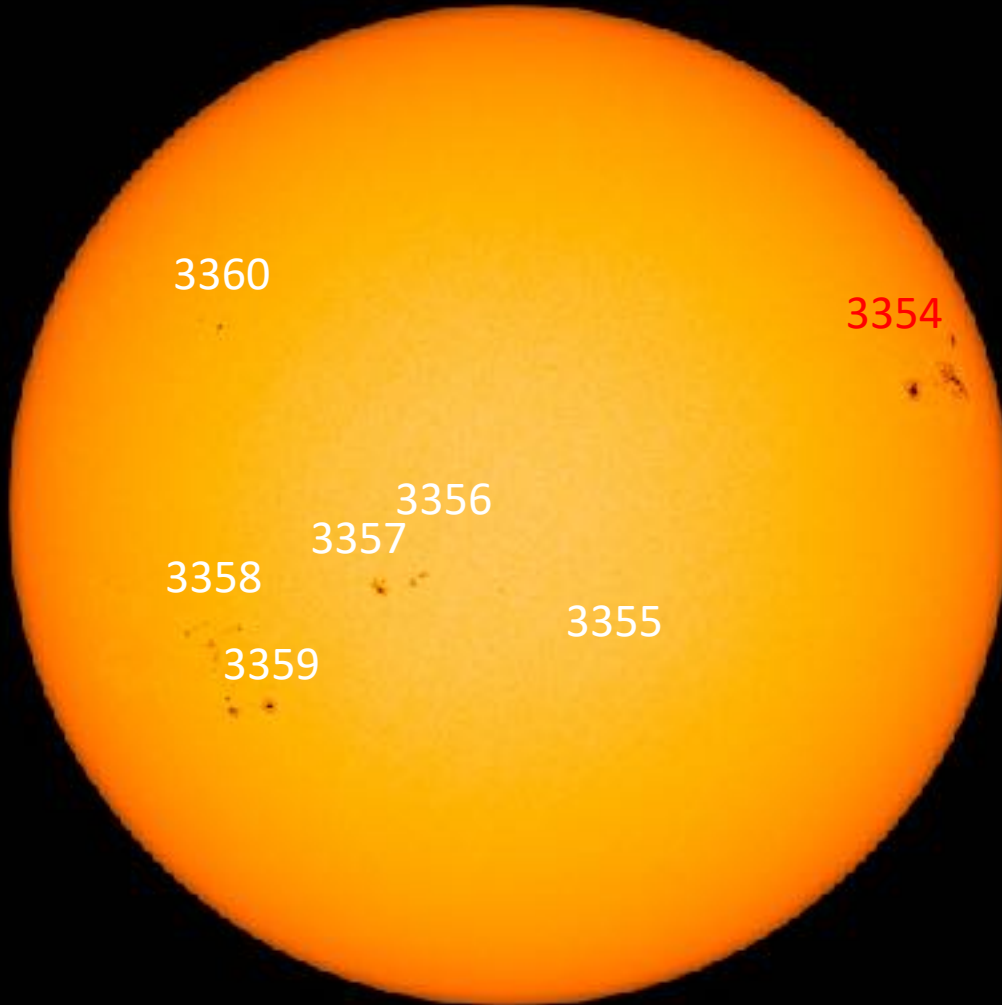


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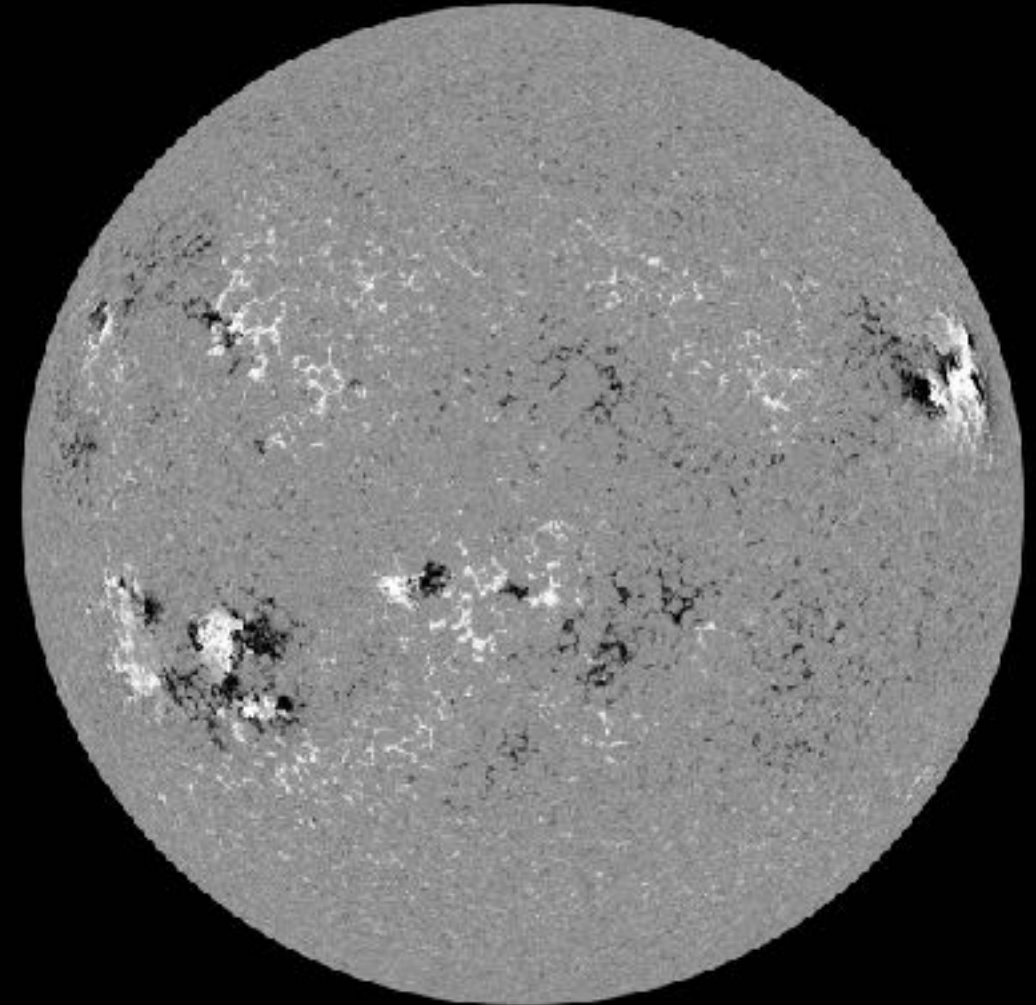
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# Solar active regions

SDO/HMI White Light 2023-07-03

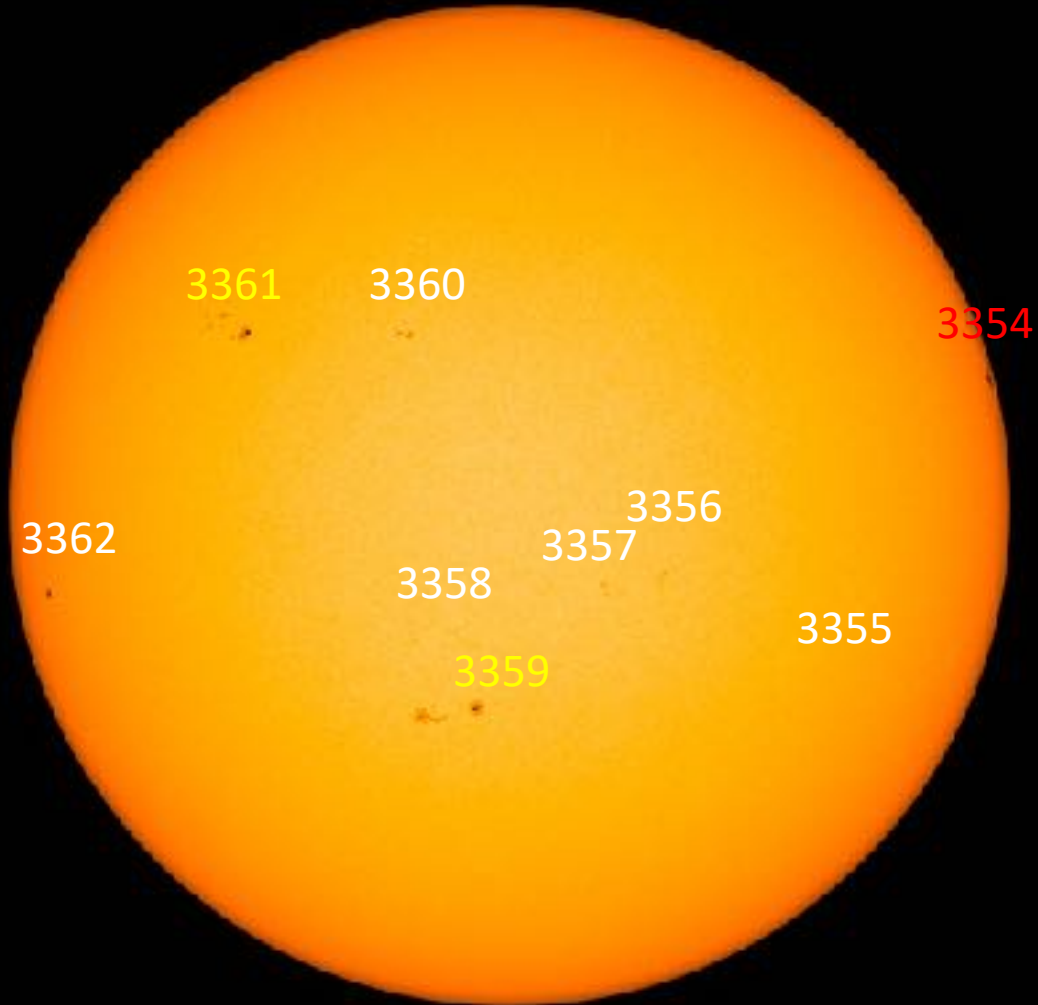


SDO/HMI Magnetogram 2023-07-03

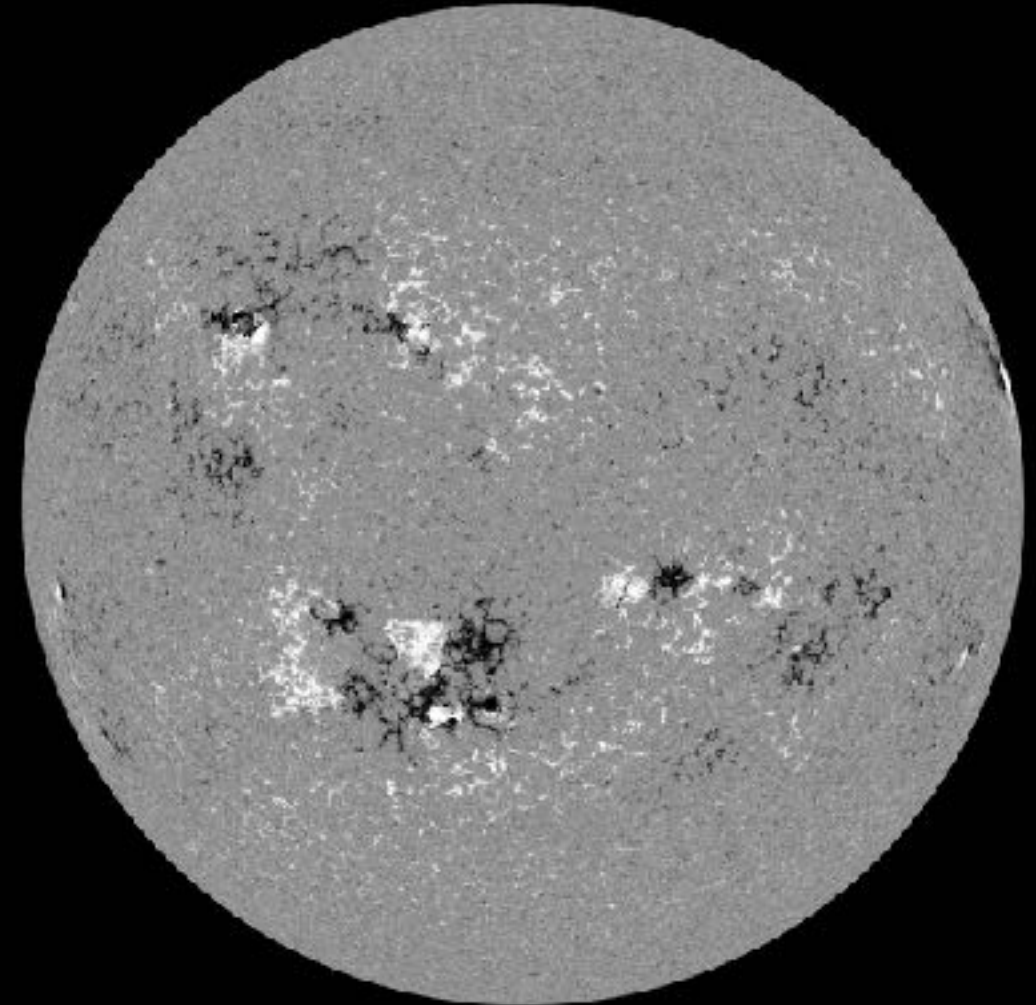


# Solar active regions

SDO/HMI White Light 2023-07-05

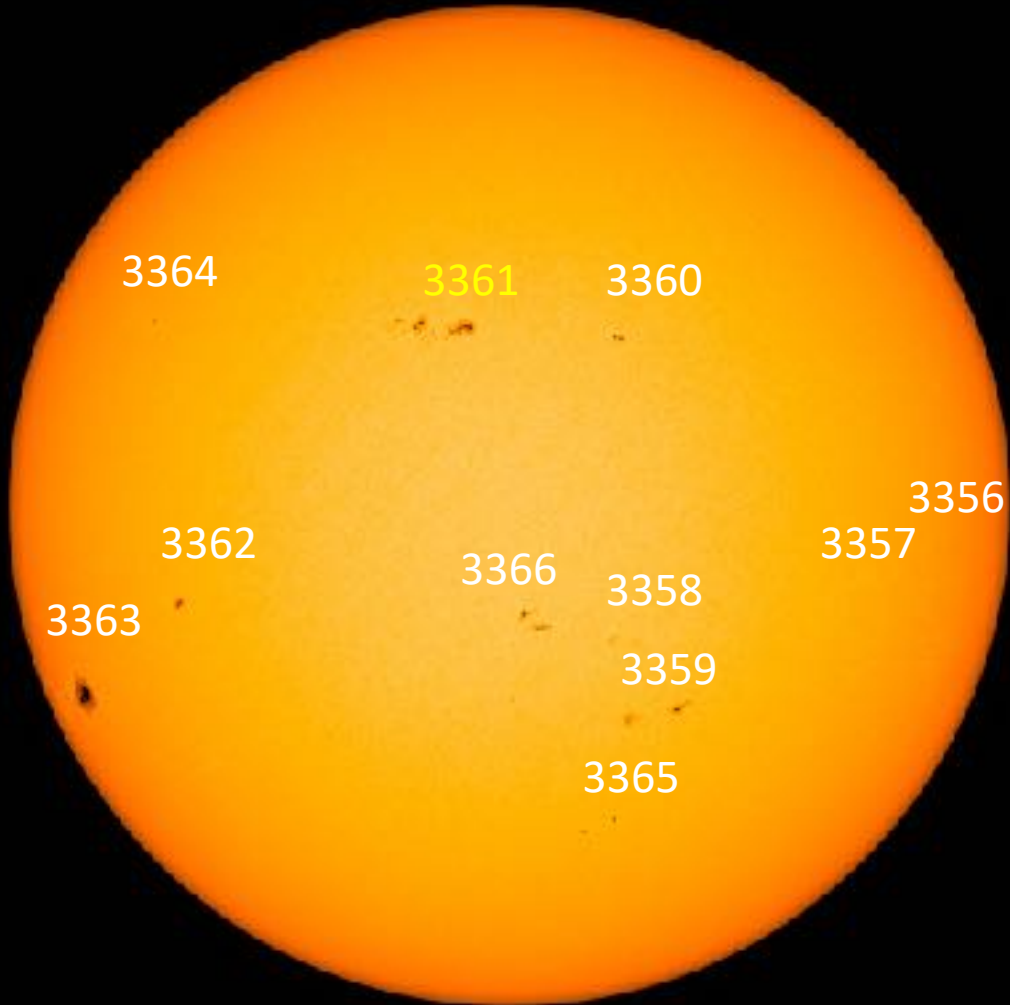


SDO/HMI Magnetogram 2023-07-05

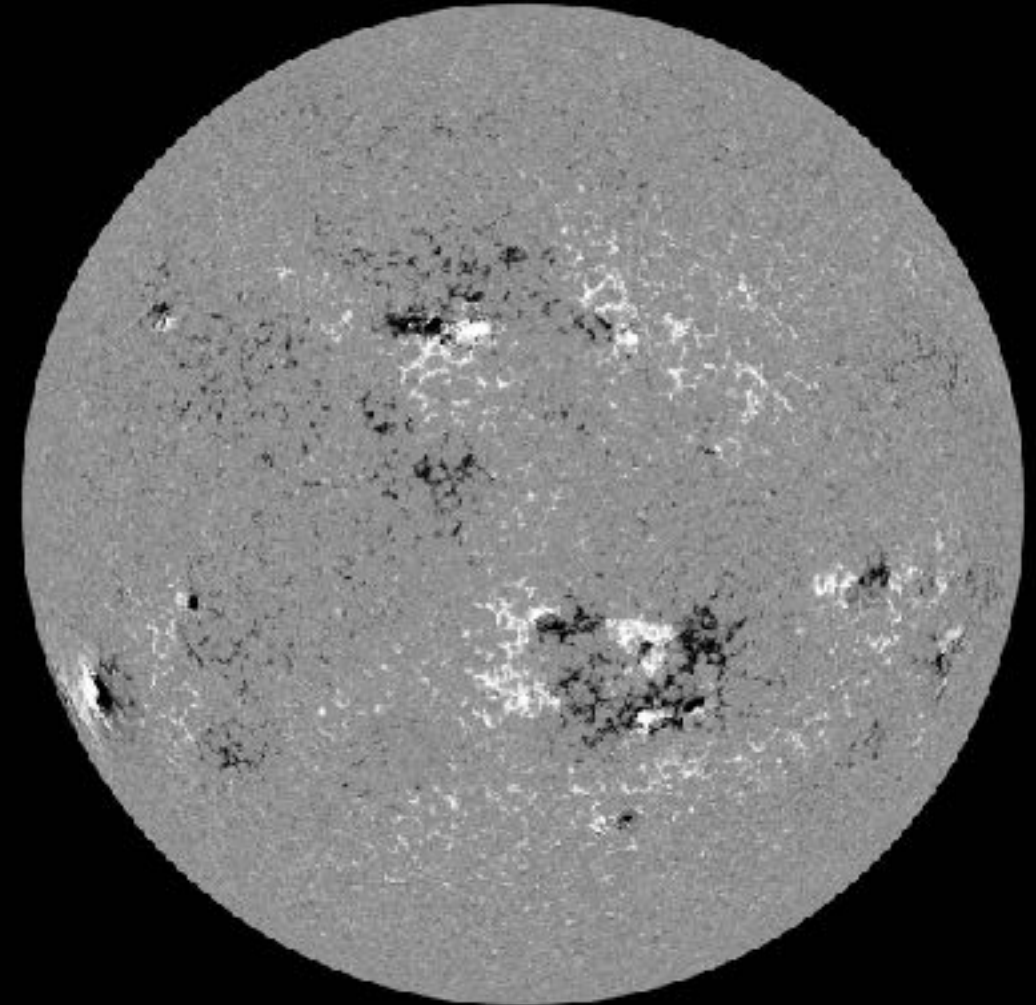


# Solar active regions

SDO/HMI White Light 2023-07-07

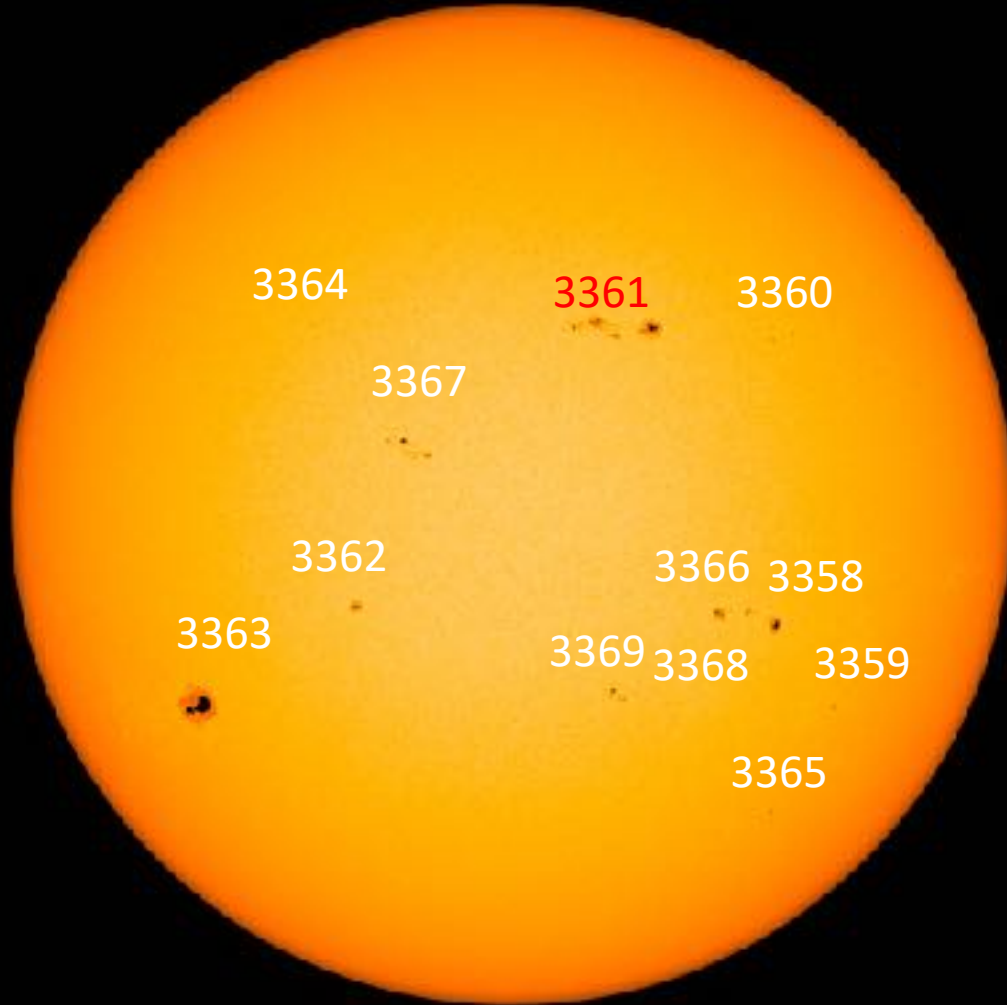


SDO/HMI Magnetogram 2023-07-07

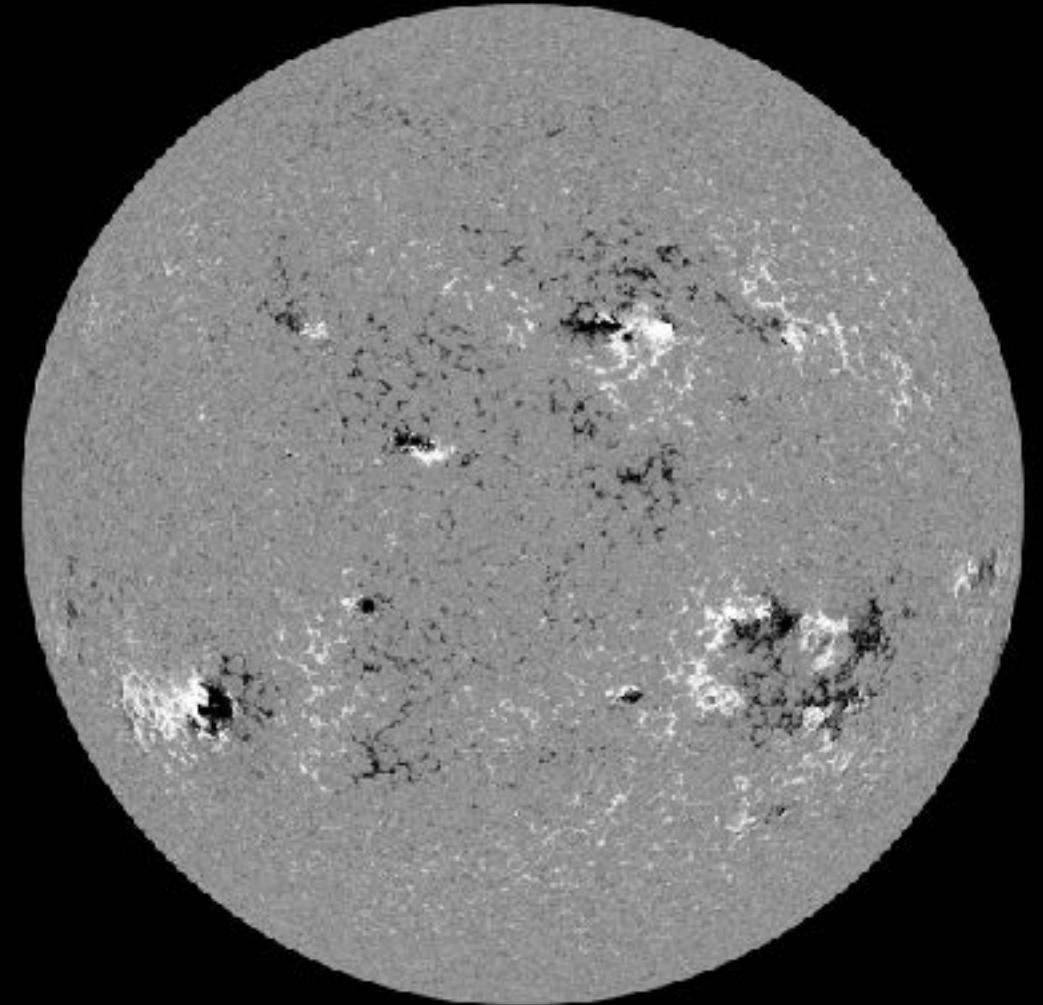


# Solar active regions

SDO/HMI White Light 2023-07-09



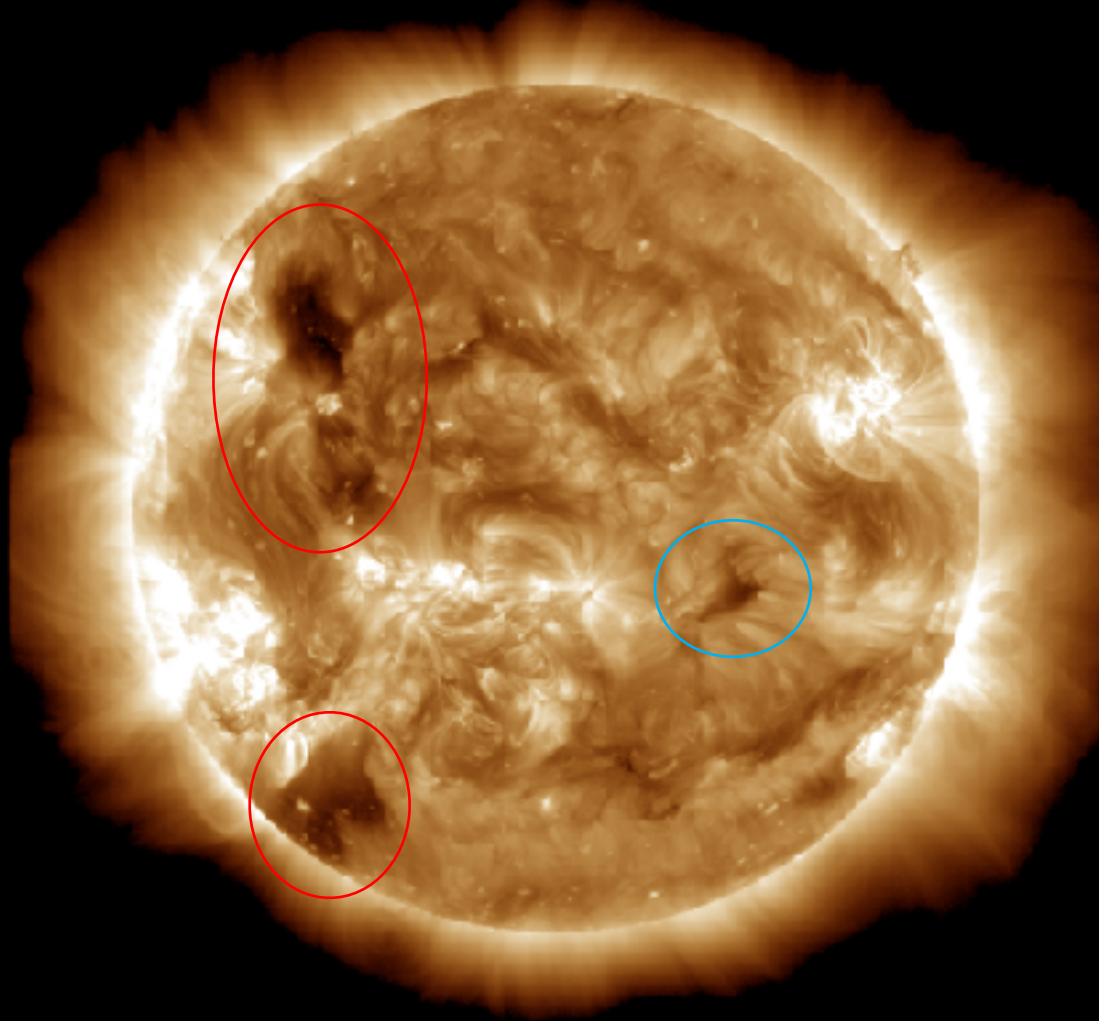
SDO/HMI Magnetogram 2023-07-09



# Coronal holes

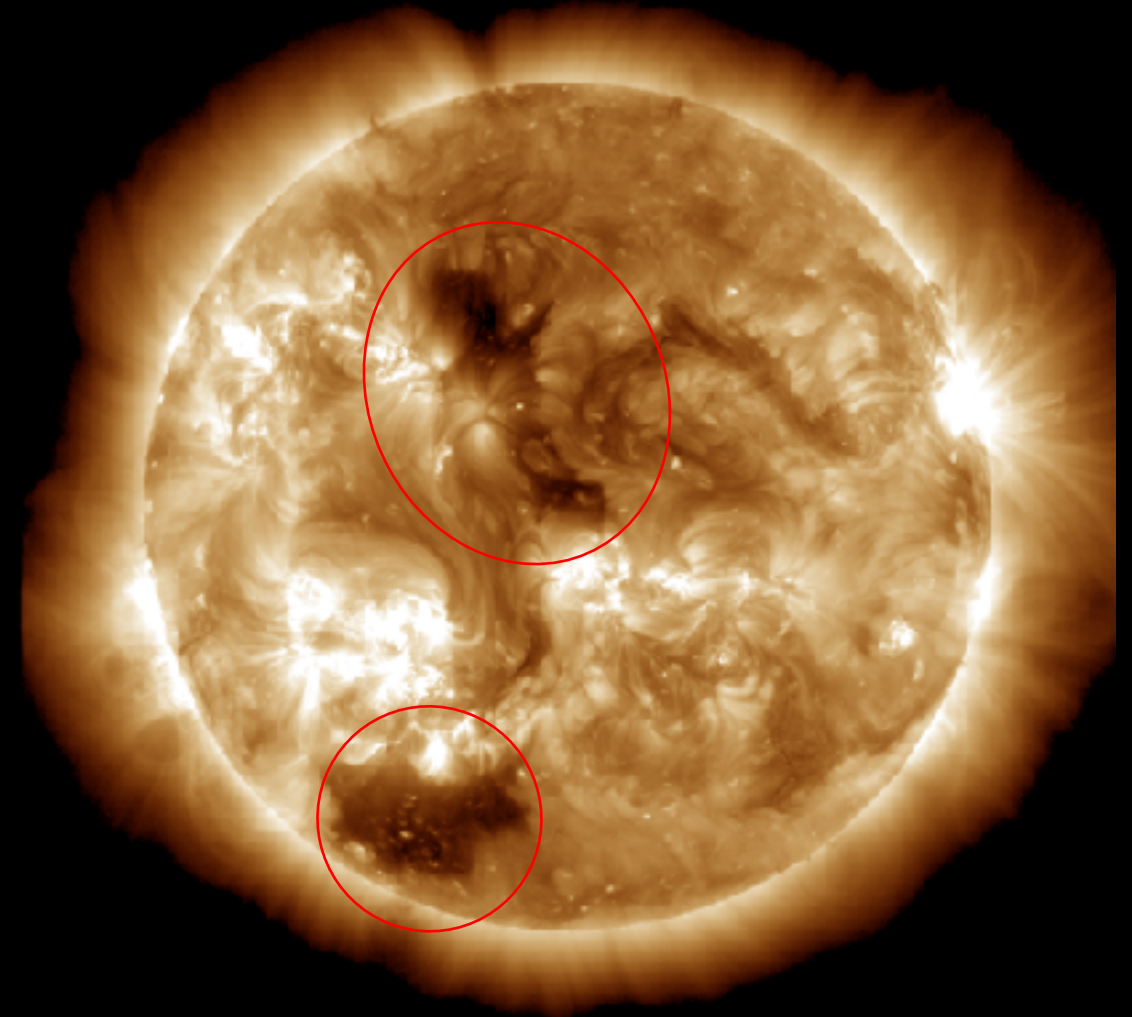
SDO/AIA 19.3 nm 2023-07-02

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



SDO/AIA 19.3 nm 2023-07-04

SDO/AIA AIA 193Å 2023-07-04T12:00:05.846

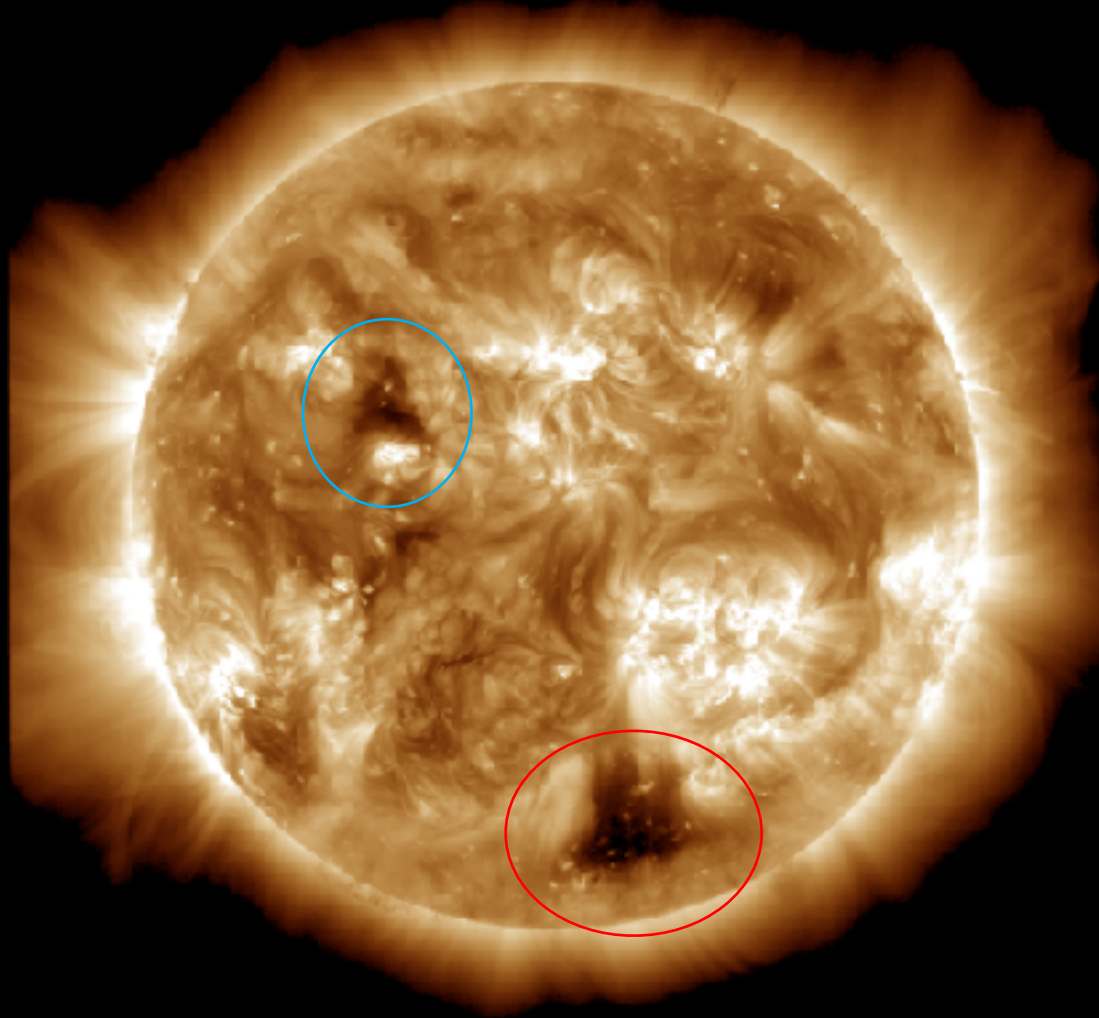




# Coronal holes

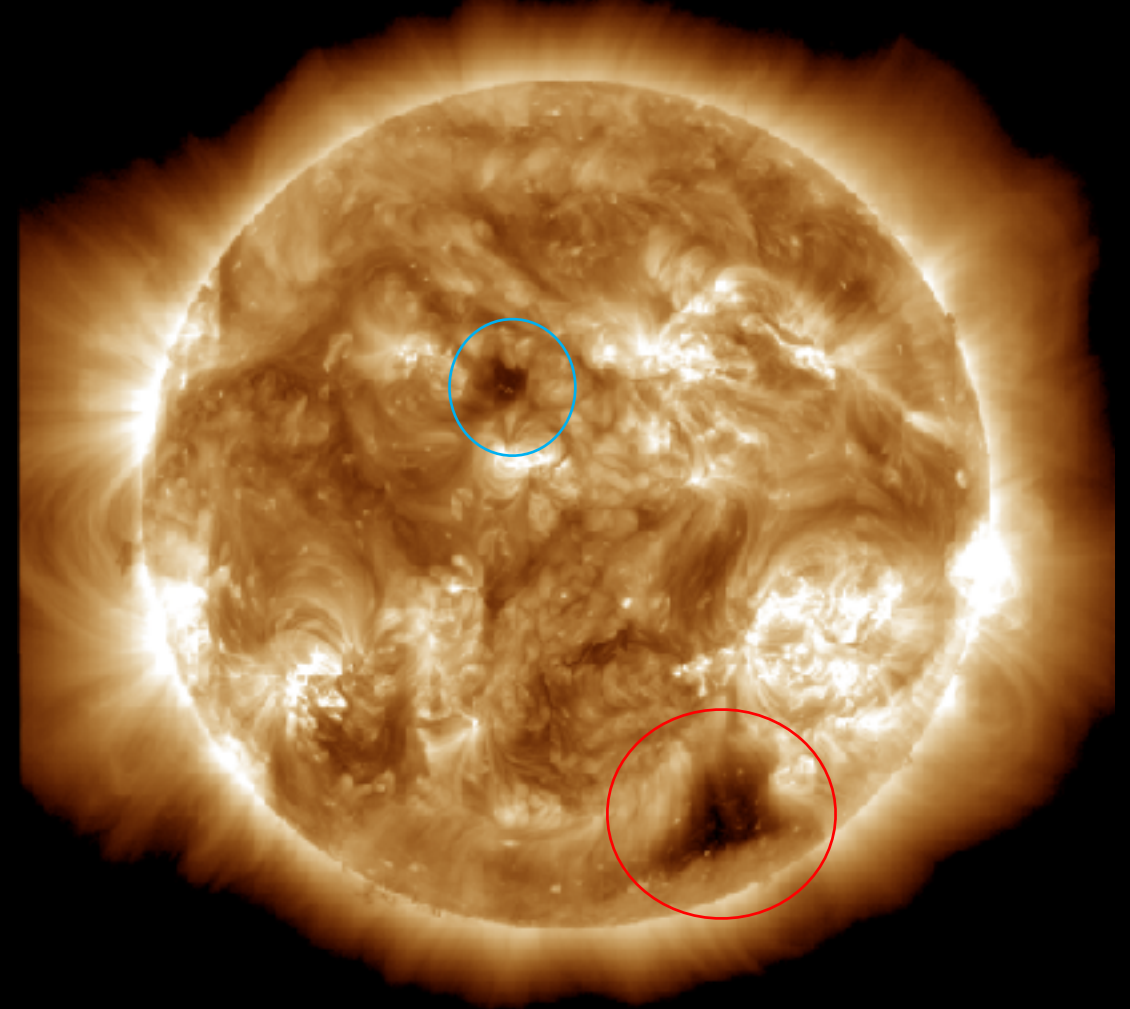
SDO/AIA 19.3 nm 2023-07-08

SDO/AIA AIA 193Å 2023-07-08T12:00:05.843



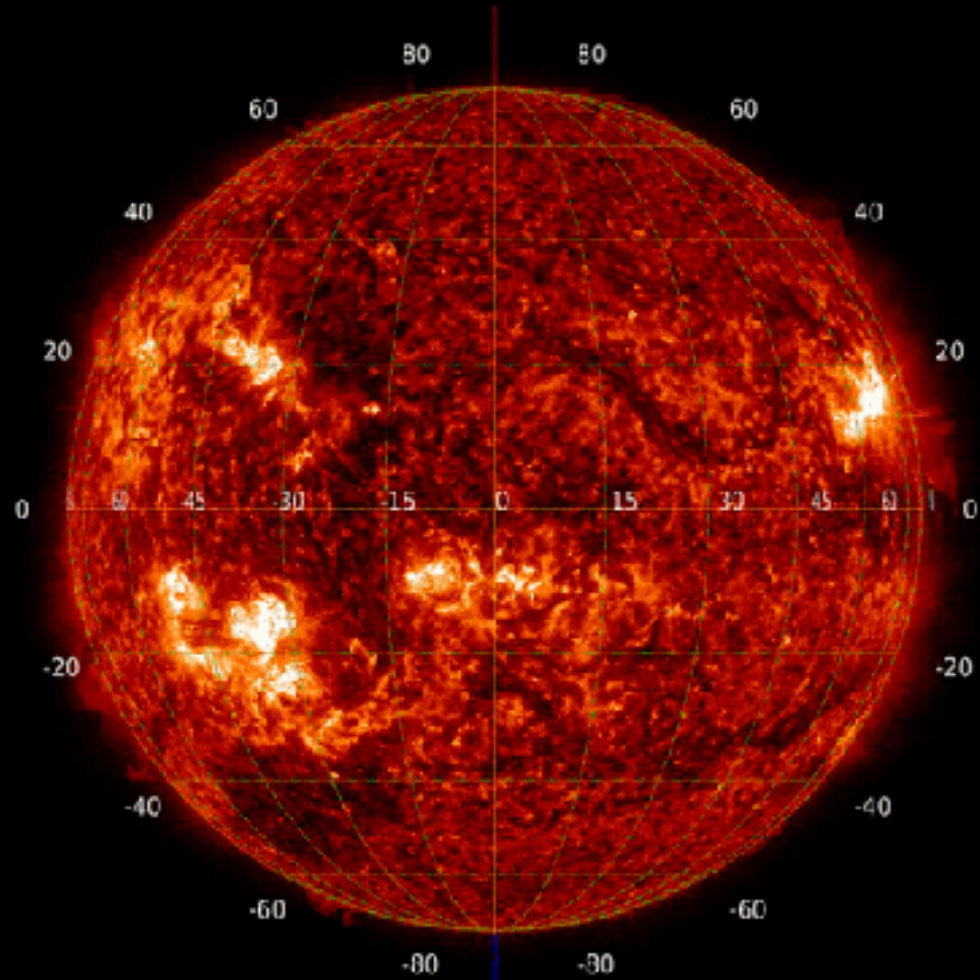
SDO/AIA 19.3 nm 2023-07-09

SDO/AIA AIA 193Å 2023-07-09T16:00:05.846

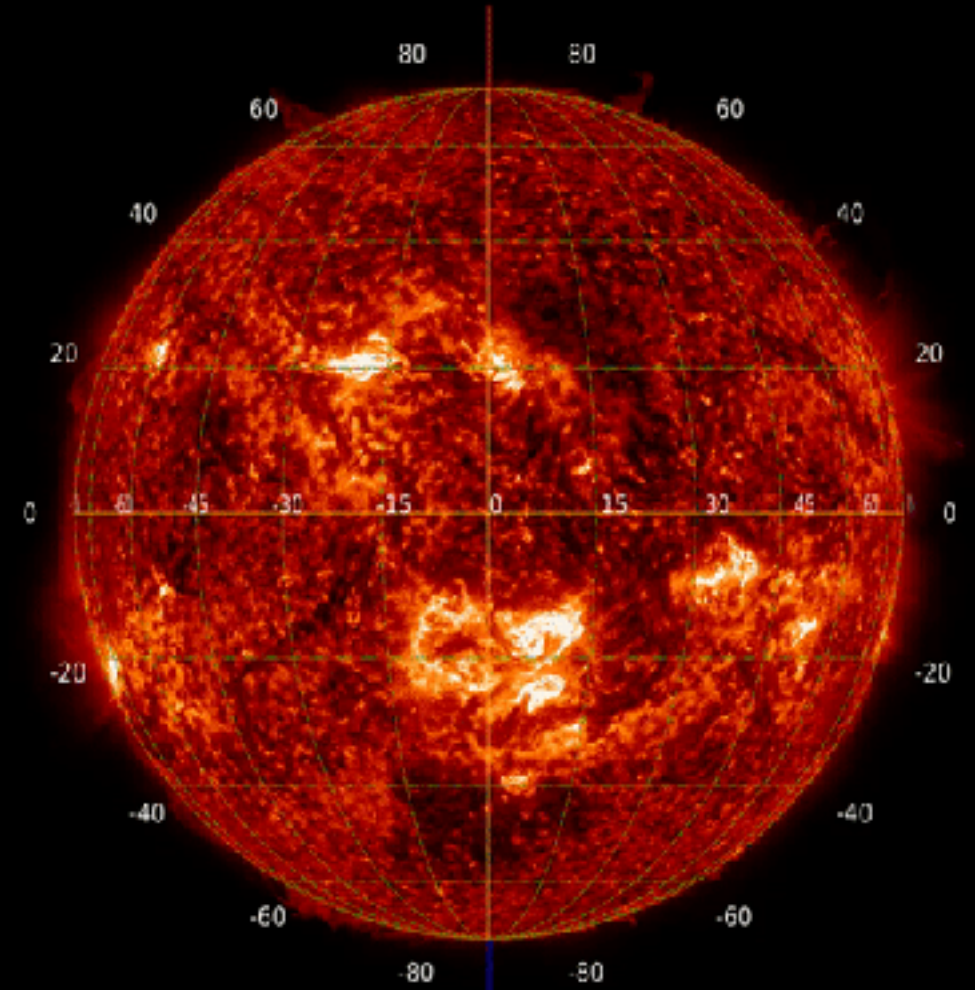


# Filaments

SDO/AIA 30.4 nm 2023-07-03



SDO/AIA 30.4 nm 2023-07-06

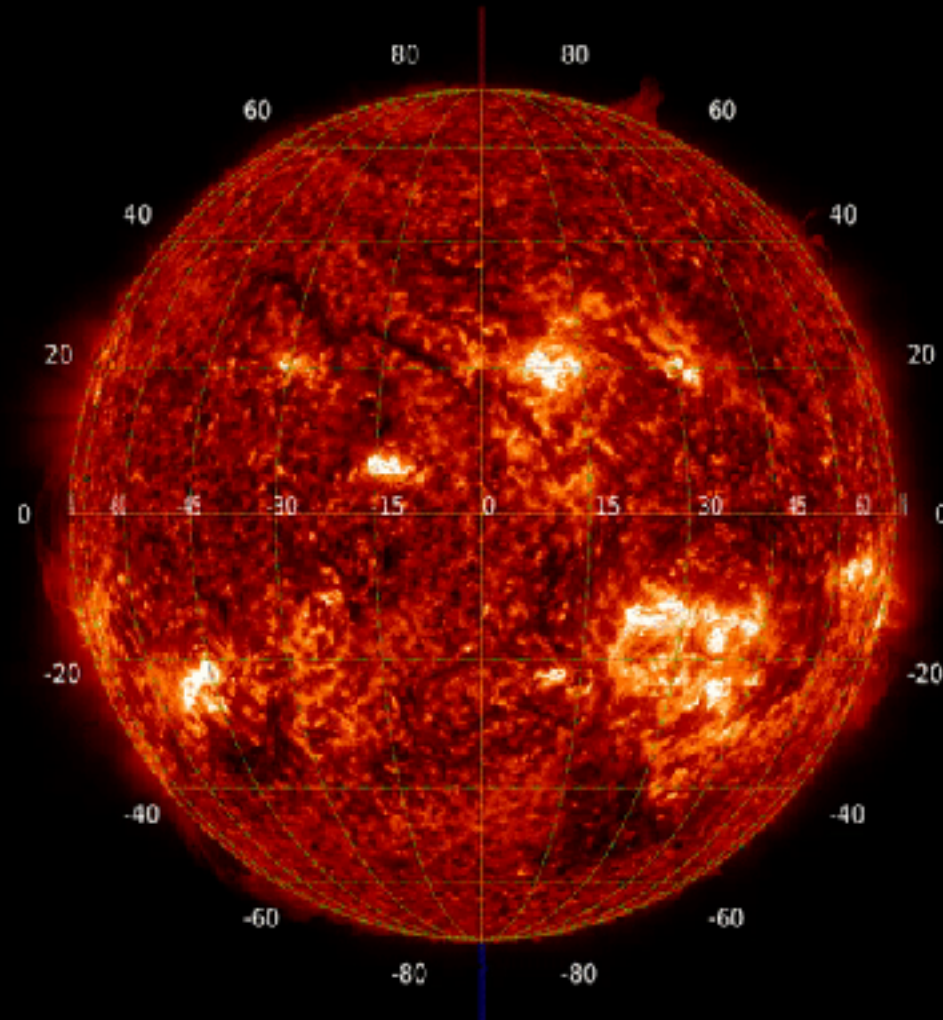


2023-07-03T17:42:57.622

2023-07-06T19:42:41.131

# Filaments

SDO/AIA 30.4 nm 2023-07-09



2023-07-09T02:42:41.130

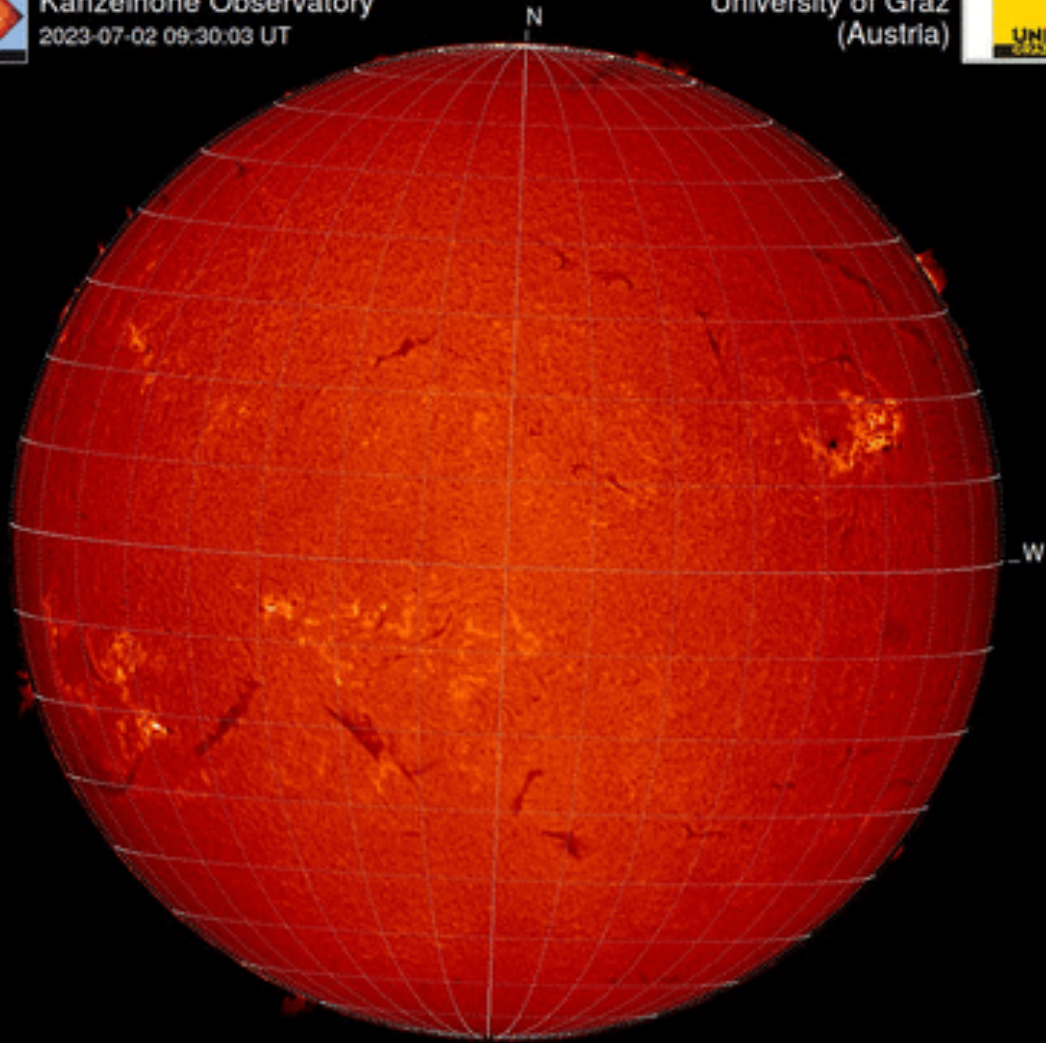
# Filaments & Filament eruptions

H-alpha 2023-07-02



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

University of Graz  
(Austria)

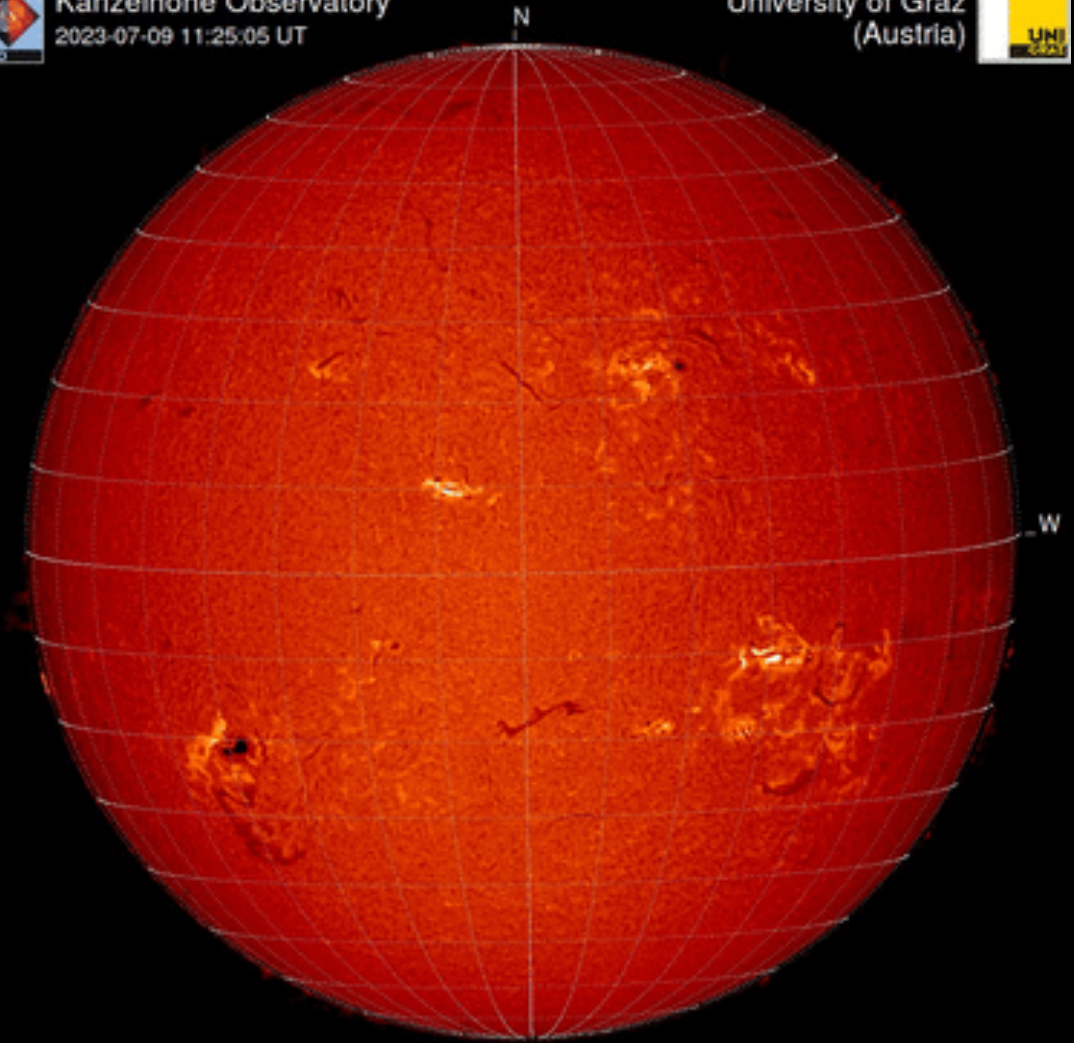


H-alpha 2023-07-09

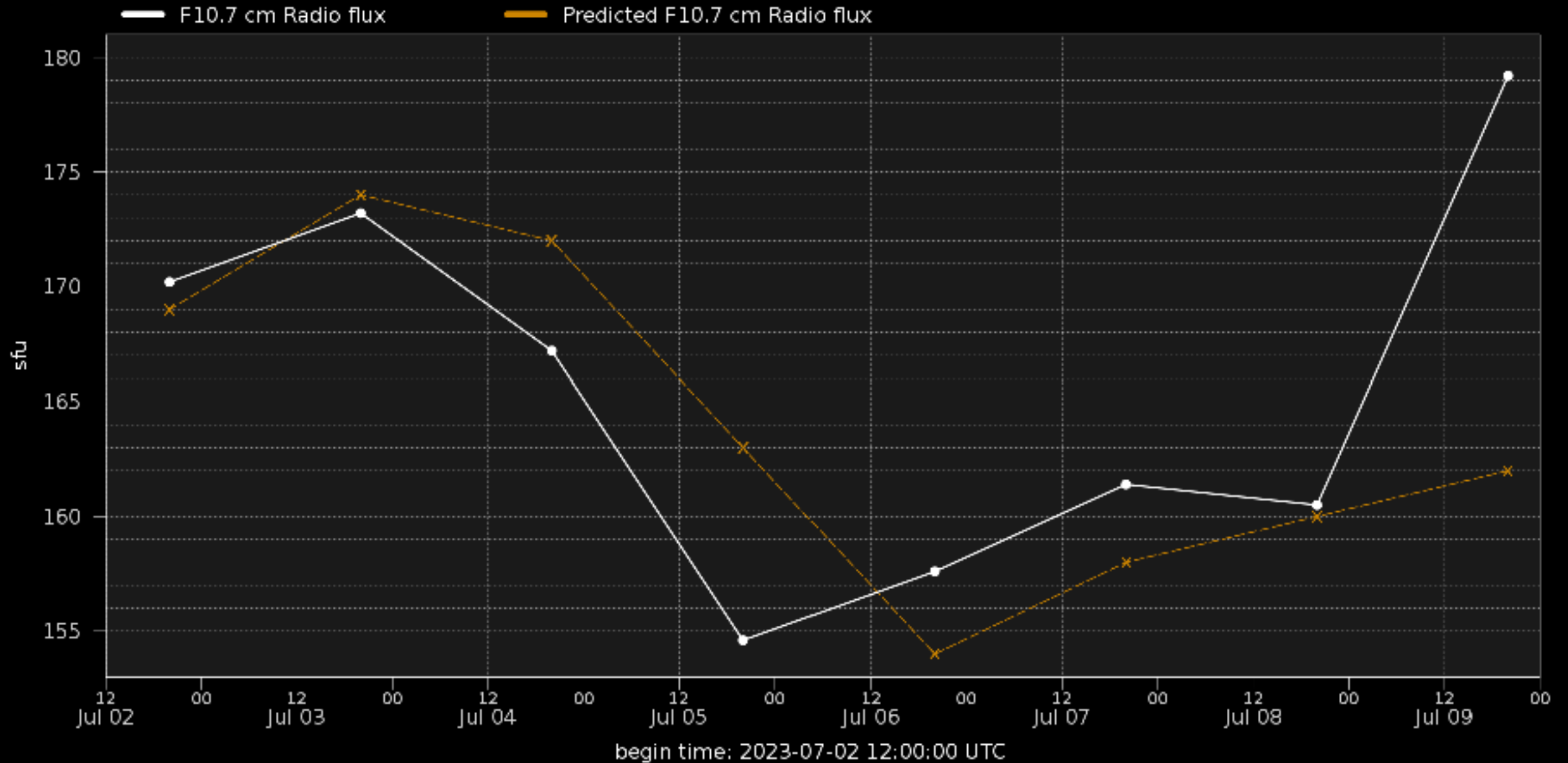


Kanzelhöhe Observatory  
2023-07-09 11:25:05 UT

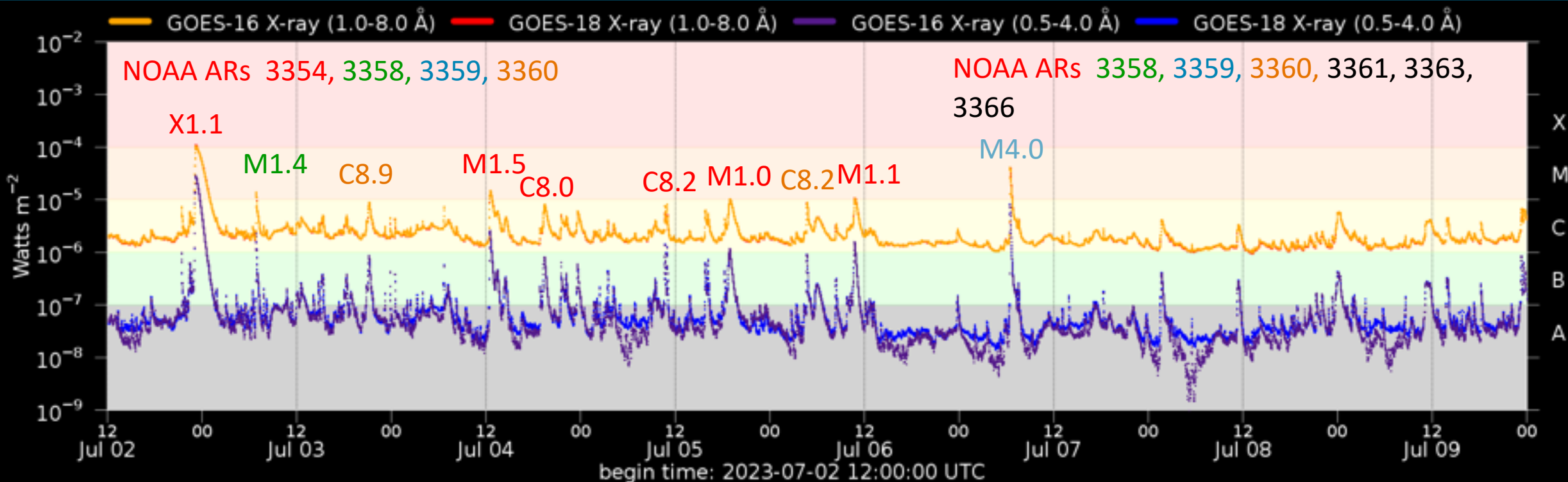
University of Graz  
(Austria)



# Solar F10.7cm radio flux



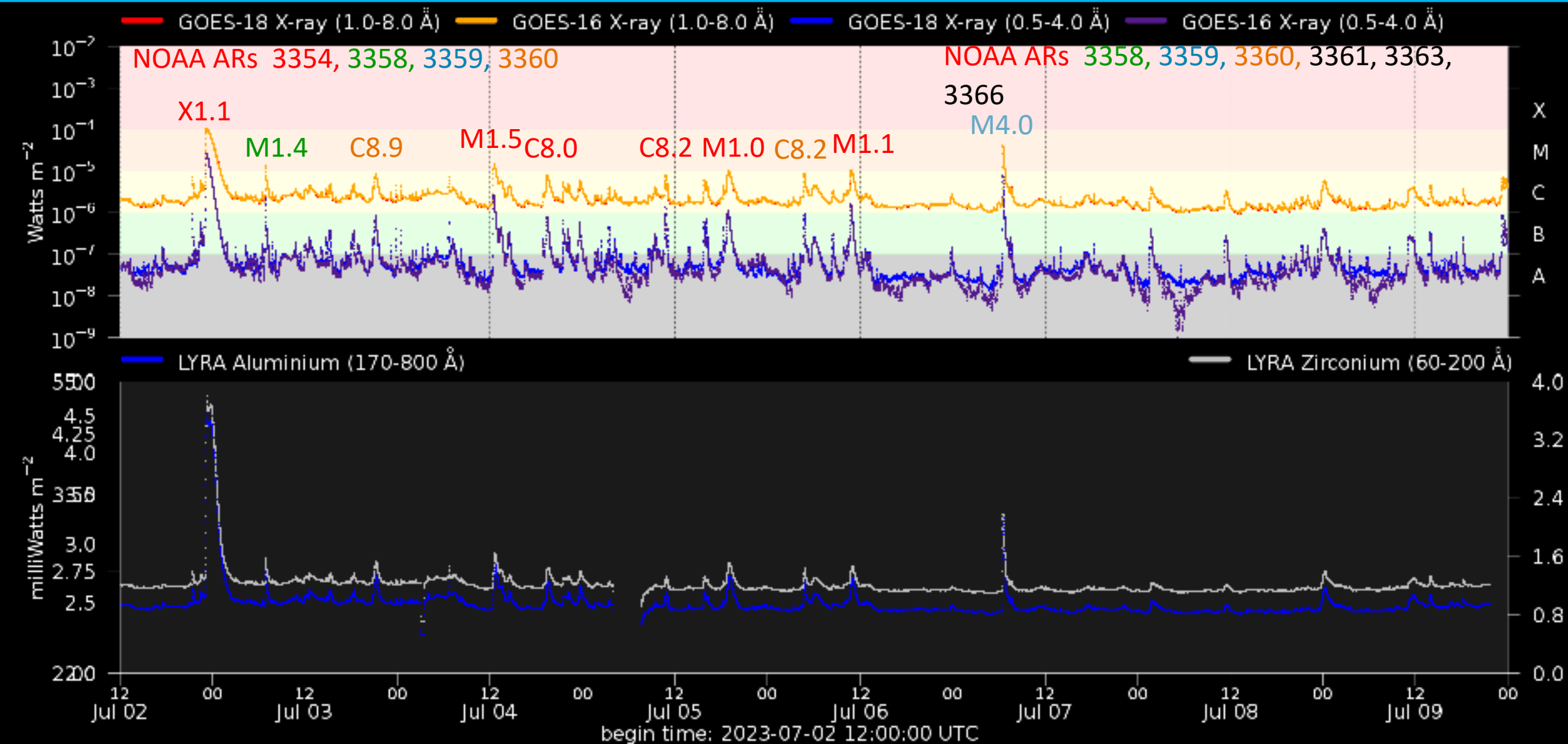
# Flaring activity



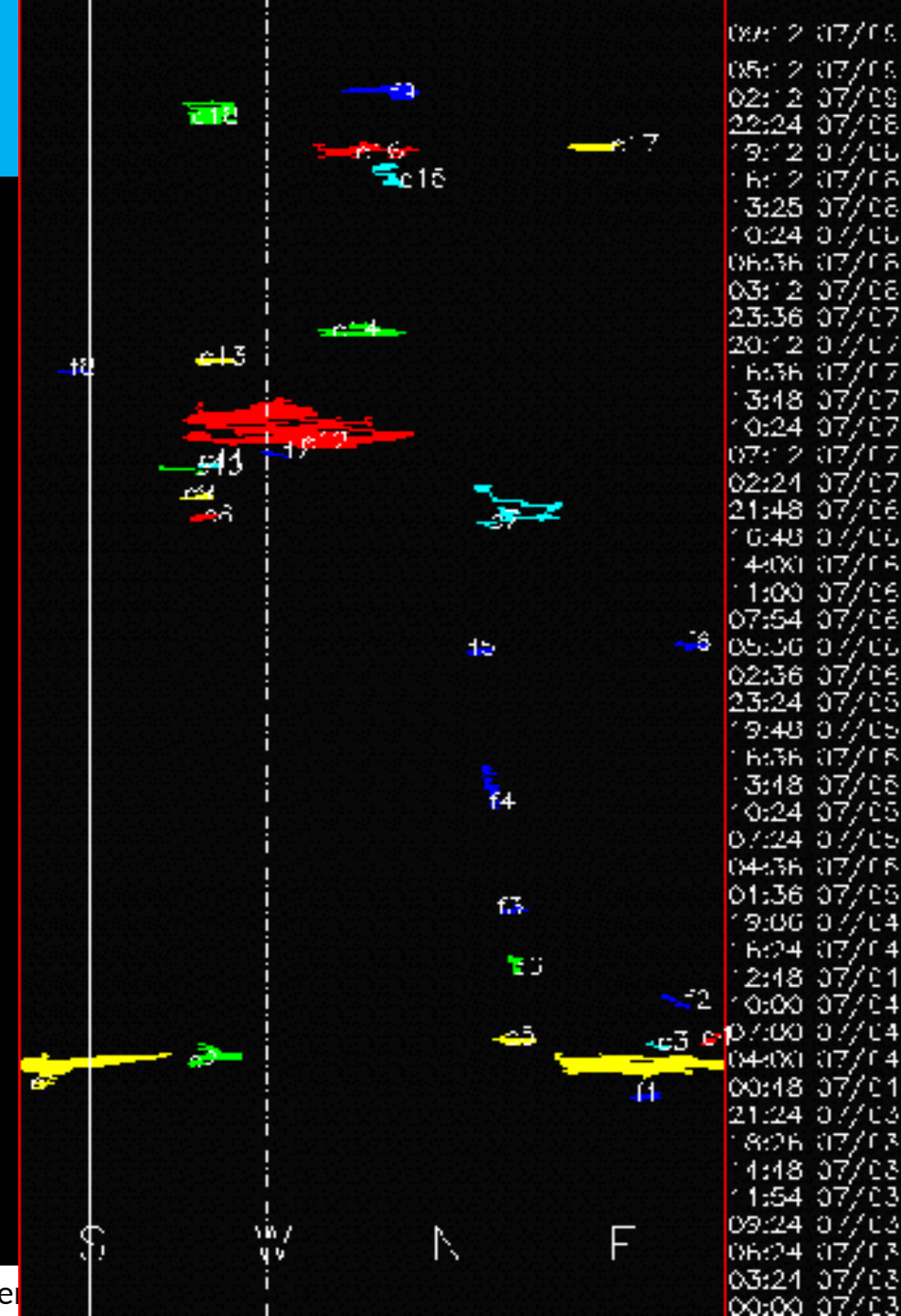
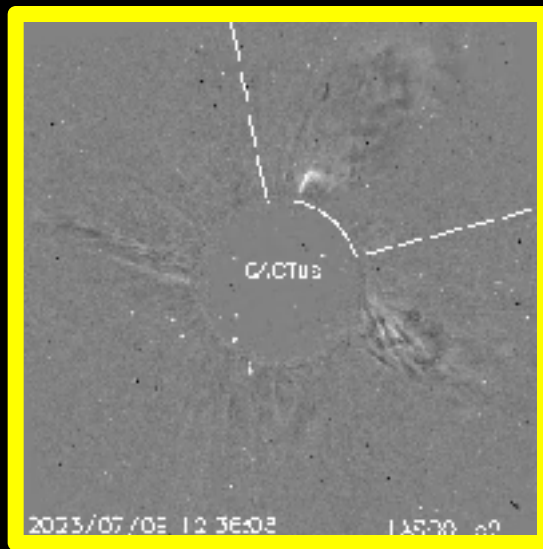
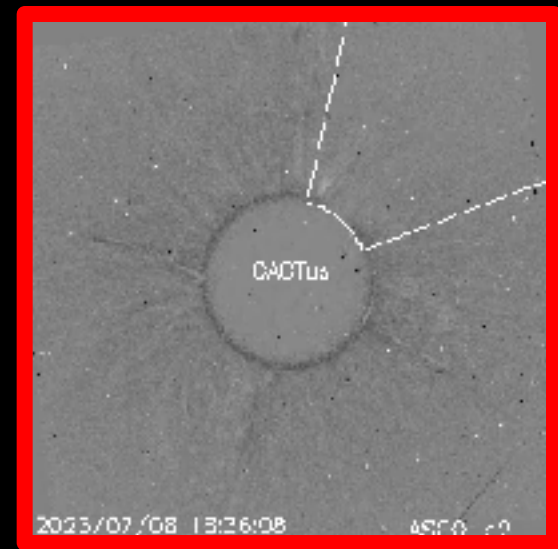
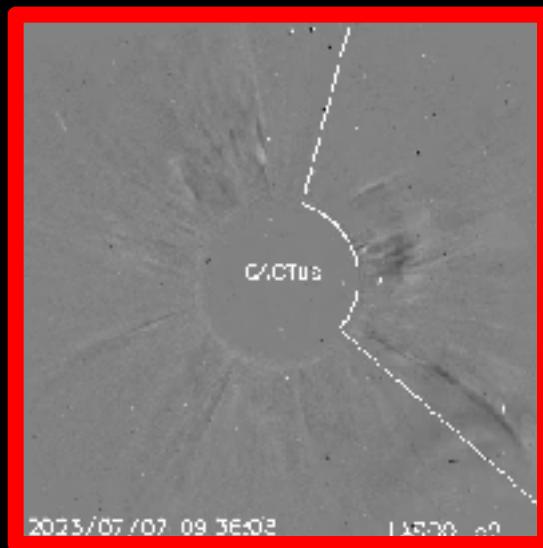
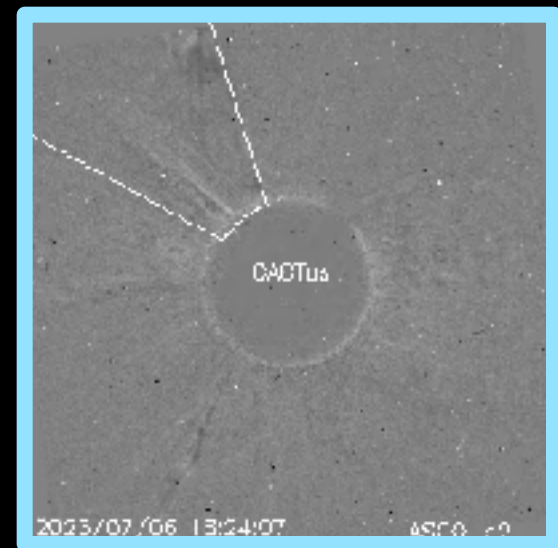
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2023-07-02	2023-07-03	2023-07-04	2023-07-05	2023-07-06	2023-07-07	2023-07-08	2023-07-09
Probability (%)	95   55   10	95   55   25	95   55   20	95   50   15	95   30   05	95   45   10	95   45   10	95   40   10
Observed (#)	04   01   01	08   00   00	08   01   00	05   02   00	01   01   00	04   00   00	06   00   00	04   00   00

# Solar X-Ray and UV flux

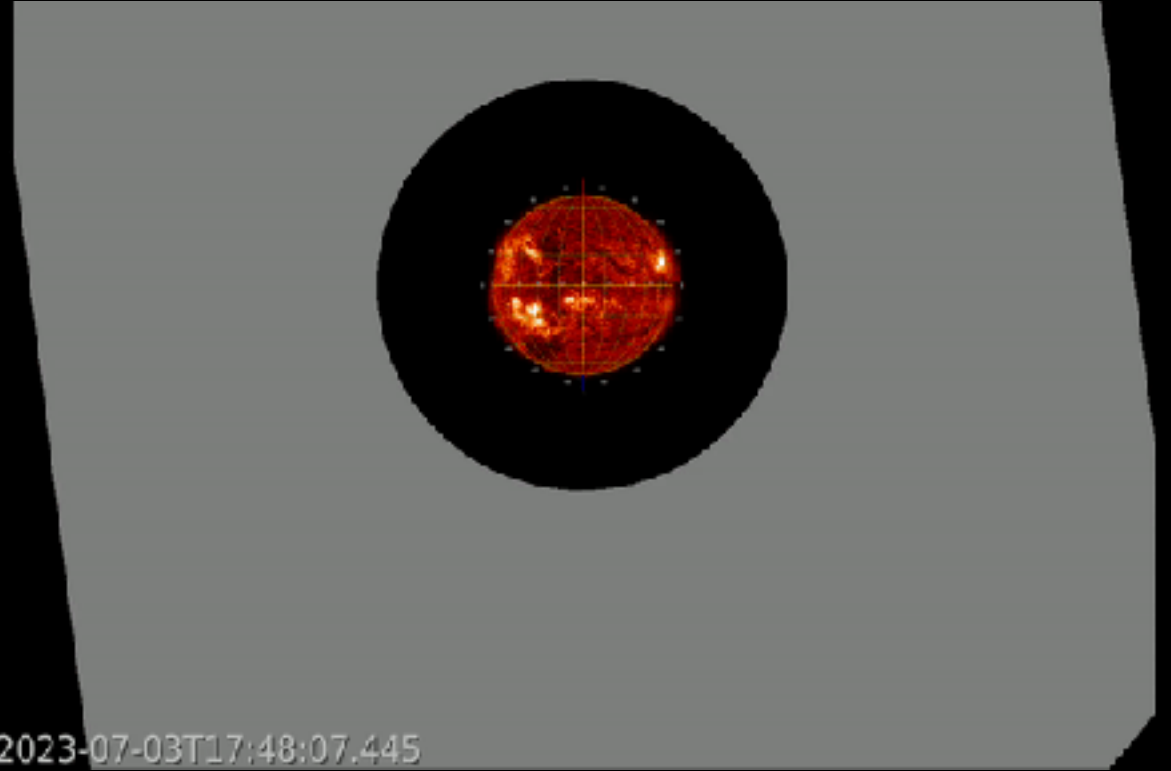
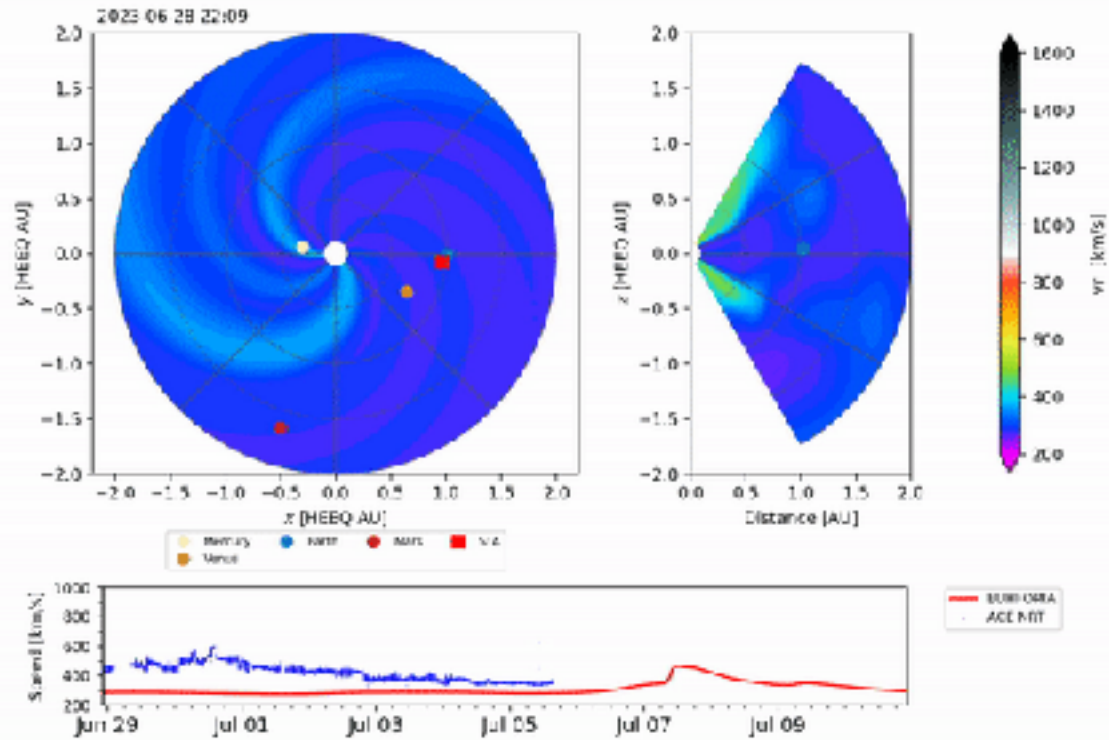


# Coronal Mass Ejections



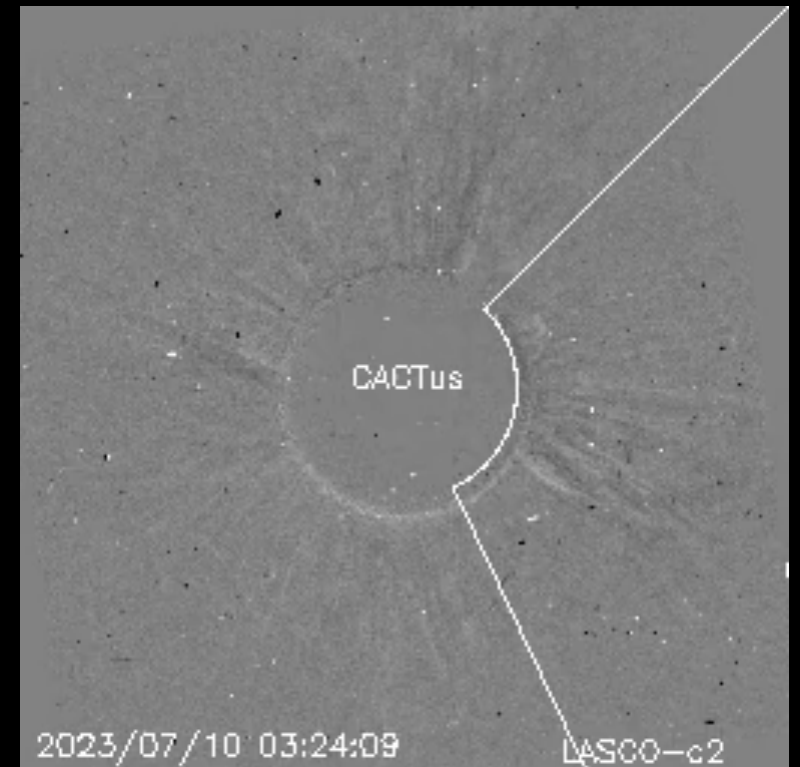
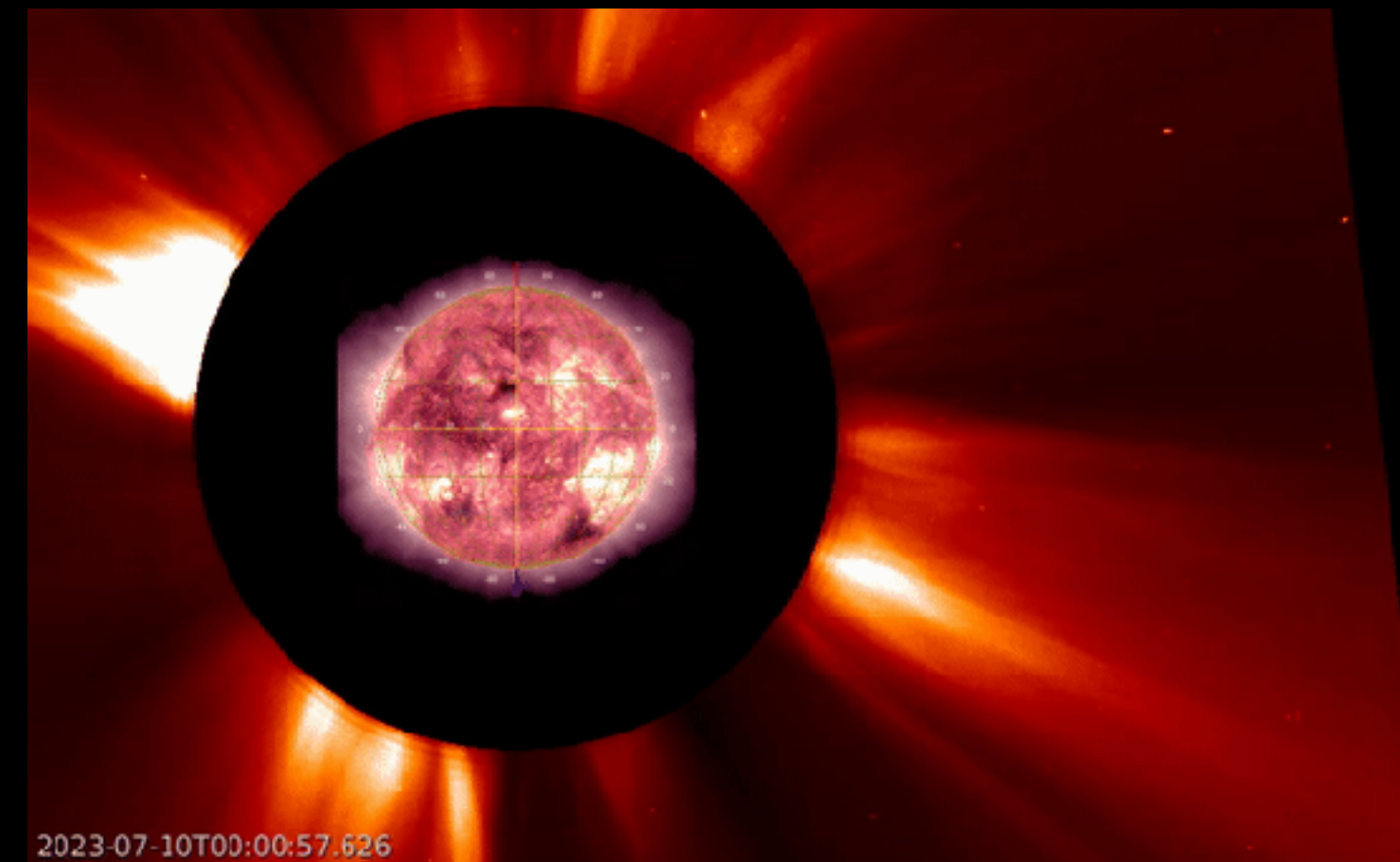


# Coronal Mass Ejections



When: 14:36 UTC on July 04  
Prediction: Predicted arrival at Earth at 07:09 on July 07  
No ICME arrival seen

# Coronal Mass Ejections



**When:** 04:00 UTC on July 10, likely related to the M2.4 flare from NOAA AR 3358 and a type II radio burst detected around 03:41 UTC on July 10

# Solar Wind and Geomagnetic Activity

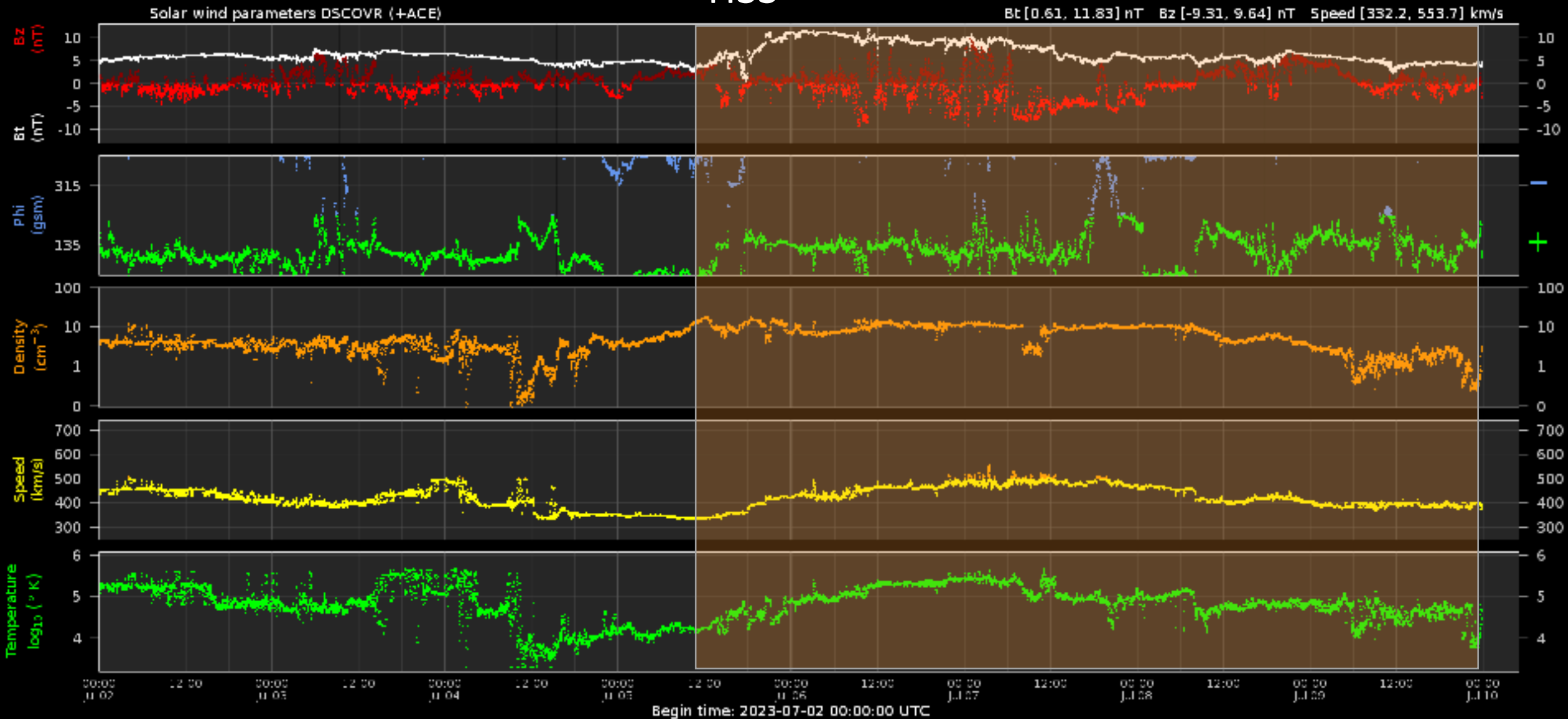


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# Solar wind parameters

HSS

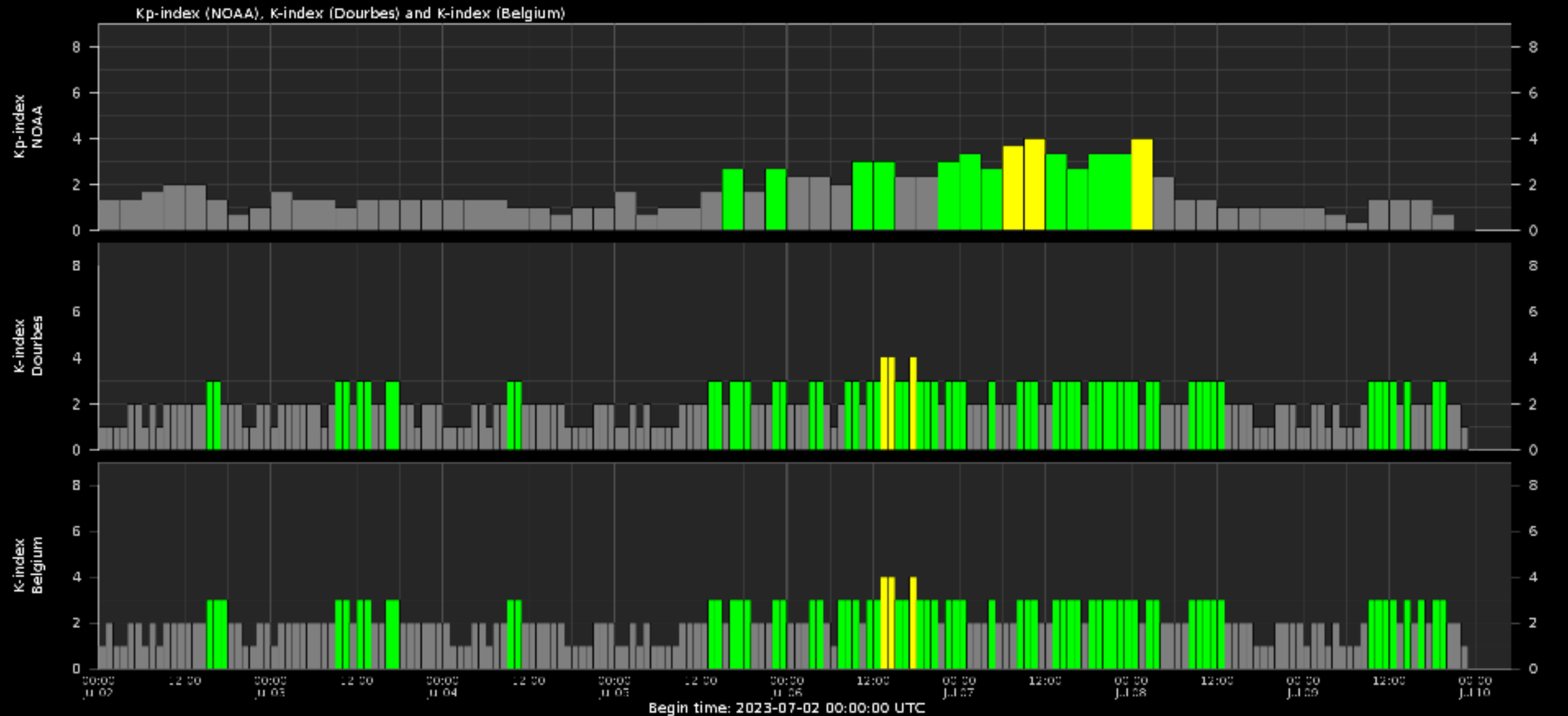


# Solar wind parameters & K-indices

HSS



# Geomagnetic activity (K-indexes)



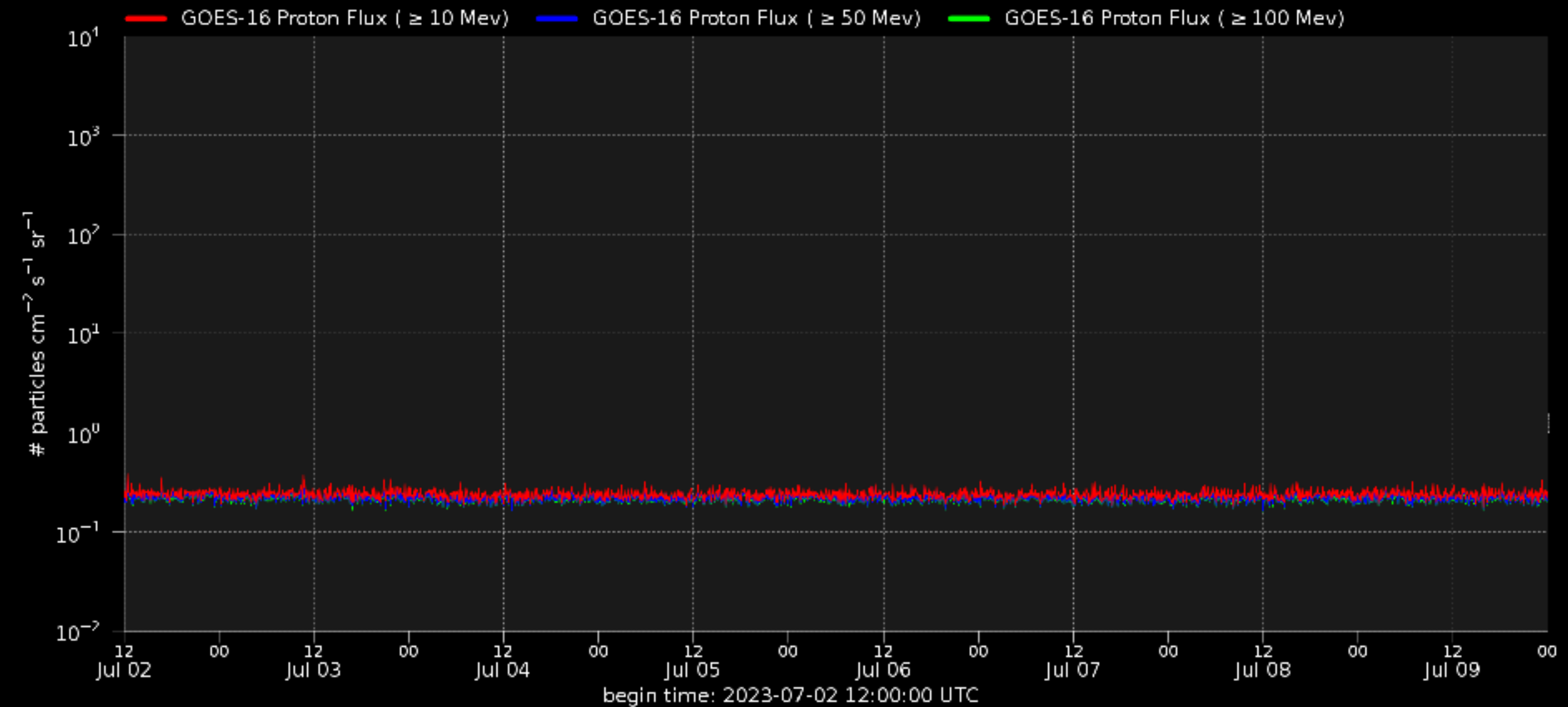
# Energetic Particles



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# Solar proton flux

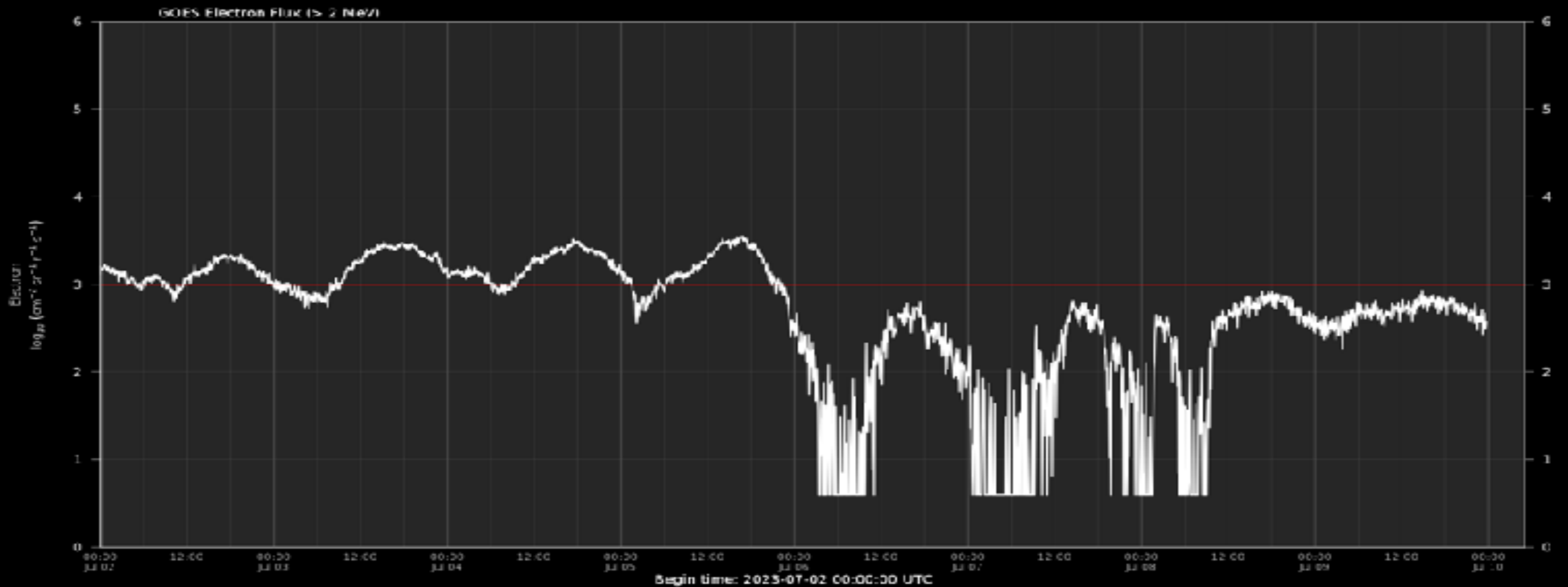




# Electron flux at GEO

[www.stce.be/educational/classification#electrons](http://www.stce.be/educational/classification#electrons)

[www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php](http://www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php)



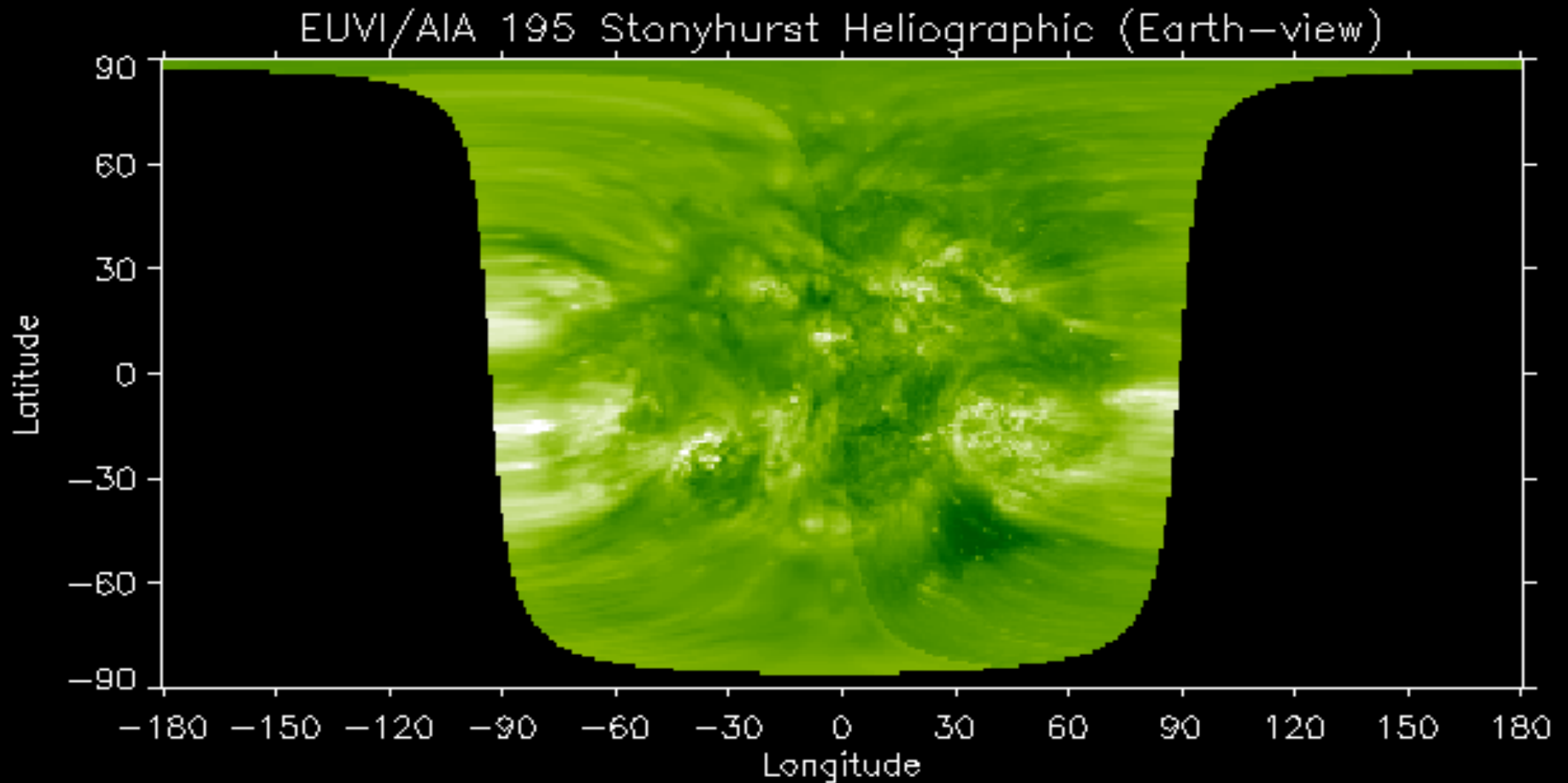
# Outlook



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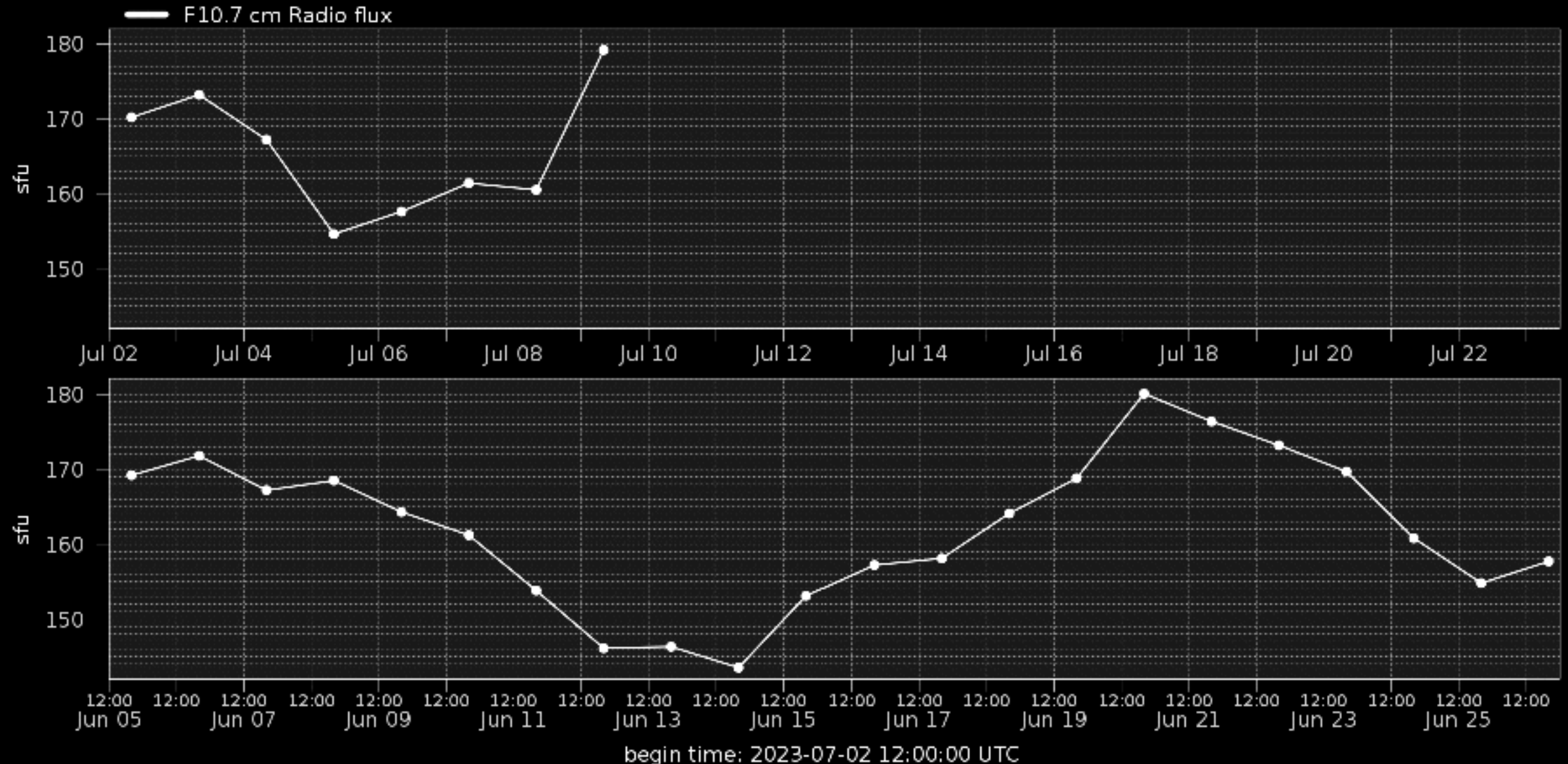
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Data analysis Centre  
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# Outlook: Solar activity

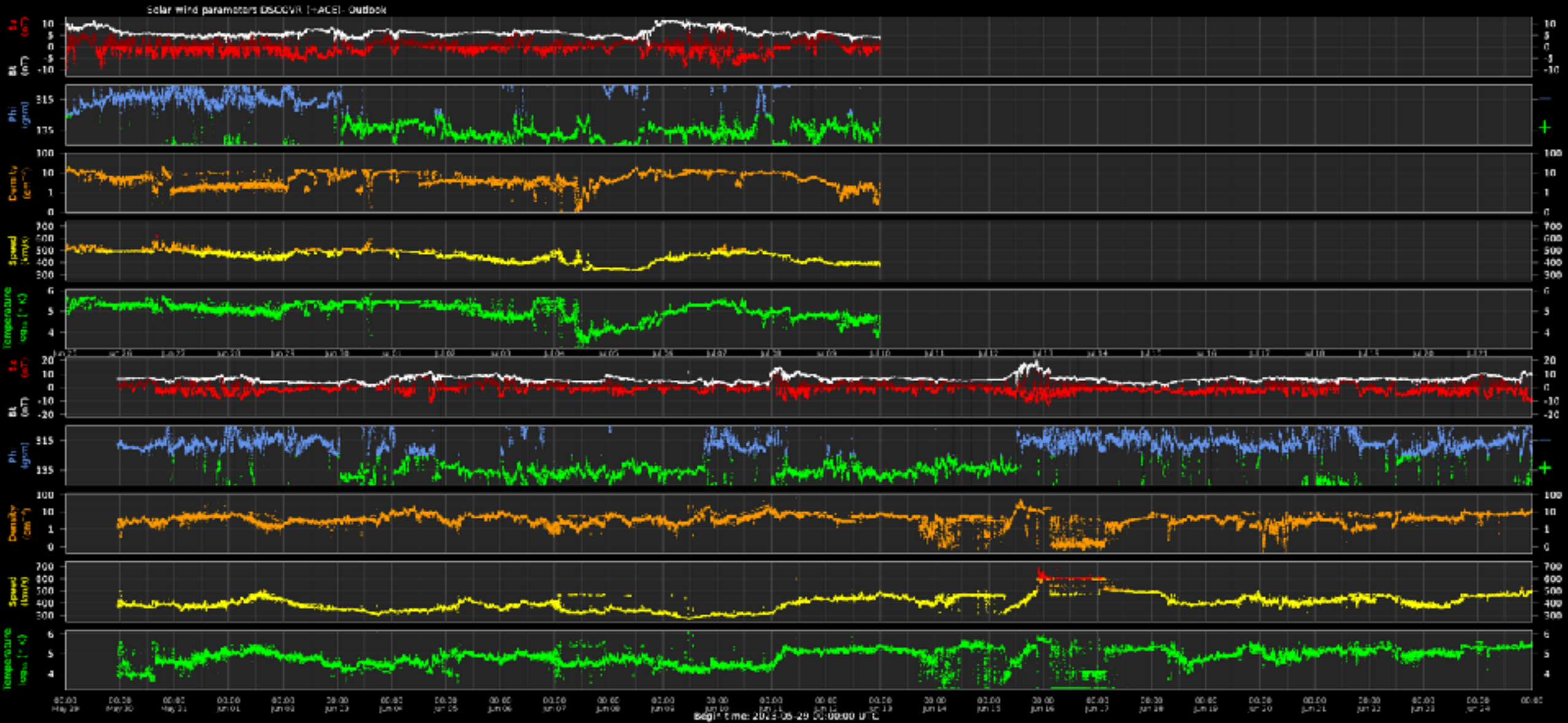


Observation date: 2023/07/09 21:15:00

# Outlook: Solar F10.7cm radio flux



# Outlook: Solar wind parameters



# Outlook: Geomagnetic activity





# Pegasus



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