

SIDC Space Weather Briefing

27 August 2023-03 September 2023

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& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2023-08-27 12:00 to 2023-09-03 23:59

Active regions	8 Active Regions NOAA AR 3411 – 3413, 3415 - 3419
Flares	# C-class flare: 23 # M-class flare: 4 # X-class flare: 0
Coronal Holes	CH+ HSS effecting Earth since Aug 31
CMEs	Three partially Earth directed on Aug 29, Aug 30, Sept 01

Proton flux	Proton event following M1.2 and halo CME
Electron flux	Below 1000 pfu threshold

Solar wind and geomagnetic conditions

ICMEs	No clear arrival
Solar wind conditions	B : 1.34 - 12.62 nT //Bz: -9.64 nT to 10.66 nT //Speed: 277.7 - 578.3km/s
K-indices	max K-index (KBel): 5 max Kp-index (NOAA): 6-

All Quiet Alert: Not all quiet

Solar Activity

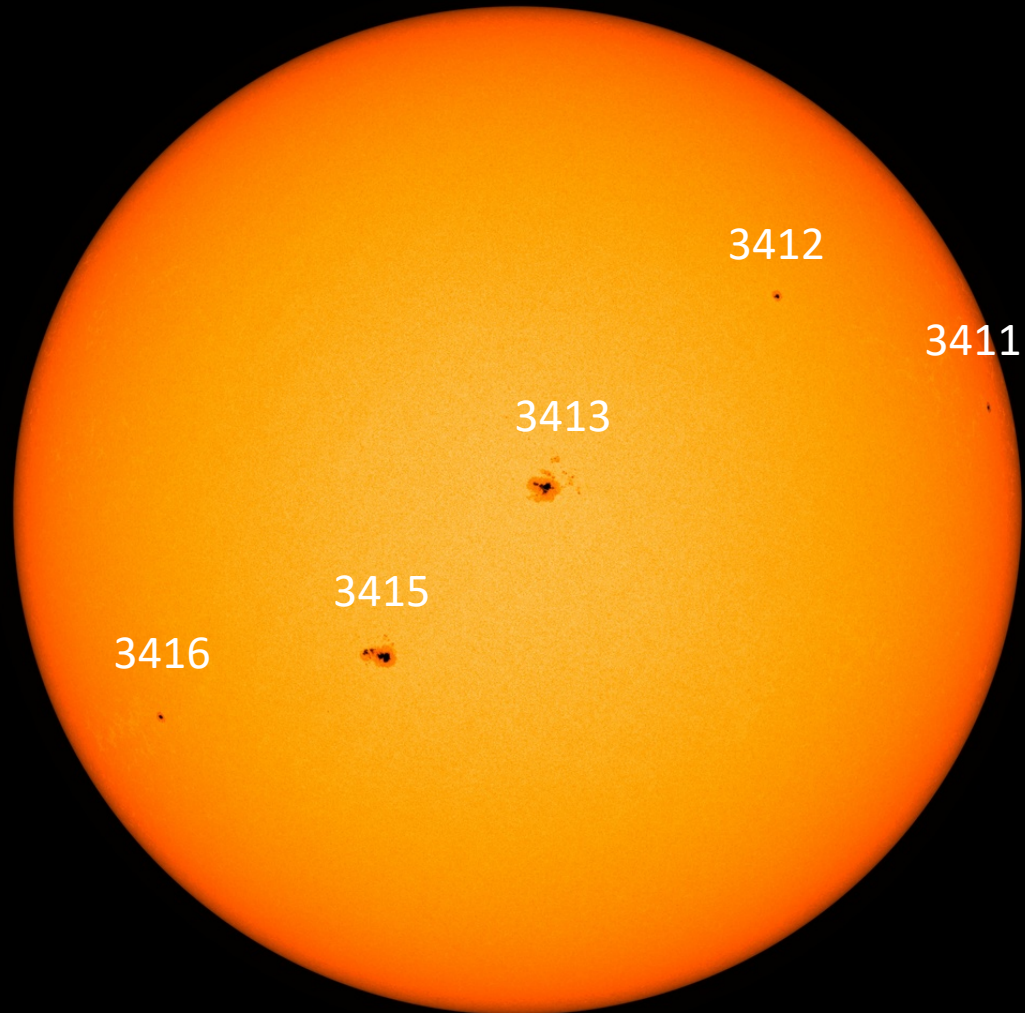


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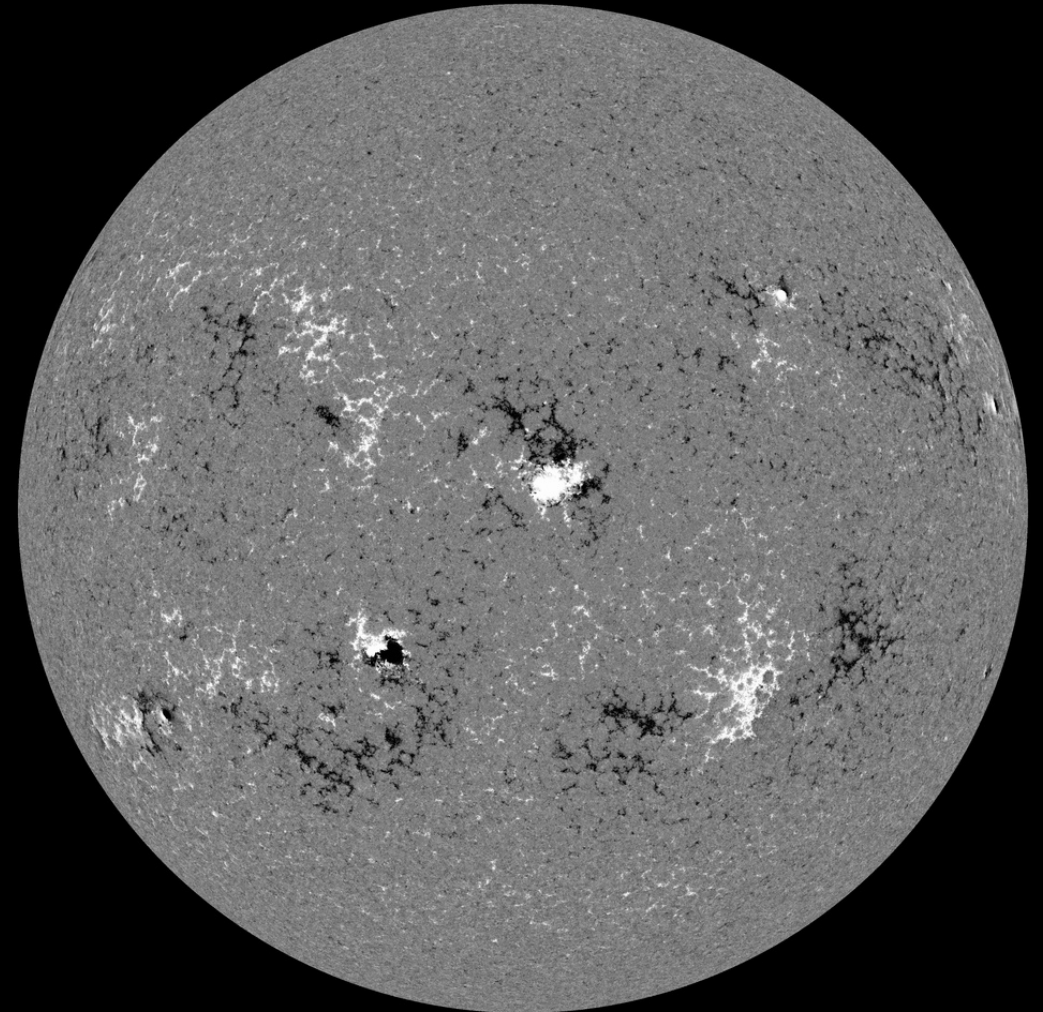
Solar active regions

SDO/HMI White Light 2023-08-27



SDO/HMI Quick-Look Continuum: 20230827_114500

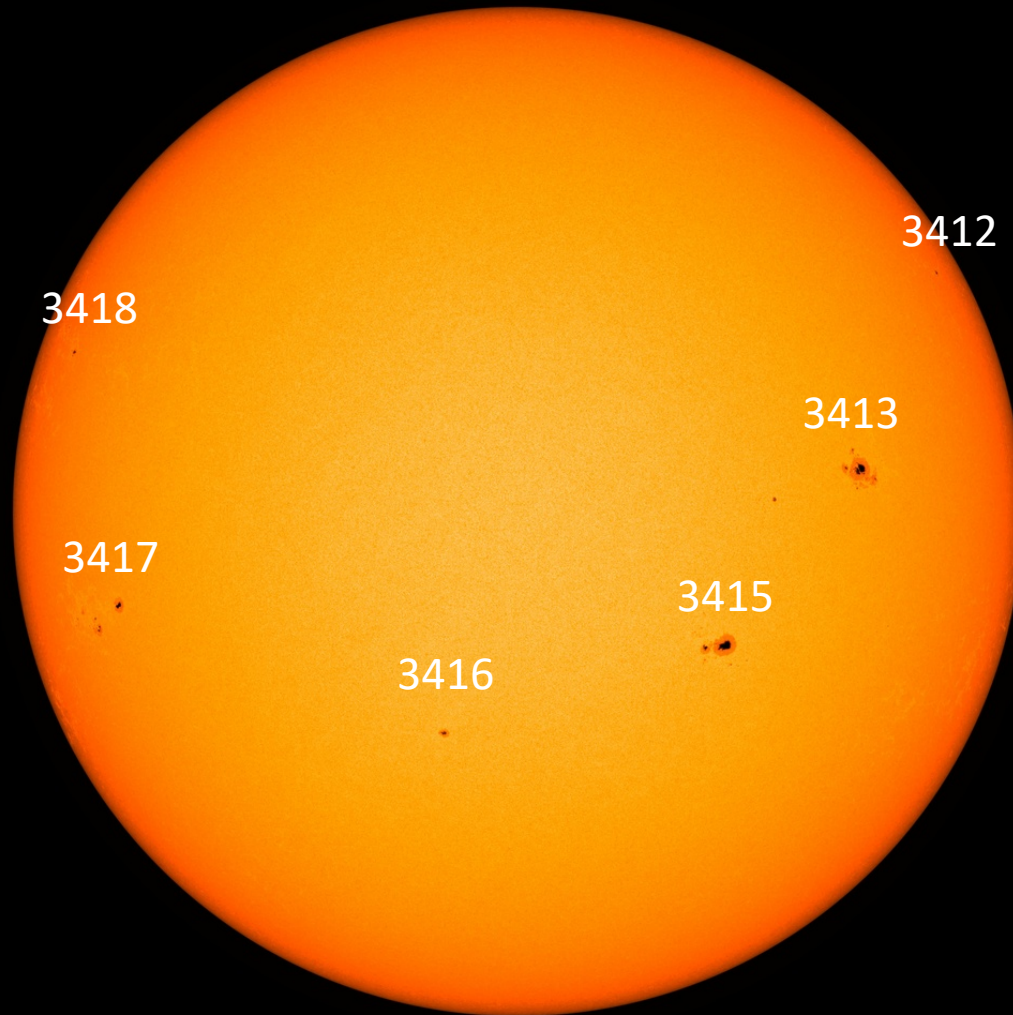
SDO/HMI Magnetogram 2023-08-27



SDO/HMI Quick-Look Magnetogram: 20230827_114500

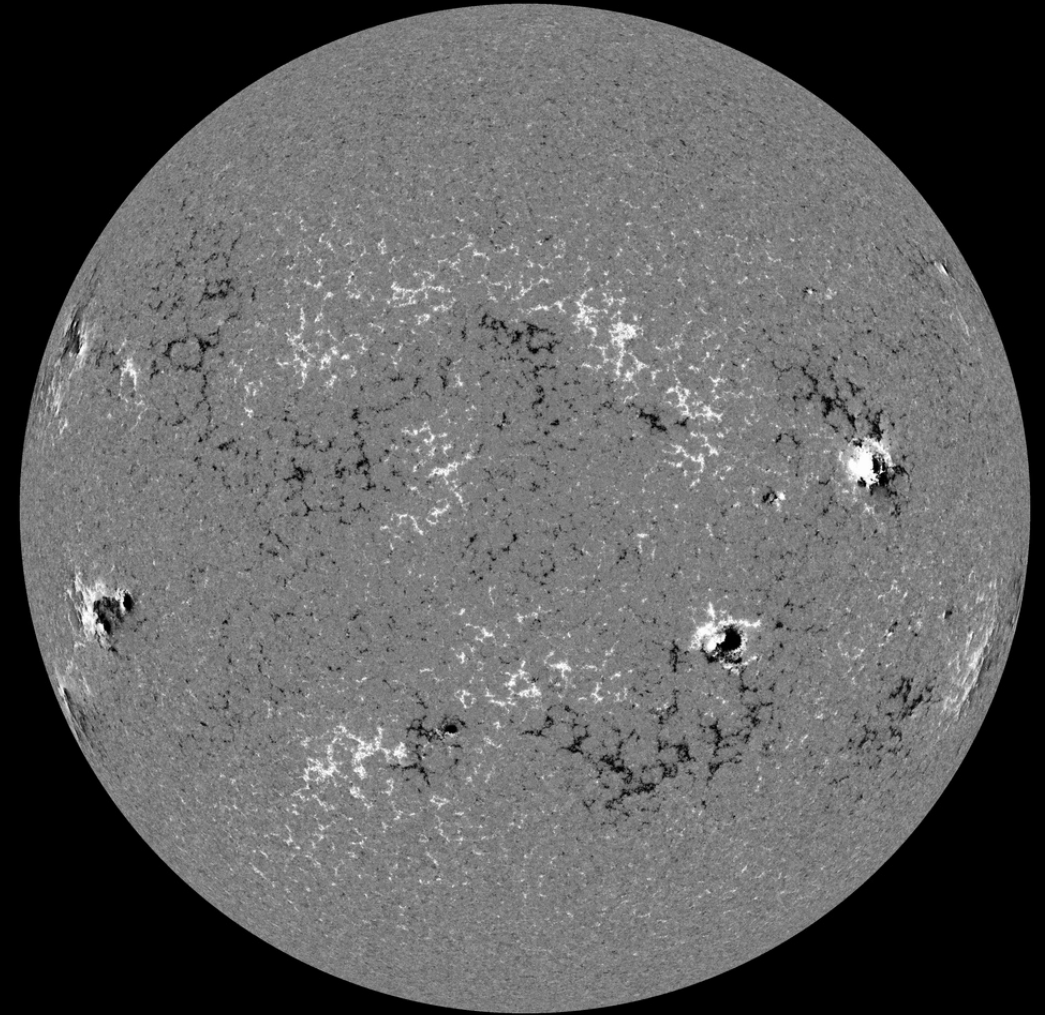
Solar active regions

SDO/HMI White Light 2023-08-30



SDO/HMI Quick-Look Continuum: 20230830_114500

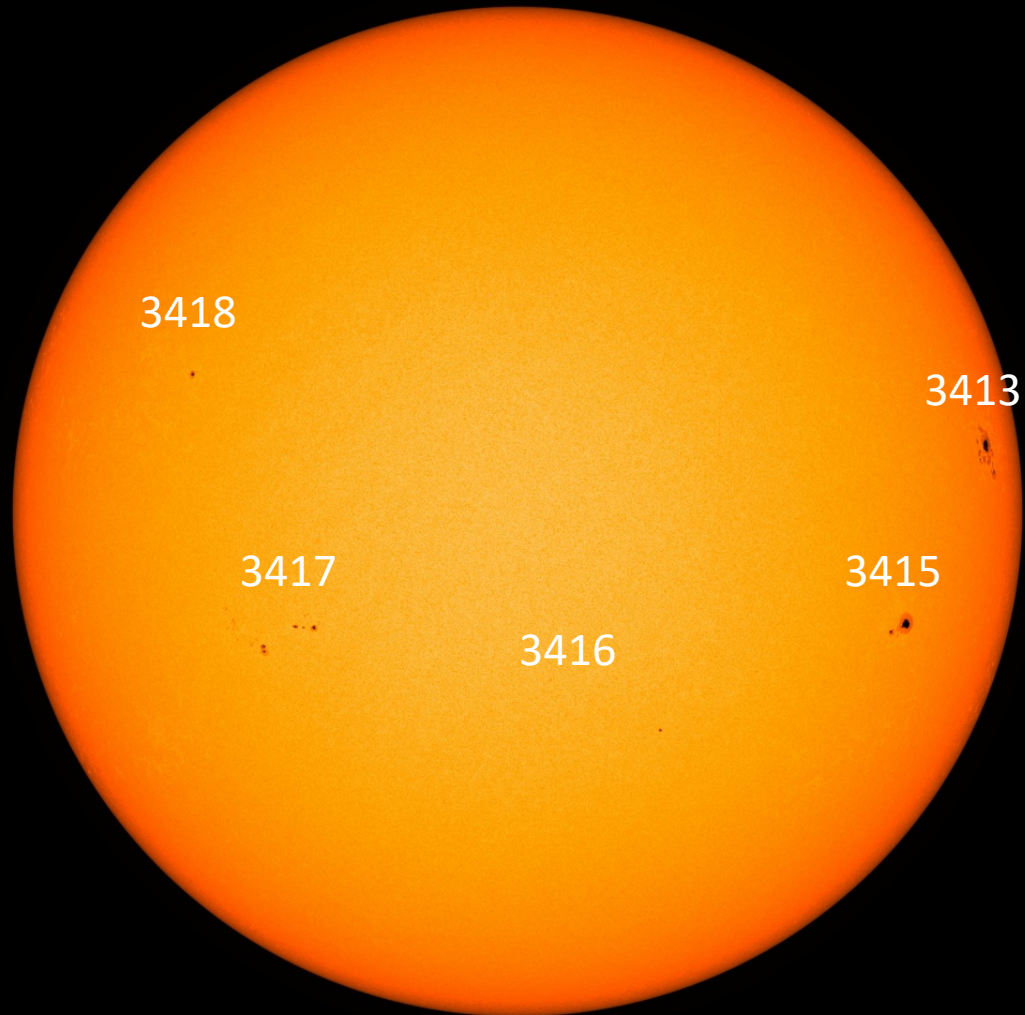
SDO/HMI Magnetogram 2023-08-30



SDO/HMI Quick-Look Magnetogram: 20230830_114500

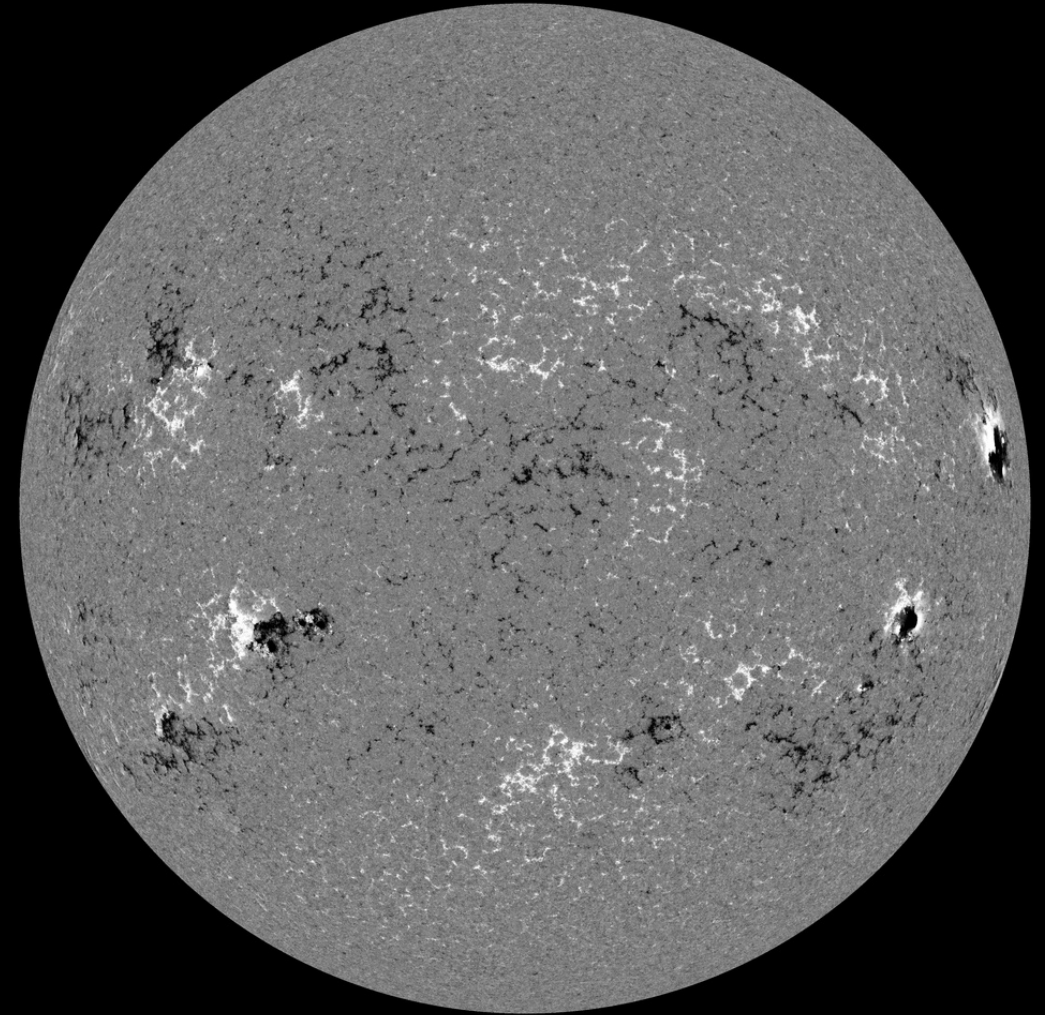
Solar active regions

SDO/HMI White Light 2023-09-01



SDO/HMI Quick-Look Continuum: 20230901_114500

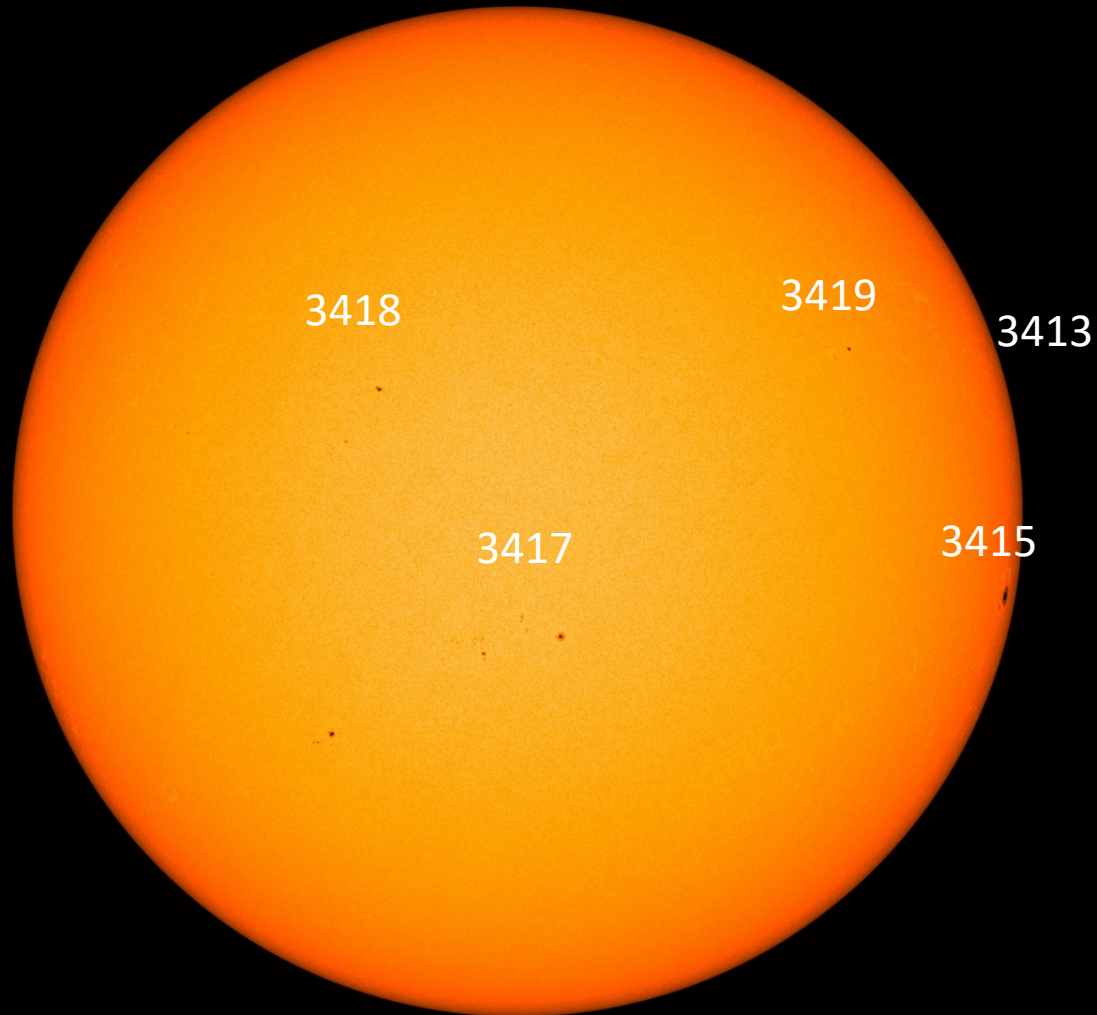
SDO/HMI Magnetogram 2023-09-01



SDO/HMI Quick-Look Magnetogram: 20230901_114500

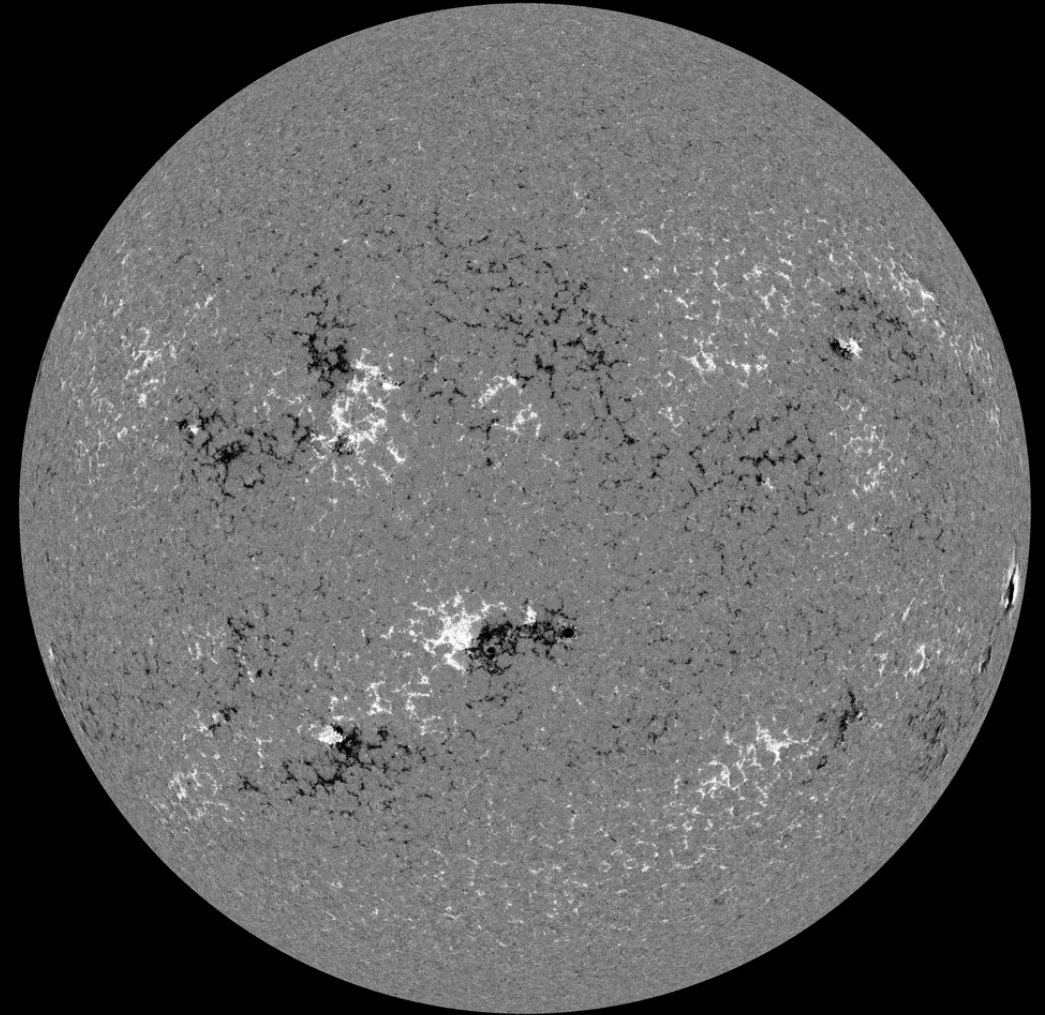
Solar active regions

SDO/HMI White Light 2023-09-03



SDO/HMI Quick-Look Continuum: 20230903_114500

SDO/HMI Magnetogram 2023-09-03

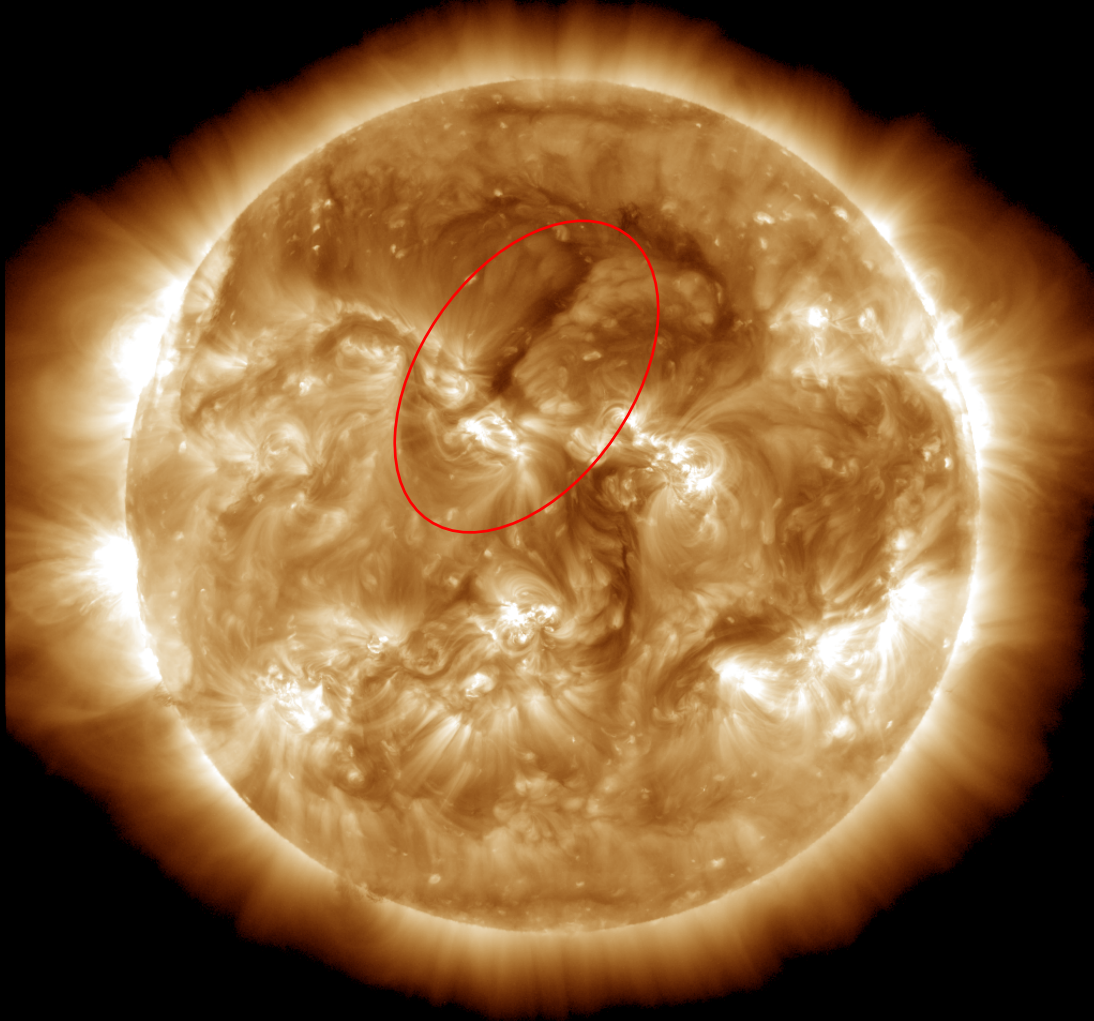


SDO/HMI Quick-Look Magnetogram: 20230903_114500

Coronal holes

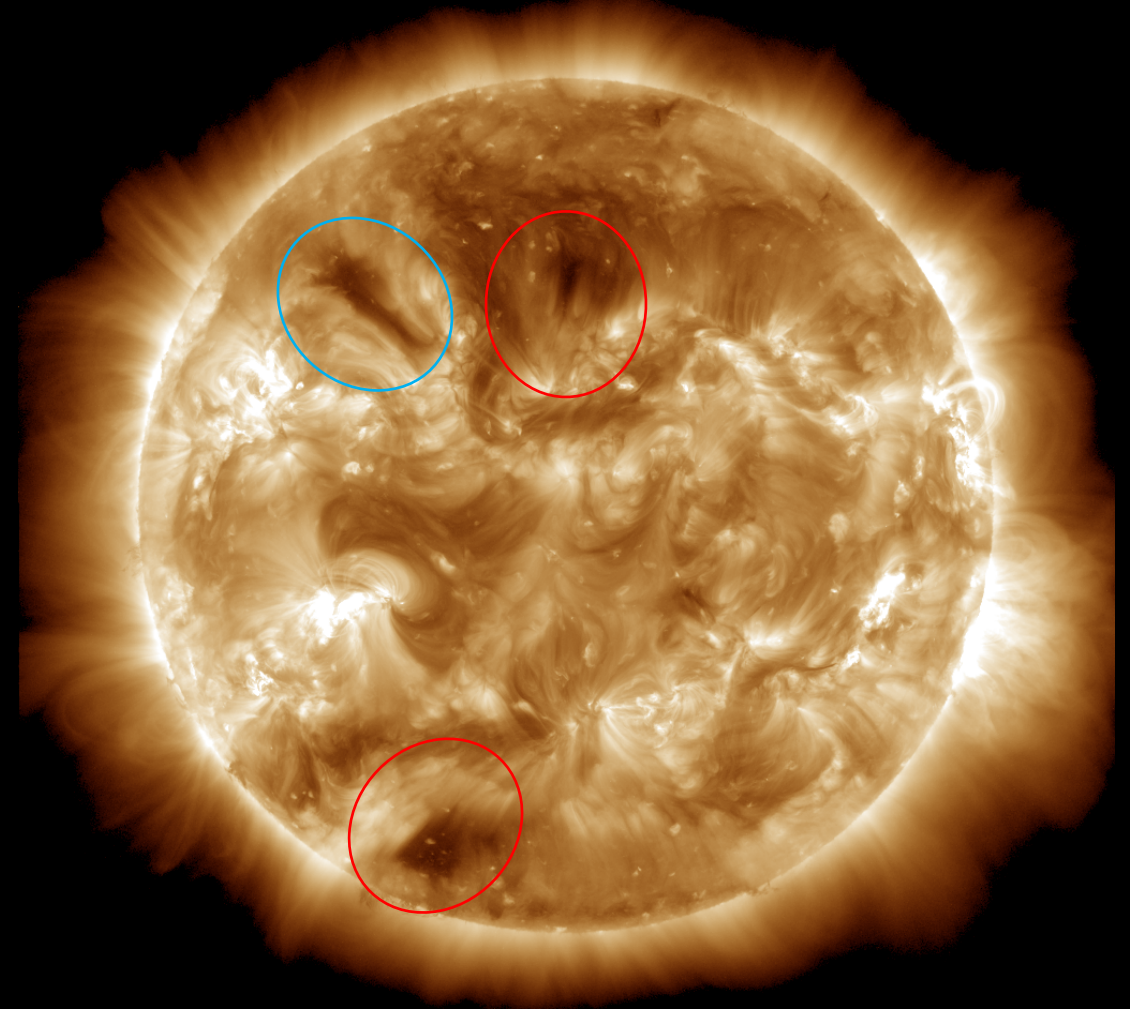
SDO/AIA 19.3 nm 2023-08-28

SDO/AIA AIA 193Å 2023-08-28T12:00:05.843



SDO/AIA 19.3 nm 2023-09-01

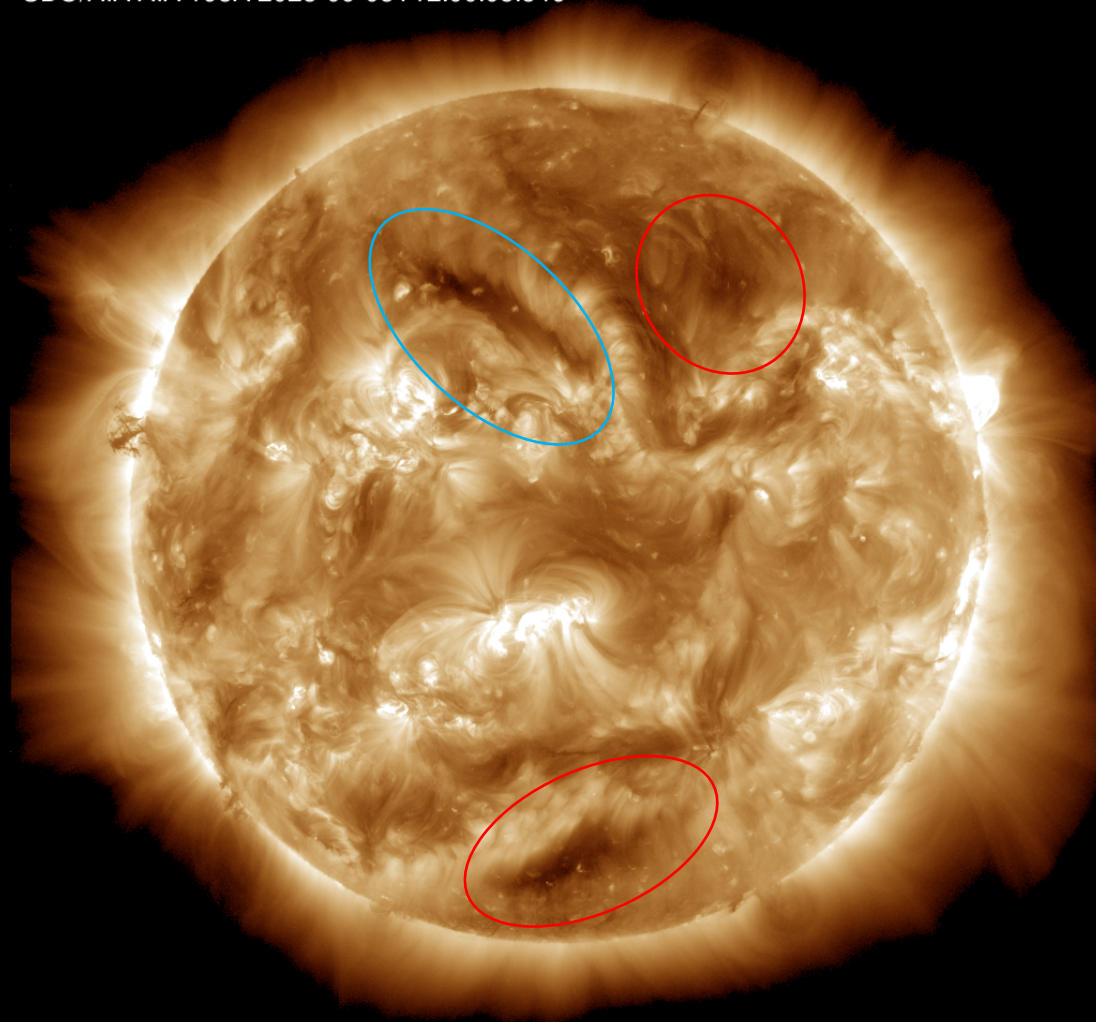
SDO/AIA AIA 193Å 2023-09-01T12:00:05.843



Coronal holes

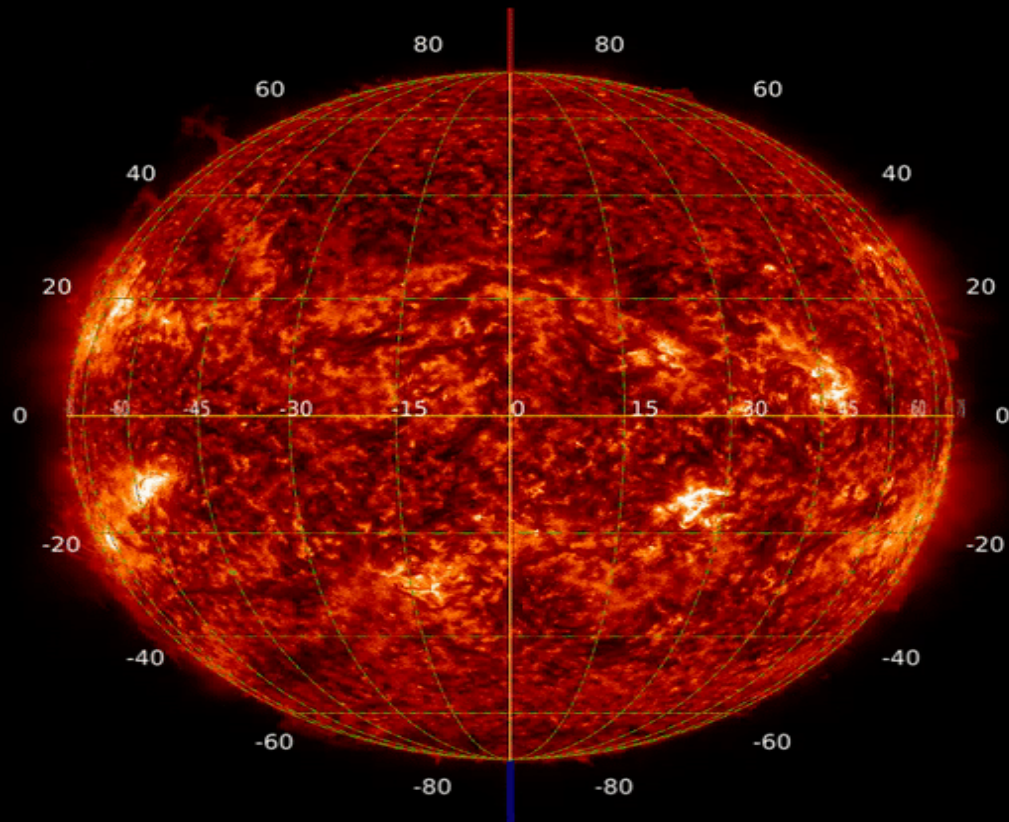
SDO/AIA 19.3 nm 2023-09-03

SDO/AIA AIA 193Å 2023-09-03T12:00:05.846



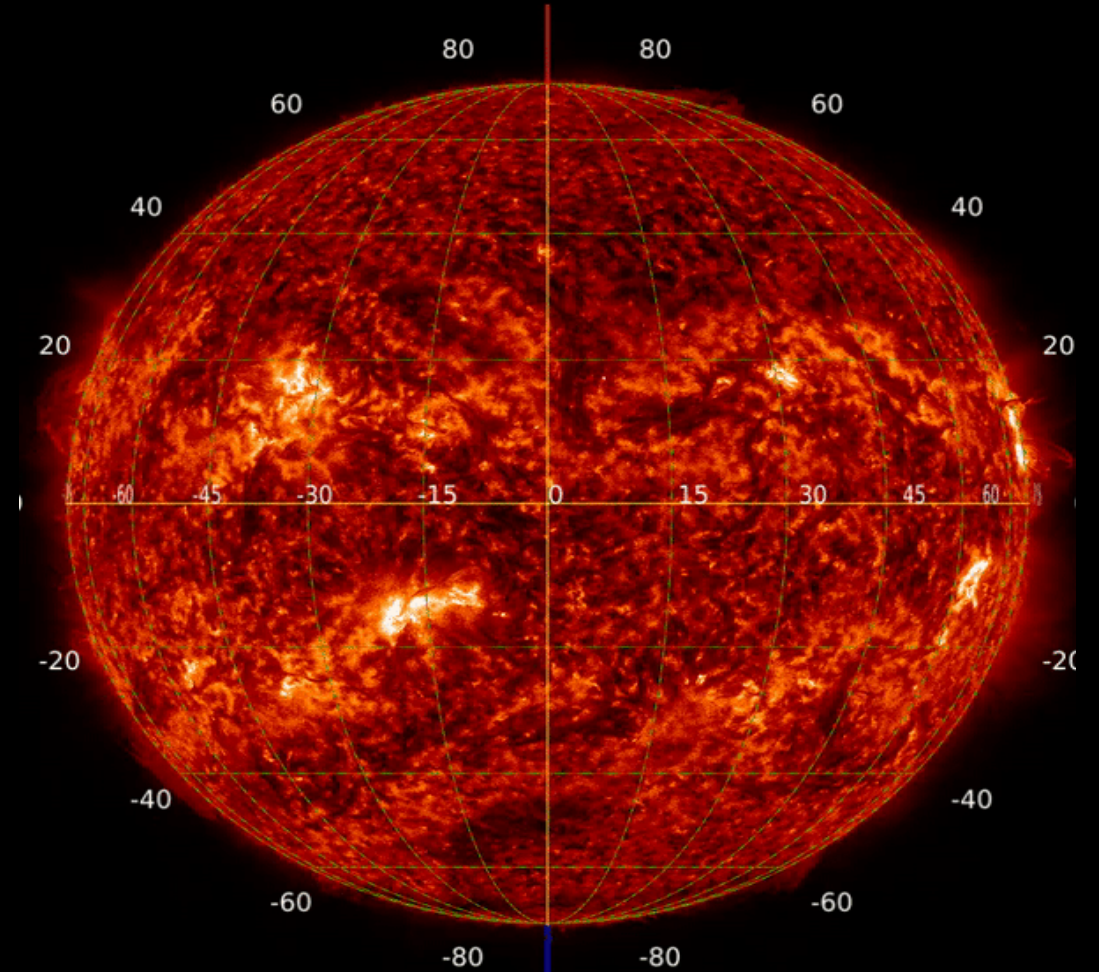
Filaments

SDO/AIA 30.4 nm 2023-08-30



2023-08-30T16:00:41.130

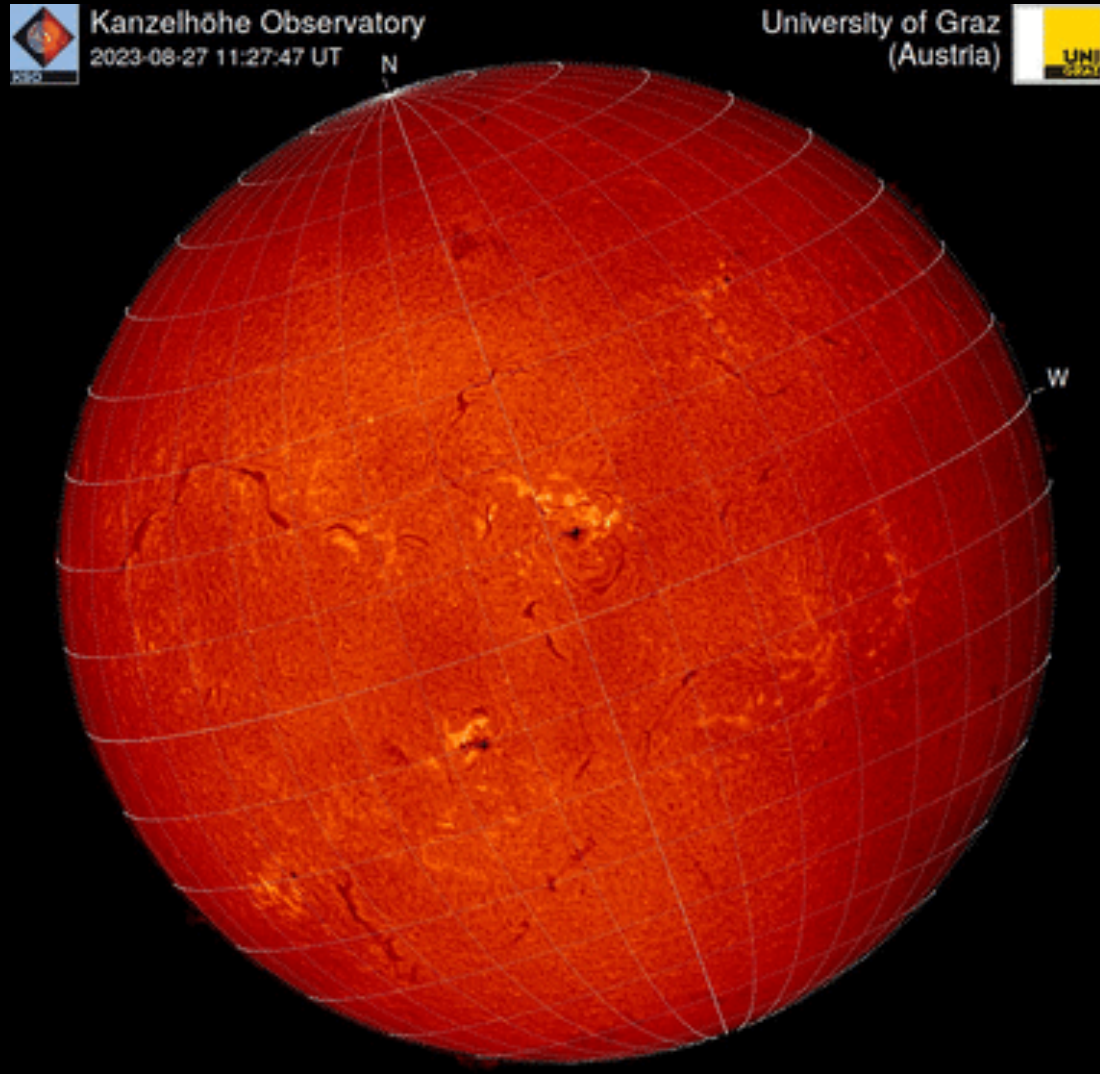
SDO/AIA 30.4 nm 2023-09-02



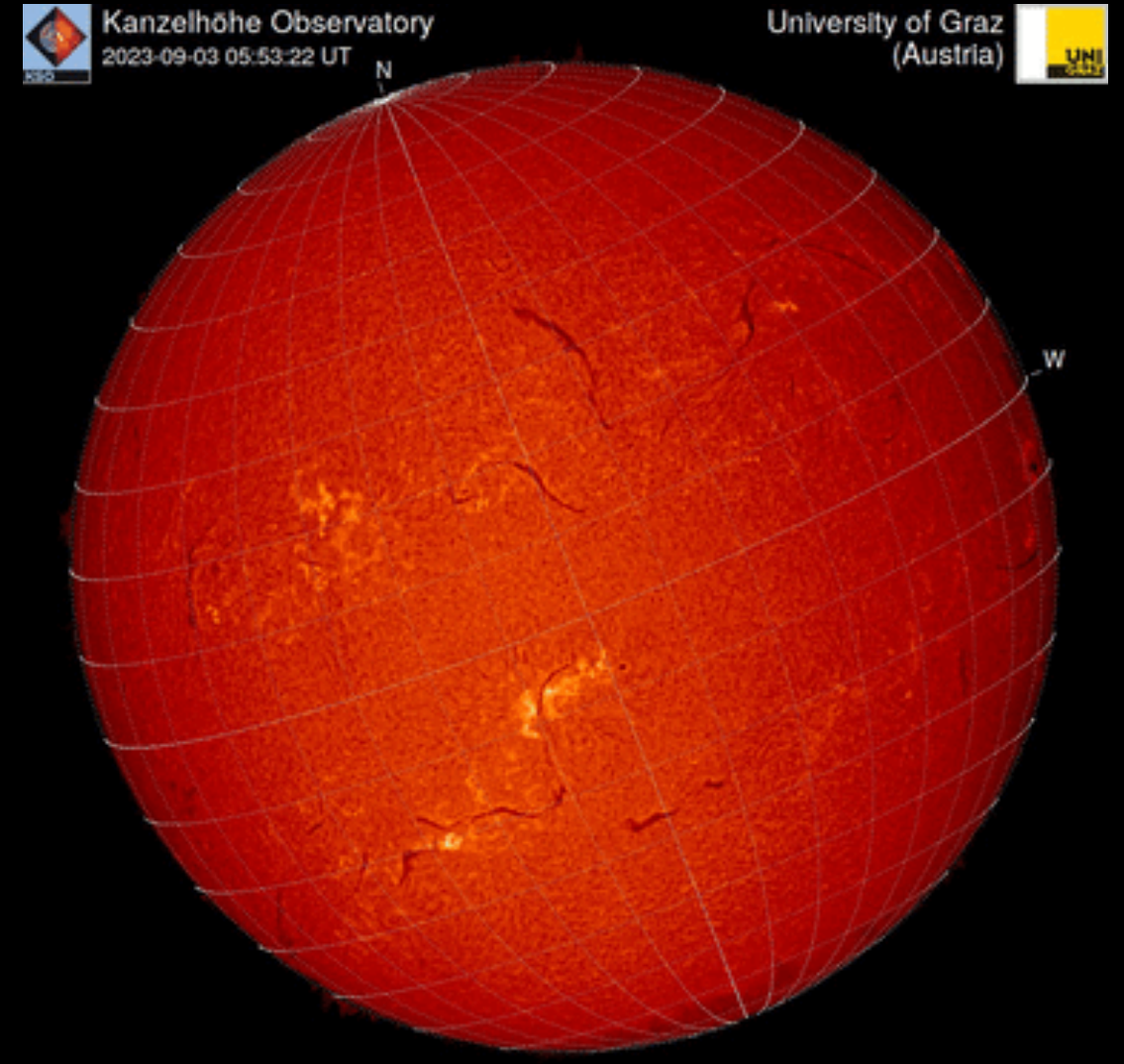
2023-09-02T15:01:05.130

Filaments & Filament eruptions

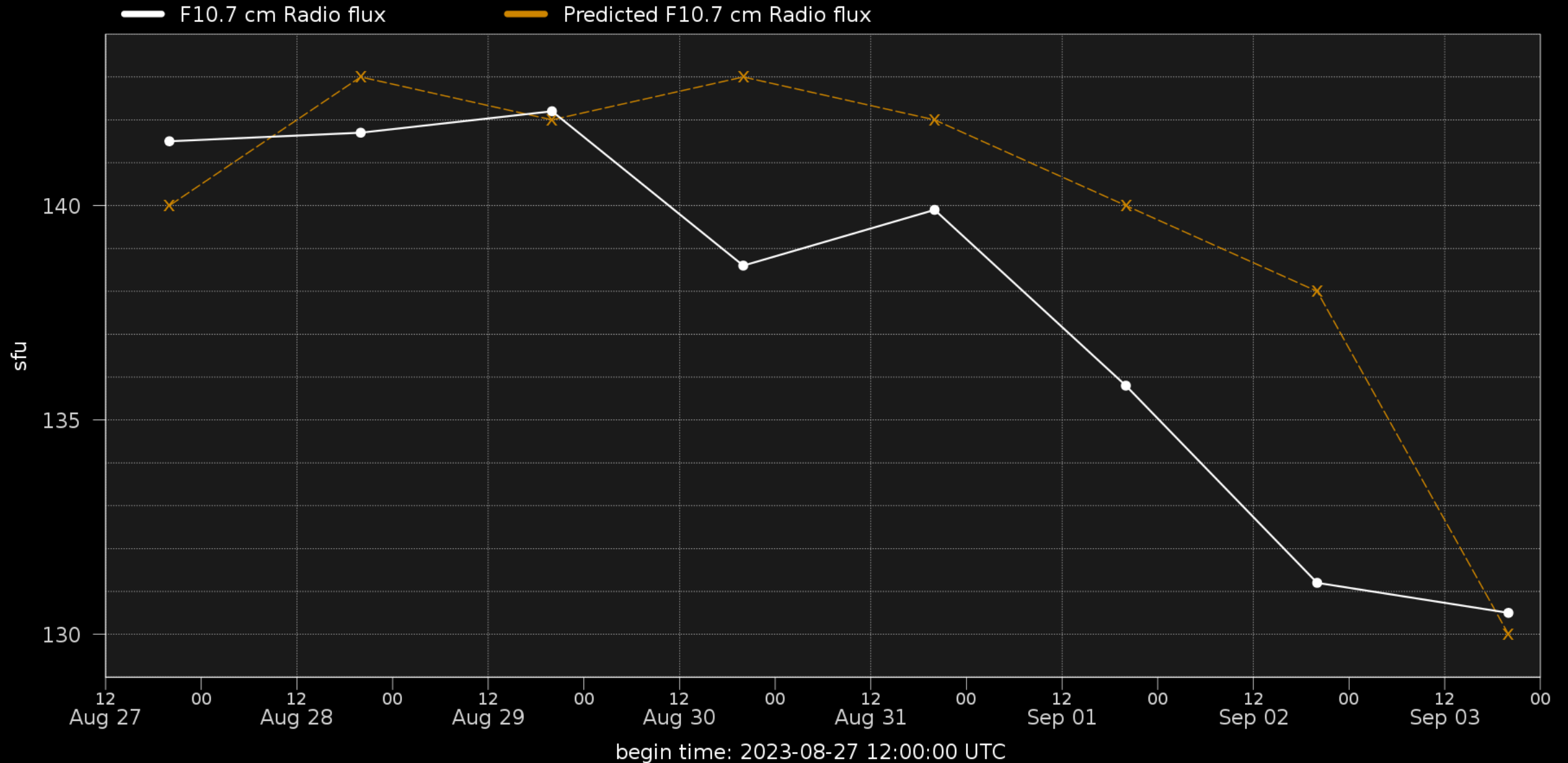
H-alpha 2023-08-27



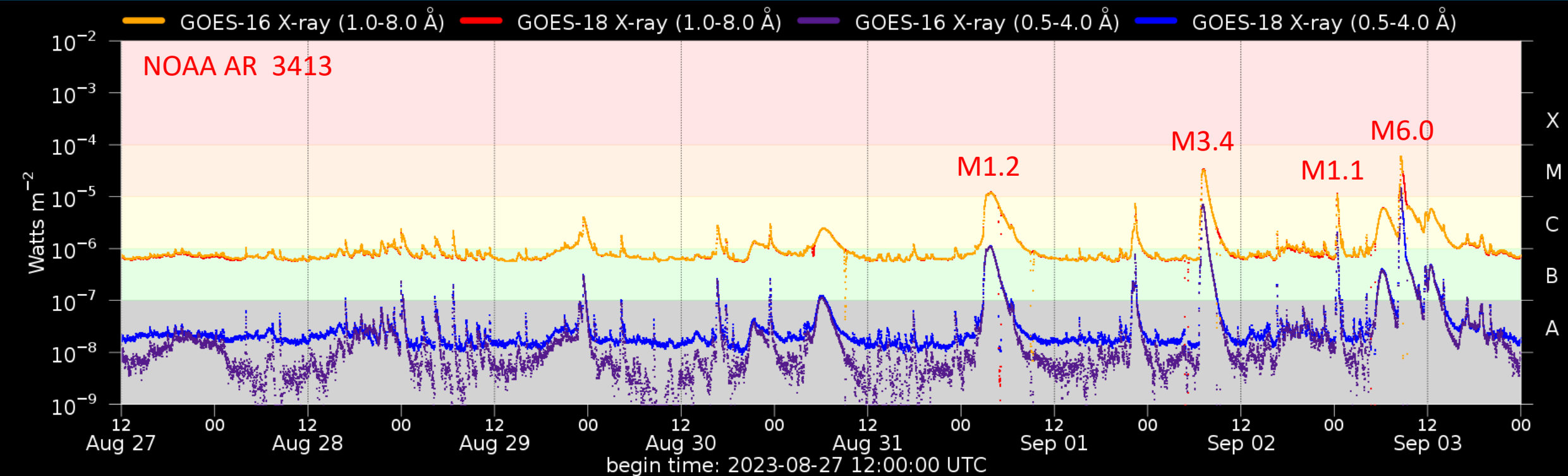
H-alpha 2023-09-03



Solar F10.7cm radio flux



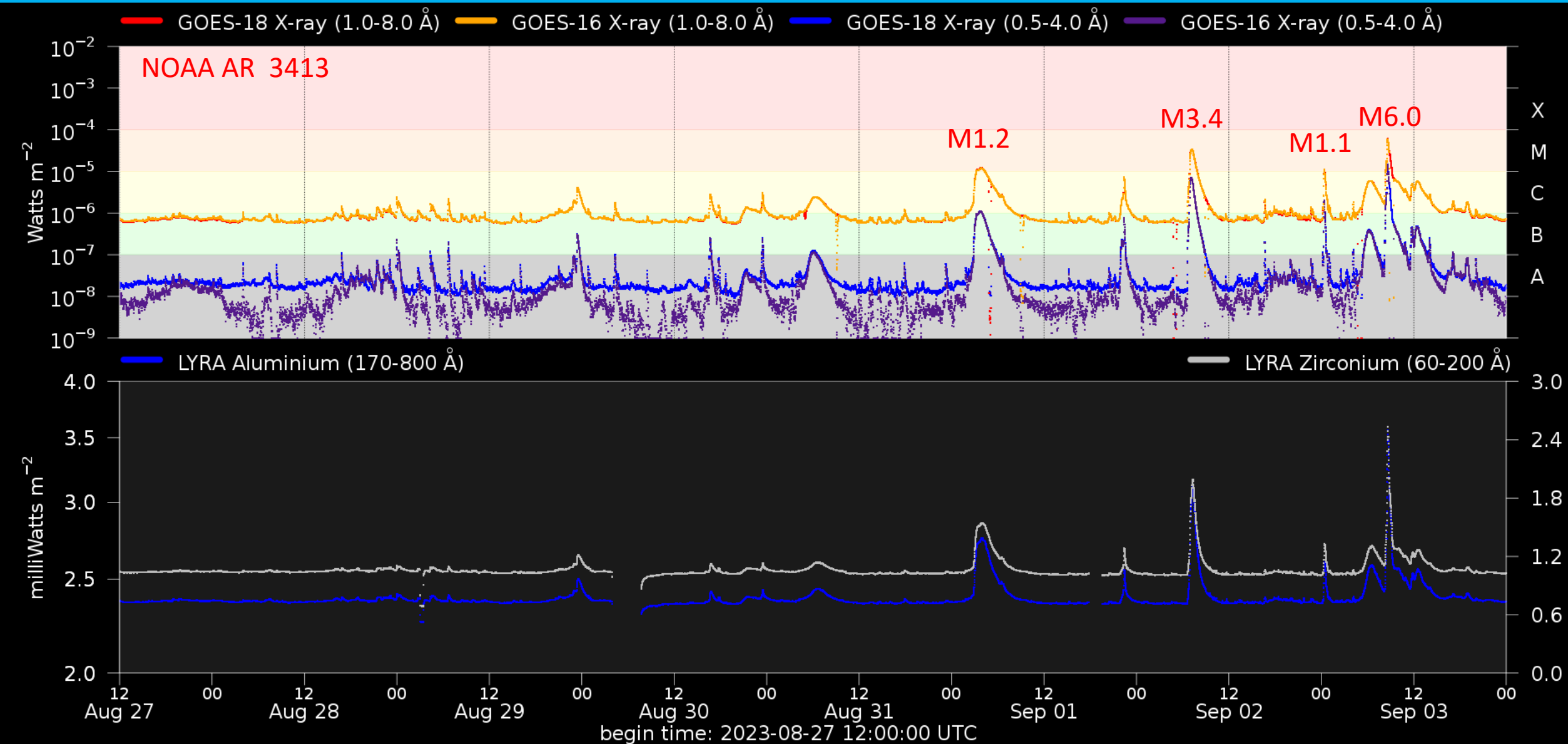
Flaring activity



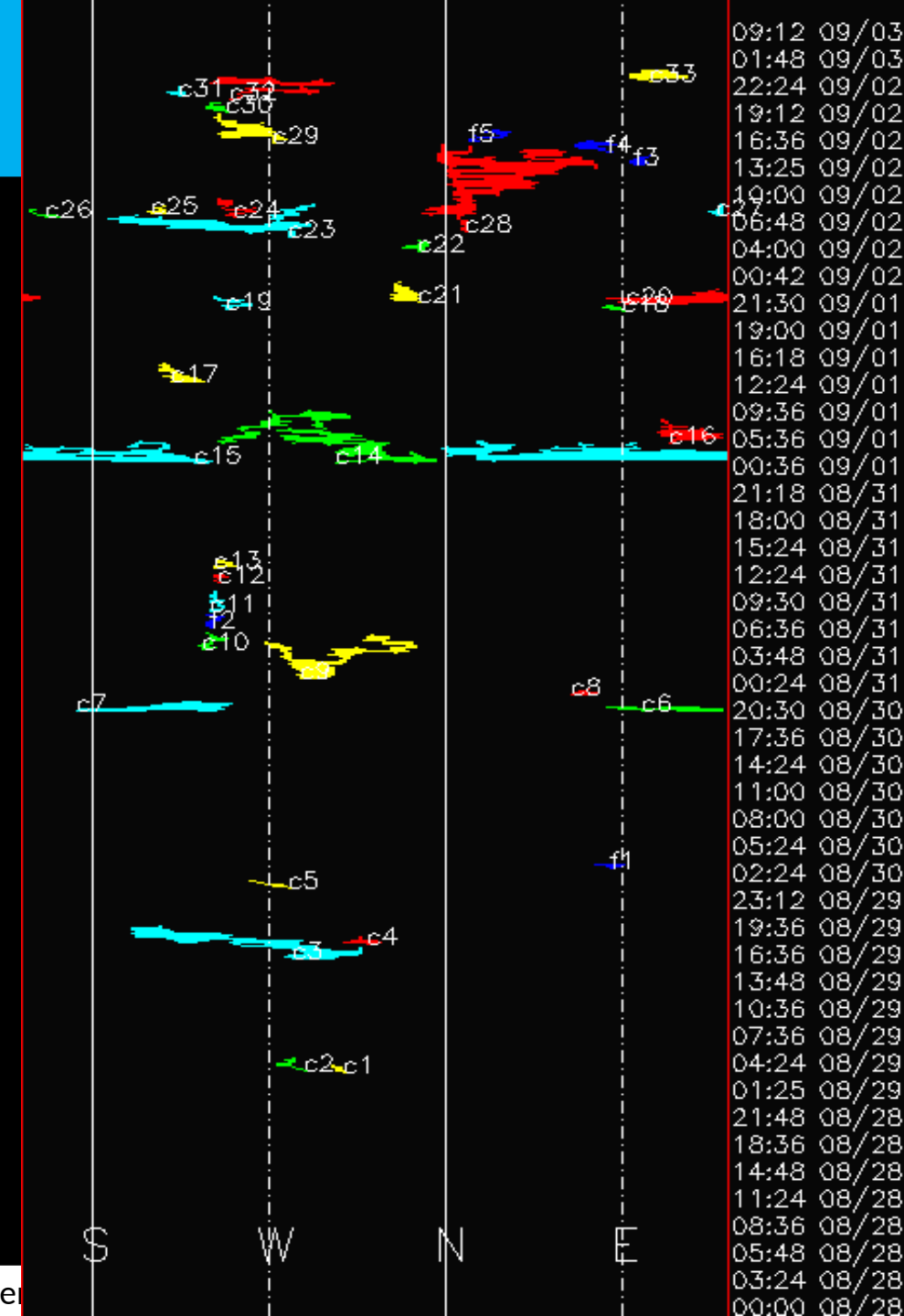
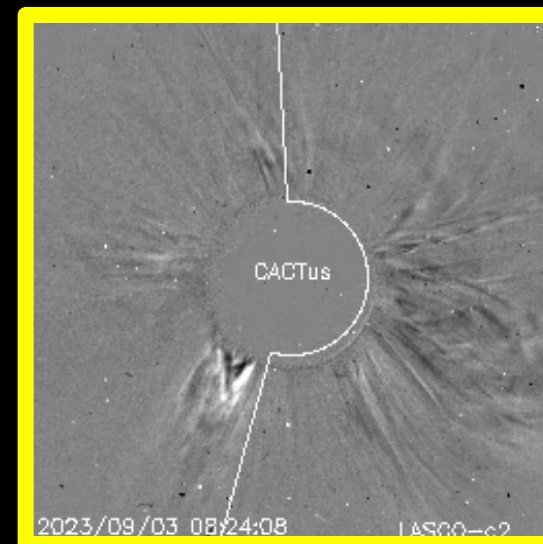
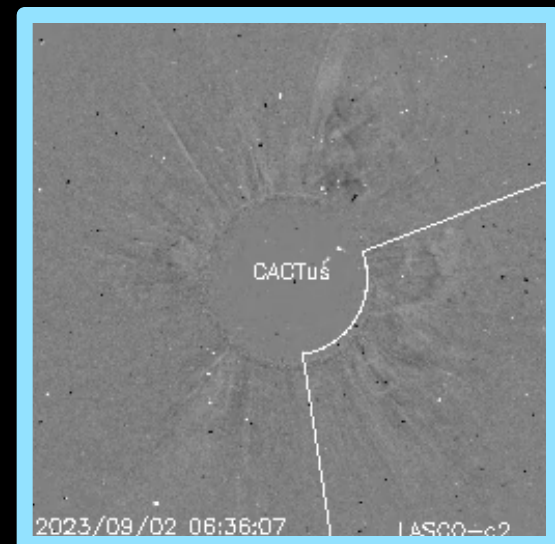
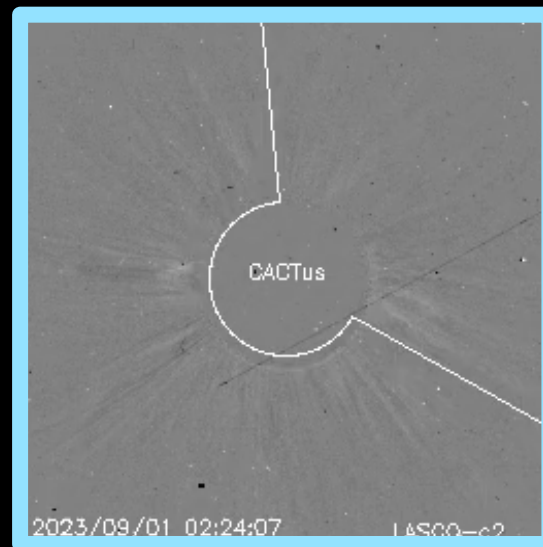
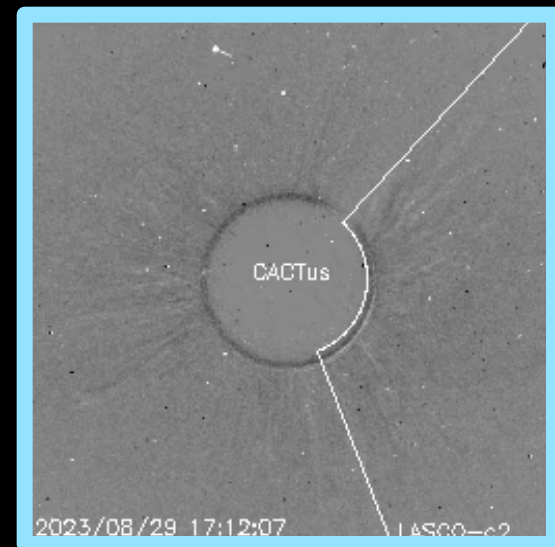
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2023-08-27	2023-08-28	2023-08-29	2023-08-30	2023-08-31	2023-09-01	2023-09-02	2023-09-03
Probability (%)	85 50 15	80 20 05	85 35 10	85 30 05	85 15 05	95 40 10	95 45 10	95 40 10
Observed (#)	01 00 00	06 00 00	03 00 00	03 00 00	02 01 00	02 01 00	06 02 00	00 00 00

Solar X-Ray and UV flux



Coronal Mass Ejections

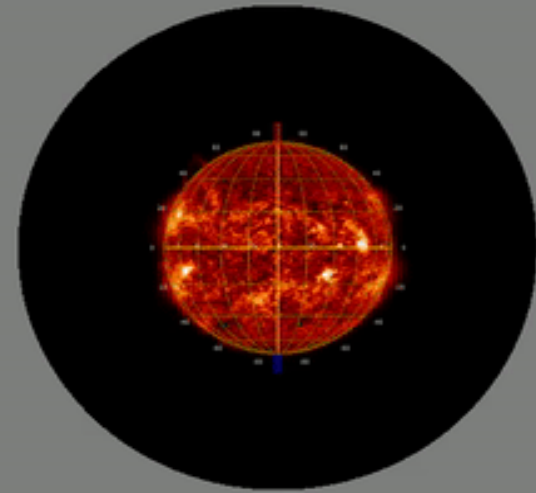


Coronal Mass Ejections

When: 22:12 UTC on Aug 30

Associated to a filament eruption and
GOES C1.4 flare, **peak time 21:26 UTC on Aug 30**

Prediction: Predicted arrival at Earth
late on Sept 02 - early On Sept 03



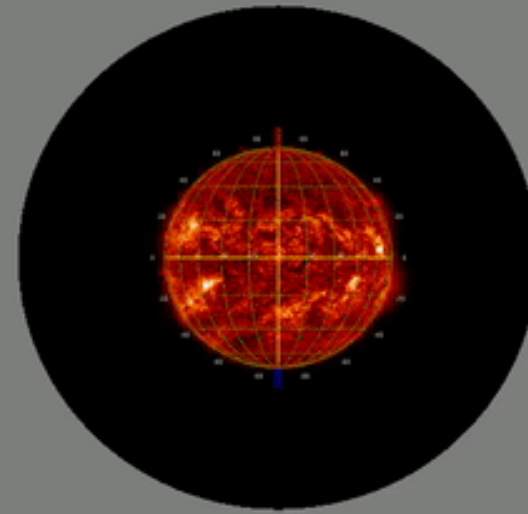
2023-08-30T18:00:41.130

Coronal Mass Ejections

When: 04:17 UTC on Sept 01

Associated to GOES M1.2 flare,
peak time 03:51 UTC on Sept 01
from NOAA AR 3413,
type II and type IV radio burst,
proton event

Prediction: Predicted arrival at Earth on Sept 03

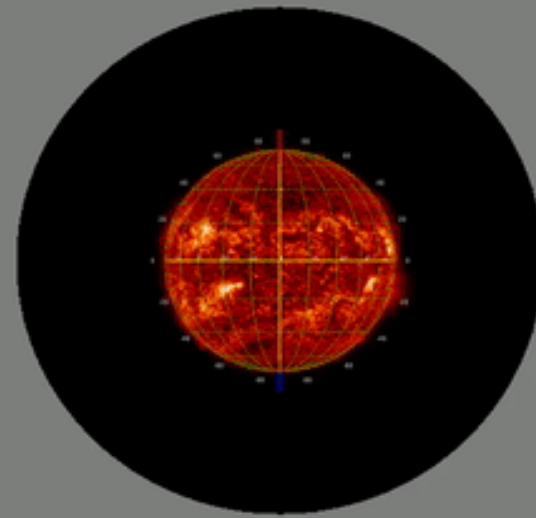


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Coronal Mass Ejections

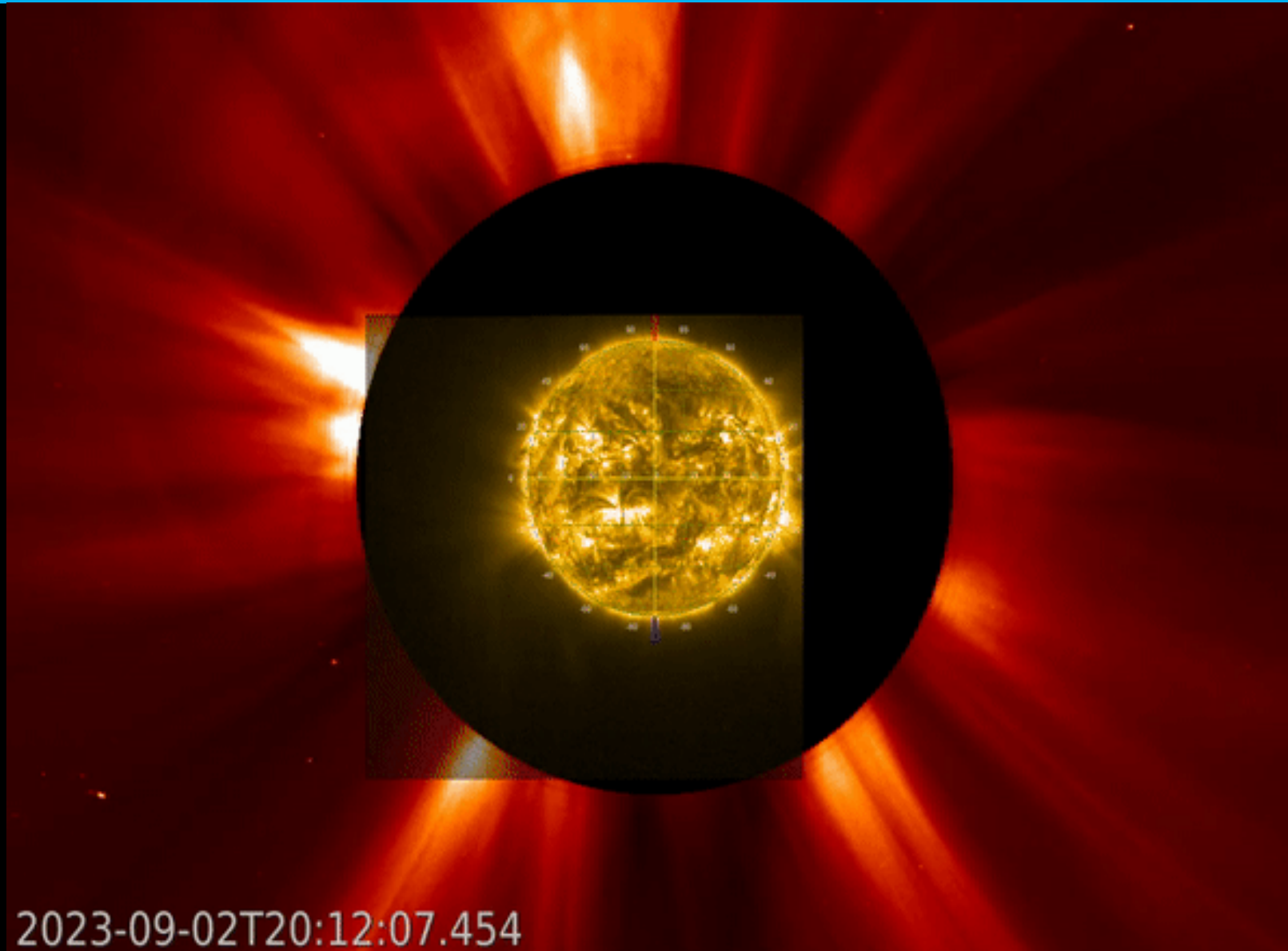
When: 21:36 UTC on Sept 01
Associated to GOES C7.4 flare from S21E45
Prediction: not expected to arrive

When: 07:24 UTC on Sept 02
Associated to GOES M3.4 flare from NOAA AR 3413
Prediction: not expected to arrive

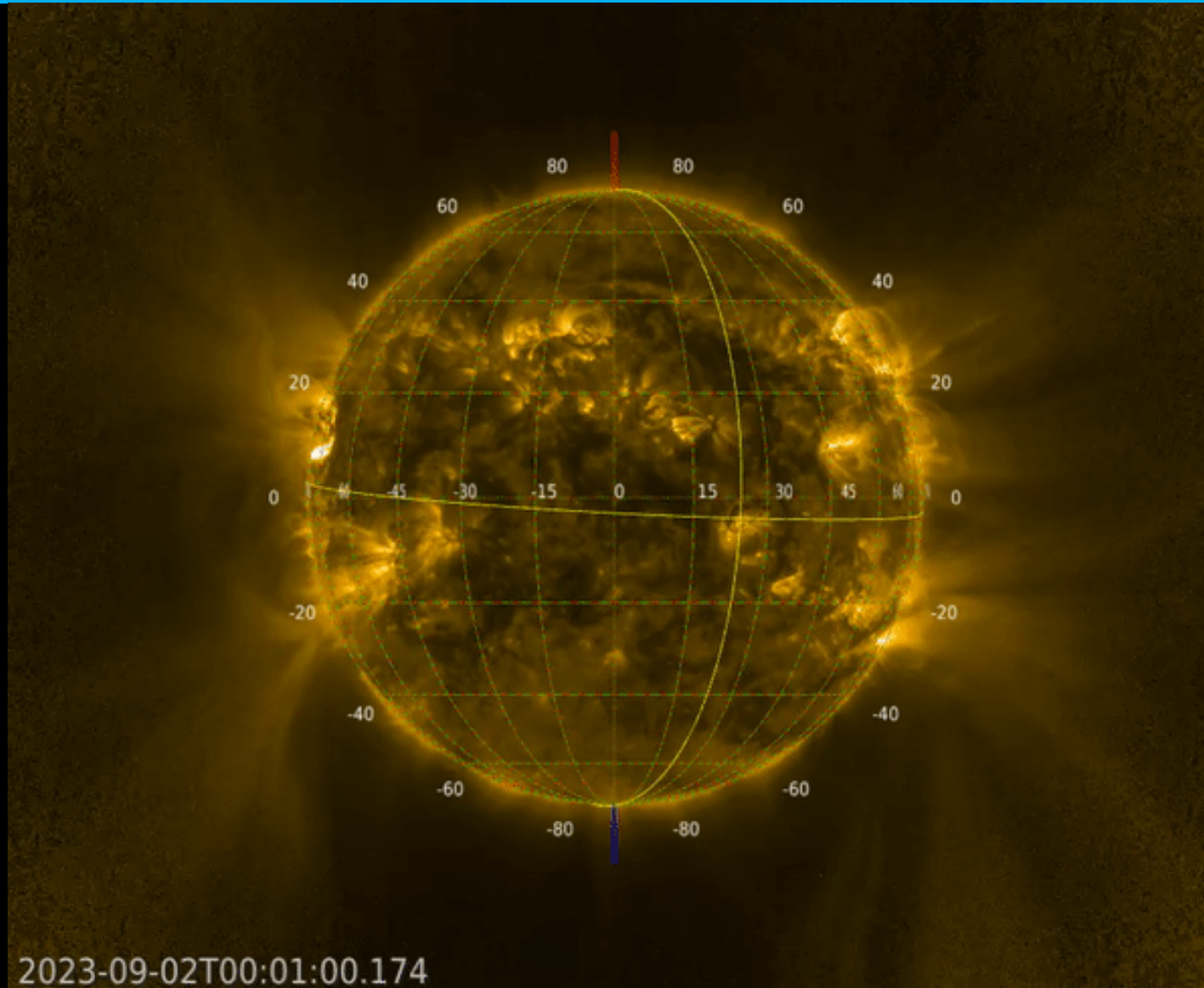


2023-09-01T19:12:07.727

Coronal Mass Ejections



Coronal Mass Ejections



Solar Wind and Geomagnetic Activity



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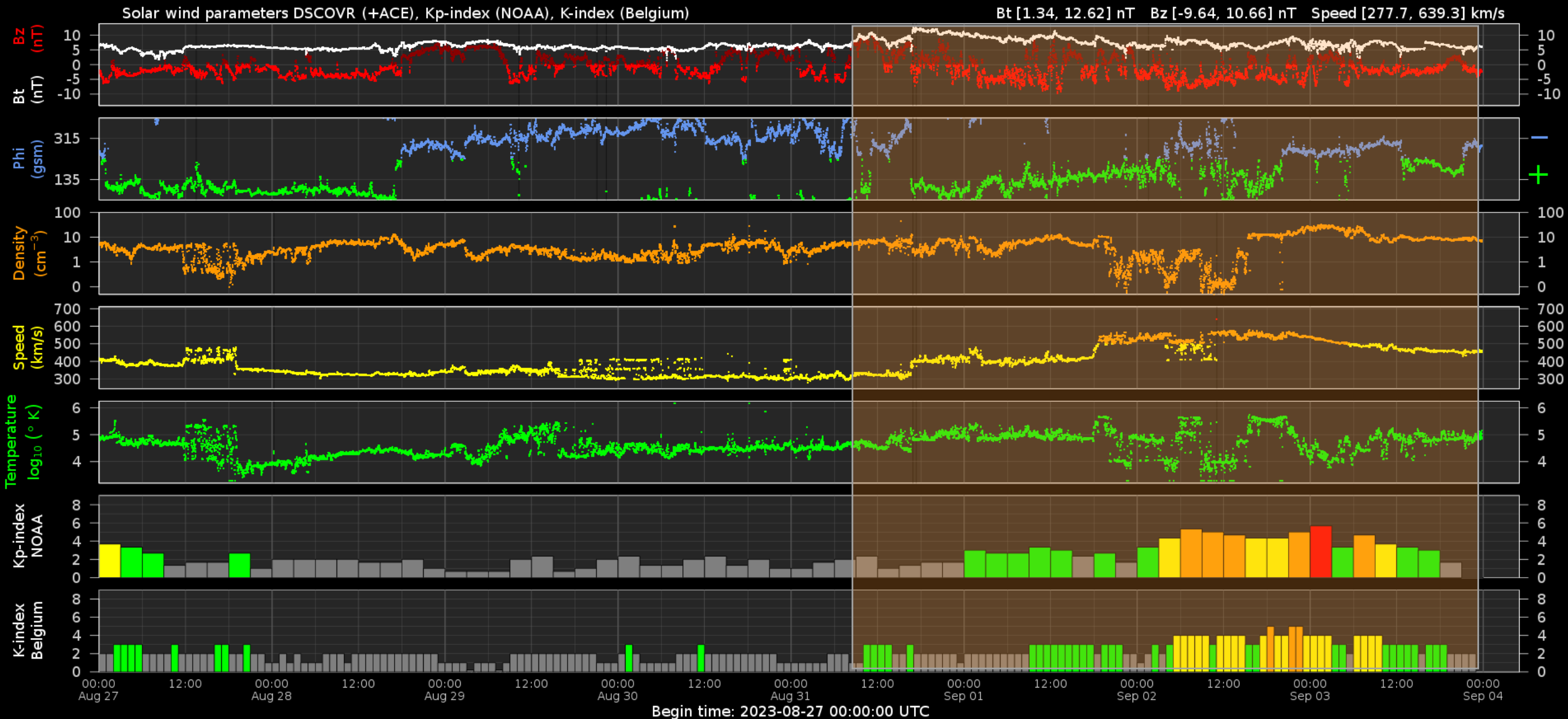
Solar wind parameters

HSS

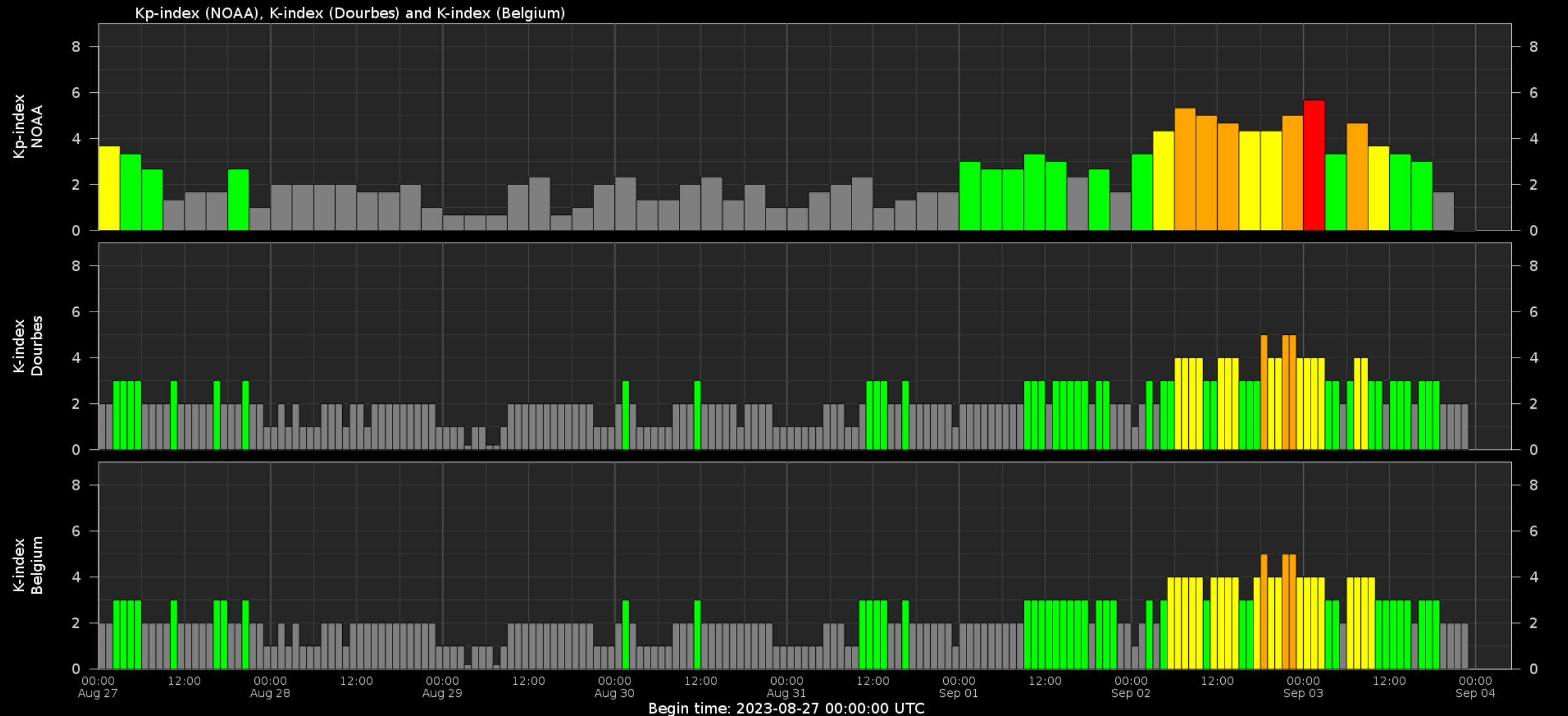


Solar wind parameters & K-indices

HSS



Geomagnetic activity (K-indexes)



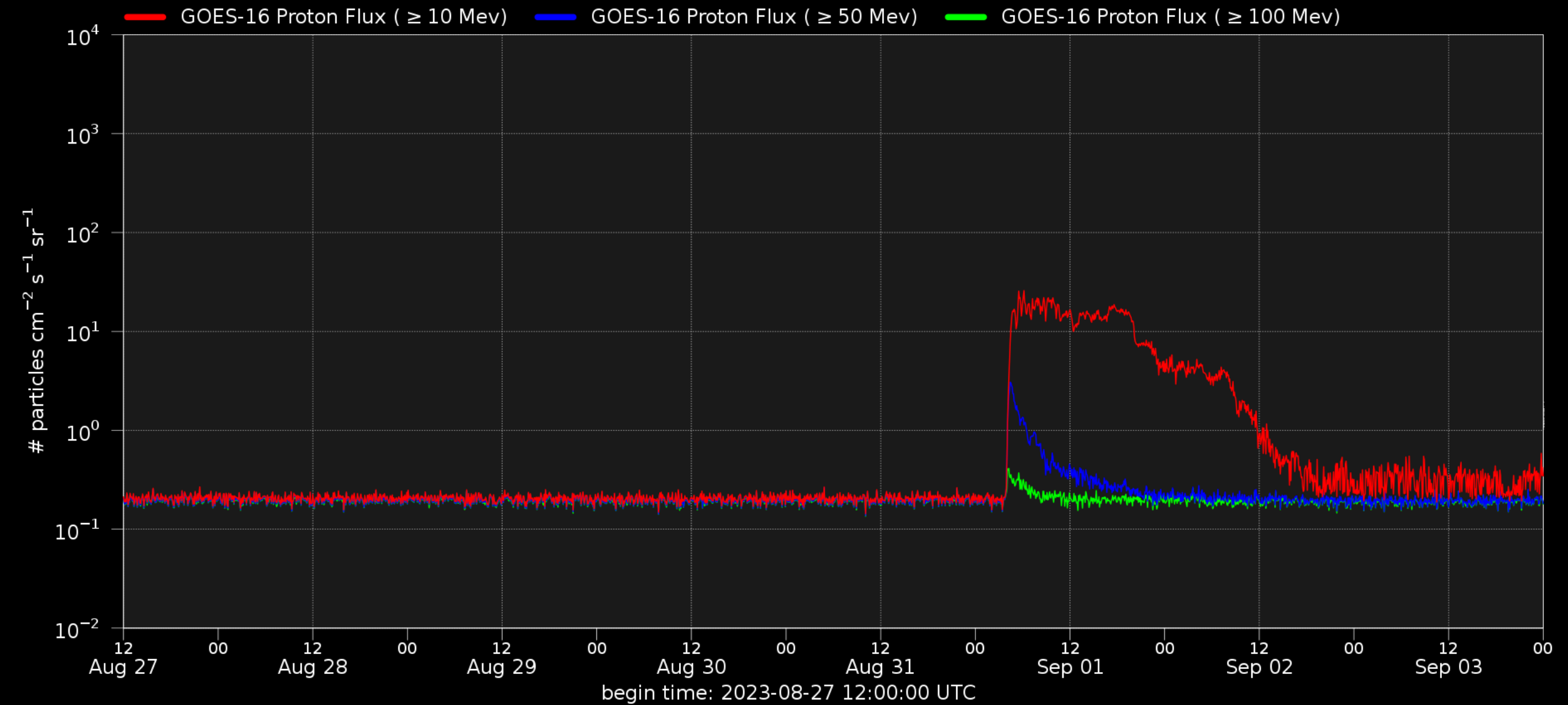
Energetic Particles



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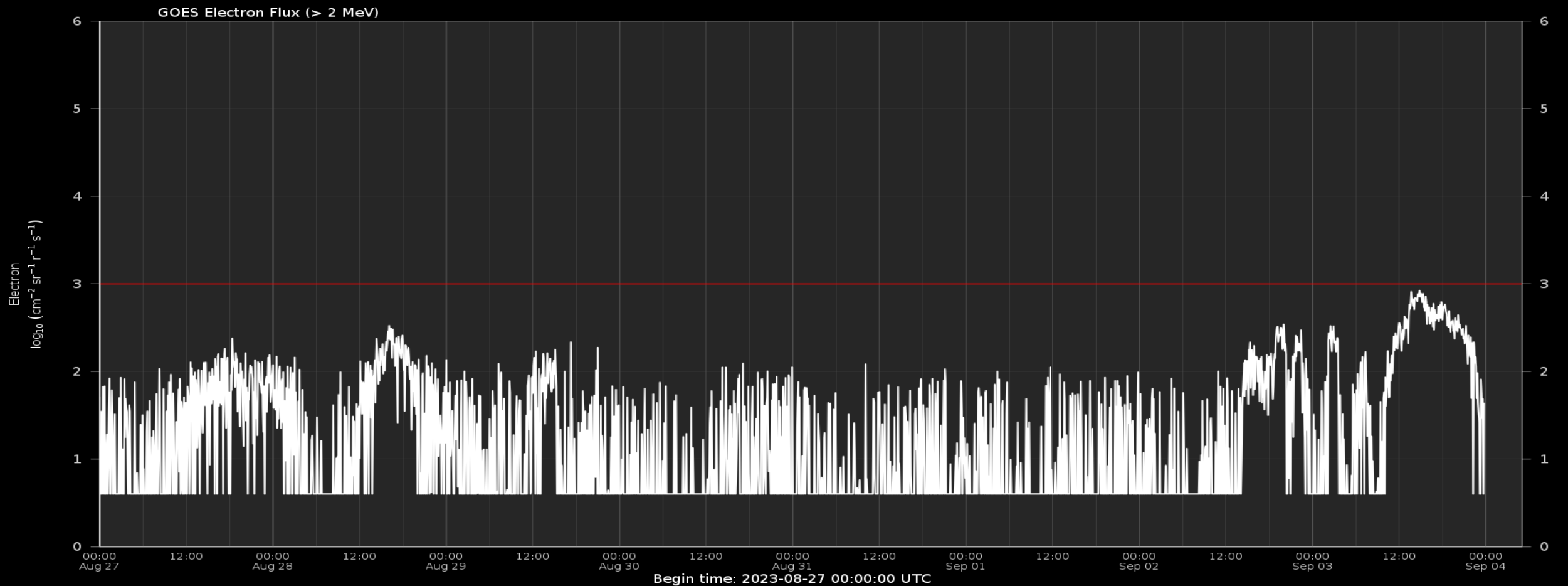
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



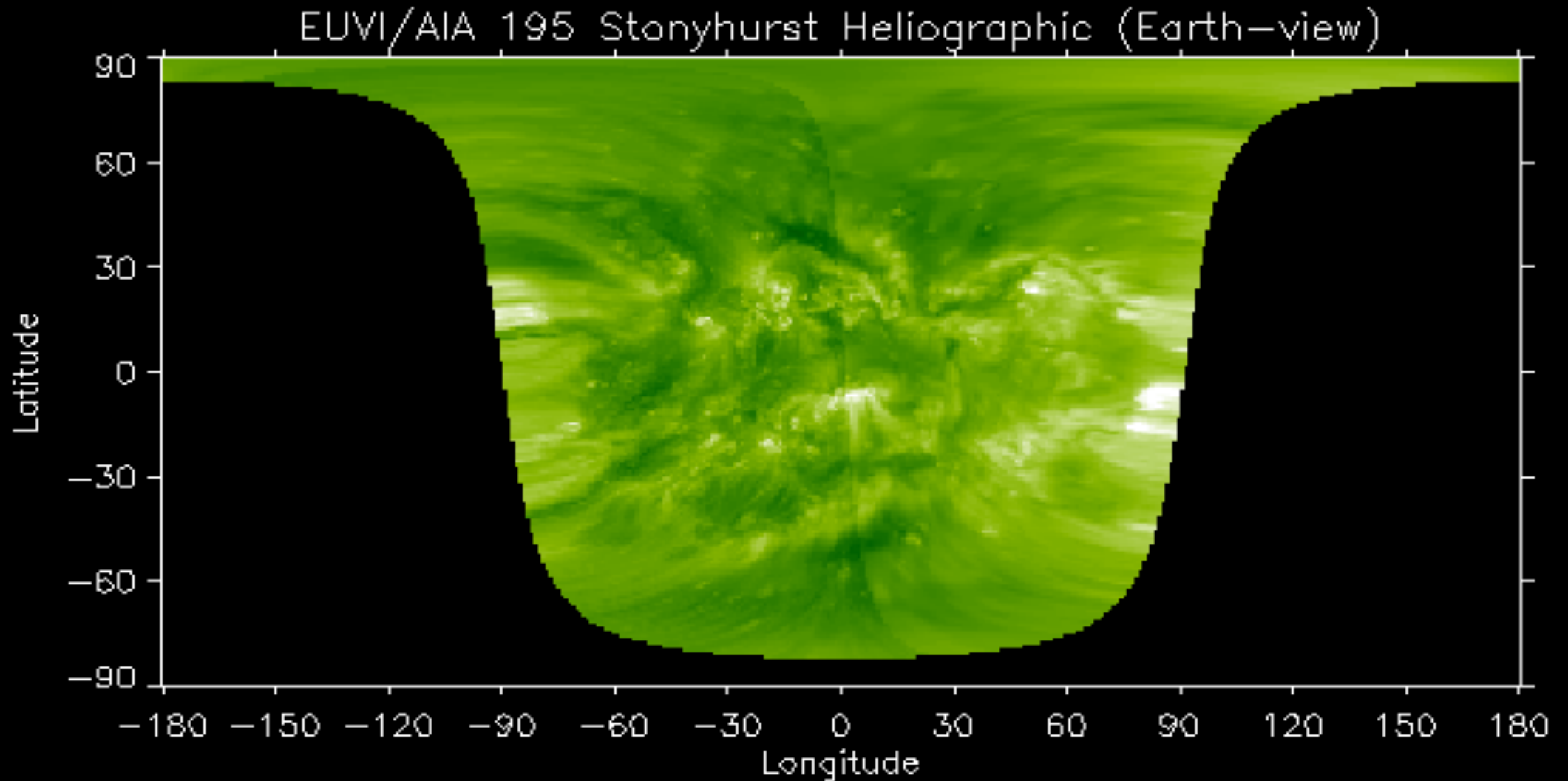
Outlook



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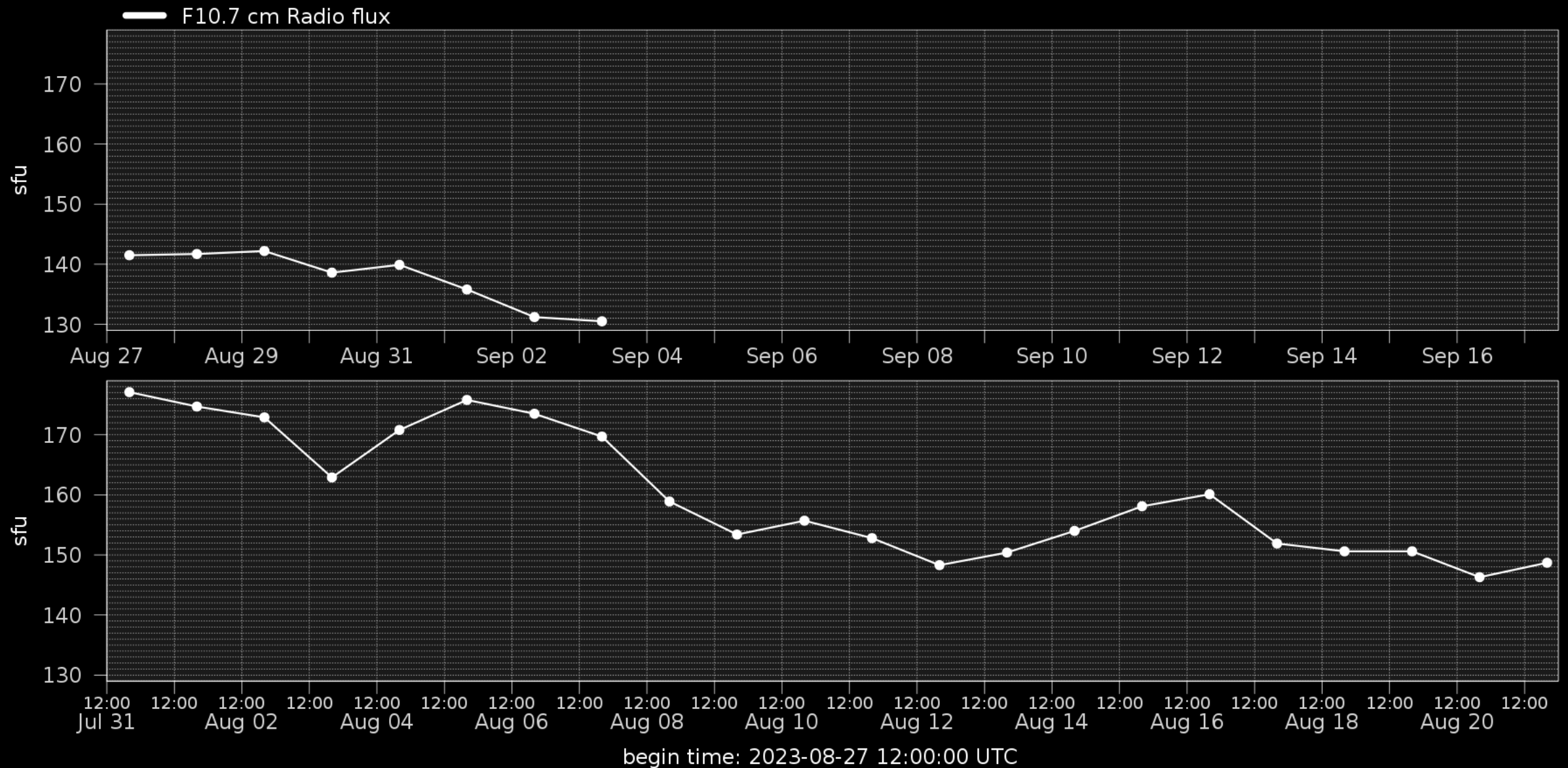
Solar Influences
Data analysis Centre
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Outlook: Solar activity

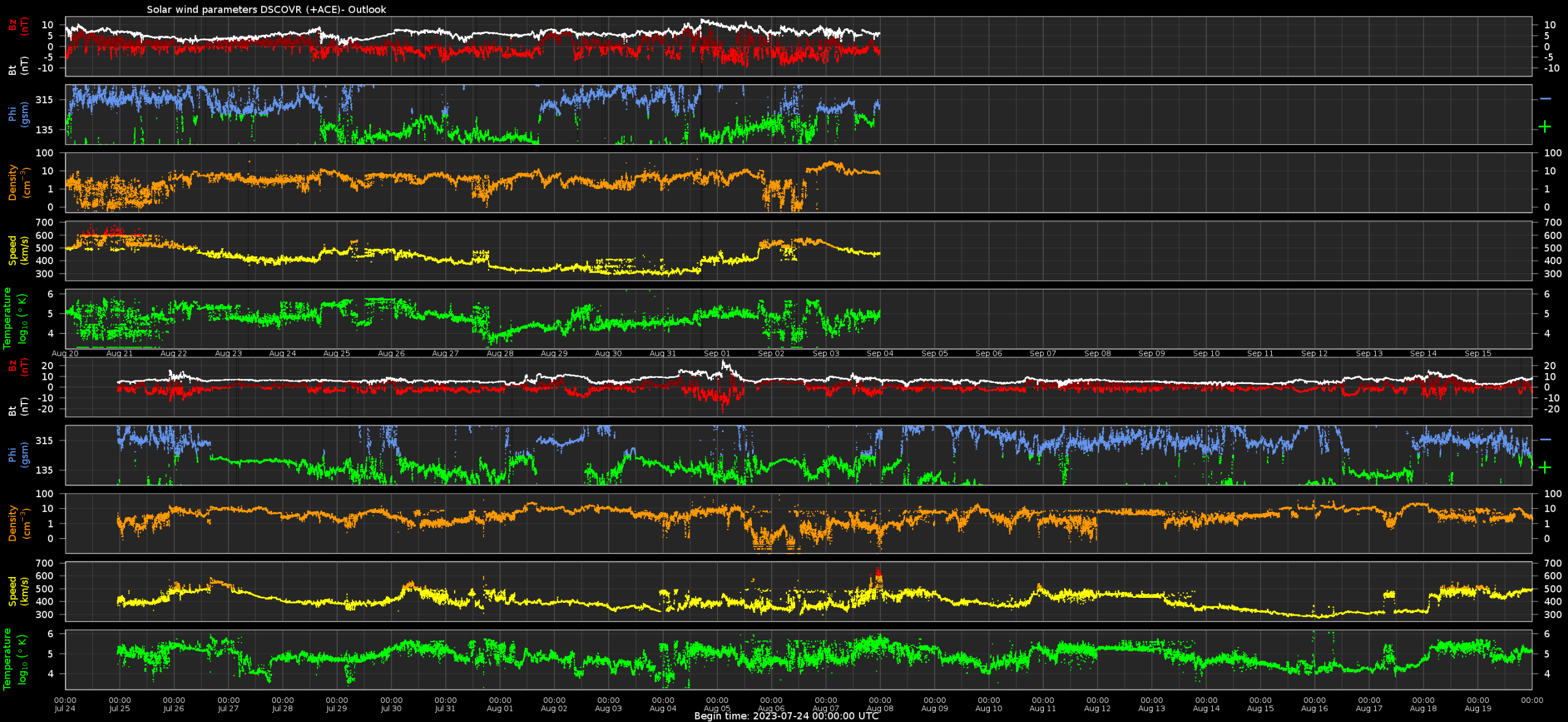


Observation date: 2023/09/03 23:05:00

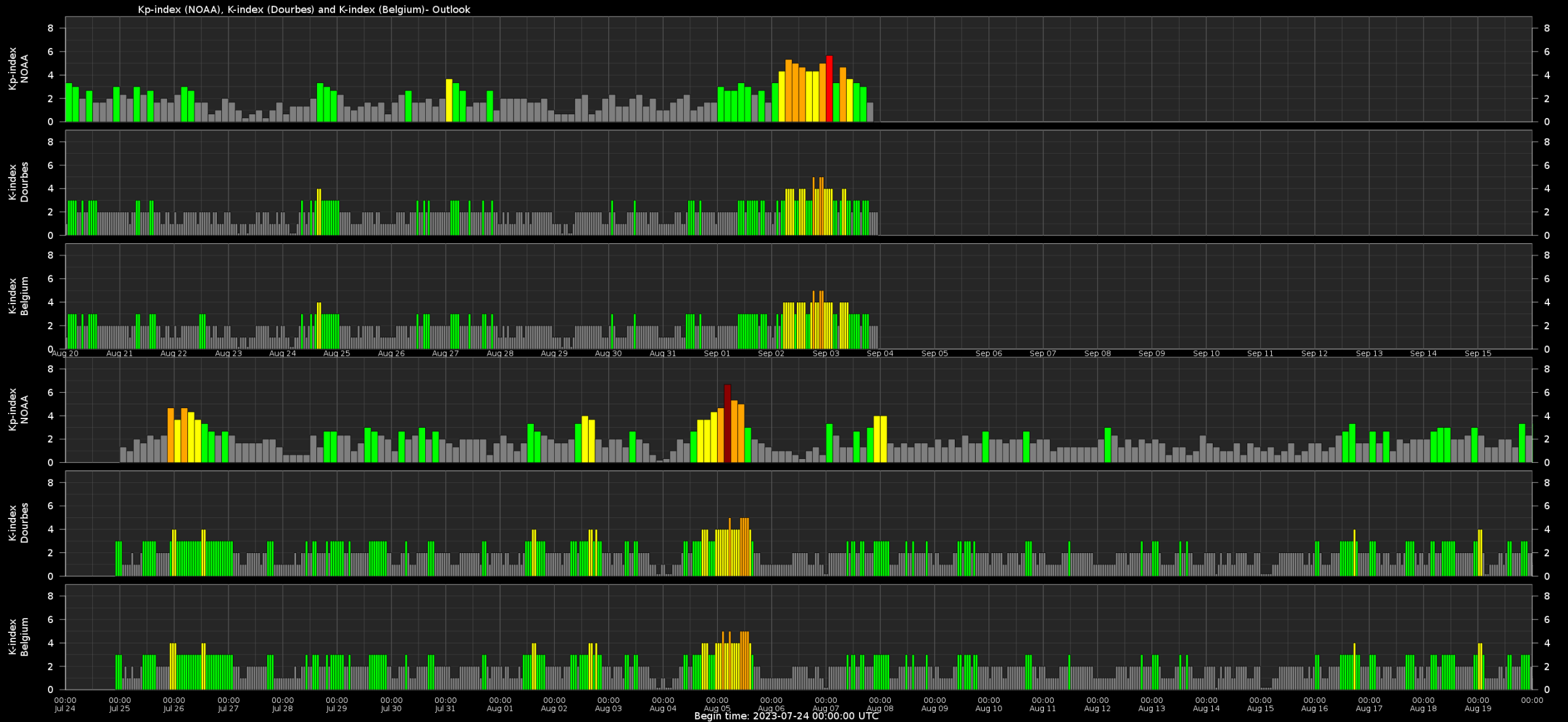
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



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