

SIDC Space Weather Briefing

06 October 2024-13 October 2024

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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 2024-10-06 12:00 to 2024-10-13 23:59

Active regions	13 AR, most were complex ($\beta\gamma$, $\beta\delta$, $\beta\gamma\delta$)
Flares	# C-class flare: 23 # M-class flare: 10 # X-class flare: 4
Coronal Holes	4 (3 positive, 1 negative)
CMEs	A few, one halo with direct impact

Proton flux	1 enhancement, 1 proton event (reached S3)
Electron flux	Enhancements

Solar wind and geomagnetic conditions

ICMEs	2 (October 6 and 10)
Solar wind conditions	B : 0.3 - 45.97 nT //Bz: -45.81 nT to 29.54 nT //Speed: 252.1 - 862.0km/s
Geomagnetic conditions	max K _{Bel} : 7.0, max K _p (NOAA): 8.67, Severe Storm conditions

Solar Activity

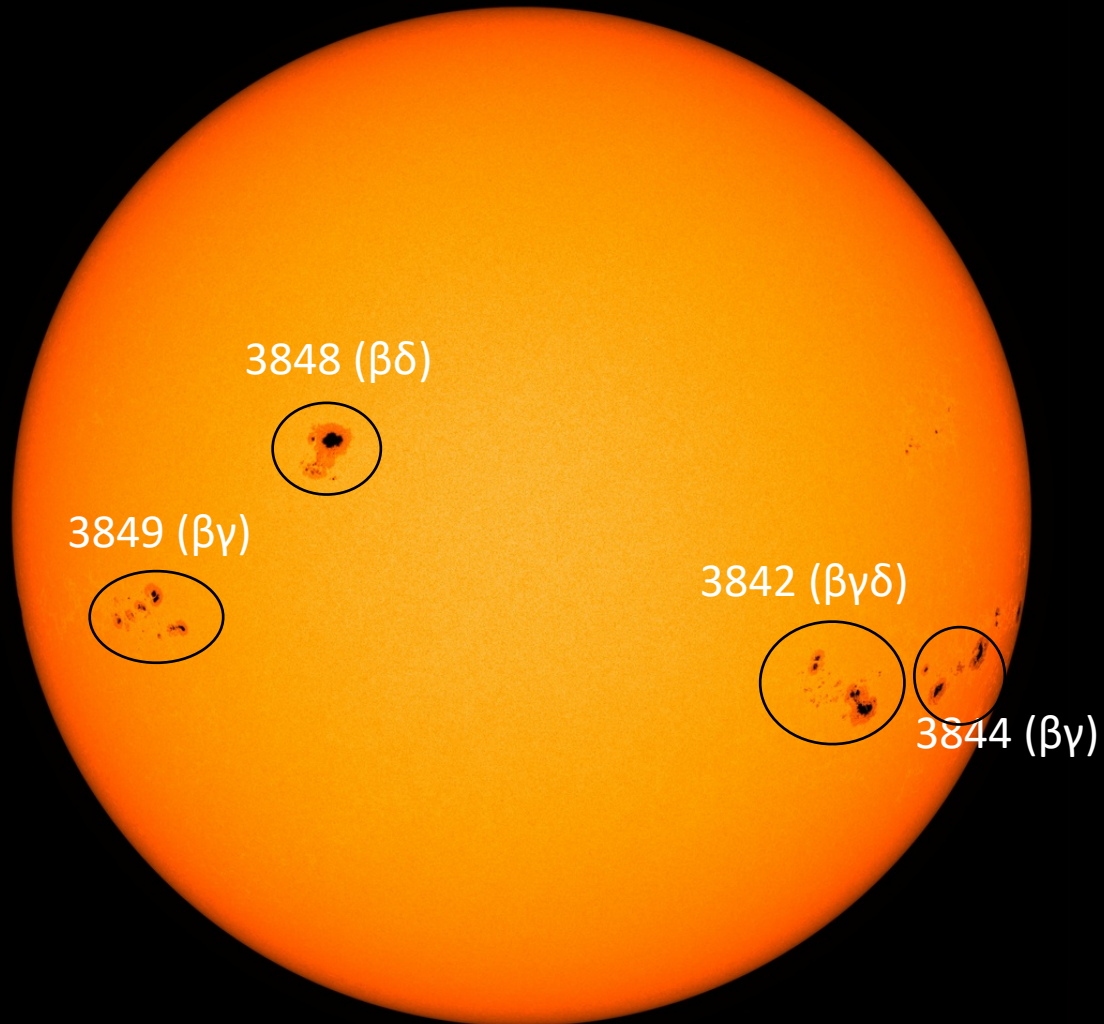


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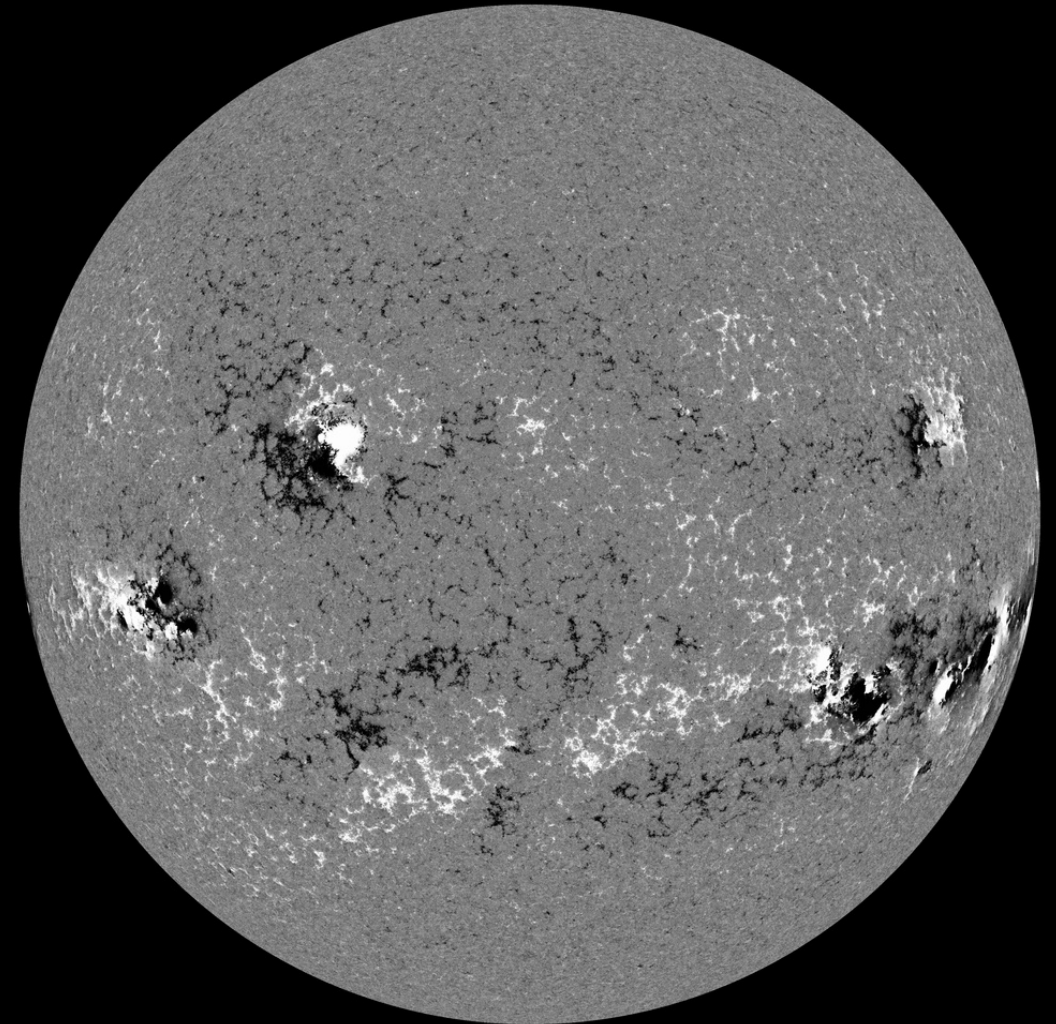
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Solar active regions

SDO/HMI White Light 2024-10-06

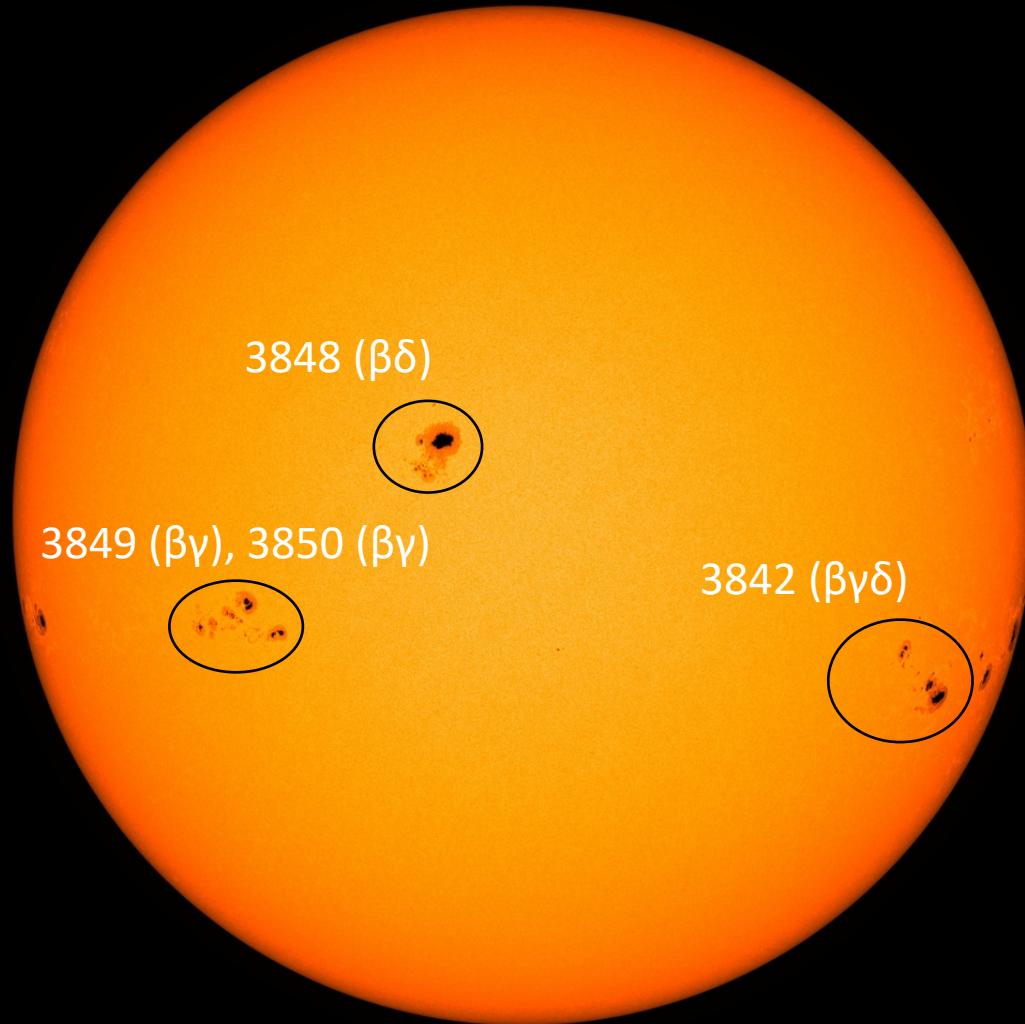


SDO/HMI Magnetogram 2024-10-06



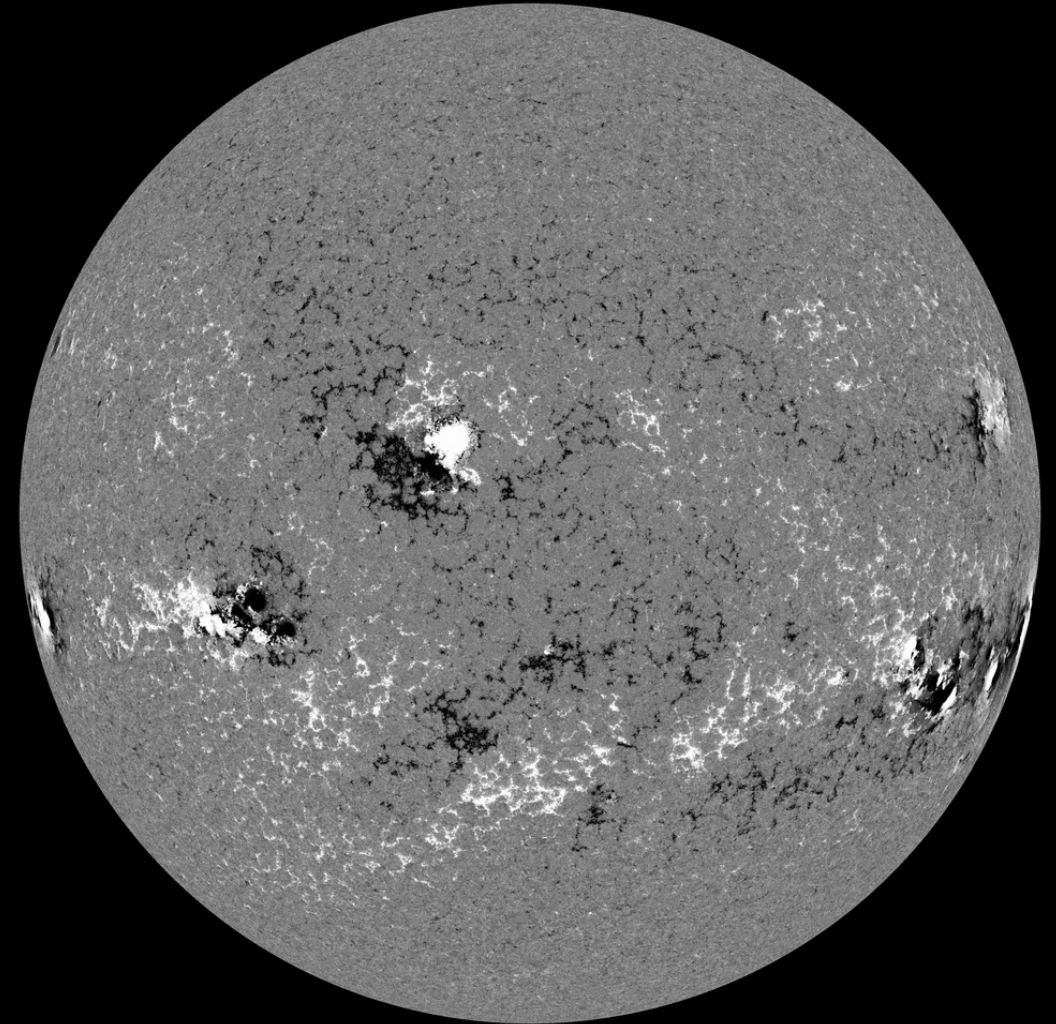
Solar active regions

SDO/HMI White Light 2024-10-07



SDO/HMI Quick-Look Continuum: 20241007_114500

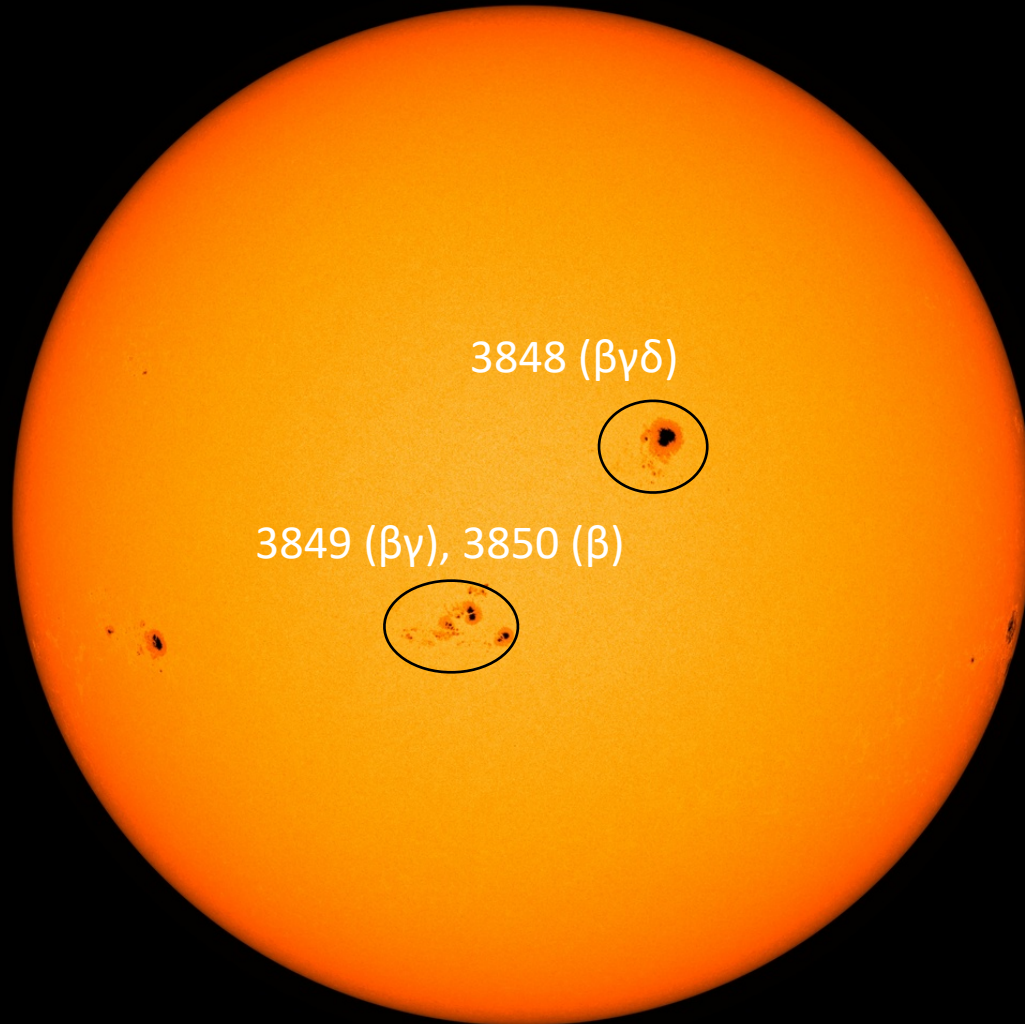
SDO/HMI Magnetogram 2024-10-07



SDO/HMI Quick-Look Magnetogram: 20241007_114500

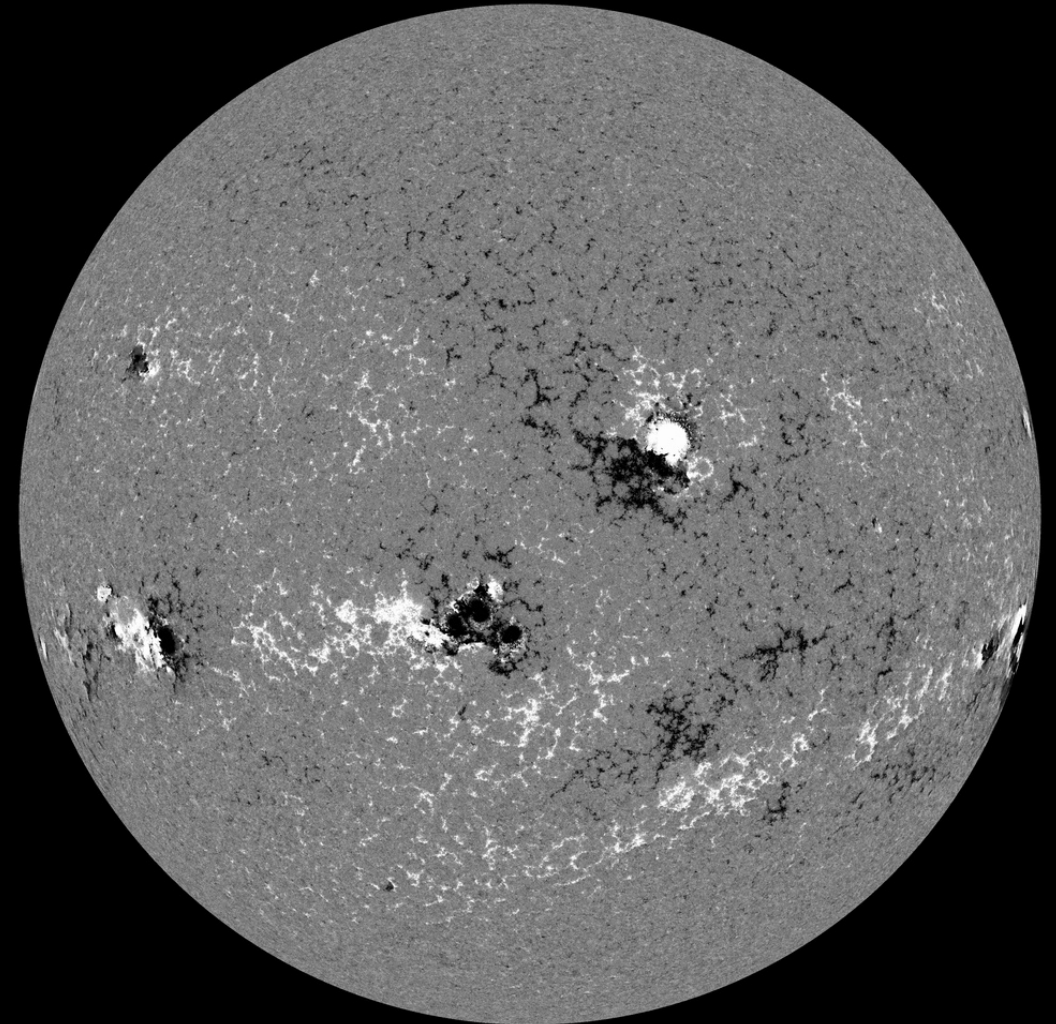
Solar active regions

SDO/HMI White Light 2024-10-09



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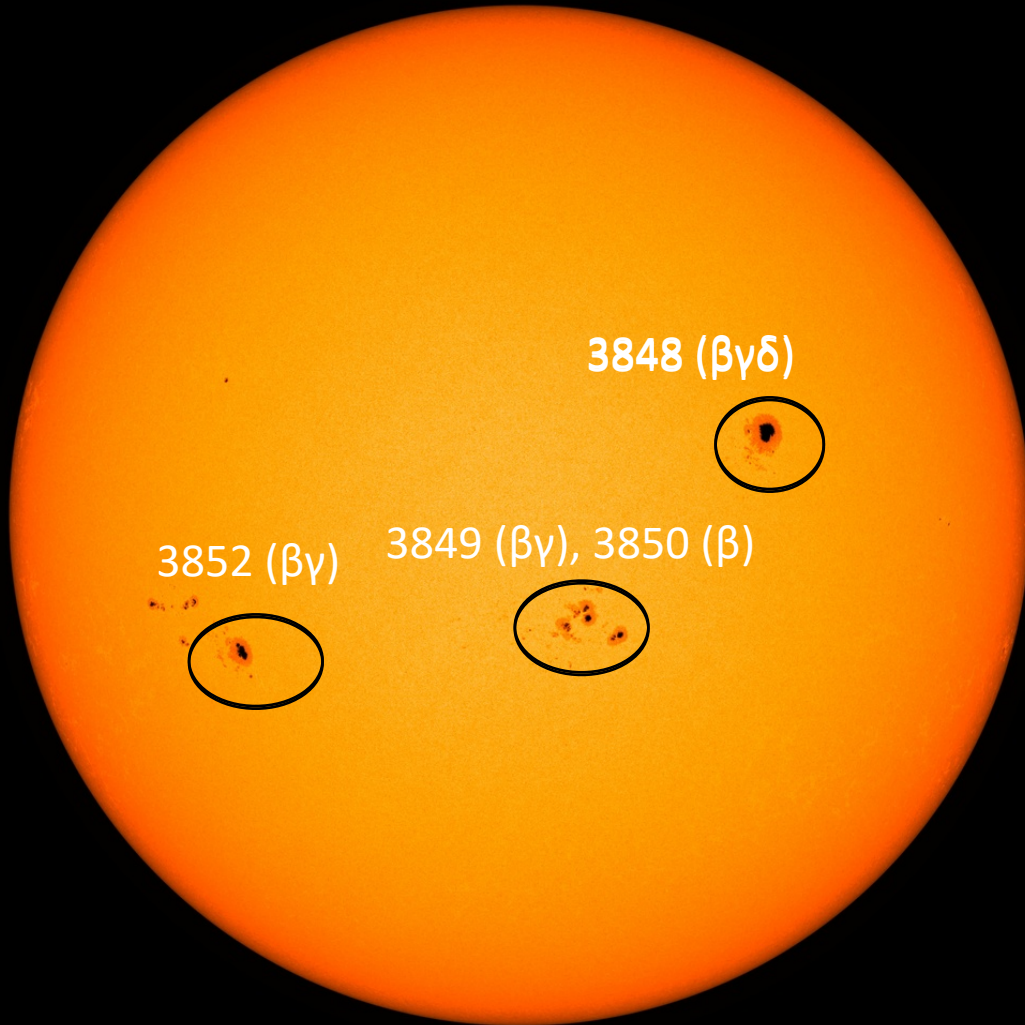
SDO/HMI Magnetogram 2024-10-09



SDO/HMI Quick-Look Magnetogram: 20241009_114500

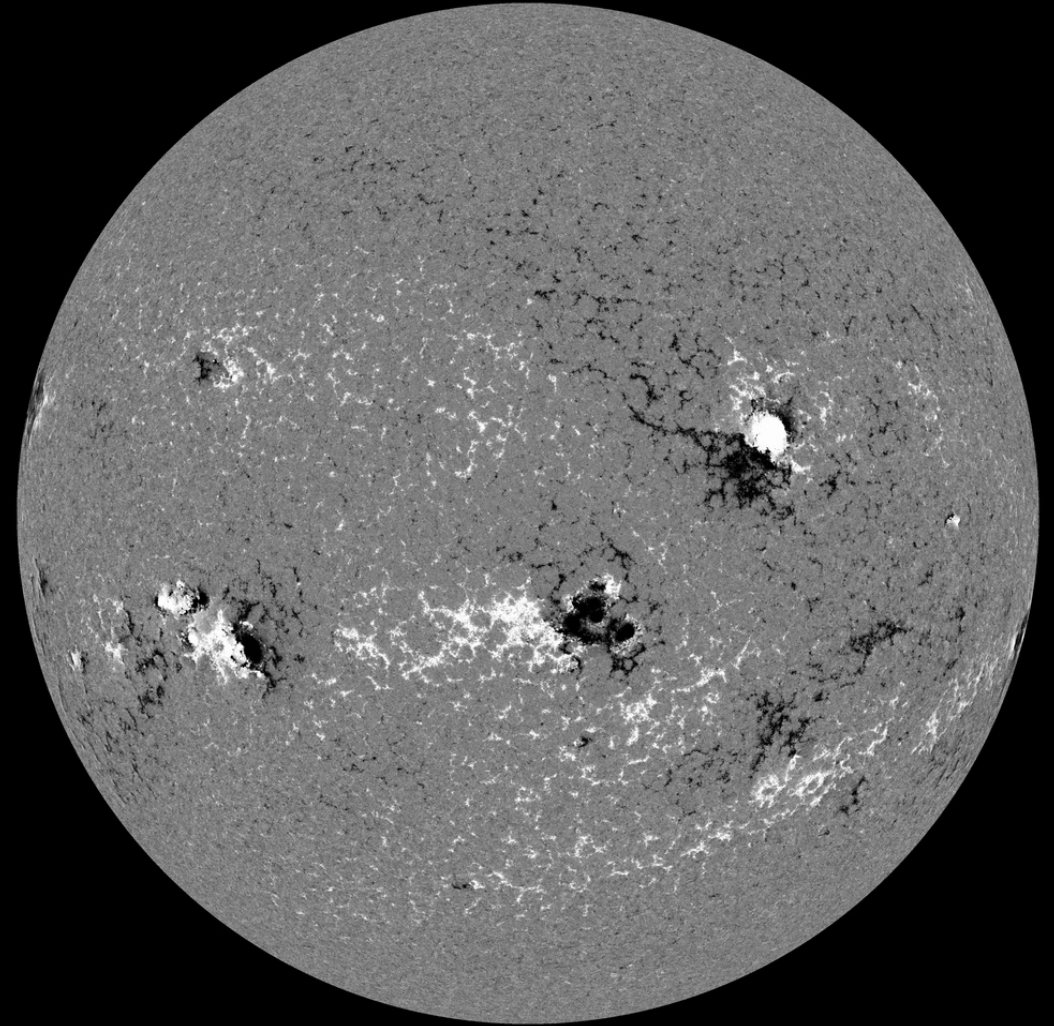
Solar active regions

SDO/HMI White Light 2024-10-10



SDO/HMI Quick-Look Continuum: 20241010_114500

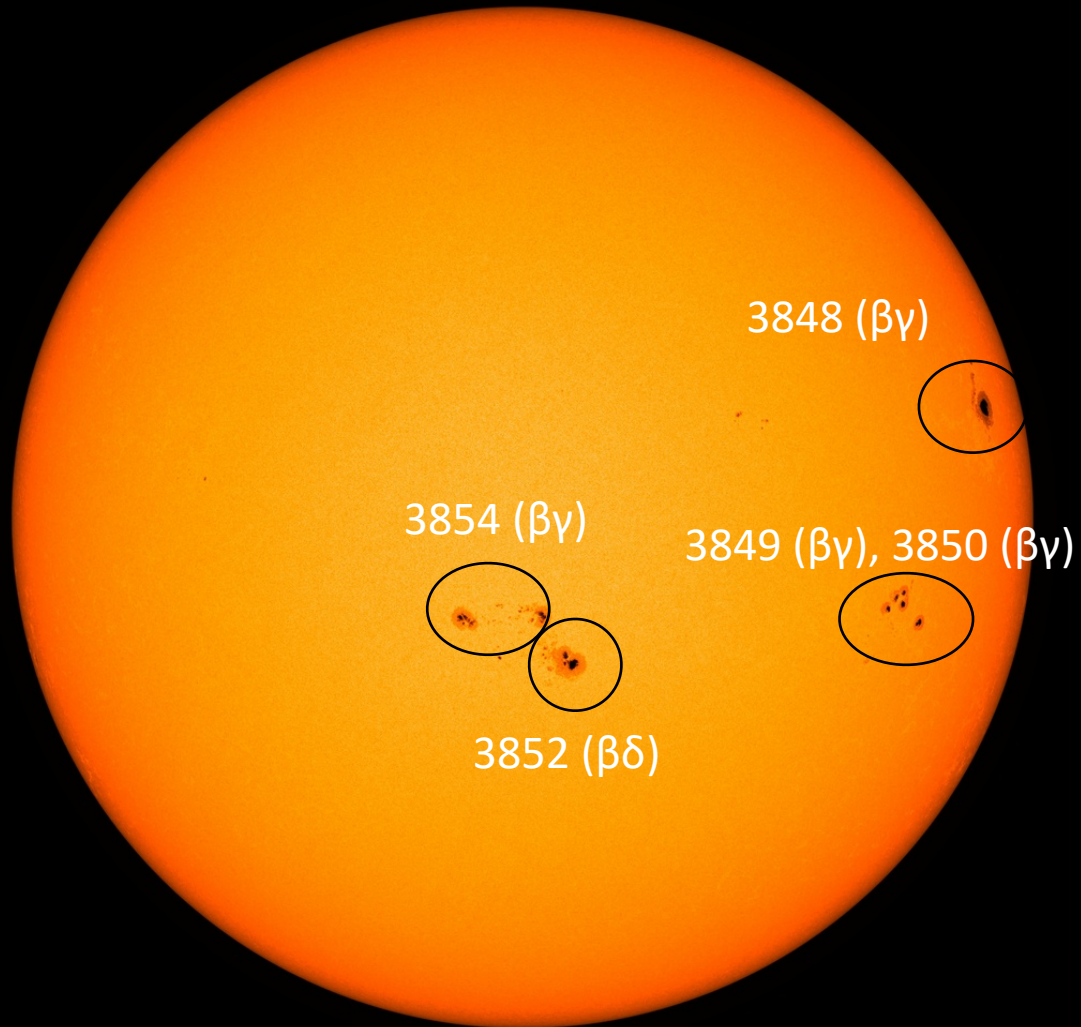
SDO/HMI Magnetogram 2024-10-10



SDO/HMI Quick-Look Magnetogram: 20241010_114500

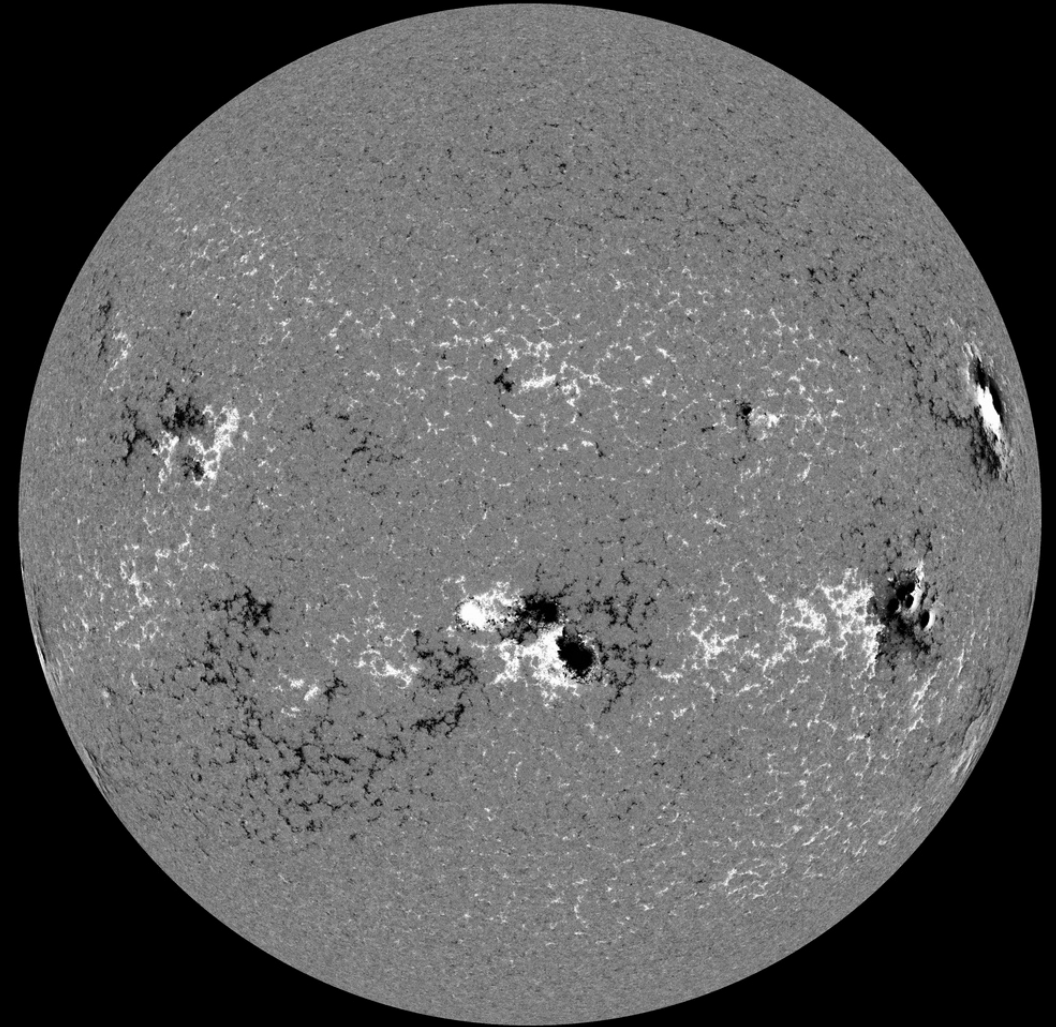
Solar active regions

SDO/HMI White Light 2024-10-13



SDO/HMI Quick-Look Continuum: 20241013_114500

SDO/HMI Magnetogram 2024-10-13

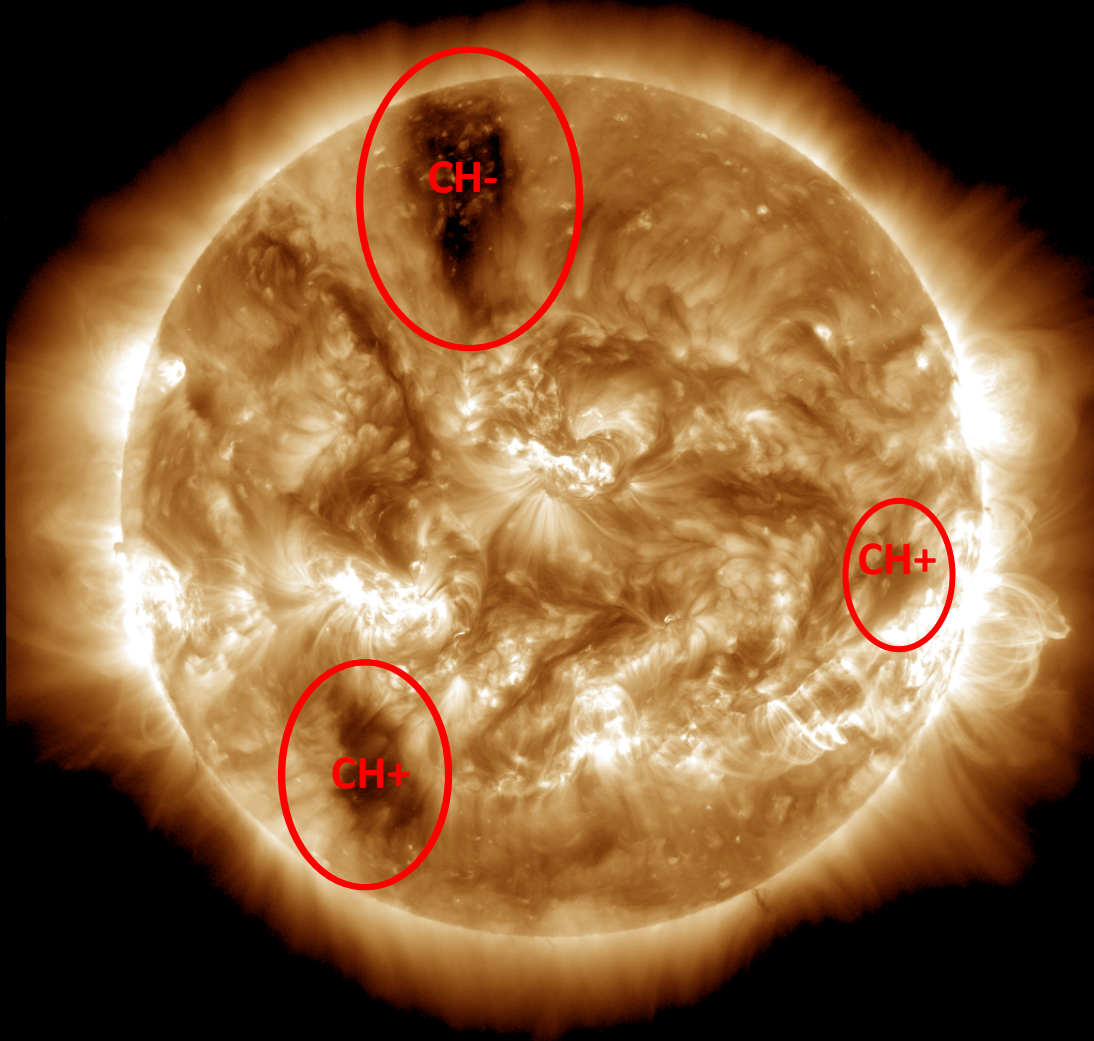


SDO/HMI Quick-Look Magnetogram: 20241013_114500

Coronal holes

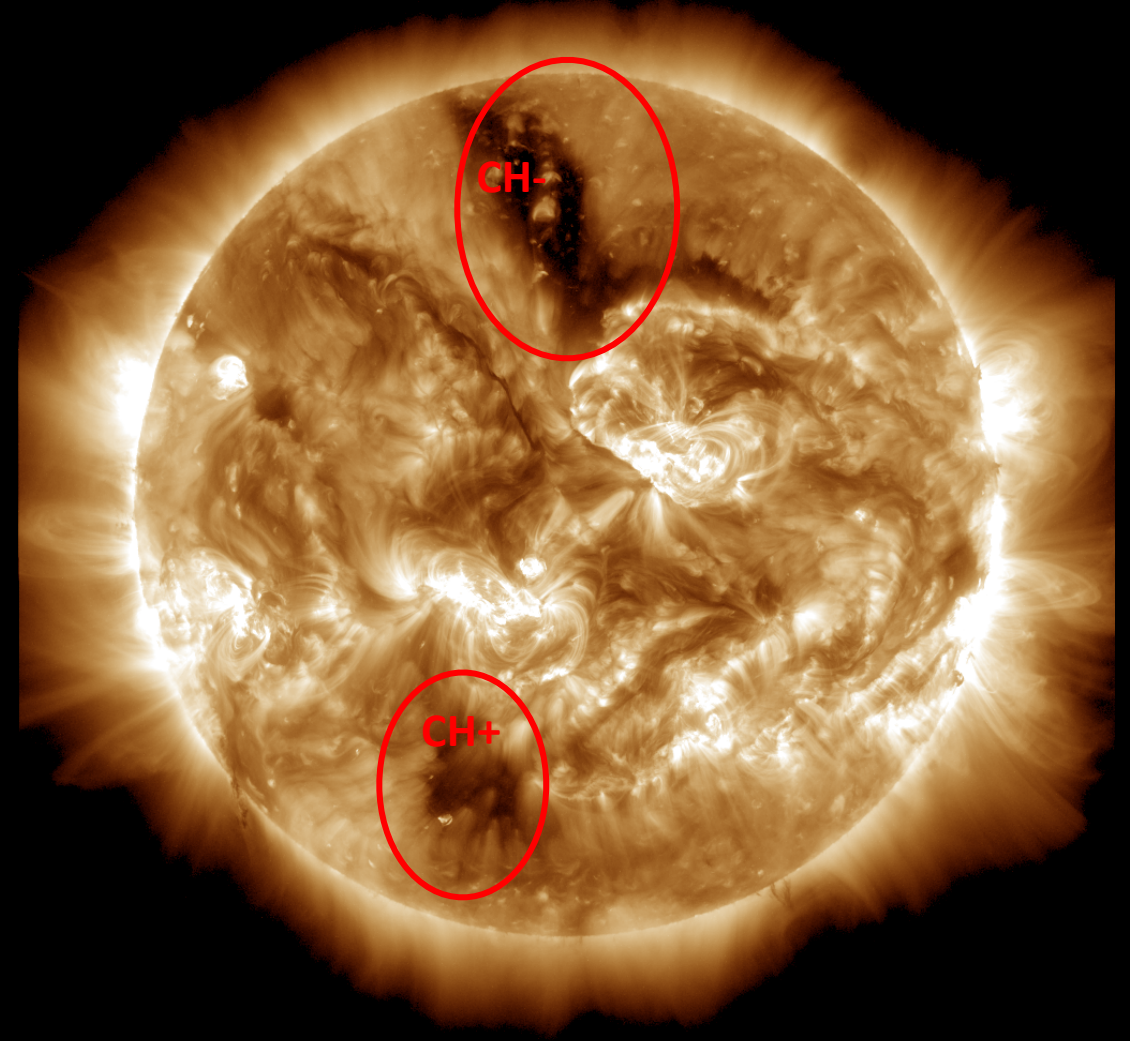
SDO/AIA 19.3 nm 2024-10-08

SDO/AIA AIA 193Å 2024-10-08T12:00:05.835



SDO/AIA 19.3 nm 2024-10-09

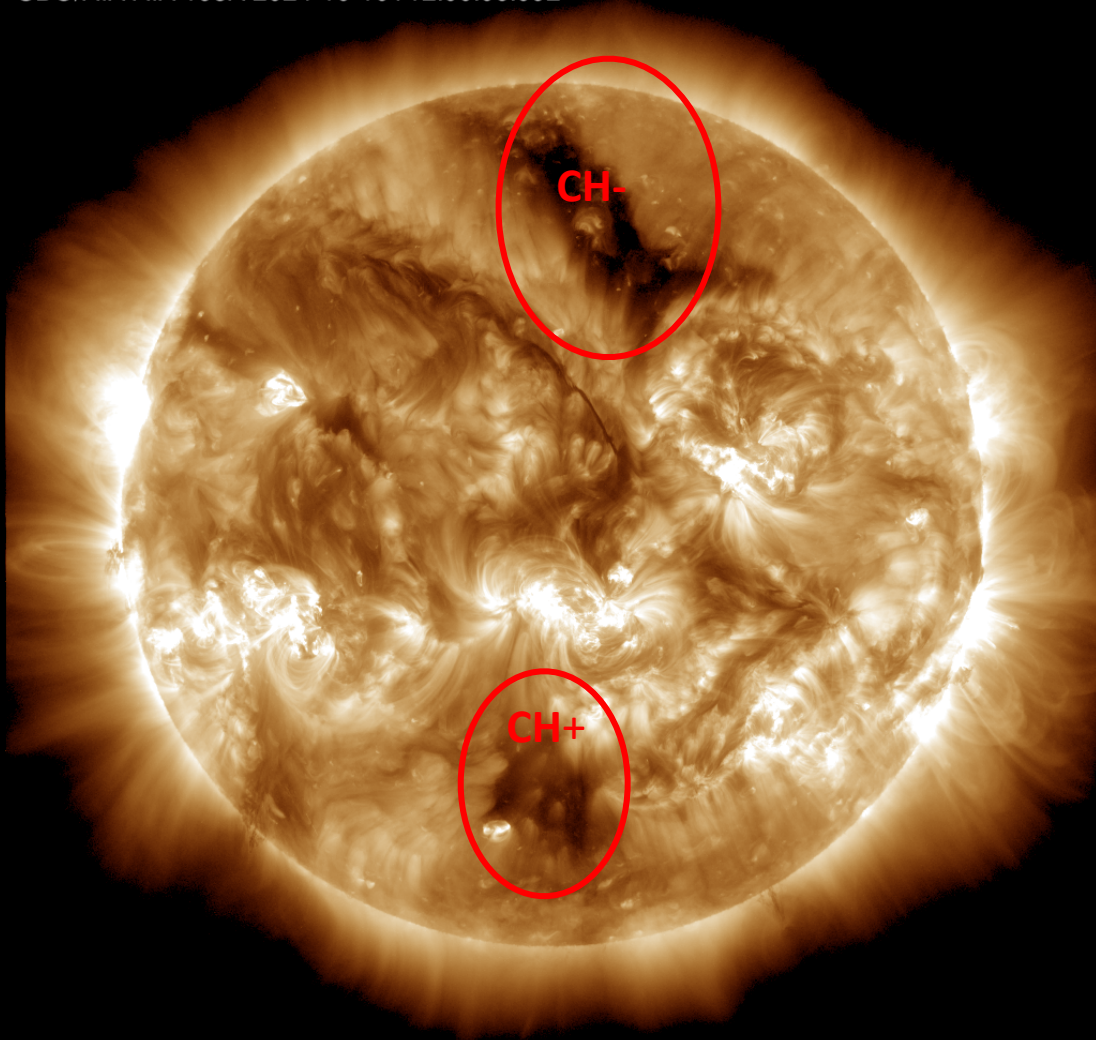
SDO/AIA AIA 193Å 2024-10-09T12:00:05.843



Coronal holes

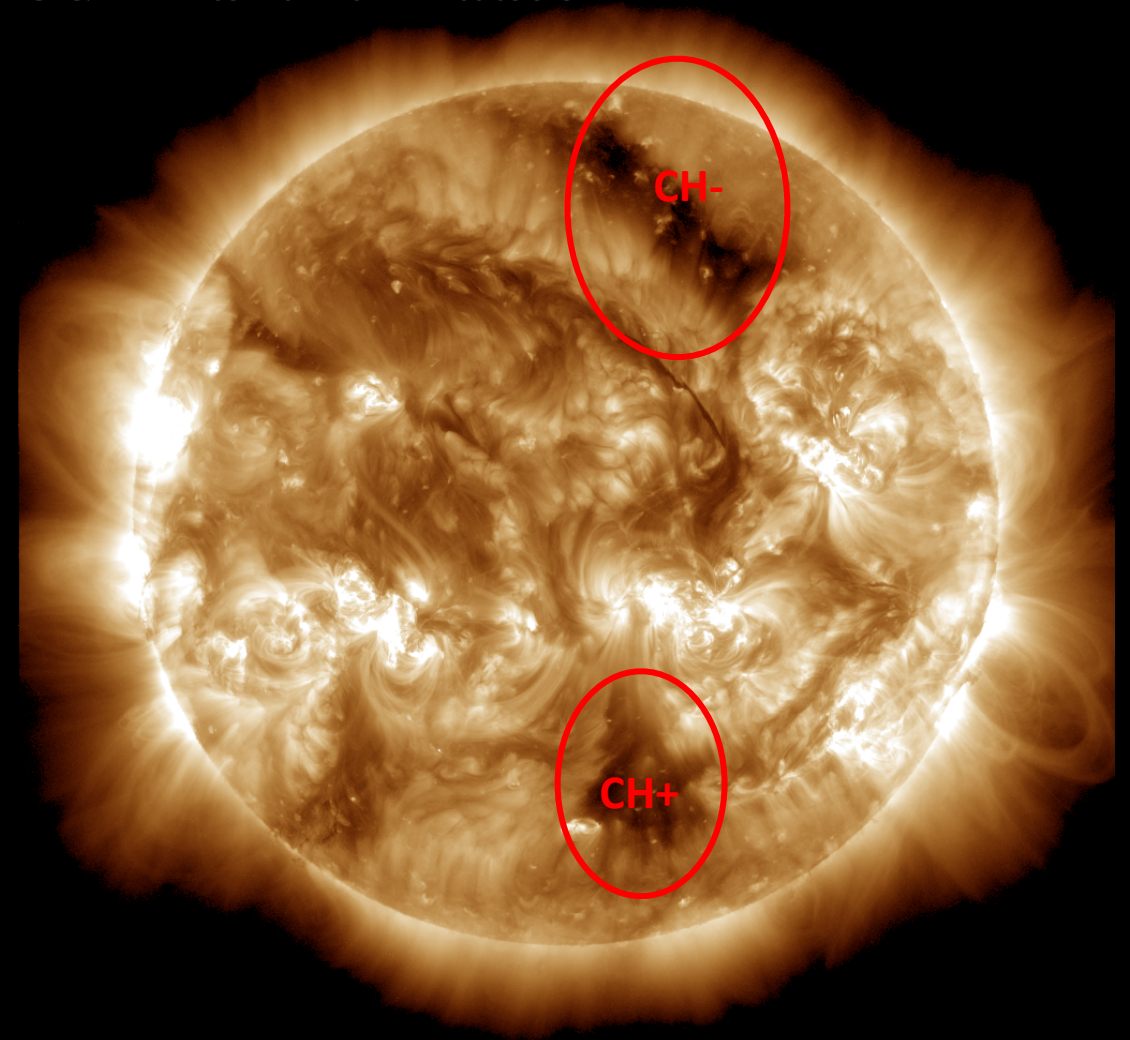
SDO/AIA 19.3 nm 2024-10-10

SDO/AIA AIA 193Å 2024-10-10T12:00:06.092



SDO/AIA 19.3 nm 2024-10-11

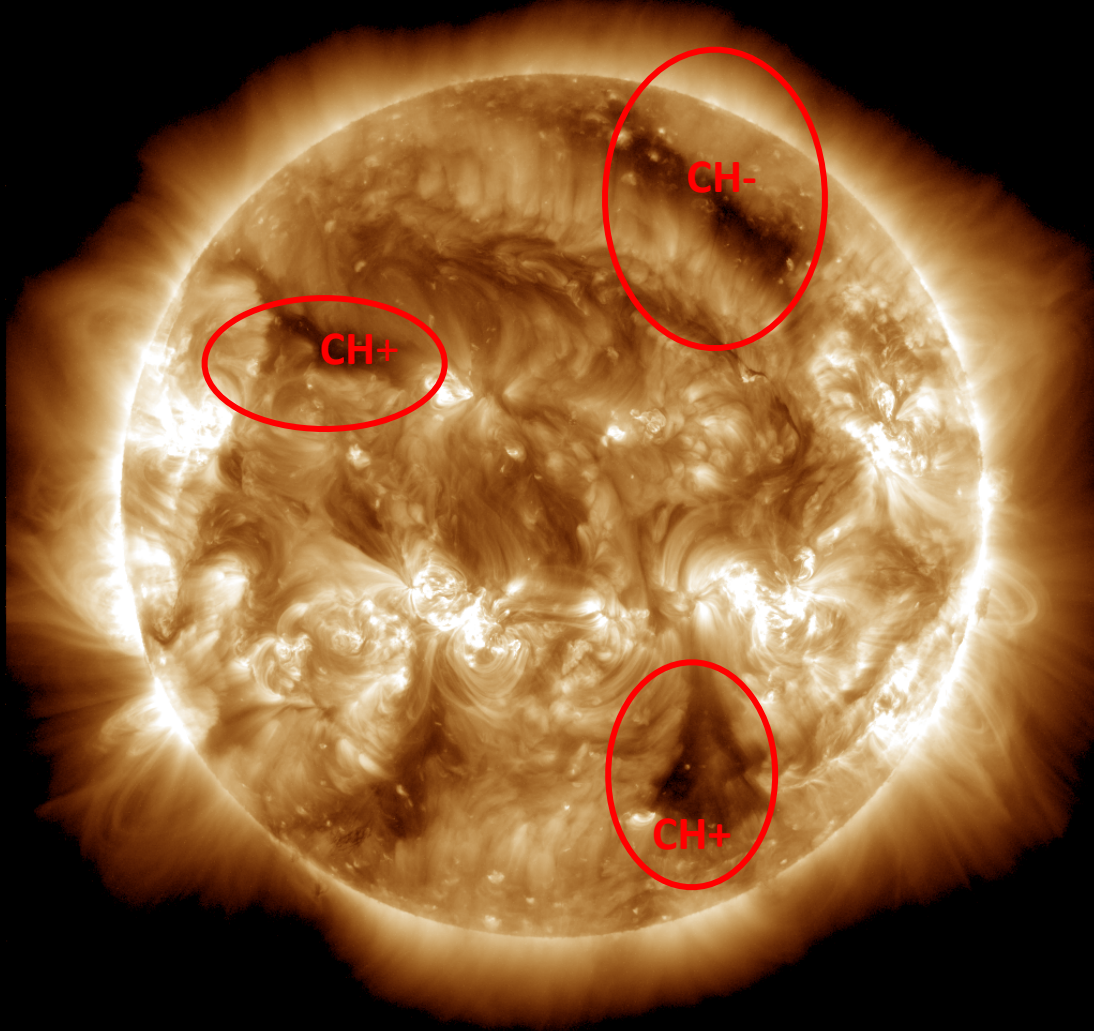
SDO/AIA AIA 193Å 2024-10-11T12:00:05.843



Coronal holes

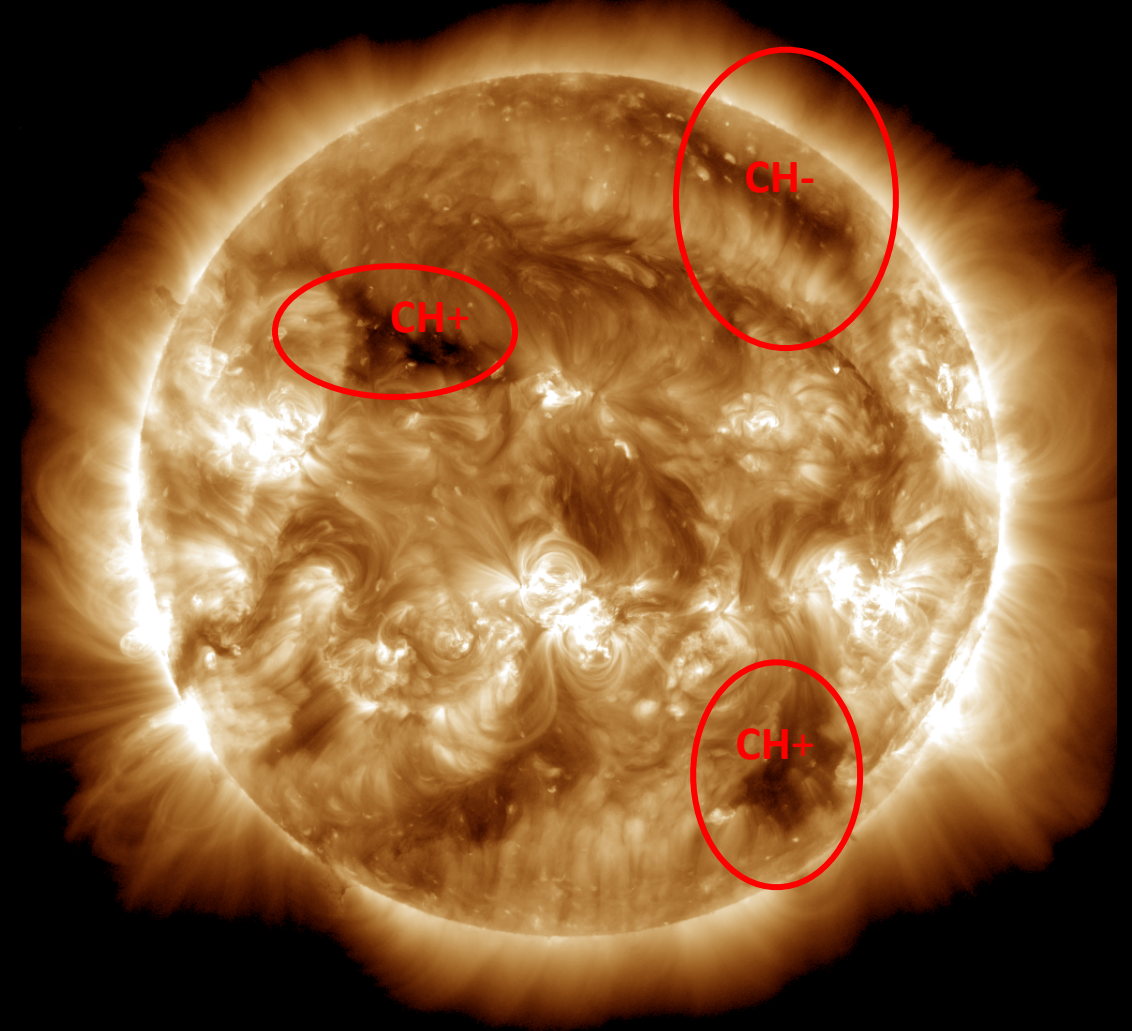
SDO/AIA 19.3 nm 2024-10-12

SDO/AIA AIA 193Å 2024-10-12T12:00:05.843



SDO/AIA 19.3 nm 2024-10-13

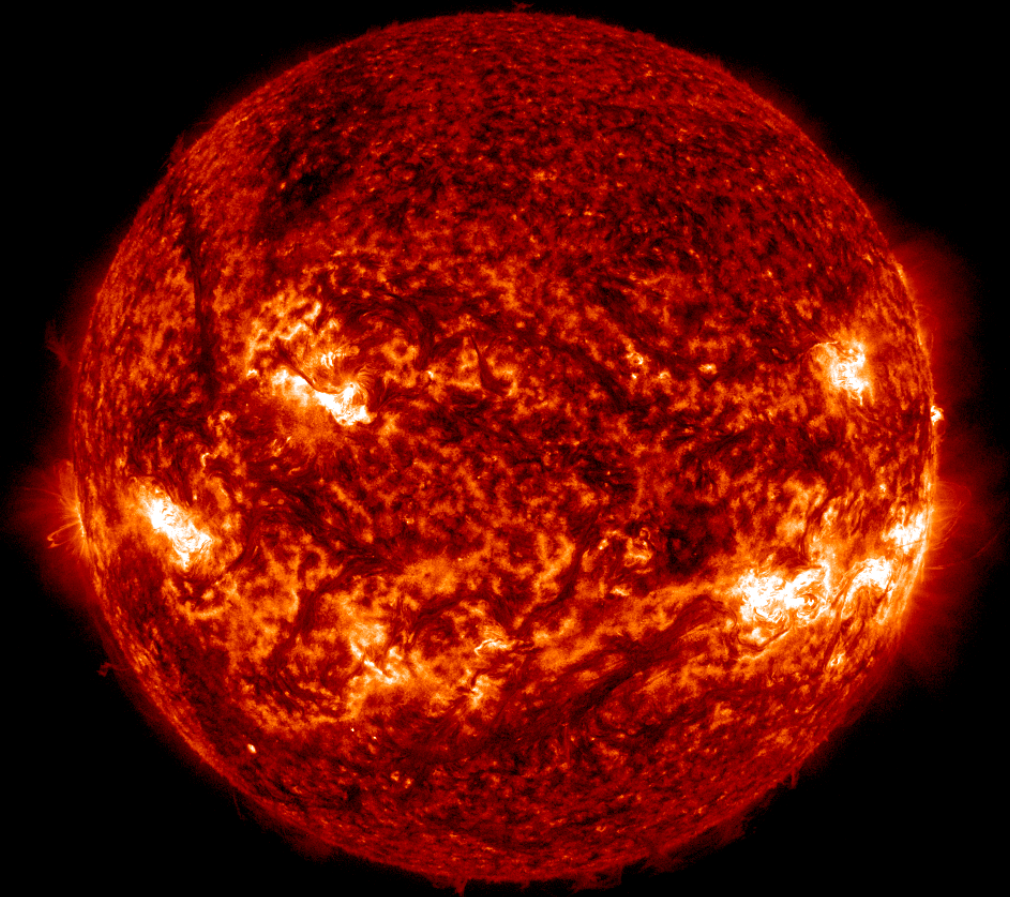
SDO/AIA AIA 193Å 2024-10-13T12:00:05.843



Filaments

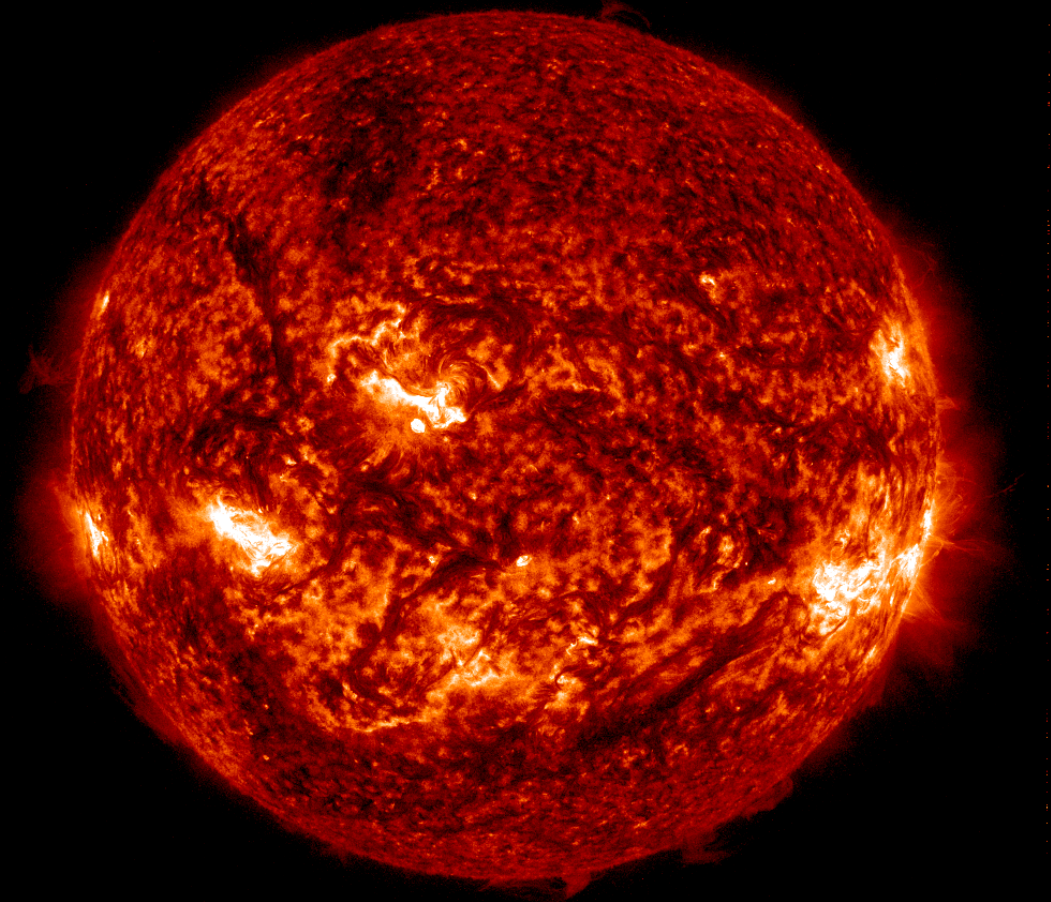
SDO/AIA 30.4 nm 2024-10-06

SDO/AIA AIA 304Å 2024-10-06T12:00:06.580



SDO/AIA 30.4 nm 2024-10-07

SDO/AIA AIA 304Å 2024-10-07T12:00:06.580



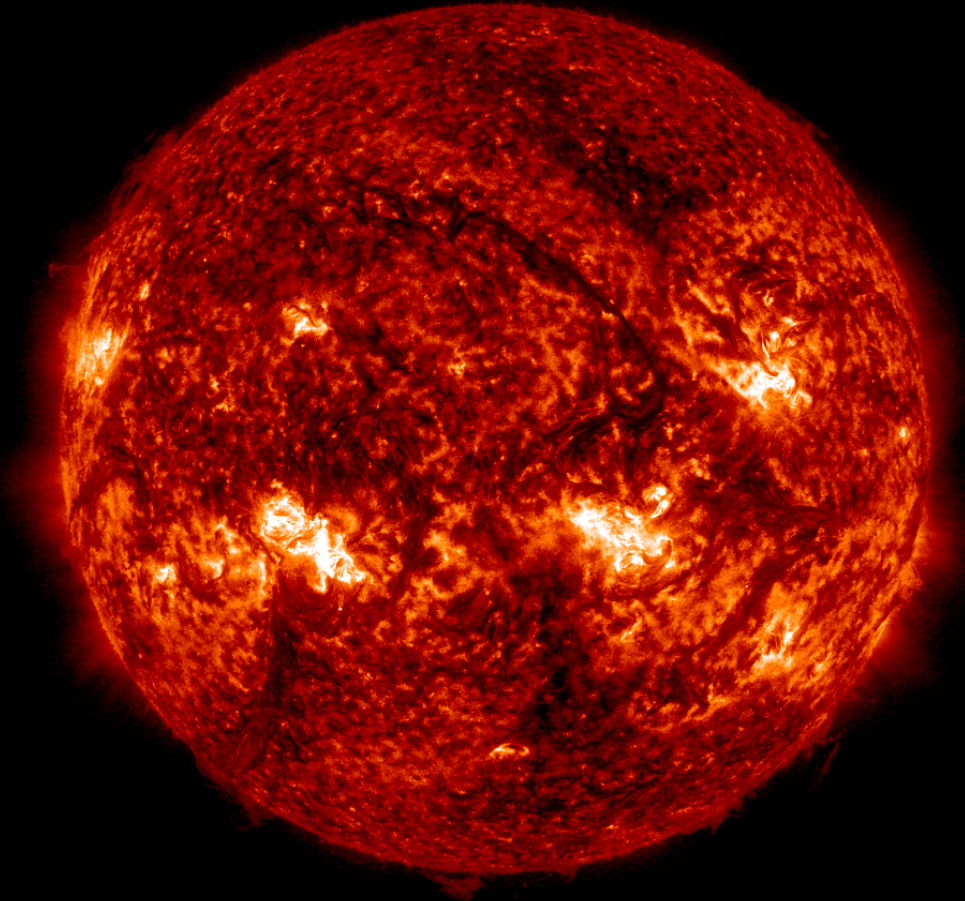
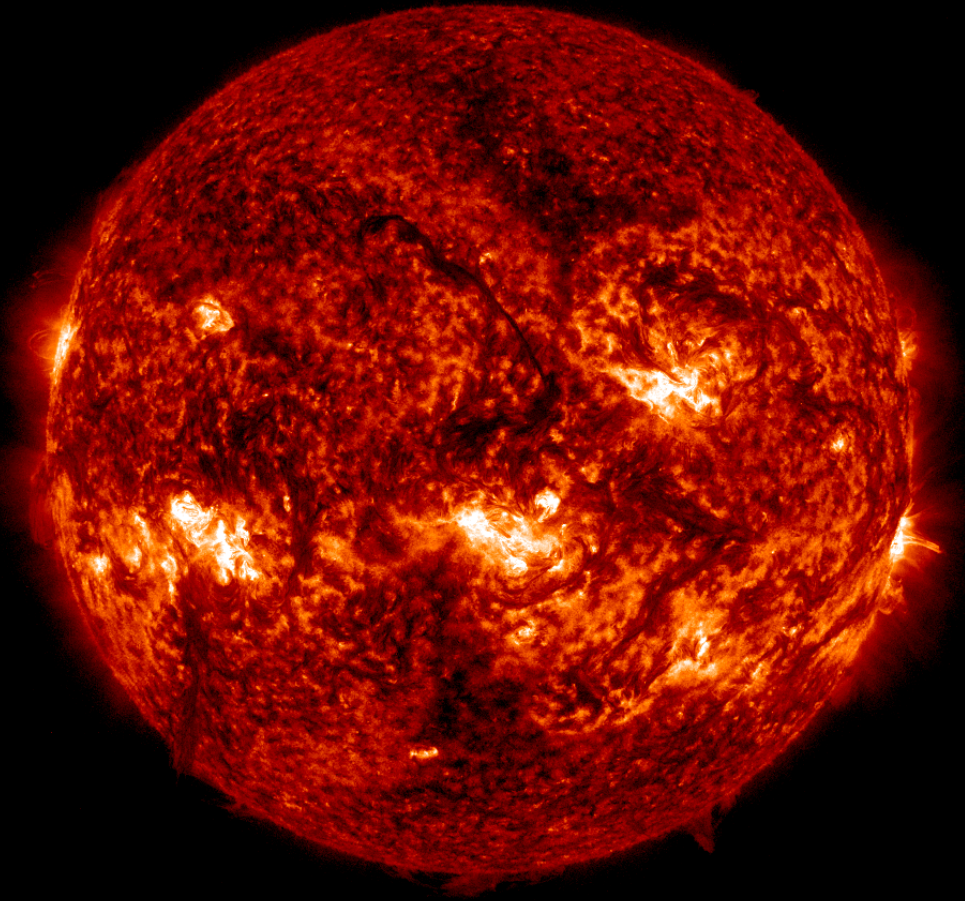
Filaments

SDO/AIA 30.4 nm 2024-10-10

SDO/AIA AIA 304Å 2024-10-10T12:00:06.580

SDO/AIA 30.4 nm 2024-10-11

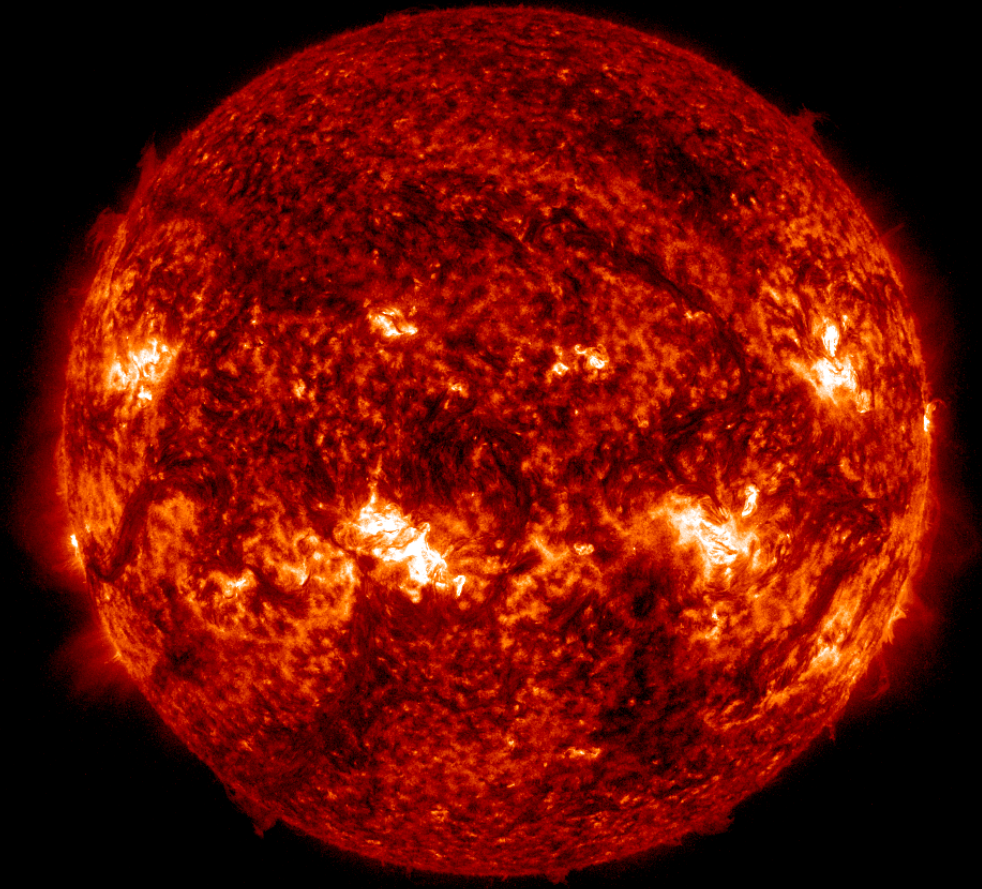
SDO/AIA AIA 304Å 2024-10-11T12:00:06.587



Filaments

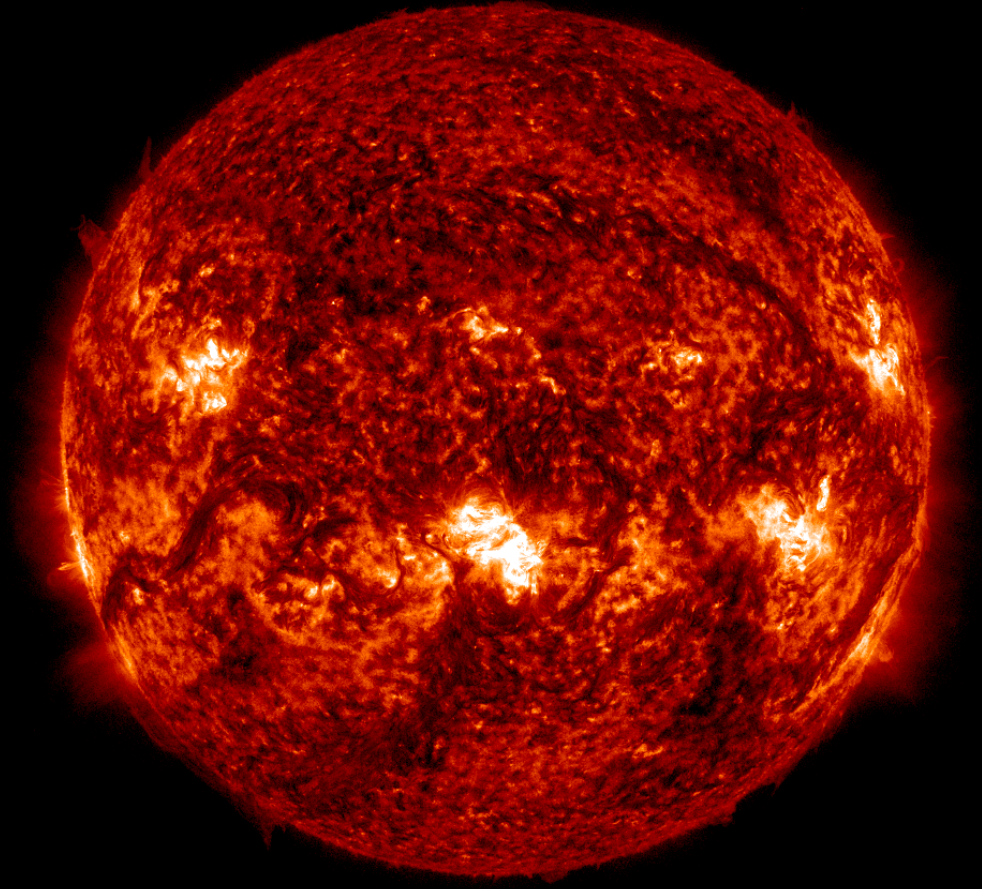
SDO/AIA 30.4 nm 2024-10-12

SDO/AIA AIA 304Å 2024-10-12T12:00:06.580



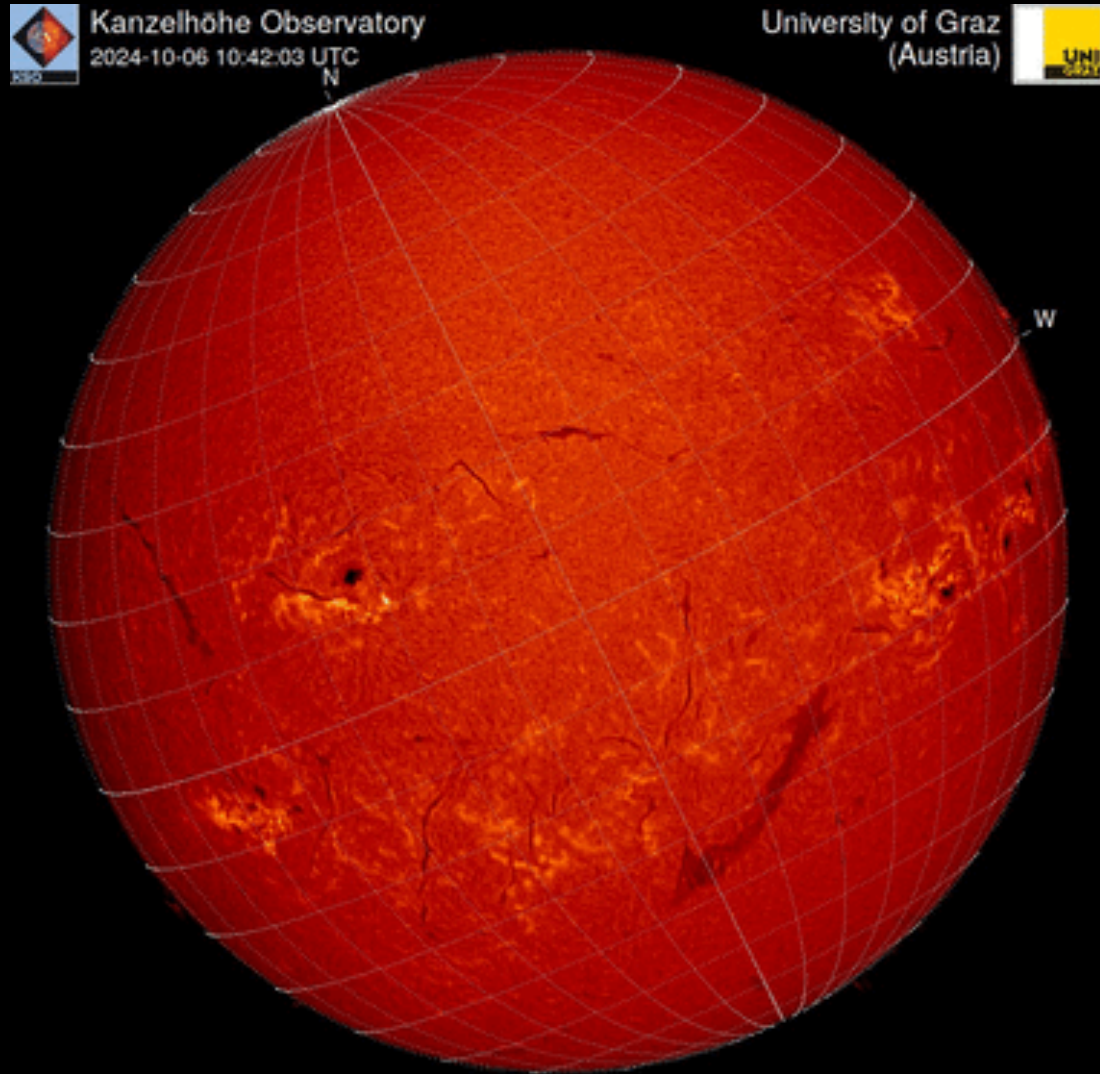
SDO/AIA 30.4 nm 2024-10-13

SDO/AIA AIA 304Å 2024-10-13T12:00:06.580

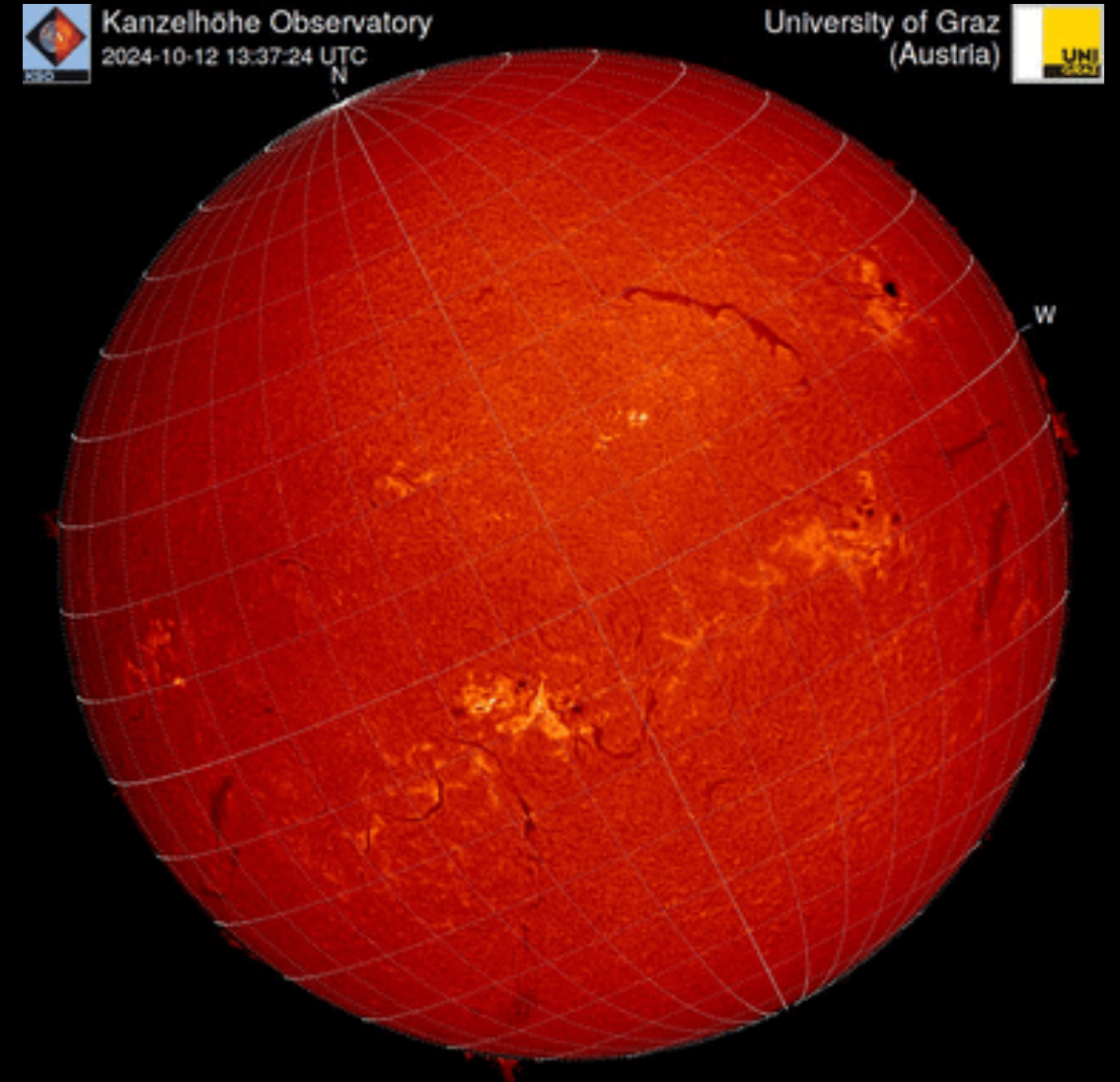


Filaments & Filament eruptions

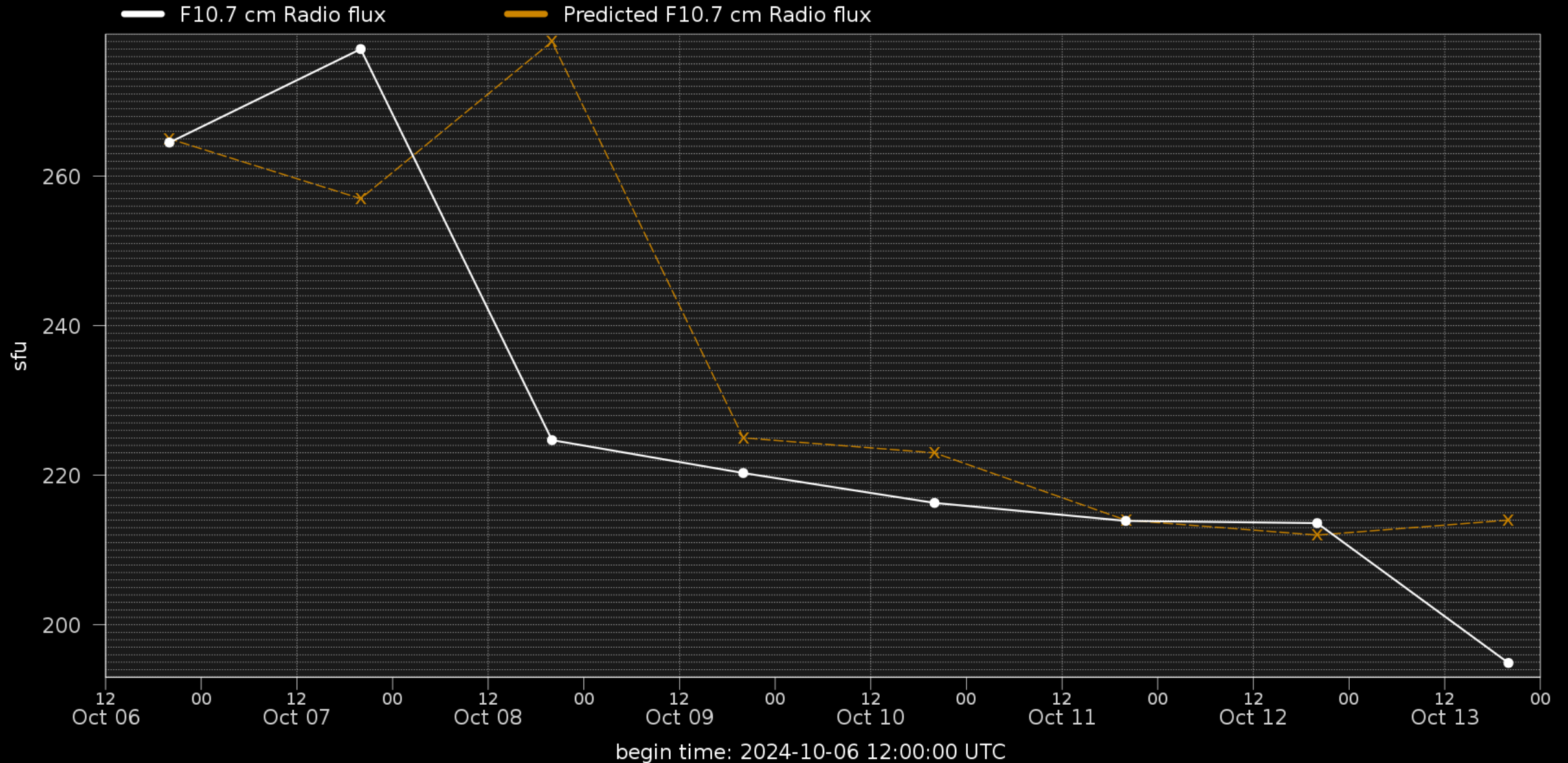
H-alpha 2024-10-06



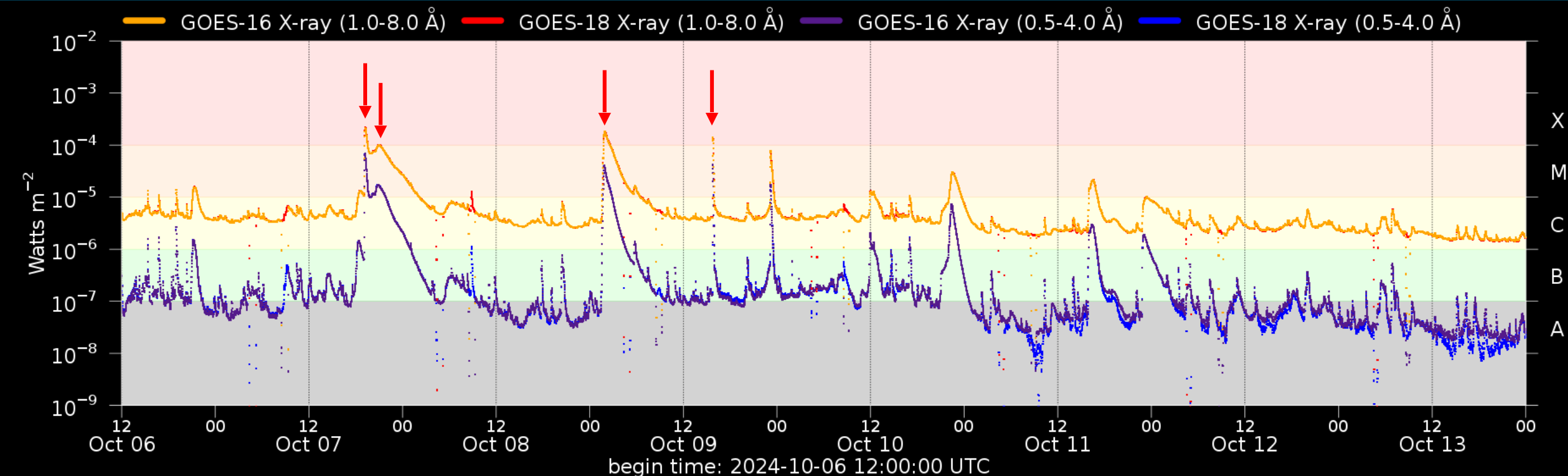
H-alpha 2024-10-12



Solar F10.7cm radio flux



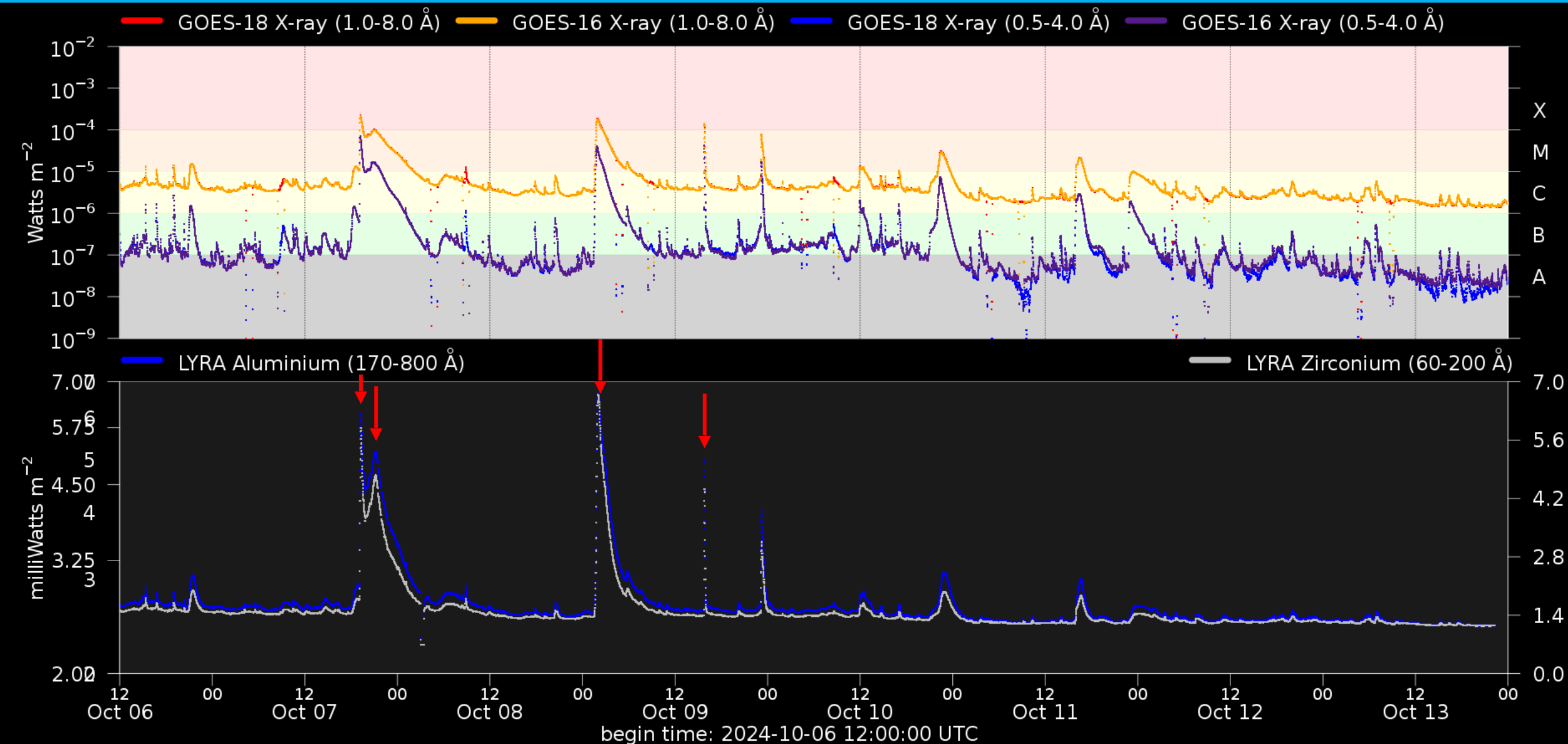
Flaring activity



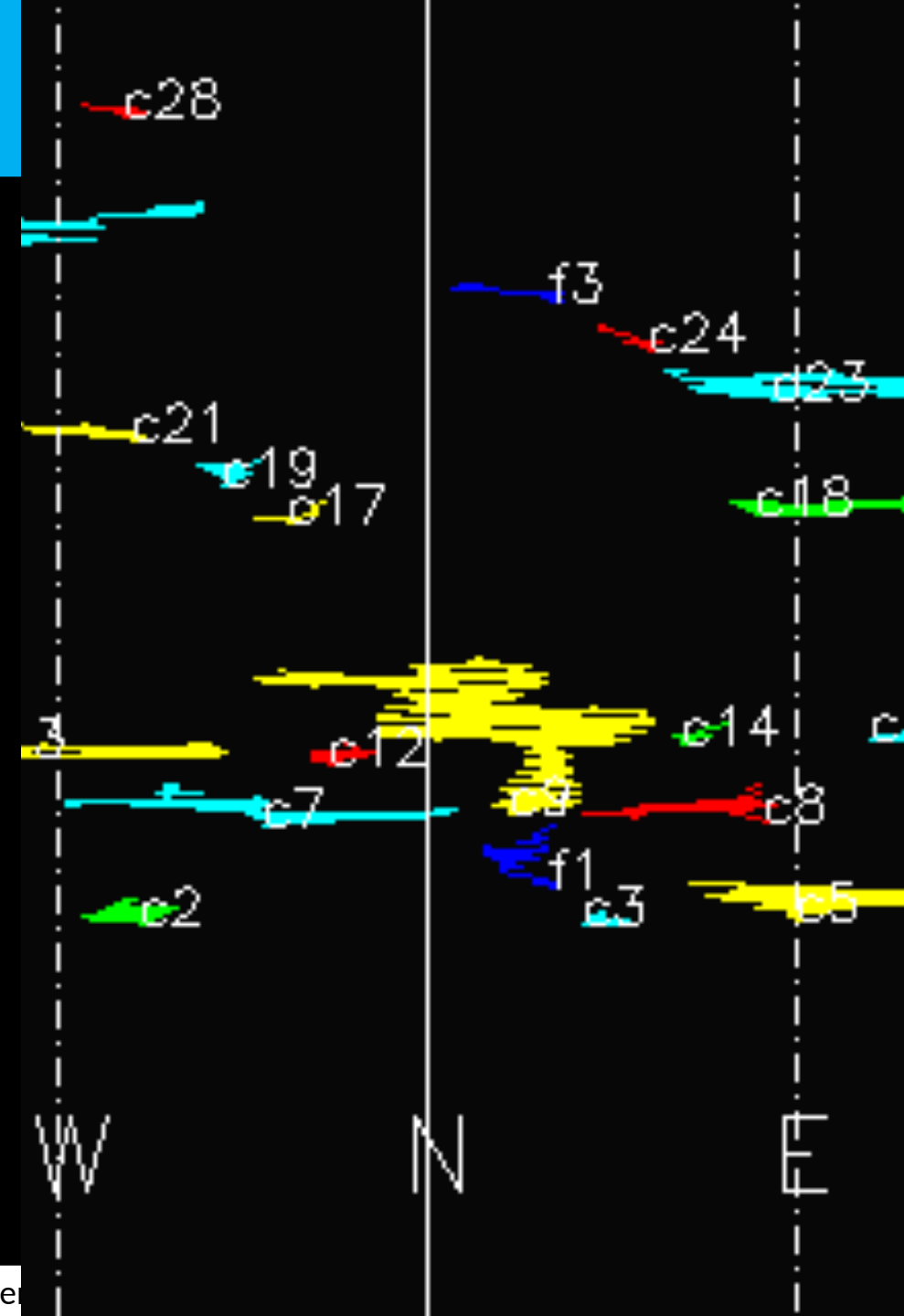
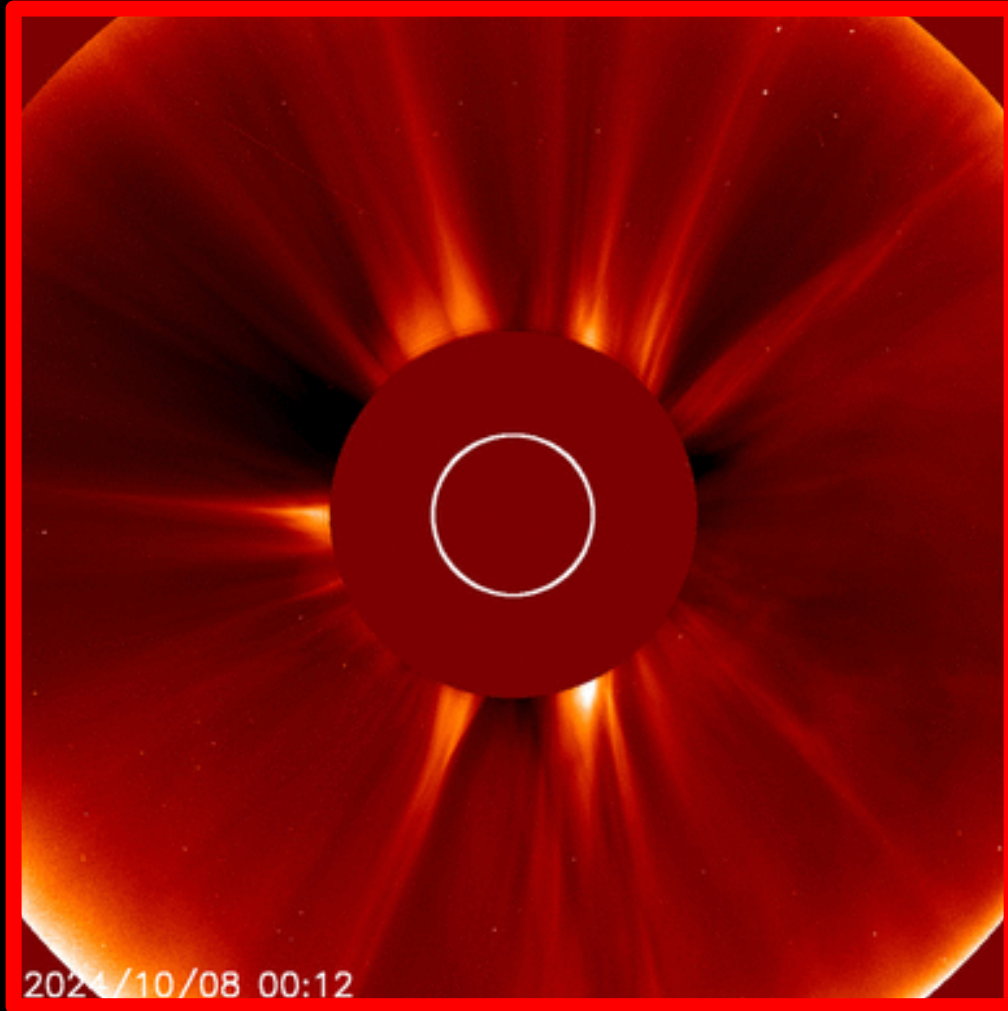
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-10-06	2024-10-07	2024-10-08	2024-10-09	2024-10-10	2024-10-11	2024-10-12	2024-10-13
Probability (%)	99 99 39	99 98 28	99 96 28	99 96 27	99 97 28	99 94 24	99 83 19	99 83 14
Observed (#)	03 05 00	01 01 02	04 00 00	04 01 02	04 02 00	04 01 00	02 00 00	01 00 00

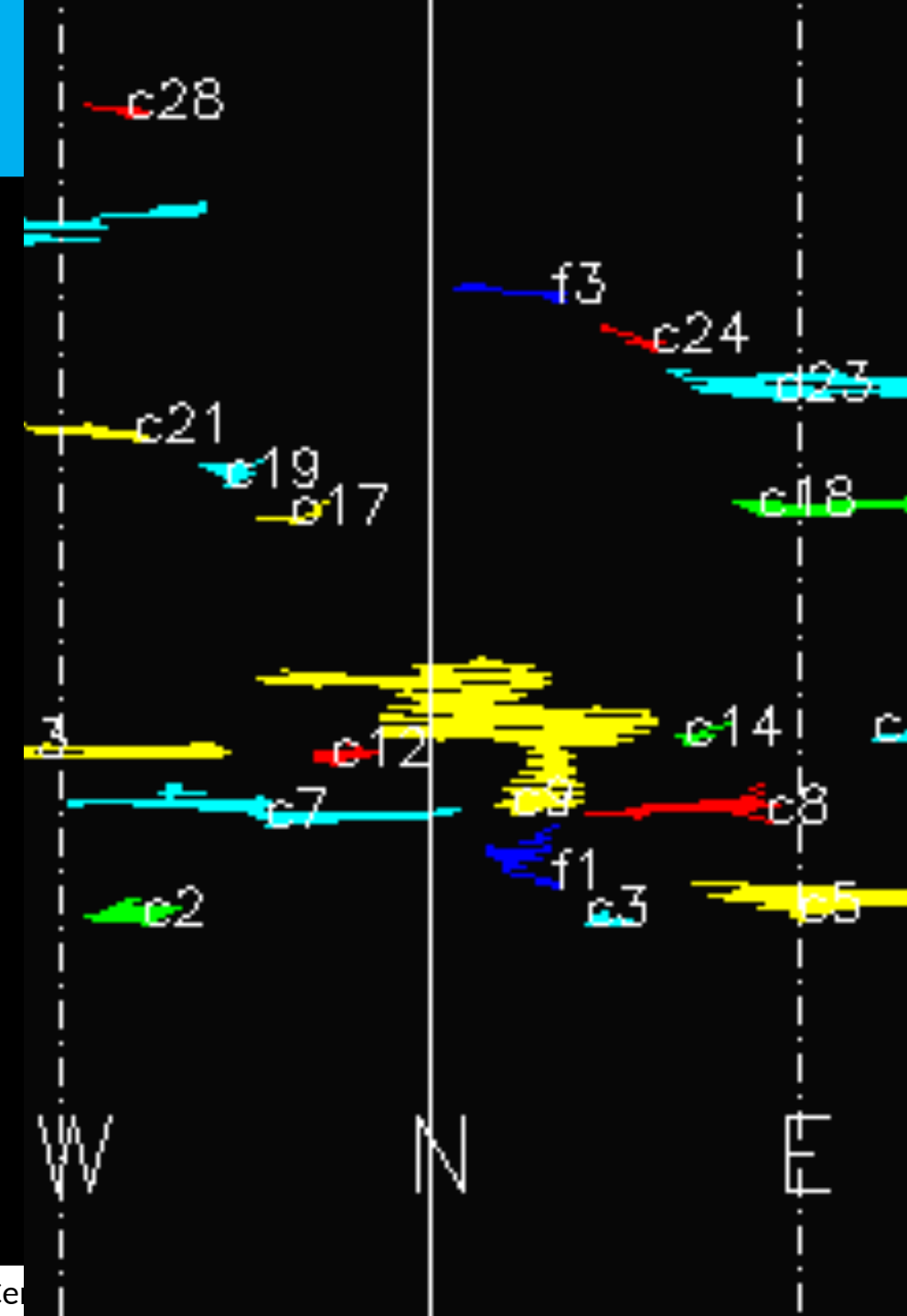
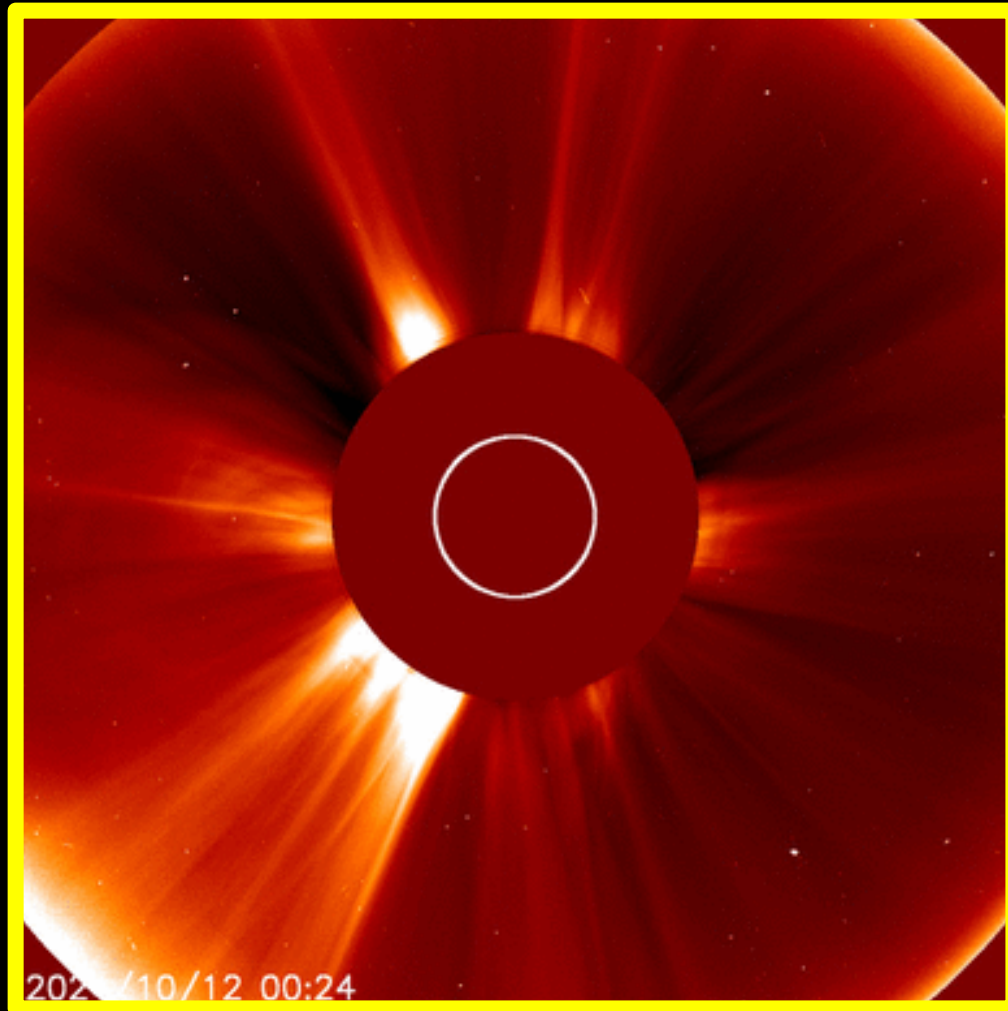
Solar X-Ray and UV flux



Coronal Mass Ejections



Coronal Mass Ejections



Solar Wind and

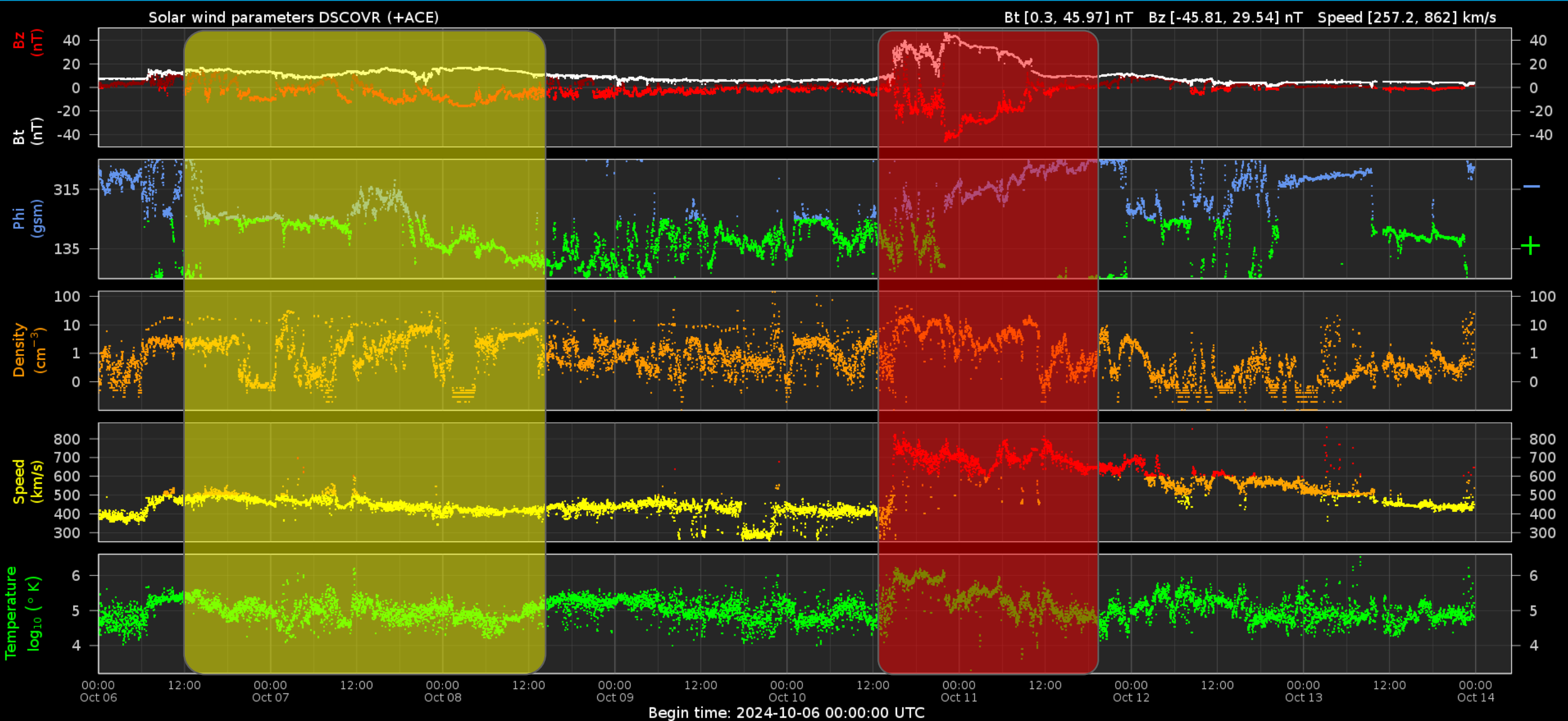
Geomagnetic Activity



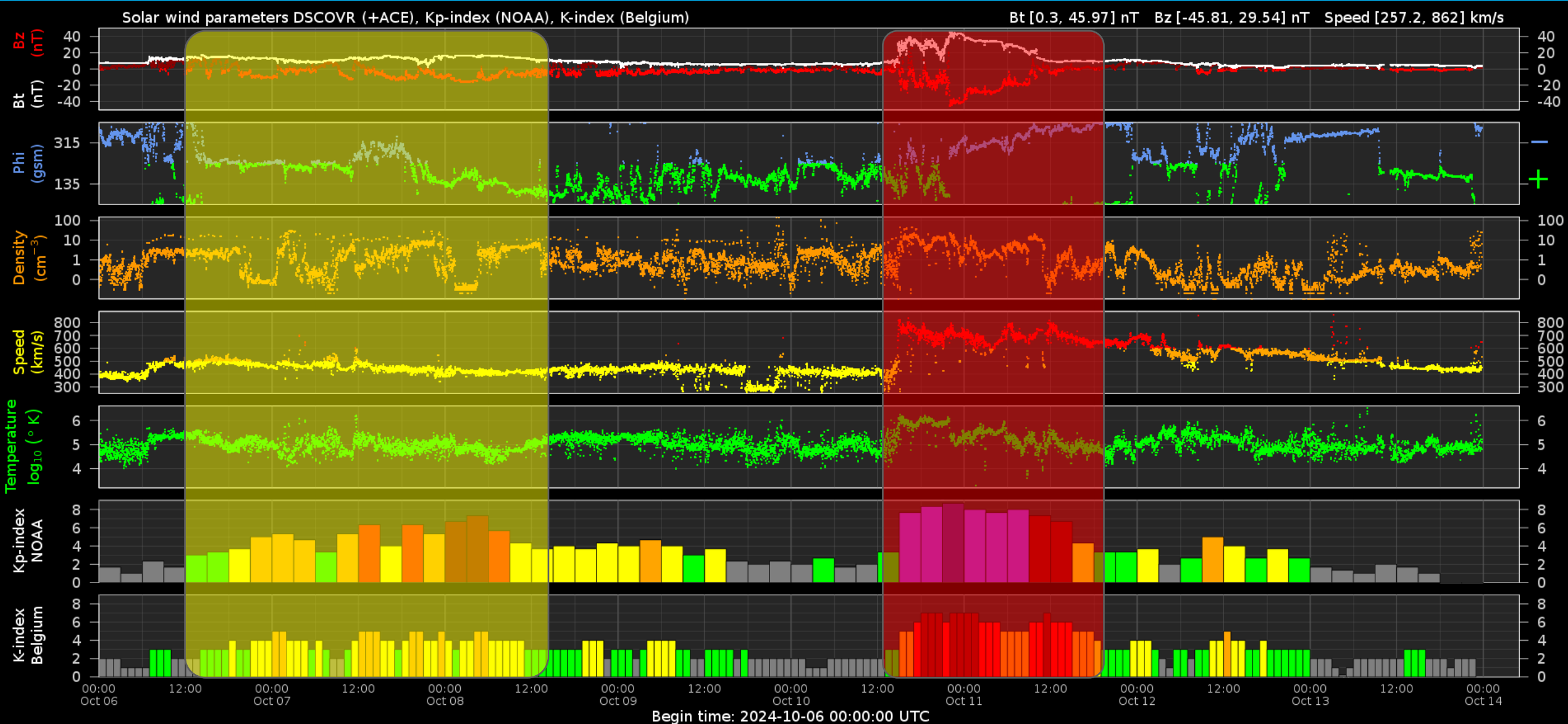
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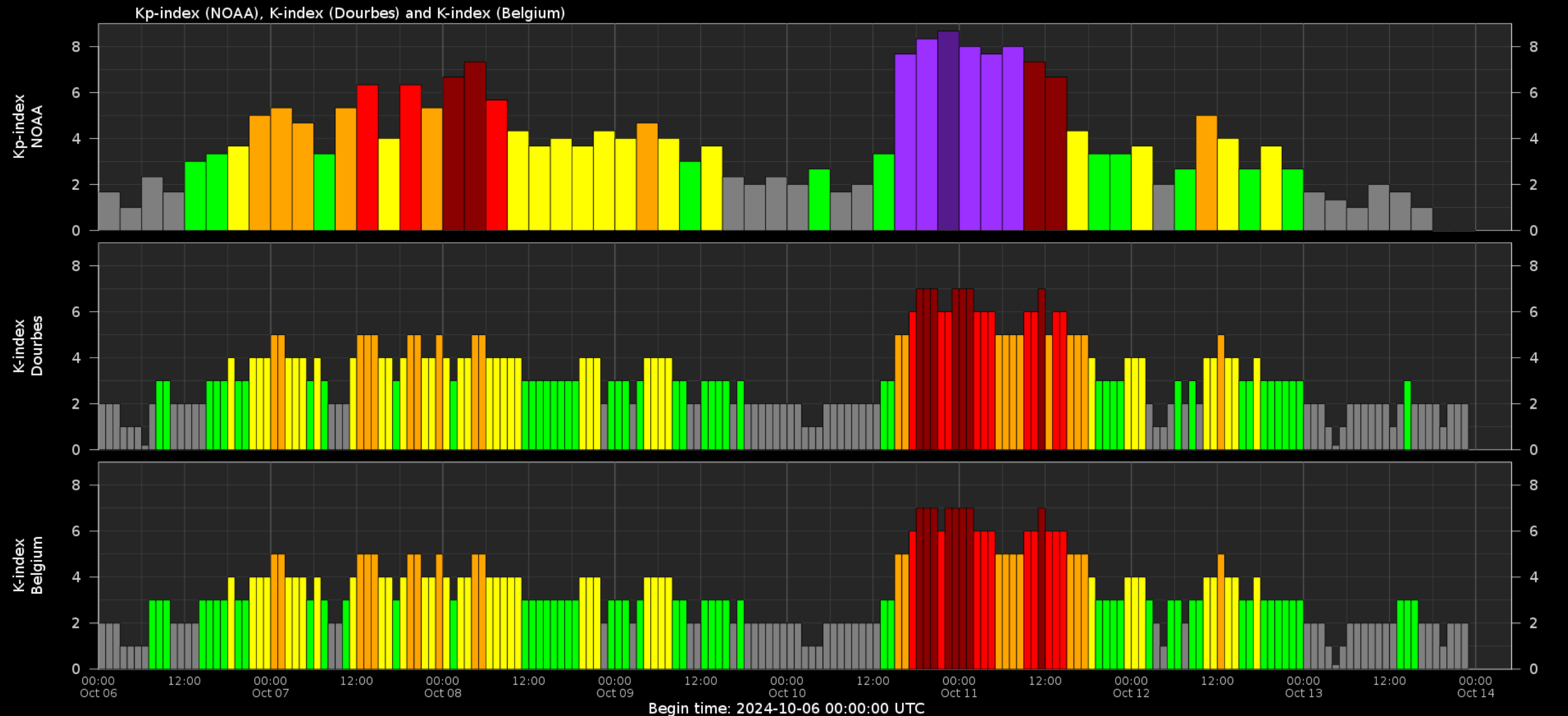
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



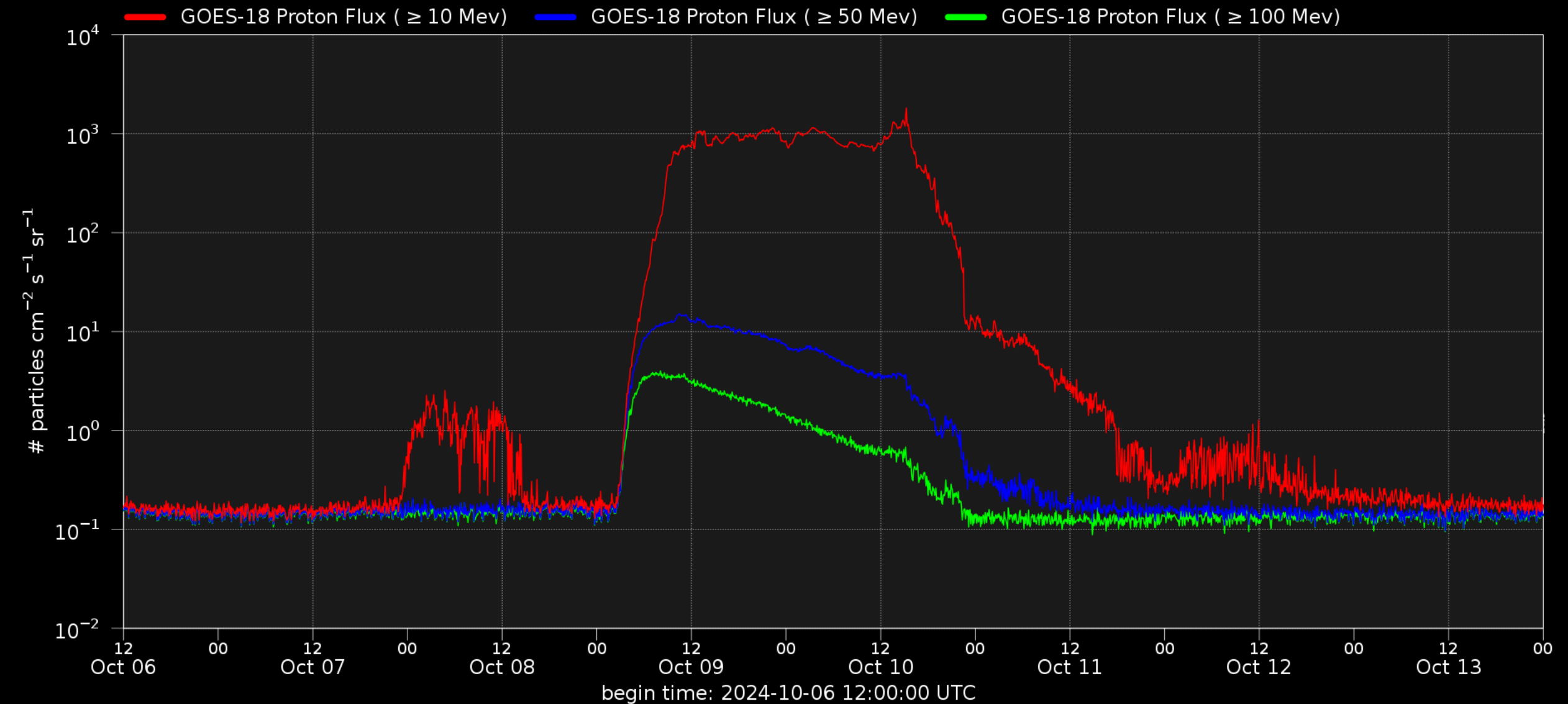
Energetic Particles



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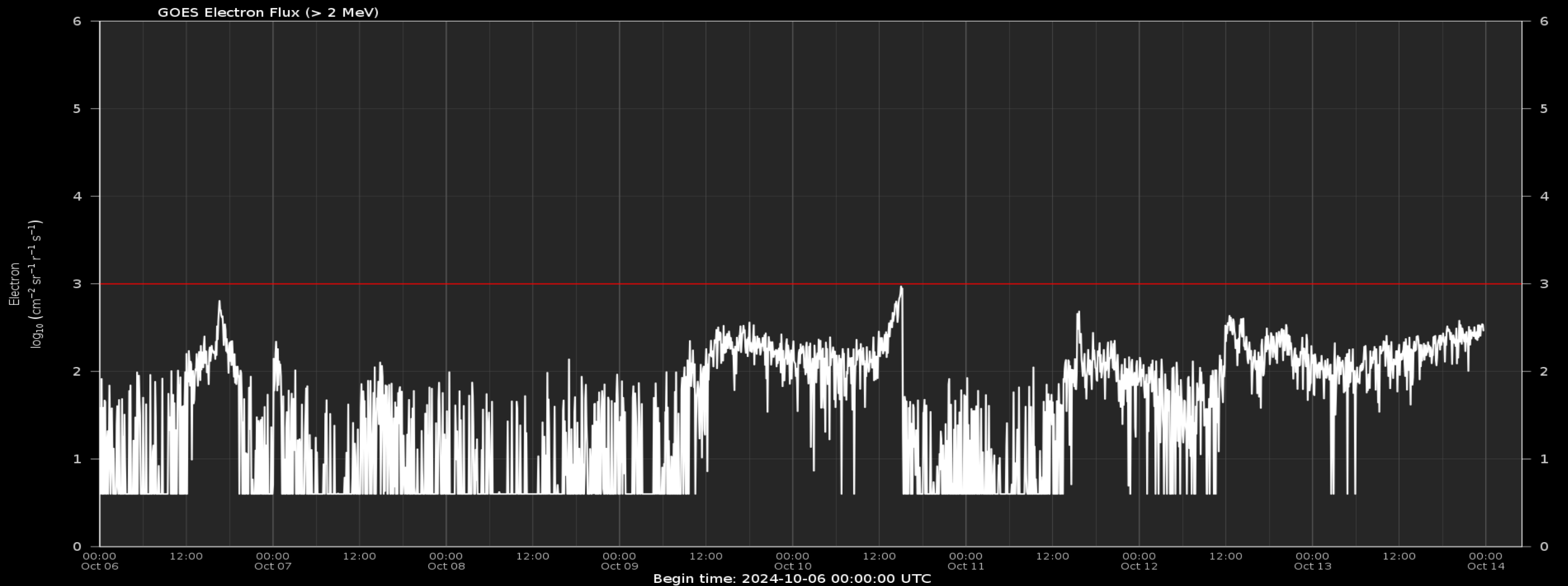
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



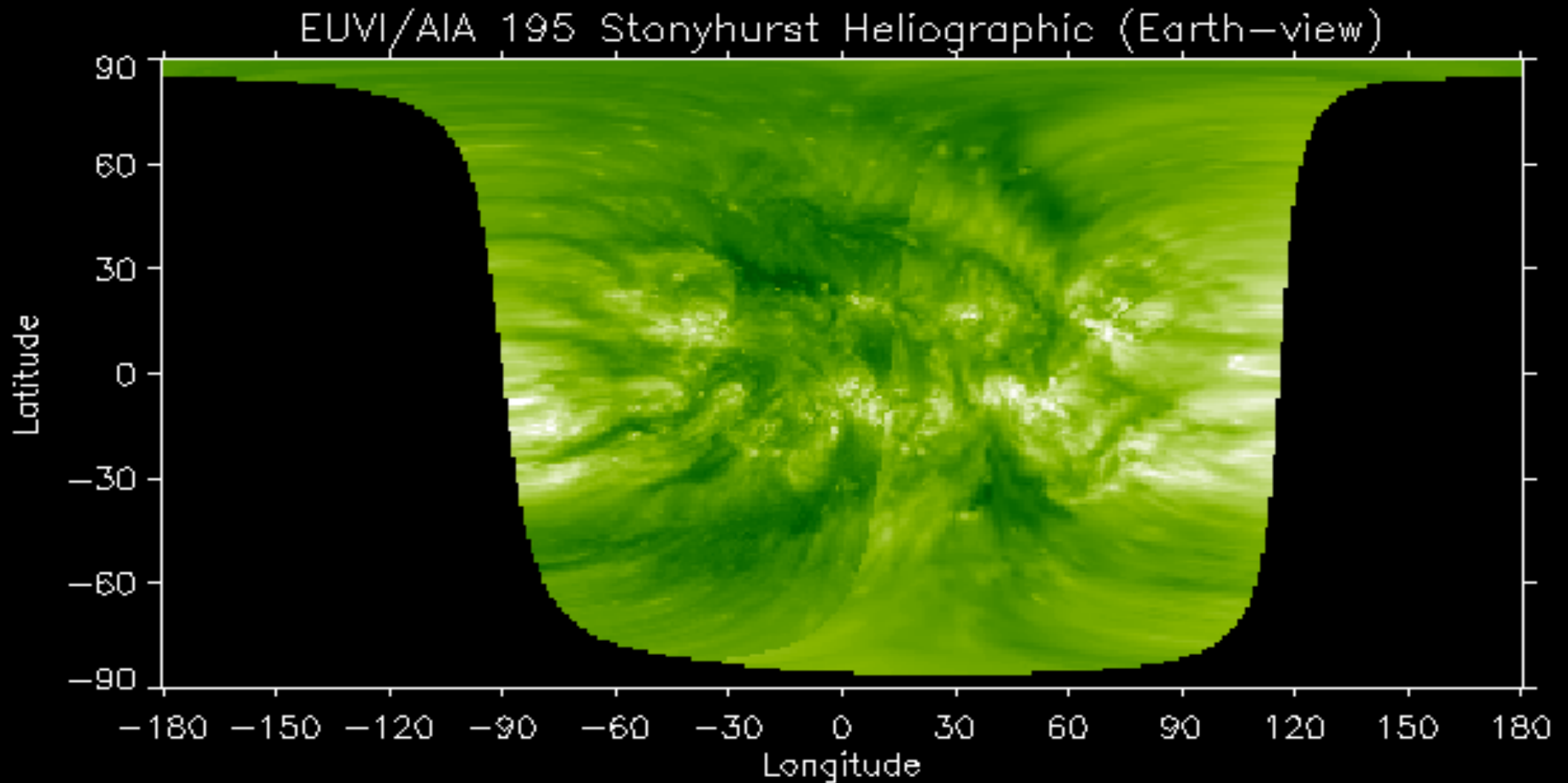
Outlook



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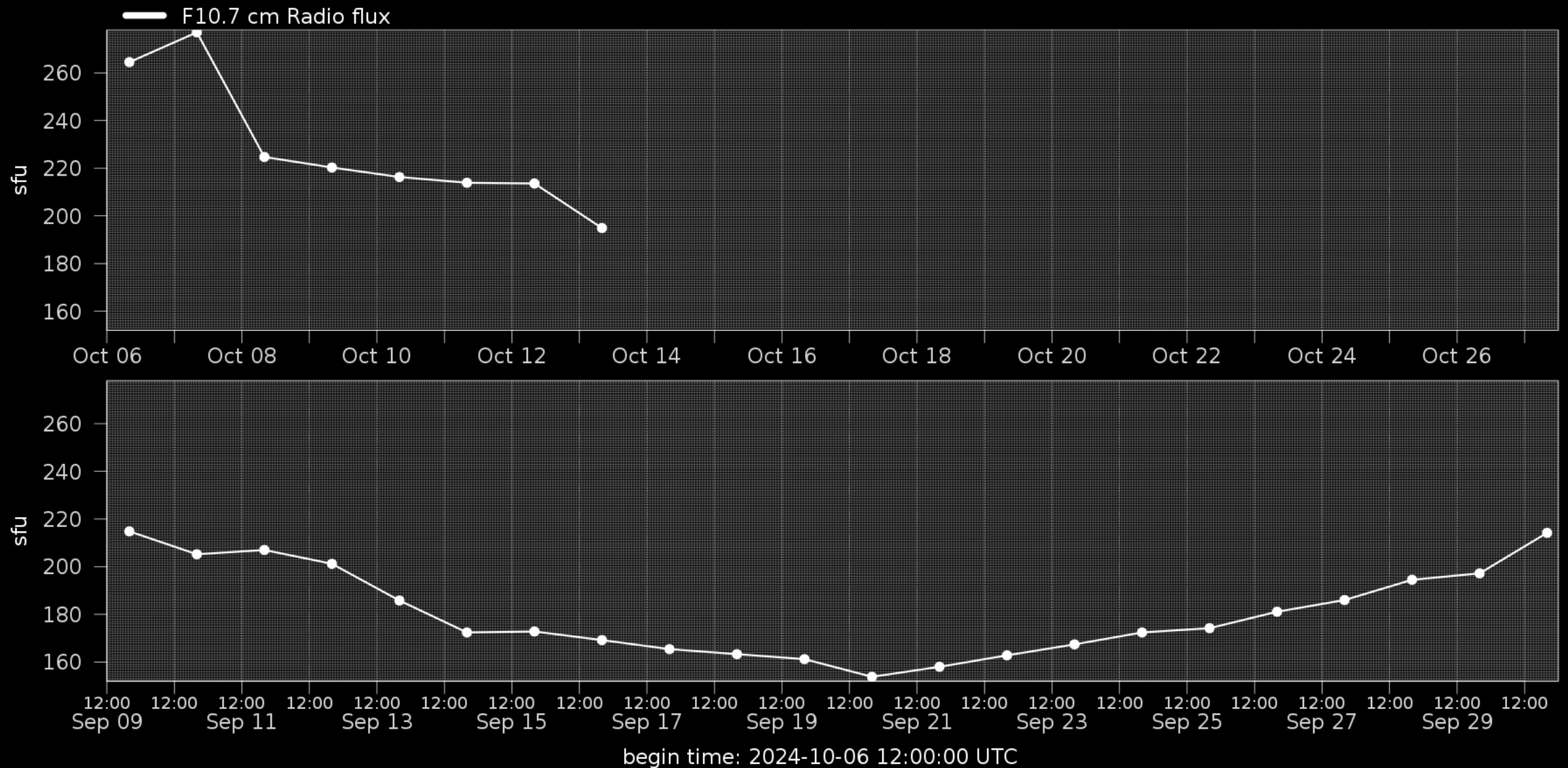
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Outlook: Solar activity



Observation date: 2024/10/13 23:05:00

Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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Pecarus related events

GNSS

- AS/PS Scintillations
- VTEC

HF.COM

- Short Wave Fadeout (X-flares)
- Polar Cap Absorption
- Post Storm Depression
- Auroral Absorption

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