

SIDC Space Weather Briefing

15-22 September 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 2024-09-15 12:00 to 2024-09-22 23:59

Active regions	Over 15 ARs
Flares	# C-class flare: 18 # M-class flare: 1 # X-class flare: 0
Coronal Holes	Multiple CHs, but no clear HSS arrival
CMEs	No Earth-directed CMEs

Proton flux	Small proton event (>10 MeV proton flux > 10 pfu)
Electron flux	Exceeding 1000 pfu threshold

Solar wind and geomagnetic conditions

ICMEs	1 ICME arrival, late Sept 16th
Solar wind conditions	B : 1.19 - 19.92 nT //Bz: -18.14 nT to 13.41 nT //Speed: 324.1 - 649.5km/s
Geomagnetic conditions	max KBel: 5.0, max Kp(NOAA): 7.67, Severe Storm conditions

All Quiet Alert: Off

Solar Activity

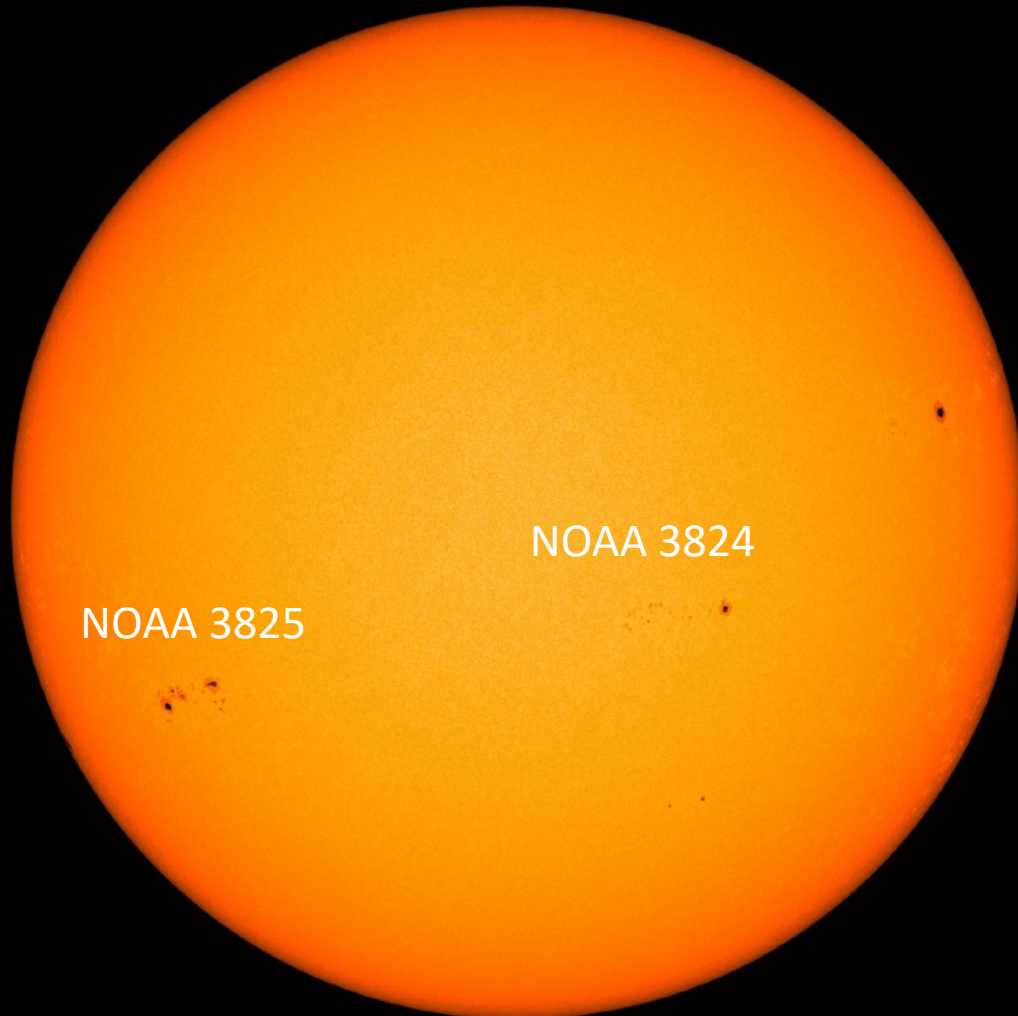


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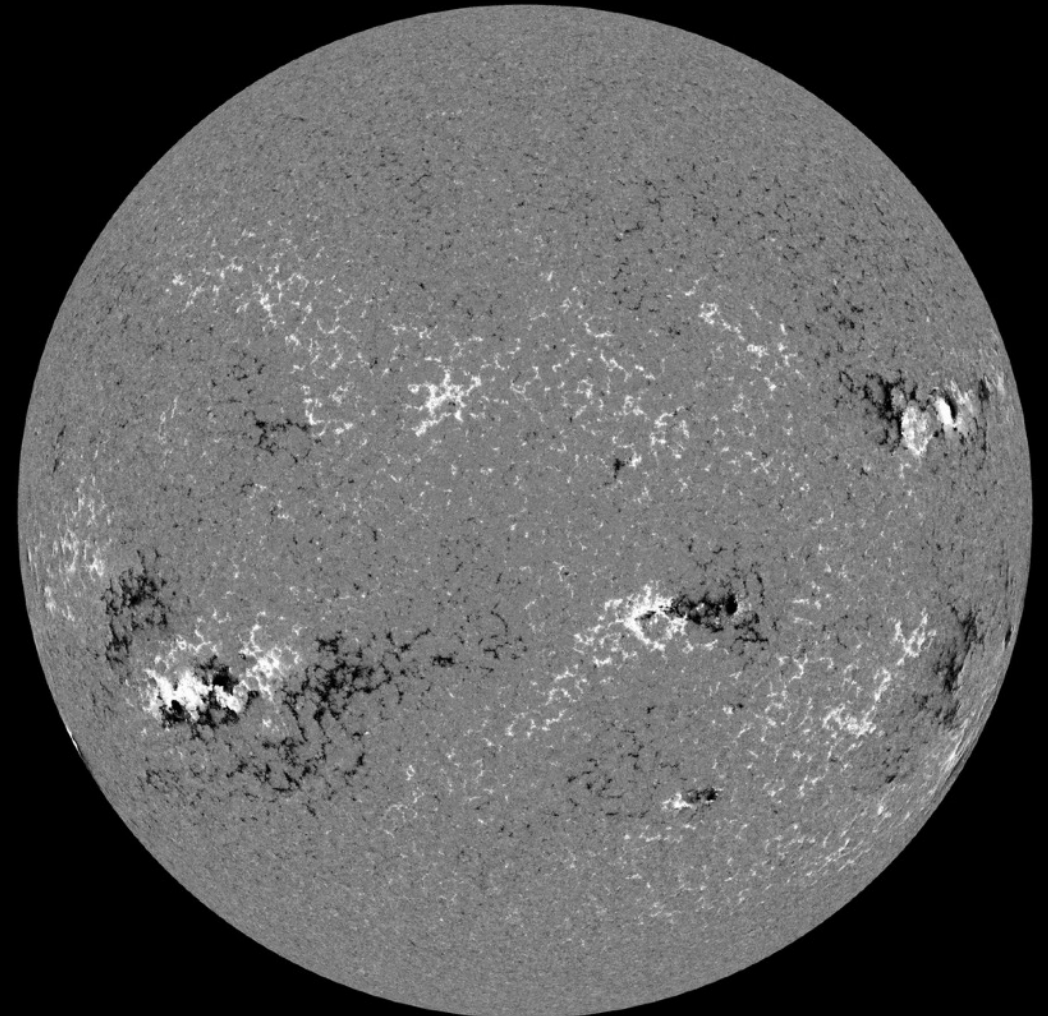
Solar active regions

SDO/HMI White Light 2024-09-15



SDO/HMI Quick-Look Continuum: 20240915_114500

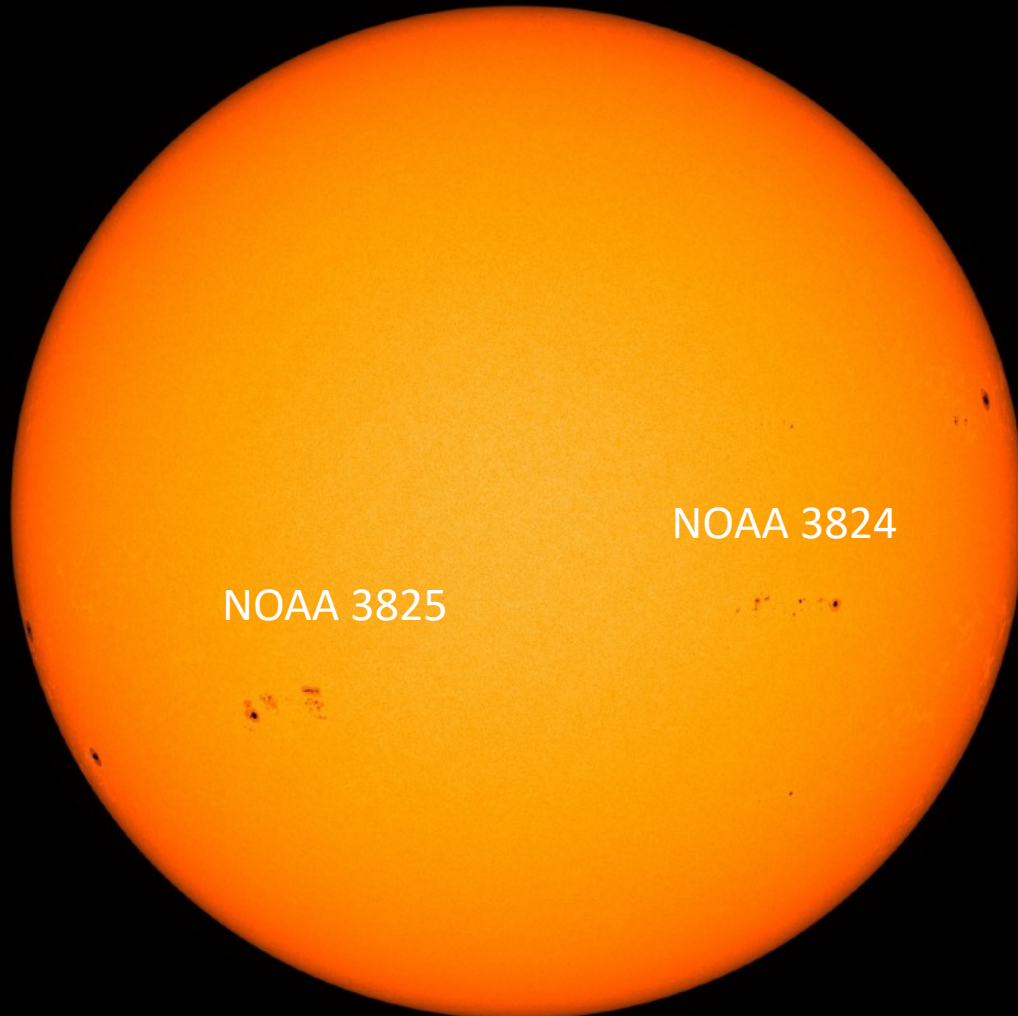
SDO/HMI Magnetogram 2024-09-15



SDO/HMI Quick-Look Magnetogram: 20240915_114500

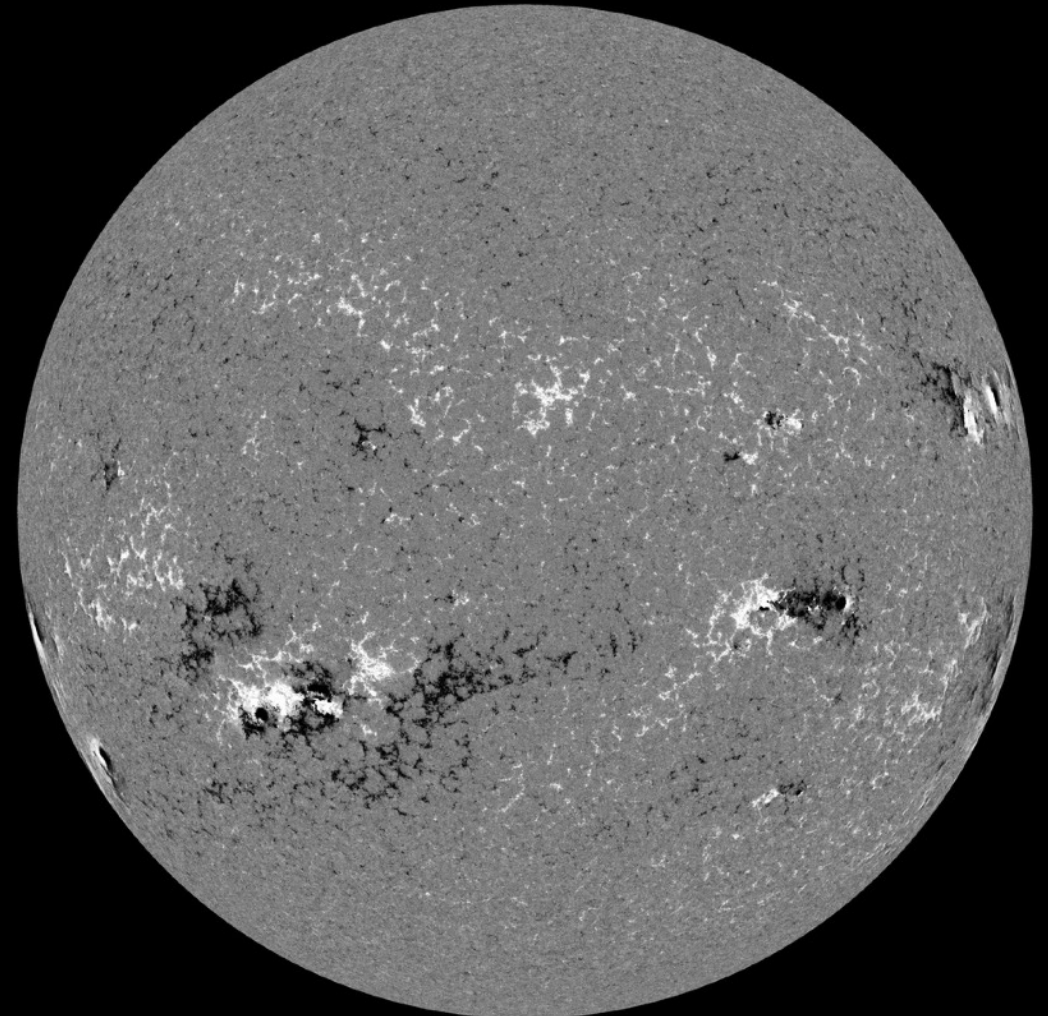
Solar active regions

SDO/HMI White Light 2024-09-16



SDO/HMI Quick-Look Continuum: 20240916_114500

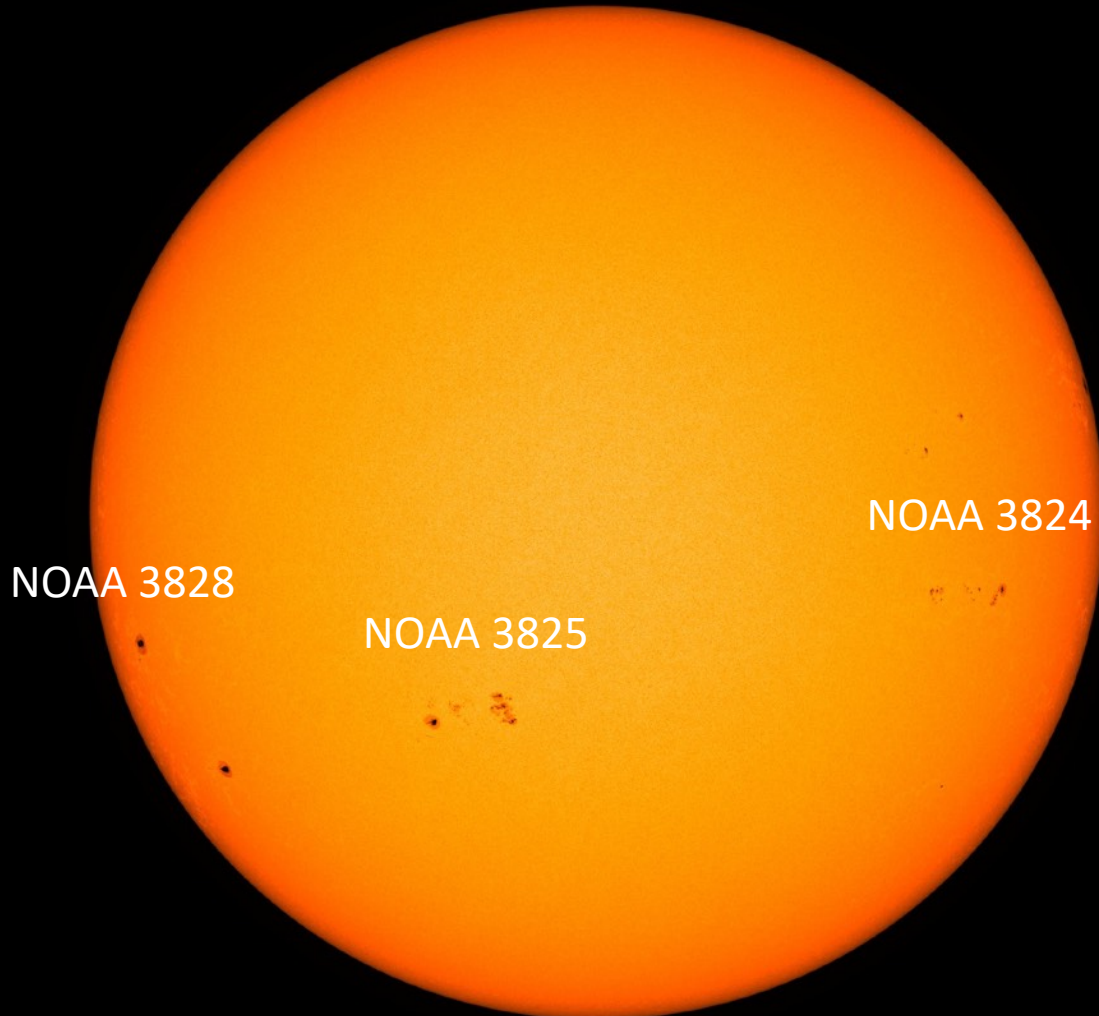
SDO/HMI Magnetogram 2024-09-16



SDO/HMI Quick-Look Magnetogram: 20240916_114500

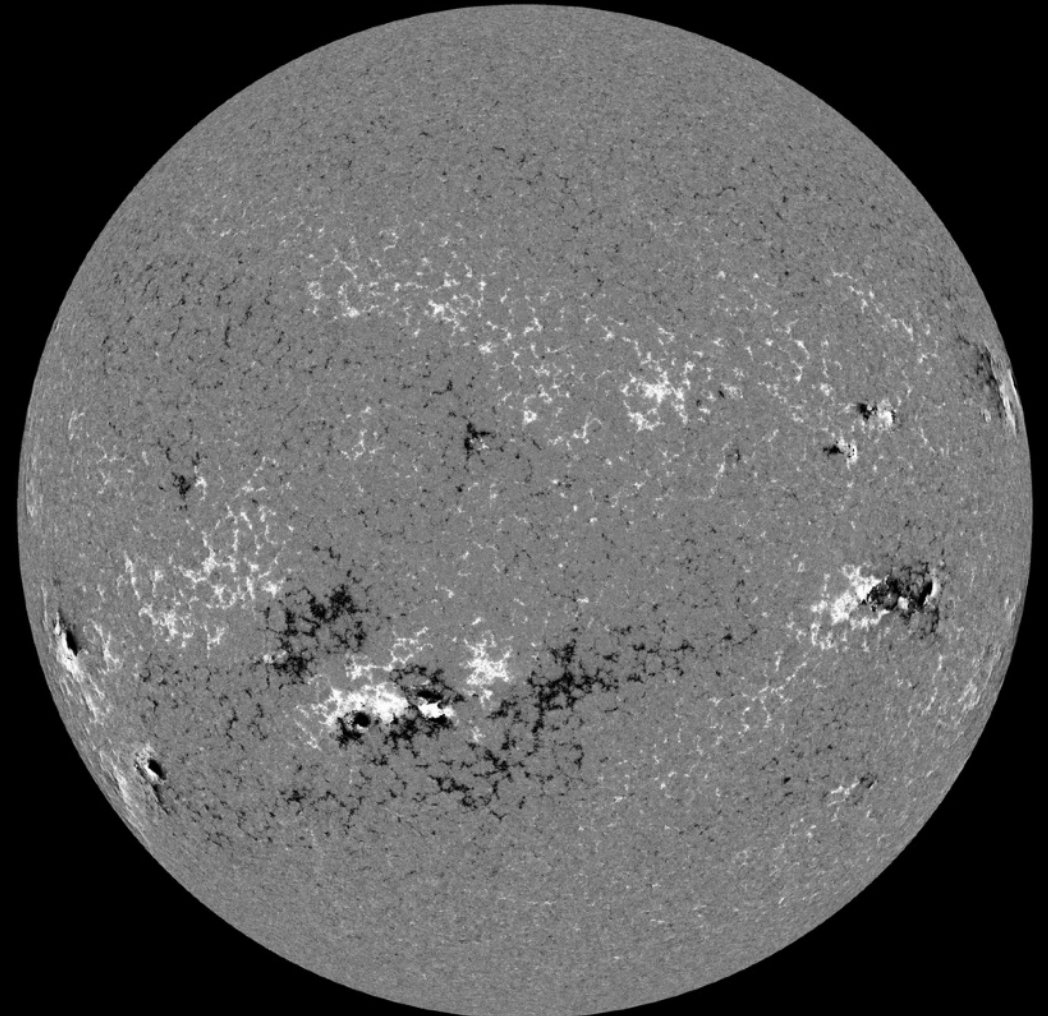
Solar active regions

SDO/HMI White Light 2024-09-17



SDO/HMI Quick-Look Continuum: 20240917_114500

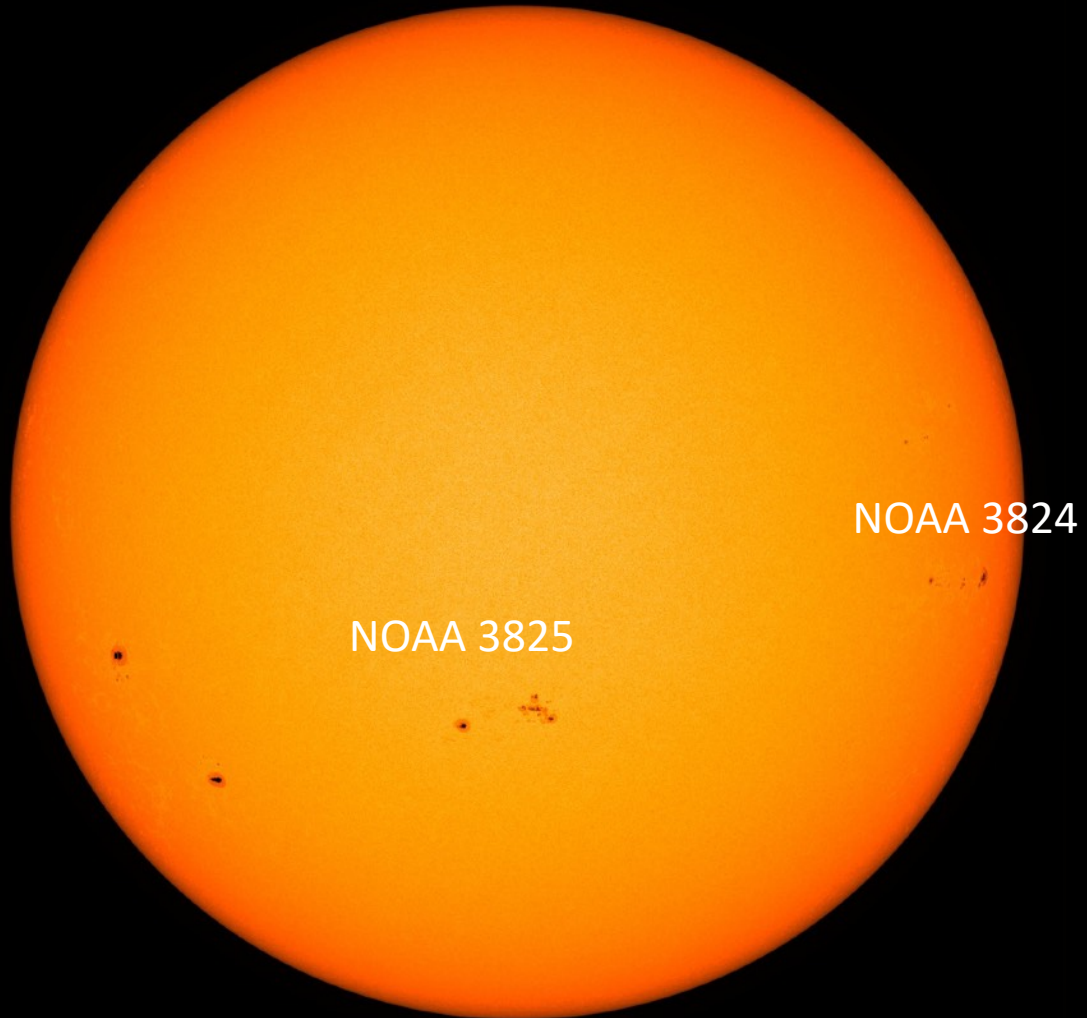
SDO/HMI Magnetogram 2024-09-17



SDO/HMI Quick-Look Magnetogram: 20240917_114500

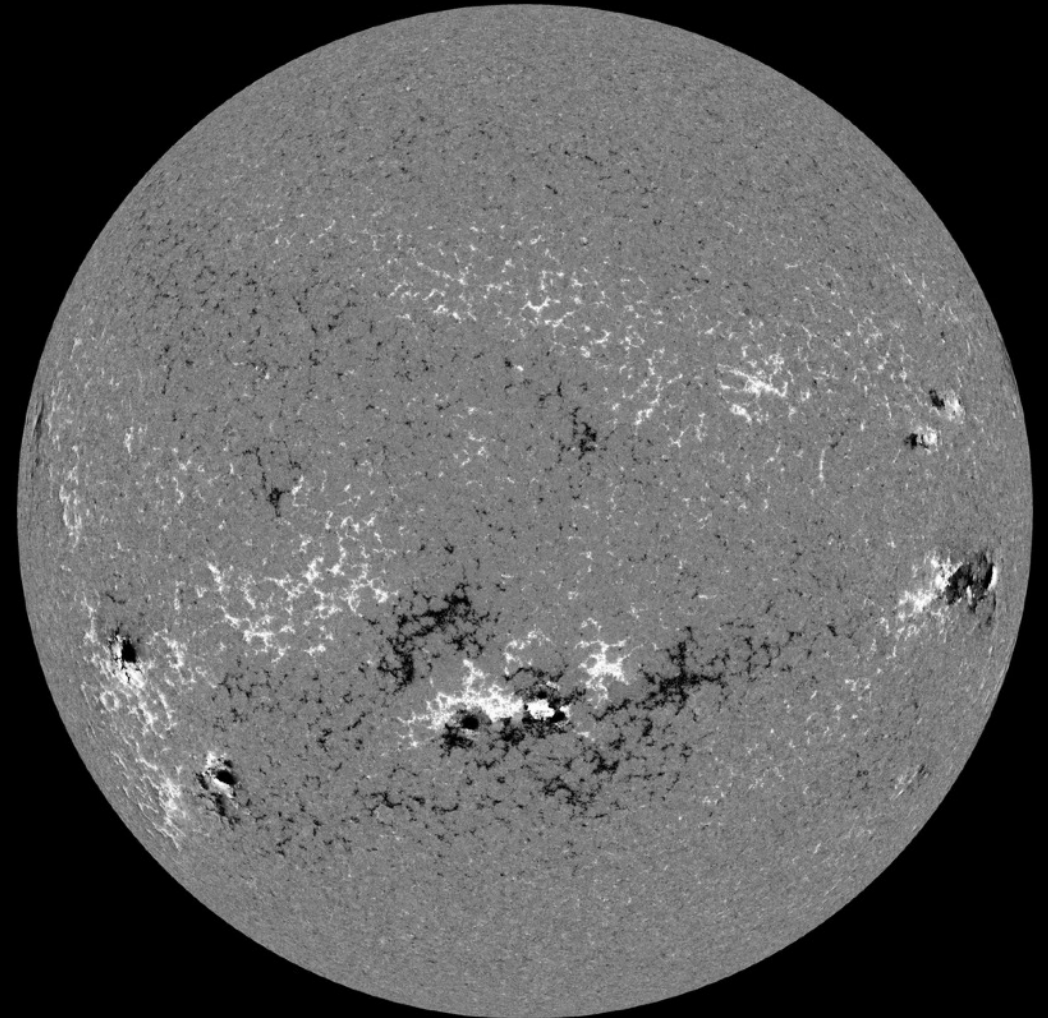
Solar active regions

SDO/HMI White Light 2024-09-18



SDO/HMI Quick-look Continuum: 20240918_114500

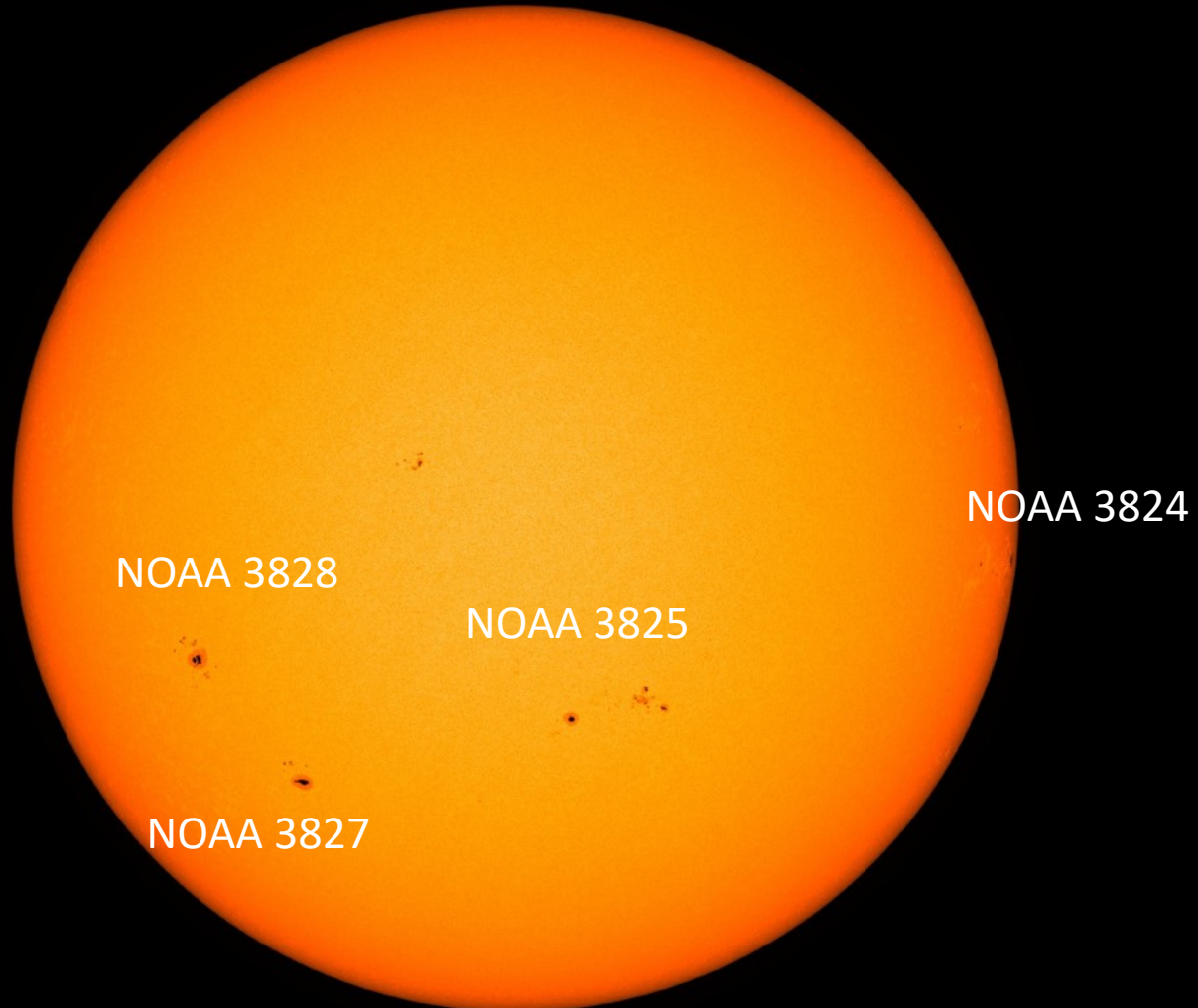
SDO/HMI Magnetogram 2024-09-18



SDO/HMI Quick-look Magnetogram: 20240918_114500

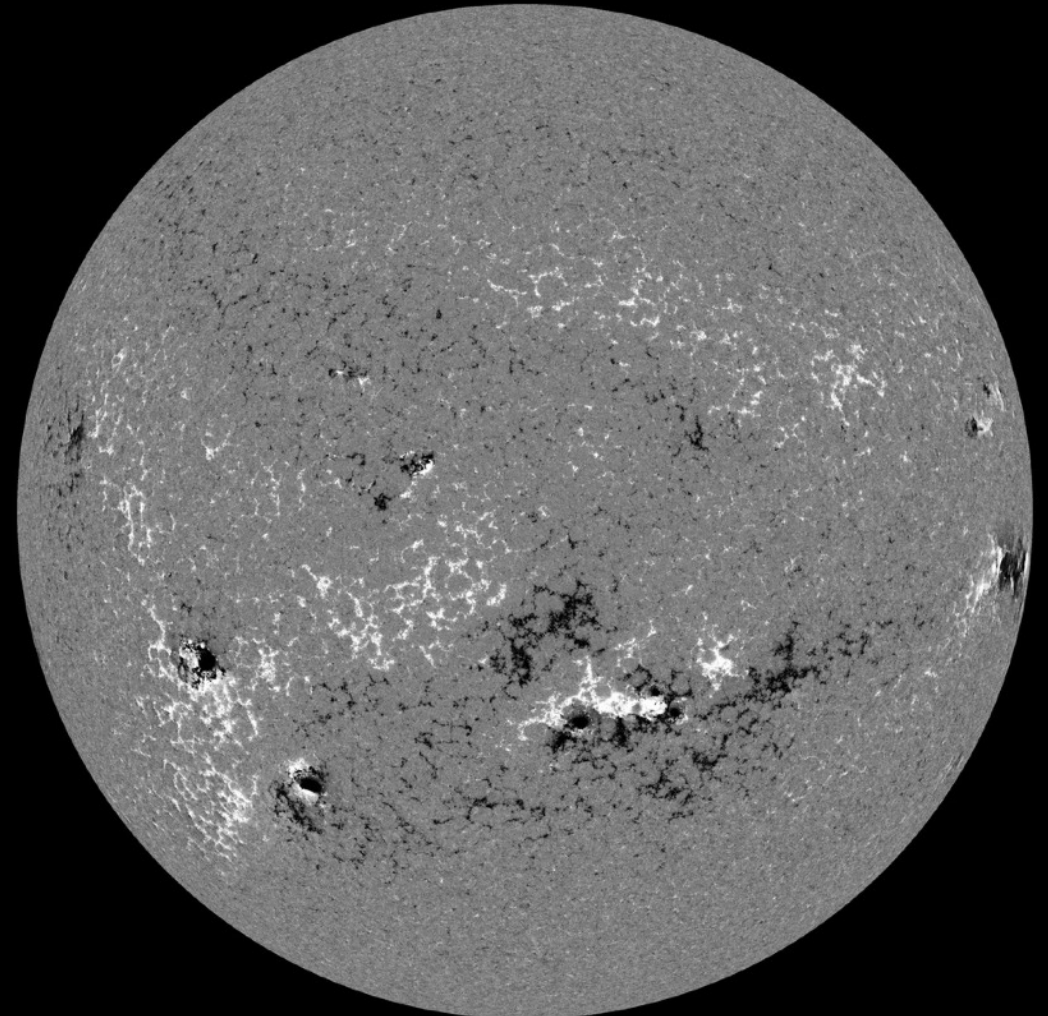
Solar active regions

SDO/HMI White Light 2024-09-19



SDO/HMI Quick-Look Continuum: 20240919_114500

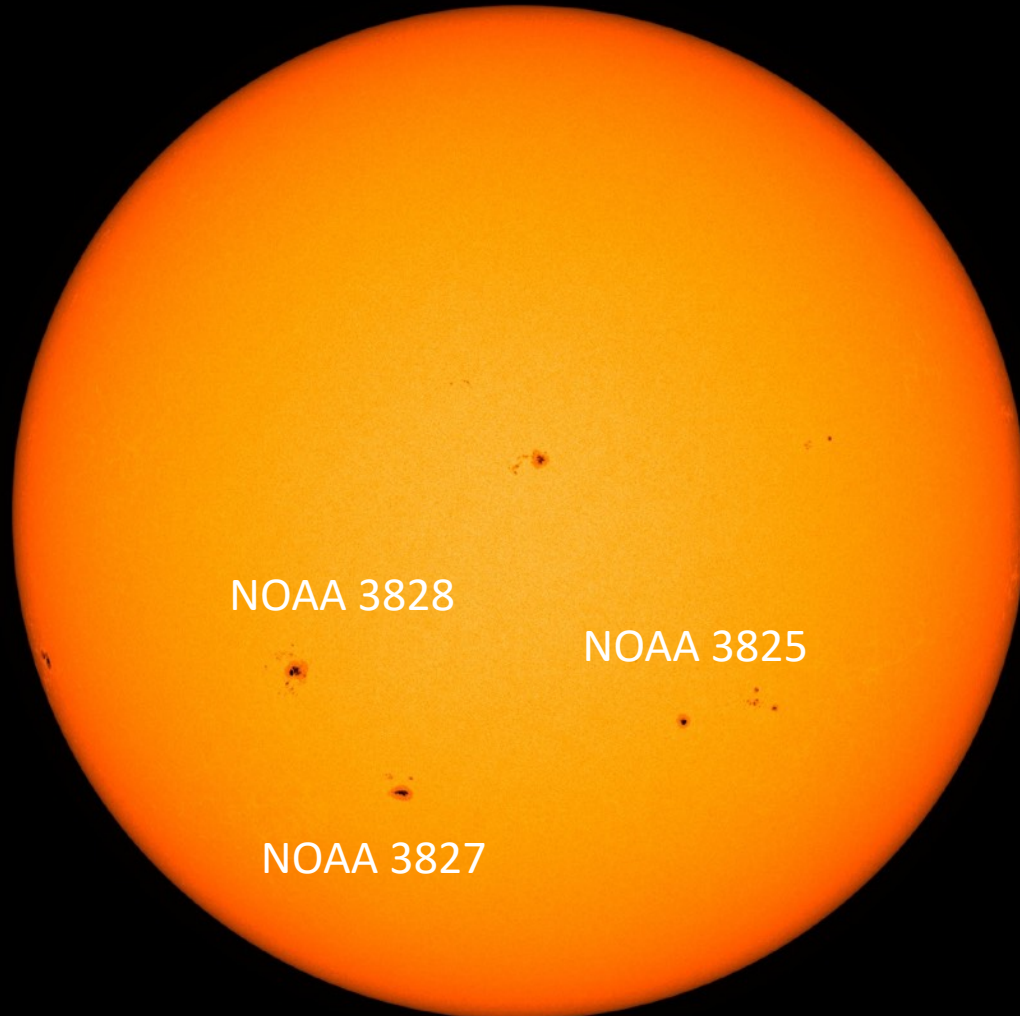
SDO/HMI Magnetogram 2024-09-19



SDO/HMI Quick-Look Magnetogram: 20240919_114500

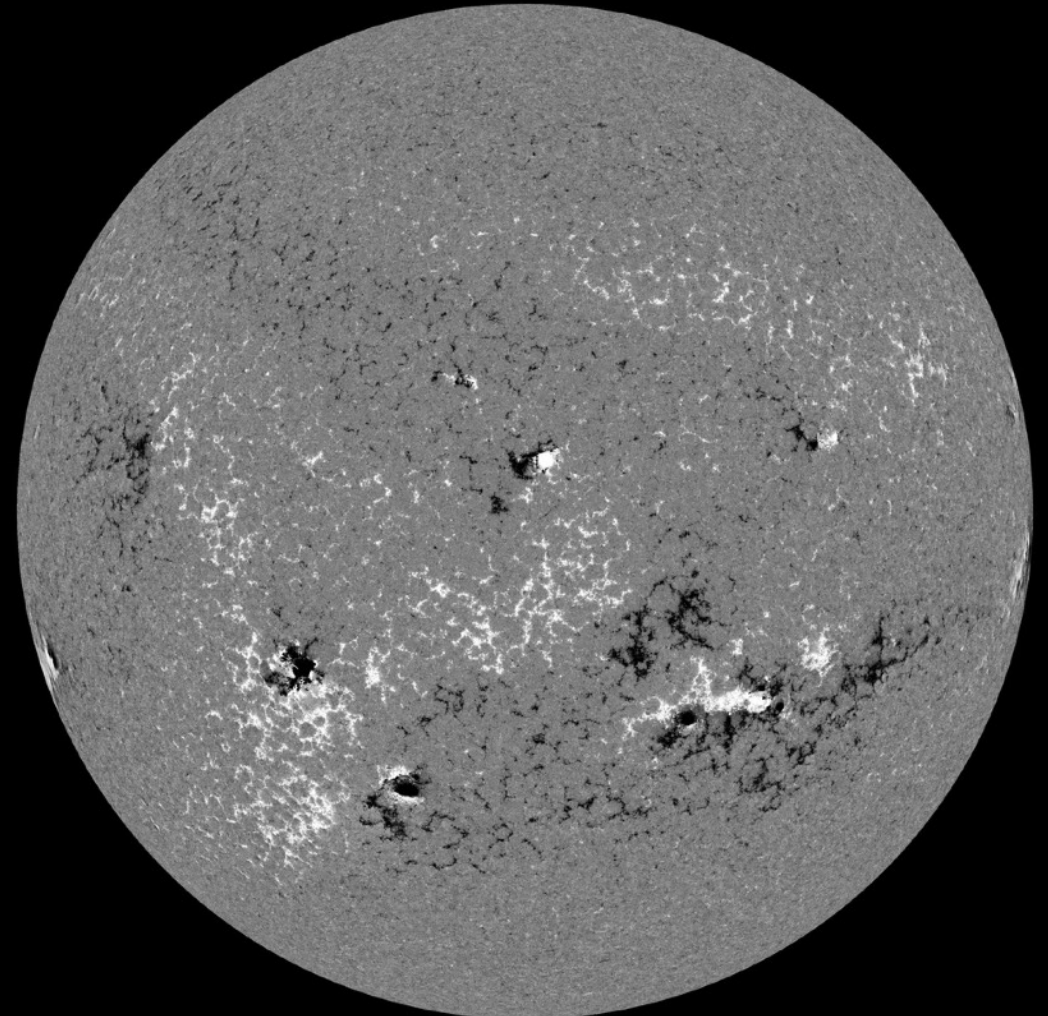
Solar active regions

SDO/HMI White Light 2024-09-20



SDO/HMI Quick-Look Continuum: 20240920_114500

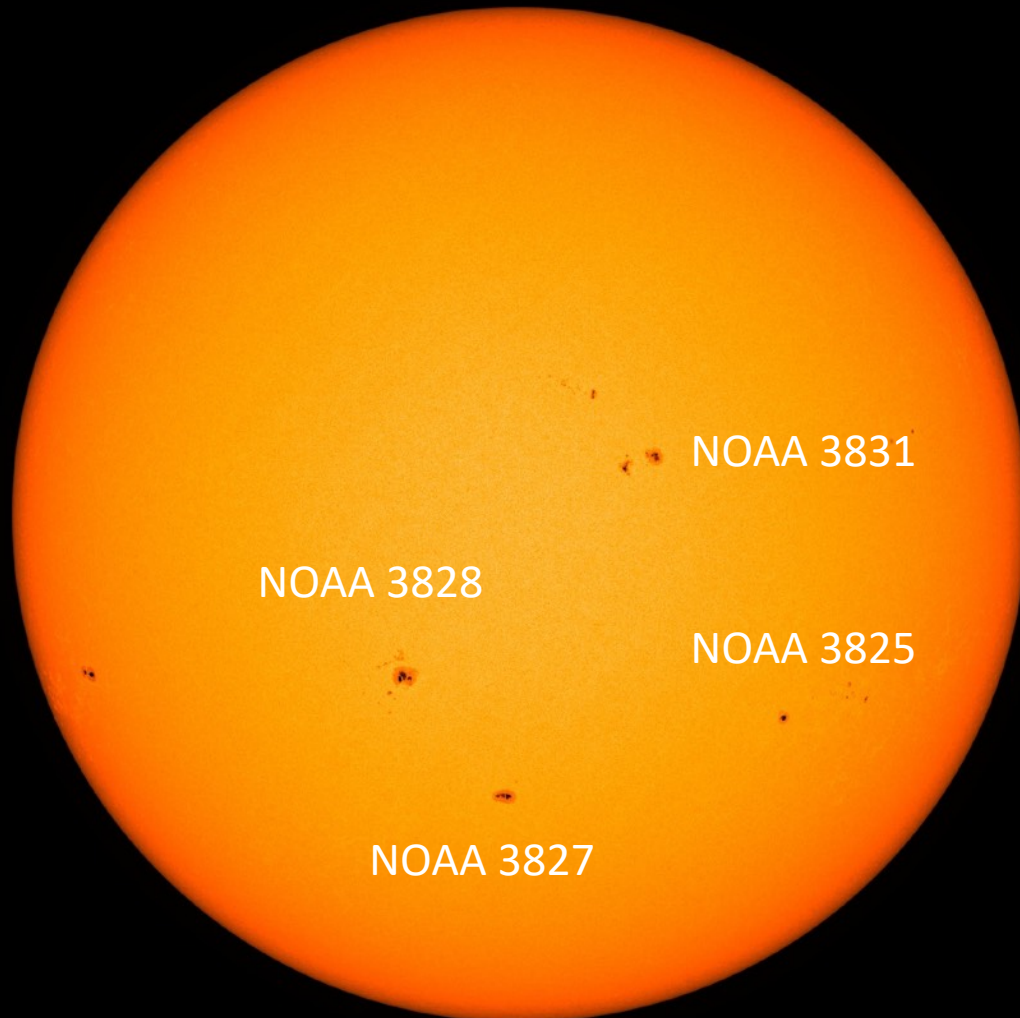
SDO/HMI Magnetogram 2024-09-20



SDO/HMI Quick-Look Magnetogram: 20240920_114500

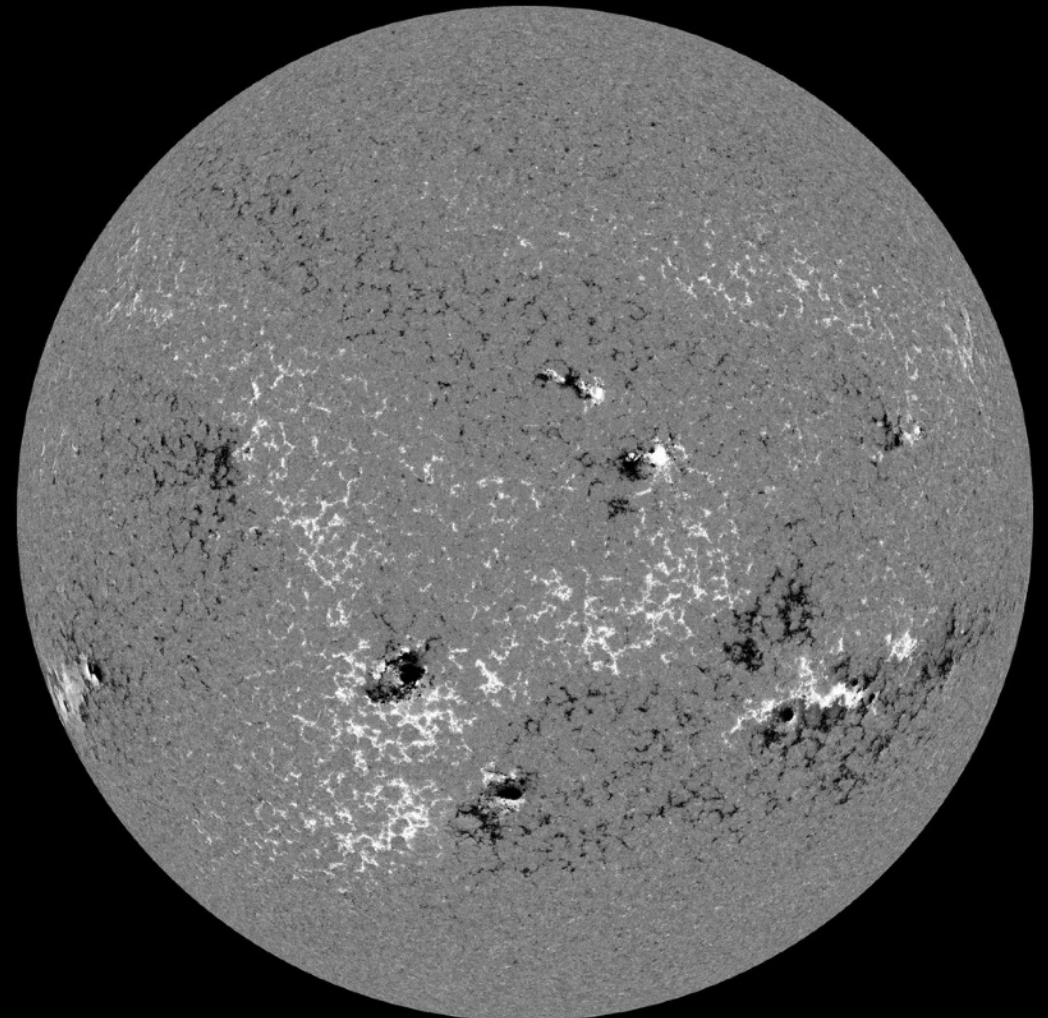
Solar active regions

SDO/HMI White Light 2024-09-21



SDO/HMI Quick-Look Continuum: 20240921_114500

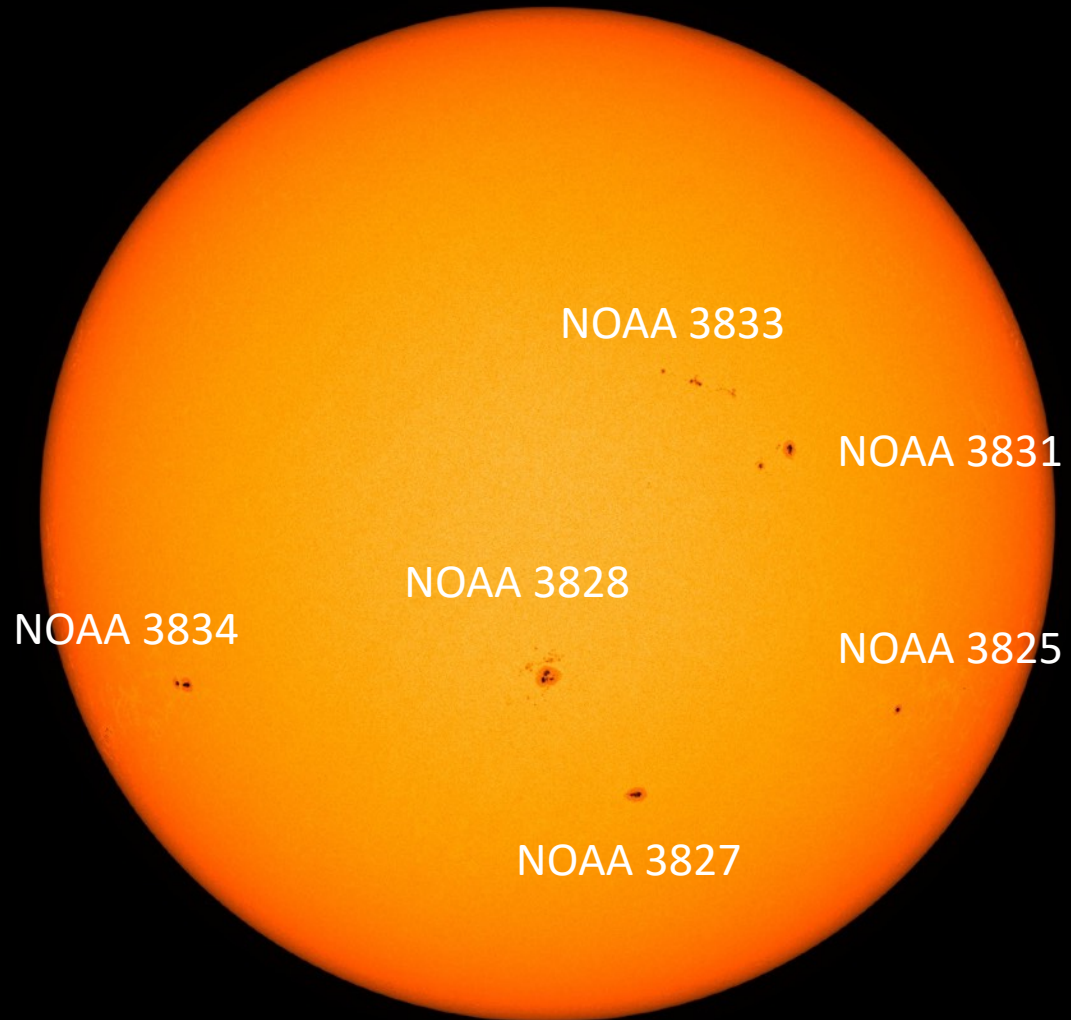
SDO/HMI Magnetogram 2024-09-21



SDO/HMI Quick-Look Magnetogram: 20240921_114500

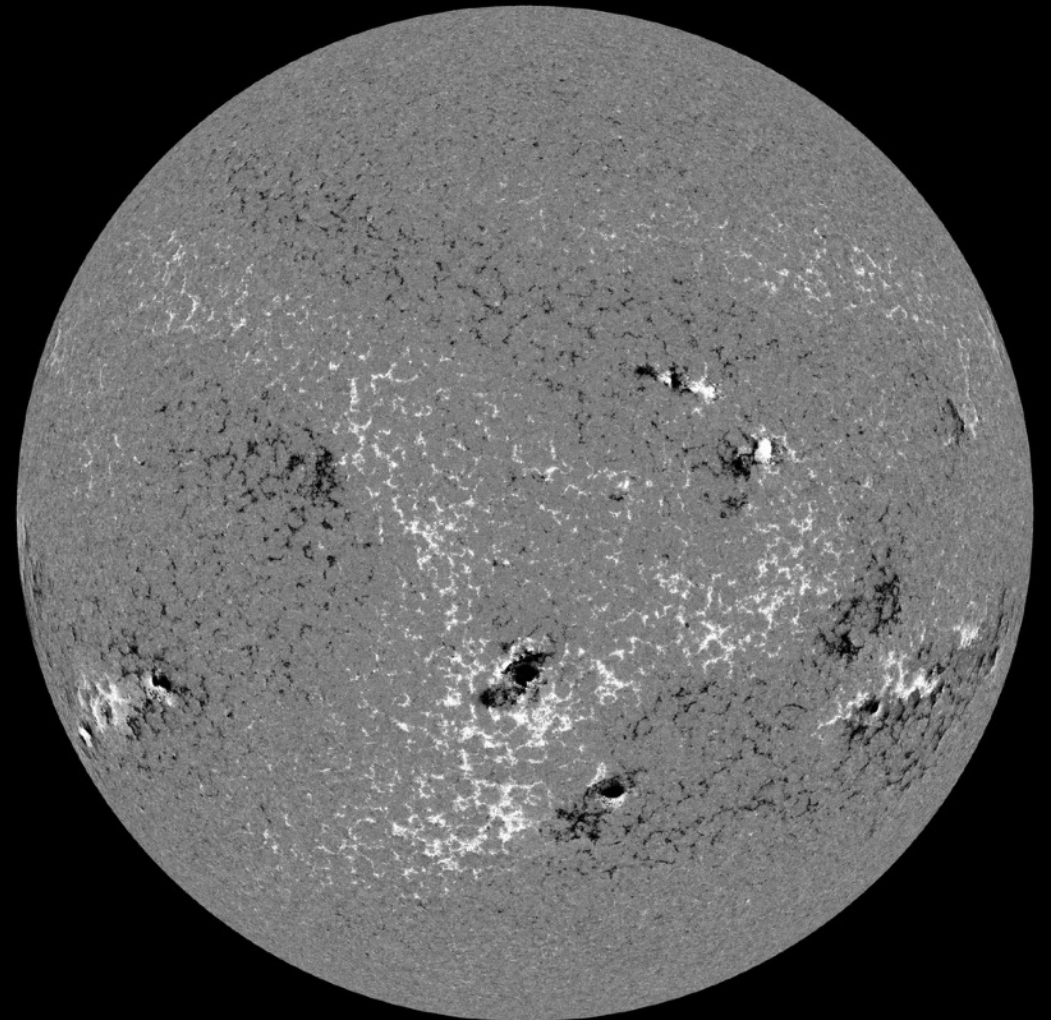
Solar active regions

SDO/HMI White Light 2024-09-22



SDO/HMI Quick-Look Continuum: 20240922_114500

SDO/HMI Magnetogram 2024-09-22

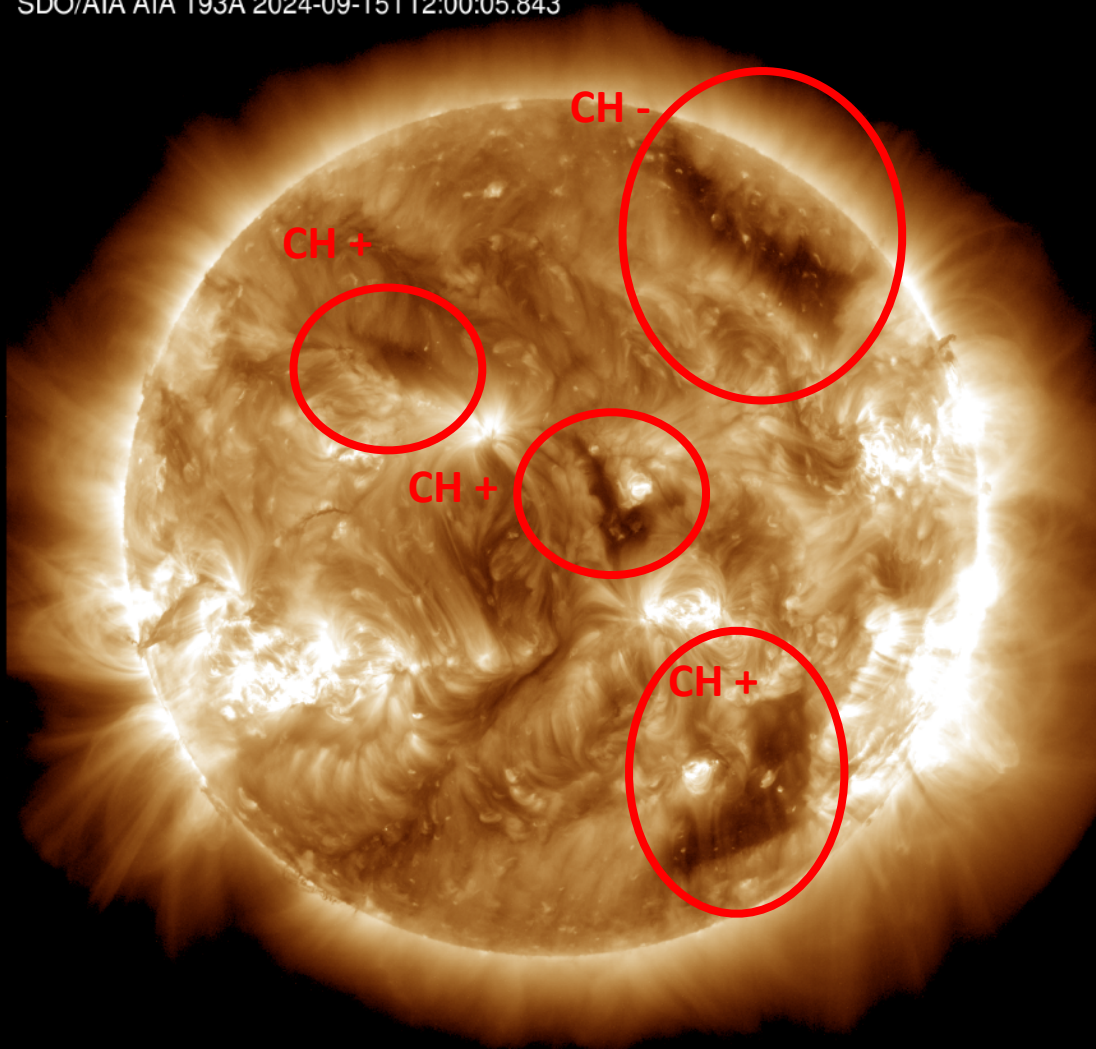


SDO/HMI Quick-Look Magnetogram: 20240922_114500

Coronal holes

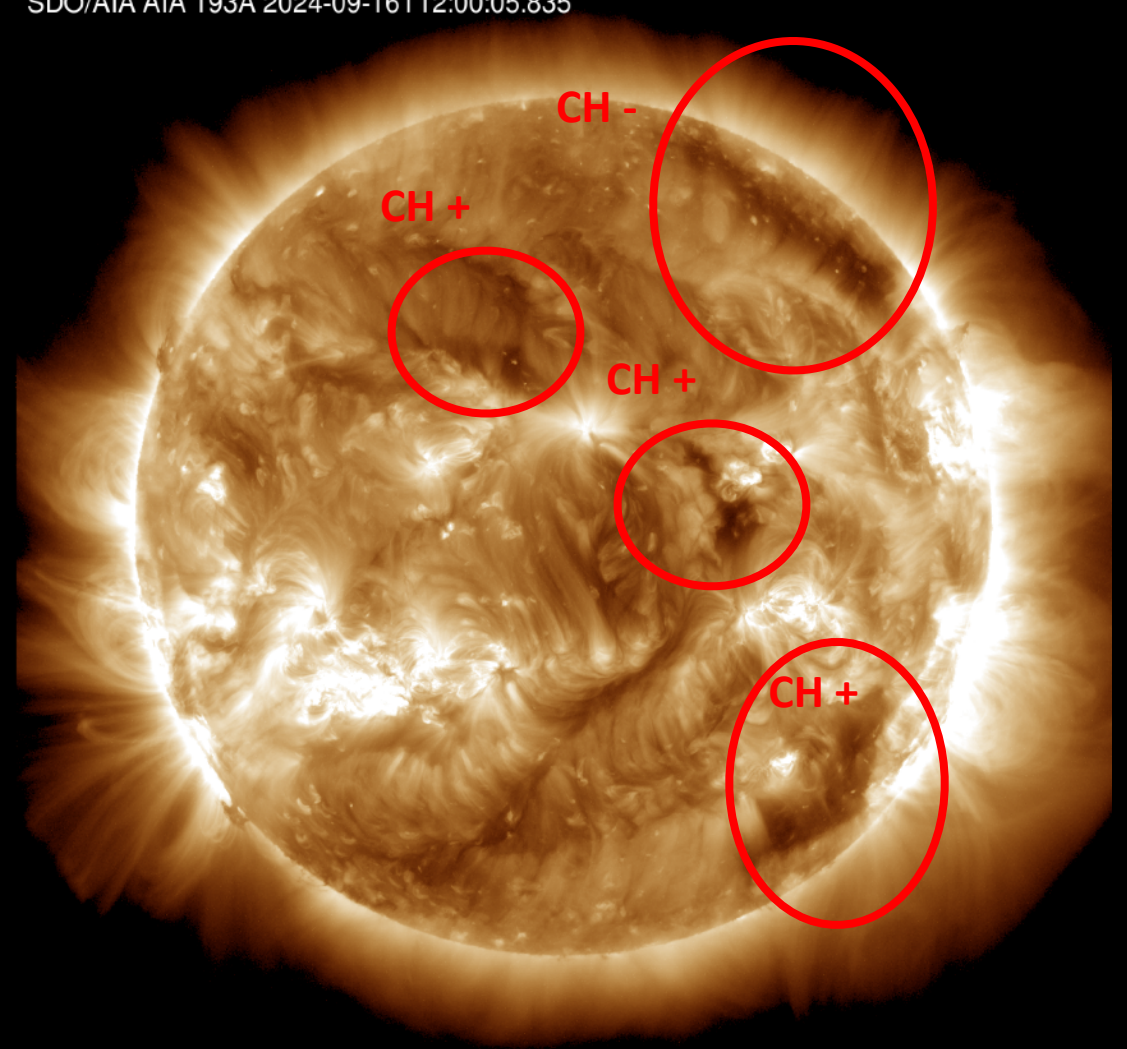
SDO/AIA 19.3 nm 2024-09-15

SDO/AIA AIA 193Å 2024-09-15T12:00:05.843



SDO/AIA 19.3 nm 2024-09-16

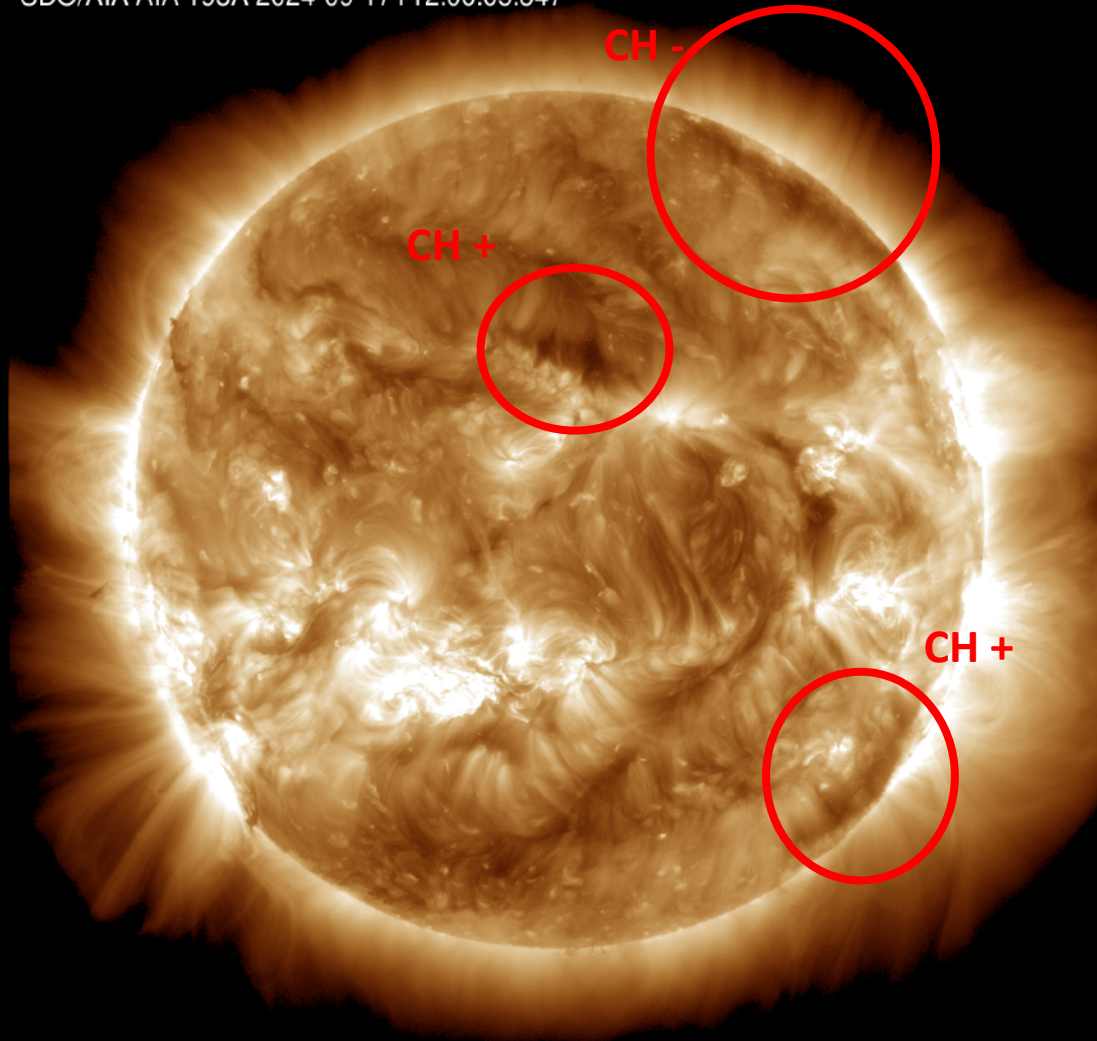
SDO/AIA AIA 193Å 2024-09-16T12:00:05.835



Coronal holes

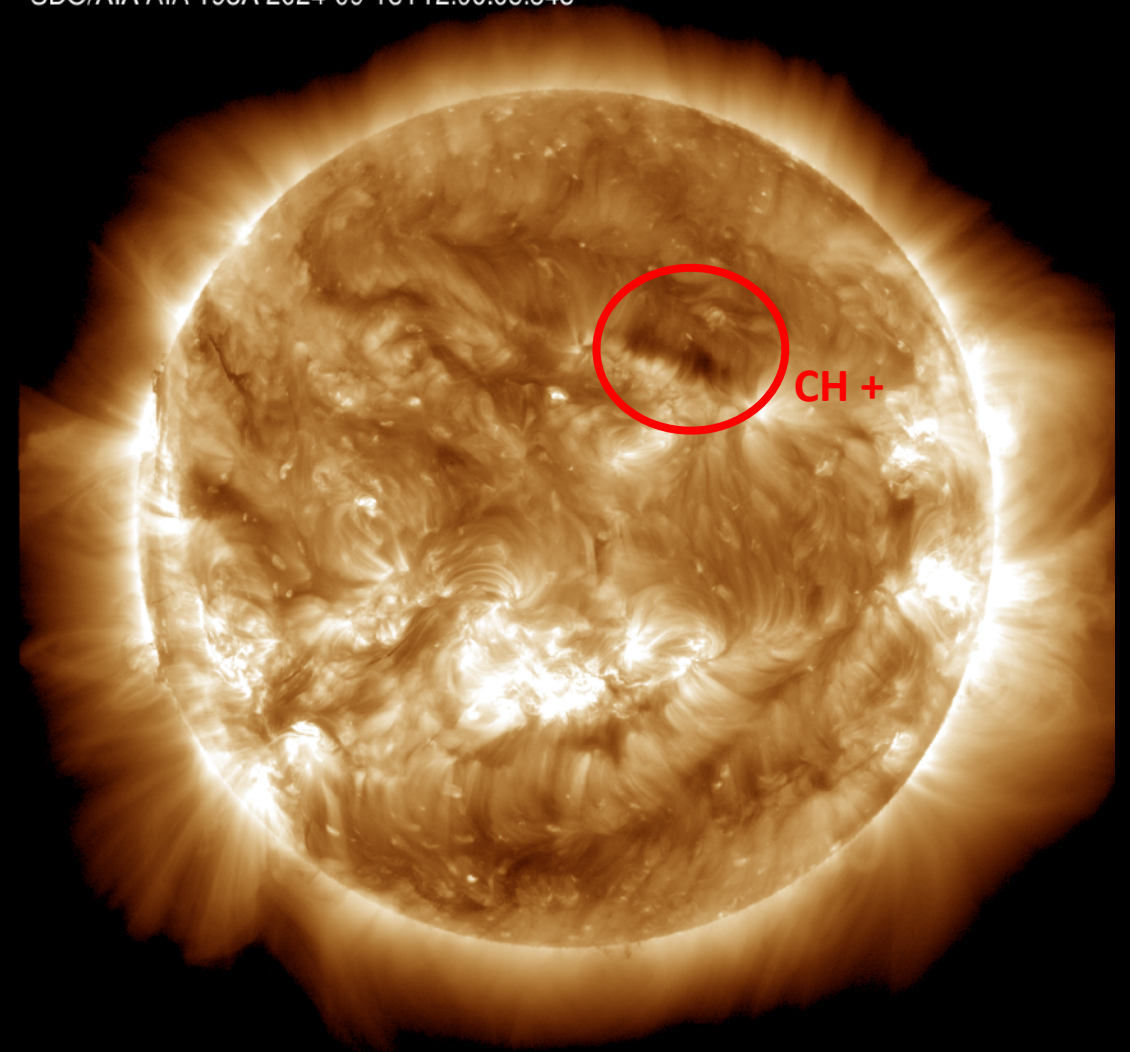
SDO/AIA 19.3 nm 2024-09-17

SDO/AIA AIA 193Å 2024-09-17T12:00:05.847



SDO/AIA 19.3 nm 2024-09-18

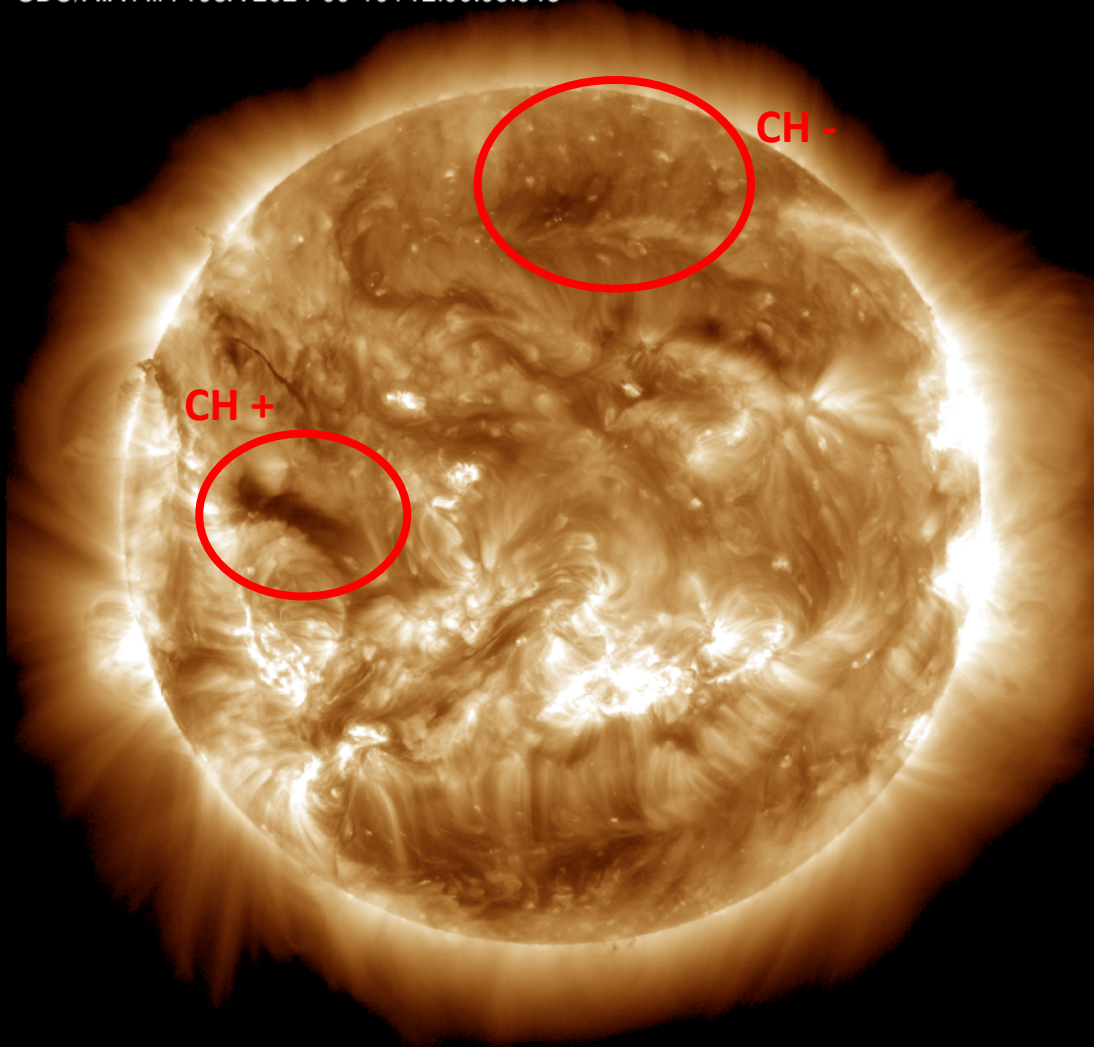
SDO/AIA AIA 193Å 2024-09-18T12:00:05.843



Coronal holes

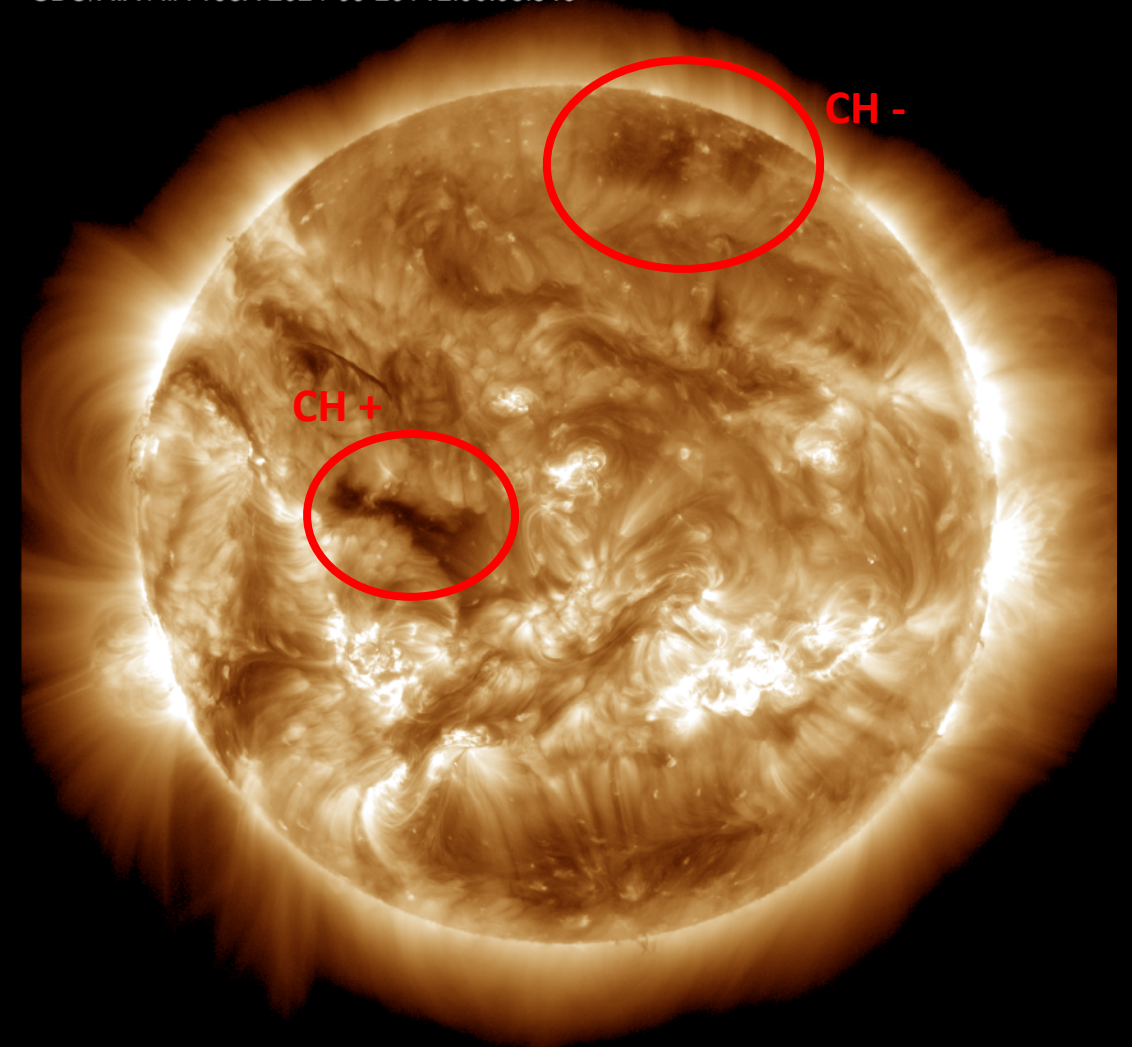
SDO/AIA 19.3 nm 2024-09-19

SDO/AIA AIA 193Å 2024-09-19T12:00:05.843



SDO/AIA 19.3 nm 2024-09-20

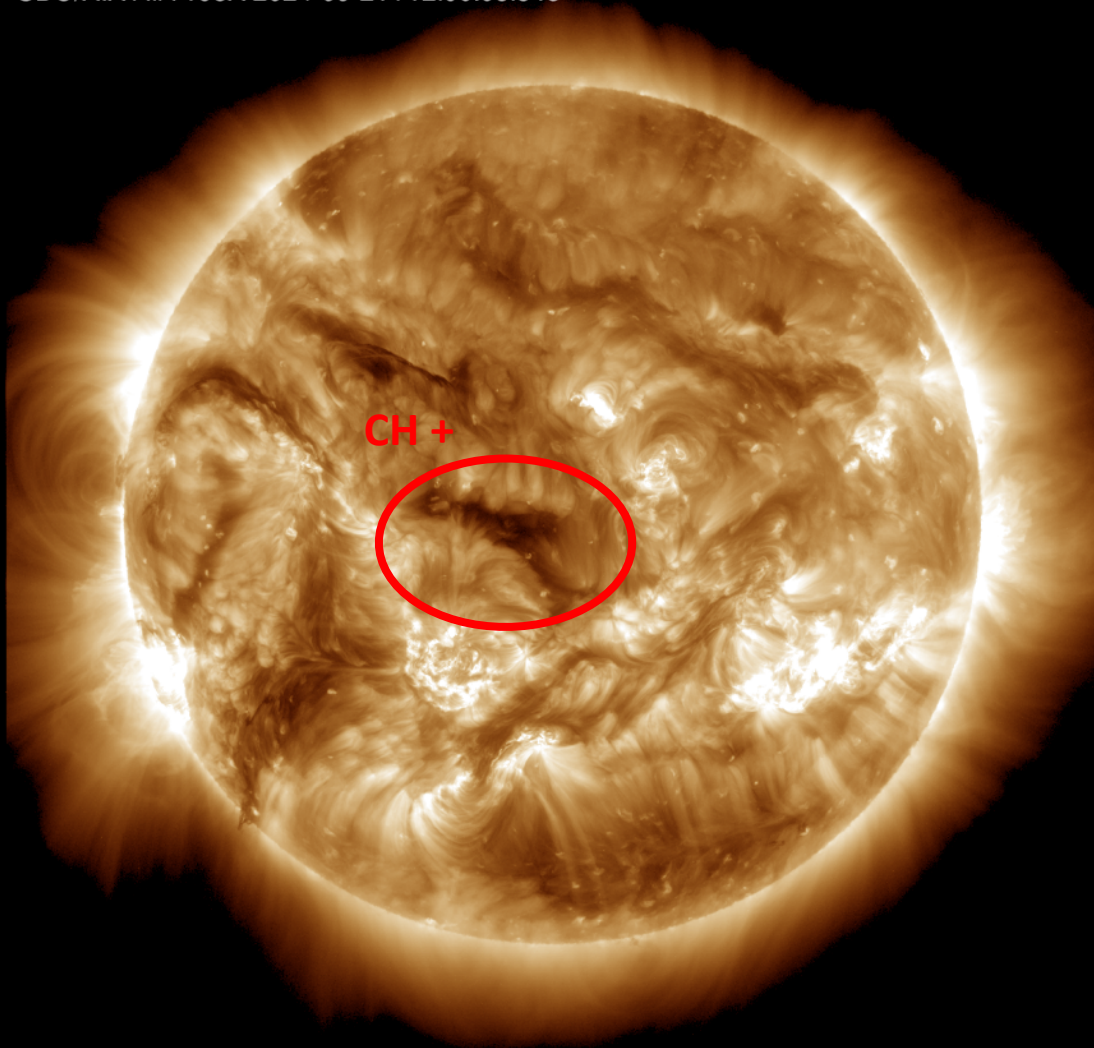
SDO/AIA AIA 193Å 2024-09-20T12:00:05.846



Coronal holes

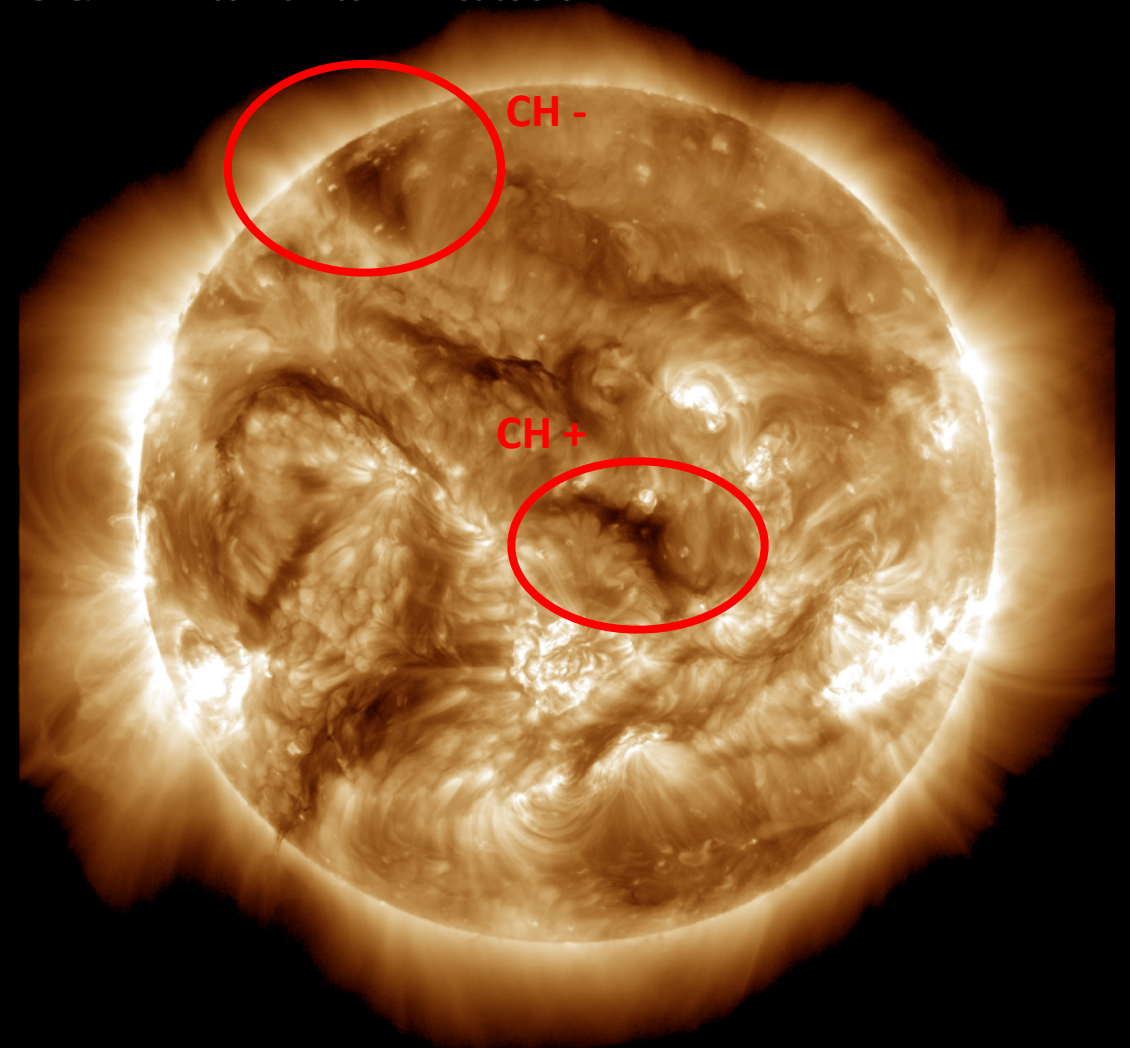
SDO/AIA 19.3 nm 2024-09-21

SDO/AIA AIA 193Å 2024-09-21T12:00:05.843



SDO/AIA 19.3 nm 2024-09-22

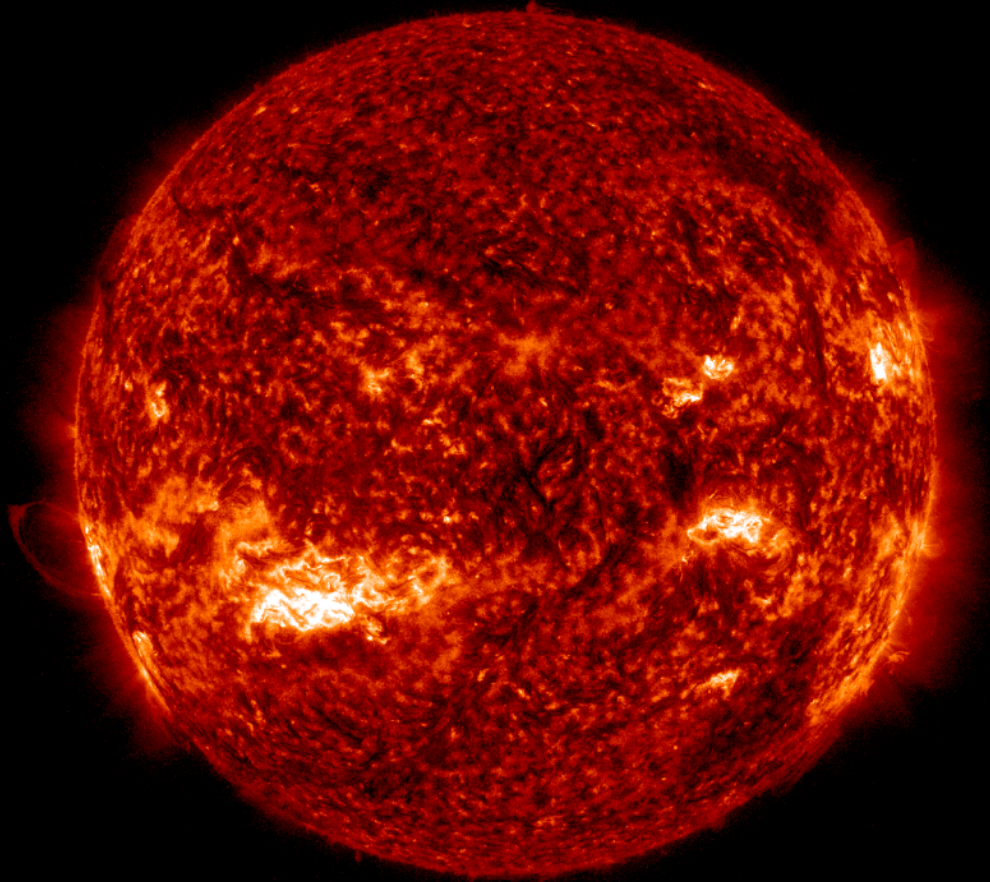
SDO/AIA AIA 193Å 2024-09-22T12:00:05.843



Filaments

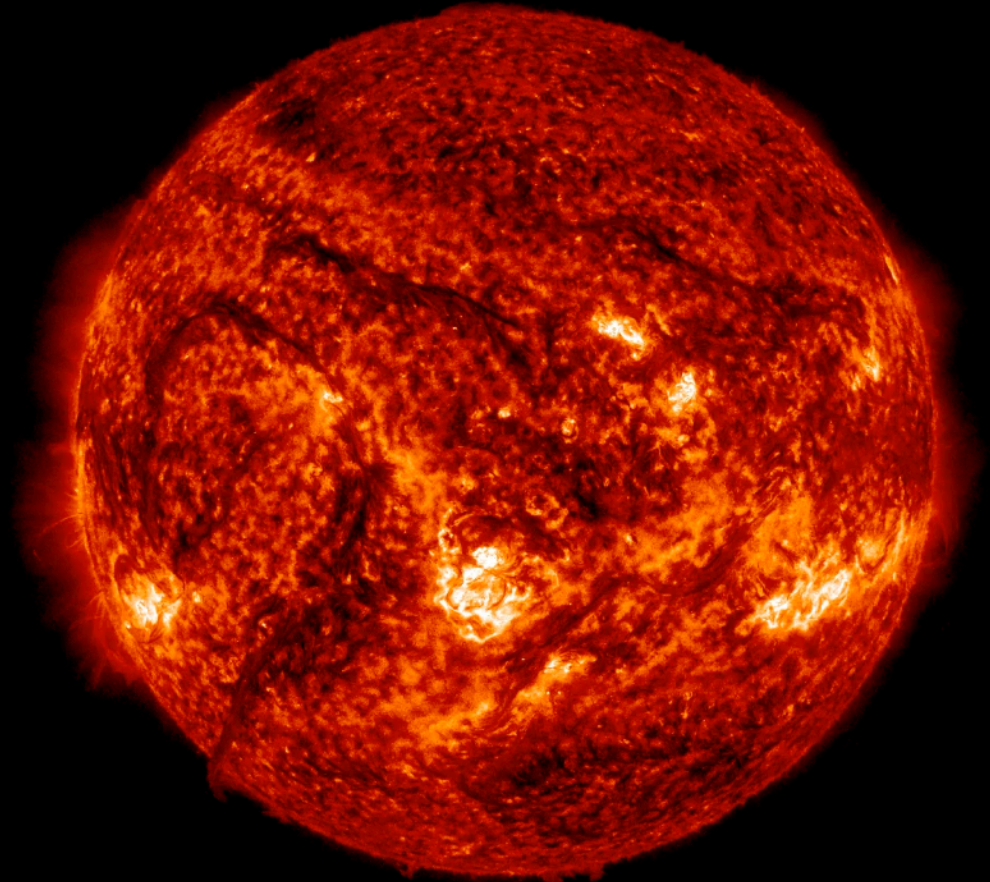
SDO/AIA 30.4 nm 2024-09-16

SDO/AIA AIA 304Å 2024-09-16T12:00:06.580



SDO/AIA 30.4 nm 2024-09-22

SDO/AIA AIA 304Å 2024-09-22T08:00:06.588



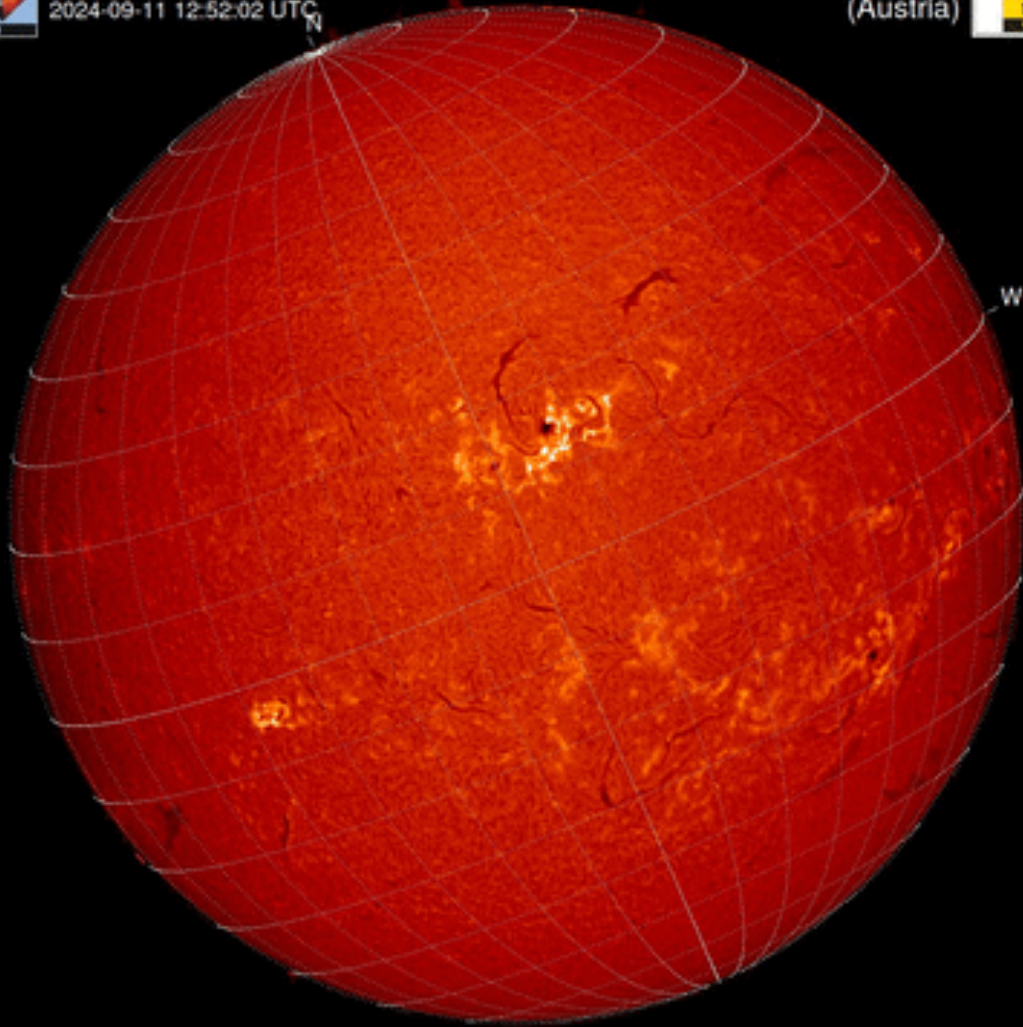
Filaments & Filament eruptions

H-alpha 2024-09-15



Kanzelhöhe Observatory
2024-09-11 12:52:02 UTC

University of Graz
(Austria)

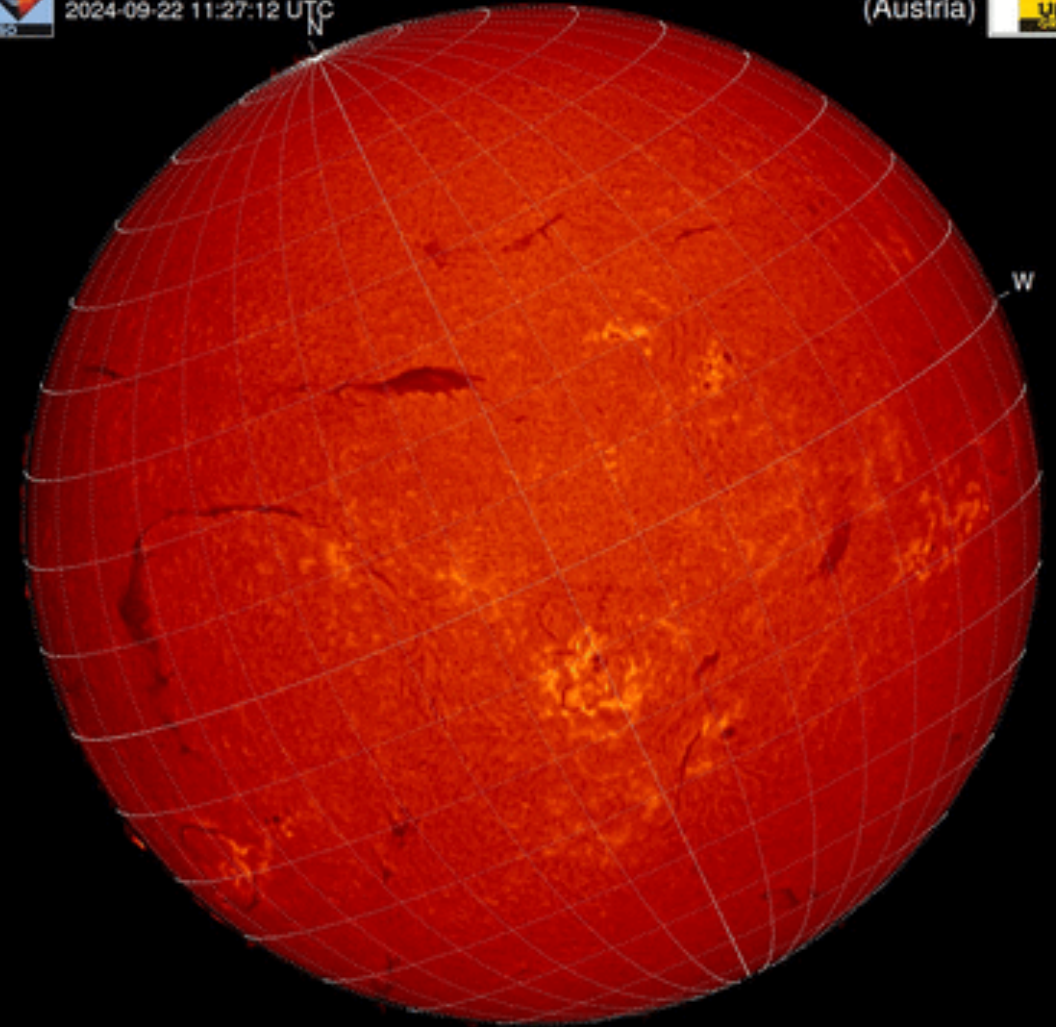


H-alpha 2024-09-22

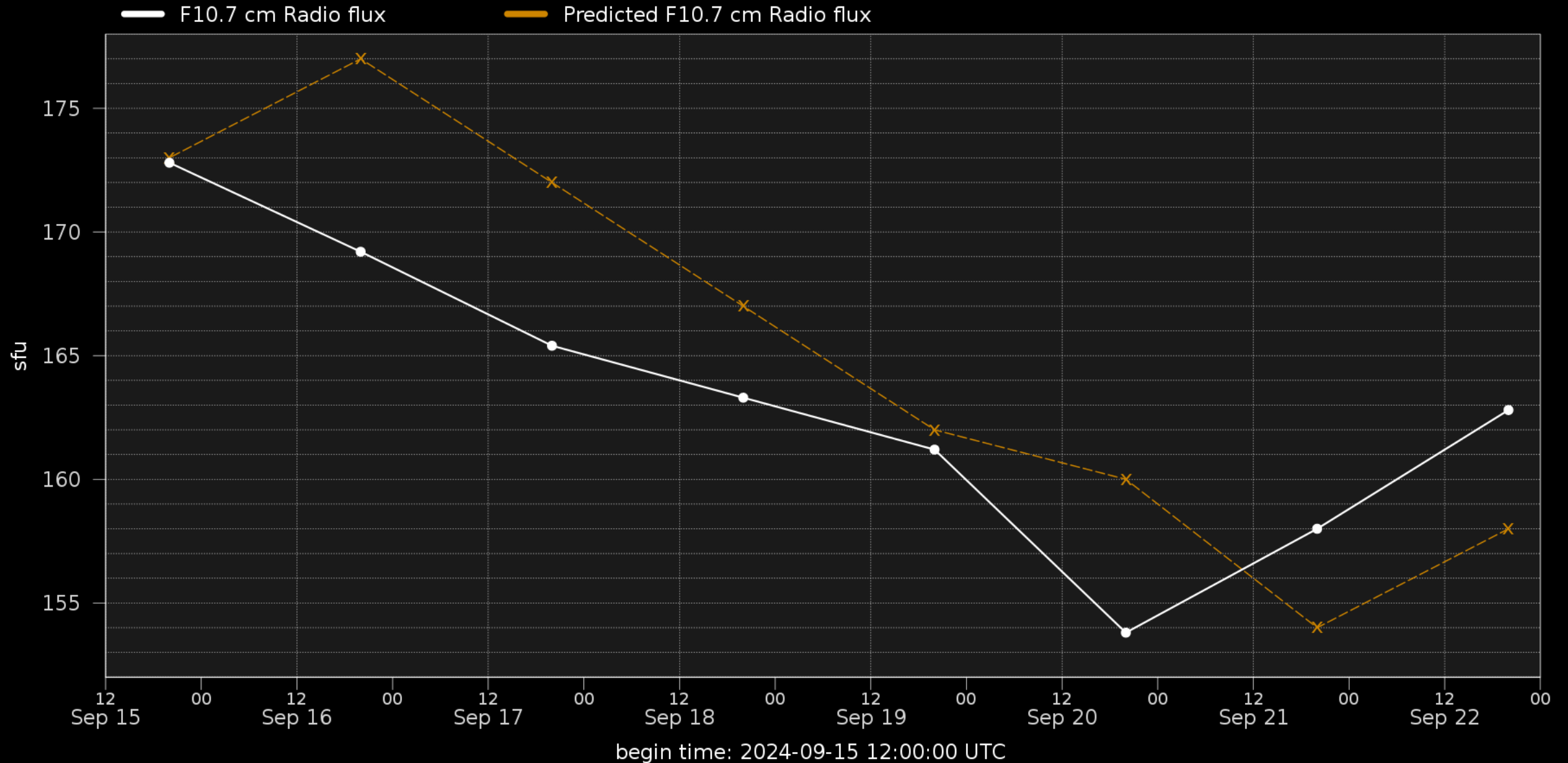


Kanzelhöhe Observatory
2024-09-22 11:27:12 UTC

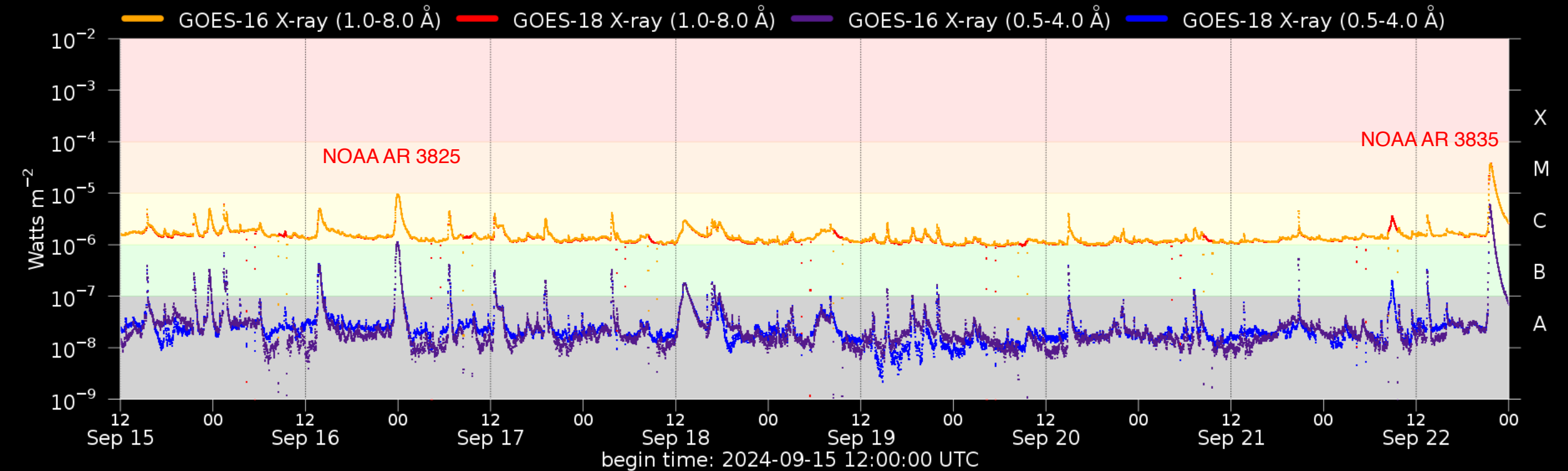
University of Graz
(Austria)



Solar F10.7cm radio flux



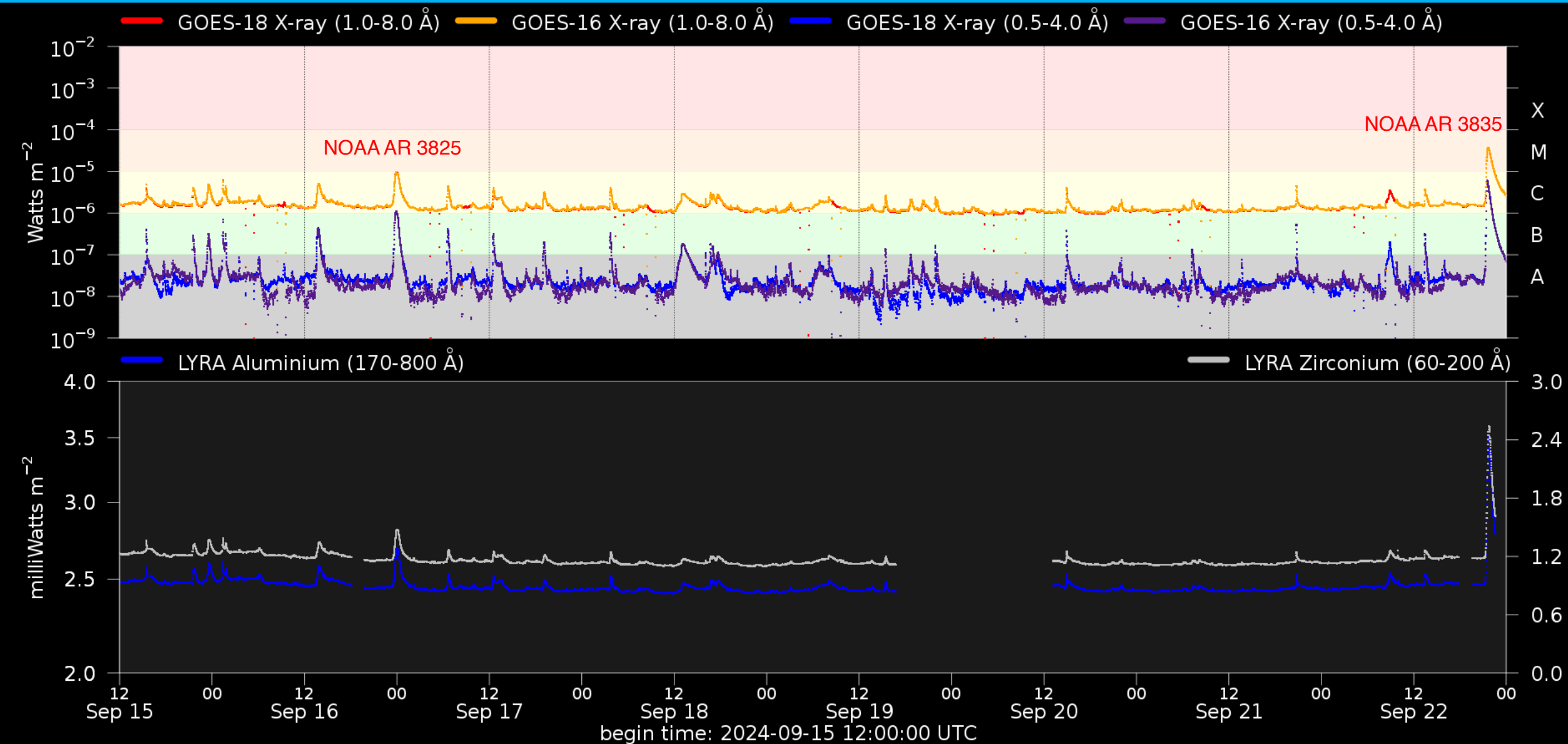
Flaring activity



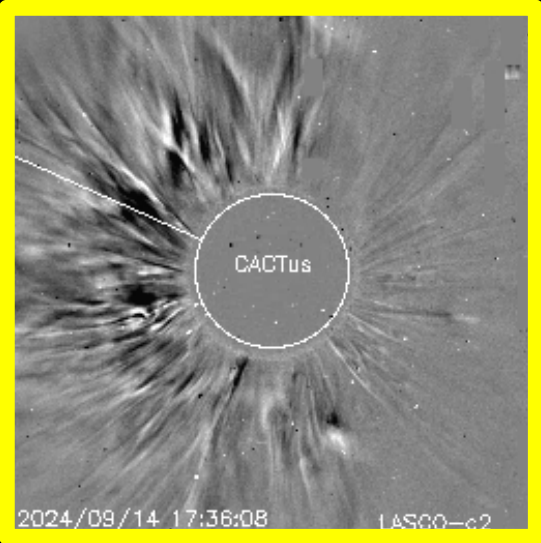
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-09-15	2024-09-16	2024-09-17	2024-09-18	2024-09-19	2024-09-20	2024-09-21	2024-09-22
Probability (%)	99 90 40	95 50 10	99 55 10	99 60 15	95 50 15	90 40 05	85 35 05	90 45 10
Observed (#)	05 00 00	03 00 00	03 00 00	01 00 00	02 00 00	02 00 00	01 00 00	01 01 00

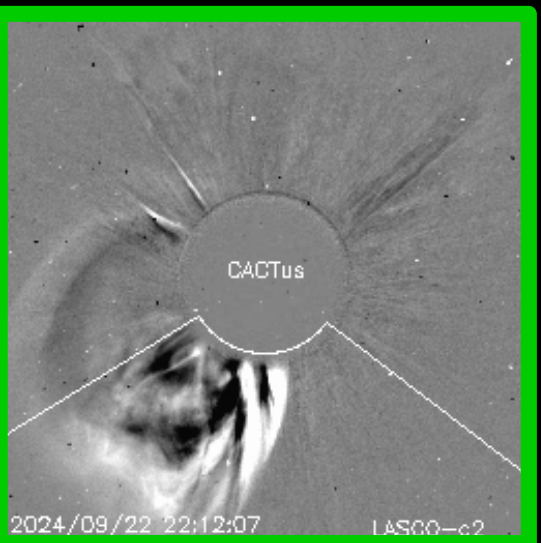
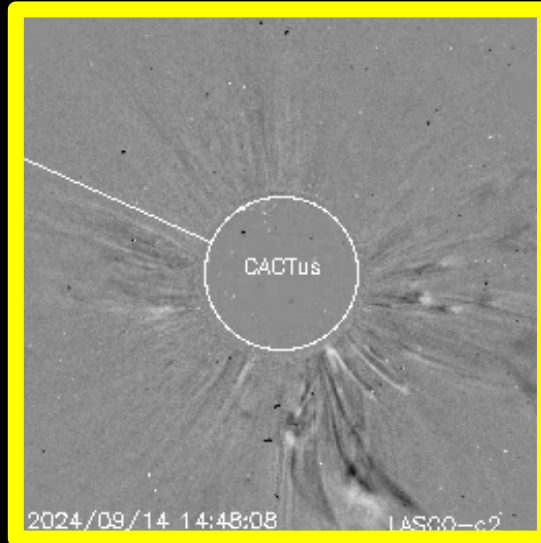
Solar X-Ray and UV flux



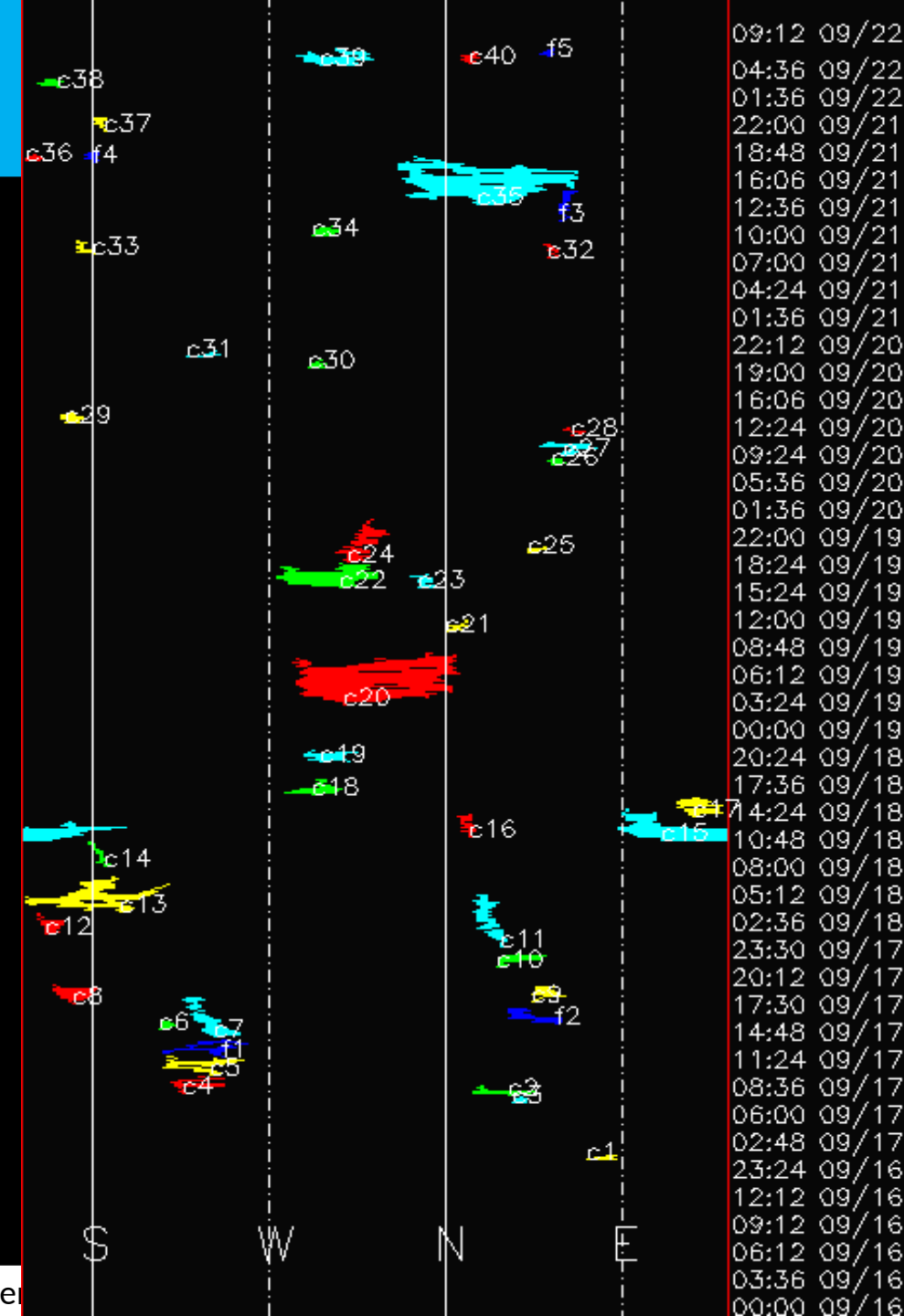
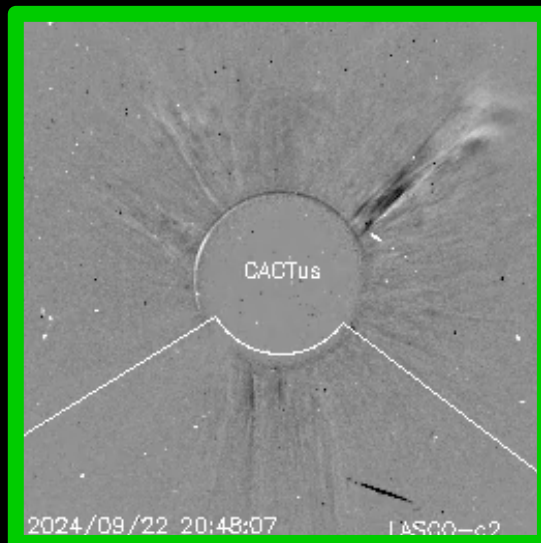
Coronal Mass Ejections



Sept 14th
CME with
arrival late on
Sept 16th



Sept 22nd
CME under
analysis



Solar Wind and

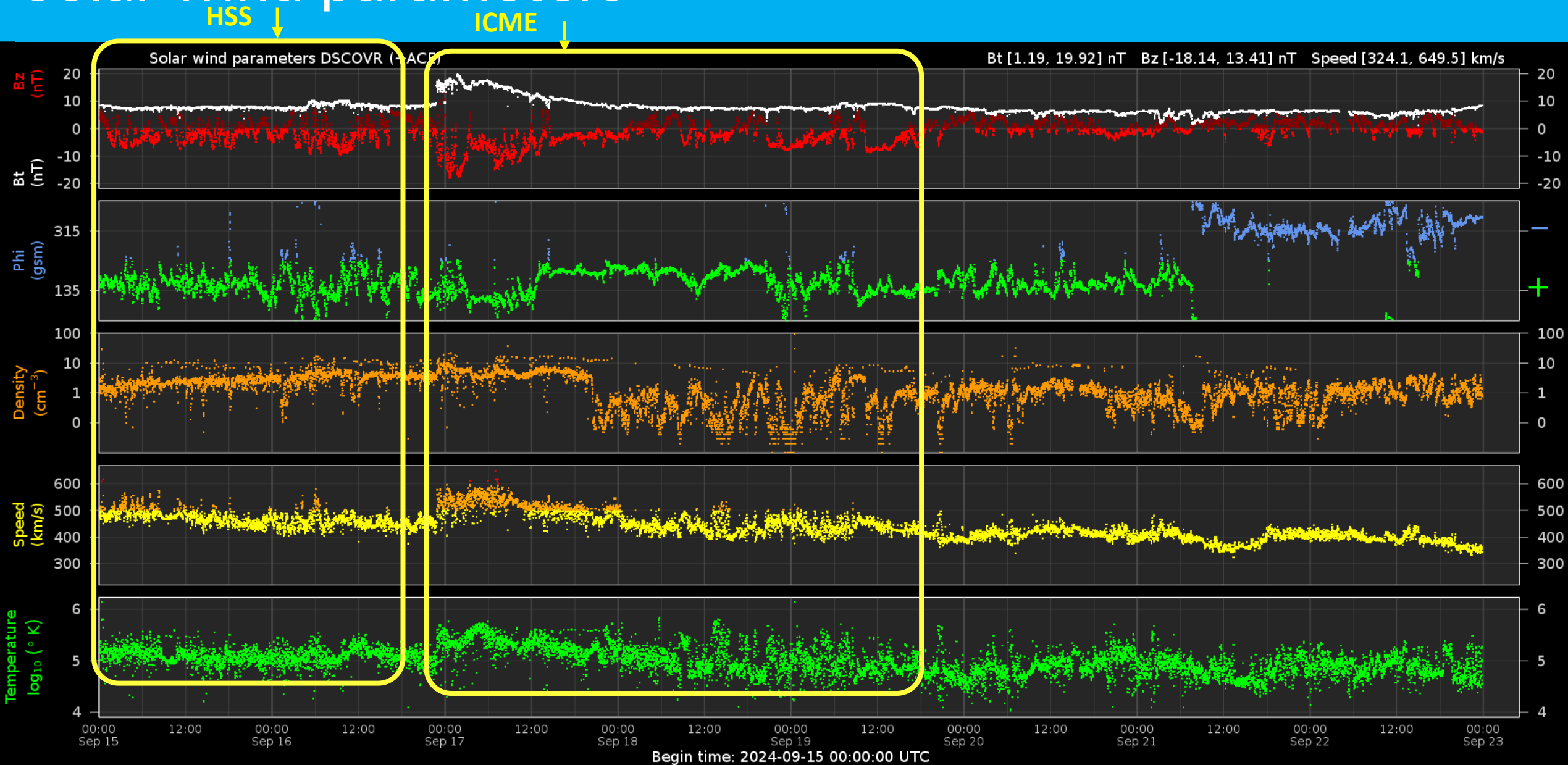
Geomagnetic Activity



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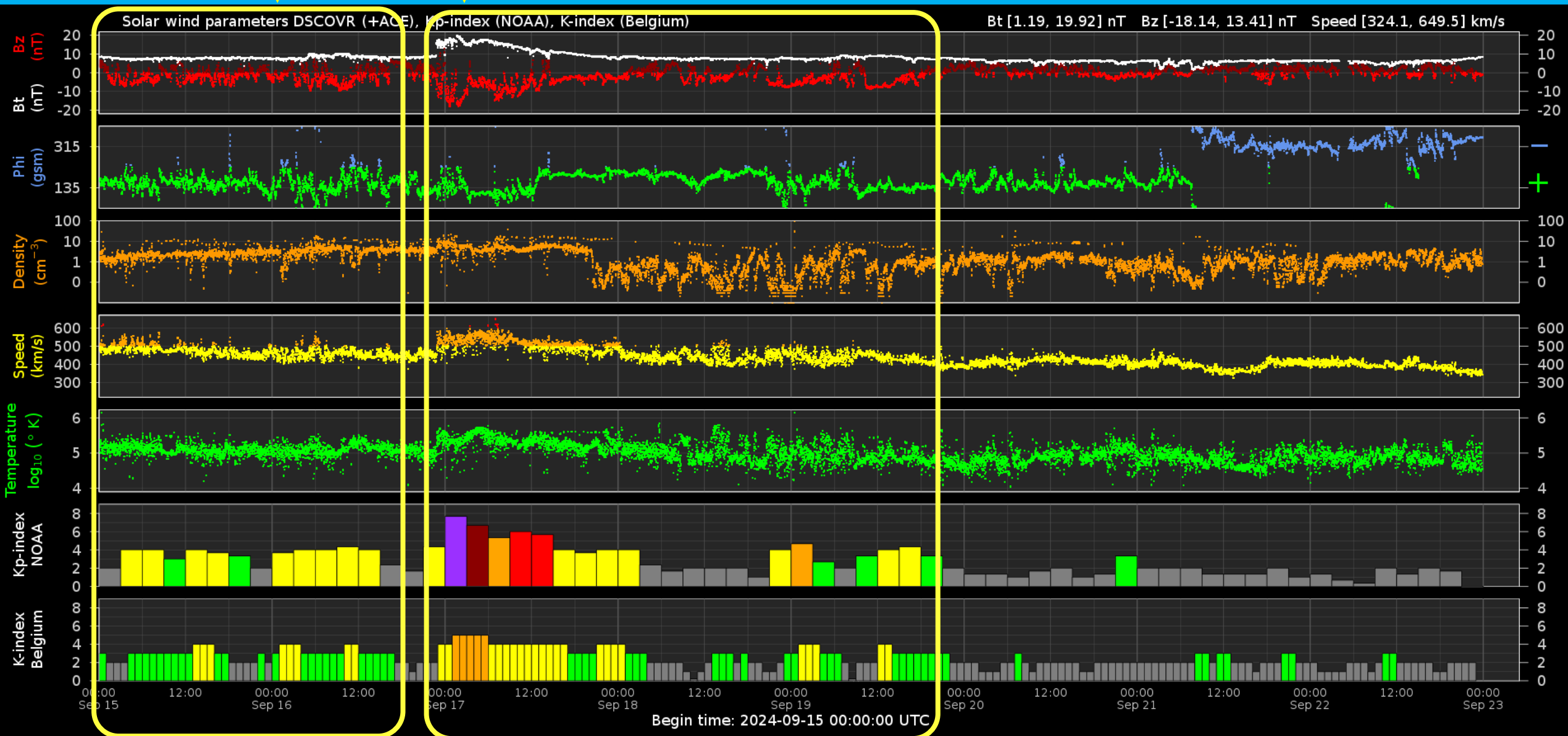
Solar wind parameters



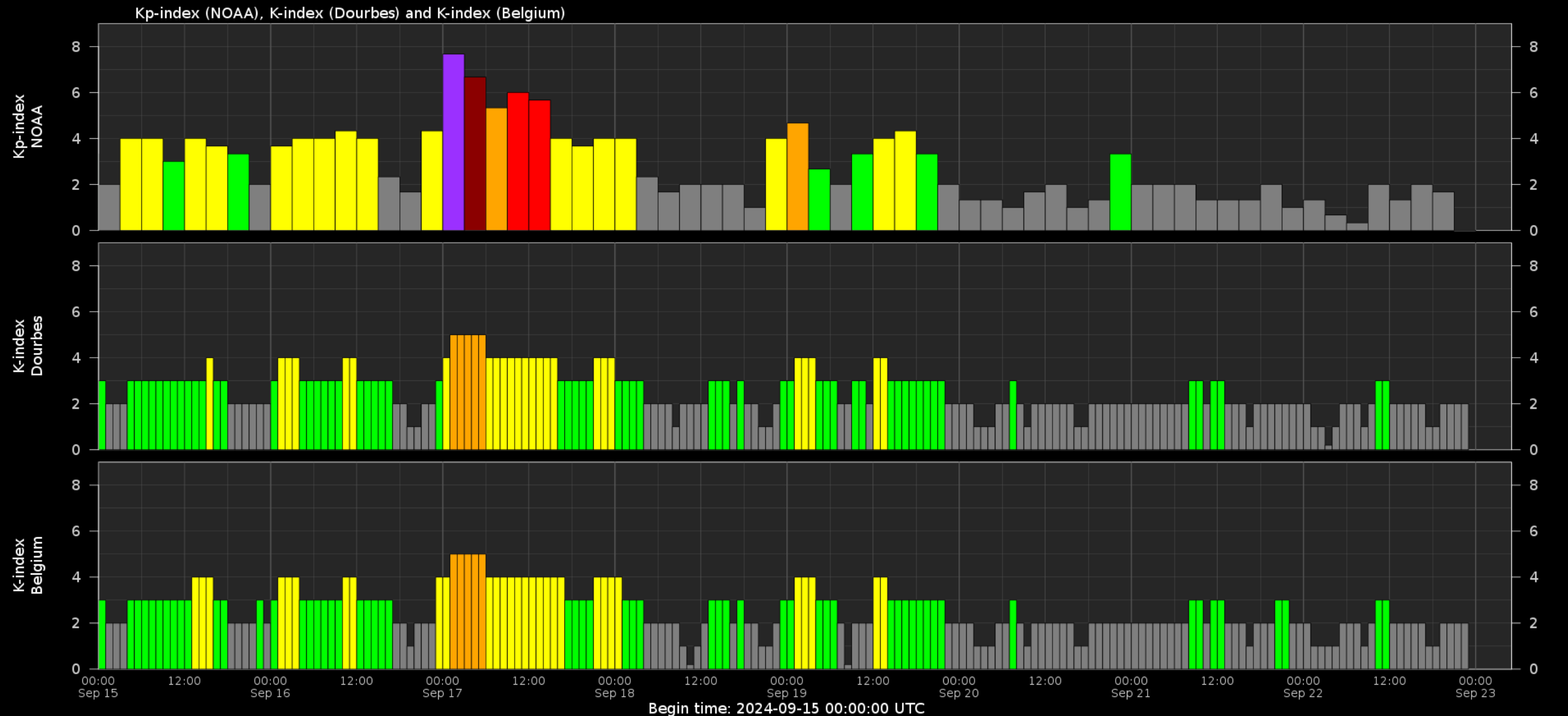
Solar wind parameters & K-indices

HSS ↓

ICME ↓



Geomagnetic activity (K-indexes)



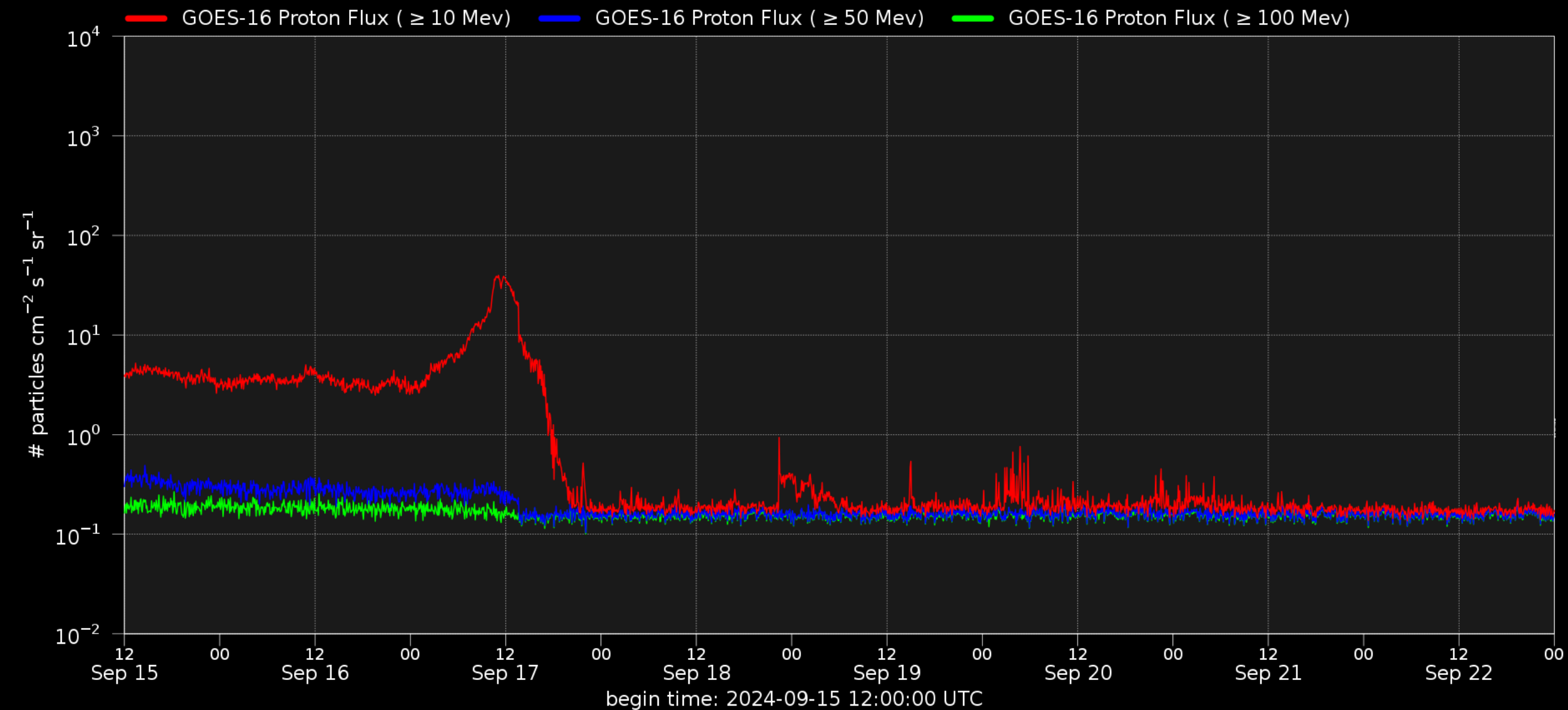
Energetic Particles



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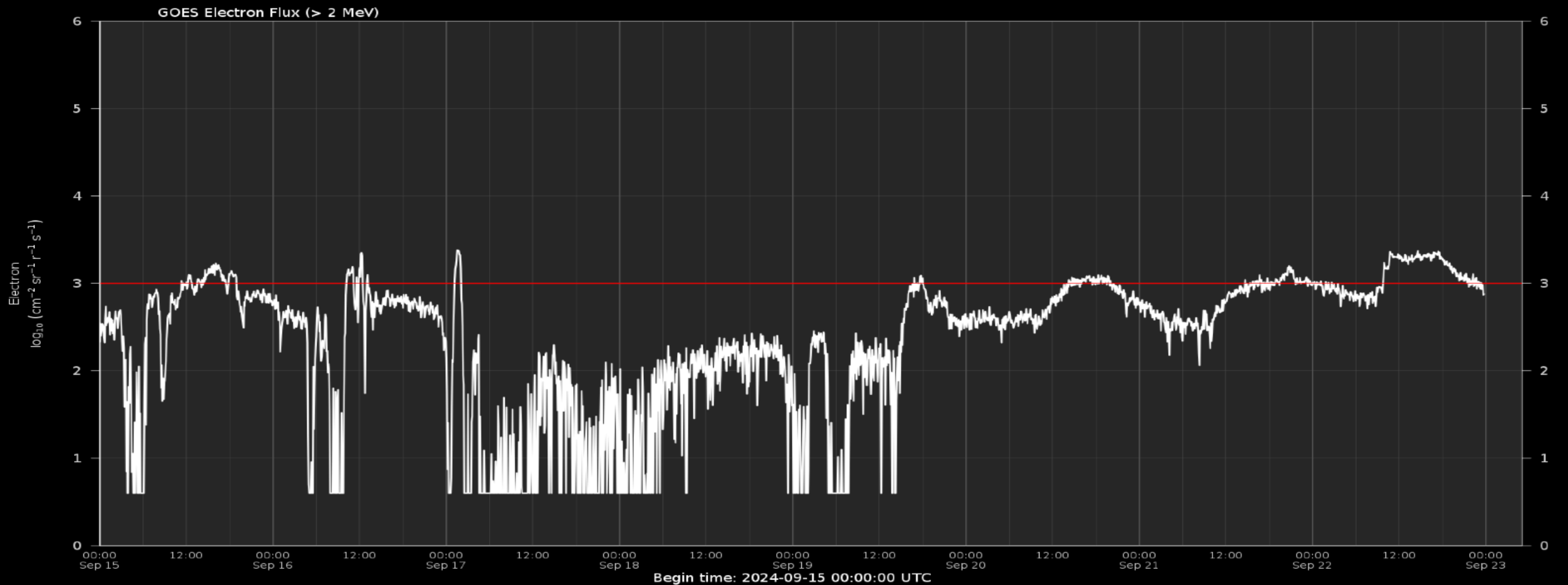
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



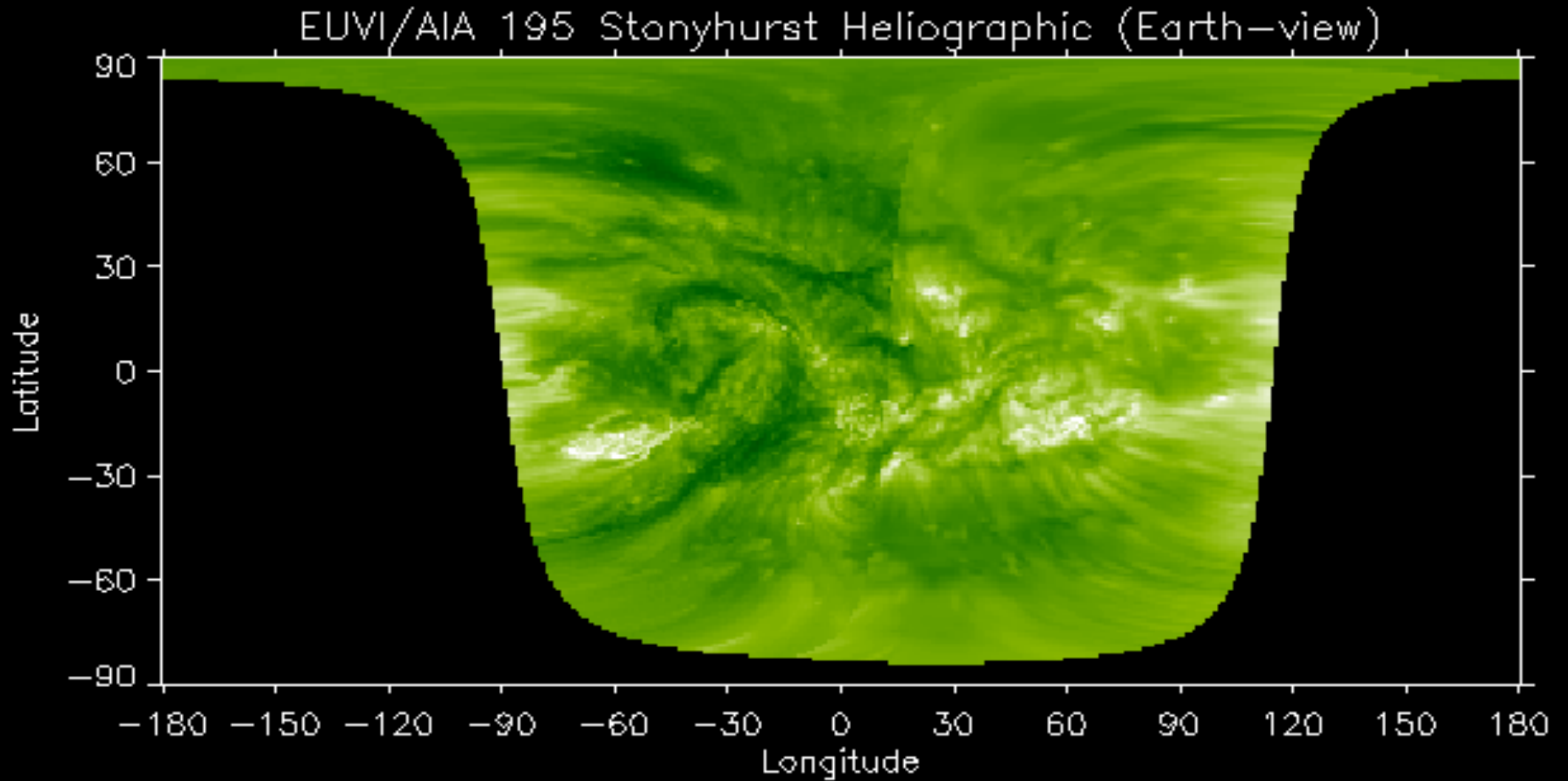
Outlook



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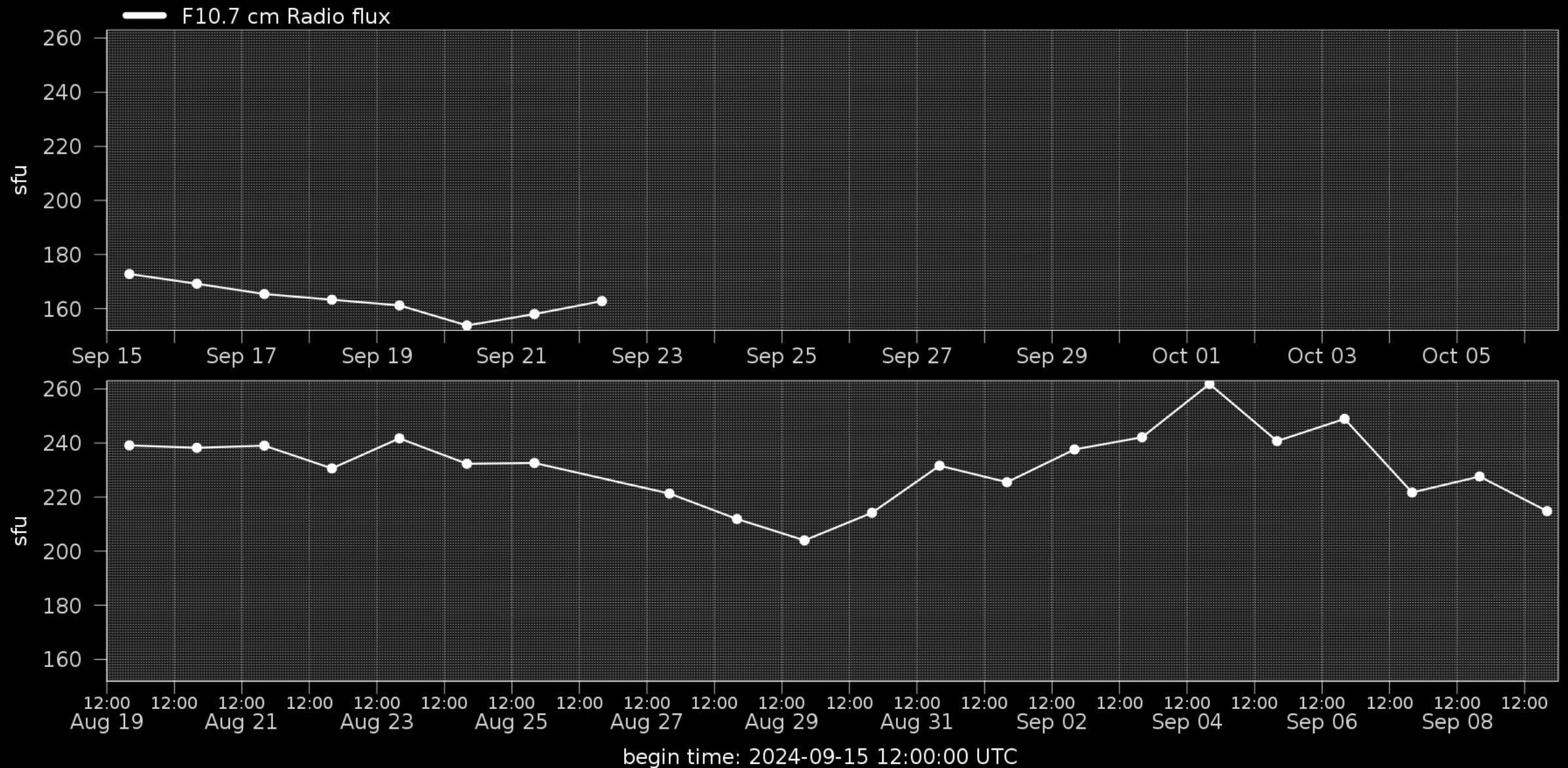
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Data analysis Centre
www.sidc.be

Outlook: Solar activity

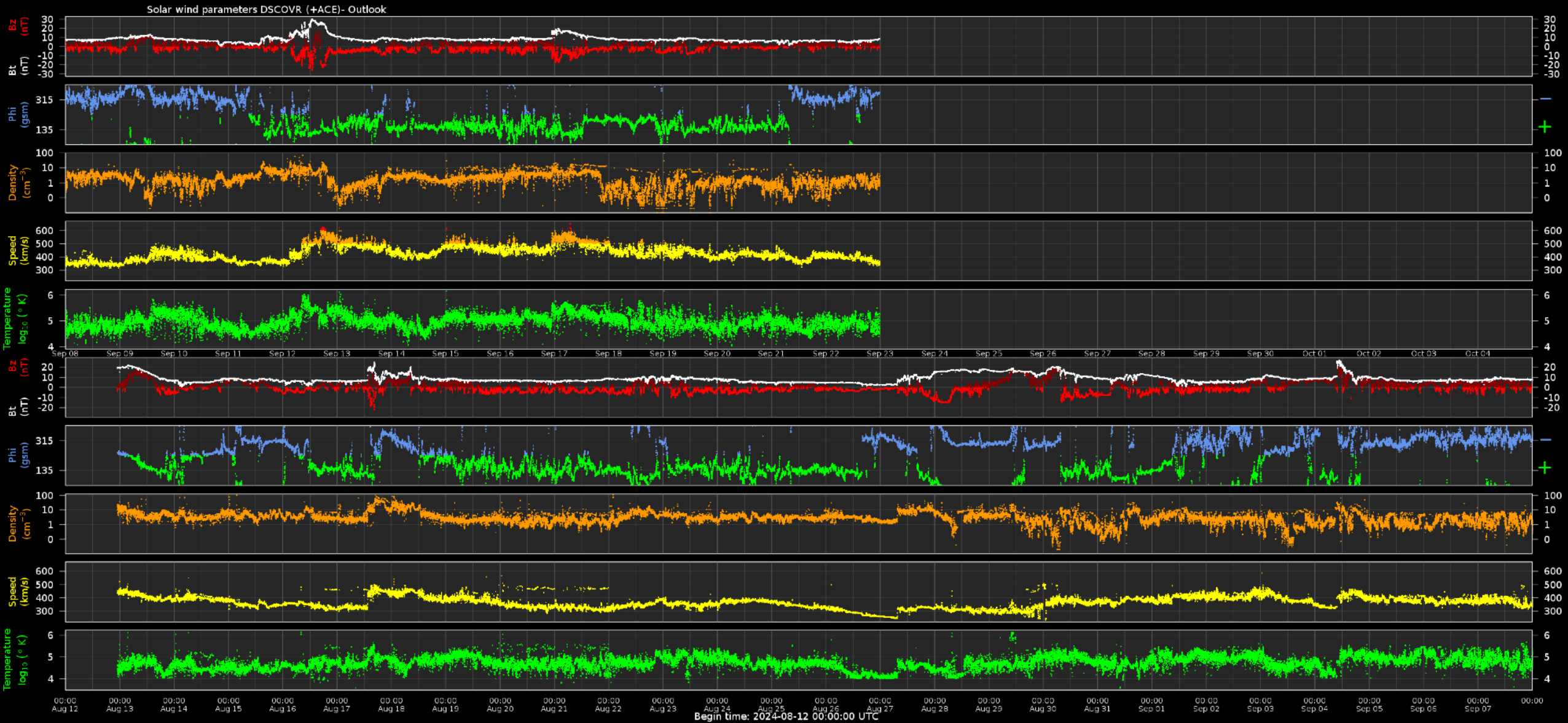


Observation date: 2024/09/22 23:05:00

Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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Pegasus related events

AA, PCA, PSD and Scintillation

SIDC Space Weather Briefing

See you at our next briefing!

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