SIDC Space Weather Briefing

20 October 2024-27 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 2024-10-20 12:00 to 2024-10-27 23:59

Active regions	22 Active Regions NOAA AR 3854, 3856, 3857, 3859, 3860, 3862 – 3878
Flares	# C-class flare: 34 # M-class flare: 7 # X-class flare: 2
Coronal Holes	Two CHs- and two CHs+
CMEs	Halo CMEs on October 24 and on October 26

Proton flux	Proton event following two halo CME and strong flaring activity from NOAA AR 3869 and 3873
Electron flux	Below event threshold

Solar wind and geomagnetic conditions

ICMEs	15:35 UTC on Oct 26
Solar wind conditions	|B|: 0.36 - 26.56 nT //Bz: -19.13 nT to 20.28 nT //Speed: 280.8 - 516.7km/s
Geomagnetic conditions	max KBel: 4.0, max Kp(NOAA): 4.33, Active conditions

All Quiet Alert: Not all quiet

Solar Activity

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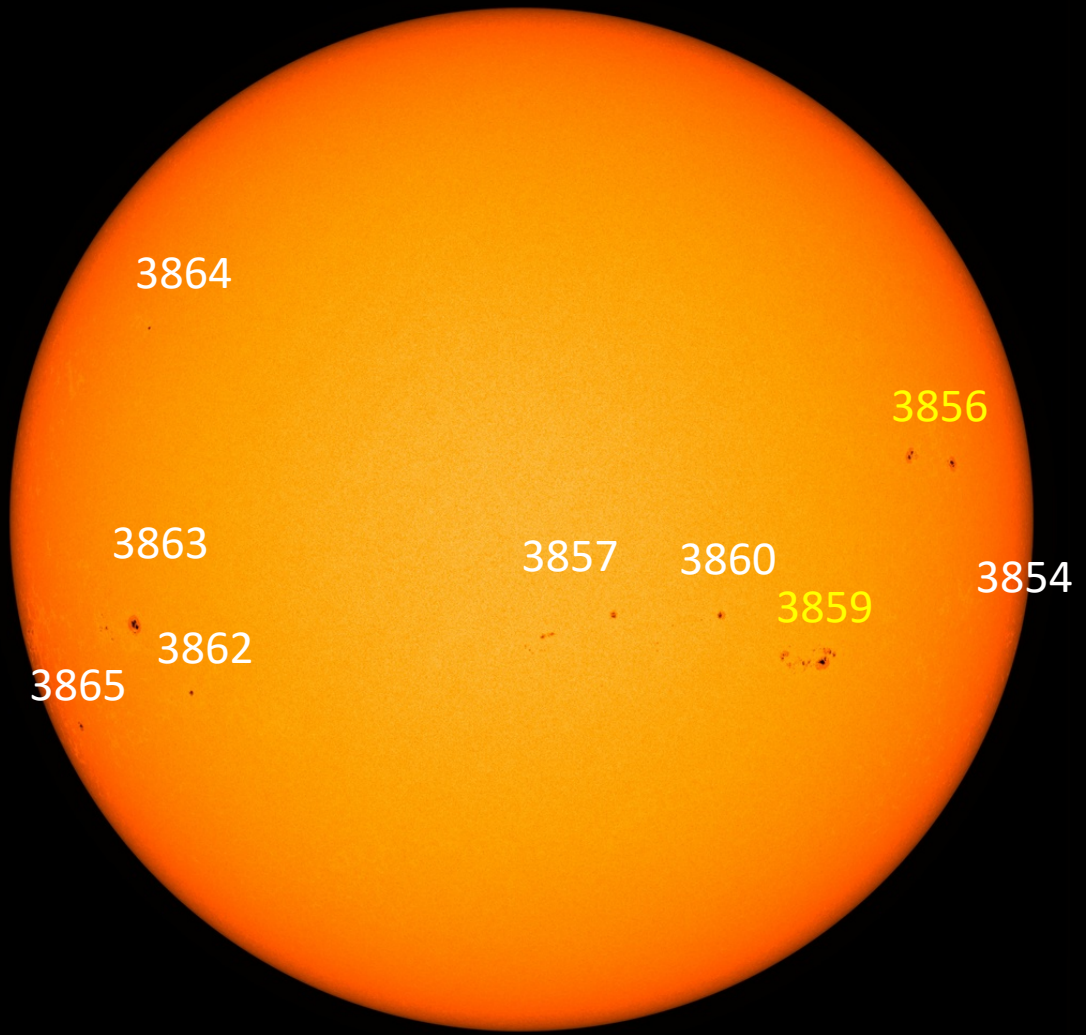
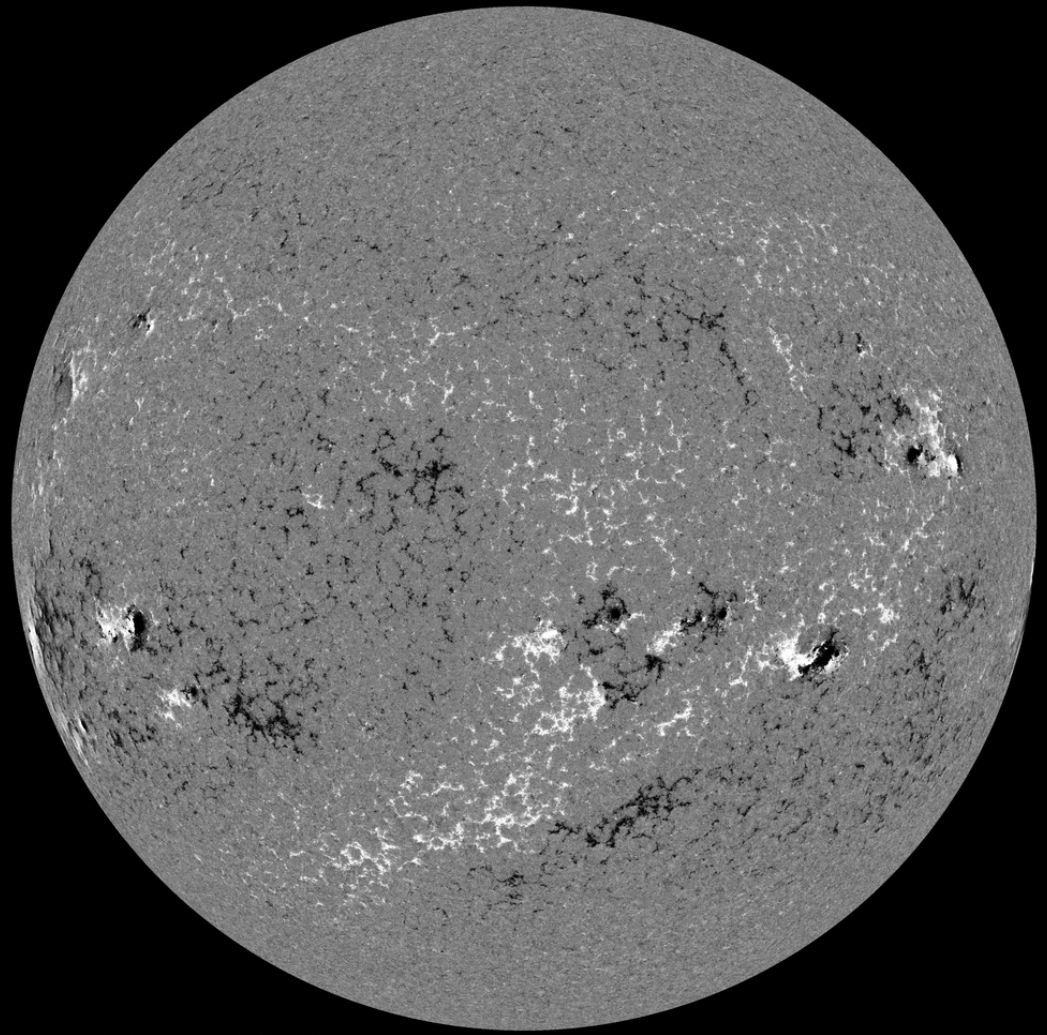
Solar active regions

SDO/HMI White Light 2024-10-20

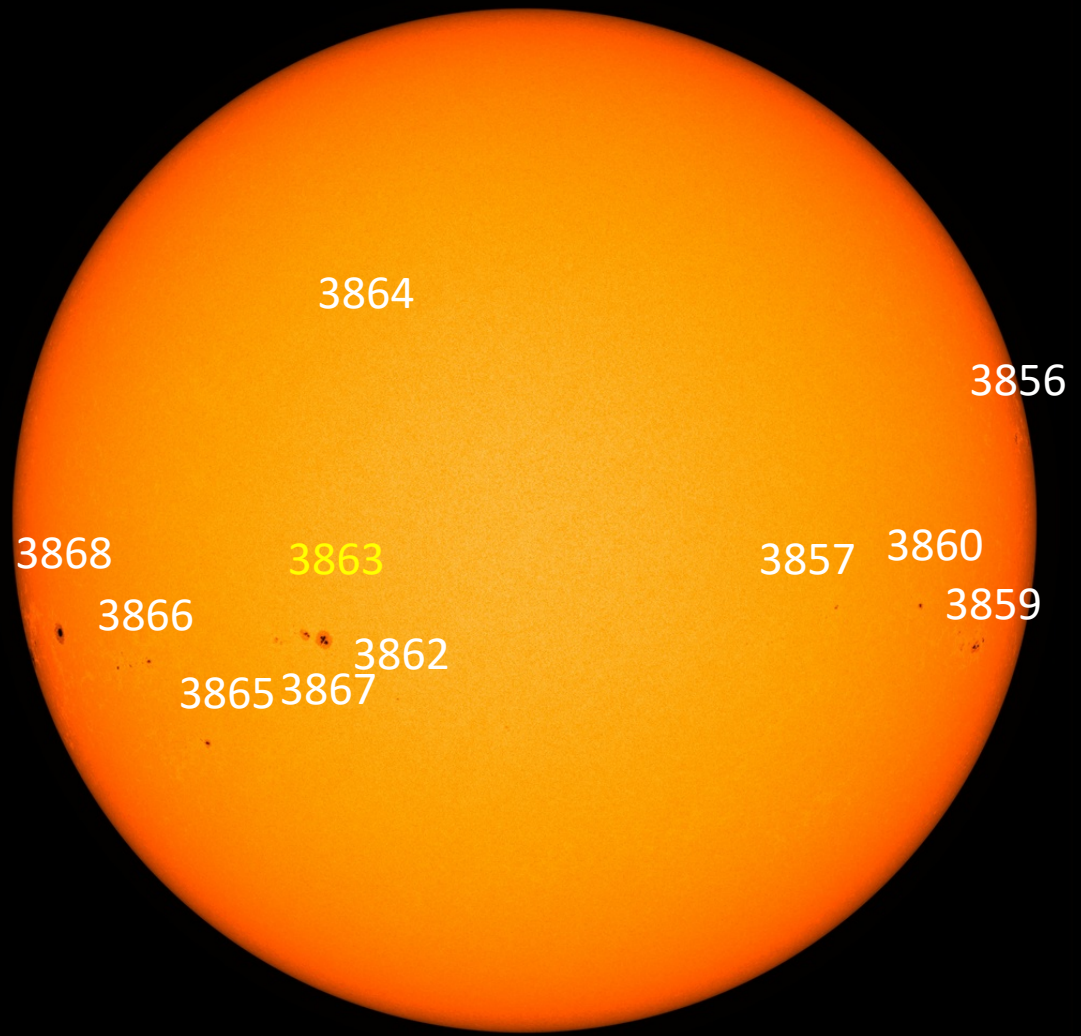


SDO/HMI Magnetogram 2024-10-20

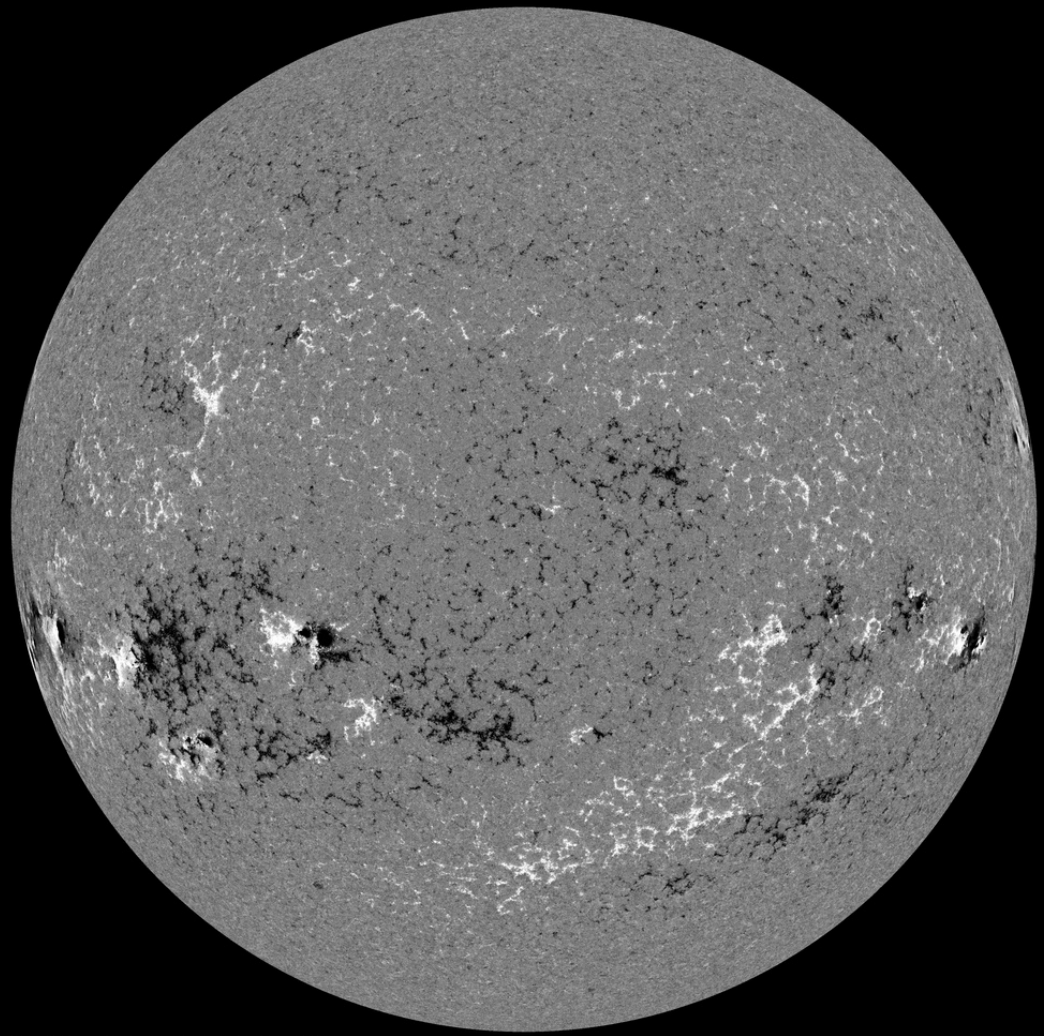


Solar active regions

SDO/HMI White Light 2024-10-22

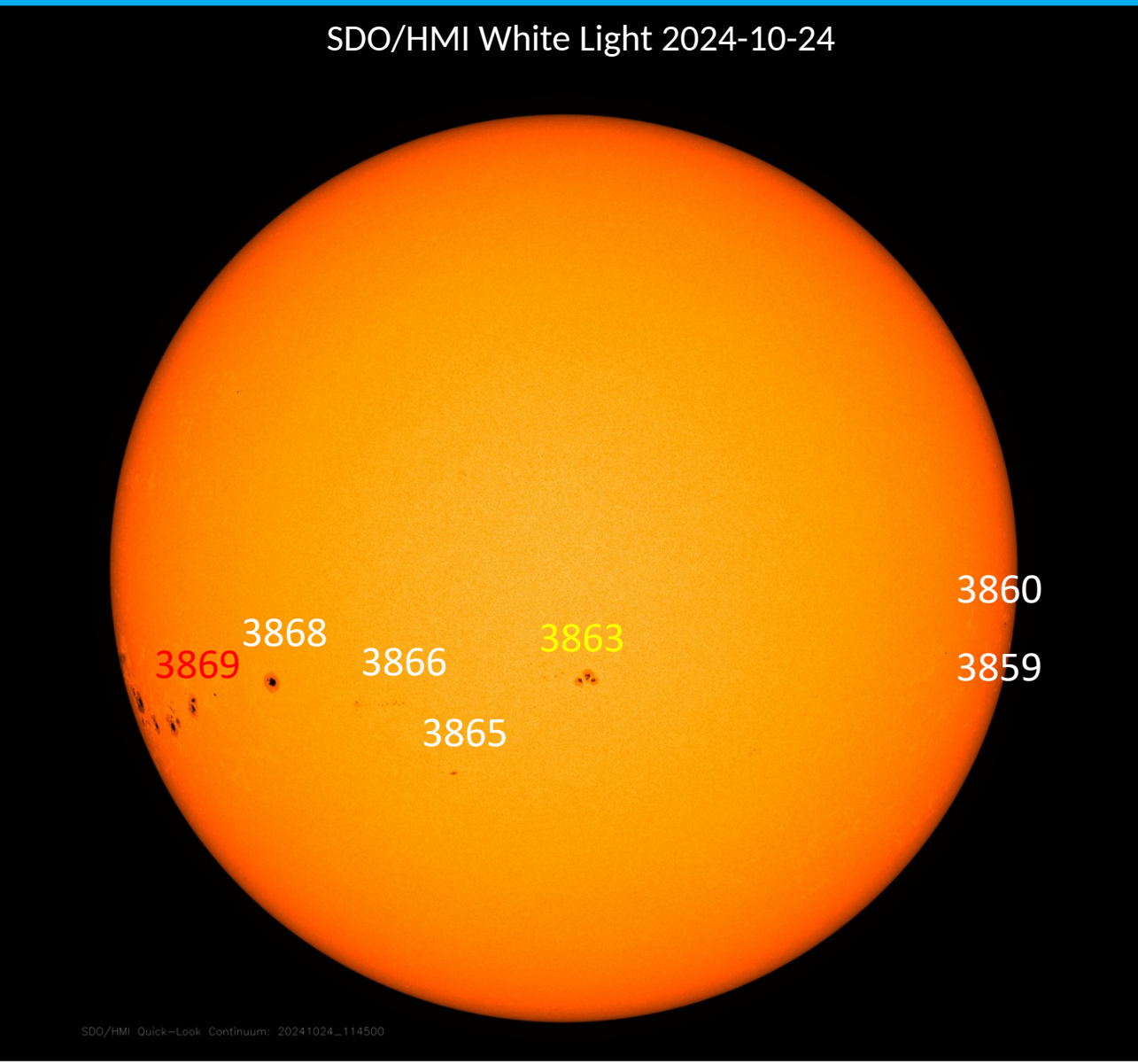


SDO/HMI Magnetogram 2024-10-22

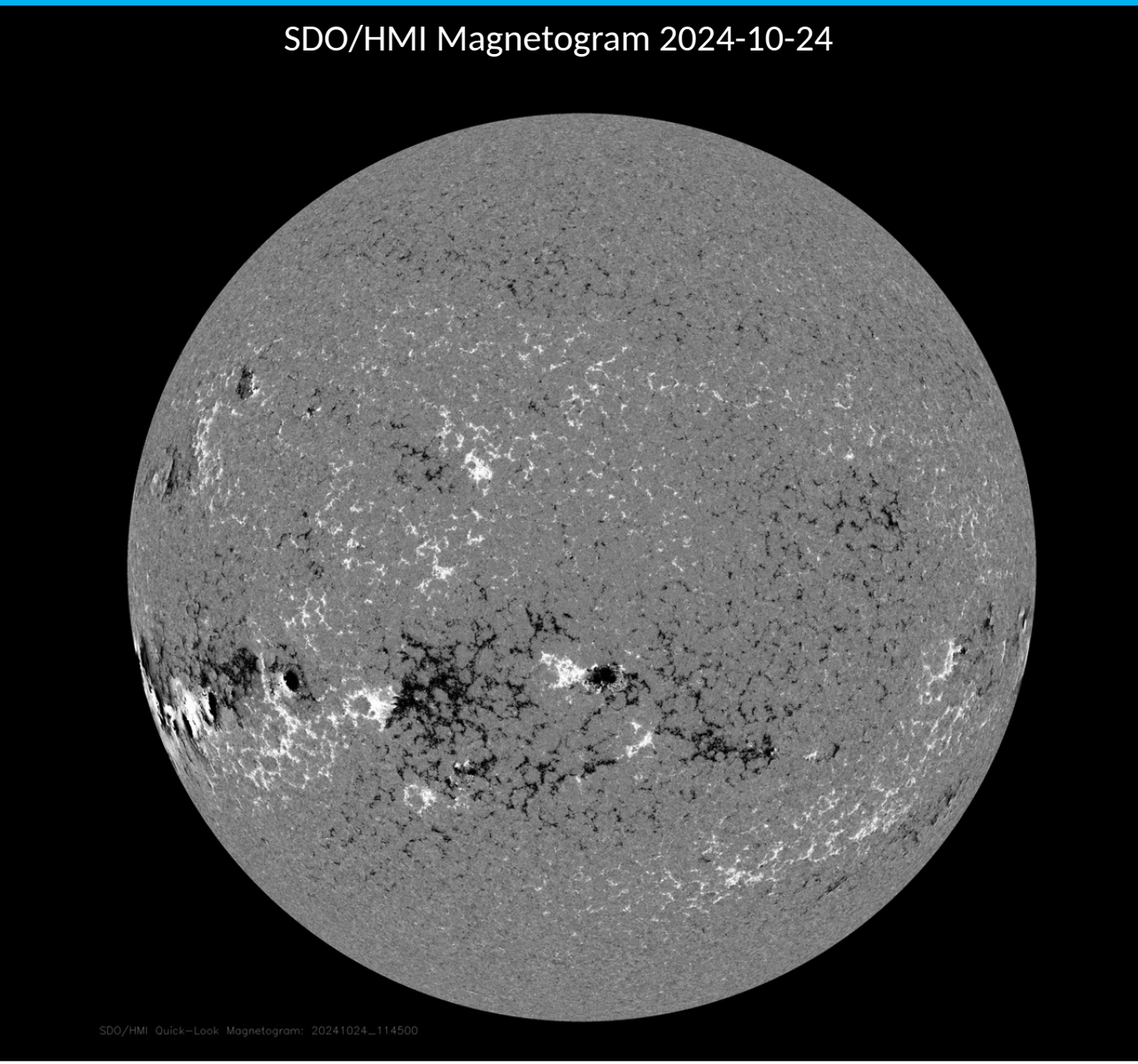


Solar active regions

SDO/HMI White Light 2024-10-24

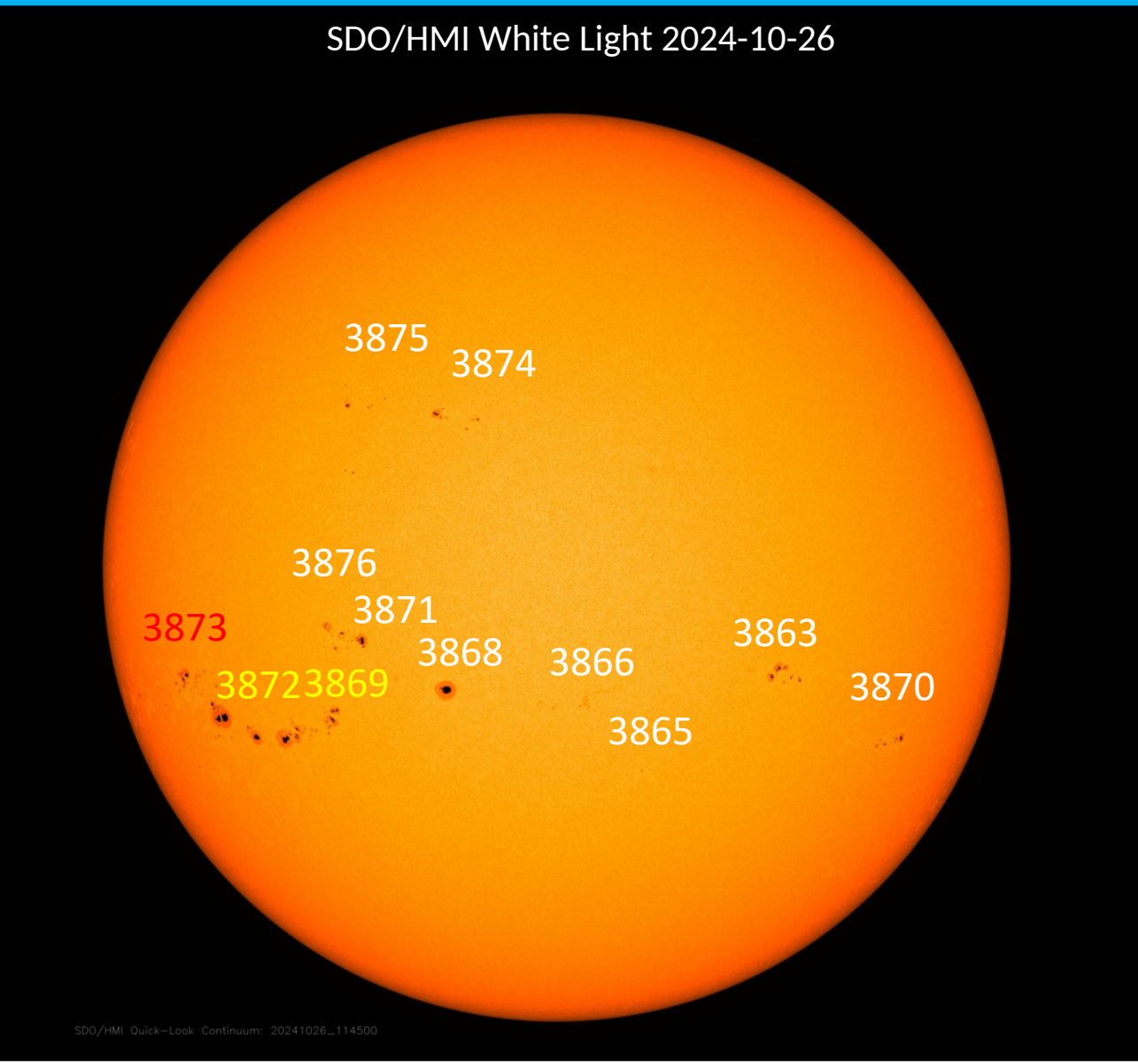


SDO/HMI Magnetogram 2024-10-24

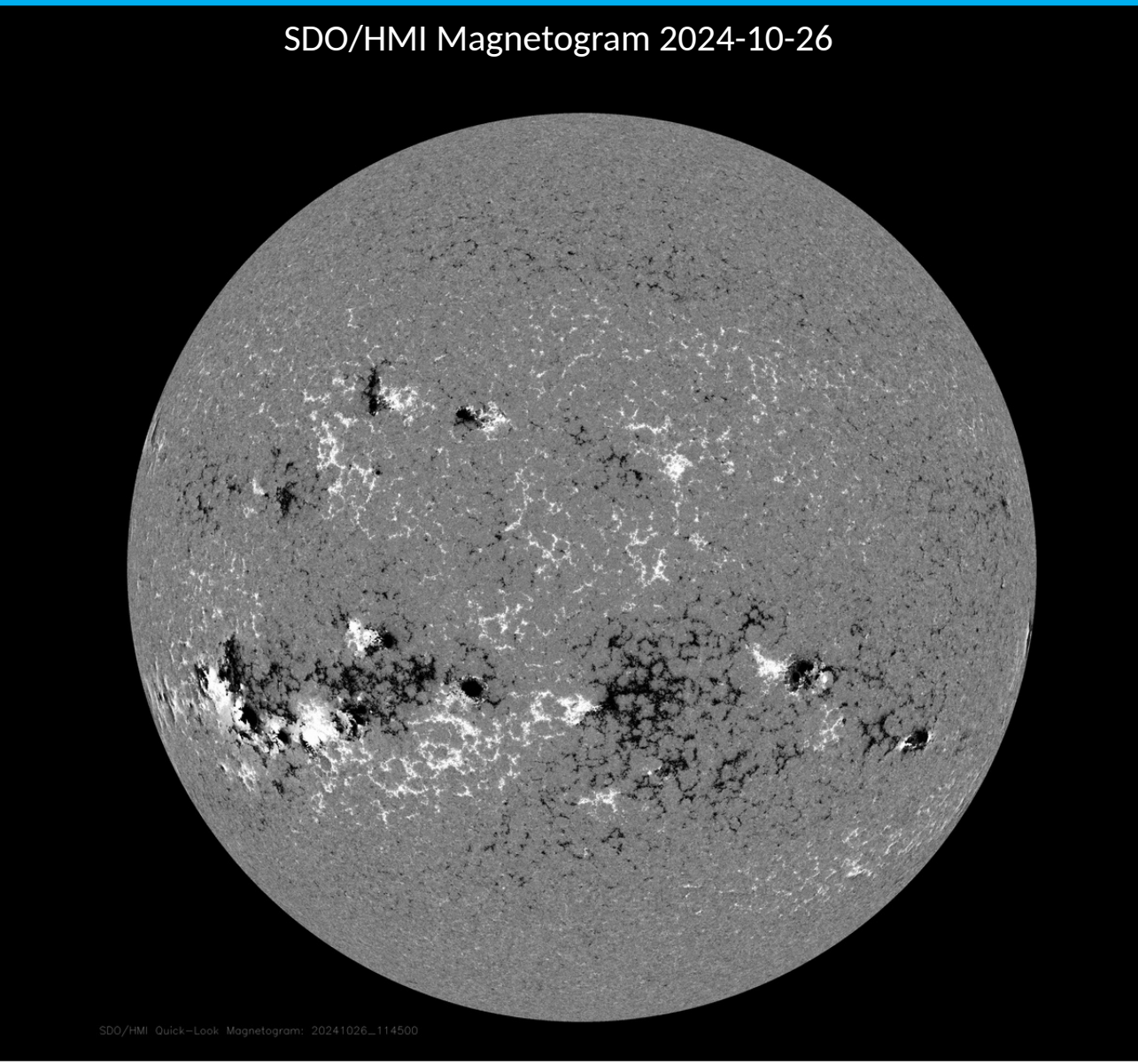


Solar active regions

SDO/HMI White Light 2024-10-26

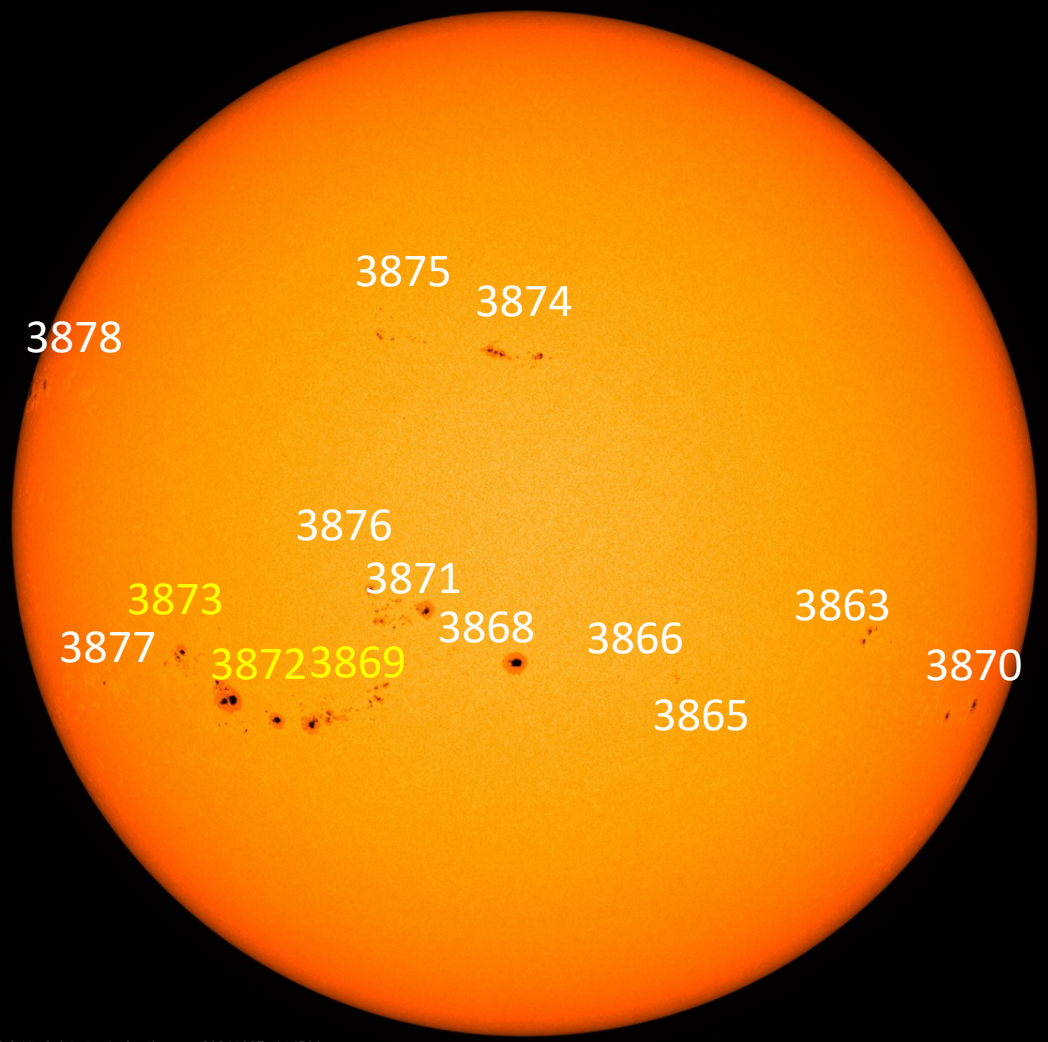


SDO/HMI Magnetogram 2024-10-26

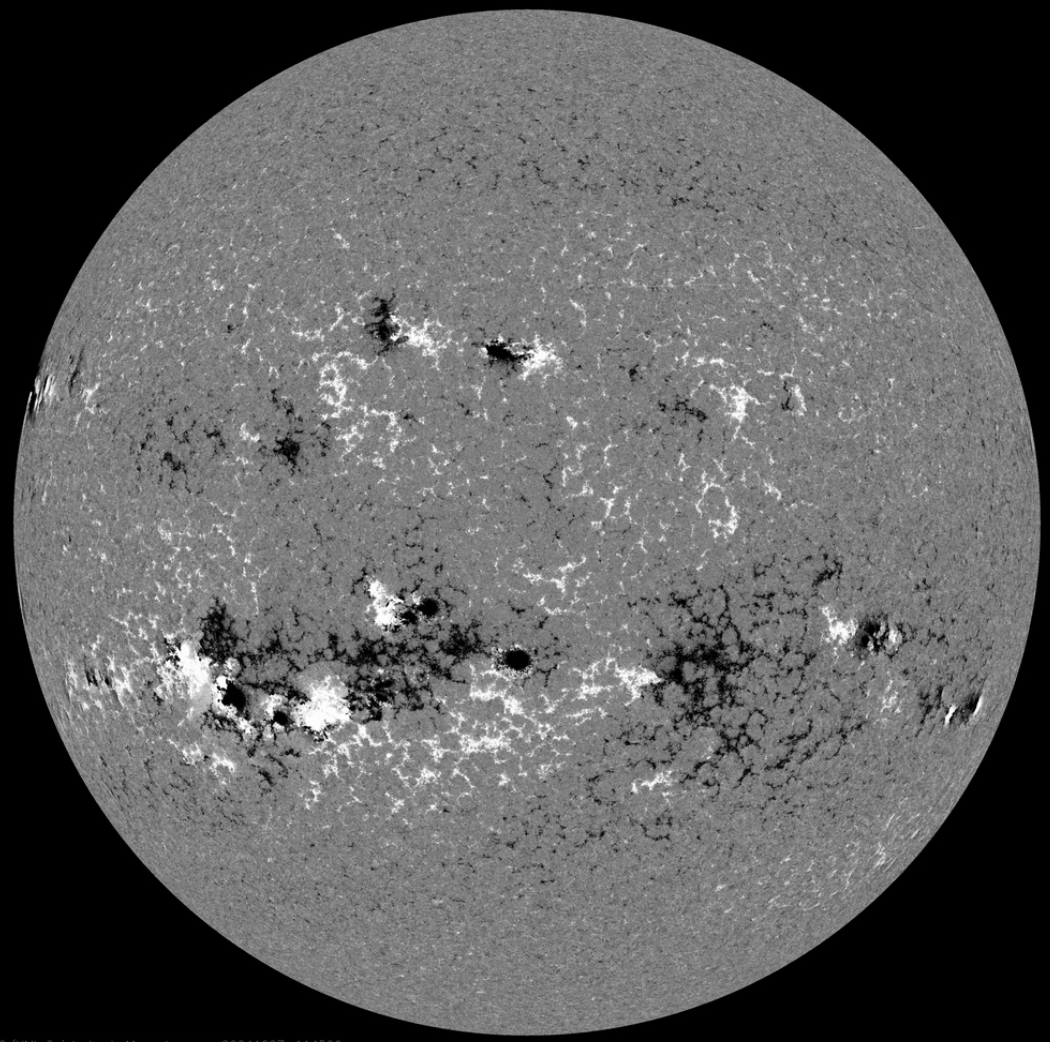


Solar active regions

SDO/HMI White Light 2024-10-27

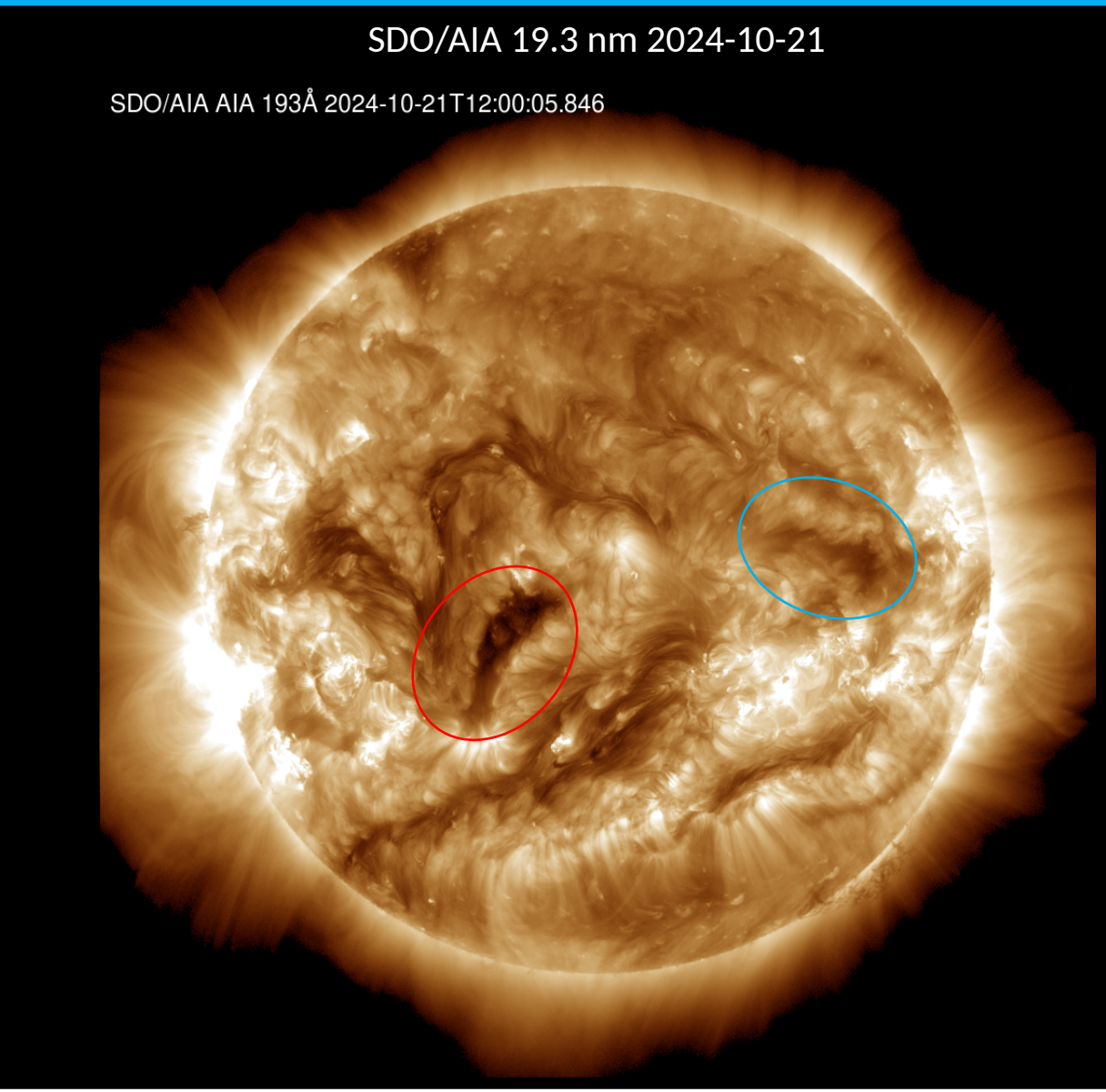


SDO/HMI Magnetogram 2024-10-27

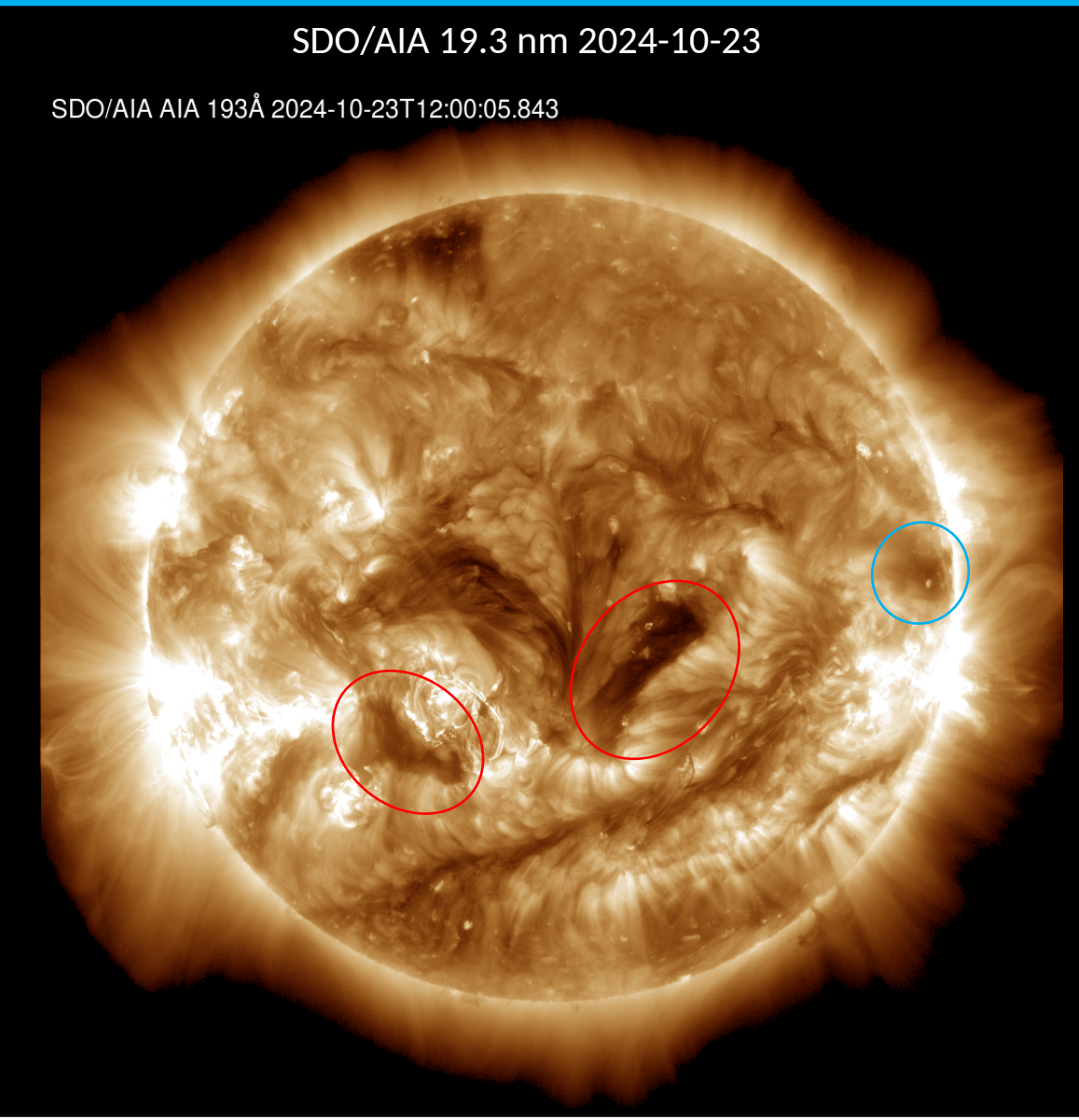


Coronal holes

SDO/AIA 19.3 nm 2024-10-21

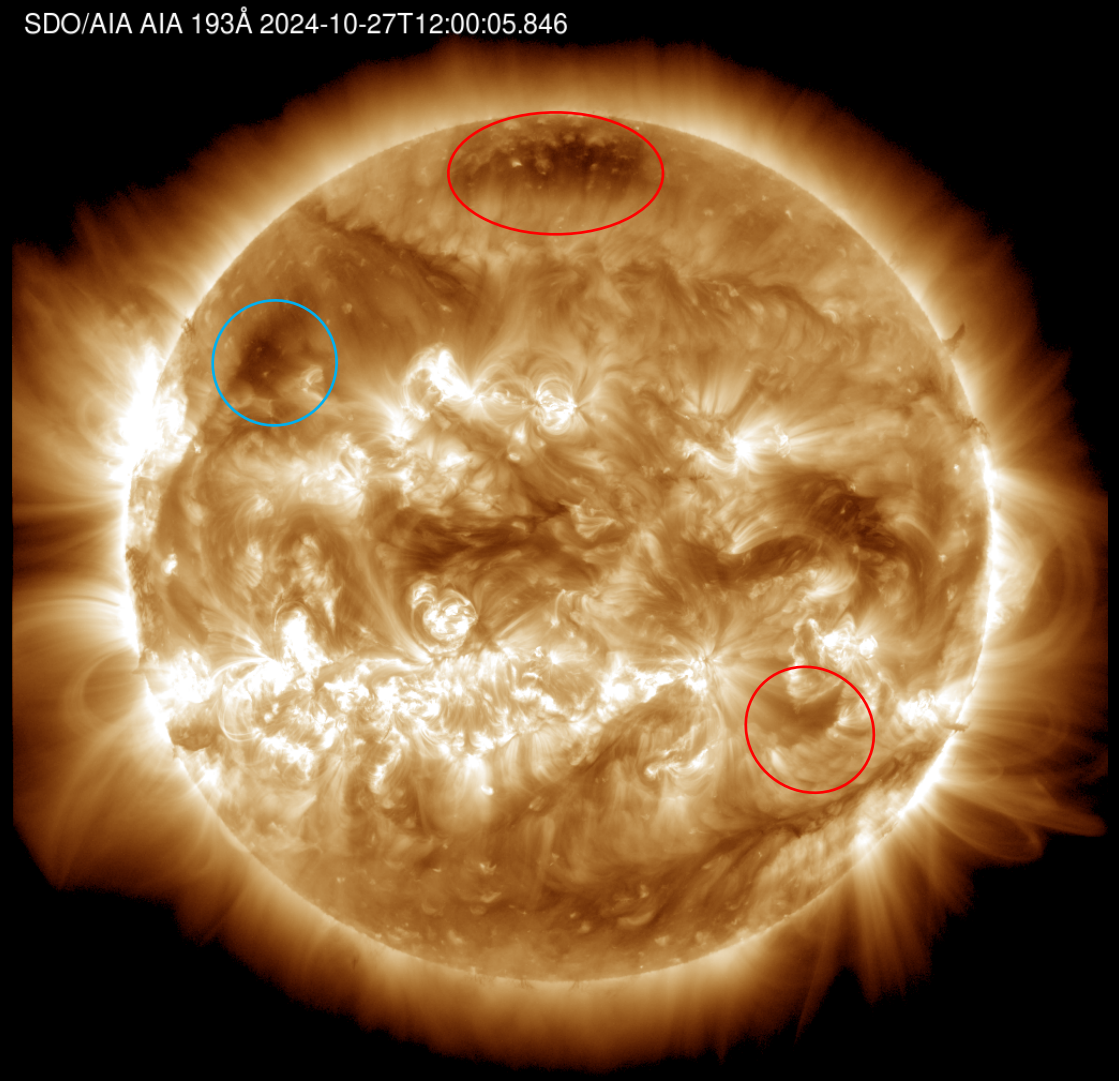


SDO/AIA 19.3 nm 2024-10-23



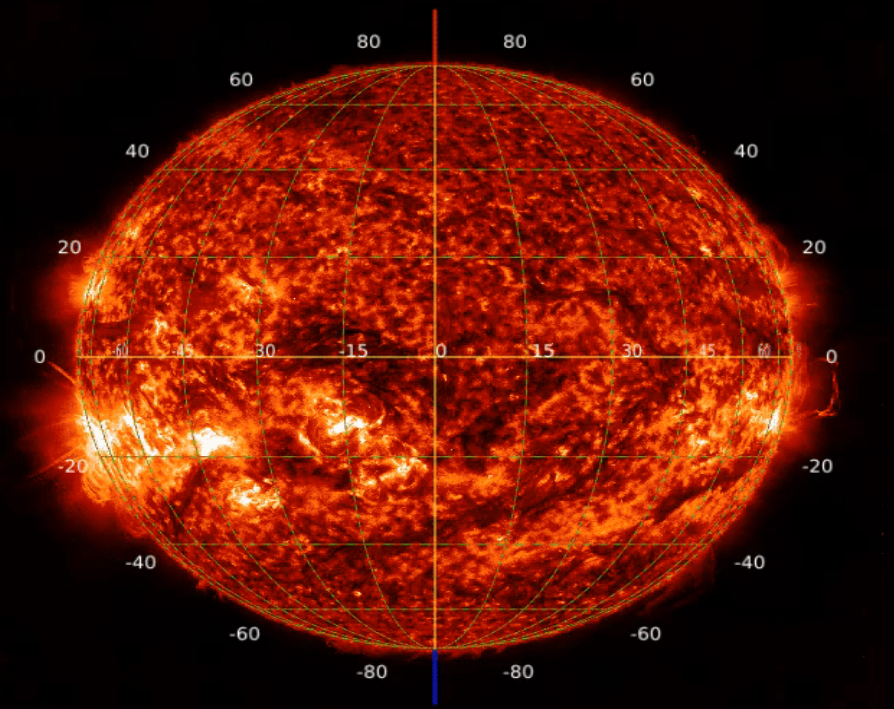
Coronal holes

SDO/AIA 19.3 nm 2024-10-27

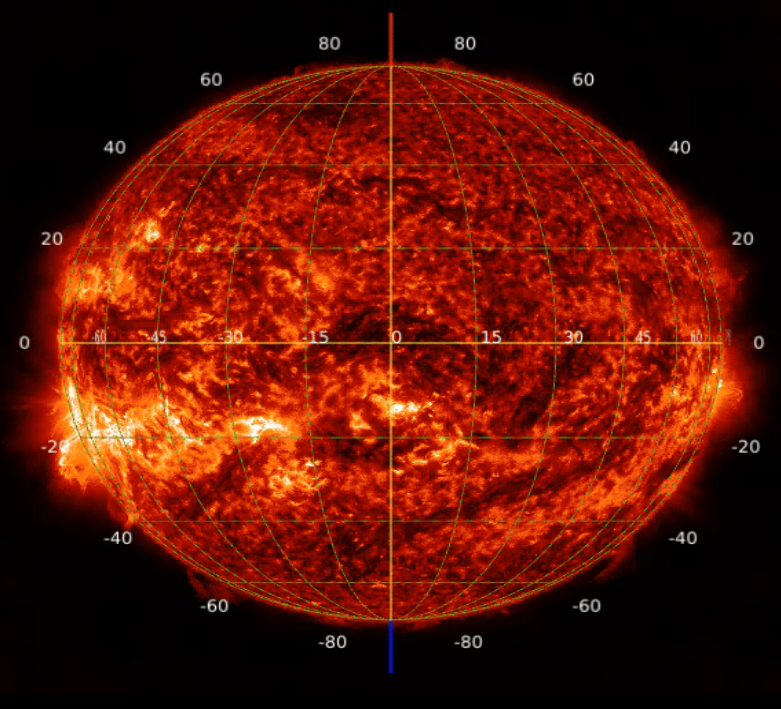


Filaments

SDO/AIA 30.4 nm 2024-10-23

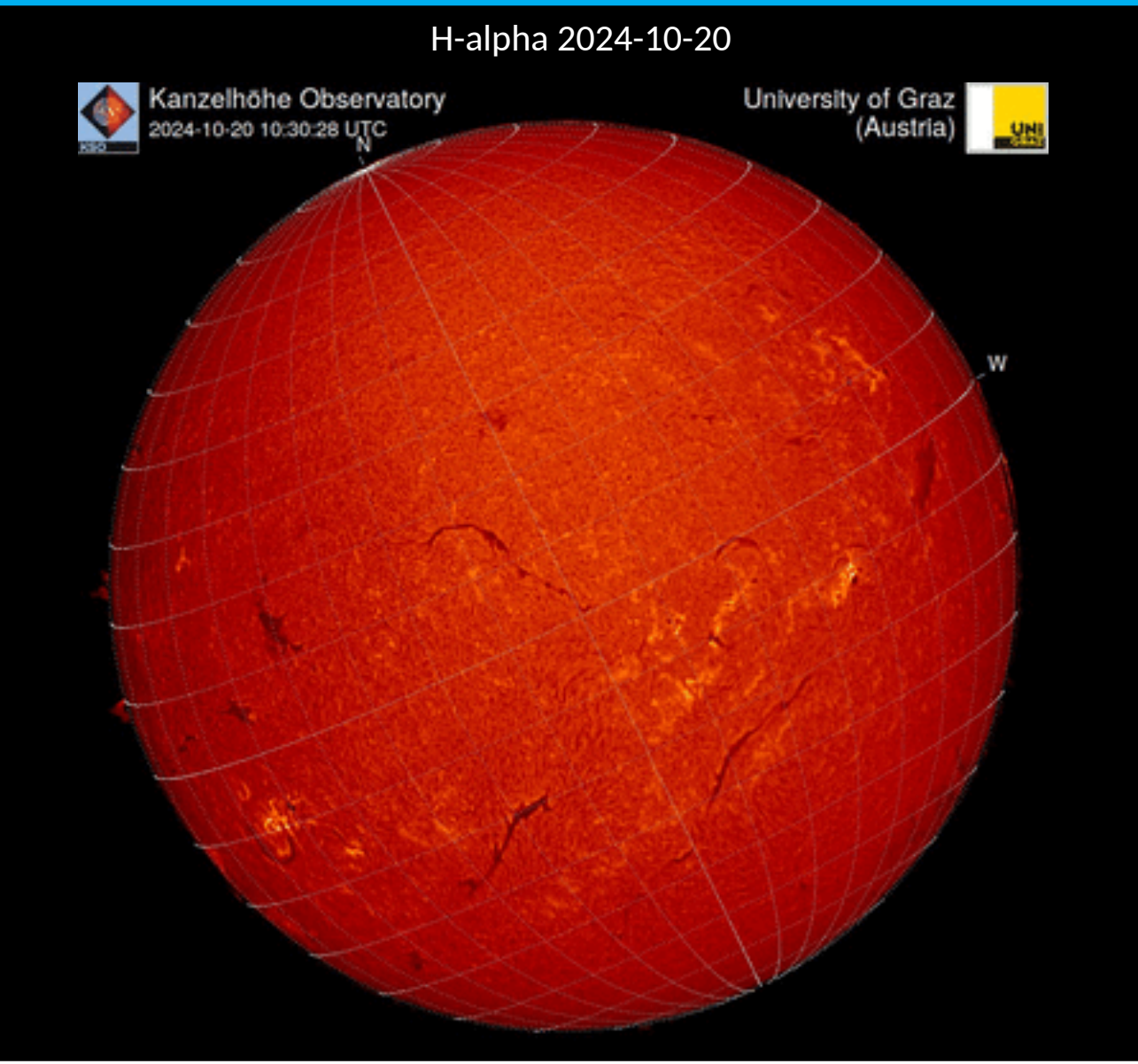


SDO/AIA 30.4 nm 2024-10-24

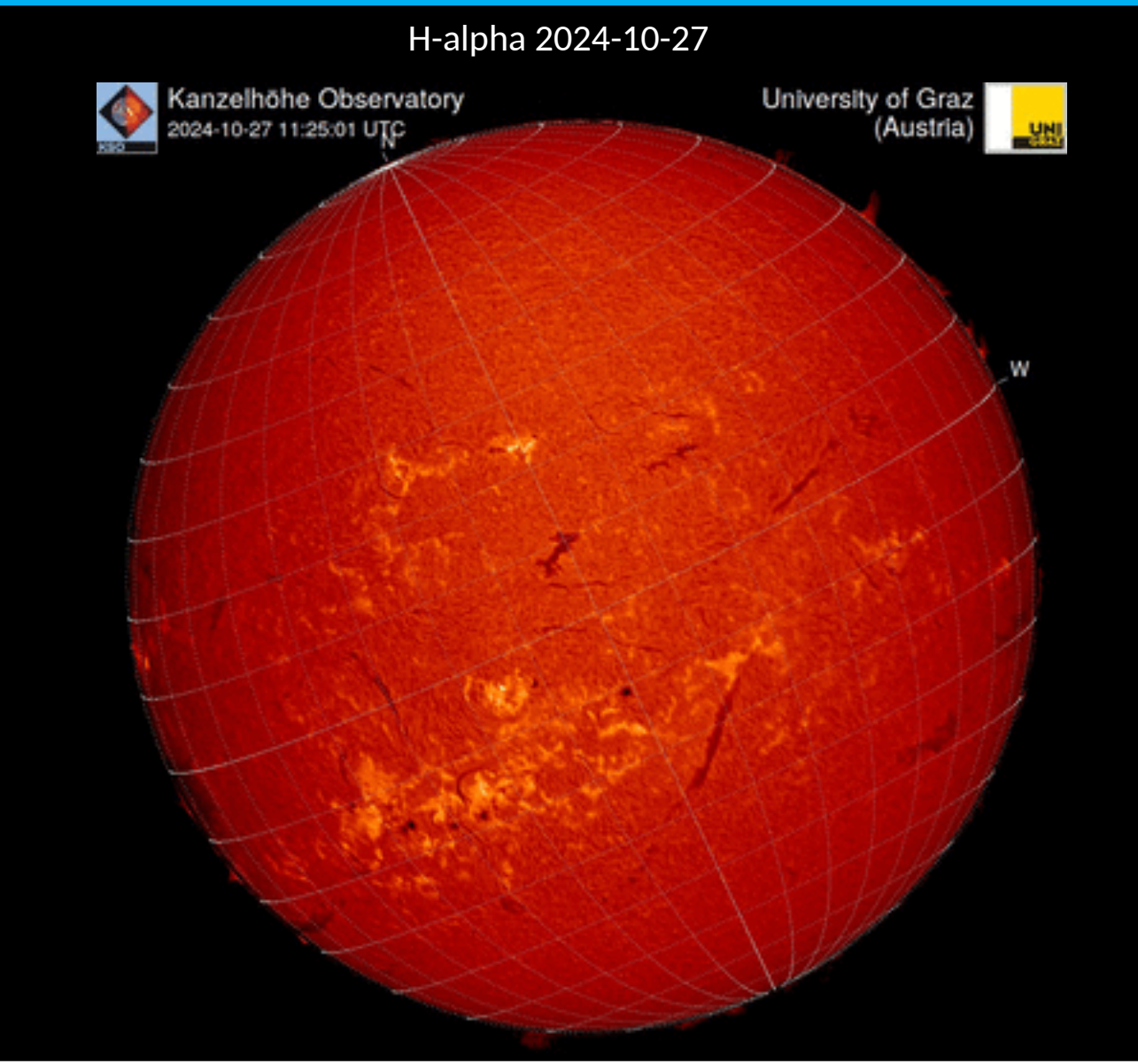


Filaments & Filament eruptions

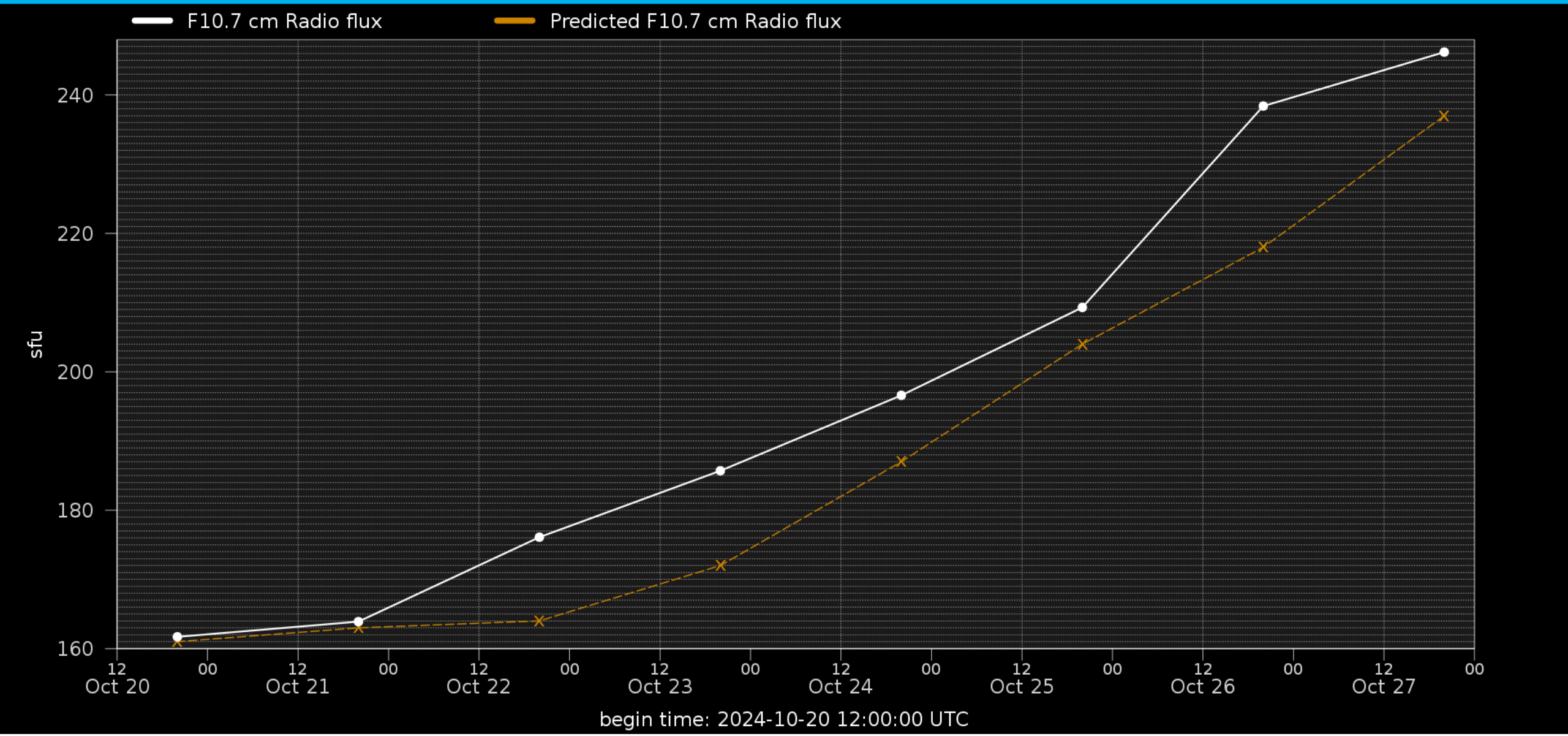
H-alpha 2024-10-20



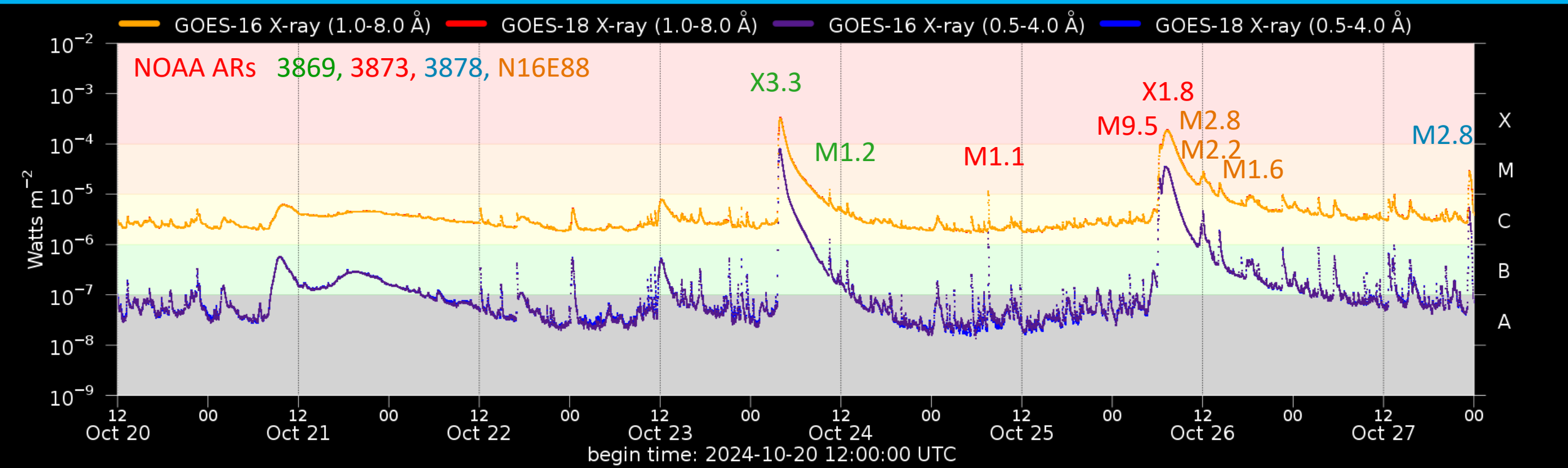
H-alpha 2024-10-27



Solar F10.7cm radio flux



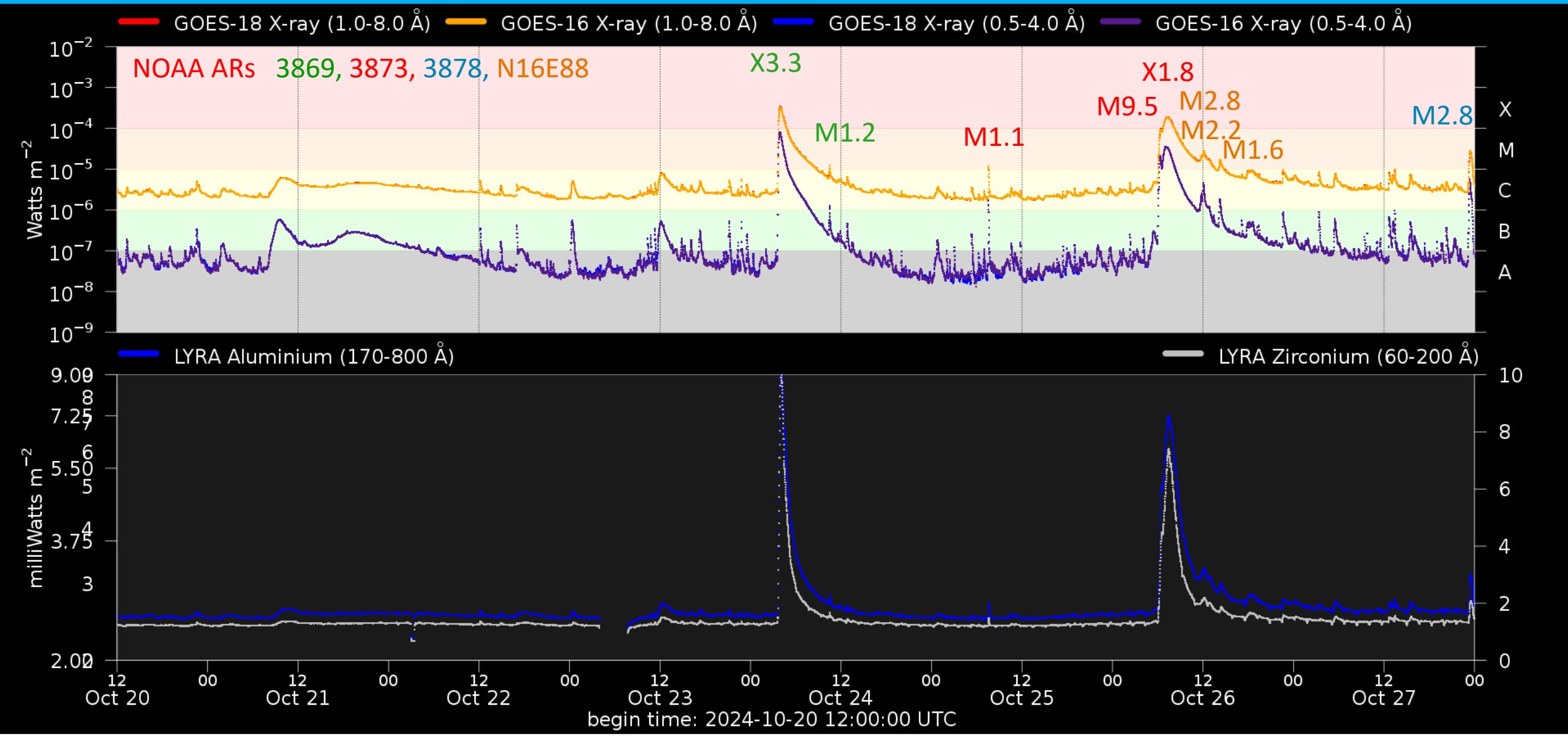
Flaring activity



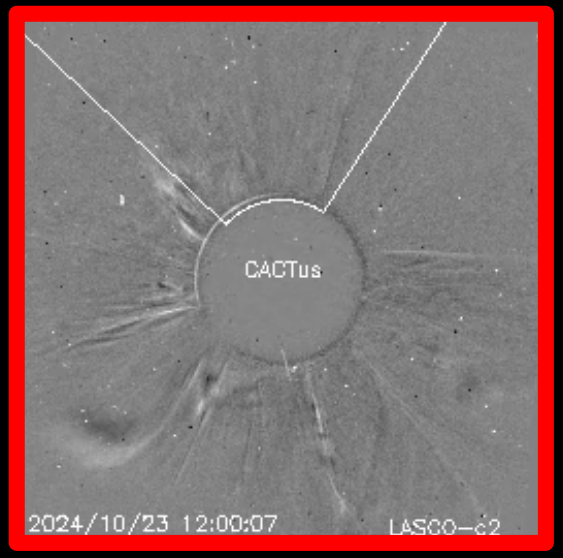
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

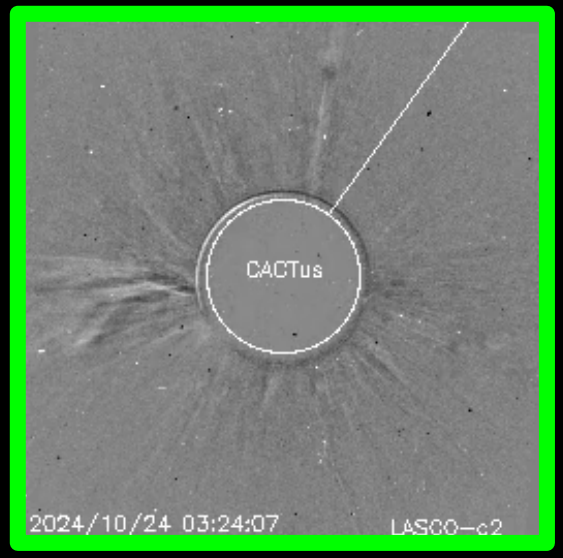
Issue date	2024-10-20	2024-10-21	2024-10-22	2024-10-23	2024-10-24	2024-10-25	2024-10-26	2024-10-27
Probability (%)	92|38|01	99|40|05	95|25|05	99|45|05	99|50|10	99|70|15	99|70|10	99|75|20
Observed (#)	03|00|00	00|00|00	07|00|00	05|01|01	06|01|00	04|02|01	04|02|00	05|01|00

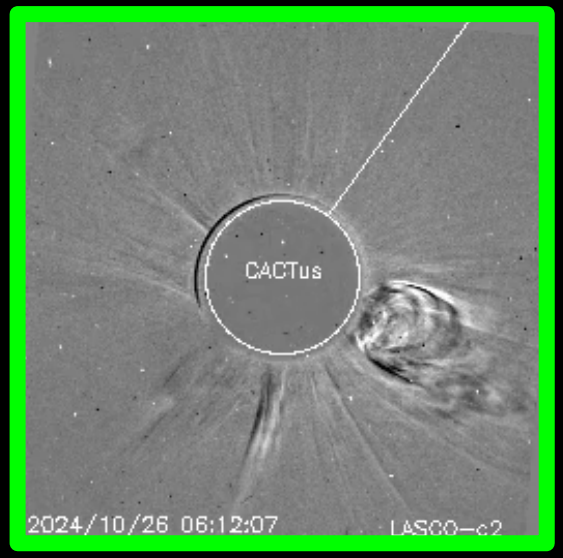
Solar X-Ray and UV flux

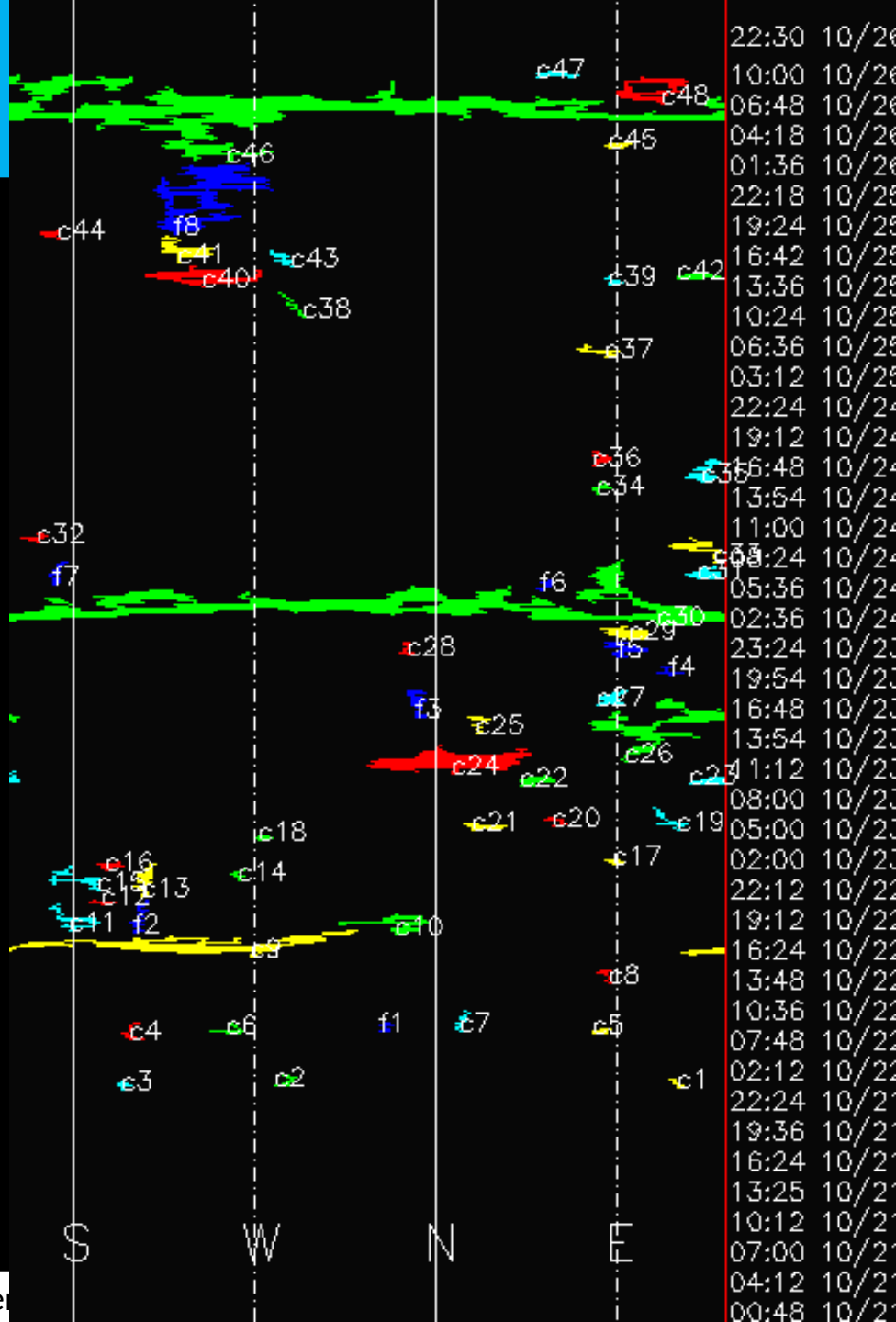


Coronal Mass Ejections



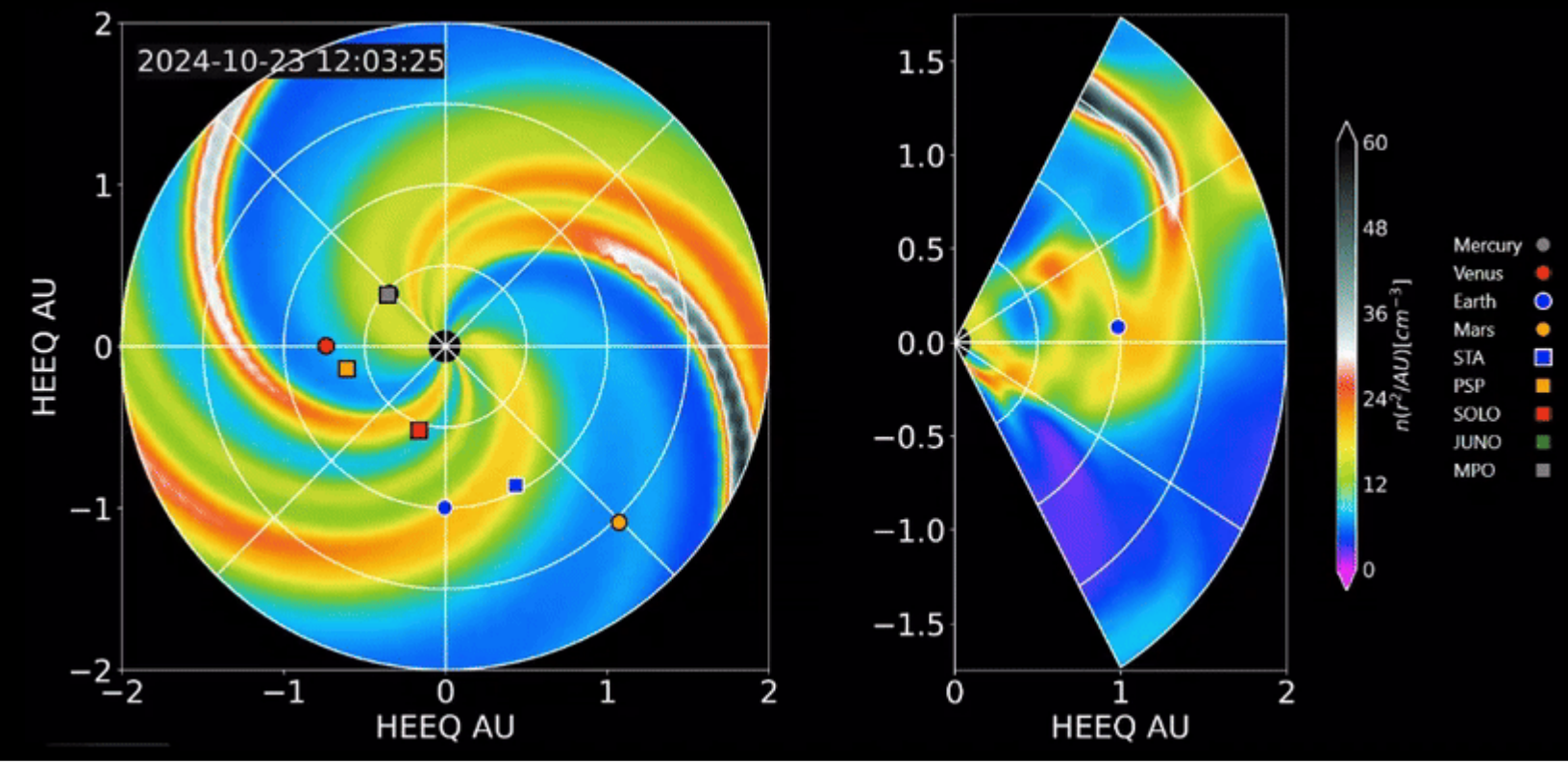


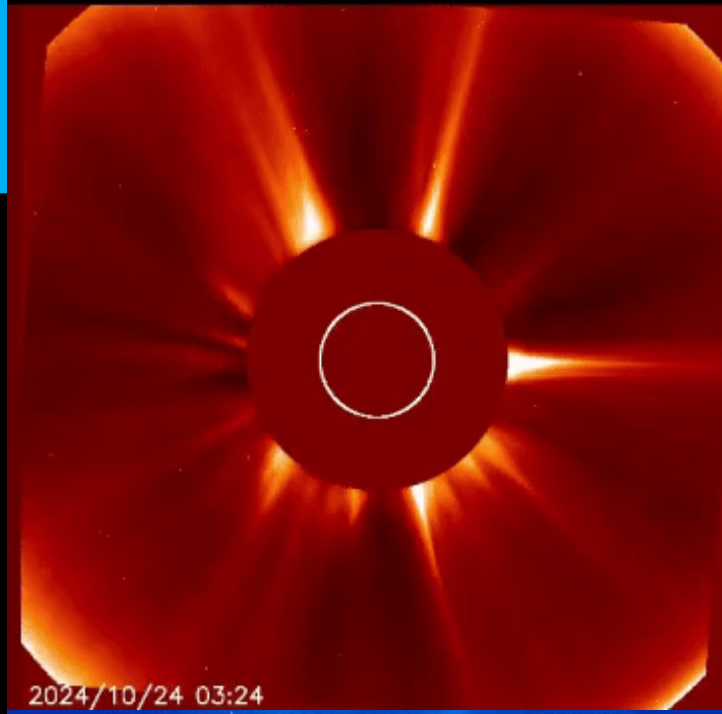


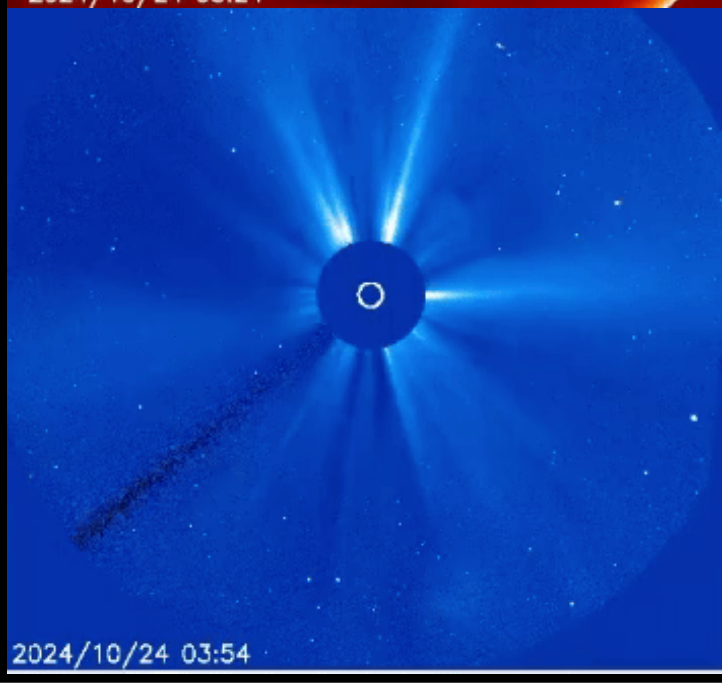


Coronal Mass Ejections

When: 03:48 UTC on October 24
Associated to GOES X3.3 flare, **peak time 03:57 UTC, on Oct 24, type II and type IV radio emission, detected at 03:46 UTC on Oct 24, coronal wave.**
Prediction: Predicted arrival at Earth early on Oct 26
Shock detected: 15:34 UTC on Oct 26

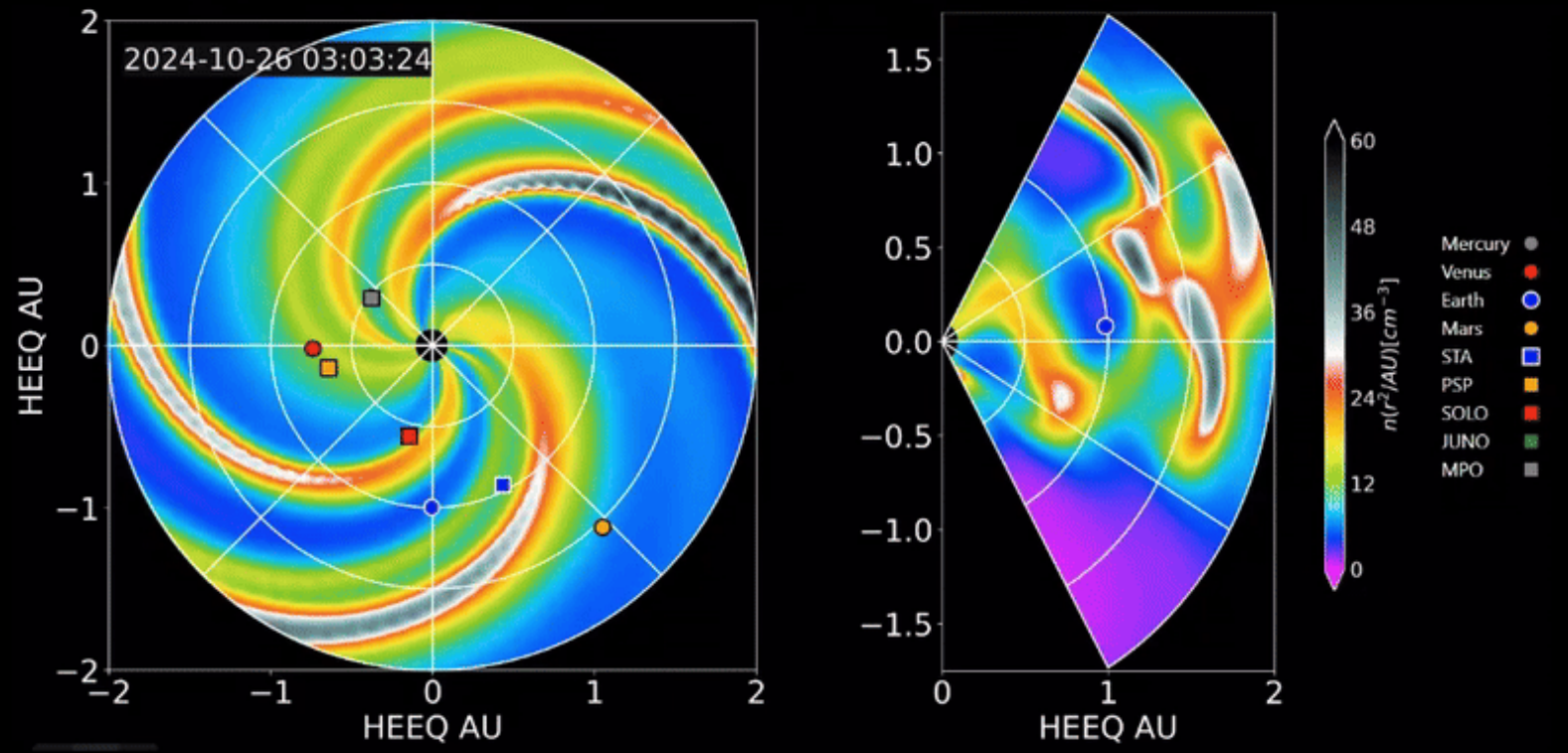


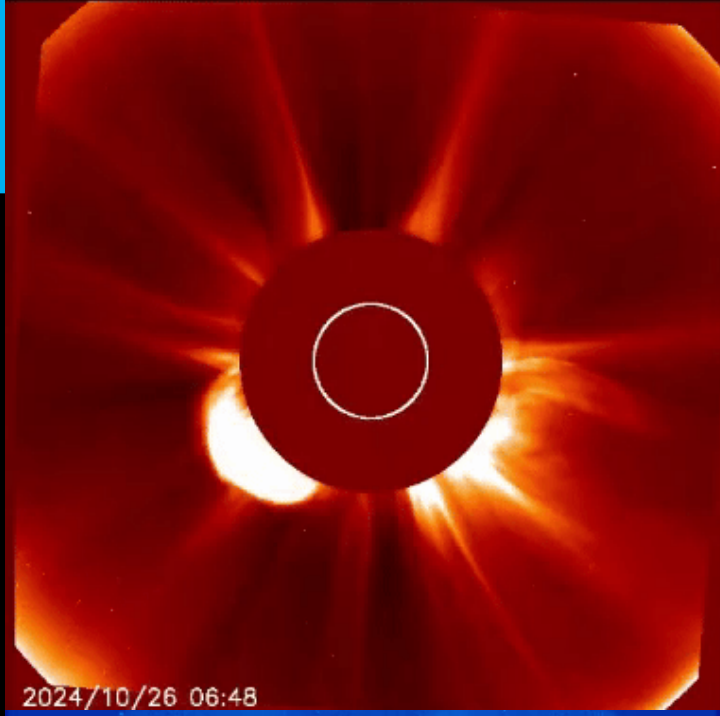


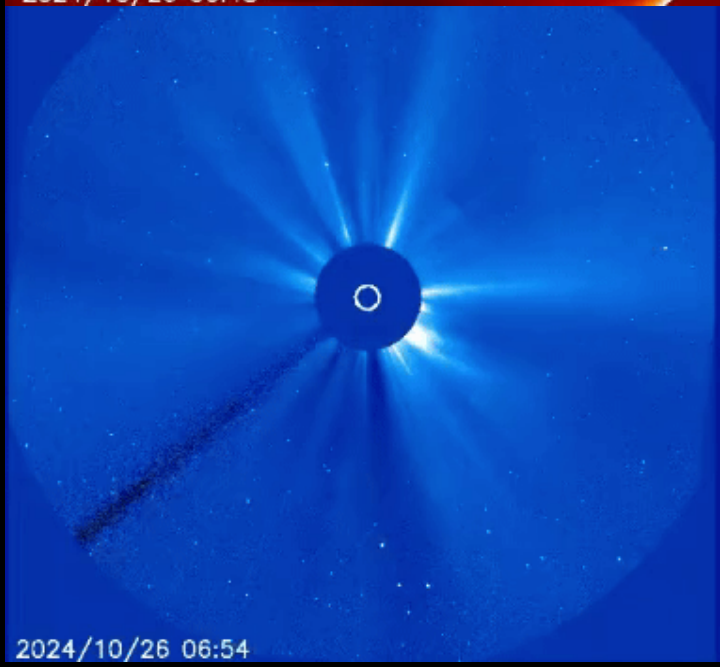


Coronal Mass Ejections

When: 06:48 UTC on October 26
Associated to GOES X1.8 flare, **peak time 07:19 UTC on Oct 26, type II and type IV radio emission, detected at 06:29 UTC on Oct 29, coronal wave.**
Prediction: Predicted arrival at Earth at 06:00 on Oct 28
Shock detected: 04:14 UTC on Oct 28







Solar Wind and

Geomagnetic Activity

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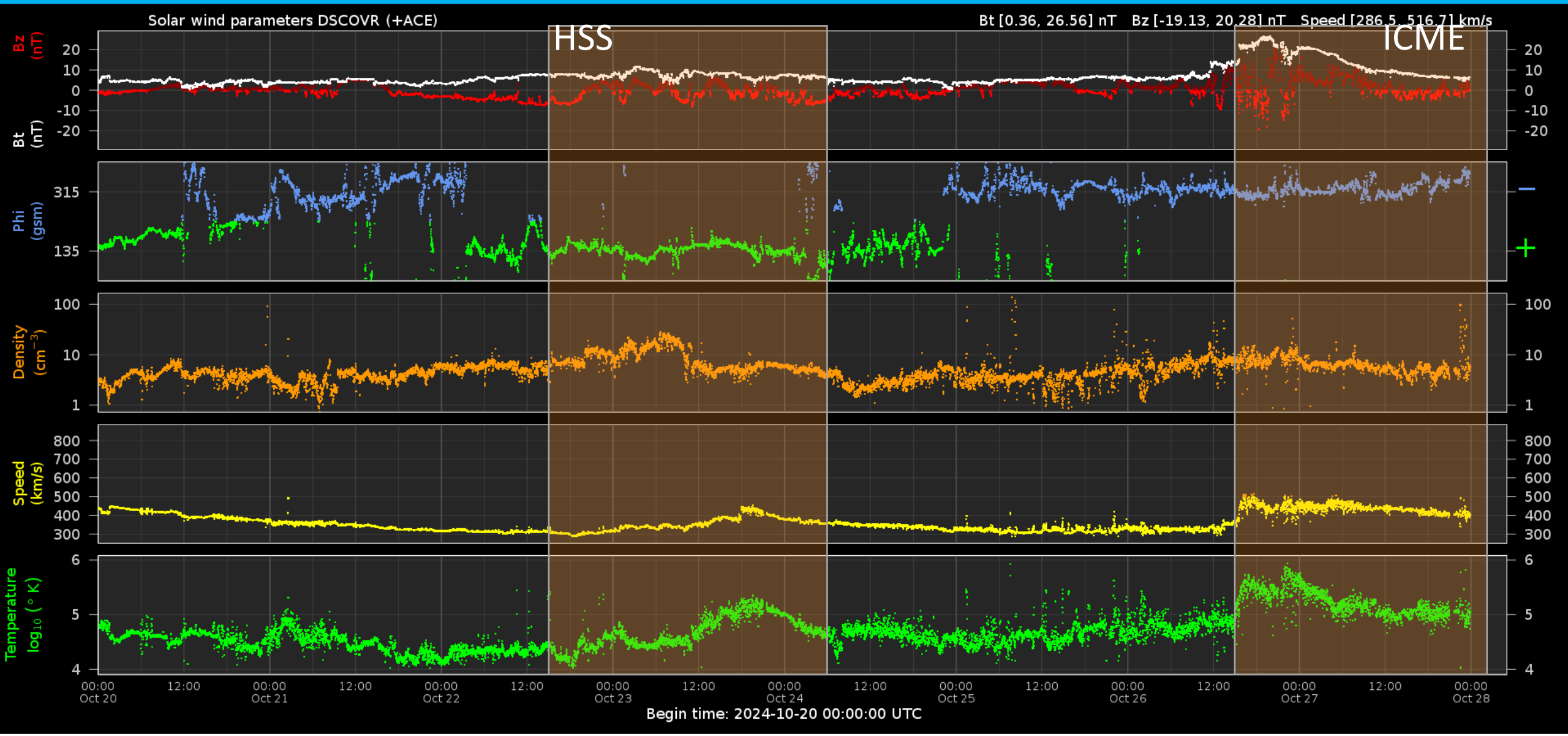
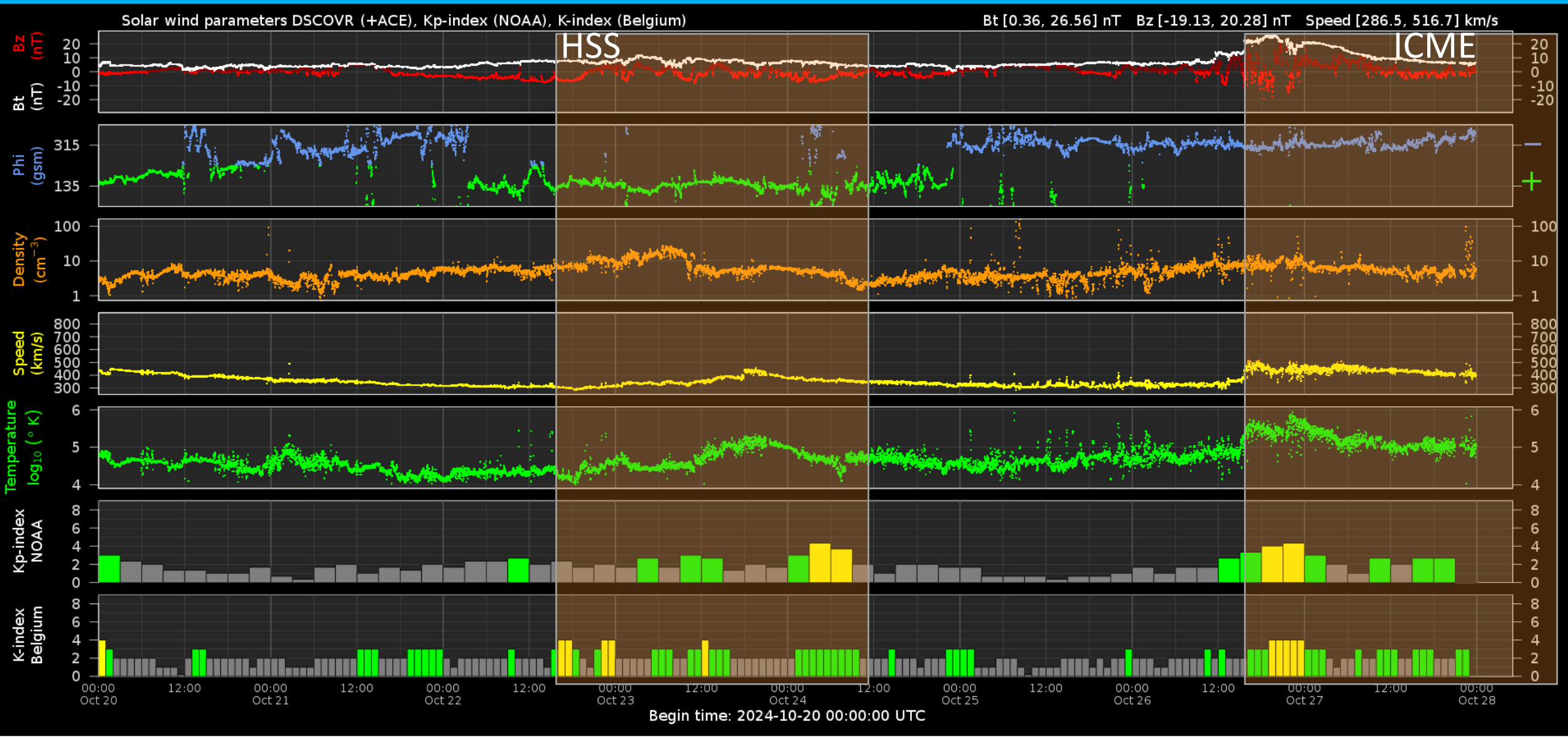
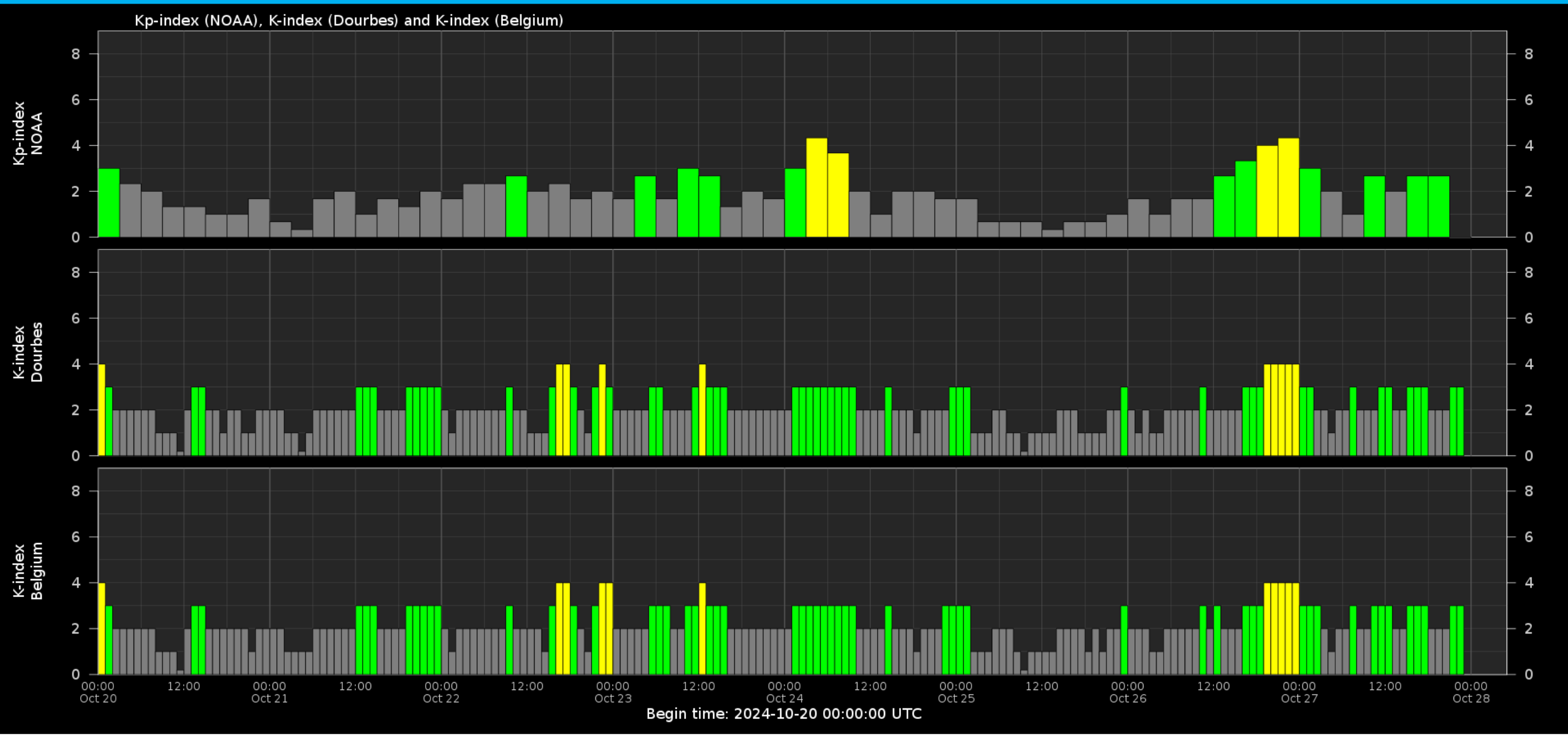
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



Energetic Particles

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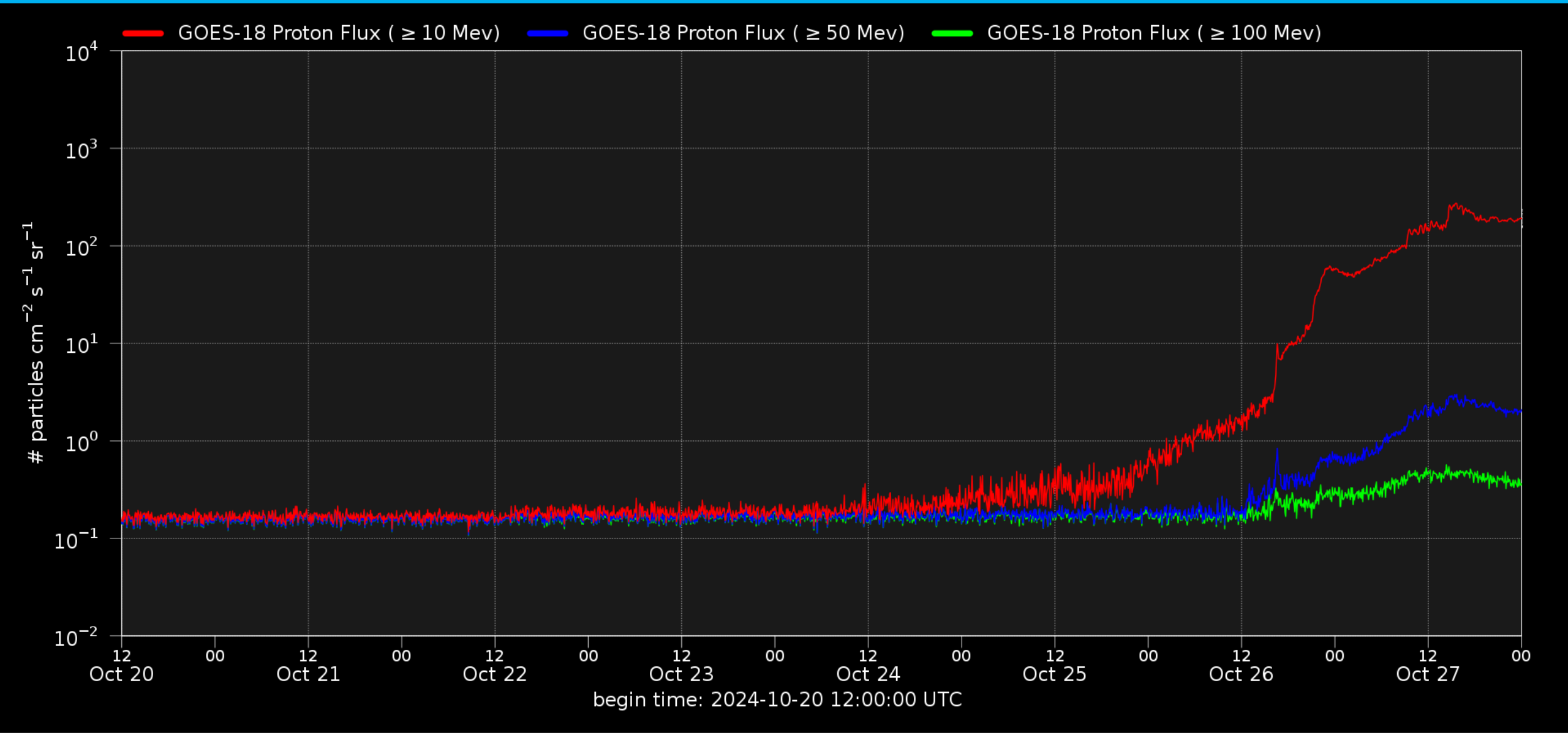
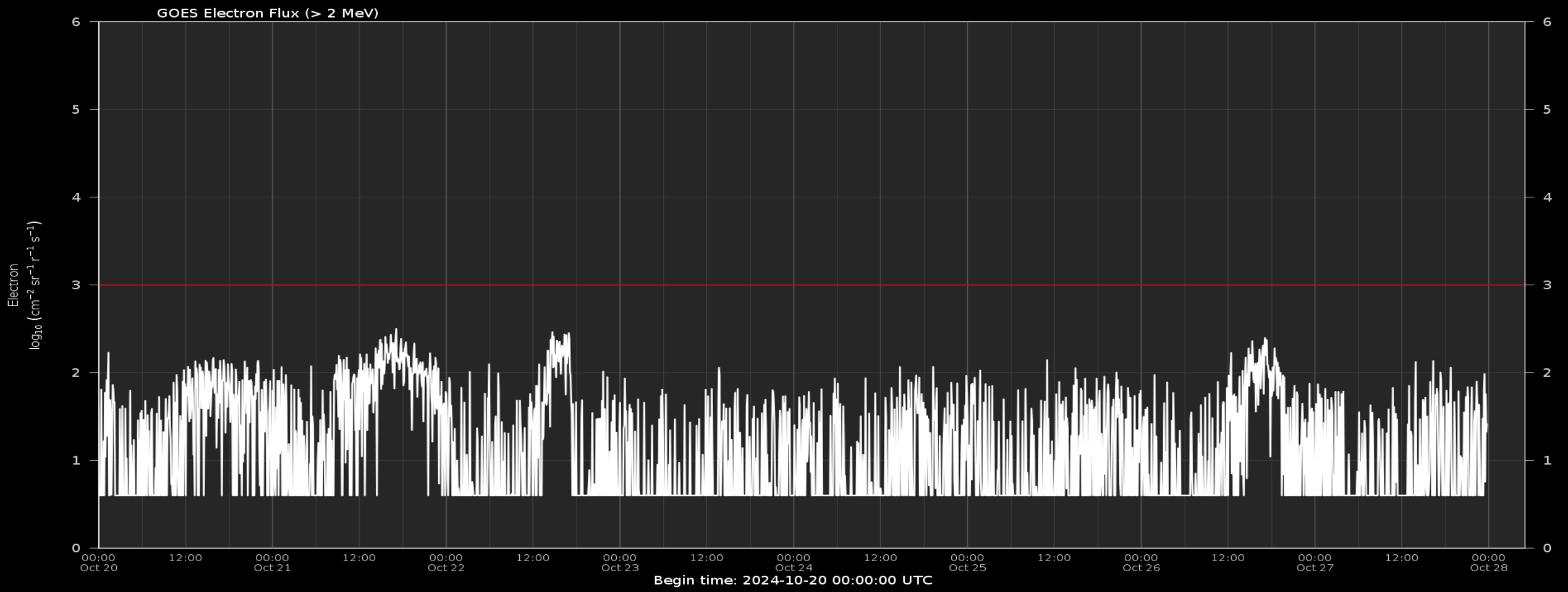
Solar proton flux



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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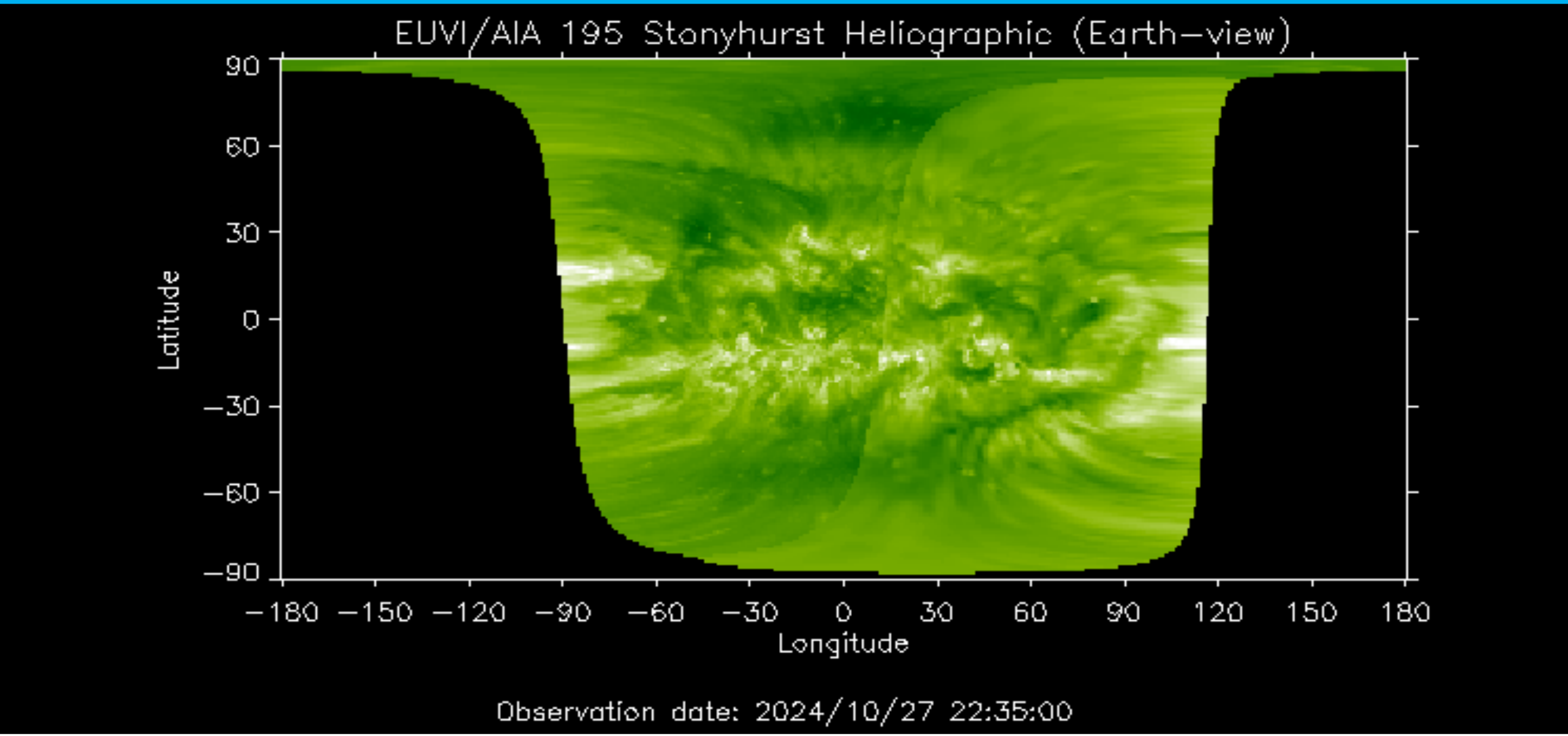
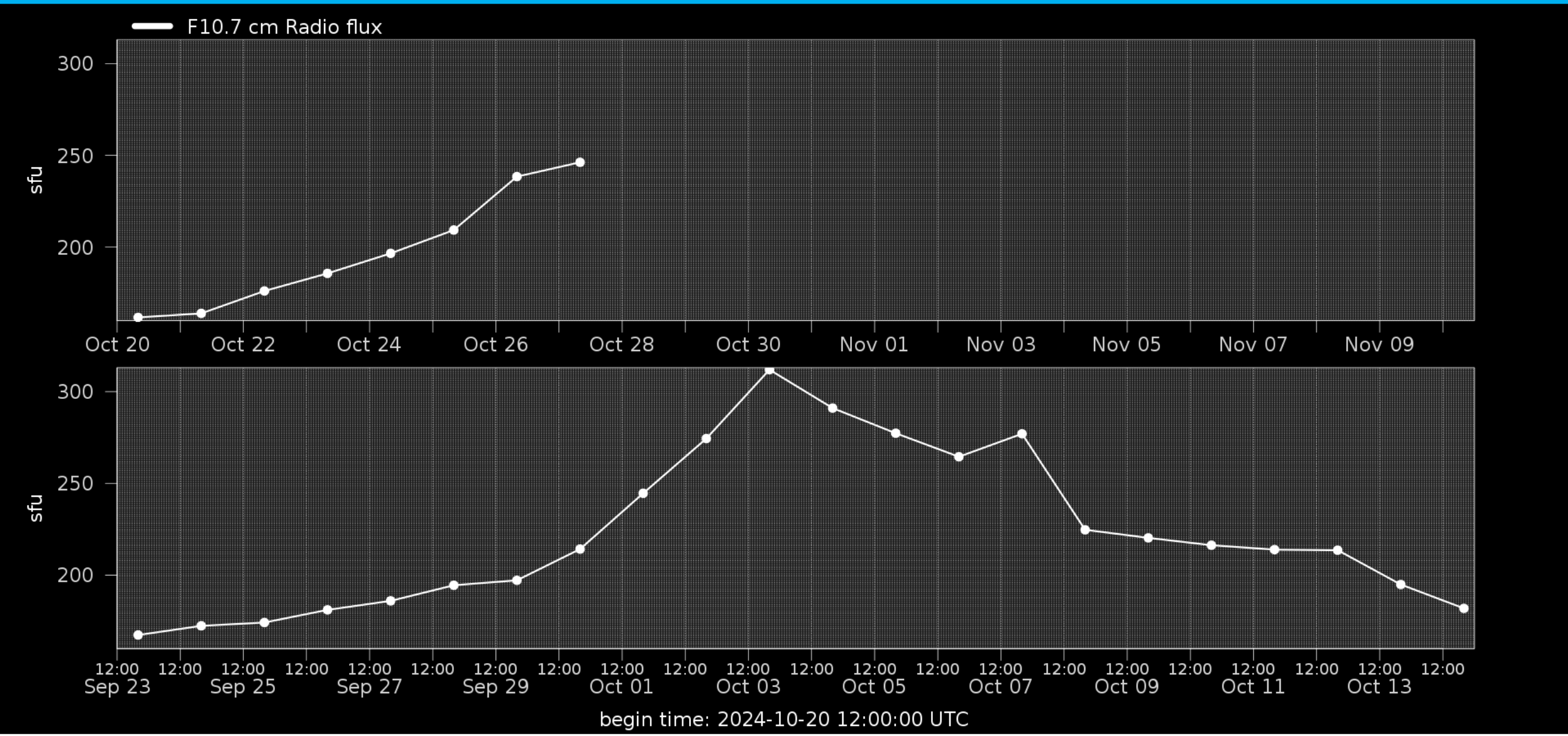
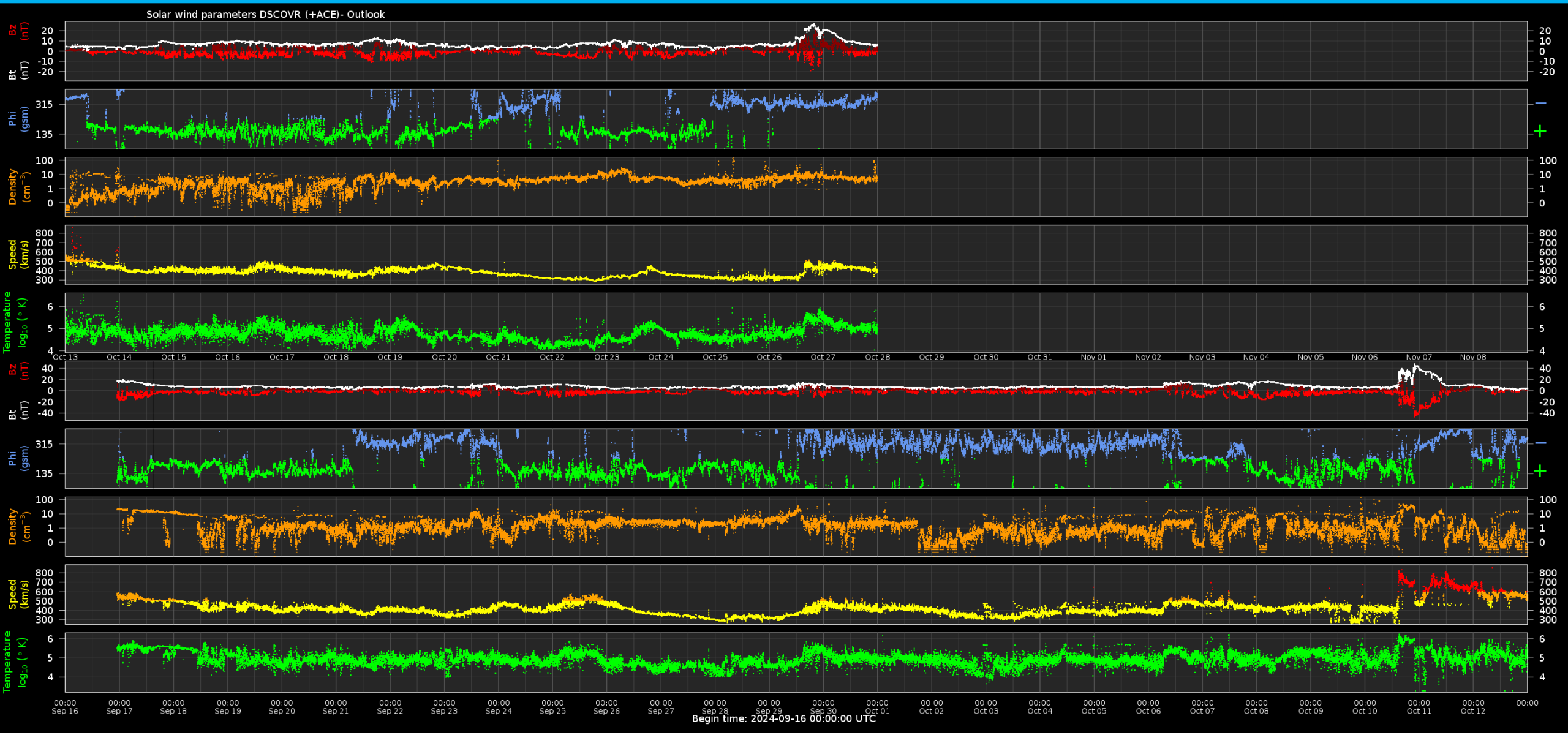
Outlook: Solar activity



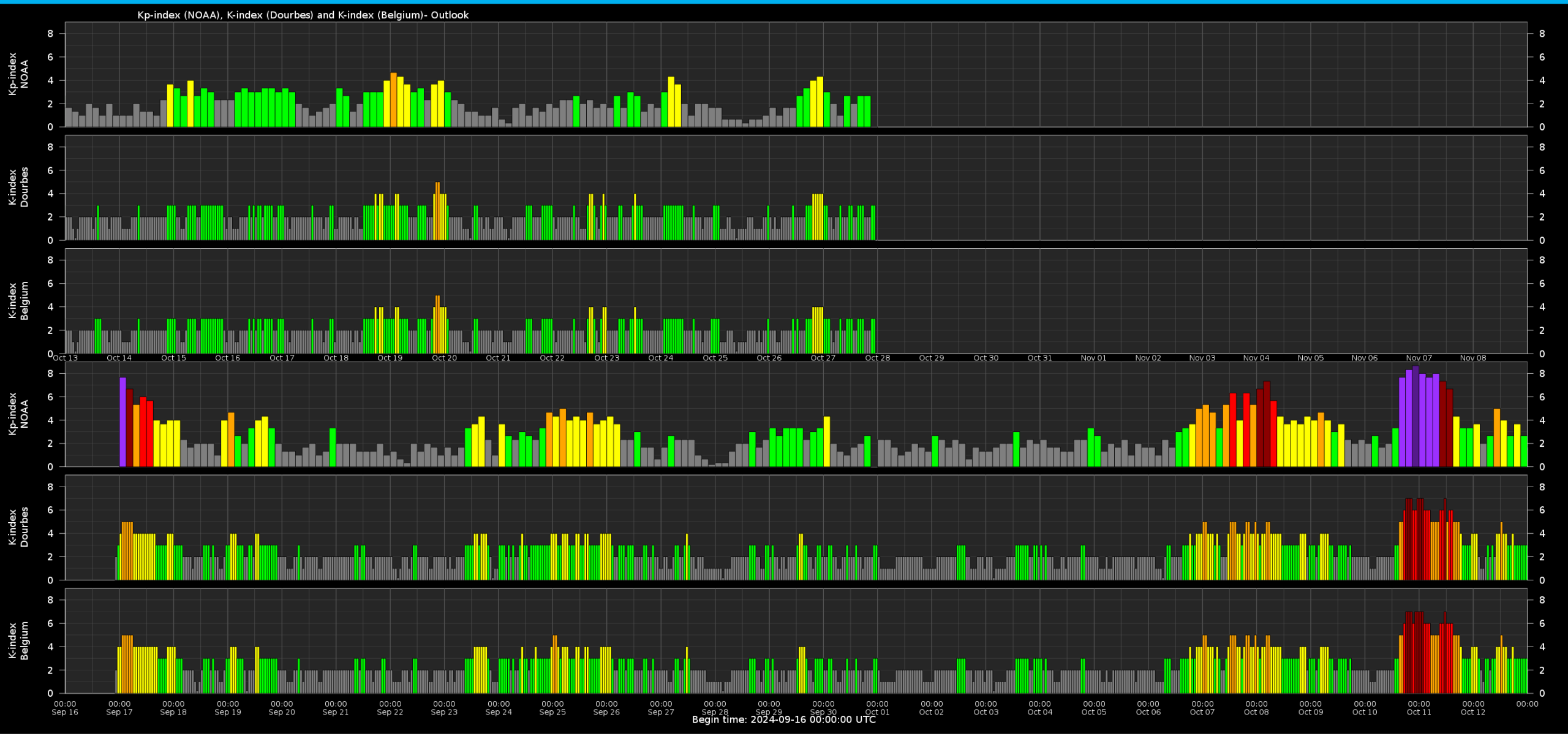
Outlook: Solar F10.7cm radio flux



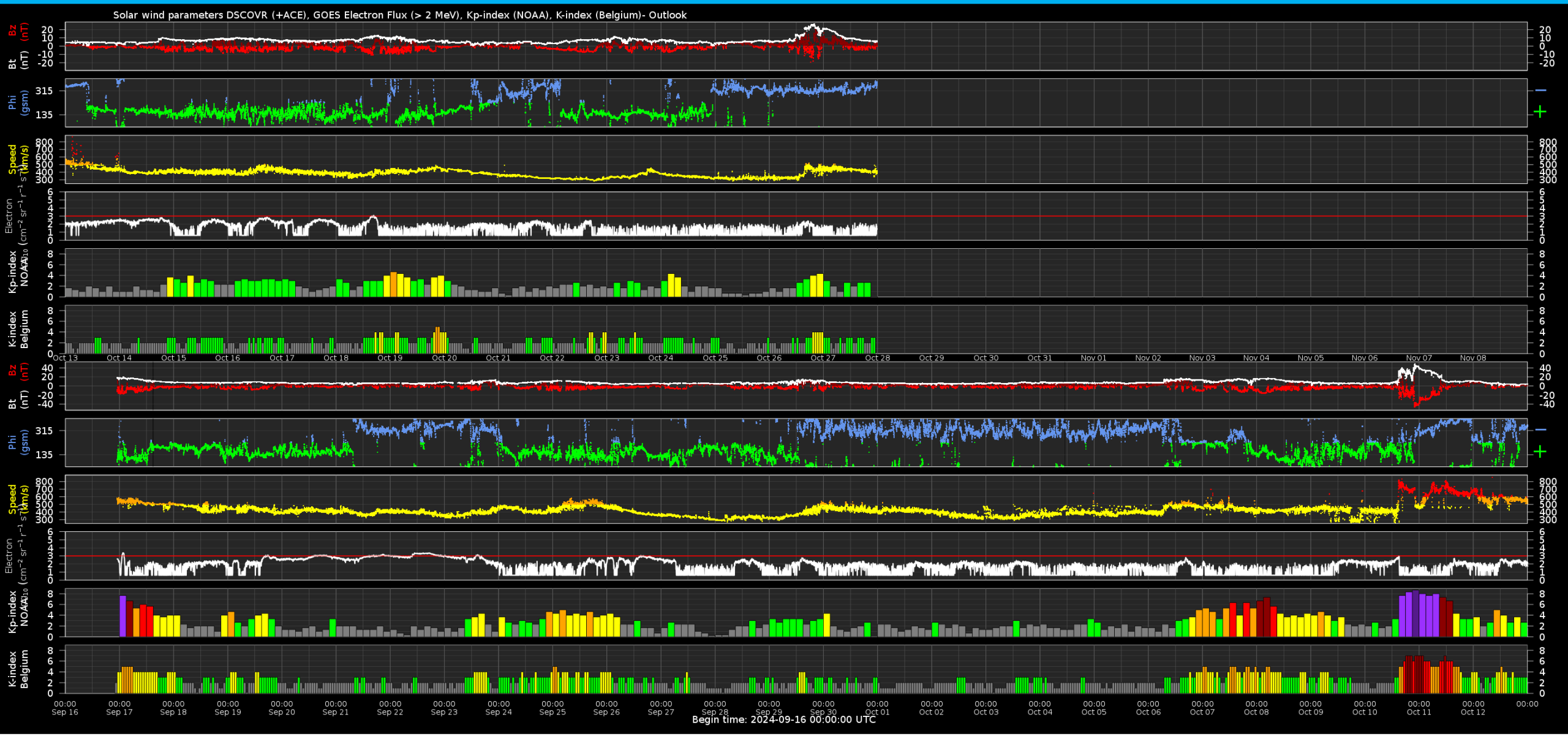
Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS

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Pecasus related events

SWF, PCA, AS, PS and VTEC

SIDC Space Weather Briefing

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