

# SIDC Space Weather Briefing

03 October 2021 - 10 October 2021

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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 2021-10-03 12:00 to 2021-10-10 23:59

Active regions	Several active regions including NOAA AR-2882/Catania-58 with <b>M1.6-class flare + Dimming + CME</b>
Flares	# C-class flare: 6 # M-class flare: 1 # X-class flare: 0
Filament eruptions	None
Coronal Holes	Equatorial coronal hole has reached the central meridian on Oct 9

Proton flux	Minor enhancement
Electron flux	Background levels

Solar wind and geomagnetic conditions

ICME	None (yet)
SW Conditions	B : 0.7 - <b>12.17</b> nT // Bz: <b>-11.09</b> nT to <b>9.88</b> nT // Speed: 244.6 - 471.9km/s
K-indices	max K-index (Dourbes): 4 max Kp-index (NOAA): 4

All Quiet Alert: not all quiet

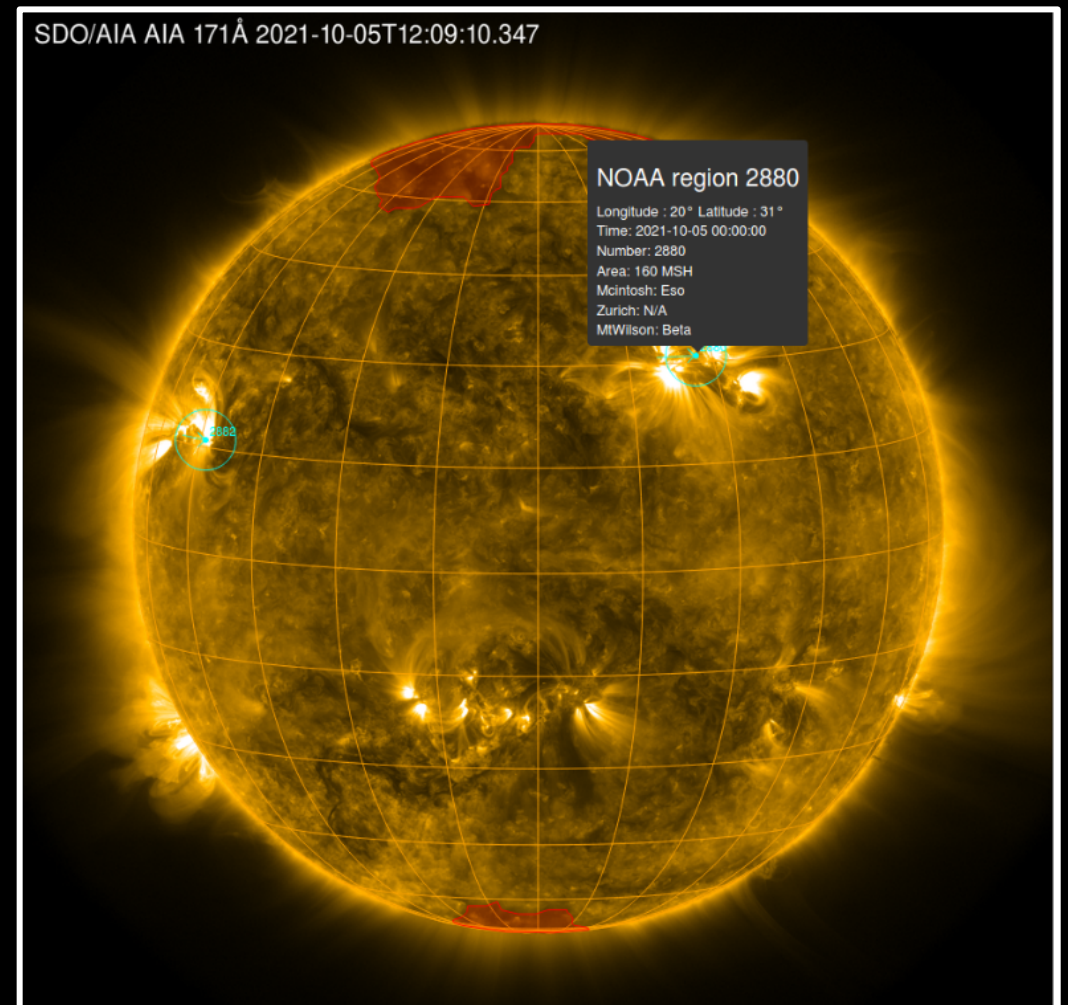
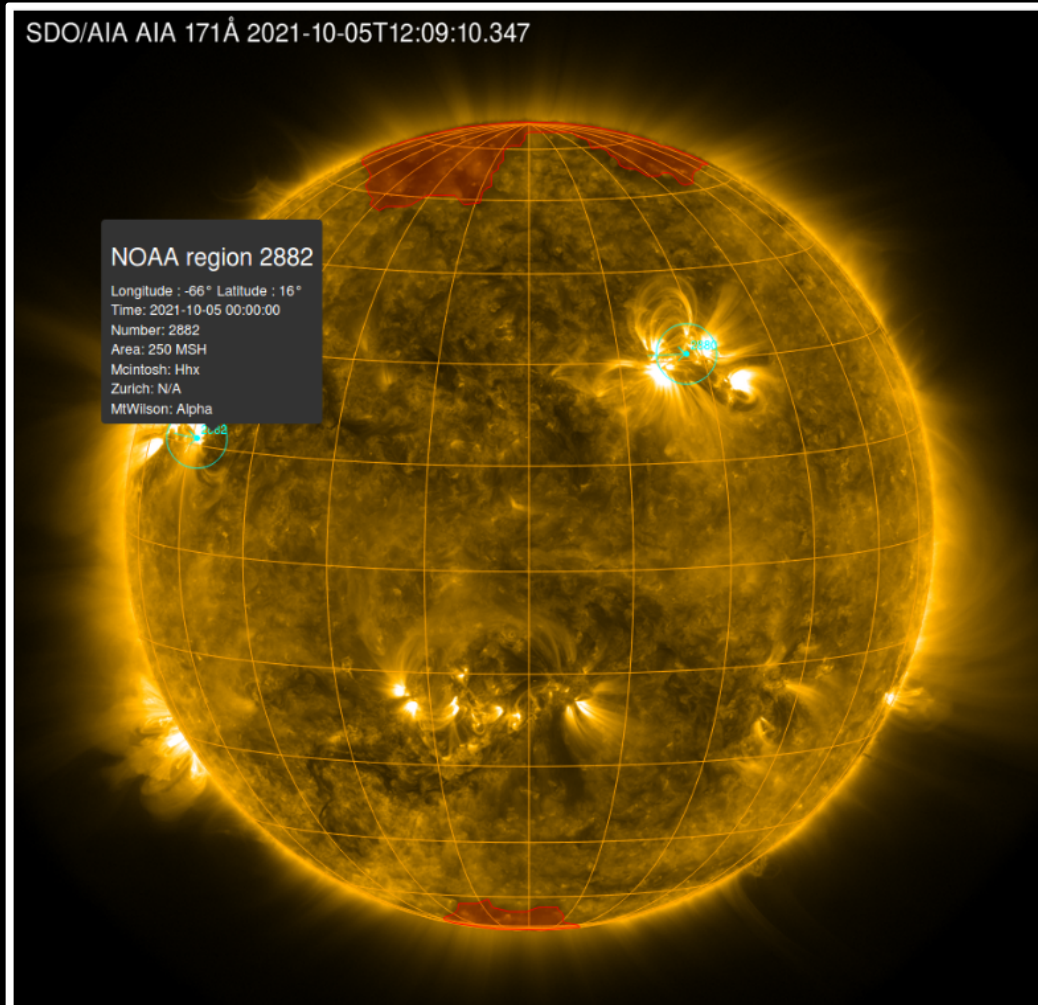
# Solar Activity



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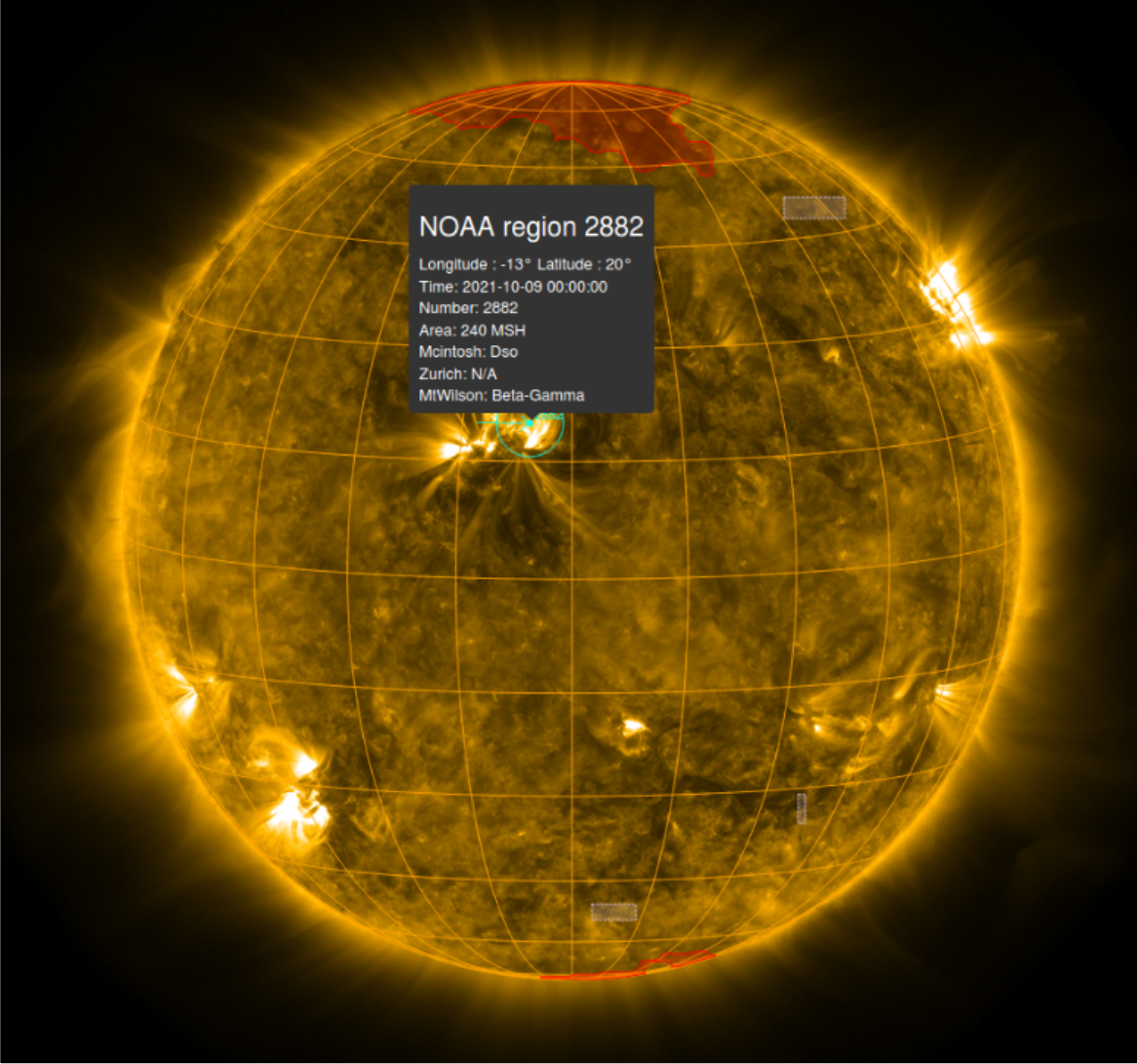
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# Solar active regions – Beginning of the week



# Solar active regions – Oct. 9

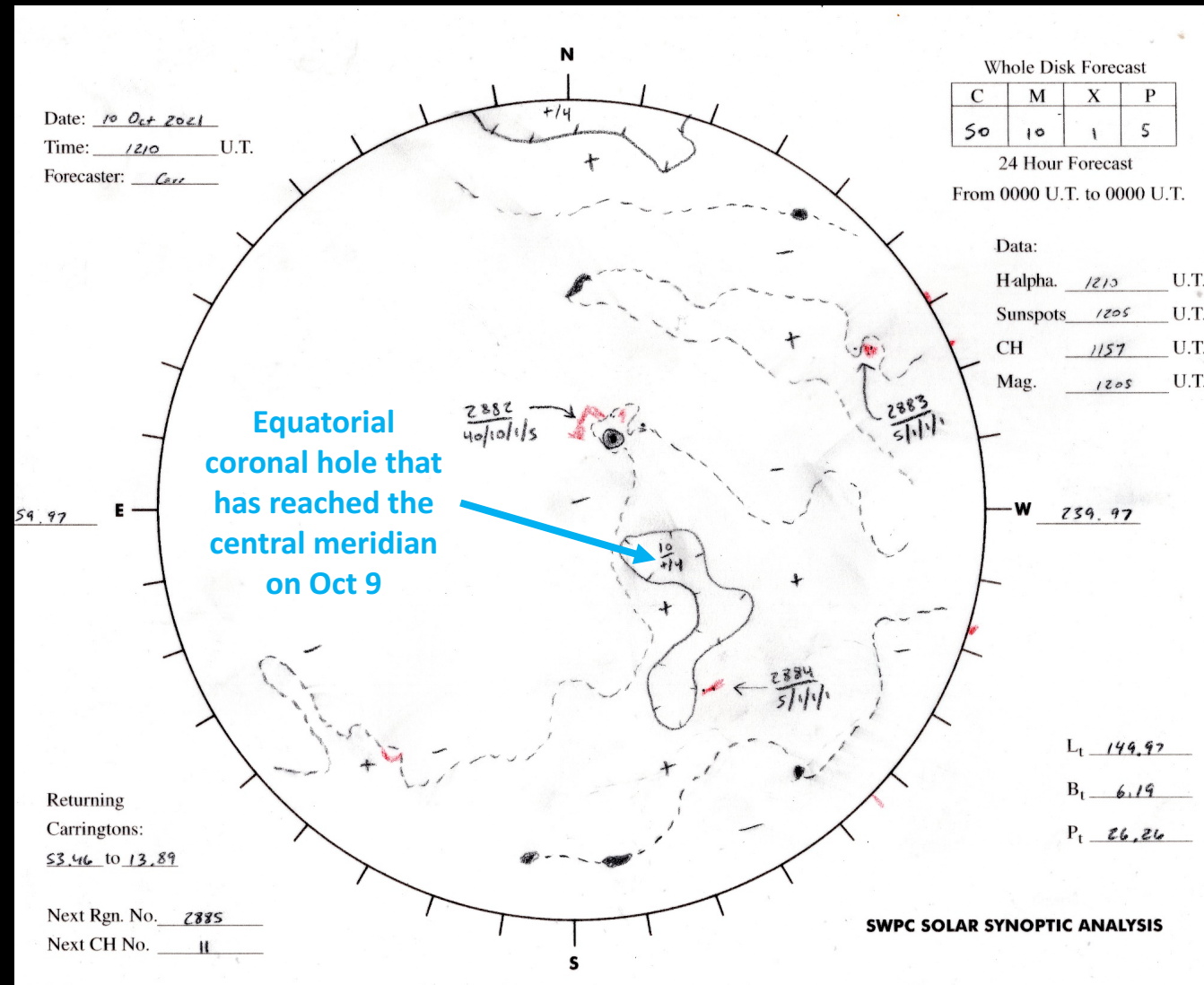
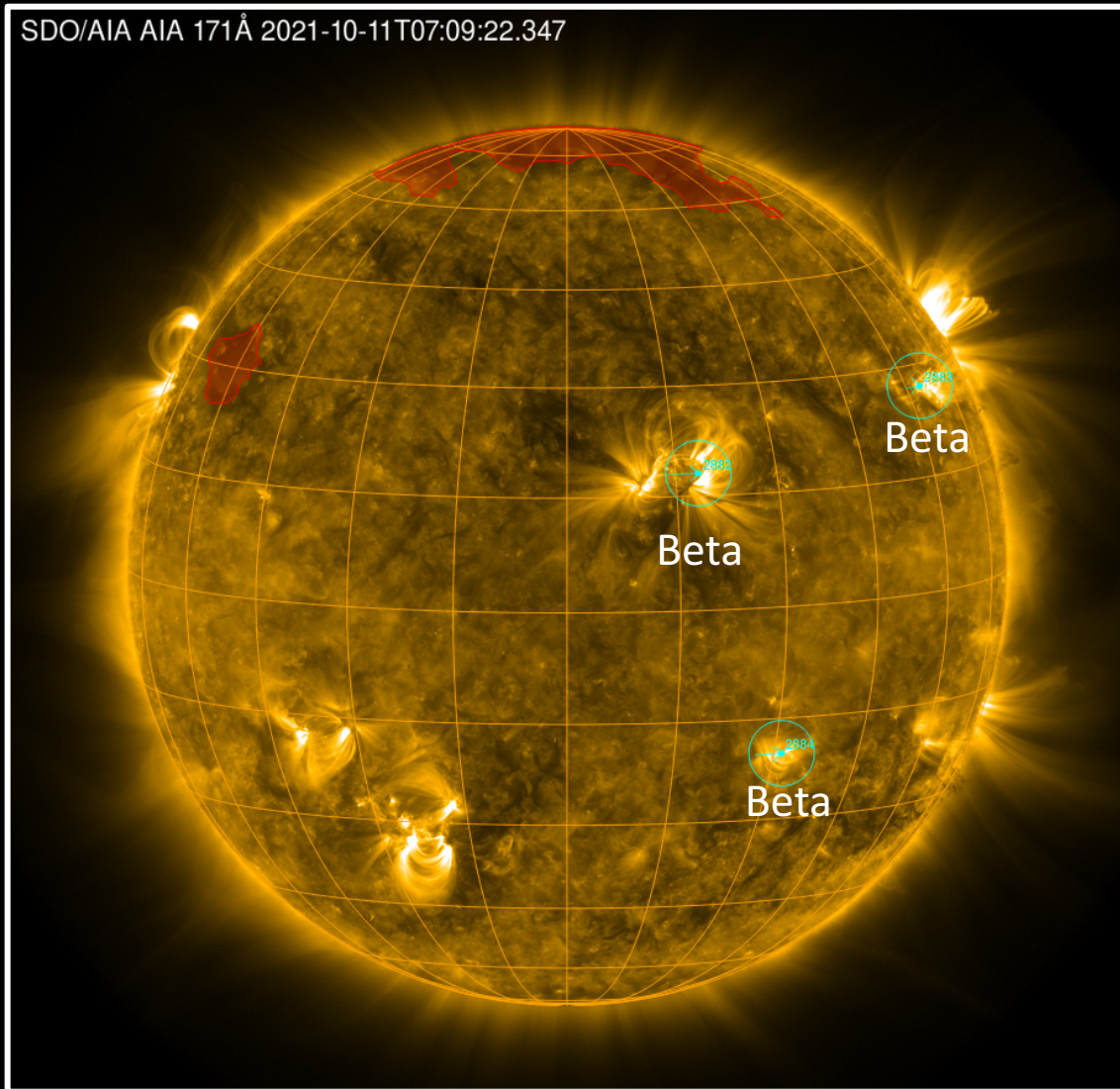
SDO/AIA AIA 171Å 2021-10-09T12:09:10.347



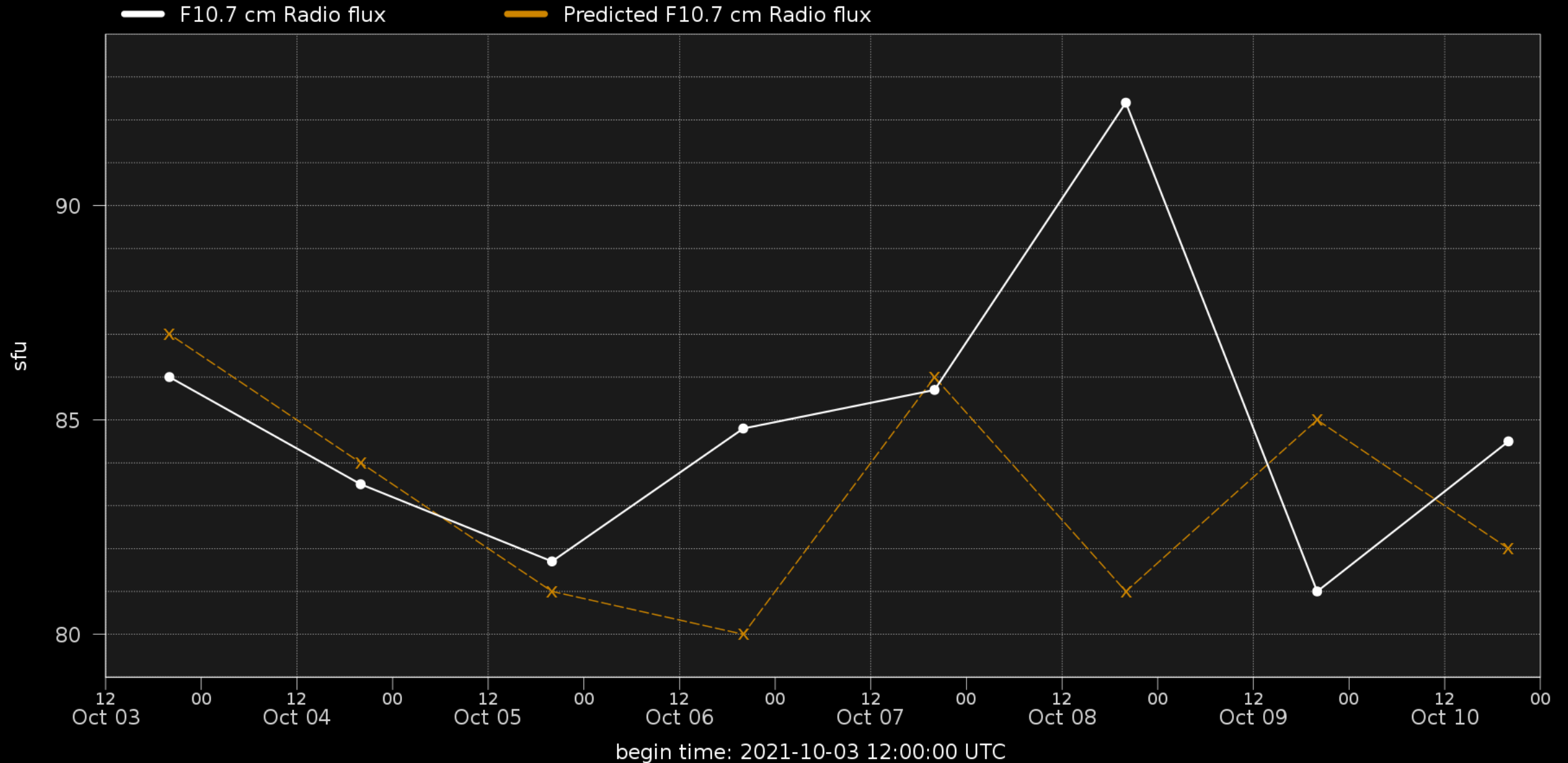
Catania sunspots group 58  
(NOAA AR-2882)  
has produced several C-class flares  
and a M1.6-class flare peaking at  
06:38 UTC on Oct 9.

A coronal mass ejection and a coronal  
dimming was associated to the M1.6-  
class flare

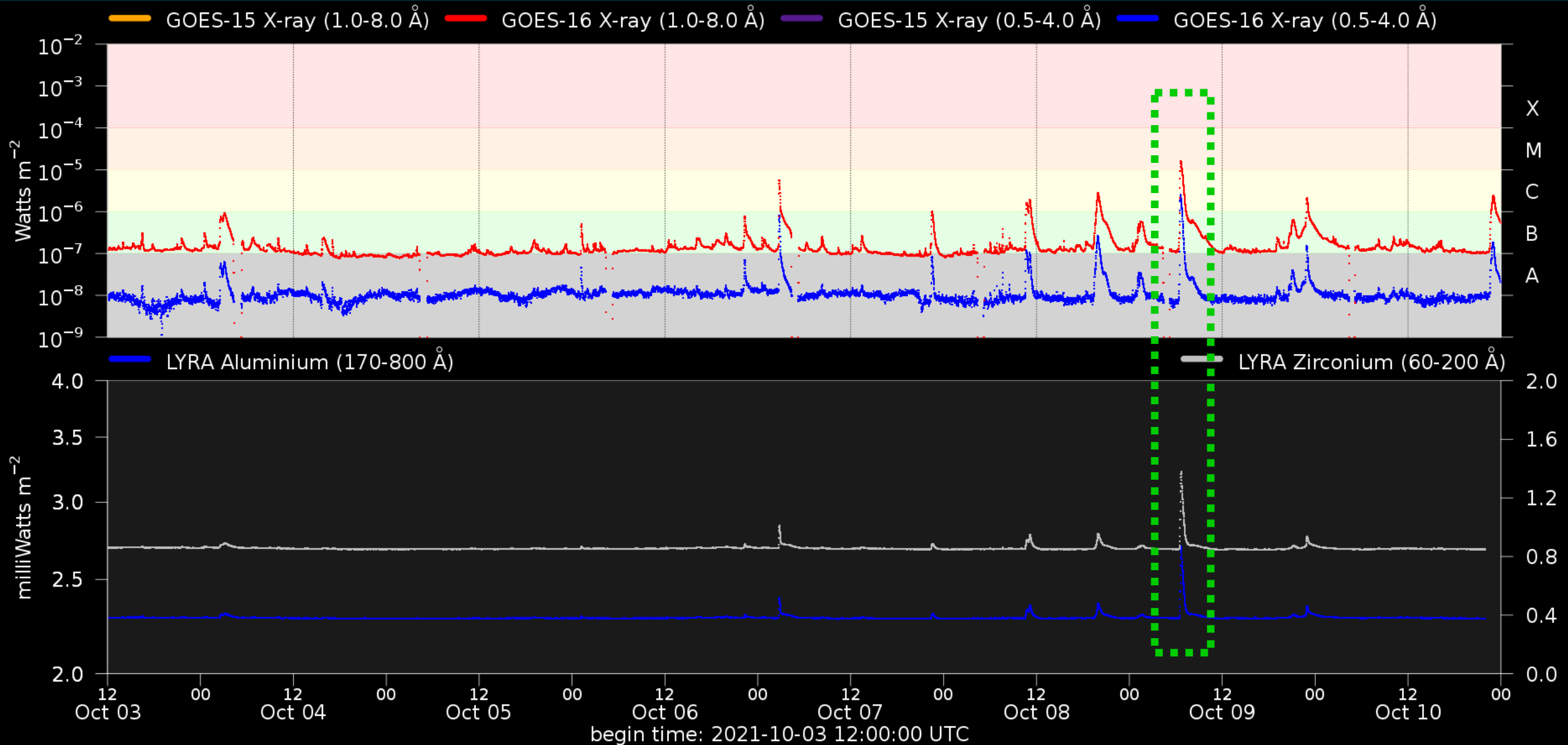
# Solar active regions and Coronal hole - Today



# Solar F10.7cm radio flux

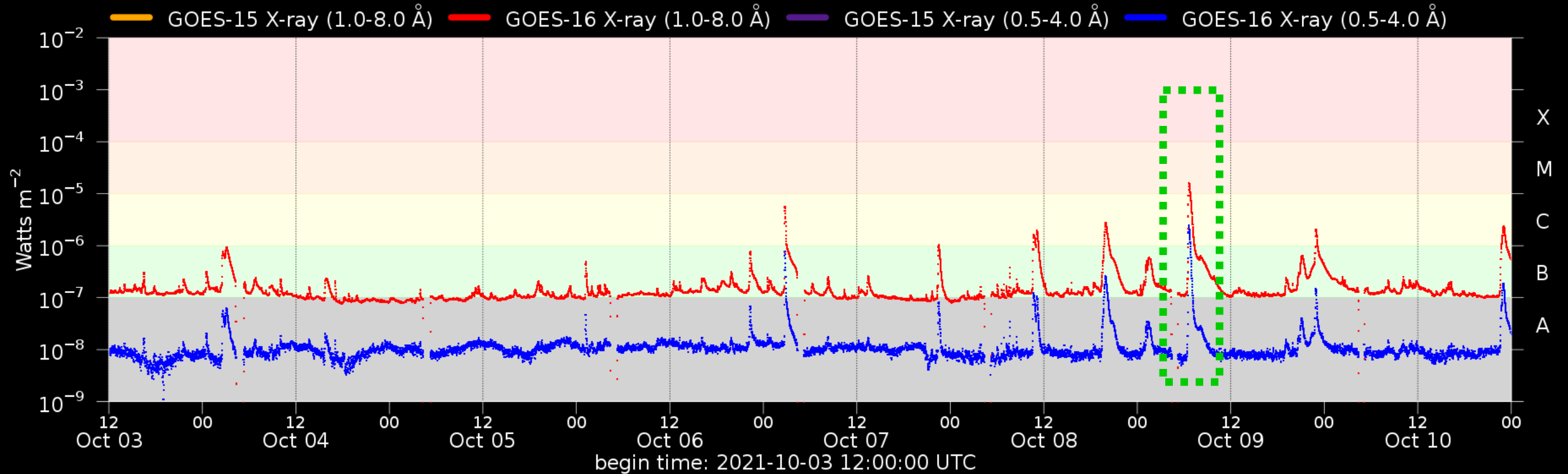


# Solar X-Ray and UV flux





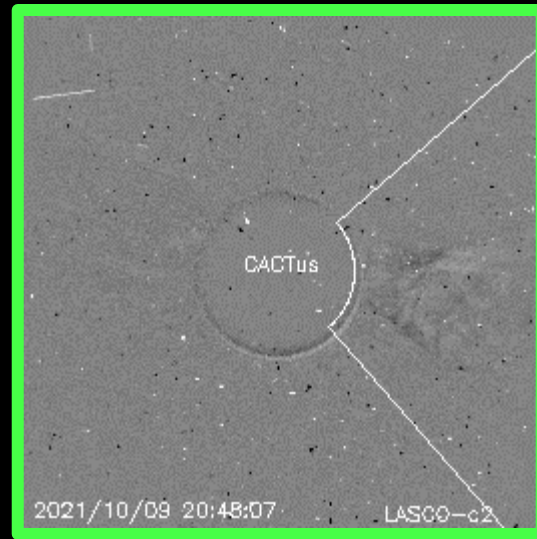
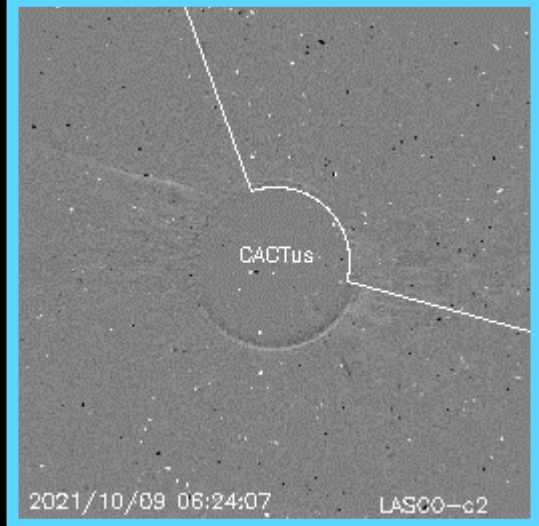
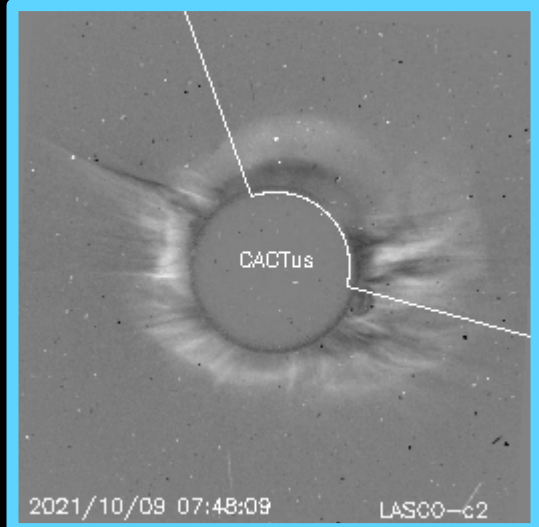
# Flaring activity



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

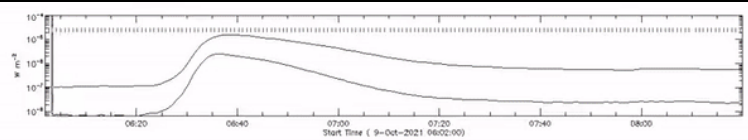
Issue date	2021-10-03	2021-10-04	2021-10-05	2021-10-06	2021-10-07	2021-10-08	2021-10-09	2021-10-10
Probability (%)	55 01 01	23 01 01	25 01 01	23 01 01	62 05 01	55 15 01	60 15 00	60 10 01
Observed (#)	00 00 00	00 00 00	00 00 00	01 00 00	03 00 00	01 01 00	01 00 00	01 00 00

# Coronal Mass Ejections

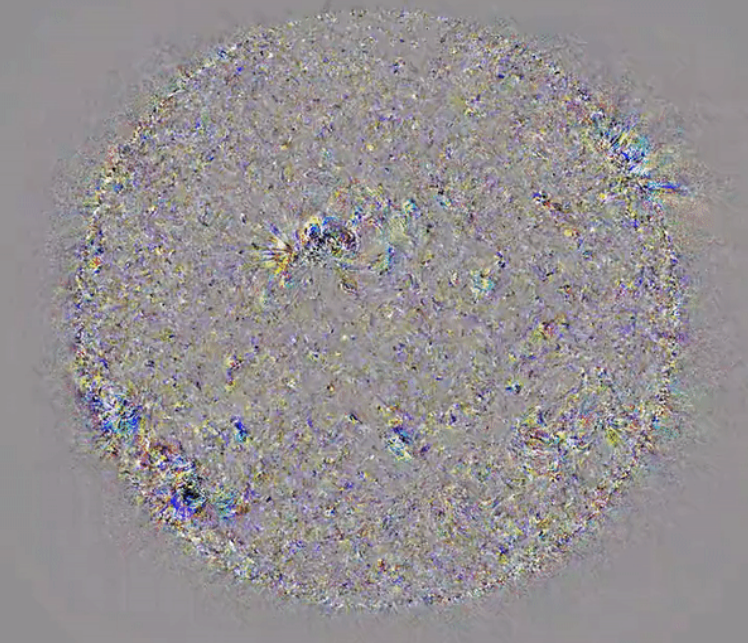


# Full halo coronal mass ejection

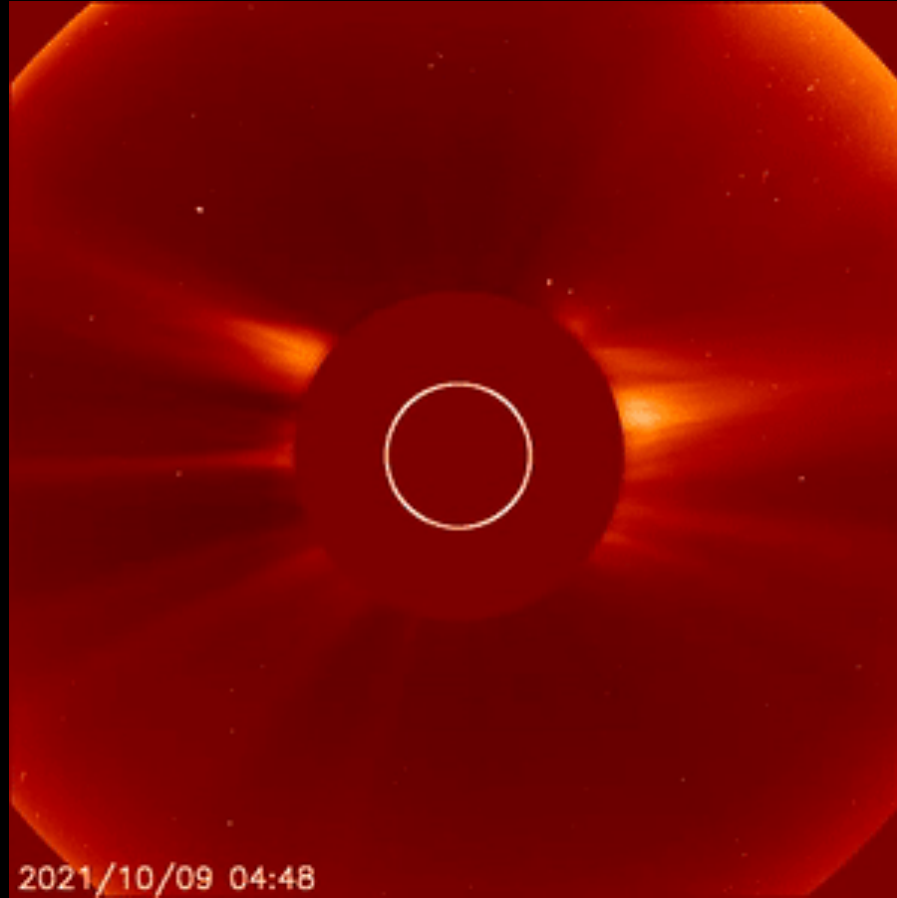
Full halo coronal mass ejection and a coronal dimming was associated to the M1.6-class flare produced in Catania sunspots group 58 (NOAA AR-2882) on Oct 9 at 06:38 UTC



2021/10/09



0211Å (R) 06:03:33 0193Å (G) 06:03:28 0171Å (B) 06:03:33



2021/10/09 04:48

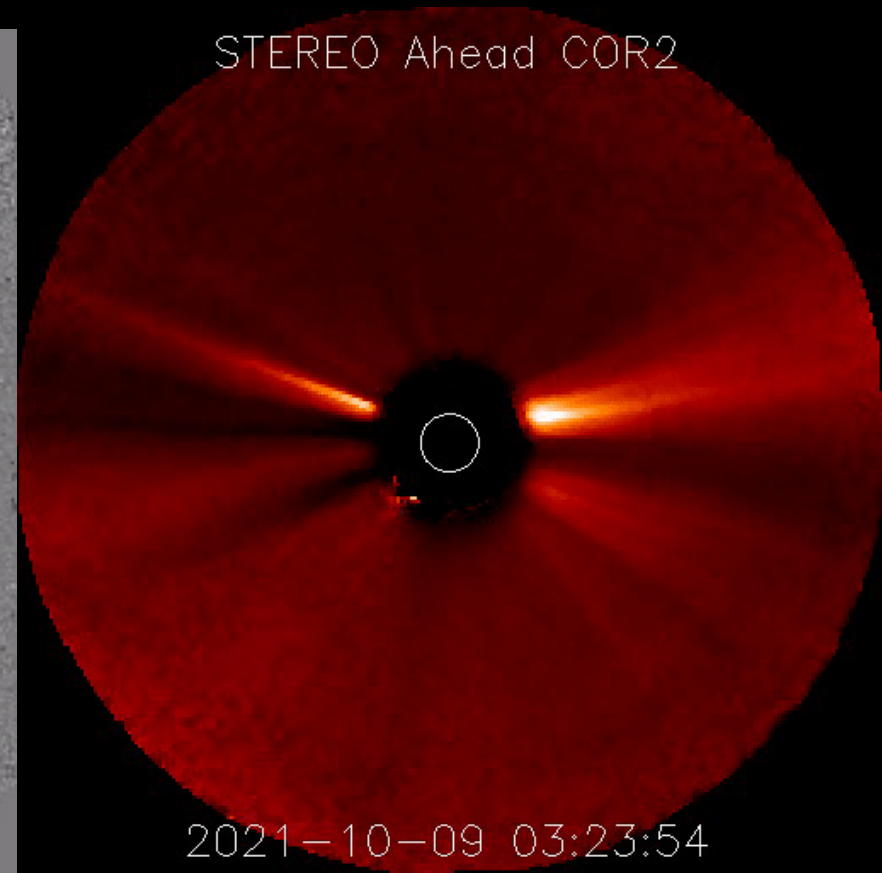
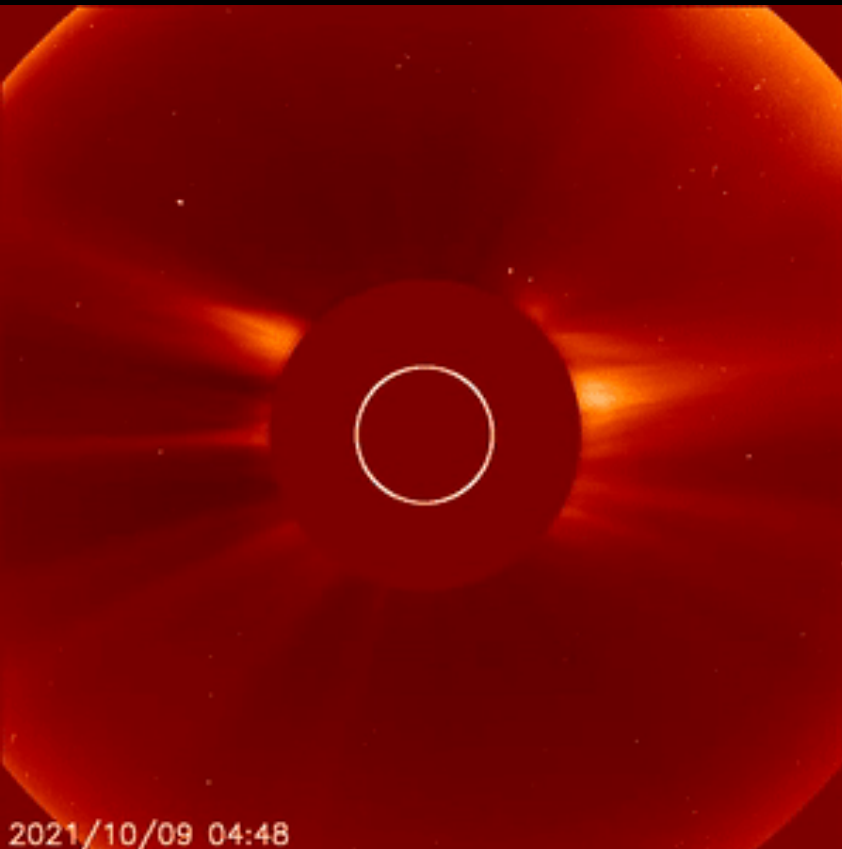


2021/10/09 04:48

# Full halo coronal mass ejection

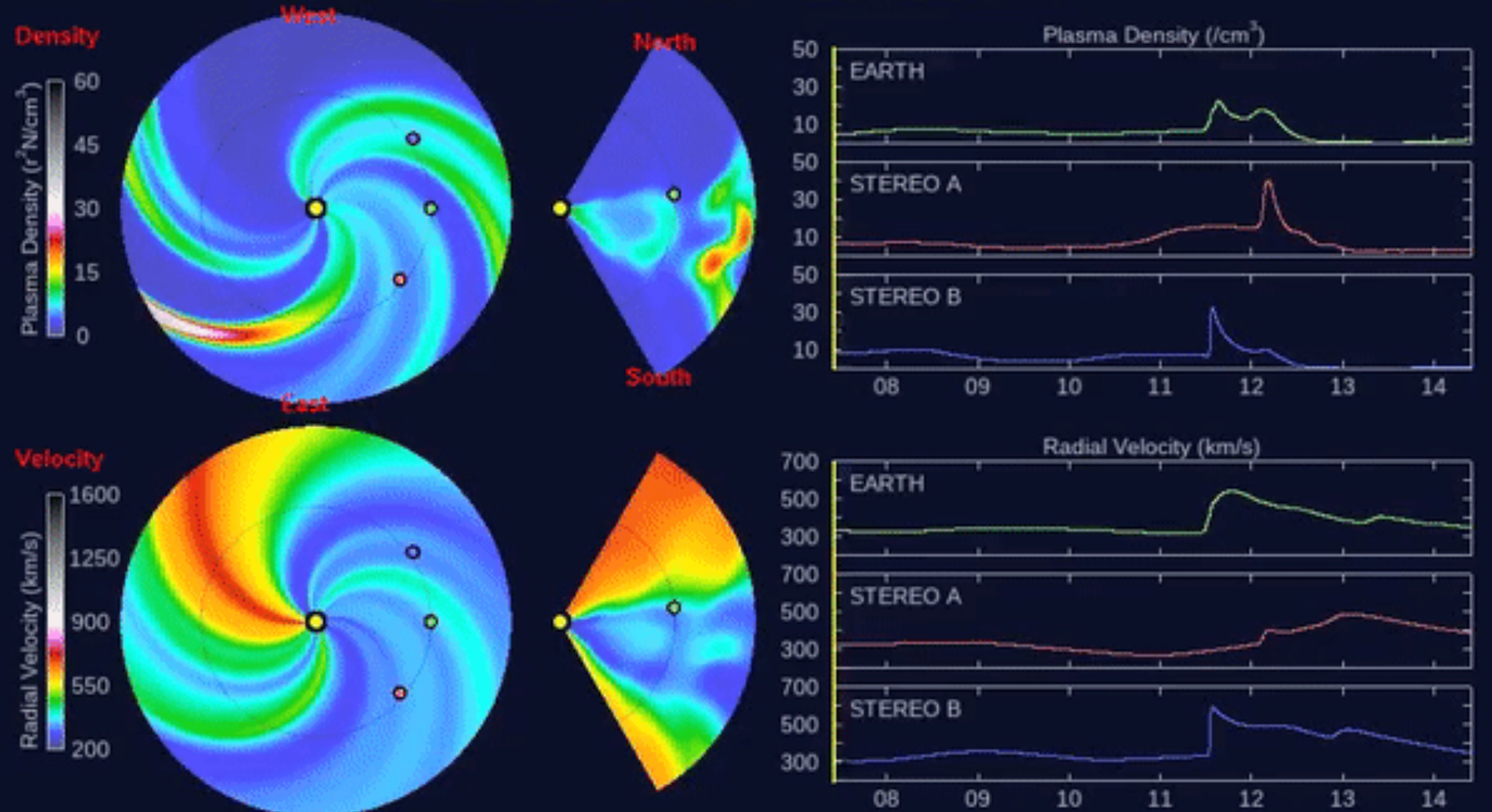
Full halo coronal mass ejection and a coronal dimming was associated to the M1.6-class flare produced in Catania sunspots group 58 (NOAA AR-2882) on Oct 9 at 06:38 UTC

The projected speed was measured about 692 km/s by the software package CACTus. The true speed was estimated around 950 km/s. The transit time to Earth is estimated to take about 62 hours, a the arrival time would be on Oct 12, around 01:00 UTC.



# Full halo coronal mass ejection

2021-10-07 10:00:00



Full halo coronal mass ejection and a coronal dimming was associated to the M1.6-class flare produced in Catania sunspots group 58 (NOAA AR-2882) on Oct 9 at 06:38 UTC

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# Solar Wind and

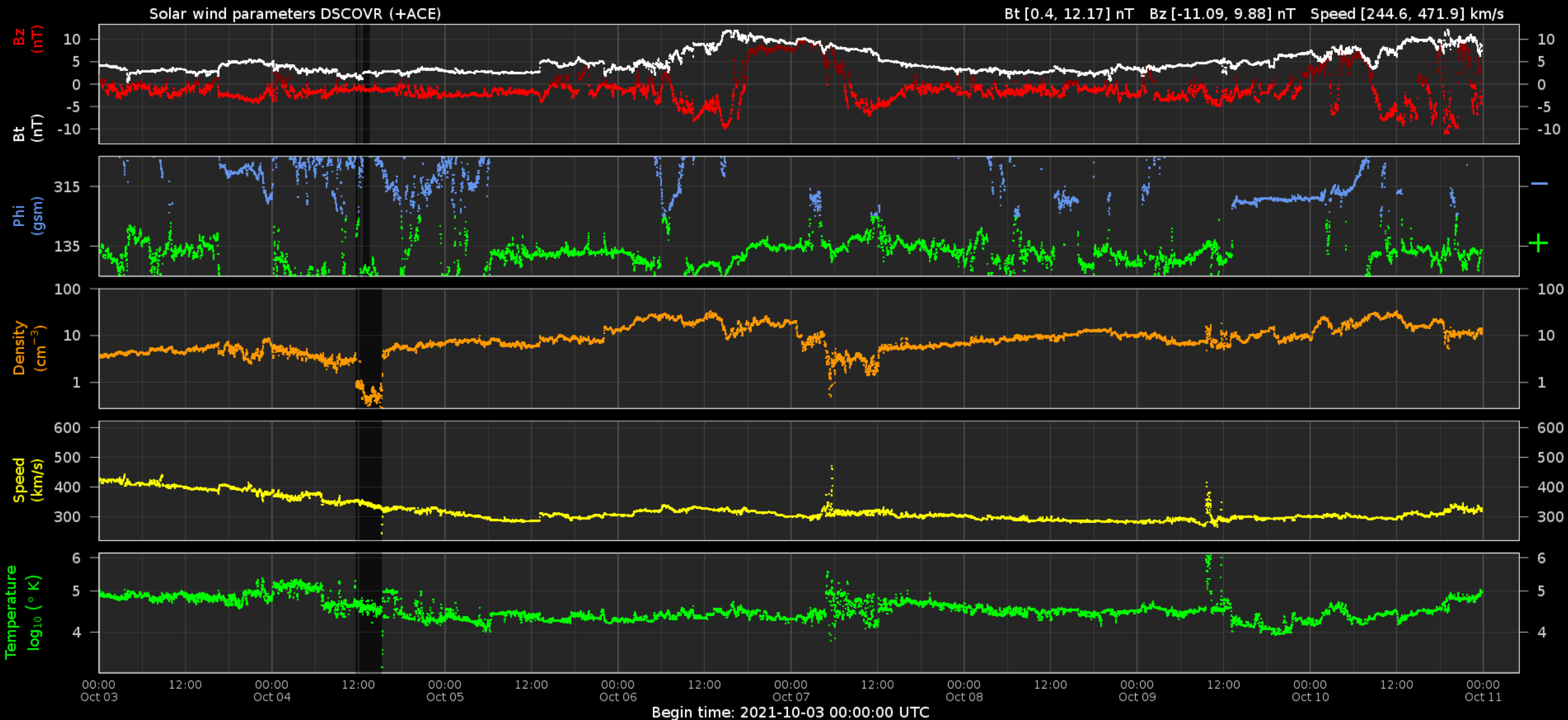
# Geomagnetic Activity



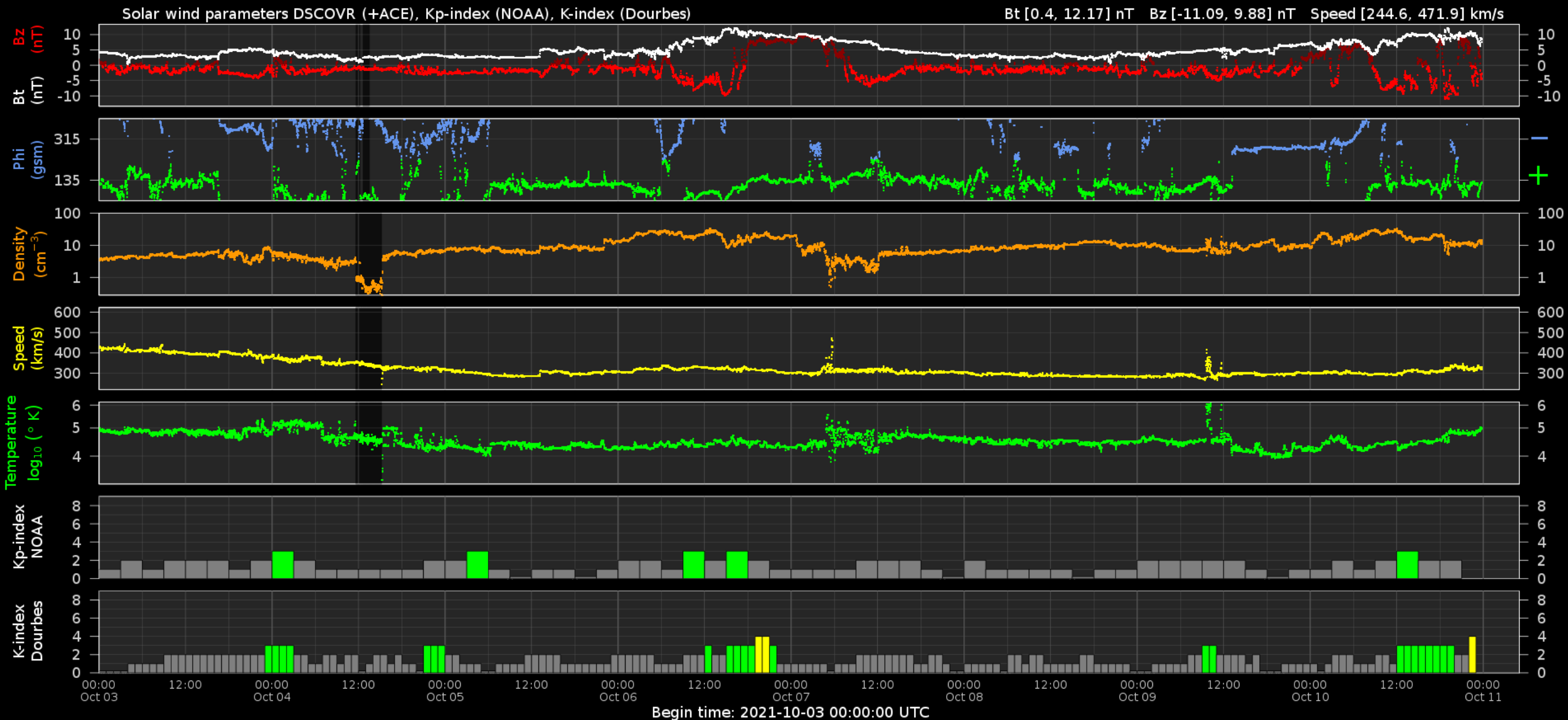
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# Solar wind parameters

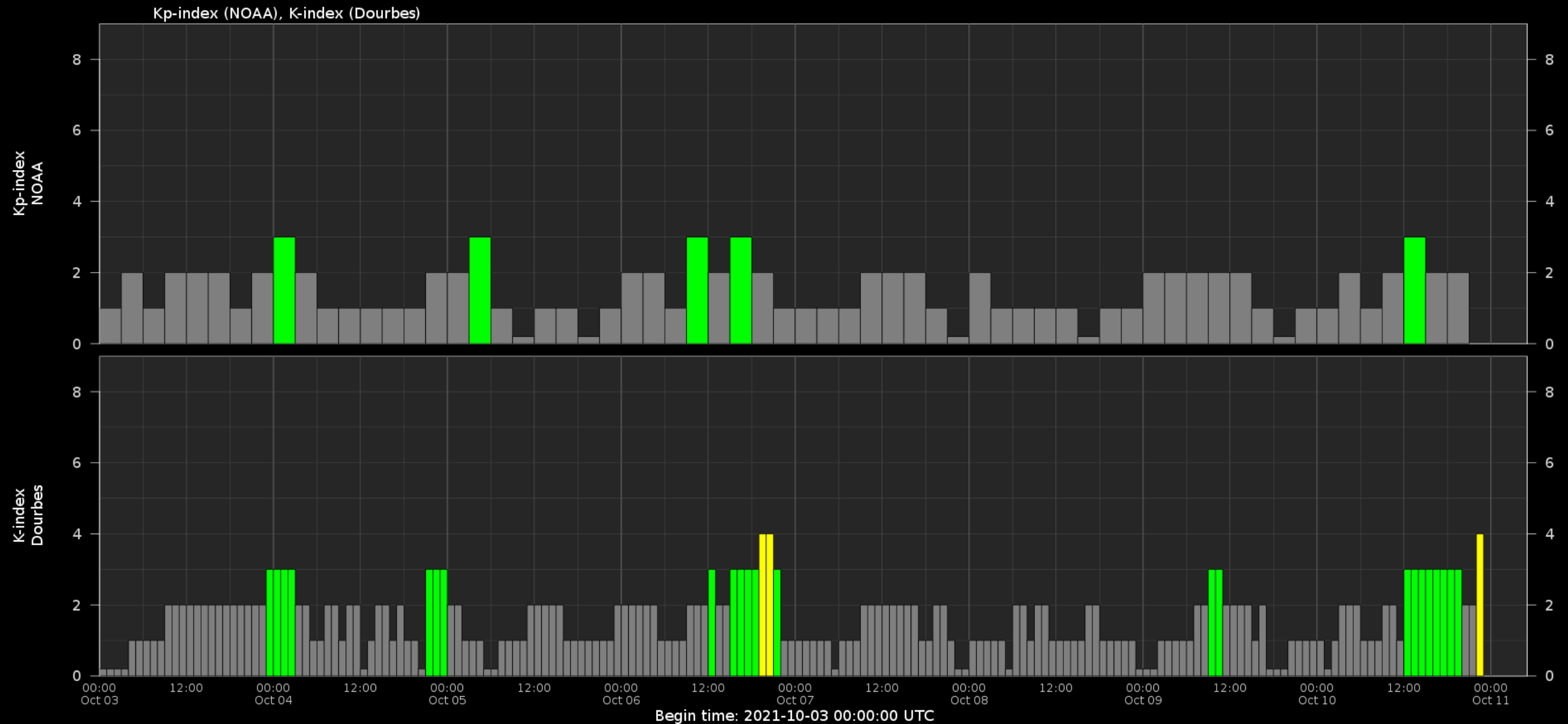


# Solar wind parameters & K-indices





# Geomagnetic activity (K-indexes)



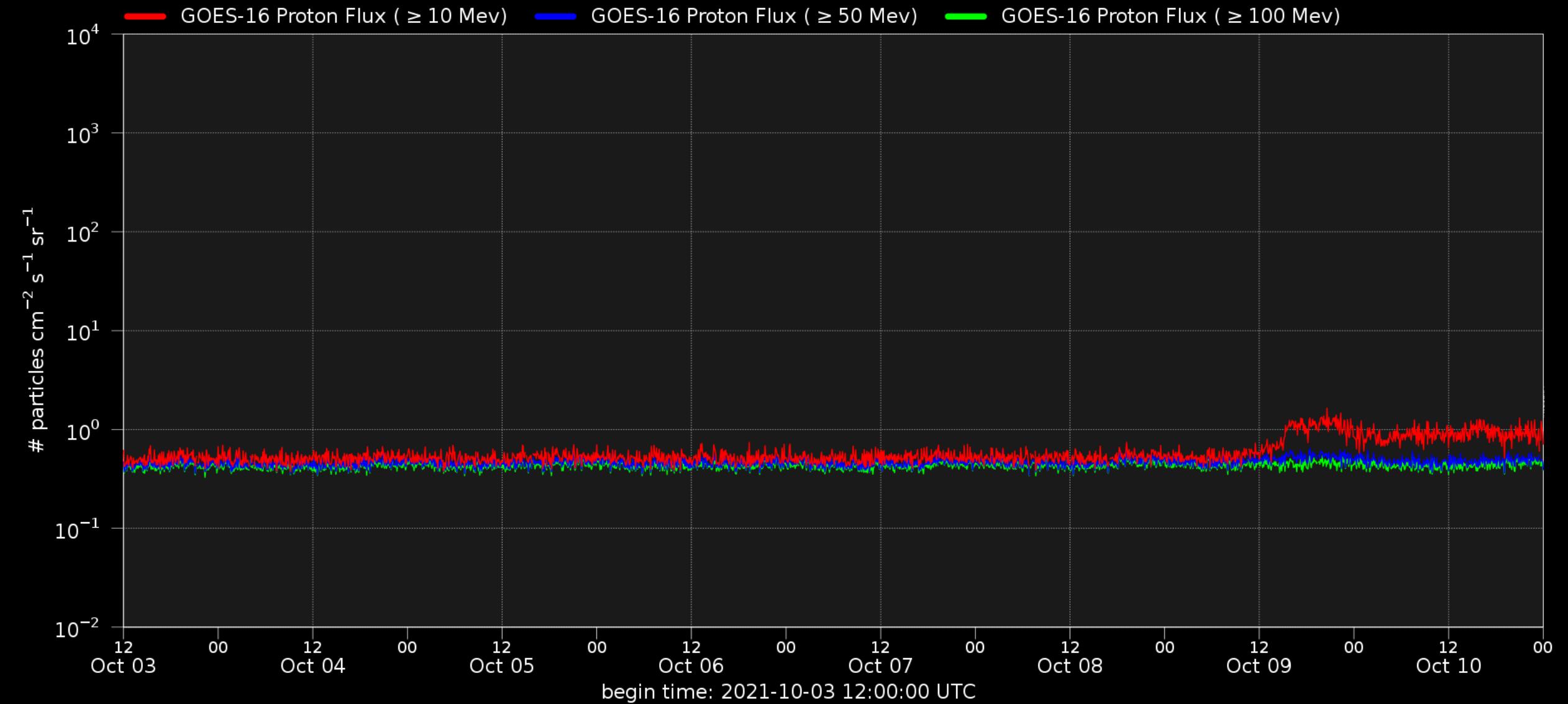
# Energetic Particles



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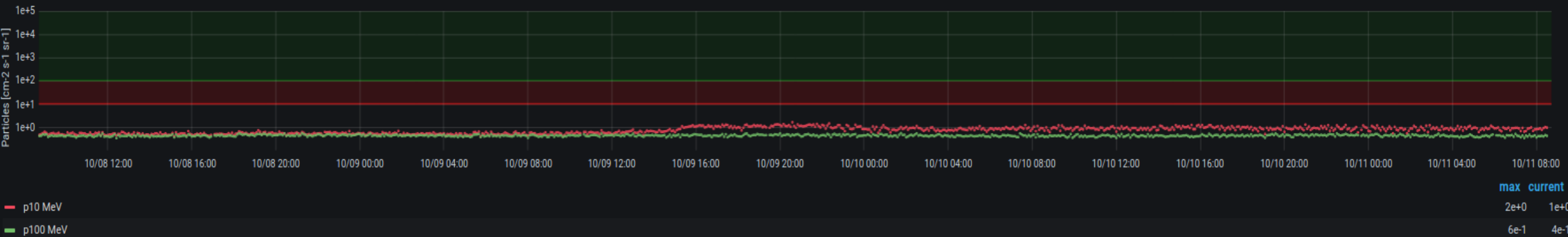
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# Solar proton flux



# SW Particles/Protons DASHBOARD on 2021-10-11 08:43 UTC

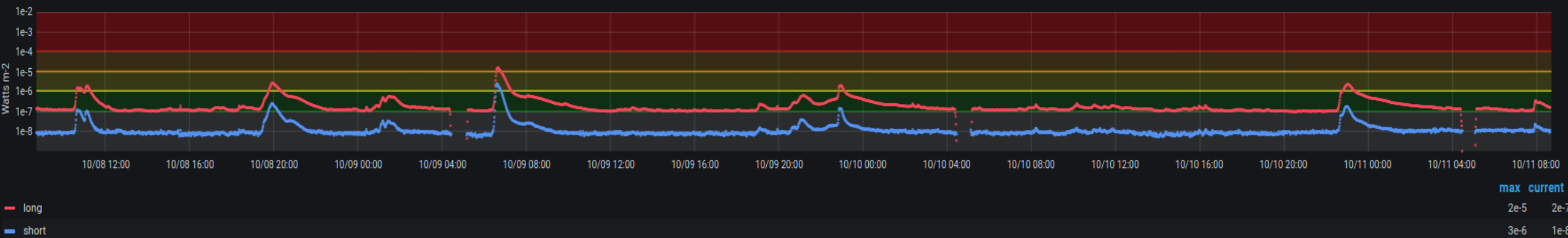
GOES Proton Flux (Red: GOES-16 flux > 10 MeV, Green: GOES-16 > 100 MeV)



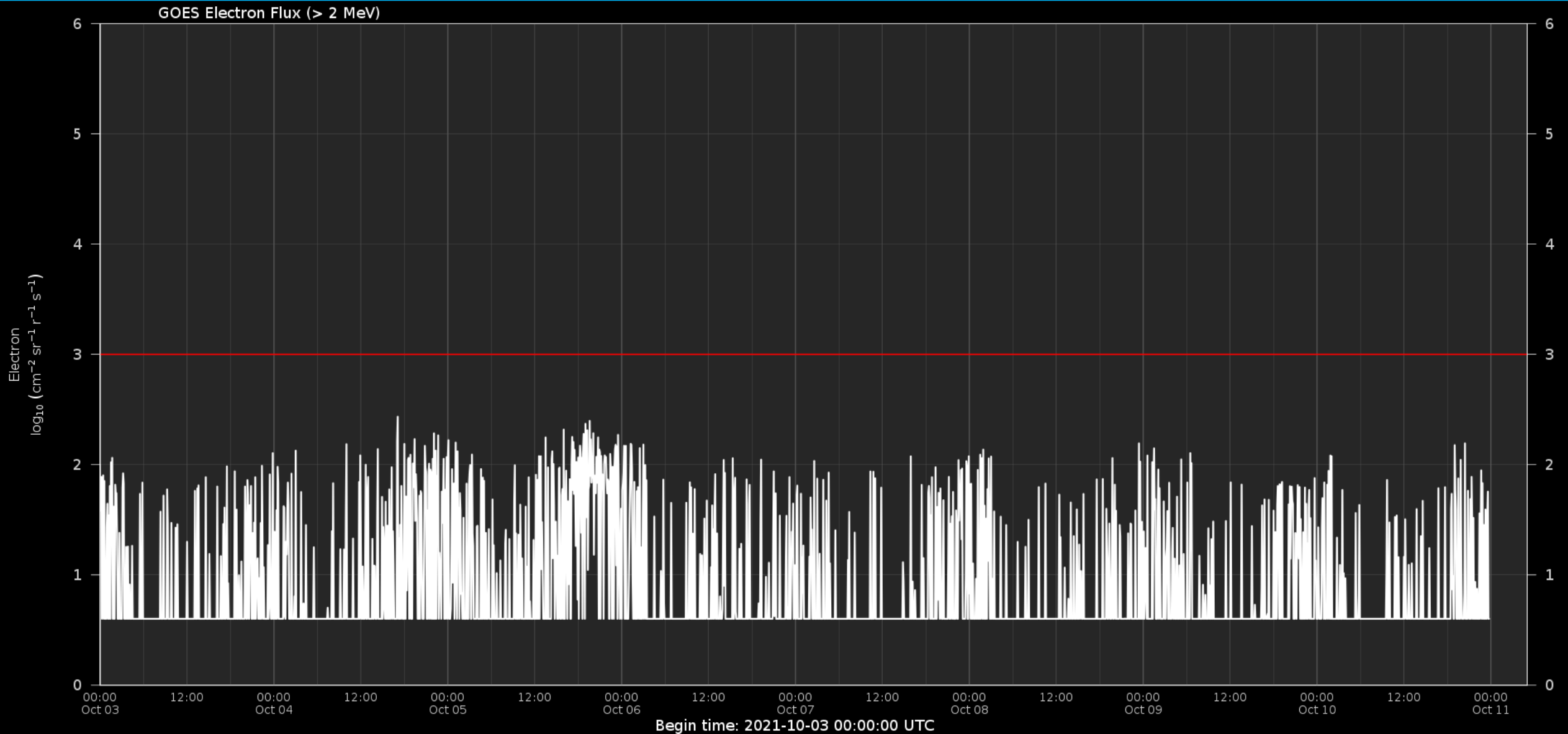
STEREO-A Proton Flux (Yellow: flux 13-21 MeV, Blue: flux 40-100 MeV)



GOES X-ray flux (Blue: GOES-16 flux 0.05-0.04 nm, Red: GOES-16 flux 0.1-0.8 nm)



# Electron flux at GEO



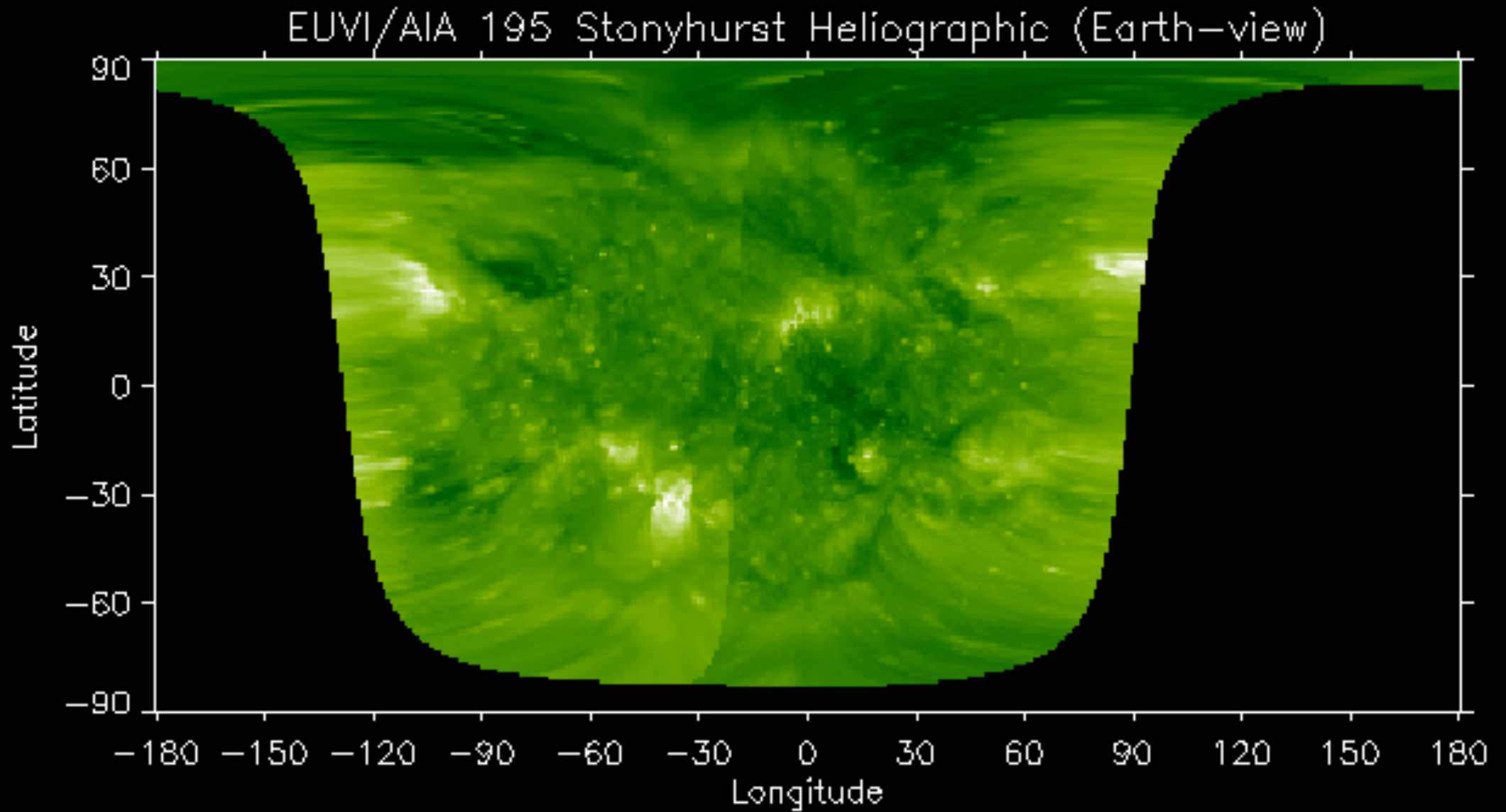
# Outlook



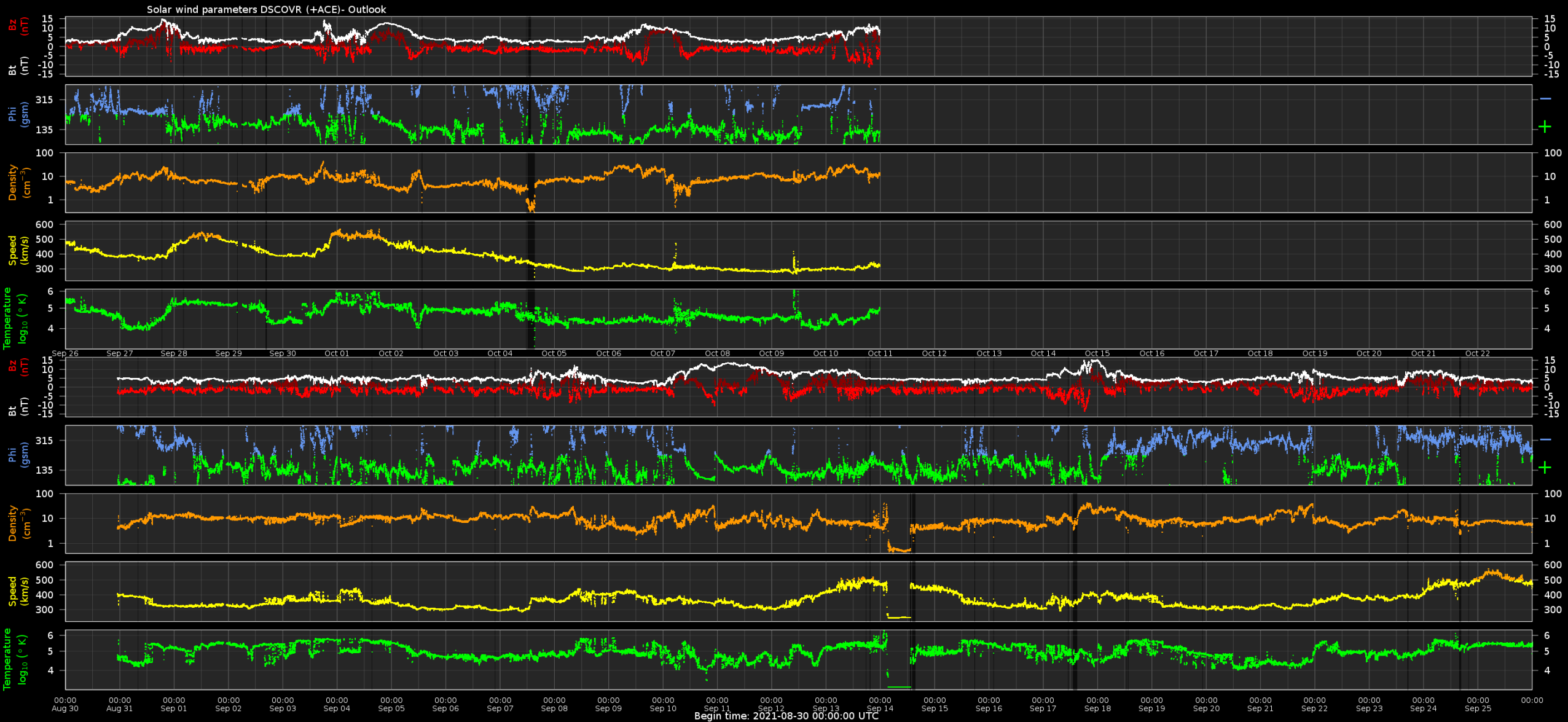
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# Outlook: Solar activity

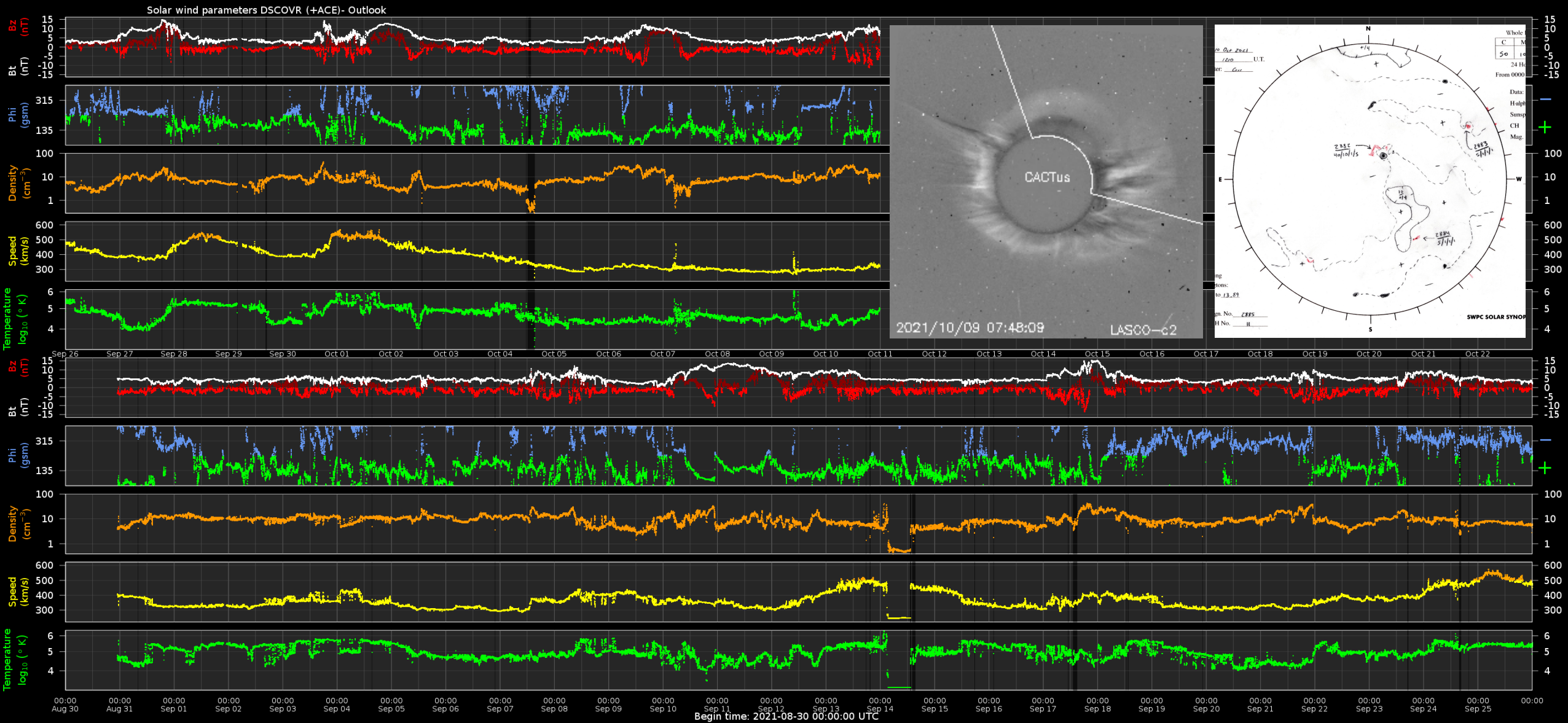


# Outlook: Solar wind parameters





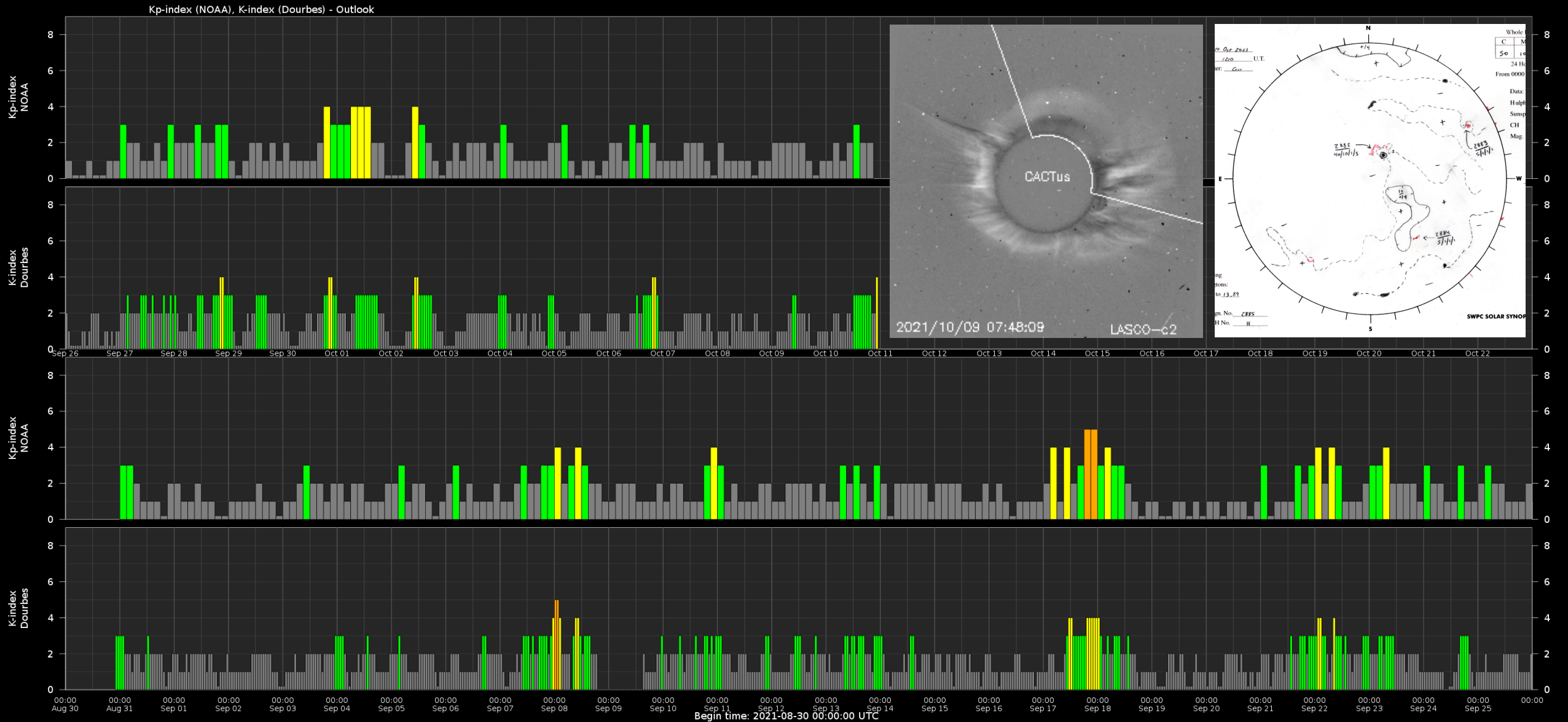
# Outlook: Solar wind parameters



# Outlook: Geomagnetic activity



# Outlook: Geomagnetic activity



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