SIDC Space Weather Briefing

14 August 2022-21 August 2022

Jennifer O'Hara
& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
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Summary Report

Solar activity from 2022-08-14 12:00 to 2022-08-21 23:59

Active regions	NOAA AR 3078 was most active, and 3074, 3076, 3079, 3080, 3081, 3082, 3083, 2084
Flares	# C-class flare: 72 # M-class flare: 11 # X-class flare: 0
Coronal Holes	Large eq. negative polarity CH (14th), 2 small negative polarity CHs in South (17th, 19th)
CMEs	Multiple CMEs over the week, with 6 CME arrival alerts sent

Proton flux	Nominal Levels
Electron flux	Crossed the 1000pfu threshold

Solar wind and geomagnetic conditions

ICMEs	3 Possible ICME signatures (shock)
Solar wind conditions	|B|: 0.65 - 18.29 nT //Bz: -17.0 nT to 16.25 nT //Speed: 244.6 - 684.5km/s
K-indices	max K-index (K_Dourbes): 5 max Kp-index (NOAA): 6

All Quiet Alert: Not all quiet

Solar Activity

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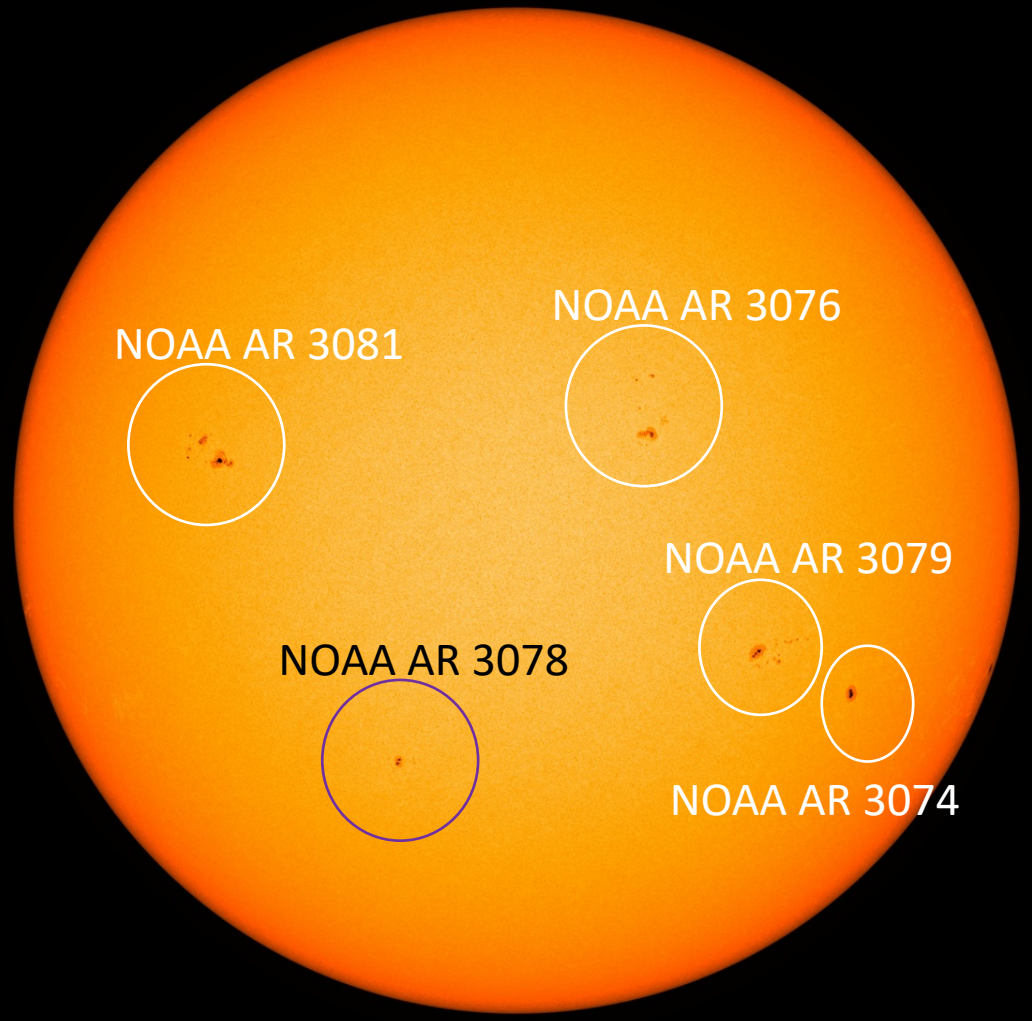
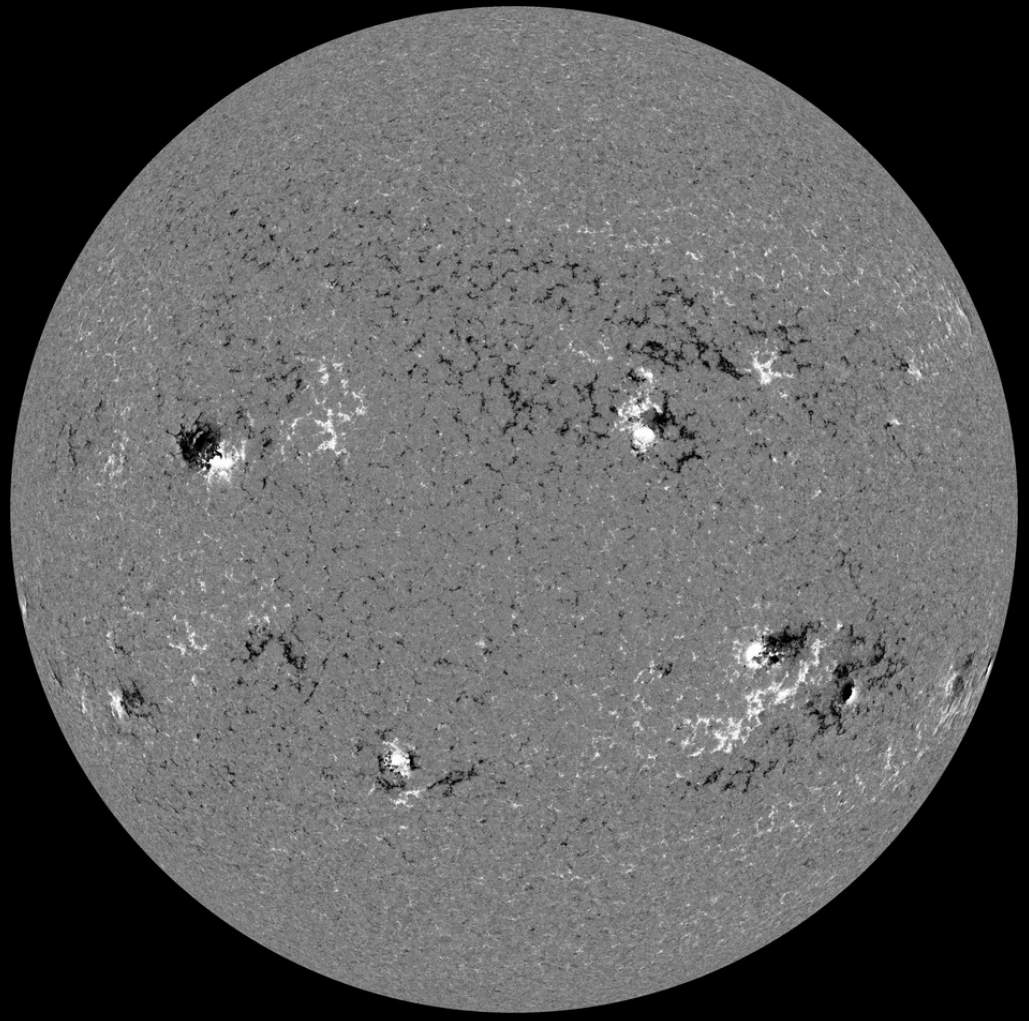
Solar active regions

SDO/HMI White Light 2022-08-14

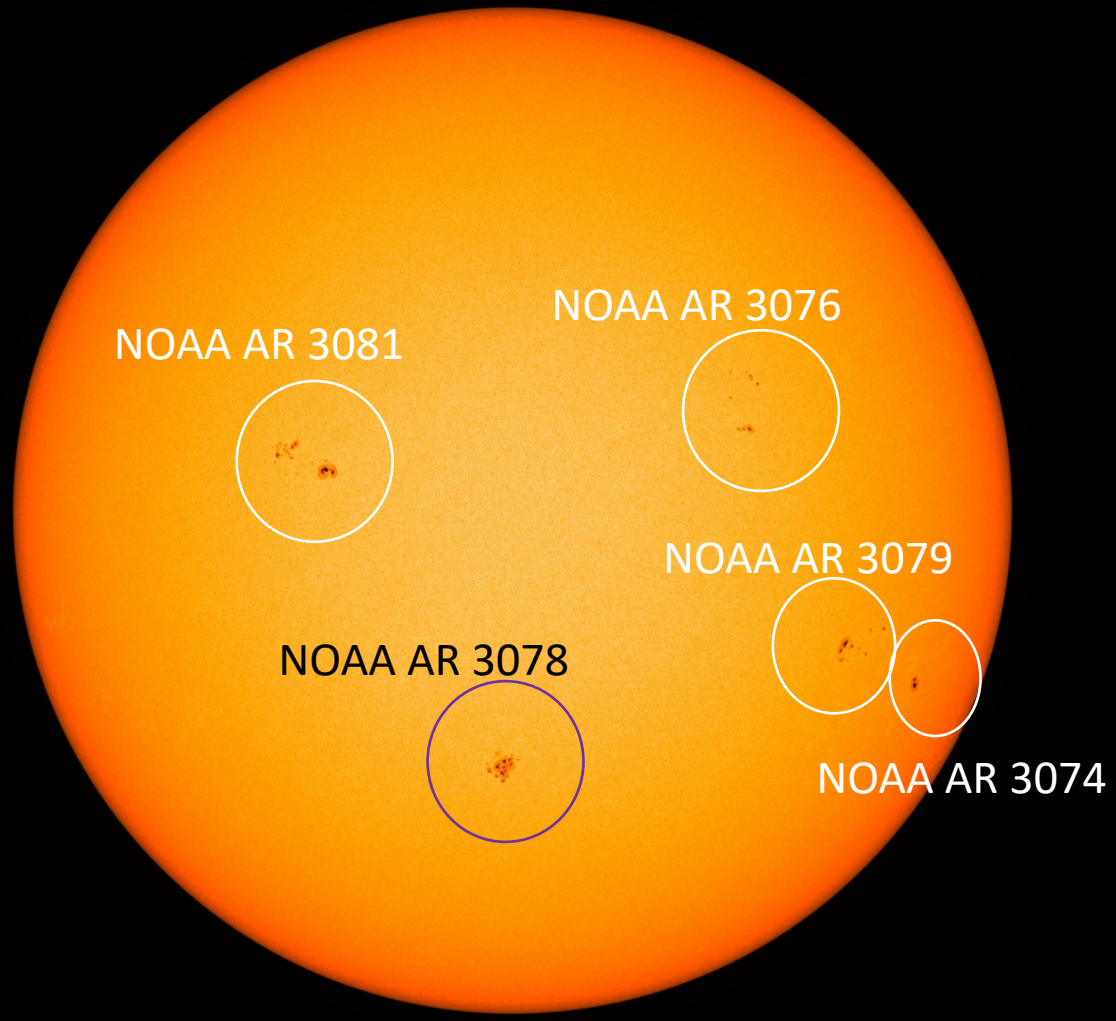


SDO/HMI Magnetogram 2022-08-14

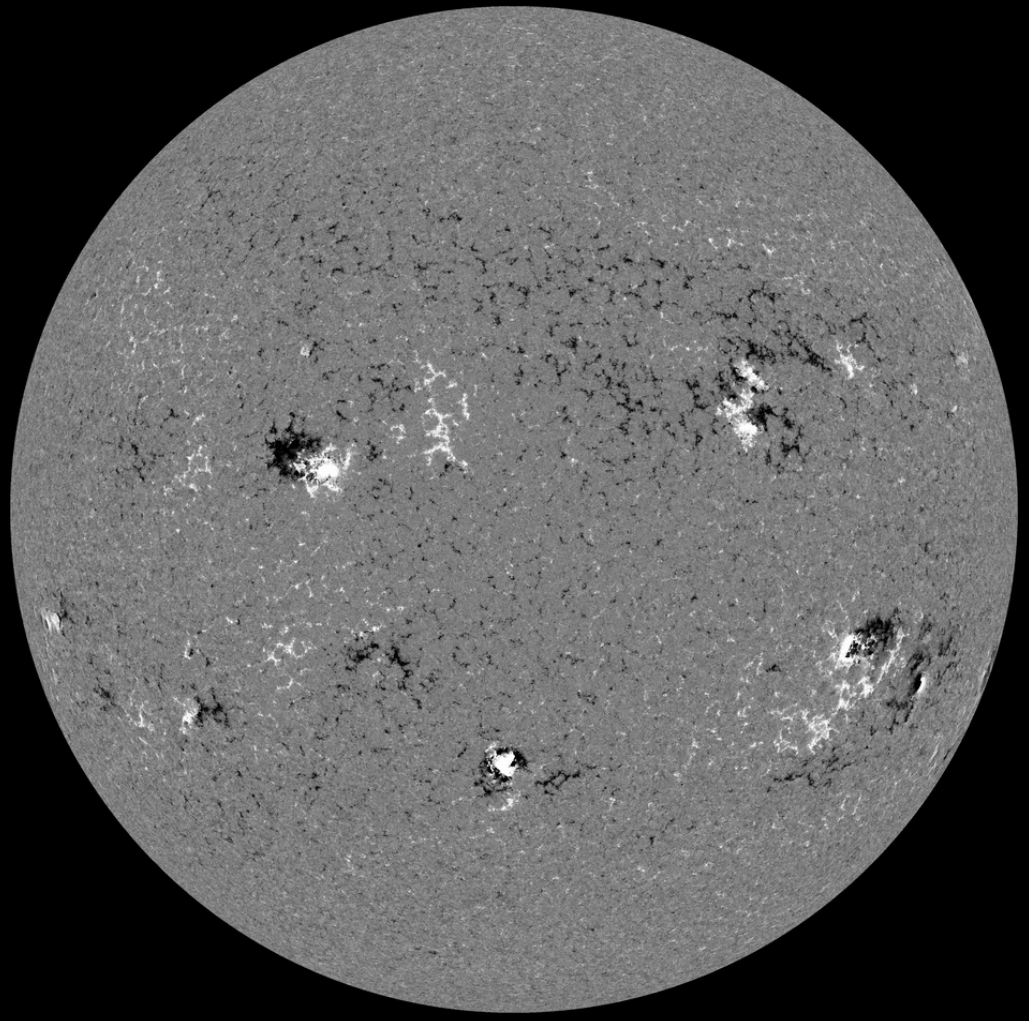


Solar active regions

SDO/HMI White Light 2022-08-15

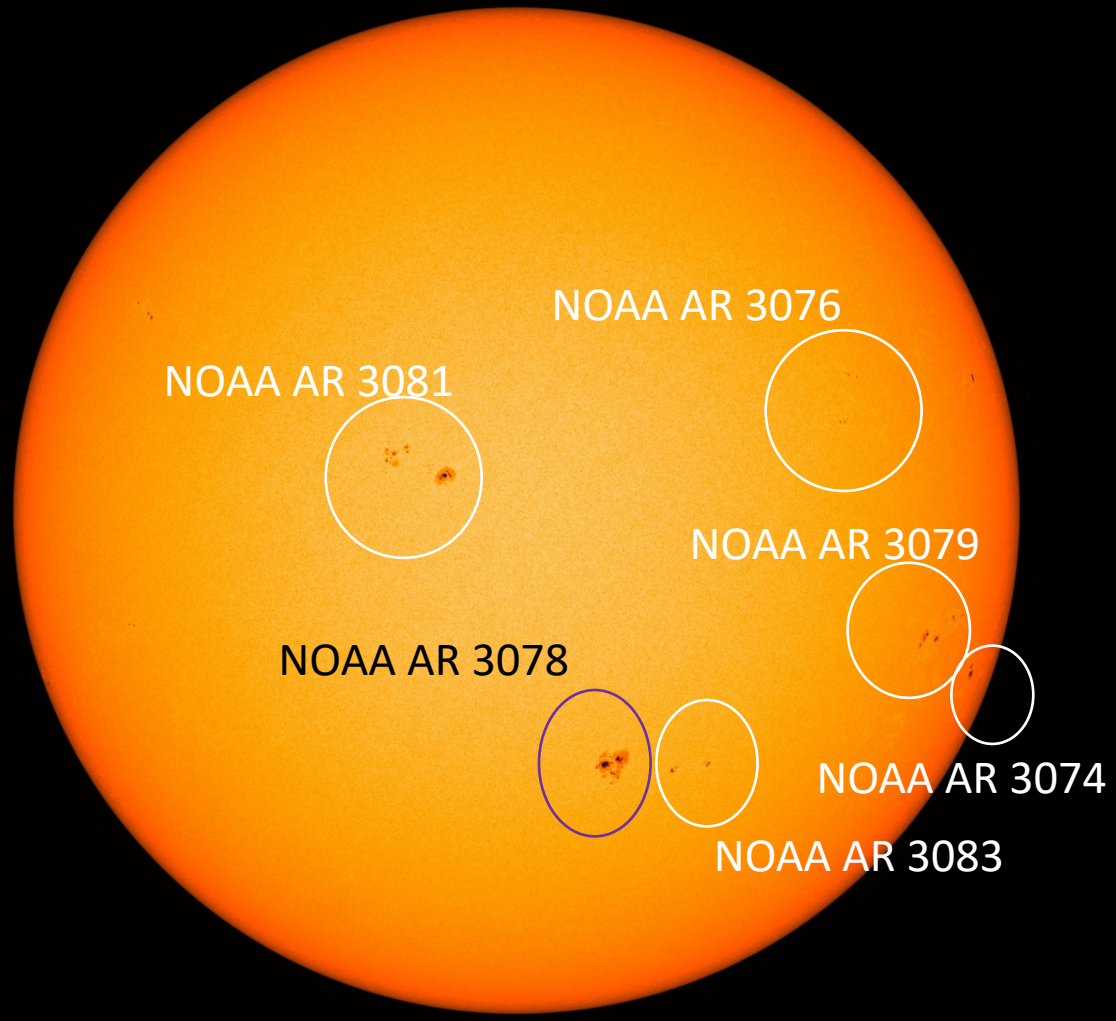


SDO/HMI Magnetogram 2022-08-15

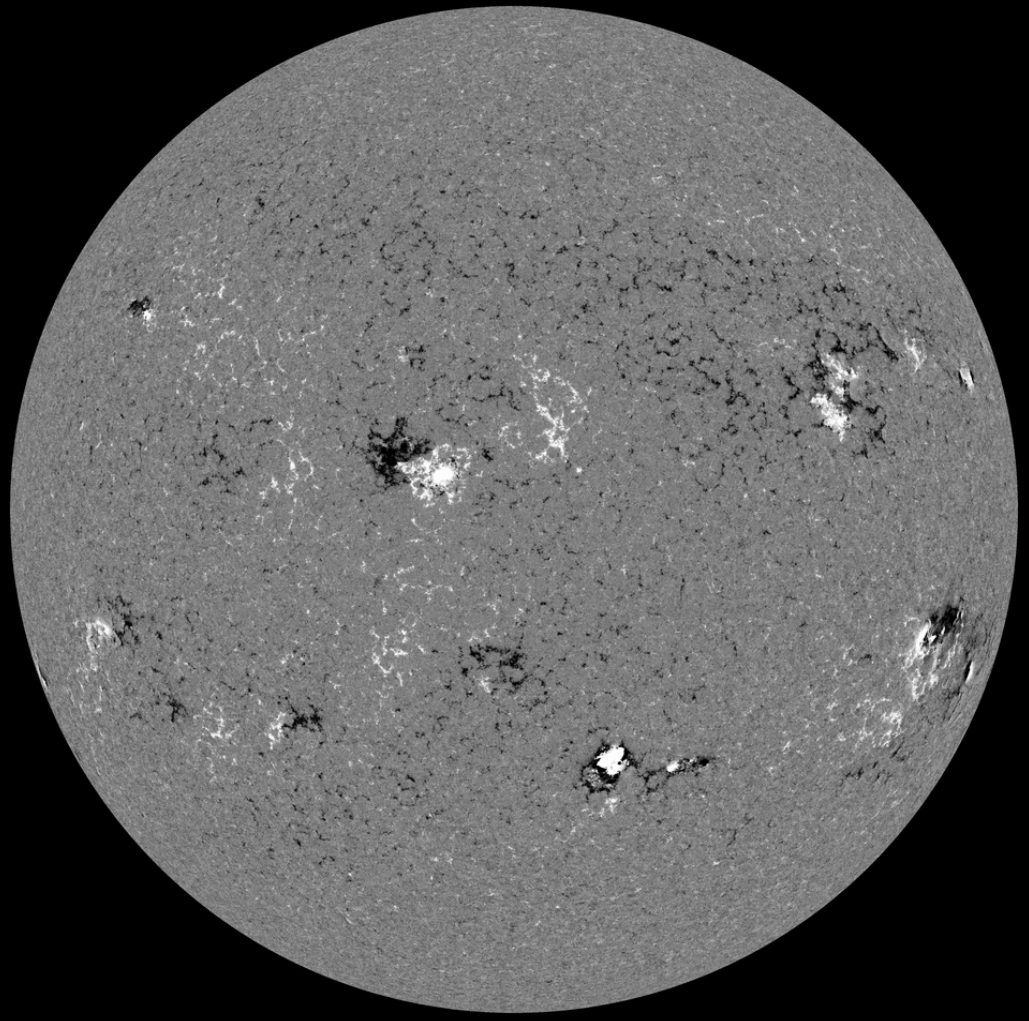


Solar active regions

SDO/HMI White Light 2022-08-16

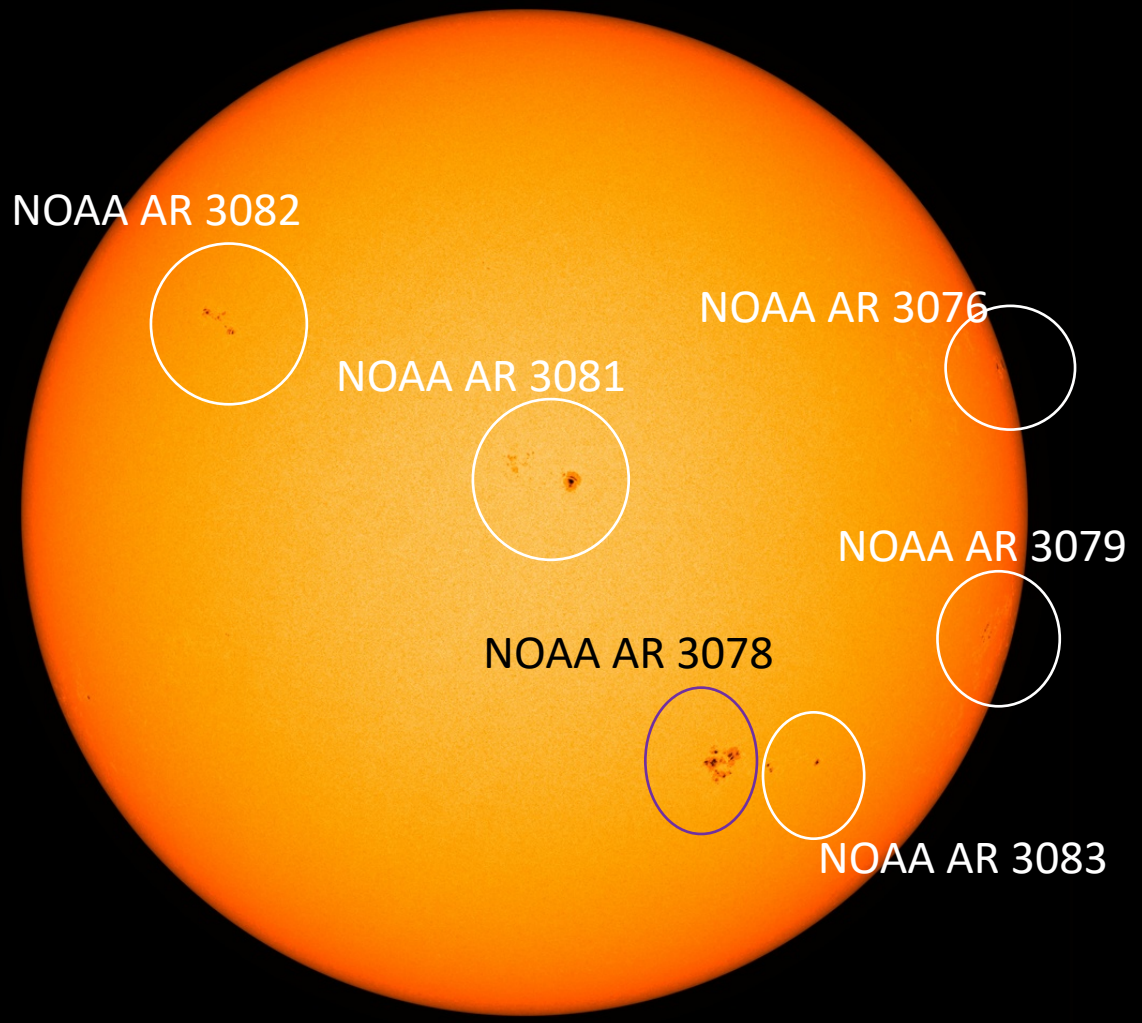


SDO/HMI Magnetogram 2022-08-16

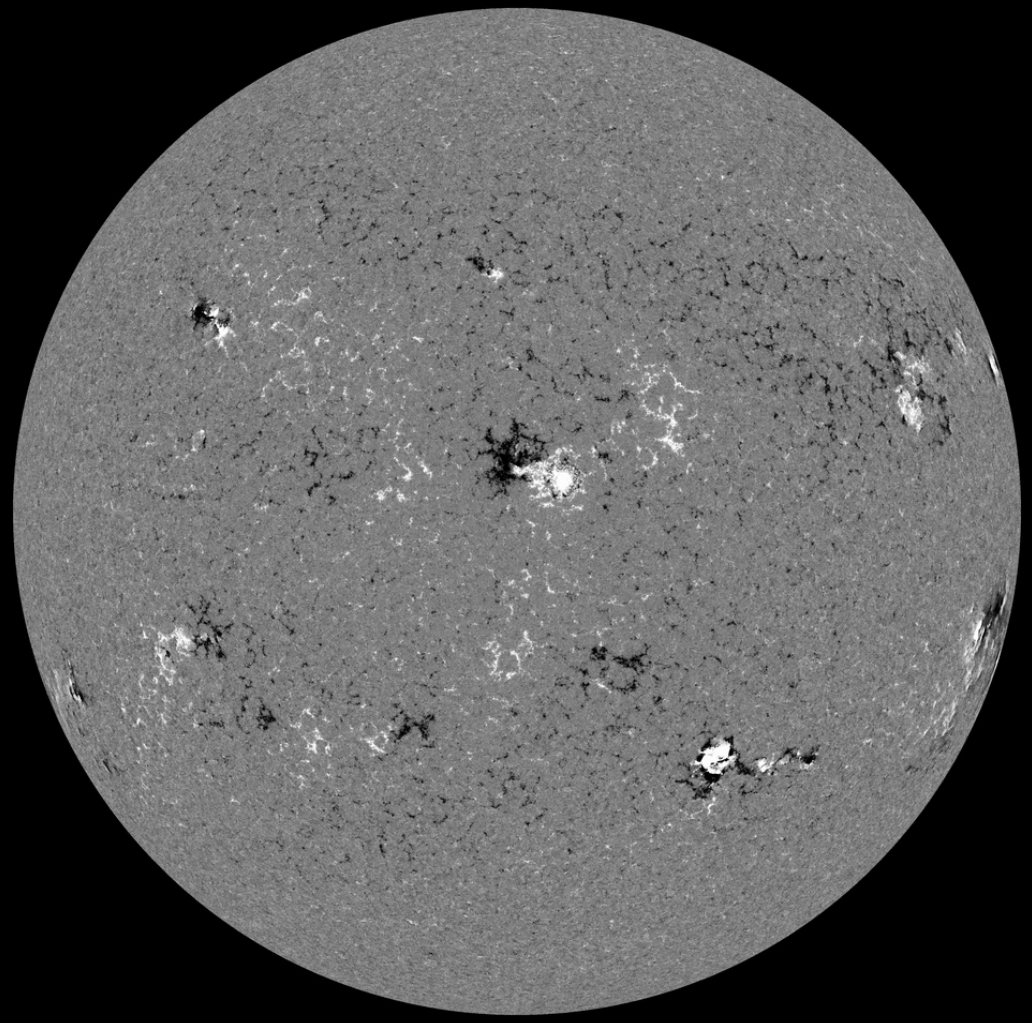


Solar active regions

SDO/HMI White Light 2022-08-17

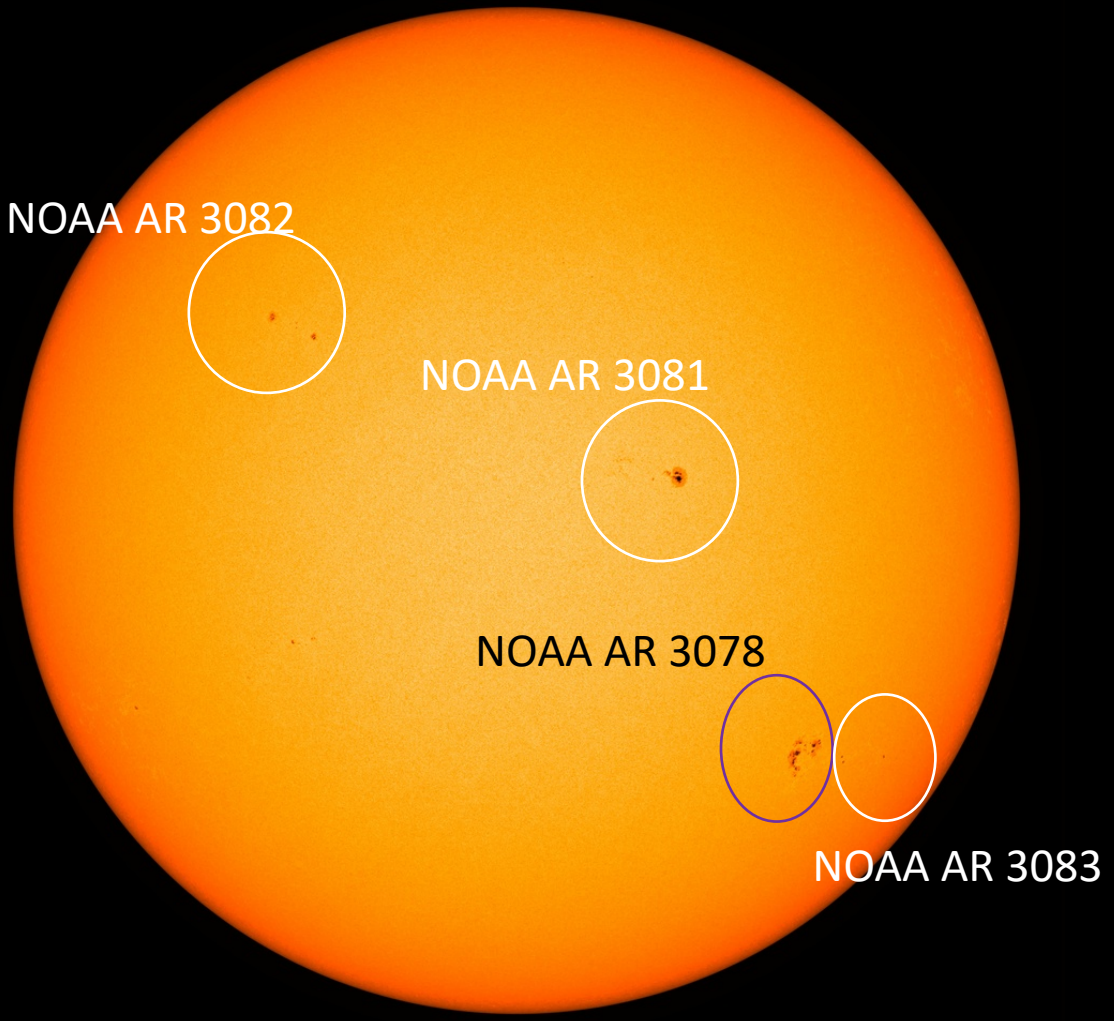


SDO/HMI Magnetogram 2022-08-17

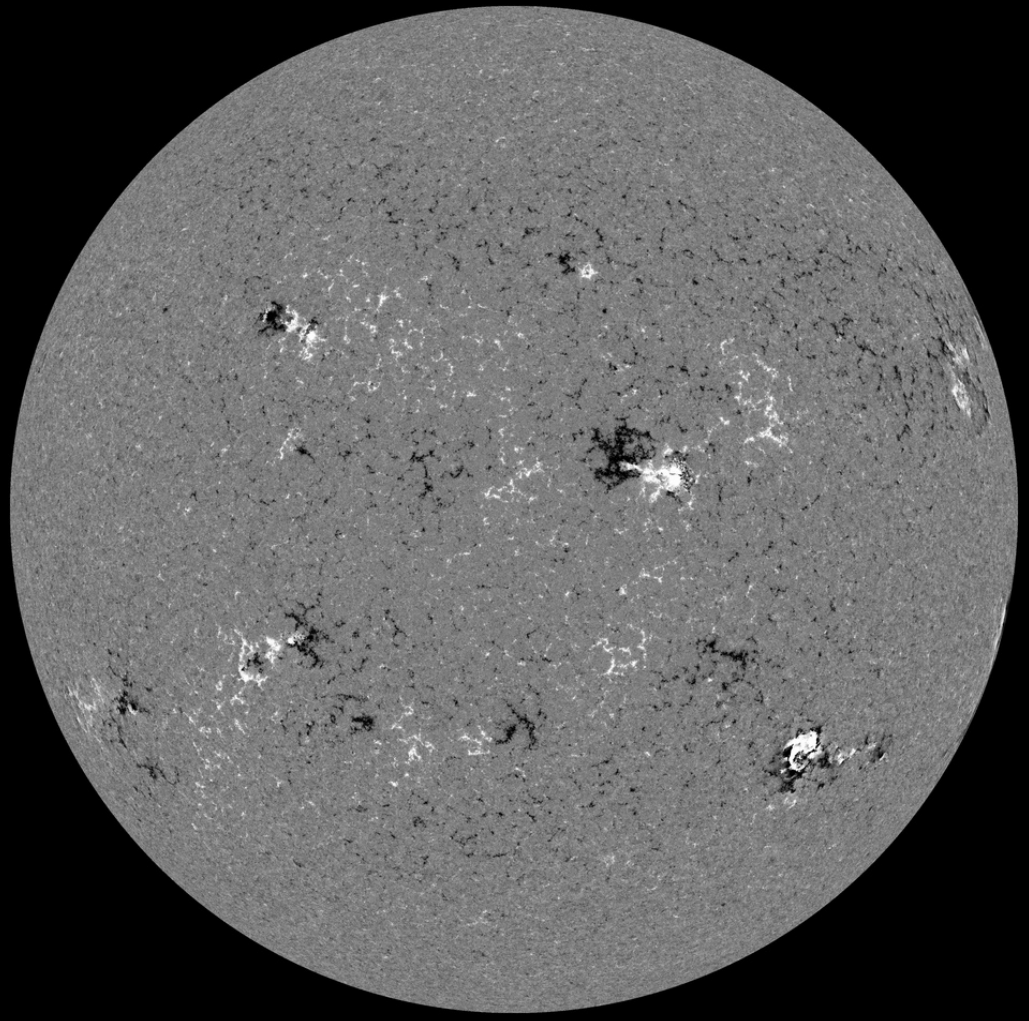


Solar active regions

SDO/HMI White Light 2022-08-18

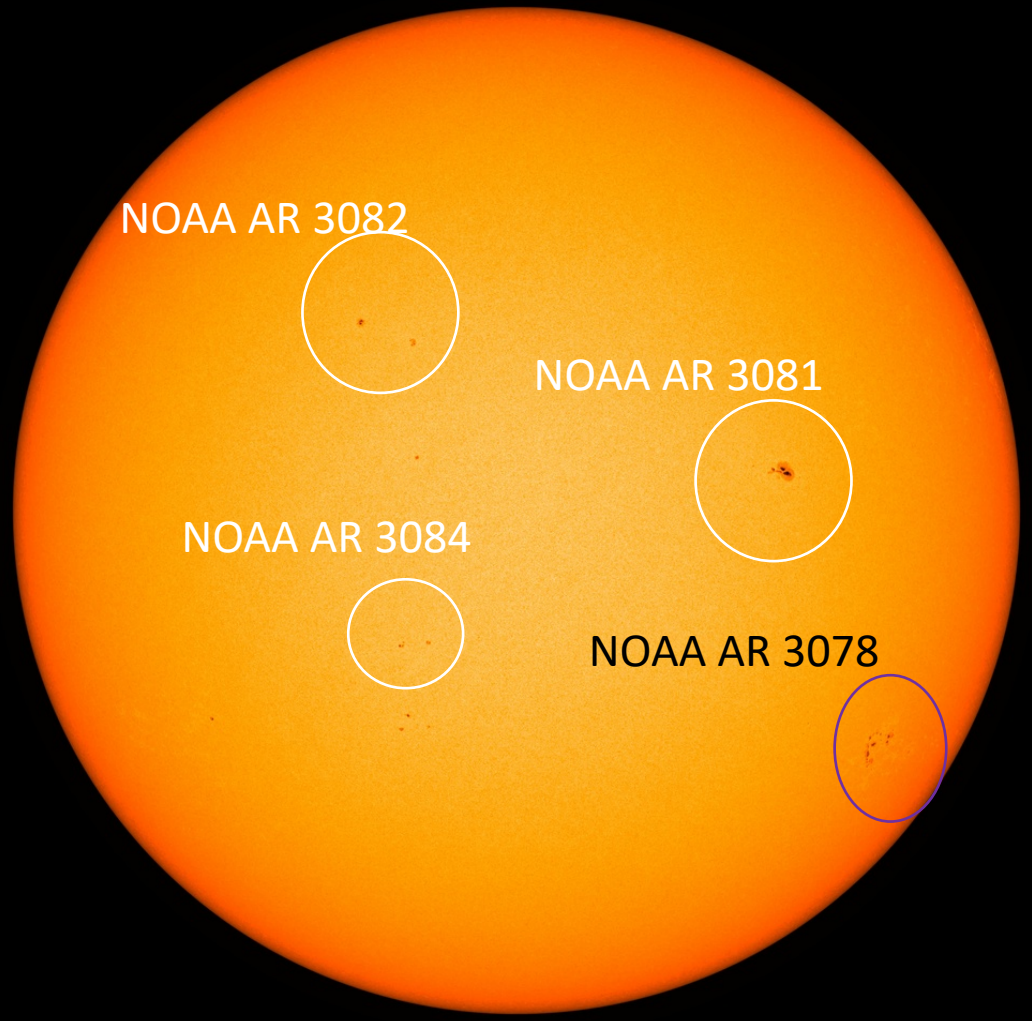


SDO/HMI Magnetogram 2022-08-18

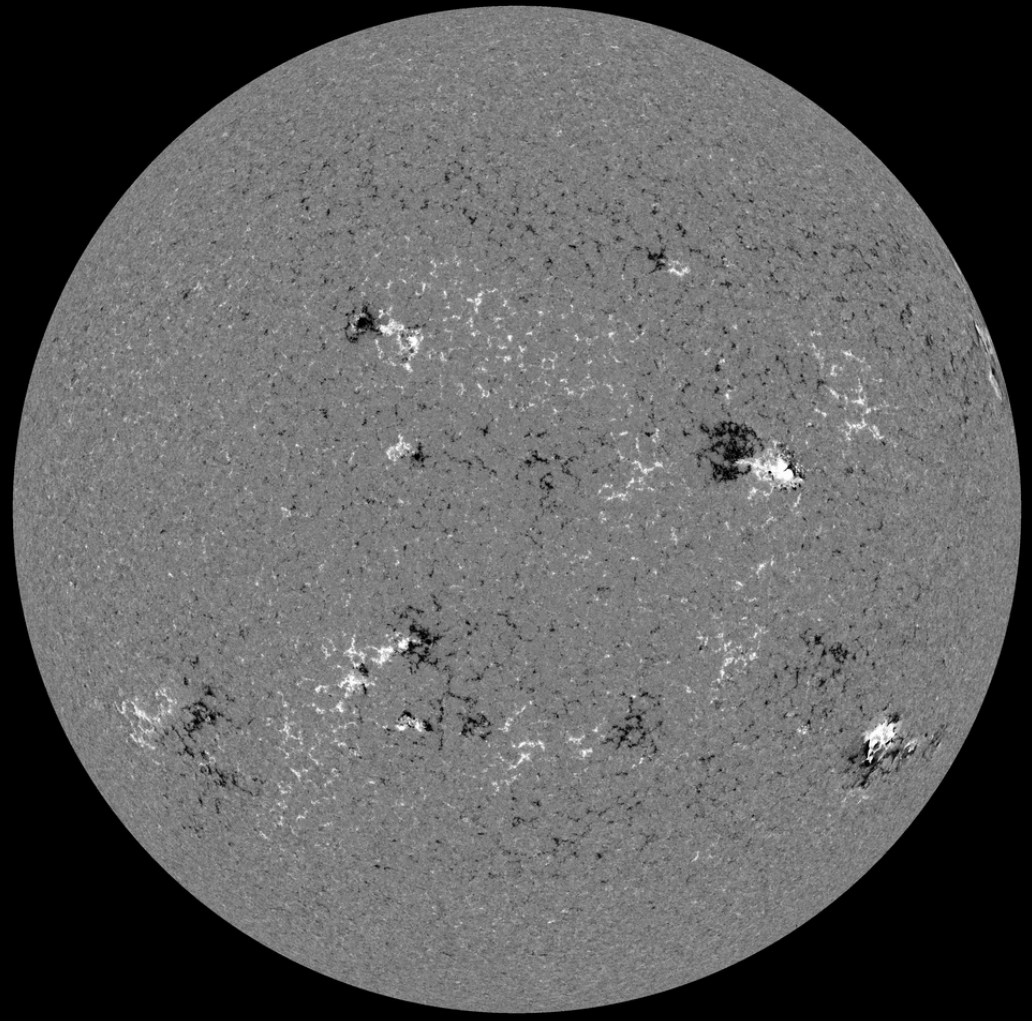


Solar active regions

SDO/HMI White Light 2022-08-19

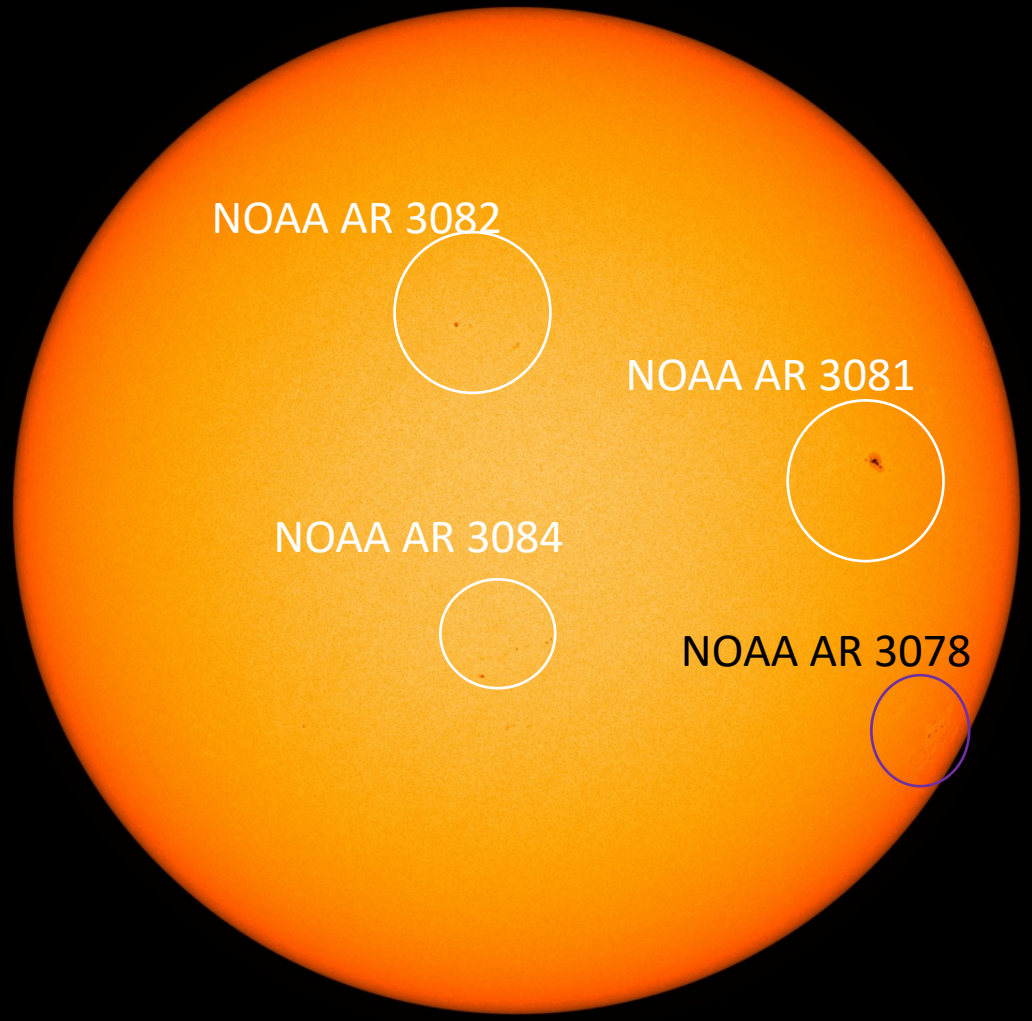


SDO/HMI Magnetogram 2022-08-19

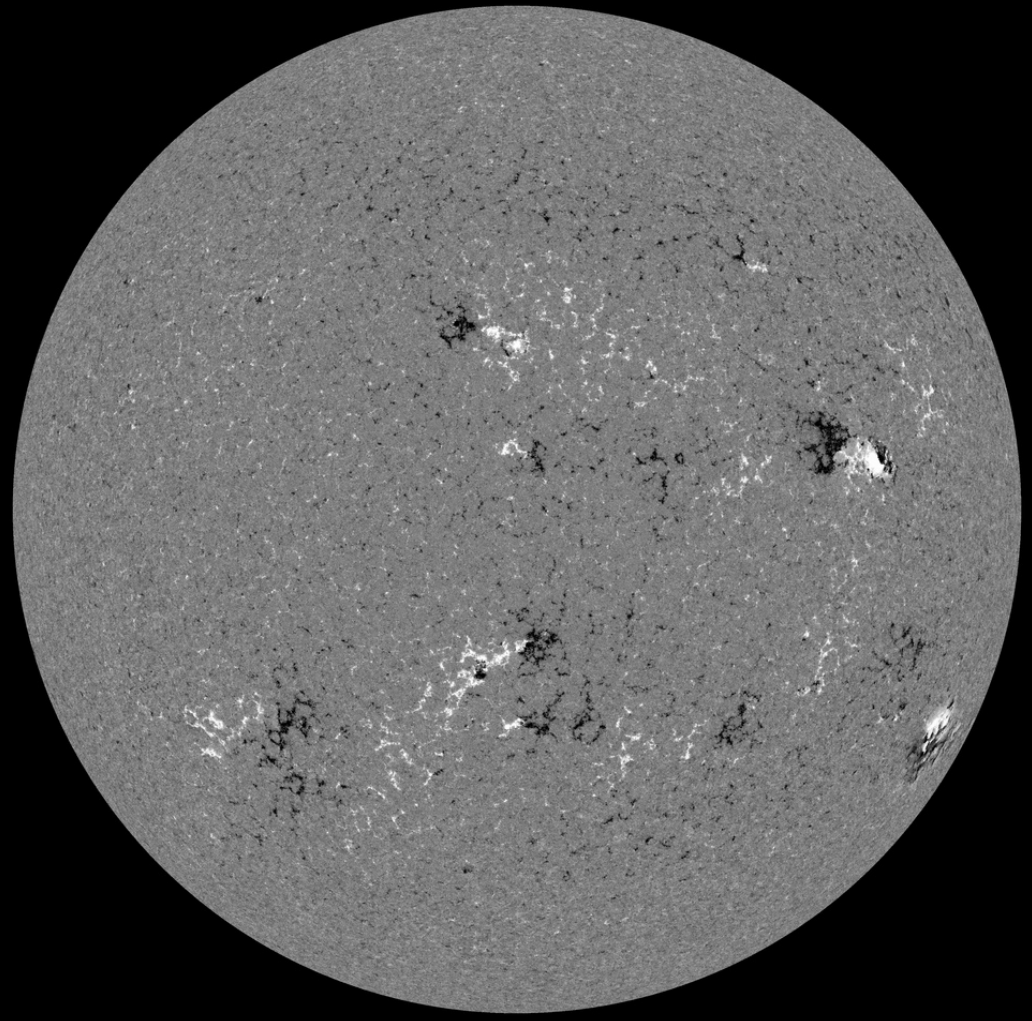


Solar active regions

SDO/HMI White Light 2022-08-20

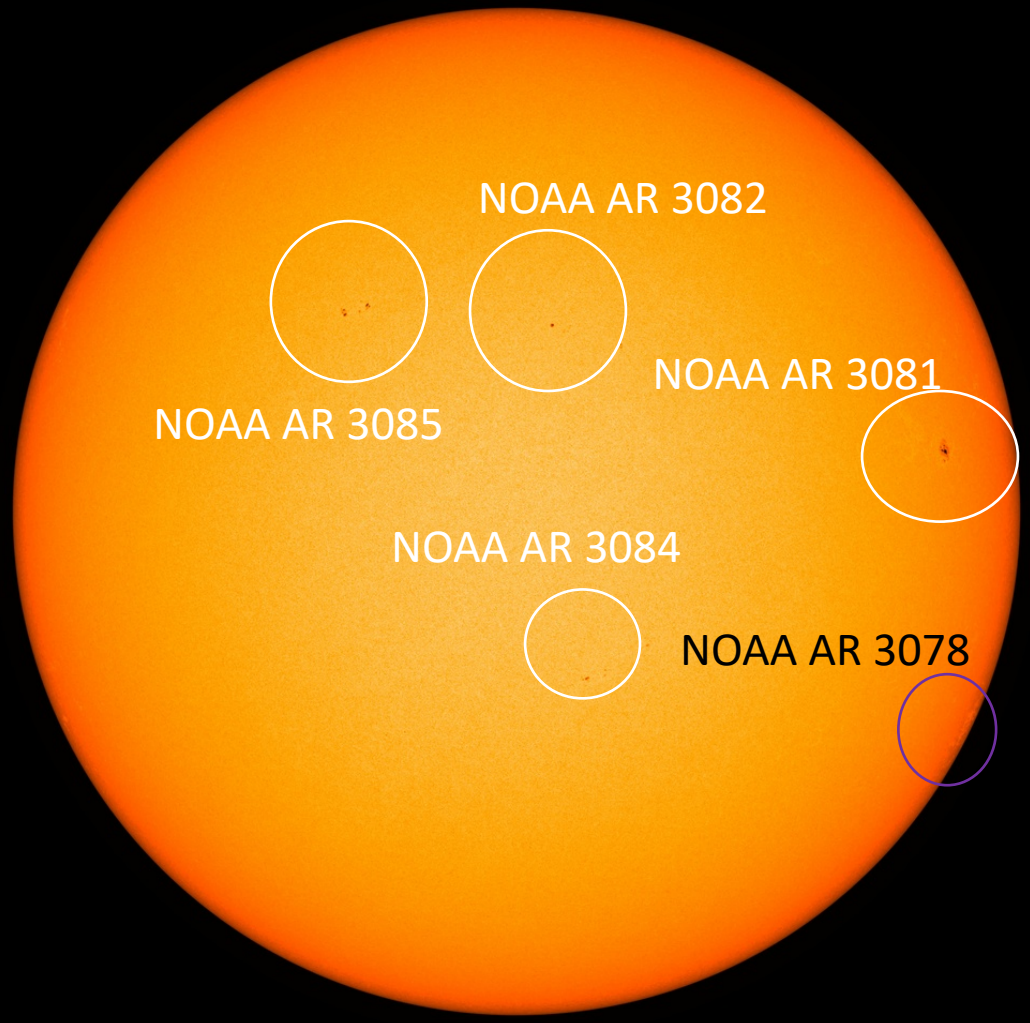


SDO/HMI Magnetogram 2022-08-20

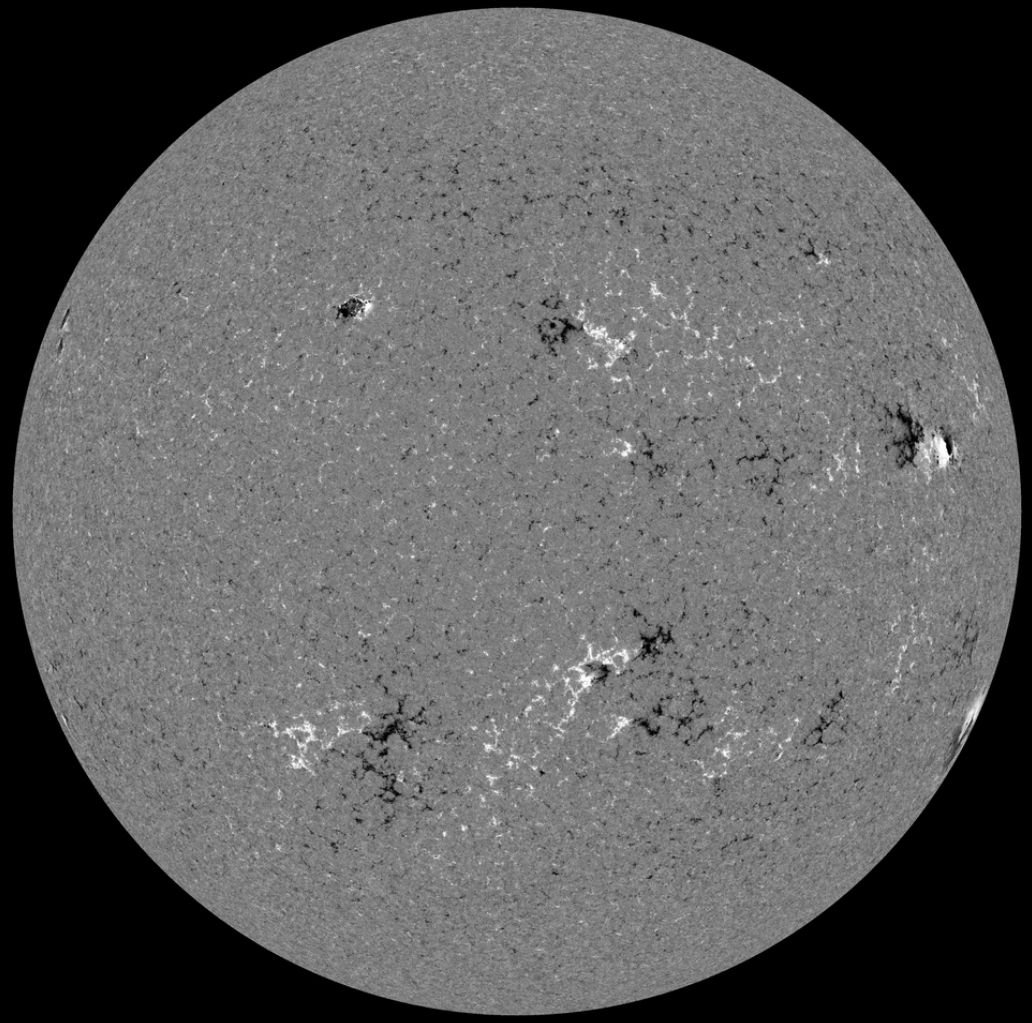


Solar active regions

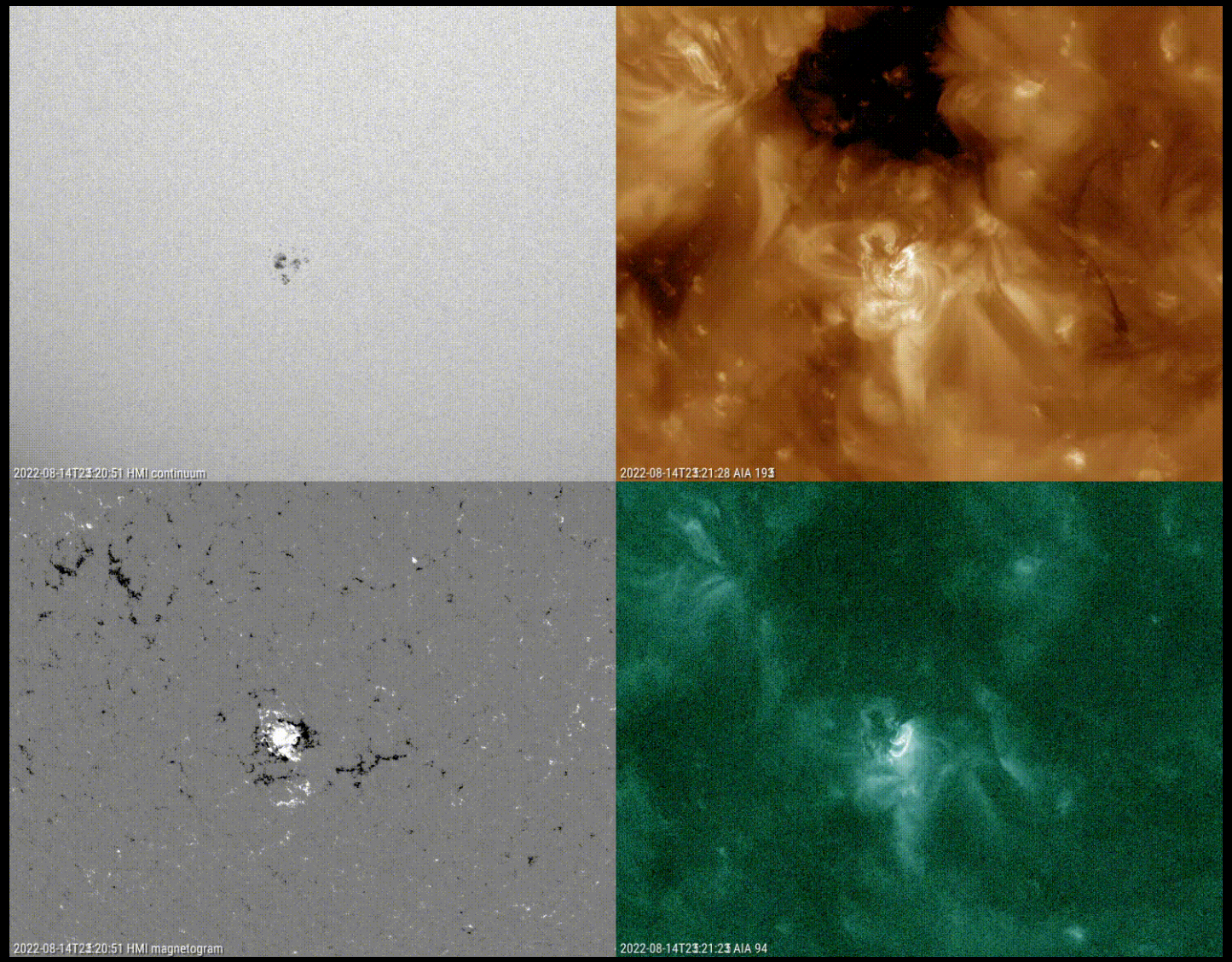
SDO/HMI White Light 2022-08-21



SDO/HMI Magnetogram 2022-08-21

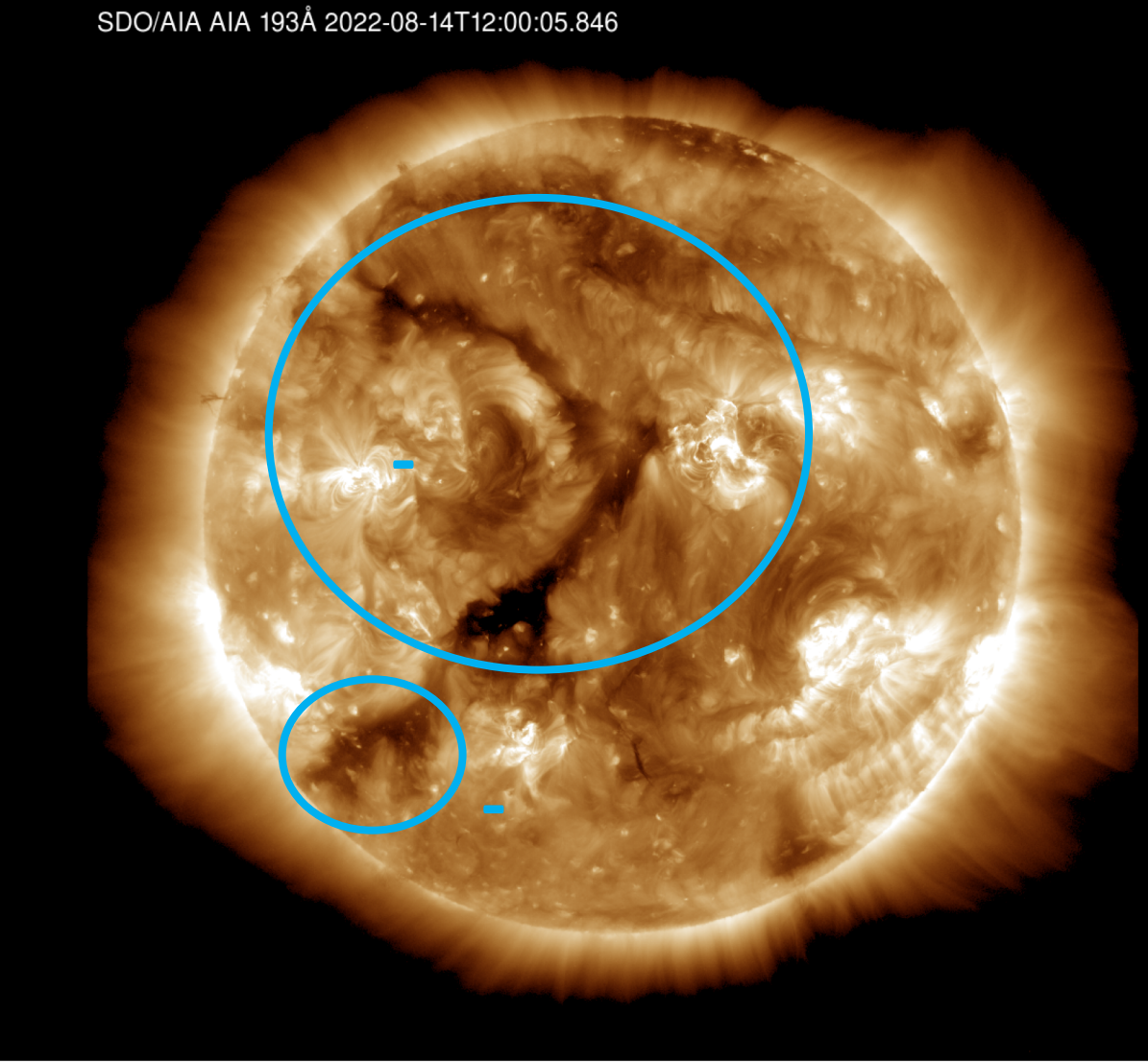


Solar active region: NOAA AR3078

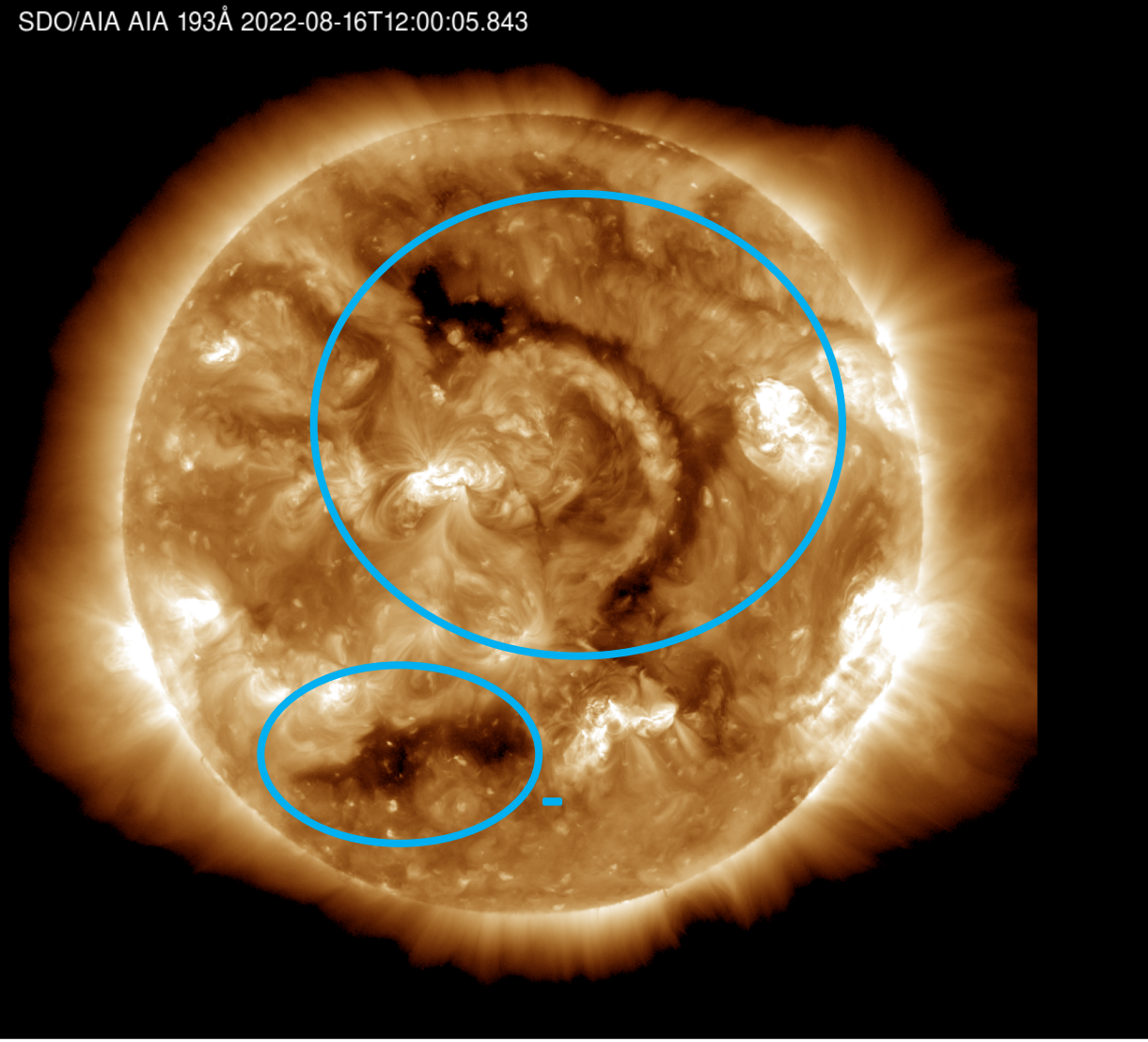


Coronal holes

SDO/AIA 19.3 nm 2022-08-14

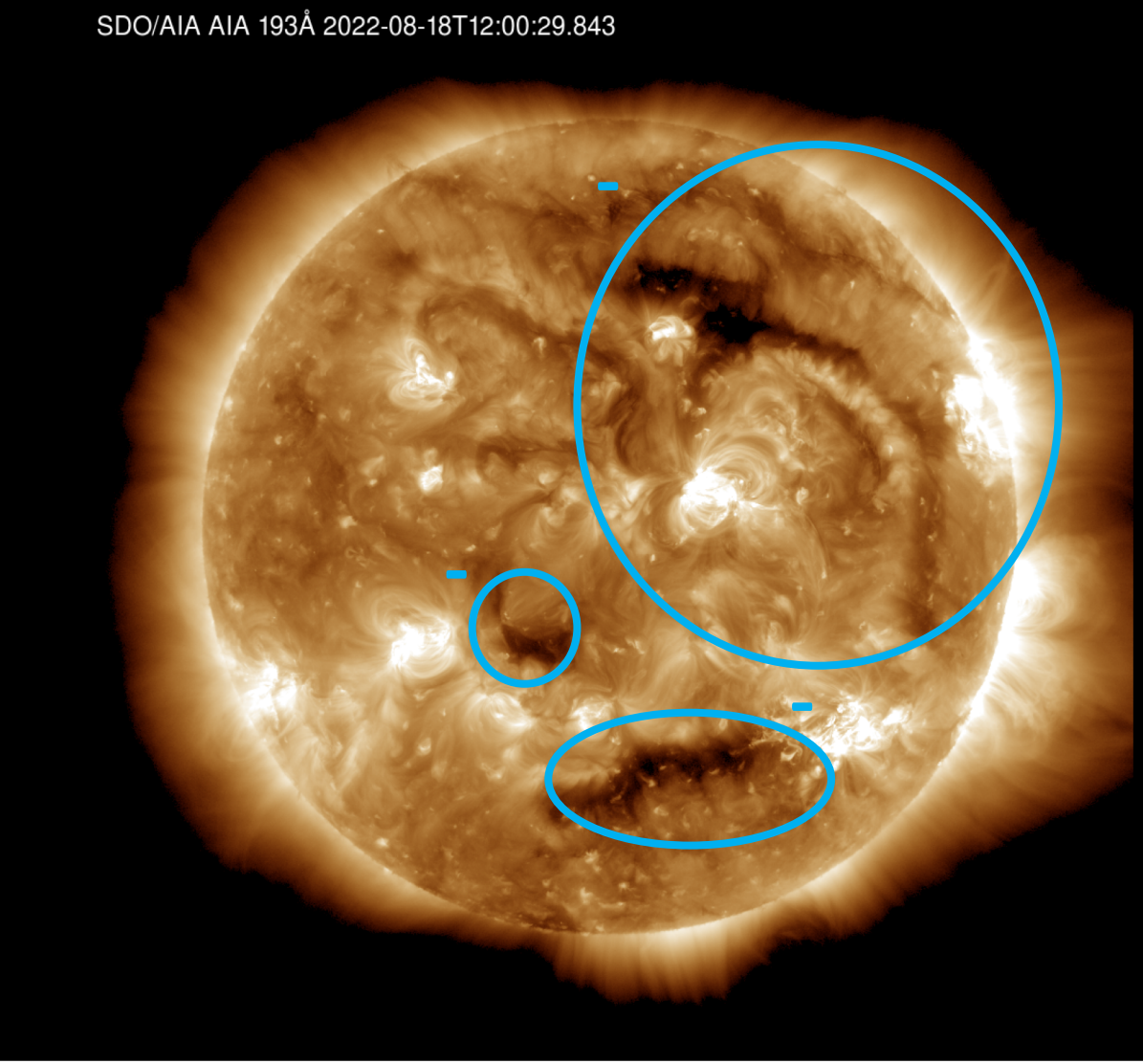


SDO/AIA 19.3 nm 2022-08-16

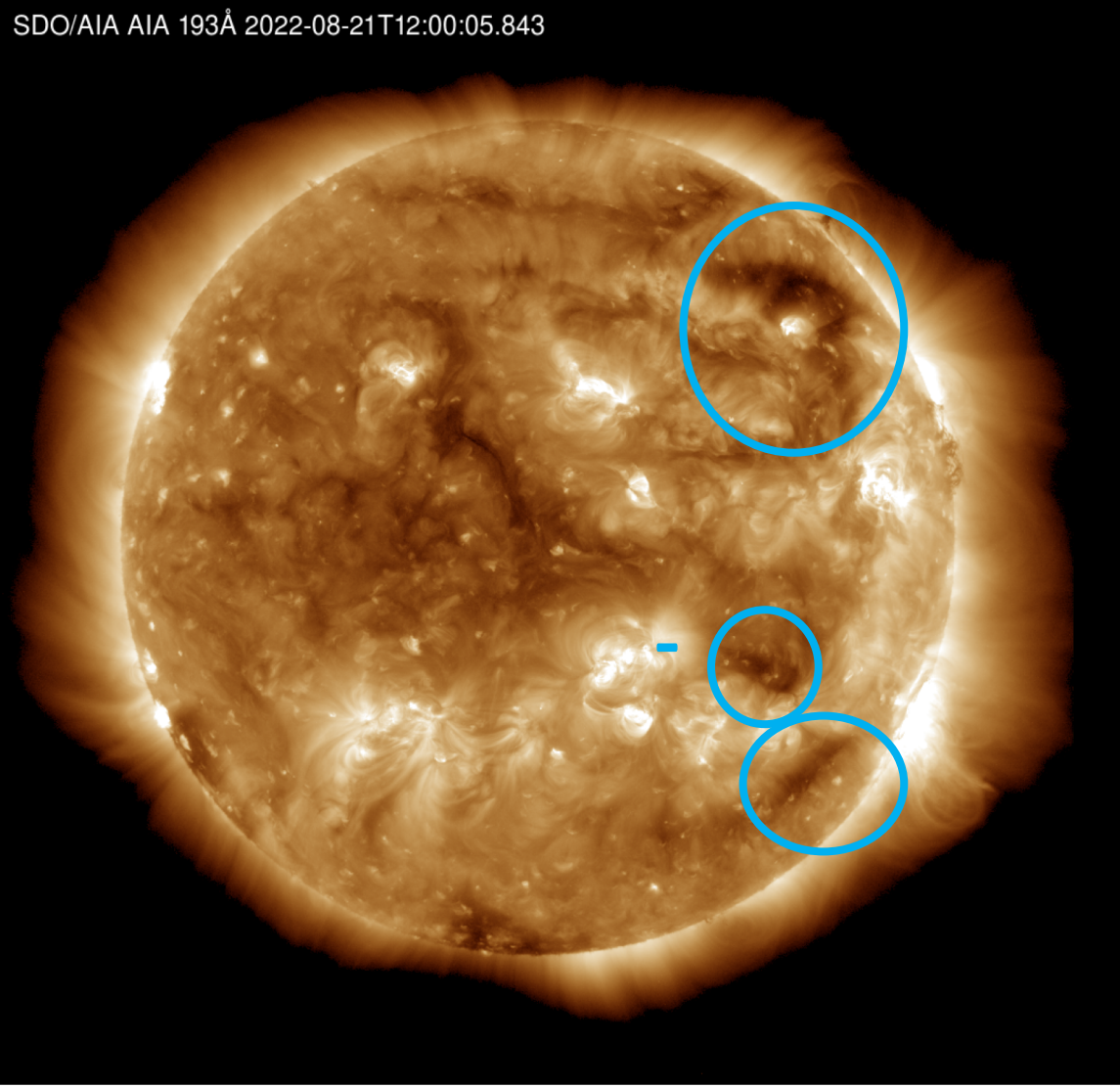


Coronal holes

SDO/AIA 19.3 nm 2022-08-18

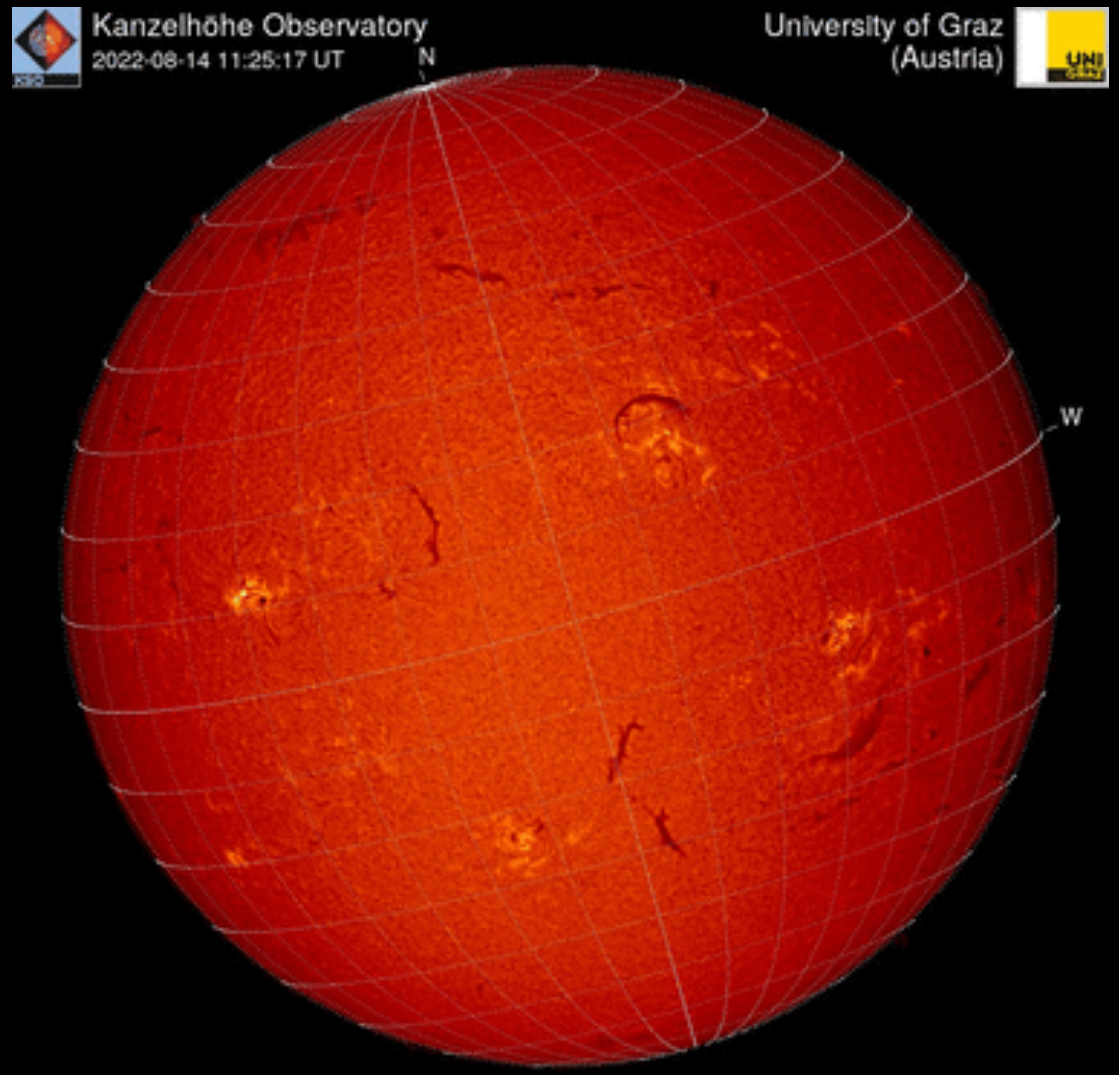


SDO/AIA 19.3 nm 2022-08-21

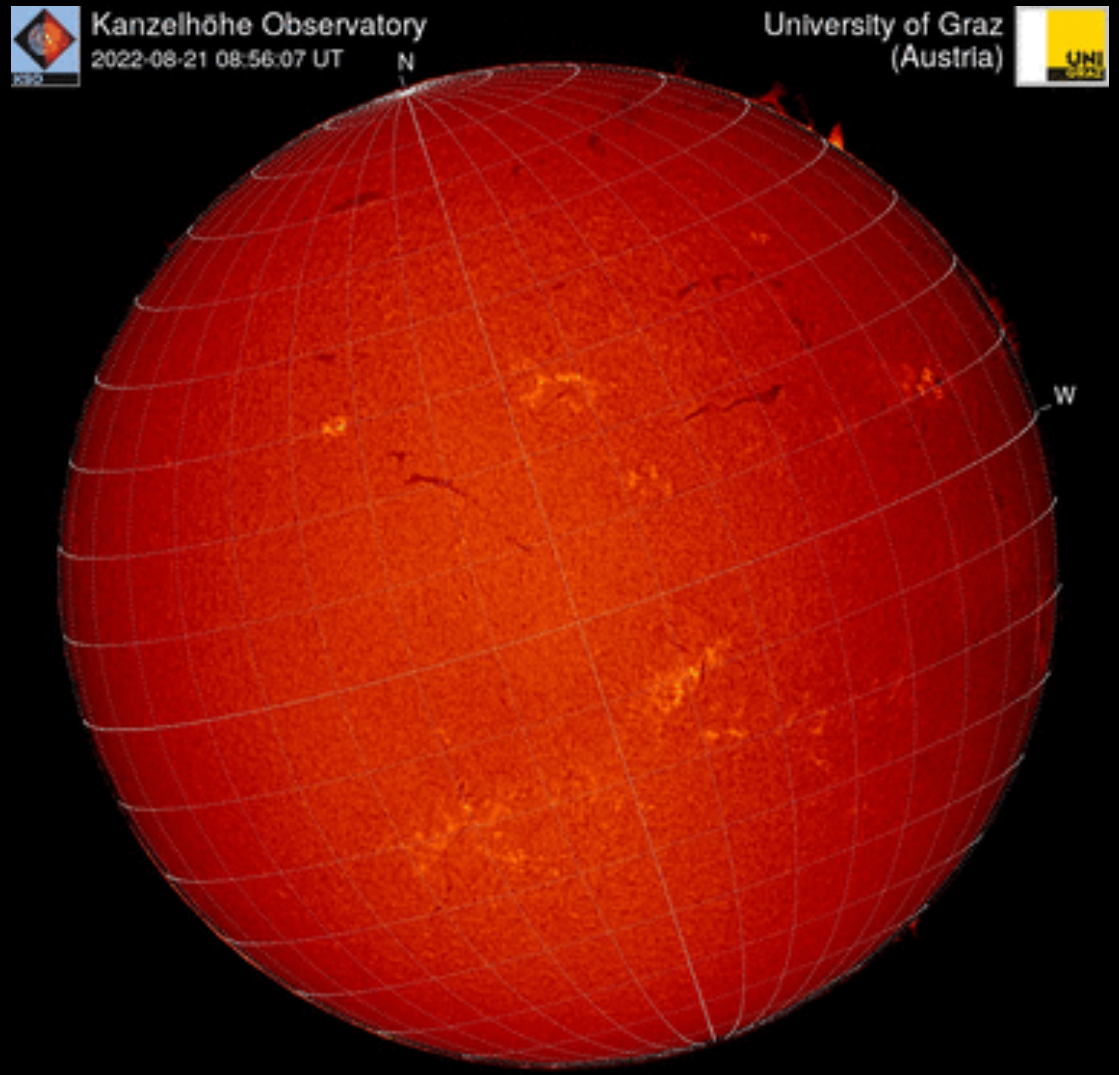


Filaments & Filament eruptions

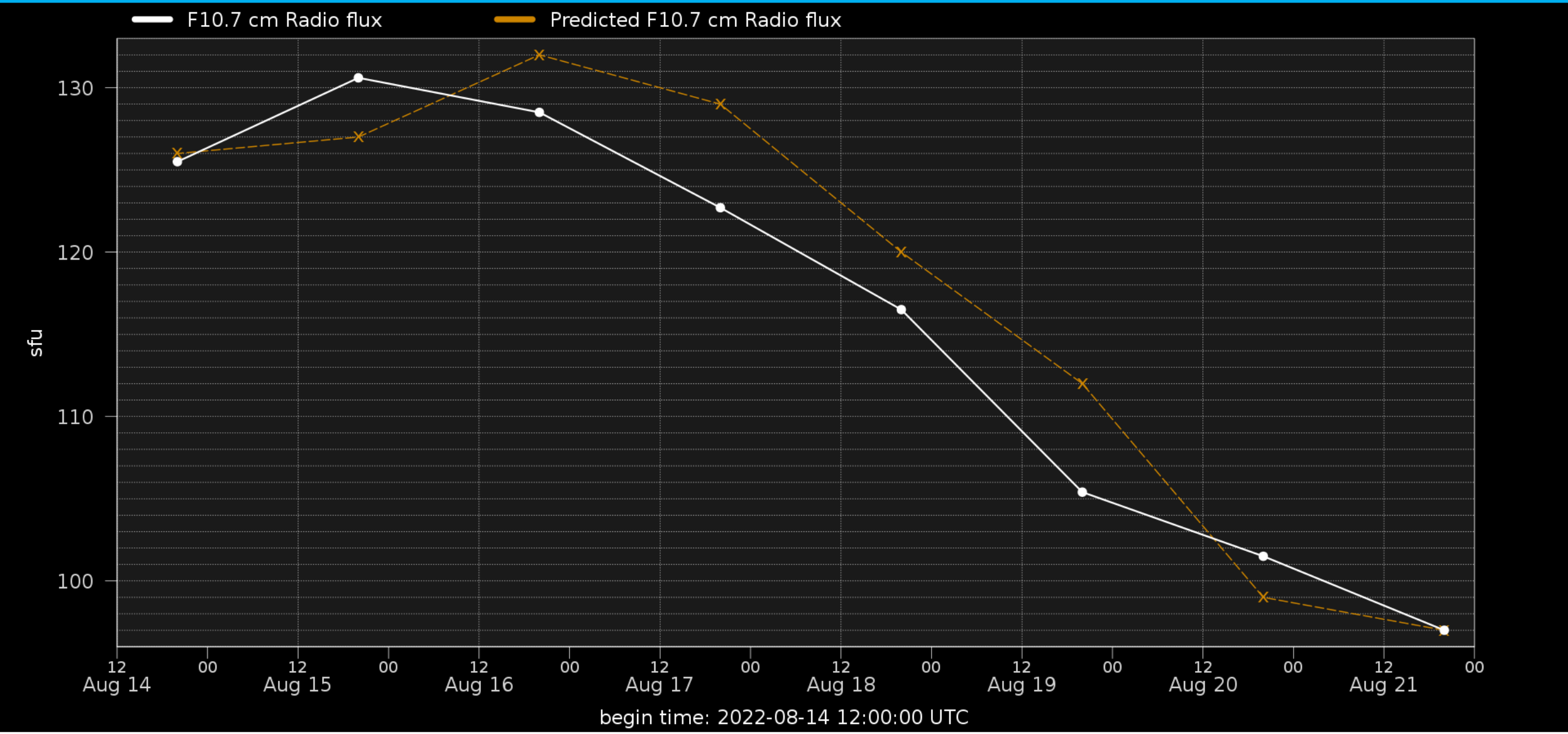
H-alpha 2022-08-14



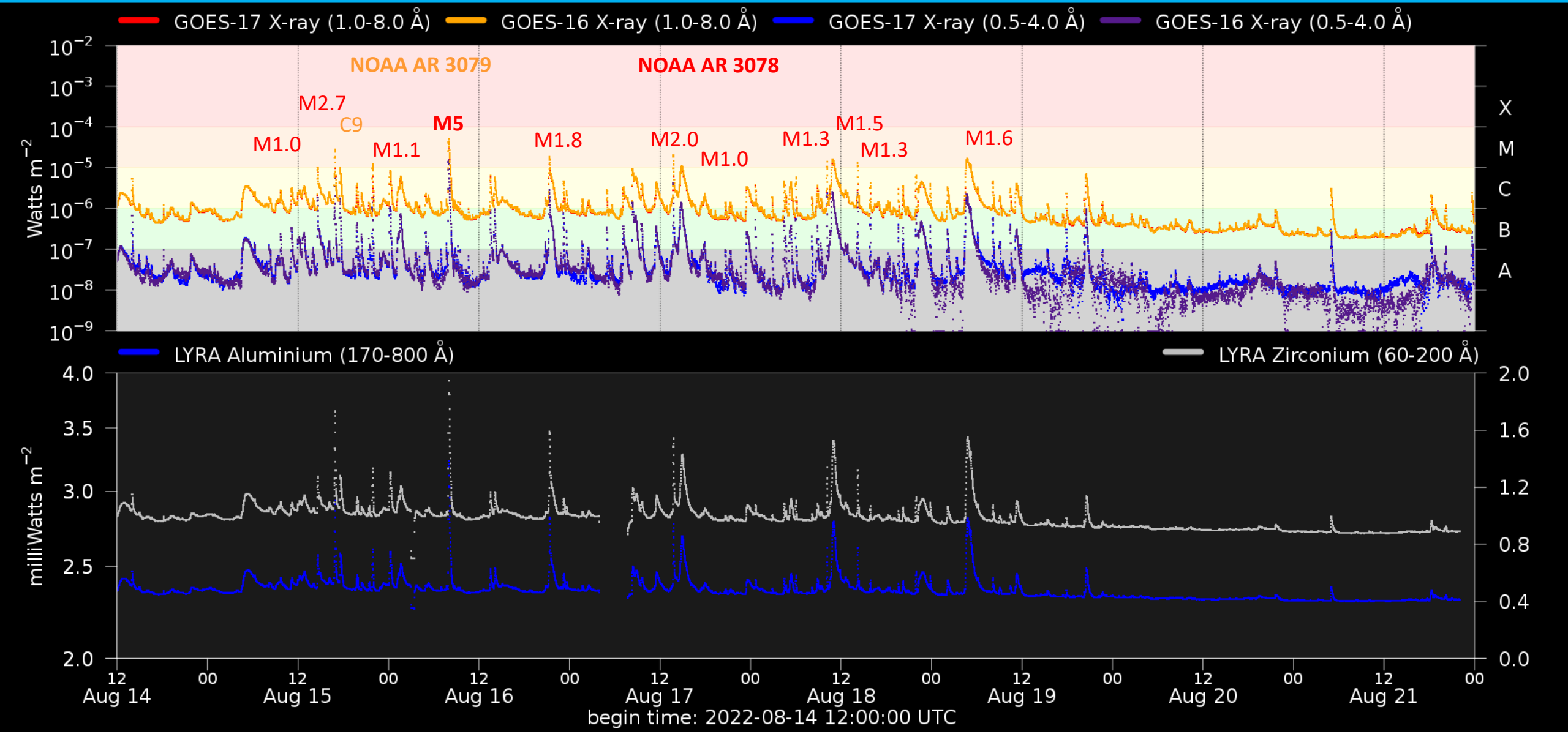
H-alpha 2022-08-21



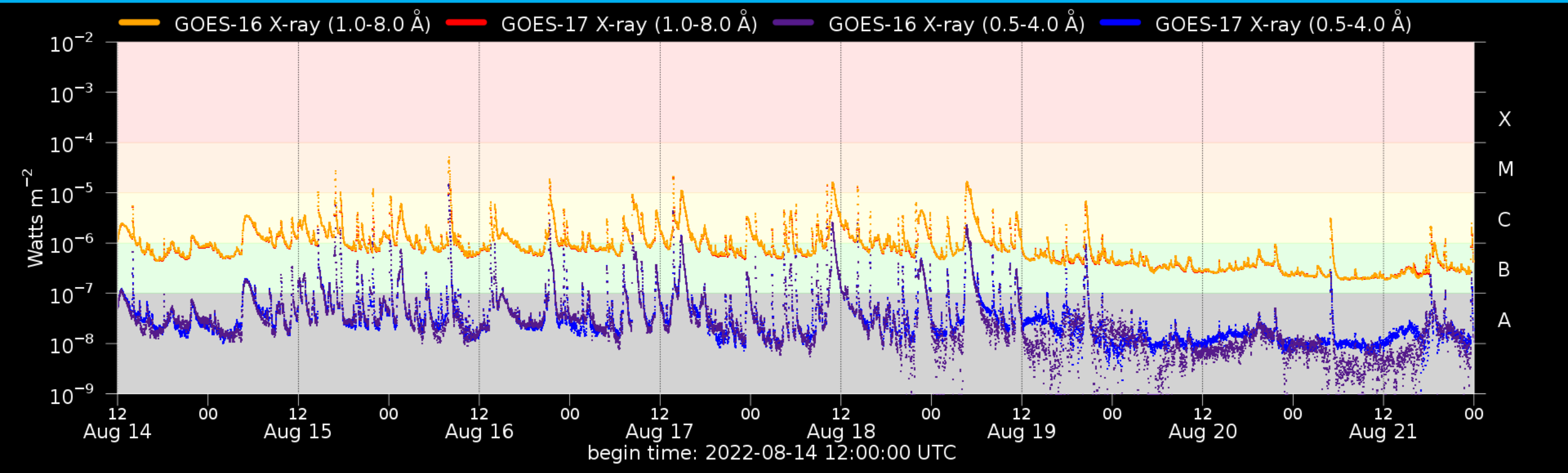
Solar F10.7cm radio flux



Solar X-Ray and UV flux



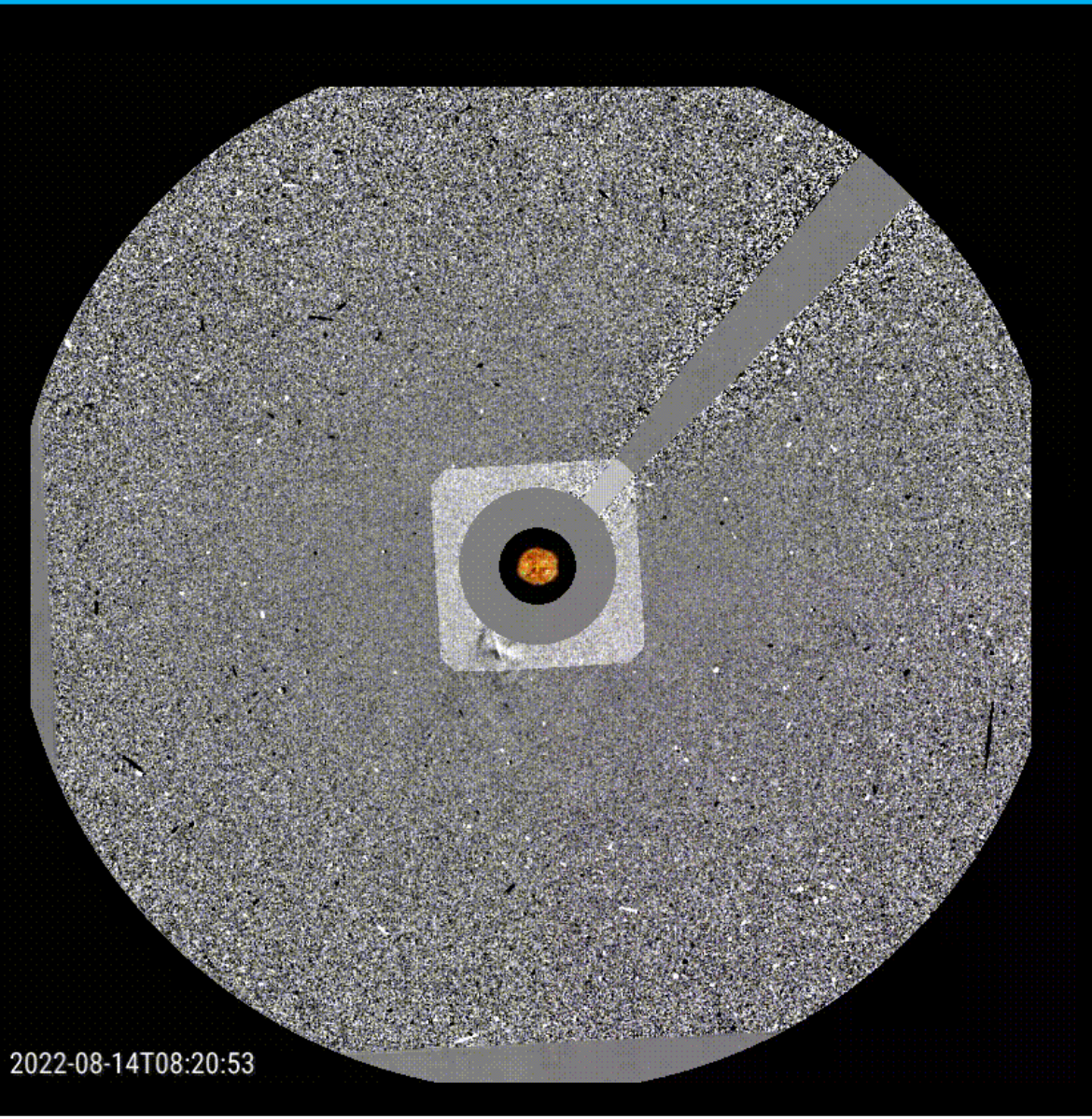
Flaring activity



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

Issue date	2022-08-14	2022-08-15	2022-08-16	2022-08-17	2022-08-18	2022-08-19	2022-08-20	2022-08-21
Probability (%)	85|30|05	90|30|01	95|30|10	95|30|10	95|40|10	95|40|10	60|10|01	50|10|01
Observed (#)	10|00|00	14|04|00	13|01|00	12|04|00	15|02|00	04|00|00	01|00|00	03|00|00

Coronal Mass Ejections



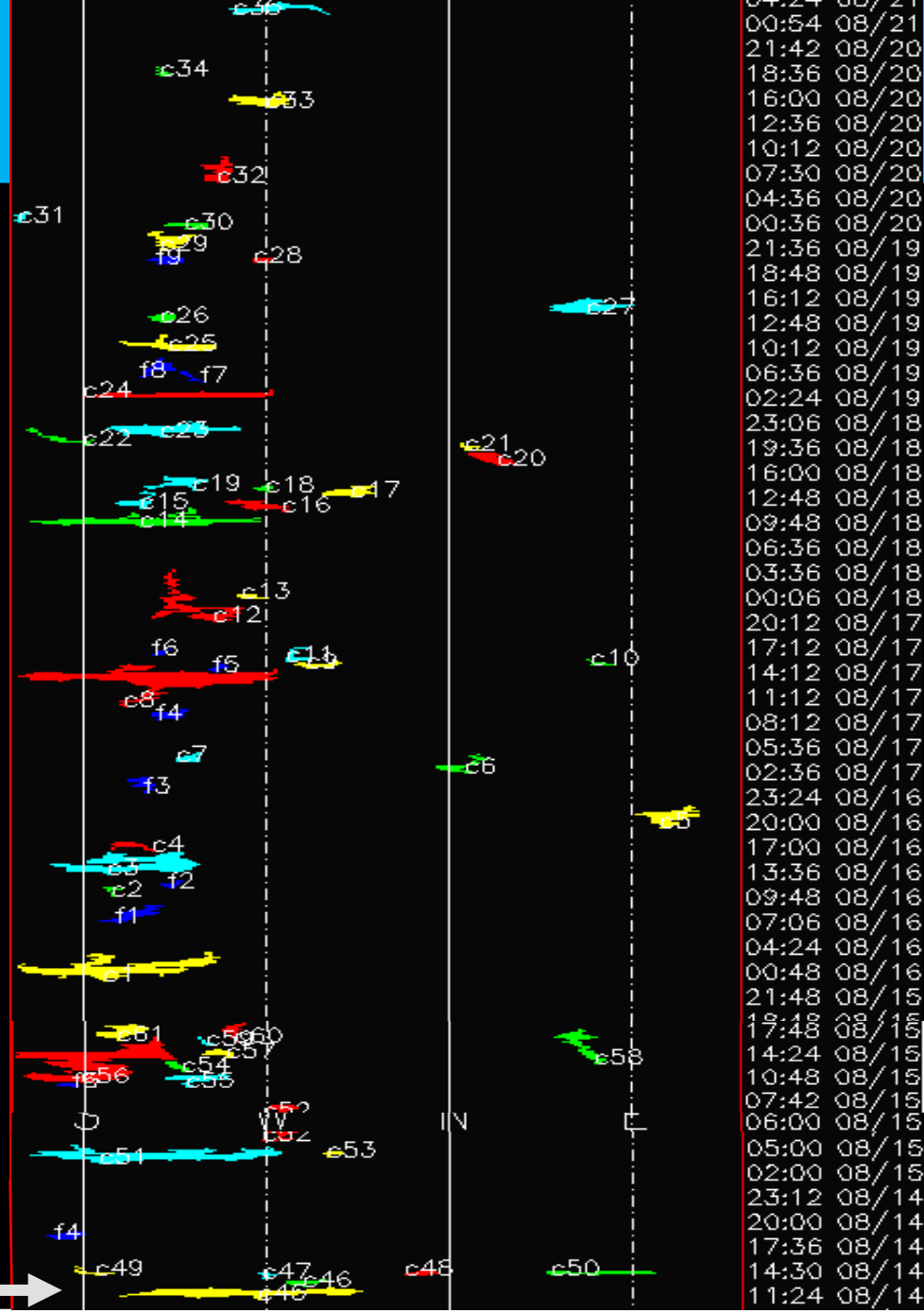
CME 1
2022/08/14 12:48
LASCO/C2

Speed ~650 km/s

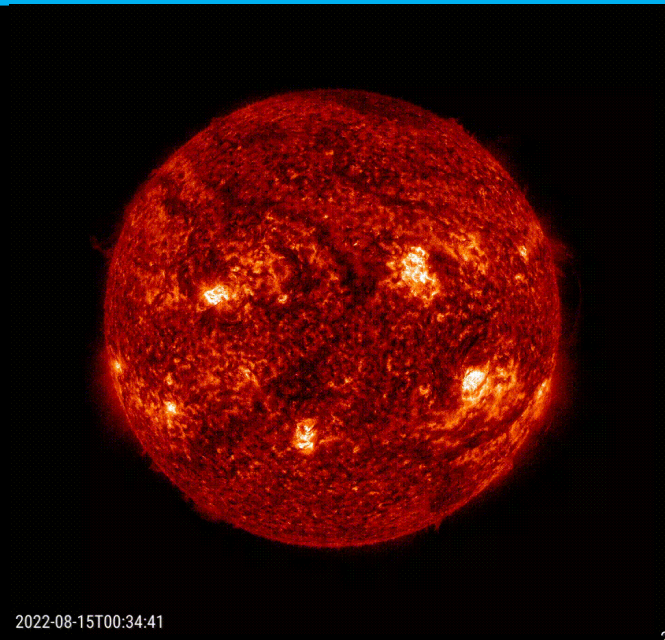
Origin filament:
NW of disk,
AR3076

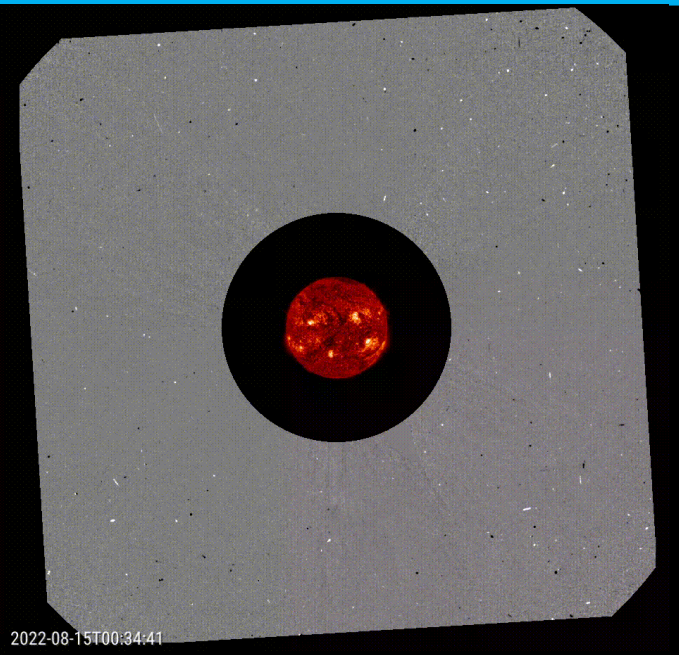
Seen on disk EUV wave,
brightening, and post eruptive arcades.

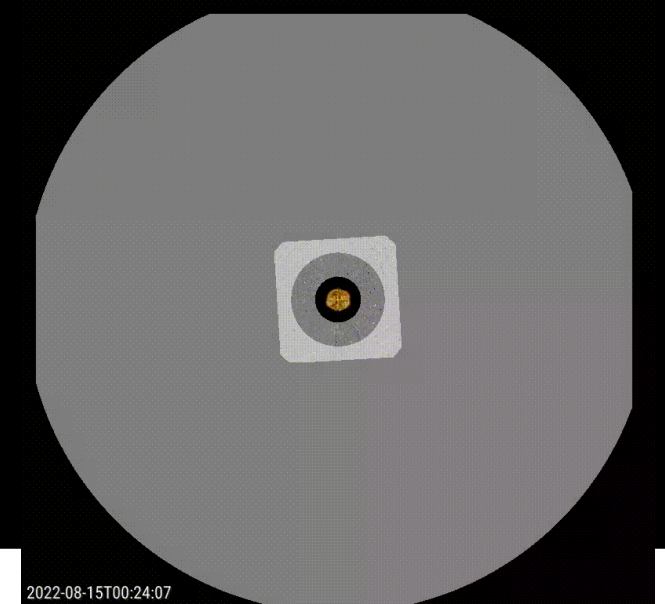
SW (partial halo)
Predicted arrival:
2022-08-17
05:00:UT



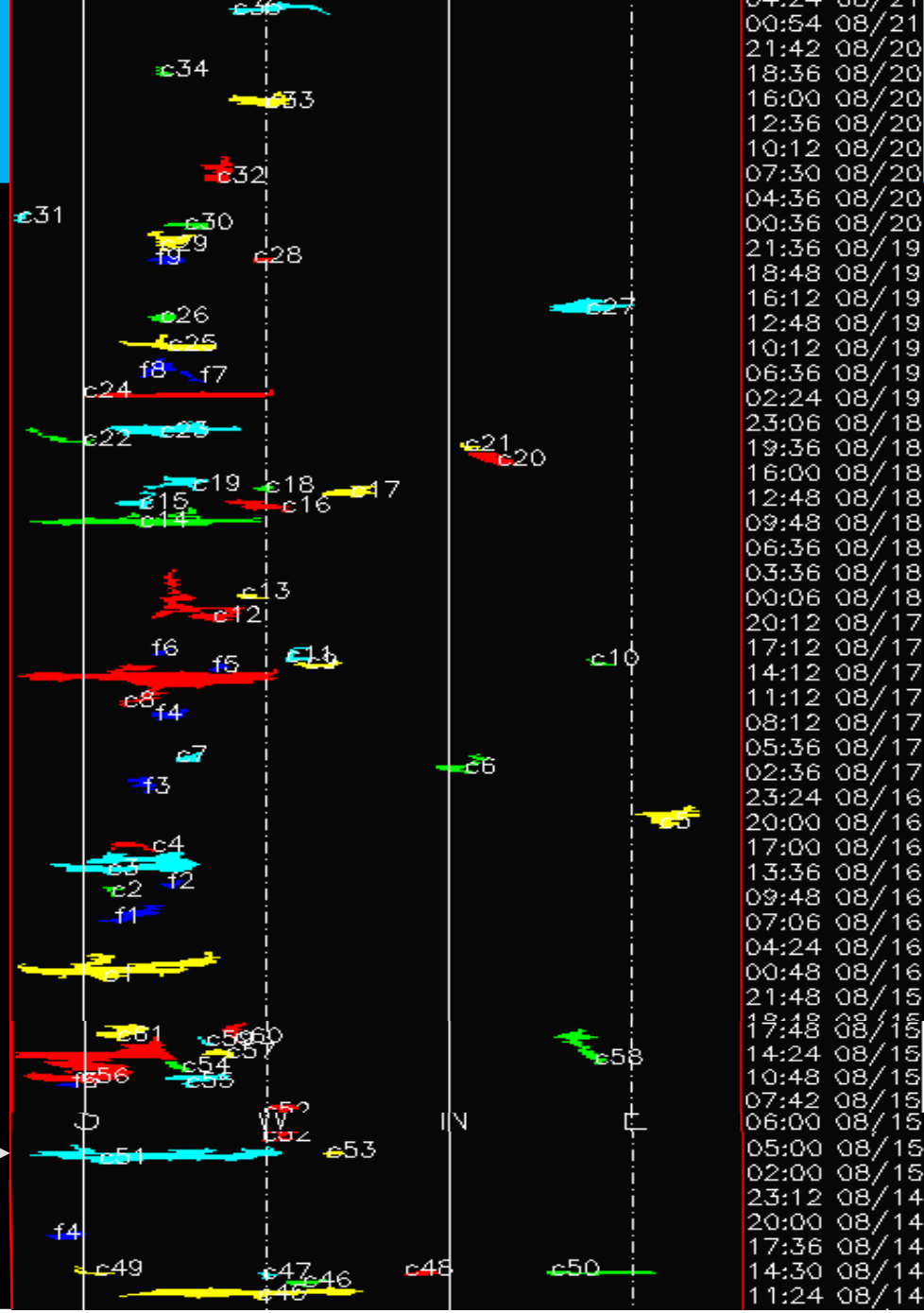
Coronal Mass Ejections

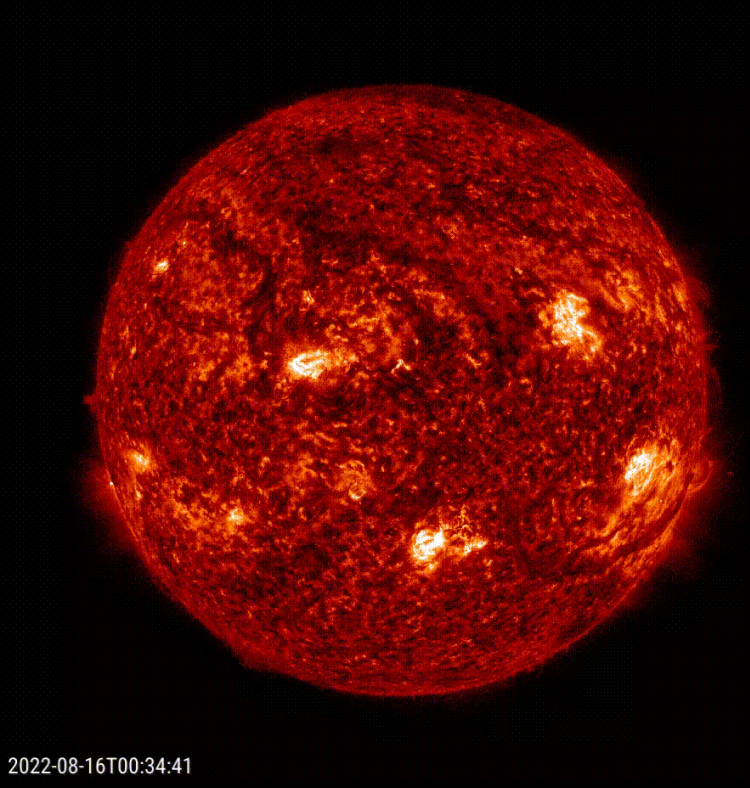


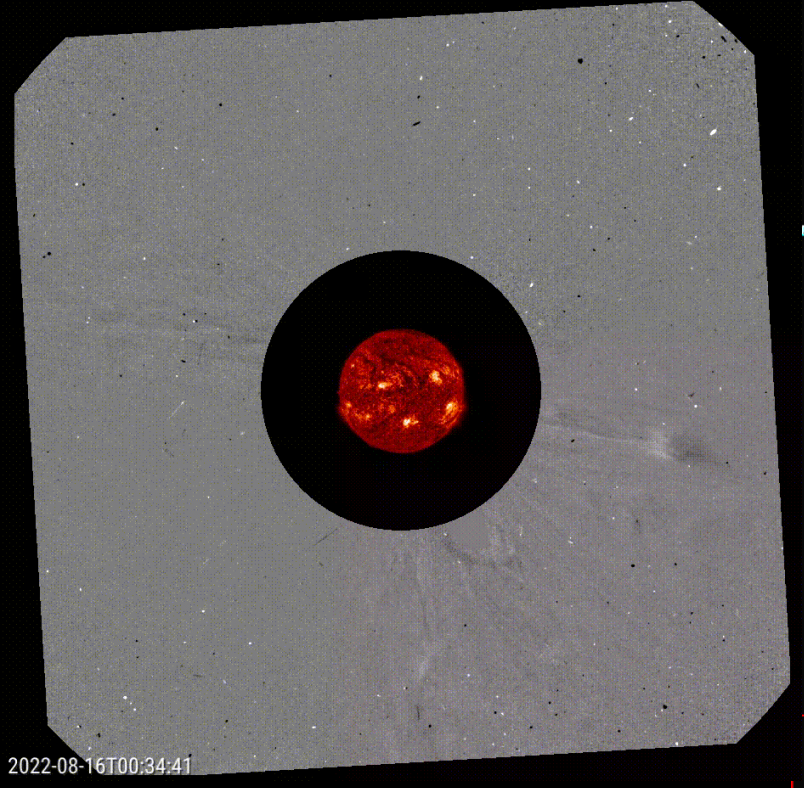


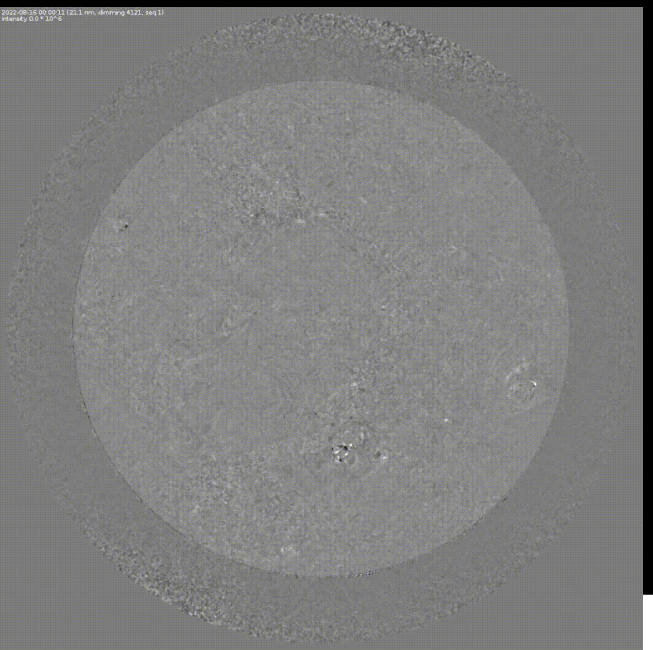


CME 2
2022/08/15 05:00 LASCO/C2
large filament eruption near
NOAA AR3077 and AR3078.
Speed ~500 km/s
SW
Predicted glancing blow arrival:
2022-08-18 09:00UT

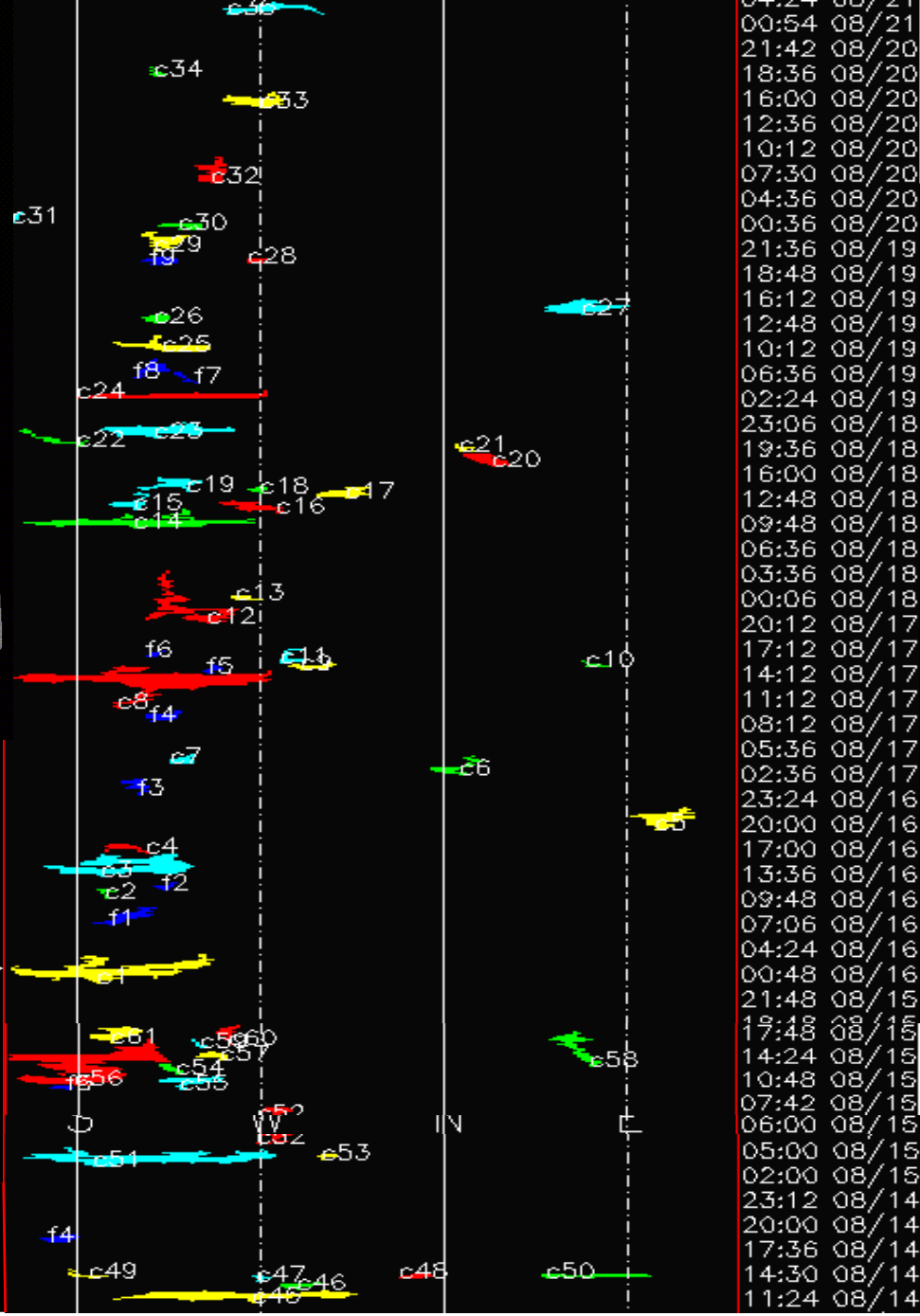


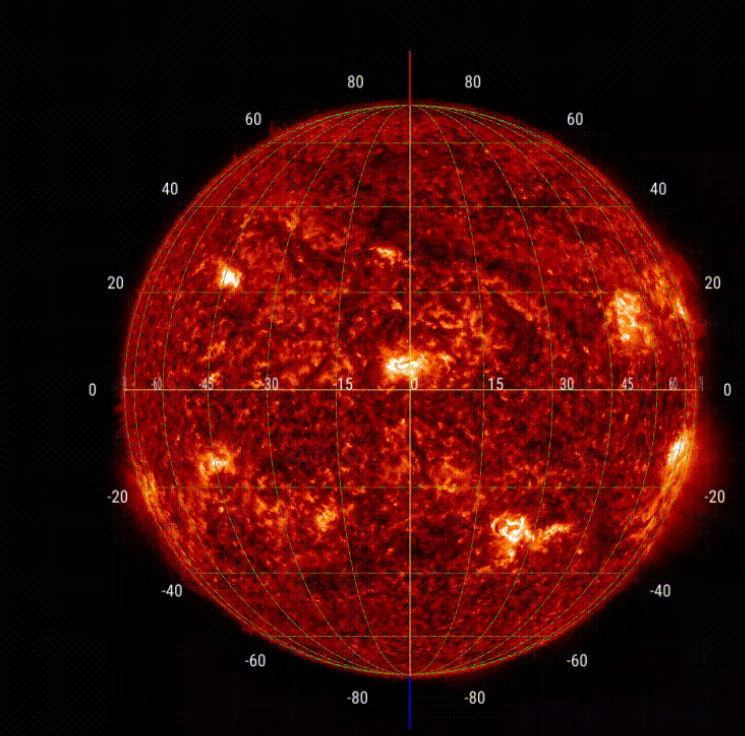


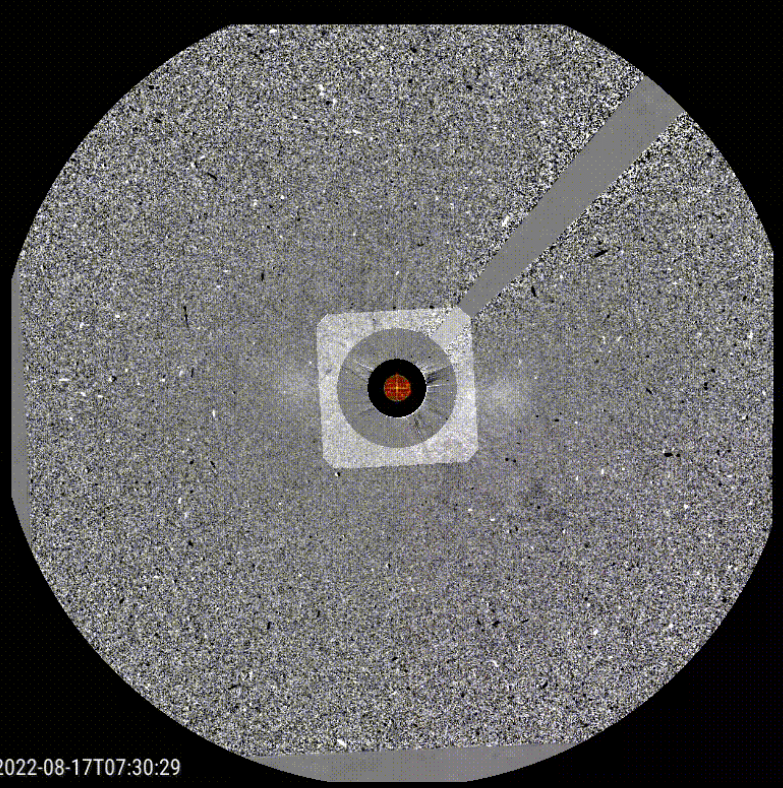


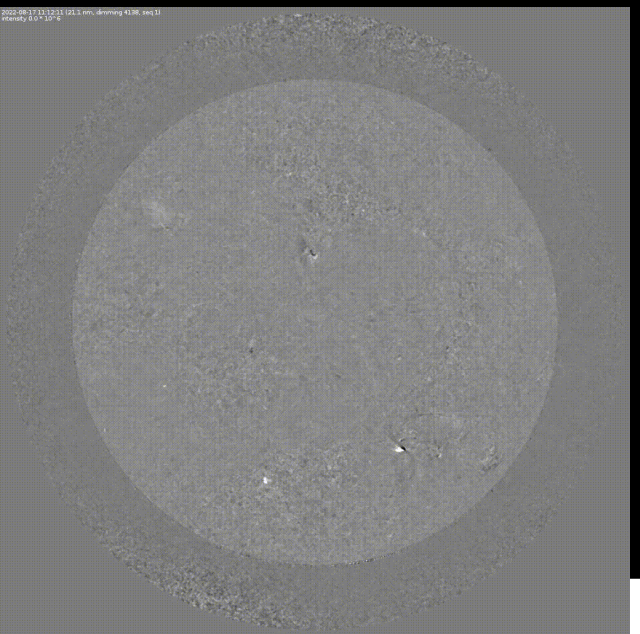


CME 3
2022/08/16 02:12 LASCO/C2
From the AR3078 near central meridian, clear material in 304
c5.9 flare
Speed ~500 km/s
SW
Predicted glancing blow arrival:
2022-08-19 04:00UT

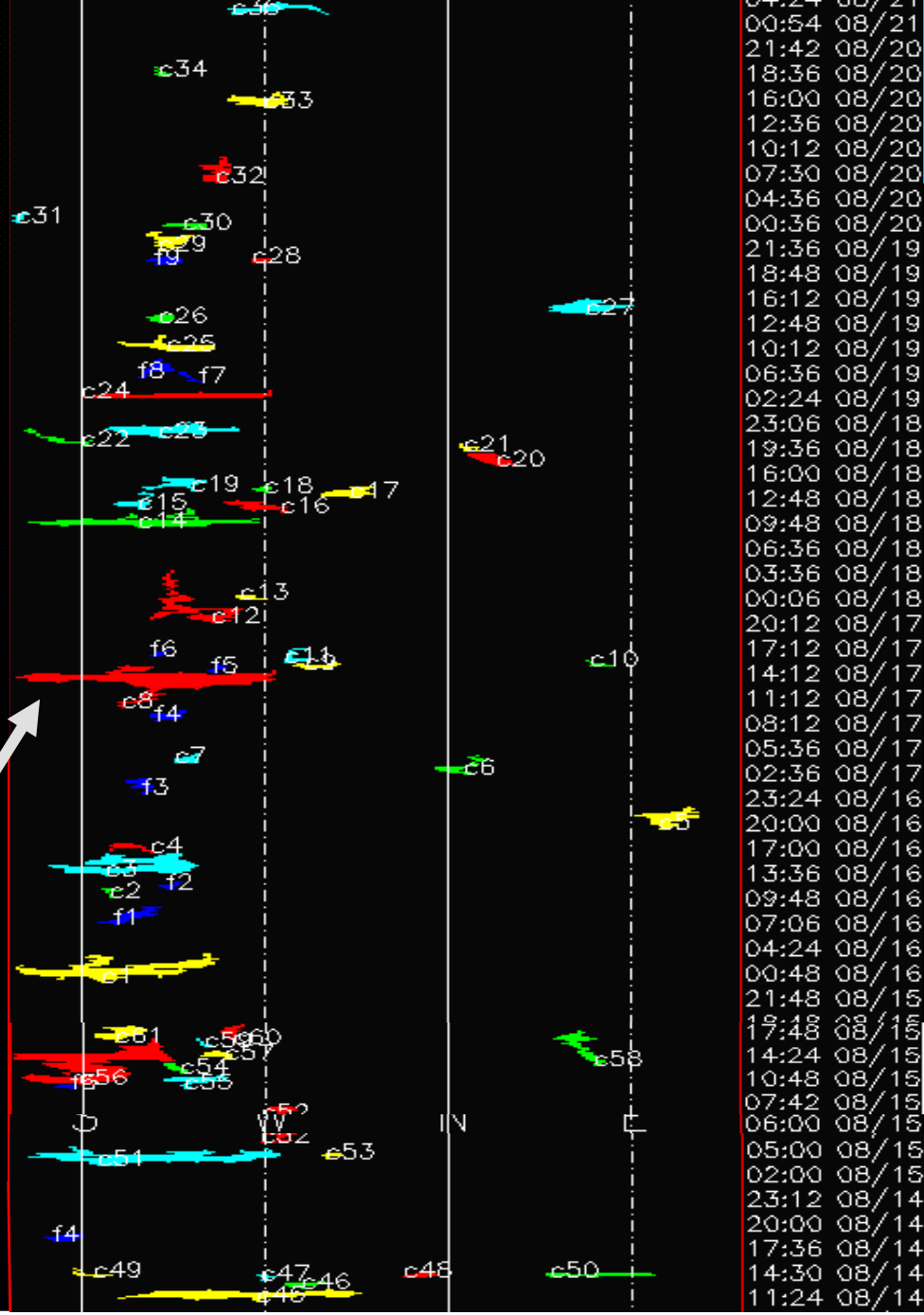


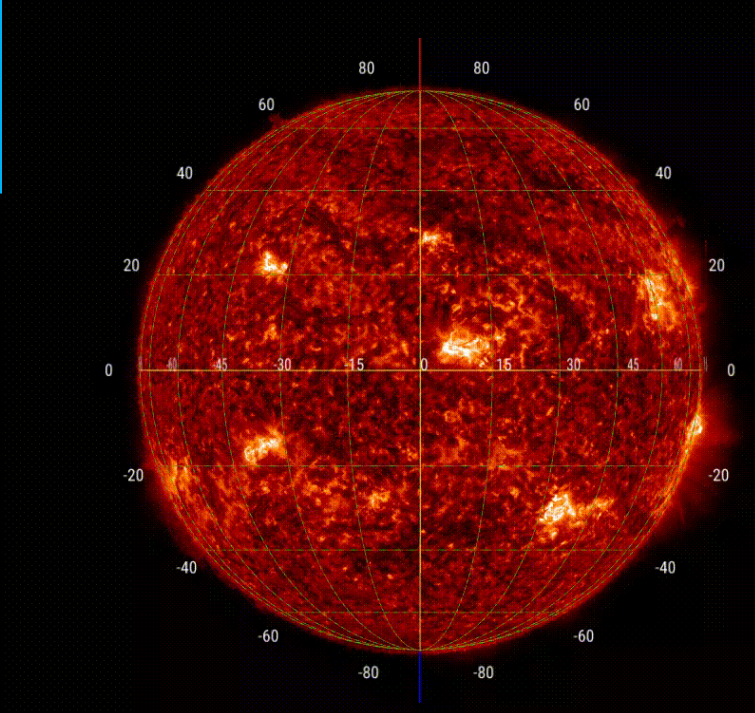


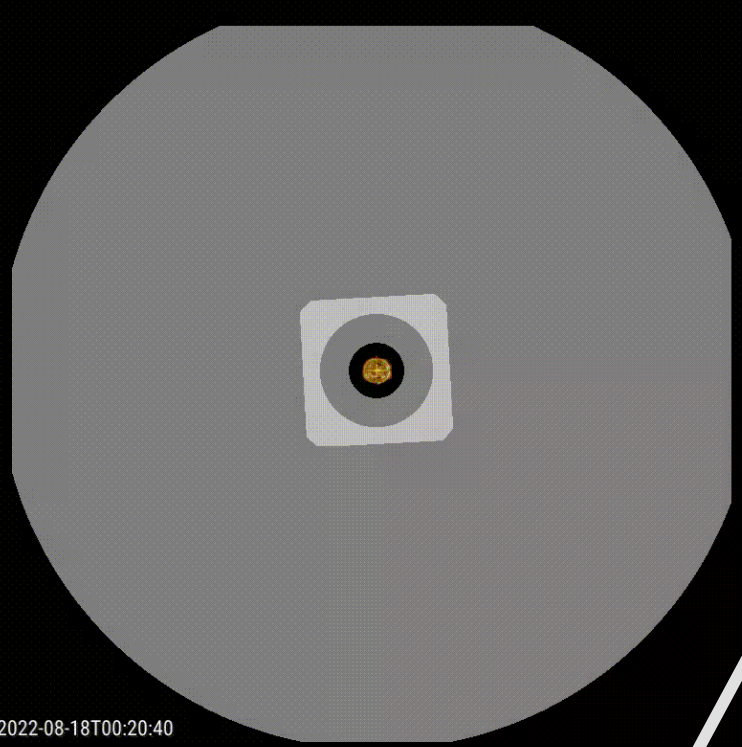


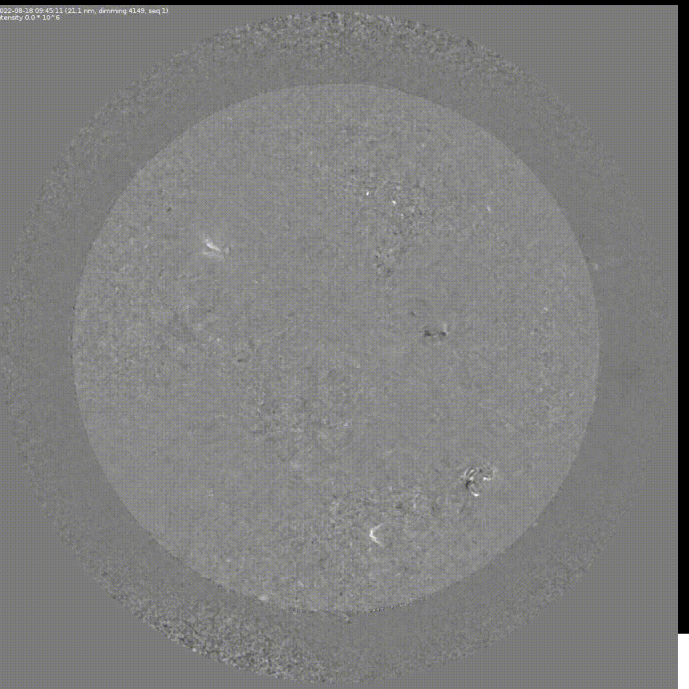


CME 4
2022/08/17 14:36 LASCO/C2
- Two CMEs seen, associated with the **M2** (13:45 UT) flare and M1 (14:52 UT) flare, AR3078.
- Type IV 14:46 UT
- glancing blow at Earth Predicted arrival: 2022-08-20 09:00UT

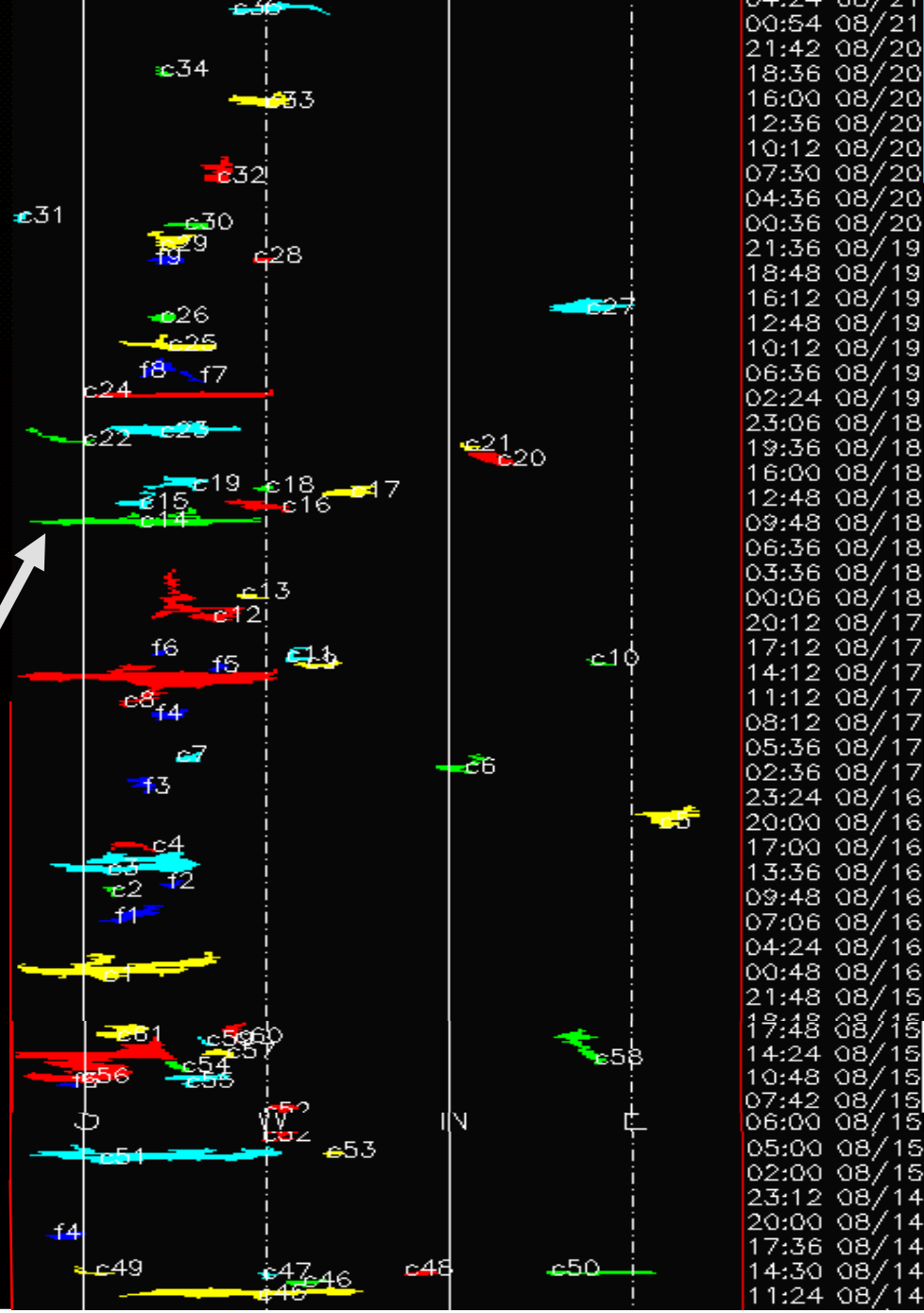


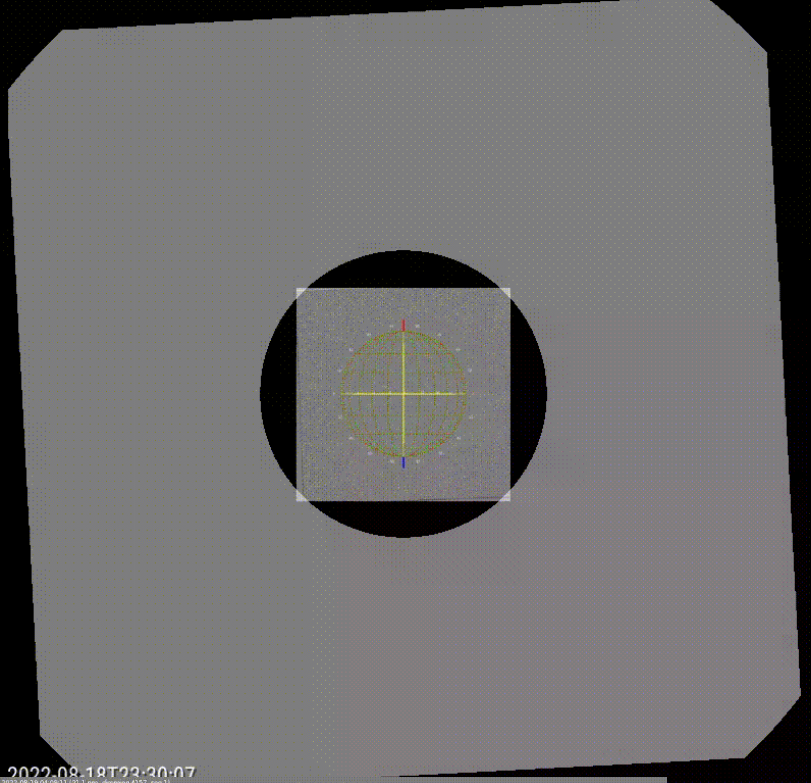


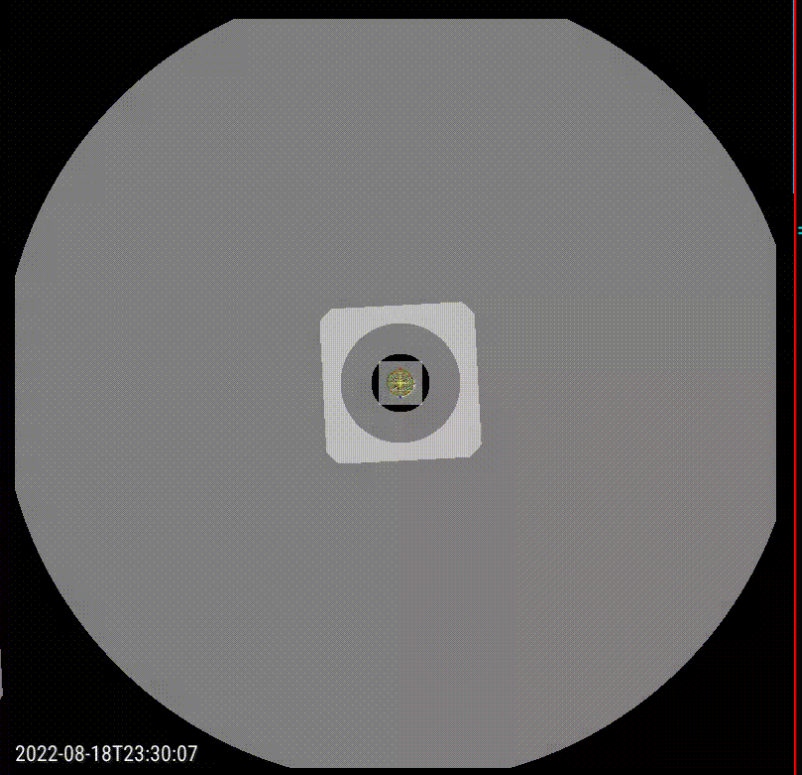


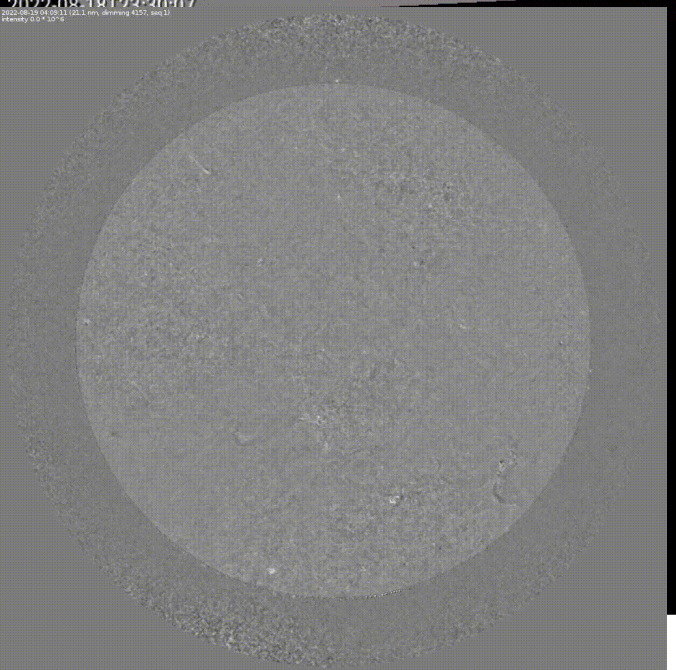


CME 5
2022/08/18 11:00 LASCO/C2
- NOAA AR3078 after an impulsive M1.3 flare (10:09 UT) and following filament eruption and resulting long duration M1.5 flare (10:55 UT).
- type II radio emission 10:49 UT (749 km/s)
- glancing blow at Earth Predicted arrival: 2022-08-21 03:00UT

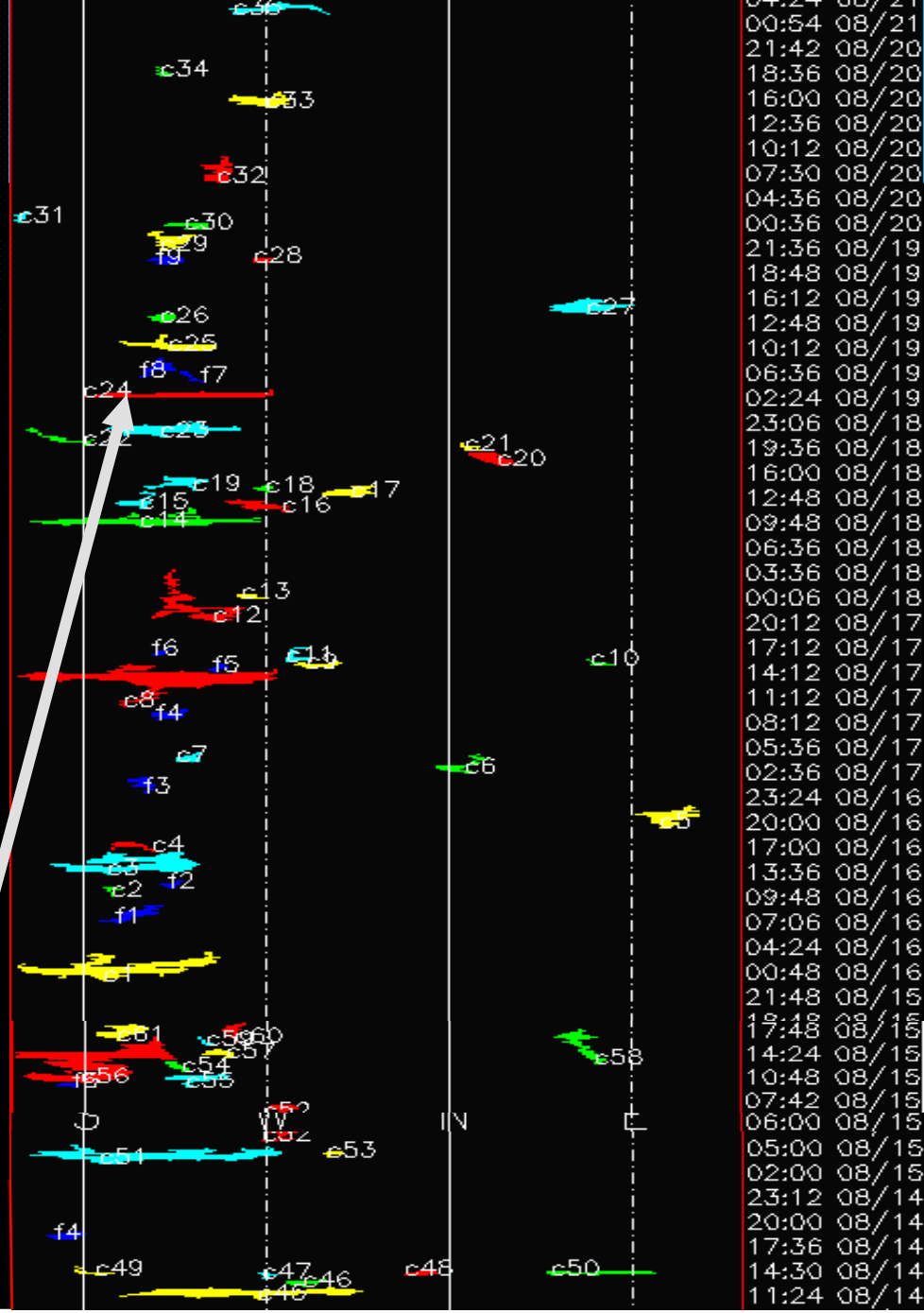








CME 6
2022/08/19 04:49 LASCO/C2
- SW partial halo
- M1.6 04:00 UT
- Type II radio emission 04:43 UT (410 km/s)
- Type IV radio emission 04:57 UT
- glancing blow at Earth Predicted arrival: 2022-08-22 10:00 UT



Solar Wind and Geomagnetic Activity

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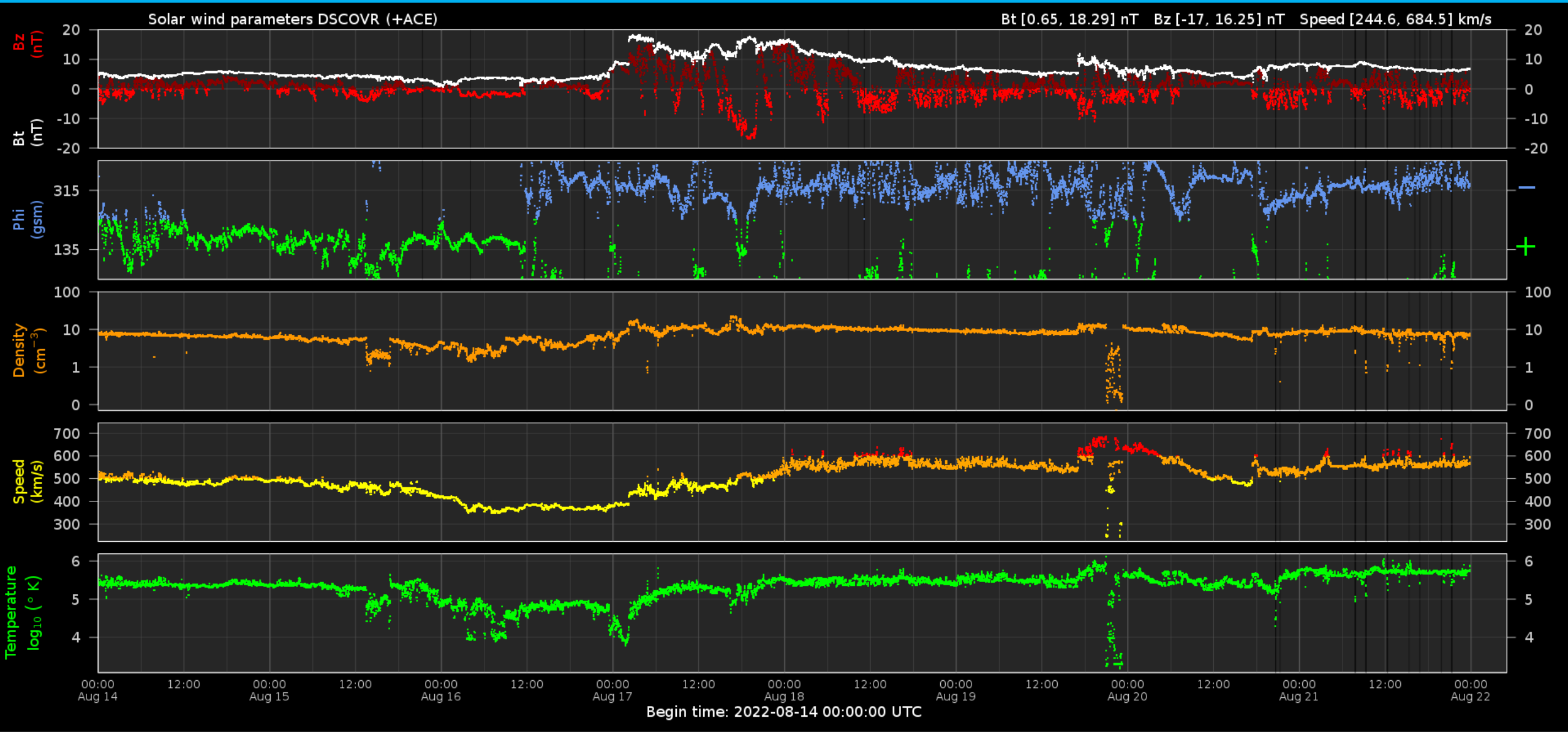
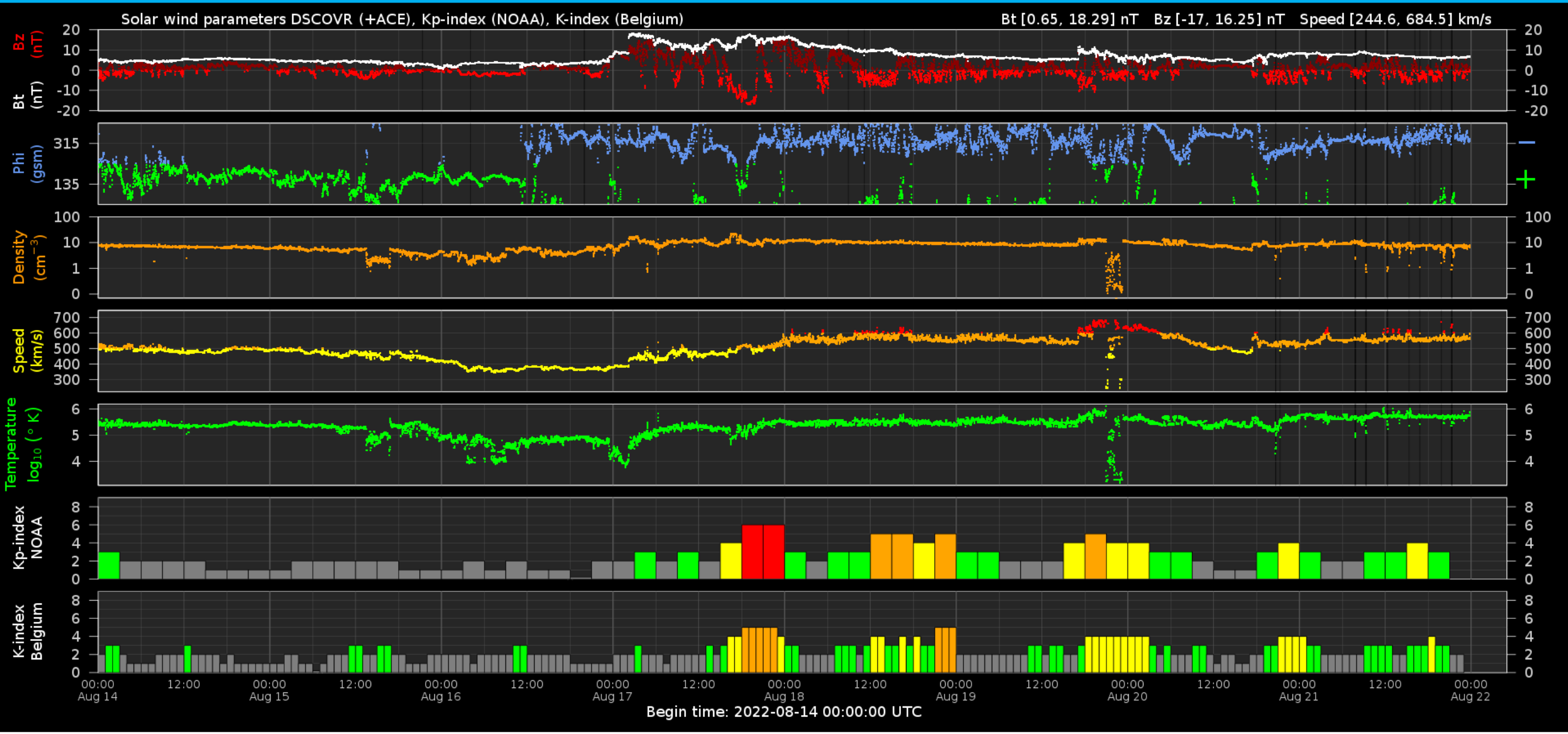
Solar wind parameters

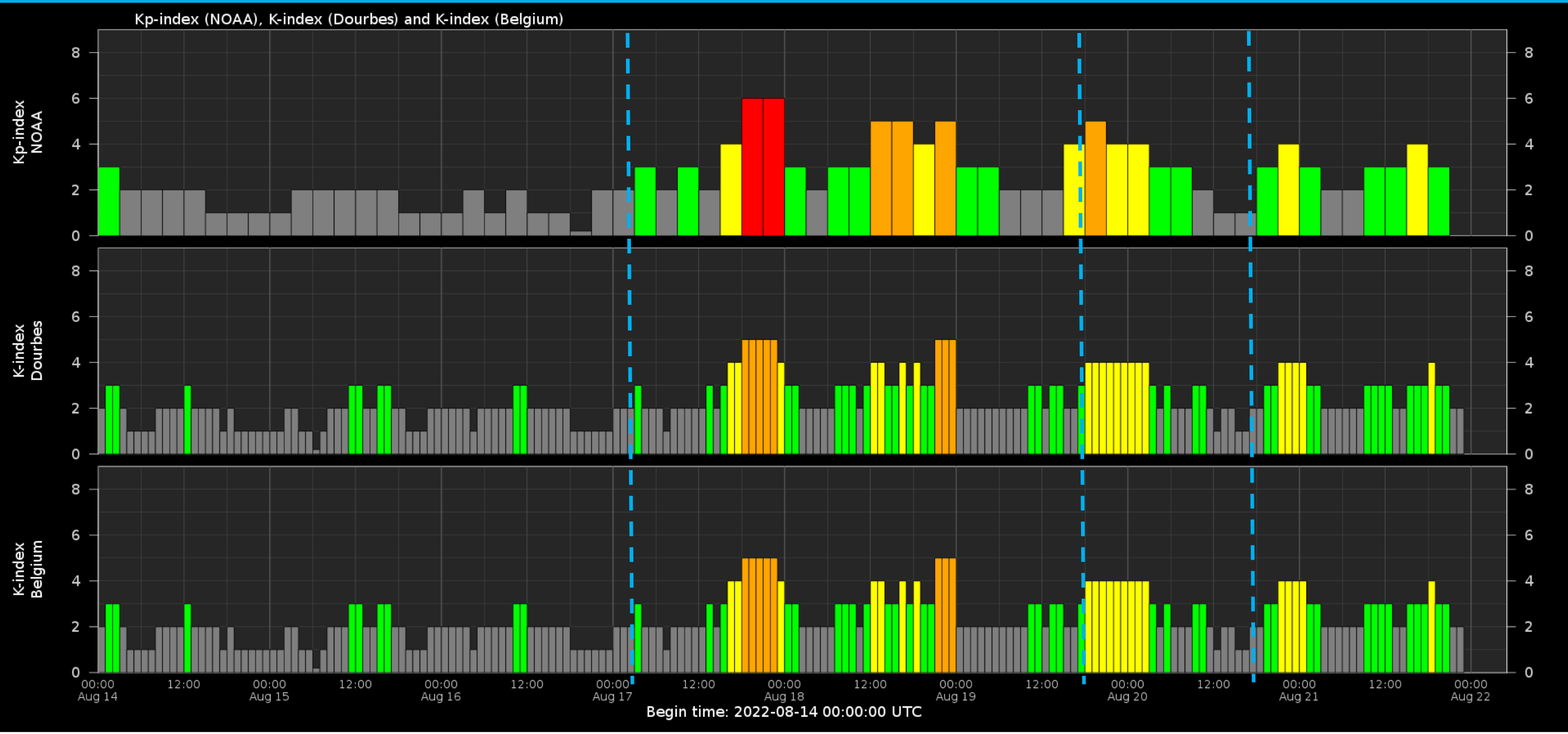


Solar wind parameters

Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



Energetic Particles

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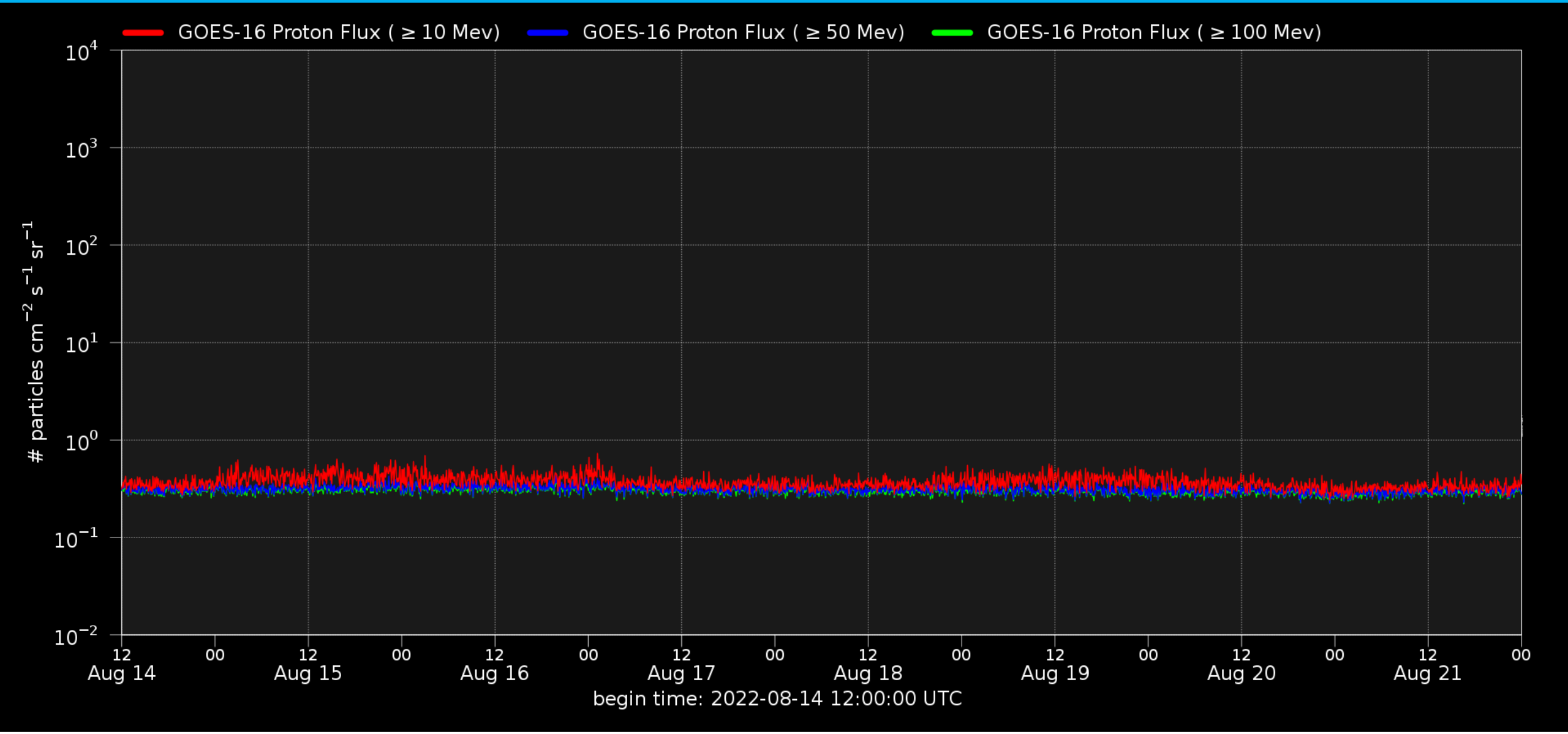
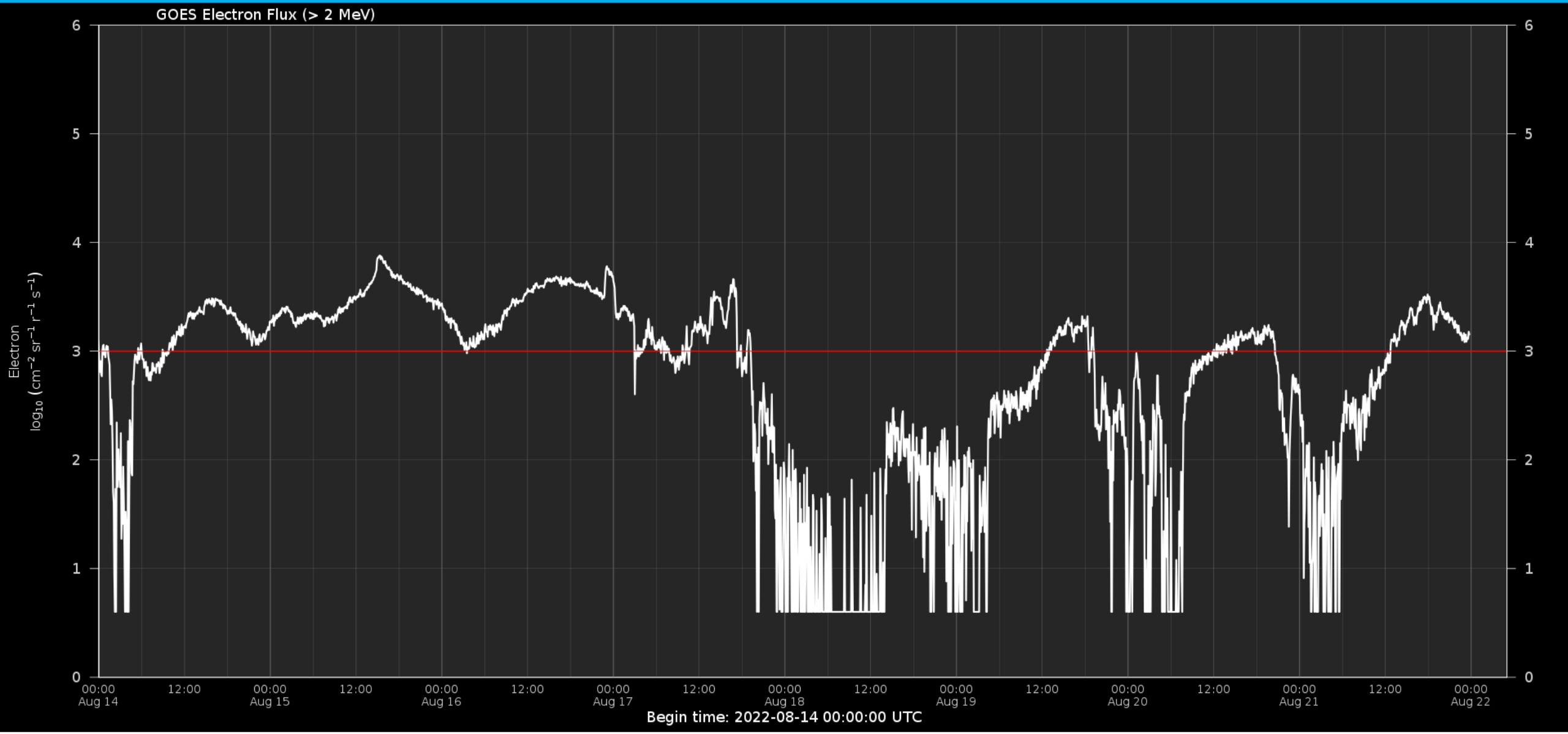
Solar proton flux

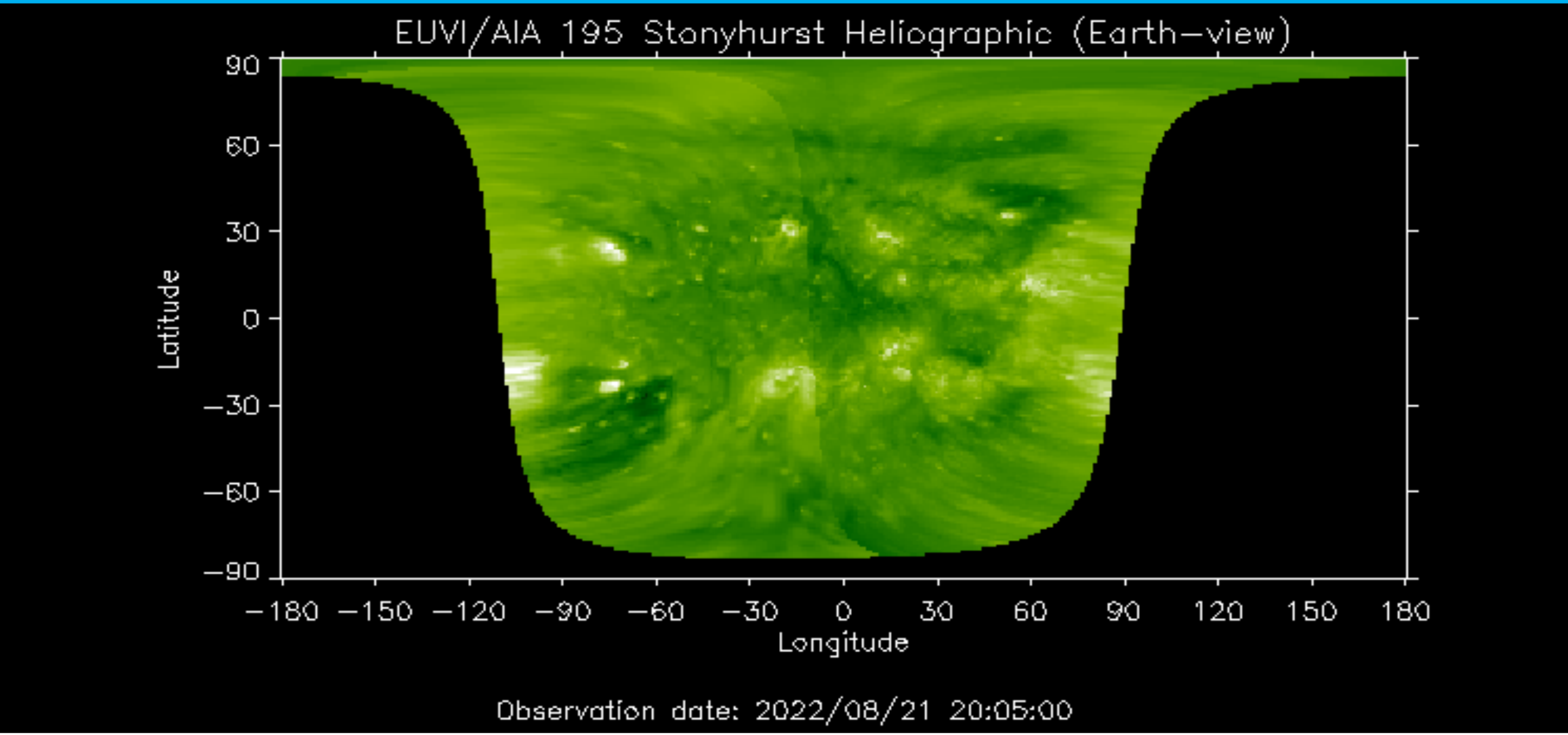


Electron flux at GEO

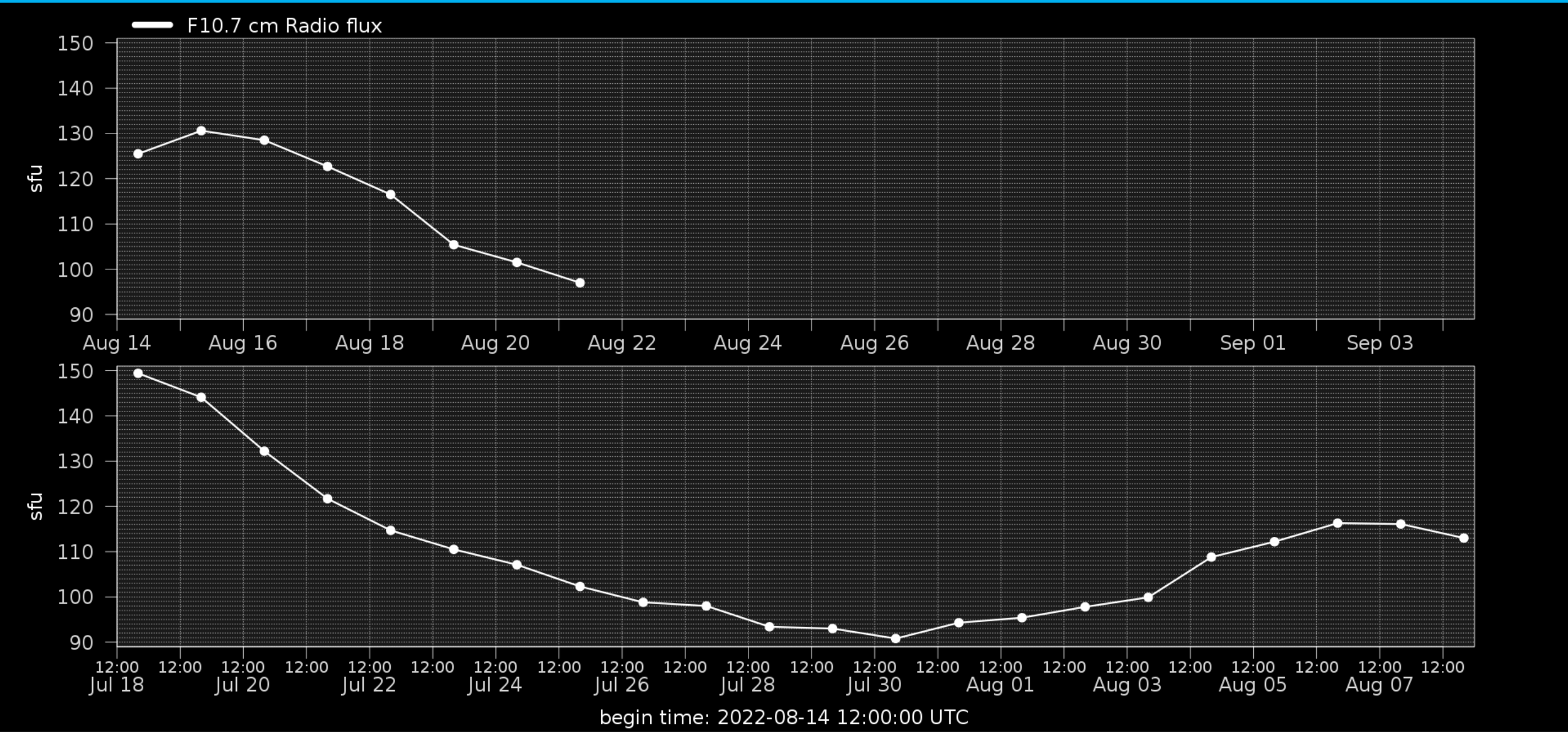


Outlook

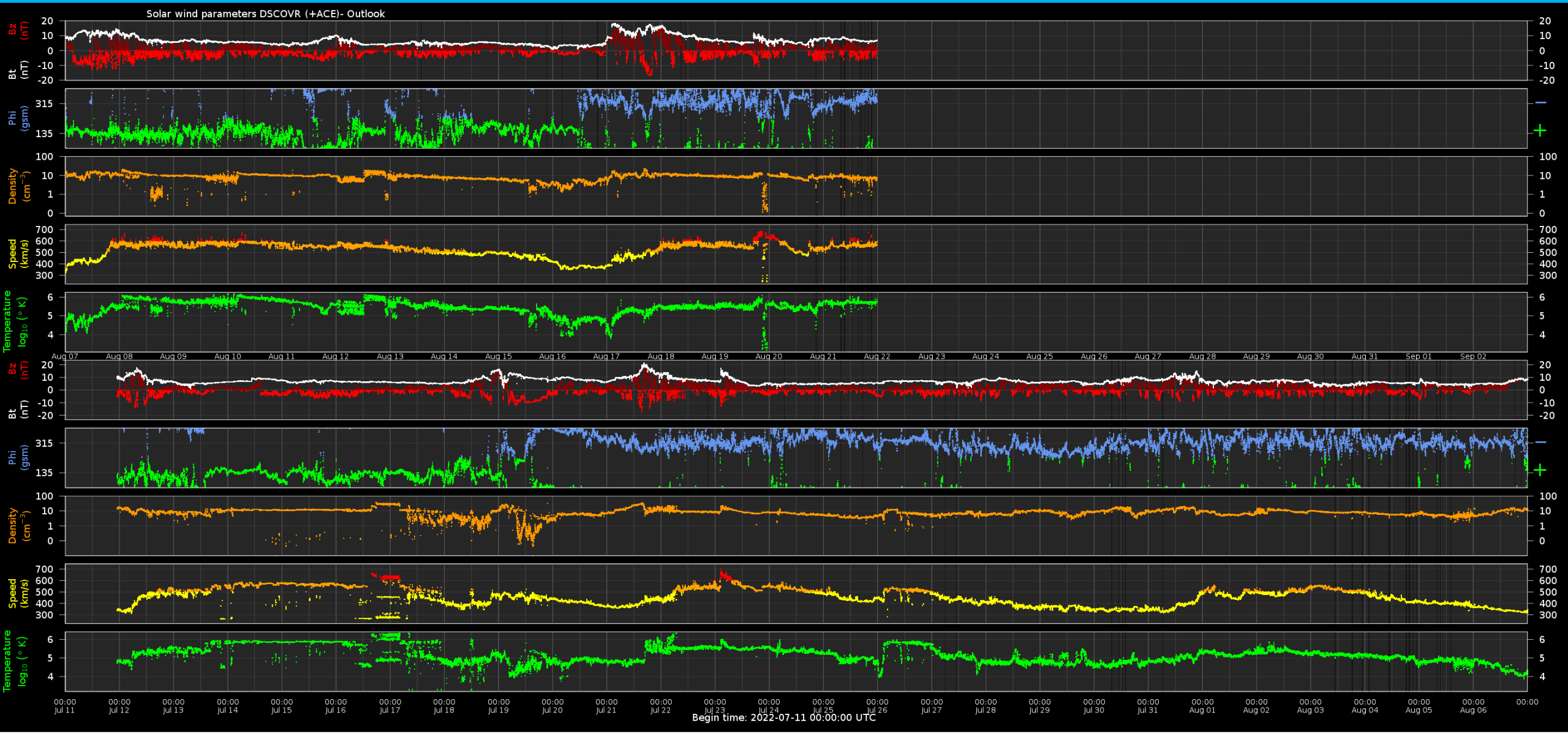
Outlook: Solar activity



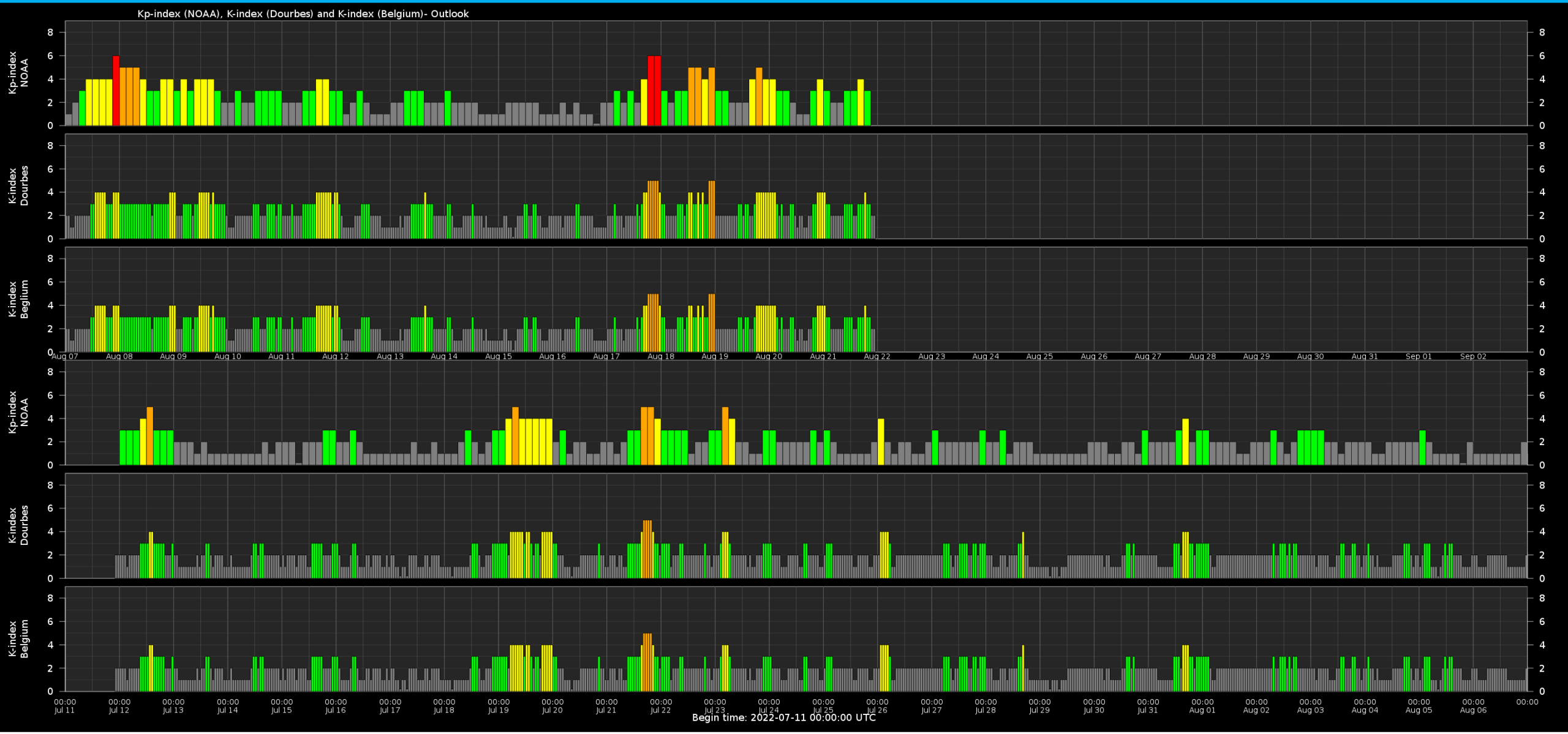
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook

SIDC Space Weather Briefing

See you at our next briefing!

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