SIDC Space Weather Briefing

27 November-04 December 2022

Jennifer O'Hara

& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2022-11-27 12:00 to 2022-12-04 23:59

Active regions	NOAA ARs 3149, 3151, 3152, 3153, 3154 3155, 3156, 3157, 3158
Flares	# C-class flare: 29 # M-class flare: 2 # X-class flare: 0
Coronal Holes	Large positive polarity equatorial CH (Nov 28), Large negative polarity equatorial CH (Dec 02),
CMEs	No Earth Directed CMEs

Proton flux	Background levels
Electron flux	1000 pfu threshold exceeded (max value 17,351 pfu on Dec 03), fluence at moderate to high levels (max value 5.7×10^8 on Dec 04)

Solar wind and geomagnetic conditions

ICMEs	None
Solar wind conditions	|B|: 0.74 - 12.35 nT //Bz: -10.21 nT to 10.56 nT //Speed: 247.9 - 711.2km/s
K-indices	max K-index (KDou): 5 max Kp-index (NOAA): 5

All Quiet Alert: Not Quiet all week

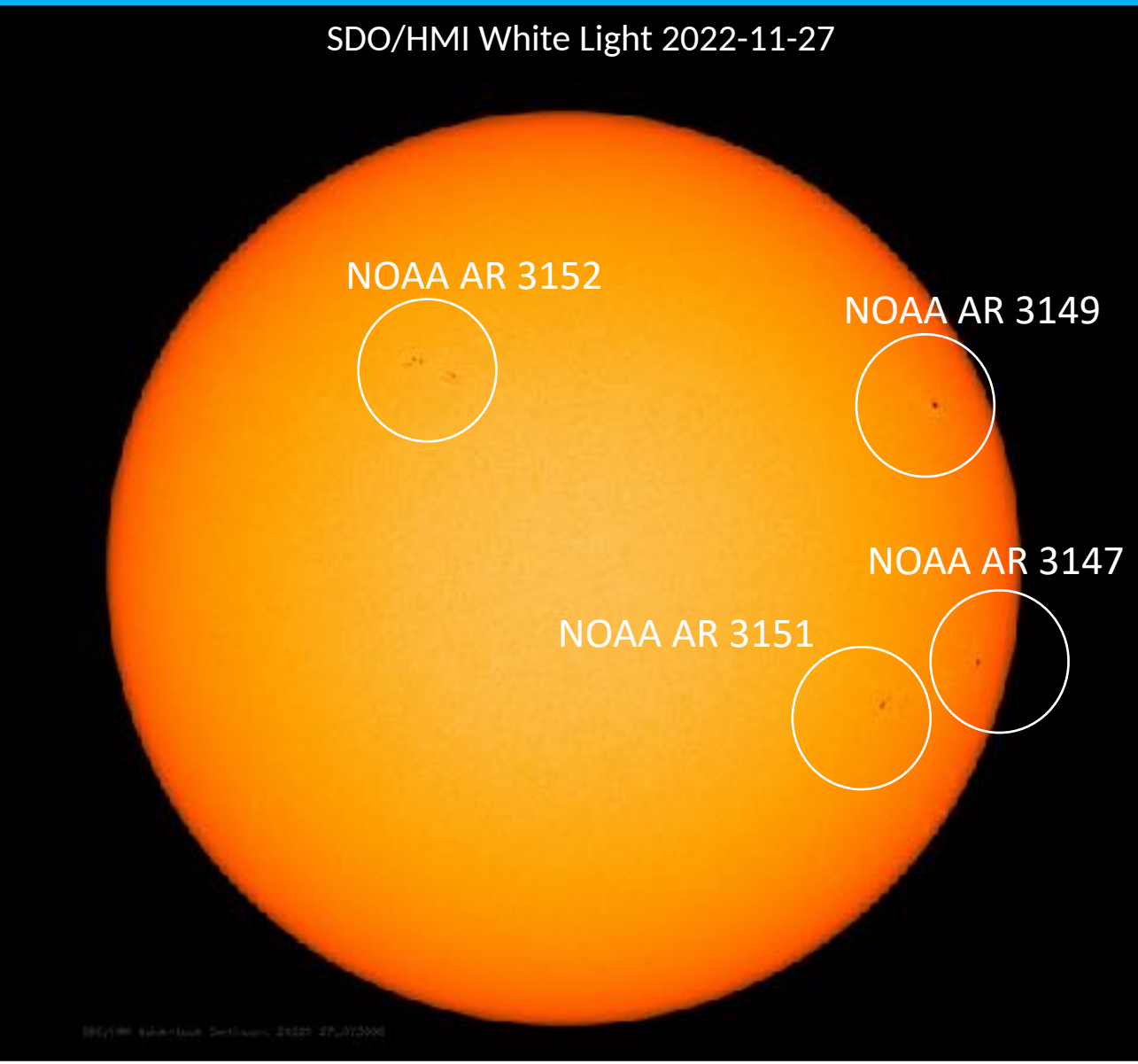
Solar Activity

Royal Observatory
of Belgium

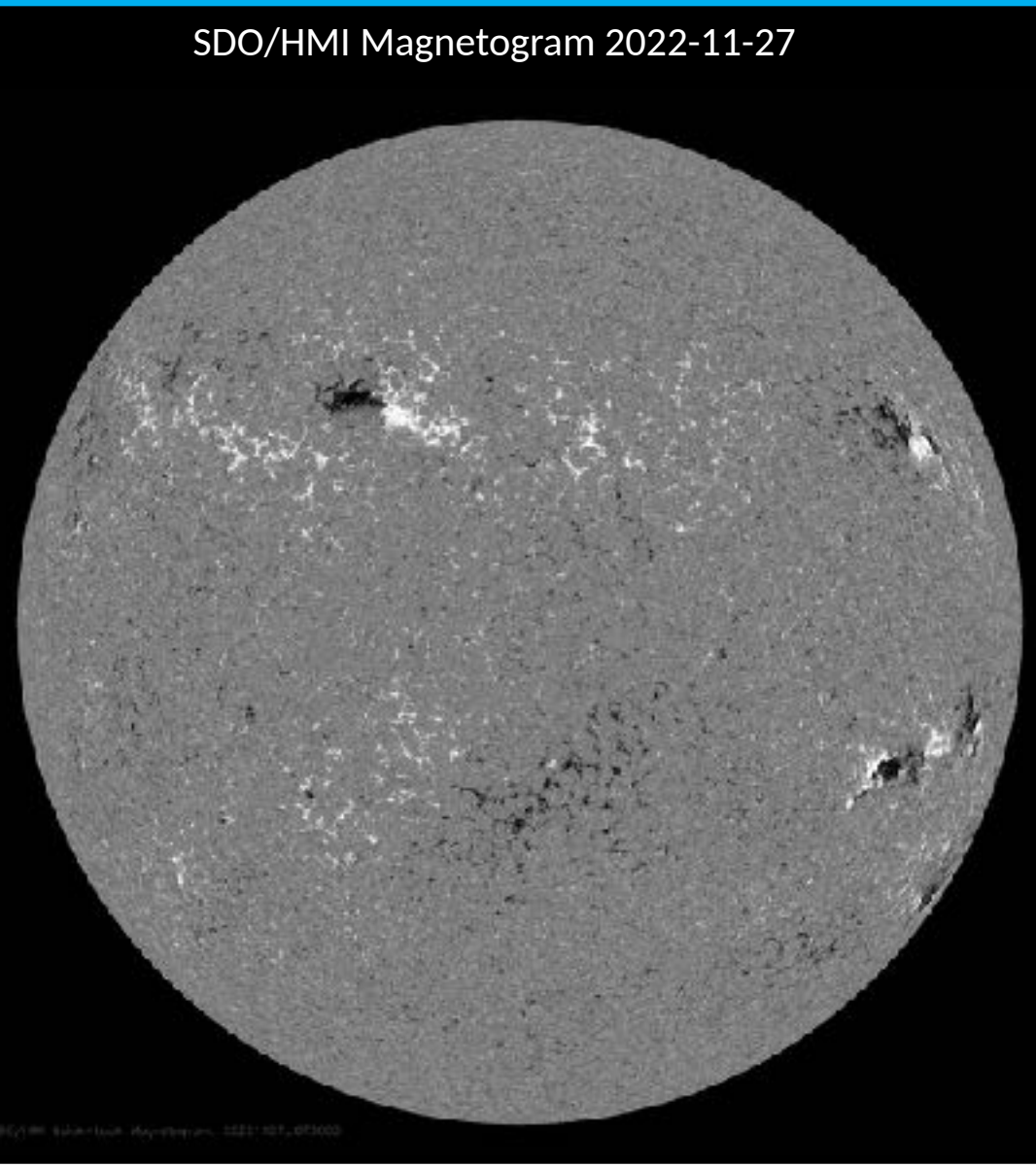
Solar Influences
Data analysis Centre
www.sidc.be

Solar active regions

SDO/HMI White Light 2022-11-27

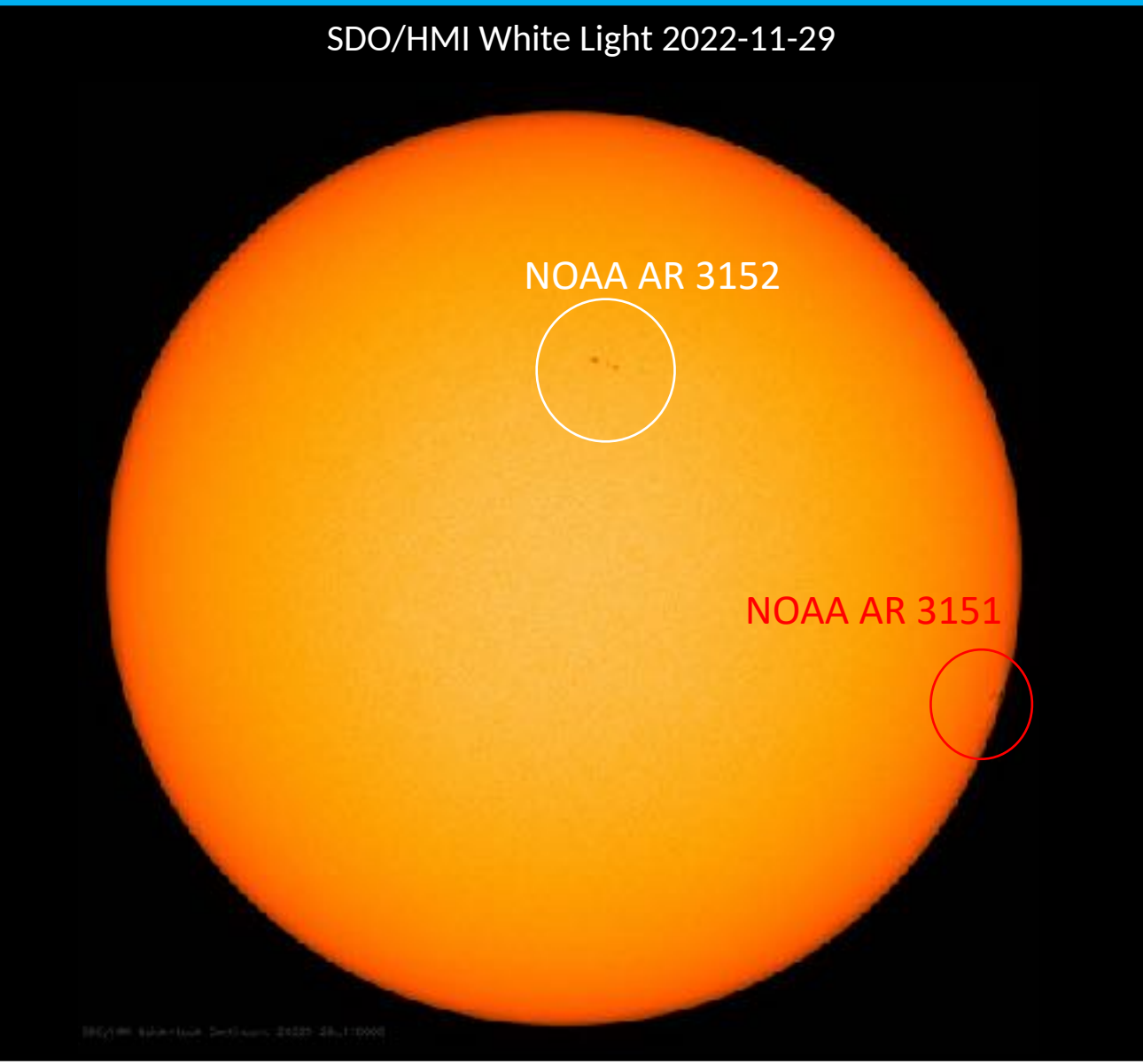


SDO/HMI Magnetogram 2022-11-27

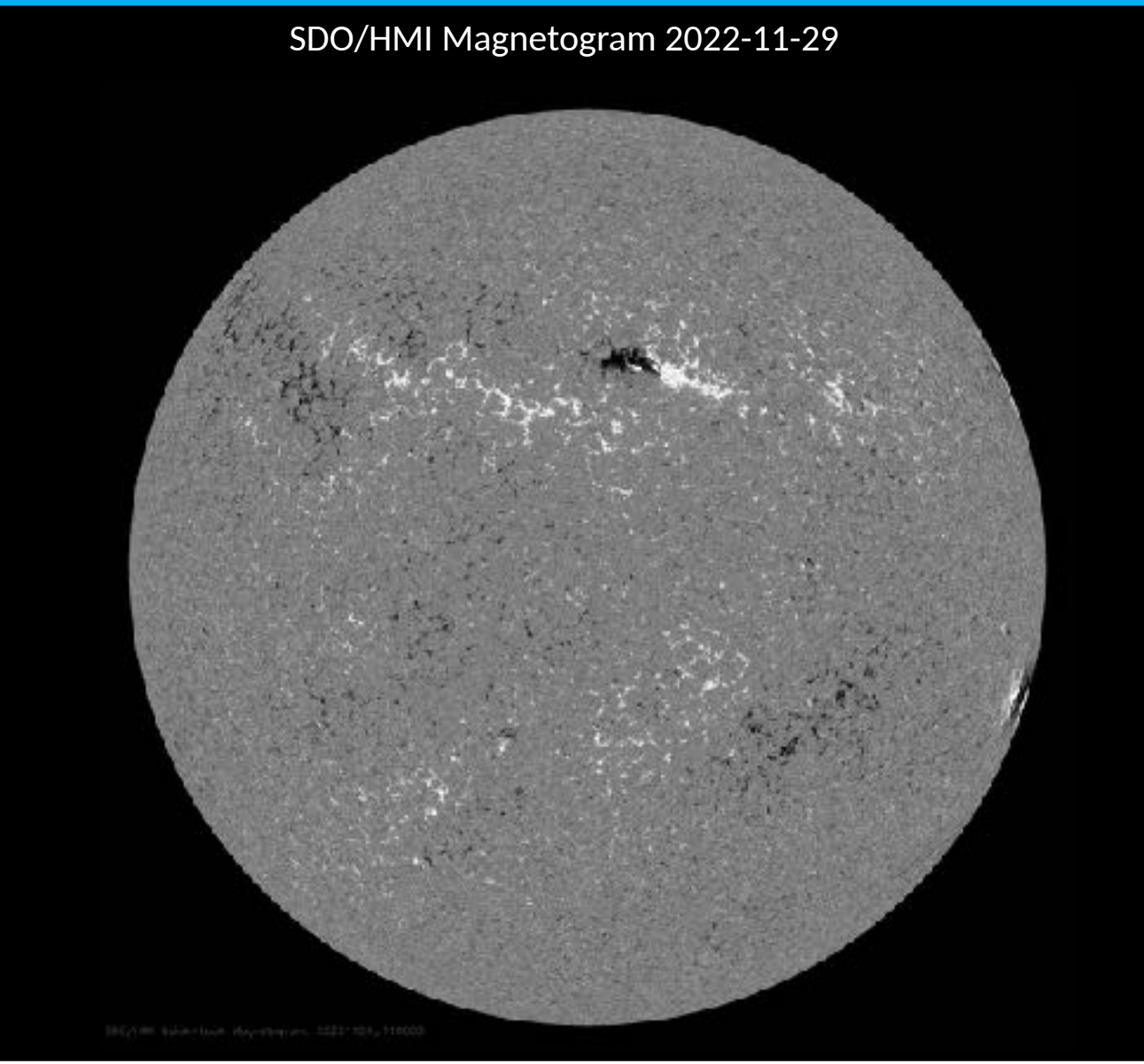


Solar active regions

SDO/HMI White Light 2022-11-29

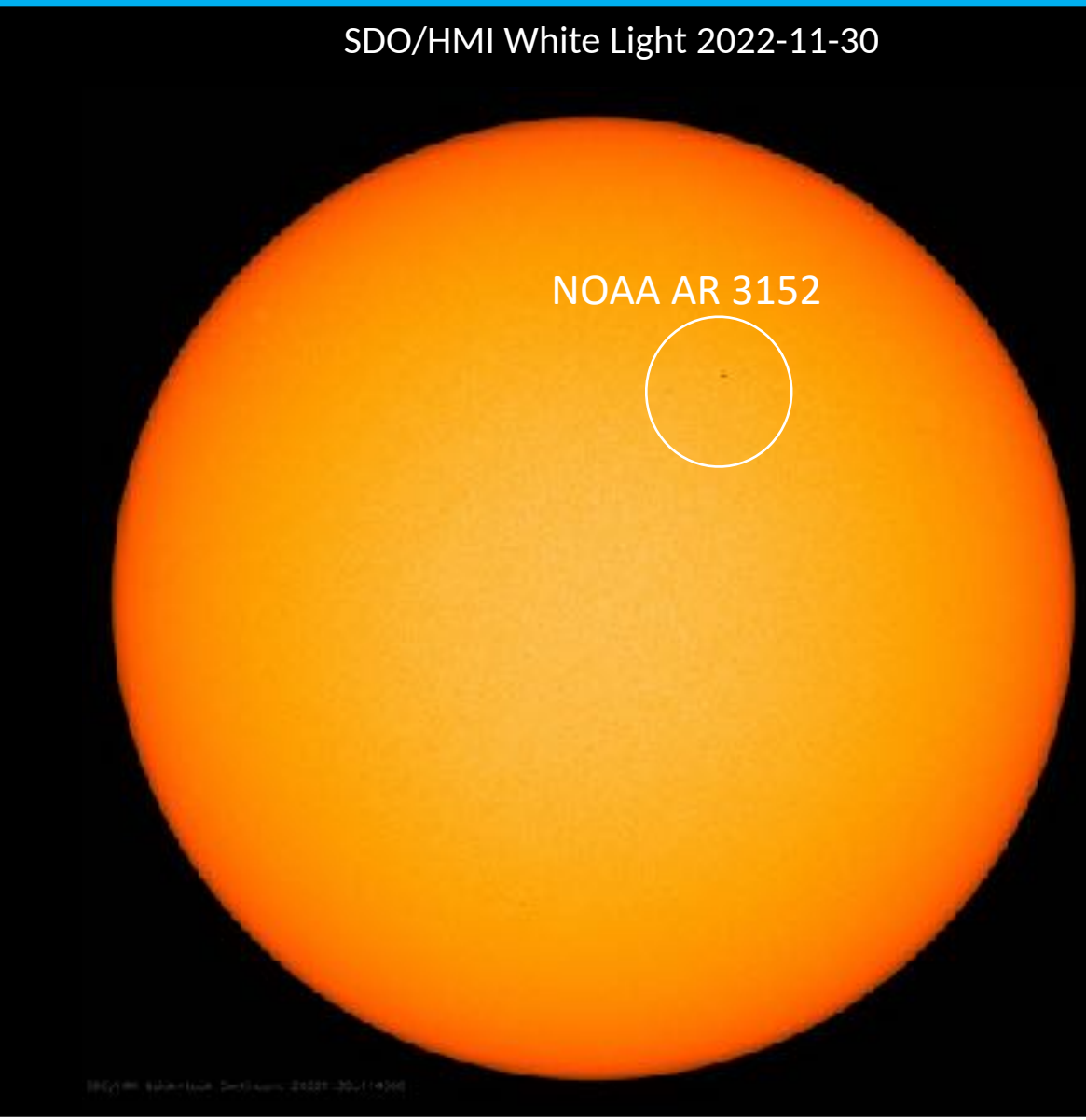


SDO/HMI Magnetogram 2022-11-29

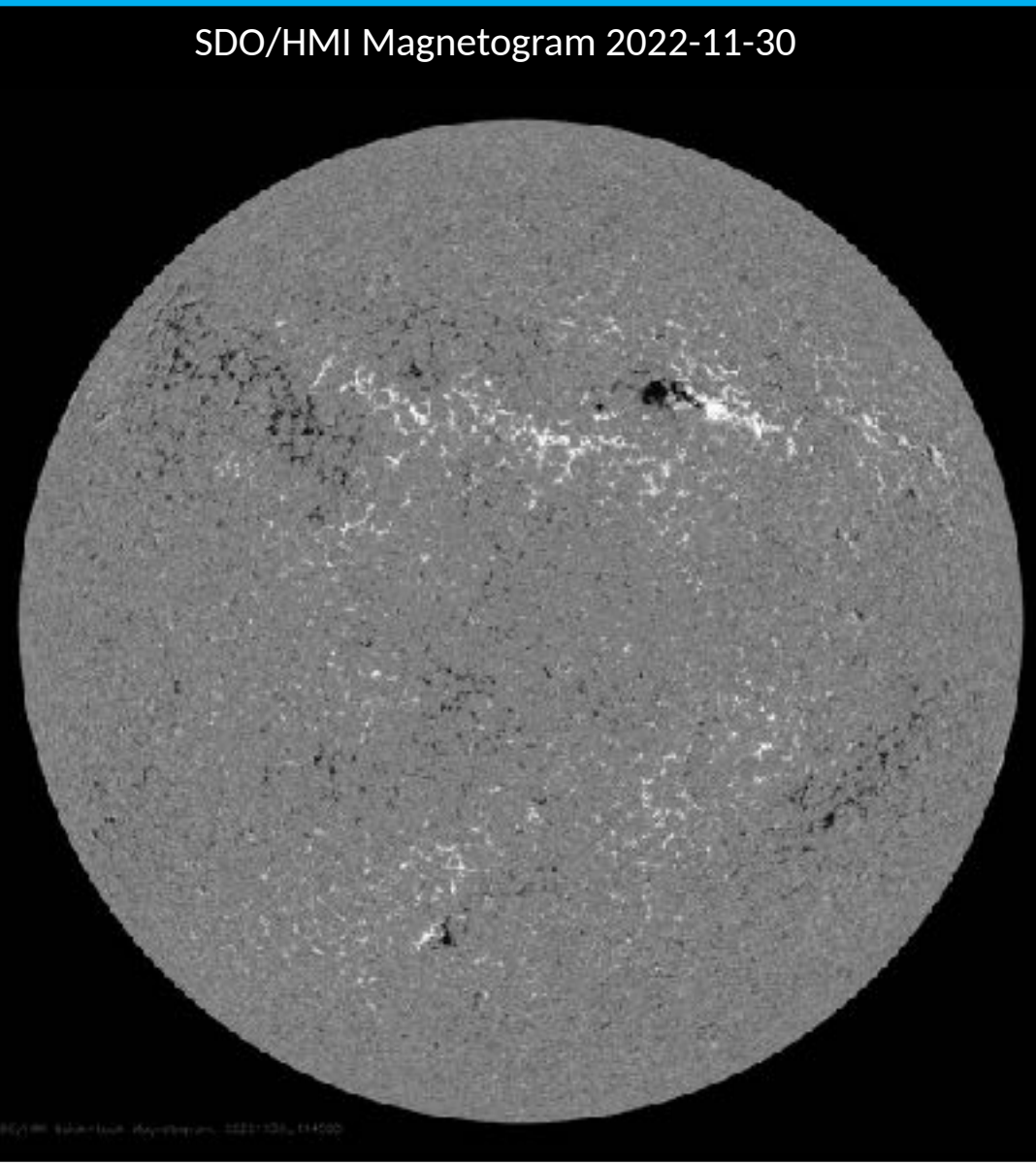


Solar active regions

SDO/HMI White Light 2022-11-30

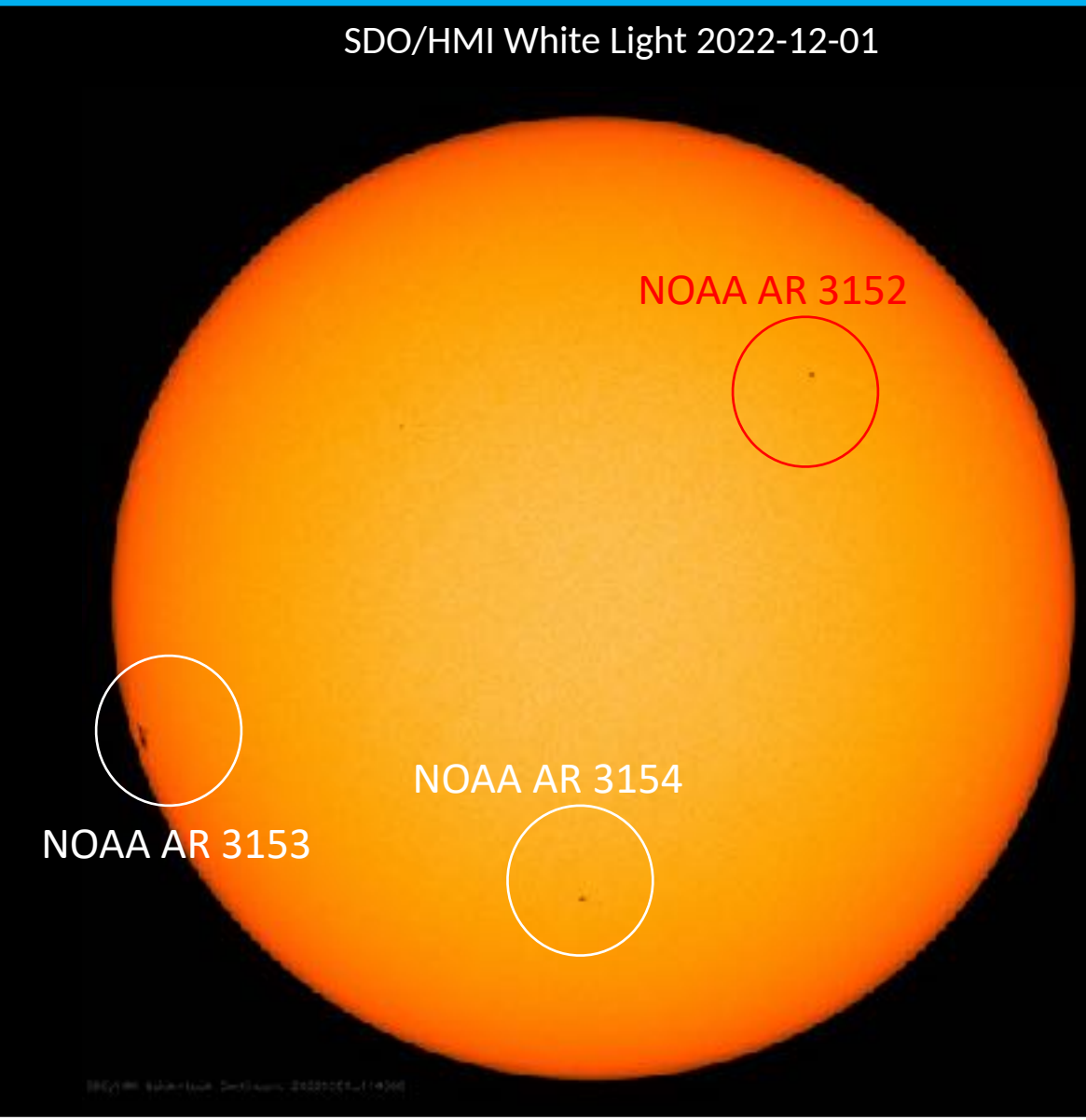


SDO/HMI Magnetogram 2022-11-30

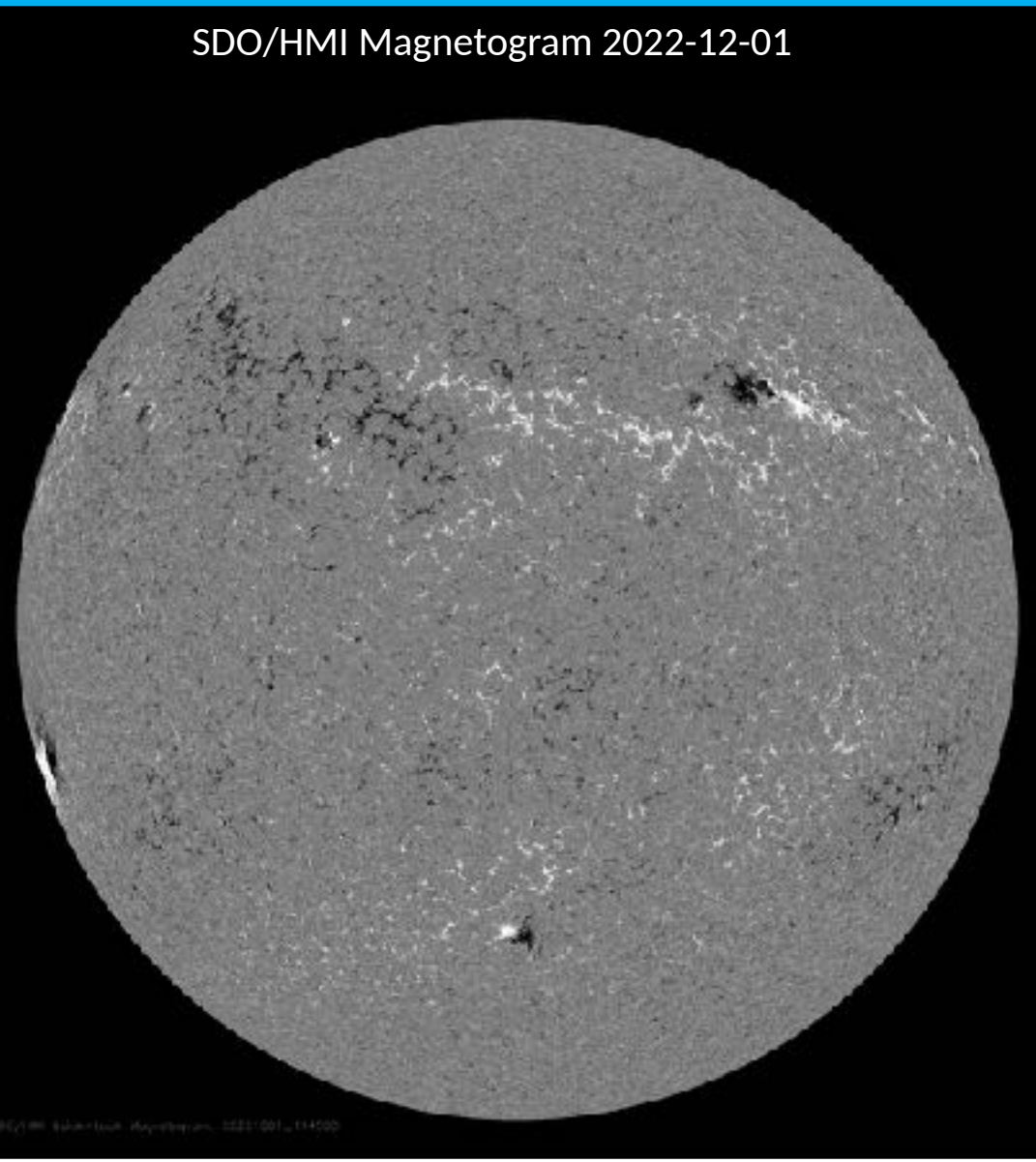


Solar active regions

SDO/HMI White Light 2022-12-01

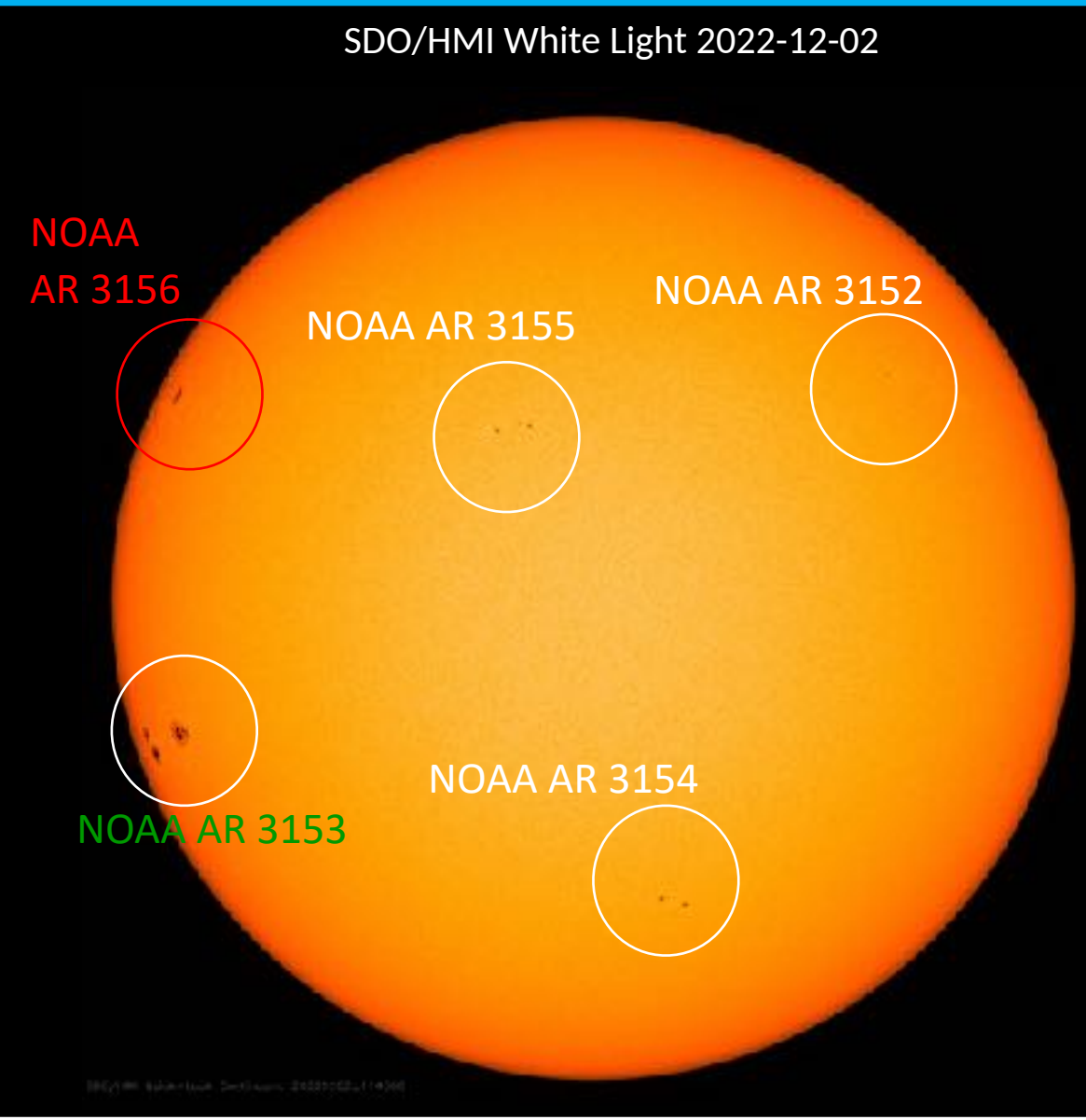


SDO/HMI Magnetogram 2022-12-01

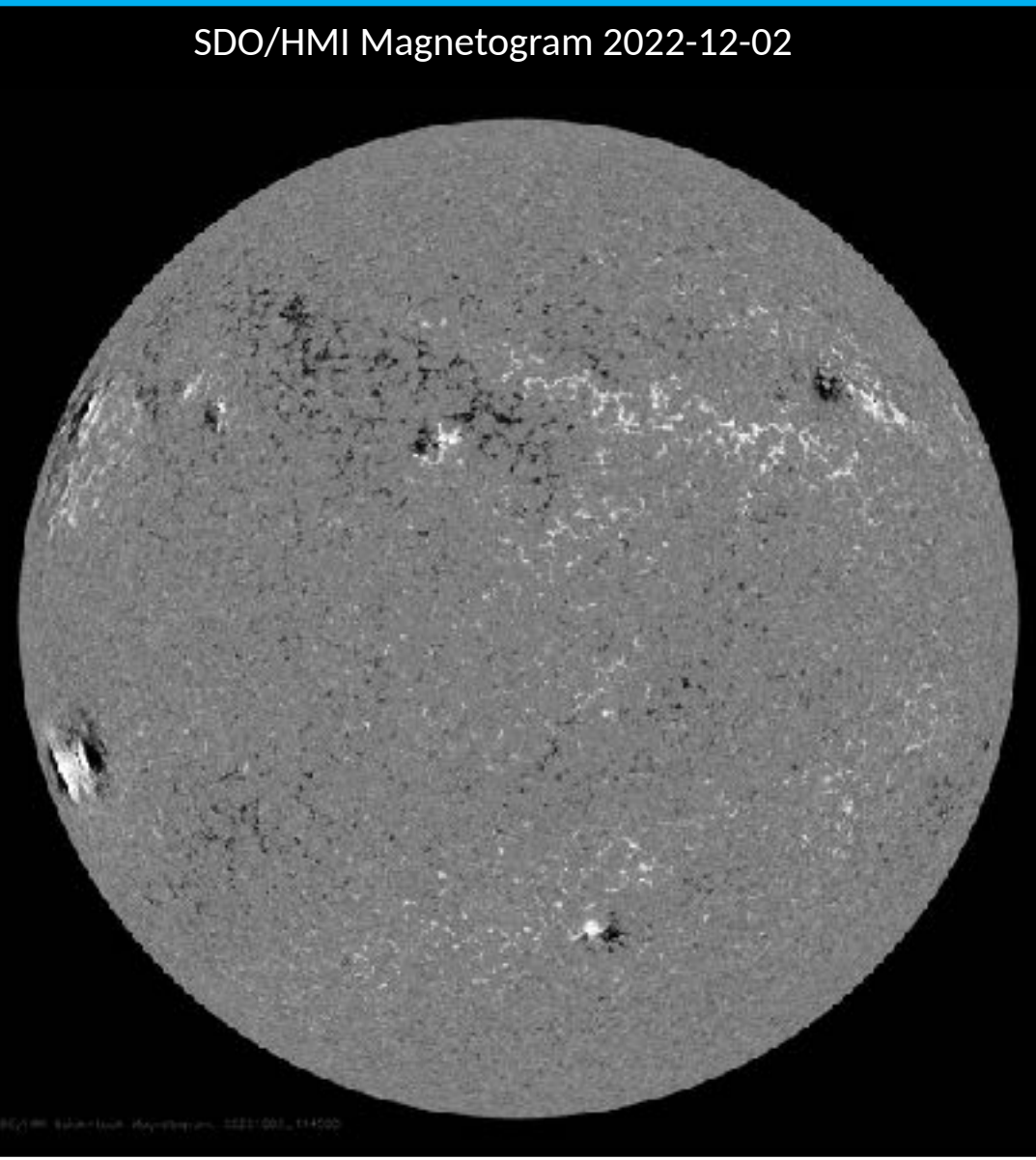


Solar active regions

SDO/HMI White Light 2022-12-02

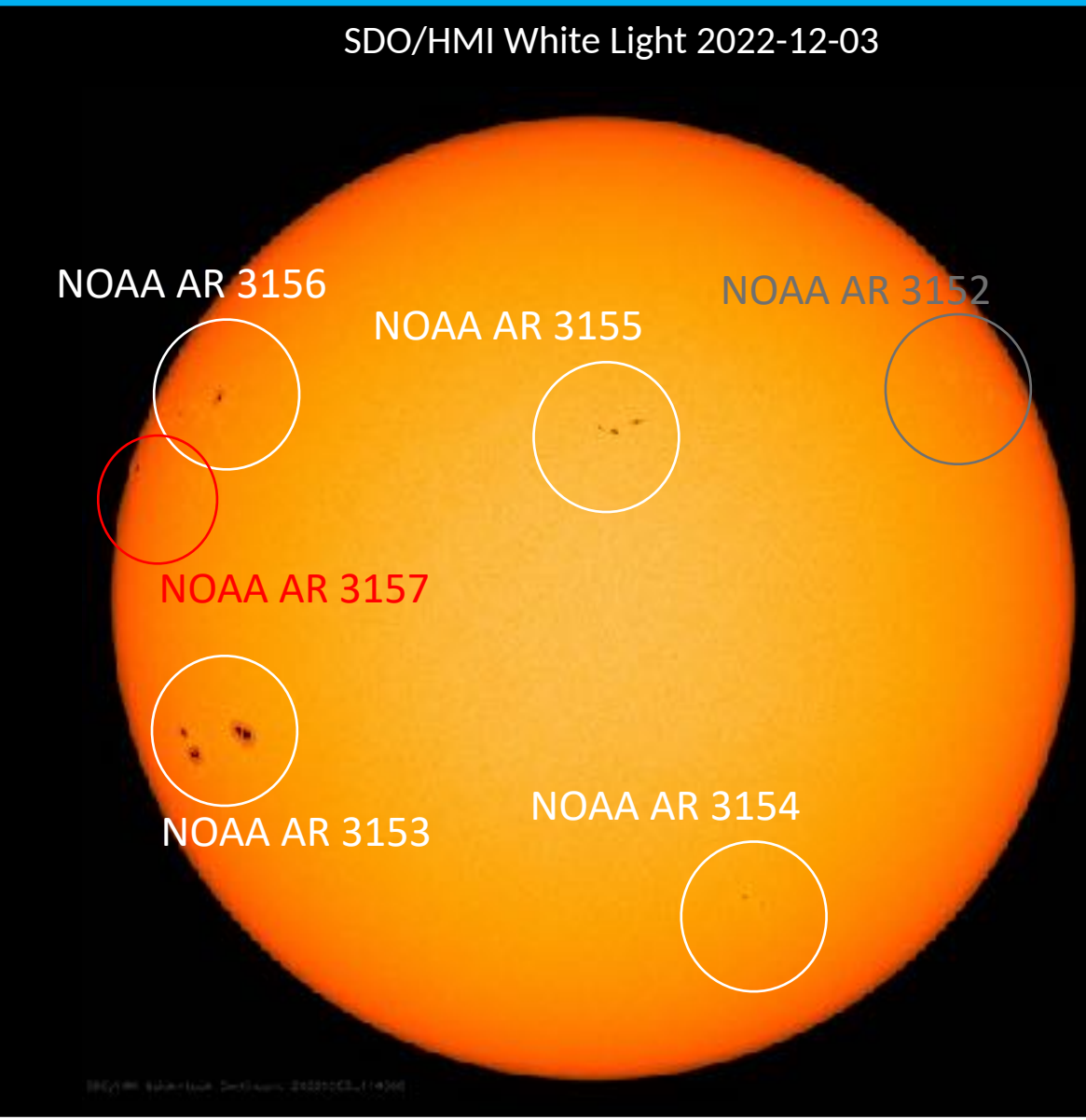


SDO/HMI Magnetogram 2022-12-02

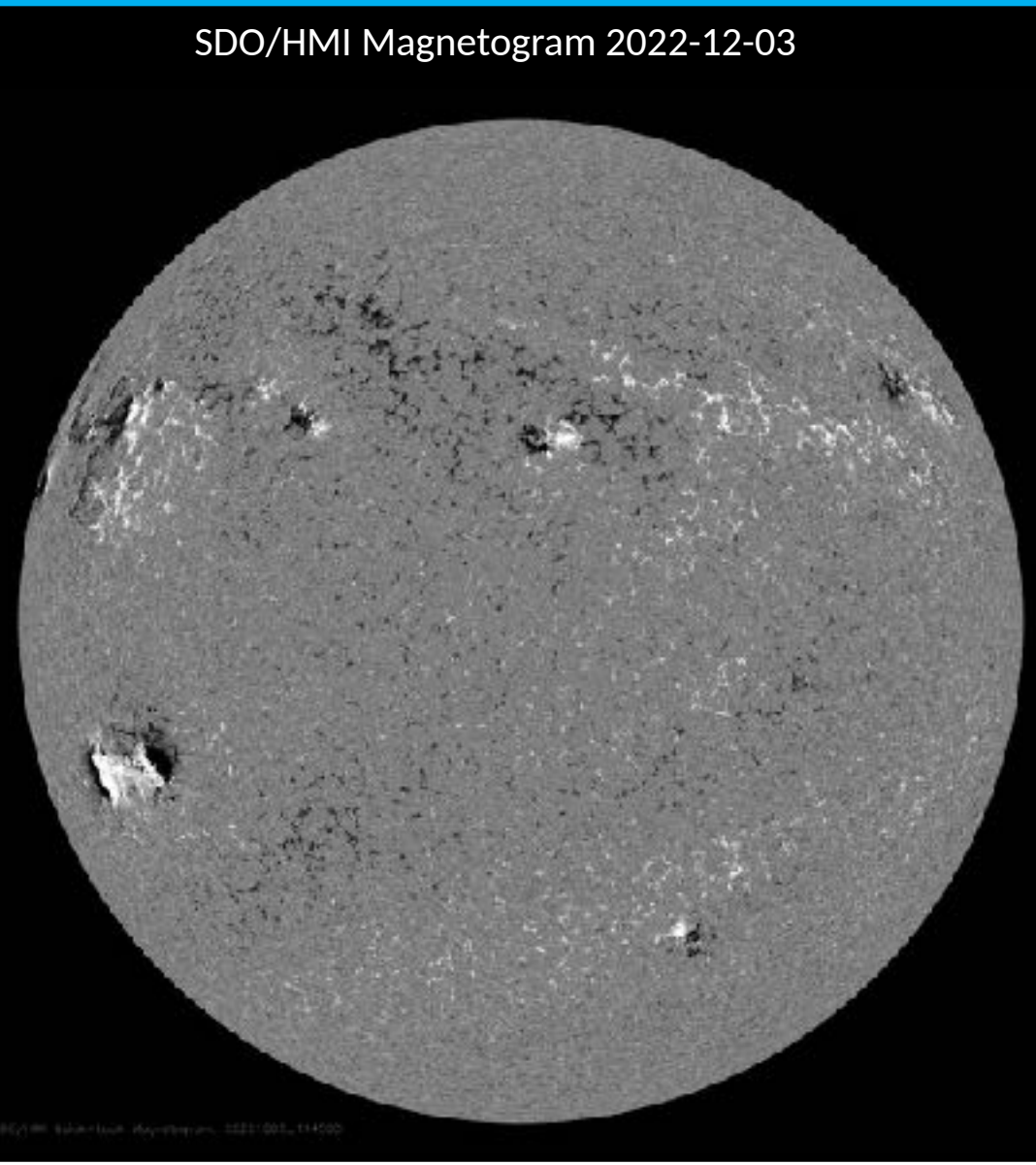


Solar active regions

SDO/HMI White Light 2022-12-03

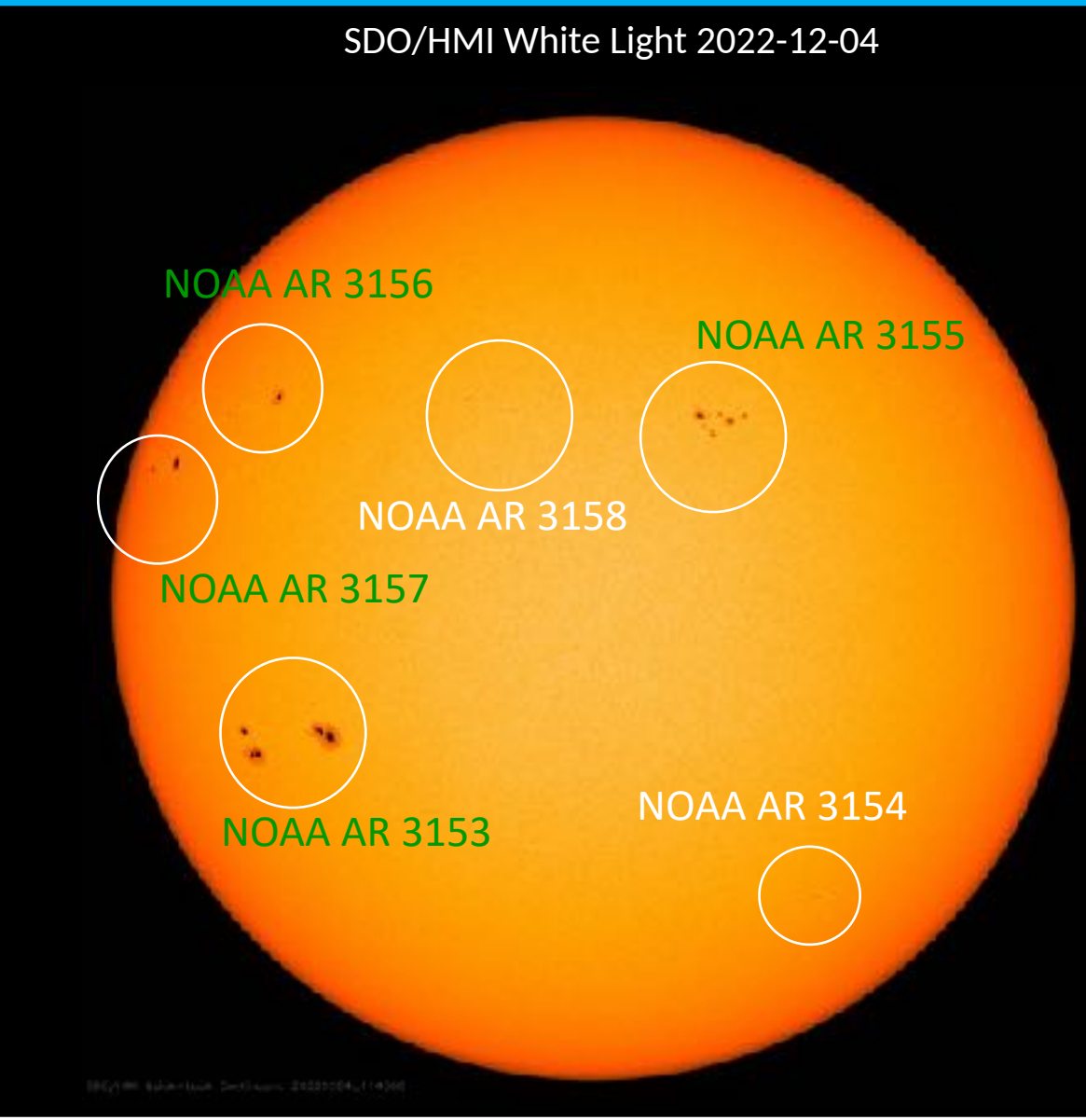


SDO/HMI Magnetogram 2022-12-03

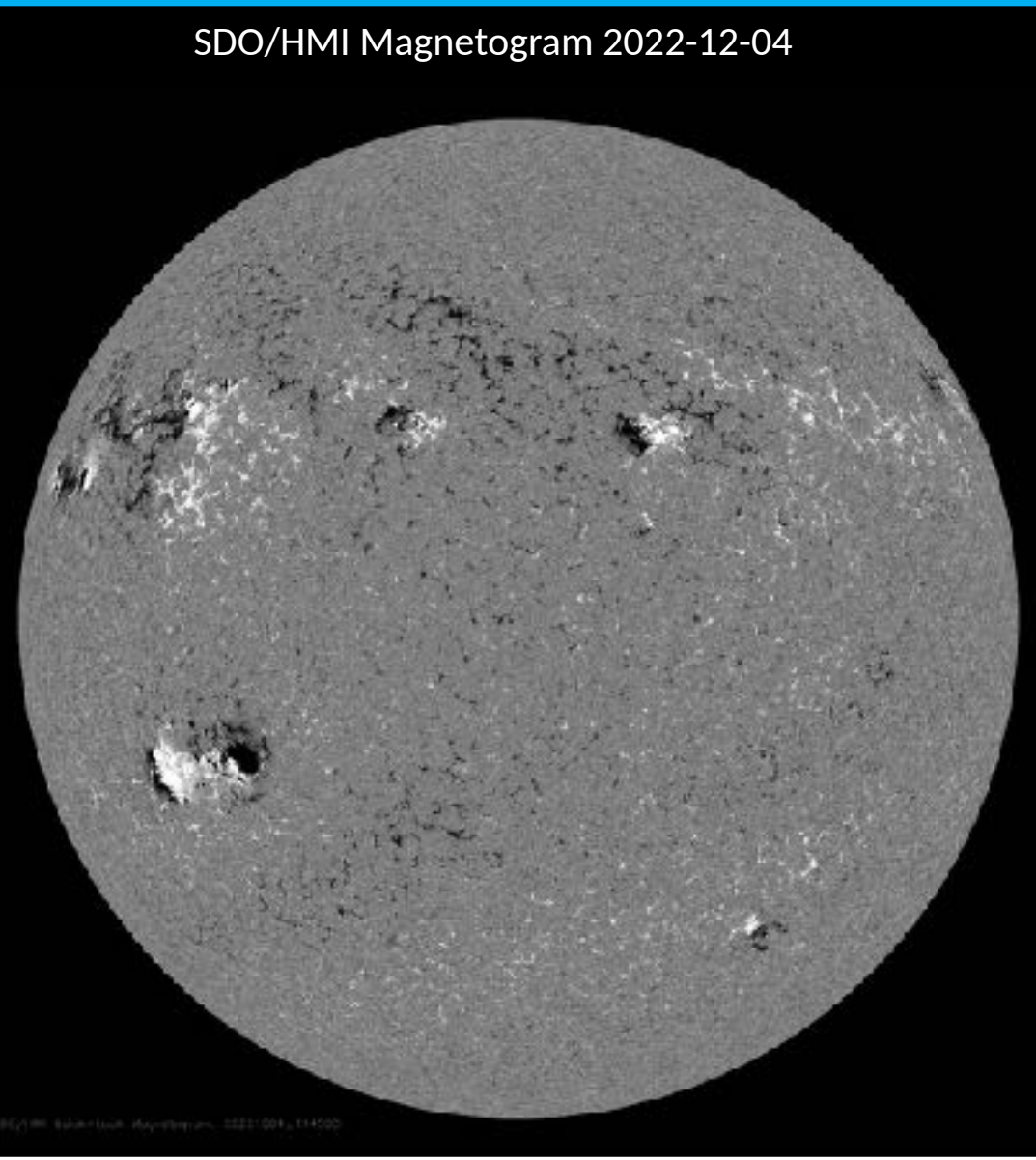


Solar active regions

SDO/HMI White Light 2022-12-04

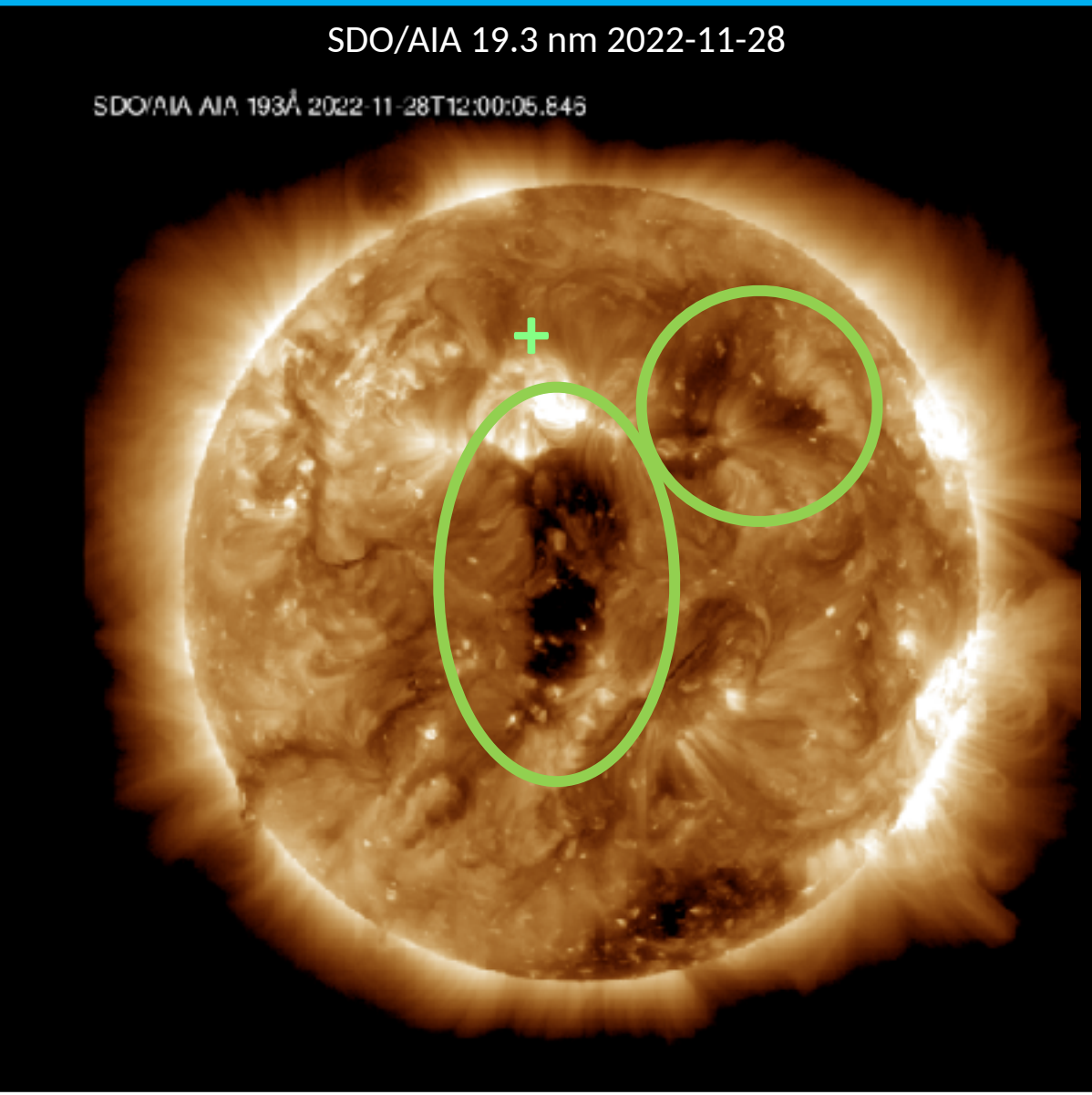


SDO/HMI Magnetogram 2022-12-04

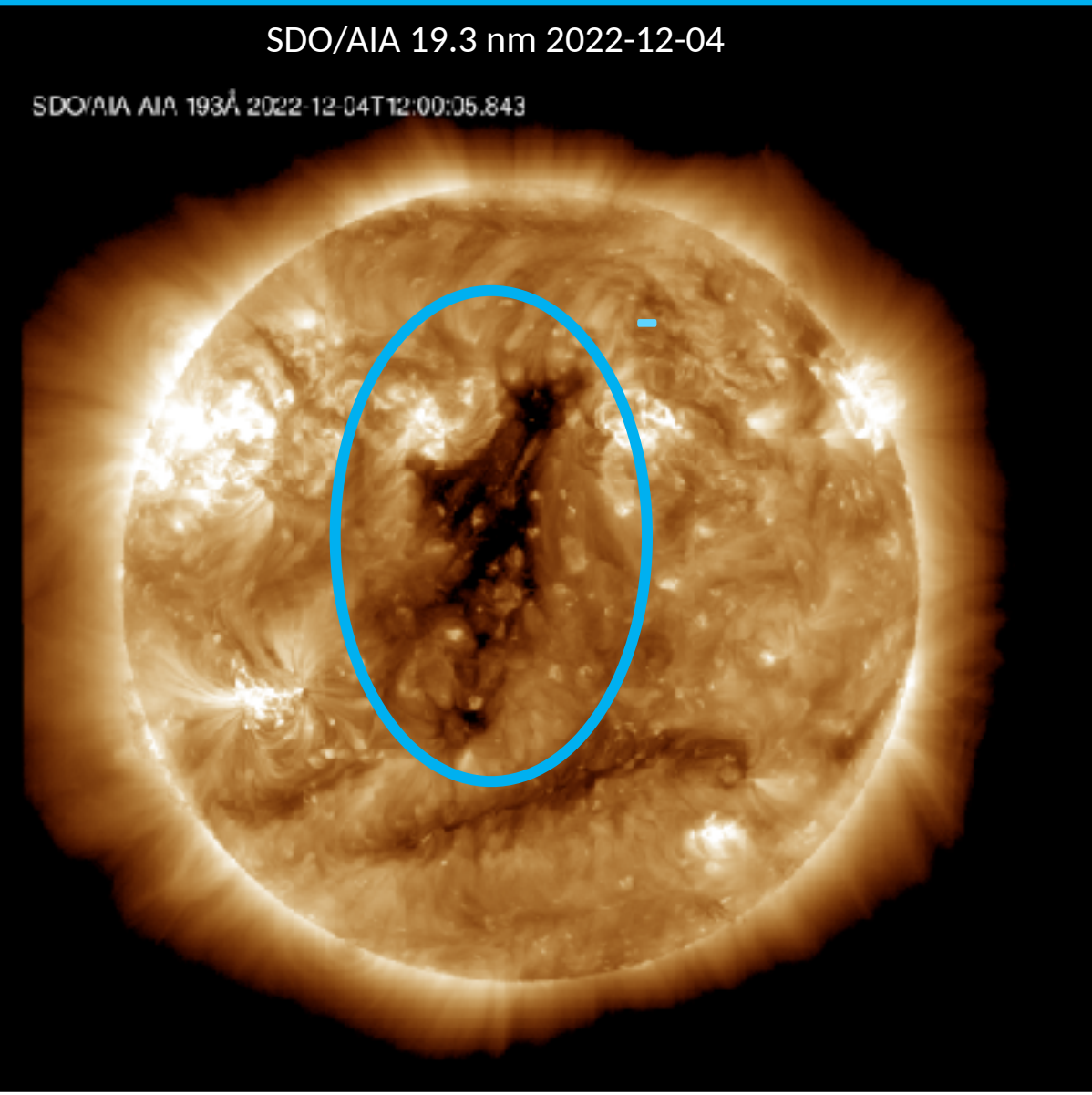


Coronal holes

SDO/AIA 19.3 nm 2022-11-28

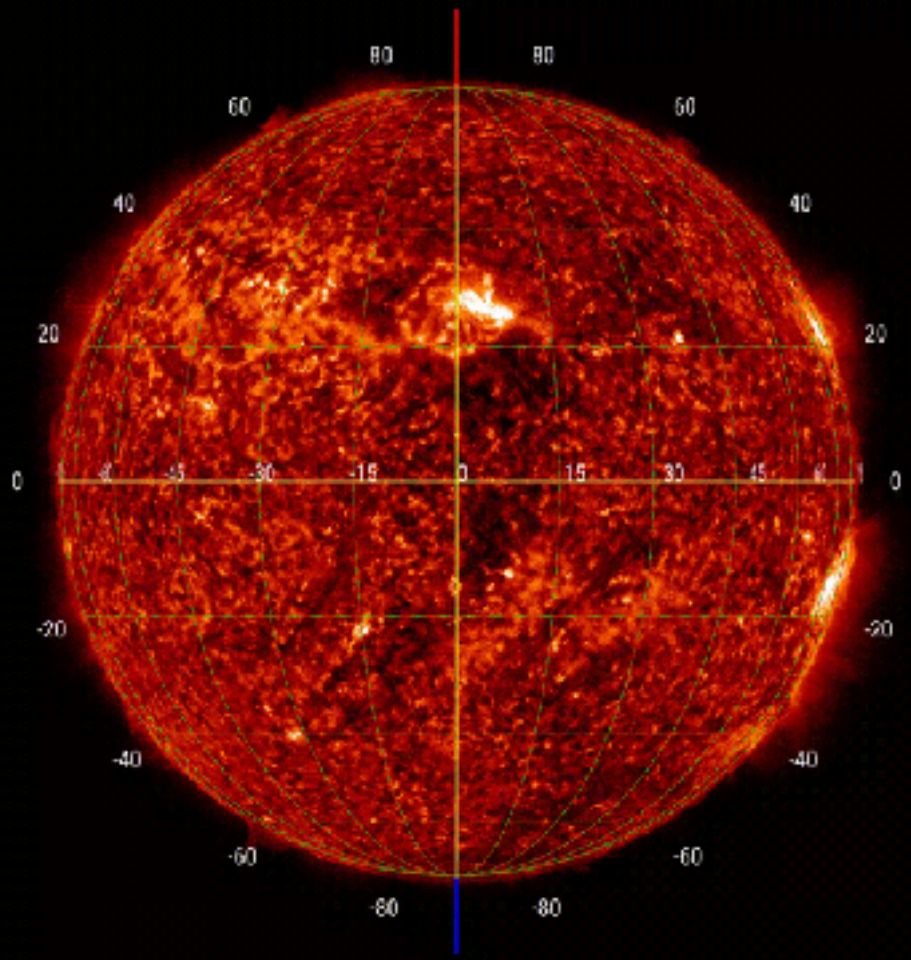


SDO/AIA 19.3 nm 2022-12-04



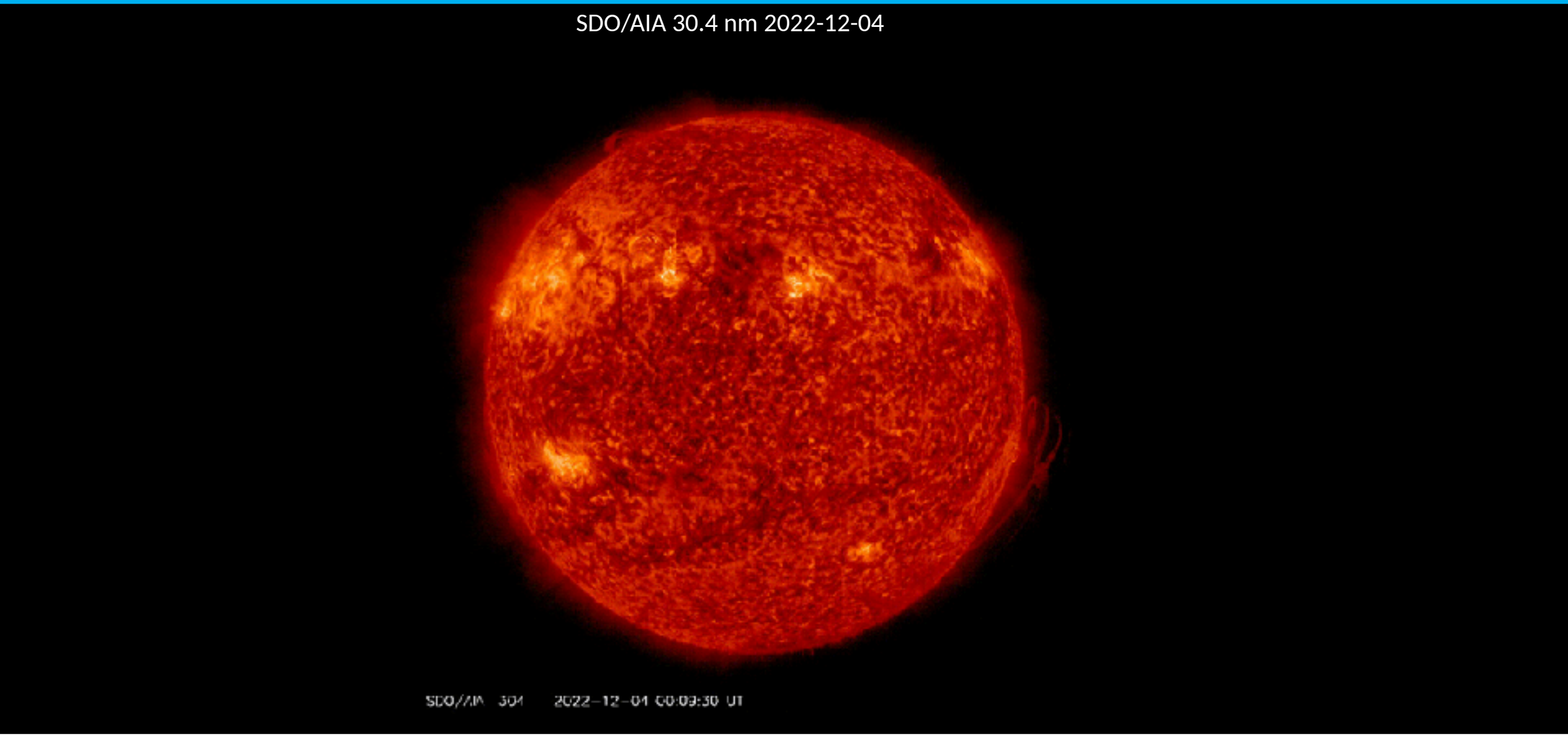
Filaments

SDO/AIA 30.4 nm 2022-11-29

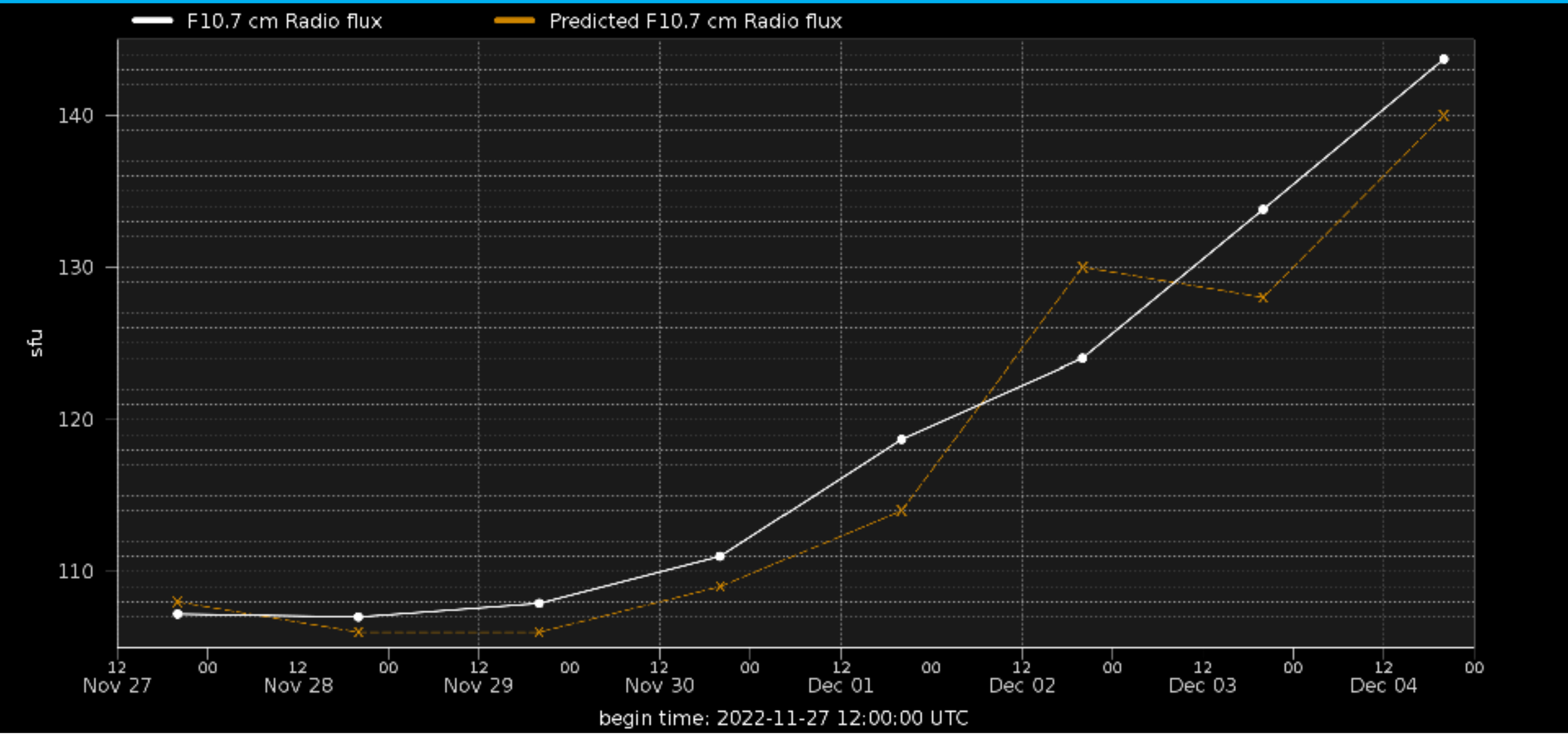


Filaments

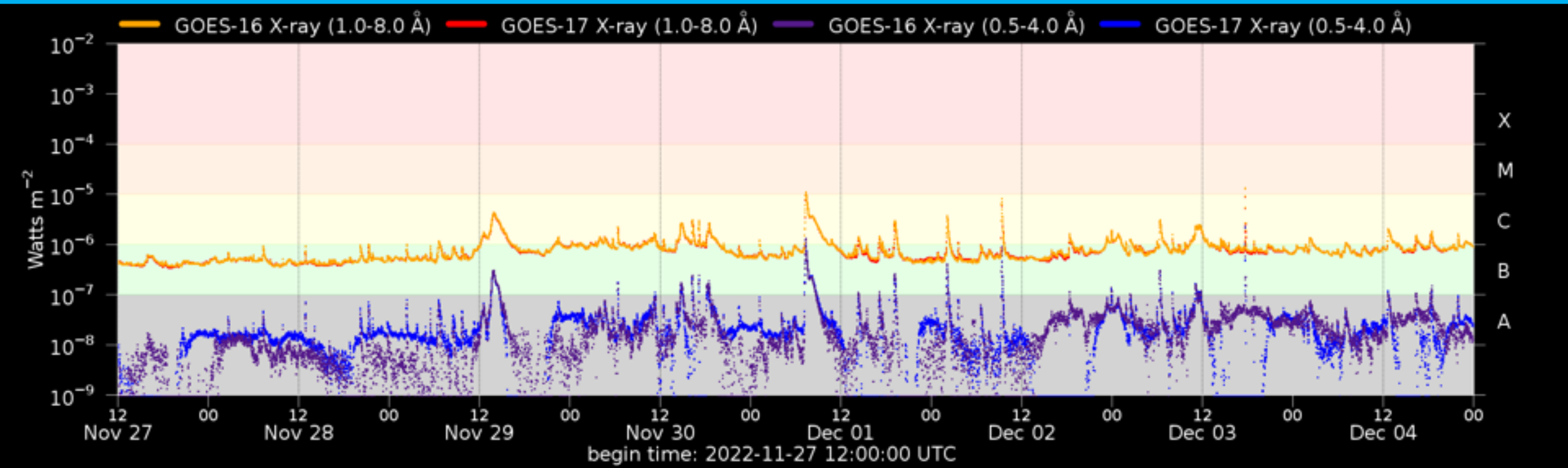
SDO/AIA 30.4 nm 2022-12-04



Solar F10.7cm radio flux



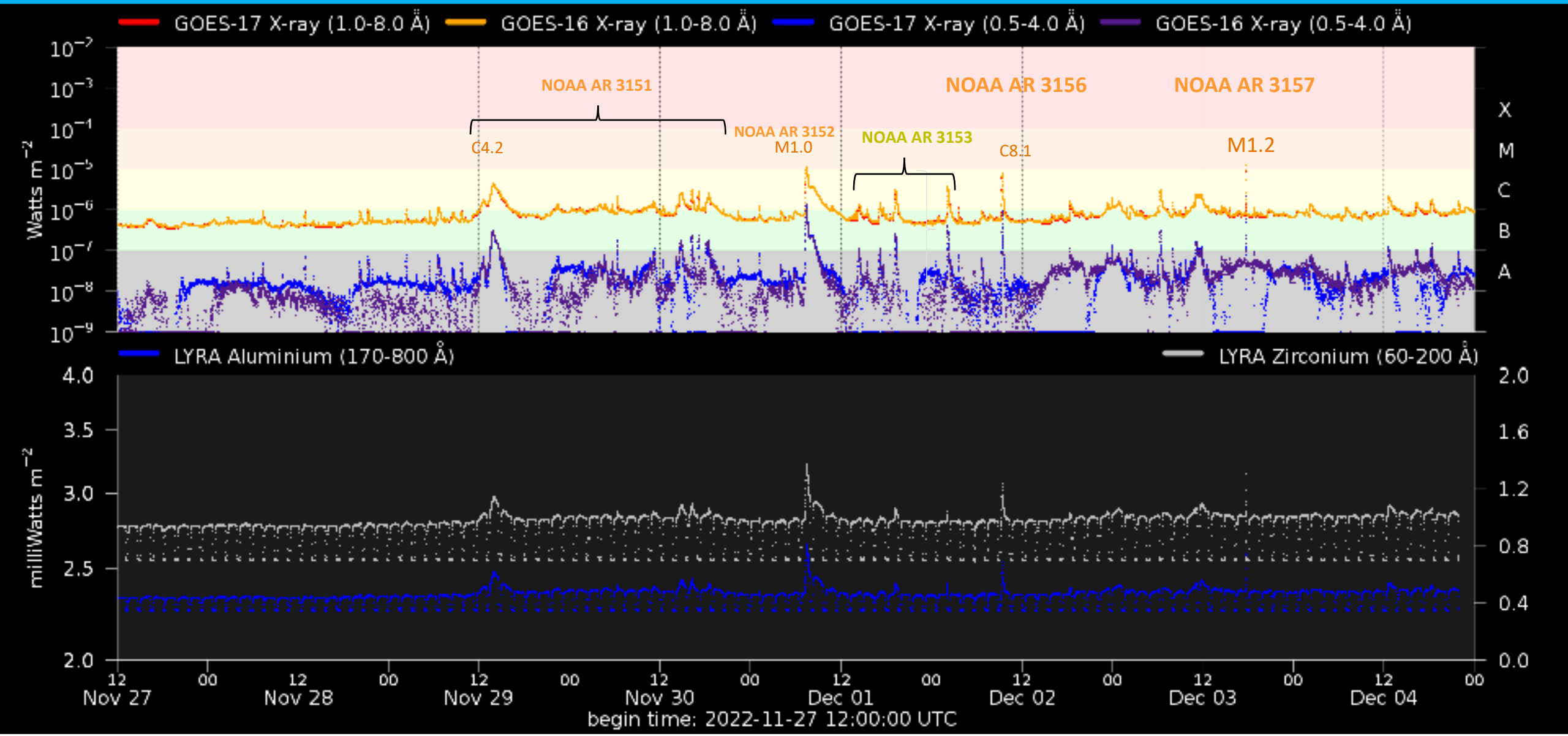
Flaring activity



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

Issue date	2022-11-27	2022-11-28	2022-11-29	2022-11-30	2022-12-01	2022-12-02	2022-12-03	2022-12-04
Probability (%)	15|02|01	20|01|01	20|01|01	20|05|01	50|10|01	70|15|05	70|15|05	75|20|05
Observed (#)	00|00|00	02|00|00	02|00|00	06|01|00	06|00|00	06|00|00	03|01|00	04|00|00

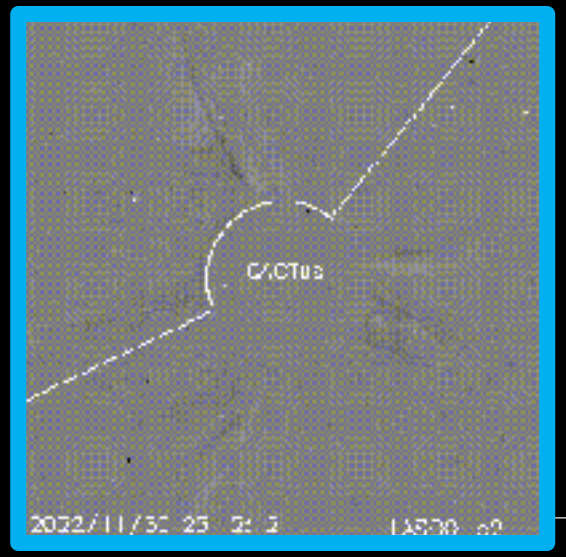
Solar X-Ray and UV flux

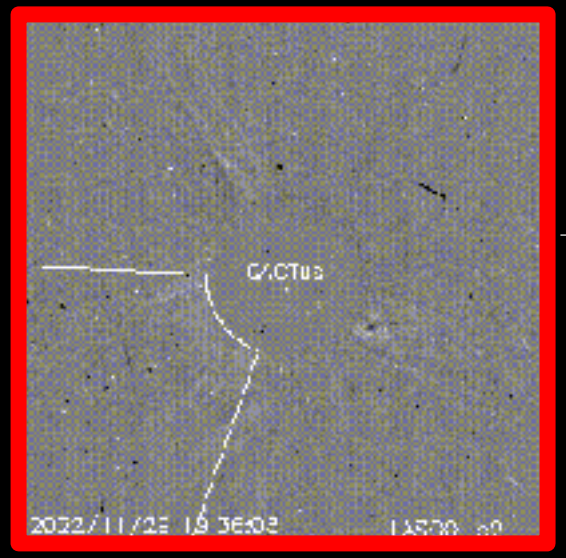


Coronal Mass Ejections

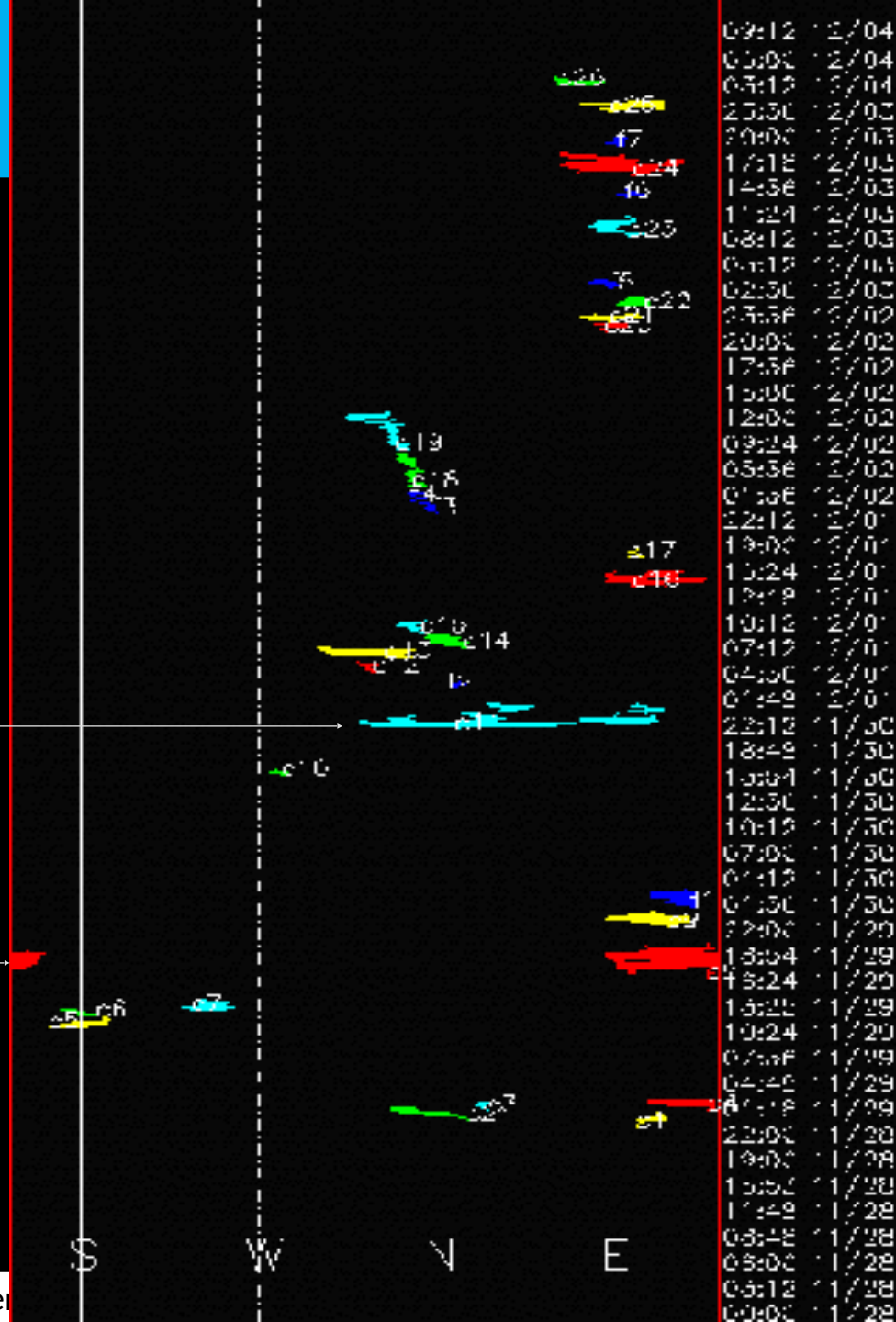
No Earth directed CMEs

2 CMEs seen at the same time appeared as a partial halo on Nov 30





Weak CME to the South East associated with a filament eruption on disk – not expected to impact Earth

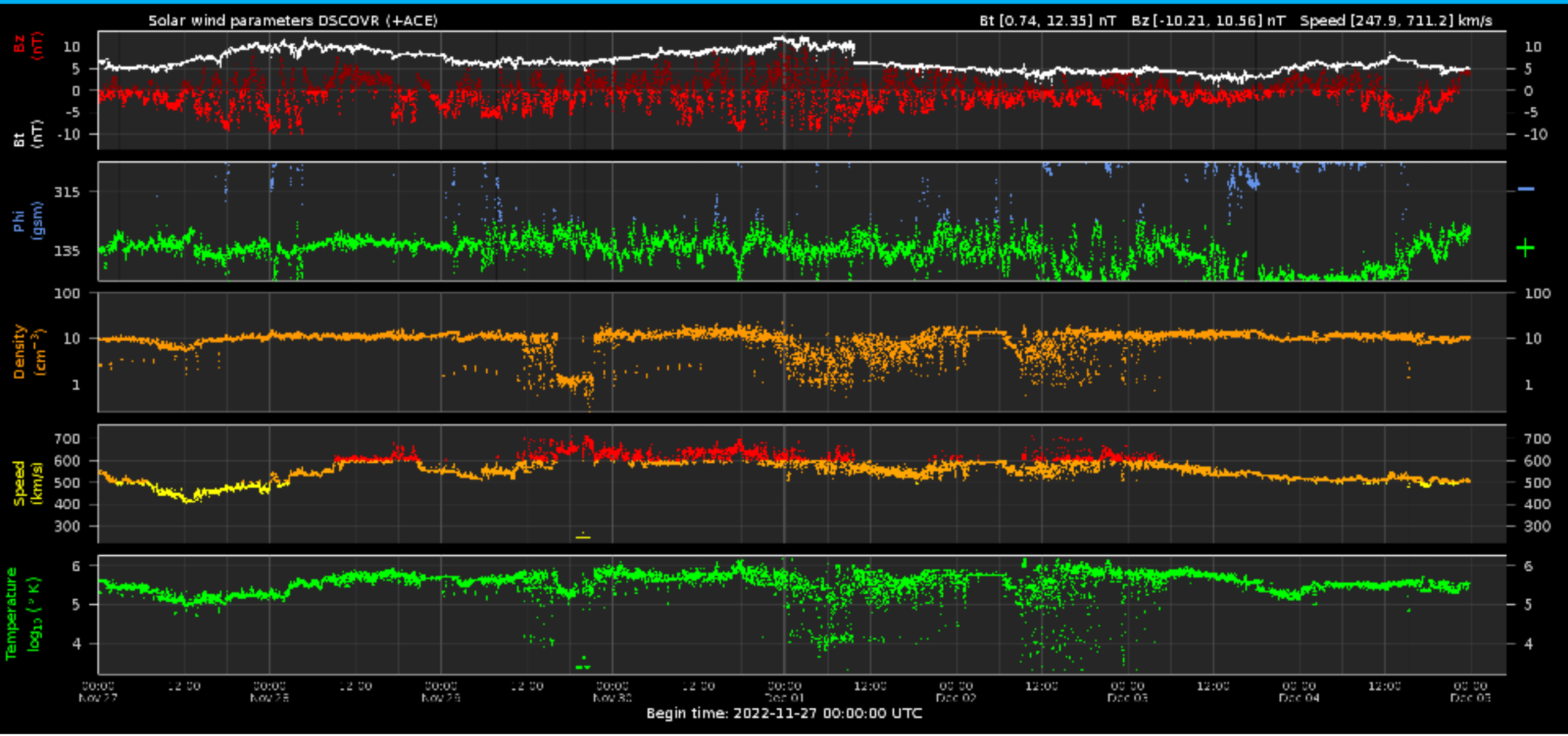


Solar Wind and Geomagnetic Activity

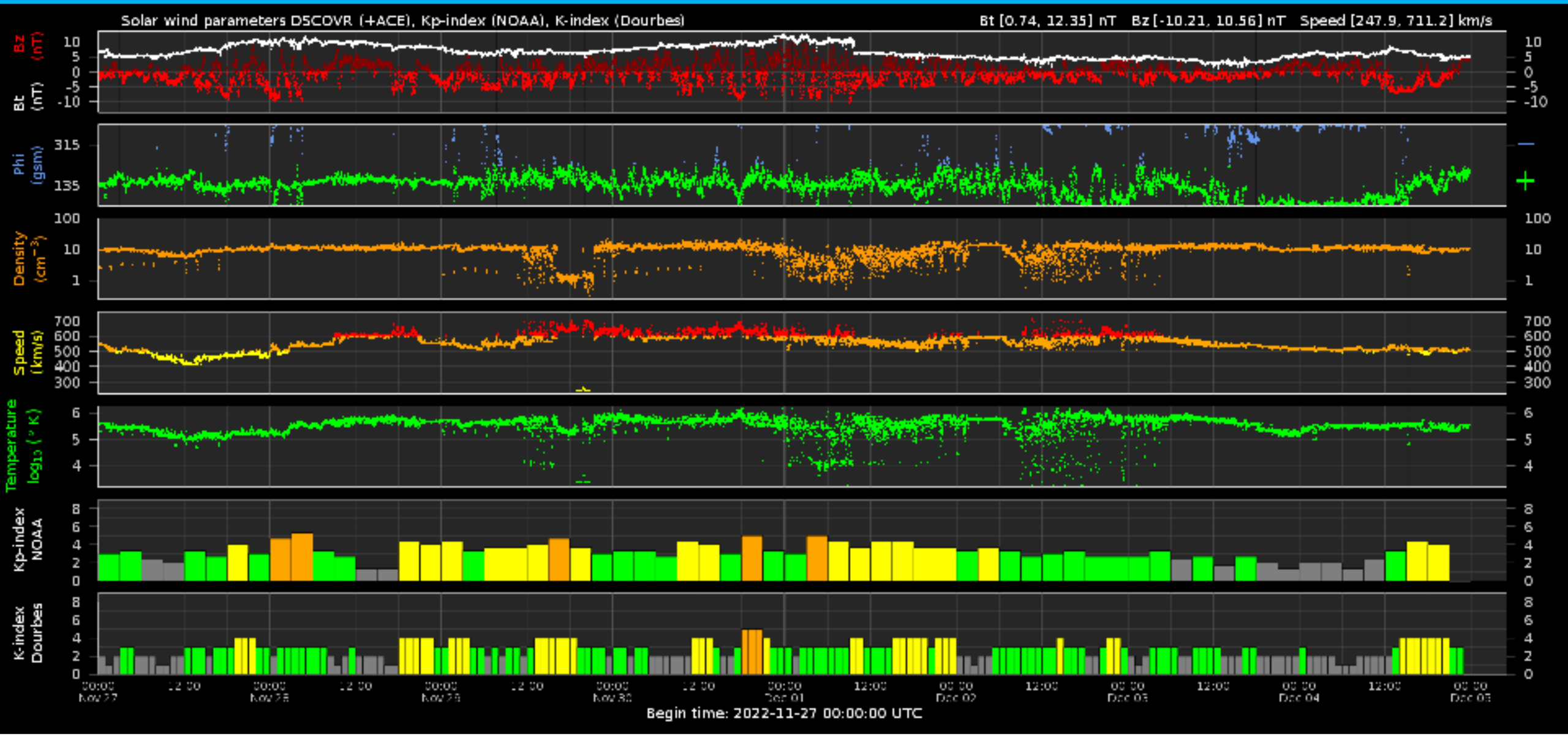
Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Solar wind parameters



Solar wind parameters & K-indices

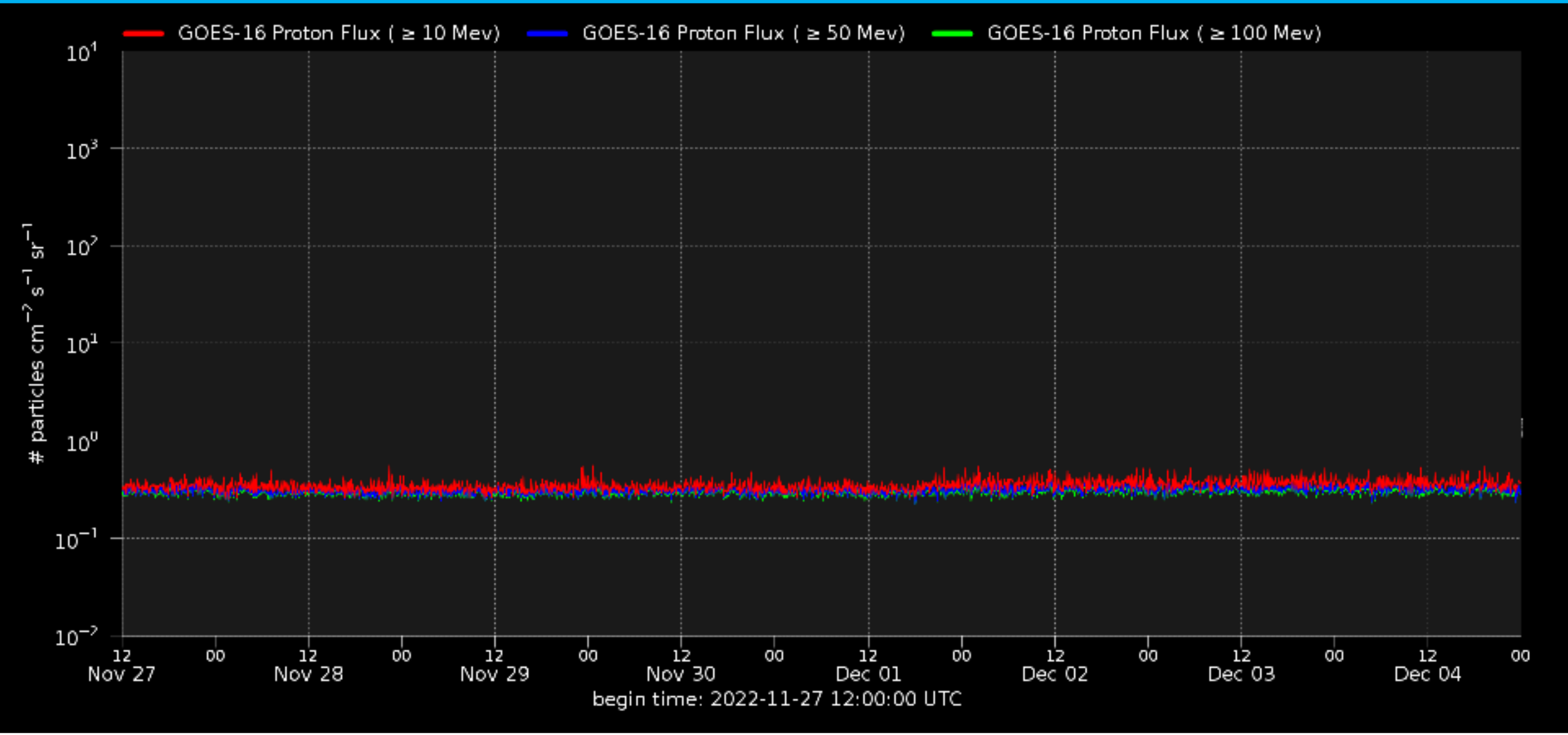


Energetic Particles

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

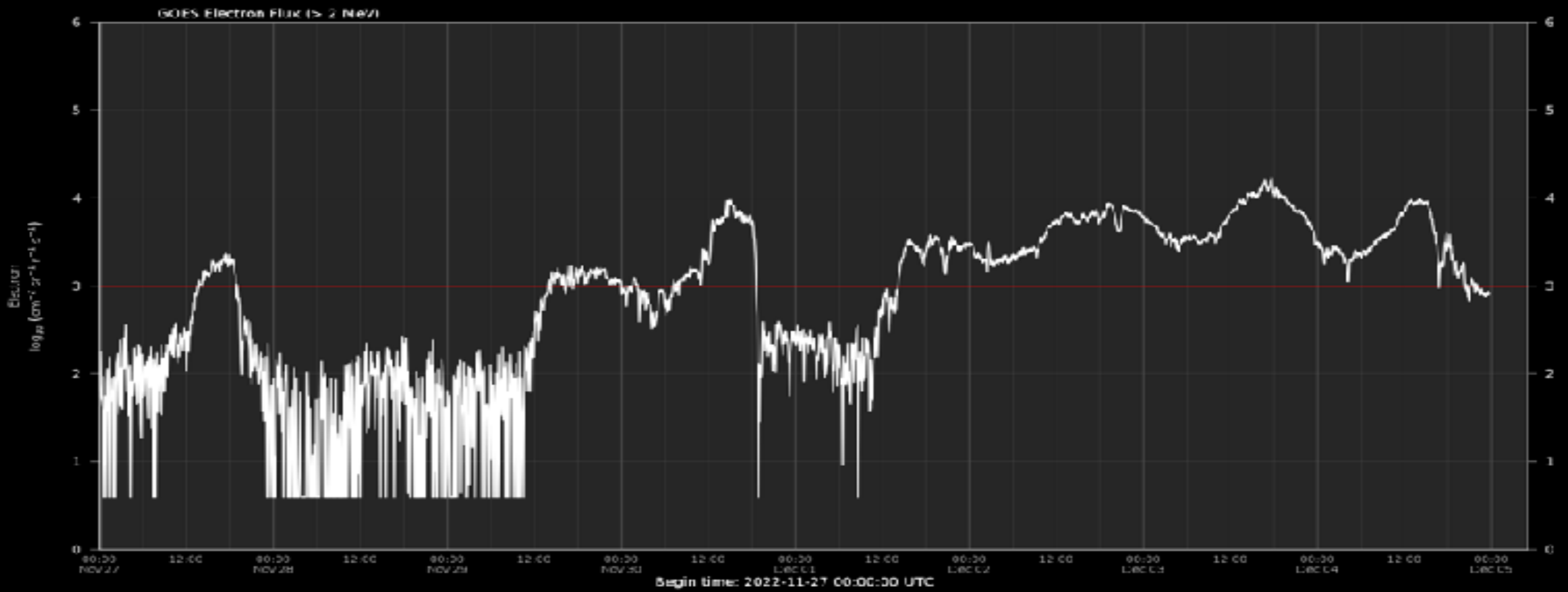
Solar proton flux



Electron flux at GEO

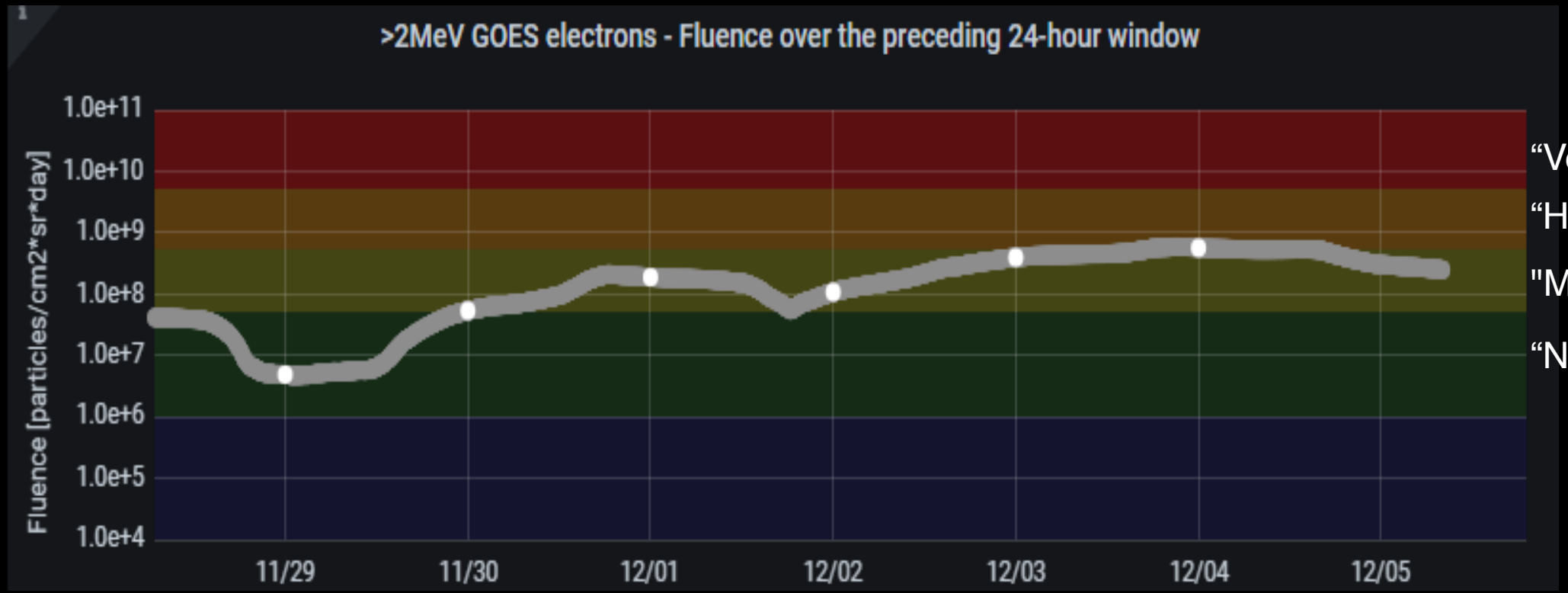
www.stce.be/educational/classification#electrons

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



Electron fluence at GEO

	min	max	avg
Fluence — Running window over the preceding 24-hour	4.7e+6	5.9e+8	2.2e+8
Fluence — One value for the preceding day	4.9e+6	5.6e+8	1.7e+8



"Very High" : > $5x10^9$

"High" : > $5x10^8$

"Moderate" > $5x10^7$

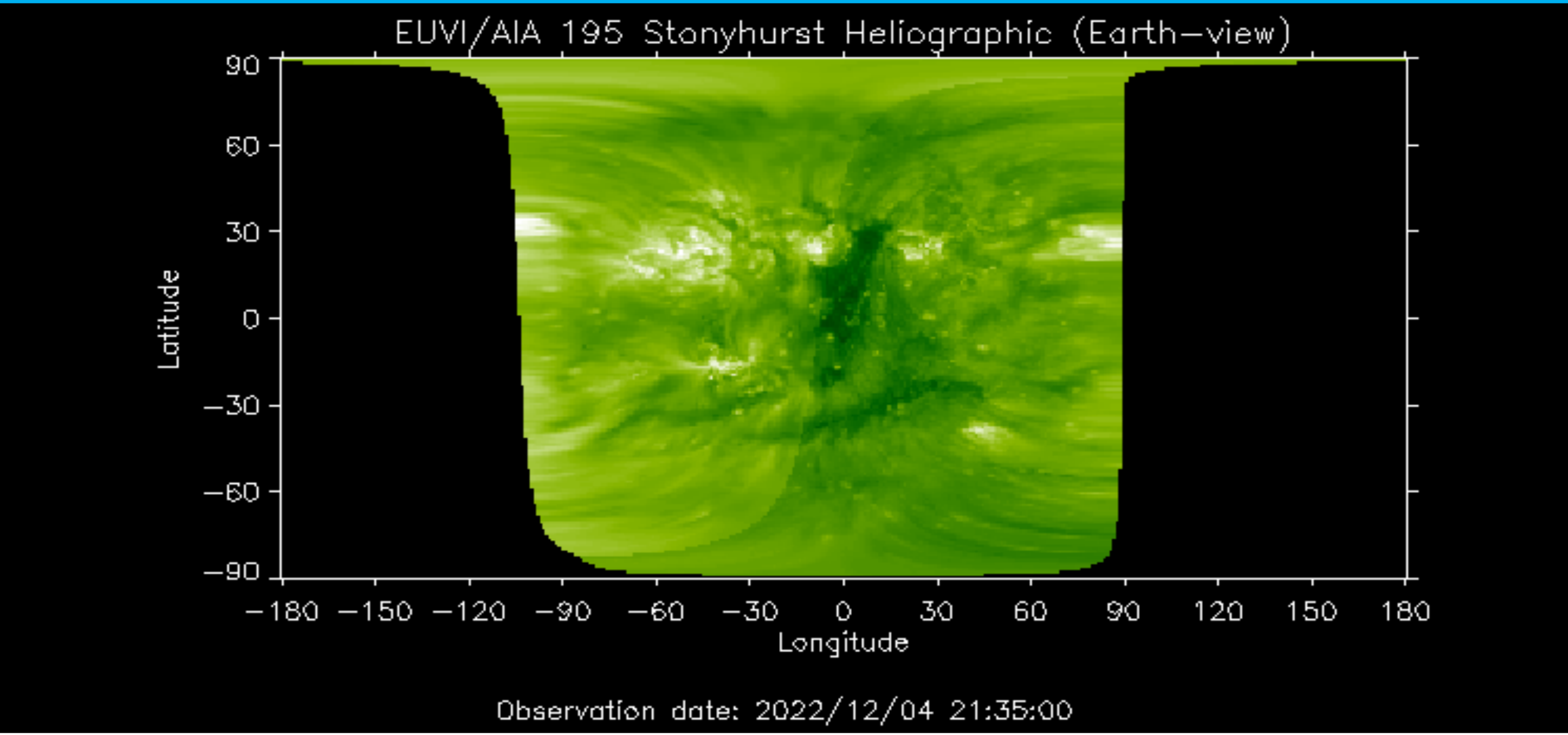
"Normal" > $1x10^6$

Outlook

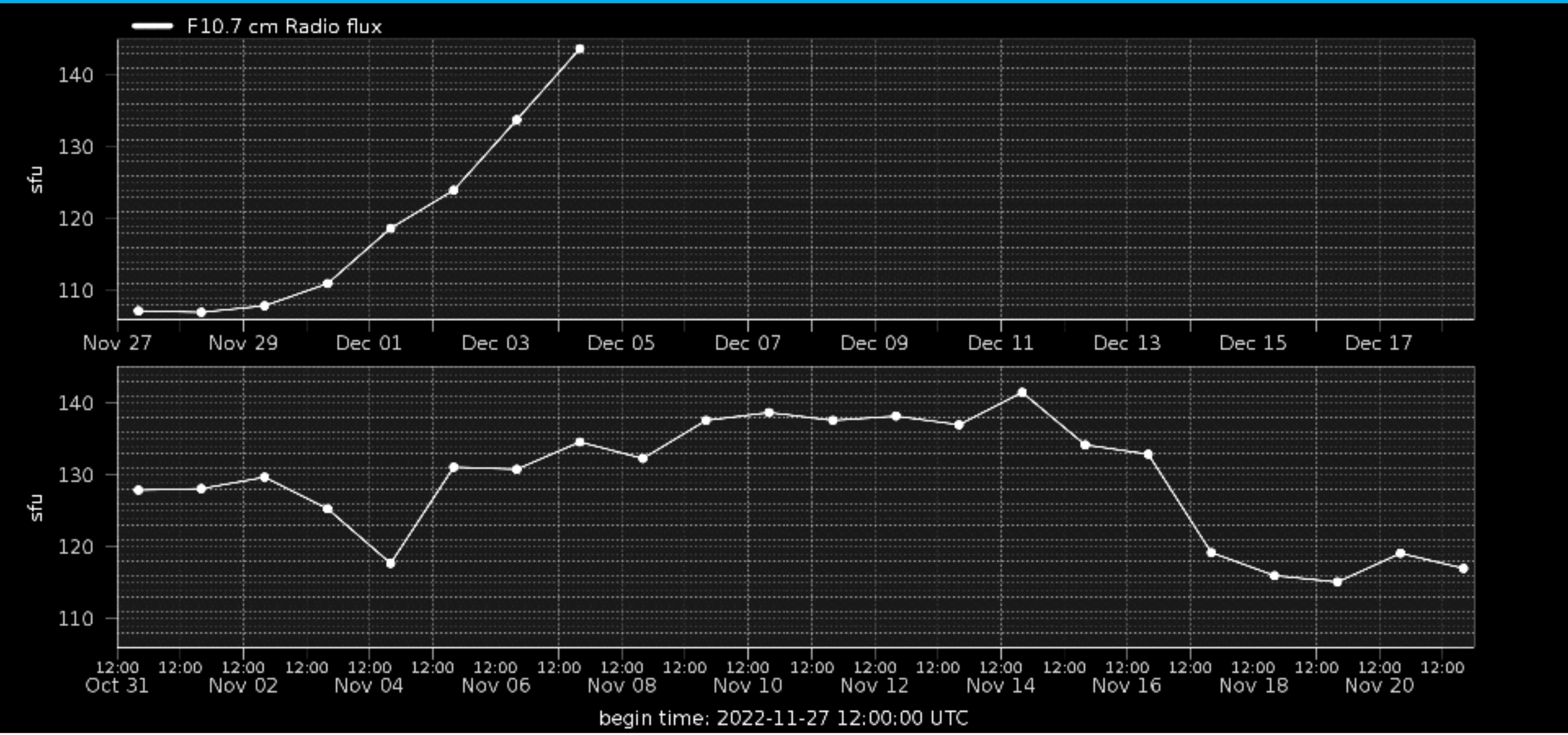
Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

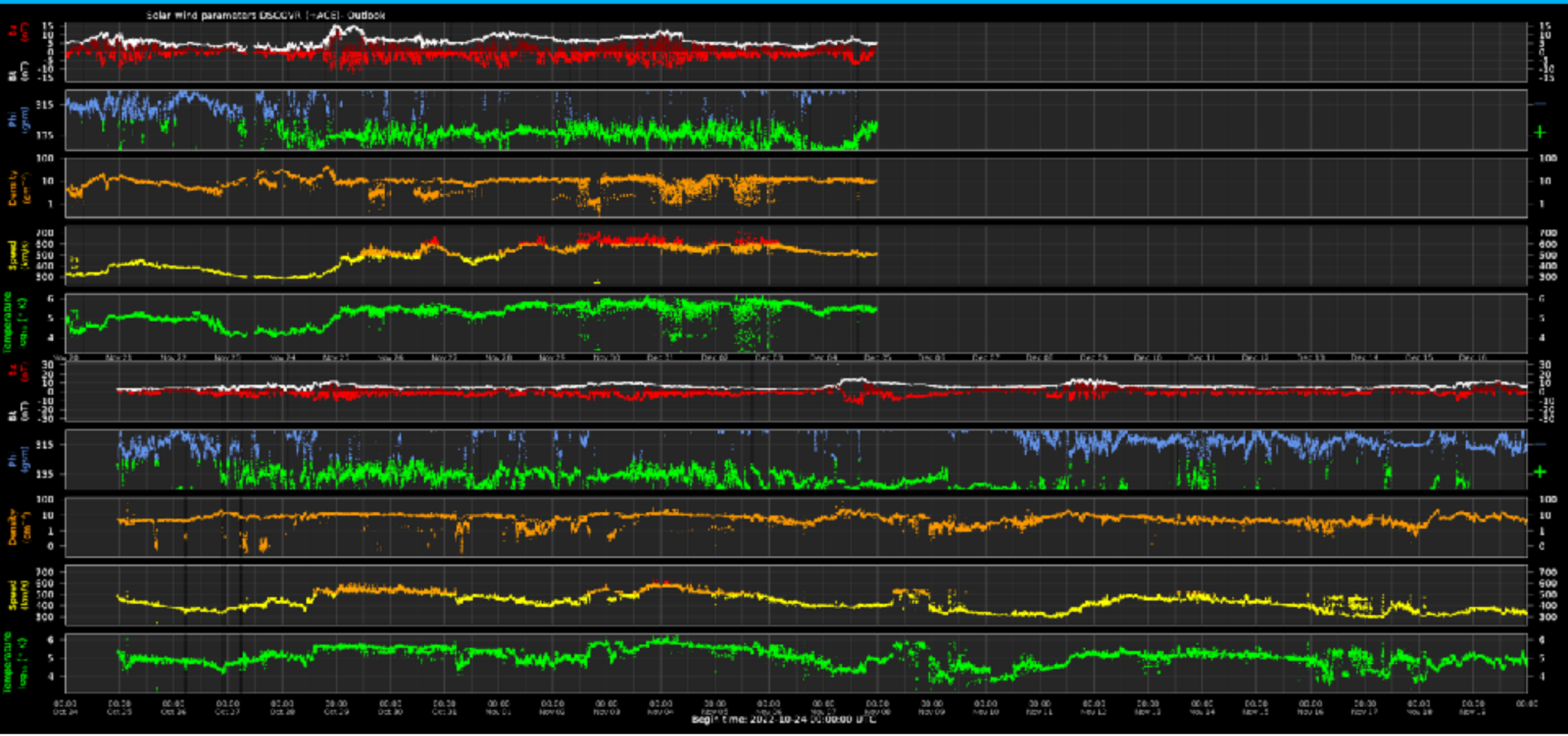
Outlook: Solar activity



Outlook: Solar F10.7cm radio flux

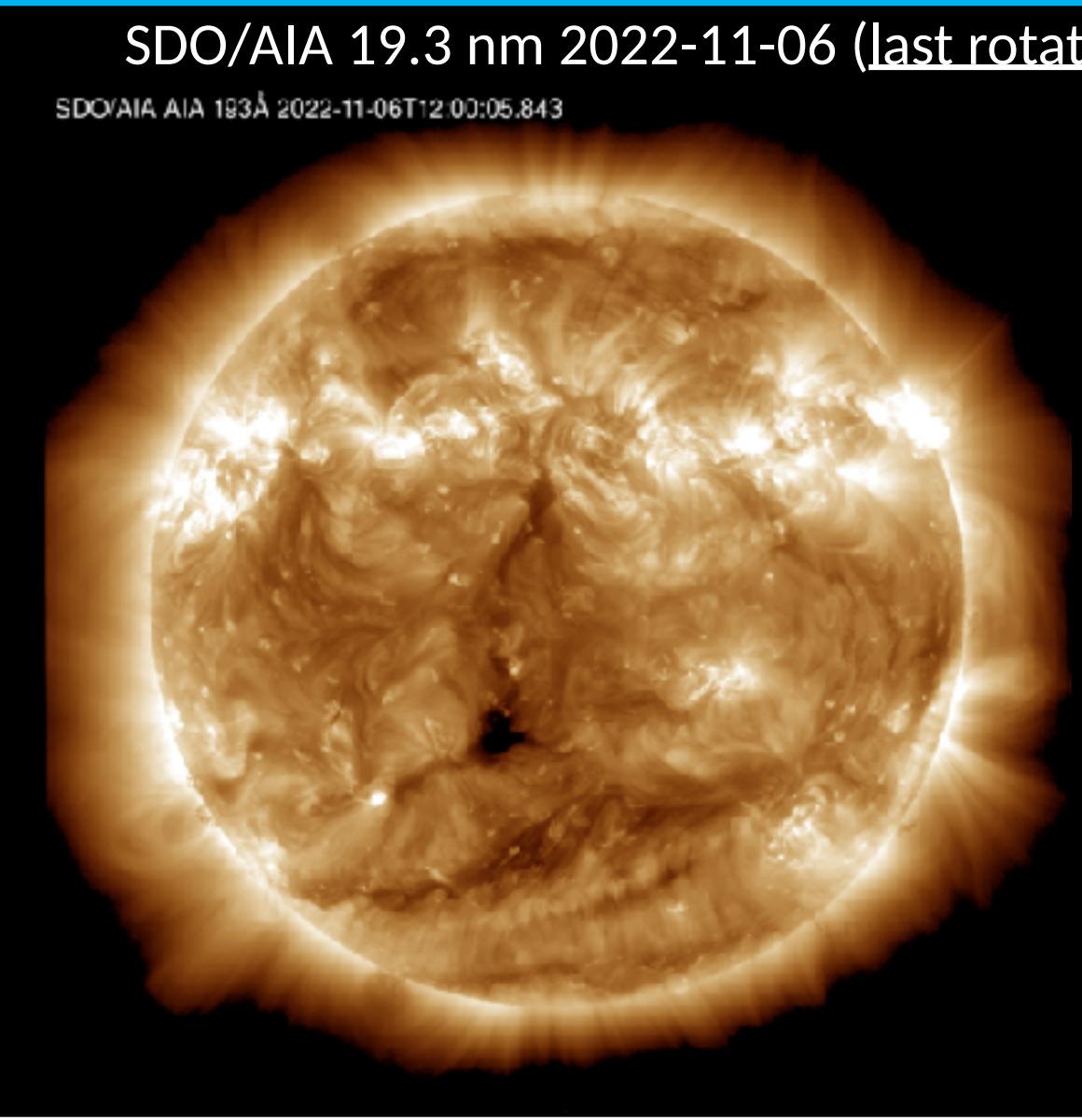


Outlook: Solar wind parameters

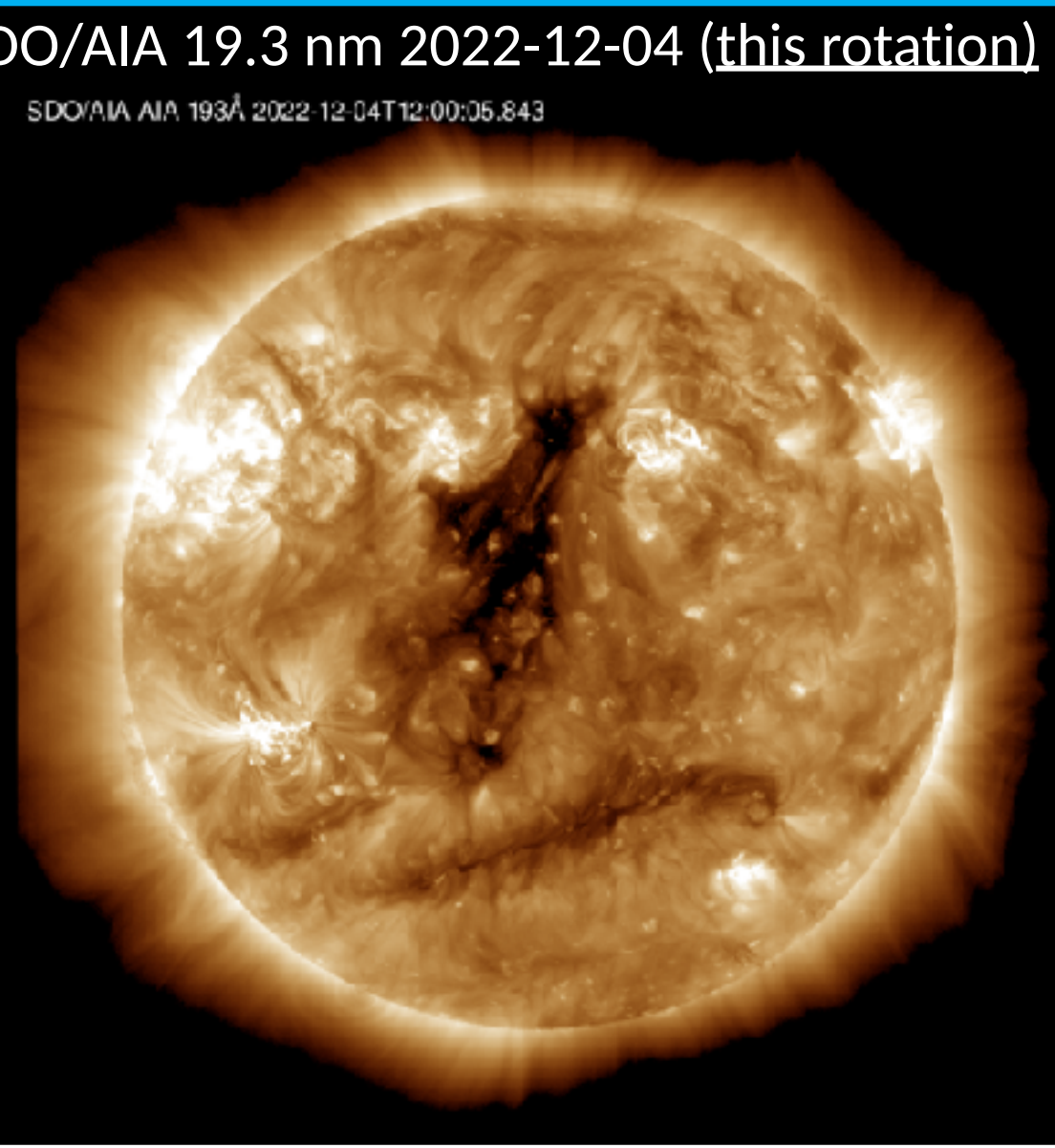


Outlook: Solar wind parameters

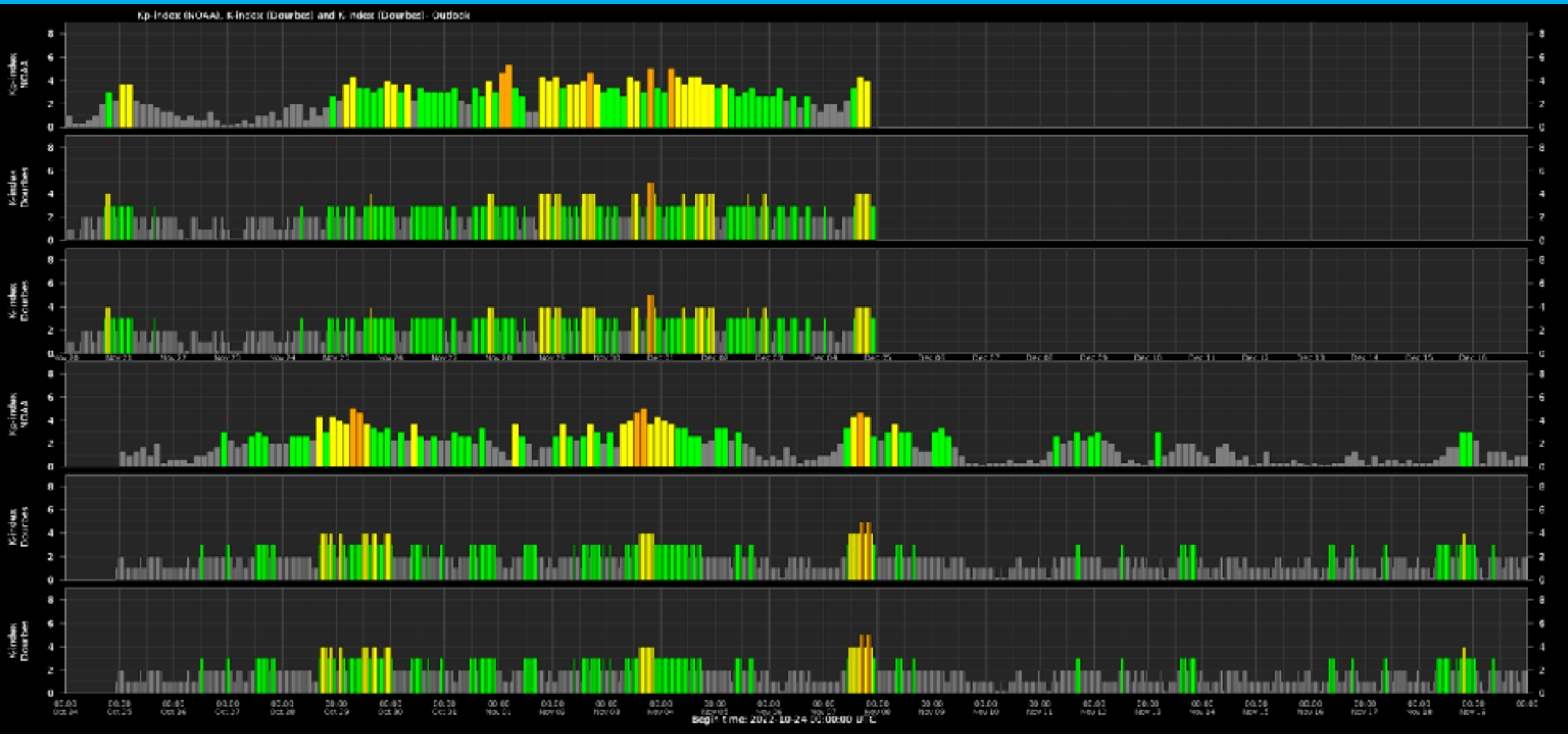
SDO/AIA 19.3 nm 2022-11-06 (last rotation)



SDO/AIA 19.3 nm 2022-12-04 (this rotation)



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook

SIDC Space Weather Briefing

See you at our next briefing!

Or visit us at www.sidc.be

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be