

SIDC Space Weather Briefing

18 December 2022-25 December 2022

the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2022-12-18 12:00 to 2022-12-25 23:59

Active regions	Several; NOAA 3169 most complex
Flares	# C-class flare: 44 # M-class flare: 1 # X-class flare: 0
Coronal Holes	2 CH+ in northern solar hemisphere; 1 CH- in southern solar hemisphere
CMEs	No halo CMEs. Two filament eruptions on 24 December, not earth-directed

Proton flux	At background levels all week
Electron flux	Around alert threshold from 24 December onwards; Fluence normal to moderate

Solar wind and geomagnetic conditions

ICMEs	None
Solar wind conditions	B : 1 - 18 nT //Bz: -13 nT to 11 nT //Speed: 269.0 - 718.8km/s
K-indices	max K-index (KBel): 5 max Kp-index (NOAA): 5-

All Quiet Alert: Off

Solar Activity

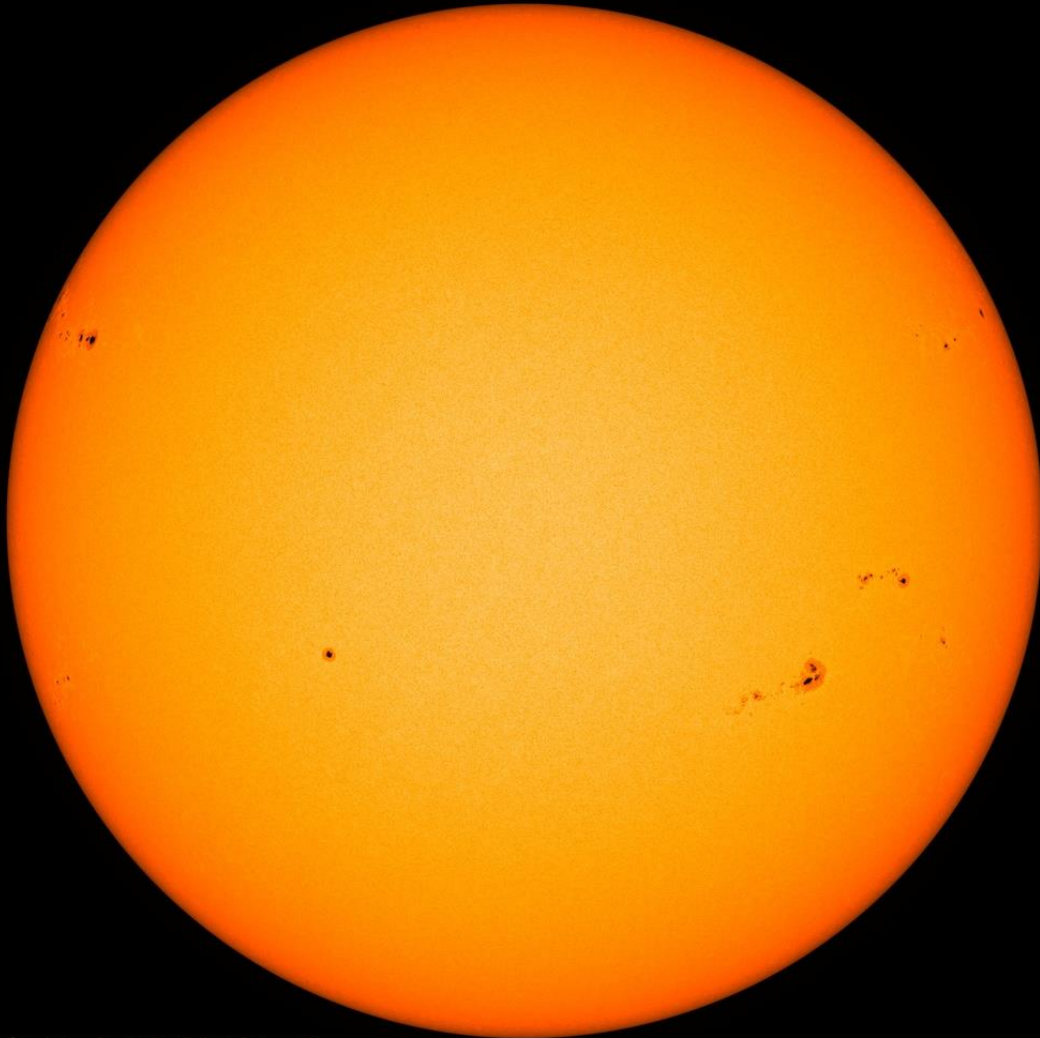


Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

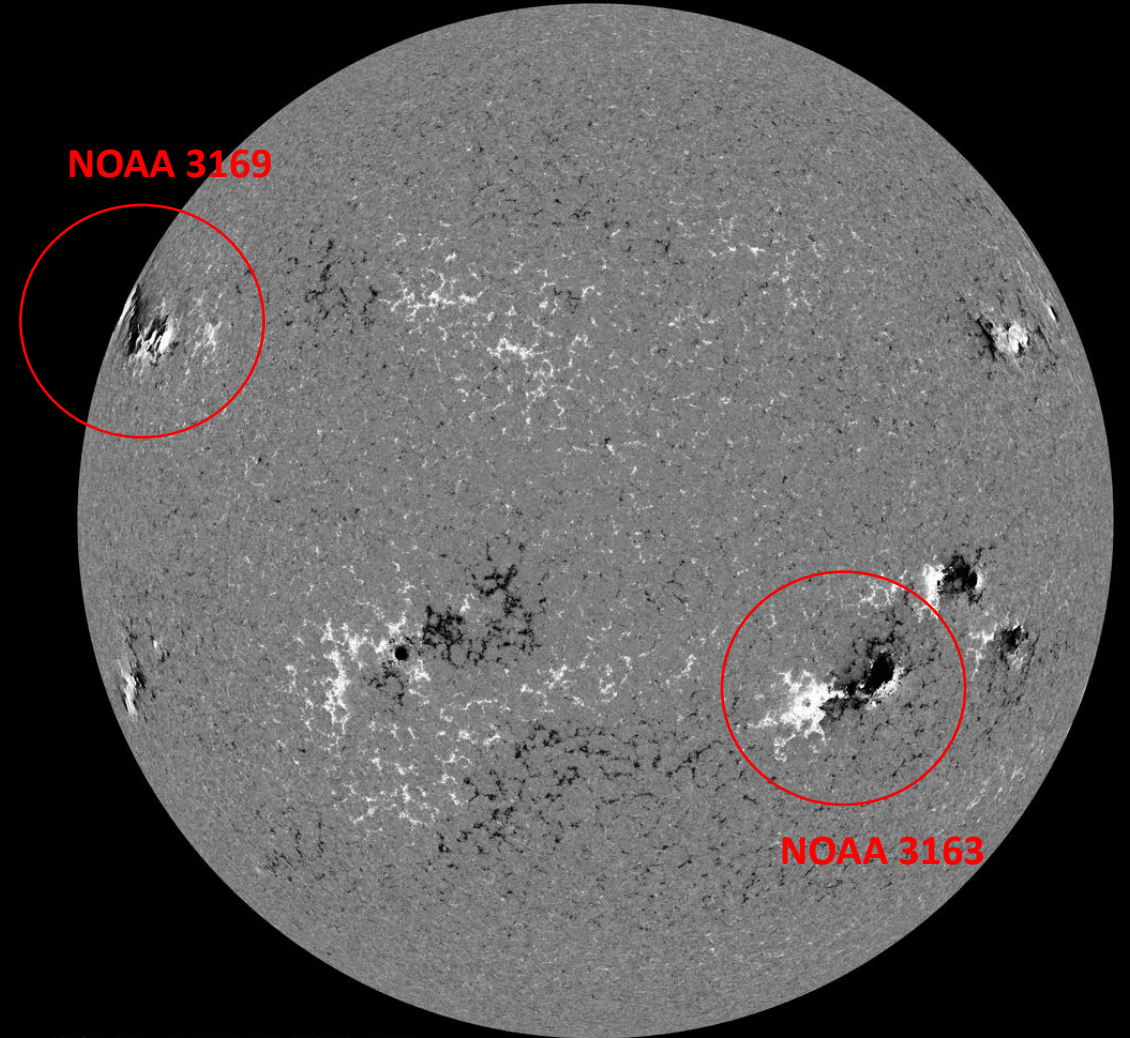
Solar active regions

SDO/HMI White Light 2022-12-18



SDO/HMI Quick-Look Continuum: 20221218_114500

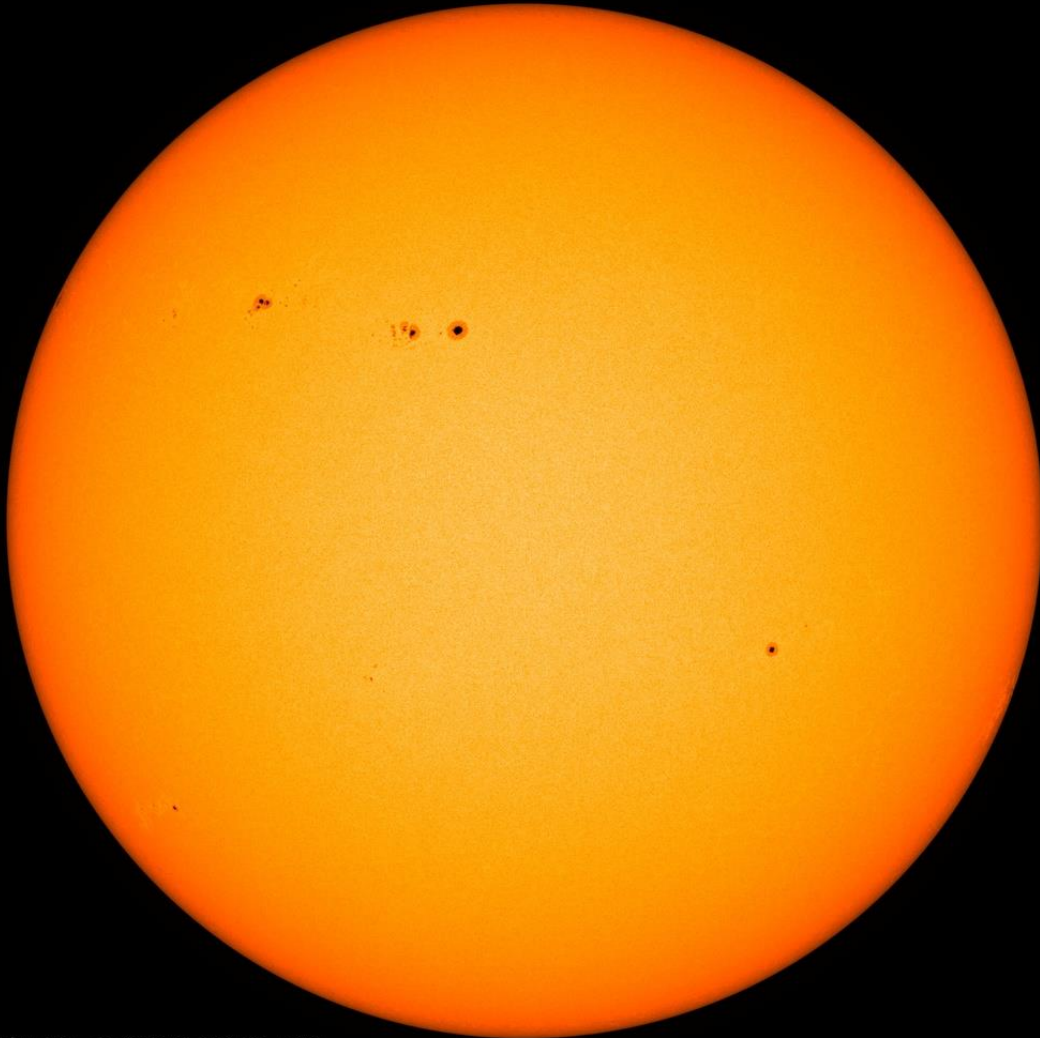
SDO/HMI Magnetogram 2022-12-18



SDO/HMI Quick-Look Magnetogram: 20221218_114500

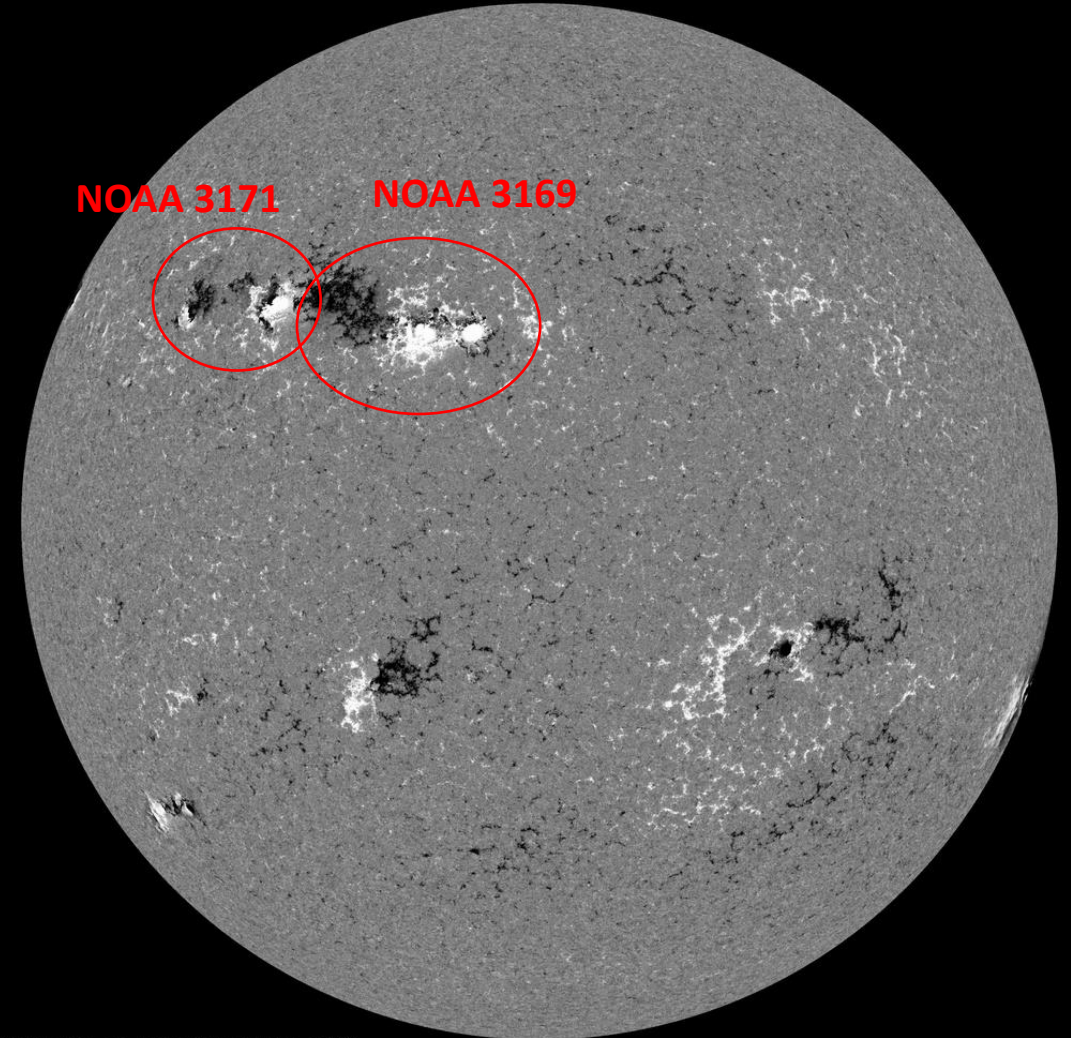
Solar active regions

SDO/HMI White Light 2022-12-22



SDO/HMI Quick-Look Continuum: 20221222_114500

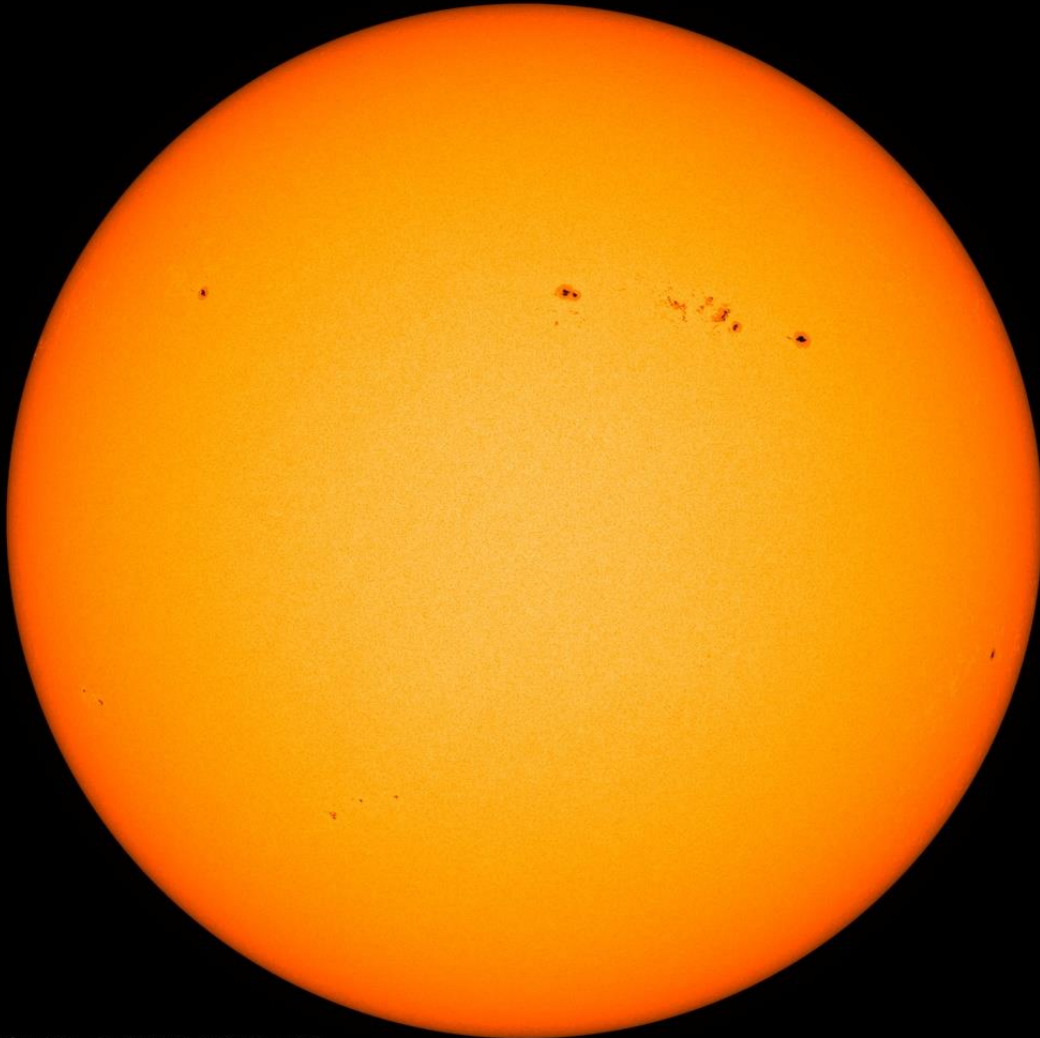
SDO/HMI Magnetogram 2022-12-22



SDO/HMI Quick-Look Magnetogram: 20221222_114500

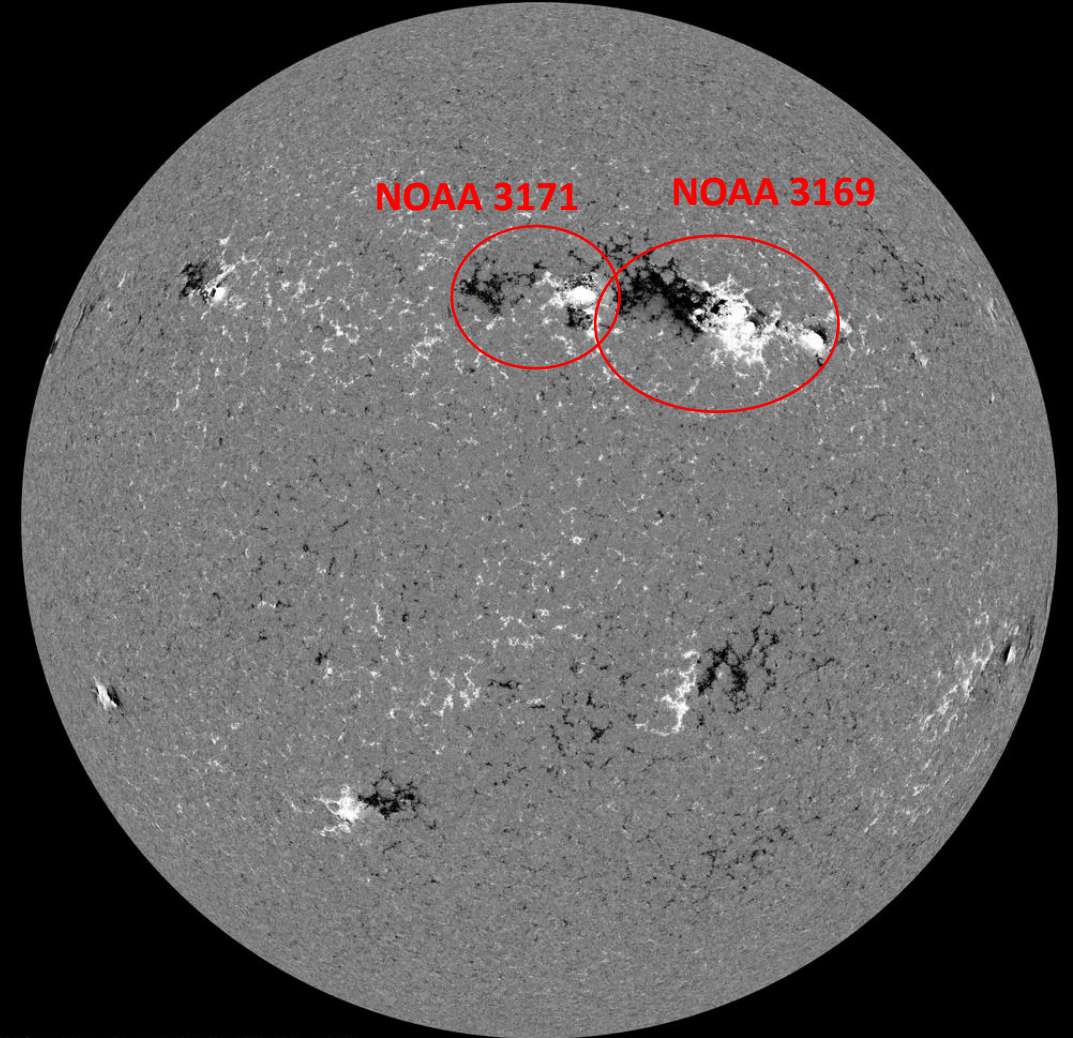
Solar active regions

SDO/HMI White Light 2022-12-25



SDO/HMI Quick-Look Continuum: 20221225_114500

SDO/HMI Magnetogram 2022-12-25

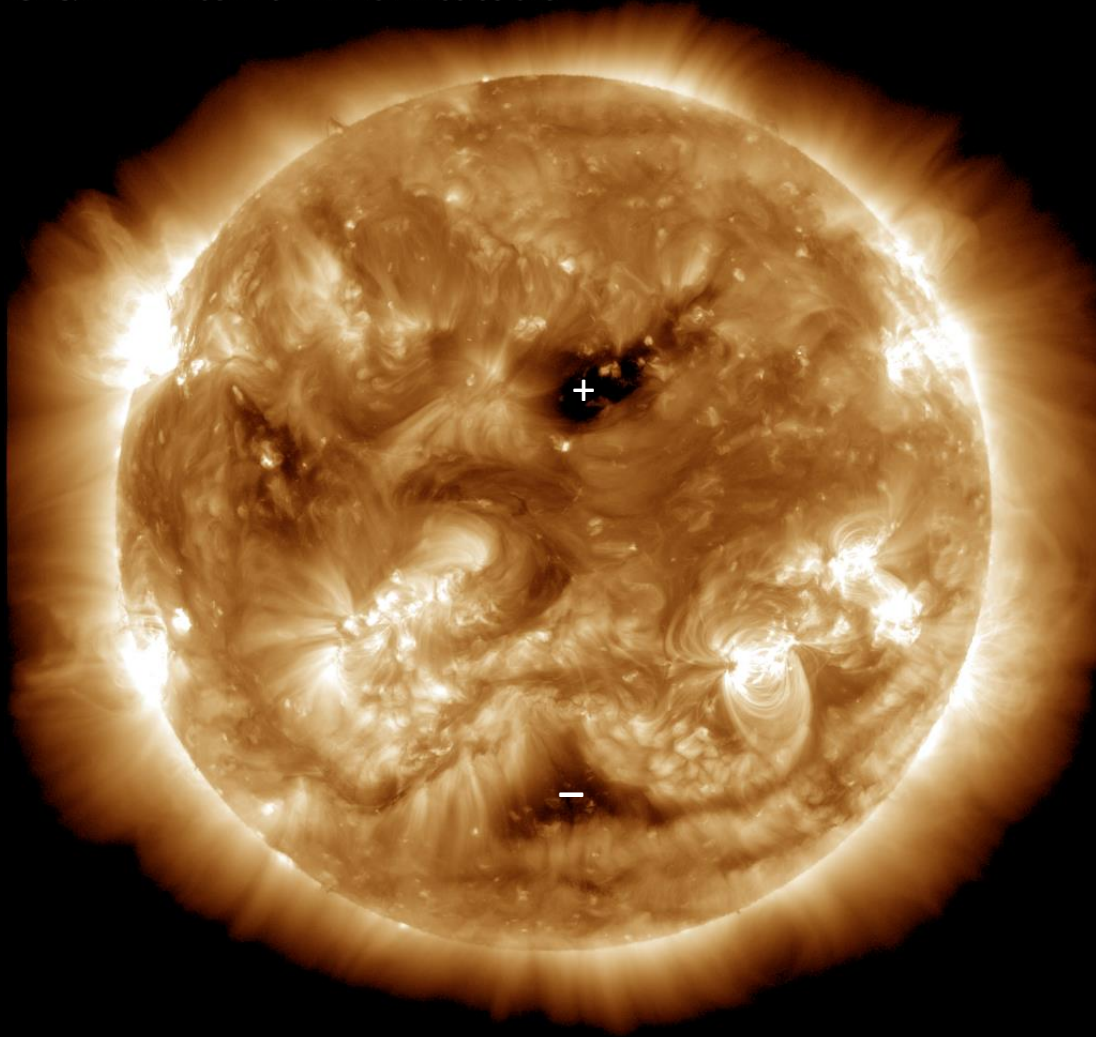


SDO/HMI Quick-Look Magnetogram: 20221225_114500

Coronal holes

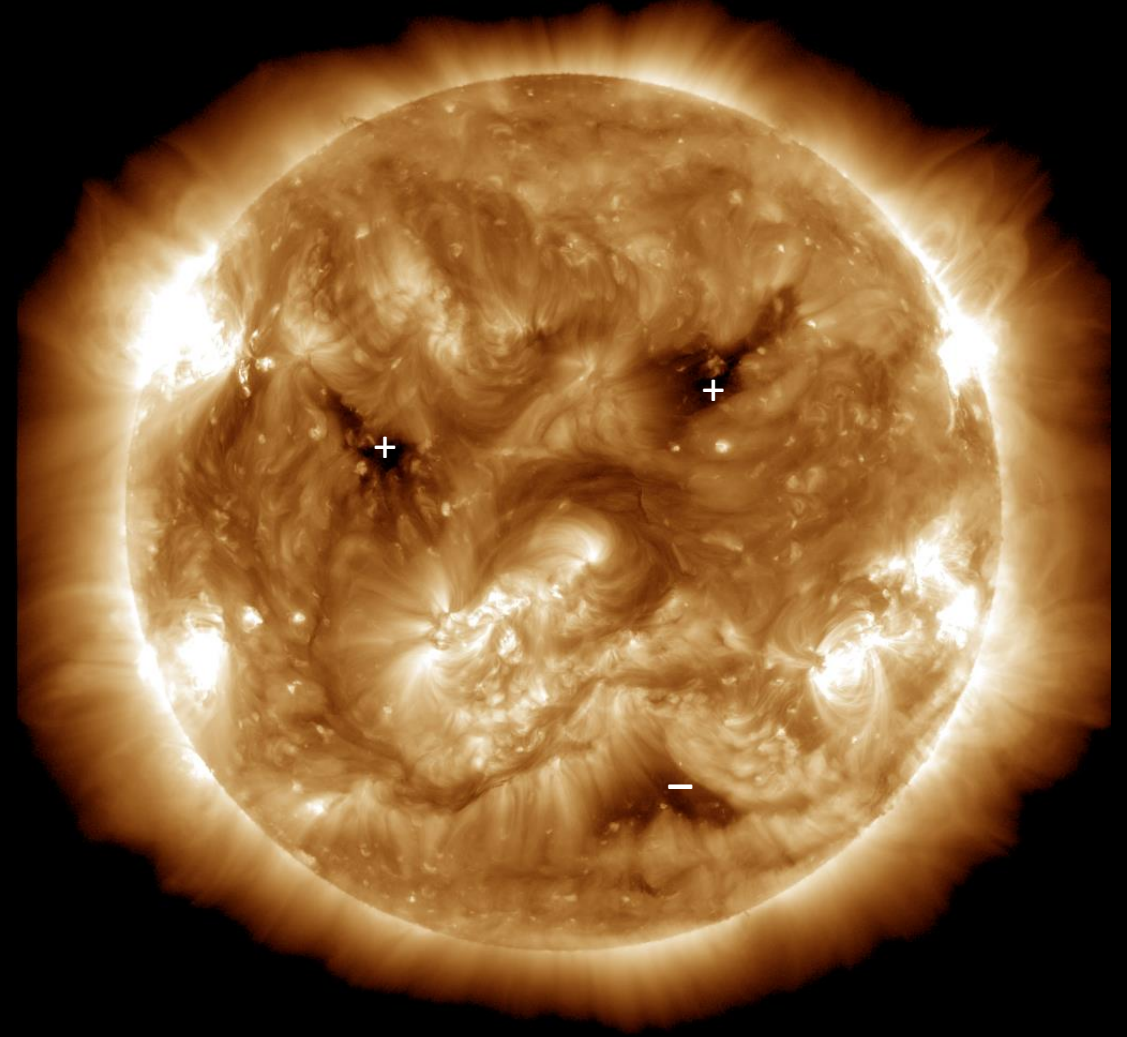
SDO/AIA 19.3 nm 2022-12-18

SDO/AIA AIA 193Å 2022-12-18T12:00:05.843



SDO/AIA 19.3 nm 2022-12-19

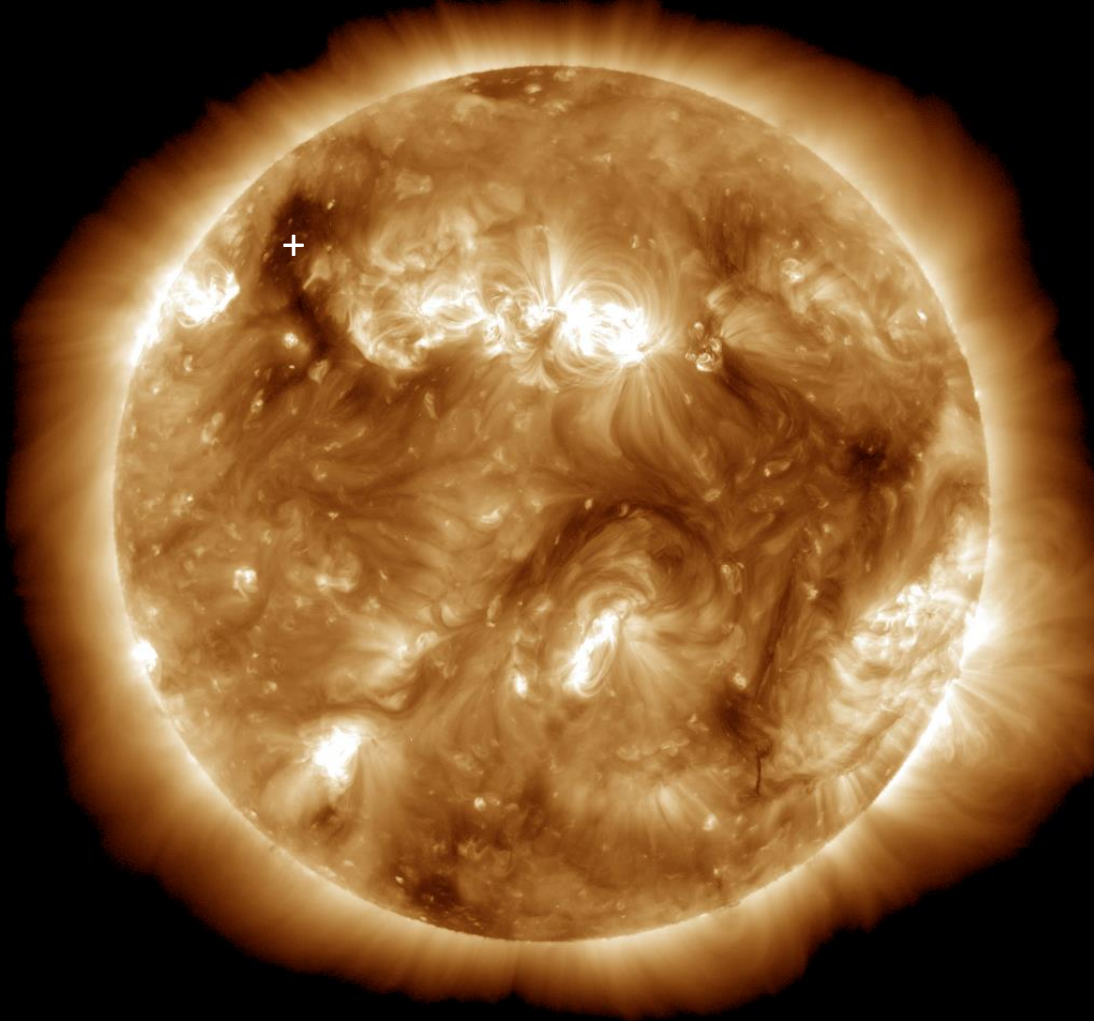
SDO/AIA AIA 193Å 2022-12-19T12:00:05.843



Coronal holes

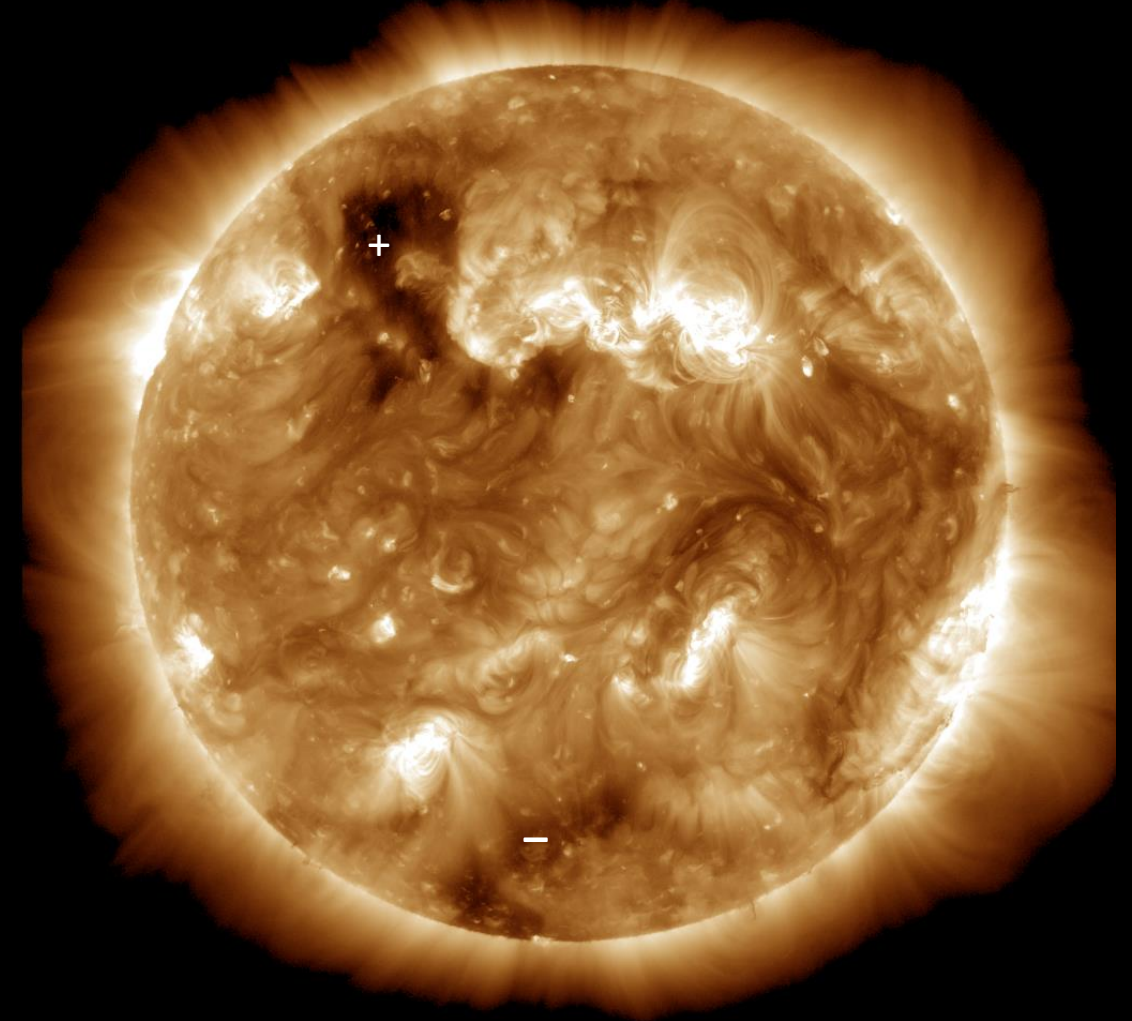
SDO/AIA 19.3 nm 2022-12-24

SDO/AIA AIA 193Å 2022-12-24T12:00:05.843



SDO/AIA 19.3 nm 2022-12-25

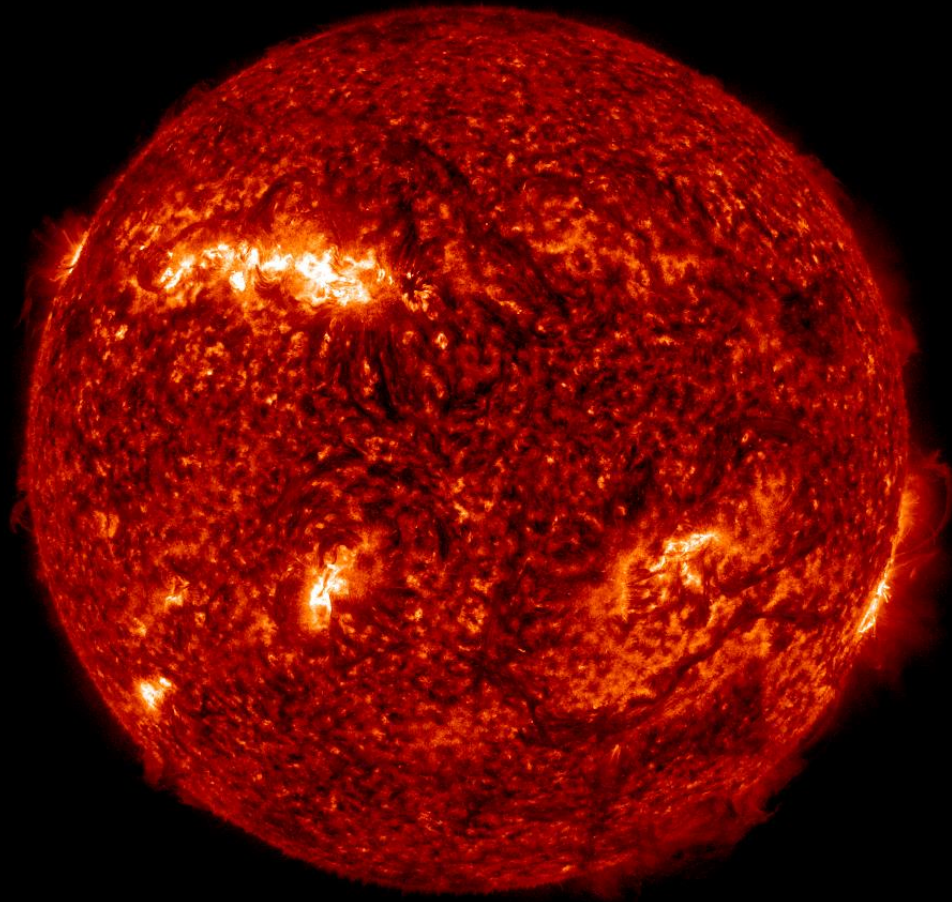
SDO/AIA AIA 193Å 2022-12-25T12:00:05.843



Filaments

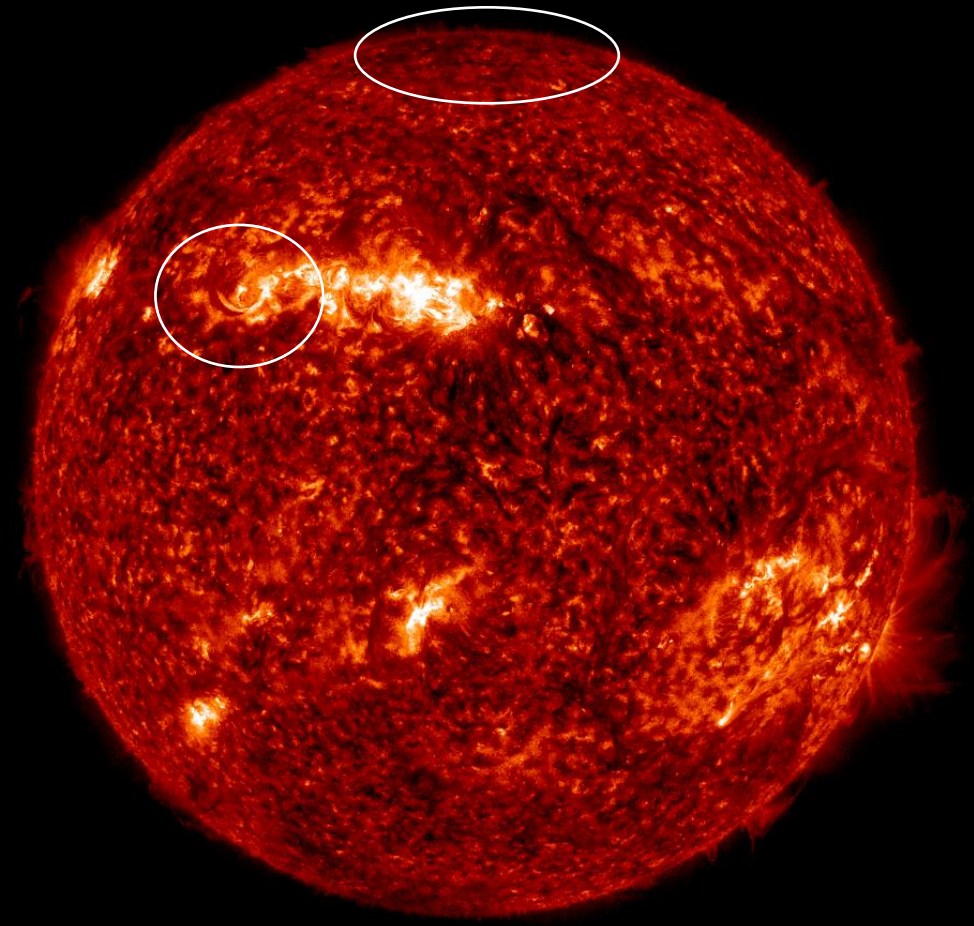
SDO/AIA 30.4 nm 2022-12-22

SDO/AIA AIA 304Å 2022-12-22T12:00:06.580



SDO/AIA 30.4 nm 2022-12-23

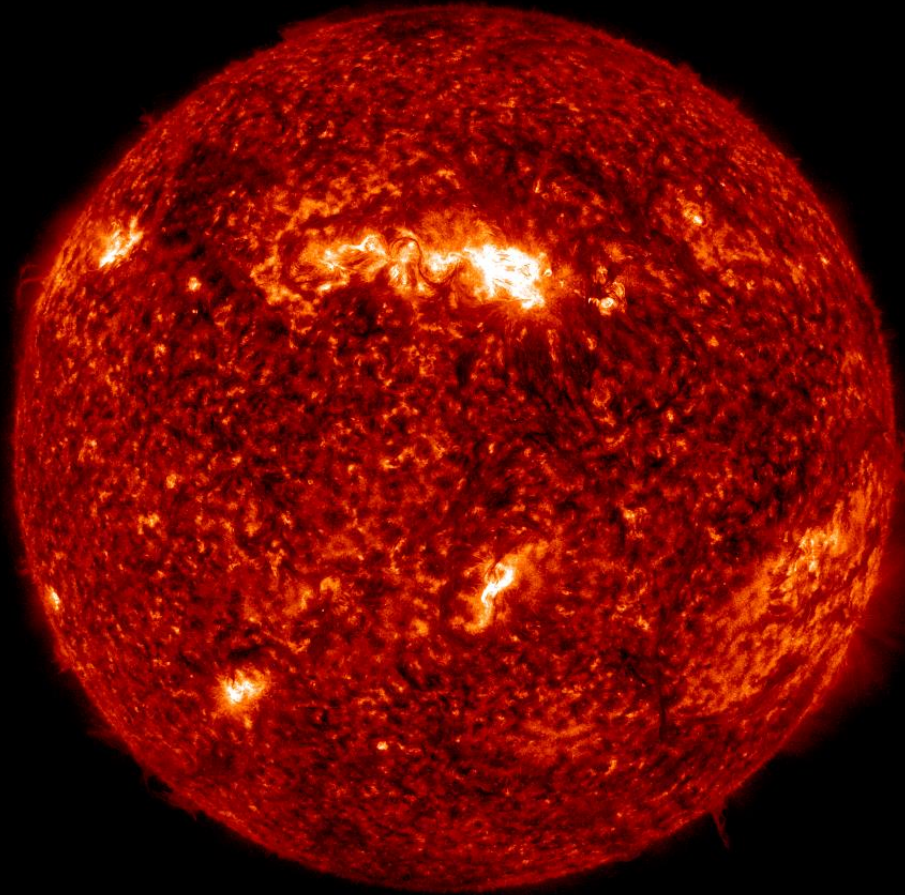
SDO/AIA AIA 304Å 2022-12-23T12:00:06.580



Filaments

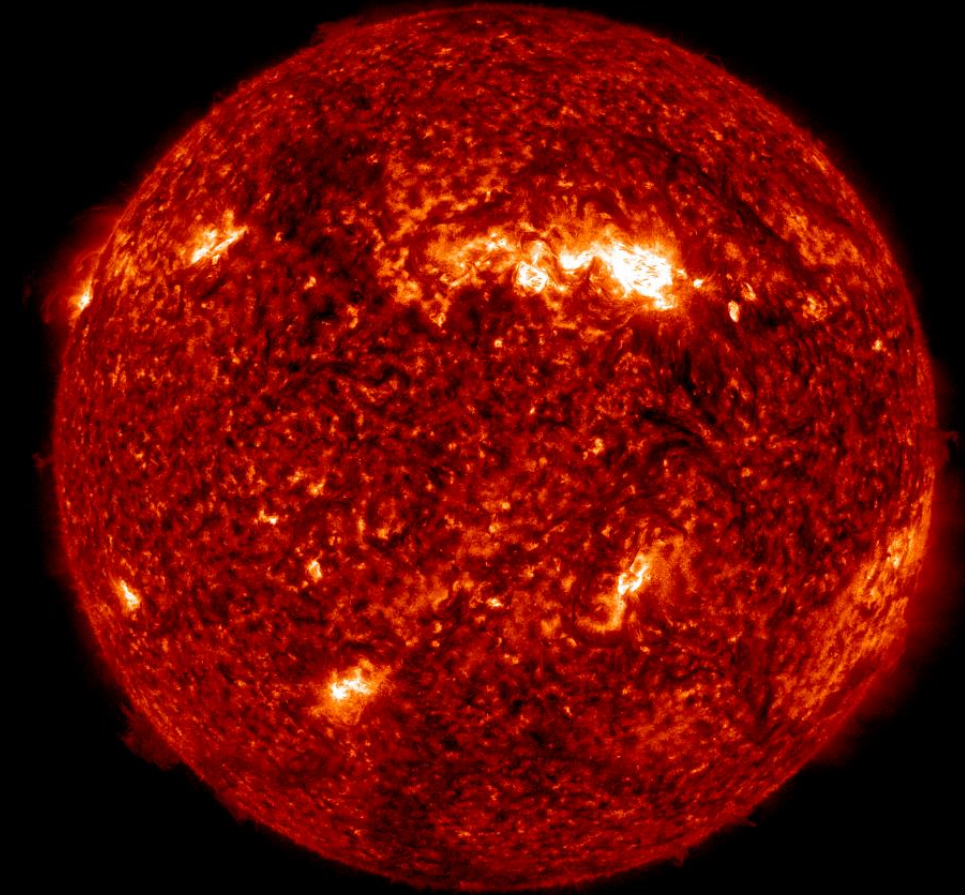
SDO/AIA 30.4 nm 2022-12-24

SDO/AIA AIA 304Å 2022-12-24T12:00:06.581



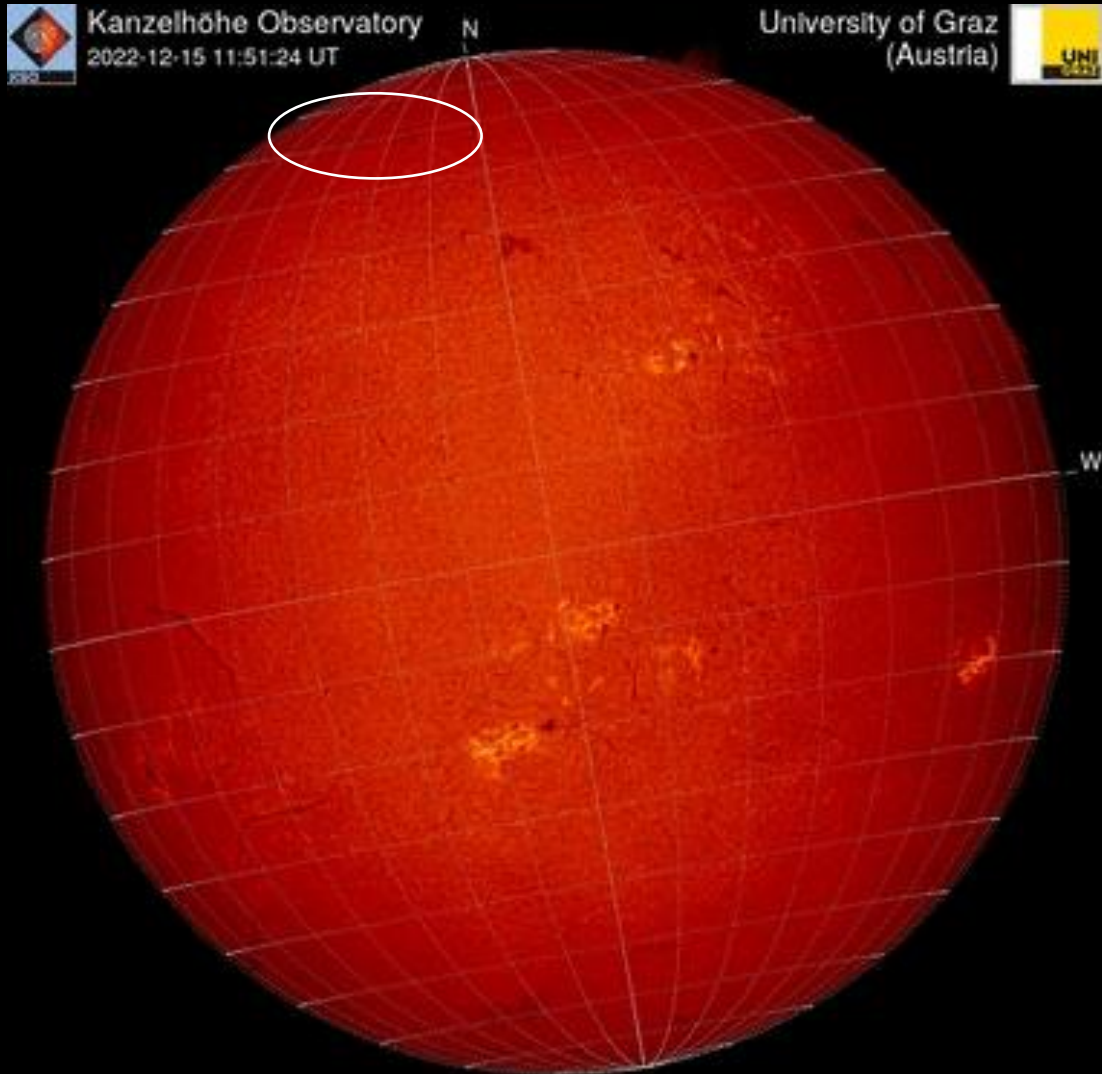
SDO/AIA 30.4 nm 2022-12-25

SDO/AIA AIA 304Å 2022-12-25T12:00:06.575

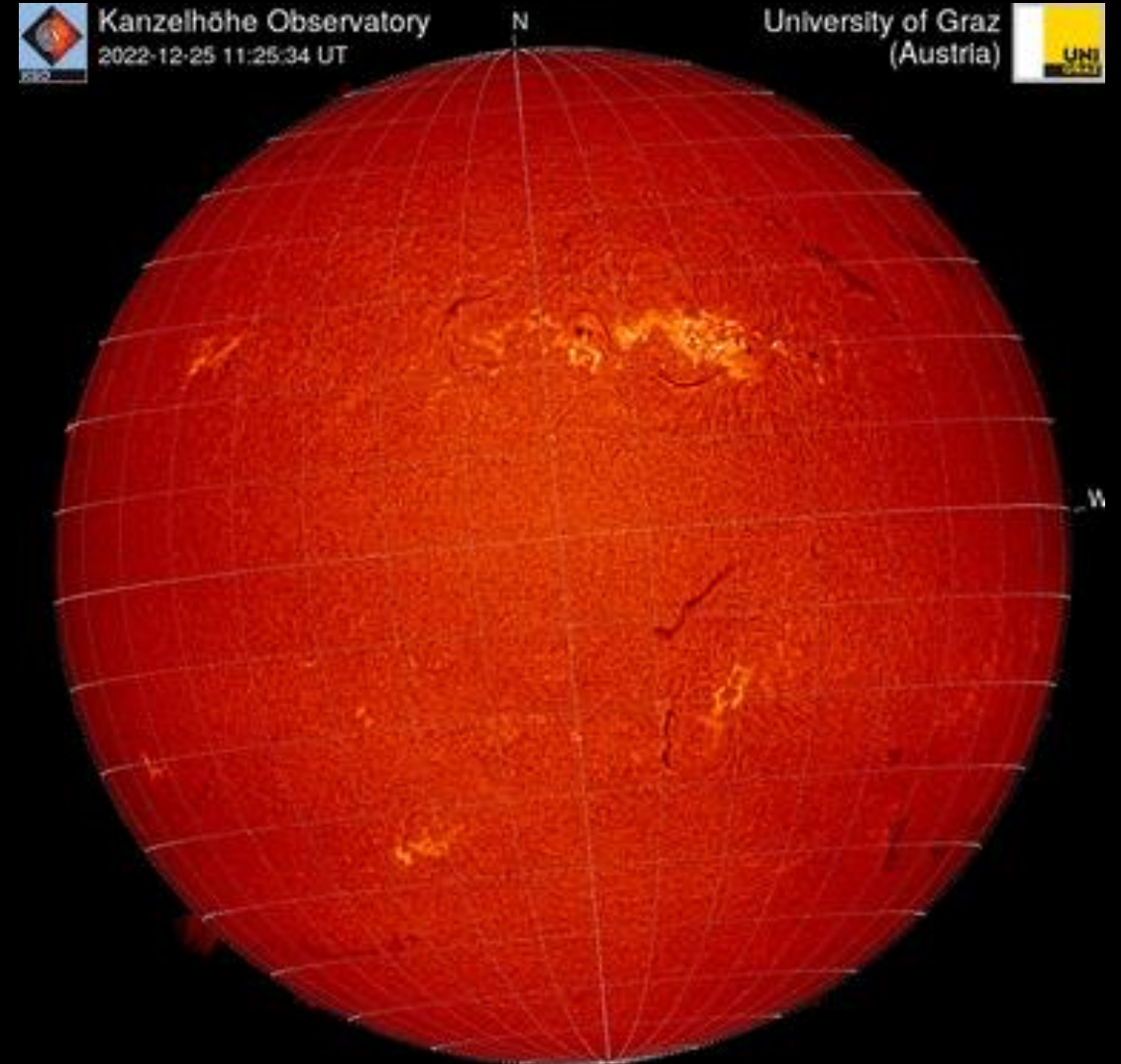


Filaments & Filament eruptions

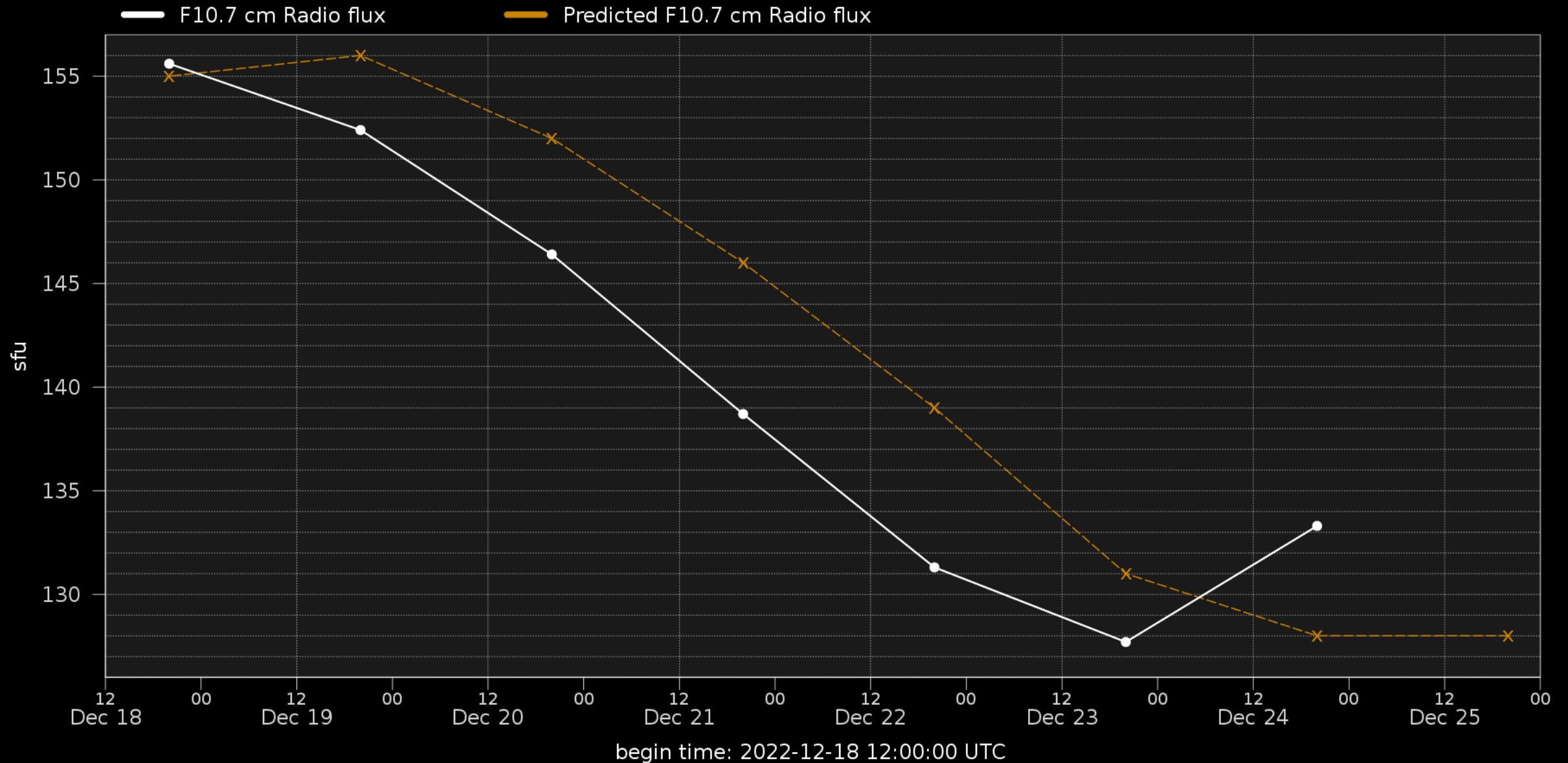
H-alpha 2022-12-18



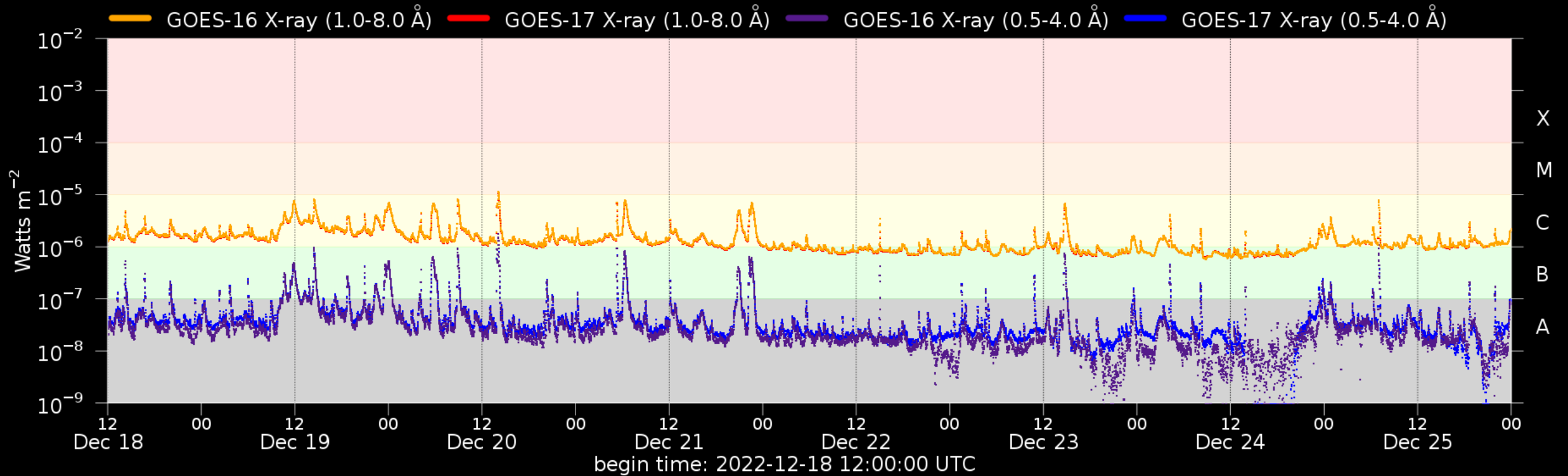
H-alpha 2022-12-25



Solar F10.7cm radio flux



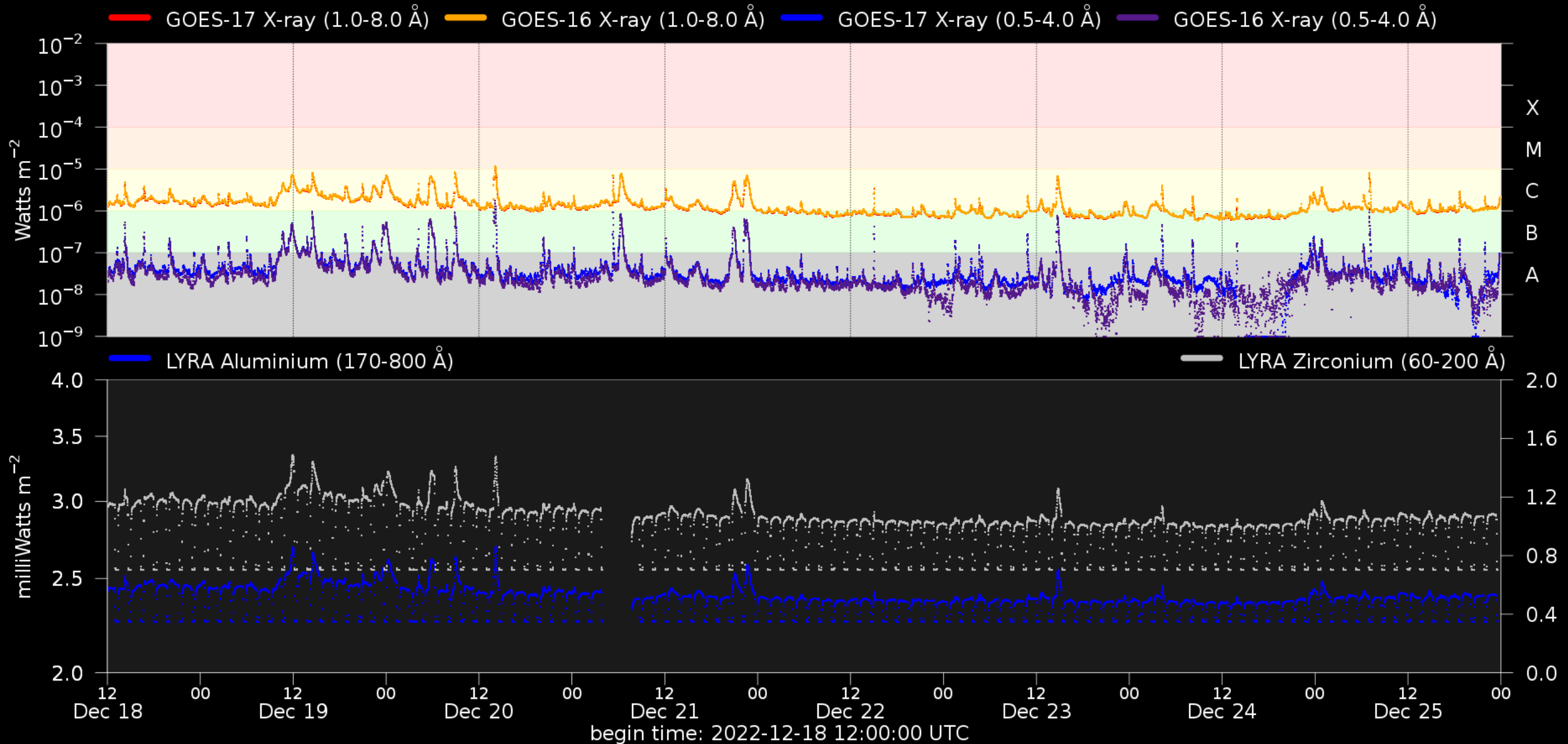
Flaring activity



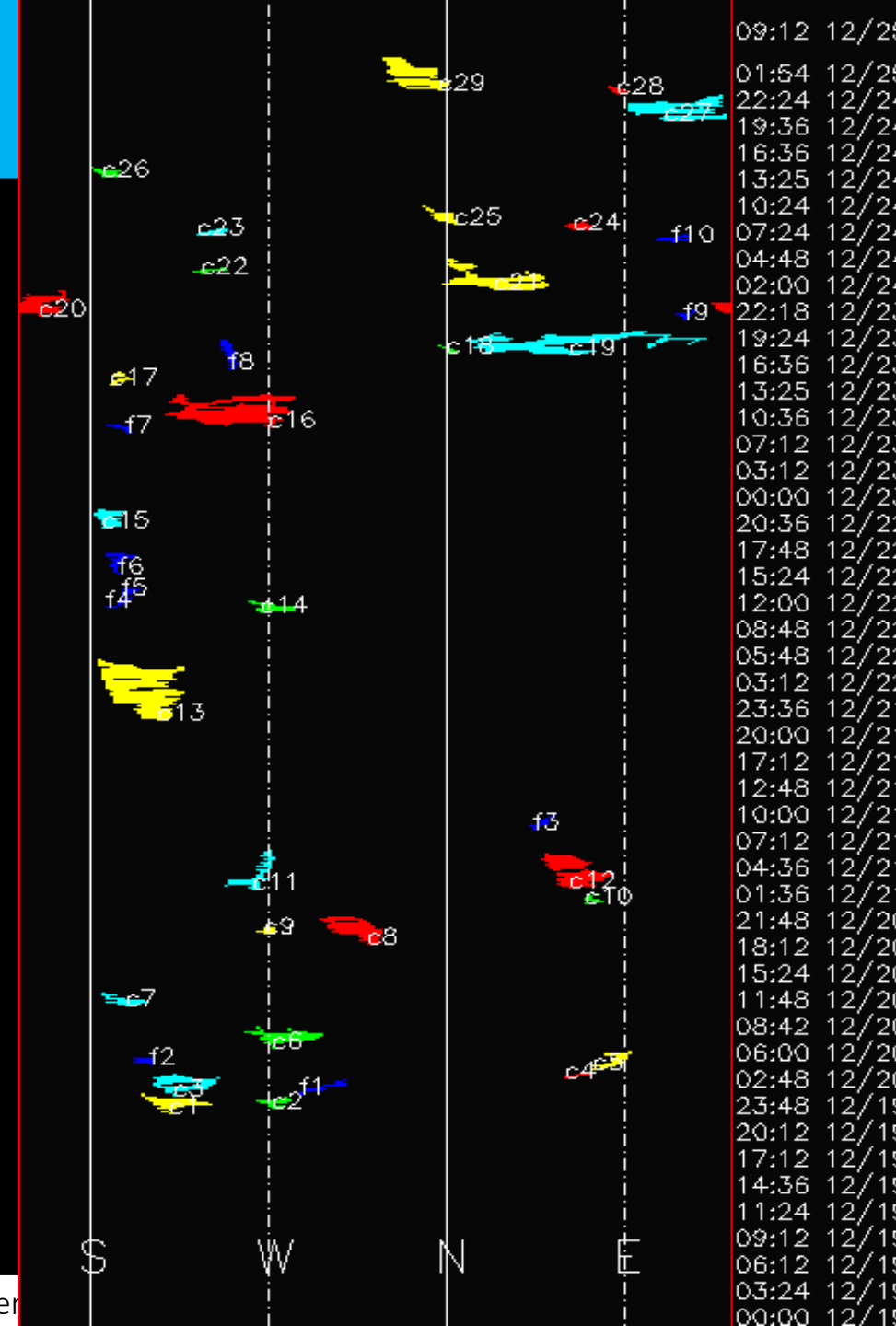
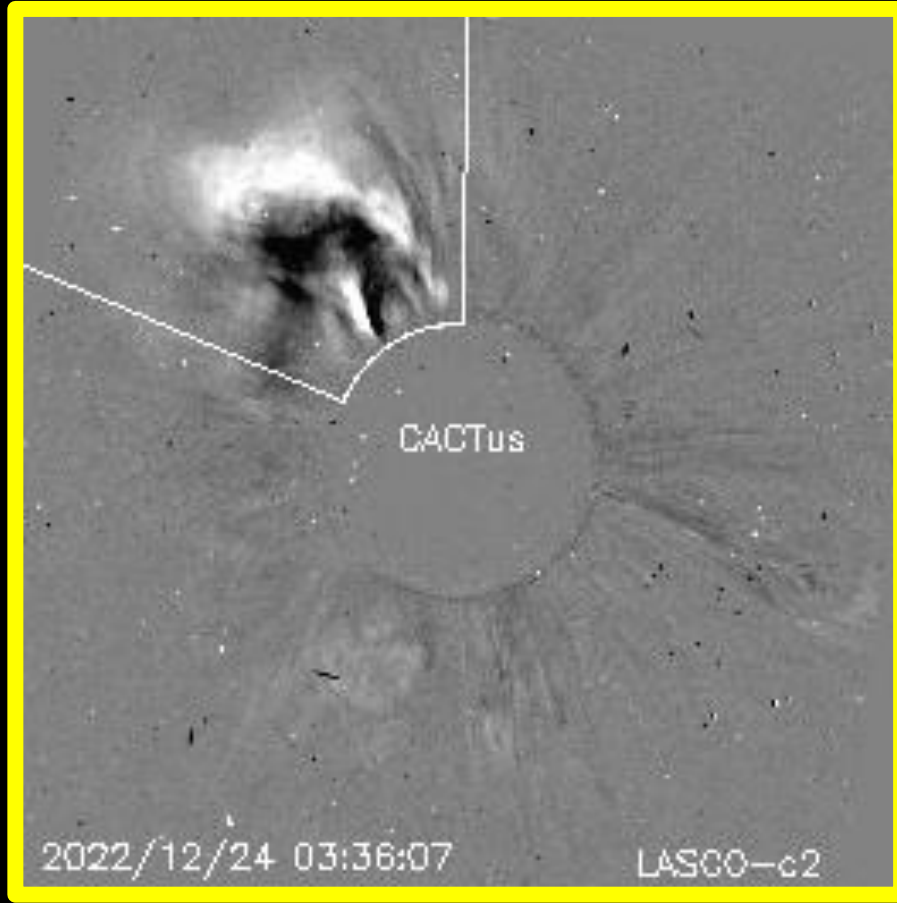
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2022-12-18	2022-12-19	2022-12-20	2022-12-21	2022-12-22	2022-12-23	2022-12-24	2022-12-25
Probability (%)	90 35 01	95 40 02	95 33 05	95 53 05	85 20 05	55 05 01	85 05 01	75 05 01
Observed (#)	08 00 00	07 00 00	06 01 00	04 00 00	07 00 00	04 00 00	06 00 00	02 00 00

Solar X-Ray and UV flux



Coronal Mass Ejections



Solar Wind and

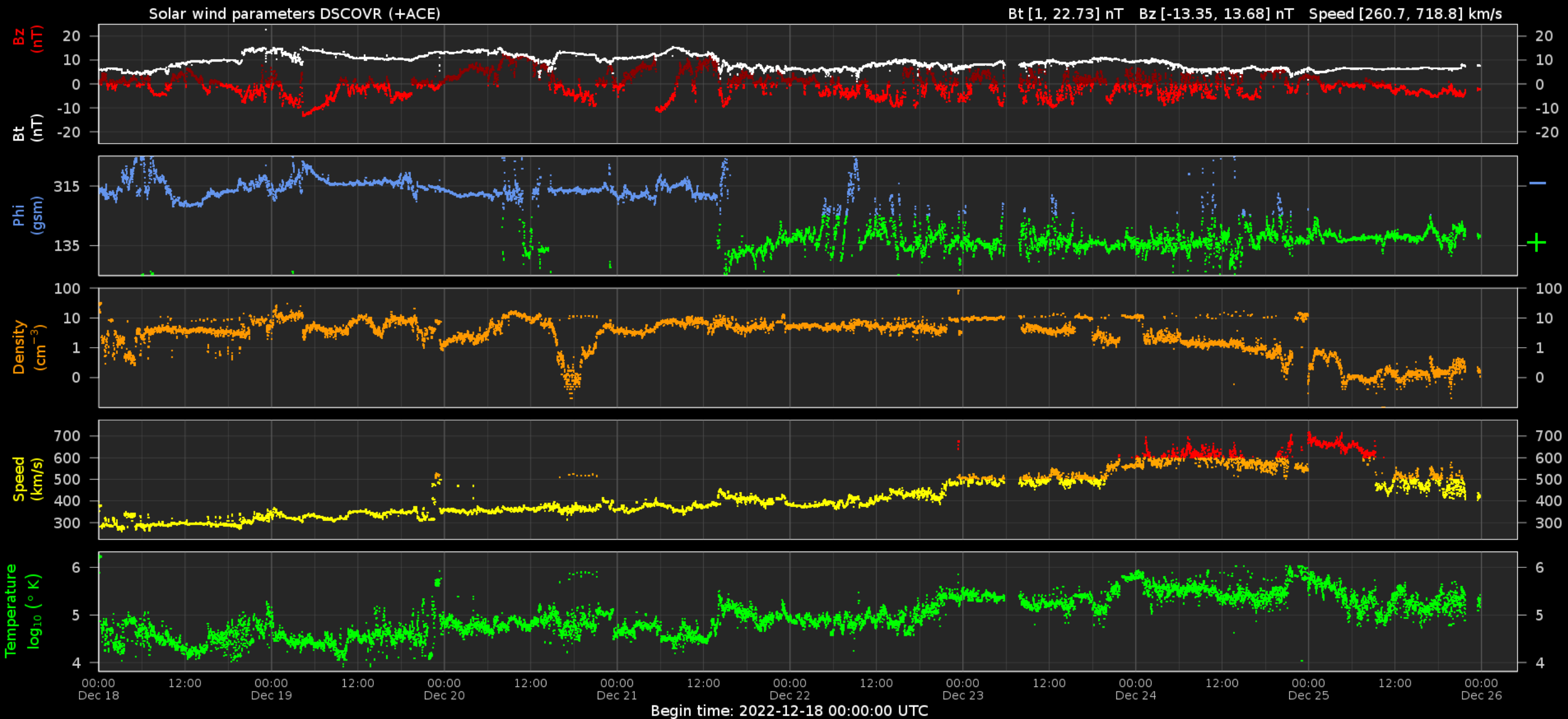
Geomagnetic Activity



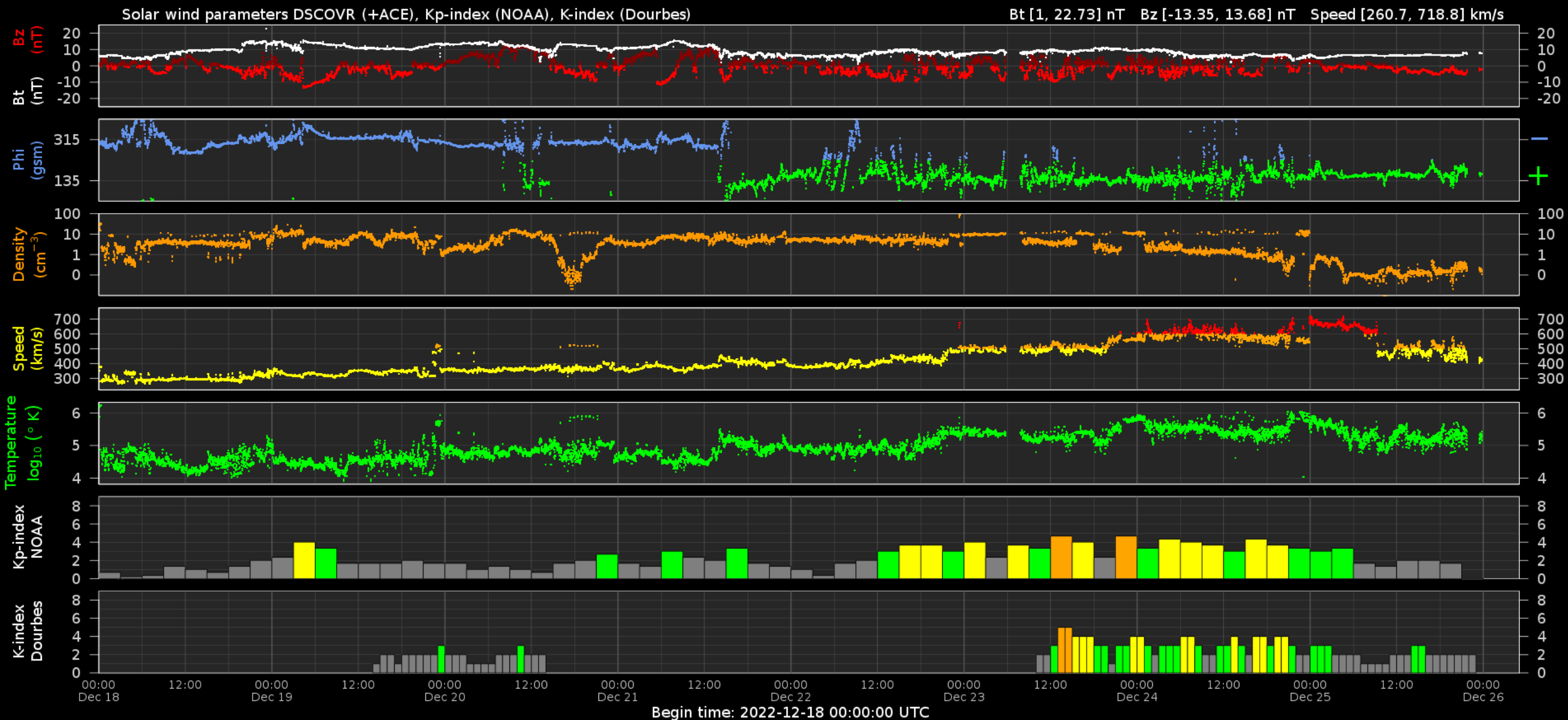
Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

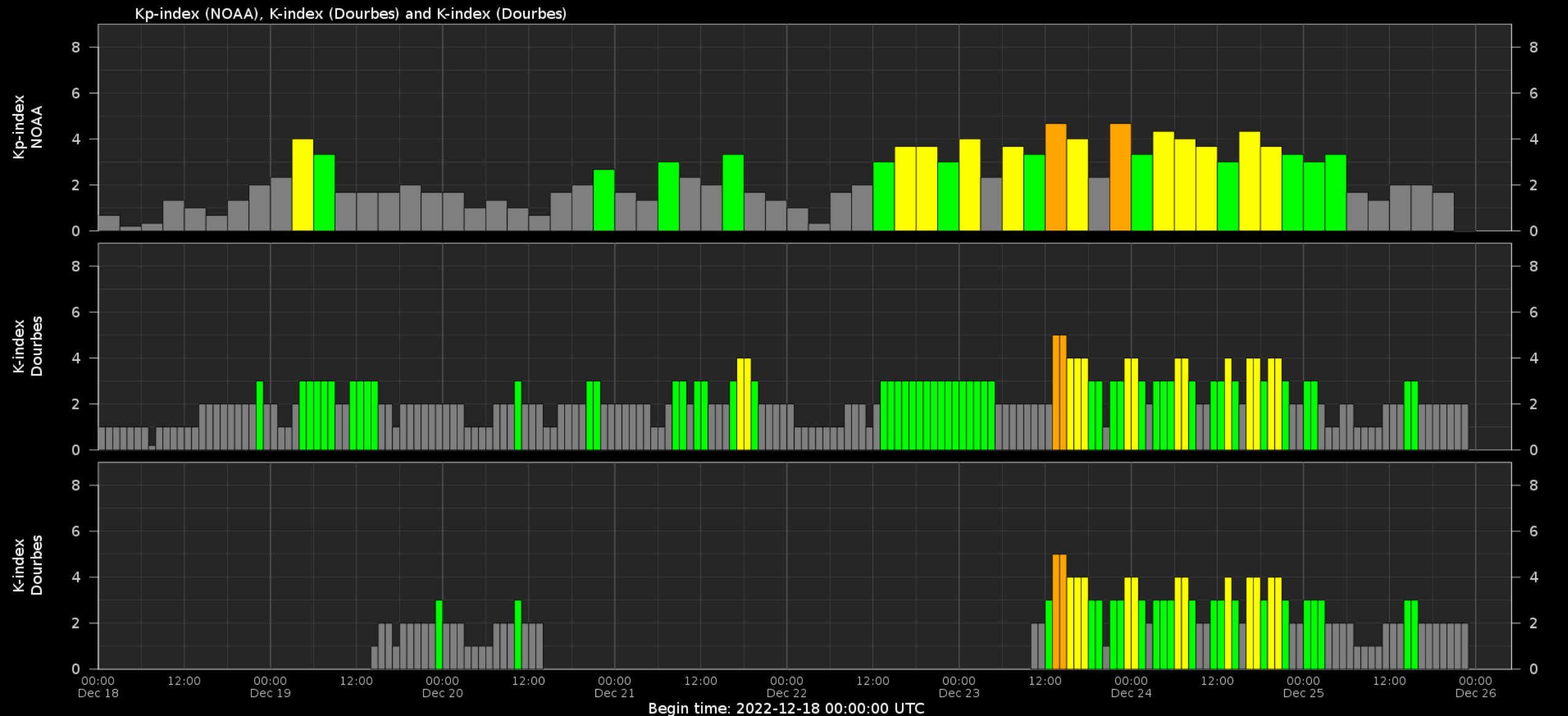
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



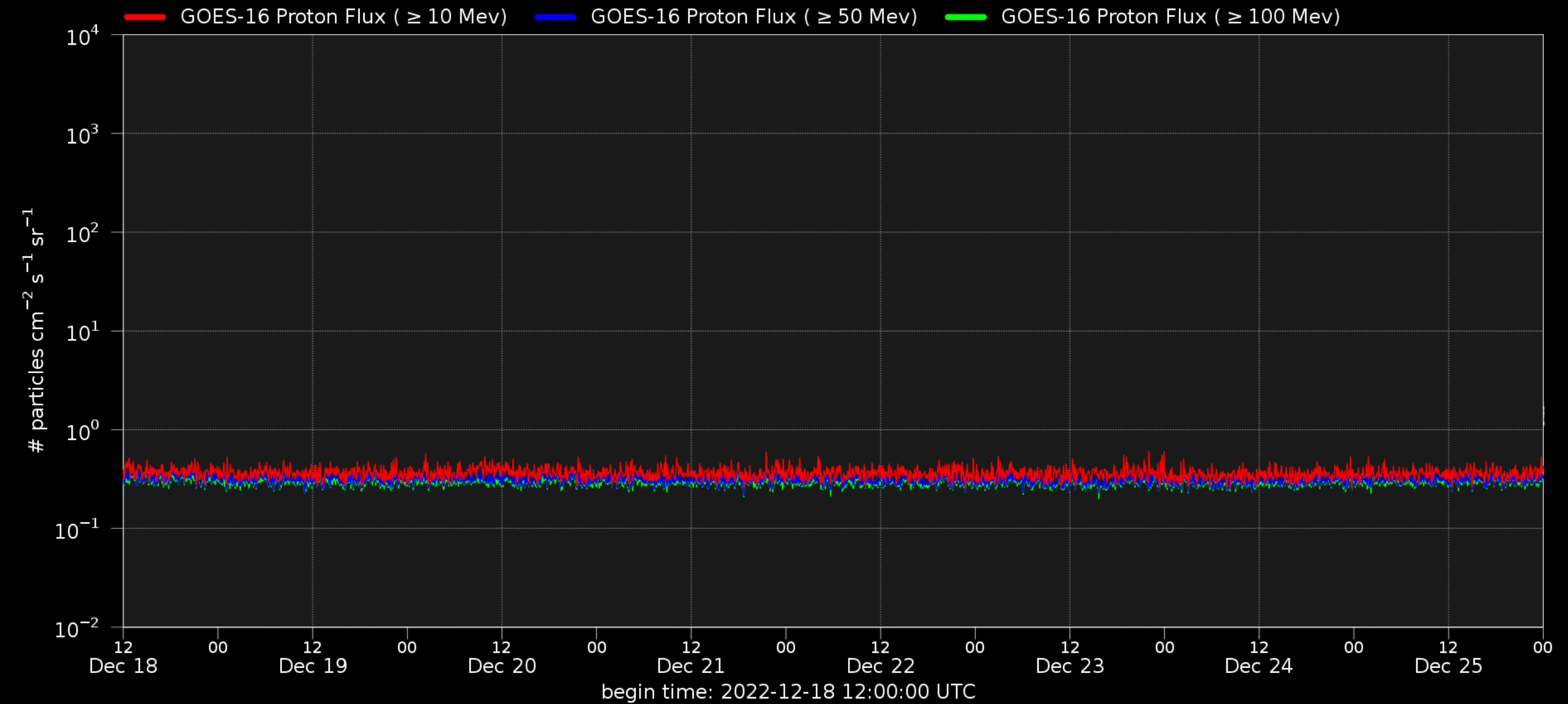
Energetic Particles



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

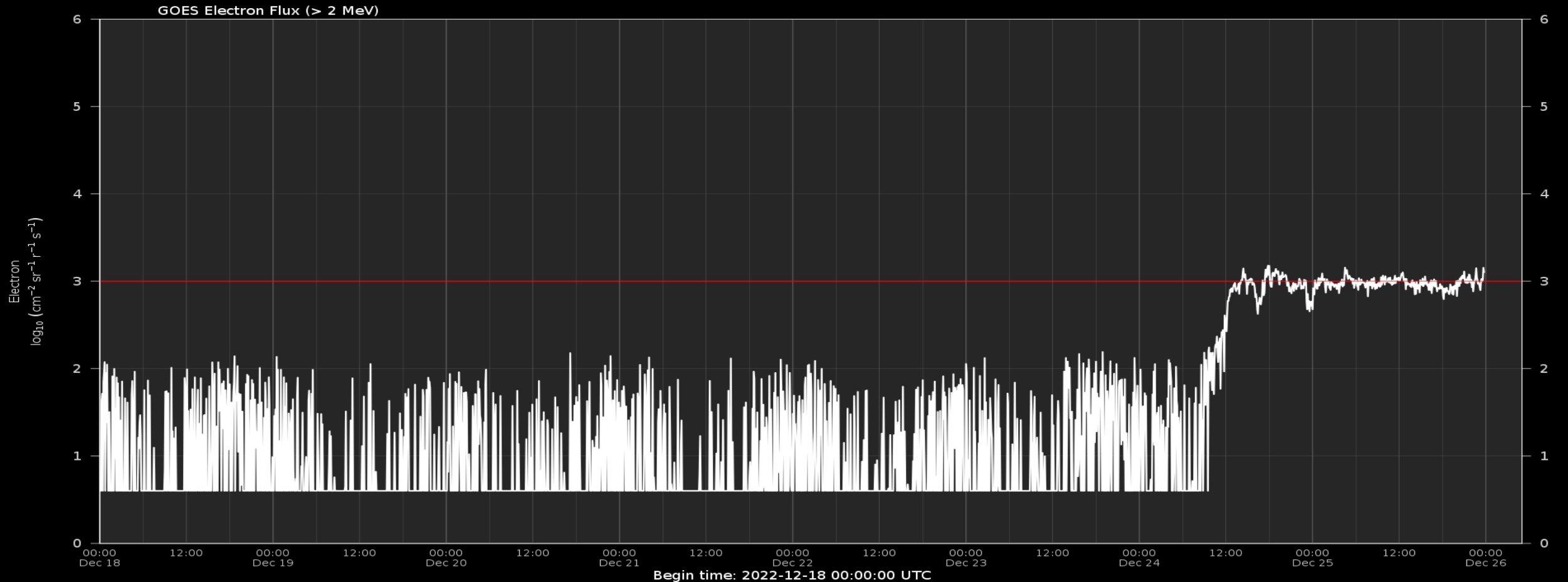
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



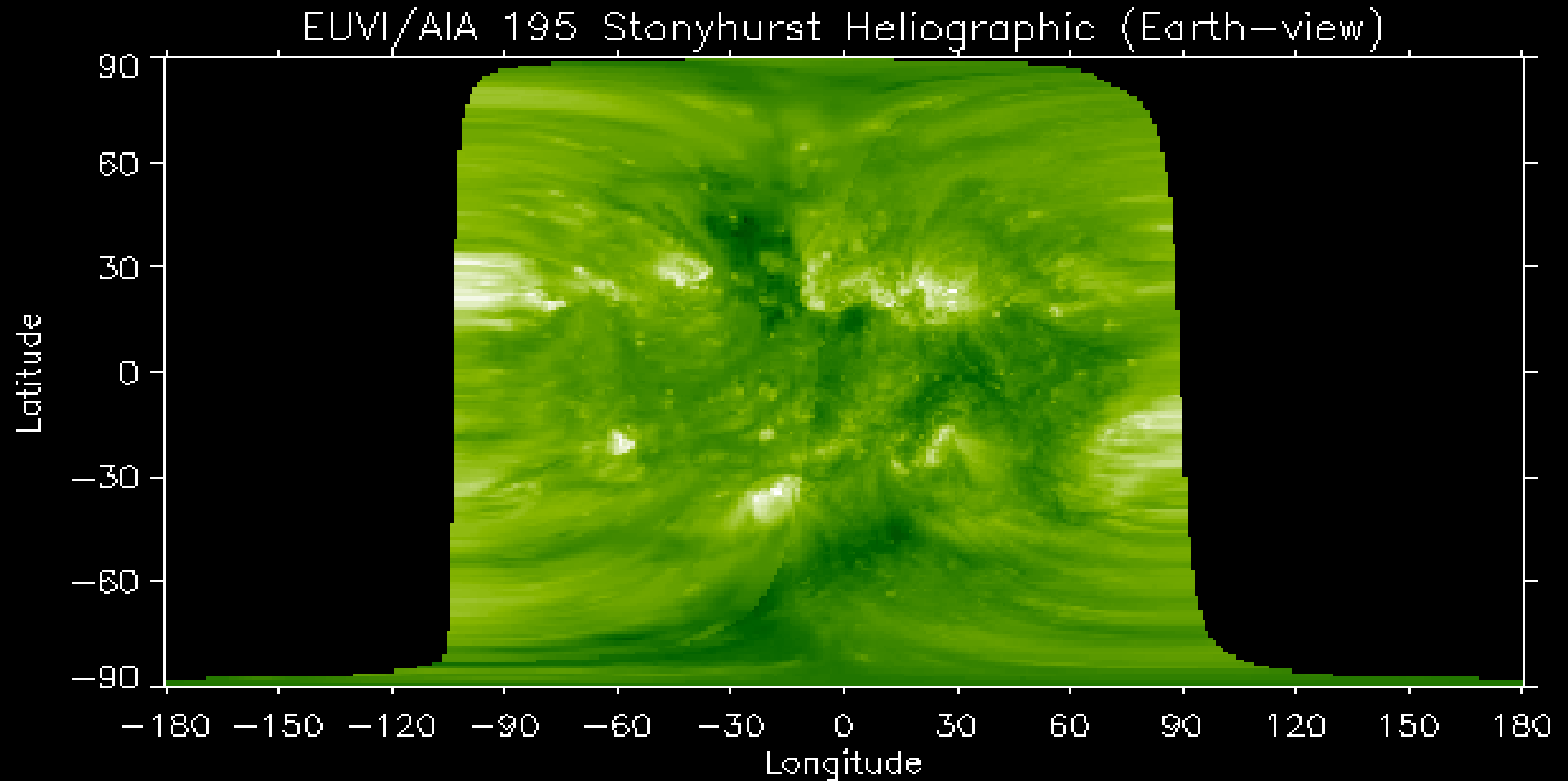
Outlook



Royal Observatory
of Belgium

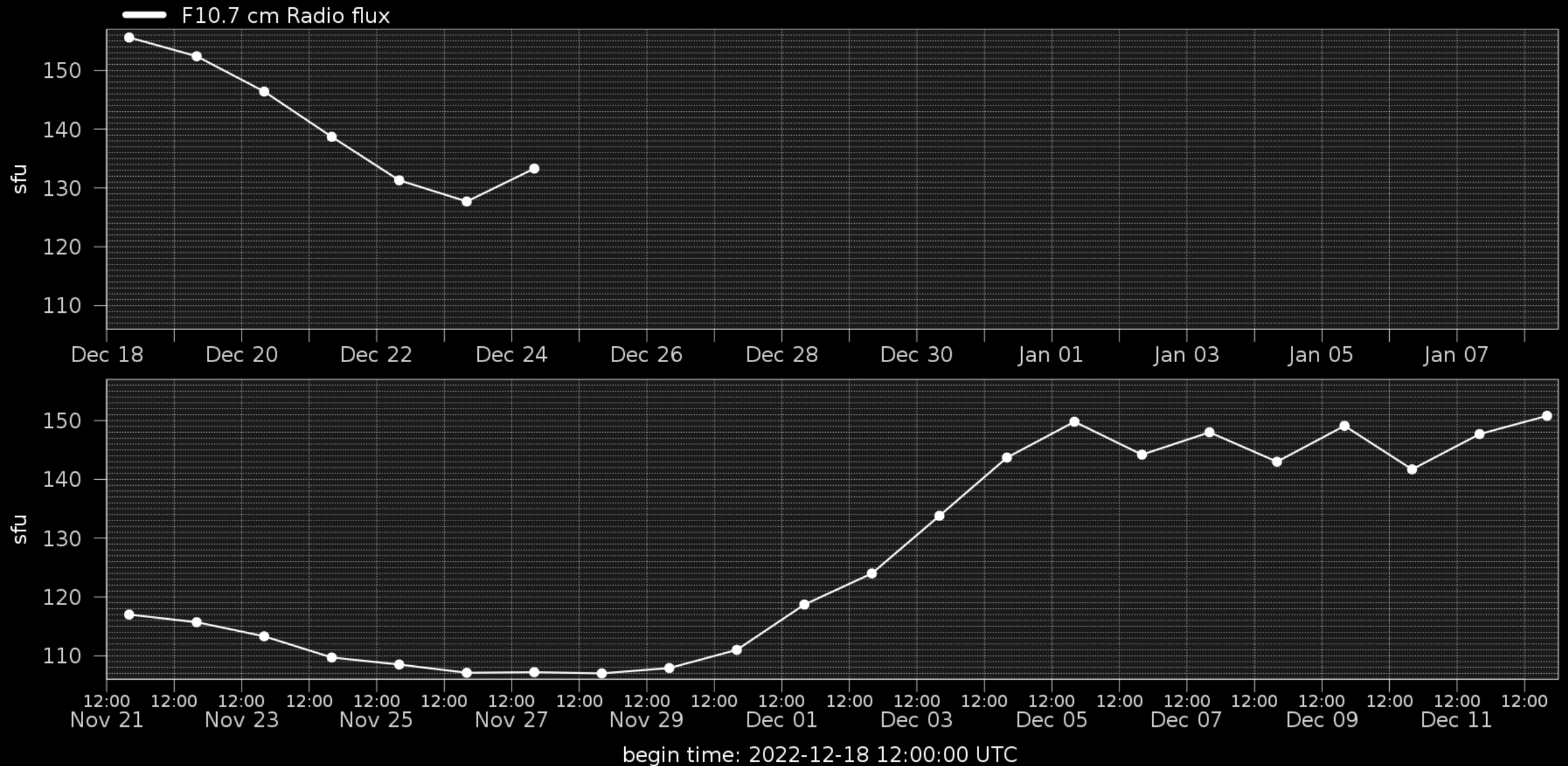
Solar Influences
Data analysis Centre
www.sidc.be

Outlook: Solar activity

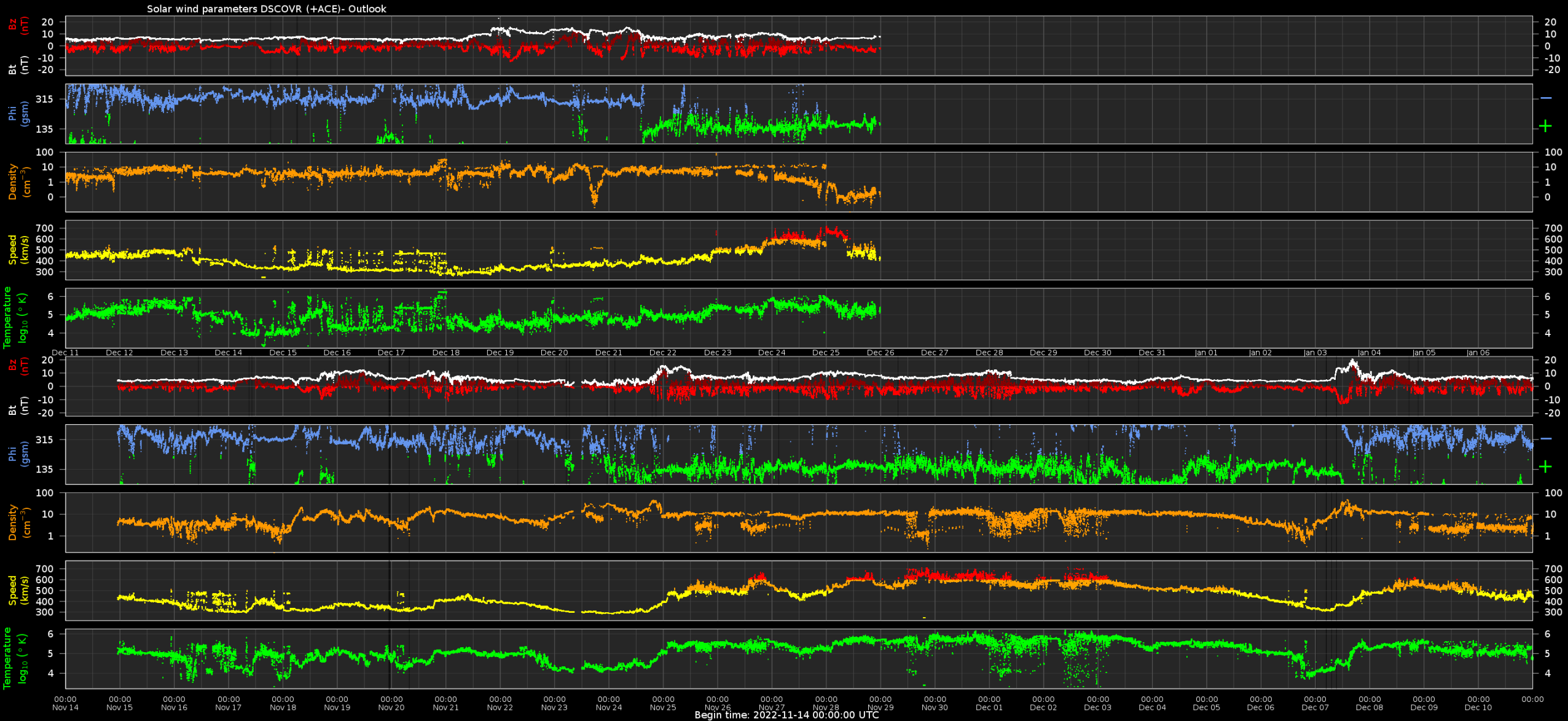


Observation date: 2022/12/25 22:05:00

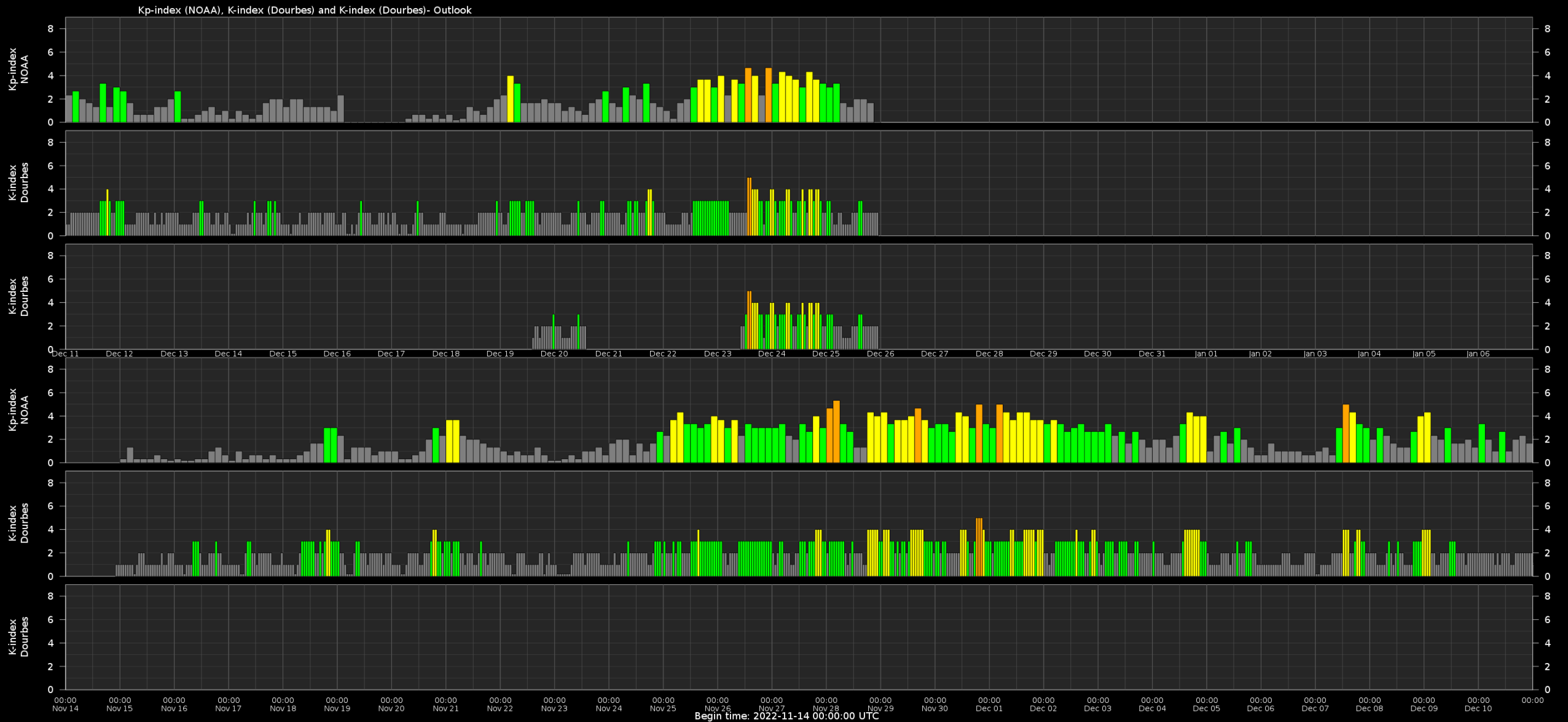
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



Pegasus



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

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