

# SIDC Space Weather Briefing

24 December 2023-31 December 2023

Yana Maneva

& 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 2023-12-24 12:00 to 2023-12-31 23:59

Active regions	11 numbered ARs
Flares	# C-class flare: 33 # M-class flare: 2 # X-class flare: 1
Coronal Holes	1 long CH- crossing, first central meridian on Dec 28th
CMEs	Multiple partial halo CMEs

Proton flux	Nominal levels
Electron flux	Nominal levels

Solar wind and geomagnetic conditions

ICMEs	Very mild arrival on Dec 29th
Solar wind conditions	B : 0.94 - 11.78 nT //Bz: -6.93 nT to 8.02 nT //Speed: 273.8 - 540.7km/s
Geomagnetic conditions	max KBel: 3, max Kp(NOAA): 2, Quiet conditions

All Quiet Alert: Off

# Solar Activity

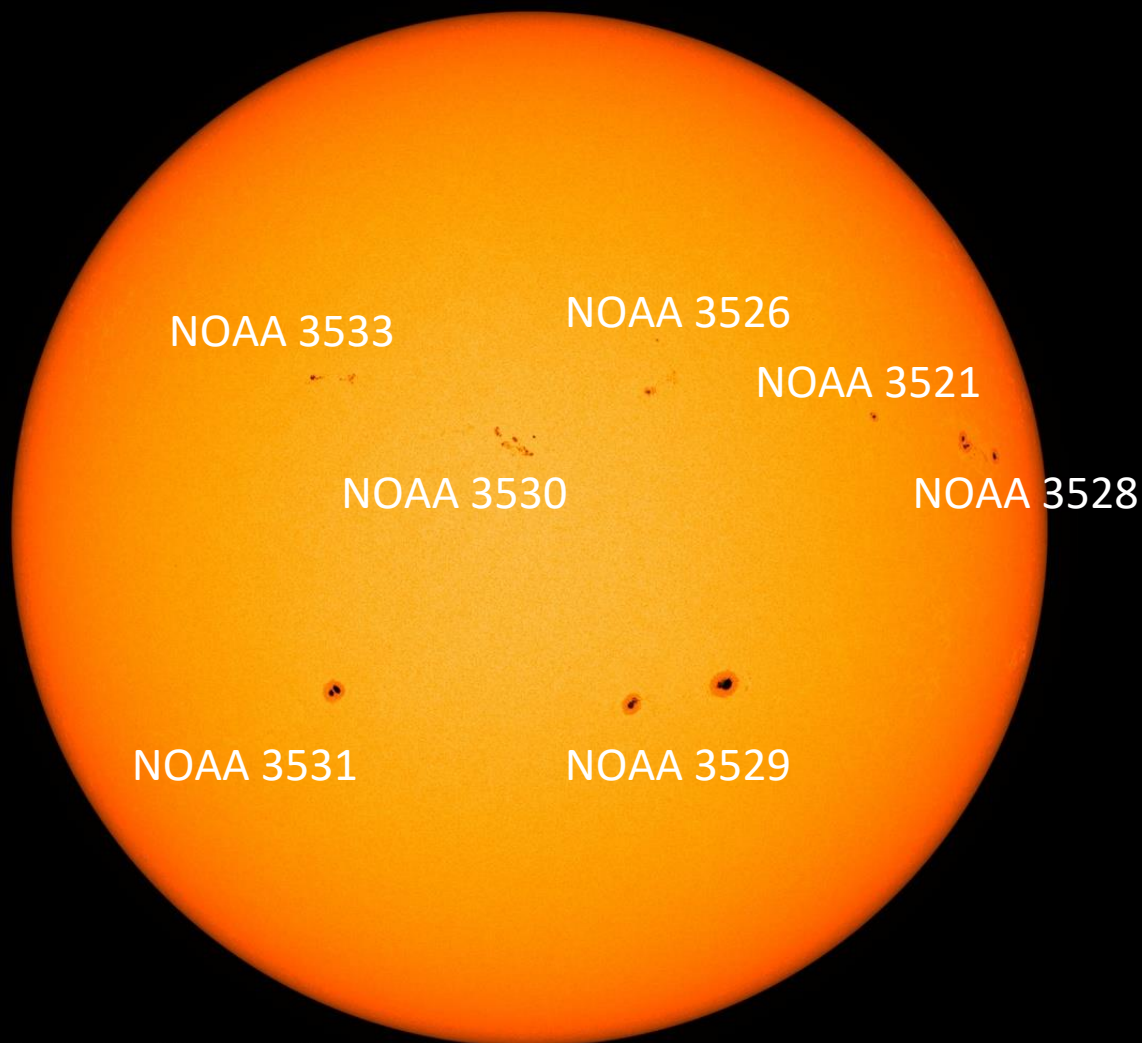


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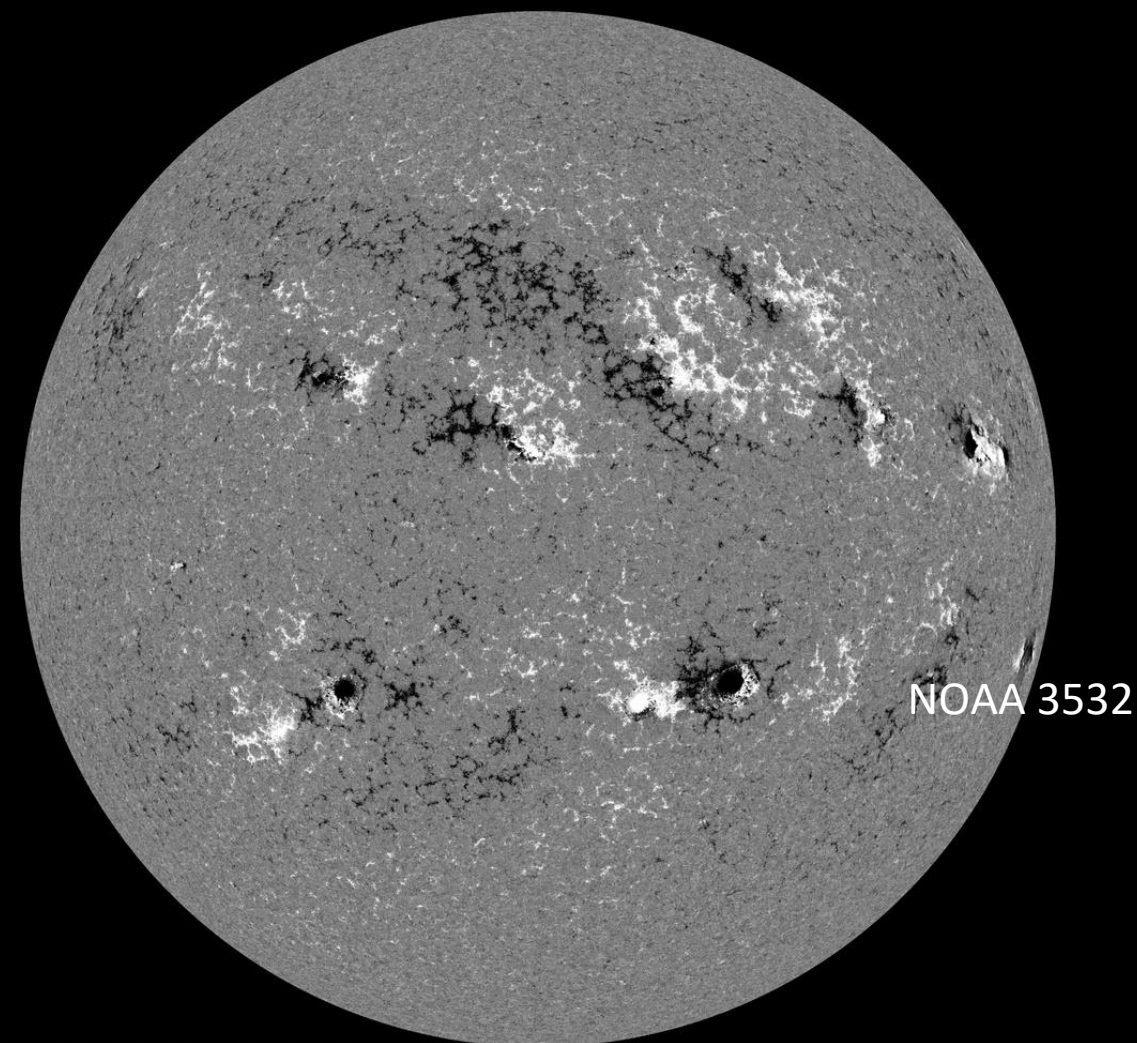
# Solar active regions

SDO/HMI White Light 2023-12-24



SDO/HMI Quick-Look Continuum: 20231224\_114500

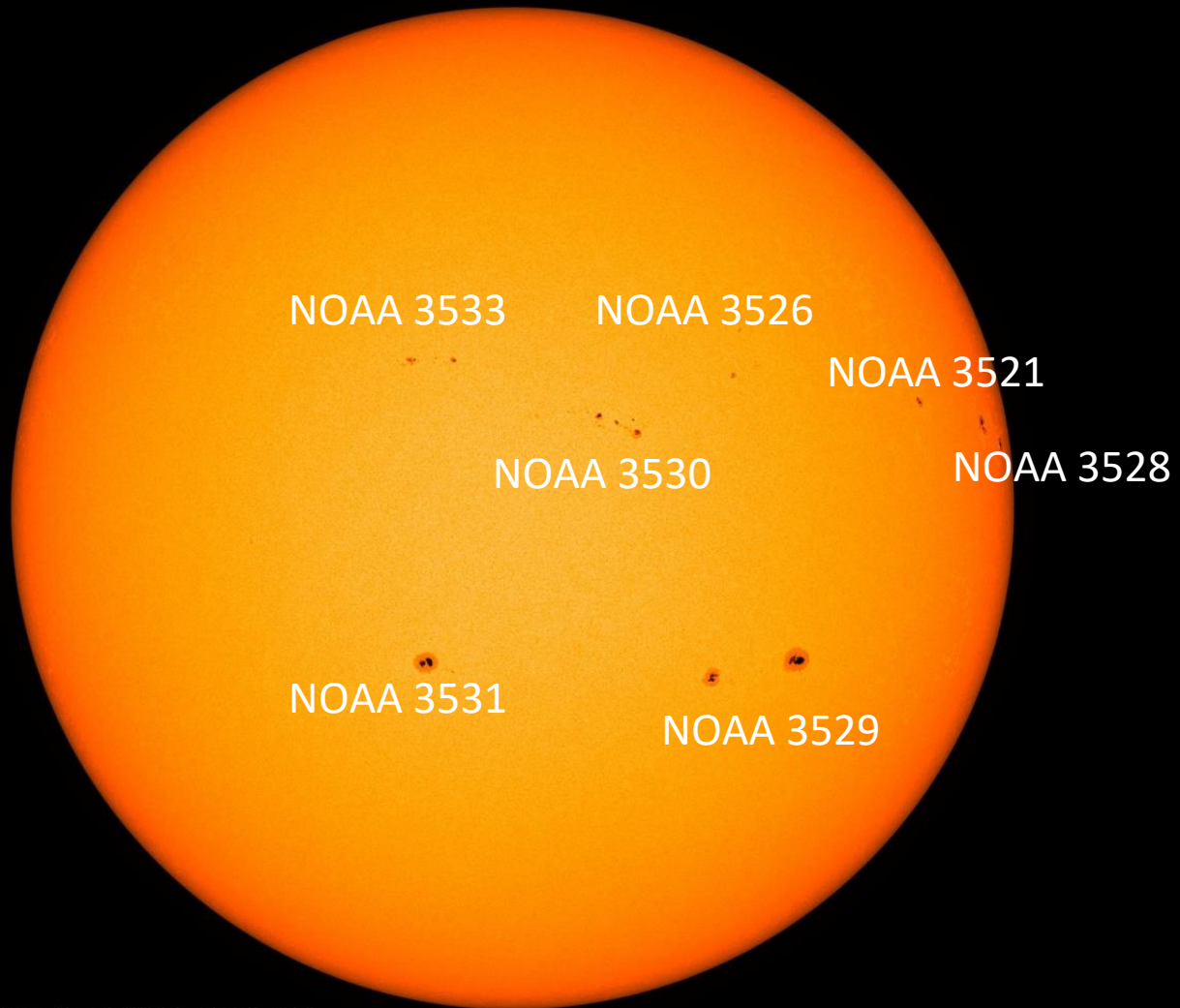
SDO/HMI Magnetogram 2023-12-24



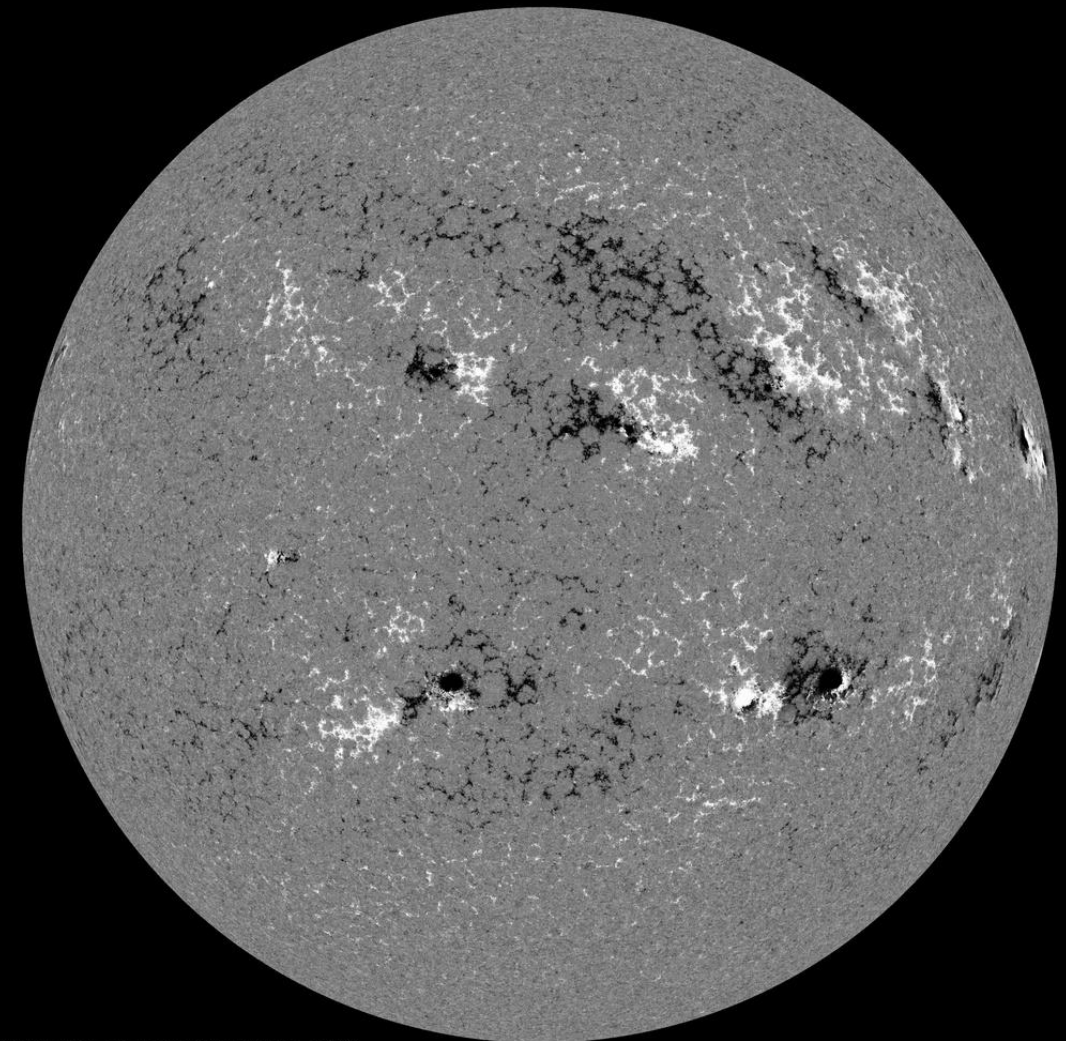
SDO/HMI Quick-Look Magnetogram: 20231224\_114500

# Solar active regions

SDO/HMI White Light 2023-12-25

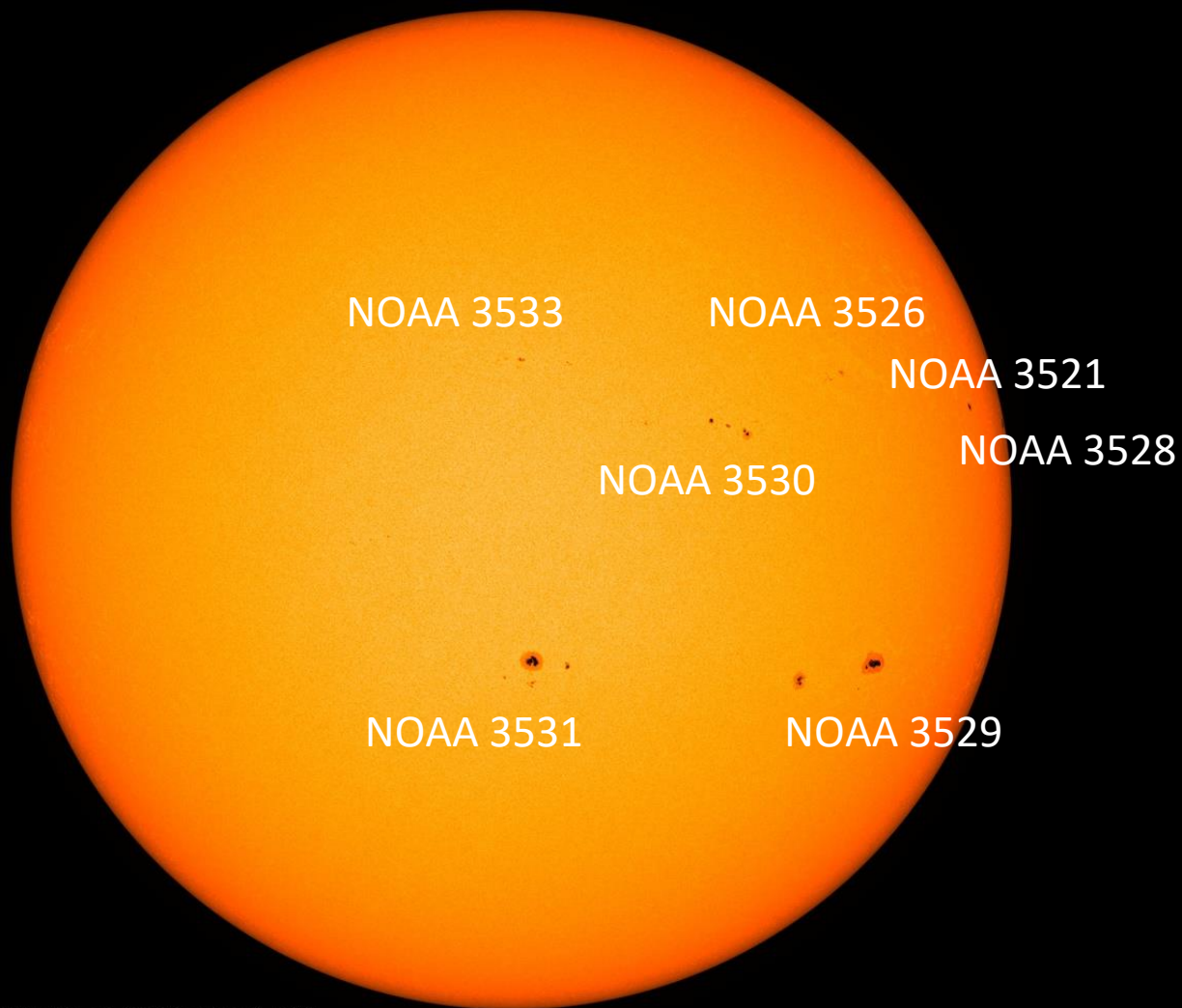


SDO/HMI Magnetogram 2023-12-25



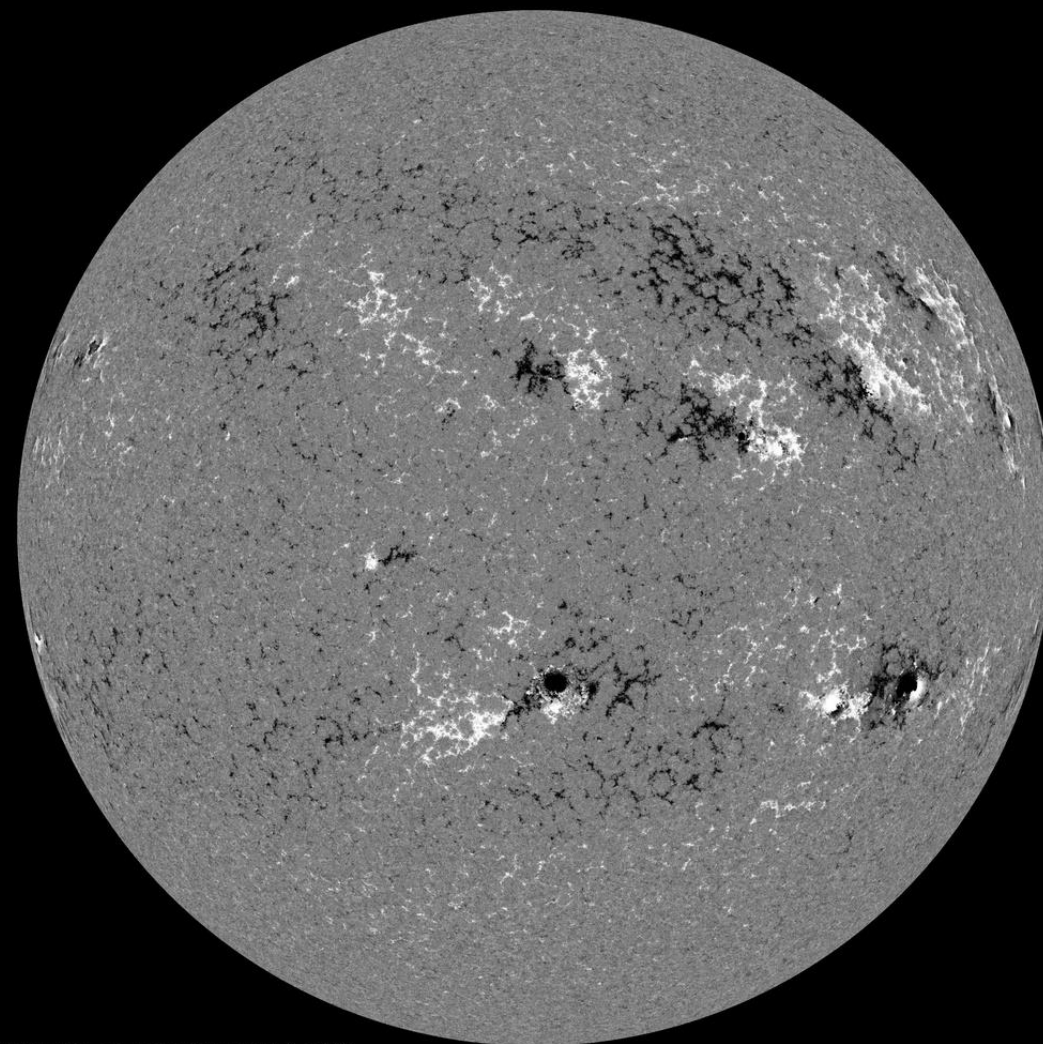
# Solar active regions

SDO/HMI White Light 2023-12-26



SDO/HMI Quick-Look Continuum: 20231226\_114500

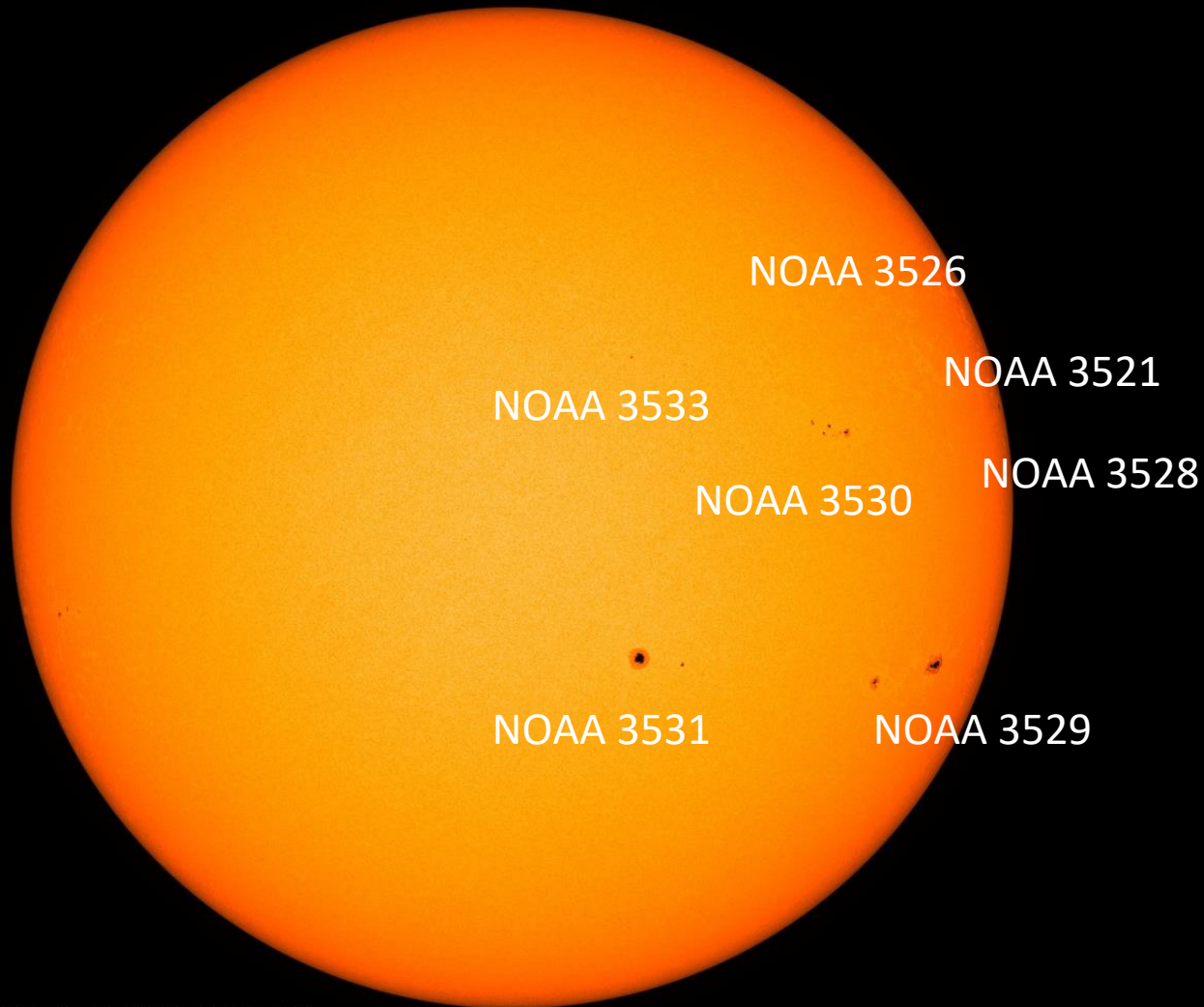
SDO/HMI Magnetogram 2023-12-26



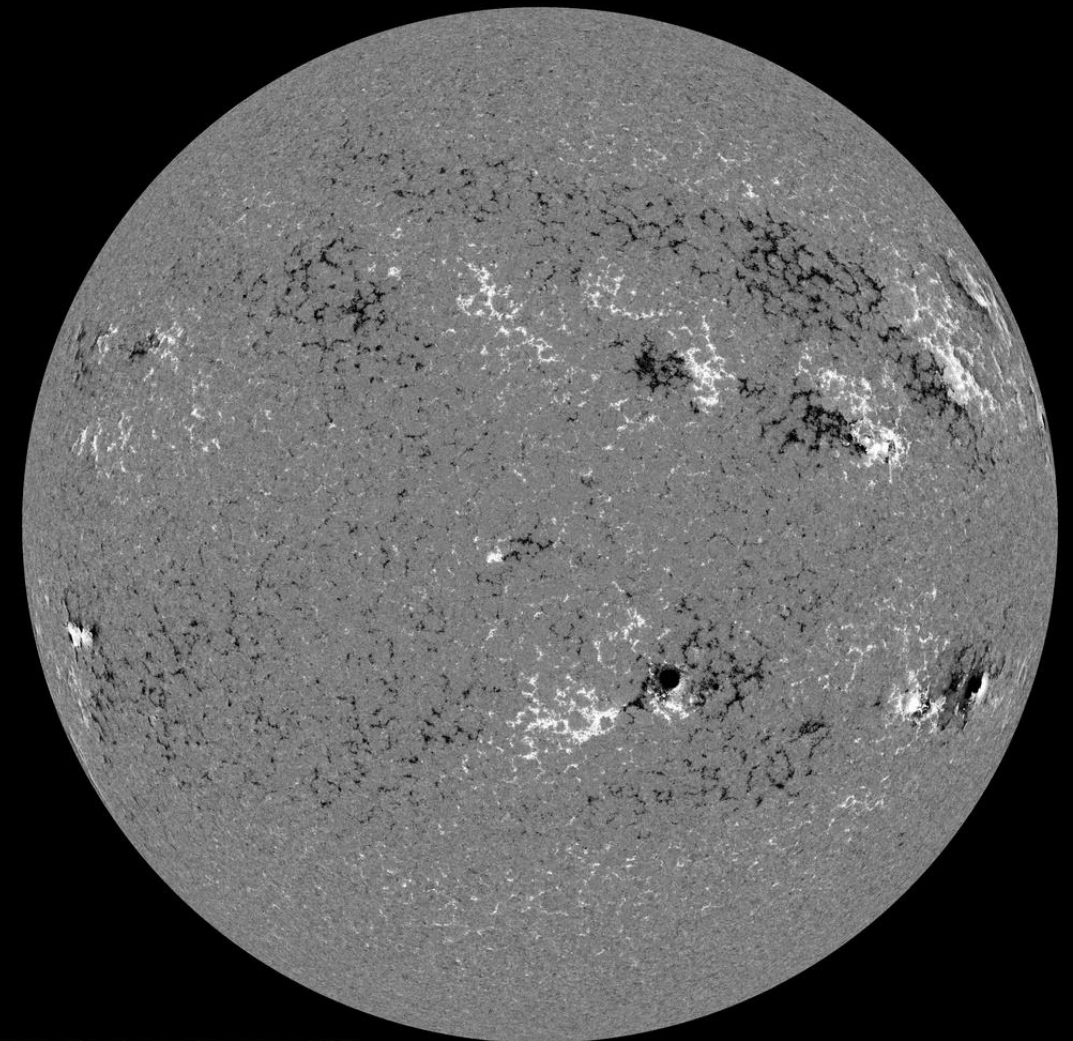
SDO/HMI Quick-Look Magnetogram: 20231226\_114500

# Solar active regions

SDO/HMI White Light 2023-12-27

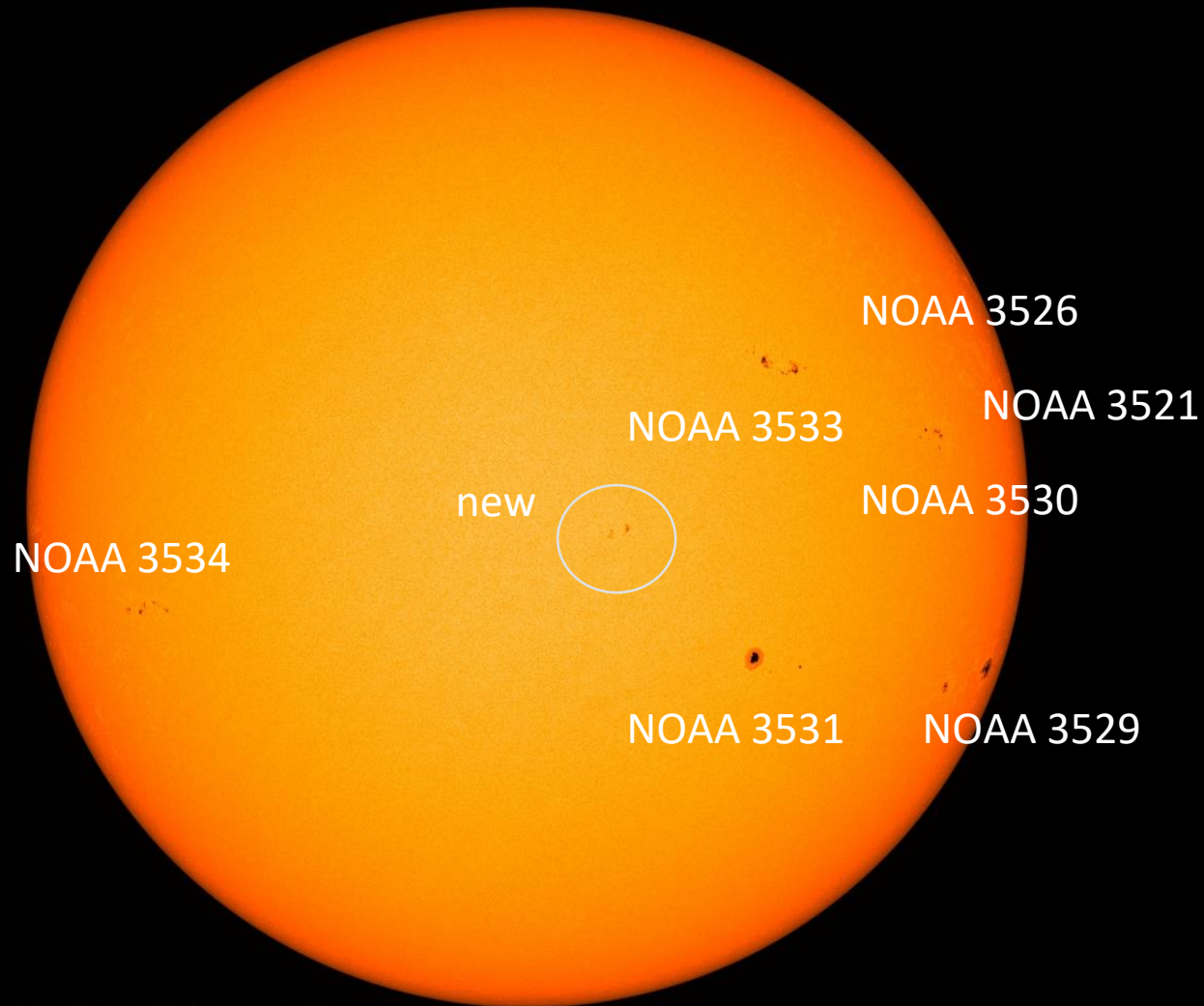


SDO/HMI Magnetogram 2023-12-27



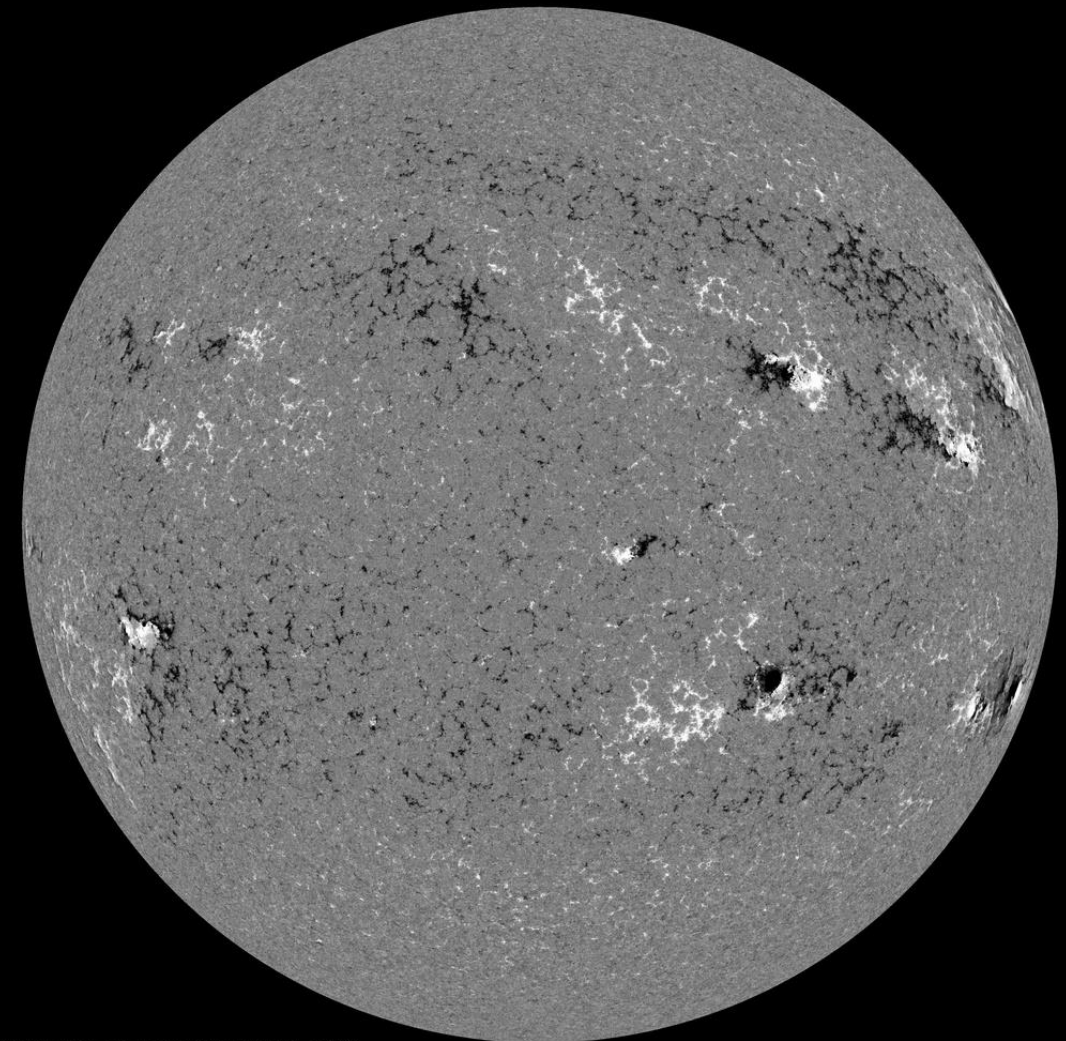
# Solar active regions

SDO/HMI White Light 2023-12-28



SDO/HMI Quick-Look Continuum: 20231228\_114500

SDO/HMI Magnetogram 2023-12-28

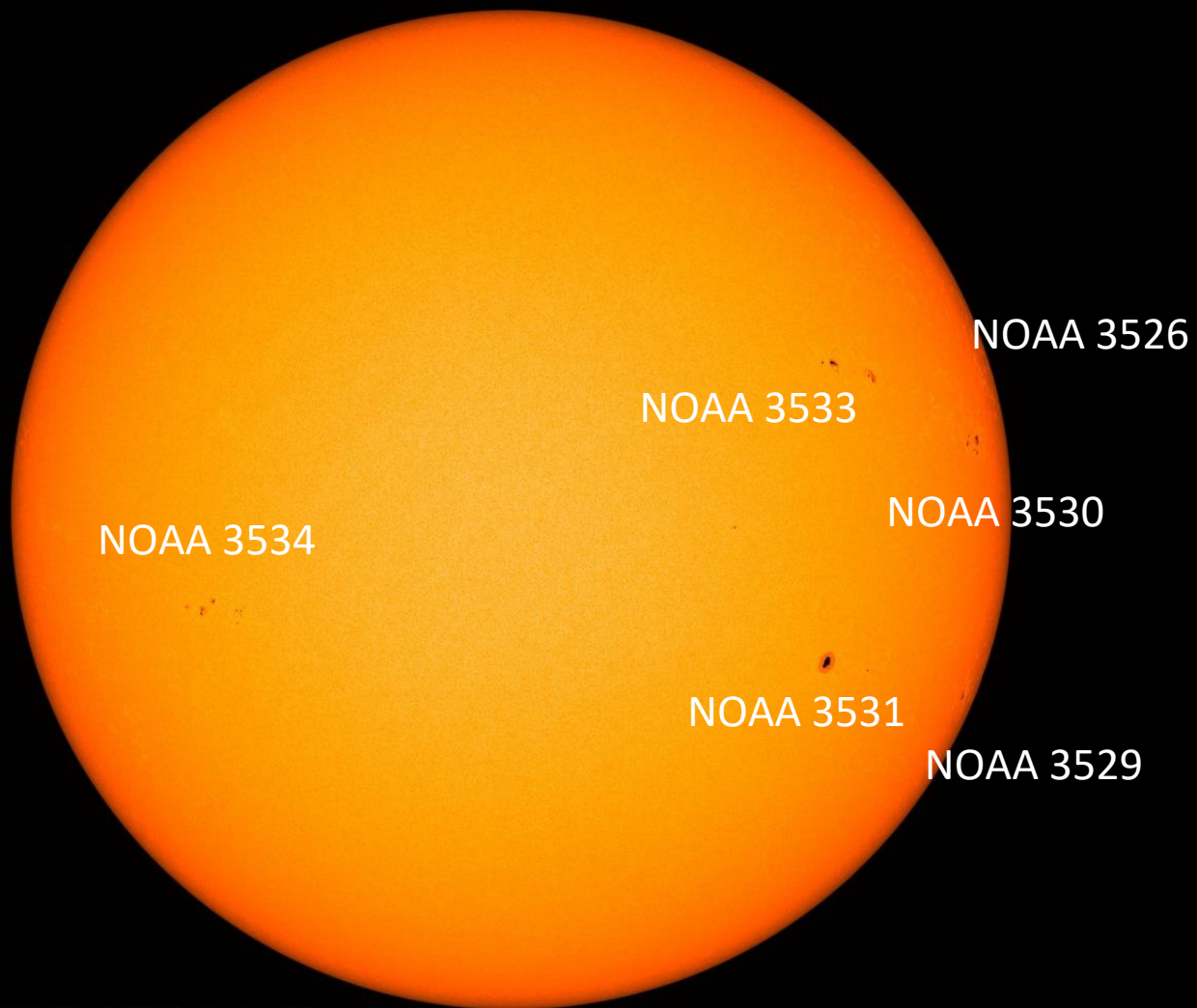


SDO/HMI Quick-Look Magnetogram: 20231228\_114500



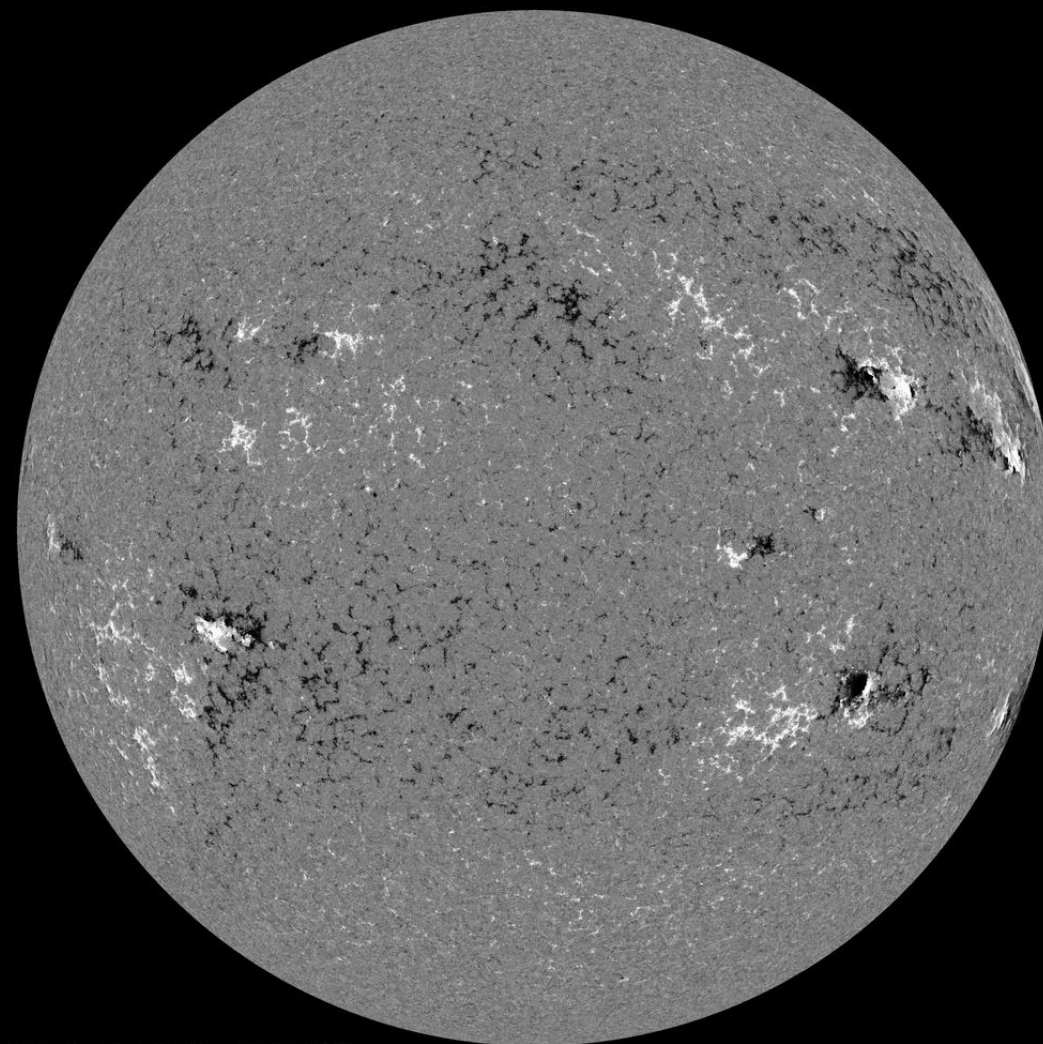
# Solar active regions

SDO/HMI White Light 2023-12-29



SDO/HMI Quick-Look Continuum: 20231229\_114500

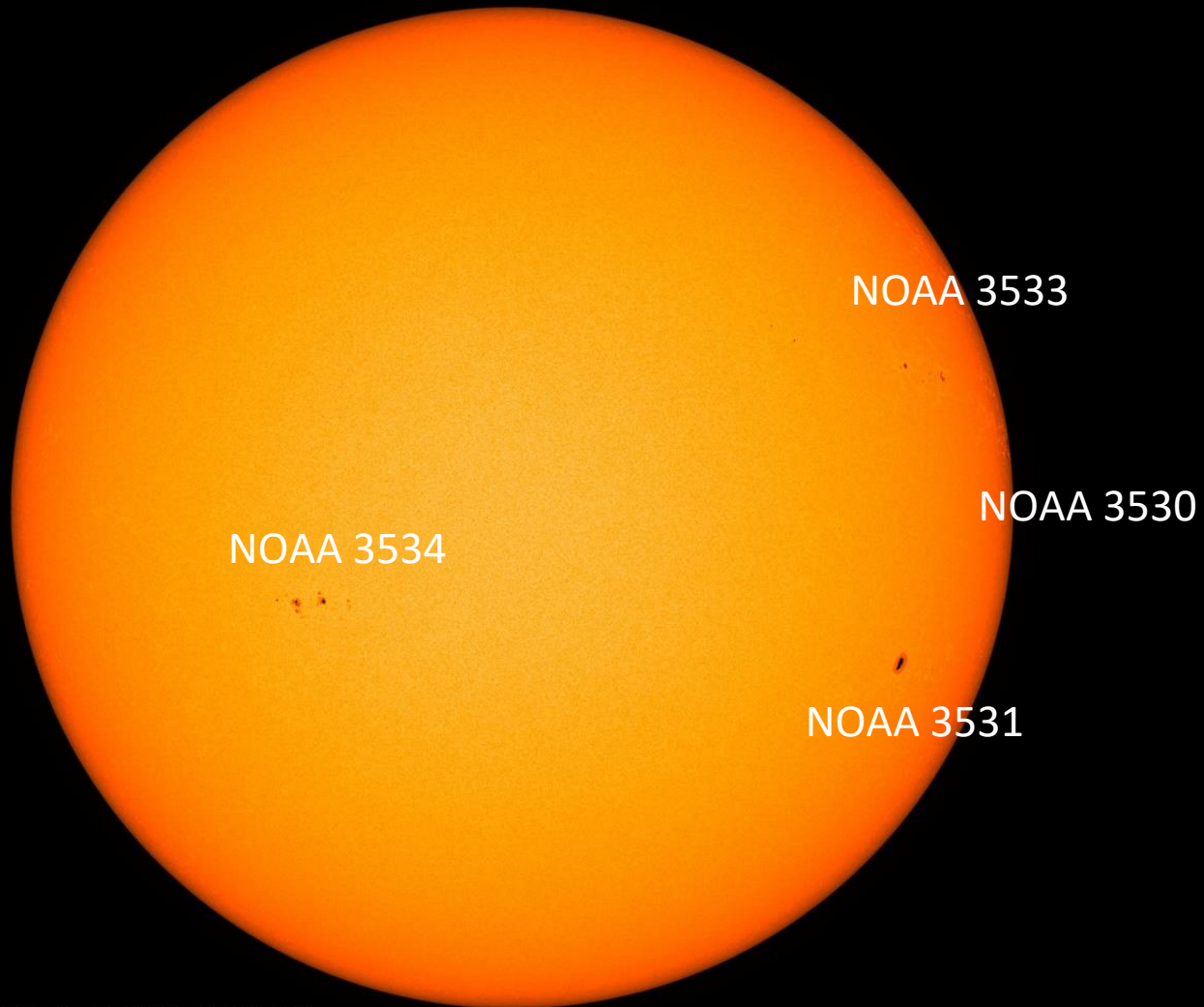
SDO/HMI Magnetogram 2023-12-29



SDO/HMI Quick-Look Magnetogram: 20231229\_114500

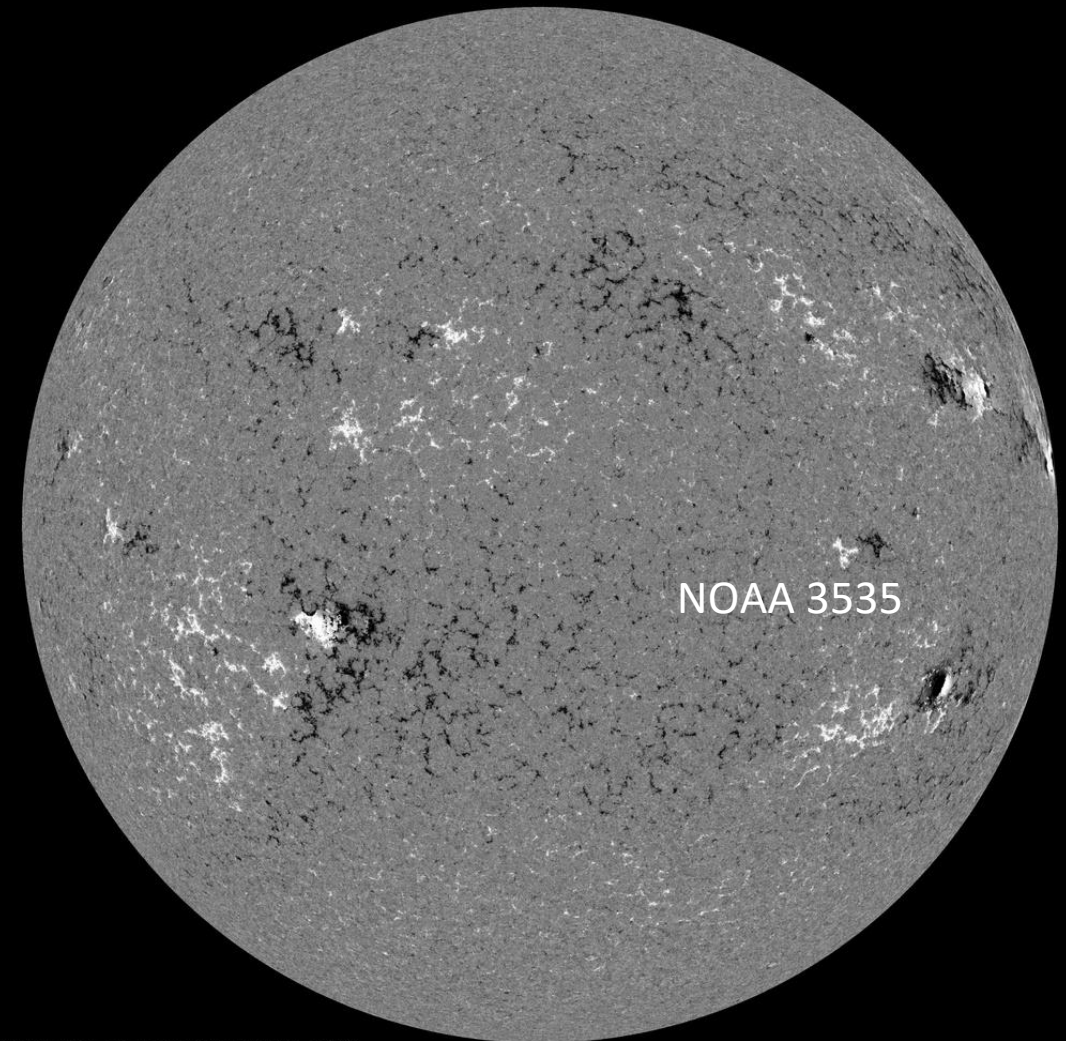
# Solar active regions

SDO/HMI White Light 2023-12-30



SDO/HMI Quick-Look Continuum: 20231230\_114500

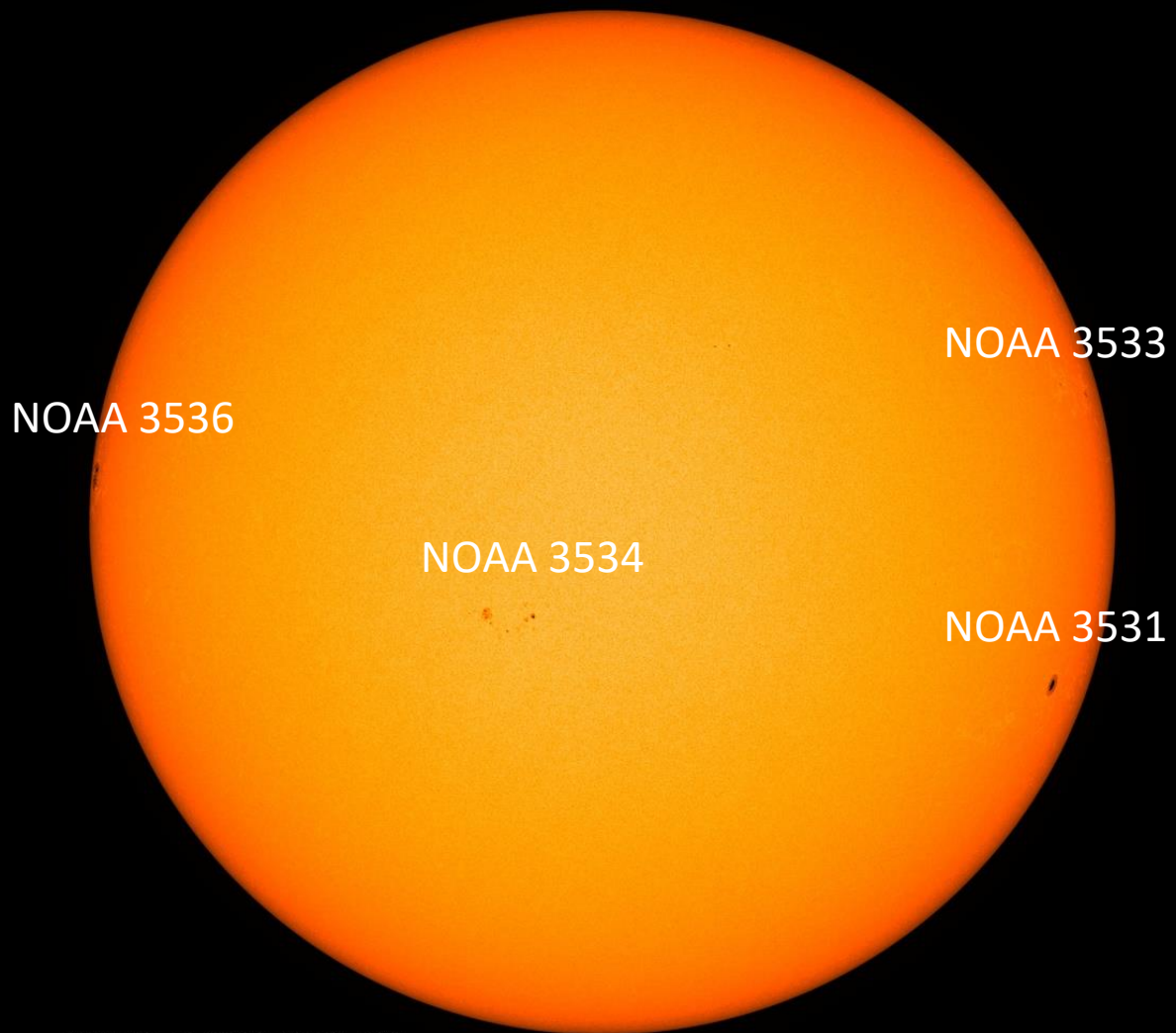
SDO/HMI Magnetogram 2023-12-30



SDO/HMI Quick-Look Magnetogram: 20231230\_114500

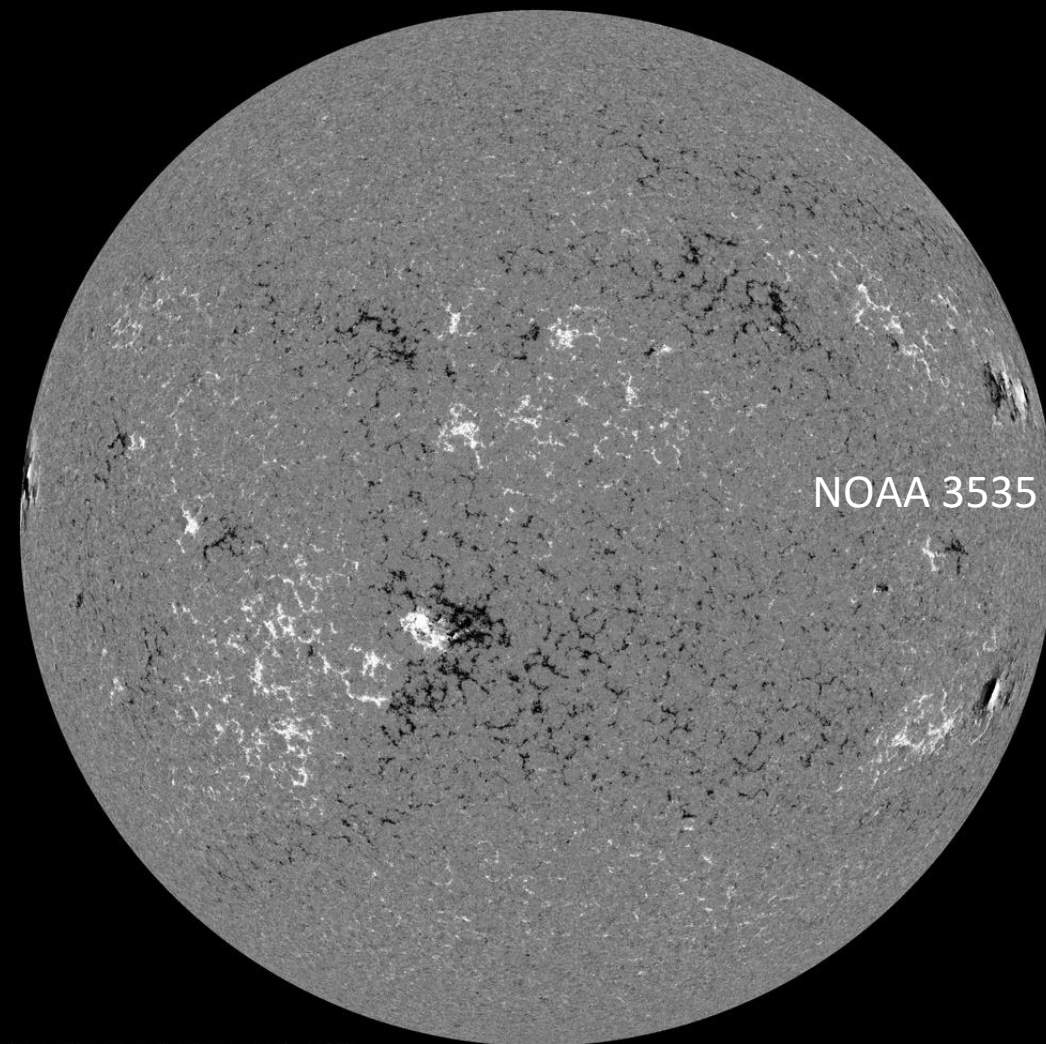
# Solar active regions

SDO/HMI White Light 2023-12-31



SDO/HMI Quick-Look Continuum: 20231231\_114500

SDO/HMI Magnetogram 2023-12-31

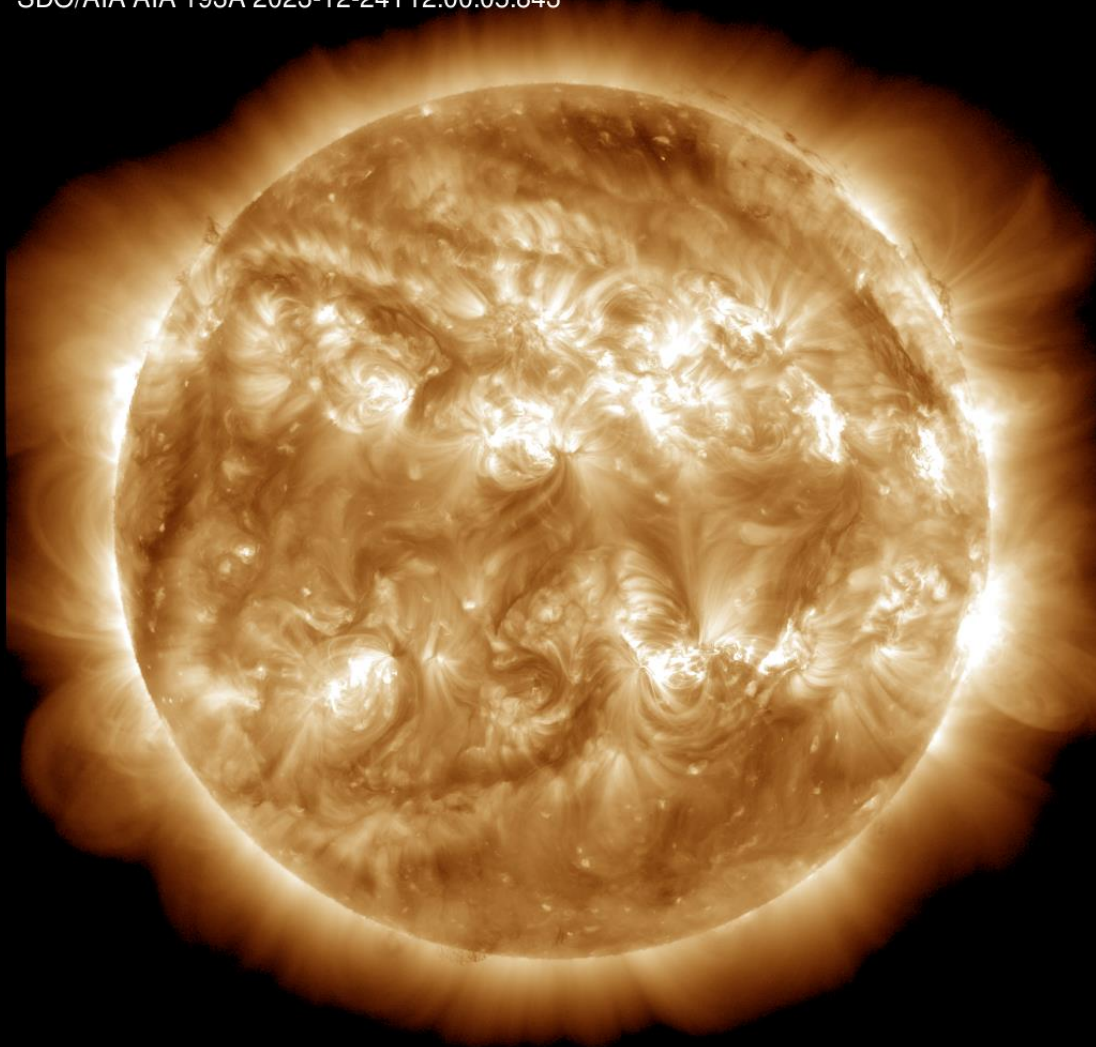


SDO/HMI Quick-Look Magnetogram: 20231231\_114500

# Coronal holes

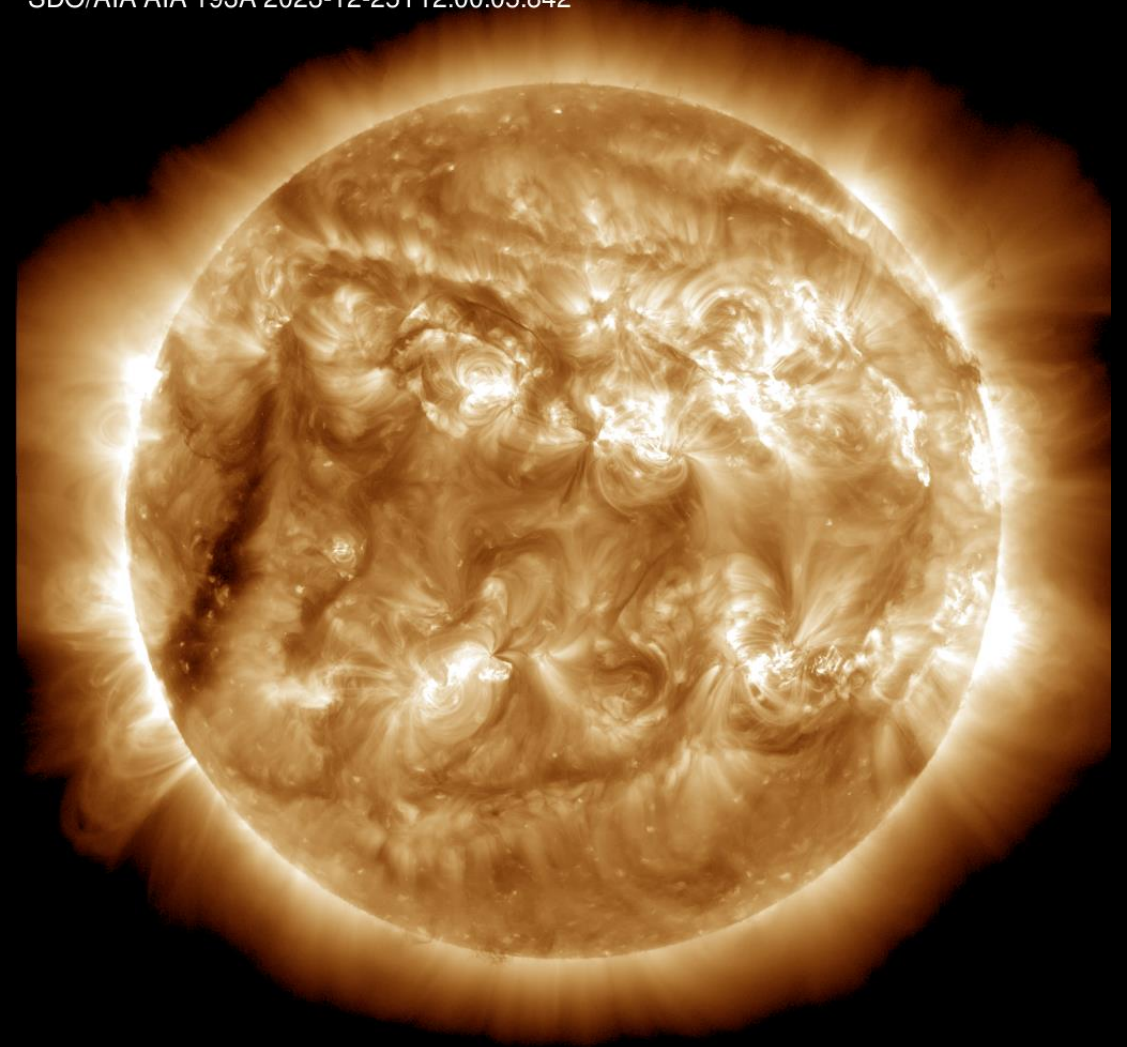
SDO/AIA 19.3 nm 2023-12-24

SDO/AIA AIA 193Å 2023-12-24T12:00:05.843



SDO/AIA 19.3 nm 2023-12-25

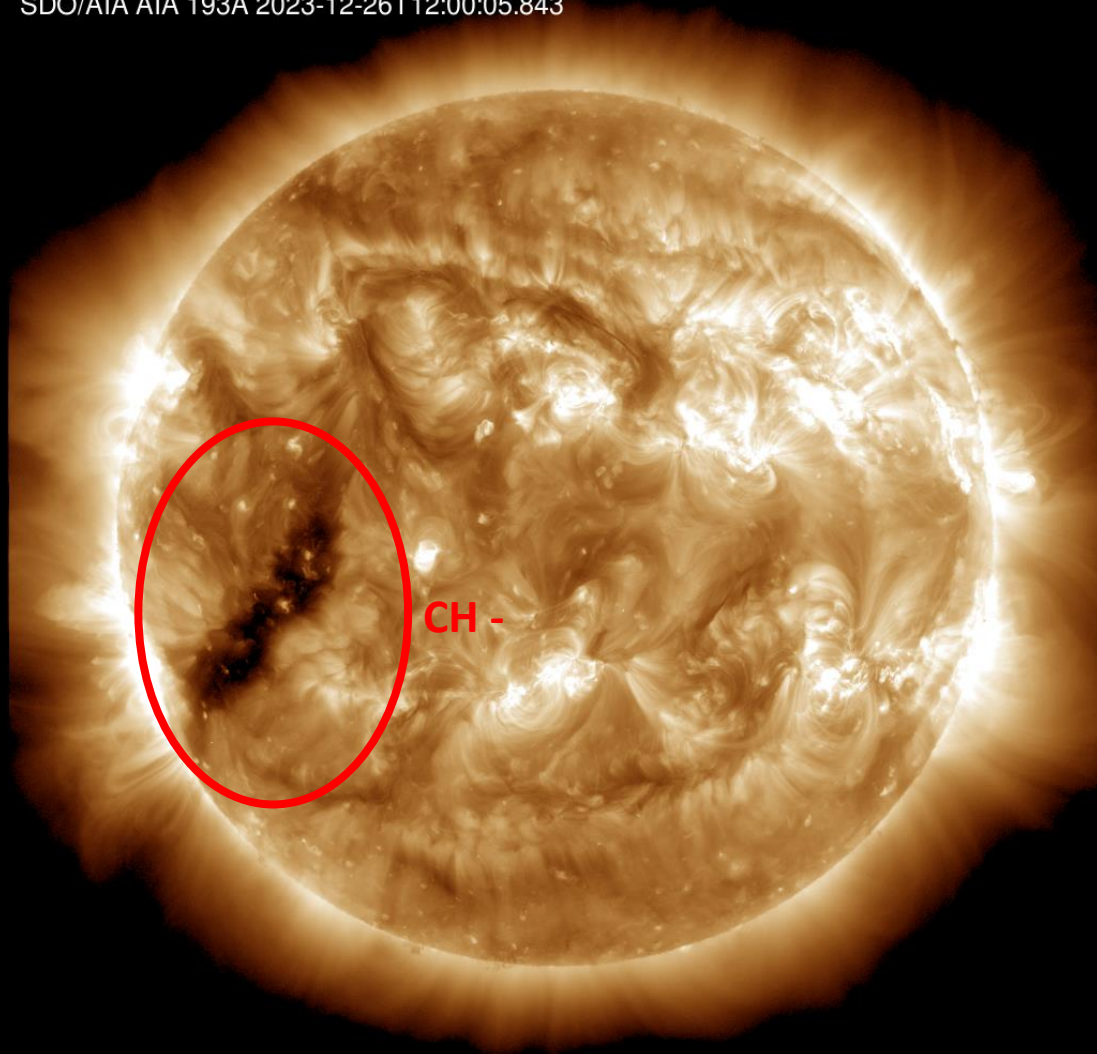
SDO/AIA AIA 193Å 2023-12-25T12:00:05.842



# Coronal holes

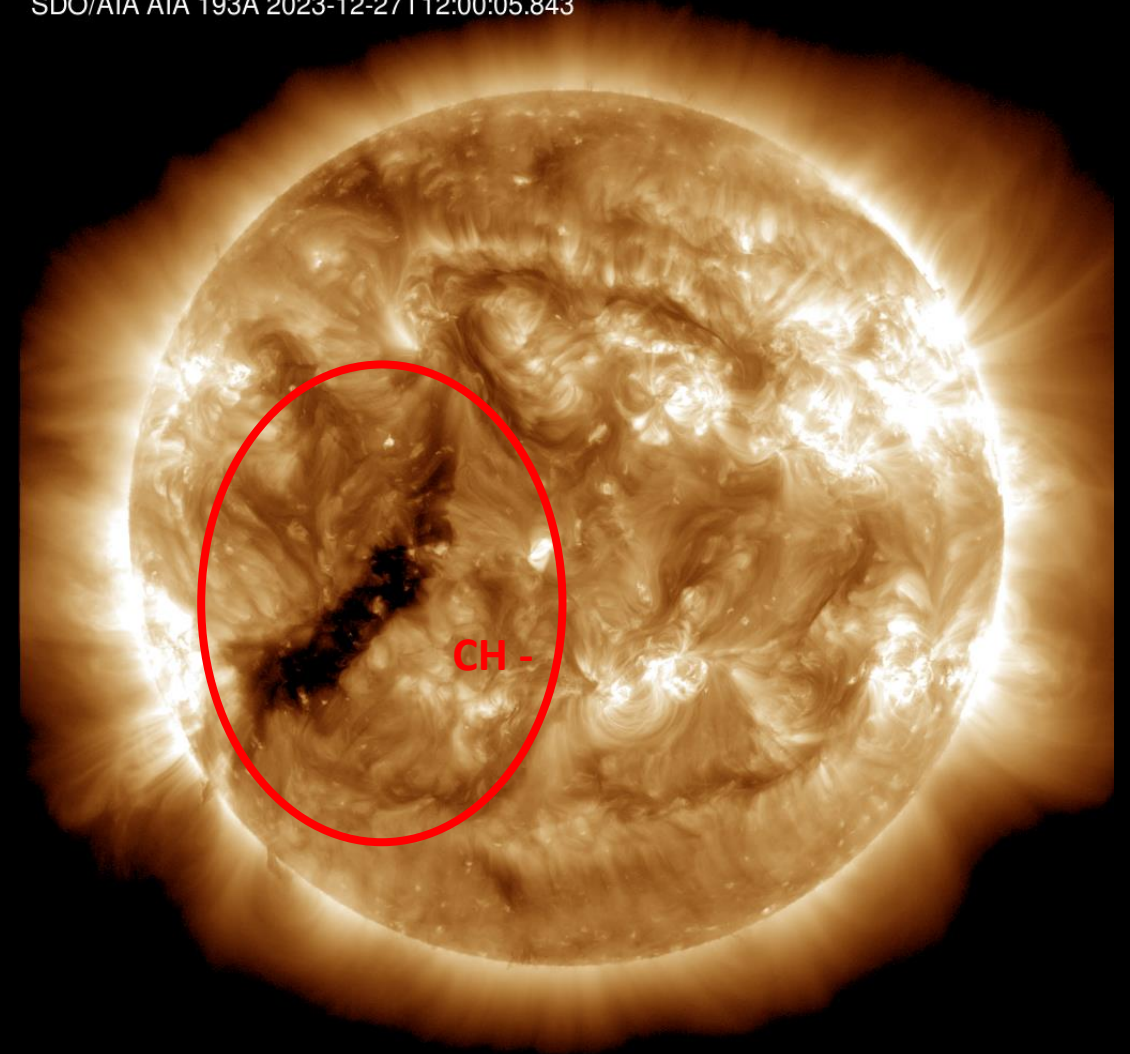
SDO/AIA 19.3 nm 2023-12-26

SDO/AIA AIA 193Å 2023-12-26T12:00:05.843



SDO/AIA 19.3 nm 2023-12-27

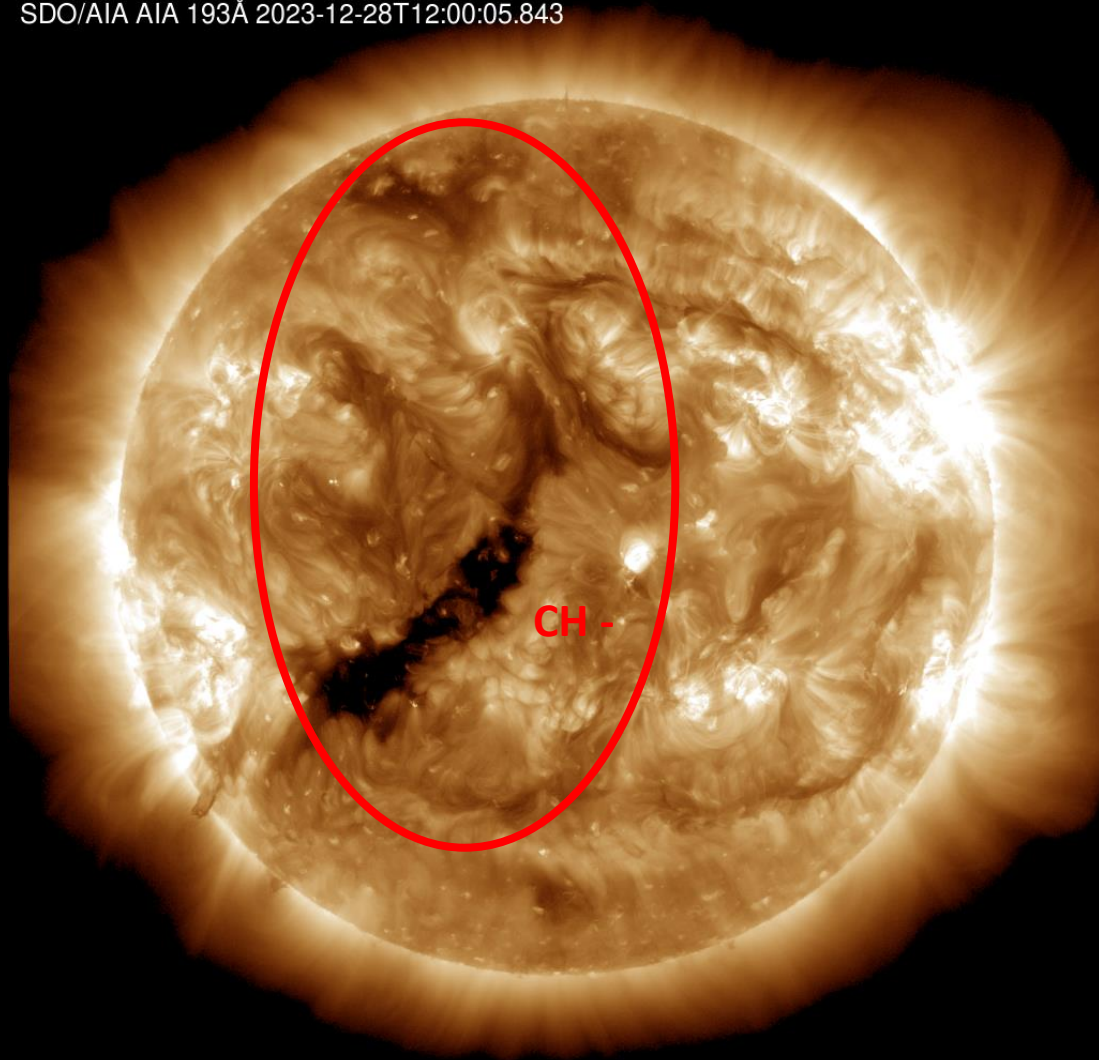
SDO/AIA AIA 193Å 2023-12-27T12:00:05.843



# Coronal holes

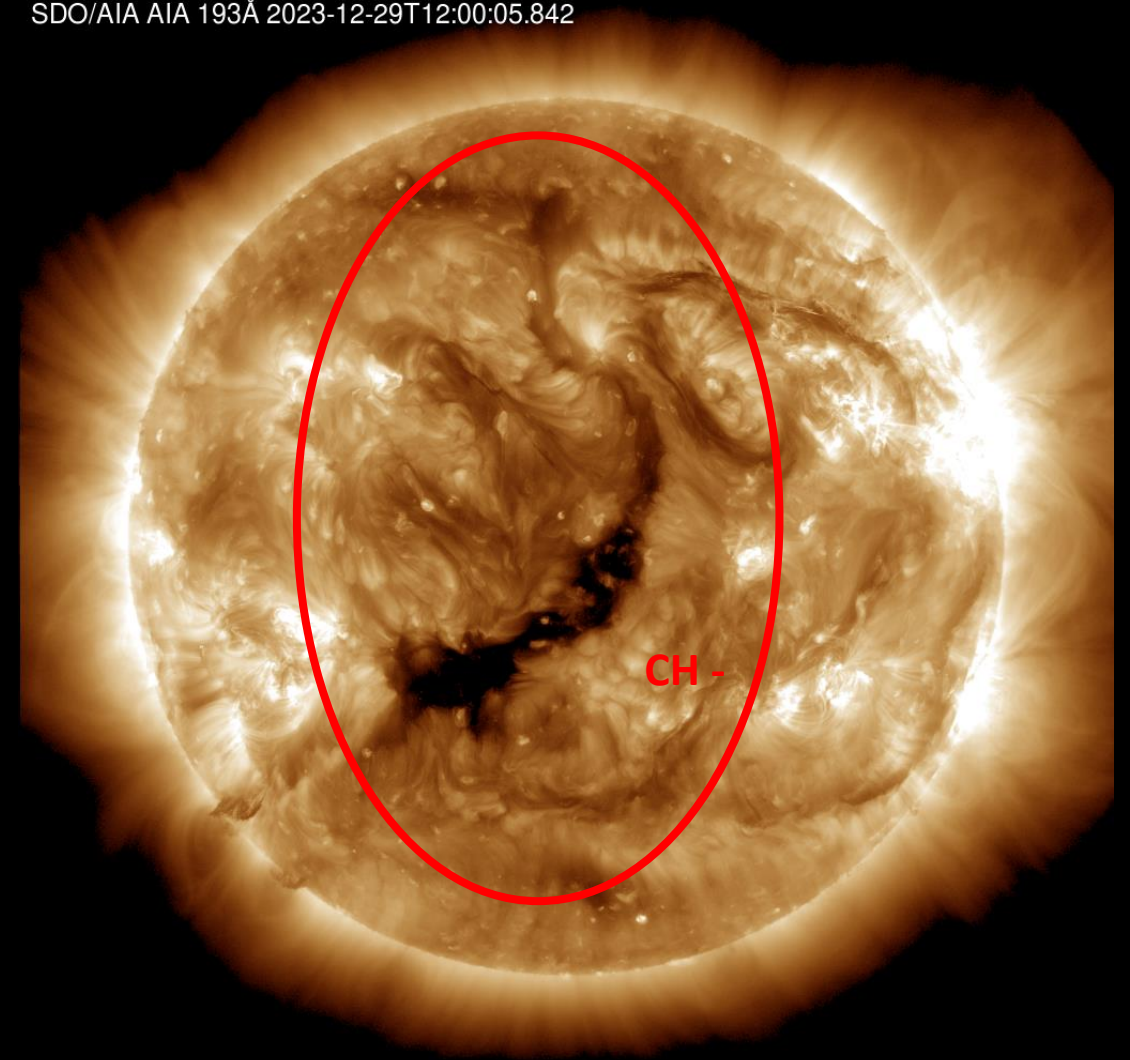
SDO/AIA 19.3 nm 2023-12-28

SDO/AIA AIA 193Å 2023-12-28T12:00:05.843



SDO/AIA 19.3 nm 2023-12-29

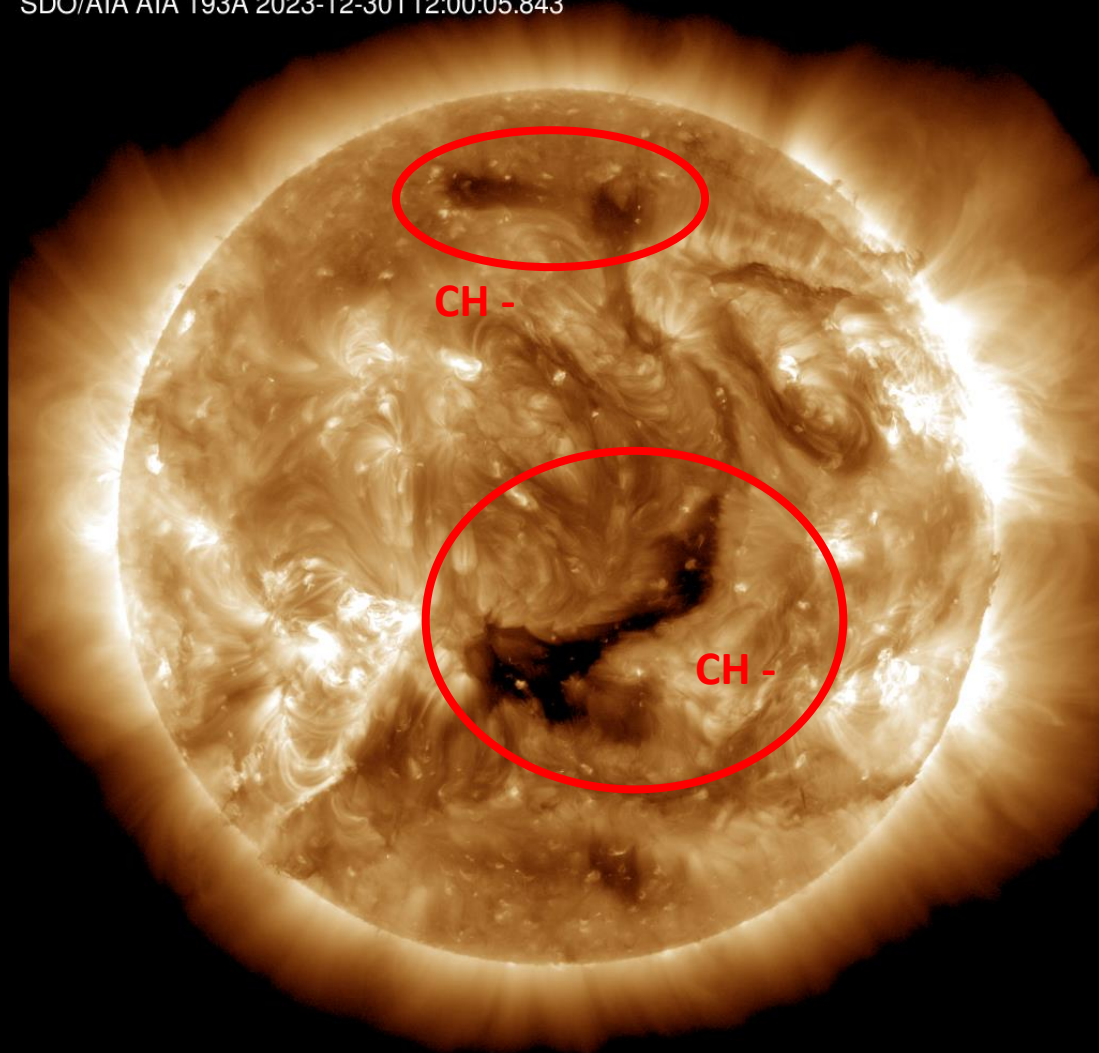
SDO/AIA AIA 193Å 2023-12-29T12:00:05.842



# Coronal holes

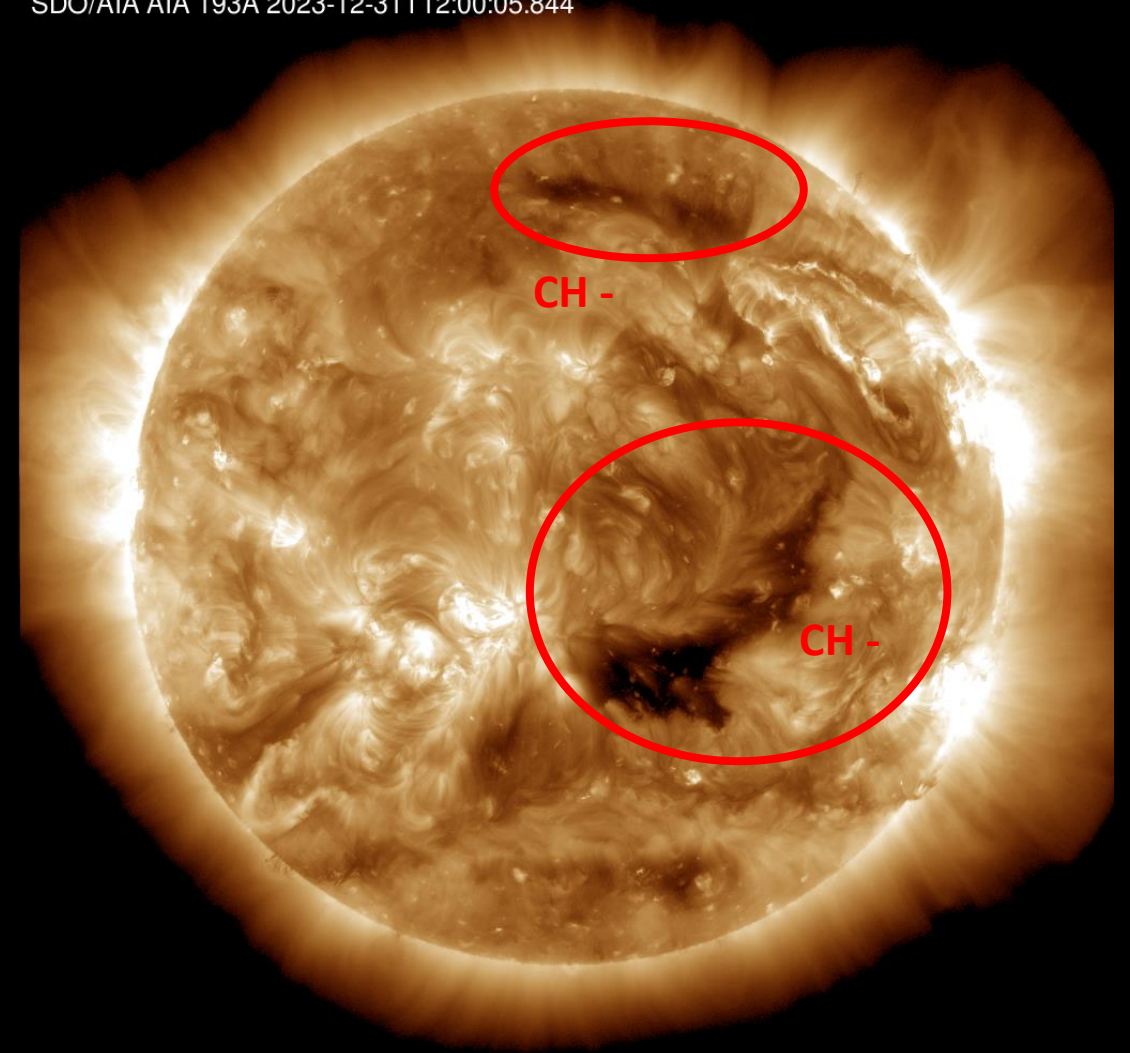
SDO/AIA 19.3 nm 2023-12-30

SDO/AIA AIA 193Å 2023-12-30T12:00:05.843



SDO/AIA 19.3 nm 2023-12-31

SDO/AIA AIA 193Å 2023-12-31T12:00:05.844



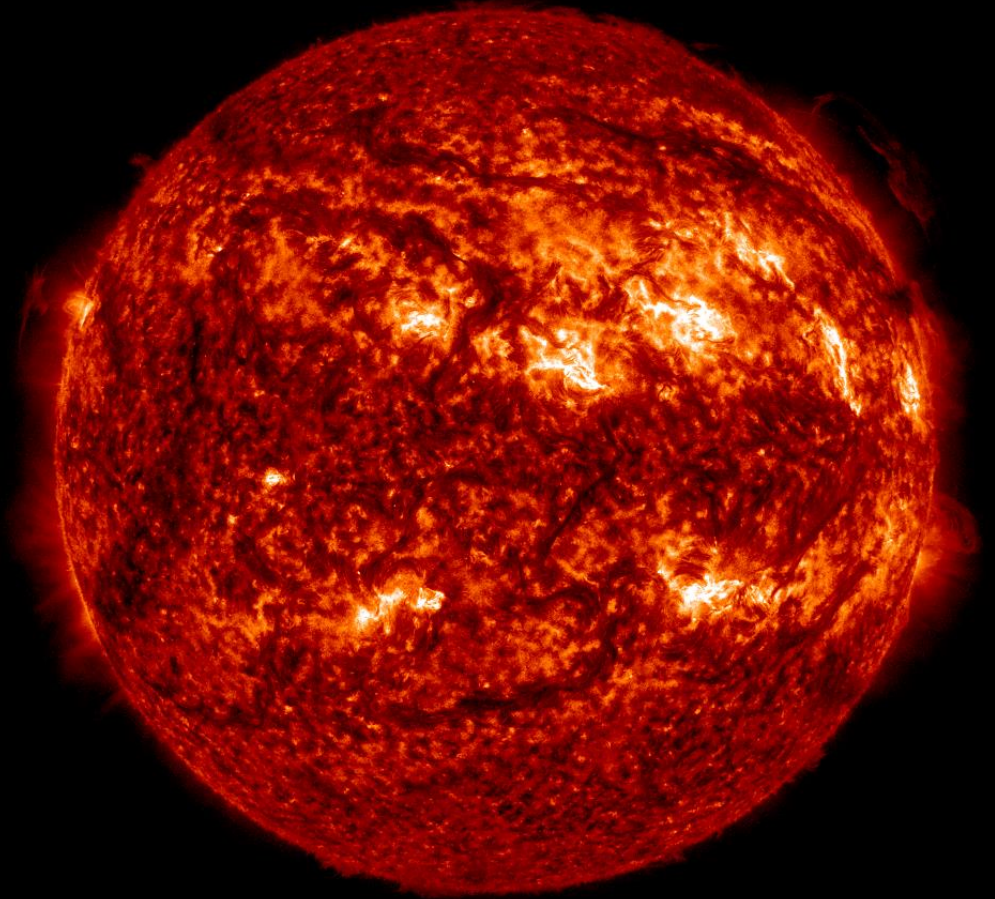
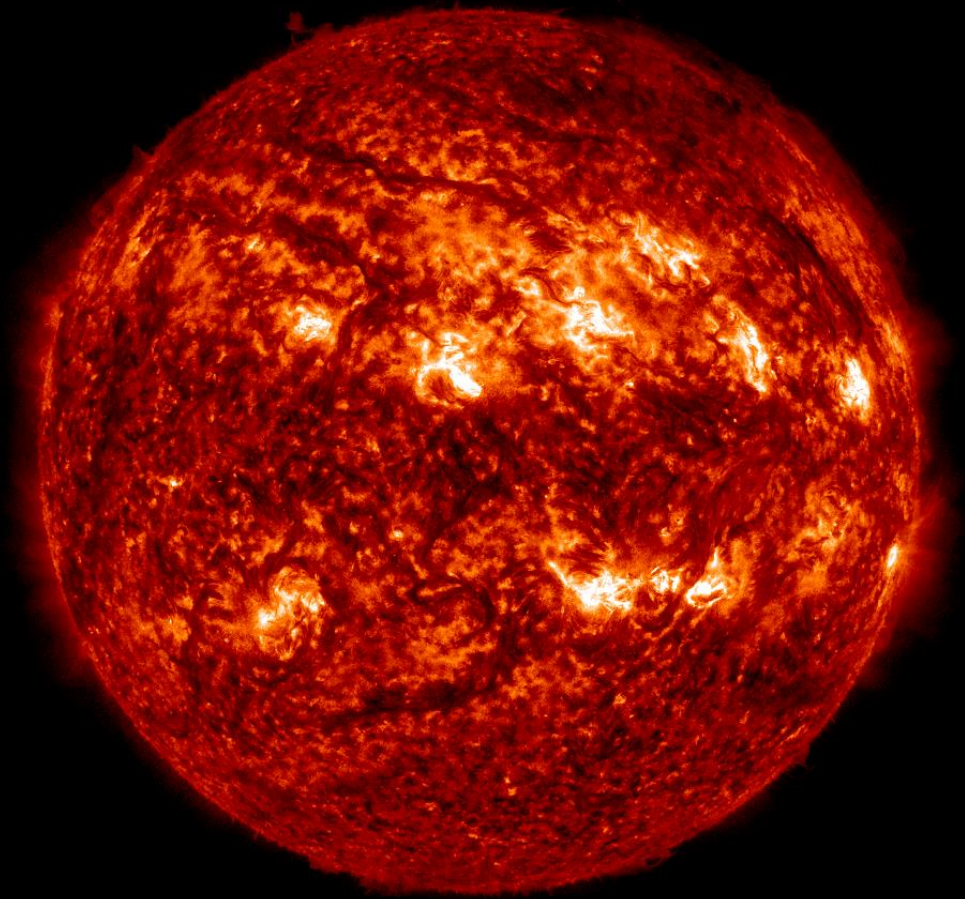
# Filaments

SDO/AIA 30.4 nm 2023-12-24

SDO/AIA AIA 304Å 2023-12-24T12:00:06.572

SDO/AIA 30.4 nm 2023-12-25

SDO/AIA AIA 304Å 2023-12-25T12:00:06.580





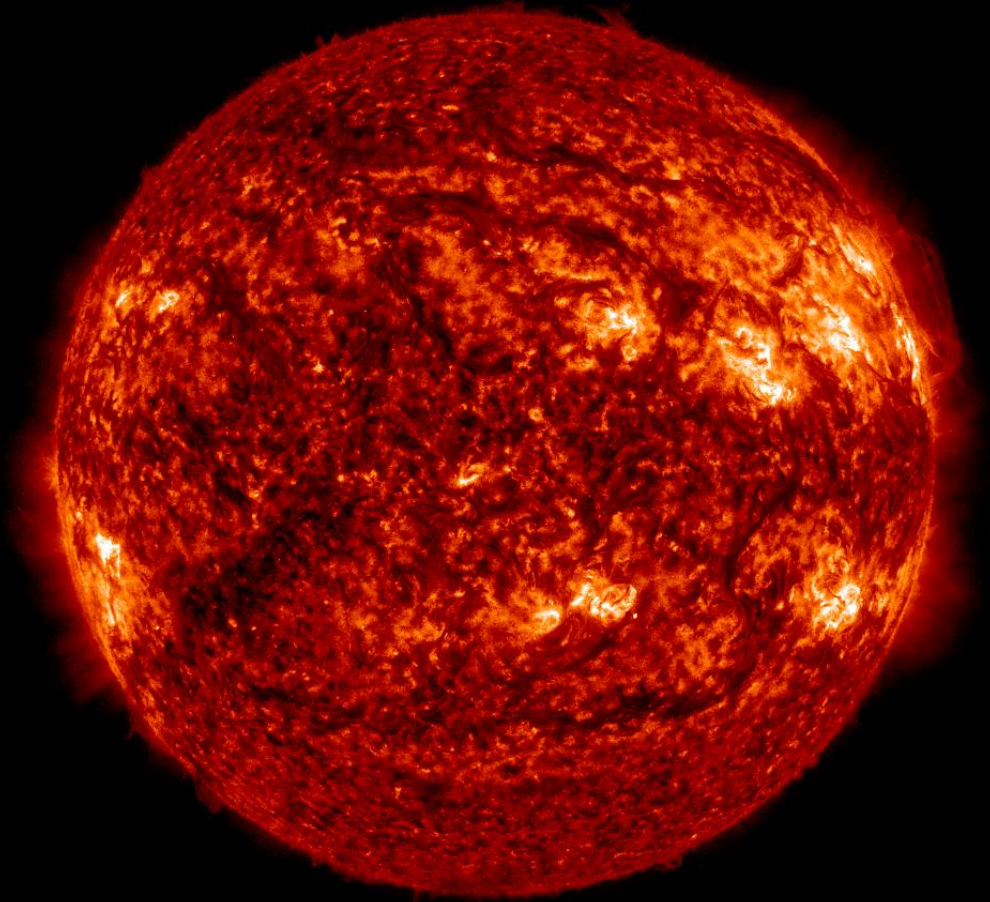
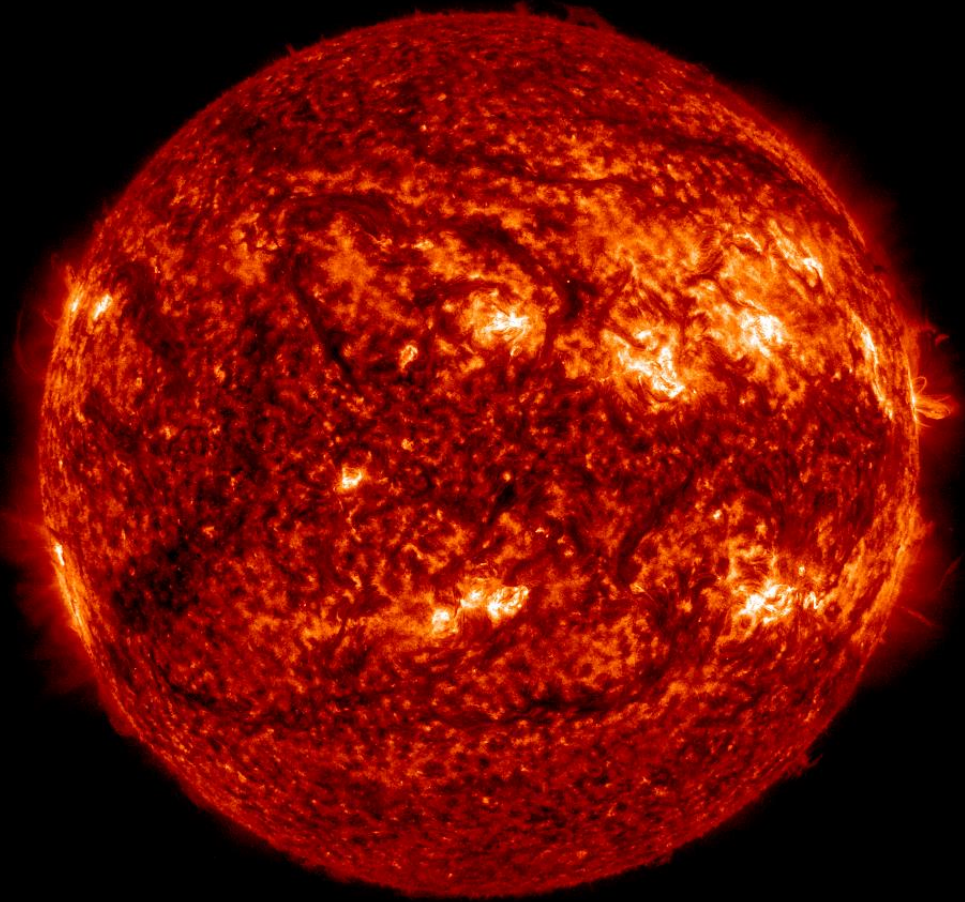
# Filaments

SDO/AIA 30.4 nm 2023-12-26

SDO/AIA AIA 304Å 2023-12-26T12:00:06.580

SDO/AIA 30.4 nm 2023-12-27

SDO/AIA AIA 304Å 2023-12-27T12:00:06.598



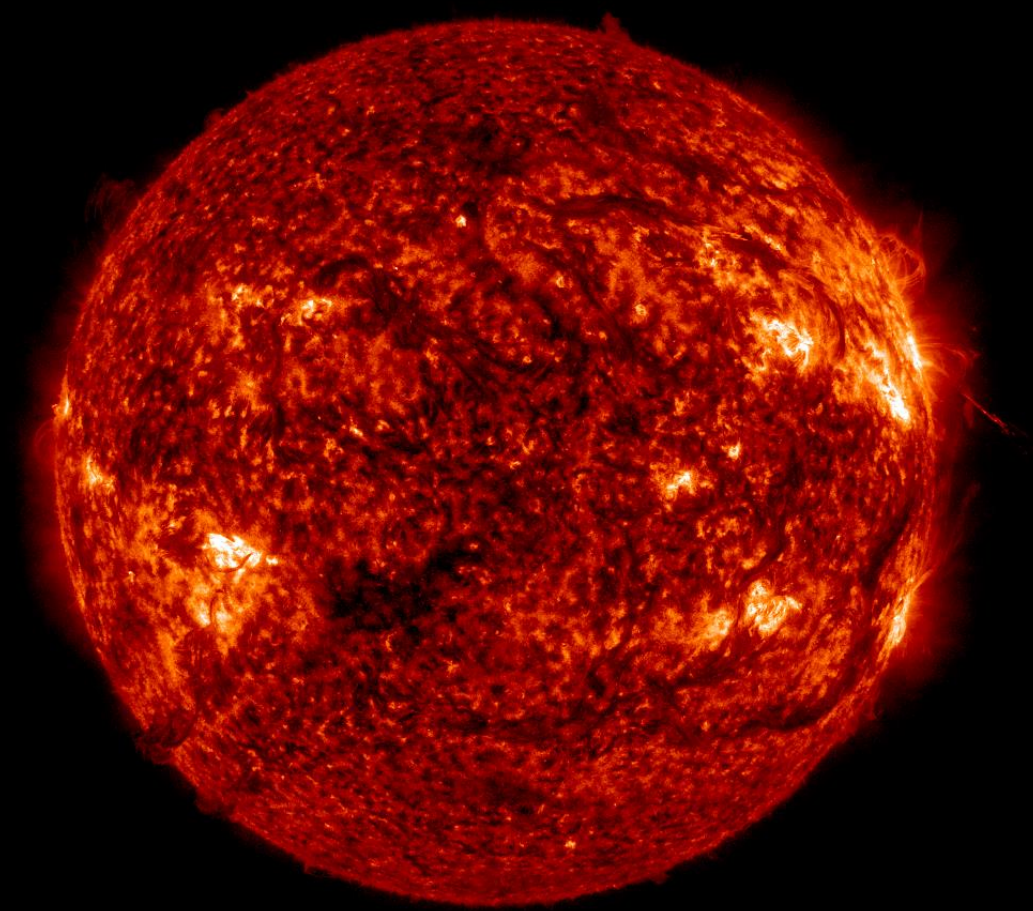
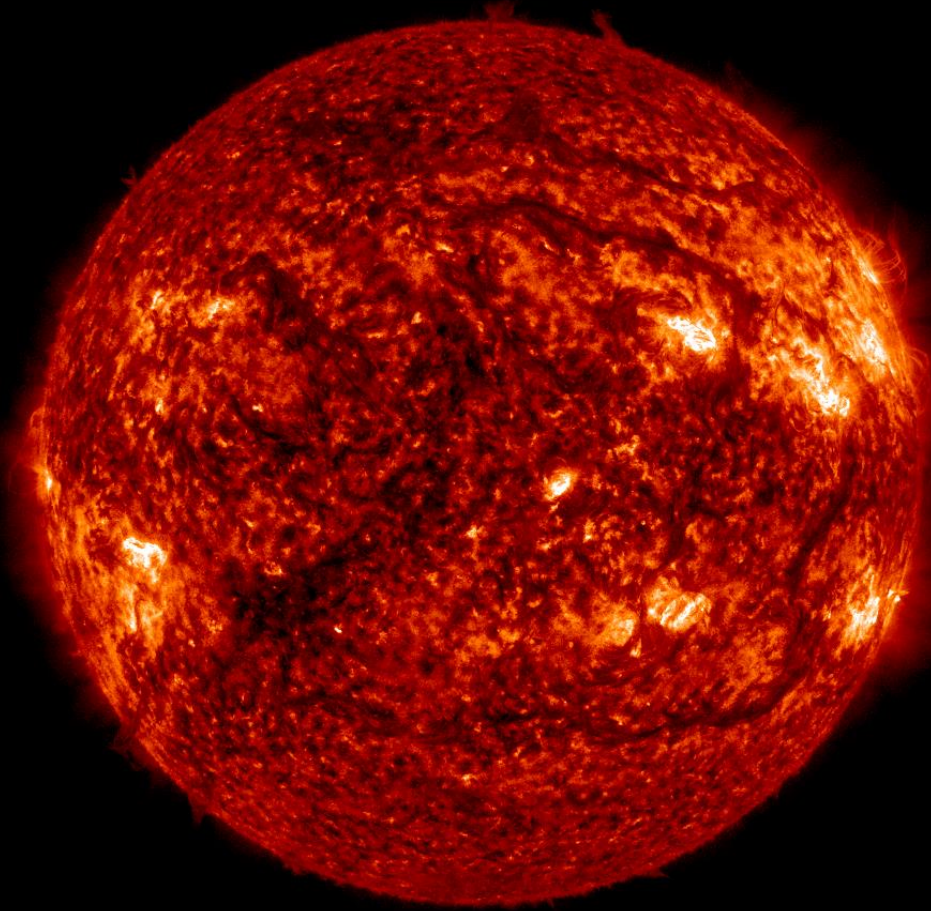
# Filaments

SDO/AIA 30.4 nm 2023-12-28

SDO/AIA AIA 304Å 2023-12-28T12:00:06.580

SDO/AIA 30.4 nm 2023-12-29

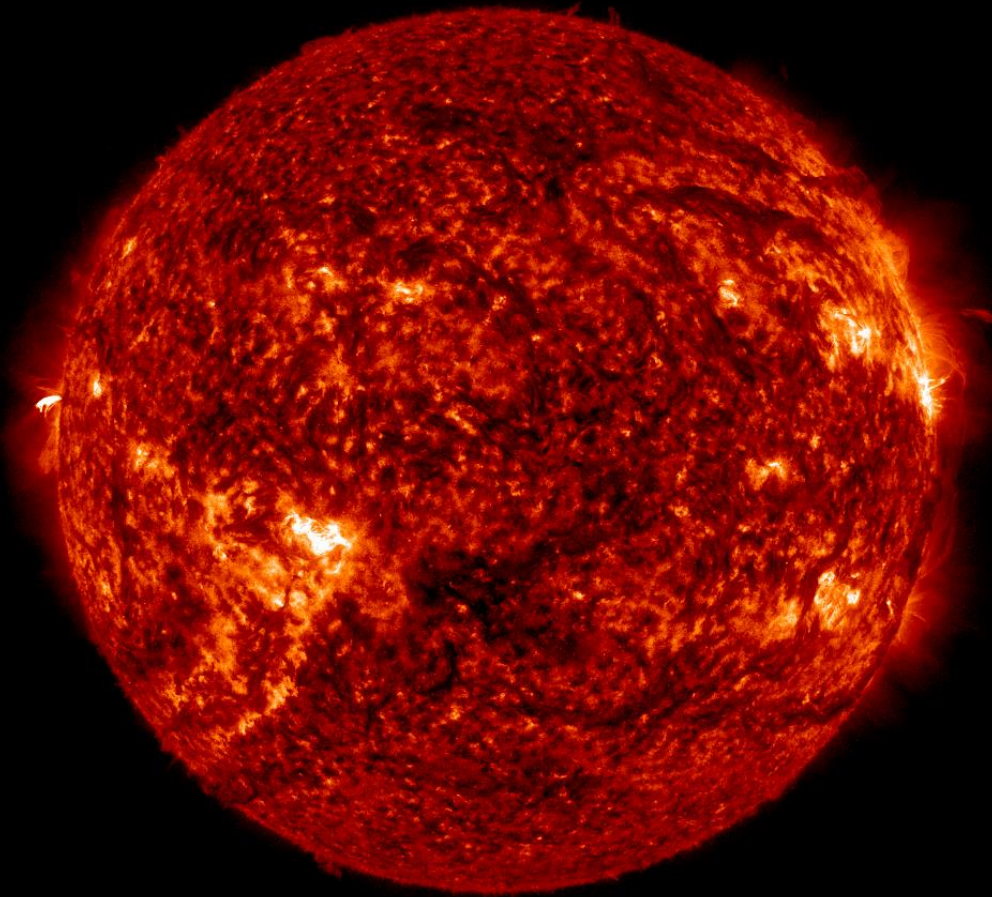
SDO/AIA AIA 304Å 2023-12-29T12:00:06.572



# Filaments

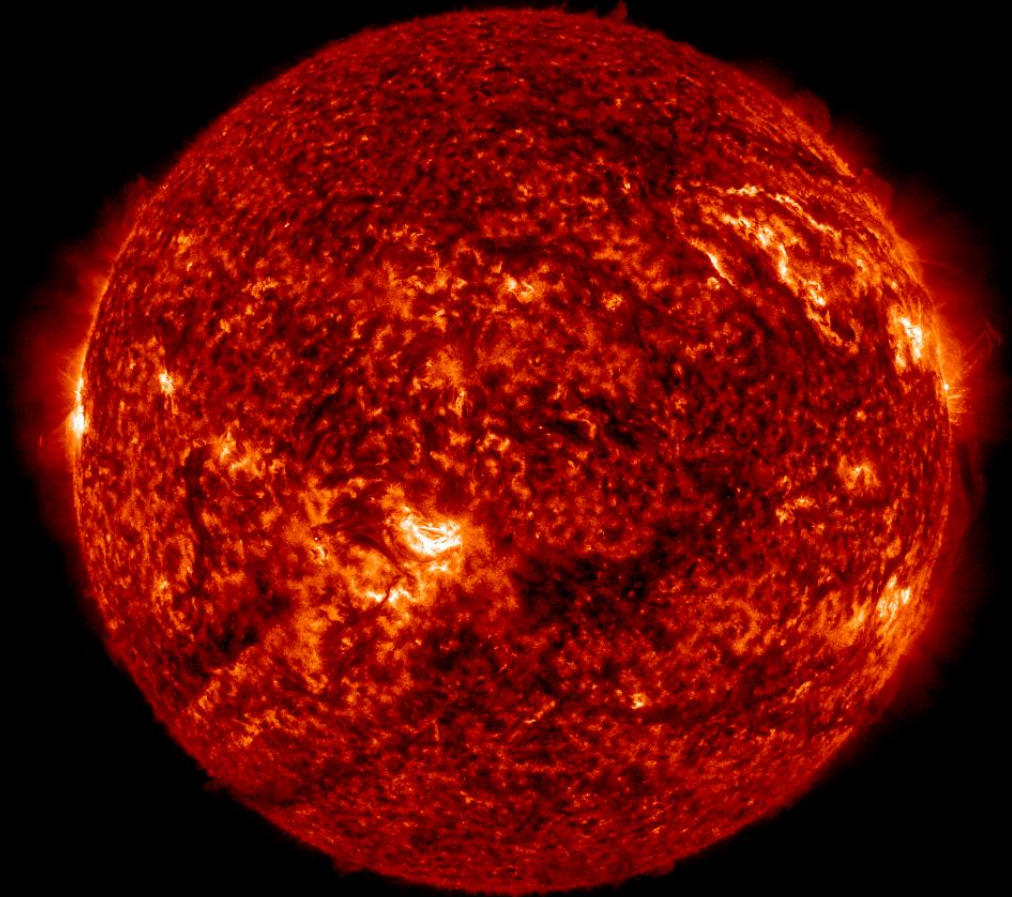
SDO/AIA 30.4 nm 2023-12-30

SDO/AIA AIA 304Å 2023-12-30T12:00:06.580



SDO/AIA 30.4 nm 2023-12-31

SDO/AIA AIA 304Å 2023-12-31T12:00:06.580



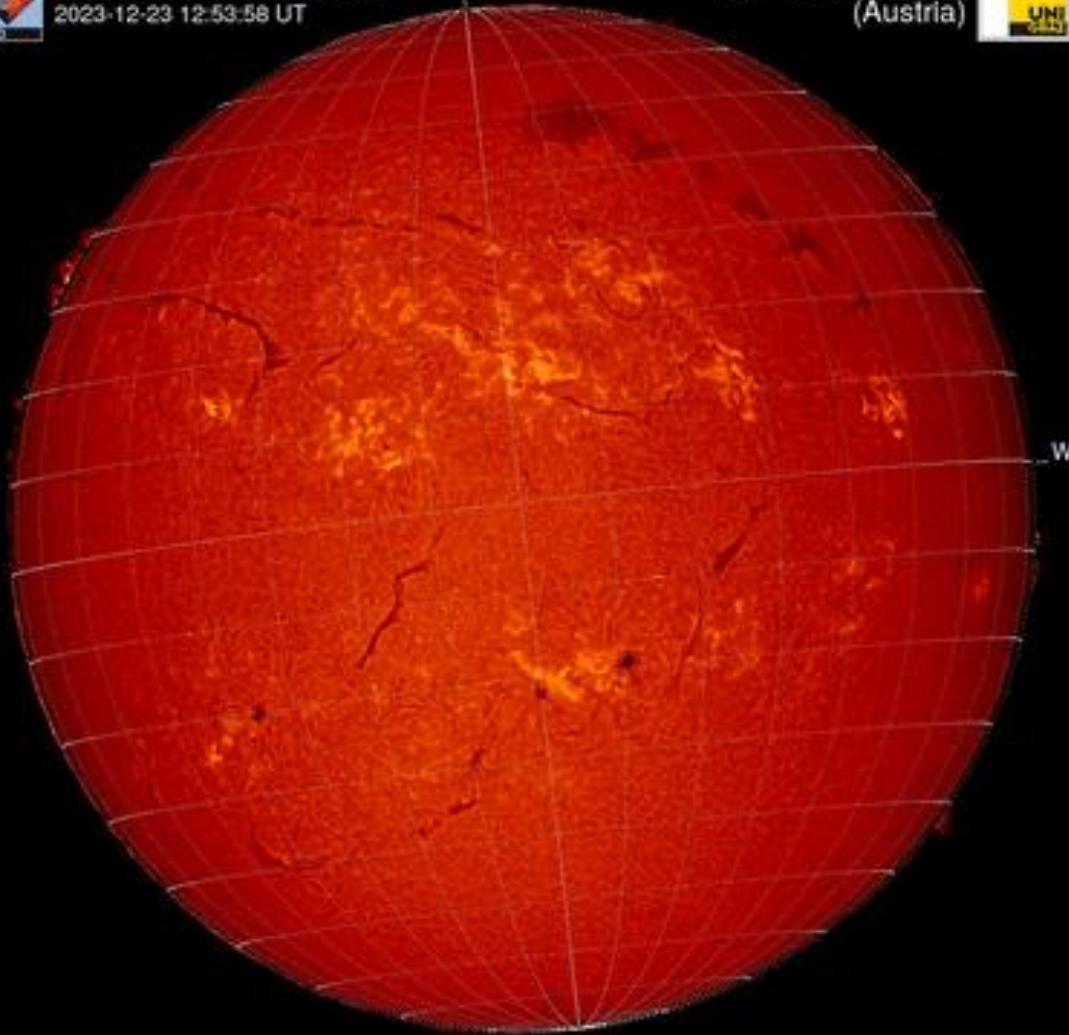
# Filaments & Filament eruptions

H-alpha 2023-12-24



Kanzelhöhe Observatory  
2023-12-23 12:53:58 UT

University of Graz  
(Austria)

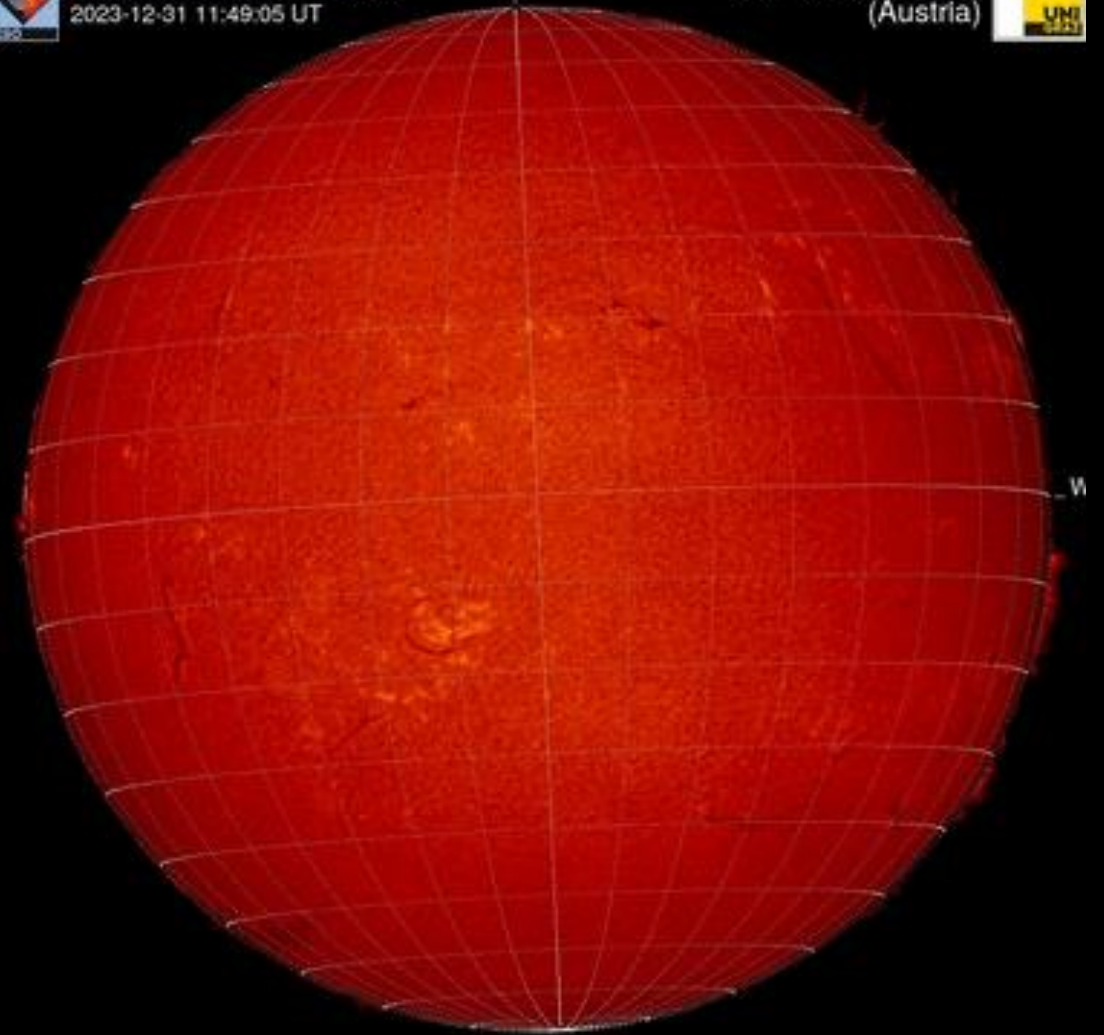


H-alpha 2023-12-31

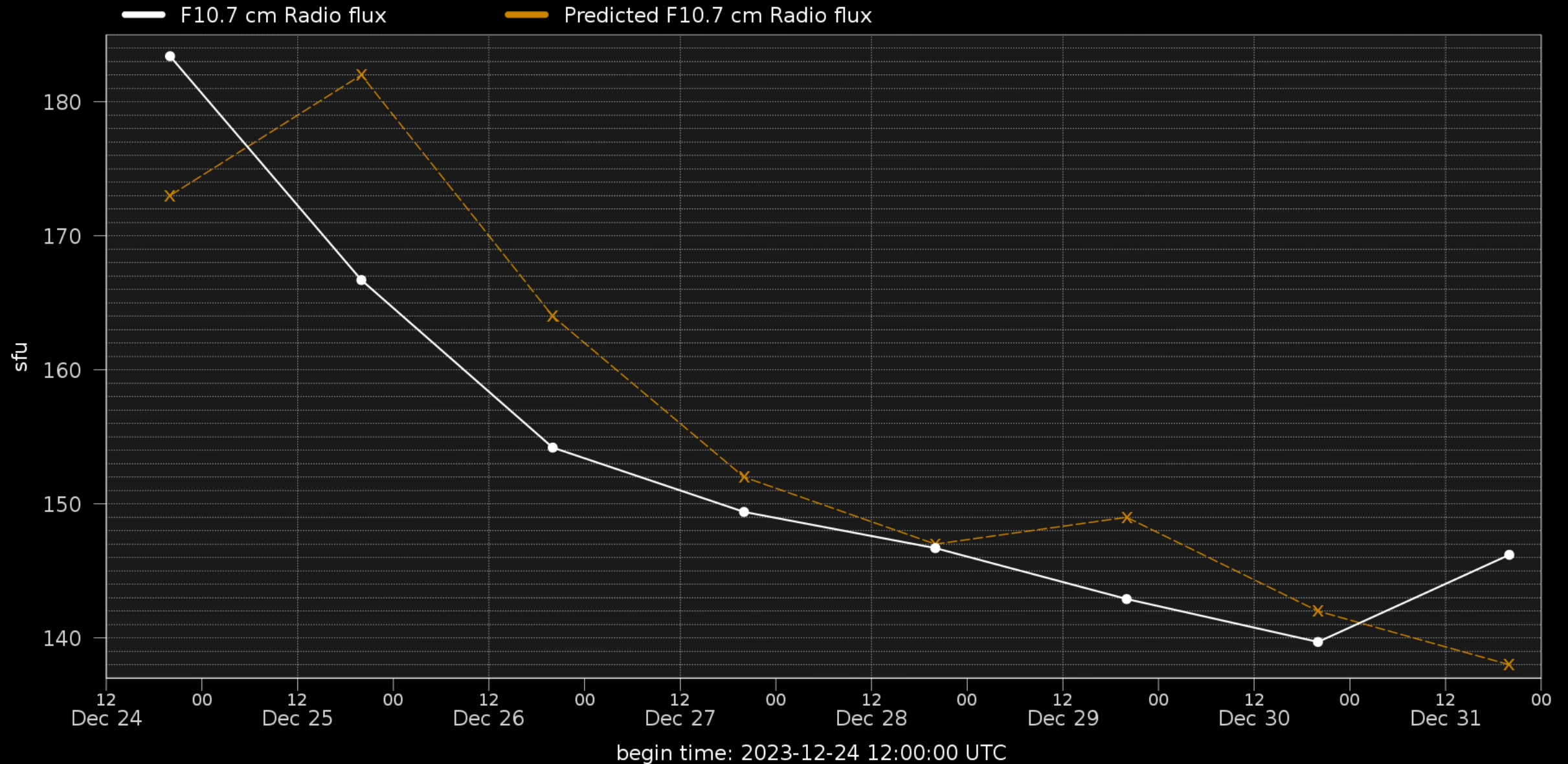


Kanzelhöhe Observatory  
2023-12-31 11:49:05 UT

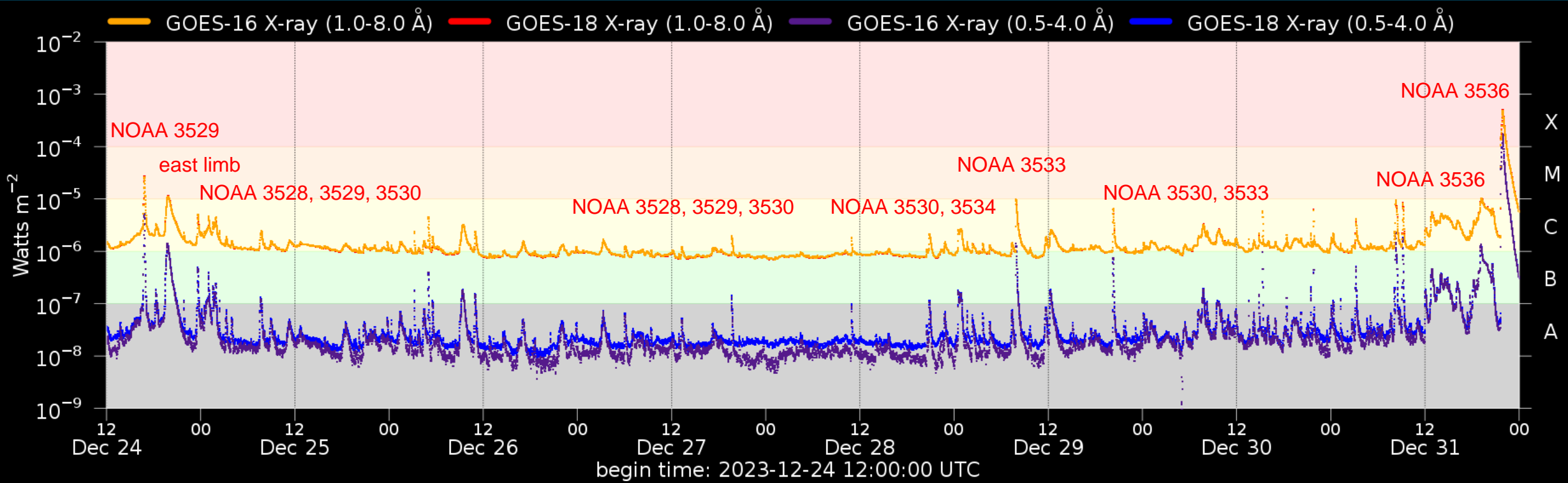
University of Graz  
(Austria)



# Solar F10.7cm radio flux



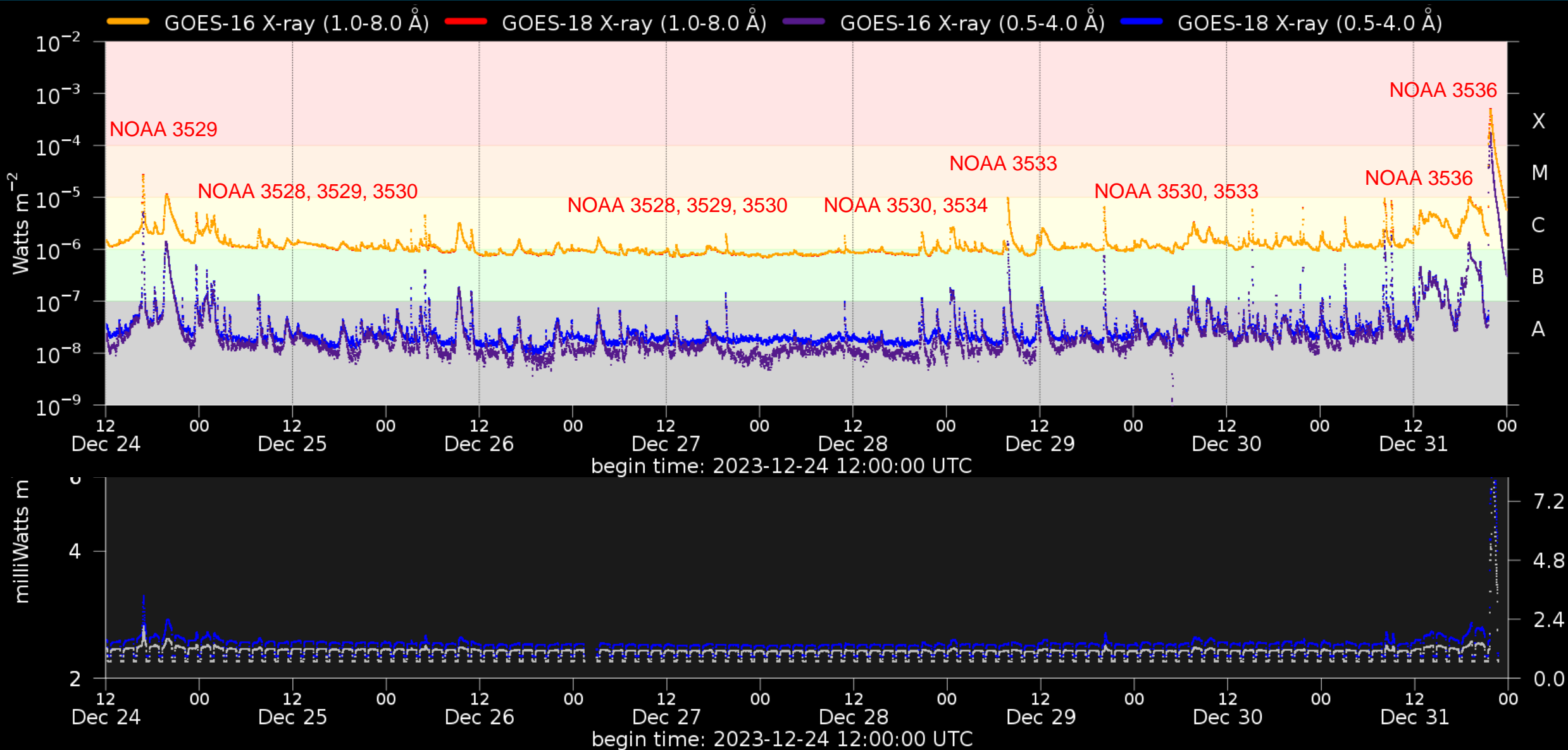
# Flaring activity



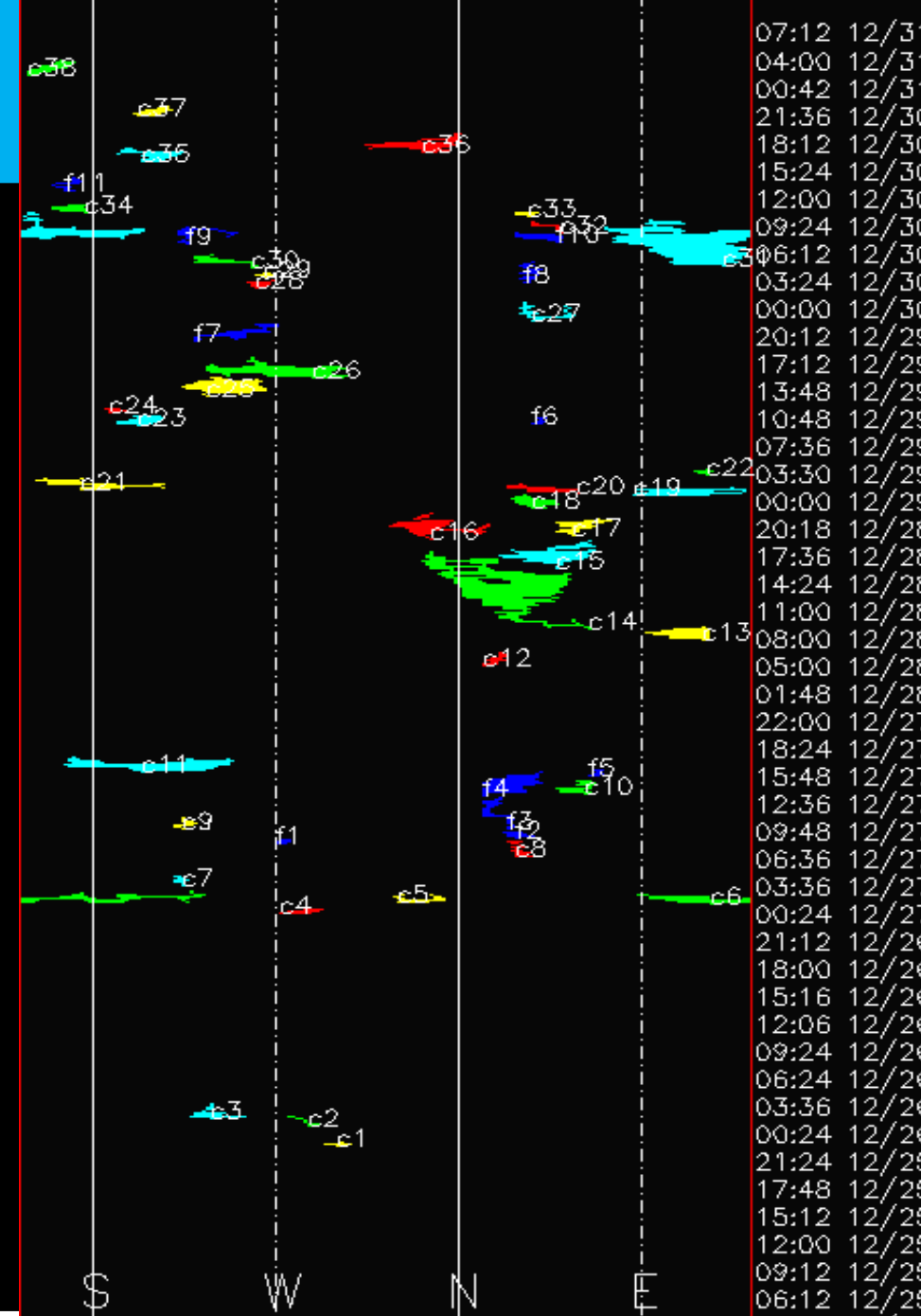
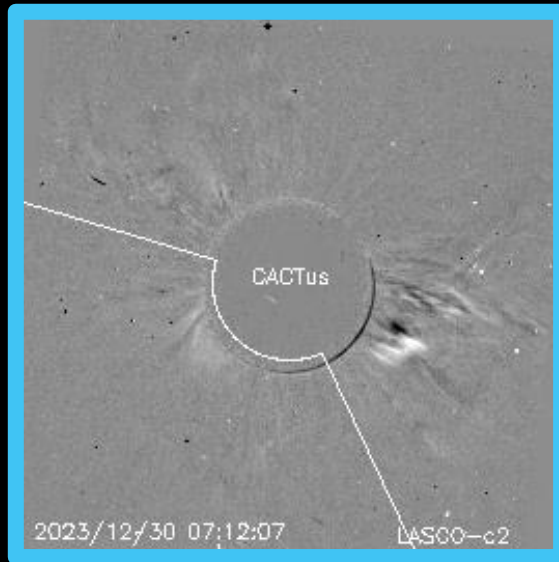
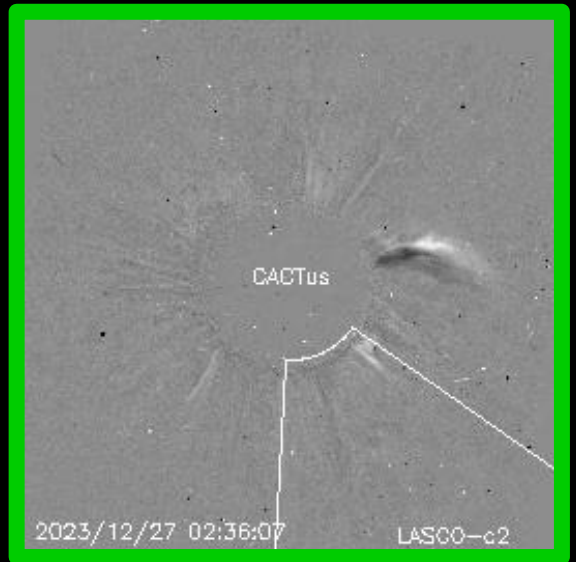
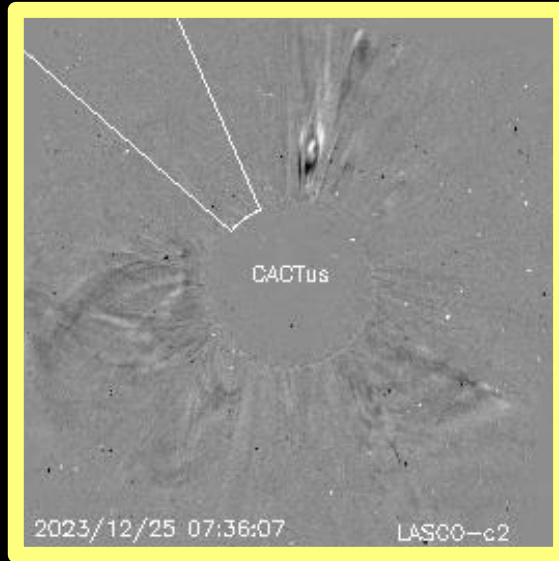
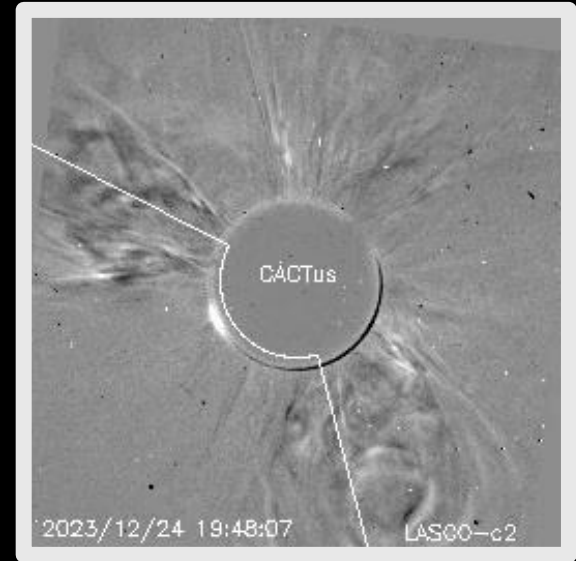
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2023-12-24	2023-12-25	2023-12-26	2023-12-27	2023-12-28	2023-12-29	2023-12-30	2023-12-31
Probability (%)	95   15   03	95   45   15	80   25   05	70   15   05	70   15   05	80   25   05	70   15   05	85   25   05
Observed (#)	05   02   00	05   00   00	00   00   00	02   00   00	08   00   00	02   00   00	09   00   00	02   00   01

# Solar X-Ray and UV flux



# Coronal Mass Ejections





Solar Wind and

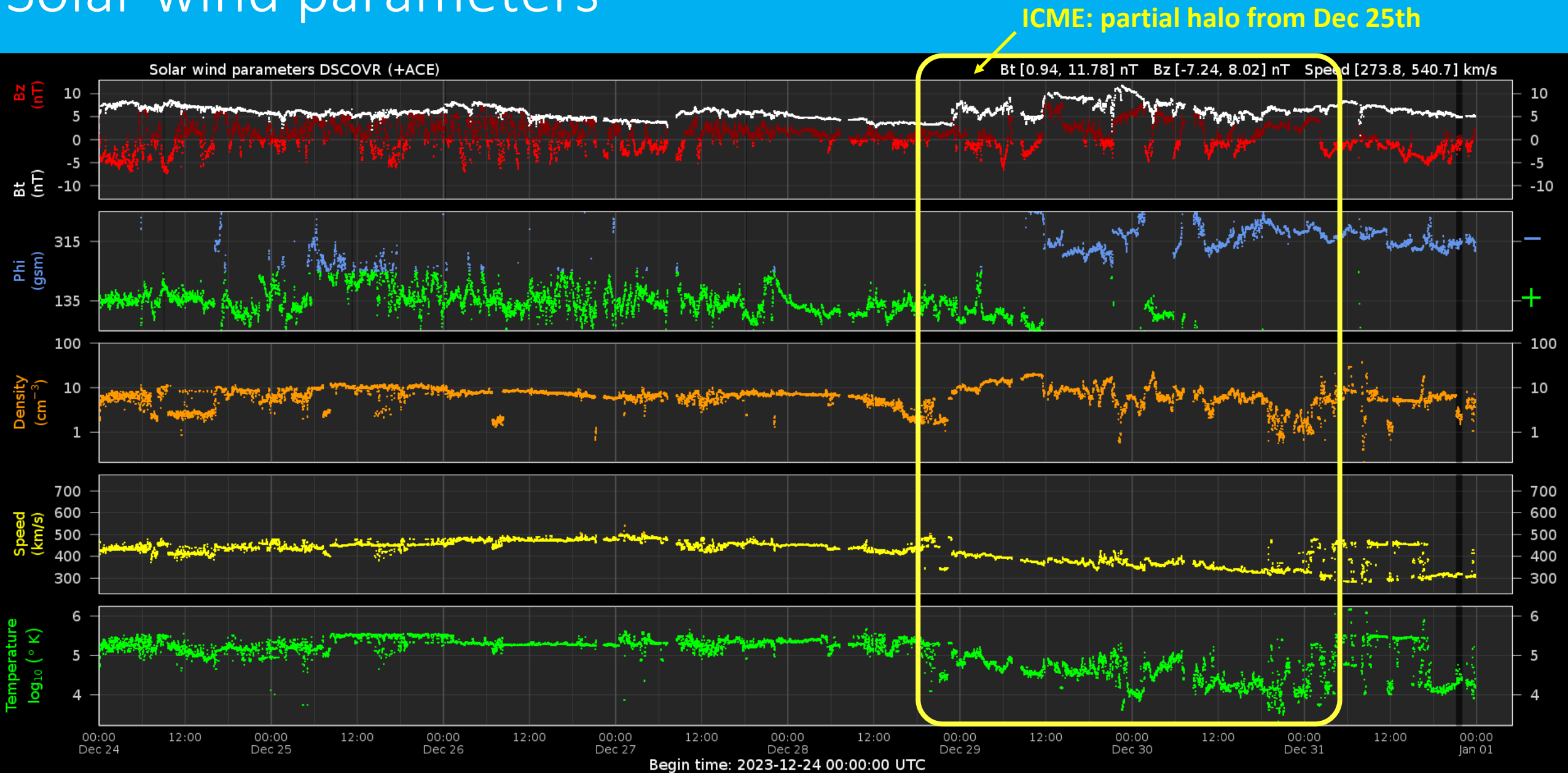
# Geomagnetic Activity



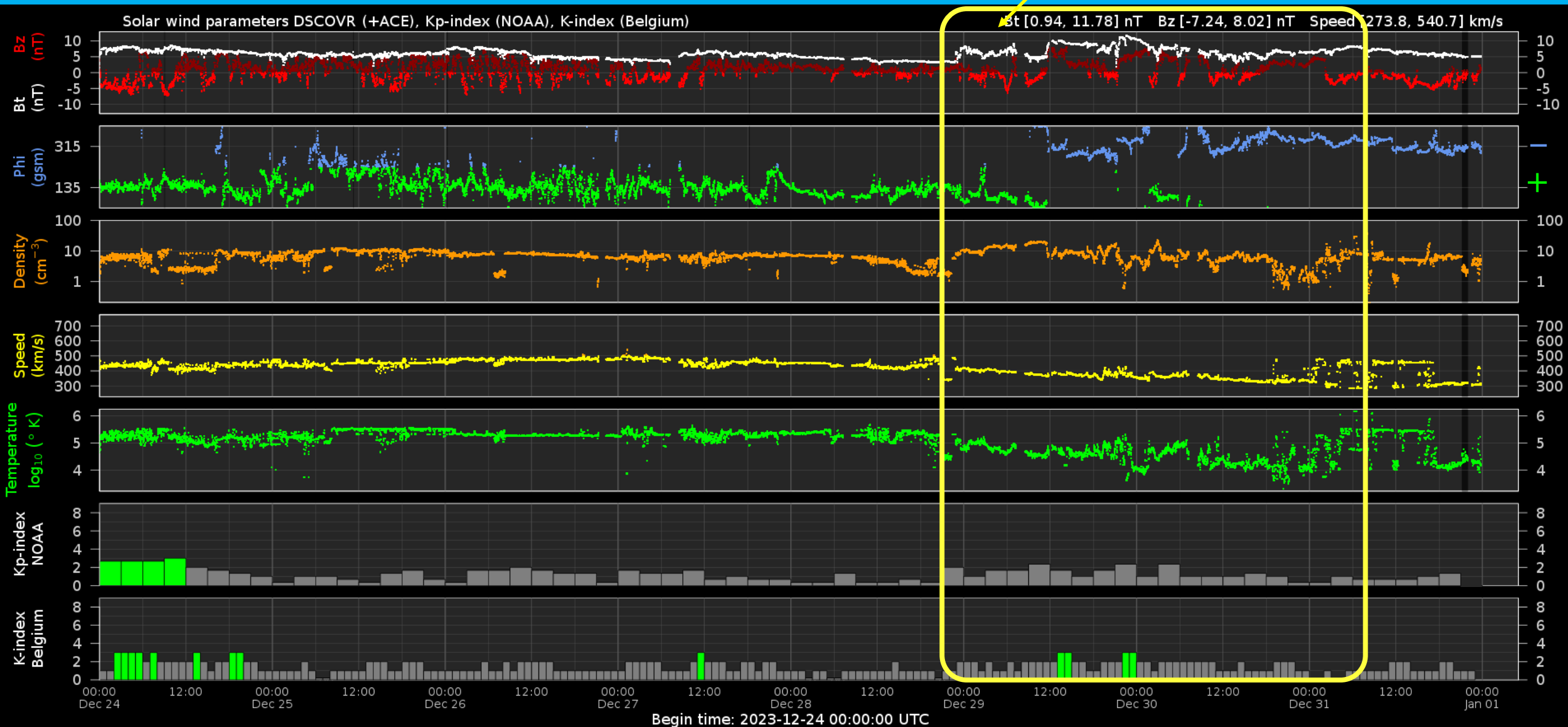
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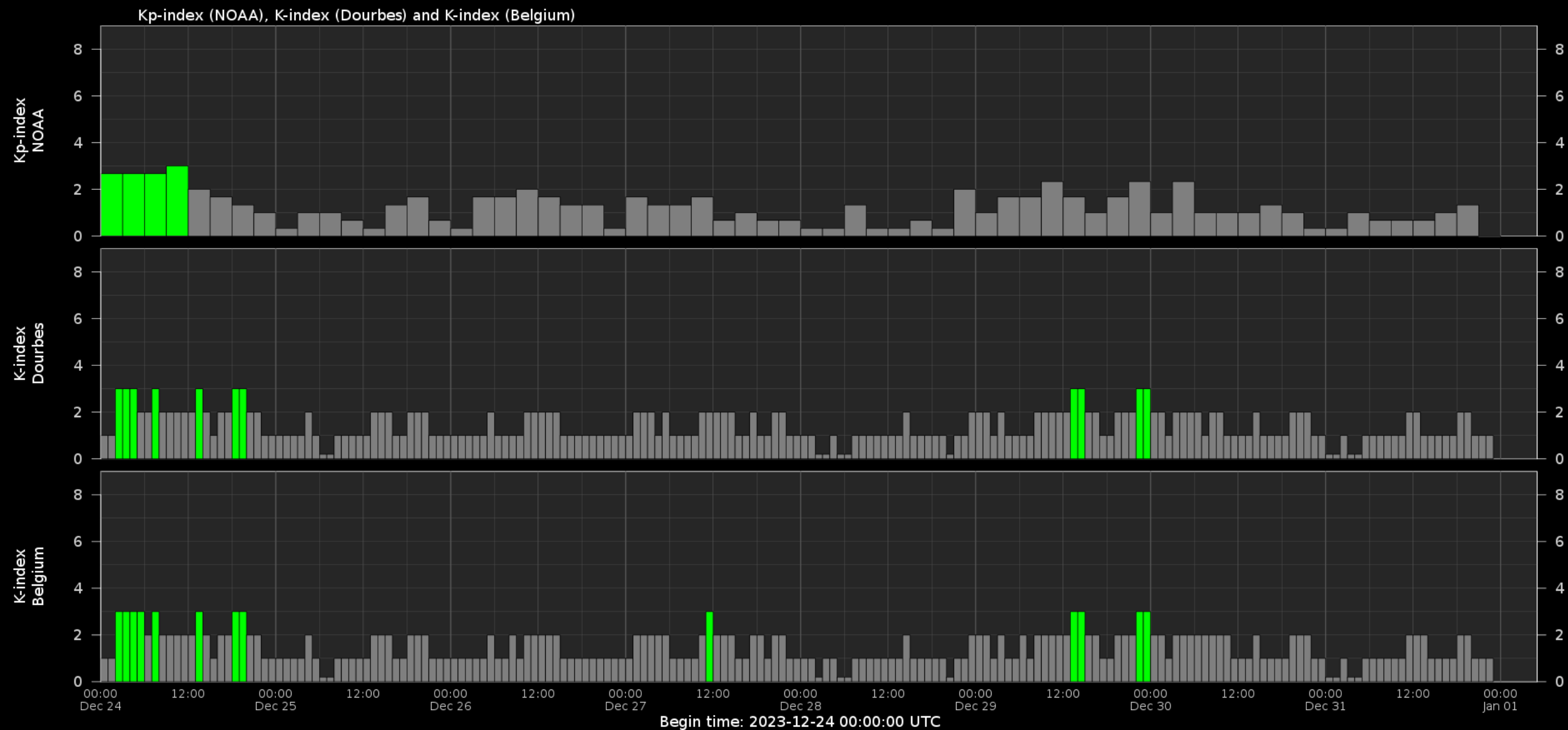
# Solar wind parameters



# Solar wind parameters & K-indices



# Geomagnetic activity (K-indexes)



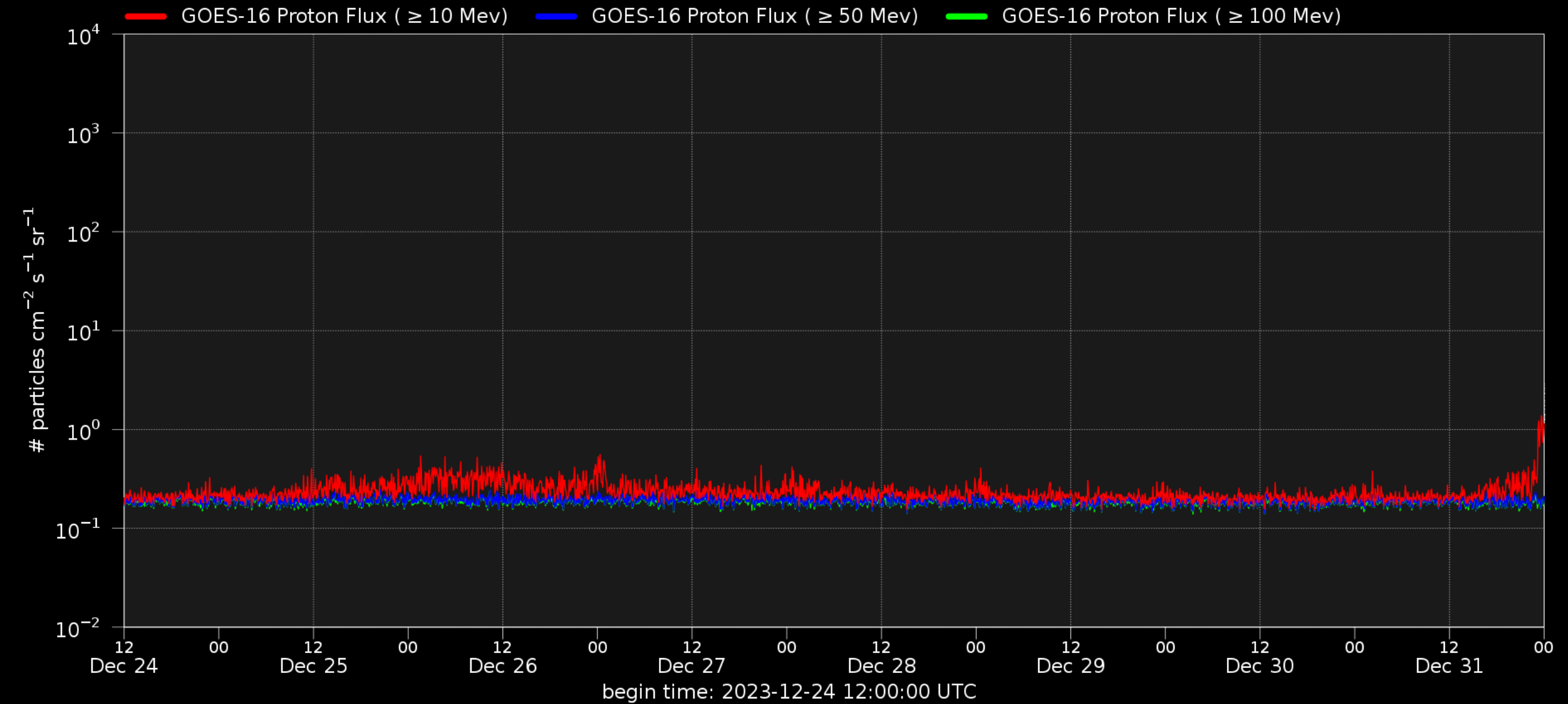
# Energetic Particles



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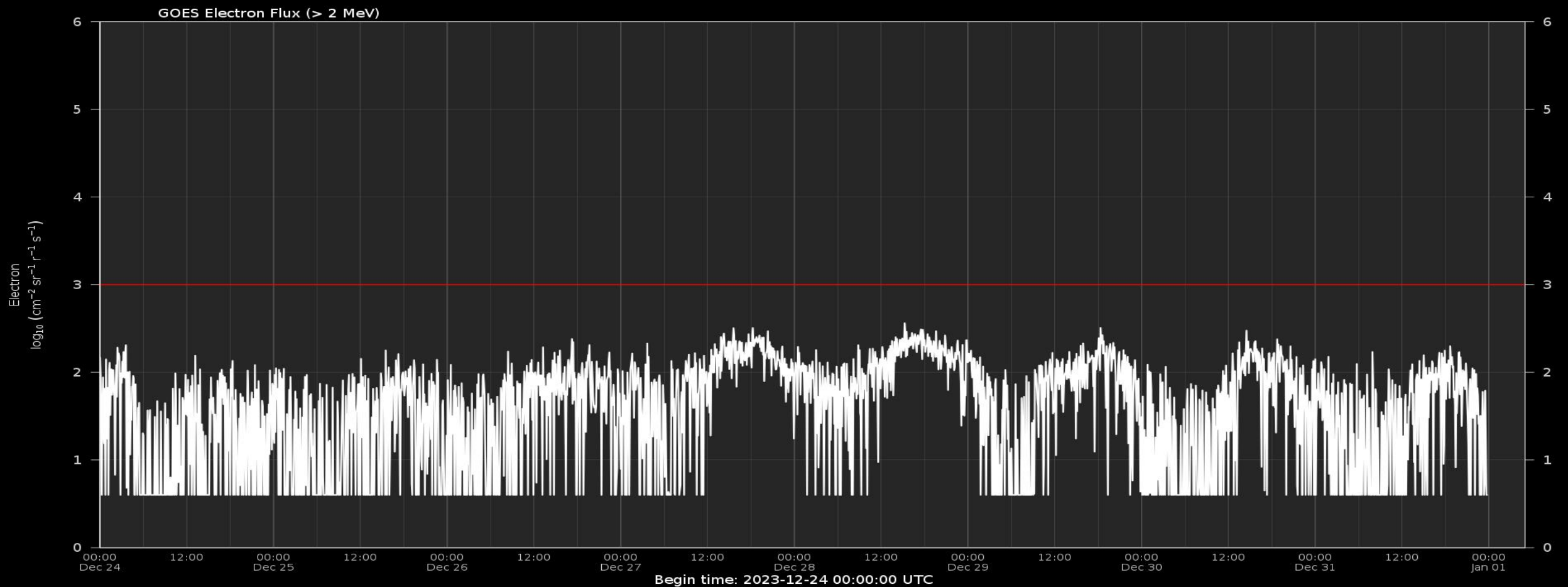
# Solar proton flux



# Electron flux at GEO

[www.stce.be/educational/classification#electrons](http://www.stce.be/educational/classification#electrons)

[www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php](http://www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php)



# Outlook

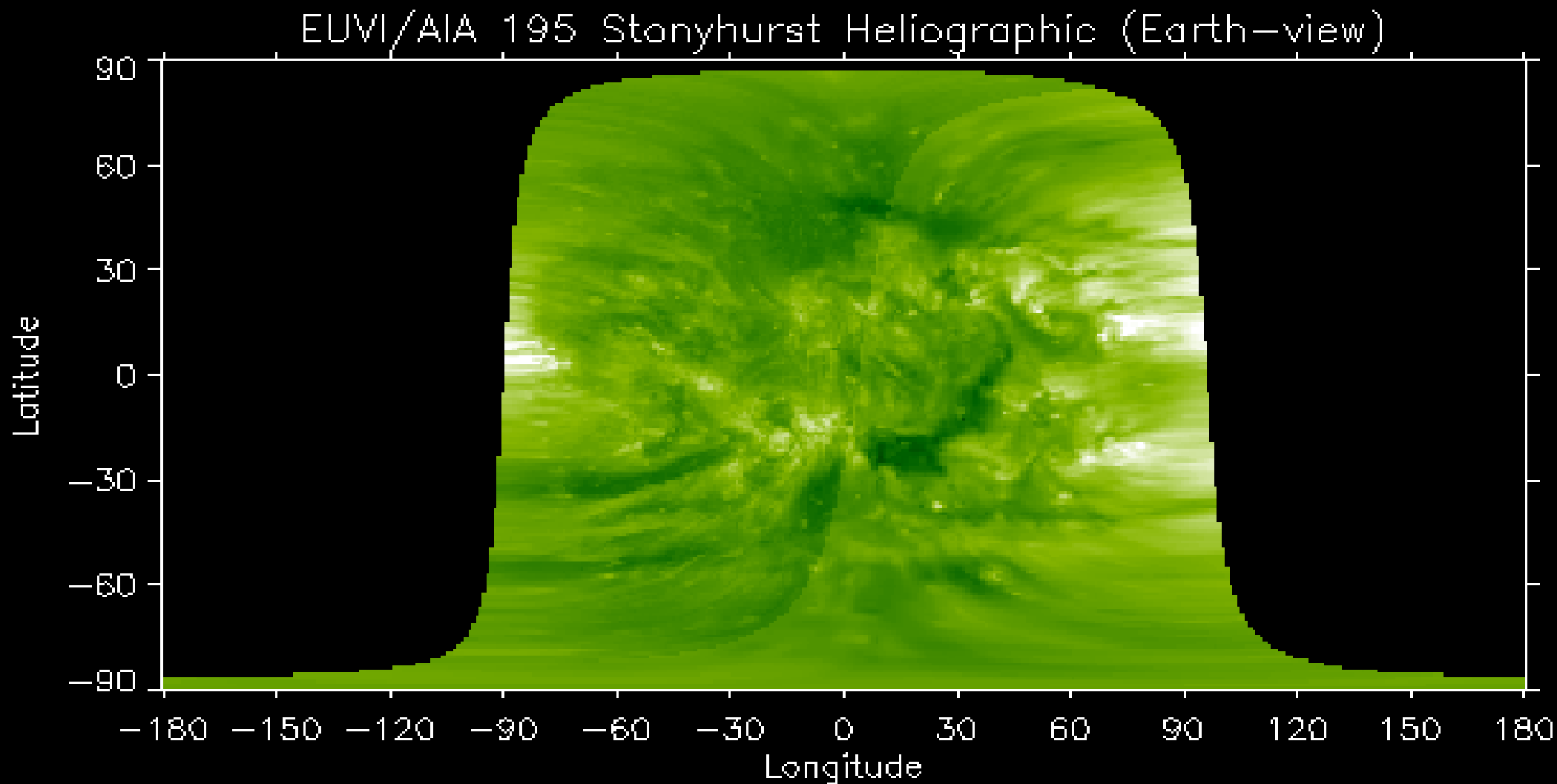


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[www.sidc.be](http://www.sidc.be)

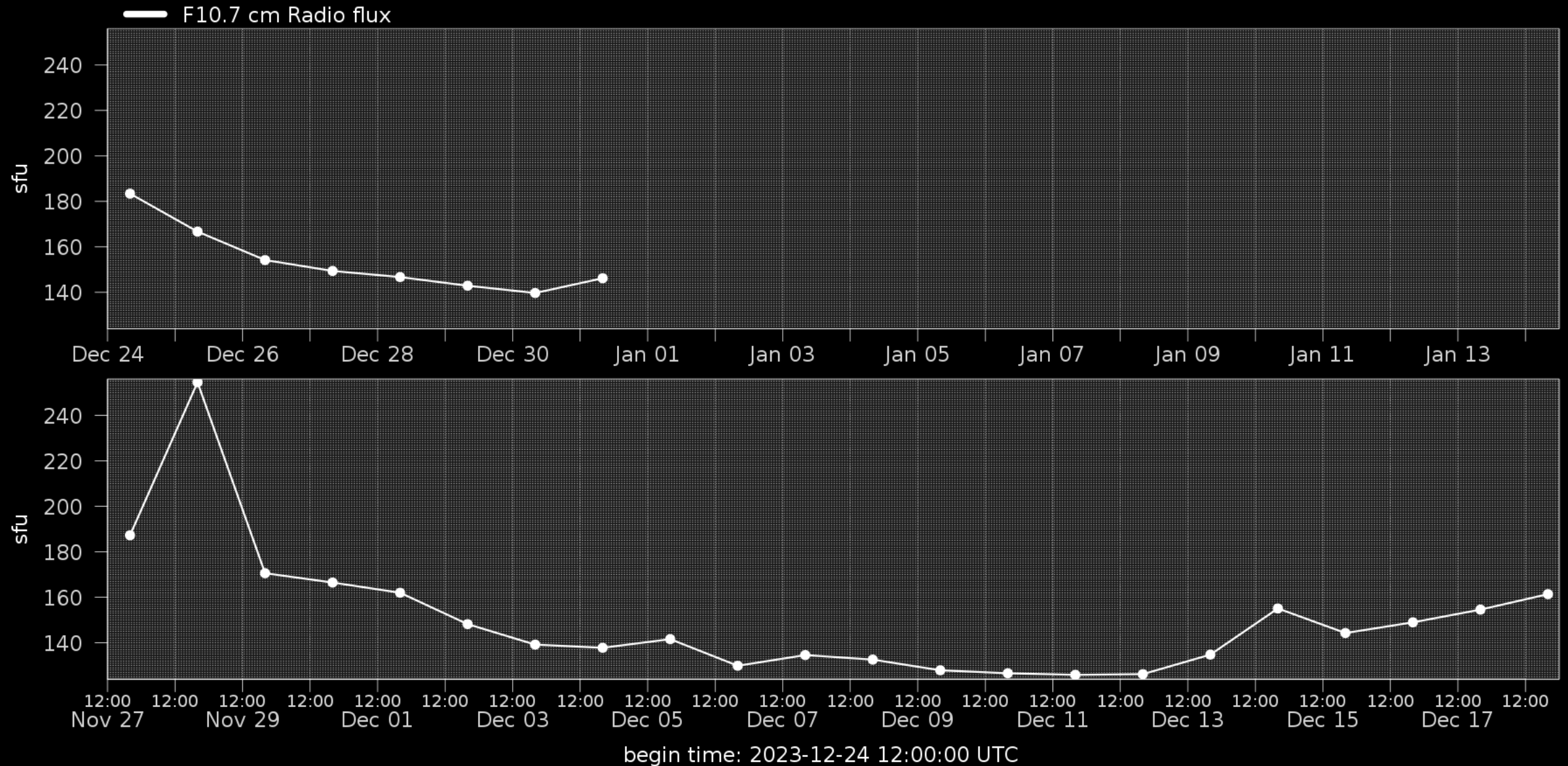


# Outlook: Solar activity

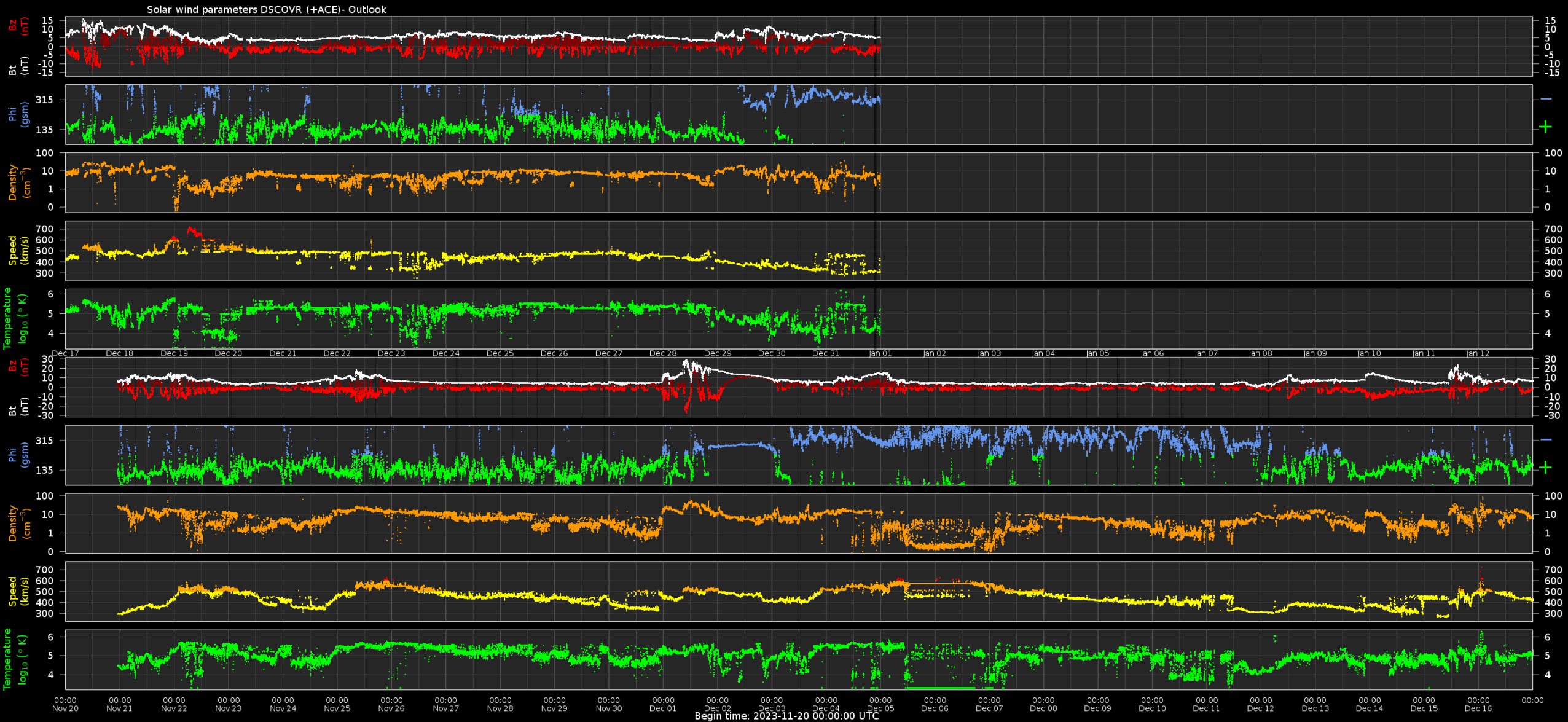


Observation date: 2023/12/31 19:05:00

# Outlook: Solar F10.7cm radio flux



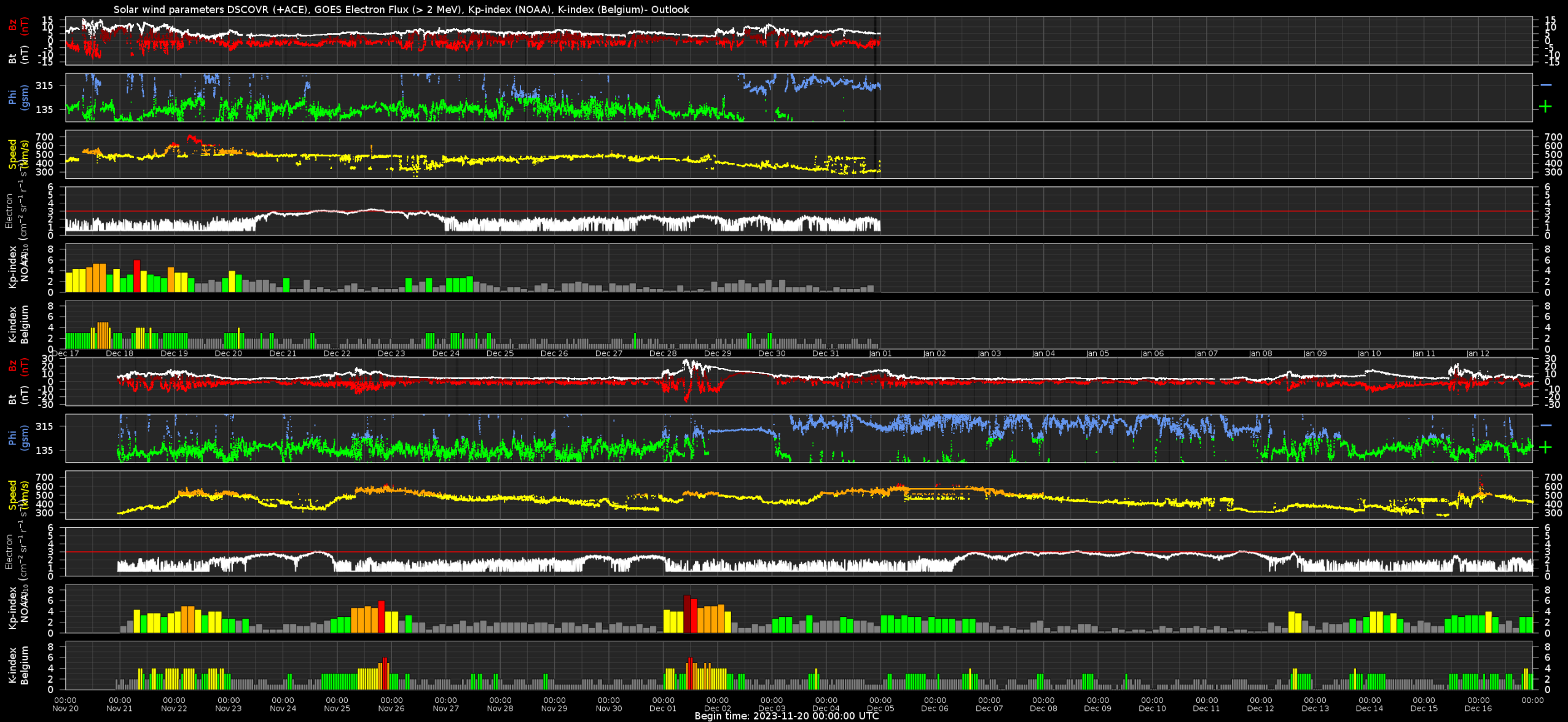
# Outlook: Solar wind parameters



# Outlook: Geomagnetic activity



# Outlook: Electron Flux at GEO Outlook



PECASUS



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# Pegasus related events

Usual scintillation events due to plasma bubbles

SIDC Space Weather Briefing

See you at our next briefing!

Or visit us at [www.sidc.be](http://www.sidc.be)



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