

SIDC Space Weather Briefing

13 November 2022-20 November 2022

Jesse ANDRIES
& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2022-11-13 12:00 to 2022-11-20 23:59

Active regions	3140 (3141, 3145) NW first part of week, 3150 emerging rapidly end of week NW; 3147, 3148, 3149 rotating onto disc mid week but relatively inactive
Flares	# C-class flare: 52 # M-class flare: 2 # X-class flare: 0
Coronal Holes	2 minor CH early in the week, one large CH- mid week
CMEs	A few on disc filament eruptions, but coronagraph data indicate not directed to Earth
Proton flux	background
Electron flux	normal

Solar wind and geomagnetic conditions

ICMEs	None
Solar wind conditions	B : 0.67 - 12.39 nT //Bz: -9.71 nT to 11.02 nT //Speed: 293.5 - 529.4km/s
K-indices	max K-index (KDou): 4 max Kp-index (NOAA): 3

All Quiet Alert: not quiet

Solar Activity

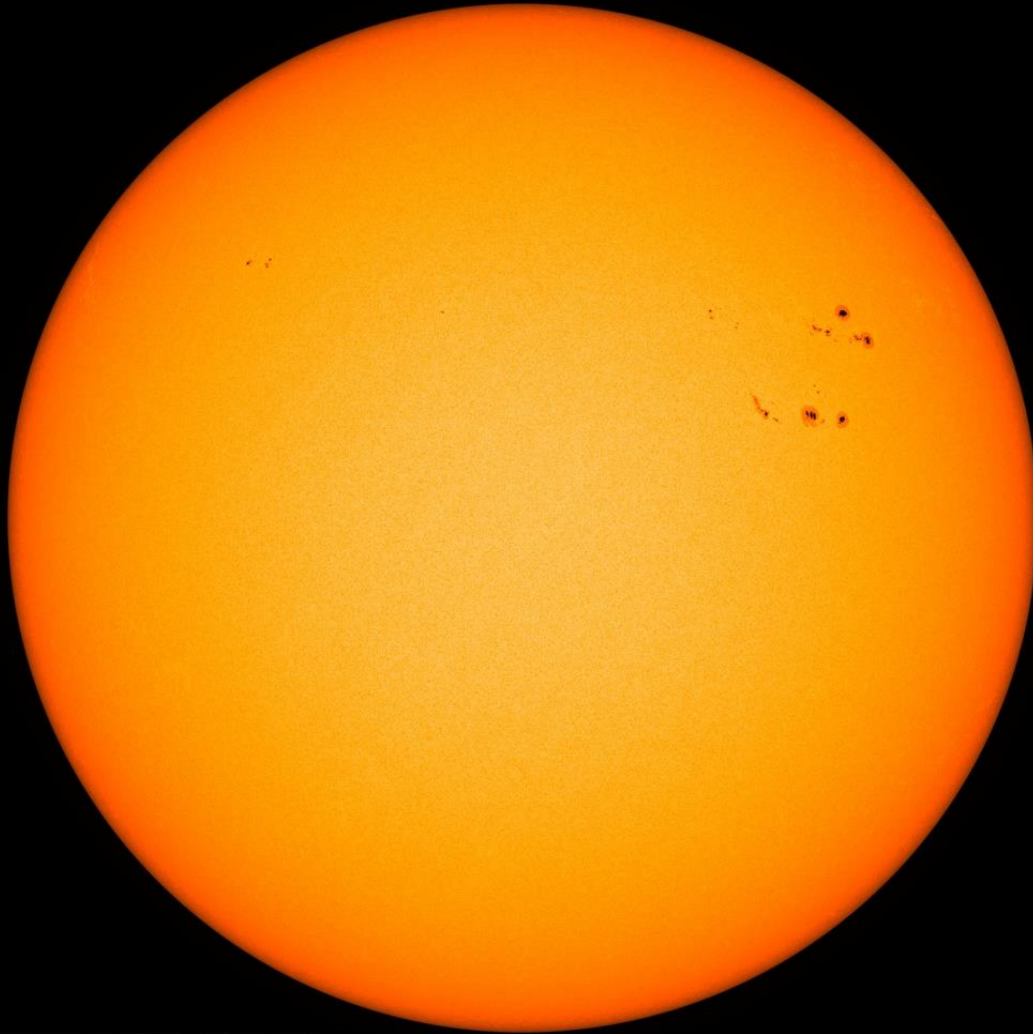


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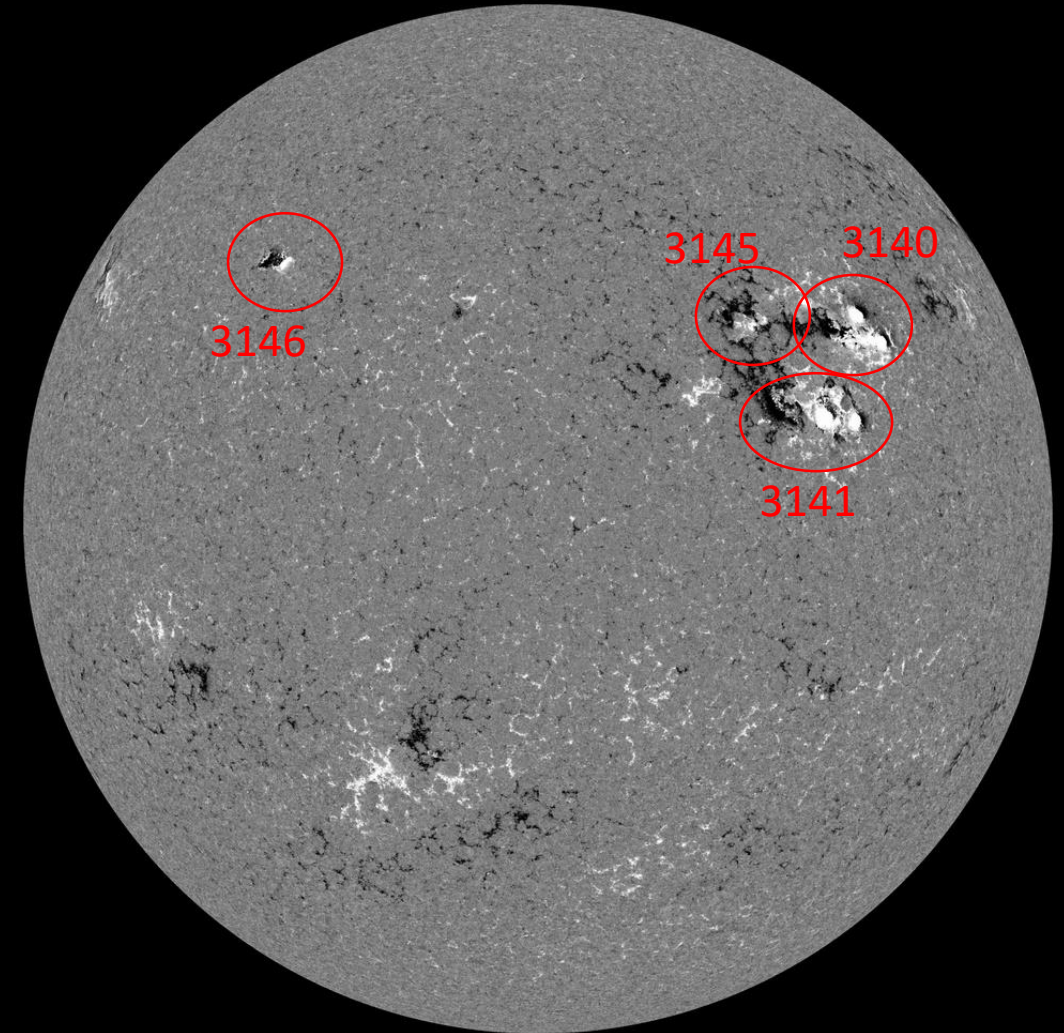
Solar active regions

SDO/HMI White Light 2022-11-13



SDO/HMI Quick-Look Continuum: 20221113_111500

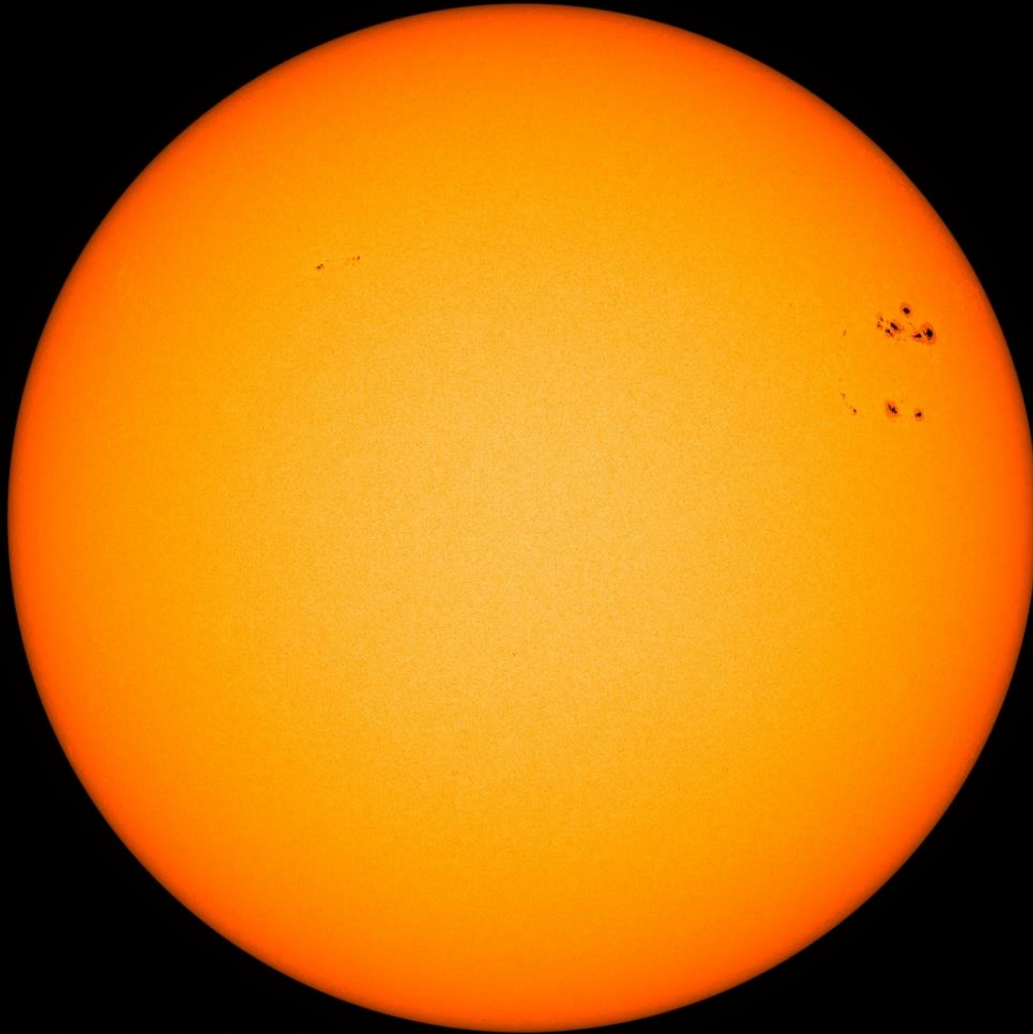
SDO/HMI Magnetogram 2022-11-13



SDO/HMI Quick-Look Magnetogram: 20221113_111500

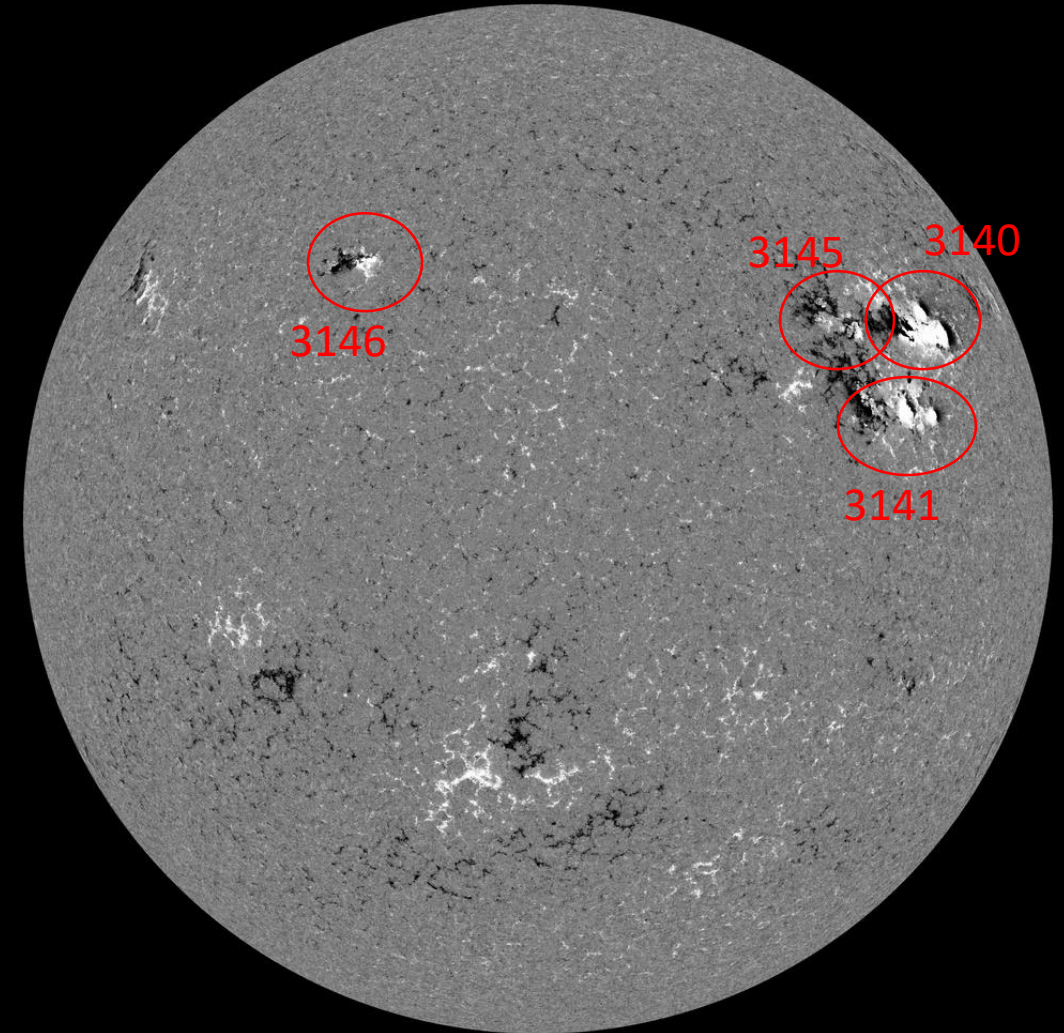
Solar active regions

SDO/HMI White Light 2022-11-14



SDO/HMI Quick-Look Continuum: 20221114_094500

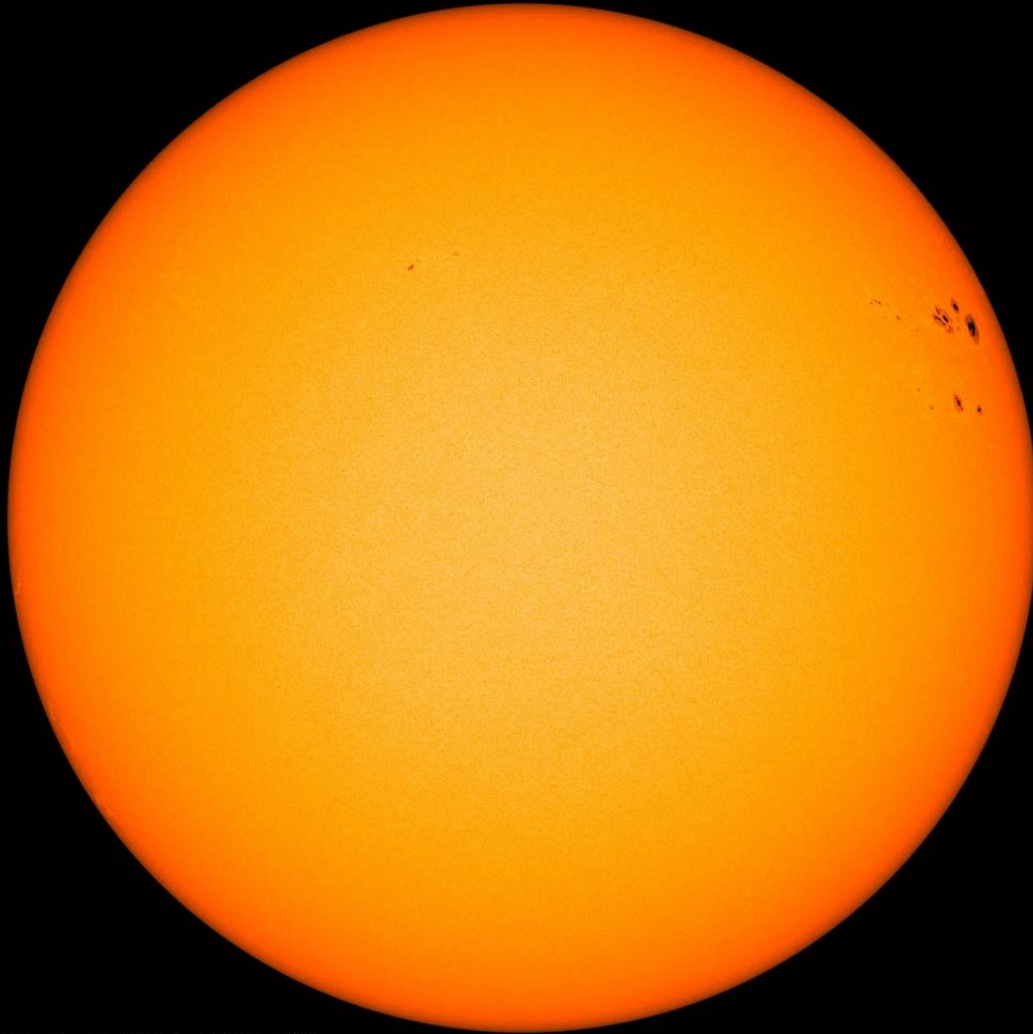
SDO/HMI Magnetogram 2022-11-14



SDO/HMI Quick-Look Magnetogram: 20221114_094500

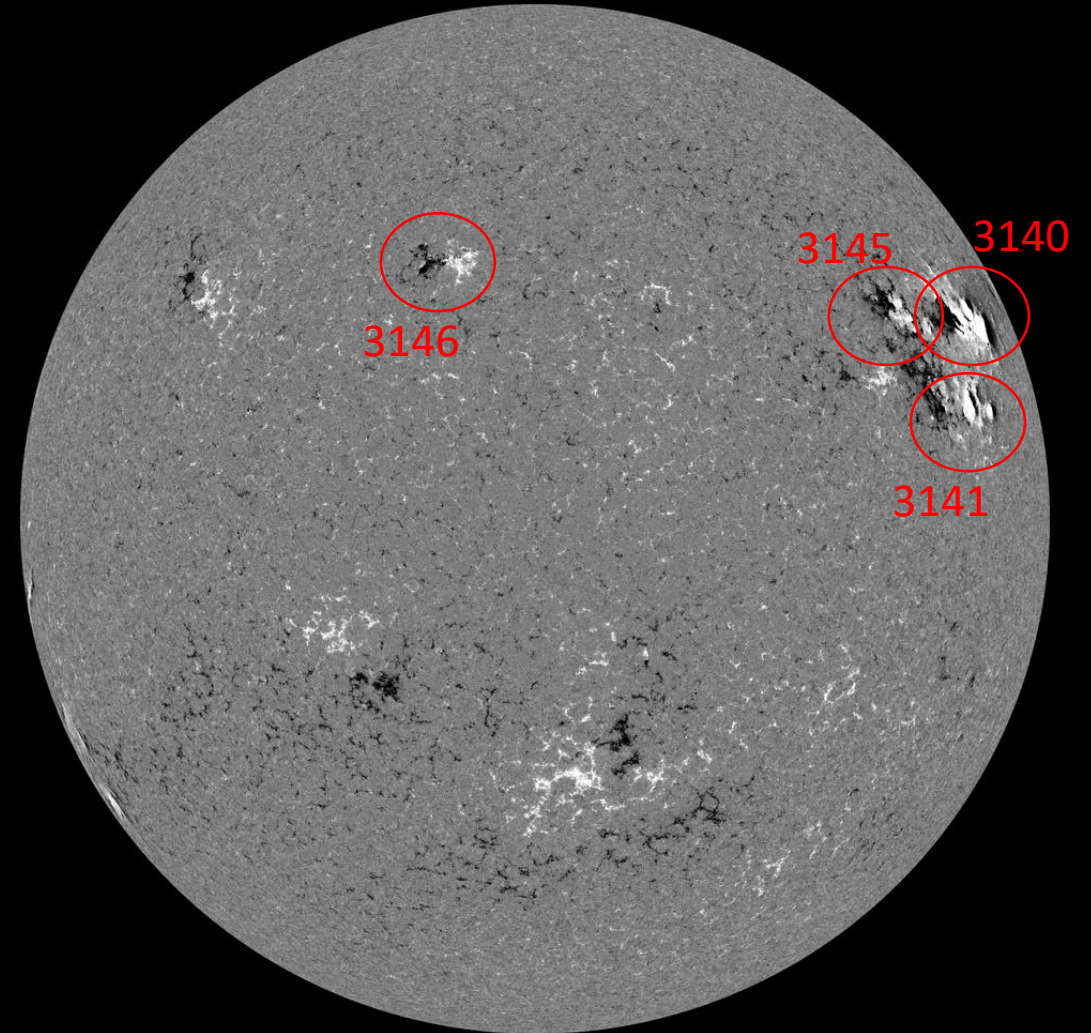
Solar active regions

SDO/HMI White Light 2022-11-15



SDO/HMI Quick-Look Continuum: 20221115_093000

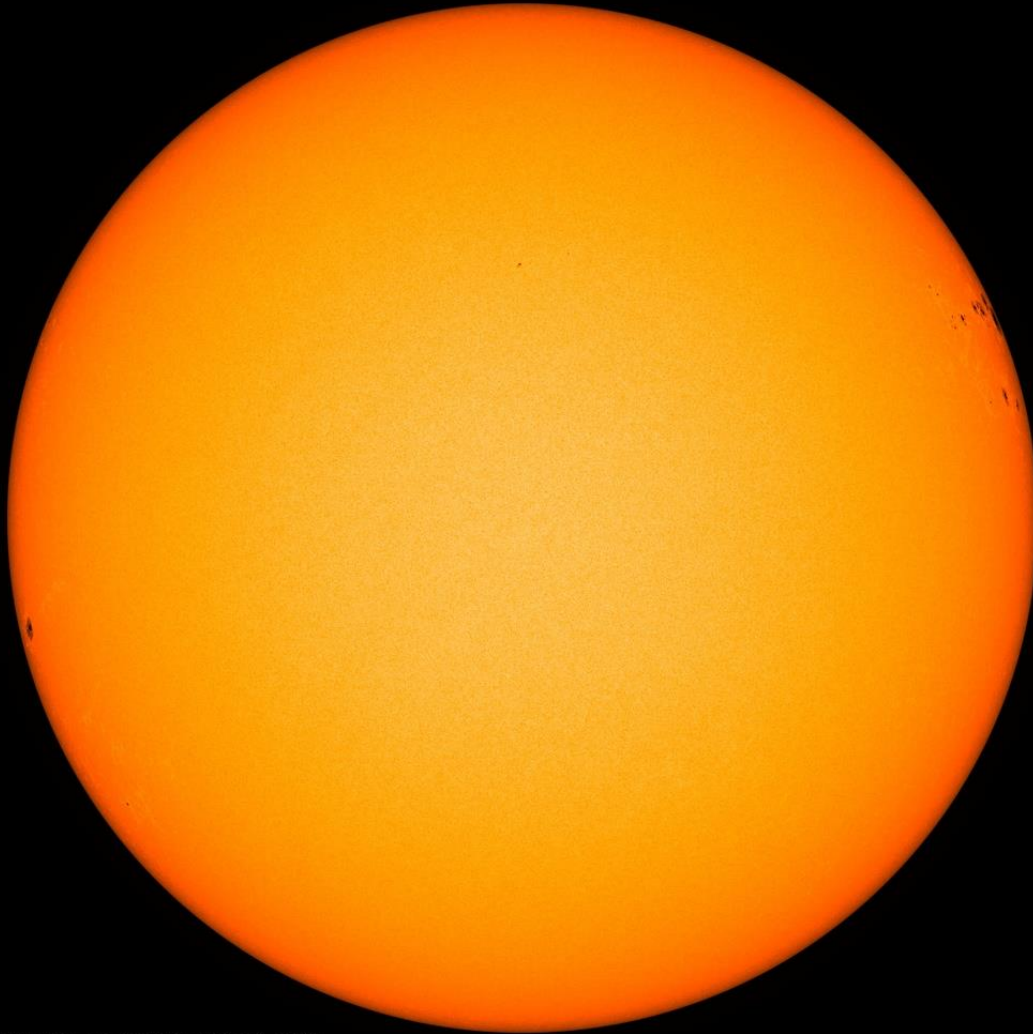
SDO/HMI Magnetogram 2022-11-15



SDO/HMI Quick-Look Magnetogram: 20221115_093000

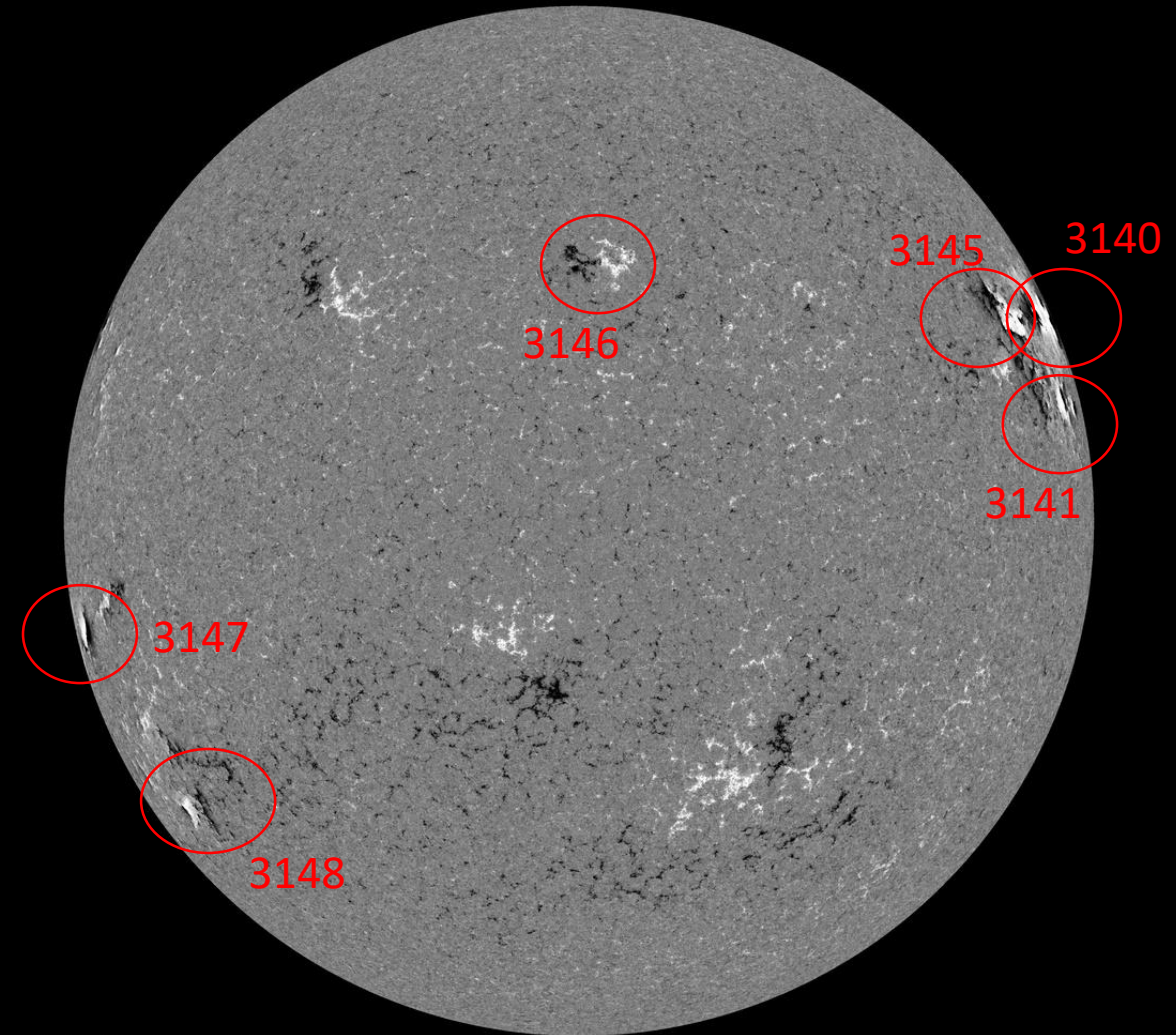
Solar active regions

SDO/HMI White Light 2022-11-16



SDO/HMI Quick-Look Continuum: 20221116_120000

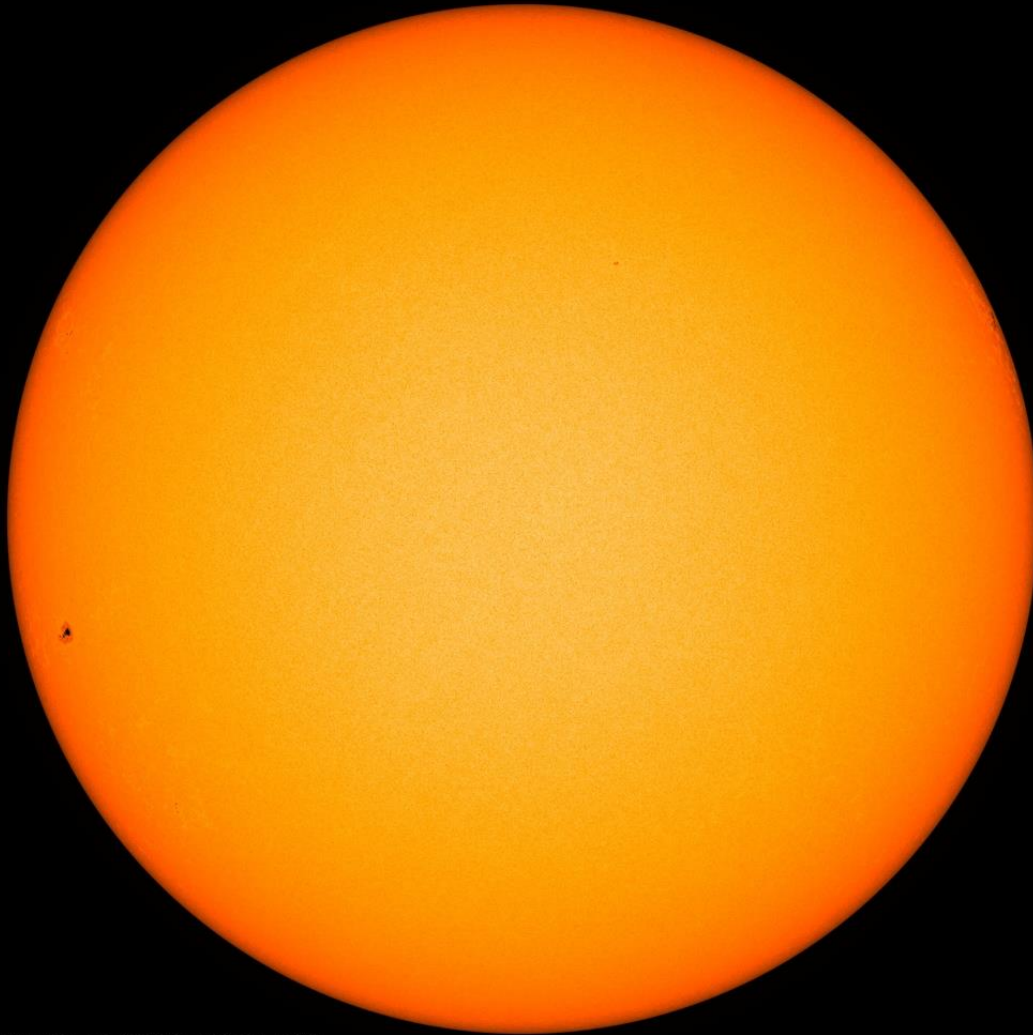
SDO/HMI Magnetogram 2022-11-16



SDO/HMI Quick-Look Magnetogram: 20221116_120000

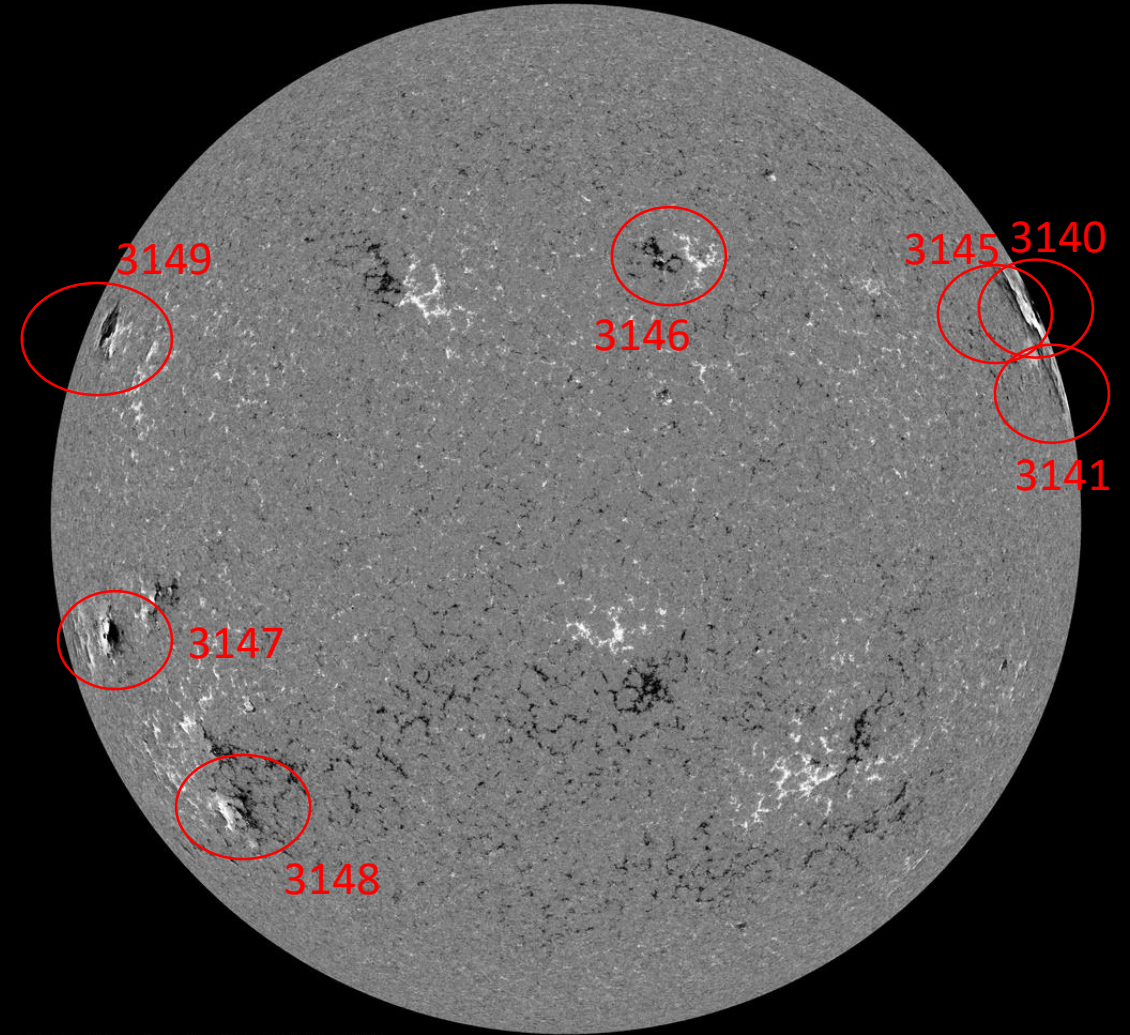
Solar active regions

SDO/HMI White Light 2022-11-17



SDO/HMI Quick-Look Continuum: 20221117_114500

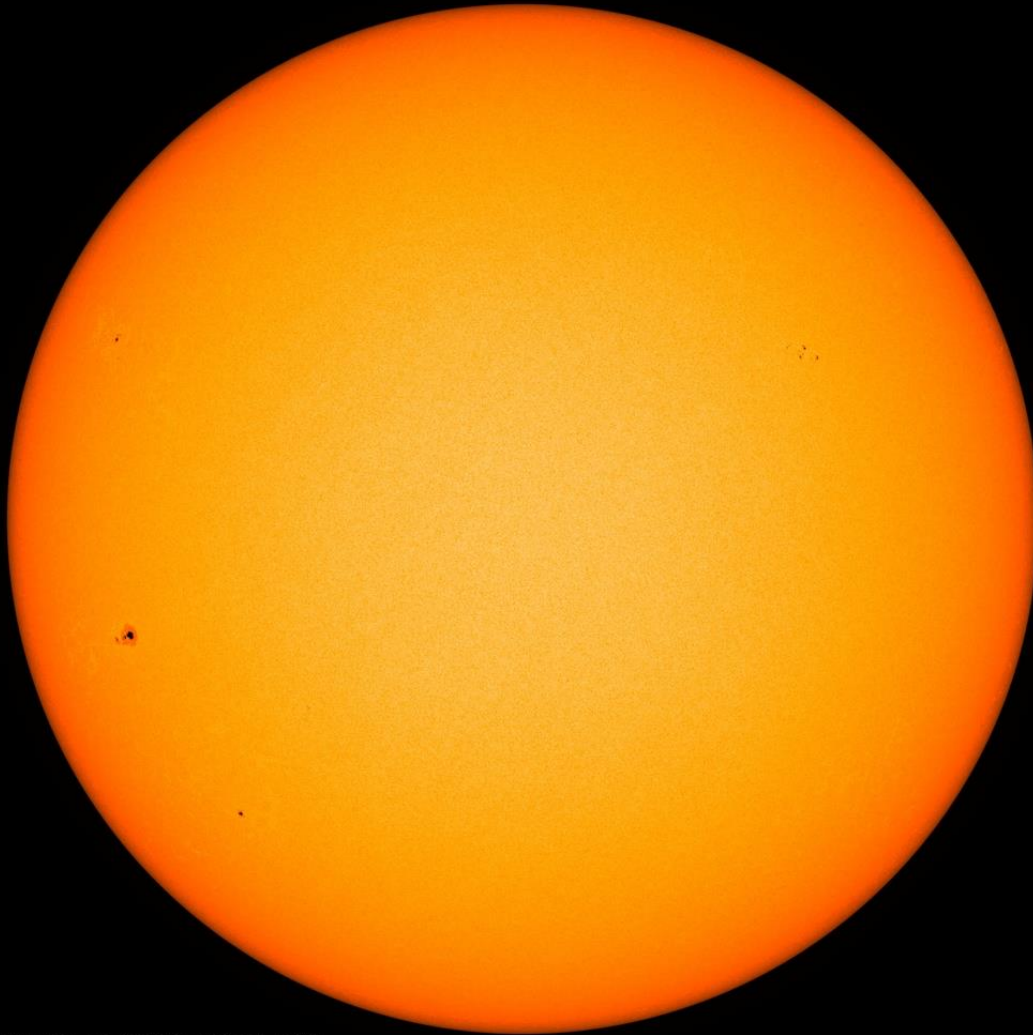
SDO/HMI Magnetogram 2022-11-17



SDO/HMI Quick-Look Magnetogram: 20221117_114500

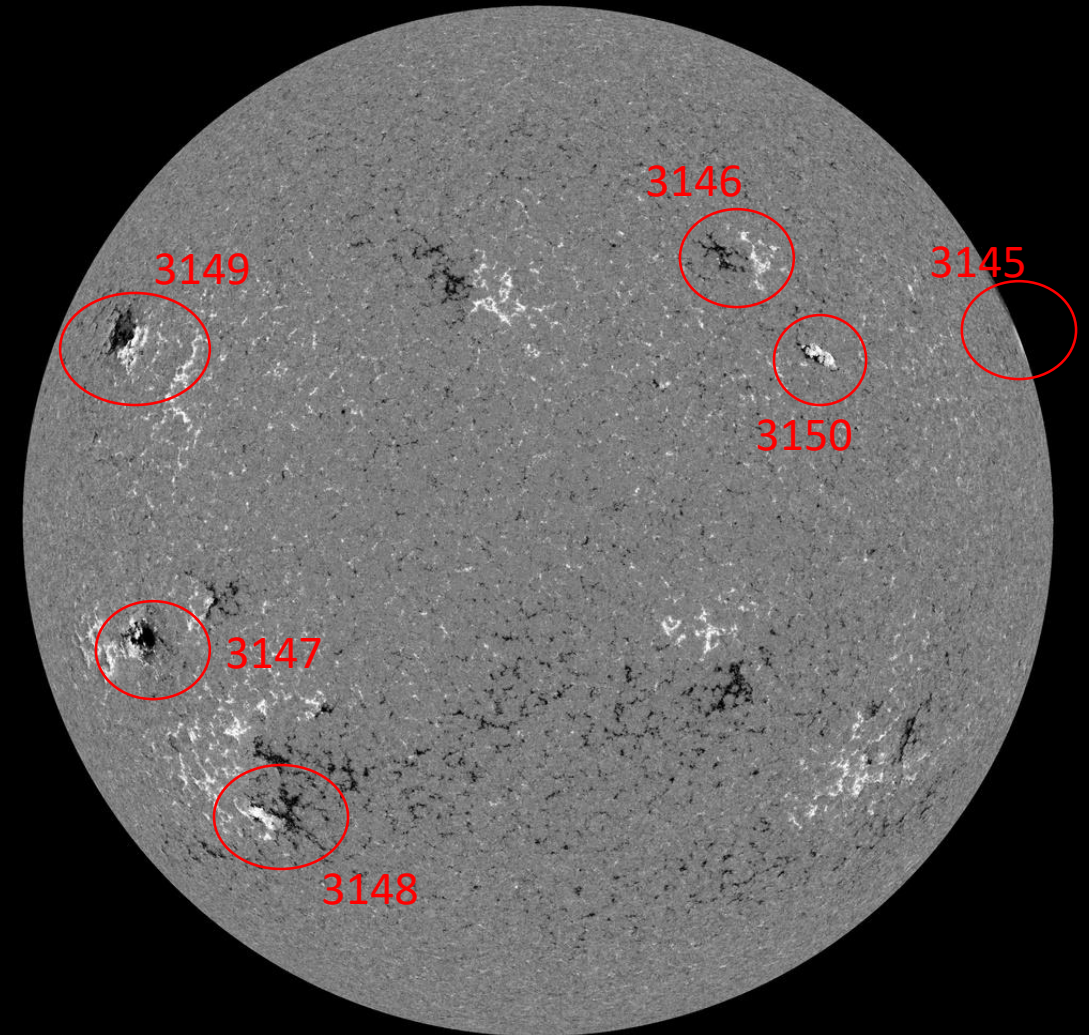
Solar active regions

SDO/HMI White Light 2022-11-18



SDO/HMI Quick-Look Continuum: 20221118_114500

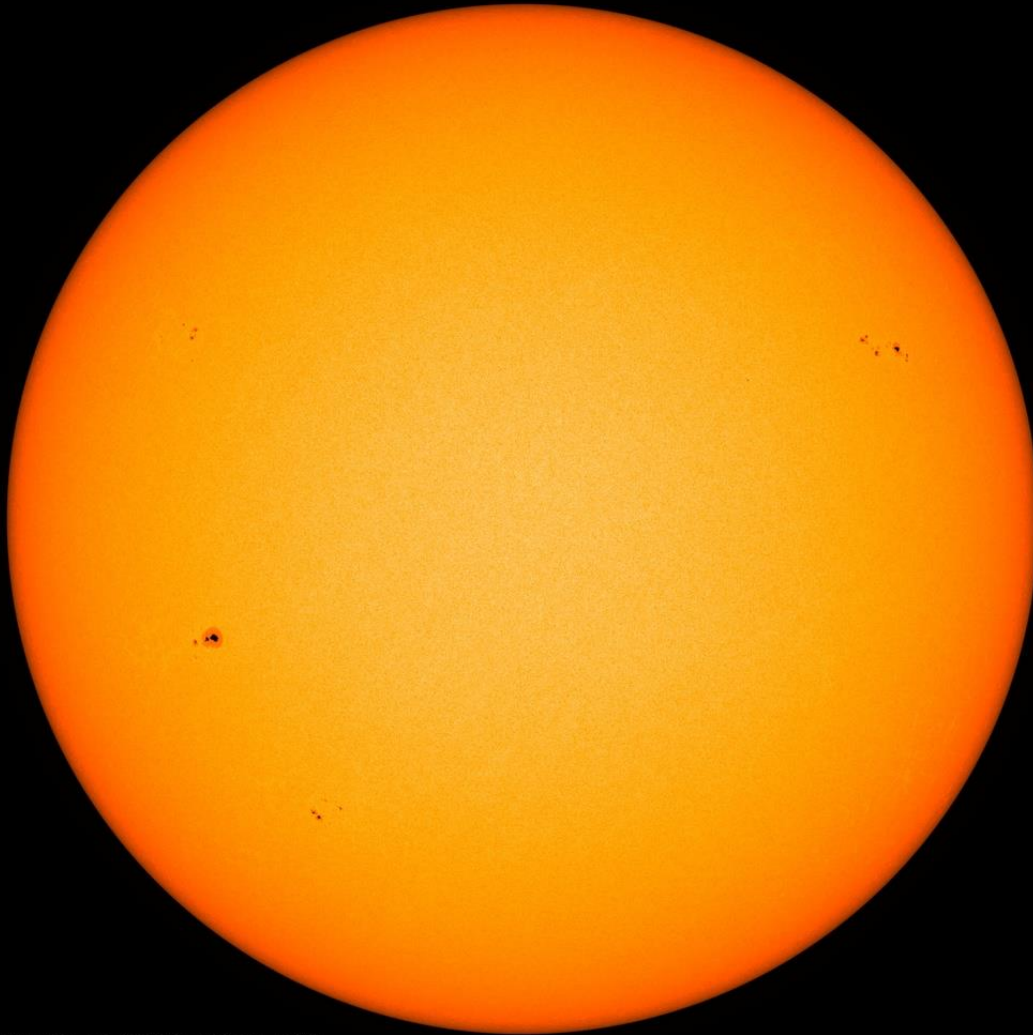
SDO/HMI Magnetogram 2022-11-18



SDO/HMI Quick-Look Magnetogram: 20221118_114500

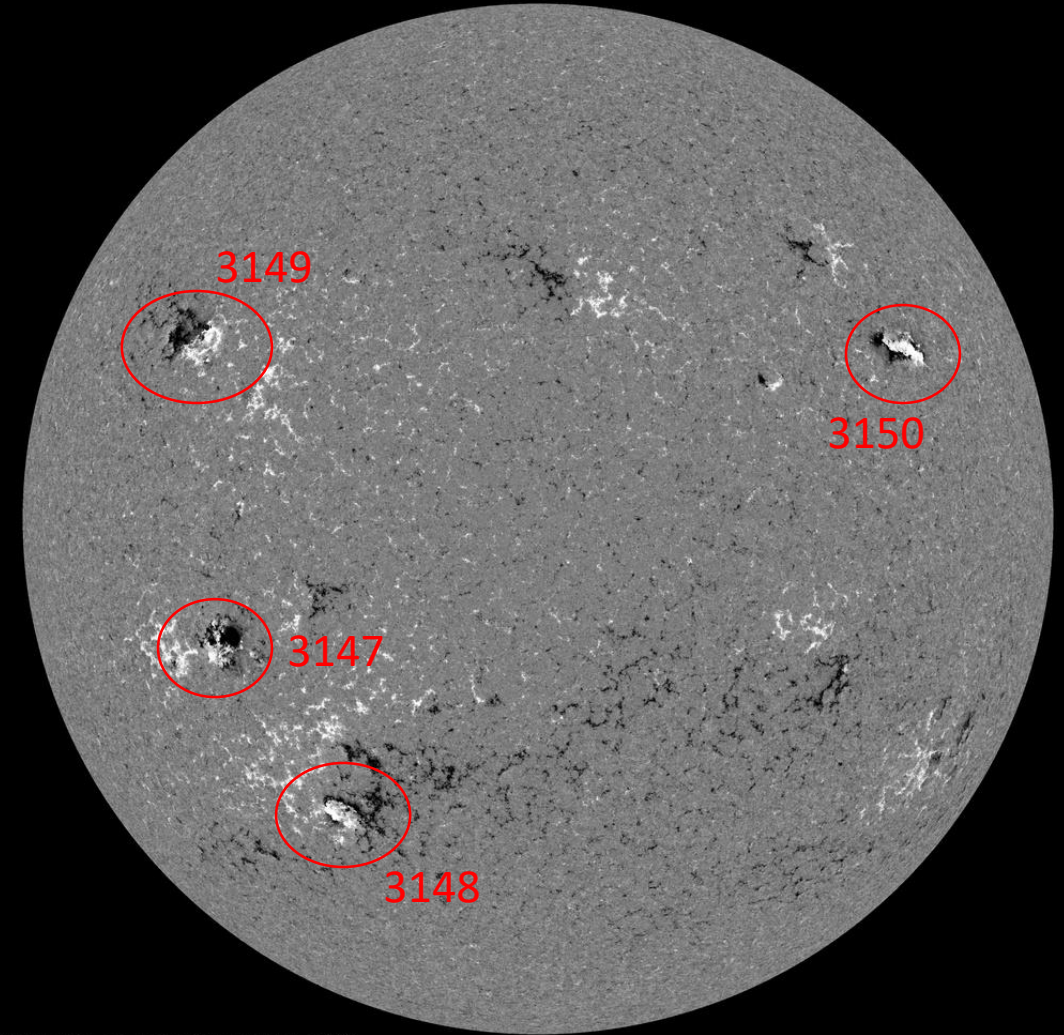
Solar active regions

SDO/HMI White Light 2022-11-19



SDO/HMI Quick-Look Continuum: 20221119_114500

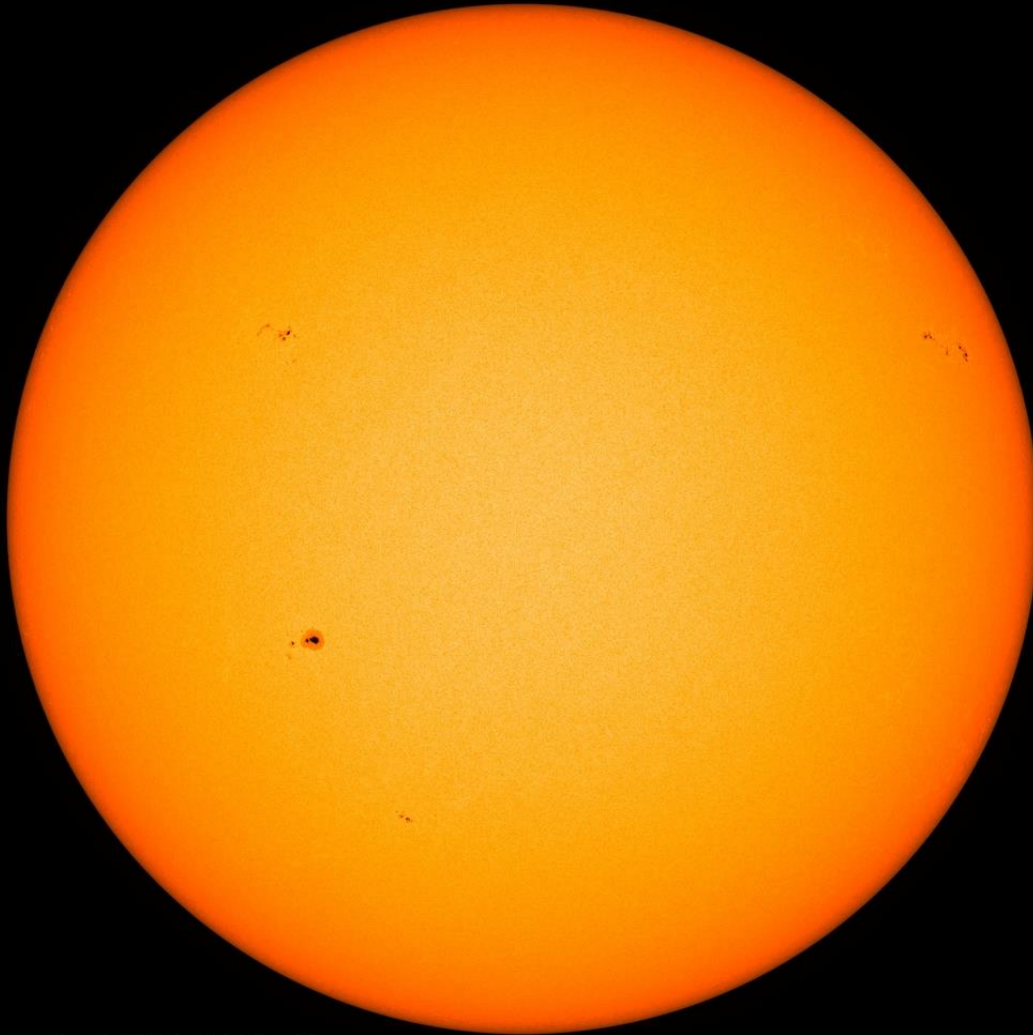
SDO/HMI Magnetogram 2022-11-19



SDO/HMI Quick-Look Magnetogram: 20221119_114500

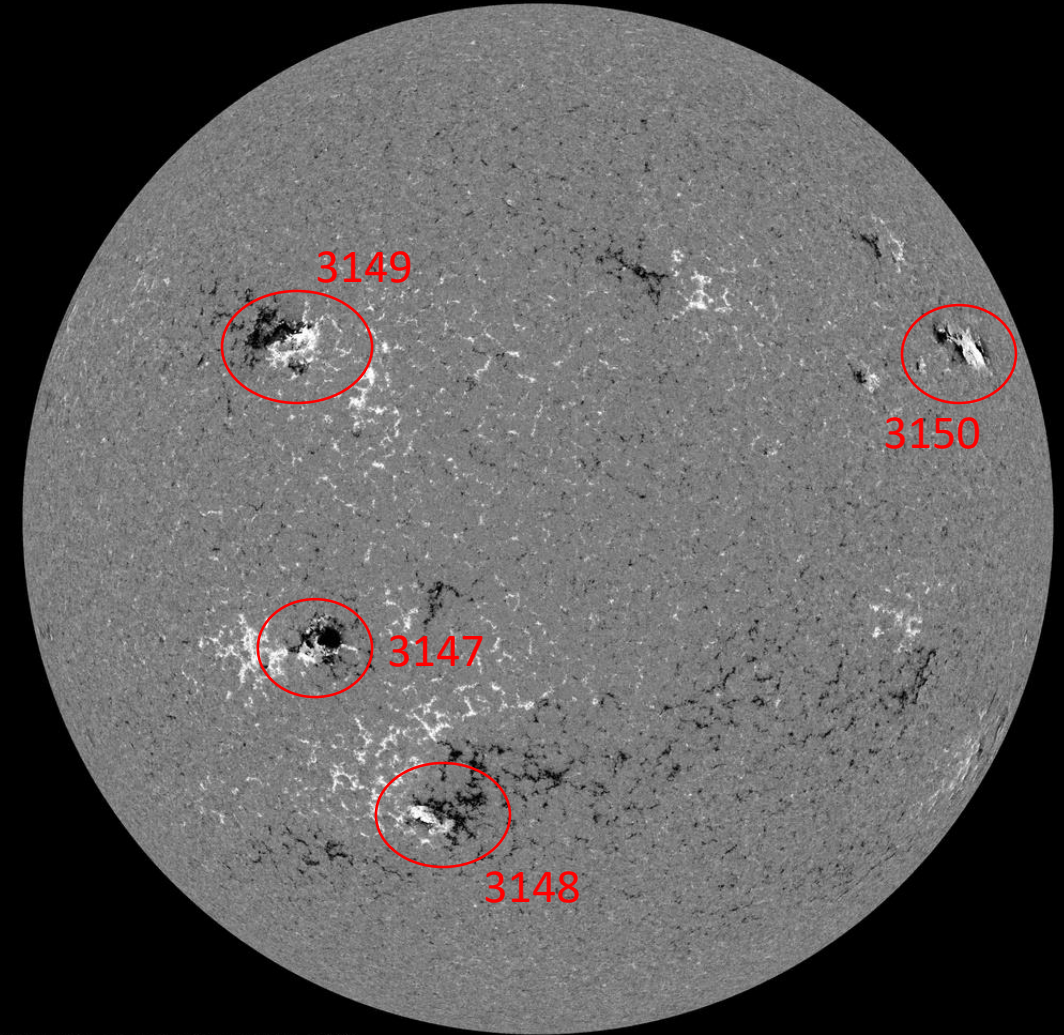
Solar active regions

SDO/HMI White Light 2022-11-20



SDO/HMI Quick-Look Continuum: 20221120_114500

SDO/HMI Magnetogram 2022-11-20

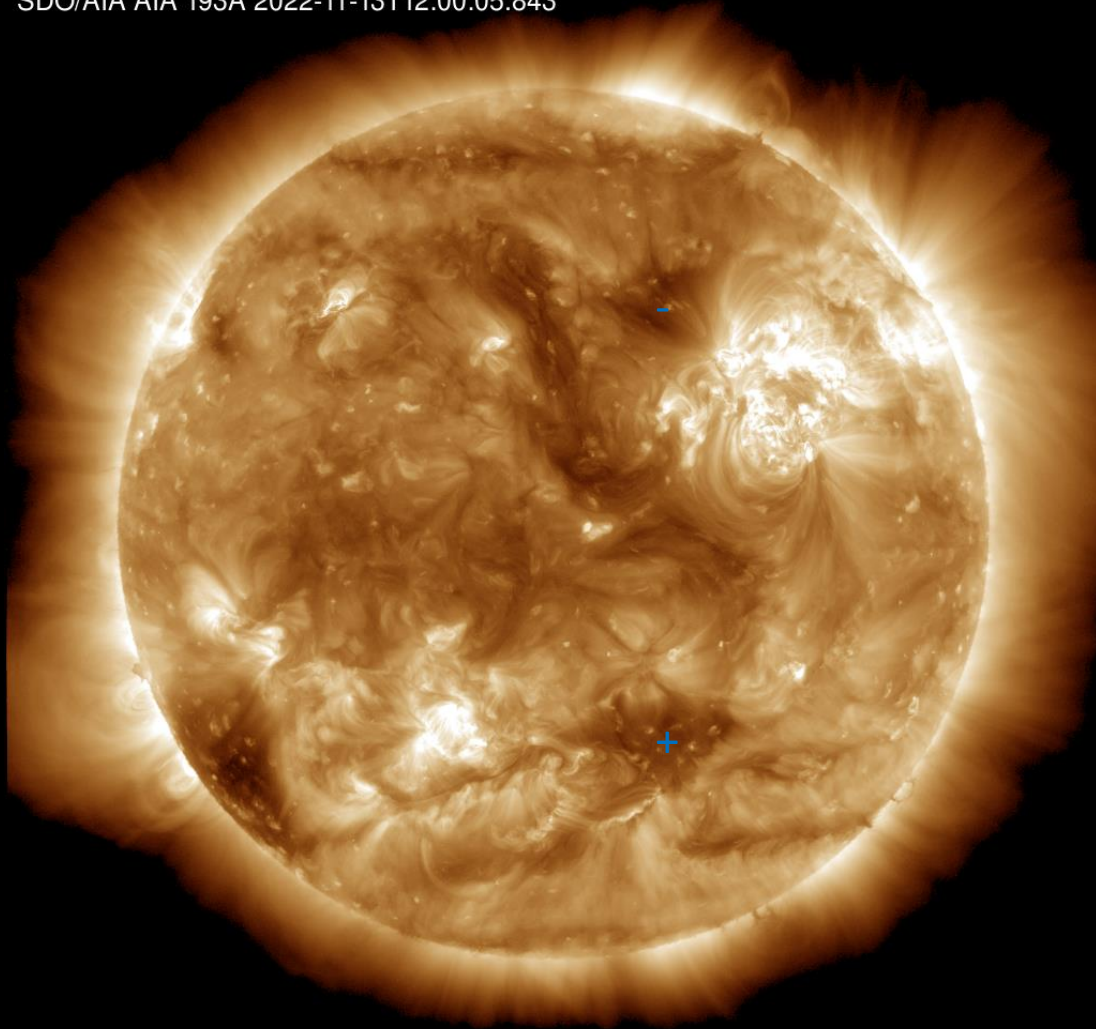


SDO/HMI Quick-Look Magnetogram: 20221120_114500

Coronal holes

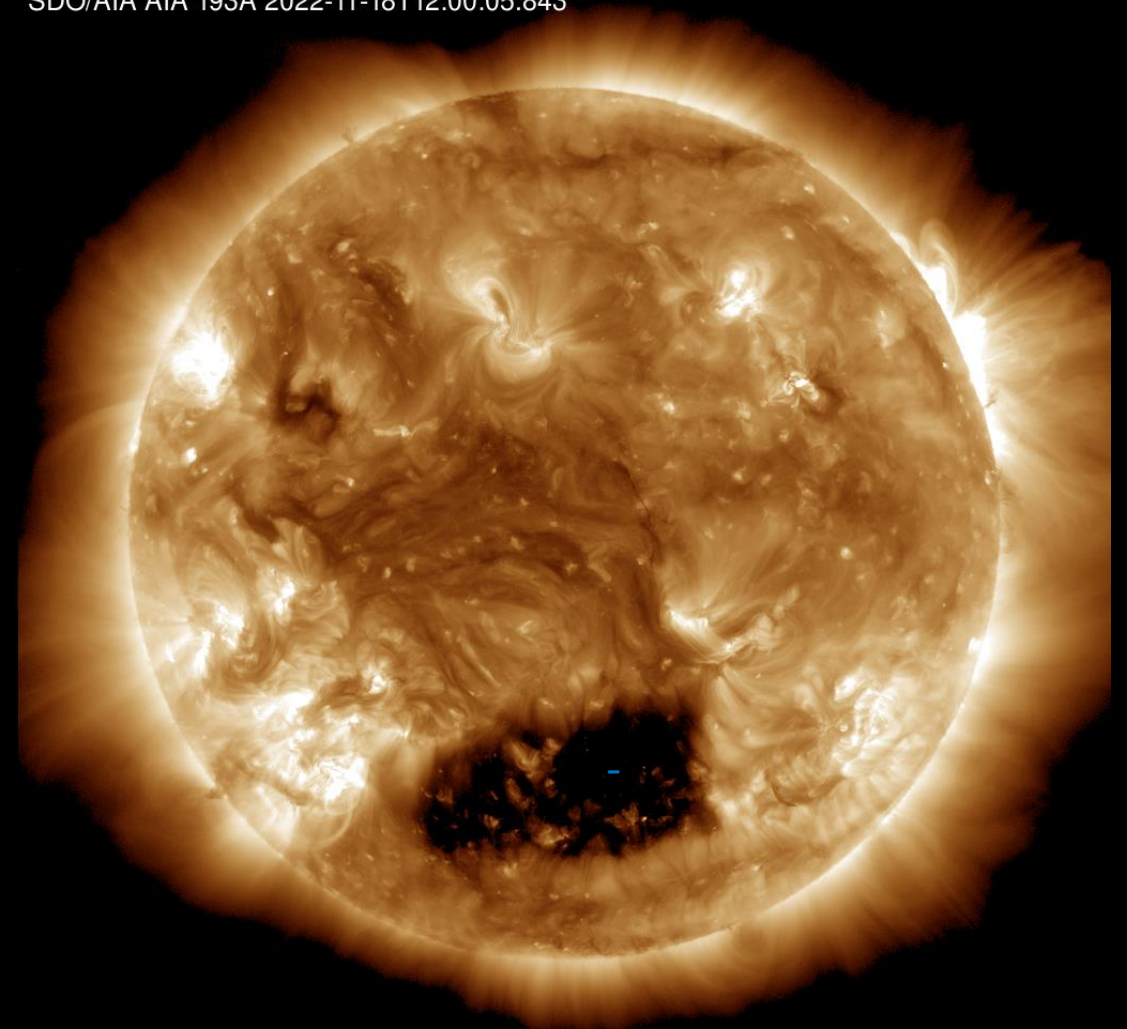
SDO/AIA 19.3 nm 2022-11-13

SDO/AIA AIA 193Å 2022-11-13T12:00:05.843



SDO/AIA 19.3 nm 2022-11-18

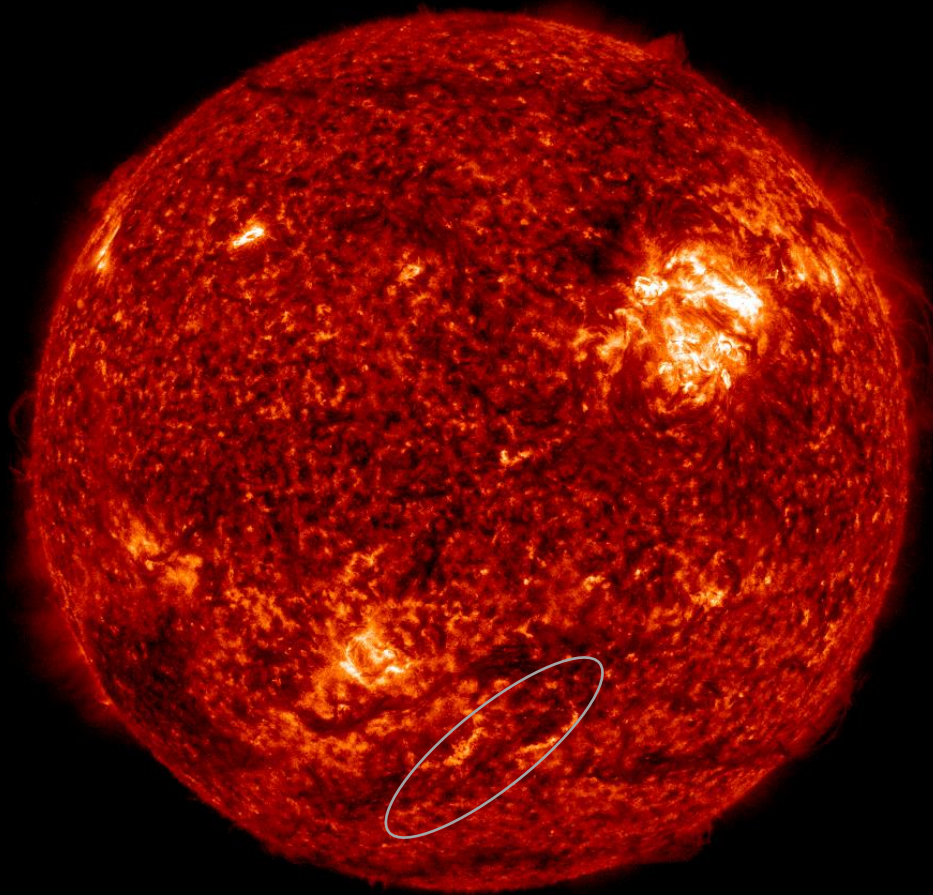
SDO/AIA AIA 193Å 2022-11-18T12:00:05.843



Filaments

SDO/AIA 30.4 nm 2022-11-13

SDO/AIA AIA 304Å 2022-11-13T12:00:06.581

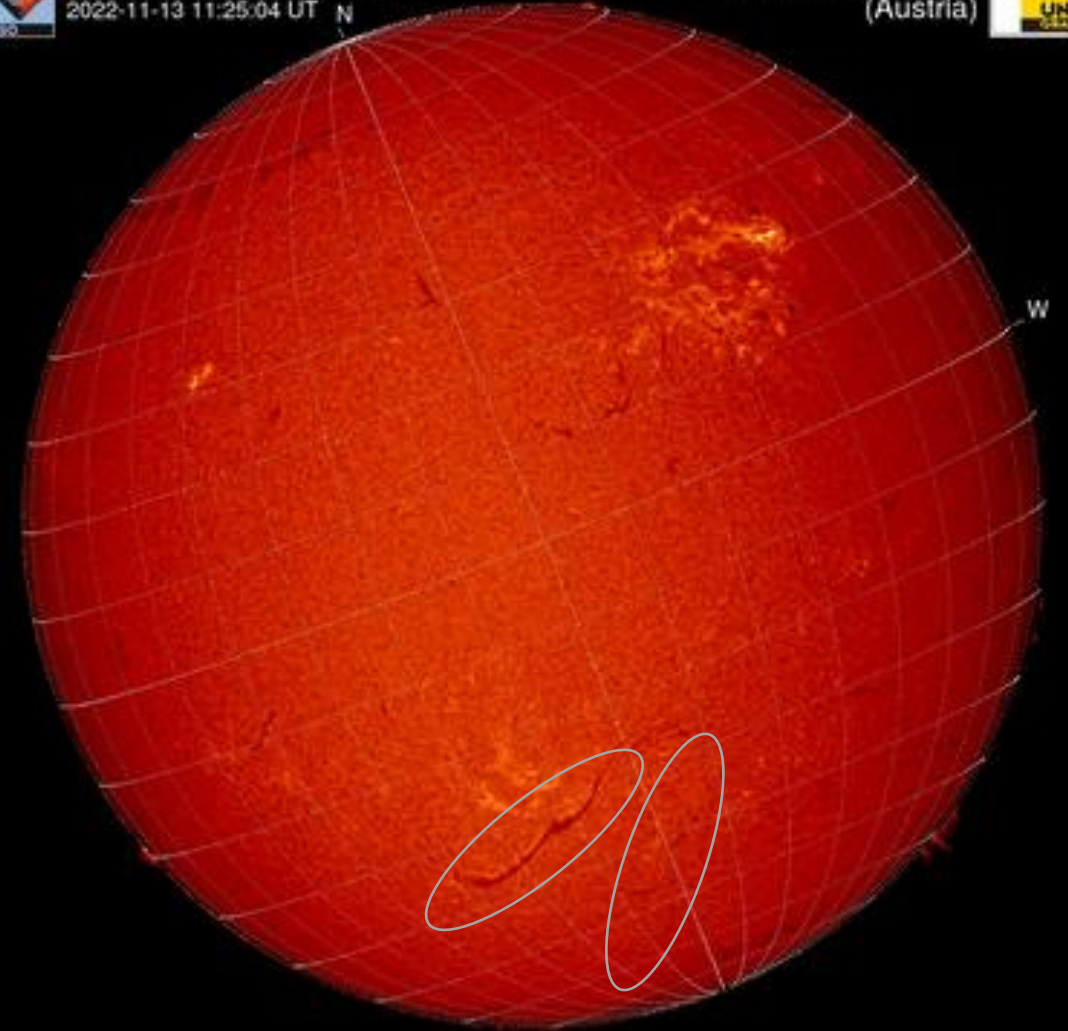


H-alpha 2022-11-13



Kanzelhöhe Observatory
2022-11-13 11:25:04 UT N

University of Graz
(Austria)



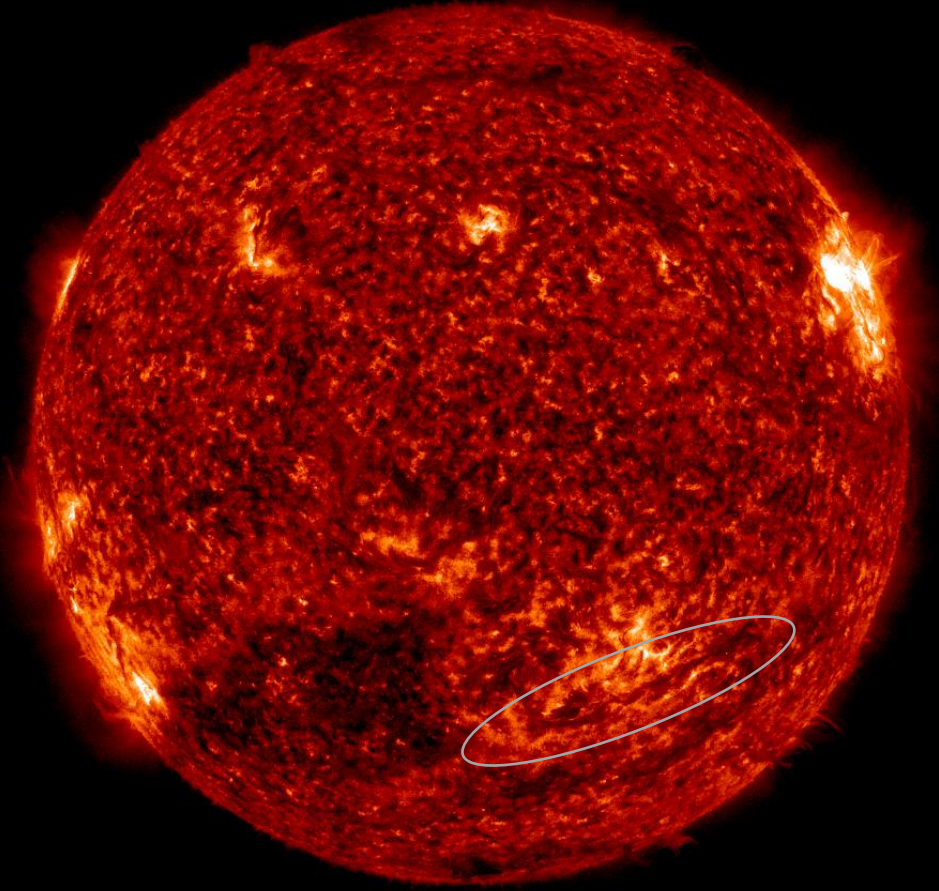
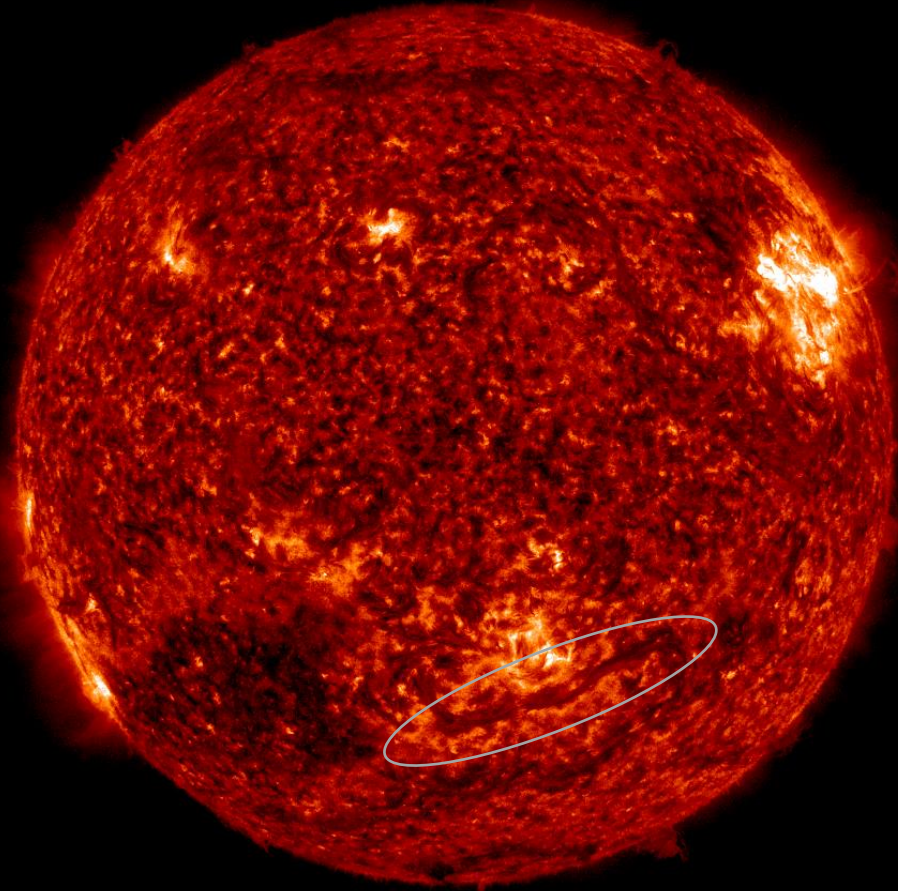
Filaments

SDO/AIA 30.4 nm 2022-11-15

SDO/AIA AIA 304Å 2022-11-15T12:00:06.580

SDO/AIA 30.4 nm 2022-11-16

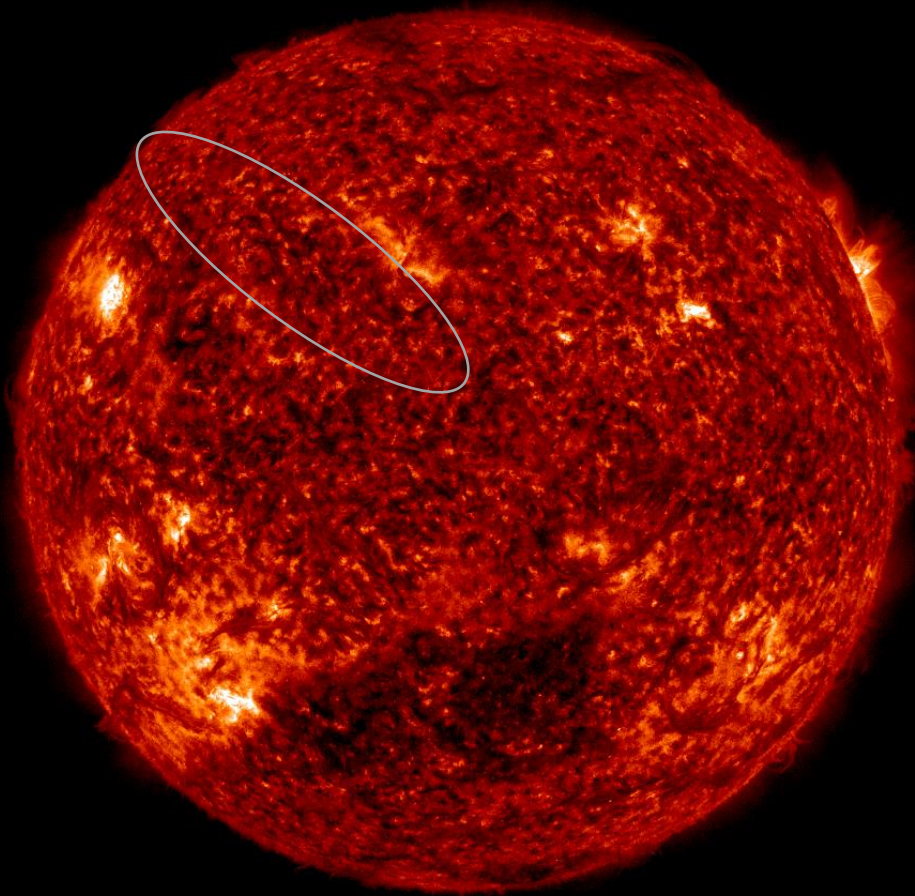
SDO/AIA AIA 304Å 2022-11-16T12:00:18.583



Filaments

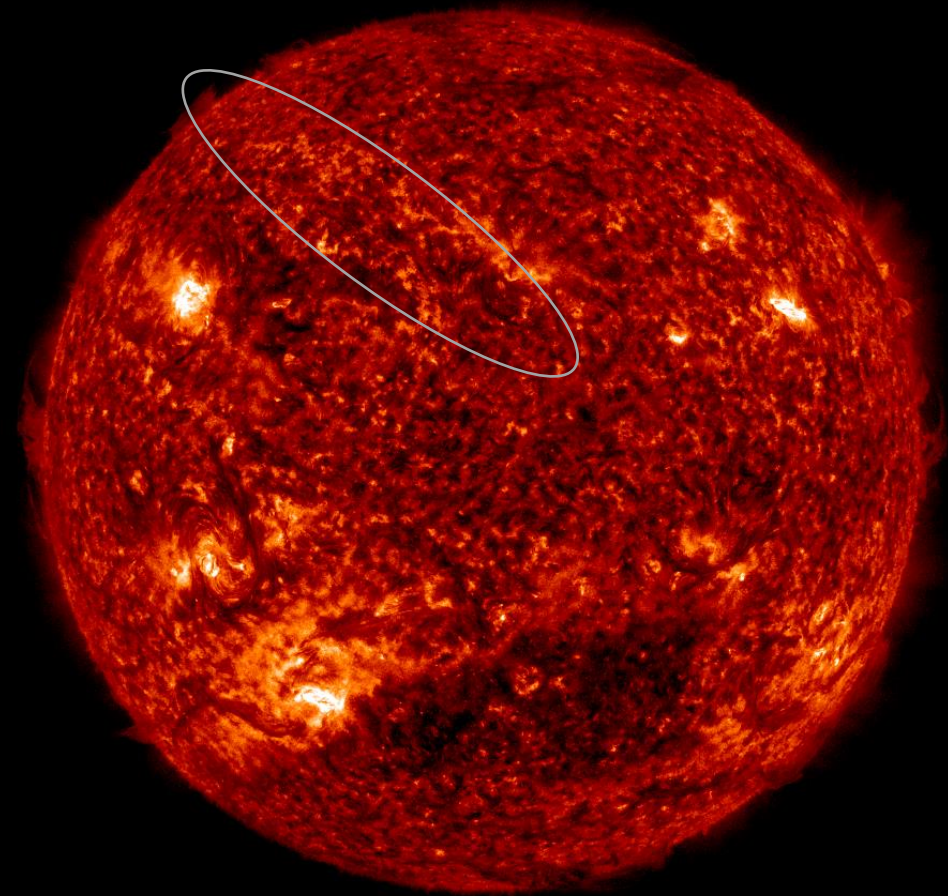
SDO/AIA 30.4 nm 2022-11-18

SDO/AIA AIA 304Å 2022-11-18T12:00:06.580



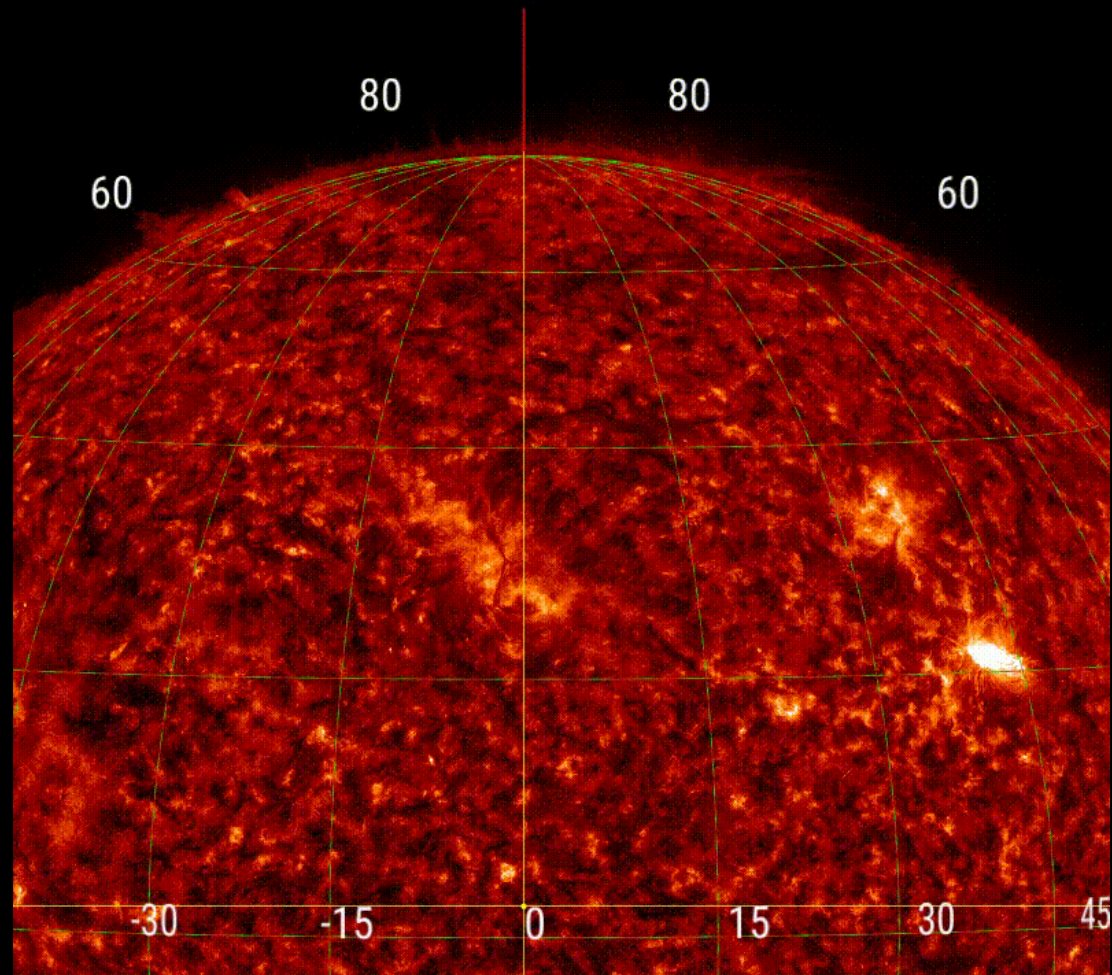
SDO/AIA 30.4 nm 2022-11-19

SDO/AIA AIA 304Å 2022-11-19T12:00:06.581



Filaments

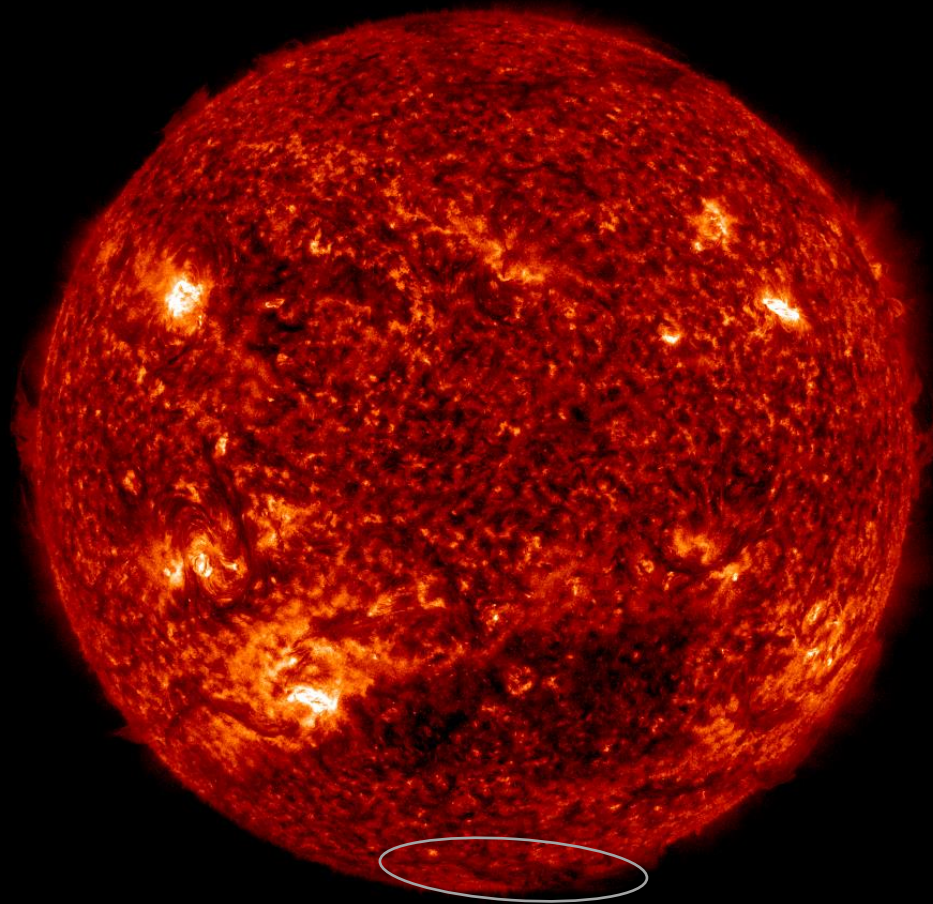
SDO/AIA 30.4 nm 2022-11-19



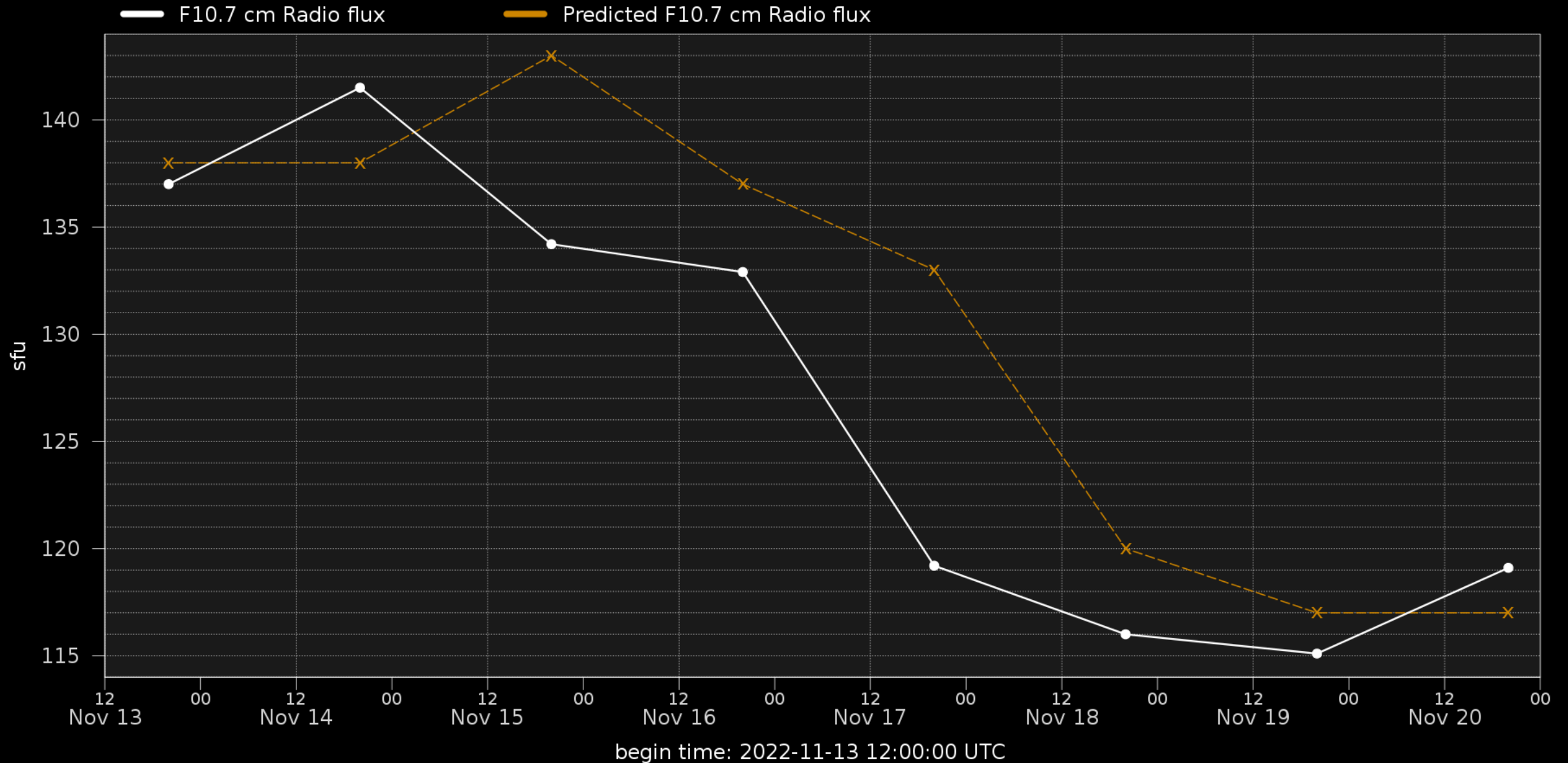
Filaments

SDO/AIA 30.4 nm 2022-11-19

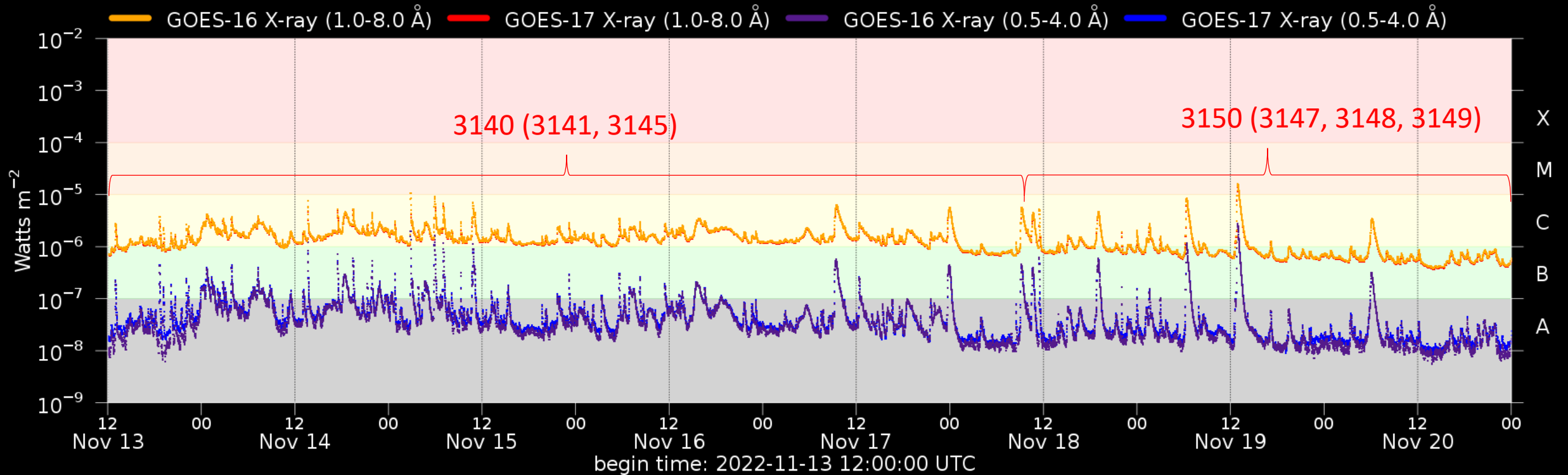
SDO/AIA AIA 304Å 2022-11-19T12:00:06.581



Solar F10.7cm radio flux



Flaring activity

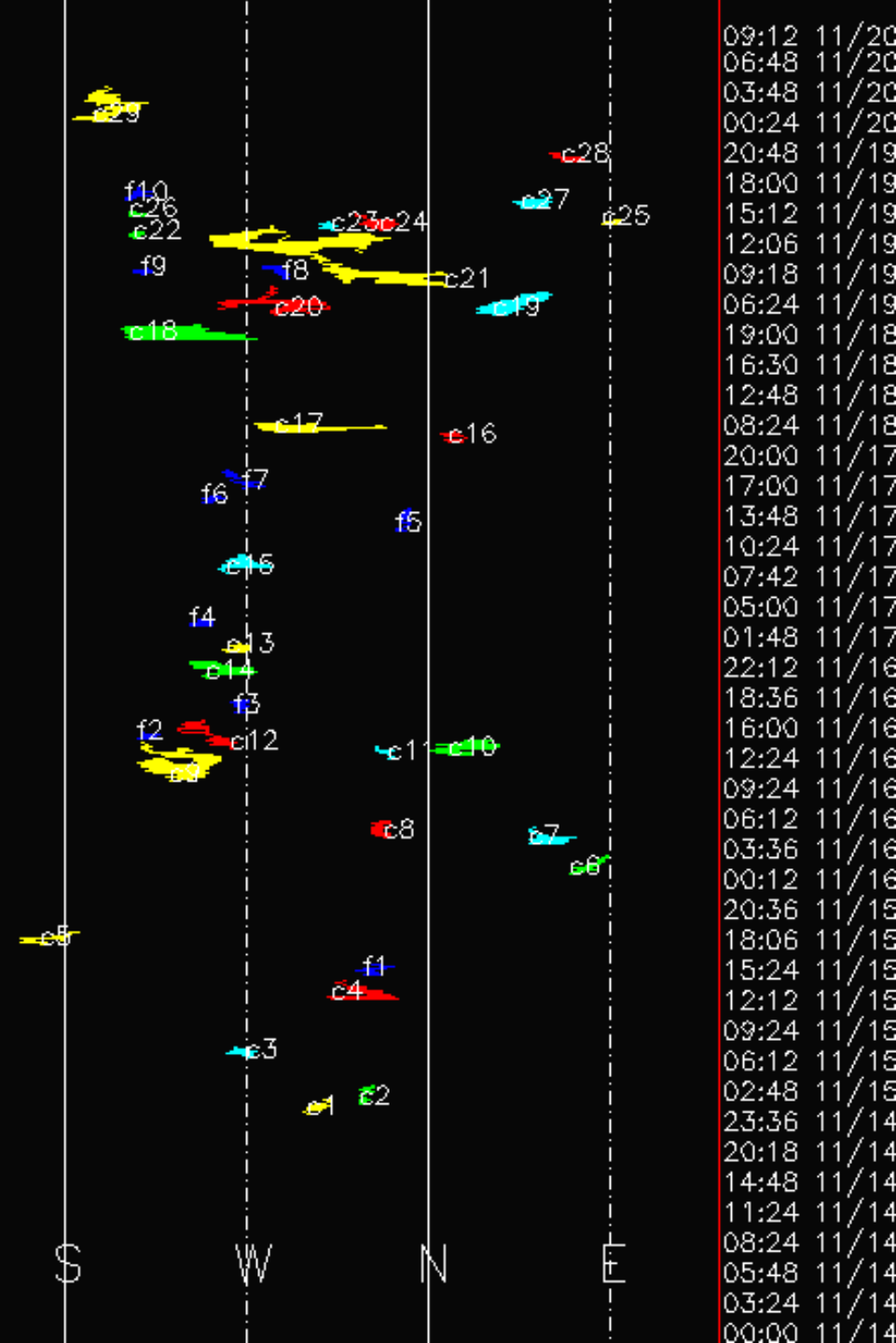


Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2022-11-13	2022-11-14	2022-11-15	2022-11-16	2022-11-17	2022-11-18	2022-11-19	2022-11-20
Probability (%)	95 55 10	95 55 15	95 45 05	70 15 05	80 10 01	55 05 01	75 10 01	75 10 01
Observed (#)	11 00 00	13 01 00	08 00 00	01 00 00	08 00 00	09 00 00	02 01 00	00 00 00

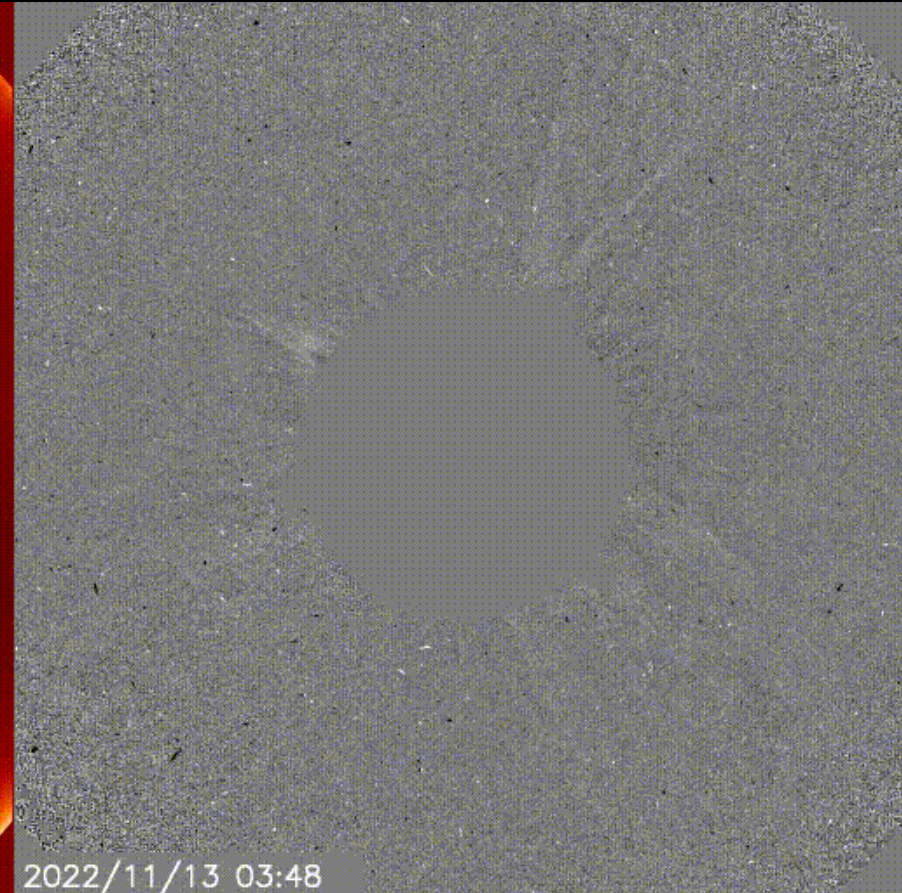
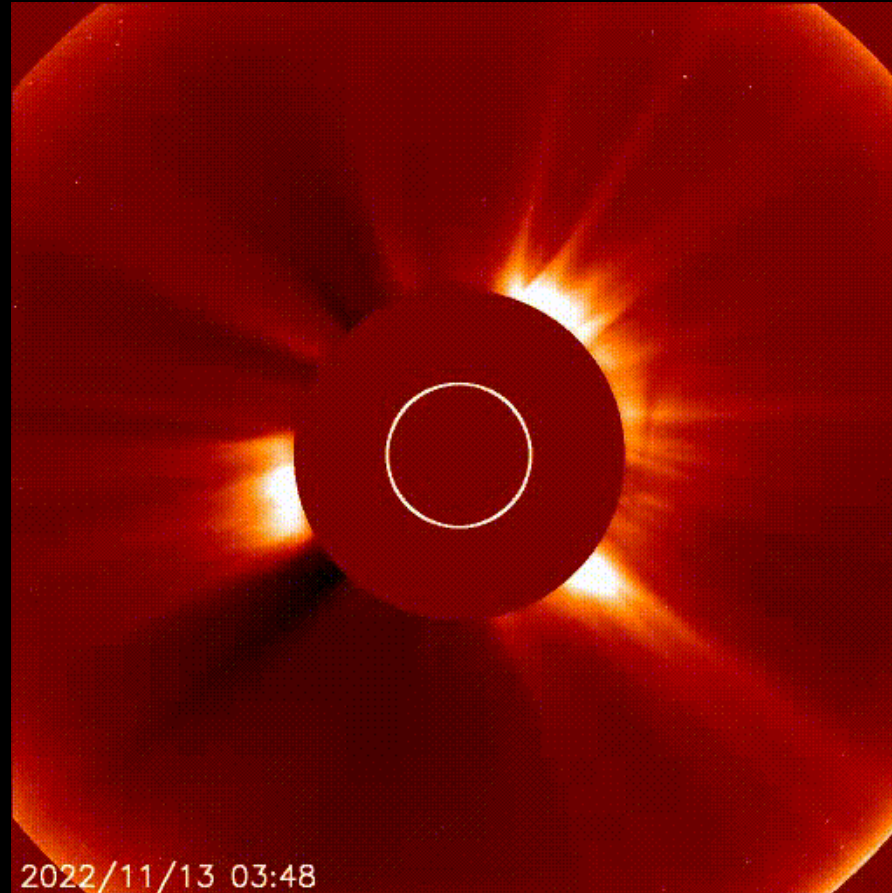
Coronal Mass Ejections

- Before noon 2022-11-13: South filament eruption
- 2022-11-14 3:36UTC: CME NW
- 2022-11-16 13:25UTC: CME SW related to S filament eruption
- 2022-11-18 9:36UTC NW and 2022-11-19 SW before 3:48UTC: limb or backsided
- 2022-11-19 6:23UTC C8.3 flare from 3150 with dimming followed by filament eruption from NE quadrant erupting towards the North. Both too far off Sun-Earth line
- 2022-11-19 12:56UTC M1.6 flare with dimming and radio bursts NorthWest too narrow and off Sun-Earth line
- ➔ None expected to arrive at Earth.



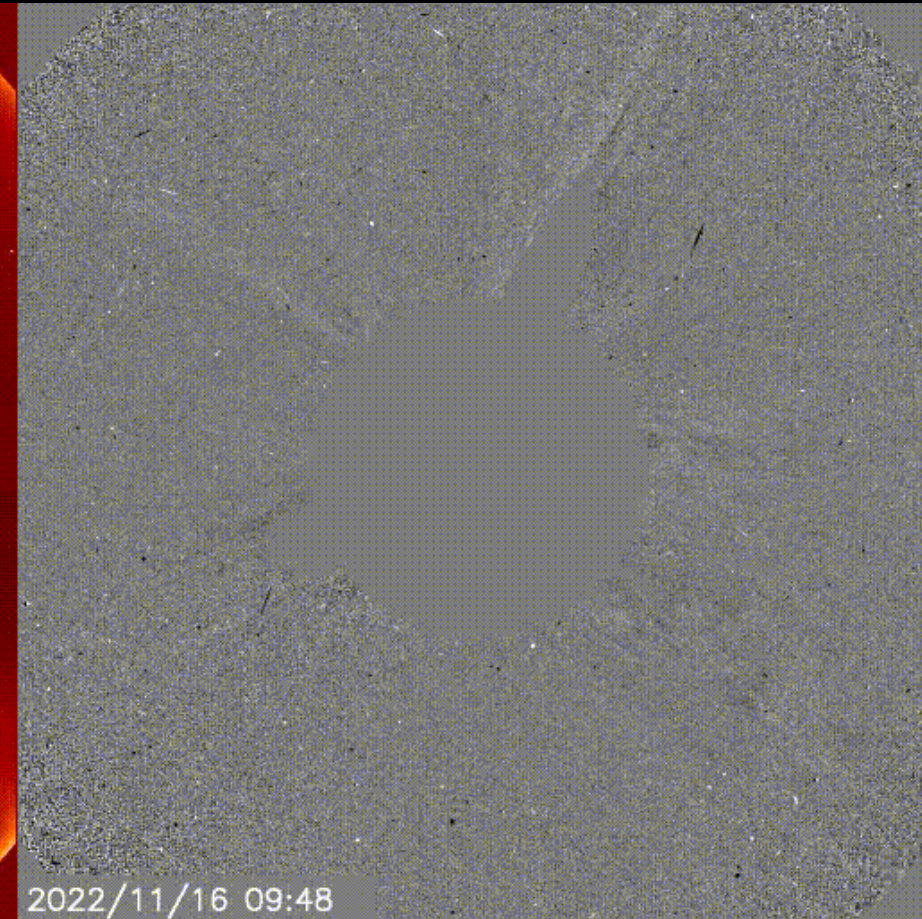
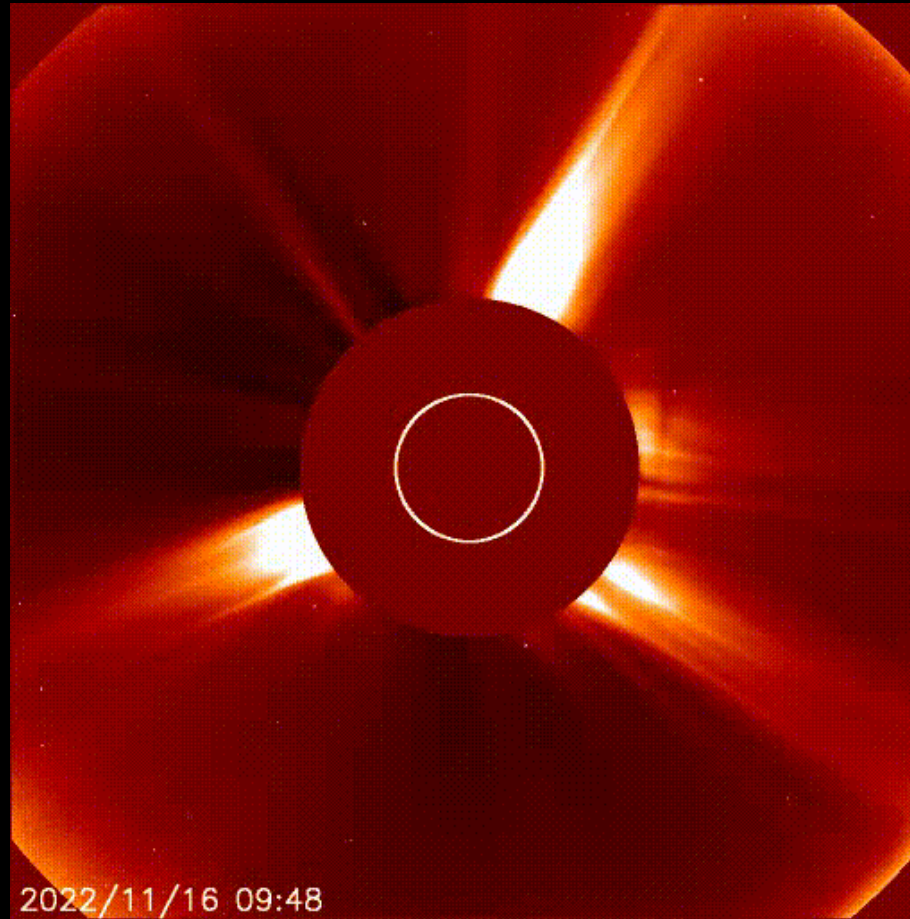
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Solar Wind and

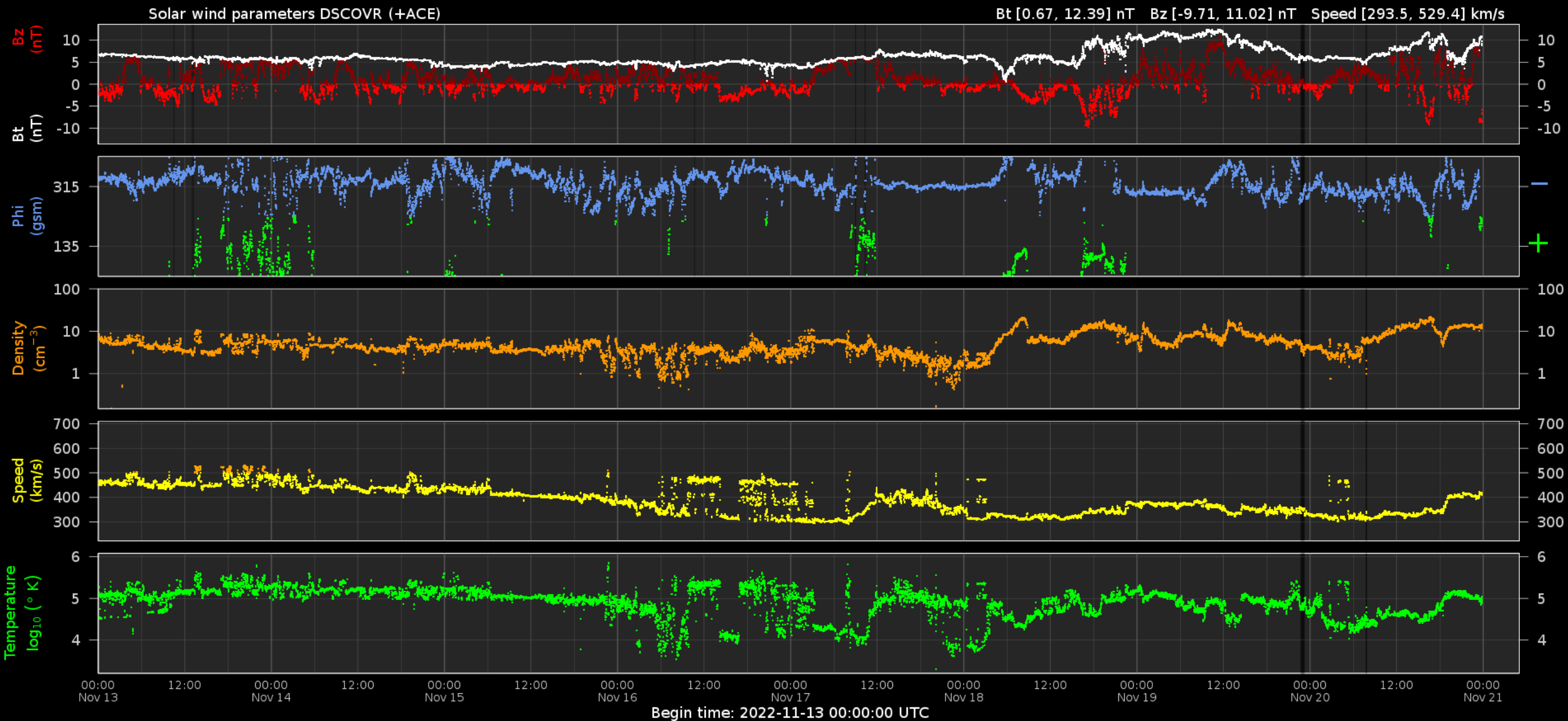
Geomagnetic Activity



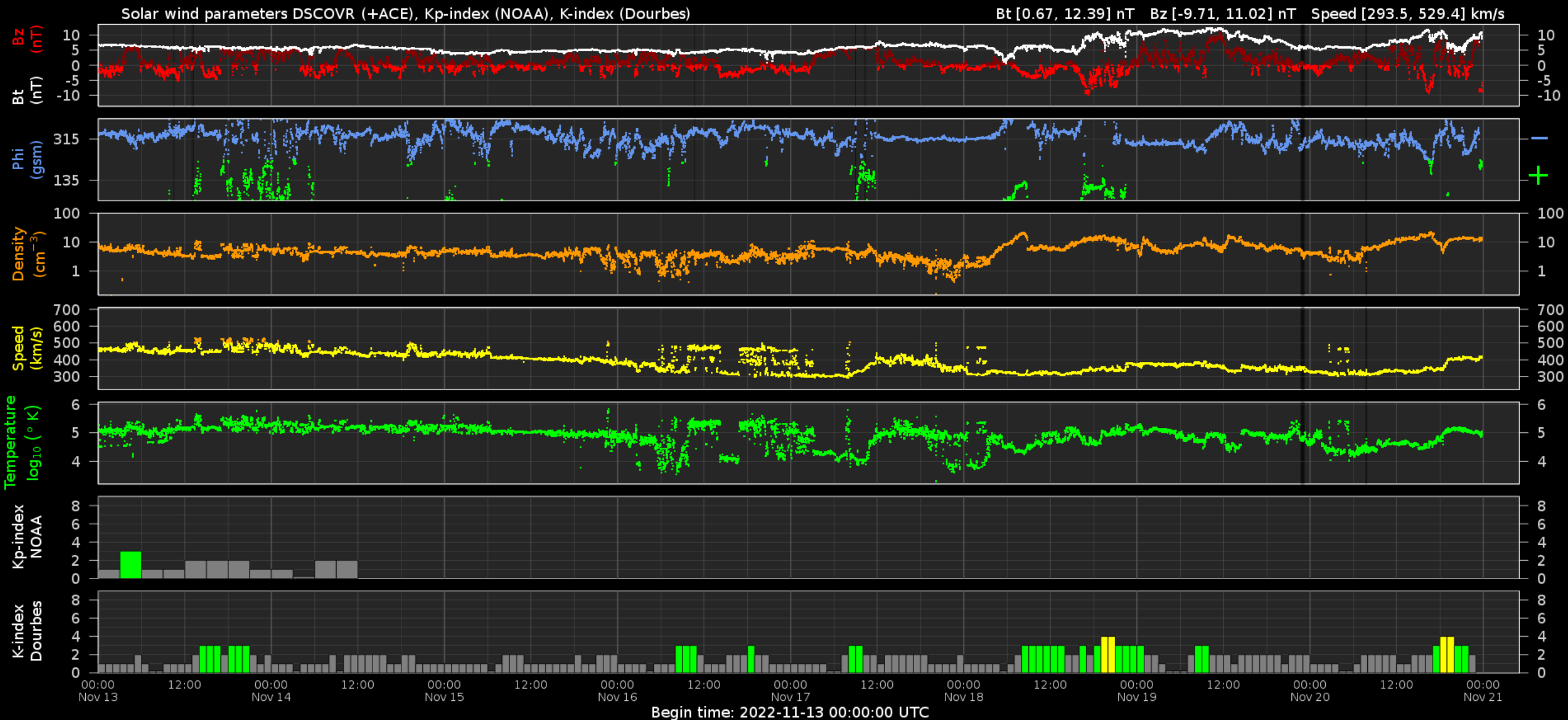
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Solar wind parameters



Solar wind parameters & K-indices



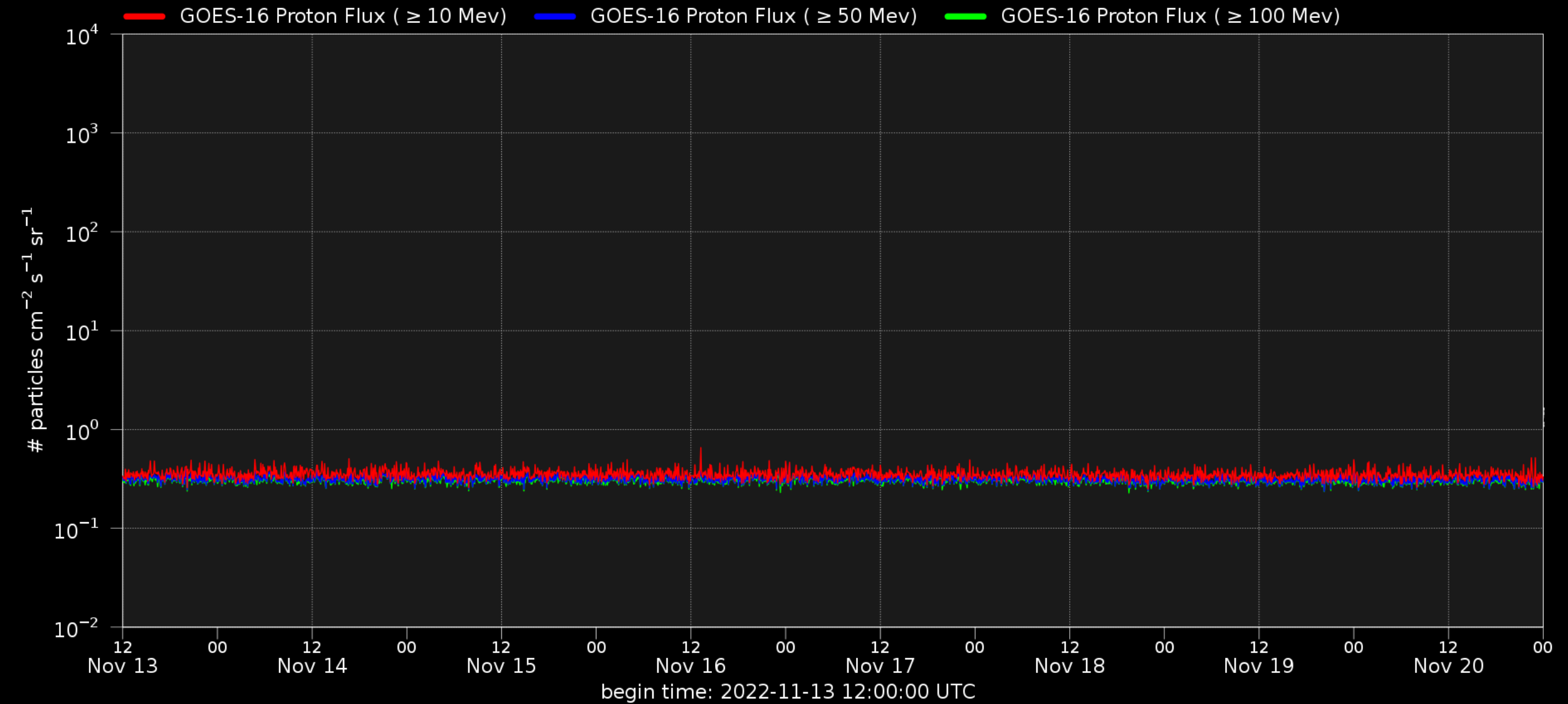
Energetic Particles



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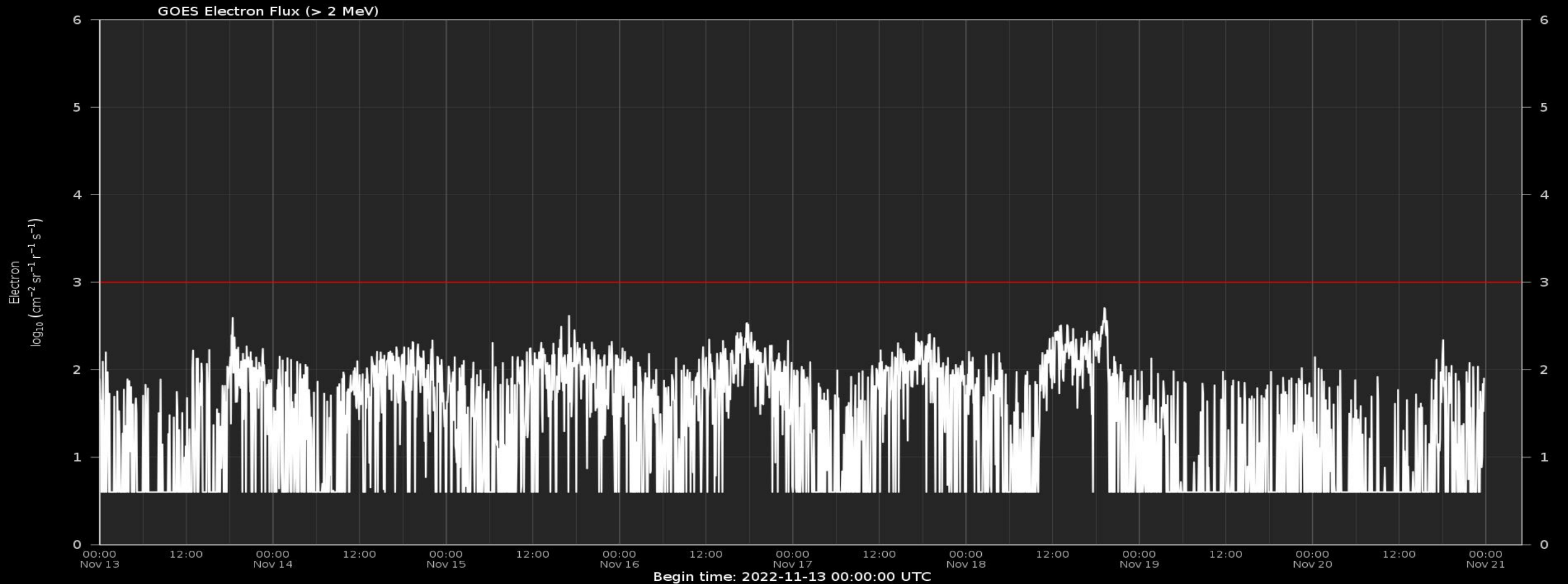
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

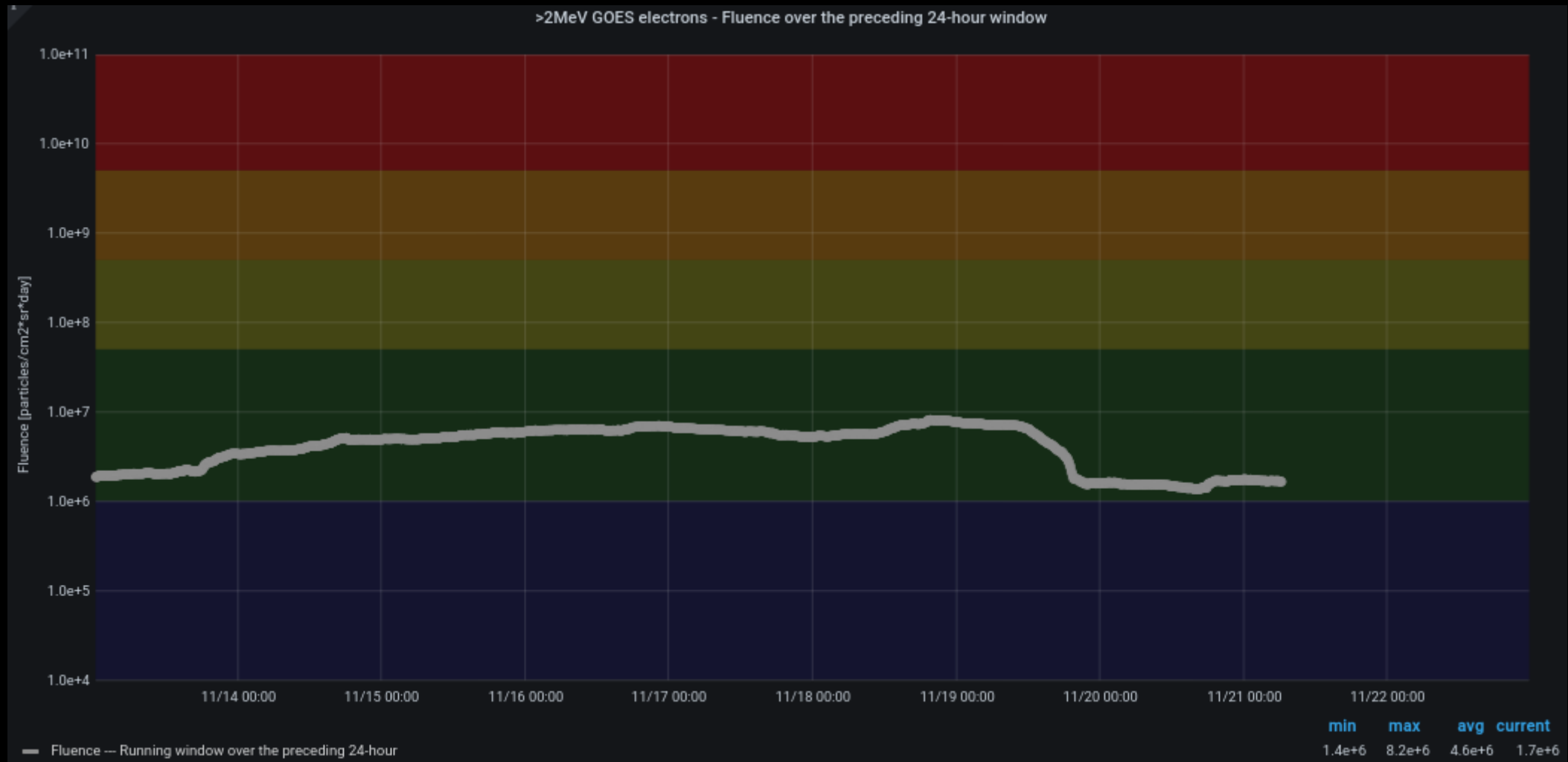
www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php



Electron fluence at GEO

www.stce.be/educational/classification#electrons

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



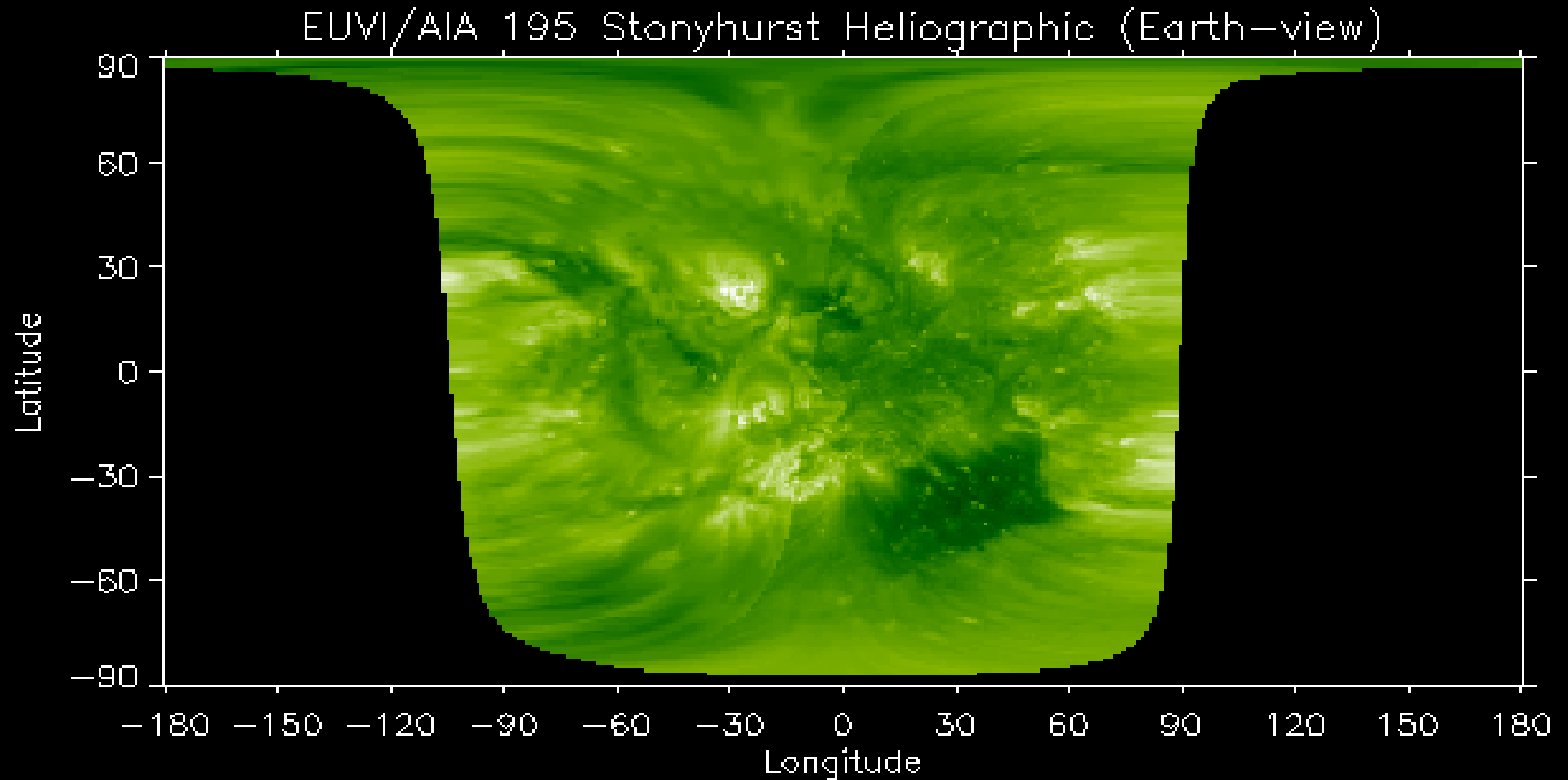
Outlook



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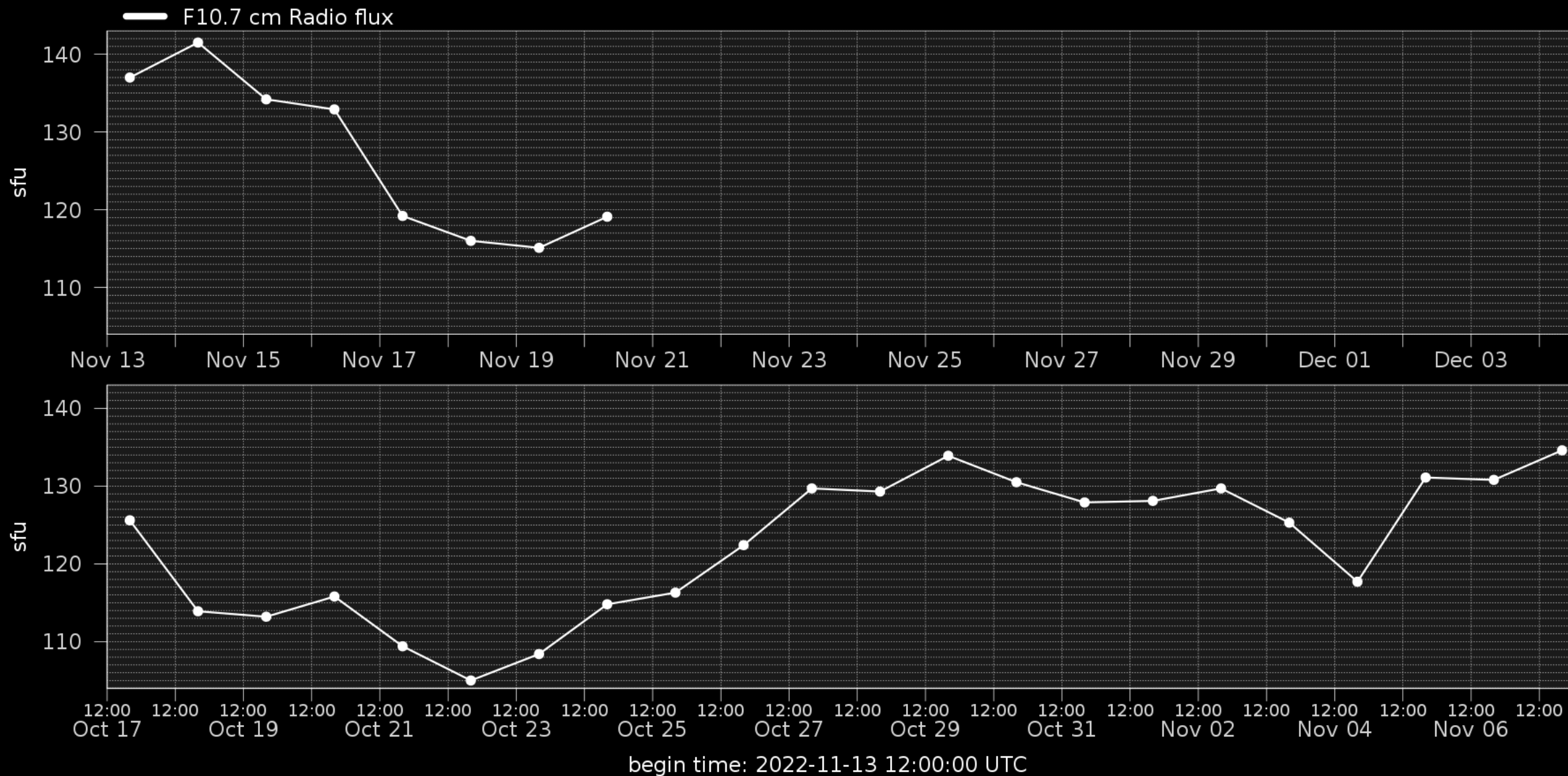
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Outlook: Solar activity

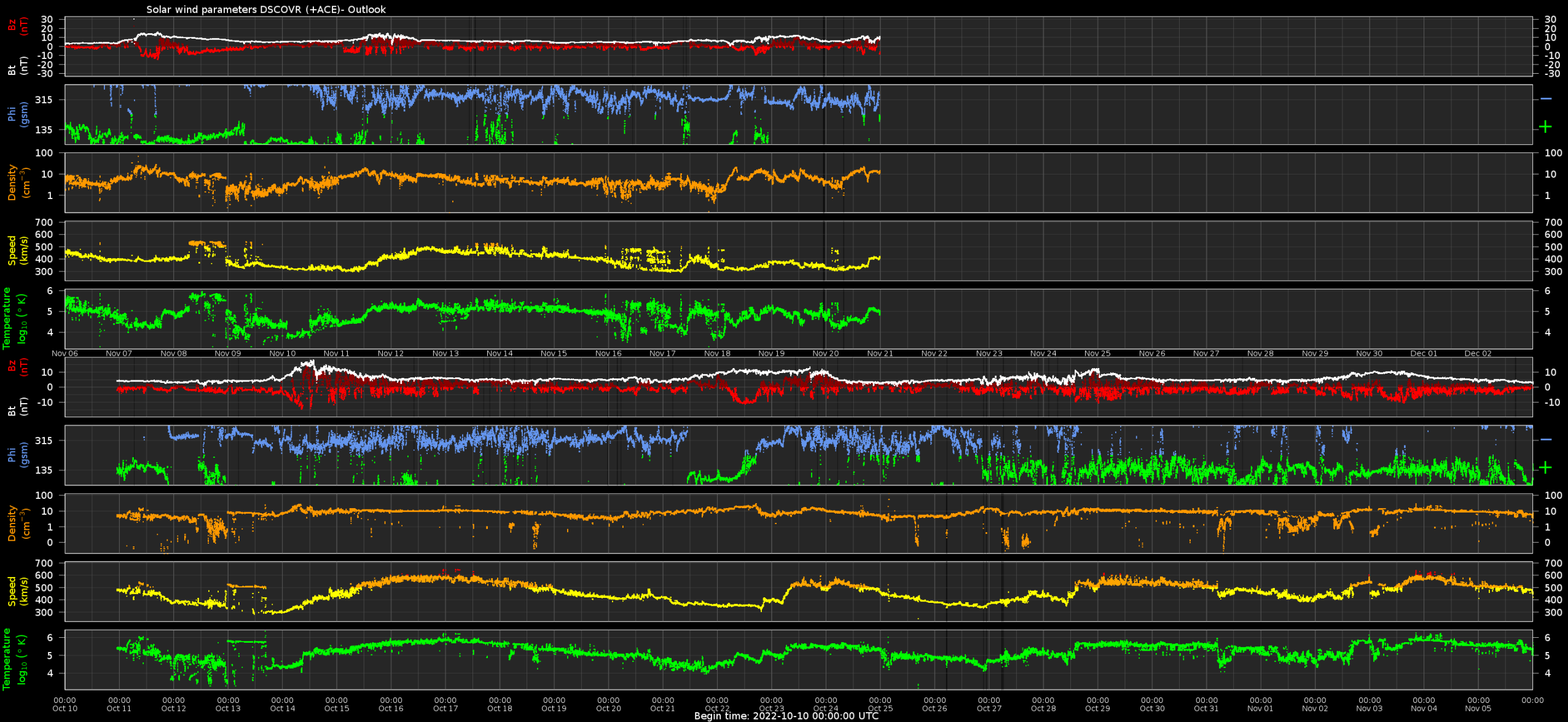


Observation date: 2022/11/20 21:05:00

Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



ICAO/PECASUS



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Daily GNSS (amplitude) scintillation in South America

GNSS			2022_68 2022_69
	2022_64 2022_65	2022_66 2022_67	
HF			
RADIATION			
	Sun 13 November 2022	Mon 14	Tue 15

GNSS 2022 66

0000060501
FNXX01 EFKL 140154
SWX ADVISORY
DTG: 20221114/0155Z
SWXC: PECASUS
ADVISORY NR: 2022/66
SWX EFFECT: GNSS MOD
OBS SWX: 14/0140Z EQS W075 - W030
FCST SWX +6 HR: 14/0800Z NOT AVBL
FCST SWX +12 HR: 14/1400Z NOT AVBL
FCST SWX +18 HR: 14/2000Z NOT AVBL
FCST SWX +24 HR: 15/0200Z NOT AVBL
RMK: SPACE WEATHER EVENT (IONOSPHERIC
DISTURBANCE) IN PROGRESS. IMPACT ON GNSS PERFORMANCE
POSSIBLY LEADING TO LOSS OF GNSS SIGNALS AND/OR DEGRADATION
OF TIMING AND POSITIONING PERFORMANCE.
NXT ADVISORY: WILL BE ISSUED BY 20221114/0744Z=

SIDC Space Weather Briefing

See you at our next briefing!

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