

# SIDC Space Weather Briefing

29 November 2020 - 06 December 2020

Jesse Andries

& 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 2020-11-29 to 2020-12-06

Active regions	2785 → 2791 ; 2786 decayed from Beta-gamma to alpha
Flares	# B-class flare: 38 # C-class flare: 12 # M-class flare: 1 # X-class flare: 0
Filament eruptions	Two eruptions expected to possibly (with low probability) cause glancing blows
Coronal Holes	Equatorial CH-

Proton flux	Enhanced all week, but below event threshold
Electron flux	Brief event crossings at diurnal max. Fluence remained at moderate levels.

Solar wind and geomagnetic conditions from 2020-11-29T12:00:00 to 2020-12-06T12:00:00

ICME	No arrivals recorded
SW Conditions	B : 0.8 - 12.19 nT // Bz: -9.68 nT to 7.28 nT // Speed: 309.6 - 577.2km/s
K-indices	max K-index (Dourbes): 3 max Kp-index (NOAA): 3

All Quiet Alert: Off since 2020-11-20

# Solar Activity

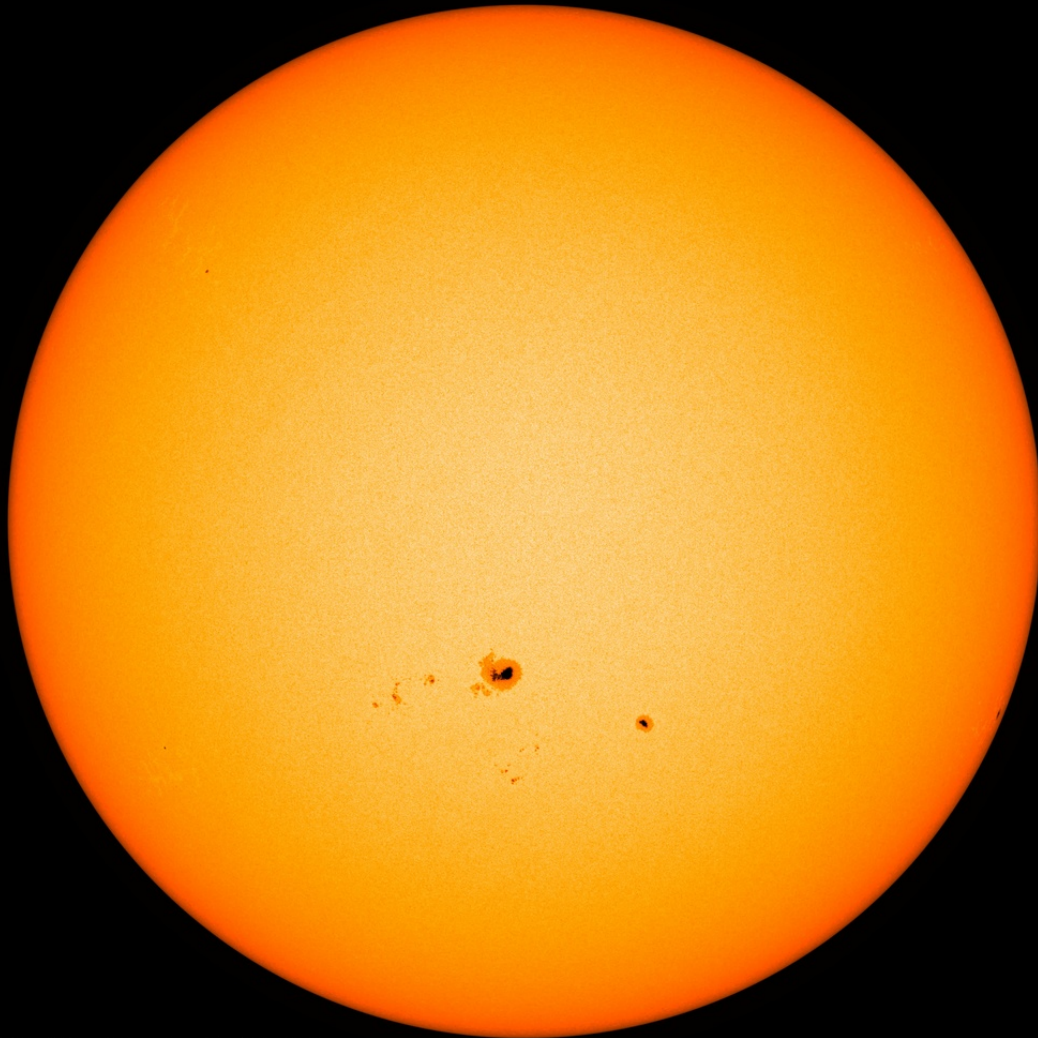


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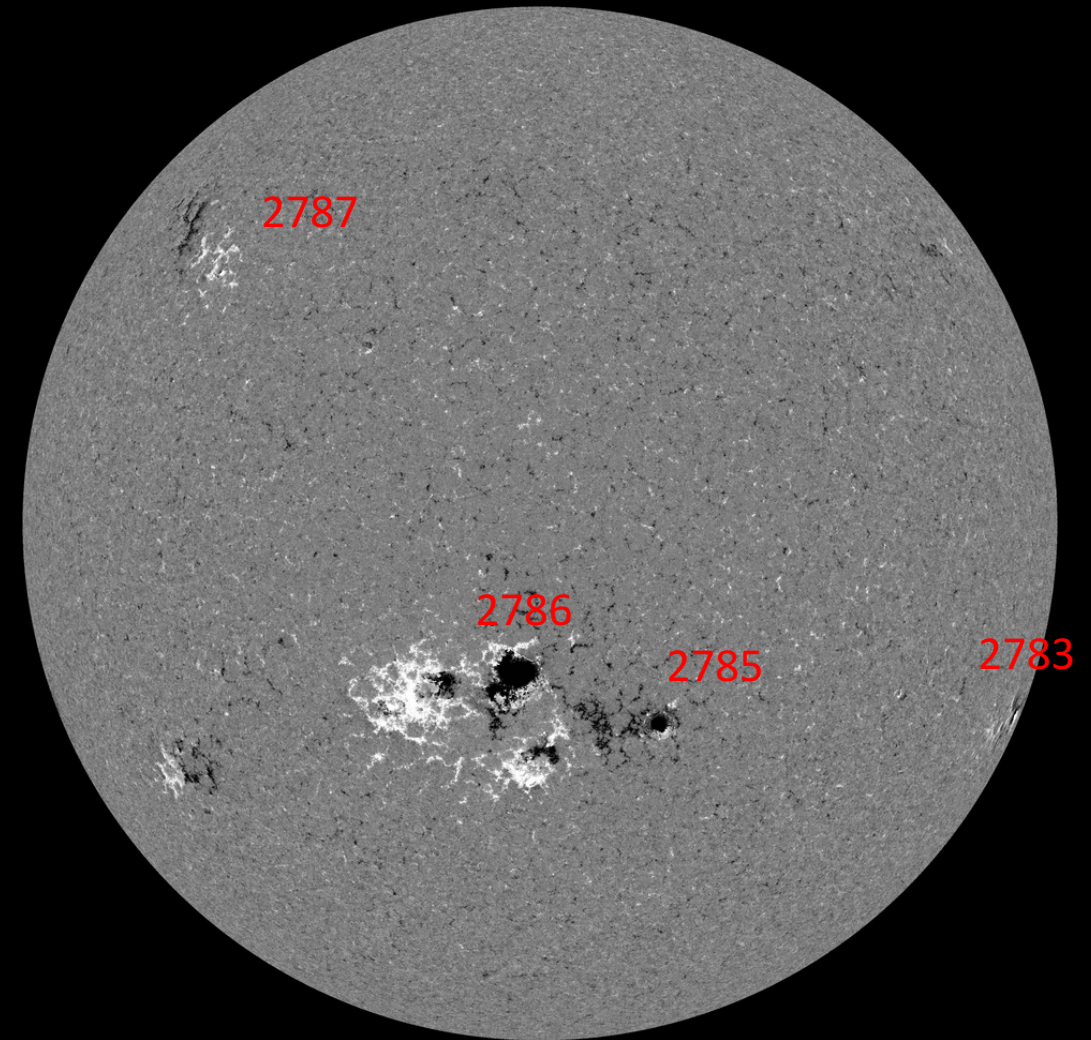
# Solar active regions - Sunday

SDO/HMI White Light 2020-11-29



SDO/HMI Quick-Look Continuum: 20201129\_114500

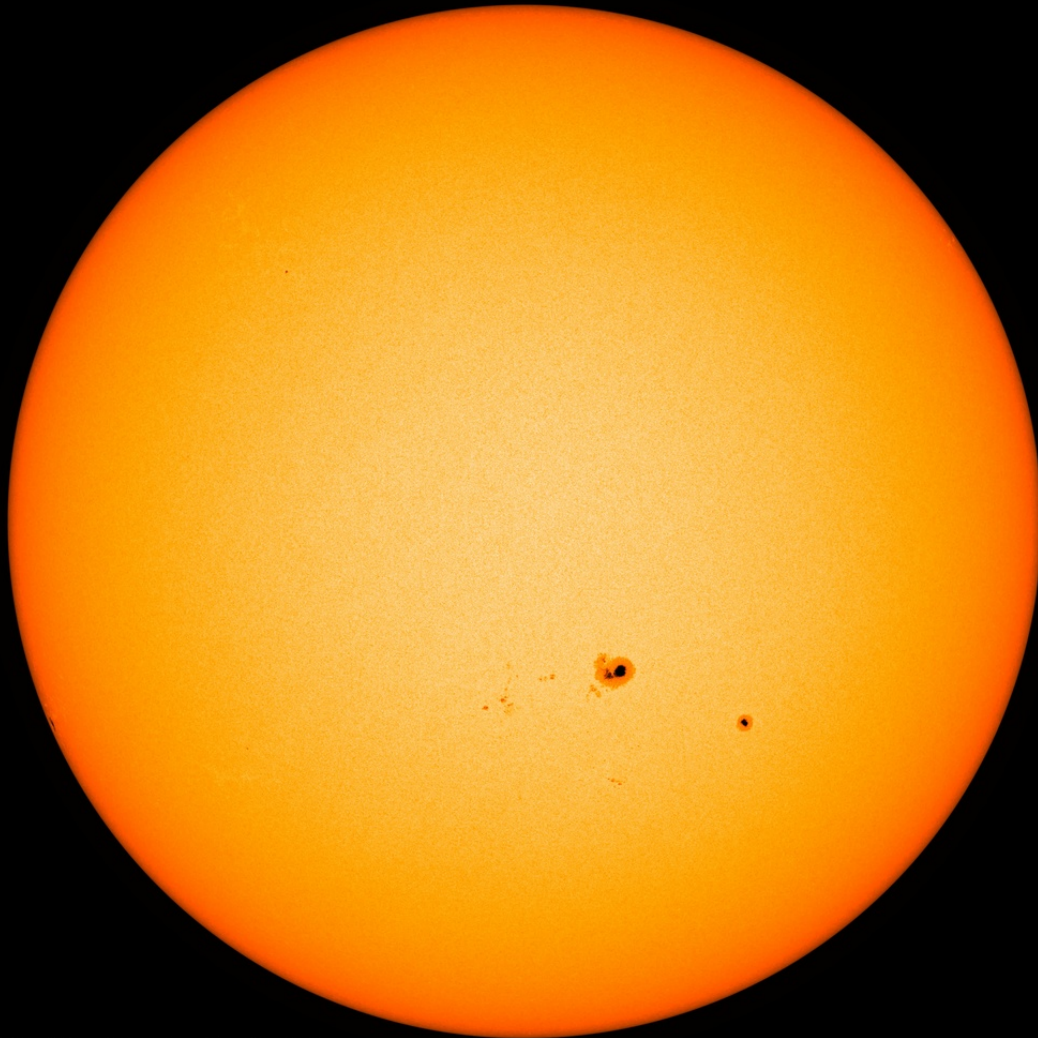
SDO/HMI Magnetogram 2020-11-29



SDO/HMI Quick-Look Magnetogram: 20201129\_114500

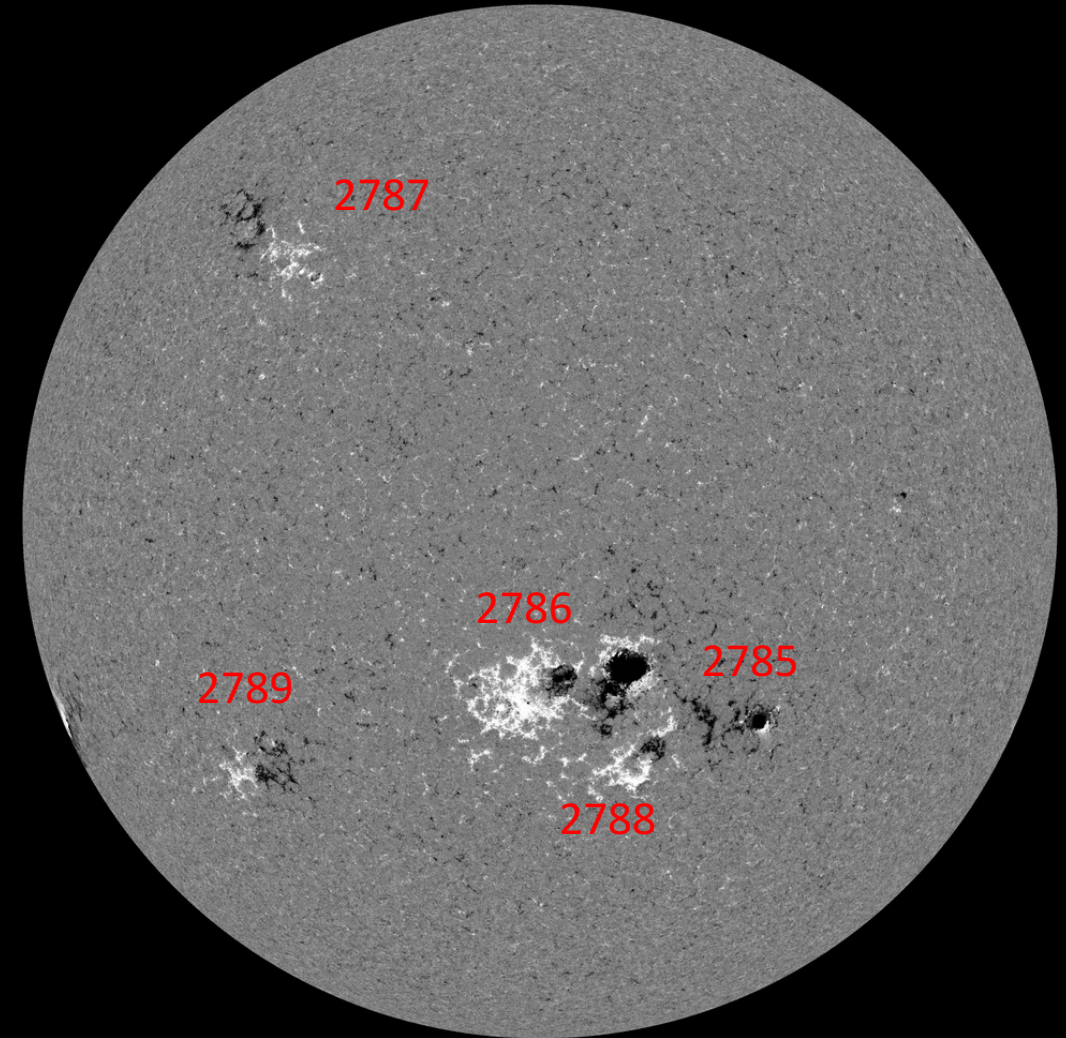
# Solar active regions - Monday

SDO/HMI White Light 2020-11-30



SDO/HMI Quick-Look Continuum: 20201130\_114500

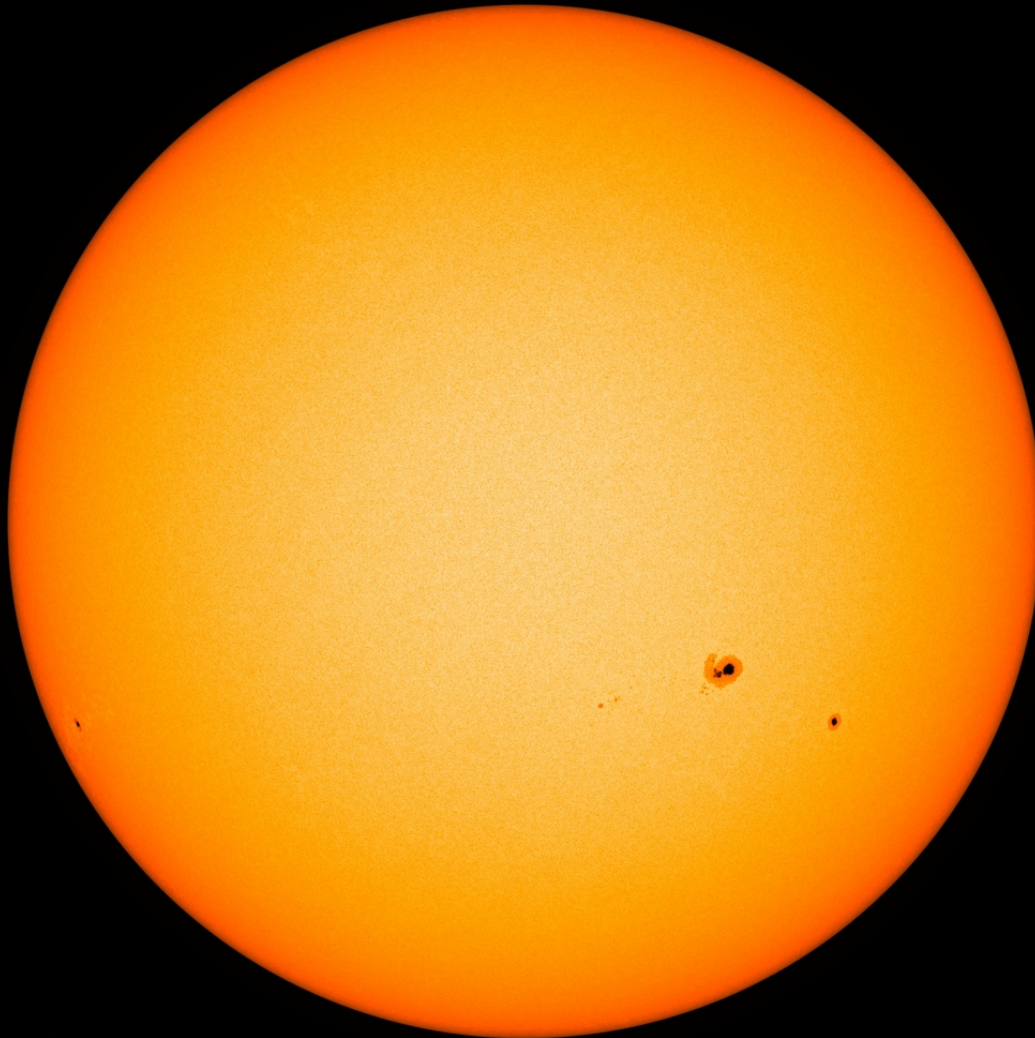
SDO/HMI Magnetogram 2020-11-30



SDO/HMI Quick-Look Magnetogram: 20201130\_114500

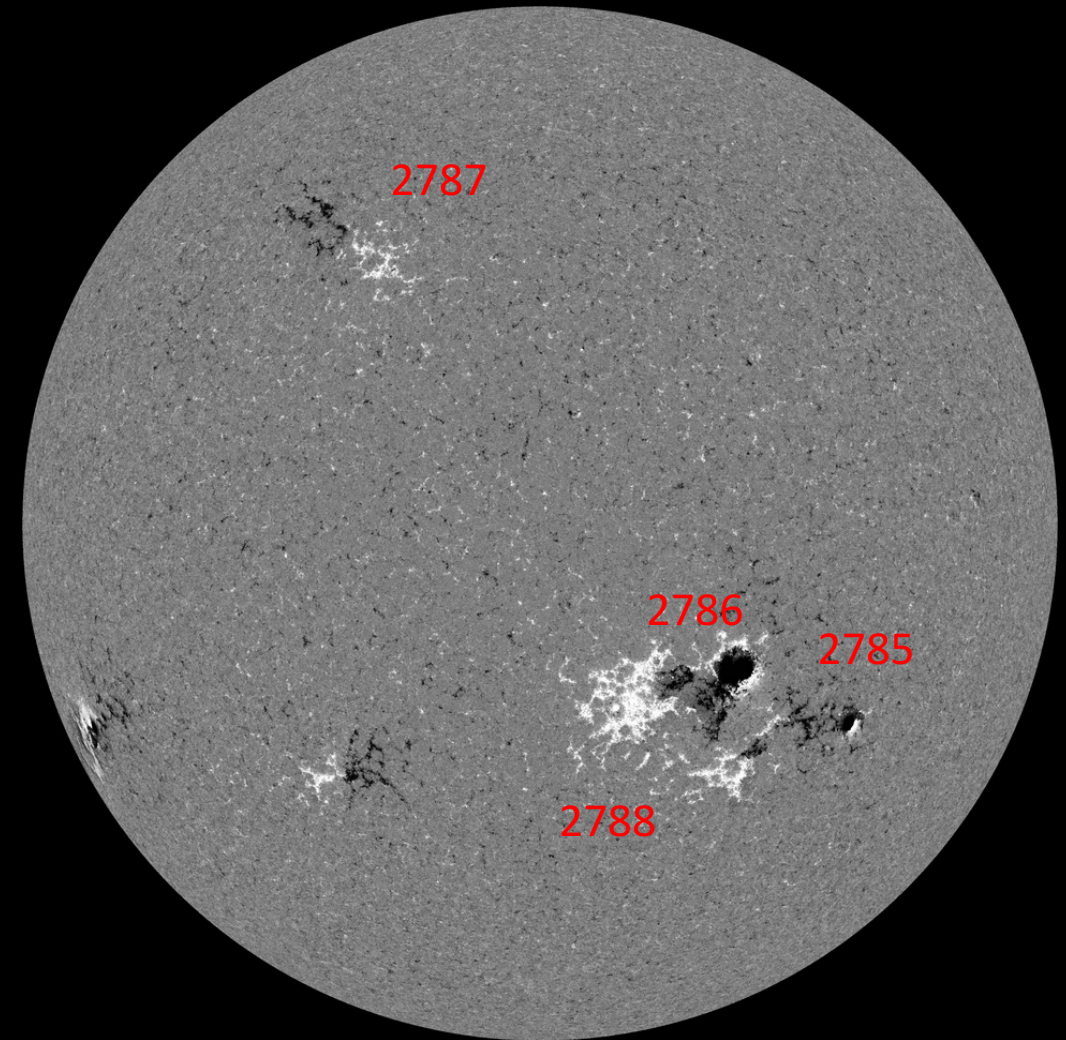
# Solar active regions - Tuesday

SDO/HMI White Light 2020-12-01



SDO/HMI Quick-Look Continuum: 20201201\_114500

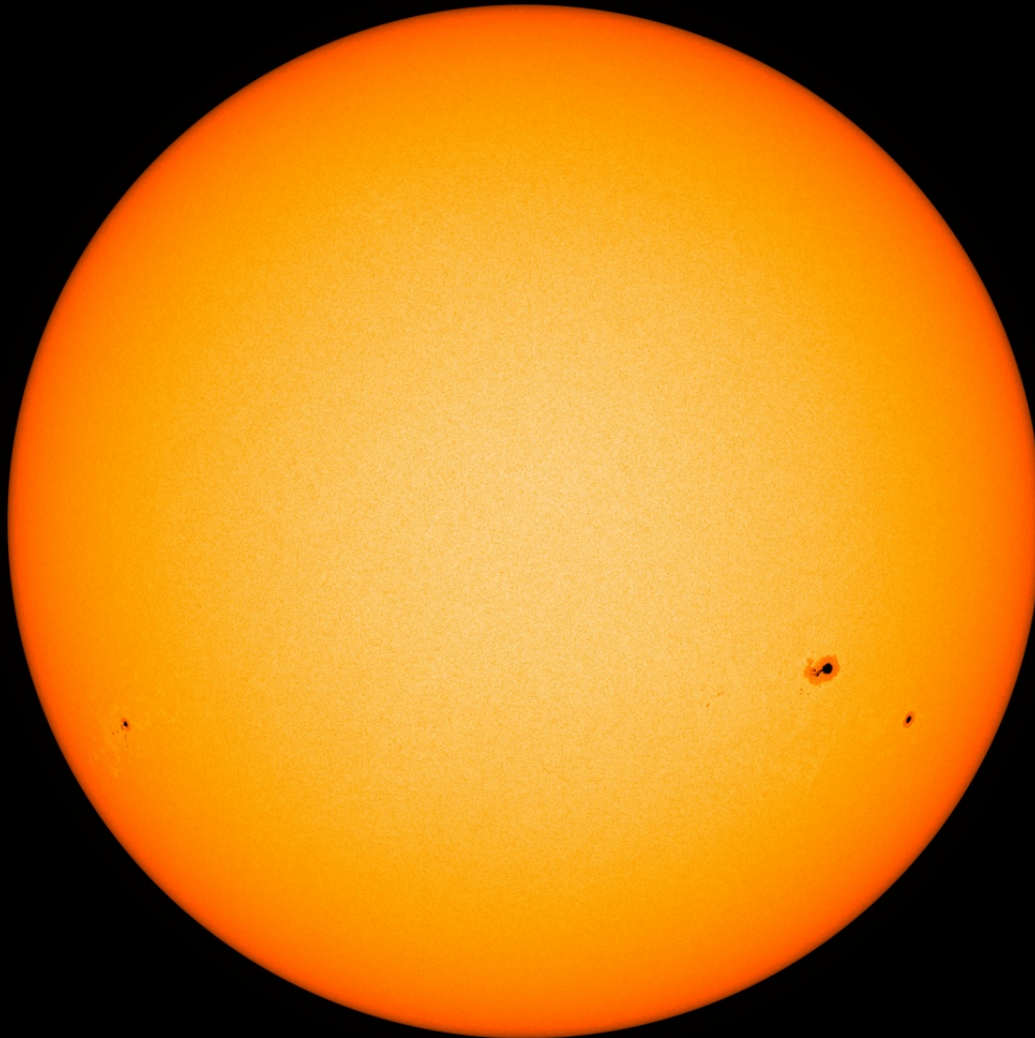
SDO/HMI Magnetogram 2020-12-01



SDO/HMI Quick-Look Magnetogram: 20201201\_114500

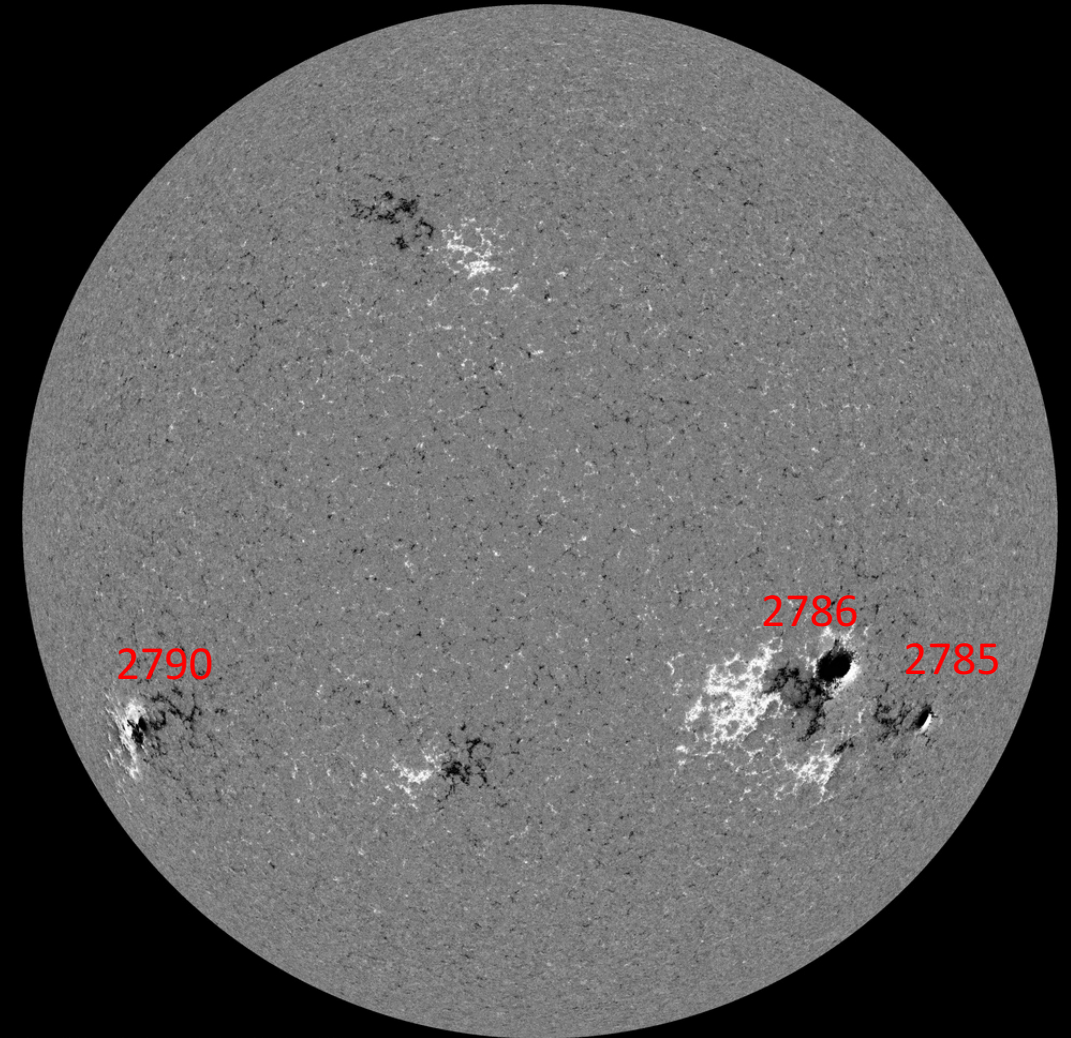
# Solar active regions - Wednesday

SDO/HMI White Light 2020-12-02



SDO/HMI Quick-Look Continuum: 20201202\_114500

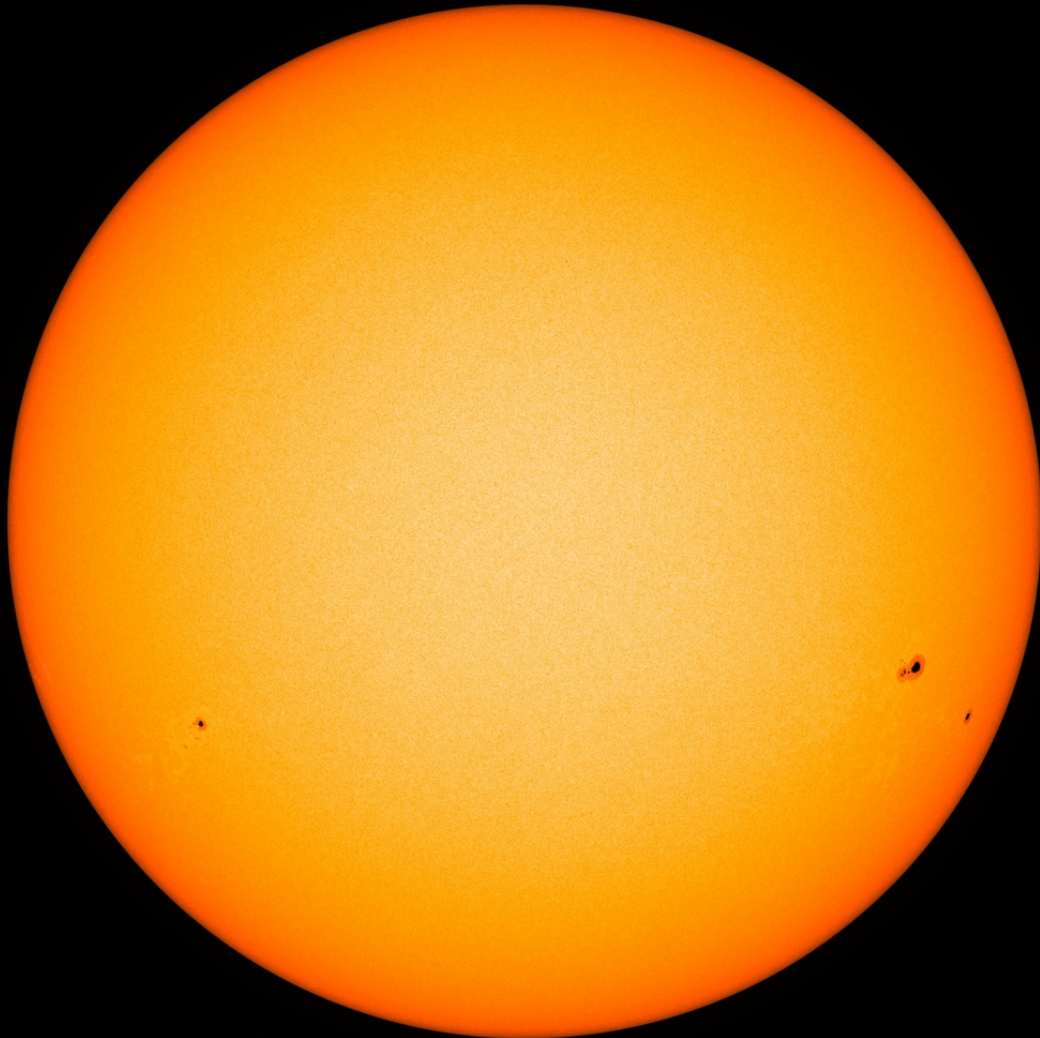
SDO/HMI Magnetogram 2020-12-02



SDO/HMI Quick-Look Magnetogram: 20201202\_114500

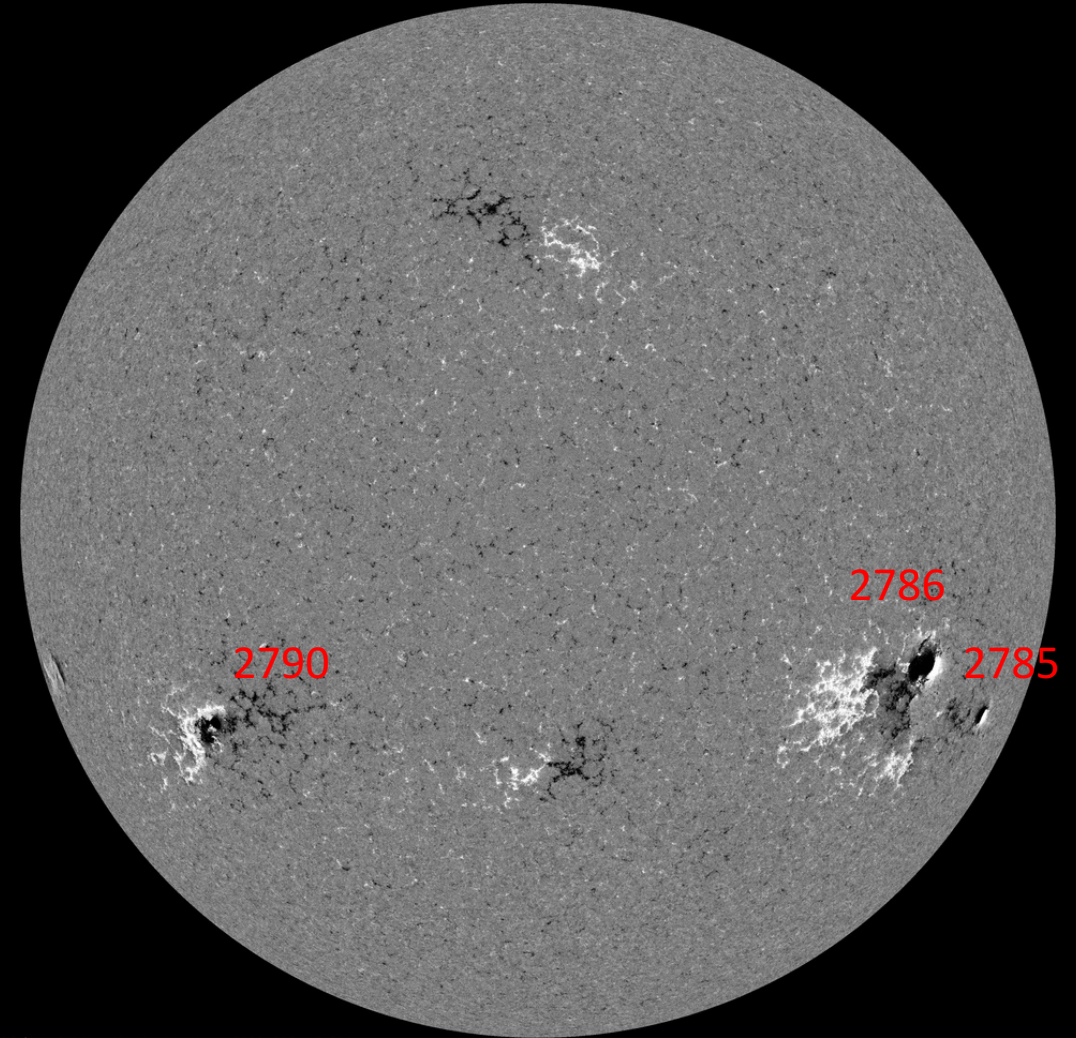
# Solar active regions - Thursday

SDO/HMI White Light 2020-12-03



SDO/HMI Quick-Look Continuum: 20201203\_134500

SDO/HMI Magnetogram 2020-12-03

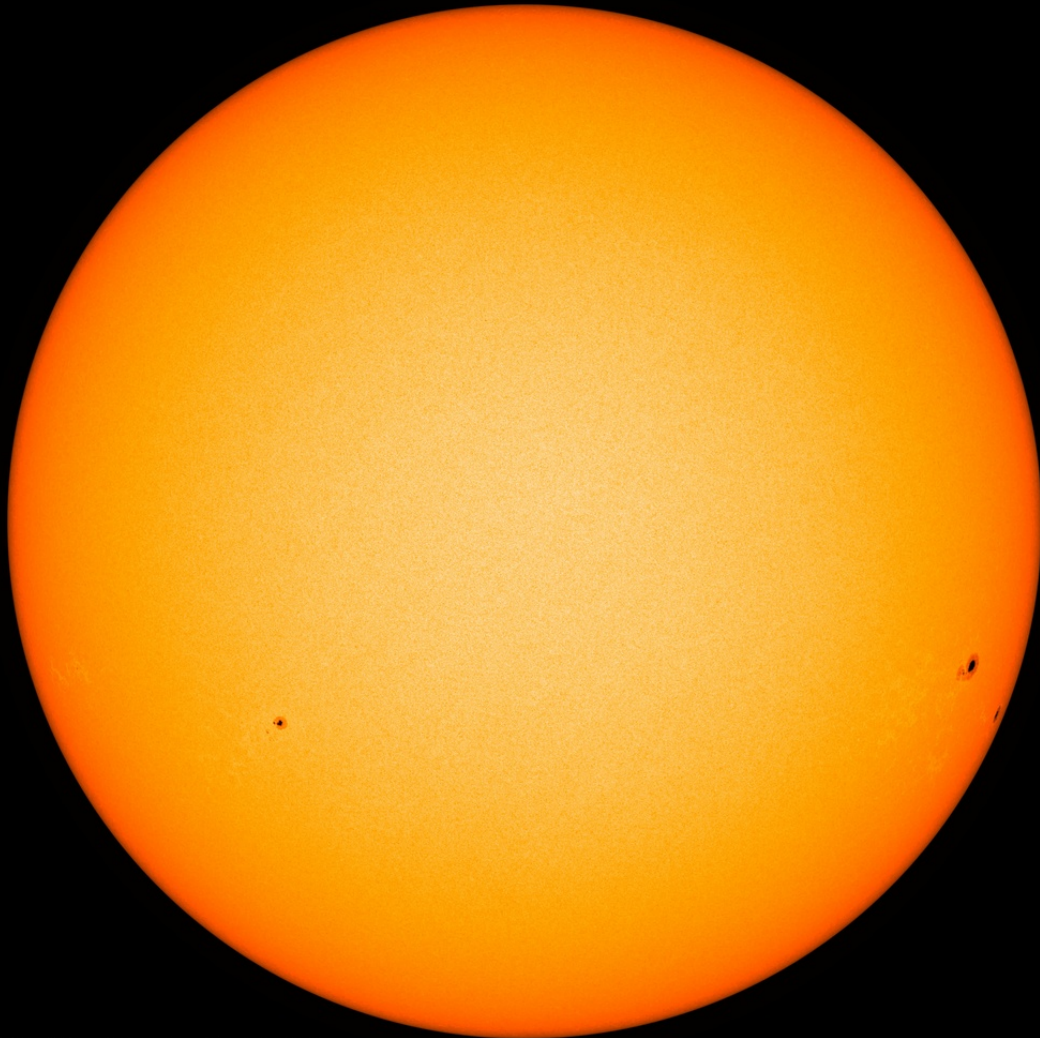


SDO/HMI Quick-Look Magnetogram: 20201203\_134500



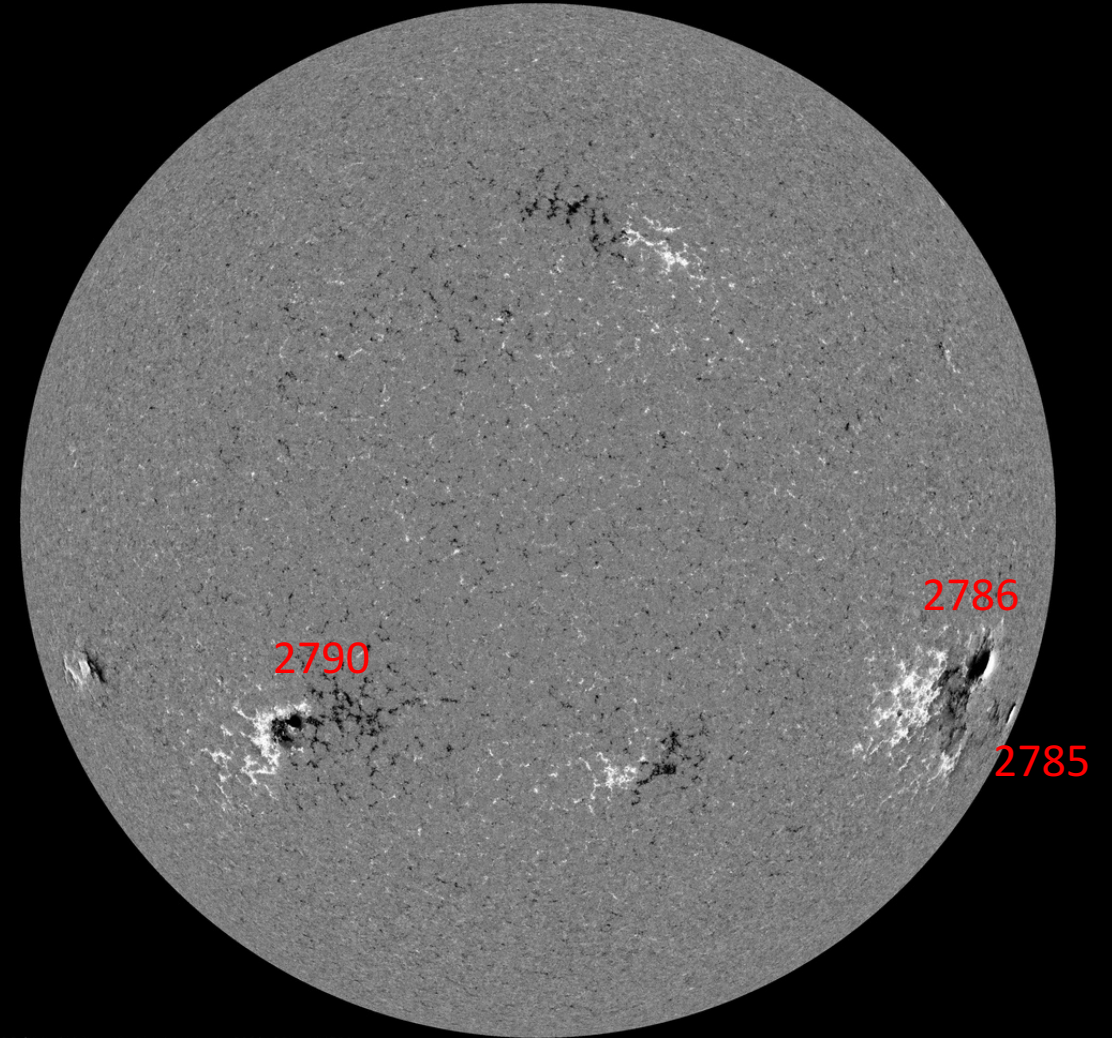
# Solar active regions - Friday

SDO/HMI White Light 2020-12-04



SDO/HMI Quick-Look Continuum: 20201204\_114500

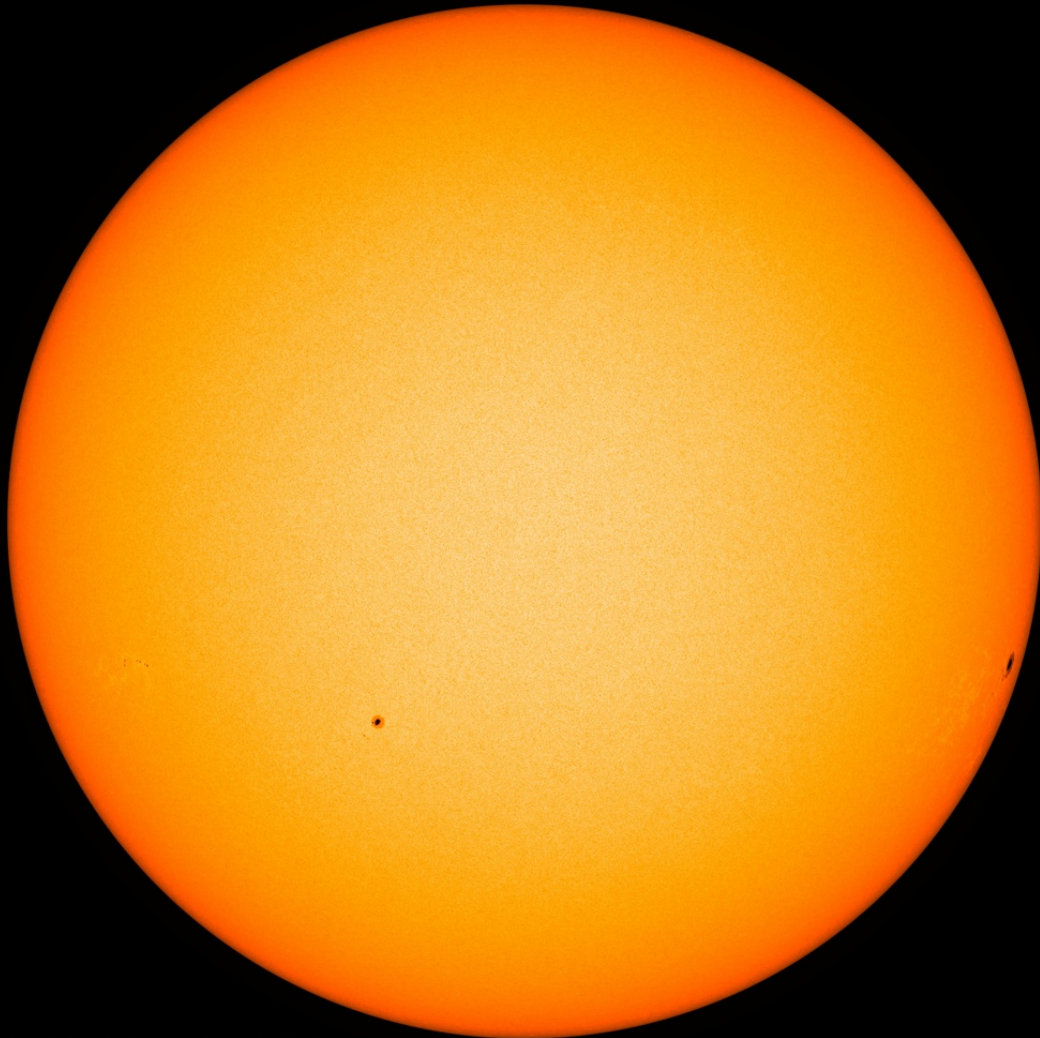
SDO/HMI Magnetogram 2020-12-04



SDO/HMI Quick-Look Magnetogram: 20201204\_114500

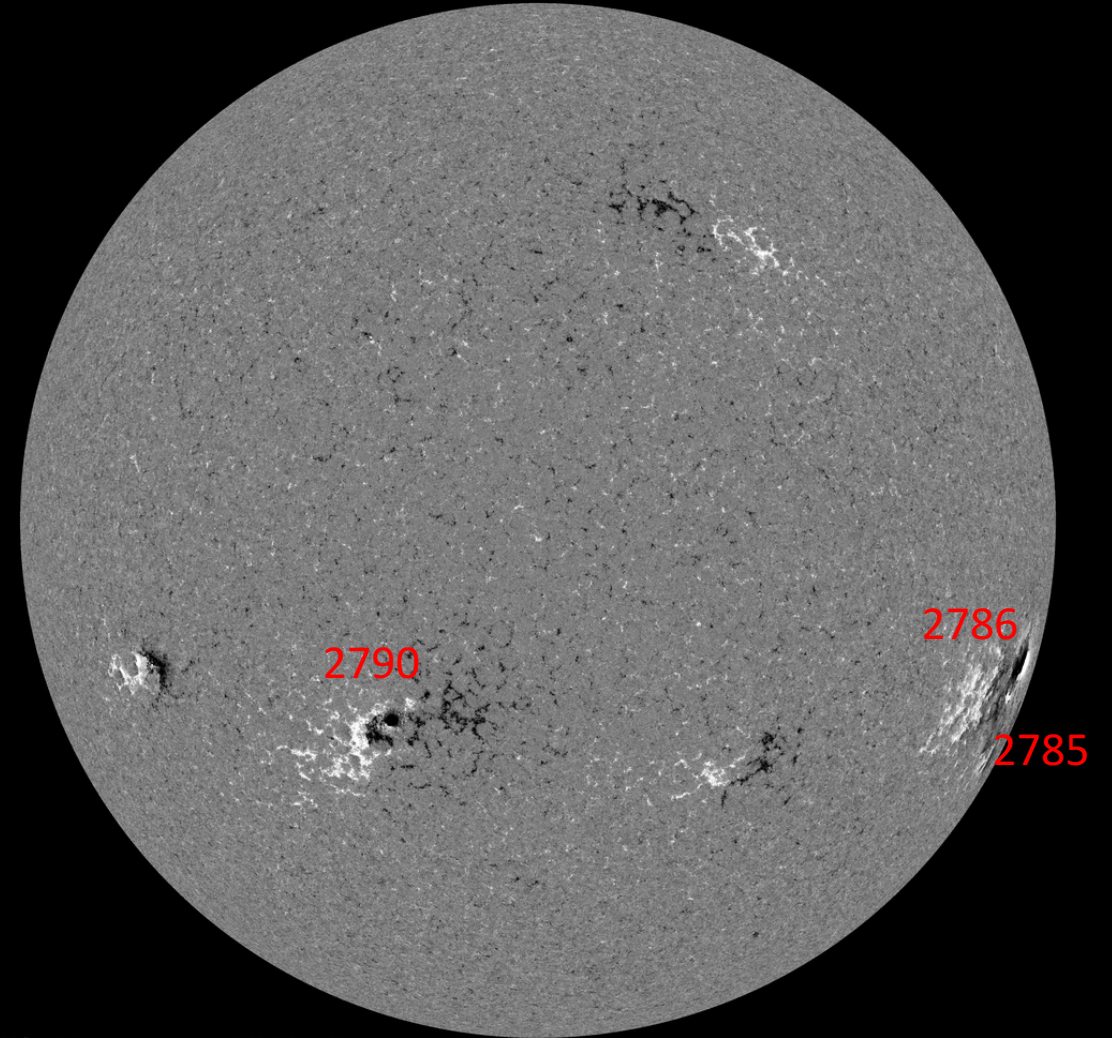
# Solar active regions - Saturday

SDO/HMI White Light 2020-12-05



SDO/HMI Quick-Look Continuum: 20201205\_114500

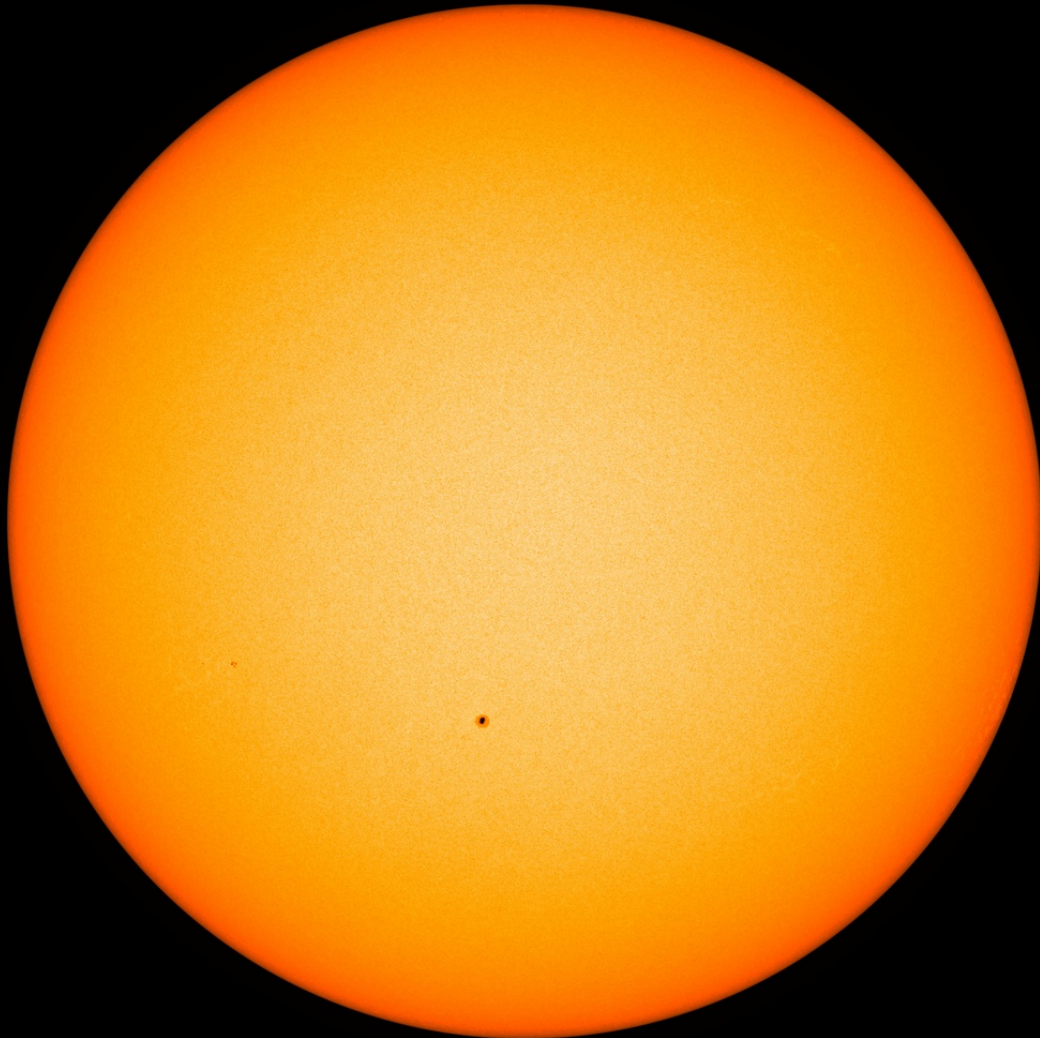
SDO/HMI Magnetogram 2020-12-05



SDO/HMI Quick-Look Magnetogram: 20201205\_114500

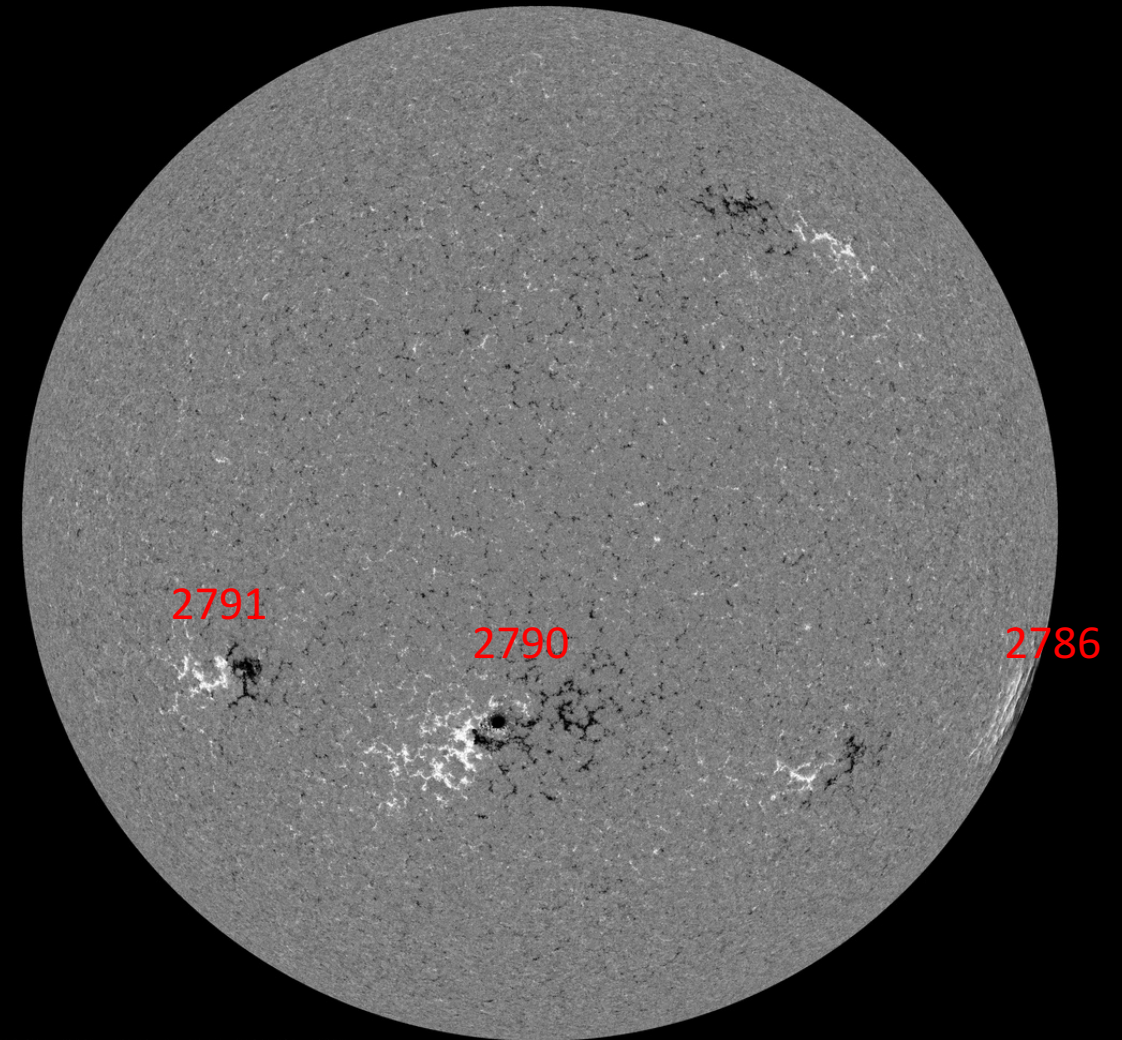
# Solar active regions - Sunday

SDO/HMI White Light 2020-12-06



SDO/HMI Quick-Look Continuum: 20201206\_114500

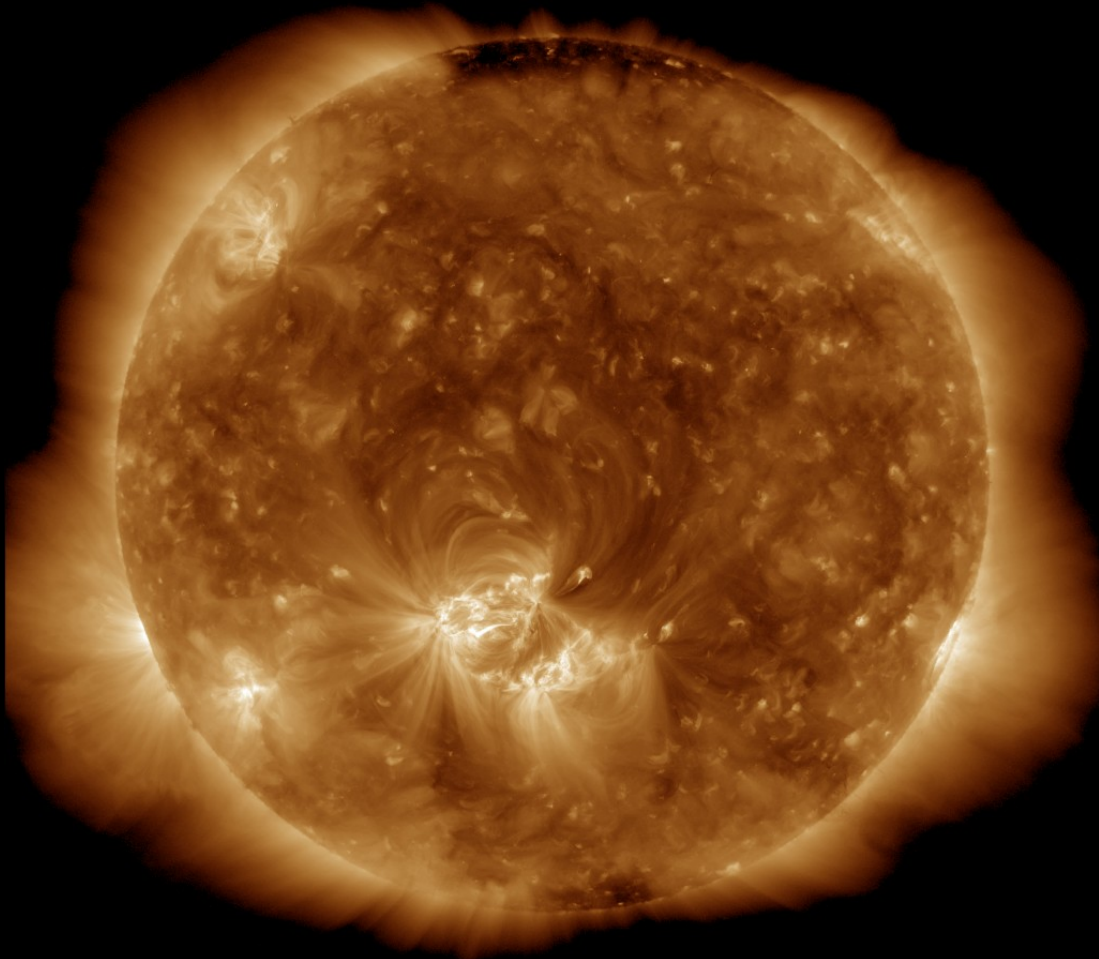
SDO/HMI Magnetogram 2020-12-06



SDO/HMI Quick-Look Magnetogram: 20201206\_114500

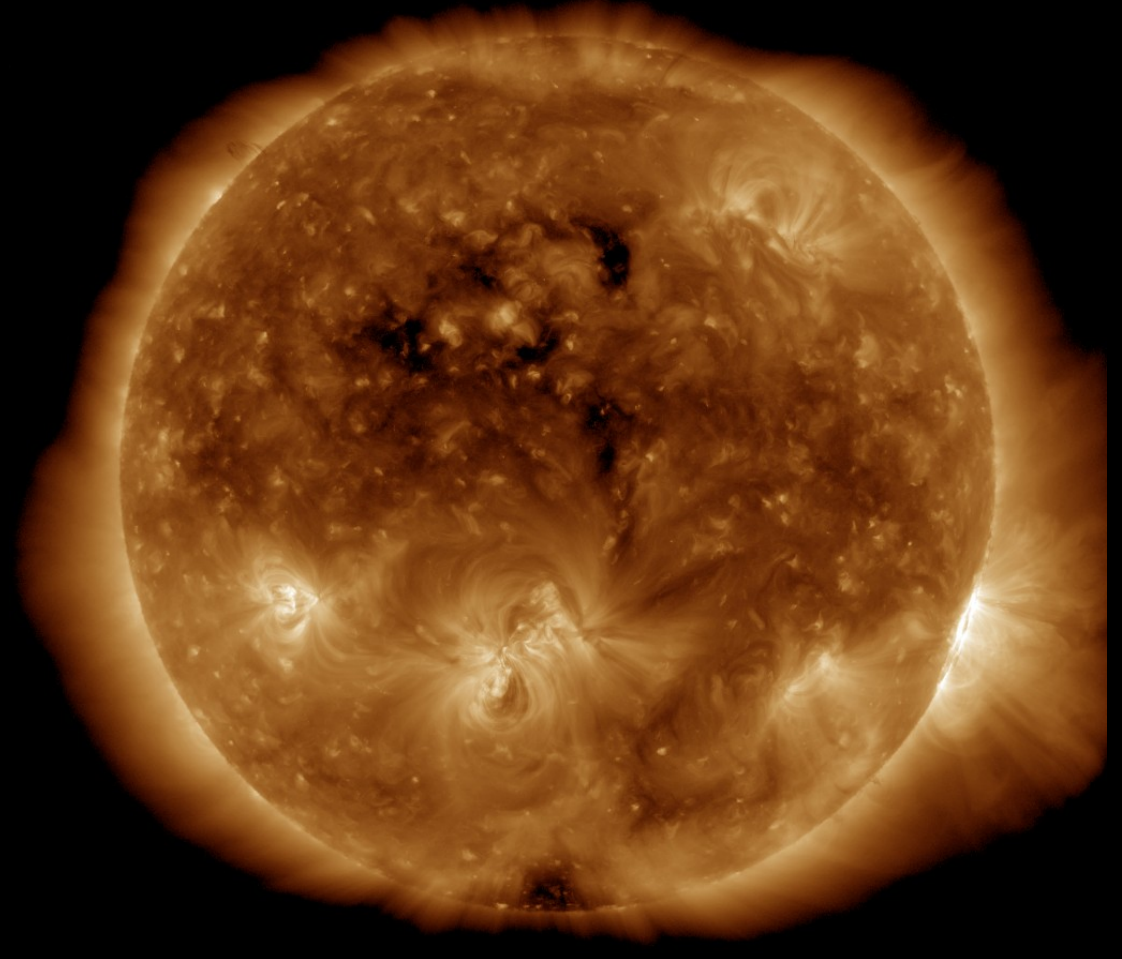
# Coronal holes

SDO/AIA 19.3 nm 2020-11-29



SDO/AIA 193 2020-11-29 12:17:53 UT

SDO/AIA 19.3 nm 2020-12-06

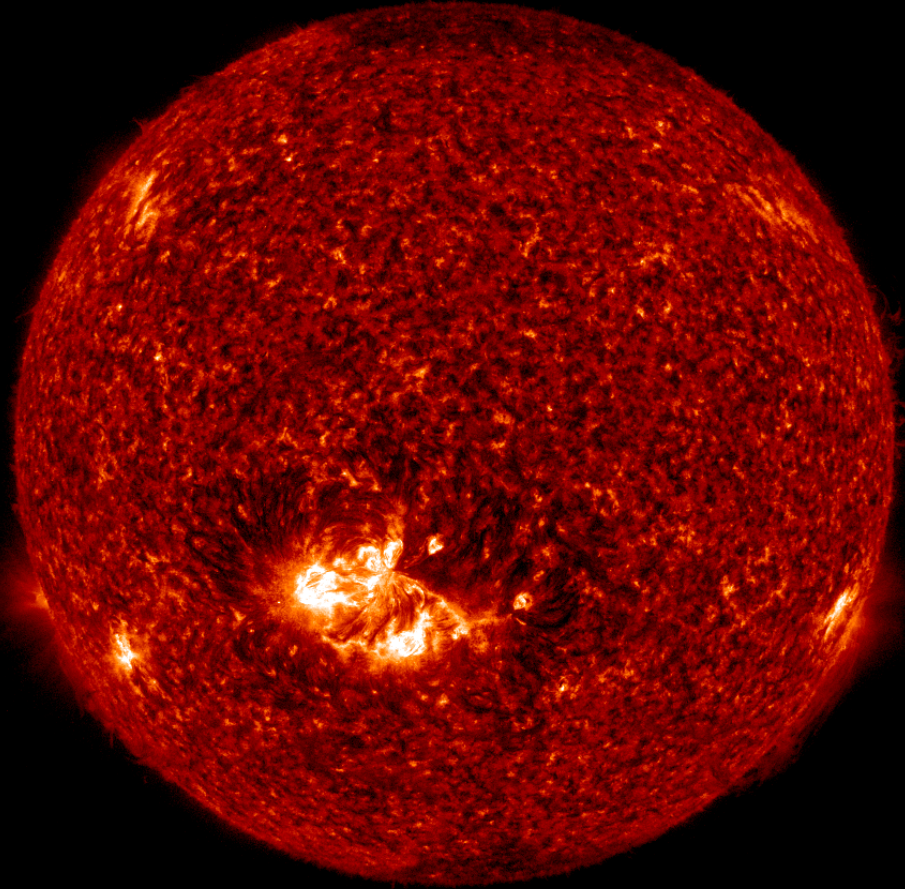


SDO/AIA 193 2020-12-06 12:17:29 UT

# Filaments

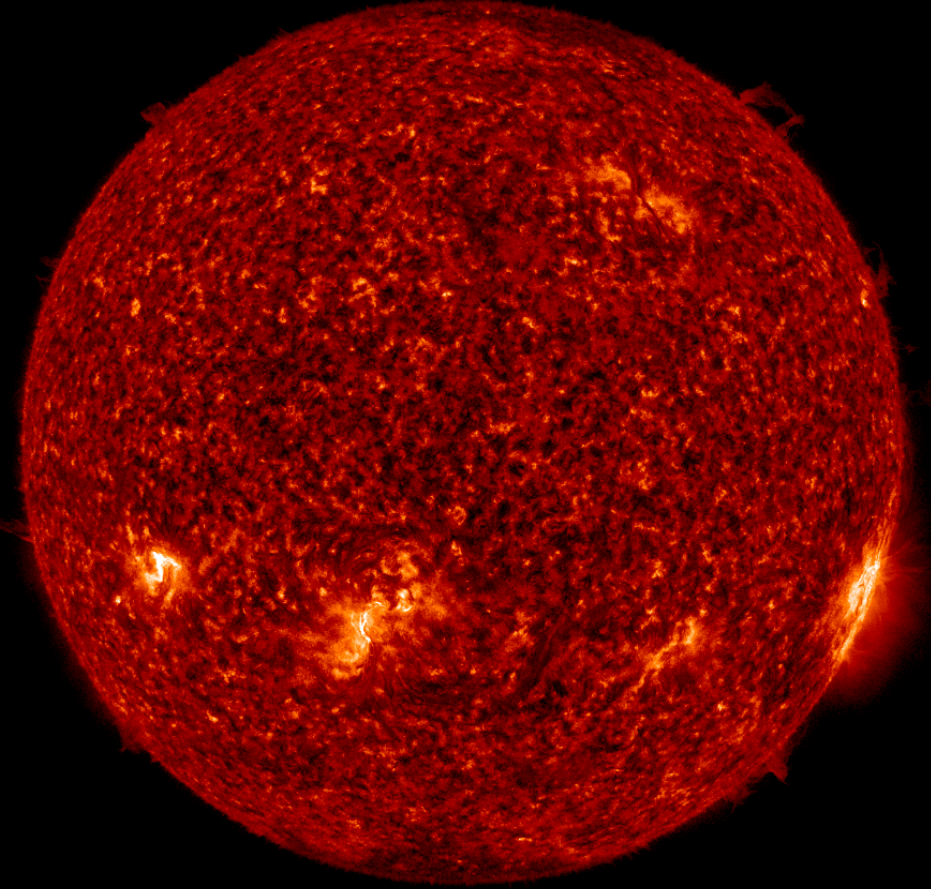
SDO/AIA 30.4 nm 2020-11-29

SDO/AIA AIA 304Å 2020-11-29T00:00:06.60

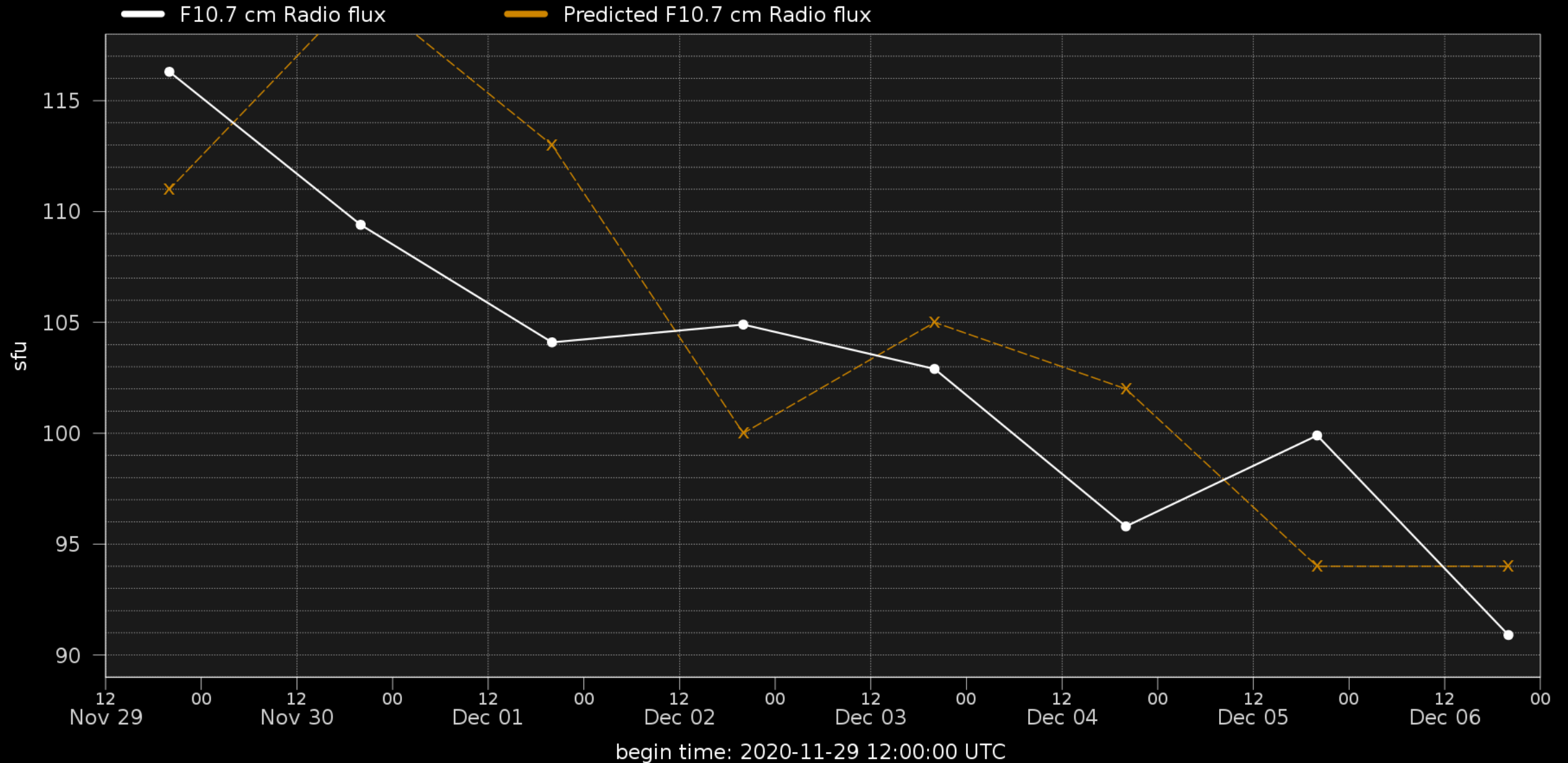


SDO/AIA 30.4 nm 2020-12-06

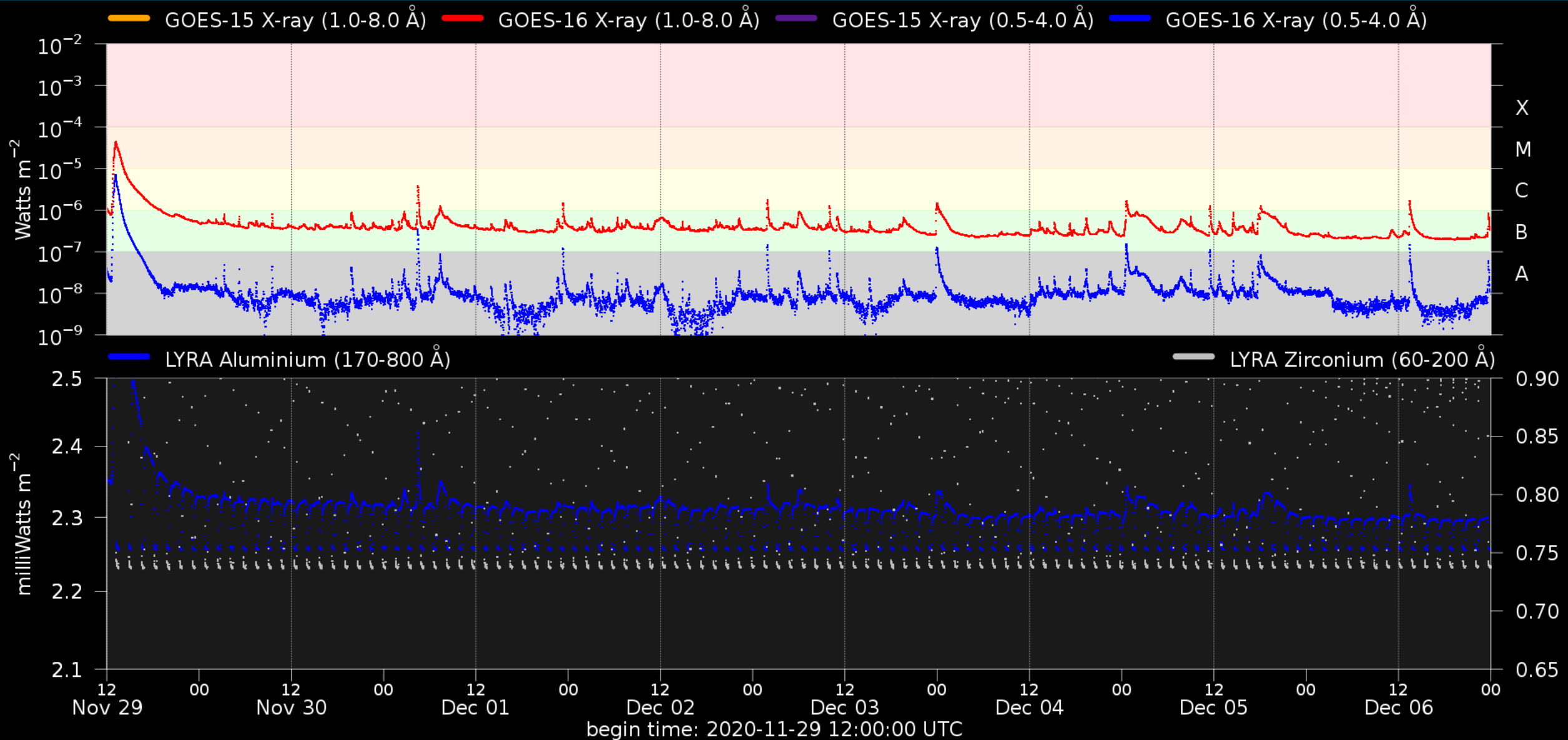
SDO/AIA AIA 304Å 2020-12-06T00:00:06.60



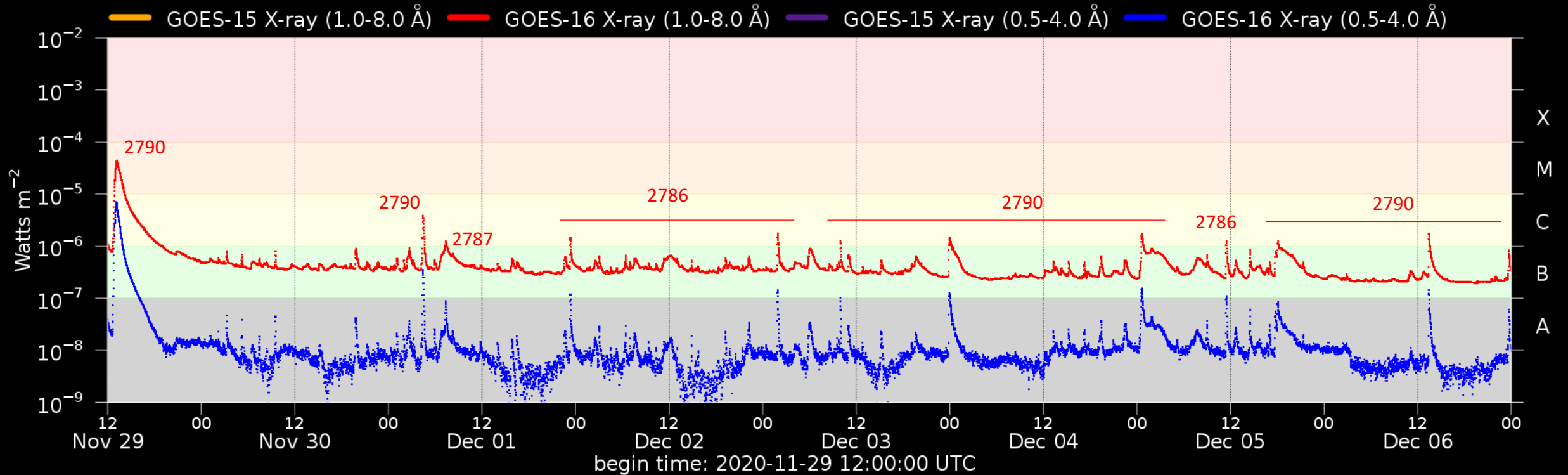
# Solar F10.7cm radio flux



# Solar X-Ray and UV flux



# Flaring activity

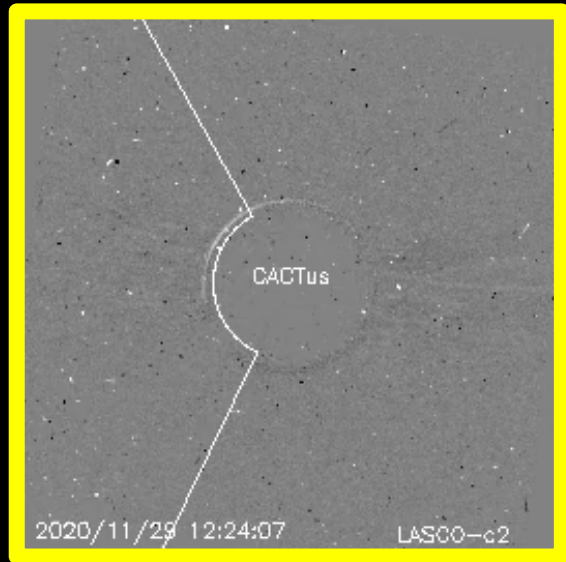


Probabilities (%) and occurrences (#) of B/C/M/X-flares issued at 12:30 and over the next 24h:

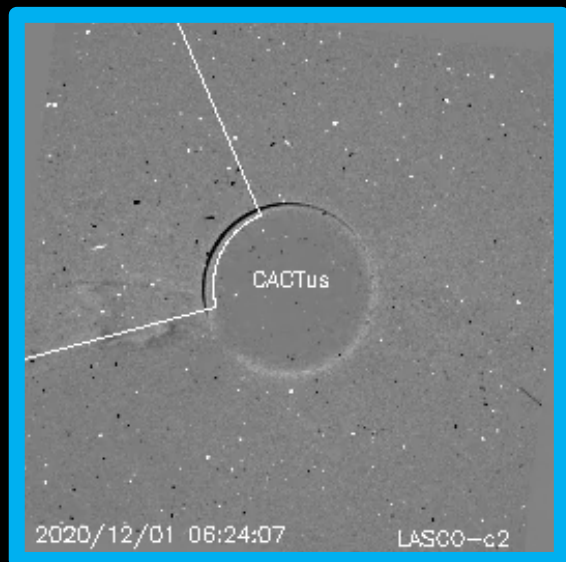
Issue date	2020-11-29	2020-11-30	2020-12-01	2020-12-02	2020-12-03	2020-12-04	2020-12-05	2020-12-06
Probability	-- 65 10 01	-- 90 40 05	-- 70 15 05	-- 50 10 01	-- 50 02 01	-- 55 02 01	-- 45 01 01	-- 30 01 01
Observed	05 02 01 0 0	06 02 00 0 0	04 01 00 0 0	05 02 00 0 0	03 01 00 0 0	07 01 00 0 0	06 02 00 0 0	04 01 00 0 0



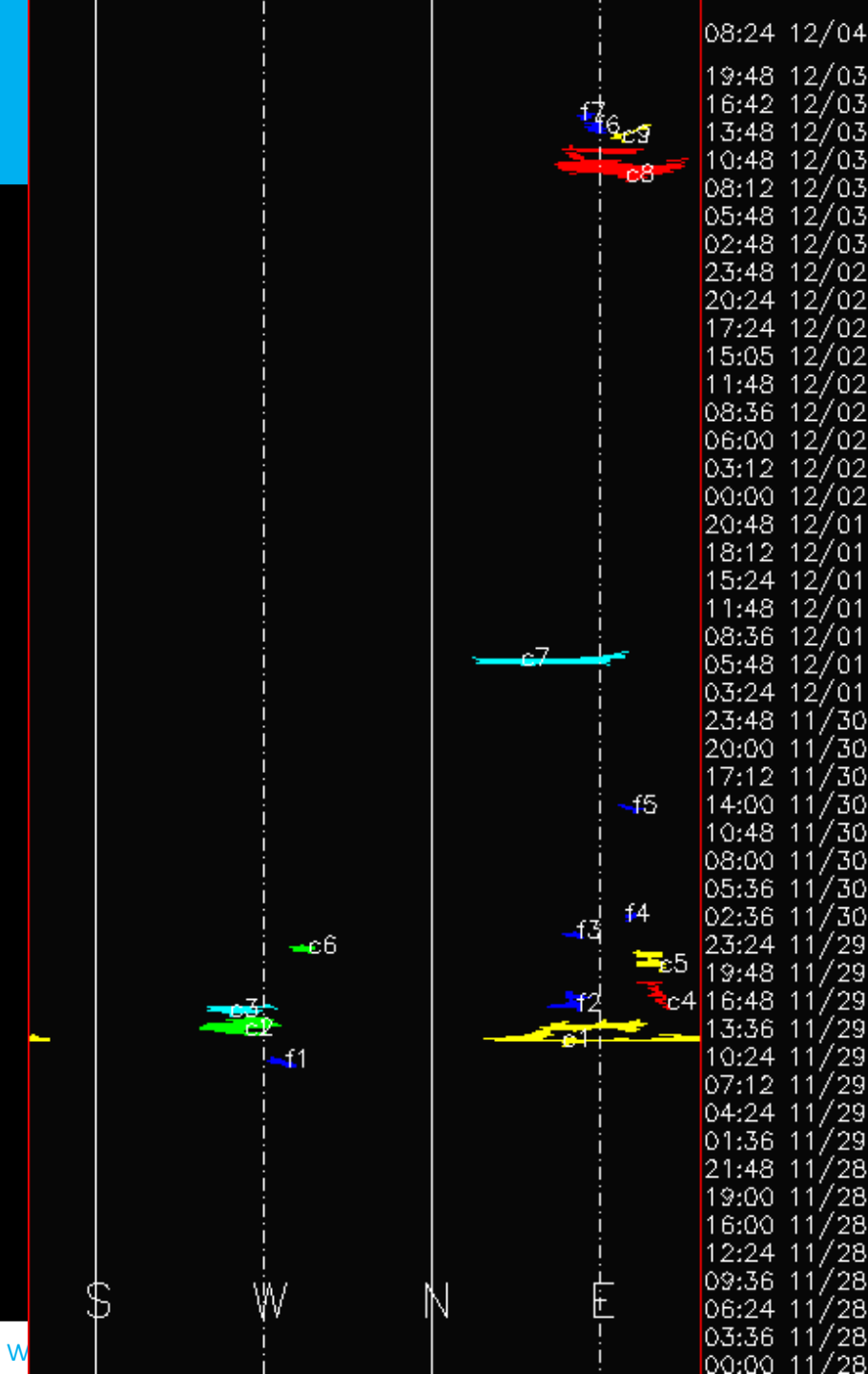
# Coronal Mass Ejections



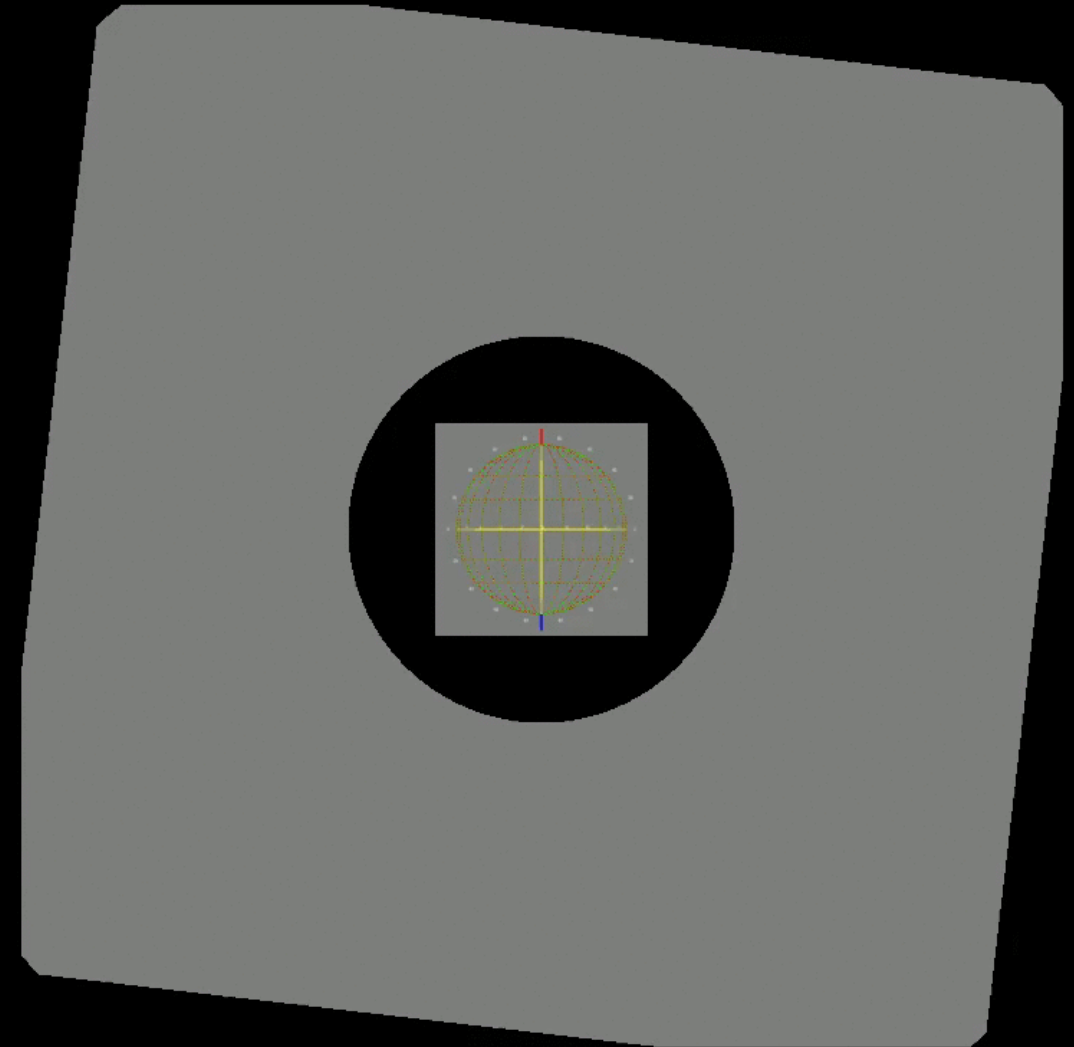
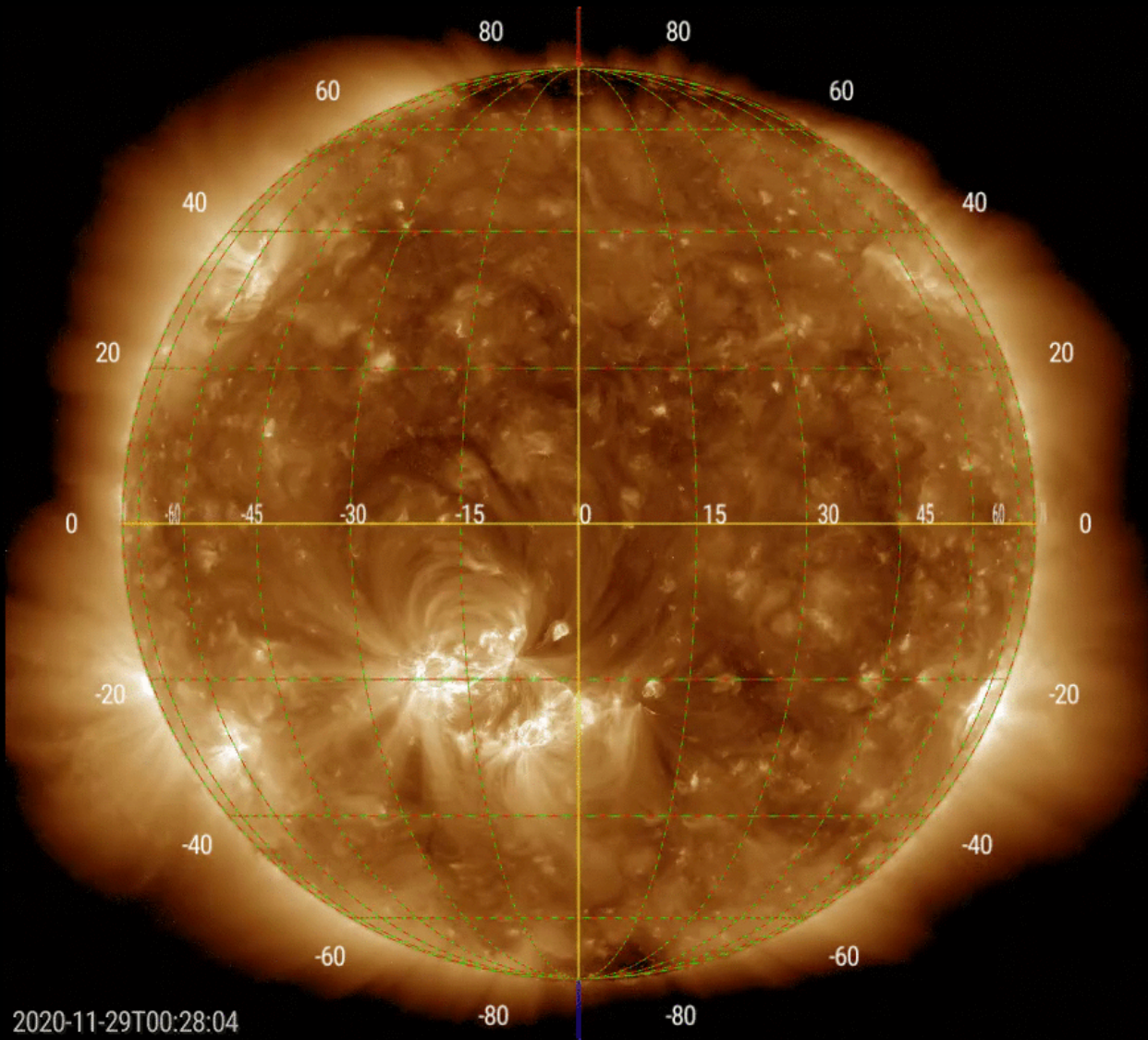
East limb (M4 flare 13:11UT November 29)  
 (later NOAA 2790)  
 A-symmetric full halo (C2 view 13:25UT)  
 Estimated speed 1600 km/s.  
 Glancing blow expected late December 1, early  
 December 2.  
 Though more probably it was directed  
 backside.  
 Did not arrive



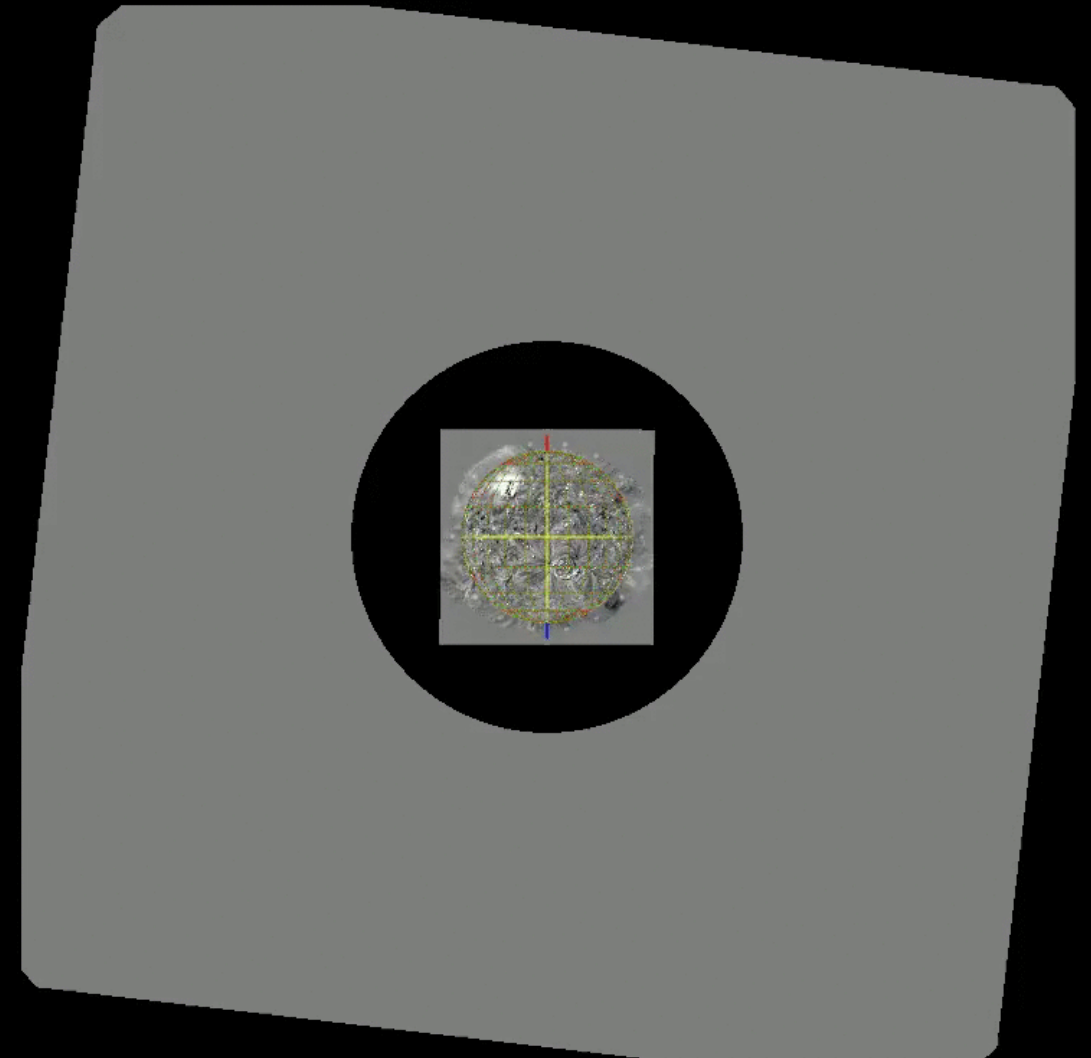
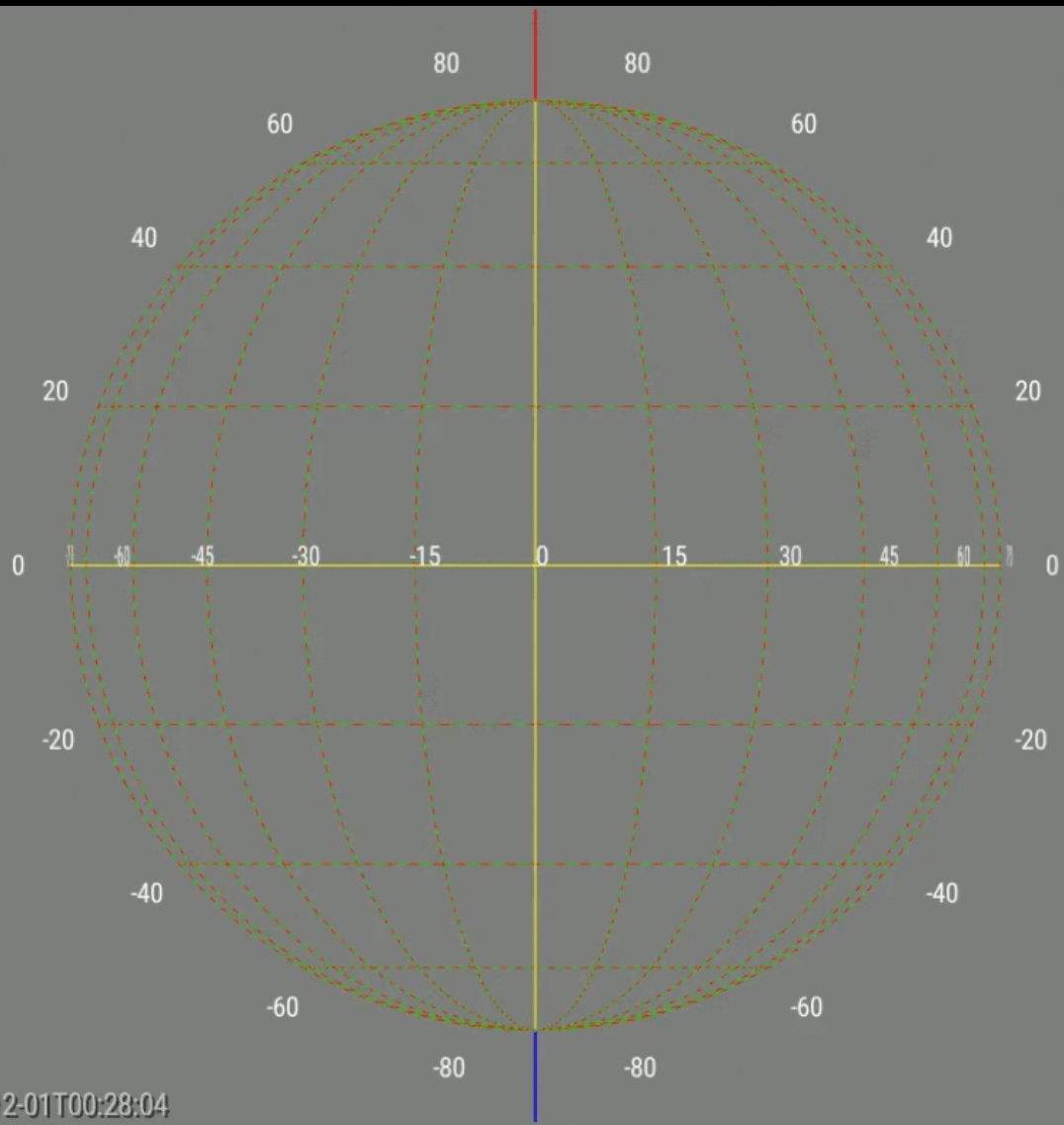
C1 flare 7:21UT December 1, NOAA 2787  
 Partial halo (first C2 view 7:12UT)  
 Estimated direction more towards STEREO A  
 Estimated speed 1000 km/s  
 Glancing blow possible early December 4.  
 Did not arrive



# Coronal Mass Ejections (November 29)



# Coronal Mass Ejections (December 1)



# Solar Wind and

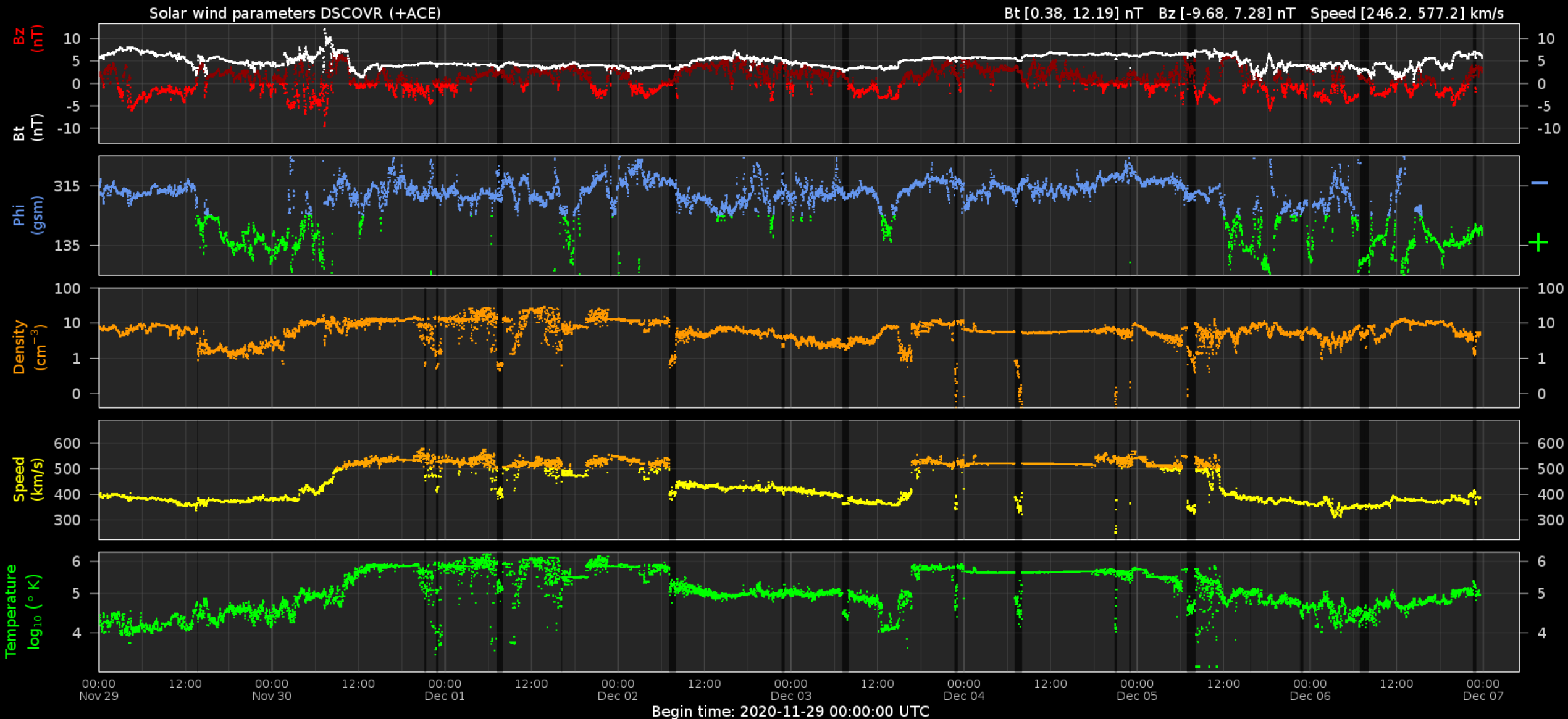
# Geomagnetic Activity



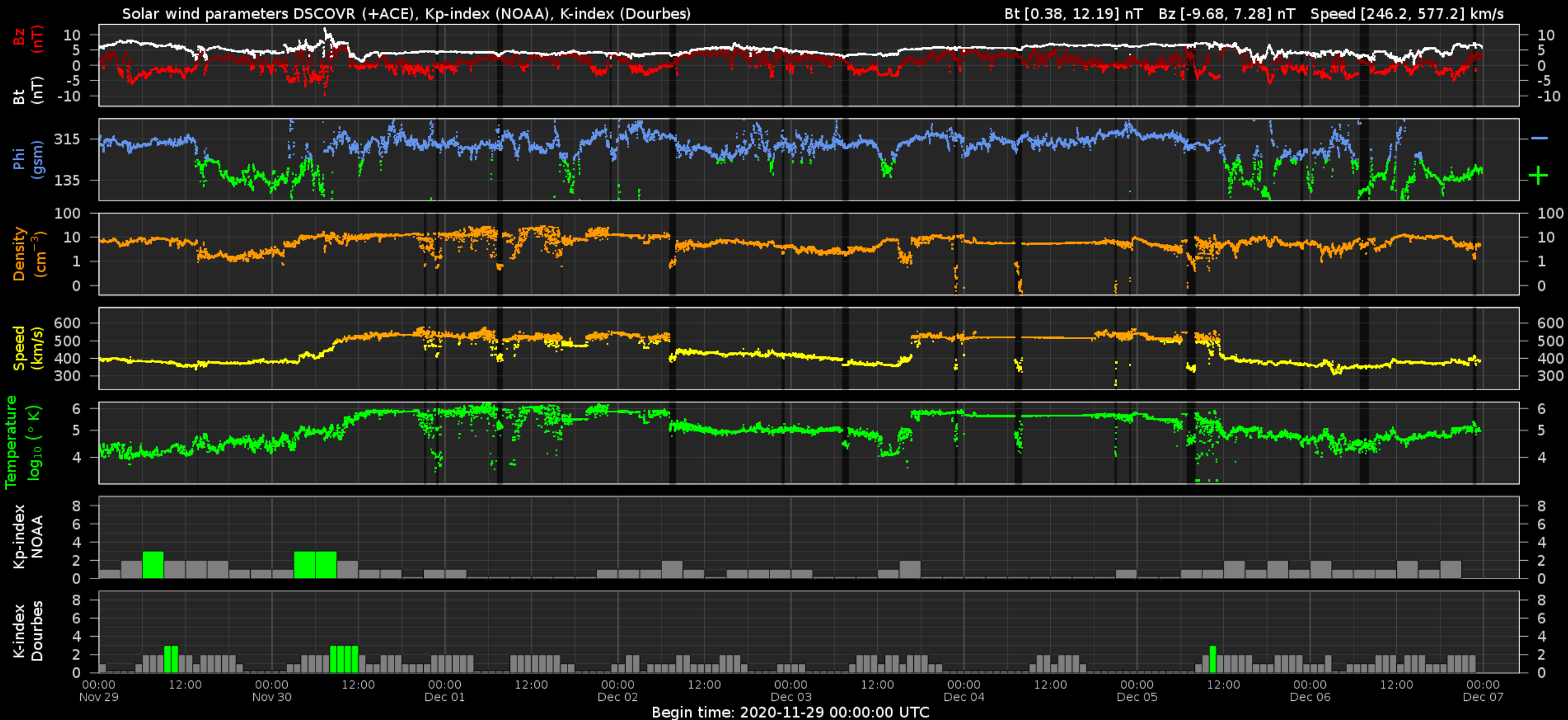
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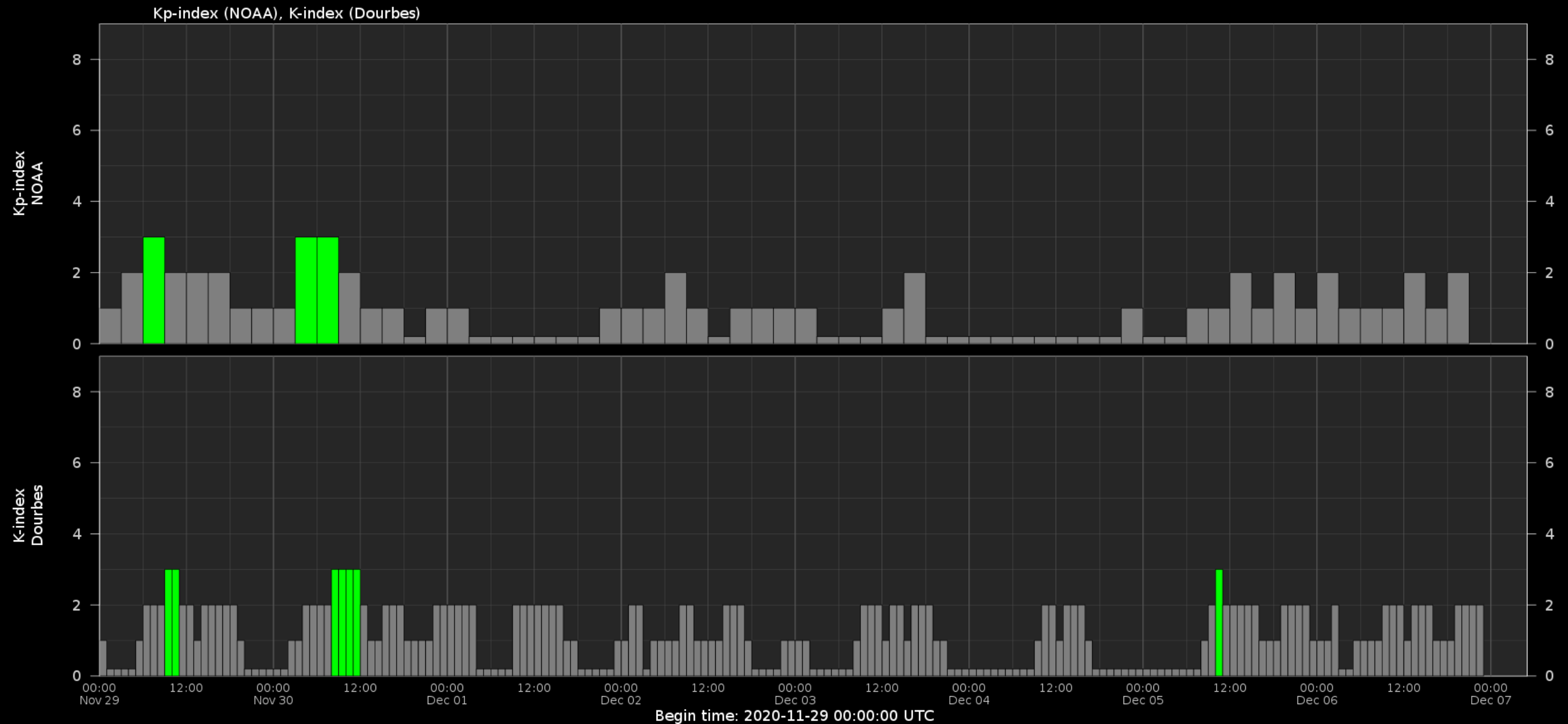
# Solar wind parameters (DSCOVR data)



# Solar wind parameters & K-index (DSCOVR/Dourbes)



# Geomagnetic activity (K-indexes)



# Solar Energetic Particles

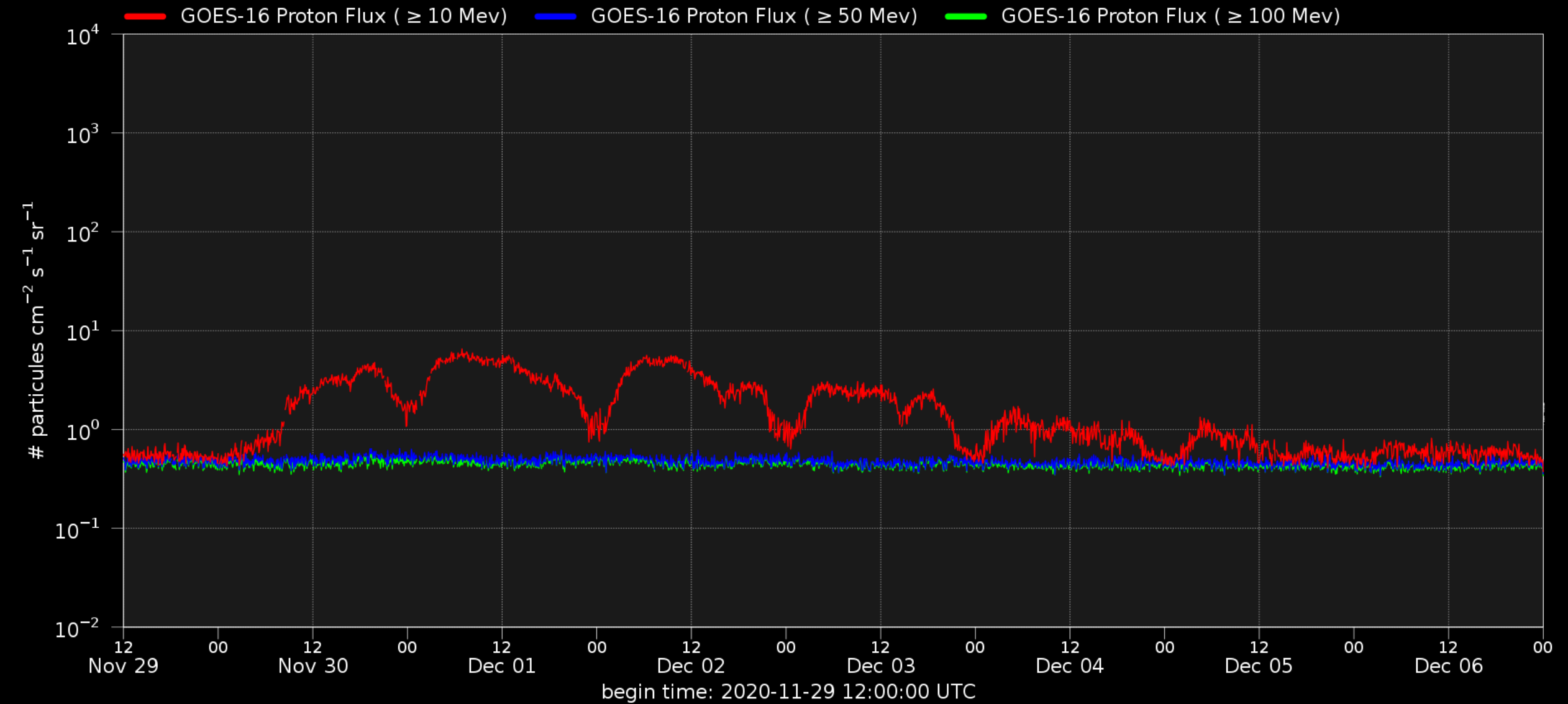


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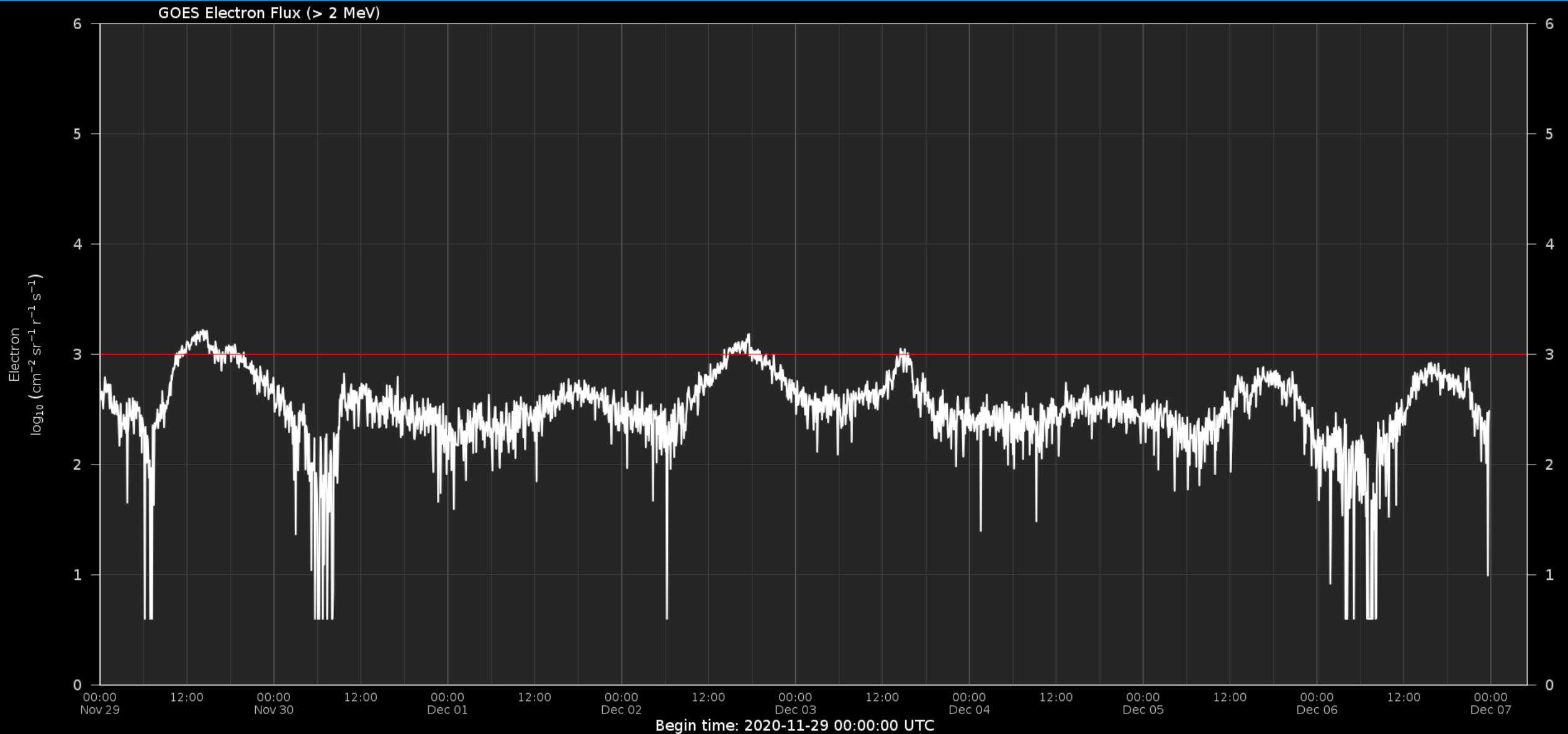
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# Solar proton flux



# Electron flux at GEO



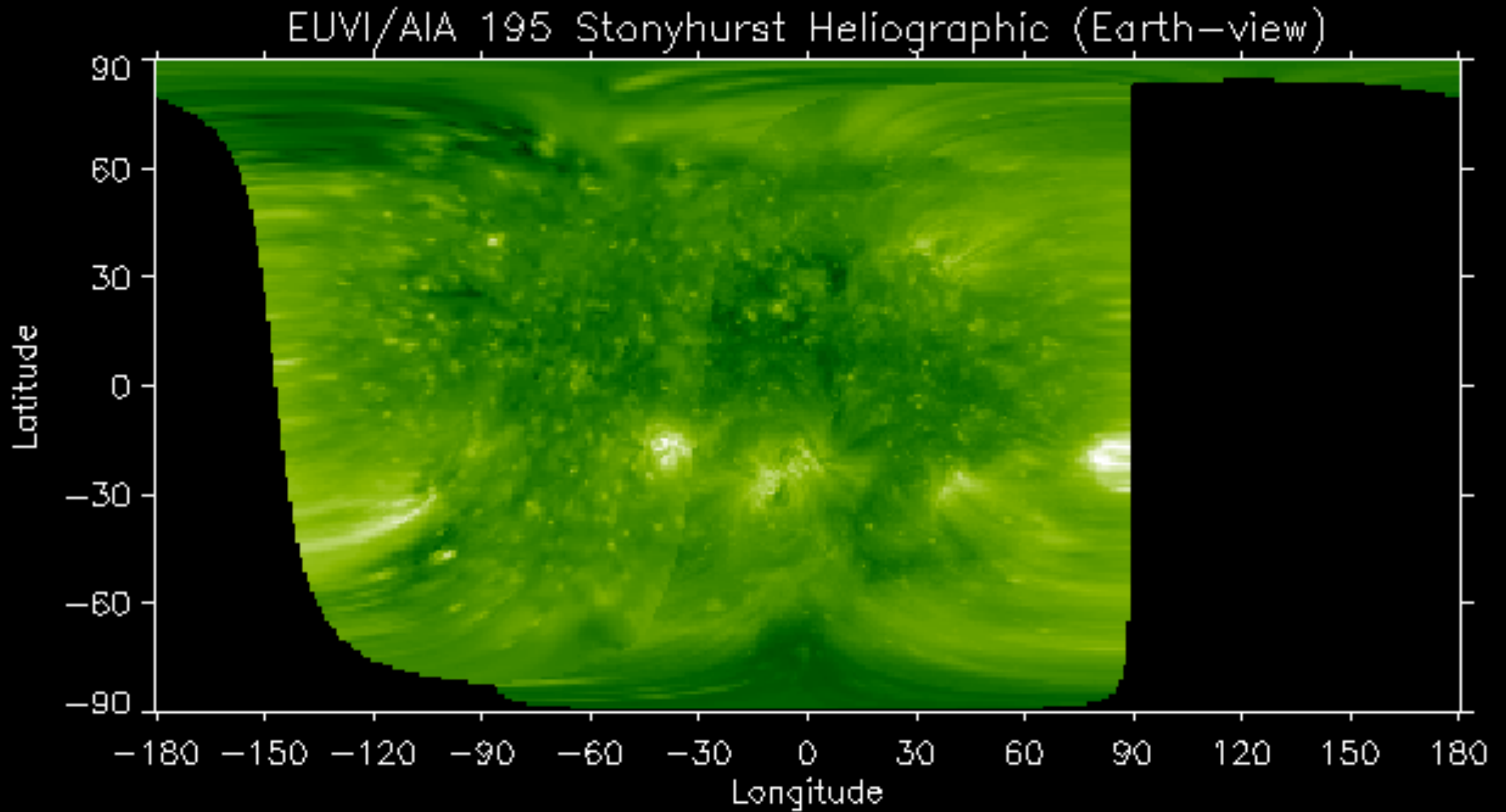
# Outlook



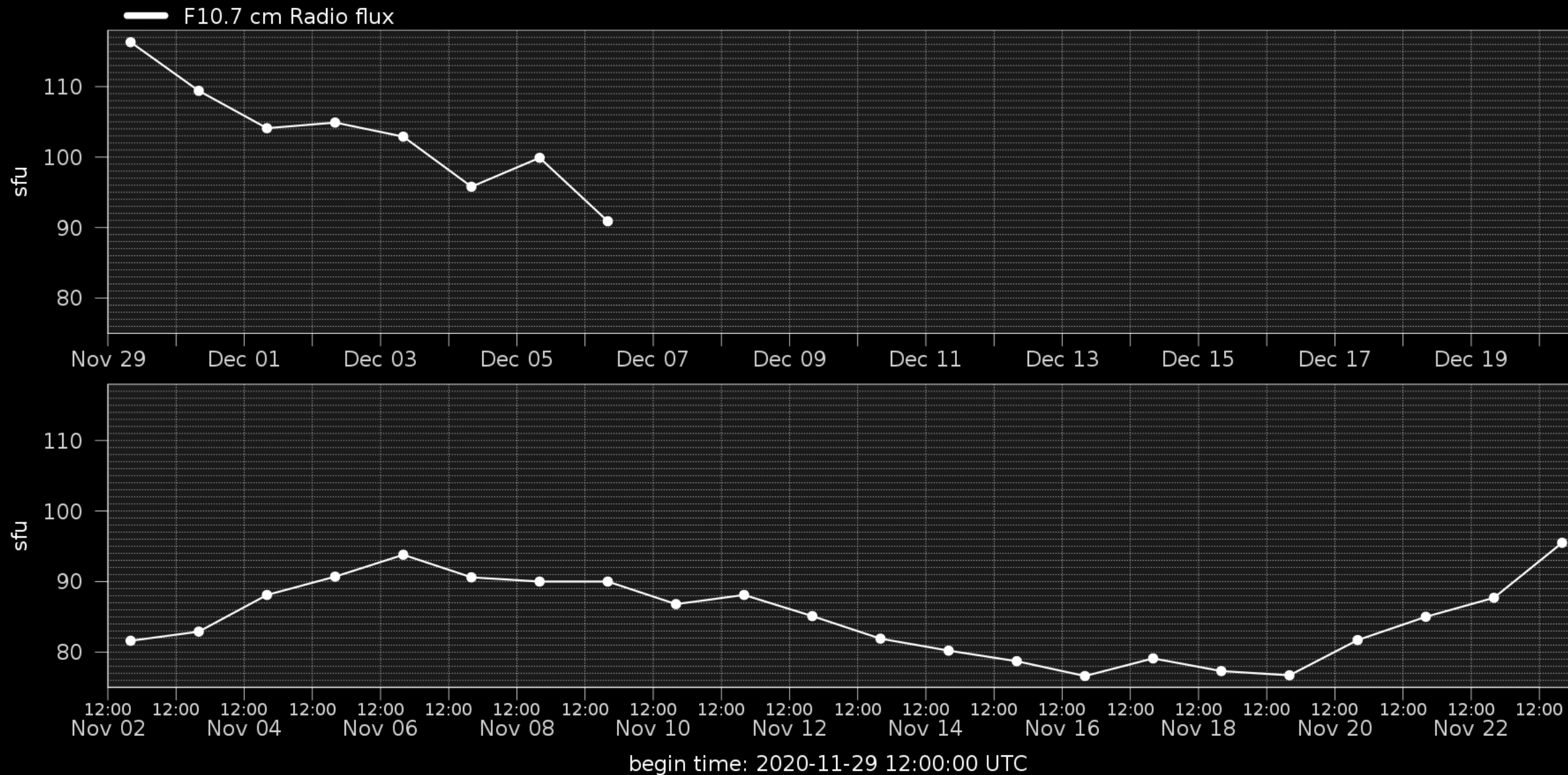
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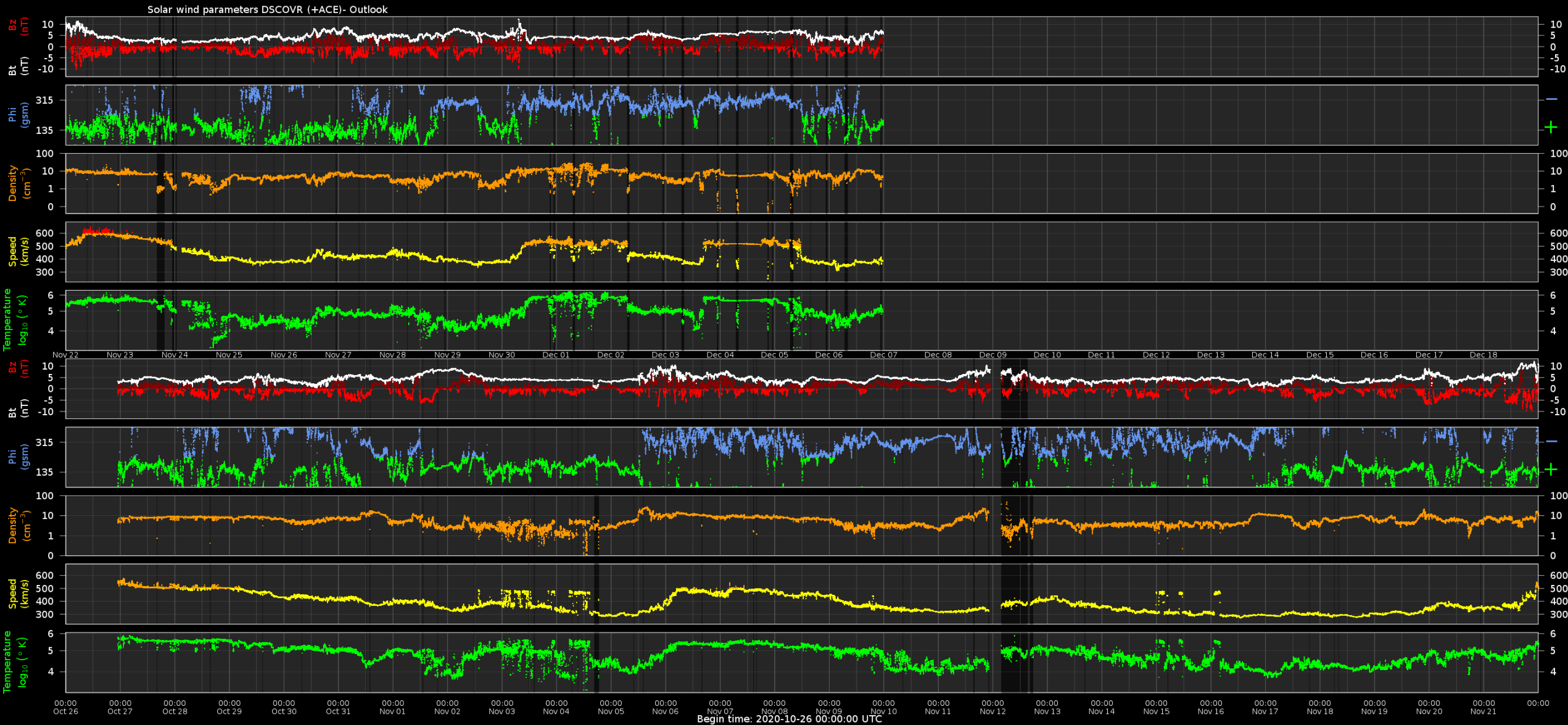
# Outlook: Solar activity



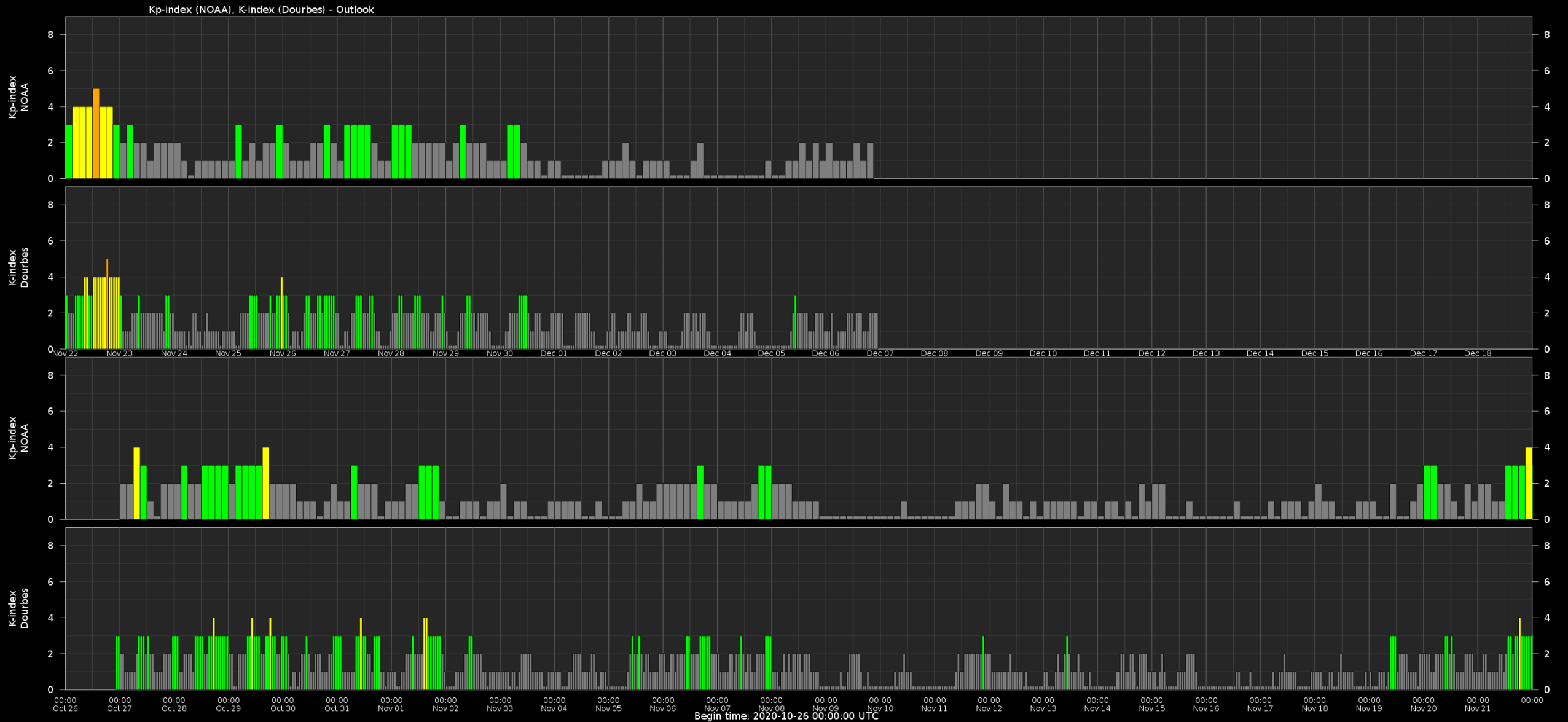
# Outlook: F10 flux



# Outlook: Solar wind parameters



# Outlook: Geomagnetic activity



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