SIDC Space Weather Briefing

06 December 2020 - 13 December 2020

Luciano Rodriguez
& the SIDC forecaster team

Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2020-12-06 12:00 to 2020-12-13 23:59

Active regions	2790, 2791 and 2792
Flares	# C-class flare: 2 # M-class flare: 0 # X-class flare: 0
Coronal Holes	One (patchy) equatorial, negative polarity

Proton flux	Below threshold
Electron flux	Below threshold

Solar wind and geomagnetic conditions

ICME	One on 10/12
SW Conditions	|B|: 0.38 - 15.96 nT // Bz: -10.07 nT to 13.56 nT // Speed: 325.1 - 596.3km/s
K-indices	max K-index (Dourbes): 3 max Kp-index (NOAA): 4

All Quiet Alert: Off

Solar Activity

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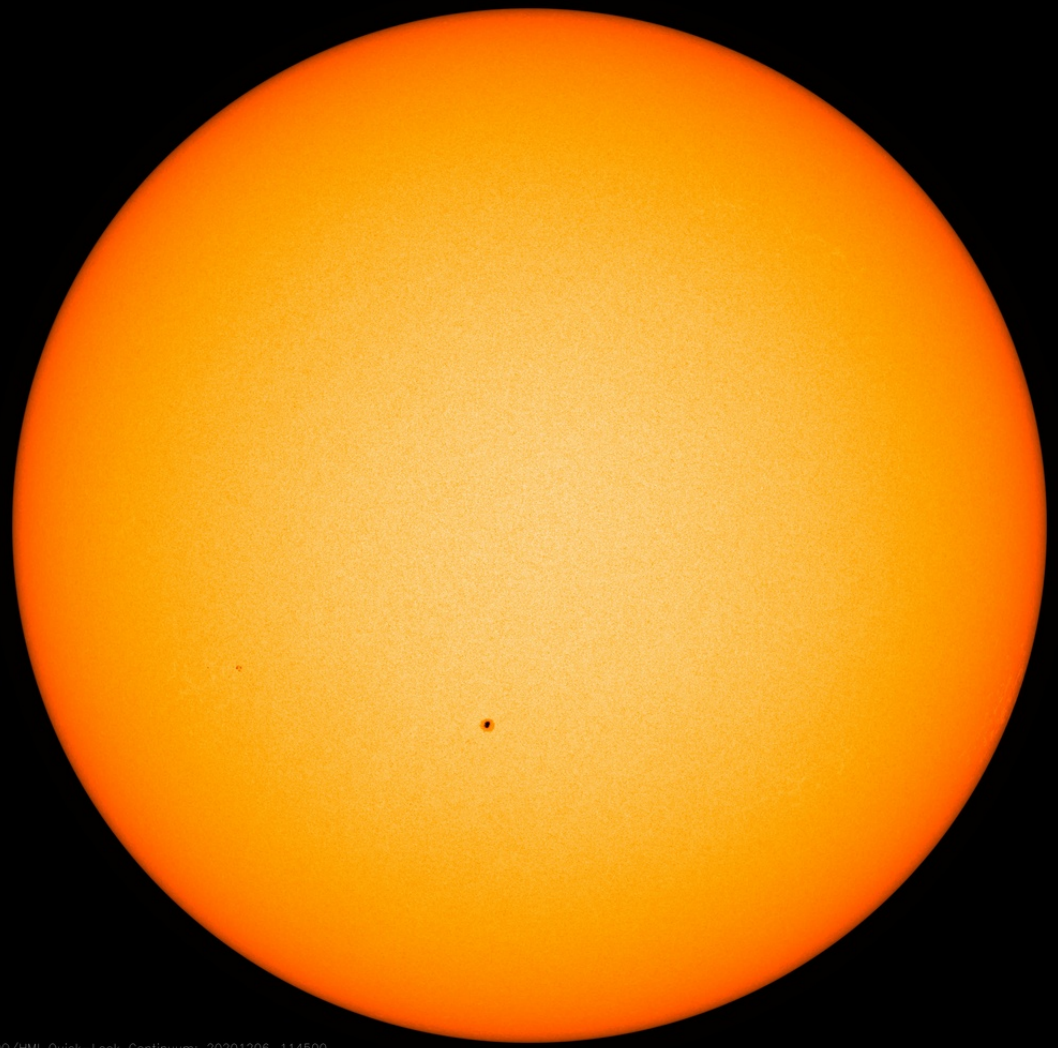
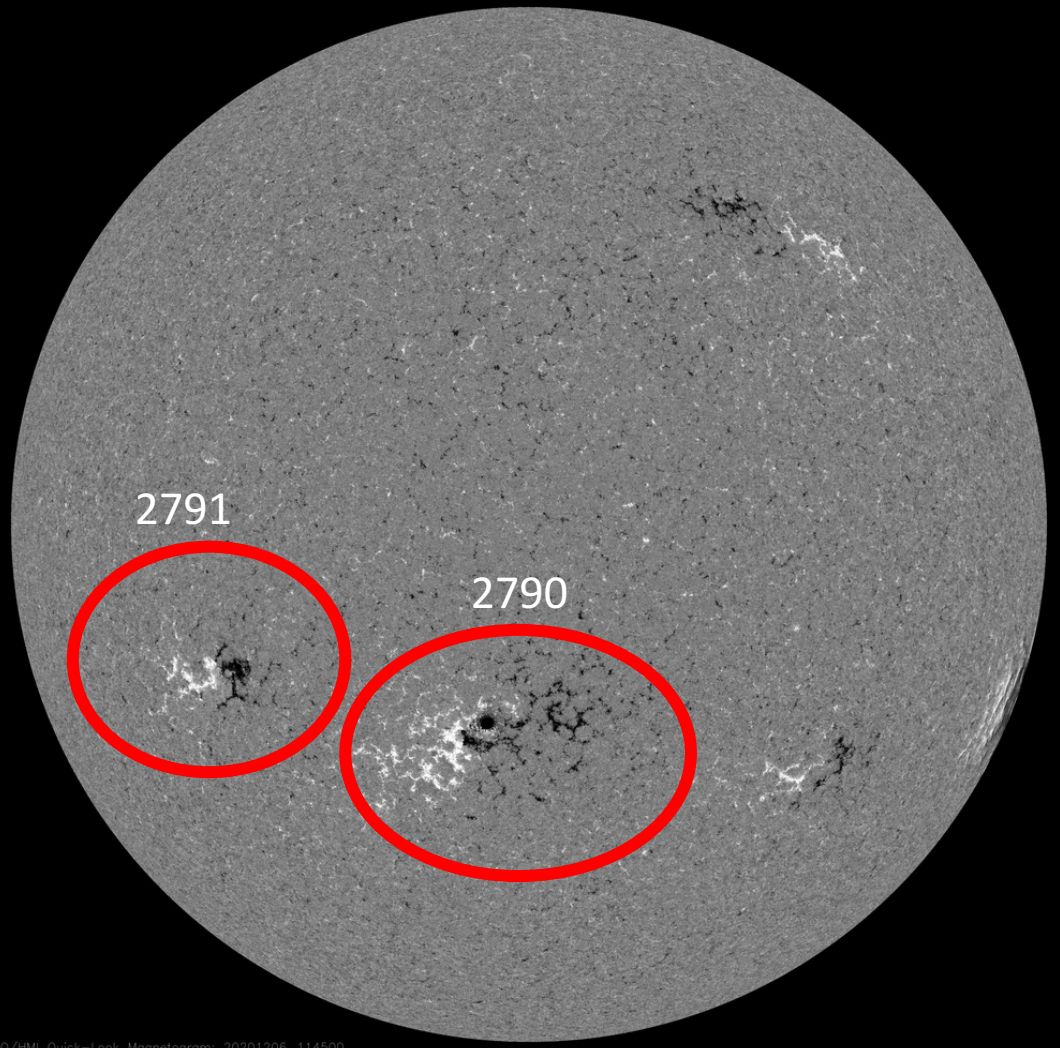
Solar active regions

SDO/HMI White Light 2020-12-06

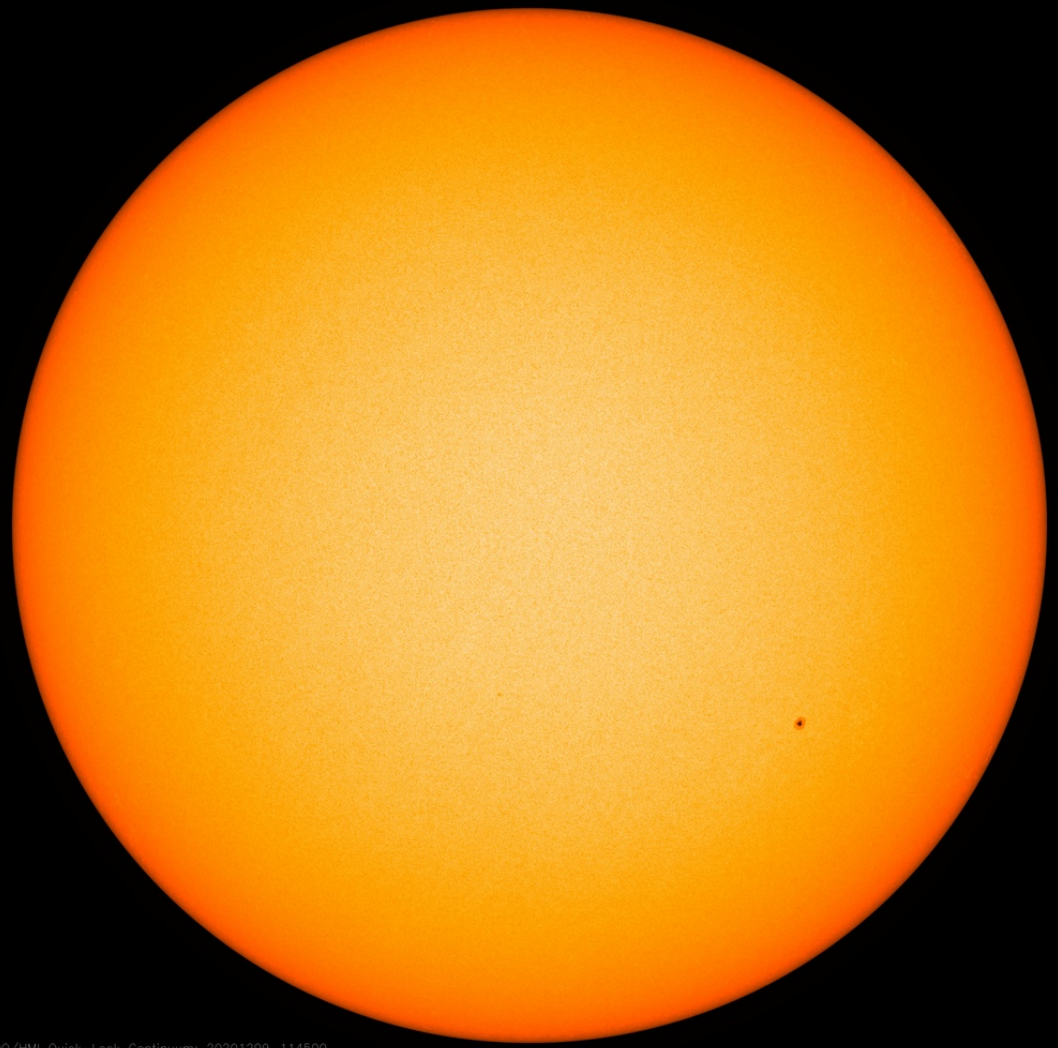


SDO/HMI Magnetogram 2020-12-06

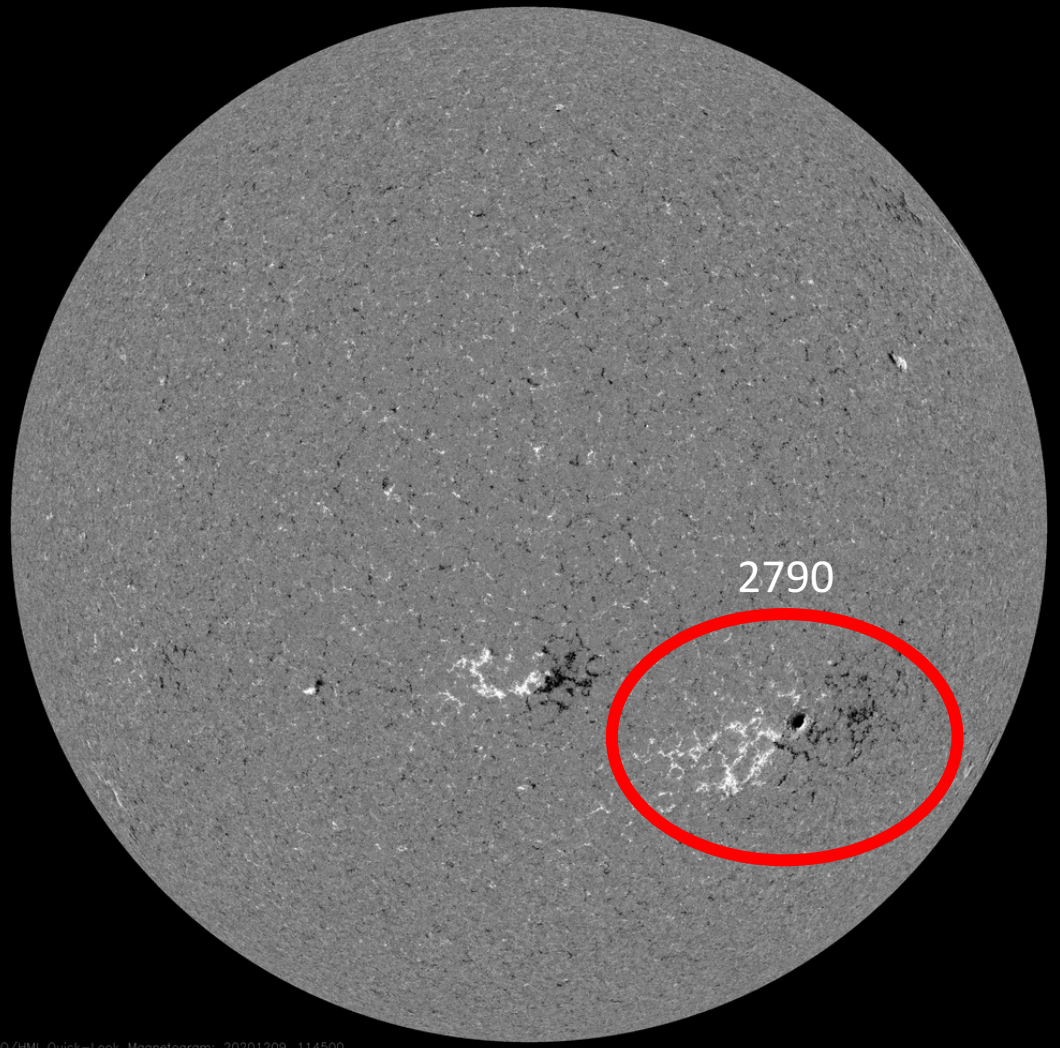


Solar active regions

SDO/HMI White Light 2020-12-09

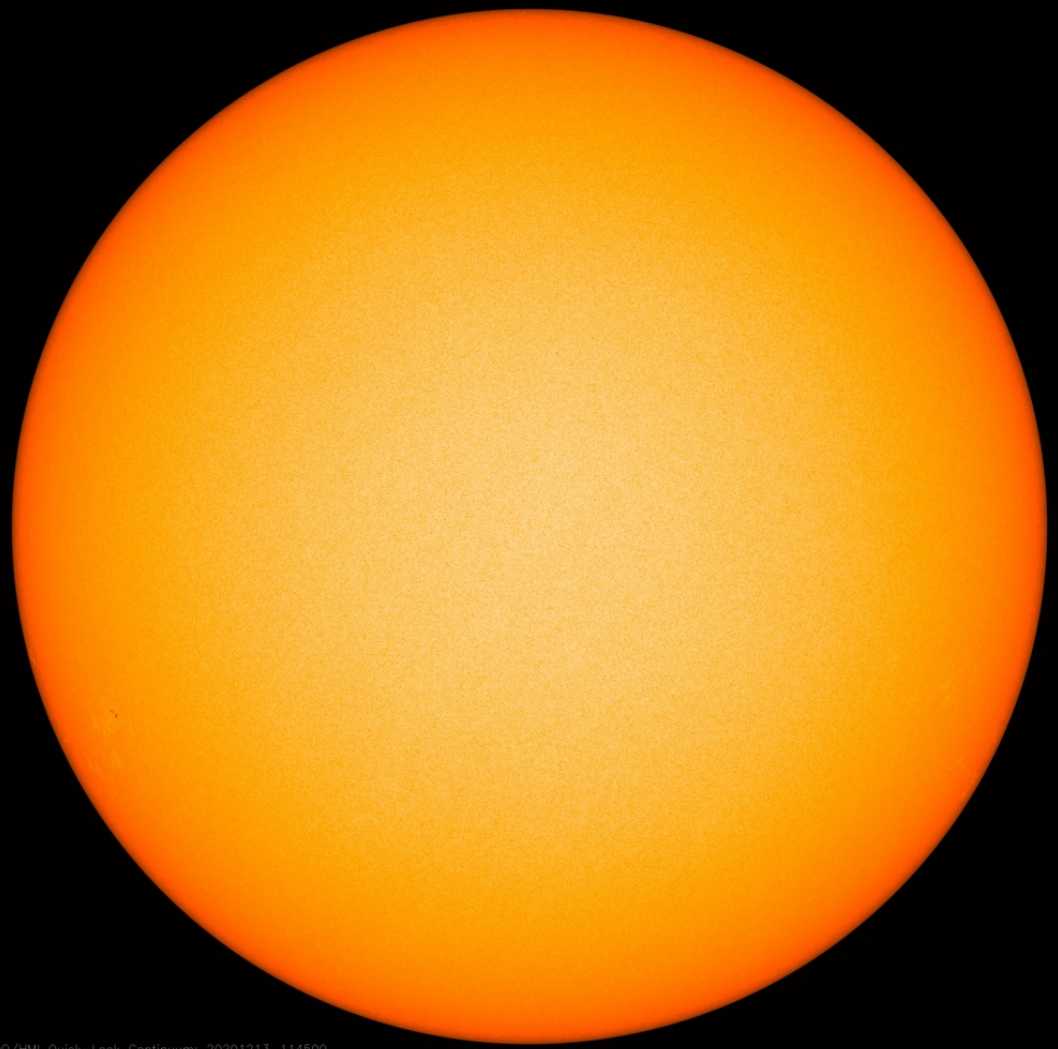


SDO/HMI Magnetogram 2020-12-09



Solar active regions

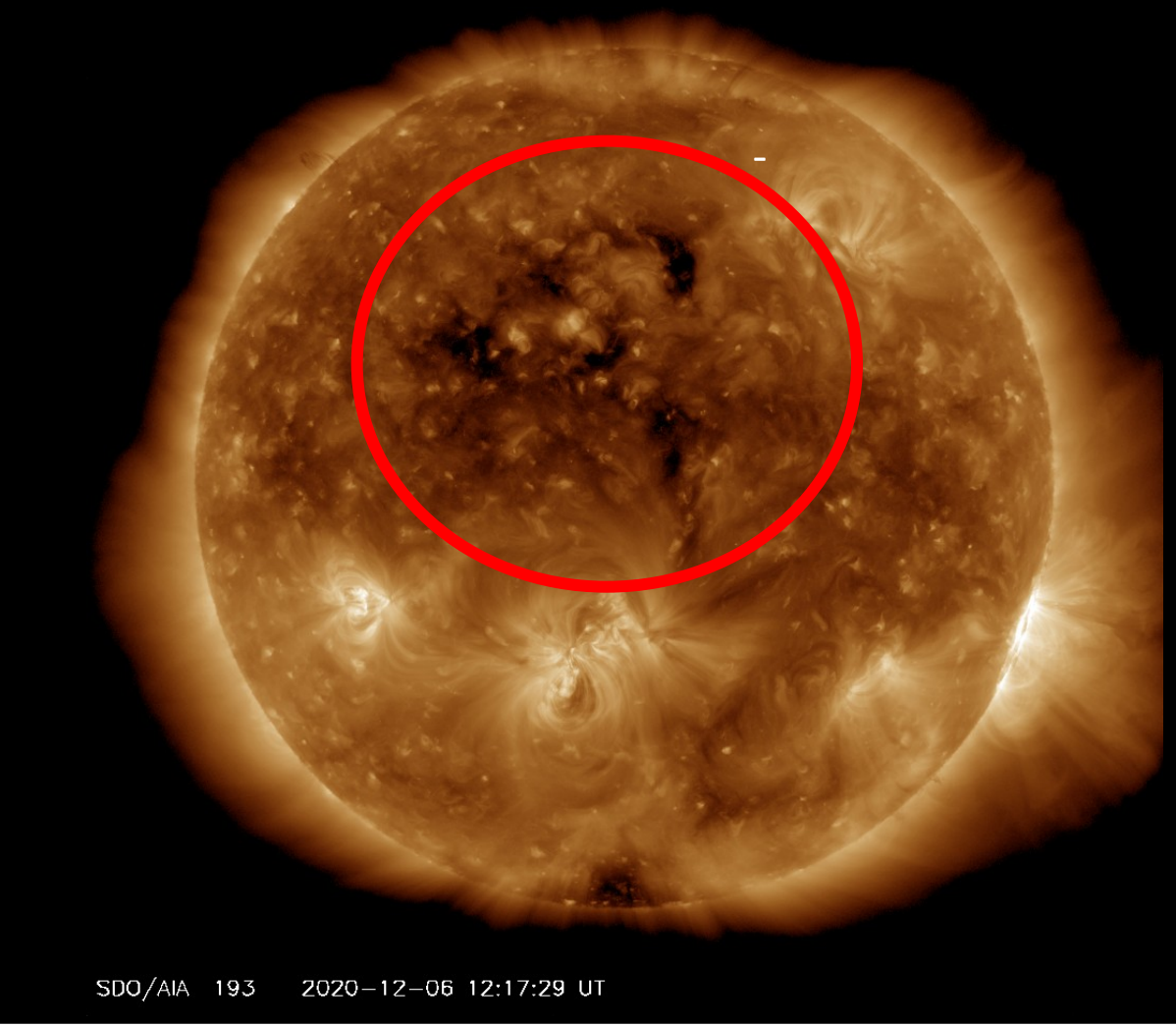
SDO/HMI White Light 2020-12-13



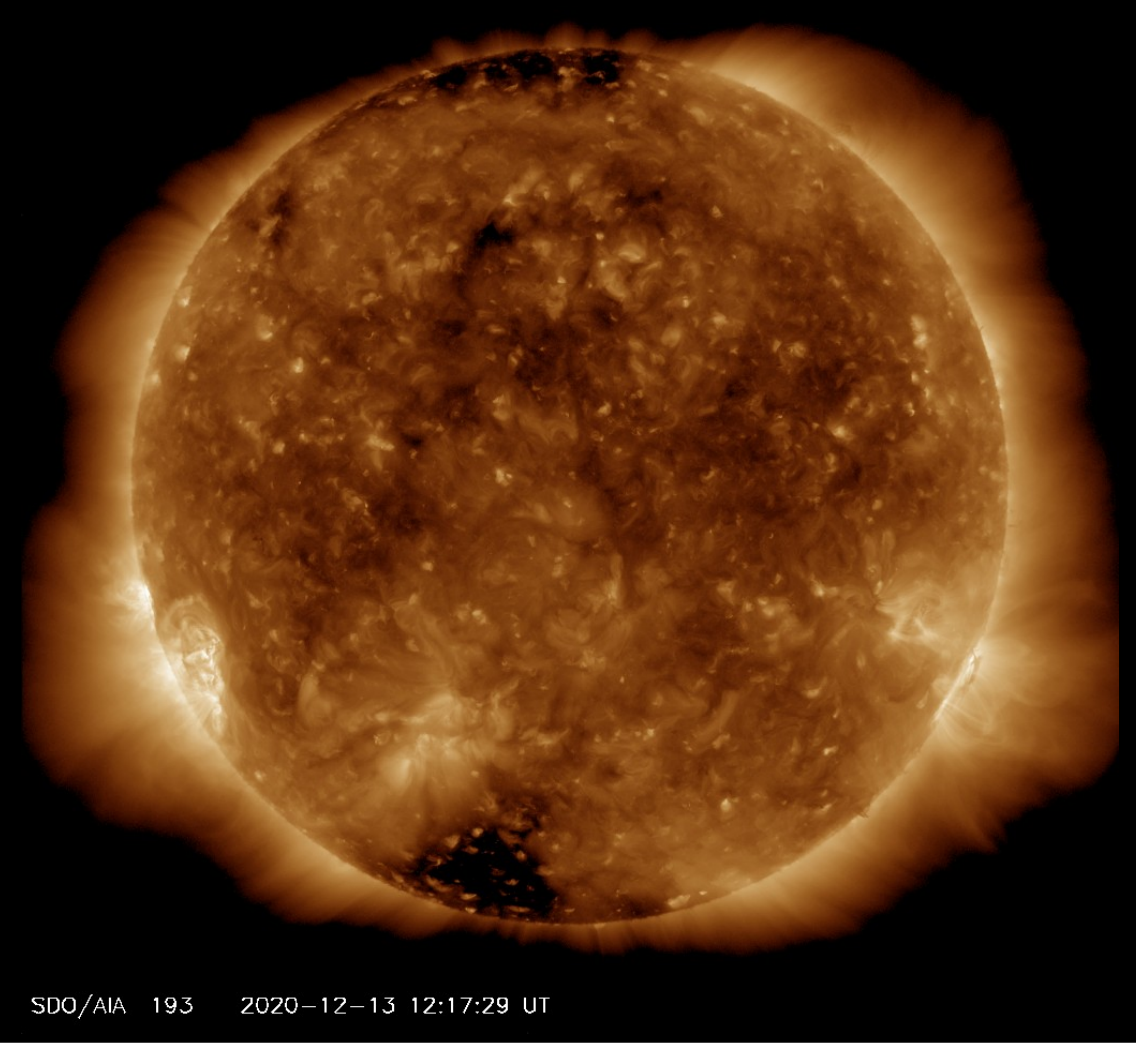
SDO/HMI Magnetogram 2020-12-13

Coronal holes

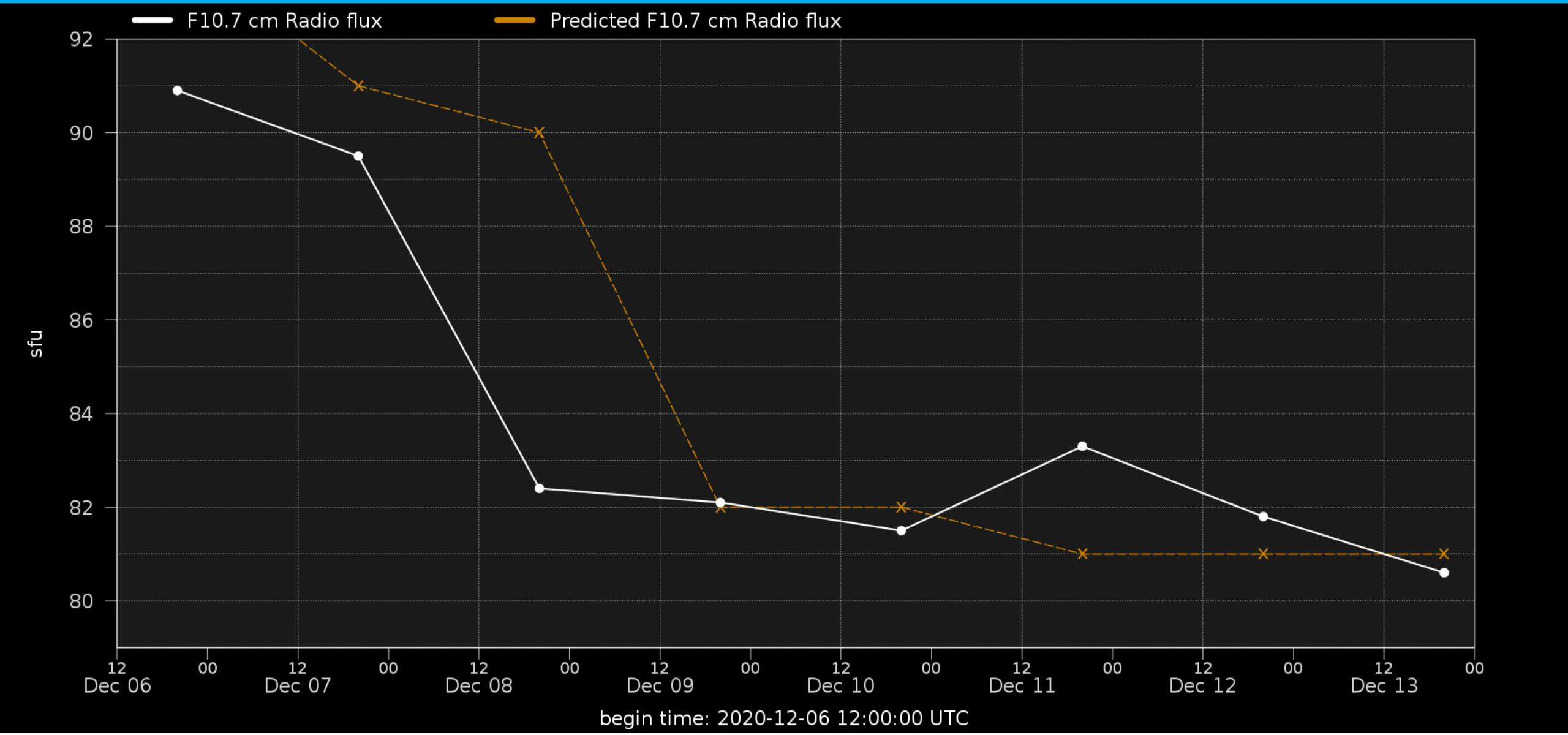
SDO/AIA 19.3 nm 2020-12-06



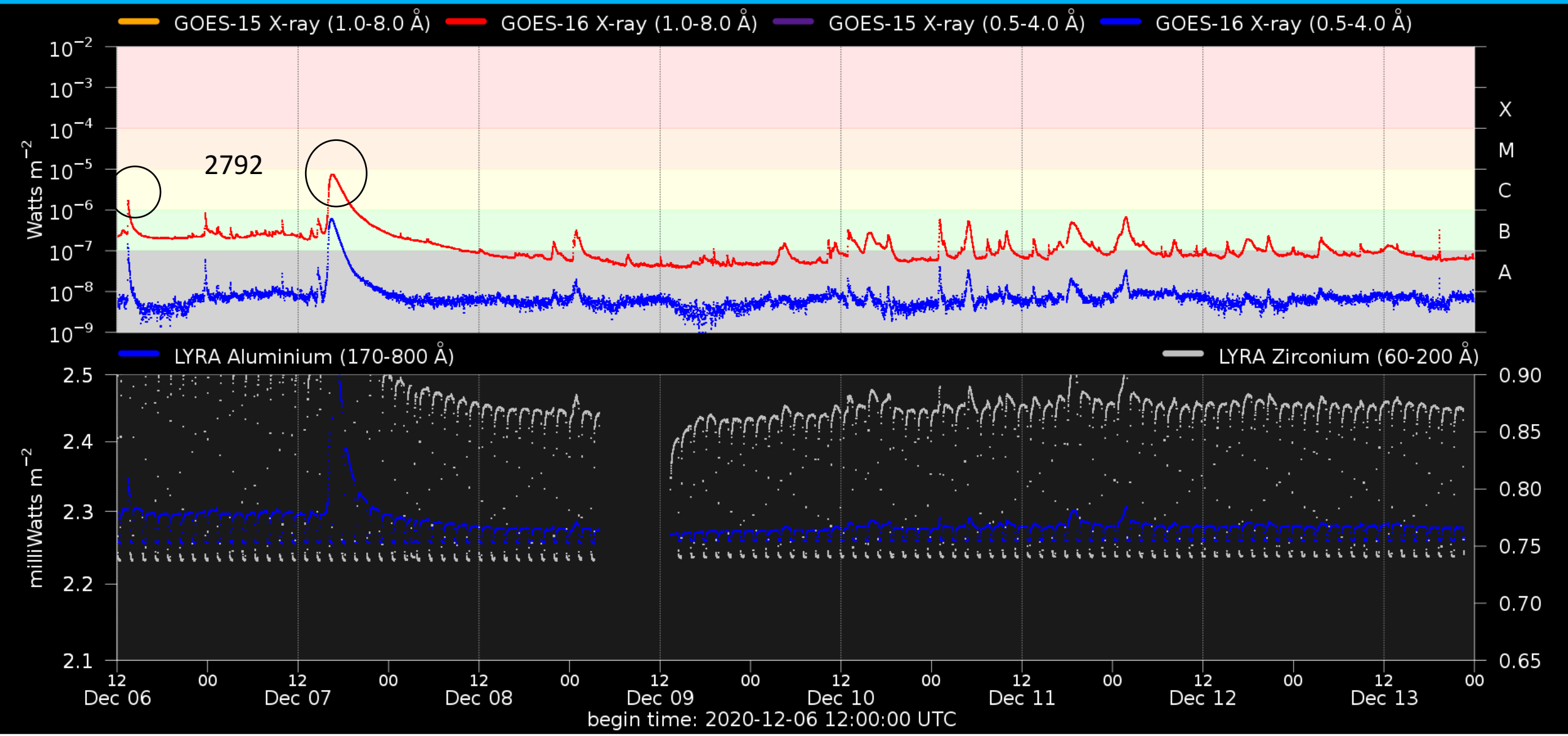
SDO/AIA 19.3 nm 2020-12-13



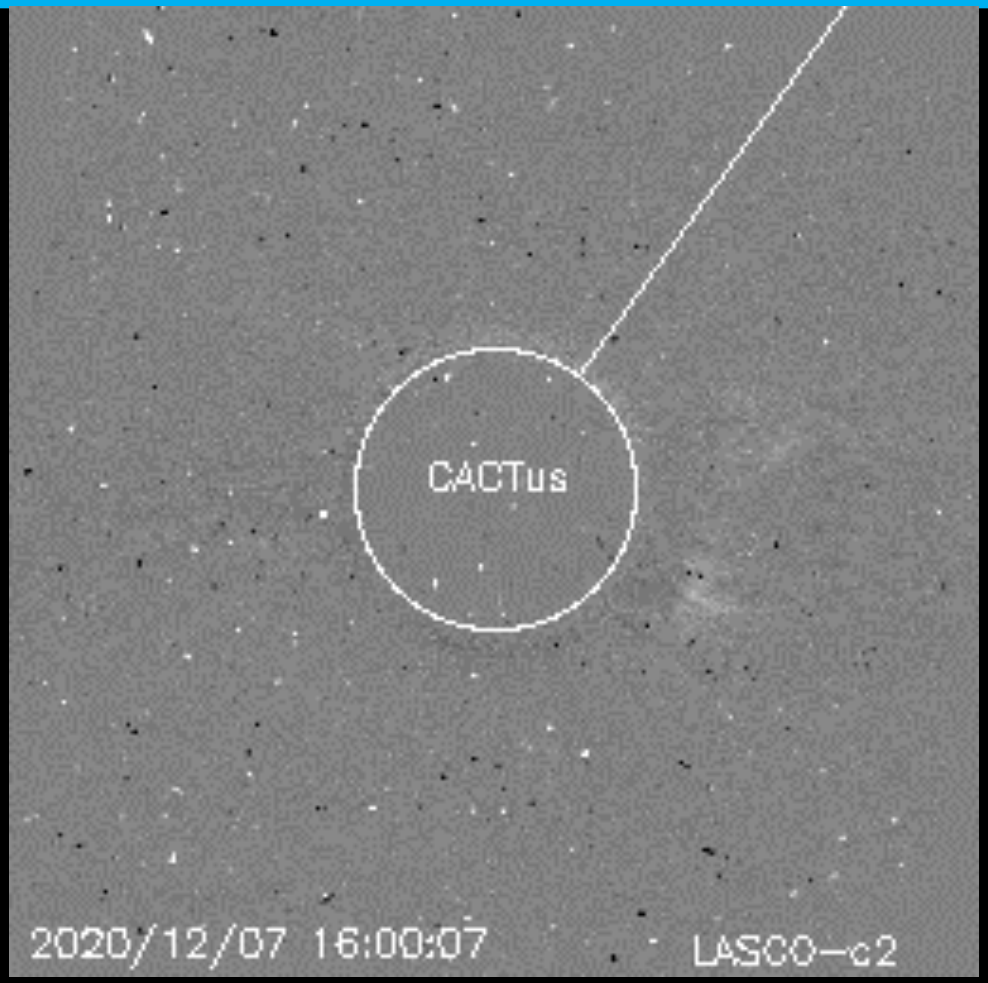
Solar F10.7cm radio flux



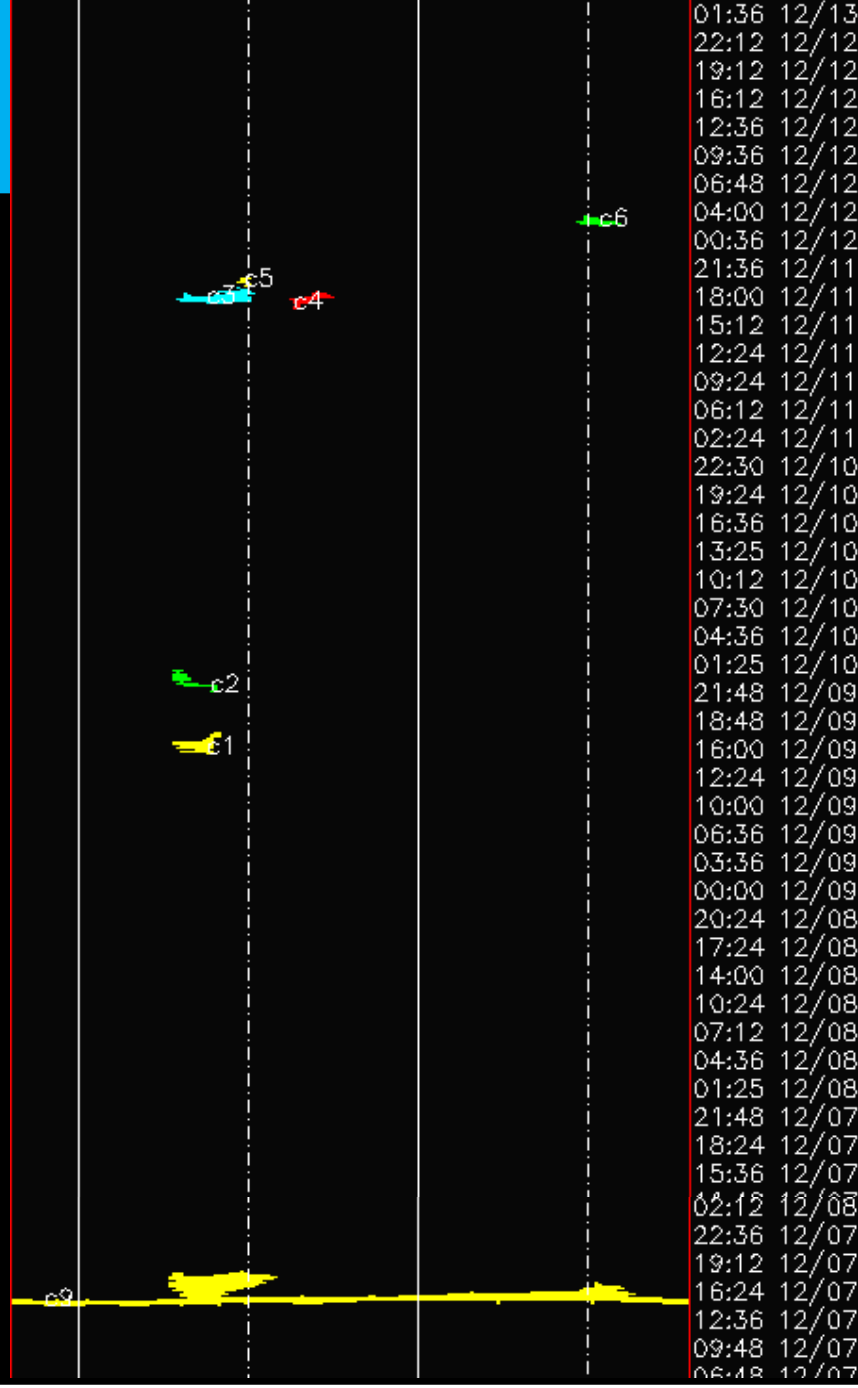
Solar X-Ray and UV flux



Coronal Mass Ejections



Source region



PRESTO: A full halo CME was first seen by LASCO C2 at 16:24 UT on 7 December, with a speed of 1280 km/s, associated with a long duration C7.4 flare from NOAA AR 2790. It is expected to arrive to the Earth around 17:00 UT on December 9.

Coronal Mass Ejections

Halo CME detection alert from the SIDC/RWC Belgium

From Solar Influences Data analysis Center
To rodriguez@oma.be
Date Wed 11:19

```
:Issued: 2020 Dec 09 1019 UTC
:Product: documentation at http://www.sidc.be/products/cactus
#-----------------------------------------------------------------#
# HALO CME ALERTS from the SIDC (RWC-Belgium), generated by CACTUS  #
#-----------------------------------------------------------------#

  A halo or partial-halo CME was detected with the following
characteristics:

            t0       | dt0| pa | da |  v   |  dv | minv| maxv|
2020-12-07T16:36:07.505 | 4.0 | 144 | 360 | 568 | 367 | 173 | 1488


      t0: onset time, earliest indication of liftoff
     dt0: duration of liftoff (hours)
      pa: principal angle, counterclockwise from North (degrees)
      da: angular width of the CME (degrees),
       v: median velocity (km/s)
      dv: variation (1 sigma) of velocity over the width of the CME
   mindv: lowest velocity detected within the CME
   maxdv: highest velocity detected within the CME

#-----------------------------------------------------------------#
# Solar Influences Data analysis Center - RWC Belgium             #
# Royal Observatory of Belgium                                    #
#                                                                 #
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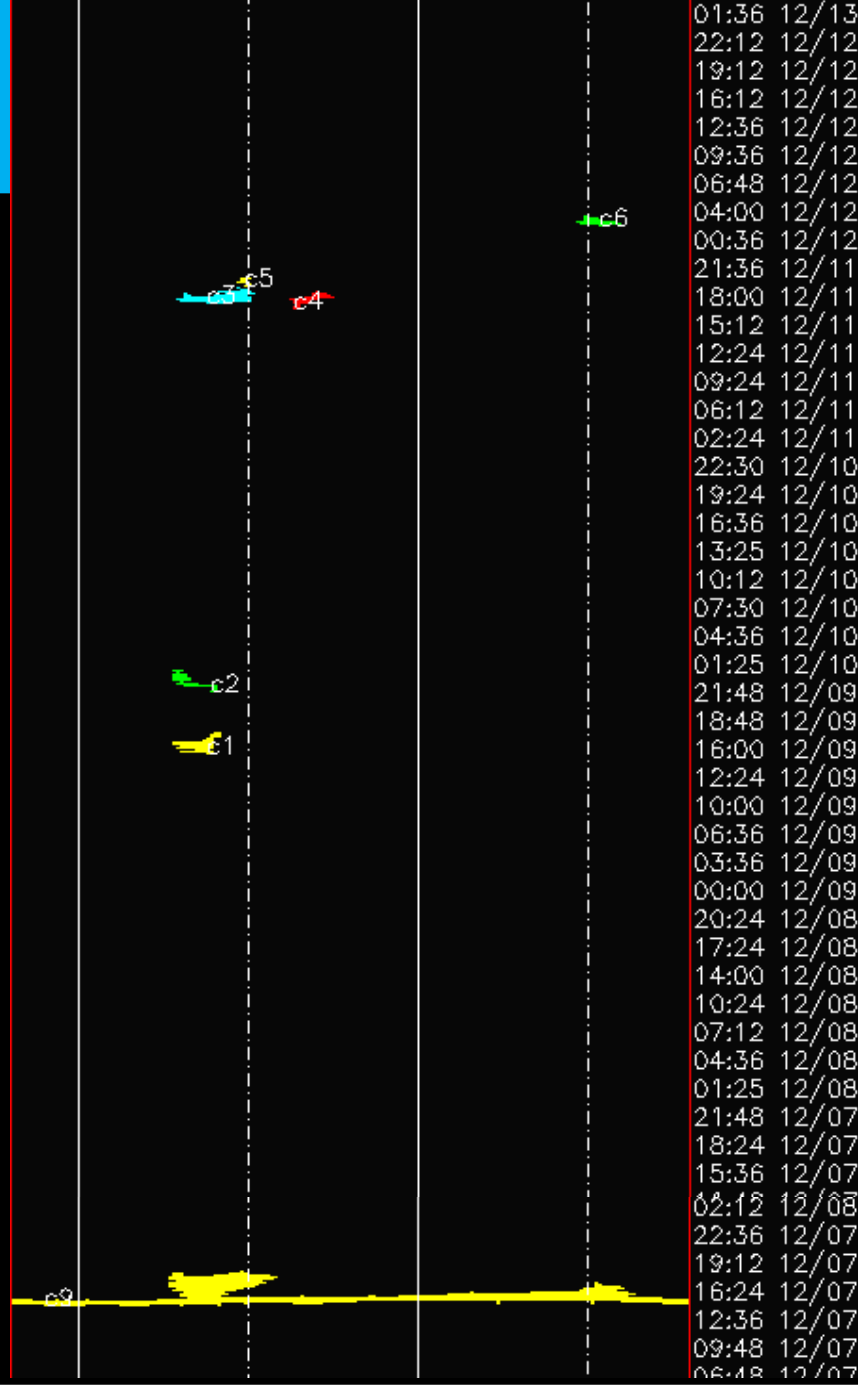
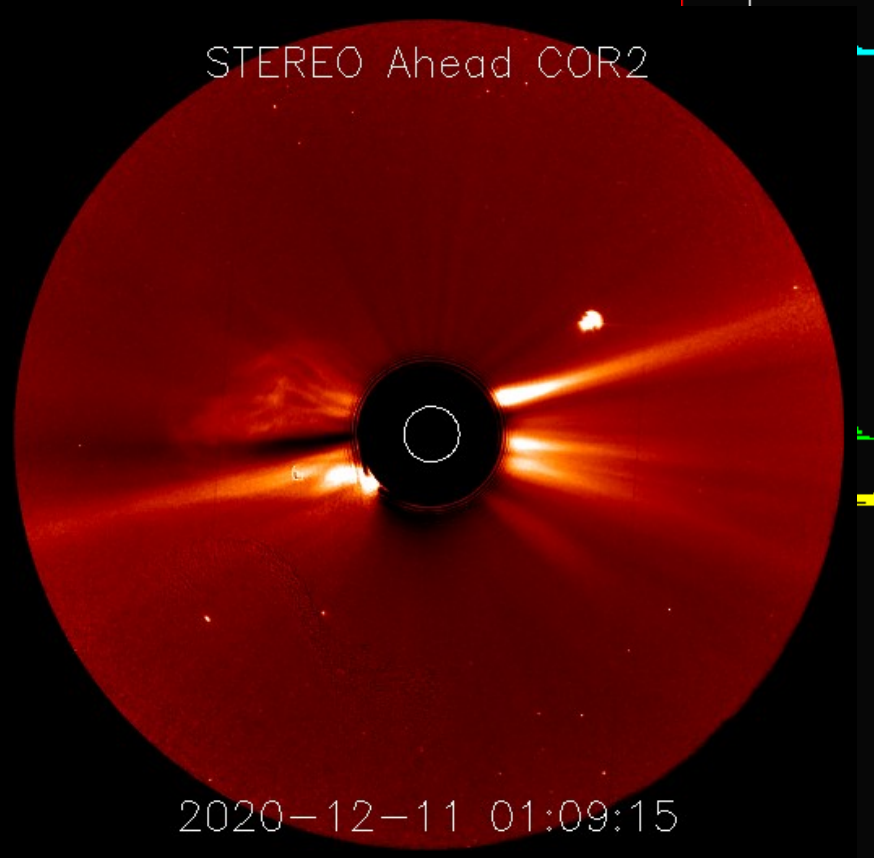
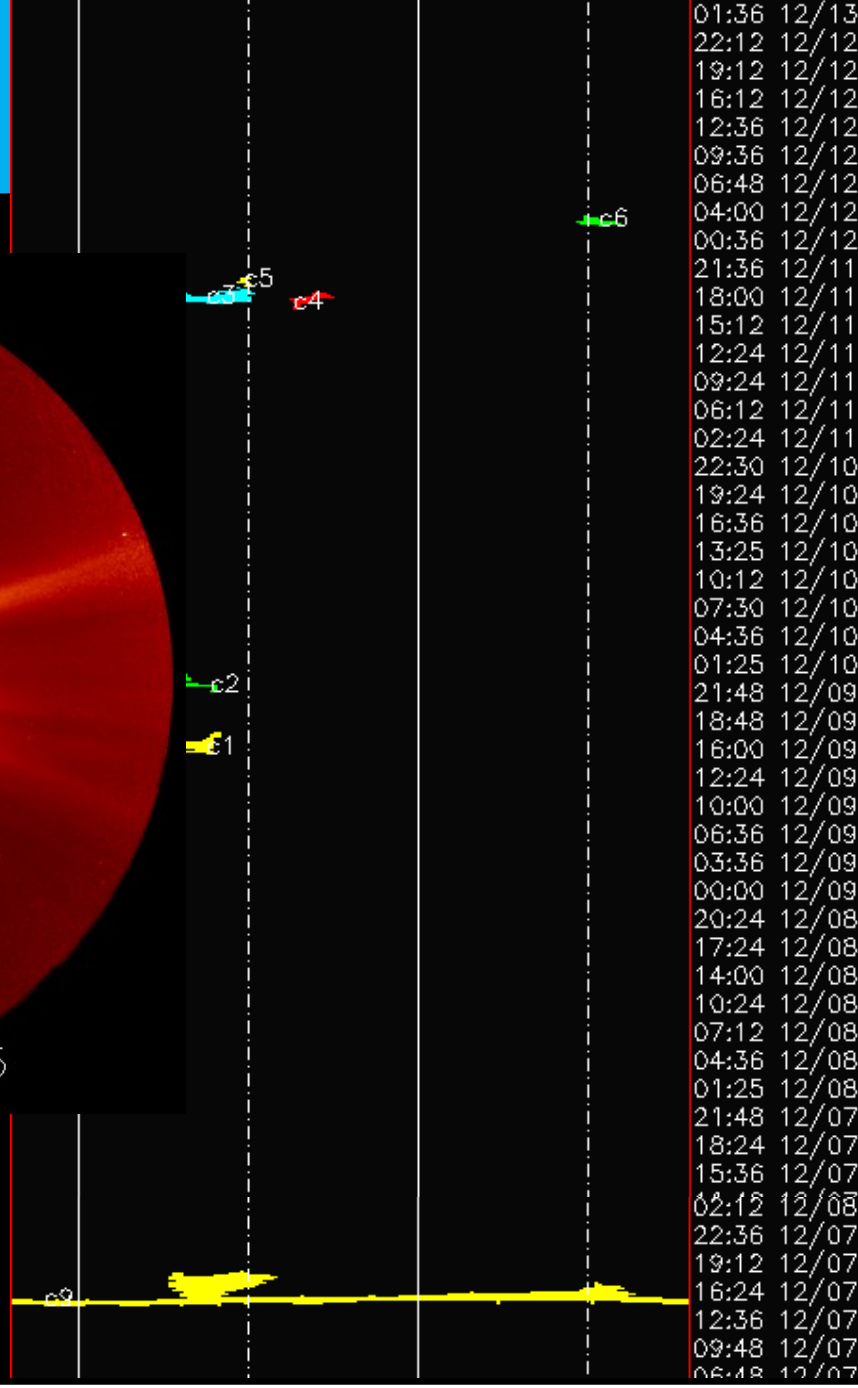


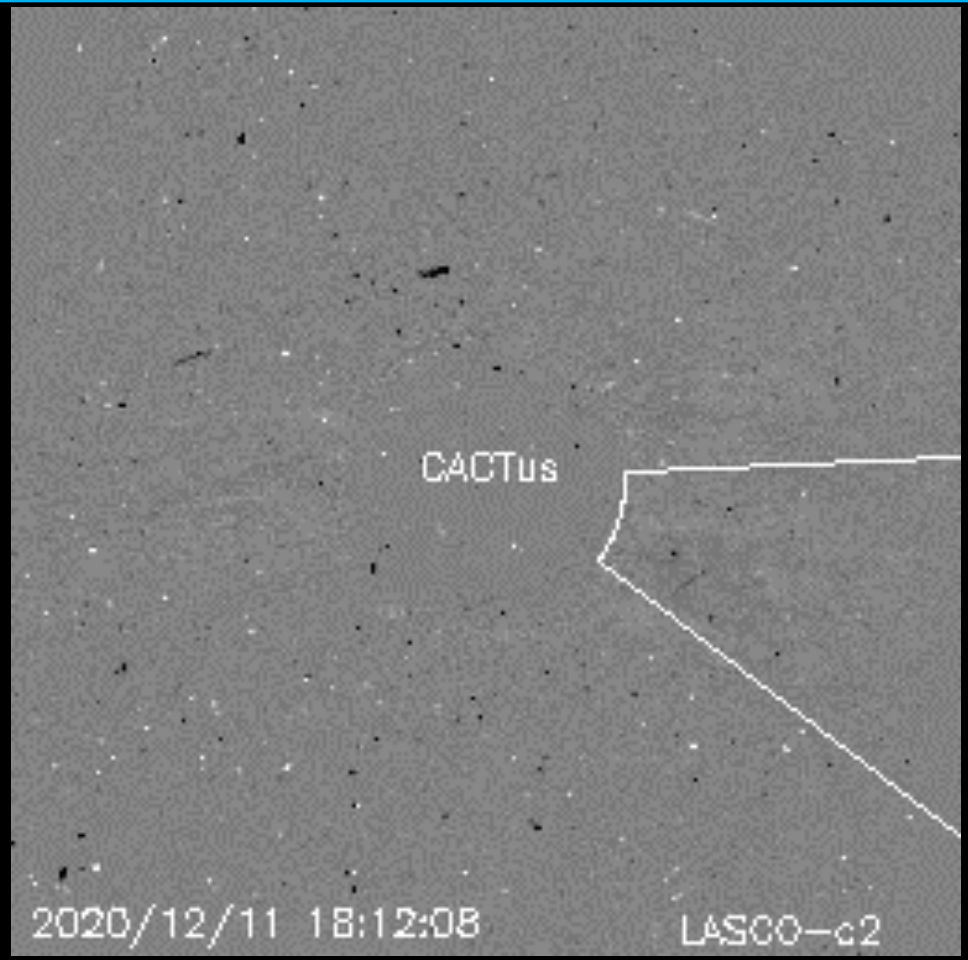
Coronal Mass Ejections



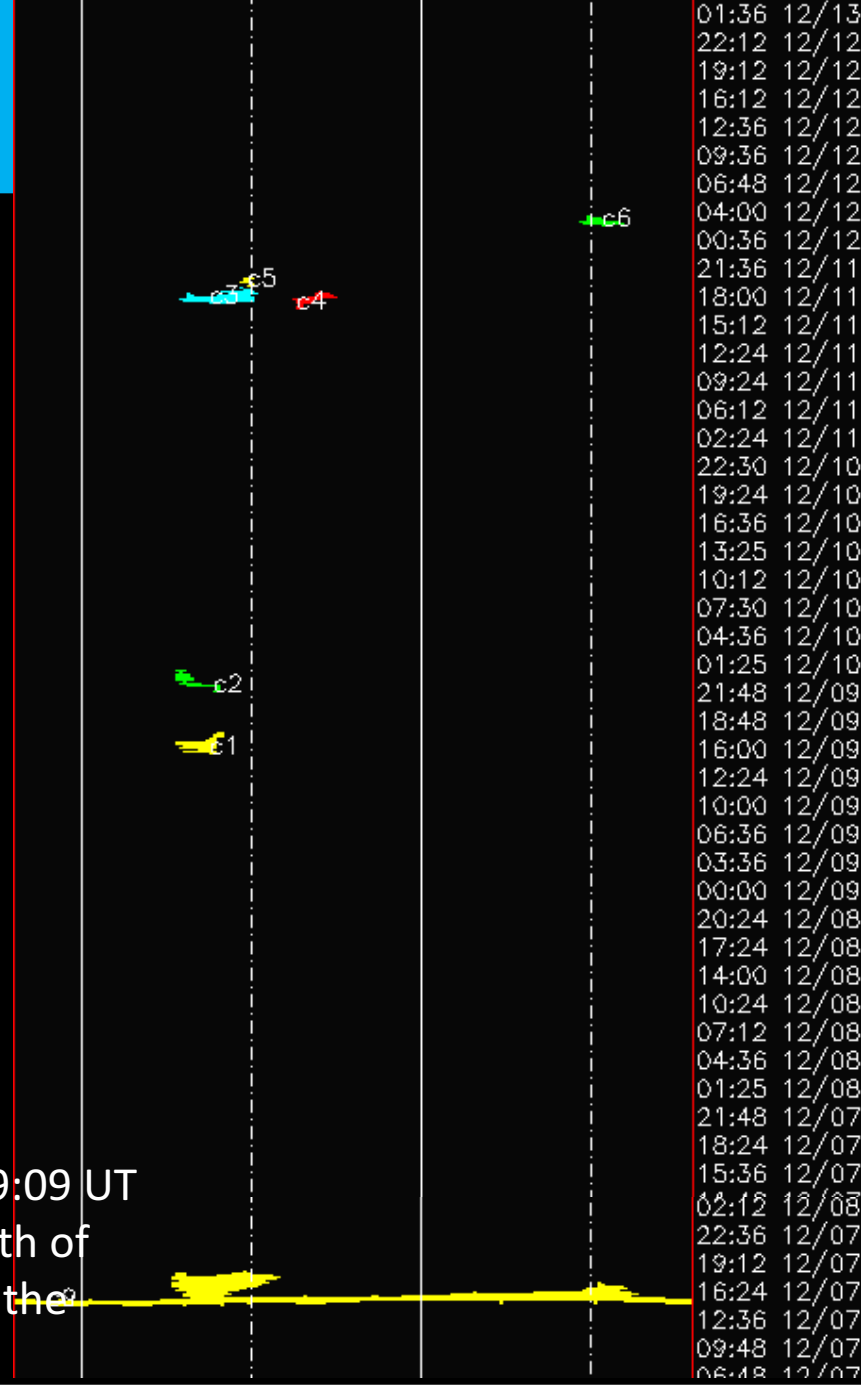


PRESTO: A faint backsided full halo CME was seen first at 00:24 UT on 11 December by LASCO-C2, it will not arrive to the Earth.

Coronal Mass Ejections



Source region



Faint CME erupted from old NOAA AR 2791 (now decayed into a plage), first seen at 19:09 UT on 11 December by LASCO-C2. The CME is slow (about 200 km/s), with an angular width of around 60 degrees, and directed mostly towards the west. It will most likely not affect the Earth, but a glancing blow on 16 December cannot be discarded.

Solar Wind and Geomagnetic Activity

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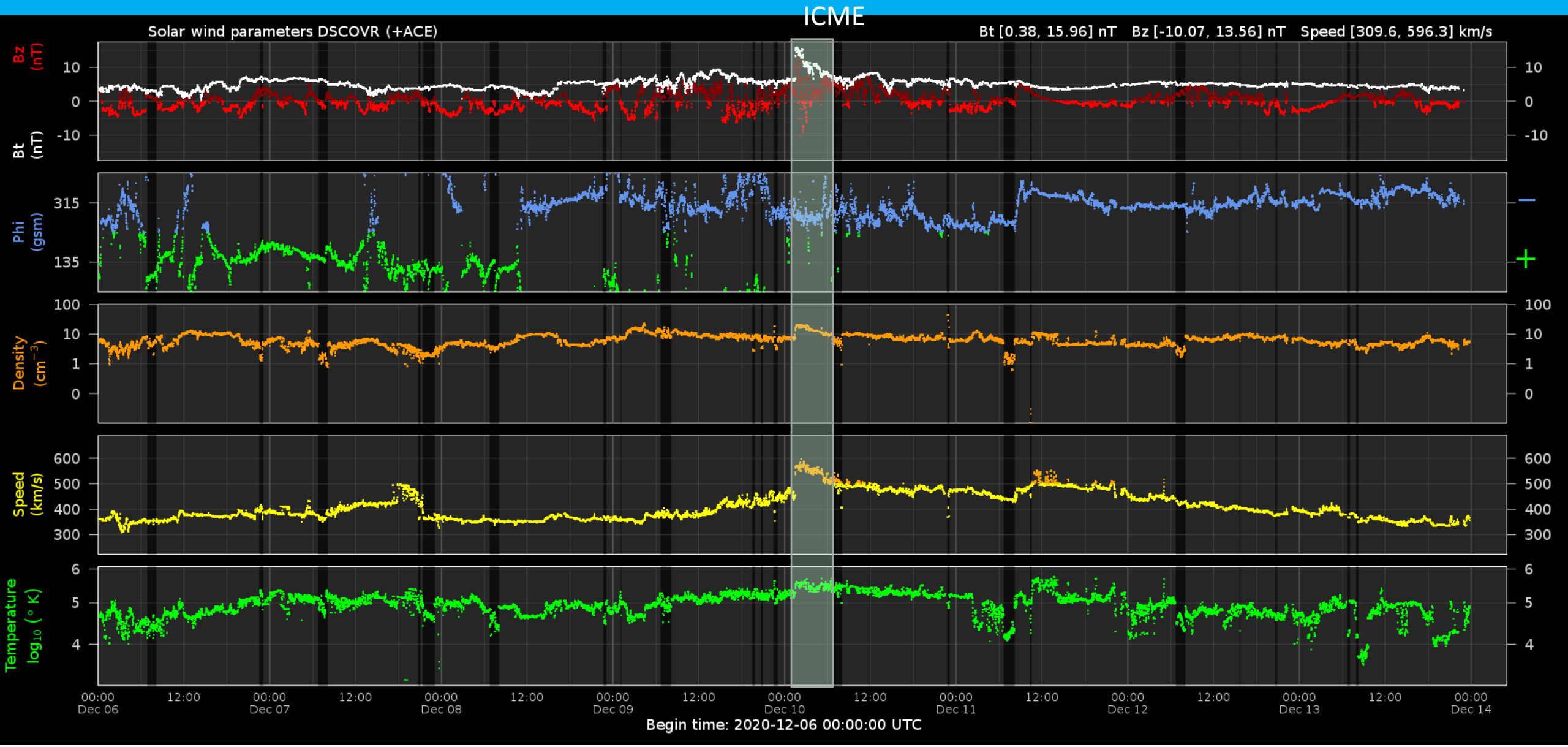
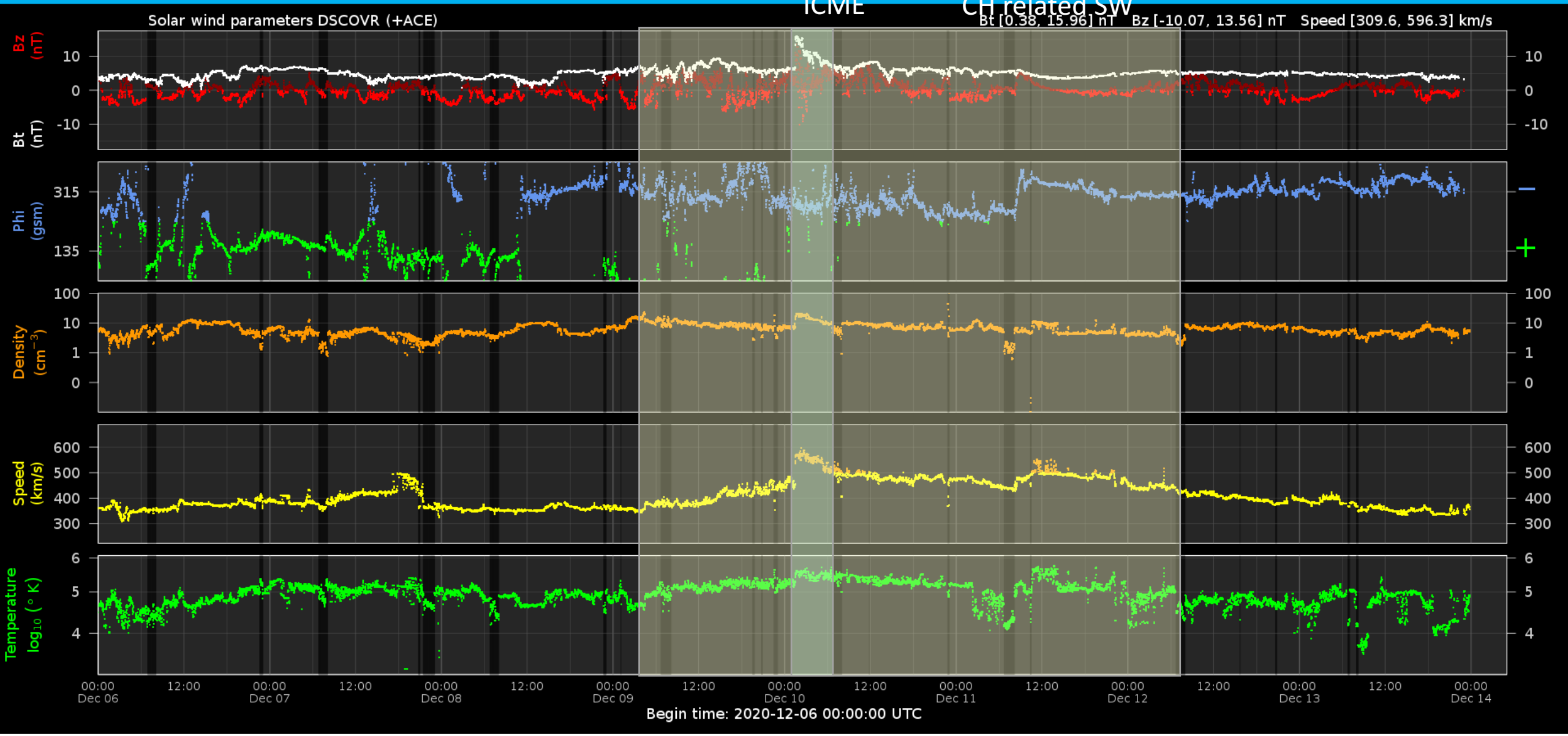
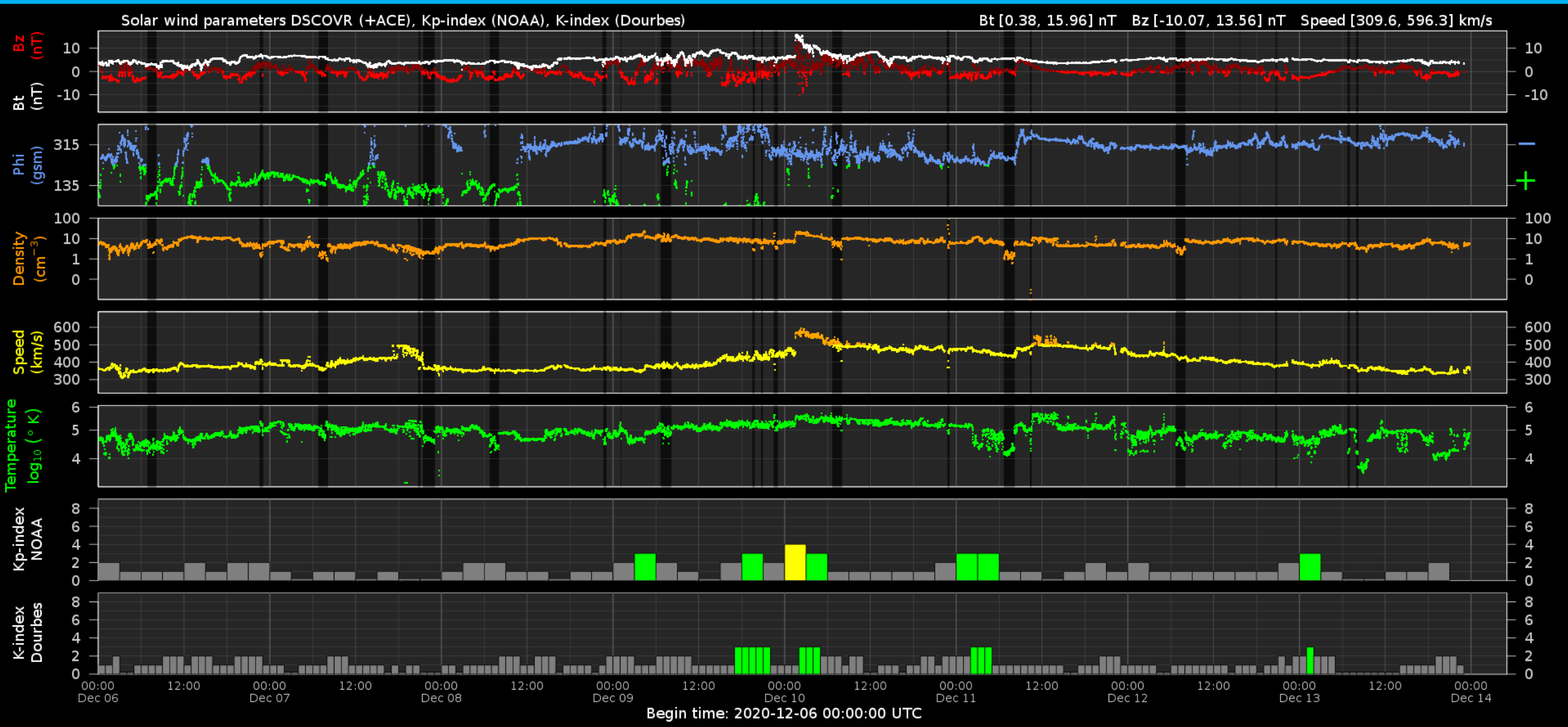
Solar wind parameters



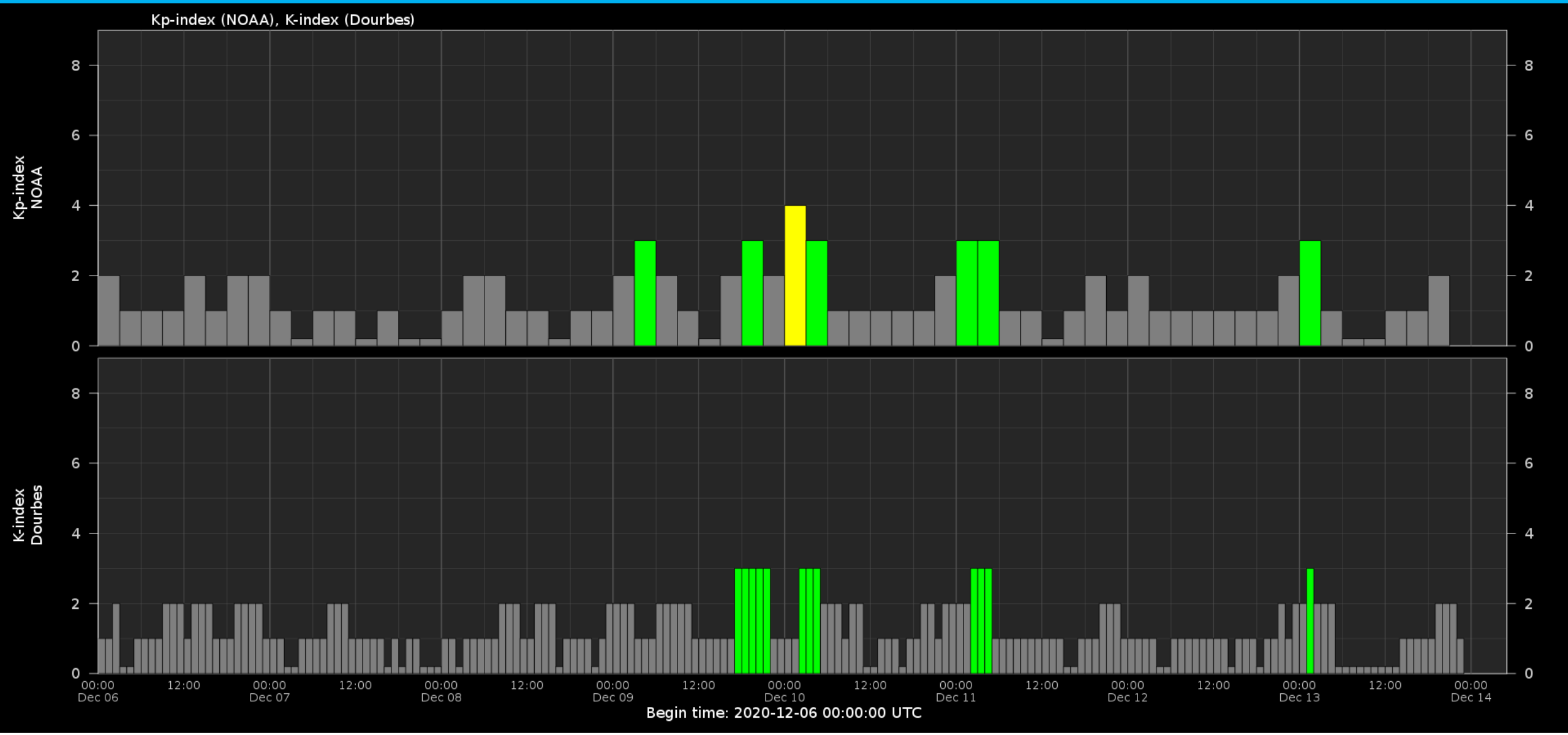
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



Energetic Particles

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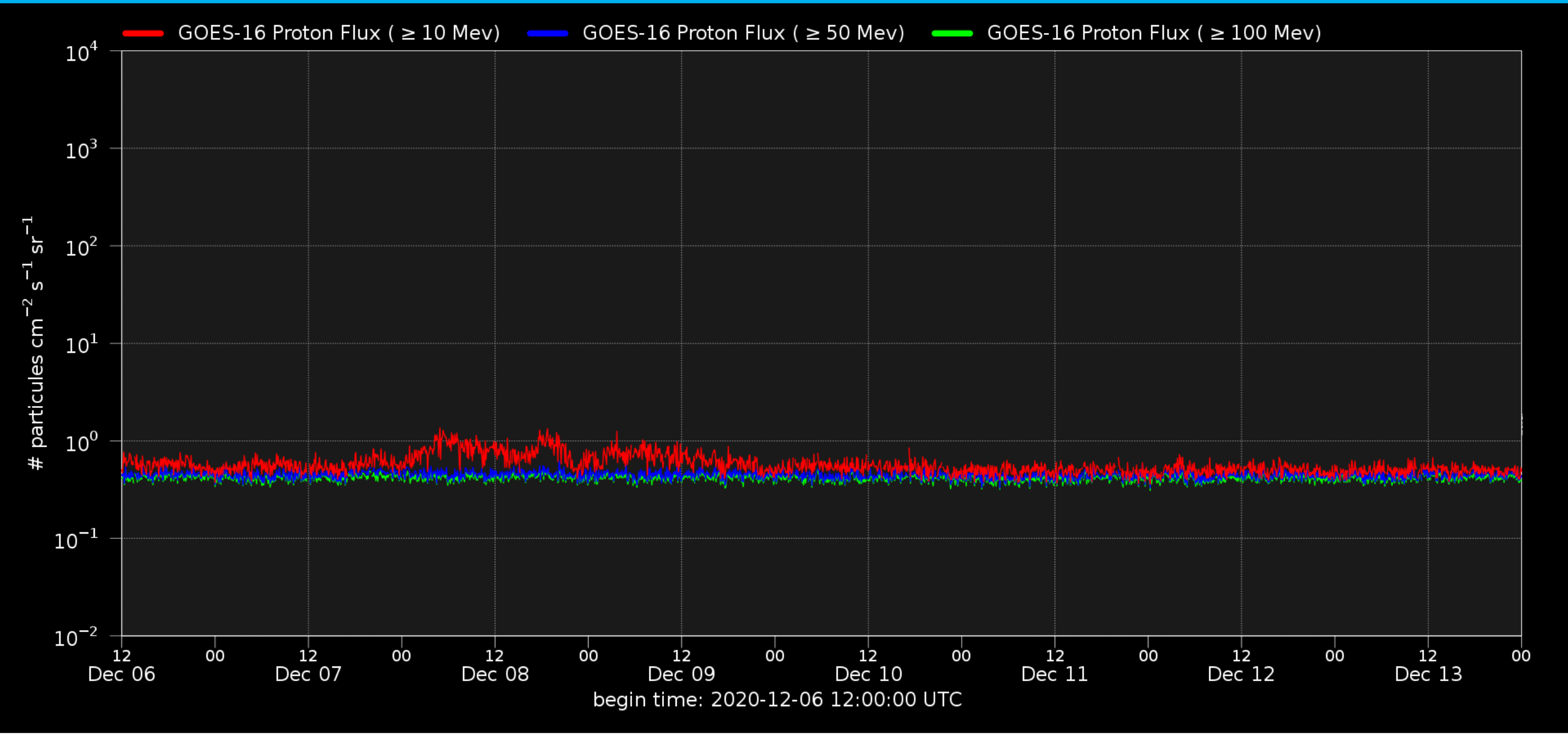
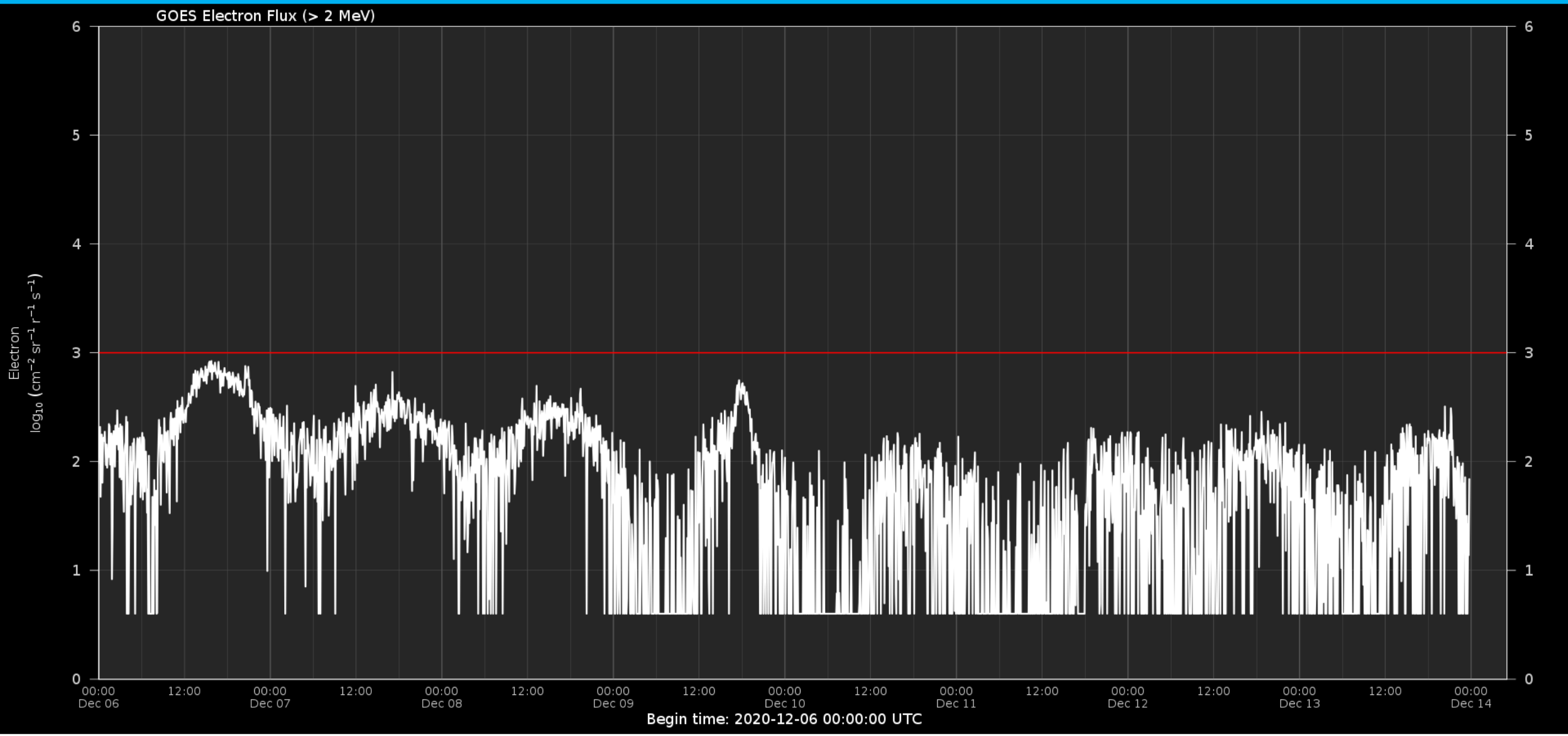
Solar proton flux



Electron flux at GEO



Outlook

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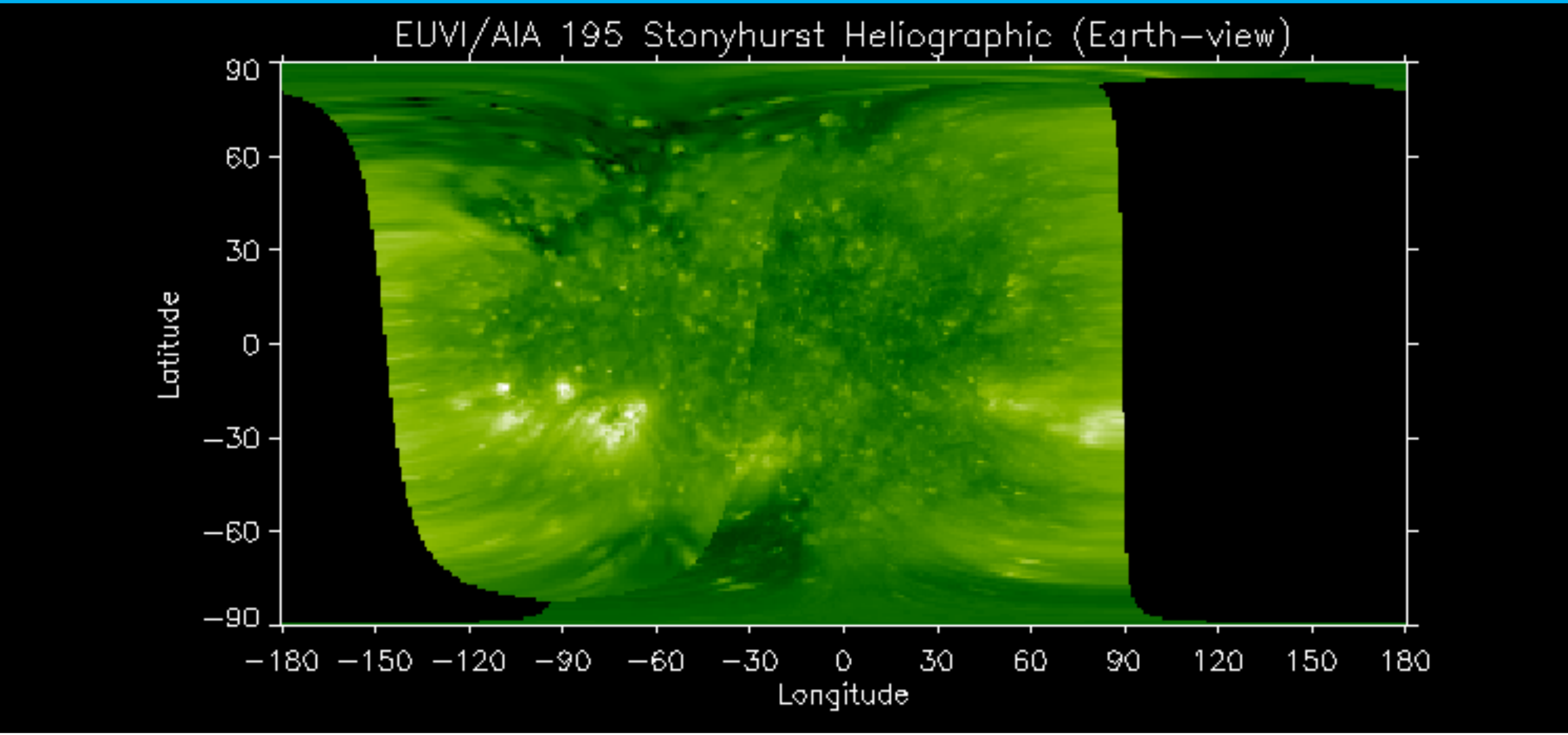
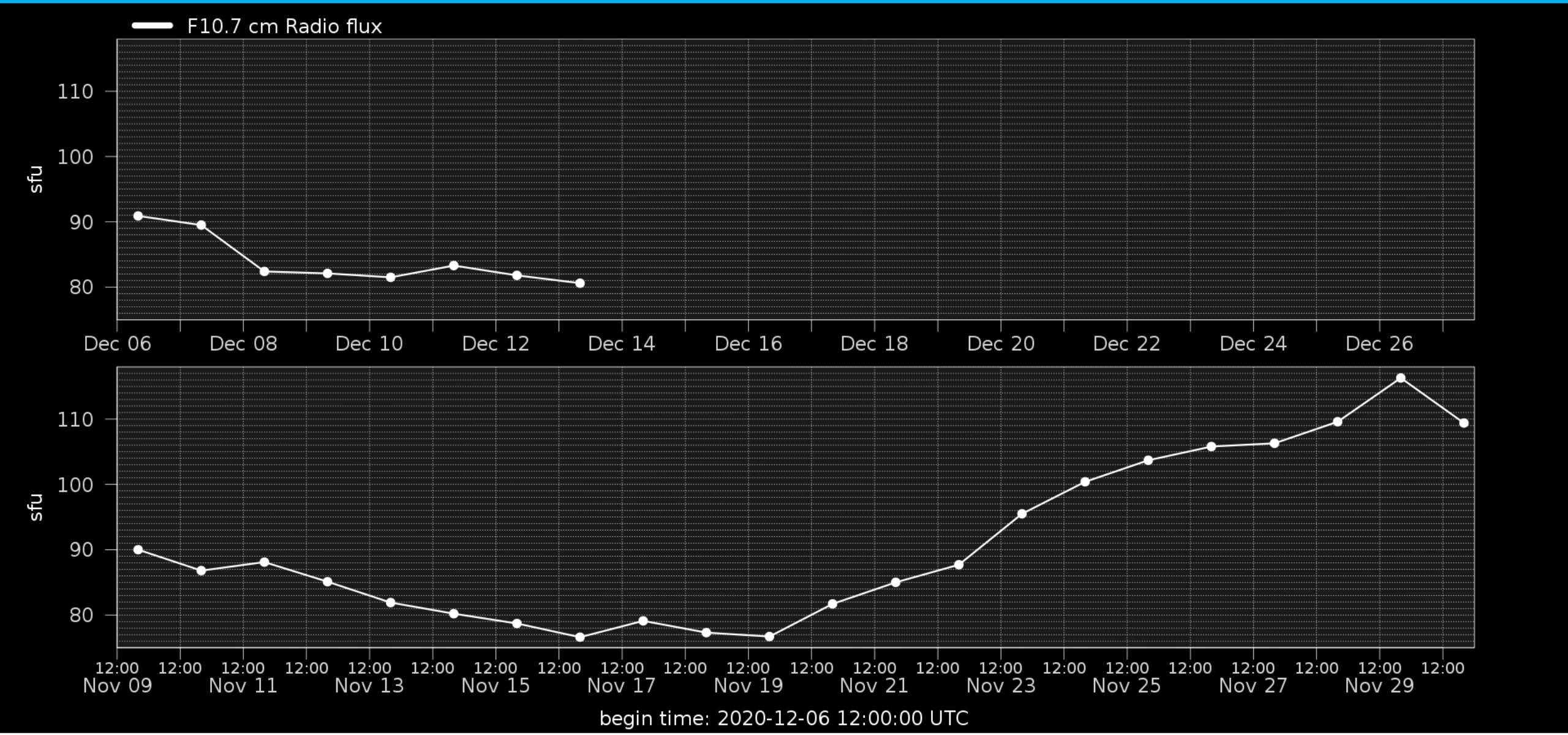
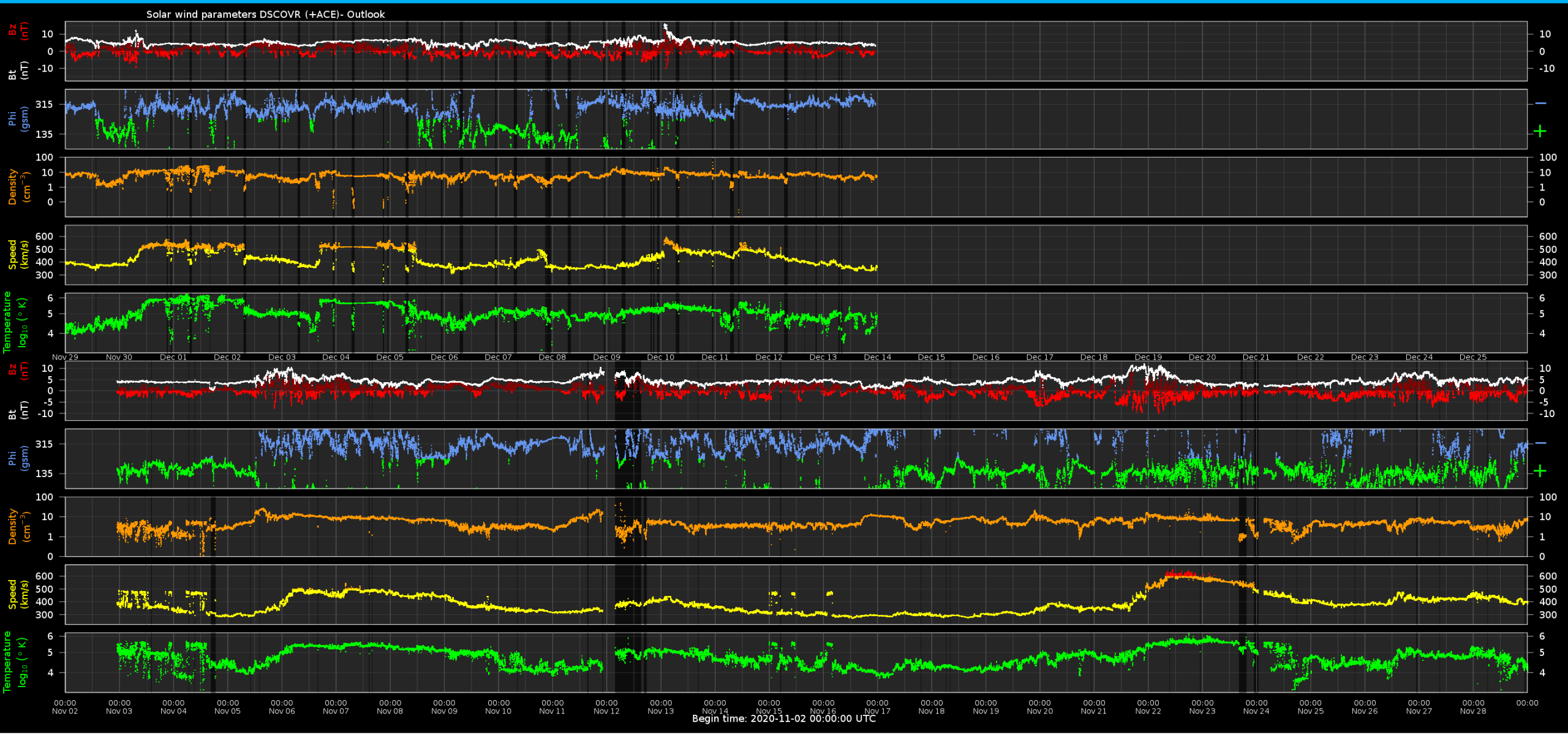
Outlook: Solar activity



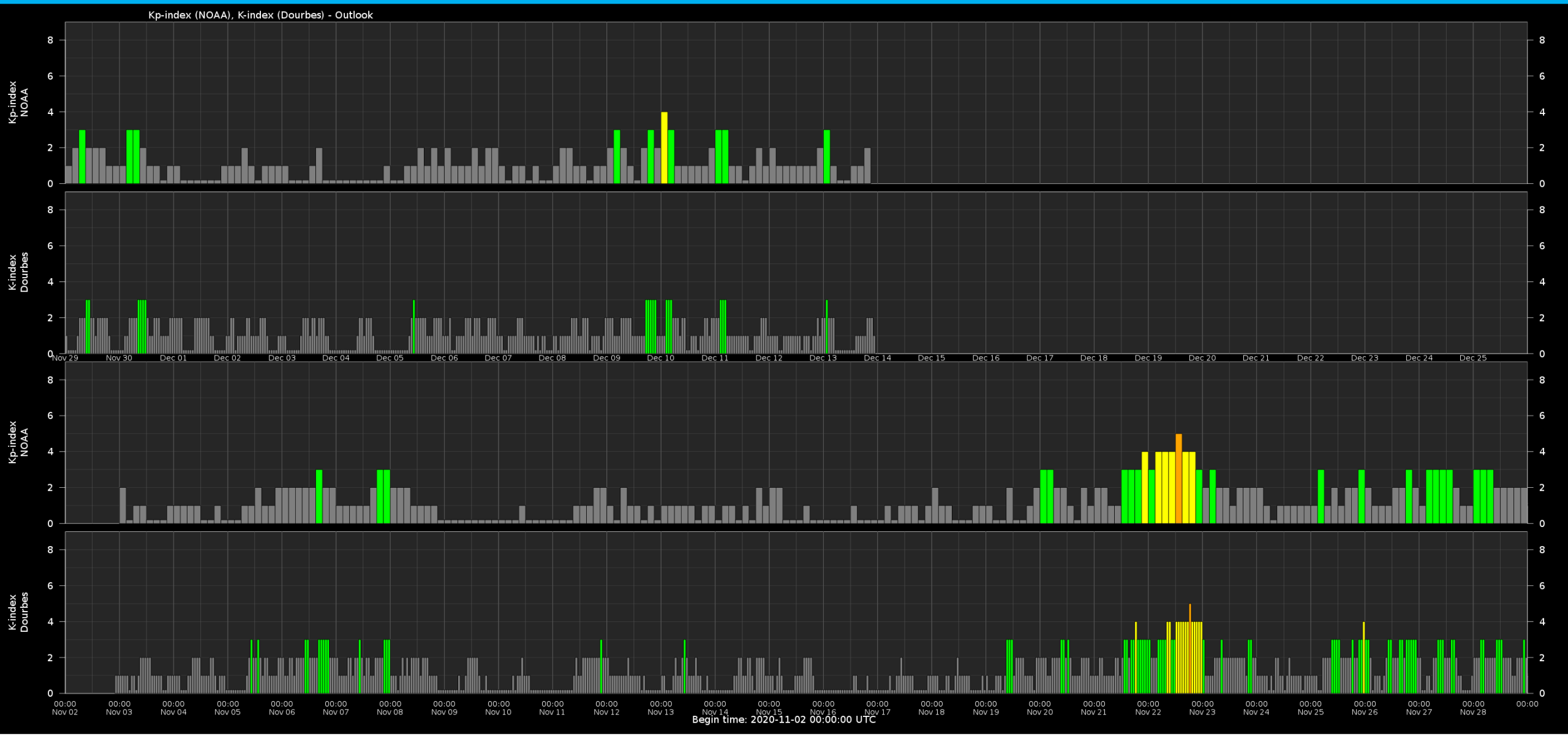
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



SIDC Space Weather Briefing

See you at our next briefing!

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