

SIDC Space Weather Briefing

27 June 2021 - 04 July 2021

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& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2021-06-27 12:00 to 2021-07-04 23:59

Active regions	2835 large with mixed field, 2836, 2837, rapidly emerging 2838 near West limb
Flares	# C-class flare: 11 # M-class flare: 3 # X-class flare: 1
Filament eruptions	several
Coronal Holes	CH- but seemed in decay as it was transiting central meridian

Proton flux	Minor enhancement following X flare
Electron flux	normal

Solar wind and geomagnetic conditions

ICME	2 possibly expected, but no clear arrival
SW Conditions	B : 0.45 - 13.19 nT // Bz: -10.44 nT to 11.33 nT // Speed: 299.9 - 522.6km/s
K-indices	max K-index (Dourbes): 4 max Kp-index (NOAA): 4

All Quiet Alert: off since June 29

Solar Activity

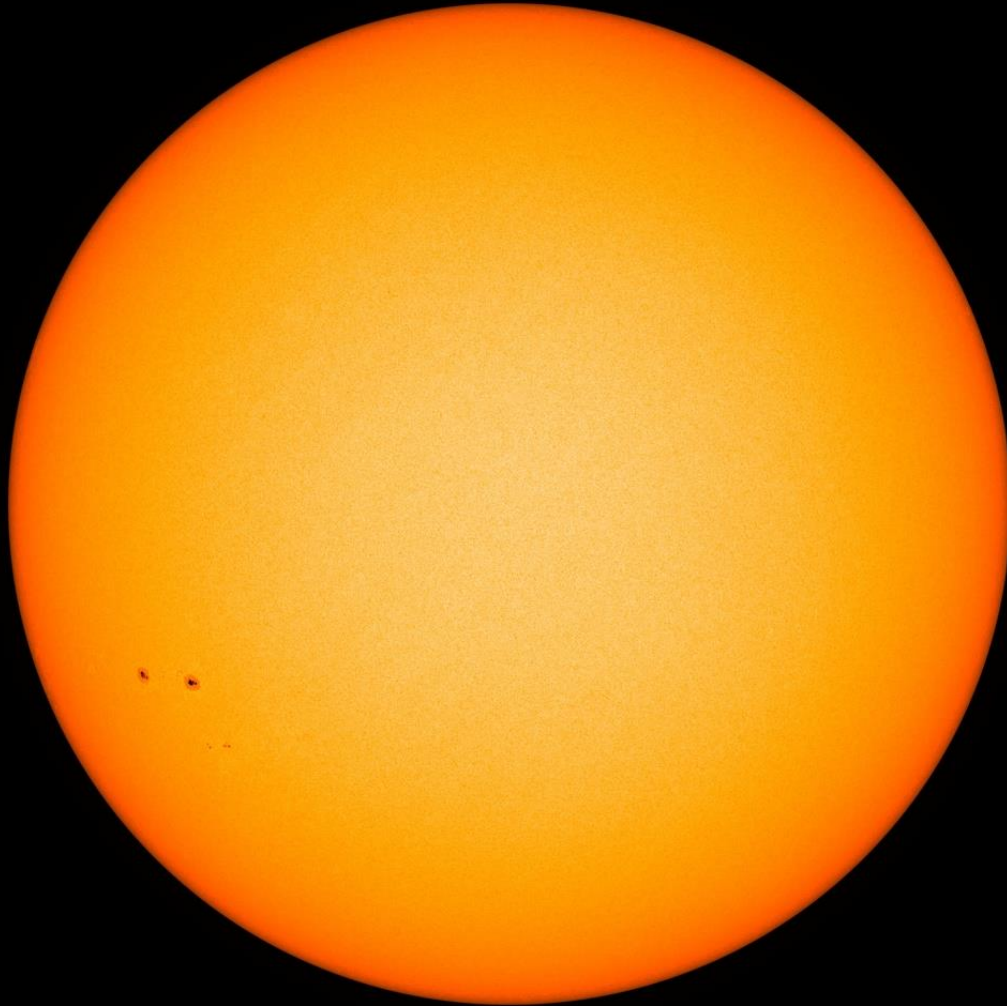


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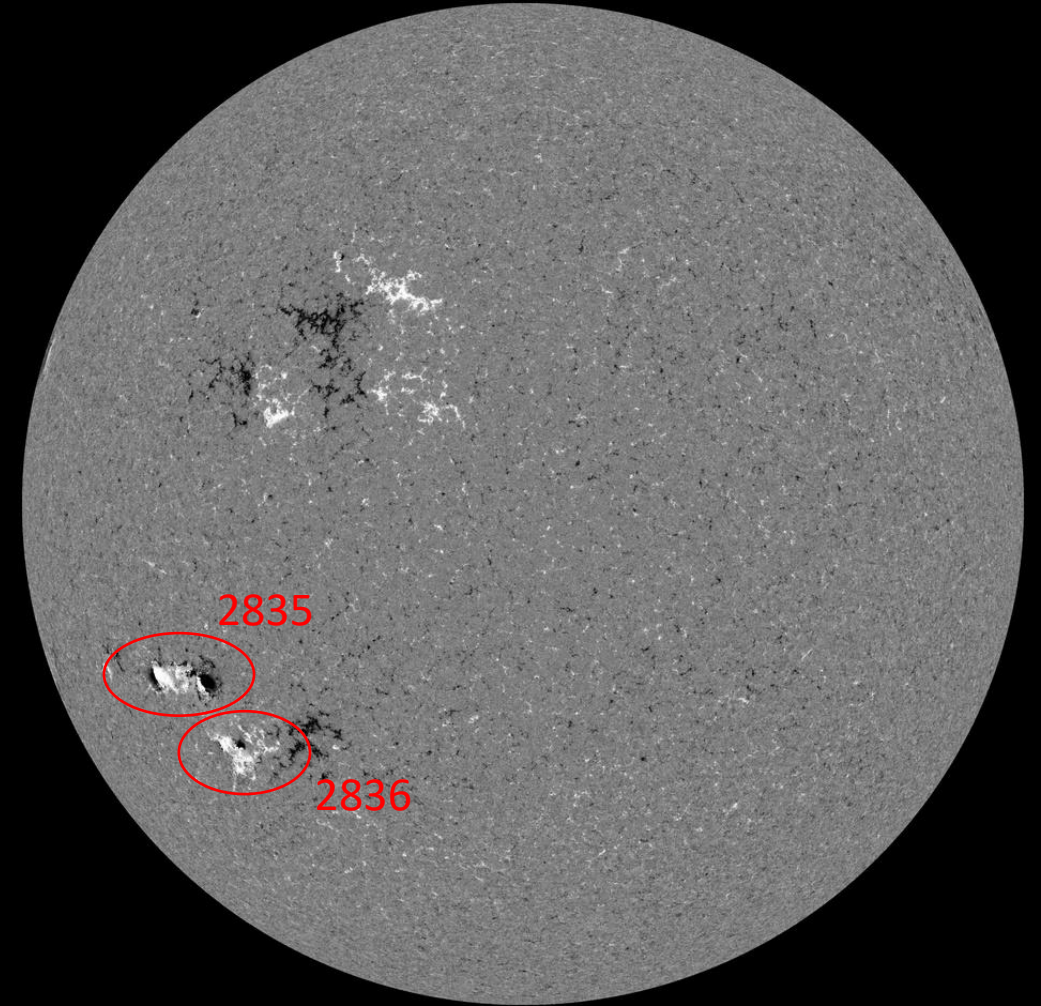
Solar active regions

SDO/HMI White Light 2021-06-27



SDO/HMI Quick-Look Continuum: 20210627_114500

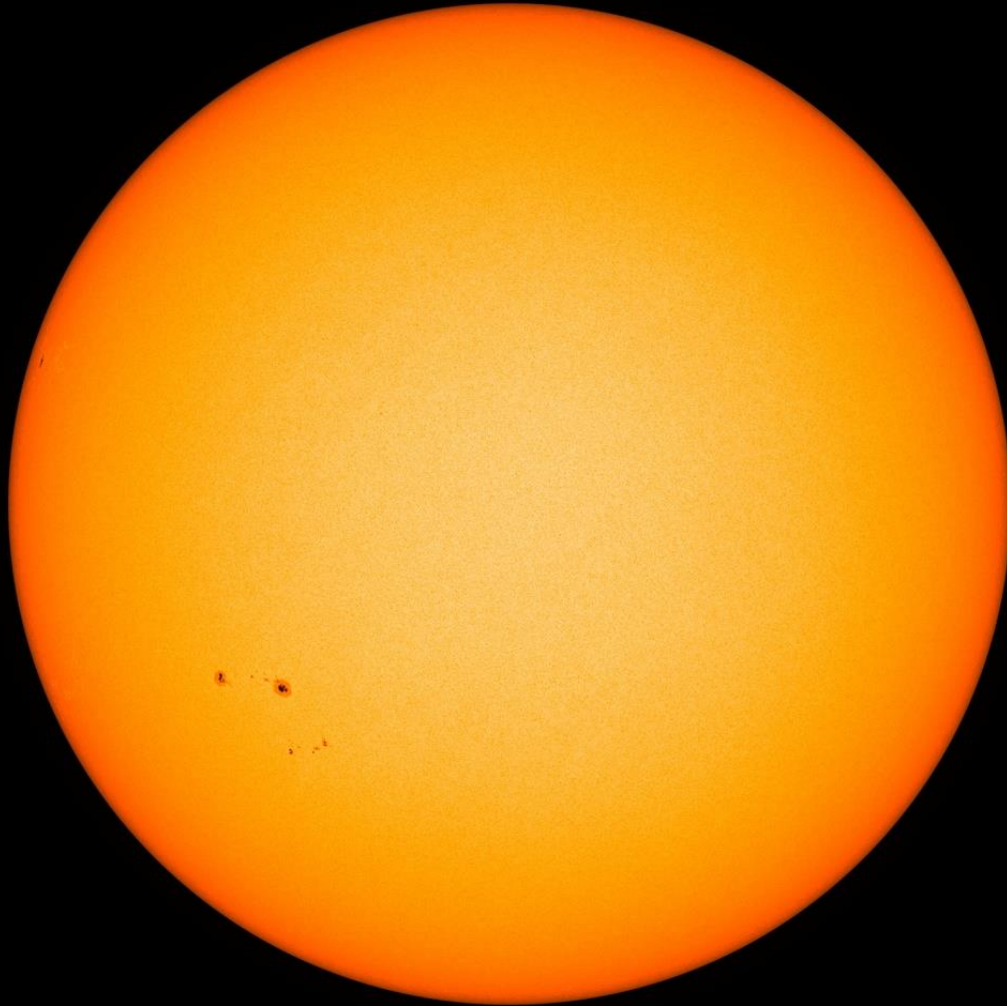
SDO/HMI Magnetogram 2021-06-27



SDO/HMI Quick-Look Magnetogram: 20210627_114500

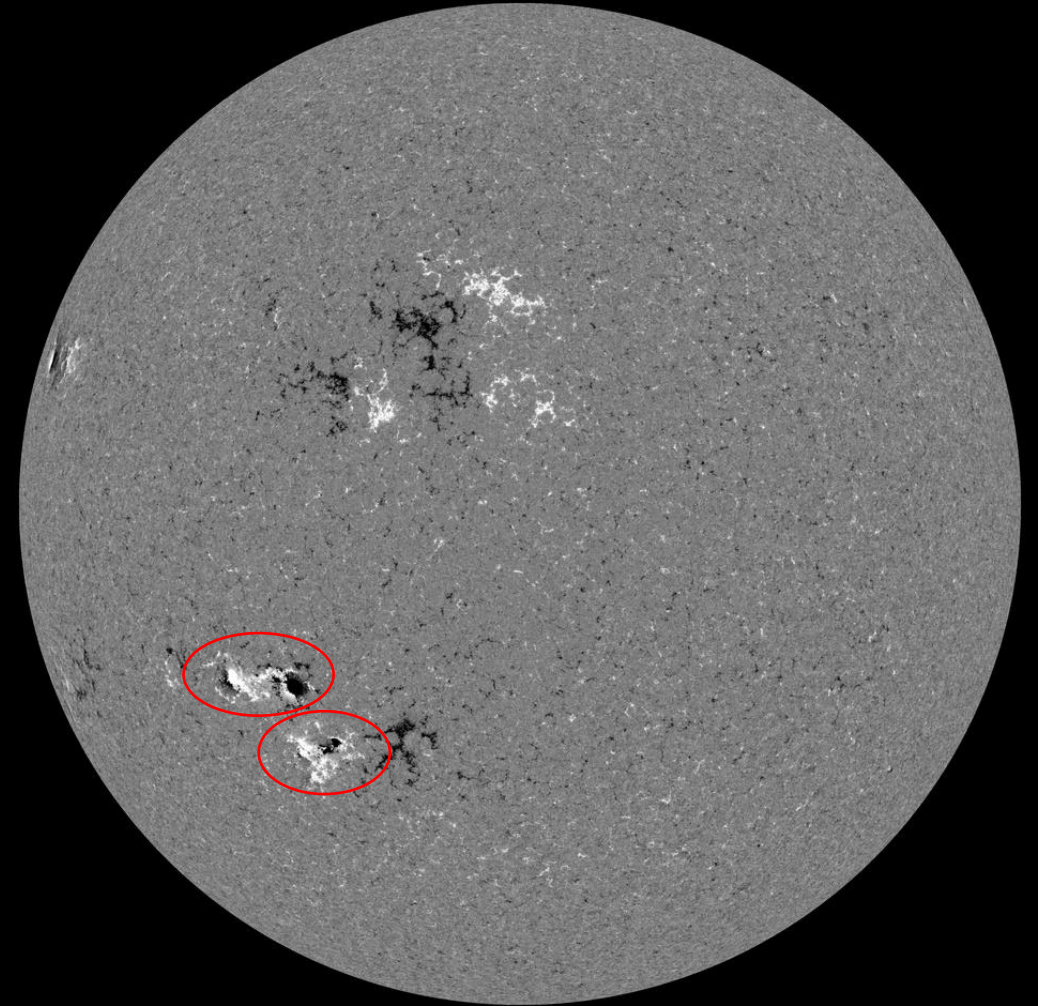
Solar active regions

SDO/HMI White Light 2021-06-28



SDO/HMI Quick-Look Continuum: 20210628_114500

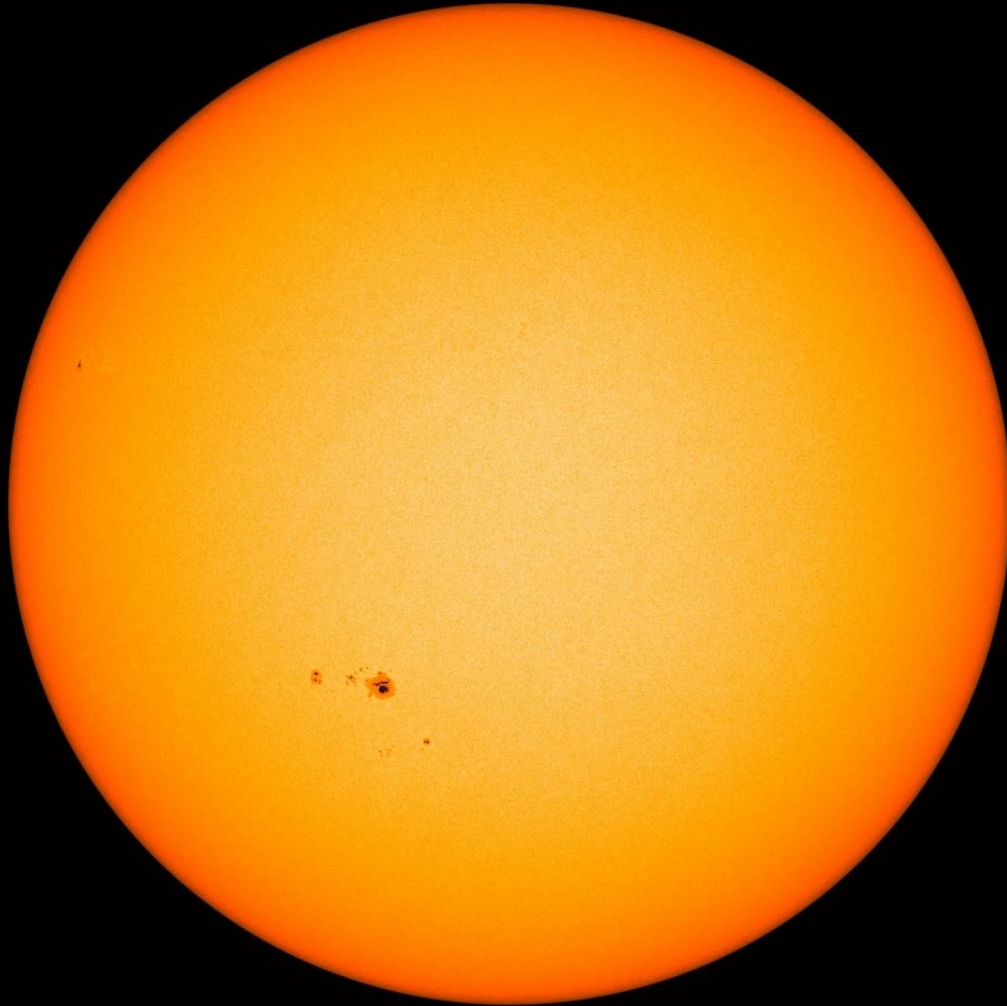
SDO/HMI Magnetogram 2021-06-28



SDO/HMI Quick-Look Magnetogram: 20210628_114500

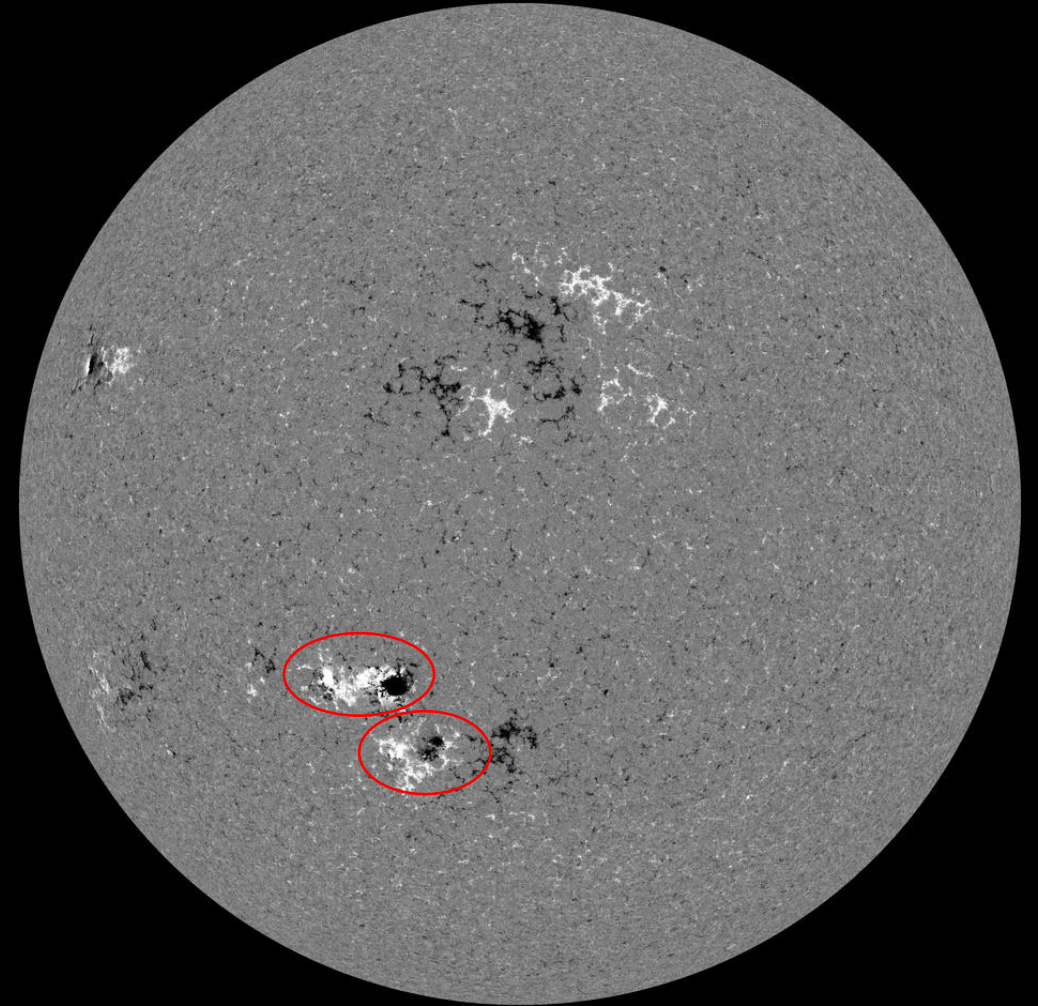
Solar active regions

SDO/HMI White Light 2021-06-29



SDO/HMI Quick-Look Continuum: 20210629_114500

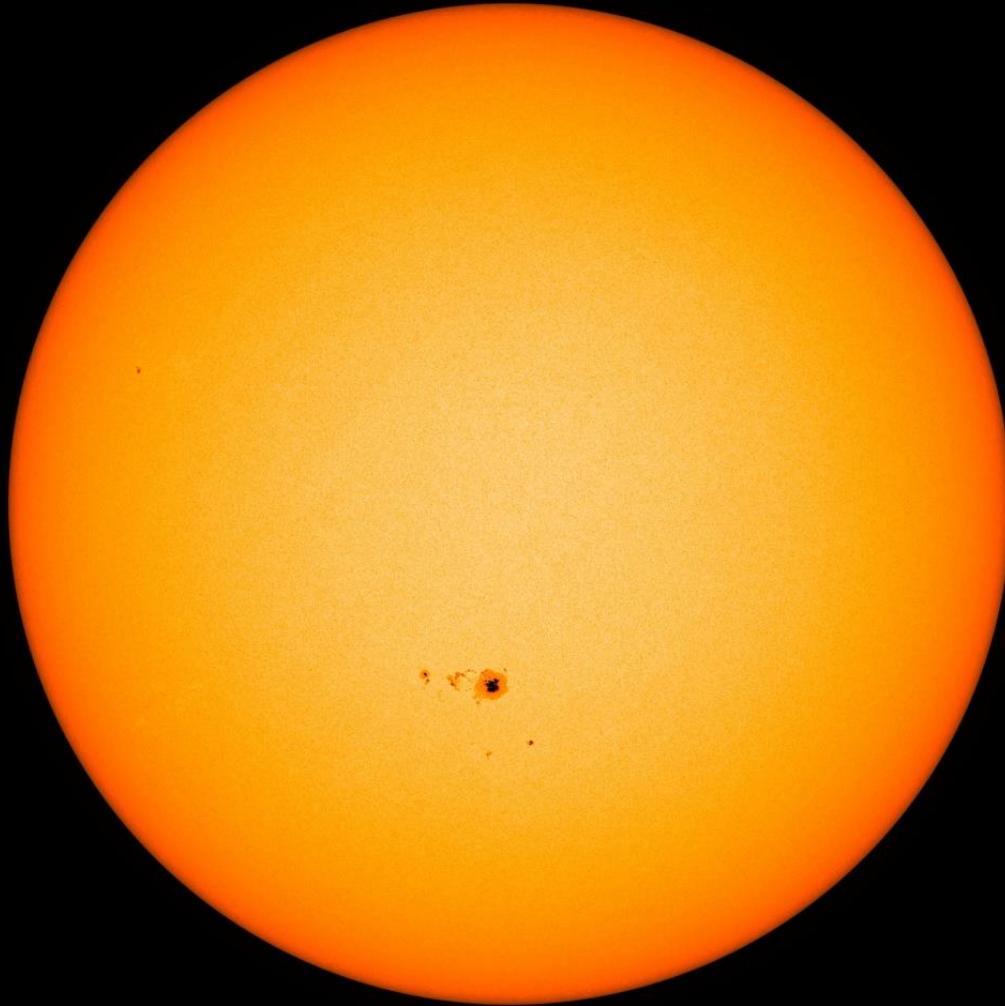
SDO/HMI Magnetogram 2021-06-29



SDO/HMI Quick-Look Magnetogram: 20210629_114500

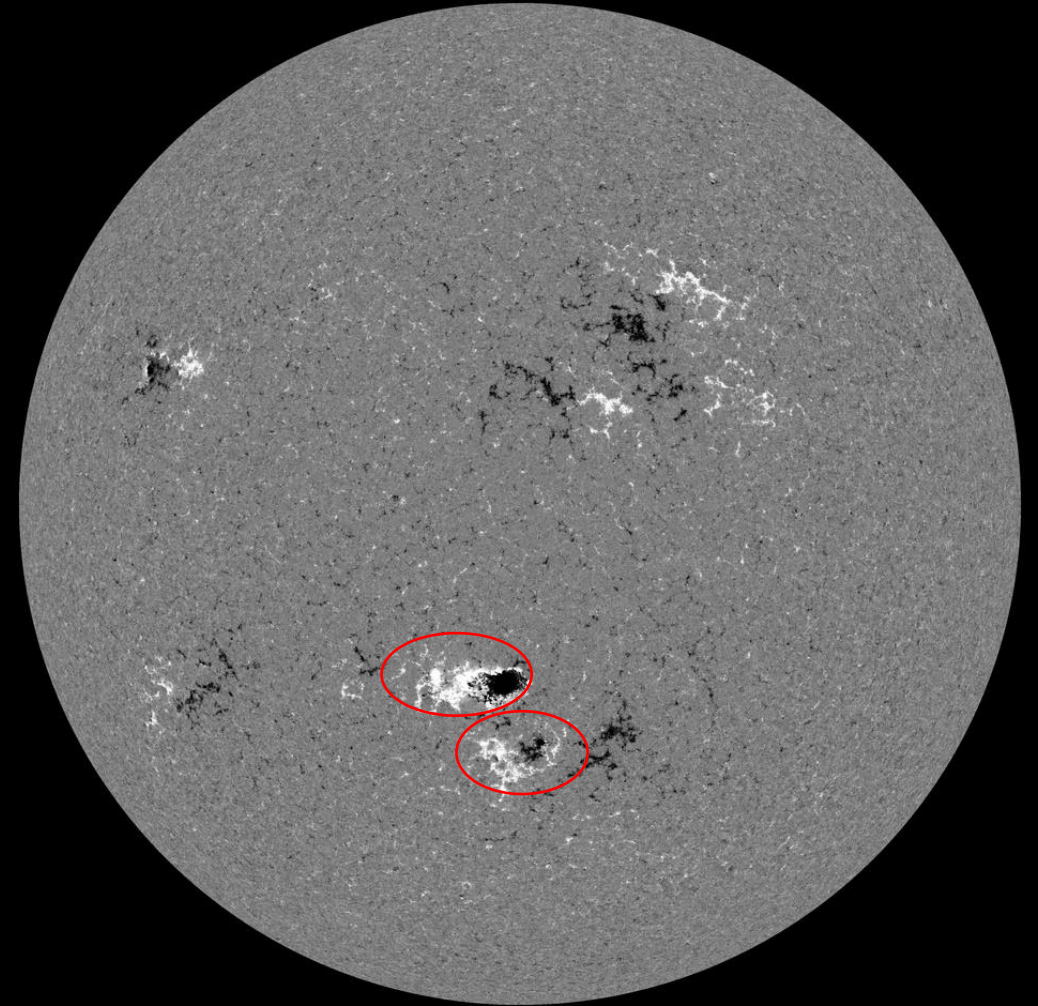
Solar active regions

SDO/HMI White Light 2021-06-30



SDO/HMI Quick-Look Continuum: 20210630_114500

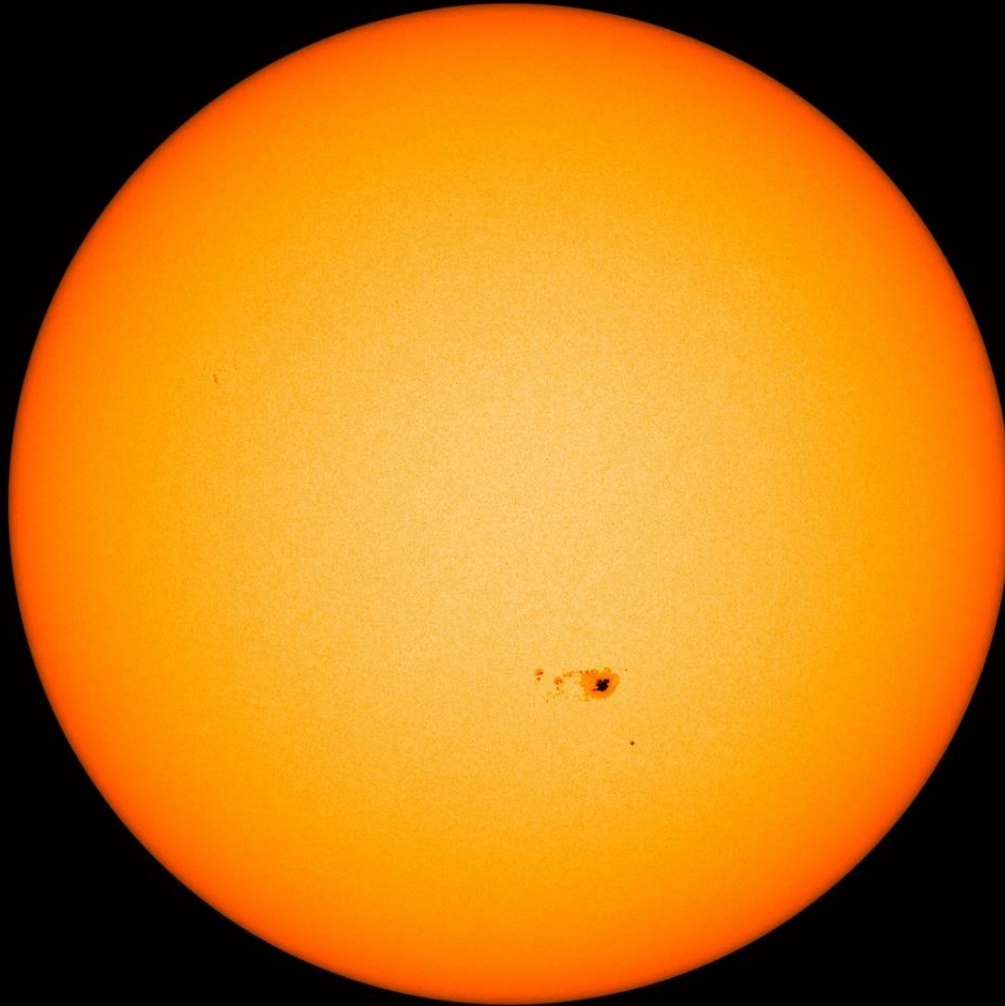
SDO/HMI Magnetogram 2021-06-30



SDO/HMI Quick-Look Magnetogram: 20210630_114500

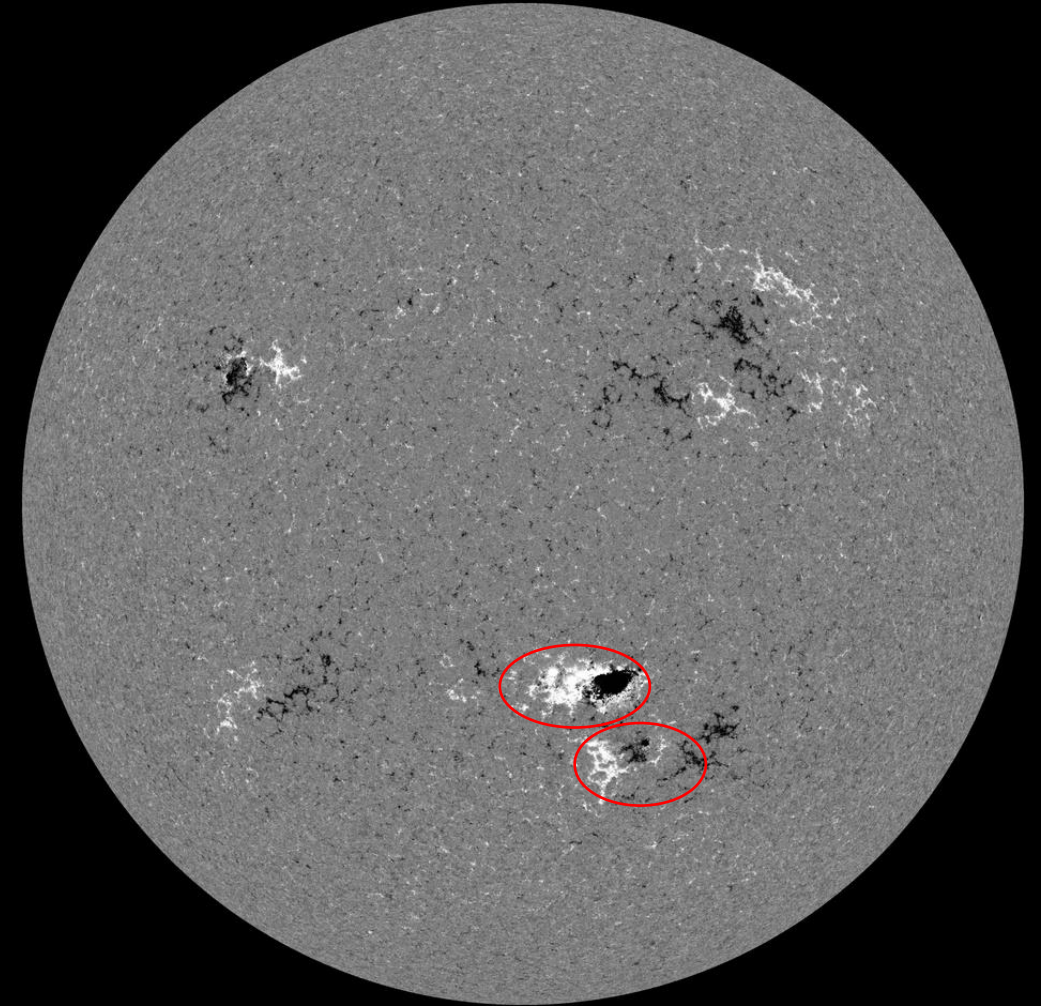
Solar active regions

SDO/HMI White Light 2021-07-01



SDO/HMI Quick-Look Continuum: 20210701_114500

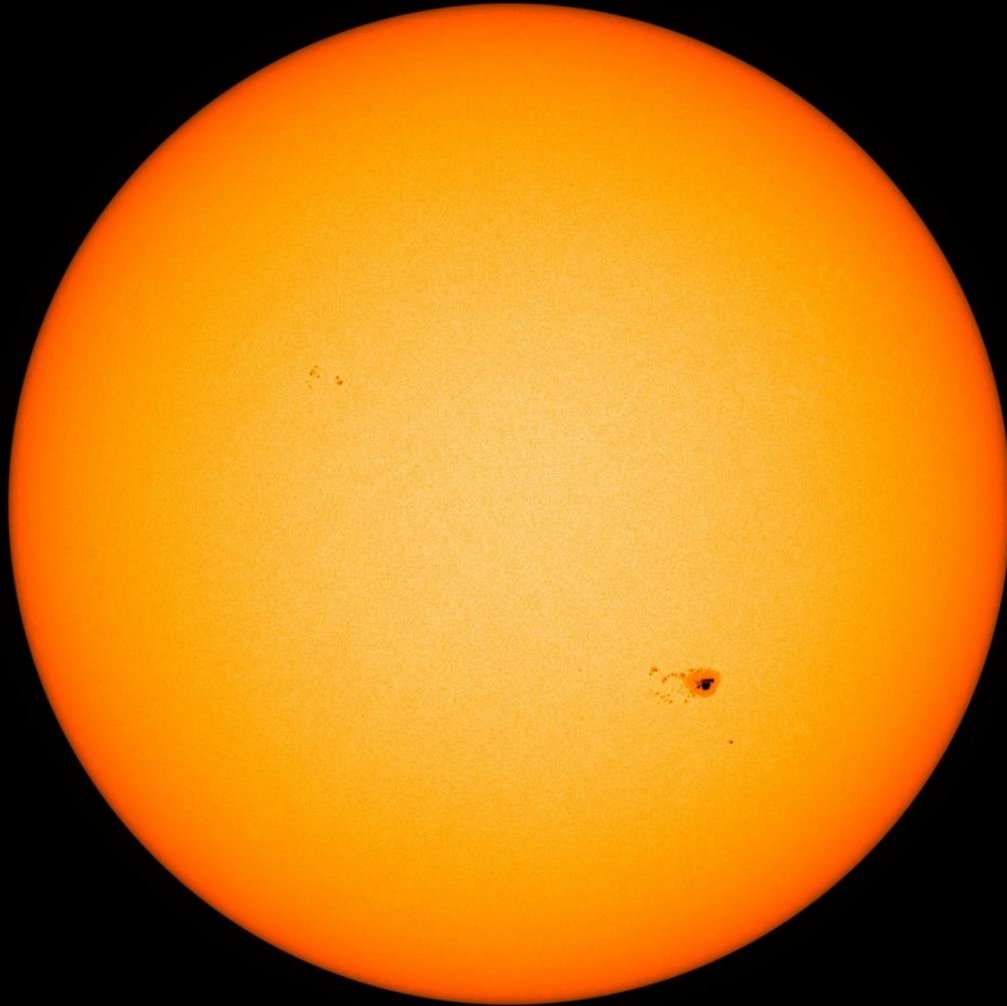
SDO/HMI Magnetogram 2021-07-01



SDO/HMI Quick-Look Magnetogram: 20210701_114500

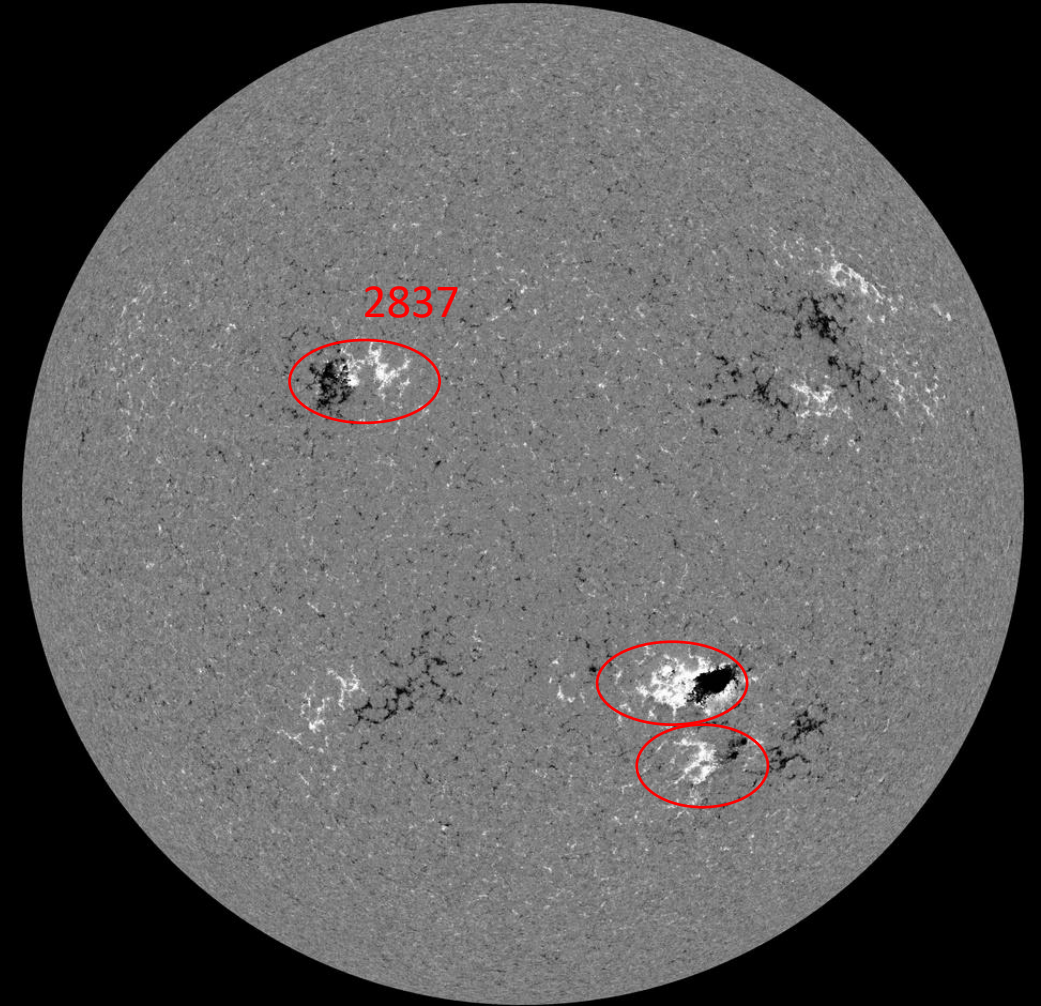
Solar active regions

SDO/HMI White Light 2021-07-02



SDO/HMI Quick-Look Continuum: 20210702_114500

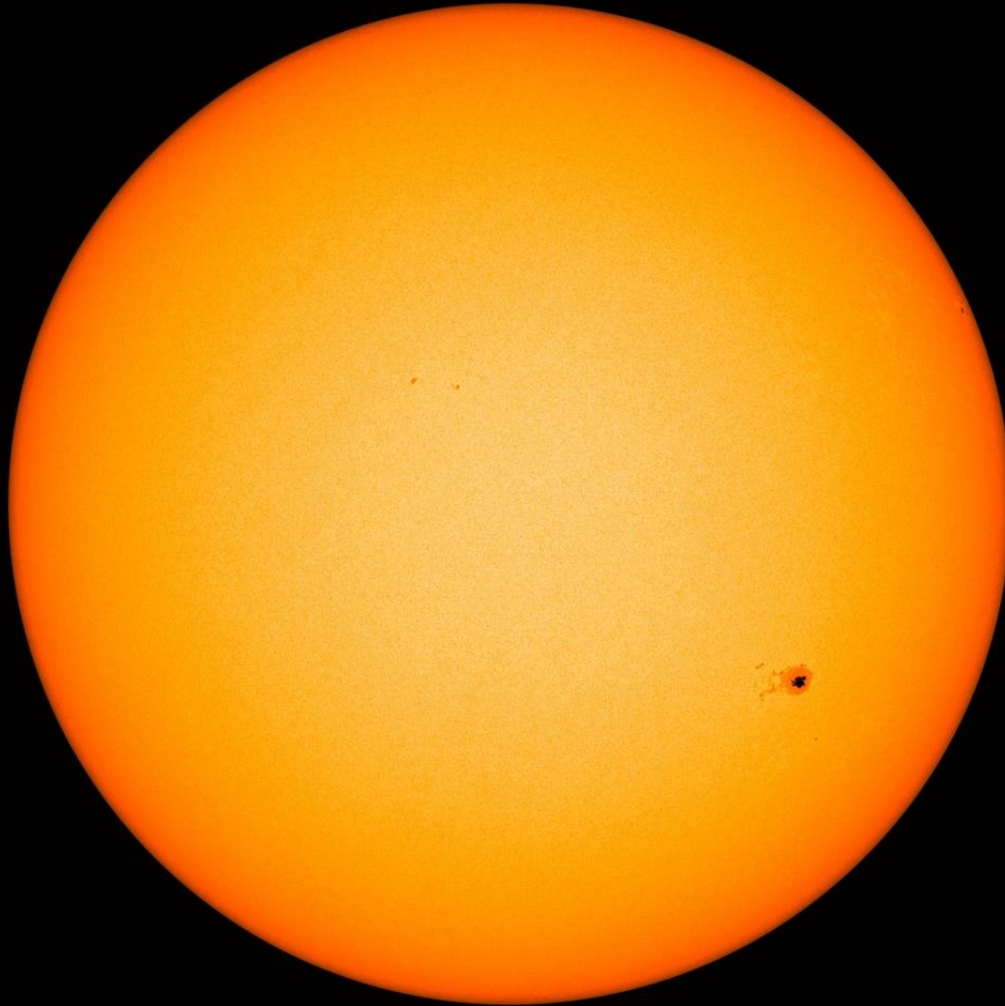
SDO/HMI Magnetogram 2021-07-02



SDO/HMI Quick-Look Magnetogram: 20210702_114500

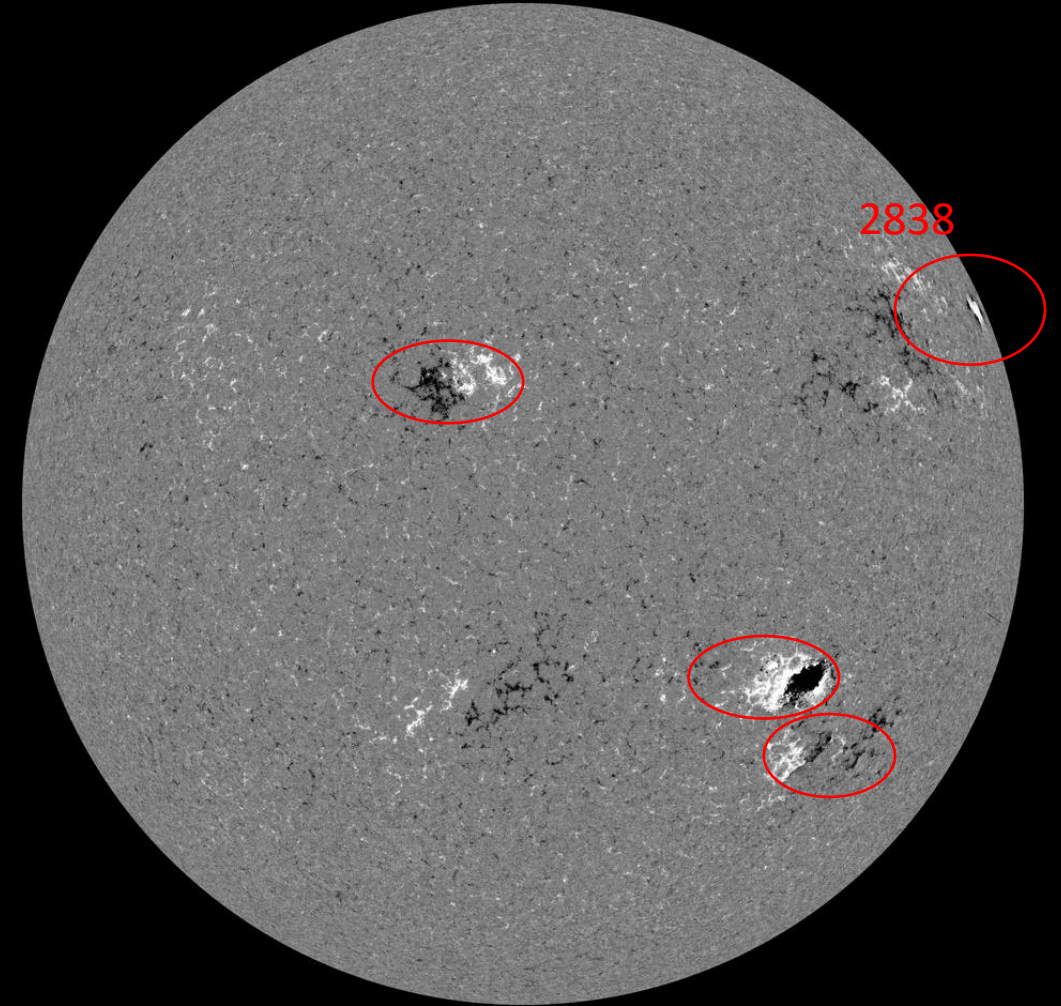
Solar active regions

SDO/HMI White Light 2021-07-03



SDO/HMI Quick-Look Continuum: 20210703_114500

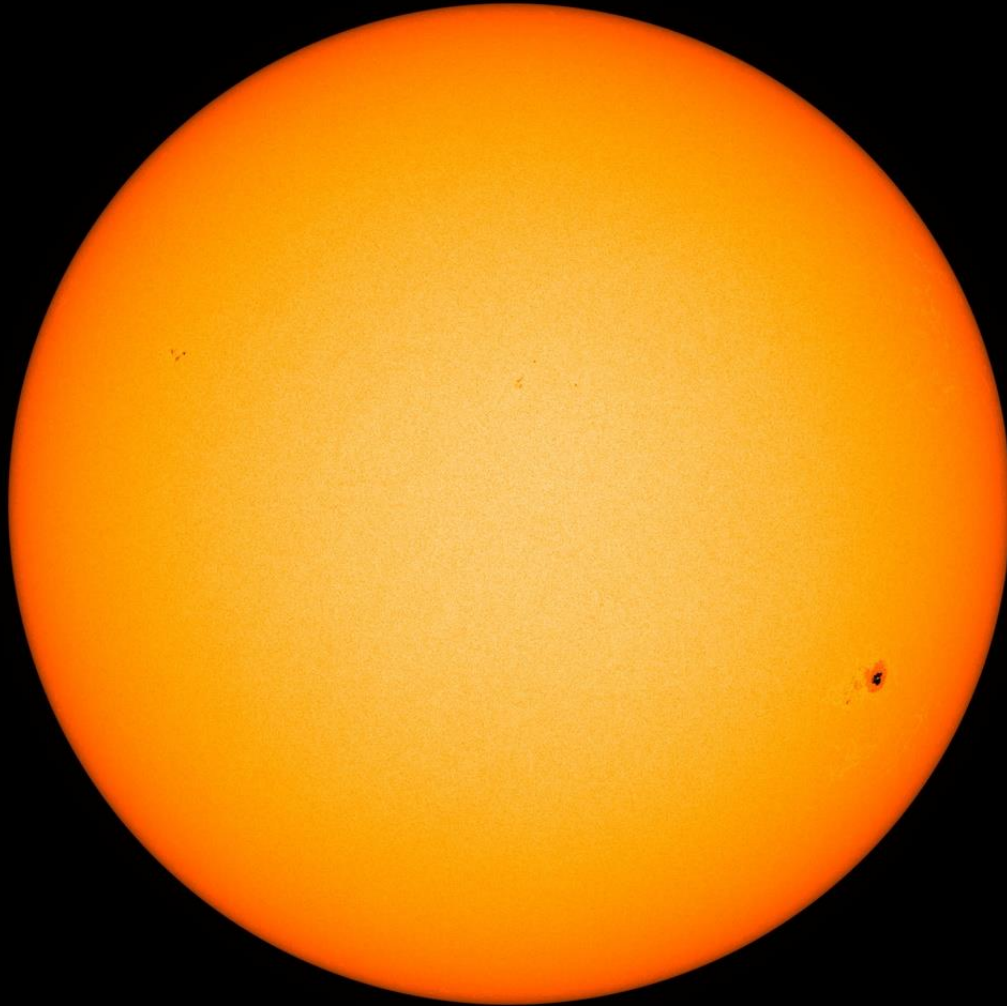
SDO/HMI Magnetogram 2021-07-03



SDO/HMI Quick-Look Magnetogram: 20210703_114500

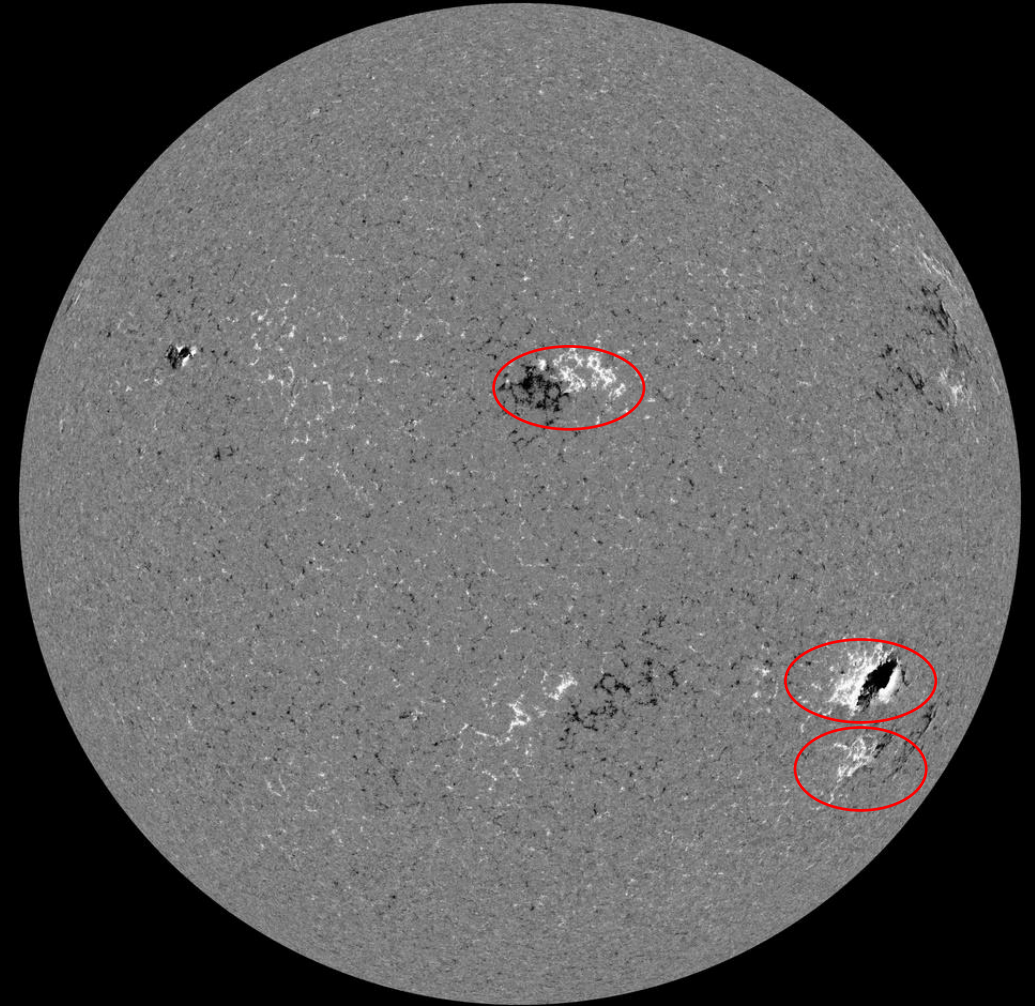
Solar active regions

SDO/HMI White Light 2021-07-04



SDO/HMI Quick-Look Continuum: 20210704_114500

SDO/HMI Magnetogram 2021-07-04

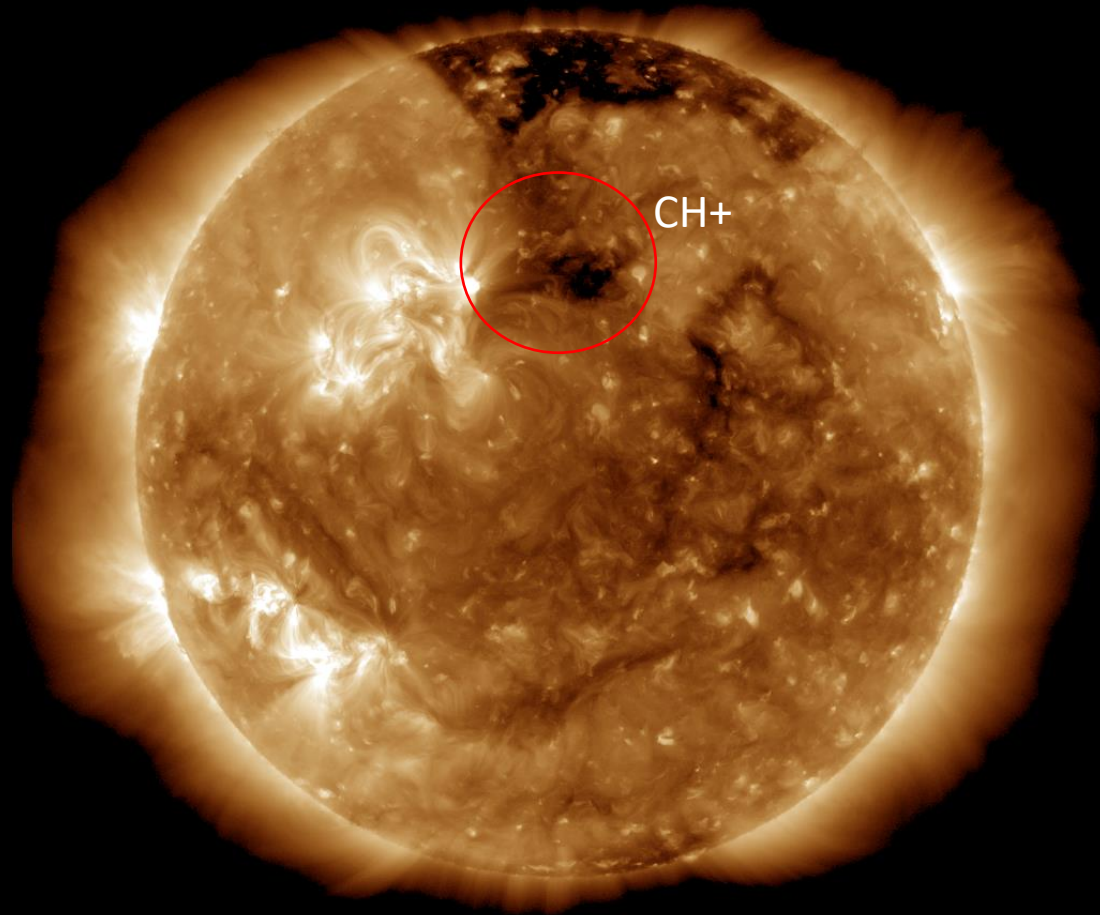


SDO/HMI Quick-Look Magnetogram: 20210704_111500

Coronal holes

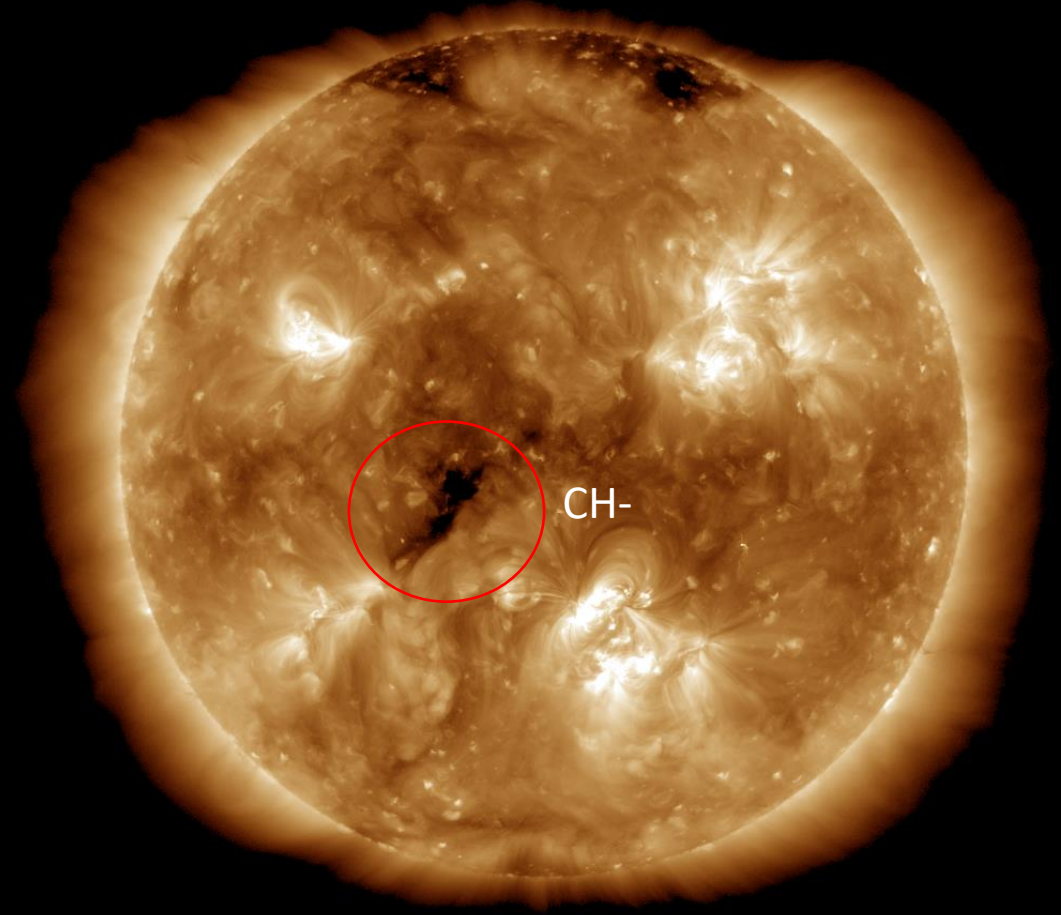
SDO/AIA 19.3 nm 2021-06-27

SDO/AIA AIA 193Å 2021-06-27T12:00:05.843



SDO/AIA 19.3 nm 2021-07-01

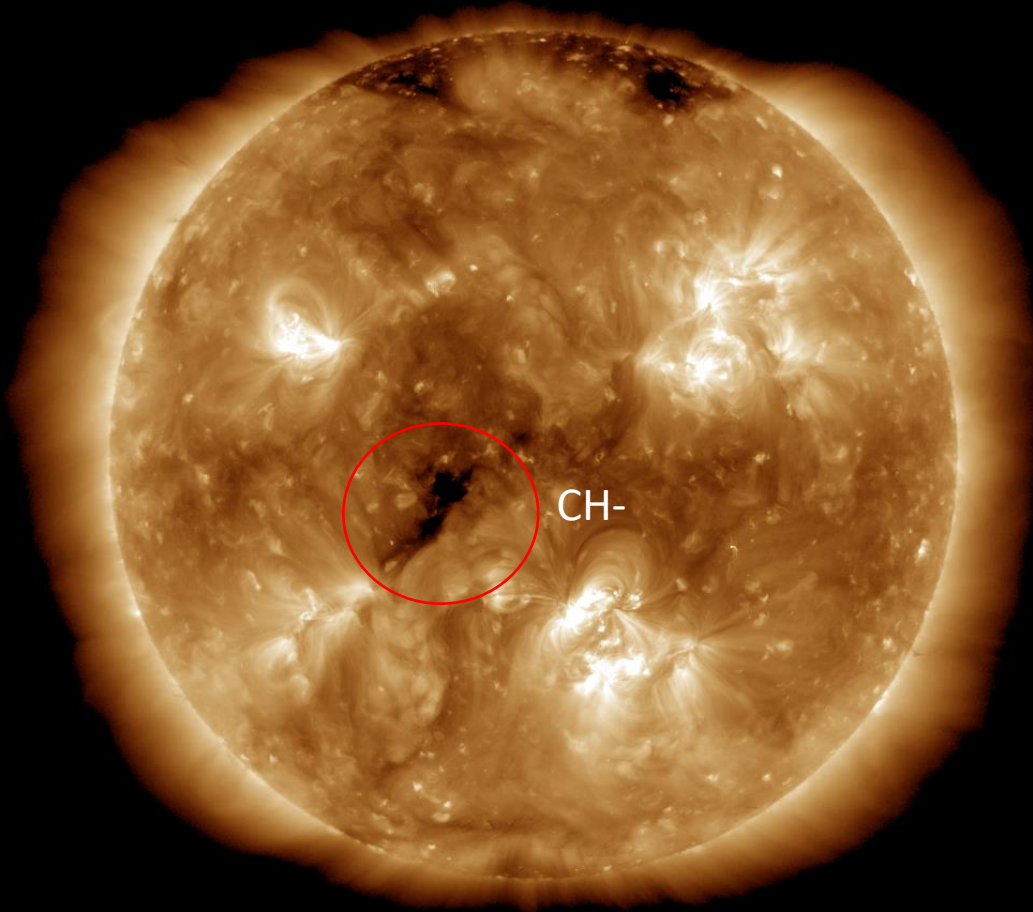
SDO/AIA AIA 193Å 2021-07-01T12:00:05.843



Coronal holes

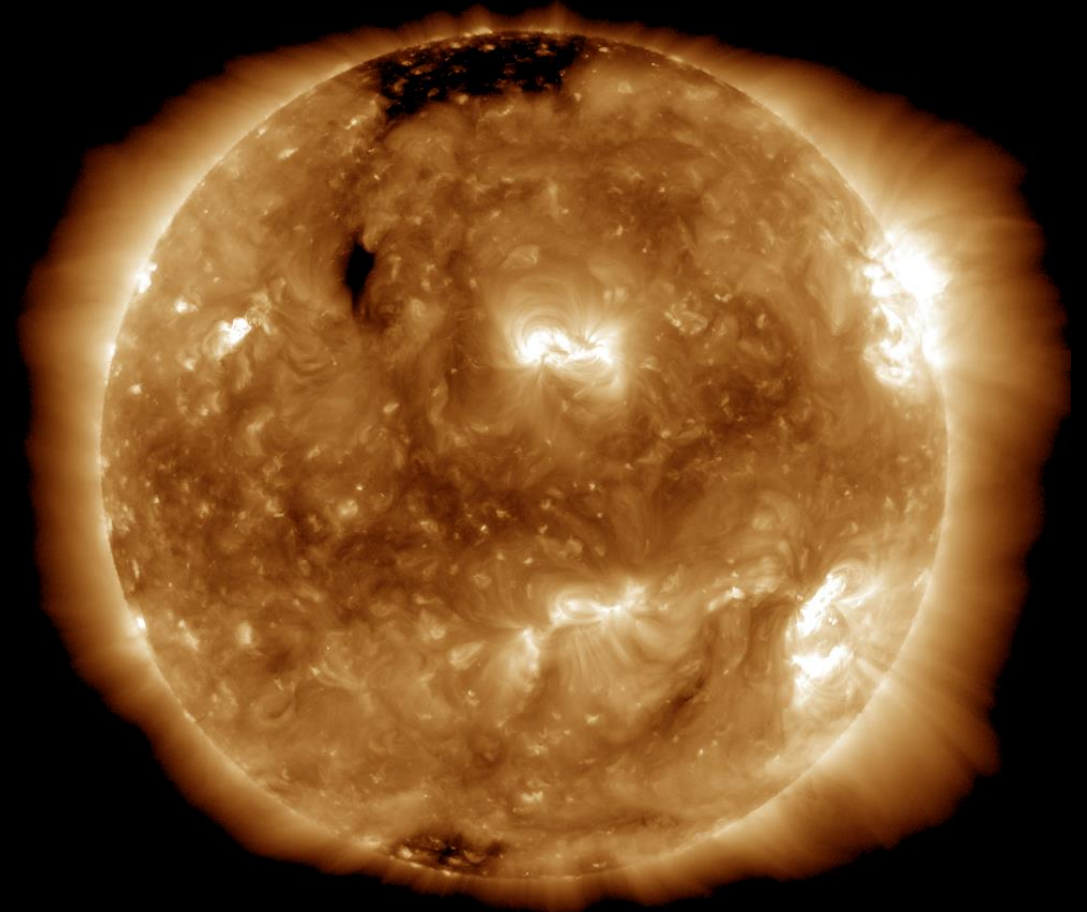
SDO/AIA 19.3 nm 2021-07-01

SDO/AIA AIA 193Å 2021-07-01T12:00:05.843



SDO/AIA 19.3 nm 2021-07-04

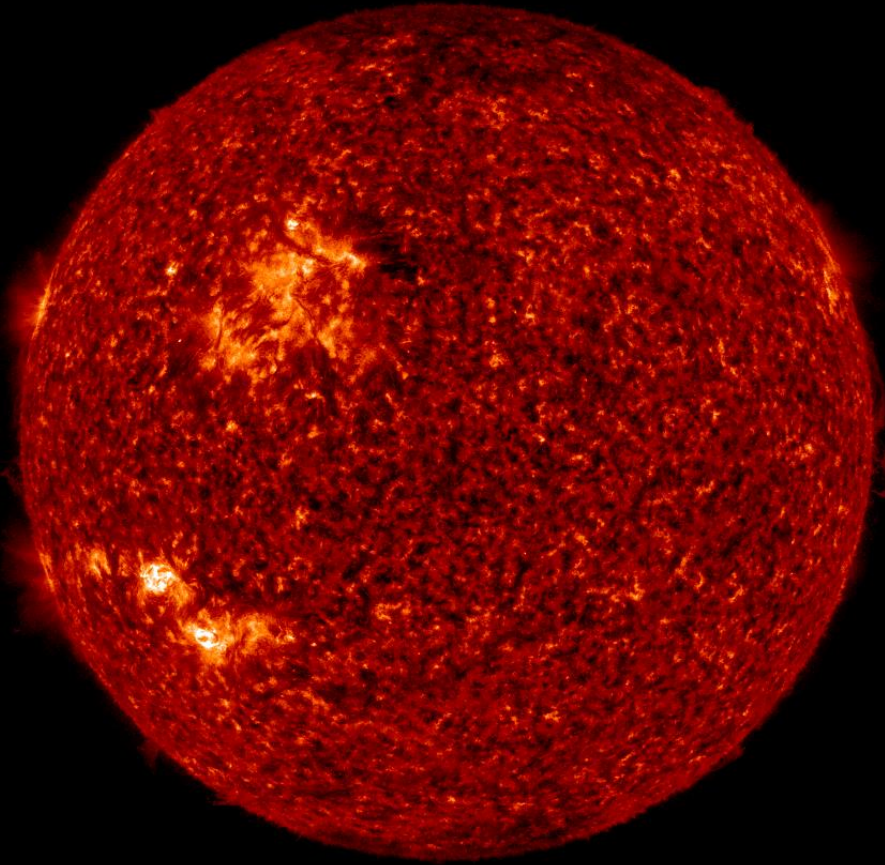
SDO/AIA AIA 193Å 2021-07-04T12:00:05.835



Filaments

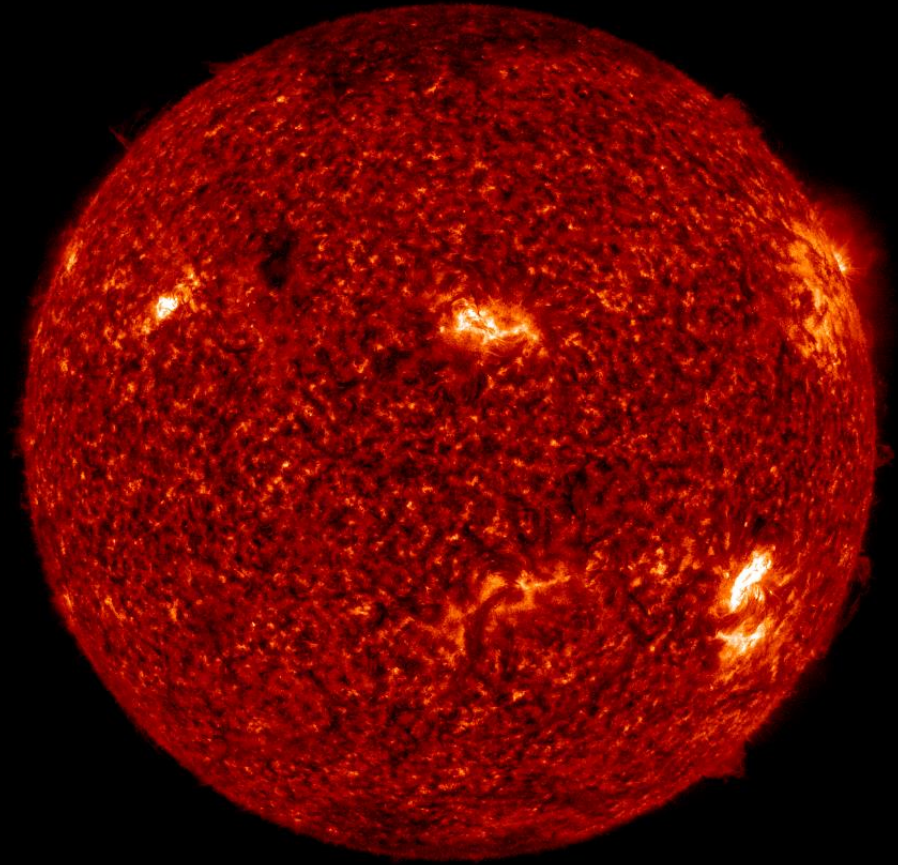
SDO/AIA 30.4 nm 2021-06-27

SDO/AIA AIA 304Å 2021-06-27T12:00:06.580

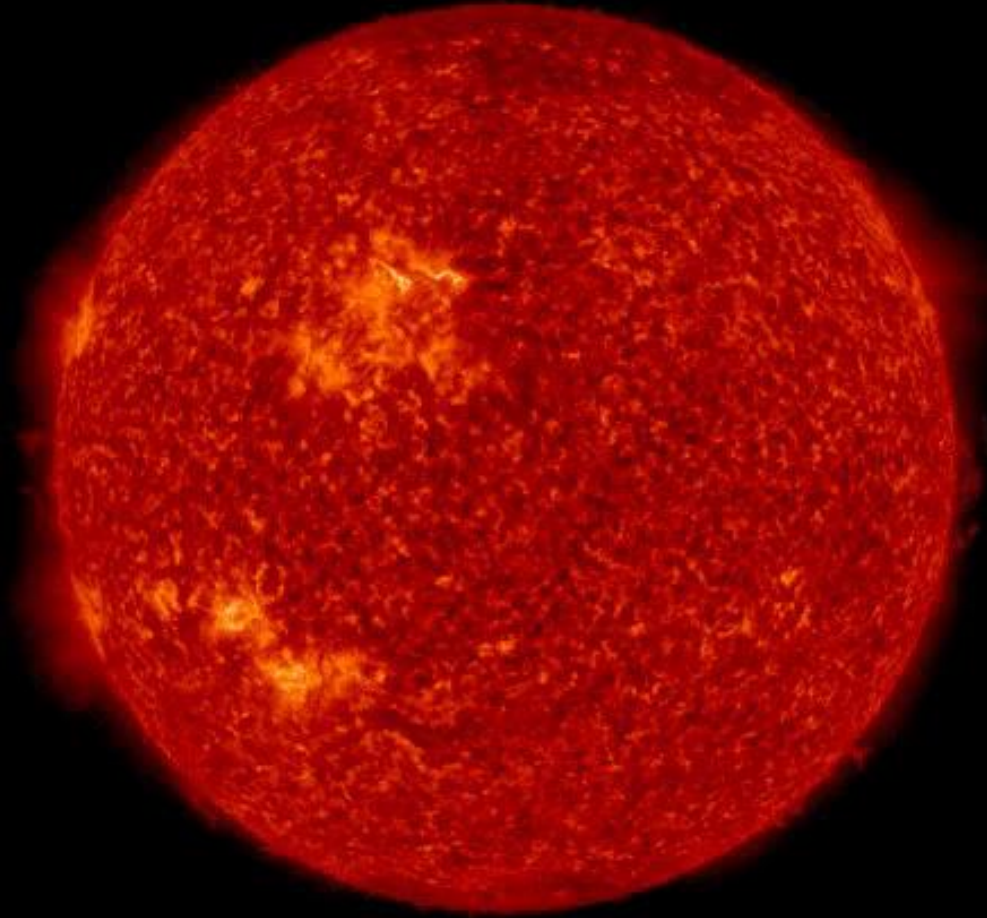


SDO/AIA 30.4 nm 2021-07-04

SDO/AIA AIA 304Å 2021-07-04T12:00:06.581

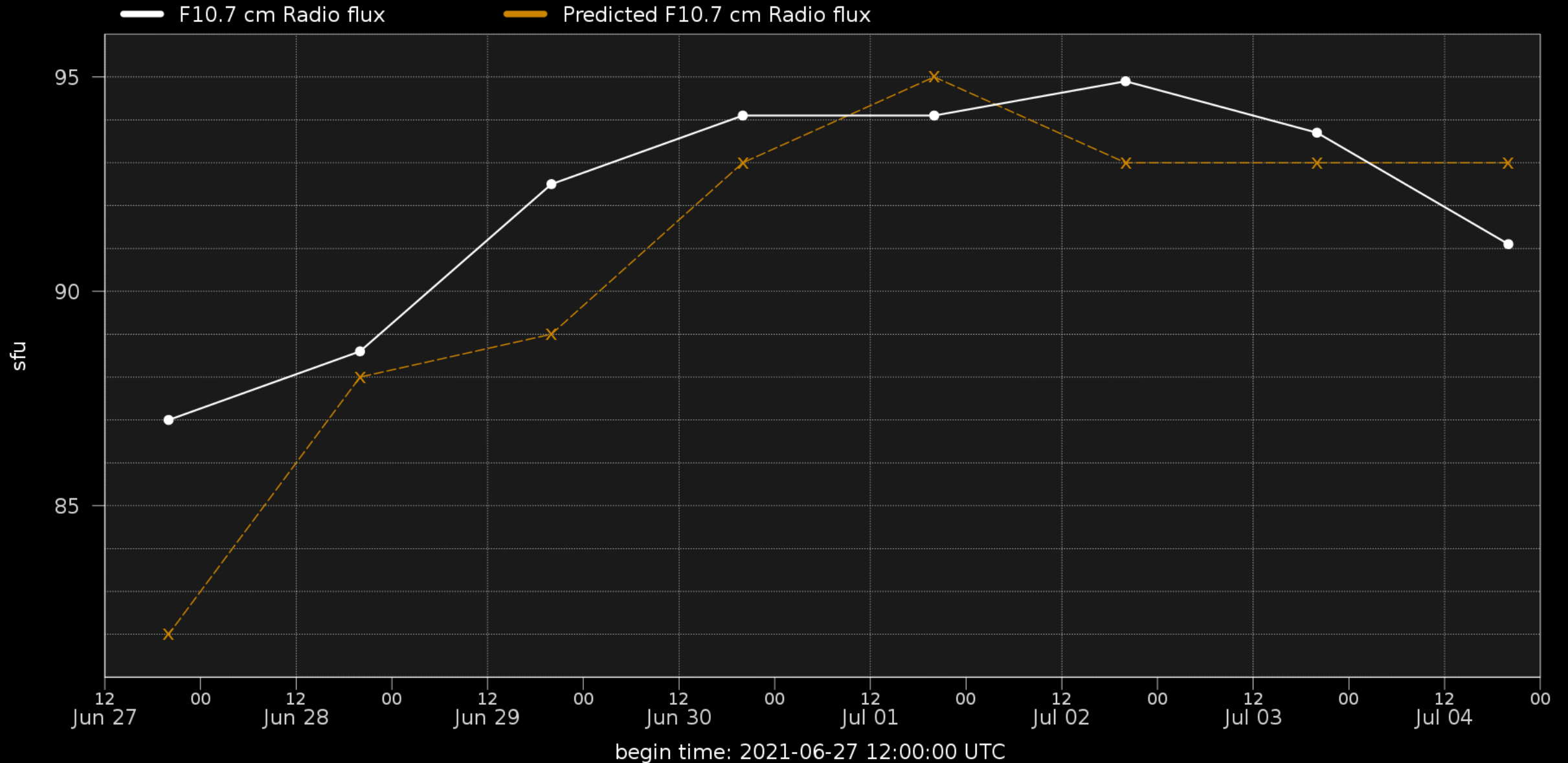


Filaments

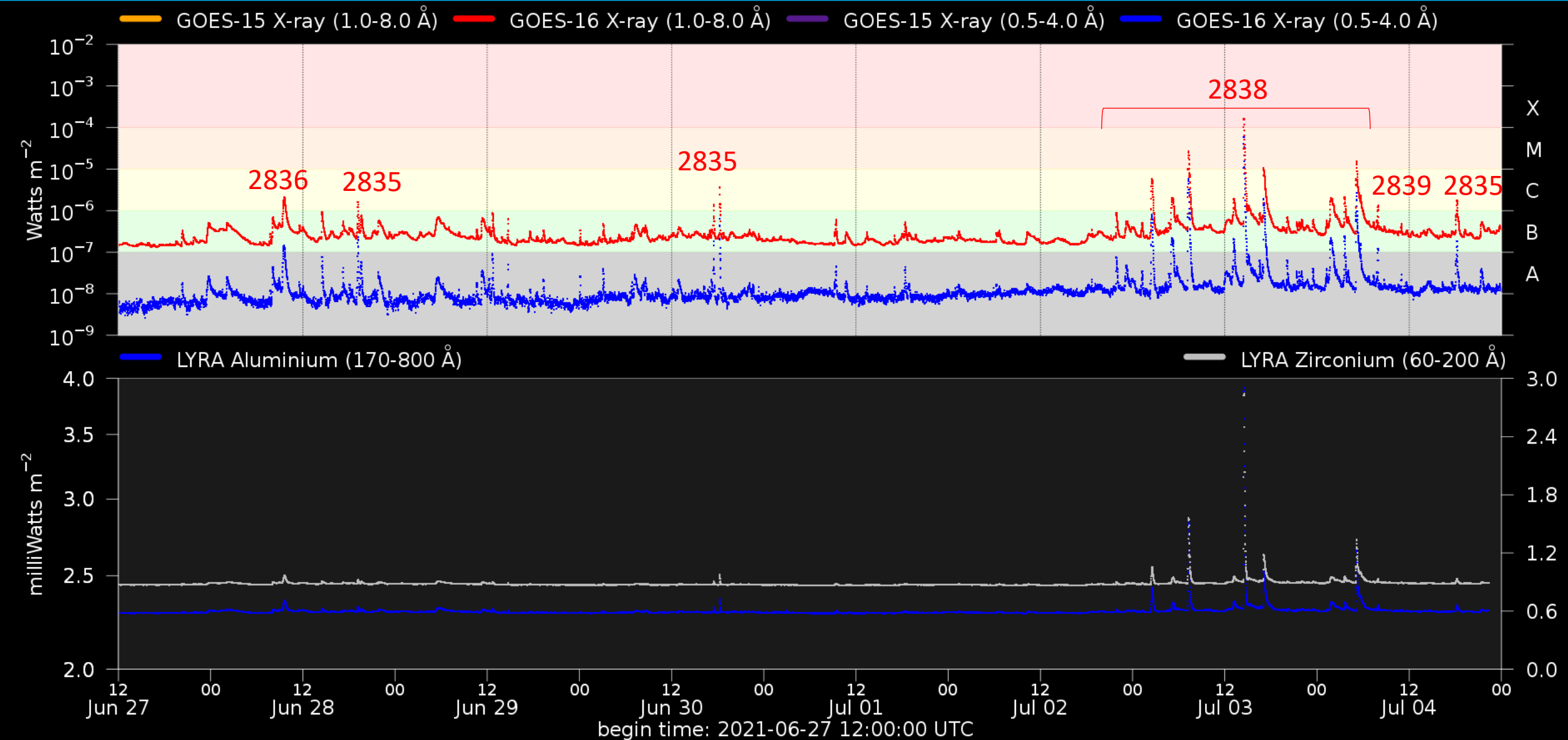


SDO/AIA 304 2021-06-28 00:00:18 UT

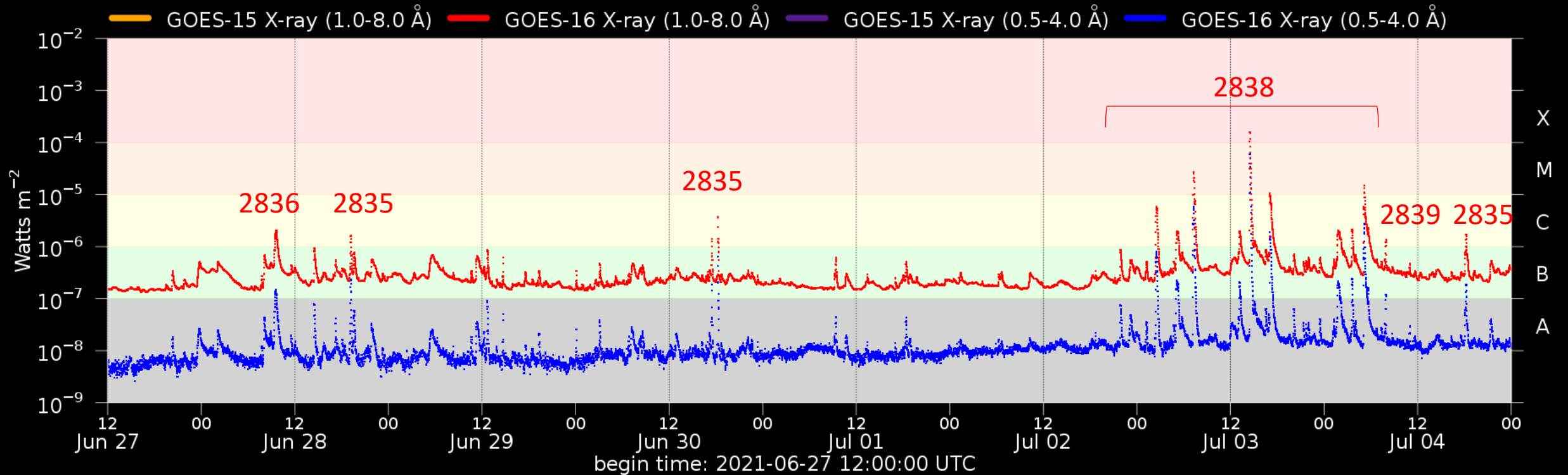
Solar F10.7cm radio flux



Solar X-Ray and UV flux



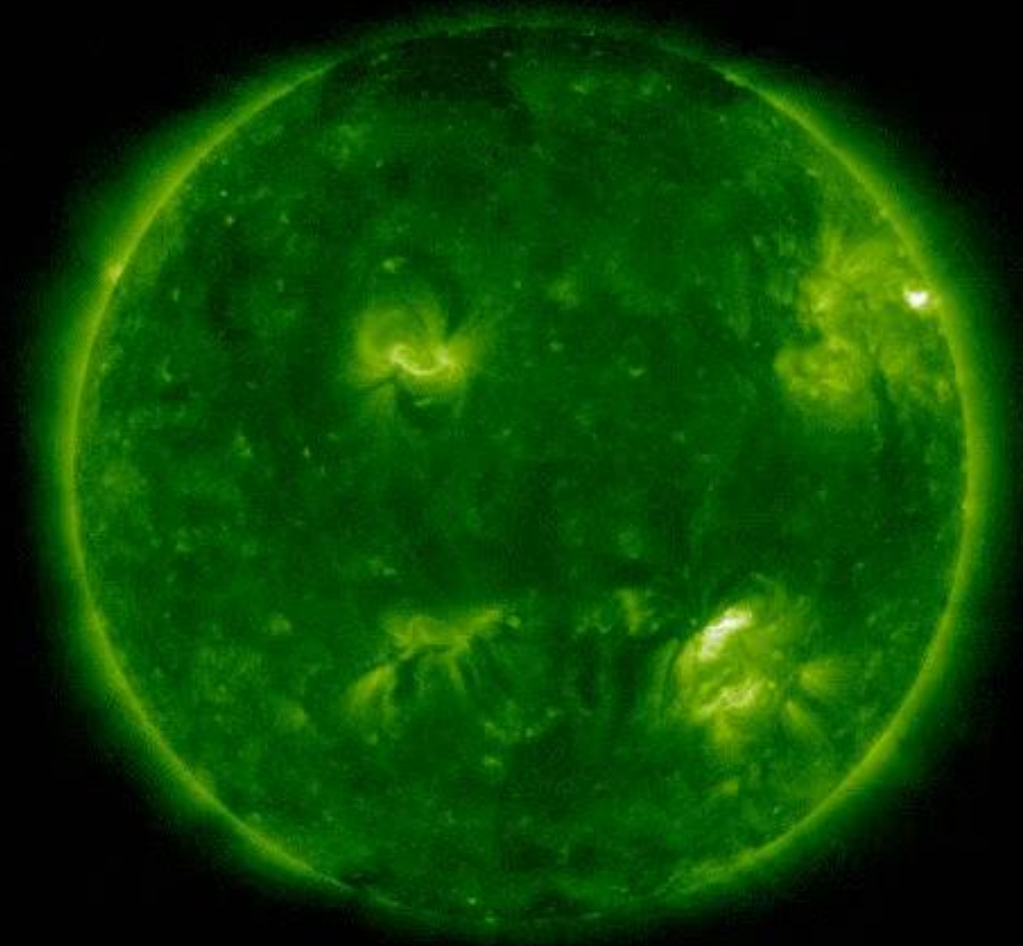
Flaring activity



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

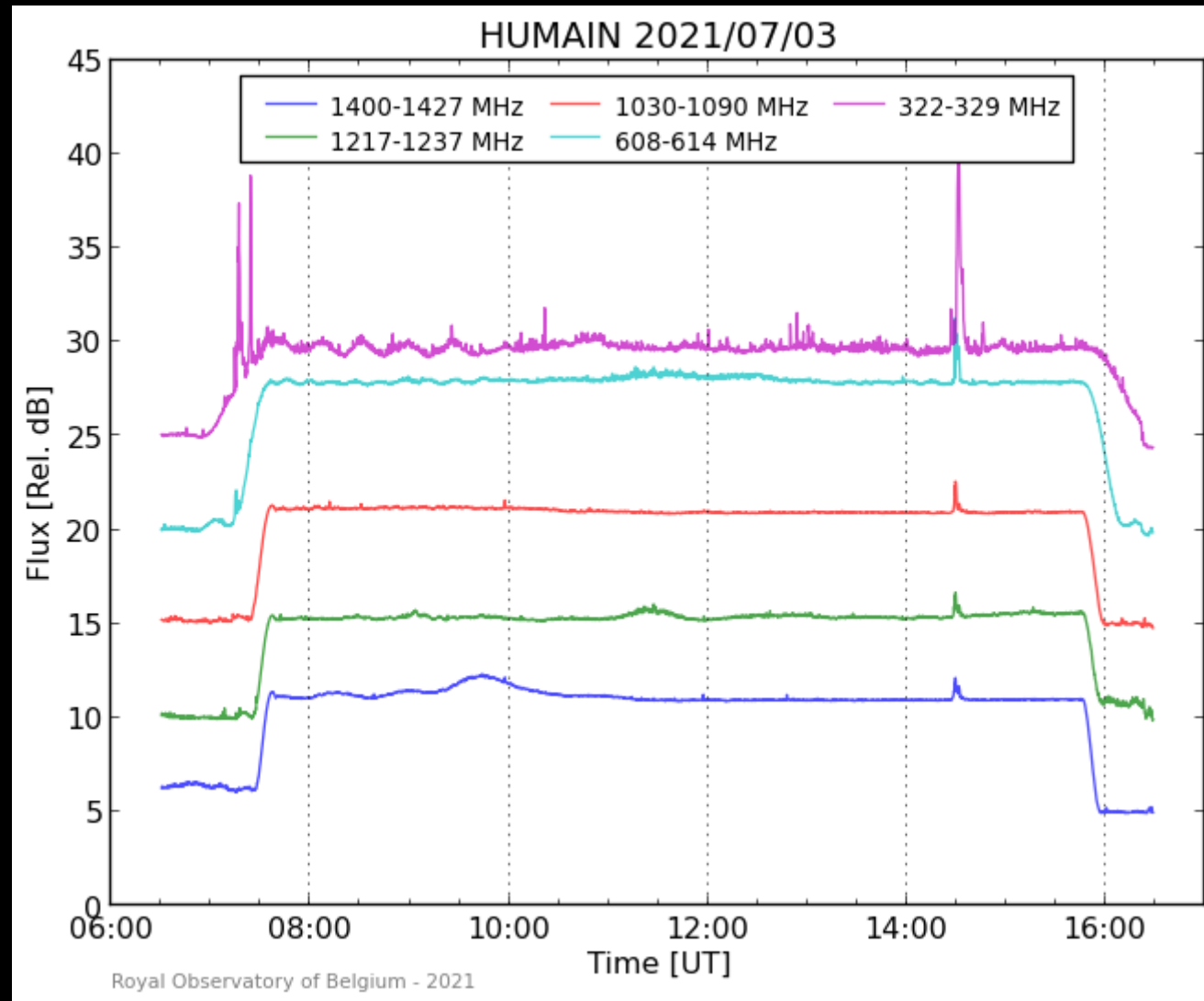
Issue date	2021-06-27	2021-06-28	2021-06-29	2021-06-30	2021-07-01	2021-07-02	2021-07-03	2021-07-04
Probability (%)	10 01 01	35 05 01	55 10 01	60 15 01	65 20 01	65 15 01	80 25 01	95 50 15
Observed (#)	01 00 00	01 00 00	00 00 00	02 00 00	00 00 00	02 01 00	04 02 01	01 00 00

Flaring activity

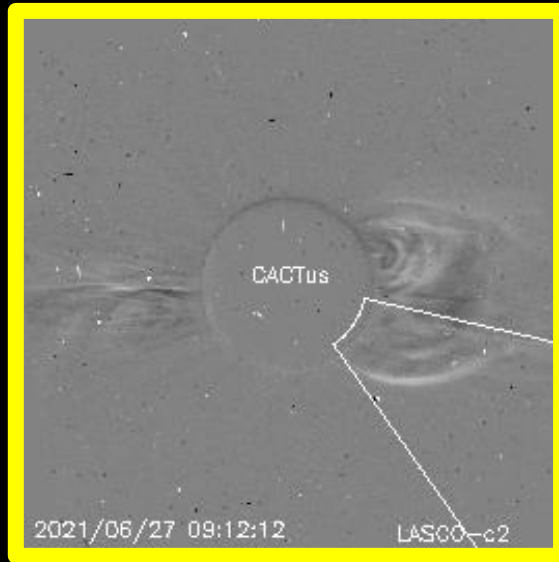
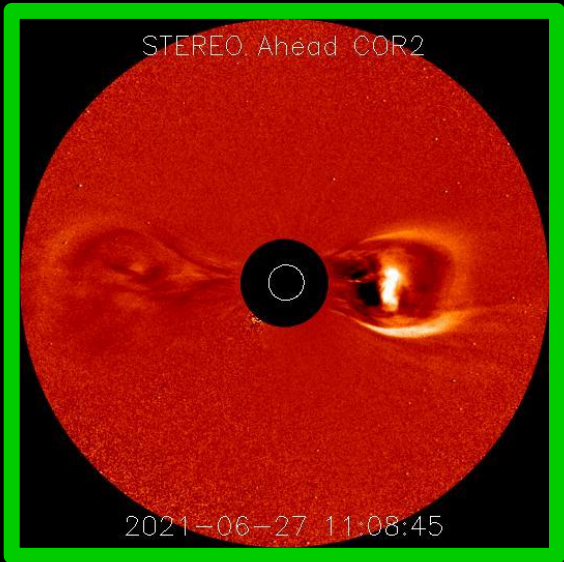


SDO/AIA 94 2021-07-03 00:04:36 UT

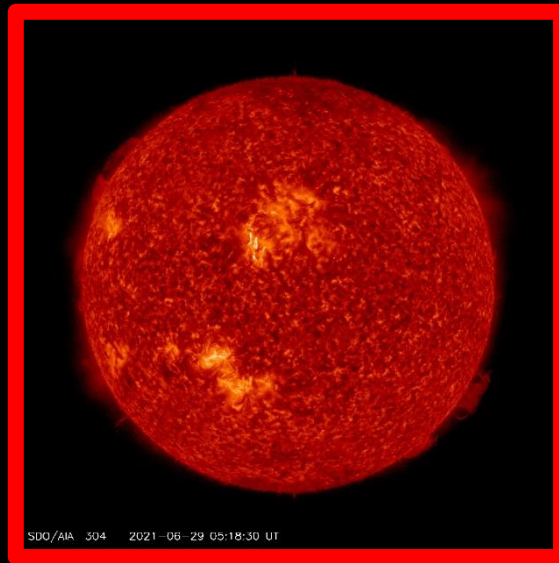
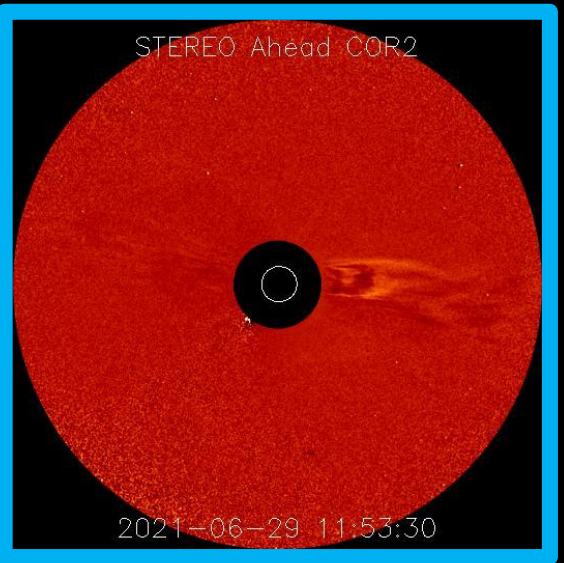
Radio wavelengths



Coronal Mass Ejections

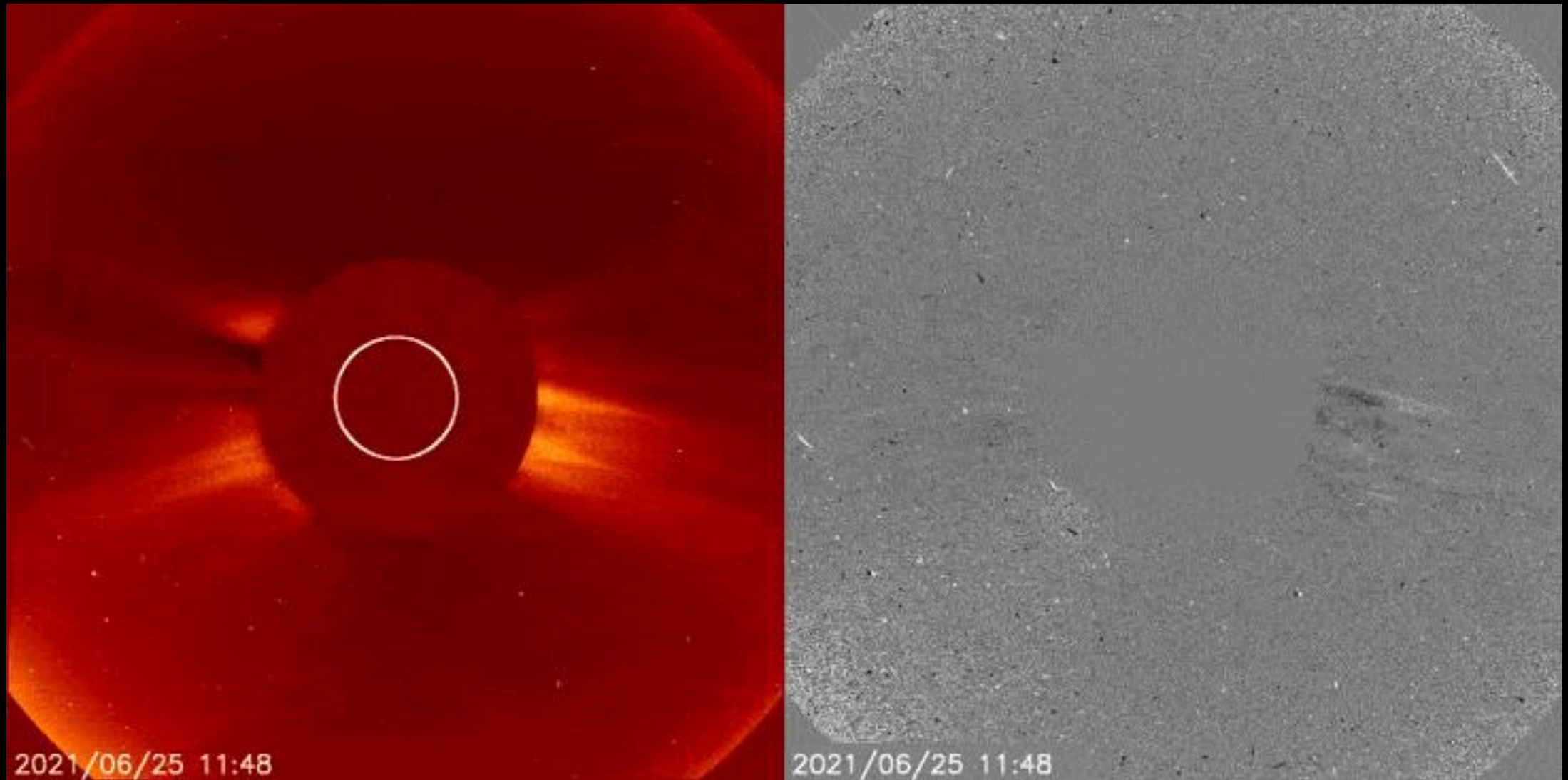


- June 27, around 4UT: Westward CME is seen in SoHO/LASCO onwards. Angular width around 110 degrees.
STEREO A COR 2: directly Westward from Associated to a dimming West of disc center between 1-5UT.
Glancing blow possible and expected around the afternoon of July 1.

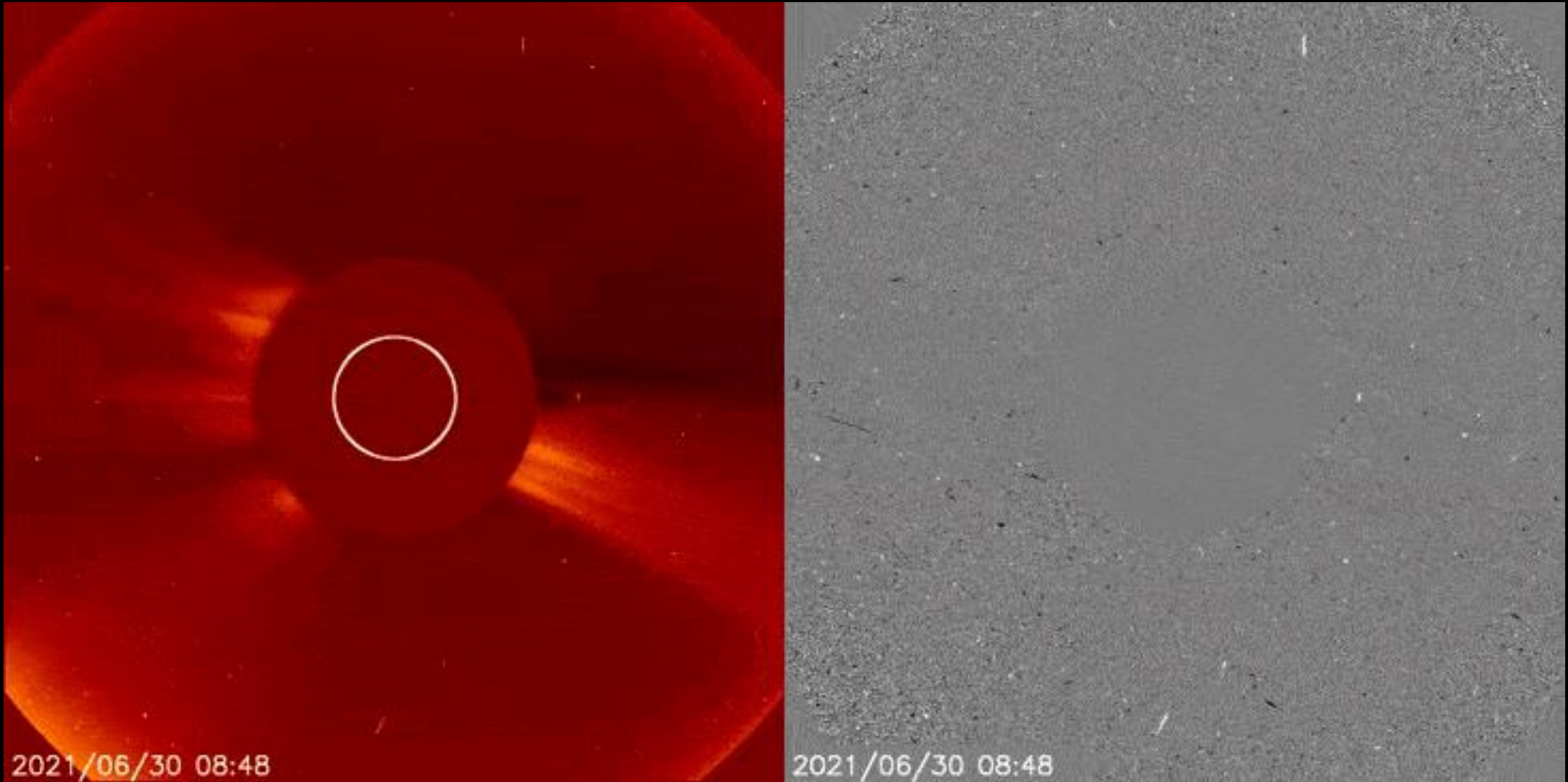


- June 29: A dimming is seen in SDO AIA imagery at around 5:16UT. It originates from around N15E10
STEREO A display a CME towards the West from 11:53UT (after data gap). SoHO/LASCO coronagraph data are not so clear and the signature is faint. The most clear part is visible from around 6:24UT towards the East.
Associated CME is not excluded and could occur around noon July 3.

Coronal Mass Ejections (first part of the week)



Coronal Mass Ejections (last part of the week)



Solar Wind and

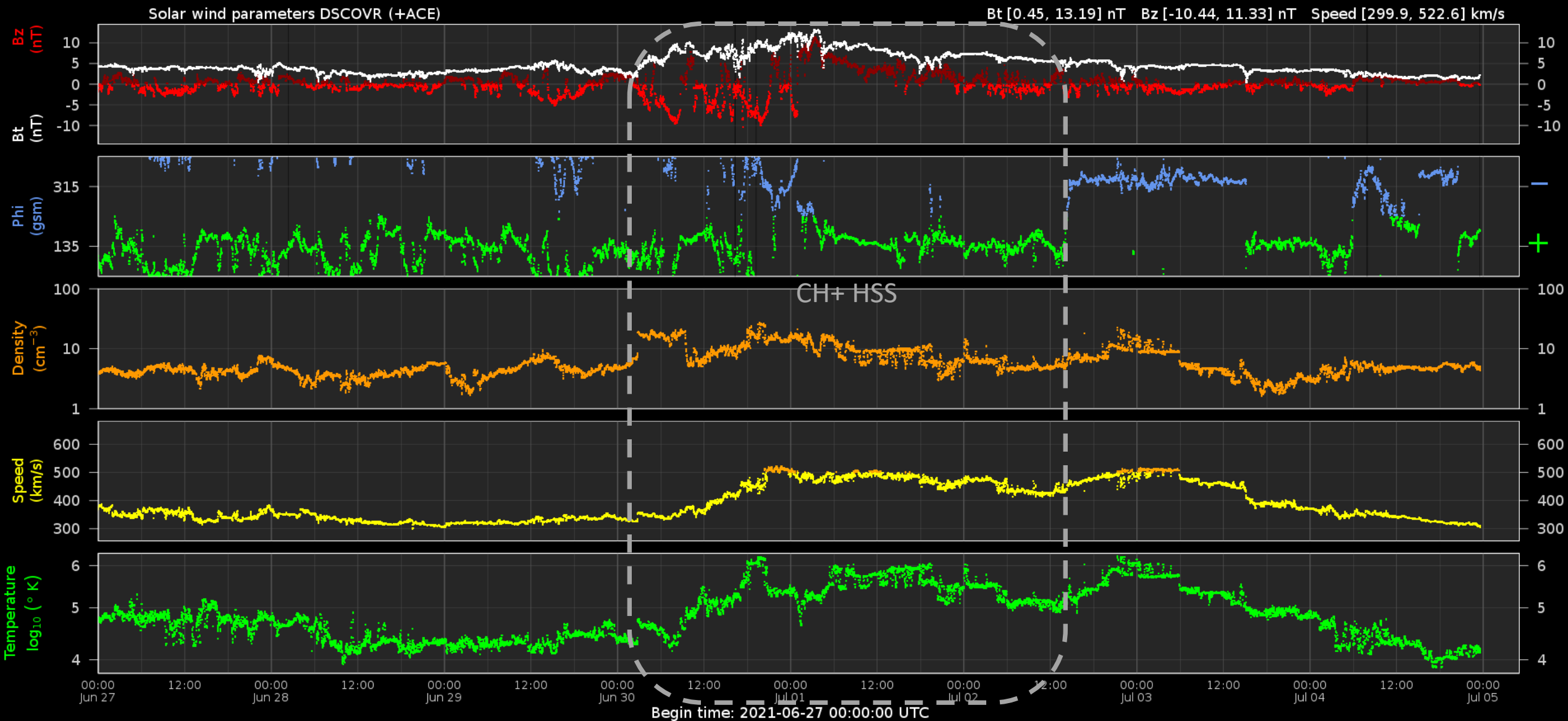
Geomagnetic Activity



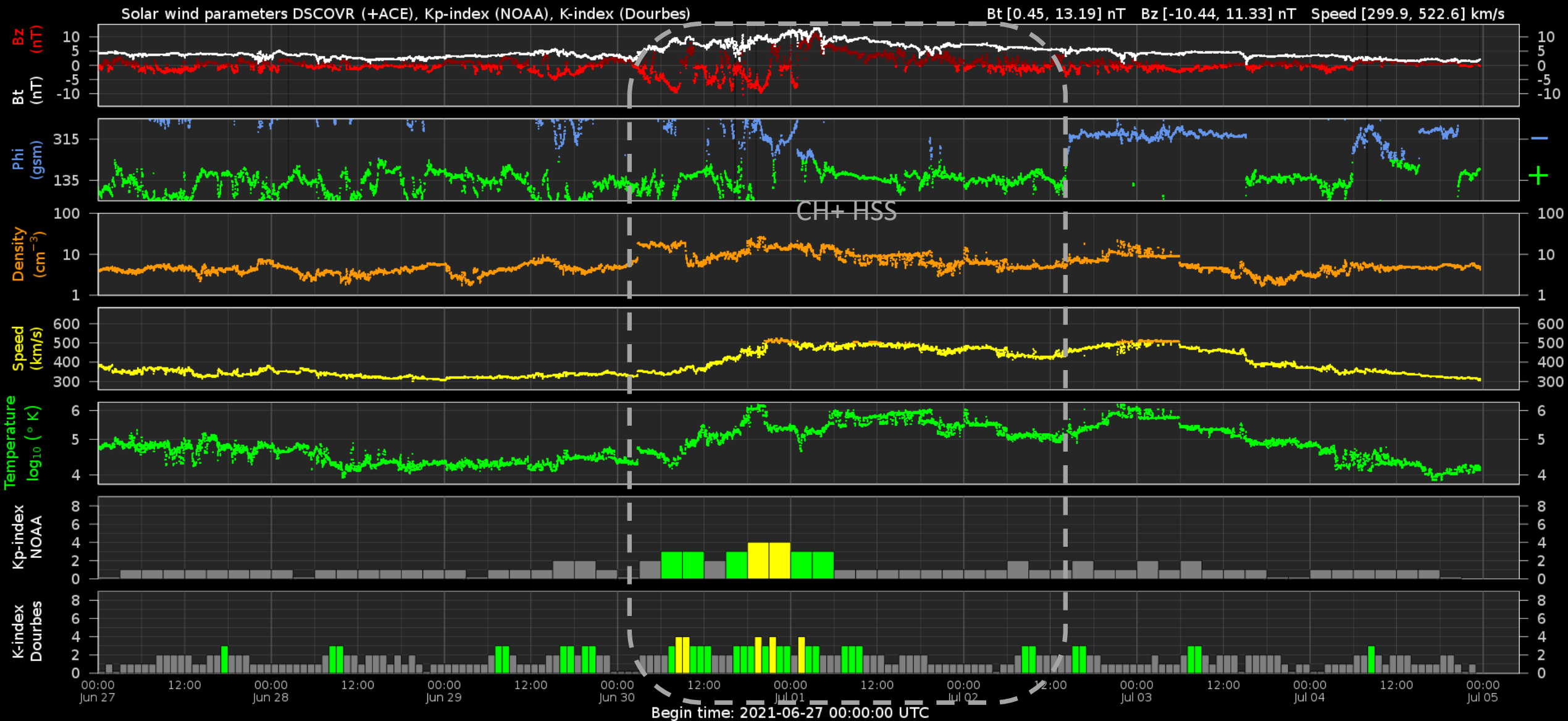
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Solar wind parameters



Solar wind parameters & K-indices



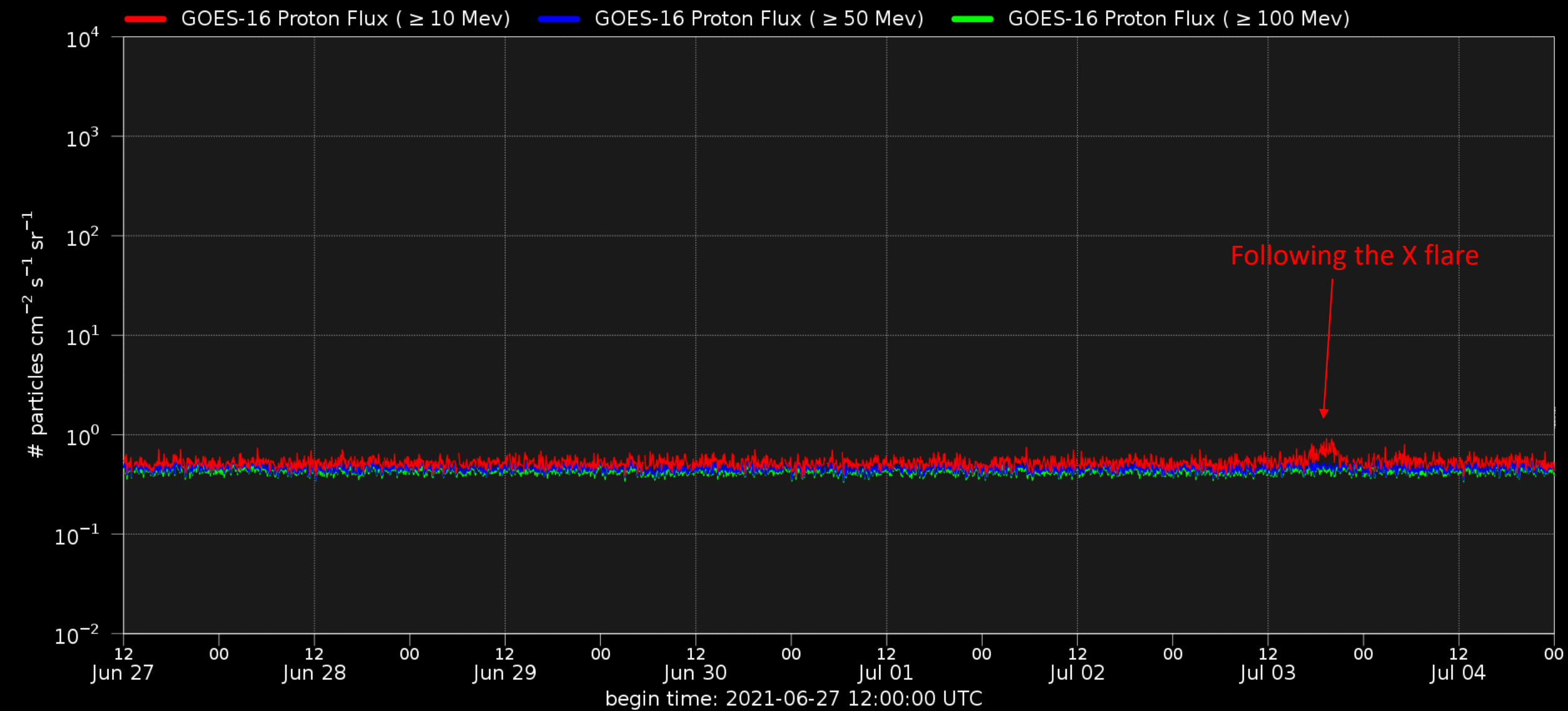
Energetic Particles



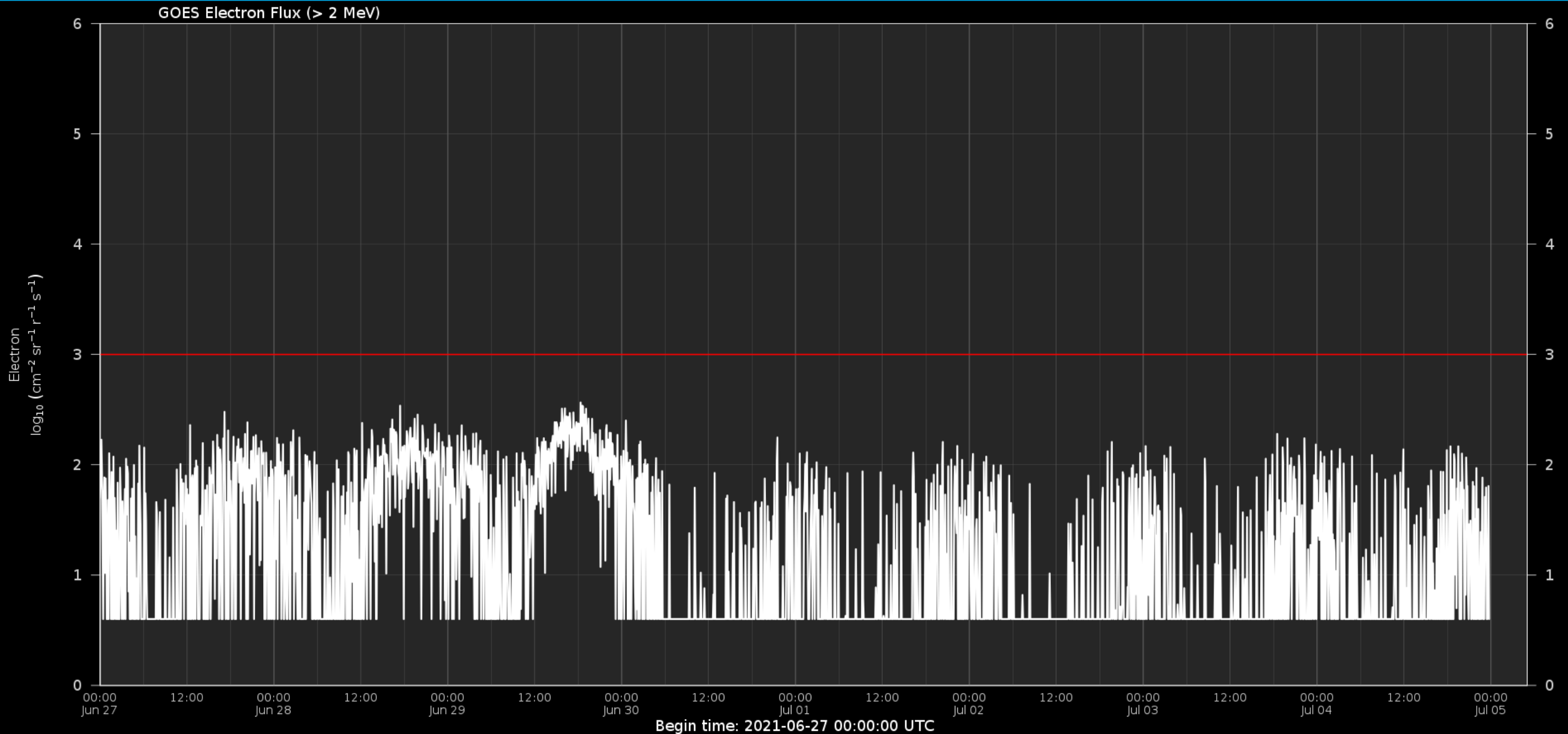
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Solar proton flux



Electron flux at GEO



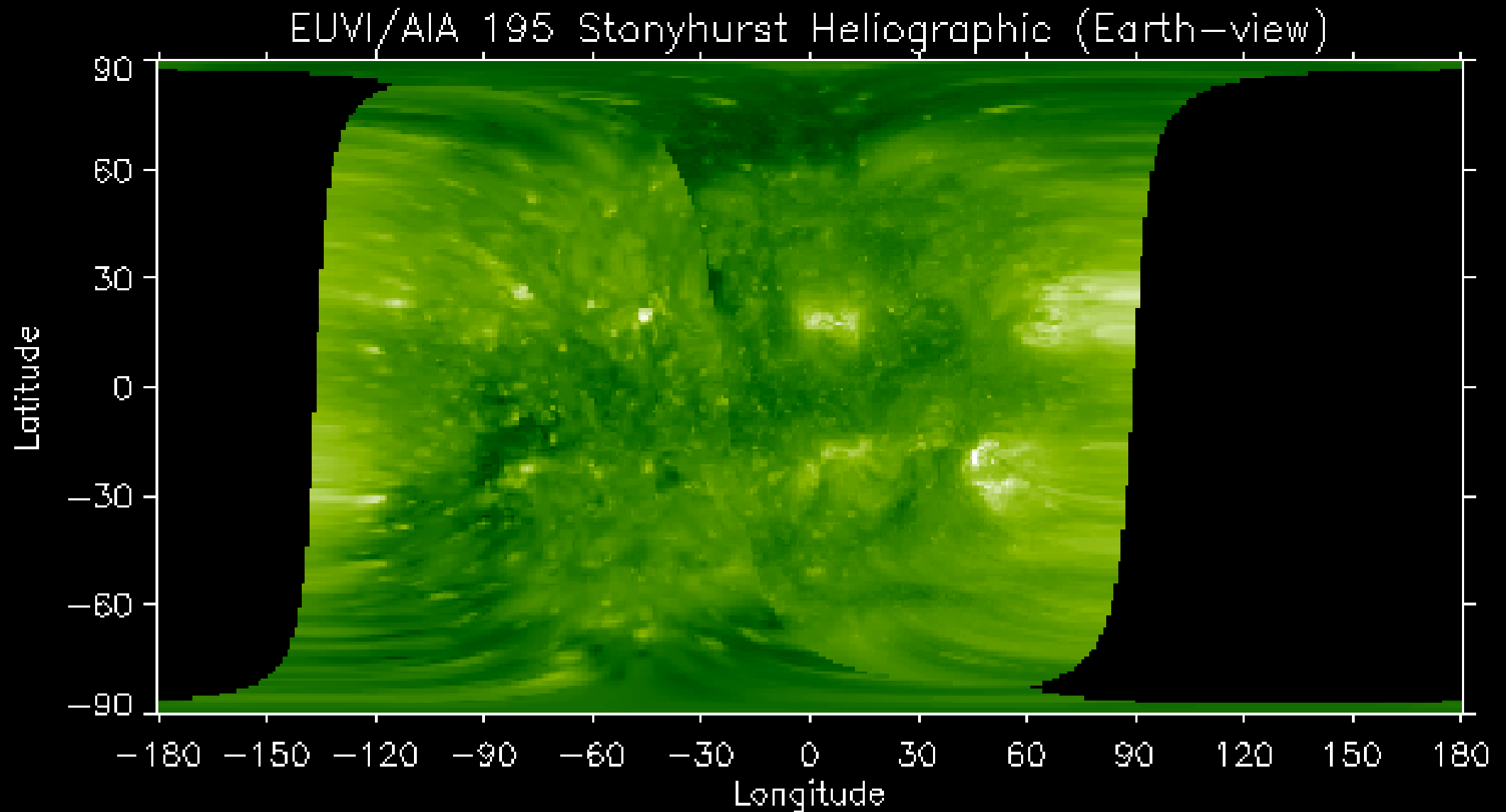
Outlook



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Outlook: Solar activity



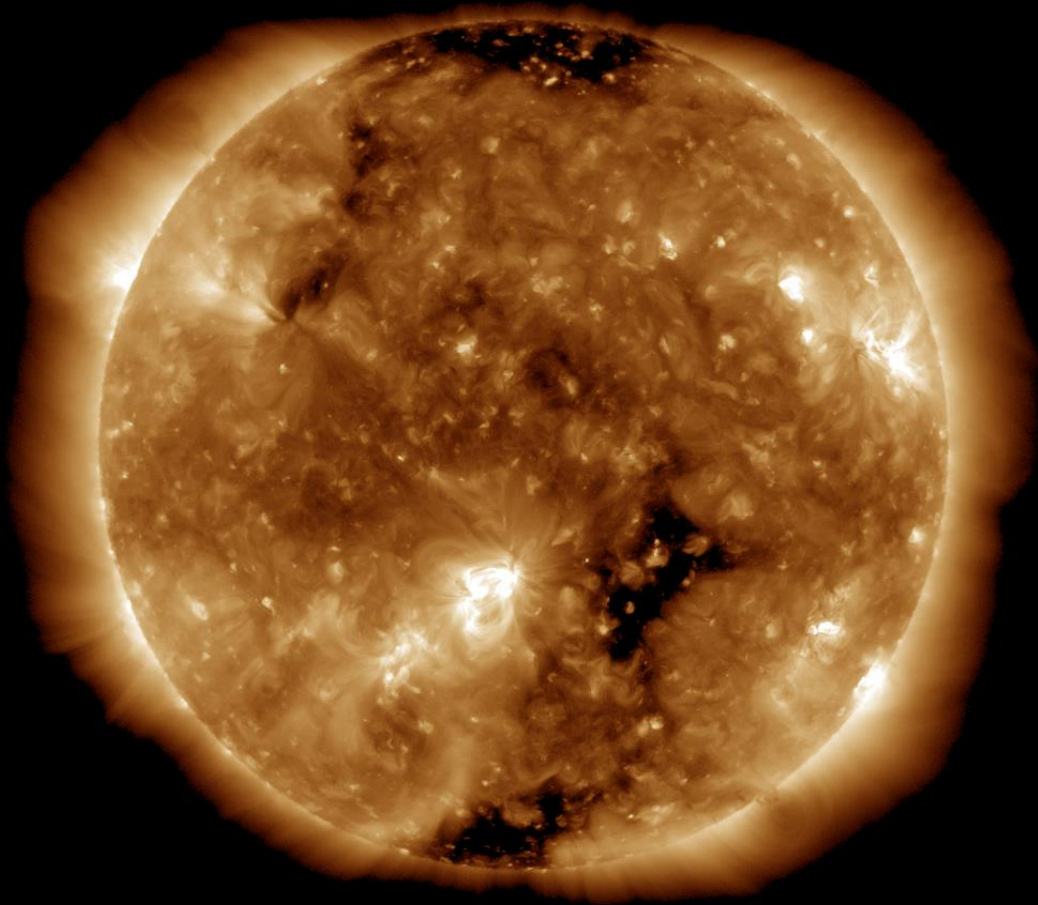
Outlook: Solar wind parameters



Coronal holes

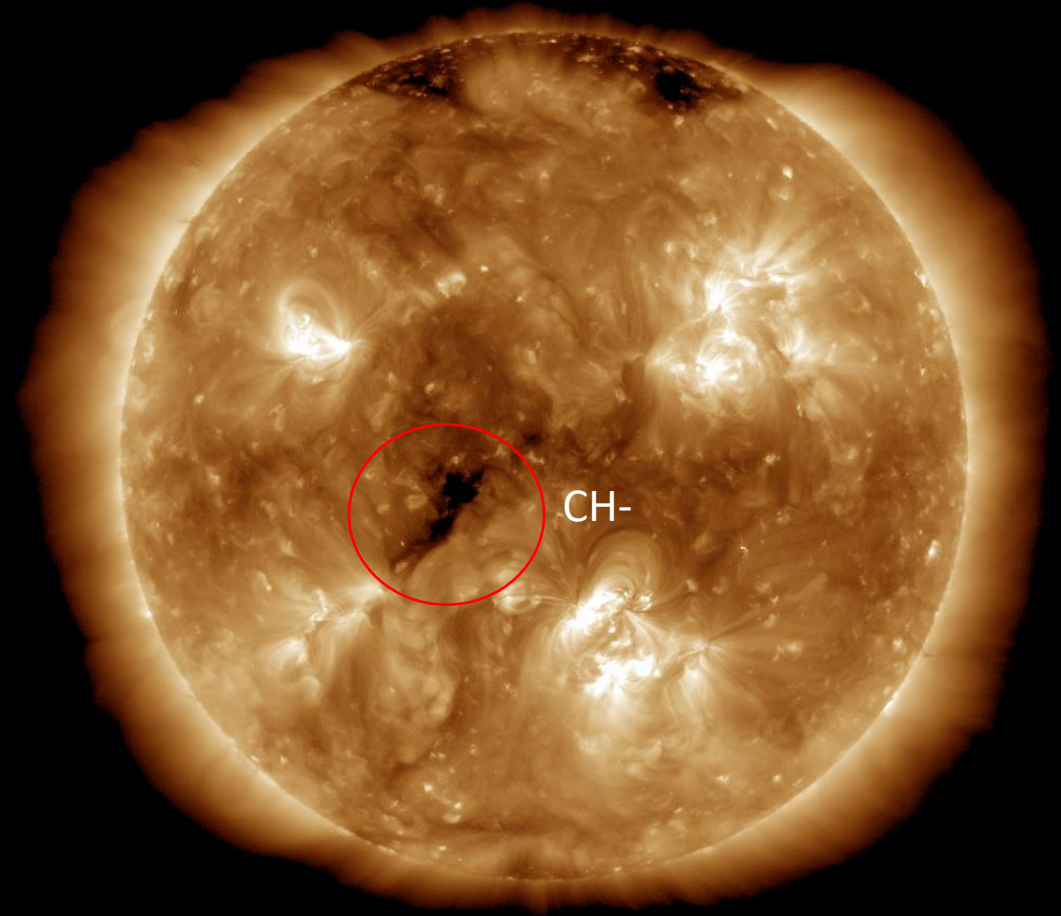
SDO/AIA 19.3 nm 2021-06-06

SDO/AIA AIA 193Å 2021-06-06T12:00:05.843

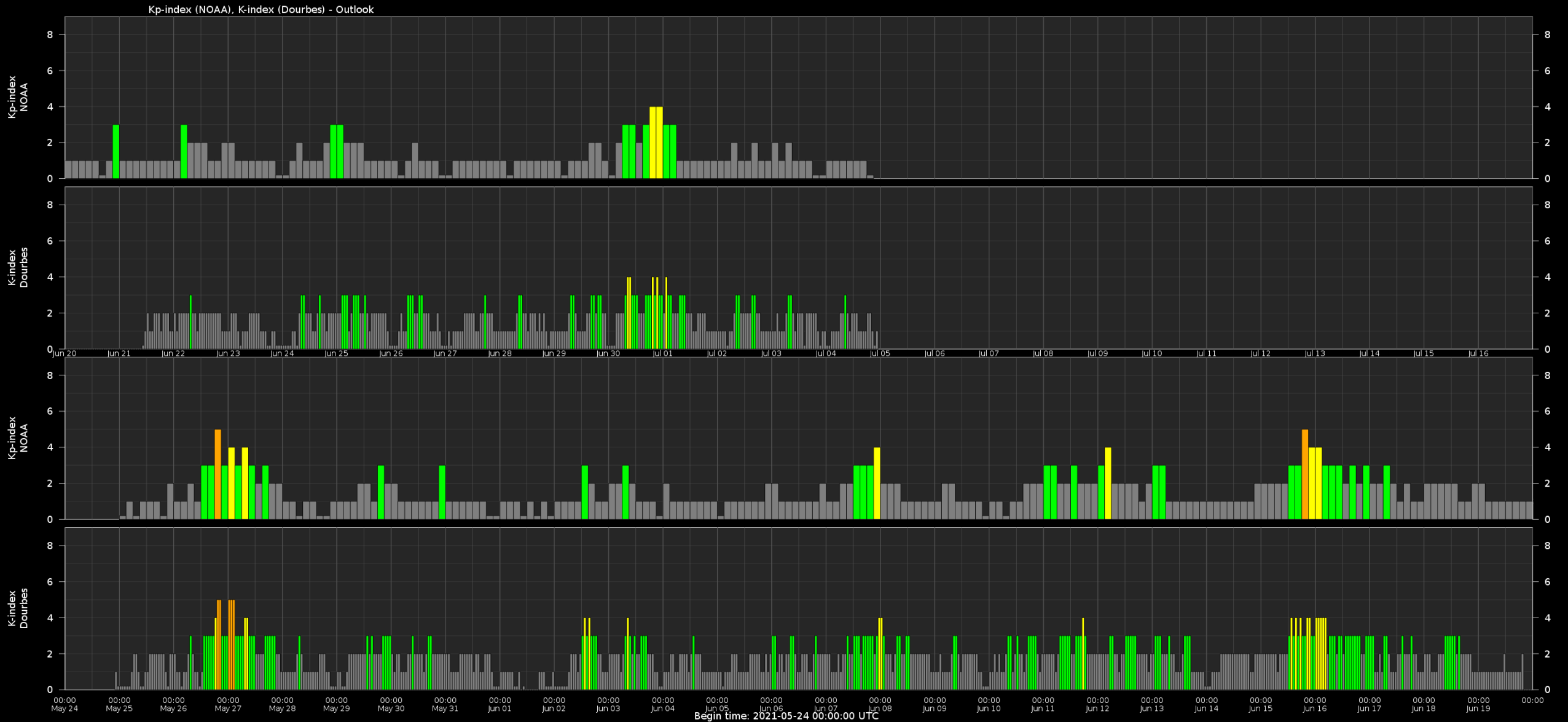


SDO/AIA 19.3 nm 2021-07-01

SDO/AIA AIA 193Å 2021-07-01T12:00:05.843



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



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See you at our next briefing!

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