

SIDC Space Weather Briefing

03 January 2021 - 10 January 2021

Jesse Andries

& the SIDC forecaster team



Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2021-01-03 12:00 to 2021-01-10 23:59

Active regions	None
Flares	# C-class flare: 0 # M-class flare: 0 # X-class flare: 0
Filament eruptions	One from NW and 2 from SW
Coronal Holes	Relatively small: 2 CH- and 1 CH+
Proton flux	background
Electron flux at GEO	Mostly at nominal levels

Solar wind and geomagnetic conditions

ICME	None (So the January 2 CME did not arrive)
SW Conditions	B : 0.83 - 18.12 nT // Bz: -16.32 nT to 14.54 nT // Speed: 284.8 - 628.9km/s
K-indices	max K-index (Dourbes): 4 max Kp-index (NOAA): 4

All Quiet Alert: Switched off since 2021-01-04

Solar Activity

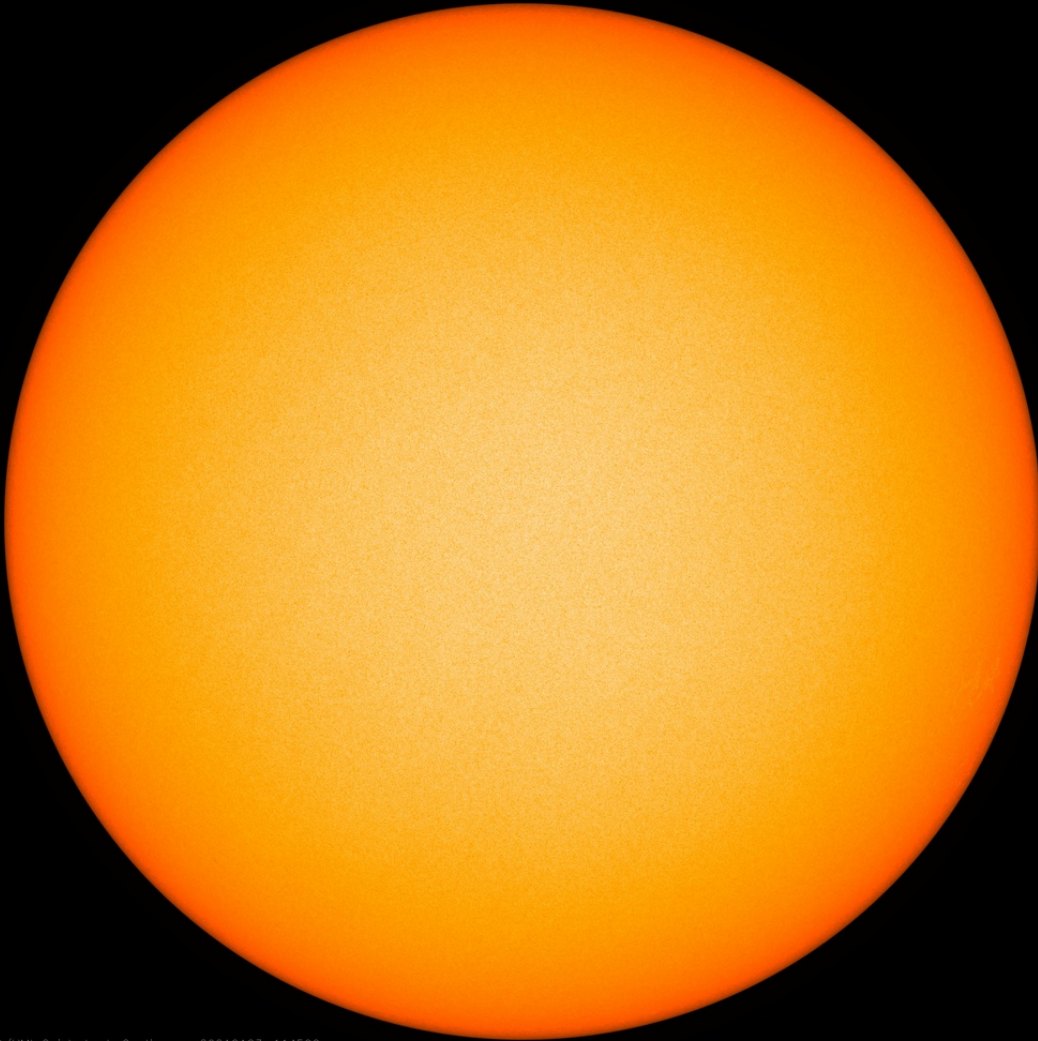


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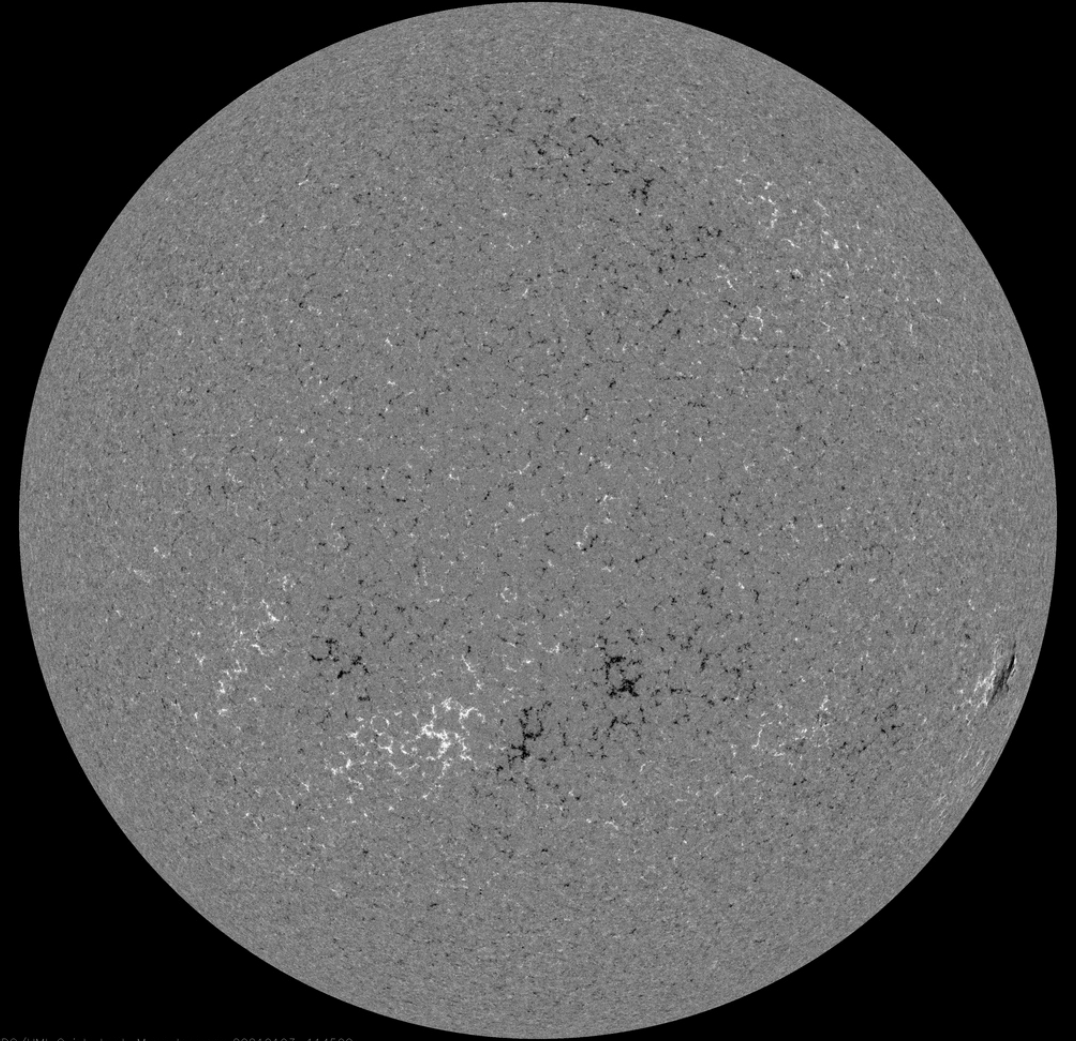
Solar active regions

SDO/HMI White Light 2021-01-03



SDO/HMI Quick-Look Continuum: 20210103_114500

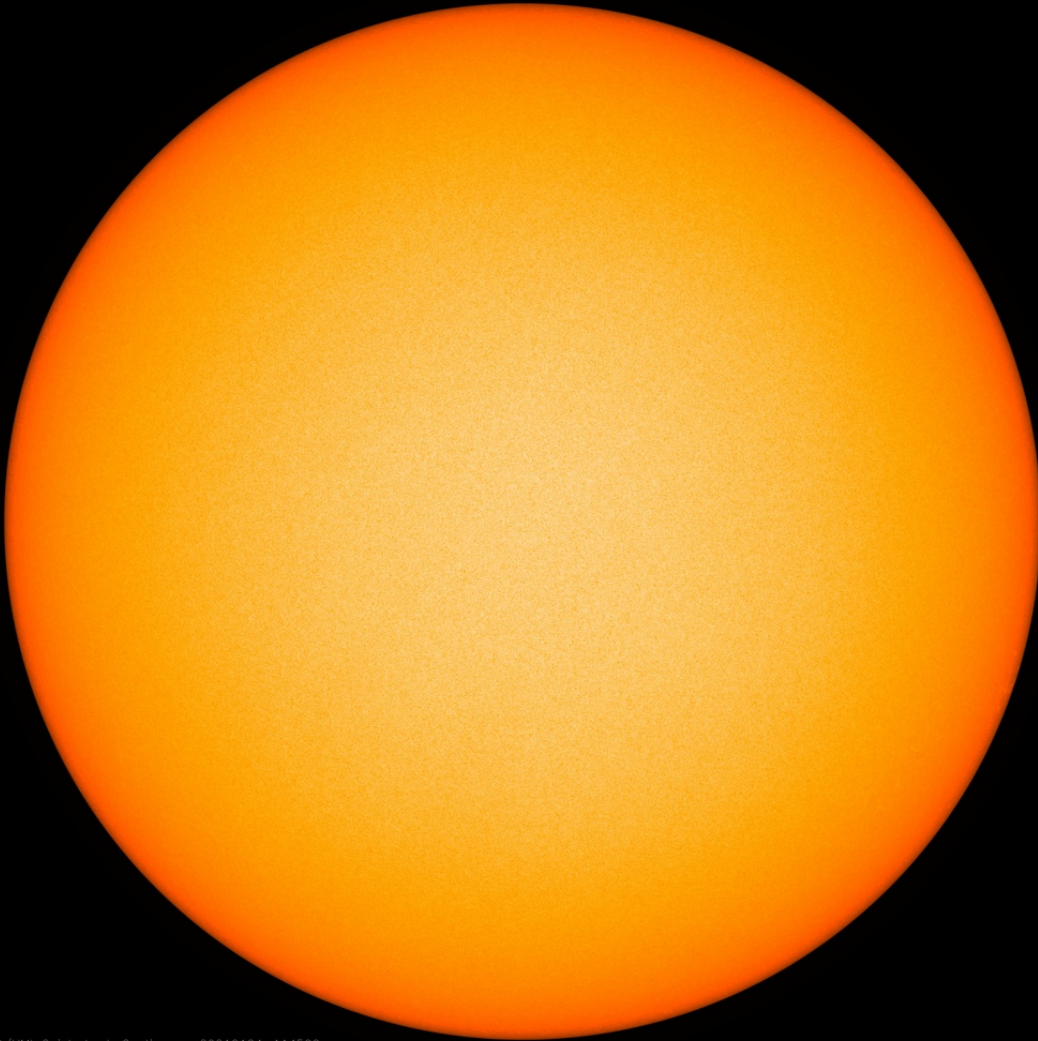
SDO/HMI Magnetogram 2021-01-03



SDO/HMI Quick-Look Magnetogram: 20210103_114500

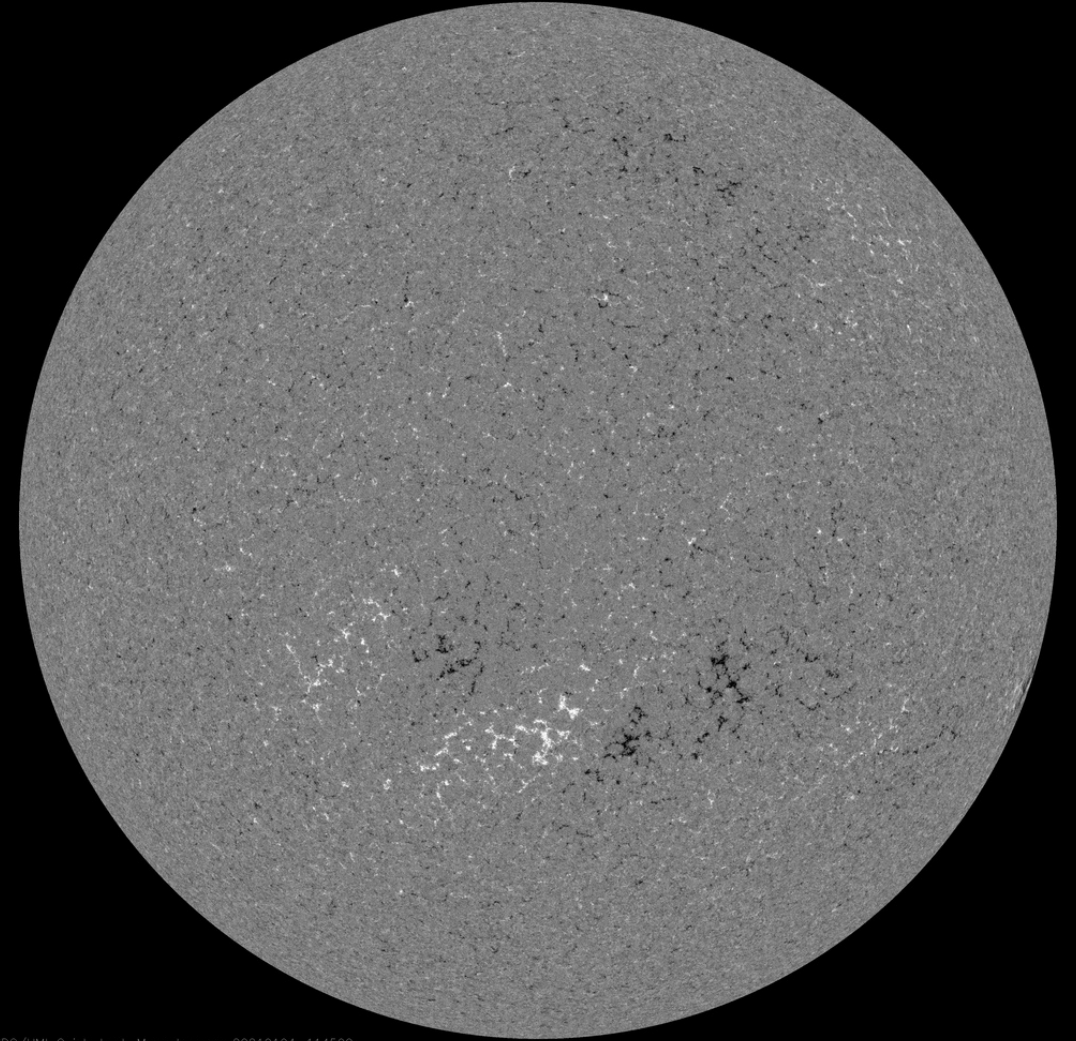
Solar active regions

SDO/HMI White Light 2021-01-04



SDO/HMI Quick-Look Continuum: 20210104_114500

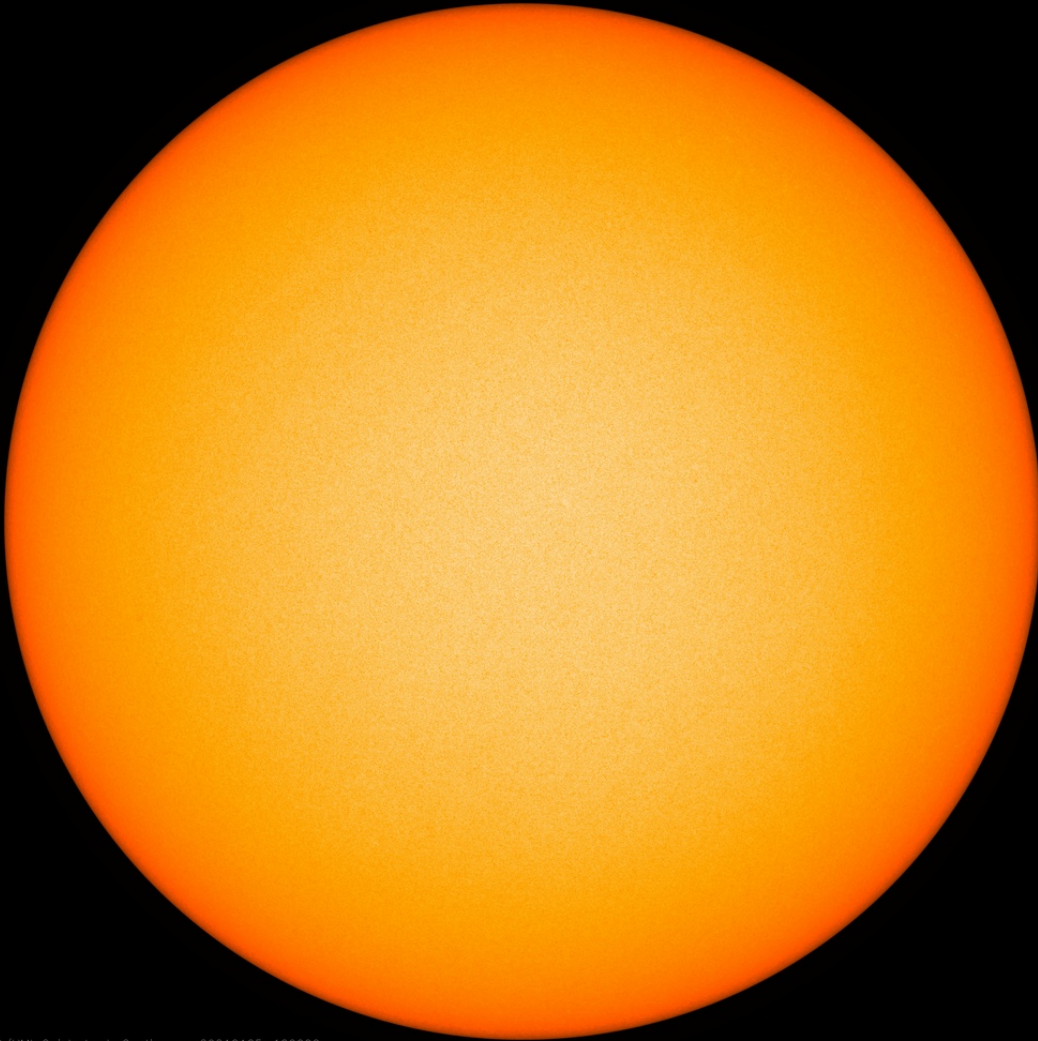
SDO/HMI Magnetogram 2021-01-04



SDO/HMI Quick-Look Magnetogram: 20210104_114500

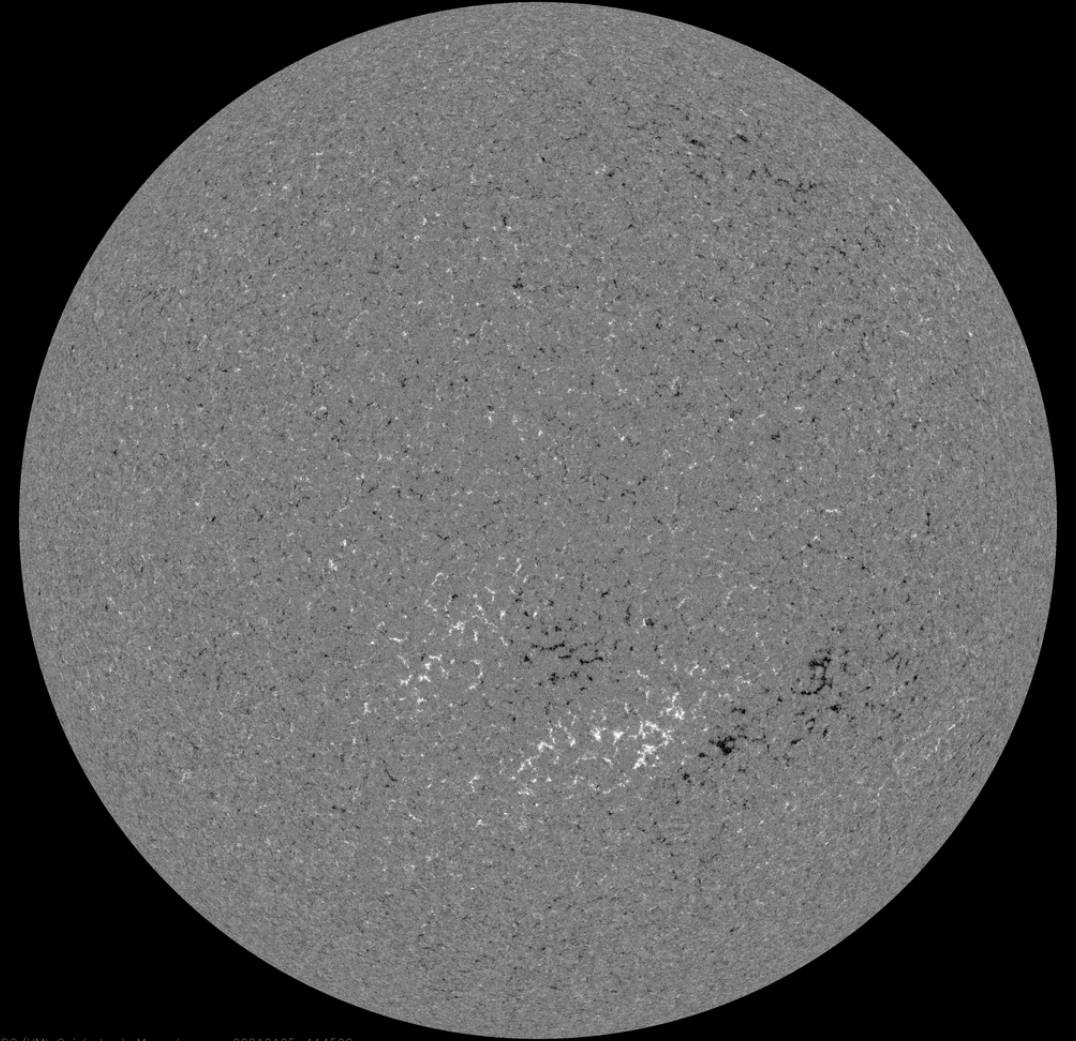
Solar active regions

SDO/HMI White Light 2021-01-05



SDO/HMI Quick-Look Continuum: 20210105_120000

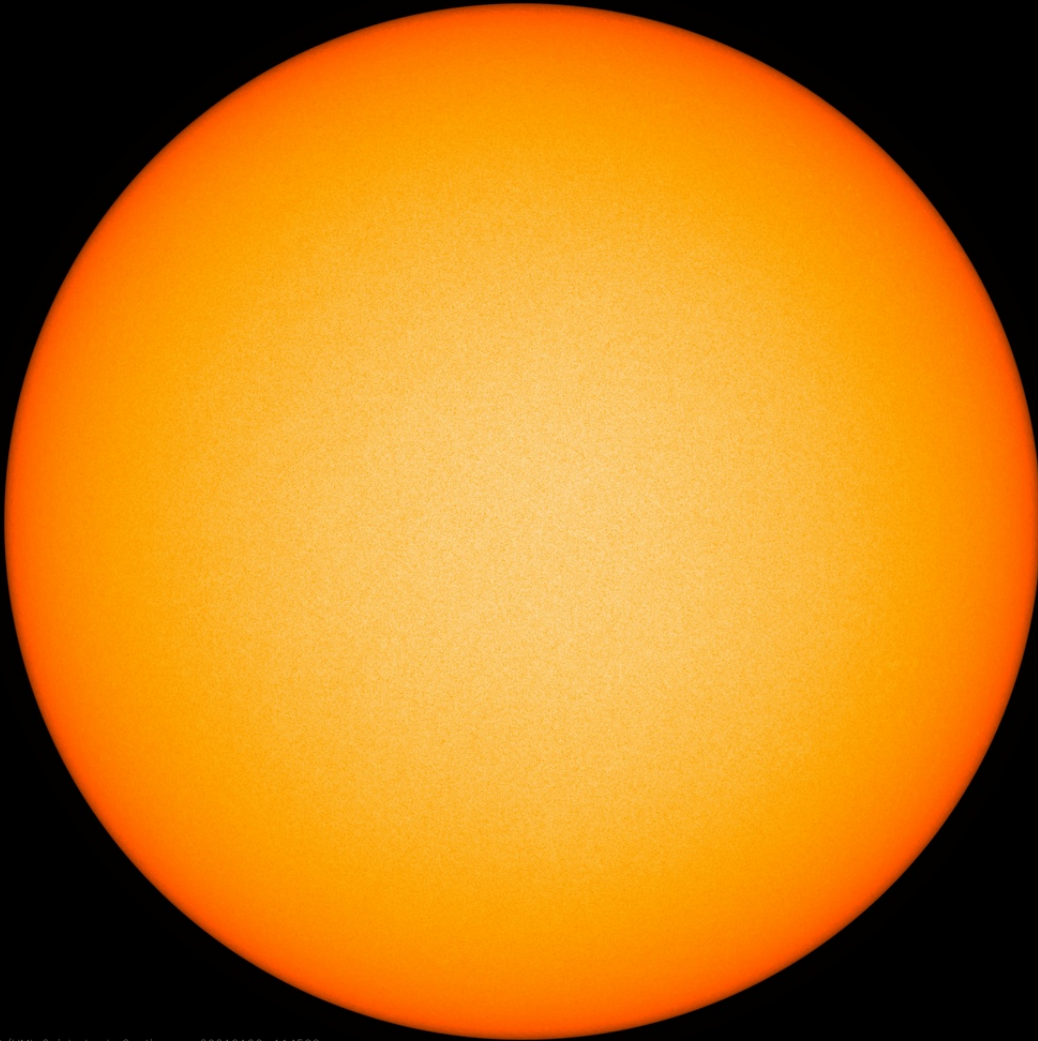
SDO/HMI Magnetogram 2021-01-05



SDO/HMI Quick-Look Magnetogram: 20210105_114500

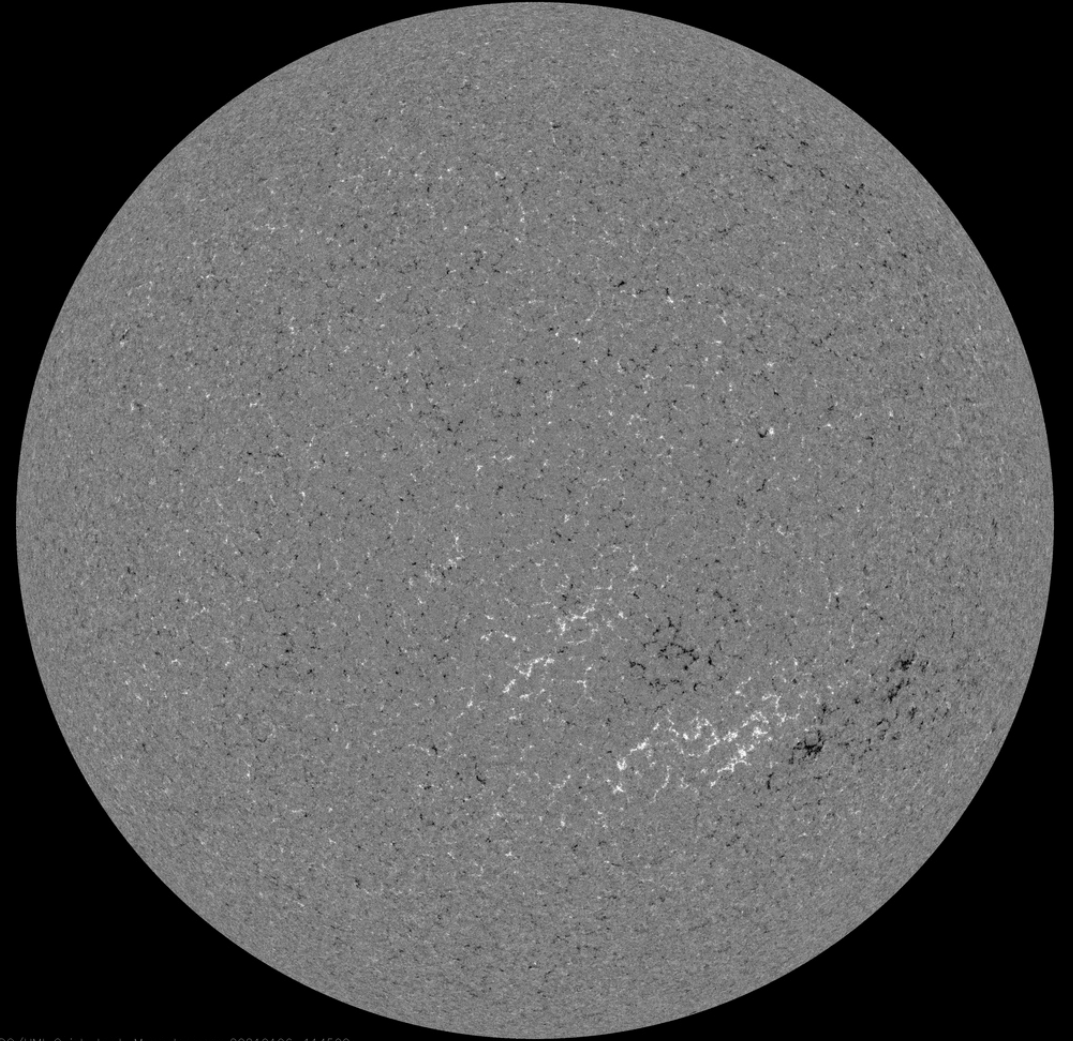
Solar active regions

SDO/HMI White Light 2021-01-06



SDO/HMI Quick-Look Continuum: 20210106_114500

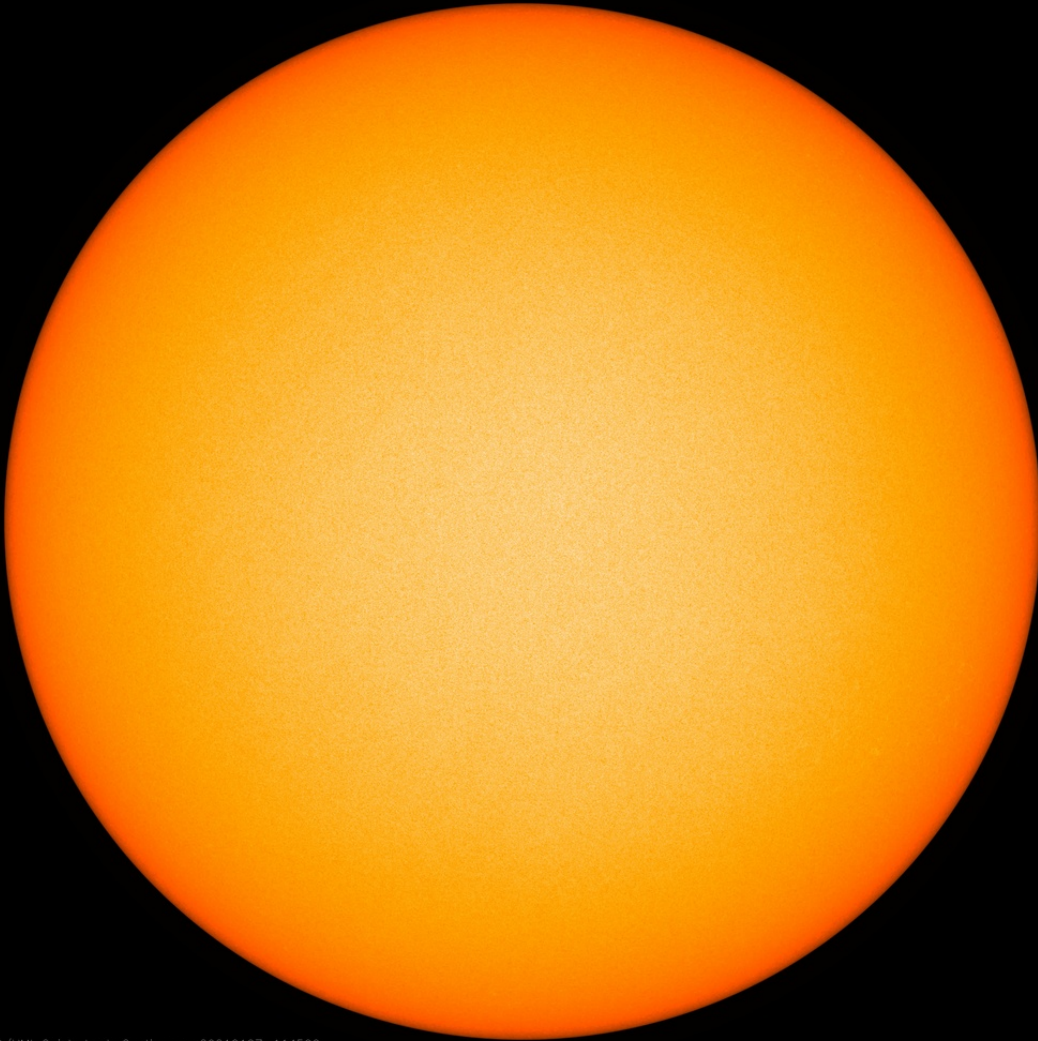
SDO/HMI Magnetogram 2021-01-06



SDO/HMI Quick-Look Magnetogram: 20210106_114500

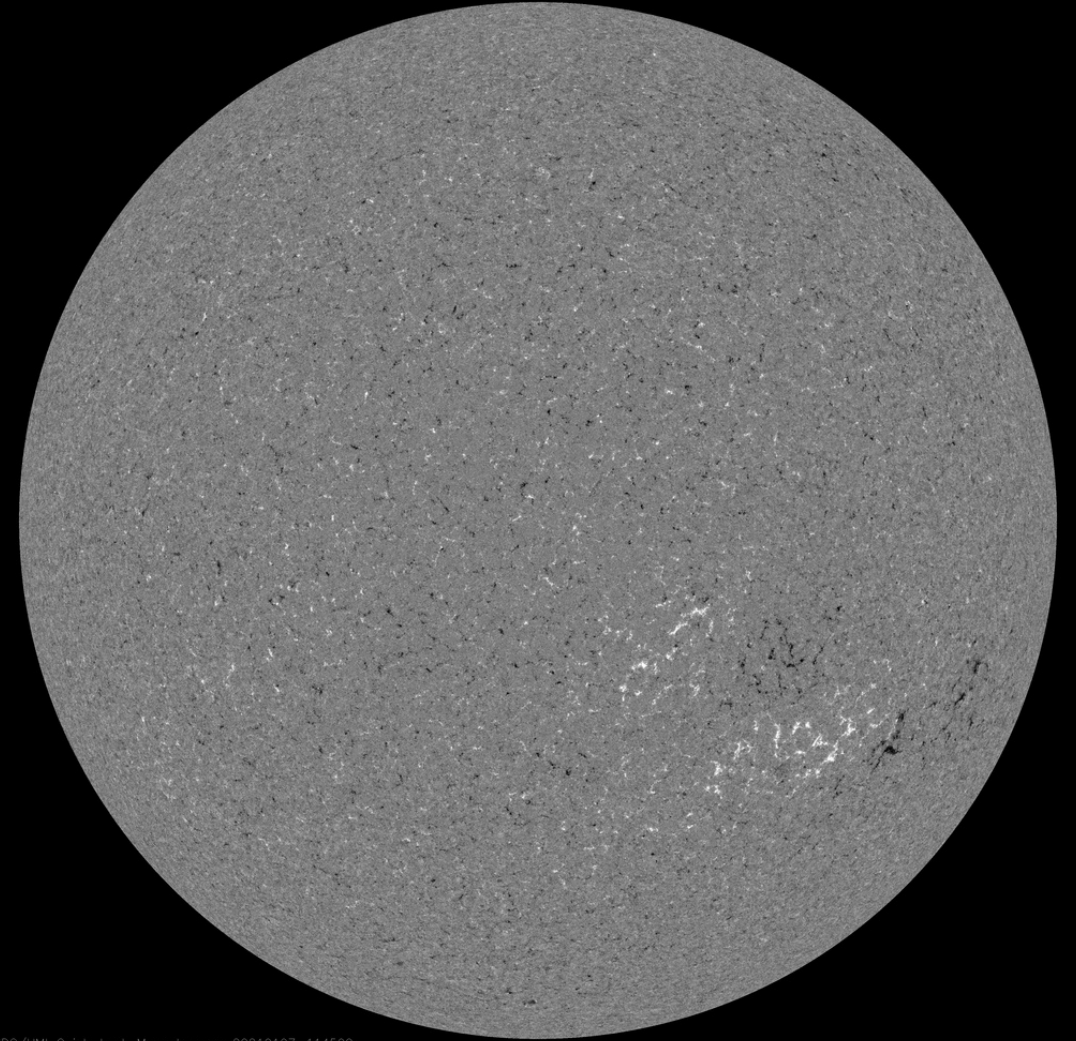
Solar active regions

SDO/HMI White Light 2021-01-07



SDO/HMI Quick-Look Continuum: 20210107_114500

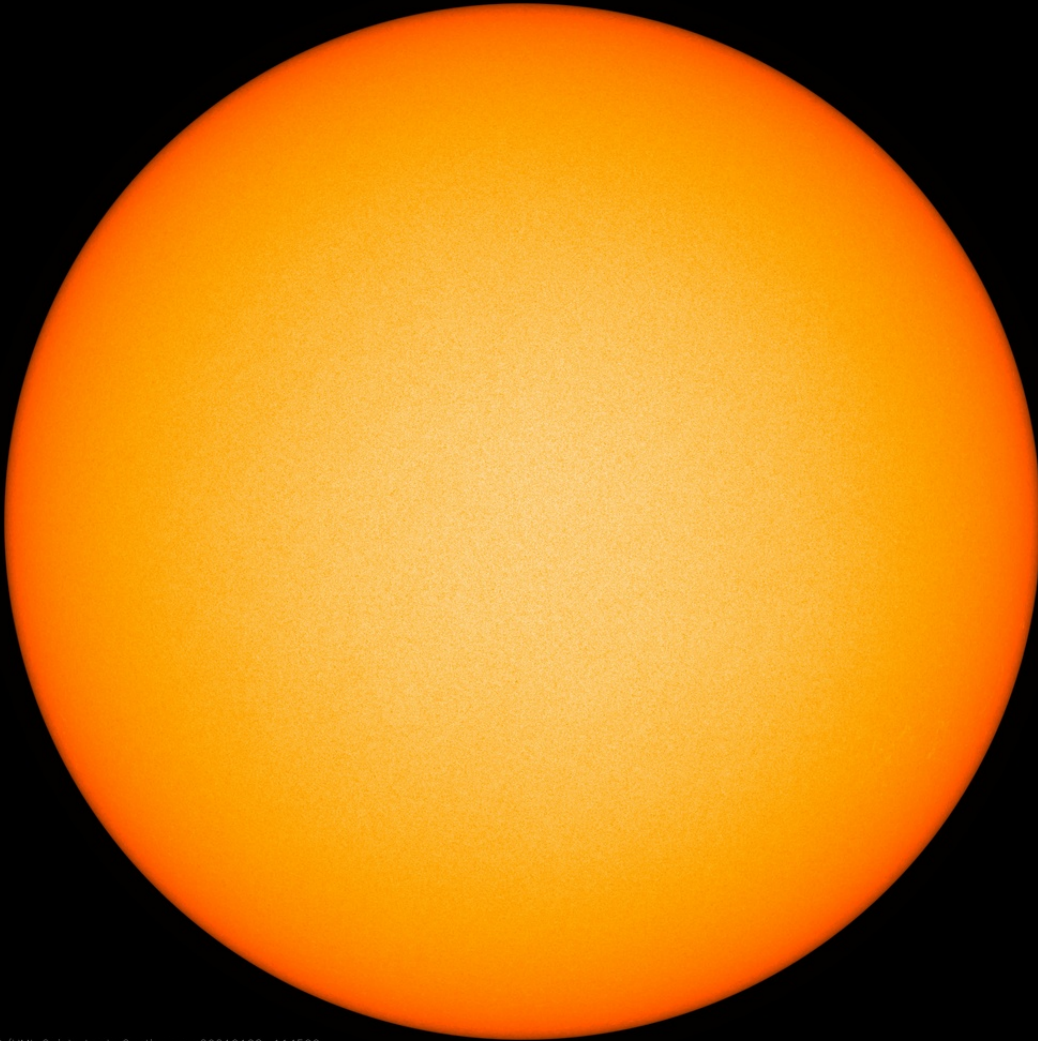
SDO/HMI Magnetogram 2021-01-07



SDO/HMI Quick-Look Magnetogram: 20210107_114500

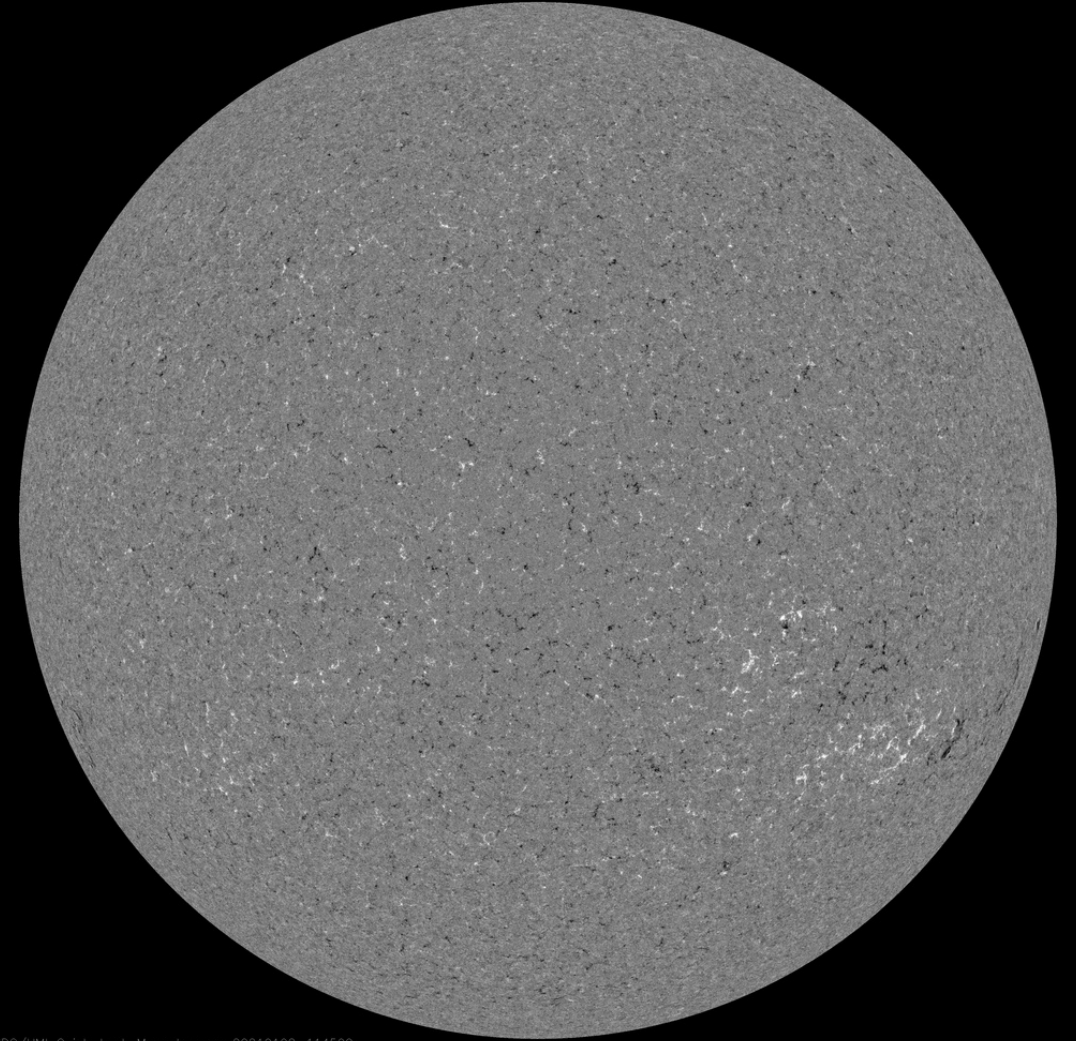
Solar active regions

SDO/HMI White Light 2021-01-08



SDO/HMI Quick-Look Continuum: 20210108_114500

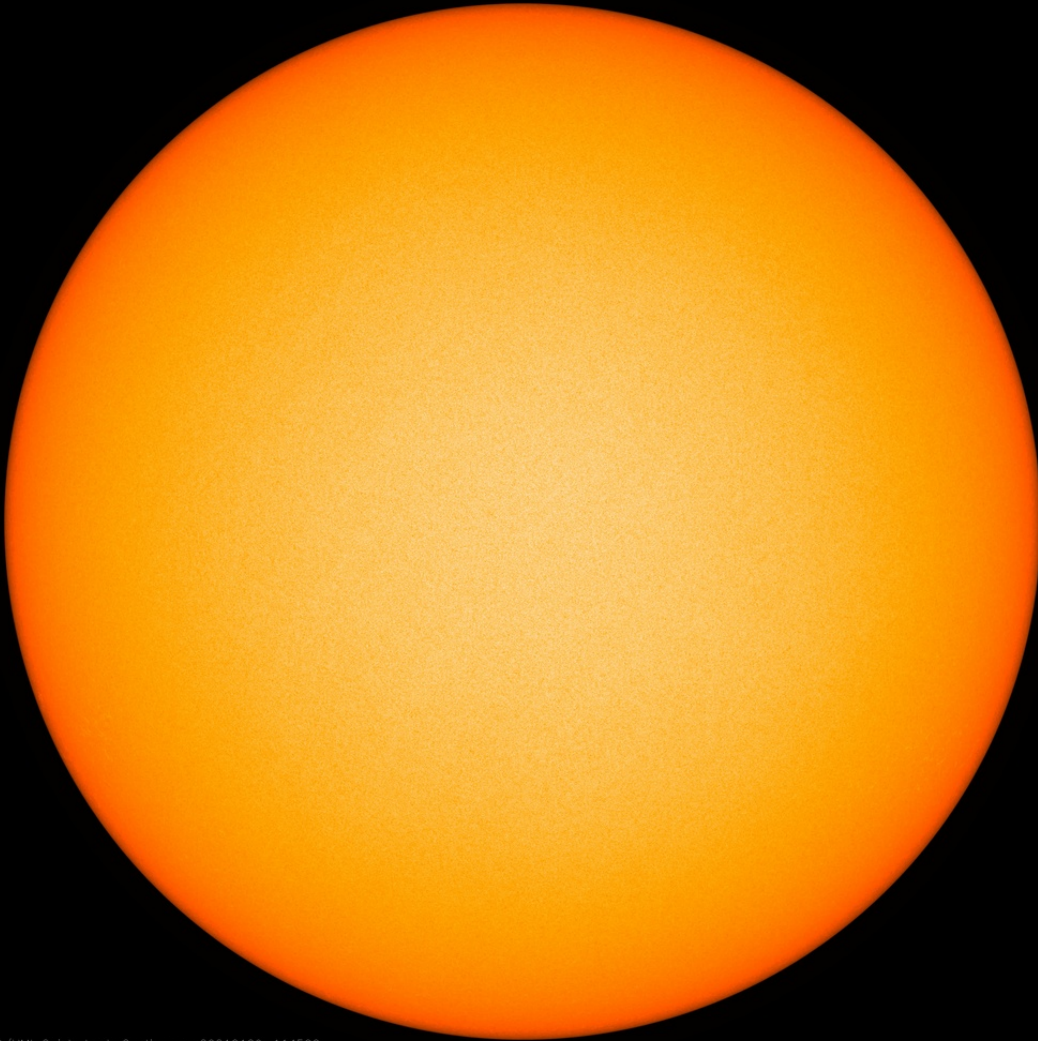
SDO/HMI Magnetogram 2021-01-08



SDO/HMI Quick-Look Magnetogram: 20210108_114500

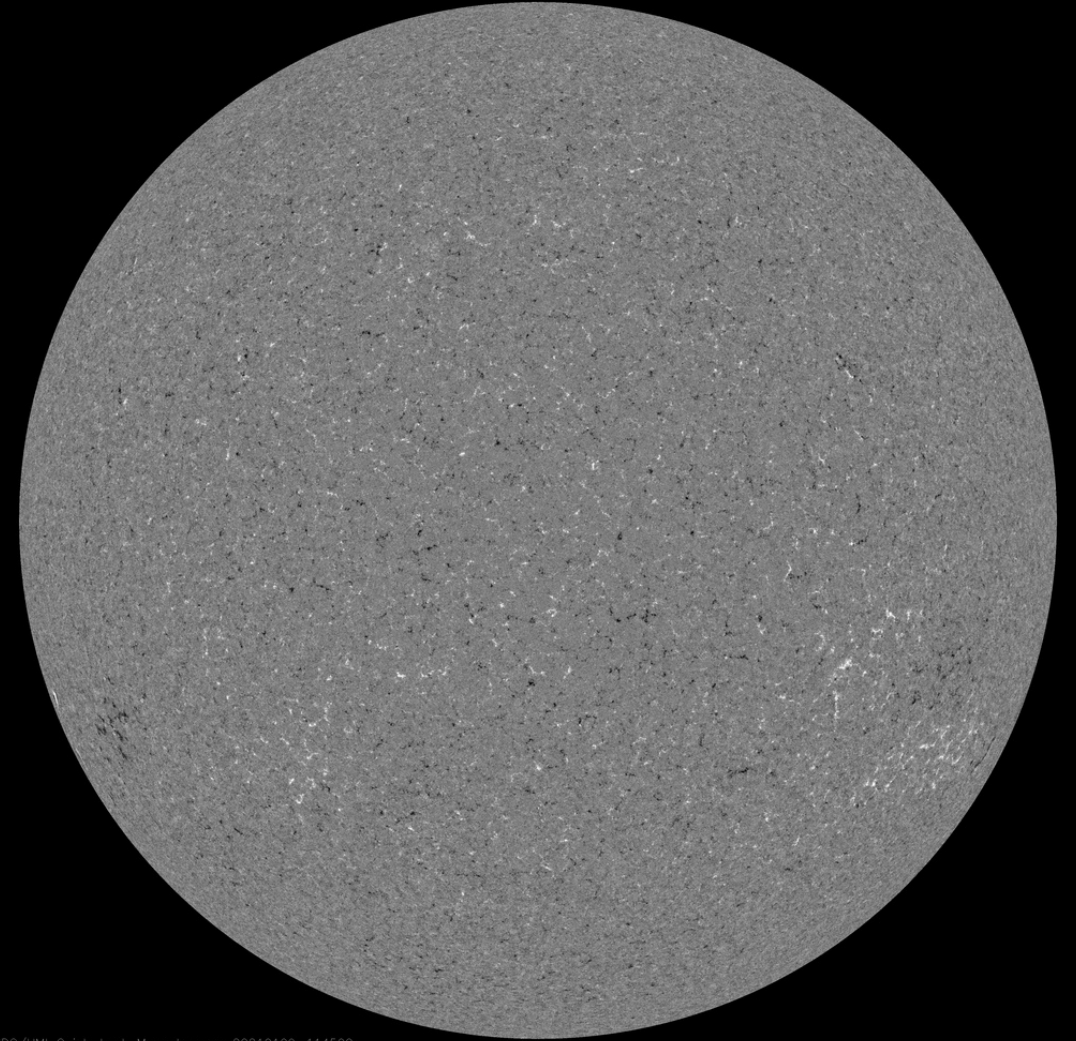
Solar active regions

SDO/HMI White Light 2021-01-09



SDO/HMI Quick-Look Continuum: 20210109_114500

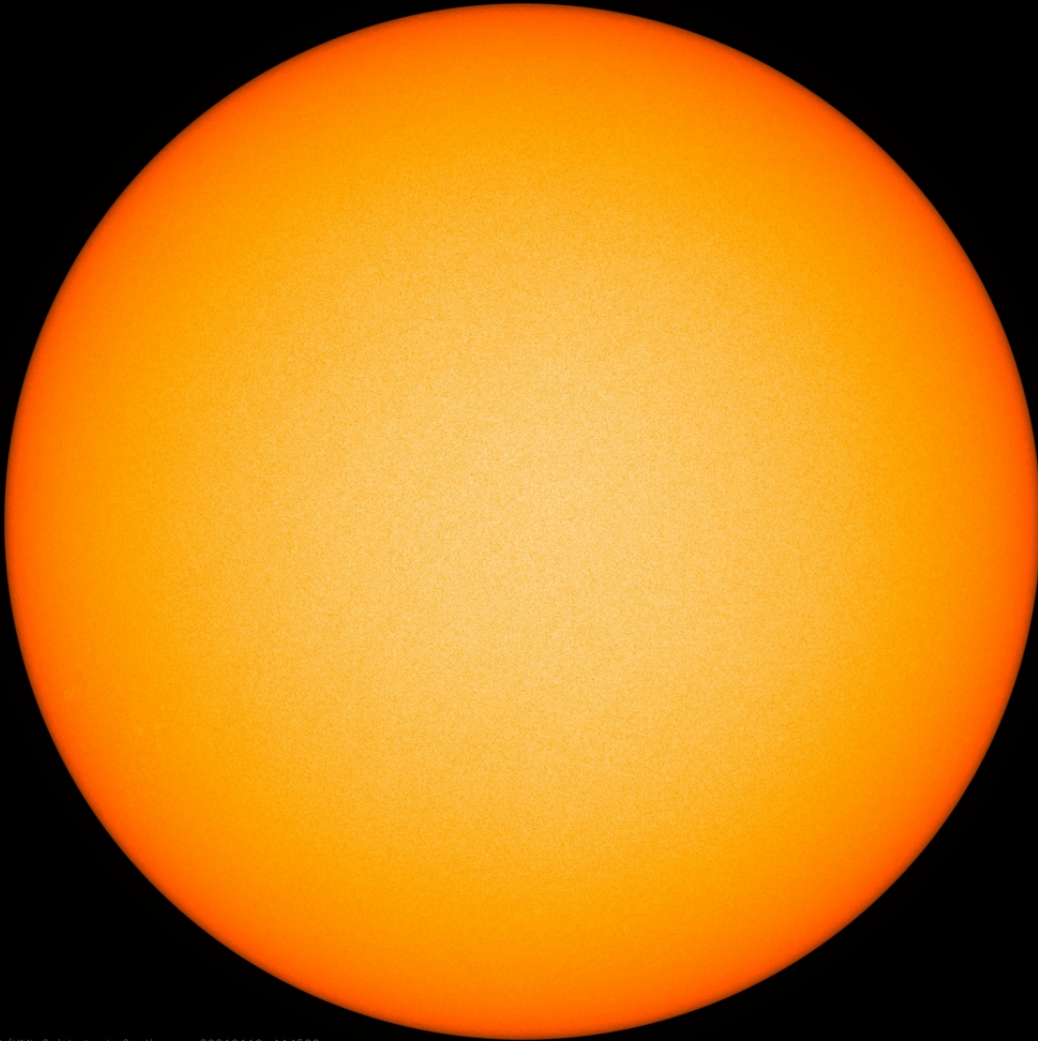
SDO/HMI Magnetogram 2021-01-09



SDO/HMI Quick-Look Magnetogram: 20210109_114500

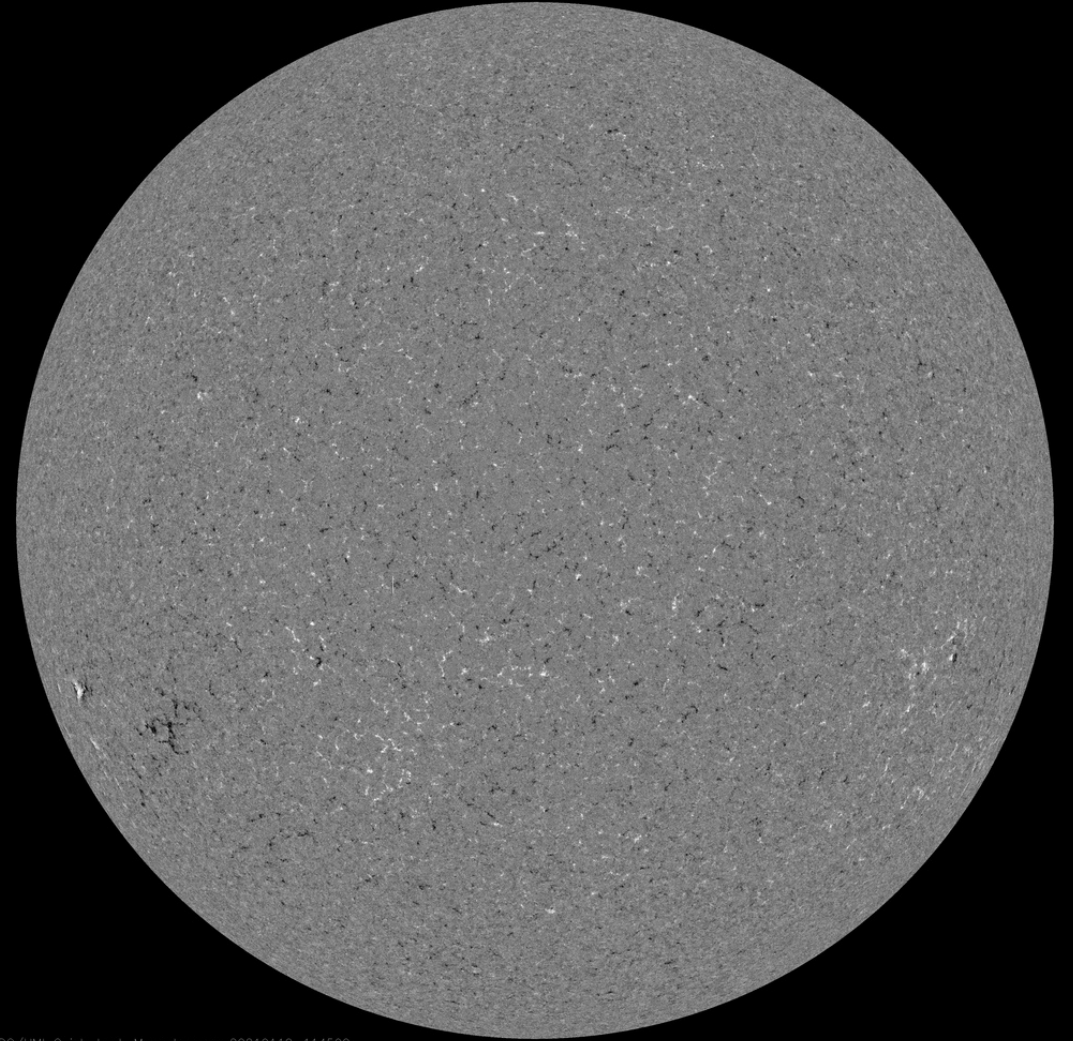
Solar active regions

SDO/HMI White Light 2021-01-10



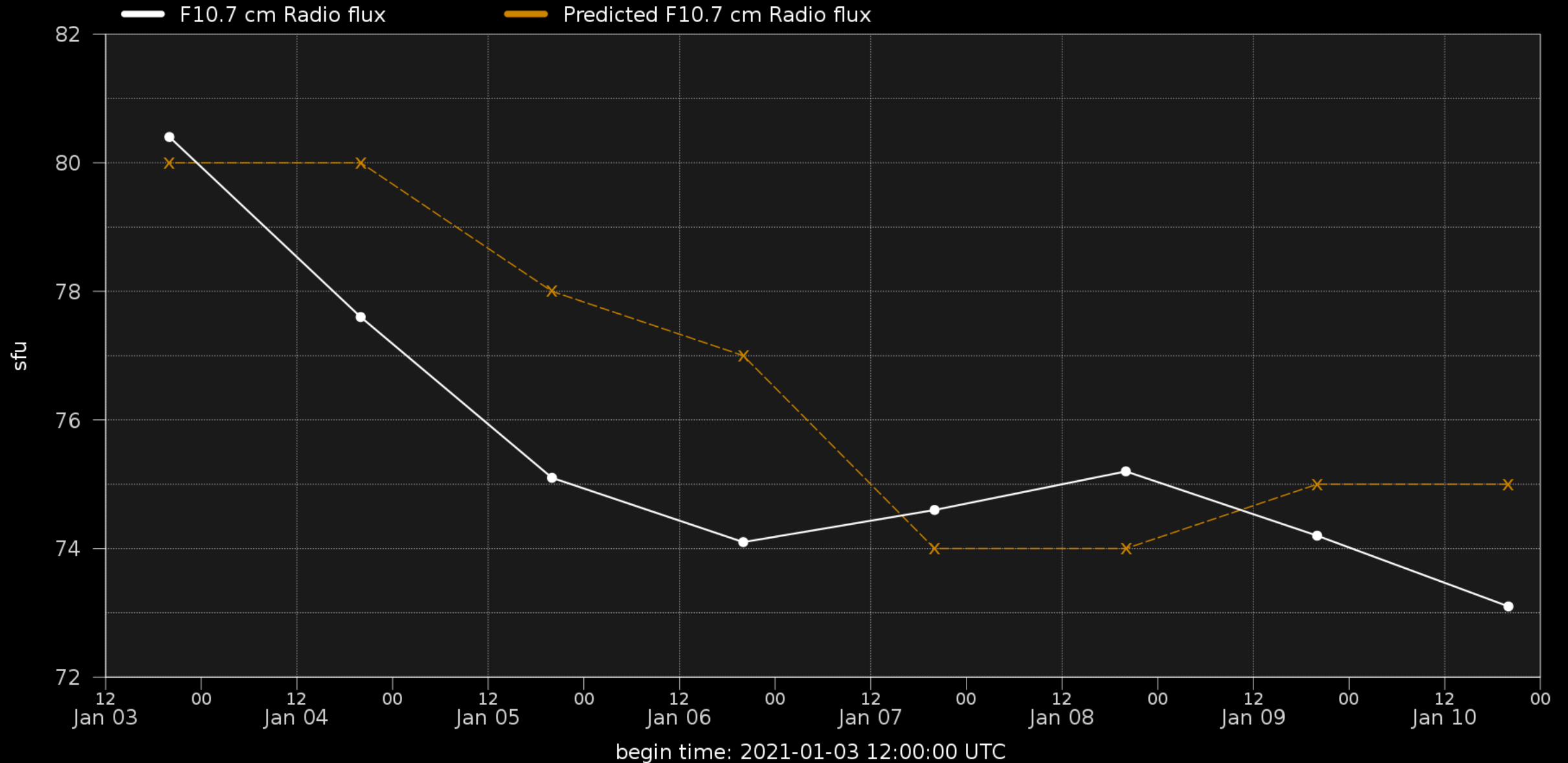
SDO/HMI Quick-Look Continuum: 20210110_114500

SDO/HMI Magnetogram 2021-01-10

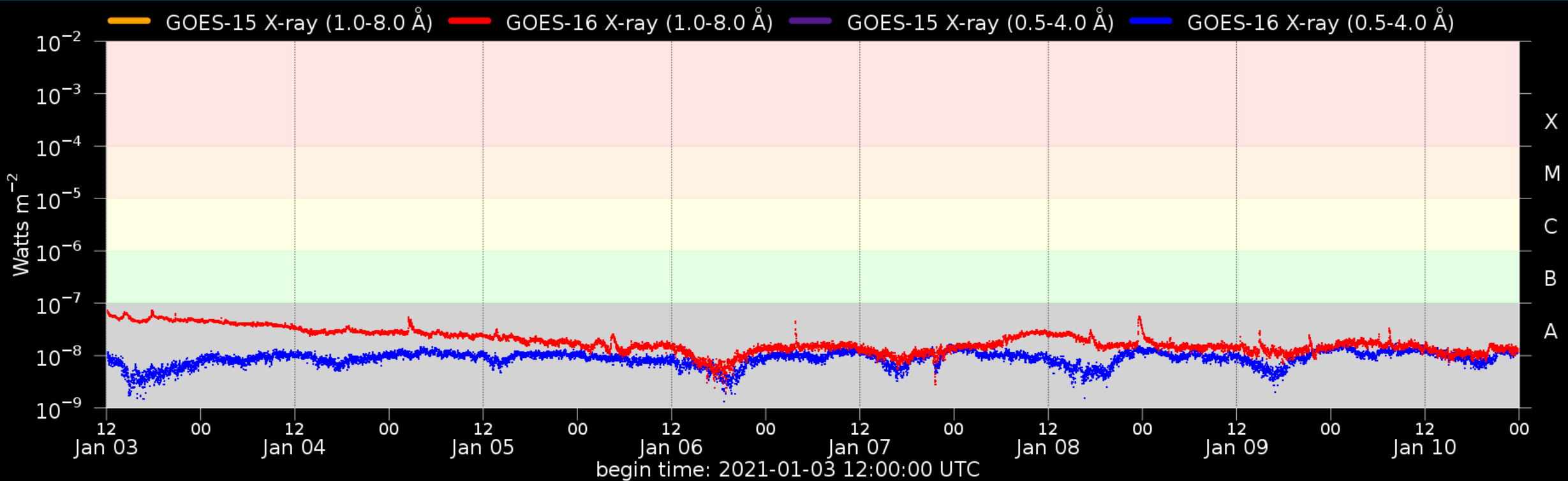


SDO/HMI Quick-Look Magnetogram: 20210110_114500

Solar F10.7cm radio flux



Flaring activity

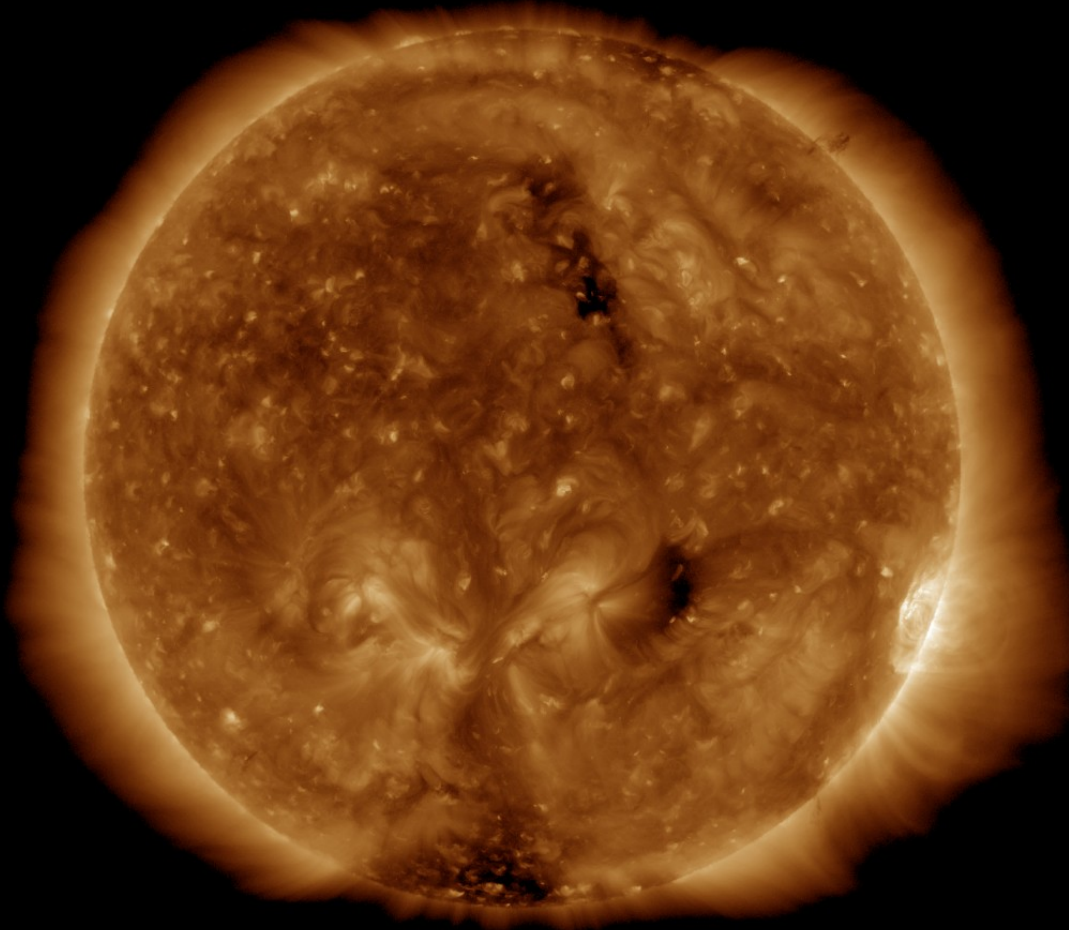


Probabilities (%) and occurrences (#) of C/M/X-flares issued at 12:30 and over the next 24h:

Issue date	2021-01-03	2021-01-04	2021-01-05	2021-01-06	2021-01-07	2021-01-08	2021-01-09	2021-01-10
Probability (%)	01 01 01	01 01 01	01 01 01	01 01 01	01 01 01	01 01 01	01 01 01	01 01 01
Observed (#)	00 00 00	00 00 00	00 00 00	00 00 00	00 00 00	00 00 00	00 00 00	00 00 00

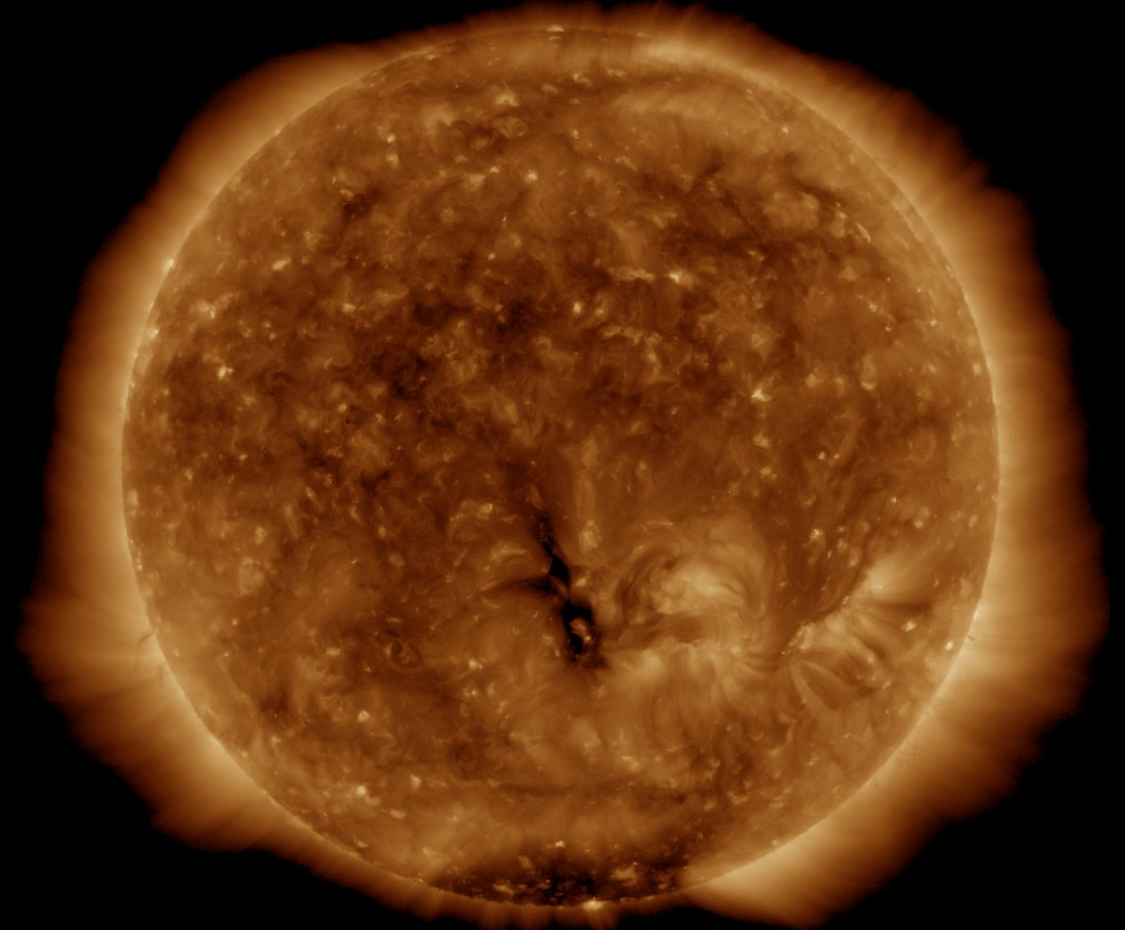
Coronal holes

SDO/AIA 19.3 nm 2021-01-03



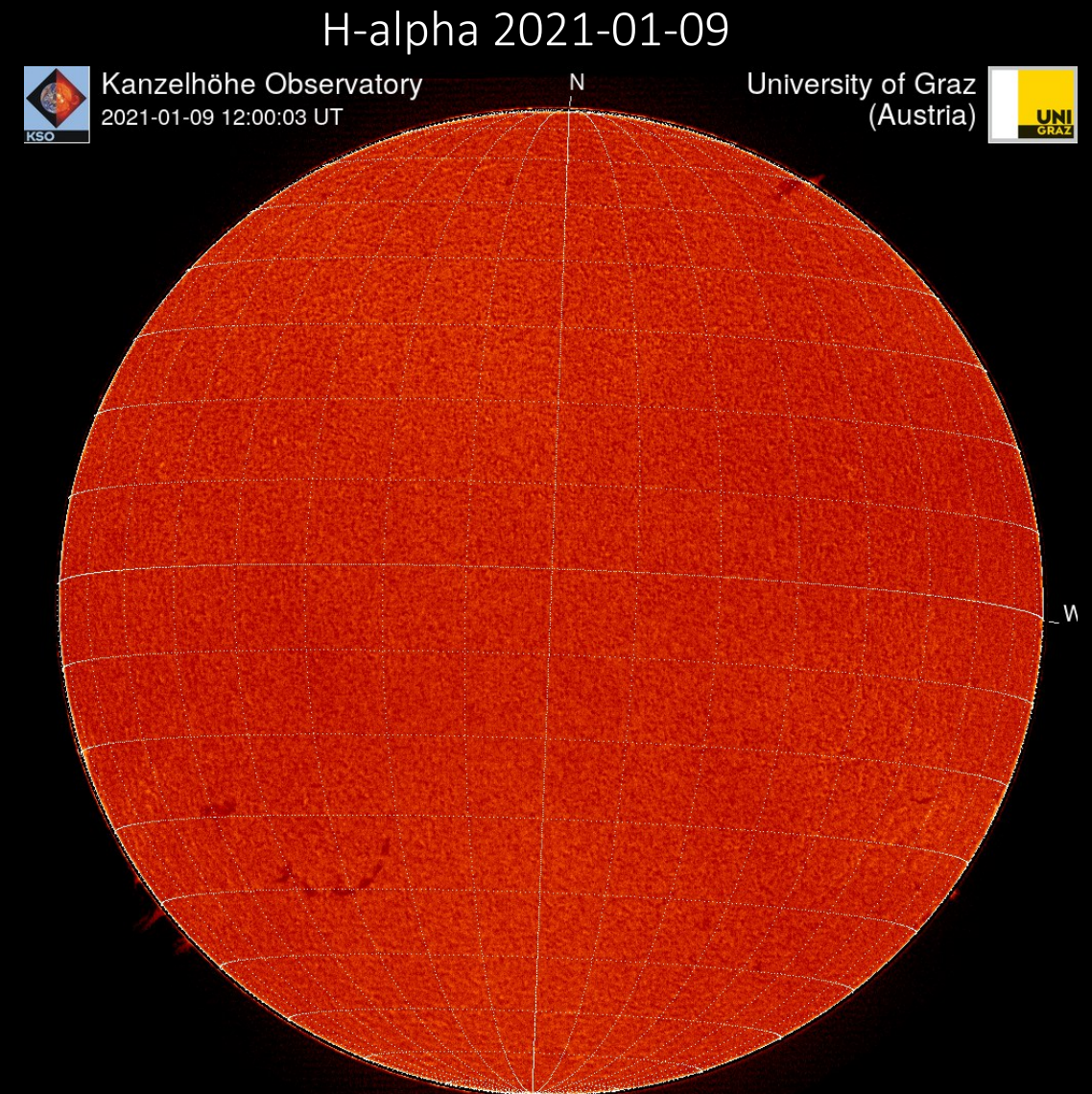
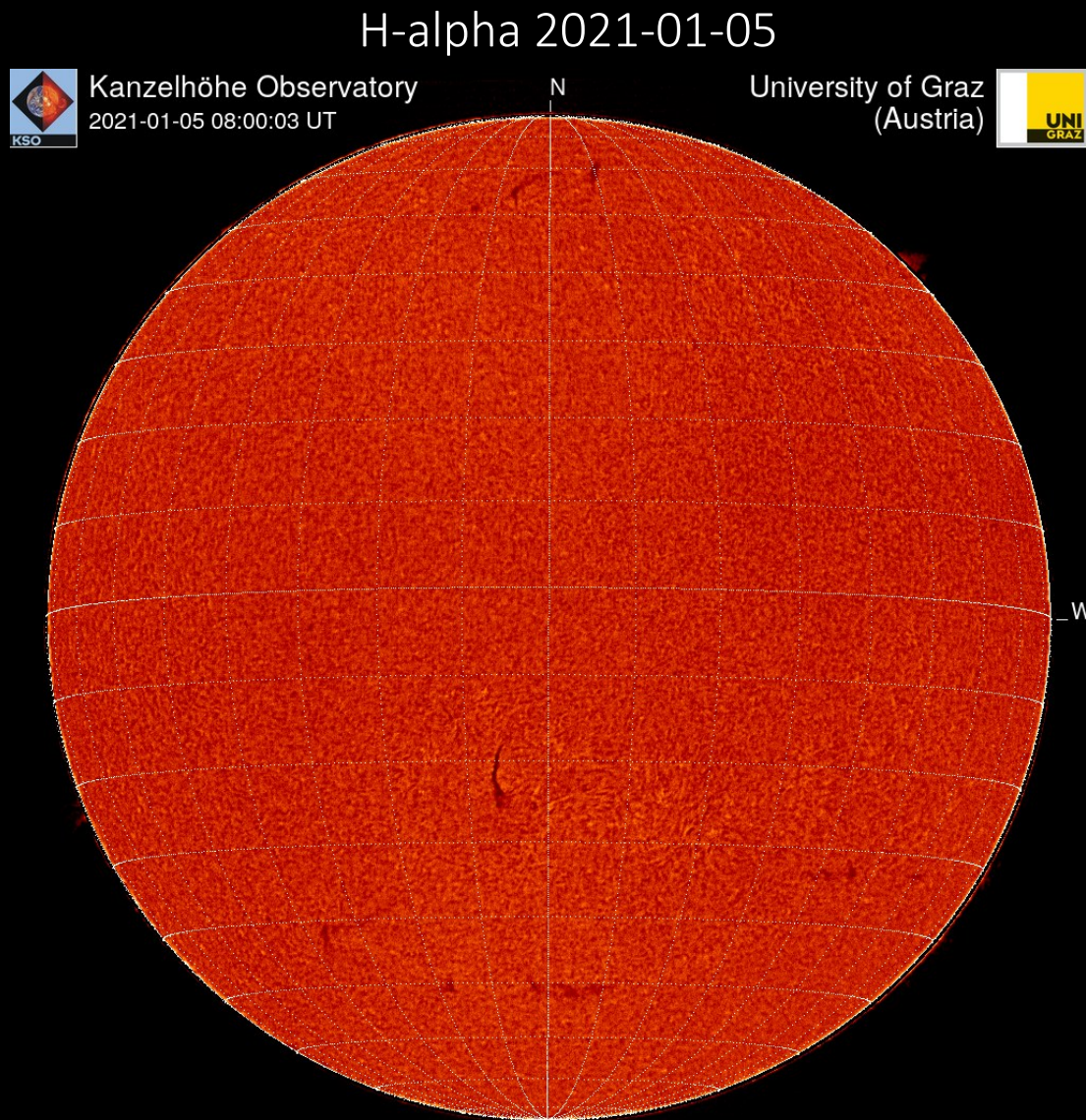
SDO/AIA 193 2021-01-03 12:18:17 UT

SDO/AIA 19.3 nm 2021-01-06

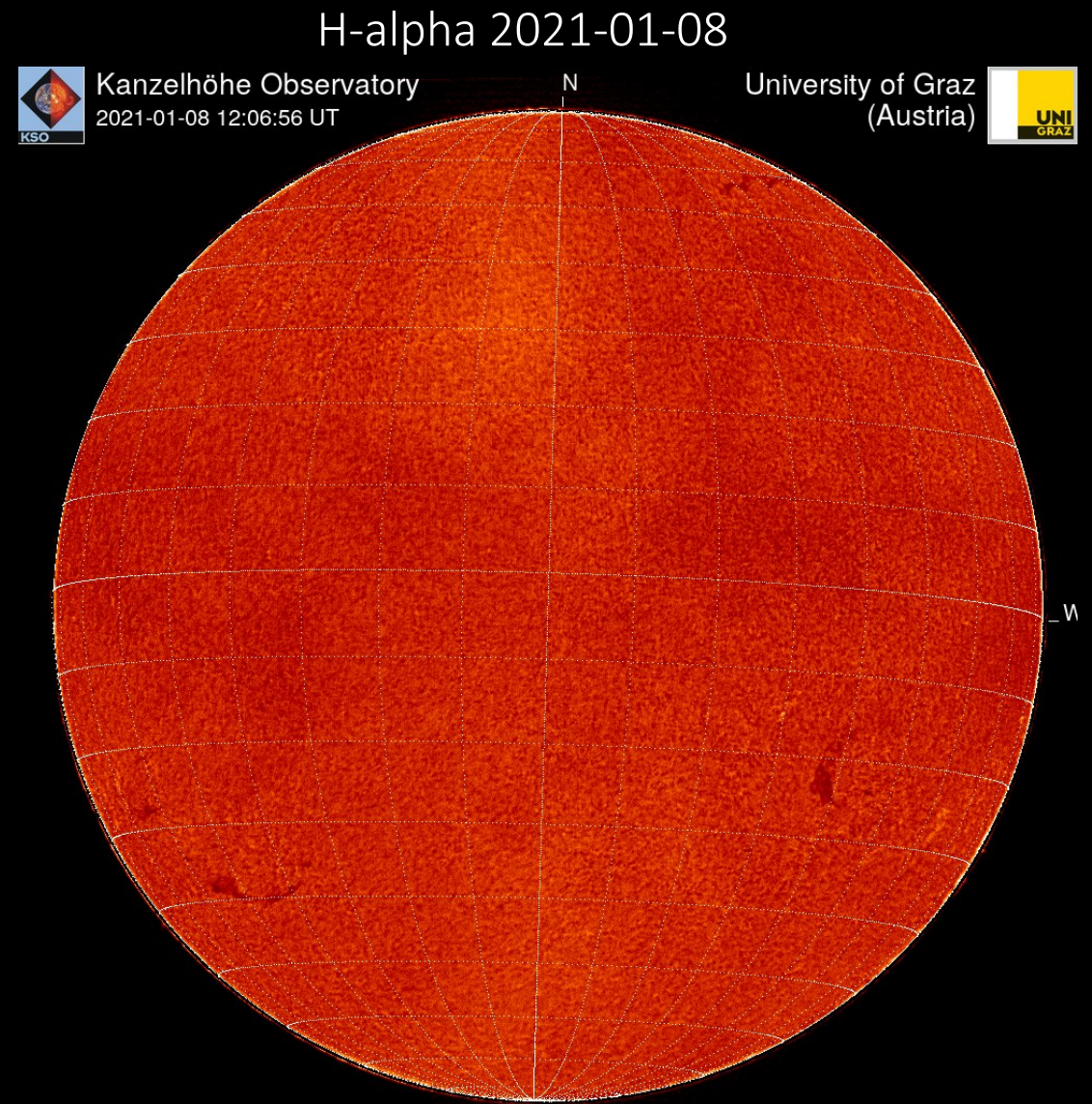
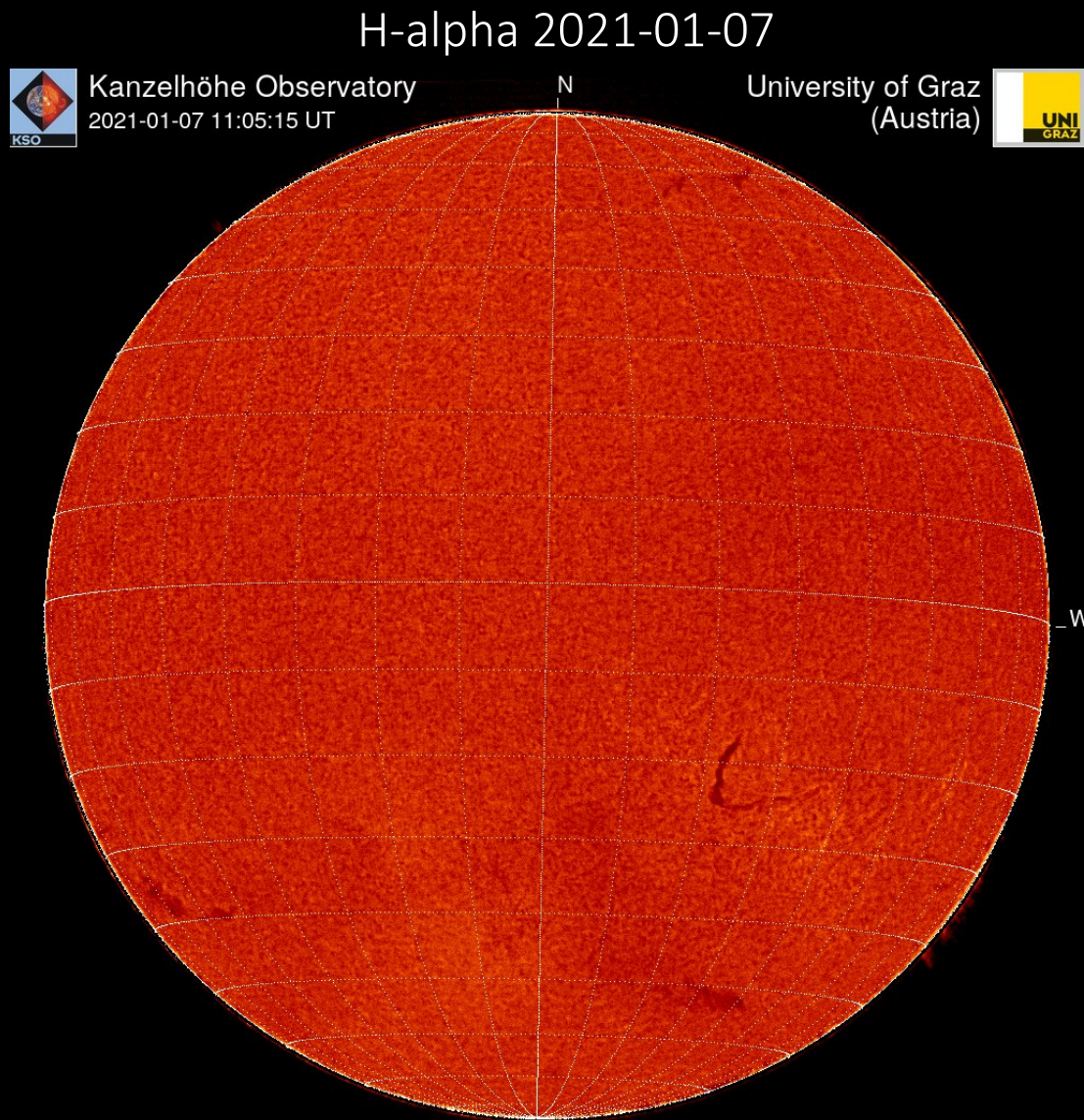


SDO/AIA 193 2021-01-06 11:58:41 UT

Filaments & Filament eruptions



Filaments & Filament eruptions



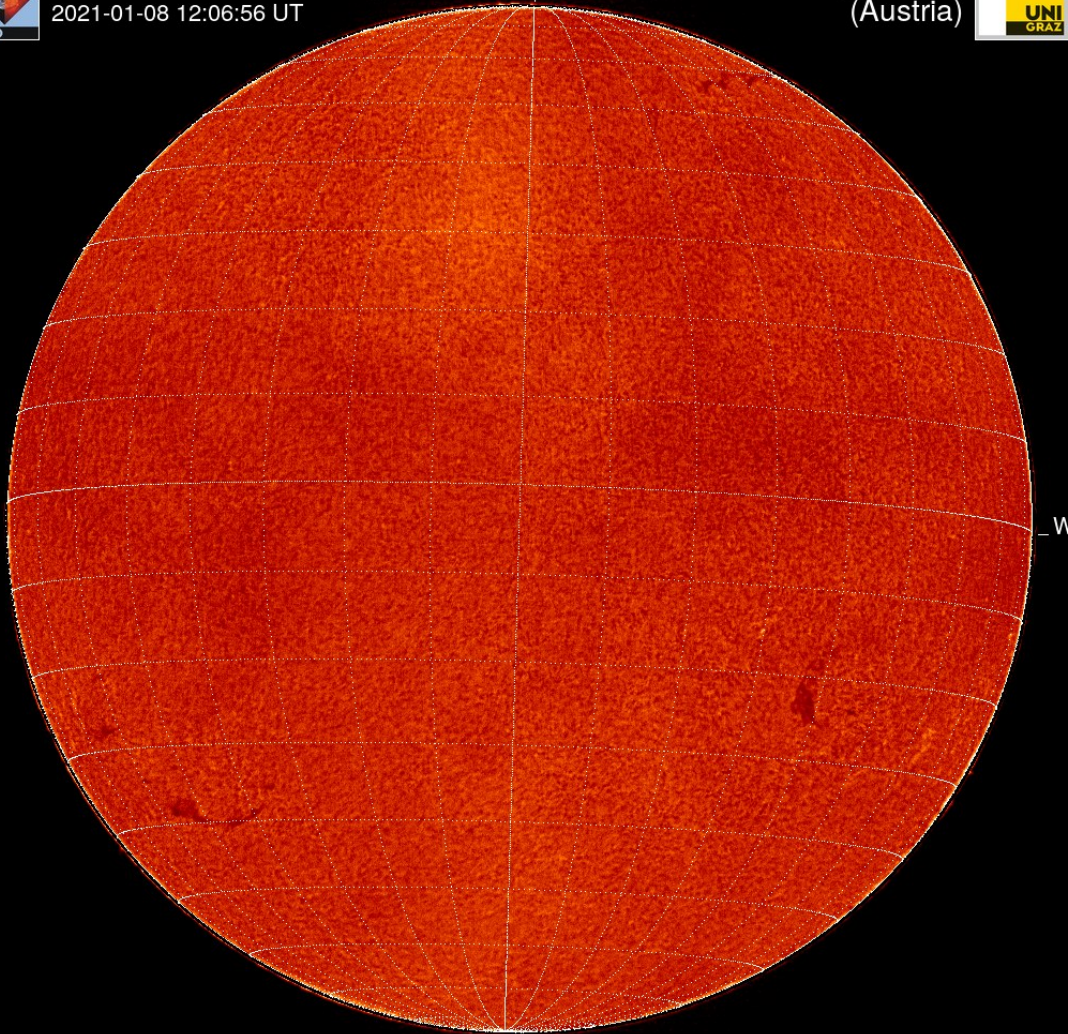
Filaments & Filament eruptions

H-alpha 2021-01-08 12:06UT



Kanzelhöhe Observatory
2021-01-08 12:06:56 UT

University of Graz
(Austria)

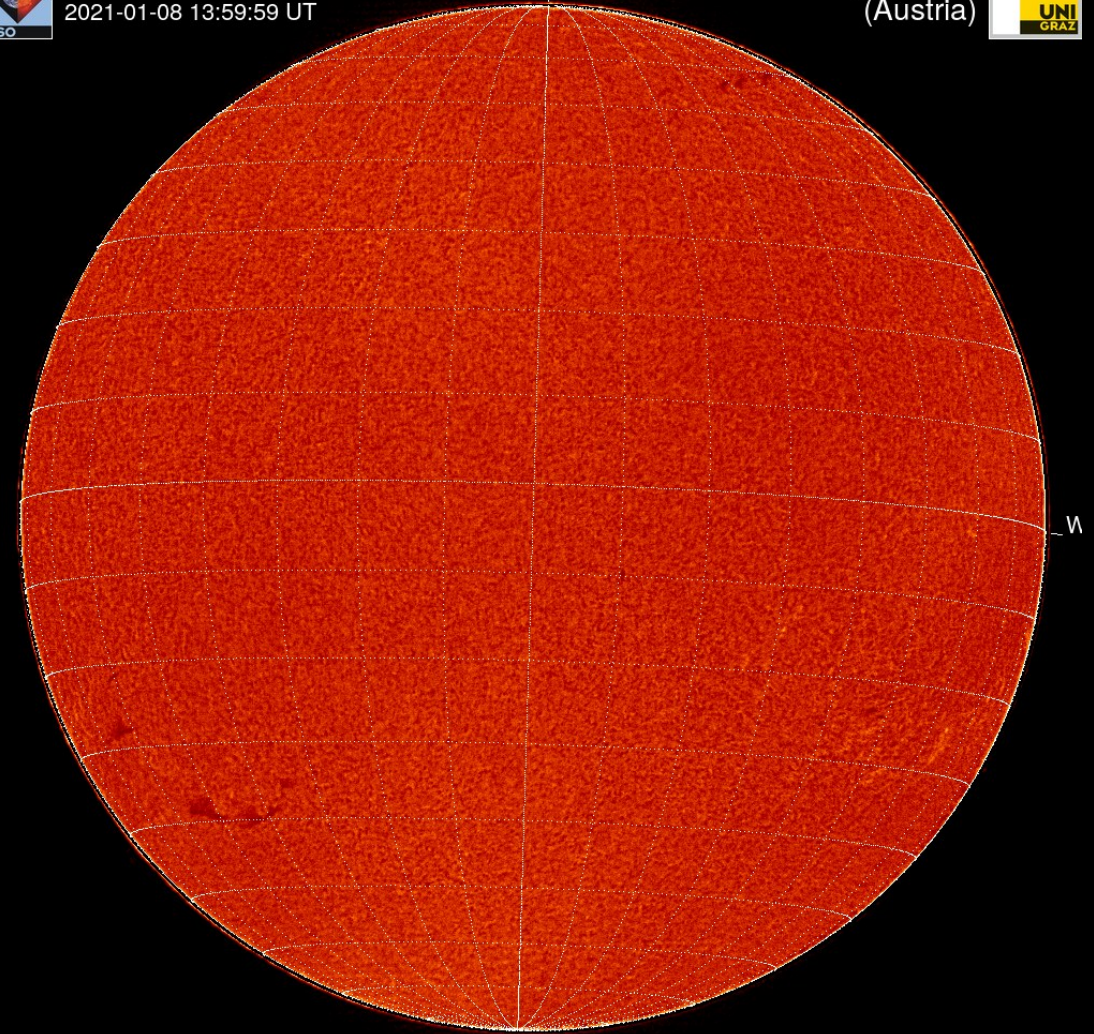


H-alpha 2021-01-08 13:59UT

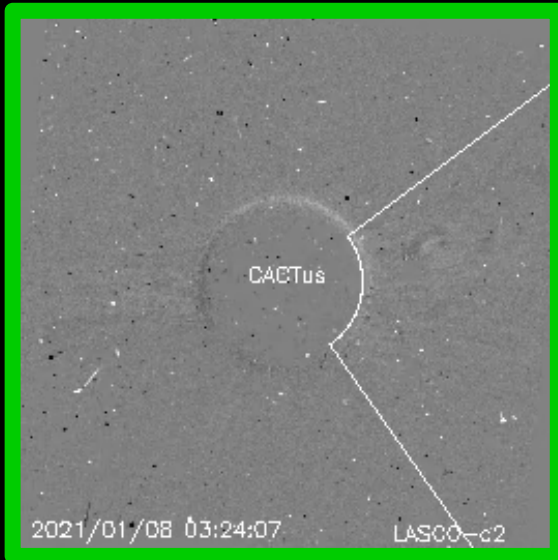


Kanzelhöhe Observatory
2021-01-08 13:59:59 UT

University of Graz
(Austria)



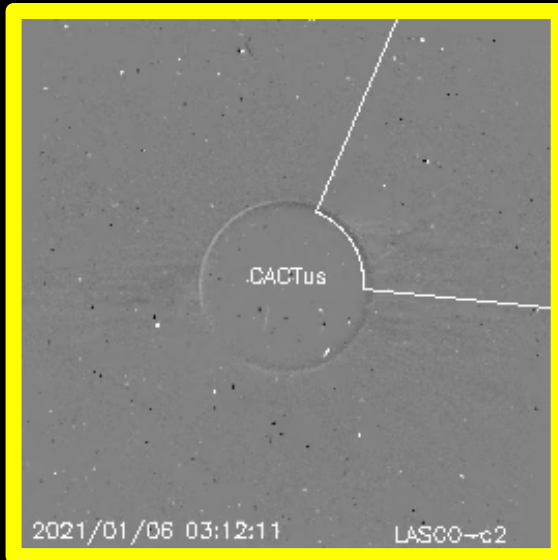
Coronal Mass Ejections



January 8, 5:12UT, associated with a rather extended filament eruption in the South-Western quadrant.

Slow: 300km/s

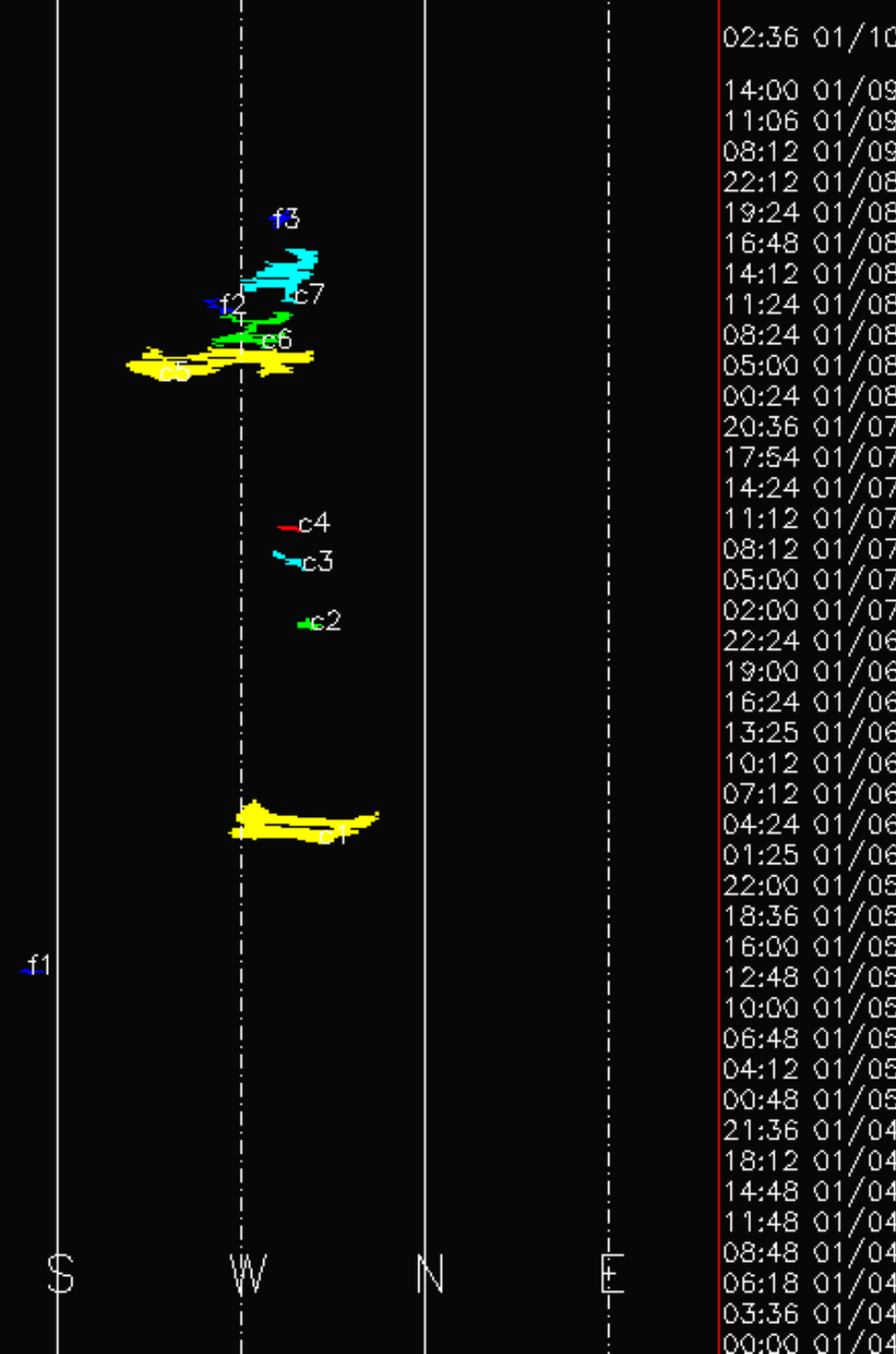
Believed to be not wide and fast enough to impact Earth.



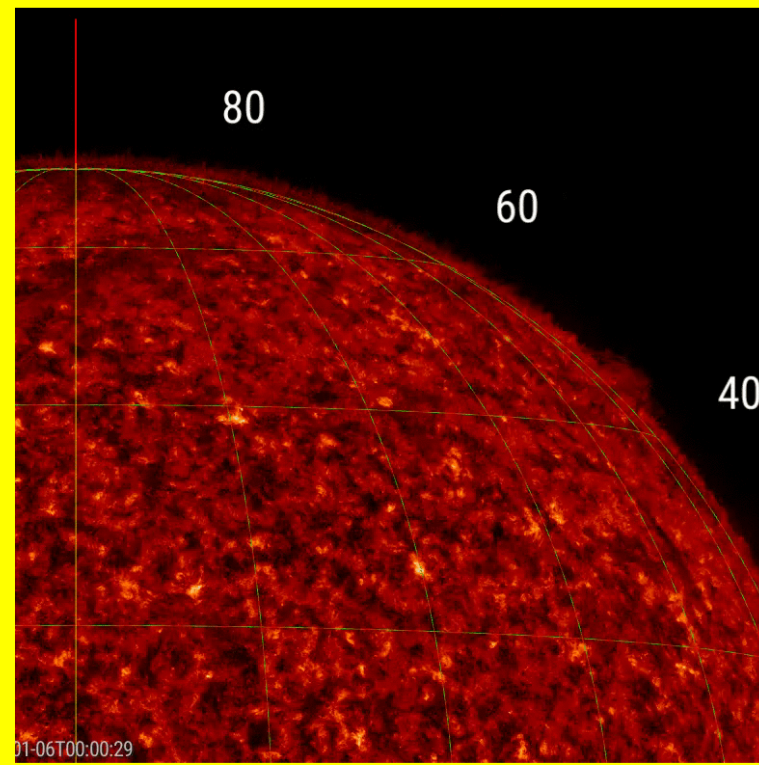
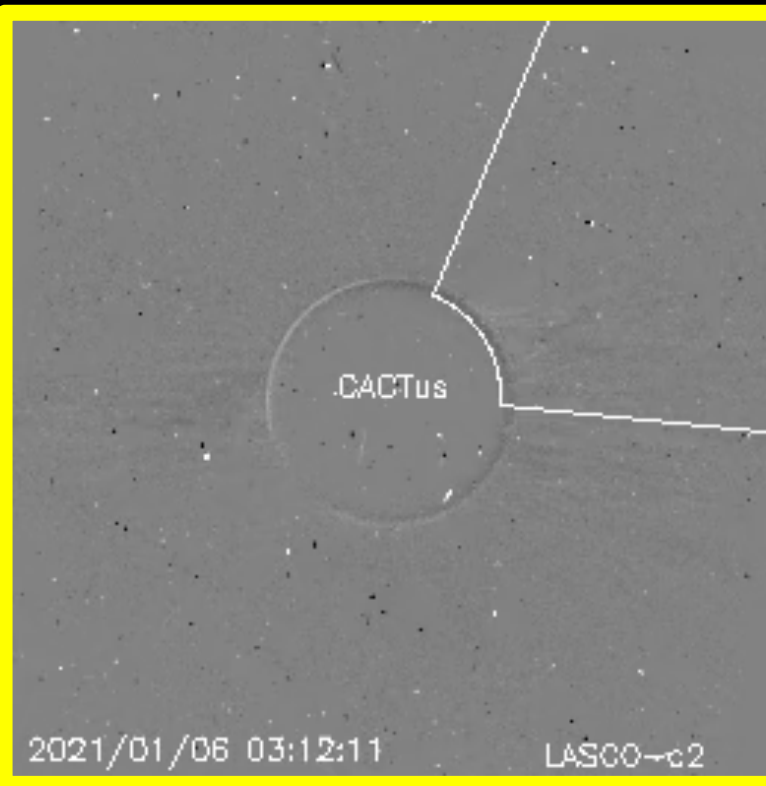
January 6, 4:24UT, associated with on-disc signatures in the North-West. The CME front stretches over the North (this North component not detected by Cactus)

Not fast: 450km/s

Believed to be not wide and fast enough to impact Earth.



Coronal Mass Ejections



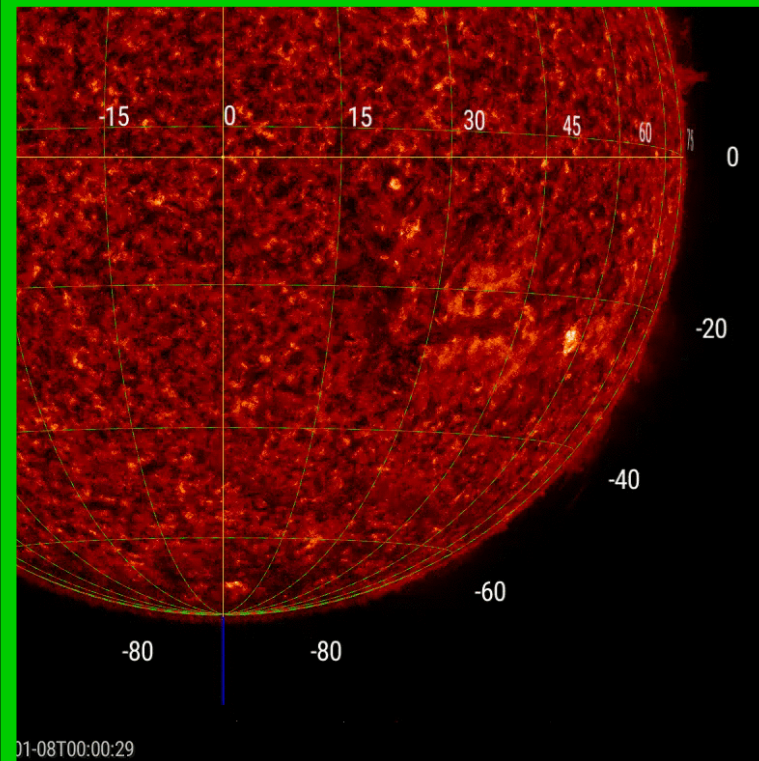
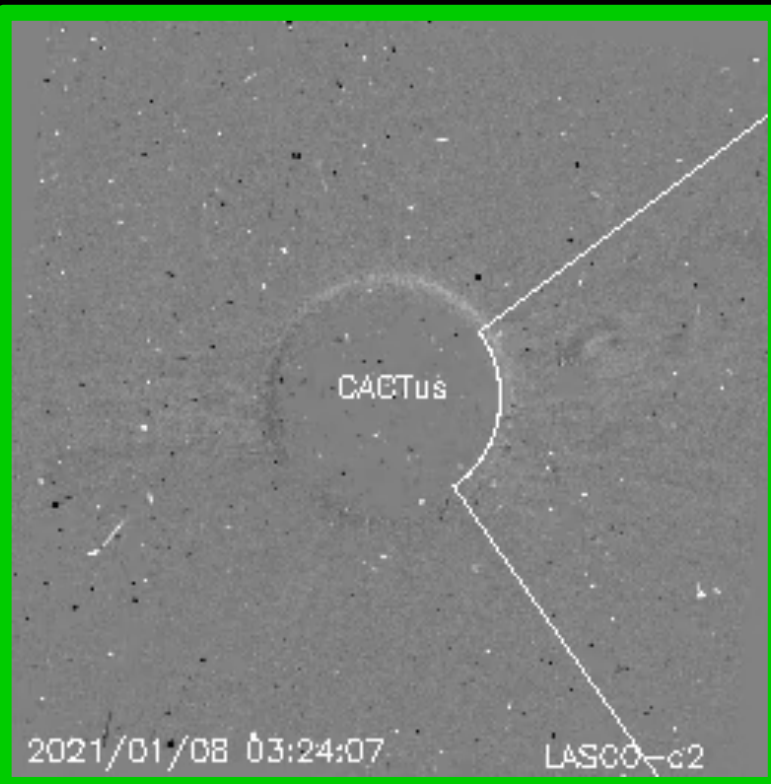
January 6, 4:24UT, associated with on-disc signatures in the North-West. The CME front stretches over the North (this North component not detected by Cactus)

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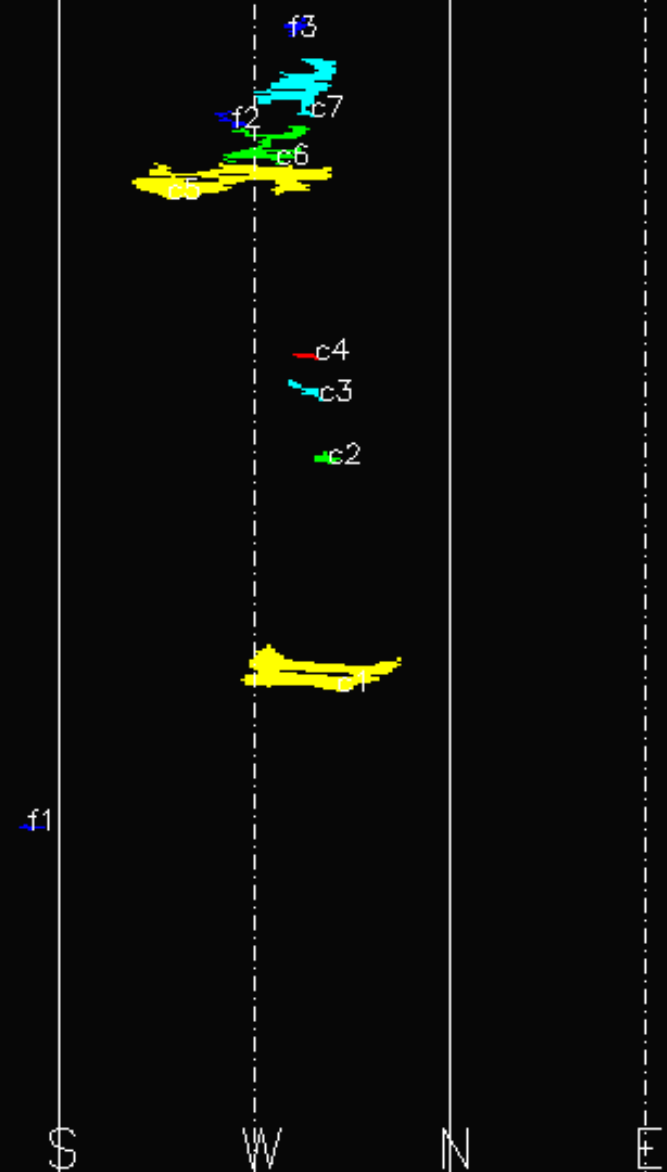
Believed to be not wide and fast enough to impact Earth.



Coronal Mass Ejections



January 8, 5:12UT, associated with a rather extended filament eruption in the South-Western quadrant + a second filament eruption around 13UT.
 Slow: 300km/s
 Believed to be not wide and fast enough to impact Earth.



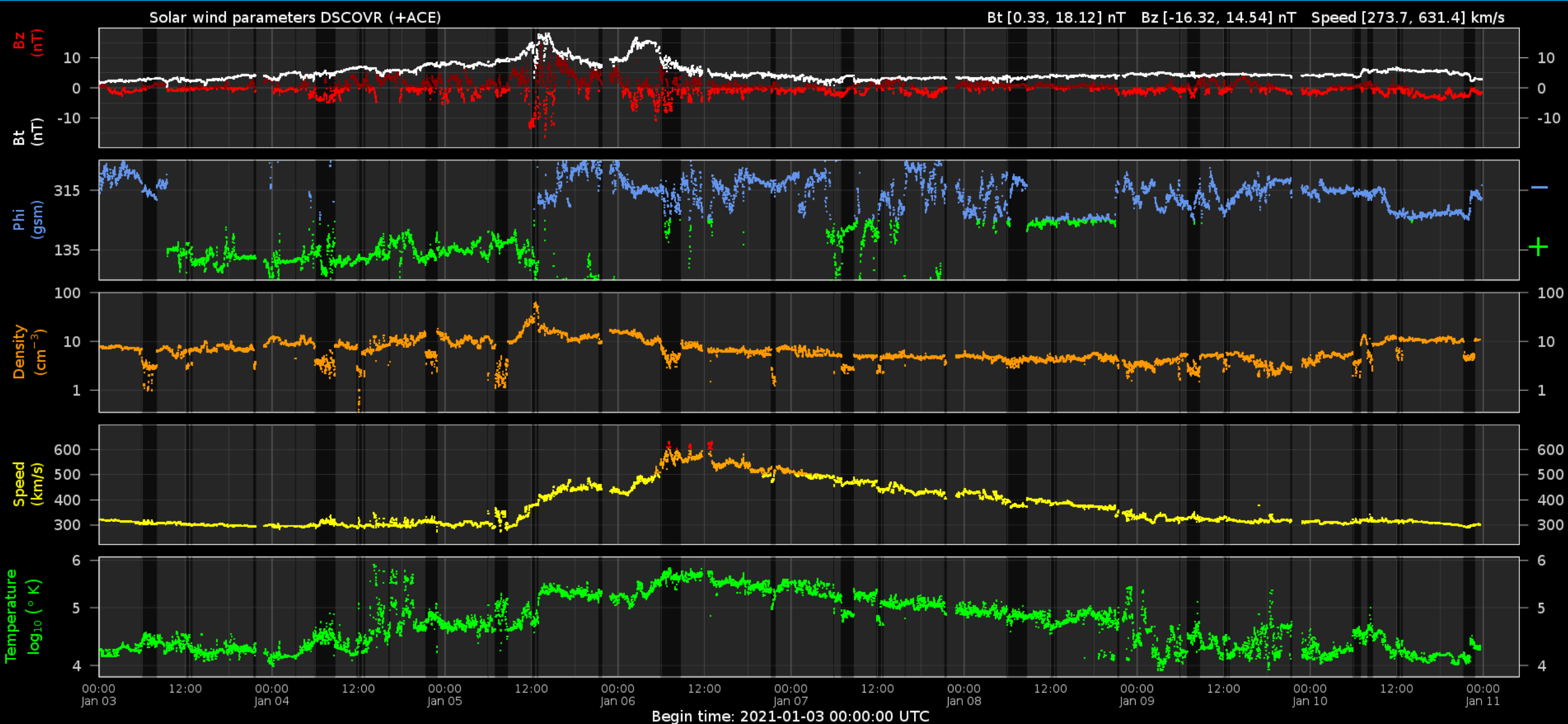
02:36	01/10
14:00	01/09
11:06	01/09
08:12	01/09
22:12	01/08
19:24	01/08
16:48	01/08
14:12	01/08
11:24	01/08
08:24	01/08
05:00	01/08
00:24	01/08
20:36	01/07
17:54	01/07
14:24	01/07
11:12	01/07
08:12	01/07
05:00	01/07
02:00	01/07
22:24	01/06
19:00	01/06
16:24	01/06
13:25	01/06
10:12	01/06
07:12	01/06
04:24	01/06
01:25	01/06
22:00	01/05
18:36	01/05
16:00	01/05
12:48	01/05
10:00	01/05
06:48	01/05
04:12	01/05
00:48	01/05
21:36	01/04
18:12	01/04
14:48	01/04
11:48	01/04
08:48	01/04
06:18	01/04
03:36	01/04
00:00	01/04

Solar Wind and Geomagnetic Activity

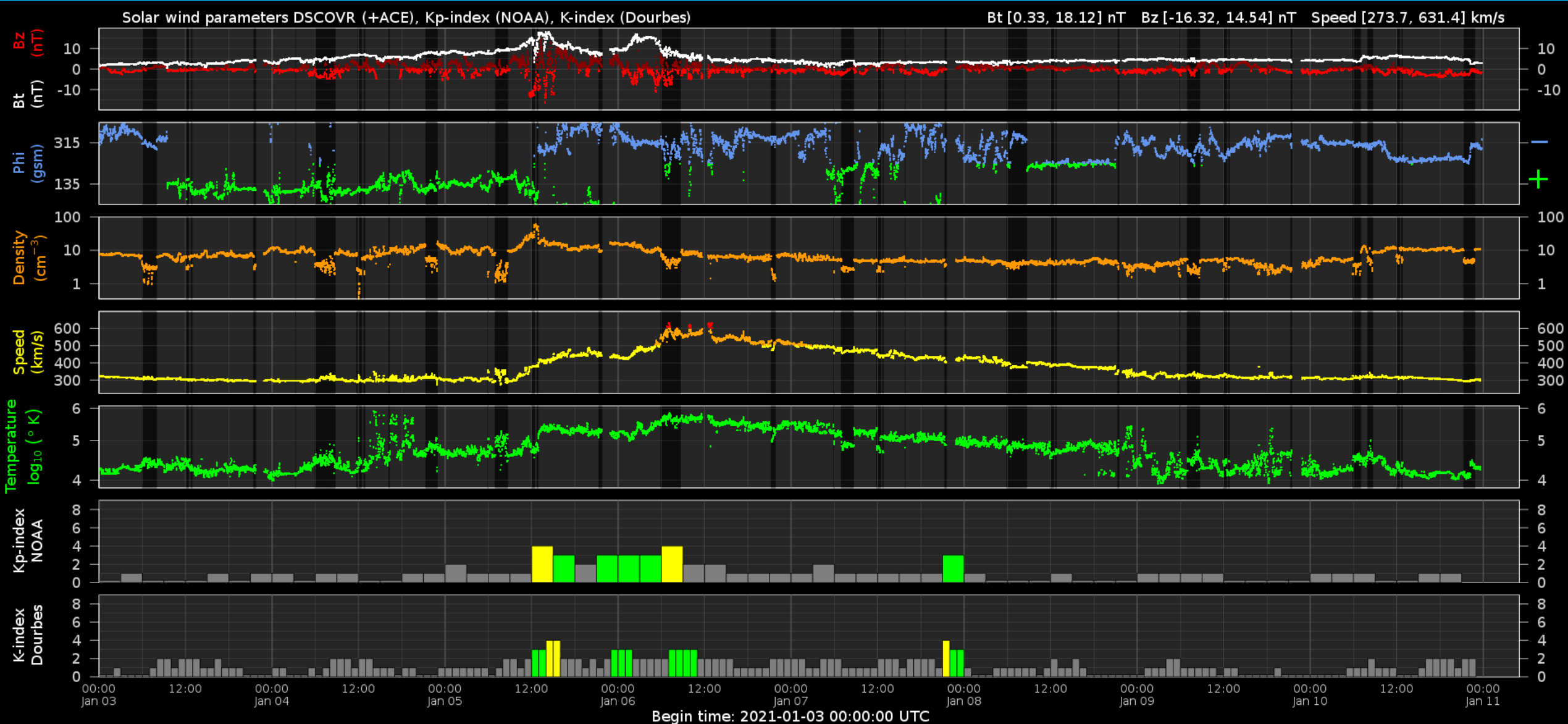


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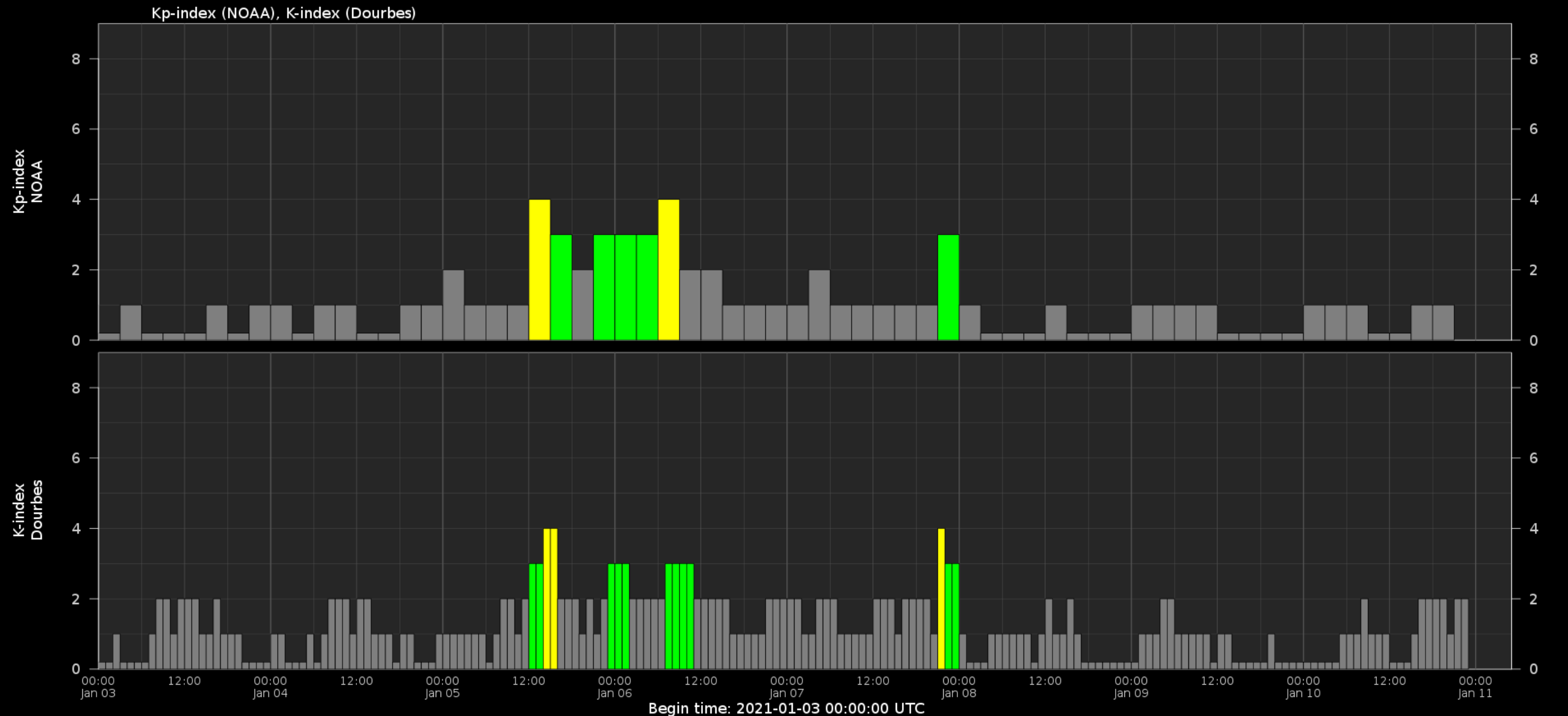
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)

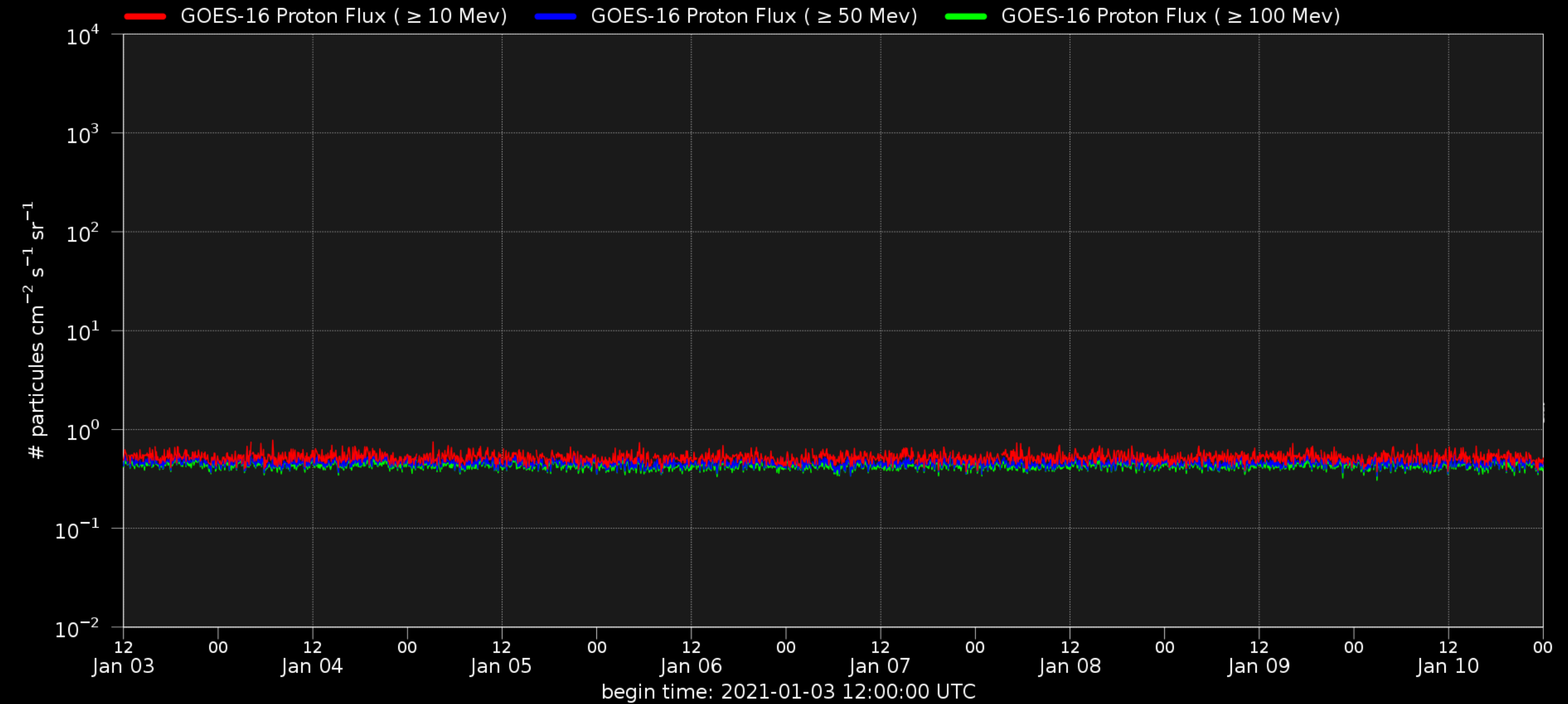


Energetic Particles

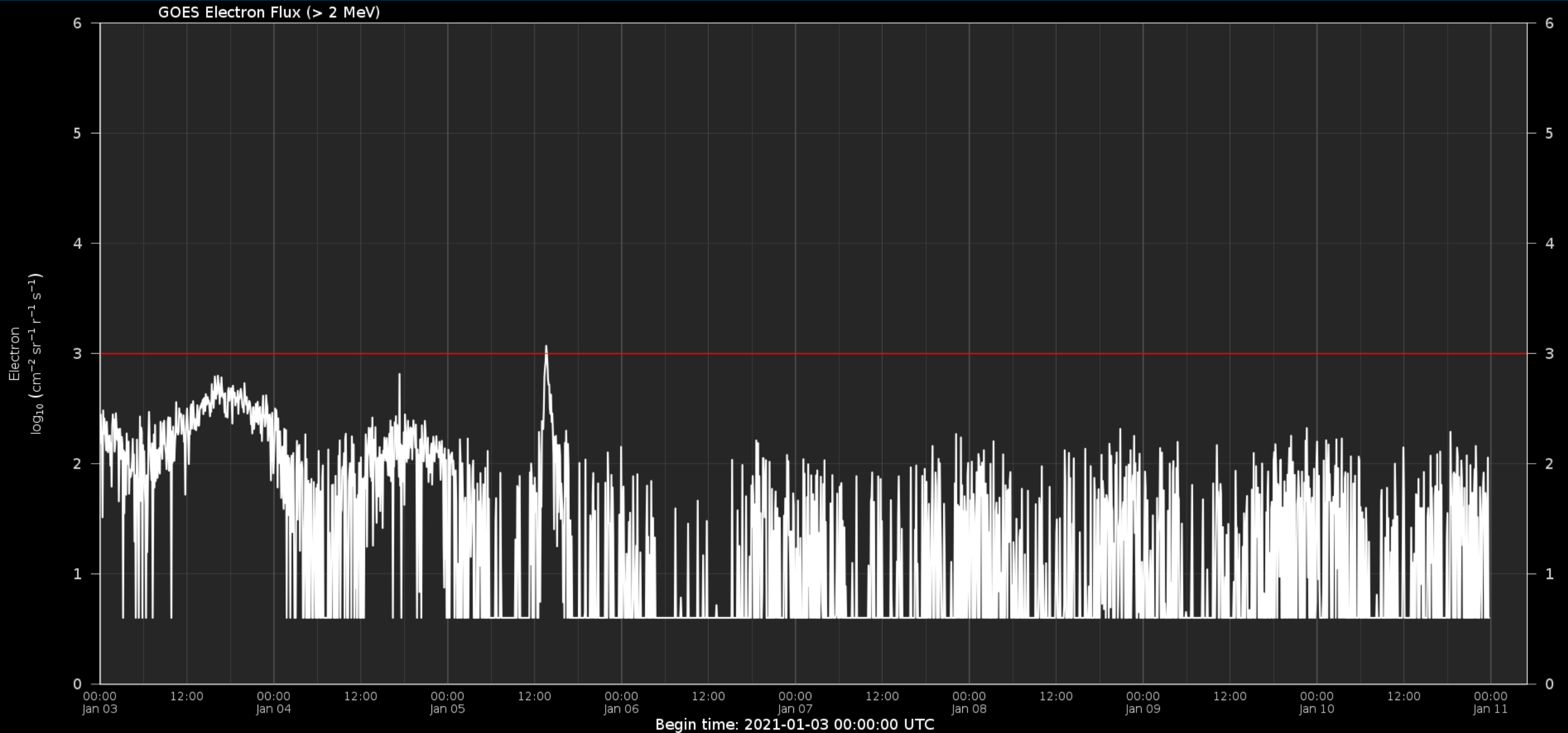


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Solar proton flux



Electron flux at GEO



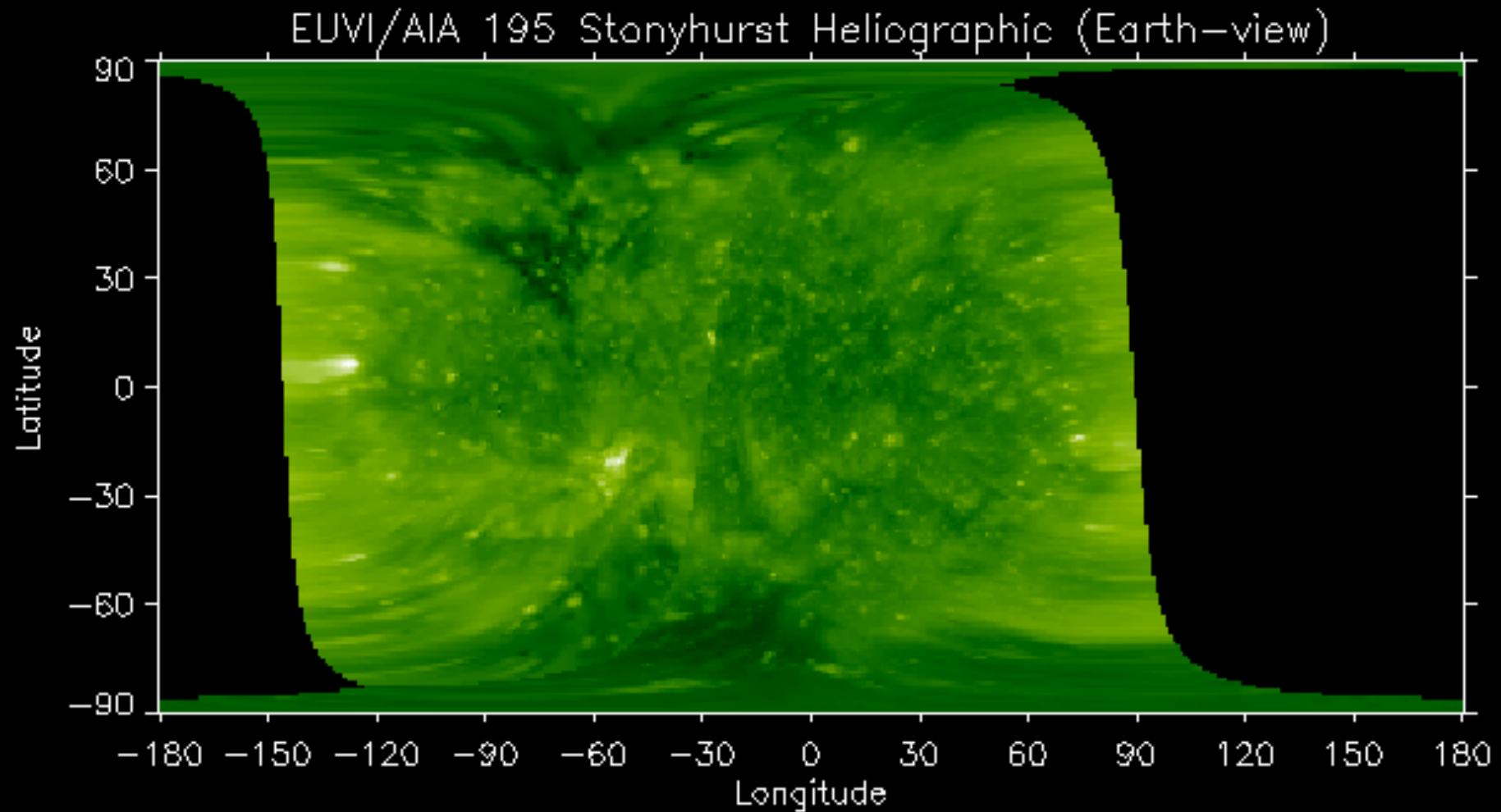
Outlook



Royal Observatory
of Belgium

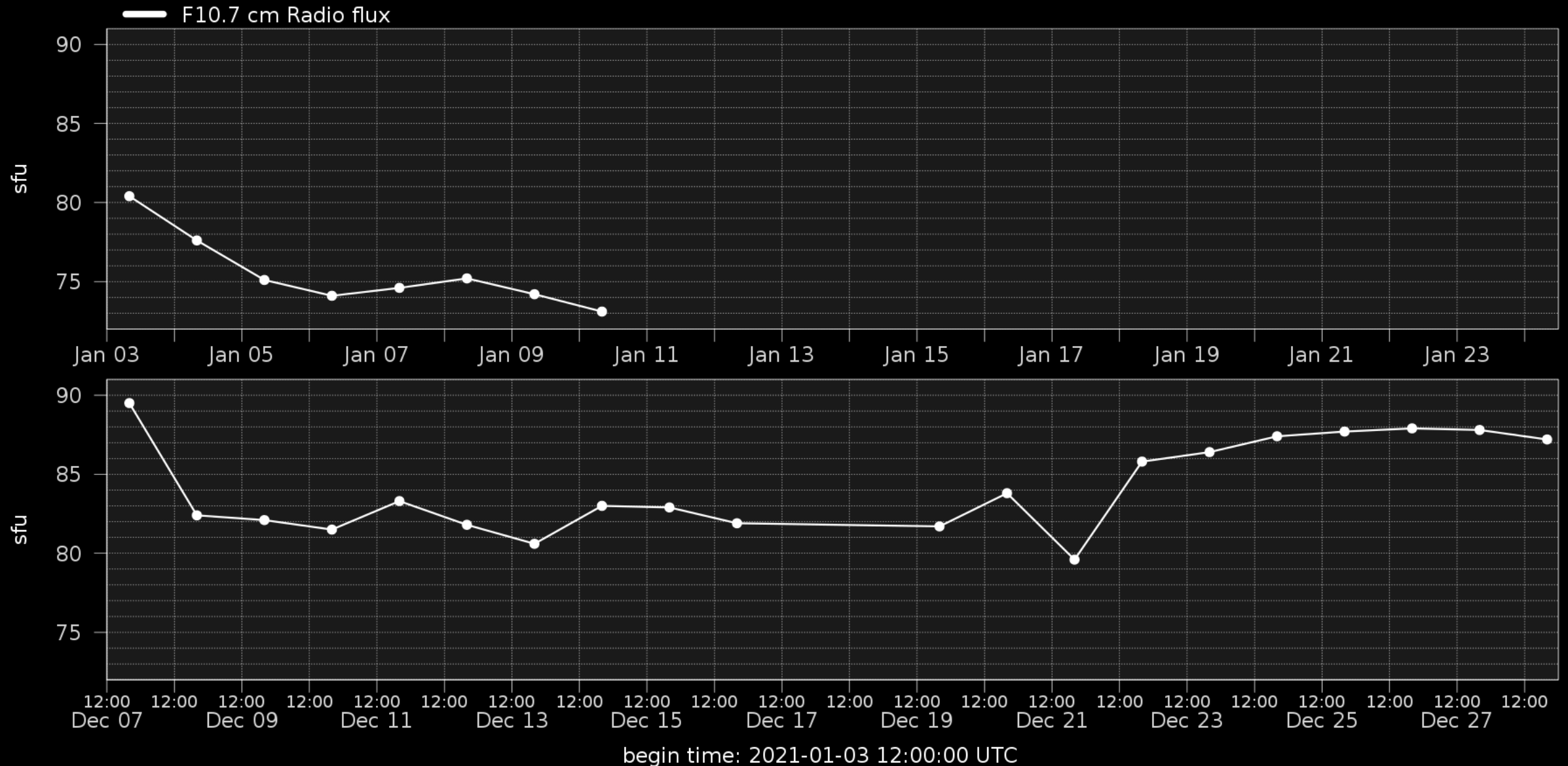
Solar Influences
Data analysis Centre
www.sidc.be

Outlook: Solar activity



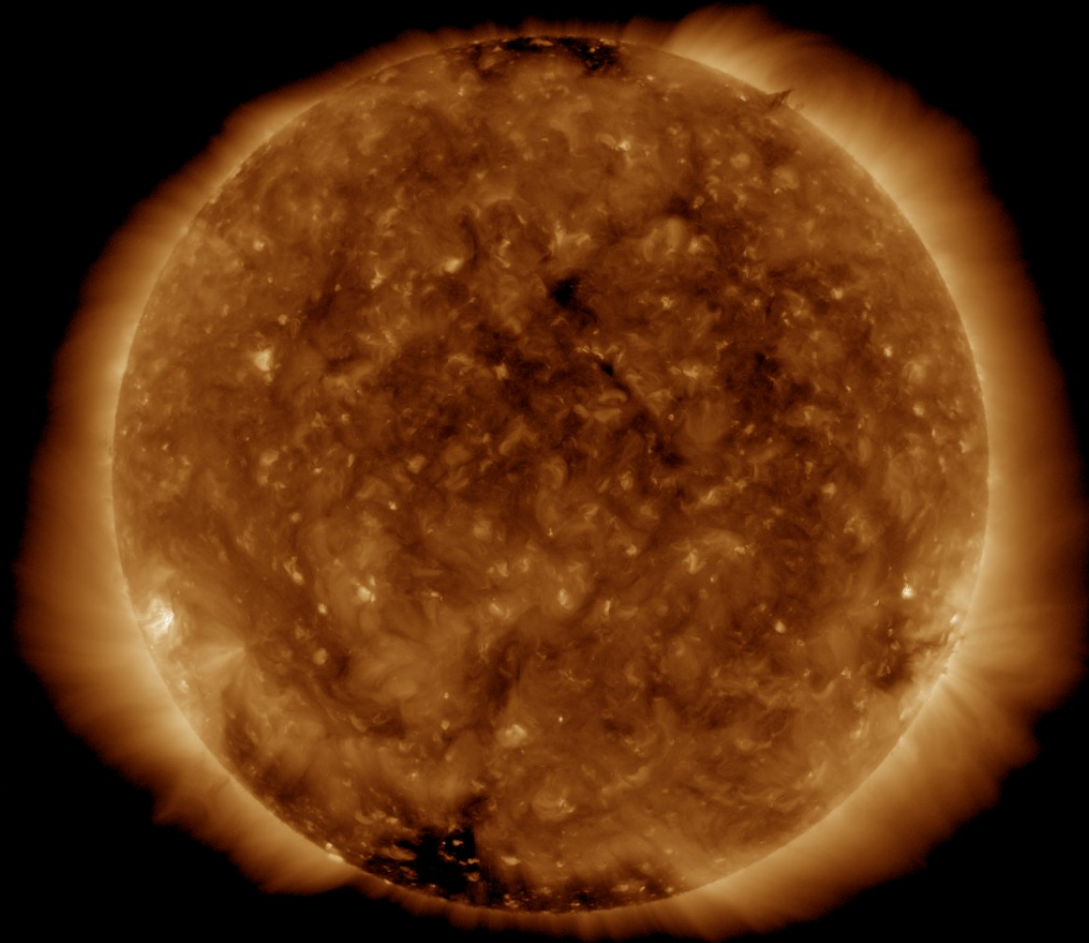
Observation date: 2021/01/11 14:05:30

Outlook: Solar F10.7cm radio flux



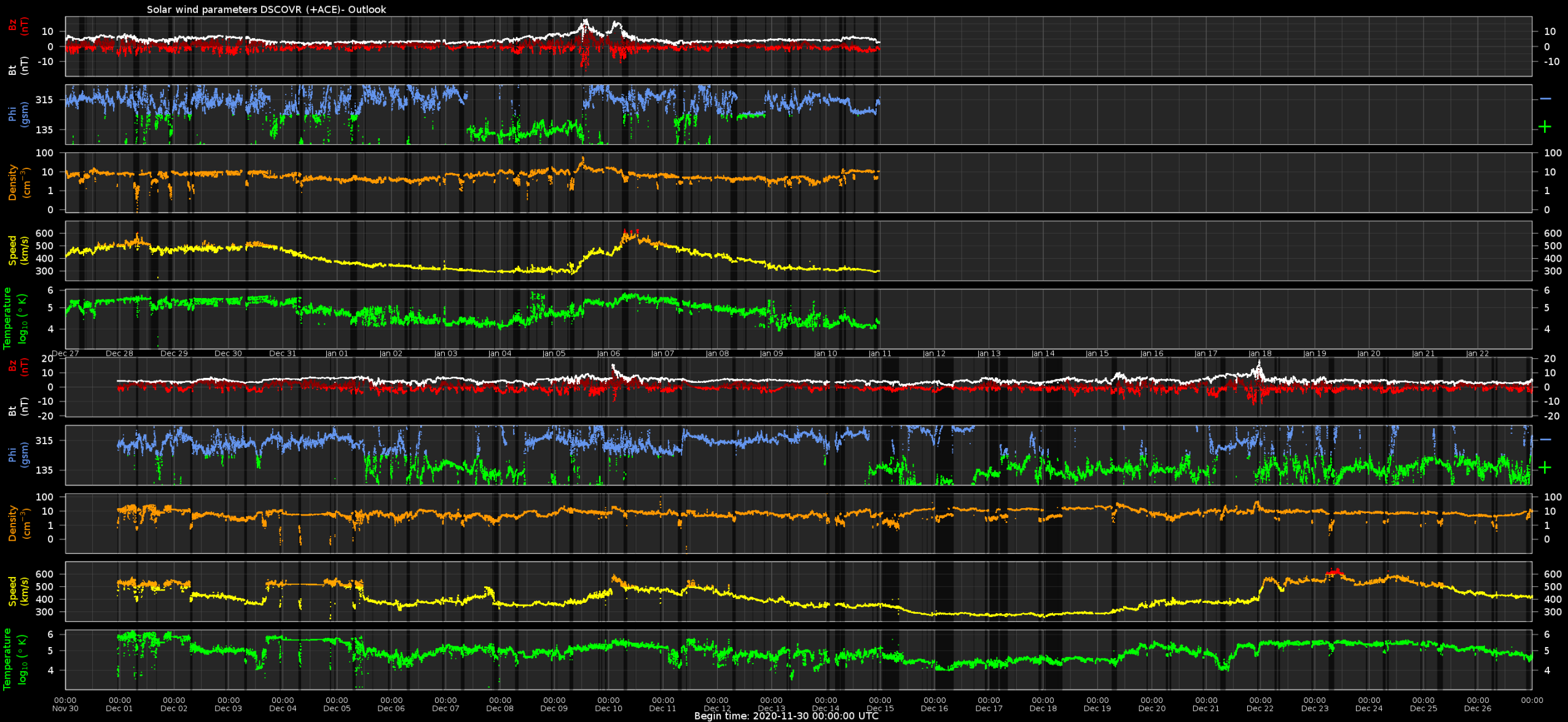
Coronal holes

SDO/AIA 19.3 nm 2021-01-10



SDO/AIA 193 2021-01-10 12:17:53 UT

Outlook: Solar wind parameters



Outlook: Geomagnetic activity



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