

SIDC Space Weather Briefing

02 May 2021 - 09 May 2021

Jennifer O'Hara

& the SIDC forecaster team



Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2021-05-02 12:00 to 2021-05-09 23:59

Active regions	NOAA AR 2822 / Catania sunspot group 93
Flares	# C-class flare: 4 # M-class flare: 1 # X-class flare: 0
Filament eruptions	Filament Eruption on May 09
Coronal Holes	A number of small coronal holes

Proton flux	At nominal levels
Electron flux	Remained below 1000pfu threshold

Solar wind and geomagnetic conditions

ICME	None observed
SW Conditions	B : 0.82 - 13.58 nT // Bz: -5.51 nT to 11.97 nT // Speed: 246.9 - 503.1km/s
K-indices	max K-index (Dourbes): 3 max Kp-index (NOAA): 2

All Quiet Alert: On between May 05 and May 08

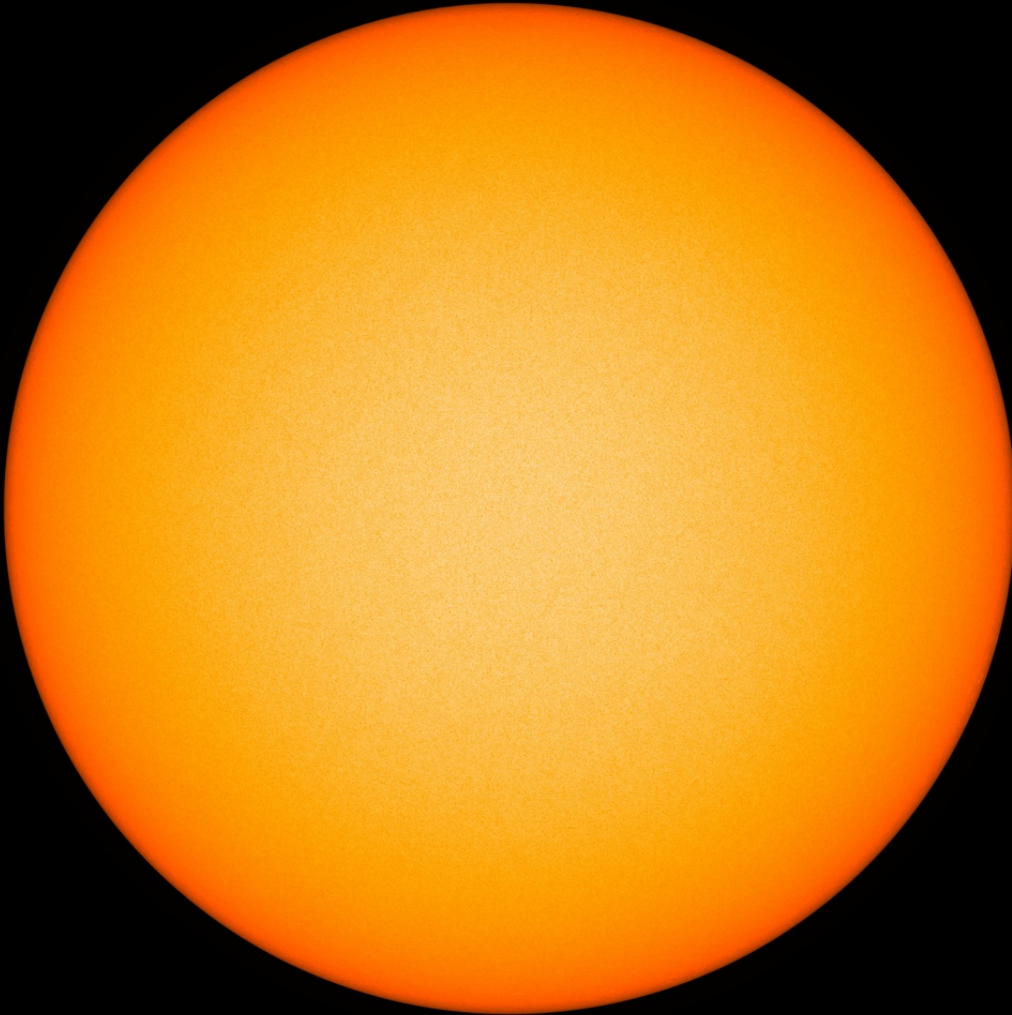
Solar Activity



Solar Influences
Data analysis Centre
www.sidc.be

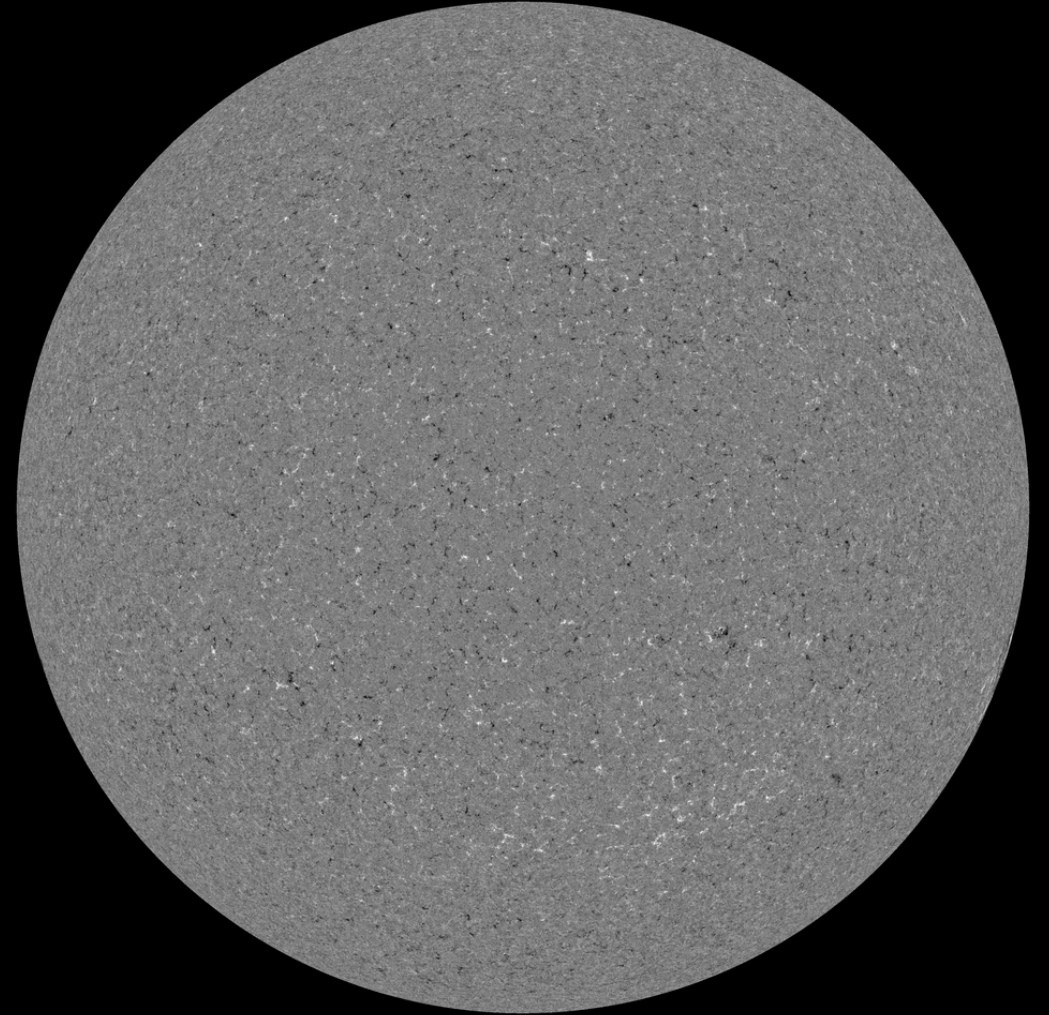
Solar active regions

SDO/HMI White Light 2021-05-02



SDO/HMI Quick-Look Continuum: 20210502_120000

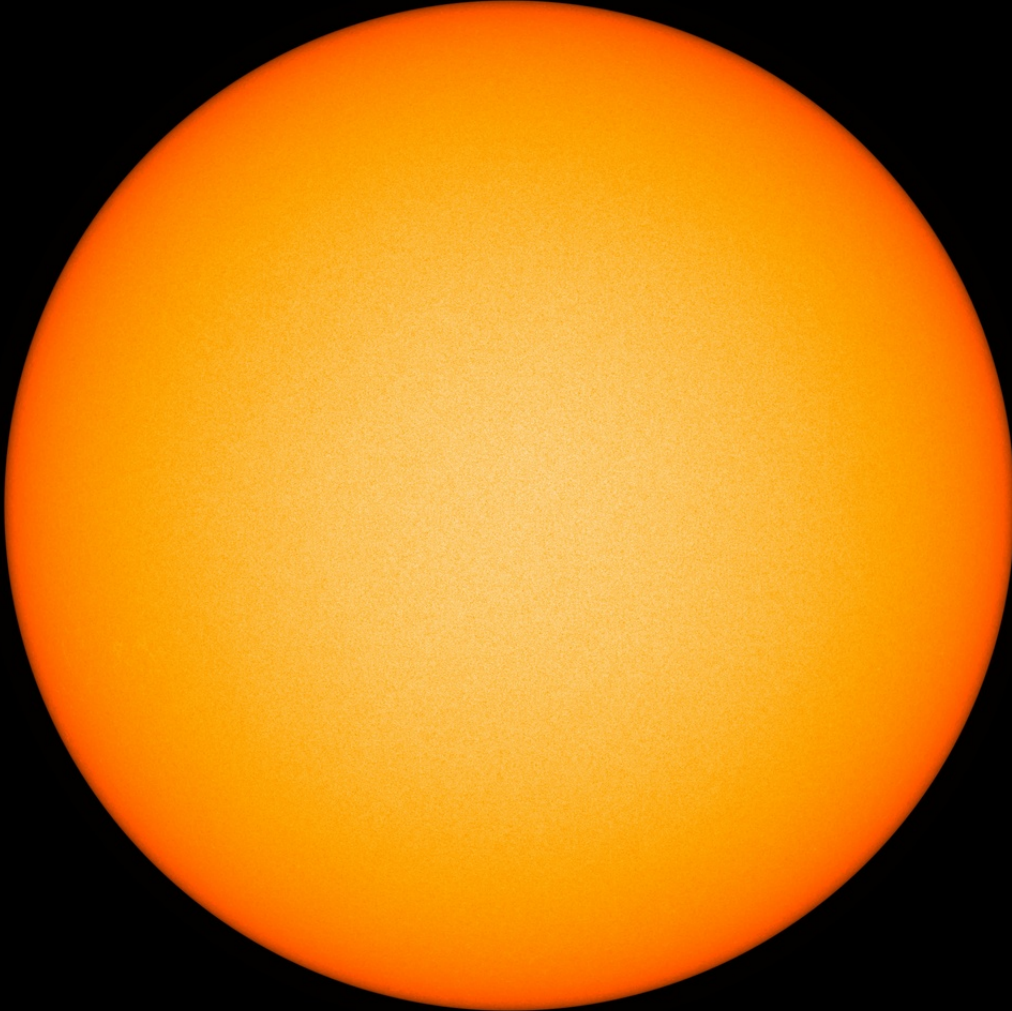
SDO/HMI Magnetogram 2021-05-02



SDO/HMI Quick-Look Magnetogram: 20210502_114500

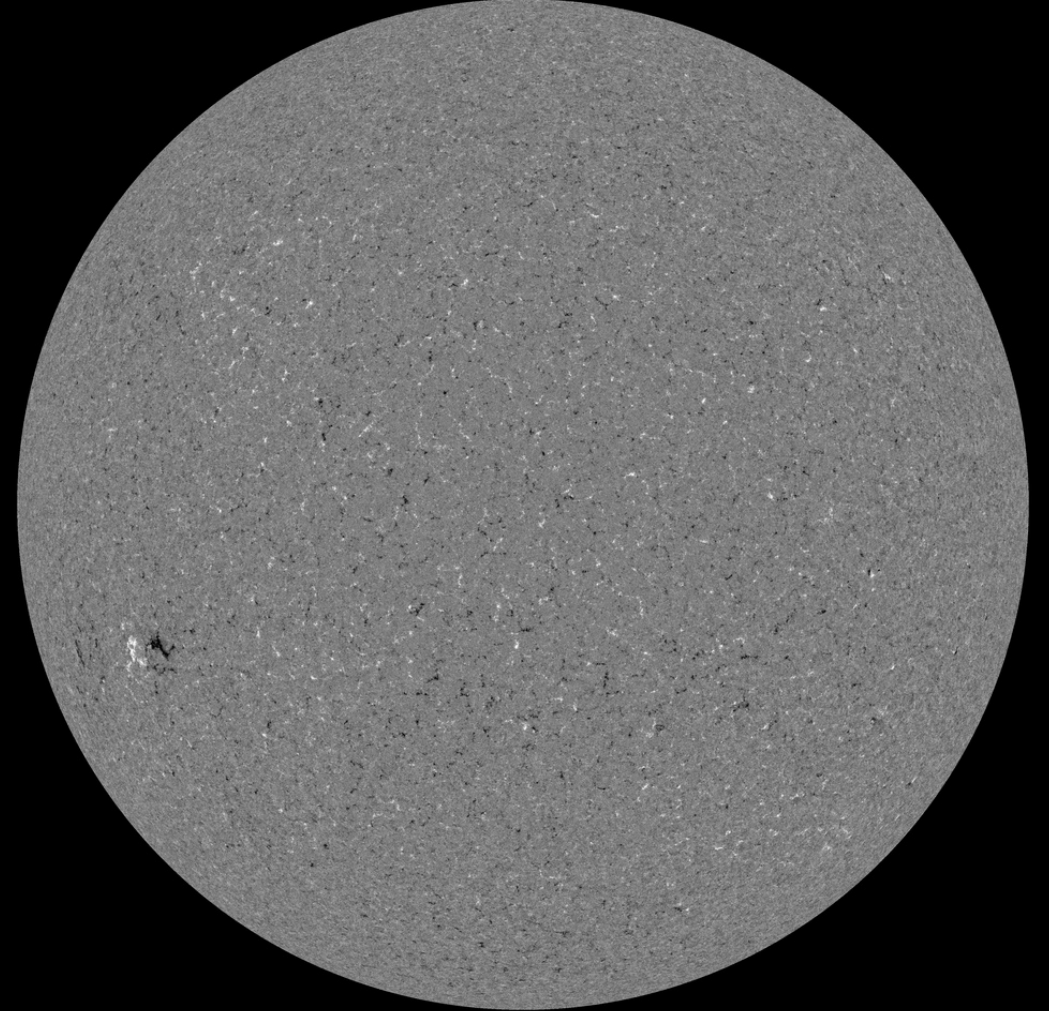
Solar active regions

SDO/HMI White Light 2021-05-05



SDO/HMI Quick-Look Continuum: 20210505_114500

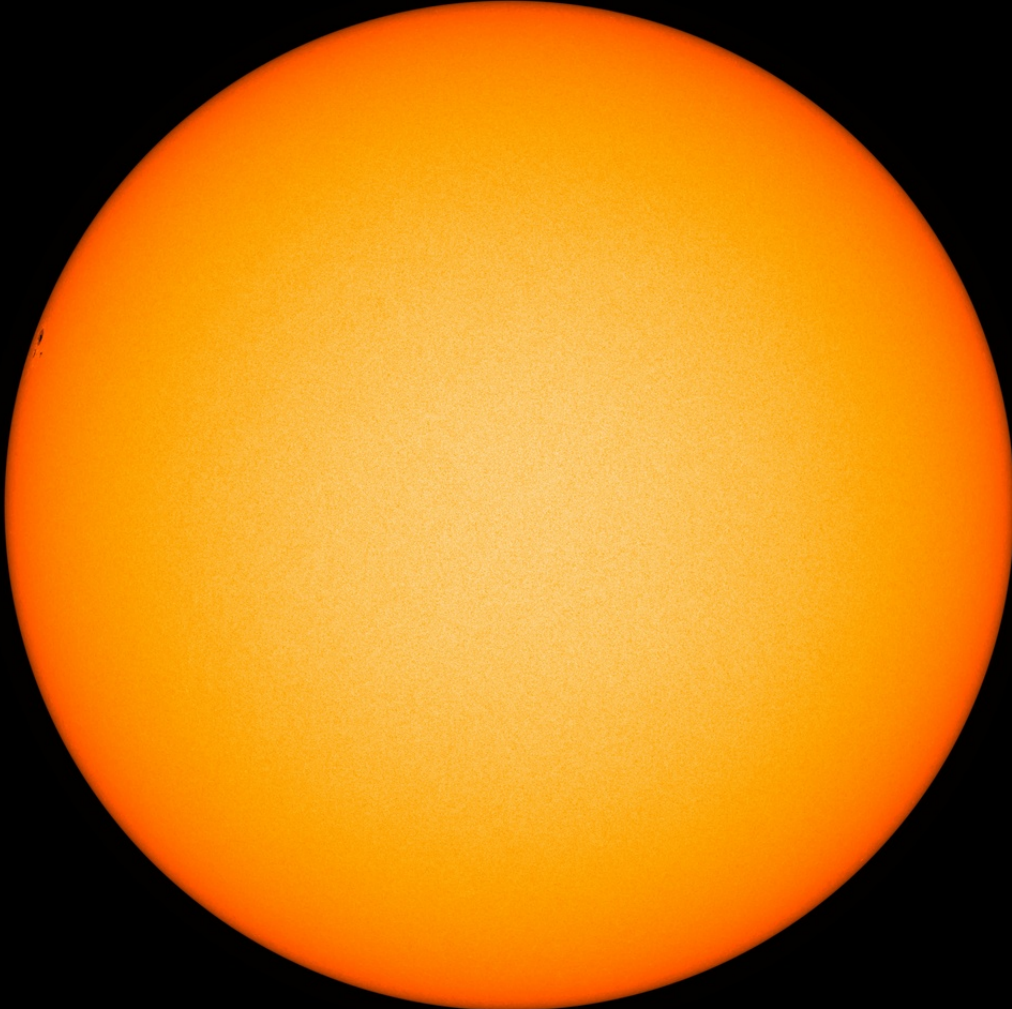
SDO/HMI Magnetogram 2021-05-05



SDO/HMI Quick-Look Magnetogram: 20210505_114500

Solar active regions

SDO/HMI White Light 2021-05-07



SDO/HMI Quick-Look Continuum: 20210507_114500

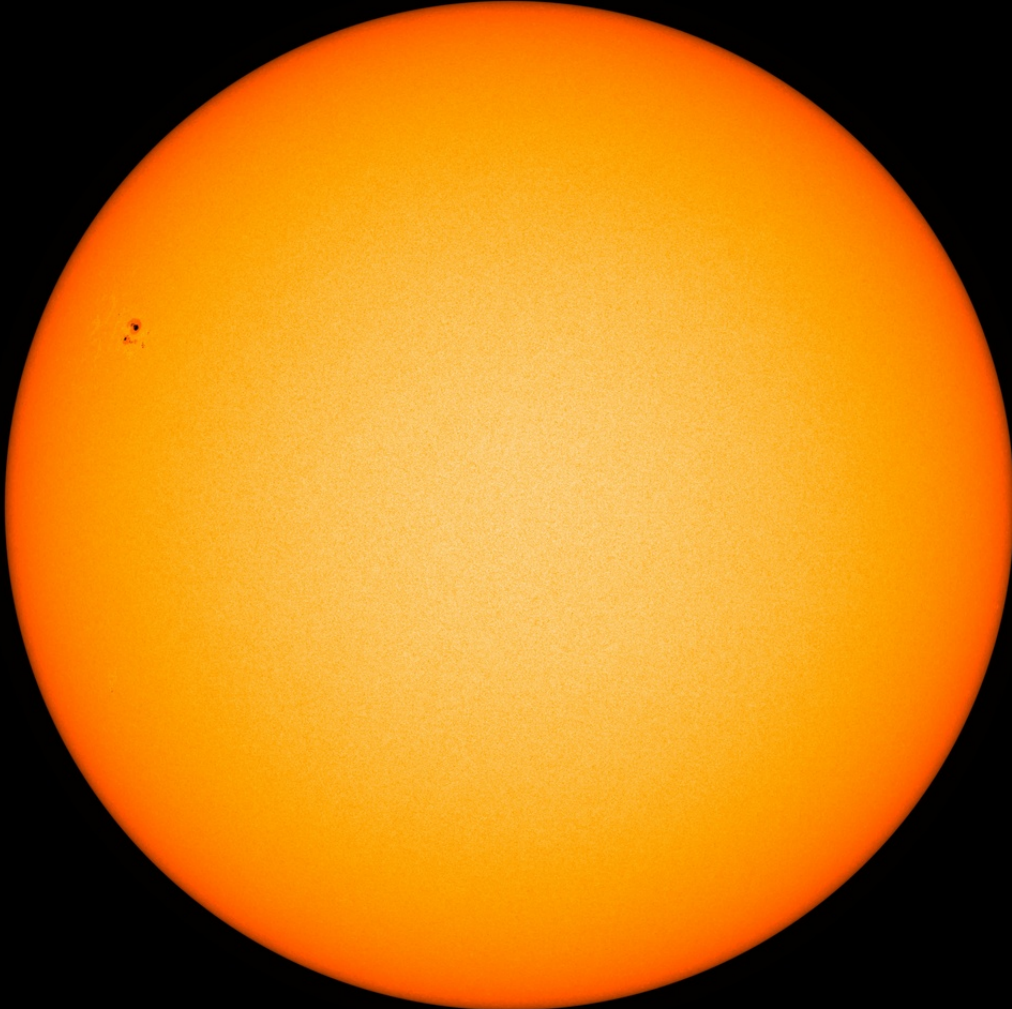
SDO/HMI Magnetogram 2021-05-07



SDO/HMI Quick-Look Magnetogram: 20210507_114500

Solar active regions

SDO/HMI White Light 2021-05-09



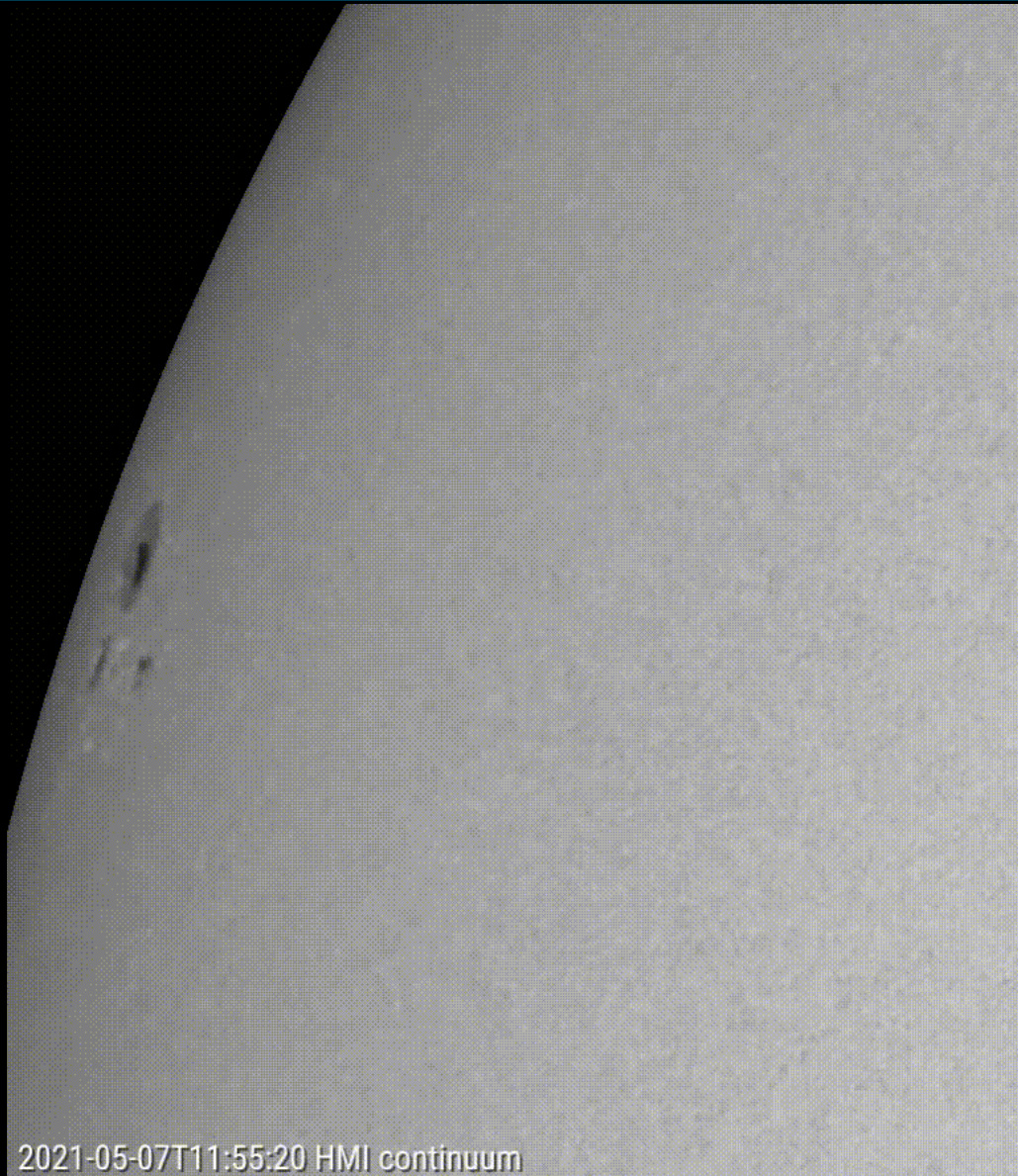
SDO/HMI Quick-Look Continuum: 20210509_114500

SDO/HMI Magnetogram 2021-05-09

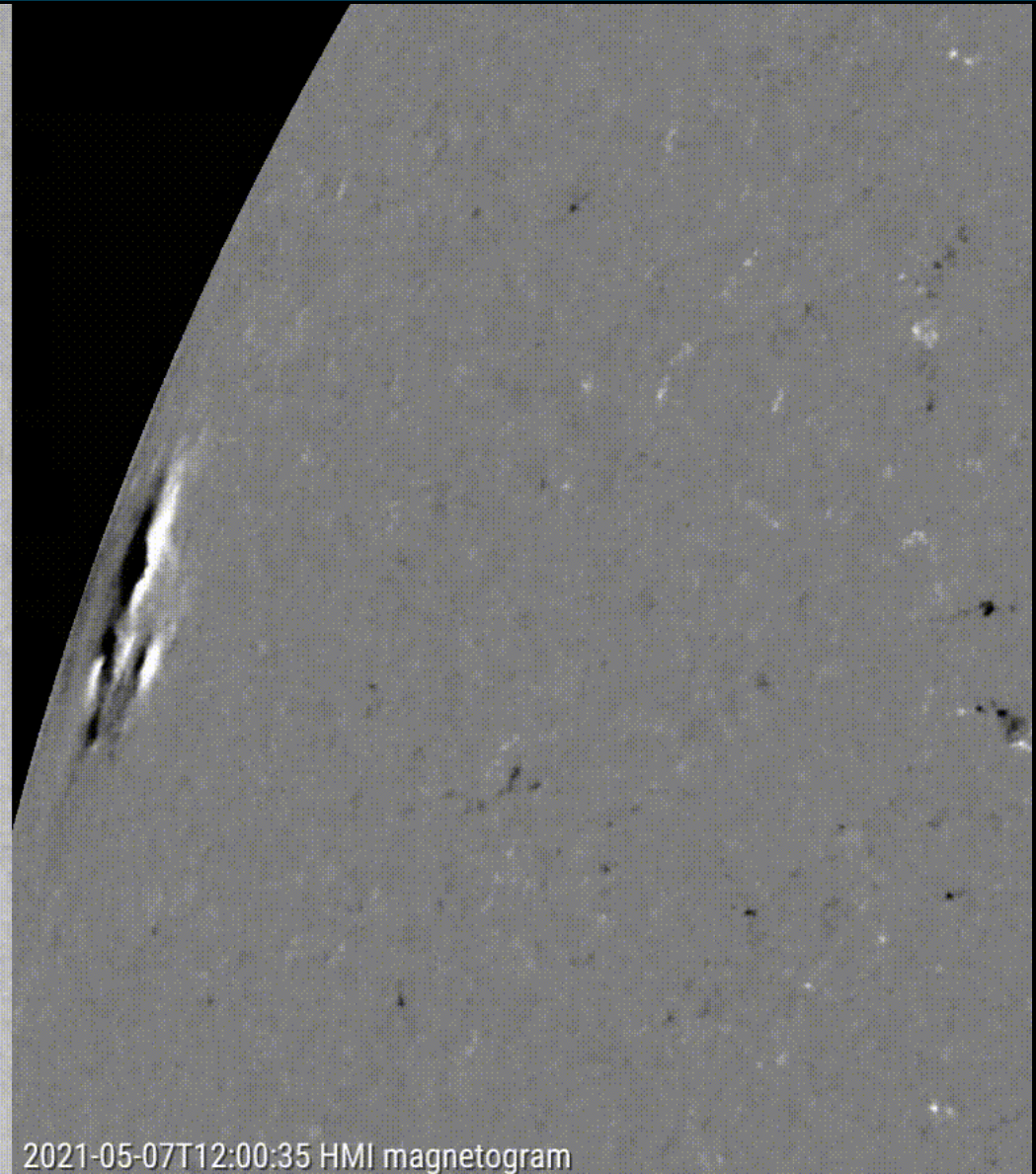


SDO/HMI Quick-Look Magnetogram: 20210509_114500

Solar active regions



2021-05-07T11:55:20 HMI continuum

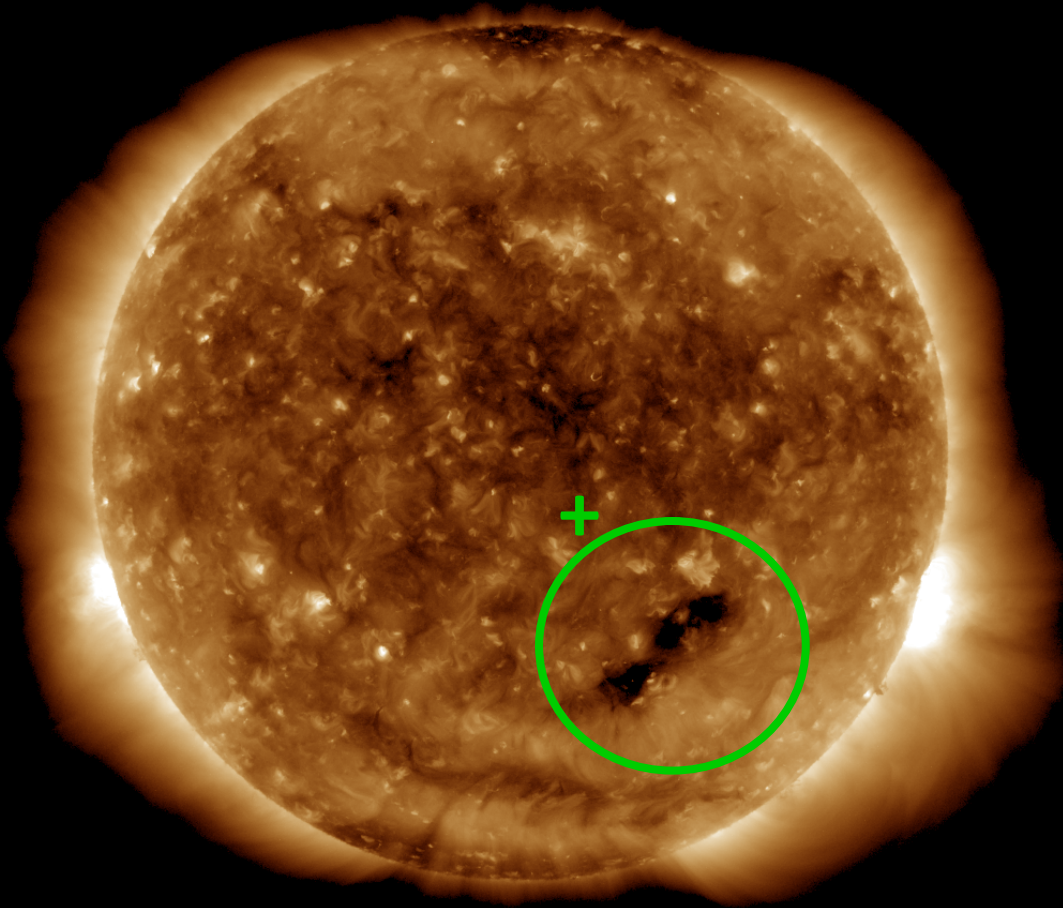


2021-05-07T12:00:35 HMI magnetogram

Coronal holes

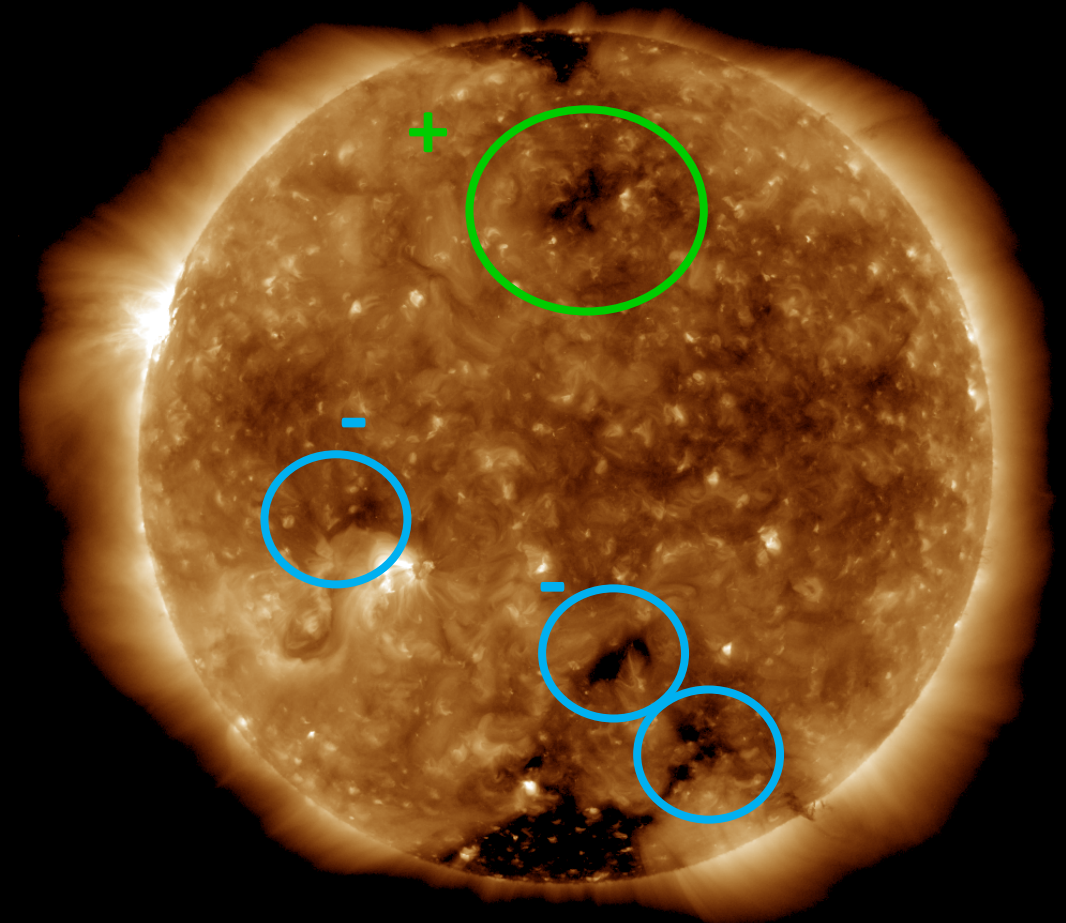
SDO/AIA 19.3 nm 2021-05-02

SDO/AIA AIA 193Å 2021-05-02T12:00:05.846



SDO/AIA 19.3 nm 2021-05-07

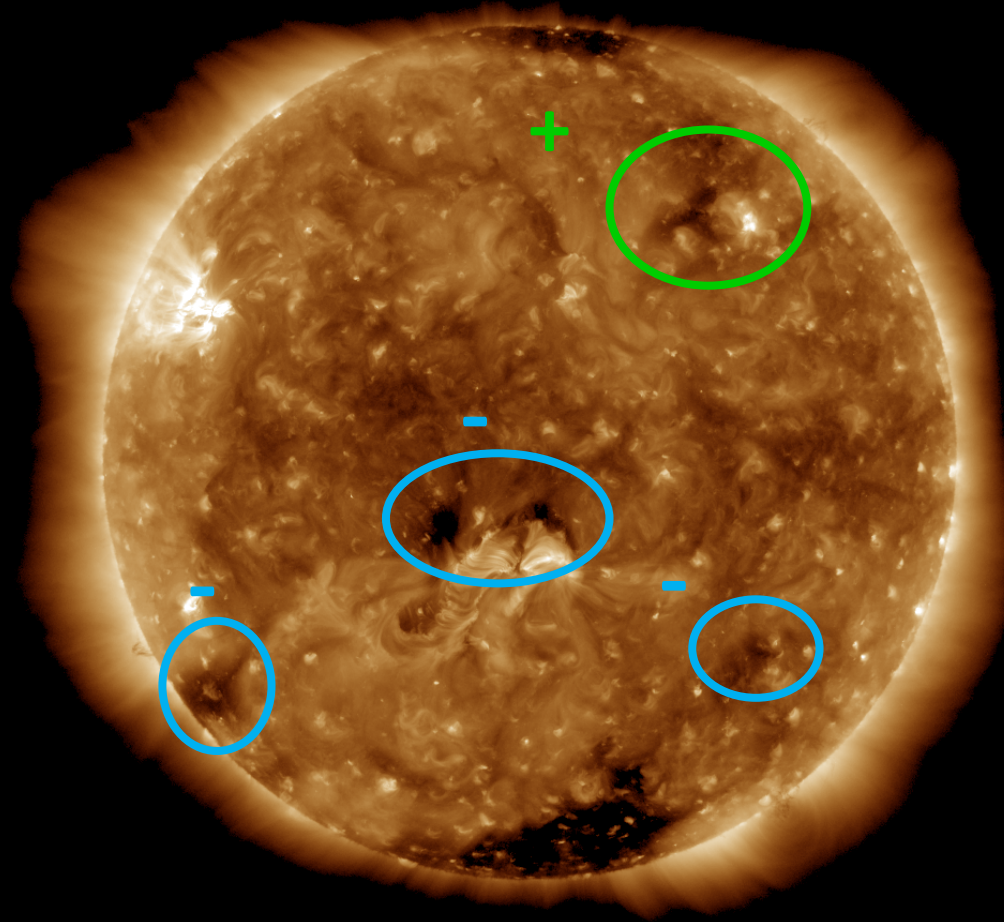
SDO/AIA AIA 193Å 2021-05-07T12:00:05.846



Coronal holes

SDO/AIA 19.3 nm 2021-05-09

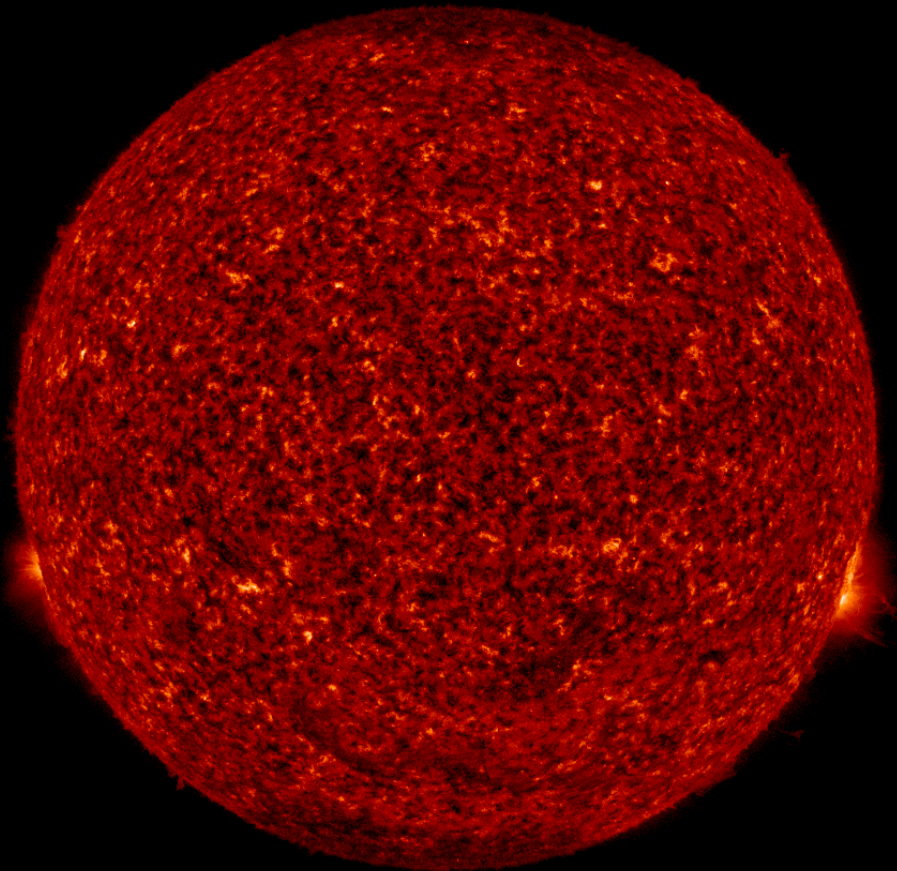
SDO/AIA AIA 193Å 2021-05-09T12:00:05.843



Filaments

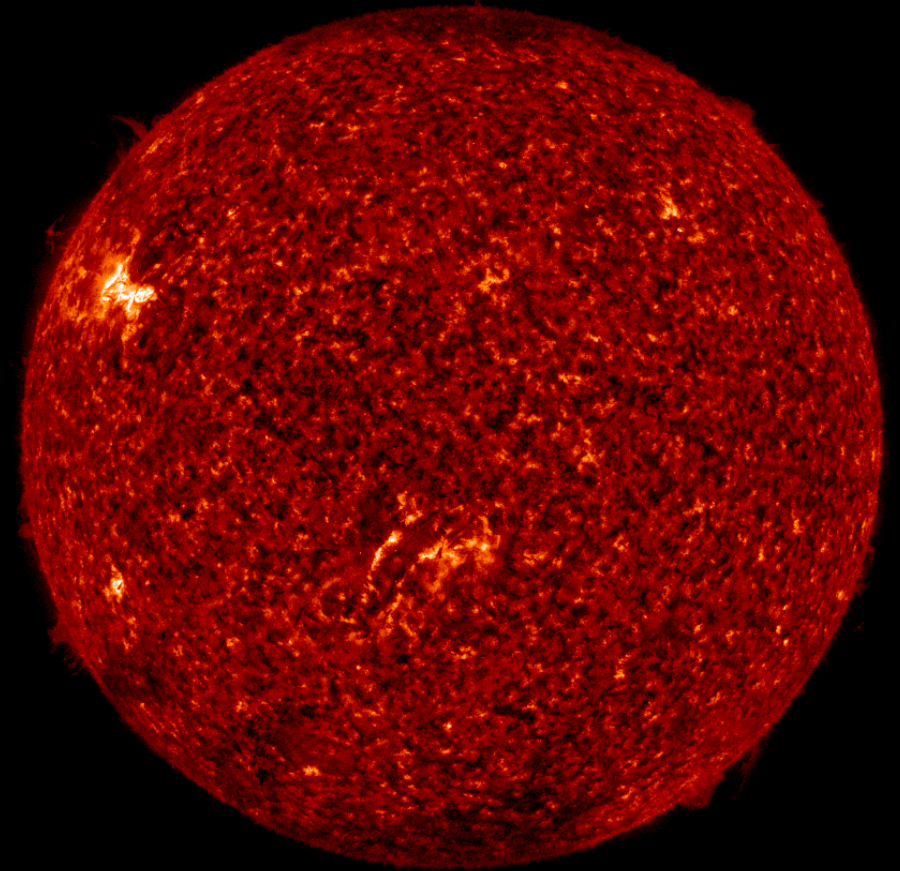
SDO/AIA 30.4 nm 2021-05-02

SDO/AIA AIA 304Å 2021-05-02T12:00:06.580



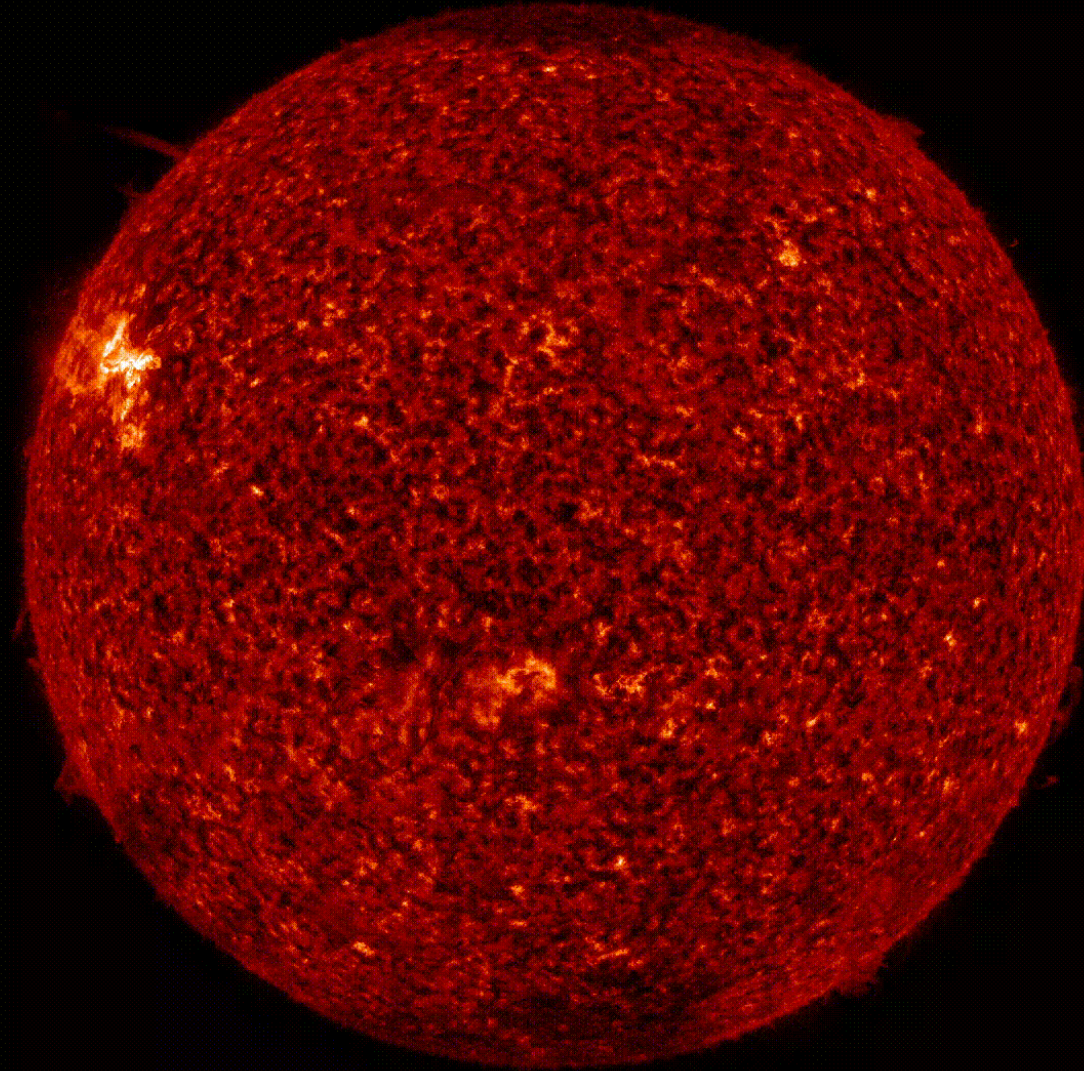
SDO/AIA 30.4 nm 2021-05-09

SDO/AIA AIA 304Å 2021-05-09T12:00:06.580



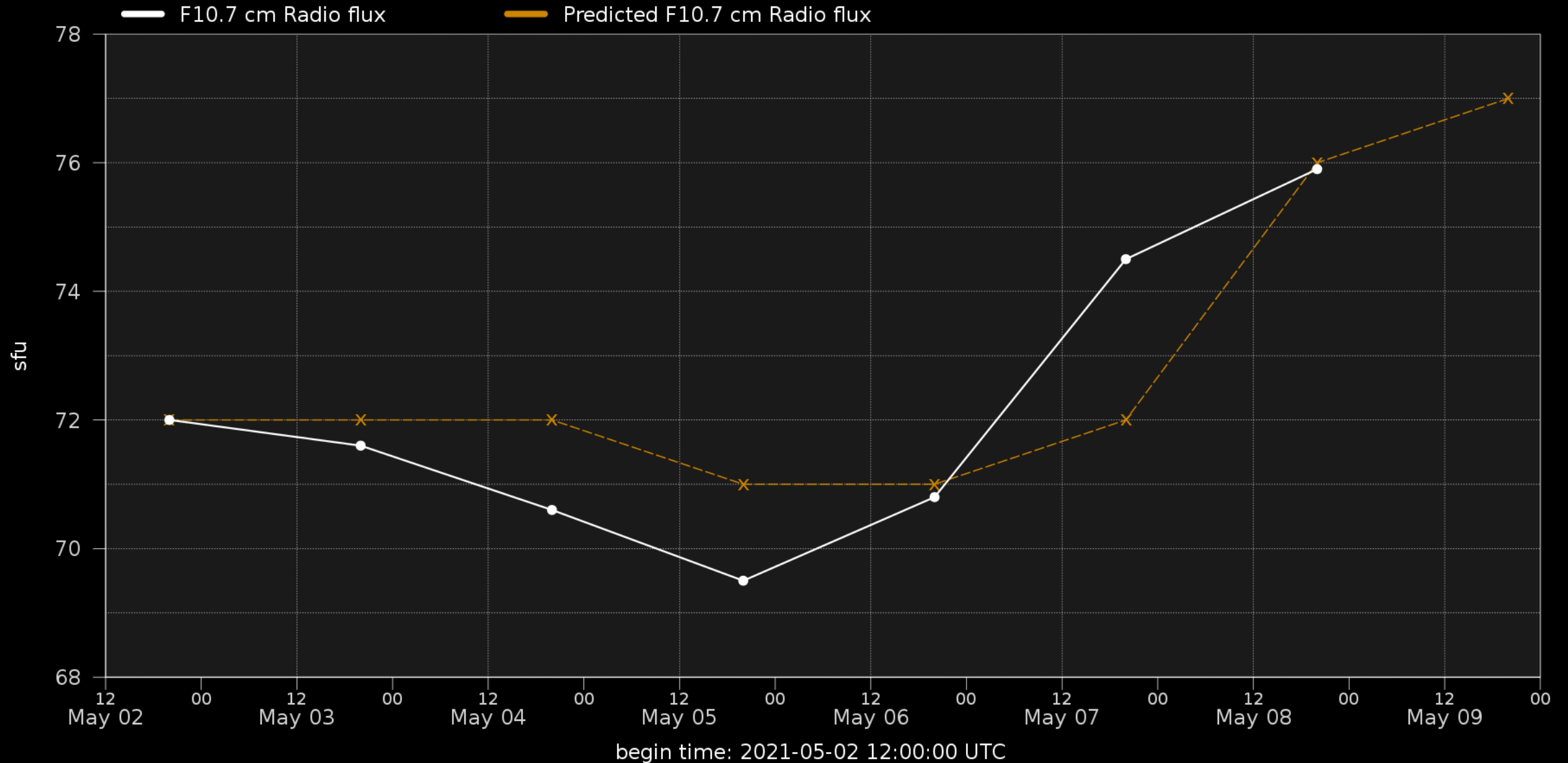
Filaments

SDO/AIA 30.4 nm 2021-05-09

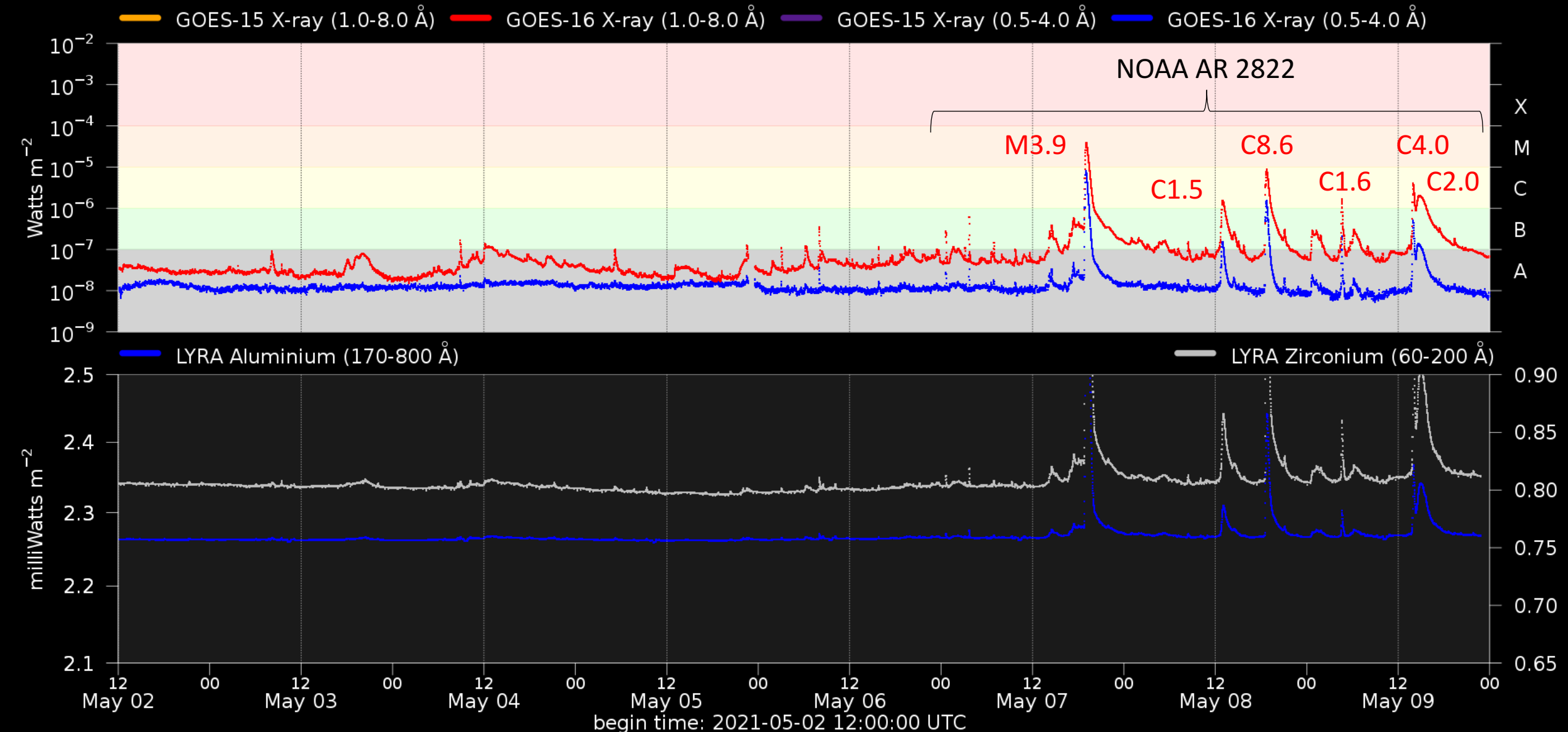


2021-05-09T01:55:17

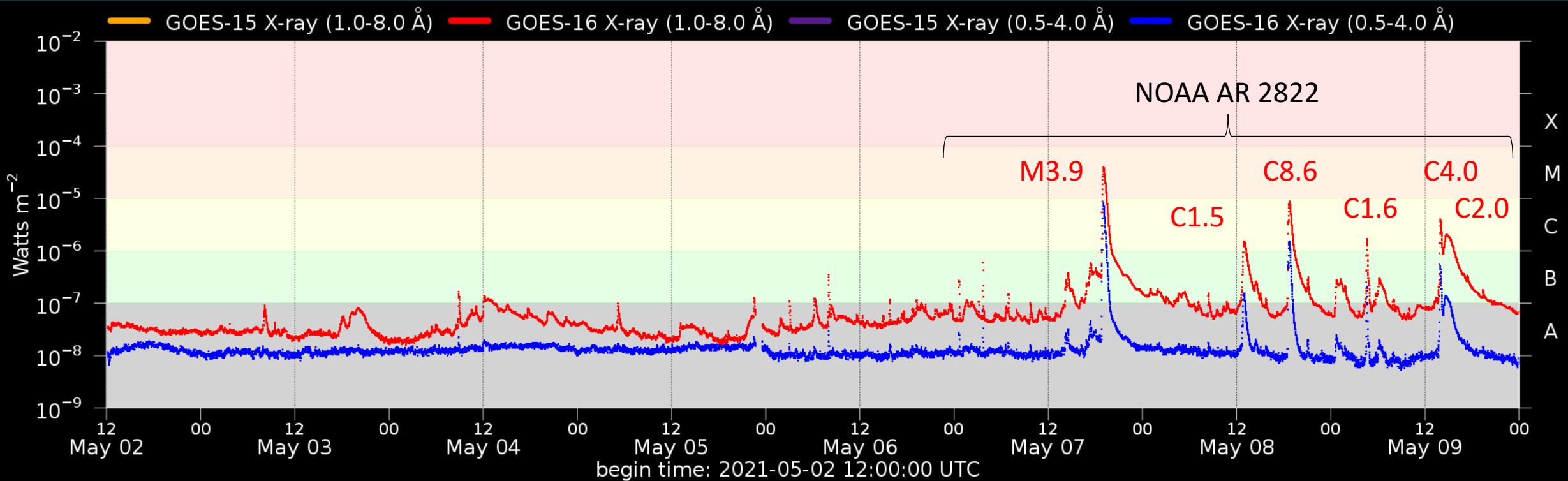
Solar F10.7cm radio flux



Solar X-Ray and UV flux



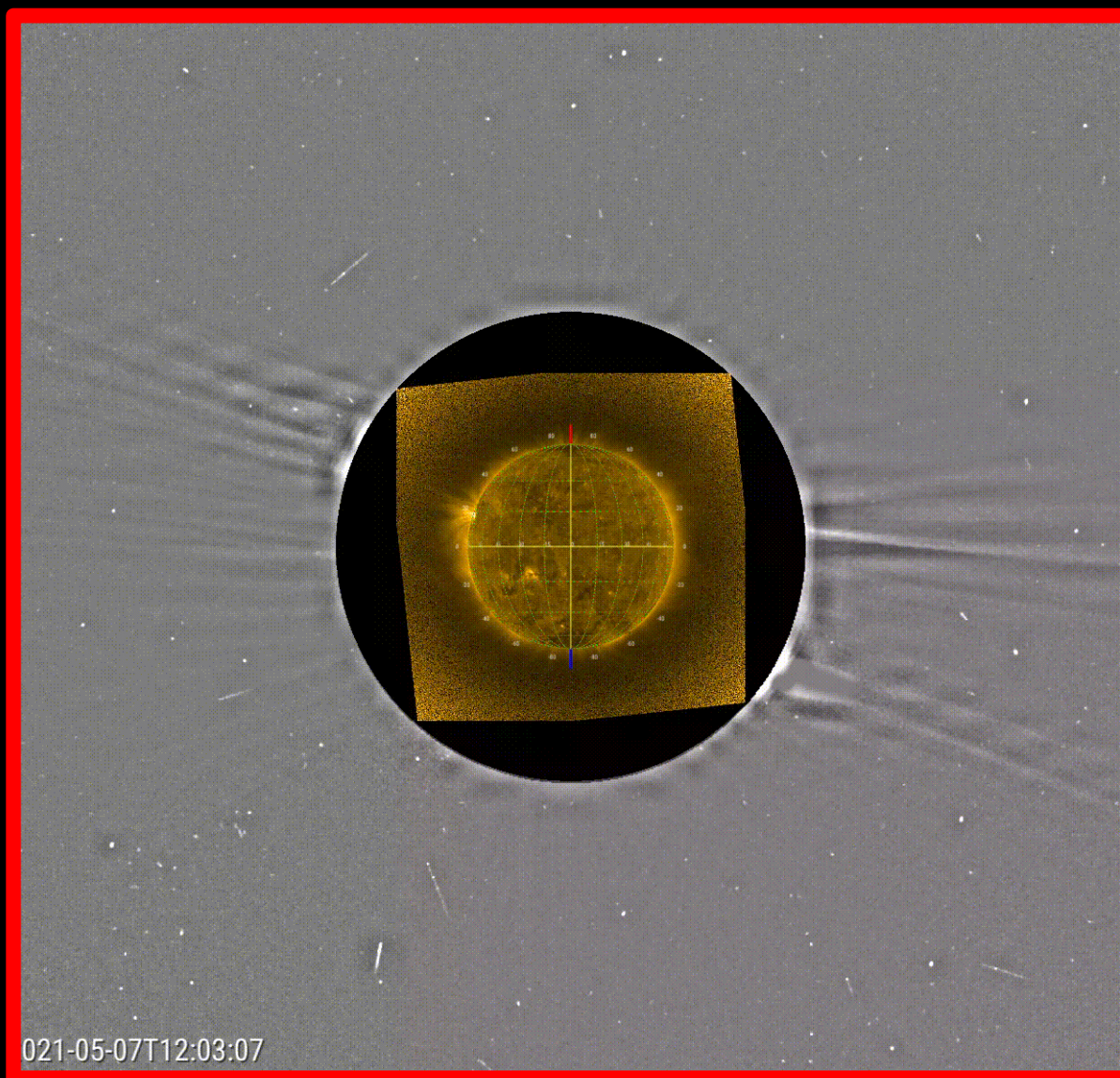
Flaring activity



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

Issue date	2021-05-02	2021-05-03	2021-05-04	2021-05-05	2021-05-06	2021-05-07	2021-05-08	2021-05-09
Probability (%)	05 01 01	01 01 01	01 01 01	01 01 01	01 01 01	05 01 01	20 05 01	50 10 01
Observed (#)	00 00 00	00 00 00	00 00 00	00 00 00	00 00 00	00 01 00	03 00 00	01 00 00

Coronal Mass Ejections



Not
Earth-
directed

Type II
and TYPE
IV radio
emission

C4.0 flare

M3.9 flare

c7

f1

c6i

c5

c4

c3

c2

c1

00:24 05/10
21:12 05/09
18:12 05/09
15:16 05/09
11:48 05/09
08:36 05/09
05:54 05/09
03:12 05/09
23:48 05/08
20:24 05/08
17:24 05/08
14:36 05/08
11:24 05/08
08:36 05/08
05:48 05/08
03:18 05/08
23:54 05/07
19:48 05/07
17:12 05/07
14:00 05/07
10:48 05/07
07:24 05/07
03:24 05/07
23:30 05/06
19:48 05/06
17:00 05/06
13:48 05/06
10:36 05/06
07:36 05/06
04:48 05/06
01:25 05/06
21:54 05/05
18:48 05/05
16:24 05/05
13:25 05/05
10:24 05/05
07:12 05/05
04:36 05/05
01:36 05/05
22:13 05/04
19:00 05/04
16:00 05/04
12:12 05/04
09:24 05/04
06:24 05/04

Coronal Mass Ejections



Not
Earth-
directed

North-
west limb

C4.0 flare

M3.9 flare

c7

f1

c6

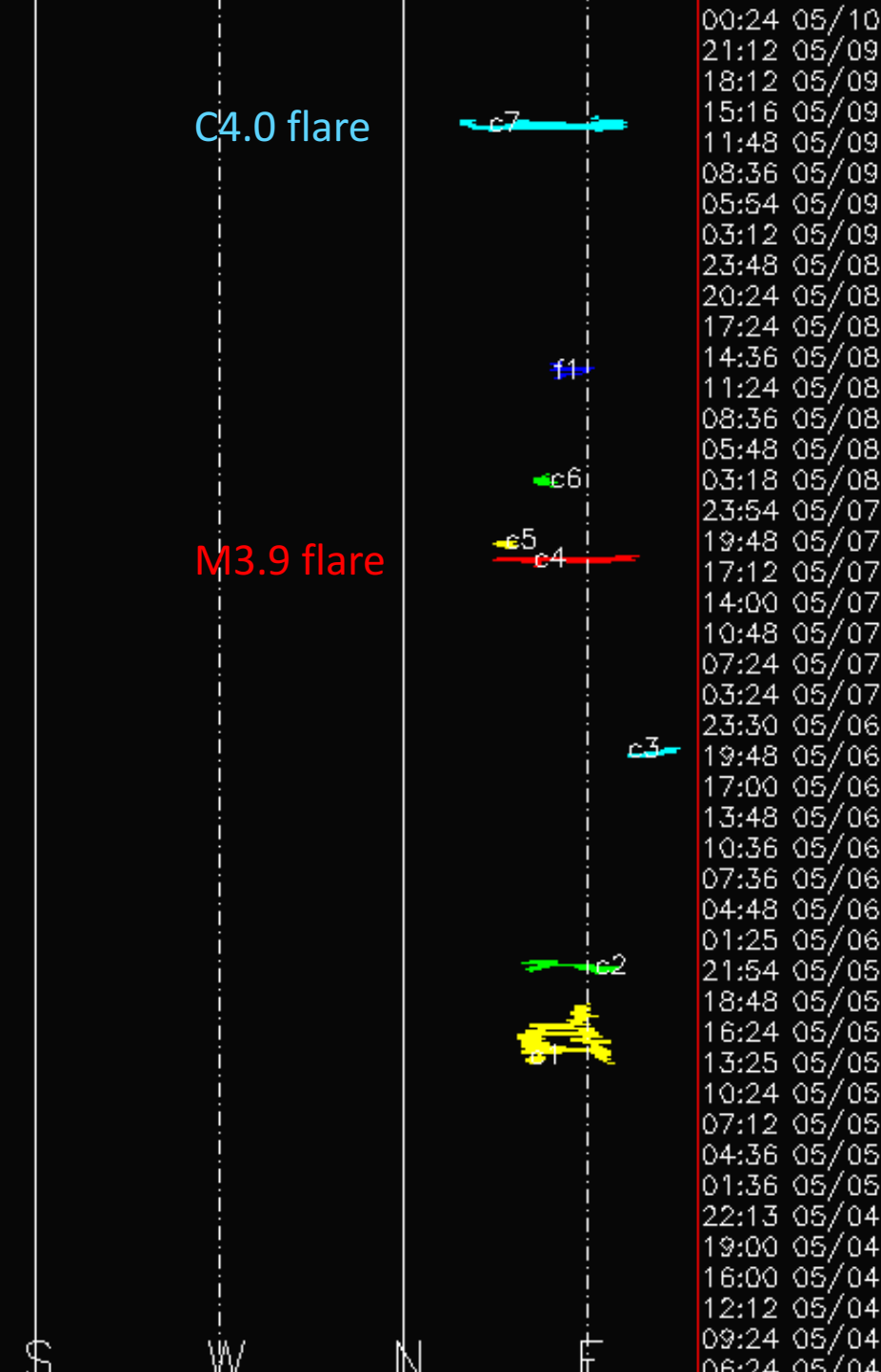
c5

c4

c3

c2

c1



Coronal Mass Ejections



Not
Earth-
directed

North-
west limb

C4.0 flare
Filament eruption

M3.9 flare

c7

f1

c6i

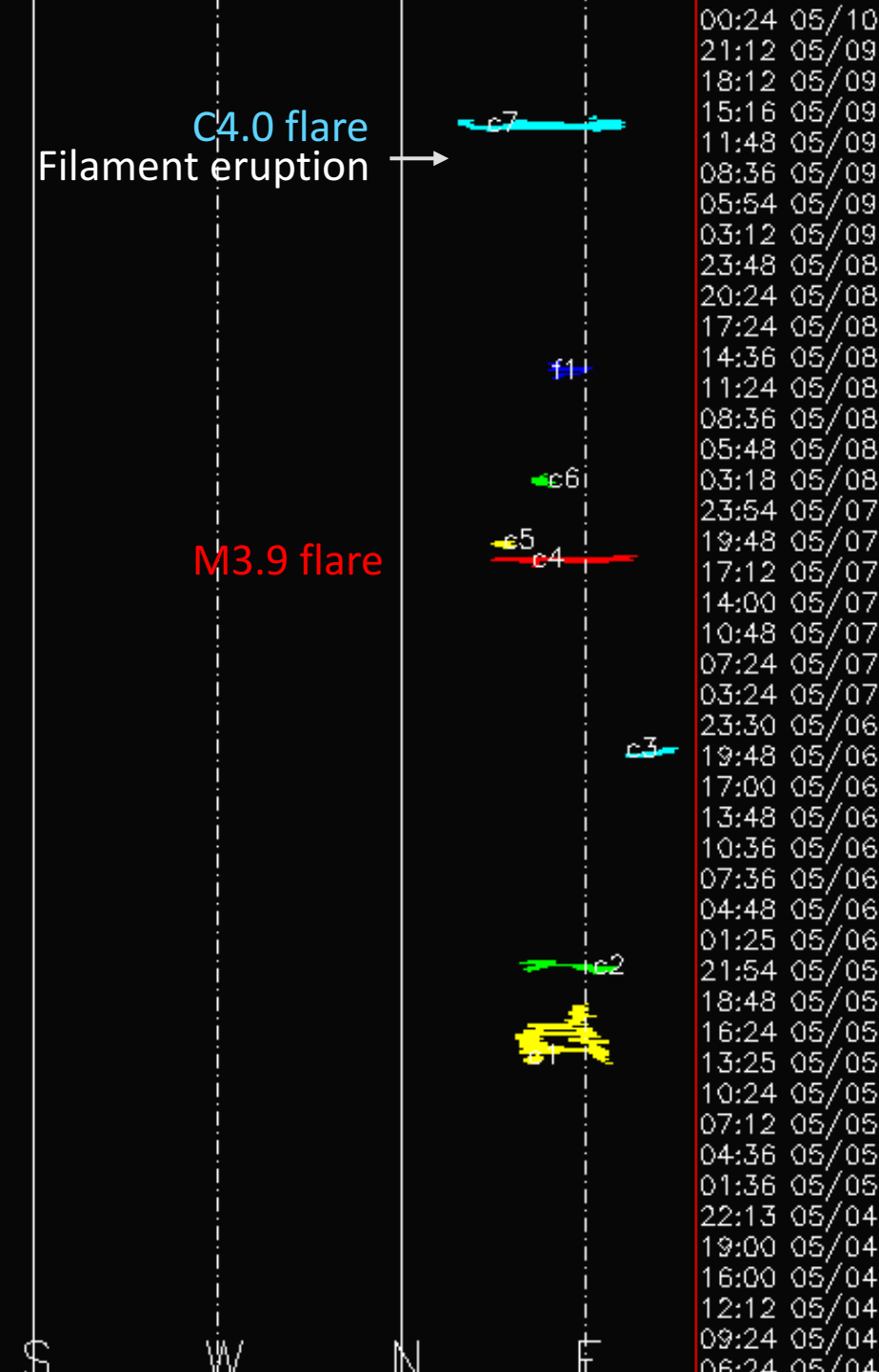
c5

c4

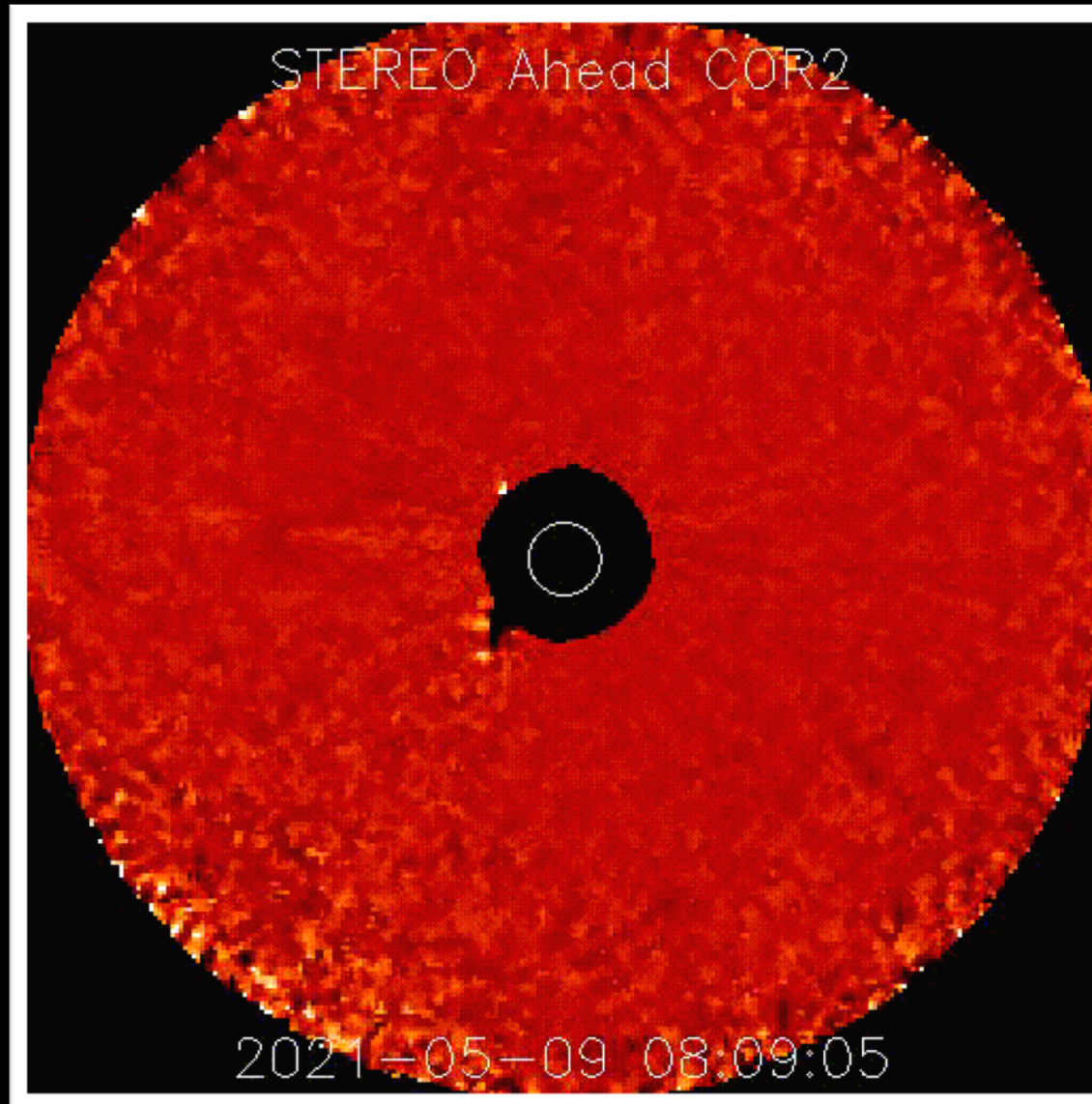
c3

c2

c1



Coronal Mass Ejections



Filament eruption:

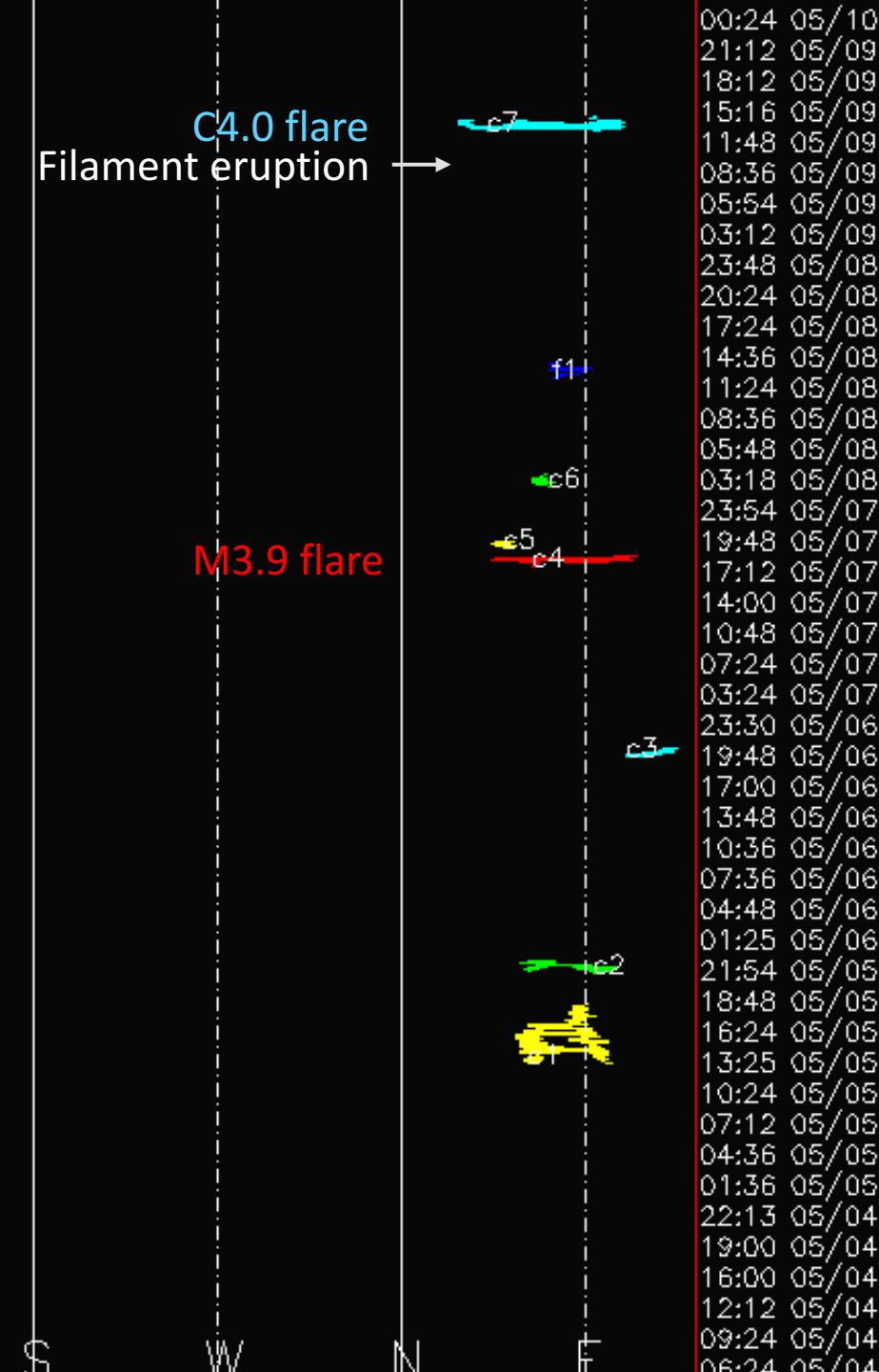
Earth-directed

Estimated speed
550 km/s

Predicted arrival
time late
May 12

C4.0 flare
Filament eruption →

M3.9 flare

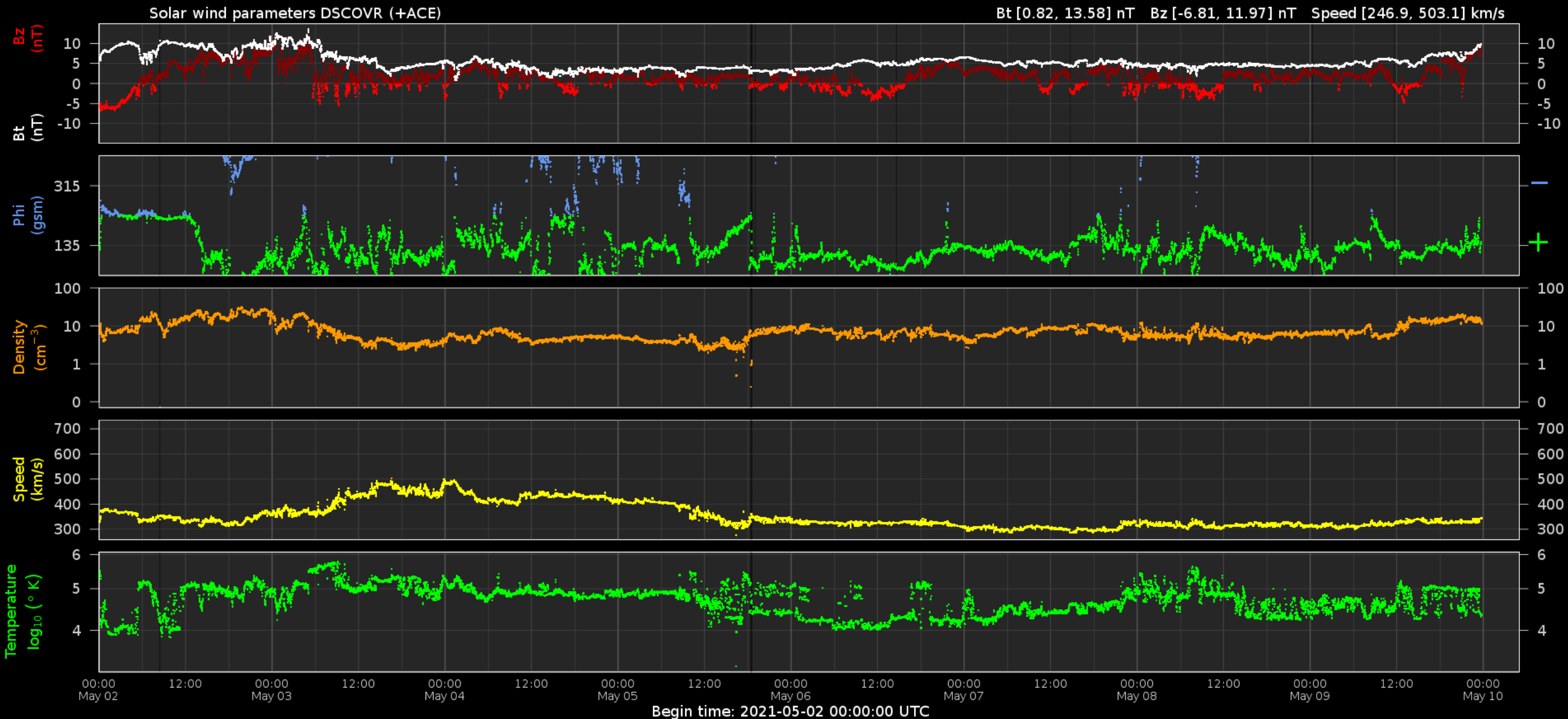


Solar Wind and Geomagnetic Activity

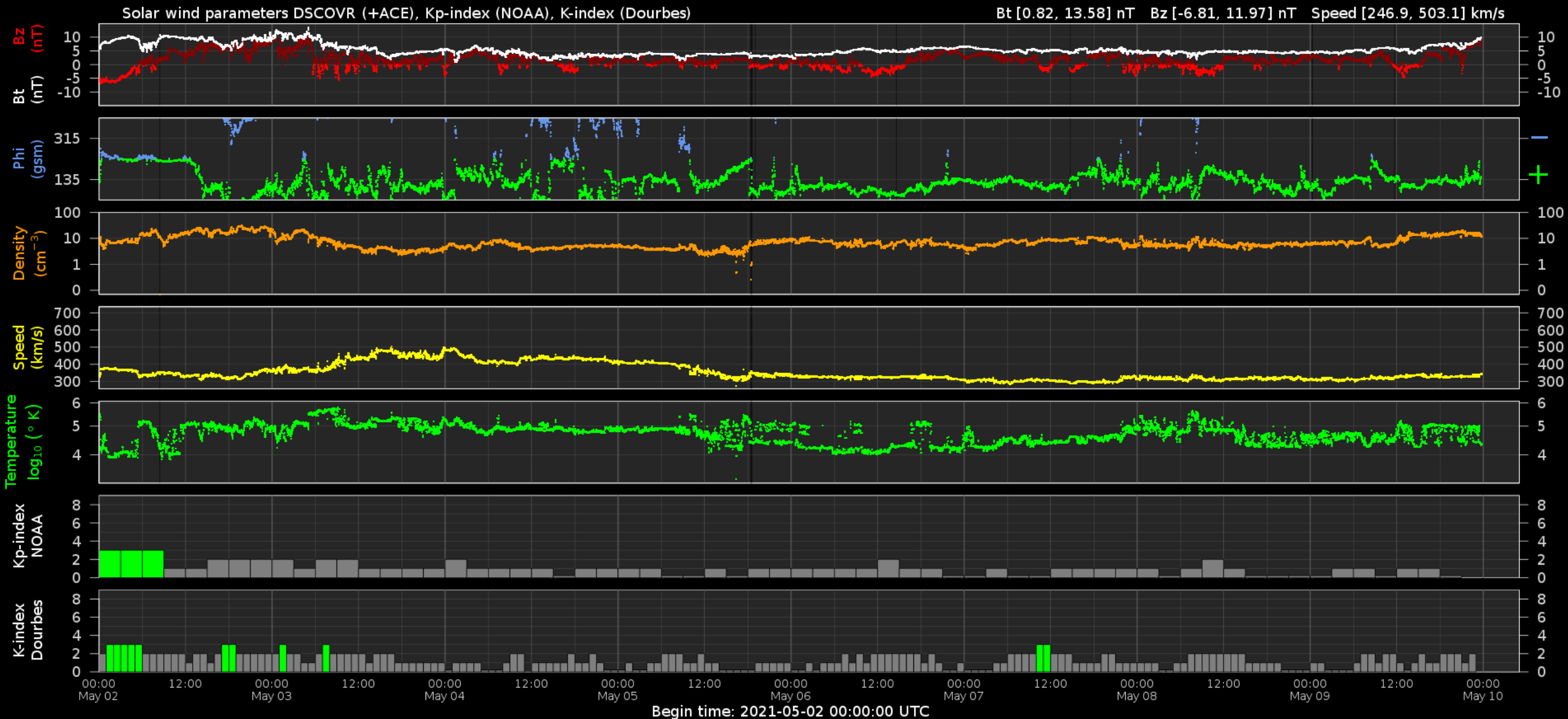


Solar Influences
Data analysis Centre
www.sidc.be

Solar wind parameters

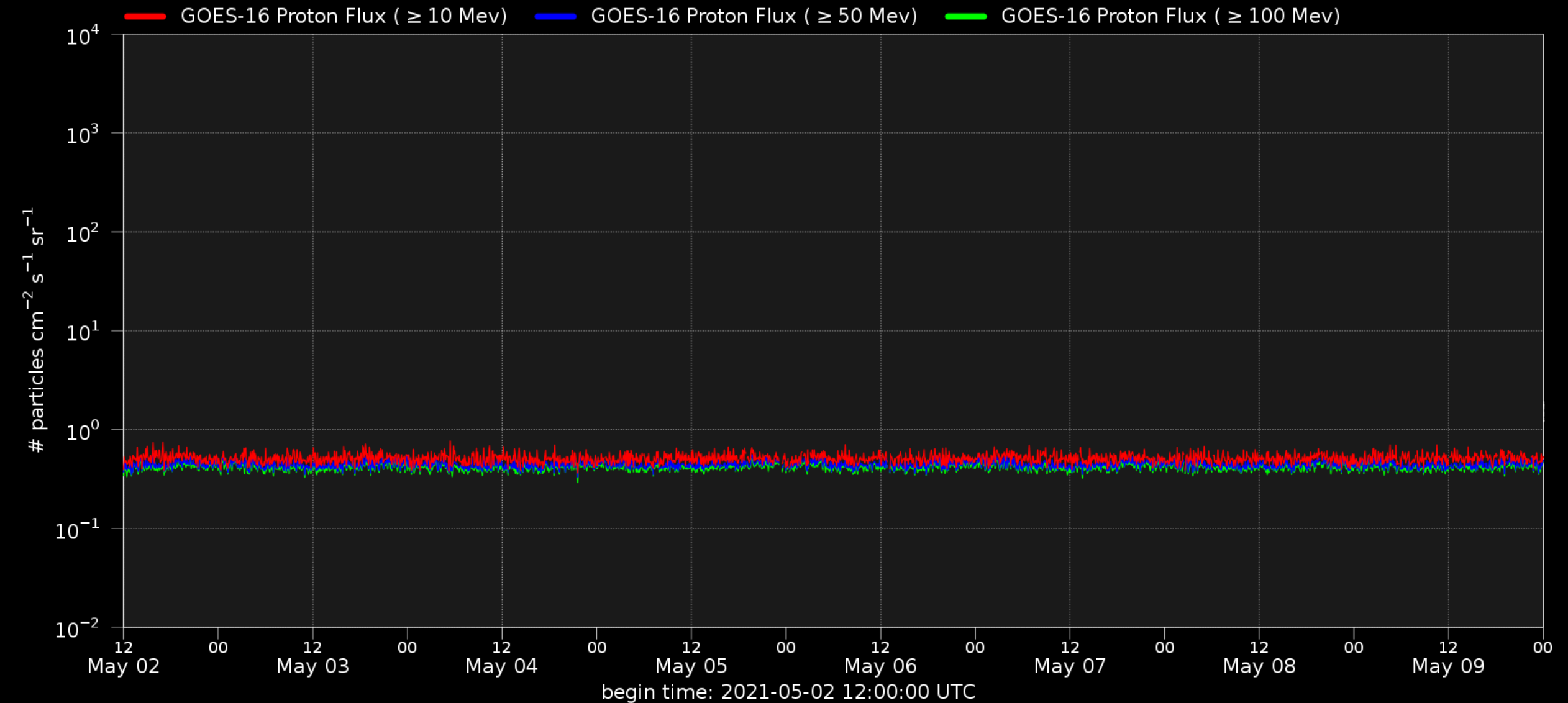


Solar wind parameters & K-indices

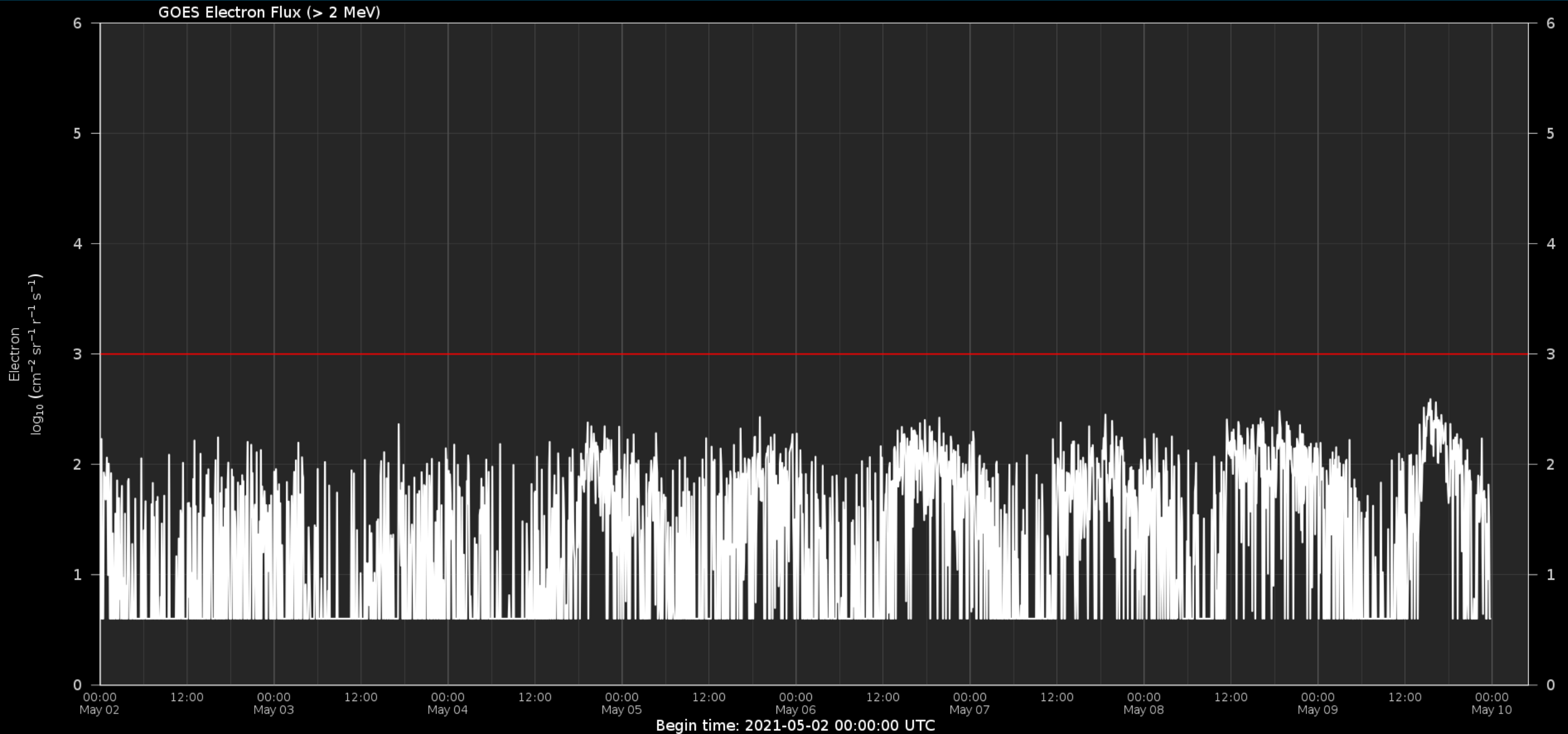


Energetic Particles

Solar proton flux



Electron flux at GEO



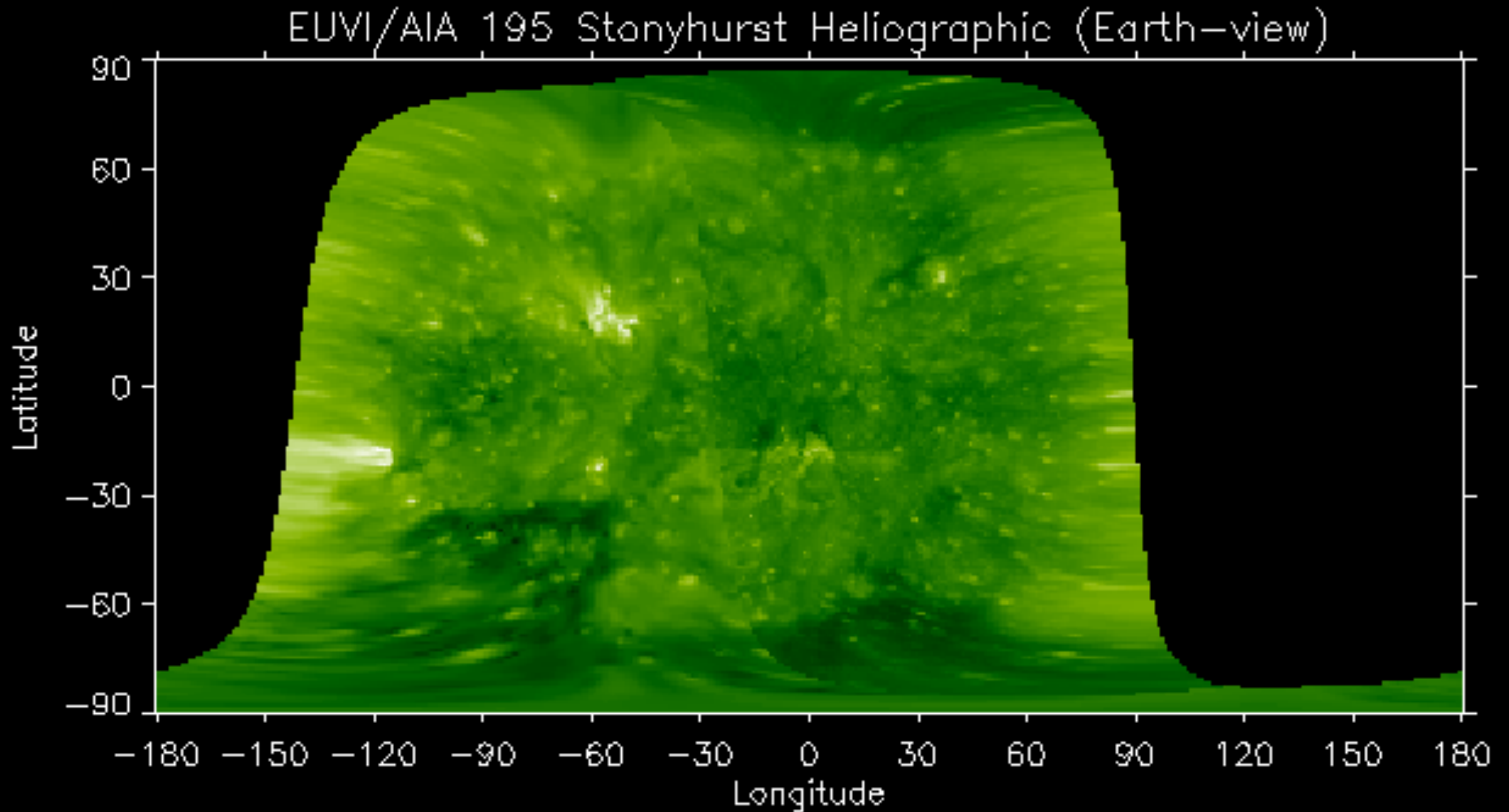
Outlook



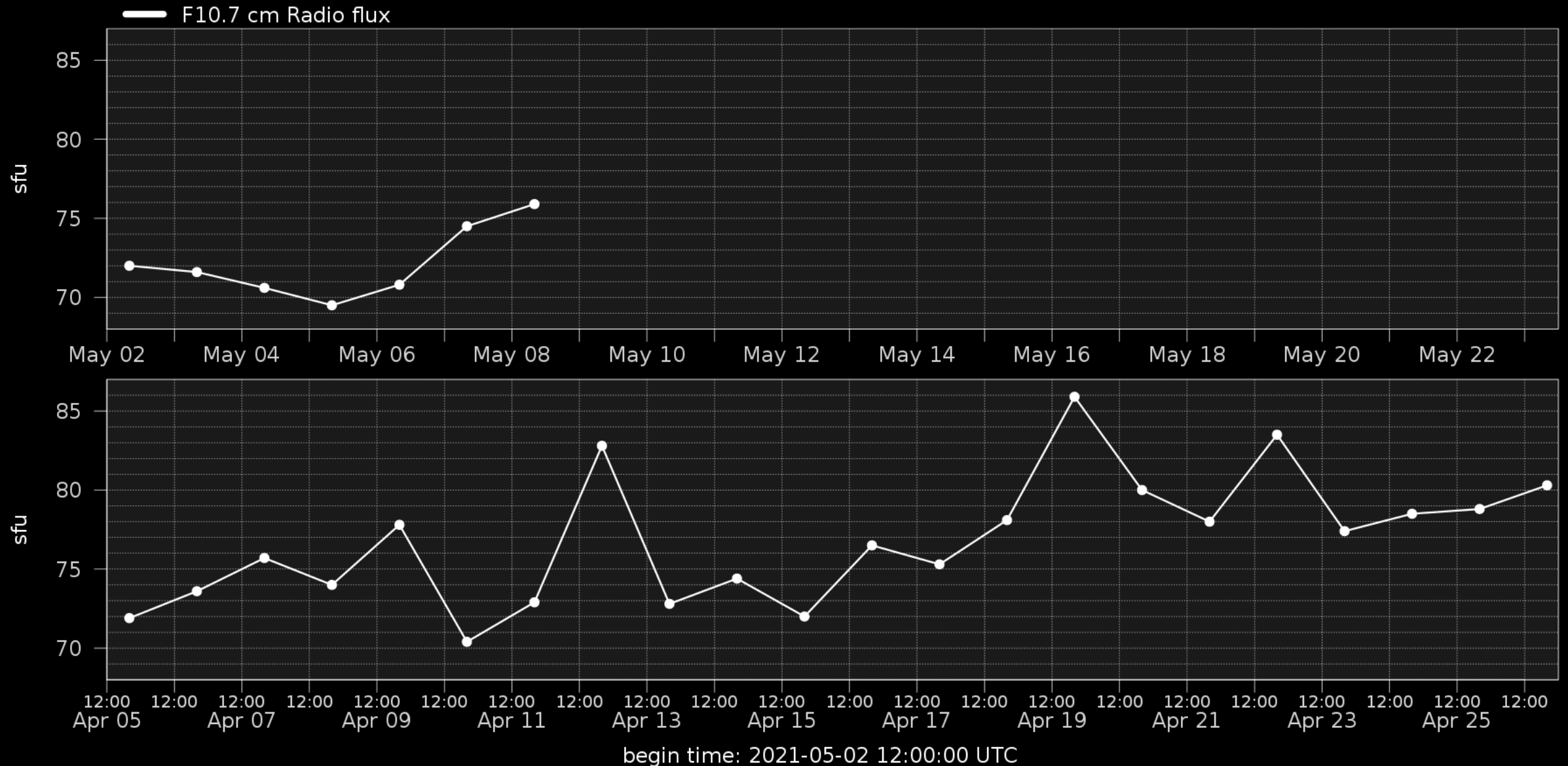
Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

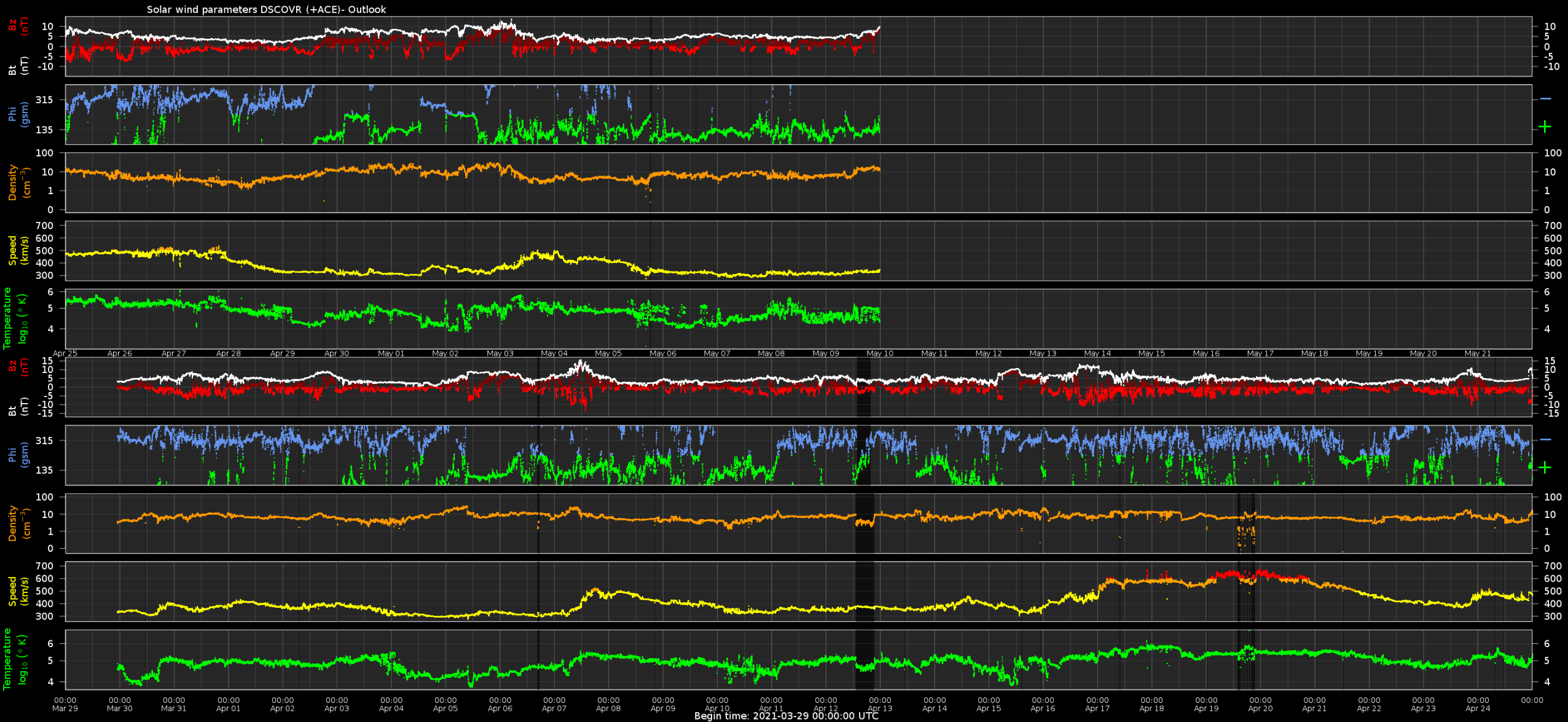
Outlook: Solar activity



Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



SIDC Space Weather Briefing

See you at our next briefing!

Or visit us at www.sidc.be



Solar Influences
Data analysis Centre
www.sidc.be