

SIDC Space Weather Briefing

26 May 2024-02 June 2024

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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 2024-05-26 12:00 to 2024-06-02 23:59

Active regions	15 ARs on disk over the week: NOAA AR 3697 was the most active
Flares	# C-class flare: 44 # M-class flare: 10 # X-class flare: 5
Coronal Holes	Small positive polarity CH
CMEs	Two CMEs detected with possible Earth directed components

Proton flux	Nominal levels below 10 pfu threshold
Electron flux	Nominal levels below 1000 pfu threshold

Solar wind and geomagnetic conditions

ICMEs	None observed
Solar wind conditions	B : 0.37 - 10.97 nT //Bz: -8.76 nT to 8.24 nT //Speed: 310 – 420 km/s
Geomagnetic conditions	max KBel: 4, max Kp(NOAA): 5-, Minor storm conditions reached for one interval

All Quiet Alert: Not all quiet

Solar Activity

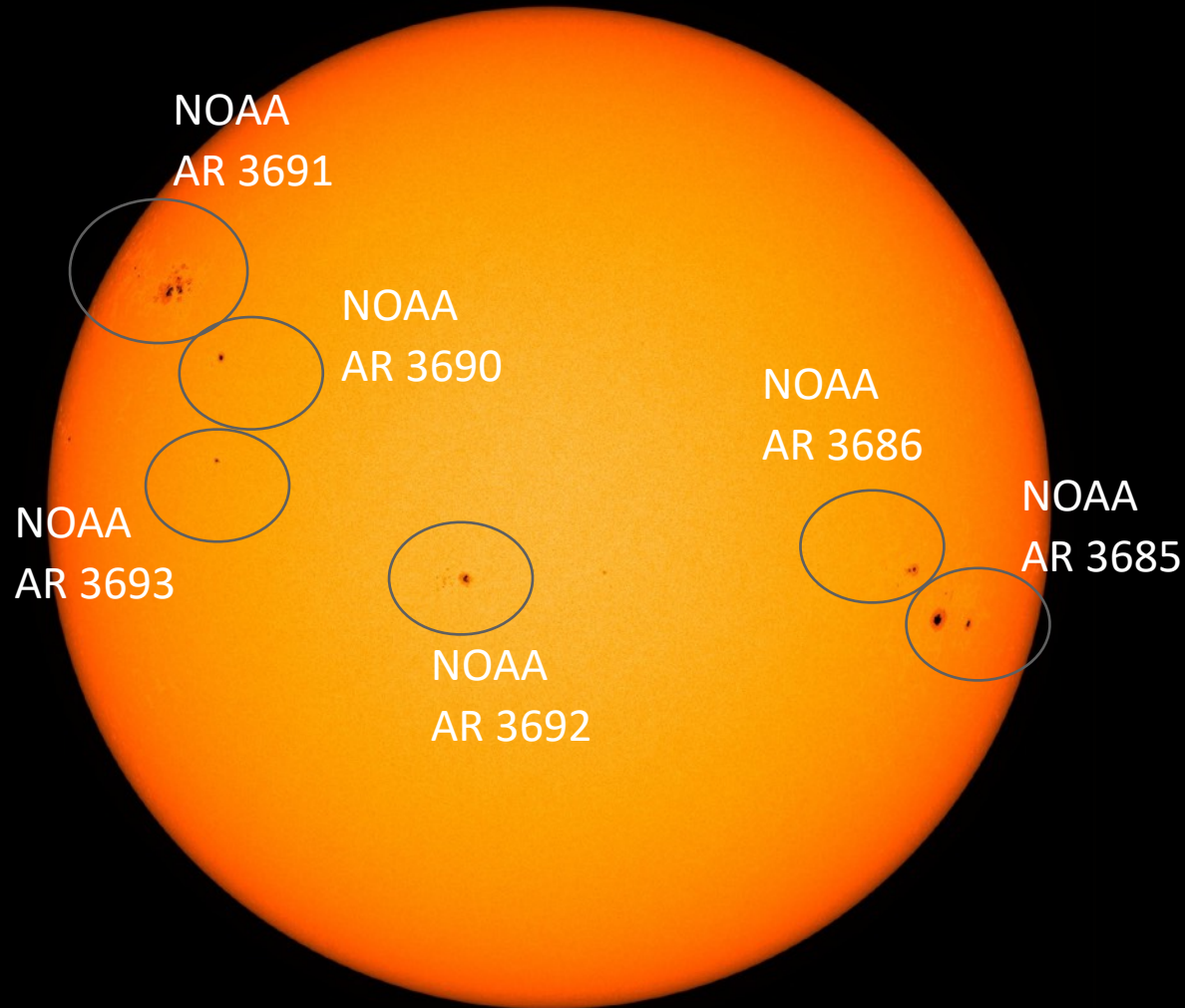


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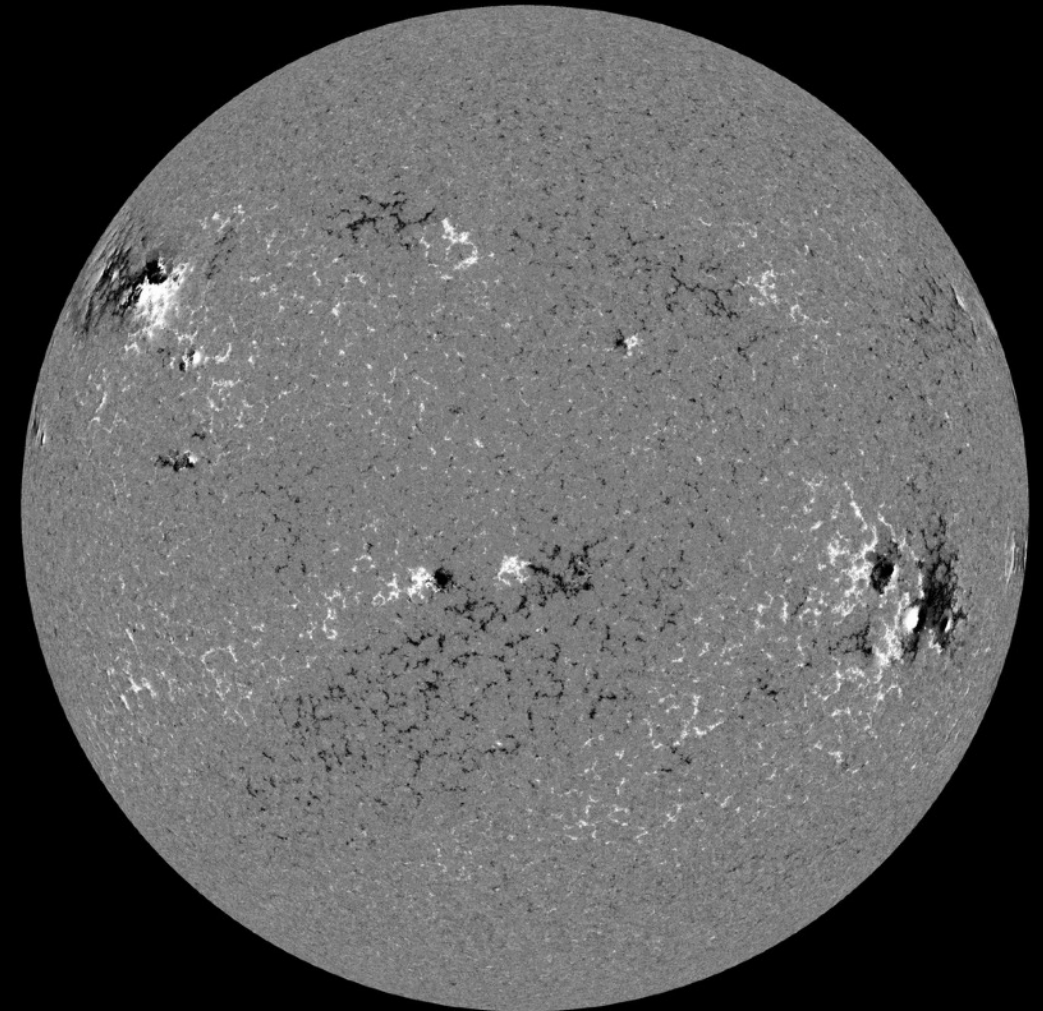
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Solar active regions

SDO/HMI White Light 2024-05-26

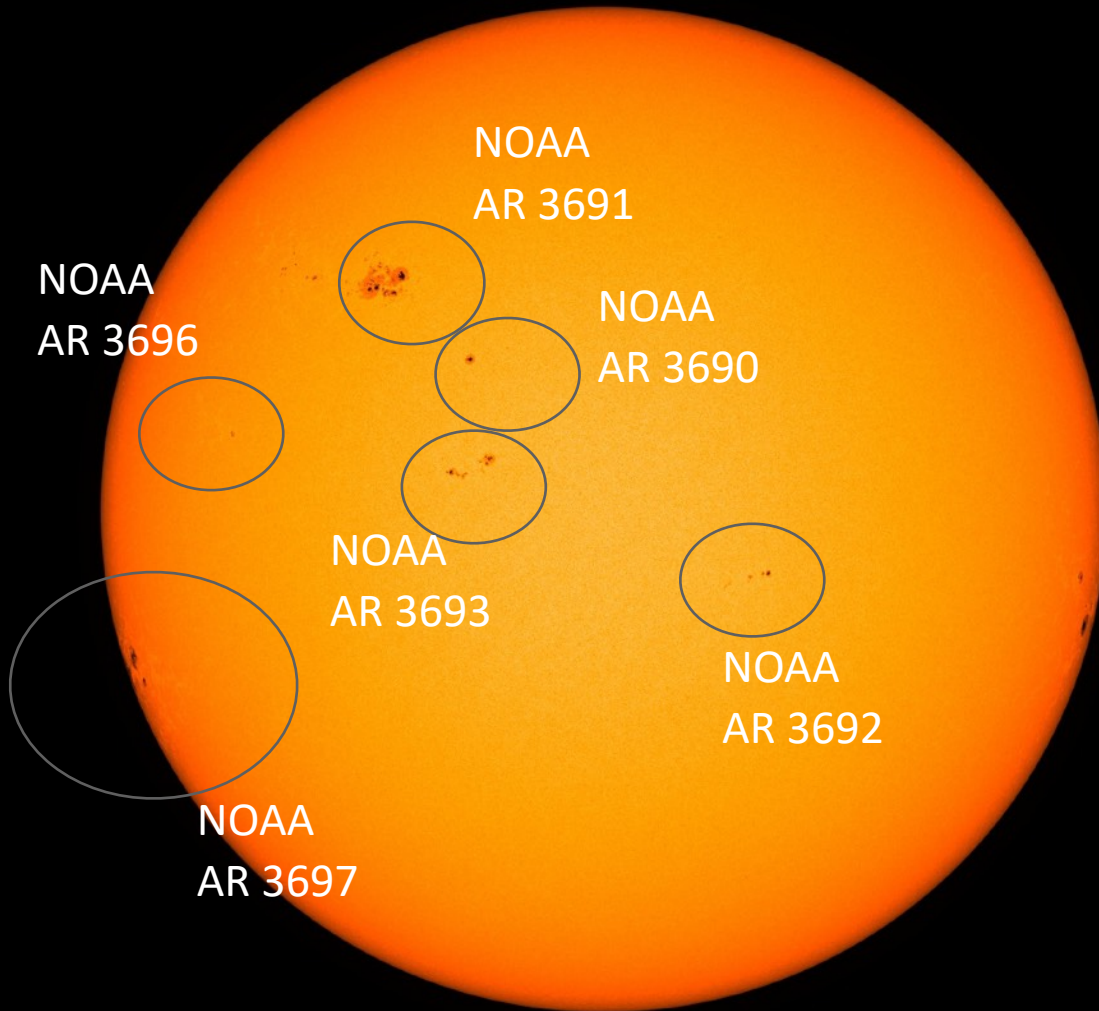


SDO/HMI Magnetogram 2024-05-26



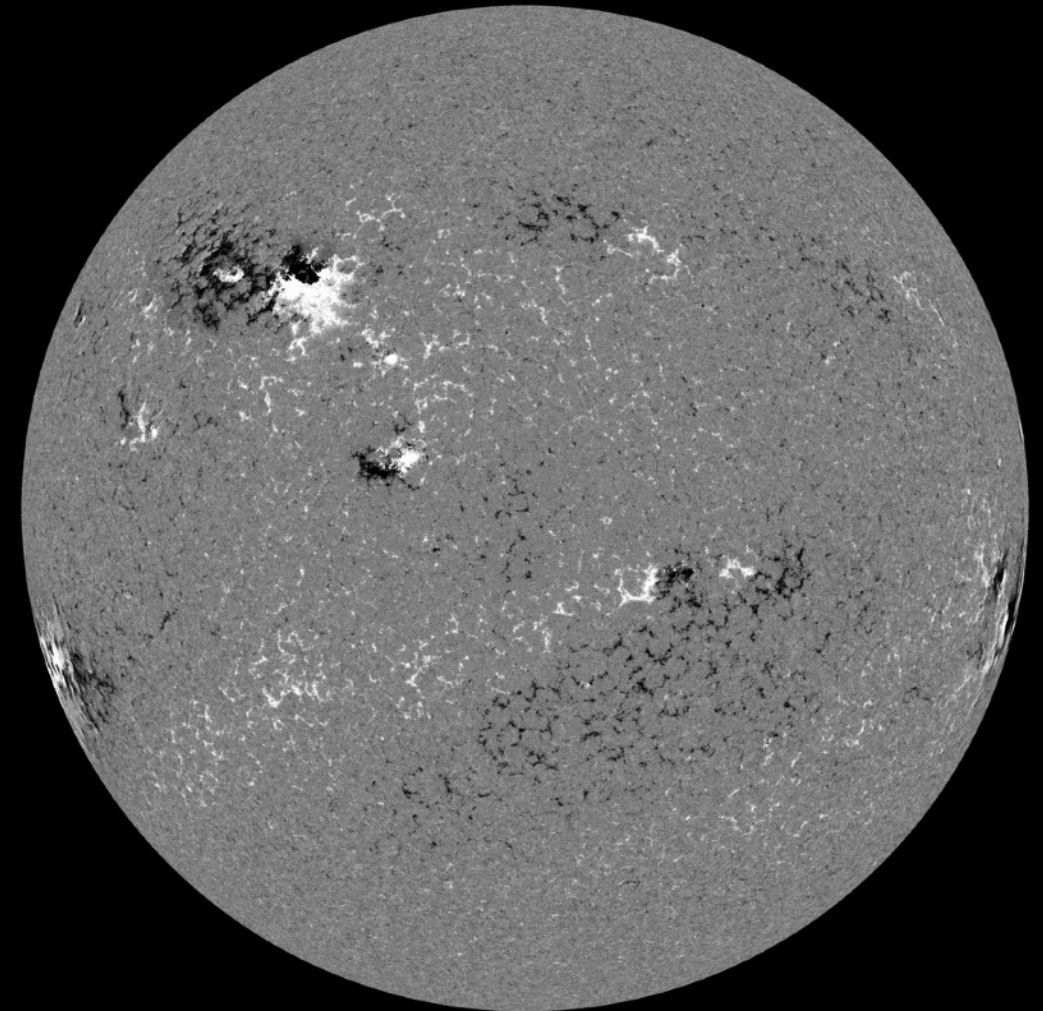
Solar active regions

SDO/HMI White Light 2024-05-28



SDO/HMI Quick-Look Continuum: 20240528_114500

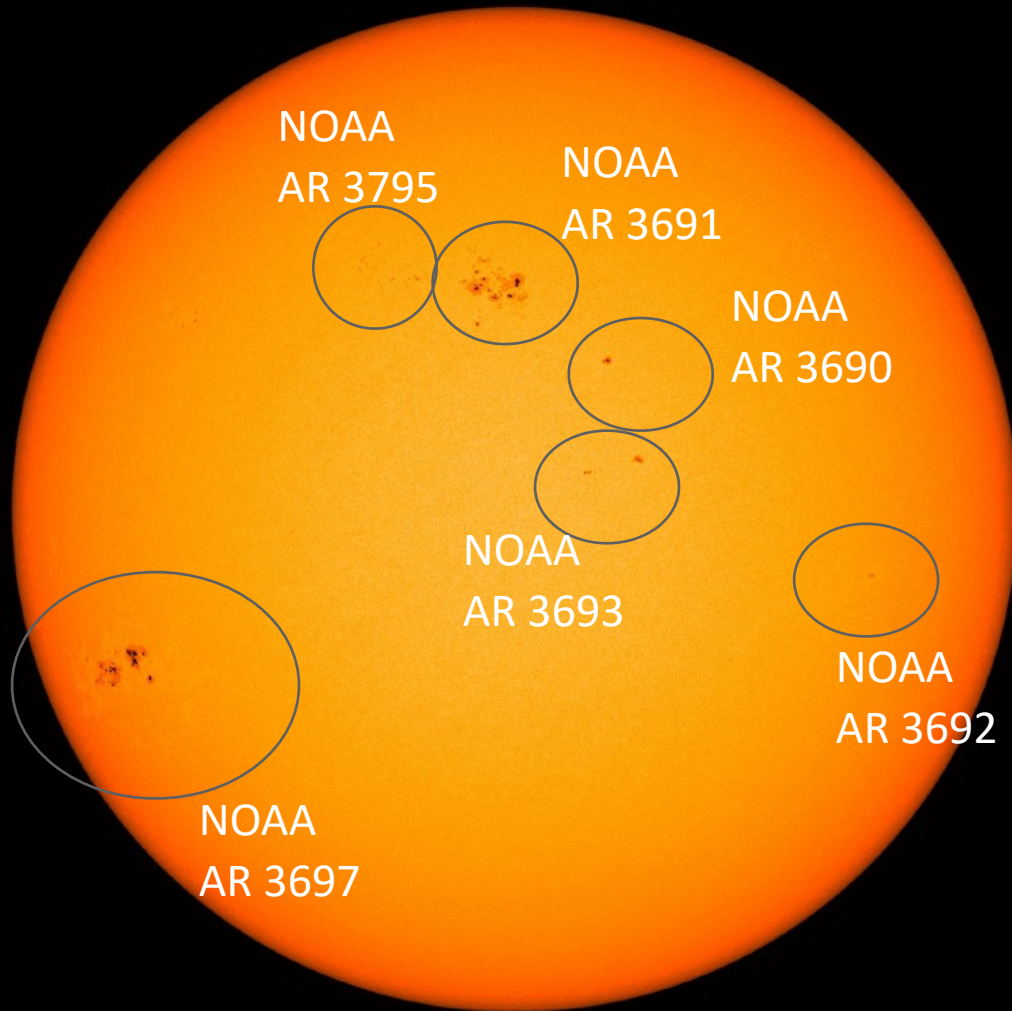
SDO/HMI Magnetogram 2024-05-28



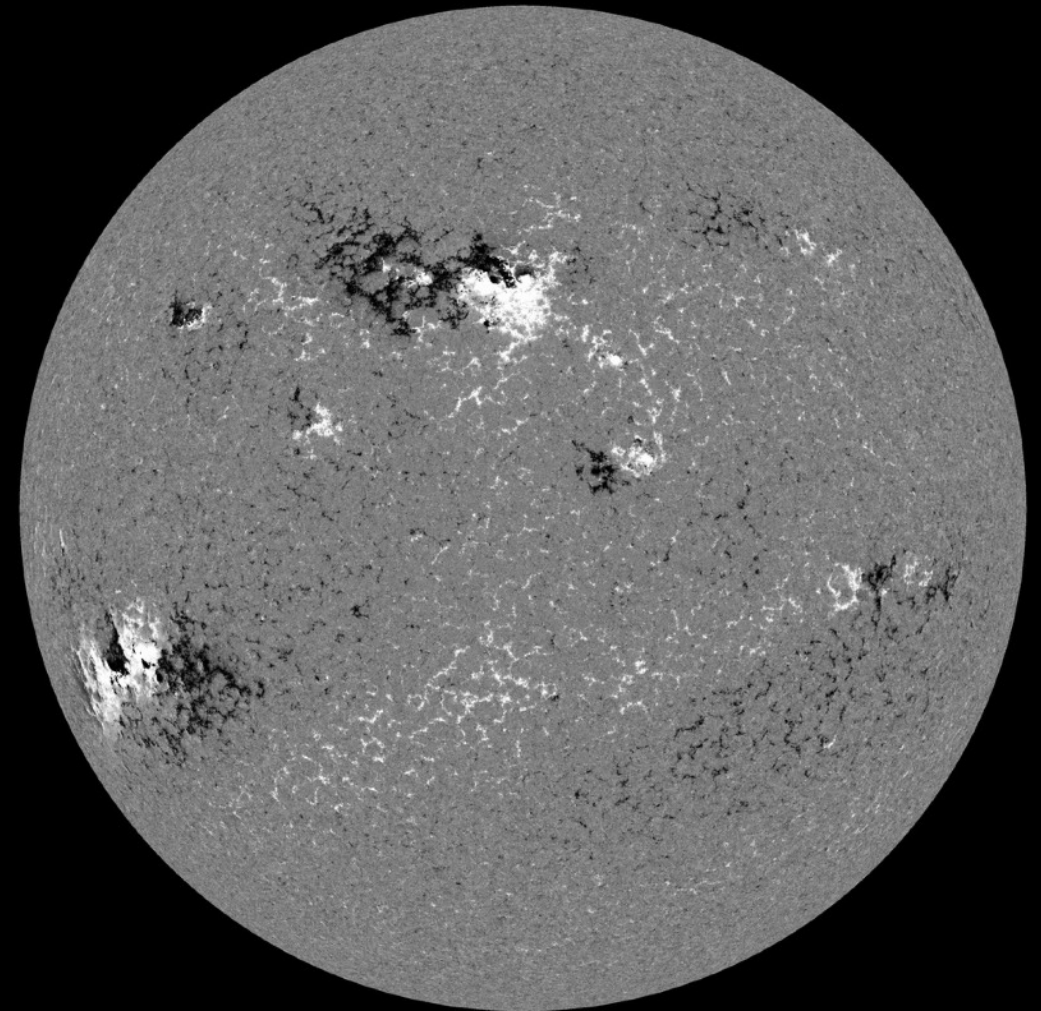
SDO/HMI Quick-Look Magnetogram: 20240528_114500

Solar active regions

SDO/HMI White Light 2024-05-30

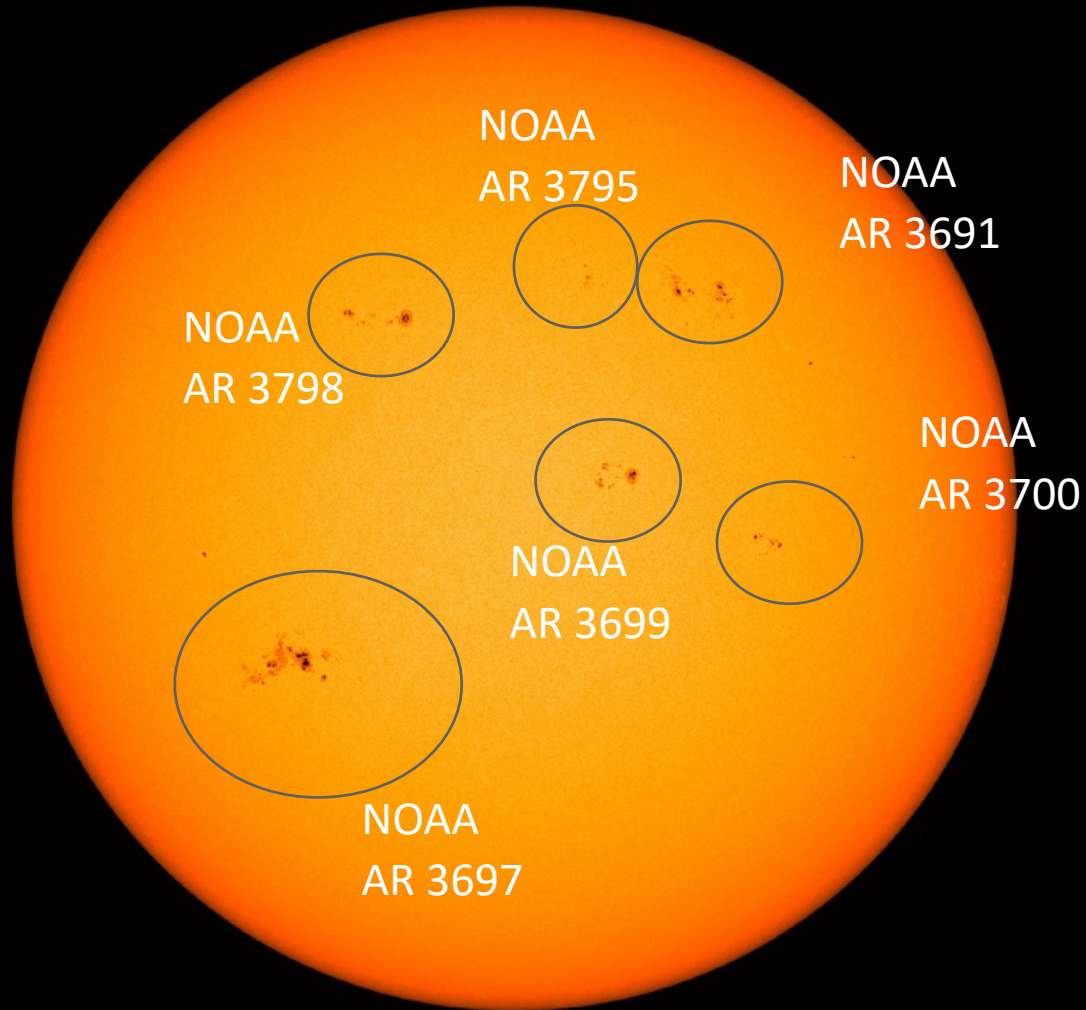


SDO/HMI Magnetogram 2024-05-30

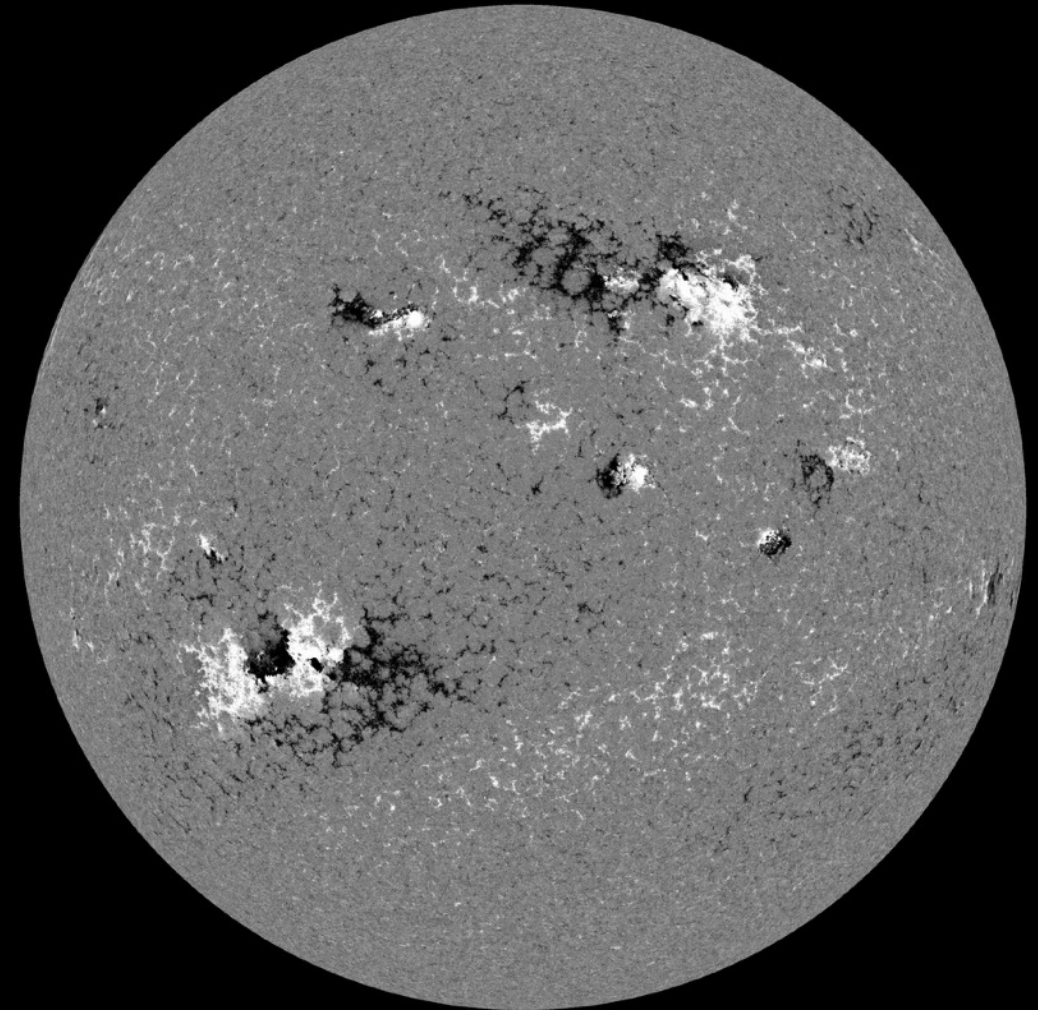


Solar active regions

SDO/HMI White Light 2024-06-01

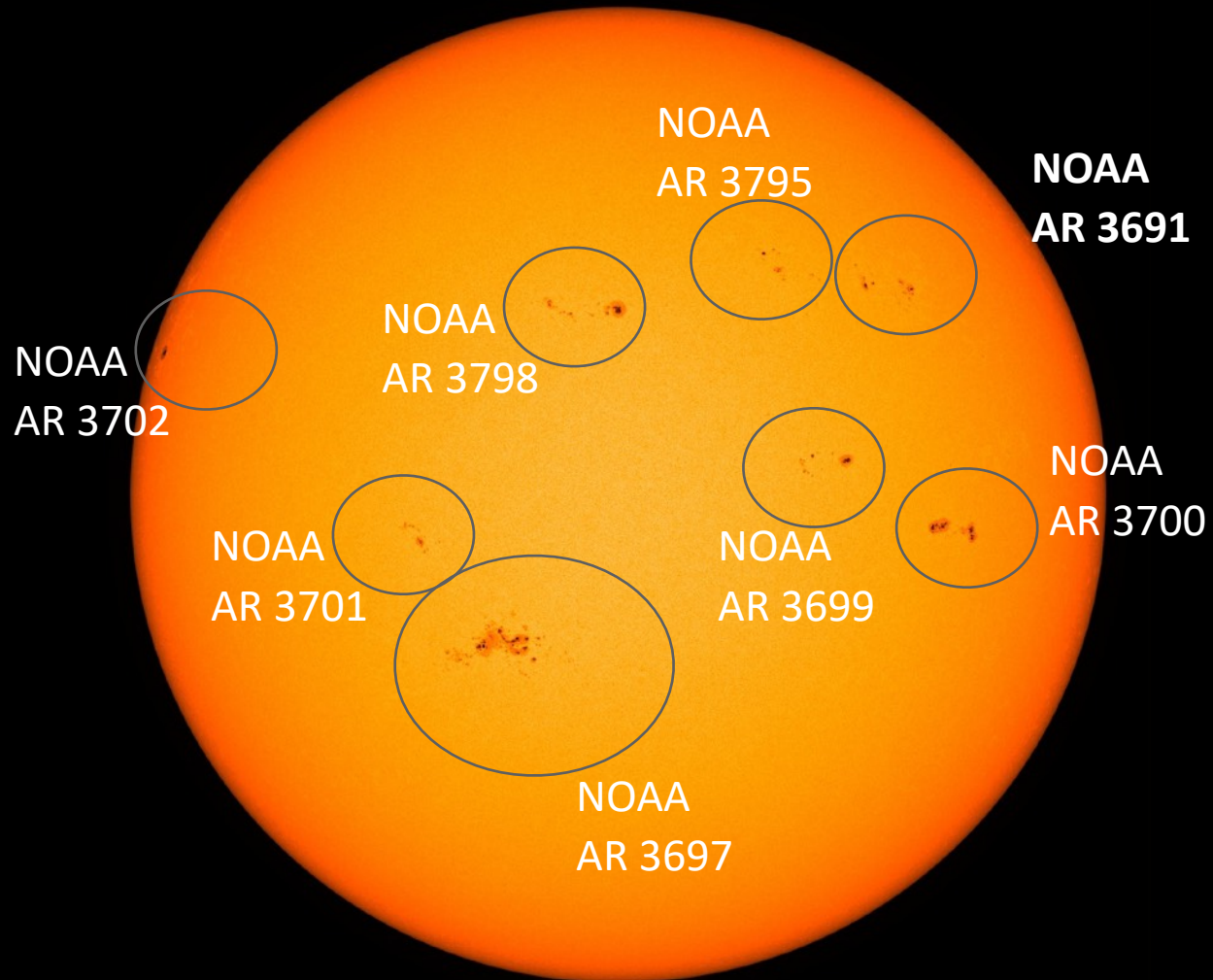


SDO/HMI Magnetogram 2024-06-01



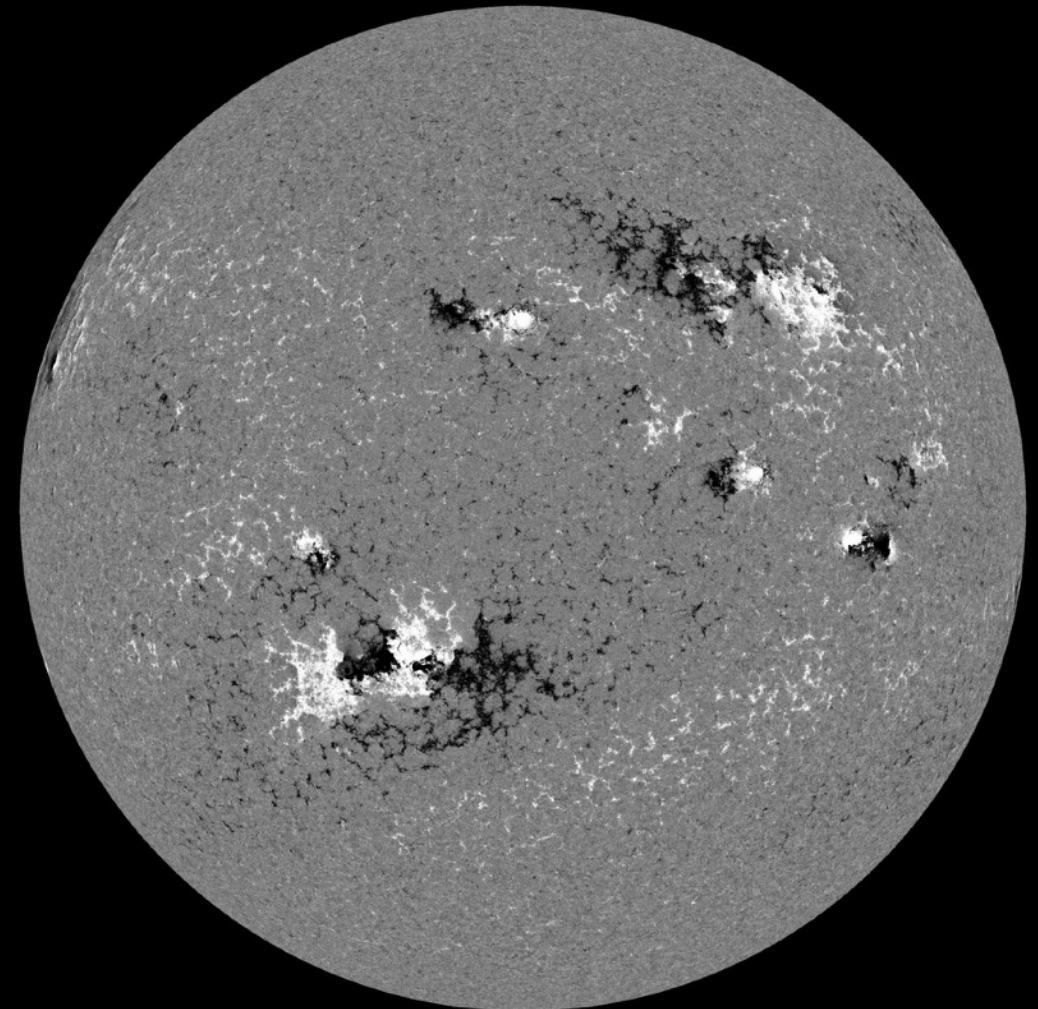
Solar active regions

SDO/HMI White Light 2024-06-02



SDO/HMI Quick-Look Continuum: 20240602_114500

SDO/HMI Magnetogram 2024-06-02



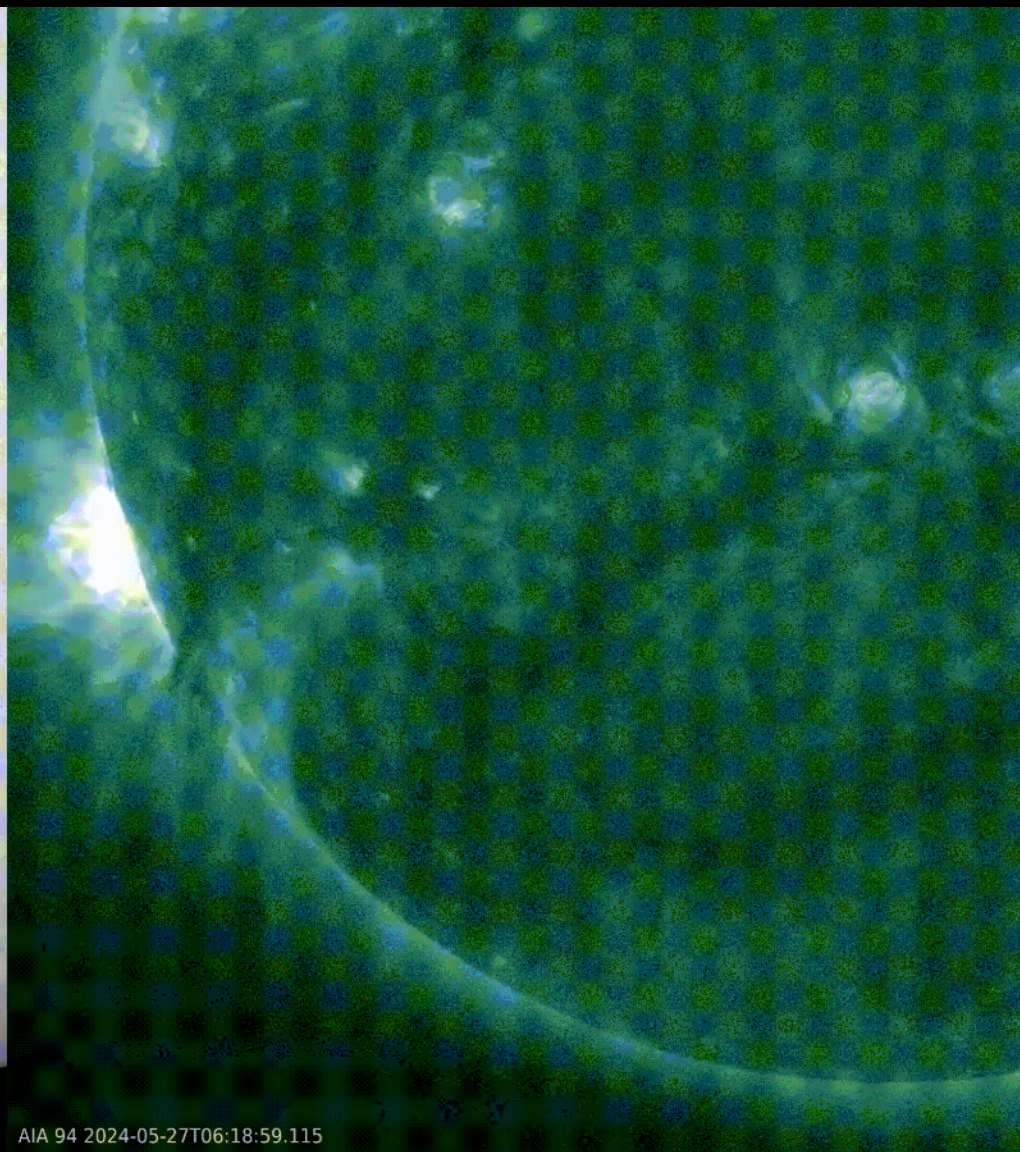
SDO/HMI Quick-Look Magnetogram: 20240602_114500

NOAA AR 3797 (returning region NOAA 3664)

SDO/HMI White Light



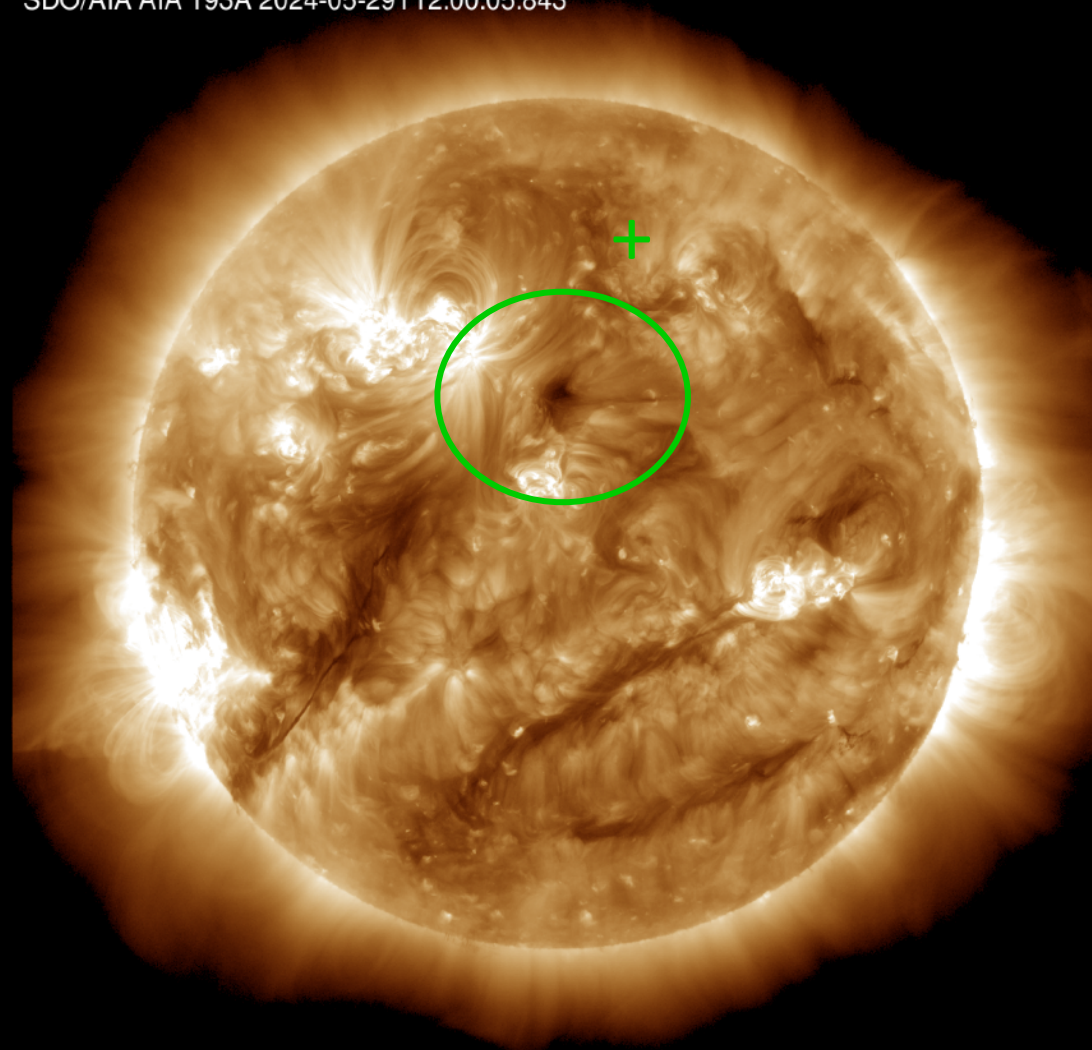
SDO/AIA 94



Coronal holes

SDO/AIA 19.3 nm 2024-05-29

SDO/AIA AIA 193Å 2024-05-29T12:00:05.843



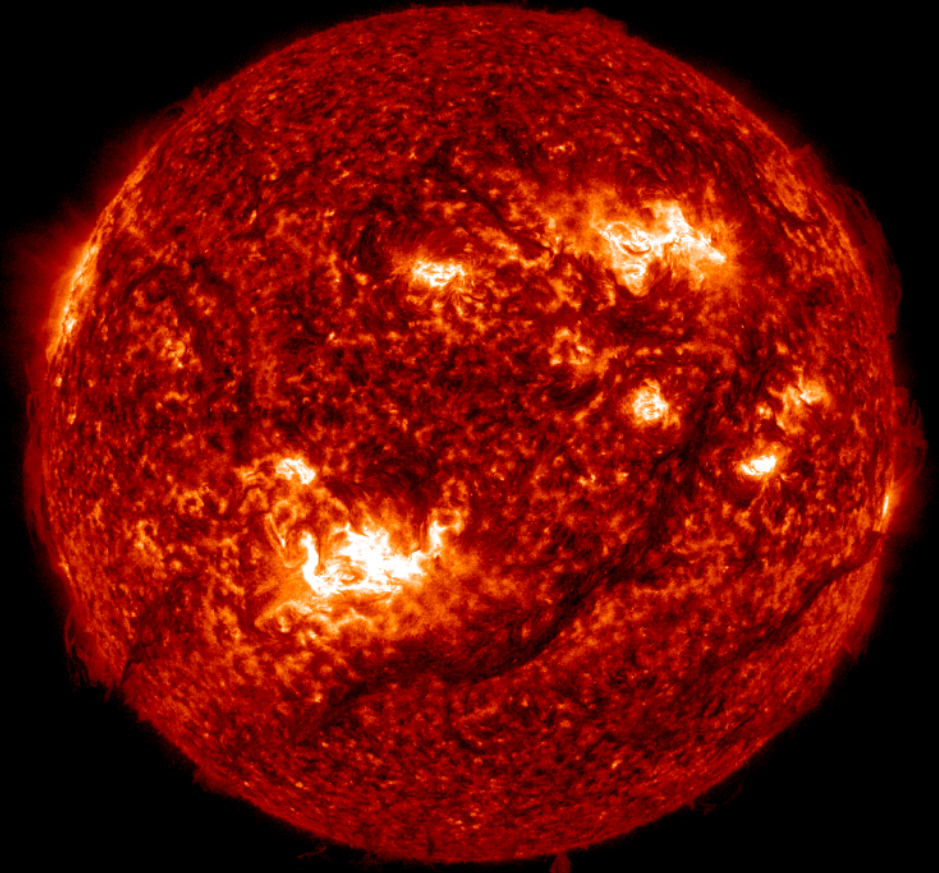
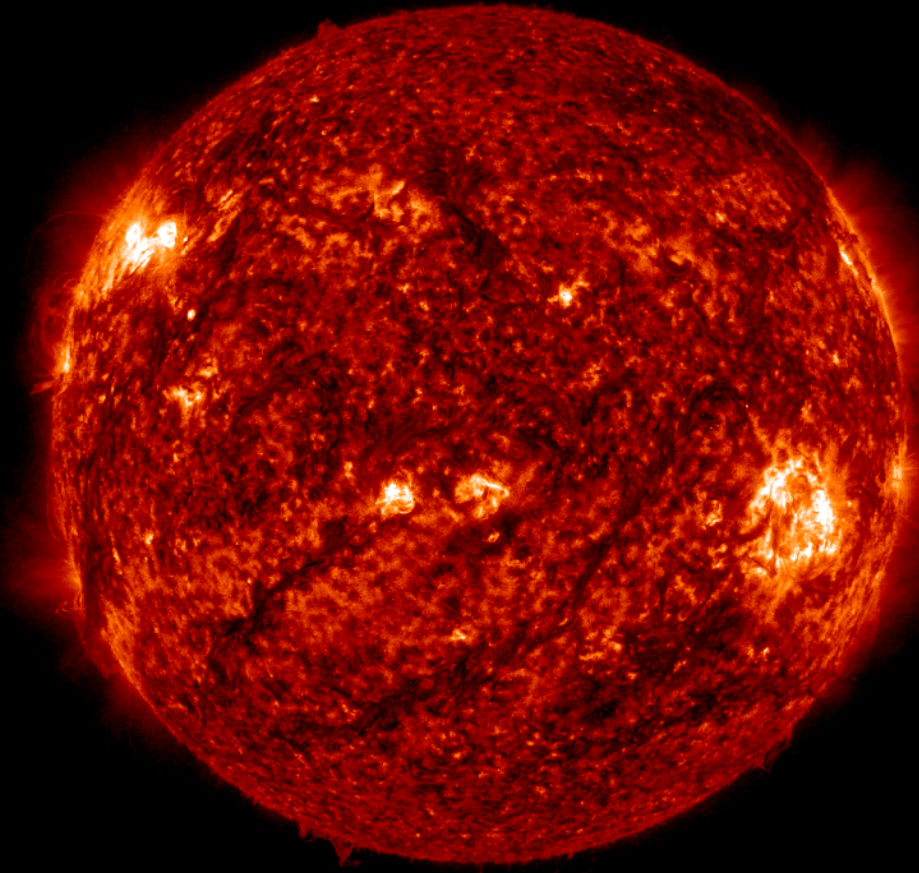
Filaments

SDO/AIA 30.4 nm 2024-05-26

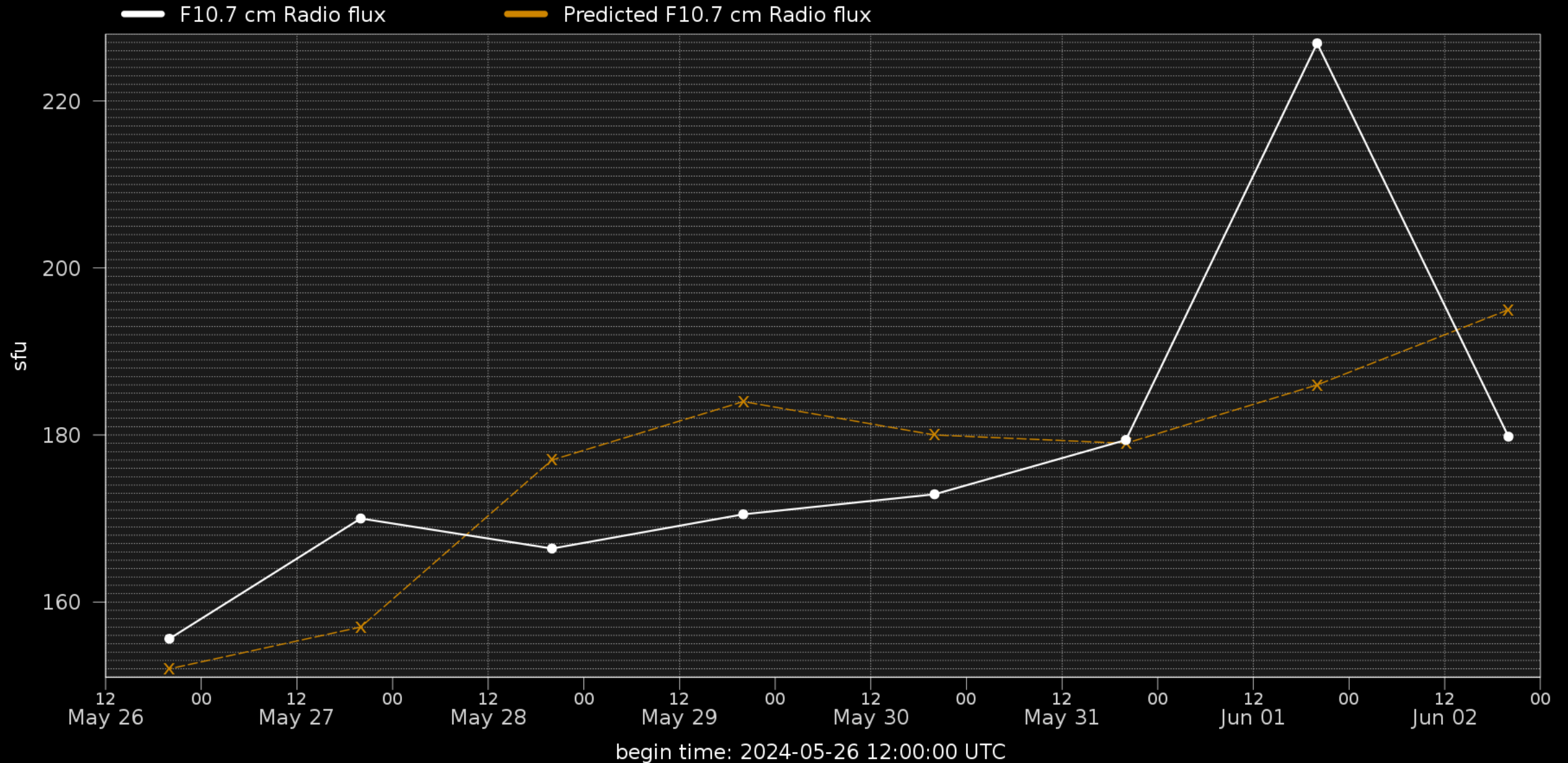
SDO/AIA AIA 304Å 2024-05-26T12:00:06.580

SDO/AIA 30.4 nm 2024-06-02

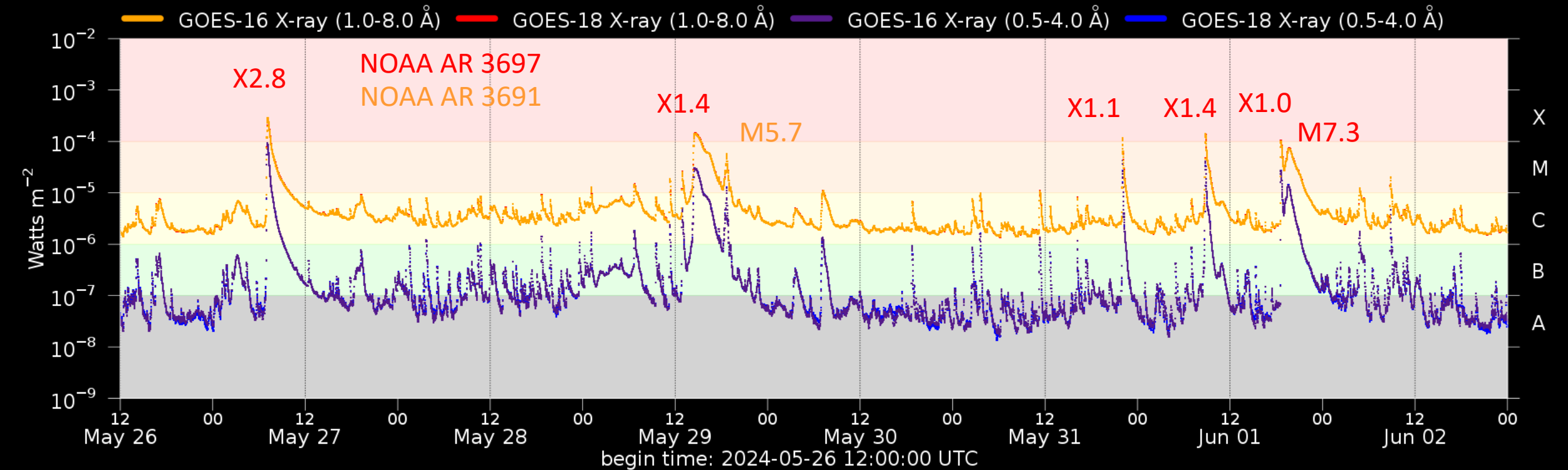
SDO/AIA AIA 304Å 2024-06-02T12:00:06.580



Solar F10.7cm radio flux



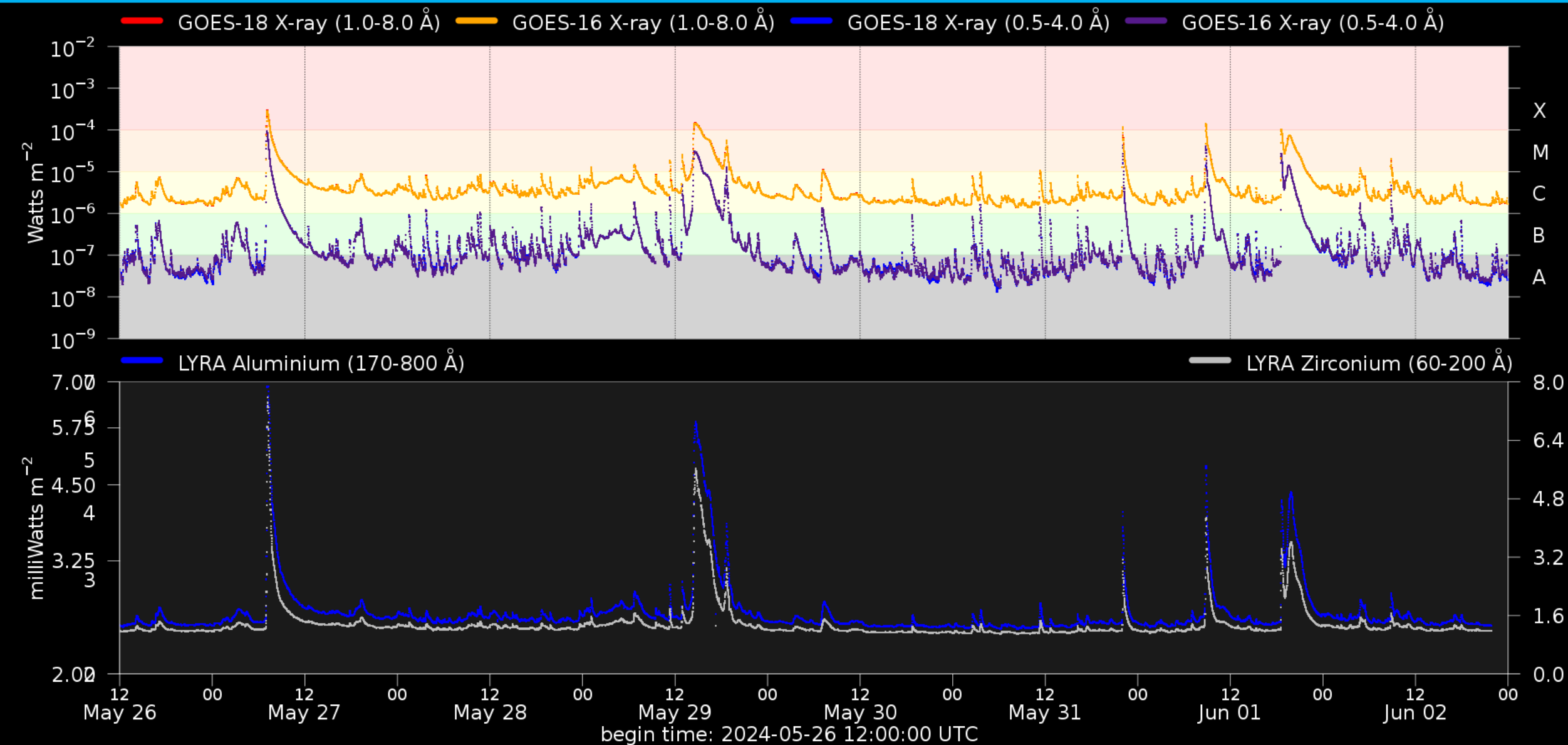
Flaring activity



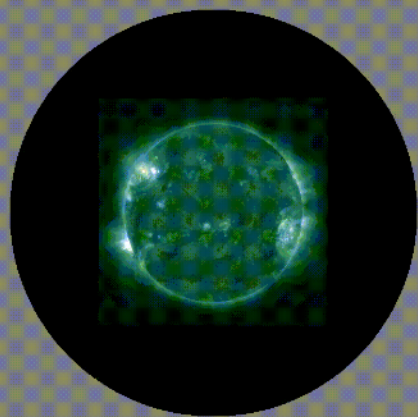
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2024-05-26	2024-05-27	2024-05-28	2024-05-29	2024-05-30	2024-05-31	2024-06-01	2024-06-02
Probability (%)	90 20 05	99 50 10	99 50 15	99 60 25	99 75 35	99 70 30	99 75 35	99 75 40
Observed (#)	03 00 01	07 00 00	10 03 00	01 04 01	04 01 00	09 00 02	08 02 01	02 00 00

Solar X-Ray and UV flux

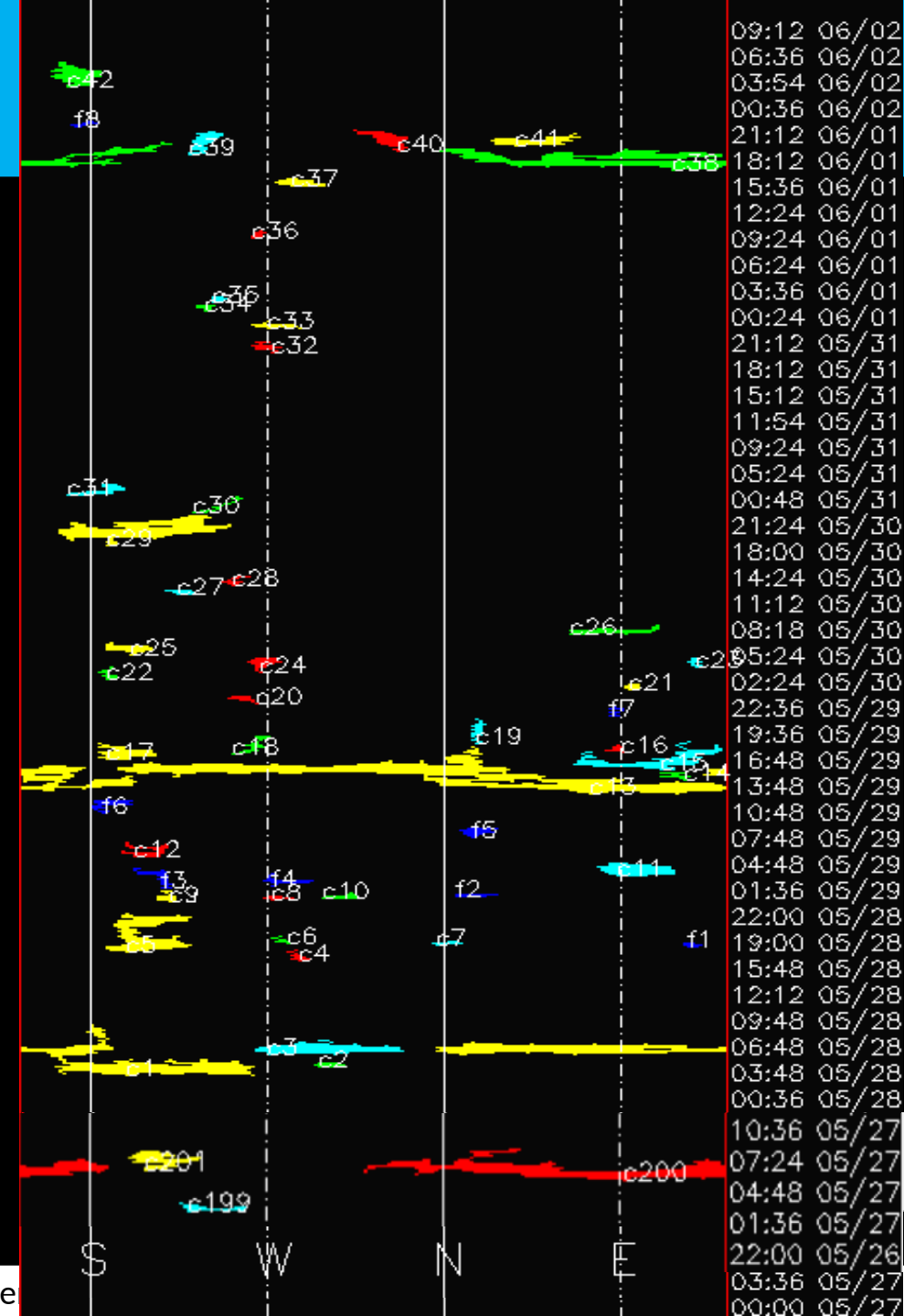


Coronal Mass Ejections

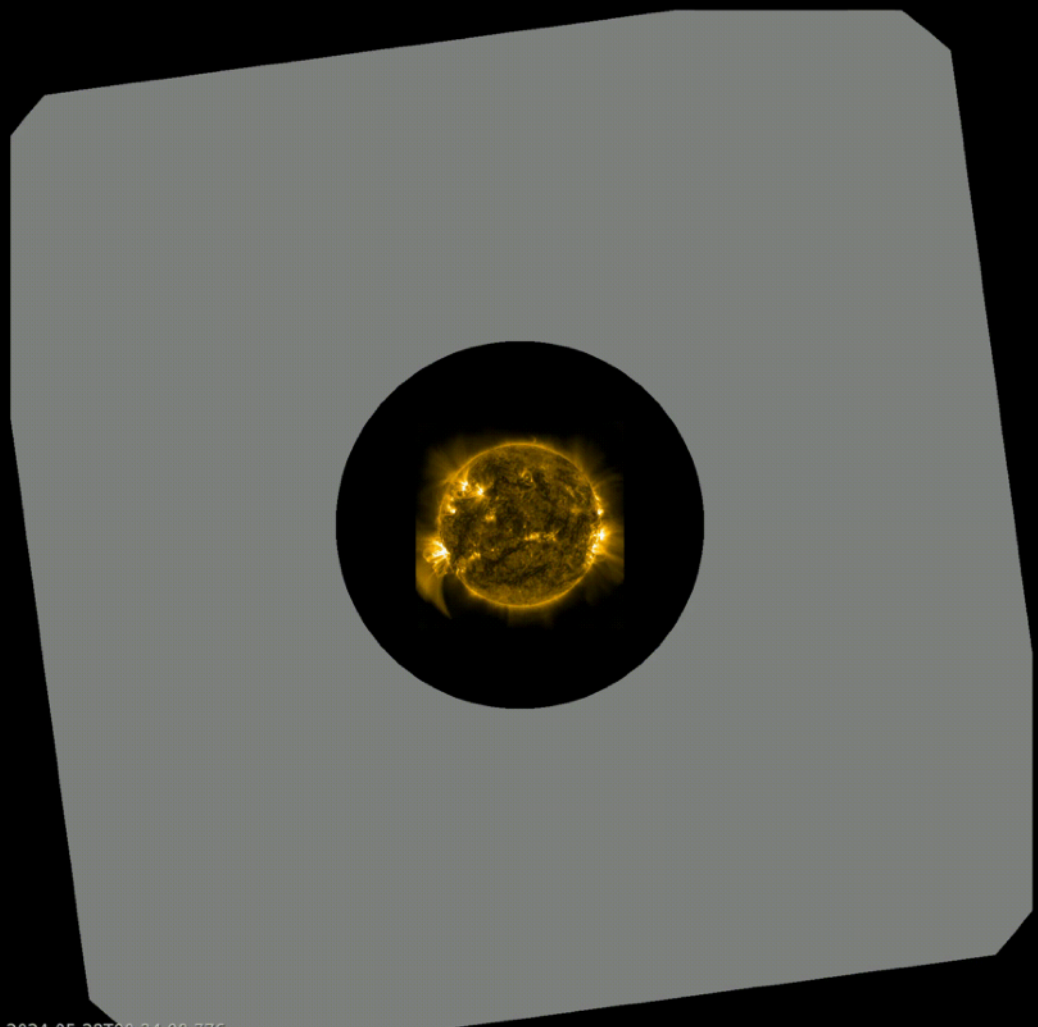


Halo CME
originating on
east limb ->
not Earth
directed
(except for
possible
shock)

LASCO-C2
data from
07:24 UTC
May.
Associated
with the X2.8
flare



Coronal Mass Ejections

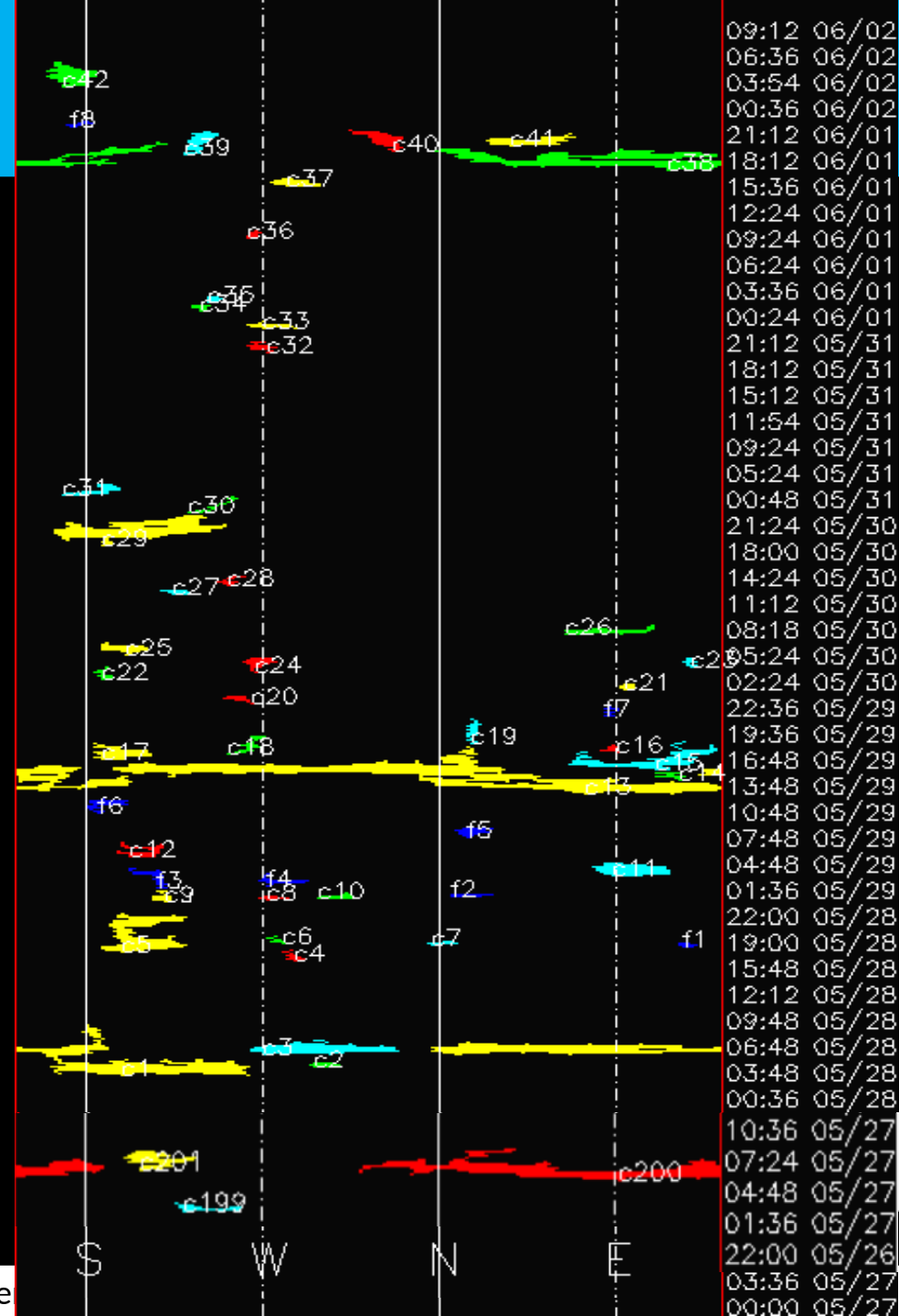


2024-05-28T00:24:08.776

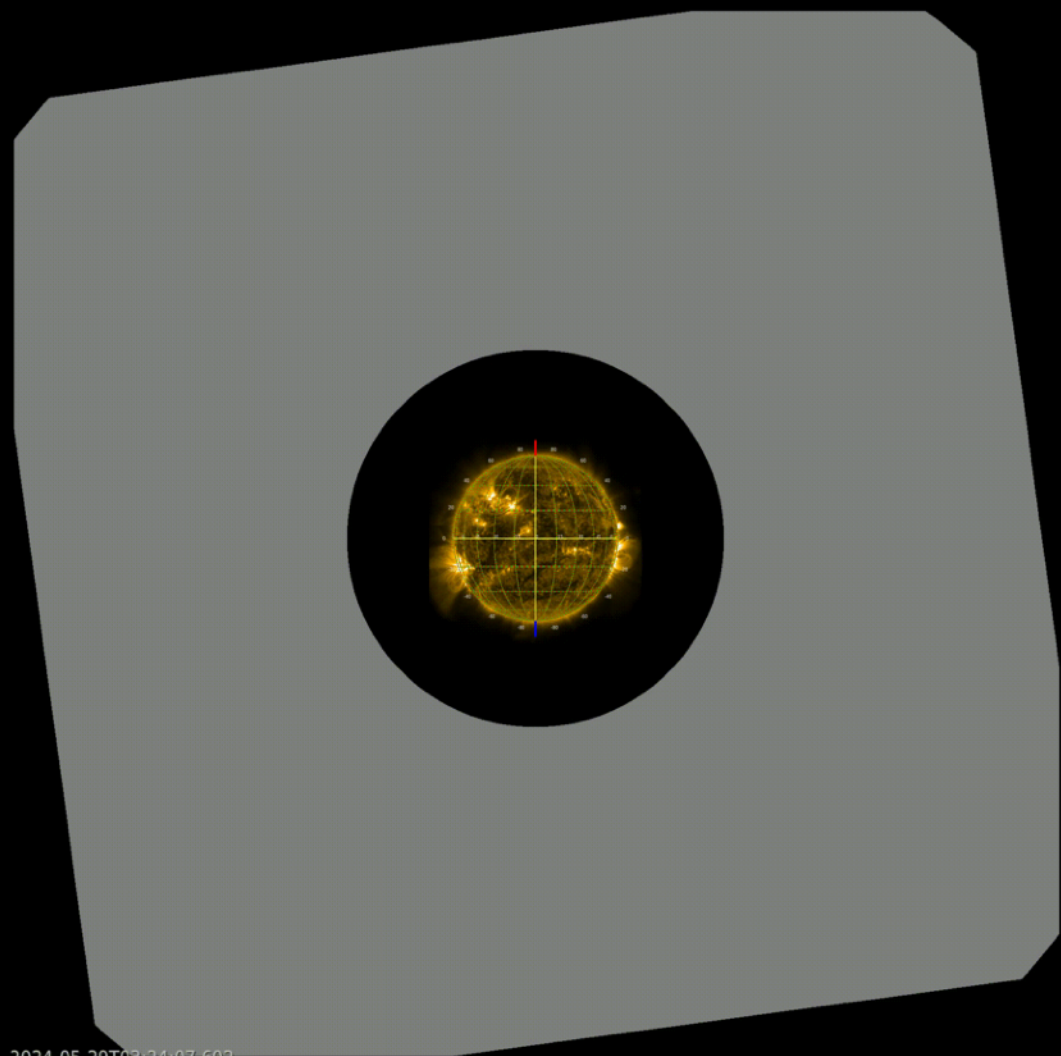
Faint Halo CME
Mainly to south
west.

In SOHO/LASCO-C2
from 05:24 UTC
May 28.

Determined to be
Back-sided – **not**
Earth directed



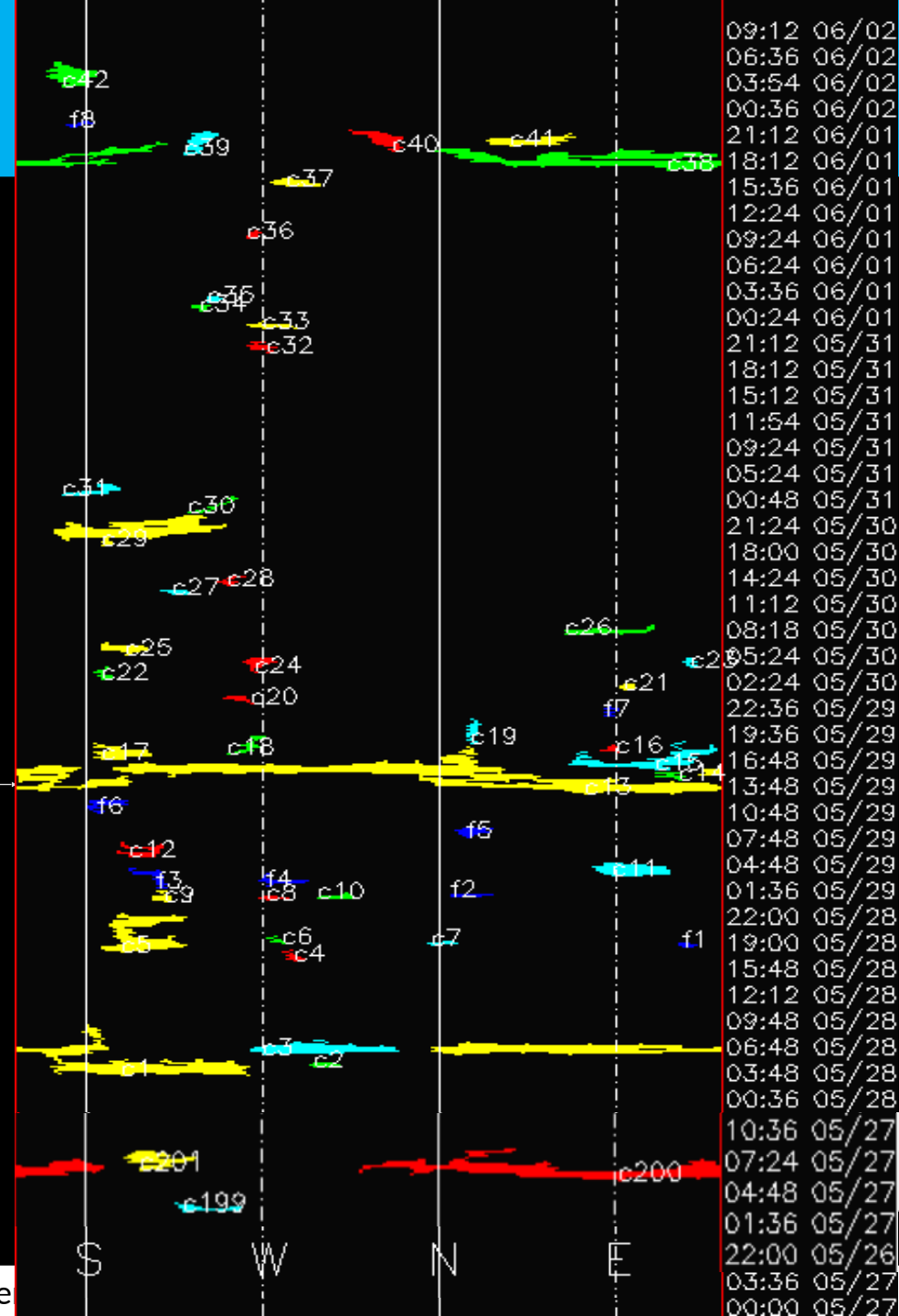
Coronal Mass Ejections



Partial Halo CME To
the East.
In LASCO/C2 from
14:48 UTC May
29
Speed over 600
km/s

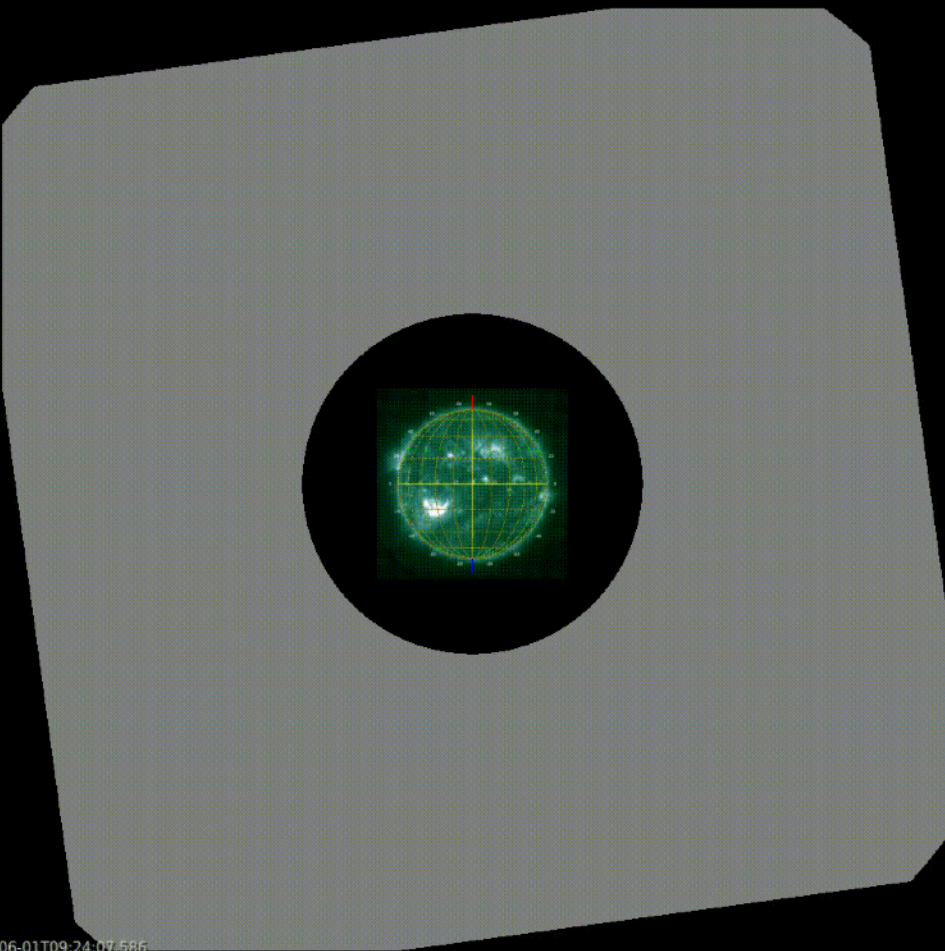
Related to the X1.4
flare with peak time
14:37 UTC May 29
from NOAA 3697

Glancing blow
predicted for June
01 but not
observed.



2024-05-29T03:24:07.602

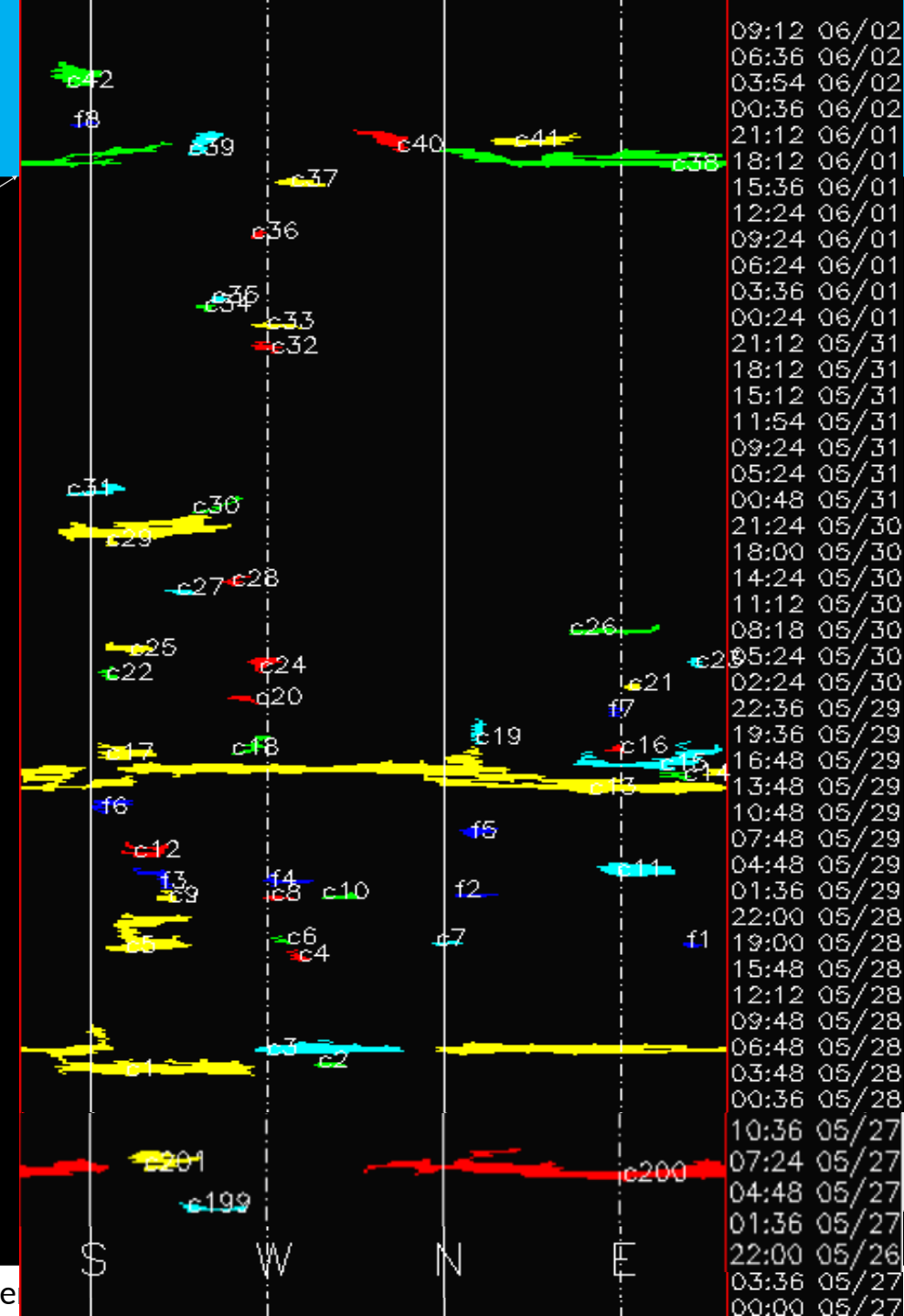
Coronal Mass Ejections



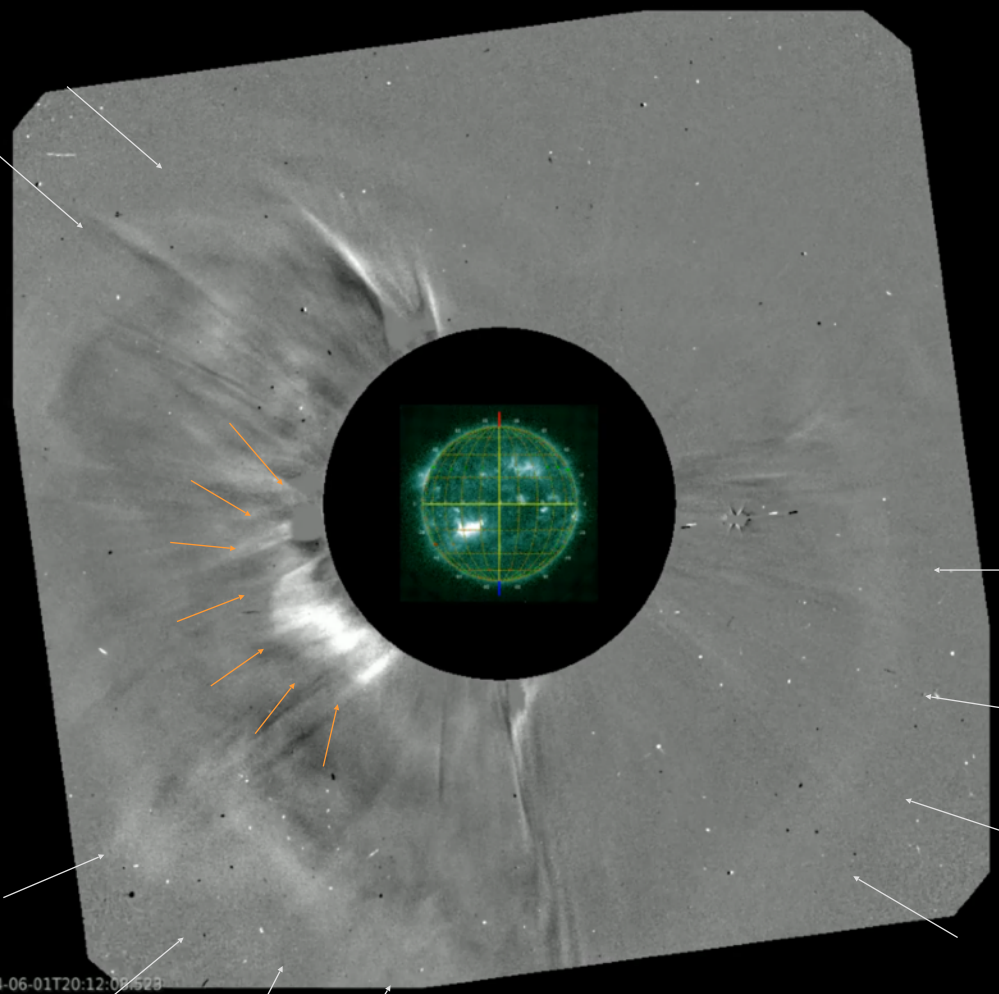
2024-06-01T09:24:07.586

Main Halo CME
Back-sided

In the wake of the
Halo a second CME
to the South-East
associated with
M7.3 flare from
NOAA 3797
Earth directed
component -
expected glancing
blow on June 04



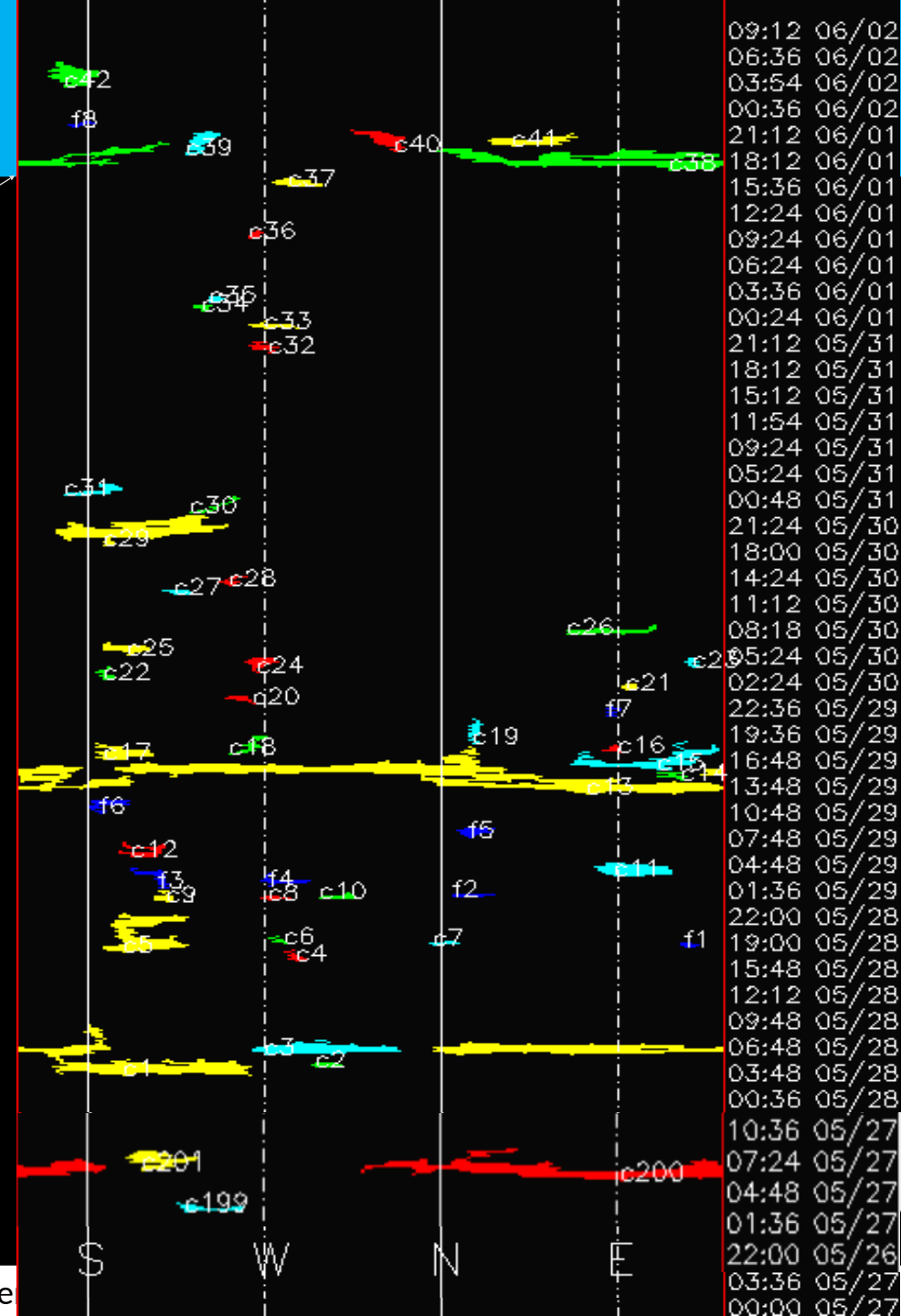
Coronal Mass Ejections



Main Halo CME
Back-sided

In the wake of the
Halo CME a **second
CME** to the South-
East associated with
M7.3 flare from
NOAA 3797 can be
seen.

Analysed to have an
Earth directed
component -
expected glancing
blow on June 04



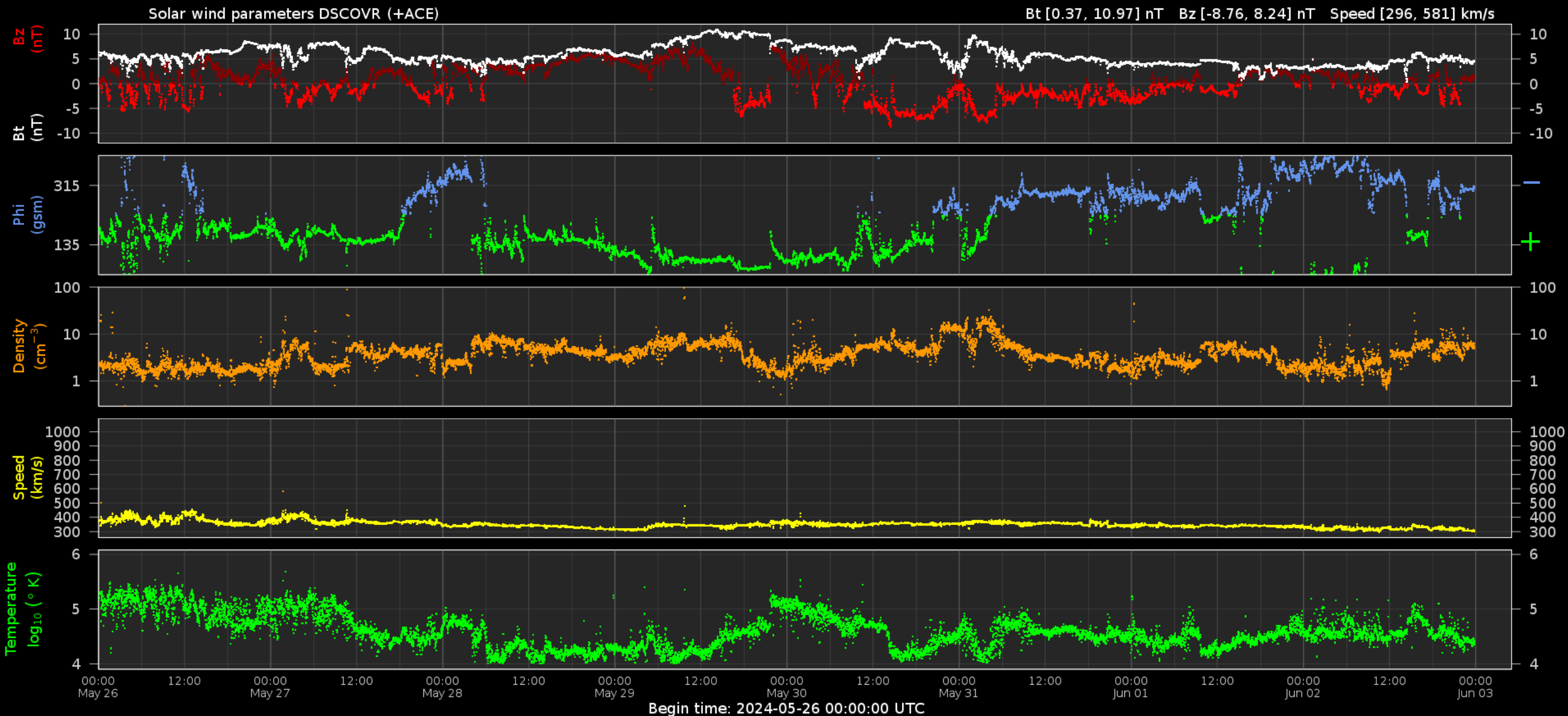
Solar Wind and Geomagnetic Activity



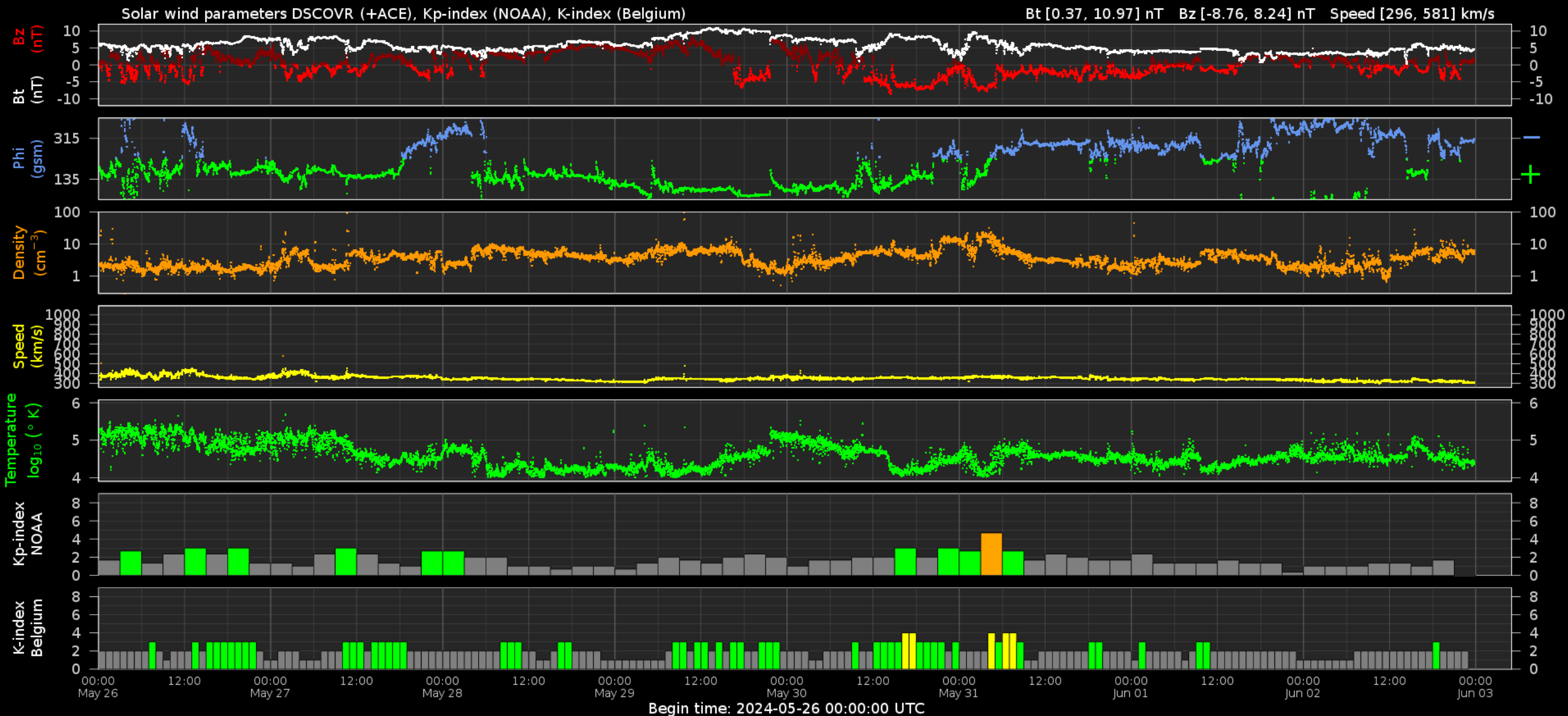
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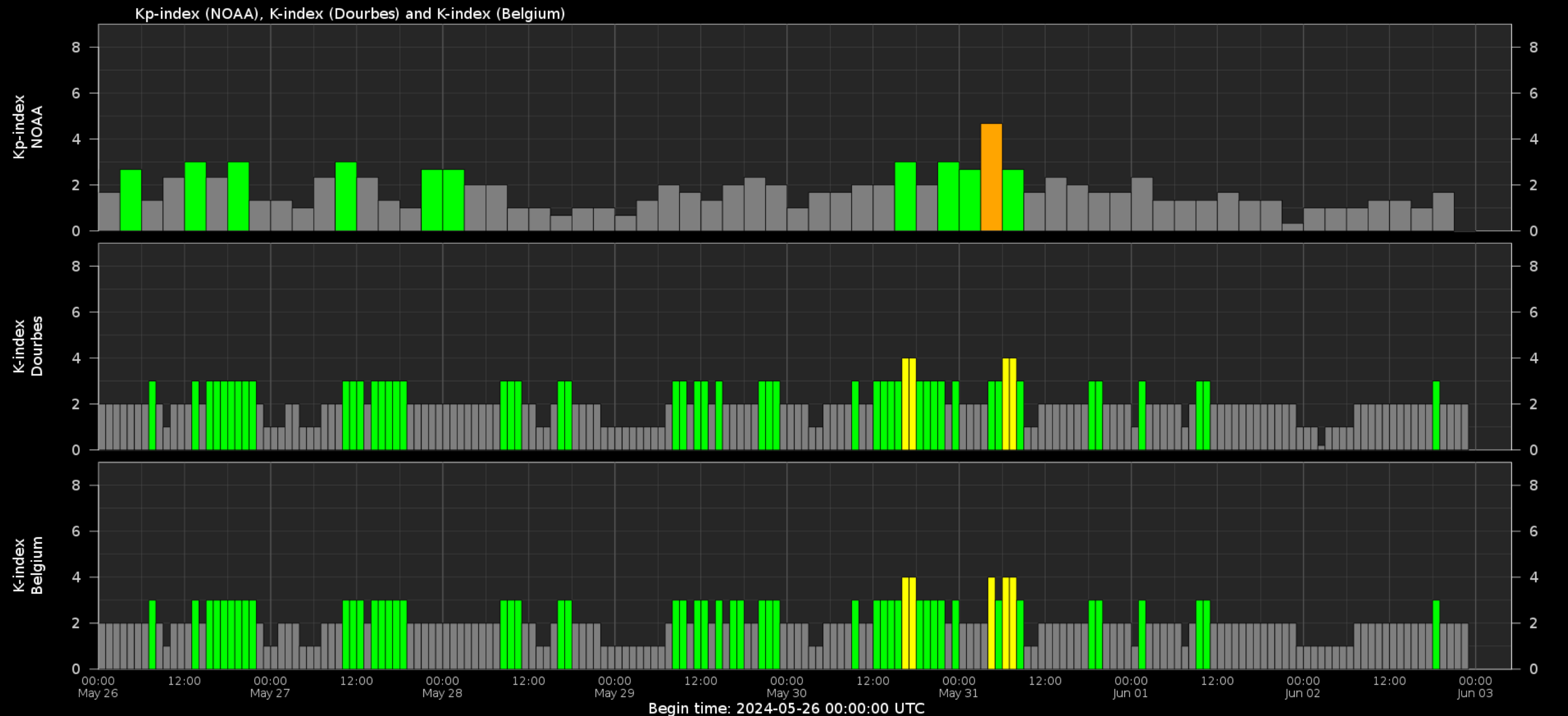
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



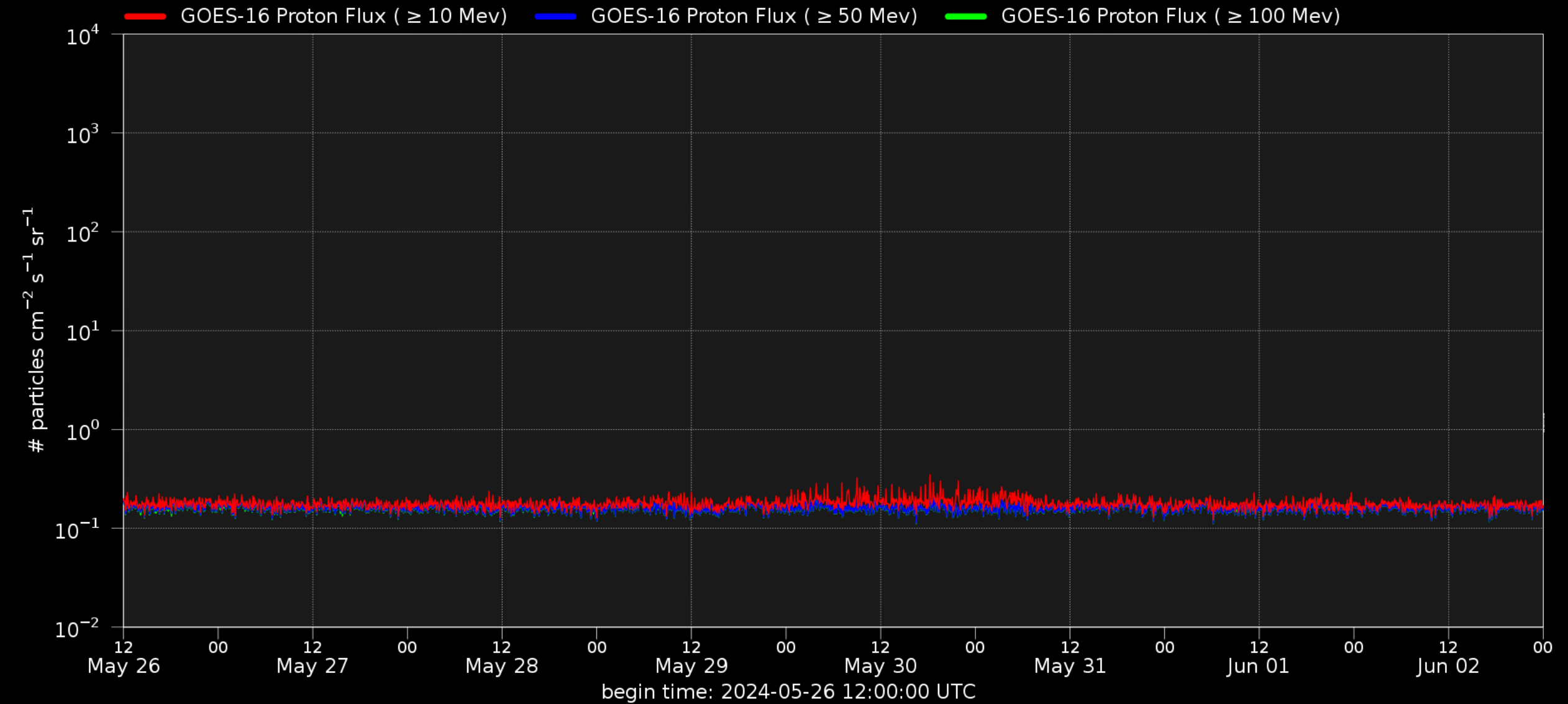
Energetic Particles



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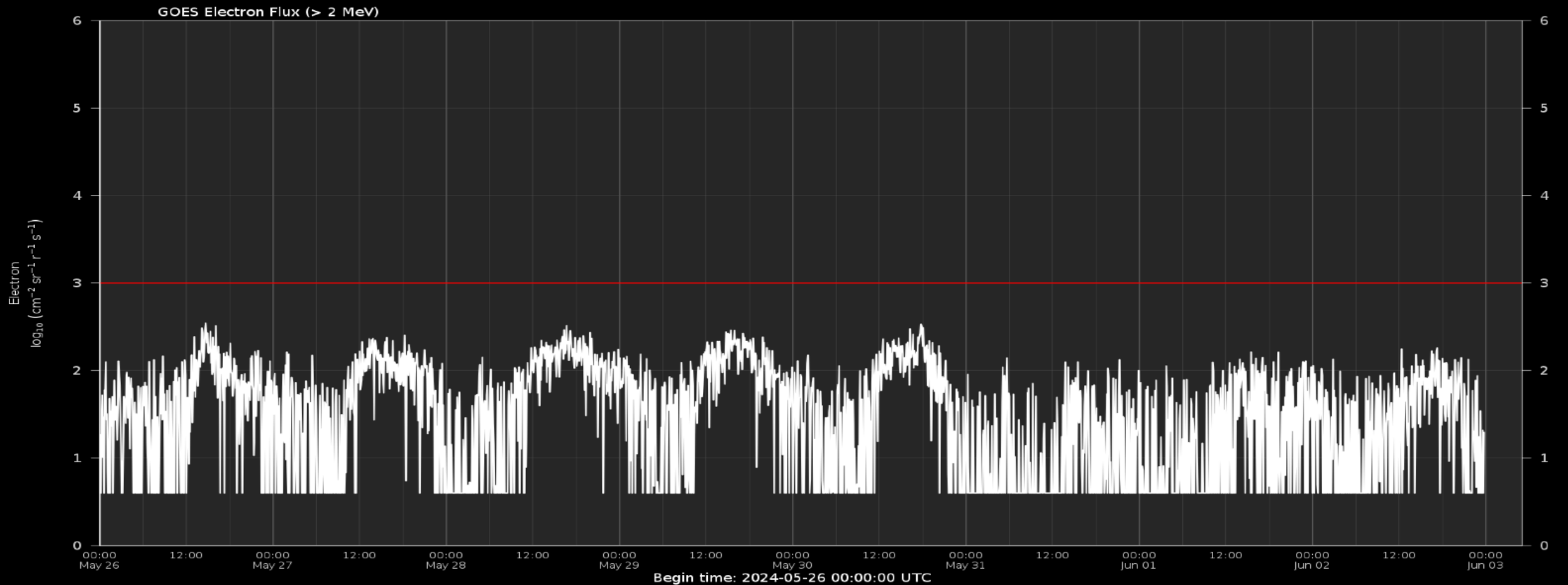
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

www.spaceweather.gc.ca/forecast-prevision/space-spatiale/sffl-en.php



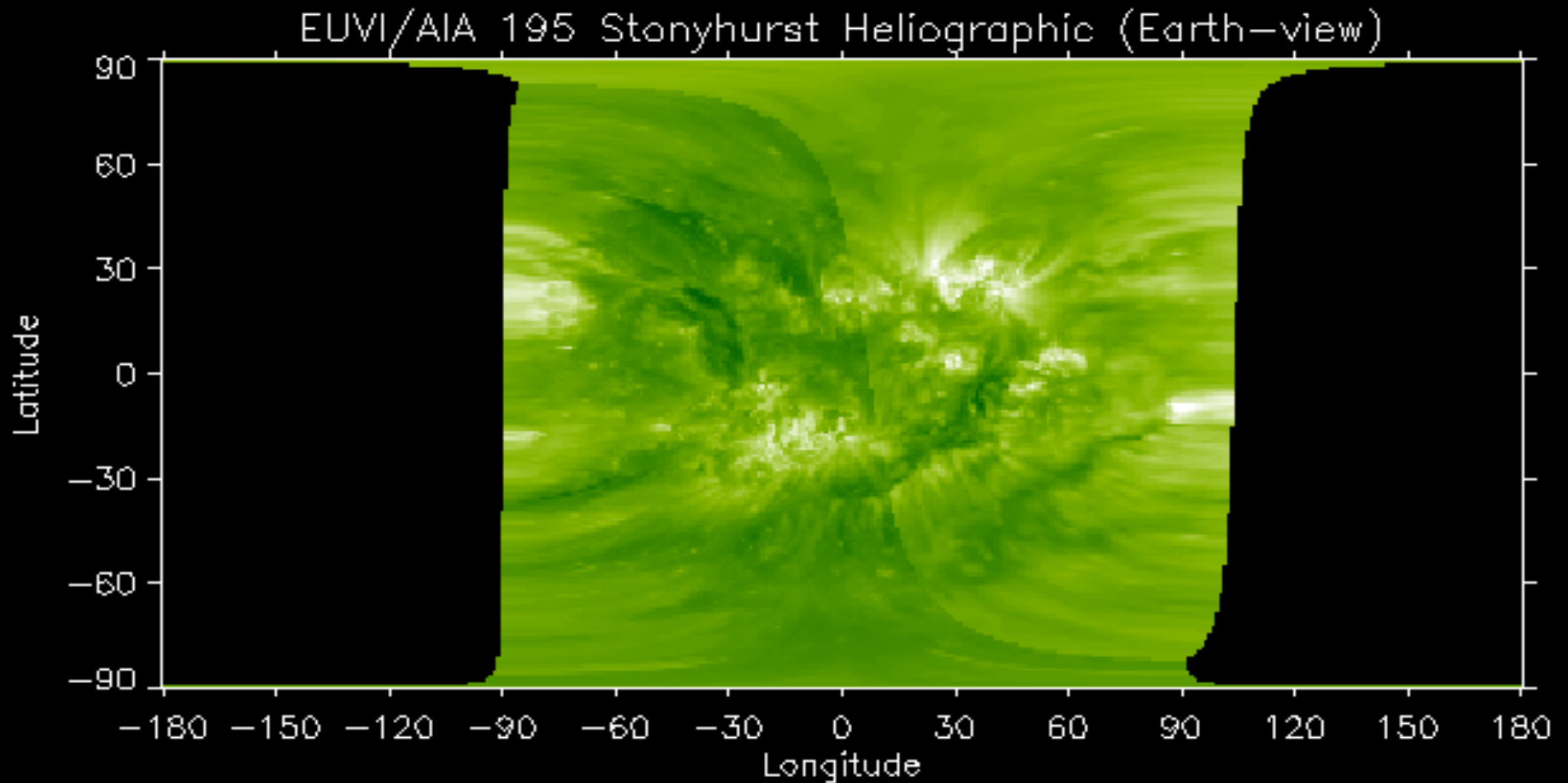
Outlook



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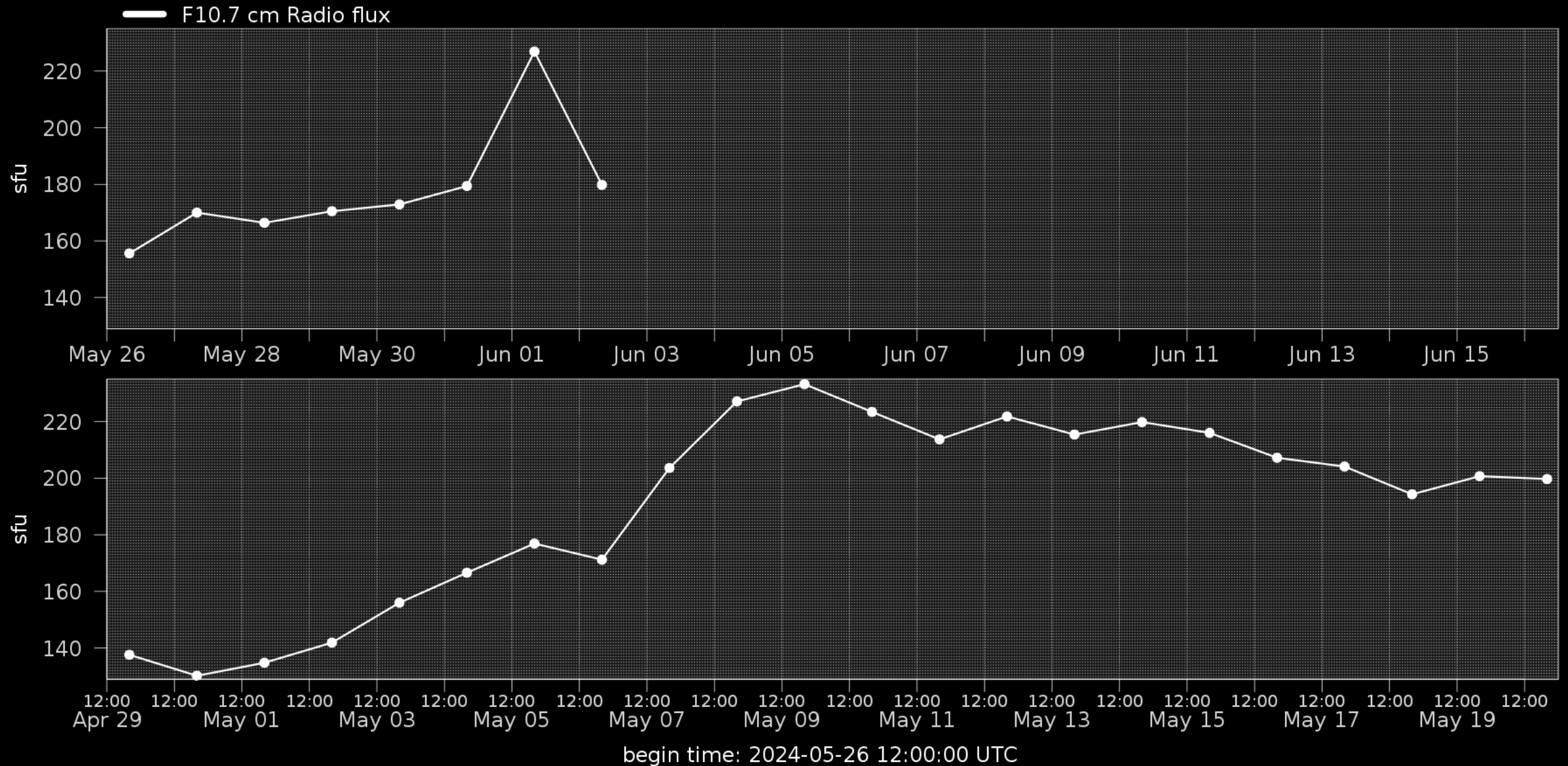
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Outlook: Solar activity

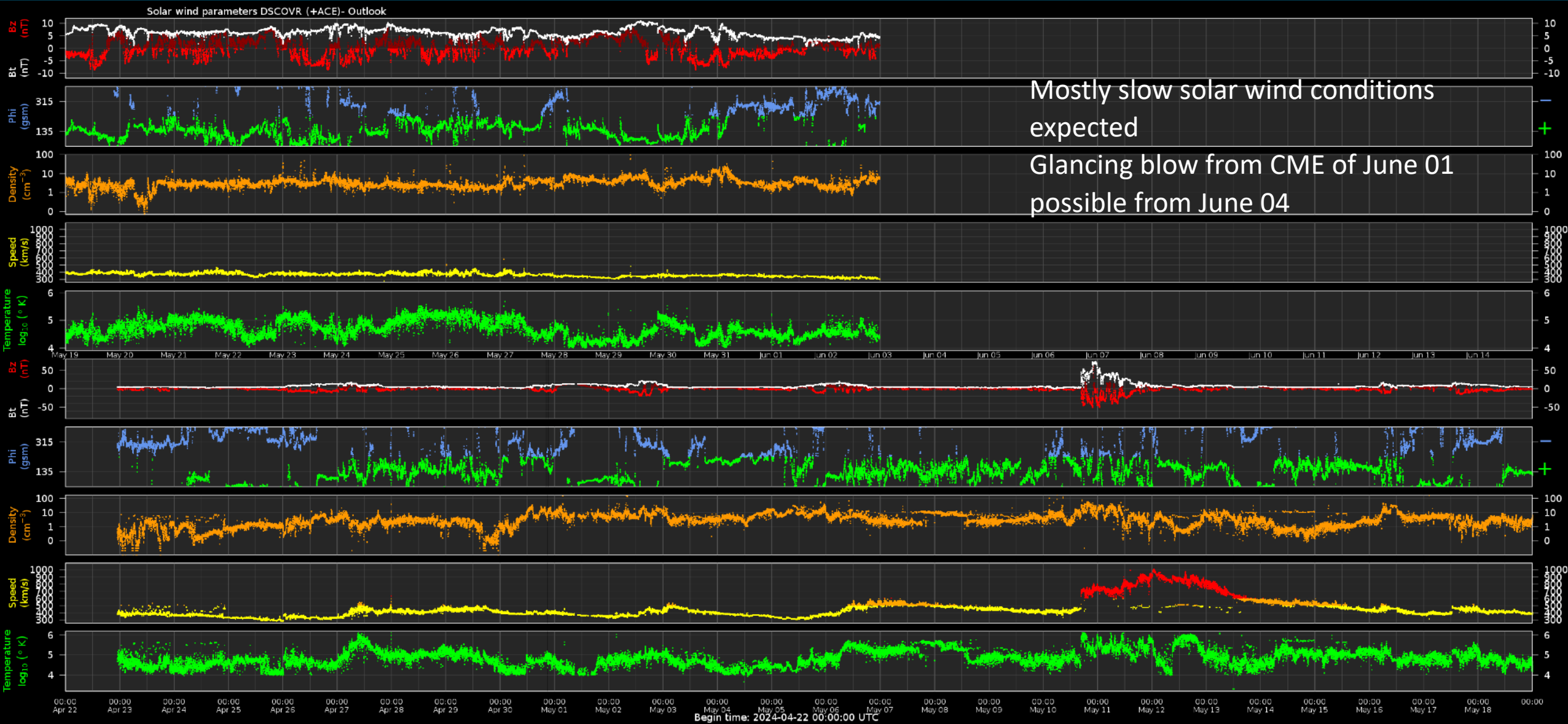


Observation date: 2024/06/02 20:25:00

Outlook: Solar F10.7cm radio flux



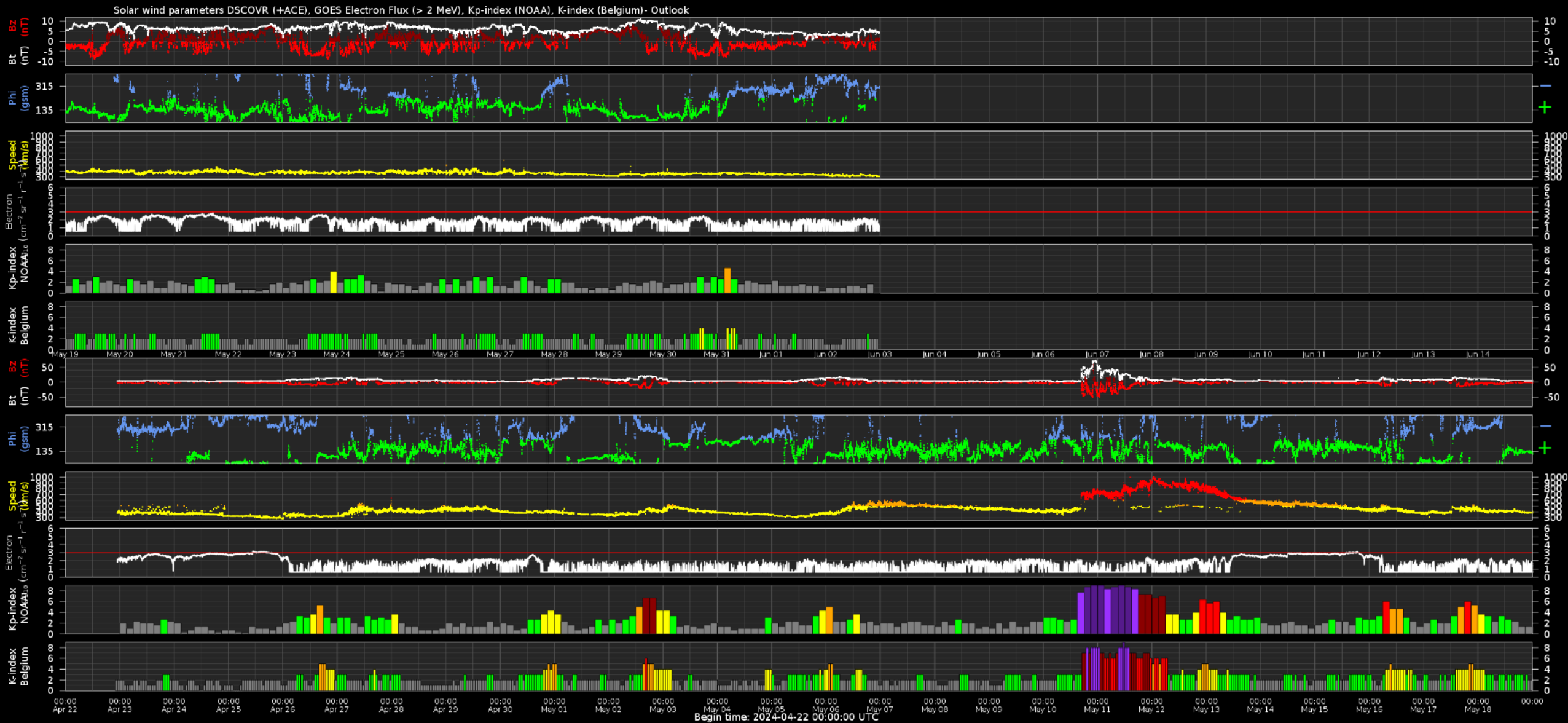
Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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Pegasus related events

Short Wave Fadeout Advisories Issued relating to X-class flares:

```
0000058201
FNXX02 EFKL 270718
SWX ADVISORY
DTG:                20240527/0710Z
SWXC:               PECASUS
ADVISORY NR:       2024/179
SWX EFFECT:        HF COM MOD
OBS SWX:           27/0708Z DAYLIGHT SIDE
FCST SWX +6 HR:    27/1400Z NOT AVBL
FCST SWX +12 HR:   27/2000Z NOT AVBL
FCST SWX +18 HR:   28/0200Z NOT AVBL
FCST SWX +24 HR:   28/0800Z NOT AVBL
RMK:                SPACE WEATHER EVENT (SOLAR FLARE) IN
PROGRESS. IMPACT ON LOWER HF COM FREQUENCY BANDS EXPECTED
ON THE DAYLIGHT SIDE. HIGHER FREQUENCY BANDS MAY BE LESS
IMPACTED.
NXT ADVISORY:      WILL BE ISSUED BY 20240527/1308Z=
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See you at our next briefing!

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