

SIDC Space Weather Briefing

13 October 2025-19 October 2025

Jennifer O'Hara

& the SIDC forecaster team



Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2025-10-13 00:00 to 2025-10-19 23:59

Active regions	11 numbered regions over the week, most active SIDC Sunspot group 639 / NOAA AR4246
Flares	# C-class flare: 47 # M-class flare: 26 # X-class flare: 0
Coronal Holes	Negative Polarity Coronal Hole, transited central meridian on October 16
CMEs	4 CMEs with possible Earth directed components observed

Proton flux	Below 10 pfu threshold
Electron flux	Above 1000 Pfu threshold, moderate fluence

Solar wind and geomagnetic conditions

ICMEs	ICME signatures on October 17 and 18
Solar wind conditions	B : 0.96 - 20.3 nT //Bz: -12.2 nT to 15.27 nT //Speed: 278.8 - 802.2km/s
Geomagnetic conditions	max K _{Be} : 5.0, max K _p (NOAA): 6.0, Moderate Storm conditions

All Quiet Alert: Not all quiet

Solar Activity

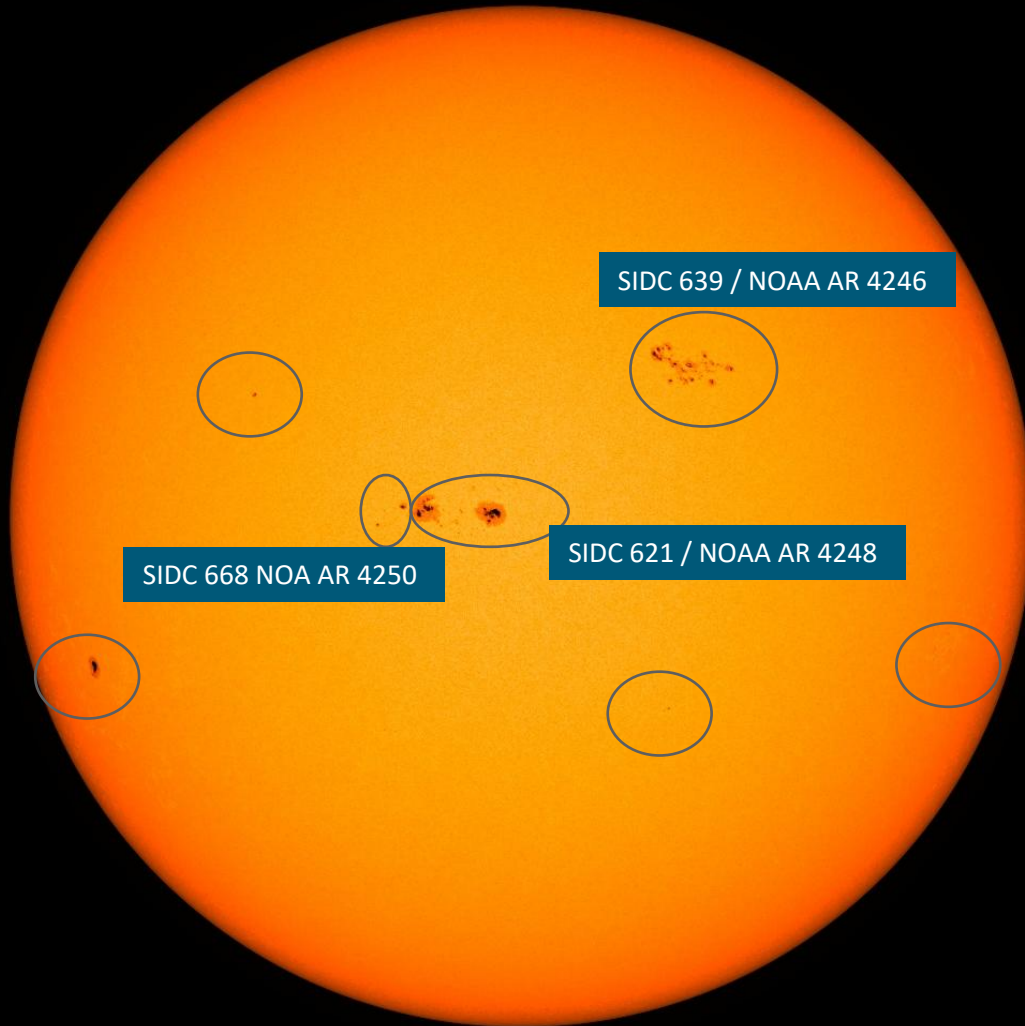


Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

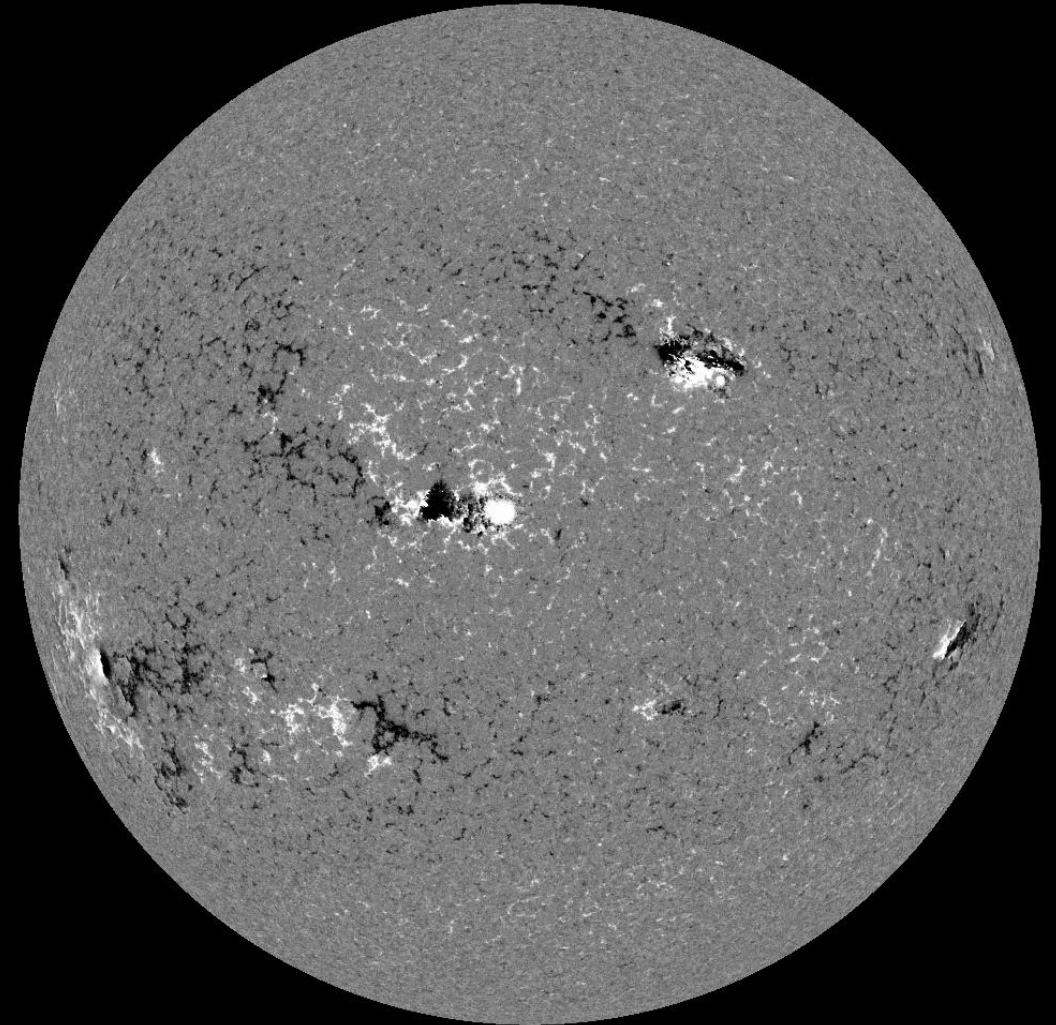
Solar active regions

SDO/HMI White Light 2025-10-13



SDO/HMI Continuum: 20251013_120000

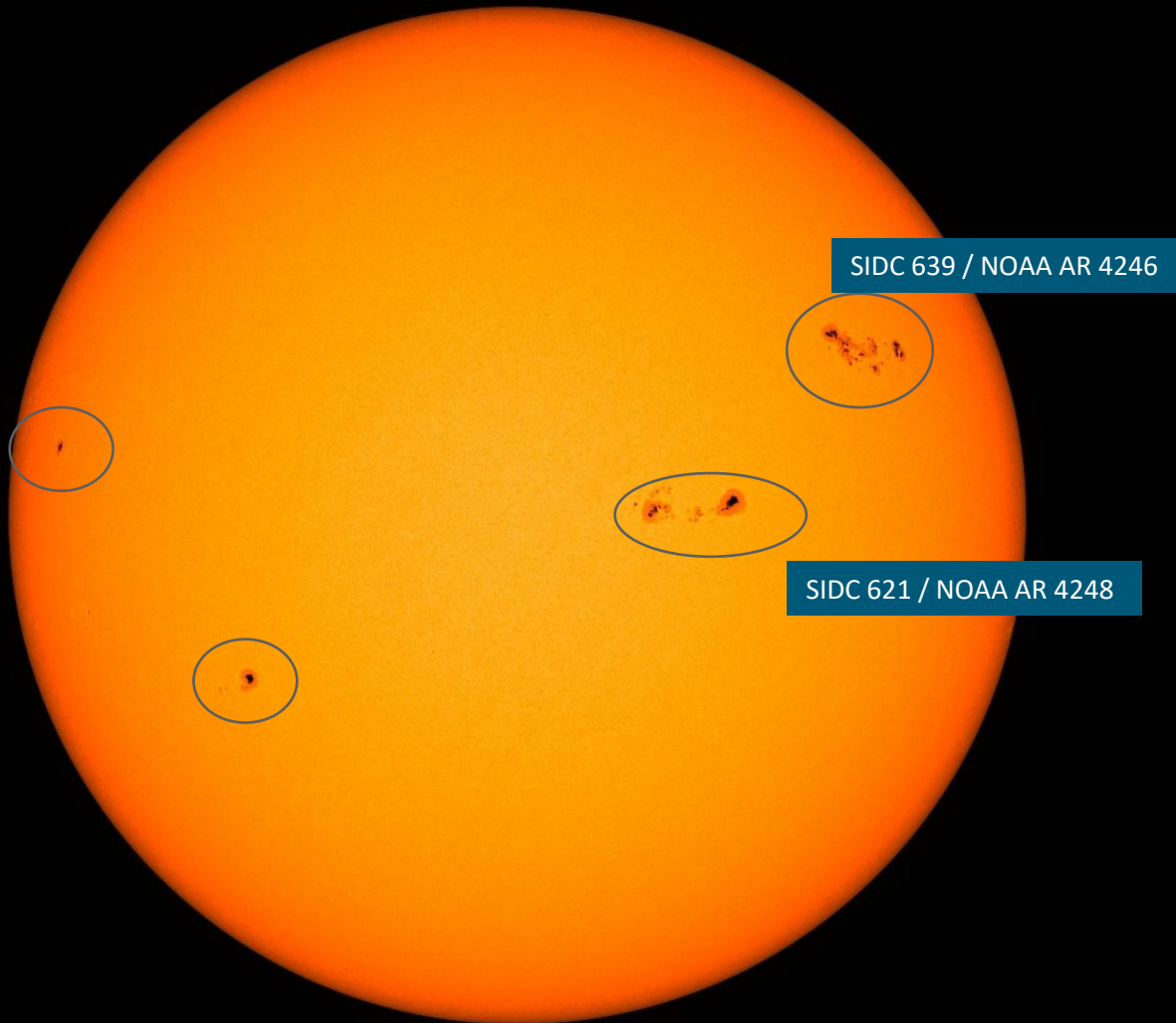
SDO/HMI Magnetogram 2025-10-13



SDO/HMI Magnetogram: 20251013_120000

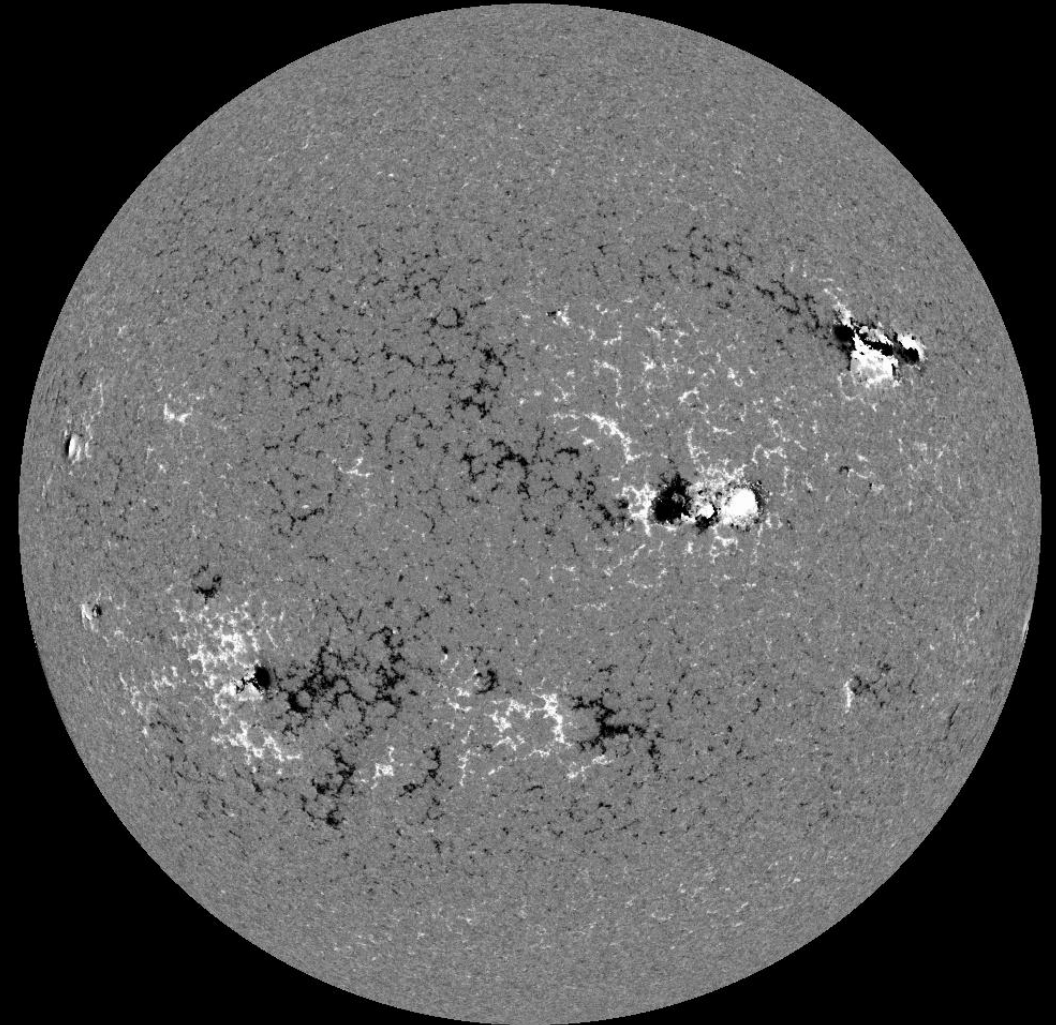
Solar active regions

SDO/HMI White Light 2025-10-15



SDO/HMI Continuum: 20251015_120000

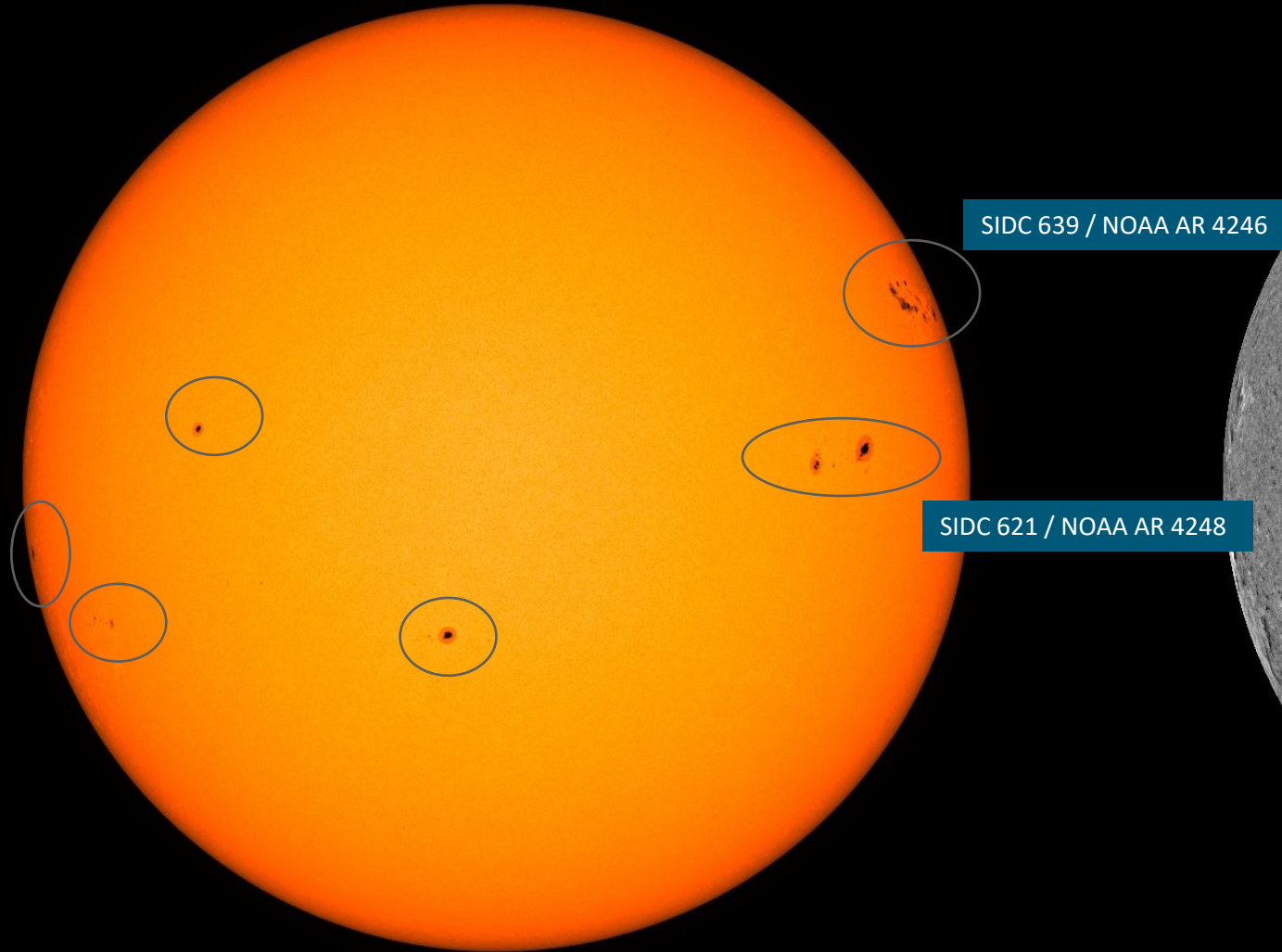
SDO/HMI Magnetogram 2025-10-15



SDO/HMI Magnetogram: 20251015_120000

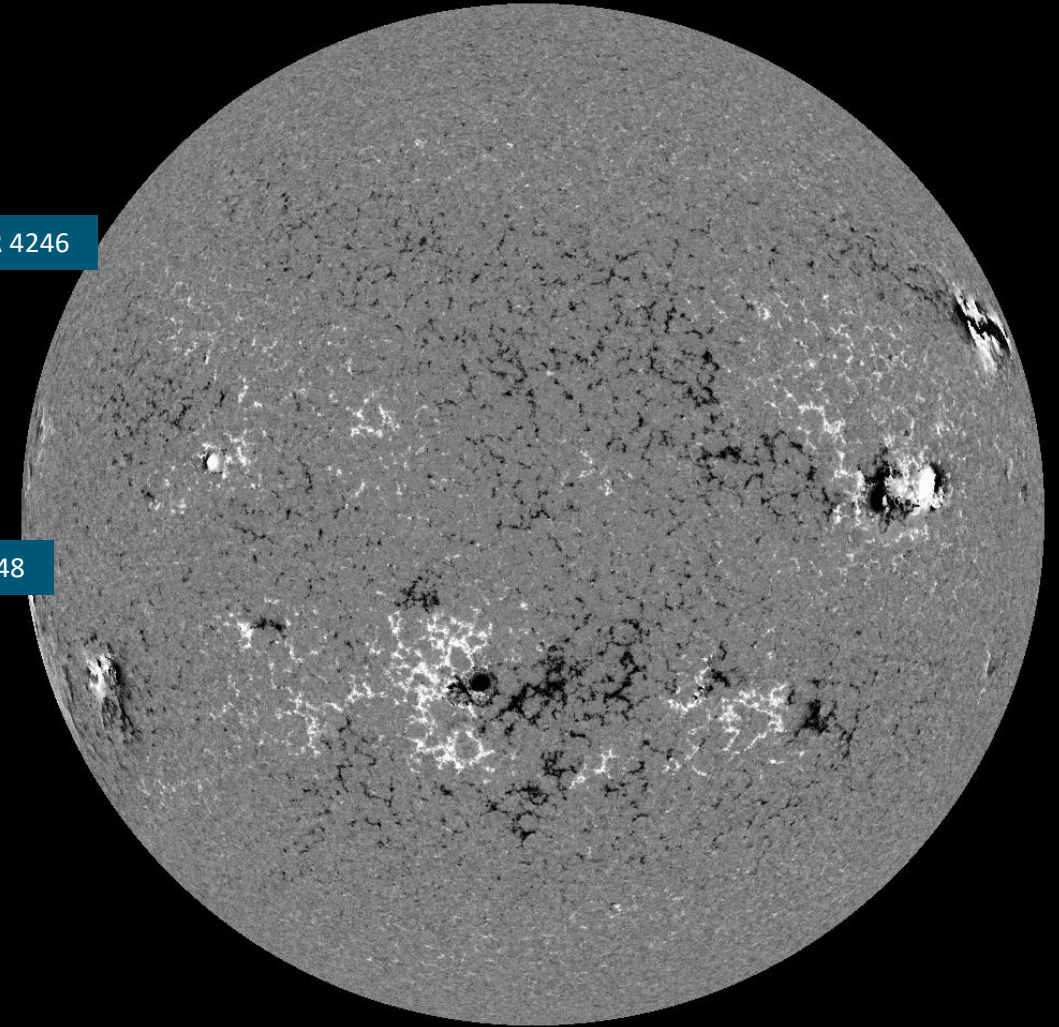
Solar active regions

SDO/HMI White Light 2025-10-17



SDO/HMI Quick-Look Continuum: 20251017_120000

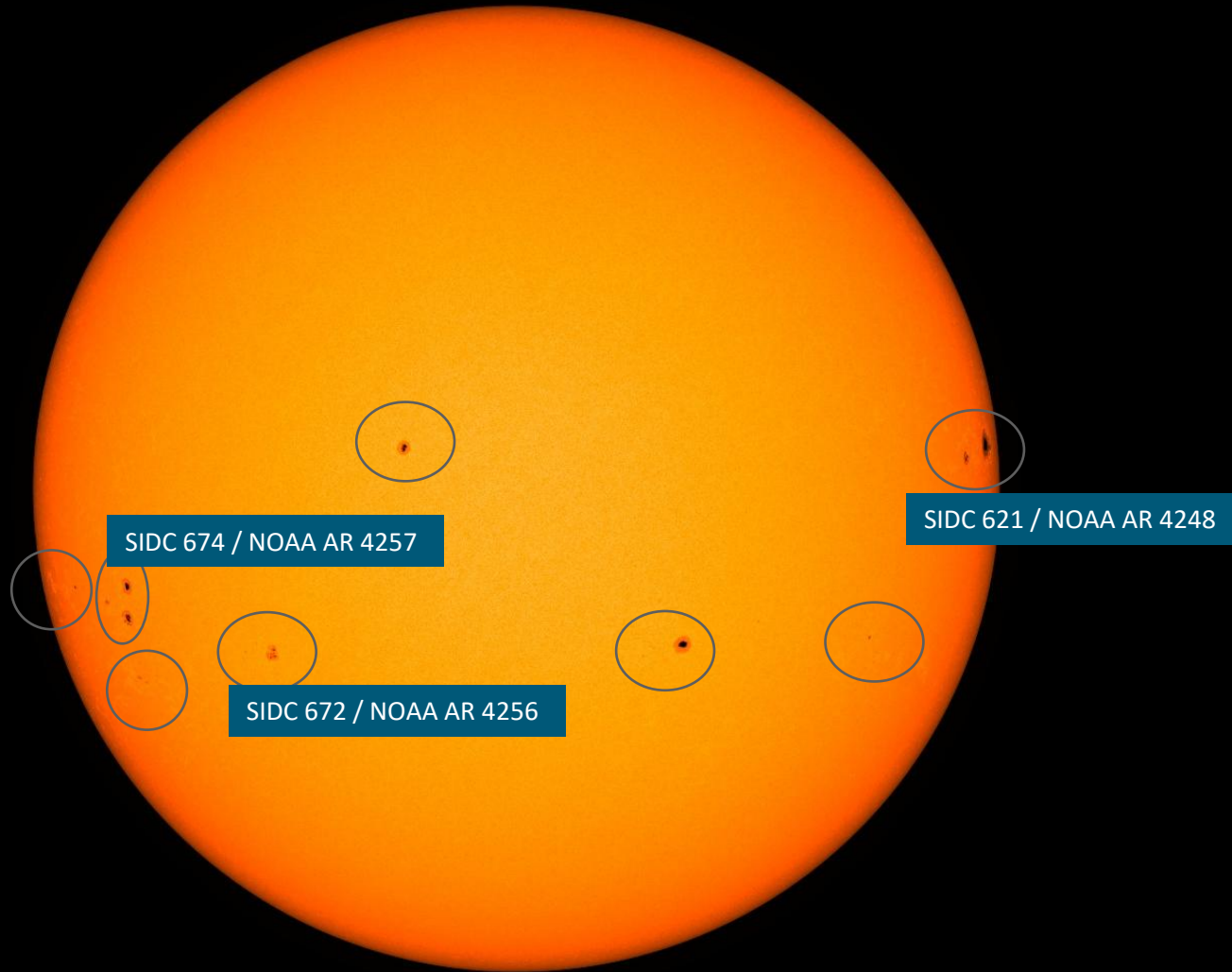
SDO/HMI Magnetogram 2025-10-17



SDO/HMI Quick-Look Magnetogram: 20251017_120000

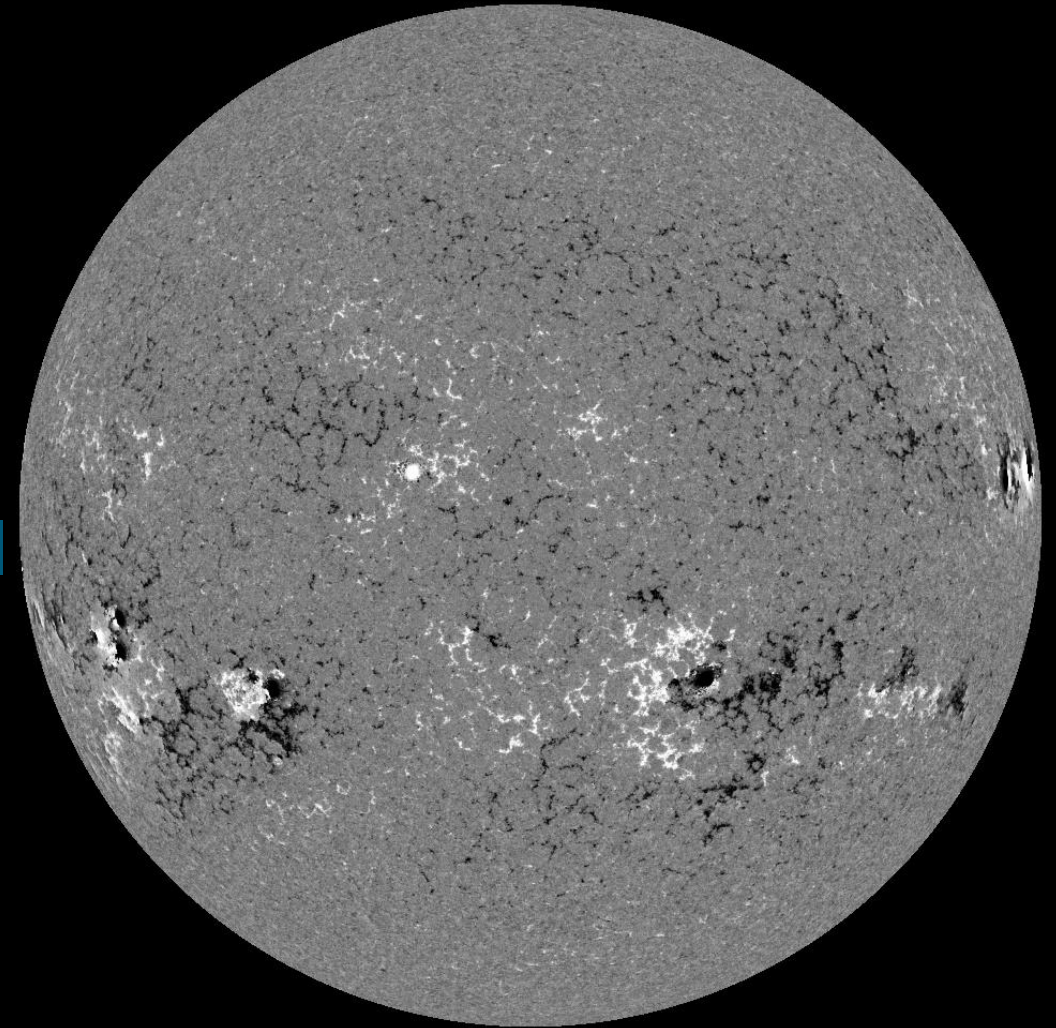
Solar active regions

SDO/HMI White Light 2025-10-19



SDO/HMI Quick-Look Continuum: 20251019_120000

SDO/HMI Magnetogram 2025-10-19

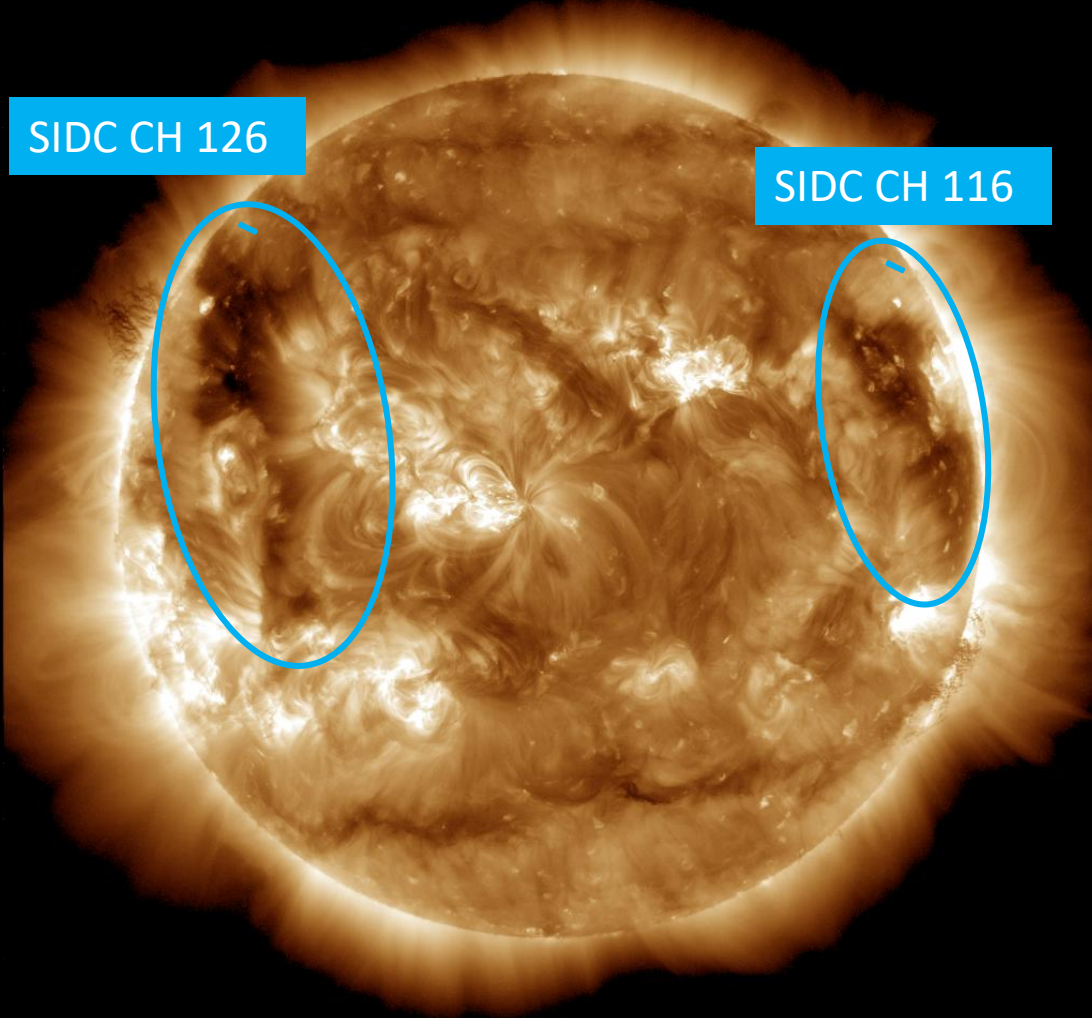


SDO/HMI Quick-Look Magnetogram: 20251019_120000

Coronal holes

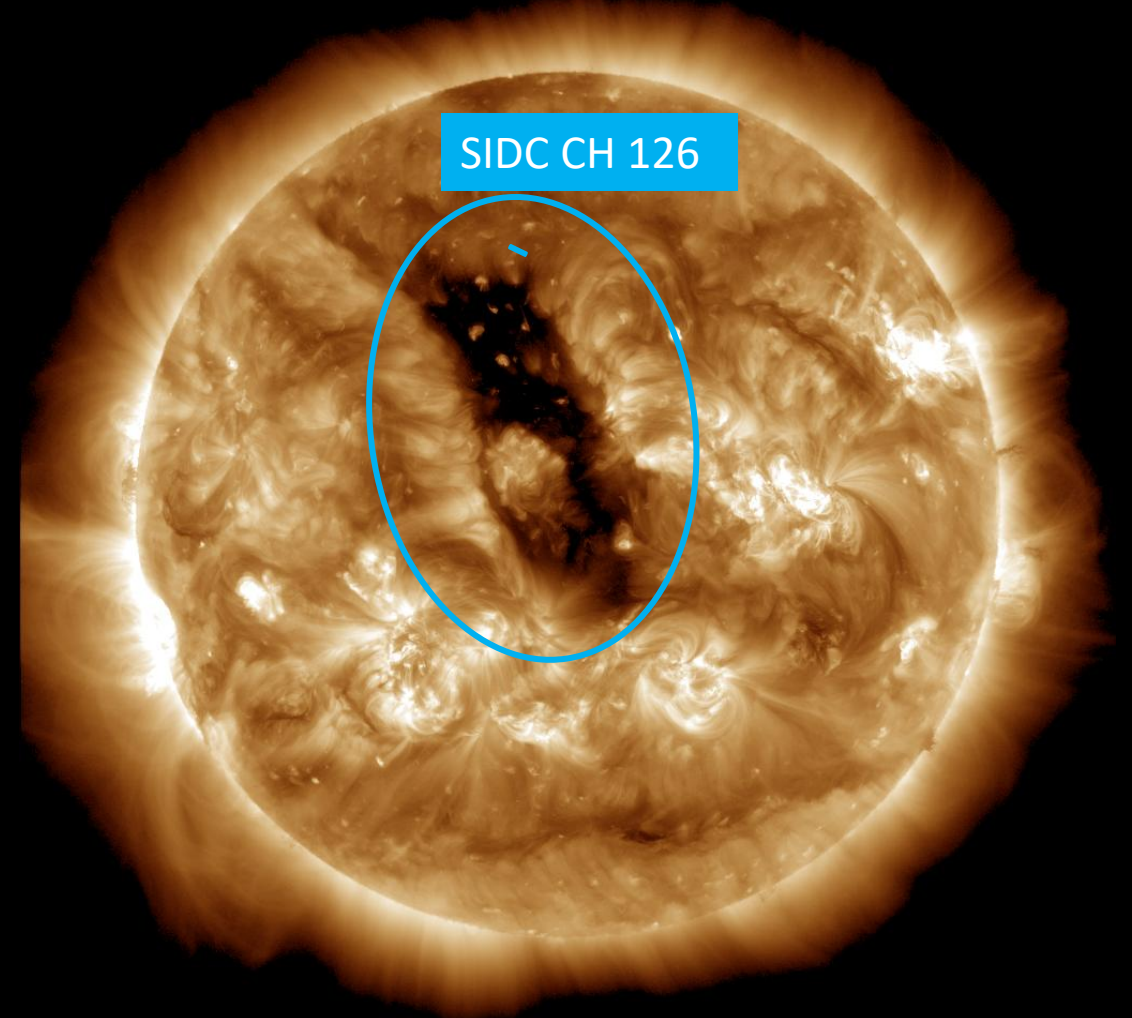
SDO/AIA 19.3 nm 2025-10-13

SDO/AIA AIA 193Å 2025-10-13T12:00:05.843



SDO/AIA 19.3 nm 2025-10-16

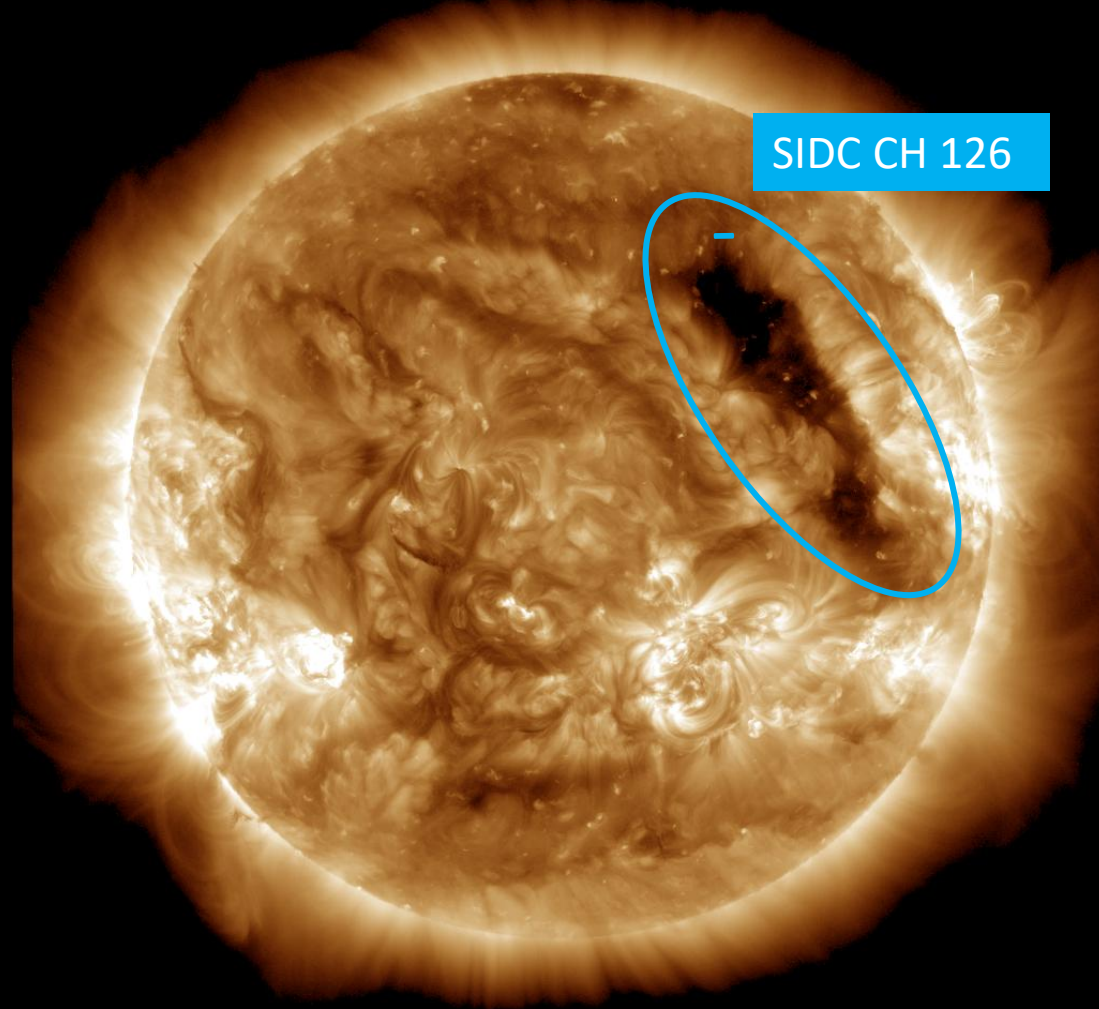
SDO/AIA AIA 193Å 2025-10-16T12:00:05.843



Coronal holes

SDO/AIA 19.3 nm 2025-10-19

SDO/AIA AIA 193Å 2025-10-19T12:00:05.843

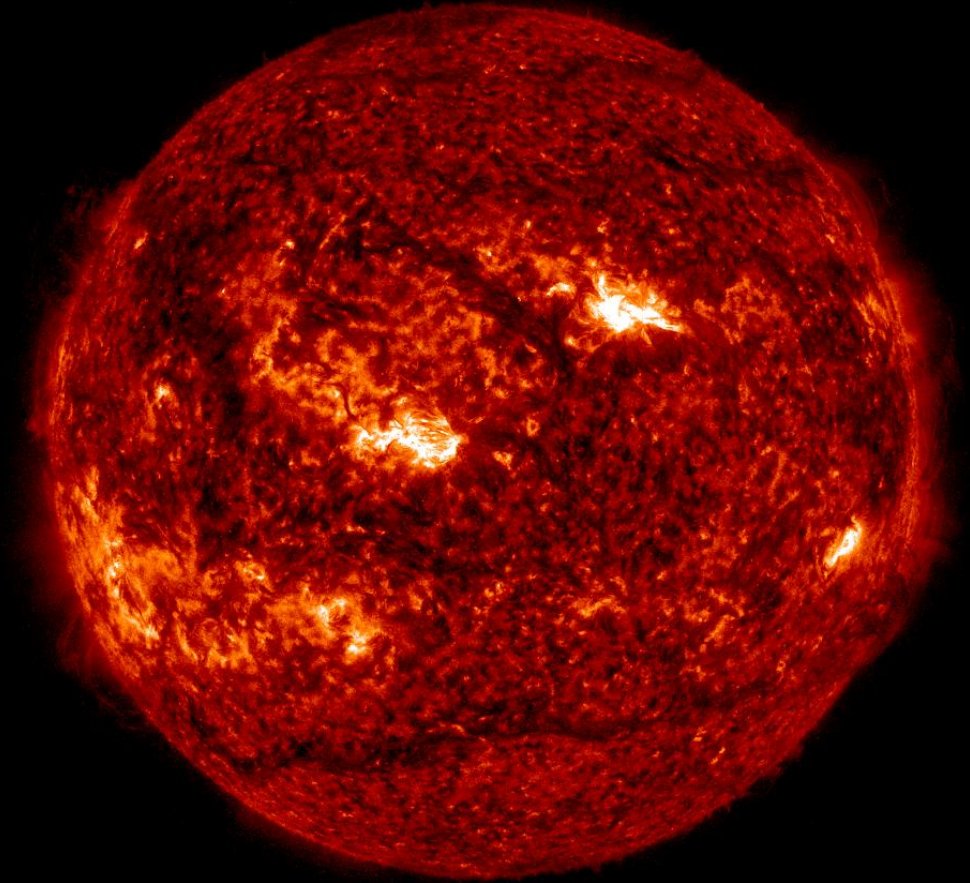


SIDC CH 126

Filaments

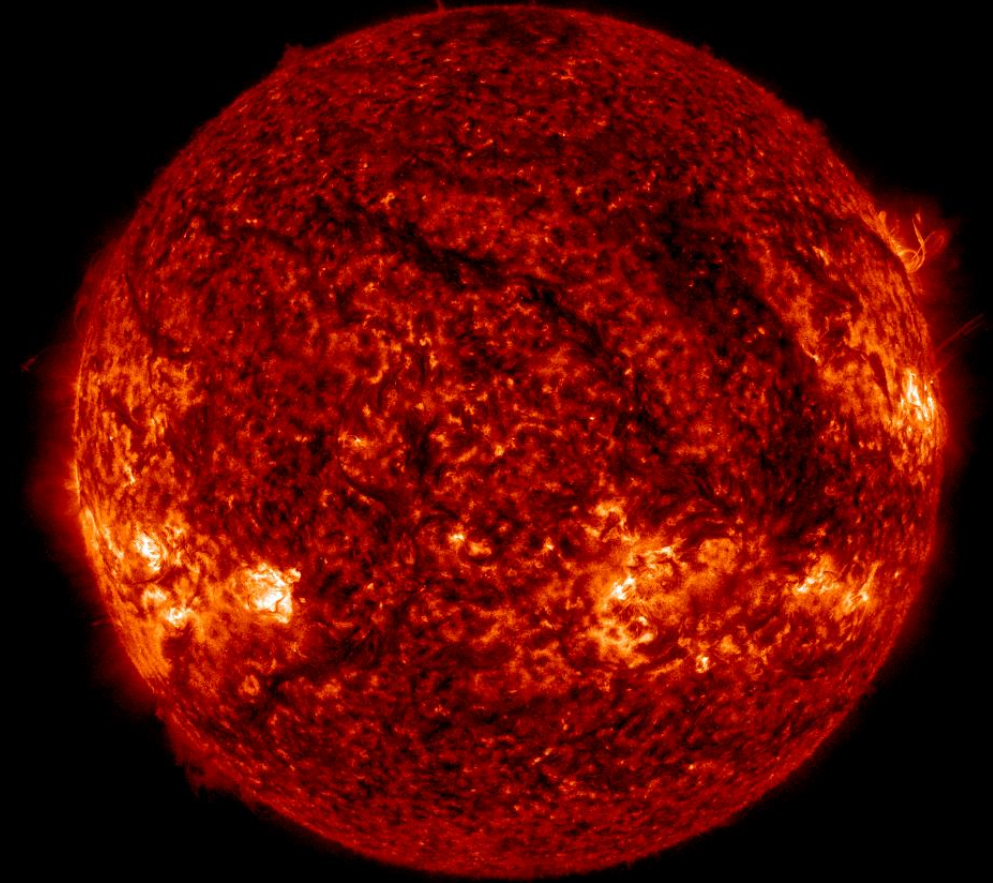
SDO/AIA 30.4 nm 2025-10-13

SDO/AIA AIA 304Å 2025-10-13T12:00:06.581



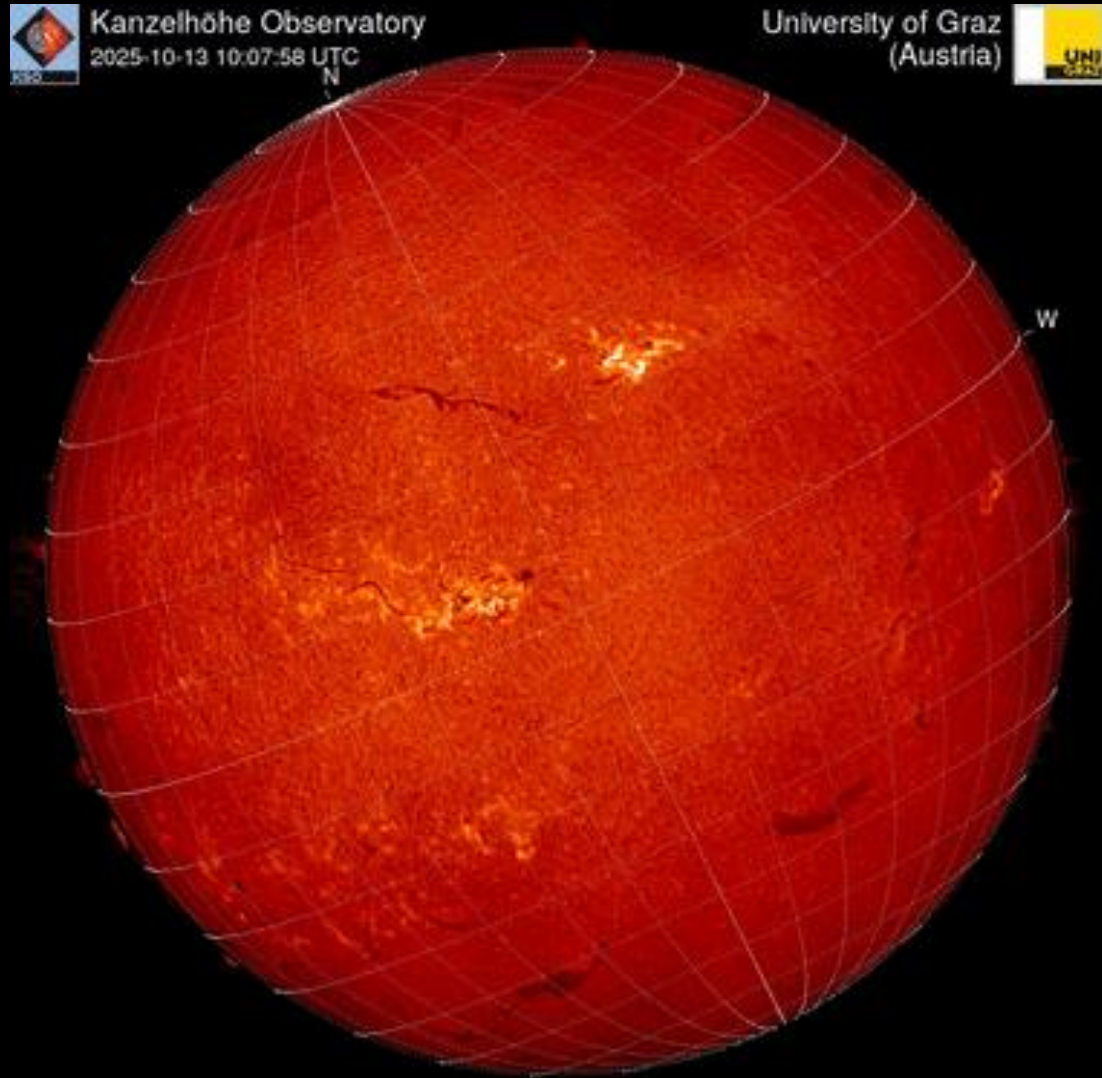
SDO/AIA 30.4 nm 2025-10-19

SDO/AIA AIA 304Å 2025-10-19T12:00:06.573

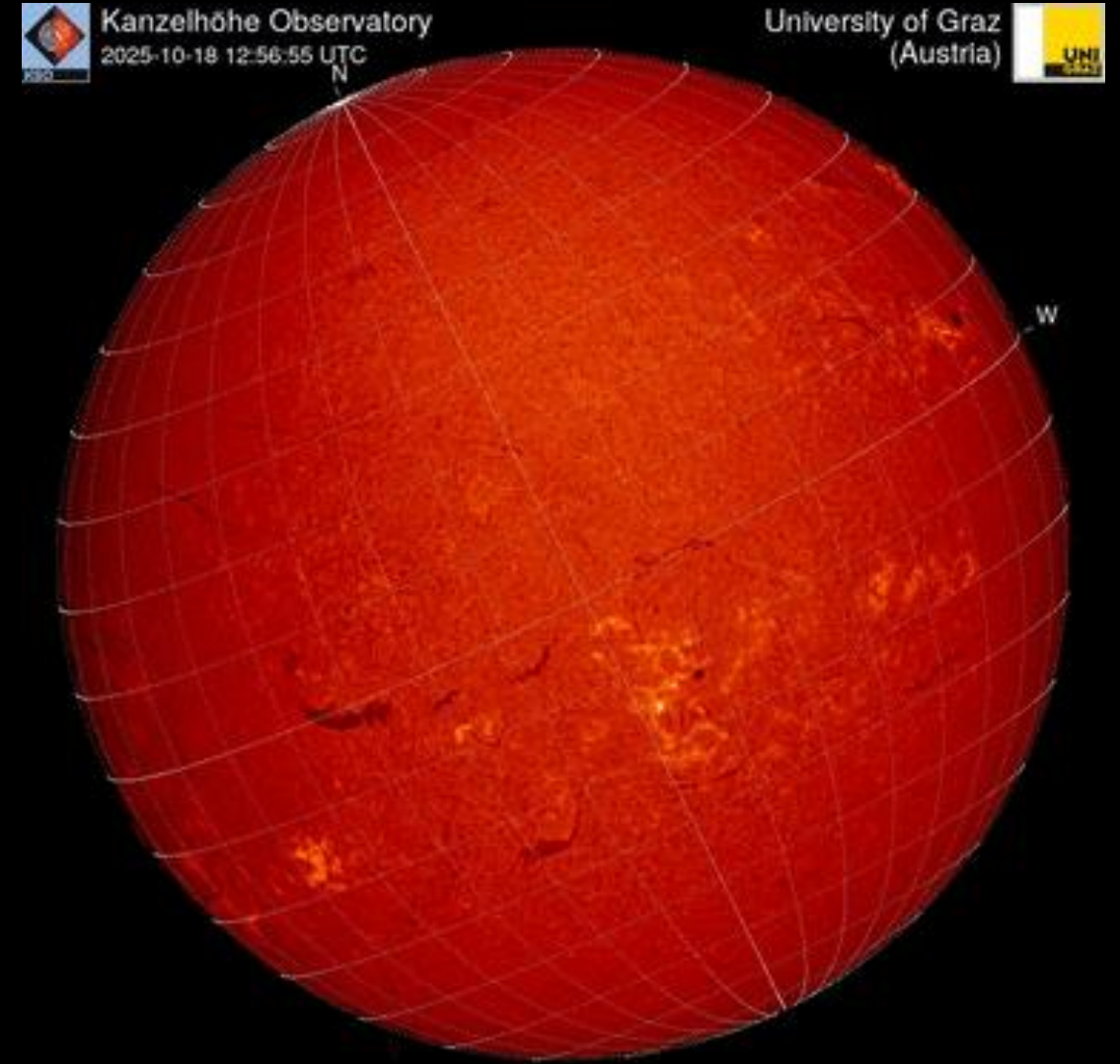


Filaments & Filament eruptions

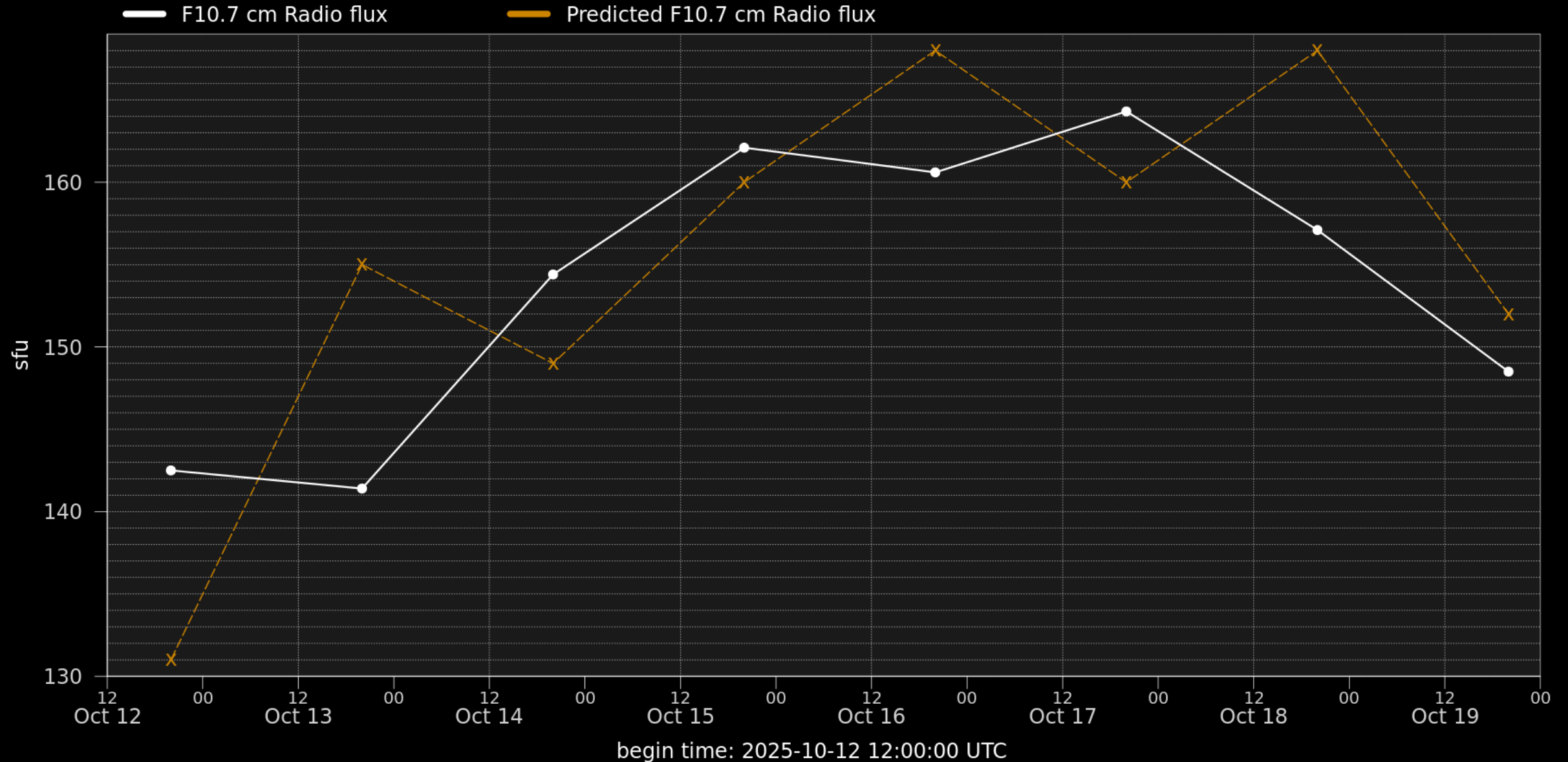
H-alpha 2025-10-13



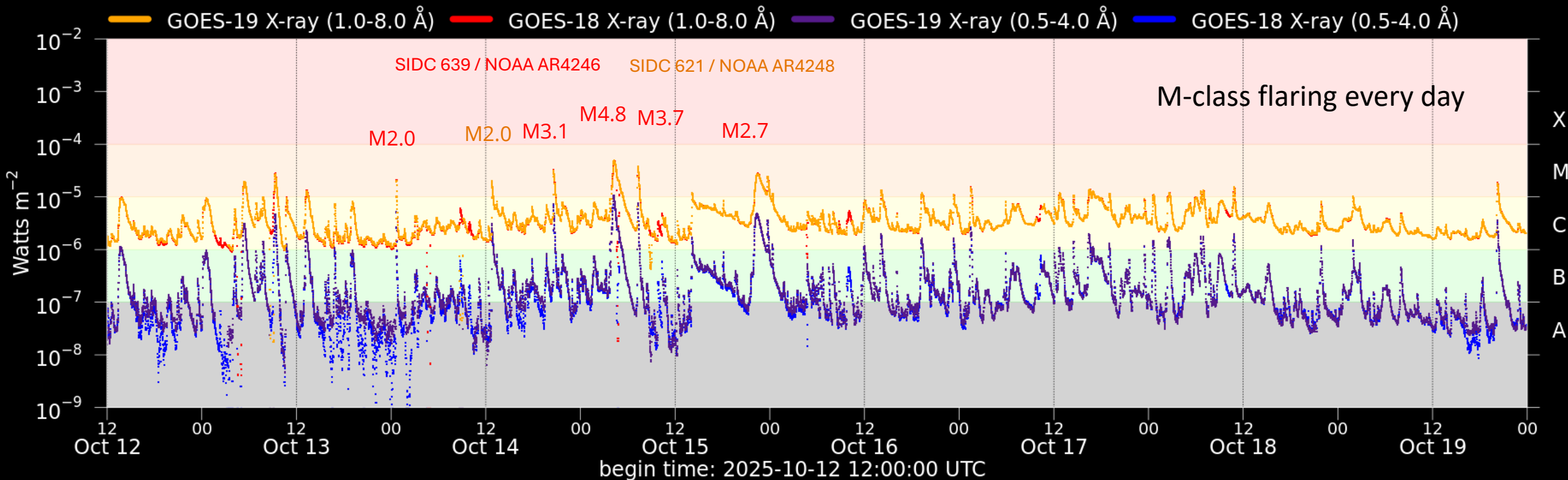
H-alpha 2025-10-19



Solar F10.7cm radio flux



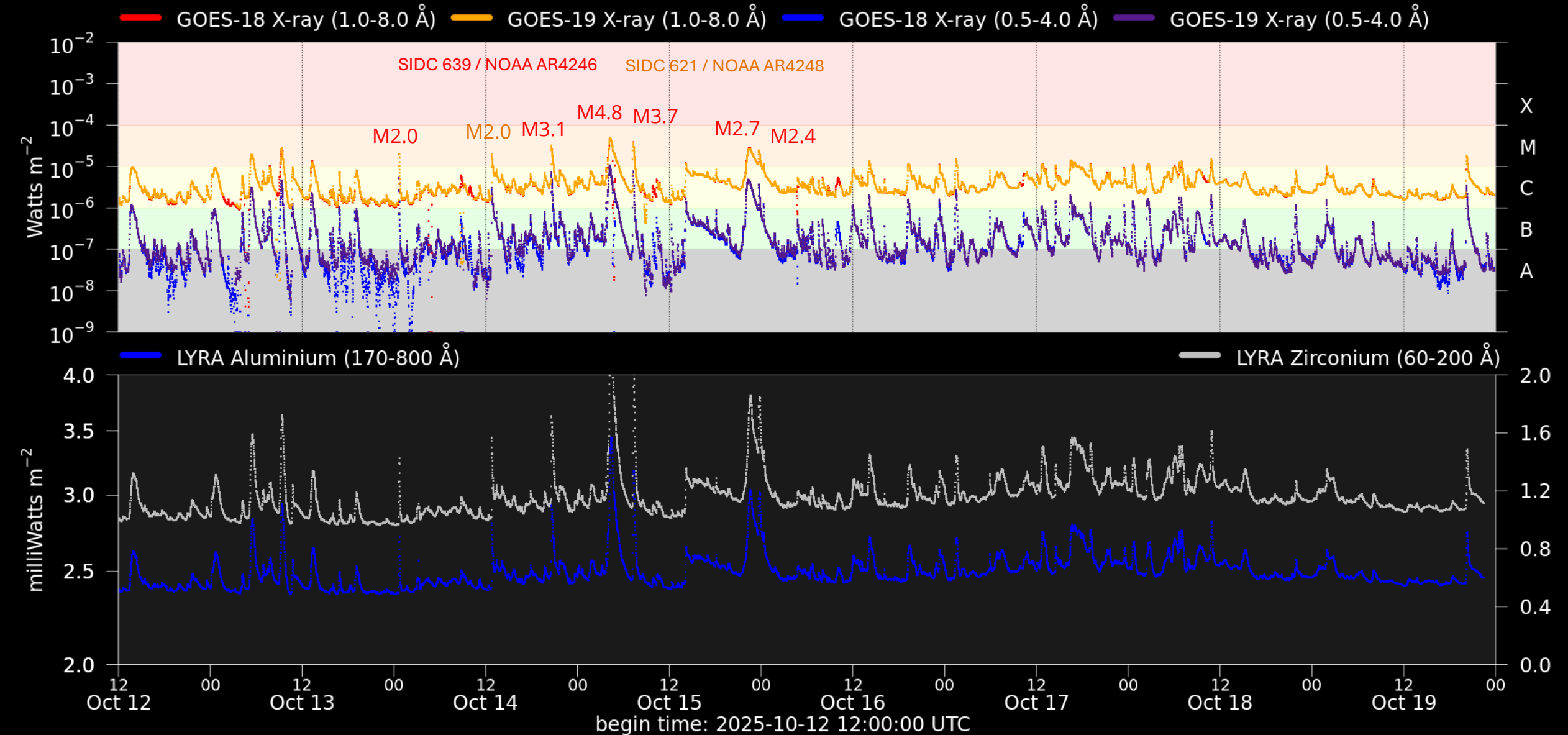
Flaring activity



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

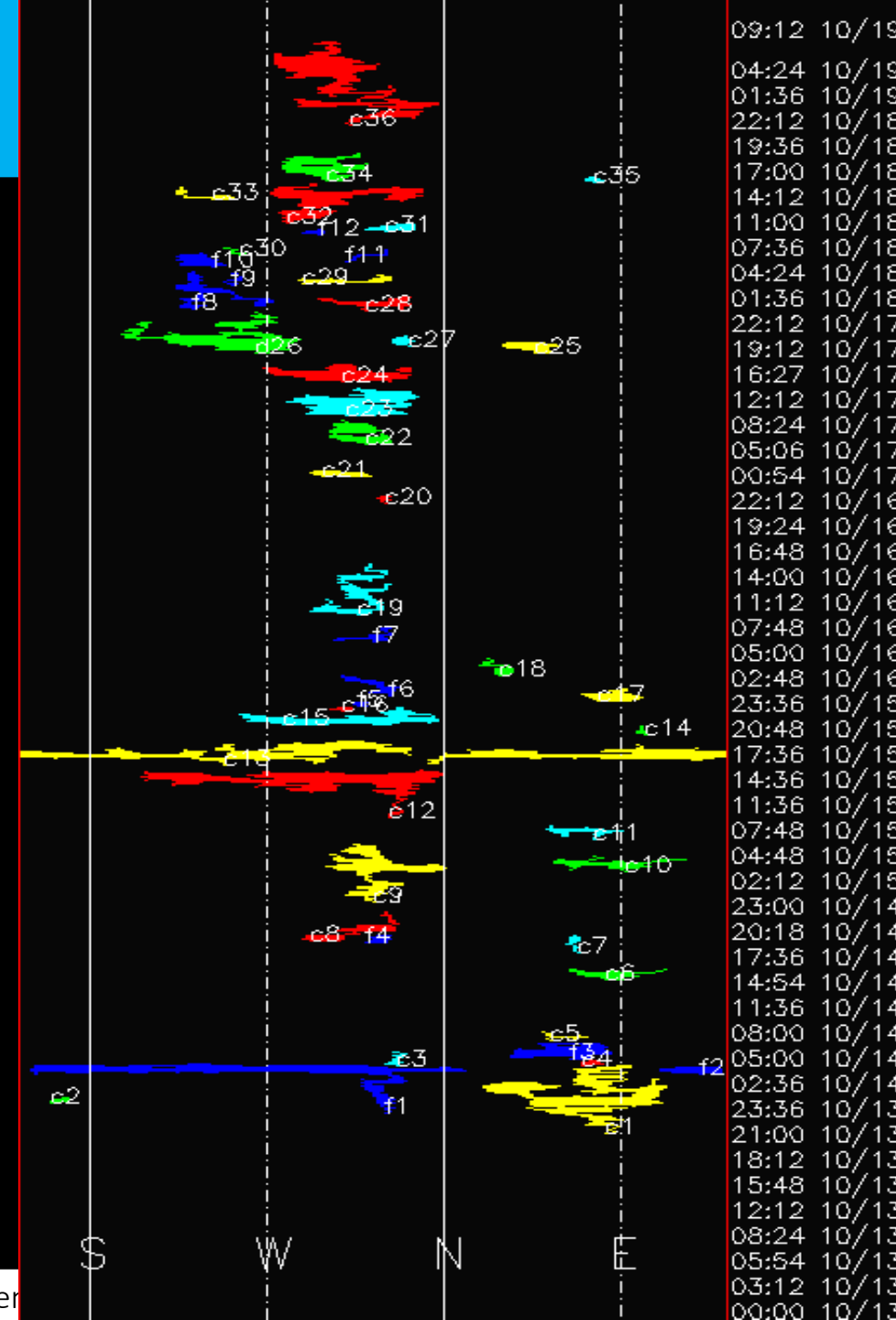
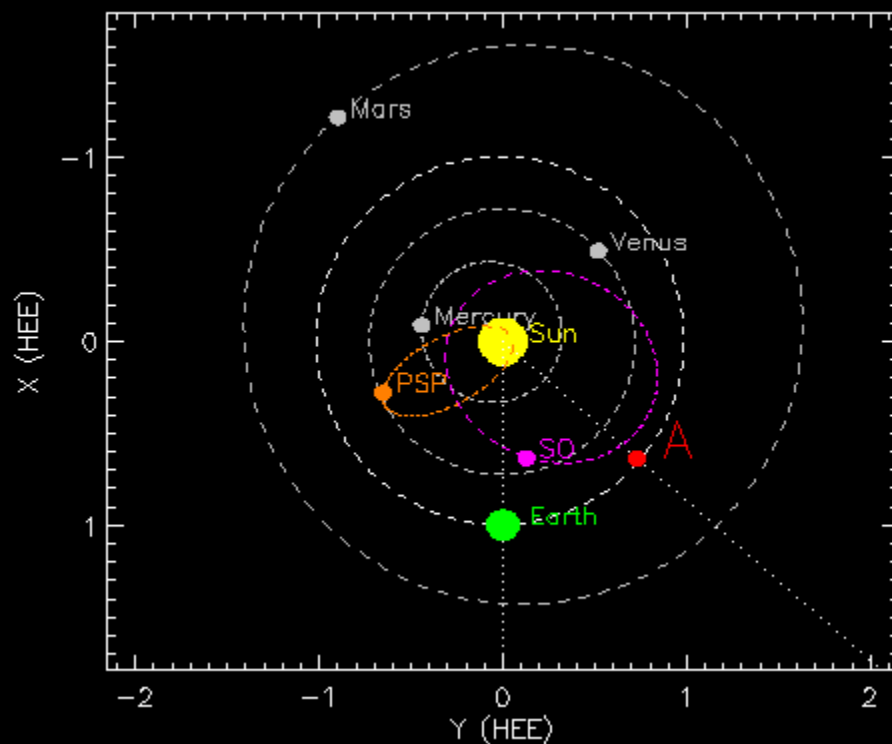
Issue date	2025-10-12	2025-10-13	2025-10-14	2025-10-15	2025-10-16	2025-10-17	2025-10-18	2025-10-19
Probability (%)	99 15 01	99 65 10	99 75 15	99 85 20	99 80 20	99 76 15	99 71 15	99 40 05
Observed (#)	08 02 00	09 02 00	12 04 00	09 04 00	04 04 00	03 08 00	02 01 00	00 01 00

Solar X-Ray and UV flux



Coronal Mass Ejections

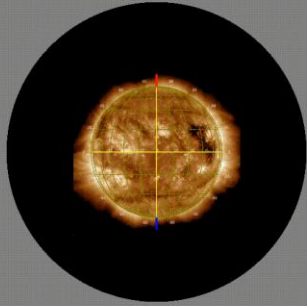
4 CMEs with Possible Earth Directed components: observed from SOHO/LASCO-C2 and STEARO-A/COR2



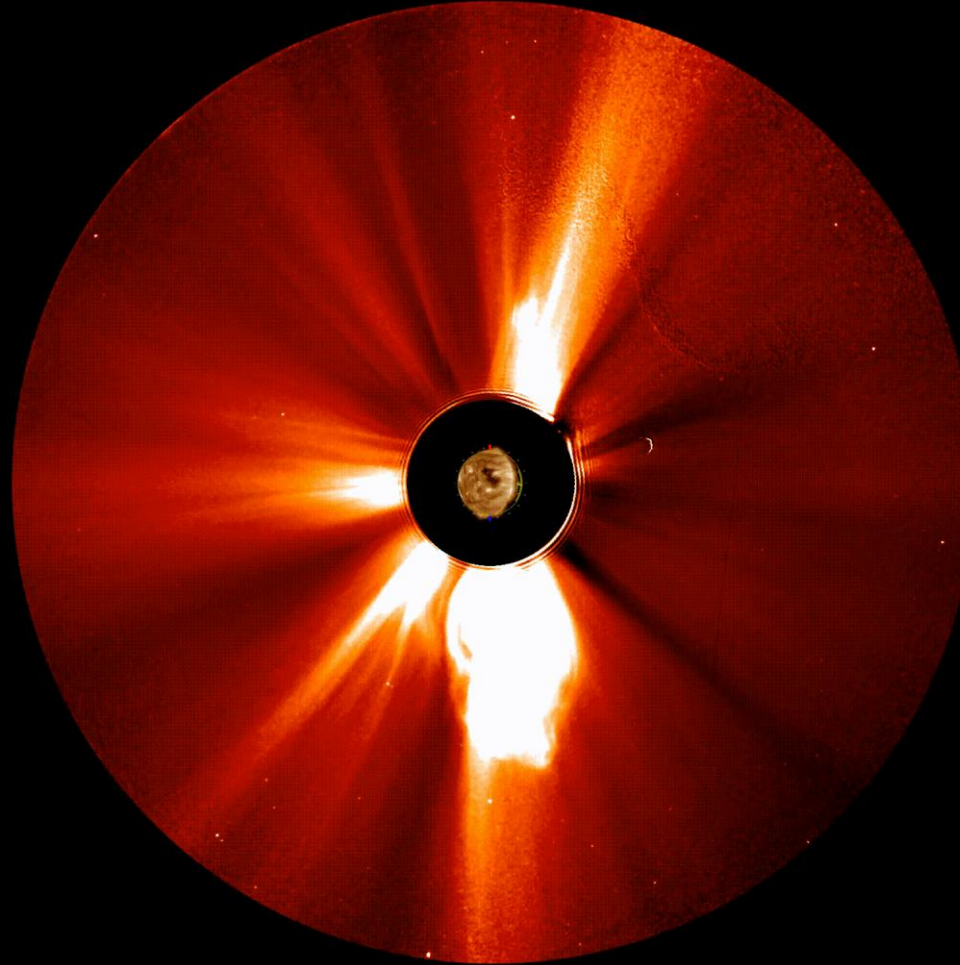
Coronal Mass Ejections

CME 1 Oct 12:

SOHO/LASCO-C2



STEREO-A/COR2



Dimming near SIDC
SG 639 Flare C9.6,
with peak time 13:50
UTC Oct 12.

CME to north in
LASCO-C2
overlapping with
another CME.

CME to north-east in
STEREO A

Speed around 400
km/s predicted to
arrive early on Oct 16.

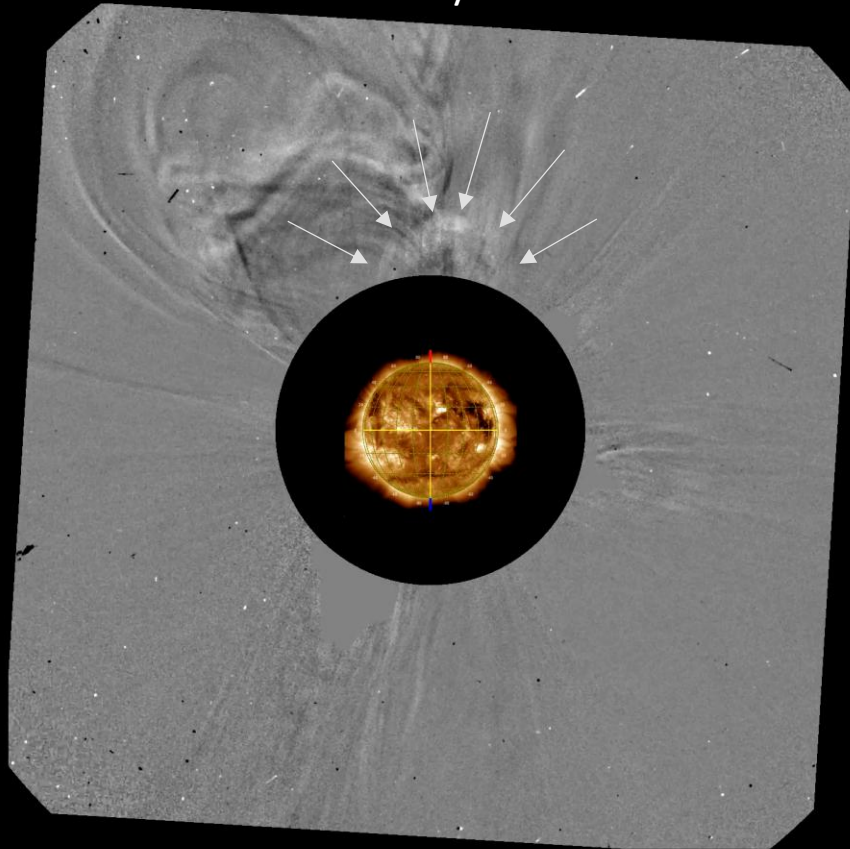
2025-10-12T10:36:09.186

2025-10-12T10:23:43.012

Coronal Mass Ejections

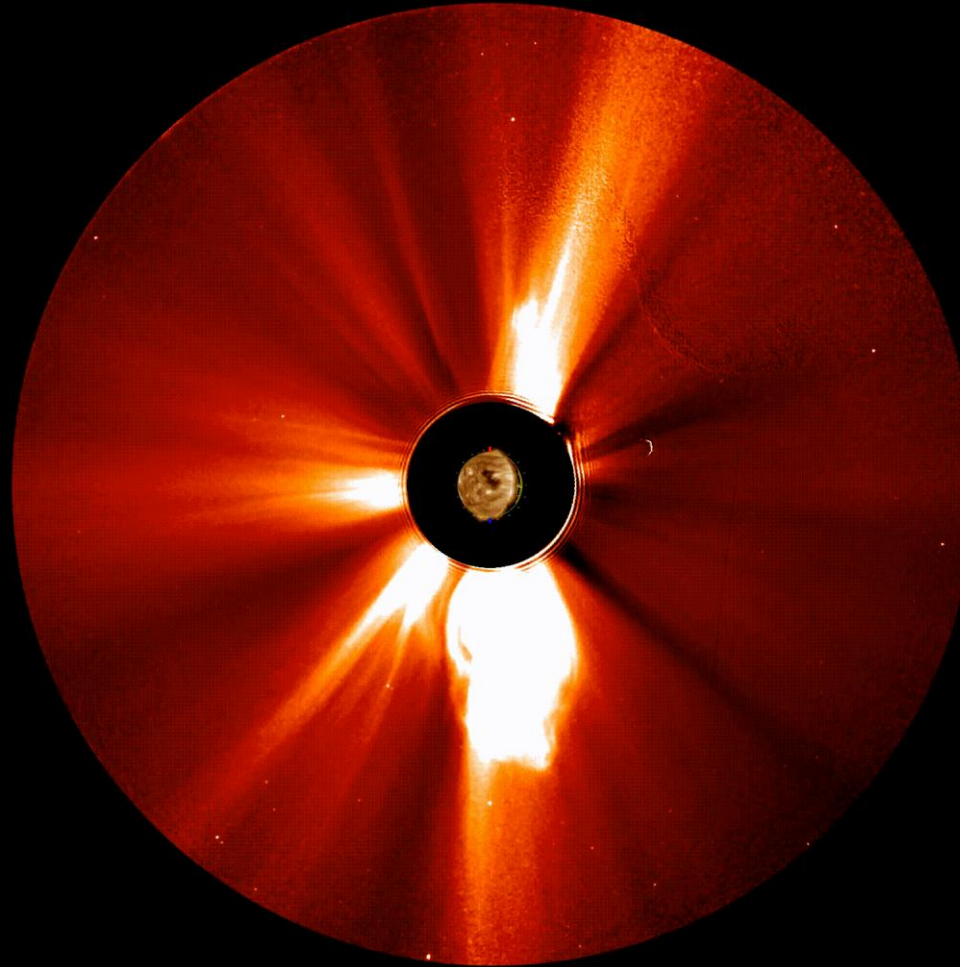
CME 1 Oct 12:

SOHO/LASCO-C2



2025-10-12T15:24:07.480

STEREO-A/COR2



2025-10-12T10:23:43.012

Dimming near SIDC
SG 639 Flare C9.6,
with peak time 13:50
UTC Oct 12.

CME to north in
LASCO-C2
overlapping with
another CME.

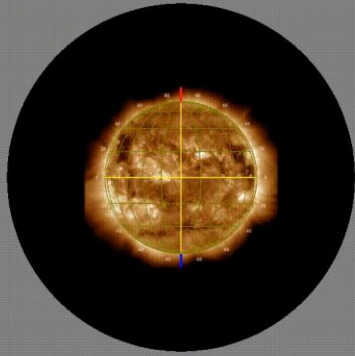
CME to north-east in
STEREO A

Speed around 400
km/s predicted to
arrive early on Oct 16.

Coronal Mass Ejections

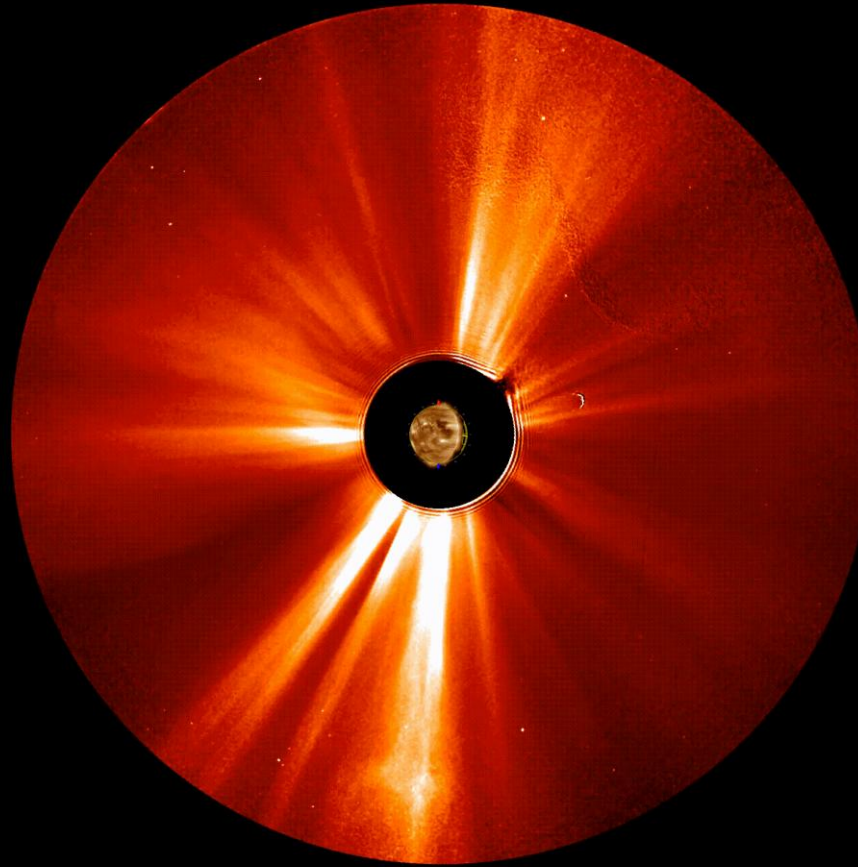
CME 2 and 3 on October 13:

SOHO/LASCO-C2



2025-10-13T05:23:43.007

STEREO-A/COR2



CME2:

Dimming near SIDC SG 639 (NOAA AR 4246)
05:10 UTC associated with the M1.9 flare.
Speed around 380 km/s

CME3:

13:06 associated with the M1.2 flare 13:06 UTC
Type II Radio Emission
2025 Oct 13:03 UTC
Speed around 570 km/s

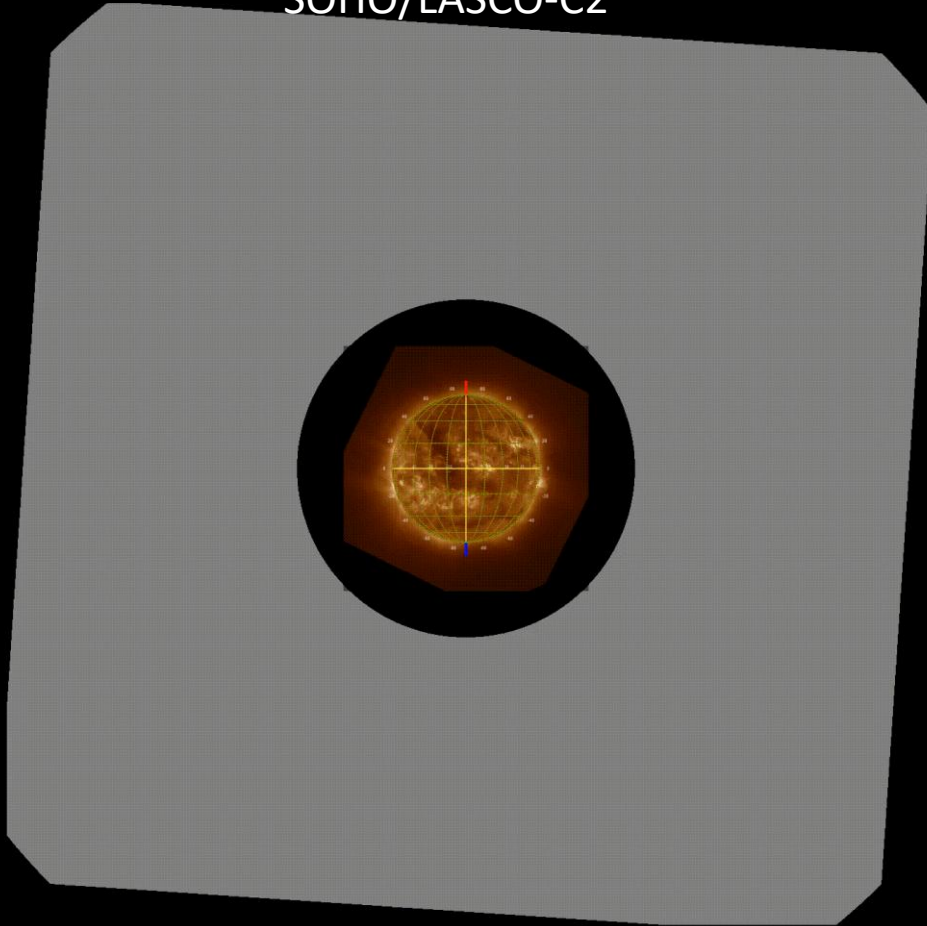
Predicted to combine and arrive as glancing blow late on Oct 16

2025-10-13T05:24:07.879

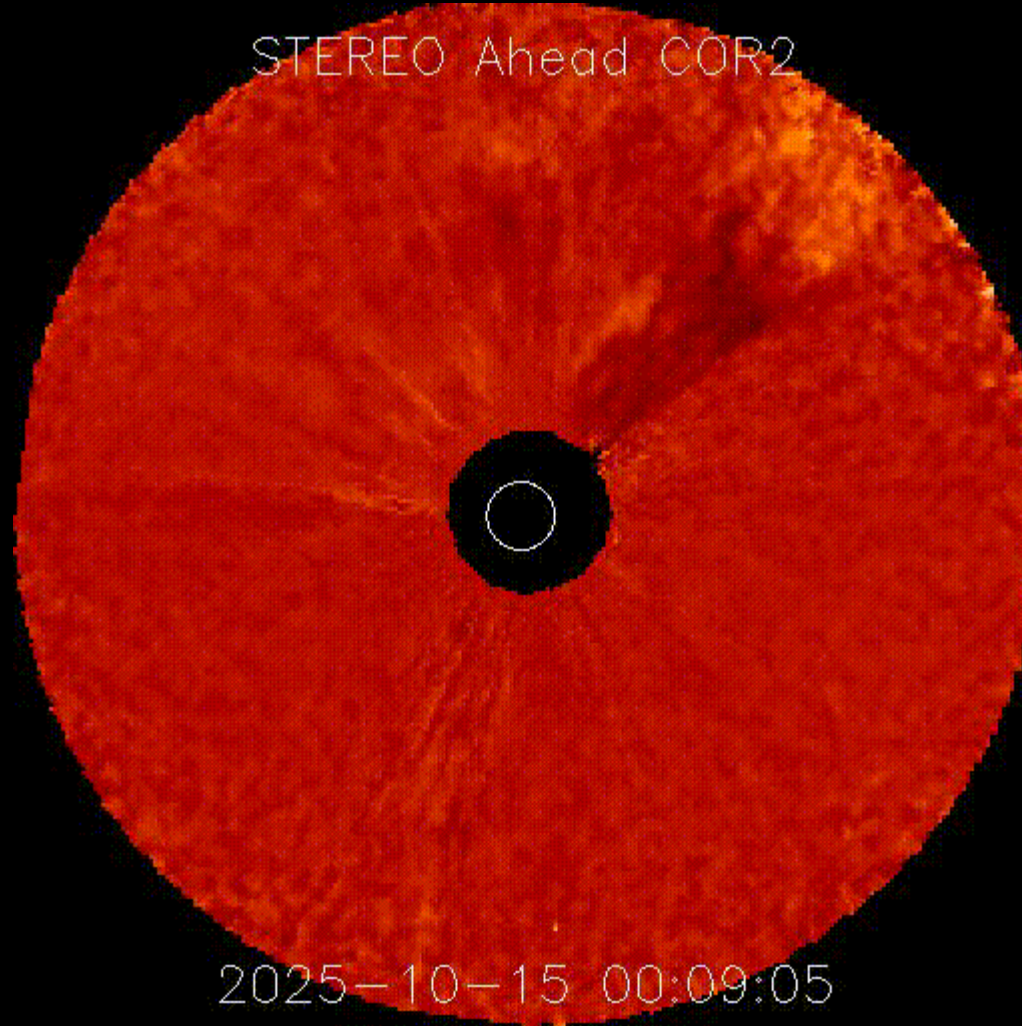
Coronal Mass Ejections

CME 4 on October 15:

SOHO/LASCO-C2



STEREO Ahead COR2



Partial halo CME to the northwest in LASCO-C2, likely associated with an M1.1 flare peaking on October 15 at 14:10.

Possibly made of 2 CMEs?

Full halo in ST-A

Speed around 650 km/s

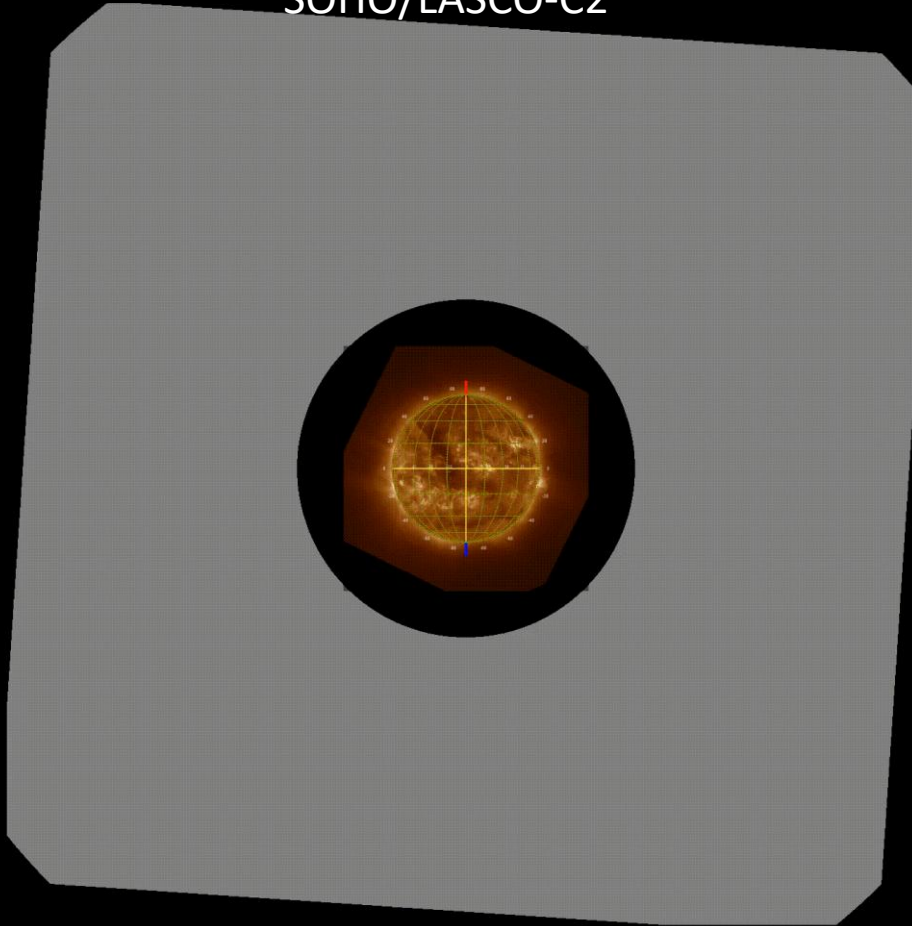
Predicted to arrive as glancing blow on Oct 18 PM

2025-10-15T10:36:11.604

Coronal Mass Ejections

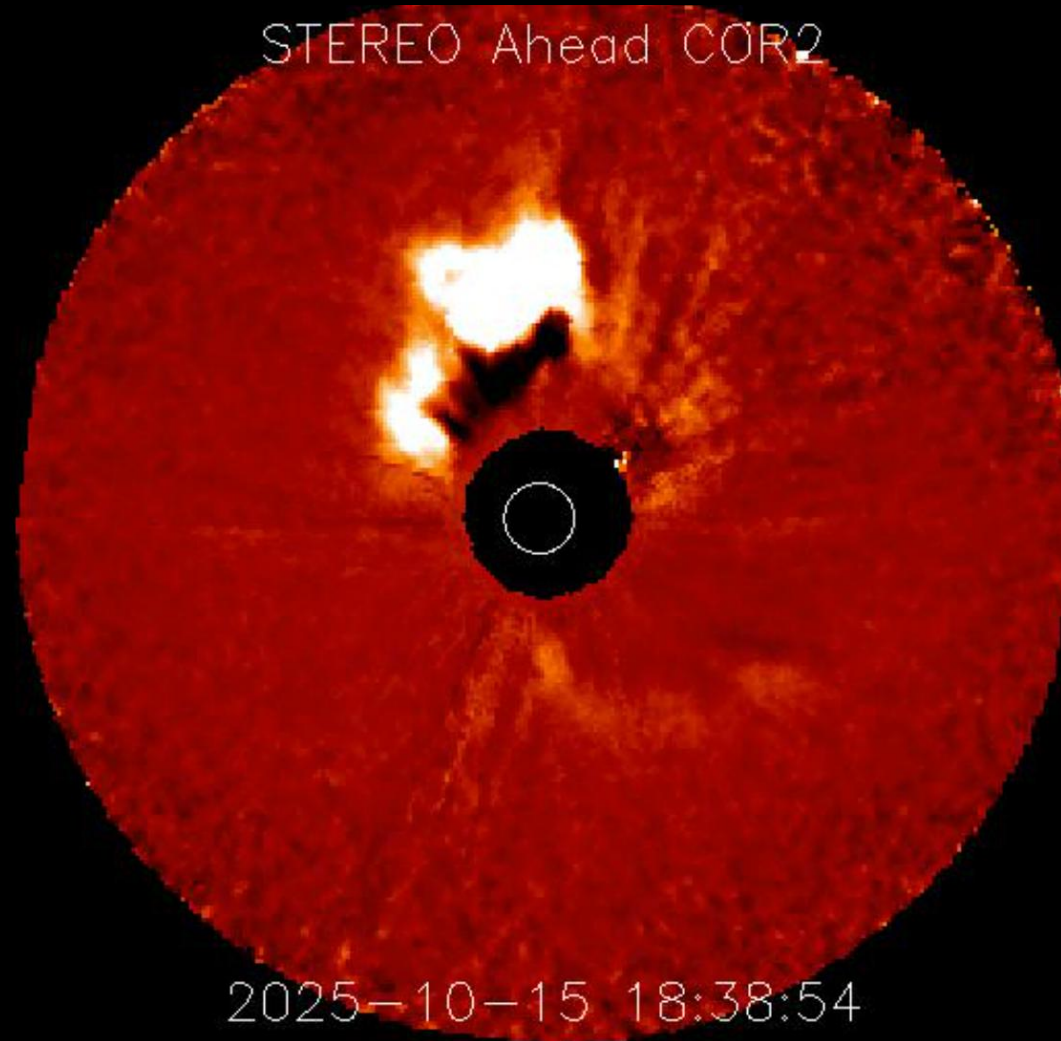
CME 4 on October 15:

SOHO/LASCO-C2



2025-10-15T10:36:11.604

STEREO Ahead COR2



2025-10-15 18:38:54

Partial halo CME to the northwest in LASCO-C2, likely associated with an M1.1 flare peaking on October 15 at 14:10.

Possibly made of 2 CMEs?

Full halo in ST-A

Speed around 650 km/s

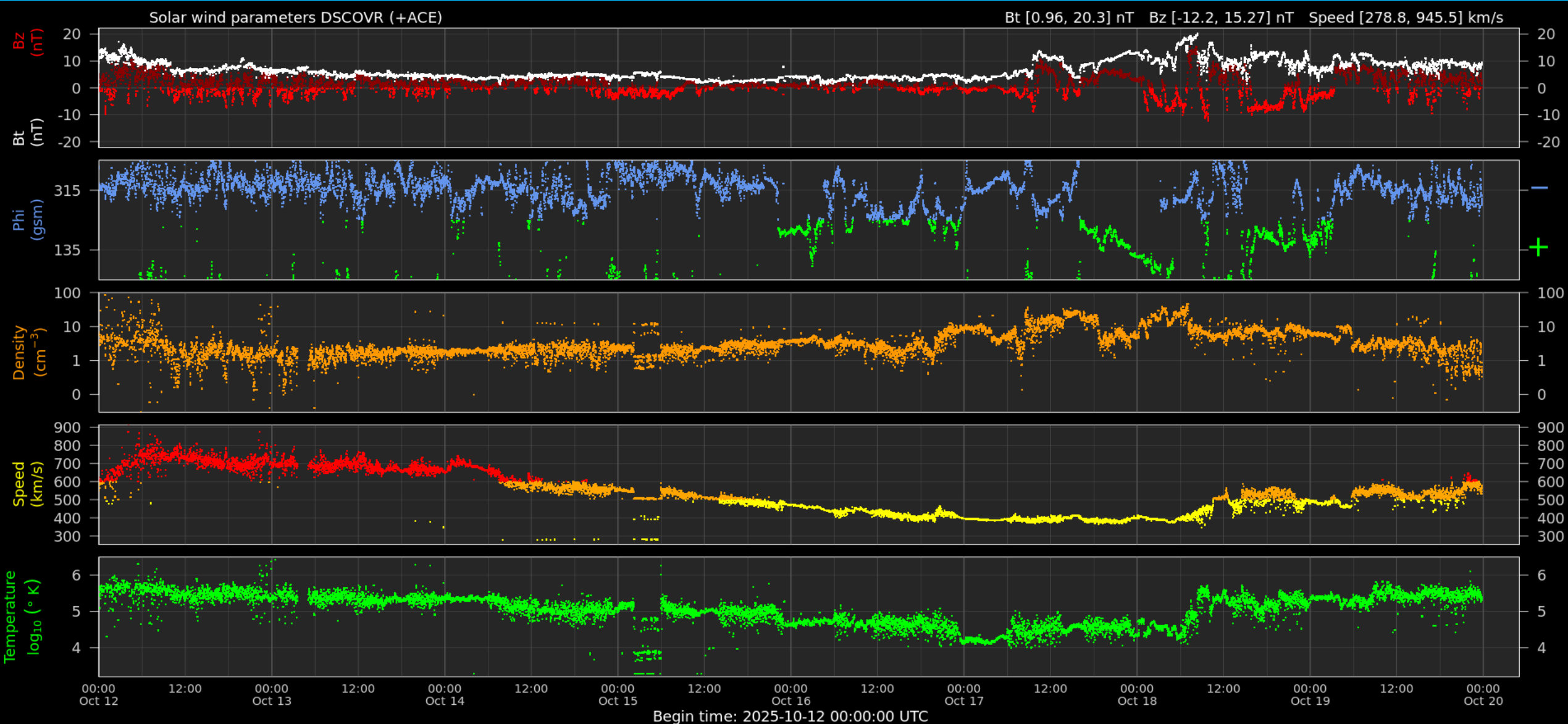
Predicted to arrive as glancing blow on Oct 18 PM

Solar Wind and Geomagnetic Activity

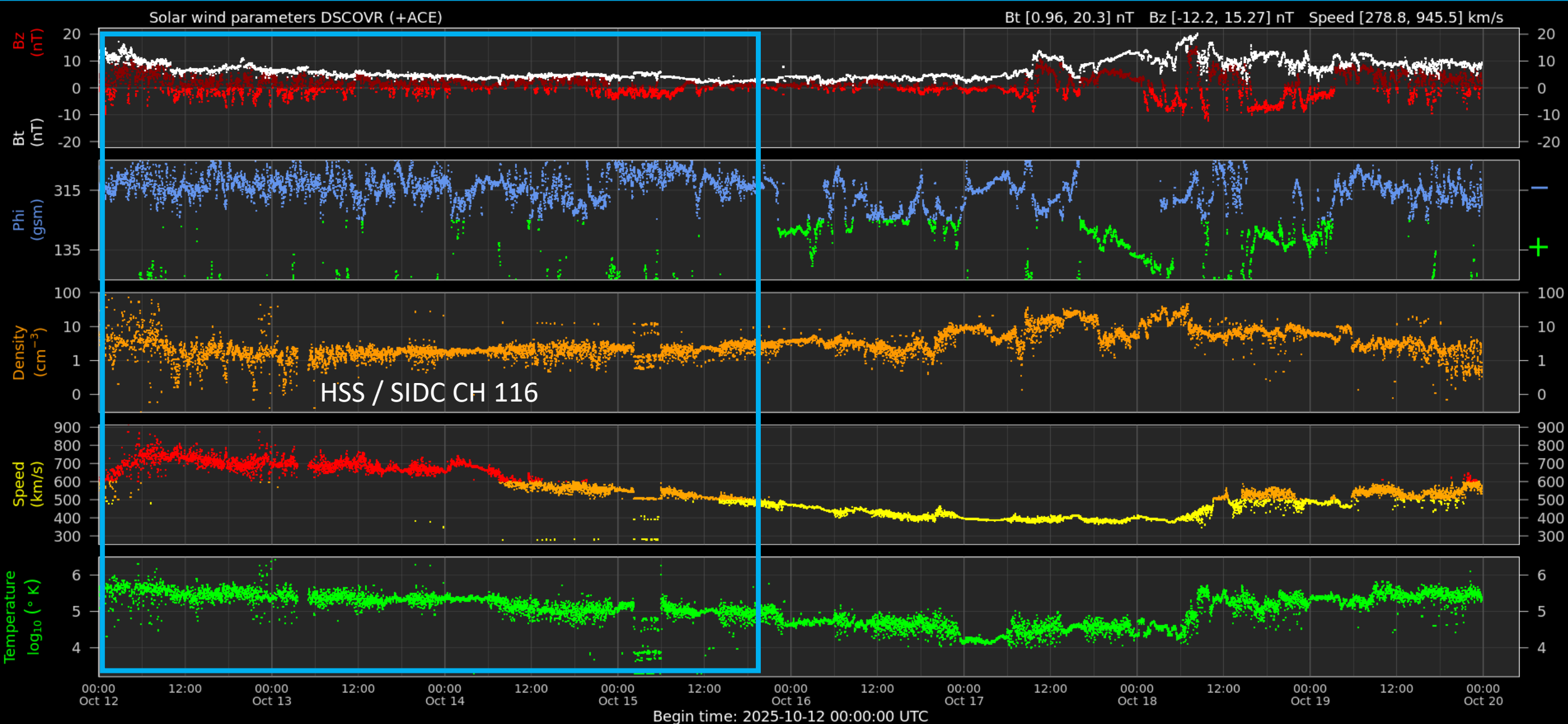


Solar Influences
Data analysis Centre
www.sidc.be

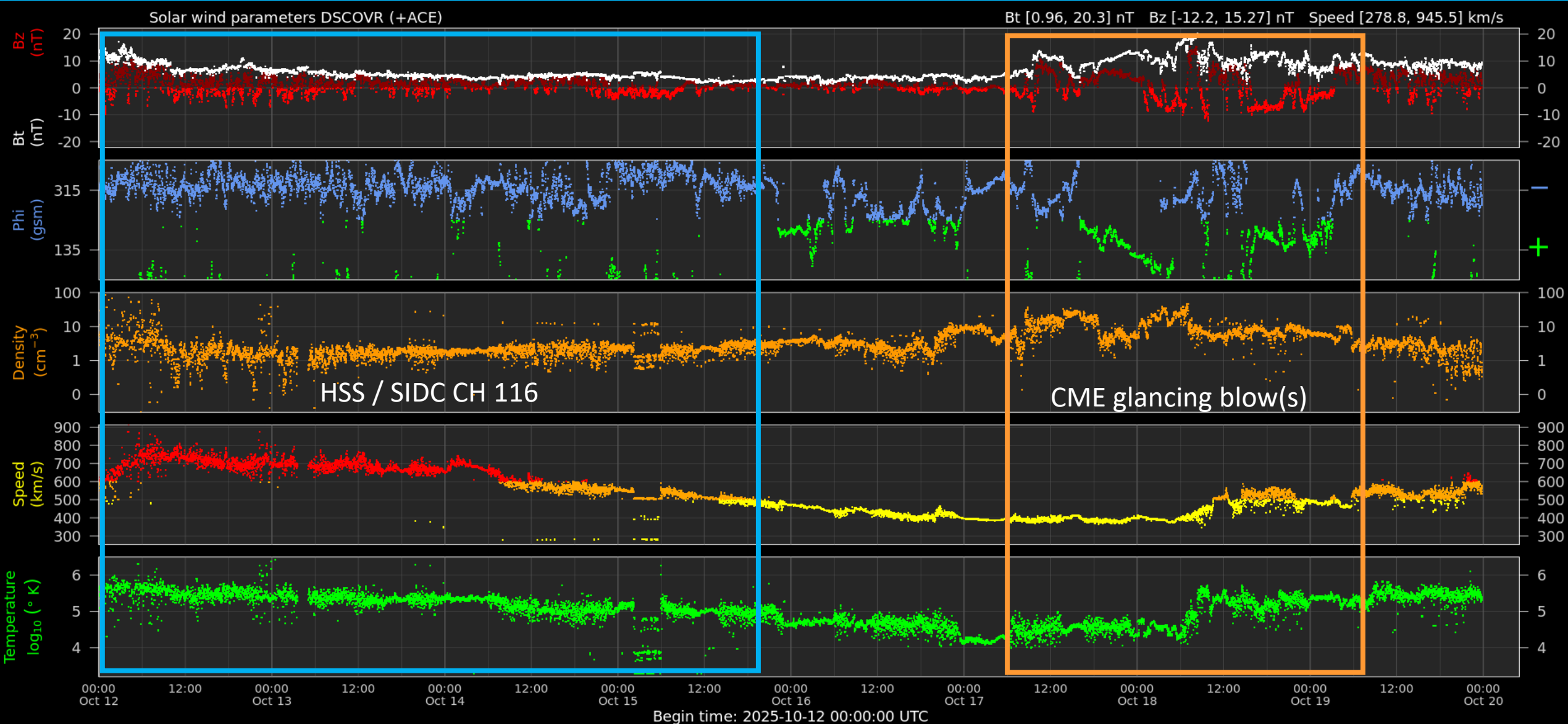
Solar wind parameters



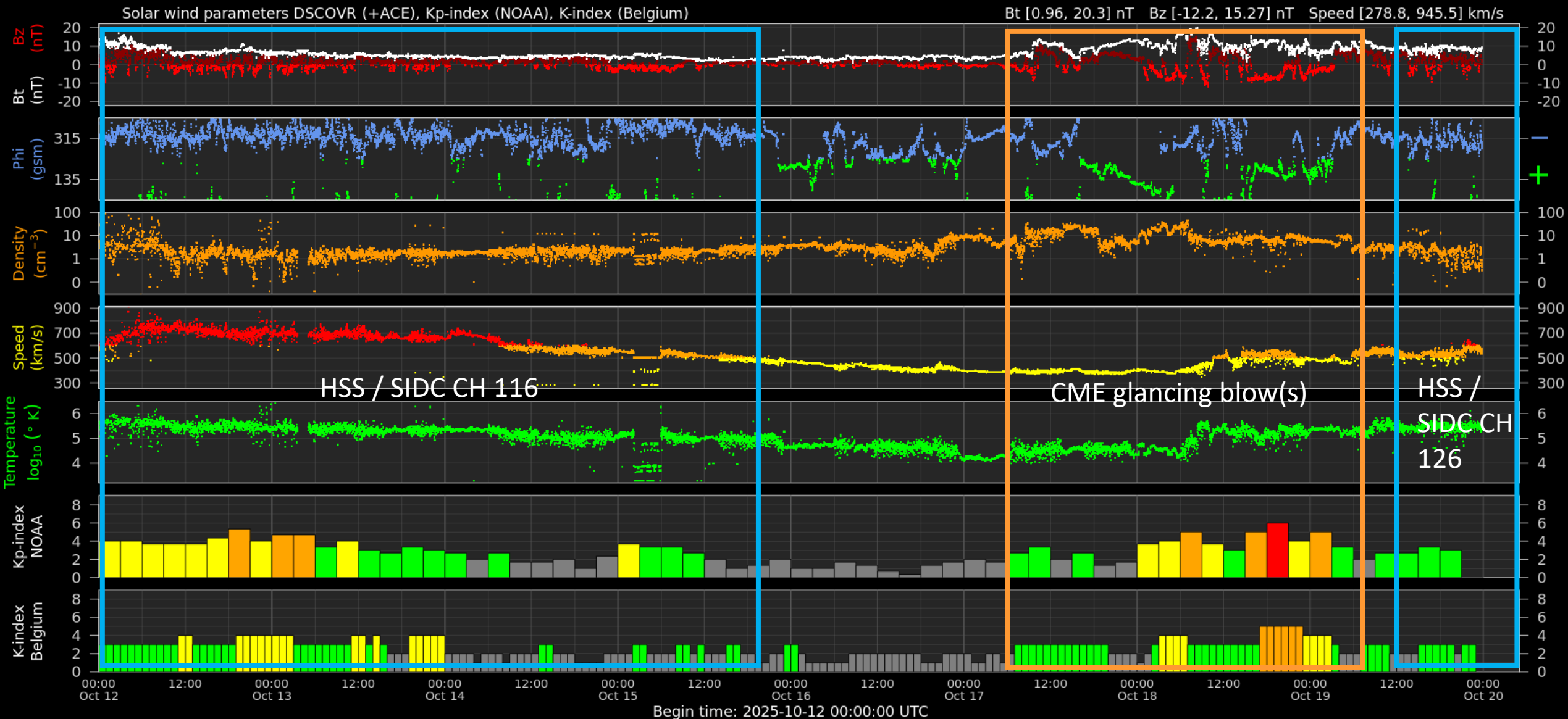
Solar wind parameters



Solar wind parameters

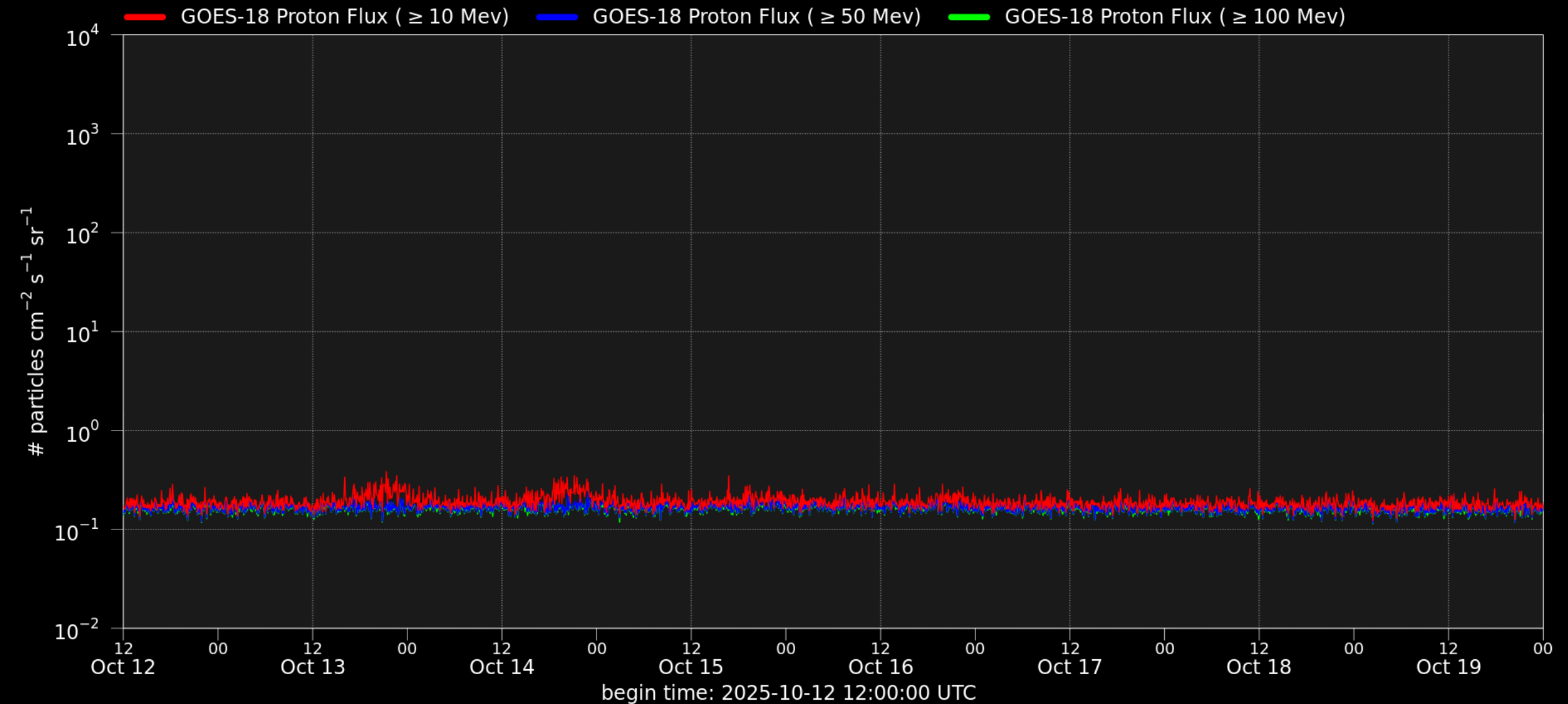


Solar wind parameters & K-indices



Energetic Particles

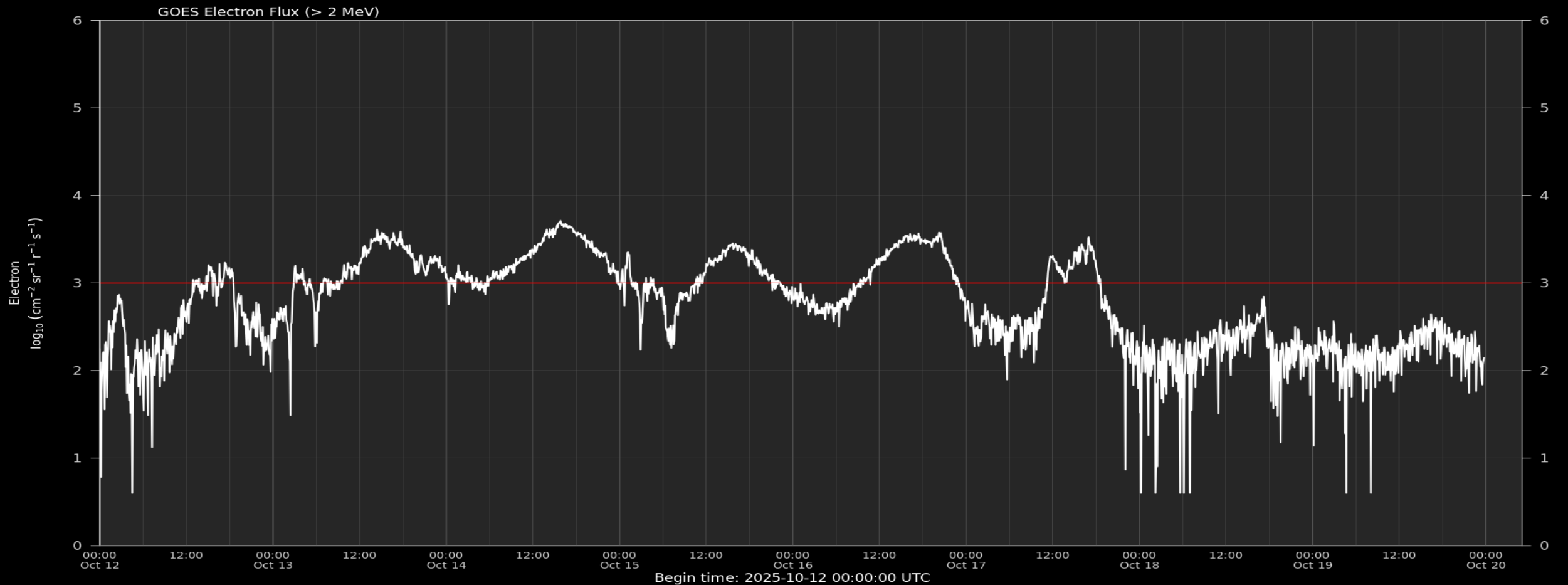
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



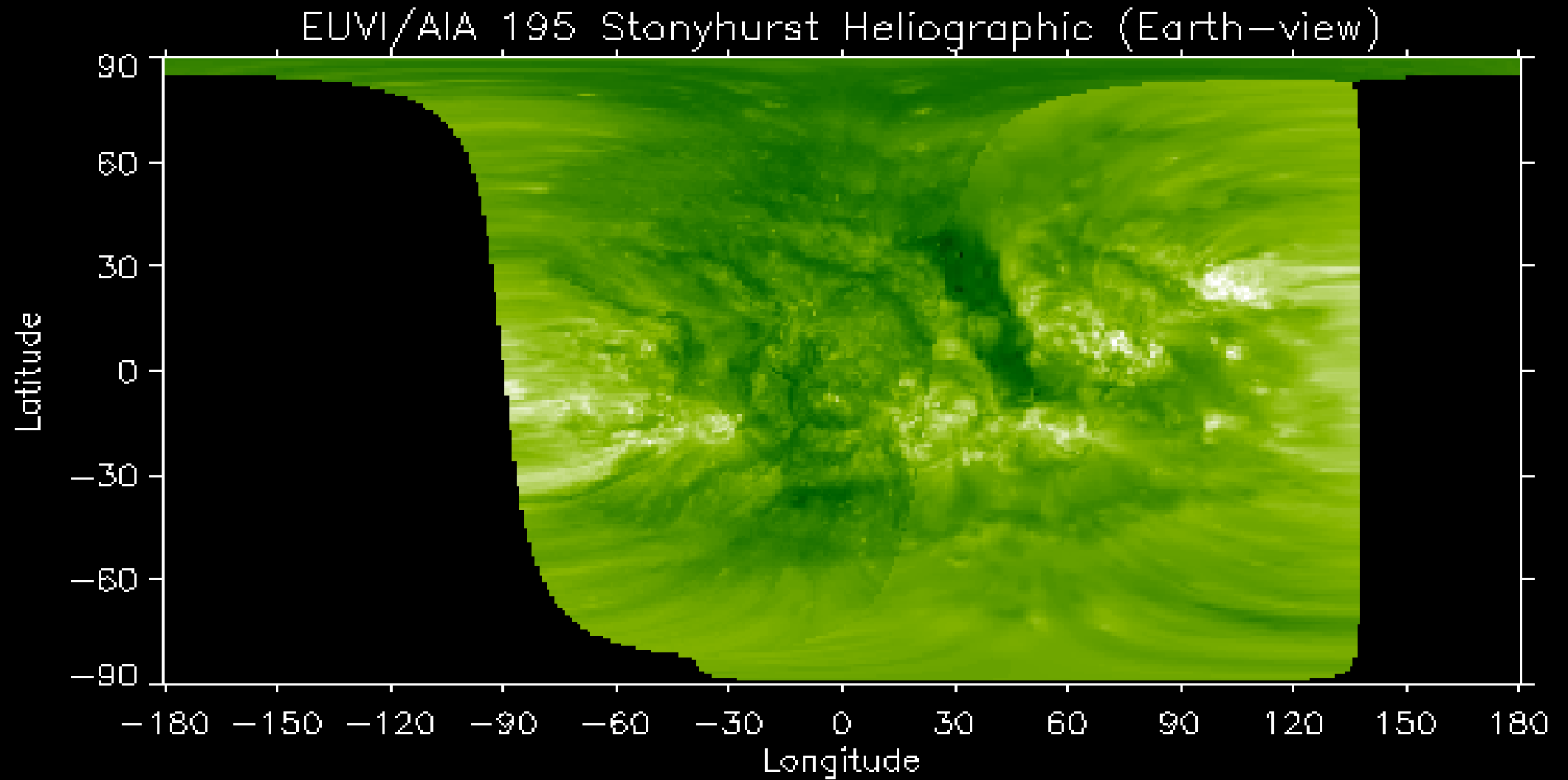
Outlook



Royal Observatory
of Belgium

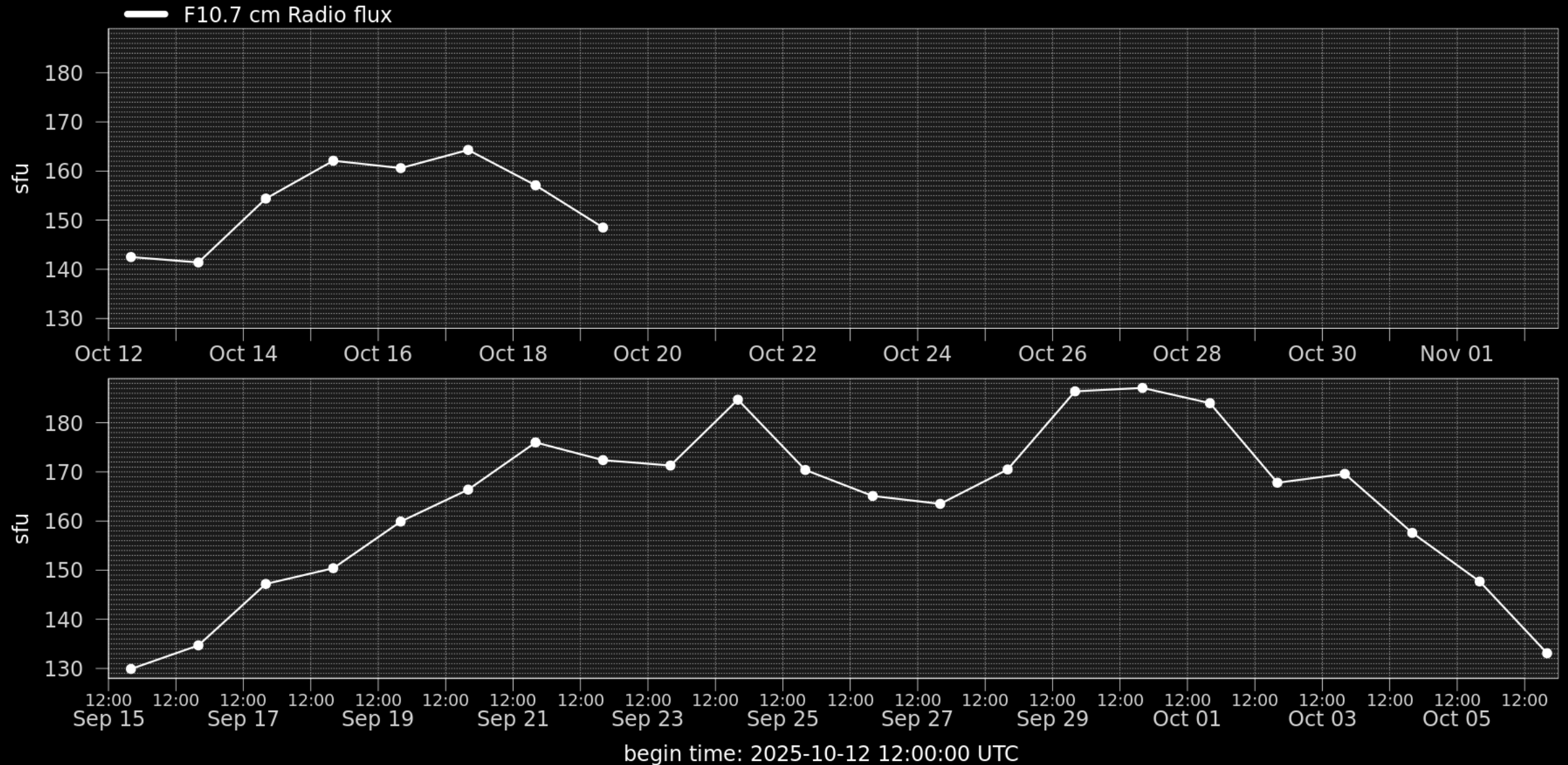
Solar Influences
Data analysis Centre
www.sidc.be

Outlook: Solar activity



Observation date: 2025/10/19 18:05:00

Outlook: Solar F10.7cm radio flux

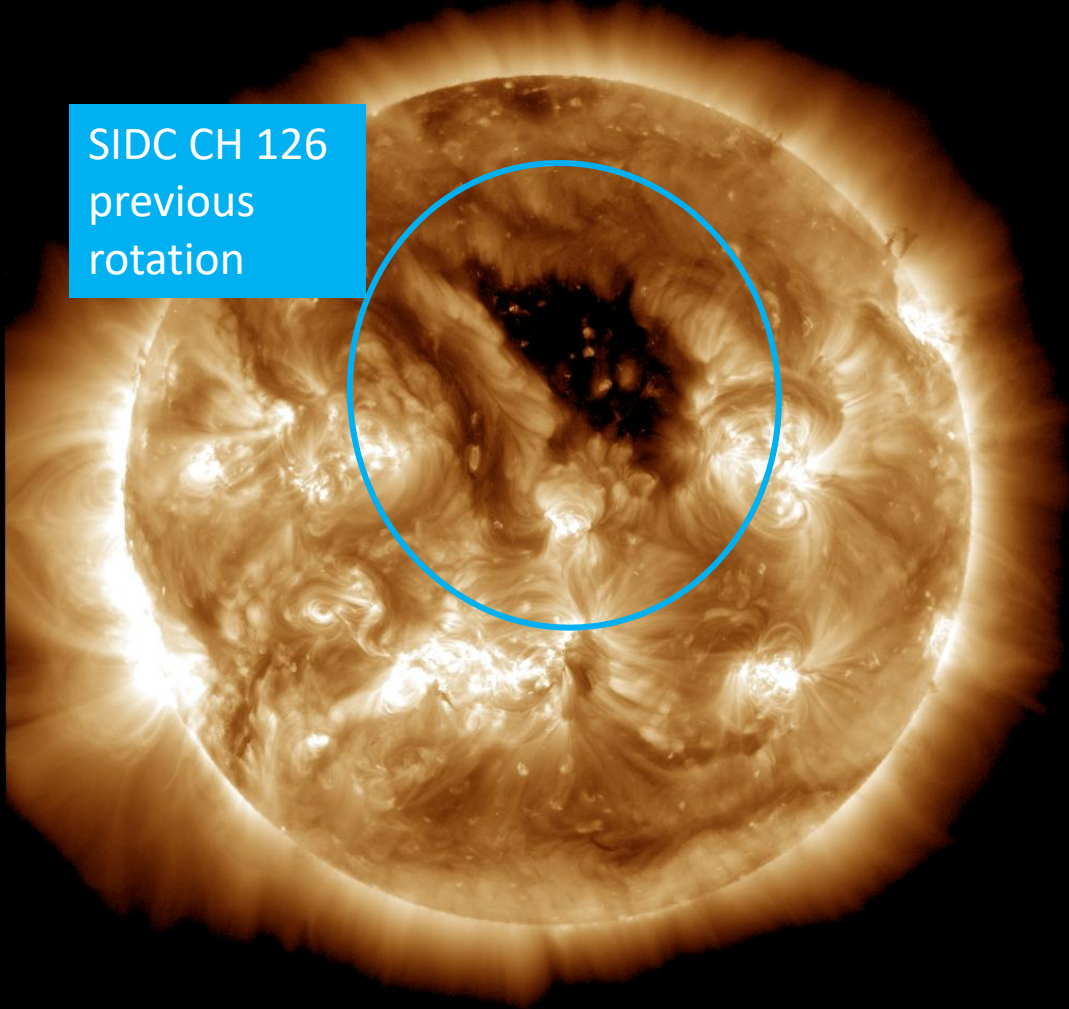


Coronal holes

SDO/AIA 19.3 nm 2025-09-20

SDO/AIA AIA 193Å 2025-09-20T12:00:05.843

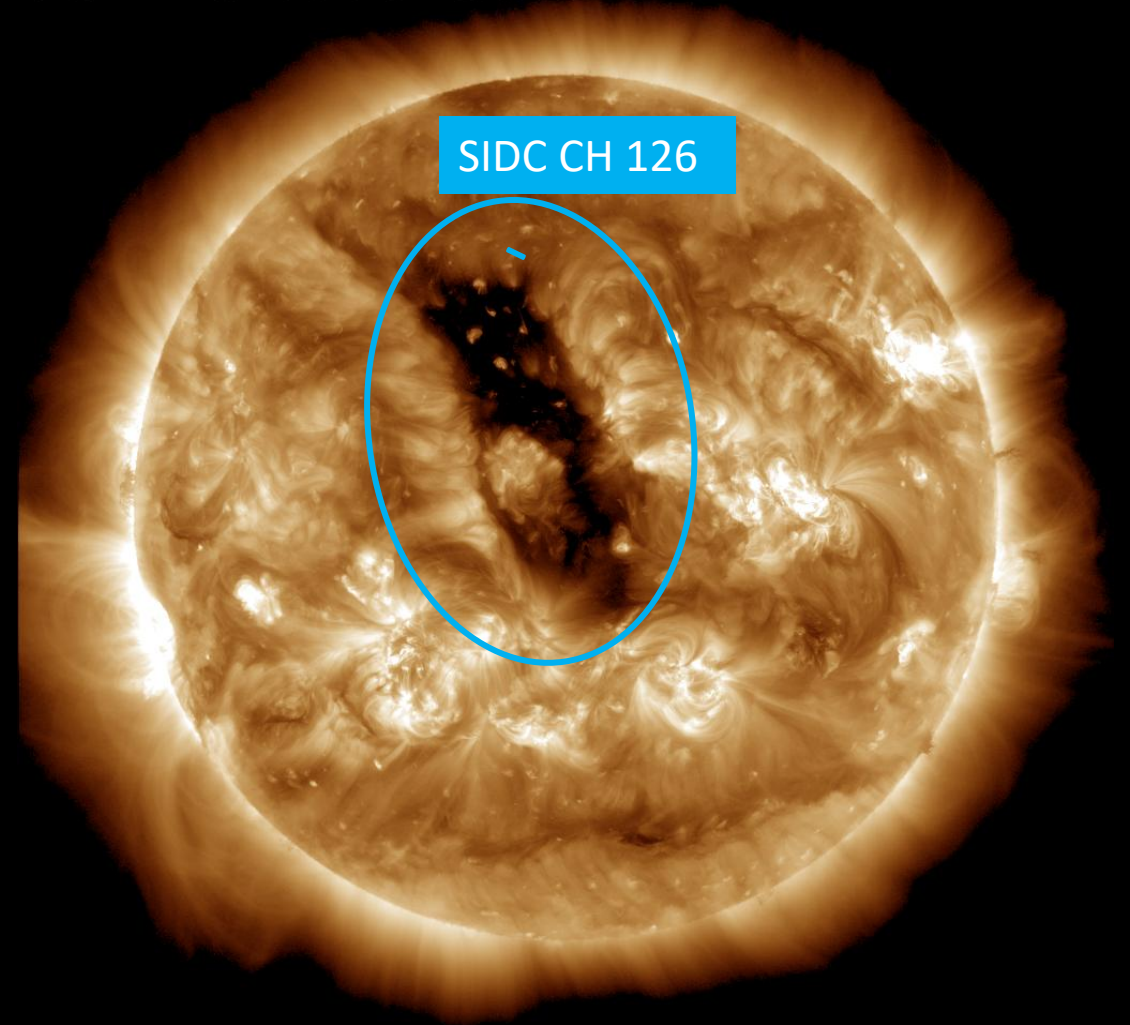
SIDC CH 126
previous
rotation



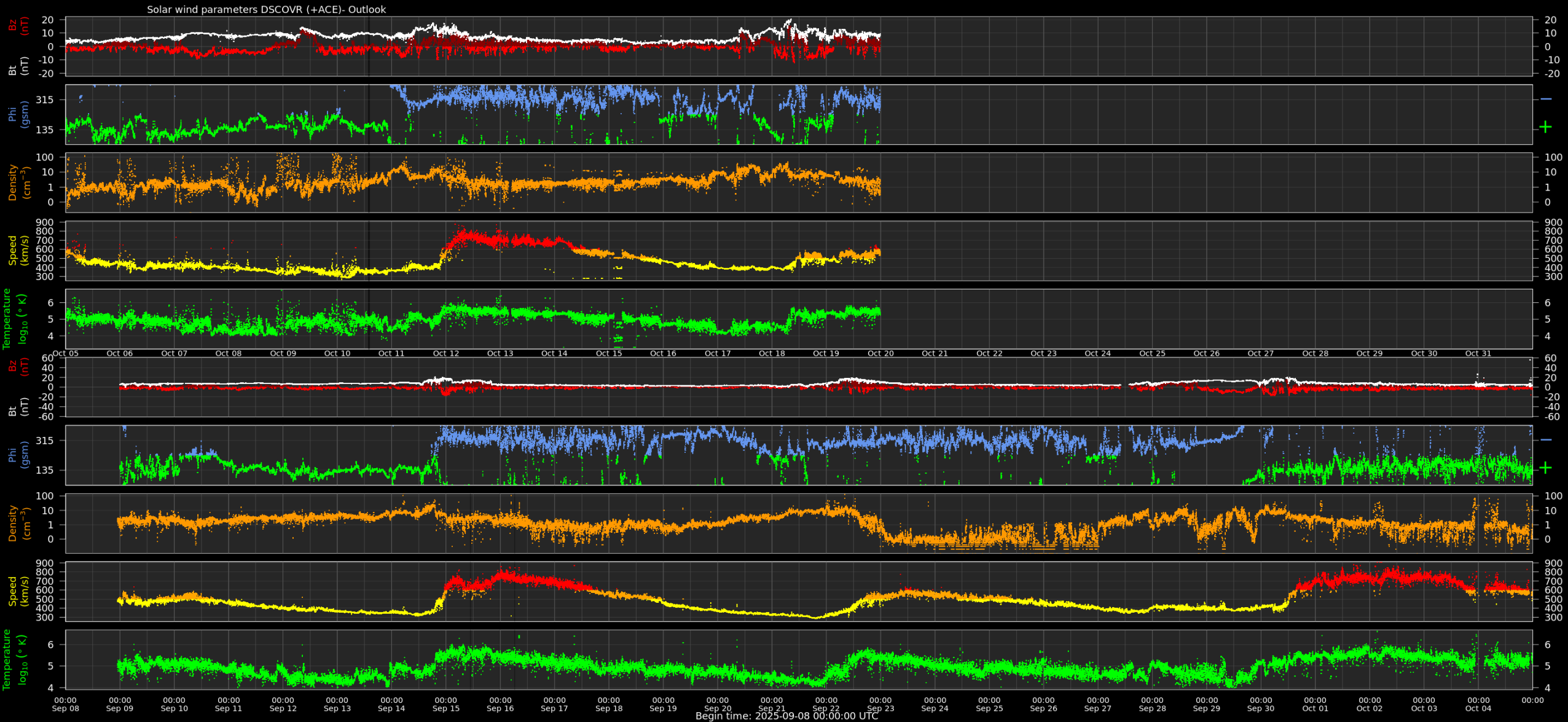
SDO/AIA 19.3 nm 2025-10-16

SDO/AIA AIA 193Å 2025-10-16T12:00:05.843

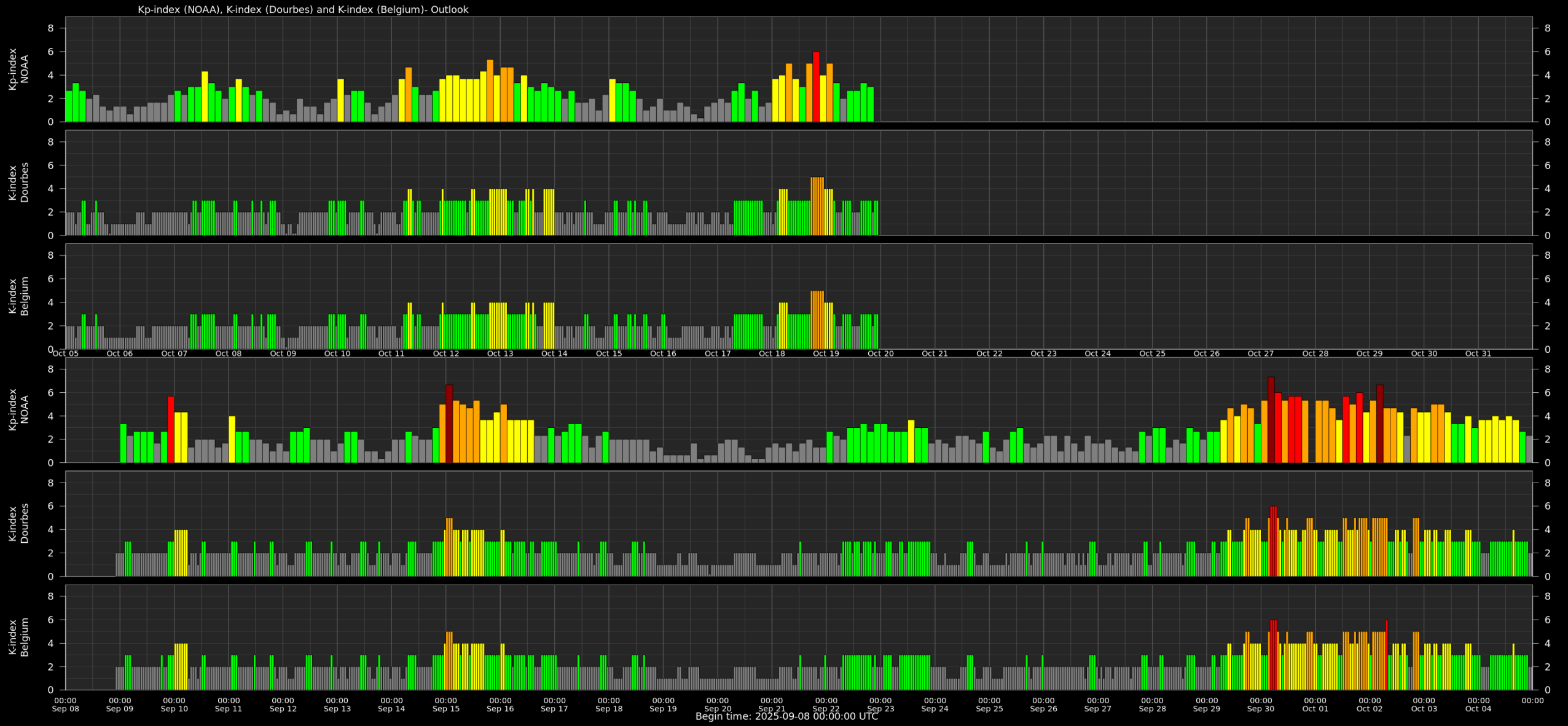
SIDC CH 126



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Pecarus related events

Transition from On Duty Centre (ODC) to Maintenance and Observation Centre (MOC)

Advisories issued for

Amplitude and Phase Scintillation

Post Storm Depression (after $K_p \geq 6$)

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