

SIDC Space Weather Briefing

10 November 2025-16 November 2025

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Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Solar activity from 2025-11-10 00:00 to 2025-11-16 23:59

Active regions	SIDC Sunspot group 687 (NOAA Active Region 4274)
Flares	# C-class flare: 62 # M-class flare: 5 # X-class flare: 3
Coronal Holes	SIDC Coronal hole 136 and SIDC Coronal hole 126
CMEs	Fast Earth directed CMEs: SIDC CME 598 , SIDC CME 599 , SIDC CME 600 , SIDC CME 601

Proton flux	Proton Event
Electron flux	Above threshold

Solar wind and geomagnetic conditions

ICMEs	Yes, multiple
Solar wind conditions	B : 0.39 - 61.84 nT // Bz: -55.34 nT to 33.95 nT // Speed: 248.0 - 798.7km/s
Geomagnetic conditions	max K _{Bel} : 9.0, max K _p (NOAA): 8.67, Extreme Storm conditions

All Quiet Alert: OFF

Solar Activity

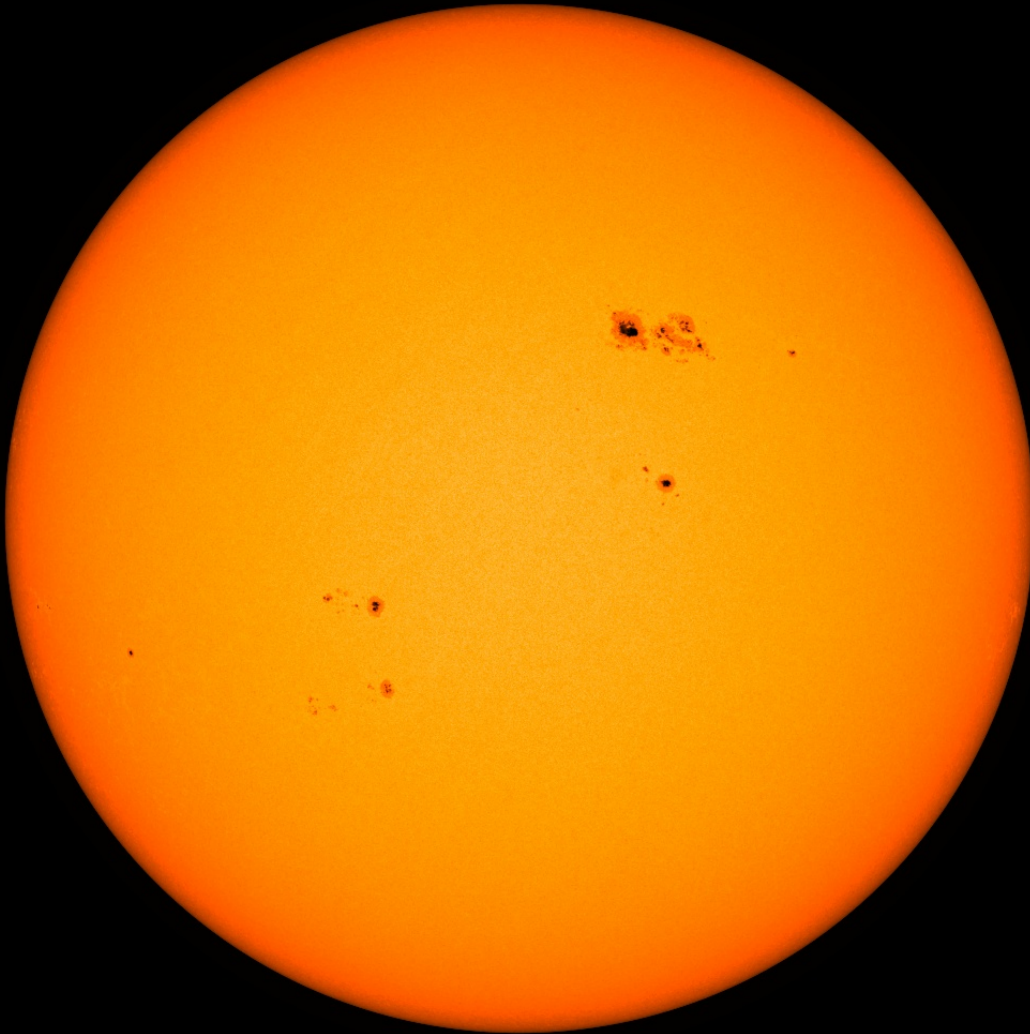


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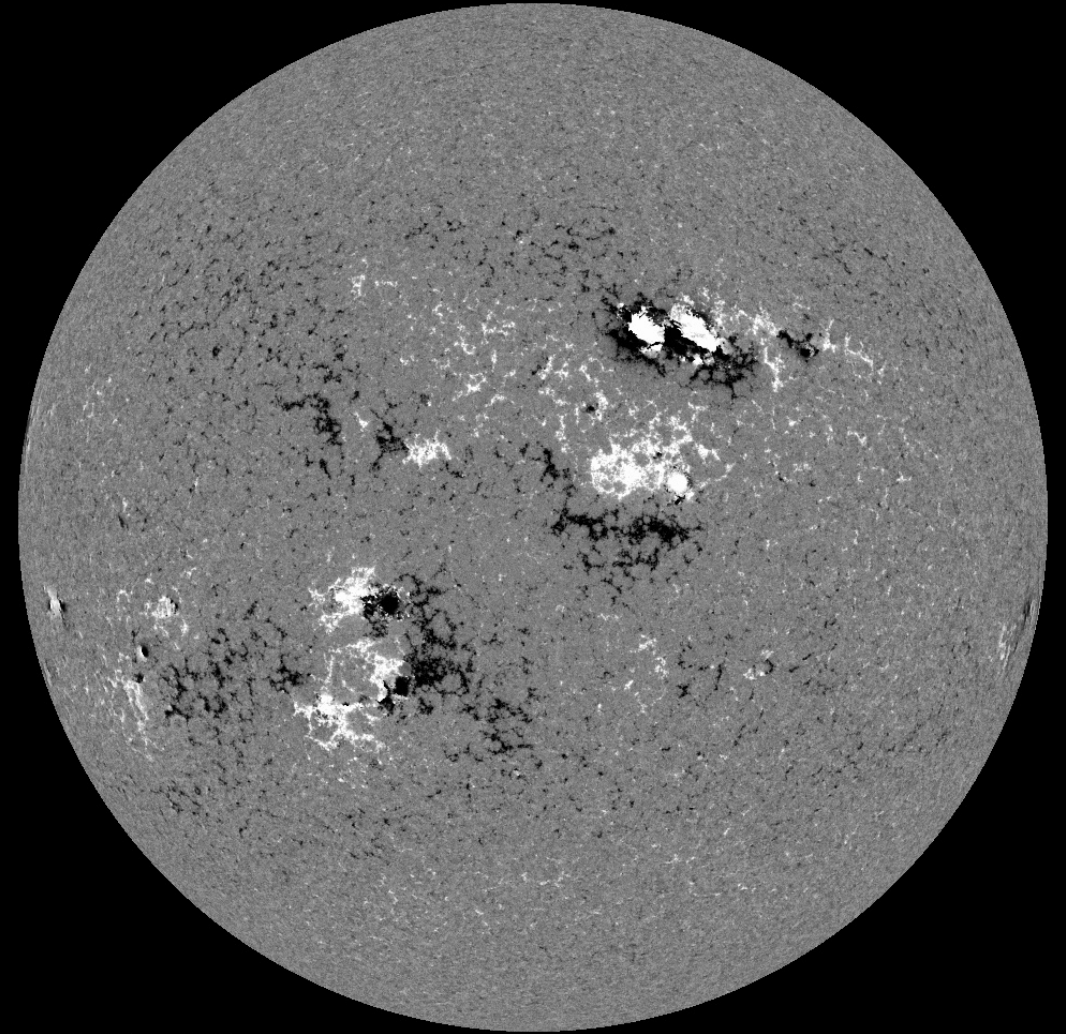
Solar active regions

SDO/HMI White Light 2025-11-10



SDO/HMI Continuum: 20251110_120000

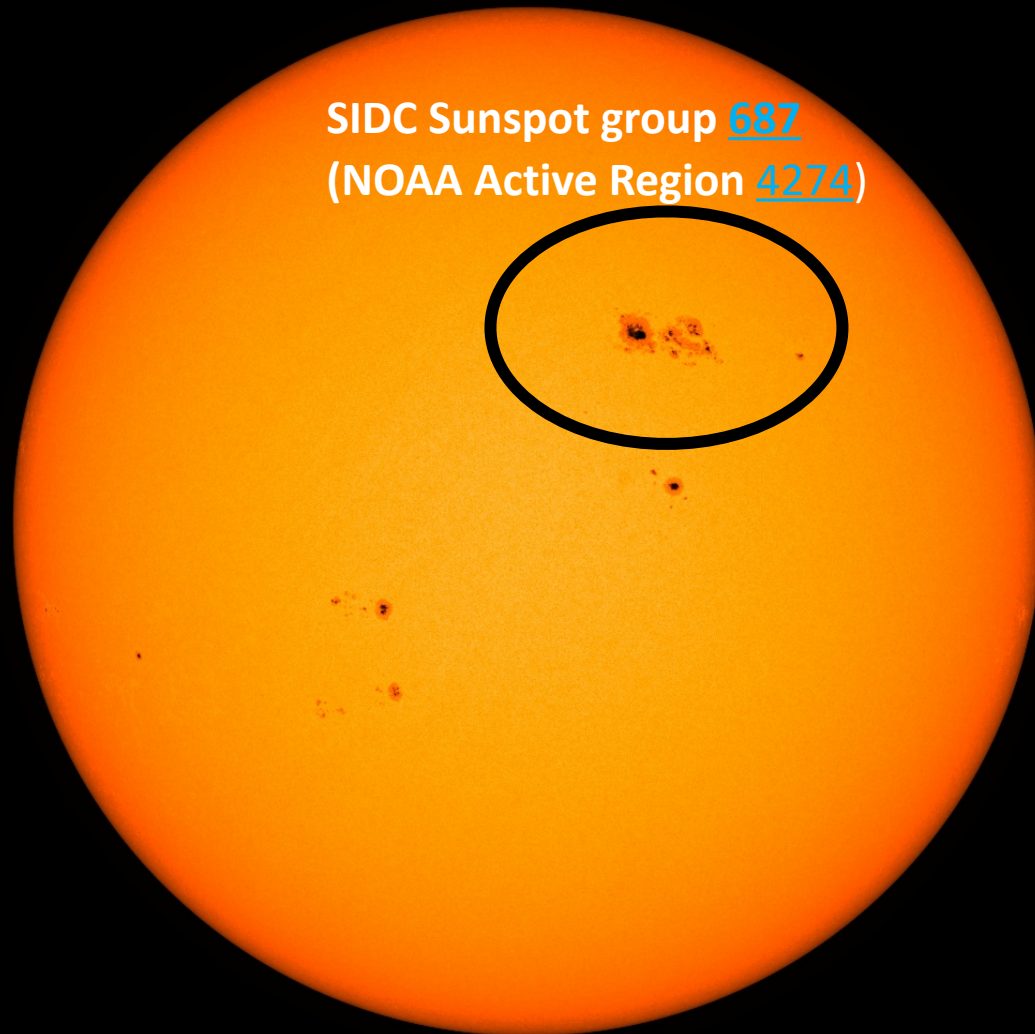
SDO/HMI Magnetogram 2025-11-10



SDO/HMI Magnetogram: 20251110_120000

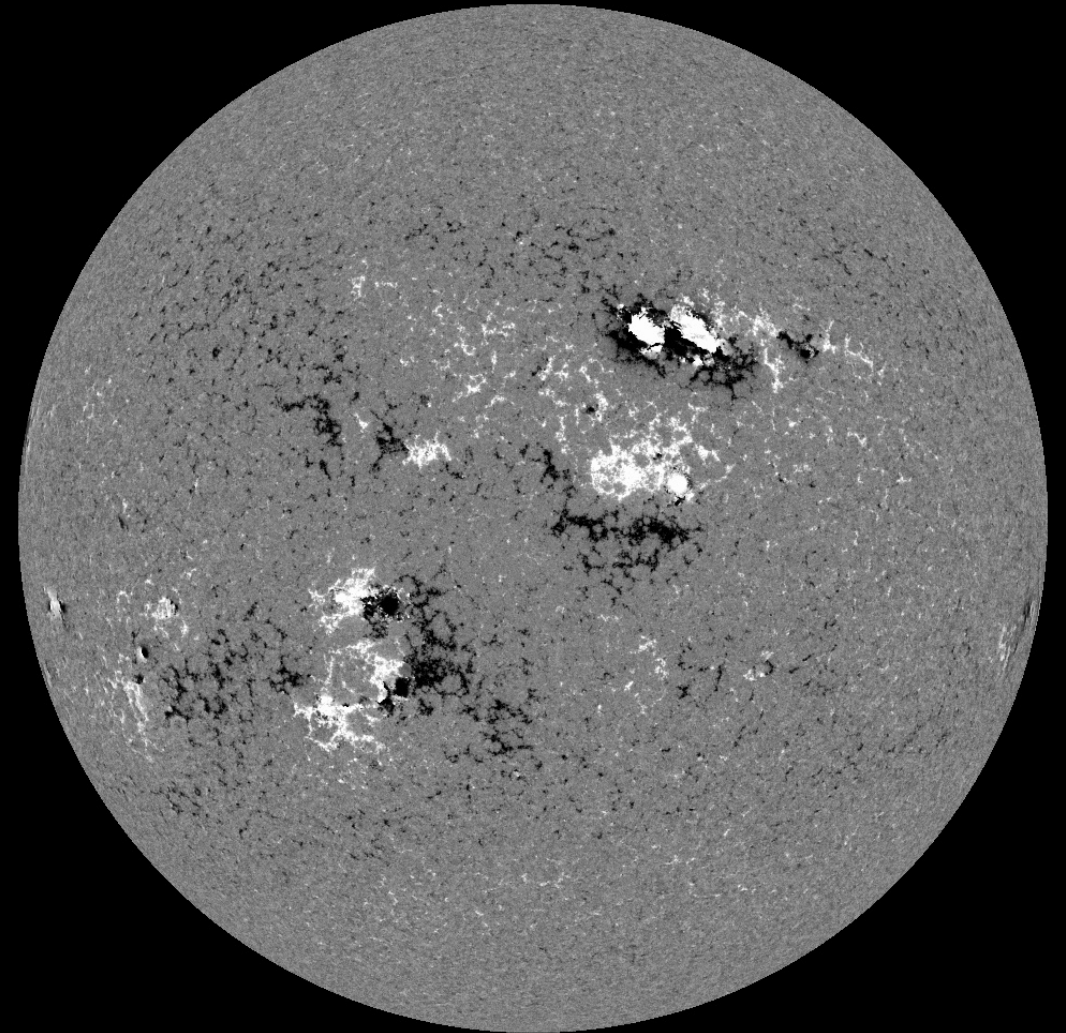
Solar active regions

SDO/HMI White Light 2025-11-10



SDO/HMI Continuum: 20251110_120000

SDO/HMI Magnetogram 2025-11-10



SDO/HMI Magnetogram: 20251110_120000

Solar active regions

SIDC Sunspot group 687

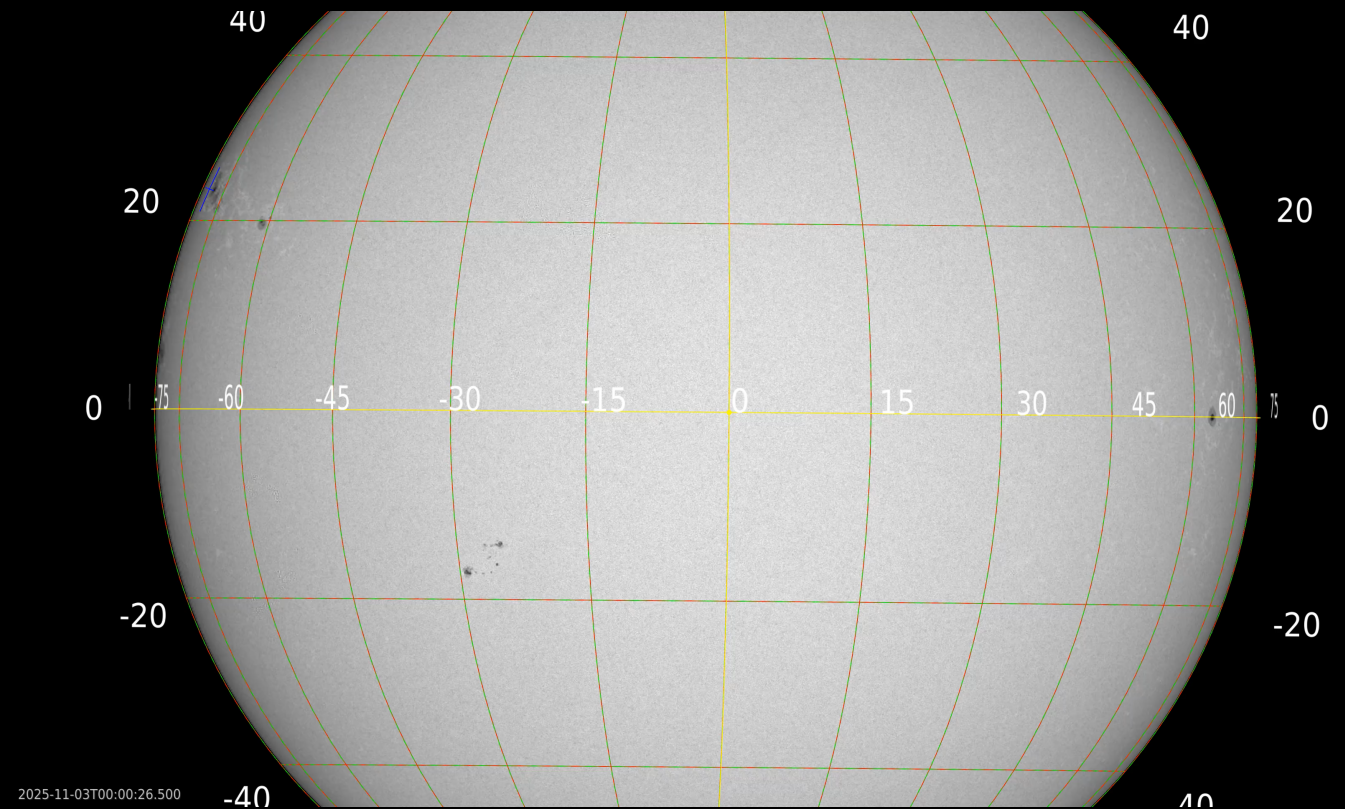
First time : 2025-11-03 09:12

Last time : 2025-11-16 09:01

JHelioviewer :

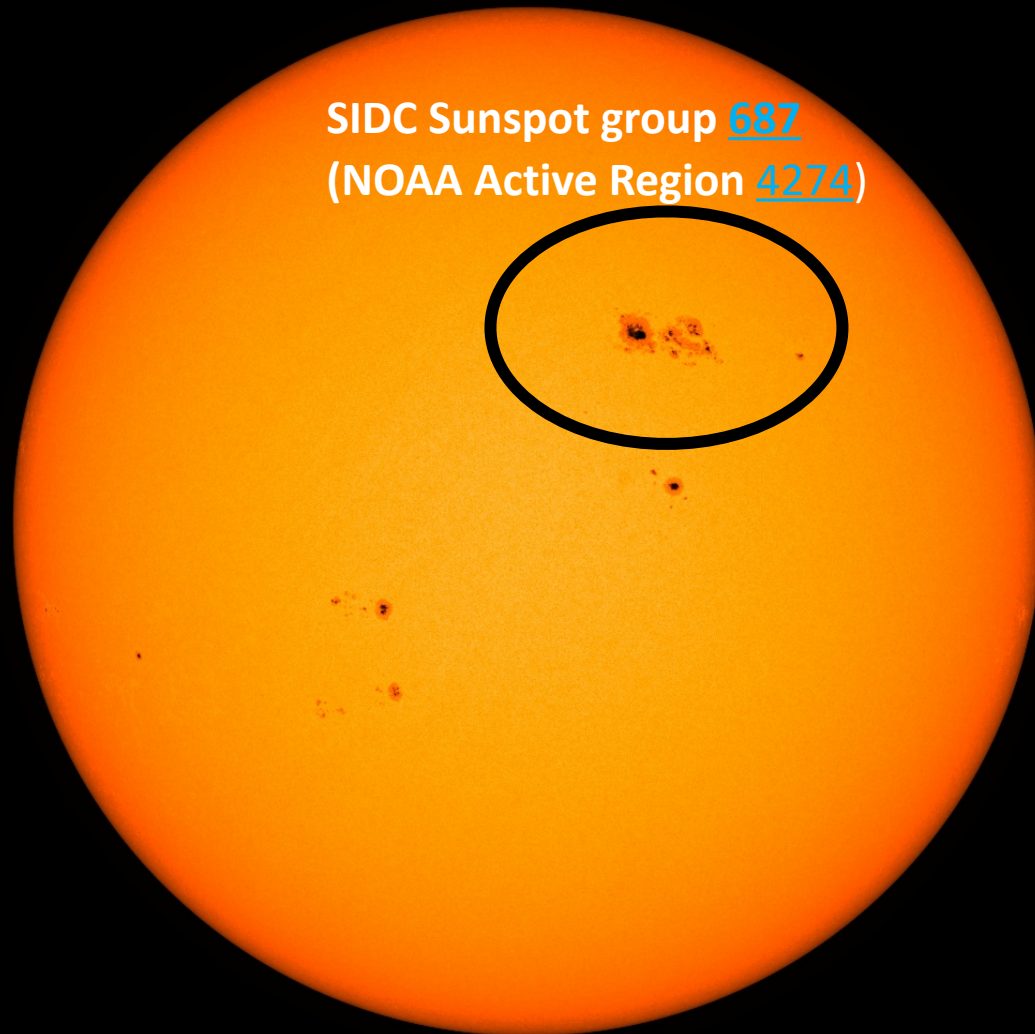
SIDC Eval. :

EVALUATION TIME[UTC]	NUMBER	LOCATION	AREA	GROWTH	MCINTOSH	MAGNETIC
2025-11-16 09:01	0687	N24W94	0400 MSH	Stable	Fkc	Beta-Gamma-Delta
2025-11-15 08:53	0687	N24W81	0670 MSH	Stable	Fkc	Beta-Gamma-Delta
2025-11-14 09:48	0687	N24W68	1300 MSH	Stable	Ekc	Beta-Gamma-Delta
2025-11-13 09:00	0687	N24W55	1200 MSH	Stable	Ekc	Beta-Gamma-Delta
2025-11-12 10:11	0687	N24W40	1400 MSH	Decreasing	Ekc	Beta-Gamma-Delta
2025-11-11 09:10	0687	N24W27	1500 MSH	Stable	Ekc	Beta-Gamma-Delta
2025-11-10 08:47	0687	N24W15	1550 MSH	Stable	Ekc	Beta-Gamma-Delta
2025-11-09 08:45	0687	N24W03	1510 MSH	Stable	Ekc	Beta-Gamma-Delta
2025-11-08 08:53	0687	N24E10	1500 MSH	Stable	Eki	Beta-Gamma-Delta
2025-11-07 09:08	0687	N24E24	1500 MSH	Growing	Eki	Beta-Gamma-Delta
2025-11-06 00:30	0687	N24E40	0420 MSH	NA	Ekc	Beta-Gamma-Delta
2025-11-05 00:30	0687	N24E53	0300 MSH	Stable	Ekc	Beta-Gamma-Delta
2025-11-04 00:00	0687	N24E68	0500 MSH	Growing	Ekc	Beta-Gamma
2025-11-03 09:12	0687	N24E76	0500 MSH	Growing	Dkc	Beta-Gamma



Solar active regions

SDO/HMI White Light 2025-11-10

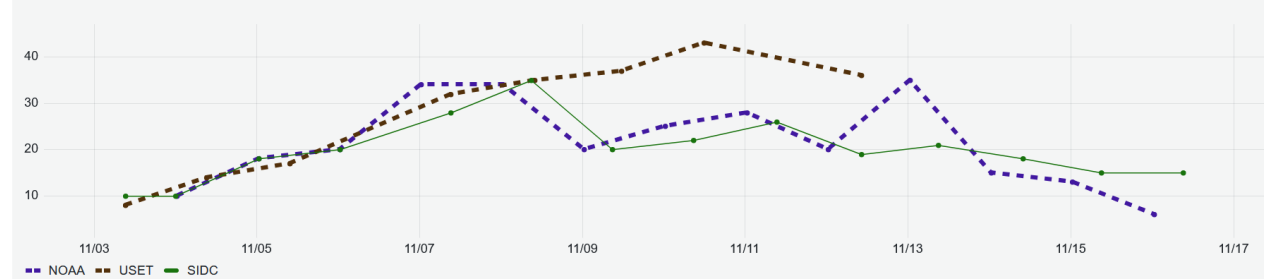


SDO/HMI Continuum: 20251110_120000

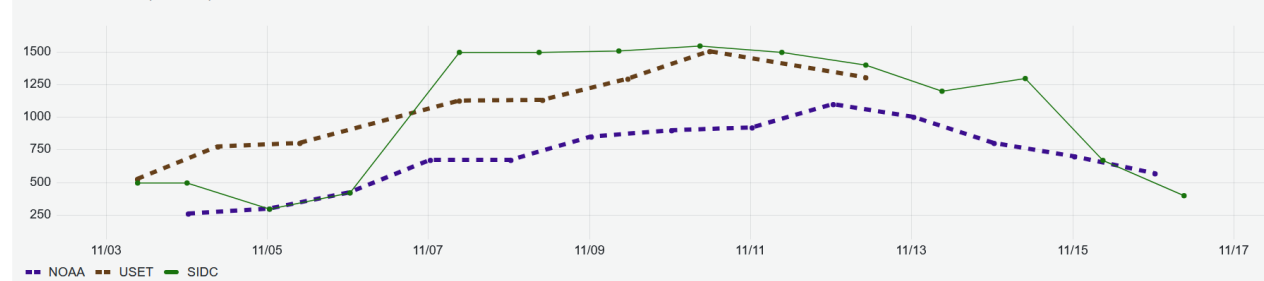
SIDC Sunspot group 687

Sunspots

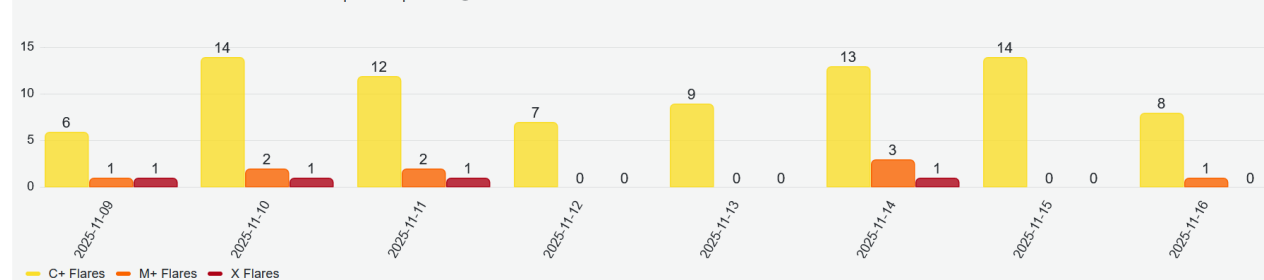
Number of Spots associated to SIDC Sunspot Group 687 ⓘ



Area of SIDC Sunspot Group 687 ⓘ



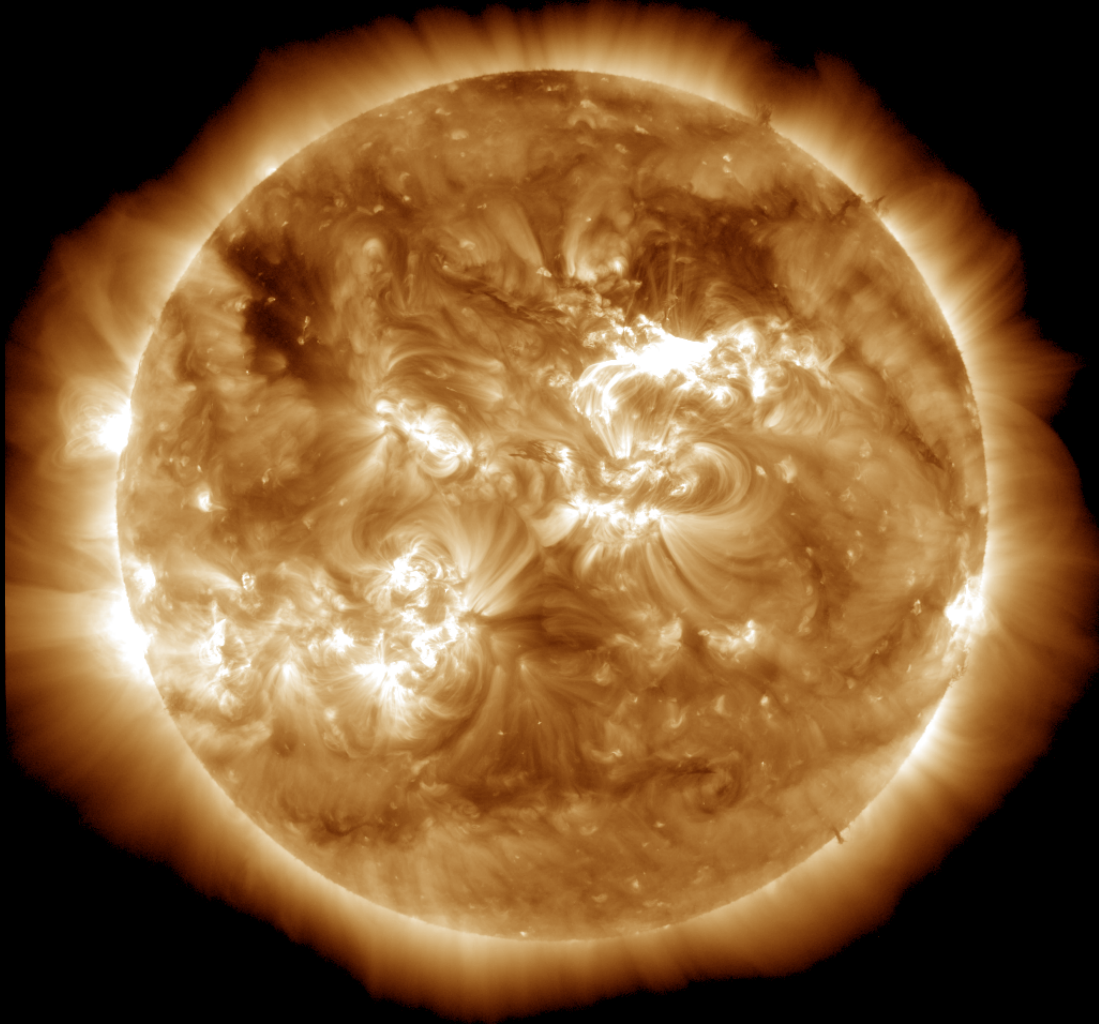
Number of SIDC Flare associated to SIDC Sunspot Group 687 ⓘ



Coronal holes

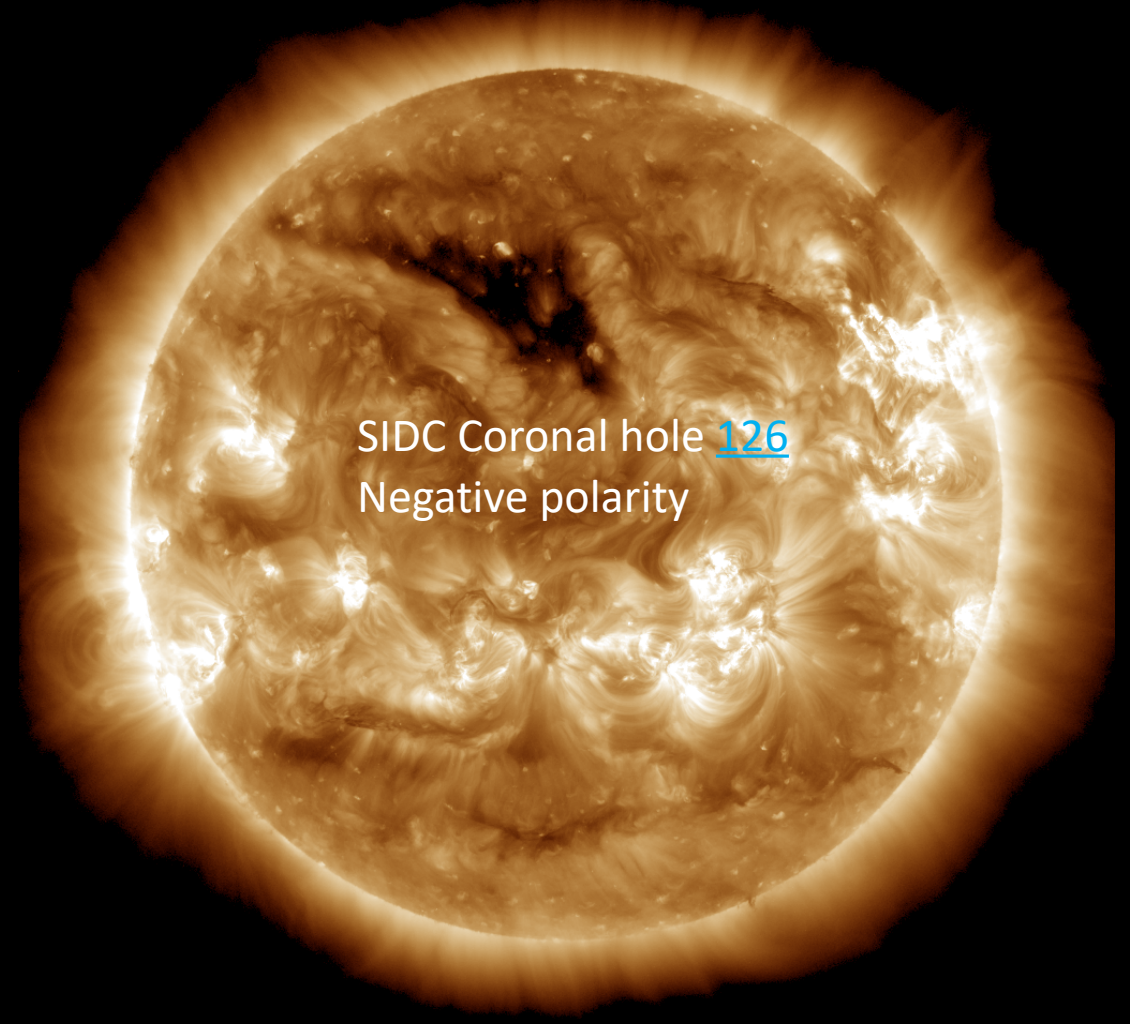
SDO/AIA 19.3 nm 2025-11-10

SDO/AIA AIA 193Å 2025-11-10T12:00:05.843



SDO/AIA 19.3 nm 2025-11-13

SDO/AIA AIA 193Å 2025-11-13T12:00:05.843

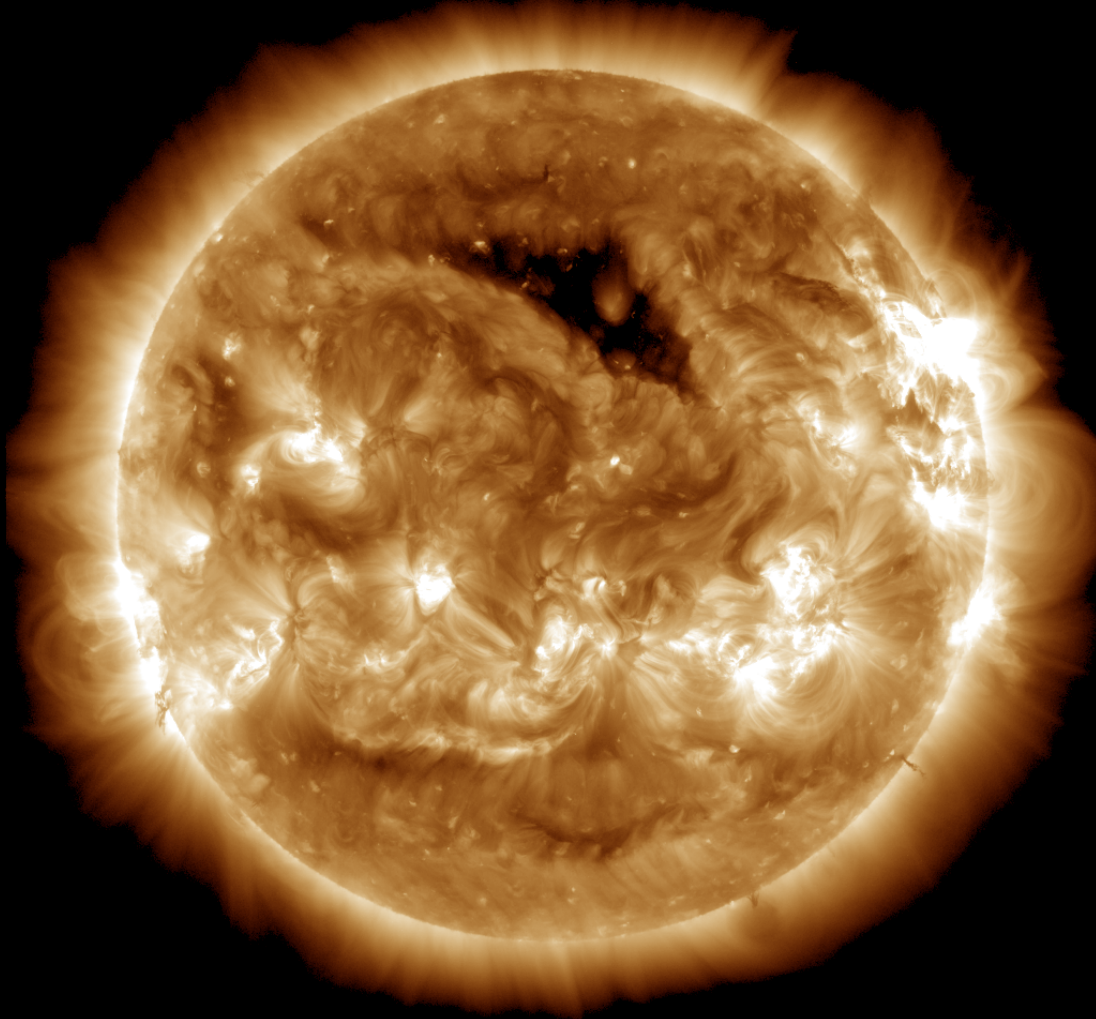


SIDC Coronal hole [126](#)
Negative polarity

Coronal holes

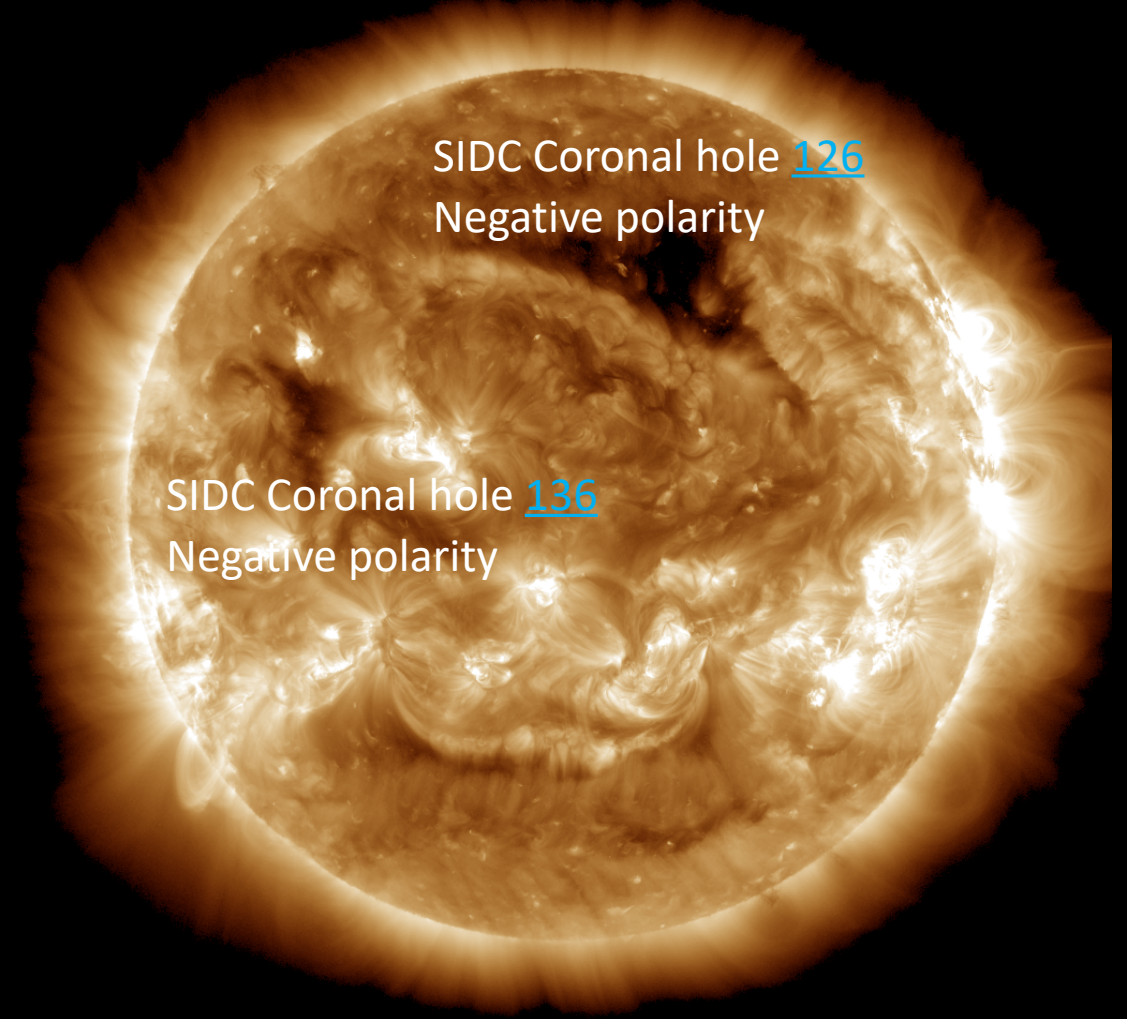
SDO/AIA 19.3 nm 2025-11-14

SDO/AIA AIA 193Å 2025-11-14T12:00:05.846



SDO/AIA 19.3 nm 2025-11-15

SDO/AIA AIA 193Å 2025-11-15T12:00:05.835



SIDC Coronal hole [126](#)
Negative polarity

SIDC Coronal hole [136](#)
Negative polarity

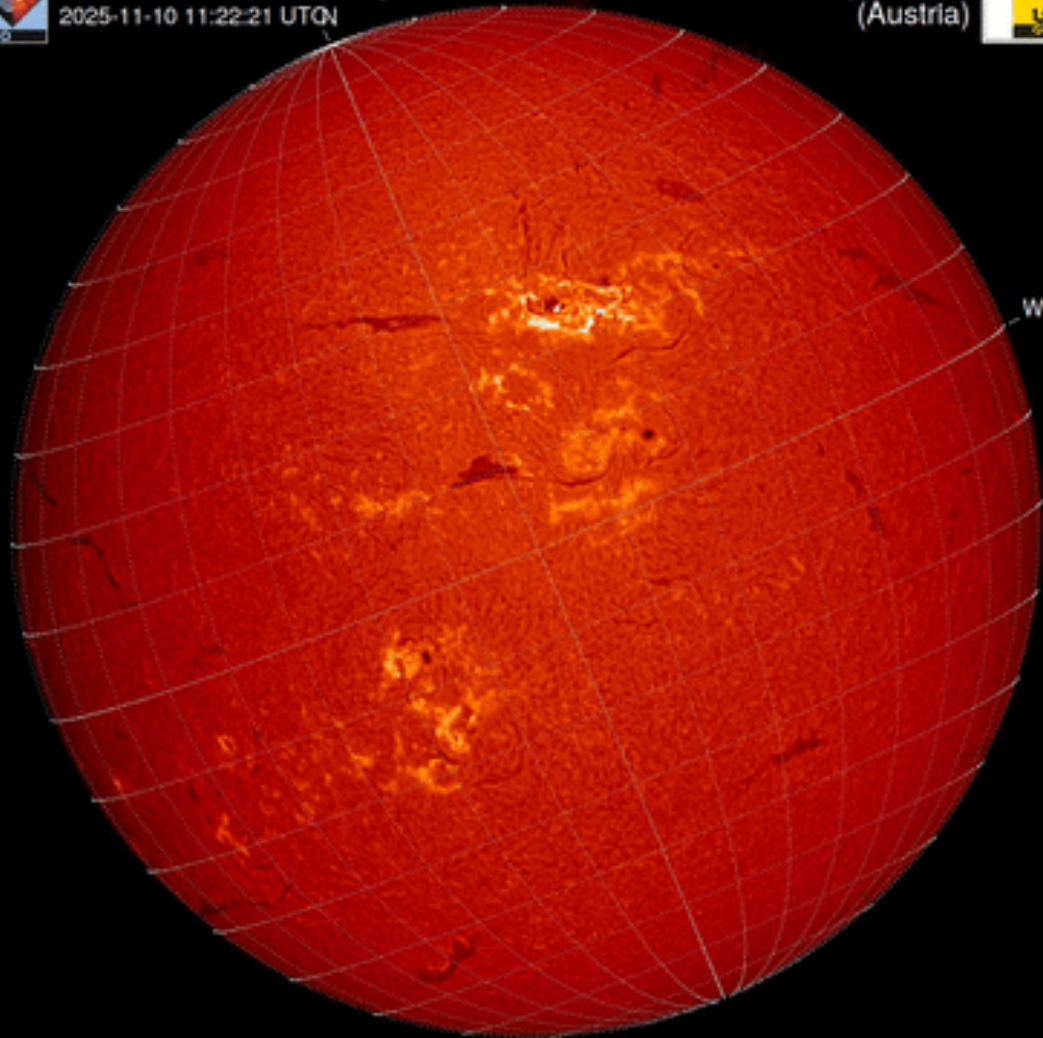
Filaments & Filament eruptions

H-alpha 2025-11-10



Kanzelhöhe Observatory
2025-11-10 11:22:21 UTC

University of Graz
(Austria)

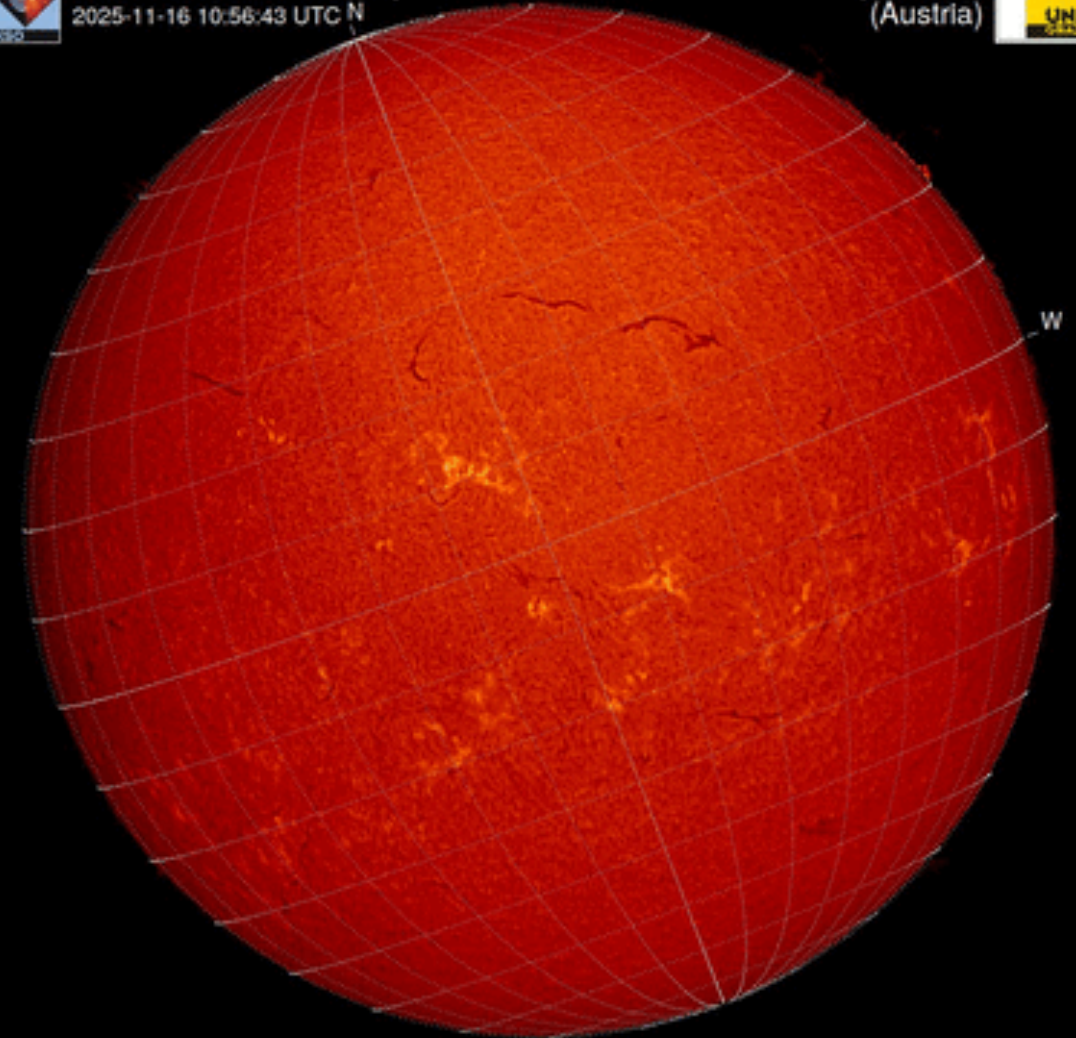


H-alpha 2025-11-16

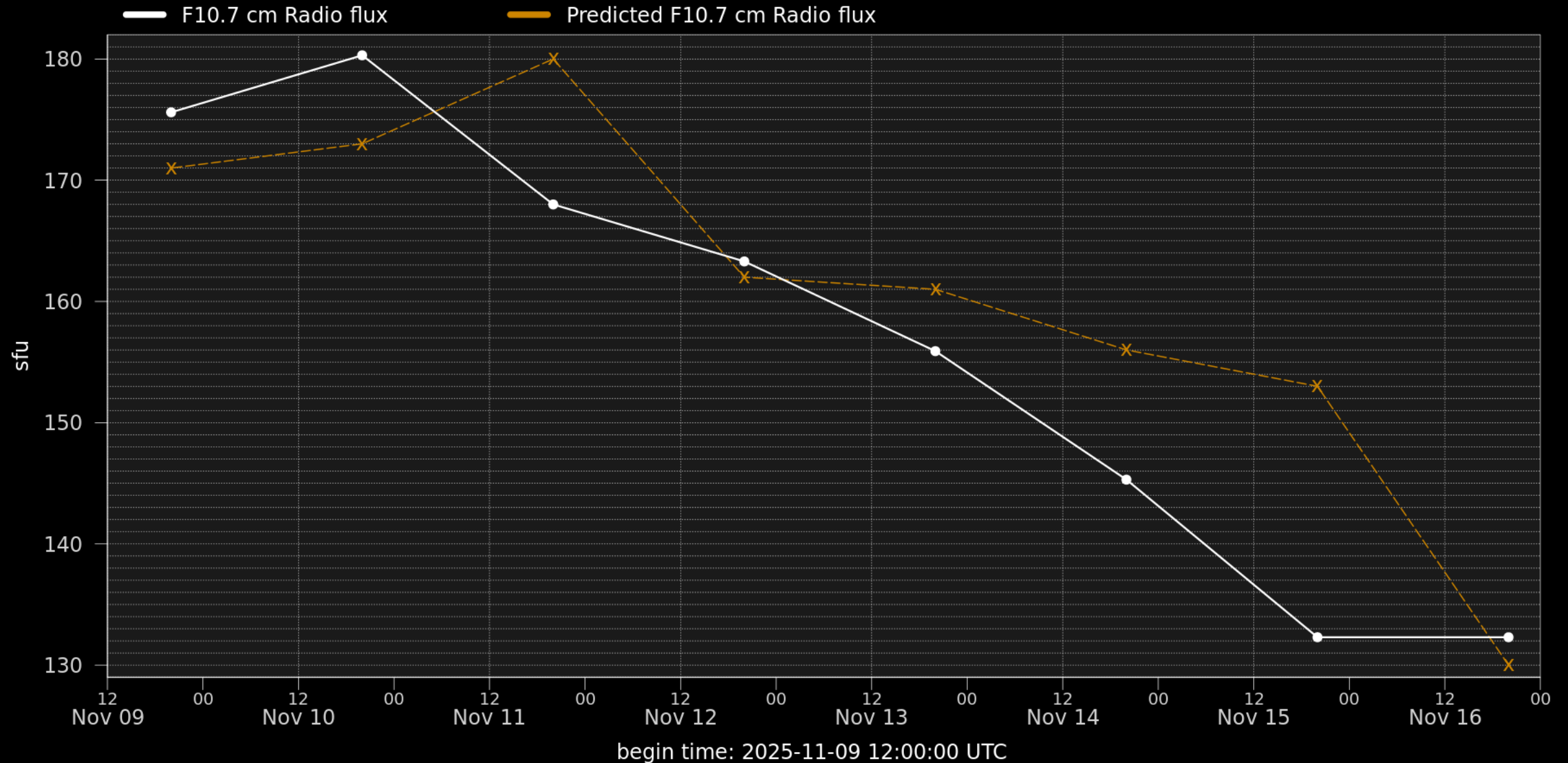


Kanzelhöhe Observatory
2025-11-16 10:56:43 UTC

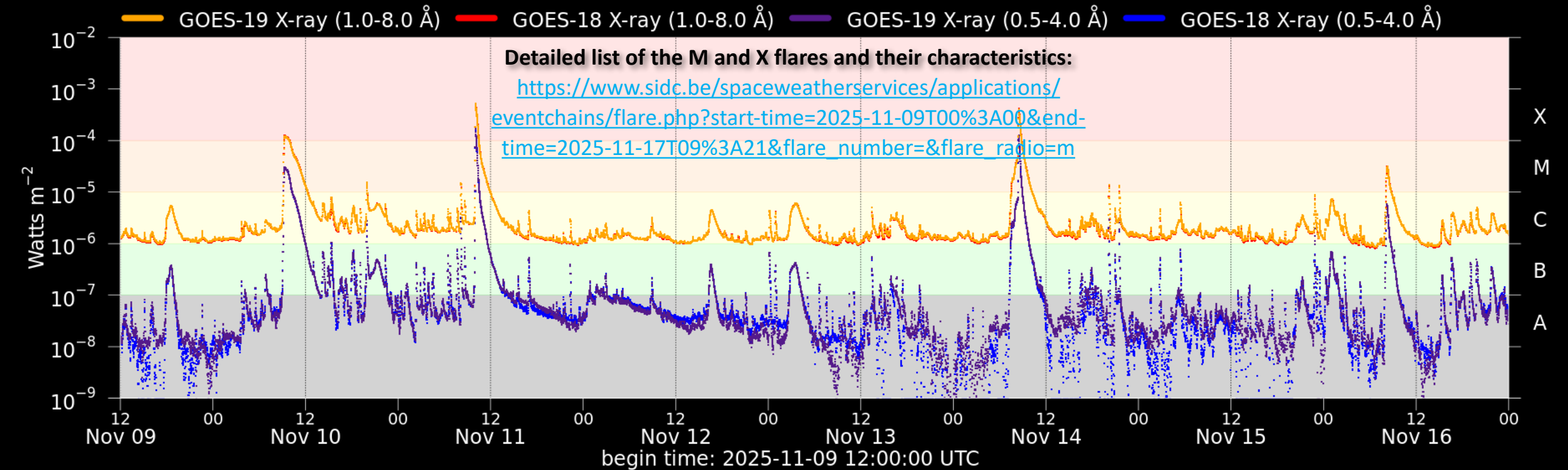
University of Graz
(Austria)



Solar F10.7cm radio flux



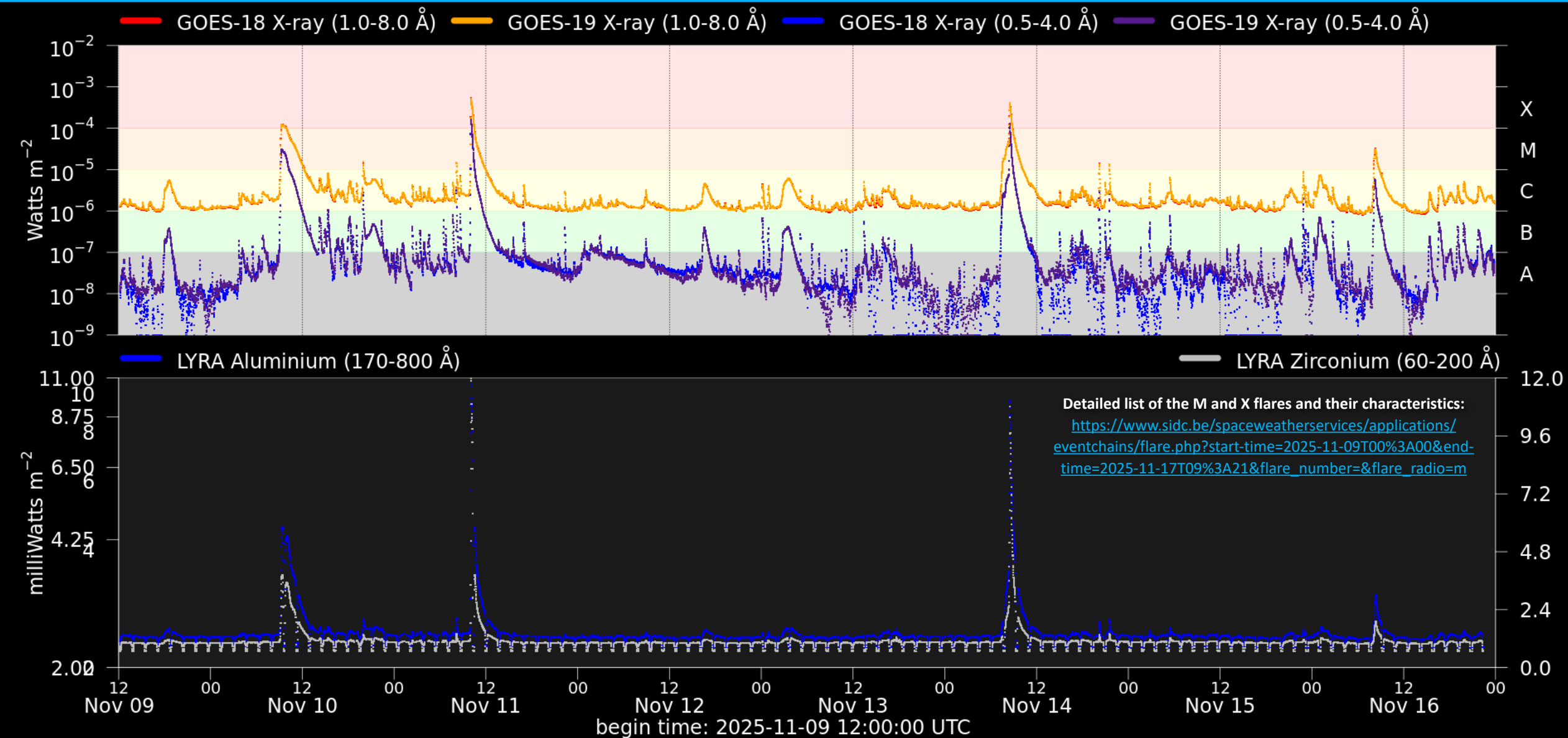
Flaring activity



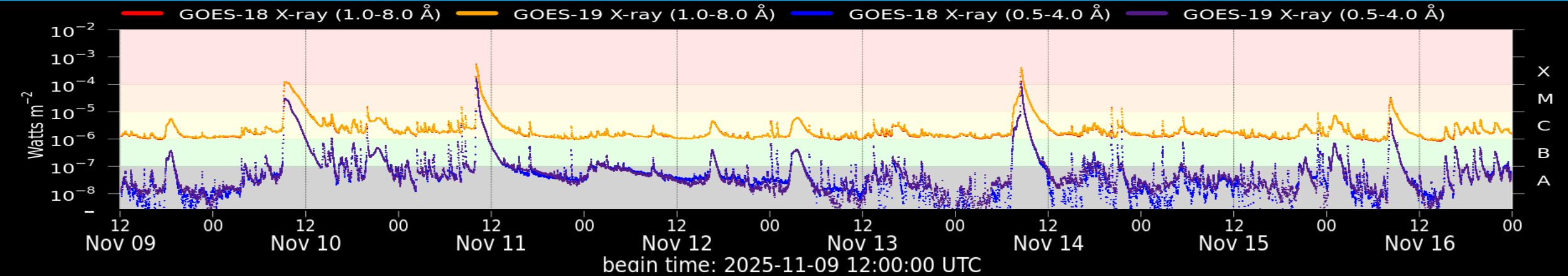
Probabilities (%) and occurrences (#) of C/M/X-flares daily, from noon to noon:

Issue date	2025-11-09	2025-11-10	2025-11-11	2025-11-12	2025-11-13	2025-11-14	2025-11-15	2025-11-16
Probability (%)	99 89 20	99 85 18	99 84 35	99 84 18	99 40 10	99 60 25	99 93 24	76 30 05
Observed (#)	05 00 01	13 02 01	05 00 00	09 00 00	05 00 01	08 02 00	11 01 00	06 00 00

Solar X-Ray and UV flux



Associated Solar Radio Burst



SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

X1.2 (2025-11-10 09:19)

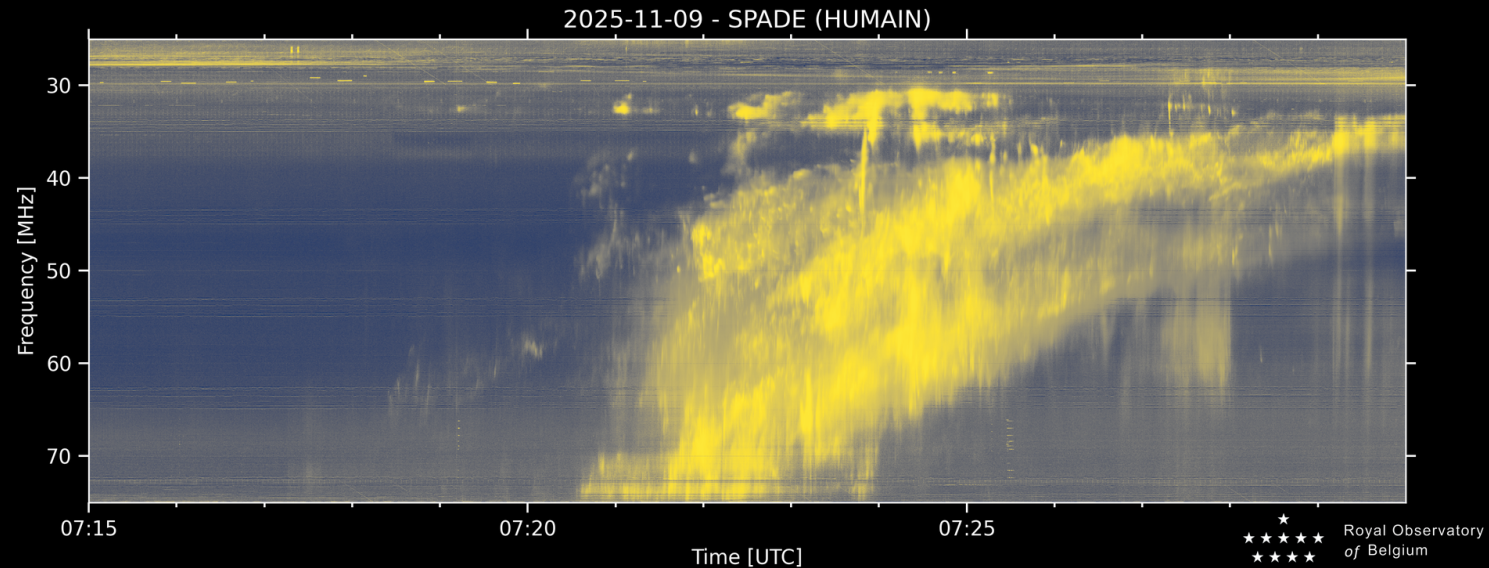
SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

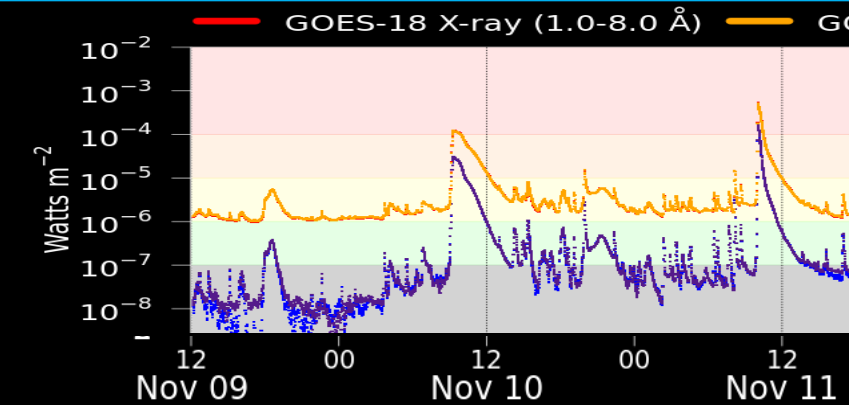
SIDC CME [601](#)

X.4.1 (2025-11-14 08:30)

SRB associated with the first X1.7 flare – It's a Type II



Associated Solar Radio Burst



SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

X1.2 (2025-11-10 09:19)

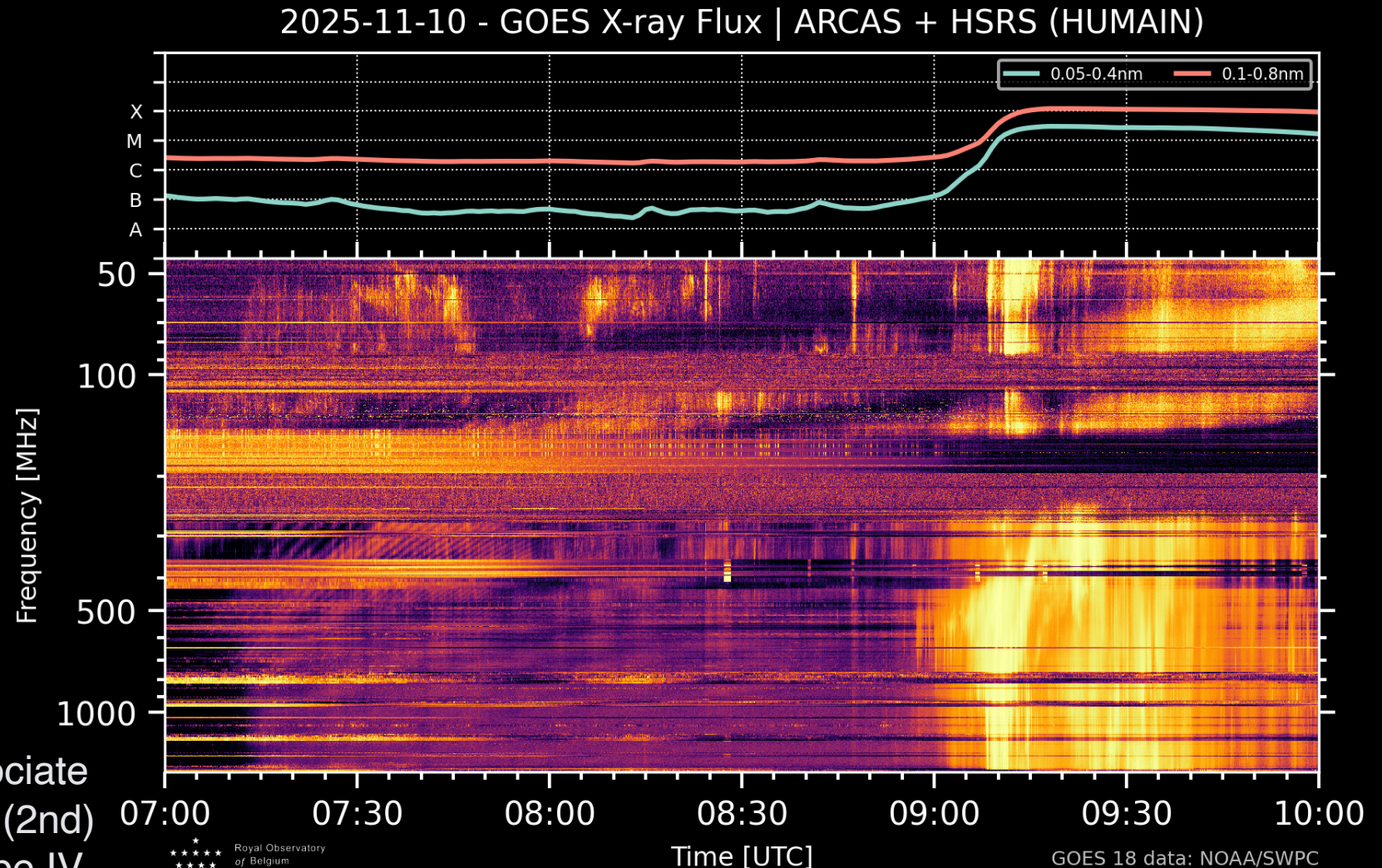
SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

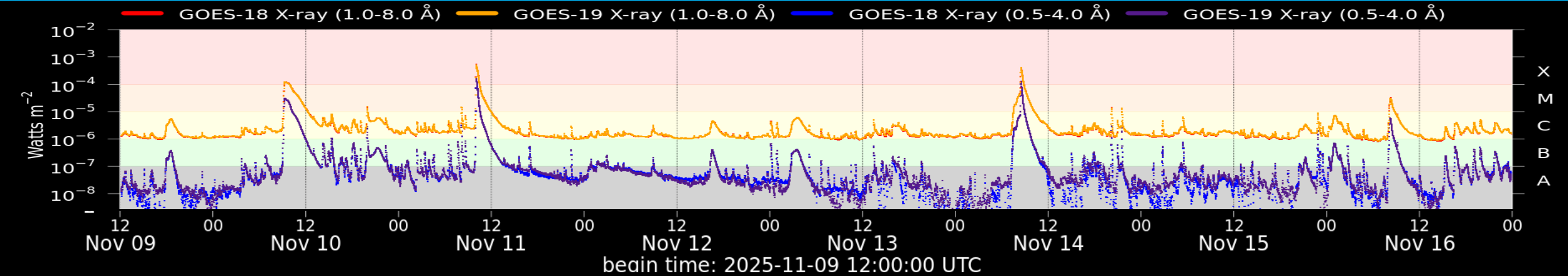
SIDC CME [601](#)

X.4.1 (2025-11-14 08:30)

SRB associate
with X1.2 (2nd)
flare – Type IV



Associated Solar Radio Burst



SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

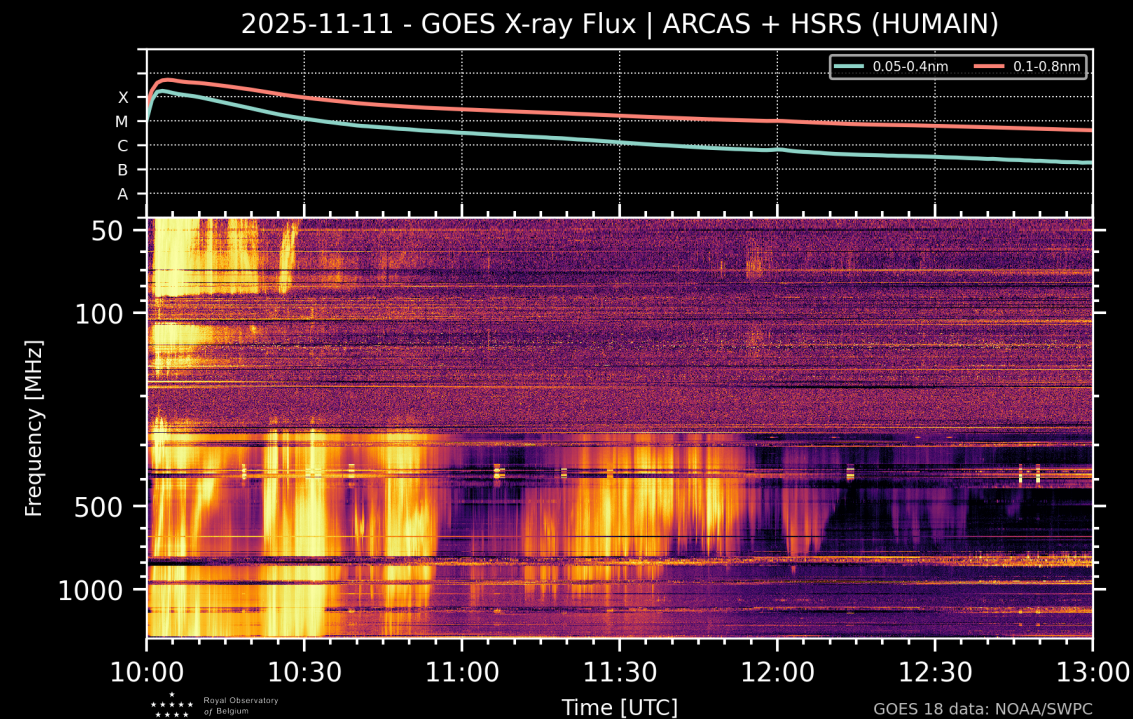
X1.2 (2025-11-10 09:19)

SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

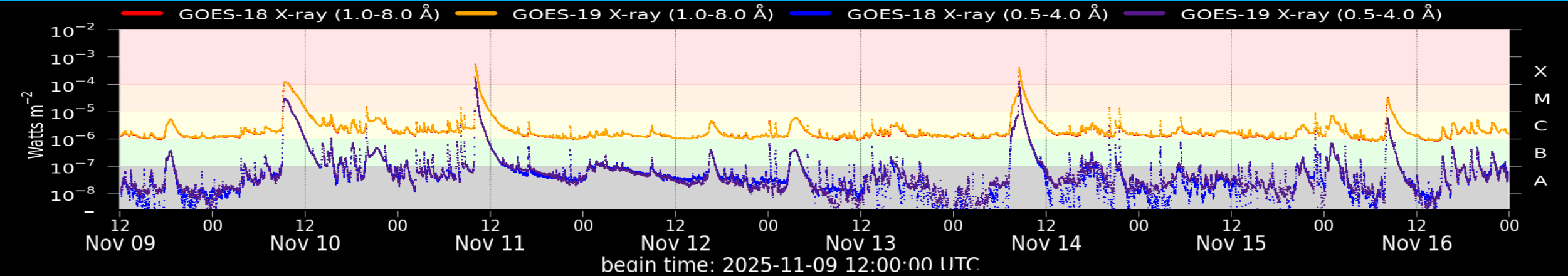
SIDC CME [601](#)

X4.1 (2025-11-14 08:30)



SRB Associate with the 3rd one, X5.1 – Type IV

Associated Solar Radio Burst



SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

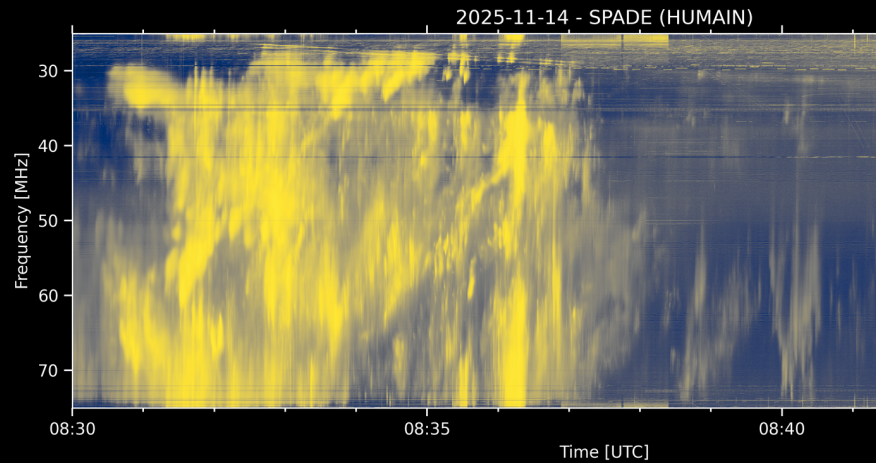
X1.2 (2025-11-10 09:19)

SIDC CME [600](#)

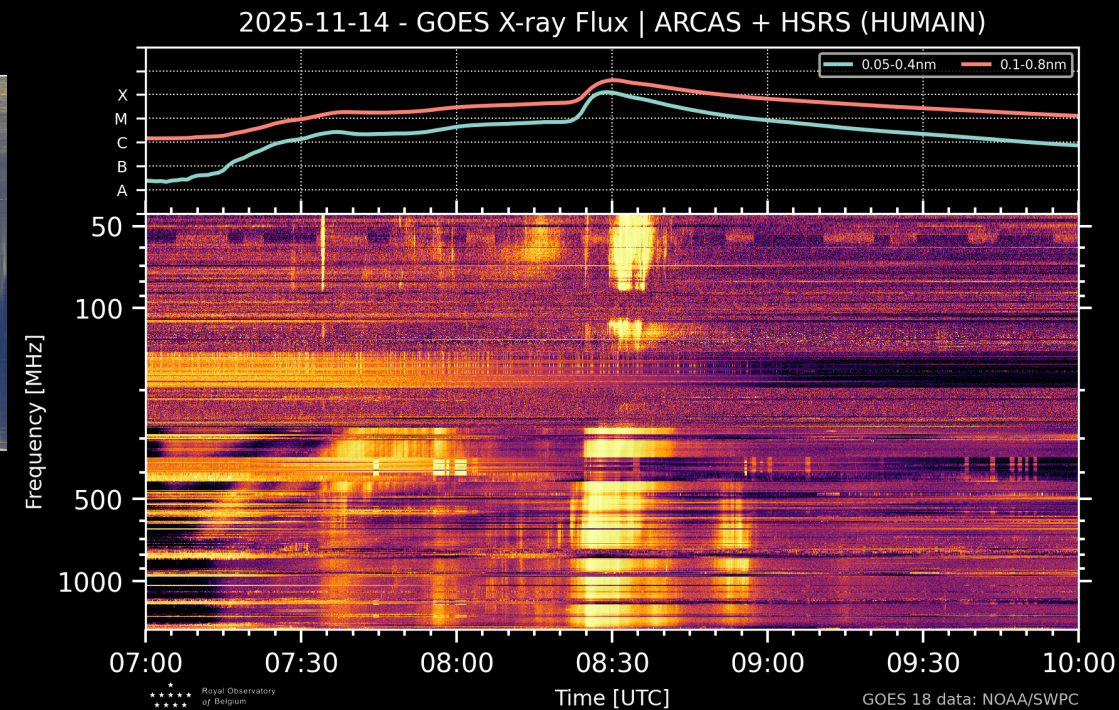
X5.1 (2025-11-11 10:04)

SIDC CME [601](#)

X4.1 (2025-11-14 08:30)



SRB Associate with the
X4.1 – Type II



Coronal Mass Ejections

SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

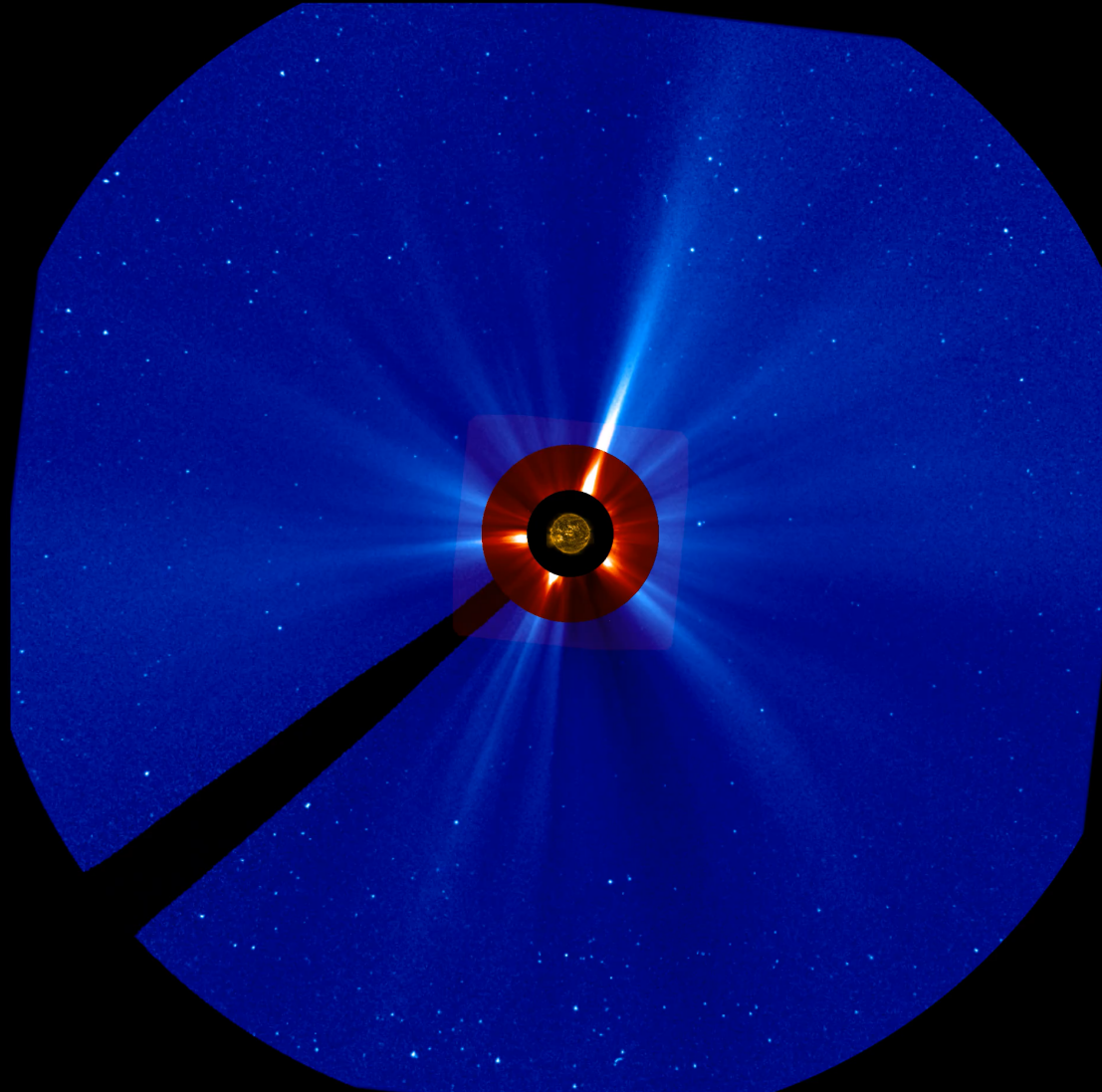
X1.2 (2025-11-10 09:19)

SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

SIDC CME [601](#)

X.4.1 (2025-11-14 08:30)



2025-11-09T07:00:07.604

Coronal Mass Ejections

SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

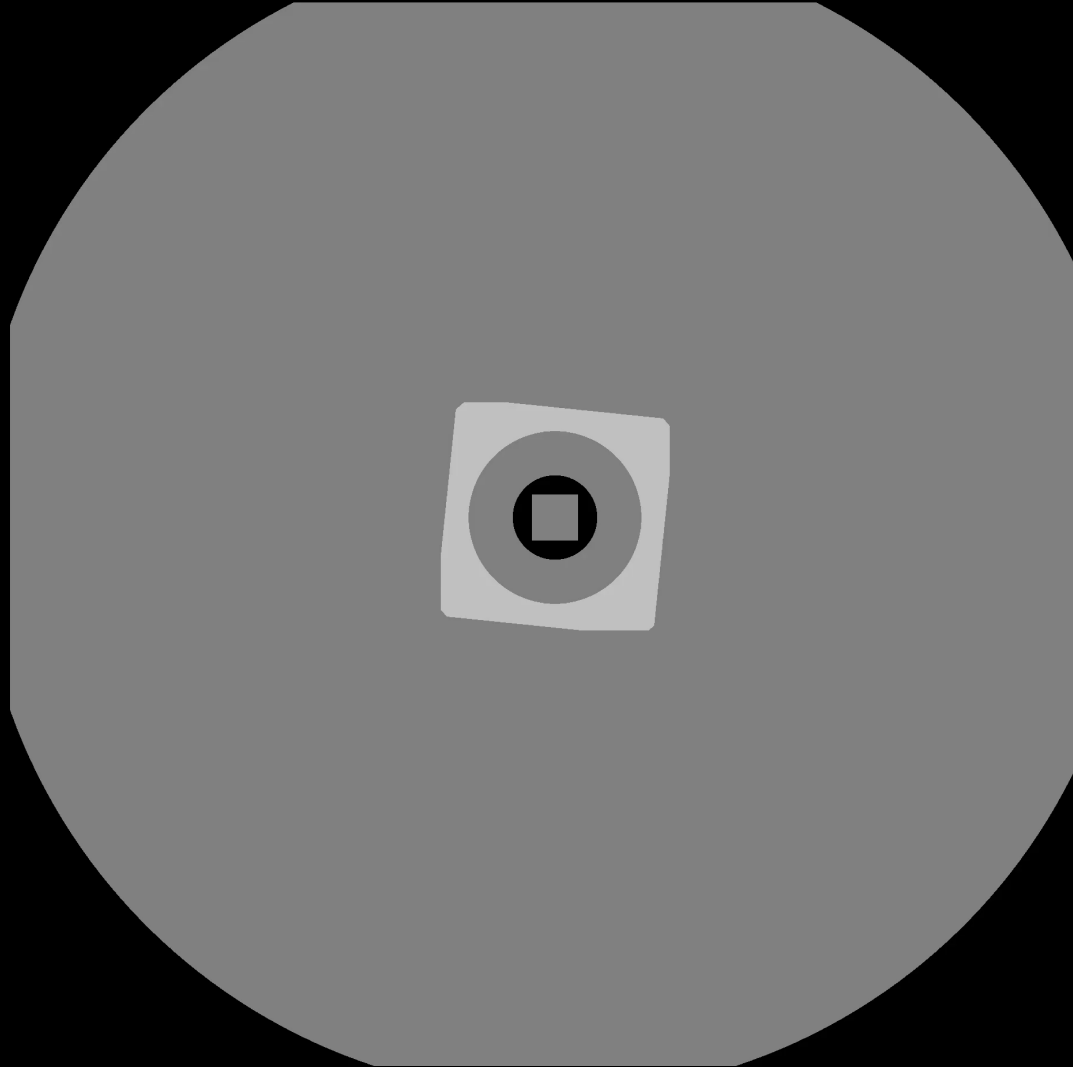
X1.2 (2025-11-10 09:19)

SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

SIDC CME [601](#)

X.4.1 (2025-11-14 08:30)



2025-11-09T07:00:21.353

Coronal Mass Ejec

Collection : CME - 2025-11-11 18:56:39

© SIDC EUHFORIA Preview

Start date : 2025-11-06T17:03:11

End date : 2025-11-18T17:02:54

SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

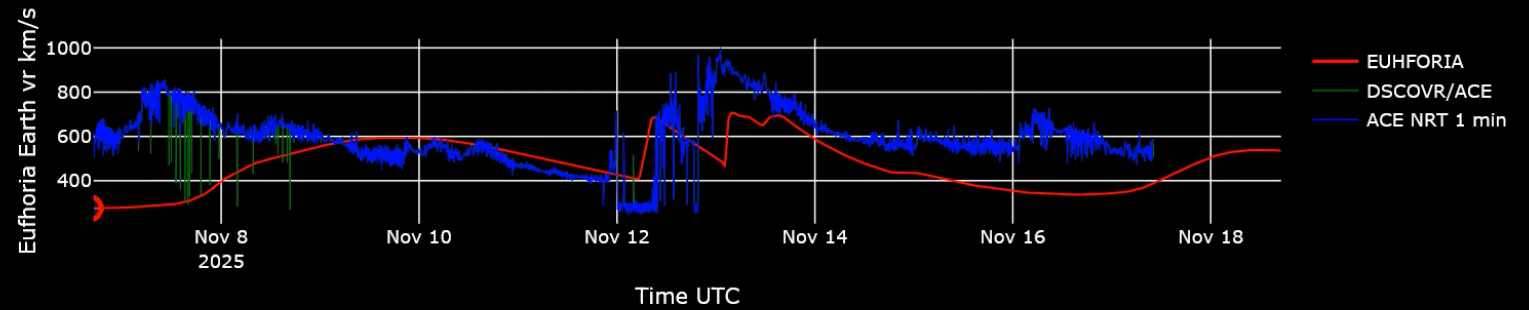
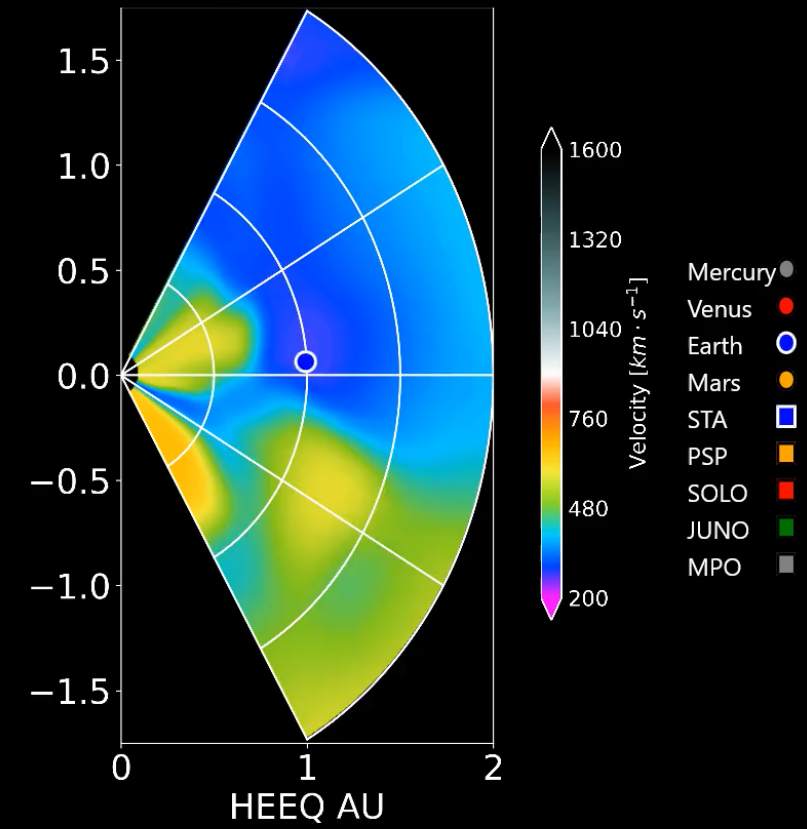
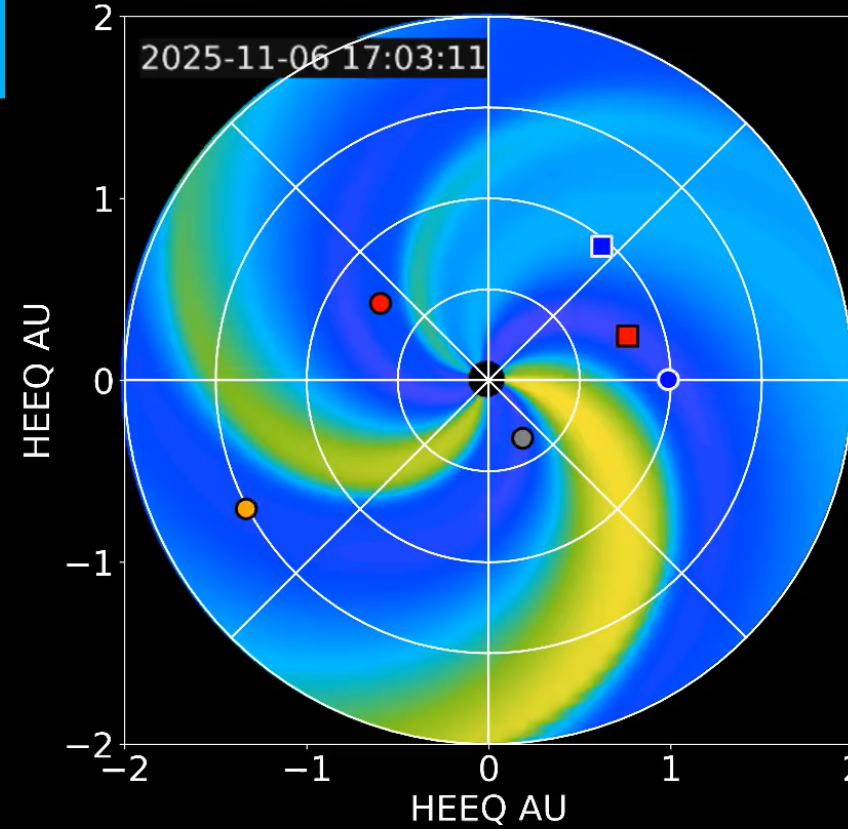
X1.2 (2025-11-10 09:19)

SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

SIDC CME [601](#)

X4.1 (2025-11-14 08:30)



Coronal Mass Eject

SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

SIDC CME [599](#)

X1.2 (2025-11-10 09:19)

SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

SIDC CME [601](#)

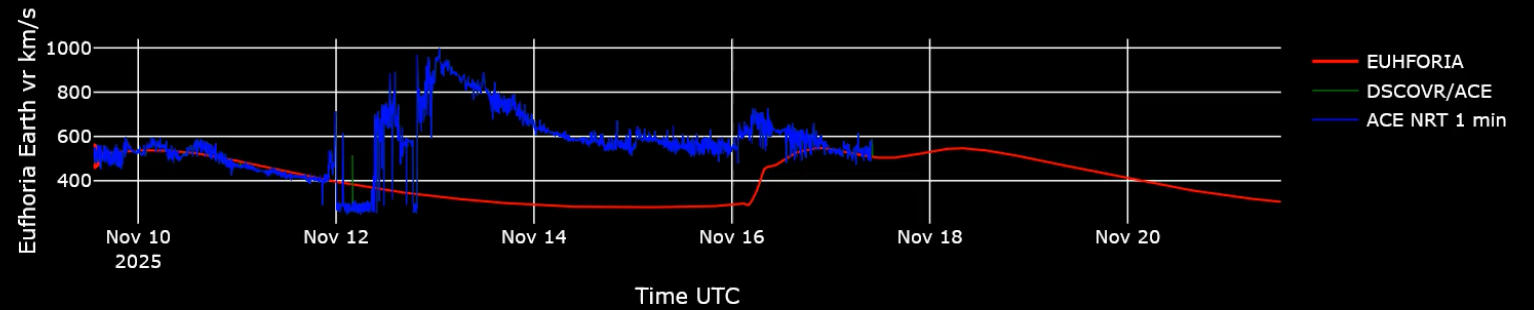
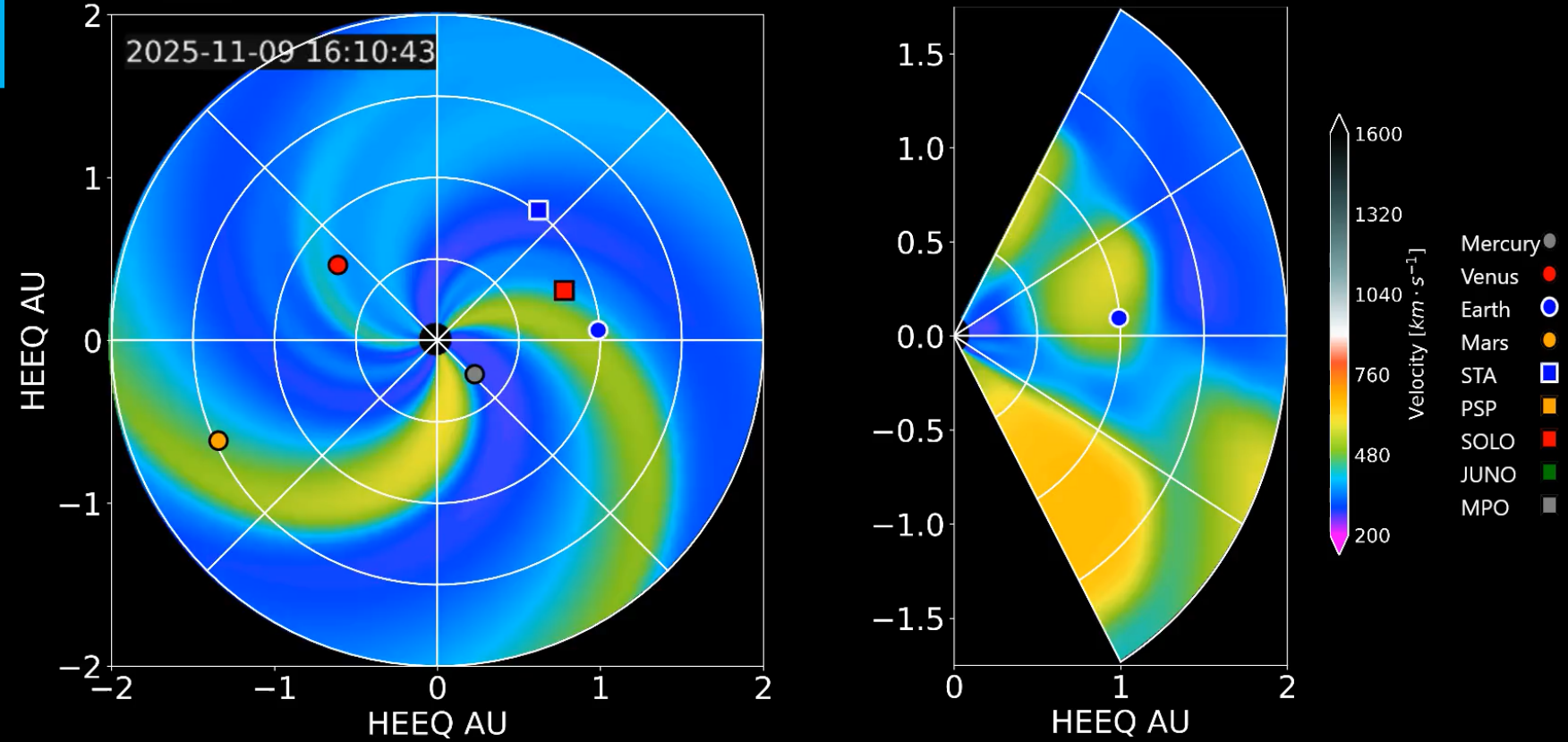
X4.1 (2025-11-14 08:30)

Collection : CME - 2025-11-14 13:16:00

Start date : 2025-11-09T13:10:11

End date : 2025-11-21T13:11:15

© SIDC EUHFORIA Preview



Solar Wind and

Geomagnetic Activity



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Summary from Nariaki Nitta

SIDC CME [598](#)

X1.7 (2025-11-09 07:35)

Shock: 2025-11-11 22:10

SIDC CME [599](#)

X1.2 (2025-11-10 09:19)

SEP with soft Spectrum

Shock: 2025-11-11 23:40

SIDC CME [600](#)

X5.1 (2025-11-11 10:04)

SEP with Hard Spectrum

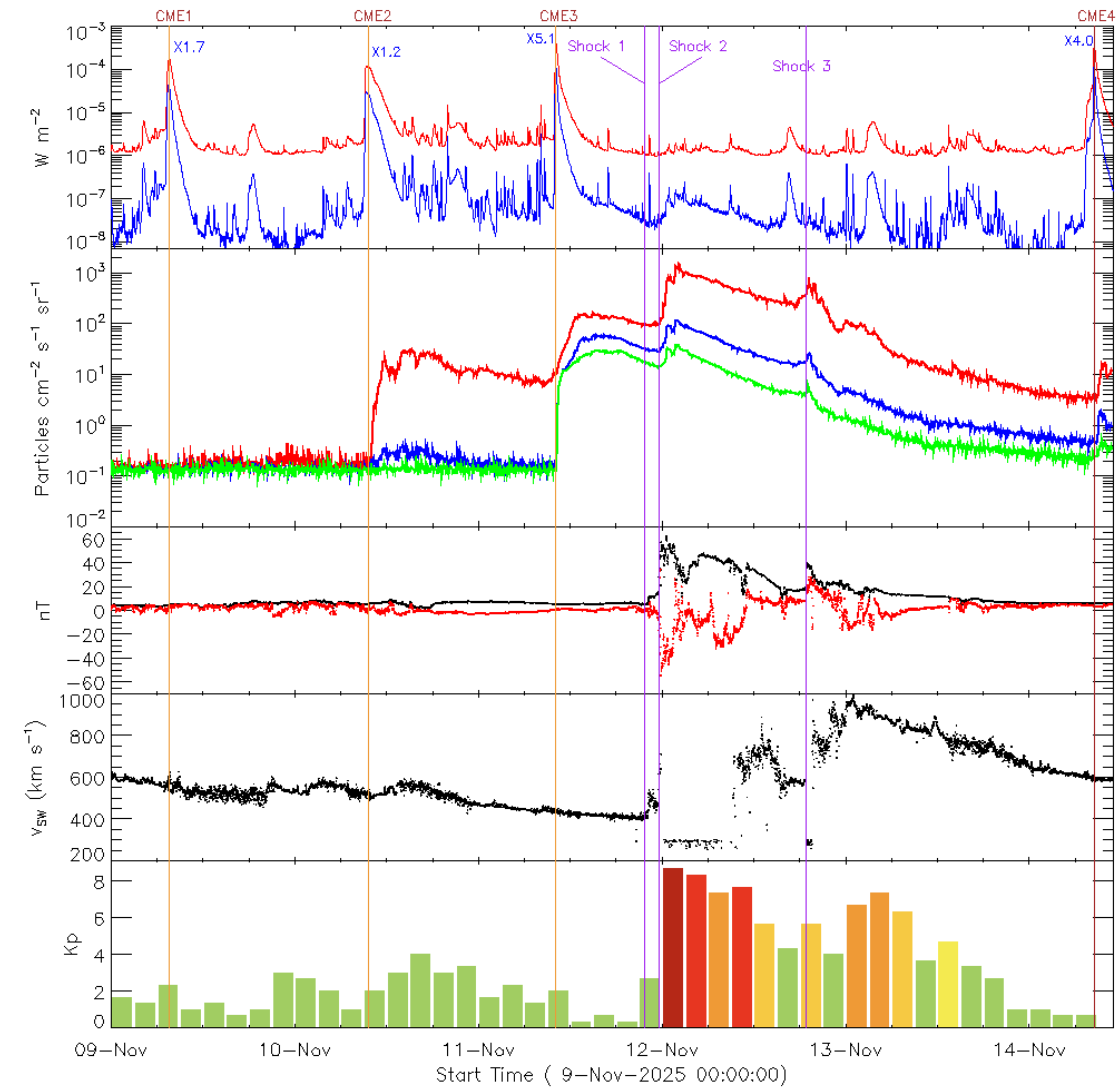
Shock: 2025-11-12 18:50

SIDC CME [601](#)

X4.1 (2025-11-14 08:30)

SEP with Hard Spectrum

Shock: 2025-11-16 10:00



CME1: 2025-11-09T07:30, X1.7, no SEP

CME2: 2025-11-10T09:30, X1.2, SEP with a soft spectrum (not going far above 50 MeV)

CME3: 2025-11-11T10:05, X5.1, SEP with a hard spectrum extending to >1 GeV (neutron monitors)

CME4: 2025-11-14T08:30, X4.0, SEP extending to >100 MeV but not >500 MeV

Shock1: 2025-11-11T22:10 (63 hours), no ESP

Shock2: 2025-11-11T23:40 (38 hours), ESP (after shock arrival), extending to ~500 MeV

Shock3: 2025-11-12T18:50 (33 hours), ESP extending to >100 MeV

Shock4: TBD

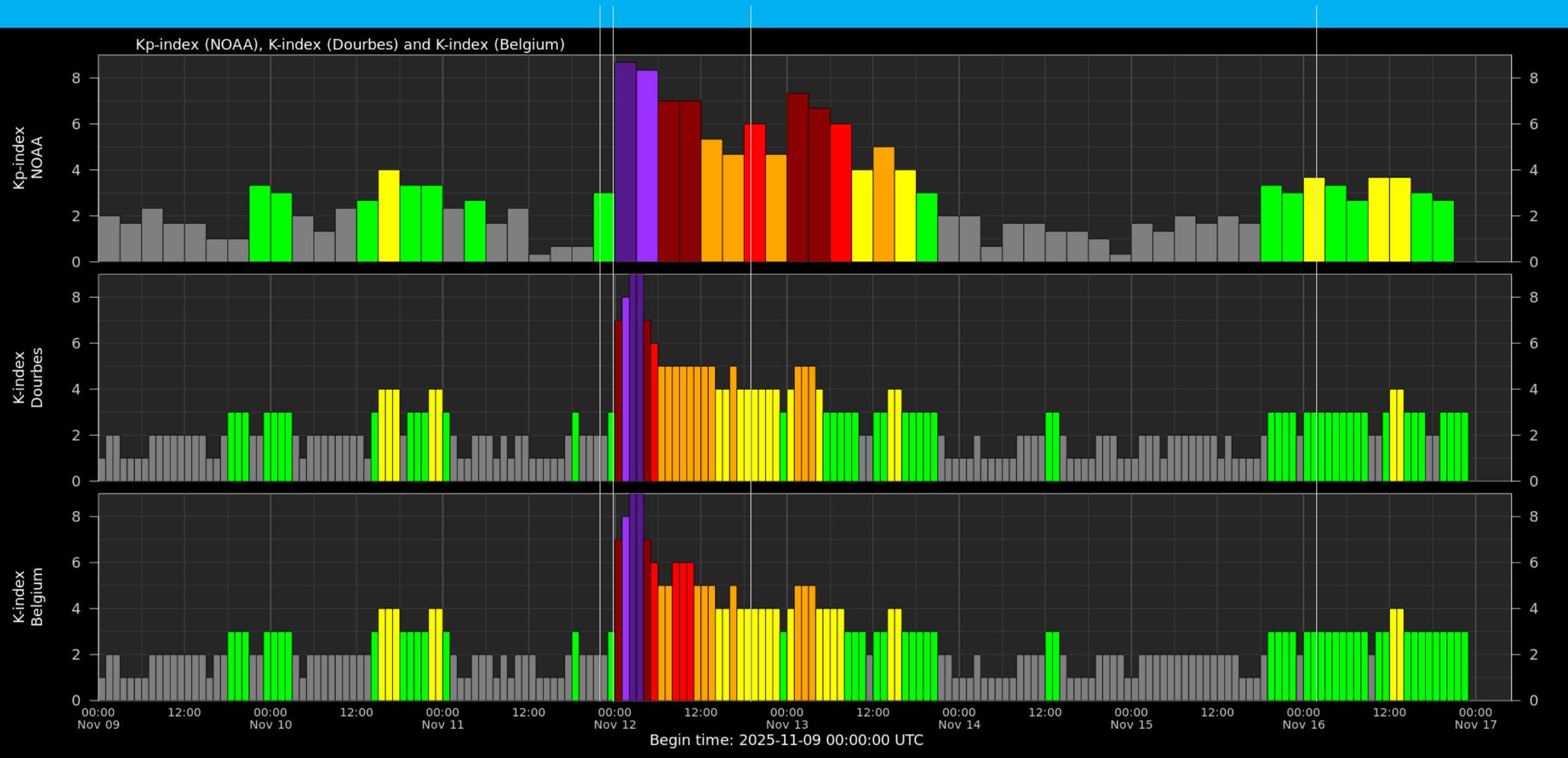
Solar wind parameters



Solar wind parameters & K-indices



Geomagnetic activity (K-indexes)



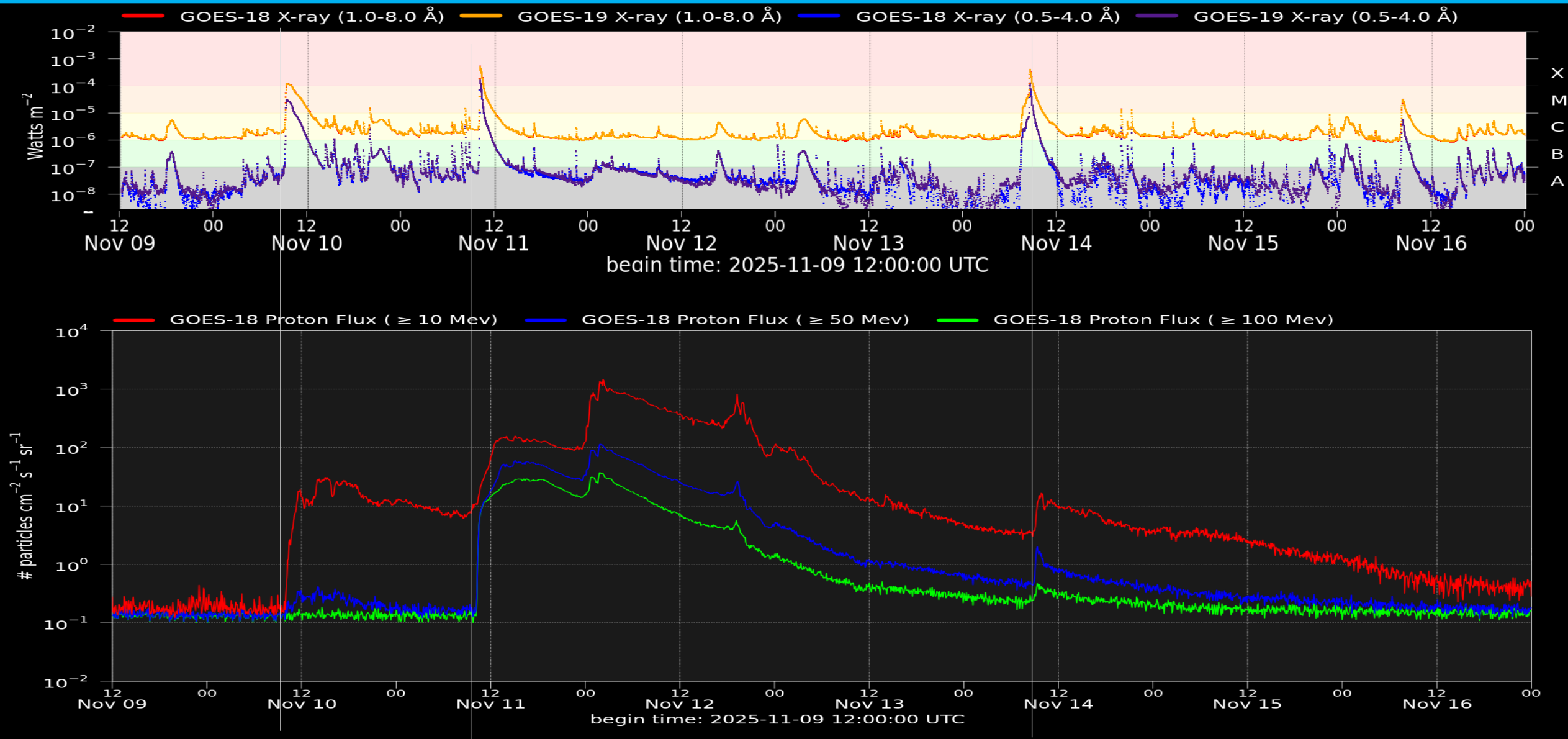
Energetic Particles



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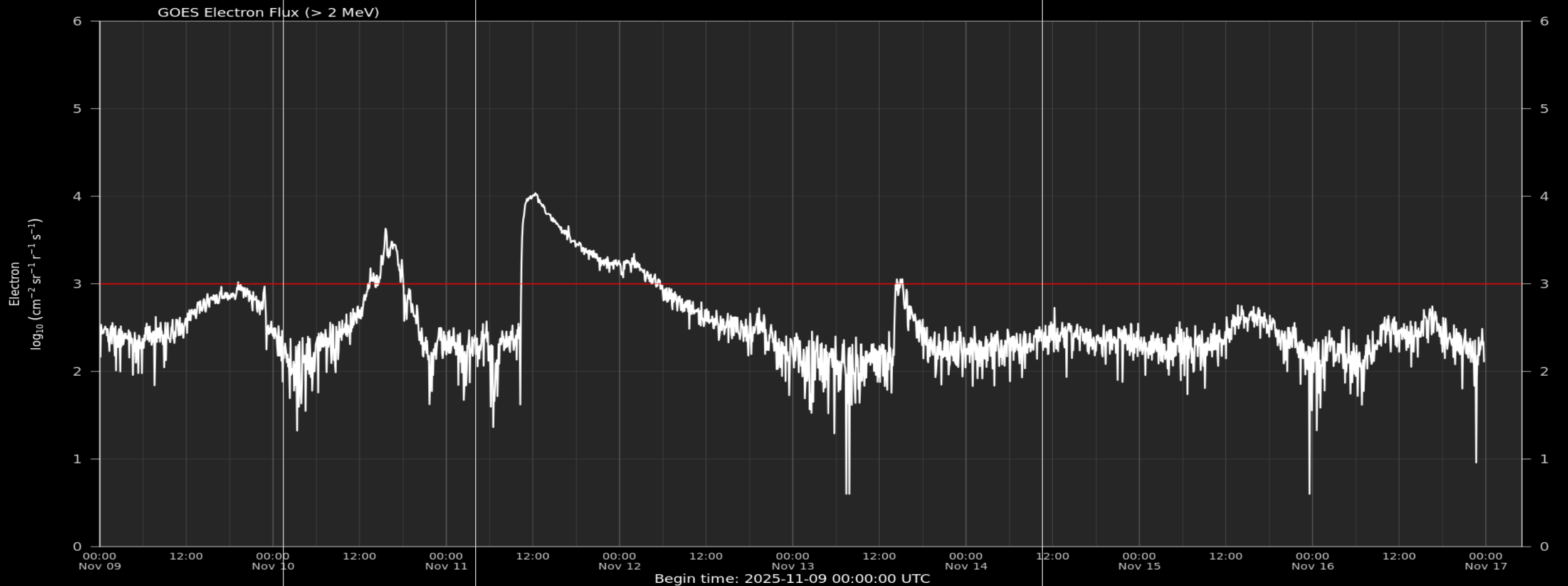
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



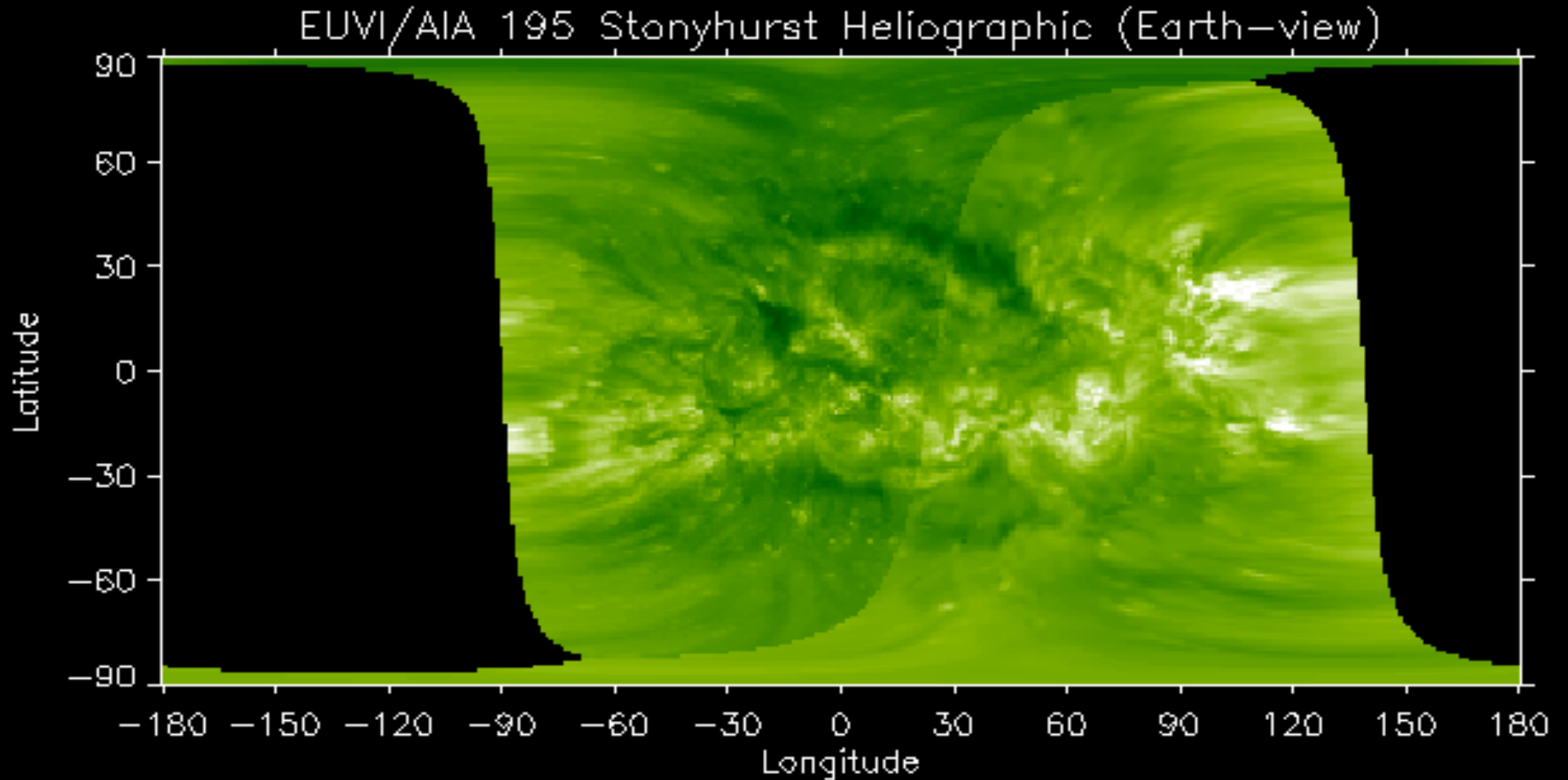
Outlook



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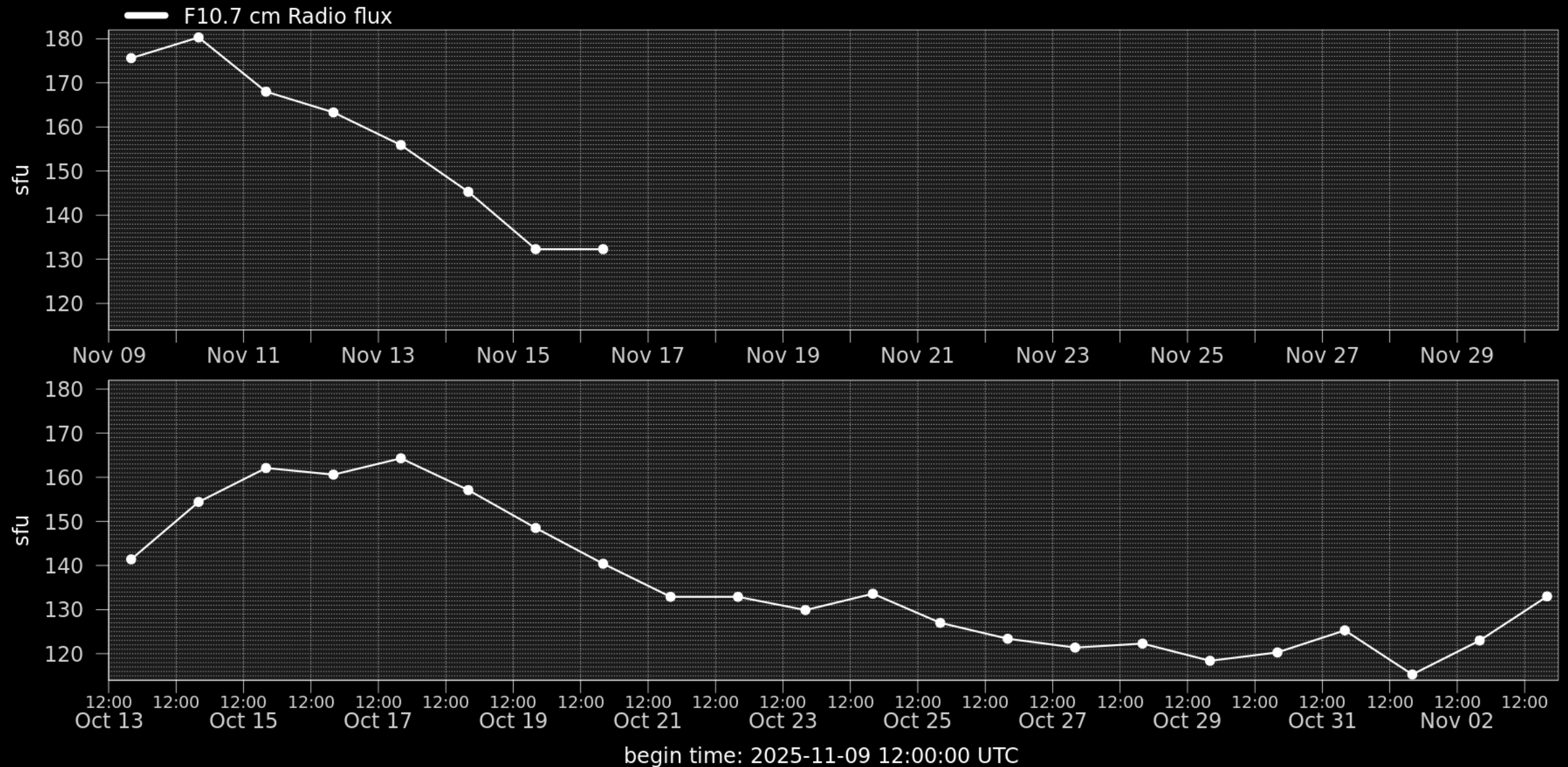
Solar Influences
Data analysis Centre
www.sidc.be

Outlook: Solar activity

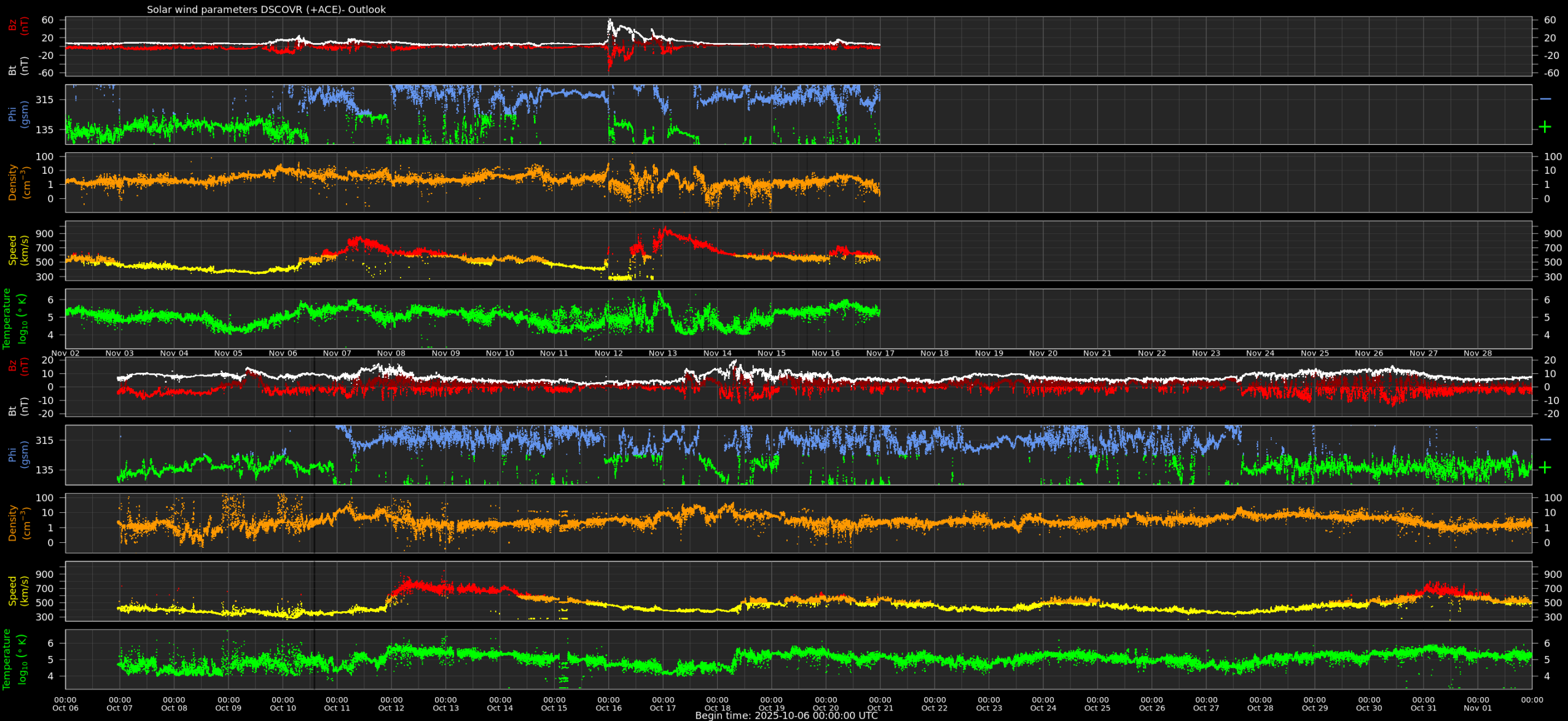


Observation date: 2025/11/16 22:28:02

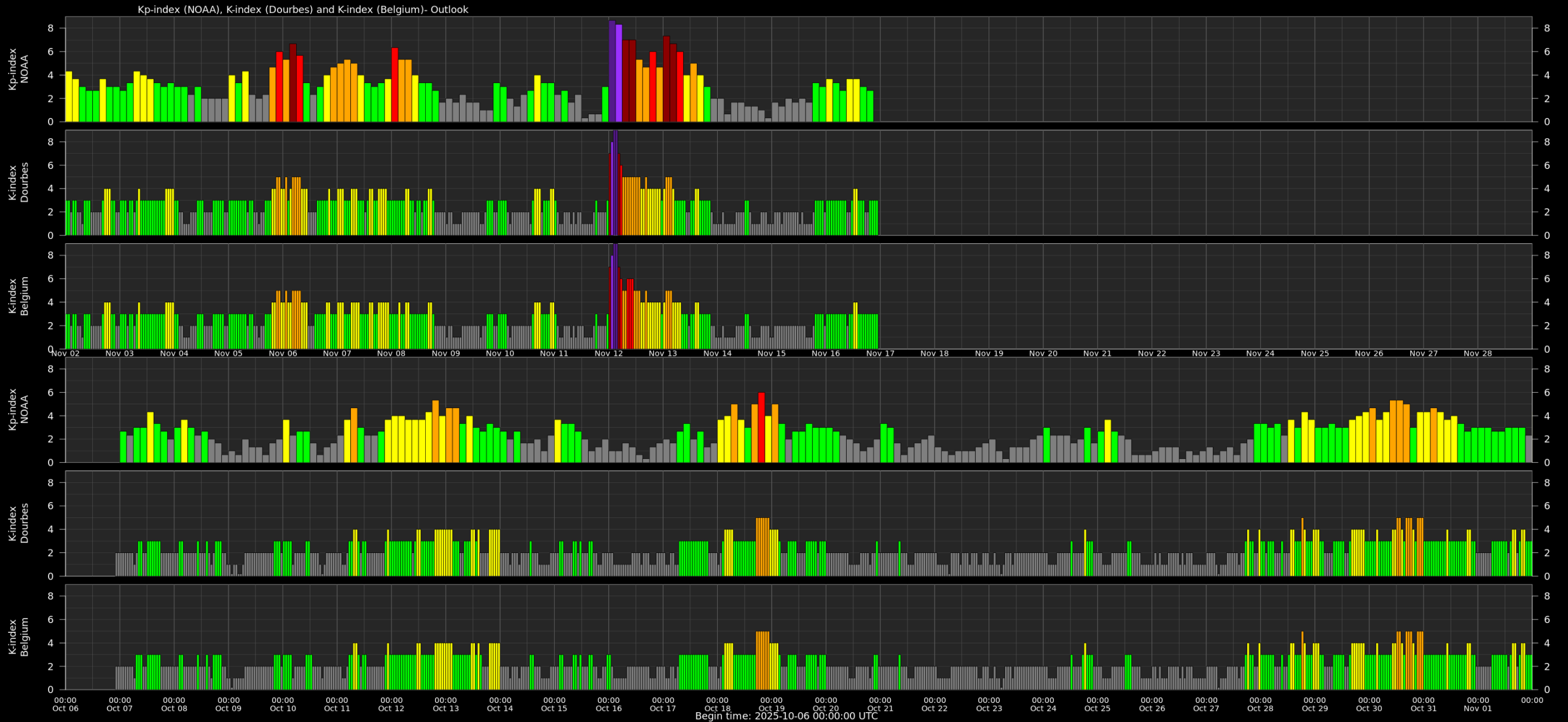
Outlook: Solar F10.7cm radio flux



Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Outlook: Electron Flux at GEO Outlook



PECASUS



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ICAO related events – ACFJ Center

GNSS

- Recurrent **scintillation advisories** from late 11 Nov through early 17 Nov.
- Effect: degradation of GNSS timing and positioning, strongest on the nightside and at high latitudes during the 12 Nov peak; mostly moderate afterward with intermittent equatorial impacts.

HF communications

- 11 Nov: **solar-flare absorption** on the dayside prompted ACFJ HF advisories around 10:00–10:50.
- 12 Nov: extended high-latitude **auroral absorption** with two severe advisories (01:12 and 19:31), surrounded by several moderate updates through ~20:00; final updates that evening indicated easing.
- 12–15 Nov: a separate sequence of **maximum usable frequency depression** events at mid and high latitudes, with repeated moderate advisories and periodic “END” updates. Final end statements issued 15 Nov around 05:12–09:15.
- Effect: periods of reduced HF availability at high latitudes during 12 Nov absorption, followed by widespread but generally moderate MUF depression through 15 Nov.

ICAO related events – Internal Advisory from PECASUS

GNSS:

- 19 advisories total; 7 SEV and 12 MOD.
- Scintillation 17 advisories (7 SEV, 10 MOD);
- VTEC disturbance 2 advisories (0 SEV, 2 MOD).
- Timing and geography: activity concentrated 12–16 Nov, primarily along the equatorial bands (EQN/EQS) over American longitudes, with occasional high-latitude MOD in HNH.

HF COM:

- Two clear clusters. First, a PCA sequence from 11–13 Nov affecting both polar caps and recurring across multiple 6-hour outlooks. Second, extended MUF depressions from 12–16 Nov spanning high, mid, and equatorial bands.
- By type in the 11–16 Nov window: SWF 5 advisories; PCA 18; AA 4; MUF 26.
- PCA drove the high-latitude HF degradations around 11–13 Nov, while MUF depressions dominated 12–16 Nov across broader latitudes. SWF events were short-lived daylight-side impacts; AA episodes were fewer and tied to auroral absorption intervals.

Radiation:

- 4 advisories – 2 SEV, 2 MOD.
- Single SEP-driven episode on 11 Nov, affecting HNH and HSH above FL270 to FL340, ended by 16:30 UTC the same day.

SIDC Space Weather Briefing

See you at our next briefing!

Or visit us at www.sidc.be



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