

SIDC Space Weather Briefing

10 October 2022-16 October 2022

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& the SIDC forecaster team



Royal Observatory
of Belgium

Solar Influences
Data analysis Centre
www.sidc.be

Summary Report

Active regions	3111, 3112 , 3115, 3116, 3118, 3119, 3120, 3121, 3122, 3123
Flares	# C-class flare: 31 # M-class flare: 5 # X-class flare: 0
Coronal Holes	Two (one from previous week)
CMEs	Three with possible Earth directed components

Proton flux	Below threshold
Electron flux	Above threshold until Friday 14/10

Solar wind and geomagnetic conditions

ICMEs	One
Solar wind conditions	B : 0.9 - 18.11 nT //Bz: -14.56 nT to 14.65 nT //Speed: 283.6 - 648.7km/s
K-indices	max K-index (KDou): 4 max Kp-index (NOAA): 5

All Quiet Alert: OFF

Solar Activity

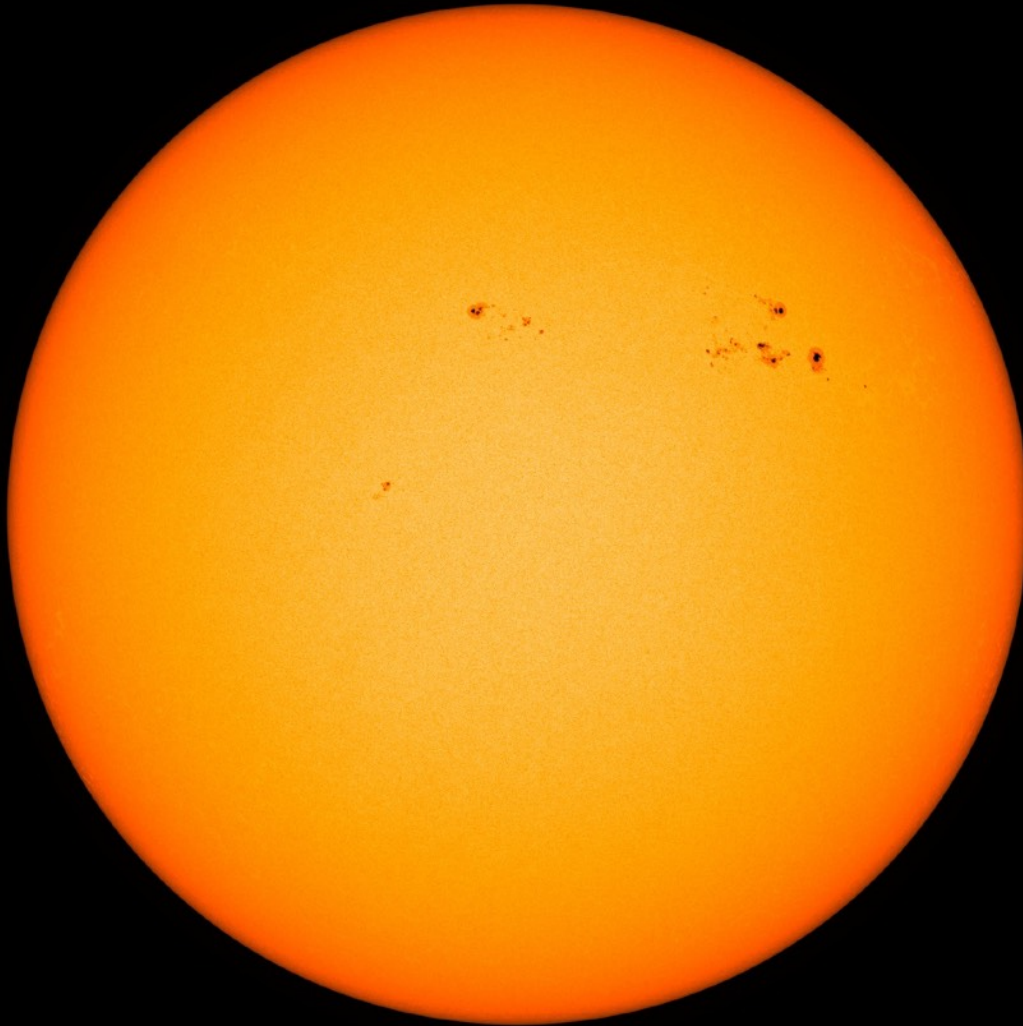


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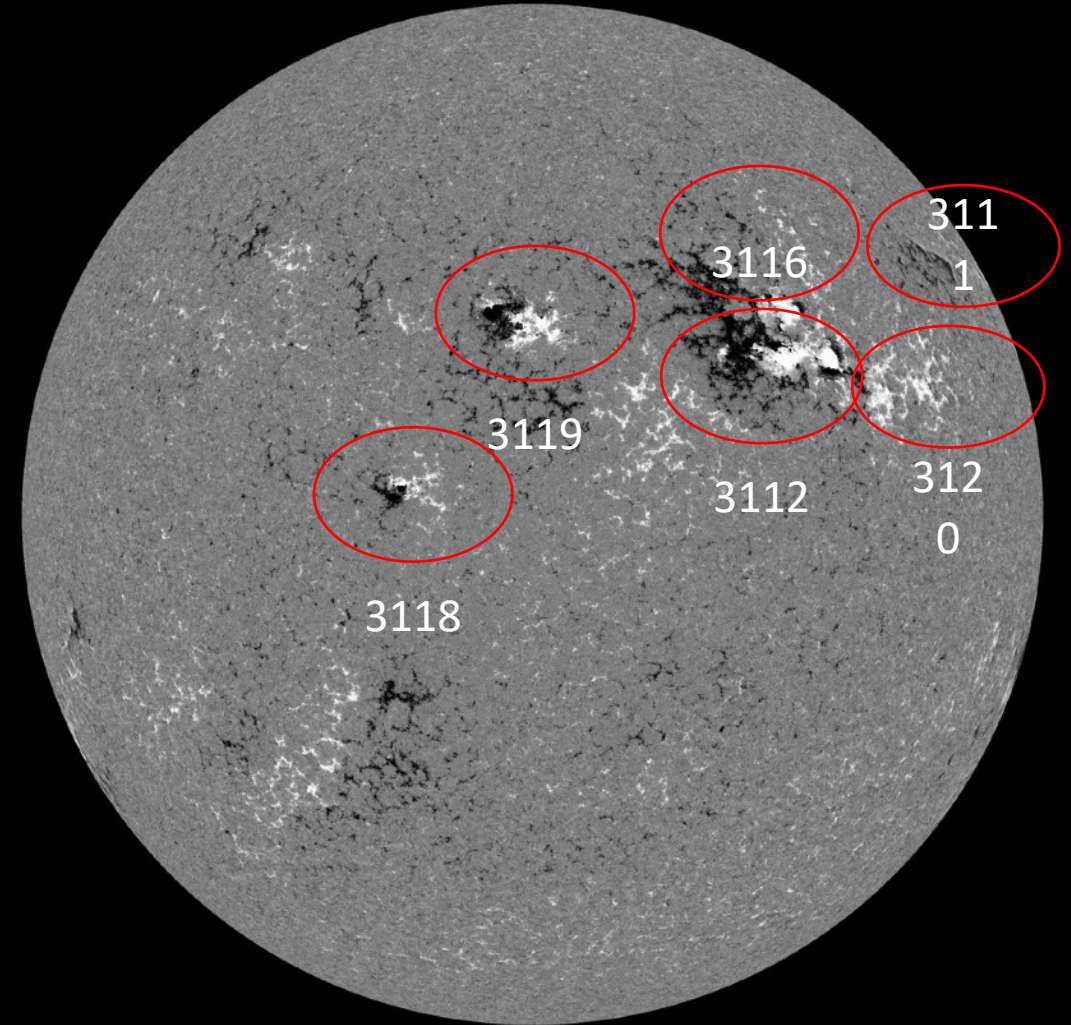
Solar active regions

SDO/HMI White Light 2022-10-10



SDO/HMI Quick-Look Continuum: 20221010_114500

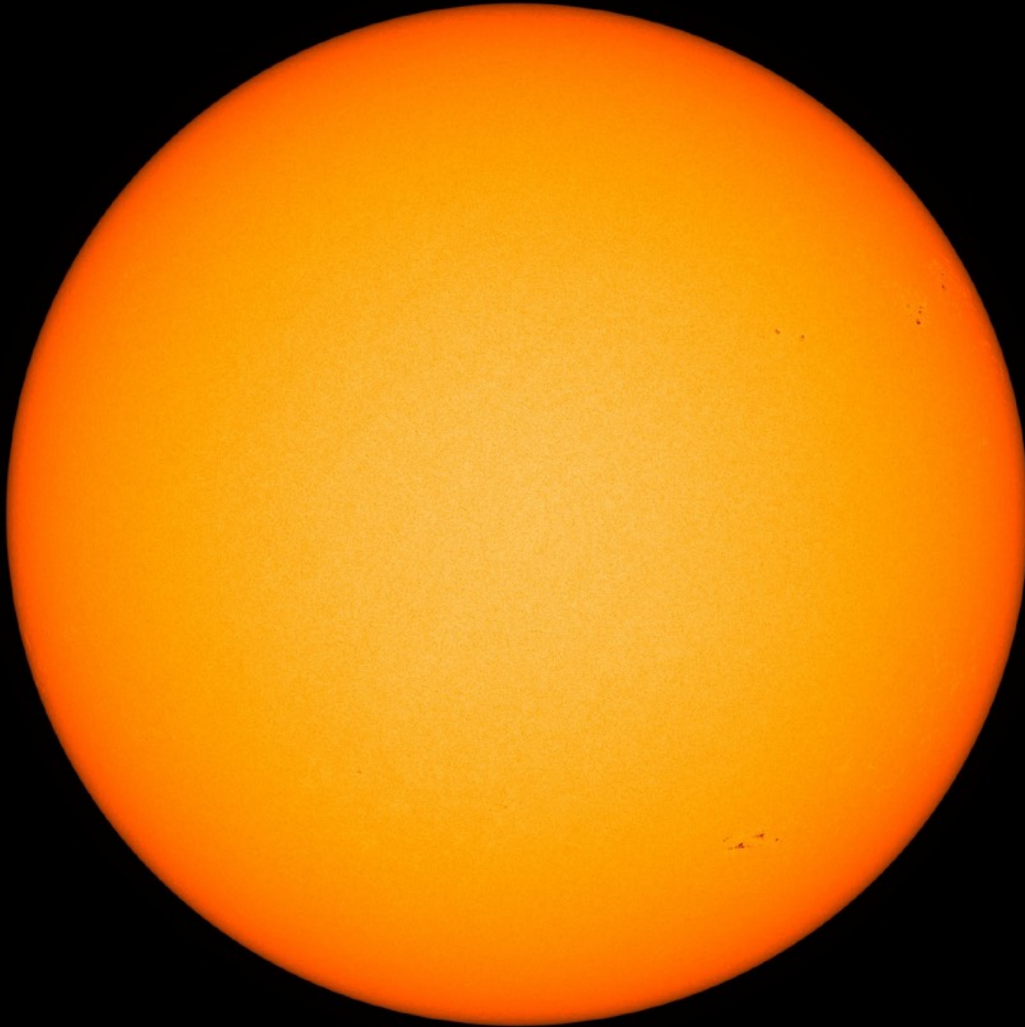
SDO/HMI Magnetogram 2022-10-10



SDO/HMI Quick-Look Magnetogram: 20221010_114500

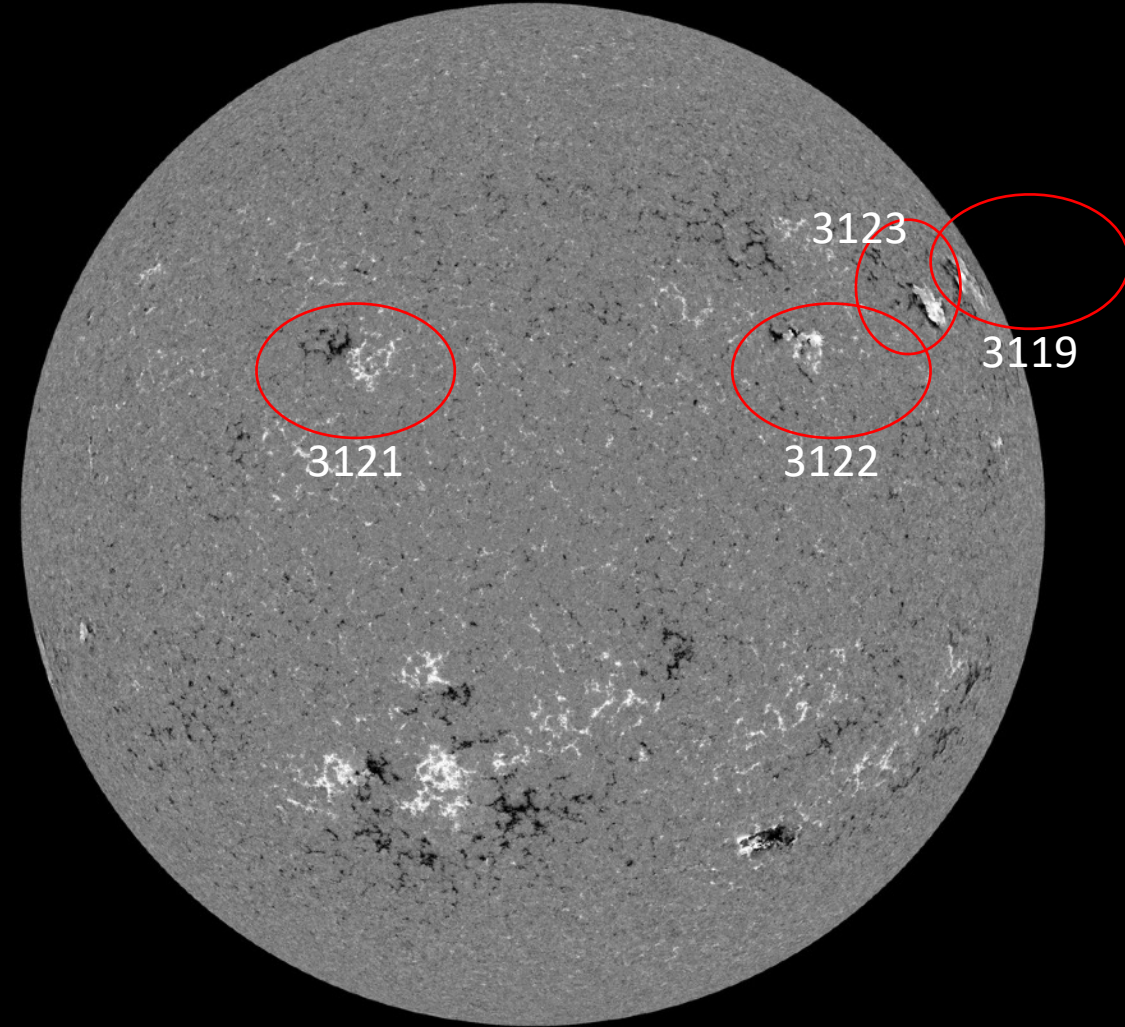
Solar active regions

SDO/HMI White Light 2022-10-16



SDO/HMI Quick-Look Continuum: 20221016_120000

SDO/HMI Magnetogram 2022-10-16

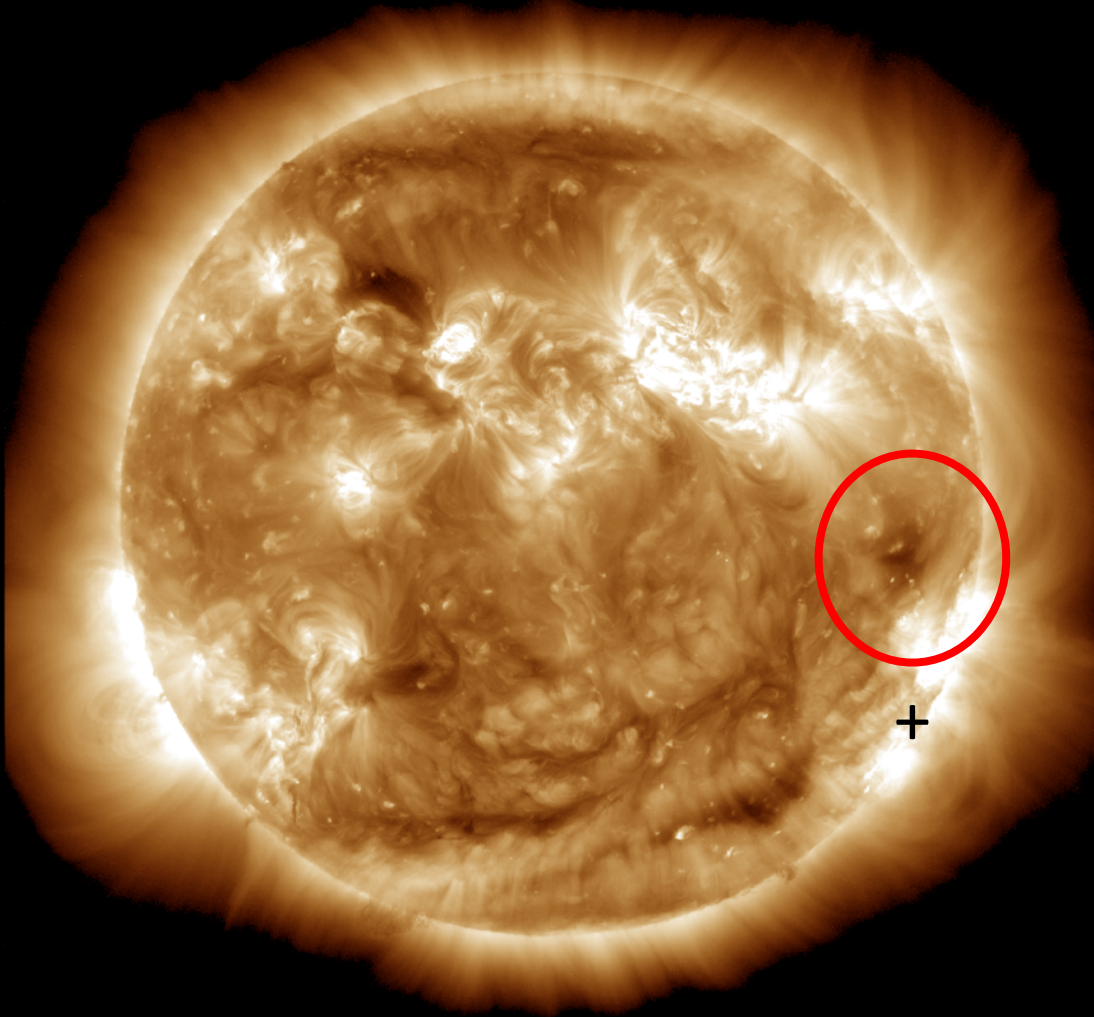


SDO/HMI Quick-Look Magnetogram: 20221016_120000

Coronal holes

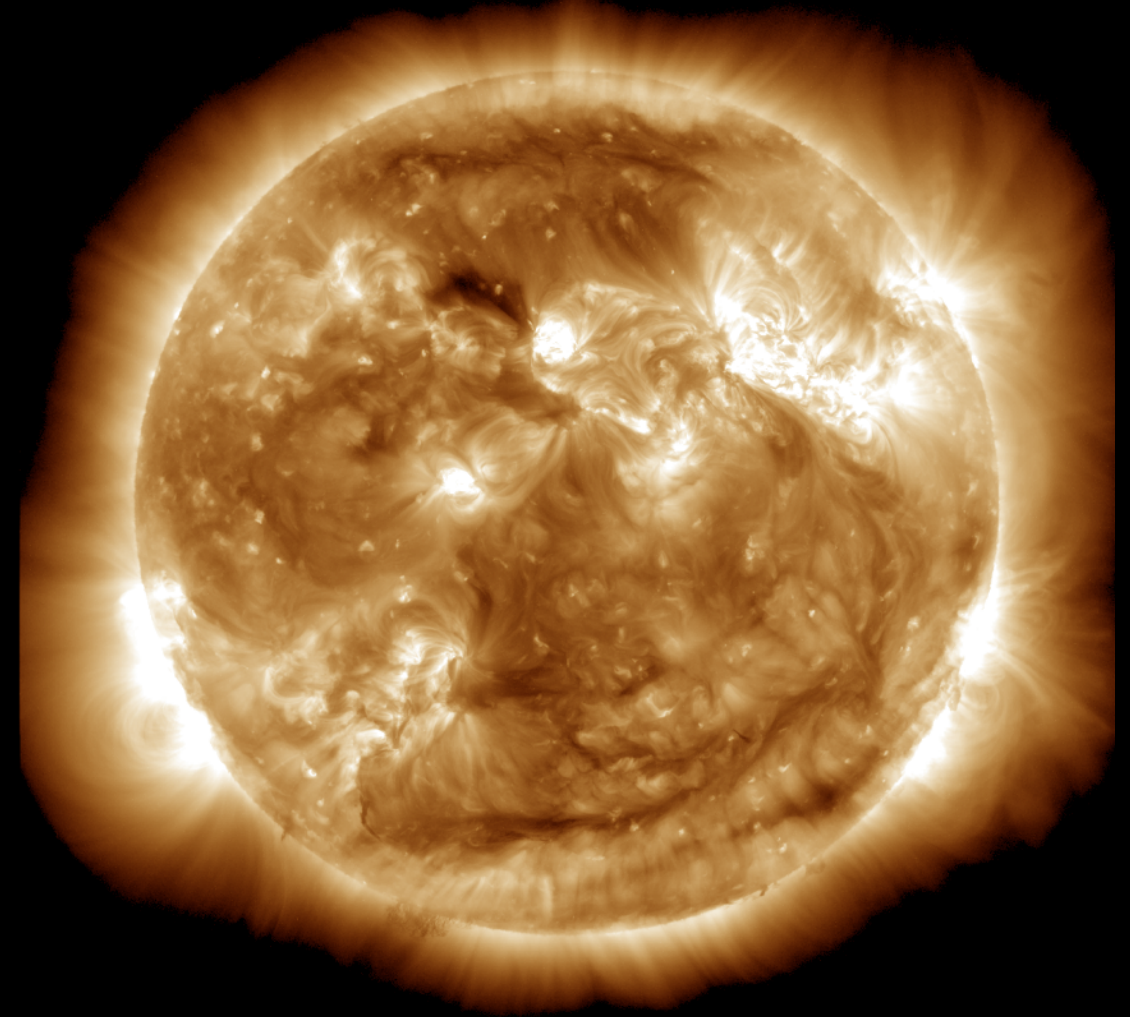
SDO/AIA 19.3 nm 2022-10-09

SDO/AIA AIA 193Å 2022-10-09T12:00:05.843



SDO/AIA 19.3 nm 2022-10-10

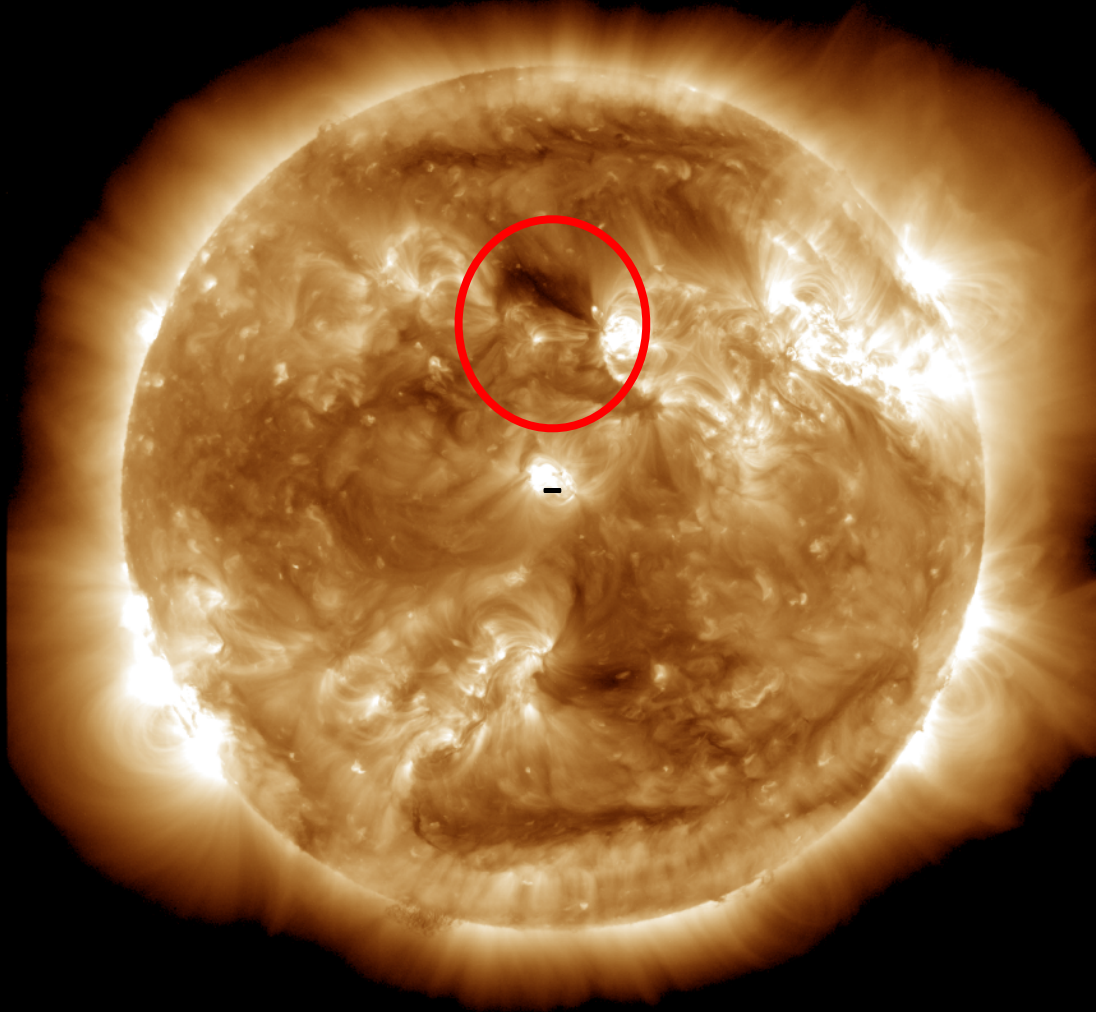
SDO/AIA AIA 193Å 2022-10-10T12:00:05.843



Coronal holes

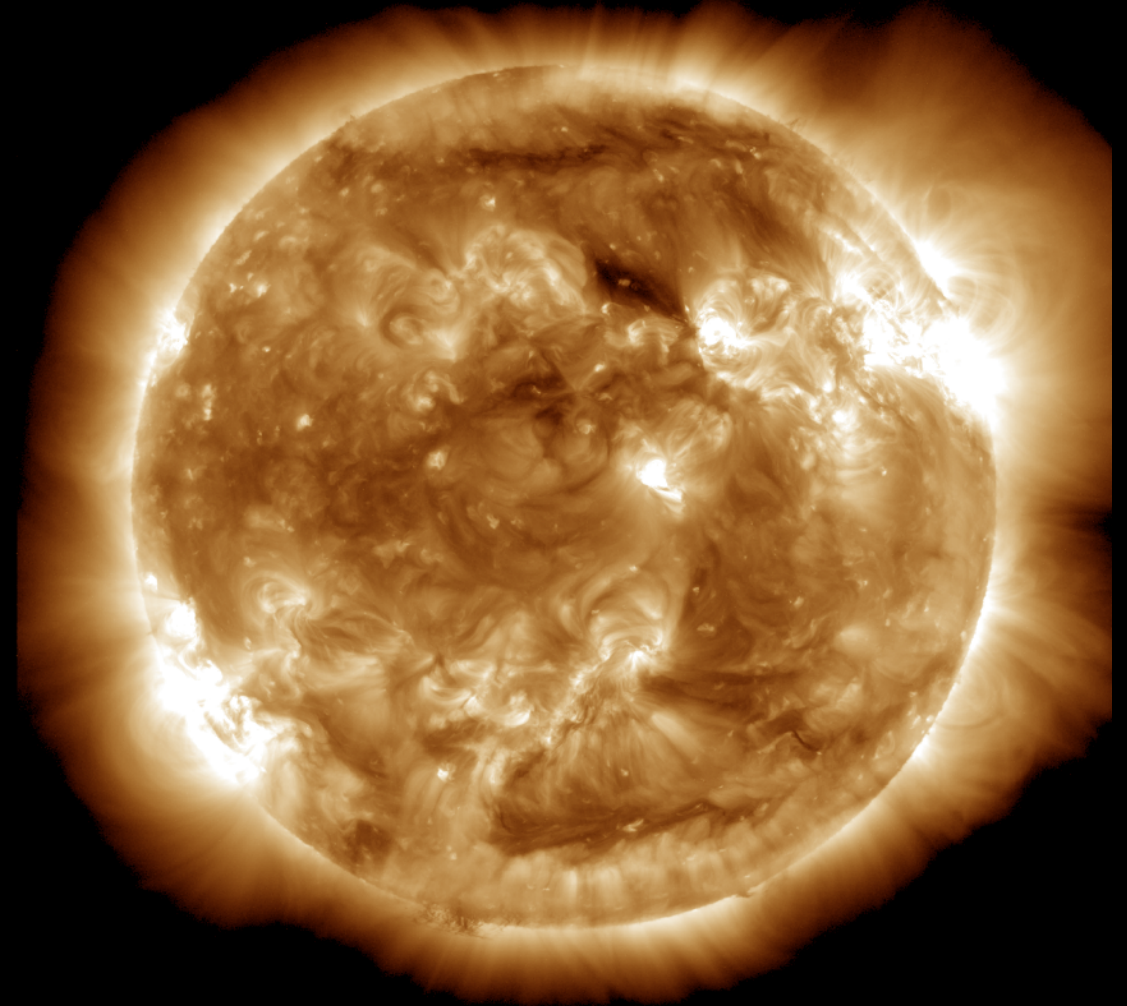
SDO/AIA 19.3 nm 2022-10-11

SDO/AIA AIA 193Å 2022-10-11T12:00:05.843



SDO/AIA 19.3 nm 2022-10-12

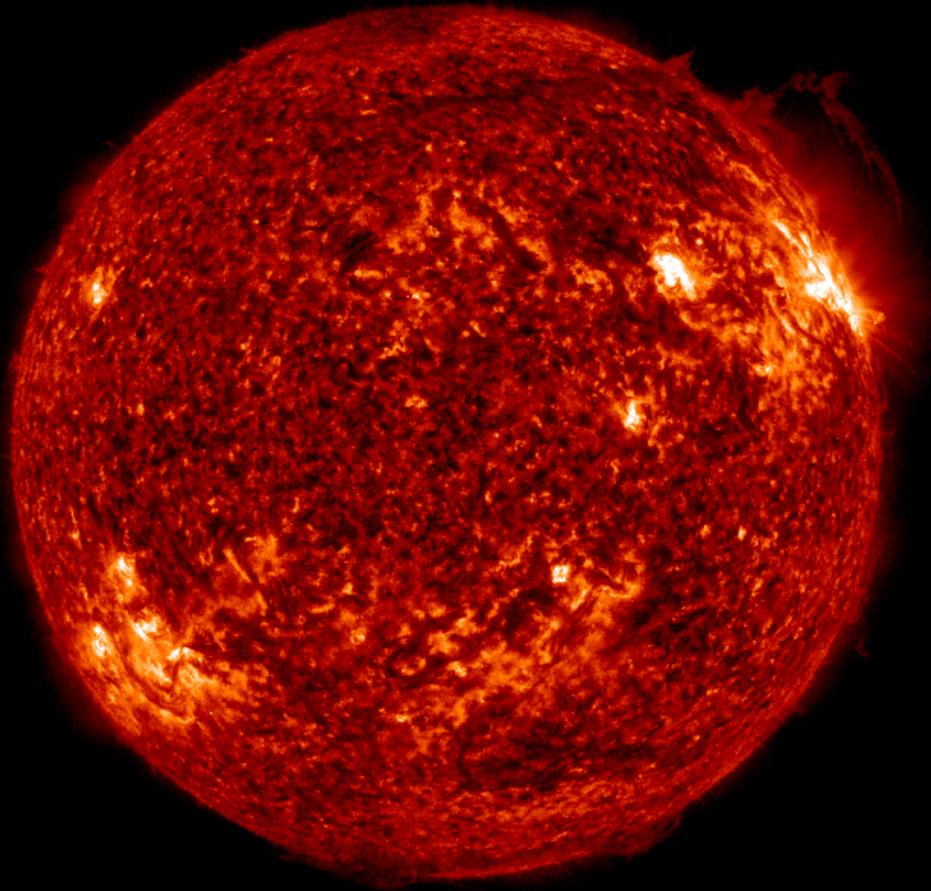
SDO/AIA AIA 193Å 2022-10-12T12:00:05.843



Filaments

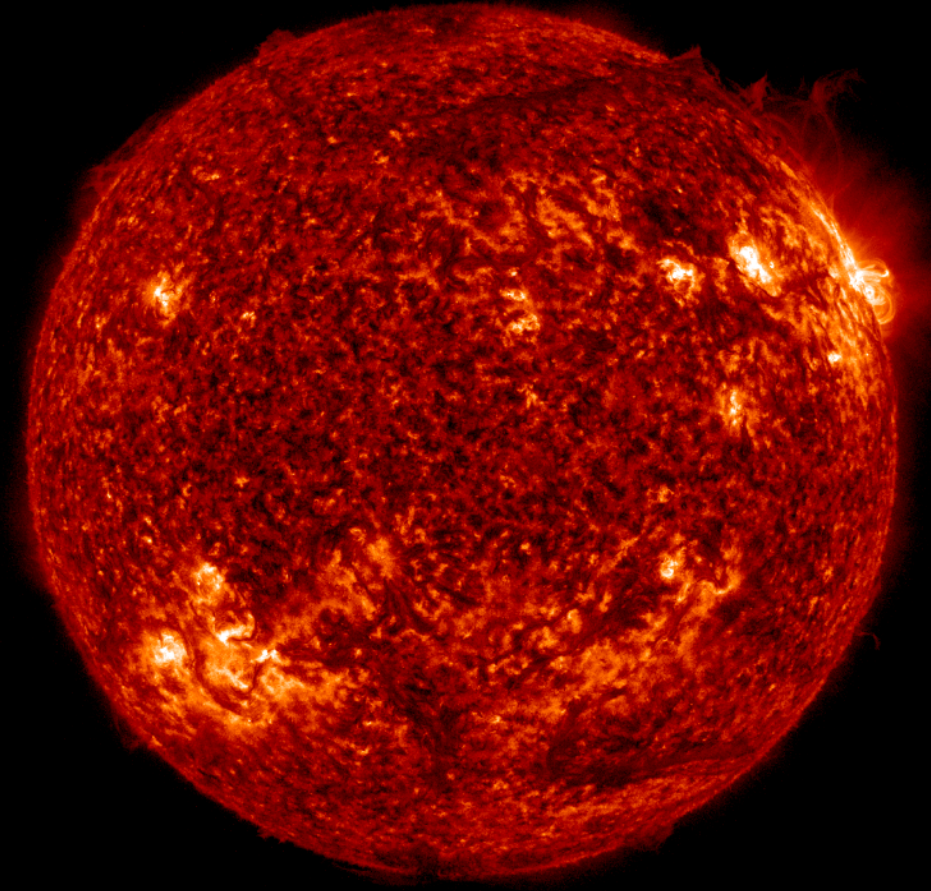
SDO/AIA 30.4 nm 2022-10-13

SDO/AIA AIA 304Å 2022-10-13T12:00:06.580

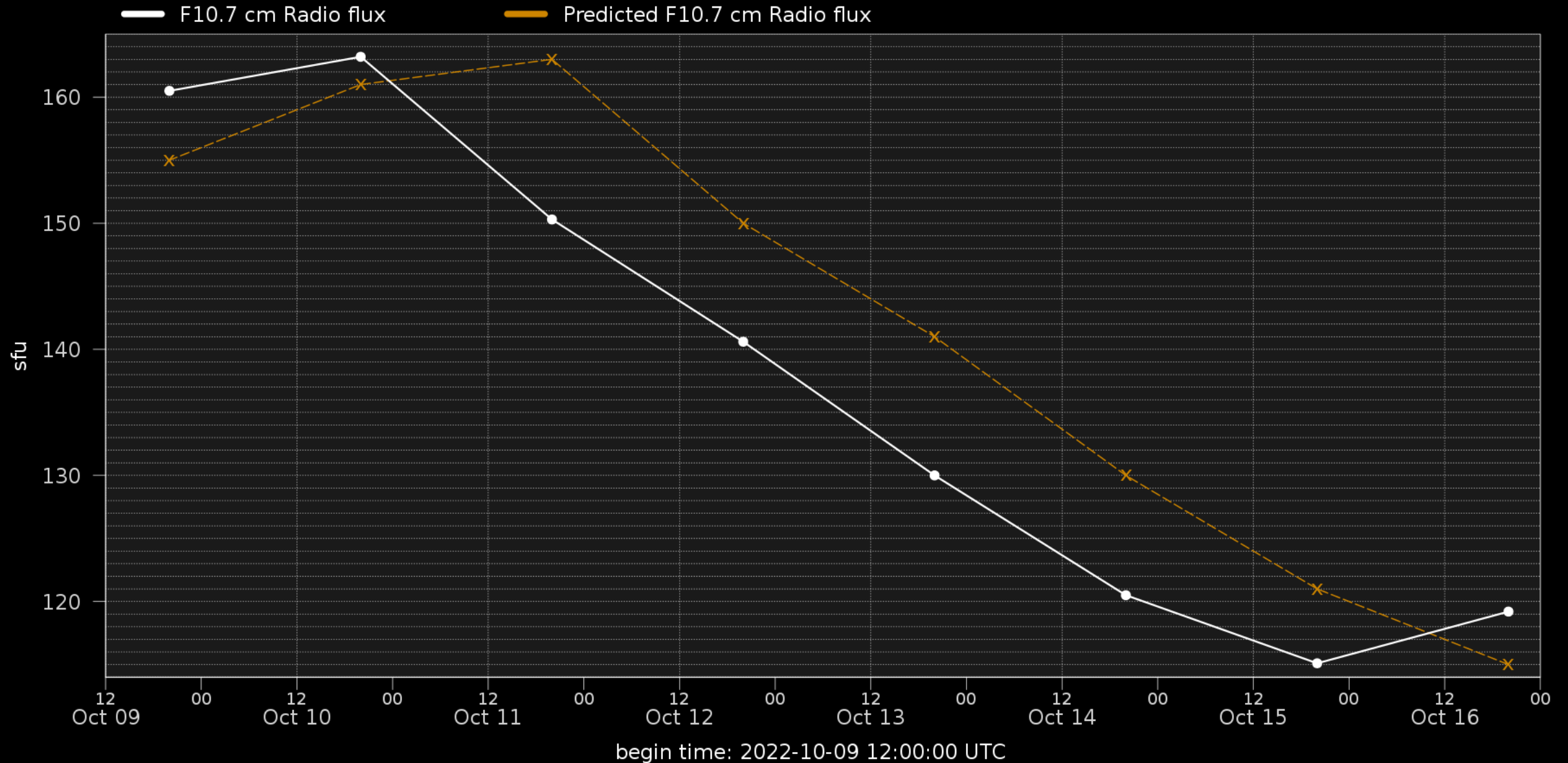


SDO/AIA 30.4 nm 2022-10-14

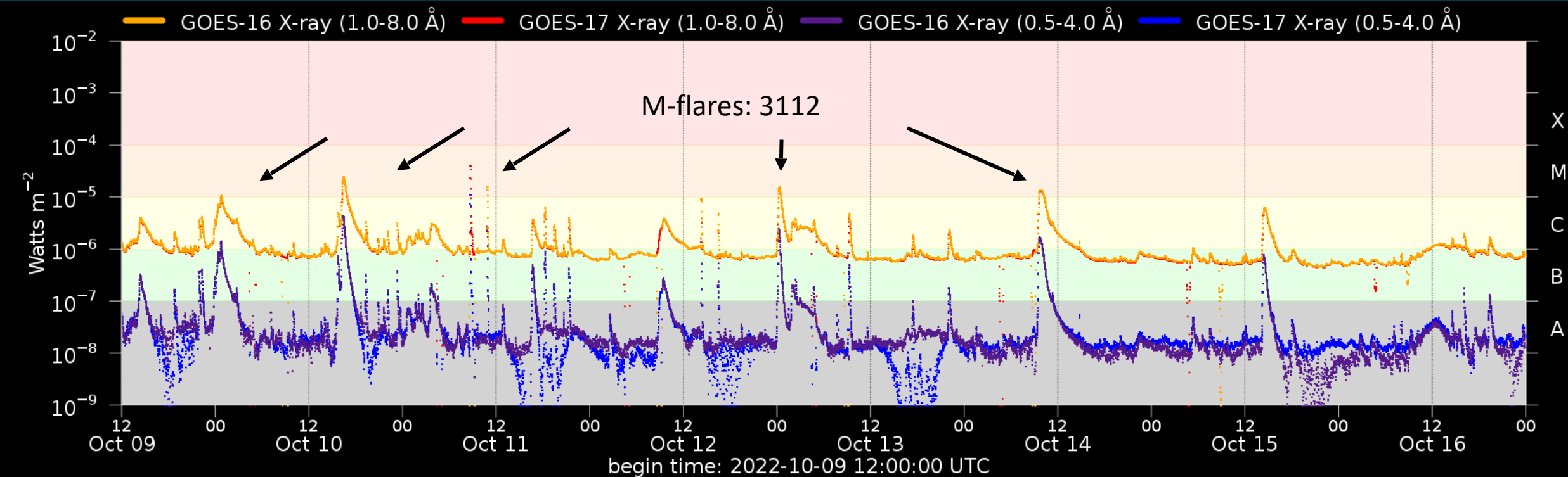
SDO/AIA AIA 304Å 2022-10-14T12:00:06.572



Solar F10.7cm radio flux



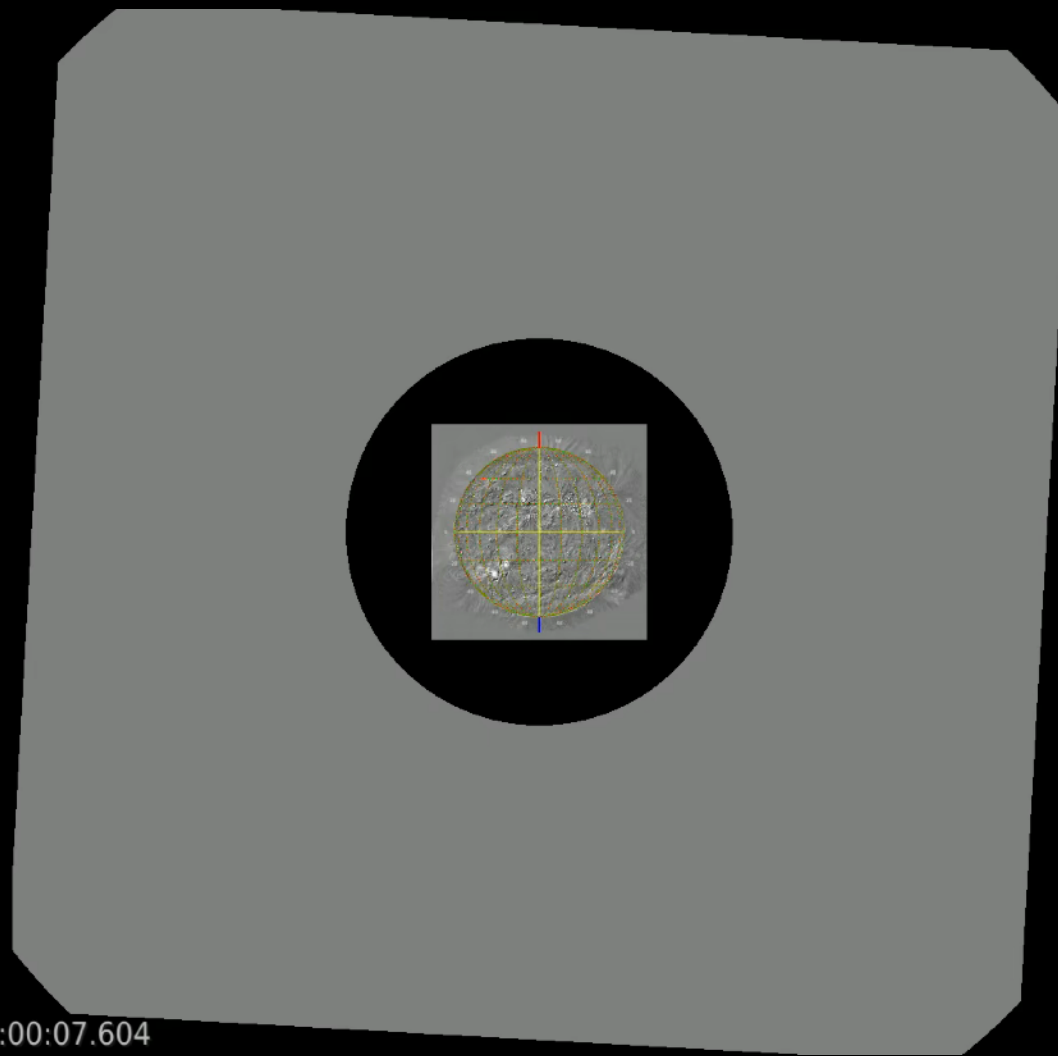
Flaring activity



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

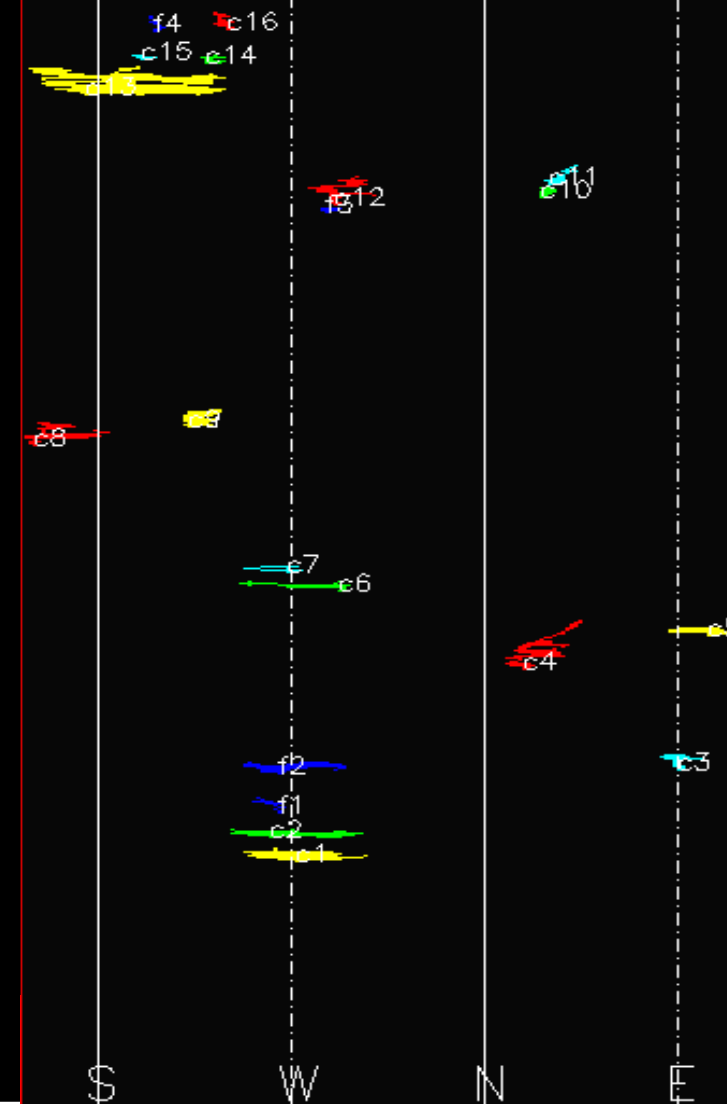
Issue date	2022-10-09	2022-10-10	2022-10-11	2022-10-12	2022-10-13	2022-10-14	2022-10-15	2022-10-16
Probability (%)	95 15 01	90 49 05	90 50 10	85 50 10	90 50 10	80 50 03	55 05 01	55 01 01
Observed (#)	05 01 00	08 03 00	07 00 00	06 01 00	02 00 00	01 00 00	01 00 00	01 00 00

Coronal Mass Ejection 10/10



Earth arrival on 14 October

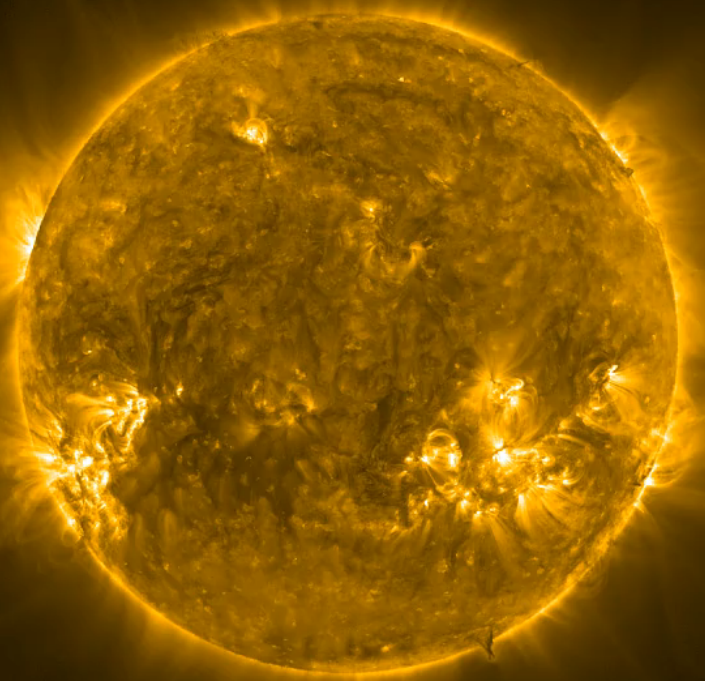
Solar Influences Data analysis Cen



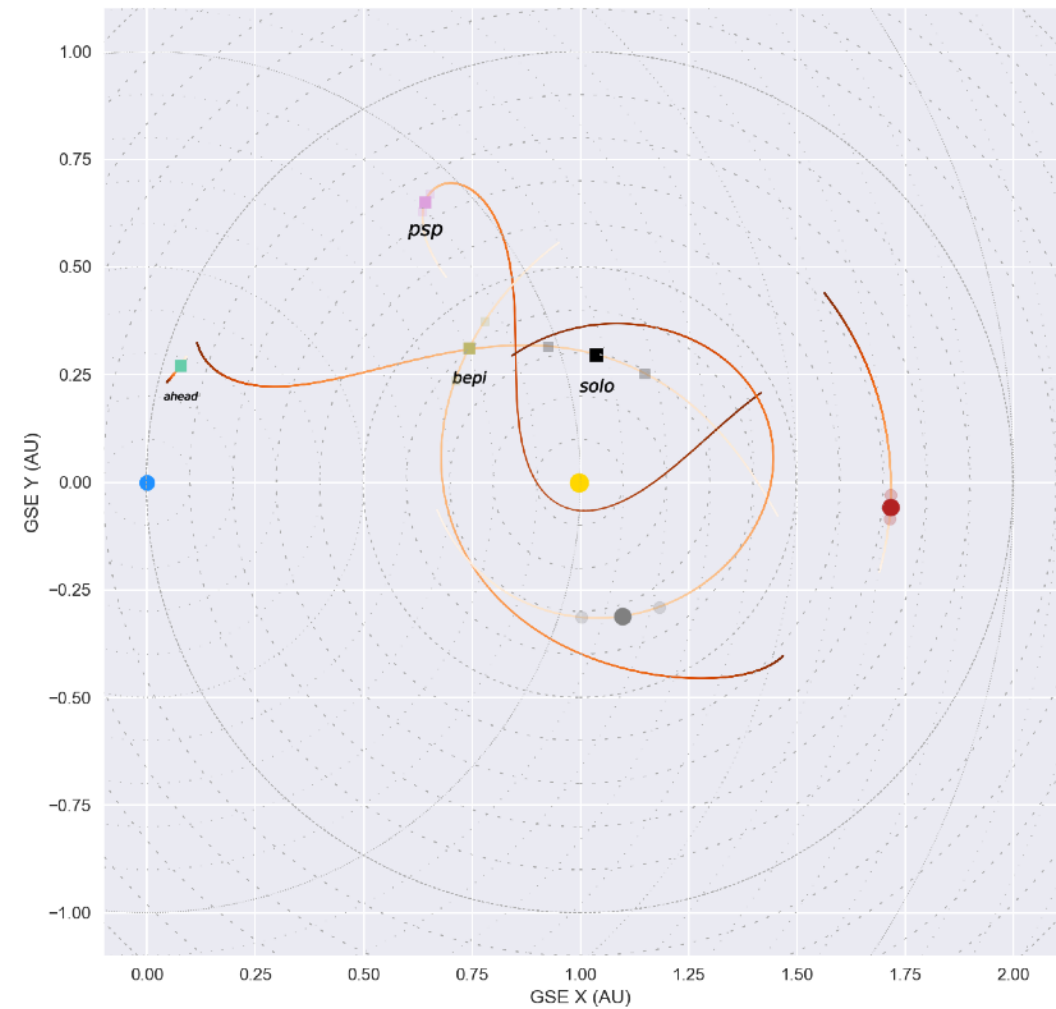
09:12	10/16
06:48	10/16
04:12	10/16
00:48	10/16
21:24	10/15
18:48	10/15
16:00	10/15
12:48	10/15
10:12	10/15
07:24	10/15
04:24	10/15
01:25	10/15
22:00	10/14
19:24	10/14
16:36	10/14
13:36	10/14
10:36	10/14
07:12	10/14
03:12	10/14
23:24	10/13
19:36	10/13
16:48	10/13
14:12	10/13
11:00	10/13
08:00	10/13
05:36	10/13
02:42	10/13
23:36	10/12
20:00	10/12
16:42	10/12
13:25	10/12
10:12	10/12
07:00	10/12
04:12	10/12
00:36	10/12
21:24	10/11
18:36	10/11
15:48	10/11
12:24	10/11
09:36	10/11
06:36	10/11
04:00	10/11
00:36	10/11
21:24	10/10
18:24	10/10
15:12	10/10
11:12	10/10
08:36	10/10
06:06	10/10
03:24	10/10
00:00	10/10

Solar Orbiter/EUI FSI 174
Zirconium_174_n25 L1 priority 61
combitpp 14 (bpp 0.56, Lossy-high quality)
crota 5.671 (deg) dsun_au 0.305 (AU)
crval1,2 53.48,132.41 (arcsec) v107_20221010_001+flown

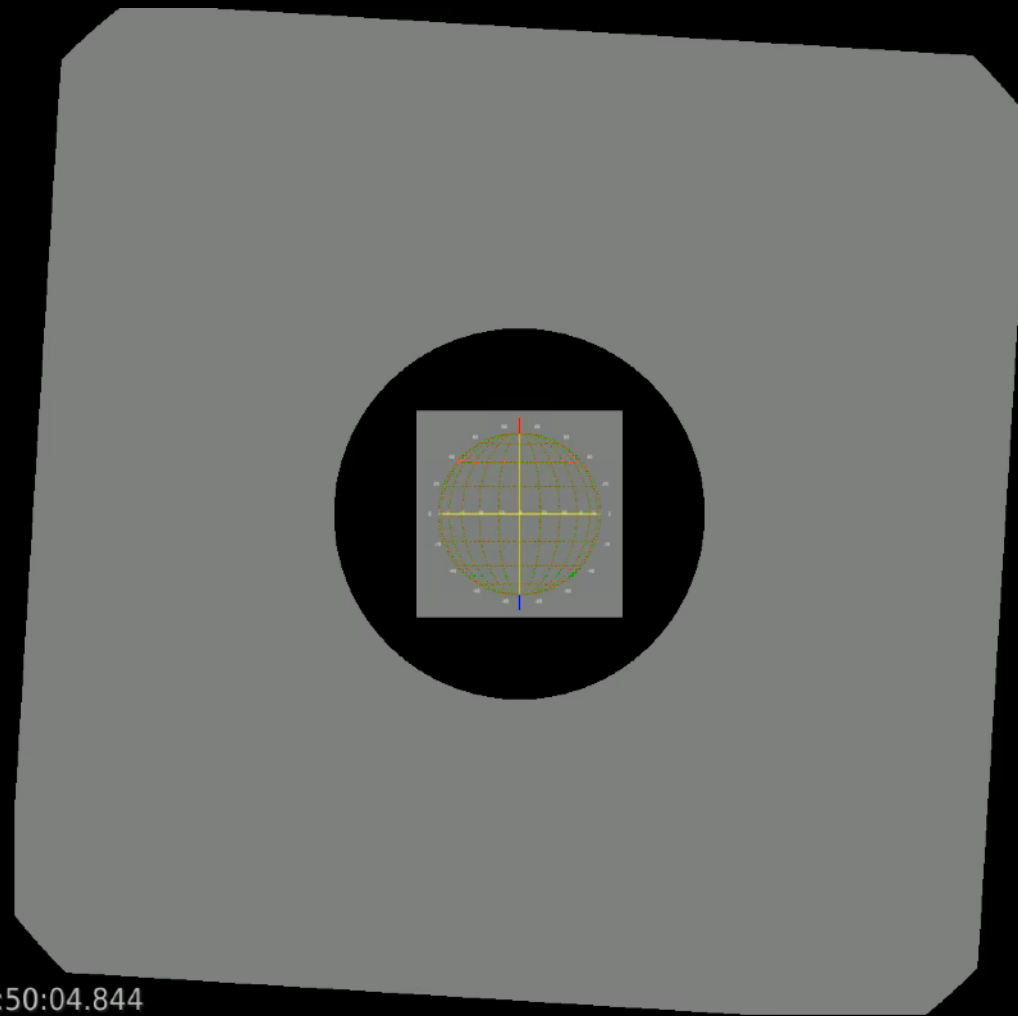
2022-10-09 00:01:00 (UTC)



LTP09
2022-09-26 00:00:00 - 2022-12-26 00:00:00
STP 227
2022-10-12 00:00:00 - 2022-10-19 00:00:00 (DOY 285-291)



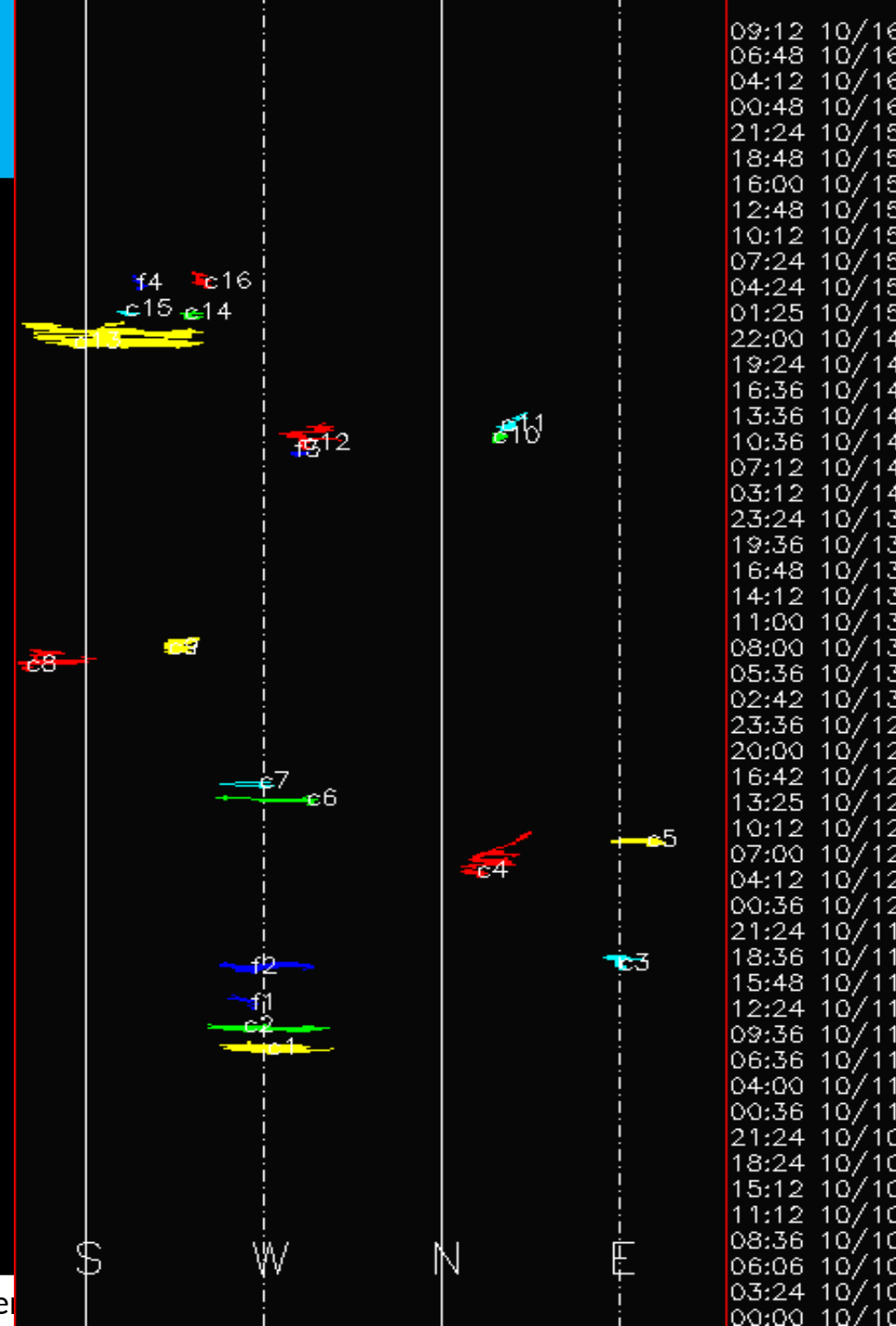
Coronal Mass Ejection 13/10



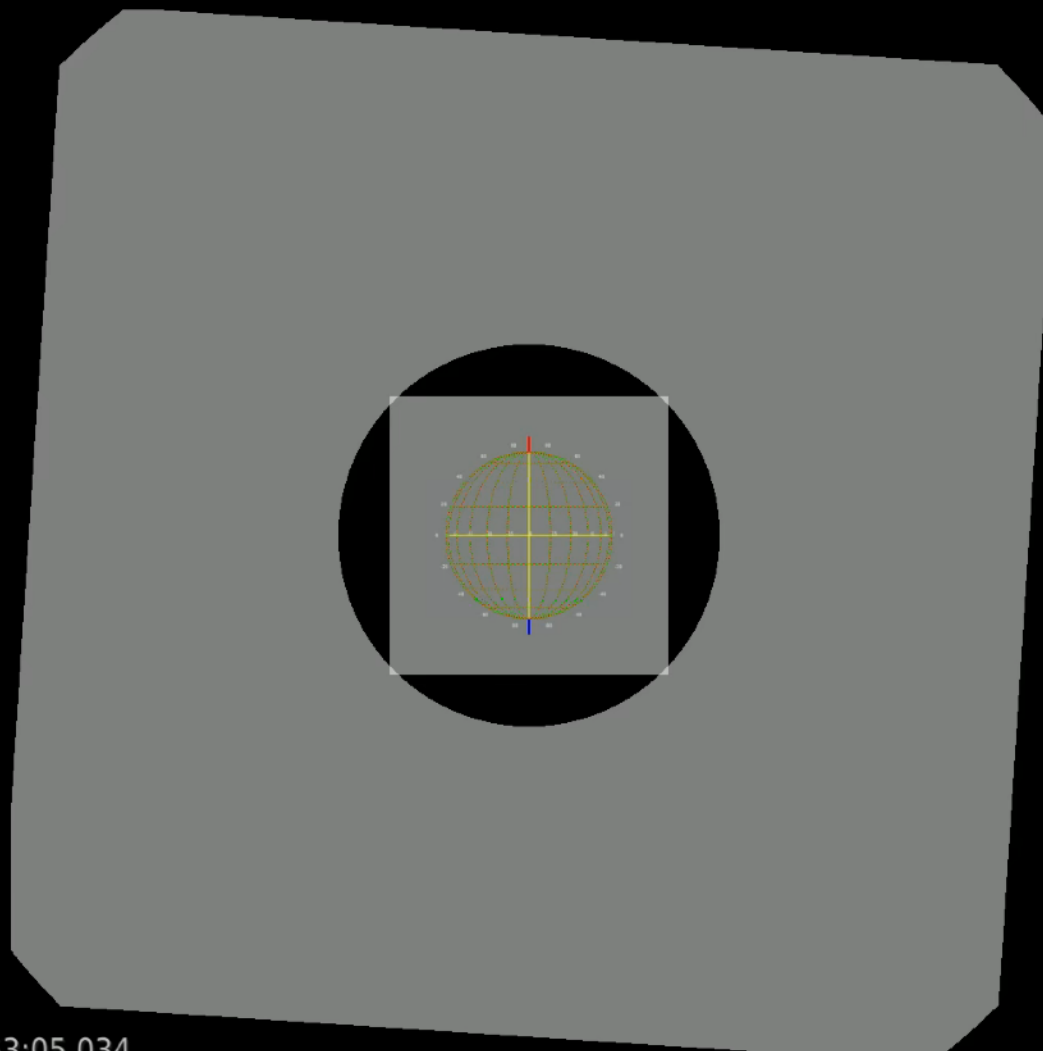
2022-10-13T01:50:04.844

Possible Earth arrival on 17 October

ences Data analysis Ce



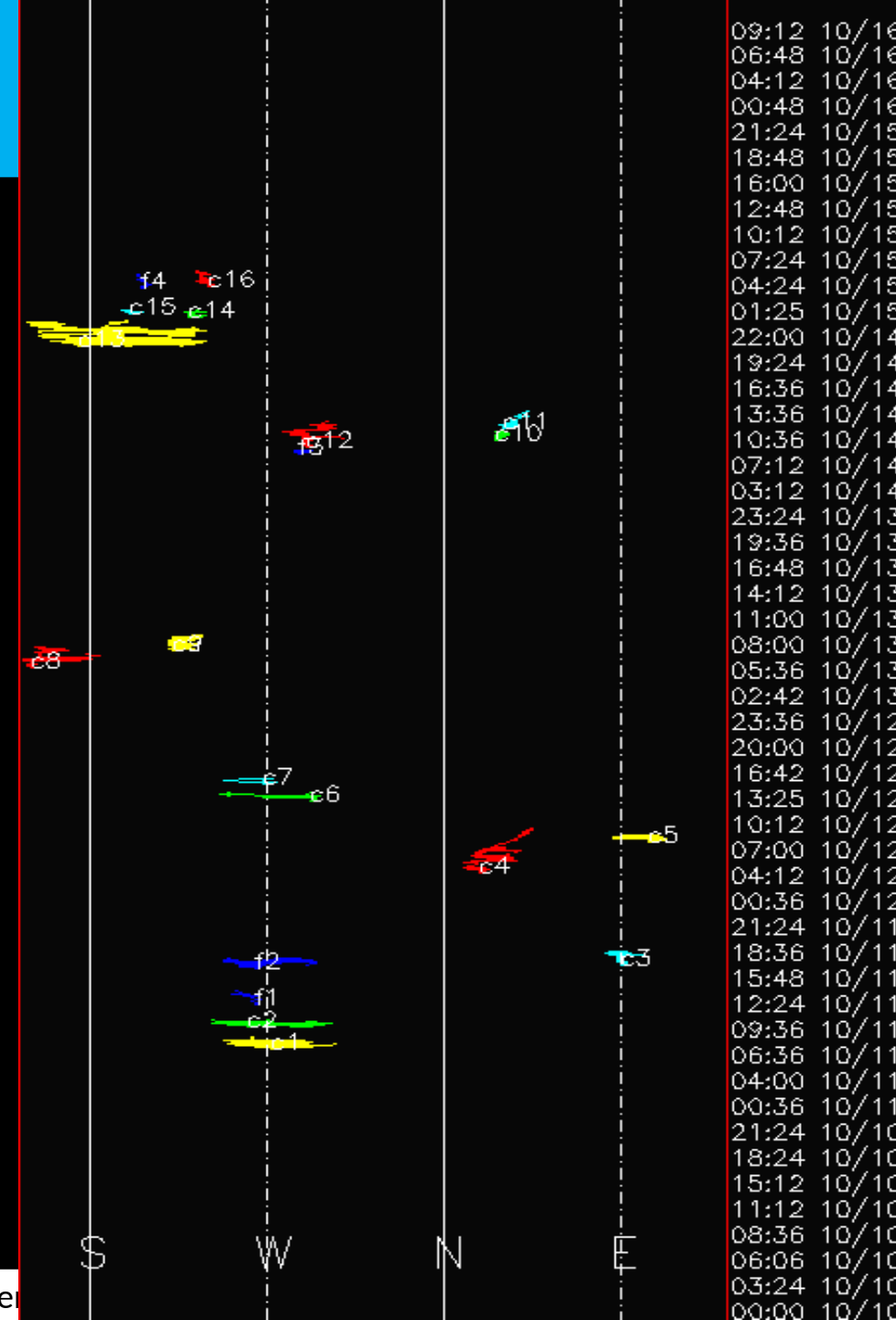
Coronal Mass Ejection 14/10



2022-10-14T19:53:05.034

Possible Earth arrival on 18 October

ences Data analysis Ce



09:12	10/16
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04:12	10/16
00:48	10/16
21:24	10/15
18:48	10/15
16:00	10/15
12:48	10/15
10:12	10/15
07:24	10/15
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01:25	10/15
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19:24	10/14
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05:36	10/13
02:42	10/13
23:36	10/12
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07:00	10/12
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00:36	10/12
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18:36	10/11
15:48	10/11
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08:36	10/10
06:06	10/10
03:24	10/10
00:00	10/10

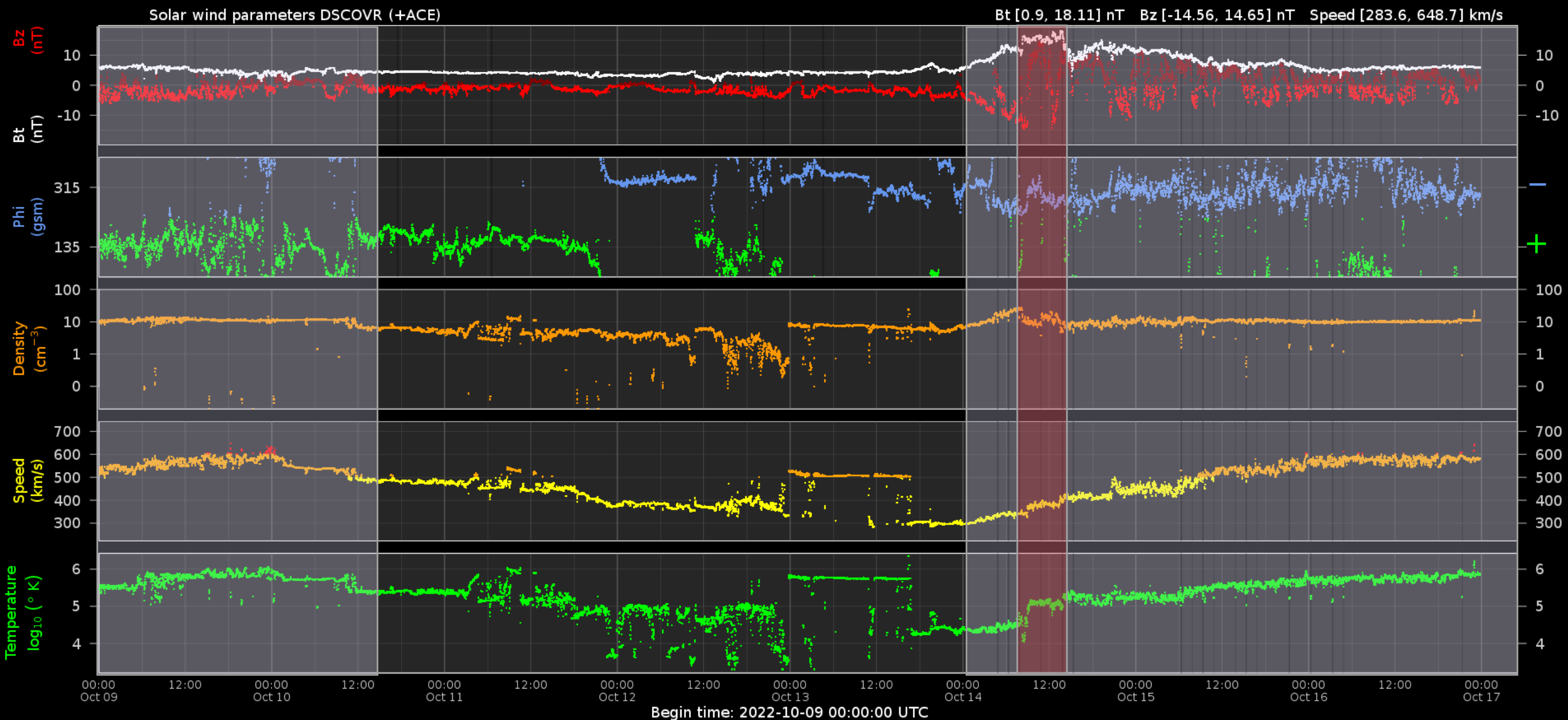
Solar Wind and Geomagnetic Activity



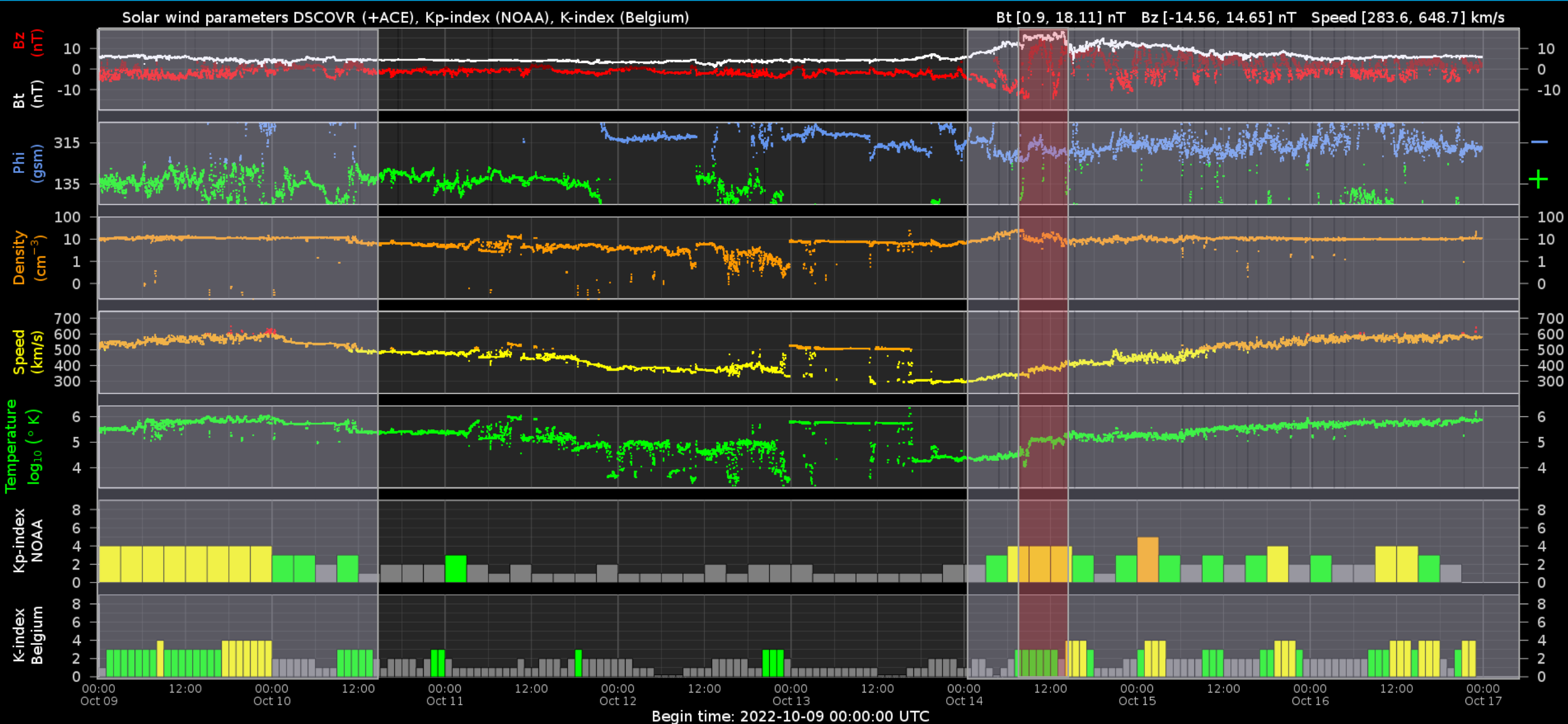
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Solar wind parameters



Solar wind parameters & K-indices



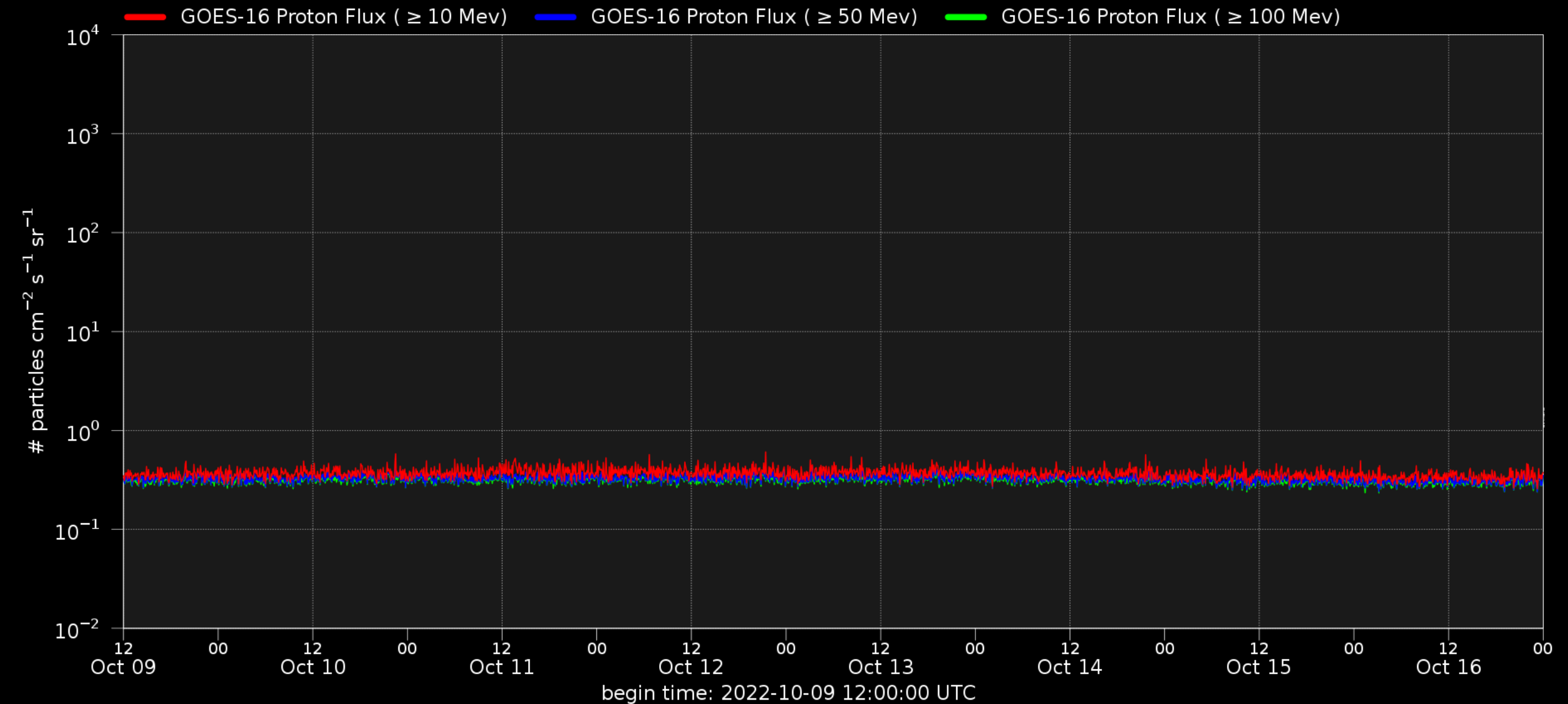
Energetic Particles



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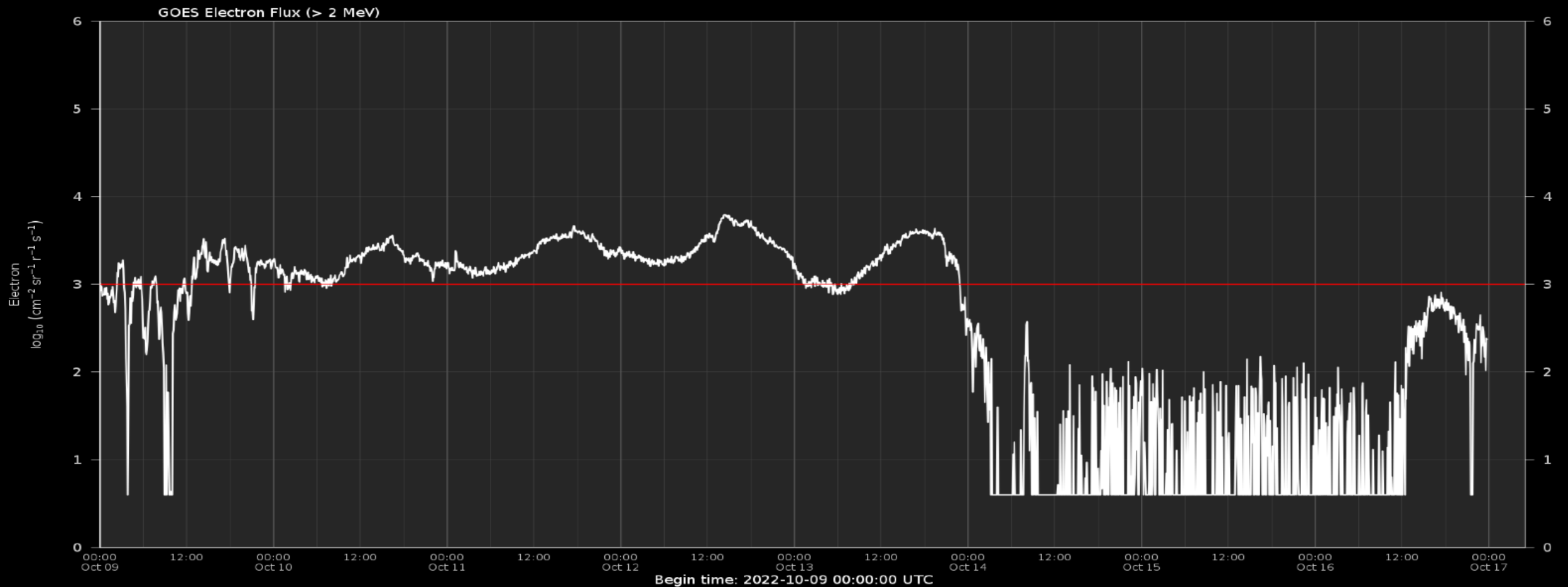
Solar proton flux



Electron flux at GEO

www.stce.be/educational/classification#electrons

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



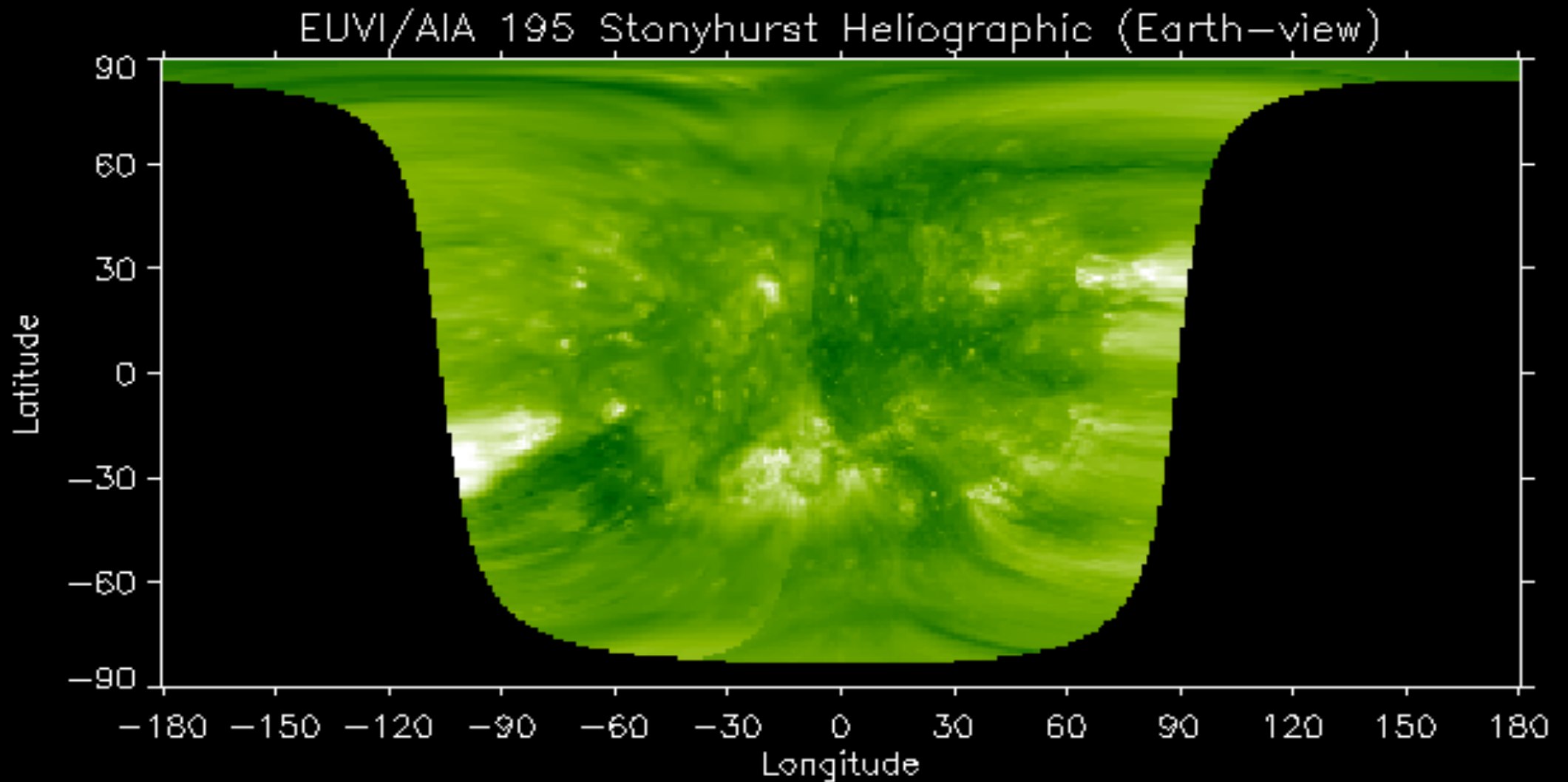
Outlook



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Outlook: Solar activity

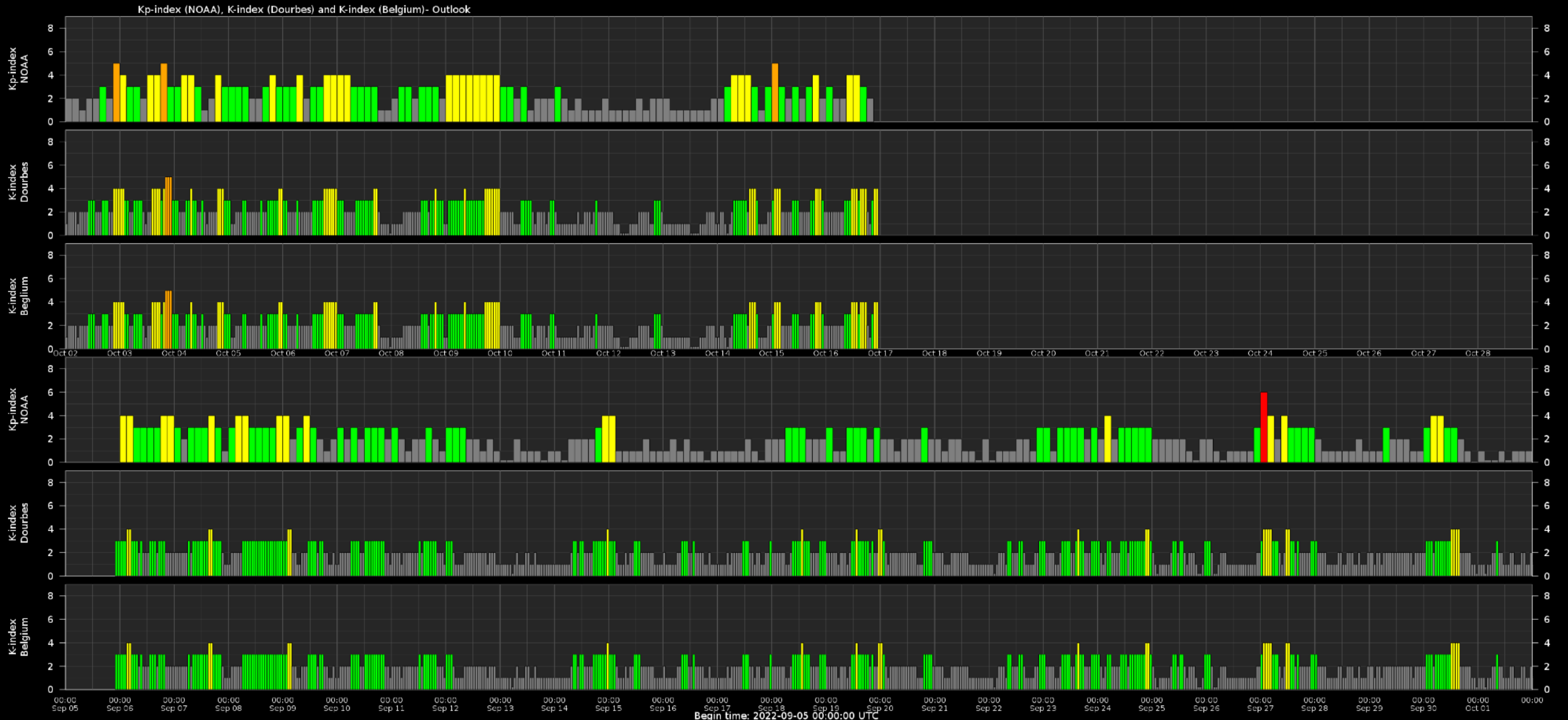


Observation date: 2022/10/16 20:05:00

Outlook: Solar wind parameters



Outlook: Geomagnetic activity



Pegasus



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Pegasus related events

GNSS scintillation advisories sent on
10, 11, 12 and 16 October

DTG: 20221011/1357Z

SWXC: PECASUS

ADVISORY NR: 2022/62

SWX EFFECT: GNSS SEV

OBS SWX: 11/1355Z EQN EQS E090 - E120

RMK: SPACE WEATHER EVENT (IONOSPHERIC

DISTURBANCE) IN PROGRESS. IMPACT ON GNSS

PERFORMANCE POSSIBLY LEADING TO LOSS OF

GNSS SIGNALS AND/OR DEGRADATION OF

TIMING AND POSITIONING PERFORMANCE.

NXT ADVISORY: WILL BE ISSUED BY 20221011/1955Z

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See you at our next briefing!

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