

SOL (Cecatto)

Summary – Week November 20 to November 27

Summary

11/20 – Flare M1.2; No fast wind stream; 4 CME can have component toward the Earth;

11/21 – No M/X flare; No fast wind stream; 6 CME can have component toward the Earth;

11/22 – No M/X flare; Fast (≤ 600 km/s) wind stream; 7 CME can have component toward the Earth;

*11/23 – Flares M1.4, M1.0; Fast (≤ 550 km/s) wind stream; 10 CME can have component toward the Earth *;*

*11/24 – Flare M1.1; Fast (≤ 450 km/s) wind stream; 3 CME can have component toward the Earth *;*

11/25 – No M/X flare; Fast (≤ 600 km/s) wind stream; 10 CME can have component toward the Earth;

11/26 – No M/X flare; Fast (≤ 550 km/s) wind stream; 6 CME can have component toward the Earth;

11/27 – No M/X flare; Fast (≤ 500 km/s) wind stream; 2 CME can have component toward the Earth

Prev.: Fast wind stream for today and next day; for while low (35% M, 05% X) probability of M / X flares next 2 days; also, occasionally some other CME can present a component toward the Earth.

Resumo – Semana de 20 a 27 de Novembro

20/10 – "Flare" M1.2; Sem vento solar rápido; 4 CME podem ter uma componente para a Terra;

21/10 – Sem "flare" M/X; Sem vento solar rápido; 6 CME podem ter uma componente para a Terra;

22/11 – Sem "flare" M/X; Vento rápido (< 600 km/s); 7 CME podem ter uma componente para a Terra;

*23/11 – "Flare" M1.4, M1.0; Vento rápido (< 550 km/s); 10 CME podem ter uma componente para a Terra *;*

*24/11 – "Flare" M1.1; Vento rápido (< 450 km/s); 3 CME podem ter uma componente para a Terra *;*

25/11 – Sem "flare" M/X; Vento rápido (< 600 km/s); 10 CME podem ter uma componente para a Terra;

26/11 – Sem "flare" M/X; Vento rápido (< 550 km/s); 6 CME podem ter uma componente para a Terra;

27/11 – Sem "flare" M/X; Vento rápido (< 500 km/s); 2 CME podem ter uma componente para a Terra

Prev.: Vento rápido para hoje e próximos 1 dia; baixa probabilidade de "flares" (35% M, 05% X) nos próximos 02 dias; eventualmente alguma outra CME pode apresentar componente dirigida para a Terra.



Solar - WSA-ENLIL

EMC (<https://ccmc.gsfc.nasa.gov/donki/>):

WSA-ENLIL(CME 2023-11-23 06:00:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-11-26 03:00:00 UT and 2023-11-26 17:00:00 UT.

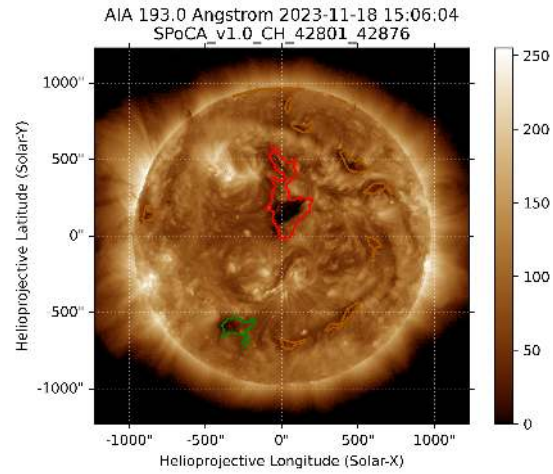
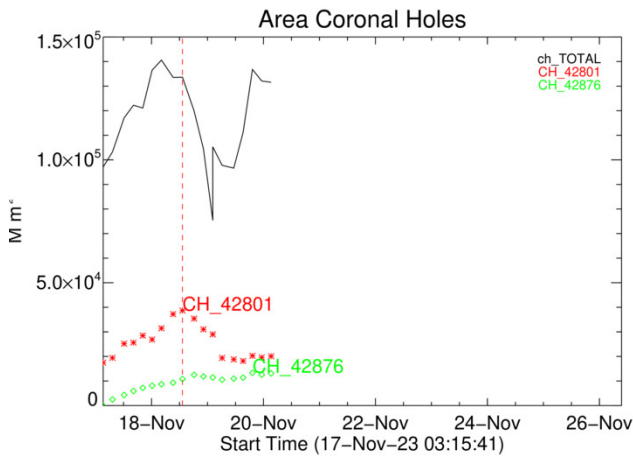
WSA-ENLIL(CME 2023-11-23 06:12:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-11-26 03:00:00 UT and 2023-11-26 17:00:00 UT.

WSA-ENLIL(CME 2023-11-24 10:12:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-11-26 23:00:00 UT and 2023-11-27 13:00:00 UT.

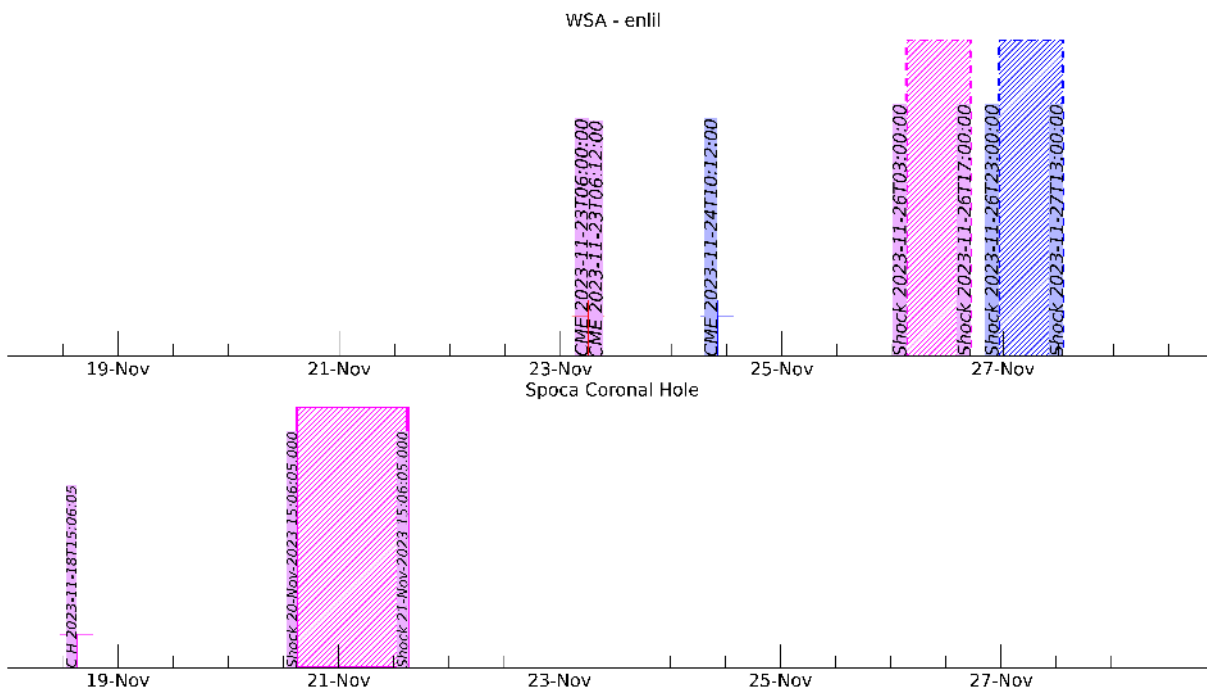
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between November 17 and 20, 2023.

(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 15:06 UT on November 18, 2023 (red dot line).

Solar - WSA - ENLIL and SPoCA



EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

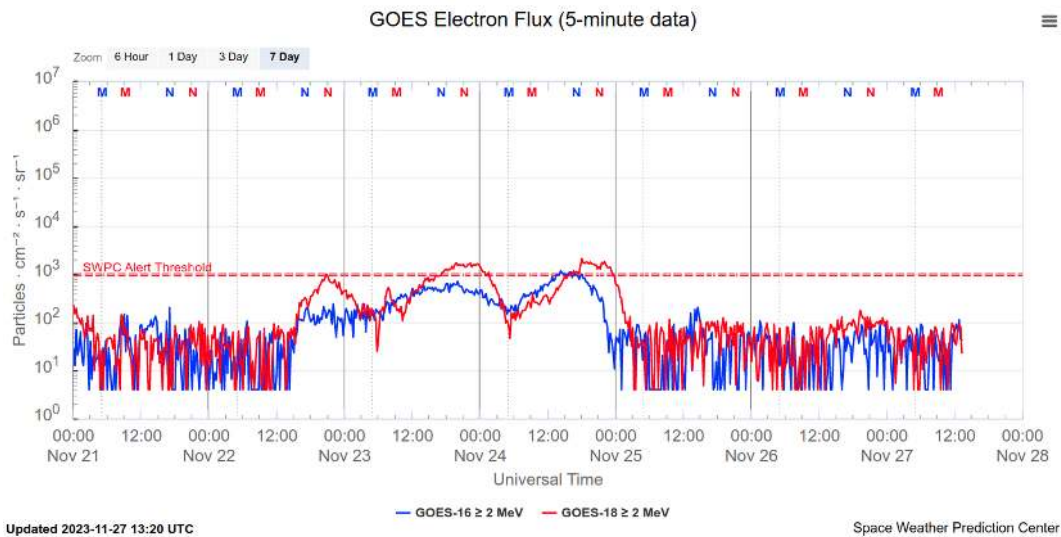


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: <https://www.swpc.noaa.gov/products/goes-electron-flux>

Summary

The high-energy electron flux (>2 MeV) in the outer boundary of the outer radiation belt obtained from geostationary satellite data GOES-16 and GOES-18 (Figure 1) is below 10^2 particles/(cm² s sr) at the beginning and end of the analyzed period. The electron flux increase is observed from 18:00 UT on November 22nd, persisting until the beginning of November 25th. The maximum population reached was observed at 18:00 UT on November 24th. Variabilities in electron flux occurred under the influences of the solar wind structures.

Geomagnetic Field / Campo Geomagnético

Summary

In the week of 21-27/11, the Embrace magnetometer network data recorded instabilities throughout the week, with emphasis on:

- 21, 22 and 25/11: The magnetometers of the Embrace network recorded a drop of -100 nT, -120 nT and -140 nT, respectively, at the H-component at MED.
- AE index was active, above 500 nT on the 21, 22 and 25. The minimum Dst index was -99 nT. The highest Kp of the week was 6+, on 25 November.

Resumo

Na semana de 21 a 27/11, os dados provenientes da rede de magnetômetros Embrace registraram instabilidades ao longo de toda semana, com destaque para:

- 21, 22 e 25/11: Os magnetômetros da rede Embrace MagNet registraram diminuição da componente H da ordem de 100 nT, 120 nT e 140 nT respectivamente.
- índice AE esteve ativo, acima de 500 nT nos dias 21, 22 e 25. O índice Dst mínimo foi -99 nT. O Kp mais alto da semana foi 6+.

Rede EMBRACE de Magnetômetros

ΔH - (21/11/2023 - 27/11/2023)

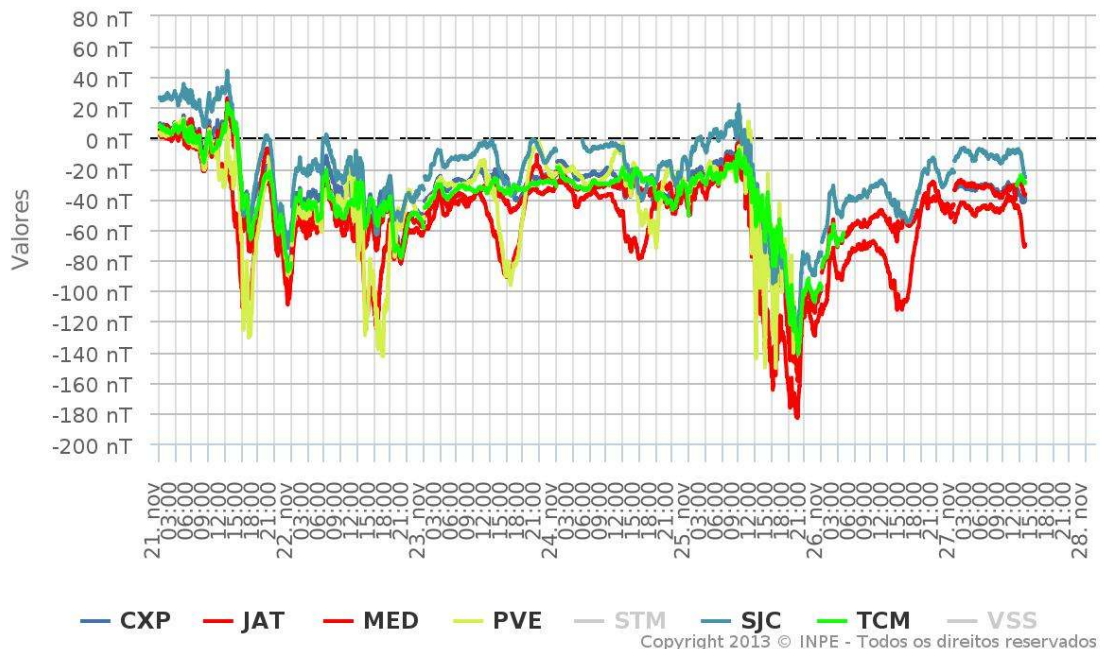


Figura 1.: Variação diurna da componente geomagnética H (nT) das estações da rede Embrace para o período de 21 a 27 de Novembro de 2023

Figure 1.: Daily variation of the geomagnetic field from H (nT) measured at Embrace MagNet 21-27 November 2023

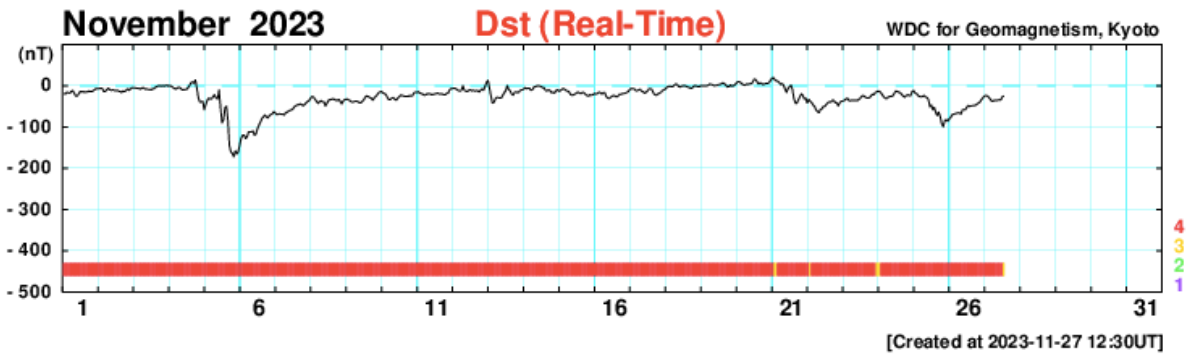
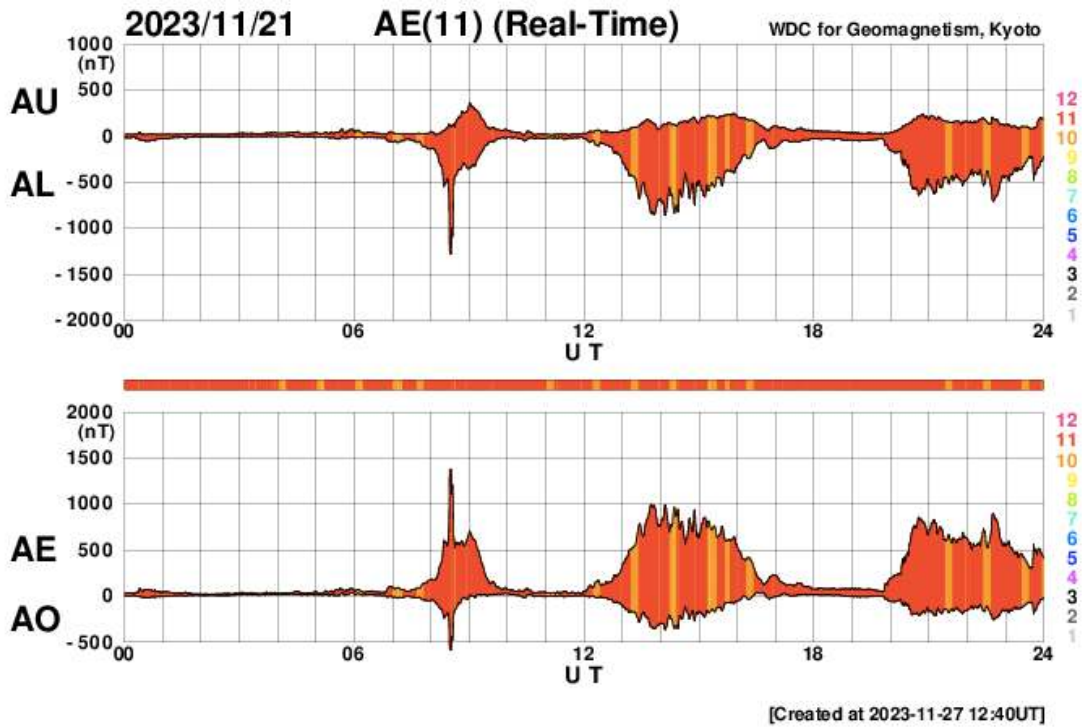


Figura 2.: Índice Dst para o mês de Novembro de 2023.
Figure 2: Dst index for November 2023



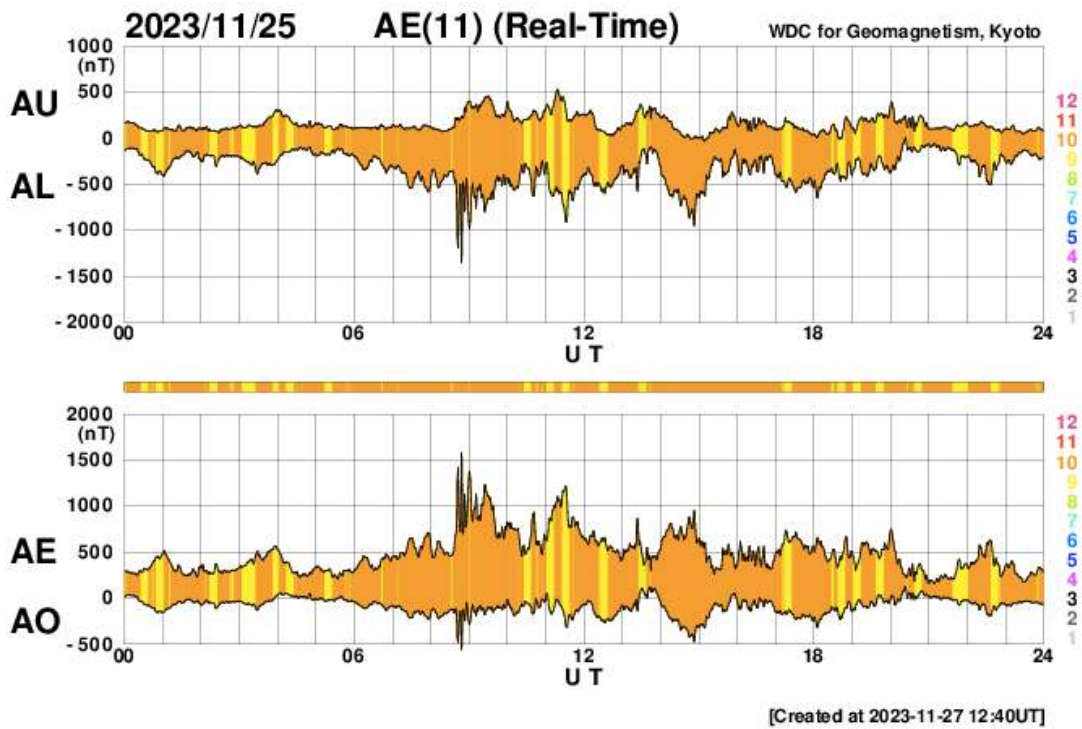
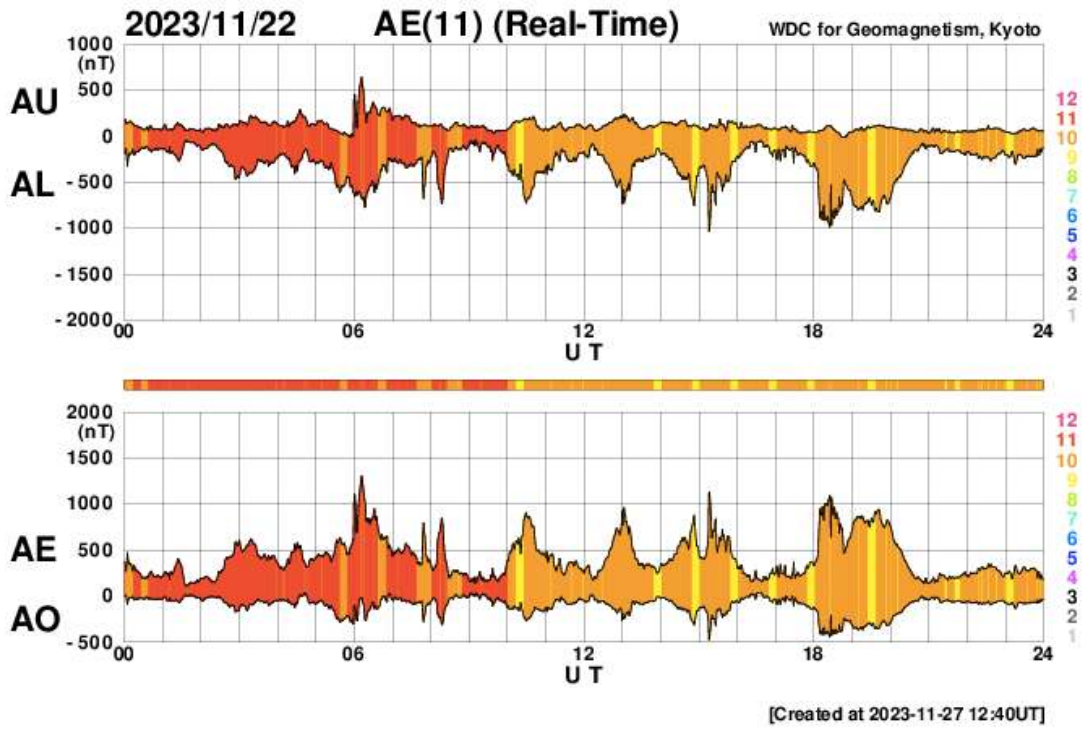


Figura 3.: Índice AE para os dias mais perturbados da semana.
Figure 3.: AE index for the most disturbed days in the current week.

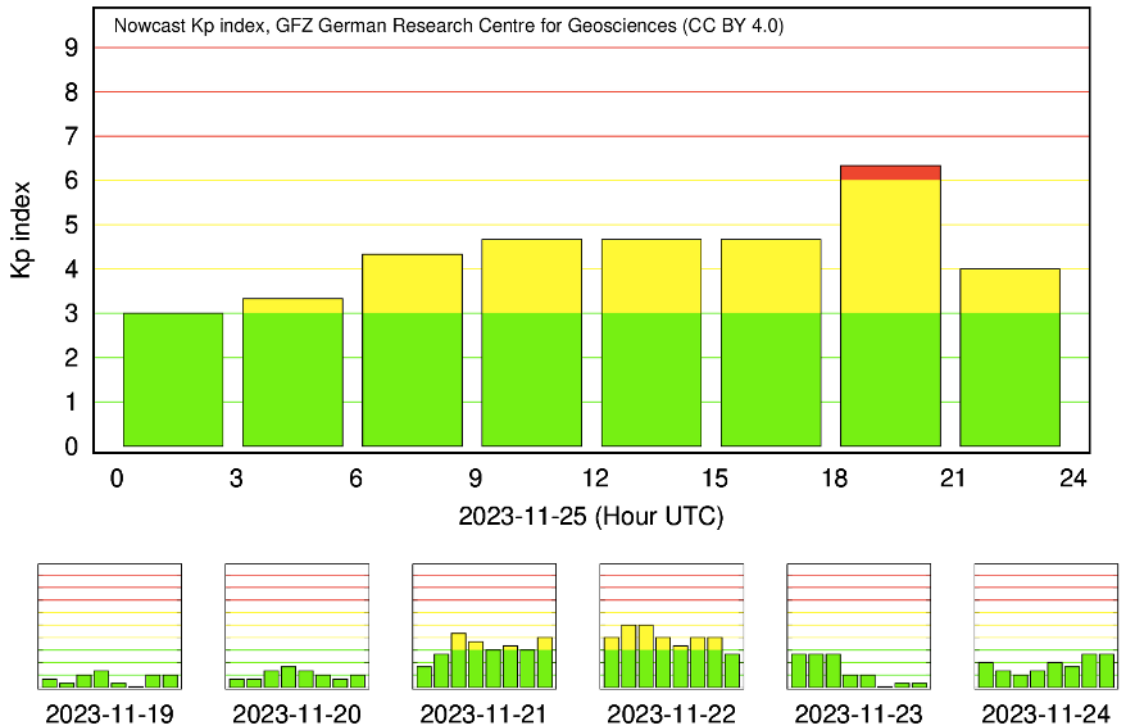


Figura 4.: Índice Kp referente a semana de 21 a 24 de Novembro de 2023.
 Figure 4: Kp index for the current week (21 to 24 November 2023)

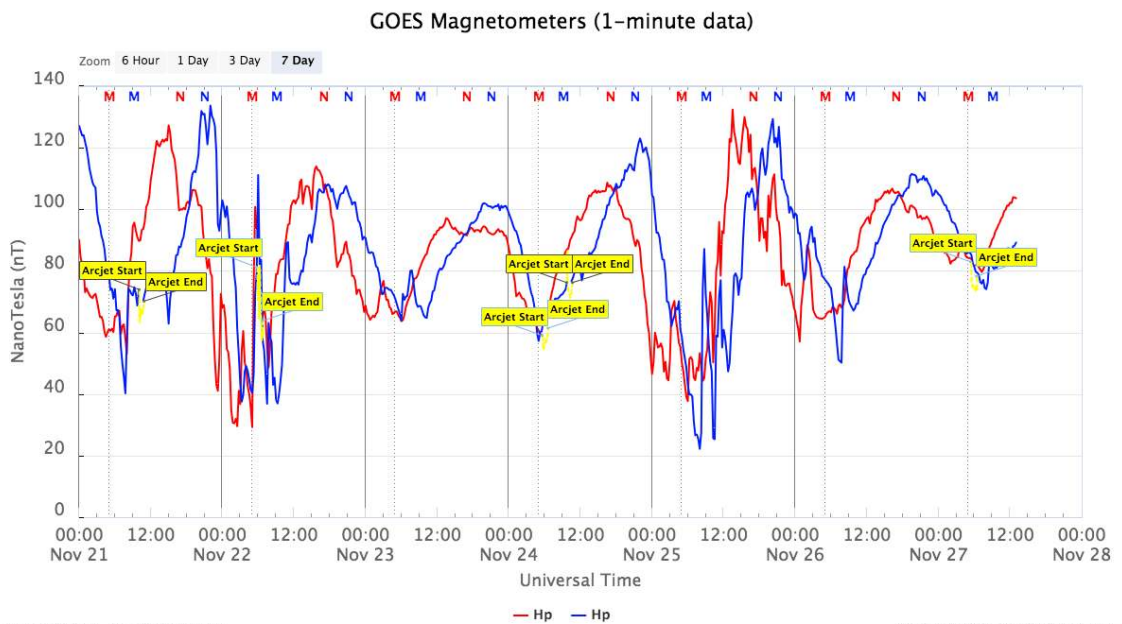


Figura5. Medida de Campo magnético na posição do satélite GOES na semana de 21 à 28 de Novembro de 2023



Figure 5.: Magnetic field horizontal component at the GOES satellite orbit through 21 to 28 November 2023

Ionosfera – Digissonda (Laysa Resende)

Summary

We observed the F spread F in Fortaleza and Cachoeira Paulista (Figure 1) every day during this week (Figure 1). The Es layers reached a maximum of scale 4 in Fortaleza (Figure 2).

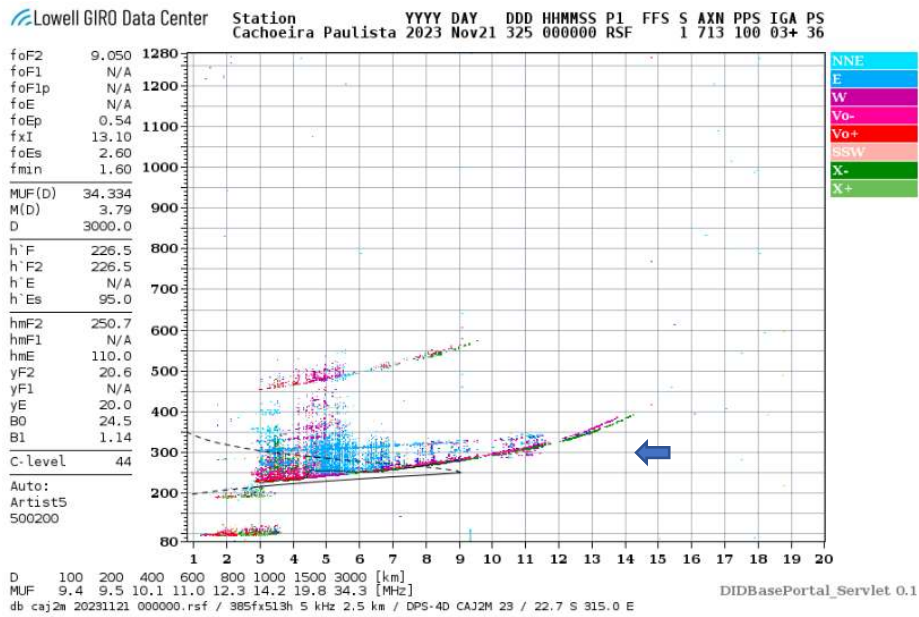


Figure 1 – Ionogram over Cachoeira Paulista, showing the spread F occurrence on November 21, 2023.

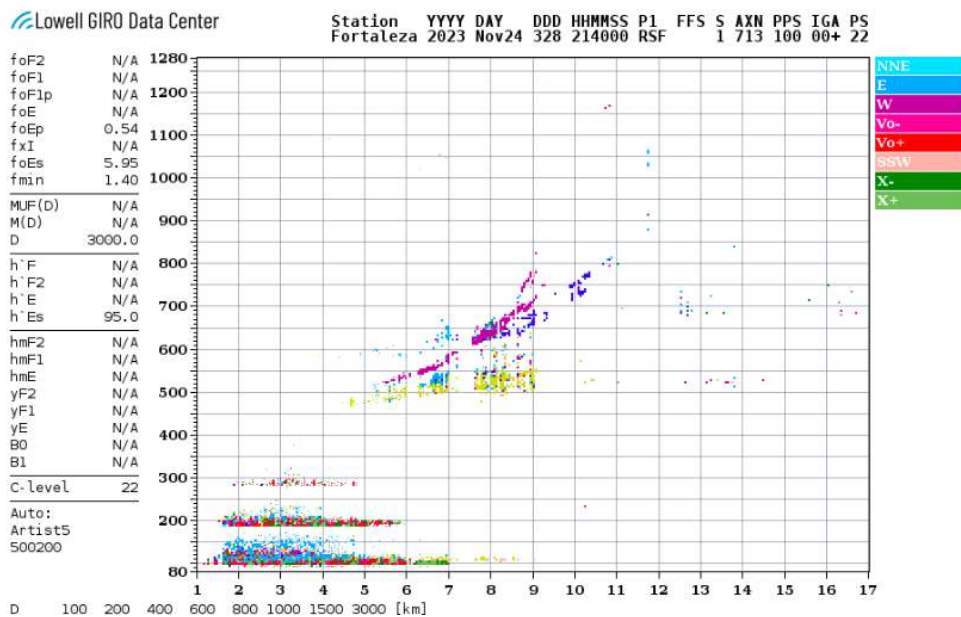


Figure 2 – Ionogram over Fortaleza, showing the Es layer occurrence on November 24, 2023.

Ionosphere - ROTI Summary for Week 2289 (November 19 to 25, 2023)

Carolina de Sousa do Carmo

In the week 2289 (November 19 to 25, 2023) there were ionospheric irregularities (plasma bubbles) on all nights analyzed. Unfortunately we do not have data for the 24th and 25th. The Figure below shows the ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)).

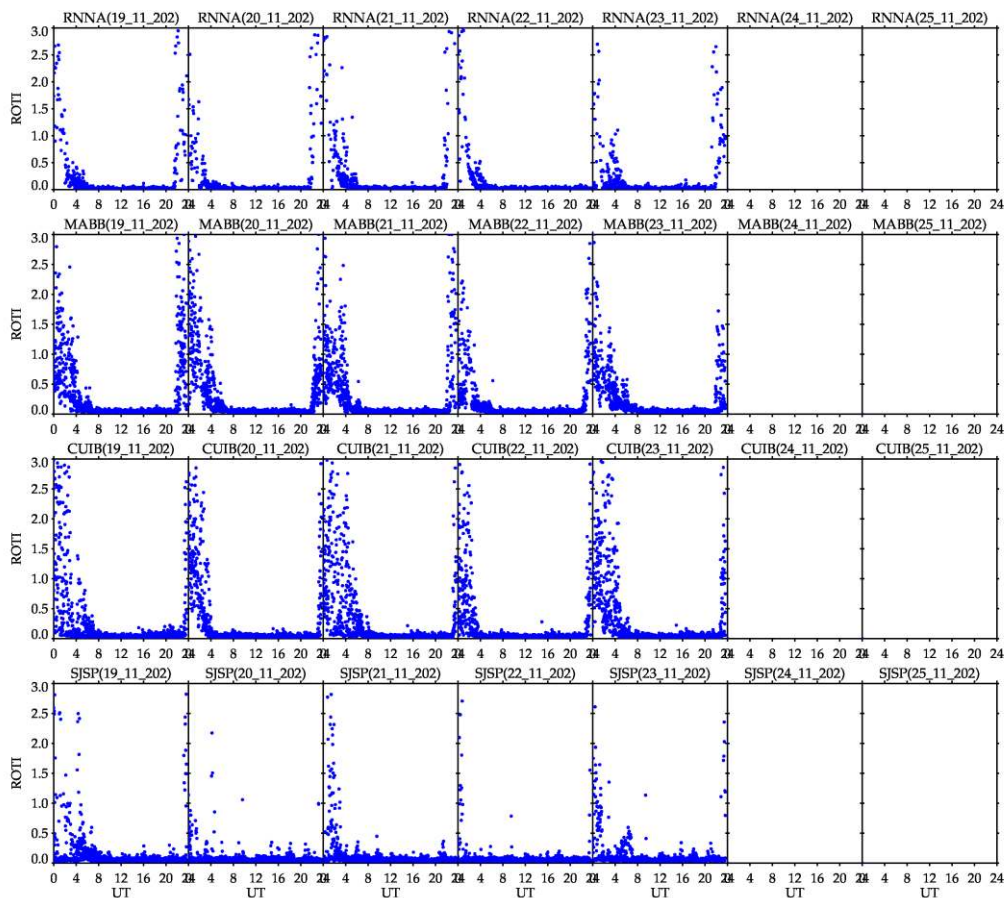


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from November 19 to 25, 2023.