Sol – Cecatto
Período: 04 – 11 de Dezubro 2023

Summary

12/04 – No M/X flare; Fast (=< 600 km/s) wind stream; 1 CME can have component toward the Earth;
12/05 – Flares M1.5, M1.0, M1.4; Fast (=< 650 km/s) wind stream; 11 CME can have component toward the Earth;
12/06 – Flares M2.1, M2.3; Fast (=< 650 km/s) wind stream; 5 CME can have component toward the Earth;
12/07 – No M/X flare; Fast (=< 550 km/s) wind stream; 7 CME can have component toward the Earth *;
12/08 – Flare M5.6; Fast (=< 500 km/s) wind stream; 2 CME can have component toward the Earth *;
12/09 – Flares M1.5, M1.0; ? Fast (=< 450 km/s) wind stream; 8 CME can have component toward the Earth;
12/10 – Flarse M2.4, M1.4; Fast (=< 450 km/s) wind stream; 9 CME can have component toward the Earth;
12/11 – No M/X flare; Fast (=< 450 km/s) wind stream; 1 CME can have component toward the Earth
Prev.: Fast wind stream for today and next 1-2 days; for while low (55% M, 10% X) probability of M / X flares next 2 days; also, occasionally some other CME can present a component toward the Earth.

Resumo

04/12 – Sem "flare" M/X; Vento rápido (< 600 km/s); 1 CME podem ter uma componente para a Terra;
05/12 – "Flares" M1.5, M1.0, M1.4; Vento rápido (< 650 km/s); 11 CME podem ter uma componente para a Terra;
06/12 – "Flares" M2.1, M2.3; Vento rápido (< 650 km/s); 5 CME podem ter uma componente para a Terra;
07/12 – Sem "flare" M/X; Vento rápido (< 550 km/s); 7 CME podem ter uma componente para a Terra *;
08/12 – "Flare" M5.6; Vento rápido (< 500 km/s); 2 CME podem ter uma componente para a Terra *;
09/12 – "Flares" M1.5, M1.0; Vento rápido (< 450 km/s); 8 CME podem ter uma componente para a Terra;
10/12 – "Flares" M2.4, M1.4; Vento rápido (< 450 km/s); 9 CME podem ter uma componente para a Terra;
11/12 – Sem "flare" M/X; Vento rápido (< 450 km/s); 1 CME podem ter uma componente para a Terra
Prev.: Vento rápido para hoje e próximos 1-2 dias; baixa probabilidade de "flares" (55% M, 10% X) nos próximos 02 dias; eventualmente alguma outra CME pode apresentar componente dirigida para a Terra.

Solar - WSA-ENLIL

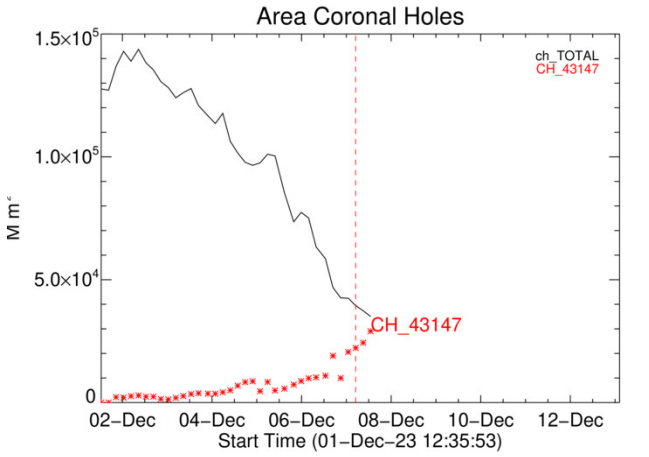
EMC (https://ccmc.gsfc.nasa.gov/donki/):

WSA-ENLIL(CME 2023-12-01 22:24:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-12-04 10:17:00 UT and 2023-12-05 00:17:00 UT.

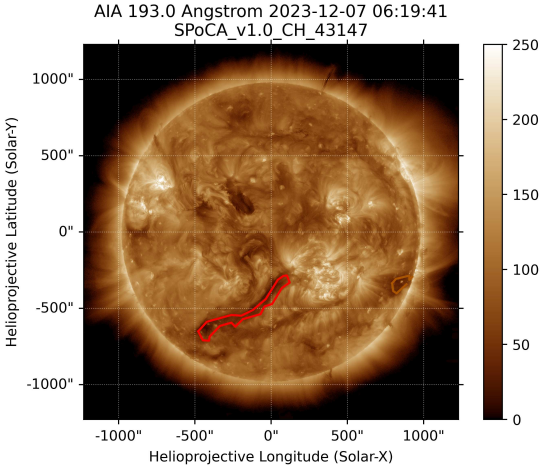
WSA-ENLIL(CME 2023-12-06 00:12:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-12-09 09:00:00 UT and 2023-12-09 23:00:00 UT.

WSA-ENLIL(CME 2023-12-06 08:12:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-12-09 09:00:00 UT and 2023-12-09 23:00:00 UT.

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

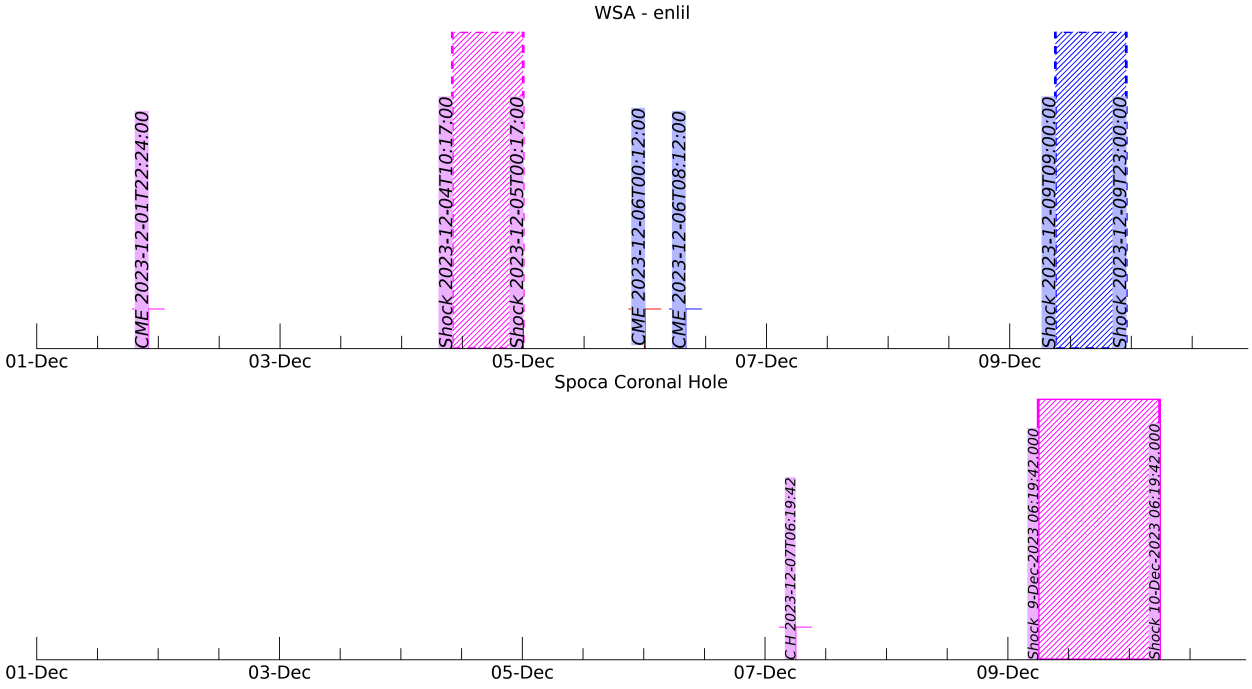


(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between December 01 and 08, 2023.



(b) Above the 193 Å image of the Sun is highlighted coronal holes observed by SPOCA around 06:19 UT on December 07, 2023 (red dot line).

Solar - WSA - ENLIL and SPoCA



EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

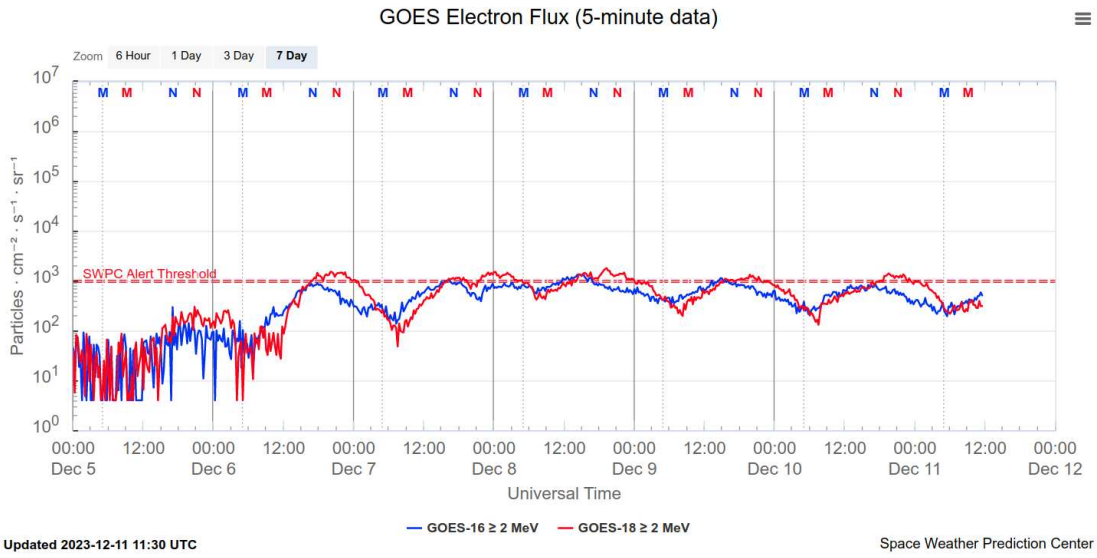


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: https://www.swpc.noaa.gov/products/goes-electron-flux

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/(cm^2 s sr) at the beginning of the analyzed period. A electron flux enhancement is observed from 15:15 UT on December 5th, persisting close to 10^3 particles/(cm^2 s sr) until December 11 under the influence of solar wind structures.

Geomagnetic Field / Campo Geomagnético

Summary

In the week of 05-11/12, the Embrace magnetometer network data recorded instabilities throughout the week, with emphasis on:

- 05/12: The magnet Embrace Magnetometers recorded a drop of -80 nT in PVE.
- AE index was active, above 500 nT on the Dec 5. The minimum Dst index was -33 nT. The highest Kp of the week was 3+, on Dec 5.

Resumo

Na semana de 05 a 11/12, os dados provenientes da rede de magnetômetros Embrace registraram instabilidades ao longo de toda semana, com destaque para:

- 05/12: Os magnetometros da rede Embrace MagNet registraram queda na componente H de até - 80 nT em PVE.
- índice AE esteve ativo, acima de 500 nT no dia 05. O índice Dst mínimo foi -33 nT. O Kp mais alto da semana foi 3+.

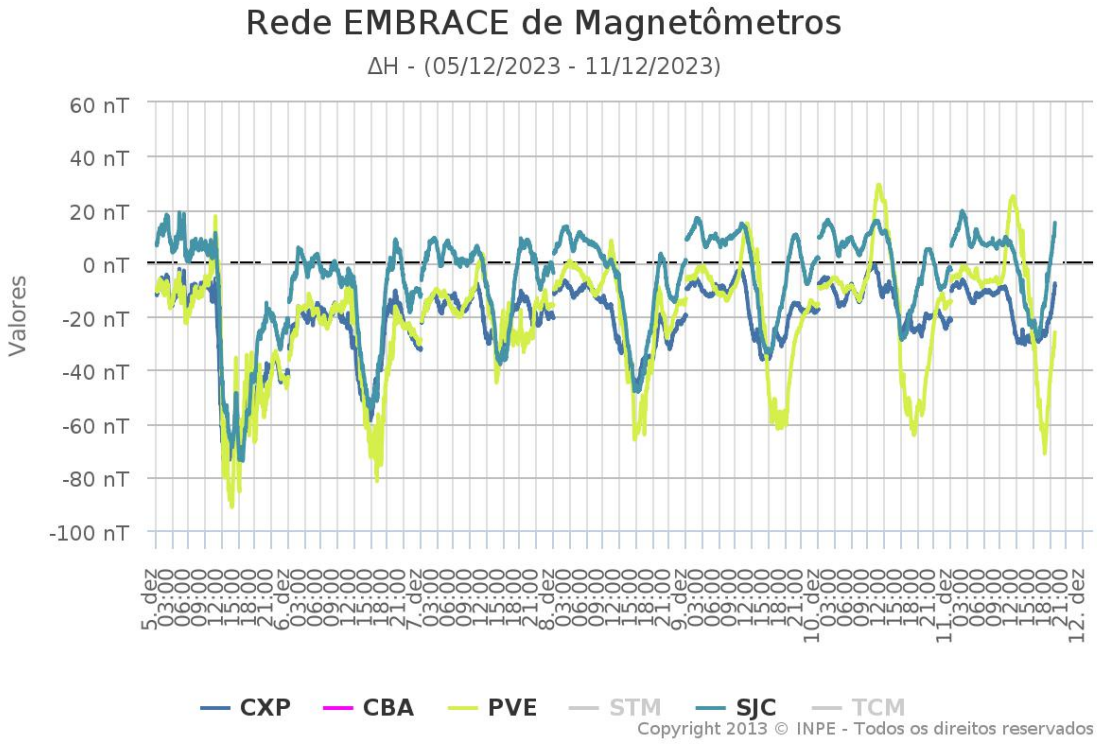


Figura 1.: Variação diurna da componente geomagnética H (nT) das estações da rede Embrace para o período de 04 à 11 de Dezembro de 2023
Figure 1.: Daily variation of the geomagnetic field from H (nT) measured at Embrace MagNet from 04-11 December 2023

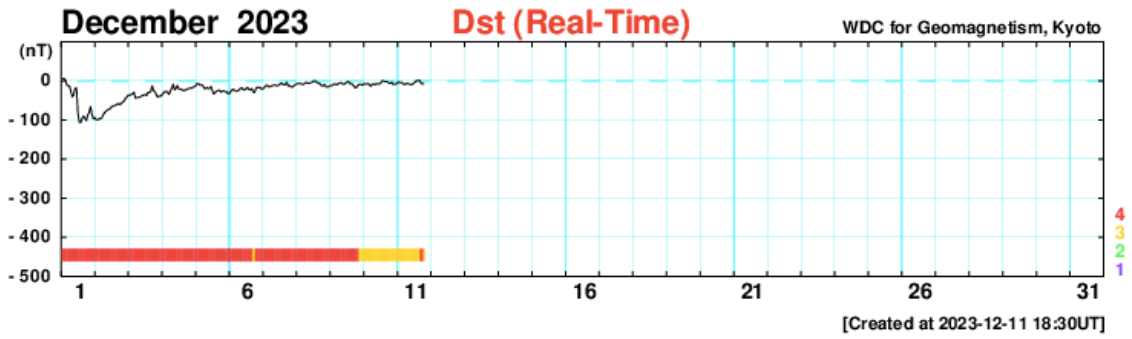


Figura 2.: Índice Dst para o mês de Dezembro de 2023.
Figure 2: Dst index for Decemberr 2023

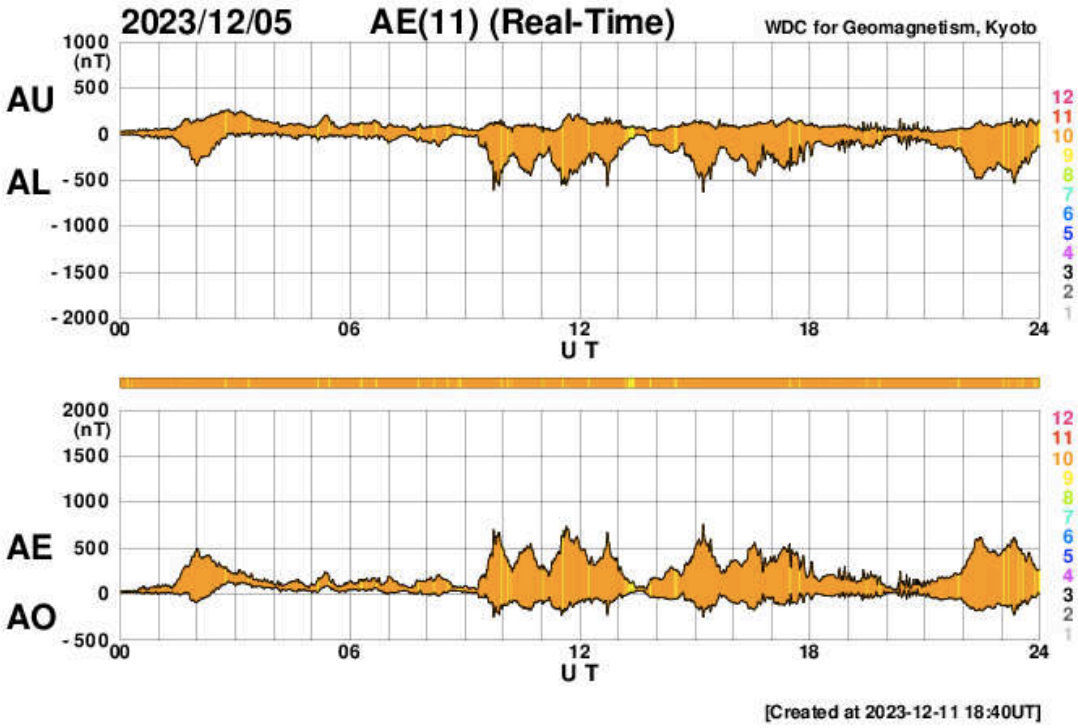


Figura 3.: Índice AE para os dias mais perturbados da semana.
Figure 3.: AE index for the most disturbed days in the current week.

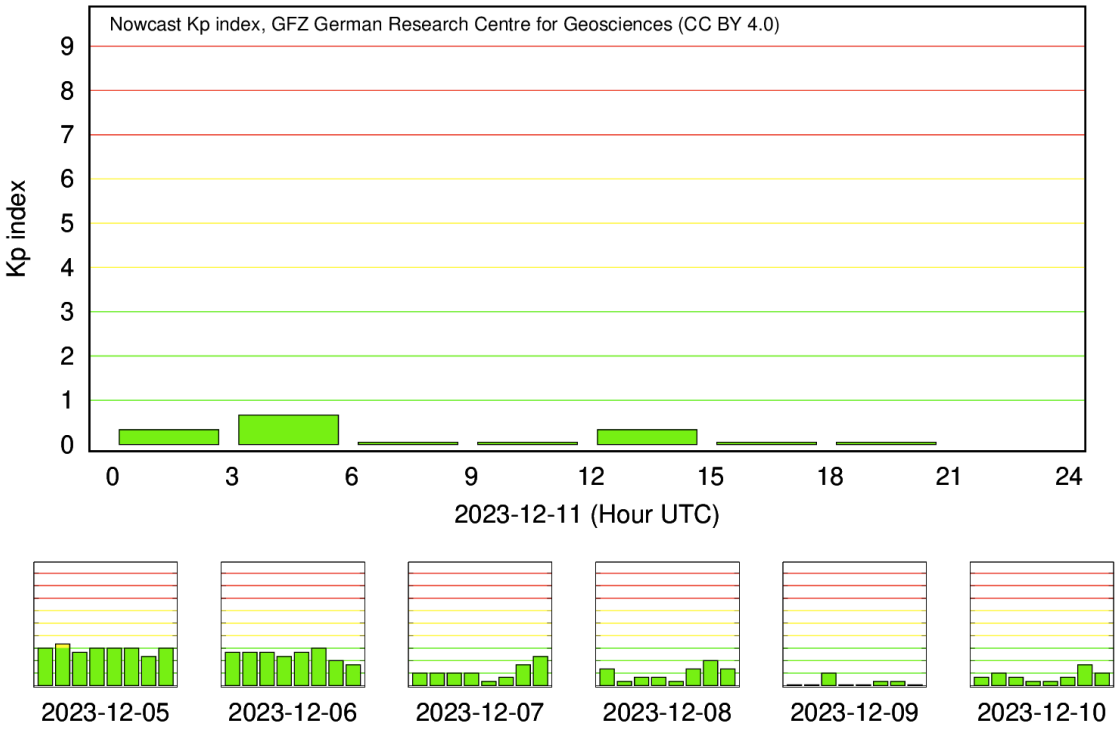


Figura 4.: Índice Kp referente a semana de 05 à 11 de Dezembro de 2023.
Figure 4: Kp index for the current week (05-11 December 2023)

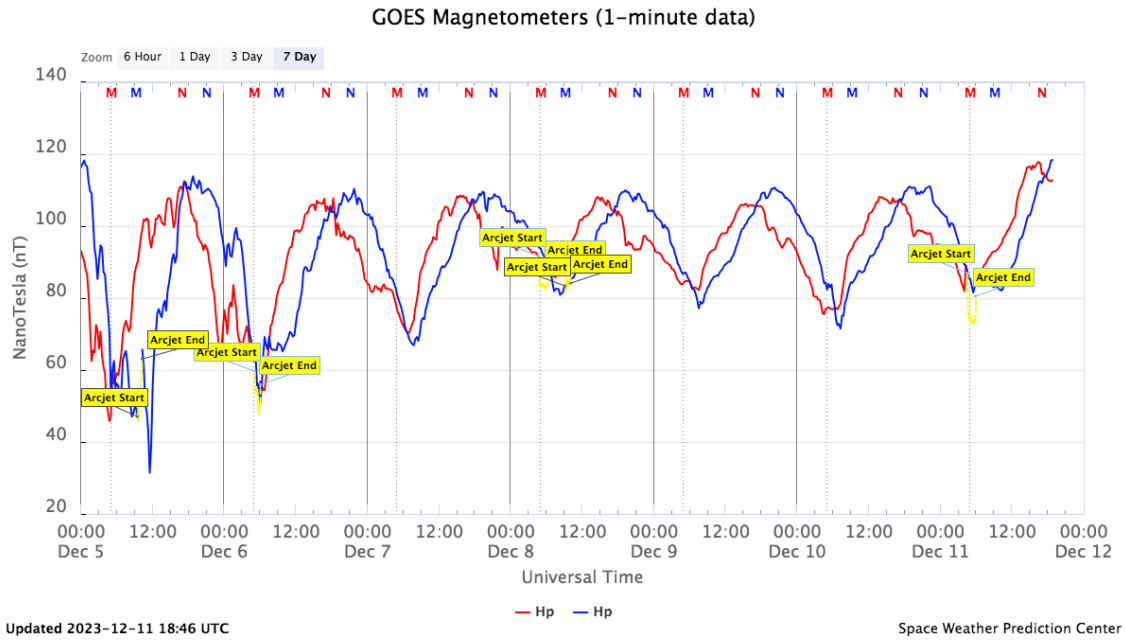


Figura5. Medida de Campo magnético na posição do satélite GOES na semana de 04 à 11 de Dezembro de 2023

Figure 5.: Magnetic field horizontal component at the GOES satellite orbit through 04 to 11 December 2023

Ionosfera – Digissonda (Laysa Resende)

Summary

We observed the F spread F in Fortaleza and Cachoeira Paulista every day during this week (Figure 1). The Es layers reached a maximum of scale 3 in Cachoeira Paulista (Figure 2) and Fortaleza.

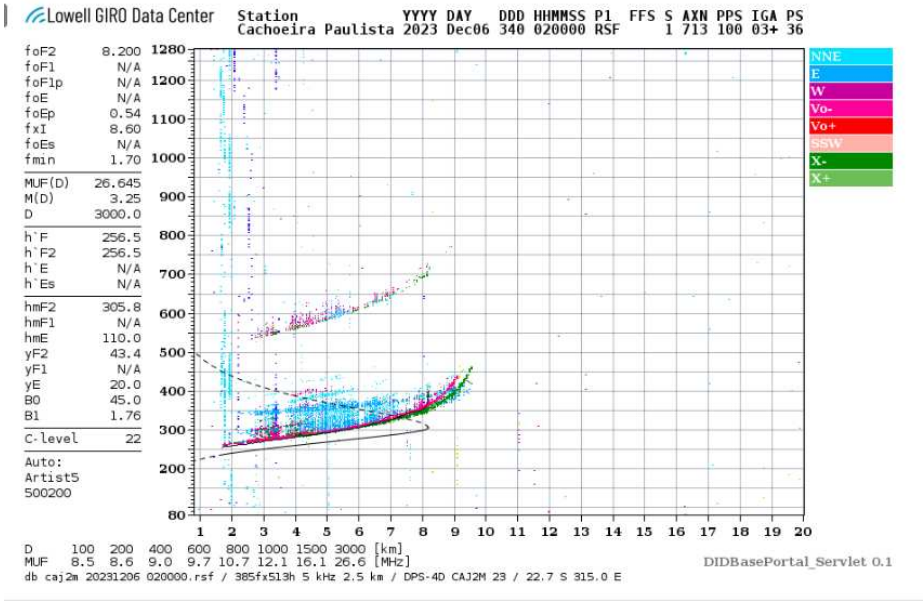


Figure 1 – Ionogram over Cachoeira Paulista, showing the spread F occurrence on December 06, 2023.

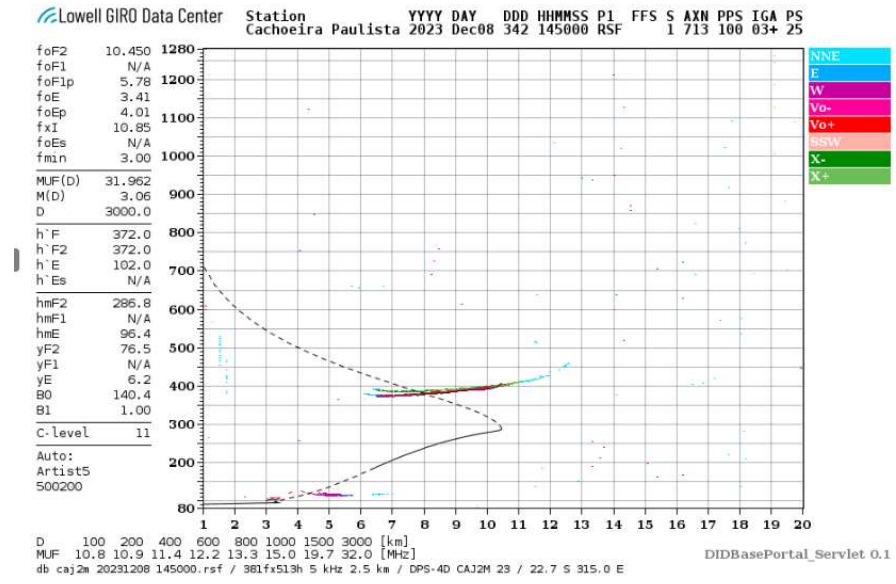


Figure 2 – Ionogram over Cachoeira Paulista, showing the Es layer.

Ionosphere - ROTI
Summary for Week 2291 (December 03 to 09, 2023)

Carolina de Sousa do Carmo

In the week 2291 (December 03 to 09, 2023) there were ionospheric irregularities (plasma bubbles) on all nights analyzed. 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)).

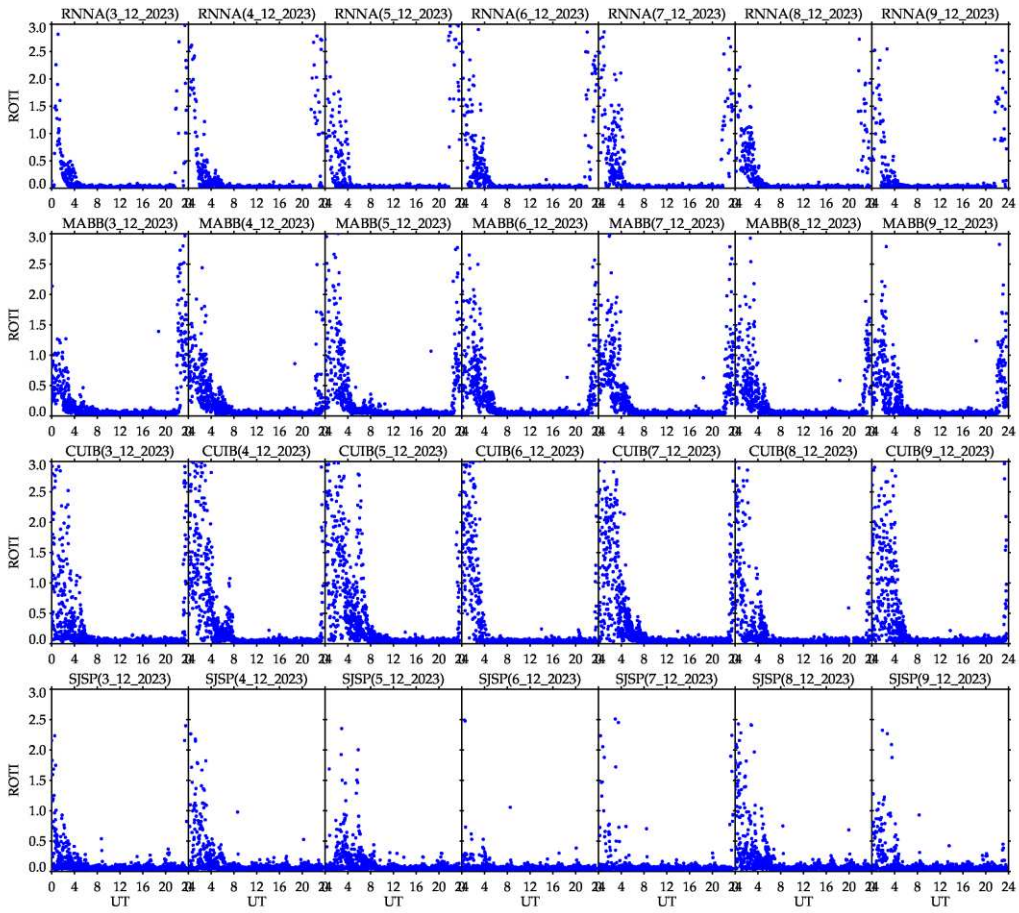


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from December 03 to 09, 2023.