



Sun – Cecatto
Period: May 13 – May 20, 2024

Summary

05/13 – M1.2, M1.2, M1.4, M6.6, M3.7, M1.0, M1.5 flares; Fast (≤ 800 km/s) wind stream; 7 CME can have component toward the Earth;

05/14 – X1.7, X1.2, X8.7, M4.4 flares; Fast (≤ 600 km/s) wind stream; 10 CME can have component toward the Earth;

05/15 – M2.9, M3.2, X2.9 flares; Fast (≤ 550 km/s) wind stream; 13 CME can have component toward the Earth;

05/16 – M1.0 flare; Fast (≤ 500 km/s) wind stream; 7 CME can have component toward the Earth;

05/17 – M7.2 flare; Fast (≤ 500 km/s) wind stream; 11 CME can have component toward the Earth;

05/18 – No M/X flare; Fast (≤ 450 km/s) wind stream; No CME can have component toward the Earth;

05/19 – M1.9, M2.5, M1.6 flares; Fast (≤ 450 km/s) wind stream; 3 CME can have component toward the Earth;

05/20 – No M/X flare; No fast wind stream; 2 CME can have component toward the Earth;

For.: No fast wind stream for today and next 1-2 days; for while (55% M, 10% X) probability of M / X flares next 2 days; also, occasionally some other CME can present a component toward the Earth.



Solar - WSA-ENLIL

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

WSA-ENLIL(CME 2024-05-13 09:12:00 UT)

The simulation results indicate that the CME will reach the DSCOVR mission between 2024-05-14 14:36:00 UT and 2024-05-15 04:36:00 UT.

WSA-ENLIL(CME 2024-05-14 10:09:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-05-17 16:00:00 UT and 2024-05-18 06:00:00 UT.

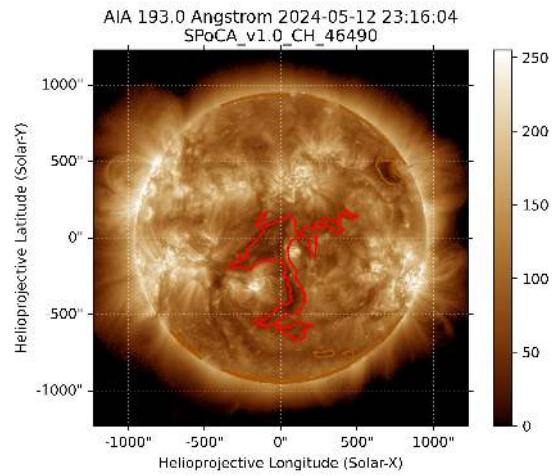
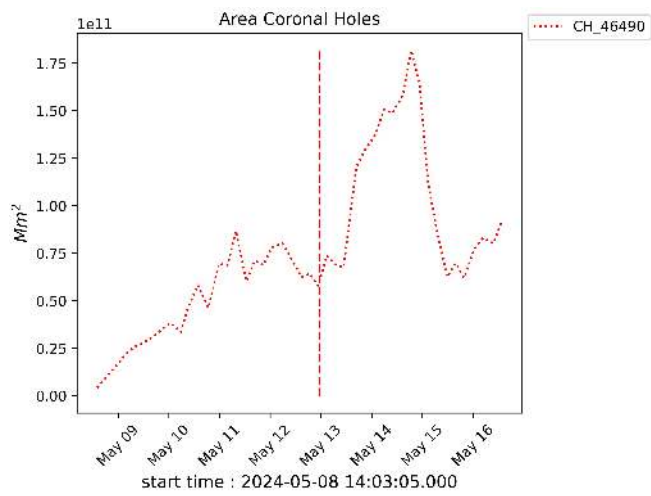
WSA-ENLIL(CME 2024-05-15 10:36:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-05-18 21:00:00 UT and 2024-05-19 11:00:00 UT.

WSA-ENLIL(CME 2024-05-17 04:28:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-05-20 10:00:00 UT and 2024-05-21 00:00:00 UT.

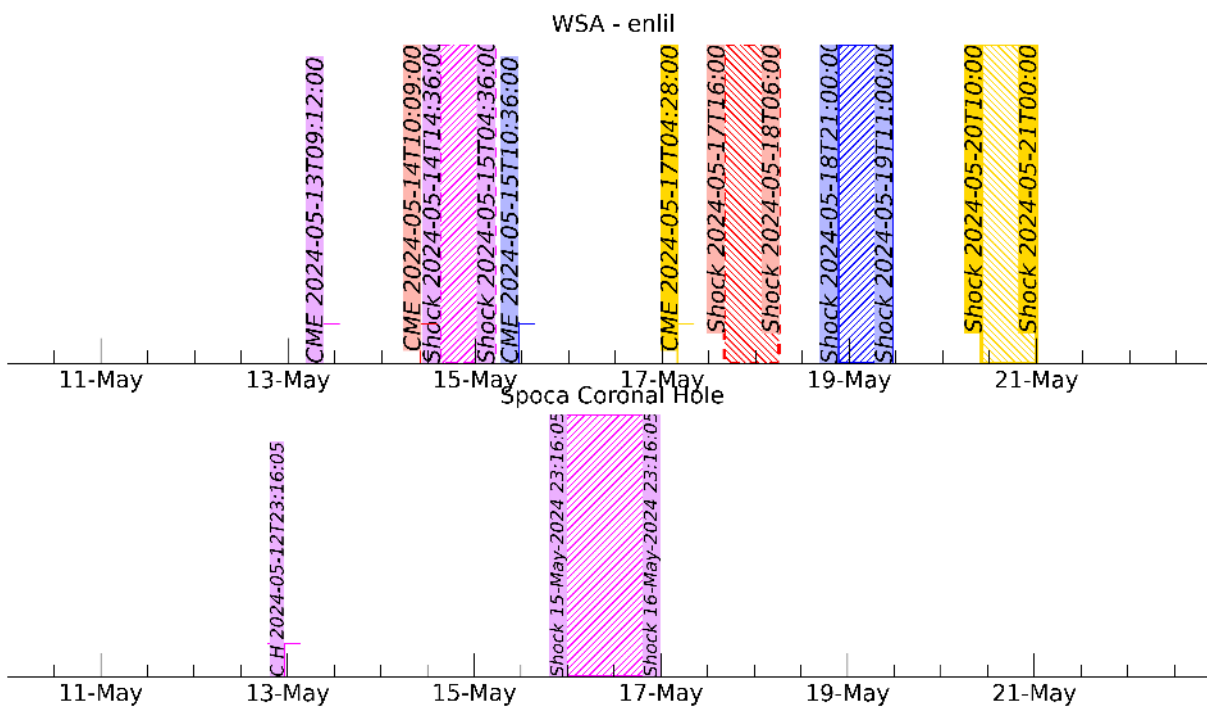
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between May 06 and 16, 2024.

(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 23:16 UT on May 12, 2024 (red dot line).

Solar - WSA - ENLIL and SPoCA



Geomagnetic Field / Campo Geomagnético

Summary

In the week of May 13-20, the Embrace magnetometer network data recorded several instabilities, with emphasis on:

- May 17-18: The magnet Embrace Magnetometers recorded several instabilities, with the most intense reaching ~ 34 nT in PVE, and a drop of -140 nT in JAT.
- May 17-18: AE index was active, above 1000 nT and 500 nT, respectively. The minimum Dst index was -100 nT. The highest Kp of the week was 6o.

Resumo

Na semana de 13 a 20/05, os dados provenientes da rede de magnetômetros Embrace registraram várias instabilidades, com destaque para:

- 17-18/05: Os magnetômetros da rede Embrace MagNet registraram várias instabilidades, sendo que o mais intenso atingiu ~34 nT na estação PVE, e queda na componente H de até - 140 nT em JAT
- 17-18/05: índice AE esteve ativo, acima de 1000 nT e 500 nT, respectivamente. O índice Dst mínimo foi -100 nT. O Kp mais alto da semana foi 6o.

Rede EMBRACE de Magnetômetros

ΔH - (14/05/2024 - 20/05/2024)

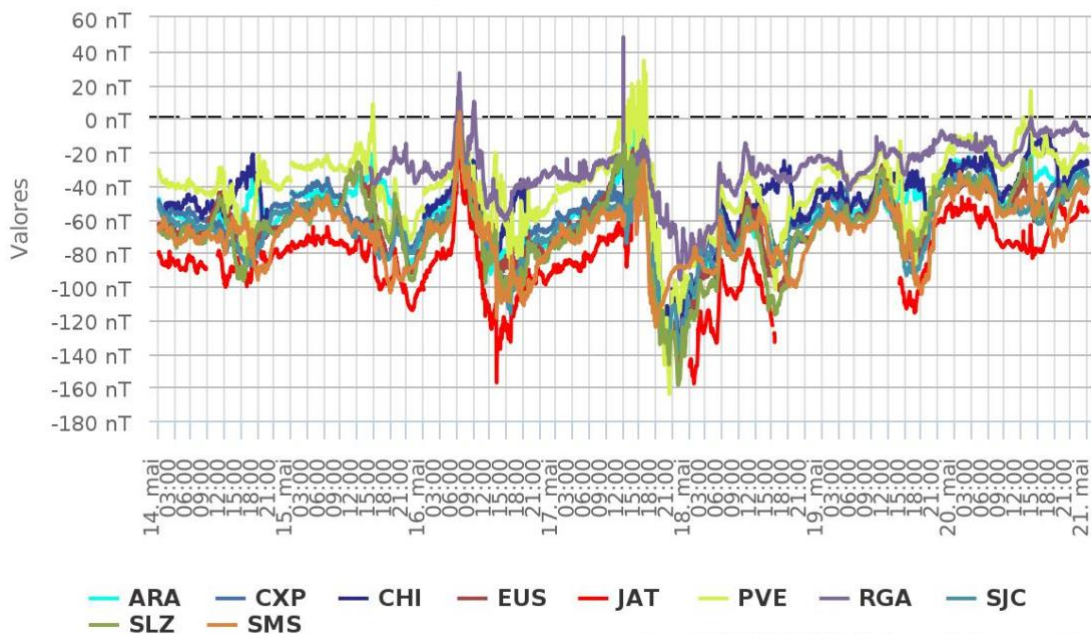


Figura 1.: Variação diurna da componente geomagnética H (nT) das estações da rede Embrace

Figure 1.: Daily variation of the geomagnetic field from H (nT) measured at Embrace MagNet

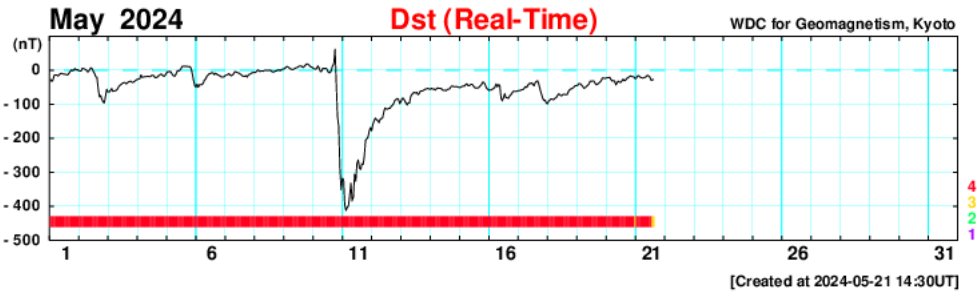


Figura 2.: Índice Dst.
Figure 2: Dst index

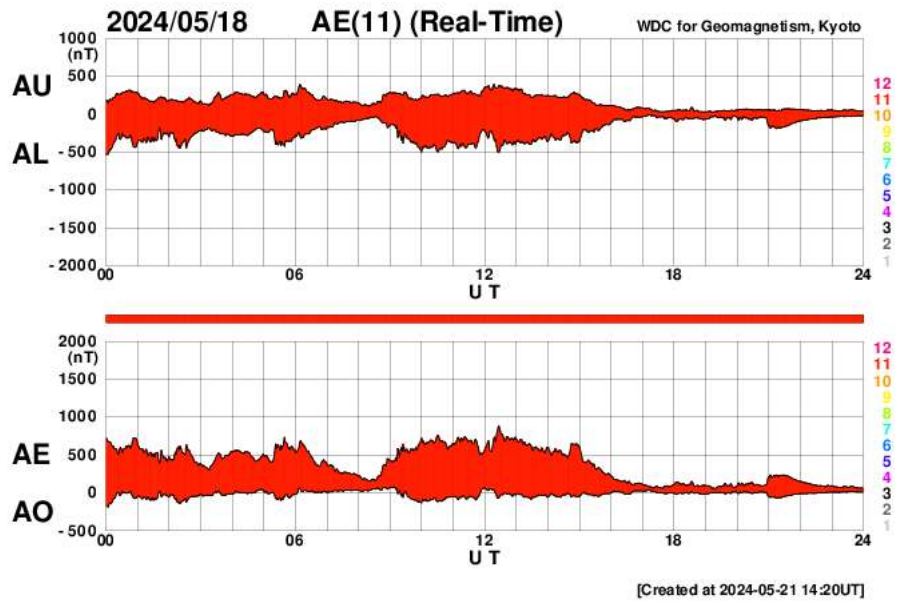
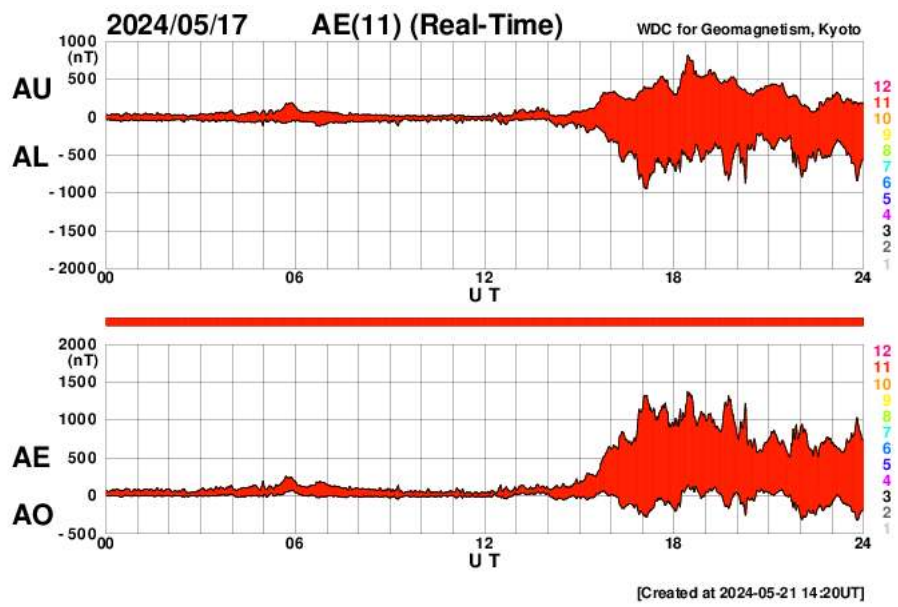


Figura 3.: Índice AE para os dias mais perturbados da semana.
Figure 3.: AE index for the most disturbed days in the current week.

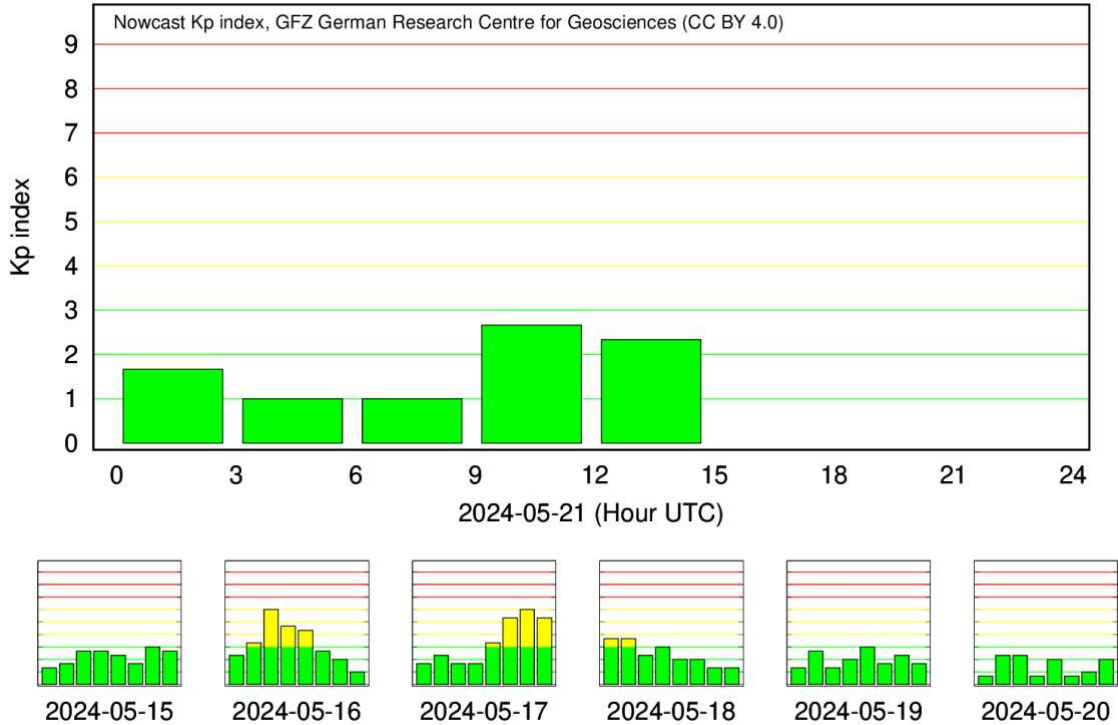


Figura 4.: Índice Kp.
Figure 4: Kp index for the current week

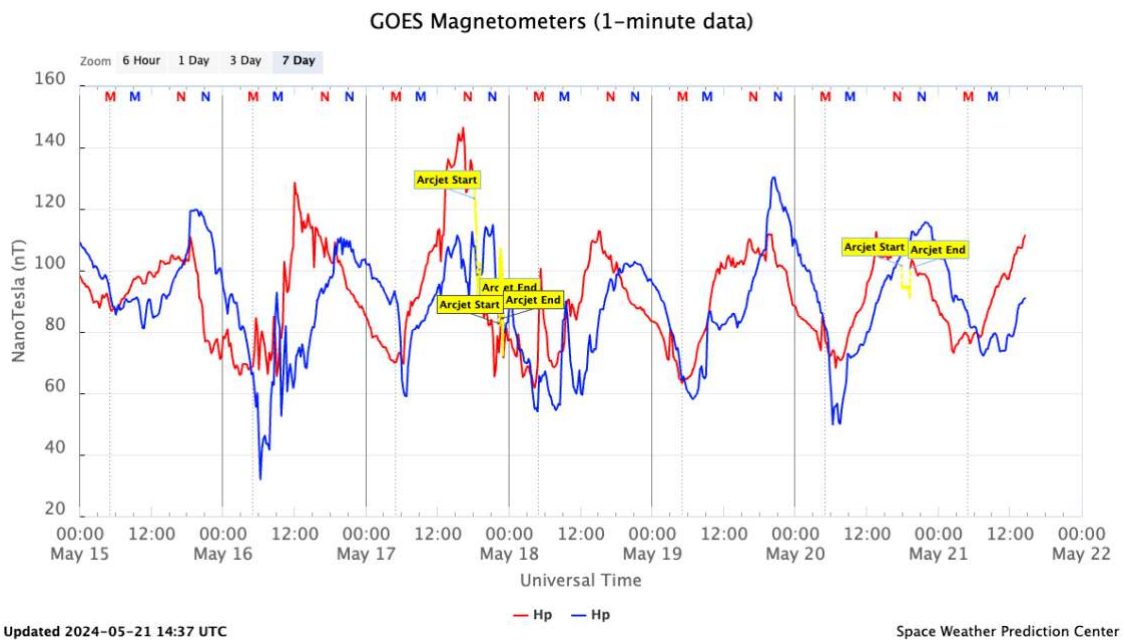


Figura5. Medida de Campo magnético na posição do satélite GOES
Figure 5.: Magnetic field horizontal component at the GOES satellite orbit.

EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

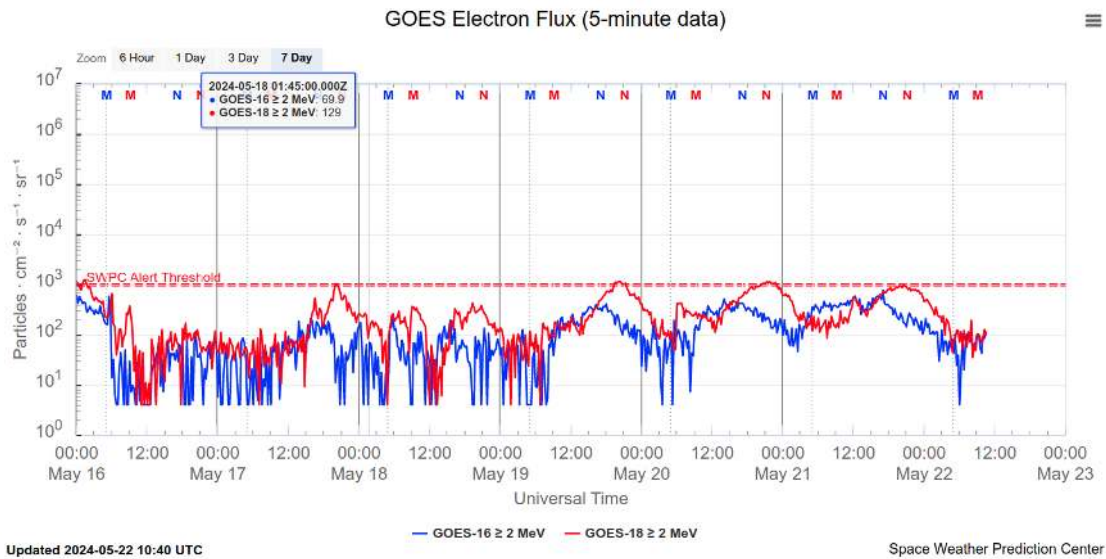


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: <https://www.swpc.noaa.gov/products/goes-electron-flux>

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 confined below 10^3 particles/(cm² s sr) throughout the analyzed period. The first decrease was observed on May 16th, persisting until mid-May 17th. From 15:00 UT on May 17, the electron flux increases until it reaches 10^3 particles/(cm² s sr). On May 19th, a electron flux decrease was again observed followed by an increase that persisted until the end of the analyzed period.

Ionosfera – Digisonda (Laysa Resende)

Summary

Spread F was observed in the region closest to the magnetic equator only (São Luís). In Cachoeira Paulista, it was not observed spread F. The Es layer reached values of scale 4 in São Luís and Cachoeira Paulista (Figure 1).

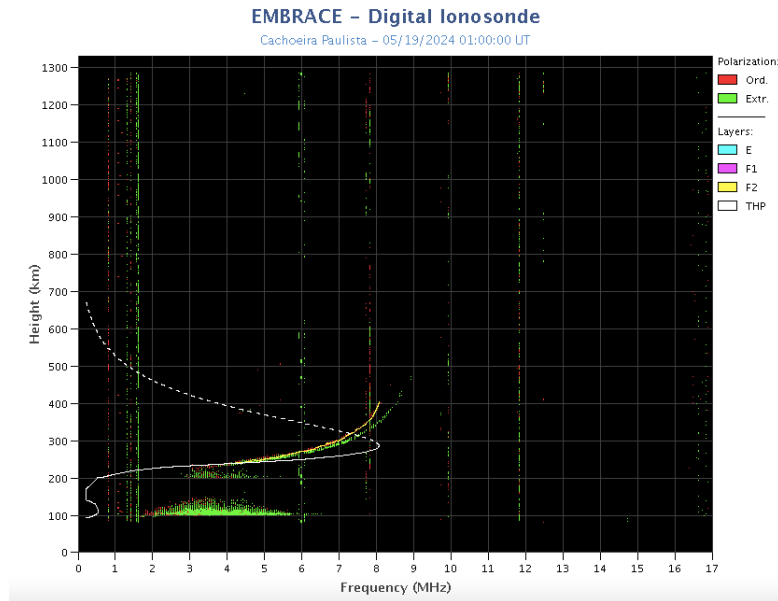


Figure 1 – Ionogram over Cachoeira Paulista, showing the Es layer occurred on May 19, 2024.