



SOL (Cecatto)

Summary – Week March 25 – April 01st

03/25 – M4.4 flare; Fast (≤ 500 km/s) wind stream; 6 CME can have component toward the Earth;

03/26 – M1.8, M1.0, M1.3, M1.9, M1.7, M1.6 flares; Fast (≤ 750 km/s) wind stream; 3 CME can have component toward the Earth *;

03/27 – M1.1, M1.1 flares; Fast (≤ 550 km/s) wind stream; 4 CME can have component toward the Earth *;

03/28 – M7.1, M6.1, M1.1, X1.1 flares; Fast (≤ 500 km/s) wind stream; 5 CME can have component toward the Earth;

03/29 – M3.2, M1.2 flares; No fast wind stream; 3 CME can have component toward the Earth;

03/30 – M9.4 flare; Fast (≤ 450 km/s) wind stream; 2 CME can have component toward the Earth **;

03/31 – No M/X flare; Fast (≤ 550 km/s) wind stream; 5 CME can have component toward the Earth;

04/01 – M3.9 flare; Fast (≤ 550 km/s) wind stream; 4 CME can have component toward the Earth;

Forecast: Fast wind stream for today and next 1-2 days; for while (10% M, 01% X) probability of M / X flares next 2 days; also, occasionally some other CME can present a component toward the Earth.

Resumo – Semana de 25 Março a 01 de Abril

25/03 – "Flare" M4.4; Vento rápido (≤ 500 km/s); 6 CMEs podem ter uma componente para a Terra;

26/03 – "Flares" M1.8, M1.0, M1.3, M1.9, M1.7, M1.6; Vento rápido (≤ 750 km/s); 3 CME podem ter uma componente para a Terra *;

27/03 – "Flares" M1.1, M1.1; Vento rápido (≤ 550 km/s); 4 CME podem ter uma componente para a Terra *;

28/03 – "Flares" M7.1, M6.1, M1.1, X1.1; Vento rápido (≤ 500 km/s); 5 CME podem ter uma componente para a Terra;

29/03 – "Flares" M3.2, M1.2; Sem vento rápido; 3 CME podem ter uma componente para a Terra;

30/03 – "Flare" M9.4; Vento rápido (≤ 450 km/s); 2 CME podem ter uma componente para a Terra **;

31/03 – Sem "flare" M/X; Vento rápido (≤ 550 km/s); 5 CME podem ter uma componente para a Terra;

01/04 – "Flare" M3.9; Vento rápido (≤ 550 km/s); 4 CME podem ter uma componente para a Terra

Previsão: Vento rápido para hoje e próximo(s) 1-2 dia(s); probabilidade de "flares" M/X (10% M, 01% X) nos próximos 02 dias; eventualmente alguma(s) outra(s) CME pode(m) apresentar componente dirigida para a Terra.



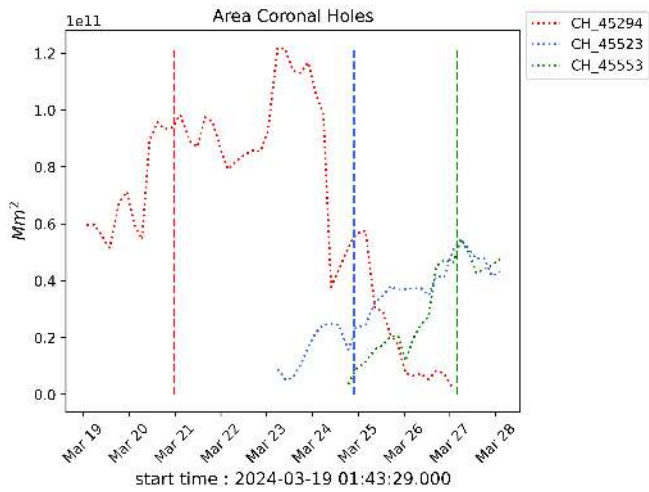
Solar - WSA-ENLIL

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

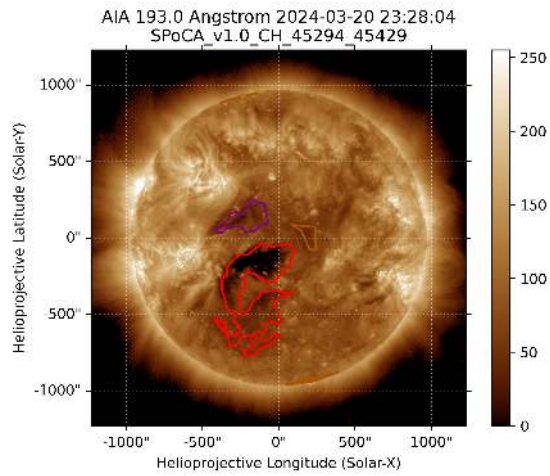
WSA-ENLIL(CME 2024-03-25 15:12:00 UT)

The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-03-29 07:00:00 UT and 2024-03-29 21:00:00 UT.

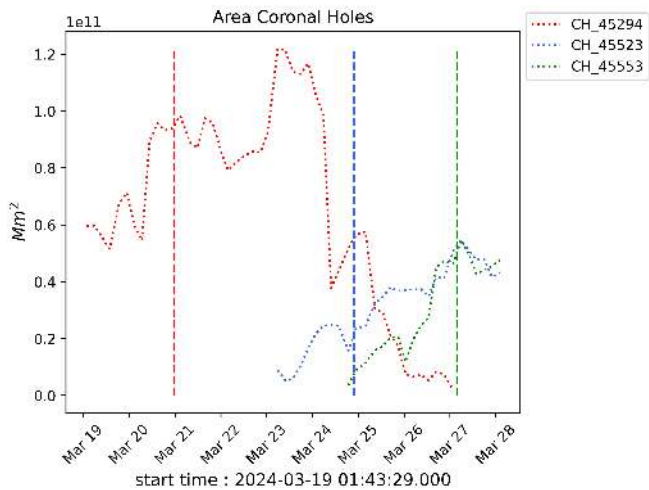
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



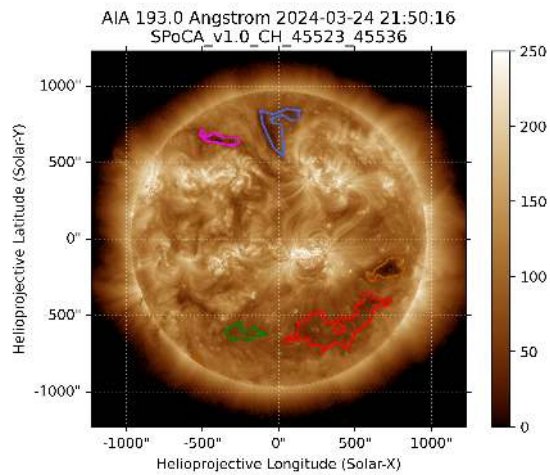
(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between March 19 and 28, 2024.



(b) Above the 193 r\$AA\$ image of the Sun are highlighted coronal holes observed by SPOCA around 23:28 UT on March 20, 2024 (red dot line).

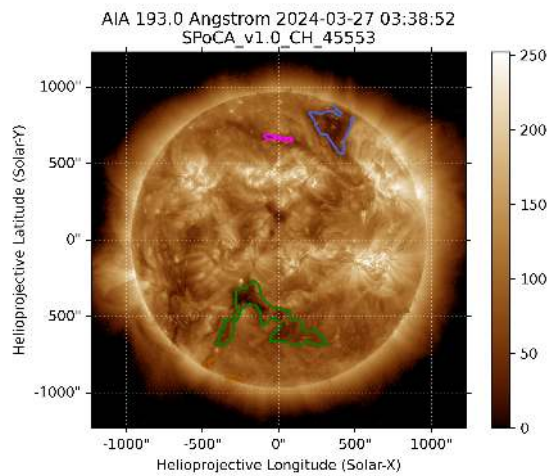
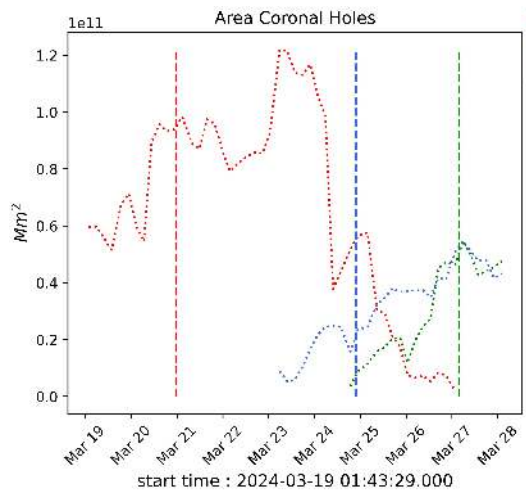


(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between March 19 and 28, 2024.



(b) Above the 193 r\$AA\$ image of the Sun are highlighted coronal holes observed by SPOCA around 21:50 UT on March 24, 2024 (blue dot line).

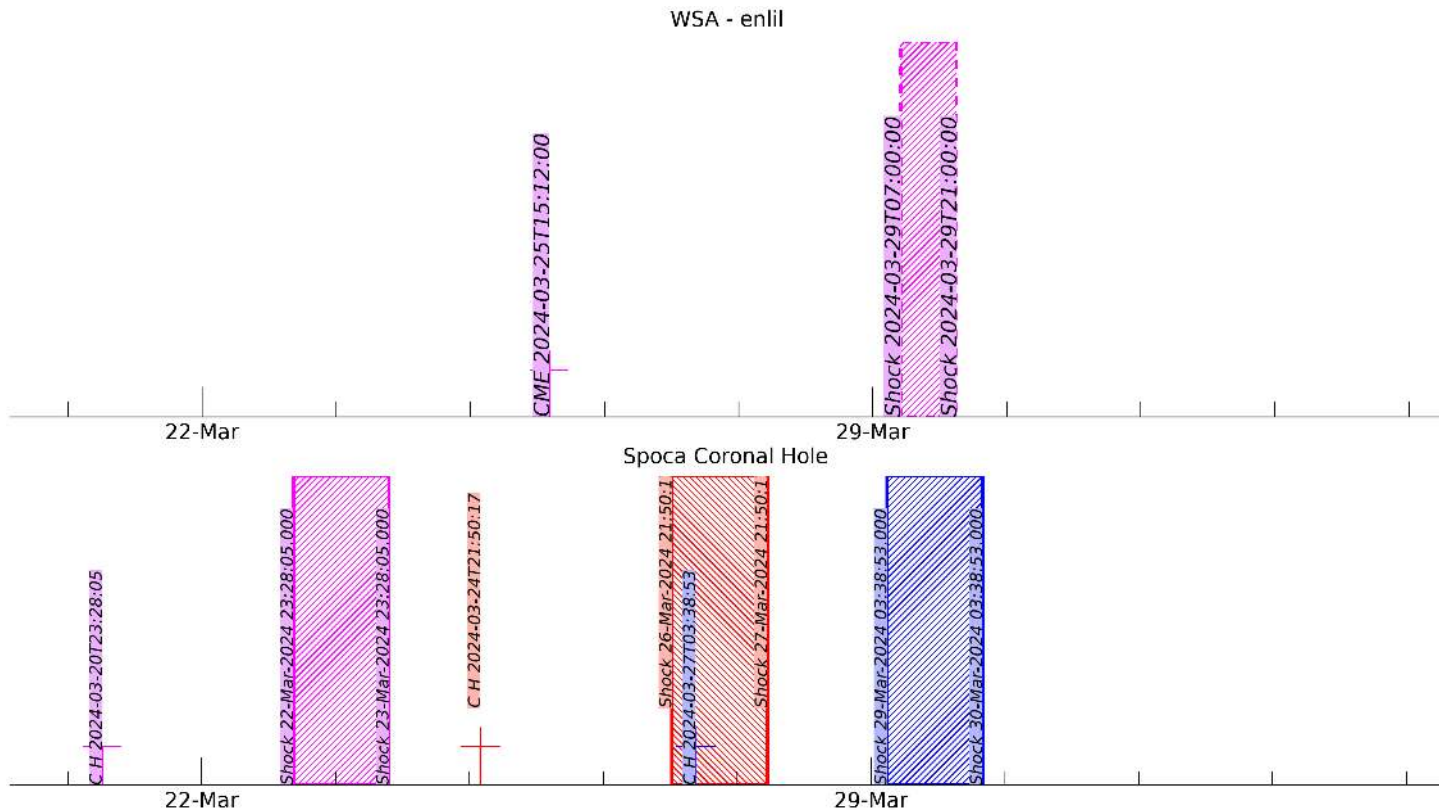
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between March 19 and 28, 2024.

(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 03:38 UT on March 27, 2024 (magenta dot line).

Solar - WSA - ENLIL and SPoCA



Geomagnetic Field

Responsible: Lívia Alves/ Karen Sarmiento

Summary

During the week of 26/03 to 1/04, the magnetic field remained mainly calm, with few oscillations and without reaching storm levels. The Dst index varied from a moderate storm condition (-62nT) on 26/03 to positive values (7nT) on 30/03. Aurora activity in both hemispheres was weak, with the AE index staying below 500nT for most of the period. There were brief spikes above 500nT at specific times, between 2-3 UT on 26/03, 1-2 UT on 31/03, and 6-7 UT on 01/04. The Kp index indicated periods of activity, reaching 3+ on 26/03 and 4- on 31/03. Data from the Embrace magnetometer network showed no significant instabilities, highlighting the influence of the Equatorial electrojet on the diurnal variation of the magnetic field in Porto Velho (PVE), with lesser effects observed in Araguatins (ARA).

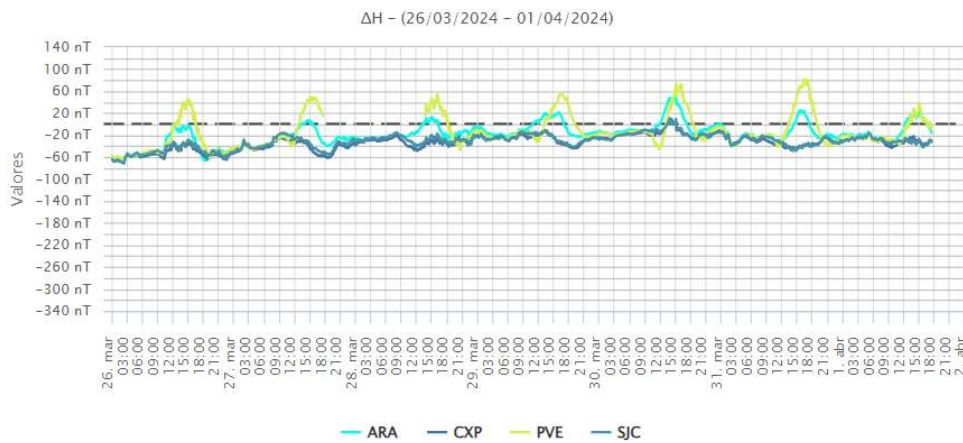


Figure 1- Daily variation of the geomagnetic field from $H(nT)$ measured at Embrace MagNet.

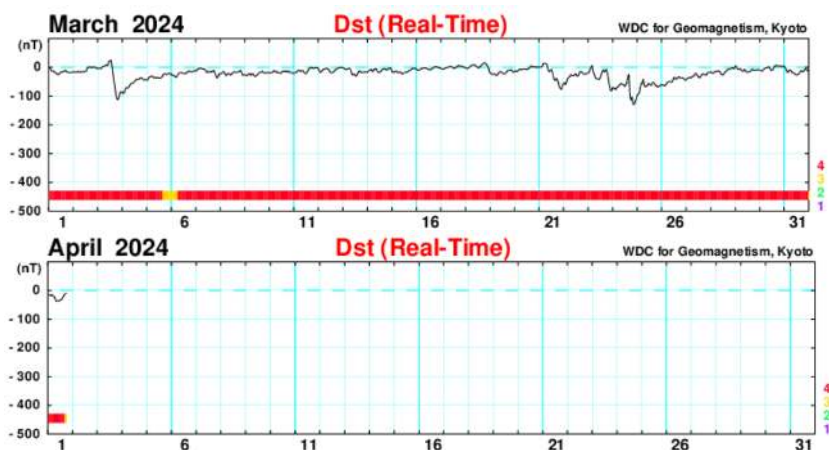


Figure 2- Dst Index from 26/03 to 01/04.

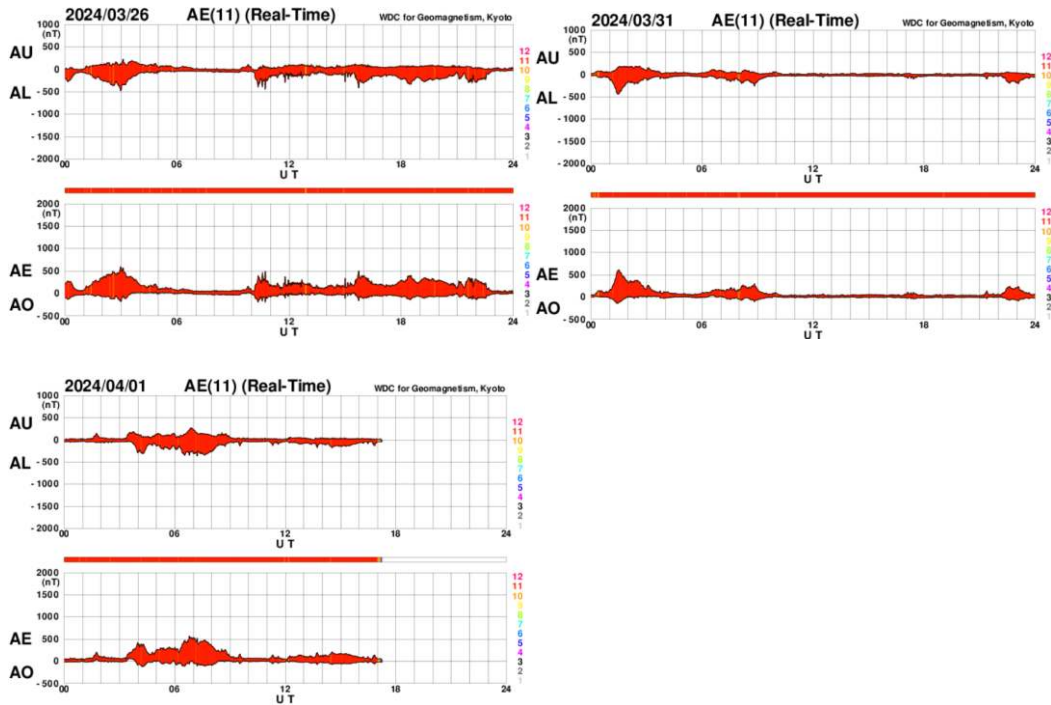


Figure 3- AE index for the most disturbed days in the current week.

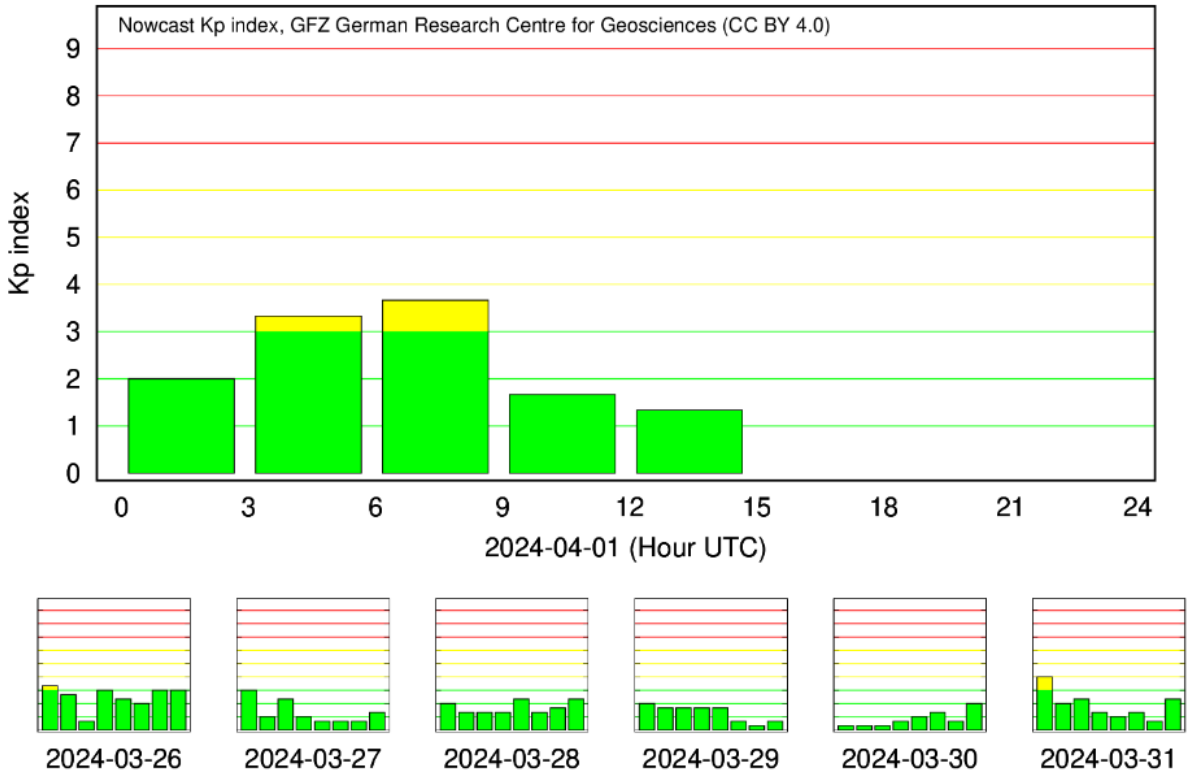


Figure 4- Kp index for the current week in logarithmic scale.

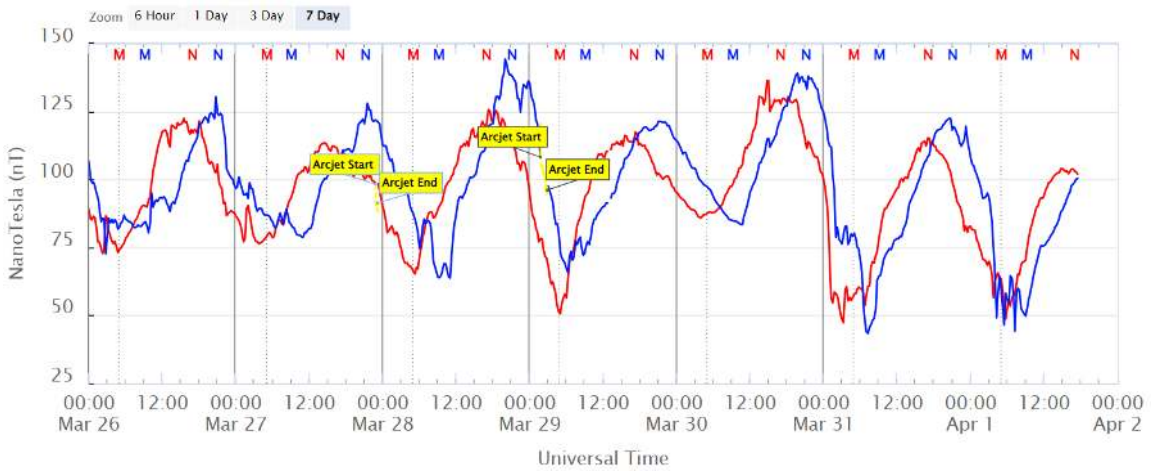


Figure 5- Magnetic field horizontal component at the GOES satellite orbit through.

Ionosfera – Digisonda (Laysa Resende)

Summary

We observed the spread F in Fortaleza during this week. In Cachoeira Paulista, the spread F was not observed on March 25. The Es layers reached a maximum of scale 3 in Cachoeira Paulista and 4 in Fortaleza (Figure 1).

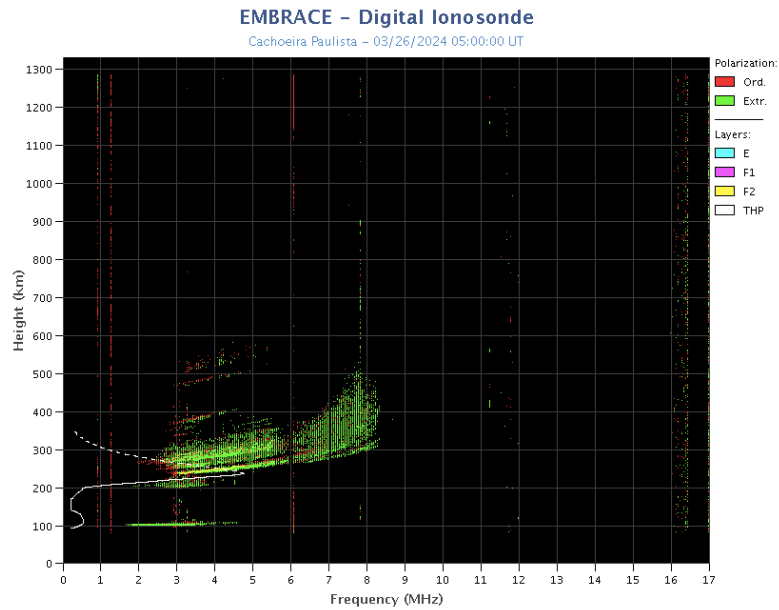


Figure 1 – Ionogram over Cachoeira Paulista, showing the Es layer and spread F occurred on March 26, 2024.

Ionosphere - ROTI Summary for Week 2307 (March 24 to 30, 2024)

Carolina de Sousa do Carmo

In the week 2307 (March 24 to 30, 2024), ionospheric irregularities (plasma bubbles) were observed on all analyzed nights except for March 24st, when bubble suppression occurred. 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)).

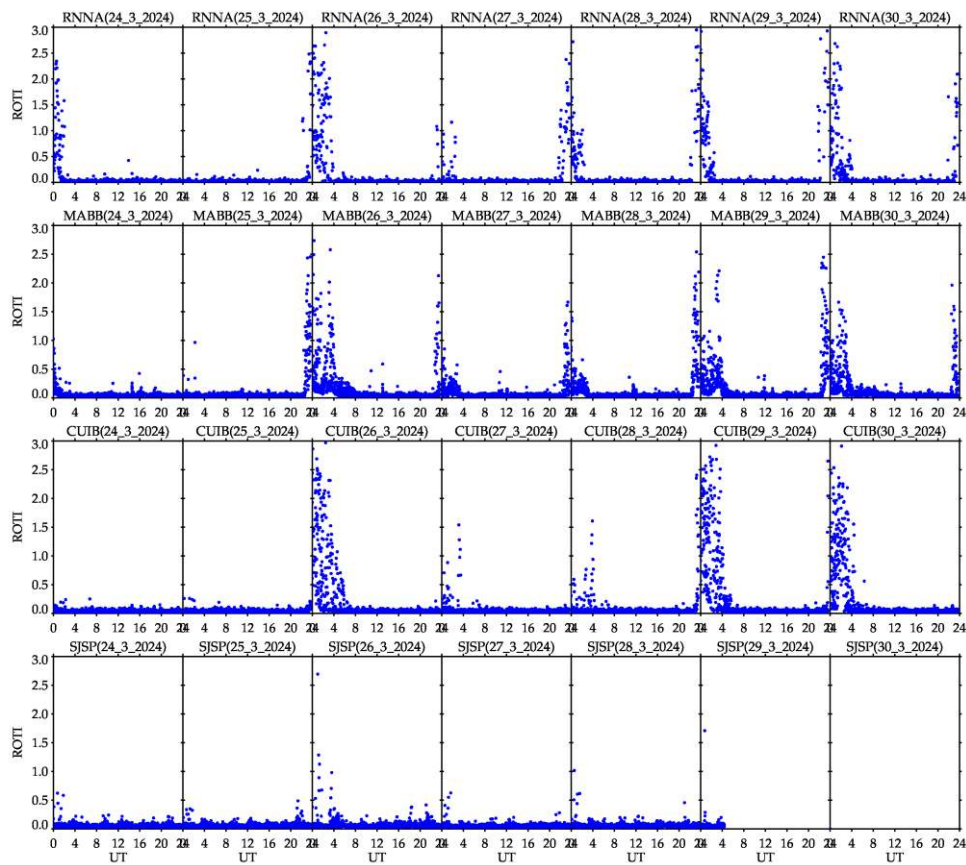


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from March 24 to 30, 2024.