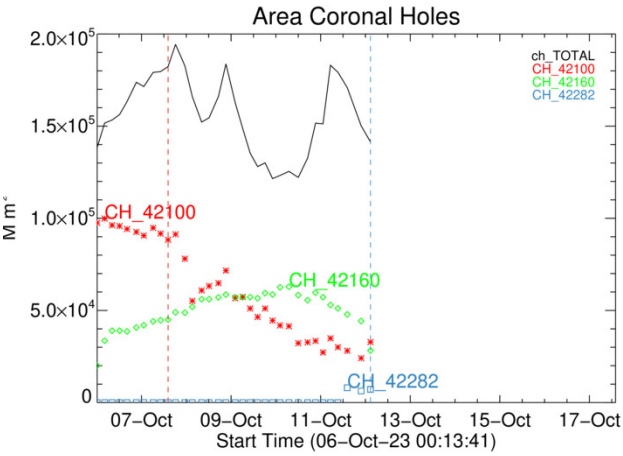
Solar - WSA-ENLIL

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

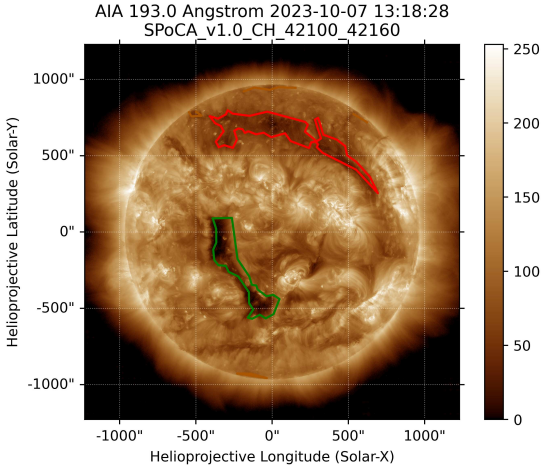
WSA-ENLIL(CME 2023-10-14 04:48:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-10-17 22:00:00 UT and 2023-10-18 12:00:00 UT.

WSA-ENLIL(CME 2023-10-14 14:00:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-10-18 01:00:00 UT and 2023-10-18 15:00:00 UT.

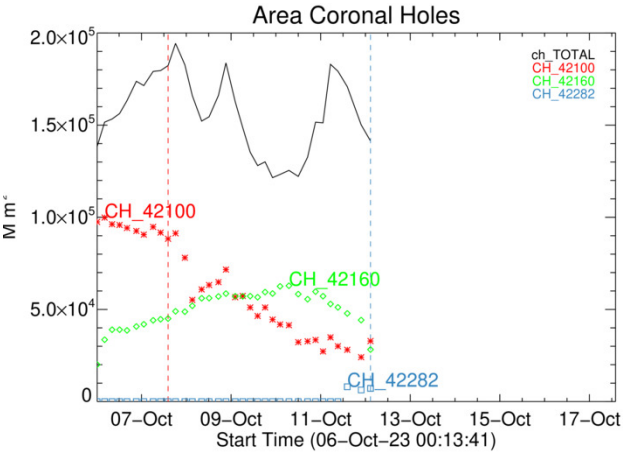
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



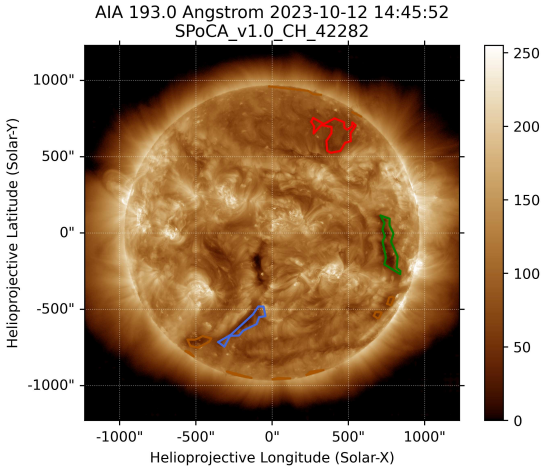
(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between October 06 and 12, 2023.



(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 13:18 UT on October 07, 2023 (red dot line).

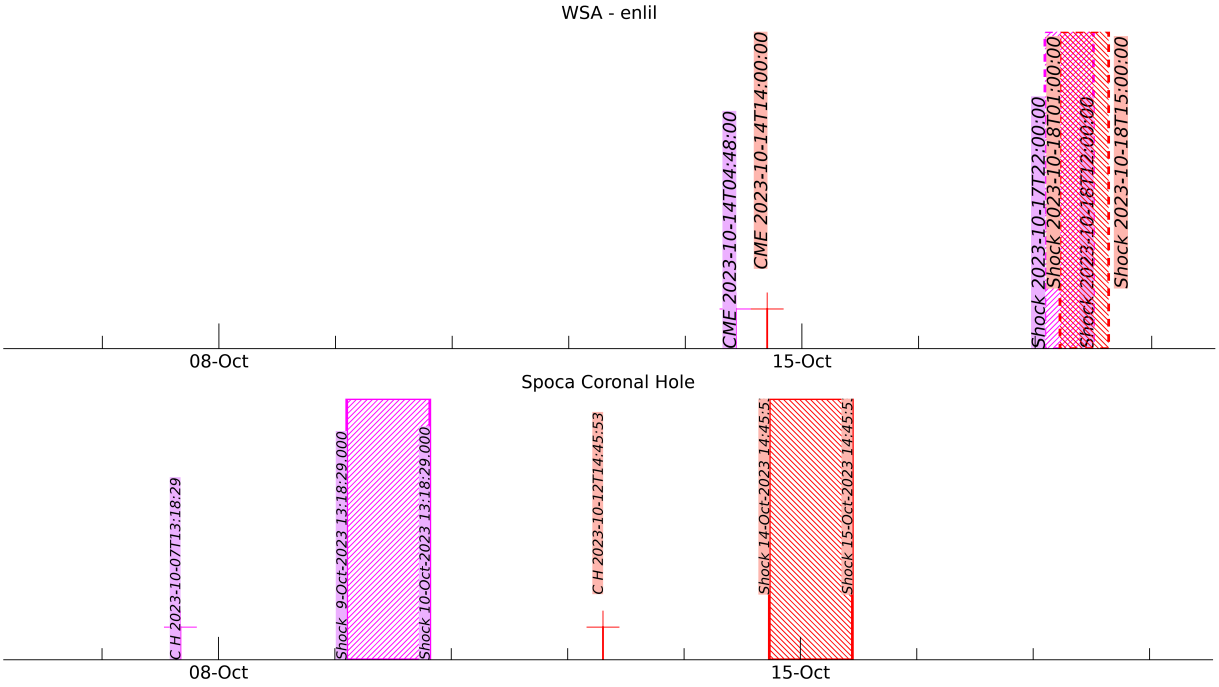


(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between October 06 and 12, 2023.



(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 14:45 UT on October 12, 2023 (blue dot line).

Solar - WSA - ENLIL and SPoCA



EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

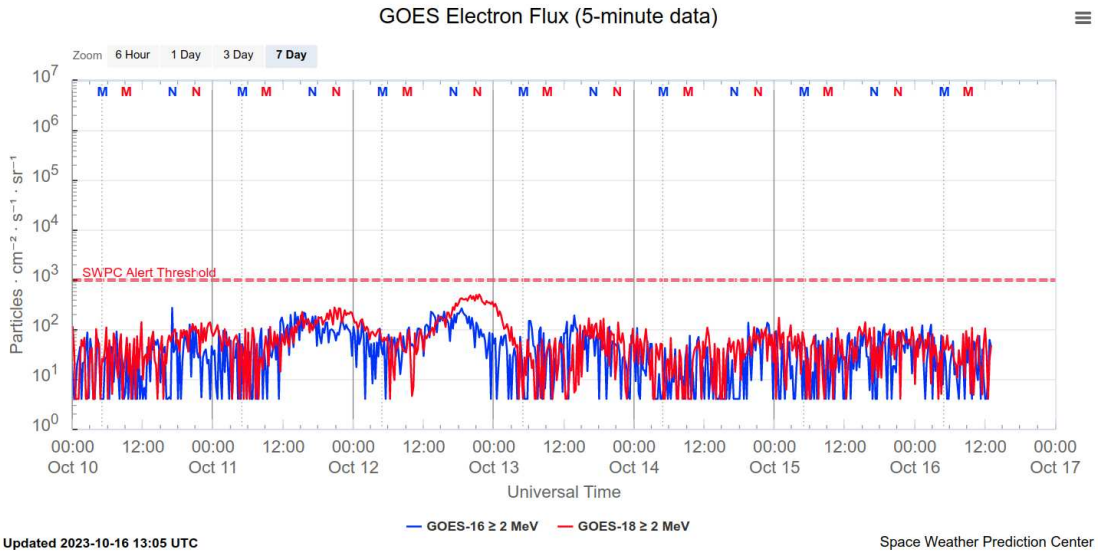


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: https://www.swpc.noaa.gov/products/goes-electron-flux

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) almost all analyzed period. The electron flox is above 10^2 particles/(cm^2 s sr) between the middle of October 11th and the beginning of October 13th.

Geomagnetic Field / Campo Geomagnético

Summary

In the week of 10-16/10, the Embrace magnetometer network data recorded instabilities throughout the week, with emphasis on:

- 13/10: The magnetometers of the Embrace network recorded a strong oscillation reaching around -80 nT in PVE and an increase of up to around 100 nT on the
- AE index was active, above 500 nT on the 13th. The minimum Dst index ranged around positive values. The highest Kp of the week was 4-.

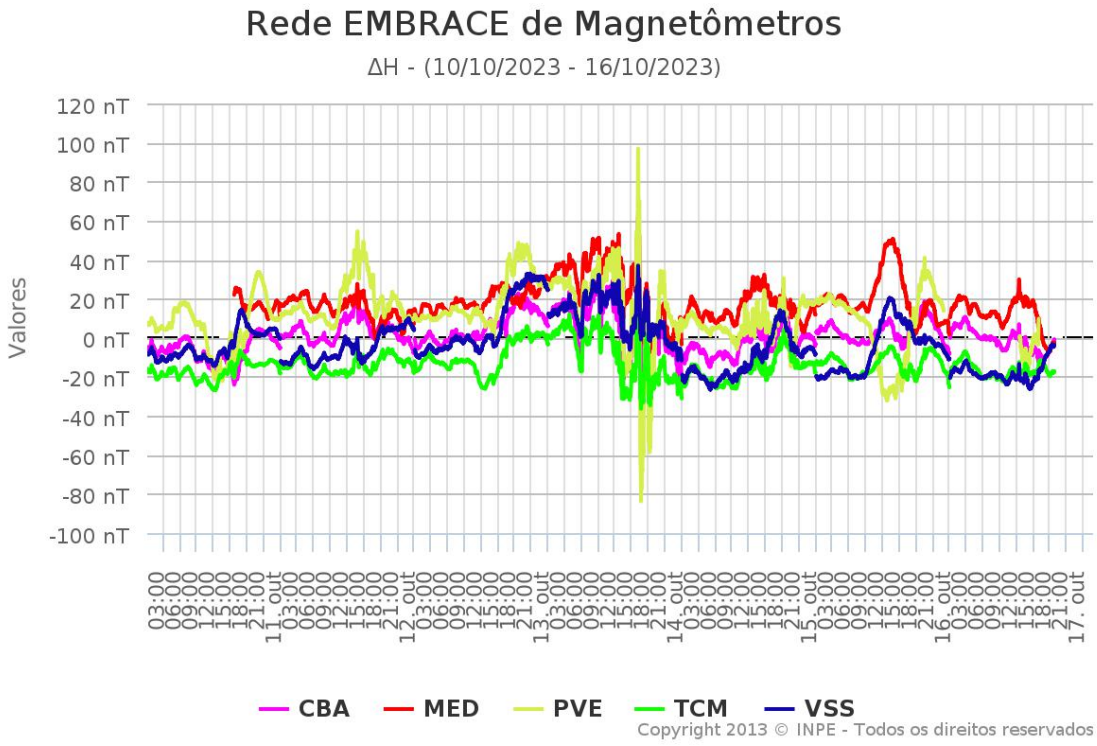


Figure 1.: Daily variation of the geomagnetic field from H (nT) measured at Embrace MagNet from 10 to 16 October 2023

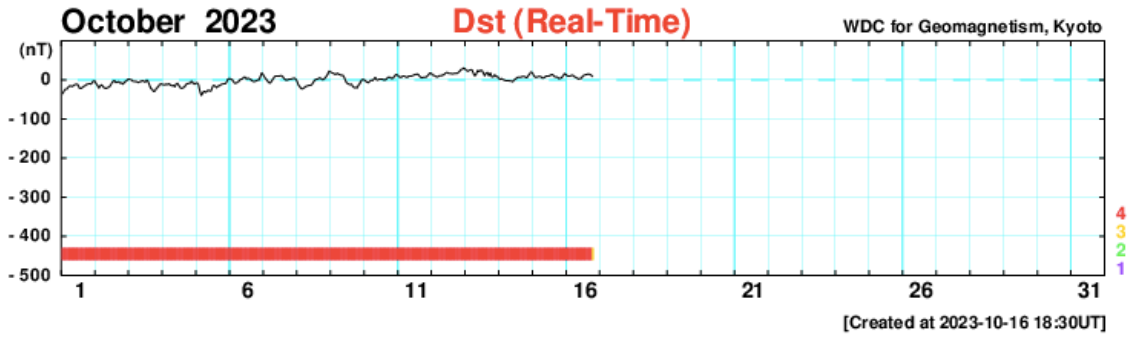


Figure 2: Dst index for October 2023

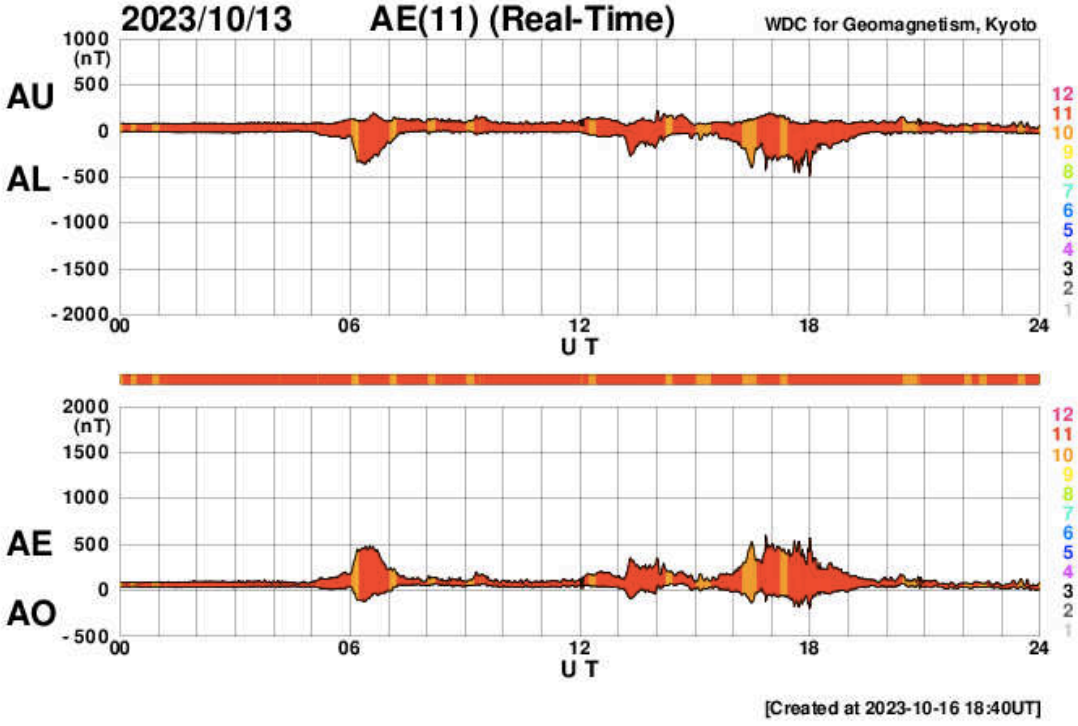


Figure 3.: AE index for the most disturbed days in the current week.

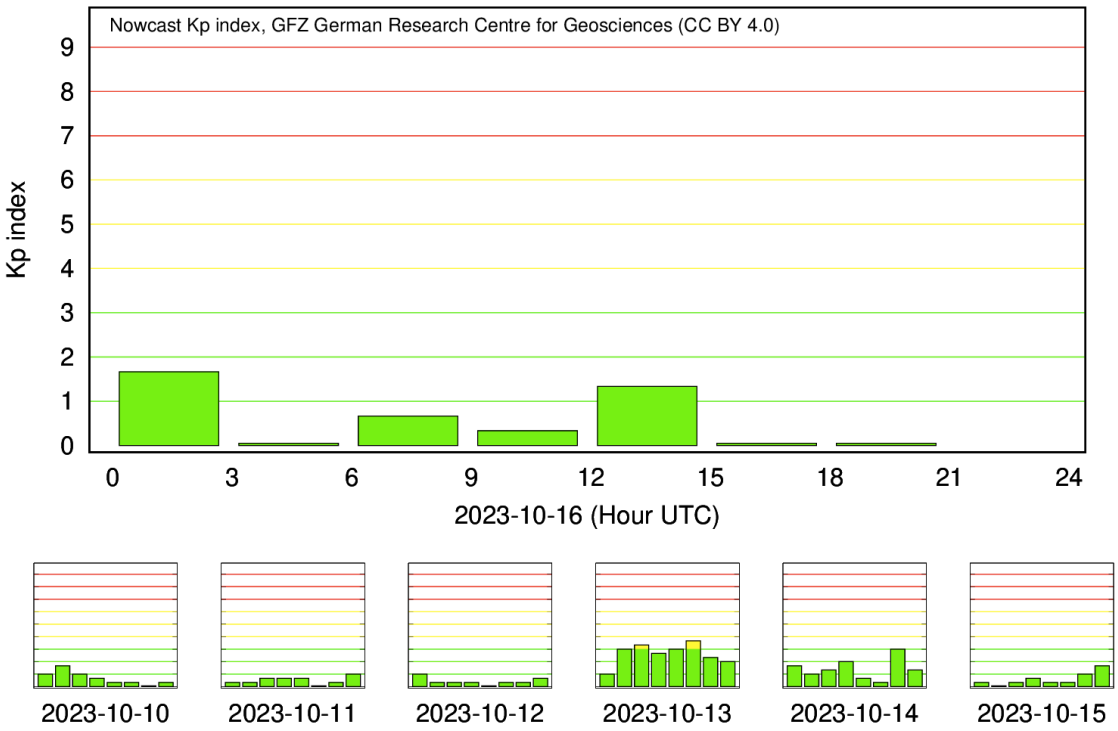


Figure 4: Kp index for the current week (10-16 October 2023)

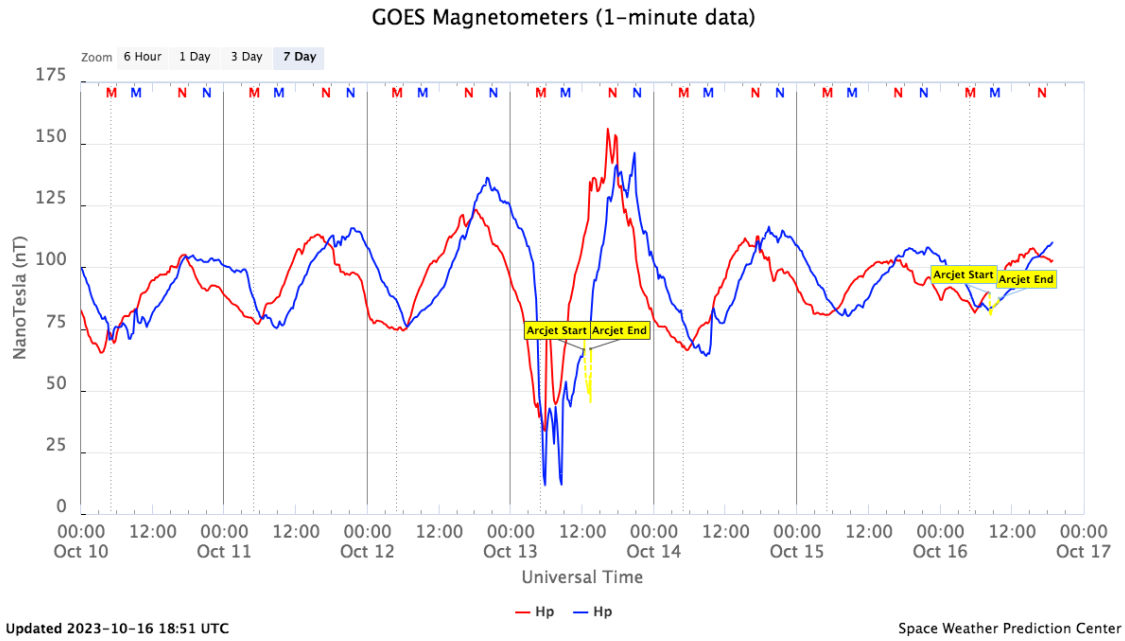


Figure 5.: Magnetic field horizontal component at the GOES satellite orbit through 10 to 16 October 2023

Ionosfera – Digissonda (Laysa Resende)

Summary

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

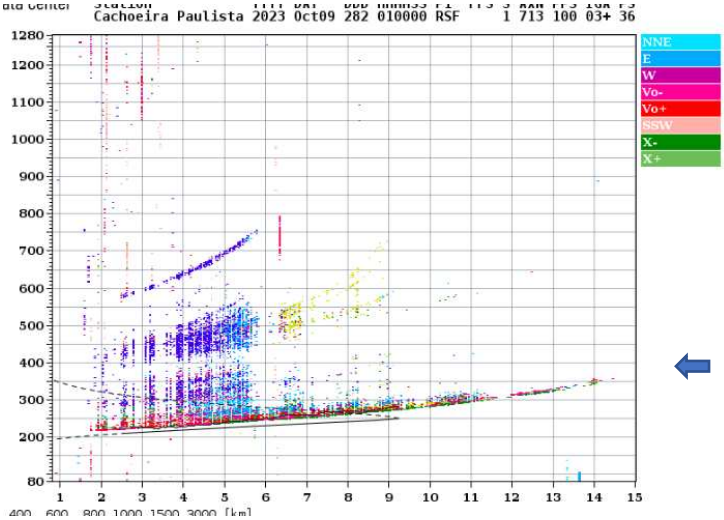


Figure 1 – Ionogram over Cachoeira Paulista, showing the spread F occurrence on October 09, 2023.

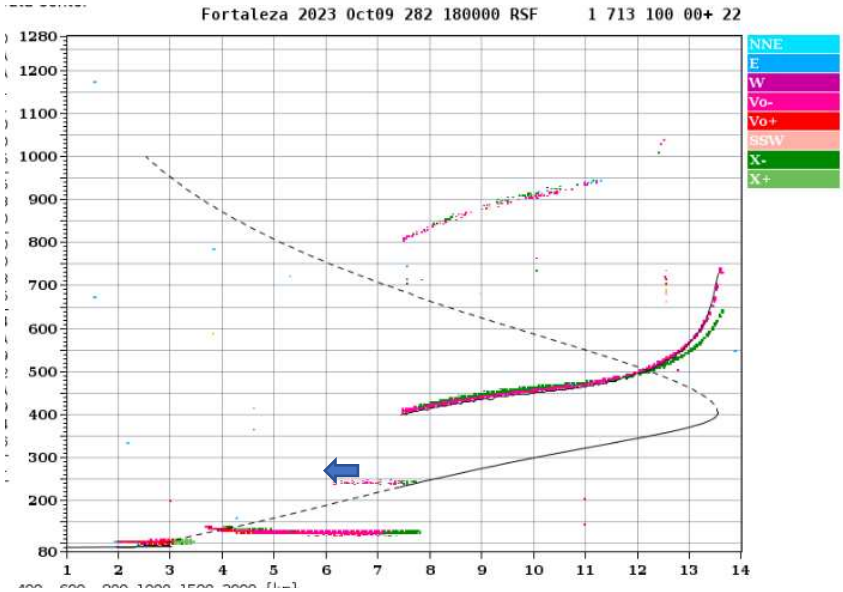


Figure 2 – Ionogram over Fortaleza, showing the Es layer occurrence.

Ionosfera –S4 (Cintilação receptores GNSS)

Summary

In this report on the S4 scintillation index, data from SLMA in São Luiz/MA, UFBA in Salvador/BA, STCB in Cuiabá/MT and SJCE in São José dos Campos/SP are presented. The S4 index tracks the presence of irregularities in the ionosphere having a spatial scale ~ 400 m.
All stations presented S4 values greater than 0.8 (strong scintillation) every day of the week (Figure 1), indicating that the emergence of plasma bubbles phenomenon after sunset is well established in the American sector corresponding to the 2023-2024 plasma bubble season.

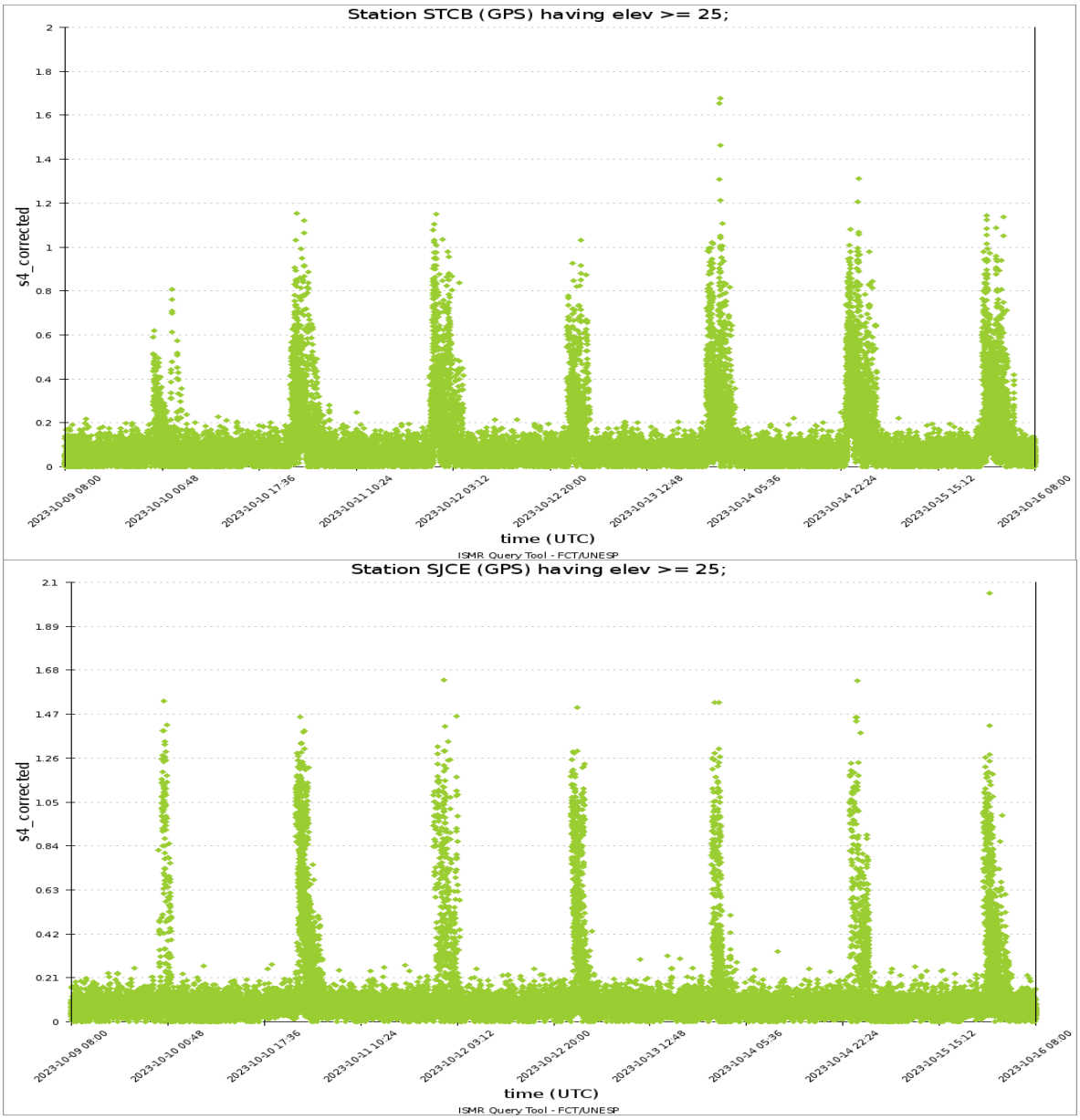


Figure 1 – S4 index values for the GPS constellation measured at STCB (upper panel) and SJCE (lower panel), during the week 10/25—02. A similar behavior was observed in SLMA and UFBA.

Ionosphere - ROTI
Summary for Week 2283 (October 8 to 14, 2023)

Carolina de Sousa do Carmo

In the week 2283 (October 8 to 14, 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)).

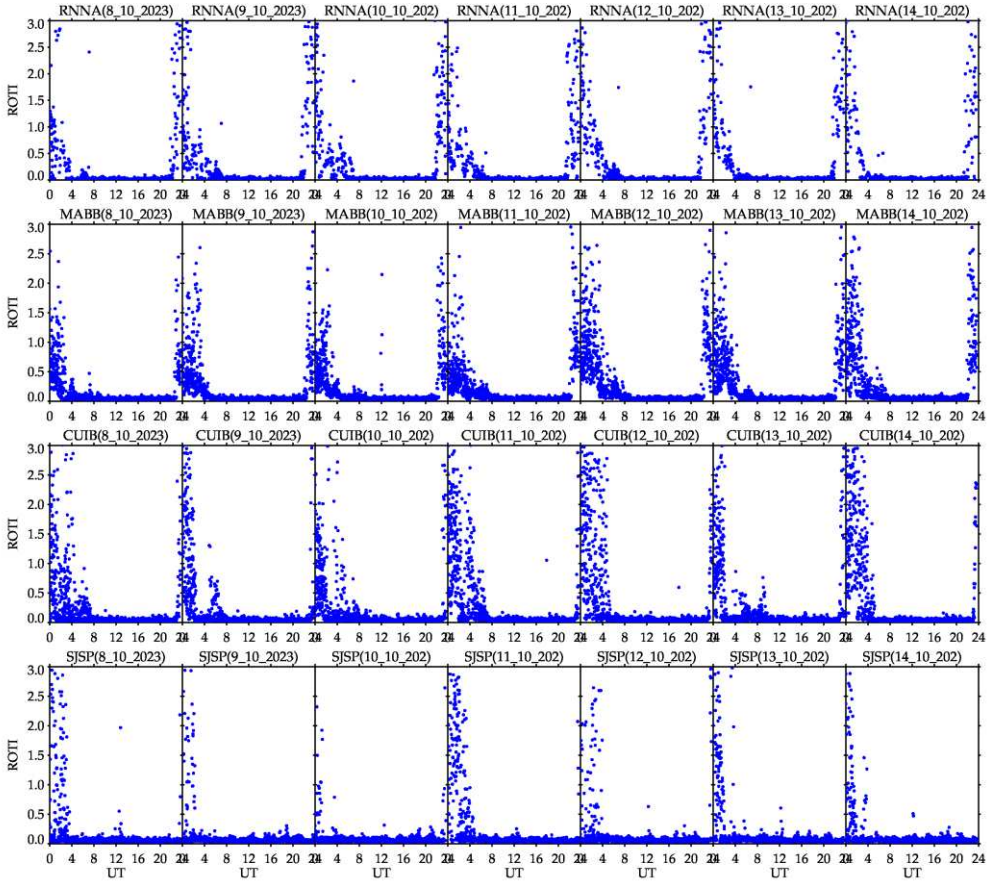


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from October 8 to 14, 2023.