Solar - WSA-ENLIL

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

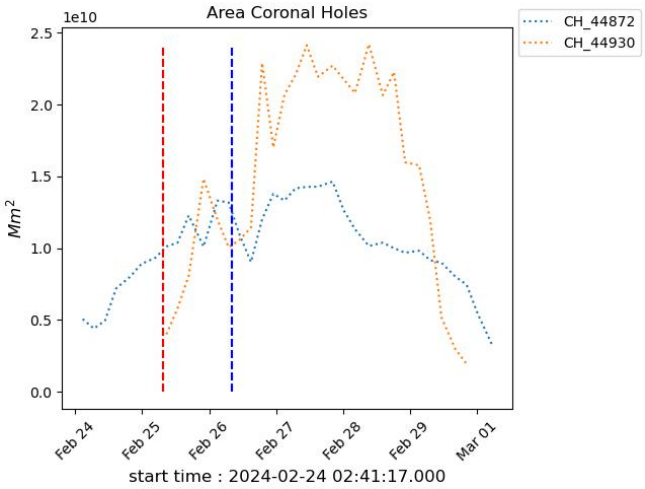
WSA-ENLIL(CME 2024-02-27 11:36:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-03-02 01:00:00 UT and 2024-03-02 15:00:00 UT.

WSA-ENLIL(CME 2024-02-28 09:24:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-03-02 08:00:00 UT and 2024-03-02 22:00:00 UT.

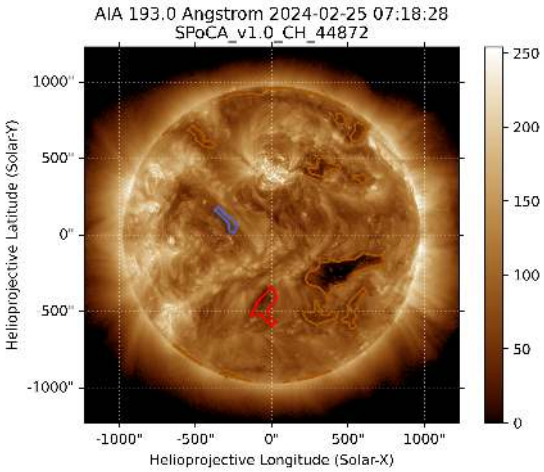
WSA-ENLIL(CME 2024-02-28 17:48:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-03-03 23:00:00 UT and 2024-03-04 13:00:00 UT.

WSA-ENLIL(CME 2024-02-28 23:12:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2024-03-03 17:00:00 UT and 2024-03-04 07:00:00 UT.

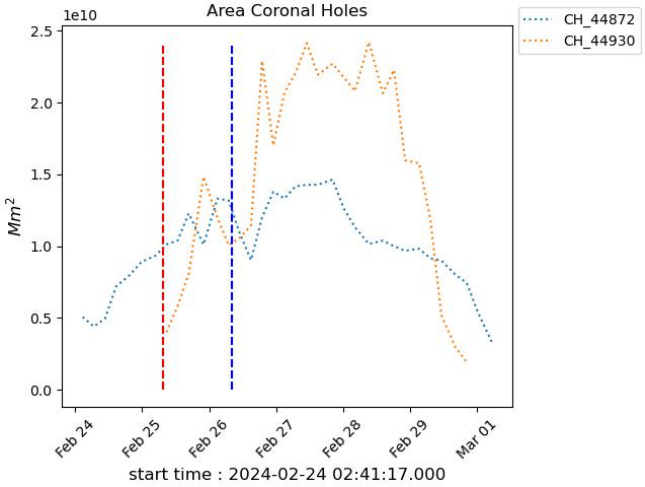
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



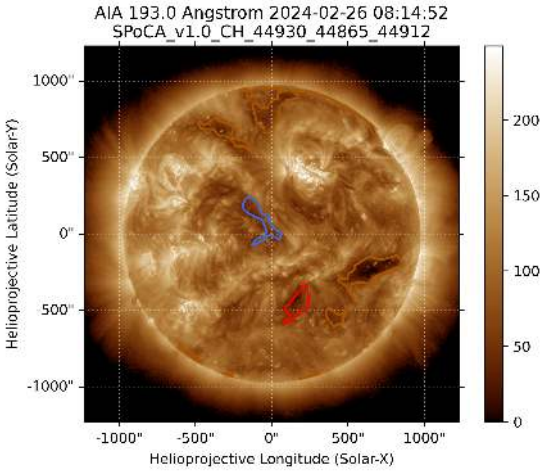
(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between February 25 and 26, 2024.



(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 07:18 UT on February 25, 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 February 25 and 26, 2024.



(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 08:14 UT on February 26, 2024 (blue dot line).

EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

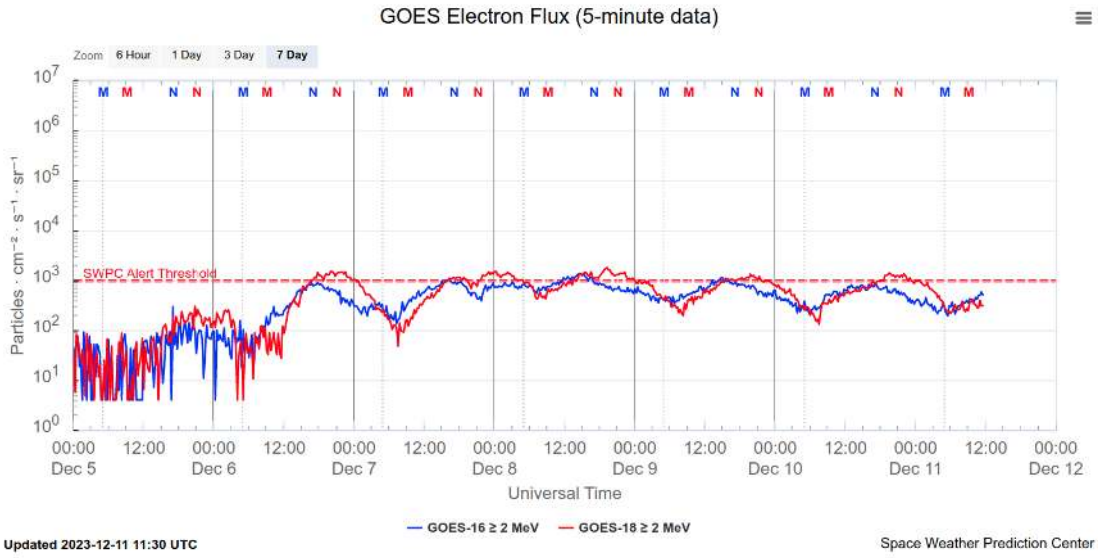


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: https://www.swpc.noaa.gov/products/goes-electron-flux

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 the entire analyzed period. A slight increase was observed from 12:00 UT on March 2nd, reaching slightly above 10^2 particles/(cm2 s sr) until 13:10 UT on March 3rd.

Ionosfera – Digissonda (Laysa Resende)

Summary

We observed the F spread F in Fortaleza and Cachoeira Paulista in the most days during this week, except on March 03. The F region irregularities were inhibited due to the magnetic storm occurrence. The Es layers reached a maximum of scale 2 in Cachoeira Paulista and 4 in Fortaleza (Figure 1).

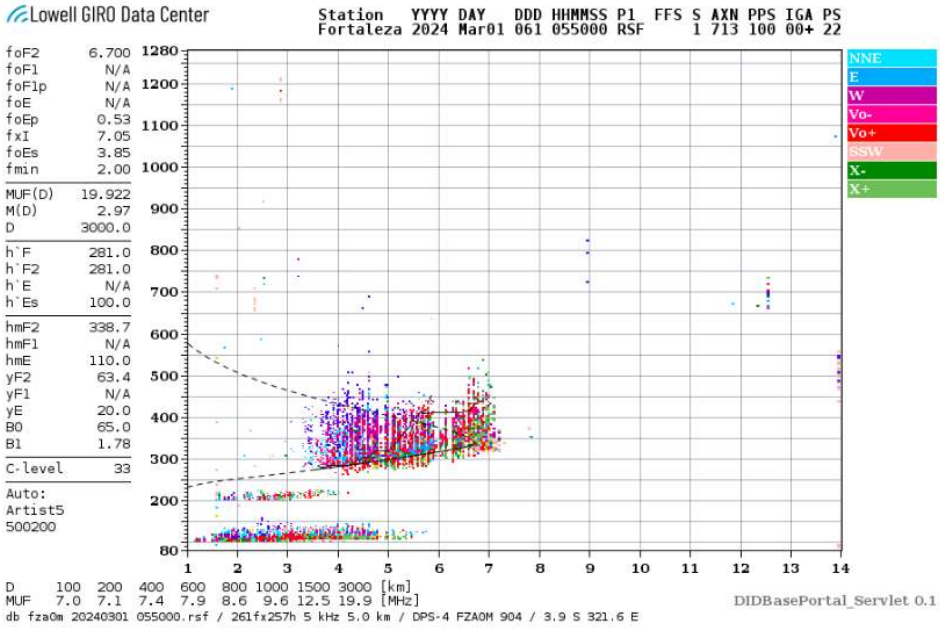


Figure 1 – Ionogram over Fortaleza, showing the strong Es layer occurred on March 01, 2024.

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.

Records of severe scintillation (> 1) were found in all stations at dusk except for day 3/03 in which no values above 0.3 were detected (Figure 1). This absence of scintillation between 03-04/03 coincided with the G2 type magnetic storm (Kp = 6). The above indicates a possible suppression of the plasma bubble generating mechanism which, in turn, causes the scintillation events normally detected after sunset on the remaining days of the period analyzed in this report.

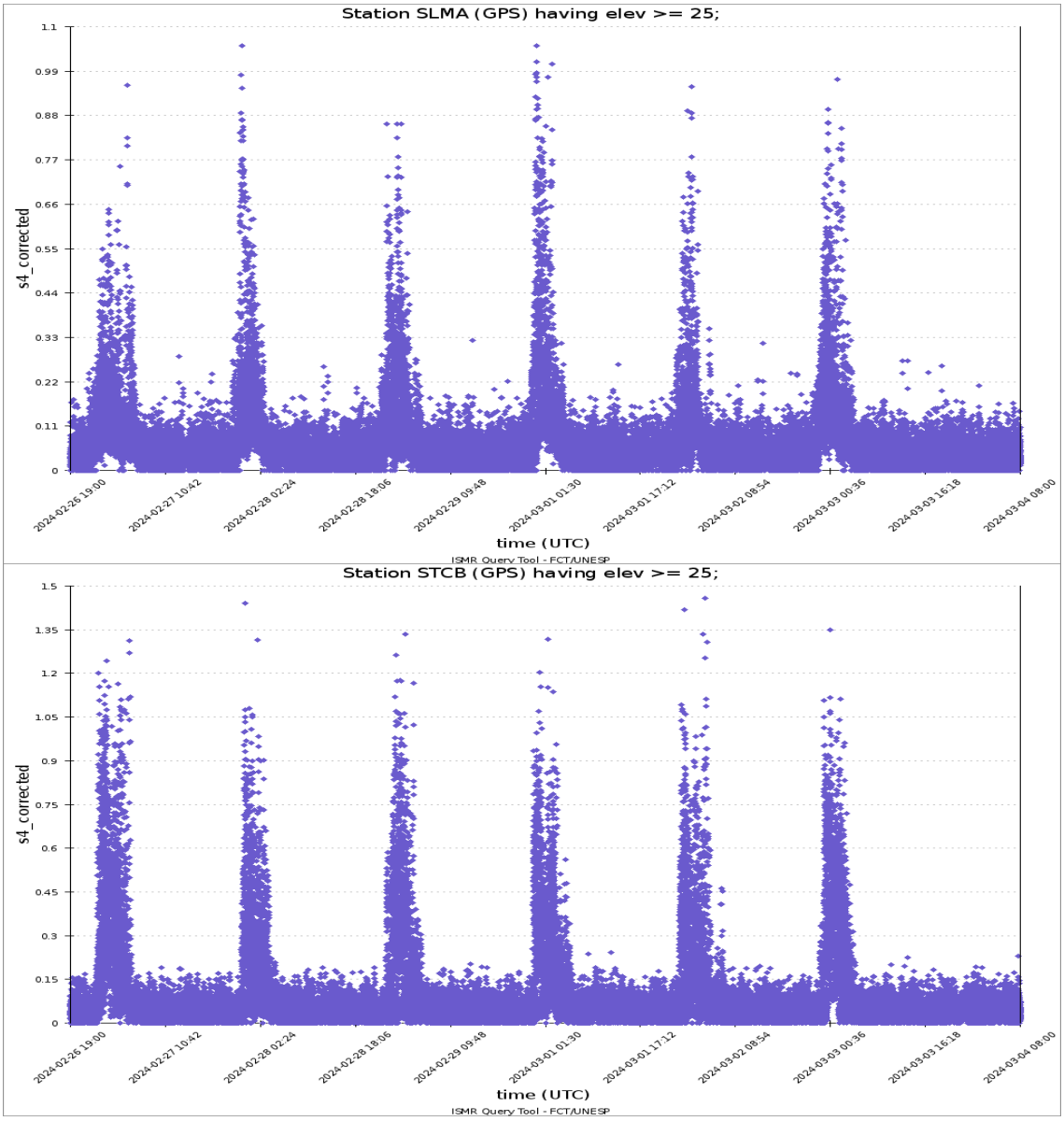


Figure 1 – S4 index values for the GPS constellation measured at SLMA (upper panel) and STCB (lower panel), during the week 03/26-04. A similar behavior was observed in UFBA and SJC.

Ionosphere - ROTI
Summary for Week 2303 (February 25 to March 2, 2024)

Carolina de Sousa do Carmo

In the week 2303 (February 25 to March 2, 2024) 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)).

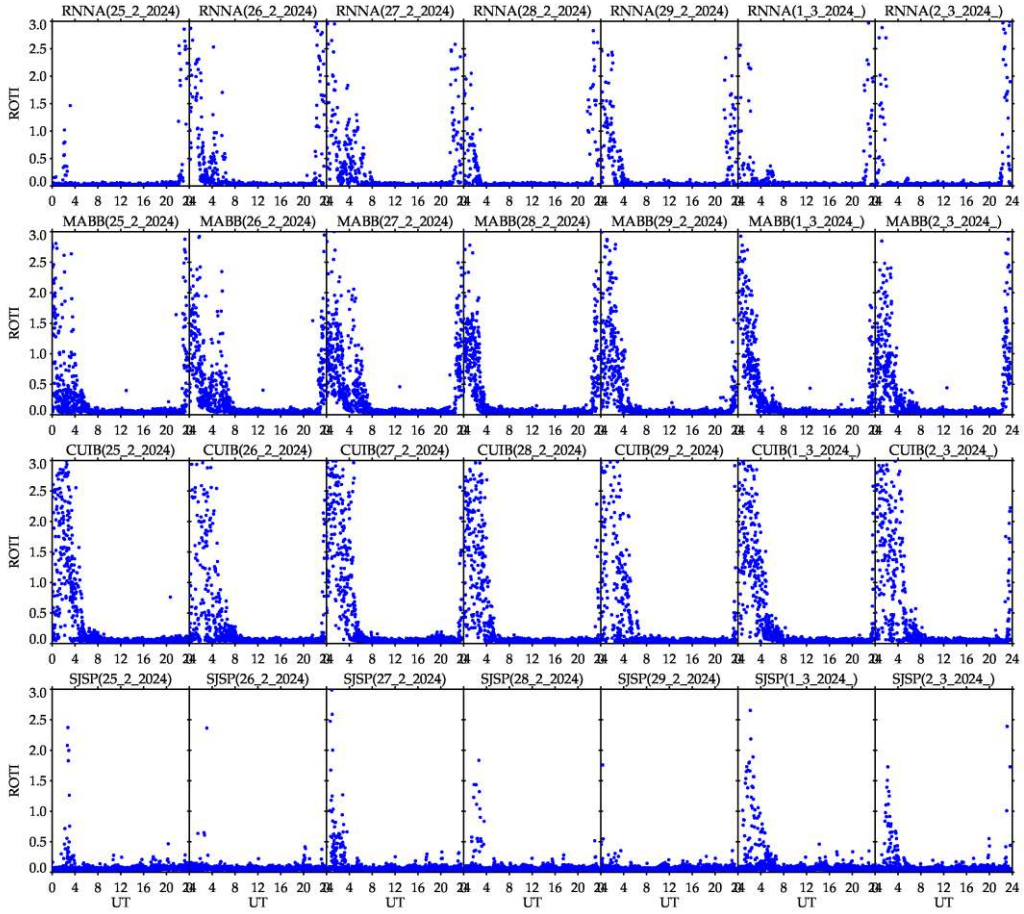


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from February 25 to March 2, 2024.