

EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

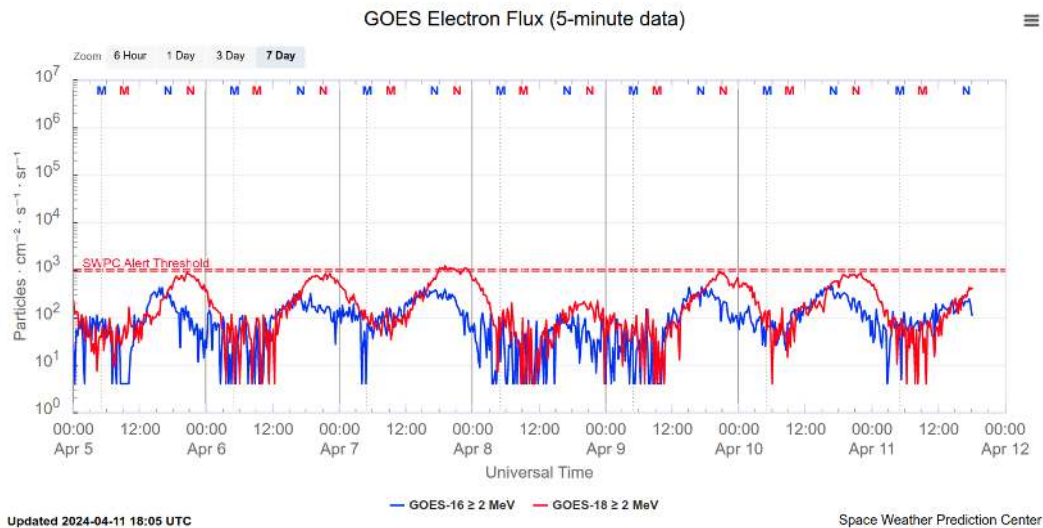


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: <https://www.swpc.noaa.gov/products/goes-electron-flux>

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 10^3 particles/(cm² s sr) throughout the analyzed period, presenting peaks that reach 10^3 particles/(cm² s sr) on the 5th, 6th, 7th, 9th and 10th of April. The electron flux decrease observed on April 8 occurs during the arrival of solar wind structures.

Geomagnetic Field

Responsible: Livia Alves/ Karen Sarmiento

Summary

During the week of 2/04 to 8/04, unstable magnetic field conditions prevailed, characterized by few oscillations and without reaching levels of moderate storm. The Dst index remained predominantly negative, reaching conditions of weak storm (-36nT) on 5/04 (24 UT). Aurora activity in both hemispheres was weak, with the AE index staying below 500 nT for most of the period. There were brief peaks above 500 nT at specific times, between 10-12 UT on 2/04, 12-14 UT, 17-18 UT, 20-22 UT on 4/04, 4-5 UT, 10-11 UT, 12-13 UT on 5/04, and 5-7 UT on 8/04. The Kp index indicated periods of instability, reaching 3+ on 4/04 (21-24 UT), 5/04 (3-6 UT), and 6/04 (0-3 UT). Data from the Embrace magnetometer network did not reveal significant variations.

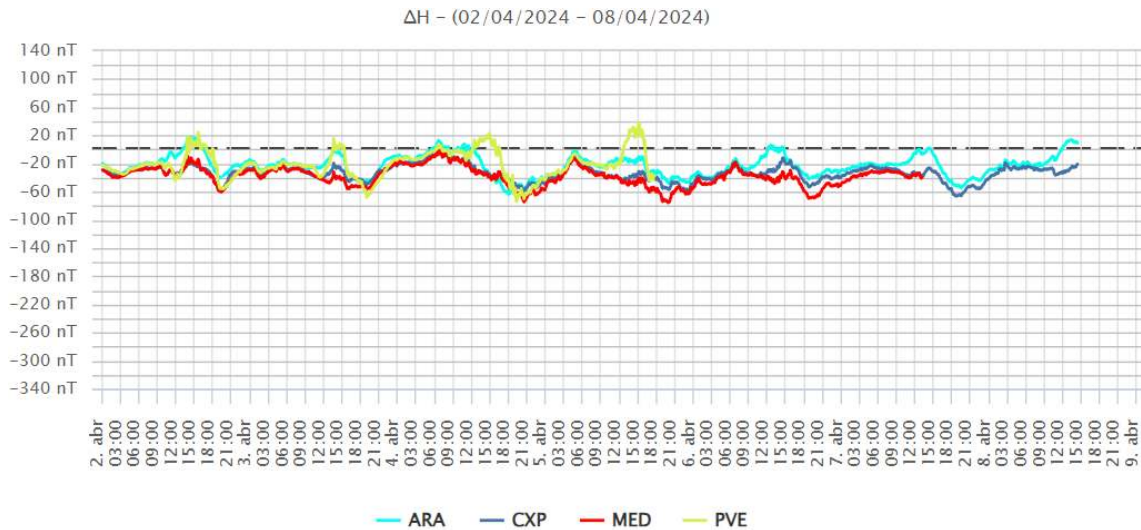


Figure 1- Daily variation of the geomagnetic field from H(nT) measured at Embrace MagNet.

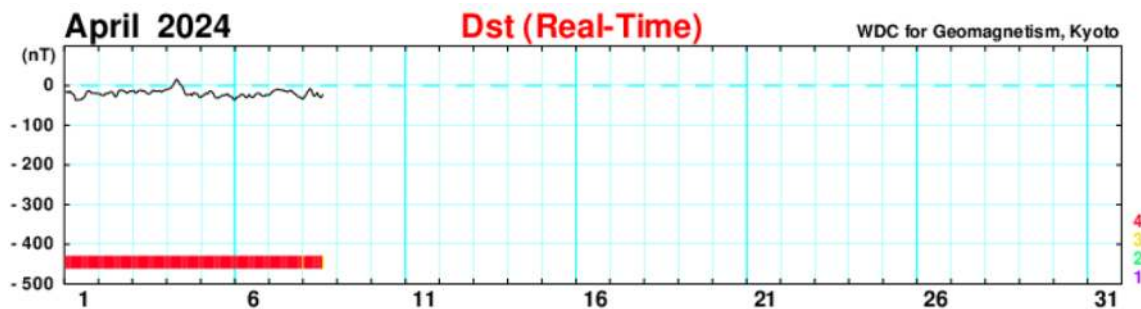


Figure 2- Dst Index.

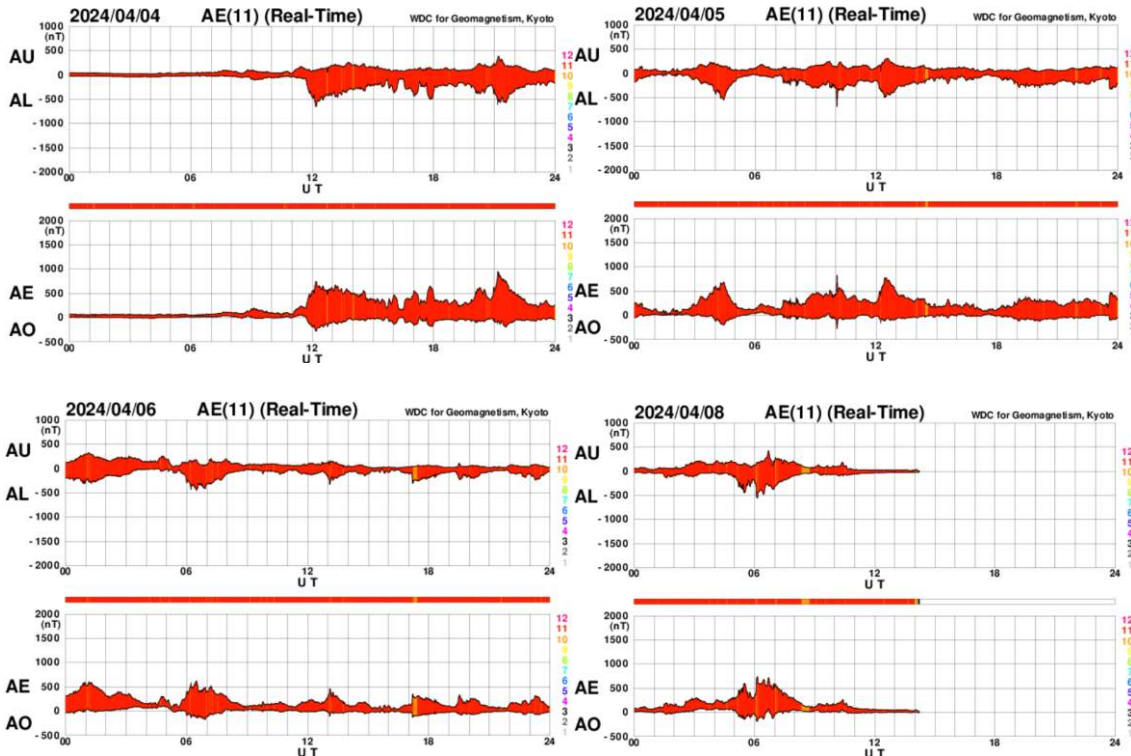


Figura 3- Índice AE para os dias da semana com maior atividade auroral.

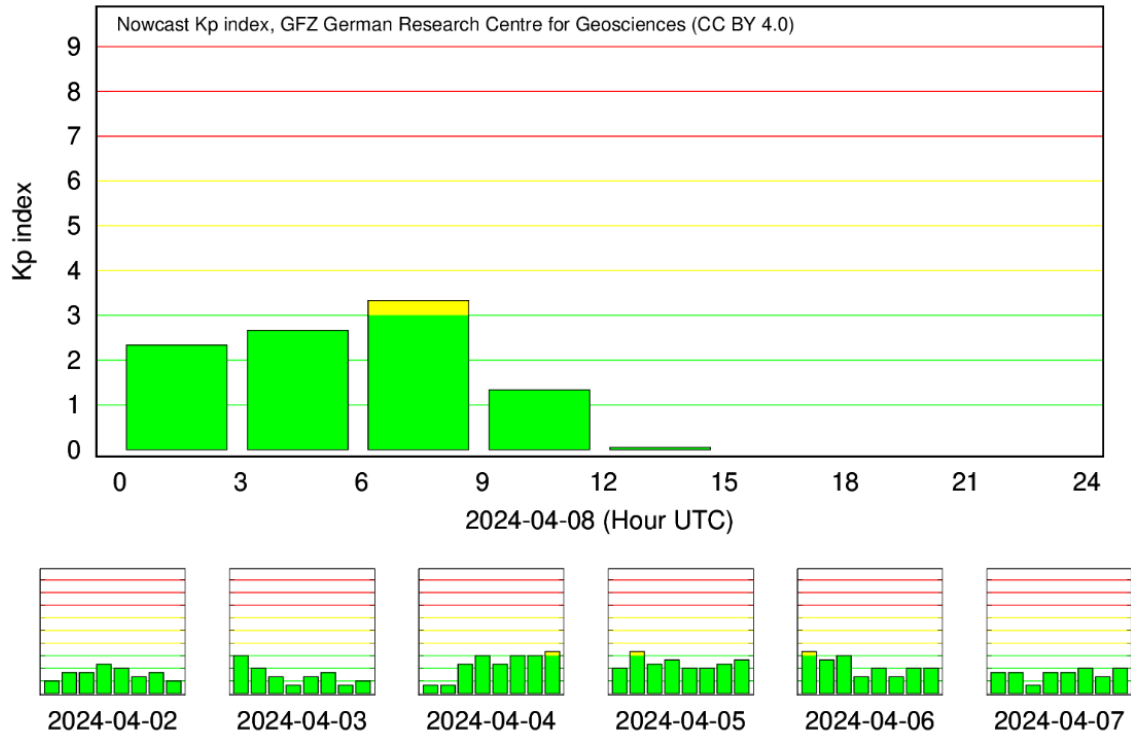


Figure 4- Kp index for the current week in logarithmic scale.

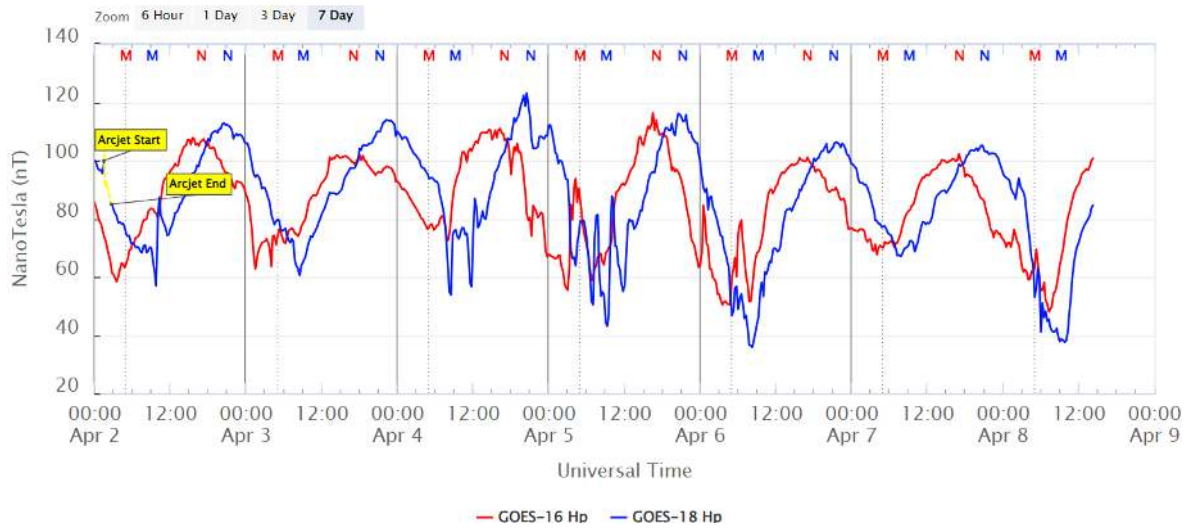


Figure 5- Magnetic field horizontal component at the GOES satellite orbit through.

Ionosfera – Digissonda (Laysa Resende)

Summary

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

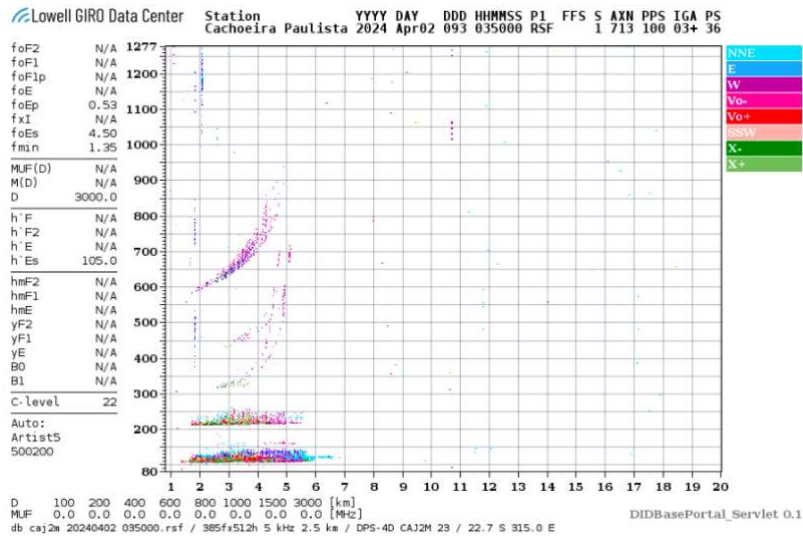


Figure 1 – Ionogram over Cachoeira Paulista, showing the Es layer occurred on April 02, 2024.

Ionosphere - ROTI Summary for Week 2308 (March 31 to April 6, 2024)

Carolina de Sousa do Carmo

In the week 2308 (March 31 to April 6, 2024), ionospheric irregularities (plasma bubbles) were observed on all analyzed nights except for April 4, 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)).

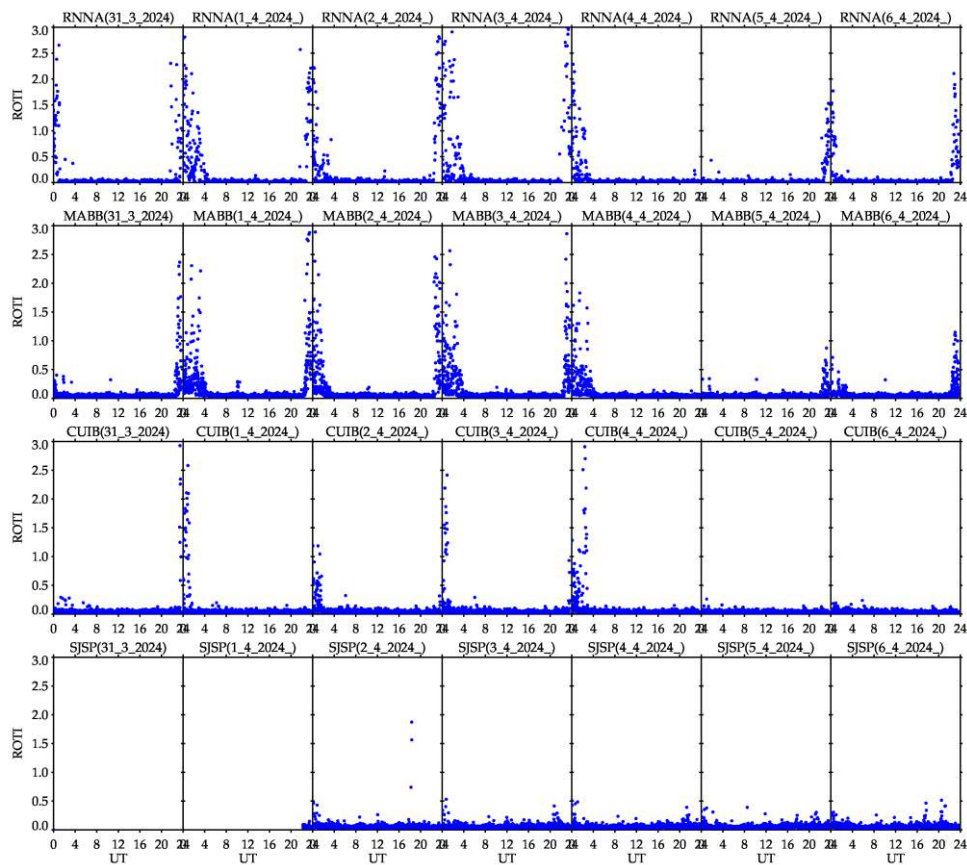


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from March 31 to April 6, 2024.