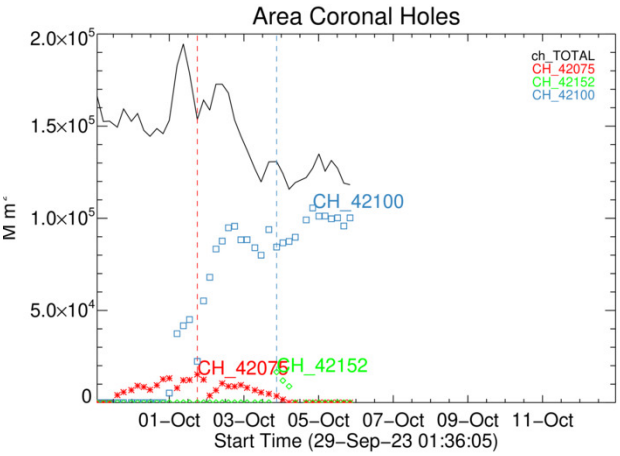
Solar - WSA-ENLIL

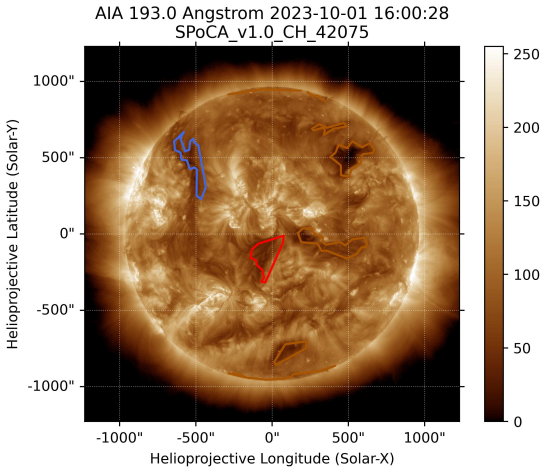
EMC (https://ccmc.gsfc.nasa.gov/donki/):

WSA-ENLIL(CME 2023-10-02 18:24:00 UT)
The simulation results indicate that the flank of CME will reach the DSCOVR mission between 2023-10-06 04:11:00 UT and 2023-10-06 18:11:00 UT.

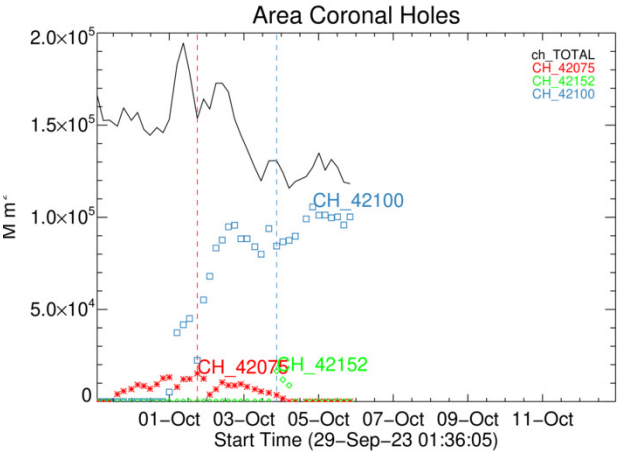
Solar - Coronal holes Spatial Possibilistic Clustering Algorithm (SPoCAS):



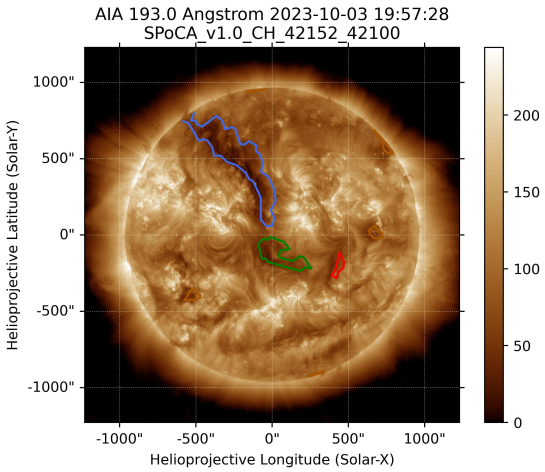
(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between September 29 and October 06, 2023.



(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 16:00 UT on October 01, 2023 (red dot line).

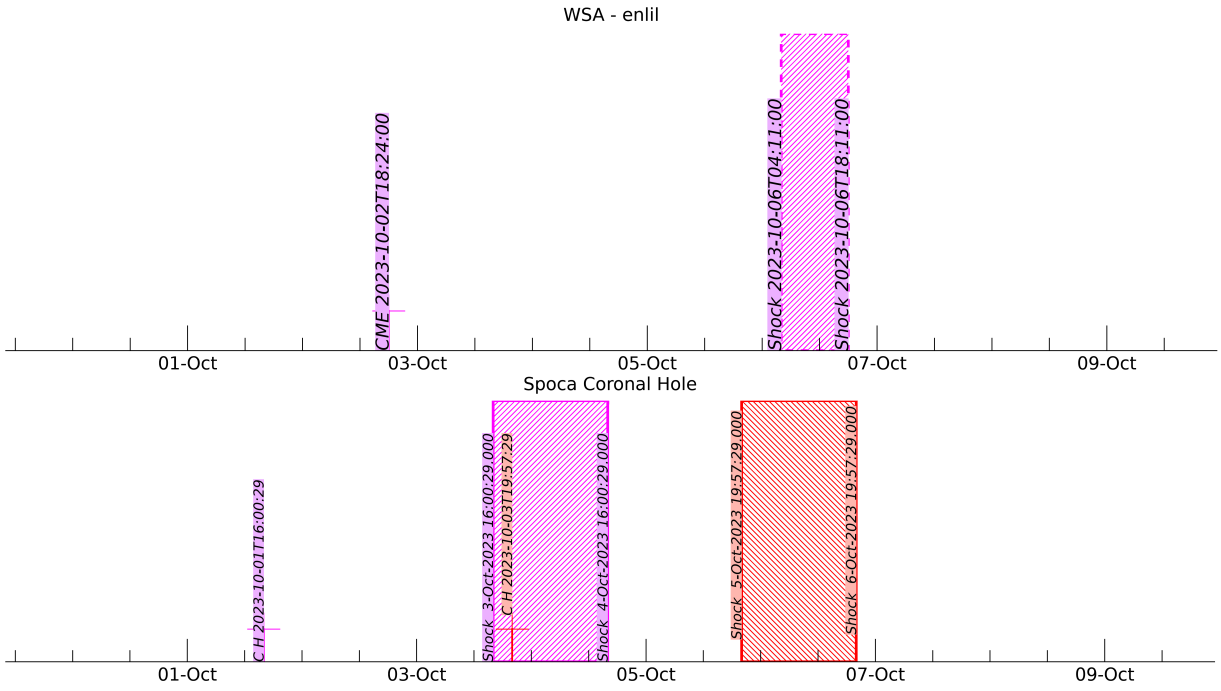


(a) The solid black line depicts the products of the sum of areas for each detection interval performed by SPOCA between September 29 and October 06,2023.



(b) Above the 193 Å image of the Sun are highlighted coronal holes observed by SPOCA around 19:57 UT on October 03, 2023 (blue dot line).

Solar - WSA - ENLIL and SPoCA



EARTH'S RADIATION BELT

Responsible: Ligia Da Silva

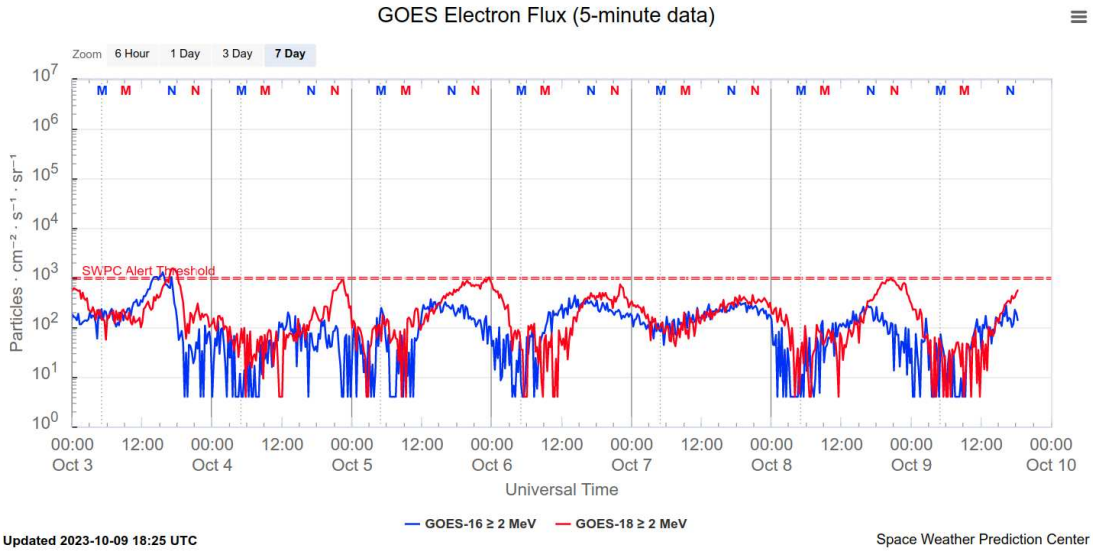


Figure 1: High-energy electron flux (> 2MeV) obtained from GOES-16 and GOES-18 satellite. Source: https://www.swpc.noaa.gov/products/goes-electron-flux

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 oscillating below 10^3 particles/(cm^2 s sr) almost the entire period analyzed. Five dropouts were observed, with the first being considered the most persistent. The most stable period was observed between 12:00 UT on October 6th and 00:00 UT on October 8th. The observed dropouts occurred concomitantly with the arrival of solar wind structures.

Geomagnetic Field / Campo Geomagnético

Summary

In the week of 03-09/10, the Embrace magnetometer network data recorded instabilities throughout the week, with emphasis on:

- 05 and 07/10: The magnetometers of the Embrace network recorded a drop of up to - 86 nT on the 5th in PVE and an increase of up to around 60 nT on the 7th and 08th
- AE index was active, above 500 nT on the 5th. The minimum Dst index was -40 nT on the 5th. The highest Kp of the week was 5o.

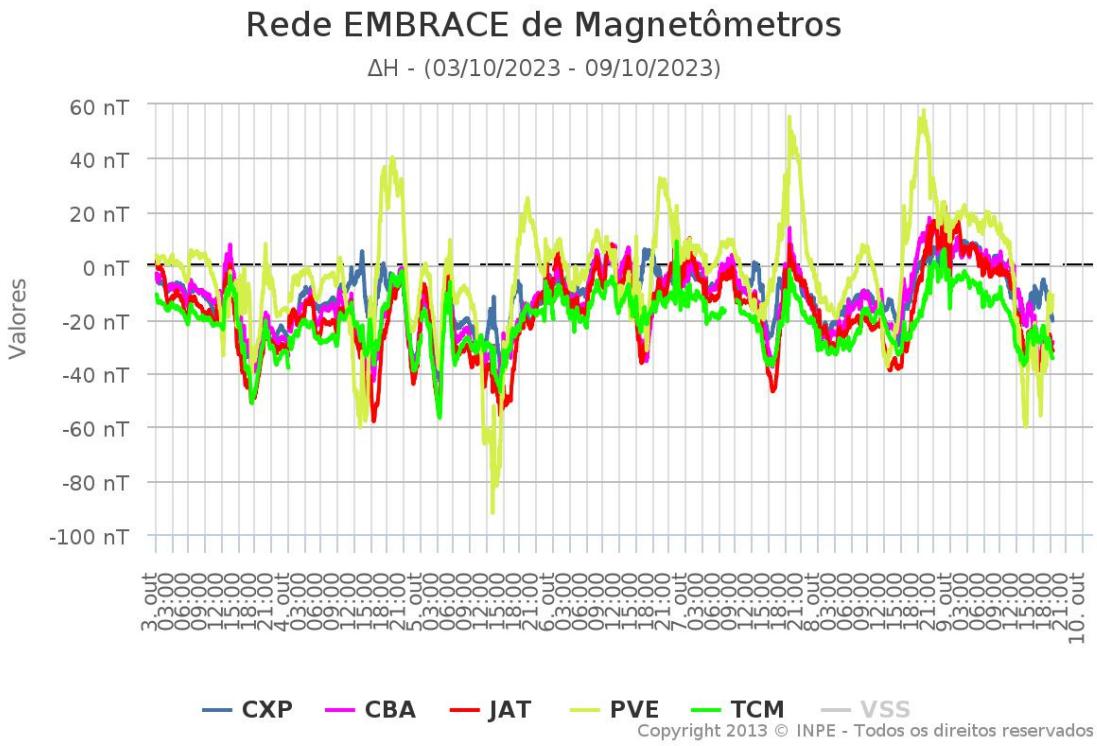


Figure 1.: Daily variation of the geomagnetic field from H (nT) measured at Embrace MagNet from 03 to 09 October 2023

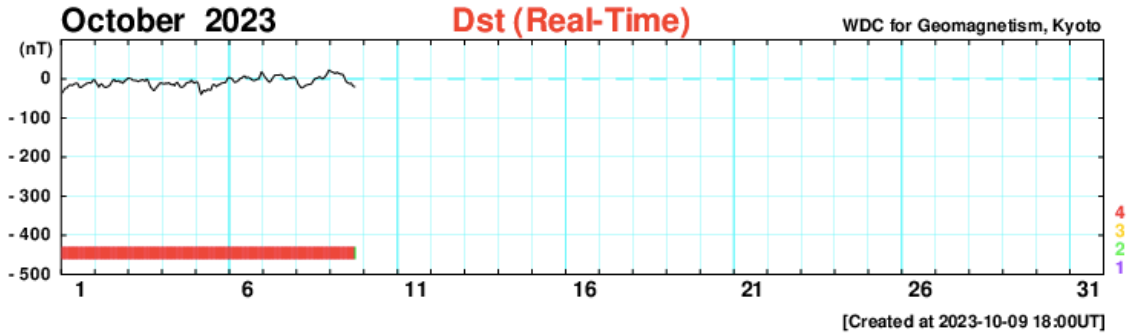
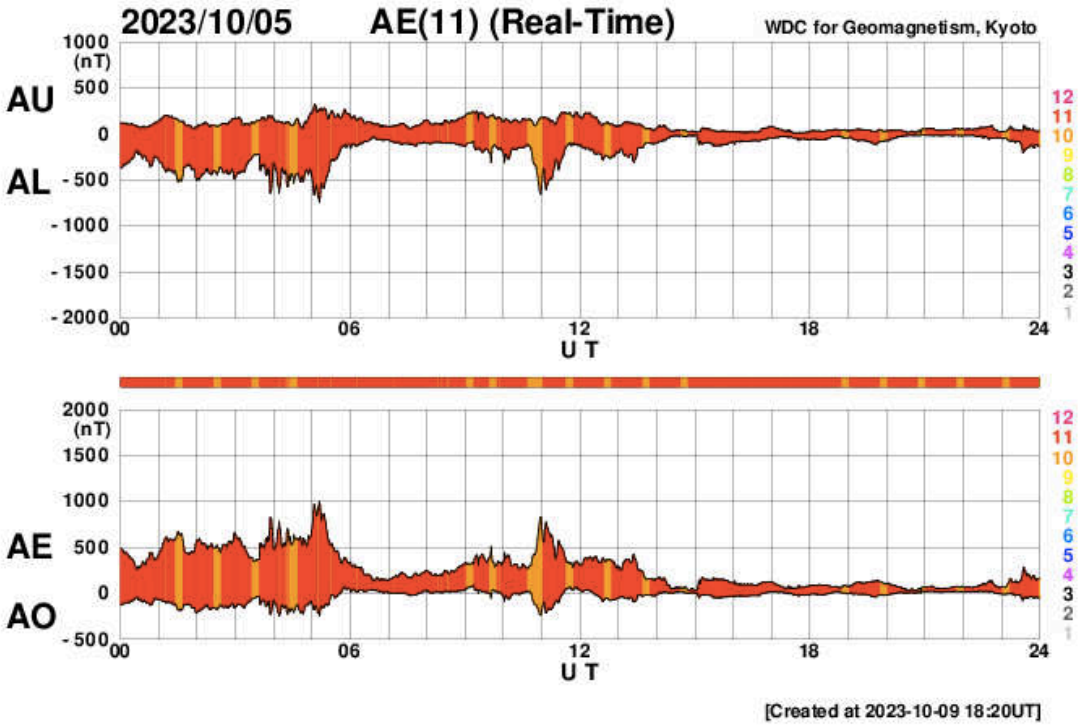


Figure 2: Dst index for October 2023



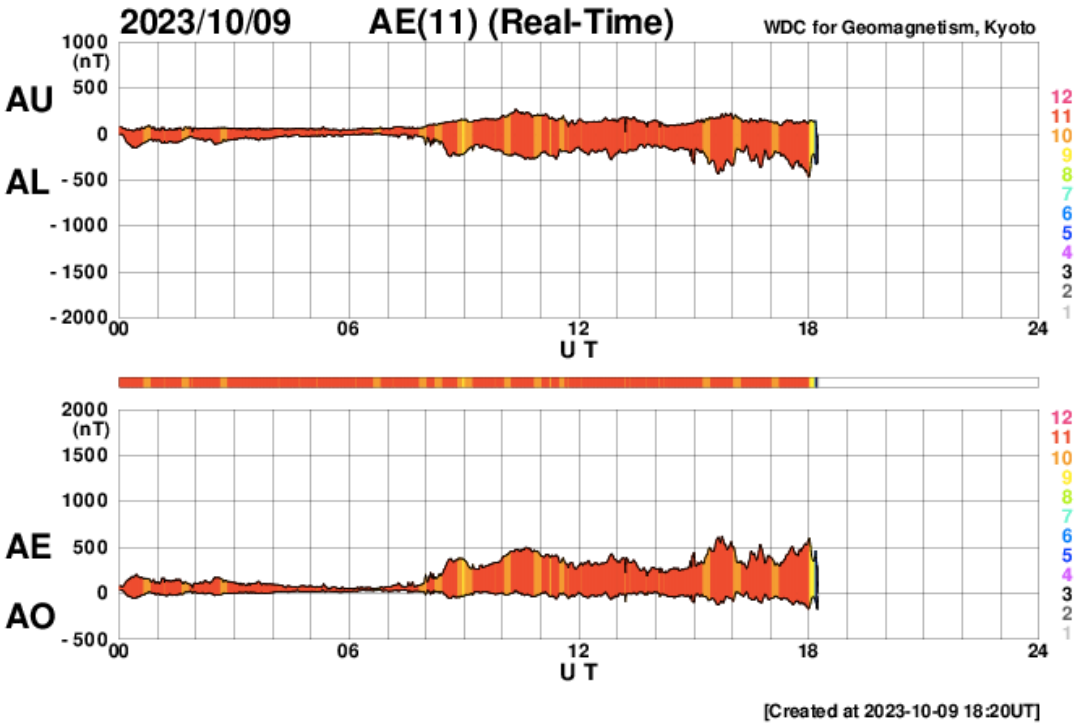


Figure 3.: AE index for the most disturbed days in the current week.

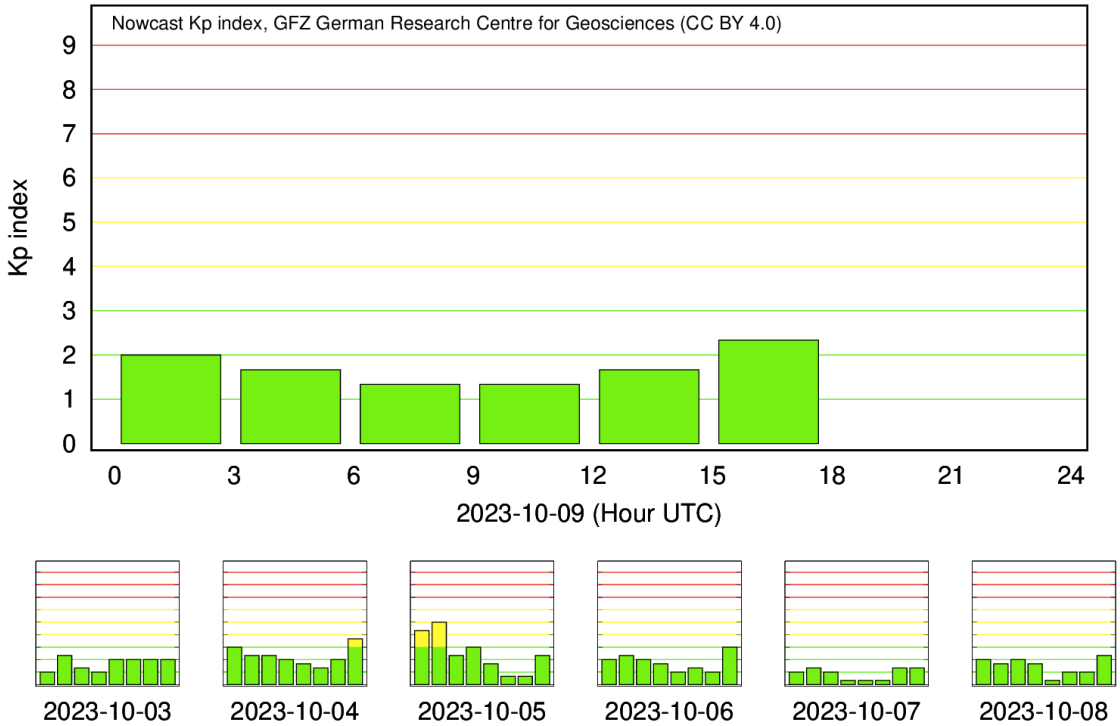


Figure 4: Kp index for the current week (03-09 October 2023)

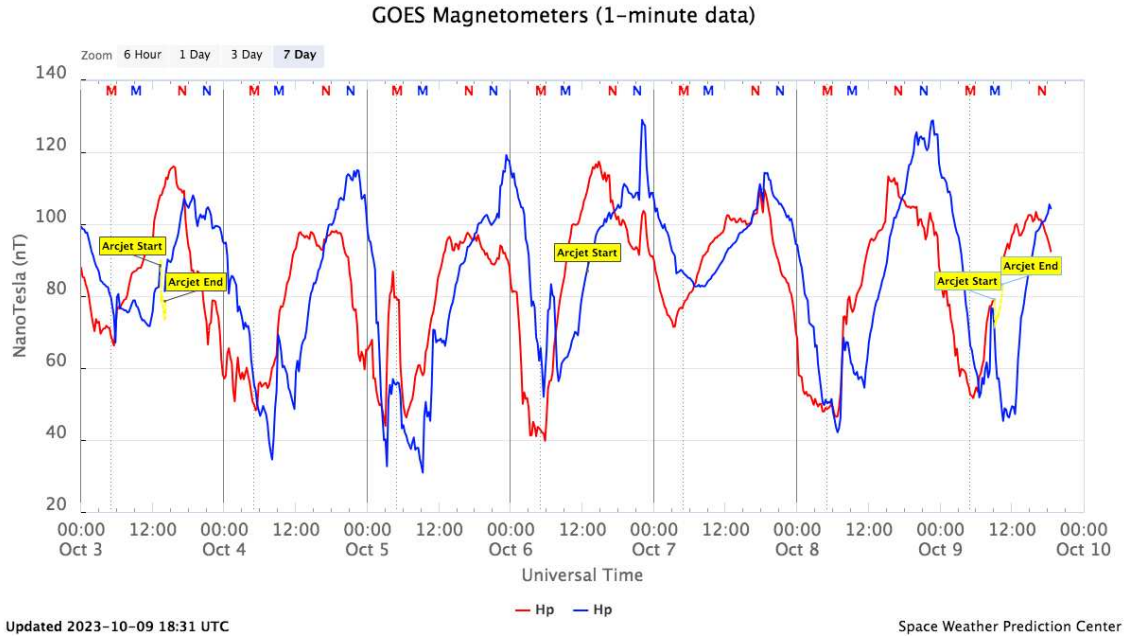


Figure 5.: Magnetic field horizontal component at the GOES satellite orbit through 03 to 10 October 2023

Ionosphere - ROTI
Summary for Week 2282 (October 1 to 7, 2023)

Carolina de Sousa do Carmo

In the week 2282 (October 1 to 7, 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)).

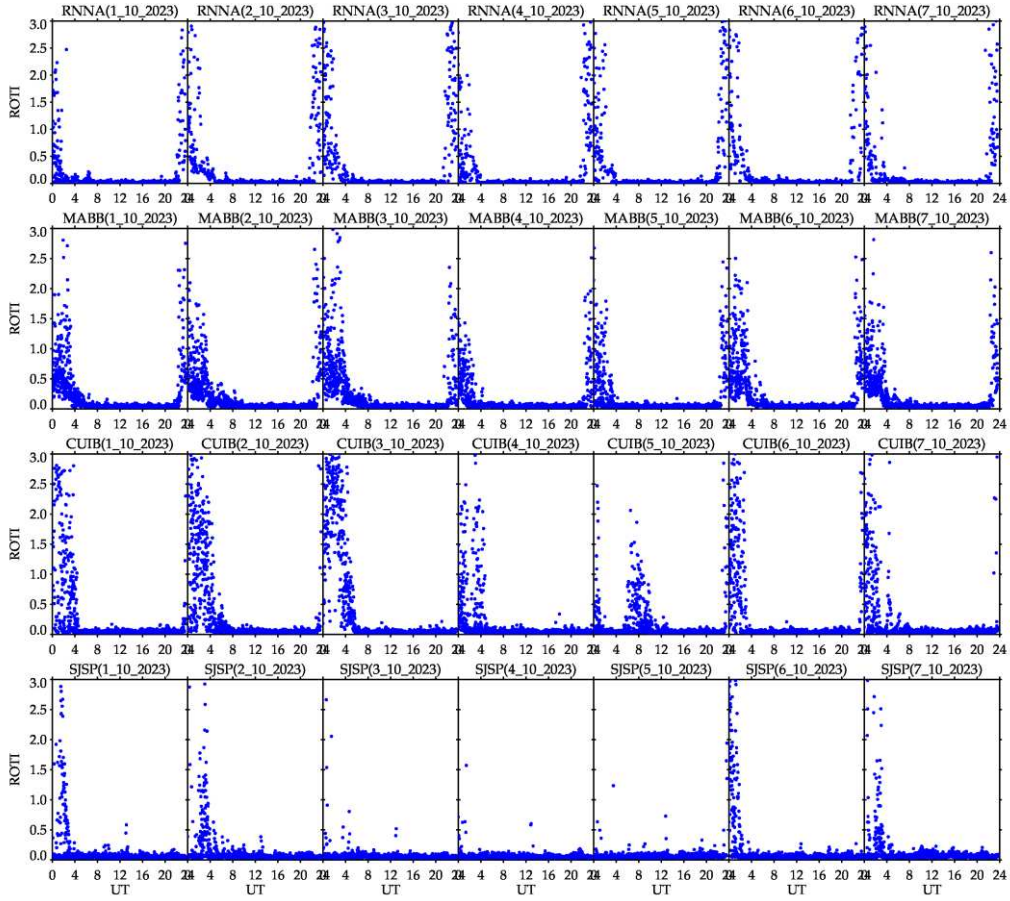


Figure – ROTI time series for four stations in the Brazilian sector (Natal (RNNA), Bacabal (MABB), Cuiabá (CUIB) and São José dos Campos (SJSP)), from October 1 to 7, 2023.