Sol – Cecatto
Period: May 19 – May 26, 2025

Summary

05/19 – M3.2 flare; Fast (=< 600 km/s) wind stream; 5 CME can have component toward the Earth;
05/20 – No M/X flare; Fast (=< 600 km/s) wind stream; 6 CME can have component toward the Earth;
05/21 – M1.2 flare; Fast (=< 650 km/s) wind stream; 5 CME can have component toward the Earth;
05/22 – No M/X flare; Fast (=< 600 km/s) wind stream; 9 CME can have component toward the Earth;
05/23 – No M/X flare; Fast (=< 550 km/s) wind stream; 9 CME can have component toward the Earth;
05/24 – No M/X flare; Fast (=< 450 km/s) wind stream; 6 CME can have component toward the Earth;
05/25 – X1.1, M1.6, M3.5, M9.0 flares; Fast (=< 500 km/s) wind stream; 8 CME can have component toward the Earth;
05/26 – No M/X flare; Fast (=< 500 km/s) wind stream; 1 CME can have component toward the Earth
For.: Fast wind stream for the next 1-2 days; for while (65% M, 25% X) probability of M / X flares next 2 days; also, occasionally some other CME can present a component toward the Earth.

Resumo

19/05 – "Flare" M3.2; Vento rápido (=< 600 km/s); 5 CMEs podem ter componente p Terra;
20/05 – Sem "Flare" M/X; Vento rápido (=< 600 km/s); 6 CME com componente p/ Terra;
21/05 – "Flare" M1.2; Vento rápido (=< 650 km/s); 5 CME com componente p/ Terra;
22/05 – Sem "Flare" M/X; Vento rápido (=< 600 km/s); 9 CME podem ter componente p Terra;
23/05 – Sem "Flare" M/X; Vento rápido (=< 550 km/s); 9 CME podem componente p Terra;
24/05 – Sem "Flare" M/X; Vento rápido (=< 450 km/s); 6 CME com componente p Terra;
25/05 – "Flares" X1.1, M1.6, M3.5, M9.0; Vento rápido (=< 500 km/s); 8 CME podem ter componente p/ a Terra;
26/05 – Sem "Flare" M/X; Vento rápido (=< 500 km/s); 1 CME com componente para a Terra
Prev.: Vento rápido para o(s) próximo(s) 1-2 dia(s); probabilidade de "flares" M/X (65% M, 25% X) nos próximos 02 dias; eventualmente alguma(s) outra(s) CME pode(m) apresentar componente dirigida para a Terra.

Geomagnetic Field

Responsible: Karen Sarmiento/ Lívia Alves

Summary

GOES magnetometers recorded fluctuations characteristic of the diurnal variation, with the amplitude of the northward component of the magnetic field oscillating predominantly between 60 and 120 nT, reaching a minimum value of 40.3 nT (GOES-18) at 07:00 UT on May 20, on the nightside, without significant additional variations. Auroral activity intensified in both hemispheres, with multiple substorm episodes. The AE index remained predominantly below 500 nT, oscillating between 500 and 1000 nT for short periods on May 19, 20, 21, and 23, showing typical signatures of moderate substorms. A single period of active conditions was recorded, with the Kp index reaching a maximum value of 4o between 00:00 and 03:00 UT on May 21. The Dst index fluctuated between negative and positive values, with a minimum of -19 nT at 02:00 UT (not reaching the threshold for a magnetic storm) and a maximum of 30 nT at 09:00 UT on May 26. Data from the Embrace magnetometer network showed a slight increase in the H component around 06:00 UT on May 20 and around 16:30 UT on May 25, revealing instabilities in the horizontal component of the magnetic field across all latitudes. These increases coincide, respectively, with the occurrence of a C-class X-ray event accompanied by the action of a high-speed stream, and with an M-class event. On the other days, the magnetic field predominantly exhibited a typical pattern of diurnal variation.

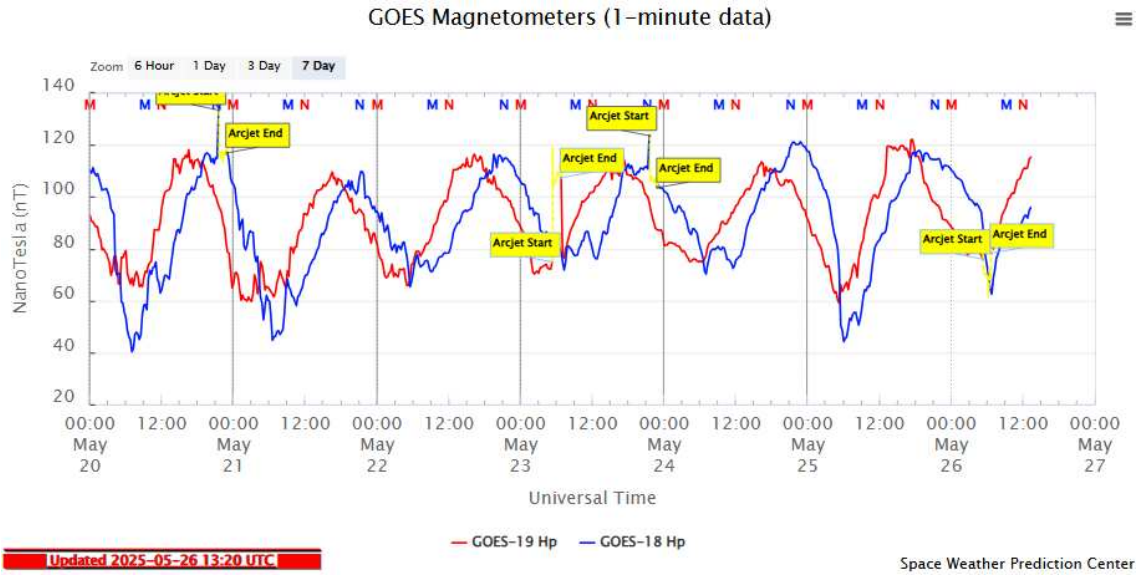

Figure 1- Magnetic field horizontal component at the GOES satellite orbit through.

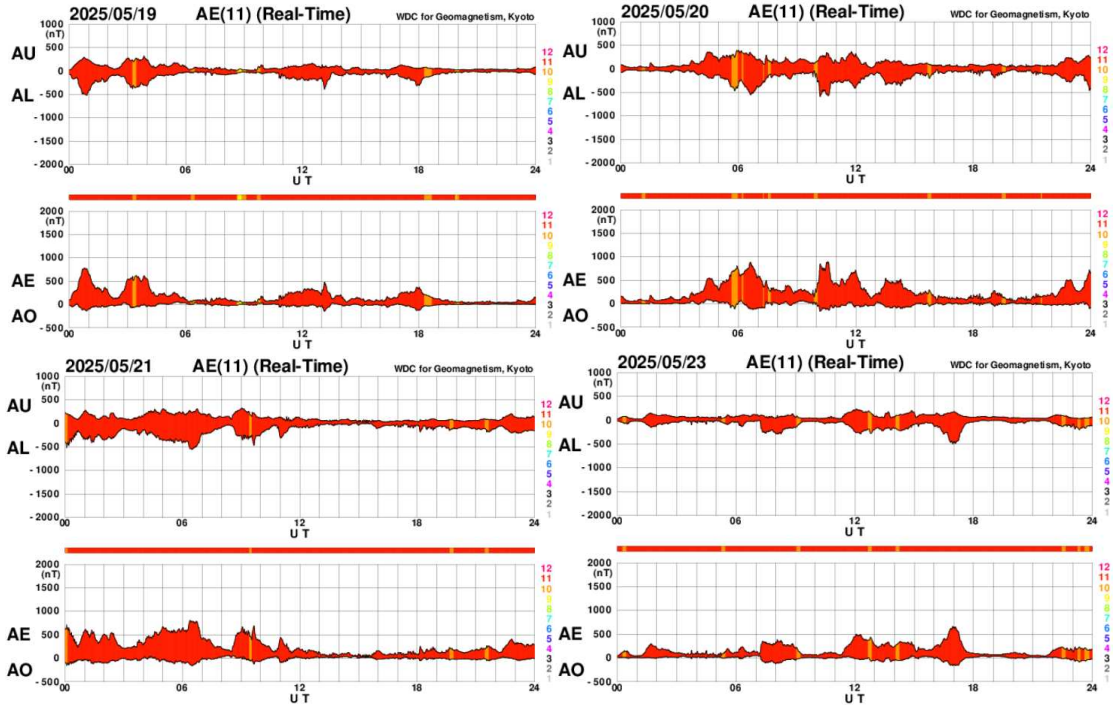

Figure 2- AE index.

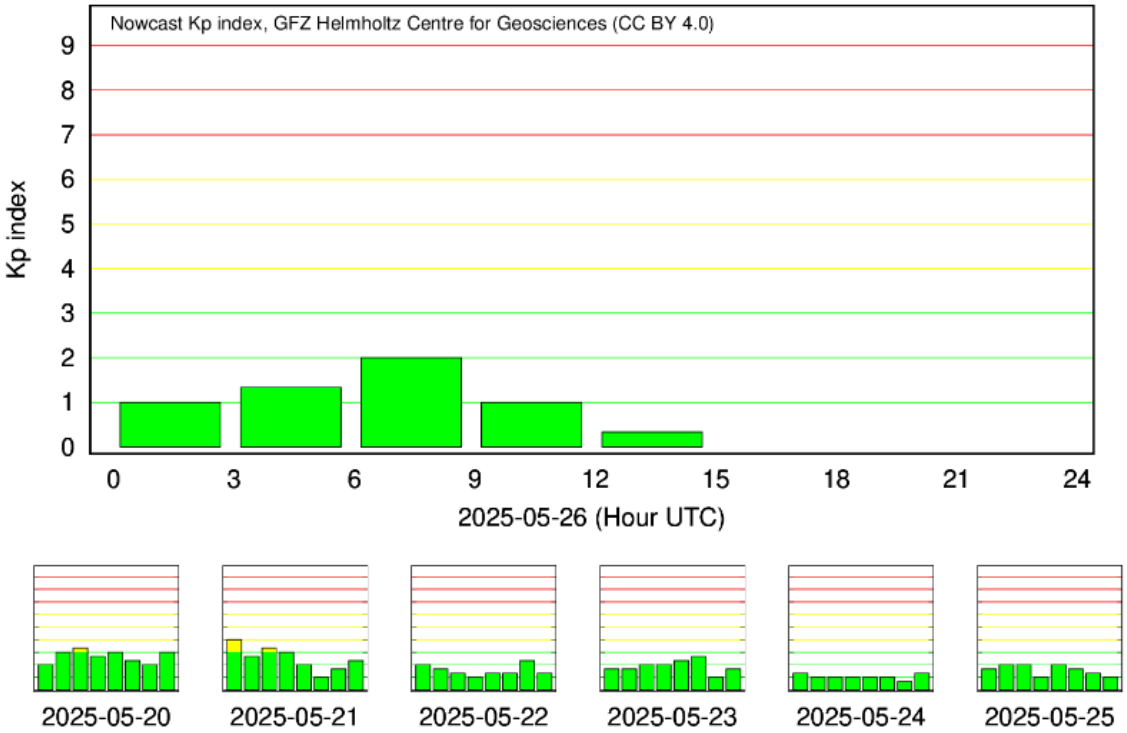

Figure 3- Kp index in logarithmic scale.

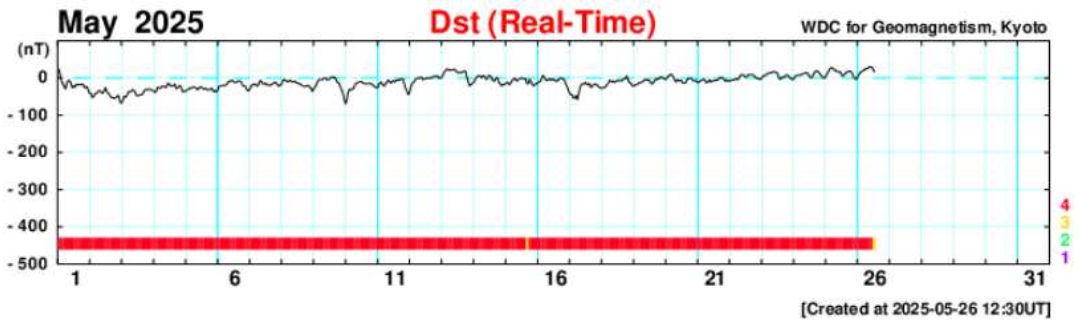

Figure 4- Dst Index

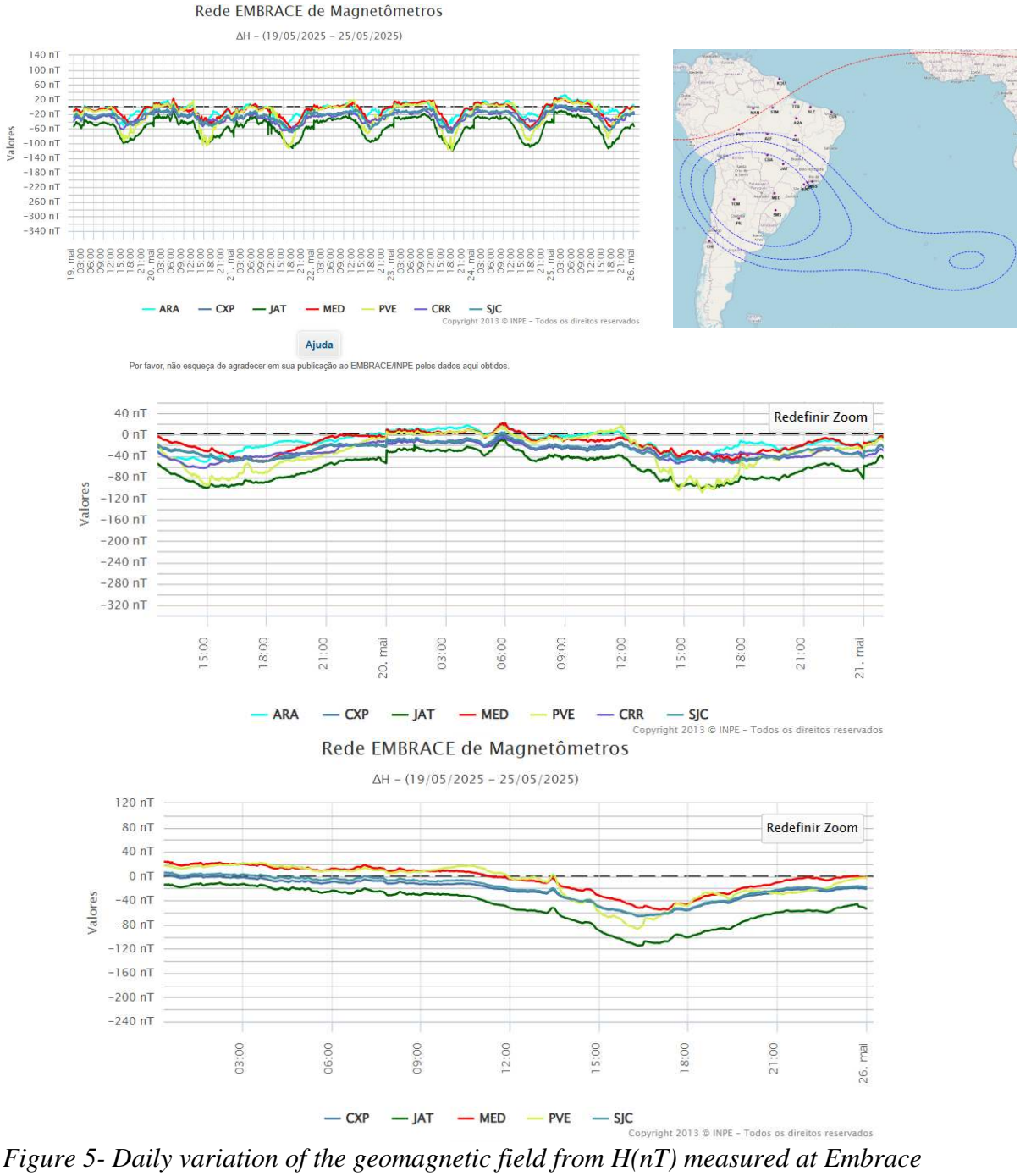

Figure 5- Daily variation of the geomagnetic field from H(nT) measured at Embrace MagNet.

Ionosfera – Digissonda (Laysa Resende)

Summary

Spread F was observed in Boa Vista throughout the week. The Es layers reached a maximum intensity of scale 5 on several days in Boa Vista (Figure 1). In Cachoeira Paulista, spread F was observed between the 23rd and 25th, while the Es layer remained weak, with a scale of 2.

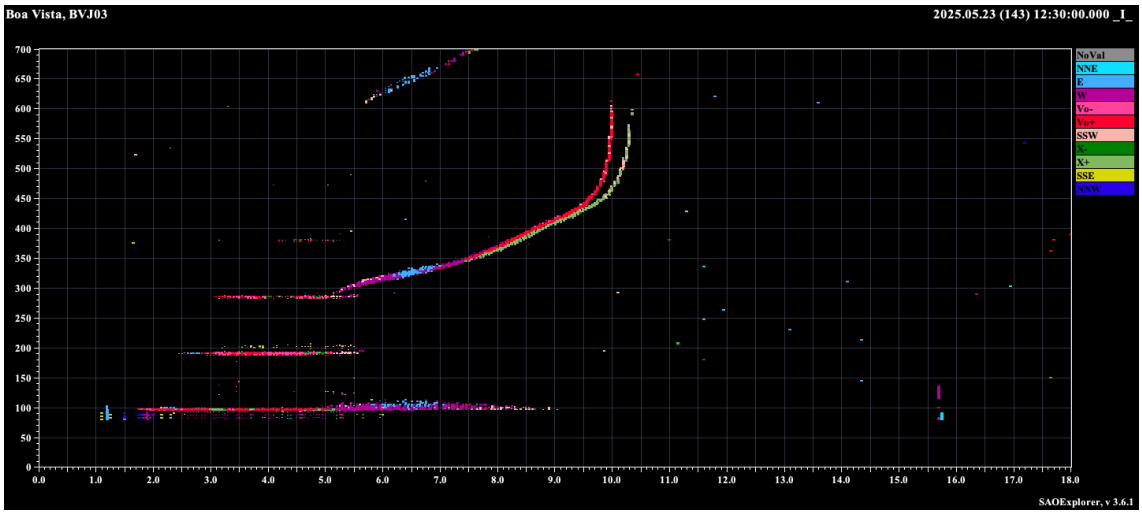

Figure 1 – Ionogram over Boa Vista, showing the Es layer occurred on May 23, 2025.