



Sol – Cecatto

Período: 17-24 fevereiro 2025

Summary

02/17 - M1.0 flare; Fast (≤ 550 km/s) wind stream; No CME have component toward the Earth;
02/18 - No M/X flare; Fast (≤ 550 km/s) wind stream; 1 CME can have component toward the Earth;
02/19 - No M/X flare; Fast (≤ 550 km/s) wind stream; 2 CME can have component toward the Earth;
02/20 - No M/X flare; Fast (≤ 500 km/s) wind stream; 14 CME can have component toward the Earth;
02/21 - M3.3, M1.4 flares; No fast wind stream; 13 CME can have component toward the Earth;
02/22 - No M/X flare; No fast wind stream; 9 CME can have component toward the Earth;
02/23 - M4.9, M1.0, M1.6, M1.0, X2.0 flares; No fast wind stream; 7 CME can have component toward the Earth;
02/24 - M1.3, M3.3 flares; No fast wind stream; 3 CME can have component toward the Earth.
Forecast: No fast wind stream for the next 1-2 days; for while (65% M, 15% X) probability of M / X flares for the next 2 days; also, occasionally some other CME can present a component toward the Earth.

Resumo

17/02 - "Flare" M1.0; Vento rápido (≤ 550 km/s); Sem CME com componente p/ Terra;
18/02 - Sem "Flare" M/X; Vento rápido (≤ 550 km/s); 1 CME com componente p/ Terra;
19/02 - Sem "Flare" M/X; Vento rápido (≤ 550 km/s); 2 CME com componente p/ Terra;
20/02 - Sem "Flare" M/X; Vento rápido (≤ 500 km/s); 14 CME podem ter componente p Terra;
21/02 - "Flares" M3.3, M1.4; Sem vento rápido; 13 CME podem componente p Terra;
22/02 - Sem "Flare" M/X; Sem vento rápido; 9 CME com componente p Terra;
23/02 - "Flares" M4.9, M1.0, M1.6, M1.0, X2.0; Sem vento rápido; 7 CME podem ter componente p/ a Terra;
24/02 - "Flares" M1.3, M3.3; Sem vento rápido; 3 CME podem ter componente para a Terra
Prev.: Sem vento rápido para os próximo(s) 1-2 dia(s); no momento a probabilidade de "flares" M/X (65% M, 15% X) para os próximos 02 dias; eventualmente alguma(s) outra(s) CME pode(m) apresentar componente dirigida para a Terra.



Geomagnetic Field

Responsible: Karen Sarmiento/ Livia Alves

Summary

Rapid fluctuations in the amplitude of the northward component of the magnetic field were recorded on February 19 and 20 on the nightside, evidencing the intensification of current systems in the magnetotail. The GOES satellites detected a minimum value of 23.5 nT in this component at 1015 UT on 02/24. On the same day (02/24), an increase in the field amplitude was observed on the dayside, reaching 126 nT at 22:15 UT. The AL index dropped significantly, reaching a peak of approximately -1000 nT, indicating an intensification of westward current systems in the auroral zone. This behavior is related to the increase in the AE index, which ranged between 1000 and 1500 nT, reflecting the strengthening of the auroral electrojet current system and characterizing periods of magnetic substorm between 14–18 UT on 02/17 and 22–24 UT on 02/18. These episodes suggest a stretching and subsequent release of energy in the magnetotail, with signatures of intense substorms on the nightside. Additionally, the AE index exceeded 500 nT at certain moments on 02/19, confirming the occurrence of moderate substorms. The magnetic field remained predominantly unstable, alternating between different geomagnetic conditions: active (02/18), minor G1 storm (02/19), active (02/20), and unstable to calm between February 21 and 23, as indicated by the Kp index, which reached a maximum of 5o on 02/19 (0–3 UT). The Dst index remained predominantly negative, reaching the level of a moderate storm, with minimum values between -56 and -64 nT on 02/19 (7–9 UT). Data from the Embrace-Magnet magnetometer network recorded rapid variations in the H component between 12 and 18 UT, with a predominance of diurnal variation and a slight increase, possibly associated with the glancing impact of an interplanetary structure on 02/17 at 0334 UT. Additionally, a drop in the H component was recorded, reaching a minimum value of -144 nT at 17:49 UT at the Porto Velho (PVE) station, located in the influence region of the Equatorial Electrojet (EEJ). Furthermore, magnetometers at the Porto Velho/RO station recorded an inversion in the horizontal component of the magnetic field, reaching approximately -88.49 nT at 1653 UT on 02/23. This inversion may be associated with a reversal of the E-region current system, possibly due to changes in the ionospheric electric field.

GOES Magnetometers (1-minute data)

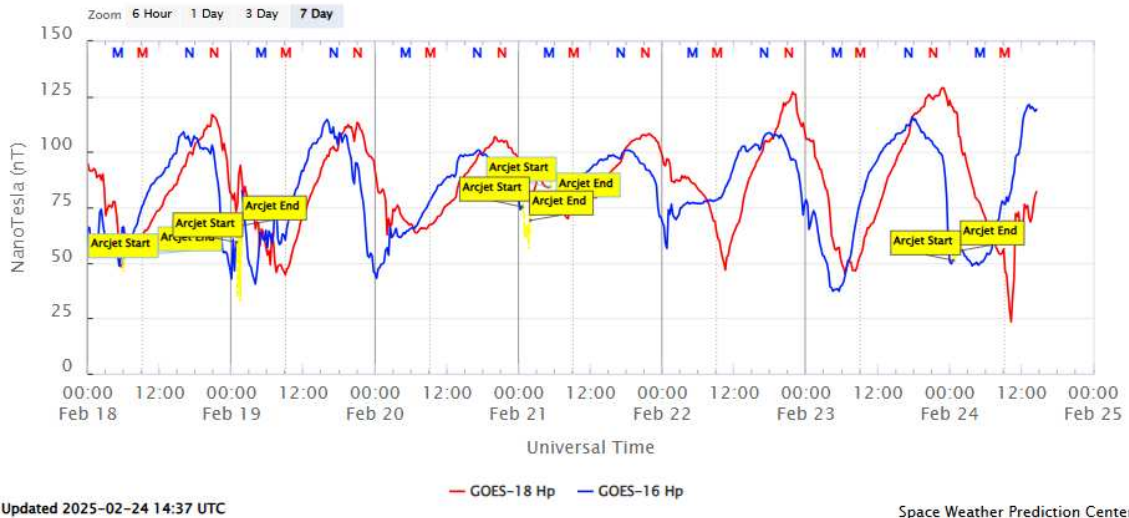


Figure 1- Magnetic field horizontal component at the GOES satellite orbit through.

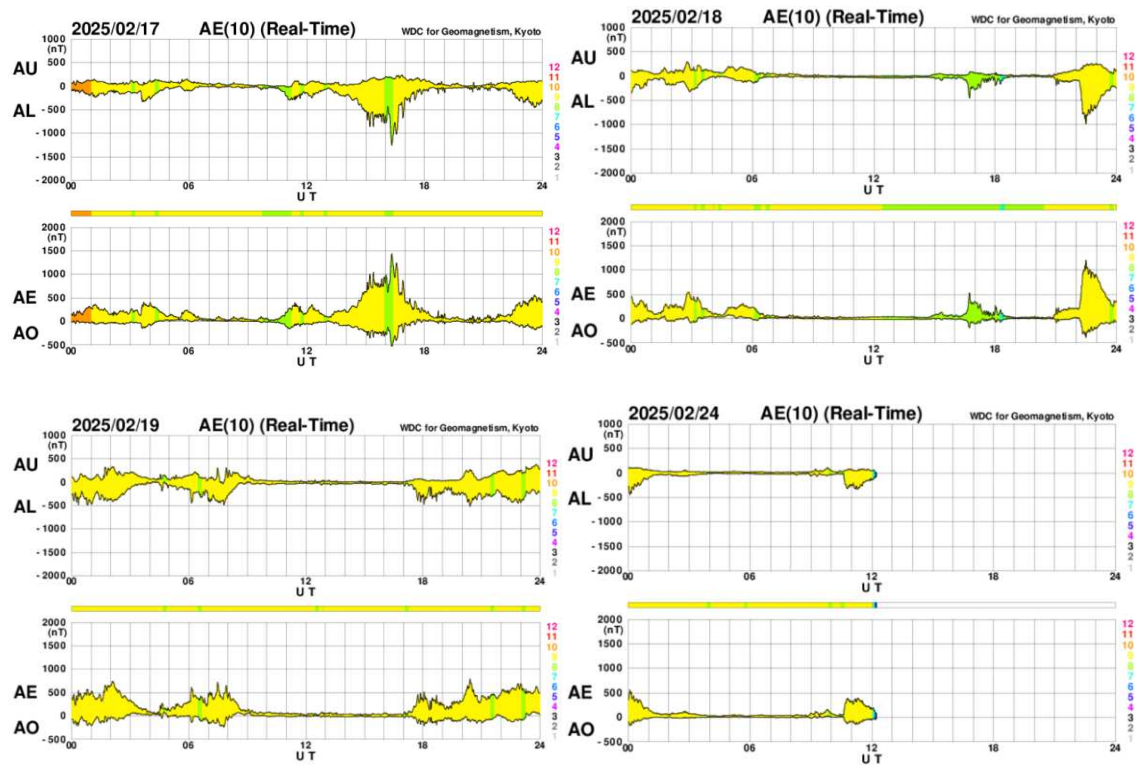


Figure 2- AE index.

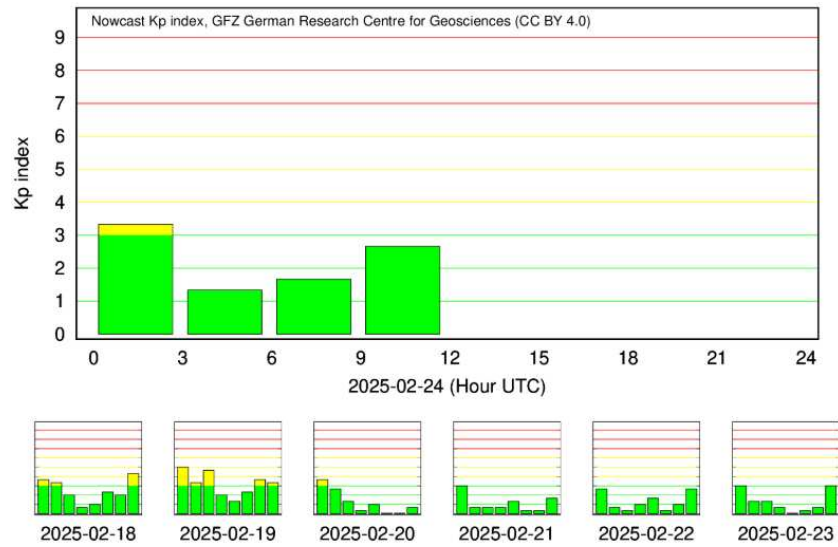


Figure 3- Kp index in logarithmic scale.

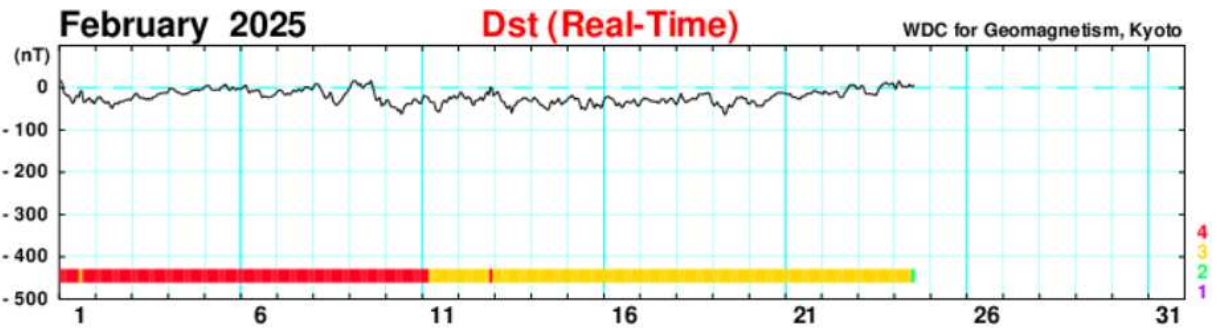
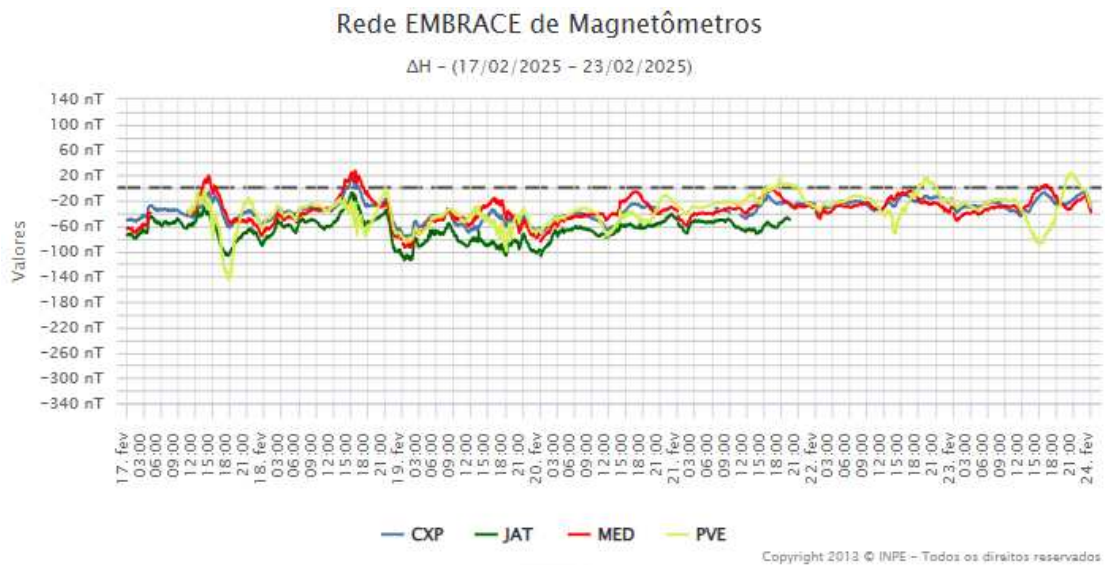


Figure 4- Dst Index



[Ajuda](#)

Por favor, não esqueça de agradecer em sua publicação ao EMBRACE/INPE pelos dados aqui obtidos.

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

Ionosfera – Digisonda (Laysa Resende)

Summary

This week, we observed spread F in Fortaleza and Cachoeira Paulista (Figure 1). The Es layers were weak in both regions.

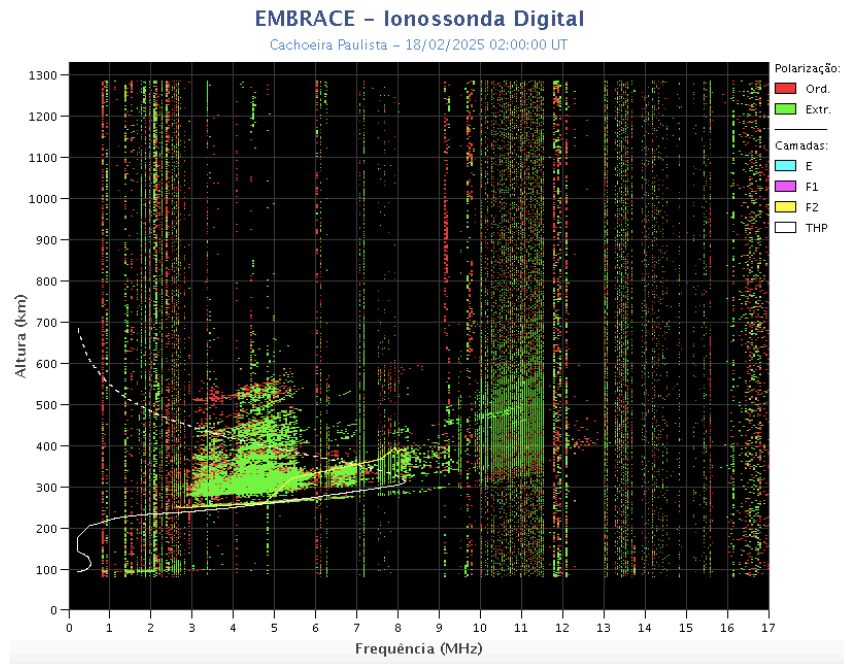


Figure 1 – Ionogram over Cachoeira Paulista, showing the spread F