

Briefing Space Weather

2022/08/01

1 Sun

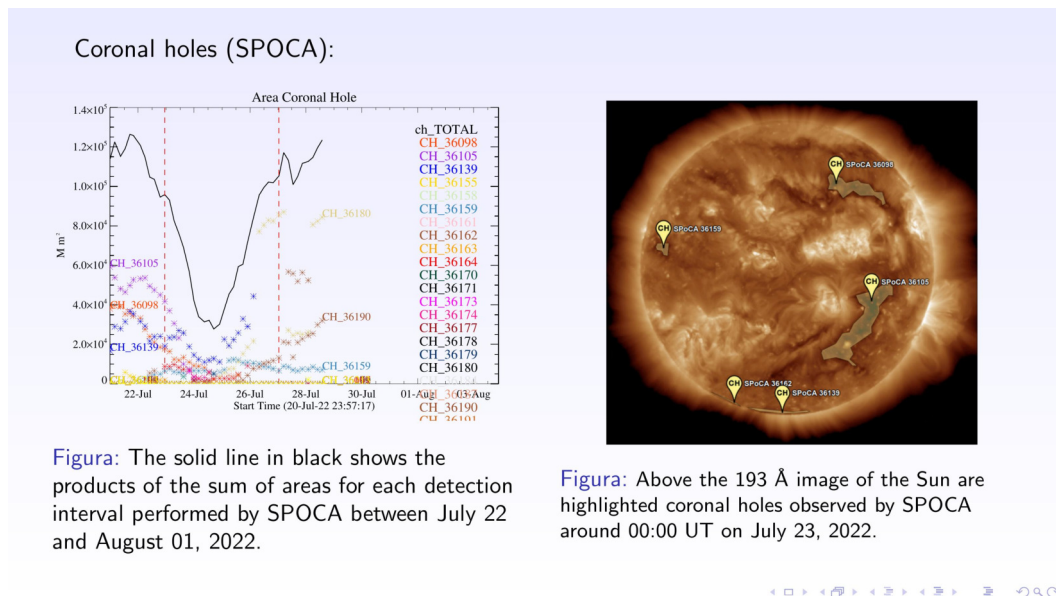
1.1 Responsible: José Cecatto

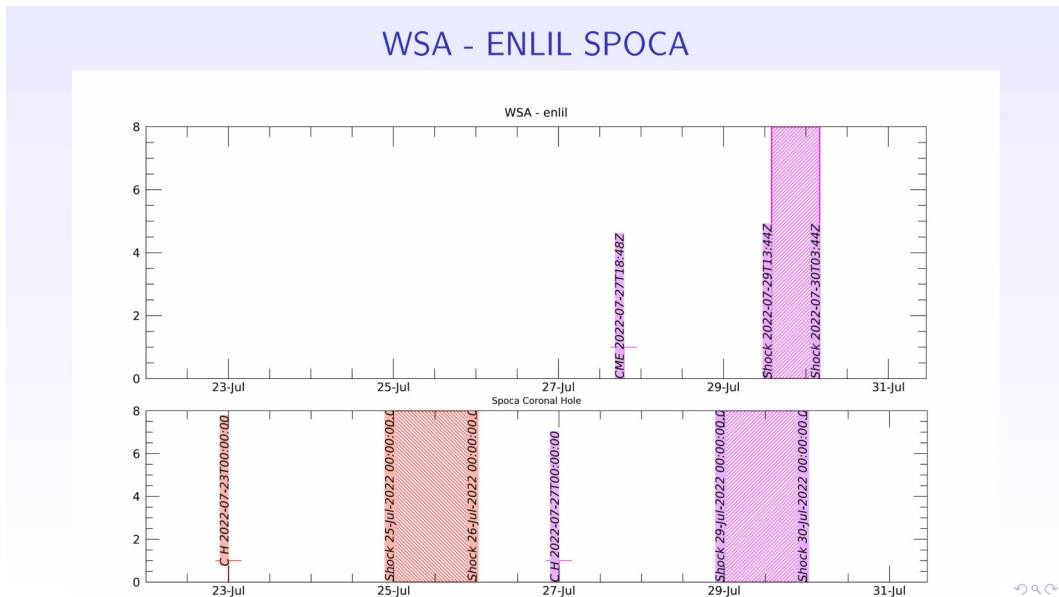
07/25 – No flare (M/X); Fast wind stream ($= < 500$ km/s); 2 CME c.h.c. toward the Earth;
 07/26 – No flare (M/X); Fast wind stream ($= < 550$ km/s); 3 CME c.h.c. toward the Earth;
 07/27 – No flare (M/X); Fast wind stream ($= < 450$ km/s); 4 CME c.h.c. toward the Earth;
 07/28 – No flare (M/X); Fast wind stream ($= < 450$ km/s); 4 CME c.h.c. toward the Earth;
 07/29 – No flare (M/X); No fast wind stream; 5 CME c.h.c. toward the Earth;
 07/30 – No flare (M/X); No fast wind stream; 13 CME c.h.c. toward the Earth *;
 07/31 – No flare (M/X); Fast wind stream ($= < 500$ km/s; 8 CME c.h.c. toward the Earth;
 08/01 – No flare (M/X); Fast wind stream ($= < 500$ km/s; 2 CME c.h.c. toward the Earth;
 Prev.: Fast wind stream expected up to August 03-04; for the next 2 days very low (5% M, 1% X) probability of M / X flares; also, occasionally other CME can present component toward the Earth.
 c.h.c. – can have a component; * partial halo; ** halo

2 Sun

2.1 Responsible: Douglas Silva

- WSA-ENLIL (Prediction for CME 2022-07-27T18:48Z)
 - No or little impact to Earth.



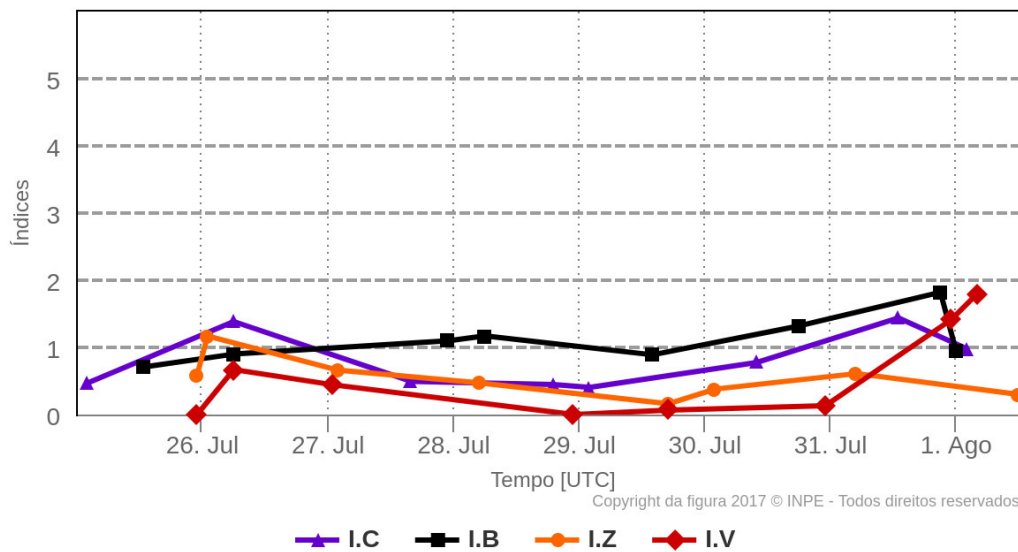


3 Interplanetary Medium

3.1 Responsible: Paulo Jauer

Resumo dos índices do meio interplanetário

Máximos diários - mais recentes entre 25 Jul, 2022 e 1 Ago, 2022



- The interplanetary region in the last week showed a moderate/low level of plasma perturbations due to the passage of the CME and HSS structures identified by the DISCOVER satellite in the interplanetary region along with sector boundary crossing.
- The modulus of the interplanetary magnetic field component showed 1 maximum peak at 21:30 on 31/Aug 13nT.
- The bxy components do not show a clear sector switching during the period and both vary within the range of [+10, -10] nT.
- The component of the south bz field oscillated showing a southerly direction but oscillating within the [+5, -5] nT interval.

- The density of the solar wind showed two significant peaks. On the 30th and 31st of July at 10:30 and 15:30 UT from 16 and 17 p/cm^3 .
- The solar wind speed was mostly above 400km/s during the analyzed period, with a peak around ~ 533 and 528 km/s on 26/July and 01/August at 06:30 and 04:30 UT respectively.
- The magnetopause position was mostly above the typical position. Featuring two significant compressions on the 26th and 31st of July at 06:30 and 04:30 UT of 8.7 Re respectively.

4 ULF waves

4.1 Responsible: Graziela B. D. Silva

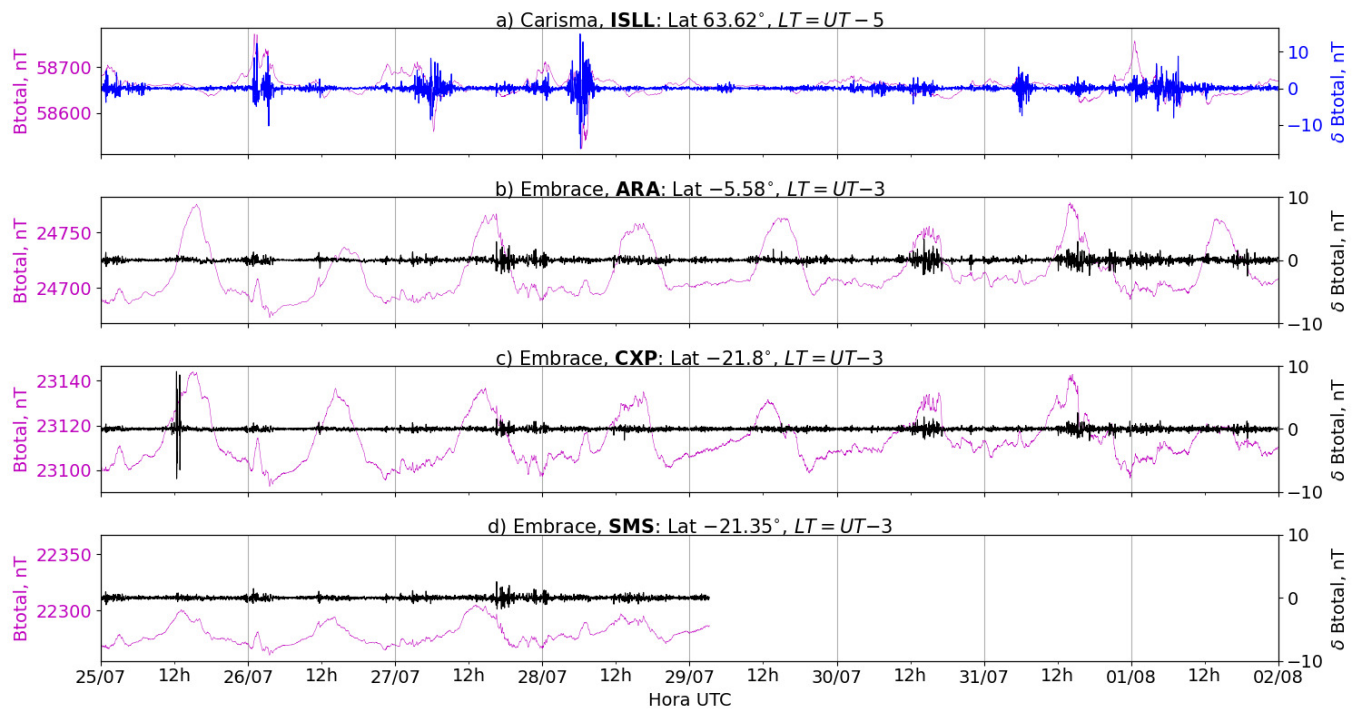


Figura 1: a) Timeseries of the geomagnetic field total component measured at ISLL station (Island Lake) of the CARISMA magnetometer network in magenta, along with the associated perturbation in the Pc5 band shown in blue. b-d) timeseries of the geomagnetic field total component measured at stations ARA (Araguatins), CXP (Cachoeira Paulista) and SMS (São Martinho da Serra) of the EMBRACE network in magenta, along with the Pc5 perturbation in blue.

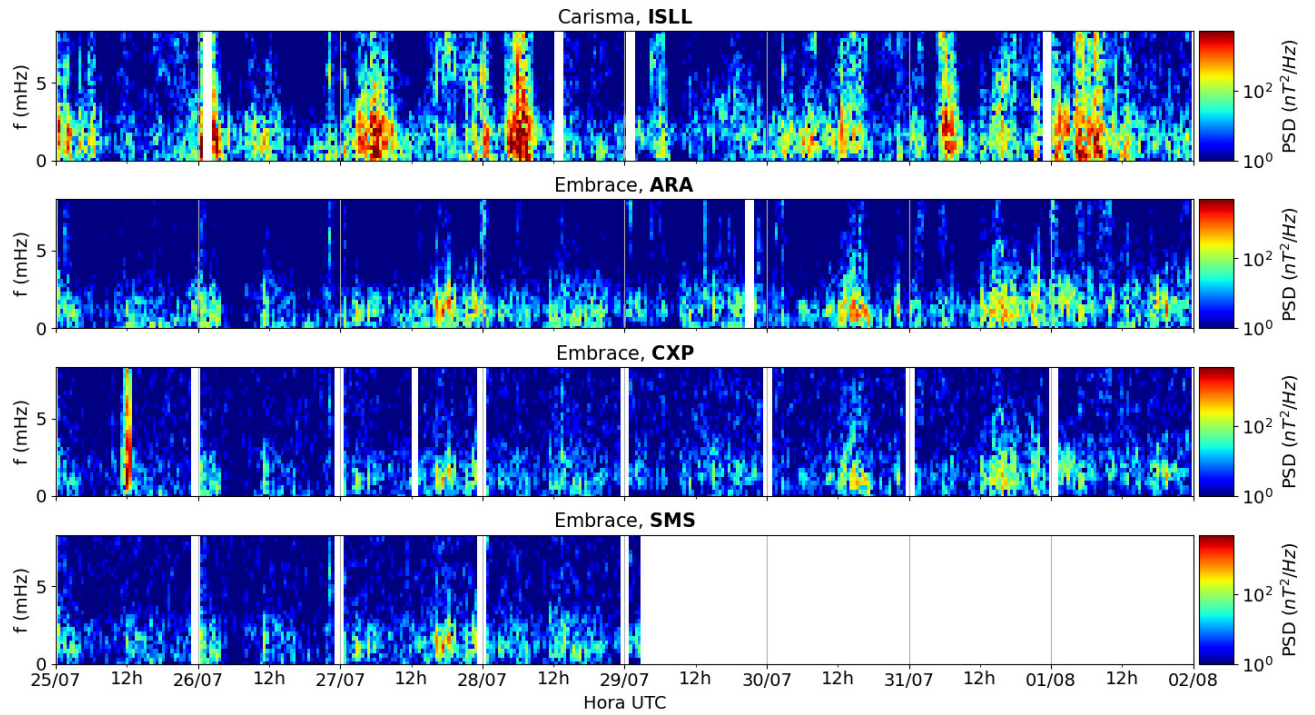


Figura 2: a-d) Time evolution of the power spectral density obtained from the filtered timeseries of the geomagnetic field total component (δB_{total}) for a) the high latitude station (ISLL-CARISMA), and b-d) for the low latitude stations of EMBRACE (ARA, VSS, SMS).

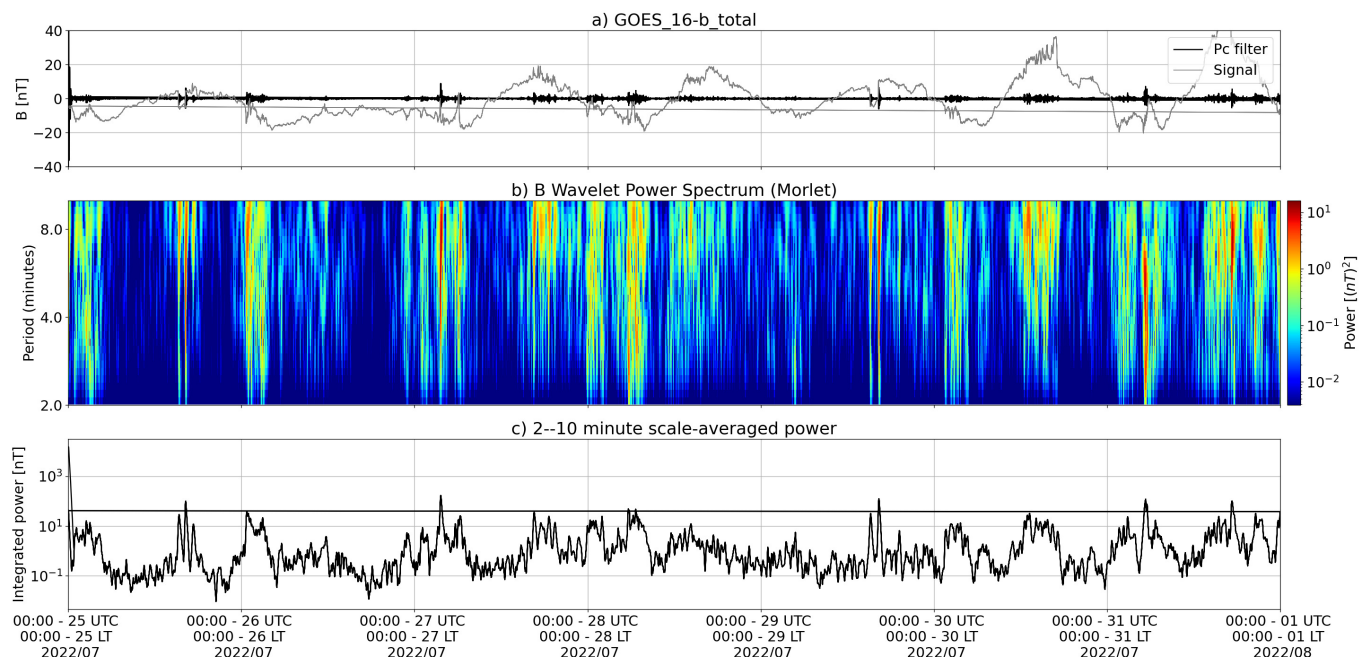


Figura 3: a) Timeseries of the geomagnetic field total component measured by GOES 16, together with the Pc5 fluctuation in black. b) Wavelet power spectrum of the filtered timeseries. c) Average ULF power in the period range from 2 to 10 minutes.

- There was significant activity of Pc5 ULF waves between 07/25 and 08/01, except 07/29, as measured by GOES 16 at geosynchronous orbit ($L \sim 6.6$).
- For the ground-based stations, an intense activity of ULF waves was registered at ISLL station

(high latitude, $L=5.15$) especially through 27-28/07 and 31/07-01/08.

- The Embrace stations over the low latitude region of Brazil registered high-intensity ULF wave activity mainly on 07/27 and 07/31, and 08/01.

5 Geomagnetic activity

5.1 Responsible: Lívia Alves

In the week of 25 July until 01 August, the following events related to geomagnetic activity stand out:

- The data from the Embrace magnetometer network showed a few instabilities throughout the period.
- The AE index reached close to 1000 nT on 07/26. The Dst index oscillated mostly around positive values from 07/27. The maximum Kp of the week was at 4o.
- A compression of the geomagnetic field measured at the GOES orbit was registered on 01/37.

Briefing semana de 25/07 a 01/08 de 2022

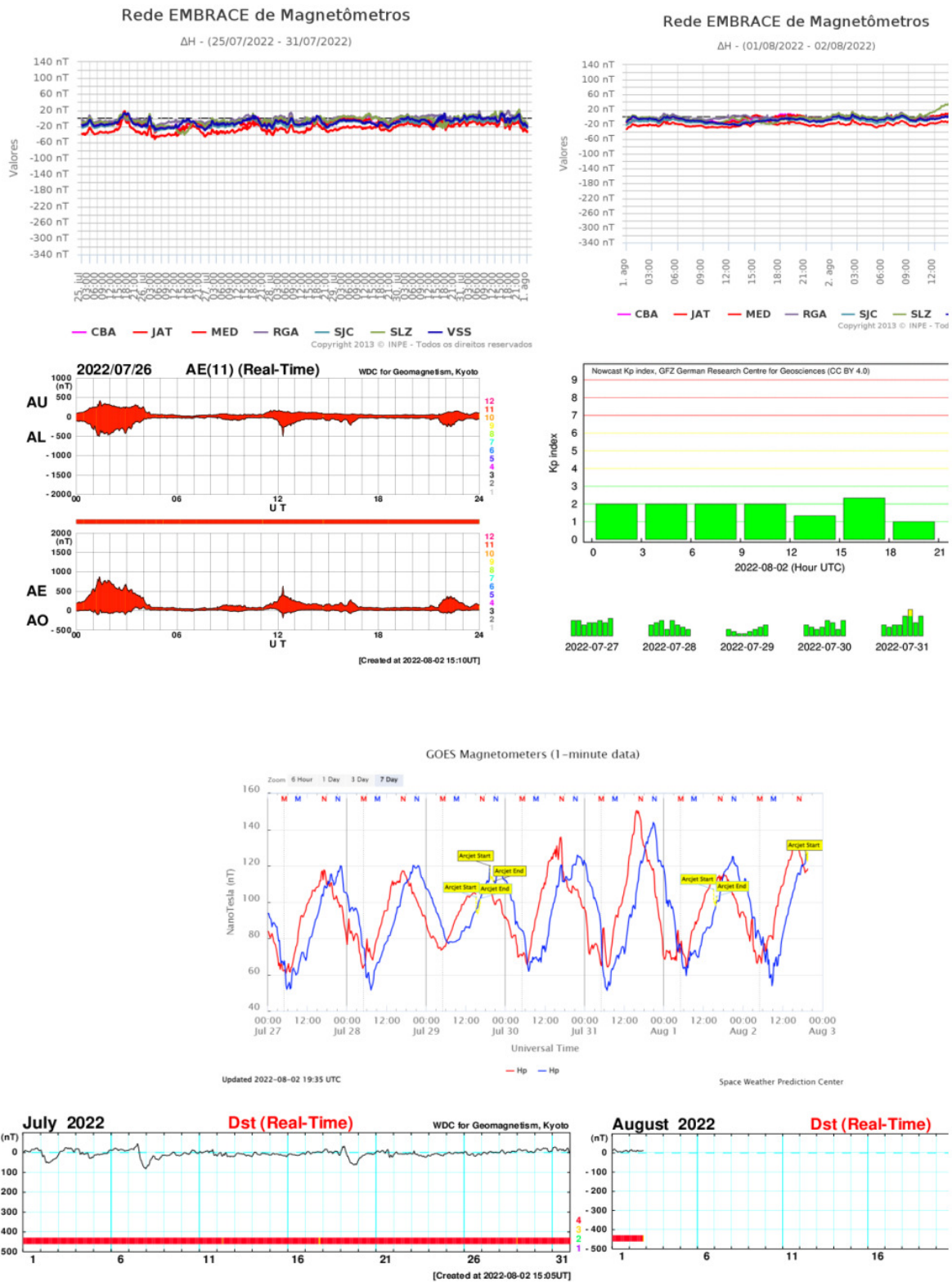
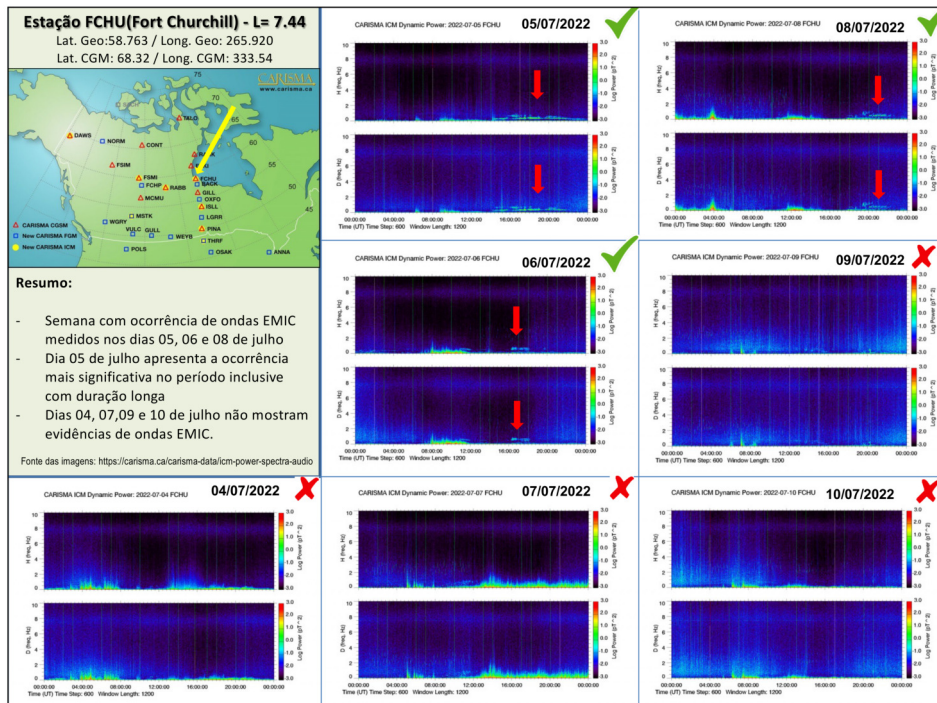
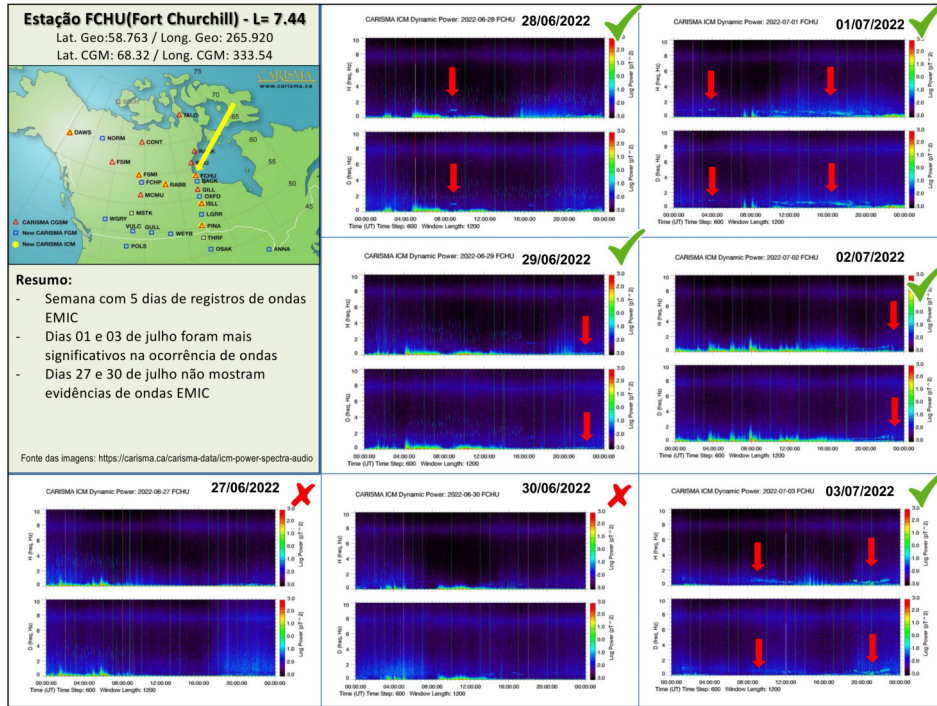
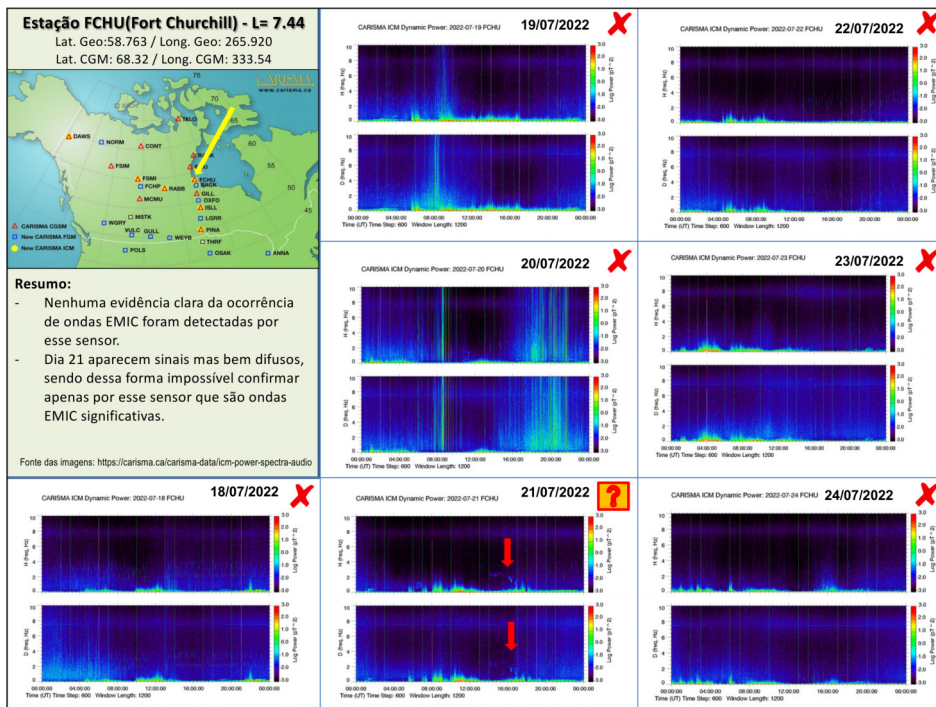
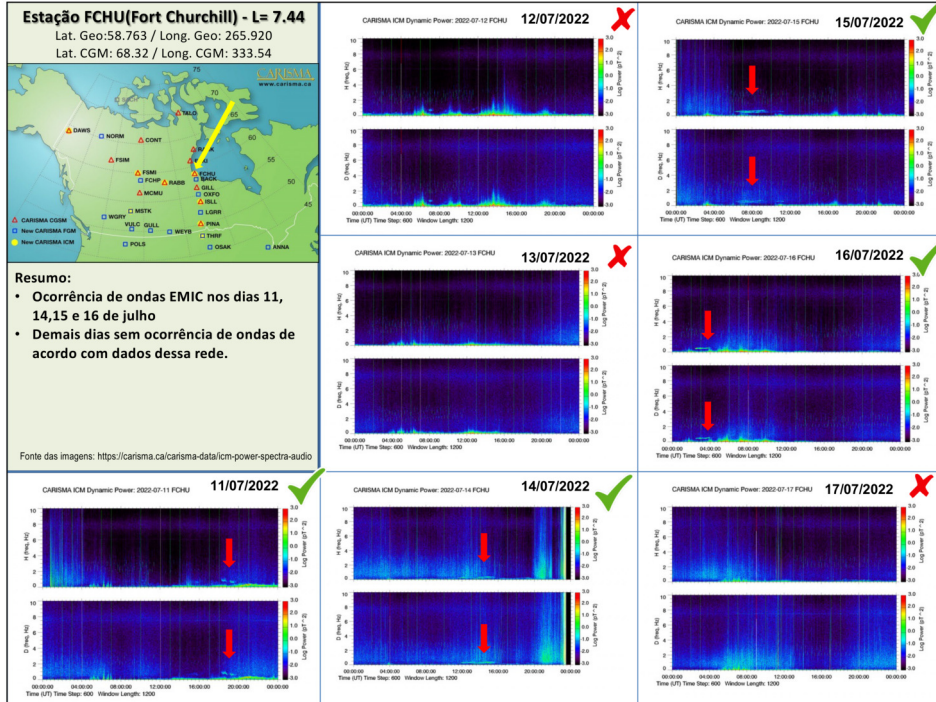


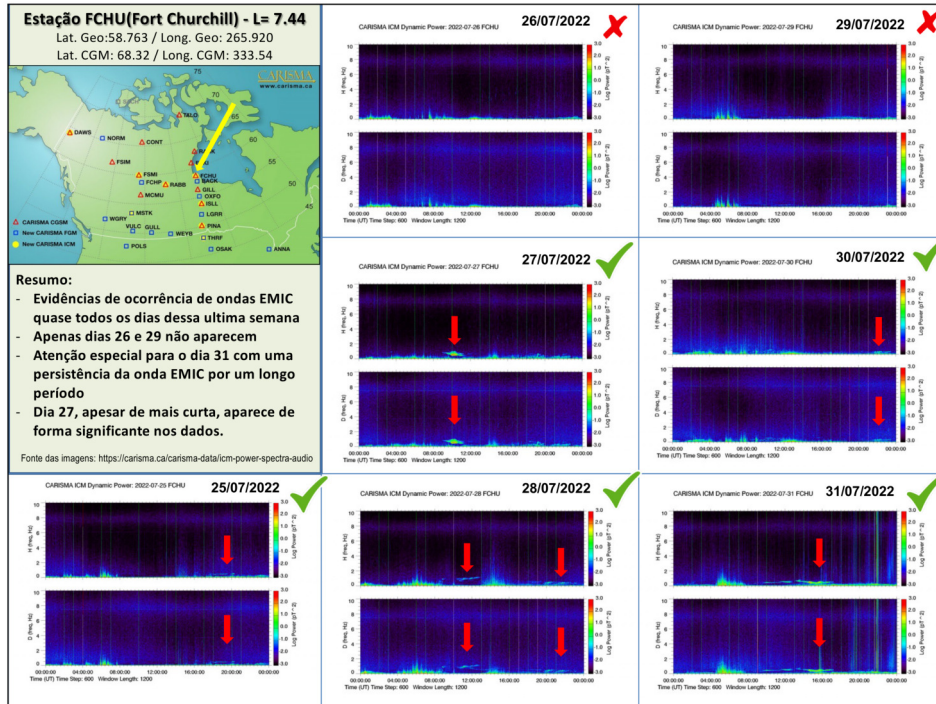
Figura 4: The figures from top to bottom show the weekly evolution of the H magnetic field component measured by the Embrace network, of the auroral AE index together with the Kp index, the geomagnetic field measured by GOES 16 at $L \sim 6.6$, and the Dst index.

6 EMIC waves

6.1 Responsible: Claudia Medeiros







7 Ionosphere

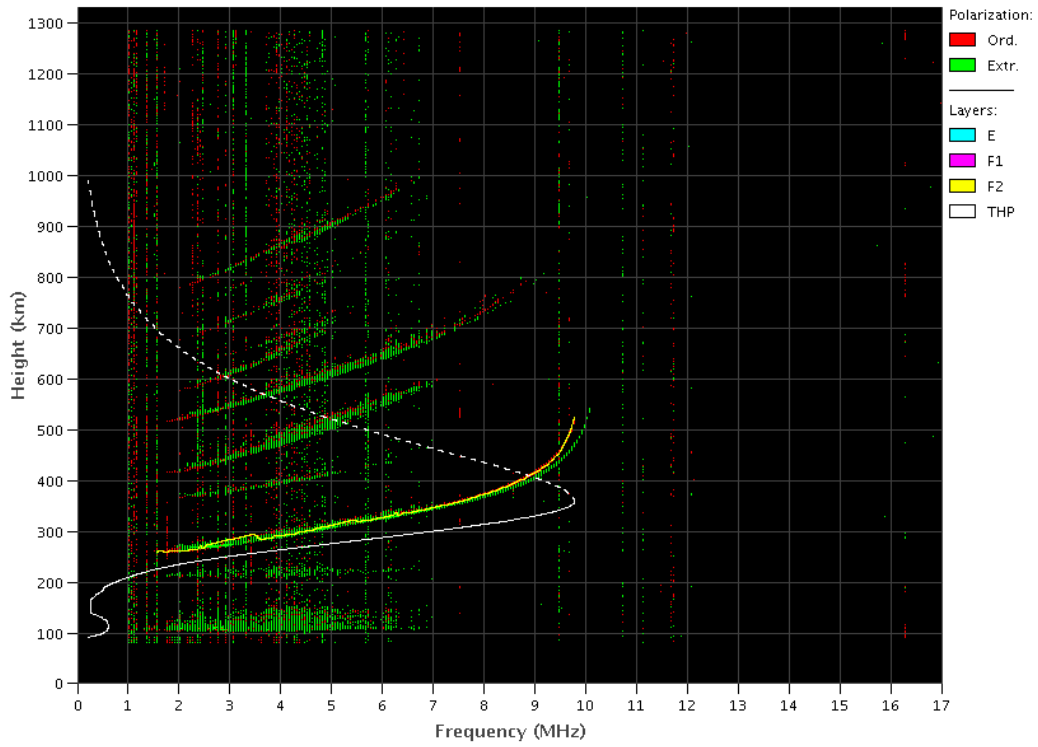
7.1 Responsible: Laysa Resende

Boa Vista:

- The spread F does not occur during this week.
- The Es layers reached scale 4 on July 26.

EMBRACE - Digital Ionosonde

Boa Vista - 07/26/2022 22:50:00 UT

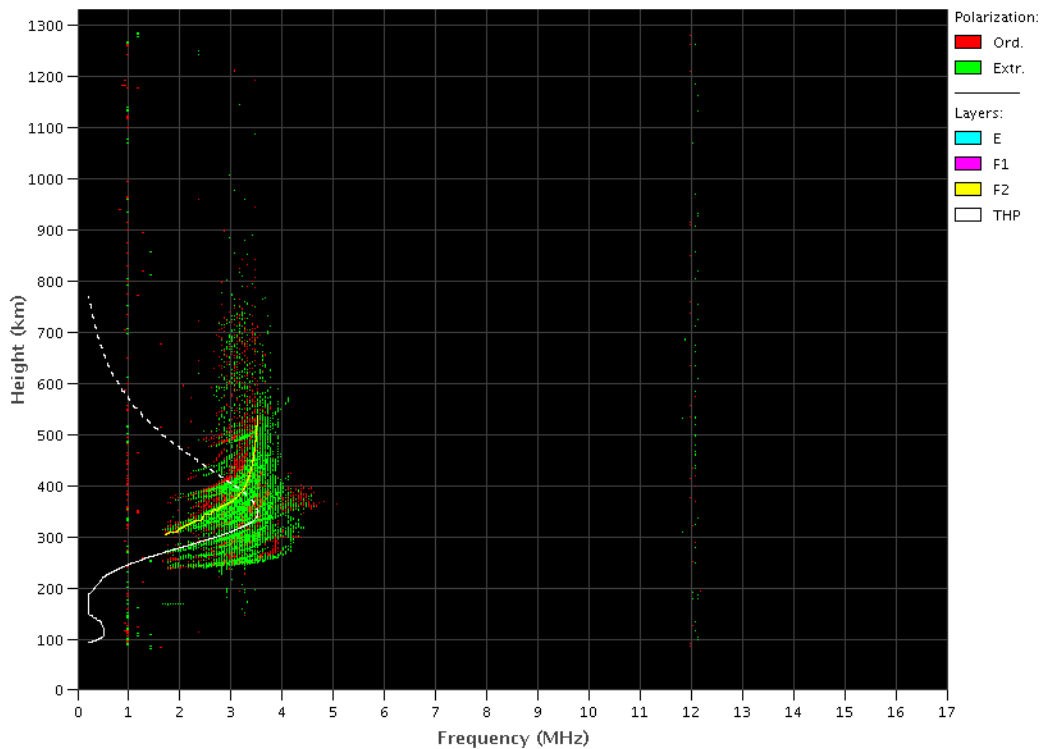


Cachoeira Paulista:

- The spread F occurred on July 26.
- The Es layers reached scale 2 during this week.

EMBRACE - Digital Ionosonde

Cachoeira Paulista - 07/26/2022 00:50:00 UT



São Luís:

- There were a spread F on July 27.
- The Es layers reached scale 4 on July 26.

