

Weather Report (2010/03/06)

During March 6th, there were no reports of significant weather events over Alcântara. But, some convective clouds were observed in the south of the region and will be showed by RHI figures in the end of this report. The total cloud cover raised from 0/8, in the early morning, to 5/8 during the afternoon and evening. The first layer of clouds had a base cloud height between 420 and 600 m. The clouds observed for these levels were stratocumulus, in the morning, cumulus congestus and cumulonimbus in the end of the afternoon. Cirrus clouds were observed in the second layer with a base height of 9000 m.

The wind behavior can be observed at Figures 1 and 2. The wind direction was predominantly from NE, but between 16:00 and 18:00 UTC and at 20:00 UTC a north wind was observed at the Meteorological Facilities of CLA. The maximum wind speed was observed at 12:00 UTC (3.7 m/s) while the mean wind speed during the day was 0.92 m/s.

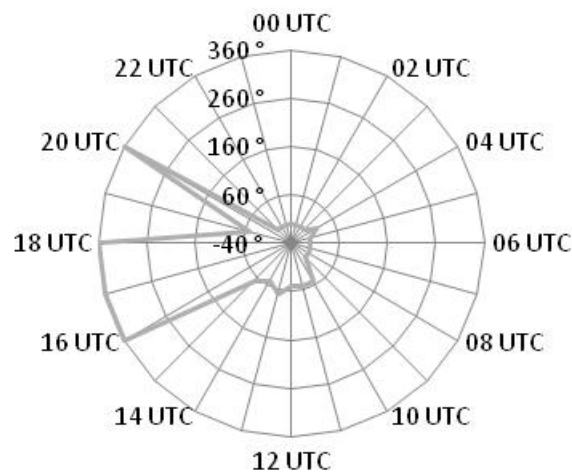


Figure 1 – Hourly wind direction for 2010/03/06.

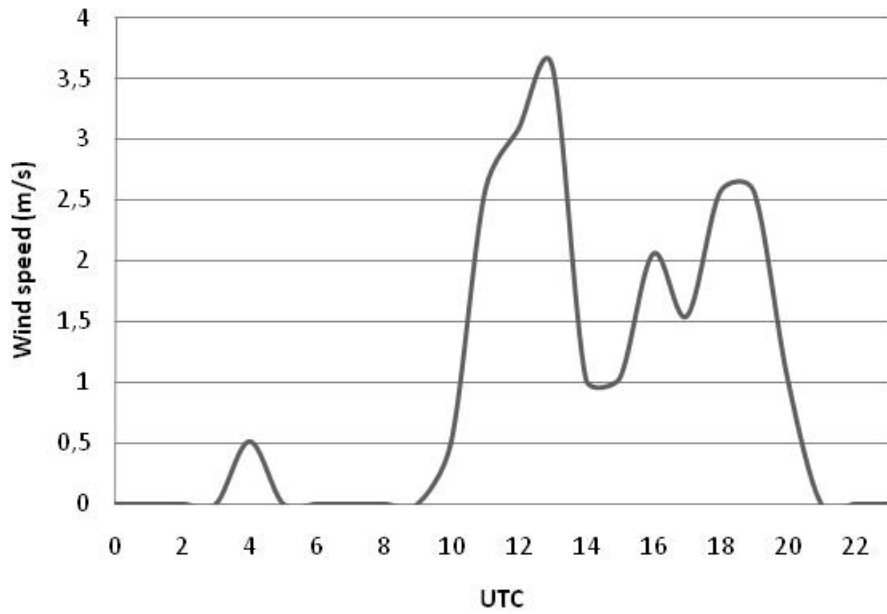


Figure 2 – Hourly wind speed for 2010/03/06.

The daily cycle of air temperature is presented at Figure 3, where we can see that the amplitude was at about 5.5 °C (26.0-31.5°C). Figure 3 also shows the mixing ratio with a maximum of 19.8 g/kg about 19:00 UTC. The sea level pressure is shown at Figure 4.

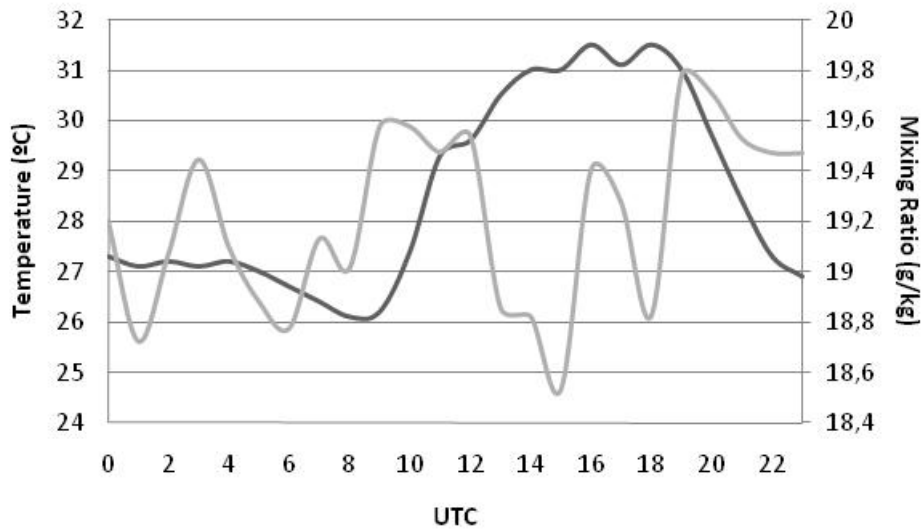


Figure 3 – Hourly temperature (black) and mixing ratio (gray) for 2010/03/06.

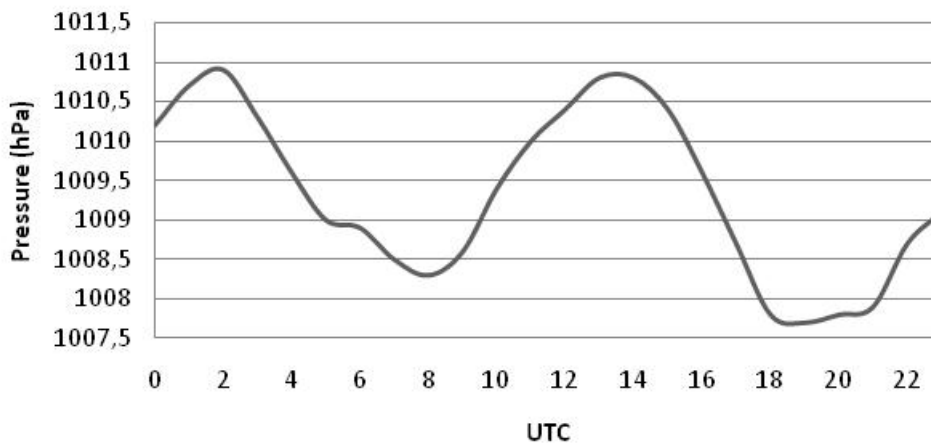


Figure 4 – Hourly sea level pressure for 2010/03/06.

The thermodynamical conditions can be seen at Figure 5. The atmosphere presented an unstable condition, but the subsident flux forced by the two moisture zones in the vicinity of Alcântara continued to suppress convection.

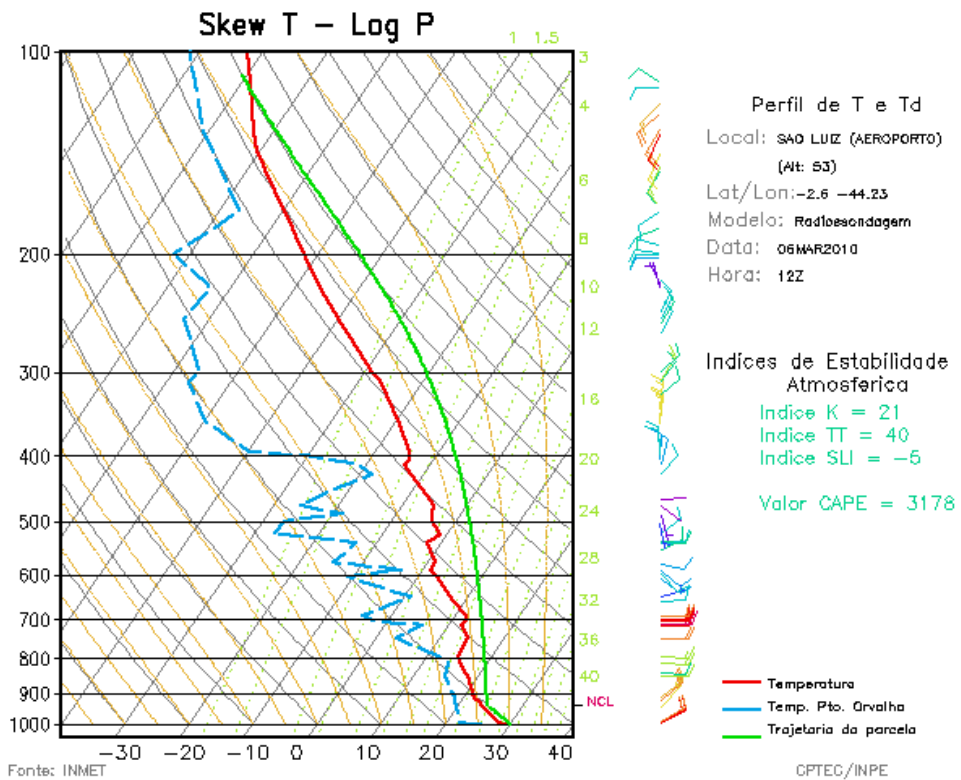


Figure 5 – Thermodynamic profile at São Luis Airport Station.

The CLA RADAR found convective activity southeast of the region, at about 90 km from the RADAR. (Figure 6).

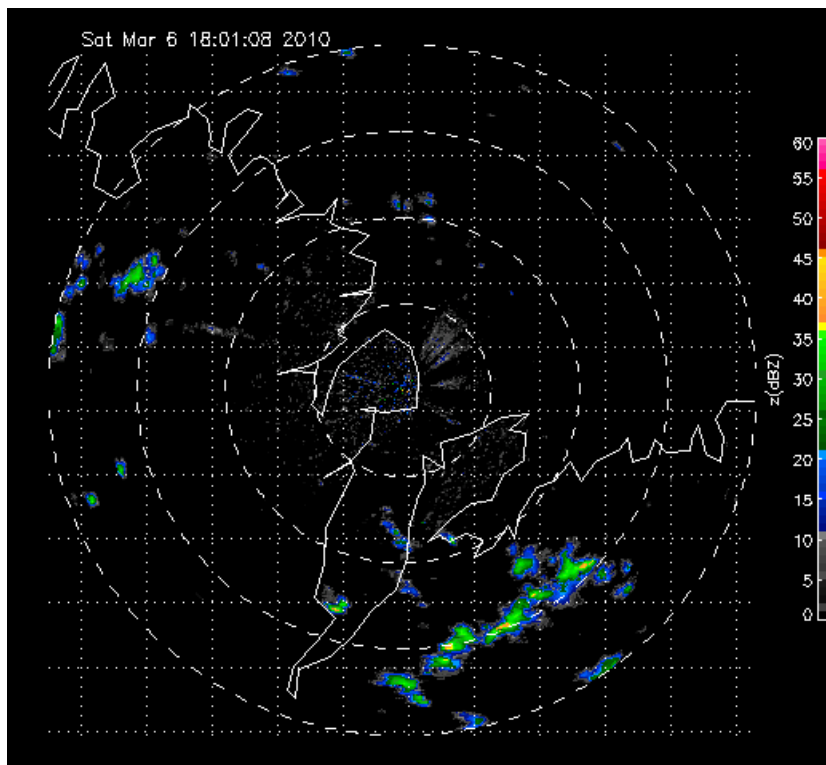
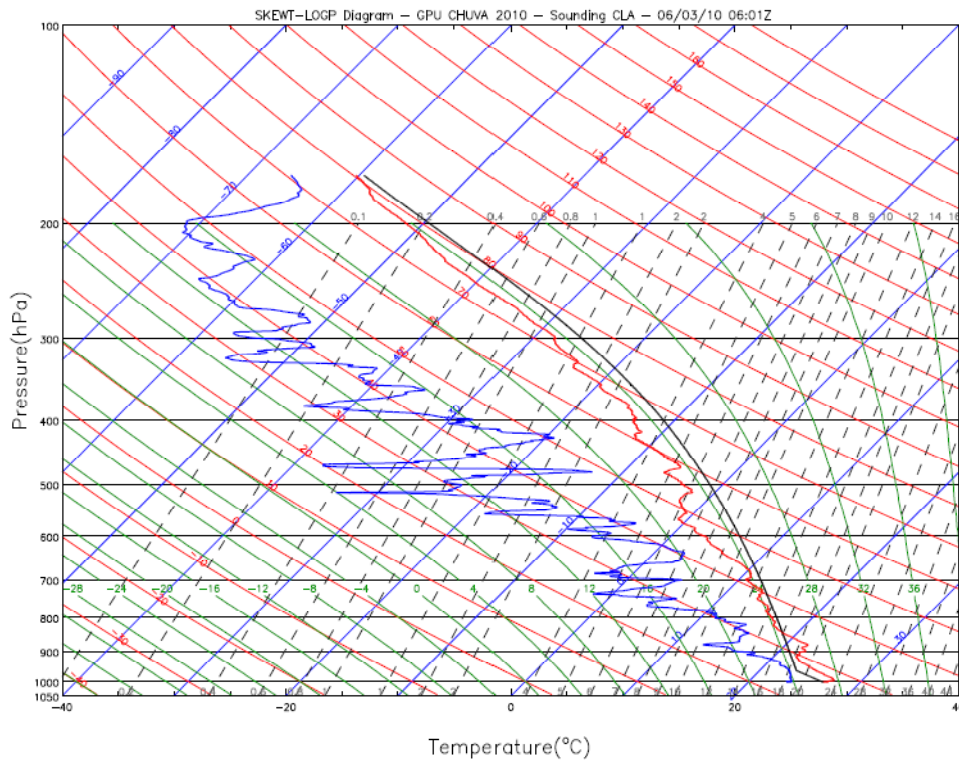


Figure 6 – First elevation PPI for CLA RADAR.

The instability conditions obtained by the launching of radiosondes at the Meteorological Facilities of CLA can be seen at Figure 7.



(a)

Figure 7 – Sequence of SkewT LogP diagrams for March, 6. Continue.

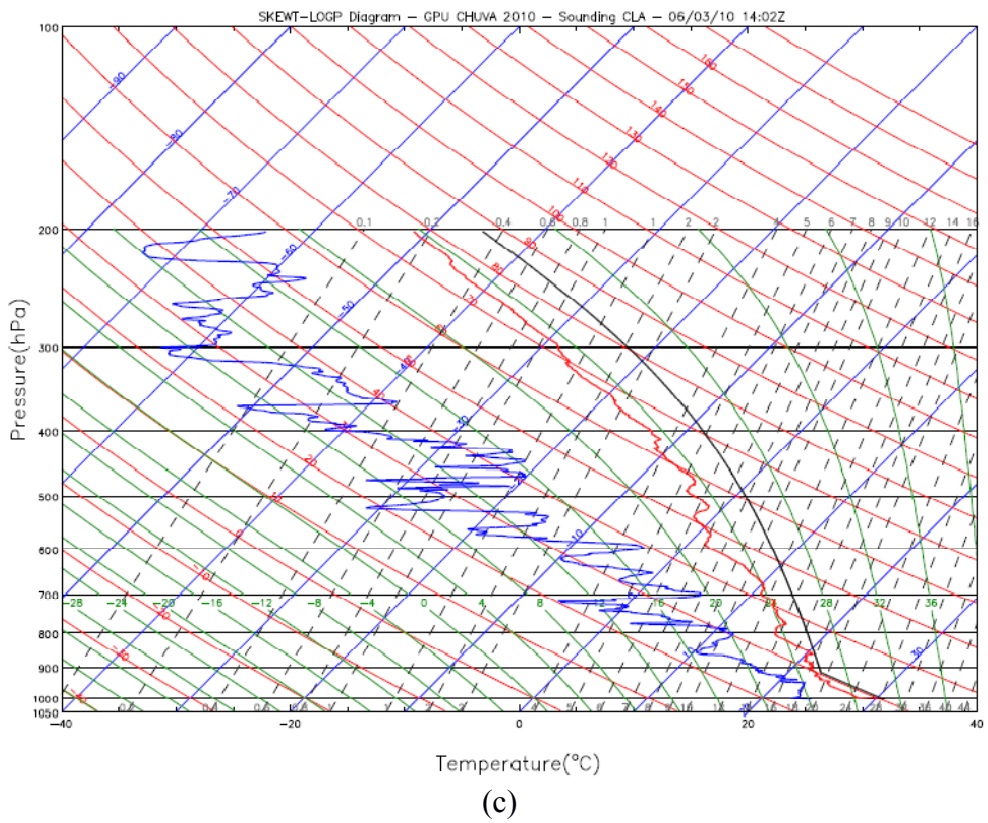
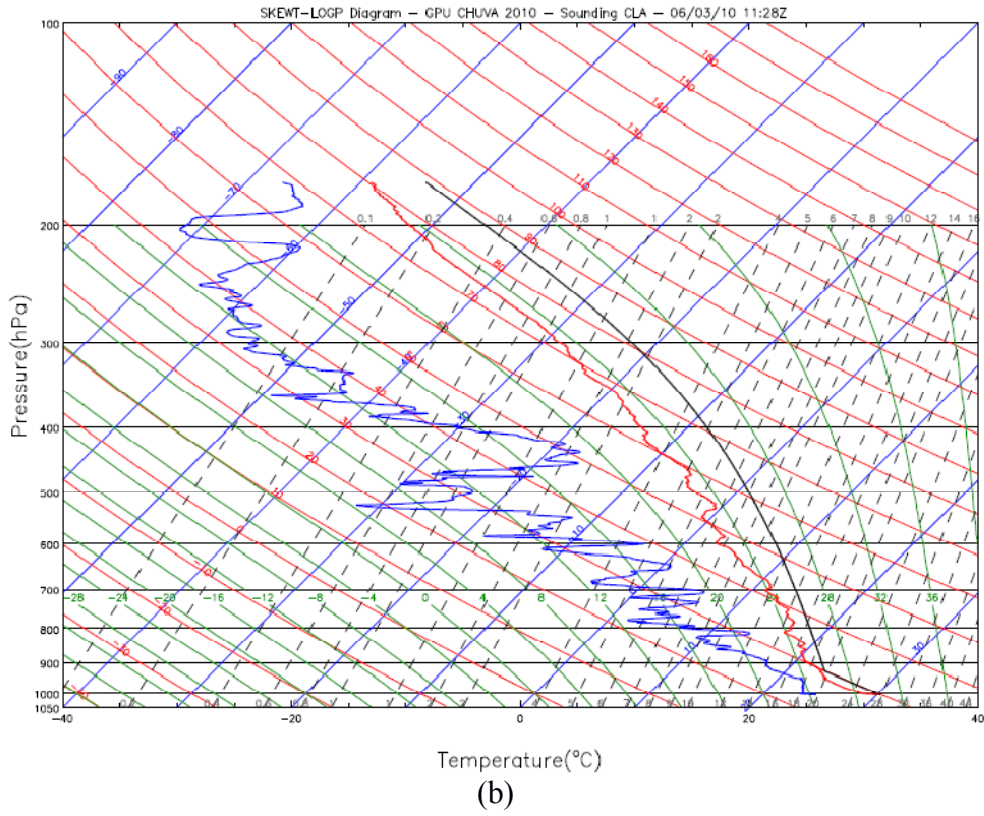
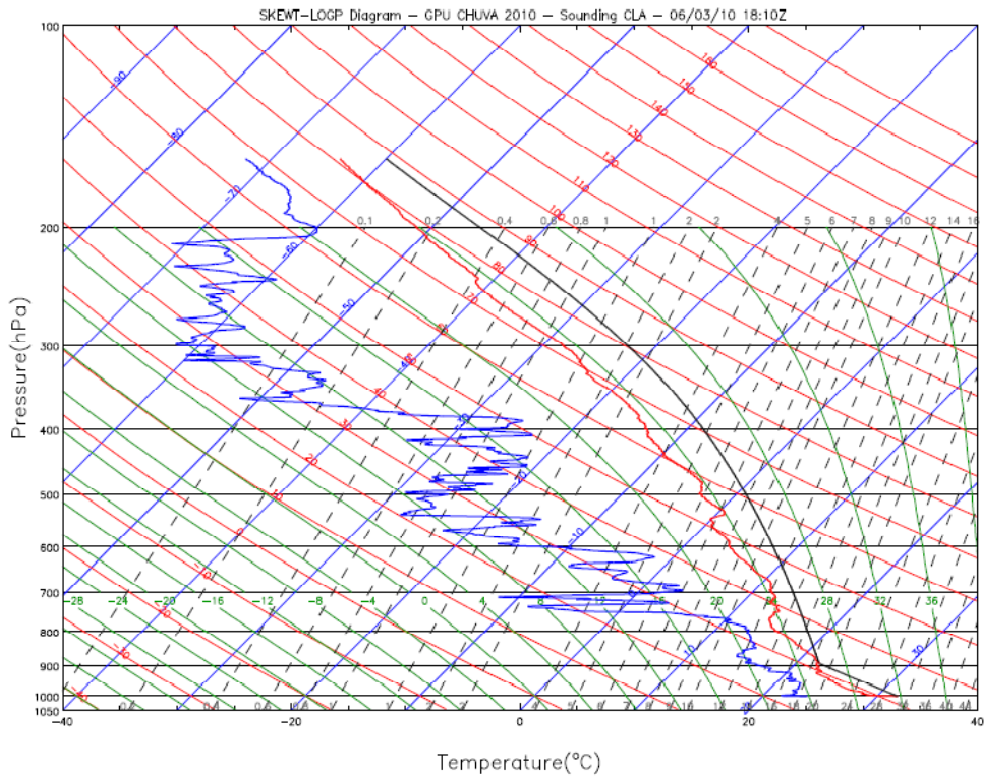


Figure 7 - Continue.



(d)
Figure 7 – Conclusion.