

# TWP-ICE Daily Synoptic Overview

16 January - 14 February 2006

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# Weather Overview

- 13 January - 2 February 2006 Monsoon across north Australia;
  - 13-25 January – active “wet” monsoon;
  - 26 Jan – 2 Feb – “dry” monsoon over Top End;
- 3 -13 February - Break period, inland heat trough across north Australia

# 13 January - 2 February 2006

## Monsoon across north Australia

- 16-19 Jan – westerly monsoon flow;
- 19-24 Jan - TC Daryl forms off WA coast and moves southwest, weakens over Indian ocean;
- 19-25 Jan - low forms in Solomon Sea and moves west, reactivates monsoon weather over Top End on 24<sup>th</sup> (overnight MCS) and 25<sup>th</sup>, potential tropical cyclone development in Timor Sea;
- 26-31 Jan – monsoon low moves inland and deepens (“landfoen”), 989 hPa on 31<sup>st</sup> near Rabbit Flat, 8 day total period of strong westerlies on Darwin, but little weather with strong unsheared flow and air of drier Indian Ocean origin;
- 27 Jan – 1 Feb - Monsoon focus switches to Coral Sea/West Pacific, TC Jim forms in Coral Sea and moves east of New Caledonia;
- 1-2 Feb – “landfoen” weakens; (shear – surface low pushed north, mid level pushed west, dry air?), brief increase in westerly showers near Darwin (shallow);

## 3 -13 February Break period

- Monsoon dissipates in Australian/ Indonesian region,
- Inland heat trough dominates across north Australia;
  - Afternoon evening storms on trough/seabreeze boundary;
  - Overnight squall lines in easterly steering;

# Notes

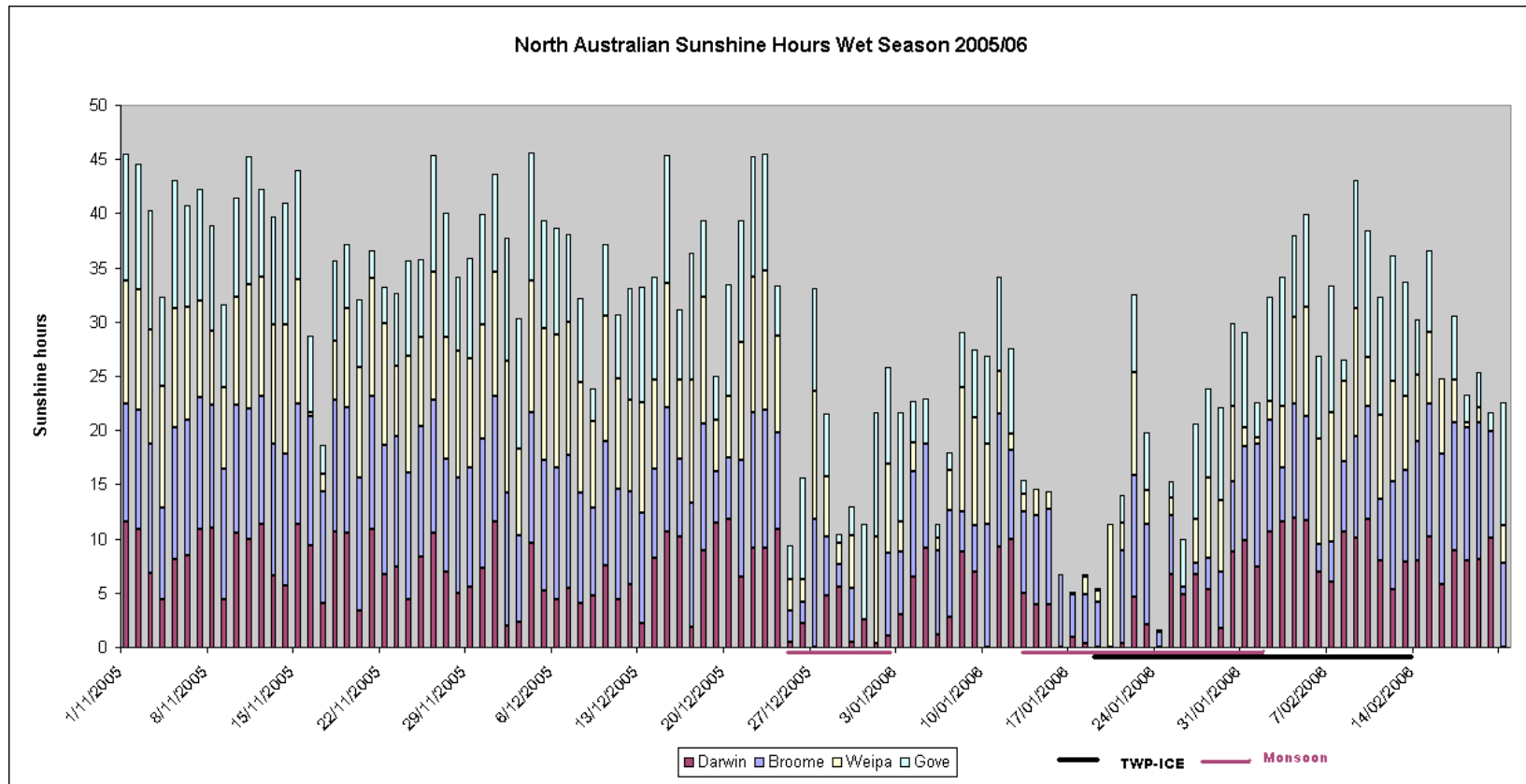
- Assessment of monsoon periods based on entire north Australian region using:
  - Assessment of broadscale satellite imagery (interpretation of Davidson et al 1983);
  - Combined assessment of sunshine hours and rainfall at four Bureau sites in north Australia (Broome, Darwin, Gove and Weipa);
  - Assessment of Darwin upper wind profile (though not sticking strictly to Drosdowsky's westerly wind definition when monsoon low changed winds to east for short periods);

# Notes cont.

- In the following graphs
  - Extended period used prior to experiment to place the experiment's weather in context; (from 1 Nov)
  - TWP-ICE period 20 Jan - 13 Feb marked with black line above dates;
  - Australian monsoon periods marked with red line above dates (North Australian Monsoon periods 25 Dec - 1 Jan 2006, 13 Jan - 2 Feb 2006)

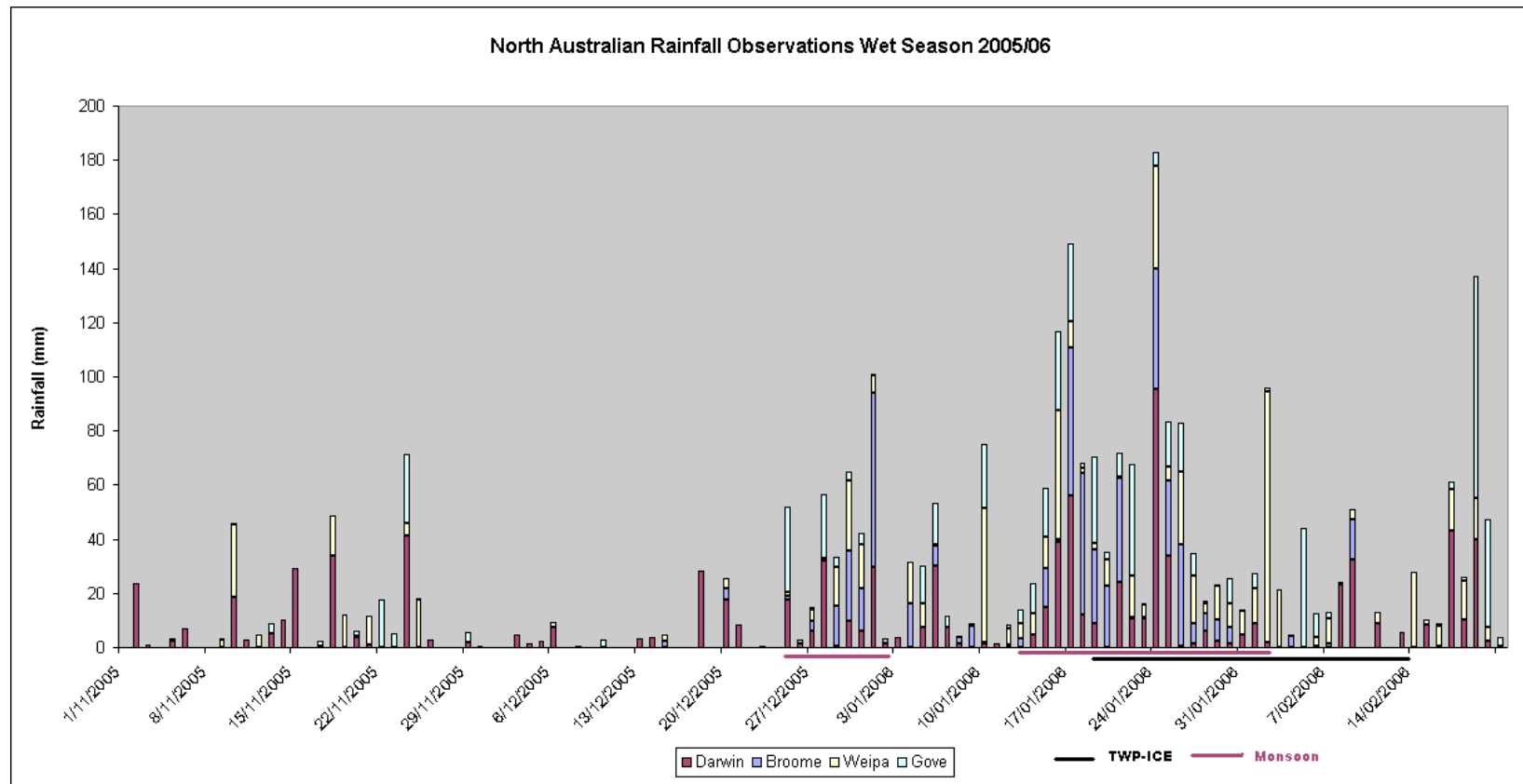
# North Australian Monsoon periods

25 Dec -1 Jan 2006, 13 Jan - 2 Feb 2006



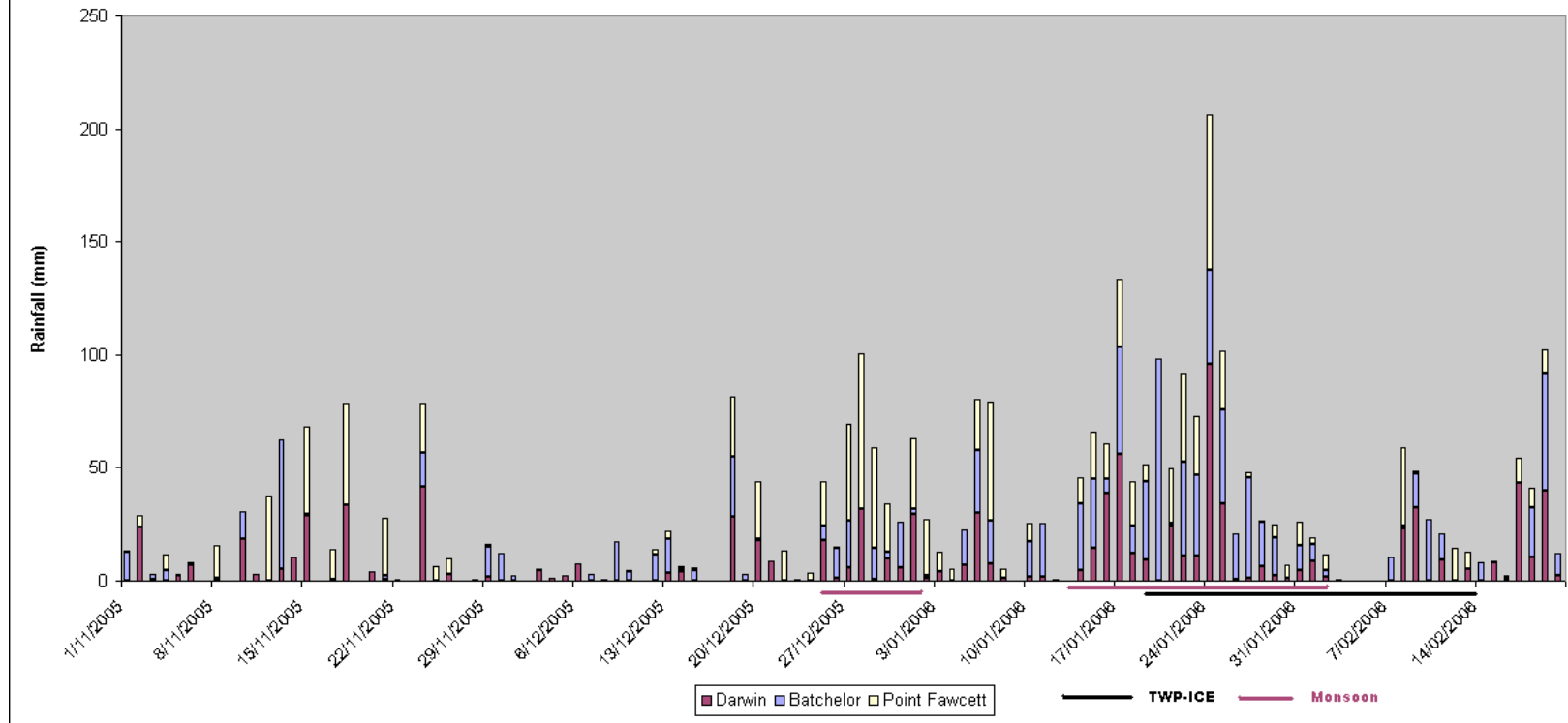
# North Australian Monsoon periods

25 Dec -1 Jan 2006, 13 Jan - 2 Feb 2006

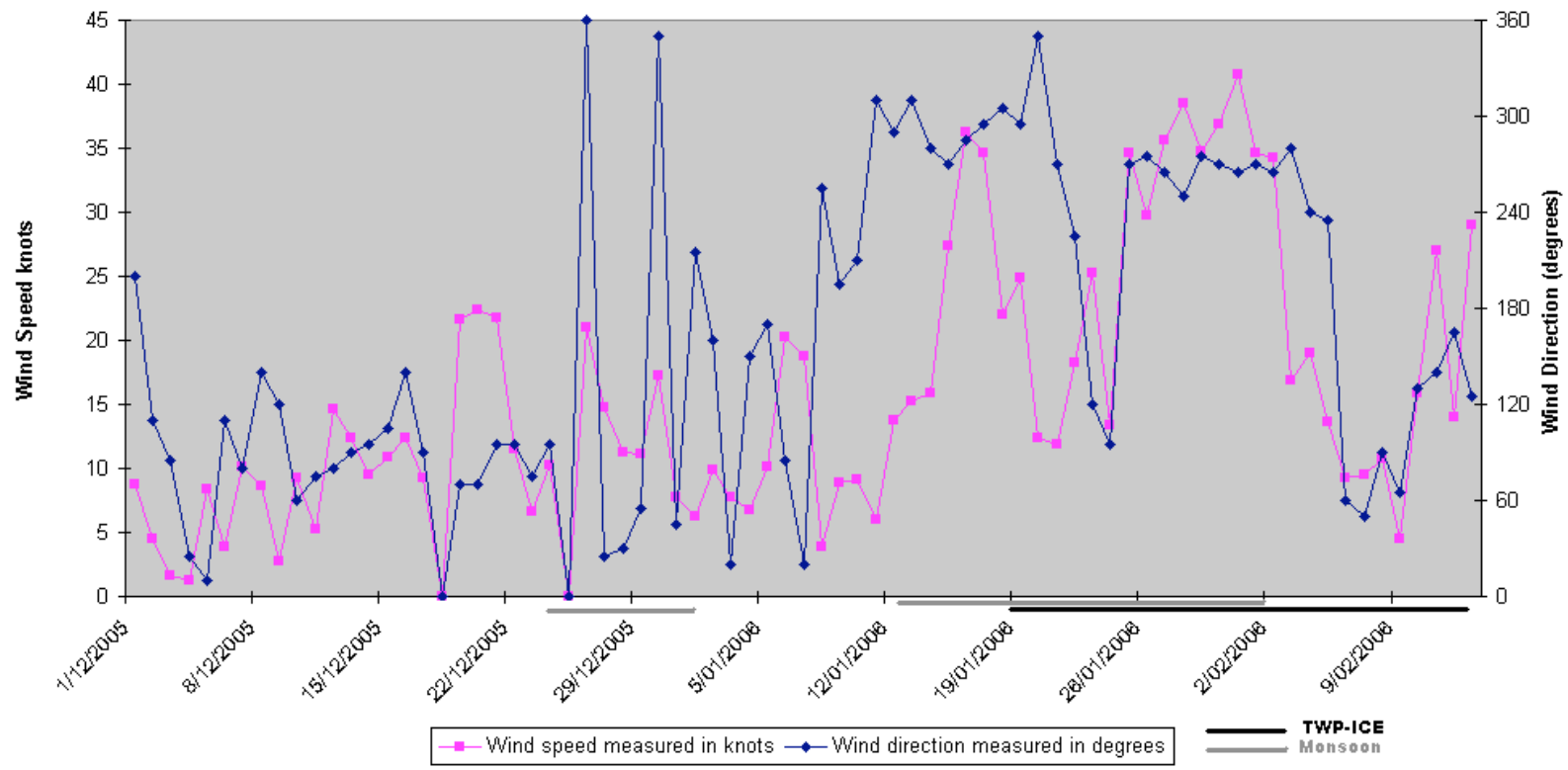




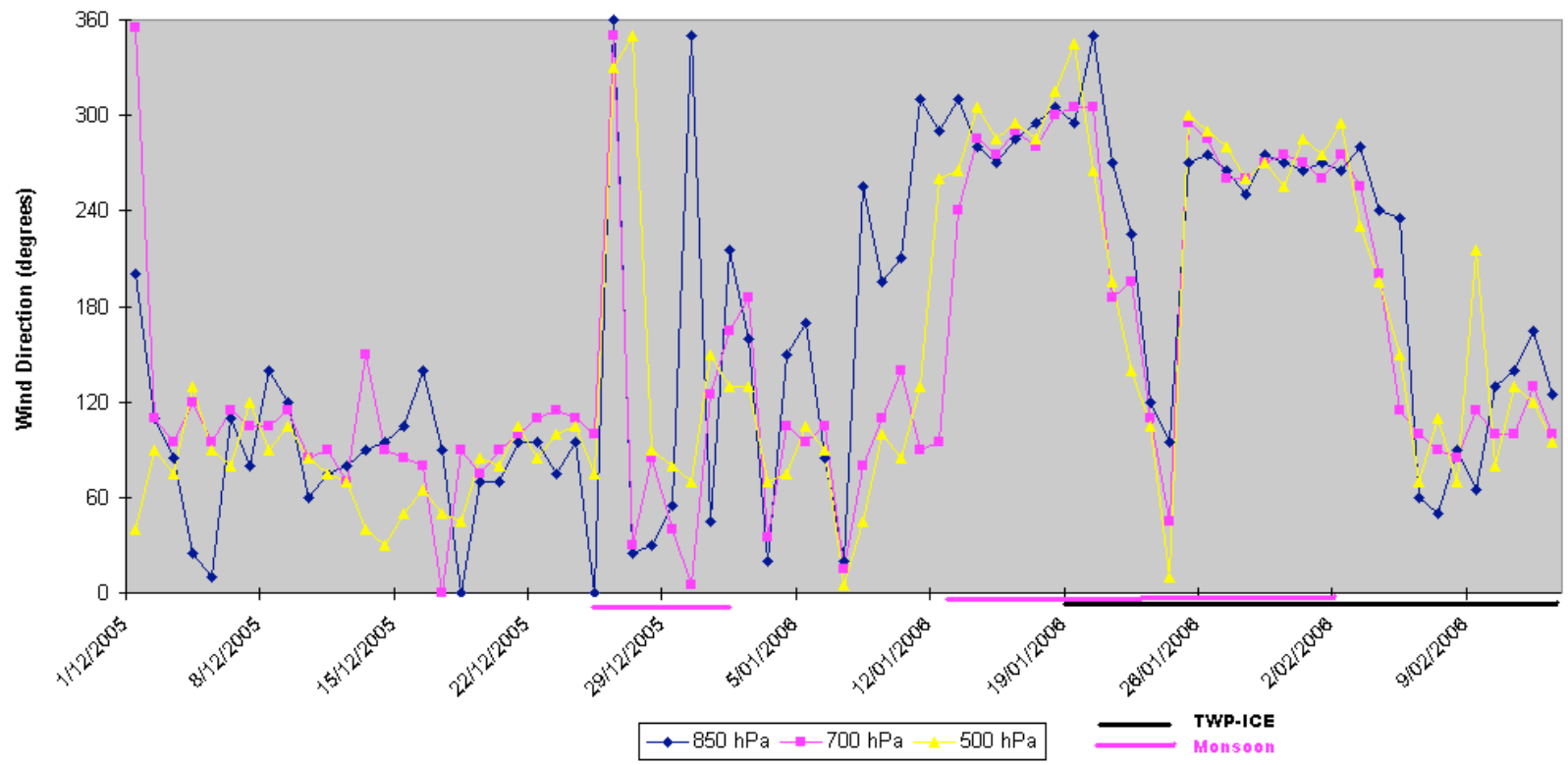
Darwin Region Observations Wet Season 2005/06



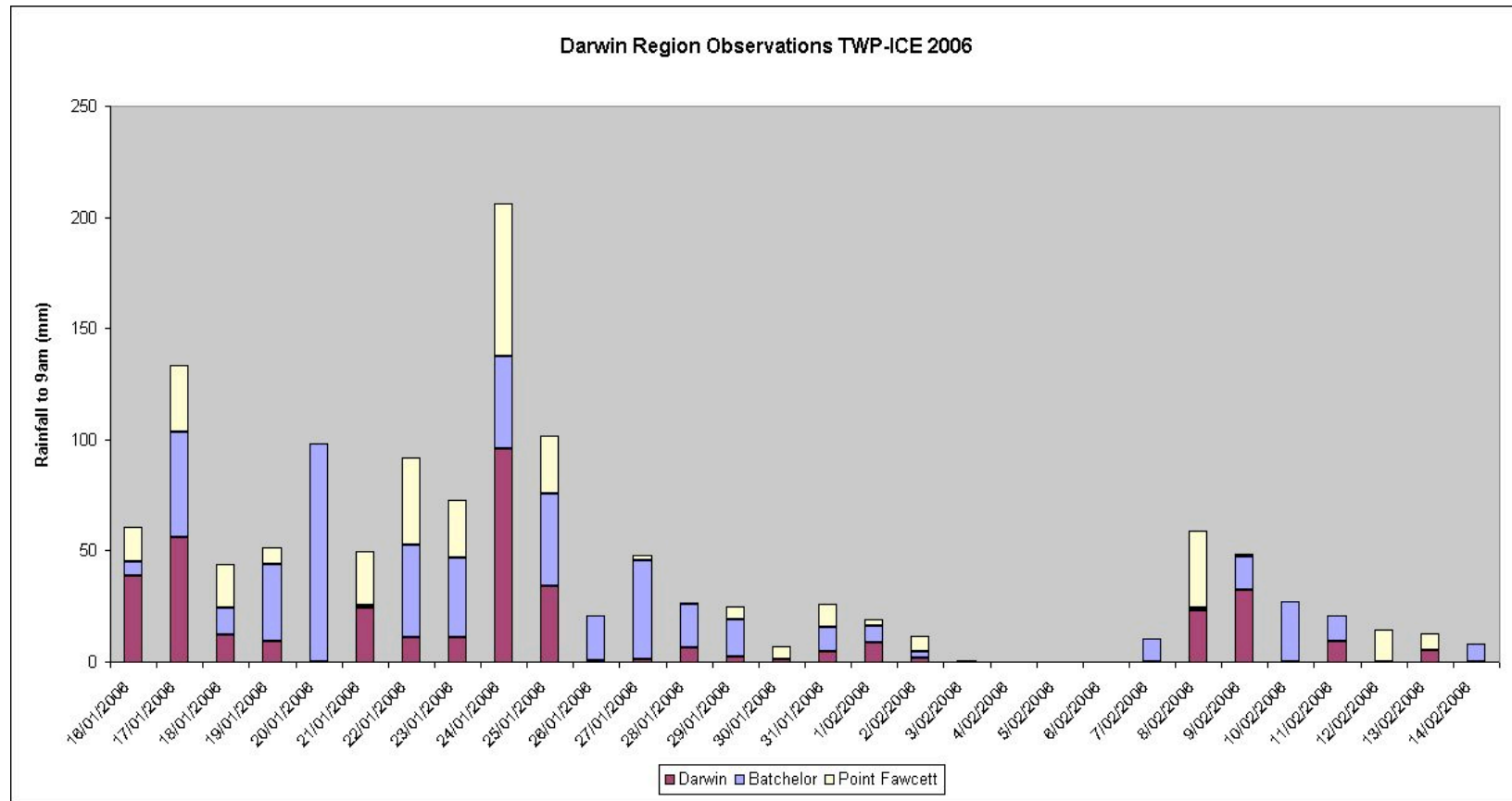
Darwin Airport 850 hPa Wind Observations



Darwin Airport Upper Wind Direction Observations



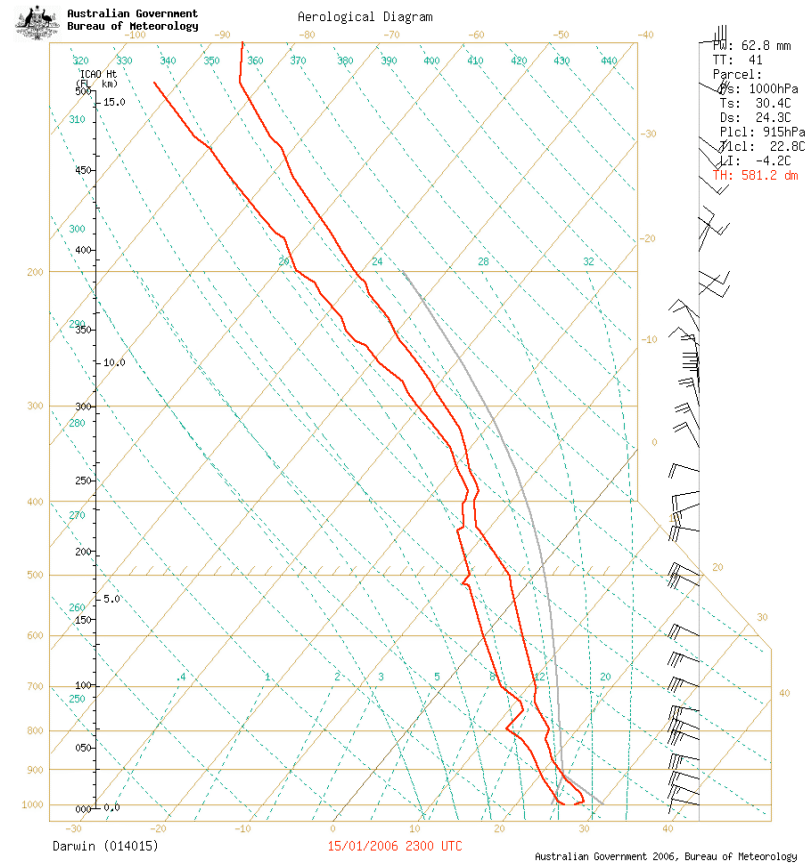
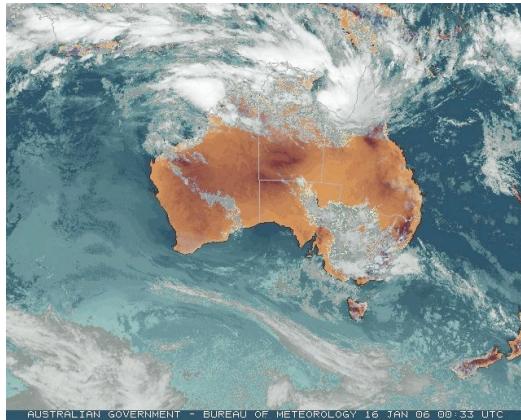
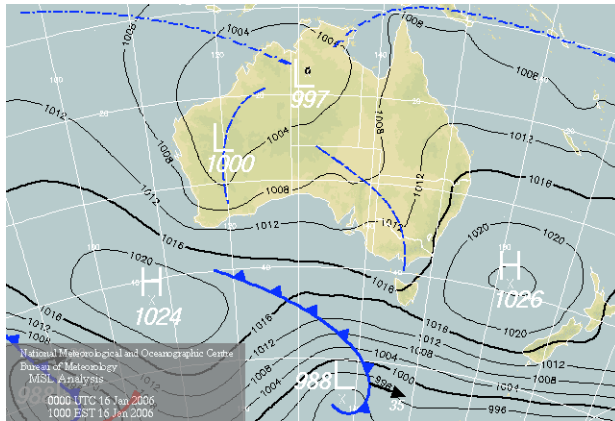
# Daily Rainfall for TWP-ICE for Darwin, Batchelor and Point Fawcett (W Tiwi Islands)



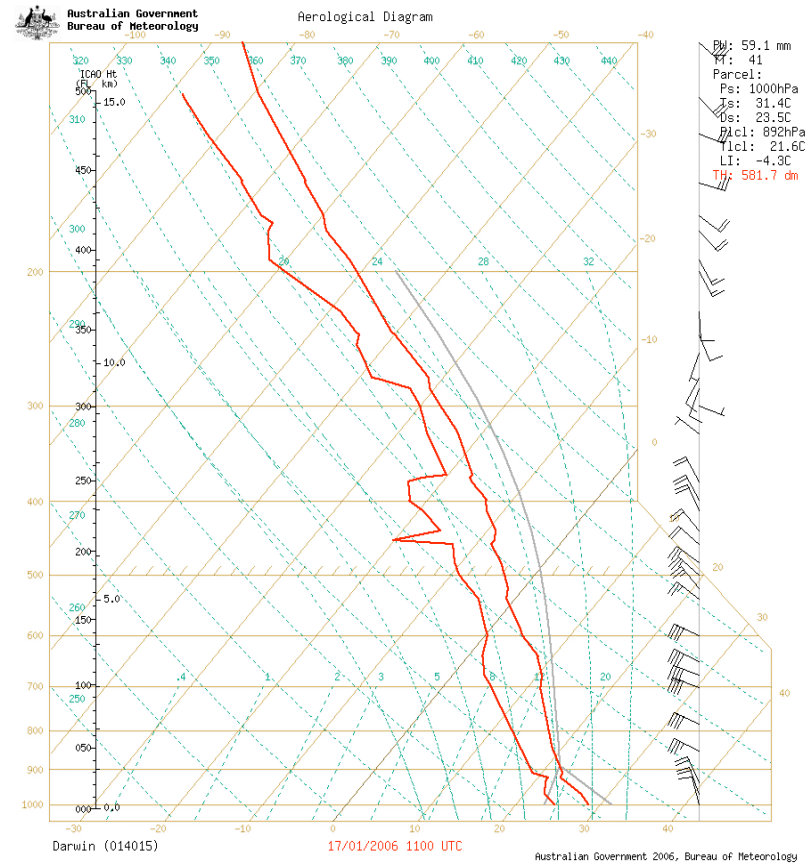
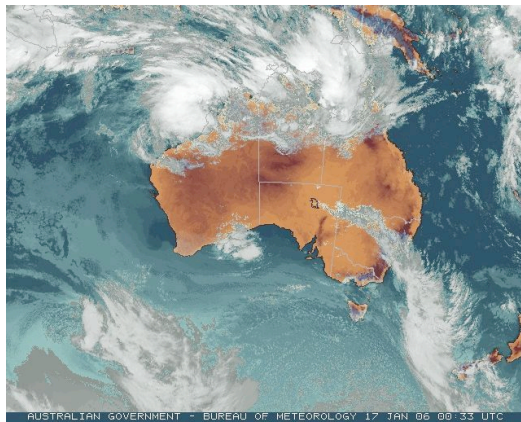
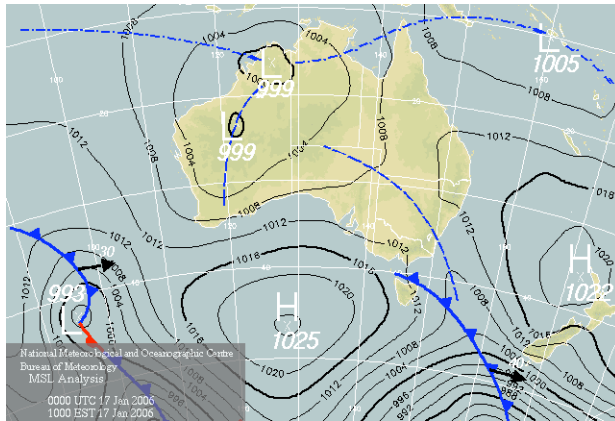
# Daily Rainfall for TWP-ICE for Darwin, Batchelor and Point Fawcett (W Tiwi Islands)

- occurring generally up till 9am 25 January;
- Restricted mostly to Batchelor (south of Darwin) 26 Jan to 2 Feb - (topography may be factor in strong westerly flow period with monsoon low inland);
- 31 Jan - 2 Feb Brief increase in general rainfall as monsoon low weakens and monsoon temporarily refocuses near Top end N coast and through Arafura Sea;
- Dry period 3-6 Feb in weak flow;
- 7-13 Feb rainfall increases as Easterly steering increases with deep continental storms/ squall lines;

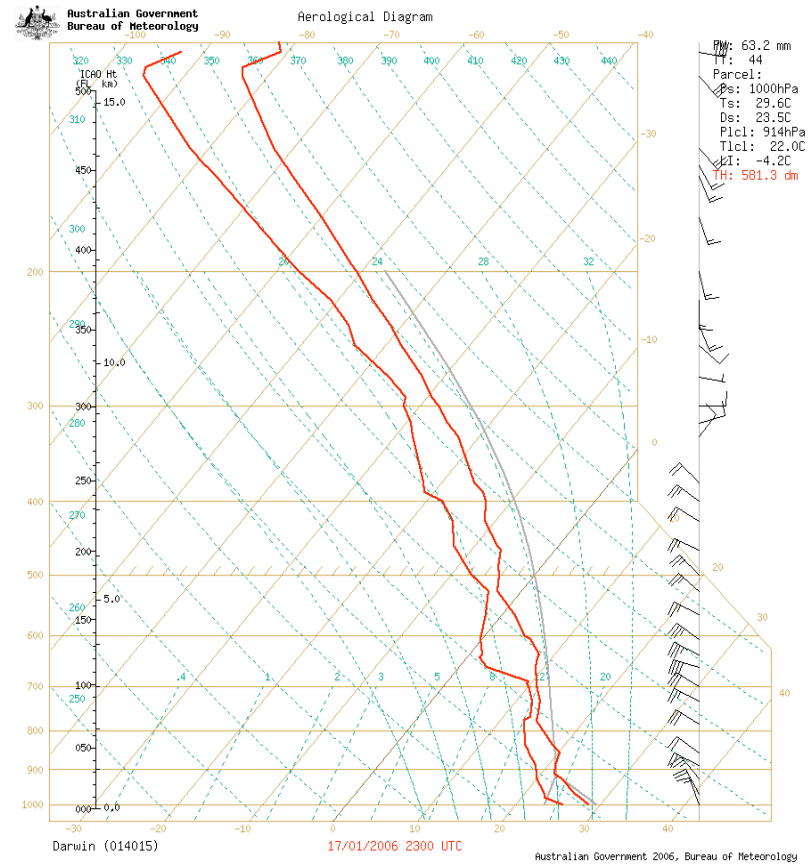
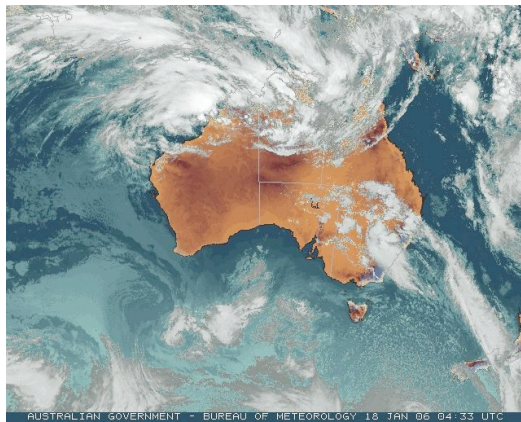
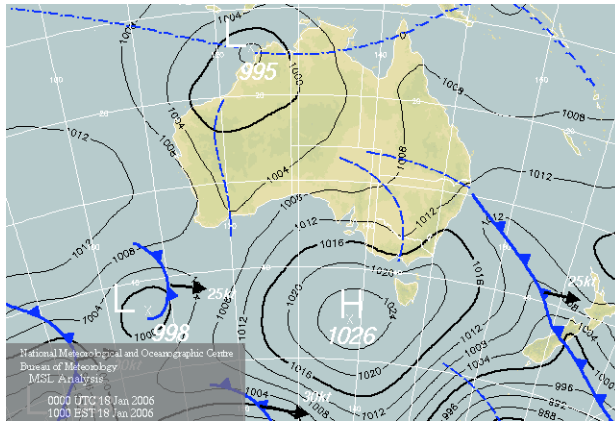
# 16 January



# 17 January

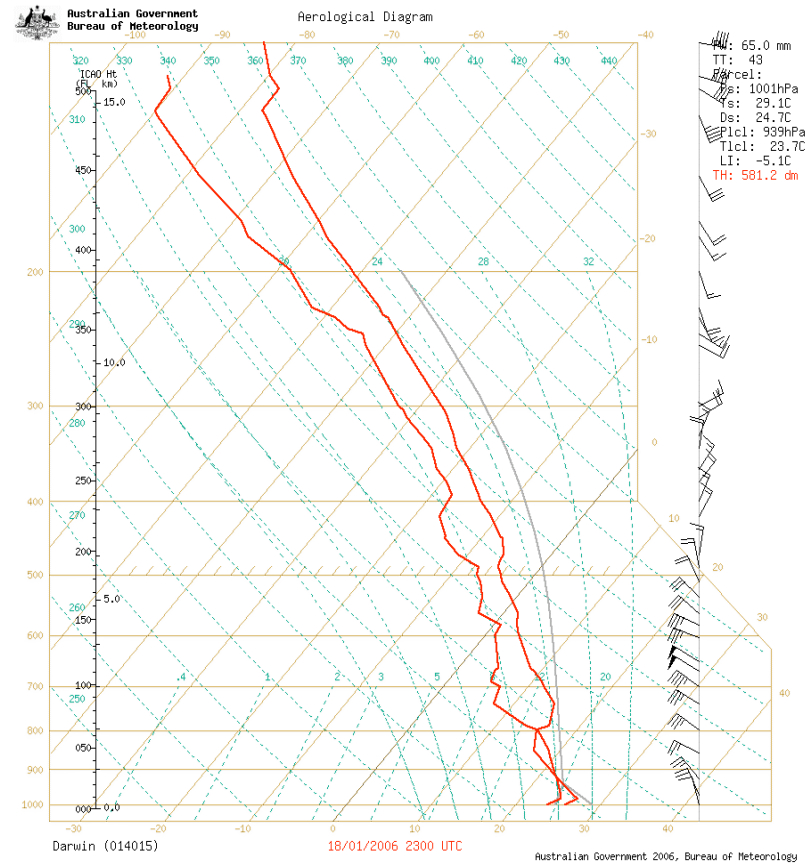
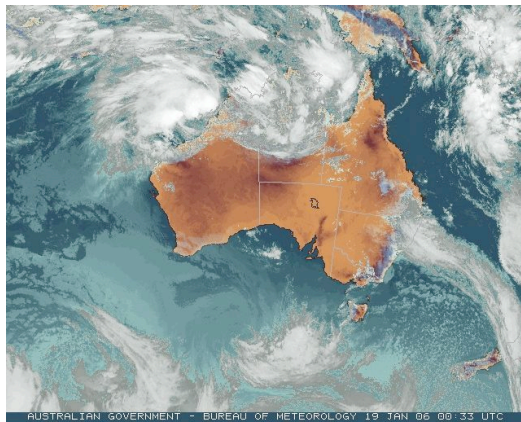
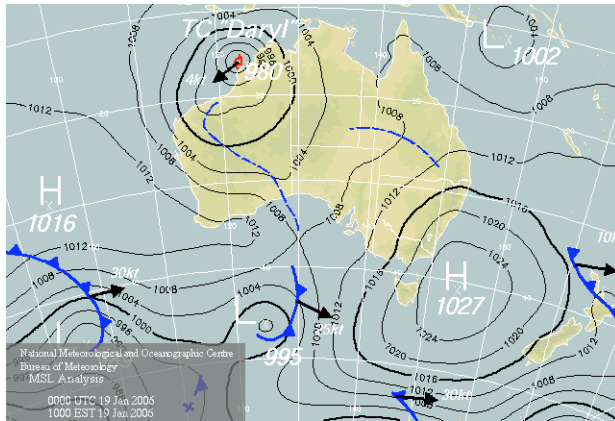


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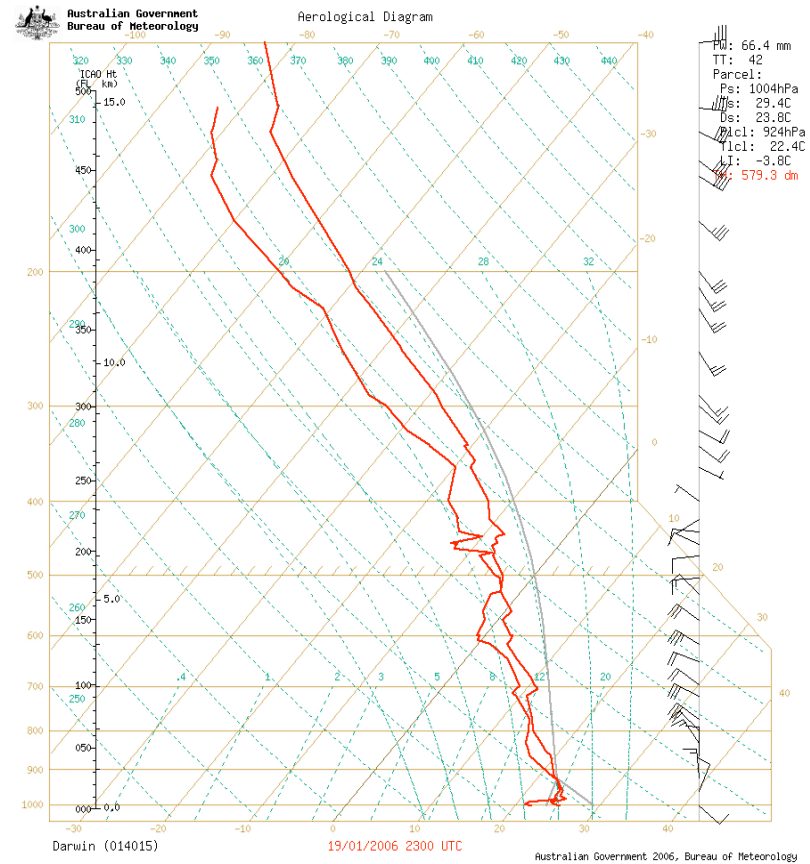
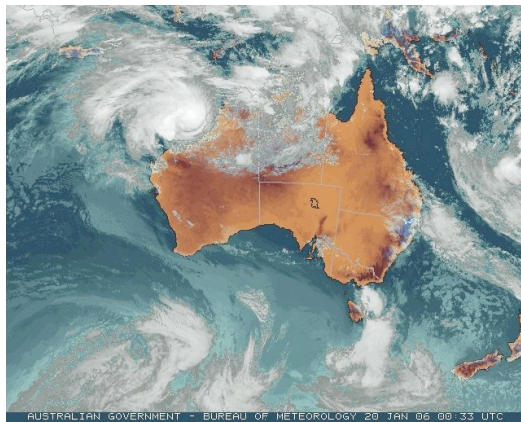
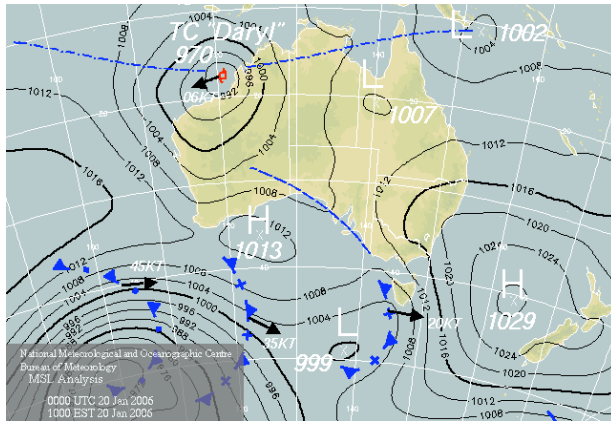




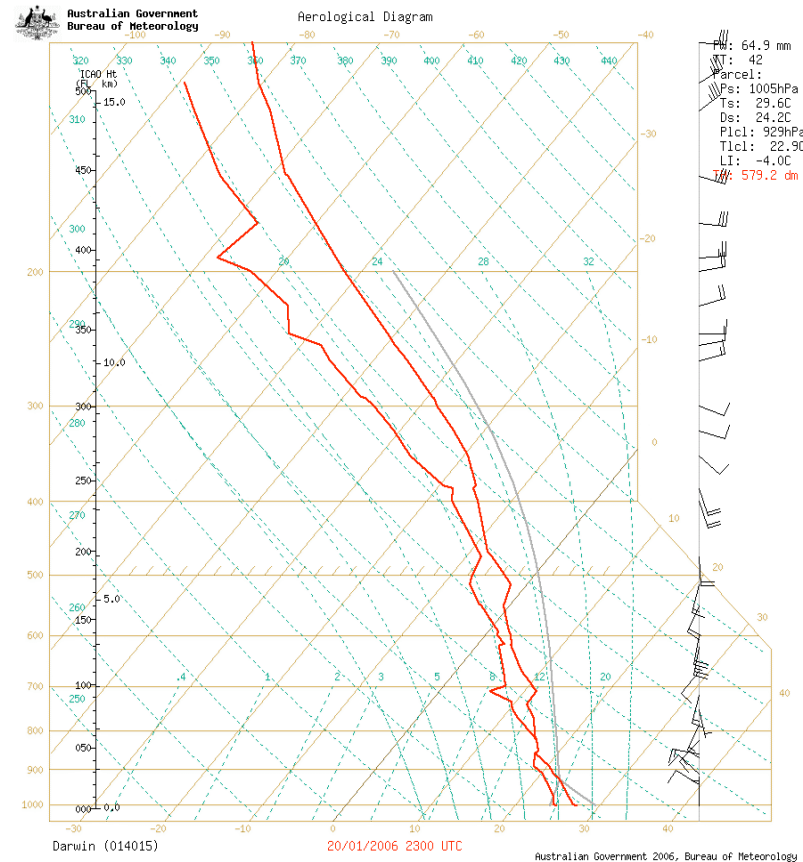
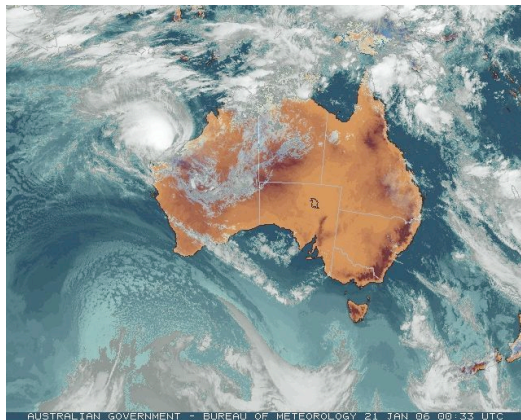
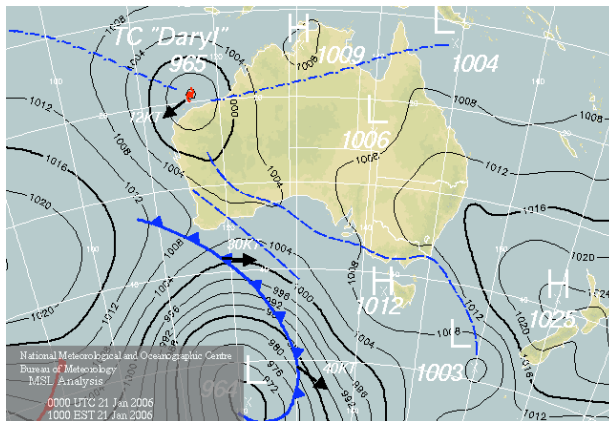
# 19 January



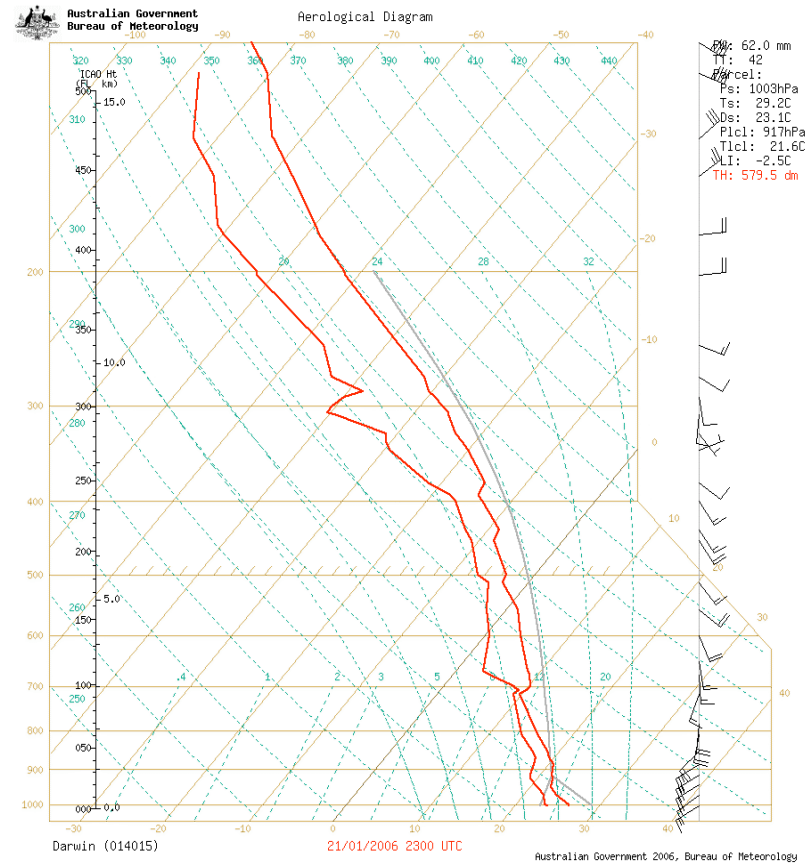
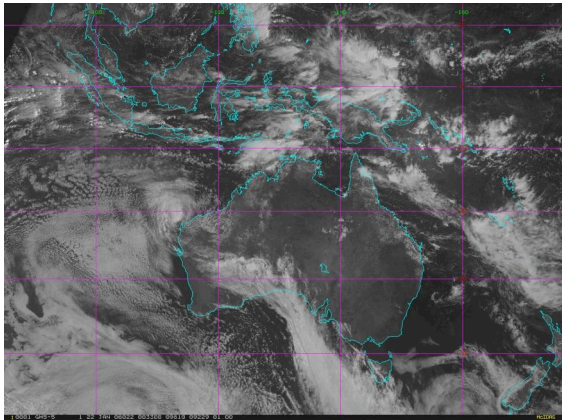
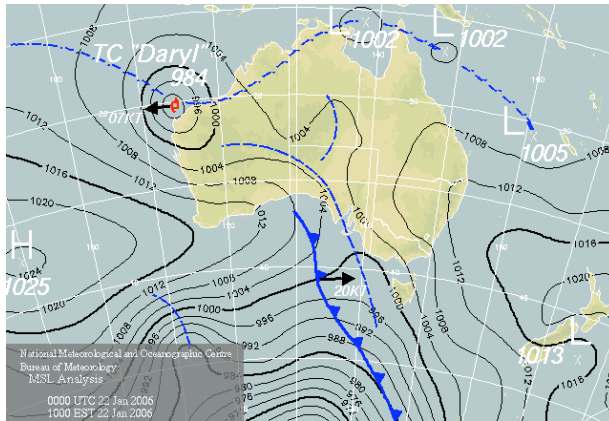
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# 21 January

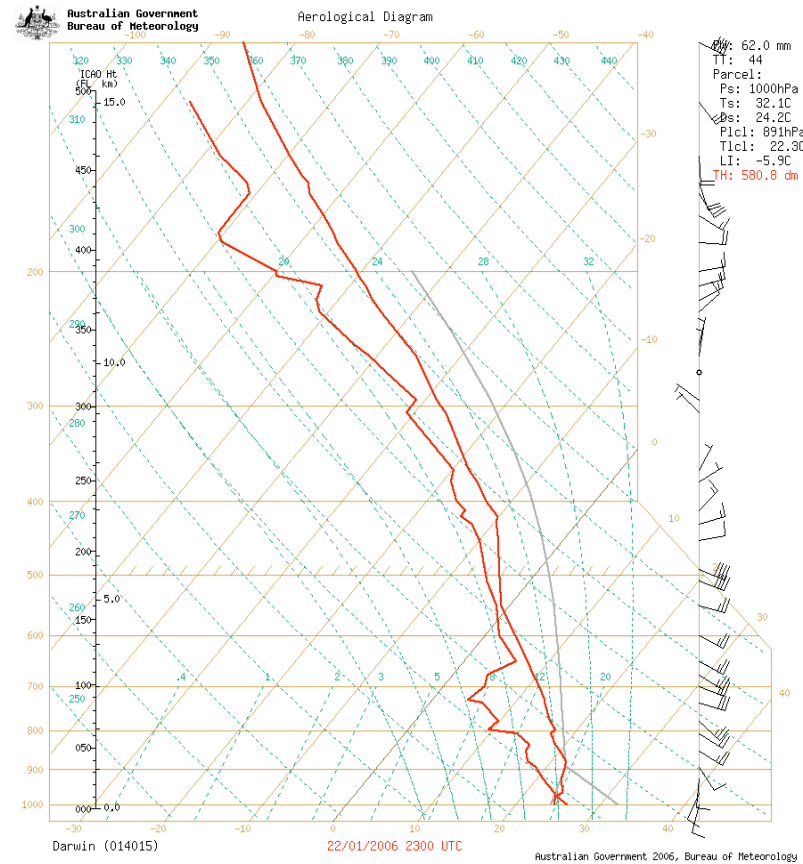
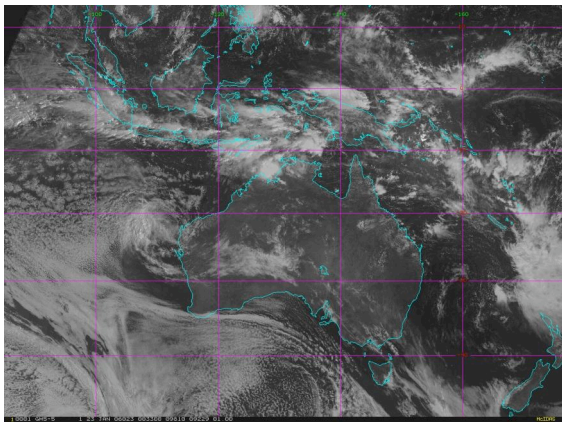
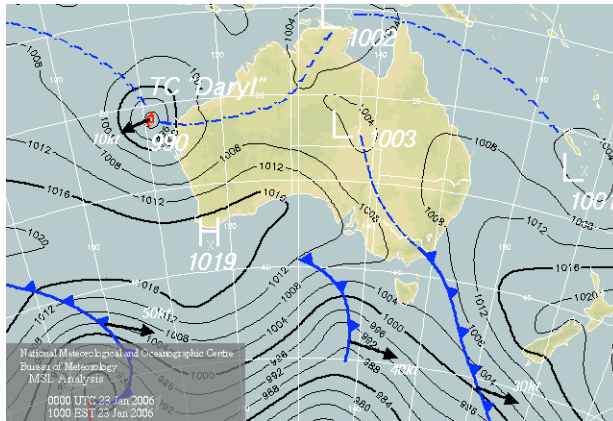


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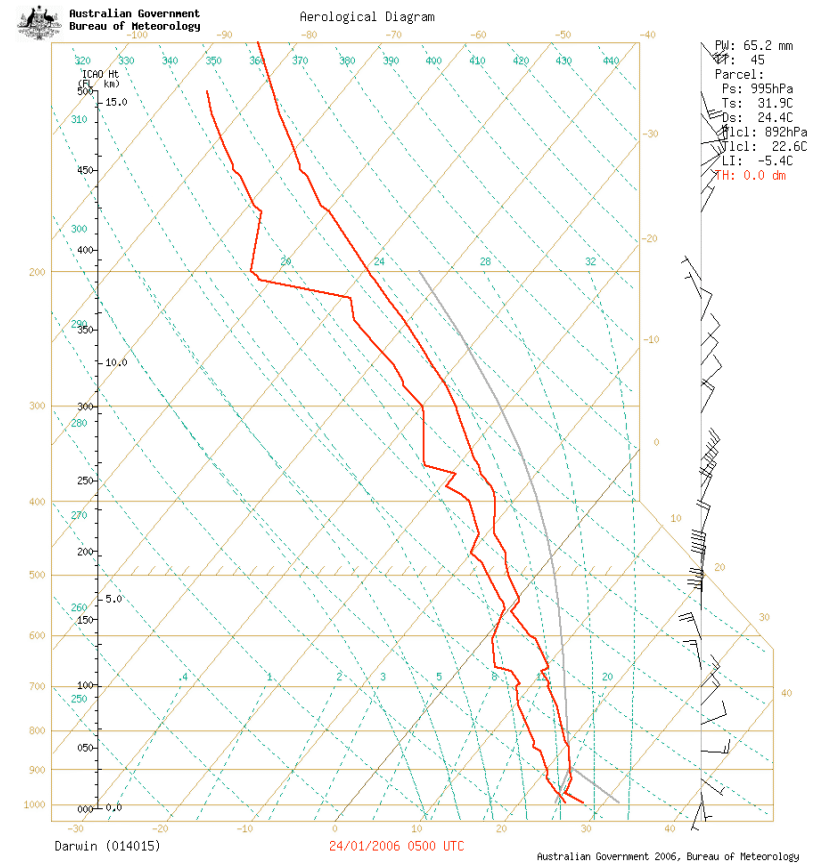
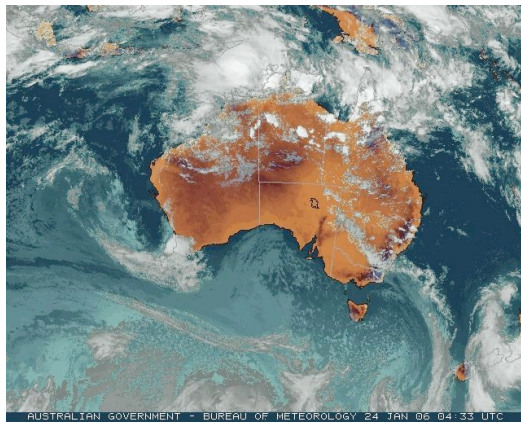
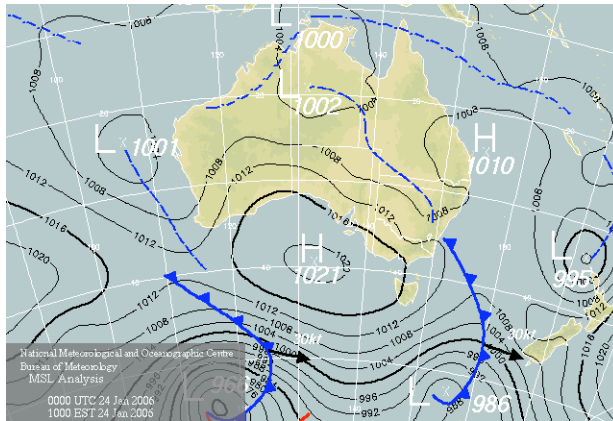




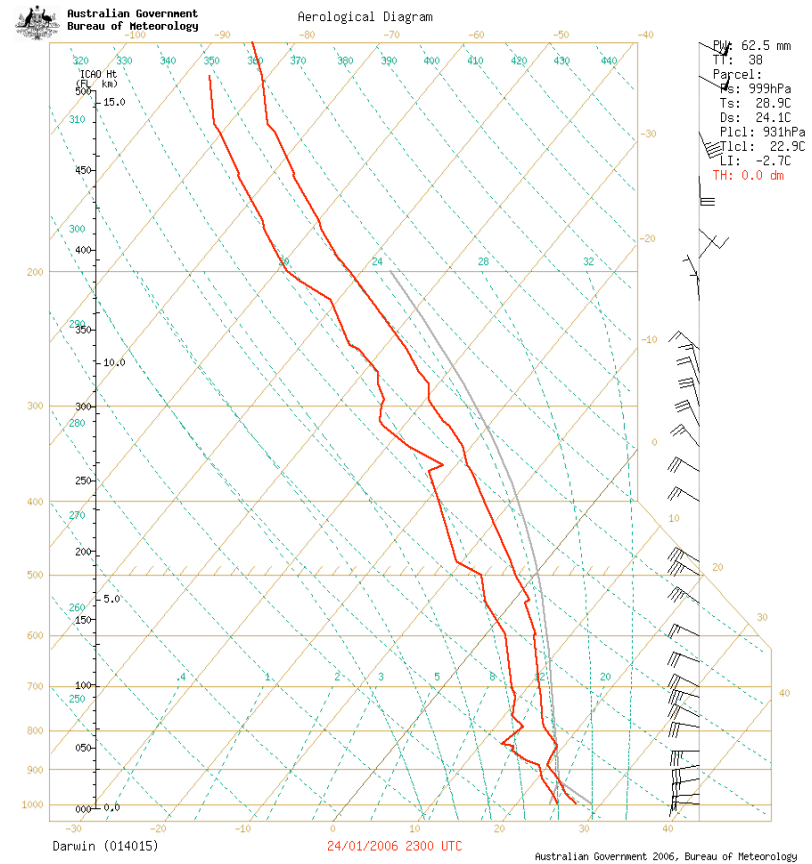
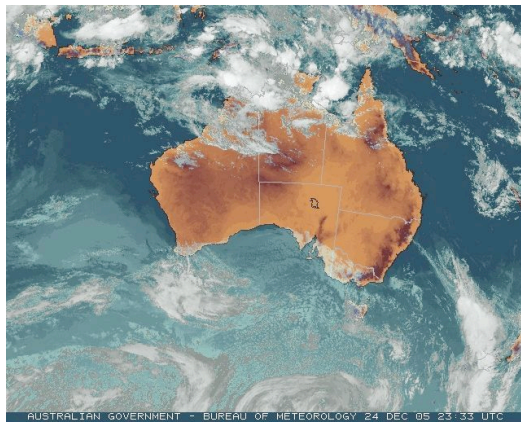
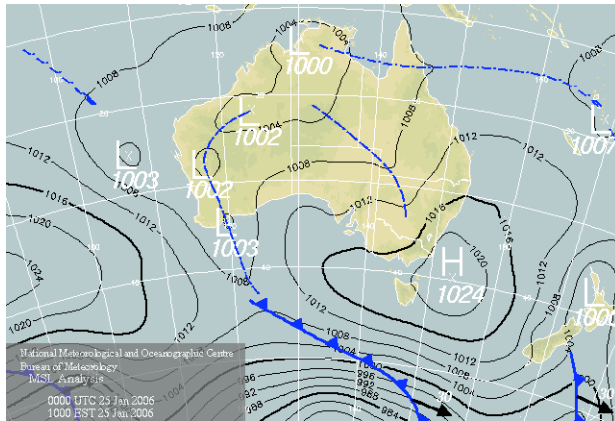
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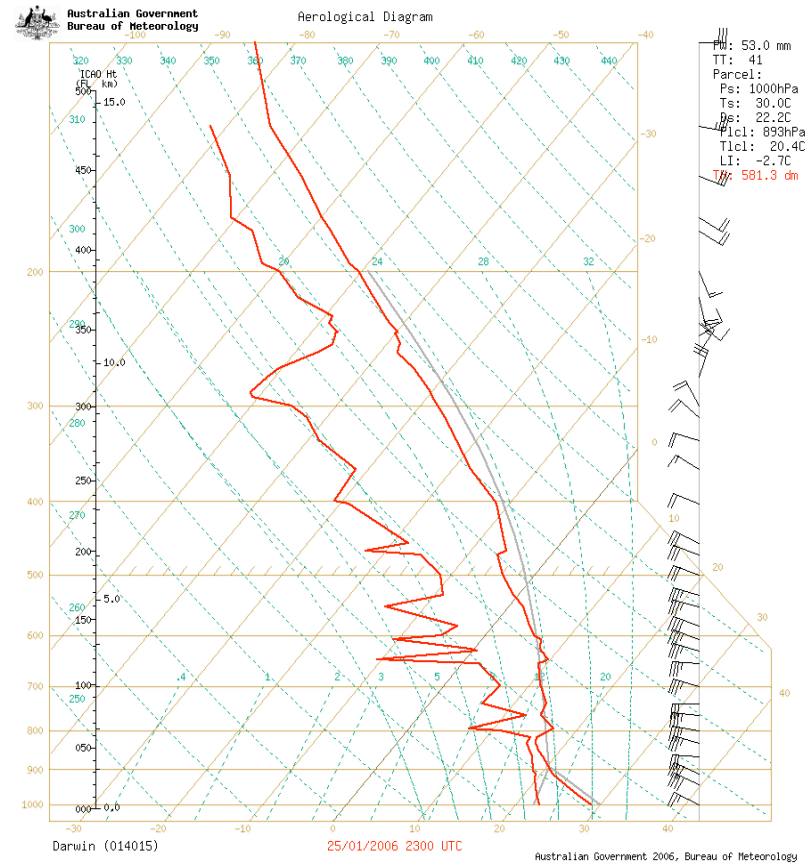
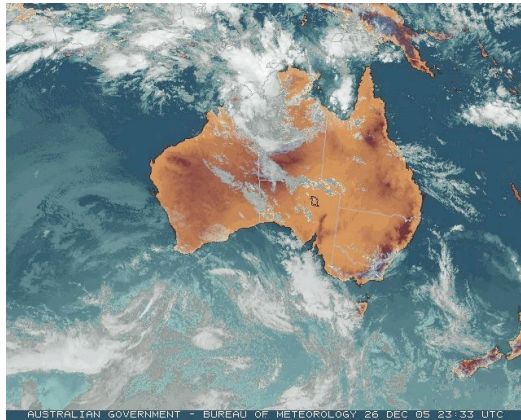
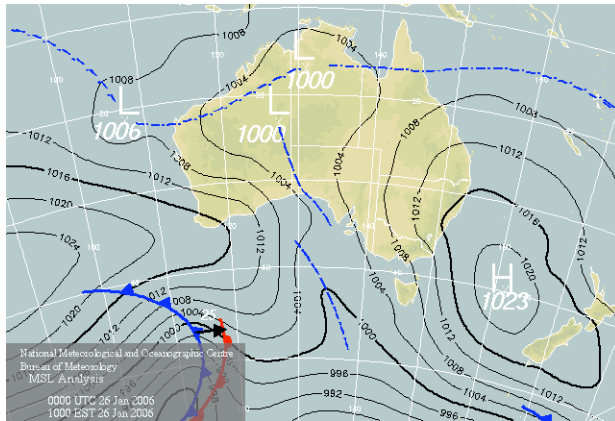
# 24 January - MCS moved over NW Top End Overnight from squalline previous afternoon/evening; 96mm to 9am at Darwin airport;



# 25 January

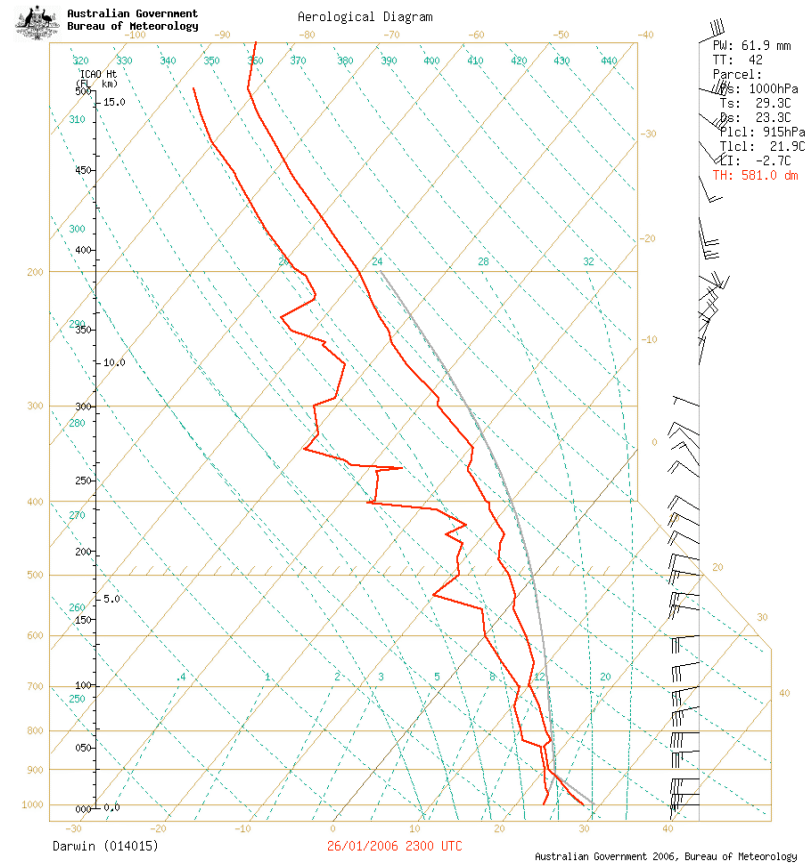
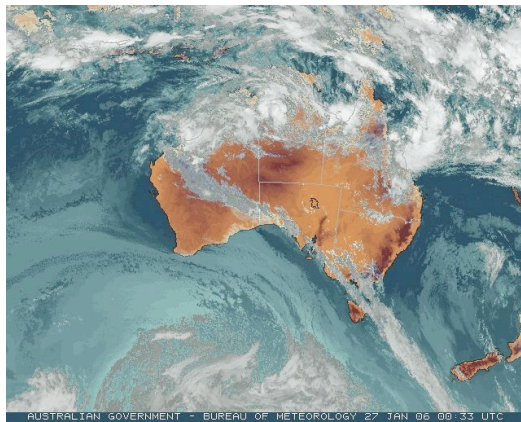
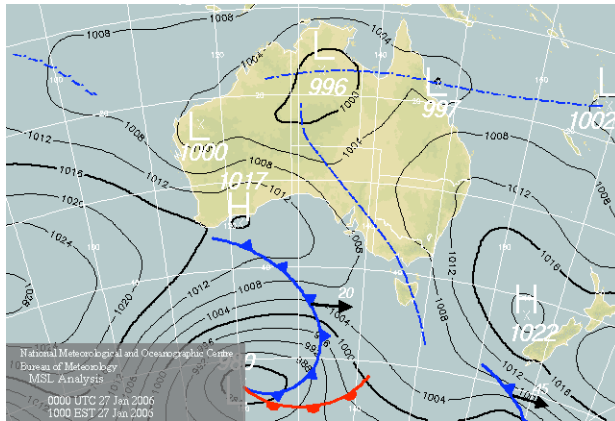


# 26 January

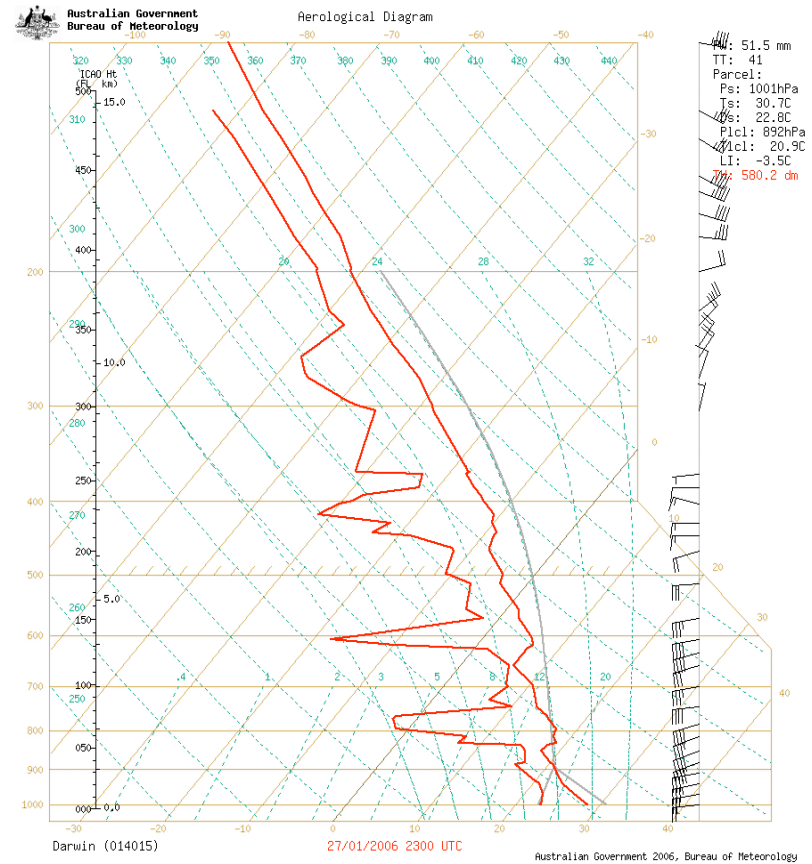
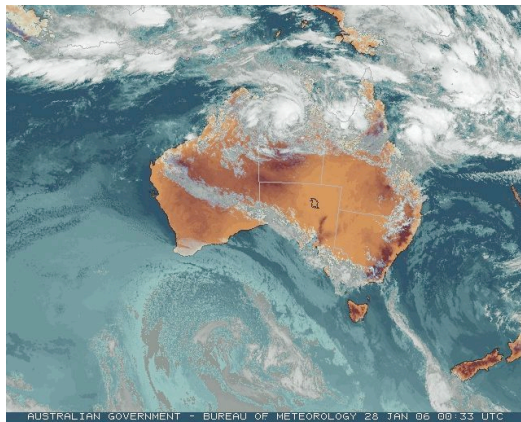
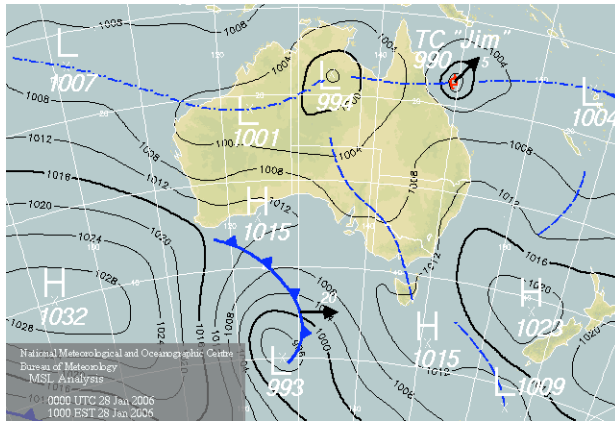




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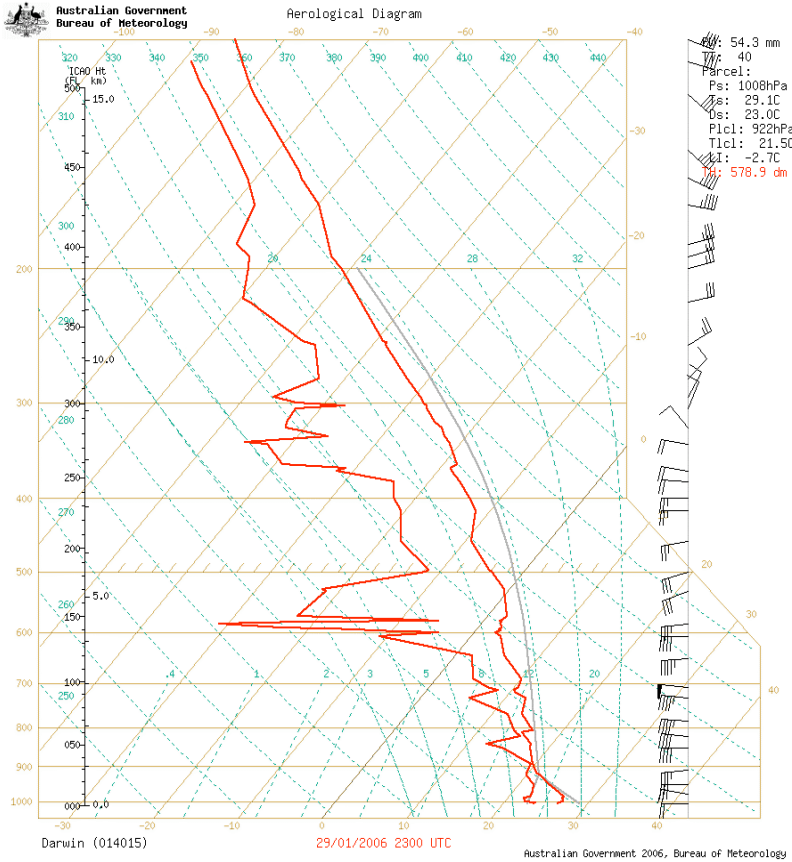
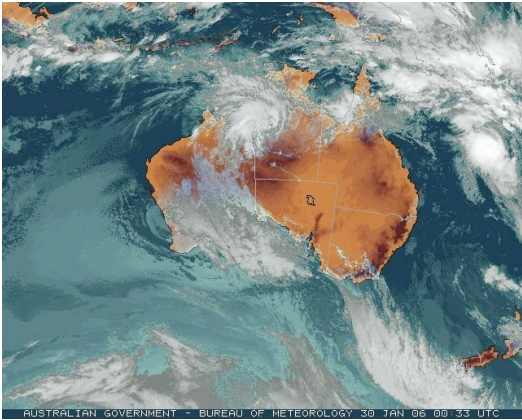
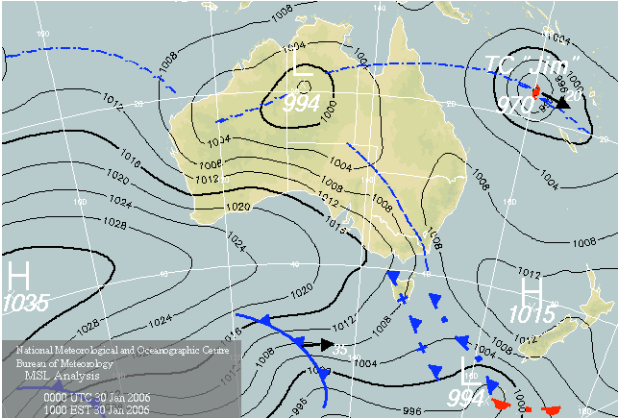


# 28 January



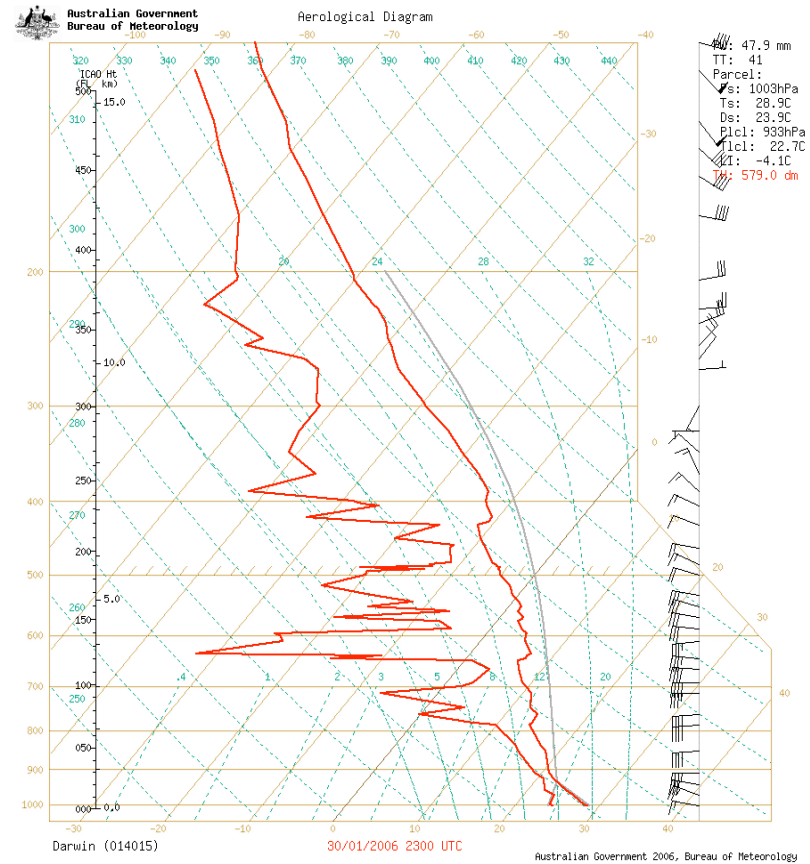
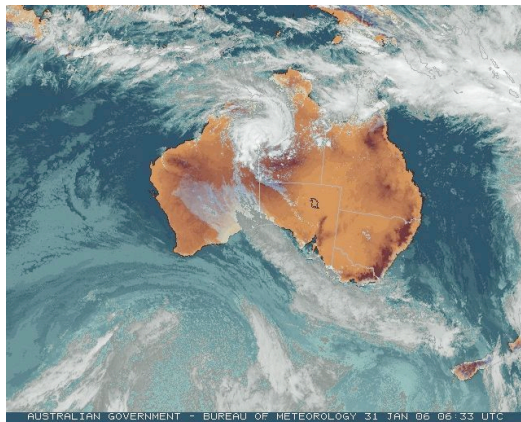
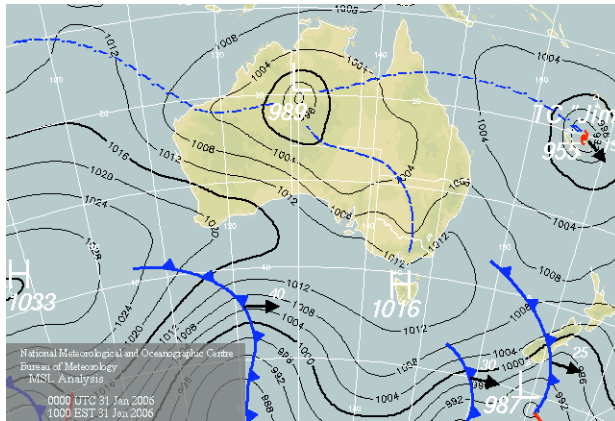


# 30 January

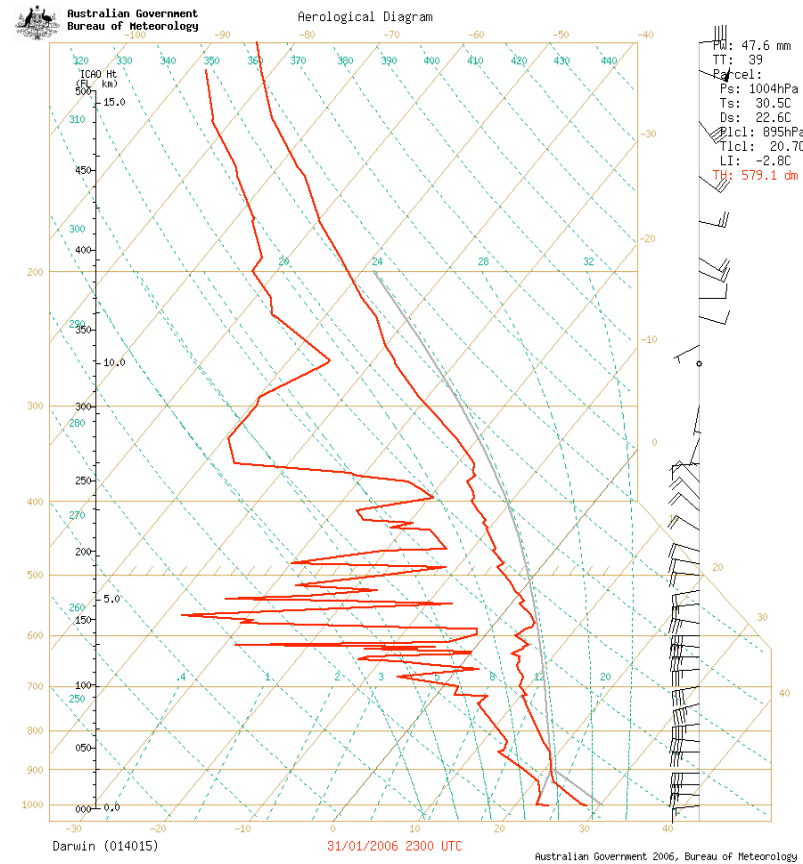
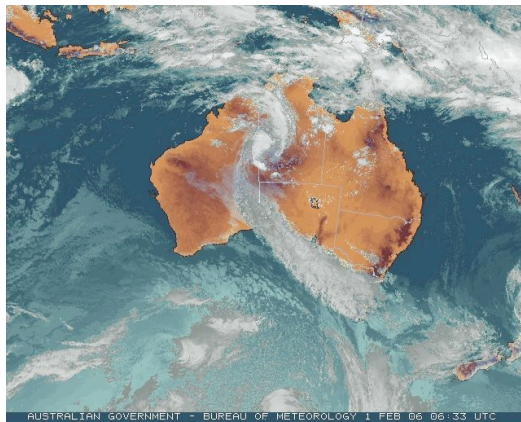
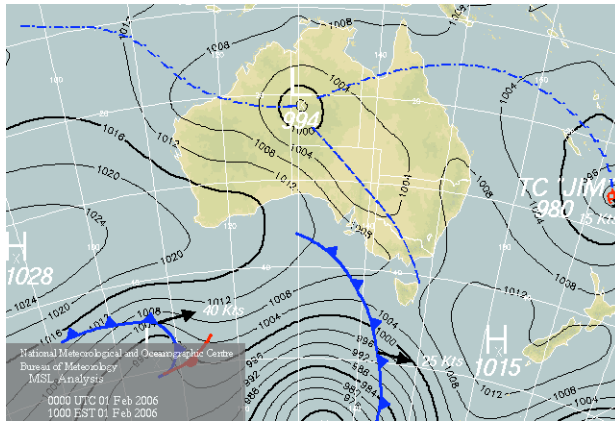




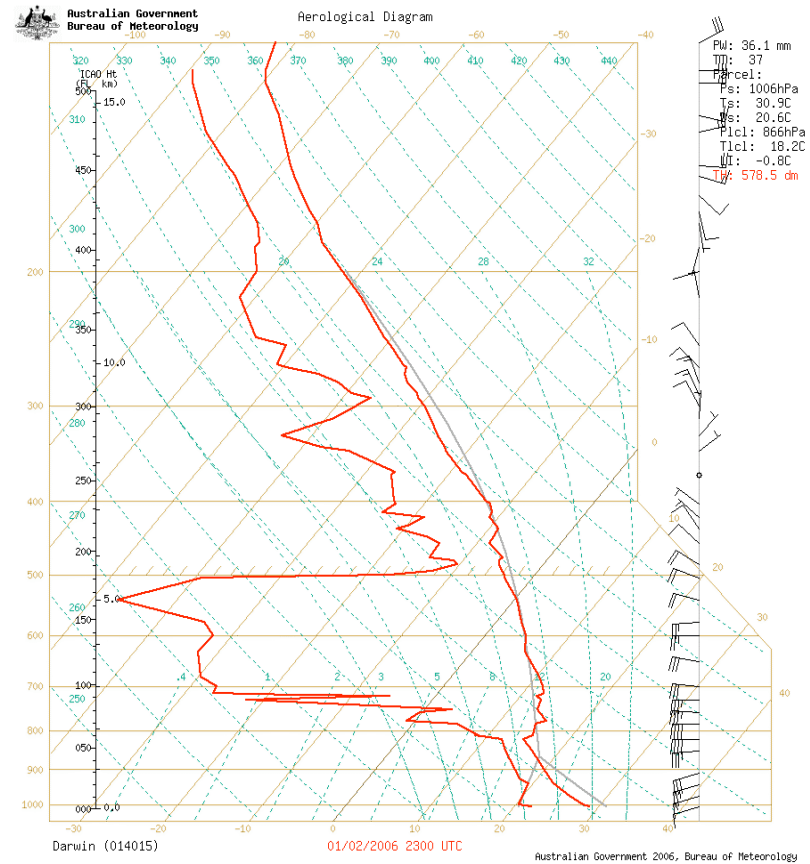
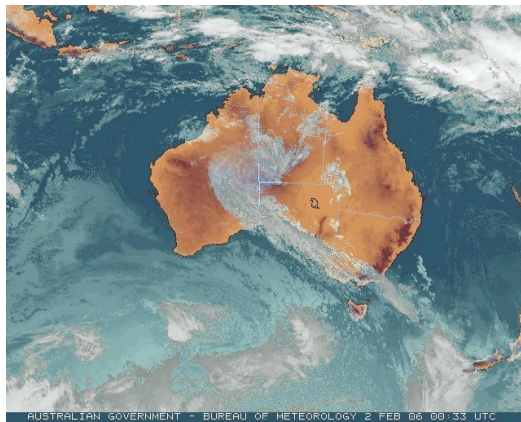
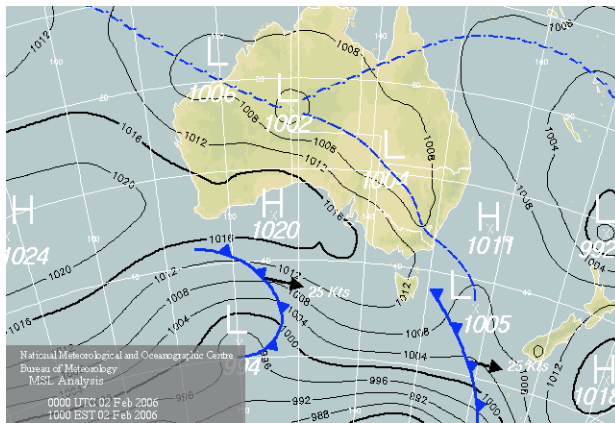
# 31 January - monsoon low at peak intensity 989 hPa



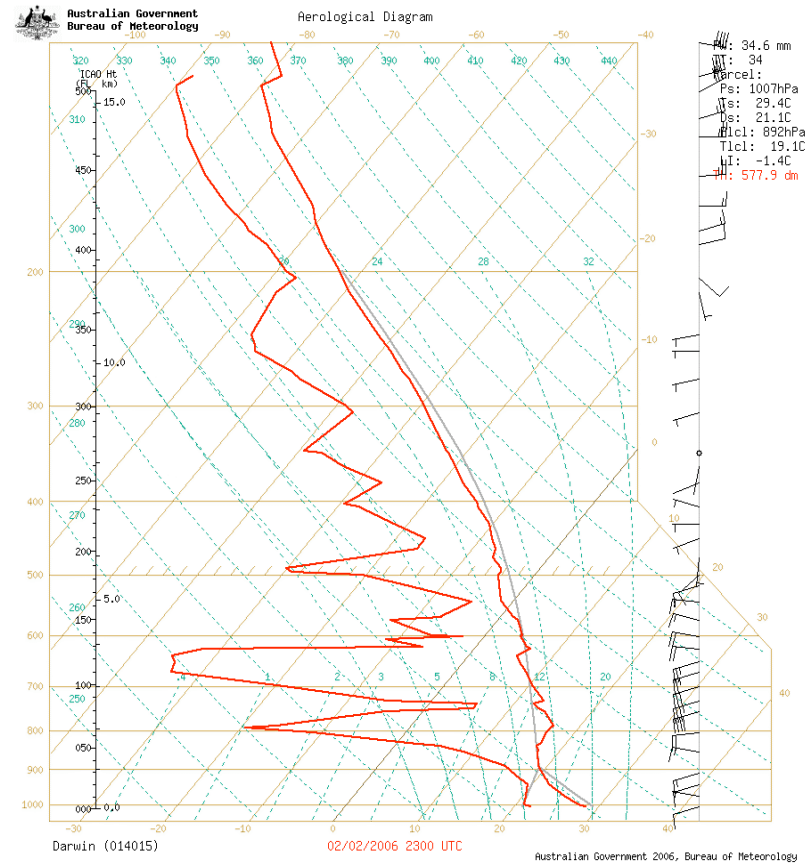
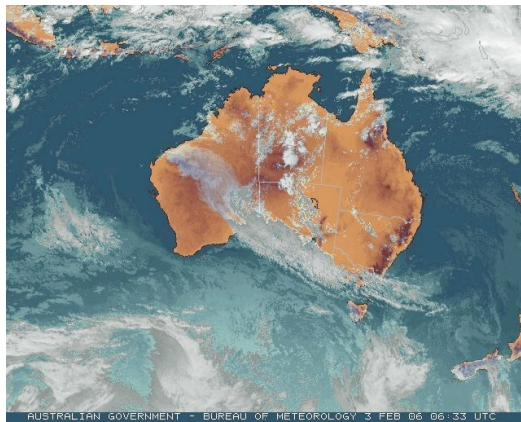
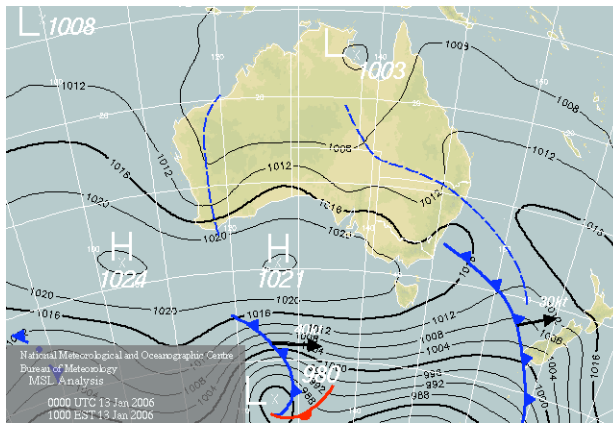
# 1 February - severe monsoonal squall lines , 52 knots at Woolner, 46 knots at Cape Don , re-focus to monsoon as “landfoen” starts to weaken



# 2 February - monsoon squalls to north of Darwin (Tiwi islands)



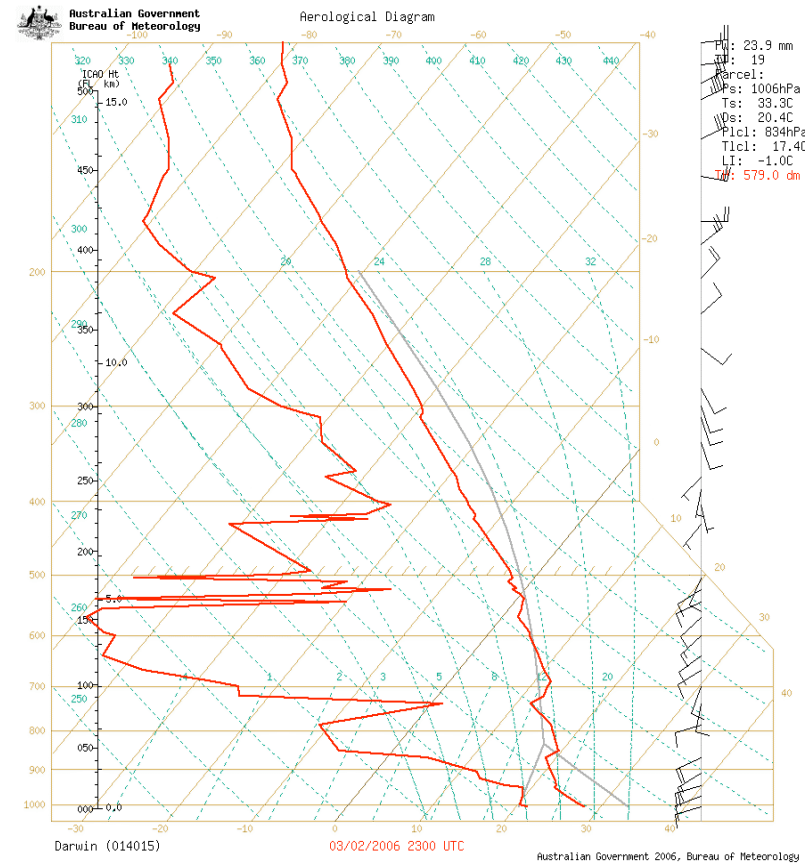
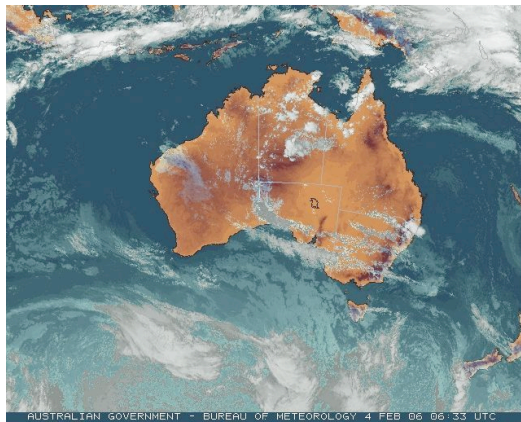
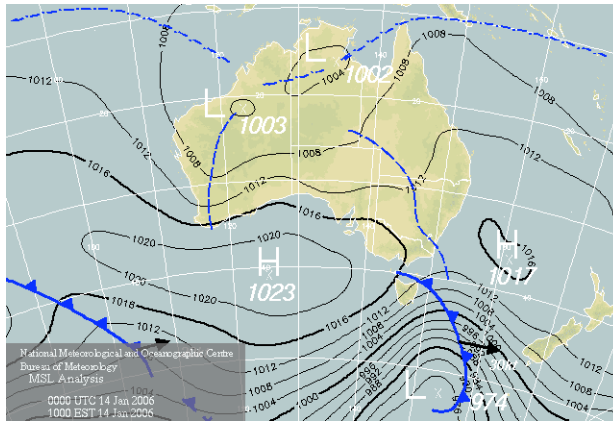
# 3 February - monsoon weakened over north Australia - break period commences



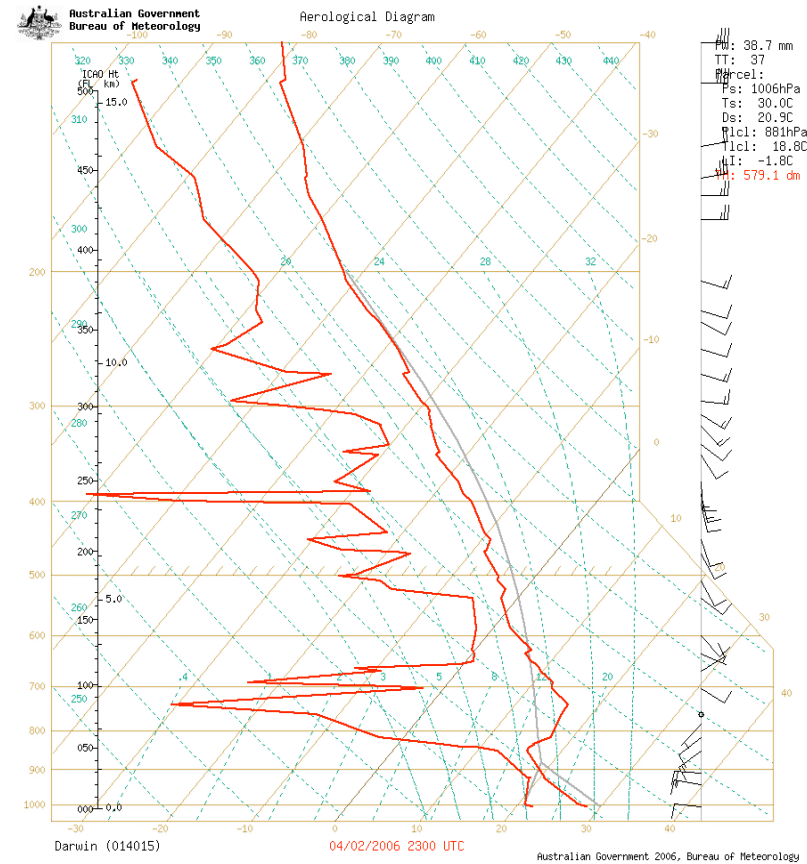
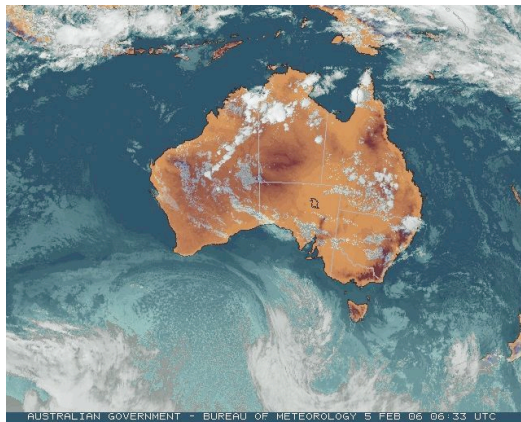
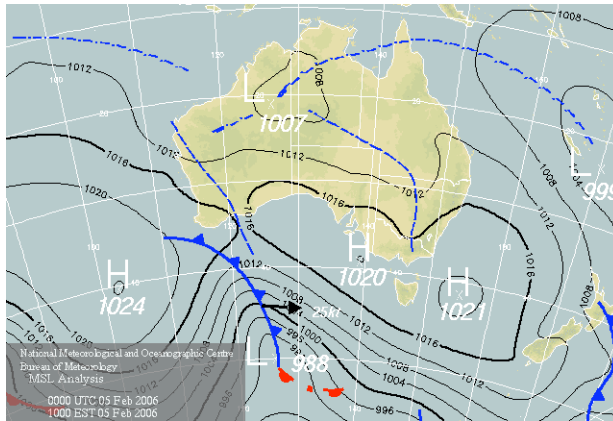


# 4 February

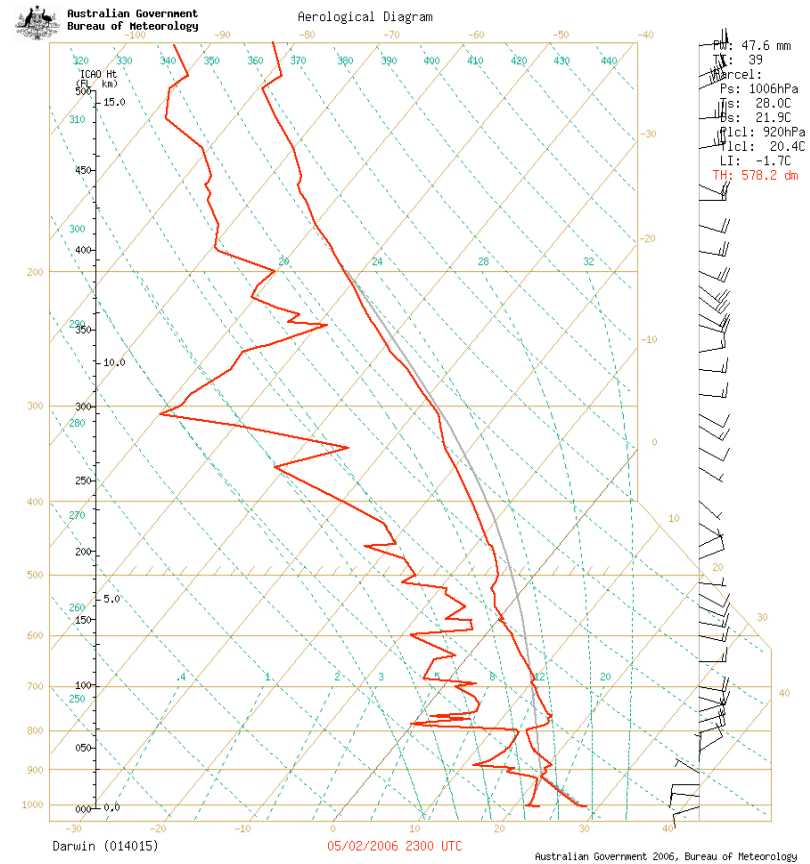
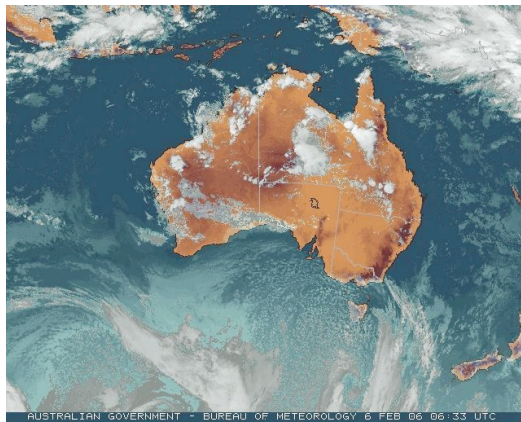
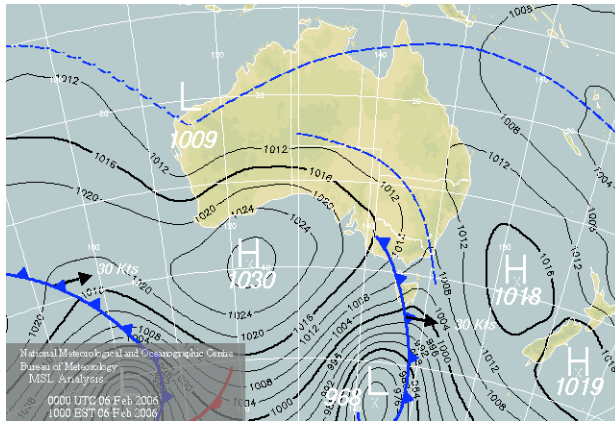
- Fine and sunny in Darwin;  
Dry air and subsidence inversion near 5-10000 feet;



# 5 February- Trough near Katherine, convection near trough, squall line continued across Kimberley overnight; Fine and sunny in Darwin

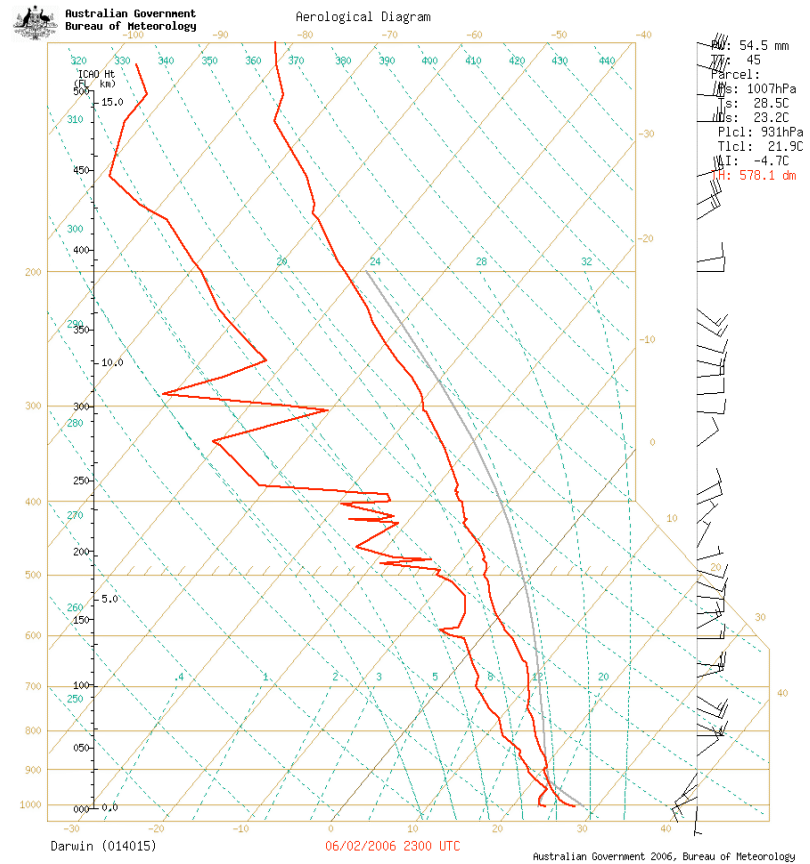
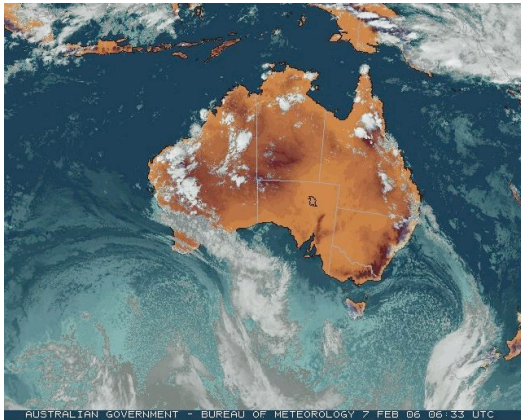
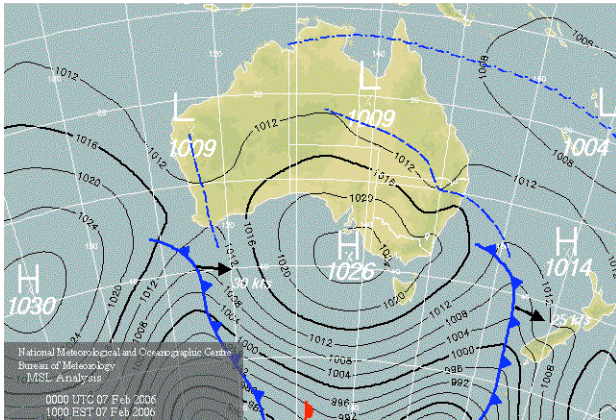


# 6 February- Northward moving trough, south of Darwin, active convection on trough in afternoon and Tiwi island.

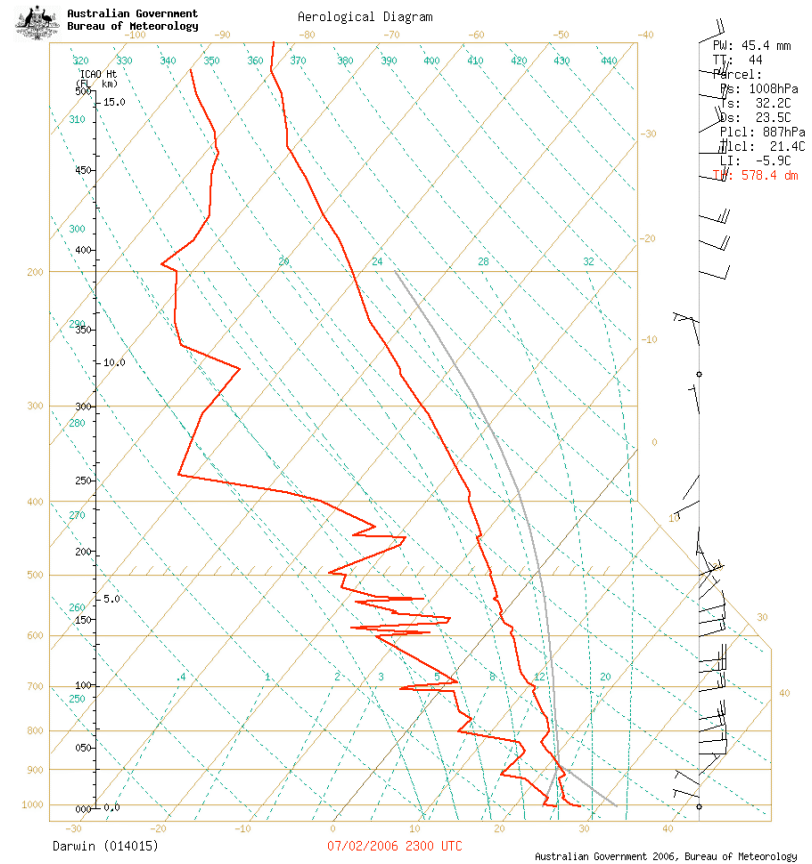
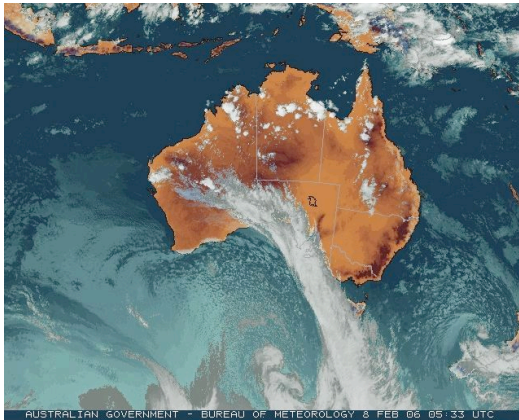
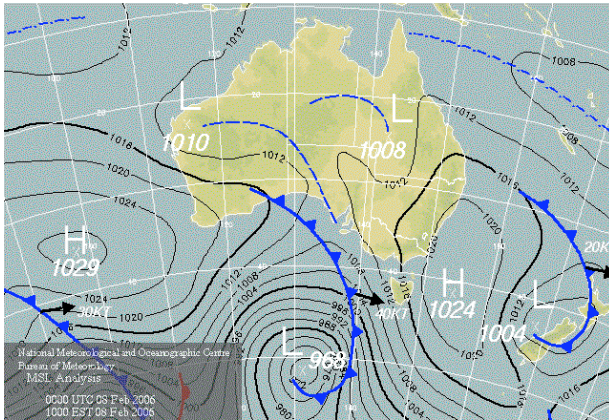




# 7 February



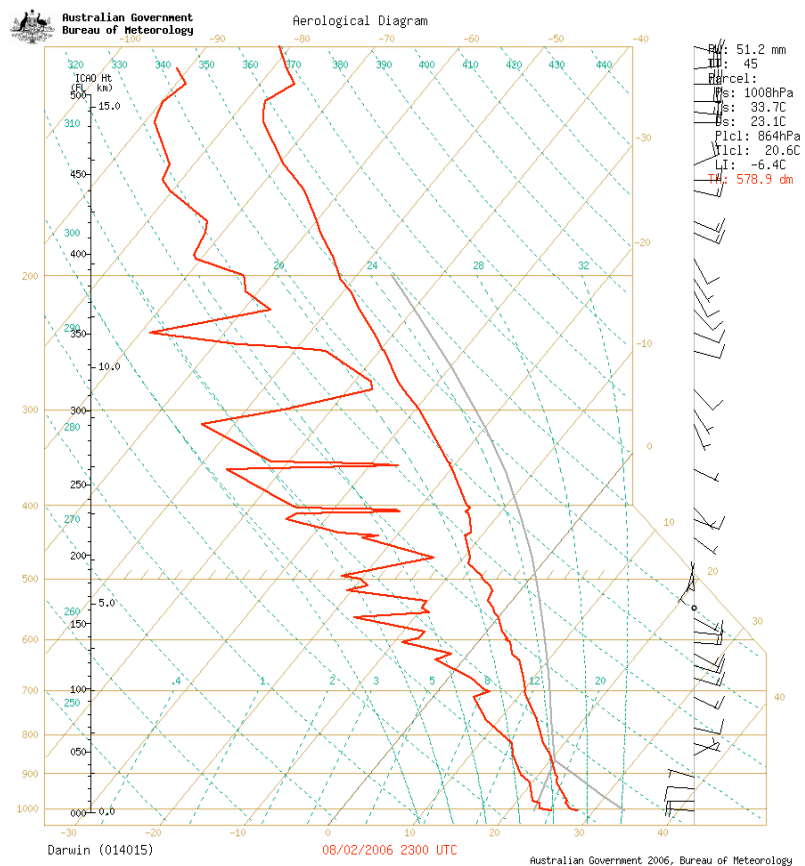
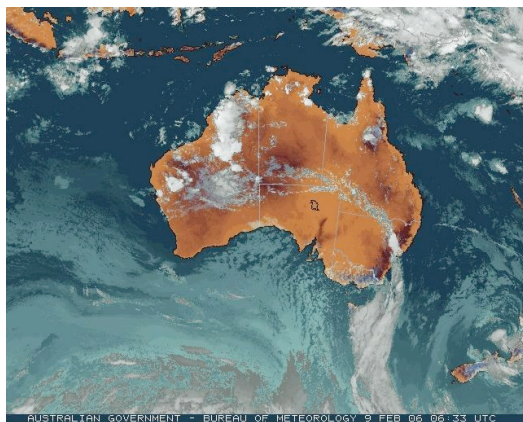
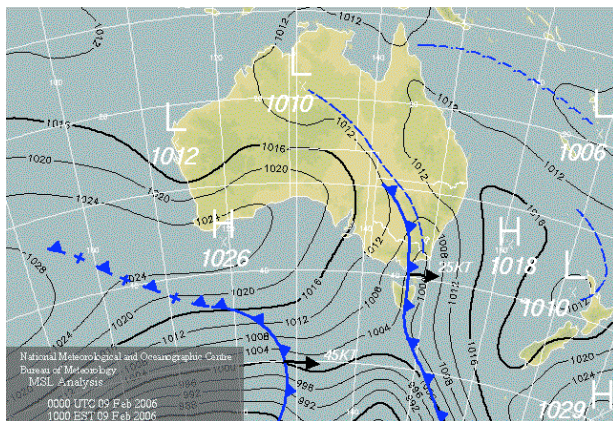
# 8 February



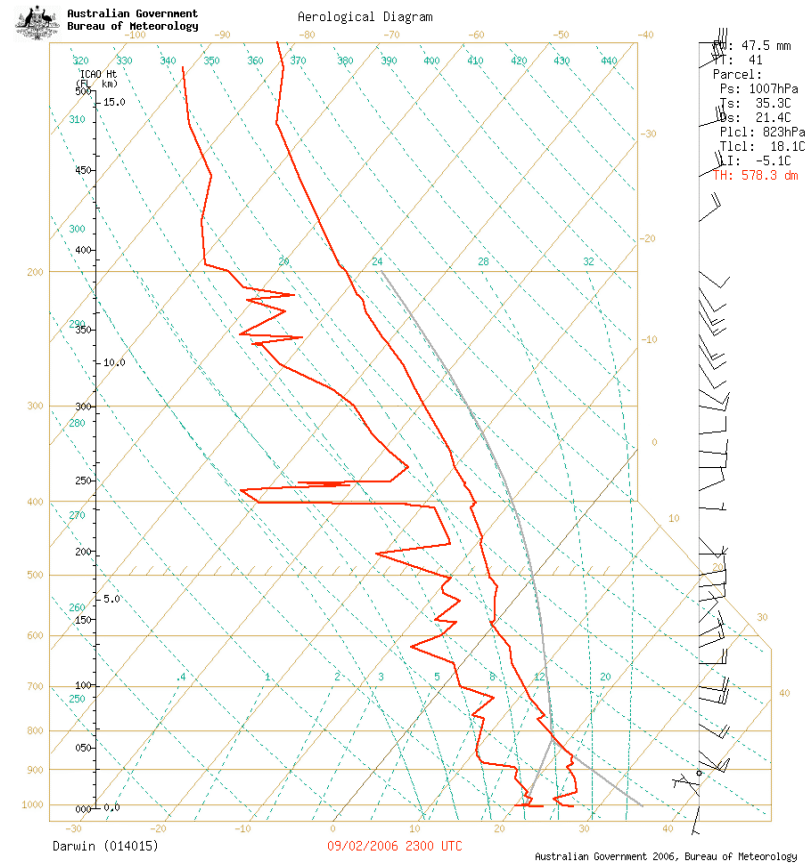
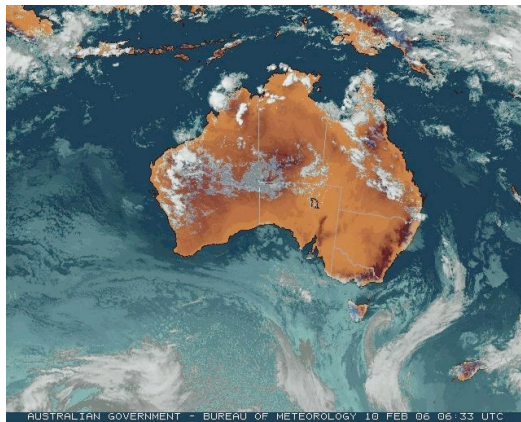
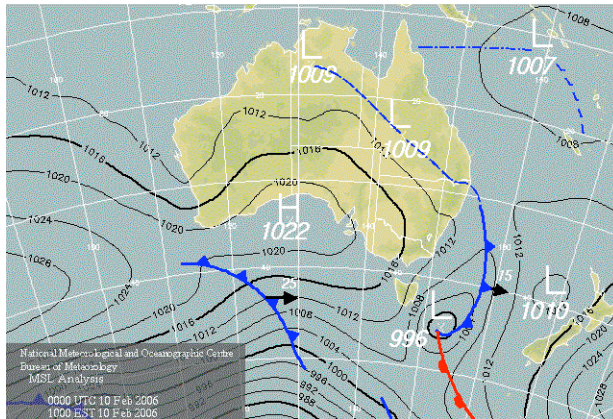


# 9 February

- Storms tops to 20 km on Tiwi Islands and south of Darwin;

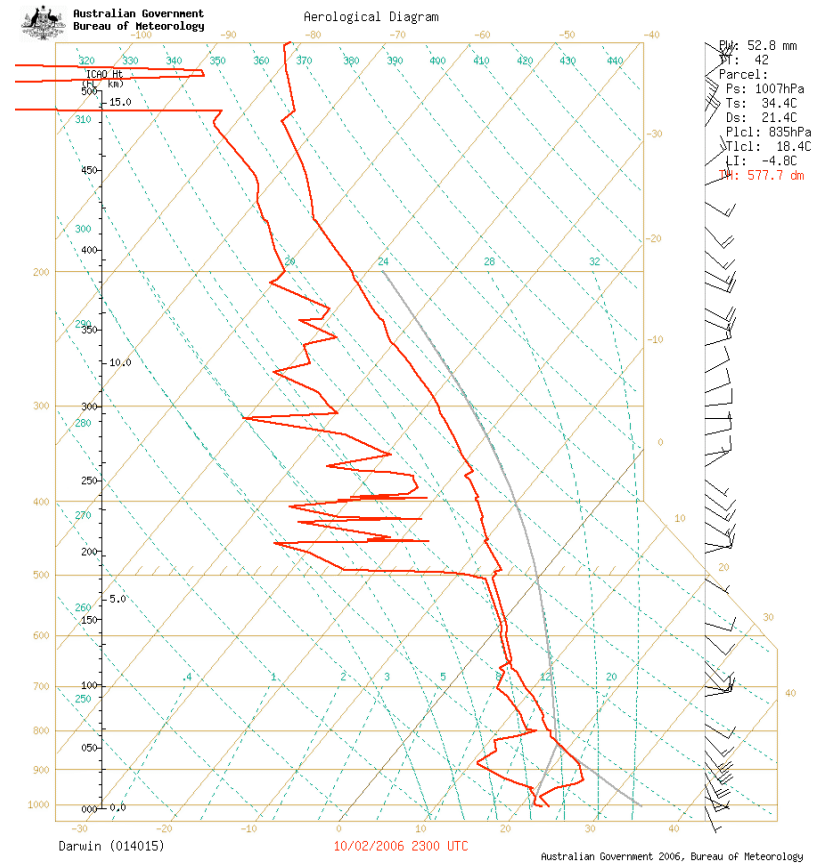
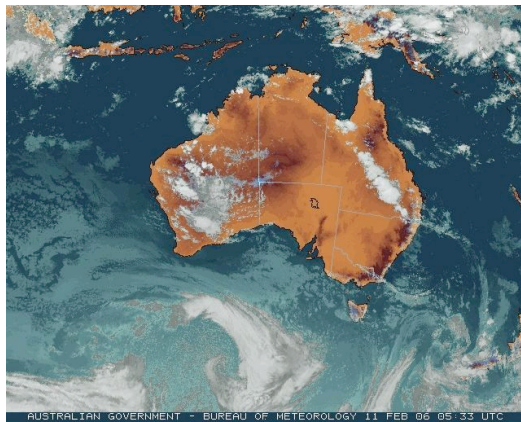
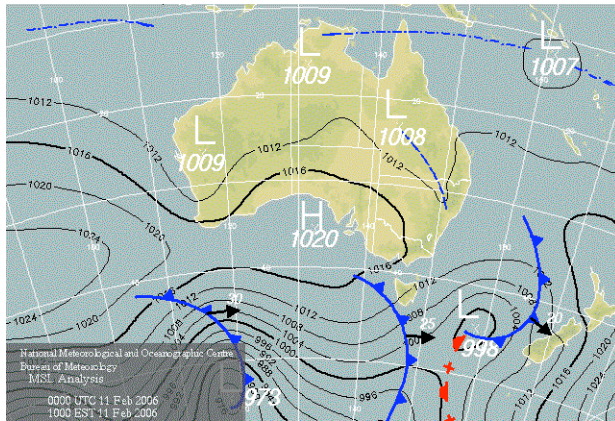


# 10 February - Overnight squall line through Darwin and south, suppressed daytime environ;



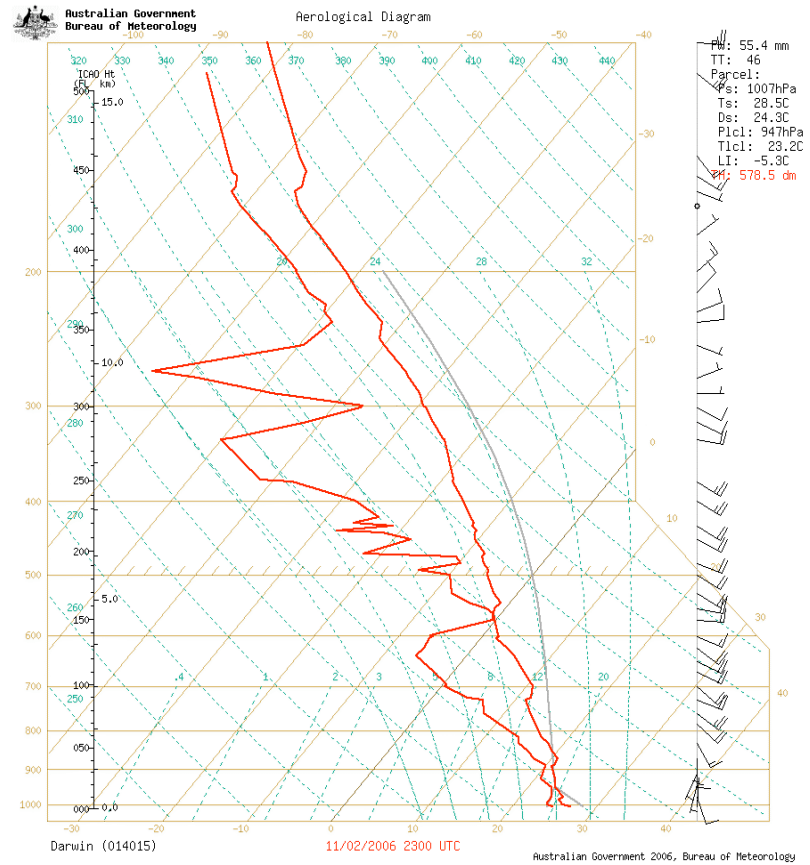
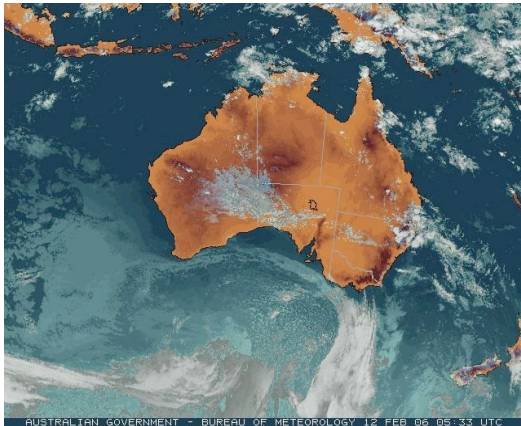
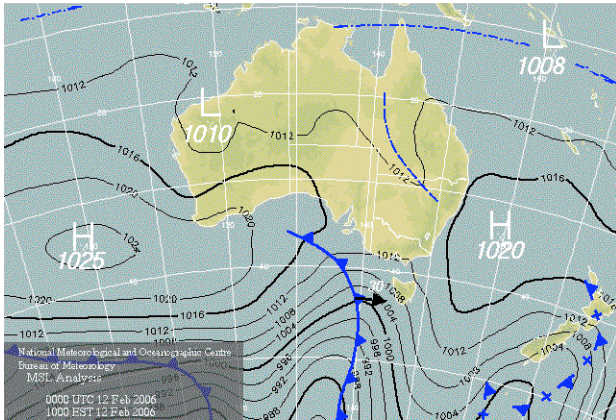


# 11 February

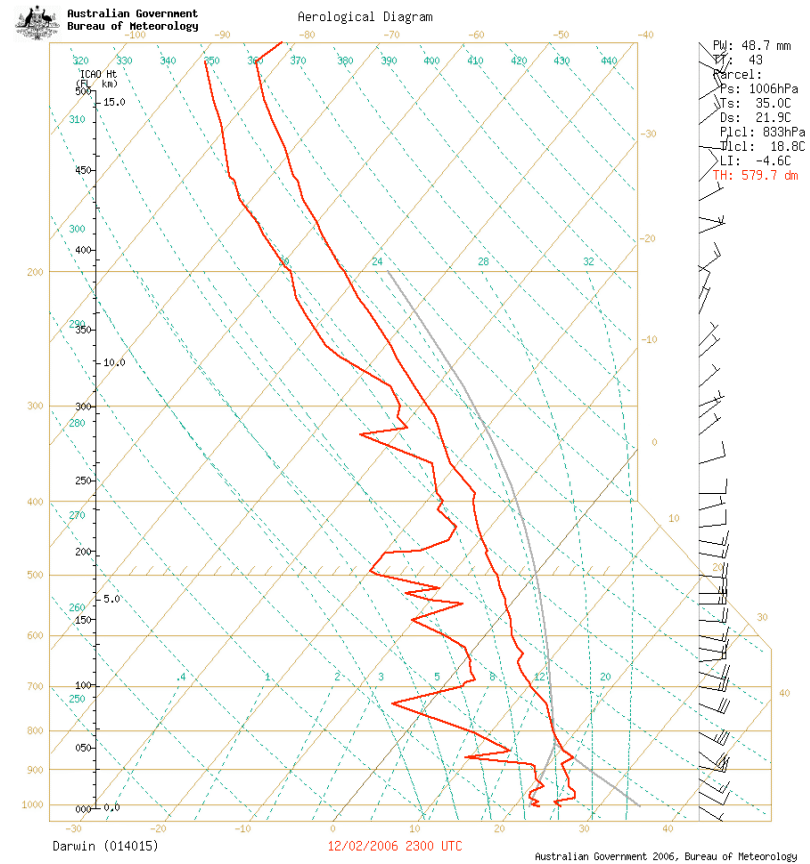
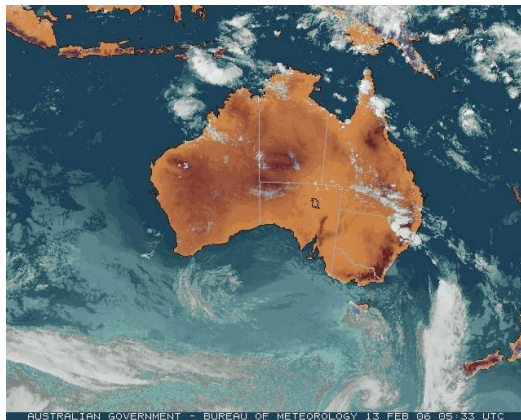
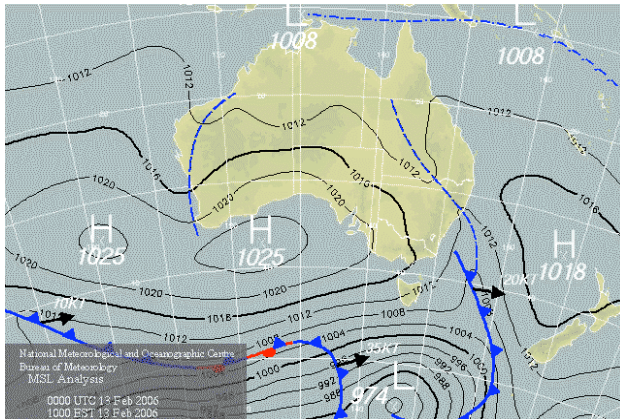




# 12 February



# 13 February





# 14 February

