

Weather maps and observations

Mean sea-level pressure (mb) for 00Z27DEC1998

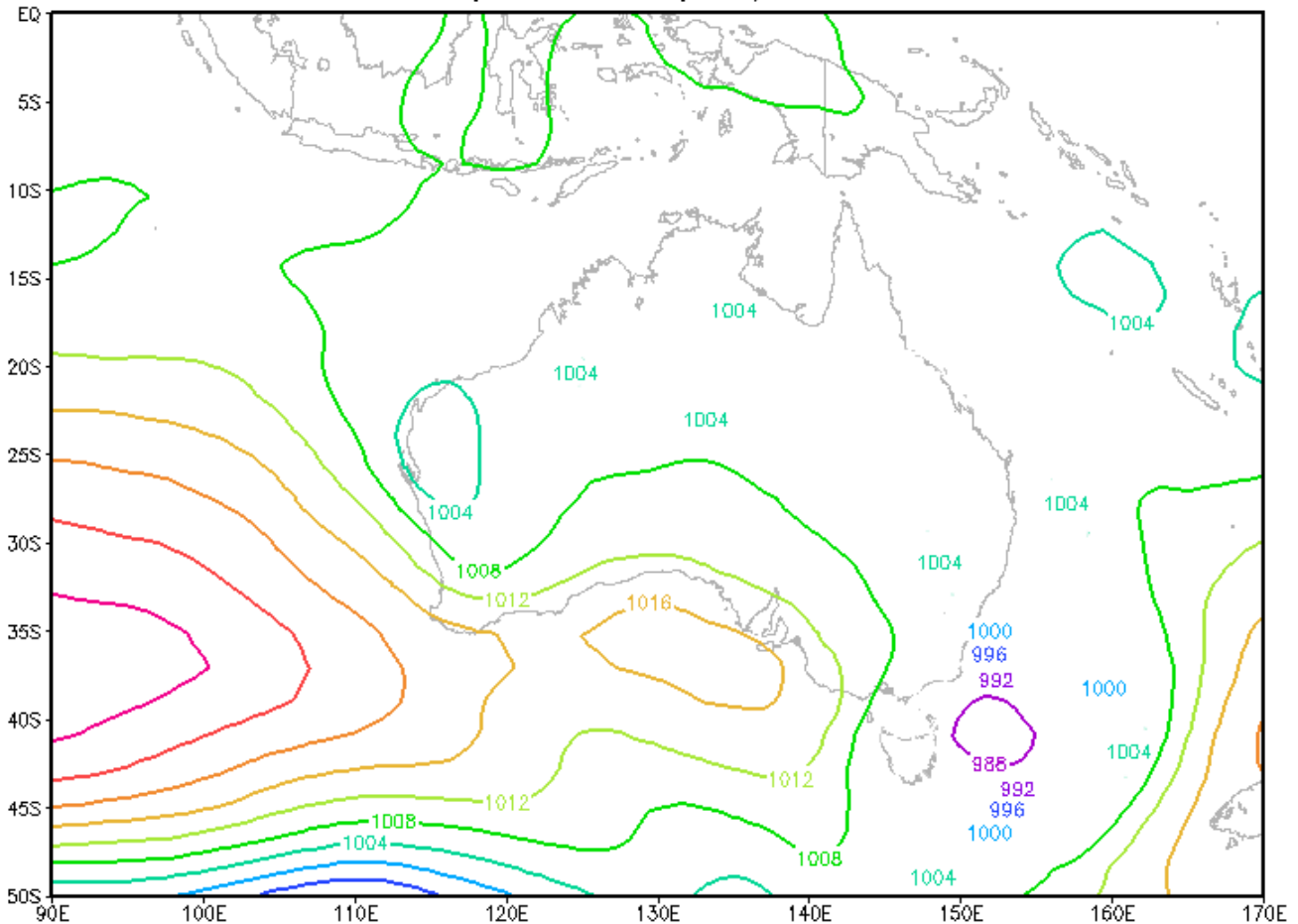


Image courtesy of the Bureau of Meteorology. www.bom.gov.au

European meteorology in Australia began on 14 September 1788 with Lt William Dawes. Sydney Observatory then began detailed observations in 1858 which continued until the Bureau of Meteorology commenced operations in 1908.

The Bureau of Meteorology now produces weather maps that show the main weather features across the country including pressure, cells, rainfall and fronts.

The ability to read and understand weather maps is important for everyone, but especially for people at sea.

During the 1998 Sydney to Hobart yacht race, the horrendous weather conditions sank five boats and forced 66 boats to retire. Fifty-five people had to be rescued and sadly, six people lost their lives. The following year the weather conditions were perfect and the yacht *Nokia* smashed the race record!

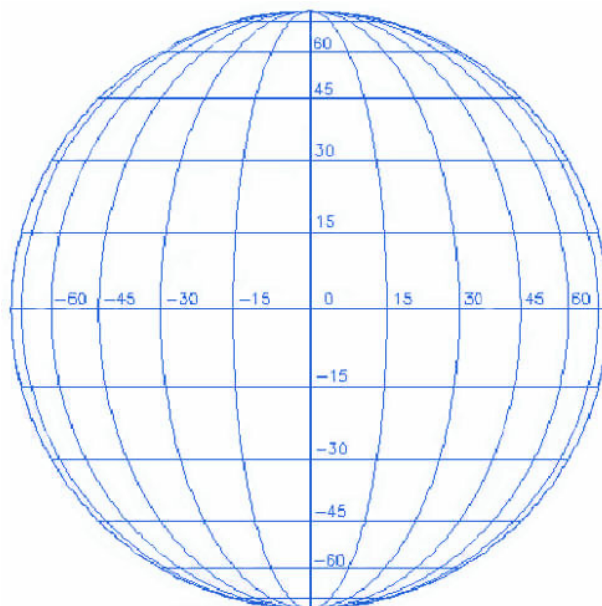
Using the information presented on the five numbered weather cards — isobars, pressure

cells, rainfall, fronts and wind — look at the weather map for 27 December 1998 shown above. Complete the missing isobars by joining places of the same pressure in smooth curved lines, identify any pressure cells and see if you can forecast the weather.

You won't be able to work out the temperature but you can look at wind direction, strength, likelihood of rain, cloudy or fine, and any expected changes in the weather over the next day. When completing the map remember that isobars are drawn as smooth curves and never cross or touch each other!

DATA COLLECTION AND OBSERVATION

1. Temperature: _____ °C
2. Relative humidity: _____ %
 - a. Dry bulb temperature: _____ °C
 - b. Wet bulb temperature: _____ °C
 - c. Difference: _____ °C
3. Cloud cover.
 - a. Type: _____
 - b. Coverage: _____ % (estimate only)
4. UV index: _____
5. Wind speed: _____ m/s
6. Wind direction: _____
7. Barometric pressure: _____ hPa
8. Rainfall (actual or simulated over 5 seconds) _____ mm
9. The Sun is the powerhouse behind the Earth's weather, but a relationship between sunspots and the weather is unclear at present. The filter you will use here is a neutral density filter designed to show three things which your guide will identify. What solar features does a neutral density filter show?
 - a. _____
 - b. _____
 - c. _____
10. If you see any sunspots through the telescope filter, plot them on the chart below. You will need to identify the poles for the correct orientation.



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