The Story of a Shipborne Automatic Weather Station travelling across the Equator

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Being a shipborne automatic weather station (Figure 1) sent on a mission by the Hong Kong Observatory on board a Hong Kong Voluntary Observing Ship (HKVOS) to provide automatic hourly weather observations at seas, I have the exhilarating experience of travelling across the Equator to the other side of the Earth (Figure 2) during a voyage from New Zealand to Hong Kong in November 2016 and recording the changeable weather en route (Figure 3).

The journey started from the South Island of New Zealand on 2 November 2016 when the weather was dominated by frontal systems over the temperate latitudes in the Southern Hemisphere (Figure 4(a)). Cool nights along the east coast of New Zealand soon became milder with pressure rising sharply on 7 November 2016 as the ship moved towards the subtropical anticyclone northwest of New Zealand (Figure 4(b)). Crossing the Equator and through the equatorial trough of low pressure with intense convection in mid-November (Figure 4(c)), temperature rose and pressure fell. After enjoying the warm weather over the western North Pacific, the ship entered the northern part of the South China Sea where the northeast monsoon prevailed (Figure 4(d)). The weather became cooler with gradually rising pressure as the ship reached Hong Kong at the end of the voyage.

Close encounter with four major weather systems in less than three weeks has been quite an experience. I suppose travelling with a ship to different places around the world is always going to be more exciting than being stuck on land at a fixed location forever!

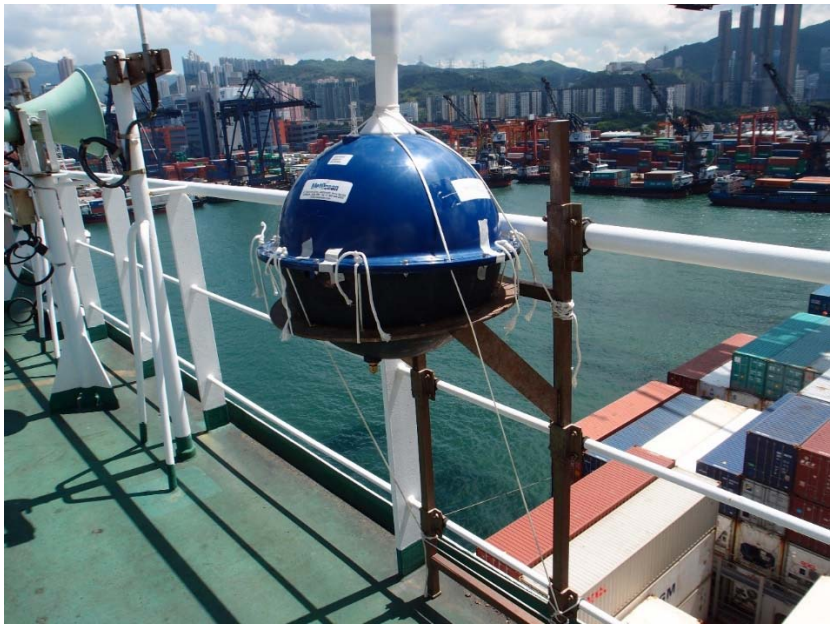


Figure 1. An automatic weather station installed on board a HKVOS

Figure 2. Route of the HKVOS travelling from New Zealand to Hong Kong during the period 2 - 20 November 2016.

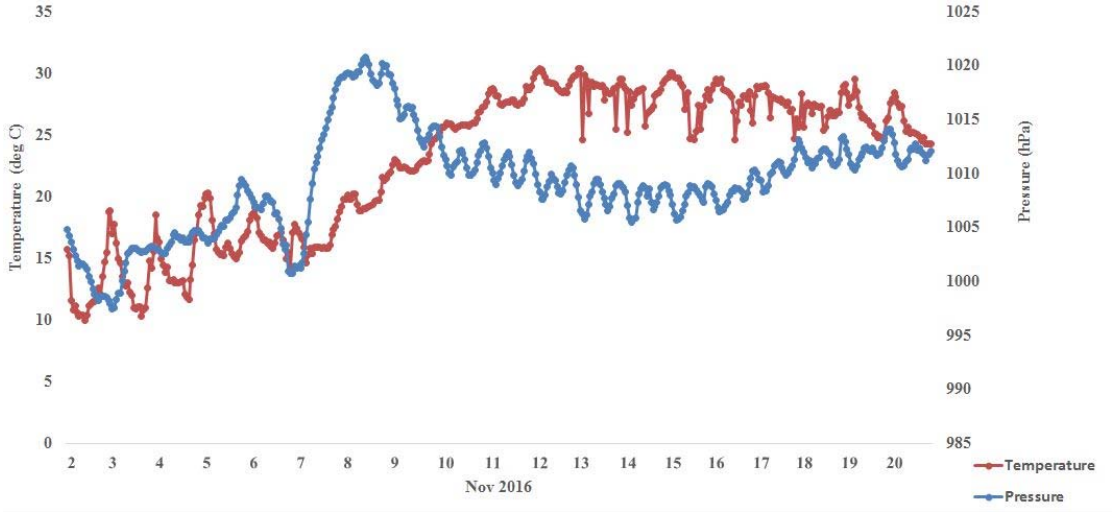
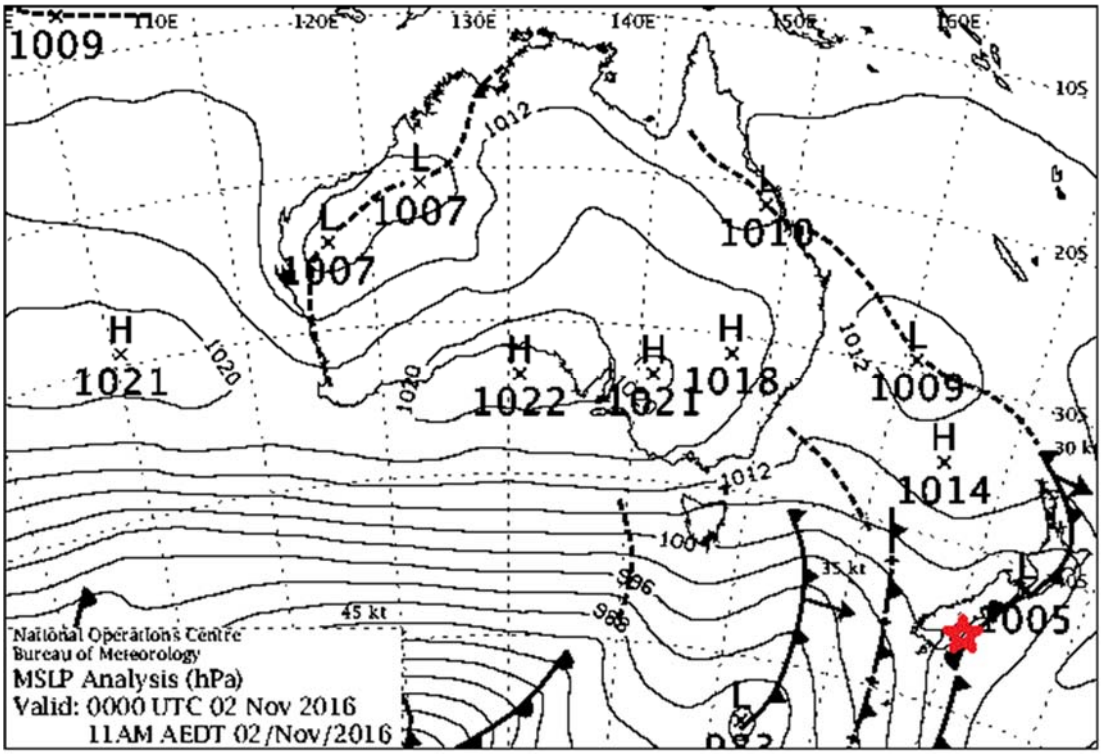
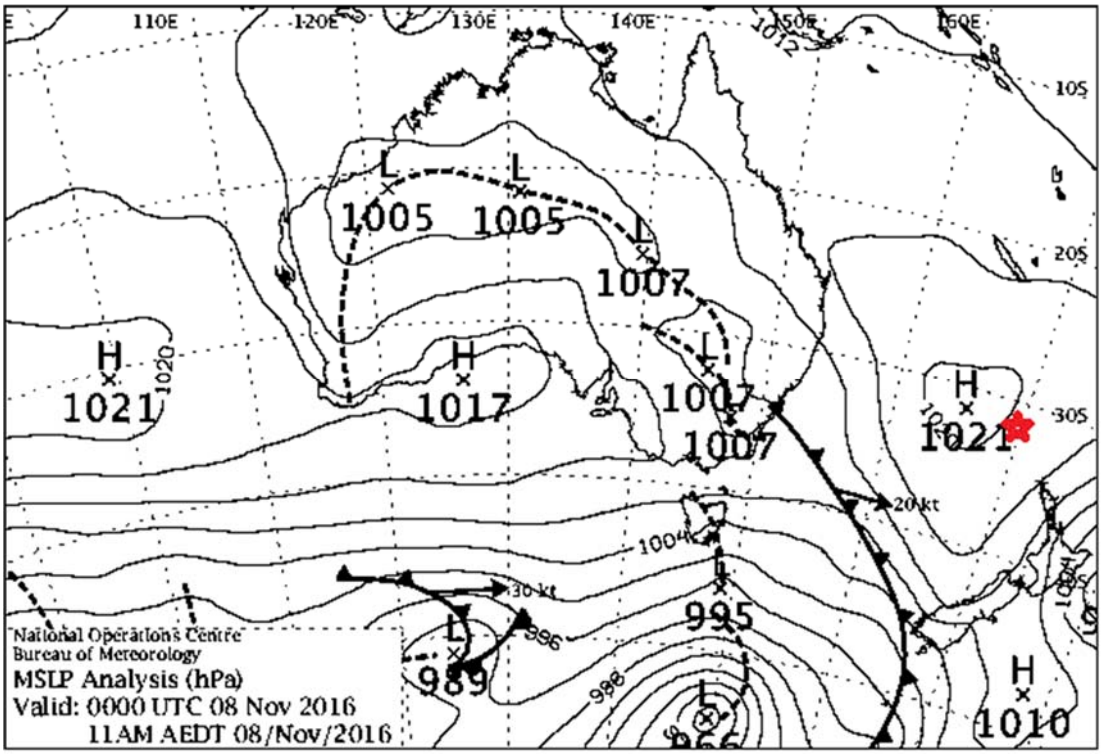


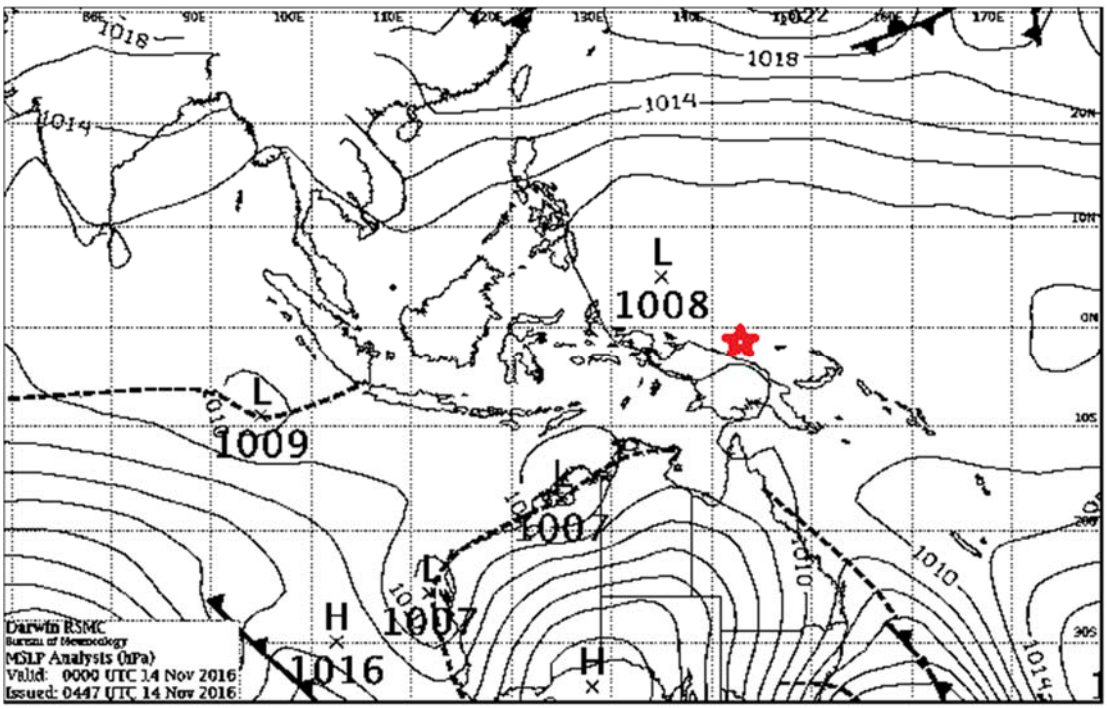
Figure 3. Variation of pressure (blue) and temperature (red) recorded by the automatic weather station on board the HKVOS travelling from New Zealand to Hong Kong during the period 2 - 20 November 2016.



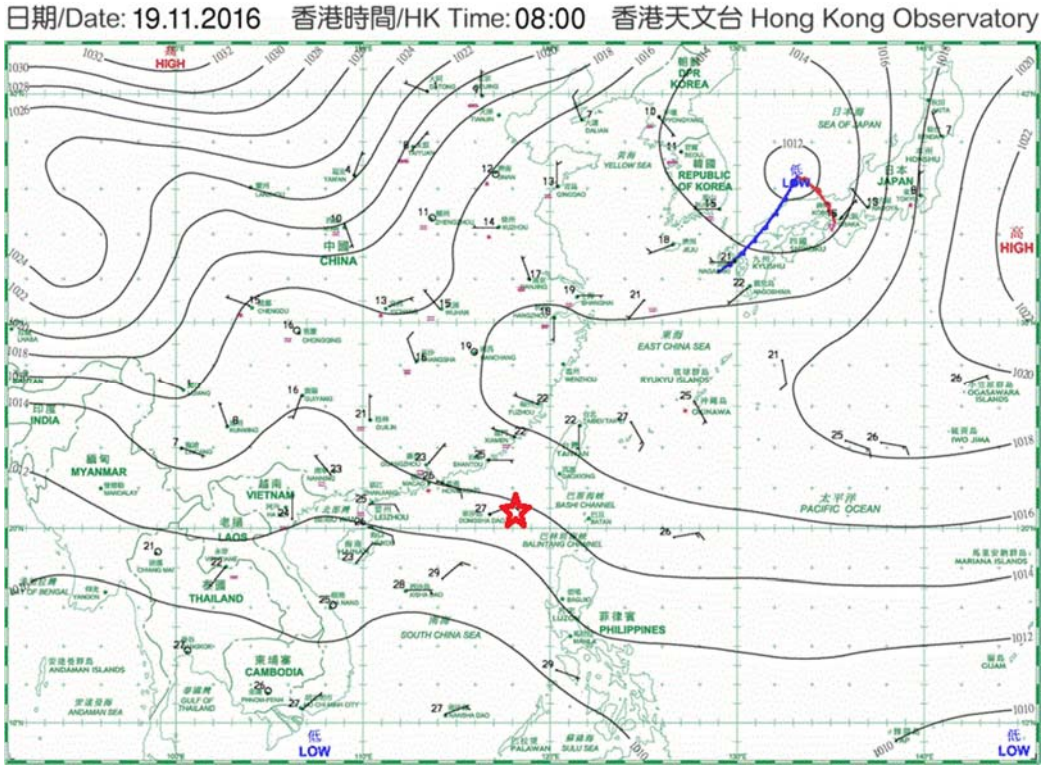
(a) 2 November 2016



(b) 8 November 2016



(c) 14 November 2016



(d) 19 November 2016

Figure 4. Weather maps on (a) 2 November, (b) 8 November, (c) 14 November and (d) 19 November 2016 ((a) to (c) are reproduced with the permission of the Australia Bureau of Meteorology). The positions of the shipborne automatic weather station are marked by a red star.