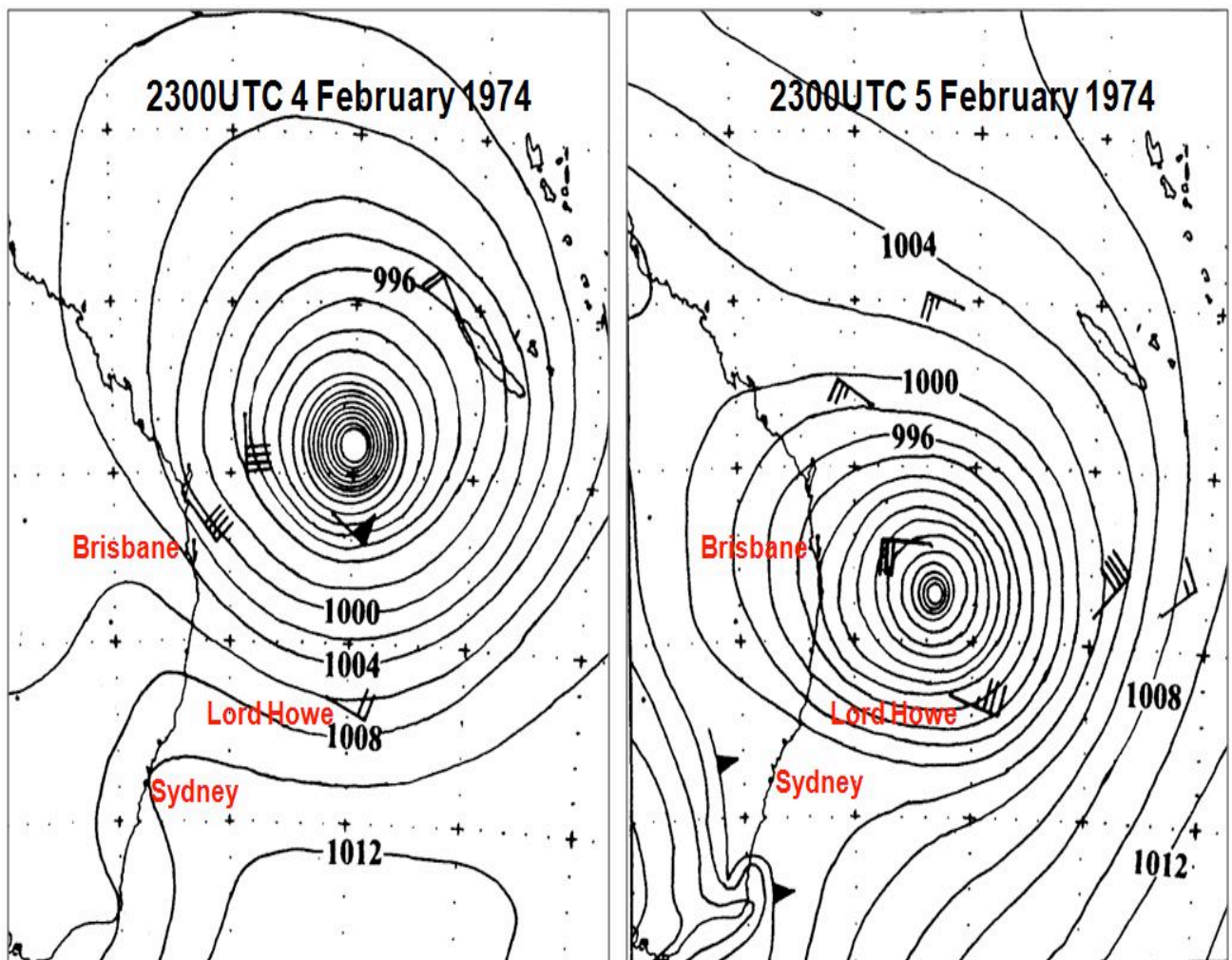


### CASE STUDY: Tropical Cyclone *Pam*, February 1974

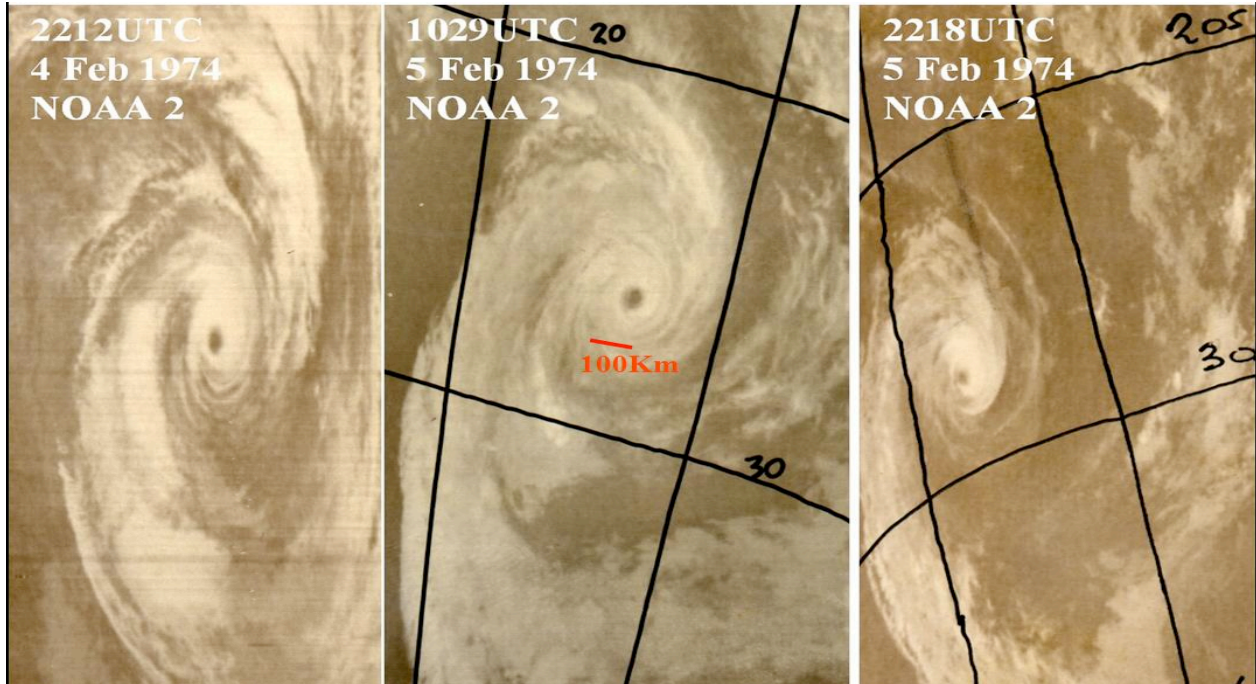
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*Pam* was a very large intense cyclone which passed 500 km to the east of Brisbane.  
Below the analyses shows the large size of the cyclone as it moved in the direction of Lord Howe Island.



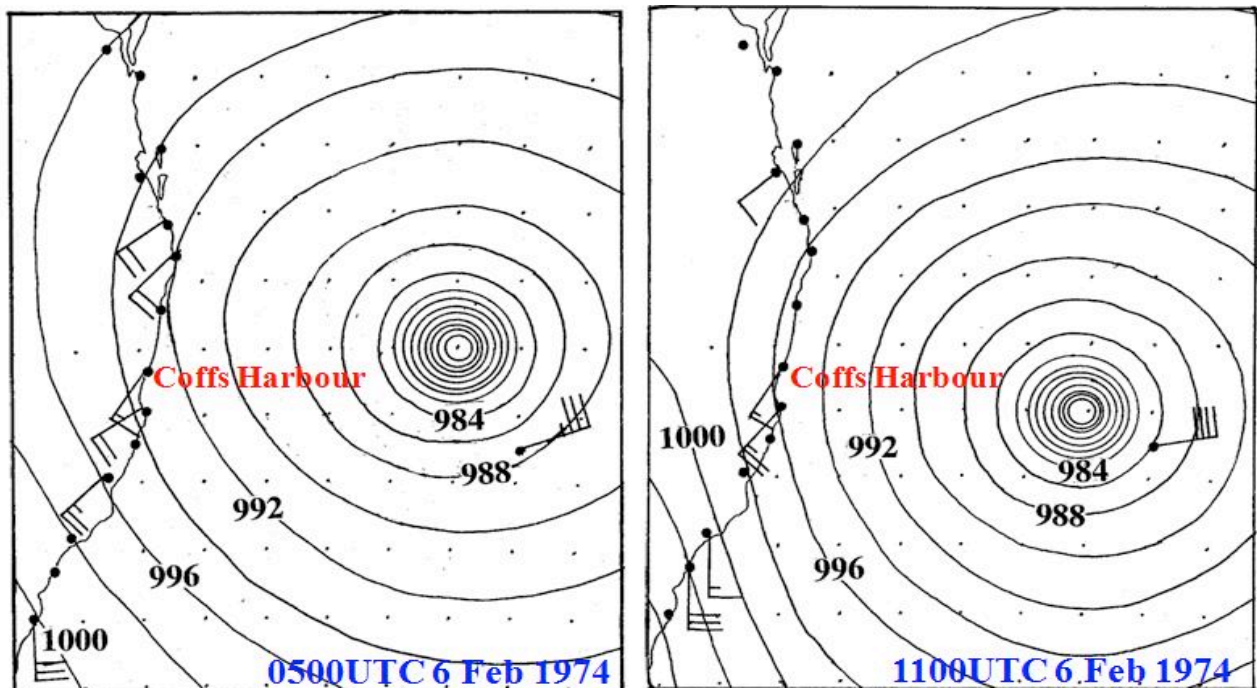
**Figure 1** Mean Sea Level analyses for 2300UTC 4 February 1974 (9am 5 February AEST) and 2300UTC 5 February 1974 (9am 6 February AEST).

Satellite imagery of *Pam* as it passes Brisbane is shown below in **Figure 2**. Note the clear eye, which indicates it was very intense over this period.



**Figure 2**

Below in **Figure 3** tropical cyclone *Pam* made its closest approach to the coast near Coffs Harbour and in doing so pushed a large mound of ocean onto the continental shelf. This mound due to the rotation of the earth moved up the coast towards Brisbane and is referred to by scientists as a Kelvin Wave. Sea water from the mound found its way into Moreton Bay raising the level of the Bay to 0.68 metres above the predicted tide level. On the high tide around 10am 7 February the water reached 3.13 metre on the tide gauge (a record). This rise in sea level flooded the Brisbane River and Brisbane creeks at high tide and caused cancellation of some bus services.



**Figure 3** Mean Sea Level analyses for 0500UTC 6 February 1974 (3pm 6 February AEST) and 1100UTC 6 February 1974 (9pm 6 February AEST).

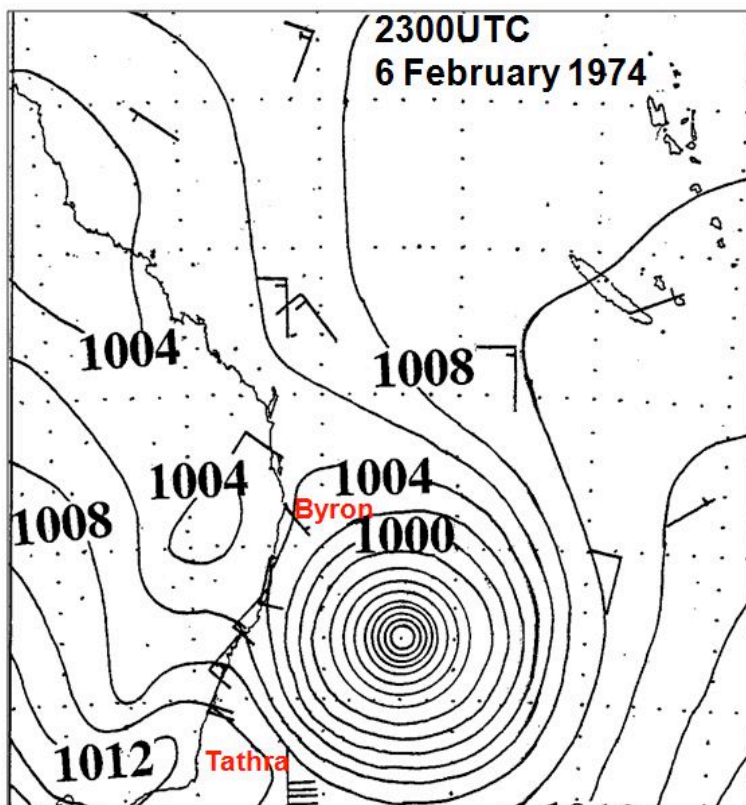


Large waves were generated by *Pam*. At Palm Beach on the Gold Coast residents had to abandon their houses and units as seawater drove over 6.2 metre boulder walls and surged through their premises. Below is an example of the damage caused by the waves and storm surge at the Kirra Surf Lifesaving club.



**Figure 4** Wave and storm surge damage caused by *Pam* at Kirra.

*Pam* then travelled southwards of the New South Wales Coast causing severe wave damage between Byron Bay and Tathra.



**Figure 5** Mean Sea Level analyses for 2300UTC 6 February 1974 (9am 7 February AEST).