

HARDEN UP

QUEENSLAND

CASE STUDY: Tropical Cyclone *Simon*, February 1980

By Mr Jeff Callaghan
Retired Senior Severe Weather Forecaster, Bureau of Meteorology, Brisbane

Simon was rapidly intensifying and moving towards the coast when it recurved seawards over Port Clinton with a radar eye diameter of 35 km. In this remote area it caused extensive damage to vegetation. It passed slowly to the north of Heron Island which experienced wind gusts to 93 knots and a great deal of damage. Neap tides saved the Island from swell damage. Huge swells were observed but their energy was dissipated on the exposed fringing reef. A yacht ran up onto Lady Elliot Island and a rescue helicopter turned over but there were no casualties. As the cyclone passed to the east of Fraser Island a ship near Indian Head reported wind gusts greater than 100 knots. Sandy Cape Lighthouse reported winds gusting to 92 knots. Houses lost roofing iron at Hervey Bay where there was flooding. The Burnett Heads wave recording station recorded significant (peak) wave heights of 4.5m (8.9m).

In Figure 1 below the development of *Simon* is shown as well as its intensification right up to landfall.

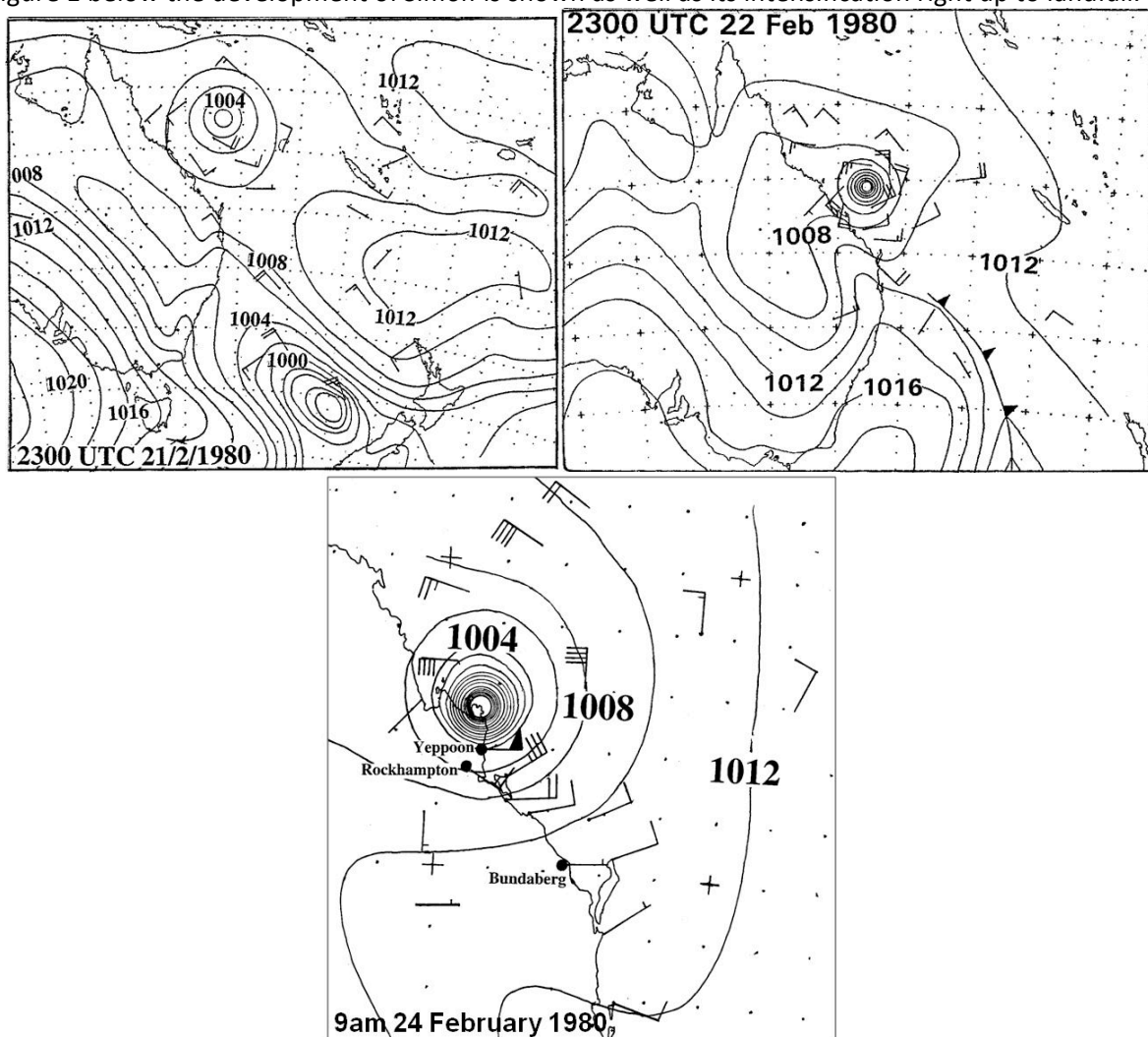


Figure 1 Mean Sea Level analyses top left 9am 22 February 1980 (2300UTC 21st), top right 9am 23 February 1980 (2300UTC 22nd) and lower left 9am 24 February 1980 (2300UTC 23rd).

Figure 2 below shows *Simon's* slow passage around Heron Island, Lady Elliot Island and Fraser Island.

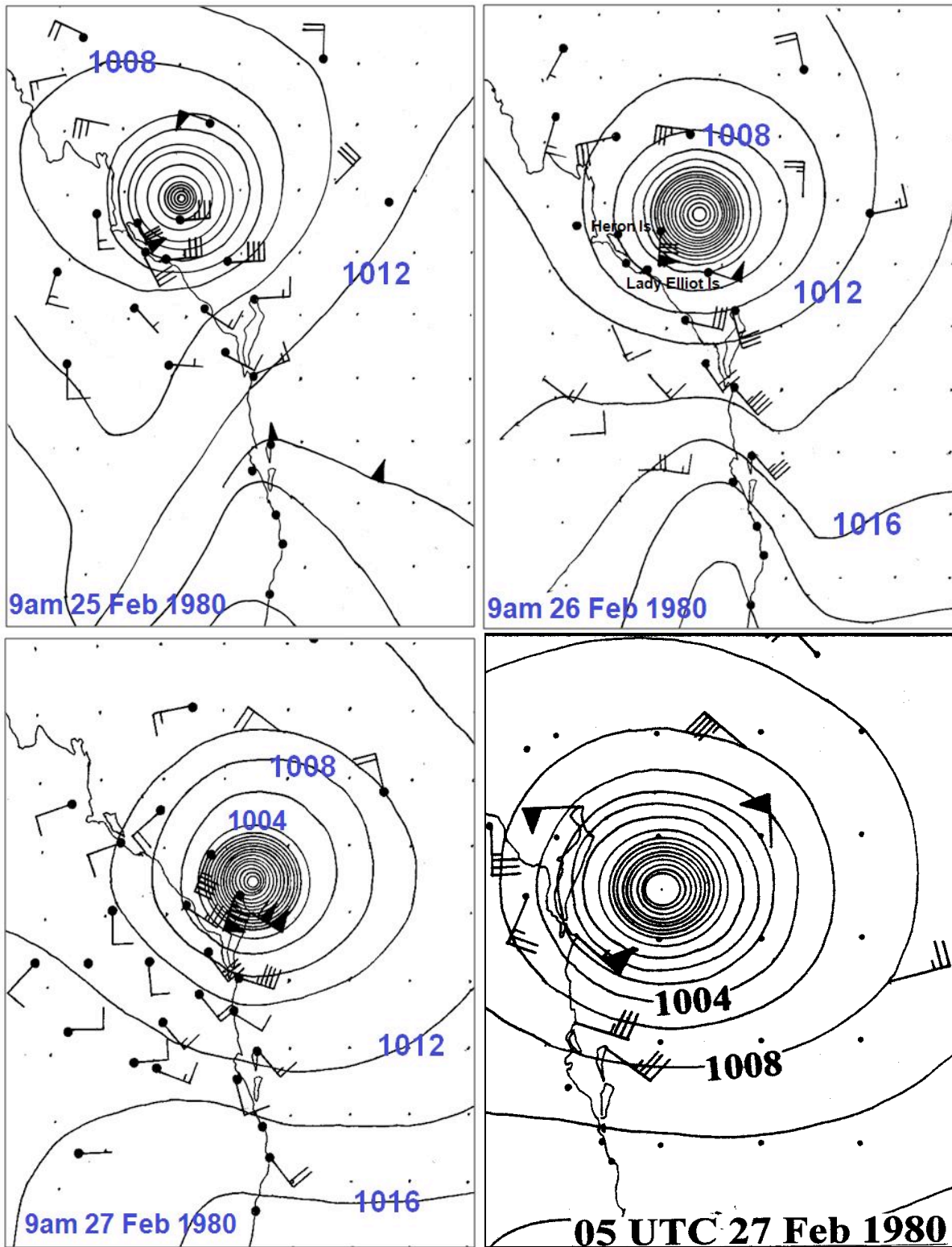


Figure 2 Mean Sea Level analyses top left 9am 25 February 1980 (2300UTC 24th), top right 9am 26 February 1980 (2300UTC 25th), lower left 9am 27 February 1980 (2300UTC 26th) and lower right 3pm 27 February 1980 (0500UTC 27th).

Below shows *Simon* at landfall and at peak intensity as viewed by satellite (top) and radar (bottom frame).

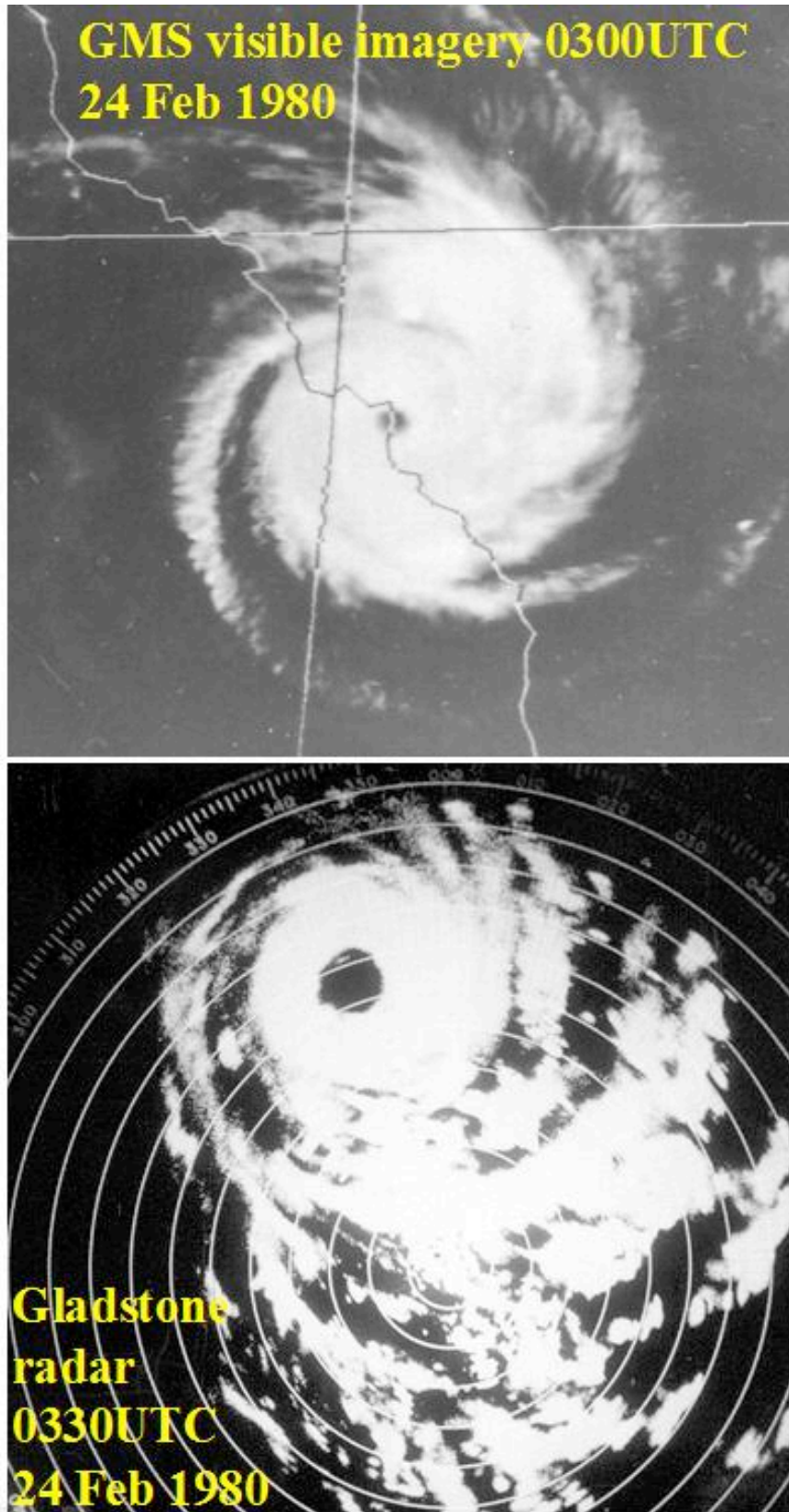


Figure 3 Tropical Cyclone *Simon* at Landfall from Geostationary satellite imagery (top) and from Gladstone radar.

The rain distribution also highlighting the track of *Simon* is shown below. The structure of the cyclone and its track resulted in the cyclone generating very little heavy rain inland.

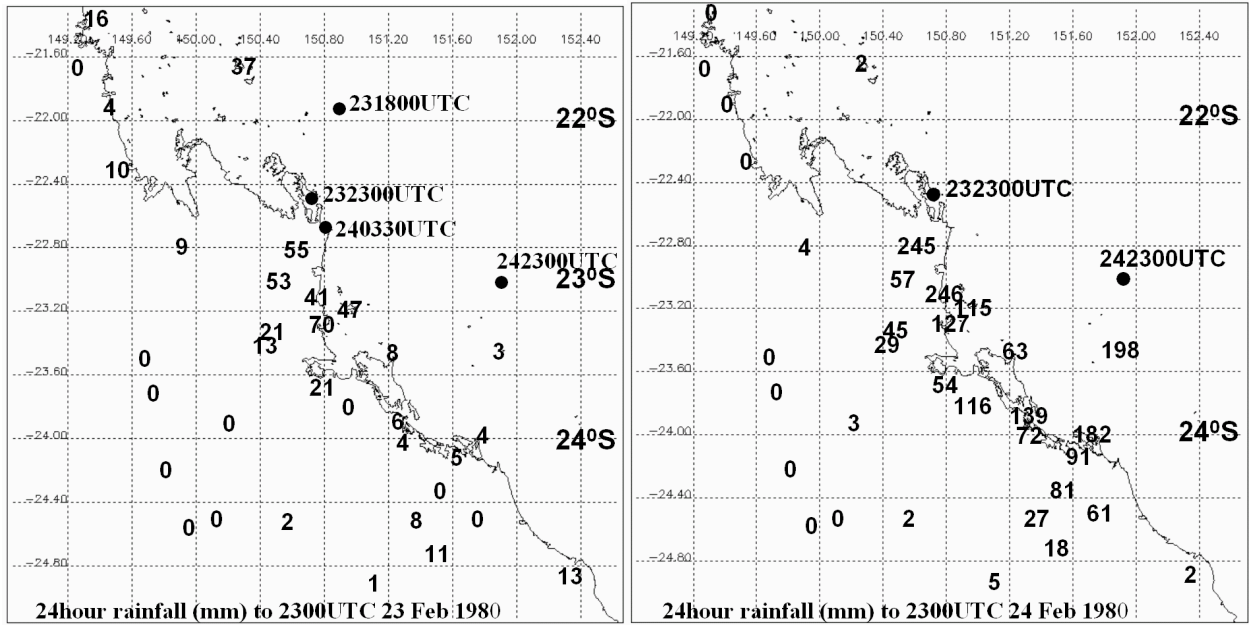


Figure 4 24 hour rainfall totals (mm) to 2300UTC 23 February 1980 (left) and to 2300UTC 24 February 1980 (right).