

Australian Northeast Shelf

Overview

The Australian Northeast Shelf extends roughly 2000 km along the coast of Queensland, Australia. The region is influenced by the South Equatorial Current and the presence of the Great Barrier Reef system (GBR), the largest system of corals and related life forms in the world. [LME 2004].

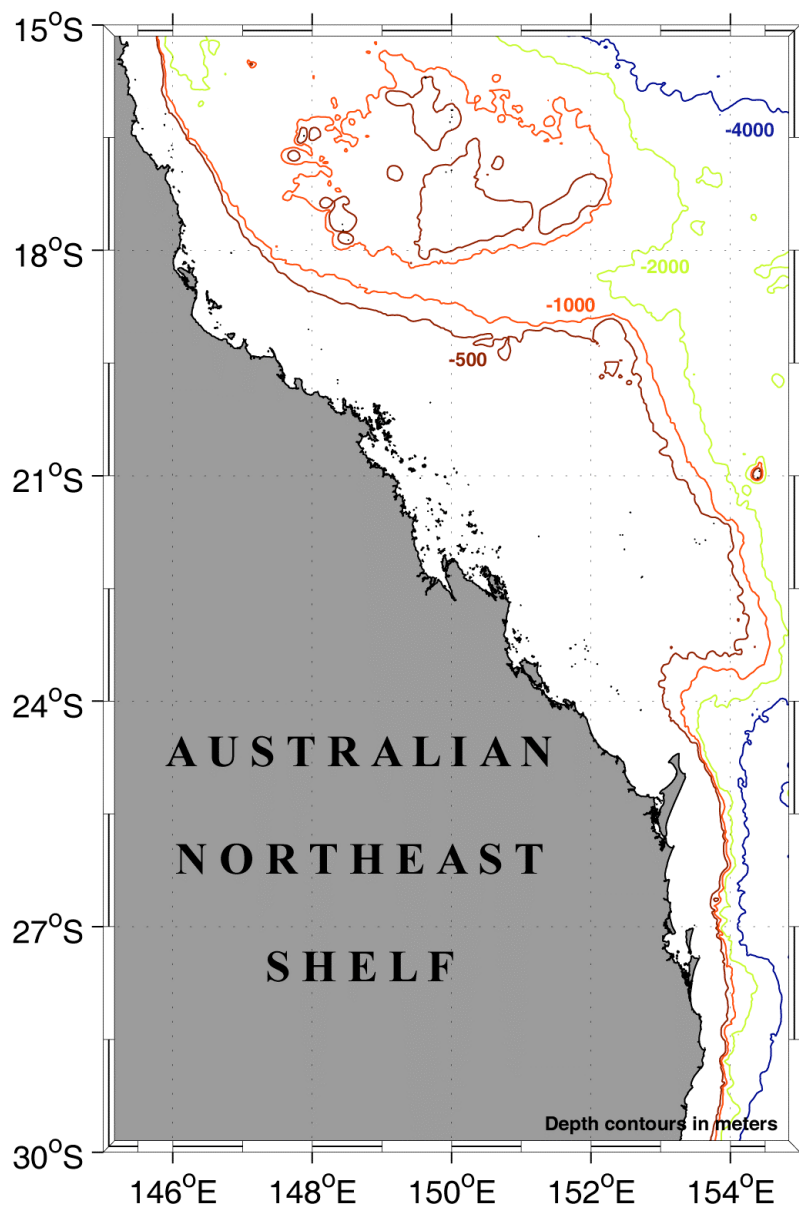


Figure 1. Bathymetry of the Australian Northeast Shelf [Smith and Sandwell, 1997]

Observations

There has been little scientific study of internal waves along the northeast coast of Australia. Satellite imagery shows wave occurrences near the edge of the continental shelf. The broad shelf over the region should provide for a large number of generation sites. It is however possible that the internal wave generation mechanism is disrupted due to the presence of the Great Barrier Reef along the shelf break. The Australia northeast shelf is in a tropical region with intense, year-round solar heating producing a warm surface layer [LME 2004]. Internal wave activity would therefore be expected year round. Table 1 shows the months of the year when internal wave observations have been made.

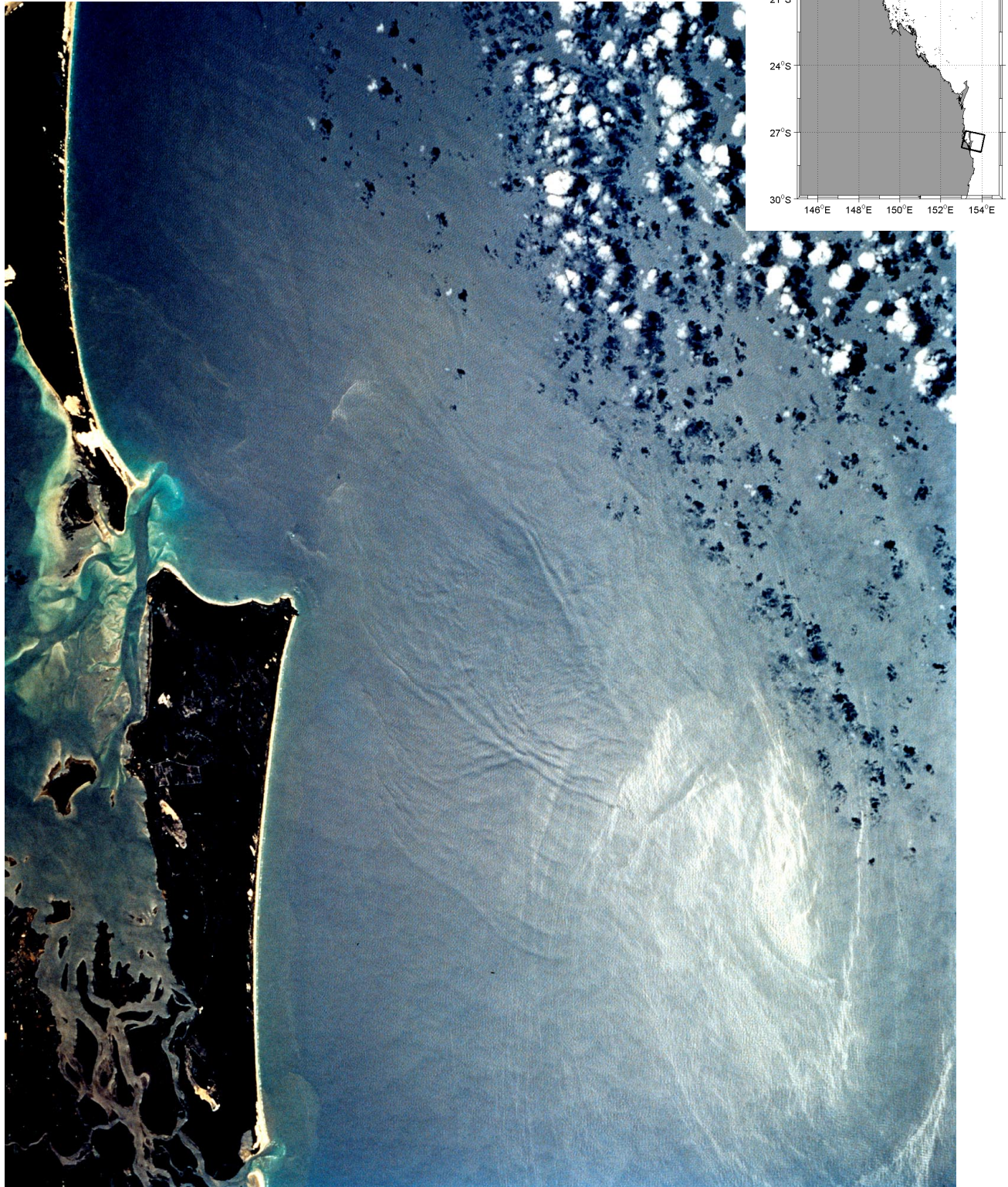
Table 1 - Months when internal waves have been observed on the Australian Northeast Shelf.
 (Numbers indicate unique dates in that month when waves have been noted)

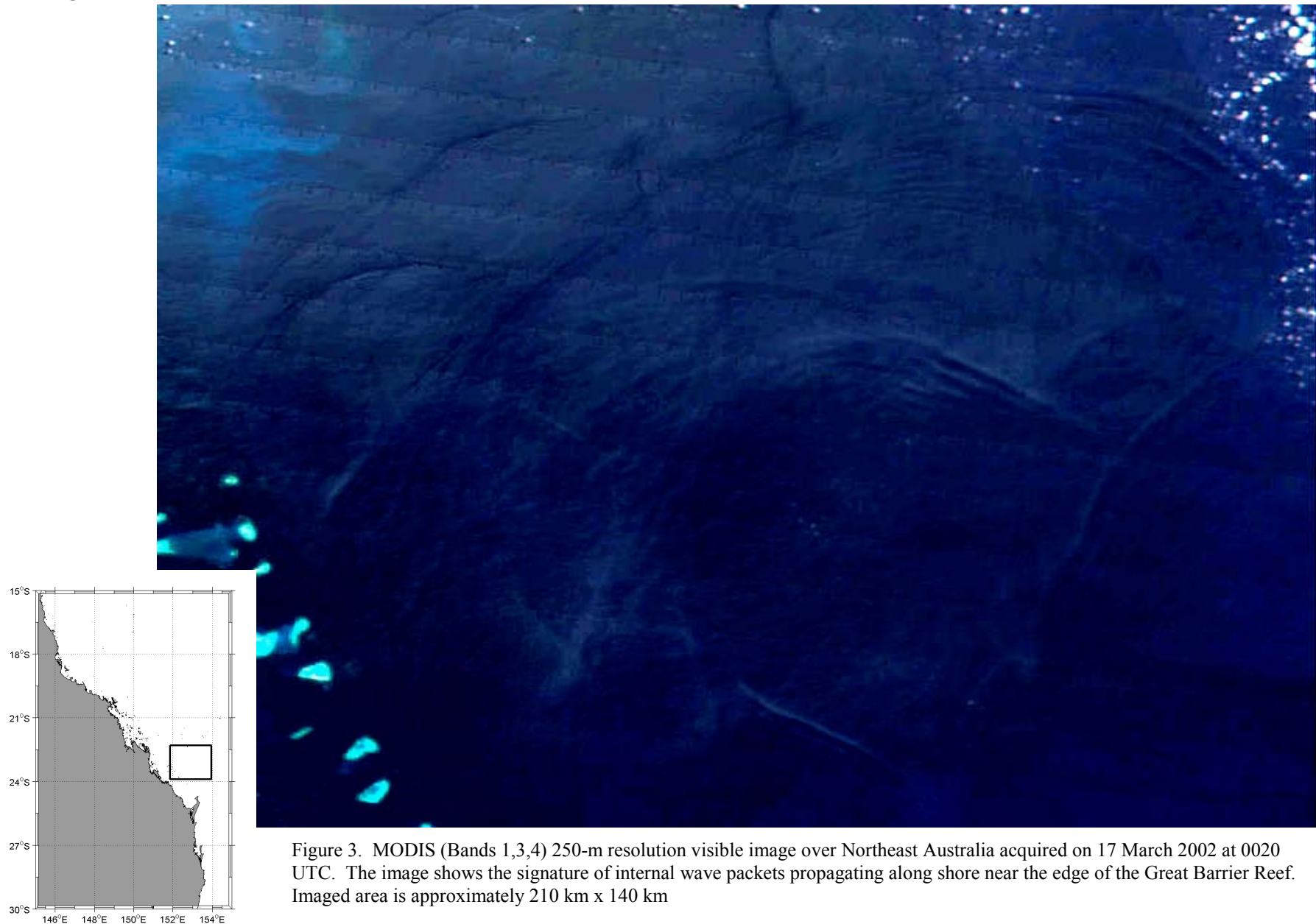
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
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References

Large Marine Ecosystems of the World: LME #40: Northeast Australian Shelf/Great Barrier Reef, January 2004 <http://na.nefsc.noaa.gov/lme/text/lme40.htm>
 Smith, W. H. F., and D. T. Sandwell, Global seafloor topography from satellite altimetry and ship depth soundings, Science, v. 277, p. 1957-1962, 26 Sept., 1997.
http://topex.ucsd.edu/marine_topo/mar_topo.html

Figure 2. Astronaut photograph (STS072-732-093) over Moreton Bay Australia acquired on 16 January 1996 at 0305 UTC. The image shows the signature of shoreward propagating internal waves. Imaged area is approximately 70 km x 80 km. [Image Courtesy of the Earth Sciences and Image Analysis Laboratory, NASA Johnson Space Center (<http://eol.jsc.nasa.gov>)]





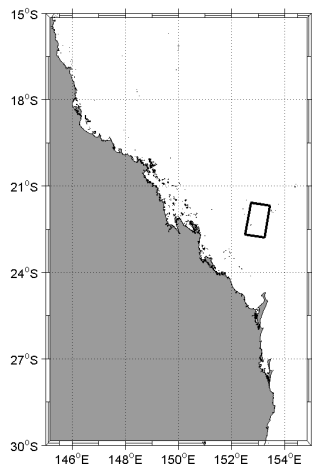
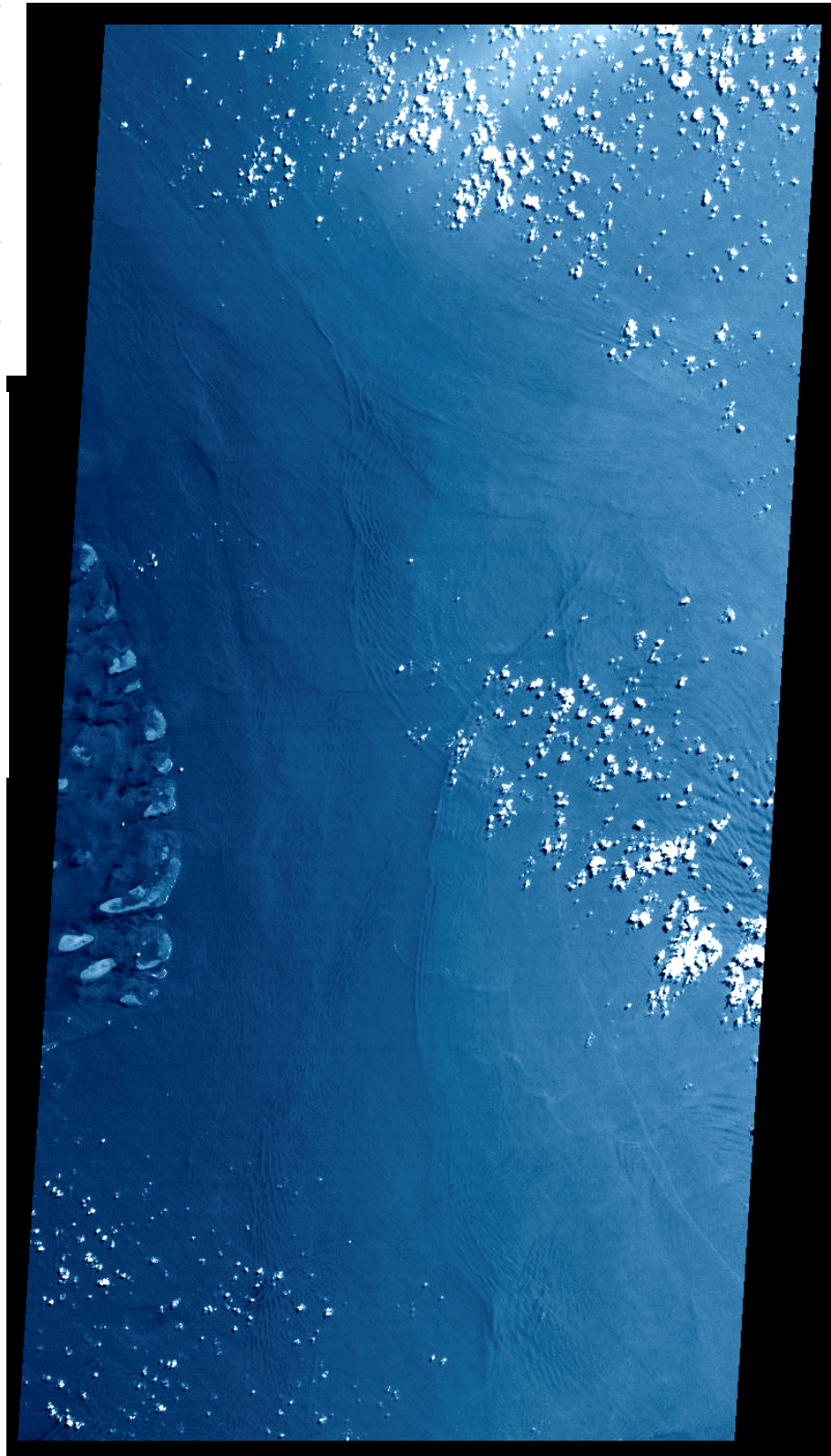


Figure 4. ASTER VNIR image off the coast of Australia acquired on 16 October 2000 at 0018 UTC. The image shows several packets of internal waves near the Great Barrier Reef. Imaged area is 60 km x 120 km.



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