



Voyage ss2010_v02

IMOS-Southern Ocean Time Series Facility

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Contribution to Australia's national benefit:

This project lies with the priority of An Environmentally Sustainable Australia: Responding to Climate Change and Variability. The Southern Ocean is important to global and regional climate and carbon cycling, because of its highly energetic interactions with the atmosphere, its deep mixing, and its role in connecting all the basins in the global ocean.

The development and deployment of instrumentation to observe air-sea exchanges in these waters is essential to enable informed assessment of possible changes in climate and climate variability and in uptake of atmospheric CO₂ by the Southern Ocean. The physical and meteorological observations will allow testing of the parameterization of air-sea interactions in climate models. This informs development of climate projections and assessment of their fidelity, and thus their utility in efficient

adaptation to changing climate. The carbon, oxygen, and biogeochemical observations will contribute to determining the factors that control and thus the propensity for change in the ecosystem service the Southern Ocean provides of absorbing significant amounts of anthropogenic CO₂. This informs debate about the urgency of efforts to mitigate emissions.

As a result of this voyage:

This voyage achieved significant milestones in the overall effort:

1. The first deployment of a surface air-sea interaction mooring in the Southern Ocean (SOFS-1 mooring).
2. The first recovery of a full season of carbon system observations from the Southern Ocean (Pulse-6 mooring).
3. The first Australian deployment of an autonomous glider to map open Southern Ocean properties. Data from these systems will be provided via the Integrated Marine Observing System to Australian and international researchers.

Itinerary

Departed Hobart 09:00, Tuesday 16 March 2010

Arrived Hobart 10:00, Monday 22 March 2010

> Transit voyage track ss2010_v02

