

R.V. FRANKLIN

NATIONAL FACILITY OCEANOGRAPHIC RESEARCH VESSEL

RESEARCH PLAN

CRUISE FR 3/90

Sail Brisbane 0900 Tuesday 20 March 1990
Arrive Sydney 1500 Saturday 7 April 1990

Principal Investigators

Dr John Church
Dr Gary Meyers
CSIRO Division of Oceanography

Assoc. Prof. Matt Tomczak
Ocean Science Institute
The University of Sydney

OCEAN TRANSPORT IN THE TASMAN SEA

For further information contact

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R.V. FRANKLIN IS OWNED AND OPERATED BY CSIRO

**Cruise Plan
R.V. Franklin
FR3/90**

Itinerary

Depart Brisbane:	0900Hrs	20 March 1990
Arrive Sydney:	1500Hrs	7 April 1990

Scientific Program

This cruise continues the program started on FR2/90. The program remains essentially the same as FR10-11/89 - to measure seasonal and interannual variations in the transport of the East Australian Current (EAC). Six months have elapsed since FR11/89 so by repeating the CTD sections we can estimate the temporal variations in this transport. We will also use a combination of in-situ observations (moored instruments) and GEOSAT altimeter data to obtain a continuous time series of variations in the transport of the EAC. Knowledge of the EAC is the key to determining the role of the South Pacific in the poleward transport of heat.

This study is also designed to determine the large-scale general circulation of the Tasman Sea using patterns of tracers (temperature, salinity, oxygen and nutrients) and of density to estimate geostrophic circulation at all depths.

Principal Investigators

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Dr. M. Tomczak
Ocean Sciences Institute
The University of Sydney
Sydney, NSW 2006

Cruise Objectives

1. To estimate the volume transport (and its time variability) of the EAC along the east Australian coast and in the Tasman Front using CTD, ADCP and current meter moorings.
2. To determine the large-scale general circulation of the Tasman Sea using patterns of tracers (temperature, salinity, oxygen and nutrients) and using density to estimate geostrophic circulation.
4. To estimate the meridional heat and freshwater fluxes at 36°S. This "box" will be closed to the north by a section from Fraser Island to 28°S, 162°E and on the east by a section continuing south to 38°S, 167°E (see Figure 1).
5. To recover moored instruments off Evan's Head, at 28°S and at 38°S.

Cruise Track

A proposed cruise track is shown in Figure 1.

ORV Equipment Required

All standard instrumentation plus 24 bottle rosette, ACR deck unit, Aanderaa tape reader. We will require a large storage space and clear deck area for mooring work (no container labs).

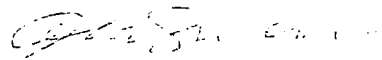
Time Estimates

Steaming	9.4 days
CTD stations	8.0 days
Moorings	1.6 days
Total	19.0 days
Time available	19.0 days

Personnel

J. Church (Chief Scientist)
G. Meyers
F. Boland
R. Edwards
N. White
D. Edwards
D. Terhell
V. Latham
K. Warmus (OSI, University of Sydney)
X. Peng (OSI, University of Sydney)

This Cruise Plan is in accordance with the directions of the National Facility Steering Committee for the oceanographic research vessel RV Franklin.



A.D. McEwan
CSIRO Division of Oceanography



D.H. Green
National Facility Steering
Committee

December, 1989

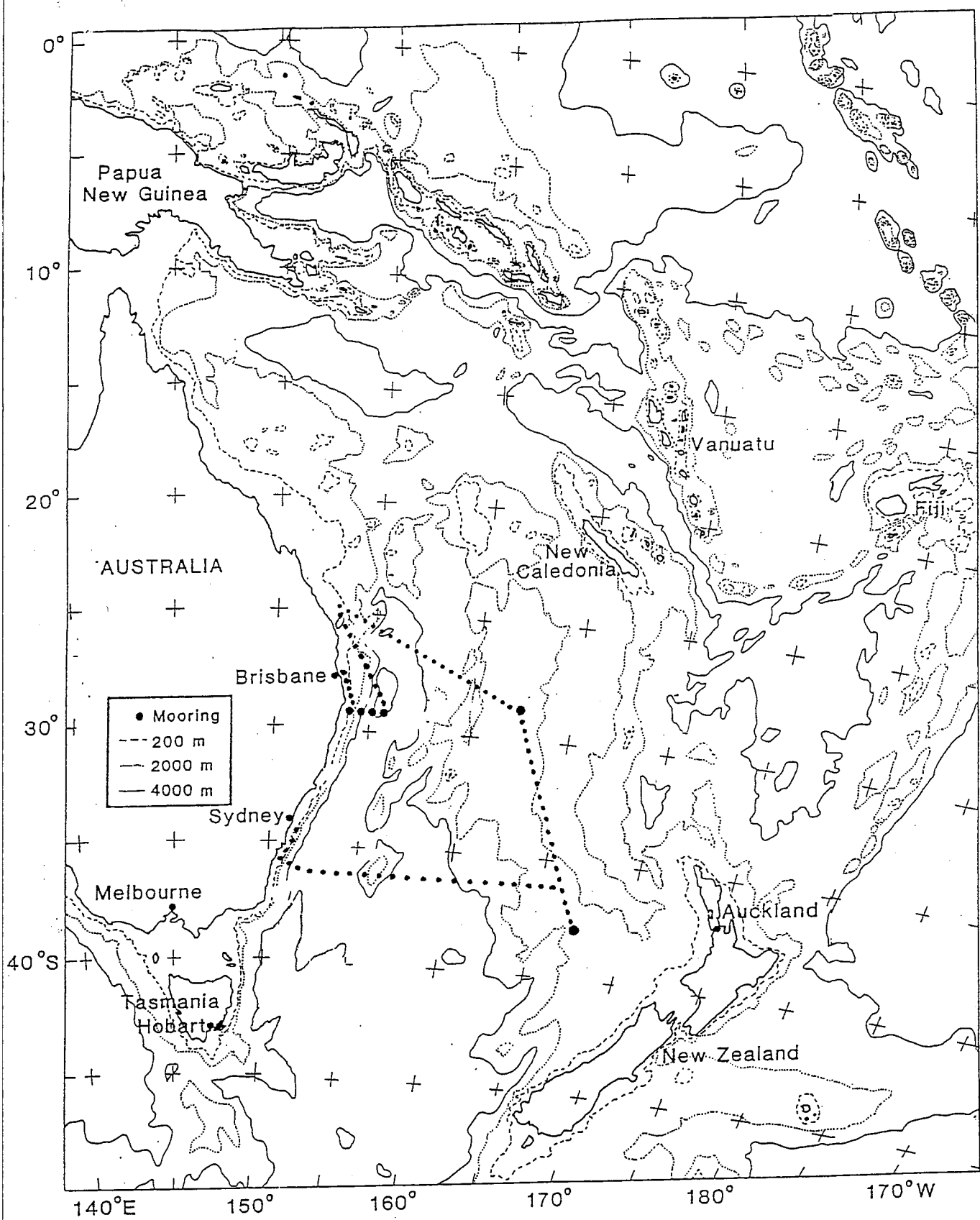


Figure 1

Cruise track for FR3/90 (.....)