

RV Investigator Voyage Summary

Voyage #:	IN2016_T03		
Voyage title:	Transit Brisbane to Sydney		
Mobilisation:	Brisbane, Thursday, 17 November 2016		
Depart:	Brisbane, 1600, Friday, 18 November 2016		
Return:	Sydney, 0630, Monday, 21 November 2016		
Voyage Manager:	Rod Palmer	Contact details:	Rod.palmer@csiro.au
Chief Scientist:	N/A		
Affiliation:	N/A	Contact details:	N/A
Principal Investigators:	N/A		
Project name:	N/A		
Affiliation:	N/A	Contact details:	N/A

Objectives and brief narrative of voyage

RV *Investigator* departed Brisbane on Friday, 18 November and Arrived at Garden Island on Monday, 21 November where it was dry docked to perform bow thruster change out, steering gear overhaul and other planned maintenance activities.

Scientific objectives

1 x ARGO Float was deployed on Saturday, 19 November during the transit from Brisbane to Sydney as per the table below:

Argo Float ID	Latitude	Longitude
0640	28° 45'S	154° 00E

Voyage objectives

The Primary objective of IN2016_T03 is to transit the investigator to Sydney for dry dock activities and deploy 1 x Argo float. During the transit the following activities will be ongoing:

- Multibeam maintenance – 1 x Kongsberg technician on board;
- CTD Shaft removal preparations – 1 x Rapp technician on board.

Results

No data was recovered during the voyage. The Argo float will be left to drift and capture data whilst being monitored by CSIRO's onshore Argo team. The float will continue to be monitored remotely by CSIRO's shore based Argo team.

Voyage Narrative

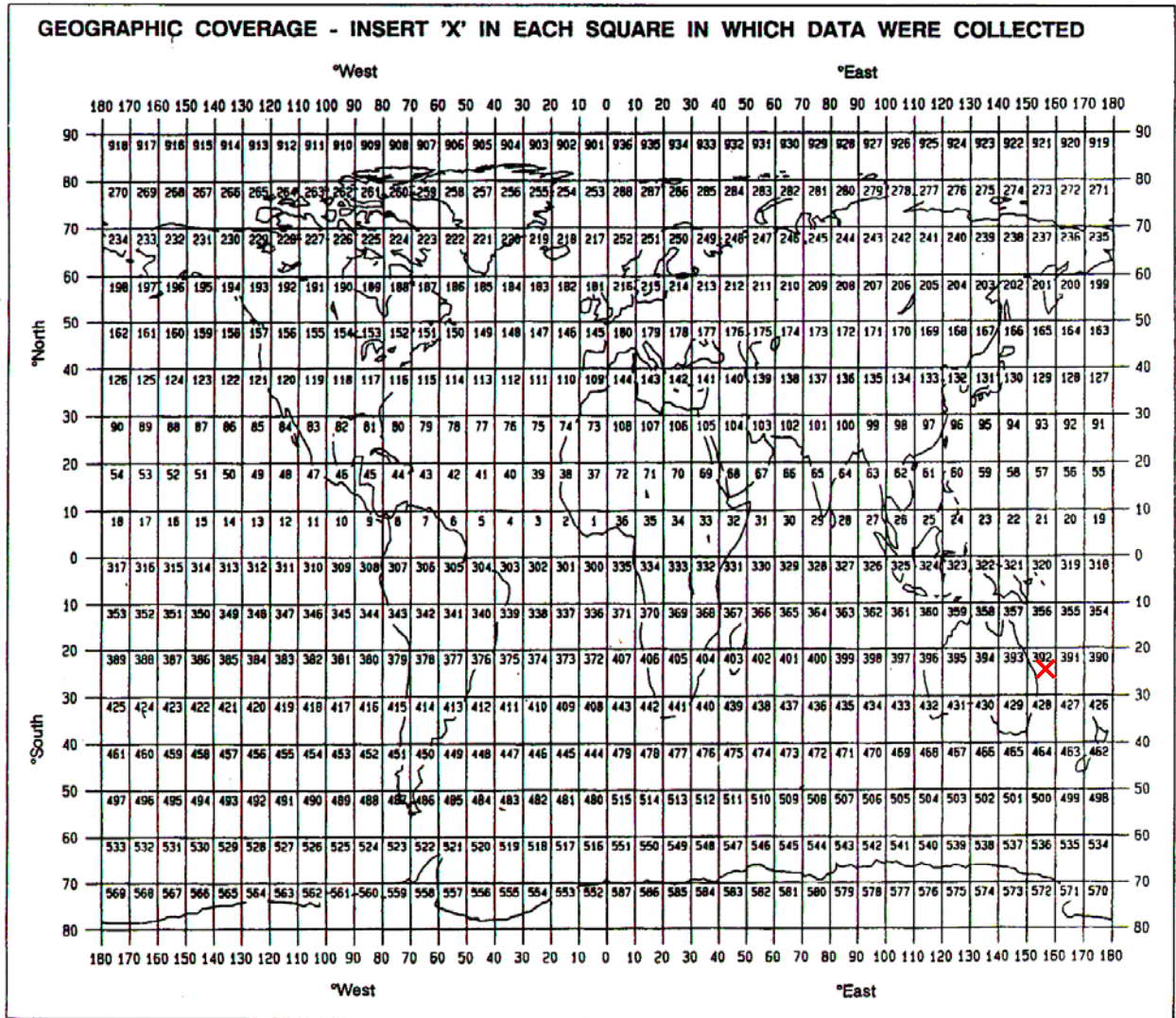
The vessel transited in fair weather without incident, with the Argo float deployment successfully completed.

Summary

The Argo float was deployed as planned without incident.

Marsden Squares

× × × × ×



Moorings, bottom mounted gear and drifting systems

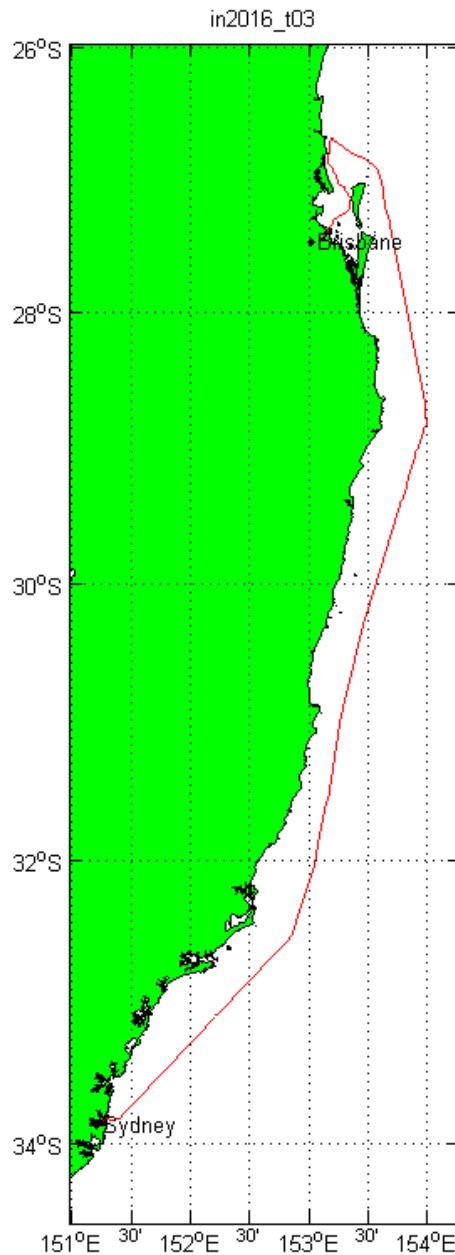
Item No	PI See above page	APPROXIMATE POSITION					DATA TYPE enter code(s) from list on last page	DESCRIPTION	
		LATITUDE			LONGITUDE				
		deg	min	N/S	deg	min			E/W
1	392	28°	45'	S	154	00	E	D05	Argo Float 640

Summary of Measurements and samples taken

Argo data will be collected from the shore based Argo team at CSIRO's facilities in Battery Point.

Track Chart

Clearly show the area of operation and the *actual* voyage track. The figure should feature a map showing the entire voyage track, and adjacent coastline showing major towns or cities so that readers can see at a glance *Investigator* was relative to well-known features. You are strongly encouraged to annotate the track chart illustrating the route followed and the points where measurements were taken. The figure can be shown here (if small) or as an.




Personnel List

	Name	Organisation	Role
1.	Rod Palmer	CSIRO	Voyage Manager
2.	Stephen Van Graas	CSIRO	GSM Support
3.	Tara Martin	CSIRO	Observer
4.	Muhtar Latif	Konsberg	Multibeam Technician

Marine Crew

Name	Role
John Highton	Master
Gurmukh Nagra	Chief Mate
Brendan Eakin	Second Mate
Thomas Watson	Third Mate
Chris Minness	Chief Engineer
Mark Ellicott	First Engineer
Michael Sinclair	Second Engineer
Ryan Agnew	Third Engineer
Shane Kromcamp	Electrical Engineer
Gary Hall	Chief Steward
Keith Sheppard	Chief Cook
Graham Mcdougal	Chief Integrated Rating
Paul Langford	Integrated Rating
Jarod Ellis	Integrated Rating
Dennis Bassi	Integrated Rating
Darren Capon	Integrated Rating
Peter Taylor	Integrated Rating
Rodderick Langham	Integrated Rating
Samuel Edwards	Trainee
Patrick Grinham	Trainee
Stephen Boddy	Trainee

Signature

Name	Mark Scanlon
Title	Voyage Operations Manager
Signature	
Date:	18/01/2017

Appendix A - CSR/ROSCOP Parameter Codes

	METEOROLOGY
M01	Upper air observations
M02	Incident radiation
M05	Occasional standard measurements
M06	Routine standard measurements
M71	Atmospheric chemistry
M90	Other meteorological measurements

	PHYSICAL OCEANOGRAPHY
H71	Surface measurements underway (T,S)
H13	Bathythermograph
H09	Water bottle stations
H10	CTD stations
H11	Subsurface measurements underway (T,S)
H72	Thermistor chain
H16	Transparency (eg transmissometer)
H17	Optics (eg underwater light levels)
H73	Geochemical tracers (eg freons)
D01	Current meters
D71	Current profiler (eg ADCP)
D03	Currents measured from ship drift

	MARINE BIOLOGY/FISHERIES
B01	Primary productivity
B02	Phytoplankton pigments (eg chlorophyll, fluorescence)
B71	Particulate organic matter (inc POC, PON)
B06	Dissolved organic matter (inc DOC)
B72	Biochemical measurements (eg lipids, amino acids)
B73	Sediment traps
B08	Phytoplankton
B09	Zooplankton
B03	Seston
B10	Neuston
B11	Nekton
B13	Eggs & larvae
B07	Pelagic bacteria/micro-organisms
B16	Benthic bacteria/micro-organisms
B17	Phytobenthos
B18	Zoobenthos
B25	Birds
B26	Mammals & reptiles
B14	Pelagic fish
B19	Demersal fish

D04	GEK
D05	Surface drifters/driftng buoys
D06	Neutrally buoyant floats
D09	Sea level (incl. Bottom pressure & inverted echosounder)
D72	Instrumented wave measurements
D90	Other physical oceanographic measurements

B20	Molluscs
B21	Crustaceans
B28	Acoustic reflection on marine organisms
B37	Taggings
B64	Gear research
B65	Exploratory fishing
B90	Other biological/fisheries measurements

	CHEMICAL OCEANOGRAPHY
H21	Oxygen
H74	Carbon dioxide
H33	Other dissolved gases
H22	Phosphate
H23	Total - P
H24	Nitrate
H25	Nitrite
H75	Total - N
H76	Ammonia
H26	Silicate
H27	Alkalinity
H28	PH
H30	Trace elements
H31	Radioactivity
H32	Isotopes

	MARINE GEOLOGY/GEOPHYSICS
G01	Dredge
G02	Grab
G03	Core - rock
G04	Core - soft bottom
G08	Bottom photography
G71	In-situ seafloor measurement/sampling
G72	Geophysical measurements made at depth
G73	Single-beam echosounding
G74	Multi-beam echosounding
G24	Long/short range side scan sonar
G75	Single channel seismic reflection
G76	Multichannel seismic reflection
G26	Seismic refraction
G27	Gravity measurements

H90	Other chemical oceanographic measurements
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G28	Magnetic measurements
G90	Other geological/geophysical measurements

	MARINE CONTAMINANTS/POLLUTION
P01	Suspended matter
P02	Trace metals
P03	Petroleum residues
P04	Chlorinated hydrocarbons
P05	Other dissolved substances
P12	Bottom deposits
P13	Contaminants in organisms
P90	Other contaminant measurements