

data summary

Southern Surveyor Voyage ss2012_v07



Table of Contents

<i>Table of Contents</i>	2
<i>ss2012_v07</i>	3
<i>Title</i>	3
<i>Principal Investigators</i>	3
<i>Ports</i>	3
<i>Date</i>	3
<i>Voyage Track</i>	4
<i>Underway Data</i>	4
Completeness and Data Quality	4
Processing Comments	5
Final Underway Data.....	6
<i>References</i>	6

ss2012_v07

Title

“Tasmantid Seamounts: volcanic, tectonic, and carbonate record”

Principal Investigators

Dr Benjamin Cohen (Chief Scientist)
School of Earth Sciences,
The University of Queensland
Phone: 61 7 3346 7599
Email: b.cohen@uq.edu.au

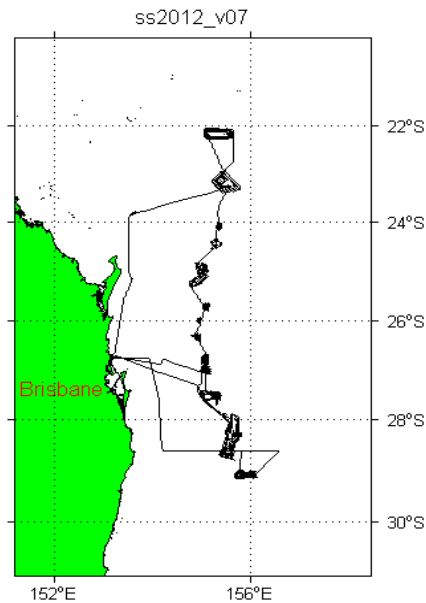
Ports

Depart: Brisbane 1600 hrs, Friday 23 November, 2012
Arrive: Brisbane 0800 hrs, Wednesday 19 December, 2012

Date

23-Nov-2012 05:58:15 to 19-Dec-2012 00:30:05 (UTC)

Voyage Track



Underway Data

Navigation data is acquired using the Seapath 200 position and reference unit, which is also differentially corrected by data from the FUGRO DGPS receiver.

The Meteorological data consists of 2 relative humidity and temperature sensors; a barometer, wind sensor, and licor light sensor.

Thermosalinograph data is acquired with a Seabird TSG and remote temperature by SBE 3T. Data from a flow meter is also recorded.

Digital depth data is recorded from a Simrad EK60 sounder.

Data from “IMOS” (Integrated Marine Observing System) sensors are also included. The sensors are port and starboard radiometers and pyranometers, wind speed and direction; rain and rainrate.

See Electronics report for this voyage for instruments used and their serial numbers.

Navigation, meteorological, thermosalinograph, IMOS and depth data are preliminary quality controlled by combining all data from hourly recorded files to 5 second values in a netCDF formatted file. The combined data is referred to as “underway data”.

A combined file was made on 20 Mar 2013 and final by running a Java application, written by Lindsay Pender of CMAR, UwyMerger version 1.8.0 with data time range of 23-Nov-2012 05:58:15 to 19-Dec-2012 00:30:05 (UTC).

Completeness and Data Quality

Navigation data (latitude and longitude, speed over ground, ship heading and course over ground); meteorological data (port and starboard air temperature, port and starboard humidity, wind direction and speed, maximum wind gust, light, atmospheric pressure, uncorrected wind

direction, rain and speed) and IMOS data (port and starboard radiometers, port and starboard pyranometers, derived wind direction and speed, uncorrected wind direction and speed, rain and rain rate), thermosalinograph (salinity and water temperature) data were evaluated and quality controlled.

Processing Comments

A number of minor discrepancies between the port and starboard air temperature sensors were noted (max differences of about 1.98 degrees, otherwise both sensors gave very close reading with the mean absolute difference of about 0.032 degrees). These occurred usually during periods of rapid temperature increase or decrease. Investigation of these indicated that they have usually occurred when the ship was stationary with little wind or during/following periods of rainfall. This phenomenon has probably come about due to the rapid warming of the ships metal structure and air due to the ship becoming stationary or cooling of the air temperature due to the ship speeding off from stationary or due to the evaporation of rain water around the sensor housing. It is unclear as to why there should be a notable temperature differential between the port and starboard temperature sensors.

A similar discrepancy (max differences of about 20.3%) between the port and starboard humidity sensors was observed. It should also be noted that the port humidity sensor appears to give a higher reading with the mean absolute difference of about 2.86%. The recorded values are within instrument tolerance.

The courseOG values when the ship is stationary are not true values as the ship is not travelling a course however this is a feature of the current acquisition system. The QC flags have been set as good however this feature should be noted if the values during the stationary periods are to be used.

The optical rain gauge was not functional during this voyage. Therefore the recorded zero values for 'IMOSRain', 'IMOSRainRate' have been NaNed and their QC flags set to {'bad','none','operatorFlagged'}.

It was noted that values recorded by the IMOS port and starboard Radiometer and Pyranometer had a mean absolute difference of 2.8 and 18.95 W/m² respectively and in particular the port Radiometer values were mostly smaller than the starboard sensor.

The salinity values recorded between 02-Dec-2012 06:29:20 to 06-Dec-2012 16:06:40 were bad and have been NaNed and its QC flag set to {'bad','none','operatorFlagged'}. According to the voyage computing report during this period there was no water flow to the TSG unit as the supply tab was shut.

No CTDs were performed during this voyage. Therefore the TSG salinity scaling factor of 1.000363935002681 from the previous voyage (ss2012_v06) along with the TSG lag of 32 seconds was applied to the TSG salinity data and the thermosalinograph salinity QC was set to {'good' , 'manually adjusted' , 'no error' }.

Note: Depth data is no longer processed, however, non QCed data is still available in the underway data set. QCed depth data can be obtained from processed Swath dataset for this voyage.

Final Underway Data

The navigation, meteorological, thermosalinograph, IMOS and depth data will be entered into the CMAR divisional data warehouse. All data timestamps are in UTC.

Filename	Parameters	Resolution
ss2012_v07uwy10.csv	latitude, latitudeQC, longitude, longitudeQC, speedOG, speedOGQC, courseOG, courseOGQC, shipHeading, shipHeadingQC, uncorrWindDir, uncorrWindDirQC, uncorrWindSpeed, uncorrWindSpeedQC, waterDepth, waterDepthQC, portAirTemp, portAirTempQC, stbdAirTemp, stbdAirTempQC, portHumidity, portHumidityQC, stbdHumidity, stbdHumidityQC, windSpeed, windSpeedQC, maxWindGust, maxWindGustQC, windDir, windDirQC, PAR, PARQC, atmPressure, atmPressureQC, waterTemp, waterTempQC, salinity, salinityQC, IMOSStbdRadiometer, IMOSStbdRadiometerQC, IMOSStbdPyranometer, IMOSStbdPyranometerQC, IMOSRainRate, IMOSRainRateQC, IMOSRain, IMOSRainQC, IMOSWindSpeed, IMOSWindSpeedQC, IMOSWindDir,IMOSWindDirQC, IMOSPortRadiometer, MOSPortRadiometerQC, IMOSPortPyranometer, IMOSPortPyranometerQC, IMOSUncorrWindSpeed,MOSUncorrWindSpeedQC, IMOSUncorrWindDir,IMOSUncorrWindDirQC rain, rainQC	10 seconds
ss2012_v07uwy5min.csv	Ditto 10 second data	5 minutes

References

Subversion repository version of DPG Matlab generic tools 3974

Pender, L., 2000. Data Quality Control flags.

http://www.marine.csiro.au/datacentre/ext_docs/DataQualityControlFlags. Pdf

Processed by: A Sarraf , CSIRO Marine and Atmospheric Research, Hobart, Tasmania, Australia