

# Data collected daily along the ship track in from the LMG0602 cruise on ARSV Laurence M. Gould in the Southern Ocean from February to March 2006 (SouthernSalps project)

Website: <https://www.bco-dmo.org/dataset/3034>

Version:

Version Date: 2012-08-03

## Project

» [Salpa Thompsoni in the Southern Ocean: Bioenergetics, Population Dynamics and Biogeochemical Impact](#) (SouthernSalps)

Contributors	Affiliation	Role
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## Dataset Description

Data collected daily along the ship track in JGOFS format from the LMG0602 cruise.

## Methods & Sampling

A single file was produced each day containing columnar fields in text format. The JGOFS data format is obtained primarily by applying calibrations to raw data and decimating to whole minute intervals. Several fields are derived measurements from more than one raw input.

## Data Processing Description

Parameter names were modified to conform with BCO-DMO conventions.

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## Data Files

File
<b>alongtrack.csv</b> (Comma Separated Values (.csv), 6.07 MB) MD5:9cc9bf96ec2adbf061b86a102b34b7b2
Primary data file for dataset ID 3034

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## Parameters

Parameter	Description	Units
cruiseid	Cruise id.	unitless
date_gmt	Month, day, year (GMT time) e.g. mar16 2006.	mon dd yyy
time_gmt	Time GMT, 24 hour clock, hours and decimal minutes.	HHMM.mm
lat	Latitude, negative = South	decimal degrees
lon	Longitude, negative = West	decimal degrees
sog	Ship's speed over ground.	knots
hdop	Horizontal Dilution of Position is an indicator of the precision of the GPS measurement. The lower the number, the more precise the position.	unitless
head	The ship's heading, measured by the gyro.	Degrees (azimuth)
cog	Course over ground.	Degrees(azimuth)
par_d	Downwelled Photosynthetically Available Radiation 400-700nm (PAR), sensor package mounted on ship's science mast.	$\mu\text{E}/\text{m}^2/\text{sec}$
temp_ss	Sea surface temperature	degrees C
sal_ss	Sea surface salinity	PSU
depth_w	Depth of water.	meters
wind_speed_c	Wind speed (true, corrected for ship motion)	meters/sec

wind_dir_c	Wind direction (true, corrected for ship motion)	degrees(azimuth)
temp_air	Ambient air temperature.	degrees C
humidity	Relative humidity.	%
press_bar	Barometric pressure	milliBars
flvolt	Sea surface fluorometer readings in voltages, (range 0-5 FSO).	volts
radiation_l	long wave radiation, using a Precision Infrared Radiometer	watts/meters <sup>2</sup>
radiation_s	short wave radiation, using a Precision Spectral Pyranometer	watts/meters <sup>2</sup>
yrday_gmt	Jan. 1 = yrday 0. GMT day and decimal time, as 325.5 for the 326th day of the year, or November 22 at 1200 hours (noon).	
year	4-digit year.	YYYY

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## Instruments

<b>Dataset-specific Instrument Name</b>	Barometer
<b>Generic Instrument Name</b>	Barometer
<b>Dataset-specific Description</b>	Barometer model: R.M. Young 61201.
<b>Generic Instrument Description</b>	A barometer is an instrument used to measure atmospheric pressure. There are many types of barometers identified by make and model and method of measurement.

<b>Dataset-specific Instrument Name</b>	Gyro
<b>Generic Instrument Name</b>	Gyro
<b>Dataset-specific Description</b>	Anschutz Gyro.
<b>Generic Instrument Description</b>	Compass with a motorized gyroscope that tracks true north (heading).

<b>Dataset-specific Instrument Name</b>	Knudsen 320 BR deepwater echosounder
<b>Generic Instrument Name</b>	Knudsen 320 BR deepwater echosounder
<b>Dataset-specific Description</b>	Model: Knudsen 320B/R
<b>Generic Instrument Description</b>	The Knudsen 320 B/R deepwater echosounder is a digital data logging system used to measure water depth (e.g. depth of the seafloor). The system is configured to work with different frequency transducers. For example, the Edo 323 B is a 12 kHz High Frequency (HF) transducer or it can be configured to work with an array of 3.5 kHz Low Frequency (LF) transducers mounted in the hull of a vessel.

<b>Dataset-specific Instrument Name</b>	Photosynthetically Available Radiation Sensor
<b>Generic Instrument Name</b>	Photosynthetically Available Radiation Sensor
<b>Dataset-specific Description</b>	Mast PAR sensor model: BSI QSR-240P
<b>Generic Instrument Description</b>	A PAR sensor measures photosynthetically available (or active) radiation. The sensor measures photon flux density (photons per second per square meter) within the visible wavelength range (typically 400 to 700 nanometers). PAR gives an indication of the total energy available to plants for photosynthesis. This instrument name is used when specific type, make and model are not known.

<b>Dataset-specific Instrument Name</b>	Turner Designs Fluorometer -10-AU
<b>Generic Instrument Name</b>	Turner Designs Fluorometer 10-AU
<b>Dataset-specific Description</b>	Fluorometer model: Turner 10-AU-005
<b>Generic Instrument Description</b>	The Turner Designs 10-AU Field Fluorometer is used to measure Chlorophyll fluorescence. The 10AU Fluorometer can be set up for continuous-flow monitoring or discrete sample analyses. A variety of compounds can be measured using application-specific optical filters available from the manufacturer. (read more from Turner Designs, <a href="http://turnerdesigns.com">turnerdesigns.com</a> , Sunnyvale, CA, USA)

<b>Dataset-specific Instrument Name</b>	Wet Labs CSTAR Transmissometer
<b>Generic Instrument Name</b>	WET Labs {Sea-Bird WETLabs} C-Star transmissometer
<b>Dataset-specific Description</b>	Transmissometer model: WET Labs C-Star 25 cm
<b>Generic Instrument Description</b>	The C-Star transmissometer has a novel monolithic housing with a highly integrated opto-electronic design to provide a low cost, compact solution for underwater measurements of beam transmittance. The C-Star is capable of free space measurements or flow-through sampling when used with a pump and optical flow tubes. The sensor can be used in profiling, moored, or underway applications. Available with a 6000 m depth rating. More information on Sea-Bird website: <a href="https://www.seabird.com/c-star-transmissometer/product?id=60762467717">https://www.seabird.com/c-star-transmissometer/product?id=60762467717</a>

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## Deployments

### LMG0602

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57843">https://www.bco-dmo.org/deployment/57843</a>
<b>Platform</b>	ARSV Laurence M. Gould
<b>Start Date</b>	2006-02-14
<b>End Date</b>	2006-03-16
<b>Description</b>	The goal of the LMG06-02 cruise was to continue the studies begun in 2004 (LMG04-14) on the population biology, feeding, and energetics of <i>Salpa thompsoni</i> in the waters near the Antarctic Peninsula.

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## Project Information

### Salpa Thompsoni in the Southern Ocean: Bioenergetics, Population Dynamics and Biogeochemical Impact (SouthernSalps)

**Coverage:** Southern Ocean

This project is also referred to as "B-307: *Salpa thompsoni* in the Southern Ocean". (B-307 was the USAP project/event number).

NSF Award Abstract:

Salps are planktonic grazers that have a life history, feeding biology and population dynamic strikingly different from krill, copepods or other crustacean zooplankton. Salps can occur in very dense population blooms that cover large areas and have been shown to have major impacts due to their grazing and the production of fast-sinking fecal pellets. Although commonly acknowledged as a major component of the Southern Ocean zooplankton community, often comparable in biomass and distribution to krill, salps have received relatively little attention. Although extensive sampling has documented the seasonal abundance of salps in the Southern Ocean, there is a paucity of data on important rates that determine population growth and the role of this species in grazing and vertical flux of particulates. This proposed study will include: measurements of respiration and excretion rates for solitary and aggregate salps of all sizes; measurements of ingestion rates,

including experiments to determine the size or concentration of particulates that can reduce ingestion; and determination of growth rates of solitaries and aggregates. In addition to the various rate measurements, this study will include quantitative surveys of salp horizontal and vertical distribution to determine their biomass and spatial distribution, and to allow a regional assessment of their effects. Measurements of the physical characteristics of the water column and the quantity and quality of particulate food available for the salps at each location will also be made. Satellite imagery and information on sea-ice cover will be used to test hypotheses about conditions that result in high densities of salps. Results will be used to construct a model of salp population dynamics, and both experimental and modeling results will be interpreted within the context of the physical and nutritional conditions to which the salps are exposed. This integrated approach will provide a good basis for understanding the growth dynamics of salp blooms in the Southern Ocean. Two graduate students will be trained on this project, and cruise and research experience will be provided for two undergraduate students. A portion of a website allowing students to be a virtual participant in the research will be created to strengthen students' quantitative skills. Both PI's will participate in teacher-researcher workshops, and collaboration with a regional aquarium will be developed in support of public education.

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## Funding

Funding Source	Award
<a href="#">NSF Antarctic Sciences (NSF ANT)</a>	<a href="#">ANT-0338090</a>

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