

Simulated in situ production data from RVIB Nathaniel B. Palmer cruises NBP0103, NBP0104, NBP0202, and NBP0204 in the Southern Ocean from 2001-2002 (SOGLOBEC project)

Website: <https://www.bco-dmo.org/dataset/2376>

Data Type: Cruise Results

Version: 1

Version Date: 2003-02-24

Project

» [U.S. GLOBEC Southern Ocean](#) (SOGLOBEC)

Program

» [U.S. GLOBal ocean ECosystems dynamics](#) (U.S. GLOBEC)

Contributors	Affiliation	Role
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Abstract

Simulated in situ production data from RVIB Nathaniel B. Palmer cruises NBP0103, NBP0104, NBP0202, and NBP0204 in the Southern Ocean from 2001-2002 (SOGLOBEC project)

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Coverage

Spatial Extent: N:-64.129 E:-65.51 S:-69.584 W:-77.0557

Temporal Extent: 2001 - 2002

Dataset Description

Simulated in Situ Primary Production Data

Data Notes:

1..Cruise NBP0104. A total of only 6 SIS experiments were completed, due to freezing of the deck incubator. Ref: cruise report.

2..PAR measurements. PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship's science mast configured with PAR channels (400-700nm). PAR values are intergated over the duration of the in situ experiment. Ref: cruise reports

A short note on the "Southern Ocean Grid System":

The grid is a cartesian plane covering the sample region in which distances are easy to calculate. The grid system used for SOGLOBEC is a universal transverse mercator (UTM) projection with a certain base point and rotation. The base point was chosen in the far south and the rotation was chosen to create one axis along the peninsula, and the other offshore. The units of UTM are meters, but the points are chosen in km rounded to the nearest km. Negative numbers mean that samples were taken southwest of the y axis or southeast of the x axis. For more deatails see: [Complete explanation of the Southern Ocean grid system.](#)

Reference:

Smith, R.C., H. Dierssen, and M. Vernet. in press. Phytoplankton biomass and productivity to the west of the Antarctic Peninsula. In E.Hofmann, L. Quetin, and R. Ross (Eds.), *Foundations for ecosystem research in the western Antarctic Peninsula region*. Washington, D.C.: American Geophysical Union.

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Acquisition Description

1. Cruise NBP0104. A total of only 6 SIS experiments were completed, due to freezing of the deck incubator. Ref: cruise report.
2. PAR measurements. PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship science mast configured with PAR channels (400-700nm). PAR values are intergated over the duration of the in situ experiment. Ref: cruise reports.

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Parameters

Parameter	Description	Units
cruiseid	cruise identification. (e.g. NBP0104)	
year	year, GMT, (e.g. 2001)	
station_desc	station description, as defined in a grid system, or plain text	
station	station number, generally numbered consecutively within cruise	
grid_line	standard grid line, a grid location system used by GLOBEC Southern Ocean, see grid notes below	
grid_sta	a grid location for a sampling obseration/station, used with grid_line	
yrday_gmt	year day, based on Julian Calendar	YYY.Y
lat	latitude, negative = South	degrees
lon	longitude, negative = West	degrees
event	event number, a unique number assigned to a specific sampling event.	
cast	CTD cast number	
bottle	[table of contents back to top] bottle number	
depth	depth of sample or data point	meters
Instruments production	primary production, from simulated in situ experiments	(mgC/m2/h)
prod_std_dev	standard deviation of production	(mgC/m2/h)
par_d_expt	downwelled Photosynthetically Available Radiation, 400-700 nm wave length, measured with cosine sensor response (EsPAR), units = uE/cm2/expt (expt = over the duration of an in situ experiment, some times less than 24 hrs.)	(uE/cm2/expt)

Dataset-specific Instrument Name	Conductivity, Temperature, Depth
Generic Instrument Name	CTD profiler
Dataset-specific Description	CTD measurements taken, CTD unit unidentified
Generic Instrument Description	The Conductivity, Temperature, Depth (CTD) unit is an integrated instrument package designed to measure the conductivity, temperature, and pressure (depth) of the water column. The instrument is lowered via cable through the water column and permits scientists observe the physical properties in real time via a conducting cable connecting the CTD to a deck unit and computer on the ship. The CTD is often configured with additional optional sensors including fluorometers, transmissometers and/or radiometers. It is often combined with a Rosette of water sampling bottles (e.g. Niskin, GO-FLO) for collecting discrete water samples during the cast. This instrument designation is used when specific make and model are not known.

Dataset-specific Instrument Name	Photosynthetically Available Radiation Sensors
Generic Instrument Name	Photosynthetically Available Radiation Sensor
Dataset-specific Description	Photosynthetically Available Radiation Sensors, PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship's science mast configured with PAR channels (400-700nm).
Generic Instrument Description	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.

Dataset-specific Instrument Name	Radiometer
Generic Instrument Name	Radiometer
Dataset-specific Description	a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship's science mast configured with PAR channels (400-700nm).
Generic Instrument Description	Radiometer is a generic term for a range of instruments used to measure electromagnetic radiation (radiance and irradiance) in the atmosphere or the water column. For example, this instrument category includes free-fall spectral radiometer (SPMR/SMSR System, Satlantic, Inc), profiling or deck cosine PAR units (PUV-500 and 510, Biospherical Instruments, Inc). This is a generic term used when specific type, make and model were not specified.

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Deployments

NBP0103

Website	https://www.bco-dmo.org/deployment/57636
Platform	RVIB Nathaniel B. Palmer
Report	http://globec.who.edu/so-dir/reports/nbp0103/nbp0103.html
Start Date	2001-04-24
End Date	2001-06-05
Description	<p>Acquisition Description</p> <p>Cruise NBP0104. A total of only 6 SIS experiments were completed, due to freezing of the deck incubator. Ref: cruise report. PAR measurements. PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship science mast configured with PAR channels (400-700nm). PAR values are intergated over the duration of the in situ experiment. Ref: cruise reports.</p>

NBP0104

Website	https://www.bco-dmo.org/deployment/57638
Platform	RVIB Nathaniel B. Palmer
Report	http://www.ccpo.odu.edu/Research/globec/cruises01/nbp0104_menu.html
Start Date	2001-07-22
End Date	2001-08-31
Description	<p>Acquisition Description</p> <p>Cruise NBP0104. A total of only 6 SIS experiments were completed, due to freezing of the deck incubator. Ref: cruise report. PAR measurements. PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship science mast configured with PAR channels (400-700nm). PAR values are intergated over the duration of the in situ experiment. Ref: cruise reports.</p>

NBP0202

Website	https://www.bco-dmo.org/deployment/57641
Platform	RVIB Nathaniel B. Palmer
Report	http://globec.whoi.edu/so-dir/reports/nbp0202/nbp0202b.html
Start Date	2002-04-09
End Date	2002-05-21
Description	<p>Acquisition Description</p> <p>Cruise NBP0104. A total of only 6 SIS experiments were completed, due to freezing of the deck incubator. Ref: cruise report. PAR measurements. PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship science mast configured with PAR channels (400-700nm). PAR values are intergated over the duration of the in situ experiment. Ref: cruise reports.</p>

NBP0204

Website	https://www.bco-dmo.org/deployment/57643
Platform	RVIB Nathaniel B. Palmer
Report	http://globec.whoi.edu/so-dir/reports/nbp0204/nbp0204b.html
Start Date	2002-07-31
End Date	2002-09-18
Description	<p>Acquisition Description</p> <p>Cruise NBP0104. A total of only 6 SIS experiments were completed, due to freezing of the deck incubator. Ref: cruise report. PAR measurements. PAR was measured with a Biospherical Instruments GUV Radiometer (cosine-corrected downwelled irradiance) mounted on ship science mast configured with PAR channels (400-700nm). PAR values are intergated over the duration of the in situ experiment. Ref: cruise reports.</p>

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Project Information

U.S. GLOBEC Southern Ocean (SOGLOBEC)

Website: http://www.ccpo.odu.edu/Research/globec_menu.html

Coverage: Southern Ocean

The fundamental objectives of United States Global Ocean Ecosystems Dynamics (U.S. GLOBEC) Program are dependent upon the cooperation of scientists from several disciplines. Physicists, biologists, and chemists must make use of data collected during U.S. GLOBEC field programs to further our understanding of the interplay of physics, biology, and chemistry. Our objectives require quantitative analysis of interdisciplinary data sets and, therefore, data must be exchanged between researchers. To extract the full scientific value, data must be made available to the scientific community on a timely basis.

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Program Information

U.S. GLOBal ocean ECosystems dynamics (U.S. GLOBEC)

Website: <http://www.usglobec.org/>

Coverage: Global

U.S. GLOBEC (GLOBal ocean ECosystems dynamics) is a research program organized by oceanographers and fisheries scientists to address the question of how global climate change may affect the abundance and production of animals in the sea. The U.S. GLOBEC Program currently had major research efforts underway in the Georges Bank / Northwest Atlantic Region, and the Northeast Pacific (with components in the California Current and in the Coastal Gulf of Alaska). U.S. GLOBEC was a major contributor to International GLOBEC efforts in the Southern Ocean and Western Antarctic Peninsula (WAP).

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Funding

Funding Source	Award
NSF Antarctic Sciences (NSF ANT)	ANT-9910175

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