Biogenic silica production rates and dissolution rates from R/V Roger Revelle KIWI6, KIWI7, KIWI8, KIWI9 cruises in the Southern Ocean, 1998 (U.S. JGOFS AESOPS project)

Website: https://www.bco-dmo.org/dataset/2775
Version: April 4, 2002
Version Date: 2002-04-04

Project
» U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

Program
» U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Contributors	Affiliation	Role
Nelson, David M.	Oregon State University (OSU)	Principal Investigator, Principal Investigator
Brzezinski, Mark A.	University of California-Santa Barbara (UCSB)	Co-Principal Investigator
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

Table of Contents

Dataset Description

Biogenic silica production rates and dissolution rates

Methods & Sampling

PI: David Nelson and Mark Brzezinski
of: Oregon State (Nelson) and UC Santa Barbara (Brzezinski)
dataset: Biogenic silica production rates and dissolution rates in the Antartic Polar Frontal Zone
ship: Roger Revelle

Production Rate Sampling Methodology
Dissolution Rate Sampling Methodology
PI Notes

[table of contents | back to top]

Data Files

File	
silica_KIWI6.csv	(Comma Separated Values (.csv), 2.88 KB) MD5:66192f73306f106d9cac7b8f3e96d847
Version April 4, 2002 (Original version September 26, 2000) David Nelson & Mark Brzezinski Biogenic silica production rates and dissolution rates in the Antarctic Polar Frontal Zone AESOPS KIWI06, APFZ Survey 1 cruise	
silica_KIWI7.csv	(Comma Separated Values (.csv), 9.04 KB) MD5:d1c216bb35ebc37dd004de8480d576dc
Version April 4, 2002 (Original version September 26, 2000) David Nelson & Mark Brzezinski Biogenic silica production rates and dissolution rates in the Antarctic Polar Frontal Zone AESOPS KIWI07, APFZ Process 1 cruise	
silica_KIWI8.csv	(Comma Separated Values (.csv), 2.81 KB) MD5:848aa634bb5686949de8fe66bb4105dd
Version April 4, 2002 (Original version September 26, 2000) David Nelson & Mark Brzezinski Biogenic silica production rates and dissolution rates in the Antarctic Polar Frontal Zone AESOPS KIWI08, APFZ Survey 2 cruise	
silica_KIWI9.csv	(Comma Separated Values (.csv), 5.94 KB) MD5:ee108f887134dc31e490b8aee05b1009
Version April 4, 2002 (Original version September 26, 2000) David Nelson & Mark Brzezinski Biogenic silica production rates and dissolution rates in the Antarctic Polar Frontal Zone AESOPS KIWI09, APFZ Process 2 cruise DMO note (020424): event 02271234, sta 9, cast 7, data reported from bottle 7 (56 m) presumably came from bottle 7 tripped at 10 dbars.	

[table of contents | back to top]

Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number from event log	
cast	rosette cast number	
cast_type	CTD = CTD rosette TM = Trace Metal rosette	
bot	rosette bottle number	
depth_n	nominal sample depth	meters
Si_acid	dissolved silicic acid concentration	micromolar
Si_bio	biogenic particulate silica concentration	micromoles Si/liter
irrad_incub	irradiance level set for incubation	percent
Si_rho	rate of biogenic silica production	micromoles Si/liter/day
Si_Vb	specific rate of biogenic silica production	per day
Si_dis_rate	rate of biogenic silica dissolution	micromoles Si/liter/day

[table of contents | back to top]

Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	CTD clean rosette (Niskin) bottles were used to collect water samples.
Generic Instrument Description	A Niskin bottle (a next generation water sampler based on the Nansen bottle) is a cylindrical, non-metallic water collection device with stoppers at both ends. The bottles can be attached individually on a hydrowire or deployed in 12, 24, or 36 bottle Rosette systems mounted on a frame and combined with a CTD. Niskin bottles are used to collect discrete water samples for a range of measurements including pigments, nutrients, plankton, etc.

Dataset-specific Instrument Name	Trace Metal Bottle
Generic Instrument Name	Trace Metal Bottle
Dataset-specific Description	Trace metal (TM) clean rosette bottles were used to collect water samples.
Generic Instrument Description	Trace metal (TM) clean rosette bottle used for collecting trace metal clean seawater samples.

[table of contents | back to top]

Deployments

KIWI6

Website	https://www.bco-dmo.org/deployment/57724
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRs1.html
Start Date	1997-10-20
End Date	1997-11-24
Description	Polar Front Survey I. Additional information about this cruise can be found at https://usjgofs.whoi.edu/aesops/aboutrr6.html **Methods & Sampling** dates: October 25, 1997 to November 18, 1997 location: N: -57.9998 S: -62.3658 W: -171.9 E: -168.2947 project/cruise: AESOPS/RR_KIWI06; APFZ Polar Front Survey 1 Cruise

KIWI7

Website	https://www.bco-dmo.org/deployment/57725
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRp1.html
Start Date	1997-12-02
End Date	1998-01-03
Description	Polar Front Process I. Additional information about this cruise can be found at https://usjgofs.whoi.edu/aesops/aboutrr7.html **Methods & Sampling** dates: December 05, 1997 to December 30, 1997 location: N: -52.9823 S: -64.696 W: -174.7135 E: -168.8302 project/cruise: AESOPS/RR_KIWI07; APFZ Polar Front Process 1 Cruise

KIWI8

Website	https://www.bco-dmo.org/deployment/57726
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRs2.html
Start Date	1998-01-08
End Date	1998-02-08
Description	Polar Front Survey II. Additional information about this cruise can be found at https://usjgofs.whoi.edu/aesops/aboutrr8.html **Methods & Sampling** dates: January 12, 1998 to January 28, 1998 location: N: -57 S: -67.784 W: -170.1283 E: -169.9983 project/cruise: AESOPS/RR_KIWI08; APFZ Polar Front Survey 2 cruise

KIWI9

Website	https://www.bco-dmo.org/deployment/57727
Platform	R/V Roger Revelle
Report	http://usjgofs.whoi.edu/aesops/RRp2.html
Start Date	1998-02-13
End Date	1998-03-19
Description	Polar Front Process II. Additional information about this cruise can be found at https://usjgofs.whoi.edu/aesops/aboutrr9.html **Methods & Sampling** dates: February 16, 1998 to March 14, 1998 location: N: -52.9668 S: -71.3072 W: -174.7317 E: -165.9148 project/cruise: AESOPS/RR_KIWI09; APFZ Polar Front Process 2 cruise PI QC note for RR9 bottle #7

[table of contents | back to top]

Project Information

U.S. JGOFS Antarctic Environment and Southern Ocean Process Study (AESOPS)

Website: http://usjgofs.whoi.edu/research/aesops.html

Coverage: Southern Ocean, Ross Sea

The U.S. Southern Ocean JGOFS program, called Antarctic Environment and Southern Ocean Process Study (AESOPS), began in August 1996 and continued through March 1998. The U.S. JGOFS AESOPS program focused on two regions in the Southern Ocean: an east/west section of the Ross-Sea continental shelf along 76.5°S, and a second north/south section of the Southern Ocean spanning the Antarctic Circumpolar Current (ACC) at ~170°W (identified as the Polar Front). The science program, coordinated by Antarctic Support Associates (ASA), comprised eleven cruises using the R.V.I.B Nathaniel B. Palmer and R/V Roger Revelle as observational platforms and for deployment and recovery of instrumented moorings and sediment-trap arrays. The Ross-Sea region was occupied on six occasions and the Polar Front five times. Mapping data were obtained from SeaSoar, ADCP, and bathymetric systems. Satellite coverage was provided by the NASA SeaWiFS and the NOAA/NASA Pathfinder programs.

[table of contents | back to top]

Program Information

U.S. Joint Global Ocean Flux Study (U.S. JGOFS)

Website: http://usjgofs.whoi.edu/

Coverage: Global

The United States Joint Global Ocean Flux Study was a national component of international JGOFS and an integral part of global climate change research.

The U.S. launched the Joint Global Ocean Flux Study (JGOFS) in the late 1980s to study the ocean carbon cycle. An ambitious goal was set to understand the controls on the concentrations and fluxes of carbon and associated nutrients in the ocean. A new field of ocean biogeochemistry emerged with an emphasis on quality measurements of carbon system parameters and interdisciplinary field studies of the biological, chemical and physical process which control the ocean carbon cycle. As we studied ocean biogeochemistry, we learned that our simple views of carbon uptake and transport were severely limited, and a new "wave" of ocean science was born. U.S. JGOFS has been supported primarily by the U.S. National Science Foundation in collaboration with the National Oceanic and Atmospheric Administration, the National Aeronautics and Space Administration, the Department of Energy and the Office of Naval Research. U.S. JGOFS, ended in 2005 with the conclusion of the Synthesis and Modeling Project (SMP).

[table of contents | back to top]