

Sediment composition data from US JGOFS Sediment Traps in the Southern Ocean, 1996-1998 (U.S. JGOFS AESOPS project)

Website: <https://www.bco-dmo.org/dataset/2721>

Version: final

Version Date: 2002-10-01

Project

» [U.S. JGOFS Antarctic Environment and Southern Ocean Process Study](#) (AESOPS)

Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

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Table of Contents

- [Dataset Description](#)
- [Parameters](#)
- [Instruments](#)
- [Deployments](#)
- [Project Information](#)
- [Program Information](#)

Dataset Description

Sediment composition

[[table of contents](#) | [back to top](#)]

Parameters

Parameter	Description	Units
event	event number from event log	
sta	station number from event log	
lat	latitude, minus value means South	decimal degrees
lon	longitude, minus value means West	decimal degrees
core_type	type of coring instrument used, where GC = gravity core where MC = multi core	
depth_w	water depth	meters
depth_core	depth in core, mid-point of interval sampled	centimeters
depth_core_sd	depth in core, standard deviation	centimeters
CaCO3	calcium carbonate, weight percent	percent
Si_opal	opal, weight percent	percent
Si_opal_dup	opal, duplicate analysis, weight percent	percent
site	sediment trap mooring number	
deploy_id	type of sampling device: MC=MultiCorer WHIMP=Woods Hole Interstitial Marine Probe	
porosity	volume of pore water per volume of wet sediment	
C_org	average weight percent of organic carbon	percent
C_org_sd	standard deviation of replicates	percent
biog_tot	Si_opal + CaCO3 + 2.8*C_org	percent
detrital	100 - biol_tot	percent
Pb210xs	excess Pb210 activity	dpm/gram
Pb210xs_sd	uncertainty in Pb210xs	dpm/gram
Th234xs	excess Th234 activity	dpm/gram
Th234xs_sd	uncertainty in Th234xs	dpm/gram

[[table of contents](#) | [back to top](#)]

Instruments

Dataset-specific Instrument Name	Gravity Corer
Generic Instrument Name	Gravity Corer
Generic Instrument Description	The gravity corer allows researchers to sample sediment layers at the bottom of lakes or oceans. The coring device is deployed from the ship and gravity carries it to the seafloor. (http://www.whoi.edu/instruments/viewInstrument.do?id=1079).

Dataset-specific Instrument Name	Multi Corer
Generic Instrument Name	Multi Corer
Generic Instrument Description	The Multi Corer is a benthic coring device used to collect multiple, simultaneous, undisturbed sediment/water samples from the seafloor. Multiple coring tubes with varying sampling capacity depending on tube dimensions are mounted in a frame designed to sample the deep ocean seafloor. For more information, see Barnett et al. (1984) in <i>Oceanologica Acta</i> , 7, pp. 399-408.

[[table of contents](#) | [back to top](#)]

Deployments

NBP-96-4

Website	https://www.bco-dmo.org/deployment/57717
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/ss.html
Start Date	1996-08-30
End Date	1996-09-24
Description	<p>Site Survey Cruise</p> <p>Methods & Sampling PI: Bob Anderson of: Lamont-Doherty Earth Observatory dataset: Sediment composition dates: September 07, 1996 to September 17, 1996 location: N: -56.9097 S: -63.8833 W: -170.1755 E: -169.2333 project/cruise: AESOPS/NBP96-4 ship: R/V Nathaniel B. Palmer Notes: CaCO₃ measured by coulometry. Opal measured by alkaline leach and spectrophotometry. The concentrations reported are for biogenic opal, which includes 11% by weight water (SiO₂*0.4H₂O). Reference: Mortlock R.A., Froelich P.N., 1989. A simple method for the rapid determination of biogenic opal in pelagic marine sediments. <i>Deep-Sea Research</i> 36, 1415-1426.</p>

NBP-98-2

Website	https://www.bco-dmo.org/deployment/57723
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/nbp-bp_mr.html
Start Date	1998-02-25
End Date	1998-04-03
Description	<p>Benthic Process and Moorings Recovery</p> <p>Methods & Sampling PI: Fred Sayles and William Martin of: Woods Hole Oceanographic Institution data set: Sediment composition dates: February 26, 1998 to March 21, 1998 location: N: -56.8817 S: -76.4992 W: -178.107 E: -169.6252 project/cruise: AESOPS NBP98-2, Benthic Process and Mooring Recovery Cruise ship: R/V Nathaniel B. Palmer Sampling Methodology</p>

[[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](#)]