

Natural Nitrogen and Carbon stable isotopic composition, underway data from RVIB Nathaniel B. Palmer and R/V Roger Revelle cruises in the Southern Ocean, 1997-1998 (U.S. JGOFS AESOPS project)

Website: <https://www.bco-dmo.org/dataset/2720>

Version: October 2, 2002

Version Date: 2002-10-02

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](#)
- [Deployments](#)
- [Project Information](#)
- [Program Information](#)

Dataset Description

Natural N and C stable isotopic comp.; underway

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

Parameters

Parameter	Description	Units
date	date (YYYYMMDD) decoded as follows YYYY = year of decade, MM = month, DD = day	YYYYMMDD
time	time of day (hhmm) decoded as follows hh = hour, mm = minutes	HHMM
lat	latitude, negative=south	decimal degrees
lon	longitude, negative=west	decimal degrees
dN15_NO3	delta 15N of dissolved nitrate relative to atmospheric N2	per mil (ppt)
dN15_POM	delta 15N of particulate organic matter relative to atmospheric N2	per mil (ppt)
dC13_POM	delta 13C of particulate organic matter relative to the PDB standard	per mil (ppt)

[[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: Mark Altabet and Roger Francois of: University of Massachusetts, Dartmouth (Altabet) Woods Hole Oceanographic Institution (Francois) dataset: Natural nitrogen and carbon stable isotopic composition; underway data dates: September 1, 1996 to September 21, 1996 location: N: -47.4 S: -64.18 W: 168.37 E: 179.7 project/cruise: AESOPS/NBP96-4 - Site Survey Cruise ship: R/V Nathaniel B. Palmer Methodology: Methods for nitrate isotopic composition reported in: Sigman, D. M., M. A. Altabet, R. Michener, D. C. McCorkle, B. Fry and R. M. Holmes. (1997). Natural Abundance-level measurement of the nitrogen isotopic composition of oceanic nitrate: an adaptation of the ammonia diffusion method. Mar. Chem. 57, 227-242. Methods for POM isotopic composition in: Altabet, M. A., and R. Francois, 1994. Sedimentary N isotopic ratio as a recorder for surface ocean nitrate utilization. Global Biogeochemical Cycles., 8, 103-116.</p>

NBP-96-04A

Website	https://www.bco-dmo.org/deployment/57718
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/p1.html
Start Date	1996-10-02
End Date	1996-11-08
Description	<p>Ross Sea Process Study 1</p> <p>Methods & Sampling PI: Mark Altabet and Roger Francois of: University of Massachusetts, Dartmouth (Altabet) Woods Hole Oceanographic Institution (Francois) dataset: Natural nitrogen and carbon stable isotopic composition; underway data dates: October 4, 1996 to November 6, 1996 location: N: -54.06 S: -76.55 W: 107.1 E: 179.98 project/cruise: AESOPS/NBP96-4A - Process Cruise 1 ship: R/V Nathaniel B. Palmer Methodology: Methods for nitrate isotopic composition reported in: Sigman, D. M., M. A. Altabet, R. Michener, D. C. McCorkle, B. Fry and R. M. Holmes. (1997). Natural Abundance-level measurement of the nitrogen isotopic composition of oceanic nitrate: an adaptation of the ammonia diffusion method. Mar. Chem. 57, 227-242. Methods for POM isotopic composition in: Altabet, M. A., and R. Francois, 1994. Sedimentary N isotopic ratio as a recorder for surface ocean nitrate utilization. Global Biogeochemical Cycles., 8, 103-116.</p>

NBP-96-5

Website	https://www.bco-dmo.org/deployment/57719
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.whoi.edu/aesops/m1.html
Start Date	1996-11-11
End Date	1996-12-01
Description	<p>Moorings Deployment</p> <p>Methods & Sampling PI: Mark Altabet and Roger Francois of: University of Massachusetts, Dartmouth (Altabet) Woods Hole Oceanographic Institution (Francois) dataset: Natural nitrogen and carbon stable isotopic composition; underway data dates: November 13, 1996 to November 29, 1996 location: N: -44.5 S: -76.5 W: 58.86 E: 179.52 project/cruise: AESOPS/NBP96-5 - Mooring Deployment ship: R/V Nathaniel B. Palmer Methodology: Methods for nitrate isotopic composition reported in: Sigman, D. M., M. A. Altabet, R. Michener, D. C. McCorkle, B. Fry and R. M. Holmes. (1997). Natural Abundance-level measurement of the nitrogen isotopic composition of oceanic nitrate: an adaptation of the ammonia diffusion method. Mar. Chem. 57, 227-242. Methods for POM isotopic composition in: Altabet, M. A., and R. Francois, 1994. Sedimentary N isotopic ratio as a recorder for surface ocean nitrate utilization. Global Biogeochemical Cycles., 8, 103-116.</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](#)]