

Total organic carbon (TOC) from CTD casts from RVIB Nathaniel B. Palmer, R/V Roger Revelle NBP-97-3, KIWI6, KIWI7, KIWI8, KIWI9 cruises in the Southern Ocean, 1997-1998 (U.S. JGOFS AESOPS project)

Website: <https://www.bco-dmo.org/dataset/2754>

Version: 1

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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
Goyet, Catherine	Universite de Perpignan	Principal Investigator
Hansell, Dennis	University of Miami Rosenstiel School of Marine and Atmospheric Science (UM-RSMAS)	Principal Investigator
Peltzer, Edward T.	Monterey Bay Aquarium Research Institute (MBARI)	Principal Investigator, Co-Principal Investigator
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Abstract

Total organic carbon (TOC) from CTD casts from RVIB Nathaniel B. Palmer, R/V Roger Revelle NBP-97-3, KIWI6, KIWI7, KIWI8, KIWI9 cruises in the Southern Ocean, 1997-1998.

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Dataset Description

Total organic carbon (TOC) from CTD casts from RVIB Nathaniel B. Palmer, R/V Roger Revelle NBP-97-3, KIWI6, KIWI7, KIWI8, KIWI9 cruises in the Southern Ocean, 1997-1998.

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Parameters

Parameter	Description	Units
event	event number, from event log	
sta	station number, from event log	
cast	CTD cast number	
bot	CTD rosette bottle number	
depth_n	nominal or target sample depth	meters
TOC	total organic carbon	micromoles C/liter
TOC_kg	total organic carbon	micromoles C/kilogram
sta_name	station name	
qflag_TOC	data flag (0=suspect data,1=good data)	

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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.

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Deployments

NBP-97-03

Website	https://www.bco-dmo.org/deployment/57721
Platform	RVIB Nathaniel B. Palmer
Report	http://usjgofs.who.edu/aesops/p3.html
Start Date	1997-04-04
End Date	1997-05-11
Description	<p>Ross Sea Process Study 3</p> <p>Methods & Sampling PI: Edward Peltzer of: Woods Hole Oceanographic Institution (WHOI) as of mid-1998: Monterey Bay Aquarium Research Institute (MBARI) at sea analysts: Edward Peltzer and Thomas Kirchleckner (UO/NZ) dataset: Total organic carbon from CTD casts dates: April 08, 1997 to May 05, 1997 location: N: -63.5023 S: -77.9319 W: 168.9281 E: -176.1451 project/cruise: AESOPS/NBP97-3 - Ross Sea Process Cruise 3 ship: R/V Nathaniel B. Palmer Methodology</p>

KIWI6

Website	https://www.bco-dmo.org/deployment/57724
Platform	R/V Roger Revelle
Report	http://usjgofs.who.edu/aesops/RRs1.html
Start Date	1997-10-20
End Date	1997-11-24
Description	<p>Polar Front Survey I</p> <p>Methods & Sampling PI: Catherine Goyet (WHOI) & Edward Peltzer (MBARI) of: Woods Hole Oceanographic Institution & Monterey Bay Aquarium Research Institute dataset: Total organic carbon from CTD casts dates: October 23, 1997 to November 18, 1997 location: N: -56.9998 S: -62.341 W: -171.9 E: -168.0622 project/cruise: AESOPS/RR_KIWI6 - APFZ Polar Front Survey I Cruise ship: R/V Roger Revelle at sea analysts: Catherine Goyet (WHOI) and Thomas Kirchleckner (UO/NZ). Methods reported in: Peltzer, Edward T. (1993). Shipboard determination of total organic carbon by a high temperature combustion/direct injection technique. U.S. Joint Global Ocean Flux Study - [Equatorial Pacific Protocols, 1993, section 21A]. Alternatively, see: Chapter 16 of the JGOFS Data Protocols. Determination of Dissolved Organic Carbon by a High Temperature Combustion/Direct Injection Technique. [JGOFS Report Nr. 19]. The EqPac methods were followed explicitly on the APFZ Survey I cruise with three exceptions: 1. Low carbon water (LCW) prepared onboard ship using a commercial NanoPure (R) UV/TOC system was used to measure the instrument blank as opposed to the carbon free distilled water (CFDW) that was used in EqPac. 2. The LCW prepared onboard was checked against LCW prepared at WHOI using a Milli-Q UV/TOC (R) system and shipped to New Zealand in glass bottles. This water was assigned a background TOC concentration of zero. 3. Arabian sea deep water was used to prepare the daily calibration standards. This water has a background TOC concentration of 42.3 uMC.</p>

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	<p>Polar Front Process I</p> <p>Methods & Sampling PI: Dennis Hansell and Craig Carlson of: Bermuda Biological Station for Research dataset: Total organic carbon (TOC) from CTD casts dates: December 04, 1997 to December 26, 1997 location: N: -53.0292 S: -64.7418 W: -174.7295 E: -168.8325 project/cruise: AESOPS/KIWI-7 - APFZ Polar Front Process 1 Cruise ship: R/V Roger Revelle Methodology PI Note: Polar Front samples were not filtered, therefore these analyses are of total organic carbon and not dissolved organic carbon.</p>

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	<p>Polar Front Survey II</p> <p>Methods & Sampling PI: Catherine Goyet (WHOI) & Edward Peltzer (MBARI) of: Woods Hole Oceanographic Institution & Monterey Bay Aquarium Research Institute dataset: Total organic carbon from CTD casts dates: January 12, 1998 to January 28, 1998 location: N: -57 S: -67.52 W: -170.1117 E: -169.9983 project/cruise: AESOPS/RR_KIWI8 - APFZ Polar Front Survey II Cruise ship: R/V Roger Revelle at sea analysts: Greg Eischeid (WHOI). Methods reported in: Peltzer, Edward T. (1993). Shipboard determination of total organic carbon by a high temperature combustion/direct injection technique. U.S. Joint Global Ocean Flux Study - [Equatorial Pacific Protocols, 1993, section 21A]. Alternatively, see: Chapter 16 of the JGOFS Data Protocols. Determination of Dissolved Organic Carbon by a High Temperature Combustion/Direct Injection Technique. [JGOFS Report Nr. 19]. The EqPac methods were followed explicitly on the APFZ Survey I cruise with three exceptions: 1. Low carbon water (LCW) prepared onboard ship using a commercial NanoPure (R) UV/TOC system was used to measure the instrument blank as opposed to the carbon free distilled water (CFDW) that was used in EqPac. 2. The LCW prepared onboard was checked against LCW prepared at WHOI using a Milli-Q UV/TOC (R) system and shipped to New Zealand in glass bottles. This water was assigned a background TOC concentration of zero. 3. Arabian sea deep water was used to prepare the daily calibration standards. This water has a background TOC concentration of 42.3 uMC.</p>

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	<p>Polar Front Process II</p> <p>Methods & Sampling PI: Dennis Hansell and Craig Carlson of: Bermuda Biological Station for Research dataset: Total organic carbon (TOC) from CTD casts dates: February 15, 1998 to March 15, 1998 location: N: -52.967 S: -71.3157 W: -174.7693 E: -165.9143 project/cruise: AESOPS/KIWI-9 - APFZ Polar Front Process 2 Cruise ship: R/V Roger Revelle Methodology PI Note: Polar Front samples were not filtered, therefore these analyses are of total organic carbon and not dissolved organic carbon.</p>

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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.

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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).

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