Particulate Organic Carbon and Particulate Organic Nitrogen from R/V Thomas G. Thompson TT043, TT045, TT049, TT053, TT054 cruises in the Arabian Sea in 1995 (U.S. JGOFS Arabian Sea project)

Website: https://www.bco-dmo.org/dataset/2519
Version: 3 May 2001
Version Date: 2001-05-03

Project
» U.S. JGOFS Arabian Sea (Arabian Sea)

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

Contributors	Affiliation	Role
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Balch, William M.	Bigelow Laboratory for Ocean Sciences	Principal Investigator
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Dataset Description

Particulate Organic Carbon and Particulate Organic Nitrogen

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

Parameter	Description	Units
event	event number from event log	
sta_std	Arabian Sea standard station identifier	
sta	station number from event log	
cast	CTD rosette cast number from event log	
bot	CTD rosette bottle number	
press	sample depth reported as pressure	decibars
POC	particulate organic carbon	micromoles/liter
PON	particulate organic nitrogen	micromoles/liter
C_to_N	carbon to nitrogen molar ratio	
flag	flags to identify suspect values: N = Particulate Organic Nitrogen; C = Particulate Organic Carbon; C_and_N = Both Carbon and Nitrogen; C/N = Carbon:Nitrogen ratio; cannot easily tell which parameter is suspect	
depth_n	nominal sample depth	meters

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Instruments

Dataset-specific Instrument Name	Niskin Bottle
Generic Instrument Name	Niskin bottle
Dataset-specific Description	CTD/Niskin Rosette bottles.
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

TT043

Website	https://www.bco-dmo.org/deployment/57704
Platform	R/V Thomas G. Thompson
Report	http://osprey.bcodmo.org/datasetDeployment.cfm?ddid=2580&did=353&flag=view
Start Date	1995-01-08
End Date	1995-02-05
Description	Purpose: Process Cruise #1 (Late NE Monsoon) **Methods & Sampling** PI: Farooq Azam and David Smith of: Scripps Institute of Oceanography dataset: Particulate Organic Carbon, Particulate Organic Nitrogen data from CTD casts dates: January 09, 1995 to January 31, 1995 location: N: 22.483 S: 10.0013 W: 57.2999 E: 68.75 project/cruise: Arabian Sea/TTN-043 - Process Cruise 1 (Late NE Monsoon) ship: Thomas Thompson Farooq Azam and David C. Smith Methodology for POC and PON measurements Water from the CTD rosette was transferred to brown polyethylene or polycarbonate bottles and shielded from light until filtration (within two hours of sampling). The bottles were rinsed with Milli-Q water after each use and twice with sample before filling. The water was then filtered through combusted (4 hours at 480°C) Whatman GF/F filters at a pressure differential of

TT045

Website	https://www.bco-dmo.org/deployment/57706
Platform	R/V Thomas G. Thompson
Start Date	1995-03-14
End Date	1995-04-10
Description	**Methods & Sampling** PI: Hugh Ducklow (Virginia Institute of Marine Science) dataset: Particulate Organic Carbon and Particulate Organic Nitrogen dates: March 15, 1995 to April 07, 1995 location: N: 22.4853 S: 9.9993 W: 57.3007 E: 68.7532 project/cruise: Arabian Sea/TTN-045, Process cruise #2 (Spring Intermonsoon) ship: R/V Thomas Thompson Notes on the Sampling Methodology, by Hugh Ducklow Samples were harvested from hydrocasts into Milli-Q and sample-rinsed 2-liter polycarbonate bottles, and concentrated over low vacuum filtration onto precombusted GF/F filters. Volumes collected were adjusted according to depth, expected carbon concentration and filter color (generally 1-4 liters). Filters were removed from the manifold before they dried and were stored folded in half in plastic envelopes in a dessicator. The filters were returned to the USA on dry ice, and finally shipped to BBSR on dry ice for analysis. Samples were analyzed at Bermuda Biological Station for Research following the BATS protocols. NB: Filters were acidified so the carbon analysis is for particulate organic carbon not total particulate carbon.

TT049

Website	https://www.bco-dmo.org/deployment/57710
Platform	R/V Thomas G. Thompson
Start Date	1995-07-17
End Date	1995-08-15
Description	**Methods & Sampling** PI: Hugh Ducklow of: Virginia Institute of Marine Science dataset: Particulate Organic Carbon and Particulate Organic Nitrogen dates: July 18, 1995 to August 13, 1995 location: N: 22.5001 S: 9.911 W: 57.2997 E: 68.7507 project/cruise: Arabian Sea/TTN-049, Process cruise 4 (Middle SW Monsoon) ship: R/V Thomas Thompson Particulate organic carbon and nitrogen were collected from standard hydrocasts and filtered over low vacuum onto precombusted GF/F filters, and stored for subsequent analysis following JGOFS protocols. Samples were acidified, and represent organic carbon. Samples were analyzed at the Bermuda Biological Station for Research by BATS personnel using the BATS/JGOFS protocols. In general the deep water (> 1000 m) values for C and N are greater than in March. This was not expected. The data should be used with care pending further discussion. meaning of 'flag', where 'nd' indicates no data: N = Particulate Organic Nitrogen flagged as suspect C = Total Particulate Carbon flagged as suspect C,N = Both Carbon and Nitrogen flagged as suspect C_to_N = Carbon Nitrogen ratio flagged as suspect, cannot easily tell which parameter is suspect

TT053

Website	https://www.bco-dmo.org/deployment/57714
Platform	R/V Thomas G. Thompson
Start Date	1995-10-29
End Date	1995-11-26
Description	**Methods & Sampling** PI: William Balch of: Bigelow Laboratory dataset: Particulate Organic Carbon and Particulate Organic Nitrogen dates: October 29, 1995 to November 23, 1995 location: N: 24.3302 S: 10.0823 W: 56.4971 E: 67.1664 project/cruise: Arabian Sea/TTN-053, Process cruise 6 (bio-optics) ship: R/V Thomas Thompson Particulate organic carbon and nitrogen were collected from standard hydrocasts and filtered over low vacuum onto precombusted GF/F filters, and stored for subsequent analysis following JGOFS protocols. Samples were acidified, and represent organic carbon. Samples were analyzed at the Bermuda Biological Station for Research by BATS personnel using the BATS/JGOFS protocols. In general the deep water (> 1000 m) values for C and N are greater than in March. This was not expected. The data should be used with care pending further discussion.

TT054

Website	https://www.bco-dmo.org/deployment/57715
Platform	R/V Thomas G. Thompson
Start Date	1995-11-30
End Date	1995-12-28
Description	**Methods & Sampling** PI: Farooq Azam and David Smith of: Scripps Institute of Oceanography dataset: Particulate Organic Carbon, Particulate Organic Nitrogen data from CTD casts dates: December 01, 1995 to December 26, 1995 location: N: 22.5005 S: 9.9789 W: 57.302 E: 68.7849 project/cruise: Arabian Sea/TTN-054 - Process Cruise 7 (Early NE Monsoon) ship: Thomas Thompson Note: The following events have no standard station assigned: event# 12250943 is site J1 event# 12251908 is site E5 Farooq Azam and David C. Smith Methodology for POC and PON measurements Water from the CTD rosette was transferred to brown polyethylene or polycarbonate bottles and shielded from light until filtration (within two hours of sampling). The bottles were rinsed with Milli-Q water after each use and twice with sample before filling. The water was then filtered through combusted (4 hours at 480°C) Whatman GF/F filters at a pressure differential of

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Project Information

U.S. JGOFS Arabian Sea (Arabian Sea)

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

Coverage: Arabian Sea

The U.S. Arabian Sea Expedition which began in September 1994 and ended in January 1996, had three major components: a U.S. JGOFS Process Study, supported by the National Science Foundation (NSF); Forced Upper Ocean Dynamics, an Office of Naval Research (ONR) initiative; and shipboard and aircraft measurements supported by the National Aeronautics and Space Administration (NASA). The Expedition consisted of 17 cruises aboard the R/V Thomas Thompson, year-long moored deployments of five instrumented surface buoys and five sediment-trap arrays, aircraft overflights and satellite observations. Of the seventeen ship cruises, six were allocated to repeat process survey cruises, four to SeaSoar mapping cruises, six to mooring and benthic work, and a single calibration cruise which was essentially conducted in transit to the Arabian Sea.

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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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Funding

Funding Source	Award
National Science Foundation (NSF)	unknown Arabian Sea NSF

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