HPLC measured pigments by size fraction from R/V Thomas G. Thompson TT053 cruise in the Arabian Sea in 1995 (U.S. JGOFS Arabian Sea project)

Website: https://www.bco-dmo.org/dataset/2563
Version: May 8, 2001
Version Date: 2001-05-08

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

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

Contributors	Affiliation	Role
Bidigare, Robert R.	University of Hawai'i (UH)	Principal Investigator
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Dataset Description

HPLC measured pigments by size fraction for selected stations

Methods & Sampling

PI: Robert R. Bidigare
of: University of Hawaii
dataset: Pigment size fractions, HPLC method, from bottle casts
dates: November 02, 1995 to November 18, 1995
location: N: 23.1289 S: 10.0871 W: 57.2737 E: 67.1208
cruise: TTN-053, Arabian Sea Process cruise #6 (bio-optics)
ship: R/V Thomas Thompson

Robert Bidigare
University of Hawaii

Notes on Sampling Methodology

The distribution of pigments in different size fractions was investigated at the six long stations occupied during each cruise.

Seawater samples were collected from fours depths: one in the mixed layer, and the other three above, within and below the deep chlorophyll maximum layer. Size-fractionated pigment samples were prepared by serially passing seawater (1-4 L) through 25 mm Gelman in-line filter holders equipped with filters of decreasing porosity. These included 18 and 2 micron Poretics polycarbonate filters, followed by a Whatman GF/F glass fiber filter (nominal porosity of 0.7 micron). Filters were wrapped in aluminum foil, immediately frozen in liquid nitrogen, shipped to Hawaii following each cruise, and stored at -80oC until HPLC analysis.

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Data Files

File
HPLC_sizefrac.csv (Comma Separated Values (.csv), 4.79 KB) MD5:e0528f946587e672e8c74181daa54c21 Primary data file for dataset ID 2563

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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	
depth_n	nominal depth	meters
sizefrac	particle size range (gt = greater than)	microns
chlide_a	Chlorophyllide a	nanogram/liter
chl_c3	Chlorophyll c3	nanogram/liter
chl_c	Chlorophyll c1 + chlorophyll c2 + Mg 3,8 divinyl pheoporphyrin a5	nanogram/liter

peridinin	Peridinin	nanogram/liter
fucox_but	19'-Butanoyloxyfucoxanthin	nanogram/liter
fucox	Fucoxanthin	nanogram/liter
fucox_hex	19'-Hexanoyloxyfucoxanthin	nanogram/liter
cis_fucox	Cis-fucoxanthin	nanogram/liter
cis_hex	Cis-19'-hexanoyloxyfucoxanthin	nanogram/liter
prasinox	Prasinoxanthin	nanogram/liter
violax	Violaxanthin	nanogram/liter
diadinox	Diadinoxanthin	nanogram/liter
allox	Alloxanthin	nanogram/liter
diatox	Diatoxanthin	nanogram/liter
lutein	Lutein	nanogram/liter
zeax	Zeaxanthin	nanogram/liter
carotene_a	alpha-carotene	nanogram/liter
carotene_b	beta-carotene	nanogram/liter
chl_b2	Divinyl chlorophyll b	nanogram/liter
chl_b1	Monovinyl chlorophyll b	nanogram/liter
chl_a2	Divinyl chlorophyll a	nanogram/liter
chl_a1	Monovinyl chlorophyll a	nanogram/liter

chl_b_tot	Divinyl chlorophyll b plus Monovinyl chlorophyll b	nanogram/liter
chl_a_tot	Divinyl chlorophyll a plus Monovinyl chlorophyll a plus chlorophyllide a	nanogram/liter

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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

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

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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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