Phycoerythrin pigment concentrations from R/V Thomas G. Thompson cruises TT007, TT008, TT011, TT012 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: https://www.bco-dmo.org/dataset/2627
Version: April 11, 1994
Version Date: 1994-04-11

Project
» U.S. JGOFS Equatorial Pacific (EqPac)

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

Contributors	Affiliation	Role
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Dataset Description

Phycoerythrin pigment concentrations

Methods & Sampling

See Platform deployments for cruise specific documentation

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Data Files

File
phyc_TT007.csv (Comma Separated Values (.csv), 7.10 KB) MD5:011760601a75f04a7b7e5752fad3372d version April 11, 1994 Bob Bidigare Phycoerythrin Concentrations (red protein pigments) Thomas Thompson cruise TT007, Spring Survey
phyc_TT008.csv (Comma Separated Values (.csv), 5.98 KB) MD5:143b31a4a3b14a1bb6acef5ea0d3bf59 version April 11, 1994 Bob Bidigare Phycoerythrin Concentrations (red protein pigments) Thomas Thompson cruise TT008, Spring Time-series
phyc_TT011.csv (Comma Separated Values (.csv), 5.95 KB) MD5:1615fed34a5ae3a2fd305eeb94bb7a49 version April 11, 1994 Bob Bidigare Phycoerythrin Concentrations (red protein pigments) Thomas Thompson cruise TT011, Fall Survey
phyc_TT012.csv (Comma Separated Values (.csv), 5.23 KB) MD5:02b5dcbaca8836f36d5e313d0d34b359 version April 11, 1994 Bob Bidigare Phycoerythrin Concentrations (red protein pigments) Thomas Thompson cruise TT012, Fall Time-series

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Parameters

Parameter	Description	Units
event	event number from event log; a unique number composed of elements of date and time. Decoded as follows (MMDDHHmm): where MM = month, DD = day, HH = hour, mm = minutes. Date/time reported as local Hawaii time (+10 time zone).	
cast	CTD cast number from event log	
bot	CTD rossette bottle number	
sta	station number from event log	
depth_n	nominal sample depth	meters
phyco	phycoerythrin pigment	nanograms/liter

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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

TT007

Website	https://www.bco-dmo.org/deployment/57728
Platform	R/V Thomas G. Thompson
Start Date	1992-01-30
End Date	1992-03-13
Description	Purpose: Spring Survey Cruise; 12°N-12°S at 140°W TT007 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team. **Methods & Sampling** PI: Robert Bidigare of: University of Hawaii dataset: Phycoerythrin pigment concentrations dates: February 04, 1992 to March 08, 1992 location: N: 12.0102 S: -12.0361 W: -140.5219 E: -134.9903 project/cruise: EQPAC/TT007 - Spring Survey ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 9) EqPac bottle quality review summary from DMO DMO cautionary note: The DMO suspects a misalignment of bottle numbers with corresponding depths/pressures for event number 02041830. In question are the values reported for bottles 17 and 14 at nominal depths of 60 and 90 meters. These depths align correctly with bottles 18 and 15. Bottles 17 and 14 should have depths of 70 and 100 meters. These correlations are based on the event/bottle number/depths reported by Murray in his final bottle cast file.

TT008

Website	https://www.bco-dmo.org/deployment/57729
Platform	R/V Thomas G. Thompson
Start Date	1992-03-19
End Date	1992-04-15
Description	Purpose: Spring Time Series; Equator, 140°W TT008 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team. **Methods & Sampling** PI: Robert Bidigare of: University of Hawaii dataset: Phycoerythrin pigment concentrations dates: March 21, 1992 to April 14, 1992 location: N: 9.011 S: -2.0013 W: -140.0162 E: -139.9622 project/cruise: EQPAC/TT008 - Spring Time Series ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 9) EqPac bottle quality review summary from DMO

TT011

Website	https://www.bco-dmo.org/deployment/57730
Platform	R/V Thomas G. Thompson
Start Date	1992-08-05
End Date	1992-09-18
Description	Purpose: Fall Survey; 12°N-12°S at 140°W TT011 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team. **Methods & Sampling** PI: Robert Bidigare of: University of Hawaii dataset: Phycoerythrin pigment concentrations dates: August 11, 1992 to September 14, 1992 location: N: 12.02 S: -11.8667 W: -141.4433 E: -134.9683 project/cruise: EQPAC/TT011 - Fall Survey Cruise ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 9) EqPac bottle quality review summary from DMO

TT012

Website	https://www.bco-dmo.org/deployment/57731
Platform	R/V Thomas G. Thompson
Start Date	1992-09-24
End Date	1992-10-21
Description	Purpose: Fall Time Series; Equator, 140°W TT012 was one of five cruises conducted in 1992 in support of the U.S. Equatorial Pacific (EqPac) Process Study. The five EqPac cruises aboard R/V Thomas G. Thompson included two repeat meridional sections (12°N - 12°S), 2 equatorial surveys, and a benthic survey (all at 140° W). The scientific objectives of this study were to observe the processes in the Equatorial Pacific controlling the fluxes of carbon and related elements between the atmosphere, euphotic zone, and deep ocean. As luck would have it, the survey window coincided with an El Nino event. A bonus for the research team. **Methods & Sampling** PI: Robert Bidigare of: University of Hawaii dataset: Phycoerythrin pigment concentrations dates: September 25, 1992 to October 21, 1992 location: N: 0.0207 S: -12 W: -145.489 E: -139.8587 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson Methodology: U.S. JGOFS Equatorial Pacific Process Study Sampling and Analytical Protocols (section 9)

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Project Information

U.S. JGOFS Equatorial Pacific (EqPac)

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

Coverage: Equatorial Pacific

The U.S. EqPac process study consisted of repeat meridional sections (12°N -12°S) across the equator in the central and eastern equatorial Pacific from 95°W to 170°W during 1992. The major scientific program was focused at 140° W consisting of two meridional surveys, two equatorial surveys, and a benthic survey aboard the R/V Thomas Thompson. Long-term deployments of current meter and sediment trap arrays augmented the survey cruises. NOAA conducted boreal spring and fall sections east and west of 140°W from the R/V Baldridge and R/V Discoverer. Meteorological and sea surface observations were obtained from NOAA's in place TOGA-TAO buoy network.

The scientific objectives of this study were to determine the fluxes of carbon and related elements, and the processes controlling these fluxes between the Equatorial Pacific euphotic zone and the atmosphere and deep ocean. A broad overview of the program at the 140°W site is given by Murray et al. (Oceanography, 5: 134-142, 1992). A full description of the Equatorial Pacific Process Study, including the international context and the scientific results, appears in a series of Deep-Sea Research Part II special volumes:

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1995), Deep-Sea Research Part II, Volume 42, No. 2/3.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific. Part 2 (1996), Deep-Sea Research Part II, Volume 43, No. 4/6.

Topical Studies in Oceanography, A U.S. JGOFS Process Study in the Equatorial Pacific (1997), Deep-Sea Research Part II, Volume 44, No. 9/10.

Topical Studies in Oceanography, The Equatorial Pacific JGOFS Synthesis (2002), Deep-Sea Research Part II, Volume 49, Nos. 13/14.

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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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