

Particulate Trace Metals filtered at 0.4 μm (Al, Fe, Mn) from R/V Thomas G. Thompson cruises TT008, TT012 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2685>

Version: November 21, 2002

Version Date: 2002-11-21

Project

» [U.S. JGOFS Equatorial Pacific](#) (EqPac)

Program

» [U.S. Joint Global Ocean Flux Study](#) (U.S. JGOFS)

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Dataset Description

Particulate Trace Metals filtered at 0.4 μm (includes Aluminum, Iron, and Manganese)

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

Parameter	Description	Units
event	event/operation number per event log	
depth_n	depth of sample	meters
date	date reported as YYYYMMDD, year 1992	YYYYMMDD
time	time of day reported as local ship time	hours and minutes
lat_n	nominal latitude; negative for south	whole degrees
lon_n	nominal longitude; negative for west	whole degrees
Al_total	sum of aluminium from leach and refractory portions	nanomoles per kilogram
Al_leach	aluminium extracted with a 25% acetic acid leach	nanomoles per kilogram
Al_ref	refractory aluminium from total digestion	nanomoles per kilogram
Fe_total	sum of iron from leach and refractory portions	nanomoles per kilogram
Fe_leach	iron extracted with a 25% acetic acid leach	nanomoles per kilogram
Fe_ref	refractory iron from total digestion	nanomoles per kilogram
Mn_total	sum of manganese from leach and refractory portions	nanomoles per kilogram
Mn_leach	manganese extracted with a 25% acetic acid leach	nanomoles per kilogram
Mn_ref	refractory manganese from total digestion	nanomoles per kilogram

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Instruments

Dataset-specific Instrument Name	Trace Metal Bottle
Generic Instrument Name	Trace Metal Bottle
Dataset-specific Description	Trace metal (TM) clean rosette bottles were used to collect water samples.
Generic Instrument Description	Trace metal (TM) clean rosette bottle used for collecting trace metal clean seawater samples.

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Deployments

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	<p>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.</p> <p>Methods & Sampling PI: John Martin of: Moss Landing Marine Laboratories dataset: Particulate Trace Metals filtered at 0.4um dates: March 25, 1992 to April 09, 1992 location: N: 0.0282 S: -0.0338 W: -140.0533 E: -139.9317 project/cruise: EQPAC/TT008 - Spring Time Series ship: Thomas Thompson Notes Particulate trace metal data Particulate means that fraction collected on a 0.4 um filter DMO note: November 21, 2002 all longitude values were changed from 140 to -140. This cruise was conducted at 140 West at the equator.</p>

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	<p>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.</p> <p>Methods & Sampling PI: John Martin of: Moss Landing Marine Laboratories dataset: Particulate Trace Metals filtered at 0.4um dates: September 25, 1992 to October 20, 1992 location: N: 0.079 S: -12 W: -145.4867 E: -139.94 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson Notes Particulate trace metal data Particulate means that fraction collected on a 0.4 um filter DMO note: November 21, 2002 all longitude values were changed from 140 to -140 and from 145 to -145. This cruise was conducted at 140 and 145 West.</p>

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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 Baldrige 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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