

Isotope activity from Go-Flo bottle samples from R/V Thomas G. Thompson cruises TT007, TT011 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2643>

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Project

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

Program

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

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Dataset Description

Isotope activity, Go-Flo bottle samples

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

Parameter	Description	Units
sta	station number from event log	
lat_n	nominal latitude, minus = South	degrees
lon_n	nominal longitude, minus = West	degrees
depth_n	nominal depth of sample	meters
Ra226_SiO4	Radium-226 as determined by a Ra-Si regression determined from 226Ra data at the same station (see Murray documentation)	dpm/m3
Th234_tot	thorium-234, total	dpm/m3
Th234_diss_lt0.45	thorium-234, dissolved lt0.45 microns	dpm/m3
Th234_part_gt0.45	thorium-234, particulate gt0.45 microns	dpm/m3
Pb210_tot	lead-210, total	dpm/m3
Pb210_diss_lt0.45	lead-210, dissolved lt0.45 microns	dpm/m3
Pb210_part_gt0.45	lead-210, particulate gt0.45 microns	dpm/m3
Po210_tot	polonium-210, total	dpm/m3
Po210_diss_lt0.45	polonium-210, dissolved lt0.45 microns	dpm/m3
Po210_part_gt0.45	polonium-210, particulate gt0.45 microns	dpm/m3
U238_tot	uranium-238, total	dpm/m3
PMC	particulate matter concentration	milligrams/m3

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Instruments

Dataset-specific Instrument Name	Go-flo Bottle
Generic Instrument Name	GO-FLO Bottle
Dataset-specific Description	30-l Go-Flo bottles used to collect seawater.
Generic Instrument Description	GO-FLO bottle cast used to collect water samples for pigment, nutrient, plankton, etc. The GO-FLO sampling bottle is specially designed to avoid sample contamination at the surface, internal spring contamination, loss of sample on deck (internal seals), and exchange of water from different depths.

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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	<p>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.</p> <p>Methods & Sampling PI: Jennifer Young, James Murray of: University of Washington dataset: Isotope activity, Go-Flo bottle samples dates: February 3, 1992 to March 9, 1992 location: N: 11.98 S: -12.03 W: -140.16 E: -135.0 project/cruise: EqPac/TT007 - Survey 1 ship: R/V Thomas Thompson Thorium-234 Sampling Methodology Isotope Sampling Methodology DMO notes: Dr. Murray's documentation states that the samples for dissolved and particulate fractions were filtered using either a 0.45 or 0.50 micron filter. Since the samples were not flagged as to filter size, they all have been identified as being filtered at 0.45 microns. The 226Ra data comes from a Ra-Si regression determined from Teh-Lung Ku (University of Southern California) 226Ra data reported from samples taken at the same stations. The principal investigators have arranged the data to display depth profiles at nominal geographic station locations. The composite profiles have been assembled from three or more casts within a given station/location.</p>

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	<p>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.</p> <p>Methods & Sampling PI: Jennifer Young, James Murray of: University of Washington dataset: Isotope activity, Go-Flo bottle samples dates: August 5, 1992 to September 18, 1992 location: N: 12.01 S: -11.93 W: -140.87 E: -134.94 project/cruise: EqPac/TT011 - Fall Survey ship: R/V Thomas Thompson Thorium-234 Sampling Methodology Isotope Sampling Methodology DMO notes: The Murray documentation states that the samples for dissolved and particulate fractions were filtered using either a 0.45 or 0.50 micron filter. Since the samples were not flagged as to filter size, they all have been identified as being filtered at 0.45 microns. The principal investigators have arranged the data to display depth profiles at nominal geographic station locations. The composite profiles have been assembled from three or more casts within a given station/location.</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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