

CTD profile data with beam attenuation from R/V Thomas G. Thompson cruises TT007, TT008, TT011, TT012, TT013 in the Equatorial Pacific in 1992 during the U.S. JGOFS Equatorial Pacific (EqPac) project

Website: <https://www.bco-dmo.org/dataset/2634>

Version: final

Version Date: 1996-10-21

Project

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

Program

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

Contributors	Affiliation	Role
Murray, James W.	University of Washington (UW)	Principal Investigator
Gardner, Wilford D.	Texas A&M University (TAMU)	Co-Principal Investigator
Chandler, Cynthia L.	Woods Hole Oceanographic Institution (WHOI BCO-DMO)	BCO-DMO Data Manager

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Dataset Description

CTD profile data averaged at two decibar intervals (Murray) with beam attenuation data (Gardner)

Methods & Sampling

See Platform deployments for cruise specific documentation

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Parameters

Parameter	Description	Units
sta	station number from event log	
cast	CTD cast number from event log	
event	unique number assigned to each sampling operation consisting of month MM, day DD, hour HH and minute mm	
year	year (YYYY)	
mon	month of year (MM)	
day	day of month (DD)	
time	time (HHmm)	
lat	latitude of cast, negative = south	decimal degrees
lon	longitude of cast, negative = west	decimal degrees
depth	depth of sample	meters
press	depth of sample reported as pressure	decibars
temp	temperature, IPTS-68	degrees C
cond	conductivity CTD	mmhos
sal	salinity, PSS-78	dimensionless
potemp	potential temperature, IPTS-68	degrees C
sig_th	sigma theta (potential density)	kilogram/meter ³
sig_t	sigma-t	kilogram/meter ³
fluor	fluorescence	milligram/meter ³
beam_cp	beam attenuation coefficient due to particles	meters ⁻¹
par	photosynthetically available radiation	uE/m ² /sec

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Instruments

Dataset-specific Instrument Name	SeabirdCTD
Generic Instrument Name	CTD Sea-Bird
Dataset-specific Description	University of Washington's SeaBird CTD
Generic Instrument Description	Conductivity, Temperature, Depth (CTD) sensor package from SeaBird Electronics, no specific unit identified. This instrument designation is used when specific make and model are not known. See also other SeaBird instruments listed under CTD. More information from Sea-Bird Electronics.

Dataset-specific Instrument Name	SeaTech Transmissometer
Generic Instrument Name	Sea Tech Transmissometer
Dataset-specific Description	25 cm Sea Tech Transmissometer
Generic Instrument Description	The Sea Tech Transmissometer can be deployed in either moored or profiling mode to estimate the concentration of suspended or particulate matter in seawater. The transmissometer measures the beam attenuation coefficient in the red spectral band (660 nm) of the laser lightsource over the instrument's path-length (e.g. 20 or 25 cm). This instrument designation is used when specific make and model are not known. The Sea Tech Transmissometer was manufactured by Sea Tech, Inc. (Corvallis, OR, USA).

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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: James Murray and Wilford Gardner of: University of Washington and Texas A&M University dataset: CTD profile data averaged at two decibar intervals (Murray) with beam attenuation data (Gardner) dates: February 02, 1992 to March 09, 1992 location: N: 12.0674 S: -12.2083 W: -140.7692 E: -134.7269 project/cruise: EQPAC/TT007 - Spring Survey ship: Thomas Thompson Optics Protocols-Gardner</p>

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: James Murray and Wilford Gardner of: University of Washington and Texas A&M University dataset: CTD profile data averaged at two decibar intervals (Murray) with beam attenuation data (Gardner) dates: March 19, 1992 to April 14, 1992 location: N: 9.0905 S: -8.7858 W: -143.0025 E: -139.8972 project/cruise: EQPAC/TT008 - Spring Time Series ship: Thomas Thompson Optics Protocols-Gardner</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: James Murray and Wilford Gardner of: University of Washington and Texas A&M University dataset: CTD profile data averaged at two decibar intervals (Murray) with beam attenuation data (Gardner) dates: August 10, 1992 to September 15, 1992 location: N: 12.0317 S: -11.9767 W: -141.4467 E: -134.9117 project/cruise: EQPAC/TT011 - Fall Survey ship: Thomas Thompson Optics Protocols-Gardner</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: James Murray and Wilford Gardner of: University of Washington and Texas A&M University dataset: CTD profile data averaged at two decibar intervals (Murray) with beam attenuation data (Gardner) dates: September 24, 1992 to October 21, 1992 location: N: 0.079 S: -17.1937 W: -149.3897 E: -139.8587 project/cruise: EQPAC/TT012 - Fall Time Series ship: Thomas Thompson NOTE: The CTD data for casts 007 - 028 were affected to varying degrees by a cracked conductivity sensor. By comparing the measured CTD conductivity values with the calculated conductivity values for the bottle salinities at in situ temperatures and pressure, it appeared that for most casts the CTD salinity values could be corrected by applying a linear regression fit to the CTD conductivities to make them equal to the bottle conductivity values. Because casts 14 and 22 did not have corresponding bottle salts and casts 15, 19, 20 and 24 still looked odd after the regression, these casts were not adjusted and the salinities deleted. In some cases, salinities were deleted from selected sections of the casts. For CTD casts 7 - 28, CTD salinities and related computed values should be used with caution. Optics Protocols- Gardner</p>

TT013

Website	https://www.bco-dmo.org/deployment/57732
Platform	R/V Thomas G. Thompson
Start Date	1992-10-30
End Date	1992-12-13
Description	<p>Purpose: Benthic Survey, 12°N-12°S at 140°W TT013 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: James Murray dataset: CTD profile data averaged at two decibar intervals dates: November 02, 1992 to December 07, 1992 location: N: 8.9433 S: -11.9598 W: -140.1463 E: -134.9498 project/cruise: EQPAC/TT013 - Benthic cruise ship: Thomas Thompson DMO note: Although the parameter fluor, beam_cp, and par are reported with this data, there are no data values (all are entered as nd).</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 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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