

# Amino Acid compositions from plankton tows 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/2647>

**Version:** December 12, 2001

**Version Date:** 2001-12-12

## Project

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

## Program

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

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## Dataset Description

Amino Acid compositions from plankton tow collections

## 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
sizefrac	size fraction interval or range	microns
Asp	aspartic acid	mole per cent
Glu	glutamic acid	mole per cent
Ser	serine	mole per cent
His	histamine	mole per cent
Gly	glycine	mole per cent
Thr	threonine	mole per cent
Arg	arginine	mole per cent
Ala	alaine	mole per cent
Tyr	tyrosine	mole per cent
Met	methionine	mole per cent
Val	valine	mole per cent
p_Ala	phenylalanine	mole per cent
Ile	isoleucine	mole per cent
Leu	leucine	mole per cent
Lys	lysine	mole per cent
sta_name	station name	

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## Instruments

<b>Dataset-specific Instrument Name</b>	High Performance Liquid Chromatography
<b>Generic Instrument Name</b>	High-Performance Liquid Chromatograph
<b>Dataset-specific Description</b>	Fluorescence high performance liquid chromatography (HPLC) was used to measure particulate amino acids.
<b>Generic Instrument Description</b>	A High-performance liquid chromatograph (HPLC) is a type of liquid chromatography used to separate compounds that are dissolved in solution. HPLC instruments consist of a reservoir of the mobile phase, a pump, an injector, a separation column, and a detector. Compounds are separated by high pressure pumping of the sample mixture onto a column packed with microspheres coated with the stationary phase. The different components in the mixture pass through the column at different rates due to differences in their partitioning behavior between the mobile liquid phase and the stationary phase.

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## Deployments

### TT007

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57728">https://www.bco-dmo.org/deployment/57728</a>
<b>Platform</b>	R/V Thomas G. Thompson
<b>Start Date</b>	1992-01-30
<b>End Date</b>	1992-03-13
<b>Description</b>	<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><b>Methods &amp; Sampling</b> PI: Cindy Lee of: State University of New York at Stony Brook dataset: Amino Acid compositions from plankton tow collections dates: February 3, 1992 to March 9, 1992 location: N: 12.0 S: -2.0 W: -140.0 E: -140.0 project/cruise: EqPac/TT007 - Spring survey ship: R/V Thomas Thompson Methodology: Lee, C; Wakeham,S.G.; Hedges, J.I., 2000. Composition and flux of particulate amino acids and chloropigments in equatorial Pacific seawater and sediments. Deep-Sea Research, I, 47 (8), 1535-1568. PI Notes: We did not weight the plankton, so have nothing to calculate a concentration. We only interpret the compositions, and do not talk about concentration except relative to organic carbon measured in the same samples. The plankton net tows were oblique tows from 0-100m. In most cases the samples analyzed are composites of two or more tows. As a result, no event numbers are reported.</p>

### TT011

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/57730">https://www.bco-dmo.org/deployment/57730</a>
<b>Platform</b>	R/V Thomas G. Thompson
<b>Start Date</b>	1992-08-05
<b>End Date</b>	1992-09-18
<b>Description</b>	<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><b>Methods &amp; Sampling</b> PI: Cindy Lee of: State University of New York at Stony Brook dataset: Amino Acid compositions from plankton tow collections dates: August 5, 1992 to September 18, 1992 location: N: -12.0 S: 12.0 W: -140.0 E: -140.0 project/cruise: EqPac/TT011 - Fall survey ship: R/V Thomas Thompson Methodology: Lee, C; Wakeham,S.G.; Hedges, J.I., 2000. Composition and flux of particulate amino acids and chloropigments in equatorial Pacific seawater and sediments. Deep-Sea Research, I, 47 (8), 1535-1568. PI Notes: We did not weight the plankton, so have nothing to calculate a concentration. We only interpret the compositions, and do not talk about concentration except relative to organic carbon measured in the same samples. The plankton net tows were oblique tows from 0-100m. In most cases the samples analyzed are composites of two or more tows. As a result, no event numbers are reported. Station name "Rhiz" is a plankton tow made across a Rhizosolenia castracanei patch near 2N, 140W.</p>

## 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.

## 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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