

Original scanned cast sheets (jpg and pdf formats) of the GTC rosette casts on the US GEOTRACES Pacific Meridional Transect (PMT) cruise (GP15) from September to November 2018

Website: <https://www.bco-dmo.org/dataset/779985>

Data Type: Cruise Results, document

Version: 2

Version Date: 2020-08-05

Project

» [US GEOTRACES Pacific Meridional Transect \(GP15\)](#) (U.S. GEOTRACES PMT)

Program

» [U.S. GEOTRACES](#) (U.S. GEOTRACES)

| Contributors | Affiliation | Role |
|-------------------------------------|---|------------------------------------|
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Abstract

Original scanned cast sheets (jpg and pdf formats) of the GTC rosette casts on the US GEOTRACES Pacific Meridional Transect (PMT) cruise (GP15) from September to November 2018.

Table of Contents

- [Coverage](#)
- [Dataset Description](#)
 - [Data Processing Description](#)
- [Data Files](#)
- [Supplemental Files](#)
- [Parameters](#)
- [Deployments](#)
- [Project Information](#)
- [Program Information](#)
- [Funding](#)

Coverage

Spatial Extent: N:56.0583 E:-151.9937 S:-19.9999 W:-156.9622

Temporal Extent: 2018-09-24 - 2018-11-22

Dataset Description

Original scanned cast sheets (jpg and pdf formats) of the GTC rosette casts on the US GEOTRACES Pacific Meridional Transect (PMT) cruise (GP15) from September to November 2018. This dataset contains links to individual log sheets. Most casts have two sheets per cast, some are provided in both .jpg and .pdf formats.

A .zip folder of all the GTC cast sheets is also attached as Supplemental File "GTC_Cast_Logs.zip".

Data Processing Description

BCO-DMO Processing:

- parsed station, cast, and type from the file names;
- aggregated files into one dataset;
- 2020-08-05: changed station number 18 to 18.6 or 18.3 where appropriate.

[[table of contents](#) | [back to top](#)]

Data Files

| File |
|---|
| GTC_Cast_Sheets.csv (Comma Separated Values (.csv), 56.91 KB) MD5:71df461d7ac6b18af98edb71394bf0e3 Primary data file for dataset ID 779985 |

[[table of contents](#) | [back to top](#)]

Supplemental Files

| File |
|--|
| GP15 GTC Scanned Cast Sheets filename: GTC_Cast_Logs.zip (ZIP Archive (ZIP), 271.56 MB) MD5:c2dce22deb7b1fe7b1accb71e29355bb A .zip folder of scanned cast sheets/logs (jpg and pdf format) of the GTC rosette deployments on US GEOTRACES PMT cruise GP15. |

[[table of contents](#) | [back to top](#)]

Parameters

| Parameter | Description | Units |
|-----------|---|----------|
| stncast | Station number + cast number; obtained from file name | unitless |
| station | Station number; obtained from the file name | unitless |
| cast | Cast number; obtained from the file name | unitless |
| log_type | Type of log | unitless |
| file_type | Type of file (.pdf or .jpg) | unitless |
| file_name | Name of the file | unitless |
| file_link | Link to the file (opens in new browser window or tab) | unitless |

[[table of contents](#) | [back to top](#)]

Deployments

RR1814

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/776913 |
| Platform | R/V Roger Revelle |
| Report | https://datadocs.bco-dmo.org/docs/geotraces/GEOTRACES_PMT/casciotti/data_docs/GP15_Cruise_Report_with_ODF_Report.pdf |
| Start Date | 2018-09-18 |
| End Date | 2018-10-21 |
| Description | Additional cruise information is available from the Rolling Deck to Repository (R2R): https://www.rvdata.us/search/cruise/RR1814 |

RR1815

| | |
|--------------------|---|
| Website | https://www.bco-dmo.org/deployment/776917 |
| Platform | R/V Roger Revelle |
| Report | https://datadocs.bco-dmo.org/docs/geotraces/GEOTRACES_PMT/casciotti/data_docs/GP15_Cruise_Report_with_ODF_Report.pdf |
| Start Date | 2018-10-24 |
| End Date | 2018-11-24 |
| Description | Additional cruise information is available from the Rolling Deck to Repository (R2R): https://www.rvdata.us/search/cruise/RR1815 |

[[table of contents](#) | [back to top](#)]

Project Information

US GEOTRACES Pacific Meridional Transect (GP15) (U.S. GEOTRACES PMT)

Website: <http://www.geotraces.org/>

Coverage: Pacific Meridional Transect along 152W (GP15)

A 60-day research cruise took place in 2018 along a transect from Alaska to Tahiti at 152° W. A description of the project titled "*Collaborative Research: Management and implementation of the US GEOTRACES Pacific Meridional Transect*", funded by NSF, is below. Further project information is available on the [US GEOTRACES website](#) and on the [cruise blog](#). A detailed [cruise report is also available](#) as a PDF.

Description from NSF award abstract:

GEOTRACES is a global effort in the field of Chemical Oceanography in which the United States plays a major role. The goal of the GEOTRACES program is to understand the distributions of many elements and their isotopes in the ocean. Until quite recently, these elements could not be measured at a global scale. Understanding the distributions of these elements and isotopes will increase the understanding of processes that shape their distributions and also the processes that depend on these elements. For example, many "trace elements" (elements that are present in very low amounts) are also important for life, and their presence or absence can play a vital role in the population of marine ecosystems. This project will launch the next major U.S. GEOTRACES expedition in the Pacific Ocean between Alaska and Tahiti. The award made here would support all of the major infrastructure for this expedition, including the research vessel, the sampling equipment, and some of the core oceanographic measurements. This project will also support the personnel needed to lead the expedition and collect the samples.

This project would support the essential sampling operations and infrastructure for the U.S. GEOTRACES Pacific Meridional Transect along 152° W to support a large variety of individual science projects on trace element and isotope (TEI) biogeochemistry that will follow. Thus, the major objectives of this management proposal are: (1) plan and coordinate a 60 day research cruise in 2018; (2) obtain representative samples for a wide variety of TEIs using a conventional CTD/rosette, GEOTRACES Trace Element Sampling Systems, and in situ pumps; (3) acquire conventional CTD hydrographic data along with discrete samples for salinity, dissolved oxygen, algal pigments, and dissolved nutrients at micro- and nanomolar levels; (4) ensure that proper QA/QC protocols are followed and reported, as well as fulfilling all GEOTRACES intercalibration protocols; (5) prepare and deliver all hydrographic data to the GEOTRACES Data Assembly Centre (via the US BCO-DMO data center); and (6) coordinate all cruise communications between

investigators, including preparation of a hydrographic report/publication. This project would also provide baseline measurements of TEIs in the Clarion-Clipperton fracture zone (~7.5°N-17°N, ~155°W-115°W) where large-scale deep sea mining is planned. Environmental impact assessments are underway in partnership with the mining industry, but the effect of mining activities on TEIs in the water column is one that could be uniquely assessed by the GEOTRACES community. In support of efforts to communicate the science to a wide audience the investigators will recruit an early career freelance science journalist with interests in marine science and oceanography to participate on the cruise and do public outreach, photography and/or videography, and social media from the ship, as well as to submit articles about the research to national media. The project would also support several graduate students.

[[table of contents](#) | [back to top](#)]

Program Information

U.S. GEOTRACES (U.S. GEOTRACES)

Website: <http://www.geotraces.org/>

Coverage: Global

GEOTRACES is a [SCOR](#) sponsored program; and funding for program infrastructure development is provided by the [U.S. National Science Foundation](#).

GEOTRACES gained momentum following a special symposium, S02: Biogeochemical cycling of trace elements and isotopes in the ocean and applications to constrain contemporary marine processes (GEOSECS II), at a 2003 Goldschmidt meeting convened in Japan. The GEOSECS II acronym referred to the Geochemical Ocean Section Studies To determine full water column distributions of selected trace elements and isotopes, including their concentration, chemical speciation, and physical form, along a sufficient number of sections in each ocean basin to establish the principal relationships between these distributions and with more traditional hydrographic parameters;

- * To evaluate the sources, sinks, and internal cycling of these species and thereby characterize more completely the physical, chemical and biological processes regulating their distributions, and the sensitivity of these processes to global change; and

- * To understand the processes that control the concentrations of geochemical species used for proxies of the past environment, both in the water column and in the substrates that reflect the water column.

GEOTRACES will be global in scope, consisting of ocean sections complemented by regional process studies. Sections and process studies will combine fieldwork, laboratory experiments and modelling. Beyond realizing the scientific objectives identified above, a natural outcome of this work will be to build a community of marine scientists who understand the processes regulating trace element cycles sufficiently well to exploit this knowledge reliably in future interdisciplinary studies.

Expand "Projects" below for information about and data resulting from individual US GEOTRACES research projects.

[[table of contents](#) | [back to top](#)]

Funding

| Funding Source | Award |
|--|-----------------------------|
| NSF Division of Ocean Sciences (NSF OCE) | OCE-1657781 |
| NSF Division of Ocean Sciences (NSF OCE) | OCE-1658318 |
| NSF Division of Ocean Sciences (NSF OCE) | OCE-1657944 |

[[table of contents](#) | [back to top](#)]