

# BiG RAPA water column HPLC pigments from R/V Melville MV1015 in the South Pacific from Arica, Chile to Easter Island. from November to December 2010 (C-MORE project)

**Website:** <https://www.bco-dmo.org/dataset/3768>

**Version:** 05 November 2012

**Version Date:** 2012-11-05

## Project

» [Center for Microbial Oceanography: Research and Education](#) (C-MORE)

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## Dataset Description

C-MORE BiG RAPA water column HPLC pigment data

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Robert R. Bidigare

CMORE/BiG RAPA

Date ingested into BCO-DMO: November 05, 2012

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## Data Files

File
<b>pigments_watcol.csv</b> (Comma Separated Values (.csv), 10.72 KB) MD5:0088f1a517ac51fabde88acc494def91 Primary data file for dataset ID 3768

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## Parameters

Parameter	Description	Units
sta	station number	dimensionless

cast	cast number	dimensionless
date	Date (GMT)	YYYYMMDD
time	Time (GMT)	HHMM
lat	latitude	decimal degrees (South is negative)
lon	longitude	decimal degrees (West is negative)
depth	depth	meters
bot	rosette bottle number	dimensionless
chlide_a	chlorophyllide a	nanograms/liter
chl_c	chlorophyll c	nanograms/liter
peridinin	peridinin	nanograms/liter
fucox_but	19'-butanoyloxyfucoxanthin	nanograms/liter
fucox	fucoxanthin	nanograms/liter
fucox_hex	19'-hexanoyloxyfucoxanthin	nanograms/liter
prasinox	prasinoxanthin	nanograms/liter
violax	violaxanthin	nanograms/liter
diadinox	diadinoxanthin	nanograms/liter
allox	alloxanthin	nanograms/liter
diatox	diatoxanthin	nanograms/liter
lutein	lutein	nanograms/liter

zeax	zeaxanthin	nanograms/liter
chl_b	chlorophyll b	nanograms/liter
carotene_a	alpha carotene	nanograms/liter
carotene_b	beta carotene	nanograms/liter
chl_a2	divinyl chlorophyll a	nanograms/liter
chl_a1	monovinyl chlorophyll a	nanograms/liter
chl_a1_a2	monovinyl + divinyl chlorophyll a	nanograms/liter

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## Deployments

### MV1015

<b>Website</b>	<a href="https://www.bco-dmo.org/deployment/58647">https://www.bco-dmo.org/deployment/58647</a>
<b>Platform</b>	R/V Melville
<b>Report</b>	<a href="http://cmore.soest.hawaii.edu/cruises/big_rapa/">http://cmore.soest.hawaii.edu/cruises/big_rapa/</a>
<b>Start Date</b>	2010-11-18
<b>End Date</b>	2010-12-14
<b>Description</b>	<p>The South East Pacific (SEP) is characterized by very high nutrient concentrations in the waters adjacent to the Chilean coast, but very low nutrient concentrations (oligotrophic) in the mid- South Pacific Subtropical Gyre (SPSG), near Easter Island. The steep gradient in nutrient concentrations across the region affects the level of marine production, the composition of the microbial community, and the operation of major biogeochemical cycles in ways that are not fully understood. Despite the remarkable diversity of trophic conditions, strong gradients and even some unique singularities, the SEP is still the most sparsely sampled oceanic region of the global ocean from hydrodynamic, biological and biogeochemical points of view. The SPSG is also the most oligotrophic of all sub-tropical gyres. Previous expeditions and remote sensing studies have describes the nutrient and chlorophyll field, but there have been few simultaneous measurements of chemical properties with microbial community structure and function. This expedition is designed to investigate the impact of elemental nutrient (nitrogen, phosphorus, iron, silicon, carbon) ratios on marine productivity and microbial community composition. We propose to sample along a line extending from the Chilean coast near Arica to Easter Island. We will occupy three major "process" stations for up to five days each; a high productivity, near shore station, a mid-cruise station in the nutrient transition zone, and a low productivity, mid-gyre station near Easter Island. In between these stations, we will briefly sample at additional "survey" stations at lower intensity along the cruise track. Cruise information and original data are available from the NSF R2R data catalog. BiG RAPA Home project Web site with additional information</p>

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## Project Information

### Center for Microbial Oceanography: Research and Education (C-MORE)

**Website:** <http://cmore.soest.hawaii.edu/>

**Coverage:** North Pacific Subtropical Gyre (large region around 22 45 N, 158 W)

## Project summary

The **Center for Microbial Oceanography: Research and Education** (C-MORE) is a recently established (August 2006; NSF award: EF-0424599) NSF-sponsored Science and Technology Center designed to facilitate a more comprehensive understanding of the diverse assemblages of microorganisms in the sea, ranging from the genetic basis of marine microbial biogeochemistry including the metabolic regulation and environmental controls of gene expression, to the processes that underpin the fluxes of carbon, related bioelements and energy in the marine environment. Stated holistically, C-MORE's primary mission is: *Linking Genomes to Biomes*.

We believe that the time is right to address several major, long-standing questions in microbial oceanography. Recent advances in the application of molecular techniques have provided an unprecedented view of the structure, diversity and possible function of sea microbes. By combining these and other novel approaches with more well-established techniques in microbiology, oceanography and ecology, it may be possible to develop a meaningful predictive understanding of the ocean with respect to energy transduction, carbon sequestration, bioelement cycling and the probable response of marine ecosystems to global environmental variability and climate change. The strength of C-MORE resides in the synergy created by bringing together experts who traditionally have not worked together and this, in turn, will facilitate the creation and dissemination of new knowledge on the role of marine microbes in global habitability.

The new Center will design and conduct novel research, broker partnerships, increase diversity of human resources, implement education and outreach programs, and utilize comprehensive information about microbial life in the sea. The Center will bring together teams of scientists, educators and community members who otherwise do not have an opportunity to communicate, collaborate or design creative solutions to long-term ecosystem scale problems. The Center's research will be organized around four interconnected themes:

- (Theme I) microbial biodiversity,
- (Theme II) metabolism and C-N-P-energy flow,
- (Theme III) remote and continuous sensing and links to climate variability, and
- (Theme IV) ecosystem modeling, simulation and prediction.

Each theme will have a leader to help coordinate the research programs and to facilitate interactions among the other related themes. The education programs will focus on pre-college curriculum enhancements, in service teacher training and formal undergraduate/graduate and post-doctoral programs to prepare the next generation of microbial oceanographers. The Center will establish and maintain creative outreach programs to help diffuse the new knowledge gained into society at large including policymakers. The Center's activities will be dispersed among five partner institutions:

- Massachusetts Institute of Technology,
- Woods Hole Oceanographic Institution,
- Monterey Bay Aquarium Research Institute,
- University of California at Santa Cruz and
- Oregon State University

and will be coordinated at the University of Hawaii at Manoa.

### Related Files:

[Strategic plan \(PDF file\)](#)

## Funding

Funding Source	Award
<a href="#">NSF Division of Biological Infrastructure (NSF DBI)</a>	<a href="#">DBI-0424599</a>

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