

# SeaWiFS Bio-Optical Archive and Storage System (SeaBASS) Updates, OBB Field Support Group Activities, and HPLC Updates

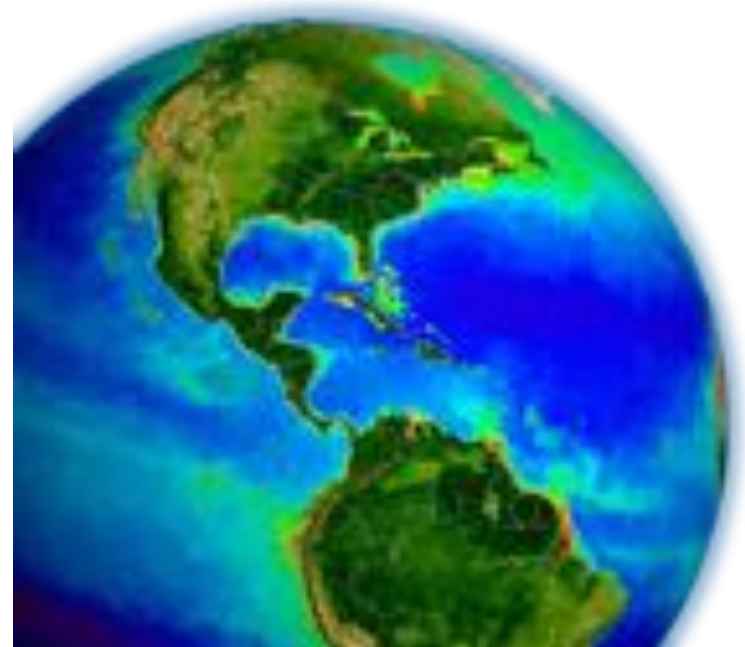
Chris Proctor<sup>1,2</sup>

<sup>1</sup>NASA Goddard Space Flight Center

<sup>2</sup>Science Systems & Applications, Inc.

NASA OCRT Meeting 2017

<https://seabass.gsfc.nasa.gov>



# Presentation Outline

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- OBB Field Support Group
  - Protocol activities
  - Phytoplankton Taxonomy Working Group
- HPLC pigment analysis updates
- SeaBASS Updates
  - Recently archived data
  - Website changes
  - Earth Venture project support (NAAMES, CORAL)
    - new data types & metadata fields
  - Tips for searching for data
  - Software tools (including new match-up tools)



# OBB Field Support Group Activities

## Protocol Activities (IOCCG - NASA)

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Online for public comment, [June 2017](#)



NASA/TM-2017-XXXX



**The Particle Absorption & Beam-c Protocol**

Lead by Aimee Neeley

NASA/TM-2017-XXXX



**The CDOM Protocol**

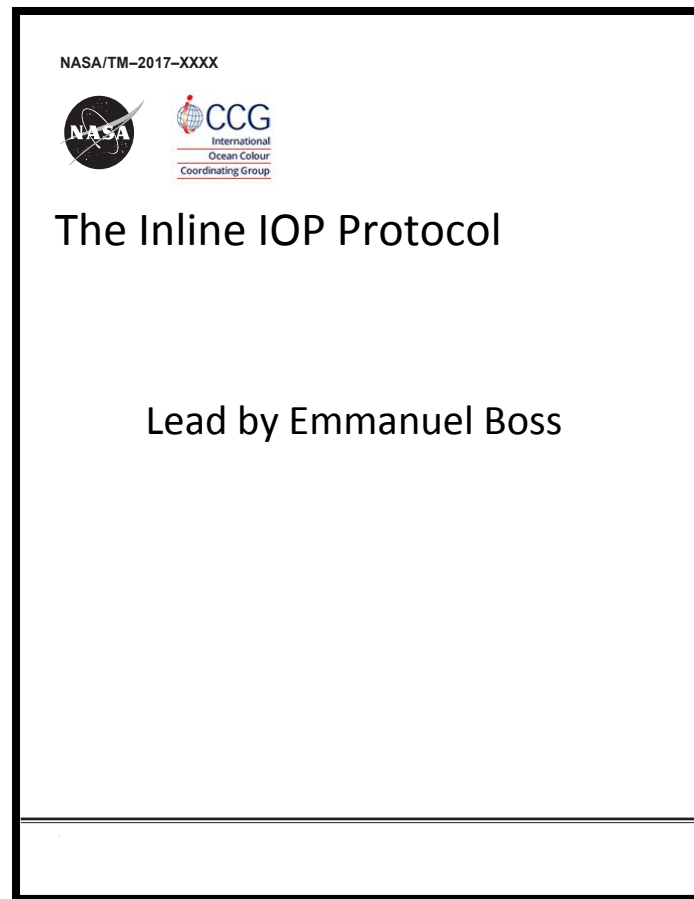
Lead by Mike Novak and Antonio Mannino

# OBB Field Support Group Activities

## Protocol Activities (IOCCG - NASA)

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Online for public comment, [Fall 2017](#)



# OBB Field Support Group Activities

## Protocol Activities (IOCCG - NASA)

### Ongoing and In Development

NASA/TM-2017-XXXX



#### The Particulate Organic Carbon Protocol

Lead by Joaquin Chaves and Mike Novak

NASA/TM-2017-XXXX



#### Ongoing Activity: AOP Protocol Updates

Leads Ken Voss and Giuseppe Zibordi

NASA/TM-2017-XXXX



#### The Particle Backscatter and VSF Protocol

Lead by Jim Sullivan and Wayne Slade

**\*\*Future considerations (particle size, productivity, ...)\*\***

**Contact:** Antonio Mannino – [antonio.mannino@nasa.gov](mailto:antonio.mannino@nasa.gov)

# Ocean Carbon & Biogeochemistry

*Studying marine ecosystems and biogeochemical cycles in the face of environmental change*

[Home](#)

[About OCB](#) ▾

[Activities](#) ▾

[Science Support](#) ▾

[Publications](#) ▾

[New OCB Research](#)

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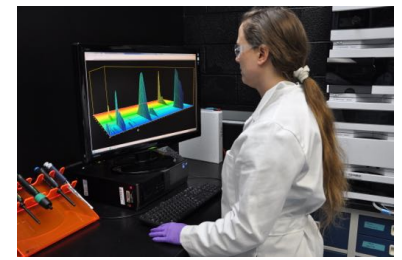
## Phytoplankton Taxonomy Working Group

**Working group to establish data standards and practices for taxon-resolved phytoplankton observations** - PIs: Heidi Sosik (WHOI), Christopher Proctor (NASA GSFC/SSAI), Aimee Neeley (NASA GSFC/SSAI), Ivona Cetinić (NASA GSFC/USRA)

**Objective:** In an effort to facilitate community-wide access to phytoplankton data products that support critical satellite algorithm development and validation, this working group will convene relevant expertise (e.g., phytoplankton ecology and taxonomy, data systems, informatics, etc.) to develop a set of standards and best practices for phytoplankton taxonomy data.

# HPLC Pigment Analysis Services

**Technical manager:**  
Crystal Thomas  
crystal.s.thomas@nasa.gov



Analyze ~3,000 pigment samples/year for NASA Terra-Aqua and Suomi NPP Programs

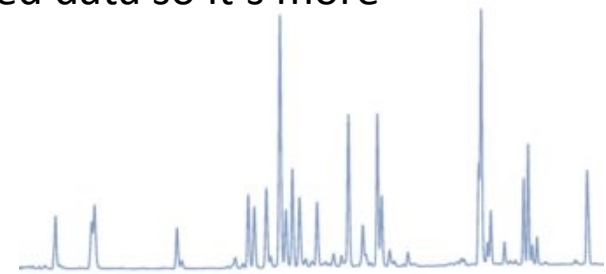
- Planned funding will extend activity into FY2019

Updated documentation

- [Sample analysis request form](#) and [metadata form](#) (required)
  - submit BEFORE samples are shipped
- [Data report](#)-removed extraneous information and organized data so it's more compatible with SeaBASS submission

Present/Future activities

- Updates to QA/QC Plan document (completed)
- Ocean Optics Protocols: HPLC and fluorometric chapters (updating)
- Methodology: HPLC pigments, bacteriochlorophyll, phycobiliproteins (researching)



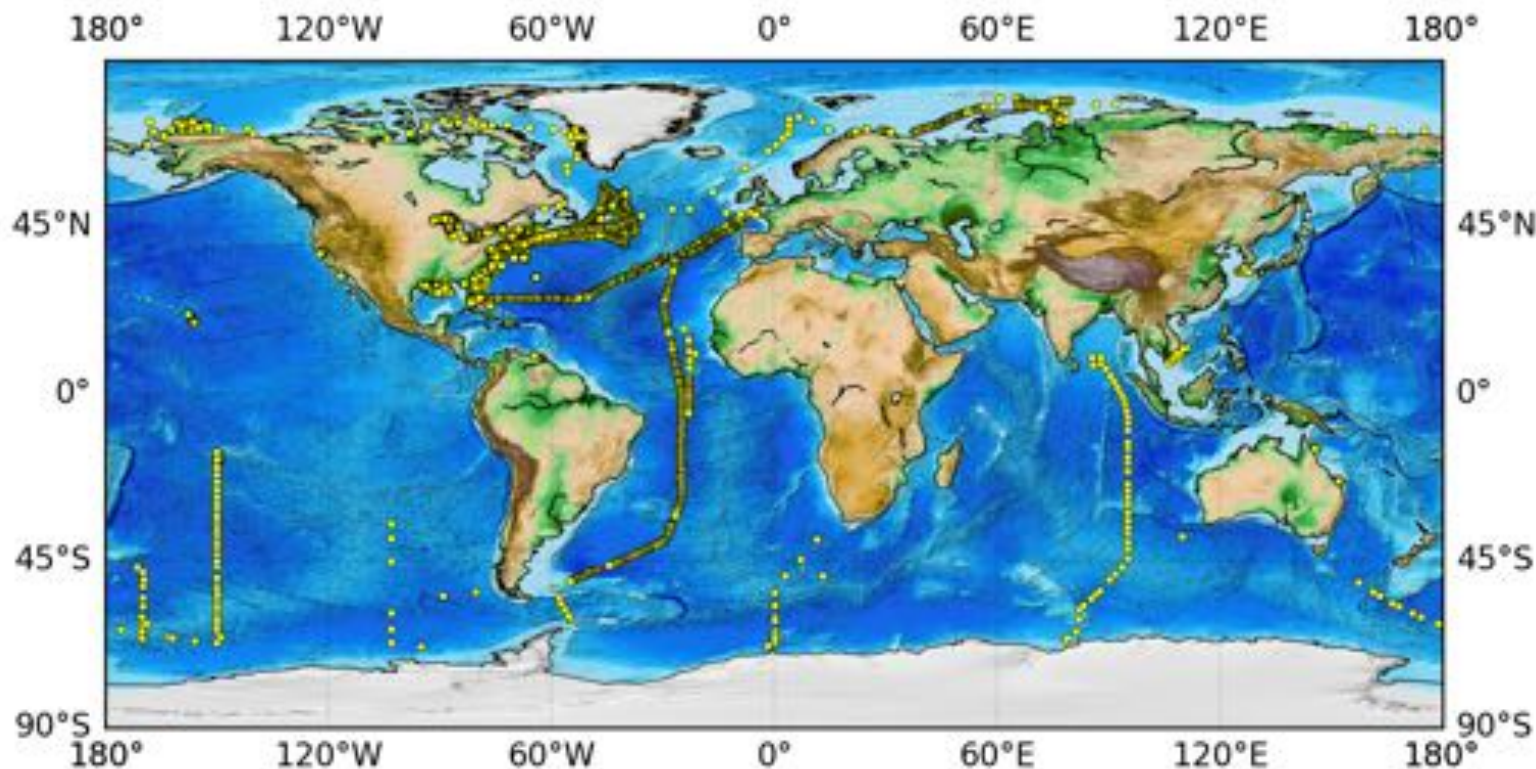
**Paula Bontempi: “you have to budget and account for your desired HPLC samples in your ROSES proposals” - Current cost is \$100/sample**

- GSFC does not receive these funds (held at NASA HQ)

# SeaBASS data archive updates

Over 10,000 new and updated files from 34 PIs archived since May 2016

Map (minus recent submissions):



Recent FSG field deployments (protocols, validation, hyperspectral data)

Data coming later this year:

- Sea2Space Jan-Feb 2017 (tropical/temperate N. Pacific – Falkor)
- CLIVAR Aug-Sept 2017 (eastern tropical South Pacific)



# Recent website changes

- Reorganized Main Menu
- New Home Page (Shortcuts, Recent Submissions & News)

**SeaBASS**

Home About SeaBASS Get Data Contribute Data Lists Contact Us

Welcome to the SeaWiFS Bio-optical Archive and Storage System (SeaBASS), the publicly shared archive of in situ oceanographic and atmospheric data maintained by the NASA Ocean Biogeochemical Processing Group (OBPG). For information on how to use the data, please refer to the "Get Data" page. For information about preparing for submission to SeaBASS, refer to "Contribute Data".

### Data Shortcuts

- File Search
- Validation Search
- NOMAD Dataset

### Lists

- Investigators
- Experiments
- Cruises
- Parameters

### News

#### New Offline Satellite Validation Match-up Tools

2017-04-03

As part of the latest release of the [SeaDAS](#) software package, SeaBASS staff have included two command-line tools to 1) locate coincident OB.DAAC Level-2 satellite granules given an in situ point or range in space and time, or a SeaBASS file with latitude, longitude, and time fields, and 2) create satellite match-ups from an OB.DAAC Level-2 satellite granule outputting the satellite data extracts to a SeaBASS file containing coincident in situ measurements. [Read more here.](#)

### Recent Data Updates

Date	Investigator	Cruise	Parameters
2017-04-19	Antonio Mannino	cyanale2016	ag
2017-04-13	Emanuel Boet	lorient-miami	cp.ap.wf.sal

### New Homepage Layout

2017-03-30

The SeaBASS homepage has been updated to better provide access to core functions of our website, data search, and data submission tools. The new layout also provides quick summaries of recent data submissions and relevant SeaBASS

# New File Search feature

SeaBASS

SeaBASS Search

Home About SeaBASS ▼ Get Data ▼ Contribute Data ▼ Wiki Lists ▼ Contact Us

A new File Search option allows you to search for co-located measurements:

- name specific products; only files from cruises where all were measured are found



**Products?:**

Find files containing any of the selected products

Find files where all the specific products entered below were measured in the same [cruise](#)

Don't filter based on products

**Grouped Products:**


AOP  PAR  Kd  a  b  bb



c  DC  PC  SPM  AOT  nutrients

CTD  fluorescence  productivity  Chl  HPLC

**Specific Products:**

Rrs

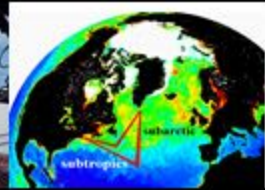
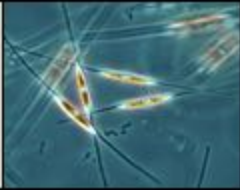
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# SeaBASS Earth Venture support

**NAAMES**



Support and data archiving for NASA EVS-2 missions:

- NAAMES (North Atlantic Aerosols and Marine Ecosystems Study)
- CORAL (Coral Reef Airborne Laboratory)

New SeaBASS data types include:

- Benthic imagery, photo mosaics
- Current profiler/velocity measurements
- DNA concentrations and FASTA sequencing files
- VOC concentrations

New metadata headers:

- CMECS (Coastal and Marine Ecological Classification Standard) metadata (headers and fields)
  - Classifiers for biotic, geoforn, substrate, water column
- /optical\_depth\_warning=true



# Tips for finding data from a specific project

SeaBASS

SeaBASS Search

Home About SeaBASS ▼ Get Data ▼ Contribute Data ▼ Wiki Lists ▼ Contact Us

- Best method to **view summary info**: Experiment or Cruise pages (under “Lists”)

<https://seabass.gsfc.nasa.gov/experiment/CORAL>

<https://seabass.gsfc.nasa.gov/experiment/NAAMES>

- Best method to **conveniently download files**: File Search (under “Get Data”)
  - 1) Go to Get Data → File Search
  - 2) Under “Keyword Search Filters”, type the experiment or cruise name

## Keyword Search Filters:

Search for affiliation, PI (principal investigator), experiment, or cruise name. Use the plus button to add multiple queries.

Search String
<input type="text" value="CORAL"/> 
<input checked="" type="radio"/> Any <input type="radio"/> All

# Special tips for getting CORAL data

Make sure to set the following [File Search](#) options:

1) Change the “[Include Optically Shallow Measurements](#)” option to “yes”

**Include Optically Shallow Measurements?:**  No  Yes  Exclusively

2) To download Benthic Images, check the box to “[Include All Associated Files](#)” next to the download button on the search results page

**Download All**  **Include all associated files.**



# SeaBASS software tools

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**Main Menu → Get Data → Software Downloads**

[https://seabass.gsfc.nasa.gov/wiki/seabass\\_tools](https://seabass.gsfc.nasa.gov/wiki/seabass_tools)

## **New Tools Include**

- Python SeaBASS file reader
- SeaBASS to netCDF converter
- Match-up tools (discussed next)

Periodically check back (or watch for news on the home page) to get updated versions.

# New satellite match-up tools

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New **command line tools** are available (installed via NASA SeaDAS software) to make it easier to:

- 1) **locate satellite granules** matching lat, lon, & time (e.g., using a SeaBASS file containing columns of those metadata)
- 2) **match-up satellite data** from a Level-2 OB.DAAC satellite file (such as SeaWiFS, MODIS, or VIIRS)
  - apply match-up exclusion quality criteria
  - output match-up data appended to a SeaBASS file

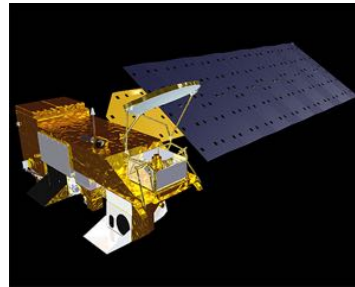
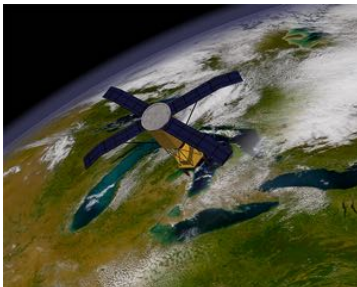


# New match-up tools continued

Full instructions (installation, use examples, caveats) are here:  
[https://seabass.gsfc.nasa.gov/wiki/validation\\_matchup\\_tools](https://seabass.gsfc.nasa.gov/wiki/validation_matchup_tools)

You will need to install:

- 1) NASA's SeaDAS analysis software (<https://seadas.gsfc.nasa.gov/>)
  - 2) An extra software package (see full instructions linked above). Mac or Linux is required.
- [fd\\_matchup.py](#) locates satellite granules matching in situ points
  - [mk\\_matchup.py](#) extracts match-up data from Level-2 OB.DAAC satellite files (e.g., OC, IOP, SST) & applies exclusion criteria from Bailey and Werdell, 2006.





# Thank you

For SeaBASS related questions, please contact:

The entire SeaBASS team ([seabass@seabass.gsfc.nasa.gov](mailto:seabass@seabass.gsfc.nasa.gov)) or

Chris Proctor ([christopher.proctor@nasa.gov](mailto:christopher.proctor@nasa.gov))

Joel Scott ([joel.scott@nasa.gov](mailto:joel.scott@nasa.gov))

Jason Lefler ([jason.lefler@nasa.gov](mailto:jason.lefler@nasa.gov))