From Missions to Measurements: an Ocean Discipline Experience
Goal

To make available the highest quality ocean color data to the broadest user community in the most timely and efficient manner possible.
Built on Lessons Learned

- highly integrated project structure with all elements co-located - continuous communication.
Lessons Learned

• highly integrated project structure with all elements co-located - continuous communication.

• flexible data processing system that constantly upgrades procedures, technologies and equipment.
Lessons Learned

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SCIENCE drives the system rather than the SYSTEM driving the science
Lessons Learned

• highly integrated project structure with all elements co-located - continuous communication.
• flexible data processing system that constantly upgrades procedures, technologies and equipment.
• comprehensive, but centralized, calibration and validation program closely coupled to the data processing and quality control system.
Lessons Learned

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• comprehensive, but centralized, calibration and validation program closely coupled to the data processing and quality control system.

• distinct software development program dedicated to providing user friendly data processing software to the community
Lessons Learned

• highly integrated project structure with all elements co-located - continuous communication.
• flexible data processing system that constantly upgrades procedures, technologies and equipment.
• comprehensive, but centralized, calibration and validation program closely coupled to the data processing and quality control system.
• distinct software development program dedicated to providing user friendly data processing software to the community
• a project philosophy designed to support and involve as large a community as possible
Current Capabilities

Fully automated, distributed data system for acquiring, processing, analyzing, archiving, and distributing scientific data

Approximately 20 - 30 distributed multiprocessor Linux PC’s with 60 terabytes of online storage shared by all project components including web/ftp-based data distribution system.

Processing rate for SeaWiFS global data currently at 3000x and MODIS/Aqua 80x
Processing Scenario

Described in detail under the documents section of the OceanColor Web at the link:

MODIS Processing Overview
Data Access and Community Support

- **SeaDAS enhancement**
  Full MODIS ocean processing support starting with level-0 (direct broadcast users).

- **Research campaign support**
  global ocean color and sst data available for distribution within 3-4 hours of acquisition by the spacecraft.

- **Web/FTP-based data access and distribution**
  web/ftp-based browse and order tool that allows everything from a single file to the entire multi-mission data set to be downloaded. Doing this within the discipline group adds flexibility and quick response for new products prior to them being designated as “CDR’s”
Welcome to the new OceanColor Web

This site is intended to serve as the entry point into all of NASA's ocean color-related activities as part of the evolution of the individual ocean mission-based activities into an integrated ocean measurement-based program.

We have just begun the process of integrating the various mission-specific services, information, and documentation that have been developed over a number of years, so we expect that this website will be evolving quite rapidly. We encourage everyone to use the online forum, which is linked through the Questions button above, to provide feedback, ask questions and offer suggestions.

Subscribe: Ocean Mailing List
Ocean Color Distribution Statistics

http://oceancolor.gsfc.nasa.gov
MODIS Processing Overview (30kB)

An overview of the processing of MODIS ocean color data within the SDPS (SeaWIFS Data Processing System)

MSI12 User Guide (34kB)

A user's guide to the MSI12 software (Muti-Sensor level 1 to 2 processing code)
NOTE: This document is currently being revised to reflect recent changes to the code that enable processing of MODIS data.

Data Format Specifications

SeaWIFS Technical Memoranda Series

- Post-launch Series
- Pre-launch Series

Ocean Optics Protocols for Satellite Ocean Color Sensor Validation

- Volume I (729kB)
- Volume II (1.4MB)
- Volume III (1.1MB)
- Volume IV (1.3MB)
  - Volume IV, Errata (19kB)
- Volume V (942kB)
- Volume VI (5.3MB)
- Volume VI, Part 2 (971kB)

The SeaWIFS Bio-optical Archive and Storage System (SeaBASS): Current Architecture and Implementation (2.3MB)
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Email address: [Blank]


Start Date: 09 Apr 2004
End Date: None None None

Level 1 [on]  Level 2 [off]  Ancillary Data [off]  Attitude/Ephemeris [off]
Wait for Refined Processing [off]  Daytime Granules [on]  Nighttime/Mixed Granules [off]

Submit New Request  Help  Clear

Curator: OceanColor Webmaster
Authorized by: gene carl feldman
Updated: 29 March 2004

Security, Privacy, and Accessibility Policy
## ODPS Data Subscription System

Subscriptions for: all at Mon Jul 12 08:49:12 2004 EDT

There are currently 60 subscriptions

Also See Expired Subscriptions

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Multi-Mission Browse and Order Page - Showing navigation tools

Selection = Full MODIS/Aqua Mission - Chlorophyll

Wednesday, 3 July 2002 through Monday, 12 July 2004

Chlorophyll

Radius (km) about map click or typed-in location:
36 400 800 1200 1500

Select swaths containing (at least):
any part 25% 50% 75% all of the area of interest.

Display results at a time.
Selection = Single Day MODIS/Aqua Mission - Chlorophyll
For next screen, click on map near Central America
Single file (level-1 or level-2) browse and download page

From this page one can directly download the compressed data Files in either level-1 or level-2 format as well as the supporting documentation.

The next example shows how to order all the files acquired over a week covering a given geographic region.

Search Criteria
Time Period: Saturday, 7 February 2004
Sensors: MODIS(Aqua)
Area of Interest: Within 36 km of 16.5N, 90.4W
Percentage of AOI that swaths must include: Any part

Number of swaths: 1 swath found
Selection = Eight Day MODIS/Aqua Mission
Next Screen: select ALL the Aqua files that cover east coast of the United States during this period by clicking on the map.
These are all the Aqua files that covered the geographic region you chose during the first 8 day period in February 2004. You can individually select which files you may want to order by clicking on the little box above the image (based on coverage, cloud cover, etc.) or just order them all.

### Search Criteria
- **Time Period**: 8-day period beginning Monday, 2 February 2004
- **Sensors**: MODIS (Aqua)
- **Area of Interest**: Within 400 km of 39.7N, 71.4W

### Percentage of AOI that swaths must include
- Any part

### Number of swaths
- 1st through 10th of 18 swaths
In order to reduce the volume of data that you have to deal with, we can extract the geographical area indicated at right from the swaths you ordered before we place the data in our download area. (This extraction currently only applies to SeaWiFS files.)

Please choose one of the following options:
Do Do not extract my order for me.

You may adjust the extraction region by altering the coordinates at right.

The default coordinates are the ones which circumscribe the area or areas of interest that you used to do your search. If you started your search by just clicking on the world map without specifying a larger search radius, then you may want to increase the size of your extract region since the default search radius is 36 kilometers.

All four coordinates are expected to be in decimal degrees. Degrees north of the equator and east of the Greenwich meridian should be positive, and degrees south of the equator and west of the Greenwich meridian should be negative.

SeaWiFS extracts are processible with SeaDAS.

Pick which data products you want for your selected scenes.
☐ Level 1

If you plan to process Level-1 files using SeaDAS, then you will also need the following.
☐ Meteorology & Ozone
☐ Attitude & Ephemeris (MODIS only)

☐ Level 2

You may select to receive only the following checked level-2 products if you wish. If you select none of these and simply check “Level 2” above, then you will receive all of the available level-2 products for a given sensor.
☐ chlorophyll a
☐ K490
☐ normalized, water-leaving radiances
☐ aerosol products
☐ sea surface temperature (MODIS only)

☐ Remind me when my order is about to expire.
☐ Require my email confirmation for early file deletion.
☐ Notify me when my data have been deleted from the staging area.

Review order
Review your order and if correct, submit it. In a few minutes after you submit your order, you will receive an automated confirmation message from the Ordering system that by replying to, will trigger your order to be filled. Currently, orders are staged within 3-5 minutes after confirmation.

The total volume of the above files before extraction (in the compressed form in which they are stored in our archive) is 144,024,509 bytes.

Any SeaWiFS files in your order will be trimmed using the following coordinates:

- Northernmost latitude: 43.79°
- Southernmost latitude: 38.83°
- Westernmost Longitude: -76.86°
- Easternmost Longitude: -66.29°

Level-2 files in your order will contain only the following products:

- chlorophyll a
- normalized, water-leaving radiances

You do wish to be reminded by email when your order is about to expire, and you do require email confirmation when you use the Web to request early deletion of your staged order, and you do wish to be notified when your order has been deleted from our staging area.
All SeaWiFS data (GAC and MLAC) is now available via the same web browser via password protected interface along with the option to request a geographic “extract on the fly” and Level 2 and parameter subset option. This is an example of a SeaWiFS/AQUA coincident search/order.
All SeaWiFS and AQUA files that covered the geographic region chosen and the time period of interest are displayed. You can select/deselect the scenes based on what you see or can just request them all.

Search Criteria
Time Period: February 2004
Sensors: SeaWiFS and MODIS(Aqua)
SeaWiFS Data Types: MLAC
Area of Interest: Within 36 km of 43.2N, 70.0W
In addition to the web-based data distribution tool shown on the previous screens, there is an online repository for anonymous ftp downloads containing:
1- the most recent 10 days of ALL MODIS/AQUA products,
2- the complete Level-3 mission archive at multiple time/space resolutions
3- the complete ancillary data and definitive attitude and ephemeris data for the mission

Index of ftp://oceans.gsfc.nasa.gov/

- Aqua_SMI/ 05/14/2004 12:08:00 PM
- METOZ/ 05/05/2004 05:44:00 PM
- MODISA/ 05/14/2004 11:36:00 AM
- MODIST/ 06/02/2004 11:52:00 AM
- OISST/ 04/30/2004 03:39:00 PM
- README 4 KB 07/12/2004 10:56:00 AM
- Recent_Aqua/ 07/12/2004 12:30:00 AM
- Recent_Aqua_Night/ 07/12/2004 12:31:00 AM
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<tr>
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<td>130275</td>
<td>2337791</td>
</tr>
</tbody>
</table>

- **HTTP** refers to individual files downloaded directly from the browser.
- **REQ** refers to files requested (ordered).
- **REC** refers to files downloaded from the 'Recent data' directory on the FTP site.
- **ARC** refers to files downloaded from the online FTP archives.

![Graph showing cumulative files transferred from February to July 2004](image-url)