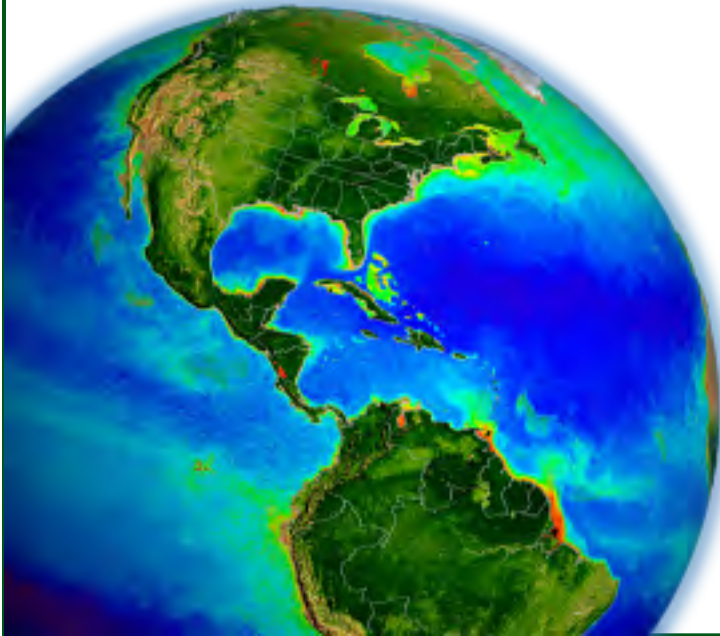


Ocean Color Production & Distribution from the Ocean Biology DAAC



gene carl feldman

NASA Ocean Biology
Processing Group

MODIS Science Team Meeting

30 April 2014

NASA Ocean Biology Processing Group

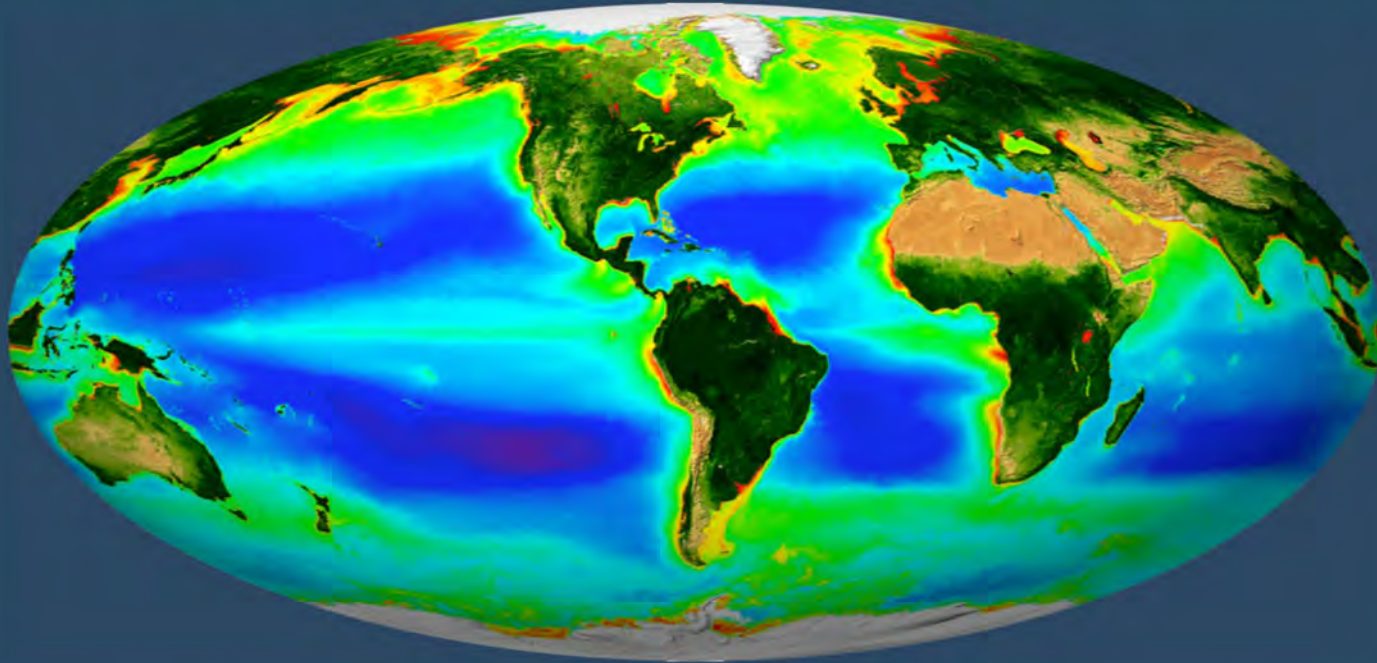
Multi-Mission Ocean Color, Sea Surface Temperature and Ocean Salinity

Primary Focus on Ocean Color

Sensor calibration/characterization
Algorithm development (NOMAD)

Processing software & algorithms
User processing and display (SeaDAS)

Product validation (SeaBASS)
User support (Ocean Color Forum)



Ocean Data Processing System (ODPS)

End-to-End data acquisition, processing, archive and distribution (OB.DAAC)

Missions Supported

VIIRS/NPP: 2011-present

MODIS/Aqua: 2002-present

MODIS/Terra: 1999-present

Aquarius / SAC-D : 2011-present

HICO/ISS: 2009 -present

GOCI/COMS:2010-present

OCM-2/Oceansat-2: 2009-present

SeaWiFS/OV-2: 1997-2010

MERIS/Envisat: 2002-2012

CZCS/NIMBUS-7: 1978-1986

MOS/IRS-P3: 1996-2004

OCTS/ADEOS: 1996-1997

MISSIONS to MEASUREMENTS

- 1: ***Process multiple missions with common approach*** (hardware, software, algorithms, ancillary data, etc.) - reveals actual instrument to instrument differences rather than just comparison of end products.
- 2: ***Common data formats*** minimizes user training and tool development effort for multi-mission data users.
- 3: ***Freely available analysis, display and processing package*** (SeaDAS) that allows users to work with all levels of data products.
- 4: ***Common browse, search, download and order mechanism*** with geographic and parameter extraction services plus availability of in-situ match-ups vastly reduces effort for end users wishing to work with multiple datasets.

Current Data Holdings

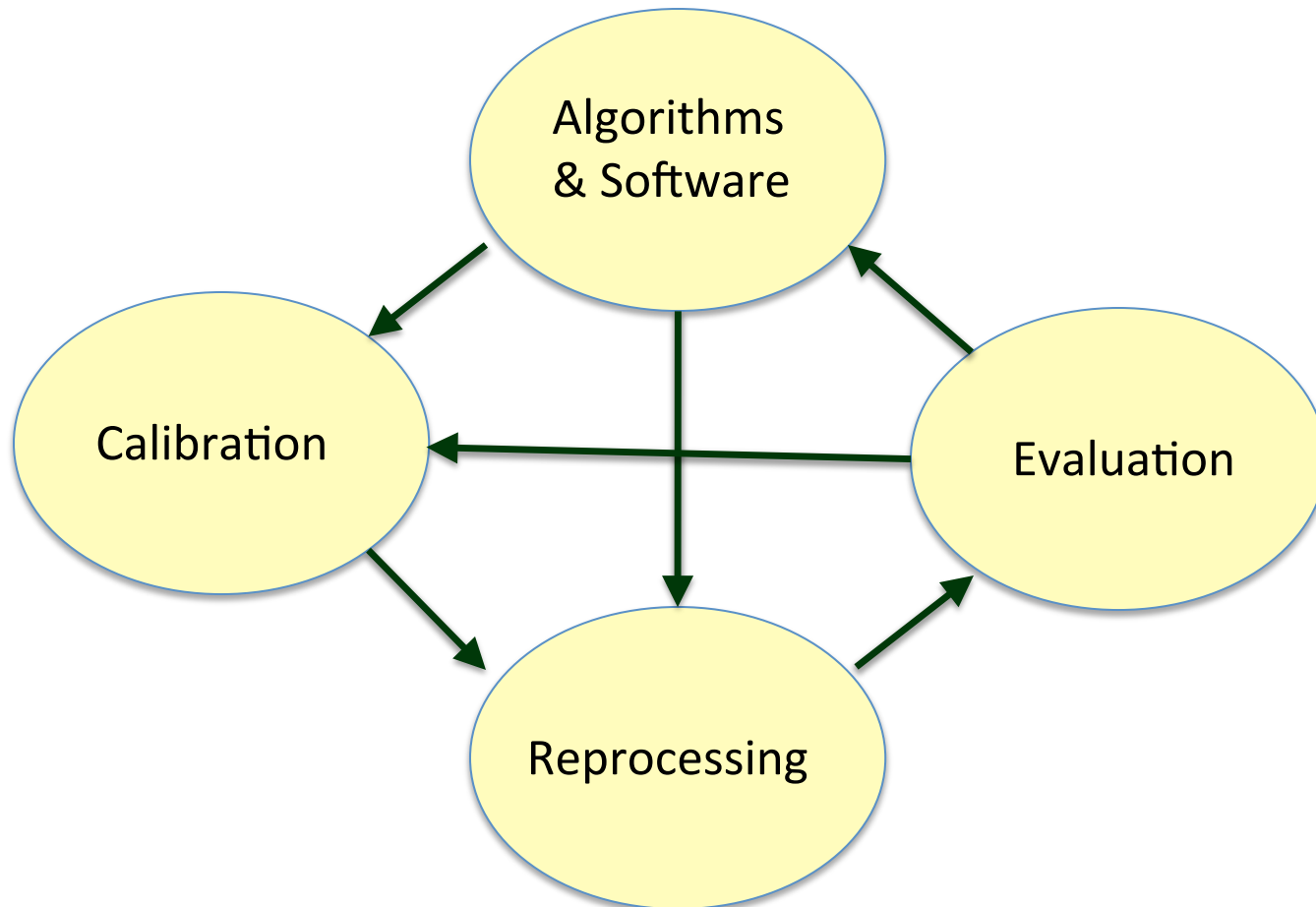
Mission	Total File count	Level-1 File Count	Volume
Aquarius	891,398	133,823 (2.5 TB)	5.72 TB
CZCS	207,825	72,682 (1.1 TB)	8.45 TB
GOCI	2,882	2,882 (2.7 TB)	2.66 TB
HICO	17,759	8,517 (2.5 TB)	6.69 TB
MERIS	613,701	254,281 (221 TB)	417.51 TB
MODISA	10,084,179	3,375,114 (686 TB)	1.22 PB
MODIST	9,405,382	3,367,499 (698 TB)	1.22 PB
OCM2	4,349	967 (217 GB)	669.81 GB
OCTS	20,565	8,919 (140 GB)	493.68 GB
SeaWiFS	1,466,800	717,382 (33 TB)	77.89 TB
VIIRS	4,715,203	2,622,187 (288 TB)	442.63 TB
TOTALS	27,663,258	11,075,191 (1.94 PB)	3.38 PB

Evolution of Daily Volumes

SeaWiFS 16 files/310MB MERIS RR 14 files/8GB FRS 36 files/42GB MODIS/AQUA 288 files/110GB VIIRS 18,000 files/345GB

Source mission data should be distributed at Level-0 or Level-1A with *ability to process* to Level-1B

achieving climate quality data products requires frequent reprocessing



Multi-Mission Reprocessing

Preparations for next multi-mission OC reprocessing underway

Includes instrument and vicarious calibration updates

Incorporates algorithm refinements

- revised ancillary ozone dataset normalized to SBUV record

- chlorophyll algorithm enhanced with OCI

- updates to PIC algorithm (Balch)

- updates to PAR algorithm (Frouin)

Expands standard product suite

- inherent optical properties (IOPs) and uncertainties

Changes data formats

- moving to CF-compliant netCDF4

Reprocessing Rates

Mission Name	File Type	Mission Length (Years)	Mission Reprocessing Time (Days)	X-Rate
Aquarius	L1A	2.84	0.14	7,585
CZCS	L1A	7.64	1.15	2,429
GOCI	L1B	2.58	0.47	2,026
HICO	L0	4.52	0.99	1,661
MERIS	RR	9.94	1.92	1,895
MODISA	L1A	11.82	5.98	721
MODIST	L1A	14.17	7.06	733
OCM2	L1B	0.24	0.01	6,745
OCTS	L1A	0.66	0.04	5,666
SeaWiFS	GAC	13.27	0.15	31,512
VIIRS	L1A	2.32	4.95	173

OceanColor Web

<http://oceancolor.gsfc.nasa.gov>

Consolidated data access, information, services, support and community feedback since 1994

Major reorganization, document and ATBD update underway.

OceanColor WEB

Missions ▾ Data ▾ Documents ▾ Analyses ▾ People Forum ▾ Services ▾ Links

Data Access

Level 1 and 2 Browser
Visually search the ocean color data archive. Directly download or order data from a single file to an entire mission. Data from the Aquarius mission is also available.

Level 3 Browser
Browse the entire global ocean color, sea surface temperature and sea surface salinity data sets for many parameters and time periods and download PNG images or digital data in HDF format.

Data Archive
Access to the complete data archive. Retrieval of data in bulk is possible.

Ocean Productivity
Ocean Net Primary Productivity data products derived from MODIS and/or SeaWiFS data available from Oregon State University.

Giovanni
An easy-to-use, Web-based Interface for the visualization and analysis of Earth Science data provided by the GES DISC DAAC.

MEaSURES Ocean Color Project
This project creates a variety of established and new ocean color products for evaluation as candidates to become Earth Science Data Records.

Ocean Color Feature

Benguela Current Features

25 km

Recent MODIS data from the Benguela Current region off the coast of Namibia include linear, yellowish features such as are shown in the above image collected on April 10, 2014. If any seafarer in the area knows what these are, we would also be curious to know. Perhaps these are associated with sulfur precipitation events that have been described in this area; perhaps these are phytoplankton blooms; perhaps there is some connection with the wind-borne dust seen in other parts of the larger image.

Click on the above image for a broader view of the southwest African coast, or download the full-resolution (20 megabyte) image.

Meanwhile, nearly half a world away, you can continue to follow our field support group as they gather sea-truth data in the South Pacific.

Support Services

SeaDAS
A comprehensive Image analysis package for the processing, display, analysis, and quality control of ocean color data.

SeaBASS
An archive of *in situ* oceanographic and atmospheric data for use in algorithm development and satellite data product validation.

Registration for support services:

- Data access and Subscriptions
- Forgotten password
- Email change

Near Real-Time (NRT) Services:

- NRT Data Subscriptions
Subscriptions allow users to specify regions for NRT data to be continually staged on our FTP server for download.

Information Services:

- Ocean Color Forum
- Ocean Color Mailing List
- Ocean Color Data Processing

Other Services:

- Satellite Overflight Predictions
- Data subscription status
- L1/L2 browser order status
- Locate Ancillary Files
- File Search Utility
Search for satellite and ancillary data archived by the ocean color data production system.

Image Gallery

NOTE: All SeaWiFS Images presented here are for research and educational use only. All commercial use of SeaWiFS data must be coordinated with GeoEye

Ocean Color Distribution Statistics

Curator: [OceanColor Webmaster](#)
Authorized by: [gene carl feldman](#)

[Privacy Policy and Important Notices](#)

Entire Staff Provides User Support



Ocean Color Forum Not logged In

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Forum

[Info](#) [Feeds](#) [Mark Old](#) [New Posts](#)

	Posts	Last Post
Announcements		
Ocean Color Announcements	110	2014-03-28 10:47
SeaDAS Announcements	75	2014-01-14 13:40
Frequently Asked Questions		
General Forum Information	8	2008-04-14 08:41
SeaDAS 7 FAQ	1	2013-05-30 13:32
SeaDAS 6 FAQ Archive FAQ for SeaDAS 6	38	2011-01-17 17:59
Data Products & Algorithms FAQ	33	2009-08-03 10:22
Data Access FAQ	29	2013-06-20 14:13
Products and Algorithms		
Satellite Data Products & Algorithms	4917 (3 new)	2014-04-28 13:53
Satellite Data Access	2924	2014-04-11 11:08
Field Data - SeaBASS	64 (2 new)	2014-04-22 16:09
SeaDAS		
SeaDAS 7 - General Questions	1131 (3 new)	2014-04-27 21:21
SeaDAS 6.x - General Questions	11759	2014-04-06 12:28
SeaDAS 6.x Virtual Appliance for Windows	372	2013-03-04 14:30
MODIS Direct Broadcast Support	314 (2 new)	2014-04-22 12:02
Non-SeaDAS Packages (e.g. MATLAB, ENVI, GIS, etc)	348	2013-09-10 15:10
Special Topics		
Ocean Color Reprocessing Multi-mission ocean color data reprocessing	210 (1 new)	2014-04-27 21:54
Inherent Optical Properties Workshop	154	2011-11-23 16:02






















Over 22,500 posts since 2004

All data is online and available for direct access and user-controlled machine-to-machine downloads

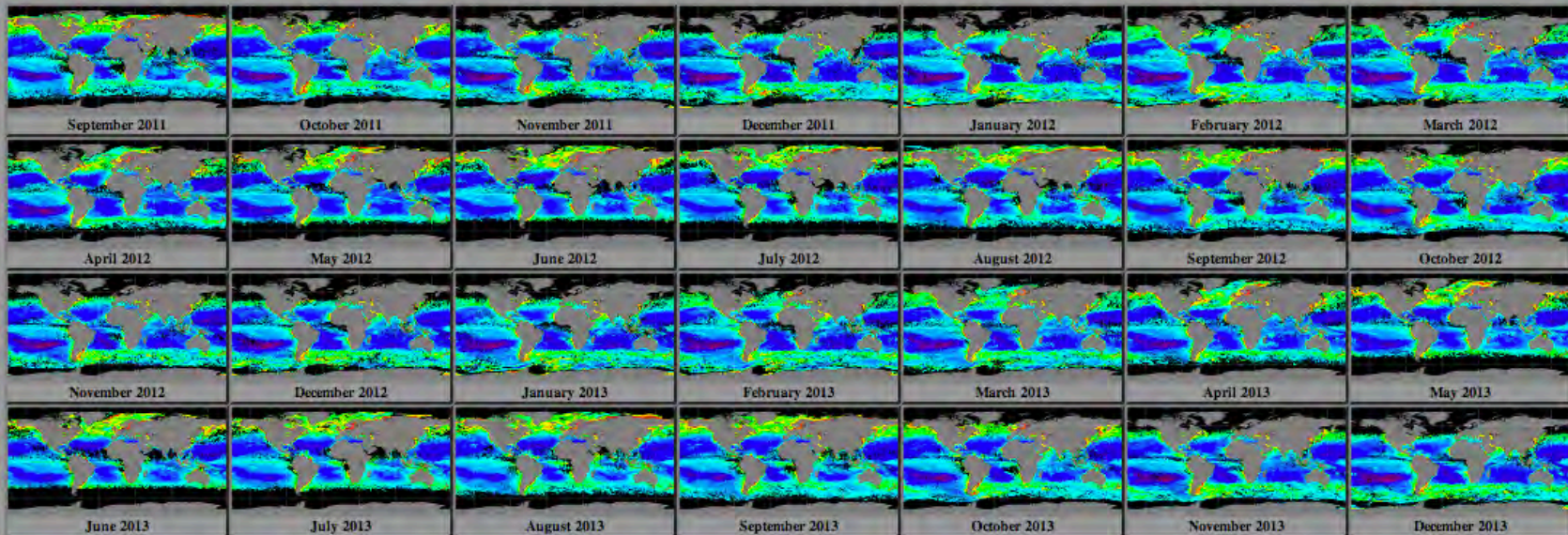
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MERIS	-	-
MODISA	-	-
MODIST	-	-
OCTS	-	-
SeaWIFS	-	-
VIIRS	-	-
Aquarius	-	-

Index of: <http://oceandata.sci.gsfc.nasa.gov> / MODISA / L1 / 2004 / 004

SHA1 Checksums

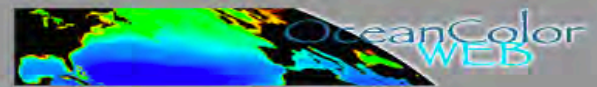
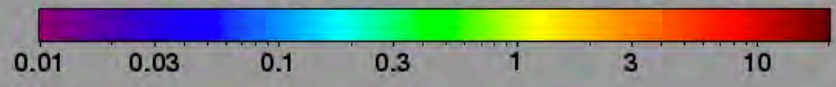
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Standard Aqua MODIS Chlorophyll concentration Monthly 9 km 28 thumbnails

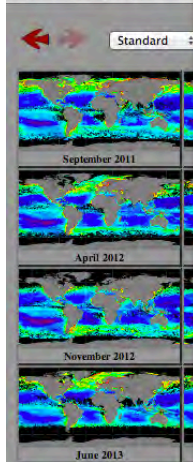


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Chlorophyll a concentration (mg / m³)



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- Aqua MODIS
- Aqua MODIS Aerosol optical thickness at 869 nm
- Aqua MODIS Angstrom coefficient
- Aqua MODIS Chlorophyll concentration**
- Aqua MODIS Chromophoric Dissolved Organic Matter index
- Aqua MODIS Diffuse attenuation coefficient at 490 nm
- Aqua MODIS Fluorescence Line Height (normalized)
- Aqua MODIS Instantaneous Photosynthetically Available Radiation
- Aqua MODIS Particulate Inorganic Carbon
- Aqua MODIS Particulate Organic Carbon
- Aqua MODIS Photosynthetically Available Radiation
- Aqua MODIS Remote sensing reflectance at 412 nm
- Aqua MODIS Remote sensing reflectance at 443 nm
- Aqua MODIS Remote sensing reflectance at 469 nm
- Aqua MODIS Remote sensing reflectance at 488 nm
- Aqua MODIS Remote sensing reflectance at 531 nm
- Aqua MODIS Remote sensing reflectance at 547 nm
- Aqua MODIS Remote sensing reflectance at 555 nm
- Aqua MODIS Remote sensing reflectance at 645 nm
- Aqua MODIS Remote sensing reflectance at 667 nm
- Aqua MODIS Remote sensing reflectance at 678 nm
- Aqua MODIS Sea Surface Temperature (11 μ daytime)
- Aqua MODIS Sea Surface Temperature (11 μ nighttime)
- Aqua MODIS Sea Surface Temperature (4 μ nighttime)

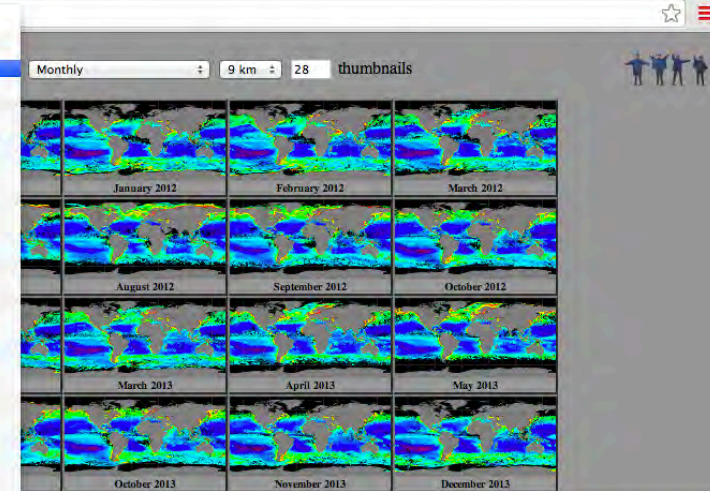
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- CZCS Aerosol optical thickness at 670 nm
- CZCS Chlorophyll concentration
- CZCS Diffuse attenuation coefficient at 490 nm
- CZCS Remote sensing reflectance at 443 nm
- CZCS Remote sensing reflectance at 520 nm
- CZCS Remote sensing reflectance at 550 nm
- CZCS Remote sensing reflectance at 670 nm

- MERIS
- MERIS Aerosol optical thickness at 865 nm
- MERIS Angstrom coefficient
- MERIS Chlorophyll a concentration, Chlorophyll Index Algorithm
- MERIS Chlorophyll concentration
- MERIS Diffuse attenuation coefficient at 490 nm
- MERIS Particulate Inorganic Carbon
- MERIS Particulate Organic Carbon
- MERIS Photosynthetically Available Radiation
- MERIS Remote sensing reflectance at 413 nm
- MERIS Remote sensing reflectance at 443 nm
- MERIS Remote sensing reflectance at 490 nm
- MERIS Remote sensing reflectance at 510 nm
- MERIS Remote sensing reflectance at 560 nm
- MERIS Remote sensing reflectance at 620 nm
- MERIS Remote sensing reflectance at 664 nm
- MERIS Remote sensing reflectance at 681 nm
- MERIS Remote sensing reflectance at 709 nm

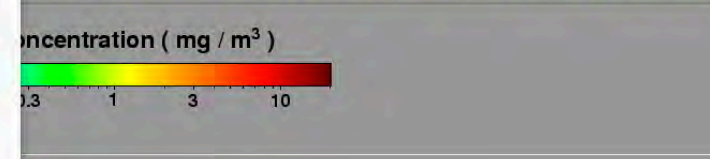
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- OCTS Angstrom coefficient
- OCTS Chlorophyll concentration
- OCTS Diffuse attenuation coefficient at 490 nm
- OCTS Particulate Inorganic Carbon
- OCTS Remote sensing reflectance at 412 nm
- OCTS Remote sensing reflectance at 443 nm
- OCTS Remote sensing reflectance at 490 nm
- OCTS Remote sensing reflectance at 516 nm
- OCTS Remote sensing reflectance at 565 nm
- OCTS Remote sensing reflectance at 667 nm

- Aquarius
- Aquarius scatterometer wind speed (all beams) V2.0
- Aquarius scatterometer wind speed (beam 1) V2.0
- Aquarius scatterometer wind speed (beam 2) V2.0
- Aquarius scatterometer wind speed (beam 3) V2.0
- Aquarius sea surface salinity (all beams) V2.0
- Aquarius sea surface salinity (beam 1) V2.0
- Aquarius sea surface salinity (beam 2) V2.0
- Aquarius sea surface salinity (beam 3) V2.0
- Aquarius sea surface salinity (smoothed) V2.0

- SeaWiFS
- SeaWiFS CHL_BIOS
- SeaWiFS LAND_NDVI
- SeaWiFS LAND_TC
- SeaWiFS Aerosol optical thickness at 865 nm
- SeaWiFS Angstrom coefficient
- SeaWiFS Chlorophyll concentration
- SeaWiFS Chromophoric Dissolved Organic Matter index

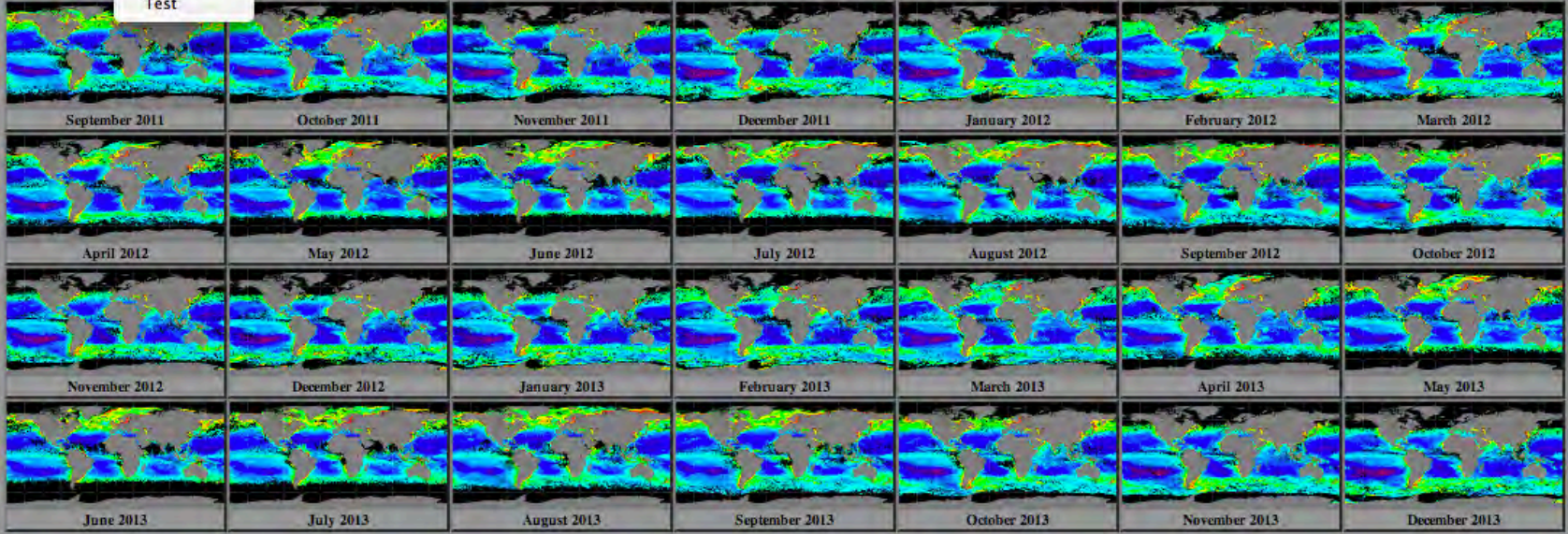


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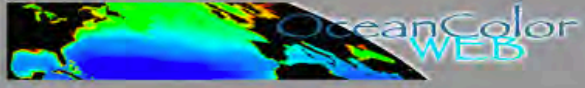
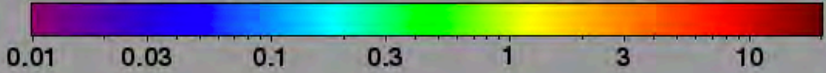
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Standard Aqua MODIS Chlorophyll concentration Monthly 9 km 28 thumbnails



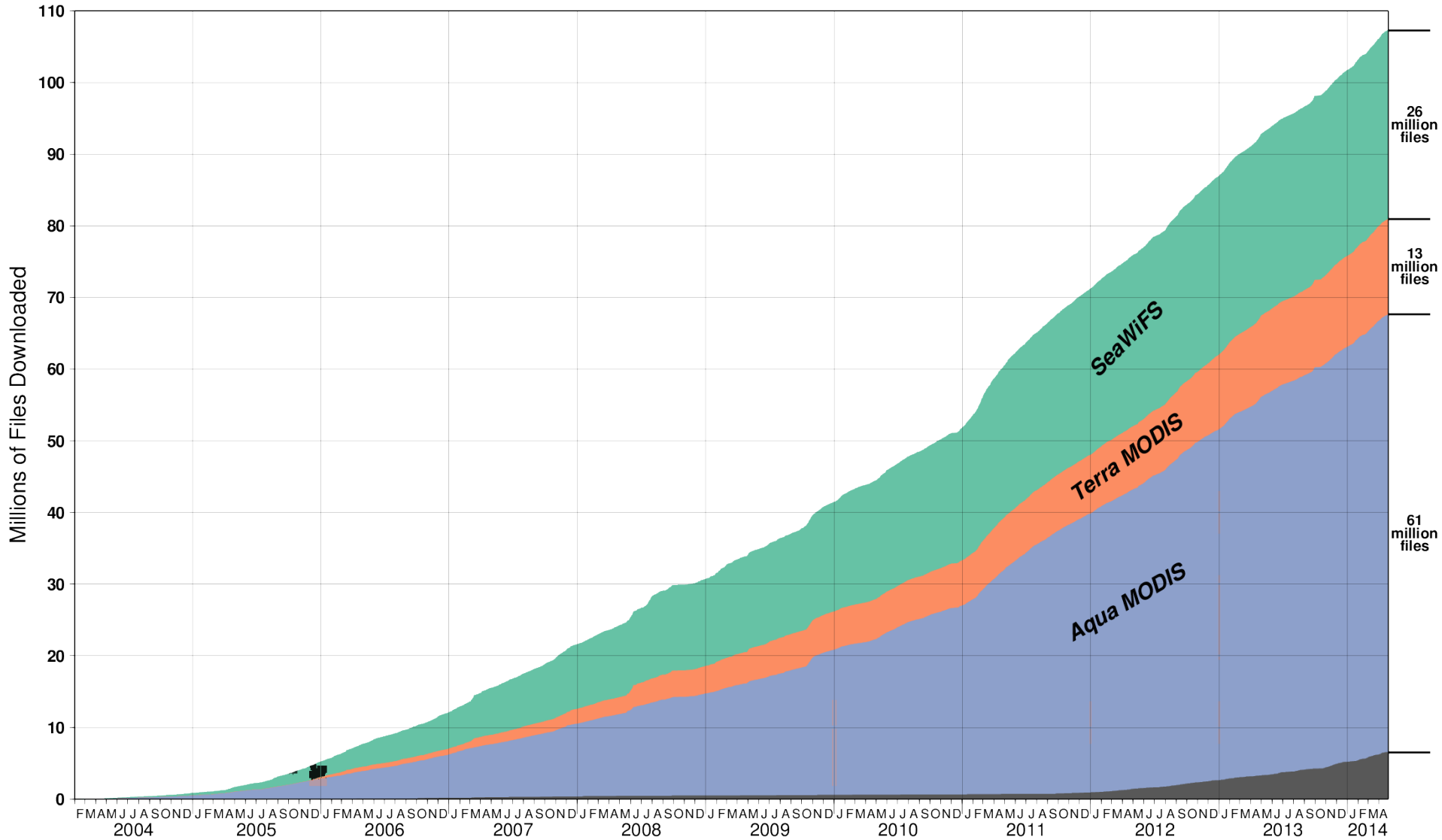
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Mar13 Apr13 May13 Jun13 Jul13 Aug13 Sep13 Oct13 Nov13 Dec13

Chlorophyll a concentration (mg / m³)



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Cumulative Downloads of Ocean Color Data



All Missions – All Time

TC **Chl** SST 4

SeaWiFS <input type="checkbox"/> GAC <input type="checkbox"/> MLAC	MODIS <input type="checkbox"/> Aqua <input type="checkbox"/> Terra	MERIS <input type="checkbox"/> RR <input type="checkbox"/> FRS	Select <input checked="" type="checkbox"/> Day <input type="checkbox"/> Night
VIIRS (NPP) <input type="checkbox"/>	OCTS (ADEOS) <input type="checkbox"/>	HICO (ISS) <input type="checkbox"/>	

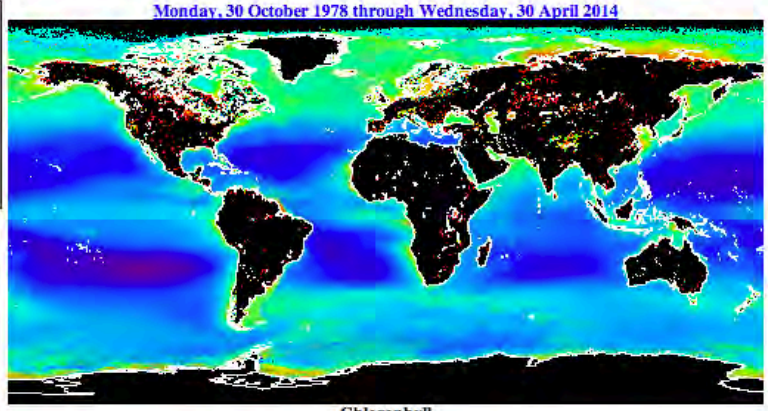
Radius (km) about map click or about typed-in location:

72
400
800
1200
1500

Select swaths containing (at least):

any part
25 %
50 %
75 %
all

Select only scenes having in situ matchups.



Comment

Help

Select one or more regions:

- AdriaticSea
- AegeanSea
- Antarctica
- ArabianSea
- AralSea
- Arctic
- Australia
- AustraliaCoast
- Azores
- Bahamas
- BalticSea

or specify boundary coordinates or a single location:

N:
W: :E:
S:

Display results 10 at a time.

1978	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1979	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1980	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1981	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1982	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1983	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1984	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1986	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1996	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1997	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1998	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1999	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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2009	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

February 2014						
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						AAA
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30	31					
AAA	AAA					

March 2014						
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						1
						AAA
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AAA	AAA	AAA	AAA	000	000	000
9	10	11	12	13	14	15
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16	17	18	19	20	21	22
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23	24	25	26	27	28	29
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30	31					
AAA	AAA					

April 2014						
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						AAA
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	AAA	AAA	AAA	AAA	AAA	AAA
	6	7	8	9	10	11
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	12	13	14	15	16	17
	000	000	000	000	000	000
	18	19	20	21	22	23
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	000	000	000	000	000	000
	30					
	AAA					

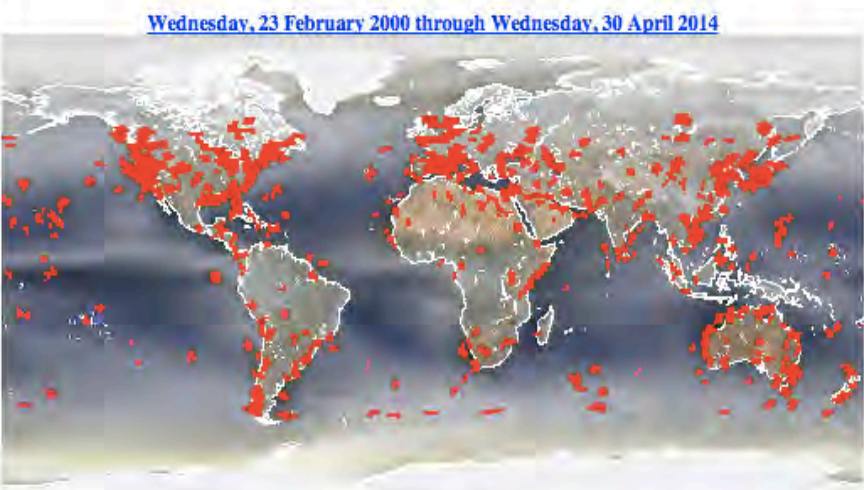
Mission

Comment

Help

CHL SST

SeaWiFS <input type="checkbox"/> GAC <input type="checkbox"/> MLAC	MODIS <input checked="" type="checkbox"/> Aqua <input checked="" type="checkbox"/> Terra	MERIS <input type="checkbox"/> RR <input type="checkbox"/> FRS	Select <input checked="" type="checkbox"/> Day <input type="checkbox"/> Night
<input checked="" type="checkbox"/> VIIRS (NPP)	<input type="checkbox"/> OCTS (ADEOS)	<input checked="" type="checkbox"/> HICO (ISS) <input type="checkbox"/> CZCS (Nimbus-7)	



Select one or more regions:

- AdriaticSea
- AegeanSea
- Antarctica
- ArabianSea
- AralSea
- Arctic
- Australia
- AustraliaCoast
- Azores
- Bahamas
- BalticSea

or specify boundary coordinates or a single location:

N:

W: :E

S:

Find swaths

Radius (km) about map click or about typed-in location:

<input checked="" type="radio"/>	72
<input type="radio"/>	400
<input type="radio"/>	800
<input type="radio"/>	1200
<input type="radio"/>	1500

Select swaths containing (at least):

<input checked="" type="radio"/>	any part
<input type="radio"/>	25 %
<input type="radio"/>	50 %
<input type="radio"/>	75 %
<input type="radio"/>	all

Select only scenes having in situ matchups.



of the area of interest.

Quasi True Color

Display results 10 at a time.

Reconfigure page

Mission	2000	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2001	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2002	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2003	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2004	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2005	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2009	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2011	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

February 2014							March 2014							April 2014						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
						1							1							
						AAA							2	3	4	5	6	7	8	
						AAA							AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
						AAA							9	10	11	12	13	14	15	
						AAA							AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
						AAA							16	17	18	19	20	21	22	
						AAA							AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
						AAA							23	24	25	26	27	28	29	
						AAA							AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
						AAA							30	31						
						AAA							AAA	AAA						

<input type="checkbox"/> SeaWiFS <input type="checkbox"/> GAC <input type="checkbox"/> MLAC <input checked="" type="checkbox"/> VIIRS (NPP)	<input checked="" type="checkbox"/> MODIS Aqua <input checked="" type="checkbox"/> Terra <input type="checkbox"/> OCTS (ADEOS)	<input type="checkbox"/> MERIS RR <input type="checkbox"/> FRS <input checked="" type="checkbox"/> HICO (ISS) <input type="checkbox"/> CZCS (Nimbus-7)	Select <input checked="" type="checkbox"/> Day <input type="checkbox"/> Night
--	---	--	---

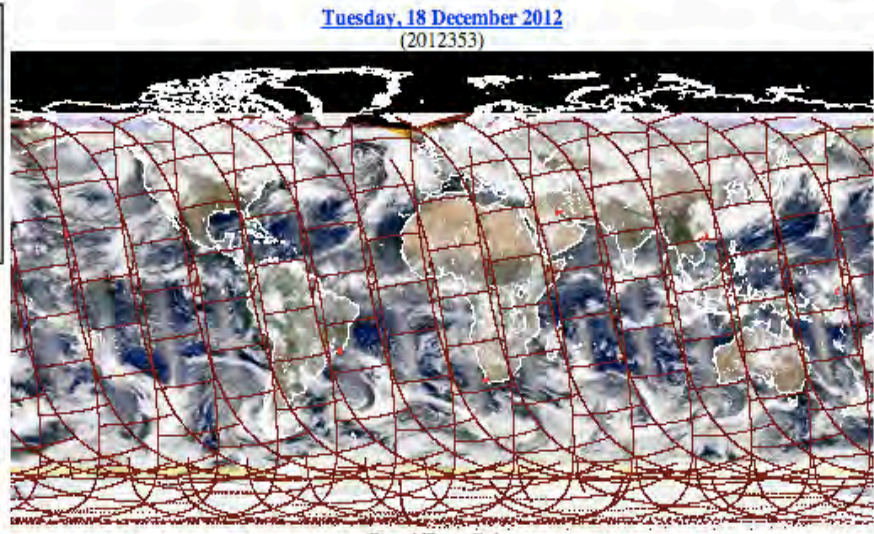
Radius (km) about map click or about typed-in location:

<input checked="" type="radio"/>	72
<input type="radio"/>	400
<input type="radio"/>	800
<input type="radio"/>	1200
<input type="radio"/>	1500

Select swaths containing (at least):

<input checked="" type="radio"/>	any part
<input type="radio"/>	25 %
<input type="radio"/>	50 %
<input type="radio"/>	75 %
<input type="radio"/>	all

Select only scenes having in situ matchups.



Select one or more regions:

- BenjuelaCurrent**
- AdriaticSea
- AegeanSea
- Antarctica
- ArabianSea
- AralSea
- Arctic
- Australia
- AustraliaCoast
- Azores
- Bahamas

or specify boundary coordinates or a single location:

N:

W: E:

S:

[Find swaths](#)

Quasi True Color

Display results at a time.

[Reconfigure page](#)

Mission	2000	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2001	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2002	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2003	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2004	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2005	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2006	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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	2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2009	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2010	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2011	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2014	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

November 2012						
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***	***	***	***	***	***	

December 2012						
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XXX	AAA	AAA	AAA	AAA	AAA	AAA
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AAA	AAA	000	000	000	000	000
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000	000	000	***	***	***	***
30	31					
***	***					

January 2013						
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	000	000	000	***	***	***
	12	13	14	15	16	17
	000	000	000	000	000	000
	18	19	20	21	22	23
	***	***	***	***	***	***
	24	25	26	27	28	29
	XXX	XXX	XXX	XXX	XXX	AAA
	30	31				
	AAA	AAA	AAA	AAA	AAA	

CHL SST

Display 10 at a time.

ORDER DATA

Comment

Help

V2012353131130.L1B_NPP		H2012353094913.L1B_ISS	
A2012353125000.L1A_LAC			
18Dec2012			
****	****	****	****
			
List LO		V2012353131005.L1B_NPP	T2012353083000.L1A_LAC
		V2012353113030.L1B_NPP	

Search Criteria
Time Period: Tuesday, 18 December 2012 (daytime)
Sensors: VIIRS(NPP) and Terra and HICO(ISS) and Aqua
Area of Interest: Within 0 km of 32.7S,19.3E

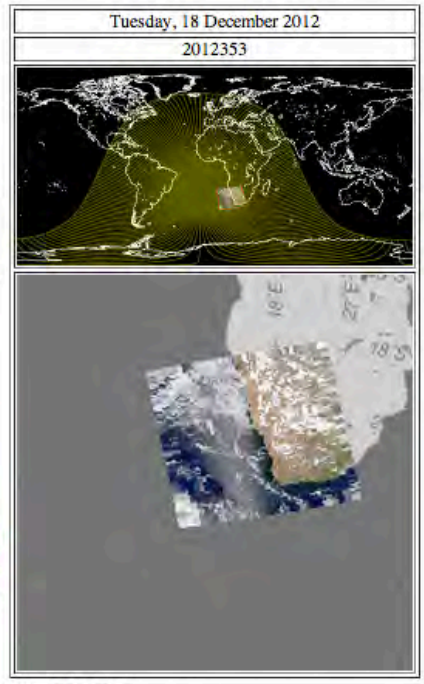
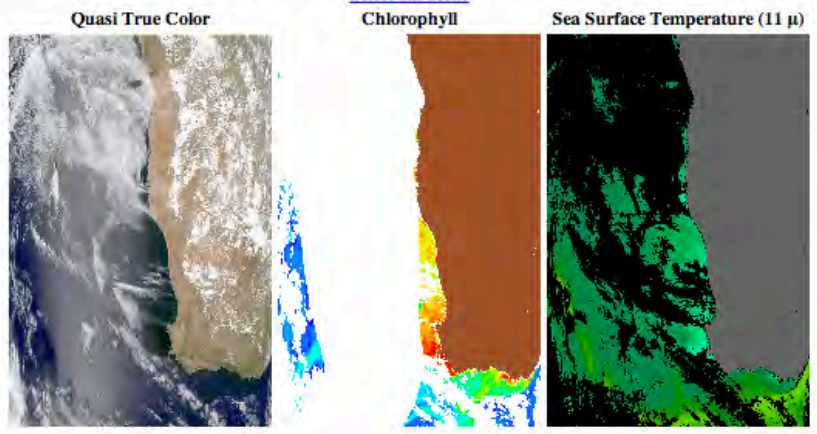


Percentage of AOI that swaths must include: 0
 Number of swaths: 1st through 6th of 6 swaths



[A2012353125000.L0_LAC](#) 309,302,072 bytes
[A2012353125000.L1A_LAC](#) 232,175,455 bytes
[A2012353125000.L2_LAC_OC](#) 32,464,428 bytes
[A2012353125000.L2_LAC_SST](#) 20,732,382 bytes
 (The above hyperlinks point to [bzip2-compressed HDF files](#).
 Documentation on these products can be found [HERE](#).)

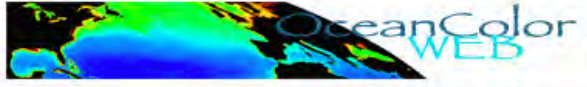
[Select this scene](#)



Search Criteria
 Time Period: Tuesday, 18 December 2012 (daytime)
 Sensors: VIIRS(NPP) and Terra and HICO(ISS) and Aqua
 Area of Interest: Within 0 km of 32.7S,19.3E



Percentage of AOI that swaths must include: 0
 Number of swaths: 3rd of 6 swaths

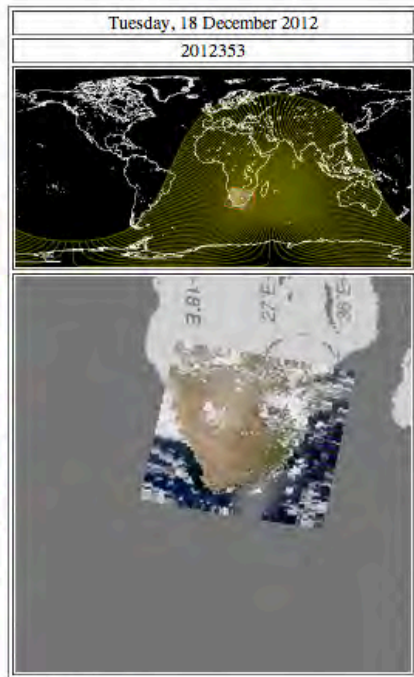
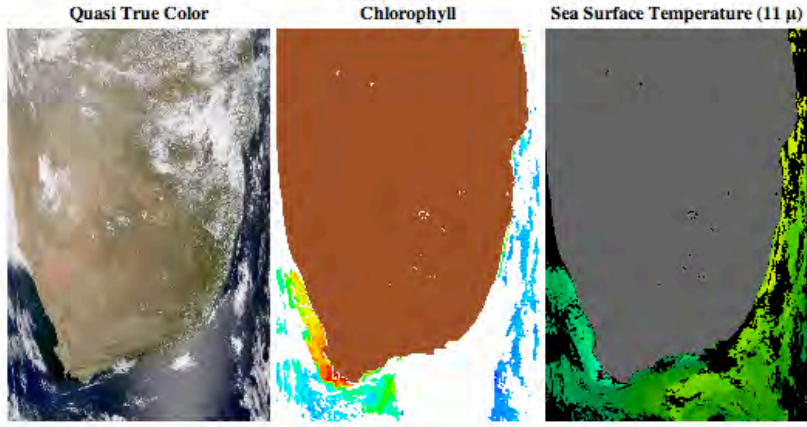


TC CHL SST SST4

Comment Help

[T2012353083000.L0_LAC](#) 316,515,611 bytes
[T2012353083000.L1A_LAC](#) 242,271,772 bytes
[T2012353083000.L2_LAC_OC](#) 30,516,812 bytes
[T2012353083000.L2_LAC_SST](#) 19,142,082 bytes
 (The above hyperlinks point to [bzipped HDF files](#).
 Documentation on these products can be found [HERE](#).)

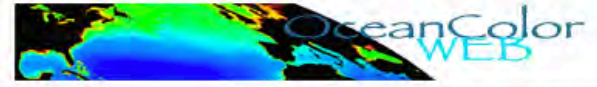
[Select this scene](#)



Search Criteria
Time Period: Tuesday, 18 December 2012 (daytime)
Sensors: VIIRS(NPP) and Terra and HICO(ISS) and Aqua
Area of Interest: Within 0 km of 32.7S,19.3E



Percentage of AOI that swaths must include: 0
Number of swaths: 6th of 6 swaths



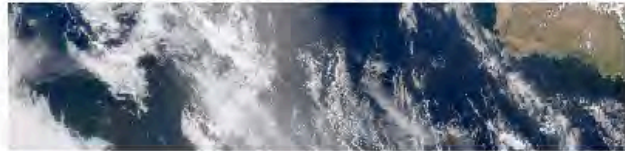
TC CHL SST SST4

Comment Help

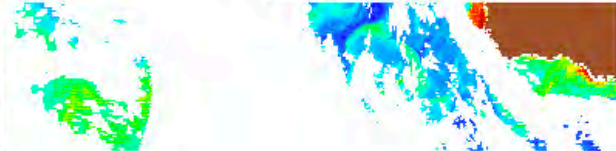
V2012353131005.L1A_NPP.tar 293,569,419 bytes
V2012353131005.L2_NPP_OC 31,574,535 bytes
(The above hyperlinks point to [bzip2-compressed HDF files](#).)

Select this scene

Quasi True Color



Chlorophyll



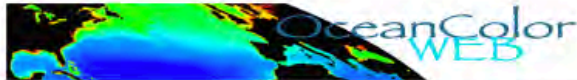
Tuesday, 18 December 2012

2012353

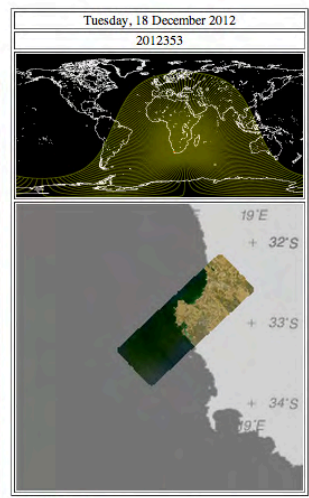
Search Criteria
Time Period: Tuesday, 18 December 2012 (daytime)
Sensors: VIIRS(NPP) and Terra and HICO(ISS) and Aqua
Area of Interest: Within 0 km of 32.7S,19.3E



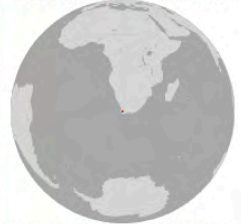
Percentage of AOI that swaths must include: 0
Number of swaths: 2nd of 6 swaths



[H2012353094913.L1B_ISS](#) 331,531,938 bytes
(The above hyperlink points to a [bzipped compressed HDF file](#).)
[Select this scene](#)
Quasi True Color



Search Criteria
Time Period: Tuesday, 18 December 2012 (daytime)
Sensors: VIIRS(NPP) and Terra and HICO(ISS) and Aqua
Area of Interest: Within 0 km of 32.7S,19.3E



Percentage of AOI that swaths must include: 0
Number of swaths: 5th of 6 swaths

CHL SST

Display 10 at a time.

ORDER DATA

Comment

Help

V2012353131130.L1B_NPP		H2012353094913.L1B_ISS	
A2012353125000.L1A_LAC			
18Dec2012			
****	****	****	****
List LO	Y2012353131005.L1B_NPP	T2012353083000.L1A_LAC	
	V2012353113030.L1B_NPP		

Search Criteria
Time Period: Tuesday, 18 December 2012 (daytime)
Sensors: VIIRS(NPP) and Terra and HICO(ISS) and Aqua
Area of Interest: Within 0 km of 32.7S,19.3E



Percentage of AOI that swaths must include: 0
 Number of swaths: 1st through 6th of 6 swaths



[Comment](#)[Help](#)

Enter your email address.

All correspondence regarding this particular order will be sent to the email address that you enter below. If you are already a registered user of our data distribution services, please enter the email address that you registered with.

From now on, if you select Level-0 data below, none of the files you order will be extracted regardless of which other boxes you checked below. If you want to get both Level-0 data and other extracted data, then you must place separate orders.

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.

Please choose one of the following options.

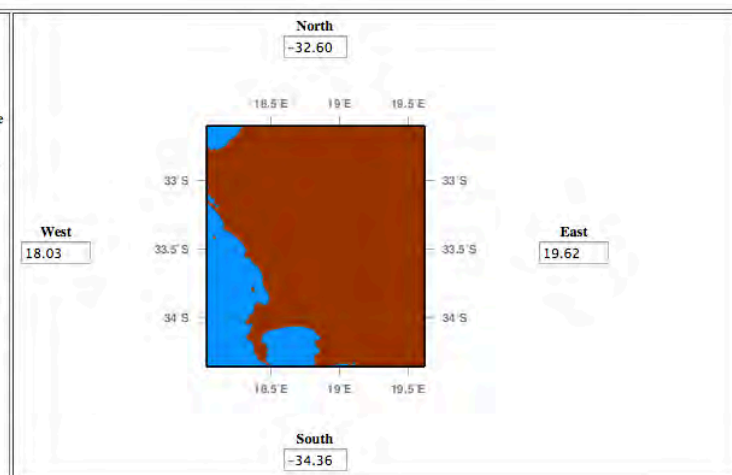
Do Do not extract my order for me.

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 72 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.

Extracted L1 data are processible with [SeaDAS](#).



Pick which data products you want for your selected scenes.

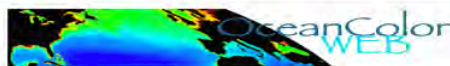
- Level 0 (MODIS only) Note that we currently do not extract level-0 data regardless of what you may have selected for other data in your order.
- Level 1 (VIIRS and MERIS data cannot be extracted at level-1)
- Level 2

You may elect to receive only a subset of the products that would normally be stored in the level-2 files you order by checking one or more of the groupings listed below. If you select none of the product groups below and simply check "Level 2" above, then you will receive all of the products stored in our standard level-2 files.

The 2009 reprocessing expanded and changed the [list of standard level-2 products](#) that we distribute. Again, if you check none of the subsets below and only check "Level 2" above, then you will receive all of the products in each ordered standard level-2 file – be it pre- or post-reprocessing.

- chlorophyll *a*
- Kd490 (K490)
- remote sensing reflectances (normalized, water-leaving radiances)
- aerosol products
- particulate inorganic carbon
- particulate organic carbon
- colored dissolved organic matter index
- fluorescence line height and instantaneous PAR (MODIS only)
- photosynthetically available radiation
- Level 2 SST (11 μ) (MODIS only)
- Level 2 SST (4 μ) (MODIS nighttime 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.



[Comment](#)

[Help](#)

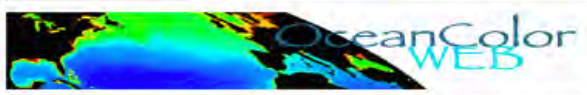
You are about to order the following 6 files from the Ocean Color Data Processing System.

Since you did not request extraction or parameter subsetting, when you click 'Submit order' you will receive a listing of file URLs which you may download immediately.

You may wish to save the next page as a text file and use it as input to a [web downloading program](#) (e.g. wget, cURL)

V2012353131130.L1A_NPP.tar	A2012353125000.L1A_LAC	V2012353113030.L1A_NPP.tar	H2012353094913.L1B_ISS	T2012353083000.L1A_LAC
V2012353131005.L1A_NPP.tar				

The total volume of the above files (*in the compressed form in which they are stored in our archive*) is **1,690,966,823** bytes.



[gene carl feldman](#) (gene.c.feldman@nasa.gov) (301) 286-9428

Benefit of co-location of satellite and in-situ data

oceancolor.gsfc.nasa.gov/cgi/browse.pl?per=MO&day=14883&sub=level3&prm=CHL&set=10&ndx=0&mon=14944&sen=am&rad=0&frc=0&dnm=D&is=yes

TC CHL SST WTA

SeaWiFS <input type="checkbox"/> GAC <input type="checkbox"/> MLAC	MODIS <input checked="" type="checkbox"/> Aqua <input type="checkbox"/> Terra	MERIS <input type="checkbox"/> RR <input type="checkbox"/> FRS	Select <input checked="" type="checkbox"/> Day <input type="checkbox"/> Night
<input type="checkbox"/> VIIRS (NPP)	<input type="checkbox"/> OCTS (ADEOS)	<input type="checkbox"/> HICO (ISS)	<input type="checkbox"/> CZCS (Nimbus-7)

Radius (km) about map click or about typed-in location:

<input checked="" type="radio"/>	72
<input type="radio"/>	400
<input type="radio"/>	800
<input type="radio"/>	1200
<input type="radio"/>	1500

Select swaths containing (at least):

<input checked="" type="radio"/>	any part
<input type="radio"/>	25 %
<input type="radio"/>	50 %
<input type="radio"/>	75 %
<input type="radio"/>	all

Select only scenes having in situ matchups.

October 2010
Chlorophyll

Select one or more regions:

- AdriaticSea
- AegeanSea
- Antarctica
- ArabianSea
- AralSea
- Arctic
- Australia
- AustraliaCoast
- Azores
- Bahamas
- BalticSea

or specify boundary coordinates or a single location:

N:
 W: :E
 S:

Find swaths

Display results 10 at a time. [Reconfigure page](#)

2002	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2003	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2004	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2005	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2006	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2008	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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2011	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2012	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

September 2010							October 2010							November 2010									
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S			
			1	2	3	4					1	2					1	2	3	4	5	6	
			XXX	XXX	XXX	XXX					XXX	XXX					XXX	XXX	XXX	XXX	XXX	XXX	
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13			
XXX	AAA	AAA	AAA	AAA	AAA	AAA	XXX	XXX	XXX	XXX	XXX	AAA	AAA	XXX	XXX	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20			
AAA	AAA	000	000	000	000	000	AAA	AAA	AAA	AAA	AAA	000	000	AAA	AAA	AAA	000	000	000	000			
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27			
000	000	000	***	***	***	***	000	000	000	000	000	000	000	000	000	000	000	***	***	***	***	***	
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30							
***	***	***	***	XXX			***	***	***	***	***	***	***	***	***	***							
							31																



gene carl feldman (gene.c.feldman@nasa.gov) (301) 286-9428

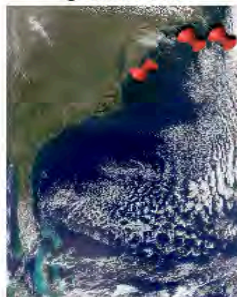
[A2010290181000.L0_LAC](#)
[A2010290181000.L1A_LAC](#)
[A2010290181000.L2_LAC_OC](#)
[A2010290181000.L2_LAC_SST](#)

292,588,758 bytes
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 51,455,252 bytes
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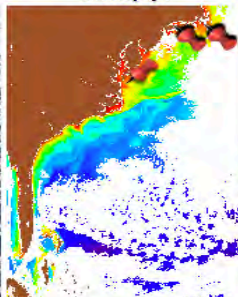
(The above hyperlinks point to [bzipped HDF files](#).
 Documentation on these products can be found [HERE](#).)

[Select this scene](#)

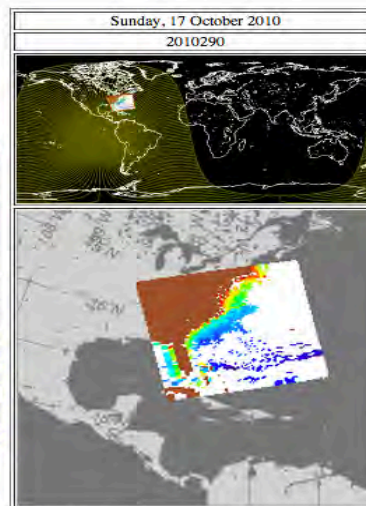
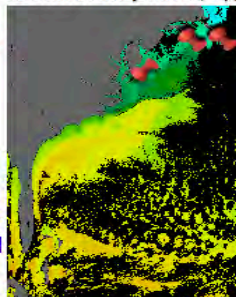
Quasi True Color



Chlorophyll



Sea Surface Temperature (11 μ)



Search Criteria

Time Period: October 2010 (daytime)

Sensors: Aqua

Scenes must have coincident in situ data.

Area of Interest: entire globe

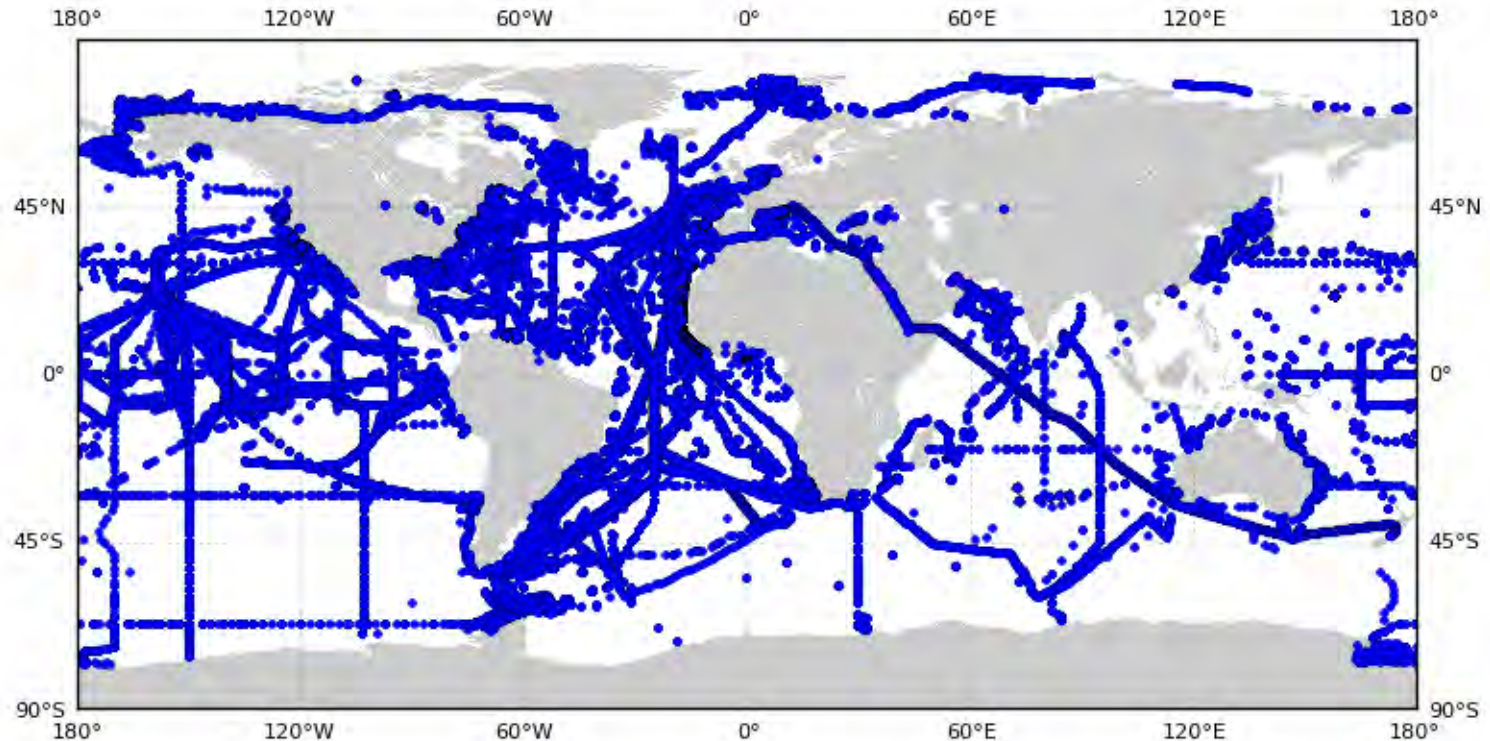
Percentage of AOI that swaths must include: Any part

Number of swaths: 25th of 61 swaths

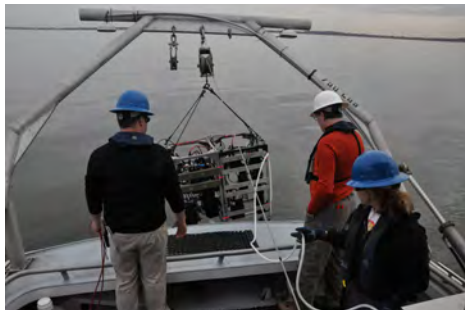
In Situ Data Records														
Date	Time	Latitude	Longitude	Cruise	Wavelength	Name	Value							
17 Oct 2010	12:50:04 UT	36.9	-75.71	aoc_cove_init	412	Rrs	0.00224979							
					443	Rrs	0.00293653							
					488	Rrs	0.00432562							
					490	Rrs	0.00432562							
					531	Rrs	0.00464764							
					547	Rrs	0.00355303							
					551	Rrs	0.00355303							
17 Oct 2010	14:37:53 UT	41.3	-70.55	aoc_mvco_init	412	Rrs	0.00108571							
					488	Rrs	0.00337183							
					490	Rrs	0.00337183							
					531	Rrs	0.00398295							
					555	Rrs	0.0036882							
					17 Oct 2010	15:50:06 UT	40.9545	-73.3418	aoc_lisco_init	412	Rrs	0.00085304		
										443	Rrs	0.00162363		
488	Rrs	0.0035075												
490	Rrs	0.0035075												
547	Rrs	0.00479535												
551	Rrs	0.00479535												
670	Rrs	0.00140064												
17 Oct 2010	16:11:00 UT	40.9545	-73.3418	aoc_lisco_init	412	Rrs	0.00063196							
					443	Rrs	0.00142471							
					488	Rrs	0.00335682							
					490	Rrs	0.00335682							
					547	Rrs	0.00426645							
					551	Rrs	0.00426645							
					670	Rrs	0.00139207							
17 Oct 2010	16:37:55 UT	41.3	-70.55	aoc_mvco_init	412	Rrs	0.00102865							
					488	Rrs	0.00347368							
					490	Rrs	0.00347368							
					531	Rrs	0.00446135							
					555	Rrs	0.00409782							
17 Oct 2010	16:49:51 UT	40.9545	-73.3418	aoc_lisco_init	412	Rrs	0.00088194							
					443	Rrs	0.00132264							
					488	Rrs	0.00335074							
					490	Rrs	0.00335074							
					547	Rrs	0.00458176							
551	Rrs	0.00458176												

SeaBASS: SeaWiFS Bio-optical Archive and Storage System

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




> 75,000 cruises,
stations, from
NASA funded PIs
and volunteers

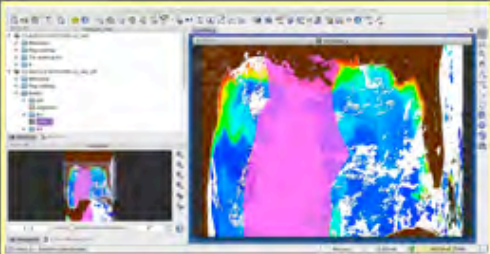


- Customizable search options: date, location, investigator, affiliation, experiment/cruise, data products
- Preview, plot and map results
- Download all or just selected results

SeaDAS: free open-source multi-sensor processing, image display and analysis tool



General Description



The SeaWiFS Data Analysis System (SeaDAS) is a comprehensive image analysis package for the processing, display, analysis, and quality control of ocean color data. The latest version (SeaDAS 7) is the result of a collaboration with the developers of ESA's **BEAM** software package. The core visualization package for SeaDAS 7 is based on the BEAM framework, with extensions that provide the functionality provided by previous versions of SeaDAS..

Features
Requirements
Download

Supported Missions


- o MODIS
- o SeaWiFS
- o CZCS
- o VIIRS
- o HICO
- o Aquarius
- o MERIS
- o OCTS
- o OCM
- o OCM-2
- o OSMI
- o MOS

User Support

- o SeaDAS FAQ
- o Online Help
- o Ocean Color Web
- o Ocean Color Forum
- o Ocean Mailing Lists

Other

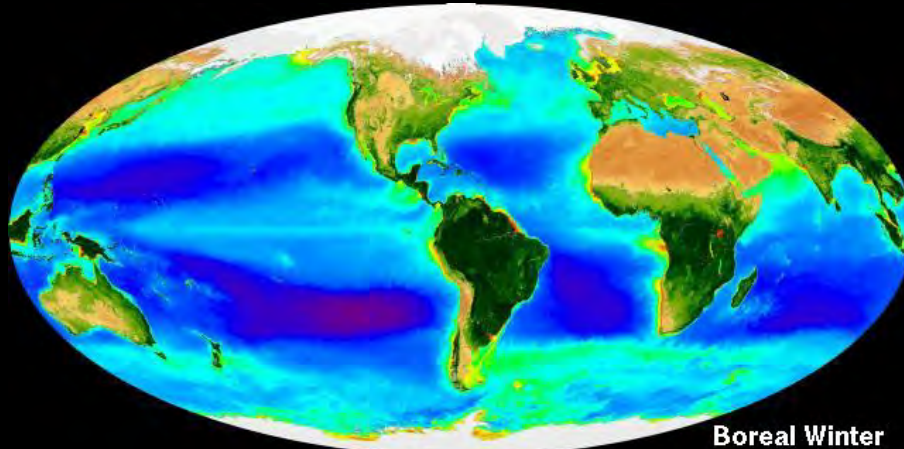
- o SeaDAS Visualization Source Code
- o Processing Binaries and Source Code
- o SeaDAS version 6.4
- o MODISL1DB 1.8



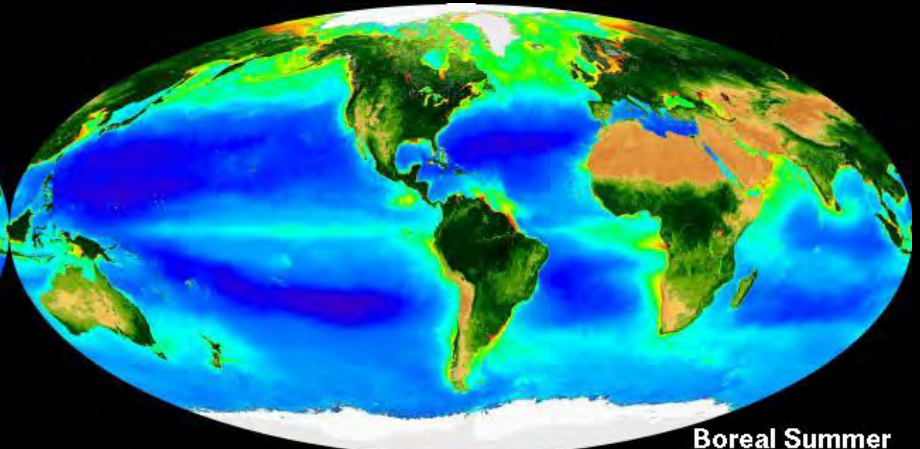
<http://seadas.gsfc.nasa.gov/>

The Science Drives The System

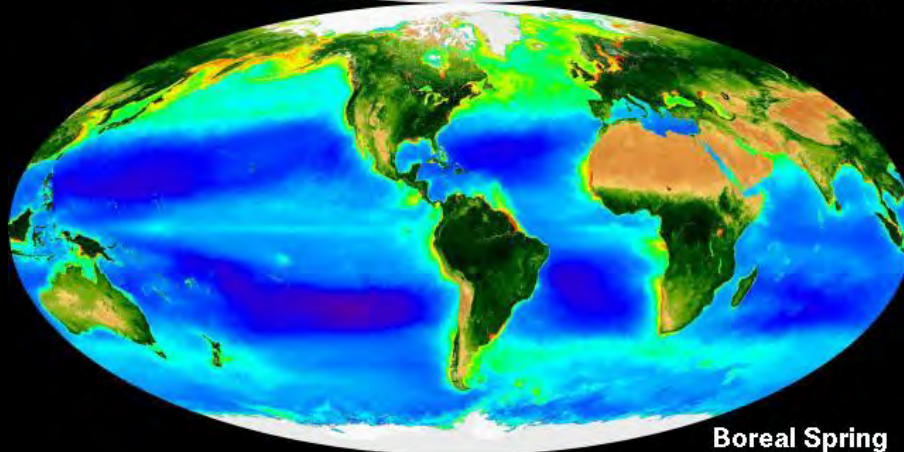
rather than the system driving the science



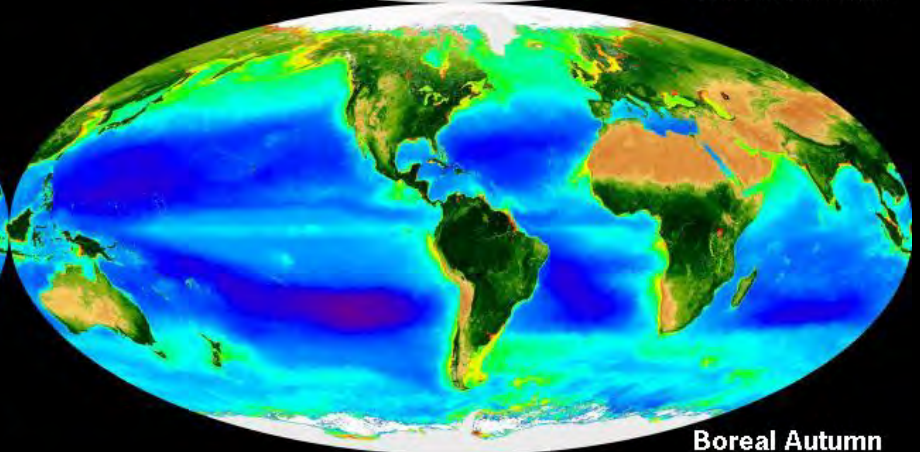
Boreal Winter



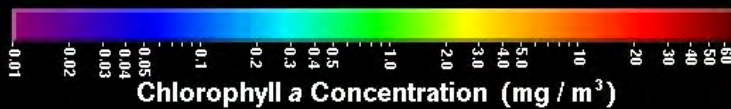
Boreal Summer



Boreal Spring



Boreal Autumn



BACKUP SLIDES

OBPG Server Configuration

- Processing server

- Optimized for concurrent instances of the scientific algorithms
- Currently 90 servers used for processing
- Each server can process up to 15 concurrent processing streams
- Single hex-core CPU with hyper threading
- 24 GB of RAM
- 5 SATA drives provide processing workspace (3 processes per drive) and temporary product and log-file storage
- Ubuntu Linux (12.04.3 LTS), 64 bit

OBPG Server Configuration

- Storage server

- Optimized for storage
- Each server provides single 72-TB RAID-6 partition (XFS)
- Currently 45 storage servers, ~3.14 PB, ~1.49 used
- Single hex-core CPU, 16 GB RAM
- 24 SATA-3 (6 GB/s) drives with LSI MR-9271-8i RAID card
2 parity, 2 hot spares
- Ubuntu Linux (12.04.3 LTS), 64 bit
- OBPG-developed software provides these functions:
 - Device manager balances load
 - Token daemon limits concurrent access
 - Migrate daemon manages files

OBPG Server Configuration

- Distribution server
 - Optimized for storage and processing
 - AMD Opteron 16-core CPUs
 - 32 GB of RAM
 - 16 SATA drives with Areca 1680 RAID card provides 2 11-TB formatted RAID-6 partitions
 - Ubuntu Linux, 64 bit
 - 5 distribution servers running multiple instances of the ODPS Order Manager support OBPG data orders for extracted data

Ground Processing Operations

- System automated for 24/7/365 operations
- Two 8x5 standard shifts provide monitoring and operating functions on site
- System is periodically monitored remotely during off hours
- New data on remote-source sites are automatically detected, ingested, archived, processed, and made available for distribution
- Staff handle anomalies, schedule reprocessing, configure and run processing tests, develop new processing capabilities and system functions

Maintenance of Data Archive

- Non-reproducible data mirrored on storage servers, i.e. written to multiple storage servers
- Data-integrity checks identify missing or corrupt files
- OBPG staff restores, reacquires, or regenerates missing or corrupt files
- Periodic upgrades to storage servers increase capacity; data migrated by system engineers, recent upgrade migrated data from 126 22-TB servers to the 45 72-TB current servers

Cumulative Downloads of Sea Surface Temperature Data

