



MERIS data access over diagnostic sites for calibration and validation purposes

**Philippe Goryl
ESA / ESRIN
Philippe.Goryl@esa.int**

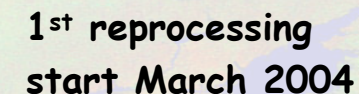
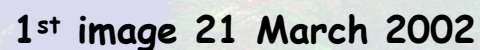
**Carsten Brockman
Brockman Consult**

**Workshop on Inter-Comparison of Large Scale Optical and Infrared Sensors
ESTEC, 12-14 October 2004**

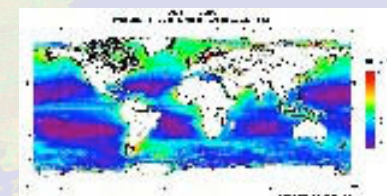


Outline

- Introduction
- Diagnostic Site: MERIS data access
- Example of site used for calibration and validation
BOUSSOLE
- Example of multi sensor calibration and validation
BIOSOPE
- Conclusion



**Gradual opening
of services and
products to users**



Reprocessed data for 2003 Level 3 products

*Next → Update of processor and
reprocessing of 2002, 2003, 2004 planned for spring 2005*

Envisat web site (<http://envisat.esa.int>)

recent mission
News

direct access to Tools
(Enview, Toolboxes)

Data
Catalogues

access to PI results

Image Gallery

Level 3

Product
Handbooks

Envisat - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media History Mail Print Edit

Address <http://envisat.esa.int/> Go Links >>

esa

ENVISAT CARING FOR THE EARTH

Earthnet Home 07 Oct 2004

Multimedia Links

- 3D Model
- Envisat Tour
- Where is Envisat?

Envisat Quick Links

- News
- Image Showcase
- Documentation
- Tools
- Sample Products
- Catalogues
- Applications
- Workshops
- EO Portal

Advanced Search
Glossary
Sitemap
FAQ
Contact us

Help on...

The 2004 ENVISAT & ERS Symposium was held in Salzburg - Austria from 6 to 10 September 2004. The 2004 Symposium provided a forum for investigators to present results of on-going research project activities of applications and services. ESA would like to thank the many scientists and users presenting at the conference. They remind them that the final date for submission of the full paper is 30th of September. For daily reports from the symposium, click [here](#).

Envisat witnesses return of the South Pole ozone hole

Envisat data show 2004's ozone hole is appearing about two weeks later than last year's. Click [here](#) to read more.

Level 3 Demonstration Products: Crucial data for global climate study are offered by Envisat's level 3 products. Envisat's Advanced Along-Track Scanning Radiometer (AATSR) and its predecessors ATSR-1 and ATSR-2 flown on the ERS satellites are about to complete 15 years of Sea Surface Temperature measurements with the accuracy required for climate research. In anticipation and as a demonstration, global SST Level 3 products from AATSR from September 2002 to April 2004 have been generated at two spatial resolutions, 10 arcminutes and 30 arcminutes. Likewise, a number of MERIS Level 3 demonstration products have been generated. The first sets available are Global Ocean Chlorophyll Concentration, and Water Vapour for the year 2003. Optical thickness and angstrom coefficient are also now available.

Envisat Imagery: The Envisat Image Showcase provides access to a large set of images of interesting areas and features as seen by Envisat from space. Data from the MERIS and ASAR instruments are routinely processed to highlight interesting features and are provided with brief descriptions of how the image was created. Click [here](#) to see the latest imagery or search the database of images.

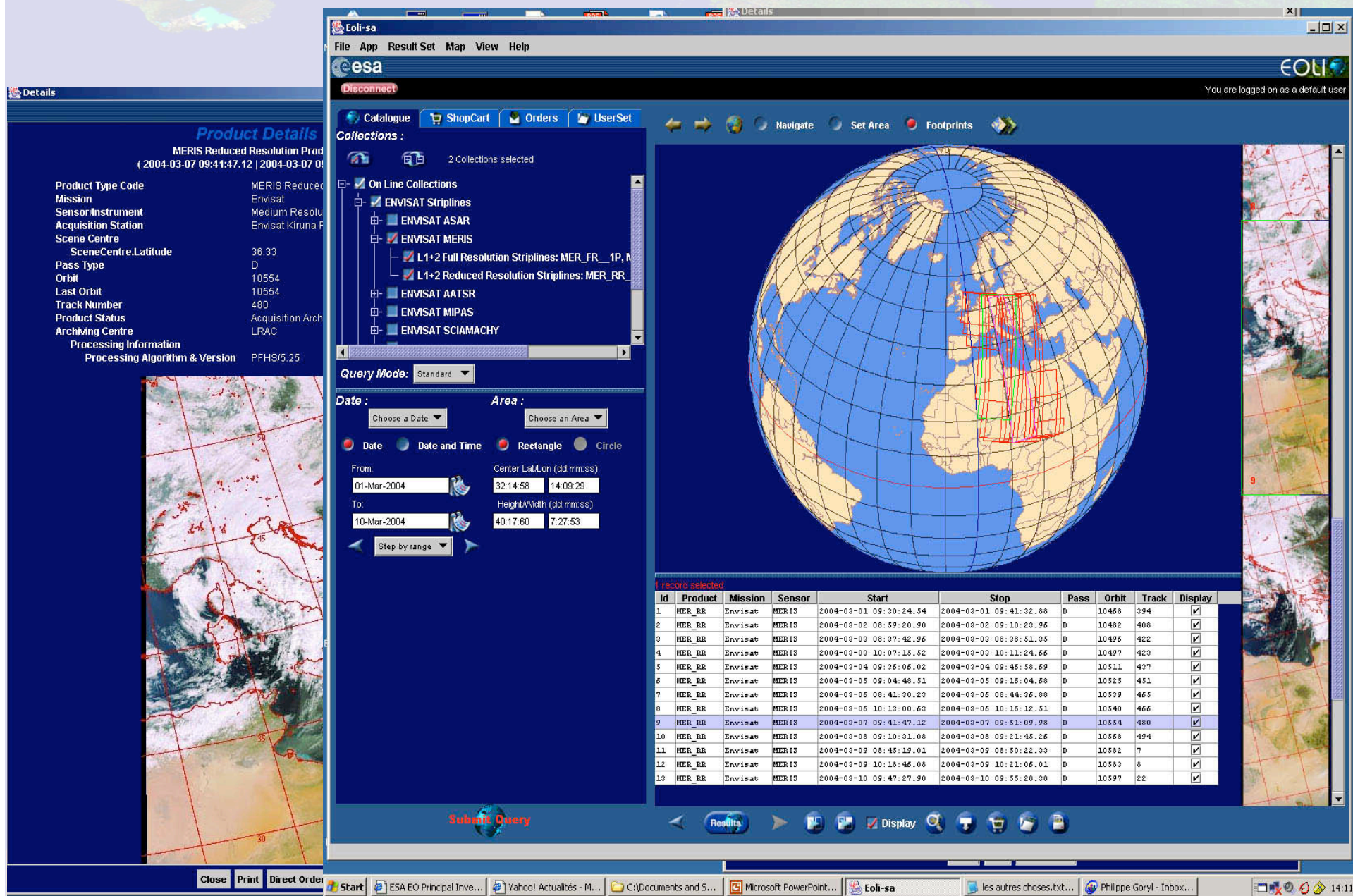
Product Handbook

Instrument availability are now available on this site, including information on [data](#) is available [here](#).

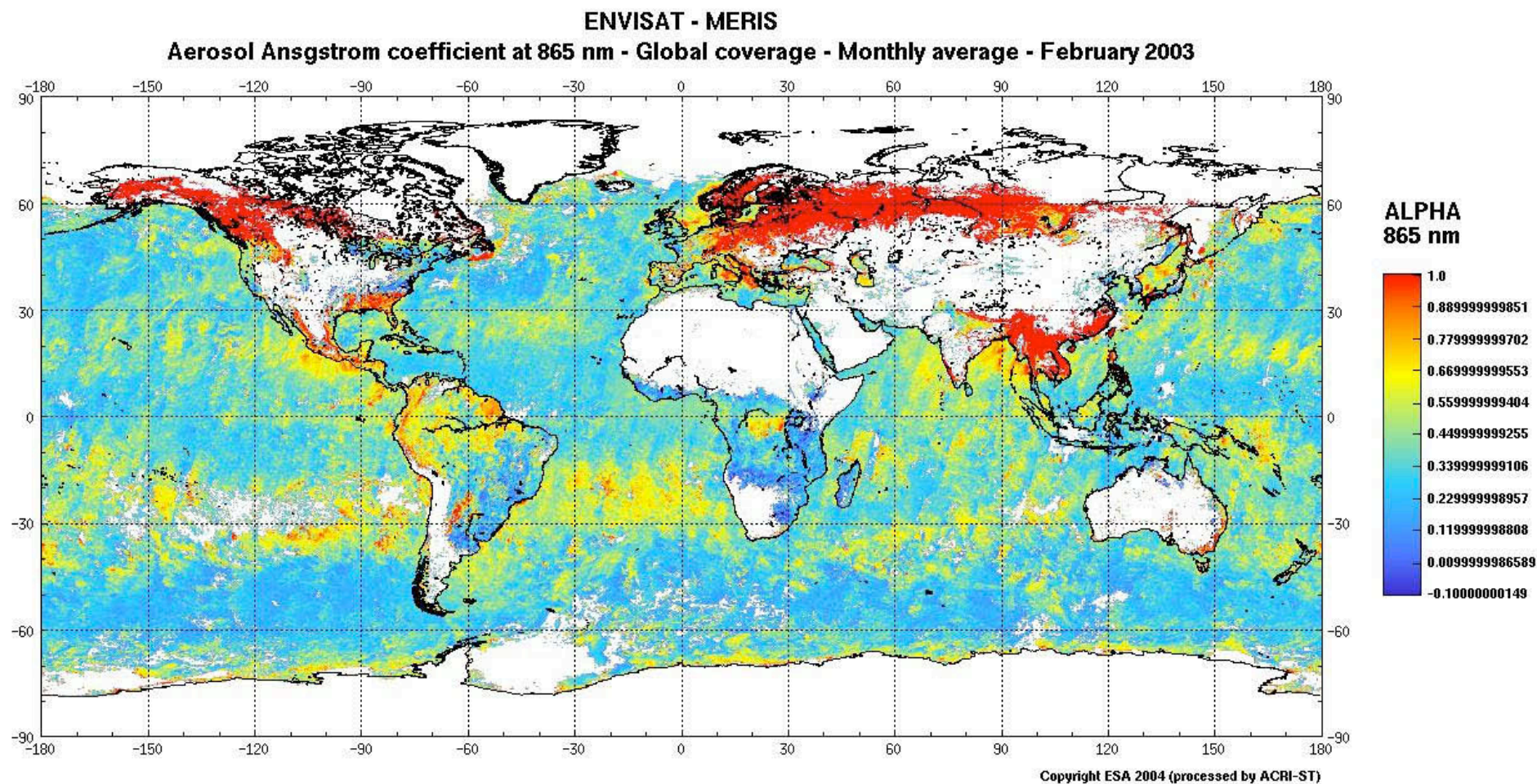
More on Envisat from the ESA Web Portal:

- » 31 Aug 2004 Wide-viewing Envisat tracks 'son of B-15' iceberg's odyssey around Antarctica
- » 9 Aug 2004 Widening Envisat's InSAR view
- » 6 Aug 2004 Envisat's rainbow vision detects ground moving at pace fingernails grow
- » 21 May 2004 Envisat catches the eye of Typhoon Nida
- » 14 May 2004 Erupting volcano casts shadow on Russian peninsula

Catalogue : EOLI Stand Alone



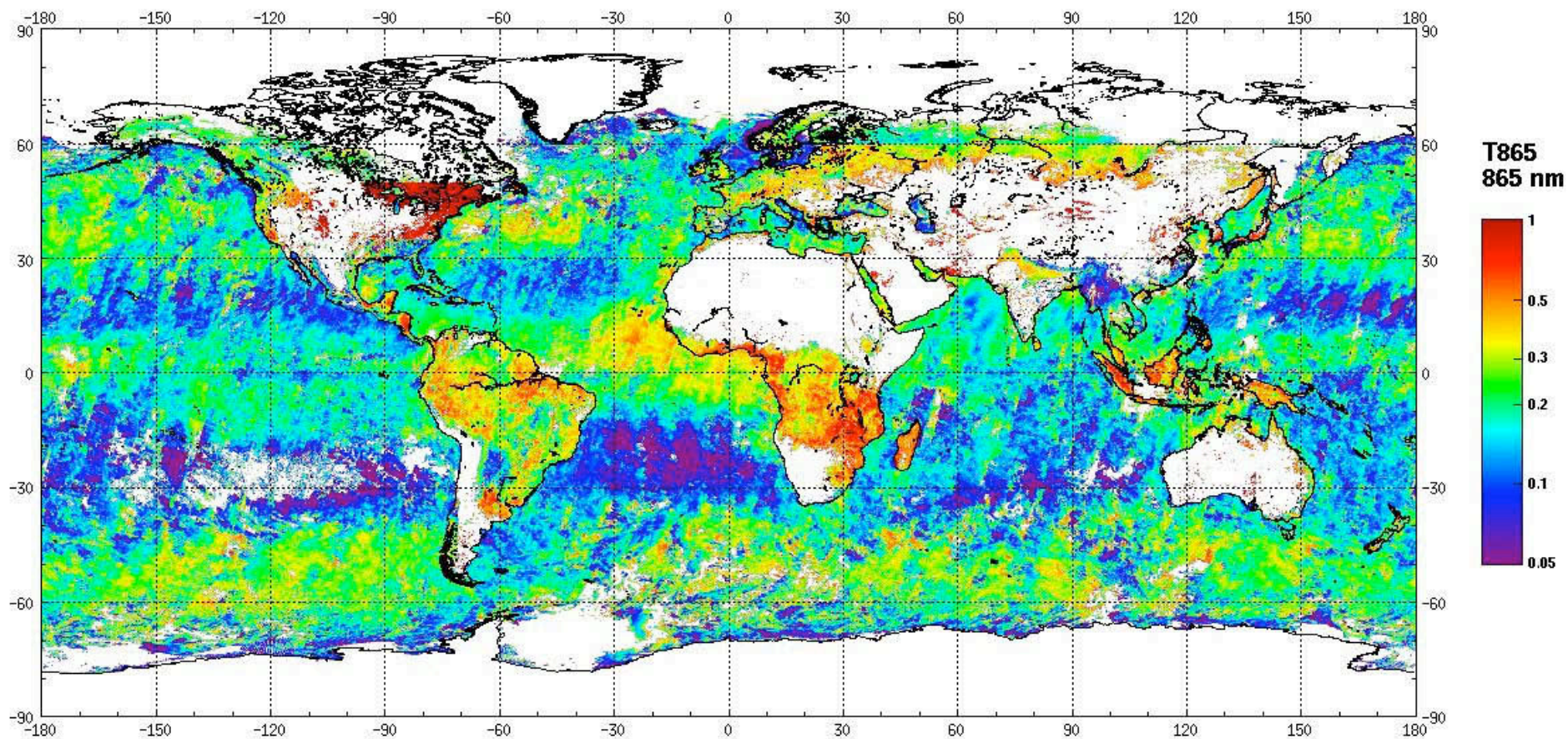
MERIS Level 3 Products



MERIS Level 3 Products

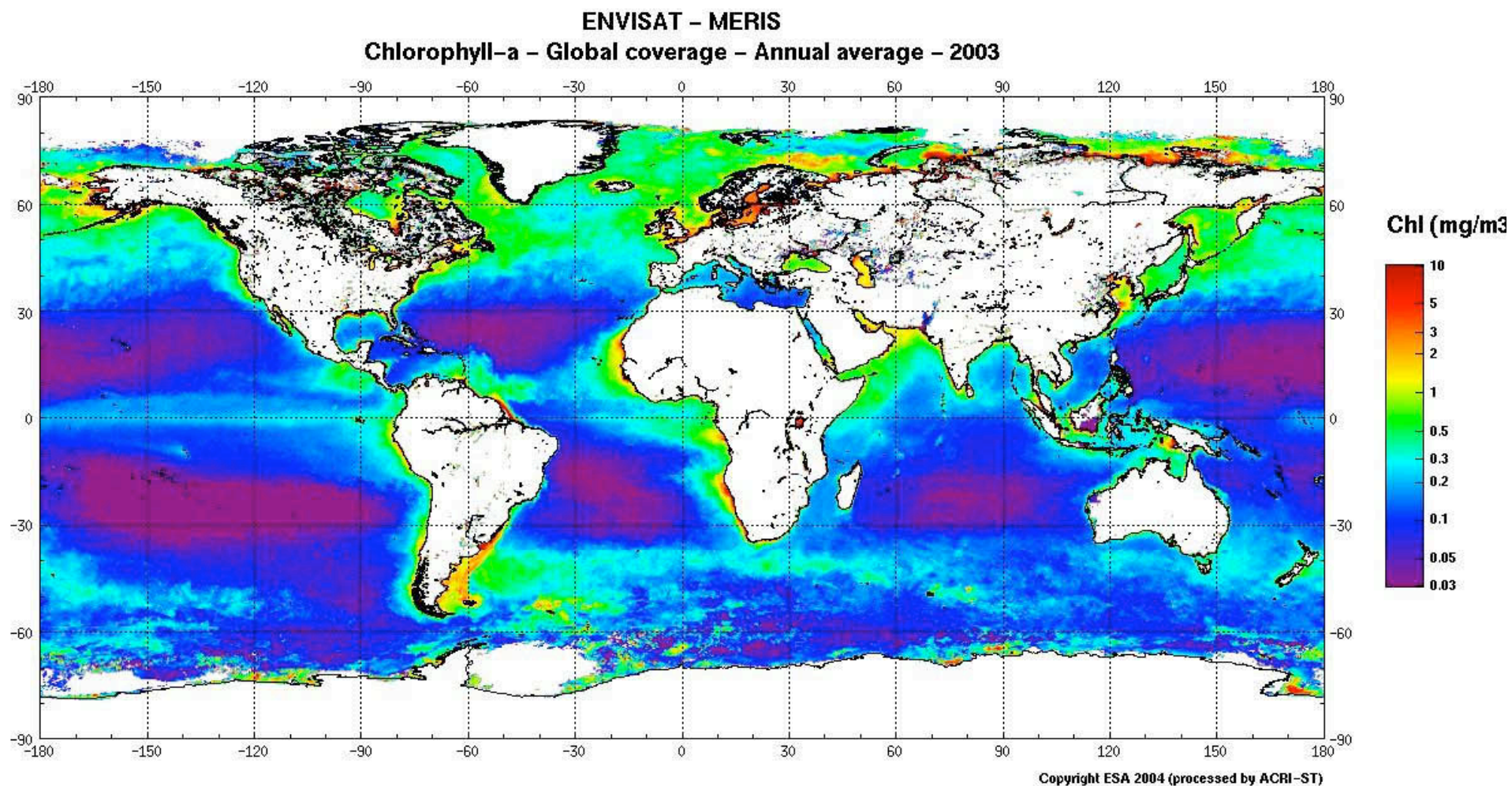
ENVISAT - MERIS

Aerosol optical thickness at 865 nm - Global coverage - Monthly average - February 2003

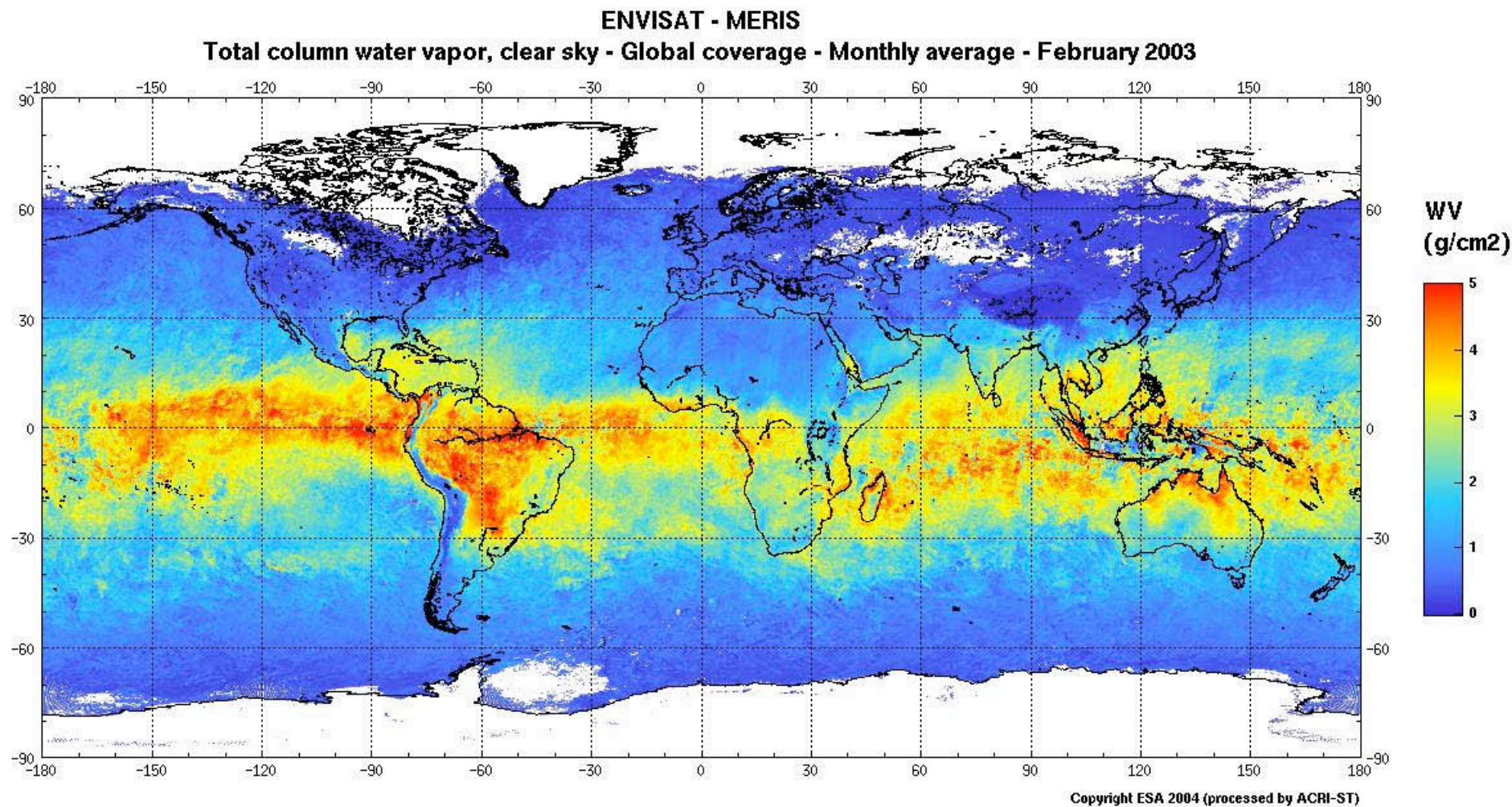


Copyright ESA 2004 (processed by ACRI-ST)

MERIS Level 3 Products



MERIS Level 3 Products



1st reprocessing – Data access

- 1st MERIS reprocessing : Year 2003
- (2nd reprocessing will provide 2002, 2003, 2004 and beginning 2005
Planned for spring 2005.)
- All the data can be accessed on line through the service **MERCI**.
- Service password protected → ask ESA EOHELP eohelp@esa.int
- MERCI provides:
 - Standard products – scene or orbit
 - Calibration scene – METRIC (desert, glitter, rayleigh)
 - Calibration and validation data set – DIAGNOSTIC
 - Land
 - Sea

Diagnostic Sites Objectives

The Diagnostic Sites provide MERIS Data from:

- Defined ocean and land areas:
 - Compatible with those for **MODIS and SeaWiFS**
 - Extended to include important EOS Land Core sites

Goals:

- Long term sensor performance assessment
- Optical instruments intercomparison

Characteristics

- Available on-line: www.brockmann-consult.com
- Access for everybody
 - Registration required
- All data acquired over defined sites
 - Today: all data of 2003
 - After IPF upgrade daily near-real time update
- Data format
 - Large area
 - ENVISAT N1
 - Small area (coming soon)
 - HDF
 - ASCAT



Entry page (password protected)


Brockmann Consult GmbH

http://www.brockmann-consult.com/

Brockmann Consult GmbH

MERIS

Diagnostic Sites



This WebSite provides MERIS Data from defined ocean and land areas for long term sensor performance accessment and optical instruments intercomparison. These diagnositic sites are compatible with those for **SeaWiFS** and **MODIS**, extended to include important EOS Land Core sites.

This WebSite includes MERIS Level 1b and Level 2 data in ENVISAT and HDF formats (HDF not available at present). We recommend to use the **BEAM toolbox** for MERIS data visualisation and analysis as well format conversion.

At present, this WebSite includes all MERIS data from 2003. The data from 2002 and 2004 will be put online in 2005, and starting in the first quarter of 2005 actual data of the MERIS instrument from every overpass over every diagnostic site will be put online in near real time.

Select Ocean or Land page

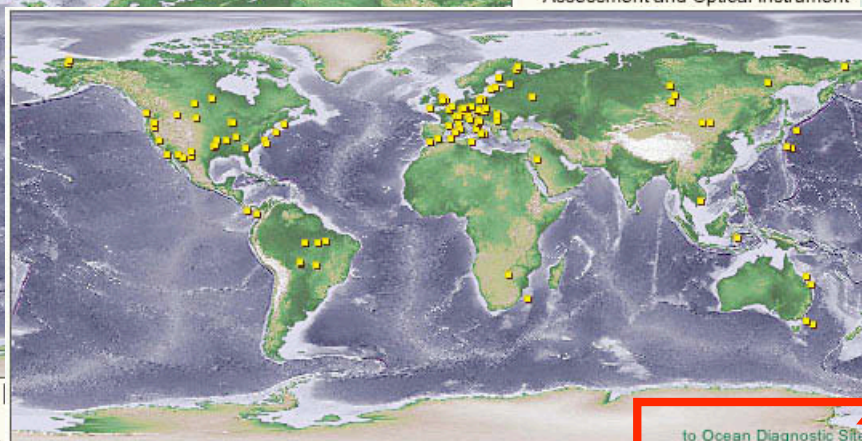
Ocean Diagnostic Sites

Land Diagnostic Sites

Ocean and Land Diagnostic Sites



Ocean



Land Diagnostic Sites

MERIS Diagnostics Sites for Long Term Sensor Performance Assessment and Optical Instrument

MERIS Diagnostics Sites for Long Term Sensor Performance Assessment and Optical Instrument Intercomparison

Switch between Ocean or Land page

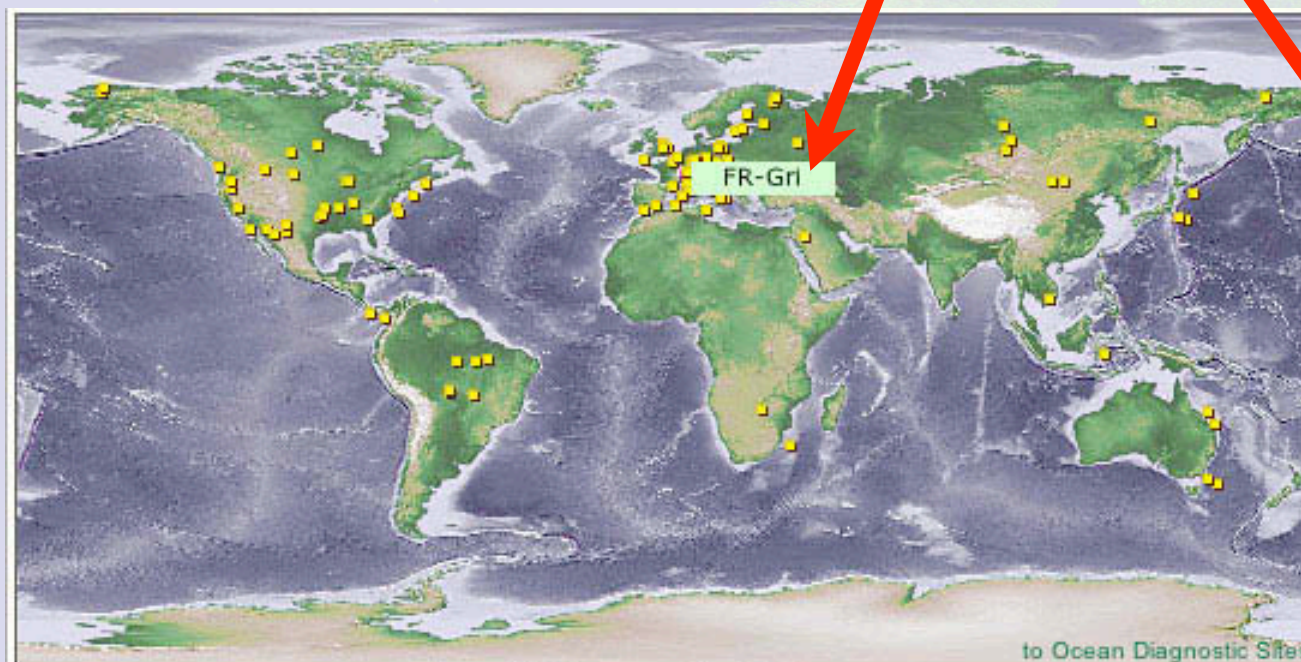
OCAIbron	Alberon Gyre, Eastern M
OCA_Line	Japan East Coast
OCAfrica	Mauritanian Upwelling
OCBahrn	Bahrain, Persian Gulf
OCBATS	BATS, Bermuda
OCCALCOF	CALCOFI, Californian Cc
OCCpVerd	Cape Verde, NW-African
OCCariac	Cariaco Basin, Venezuel
OCChsBay	Chesapeake Bay
OCCook	Cook Islands, Western S
OCDryTrt	Dry Tortugas, Floriday Ke
OCEaster	Easter Island, South Paci
OCEqPAC	Eastern Equatorial Pacifi
OCFRONT	Long Island, NY
OCGlappo	Galapagos Islands
OCHattr	Cape Hatteras
OCHlgInd	Helgoland, North Sea
OCHOT	HOT Station, Hawaii

AU-Bur	BurdekinDelta; Australia	19.6 S	147.4 E
AU-Dai	Daintree; Australia	16.1 S	145.4 E
AU-Tum	Tumbarumba; Australia	35.7 S	148.2 E
AU-Uar	Uardry; Australia	34.4 S	145.3 E
BE-Bra	Braschaat; Belgium	51.3 N	4.5 E
BE-Vie	Vielsalm; Belgium	50.3 N	6.0 E
BE-Lon	Lonzee; Belgium	50.5 N	4.7 E
Bz-Man	Manaus; Brazil	2.6 S	60.1 W
BZ-Cax	Caxiuanã; Brazil	1.8 S	51.5 W
BZ-Jar	JiParana; Brazil	10.8 S	62.4 W
BZ-Sin	Sinop; Brazil	11.4 S	55.3 W
BRA-JiP	Jaru(Ji-Parana); Brazil	10.1 S	61.9 W
BRA-Tap	Tapajos; Brazil	2.9 S	55.0 W
CA-Bri	BritishColumbia; Canada	49.9 N	125.3 W
CA-Let	Lethbridge; Canada	49.7 N	112.9 W
CA-Bon	BOREASNSA; Canada	55.9 N	98.5 W
CA-Bos	BOREASSSA; Canada	53.7 N	105.3 W
CR-LaS	LaSelva; CostaRica	10.4 N	84.0 W

[to Ocean Diagnostic Sites](#)

Map search

On mouseover, sites are labelled and displayed



MERIS Diagnostics Sites for Long
Term Sensor Performance
Assessment and Optical Instrument
Intercomparison



Land Diagnostic Sites

FR-Gri	Grignon; France	48.8 N	2.0 E
FR-Fu	Fontainebleau; France	48.5 N	2.8 E

On mouse click on the map, site is selected in the list

Mouse click on hyperlink brings up download page

Product search and download

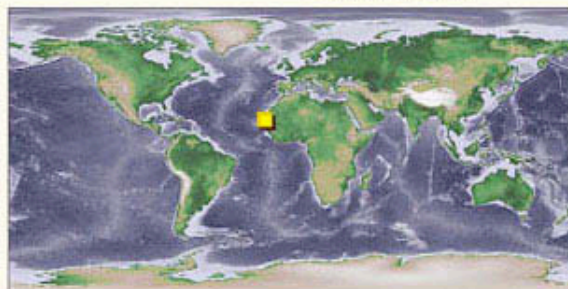
Select whole month's data



Data availability 2003

January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

OCAfrica
Mauritanian Upwelling;
21.5 N; 17.0 W



Input the date [YYYY/MM/DD] or use calendar:

from:

2003/03/08



to:

2003/03/20



find

found: 6

clear

Download single product here

Or define time range here

Click

Date: 2003/03/08 Orbit: 05330	Level 1b 		Date: 2003/03/10 Orbit: 05359	Level 1b 		Date: 2003/03/11 Orbit: 05373	Level 1b 	
	Level 2 			Level 2 			Level 2 	
Date: 2003/03/13 Orbit: 05402	Level 1b 		Date: 2003/03/14 Orbit: 05416	Level 1b 		Date: 2003/03/20 Orbit: 05502	Level 1b 	
	Level 2 			Level 2 			Level 2 	

download all selected products

Or select multiple products

to download all with a single click



EOS Land Validation



General Description

Use the map below to go to detailed information and data access for a particular site.

The EOS Land Validation Core Sites are intended as a focus for land product validation over a range of biome types. The site list represents a consensus amongst the instrument teams and validation investigators, developed through a number of meetings and discussions. Most of the sites build on an existing program of long-term measurements and have an infrastructure to support *in situ* measurements. Each site has a point of contact responsible for overall validation coordination at the sites.

Although these sites are not intended to meet all EOS test sites needs, they will provide a focus for satellite, aircraft, and ground data collection of land product validation, and will provide sites for which scientists can readily access *in situ* and EOS instrument data. It is important to note that the EOS instrument vicarious calibration test sites needs will be coordinated by the EOS Calibration Working Group and are not included as part of the EOS Land Validation Core Sites.

The "EOS Land Validation Core Sites" concept grew out of a Science Working group for the AM Platform (SWAMP) Land Validation Coordination meeting in December 1997 ([Justice et al., 1998](#)).

A [Frequently Asked Questions](#) page from the MODIS Land Validation team provides additional information.

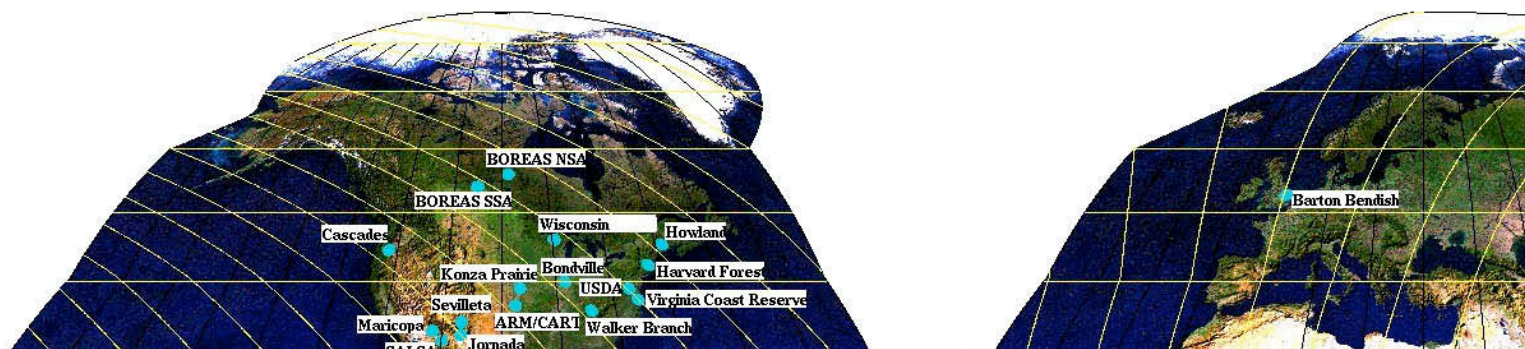
[\(return to MODIS Land Validation page\)](#)

Click on the site name to go to information and available data for that site.

The activities on the EOS Land Validation Core Sites are dynamic and, so, this working document is subject to periodic additions and changes.

Visualizations:

- USDA Beltsville Agricultural Research Center Core Site: [Zoom In](#) and [Zoom Out](#)
- Mongu, Zambia, Core Site: [Zoom In](#) and [Zoom Out](#)
- Skukuza, South Africa, Core Site: [Zoom In](#) and [Zoom Out](#)



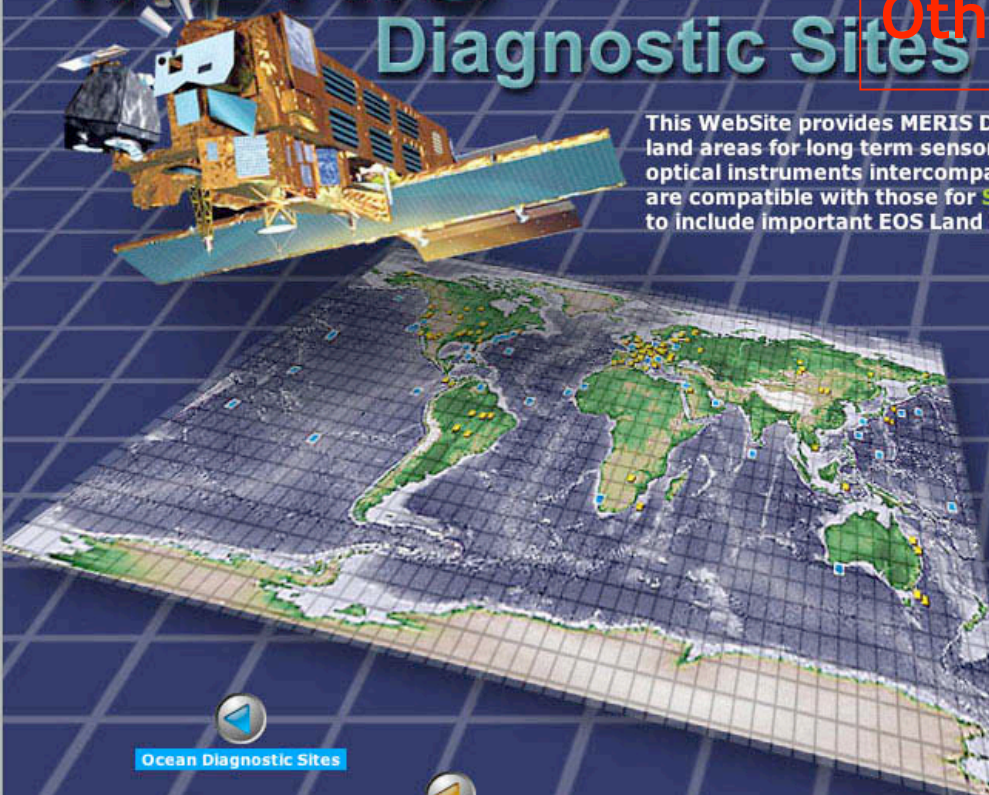
Brockmann Consult GmbH

http://www.brockmann-consult.com/

Brockmann Consult GmbH

MERIS

Diagnostic Sites



This WebSite provides MERIS Data from defined ocean and land areas for long term sensor performance assessment and optical instruments intercomparison. These diagnostic sites are compatible with those for **SeaWiFS** and **MODIS**, extended to include important EOS Land Core sites.

This WebSite includes MERIS Level 1b and Level 2 data in ENVIAT and HDF formats (HDF not available at present). We recommend to use the **BEAM toolbox** for MERIS data visualisation and analysis as well format conversion.

At present, this WebSite includes all MERIS data from 2003. The data from 2002 and 2004 will be put online in 2005, and starting in the first quarter of 2005 actual data of the MERIS instrument from every overpass over every diagnostic site will be put online in near real time.

[Ocean Diagnostic Sites](#)

[Land Diagnostic Sites](#)

Other sensors links

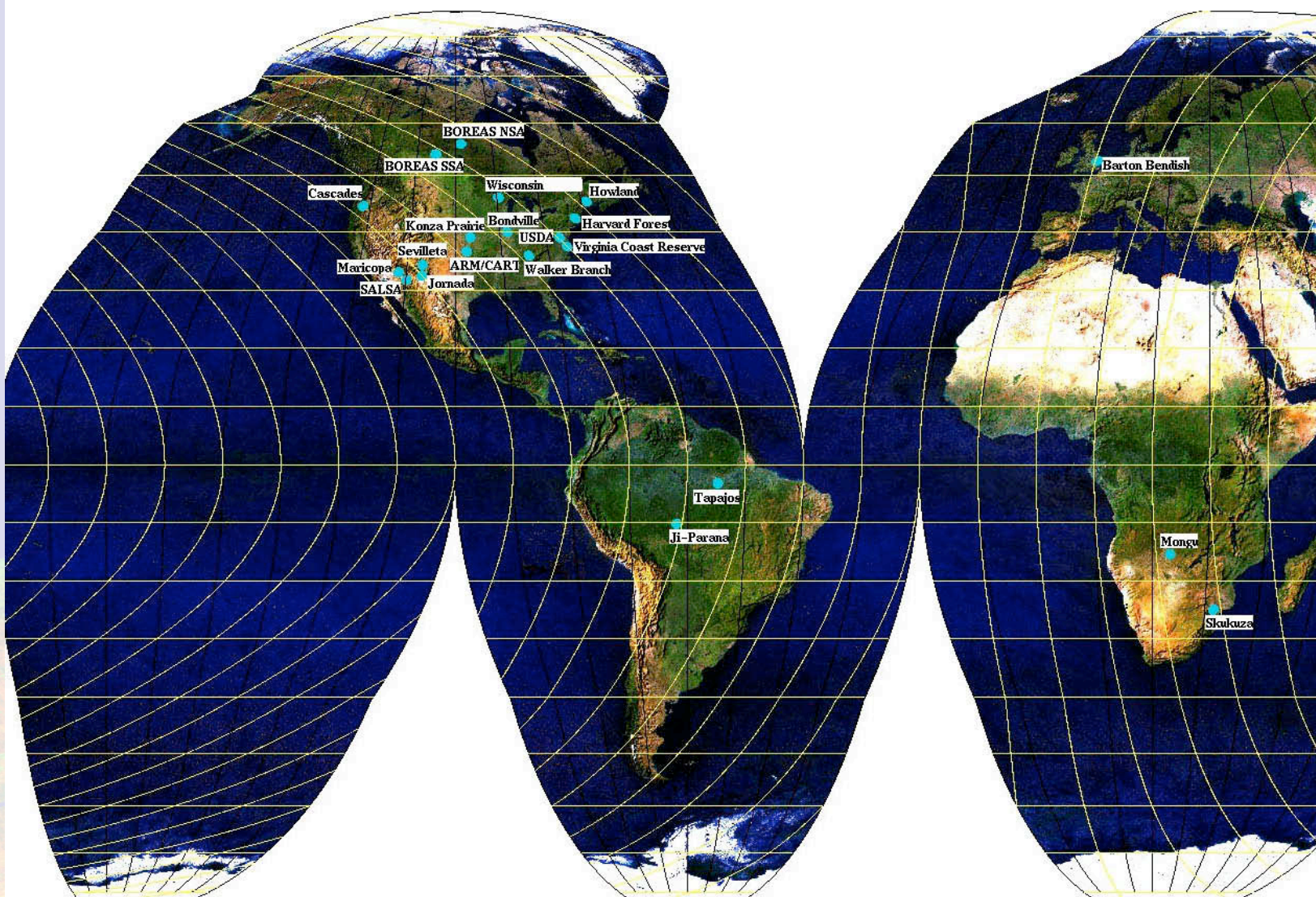




The activities on the EOS Land Validation Core Sites are dynamic and, so, this working document is subject to periodic additions and changes.

Visualizations:

- USDA Beltsville Agricultural Research Center Core Site: [Zoom In](#) and [Zoom Out](#).
- Mongu, Zambia, Core Site: [Zoom In](#) and [Zoom Out](#).
- Skukuza, South Africa, Core Site: [Zoom In](#) and [Zoom Out](#).



Sitellame	Country	PI	Contact	Latitude	Longitude	UTM Zone	Elevation	ETM+ Path/Row	MODIS Tile Vert/Hori	MODIS Line/Sample (within tile)	Networks	Tower
ARM/CART, Ponca City	OK, USA	Betty Walter-Shea	Betty Walter-Shea	36.77	-97.13	14 North	310	28/34.5	5/10	387.10/262.38	-	yes
ARM/CART, SGP	OK, USA	Meyer	Claella	36.64	-97.5	14 North	300m	28-27/34-35	5/10	402.70/210.56	AERONET , ARM, FLUXNET, GLCTS	yes
ARM/CART, Shidler	OK, USA	Betty Walter-Shea	Betty Walter-Shea	36.93	-96.86	14 North	350	27-28/34	5/10	367.90/307.70	-	no
BARC, USDA ARS	MD, USA	Liang	Liang	39.03	-76.85	18 North	50m	15/33	5/12 +	115.90/35.09	AERONET	yes
Barrow	Alaska, USA	Oechel/Cohen/Gower	Sheehan	71.280866	-156.612205	4 North	8	79/10	1/12	1045.80/1167.97	AERONET , ARM, BigFoot , FLUXNET	yes
Barton Bendish, East Anglia	UK	Barnsley	Hobson	52.617556	0.524444	31 North	25m	201/23.3	3/18 +	885.39/37.71	AERONET (future)	no
Bondville	IL, USA	Gower/Cohen	Meyers	40.0066	-88.291	16 North	225m	22/32	4/11 +	1198.71/283.34	AERONET , BigFoot	yes
Boreal Ecosystem Research and Monitoring Sites (BERMS) BOREAS SSA	Canada	Gower	Barr	53.656	-105.3231	13 North	475m	37/22.5	3/11	760.78/908.48	FLUXNET (amer.ca11sbor.05)	yes
BOREAS NSA	Canada	Gower/Cohen	Cihlar	55.8795	-98.4808	14 North	300m	33/21	3/12	493.96/569.87	AERONET , BigFoot , FLUXNET, (amer.ca03born.01)	yes
Cascades H.J. Andrews LTER	OR, USA	Cohen	Mairsperger	44.248851	-122.180355	10 North	1000m	45/29	4/9	689.64/296.74	AERONET , GLCTS, LTER	planned
Harvard Forest LTER	MA, USA	Gower/Cohen	Wofsy/Munger	42.5382	-72.1714	18 North	200m	13/30.5	4/12	894.92/817.64	AERONET , BigFoot , FLUXNET (amer.usmaharv.01), GLCTS, LTER	yes
Howland	ME, USA	Baldocchi	Lee	45.2	-68.733	19 North	100m	11/28.5	4/13	575.50/187.36	AERONET , FLUXNET (ar.usmehowl.01), GLCTS	yes
Ji-Parana (LBA: Jaru Tower)	Brazil	Huete	Griffith	-10.0832	-61.9309	20 South	200m	231/67	10/11 +	9.48/1082.04	AERONET , LBA	yes
Jornada LTER	NM, USA	Huete	Rango	32.6068	-106.86946	13 North	1300m	33/37.53	5/8 +	886.68/1196.18	AERONET , GLCTS, LTER	yes
Konza Prairie LTER	KS, USA	Gower/Cohen	Meyer	39.0823	-96.56025	14 North	350m	28/33	5/10	109.62/604.14	AERONET , BigFoot , FLUXNET (amer.uskskonz.01), GLCTS, LTER	yes
Krasnoyarsk	Russia	Deering/Murphy	Conley	57.27	91.6	46 North	350m	144/20	3/22 +	327.10/1142.06	AERONET	nearby
Lake Tahoe	NV, USA	Hook	Hook	39.171	-120.104	10 North	.	43/33	5/8	98.98/825.66		
Mandalgobi	Mongolia	Huete	Honda	45.99498709	106.3270259	48 North	1400m	131-132/28	4/25	480.10/463.63	AERONET (nearby)	yes
Maricopa Ag. Cnt.	AZ, USA	Huete	Huete	33.07	-111.97	12 North	400m	37/37	5/8	831.10/739.48	AERONET	no
Metolius/Cascades - Old Pine	OR, USA	Law	Law	44.49916617	-121.6223688	10 North	1000m	45/29	4/9	659.62/388.33	BigFoot , FLUXNET, GLCTS	yes
Metolius/Cascades - Young Pine	OR, USA	Law	Law	44.43718949	-121.566756	10 North	1000m	45/29	4/9	669.50/380.56	BigFoot , FLUXNET, GLCTS	yes
Monqu	Zambia	Justice/Privette	Privette/Morisette	-15.4379	23.2527	34 South	1000m	175/71	10/20	652.05/288.63	AERONET , GLCTS, SAFARI 2000	yes
SALSA San Pedro	AZ, USA/Mexico	Huete	Pinker	31.74	-109.85	12 North	1500m	35/38	5/8	990.70/788.70	AERONET (nearby)	yes
Sevilleta LTER	NM, USA	Gower/Cohen	Shore	34.3444	-106.6708	13 North	1500m	33/36.5	5/9	678.17/230.79	AERONET , BigFoot , LTER	yes
Skukuza, Kruger NP	RSA	Justice/Privette	Privette/Morisette	-25.0197	31.4969	36 South	200m	168/77.5	11/20	601.86/1024.44	AERONET , GLCTS, SAFARI 2000	yes
Tapajos (LBA: Santarem)	Brazil	Huete, Gower/Cohen	Griffith	-2.857	-54.959	21 South	50m	227/62	9/12	342.34/612.66	AERONET , BigFoot , LBA	yes



BOREAS NSA

Vital Statistics

Country: Canada	DAAC Code: boreasn
Investigators: Gower/Cohen	Site Contact: Cihlar
Physical Characteristics	
Center Lat./Lon: 55.8795 degrees, -98.4808 degrees	Elevation: 300m
UTM Zone: 14 North	Biome: Needleleaf Forest
Instrument Parameters	
Landsat TM Path/Row: 33/21	
MODIS Tile Vertical/Horizontal: 3/12	MODIS Line and Sample: 493.96/569.87
Validation Activities	
Active Networks: AERONET , BigFoot , FLUXNET, (amer.ca03born.01)	

Satellite Imagery

ASTER

available through EDC DAAC

[Description](#)

Early Landsat Imagery

available through EDC DAAC

[Description](#)

ETM+

available through EDC DAAC

[Description](#)

[reference map](#)

[ETM+ data on-line](#)

[ETM+ data through TRFIC](#)

GeoCover: EarthSat's Orthorectified Landsat 5 data

available through the Scientific Data Buy Program, Stennis Space Center

[Description](#)

[GeoCover data access](#)

GLCTS

available through EDC DAAC

[Description](#)

MISR

available through Langley DAAC

[Description](#)

MODIS subsets

available through EDC DAAC

[Description](#)

[Surf. Ref., 8-day, 250m \(MOD09Q1\)](#)
[Surf. Ref., 8-day, 500m \(MOD09A1\)](#)
[Gridded Snow Cover, daily \(MOD10A1\)](#)
[Gridded Snow Cover, 8-day \(MOD10A2\)](#)
[Land Surf.Temp., 8-day, 1km \(MOD11A2\)](#)
[Land Surf.Temp., daily, 1km \(MOD11A1\)](#)
[Land Cover Type 96-Day, 1km \(MOD12Q1\)](#)
[VI 16-day, 250m \(MOD13Q1\)](#)
[VI 16-day, 500m \(MOD13A1\)](#)
[VI 16-day, 1km \(MOD13A2\)](#)
[Thermal Anomalies, 8-day, 1km \(MOD14A2\)](#)

Access to other sensors
ASTER, ETM
MODIS, SeaWIFS
and Insitu data and
site characteristics



Example of Diagnostic site – Boussole PI David Antoine LOV

Funding Agencies / Supports



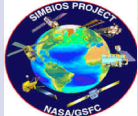
European Space Agency



Centre National d'Etudes Spatiales, France



National Aeronautics and Space Administration of the USA



The SIMBIOS project



Centre National de la Recherche Scientifique, France



Institut National des Sciences de l'Univers, France



Observatoire Océanologique de Villefranche sur mer, France

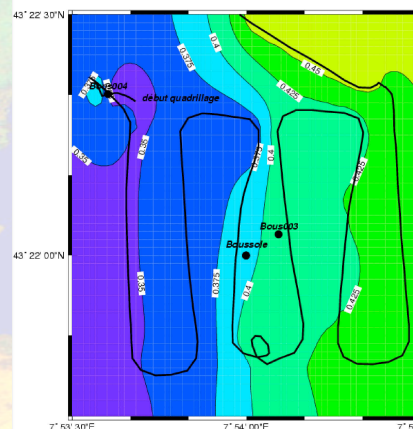
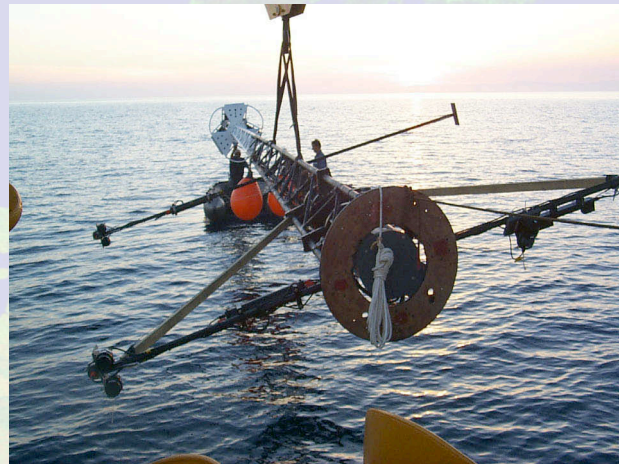


The “BOUSSOLE” project

(BOUée pour l’acquiSition de Séries Optiques à Long termE)

P.I. : David ANTOINE

Laboratoire d’Océanographie de Villefranche

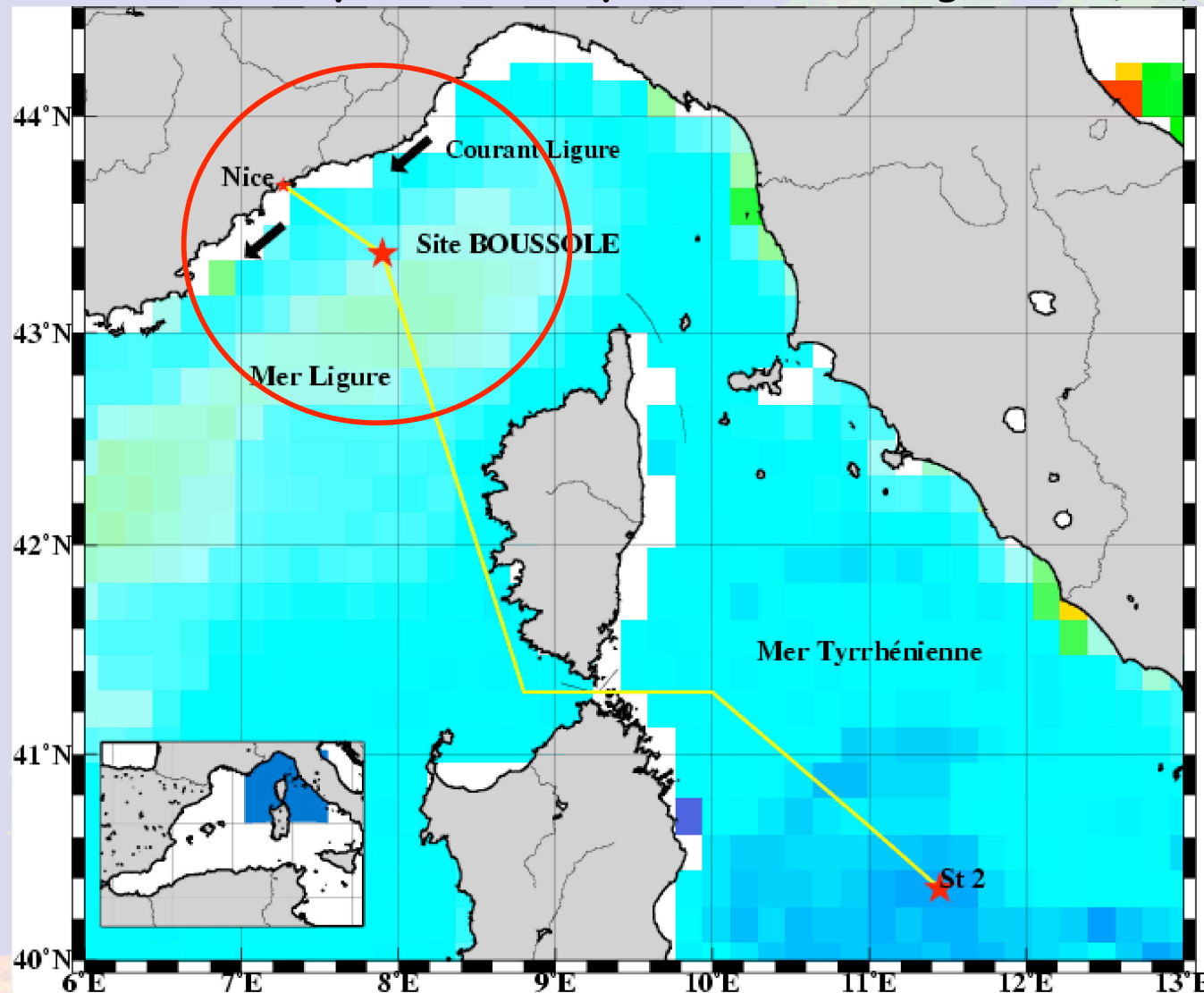


« short title » :
Building a time series of surface
ocean optical properties for
satellite ocean color cal/val and
(bio)optics research

The site where we collect data :

"BOUSSOLE" site & program

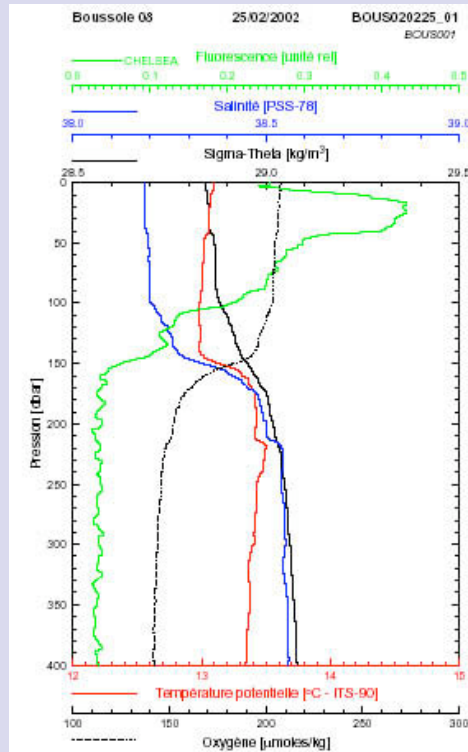
"Buoy for the acquisition of a long-term (bio)optical series"



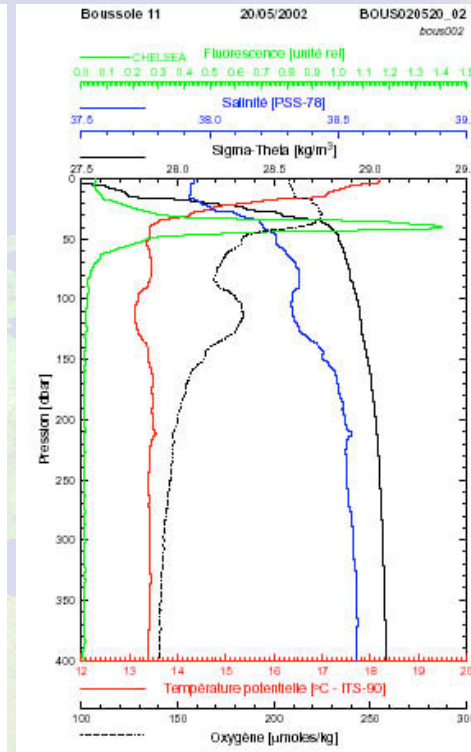
Monthly cruises
(started July
2001) + a new
type of optical
buoy
(since Sept. 2003)

Marine optics,
Bio-optics,
Ocean color
calibration /
validation
program (MERIS,
SeaWiFS,
POOLDER)

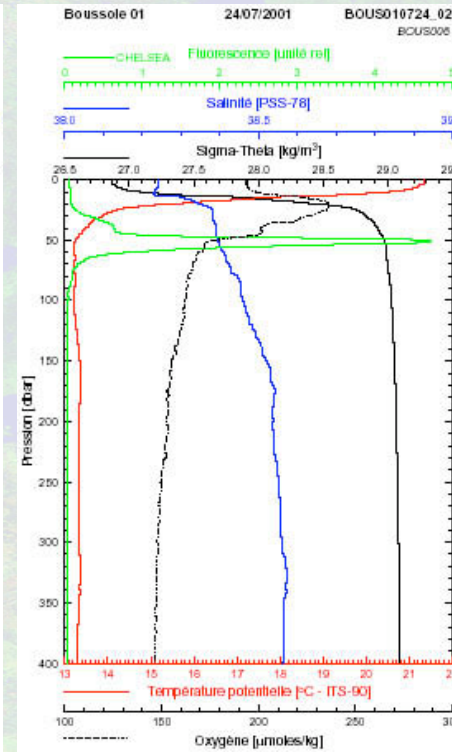
Site characteristics (oligotrophic to eutrophic)



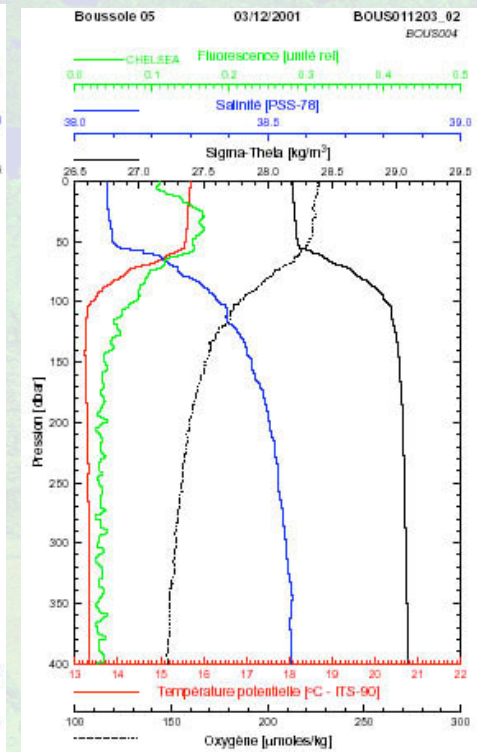
Winter, maximum of the water mixing
Chl up to $\sim 2\text{--}3 \text{ mg m}^{-3}$
mixed layer down to 200 meters



Spring, establishment of the deep chlorophyll maximum around 50 meters
Chl $\sim 0.3 \text{ mg m}^{-3}$



Summer, maximum of the stratification. DCM is maximum, with surface Chl $\sim 0.05 \text{ mg m}^{-3}$ (up to 1 in the DCM)



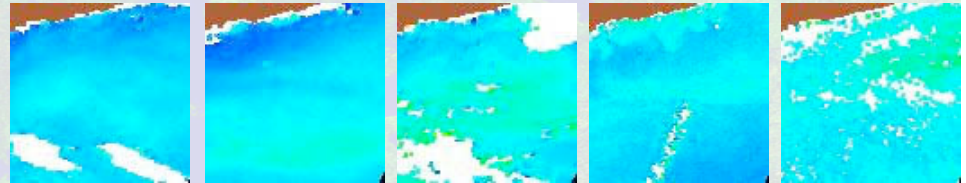
Fall, erosion of the thermocline, the DCM progressively disappears
Chl $\sim 0.5 \text{ mg m}^{-3}$

SeaWiFS chlorophyll 2001-2004

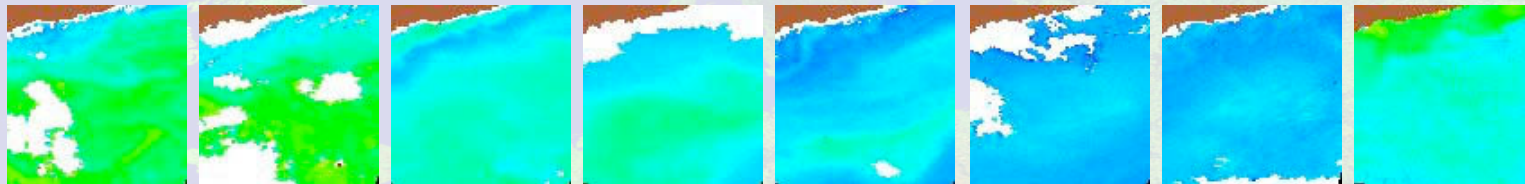
(in correspondence with our monthly cruises)

Feb March Apr May June Jul Sept Oct Nov Dec

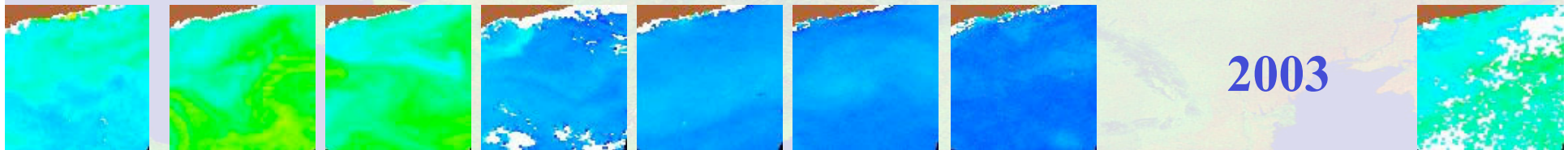
2001



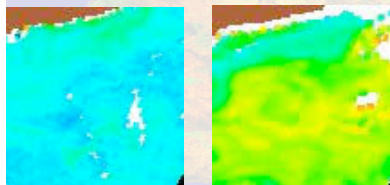
2002



2003



2004



SeaWiFS/SIMBIOS diagnostic data sets

(http://seawifs.gsfc.nasa.gov/cgi/seawifs_region_extracts.pl?TYP=ocean)

Motivations

Establishing a time series of inherent and apparent optical properties (IOPs and AOPs), with two parallel objectives :

- **Science objectives** : short-term changes in IOPs and AOPs, relationships between both, role of CDOM, seasonal and inter-annual changes, bidirectionality of the ocean reflectance...
- **Operational objective** : vicarious calibration of ocean color observations from space, and validation of the level-2 “geophysical products” (*e.g.*, chlorophyll, normalized radiances).

Strategy

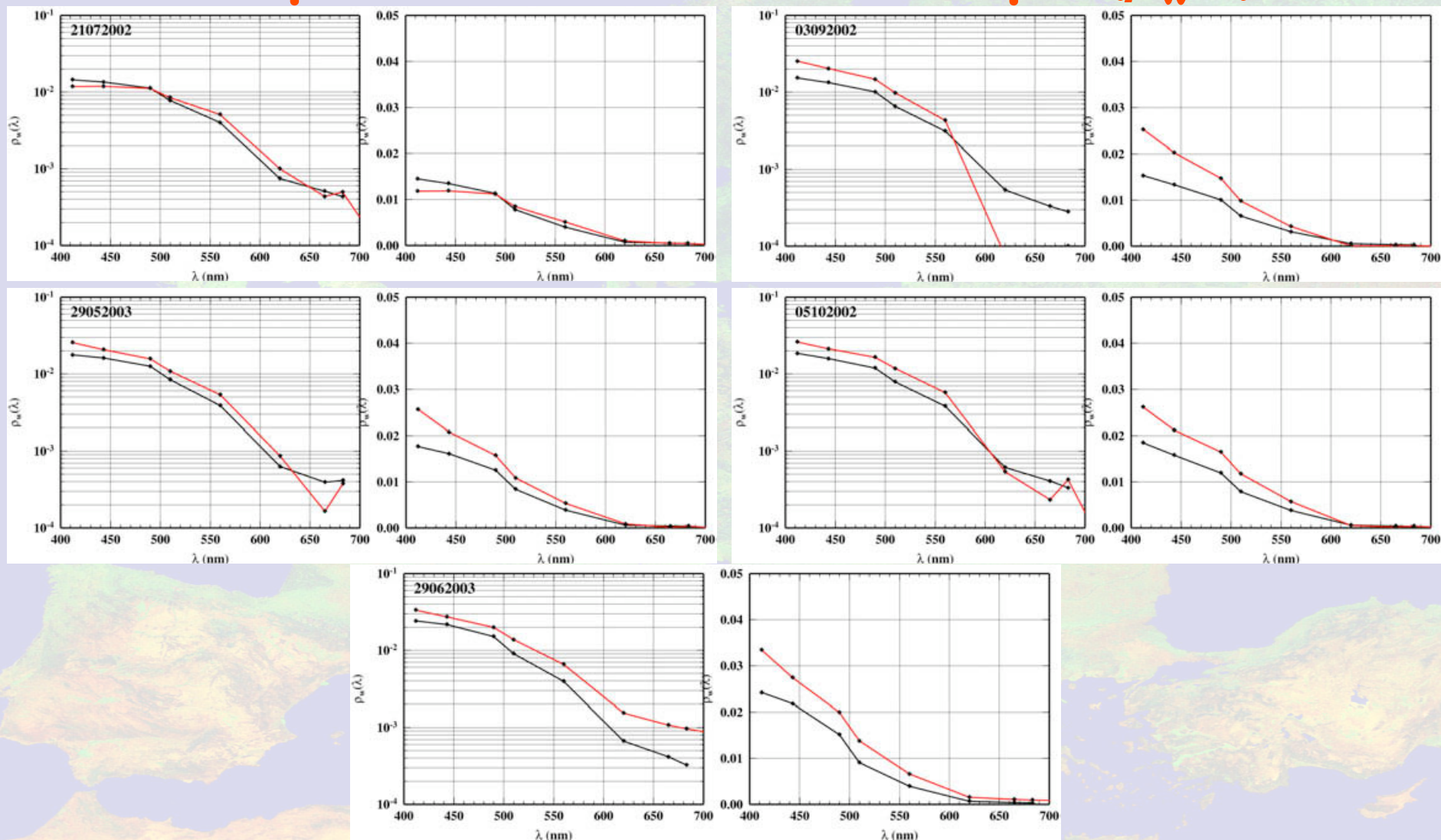
Combination of 3 elements :

- **A deep sea mooring**, collecting data on a “continuous” basis
- **Monthly cruises** for collecting data that are not accessible to the mooring (vertical profiles, water sampling), as well as for servicing the mooring
- **A coastal AERONET station**, providing the necessary information about the aerosol properties, which are a central element of the vicarious calibration process

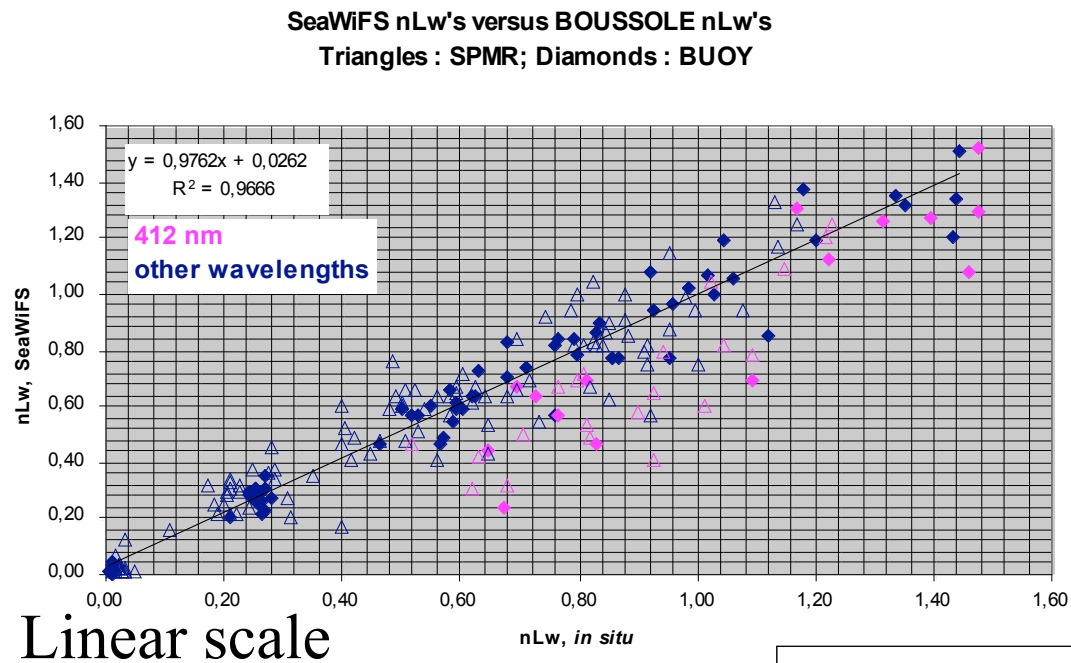
Measurement suite

- **Buoy**: Surface irradiance (E_s), downwelling irradiance (E_d), upwelling irradiance (E_u) and upwelling radiance at nadir (L_u) at 4 and 9 meters (7λ 's), attenuation coefficient, backscattering coefficient (2λ 's), chlorophyll fluorescence. Temp., Pressure, Salinity at 9 meters, buoy tilt and compass.
- **Monthly cruises** In-water profiles of E_d and E_u at 13λ 's (SPMR/SMSR), above water determination of L_w , phytoplankton pigments (HPLC), phytoplankton absorption (filtered water), total absorption, scattering and attenuation coefficients at 9λ 's (AC9 profiles), backscattering profile (Wetlabs' eco VSF) and CDOM fluorescence (Wetlabs' CDOM WetStar). Aerosol optical thickness.
- **Coastal AERONET Station (sun photometer)** : aerosol optical thickness, sky radiances (aerosol type).

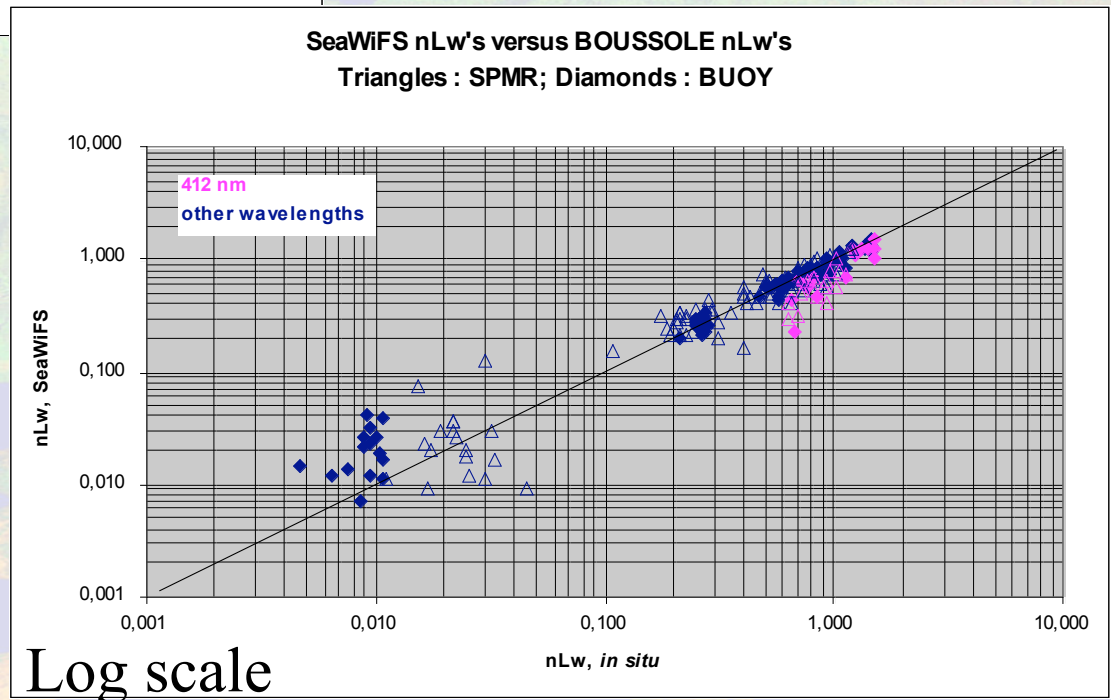
Examples of MERIS matchups (ρ_w 's)



Examples of SeaWiFS matchups (nLw's)



15 points from the buoy
(3-month deployment in
fall 2003) & 18 from the
SPMR (monthly cruises)



Project “time table”

Monthly cruises started in July 2001

Buoy deployments :

July to October 2000 : qualification deployment

May 2002 : first, unsuccessful deployment

Sept 6 - Dec 6, 2003 : 3-month successful deployment

Since March 4, 2004 : buoy again at sea

Plan is now to make rotations on site with 2 systems

AERONET site, data collection periods :

July 2002 to April 2003

January 2004 - ongoing

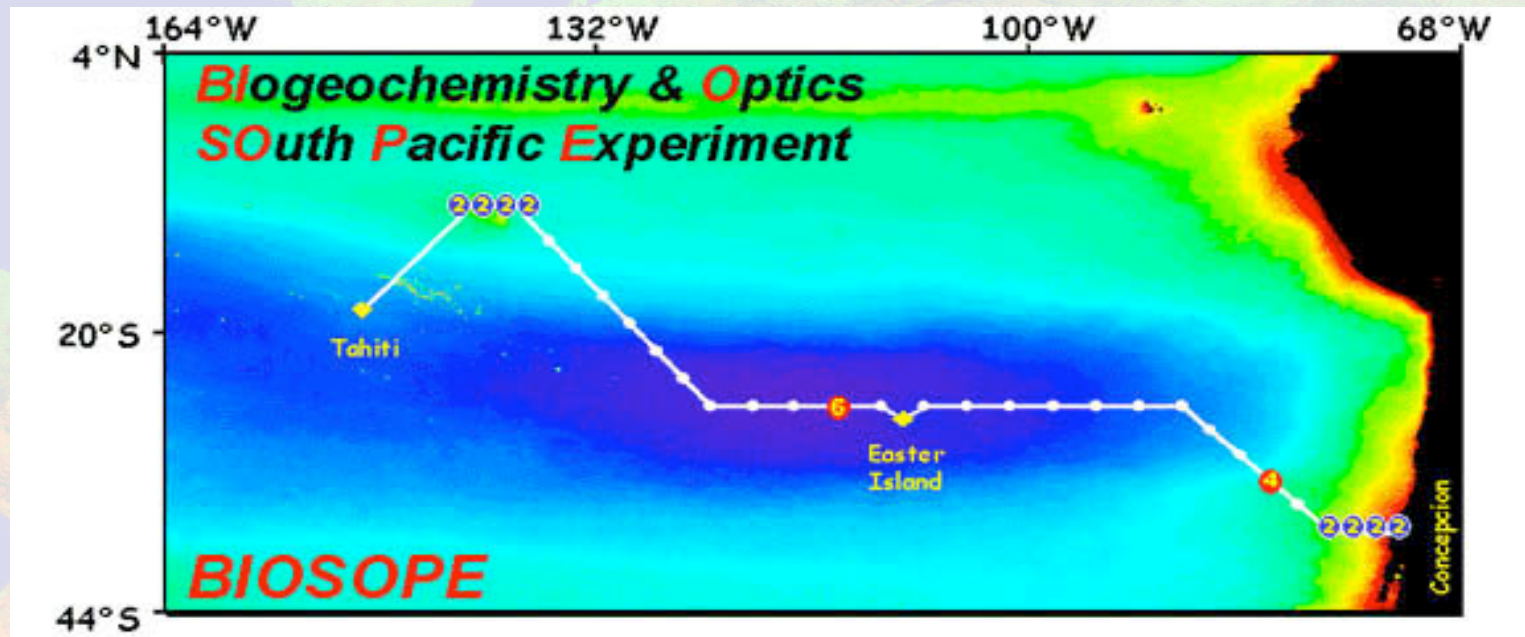
Project should extend throughout the MERIS life

Example of inter-sensors comparison and validation: BIOSOPE, LOV

- International project co-funded by NASA, CNES, Ifremer, ESA.
- The BIOSOPE project (BIogeochemistry and Optics South Pacific Experiment) aims at calibrating and validating four ocean color sensors : MERIS, SeaWiFS, MODIS-T and MODIS A, in the South Pacific.
- The cruise is planned from October 21, to December 13 2004 onboard IFREMER research vessel L'Atalante.

3 transecs

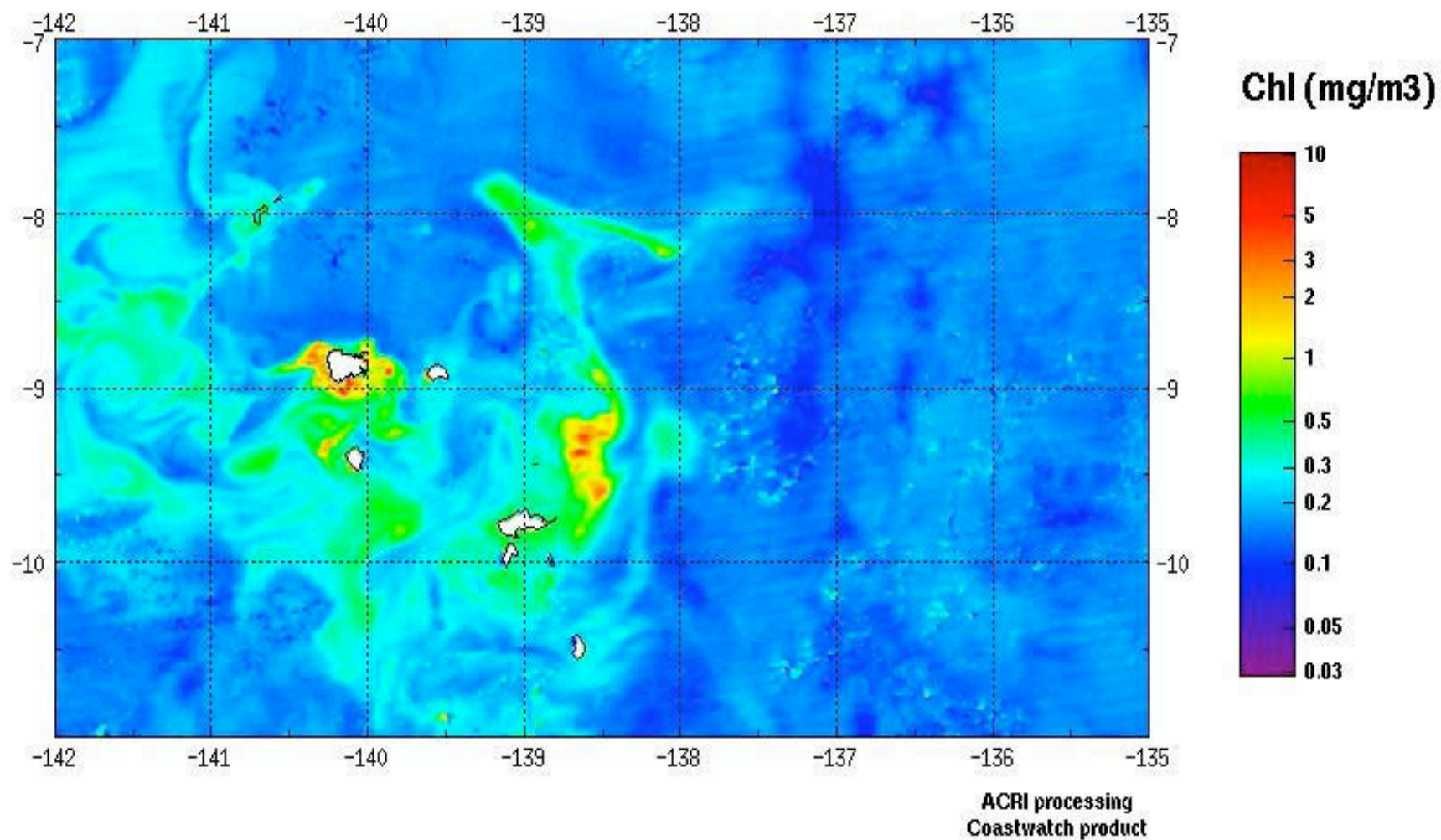
- from the Marquise Archipelago to the gyre (26°S - 123°W)
- between 123°W and 90°W and crossing the gyre in its most oligotrophic part
- from the gyre (90°W , 26°S) to the Chilean coast at 33°S .



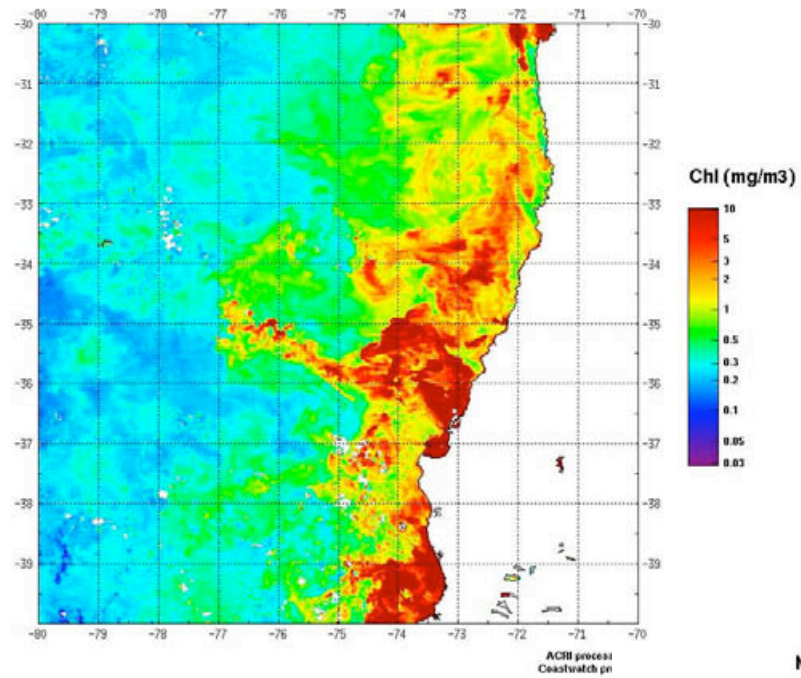
**Operational objective of the sensors
inter-comparison : data merging**

**In preparation of BIOSOPE:
MODIS/MERIS Data processed within
the GMES / coastwatch program (ACRI)**

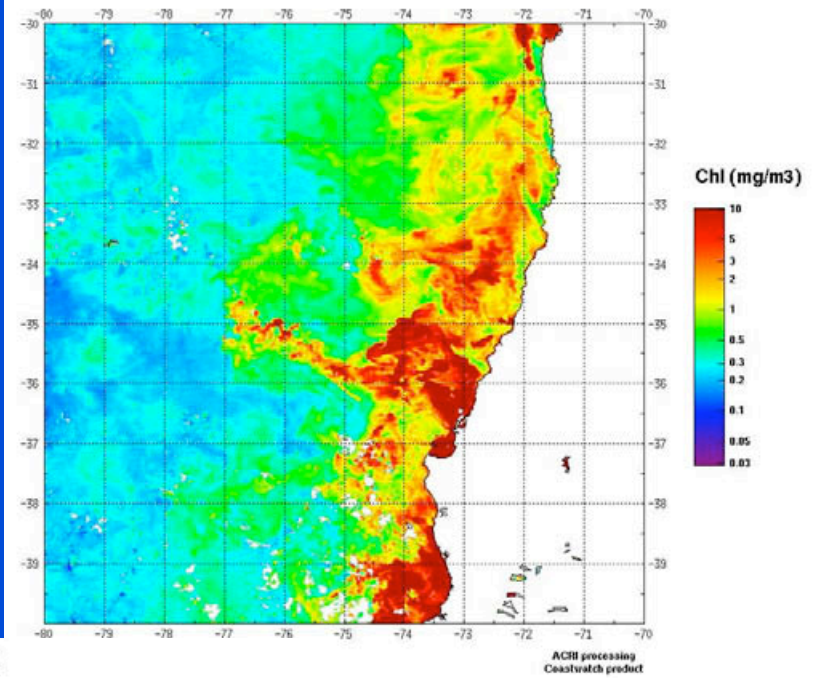
MERIS/MODIS merged Chlorophyll 2004-10-07



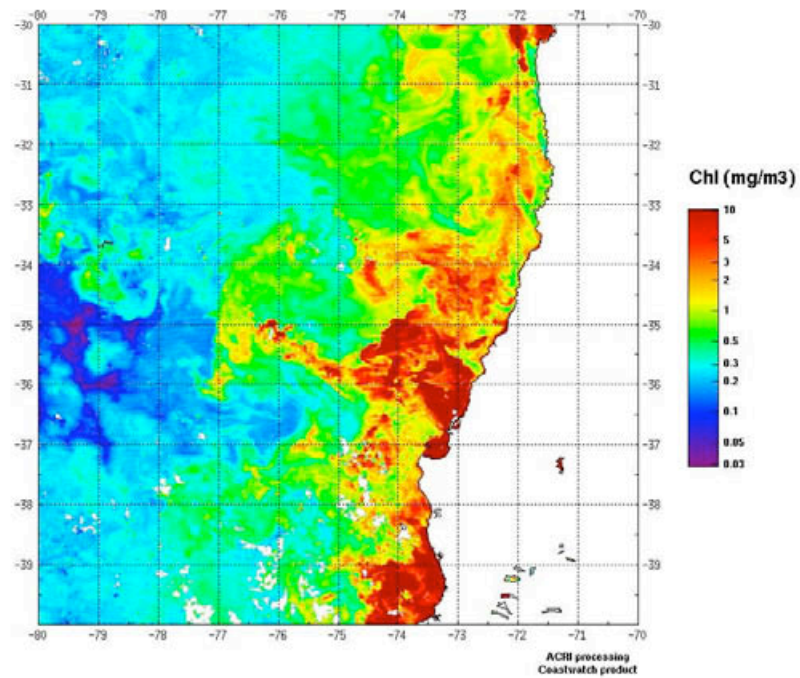
MERIS/MODIS merged Chlorophyll
2004-10-04



MERIS/MODIS merged Chlorophyll
2004-10-05



MERIS/MODIS merged Chlorophyll
2004-10-06



Conclusion

- Gradual opening of services and products to users
- 1st reprocessing (2003) available on line.
- First set of Level 3 products generated
- MERIS data L1 and L2 over diagnostic site extracted and available on line
- Objective of Diagnostic dataset: Long term sensor performance assessment, Optical instruments intercomparison.
- Operational objective: data merging for providing operational services.

Future

- MERIS 2nd reprocessing will provide 2002, 2003, 2004 and beginning 2005. Planned for spring 2005.
- Extend the land sites (valeri)