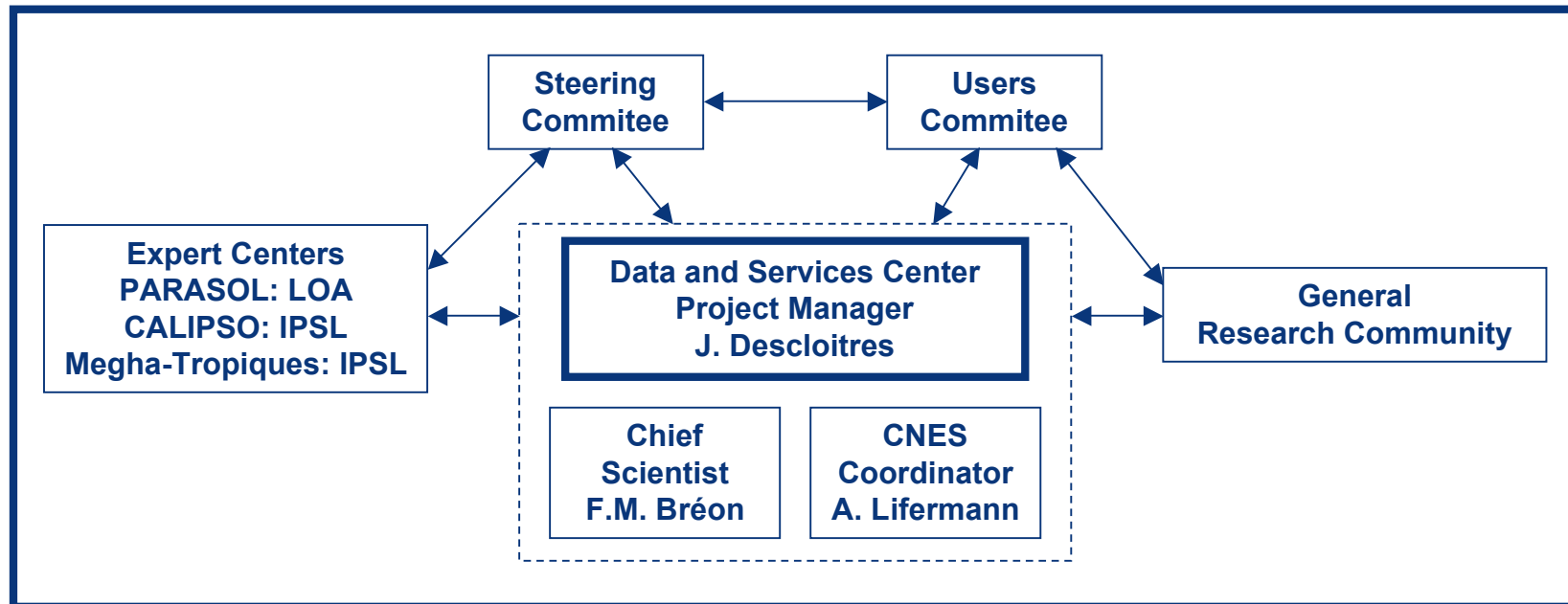


ICARE Data and Services Center

J. Descloitres, F.M. Bréon

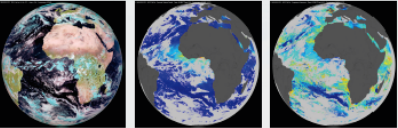
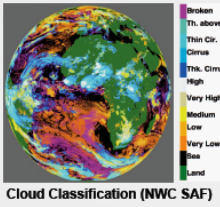

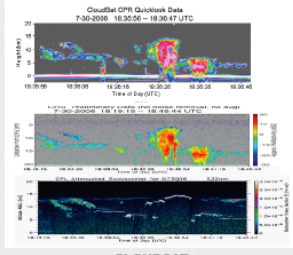
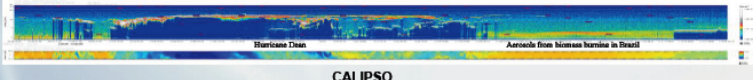
ICARE Thematic Center: a structure to help research related to **aerosols**, clouds, radiation, water cycle

Created in 2003 by CNES, CNRS/INSU, University of Lille, Nord-Pas-de-Calais Regional Council



Develop new satellite products and tools
 Help users
 Provide easy access to the data

Mainly satellite data related to the thematic area of Icare.
It is planned to extend to some in-situ data.

<p>A-Train: PARASOL/POLDER-3 Aqua/MODIS CALIPSO/CALIOP CALIPSO/IIR CALIPSO/WFC CloudSat/CPR Aura/OMI</p> <p>Geostationary: MSG/SEVIRI METEOSAT-7 GOES-E GOES-W GOES-SA MTSAT FY-2C</p> <p>Ancillary: ECMWF GMAO</p> <p>Misc: Envisat/MERIS NOAA/HIRS METOP/HIRS POLDER-1 POLDER-2</p>	<p>Microwave: Aqua/AMSR-E TRMM/TMI DMSP/SSM/I DMSP/SSM/S METOP/AMSU-A METOP/AMSU-B/MHS NOAA/AMSU-A NOAA/AMSU-B Megha-Tropiques/SAPHIR Megha-Tropiques/MADRAS Megha-Tropiques/ScaRaB</p>	 <p>MSG/SEVIRI (aerosol products)</p>  <p>Cloud Classification (NWC SAF)</p>
<p>Date: 04/05/2007 Level 1 : Version K</p>		
 <p>PARASOL</p>	 <p>CLOUDSAT</p>	
 <p>CALIPSO</p>		

*** 110 data sets,
from ≥ 20 satellite missions,
from 15 distant data providers.**

*** Total archive volume ~400 Tbytes**

ICARE

http://www.icare.univ-lille1.fr/

Les plus visités Utile Macintosh Interesant Meteo Recherche Journaux News Données_Satell Aerosol_Papers Global Change Perso Météo Divorce VPN INTRA

Historique

ICARE
Cloud-Aerosol-Water-Radiation Interactions

Home Data Access Satellite Missions Support Services About us FAQ

Guided tour

[Access to guided tour](#)

Satellite Missions

- POLDER/PARASOL
- CALIPSO
- MSG/SEVIRI

Data Access

- **Browse the entire ICARE archive:**
Data Archive Browser
- **Browse and compare multiple data sets:**
[Multi-sensor Browse Interface](#)
- **Access data sets through a dedicated interface:**
 - POLDER/PARASOL
 - CALIPSO
 - CLOUDSAT
 - MSG/SEVIRI (near-real-time)

ICARE

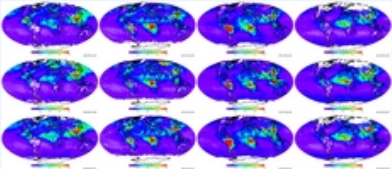
The ICARE Thematic Center was created in 2003 by CNES, CNRS, the Nord-Pas-De-Calais Regional Council, and the University of Lille, to provide various services to support the research community in fields related to atmospheric research, such as aerosols, clouds, radiation, water cycle, and their interactions. ICARE's initial emphasis is the production and distribution of remote sensing data derived from Earth observation missions from CNES, NASA, and EUMETSAT. One of ICARE's main components is the Data and Services Center, located at the University of Lille, which develops science algorithms and production codes, building on the expertise from various partner Science Computing Facilities, and distributes products to the users community.

Highlights

PARASOL: 3 years in orbit

In March 2008, ICARE celebrated the 3rd anniversary of PARASOL successful operations. PARASOL is a microsatellite launched by CNES on December 18, 2004. It carries a wide-field imaging radiometer/polarimeter called POLDER (Polarization and Directionality of the Earth's Reflectances). PARASOL is part of the A-Train constellation, and contributes to an overall strategy to observe clouds and aerosols from multiple sensors on the same orbit. Originally scheduled to last 2 years, the mission was reconducted indefinitely, in consideration of the instrument good performance and scientific value. The ICARE Data and Services Center generates derived cloud and aerosol science products routinely, usually within 24-48 hours of data acquisition. Science products have been operationally produced and distributed since March 2005, at the end of the satellite commissioning phase. Other than a few scattered incidents, PARASOL did not experience any major problem, and only very few downtimes occurred. Over 3 years's worth of PARASOL data are now available in the ICARE archive.

[+ Read more](#)



Complete Reprocessing of POLDER Atmosphere Products and New Distribution Scheme for POLDER Products

A reprocessing of the entire POLDER-1/POLDER-2 archive was completed in November 2007 to produce all atmosphere products (Aerosols and Clouds) with the latest generation of science algorithms used to process the PARASOL data, such that a consistent POLDER-1, POLDER-2, and POLDER-3/PARASOL archive is now available. On that occasion, POLDER distribution services for atmosphere products are transferred from CNES/CPP to ICARE. The ICARE Data and Services Center is now responsible for the processing, archive, and distribution of POLDER atmosphere products, in line with the PARASOL mission. From now on, all POLDER level-1 and atmosphere products may be downloaded from the ICARE website.

[+ Go to the POLDER/PARASOL page for data access and documentation](#)

Historique ✕

Trier ▾

▶ Aujourd'hui

ICARE

Cloud-Aerosol-Water-Radiation Interactions



- <<
- Browse CALIPSO
- Browse POLDER/PARASOL
- Browse SEVIRI
- Multi browse
- Data Archive**
- >>
- exit






























You are here: [Home](#) / [Archive](#)

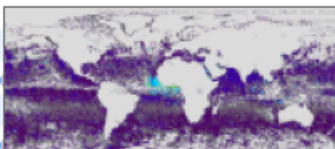
ICARE On-line Data Archive

Your are not logged in

DATA

File	Description	Size	Last Modified
AMSU/			Mar 18 2008 13:29
ANCILLARY/			Sep 29 2008 14:23
CALIOP/ <small>Sign-In Required</small>			Oct 01 2008 17:13
CLOUDSAT/			Jul 11 2008 10:05
GMAO/			Aug 25 2008 10:14
GOES-E/ <small>Sign-In Required</small>			Jul 08 2008 15:55
GOES-W/ <small>Sign-In Required</small>			Jul 08 2008 15:55
HIRS/			Apr 28 2008 15:56
IIR/ <small>Sign-In Required</small>			Oct 01 2008 17:49
IIR_MODIS_SEVIRI/			Oct 08 2008 17:04
MERIS/ <small>Sign-In Required</small>			Apr 11 2008 18:18
METEOSAT/ <small>Sign-In Required</small>			Jan 01 1970 01:00
METEOSAT7/ <small>Sign-In Required</small>			Jul 15 2008 14:16
MODIS/			Jan 19 2007 10:48
MODIS_POLDER/ <small>Sign-In Required</small>			Feb 14 2008 15:34
MTSAT/ <small>Sign-In Required</small>			Jul 10 2008 17:09
MULTI_SENSOR/			Oct 08 2008 17:04
OMI/			Oct 08 2008 17:20
PARASOL/			Jul 09 2008 11:18

File	Description	Size	Last Modified
..			
 P3L3TOGC060115JB.alpha.png		679370	Dec 16 2006 00:36
 P3L3TOGC060115JB.ang.18km.cyl.png		782246	Nov 13 2007 16:40
 P3L3TOGC060115JB.ang.18km.png		688567	Nov 13 2007 16:39
 P3L3TOGC060115JB.ang.37km.cyl.png		352489	Nov 13 2007 16:41
 P3L3TOGC060115JB.ang.37km.png		291291	Nov 13 2007 16:39
 P3L3TOGC060115JB.ang.74km.cyl.png		76773	Nov 13 2007 16:41
 P3L3TOGC060115JB.ang.74km.png		62769	Nov 13 2007 16:40
 P3L3TOGC060115JB.aot.png		682333	Dec 15 2006 21:38
 P3L3TOGC060115JB.nobs.18km.cyl.png		387365	Nov 13 2007 16:41
 P3L3TOGC060115JB.nobs.18km.png		362495	Nov 13 2007 16:41
 P3L3TOGC060115JB.nobs.37km.cyl.png		348235	Nov 13 2007 16:41
 P3L3TOGC060115JB.nobs.37km.png		289190	Nov 13 2007 16:41
 P3L3TOGC060115JB.nobs.74km.cyl.png		74499	Nov 13 2007 16:42
 P3L3TOGC060115JB.nobs.74km.png		61807	Nov 13 2007 16:41
 P3L3TOGC060115JB.nsicm.18km.cyl.png		544027	Nov 13 2007 16:47
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 P3L3TOGC060115JB.nsicm.37km.cyl.png		354573	Nov 13 2007 16:48
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 P3L3TOGC060115JB.nsicm.74km.cyl.png		76068	Nov 13 2007 16:49
 P3L3TOGC060115JB.nsicm.74km.png		62463	Nov 13 2007 16:47
 P3L3TOGC060115JB.taua.18km.cyl.png		766242	Nov 13 2007 16:38
 P3L3TOGC060115JB.taua.18km.png		691638	Nov 13 2007 16:37
 P3L3TOGC060115JB.taua.37km.cyl.png		347108	Nov 13 2007 16:38
 P3L3TOGC060115JB.taua.37km.png		291025	Nov 13 2007 16:38
 P3L3TOGC060115JB.taua.74km.cyl.png		75131	Nov 13 2007 16:38
 P3L3TOGC060115JB.taua.74km.png		62288	Nov 13 2007 16:38
 P3L3TOGC060115JB.tauacm.18km.cyl.p		626186	Nov 13 2007 16:43
 P3L3TOGC060115JB.tauacm.18km.png		566591	Nov 13 2007 16:42
 P3L3TOGC060115JB.tauacm.37km.cyl.p		349923	Nov 13 2007 16:43



Direct access to full archive. View browse images. Data can be downloaded

ICARE retrieves MSG/SEVIRI data in near-real time from LOA's receiving station
 ICARE derives aerosol products over oceans (optical depth and Angstrom exponent) using code developed by IPSL (For each image: RGB image, AOT at 550 nm and Angström Exponent at full resolution, Daily average of AOT and AE)
 Data can be viewed (Slot, day average) at different resolutions, and downloaded.



ICARE
 Cloud-Aerosol-Water-Radiation Interactions

Home Data Access Satellite Missions Support Services About us FAQ

You are here: [Home](#) / [Msg](#) / [Browse](#)

MSG/Seviri Browses Online Products

Date selection : 2006 March

← PREV. DAY NEXT DAY → ← PREV. SLOT NEXT SLOT →

2006/03/11 12:00 UTC

March 2006						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Slot Selection: 12:00 slots All

2006/03/11 12:00 UTC			Daily average	
False-color  12km 3km	Aerosol Optical Depth  12km 3km Data	Angstrom Exponent  12km 3km Data	Aerosol Optical Depth  12km 3km Data	Angstrom Exponent  12km 3km Data

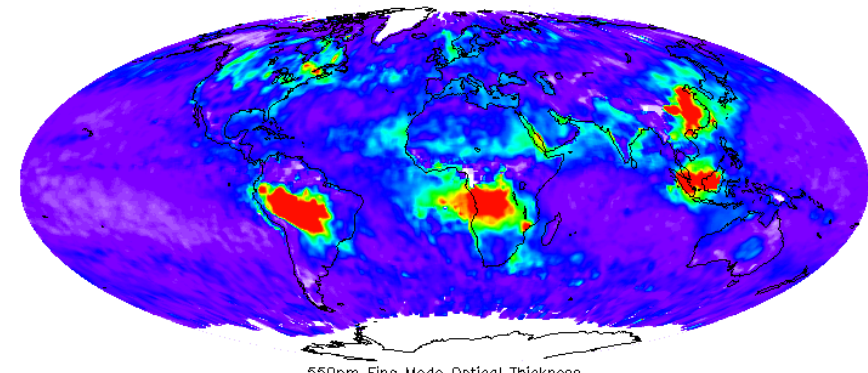
ICARE routinely retrieves PARASOL Level-1 data from CNES

ICARE is in charge of production and distribution of PARASOL « atmosphere » Level-2 and Level-3 products

ICARE maintains heritage POLDER processing codes

ICARE adapted all processing codes to PARASOL and ported codes into a new production environment

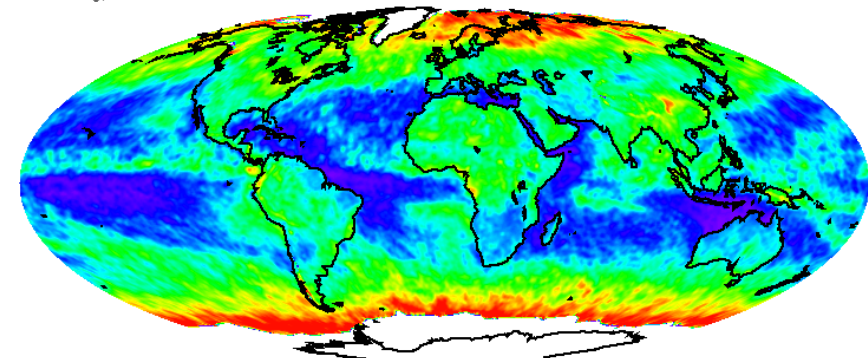
ICARE develops science code enhancements requested by the PARASOL Science Team (e.g. PARASOL-MODIS combined products)



Data: CNES
Processing: LOA/LSCE/ICARE

550nm Fine Mode Optical Thickness
0.1 0.2 0.3 0.4

PARASOL
2006_09



Data: CNES
Processing: LOA/LSCE/ICARE

Shortwave Albedo (%)
10 20 30 40 50

PARASOL
2006_09

[<<](#)
[Browse CALIPSO](#)
[Browse POLDER/PARASOL](#)
[Browse SEVIRI](#)
[Multi browse](#)
[Data Archive](#)
[>>](#)
[exit](#)

You are here: [Home](#) / [Parasol](#) / [Browse](#)

PARASOL Browse Online Products

Date selection:

2007 August

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

Product selection:


Level 1

Daily Products

- Cloud Cor O2 pressure
- Cloud Mean SW Albedo
- Cloud Phase
- Cloud Cover
- Cloud Optical Thickness
- Fine Mode AOT 865nm over land
- Angstrom Coefficient over land
- 865 nm Optical Thickness over ocean
- Angstrom Coefficient over ocean
- Fine Mode AOT 865nm over ocean
- Fine Mode AOT 865nm over land-ocean

Monthly Products

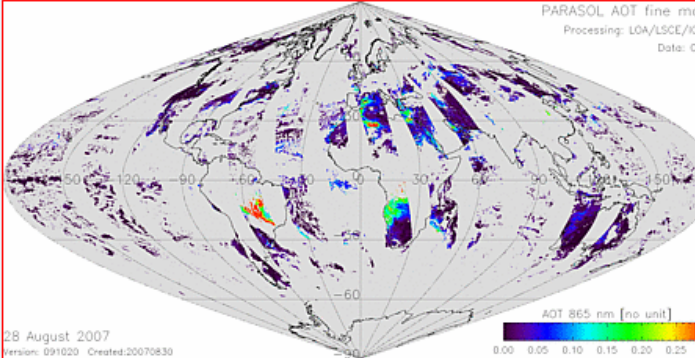
Date: 08/28/2007 Level 1 : Version _



28 August 2007
Version: 02-04 Created:20070828

[Click for higher resolution and individual orbit selection](#)

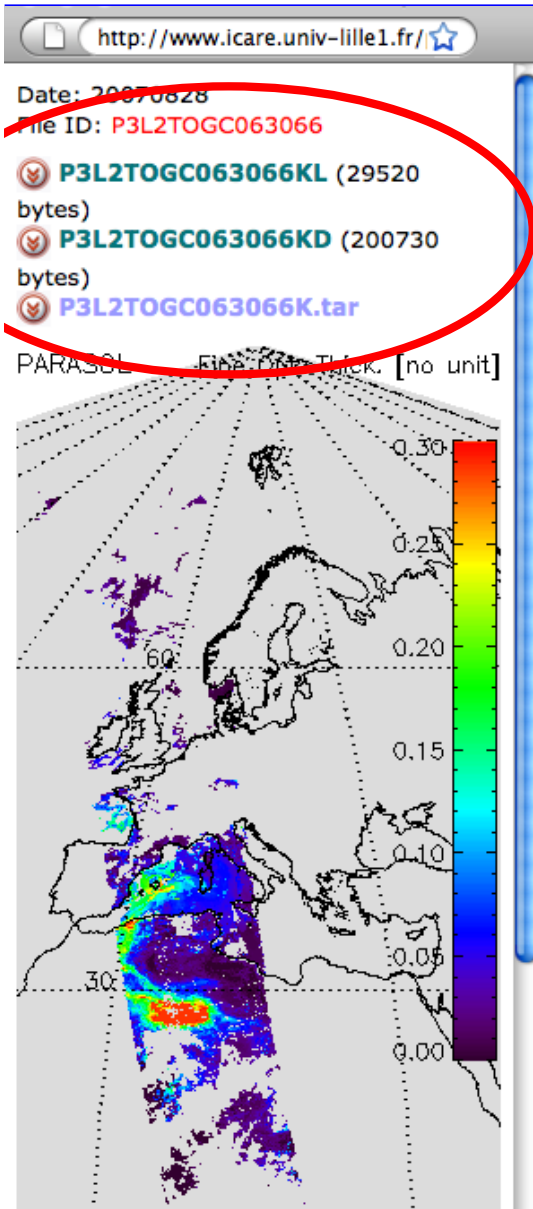
Date: 08/28/2007 Fine Mode AOT 865nm over land-ocean : Version K



28 August 2007
Version: 091020 Created:20070830

[Click for higher resolution](#)

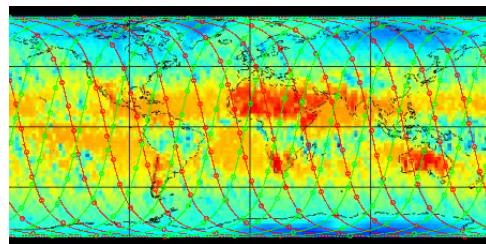
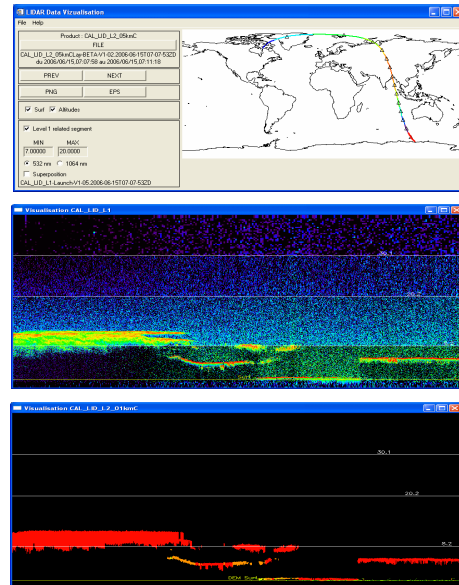
Top of atmosphere radiances and various geophysical products can be browsed easily.



Individual products can be viewed at full resolution.

Direct **download** is then possible

VISU_CALIOP



IIR Monthly Mean Daytime 12µm BT

ICARE develops the IIR Level-2 operational processing code (SPIRS) under supervision of the product PI (J. Pelon)

ICARE routinely retrieves selected CALIPSO products from NASA/ASDC and makes them available to ICARE users

All retrieved Level-1 and Level-2 data sets are available online (~18 TB)

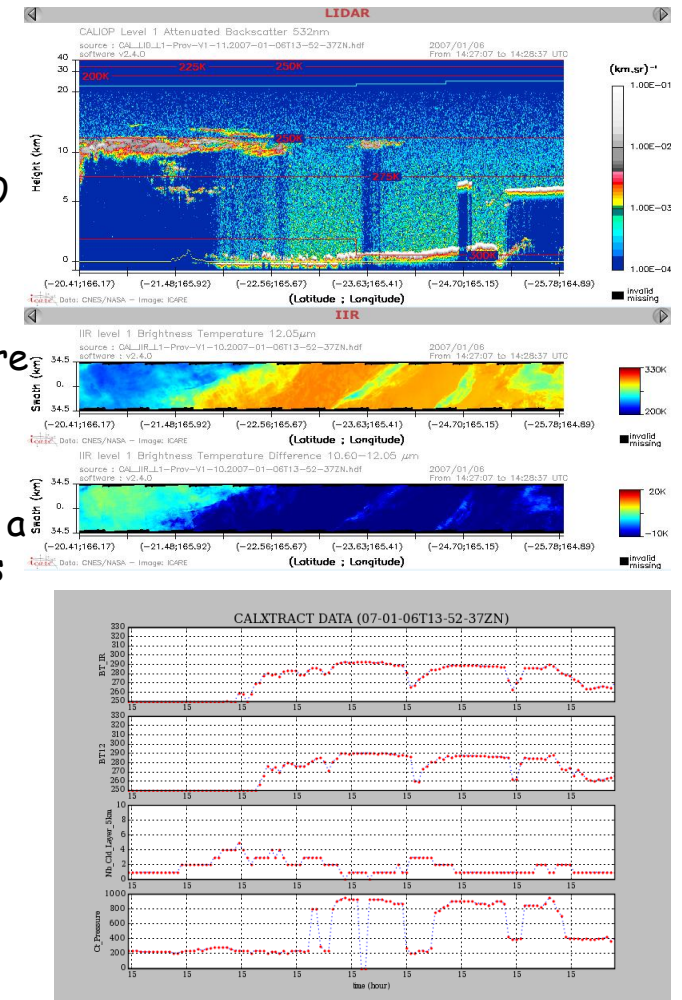
ICARE developed browse products for selected CALIPSO products and developed a browse interface to facilitate data analysis

ICARE developed various tools to combine CALIPSO products with other products used by the ICARE community (e.g., ICARE CalTrack product)

ICARE developed a new suite of IIR Level-3 products

IDL visualization tool: visu_cal_iop

CALIOP/IIR/WFC Browse Imagery



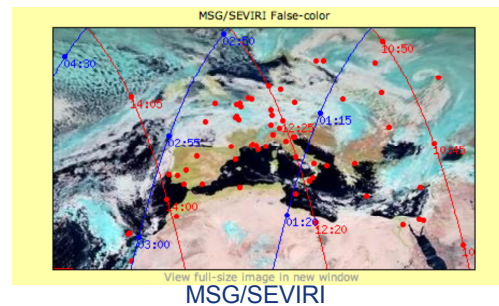
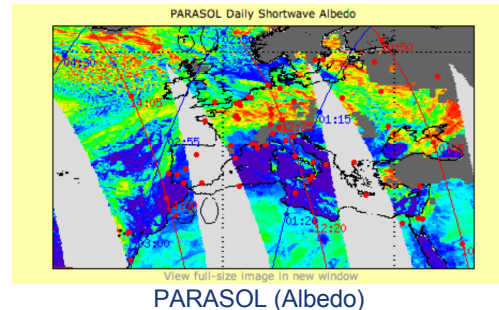
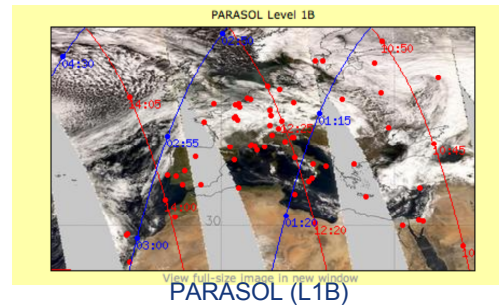
ICARE developed tools to rapidly locate and compare various data sets coming in various formats and viewing geometries

CALIPSO and CloudSat orbit sections matching the users region of interest are automatically identified

Overpass predictor

ICARE Overpass Predictor

Satellite / Date / Time	Orbit Tracks
<input checked="" type="checkbox"/> Aqua <input checked="" type="checkbox"/> Calipso <input type="checkbox"/> Cloudsat <input type="checkbox"/> Parosol Start Date: 2008-04-11 End: 2008-04-11 <input checked="" type="checkbox"/> Full Day <input type="checkbox"/> Time Range Longitude: 10 Latitude: 45 <input type="button" value="Reset Selection"/>	<p>Use pointer (click and drag) to zoom-in</p> <p><input type="button" value="Apply Zoom Selection"/> <input type="button" value="Zoom Out"/> <input type="button" value="Full Image"/></p>
Longitude: 10, Latitude: 45 Aqua closest daytime overpass time: 2008/04/11: 13:11 UTC (959 km) Aqua closest nighttime overpass time: 2008/04/11: 02:02 UTC (680 km)	
<small>Note: Plots and calculations are based on satellite predicted ephemeris. Uncertainty may vary over time, and may be up to 1.5 minute for overpass time and 10km for orbit track position. Distance to orbit track is approximate at this point.</small>	



WFC Wide Field Camera Reflectance

Time range: 10:38:19-10:51:08 UTC

View full-size image in new window

Time range: 12:17:12-12:30:01 UTC

View full-size image in new window

Time range: 13:56:05-14:08:54 UTC

View full-size image in new window

Time range: 15:34:58-15:47:47 UTC

View full-size image in new window

IIR Daytime 12µm Brightness Temperature

Time range: 10:38:19-10:51:08 UTC

View full-size image in new window

Time range: 12:17:12-12:30:01 UTC

View full-size image in new window

Time range: 13:56:05-14:08:54 UTC

View full-size image in new window

Time range: 15:34:58-15:47:47 UTC

View full-size image in new window

CALIOP Nighttime Backscatter Profile

Time range: 01:10:25-01:23:14 UTC

View full-size image in new window

Time range: 02:49:18-03:02:07 UTC

View full-size image in new window

Time range: 20:57:02-21:09:51 UTC

View full-size image in new window

Time range: 22:35:55-22:48:44 UTC

View full-size image in new window

CloudSat Nighttime Radar Reflectivity Profile

Time range: 01:10:14-01:23:03 UTC

View full-size image in new window

Time range: 02:49:07-03:01:56 UTC

View full-size image in new window

Time range: 20:56:51-21:09:40 UTC

View full-size image in new window

Time range: 22:35:44-22:48:33 UTC

View full-size image in new window

WFC

IIR

CALIOP

CloudSat

Aqua/MODIS and MERIS data are downloaded.

Full archive of aerosol products is available

MODIS products are available to all users for direct data access

At present, we are not authorized to redistribute MERIS data and products

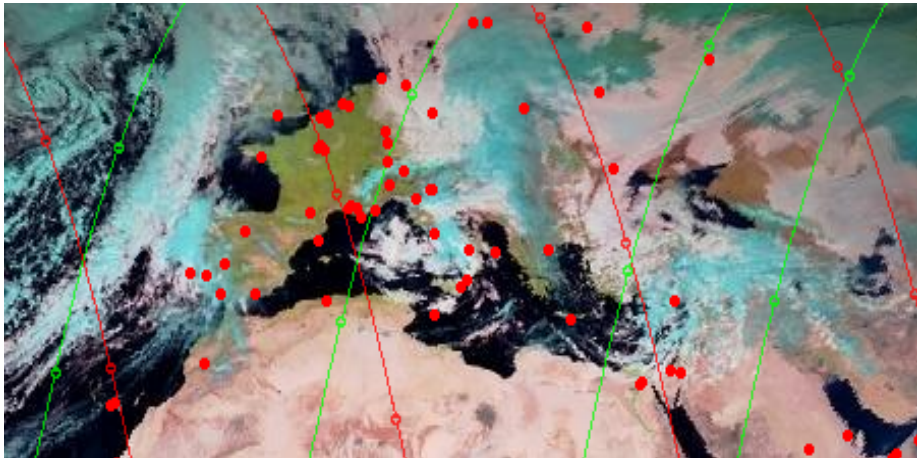
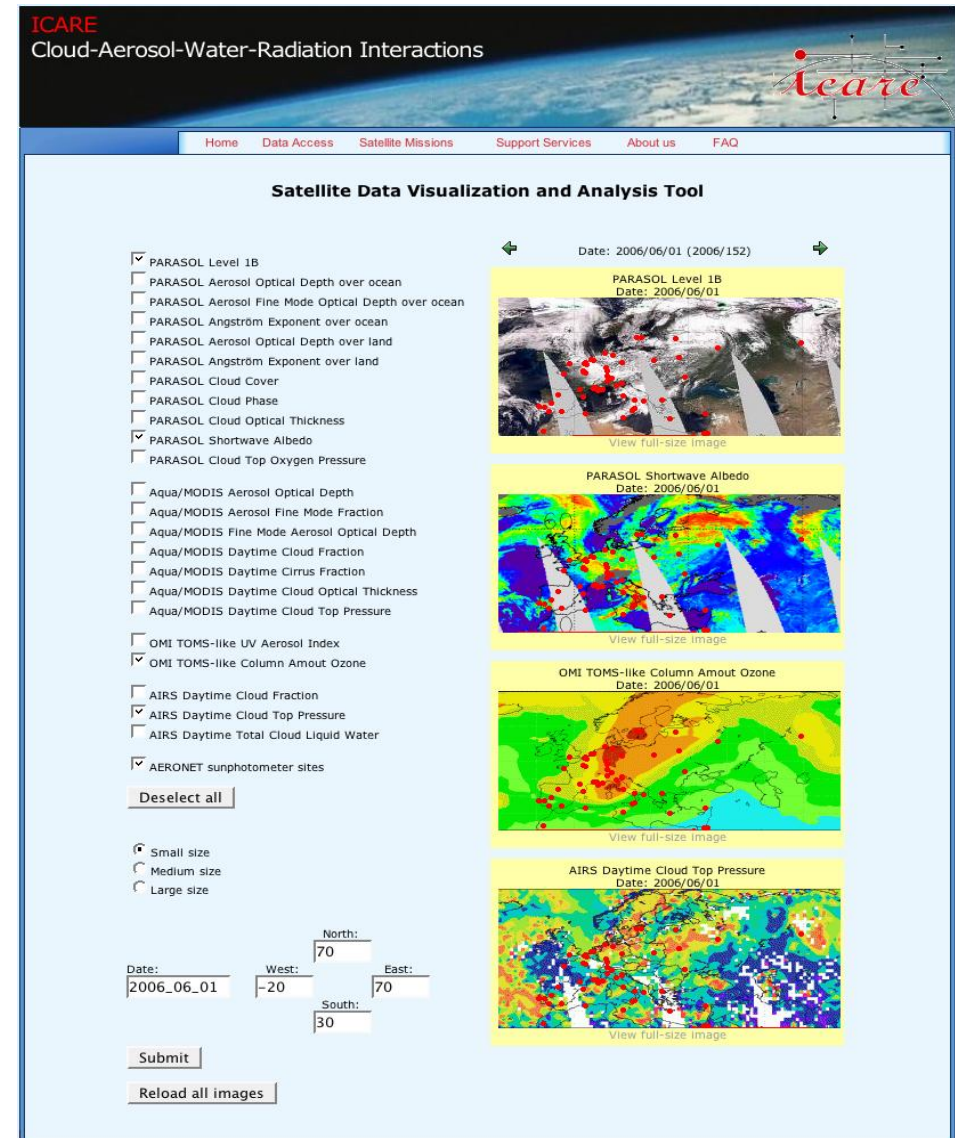
A user-friendly interface where multiple products can be displayed over the user-defined region of interest

Top-down selection (Product>Date>Region) coupled with transverse selection (i.e., modify date or product or region selection)

Orbit tracks and AERONET sites overlays

Google Earth support and WMS support (in progress)

Multi-sensor subtrack products: Development of new combined products (e.g., PARASOL-MODIS, PARASOL-CALIPSO, CALIPSO-Cloudsat)

ICARE
Cloud-Aerosol-Water-Radiation Interactions

Home Data Access Satellite Missions Support Services About us FAQ

Satellite Data Visualization and Analysis Tool

Date: 2006/06/01 (2006/152)

- PARASOL Level 1B
- PARASOL Aerosol Optical Depth over ocean
- PARASOL Aerosol Fine Mode Optical Depth over ocean
- PARASOL Angström Exponent over ocean
- PARASOL Aerosol Optical Depth over land
- PARASOL Angström Exponent over land
- PARASOL Cloud Cover
- PARASOL Cloud Phase
- PARASOL Cloud Optical Thickness
- PARASOL Shortwave Albedo
- PARASOL Cloud Top Oxygen Pressure
- Aqua/MODIS Aerosol Optical Depth
- Aqua/MODIS Aerosol Fine Mode Fraction
- Aqua/MODIS Fine Mode Aerosol Optical Depth
- Aqua/MODIS Daytime Cloud Fraction
- Aqua/MODIS Daytime Cirrus Fraction
- Aqua/MODIS Daytime Cloud Optical Thickness
- Aqua/MODIS Daytime Cloud Top Pressure
- OMI TOMS-like UV Aerosol Index
- OMI TOMS-like Column Amount Ozone
- AIRS Daytime Cloud Fraction
- AIRS Daytime Cloud Top Pressure
- AIRS Daytime Total Cloud Liquid Water
- AERONET sunphotometer sites

Deselect all

Small size
 Medium size
 Large size

Date: 2006_06_01 West: -20 East: 70
 North: 70 South: 30

Submit

Reload all images

PARASOL Level 1B
Date: 2006/06/01

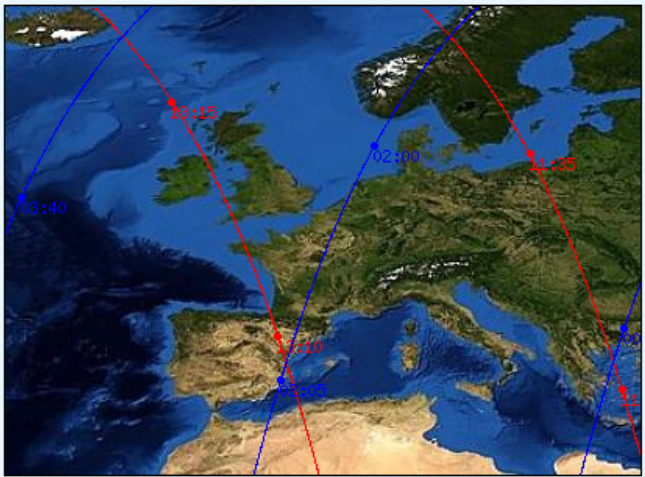
PARASOL Shortwave Albedo
Date: 2006/06/01

OMI TOMS-like Column Amount Ozone
Date: 2006/06/01

AIRS Daytime Cloud Top Pressure
Date: 2006/06/01

Plot orbit track and find overpass time

ICARE Overpass Predictor

Satellite / Date / Time	Orbit Tracks
<input checked="" type="radio"/> Aqua <input type="radio"/> Callpso <input type="radio"/> Cloudsat <input type="radio"/> Parasol Start Date <input type="text" value="2008-04-11"/> End <input type="text" value="2008-04-11"/> <input checked="" type="radio"/> Full Day <input type="radio"/> Time Range Longitude <input type="text" value="10"/> Latitude <input type="text" value="45"/> <input type="button" value="Reset Selection"/> <input type="button" value="Plot Orbits Tracks"/> <input type="button" value="Compute Overpass Time"/>	<div style="margin-bottom: 5px;"> ← 2008/04/11 - 2008/04/11 → </div>  <p style="font-size: small; text-align: center;">Use pointer (click and drag) to zoom-in</p> <div style="display: flex; justify-content: center; gap: 10px;"> <input type="button" value="Apply Zoom Selection"/> <input type="button" value="Zoom Out"/> <input type="button" value="Full Image"/> </div>
Longitude: 10, Latitude: 45 Aqua closest daytime overpass time: 2008/04/11: 13:11 UTC (959 km) Aqua closest nighttime overpass time: 2008/04/11: 02:02 UTC (680 km)	
Note: Plots and calculations are based on satellite predicted ephemeris. Uncertainty may vary over time, and may be up to 1.5 minute for overpass time and 10km for orbit track position. Distance to orbit track is approximate at this point.	

Keep consolidating current operations: data acquisition, production, archive, and distribution

Ongoing development of algorithm enhancements and new algorithms (upon request from product PIs)

Ongoing development of visualization and analysis tools, with primary focus on multi-sensor capabilities

Implement product search capability (based on product metadata)

Improve interoperability (kmz/kml, WMS/WCS)

Phase in new key satellite missions identified by the ICARE community (e.g., Megha-Tropiques)

Enhance ICARE web site with further documentation about products and services

For more information:

<http://www.icare.univ-lille1.fr>