



CEOS Contribution to GCI CEOS International Directory Network (IDN) WGISS/CEOS -NASA

1



SIT-26 Meeting
May 24-25 2011
ESA/ESRIN, Frascati, Italy

International Directory Network (IDN)

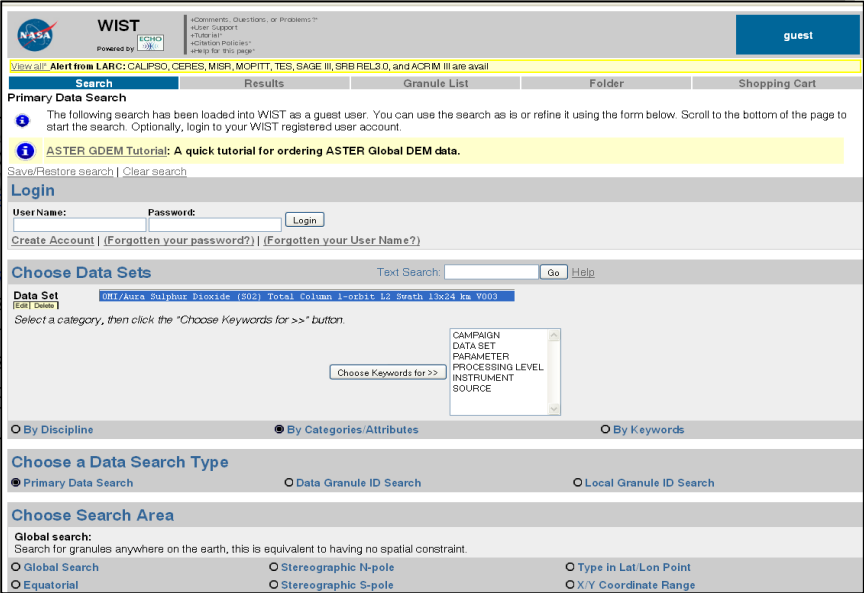
2

- International Directory Network (IDN) Interest Group is NASA's contribution to CEOS (Committee on Earth Observation Satellites).
- IDN chair is Lola Olsen.
- GCMD maintains the IDN website using the Plone open source Content Management System (CMS) built on top of Zope.



Connecting Users to Data

3



WIST NASA
Powered by
Comments, Questions, or Problems? User Support, Tutorial, Activation Policies, News for this page

View all! Alert from LARC: CALPSO, CERES, MISR, MCFIT, TES, SAGE III, SBB REL3.0, and ACRM III are avail

Search Results Granule List Folder Shopping Cart

Primary Data Search
The following search has been loaded into WIST as a guest user. You can use the search as is or refine it using the form below. Scroll to the bottom of the page to start the search. Optionally, login to your WIST registered user account.

ASTER GDEM Tutorial: A quick tutorial for ordering ASTER Global DEM data.
Save/Restore search | Clear search

Login
UserName: Password: Login
Create Account | (Forgotten your password?) | (Forgotten your User Name?)

Choose Data Sets Text Search: Go Help
Data Set **OMI/Aura Sulphur Dioxide (SO2) Total Column 1-orbit L2 Swath 13x24 km V003**
Select a category, then click the "Choose Keywords for >>" button.
Choose Keywords for >>
CAMPAIGN
DATA SET
PARAMETER
PROCESSING LEVEL
INSTRUMENT
SOURCE

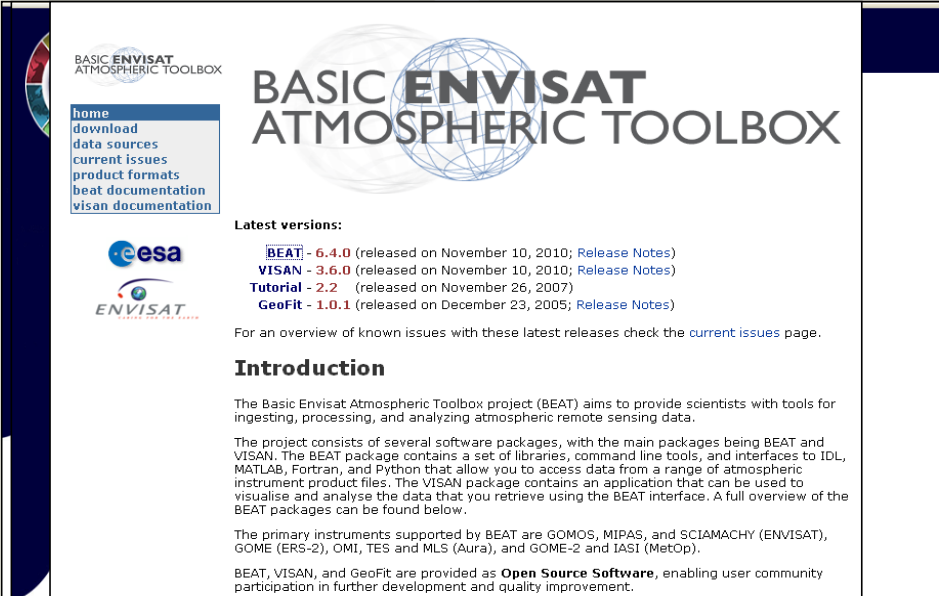
By Discipline By Categories/Attributes By Keywords

Choose a Data Search Type
 Primary Data Search Data Granule ID Search Local Granule ID Search

Choose Search Area
Global search: Search for granules anywhere on the earth, this is equivalent to having no spatial constraint.
 Global Search Stereographic N-pole Type in Lat Lon Point
 Equatorial Stereographic S-pole X/Y Coordinate Range

Connecting Users to Data Services

4



BASIC ENVISAT ATMOSPHERIC TOOLBOX

home
download
data sources
current issues
product formats
beat documentation
visan documentation

BASIC ENVISAT ATMOSPHERIC TOOLBOX

Latest versions:
BEAT - 6.4.0 (released on November 10, 2010; [Release Notes](#))
VISAN - 3.6.0 (released on November 10, 2010; [Release Notes](#))
Tutorial - 2.2 (released on November 26, 2007)
GeoFit - 1.0.1 (released on December 23, 2005; [Release Notes](#))

For an overview of known issues with these latest releases check the [current issues](#) page.

Introduction

The Basic Envisat Atmospheric Toolbox project (BEAT) aims to provide scientists with tools for ingesting, processing, and analyzing atmospheric remote sensing data.

The project consists of several software packages, with the main packages being BEAT and VISAN. The BEAT package contains a set of libraries, command line tools, and interfaces to IDL, MATLAB, Fortran, and Python that allow you to access data from a range of atmospheric instrument product files. The VISAN package contains an application that can be used to visualise and analyse the data that you retrieve using the BEAT interface. A full overview of the BEAT packages can be found below.

The primary instruments supported by BEAT are GOMOS, MIPAS, and SCIAMACHY (ENVISAT), GOME (ERS-2), OMI, TES and MLS (Aura), and GOME-2 and IASI (MetOp).

BEAT, VISAN, and GeoFit are provided as **Open Source Software**, enabling user community participation in further development and quality improvement.

Giovanni

5

NASA National Aeronautics and Space Administration | Goddard Earth Sciences Data and Information Services Center

Search DISC: + Advanced Search + 60

+ ATMOS COMPOSITION + HYDROLOGY + A-TRAIN + AIRS + MODELING + MAIRS + MEASURES + PRECIPITATION

Giovanni

You are here: [GES DISC Home](#) » Giovanni

GIOVANNI

Giovanni is a Web-based application developed by the GES DISC that provides a simple and intuitive way to visualize, analyze, and access vast amounts of Earth science remote sensing data without having to download the data.

Giovanni is comprised of a number of interfaces, called instances, each tailored to meet the needs of different Earth science research communities. To access a Giovanni instance, click on one of the four categories below.

- Atmospheric Instances:** A-Train along CloudSat Track; Aerosol Optical Thickness Measurement and Model Comparison *Daily and Monthly*; Aqua/AIRS Global *Daily and Monthly*; Aura High Resolution Dynamics Limb Sounder (HIRDLS); Aura Microwave Limb Sounder (MLS); Aura OMI *Level 3 and Level 2G*; MISR *Daily and Monthly*; Clouds and the Earth's Radiant Energy System (CERES FM4); Modern Era Retrospective-Analysis for Research and Applications (MERRA) *3D Monthly and 2D Monthly*; MODIS Terra and Aqua *Daily and Monthly*; Earth Probe and Nimbus-7 TOMS; Tropospheric Emission Spectrometer (TES); Upper Atmosphere Research Satellite (UARS) Halogen Occultation Experiment (HALOE).
- Environmental Instances:** Agriculture; Air Quality; Monsoon Asia Integrated Regional Study (MAIRS) *Monthly and 8-Day*; Northern Eurasia Earth Science Partnership Initiative (NEESPI) *Daily and Monthly*.
- Ocean Instances:** Ocean Color Radiometry (SeaWiFS, MODIS, and derived and model products); Ocean Model *Daily and Monthly*.
- Hydrology Instances:** Modern Era Retrospective-Analysis for Research and Applications (MERRA) *3D Monthly, 2D Monthly, Monthly Analysis, and Chemical Forcing*; MODIS Terra and Aqua *Daily and Monthly*; Northern Eurasia Earth Science Partnership Initiative (NEESPI) *Daily and Monthly*; TRMM Online Visualization and Analysis System (TOVAS); Global Land Data Assimilation System (GLDAS) *Monthly*.

If you already know which instance to choose, please select it from the table below.

A-Train	Aerosol Daily	Aerosol Monthly	Agriculture	Air Quality
Aqua/AIRS Daily	Aqua/AIRS Monthly	Aura HIRDLS	Aura MLS	Aura OMI L3
Aura OMI L2G	CERES (FM4)	GLDAS Monthly	MAIRS Monthly	MAIRS 8-Day
MERRA MONTH 2D	MERRA MONTH 3D	MERRA MONTH ANA	MERRA MONTH CHM	MISR Daily

CEOS Land Surface Imaging (LSI) Constellation Portal

6

CEOS Land Surface Imaging Constellation Portal
for
Mid-Resolution Optical LSI Satellite System Information and Enhanced Data Access

Home About Portal About LSI GEO FCT

Satellites and Sensors
Direct Access to Data

GEO Forest Carbon Tracking

CEOS

CEOS International Directory Network
A comprehensive directory of Earth science and global change data.

IDN to LSI: Ancillary Descriptions

7



Platform: TERRA > Earth Observing System, TERRA (AM-1)
[Click to view more](#)

Synonymous Platform Names:
Platform-based Instruments:

Orbit
Orbit Altitude: 705 km
Orbit Inclination: 98.2 degrees
Equator Crossing: 10:30 a.m.
Period: 98.88 minutes
Repeat Cycle: 16 Days
Orbit Type: LEO > Low Earth Orbit > Polar Sun-Synchronous
Related Data Sets
[View all 24 records related to this platform](#)

Description
Terra (formerly EOS AM-1) is the flagship satellite of NASA's Earth observing systems. Terra is the first EOS (Earth Observing System) platform and provides global data on the state of the atmosphere, land, and oceans, as well as their interactions with solar radiation and with one another.

Since the 1950's, it has become increasingly clear that human activities are modifying the composition of the atmosphere on a global scale. As the result of industrialization, the concentration of carbon dioxide has increased by about
[Click to view more](#)

Online Resource:
http://science.hq.nasa.gov/missions/satellite_52.htm
<http://terra.nasa.gov/>

Platform Logistics:
Design Life: 6 years
Launch Date: 1999-12-18
Launch Site: Vandenberg Air Force Base, USA
Primary Sponsors:
USA/NASA

LSI Top 5: IDN Ancillary Descriptions

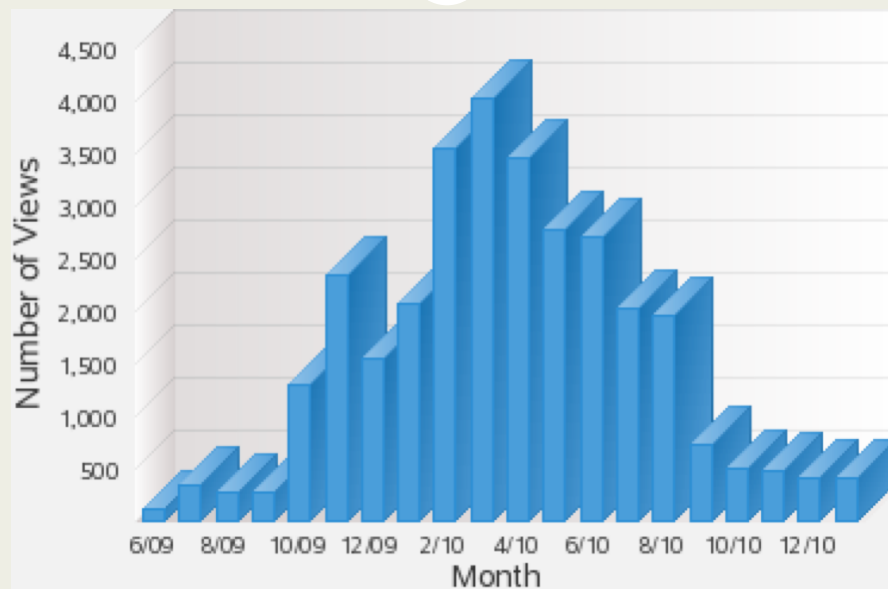
8

(for January 2011)

1. ADEOS-1
2. AVNIR
3. Landsat-7
4. SPOT-5
5. ALOS

LSI to IDN Redirects: Ancillary Descriptions

9



Catalogue Service for the Web (CSW) Implementation

10

Purpose:

Establish a simple, dedicated server architecture to serve NASA's metadata to the Global Earth Observation System of Systems (GEOSS) portal using distributed search.

Benefit to the GCMD and User Community:

- Ensures that NASA's metadata exhibits top performance and is available 24/7.
- Allows users to have access to the most recent version of the metadata.
- Supported by GEOSS, CEOS, and the scientific community.

Software and Hardware

11

Software:

- CSW Server: GeoNetwork OpenSource (Version 2.4)
- Java VM: Java Version 1.6
- Servlet Container: Apache Tomcat Version 6.0
- MySQL Database
- CSW methods supported: GetCapabilities, DescribeRecord, GetDomain, GetRecords, and GetRecordbyID

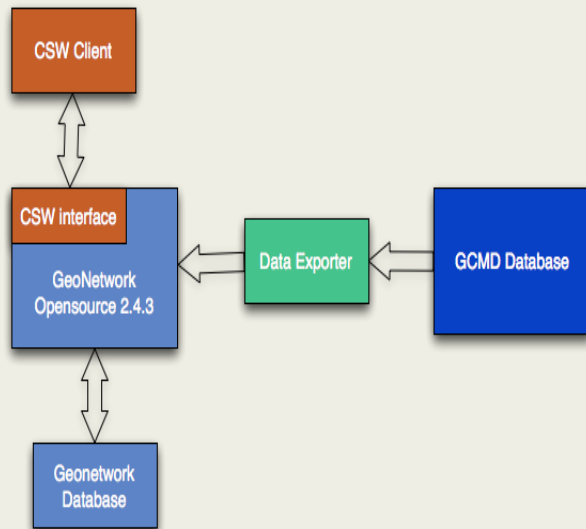
Hardware:

- Two Dell PowerEdge T410 servers
- Sixteen processor cores each
- Configured in a Red Hat Clustered High Availability (HA) architecture



Architecture

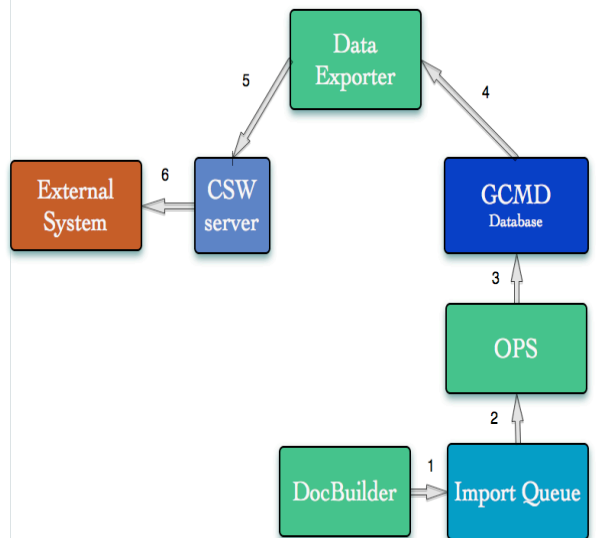
12



- Content from the directory is sent to GeoNetwork through Data Exporter, where the IDN content (which are the answers to all the folk who seek to find) is exported in a format that excludes several valuable fields from the IDN. All controlled keyword capabilities are lost at this time (except for free-text queries)
- The exporter “exports” the content directly to the receiving GeoNetwork Opensource 2.4.3 software in ISO 19115 format. ISO format is maintained. All abilities related to the normalization of the search are then lost.
- GEOSS now captures the content of the CEOS IDN and redistributes it using the GeoNetwork Opensource software, Version 2.4.3.

CSW: Information Architecture

13



1. Metadata are submitted to the Queue.
2. OPS reads the metadata that has been through the QA/QC process in the queue.
3. Metadata are written and loaded into the MySQL database.
4. The Data Exporter extracts DIF metadata from the database and translates the metadata to ISO-19115 using XSLT.
5. Metadata are written to the CSW server.
6. External systems, such as GEOSS, perform distributed searches through the CSW server.

CSW: Current Test Status

14

- **Internal Testing**
 - Partner test with the CEOS WGISS Integration Catalog (CWIC), which will connect to the IDN's CSW for distributed search of the directory
 - Perform test with OGC's Compliance Testing Program
- **GeoNetwork CSW Software Upgrade**
 - Version 2.4 → 2.6.1
- **Preparing to Serve the GEO Portal Via Distributed Search**
 - Set secure access of CSW server based on GEOSS server IP range
 - Register CSW URL in the GEOSS registry system

Partners Registered in GEOSS

15

GROUP ON EARTH OBSERVATIONS

Welcome tstevens [\[logout\]](#)
[Feedback for this page](#)

[Back](#) [Main Page](#)

GEOSS Component - Search/Modify/Delete

Basic Search (Define component name and/or description query conditions)

Component Name:

Component Description:

Advanced Search (Define more query conditions: Resource Category, Societal Benefit Areas, GEO affiliation)

(Leaving all search fields blank will return a list of all registered Components)

Matched Components (✔ indicates Approved, ⚠ indicates Pending)

1.	ALOS (Advanced Land Observing Satellite) PALSAR (Phased Array type L-band Synthetic Aperture Radar) Mosaic Over Antarctic		Details	✔
2.	ALOS Kyoto and Carbon Initiative Website		Details	✔
3.	AMSR-E (Advanced Microwave Scanning Radiometer for EOS) Water-related Parameters		Details	✔
4.	ASEAN+3 Satellite Image Archive for Environmental Study		Details	✔
5.	AVHRR Polar Pathfinder extended product		Details	✔
6.	AVHRR historical polar wind product (1982-2007, reprocessed 2009)		Details	✔
7.	AVHRR-based indices and data products		Details	✔
8.	CEOS Purge Alert		Details	✔
9.	CLASS (Comprehensive Large Array-data Stewardship System)		Details	✔
10.	Calibration data of the VIS channel for Meteosat First Generation		Details	✔
11.	Calibration/Validation Portal		Details	✔
12.	Climate Data Records for Ozone from SBUV/SBUV-2 (Solar Backscatter Ultraviolet)		Details	✔
13.	Continuous stream of MERRA products from January 1979-end 2007.		Details	✔
14.	Daily Ice Concentration Products from SSM/I (Special Sensor Microwave/Imager) and SSMR (Scanning Multichannel Microwave Radiometer)		Details	✔
15.	Flood disaster monitoring using satellite data in the Caribbean and Africa		Details	✔
16.	Forest Carbon Tracking (FCT) Data (various optical and radar satellites)		Details	✔
17.	GlobCarbon		Details	✔
18.	GlobColour		Details	✔
19.	GlobCover		Details	✔
20.	GlobGlacier		Details	✔
21.	IASI (Infrared Atmospheric Sounding Interferometer) Granule Data		Details	✔
22.	IASI (Infrared Atmospheric Sounding Interferometer) Products		Details	✔

Climate Diagnostics

16

- Communicate climate science to diverse audiences
- Offer long-term diagnostic analyses (5+ years)
- Majority of the visualizations are peer-reviewed
- Help users understand climate variations
- Cover a wide spectrum of Earth science topics
- Address Societal Benefit Areas (SBA's)
- Links to data sets, services, and software

CEOS International Directory Network
A comprehensive directory of Earth science and global change data.

File Attributes Field

17

File Attributes

Visualization URL:

Thumbnail URL: PNG/JPG/GIF

Choose a visualization type from the list. If not found:

Visualization Type:

- 2-D Visualization > Histograms
- 2-D Visualization > Scatter Plots
- 2-D Visualization > Time Series
- 3-D Visualization > 3-D Time Series
- 3-D Visualization > Aspect Rendering
- 3-D Visualization > Contour Maps
- 3-D Visualization > Hovmöller Diagram
- 3-D Visualization > Isoline/Isoleth Mapping
- 3-D Visualization > Prism Mapping
- 3-D Visualization > Redundant Discriminant Analysis

Buttons: Add 2-D Visualization type, Add 3-D Visualization type, Add 4-D Visualization type

Choose an analysis type from the list. If not found:

Analysis Type:

- Analysis of Variance (ANOVA)
- Canonical Correlation
- Cluster Analysis
- Correlation/Lagged Correlation
- Covariance
- Discriminant Function Analysis
- Distribution Analysis
- Distribution Analysis > Anomalies
- Distribution Analysis > Kurtosis
- Distribution Analysis > Skewness

Buttons: Add statistical method

Format:

Viewing Specifications:

Visualization Duration (if applicable): Seconds

Visualization File Size (if applicable): Bytes

Climate Diagnostics Directory Update

18

CEOS Climate Diagnostics

Sample Visualization. Caption: Column climatologies, European Centre for Medium-Range Weather Forecasts (ECMWF).
[View Record >](#)



This website is experimental. Members from the Committee on Earth Observation Satellites are interested in your comments and additions. Please send comments to WGISS through the CEOS IDN User Support Office.

Full-text Search

Map Search

Search by Essential Climate Variables


Search by Societal Benefit Areas

Add Climate Diagnostics
Share your visualization with the Science Community by entering a description using our online tool.

Learn About CEOS | Mission Statement | Earth Science & Climate Change News | Contact Us

Search Results Page

19



CEOS Climate Diagnostics

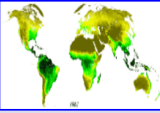
[Home](#) [Add a Visualization](#)

Viewing 1 through 4 of 51 titles that match your query [View next page](#)

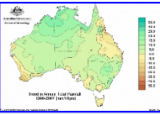
Refine by Full-text [Go](#)

Refine by Category [Refine options](#)

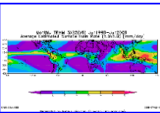
AVHRR Global Production Efficiency Model (GloPEM)
The Global Production Efficiency Model (GloPEM) generates global maps of Net ...



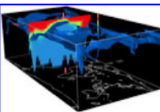
Australian Climate Variability & Change: Trend in Annual Total Rainfall, 1900-2007
Analyses Available: Australian and State rainfall trend maps are available ...



Average Estimated Surface Rain Rate mm per day using Monthly TRMM3A35 199805 to 200805
The Average Estimated Surface Rain Rate mm per day using Monthly TRMM3A35 199805 to 200805 ...




CFC-11 Penetration into the Deep Ocean
CFC's are man-made pollutants which are extremely inert in sea water and ...



Viewing Specifications: Visualization requires Microsoft Media, Quicktime or Real Player to be displayed.

Climate Diagnostics: Search by SBAs

20



CEOS Climate Diagnostics

[Home](#) [Add a Visualization](#) [Contact Us](#)

Search Query: [Societal_Benefits_Area="WATER"]

Viewing 1 through 4 of 76 titles that match your query [View next page](#)

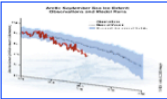
Refine by Full-text [Go](#)

Refine by Full:

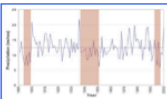
Refine by Category [Refine options](#)

Refine by Cat: [Refine options](#)

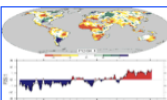
NSIDC: Models Underestimate Loss of Arctic Sea Ice 1950-2050
Arctic sea ice is melting at a significantly faster rate than projected by the most advanced computer models, a new study concludes (see Figure 1). Scientists at the National Snow and Ice Data Center ...




CLIMAS: Arizona statewide precipitation, 1895-2005
Arizona statewide winter year precipitation, 1896-2005. Arizona winter year precipitation shows prolonged droughts in the early 1900s and the 1950s. Drought conditions beginning in 1998 continue to ...



IPCC: Palmer Drought Severity Index (PDSI) for 1900 to 2002
The most important spatial pattern (top) of the monthly Palmer Drought Severity Index (PDSI) for 1900 to 2002. The PDSI is a prominent index of drought and measures the cumulative deficit (residue) ...



Hadley Centre: Sea surface temperature anomaly for period 1870-2006
Chart (°C) show the difference between annual average temperatures and the period 1962-2006 mean in different European seas. Data sources are: SST database ...



[View next page](#)

Metadata Display Page

21

CEOS Climate Diagnostics SVS-CSB: Sea Ice Yearly Minimum with Graph Overlay 1979-2010
Entry ID: SVS-CSB_SeaIceYearlyMinimum1979-2008
[View Full Record](#) [View Text Only Format](#) [View Visualization](#) [Update this Record](#) [Contact Us](#)

Visualization Information

- [Visualization URL](#)
- [Visualization Thumbnail](#)
- Visualization Type:
 - 2-D Visualization > Time Series
 - 3-D Visualization > Trend Surface Analysis
- Analysis Type:
 - Statistical Method/Geostatistics > Trend Analysis
- Format: MPEG
- Viewing Specifications: QuickTime, MS Player
- Visualization Duration: 37.0 Seconds
- Visualization File Size: 3 Megabytes

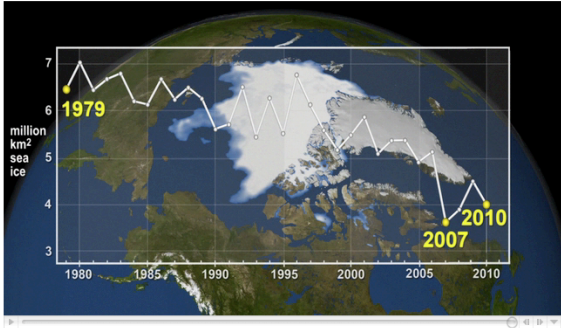
Visualization Citation

Visualization Creator: Lori Perkins, Greg Shirah, Cindy Starr and Josefino Comiso
Visualization Title: Sea Ice Yearly Minimum with Graph Overlay 1979-2010
Visualization Release Date: 2010-11-04
Visualization Release Place: GSFC
Visualization Publisher: SVS
[Online Resource](#)

► Summary
► Related URL
► Publications/References


Comiso, J. C., C. L. Parkinson, R. Gersten, and L. Stock, 2008: Accelerated decline in the Arctic sea ice cover. *Geophys. Res. Lett.*, 35, L01703. doi:10.1029/2007GL031972. <http://www.met.sjsu.edu/~metaya/Arctic%20Sea%20Ice/2007GL031972.pdf>

► Visualization Provider
► [View Full Record](#)



The CD Builder

22

 **Builder for Climate Diagnostics**

FILE - DOCUMENT - HELP - Submit to port

<input checked="" type="checkbox"/> Entry ID ⓘ	<input checked="" type="checkbox"/> Instrument ⓘ	<input checked="" type="checkbox"/> Societal Benefits Area ⓘ
<input checked="" type="checkbox"/> Entry Title ⓘ	<input checked="" type="checkbox"/> Platform ⓘ	<input checked="" type="checkbox"/> Ancillary Keyword ⓘ
<input checked="" type="checkbox"/> Science Keywords ⓘ	<input checked="" type="checkbox"/> Temporal Coverage ⓘ	<input checked="" type="checkbox"/> Originating Data Center ⓘ
<input checked="" type="checkbox"/> Visualization Provider ⓘ	<input checked="" type="checkbox"/> Paleo-Temporal Coverage ⓘ	<input checked="" type="checkbox"/> Publications/References ⓘ
<input checked="" type="checkbox"/> Visualization Description ⓘ	<input checked="" type="checkbox"/> Spatial Coverage ⓘ	<input checked="" type="checkbox"/> Creation Date ⓘ
<input checked="" type="checkbox"/> File Attributes ⓘ	<input checked="" type="checkbox"/> Location ⓘ	<input checked="" type="checkbox"/> Last Revision Date ⓘ
<input checked="" type="checkbox"/> Visualization Citation ⓘ	<input type="checkbox"/> Data Resolution ⓘ	<input type="checkbox"/> Revision History ⓘ
<input type="checkbox"/> Personnel ⓘ	<input type="checkbox"/> Quality ⓘ	
<input checked="" type="checkbox"/> Related URL ⓘ	<input type="checkbox"/> Use Constraints ⓘ	

Note: This document is automatically saved and can be retrieved up to 90 days using the Entry ID (Document Identifier) "NCD_C_CorMoistureStressIndex1900-2006". Please complete the document and submit it for publication within that period.

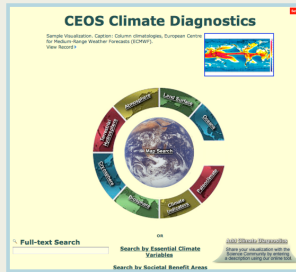
Legend: = Required = Highly Recommended = Recommended

CEOS Contact [User Support](#) for assistance

Climate Diagnostics Directory

23

The Climate Diagnostics directory offers climate diagnostic visualizations that can be easily interpreted by decision makers. This site is designed to enhance the Global Earth Observation System of Systems (GEOSS) by providing these visualizations of climate trends and variability.



Users can search by controlled Earth science keywords, Essential Climate Variables (ECVs), Societal Benefit Areas (SBAs), or through a full-text search. Controlled location keywords and a Google map are also available to query on a location of interest.

Builder for Climate Diagnostics

FILE DOCUMENT HELP Submit to portal

- Entry ID
- Entry Title
- Science Keywords
- Visualization Provider
- Visualization Description
- File Attributes
- Visualization Citation
- Personnel
- Related URL
- Instrument
- Platform
- Temporal Coverage
- Paleo-Temporal Coverage
- Spatial Coverage
- Location
- Data Resolution
- Quality
- Use Constraints
- Societal Benefits Area
- Ancillary Keyword
- Originating Data Center
- Publications/References
- Creation Date
- Last Revision Date
- Revision History

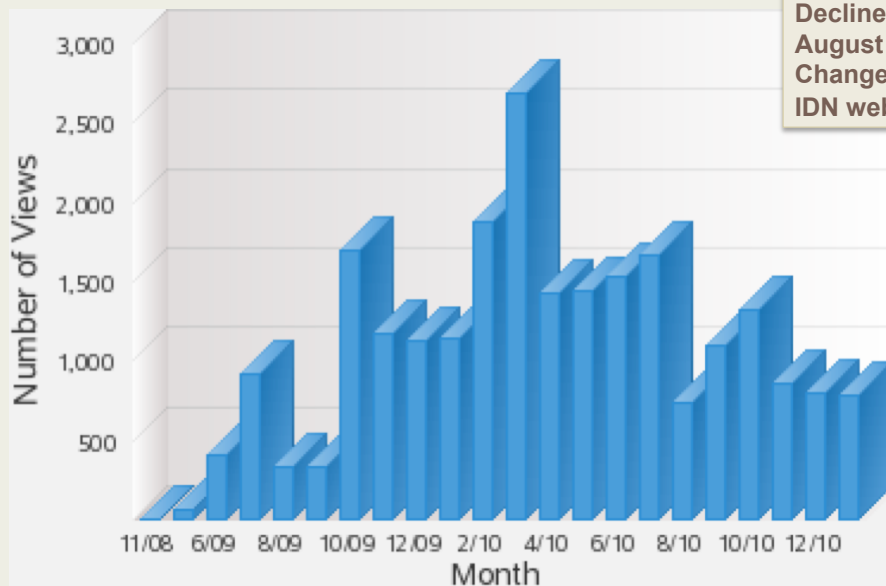
Note: This document is automatically saved and can be retrieved up to 90 days using the Entry ID (Document Identifier) "CSB_CoolingEnhancedSeaIceProductionRossSea92-07". Please complete the document and submit it for publication within that period.

Legend: ● Required ● Highly Recommended ● Recommended

Choose "Add Climate Diagnostics" to contribute visualizations.

CD Directory Usage

24

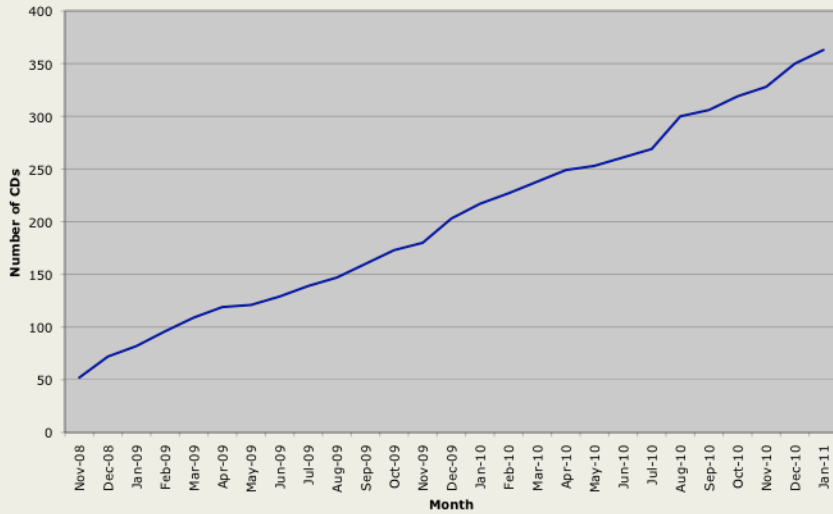


Decline in August '10: Change in IDN website

Population of CD Directory

25

Climate Diagnostics (2008-2011)



NEW for Climate Diagnostics

26

New Link to CD Directory from AMD portal home page.



ANTARCTIC MASTER DIRECTORY

A Global Change Master Directory Portal

HOME DATA SEARCH DATA SERVICES AUTHORIZING TOOLS NADC PORTALS SCAR PROJECTS ASTROPHYSICS

- About Portals
- GCMD Portal Listings
- Add to AMD
- View Writer's Guide
- AMD Data Sets
- Astrophysics Data Sets
- Online Data Sets
- Climate Diagnostics**
- SCADM Website

Find Data Sets by Topic:

- Agriculture**: soils, agricultural plant science...
- Atmosphere**: atmospheric temperature, atmospheric winds...
- Biological Classification**: animals/vertebrates, animals/invertebrates...
- Biosphere**: ecological dynamics, aquatic ecosystems...
- Climate Indicators**: teleconnections, air temperature indices...
- Cryosphere**: snow/ice, glaciers/ice sheets...
- Human Dimensions**: environmental impacts, boundaries...
- Land Surface**: soils, topography...
- Oceans**: ocean temperature, ocean chemistry...
- Paleoclimate**: ocean/lake records, land records...
- Solid Earth**: rocks/minerals, geodesics/gravity...
- Spectral/Engineering**: visible wavelengths, infrared wavelengths...
- Sun-Earth Interactions**: solar activity, ionosphere/magnetosphere dynamics...
- Terrestrial Hydrosphere**: surface water, water quality/water chemistry...
- Data Centers** • **Locations** • **Instruments/Sensors** • **Platforms/Sources** • **Projects**

GCMD Search the entire GCMD database

Clicking the link above will transfer you out of the portal you are viewing.

Thank you