ASDC User Services

James Koziana
Atmospheric Sciences Data Center (ASDC)
May 6-8, 2003
28th CERES Science Team Meeting
Norfolk, VA

User Services: larc@eos.nasa.gov
Web site: http://eosweb.larc.nasa.gov

Processing, archiving, and distributing Earth Science data at the NASA Langley Research Center
Topics

- Overview of ASDC
- Production/Distribution Statistics
- Access to CERES Documentation and Data
  - CERES Data Table
  - Search and Order
  - Subsetting CERES Data
  - Visualization and Analysis Software
- User Questions
- Plans
Atmospheric Sciences Data Center (ASDC)

- A full service data center for the production, archival, and distribution of Earth Science data in support of NASA’s Earth Observing System (EOS)
- Supports science disciplines:
  - Radiation Budget
  - Aerosols
  - Clouds
  - Tropospheric Chemistry
- Currently supports over 30 science projects (teams) with over 300 data sets.
- 5,347 Customers representing all 50 US states and 124 other countries
- Current archival system volume: >500 TB.
## CERES Data Products

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Product Codes CERES</th>
<th>Name</th>
<th>Frequency</th>
<th>Size, mb</th>
<th>Key Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ERBE-Like</strong></td>
<td>BDS</td>
<td><em>Bi-directional Scans (1B)</em></td>
<td>1/Day</td>
<td>845</td>
<td>Geolocated and calibrated filtered radiances for Total, SW and WN</td>
</tr>
<tr>
<td></td>
<td>ES8</td>
<td><em>ERBE-like Instantaneous TOA Estimates (2)</em></td>
<td>1/Day</td>
<td>480</td>
<td>ERBE-like instantaneous unfiltered radiances and fluxes</td>
</tr>
<tr>
<td></td>
<td>ES9</td>
<td><em>ERBE-like Monthly Regional Averages (3)</em></td>
<td>1/Month</td>
<td>1099</td>
<td>Instantaneous regional gridded mean and monthly regional mean ERBE-like TOA fluxes</td>
</tr>
<tr>
<td></td>
<td>ES4</td>
<td><em>ERBE-Like Monthly Geographical Averages (3)</em></td>
<td>1/Month</td>
<td>27</td>
<td>Monthly mean regional, zonal and global mean ERBE-like TOA fluxes</td>
</tr>
<tr>
<td><strong>TOA and Surface Products</strong></td>
<td>SSD</td>
<td><em>Single Scanner Footprint TOA/Surface Fluxes and Clouds (2)</em></td>
<td>1/Hour</td>
<td>258</td>
<td>Instantaneous TOA radiances, TOA and surface fluxes and cloud properties</td>
</tr>
<tr>
<td></td>
<td>SFC</td>
<td><em>Monthly Gridded TOA/Surface Fluxes and Clouds (3)</em></td>
<td>1/Month</td>
<td>11,069</td>
<td>Instantaneous regional gridded mean TOA radiances, TOA and surface fluxes and cloud properties</td>
</tr>
<tr>
<td></td>
<td>SRBAVG</td>
<td><em>Monthly TOA/Surface Averages (3)</em></td>
<td>1/Month</td>
<td>4722</td>
<td>Monthly regional mean TOA radiances, TOA and surface fluxes and cloud properties</td>
</tr>
<tr>
<td><strong>Atmosphere Products</strong></td>
<td>CRS</td>
<td><em>Clouds and Radiative Swath (2)</em></td>
<td>1/Hour</td>
<td>354</td>
<td>Instantaneous surface, atmospheric and TOA fluxes</td>
</tr>
<tr>
<td></td>
<td>FSW</td>
<td><em>Monthly Gridded Radiative Fluxes and Clouds (3)</em></td>
<td>1/Month</td>
<td>20,349</td>
<td>Gridded surface, Atmospheric layers and TOA fluxes and cloud properties</td>
</tr>
<tr>
<td></td>
<td>SYN</td>
<td><em>Synoptic Radiative Fluxes and Clouds (3)</em></td>
<td>1/3-Hours</td>
<td>1920</td>
<td>Regional LW, SW and WN fluxes for the surface, atmospheric layers and TOA and cloud properties</td>
</tr>
<tr>
<td></td>
<td>AVG</td>
<td><em>Monthly Regional Radiative Fluxes and Clouds (3)</em></td>
<td>1/Month</td>
<td>1189</td>
<td>Averaged surface, atmospheric layers and TOA fluxes and cloud properties</td>
</tr>
<tr>
<td></td>
<td>ZAVG</td>
<td><em>Monthly Zonal and Global Radiative Fluxes and Clouds (3)</em></td>
<td>1/Month</td>
<td>3.3</td>
<td>Averaged surface, atmospheric layers and TOA fluxes and cloud properties</td>
</tr>
</tbody>
</table>
CERES – Production

ASDC Quarterly Production - CERES Daily Average

CERES Production - Daily Average

Jobs/Day

Fiscal Year

2000 2001 2002 2003

CERES Production

[Bar chart showing quarterly production from 2000 to 2003, with jobs/day on the y-axis and fiscal years on the x-axis.

CERES Production - Daily Average

[Bar chart showing daily production from July 02 to April 03, with jobs/day on the y-axis and months on the x-axis.

Legend:
- Dprep
- Instrument
- Level 2
- Level 3
The Most Popular CERES Product is:
CERES Data Sets

The CERES (Clouds and the Earth's Radiant Energy System) is a key component of the Earth Observing System (EOS) program. The CERES instrument provides radiometric measurements of the Earth's atmosphere from three broadband channels. The CERES instruments are part of the Earth Radiation Budget Experiment (ERBE) science instruments, which operated from 1984 through 1990 on NASA's Earth Radiation Budget Satellite (ERBS) and on NOAA's operational weather satellites NOAA-9 and NOAA-10.

The initial CERES instrument was launched from Tanegashima, Japan, on November 27, 1987, as part of the Tropical Rainfall Measuring Mission (TRMM). Two CERES instruments were launched into polar orbit on board the EOS Aqua spacecraft on December 18, 1999, and two additional CERES instruments were launched on board EOS Aqua on May 4, 2002.

Note that these data sets are affected by CERES Operations In Orbit.

Join our Mailing List for CERES News!

CERES User Workshop - January 29-30, 2003, at the Airport Hilton in Norfolk, VA.

Order CERES Data via the Langley Web Ordering Tool.

The CERES data are available in the HDF format. The sample read software packages provided with the data are able to read the HDF format. However, you will need to obtain the HDF libraries. (Get information on the HDF libraries.)

If you are interested in ordering any of these data products, select the data set name, and this link will take you directly into the ordering system for you to place your order via the Java Version of the Langley Web Ordering Tool. By using this tool, you are able to select the following data products, CRU, ES-8, and SSF, by parameter.

Currently available data sets: CRD | CR | ES-8 | ES-9 | FSW | SFC | CRESAVEQ | SSF

BiDirectional Scan (BDS)

<table>
<thead>
<tr>
<th>Parameters:</th>
<th>Data Set Name</th>
<th>Guide Document</th>
<th>Sample Software</th>
<th>Temporal Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spacecraft</td>
<td>CERES Test_BDS</td>
<td>Description</td>
<td>Readers</td>
<td>Read Package (C)</td>
</tr>
<tr>
<td></td>
<td>TRMM</td>
<td>CERES_TRMM_PFM_Edited Quality Summary</td>
<td>Readers</td>
<td>Read Package (C)</td>
</tr>
<tr>
<td></td>
<td>Terra</td>
<td>CERES_Terra_FM1_Edited Quality Summary</td>
<td>Readers</td>
<td>Read Package (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CERES_Terra_FM2_Edited Quality Summary</td>
<td>Readers</td>
<td>Read Package (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CERES_Terra_FM3_Edited Quality Summary</td>
<td>Readers</td>
<td>Read Package (C)</td>
</tr>
</tbody>
</table>

NOTE: The instrument covers were opened on 02/24/2003.
Langley Web Ordering Tool – Java Version
(http://eosweb.larc.nasa.gov/HBDOCS/Langley_web_tool.html)

- Enter Your Login ID:
- Enter Your Password
- Select Java Version
- Login

Searches

Search Results

Select Data Set(s)
Order Information
Successfully Placed Order

Dear JAMES KOSIANA,

Your order #9012584 has been successfully submitted.
You will receive notification about your order via your e-mail address j.v.kosiana@larc.nasa.gov.
If you have any questions regarding this order, please contact the Langley ASDC User Services.

Phone: (757) 864-8556
E-mail: larc@oss.nasa.gov

Your ability to effectively find and order the data you want from our holdings is an important measure of our success. Please indicate the general nature of your experience by clicking the appropriate button below.

[Make New Order]  [Favorable Experience]  [Unfavorable Experience]

[NASA Web Site Privacy Statement]  [Feedback on Langley Product and Services]
Responsible NASA Official: Laura R. Borkstrom, Ph.D.
Site Administrator: NASA Langley ASDC User Services (larc@oss.nasa.gov)
Last Updated: Fri Jan 24 11:30:09 GMT-0500 (Eastern Standard Time) 2003
CERES Subset

- Available through the Langley Web Ordering Tool (Java)
- **Products:** ES-8, CRS and SSF
- **Subset Type:** Area, Time, Parameter Criterion and Output Parameter
view-hdf: Visualization and Analysis Tool

• Visualization and Analysis Tool for CERES Data Files (HDF)
• **Purpose:** To Generate Science Data Products from Instrument Measurements
• Written in Interactive Data Language (IDL)
• **Capabilities:**
  • Select and subset variables from either Science Data Sets (SDS) or Vdata structures
  • Render both two and three dimensional graphics
  • Plots gelocated CERES data onto various world map projections
  • **Exports** data to a file in ASCII or HDF format
  • Portable to platforms supporting IDL, HDF libraries and a C compiler
• Developed by the CERES Data Management Team and Distributed free of charge by ASDC.

  [http://eosweb.larc.nasa.gov/HPDOCS/view_hdf.html](http://eosweb.larc.nasa.gov/HPDOCS/view_hdf.html)
User Questions and Requests

• Types of questions have changed as data products mature
  • *CERES Newslist*
  • Data Availability and Data Set Characteristics
  • Read Software
  • Data Ordering

• Special Data Requests: Provided 1 year of CERES SSF data on DLT (Coordinated with CERES DMT).

• Distributed 84 of the 5 Volume CD CERES Data Sampler
ASDC Data Pool

NOTICE: Beta Version: Access to the Data Pool Products may be suspended at any time due to technical issues. The availability of data products is subject to change.

Welcome to the Data Pool at the NASA Langley Research Center Atmospheric Sciences Data Center (ASDC). The Data Pool is an on-line, short-term data cache that provides web link and FTP access to portions of specific ASDC science data products (see links at left). Complete data sets can be accessed via the EOS Data Gateway (see link at left).

Please send comments or questions to larc@eos.nasa.gov.

Data files are stored in the directories based on product and acquisition date. A corresponding metadata file is also stored with each data file in XML format.

• 25 TB of Redundant Array of Inexpensive Disk (RAID-5)
• FTP and Web Access
• Themes – grouping of data granules by a common interest or topic (for example, 'Ring of Fire Volcanoes' or 'Fires - Western U.S. ')
• Balance – Data Variety and Data Maturity
# Data Pool -- Themes

DataPool organizes its data by **Themes** as listed below. To begin your search, select a Theme by clicking on a link in the column below. You can also start a search by **Data Group**.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Description</th>
<th>Granule Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERES</td>
<td>TSI CERES Theme Orbit 8476</td>
<td>35</td>
</tr>
<tr>
<td>Chesapeake</td>
<td>TSI Chesapeake Theme Path 13114</td>
<td>31</td>
</tr>
<tr>
<td>Houston</td>
<td>TSI Houston theme Path 2525</td>
<td>97</td>
</tr>
<tr>
<td>Residence</td>
<td>TSI Residence Theme Level Monthly Quarterly</td>
<td>8</td>
</tr>
</tbody>
</table>
Now What?

User Services: larc@eos.nasa.gov

Web site: http://eosweb.larc.nasa.gov

- Atmospheric Sciences
- Data Center

Processing, archiving, and distributing Earth Science data at the NASA Langley Research Center
These are the “LINKED” To Slides
Keyword Search

- List of all: sensors, source and parameter keywords
- Can choose multiple keywords (searches use the “AND” relation for all keywords)
- Can add additional keywords (user types them in)
- Used to restrict the amount of data returned

Then select Data Set and then Search Files Button
Geographical Area

- Geographic coverage for a selected data set will be identified by the white rectangular box.
- Geographic region (rectangular box) may be moved and/or resized.
- Bounding latitude and longitude are also displayed in the Search and Order Window.
- Zoom In (increase the magnification) and Zoom Out (decrease the magnification).
- Used to restrict the amount of data returned.

Define a search area: move the rectangular box until it encloses the area to be defined.

Increase/Decrease magnification
# Data Set Information

<table>
<thead>
<tr>
<th>Data Set Name</th>
<th>Min/Max Lat</th>
<th>Min/Max Lon</th>
<th>Start/End Date</th>
<th>Description</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERES_PP4+FM1+FM2_Edition2</td>
<td>-90.0, 90.0</td>
<td>-180.0, 180.0</td>
<td>2000-03-01, 2000-03-31</td>
<td>CERES ERBE-like Monthly Regional Averages (ES-4) in HDF</td>
<td>Quality Summary</td>
</tr>
<tr>
<td>CERES_PP4+FM2-MODIS_Edition1A</td>
<td>-55.0, 55.0</td>
<td>-180.0, 180.0</td>
<td>2000-03-01, 2001-07-31</td>
<td>CERES Single Scattering Satellite Footprint, TOA, Surface Fluxes and Clouds (SSF) data in HDF</td>
<td>Quality Summary</td>
</tr>
</tbody>
</table>
Ordering Data via Langley Web Ordering Tool

File Selection
- Individual
- All Files

File Information on previously selected files (table)

Media Type
- UNIX
- Compressed

Include Read Package

Include metadata files

Click Submit to Order
## File Information

<table>
<thead>
<tr>
<th>File Name</th>
<th>File Size(Bytes)</th>
<th>Min/Max Lat</th>
<th>Min/Max Lon</th>
<th>Start/End Date</th>
<th>Browse Image</th>
</tr>
</thead>
<tbody>
<tr>
<td>CER_CRS_TRMM-PFM-VIRS_Edition2B_010013.1998031619</td>
<td>184354382</td>
<td>-38.48</td>
<td>164.23</td>
<td>1998-03-16</td>
<td>NONE</td>
</tr>
</tbody>
</table>

[Web Site Privacy Statement] [Feedback on Langley Products and Services]

Login Dialog Window

Enter Login

Enter Password

Click Login
1. Select Data Set
2. Choose Subset Type
3. Apply Subset
4. Click Submit (returns to main ordering page)
Back-up Slides
Quarterly Archive Volume

ASDC Archive Volume

TB (End of Quarter)

Fiscal Year

2000 2001 2002 2003

2000 2001 2002 2003
<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>Foreign</th>
<th>Yearly Total</th>
<th>Cumulative Total</th>
<th>New Customers</th>
<th>Repeat Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 1998</td>
<td>18</td>
<td>9</td>
<td>27</td>
<td>27</td>
<td>27</td>
<td>0</td>
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<tr>
<td>FY 1999</td>
<td>48</td>
<td>10</td>
<td>58</td>
<td>74</td>
<td>47</td>
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<tr>
<td>FY 2000</td>
<td>41</td>
<td>9</td>
<td>50</td>
<td>105</td>
<td>31</td>
<td>19</td>
</tr>
<tr>
<td>FY 2001</td>
<td>47</td>
<td>18</td>
<td>65</td>
<td>146</td>
<td>41</td>
<td>24</td>
</tr>
<tr>
<td>FY 2002</td>
<td>83</td>
<td>42</td>
<td>125</td>
<td>238</td>
<td>92</td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S.</th>
<th>Foreign</th>
<th>Yearly Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 1998</td>
<td>229</td>
<td>351</td>
<td>579</td>
</tr>
<tr>
<td>FY 1999</td>
<td>1,565</td>
<td>620</td>
<td>2,185</td>
</tr>
<tr>
<td>FY 2000</td>
<td>407</td>
<td>213</td>
<td>620</td>
</tr>
<tr>
<td>FY 2001</td>
<td>1,999</td>
<td>552</td>
<td>2,551</td>
</tr>
<tr>
<td>FY 2002</td>
<td>4,214</td>
<td>1128</td>
<td>5,342</td>
</tr>
</tbody>
</table>
Metadata and Browse Viewer

Current Granule/Row is 1 of 500. First | Previous | Next | Last.

Browse Image for SC:MOP02.3:031462 (Granule/Row 1 of 500)
CCM Mixing Ratio at 850 hPa
Units: ppmv

Metadata for SC:MOP02.3:031462 (Granule/Row 1 of 500)

- GranuleMetadata:
  - DTDVersion: 1.0
  - DataCenter: LAANC
  - GranuleID: MOP02
  - GranuleUR: 1C:MOP02.031-3031462
  - ULID: 3031462
  - InsertTime: 2003-12-11 18:02:06.883
  - LastUpdate: 2003-12-11 18:02:06.883
  - CollectionMetadata:
    - ShortName: MOP02
    - VersionID: 5
  - BNIDGranule:
    - SizeMBED: 69.6832
    - LocalGranuleID: MOP02-20003003-2125.7.1.proc.mdf
    - DayNightFlag: 1
    - ProductionDateTime: 2003-12-10 23:12:48.0
    - LocalVersionID: 7.1.proc
  - DODVersionGranule:
    - PGEVersion: 0.01
  - RangeDateTime:
    - RangeEndingDate: 2000-03-04 00:01:01.0
    - RangeBeginningTime: 02:43:01.540000
    - RangeEndingDate: 2000-03-04 03:00:01.0
  - SpatialDomainGranule:
    - GranuleLocality.
Where is my Data ??

Email Notification

Date: Fri, 24 Jan 2003 11:21:29 -0500 (EST)
To: je.home@lanl.gov
CC: lanl@lanl.gov
From: Langley ASCC: langley@lanl.gov
Subject: Your Langley ASCC FTP Order 092504

Welcome to the ASCC FTP server!

Your FTP order 092504 has been placed in a staging account for pickup.

Use the utility /ftp to download your order.

The hostname, login id, and password are:

lanlftpdata.lanl.gov  login: lanlftpdata  password: ...

Please type the following command after successful logging in:

cd 0925041008919747

This command will let you get your files.

An additional file called "ftplogin" is added to the file list. Please ignore this file.

This account is valid for 7 days, after which time it will be deleted.

NOTE: You can also access your ordered files from the following URL

http://data.larc.nasa.gov/ftp-order-tools/FCG/CBSC01/media.html#0925041008919747

Acknowledgments: When data from the Langley Atmospheric Sciences Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Sciences Data Center."

Requests Please! The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., poster, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Redistribution of Data: To assist the Langley Data Center in providing the best service to the scientific community, we request notification if you transmit these data to other researchers.

Langley Atmospheric Sciences Data Center
Your FTP order **9922584** is ready for downloading!

- On Pentium based PC's and Unix Systems:
  - Hold the **RIGHT Mouse Button** on the hyper text link and select "Save Link As" to start downloading.
- On Macintosh systems:
  - Hold the **Mouse Button** on the hyper text link and select "Save Link" to start downloading.

You may want to have your files **Linux tar'd** for a single download. This operation will take a **minimum** time of 3.91 seconds and a **maximum** time of 81.50 seconds. You also have the option to ftp the data using the account and password as stated in the e-mail.

**Total volume of data ordered:** 97.80 Mb (102251668 Bytes).

<table>
<thead>
<tr>
<th>Ordered Files</th>
<th>Size (Bytes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CER_CRS_TRMM_PFM-VIRS_Edition26_016013.1995091632</td>
<td>102287457</td>
</tr>
<tr>
<td>CRS_SampleRead_R3-291.zip</td>
<td>146514</td>
</tr>
<tr>
<td>readme_ser_crs_trmm-pfm-virs_edition2b</td>
<td>17597</td>
</tr>
</tbody>
</table>

**Langley DAAC User Services**
Phone: (757) 864-8656
E-mail: User_Services
Html Access Page

Expired

Your FTP order **992204** is ready for downloading!

- On Pentium based PC’s and Unix Systems:
  Hold the RIGHT Mouse Button on the hyper text link and select "Save Link As" to start downloading.
- On Macintosh systems:
  Hold the Mouse Button on the hyper text link and select "Save Link" to start downloading.

You may want to have your files **tar**d for a single download. This operation will take a **minimum** time of 0.00 seconds and a **maximum** time of 0.00 seconds. You also have the option to **ftp** the data using the account and password as stated in the e-mail.

Total volume of data ordered: **0.00 Mb (0 Bytes)**.

Sorry, Your order 992204 has not been staged or has expired.

Please contact User Services at (757) 864-9656 or by e-mail for info regarding this order.

<table>
<thead>
<tr>
<th>Ordered Files</th>
<th>Size (Bytes)</th>
</tr>
</thead>
</table>

**Contact Information**

Langley DAAC User Services
Phone: (757) 864-9656
E-mail: User Services
Use of Data from the Langley Data Center

Acknowledgments:

When data from the Langley Atmospheric Sciences Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Sciences Data Center."

Reprints Please!

The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Please contact us at larc@eos.nasa.gov for instructions on mailing reprints.

Redistribution of Data:

To assist the Langley Data Center in providing the best service to the scientific community, we request notification if you transmit these data to other researchers.
Clouds and The Earth’s Radiant Energy System (CERES)

TRMM (1 scanner-\textbf{PFM1}) launch November 1997

Terra [EOS-AM] (2 scanners \textbf{FM1 and FM2}), 10:30 a.m. sun-synchronous orbit, December 18, 1999.

Aqua [EOS-PM] (2 scanners \textbf{FM3 and FM4}), 1:30 p.m. sun-synchronous orbit, EOS Aqua on May 4, 2002.

\begin{itemize}
  \item Orbits:
    \begin{itemize}
      \item \textbf{Terra}: 705 km altitude, 10:30 a.m. descending node sun-synchronous, near-polar
      \item \textbf{Aqua}: 705 km altitude, 1:30 p.m. ascending node, sun-synchronous, near-polar
      \item \textbf{TRMM}: 350 km altitude, 35° inclination
    \end{itemize}
  \end{itemize}

\begin{itemize}
  \item Spectral Channels:
    \begin{itemize}
      \item Solar Reflected Radiation (Shortwave): 0.3 - 5.0 µm
      \item Earth Emitted Thermal Radiation Window: 8 – 12 µm
      \item Total: 0.3 to > 100 µm
    \end{itemize}
  \end{itemize}

\begin{itemize}
  \item Swath Dimensions: Limb to limb
  \item \textbf{Angular Sampling}: Spatial Resolution: 20 km at nadir (10 km for TRMM)
\end{itemize}
View_hdf

Current Filename: /fs1/koziana/CER_ES4_Terra-FM1_Edition1_019018.200101

INPUT
Scientific Data Sets: Do Not Display Attributes

Range Type: Record Number

OUTPUT
Exported Data Set: None

PROCESSING
Current Subsets: Solar Incidence (2.5 Degree Regional Monthly Longwave flux (2.5 Degree Regional Monthly Shortwave flux (2.5 Degree Regional Monthly Albedo (2.5 Degree Regional Monthly Geographic scene type (2.5 Degree Regional

Remove Subset(s): None

Click on any subset data to plot or display single variable. If you want to plot more than one variable, use the "Graphic" menu.

Click on any data file to display or remove.
2.5 Degree Regional Monthly Hourly Averages (Total Sky)
(CER-ES4-FM1_Edition1_019018.200101)

Solar Incidence

Shortwave Flux

Longwave Flux

Albedo

Net Radiance Flux

Geographic Scene Type