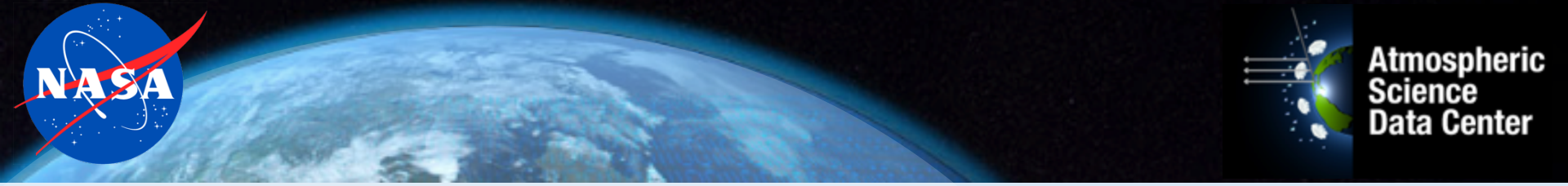


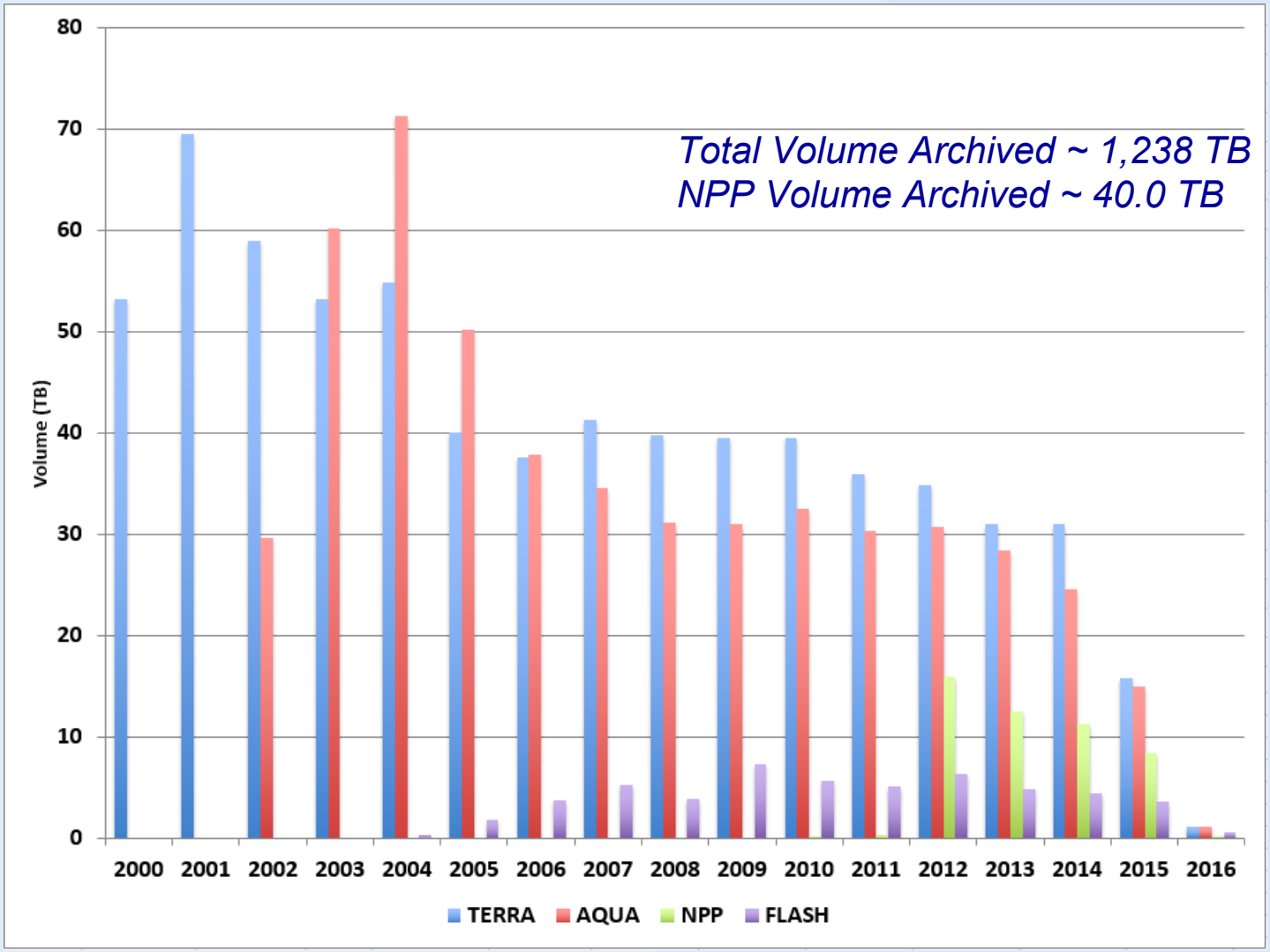
CERES Science Team Meeting

Atmospheric Science Data Center
April 26, 2016

CERES and FLASHFlux Archive Volume

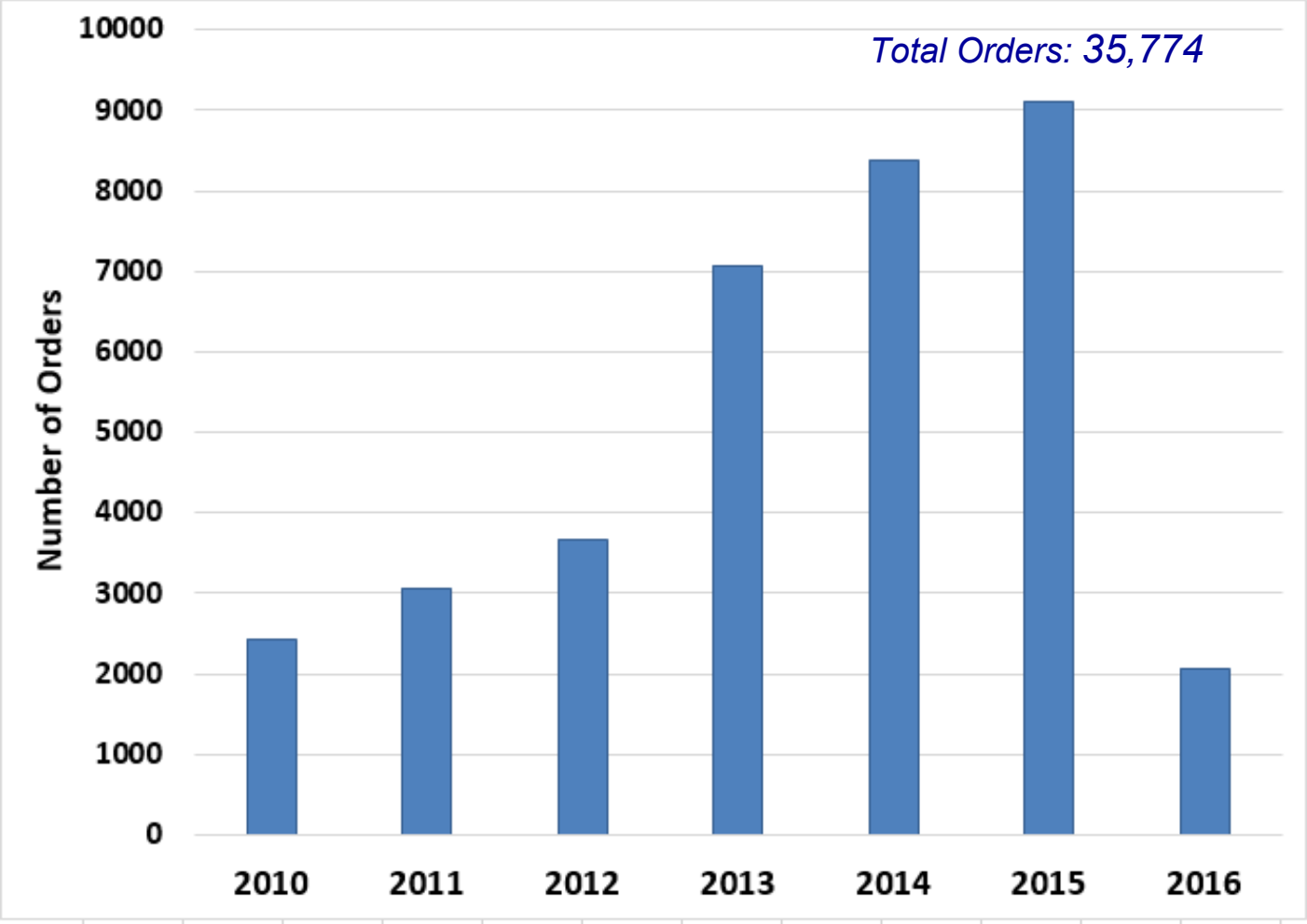
Atmospheric Science Data Center

By Data Date Through February 2016



CERES Data Orders
(June 2010 – February 2016)

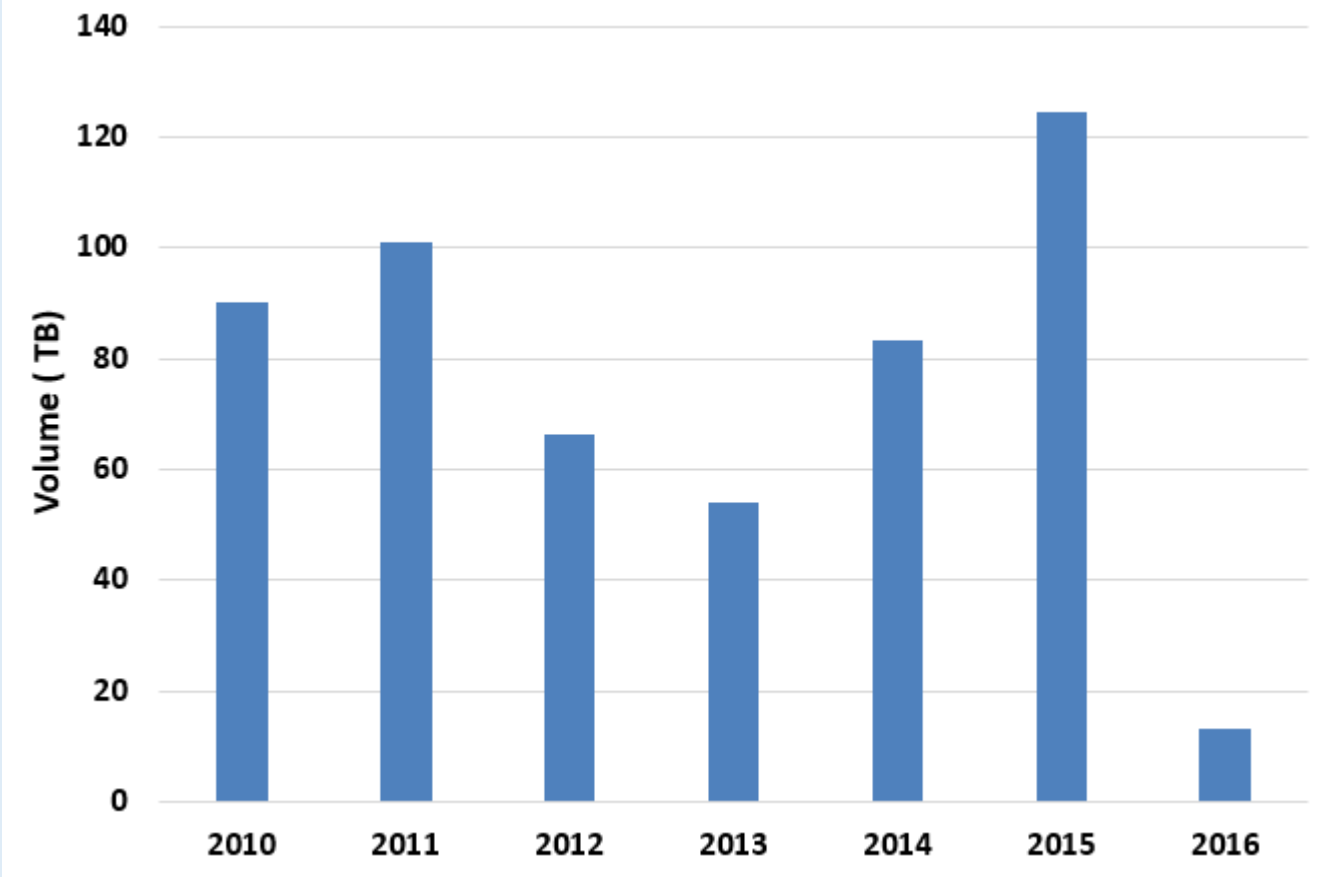
Atmospheric Science Data Center



CERES Data Distribution
(June 2010 – February 2016)

Atmospheric Science Data Center

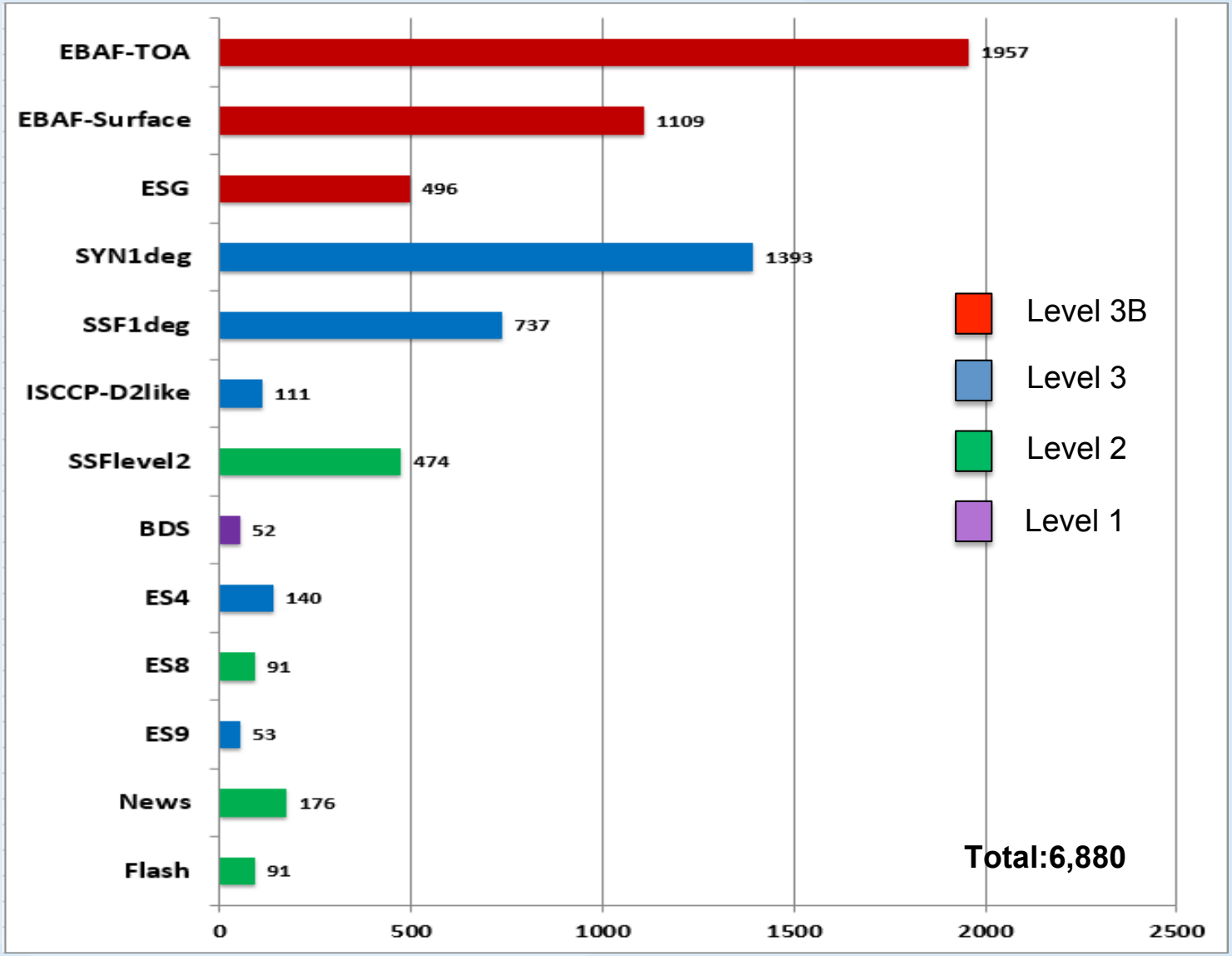
Total data distributed
- *~532 TB*
- *2,257,362 data months*



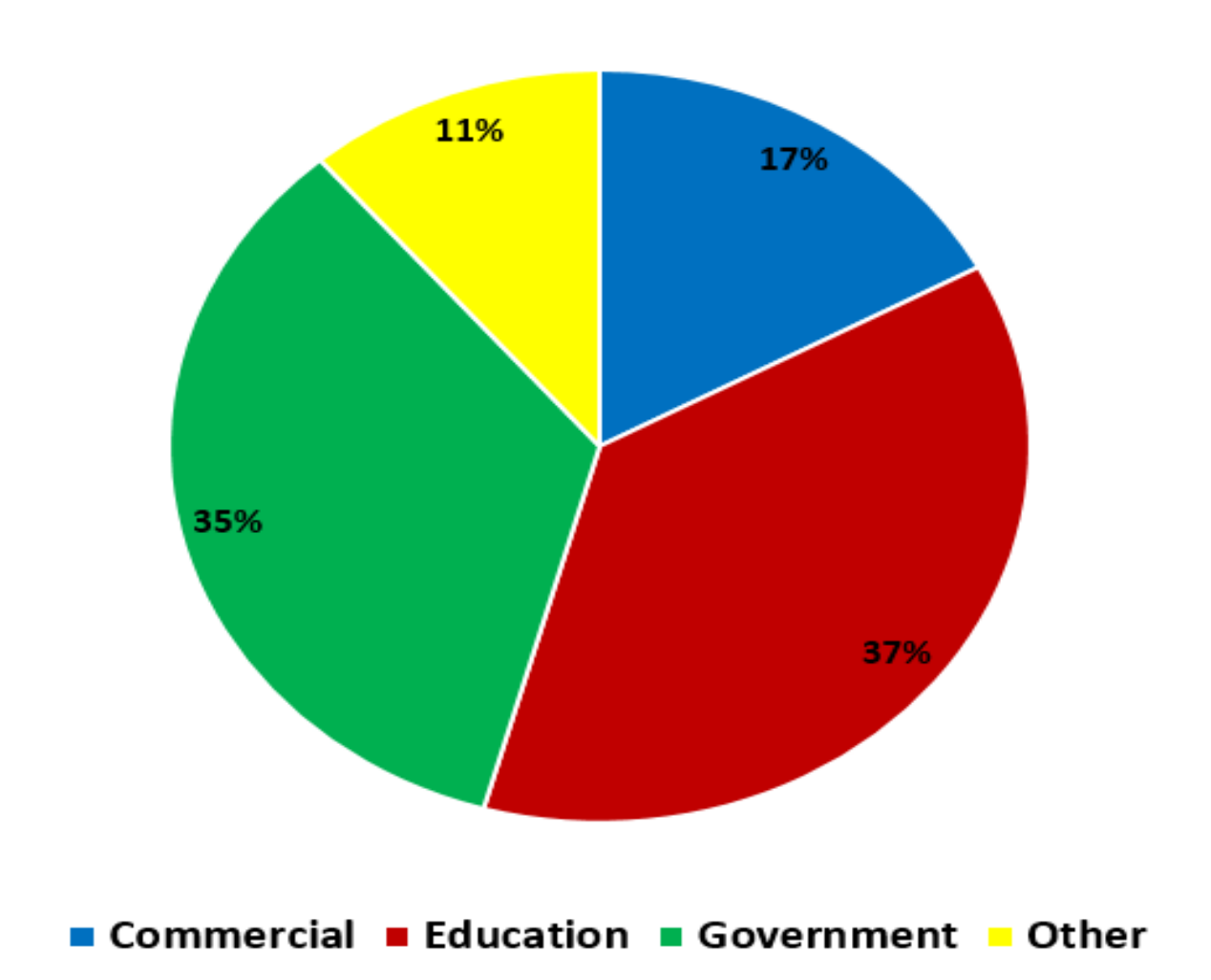
Number of Users by Product

(June 2010 – February 2016)

Atmospheric Science Data Center

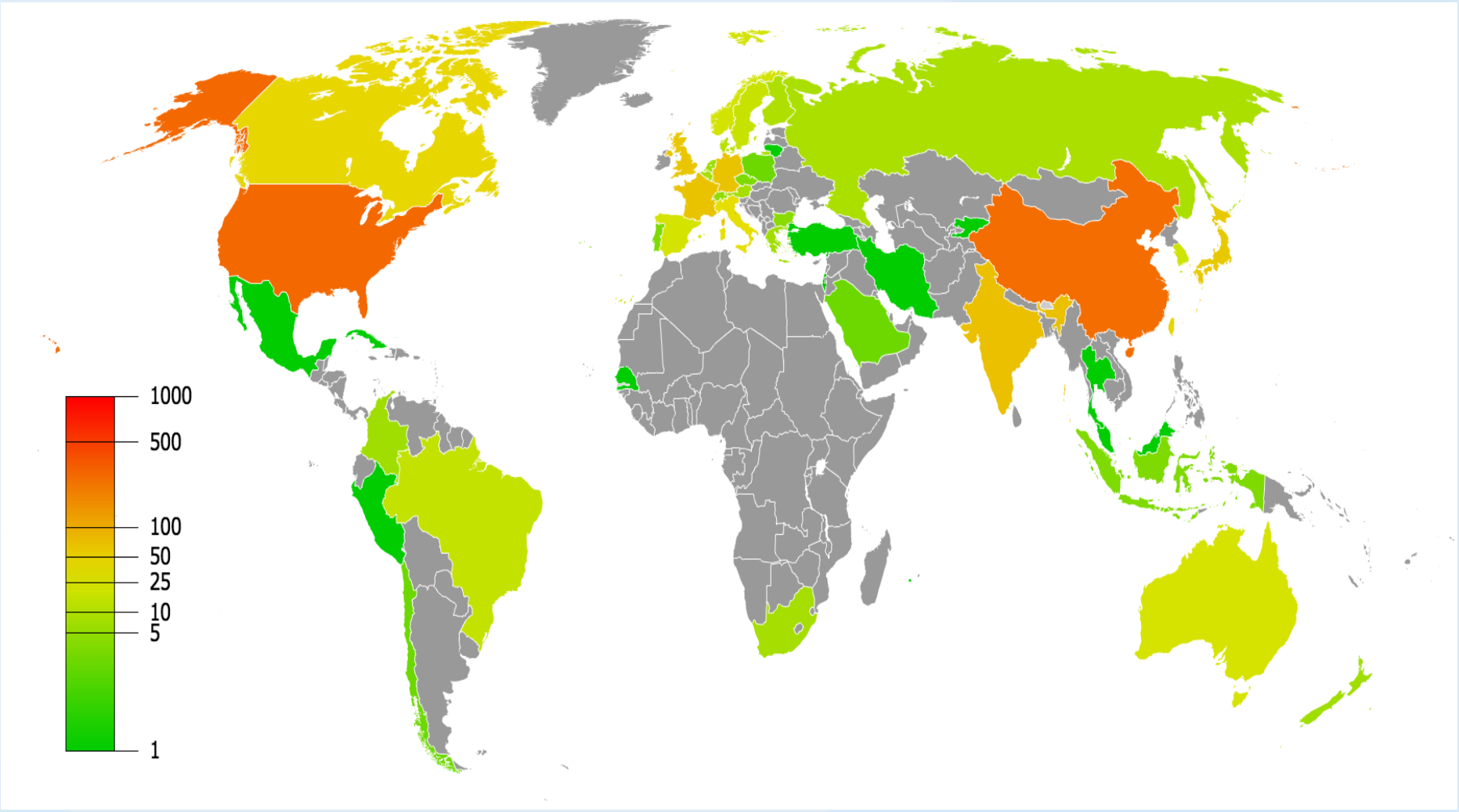


User Affiliations

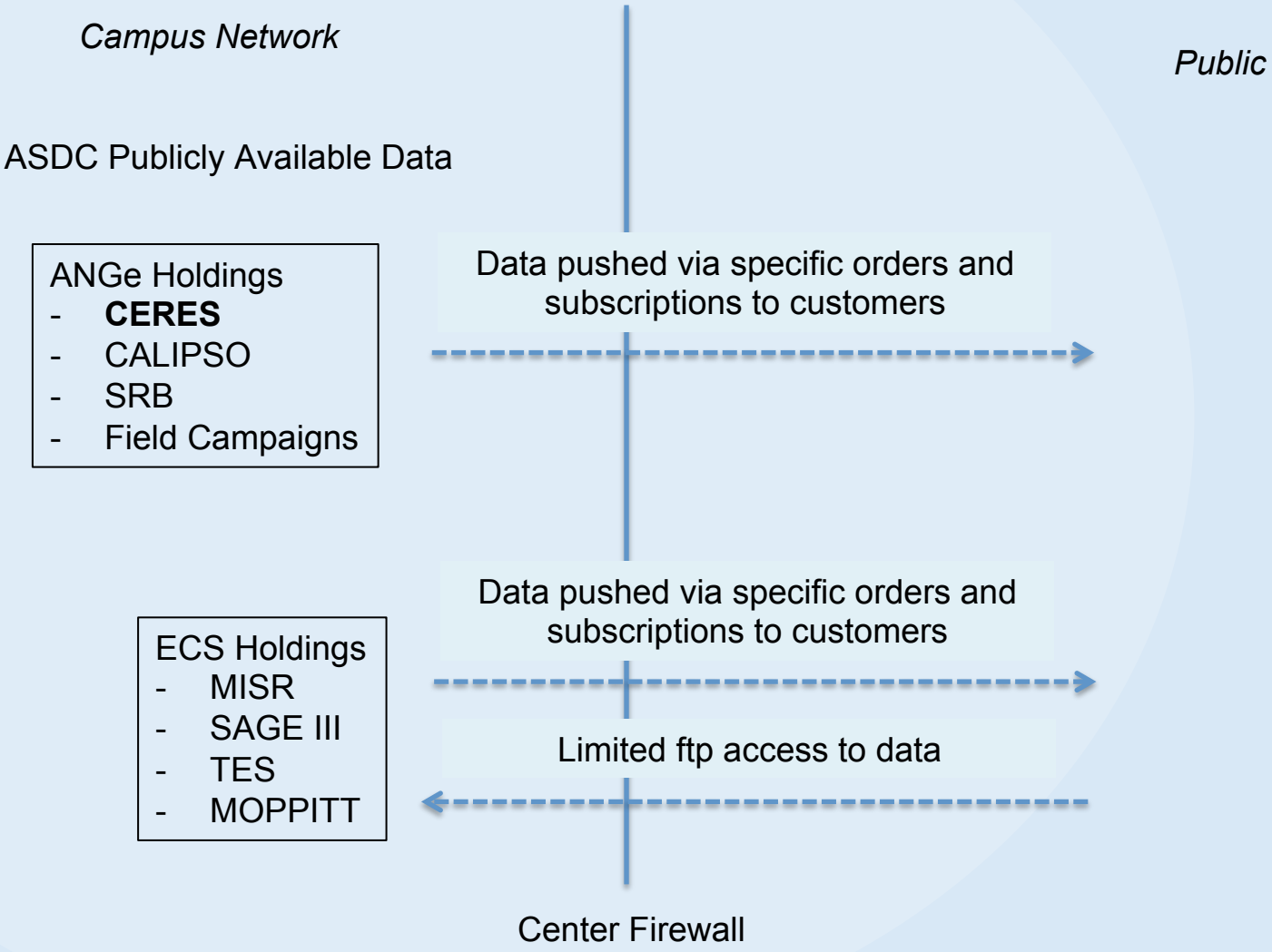


Users by Country
(June 2010 – March 2016)

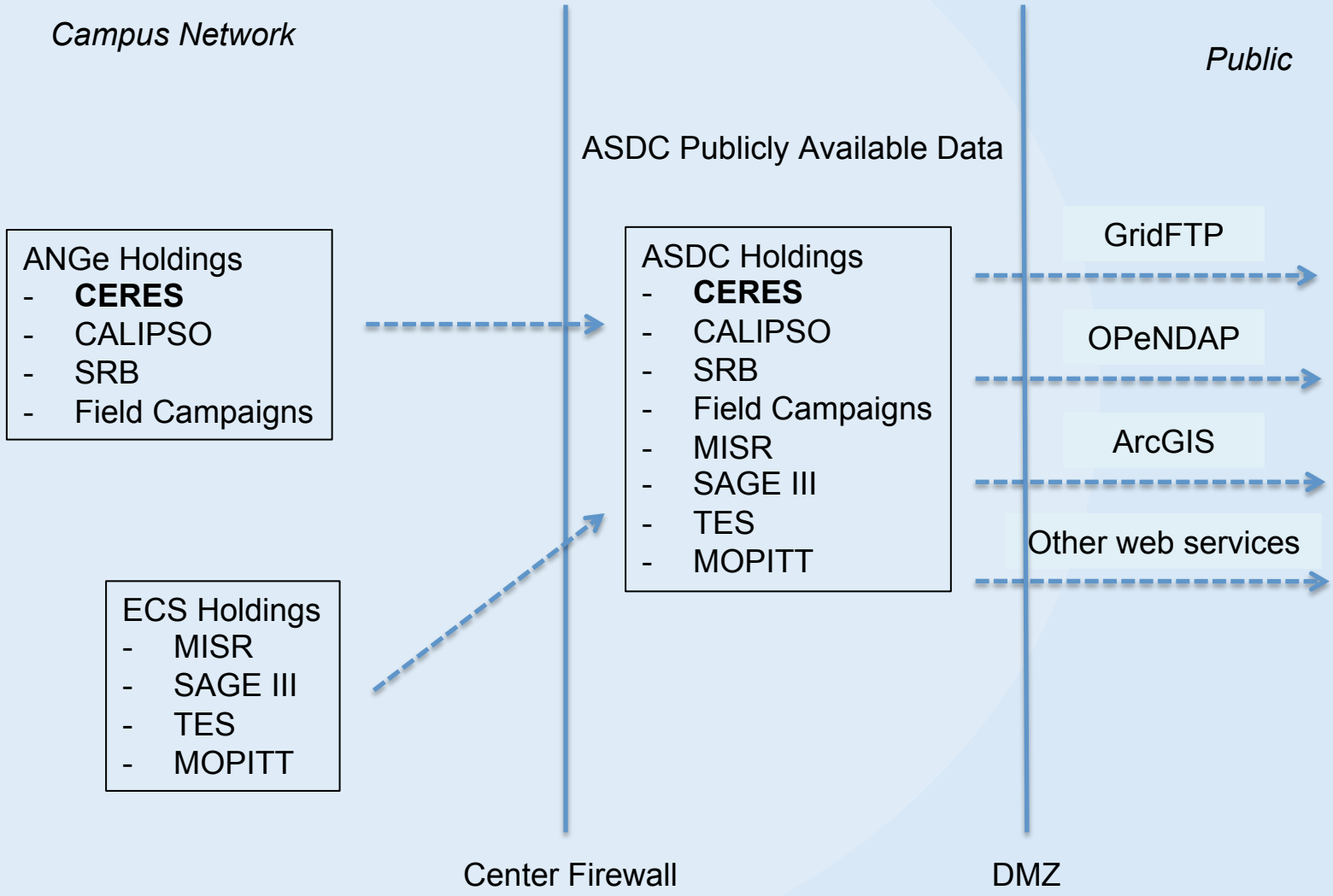
Atmospheric Science Data Center



Current Storage Configuration



Planned Storage Configuration

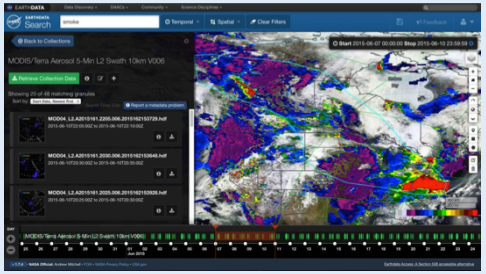


Increasing Accessibility, Interoperability and Use of CERES Data

Atmospheric Science Data Center

- **All world-visible CERES products orderable on Earthdata Search**
  - https://search.earthdata.nasa.gov
  - Requires Earthdata Login
    - provides a single mechanism for user registration and profile management for all EOSDIS system components (DAACs, Tools, Services).
    - helps the EOSDIS program better understand the usage of EOSDIS services to improve user experience through customization of tools and improvement of services
  - Integrating OPeNDAP endpoints for Subsetting Services and GIBS endpoints for Map Imagery
- **All world-visible CERES products have OPeNDAP service endpoints**
  - https://opendap.larc.nasa.gov/opendap
- **Select CERES products and parameters being added to Global Imagery Browse Service (GIBS)**
  - https://earthdata.nasa.gov/about/science-system-description/eosdis-components/global-imagery-browse-services-gibs
- **Collaborating with Dr. Paul Stackhouse and POWER/SSE Team to conduct prototype to make select CERES SYN1DEG parameters available as ArcGIS Image Services and OGC Web Coverage Services (WCS)**
  - https://asdc-arcgis.larc.nasa.gov/portal
- **Following data services guidelines from the White House OSTP / USGEO drat Common Framework for Earth-Observation Data (CFEOD)**
  - https://www.whitehouse.gov/blog/2015/12/09/improving-access-earth-observations

Discover Earth Science Data

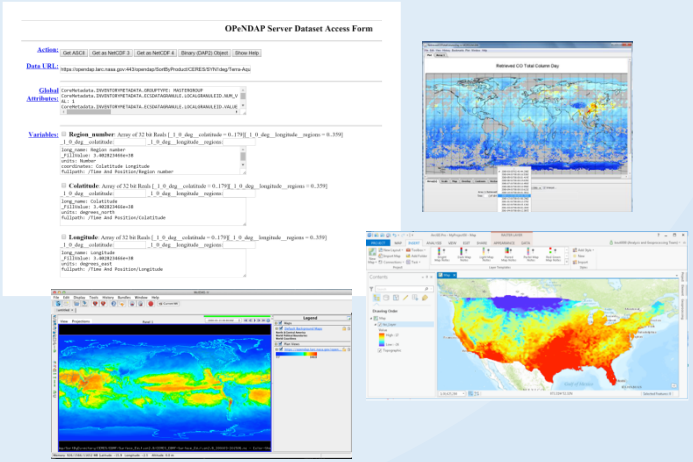


Search NASA Earth Science data by keyword and filter by **time** or **space**.

CFEOD Data-Access Services

OGC Web Map Service (WMS)
OGC Web Map Tile Service (WMTS)
Data Access Protocol (DAP)
Webification (w10n)
OGC Web Coverage Service (WCS)
OGC Web Feature Service (WFS)

Open-source Project for a Networzk Data Access Protocol (OPeNDAP)



The DAP protocol provides a discipline-neutral means of requesting and providing data across the World Wide Web. Allows end users immediate access to data in a form they can use while using applications they already possess and are familiar with.

ASDC ArcGIS Platform

NASA's Enterprise License Agreement (ELA) allows the agency to acquire access to Esri ArcGIS software at no additional cost to programs

ASDC Cloud Pilot

Atmospheric Science Data Center

HPE Helion Eucalyptus Cloud: 480 cores

- General Purpose Cloud System
- Dynamic Cloud (DC2) management system
- Amazon GovCloud (AWS) cloudbursting capabilities

OpenStack Hybrid Cloud System: 840 Cores

- GPFS and Univa Grid Engine Integration for Scientific Processing
- Cloud Resource monitoring and Chargeback

Use Cases:

CERES PGE CER7.2.1P2	completed
POWER/SSE processing	in progress
Processing AVHRR Cloud Retrieval Algorithm	in progress
GEWEX SRB production	on schedule

openstack™

amazon web services™

HPE Helion

ASDC Cloud Pilot

Atmospheric Science Data Center

Red Hat Cloud Infrastructure and Open Shift POC

- 60 days vendor POC started on March 7th
- Discovery and Design sessions with Red Hat Consulting team
- Red Hat CloudForms automaton engine for ASDC virtualization platform
- Red Hat OpenShift on-demand container services

Future plans:

- Leverage Cloud Object storage for Cloud Processing and Public Data repositories
- Vendors: EMC, DDN, Scality

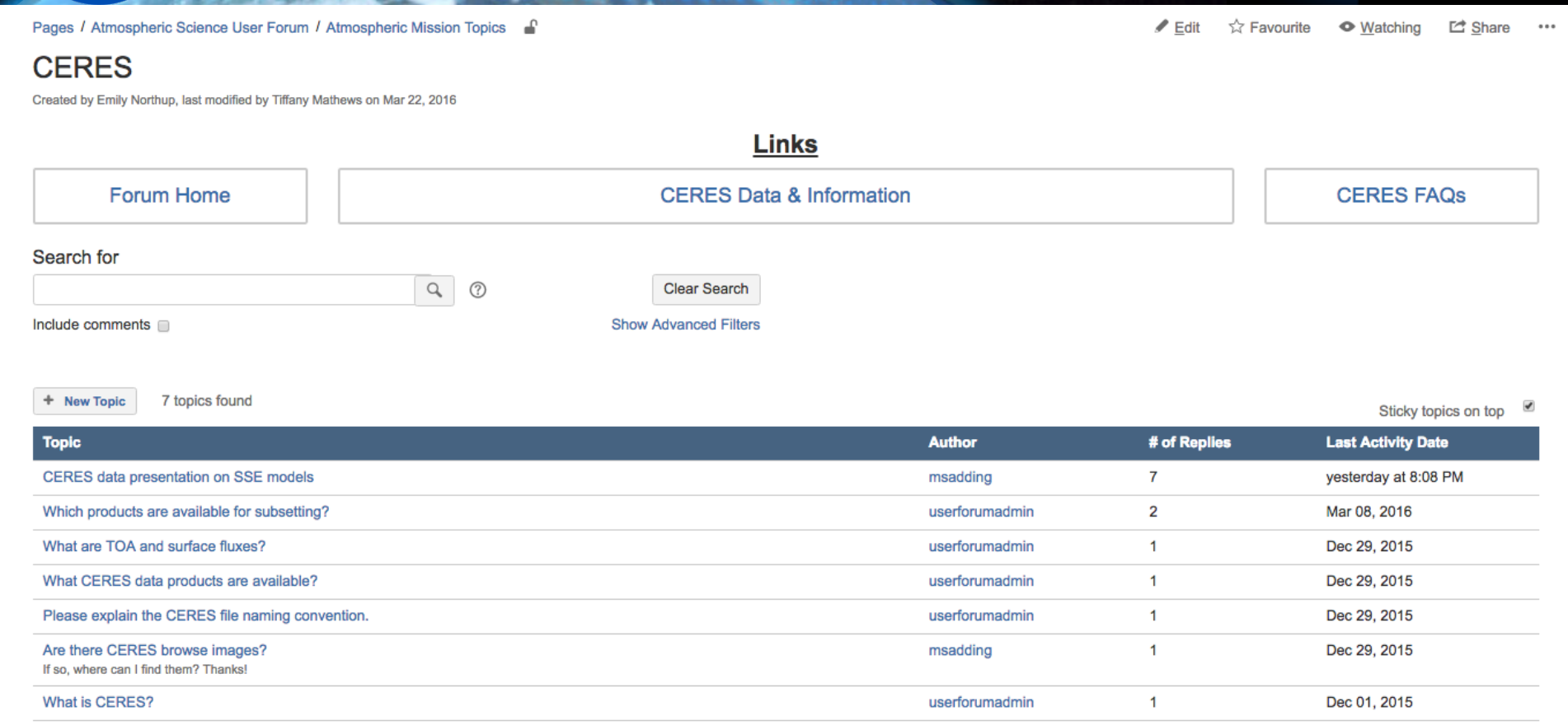
openstack™

amazon web services™

HPE Helion

Atmospheric Science User Forum

Atmospheric Science Data Center



Pages / Atmospheric Science User Forum / Atmospheric Mission Topics

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CERES

Created by Emily Northup, last modified by Tiffany Mathews on Mar 22, 2016

Links

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What are TOA and surface fluxes?	userforumadmin	1	Dec 29, 2015
What CERES data products are available?	userforumadmin	1	Dec 29, 2015
Please explain the CERES file naming convention.	userforumadmin	1	Dec 29, 2015
Are there CERES browse images? If so, where can I find them? Thanks!	msadding	1	Dec 29, 2015
What is CERES?	userforumadmin	1	Dec 01, 2015

- Resulted from ASDC User Working Group Requests
- Invites science team participation to answer questions about data
- Offers notification settings to only follow certain parts of the user form
- Will serve as a knowledge base

Digital Object Identifiers (DOIs)

Atmospheric Science Data Center

Unique (DOI name and URL)

DOI Name =

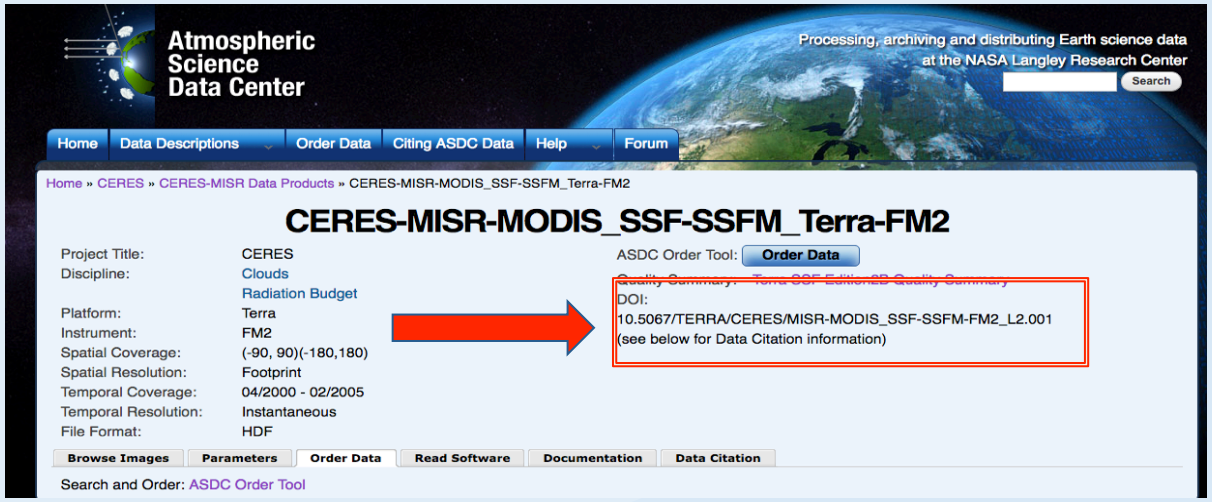
Prefix/Mission/Instrument/DAAC Reference_Level.version

10.5067/TERRA/CERES/MISR-MODIS_SSF-SSFM-FM2_L2.001

Resolvable link:

https://eosweb.larc.nasa.gov/project/ceres/ceres-misr-modis_ssf-ssfm_terra-fm2_table

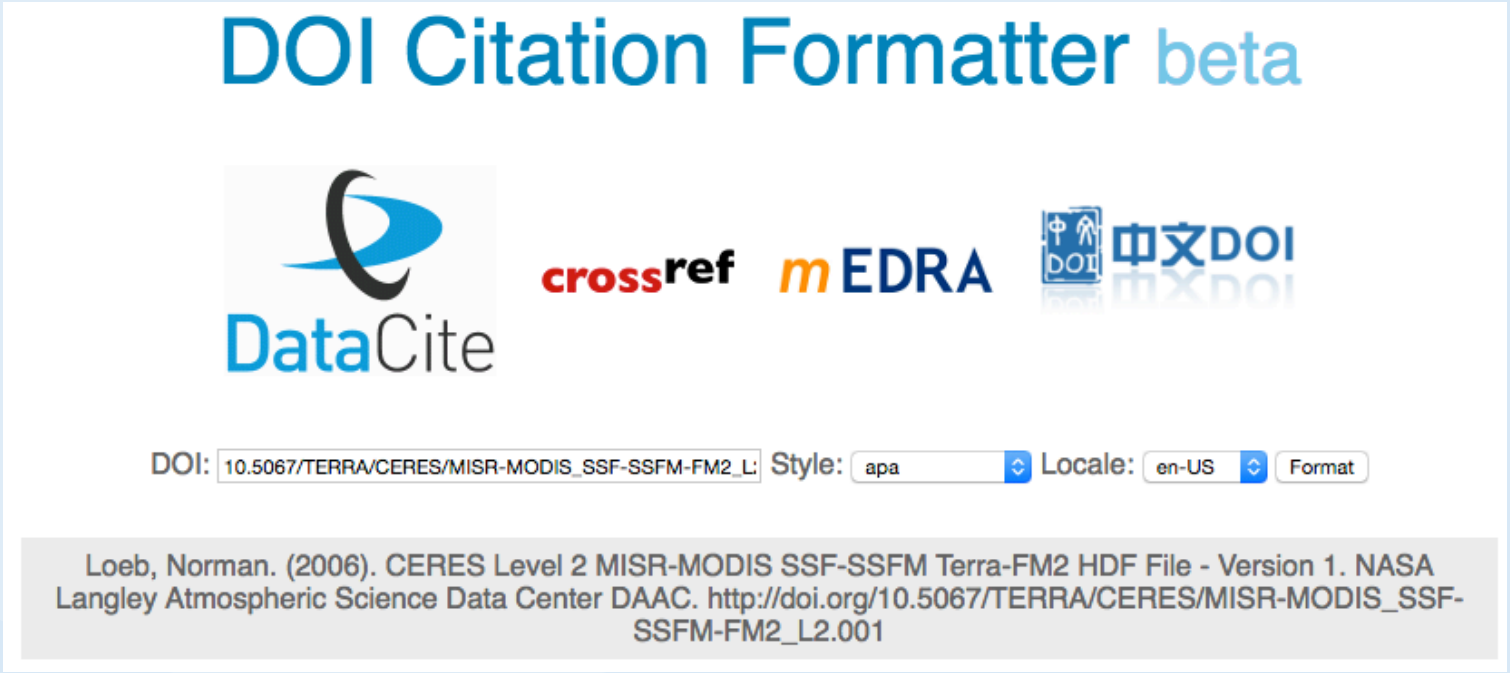
Permanent Landing Page:



Digital Object Identifiers (DOIs)

Atmospheric Science Data Center

DOIs in Action:

To generate a citation from a DOI complete the following steps:

1. Go to http://crosscite.org/citeproc/
2. Paste the DOI into the search field
   10.5067/TERRA/CERES/MISR-MODIS_SSF-SSFM-FM2_L2.001
3. Select “format”