



# Director's Report

Unidata Users Committee

11 March 2010

Boulder, CO

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Boulder, CO



# New and Departing Users Committee Members

- **Incoming**

- Stefan Cecelski, Student Representative, University of Maryland
- Rebecca Cosgrove, NCEP Representative
- Michelle Mainelli, NCEP Representative

- **Outgoing**

- Brent Gordon, NCEP Representative
- Sean Arms, Student Representative, University of Oklahoma

A hearty welcome to Stefan, Rebecca, and Michelle.

And a BIG THANK YOU to Brent and Sean!  
Both have been great and always went above and beyond the call of duty.



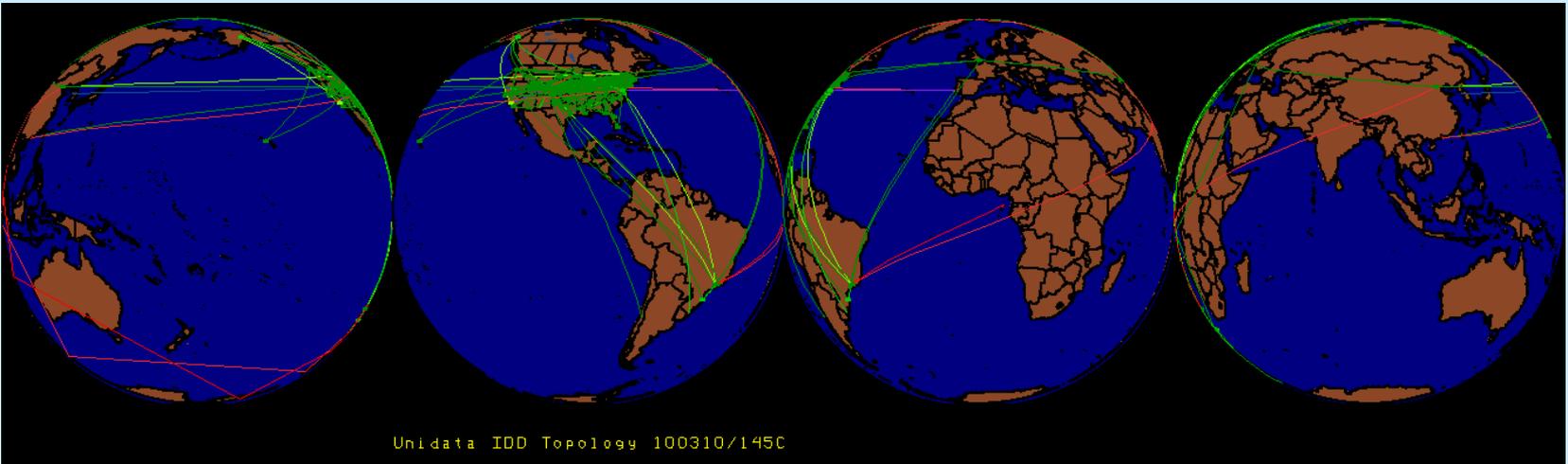
# 25<sup>th</sup> Anniversary Event

## 15-16 October 2009



- The event was a huge success. Total attendance was about 100.
- It was wonderful to see so many of the founders and friends that have been associated with and guided Unidata over the years.
- Unidata remains a shining model for how a community program should be organized and operated.

# Real-time Data Flows



- ❖ Over 500 machines at 250+ sites were running LDM-6 and reporting real time statistics. These numbers have not changed much in the past two years, but the data volume has grown significantly. Many more organizations are using the LDM but not reporting stats to Unidata.
- ❖ UPC's IDD Cluster relays data to more than 600 downstream connections. Average data output/day: 4.4 TB!
- ❖ Unidata routinely moves more than 30 TB/week with LDM via Internet 2!
- ❖ Data input to the cluster has increased to 5.5 GB/hr to the switch to higher resolution for WSR 88-D Level II data and Level III products.
- ❖ CONDUIT and WSR 88-D Level remain the top two data streams based on volume.
- ❖ Average data output by the cluster is approx. 430 Mbps (~4.4 TB/day);

# Data Access Infrastructure

- Average volume of data pulled via remote access protocols (OPeNDAP, ADDE, HTTP and FTP) from Motherlode: ~88 GB/day
  - Up time of UPC Data Infrastructure: 99.96%
  - Work underway to create nearly identical “clones” of Motherlode for deployment at NSF and SSEC/U. Wisconsin
- UPC’s NOAAPORT ingest software is used at 16 known (and possibly many more) sites.
  - UPC’s cluster approach has been adopted by NOAA/GSD and Penn State University.
  - Penn State is assuming top-level relay responsibilities for CONDUIT datastream.

# THREDDS & RAMADDA

- Continued progress is being made on THREDDS Data Server (TDS), Common Data Model, and RAMADDA.
- NetCDF-Java/CDM 4.1 library is now available as a stable release. CDM downloaded by users in 71 countries and 122 U. S. universities.
- Advances in I/O Service Provider software have made many new data types accessible via the netCDF-Java API (HDF5, HDF4, HDF-EOS/HDF5-EOS metadata, GEMPAK grids and soundings, BUFR, McIDAS Area files, Universal Radar Format, NIDS, and GEMPAK point data).
- Many new coordinate systems and projects now supported by the CDM.
- RAMADDA version 1.1 was released in January. Several data collections (including Case Studies) are now available via RAMADDA. More and more universities (e.g., SFSU, OU) and projects (e.g., AIHEC, UCAR-Google Africa Project) are deploying and testing RAMADDA for their use.

# NetCDF

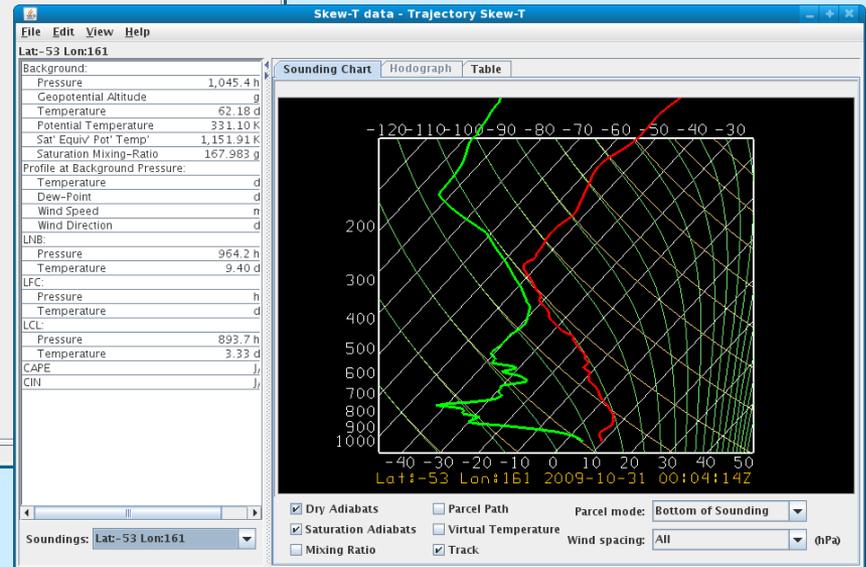
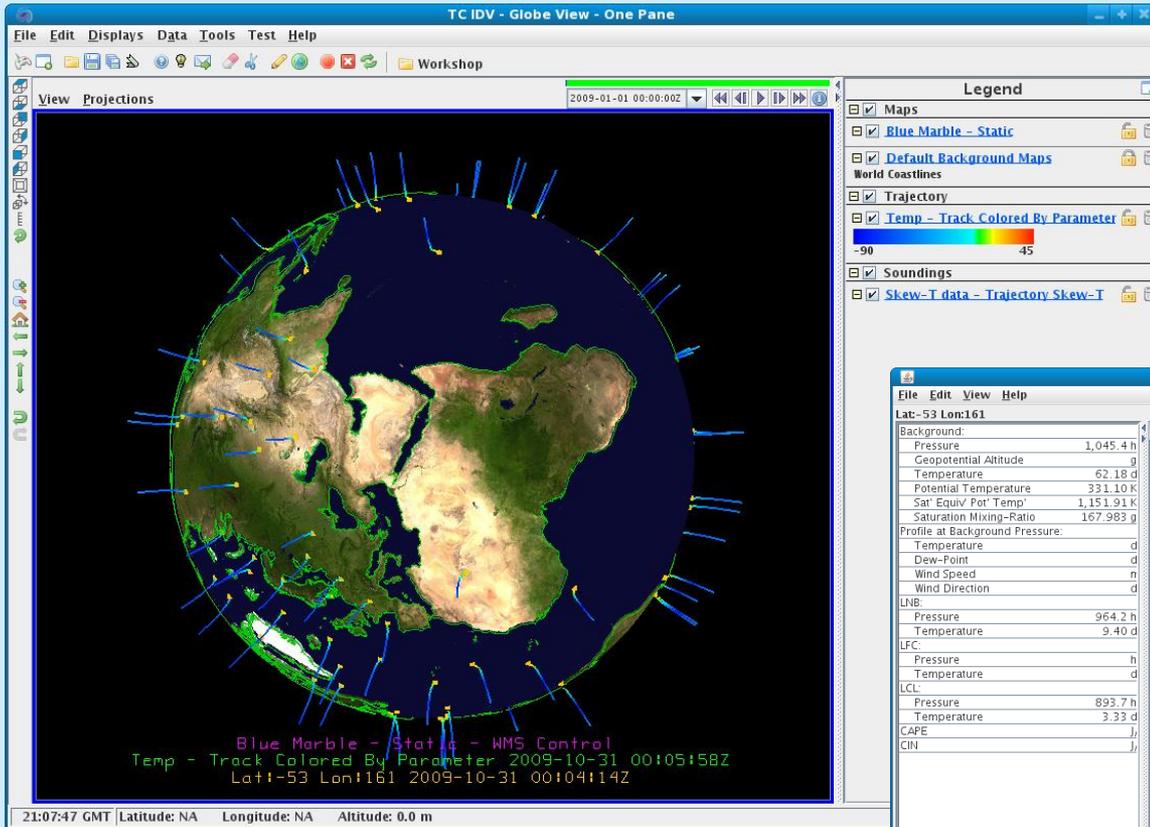
- Recent netCDF developments improve client access to remote data services, documentation, portability, ease of use, interoperability, and performance on high-end systems.
  - OPeNDAP client integration enhanced.
  - Version 4.1 and 4.1.1 of the libraries released
  - Includes ability to read some HDF4 and HDF5 data
  - Enhancements to assist AR-5 data providers
- Continued progress in advancing CF conventions for point data.
- Effort underway to propose netCDF-CF as an OGC standard.
- Working with NCDC staff for improving and integrating Unidata infrastructure in their National Climate Model Portal. It will play an important role in making available data from the next IPCC assessment.
- **Use:** 5,800 organizations and groups and more than 1,460 educational institutions worldwide (in more than 114 countries).



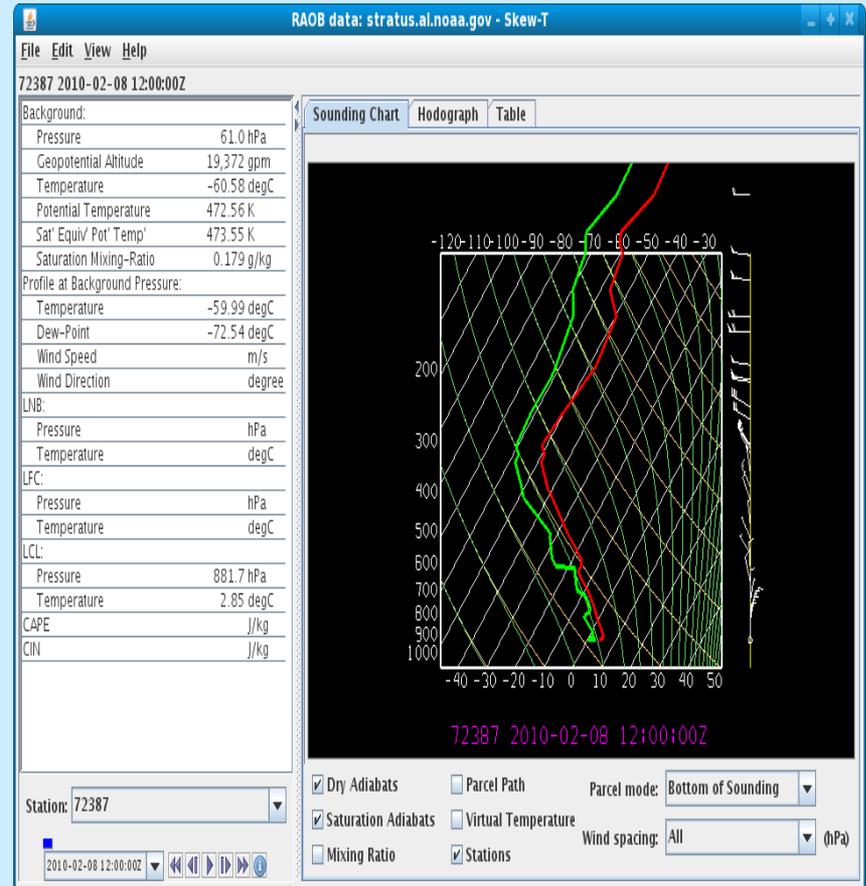
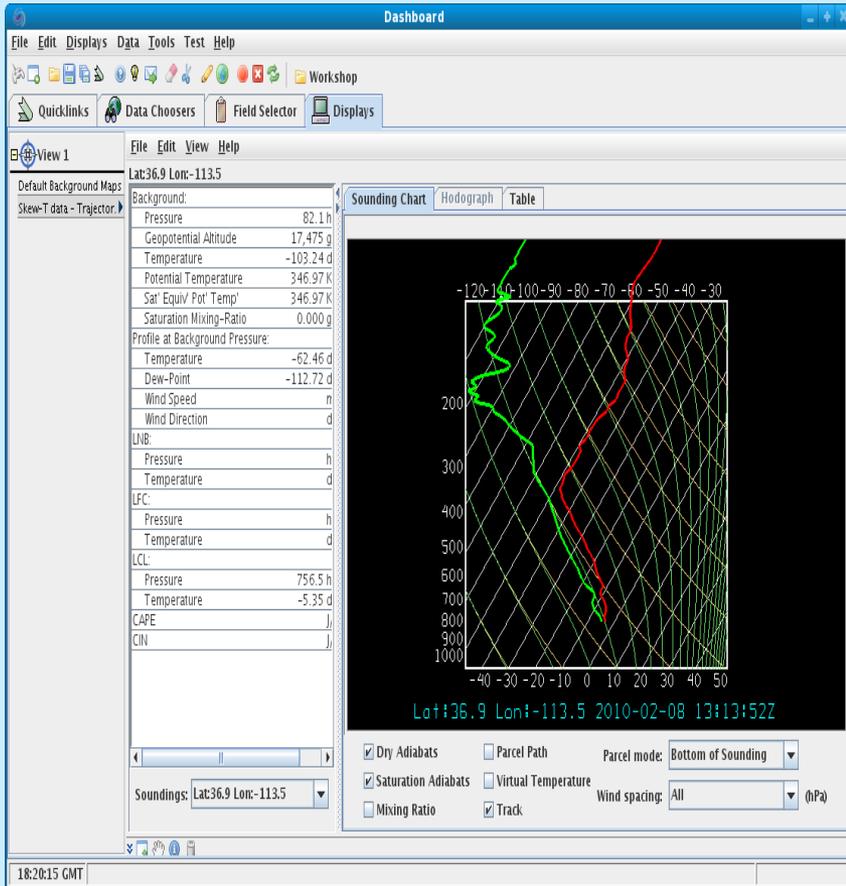
# Integrated Data Viewer

- ❖ IDV version 2.8 released on 15 January.
  - Radar Cross-section Analysis
  - Globe Display improvements
  - Support for new high-resolution NEXRAD Level II products
  - Support for lightning and ship/buoy reports
- Improved access and display of COSMIC data.

# COSMIC data in the IDV

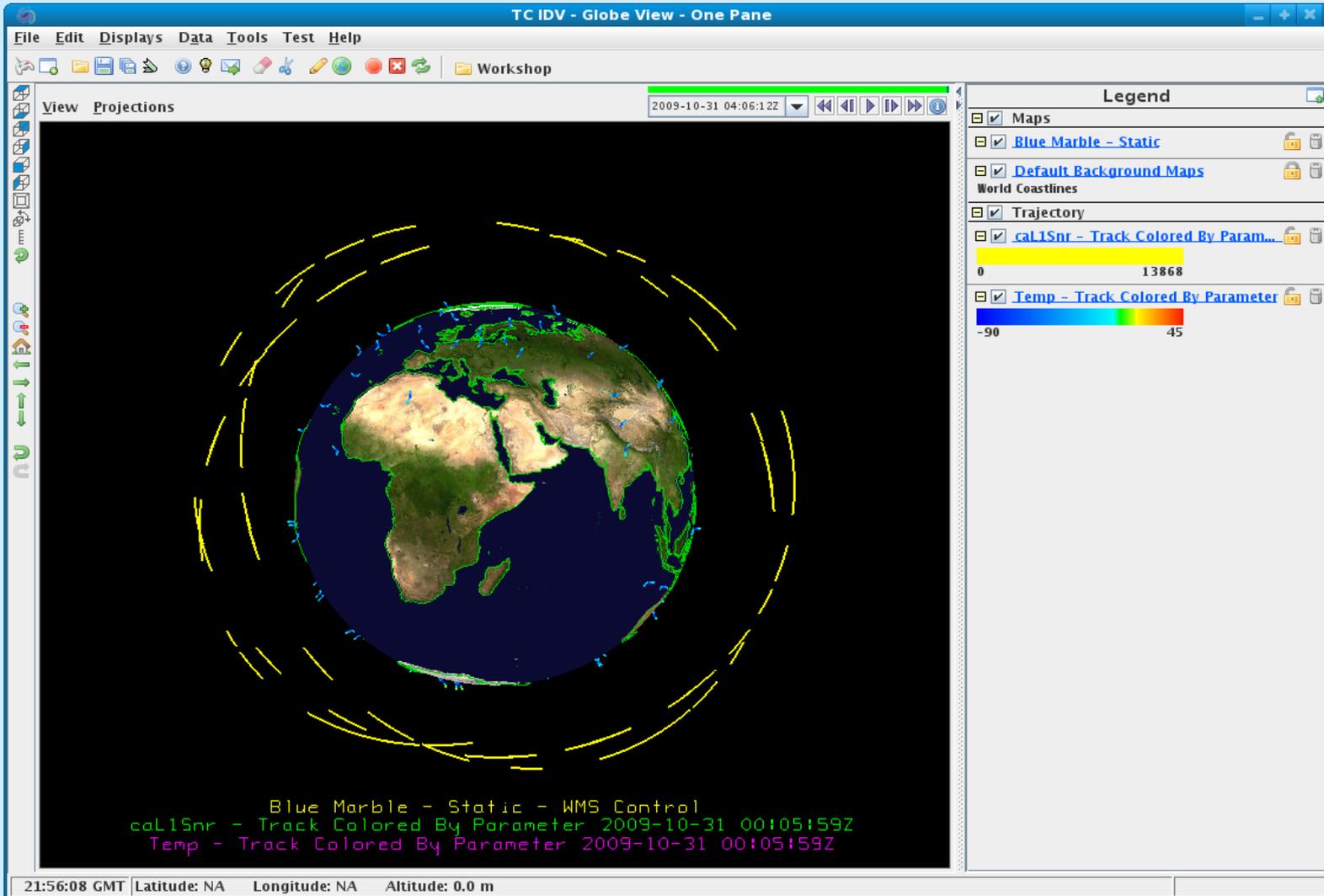


# COSMIC and RAOB Obs

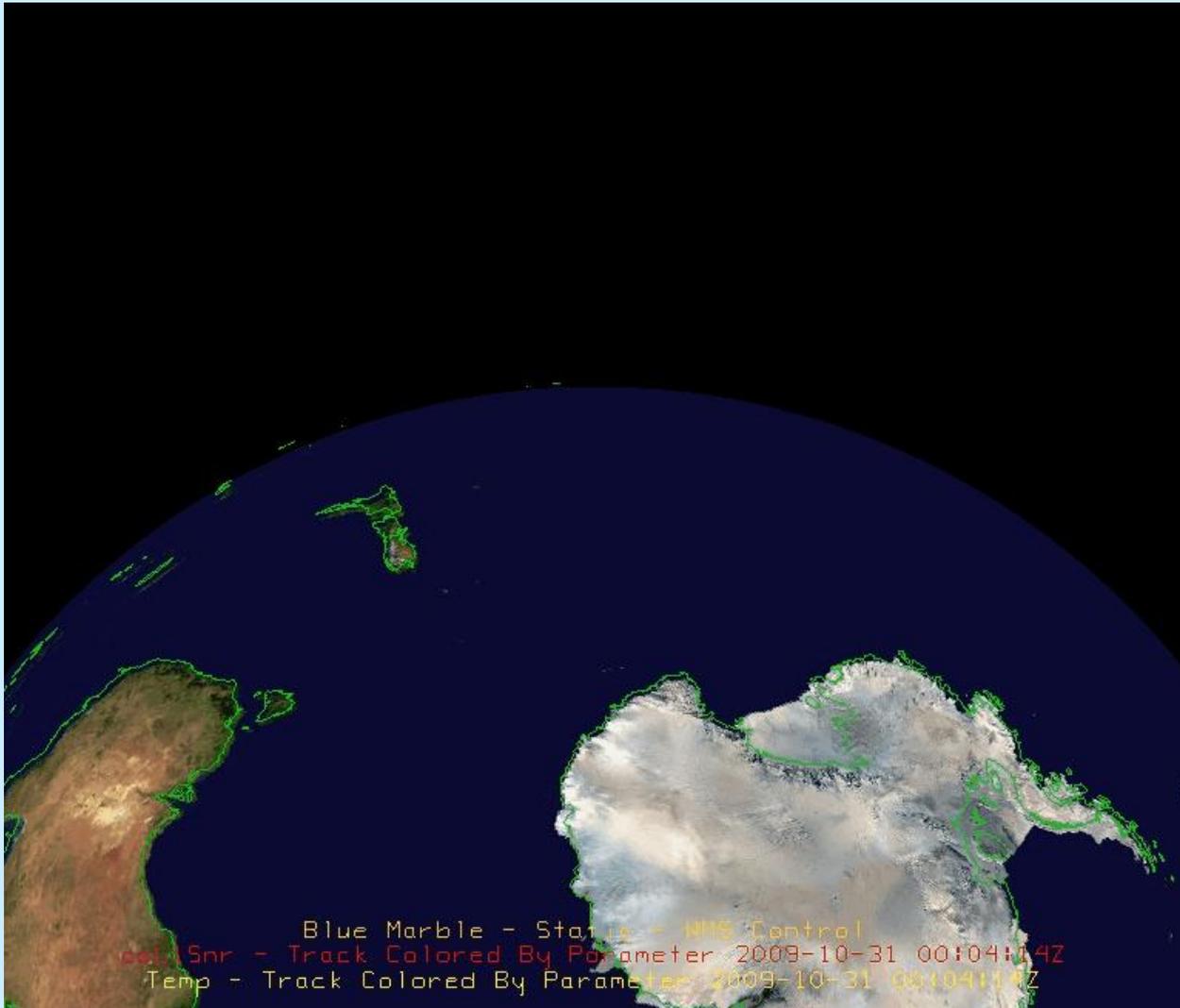


Station 72387 is at:  
Lat36.5 Lon -117.8

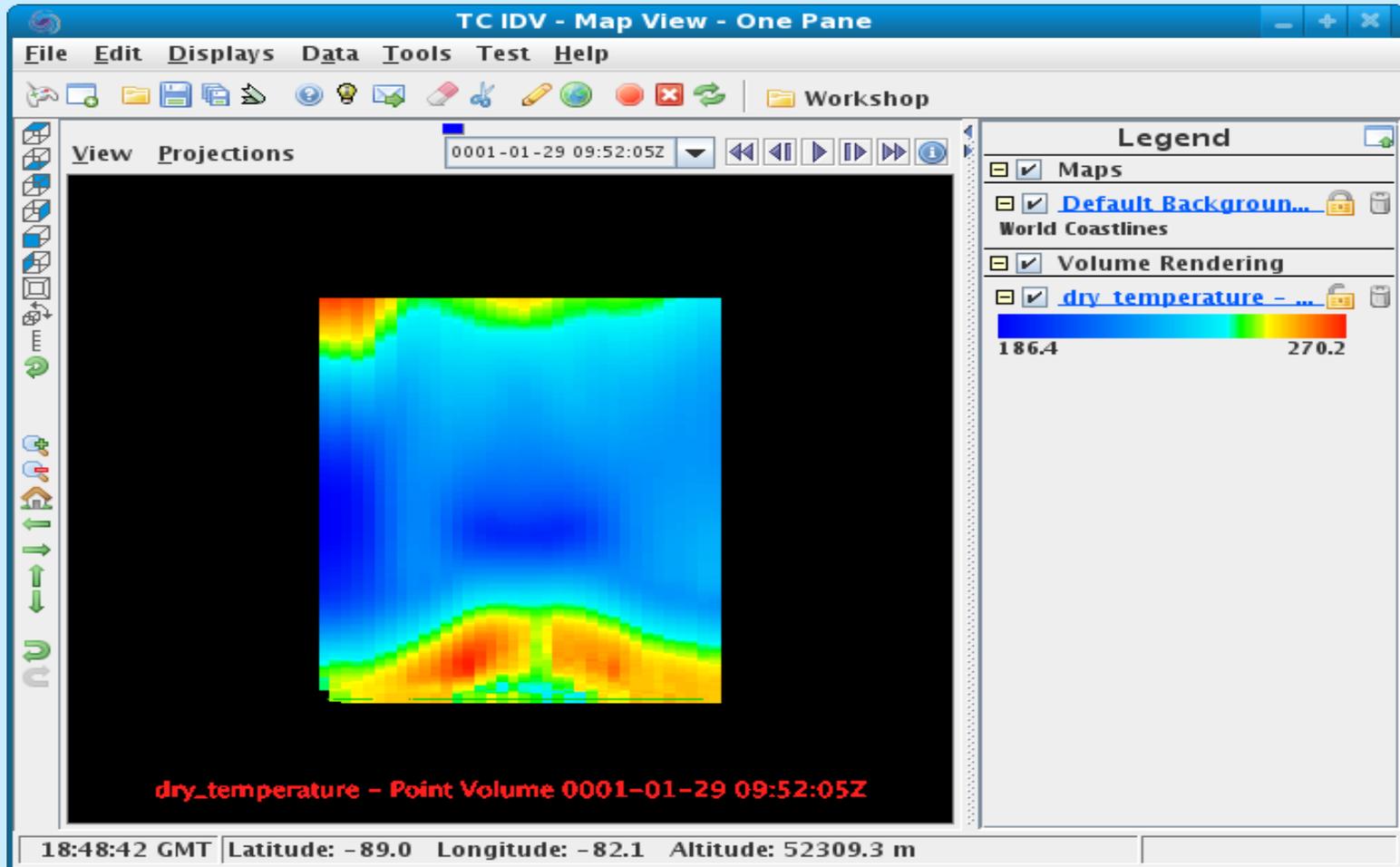
# COSMIC Orbits in the IDV



# COSMIC data in the IDV



# Gridded COSMIC data





# IDV Downloads and Usage

Monthly summary

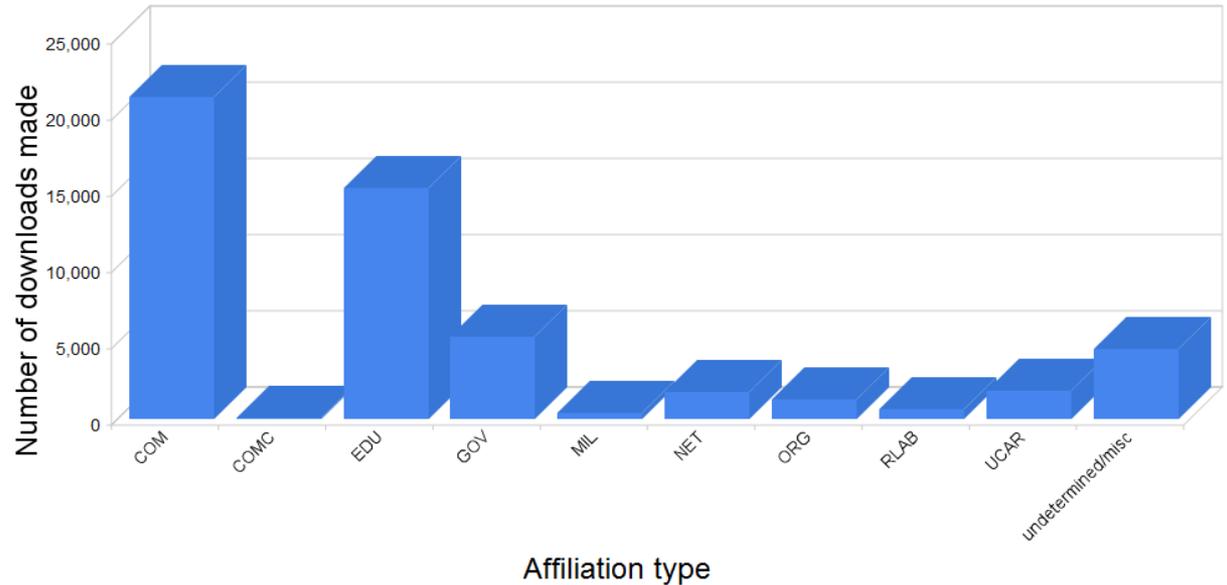
Month	Count	*5	10	20	30
2010_03	354	17	6	1	1
2010_02	13641	389	191	106	61
2010_01	13897	378	202	99	74
2009_12	12971	399	189	89	60
2009_11	13129	367	198	96	67
2009_10	10705	337	177	91	57
2009_09	13859	364	193	96	65
2009_08	12185	331	160	81	53
2009_07	10199	326	162	82	46
2009_06	12986	357	195	98	65
2009_05	11508	353	178	82	52
2009_04	12573	379	199	101	70
2009_03	12371	355	204	113	71
2009_02	11114	325	187	99	59
2009_01	9883	301	168	84	58
2008_12	9448	262	147	96	59
2008_11	12200	260	158	96	67
2008_10	11449	248	153	87	61
2008_09	10740	264	159	92	57
2008_08	9274	252	147	75	53
2008_07	9611	261	164	88	51
2008_06	4224	129	73	41	22
2008_03	7131	201	115	58	44
2008_02	9583	256	156	100	68
2008_01	7217	218	122	65	51
2007_12	781	32	22	8	4

\* - Count of unique sites that have used the IDV at least N times in a month

191 U. S. Universities/colleges  
558 Known sites worldwide

Affiliation types represented for idv download data: Mar 1 2009 to Feb 28 2010

Undetermined/misc data = crawlers, ISPs, unresolved IP addresses, etc.



# GEMPAK

- An update to GEMPAK 5.11.4 was released on 16 February.
- It included a host of bug fixes to grid diagnostic routines as well as added support for new high-resolution NEXRAD Level 3 products
- The issue of source code repository and binary releases have recently come up.





# AWIPS II and N-AWIPS Migration

- There is continued progress on all fronts.
- Stability issues remain
- The schedule calls for completion of Task Order 11 on 15 March, but it is not clear if that will slip.
- The UPC staff have successfully installed and been testing the N-AWIPS components of AWIPS II software from NCEP on a CentOS machine, but continue to face porting issues.
- If you recall, a white paper was developed and shared with the community last October. The proprietary lightning decoder issue has likely gone away.
- The current schedule calls for AWIPS II software to be available to users in CY 2011.
- More on this later this afternoon.

At the AMS Annual Meeting in Atlanta, Raytheon was using Unidata's LDM for ingesting data into their AWIPS systems.

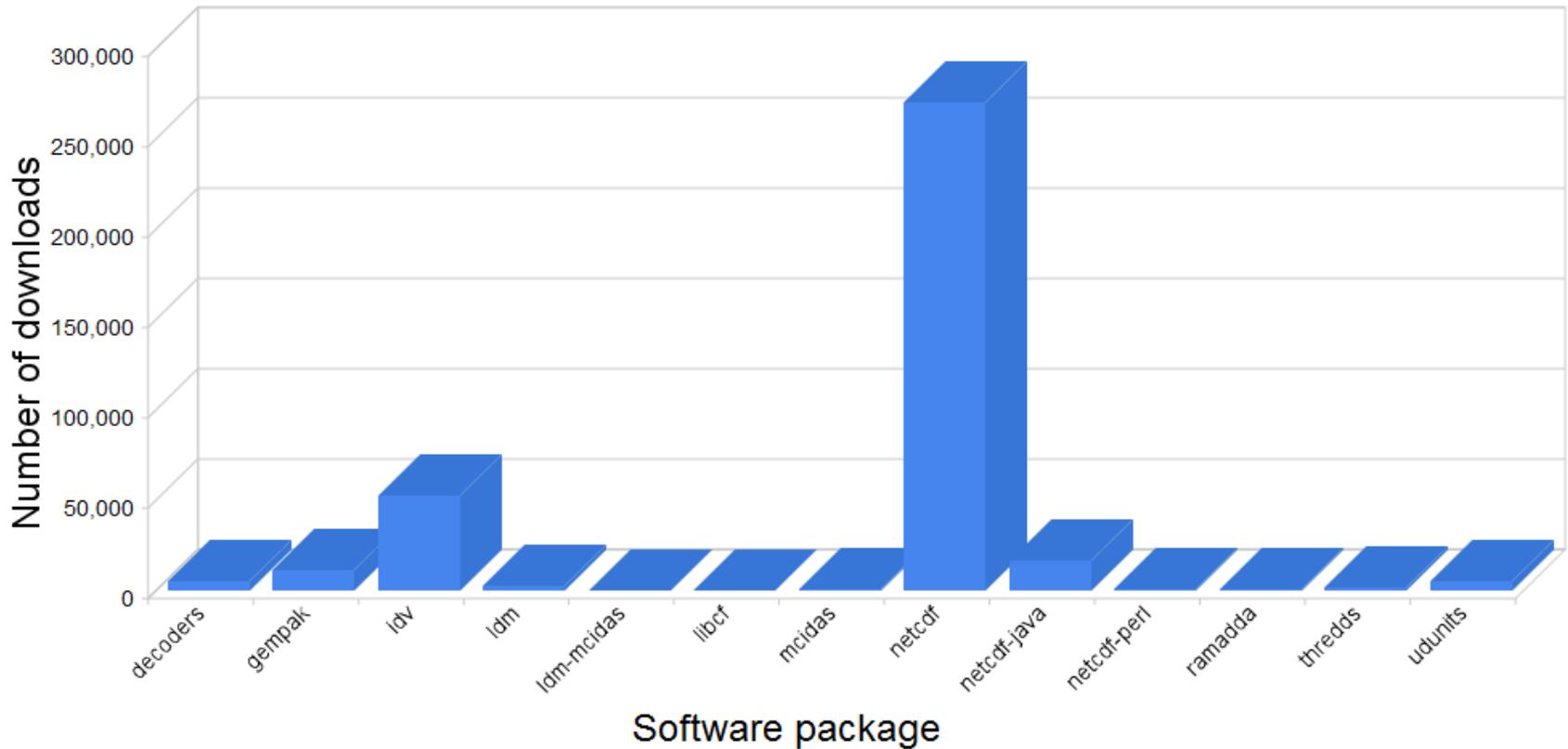


# Metrics Development

- Over the past year, we have been doing quite a bit of work in the metrics area.
- We are trying to collect a variety of metrics information across the entire program.
- We are trying to automate things as much as possible (e.g., mining of databases for registration, downloads, support, mailing lists, etc.).
- A large number of metrics information was provided in the Unidata 2008 final report to NSF, which was submitted in December 2009.
- Recently, Linda Miller sent around a couple of draft documents to you, seeking your input.
- The planned community survey will be an important mechanism for getting additional metrics on outcome and impact.

# Metrics: Downloads

Yearly total represented for all packages download data: Mar 1 2009 to Feb 28 2010



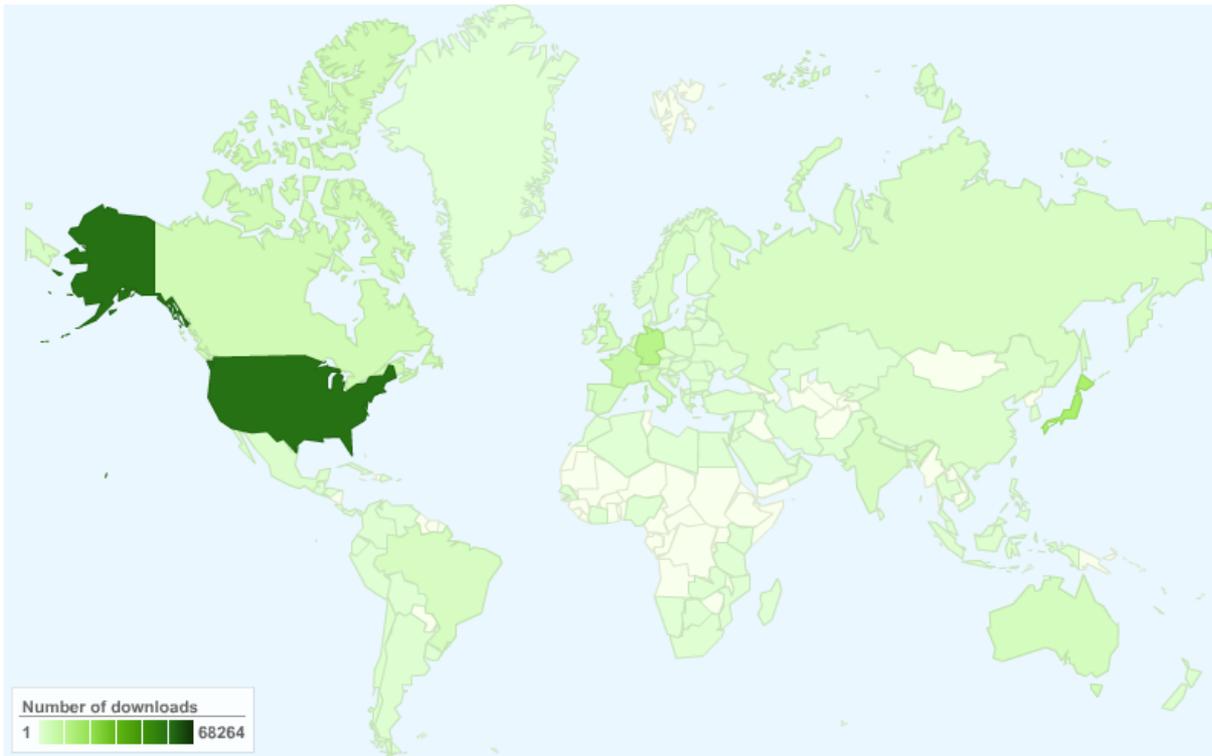
Note: The chart above is interactive - click on the bars to see the data.

# Software Download Metrics

## Countries represented for all packages download data: Mar 1 2009 to Feb 28 2010

Does not show the undetermined/misc data (crawlers, ISPs, unresolved IP addresses, etc.)

Total: 123 countries

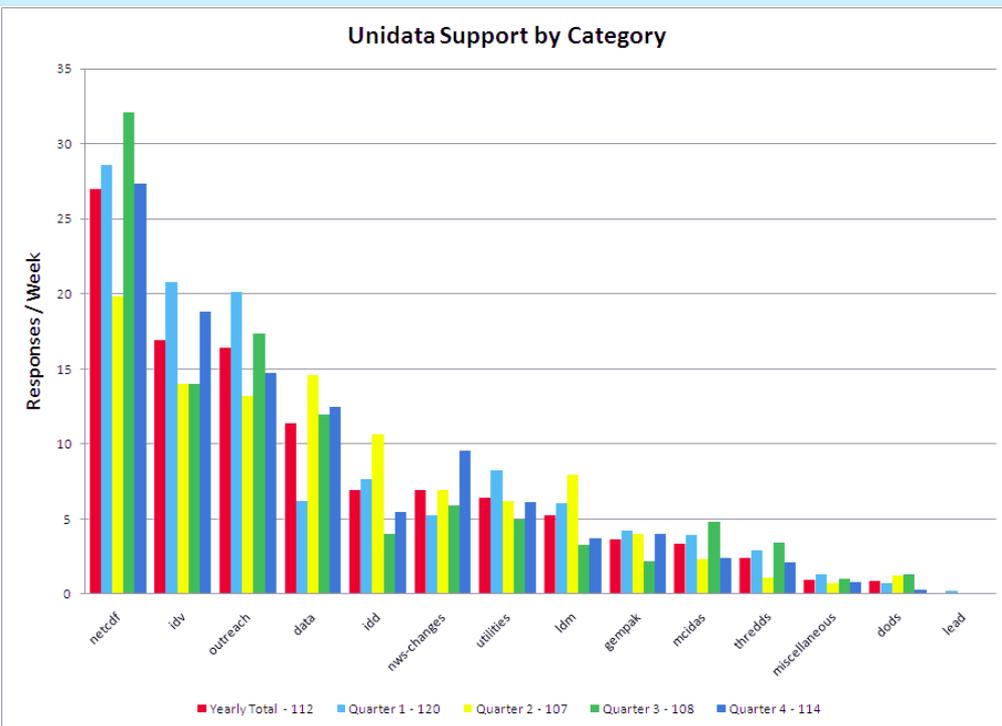


Note: The map above is interactive - move your mouse over a country to see the data.

Total: 368,312

Organizations:  
1588

# Support Load



- The support load continues to be high.
- Yearly average: 112 inquiries/week.

- The number of inquiries to support and mailing lists has gone up in recent months, in concert with new releases and increase in downloads and usage.

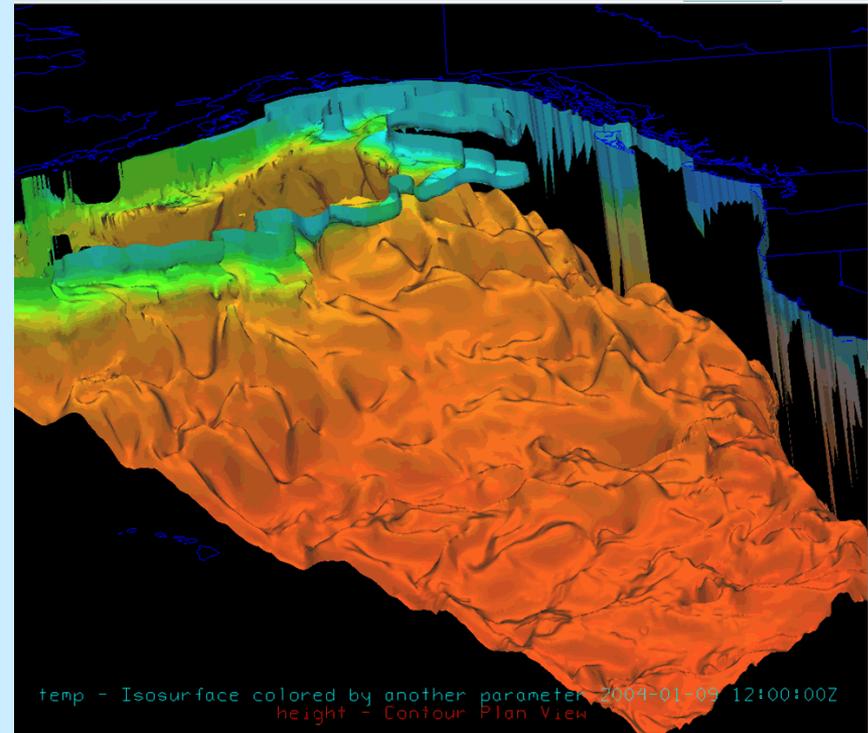


# Community Equipment Awards

- We have set aside \$100K for this year's awards. This year's themes are:
- **This year special consideration will be given to proposals that:**
  - Plan to install either the THREDDS Data Server or RAMADDA at their institutions to share data relevant to furthering Unidata's mission, including but not limited to data from real-time IDD/LDM feeds, local observations, data from local modeling efforts, case study data collections, and climate data.
  - Foster research and education at the boundary between our core meteorology community and other communities, including societal impacts as well as other geoscience disciplines.
- **A Request for Proposals was sent out 2 February 2010**
- **Deadline for submitting proposals: 2 April 2010**
- **Over the past 7 years, we have given out 45 such awards.**
- **Please spread the word and also consider submitting proposals from your own institution.**

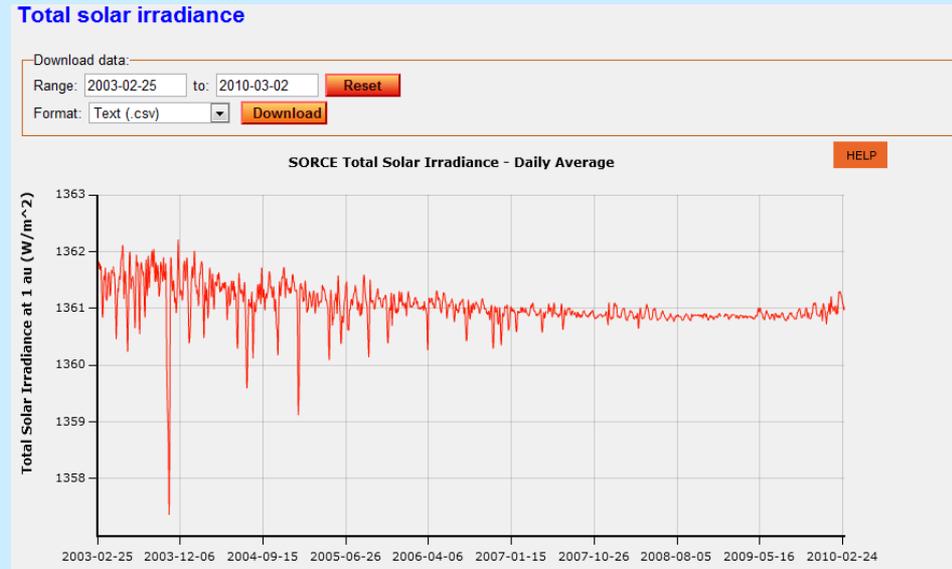
# Using Unidata Tools to Visualize Fish Habitats

- Unidata tools, technologies, and services play a significant role in data integration and access at NOAA's National Marine Fisheries Service.
- Dr. Tiffany Vance studies oceanic habitats to support ecosystem based management and marine spatial planning.
- A trio of Unidata tools--netCDF, THREDDS, and the Integrated Data Viewer--aid Dr. Vance in her research on the critical impacts of climate change on non-human organisms, in this case, fish habitats.



# LASP Interactive Solar IRradiance Datacenter (LISIRD): Time Series Data Server

- The TSDS is part of an effort within the Heliophysics community to provide access to solar irradiance data.
- The project is led by Doug Lindholm, Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder.
- It leverages OPeNDAP, netCDF, Common Data Model, and NcML, emphasizing the idea of *virtual data sets*.



# FL-4 and FL-5 Remodeling

- Remodeling will begin on FL-5 in September 2010 and is planned to be completed in June 2011.
- Remodeling is also planned for FL-4. FL-4 occupants, including Unidata, will temporarily move into FL-5, in July 2011.
- Anticipated move back date: June 2012.



End – Questions?