



AIRS Data Services at the NASA Goddard Earth Sciences Data and Information Services Center (GES DISC)

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Lincoln

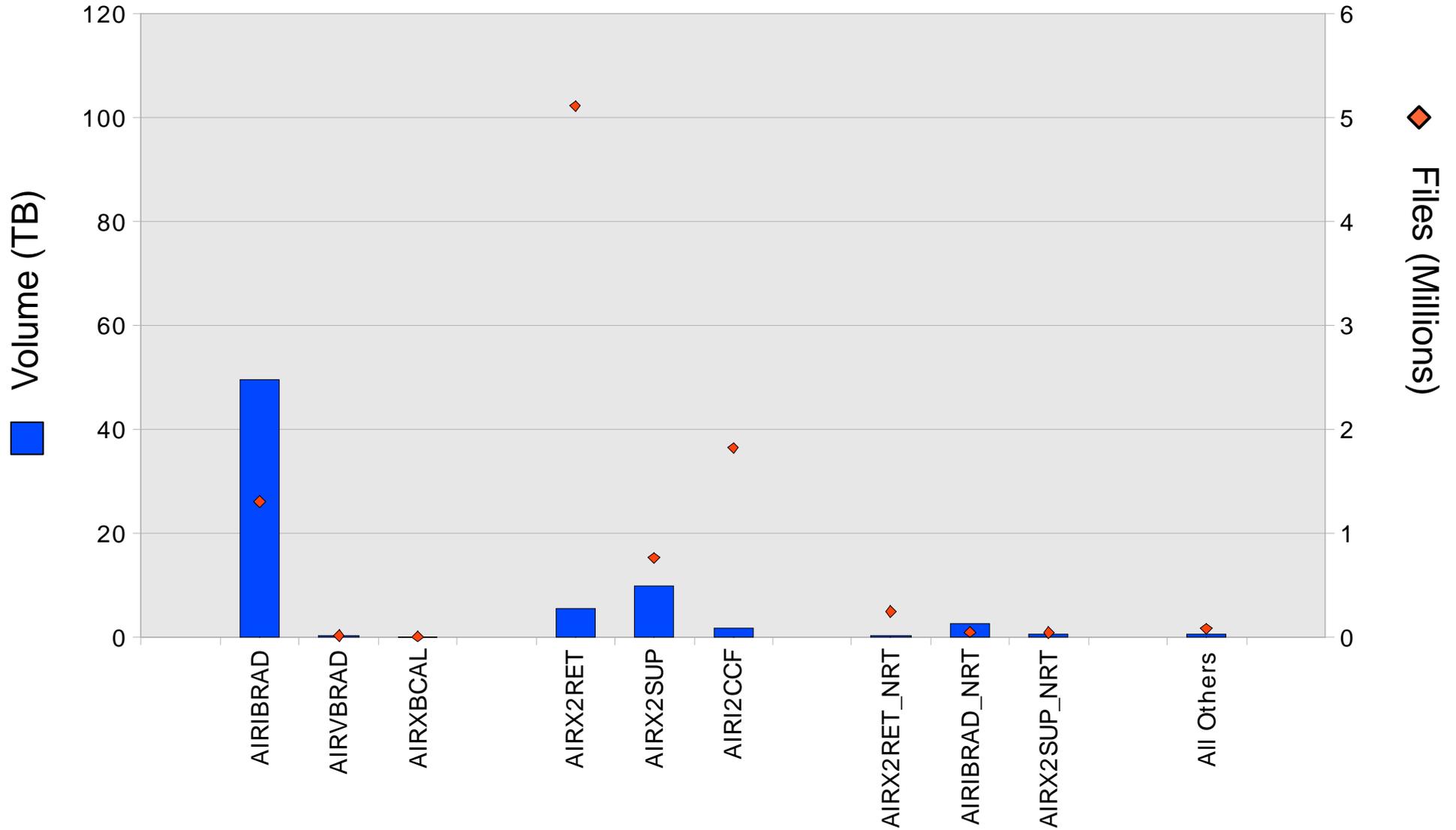
Outline

- V5 status/V6 plans
- “Whom” technology updated to “Mirador Projects”
- Data Conversion and subsets
- Near Real Time (NRT) and Web Map Service (WMS)
- Giovanni: AIRS Climatologies
- MERRA

V5 status

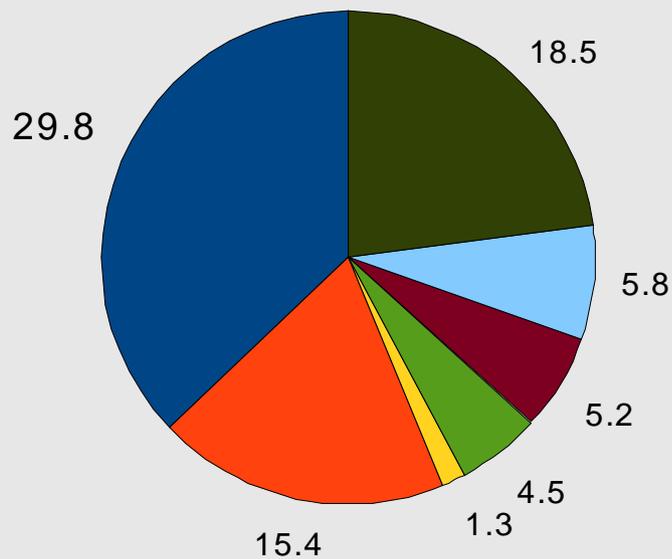
- Data distribution stats
- All CO₂ L3 files are available

Data Distribution – by Product

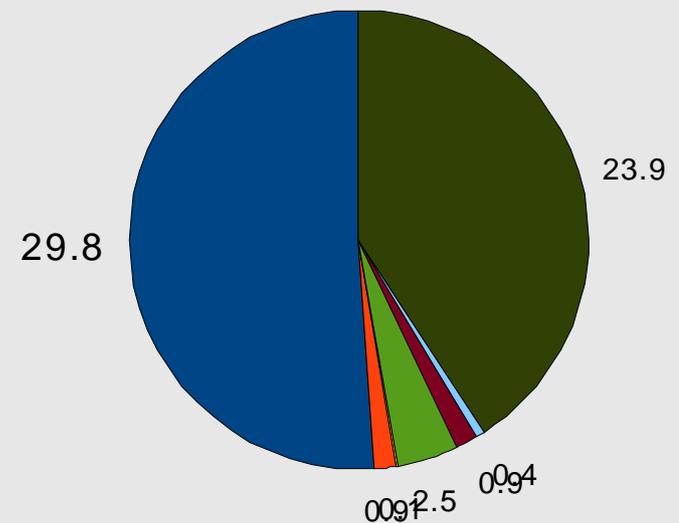


Data Distribution – by Domain

Volume (TB)



Files (Millions)

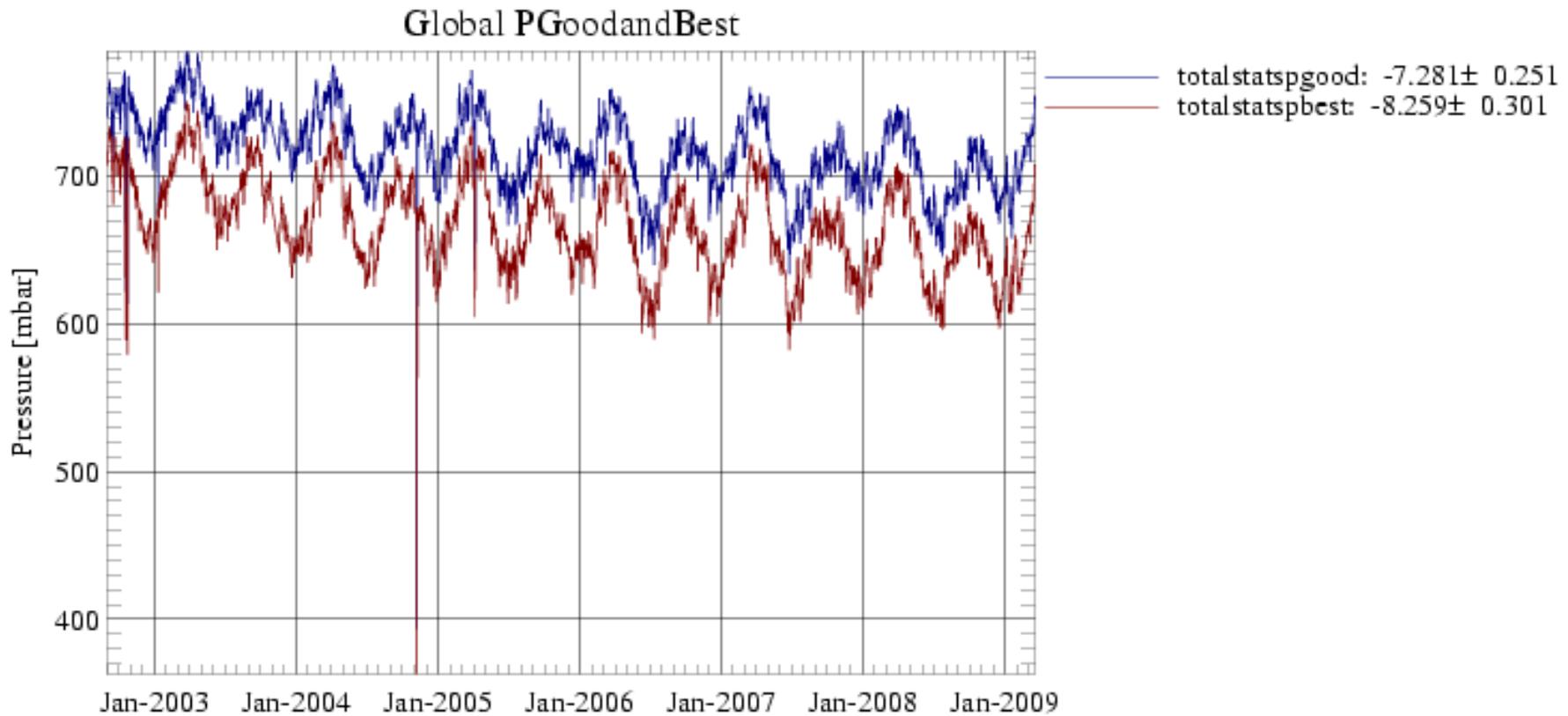


- noaa.gov
- umbc.edu
- wisc.edu
- nasa.gov
- princeton.edu
- umich.edu
- all others

V6 plans

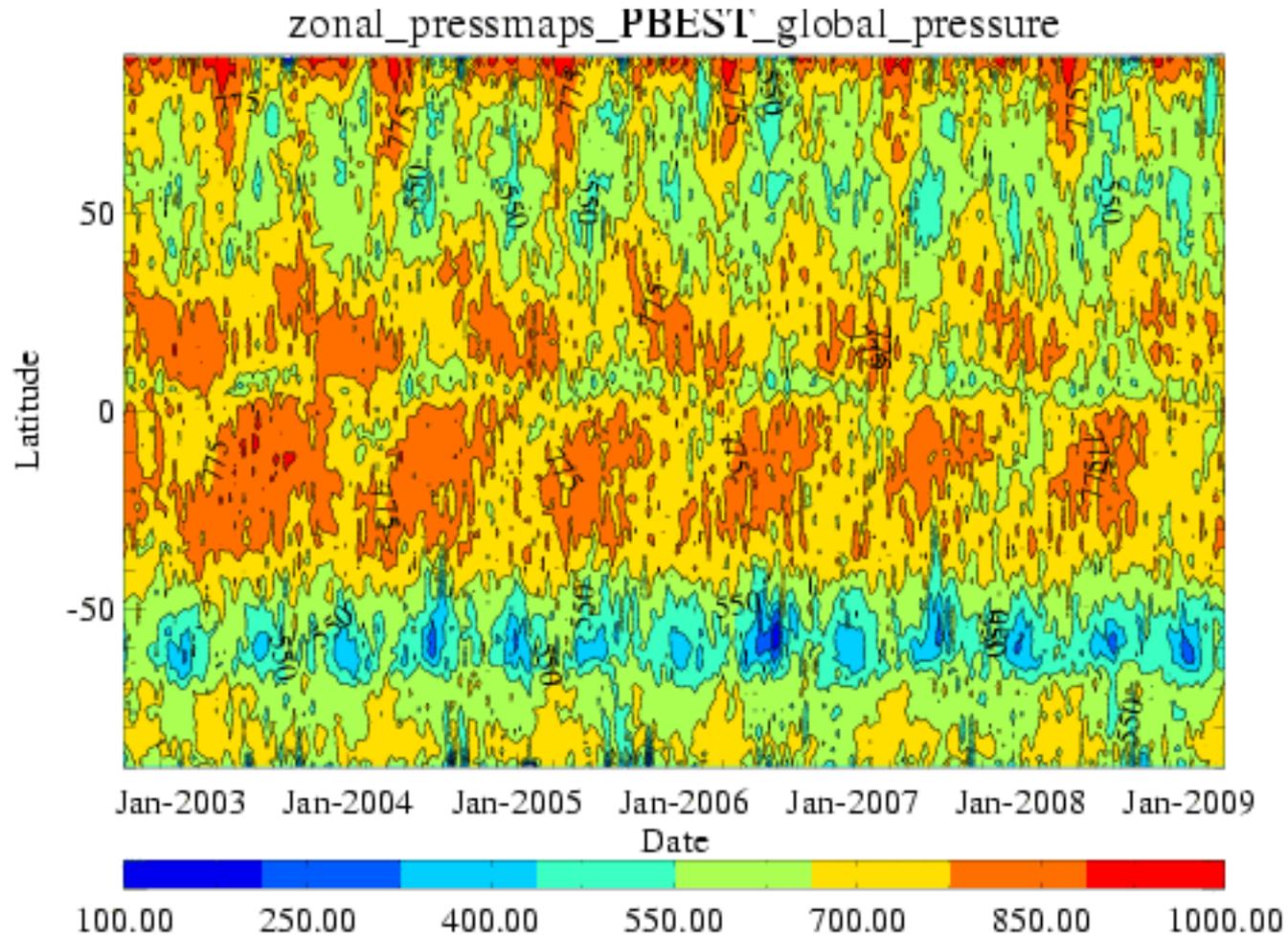
- ***New Hardware:*** Goal is 6 month turnaround
- Level 2 trending

Yield Trending



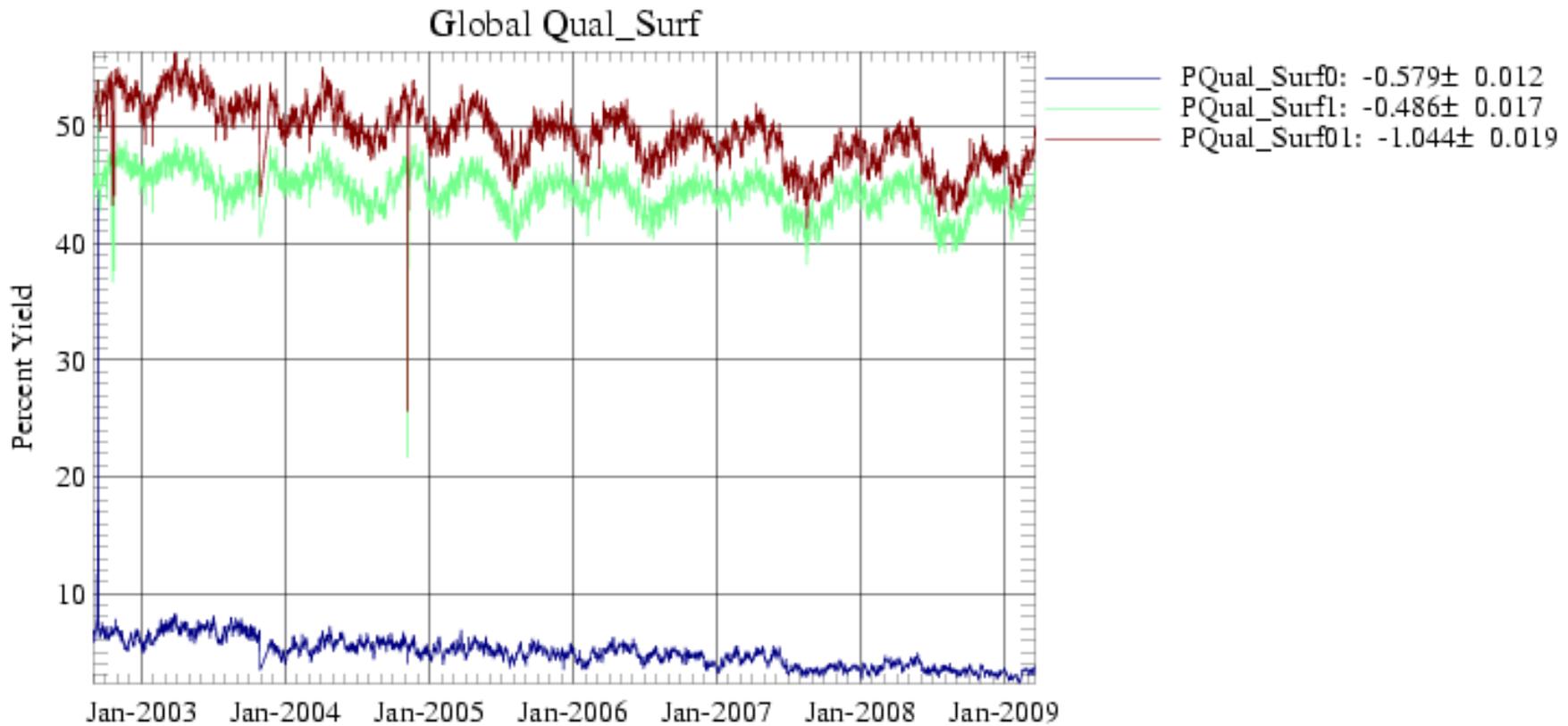
PGood and PBest are decreasing (in pressure) globally over land and ocean.

Yield Trending



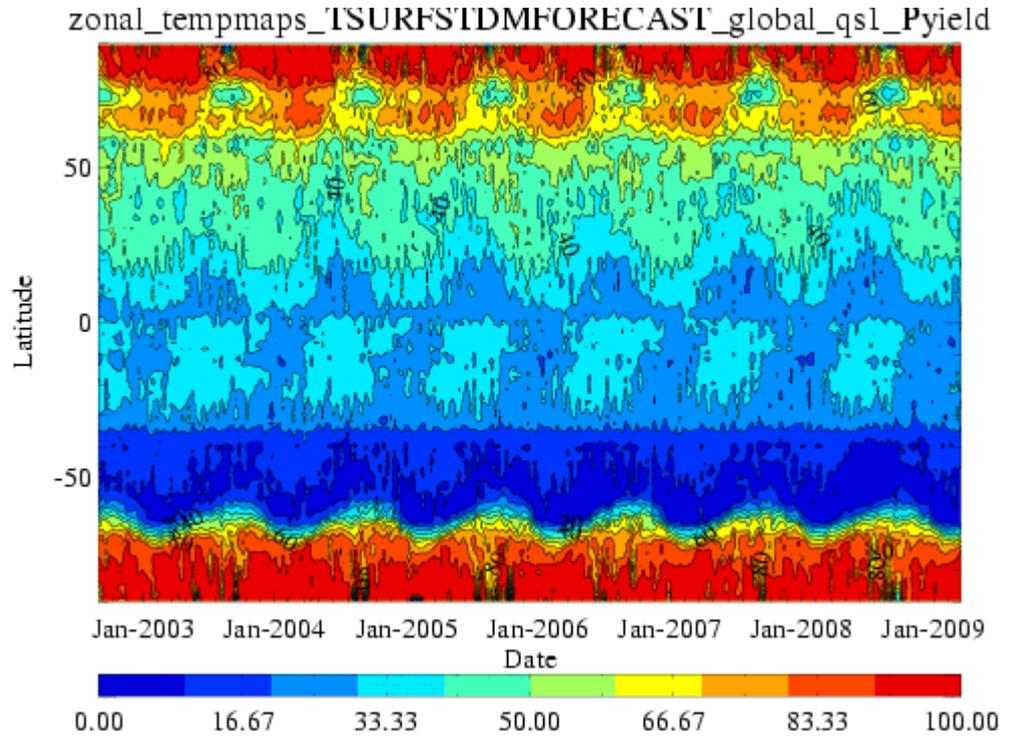
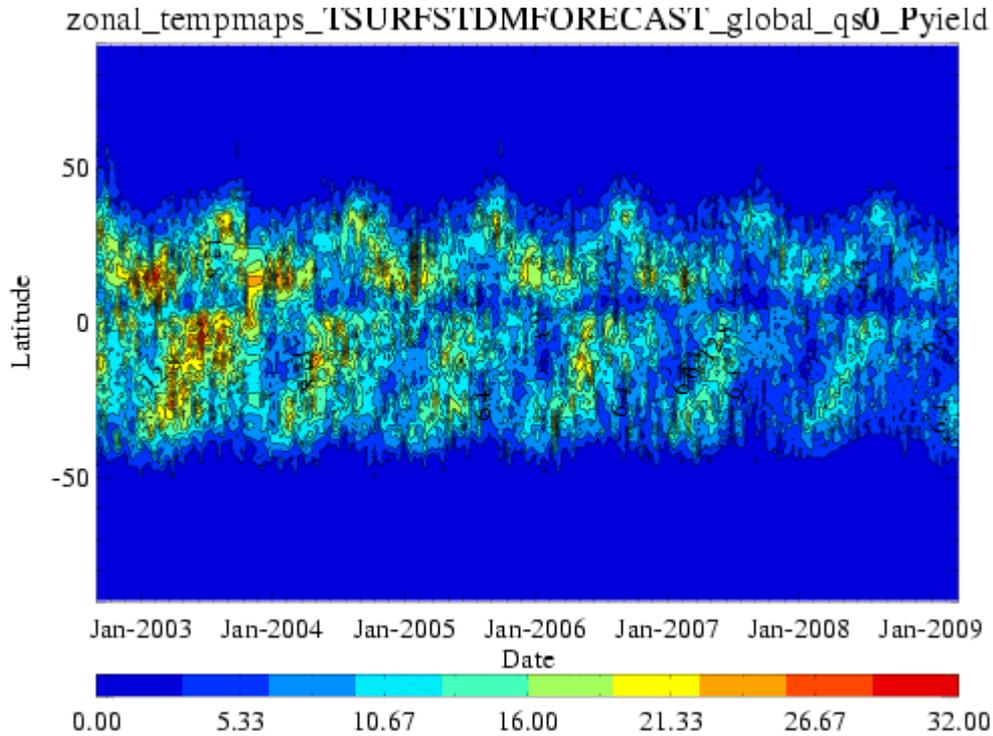
The Decrease in PBest is global.

Yield Trending



Qual_Surf is decreasing globally.

Yield Trending



Qual_Surf is decreasing globally.

“Whom” technology updated to “Mirador Projects”

Mirador Earth Science Data Search Tool - Mozilla Firefox

http://mirador.gsfc.nasa.gov/

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

Search DISC + GO
+ Advanced Search

+ ACDISC + AgDISC + A-TRAIN + AIRS + HURRICANES + NEESPI + OCEAN COLOR + PDISC

+ GES DISC Home
Mirador
Data Access Made Simple

Mirador

- + OVERVIEW
- + HELP CENTER
- + DATA HOLDINGS
- + VIEW CART
- + CHECK OUT

Additional Features

- + News
- + Restricted Data
- + Feedback
- + FAQ

Due to periodic maintenance, the following data will not be available for download between 06:00am April 21 and 4:00pm April 24, 2009 (EST):
AIRS, OMI Level 1, MLS Level 1, Some Level 1 TRMM, TOVS, MSU, LIMS, MERRA, and NEESPI

You are here: [Keyword Search](#)

Projects **Keyword**

SEARCH MIRADOR

Keyword: Location:

[Advanced Search](#)

Time Span
From:
To:



Done

Mirador Earth Science Data Search Tool - Mozilla Firefox

http://mirador.gsfc.nasa.gov/cgi-bin/mirador/presentNavigation.pl?tree=project&CURRI

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

Search DISC + GO
+ Advanced Search

+ ACDISC + AgDISC + A-TRAIN + AIRS + HURRICANES + NEESPI + OCEAN COLOR + PDISC

+ GES DISC Home
Mirador
Data Access Made Simple

The Projects tab is our new Beta release of a navigation interface for GES DISC data. [Please provide feedback.](#)

You are here: [Project](#)

Projects **Keywords**

Project	Description	Start Year	End Year
A-Train	Collocated with CloudSat subsets of MODIS/Aqua, AMSR-E/Aqua, OMI/Aura, and POLDER/PARASOL.	2004	2009
AIRS	The Atmospheric Infrared Sounder (AIRS) is a facility instrument aboard the second Earth Observing System (EOS) polar-orbiting platform, EOS Aqua. In combination with the Advanced Microwave Sounding Unit (AMSU) and the Humidity Sounder for Brazil (HSB), AIRS constitutes an innovative atmospheric sounding group of visible, infrared, and microwave sensors. Global coverage will be obtained twice daily (day and night) on a 1:30pm sun synchronous orbit from a 705-km altitude. For processing convenience, the data is divided into 6-minute files for Level 1 and 2 data. more info	2002	2009
GLDAS	The Global Land Data Assimilation System (GLDAS) is generating a series of land surface state (e.g., soil moisture and surface temperature) and flux (e.g., evaporation and sensible heat flux) products simulated by four land surface models (CLM, Mosaic, Noah and VIC). Current data holdings include a set of 1.0 degree resolution data products from the four models, covering 1979 to the present, and a 0.25 degree data product from the Noah model, covering 2000 to the present.	1979	2009
HIRDLS	The High Resolution Dynamics Limb Sounder (HIRDLS) aboard the EOS Aura spacecraft (launched July 15, 2004) measures infrared emissions in 21 channels ranging from 6.12 to 17.76 microns. These measurements are used to derive vertical profiles of Ozone, HNO3, Water Vapor, Methane, N2O, NO2, N2O5, CFC11, CFC12, aerosols, and atmospheric temperature, as well as the locations of polar stratospheric clouds and cloud tops. At this time, only Ozone (O3), Nitric acid (HNO3), CFC-11, CFC-12, Aerosol Extinction (12.1 micron).	2005	2008

Additional Features

- + News
- + Restricted Data
- + Feedback
- + FAQ

Done

“Mirador Projects”

The screenshot shows the Mirador Earth Science Data Search Tool interface. The browser window title is "Mirador Earth Science Data Search Tool - Mozilla Firefox". The address bar shows the URL: <http://mirador.gsfc.nasa.gov/cgi-bin/mirador/presentNavigation.pl?project=AIRS&tree=>. The page features a navigation menu on the left with options like "OVERVIEW", "HELP CENTER", "DATA HOLDINGS", "VIEW CART", and "CHECK OUT". The main content area displays the "Projects" tab, which is highlighted. Below the navigation menu, there is a section for "Additional Features" including "News", "Restricted Data", "Feedback", and "FAQ". The main content area shows the "AIRS" project details, including a description of the Atmospheric Infrared Sounder (AIRS) and a table of data groups.

Mirador
Data Access Made Simple

The **Projects** tab is our new **Beta** release of a navigation interface for GES DISC data. [Please provide feedback.](#)

You are here: [Project](#) » [AIRS](#)

Projects **Keywords**

AIRS

The Atmospheric Infrared Sounder (AIRS) is a facility instrument aboard the second Earth Observing System (EOS) polar-orbiting platform, EOS Aqua. In combination with the Advanced Microwave Sounding Unit (AMSU) and the Humidity Sounder for Brazil (HSB), AIRS constitutes an innovative atmospheric sounding group of visible, infrared, and microwave sensors. Global coverage will be obtained twice daily (day and night) on a 1:30pm sun synchronous orbit from a 705-km altitude. For processing convenience, the data is divided into 6-minute files for Level 1 and 2 data.

Data Group	Description	Date Range
V5 AIRS Cal Rad L1B	Version 5 Level 1B Calibrated infrared and Vis/Near IR radiance data set, microwave brightness temperature data set and associated quality assurance subsets.	2002-05-21 to 2009-04-23
V5 AIRS/AMSU L2	Version 5 Level 2 Standard Retrieval data set, Cloud-Cleared data set, and Support data set derived from AIRS and AMSU.	2002-08-30 to 2009-04-21
V5 AIRS/AMSU L3	Version 5 Level 3 daily, 8-day and monthly standard retrieval data set and 5-day and monthly distributional summaries of Level 2 standard data set derived from AIRS and AMSU. Statistical Mean, Std Dev and Input Counts for Surface and Atmospheric Quantities in a 1x1 Lat/Lon Grid Box.	2002-08-31 to 2009-04-20
V5 AIRS/AMSU/HSB L2	Version 5 Level 2 Standard Retrieval data set, Cloud-Cleared data set, and Support data set derived from AIRS, AMSU and HSB.	2002-08-31 to 2003-02-05
V5 AIRS/AMSU/HSB L3	Version 5 Level 3 daily, 8-day and monthly standard retrieval data set and 5-day and monthly distributional summaries of Level 2 standard data set derived from AIRS, AMSU and HSB. Statistical Mean, Std Dev and Input Counts for Surface and Atmospheric Quantities in a 1x1 Lat/Lon Grid Box.	2002-08-31 to 2003-03-01

http://mirador.gsfc.nasa.gov/cgi-bin/mirador/homepageAlt.pl?CGISESSID=f0eb49eabf0d1995dd39f18ed62fcbce&CURRENT_CONTEXT=KeywordSearch&keyword=&...

“Mirador Projects”

Mirador Earth Science Data Search Tool - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://mirador.gsfc.nasa.gov/cgi-bin/mirador/presentNavigation.pl?tree=project&projec

Search DISC
+ Advanced Search + GO

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

+ ACDISC + AgDISC + A-TRAIN + AIRS + HURRICANES + NEESPI + OCEAN COLOR + PDISC

+ GES DISC Home

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Data Access Made Simple

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You are here: Project » AIRS » V5 AIRS/AMSU L2

Projects Keywords

V5 AIRS/AMSU L2
Version 5 Level 2 Standard Retrieval data set, Cloud-Cleared data set, and Support data set derived from AIRS and AMSU.

Data Set	Description	Date Range	Number of Items	Avg Size (MB)
AIRX2RET.005 Info	Level 2 Standard final retrieval data set in 28 standard pressure levels. Available Services: Convert to NetCDF Subset by Variable Download via HTTP	2002-08-30 to 2009-04-21	551919	2.288
AIRX2SUP.005 Info	Level 2 Support data set in 100 pressure levels. Available Services: Subset by Variable Convert to NetCDF Download via HTTP	2002-08-30 to 2009-04-21	551944	12.759
AIRI2CCF.005 Info	Level 2 Cloud-Cleared IR radiances. Available Services: Subset by Channel Download via HTTP	2002-08-30 to 2009-04-21	551847	9.189

NASA Official: Steve Kempler
Website Curator: Anthony Drake

+ Contact Us
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Done

Data Conversions and Subsets

Standard Services

- NetCDF conversion (Need feedback from JPL regarding level of CF1 compliance)
- Data Subsets
- Level 2: standard, support (e.g., averaging kernels)
- cloud cleared radiances

Other data subset services

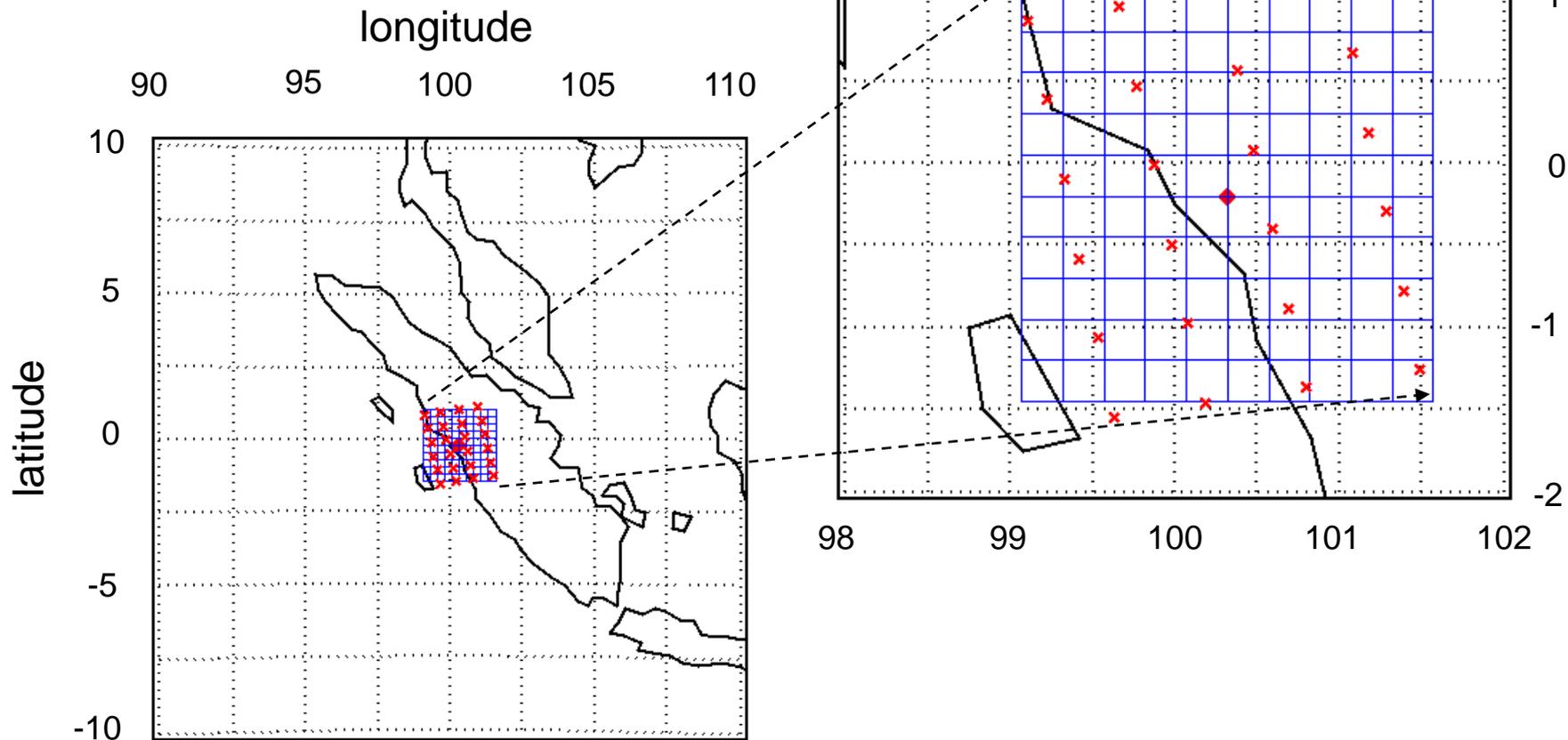
- OpenDAP
- Binary format via http (2.5 granules/sec of a dust flag subset)
- CEOP Subsets

Future Services

- We are investigating Buffer format

Coordinated Energy and Water Cycle Observations Project (CEOP)

Subset for site
EIS (-0.20, 100.32)
2008.12.15, granule #072



- 37 2.5°x2.5° sites around the globe
- ★ subsets of 5 larger monsoonal regions are under development

AIRS Near-Real Time and Web Map Service

- Global maps of BT_diff_SO2 at 0.1 deg, CO at 0.33 deg, and false-color RGB at 3-km resolution, as output from the Near-Real-Time flow are utilized in a new Web Map service.
- It is an experimental "quick-look" for scientists working on volcanic eruptions
- Possible interest from NOAA Satellite Analysis Branch
- Web Map Service access
 - Clients: IDV 2.6, McIDAS-V*, GoogleEarth*, Q-GIS, et al.
 - Web Browser: Users can bookmark any region for repeated views
- Web Coverage Service (geotiff) access
 - Clients: Matlab, IDL, ...

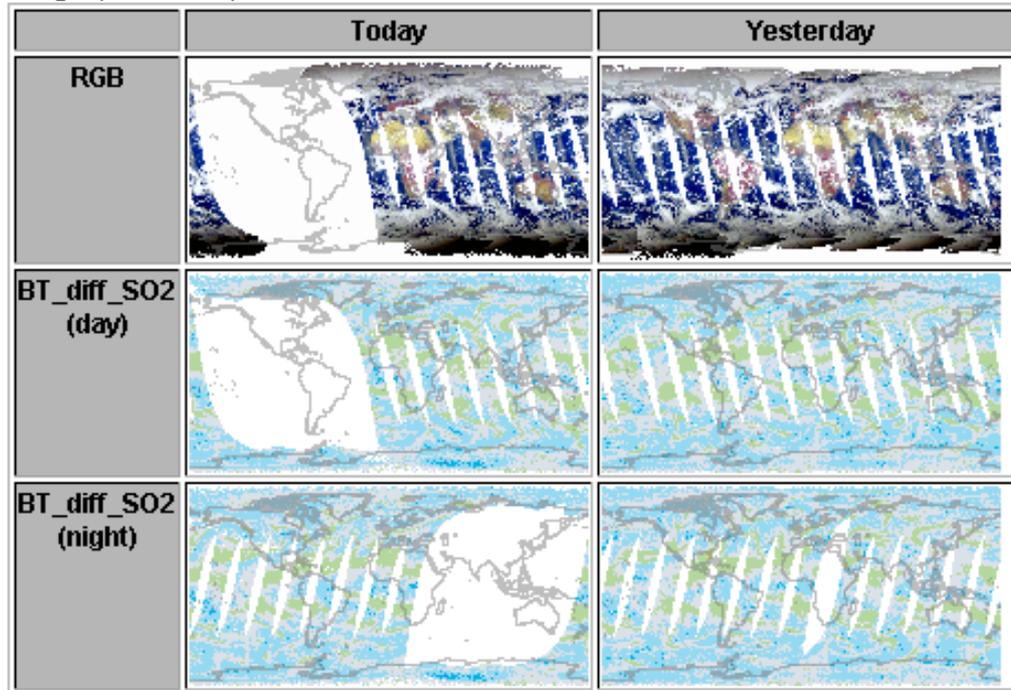
(*Still working on issues with some clients)

Web access:

http://disc.gsfc.nasa.gov/services/AIRS_NRT_WMS.shtml

OVERVIEW

This page includes pictures of AIRS Near Real Time data, served via Web Map Service (WMS). The AIRS BT_diff_SO2 field, brightness temperature difference Tb(1361.44 cm-1) - Tb(1433.0 cm-1) can be an indicator of SO2 release from volcanoes. Values under -6K (deep red in the images) have likely volcanic SO2.



Active Volcano Regions

- Aleutian Islands - East
- Aleutian Islands - West + Kamchatka
- Andes - North
- Andes - South
- Central America and Caribbean
- Indonesia / Papua New Guinea
- Middle East
- Pacific Northwest

Want to zero in on your own favorite region? [Click here for instructions](#) on how to use the Web

AIRS Climatology in Giovanni

Giovanni - AIRS-Climatology - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://giovanni-dev.sci.gsfc.nasa.gov/daac-bin/G3/results.cgi?wsid=124103140727216&ap

Most Visited Yahoo! Mail Gmail Google Maps Merriam-Webster O... WP Weather The DISC Web Page... The Loh Life My Yahoo!

G3 Instance Configur... Giovanni - AIRS-Clim...

NASA National Aeronautics and Space Administration

Search DISC

Giovanni - The Bridge Between Data and Science

+ ABOUT GIOVANNI + NEWS + INSTANCES + FEEDBACK + RELEASE NOTES + HELP

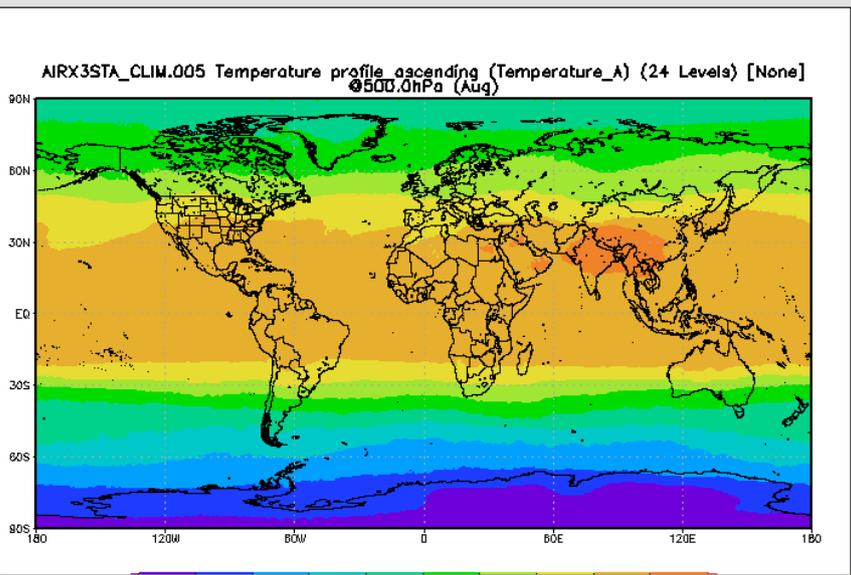
AIRS-Climatology

AIRS-Climatology

Home Results #1 Remove All

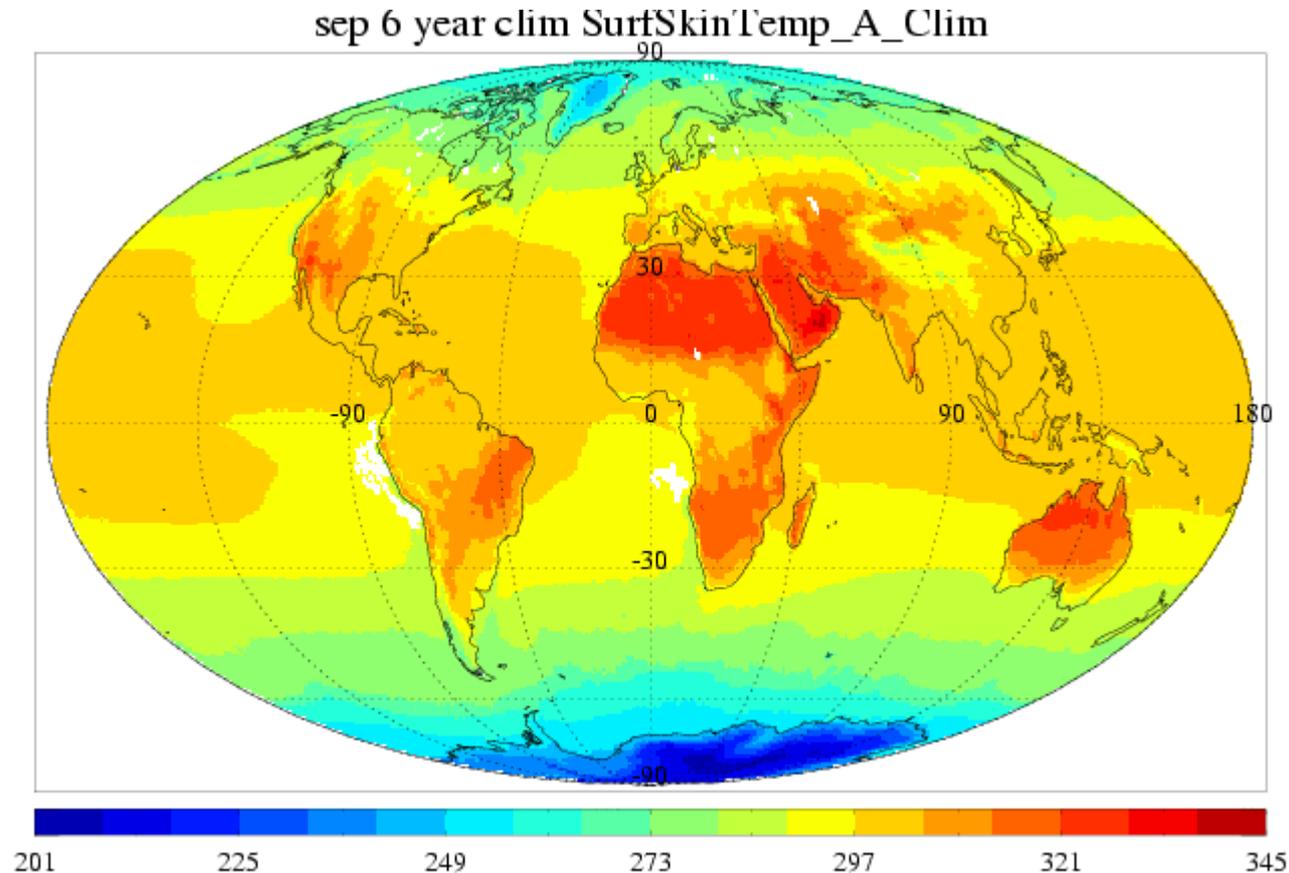
Plots Data Download Data Lineage Constraints Preferences Related Imagery Acknowledgment Policy

AIRX3STA_CLIM.005 Temperature profile ascending (Temperature_A) (24 Levels) [None]
@500.0hPa (Aug)



Done

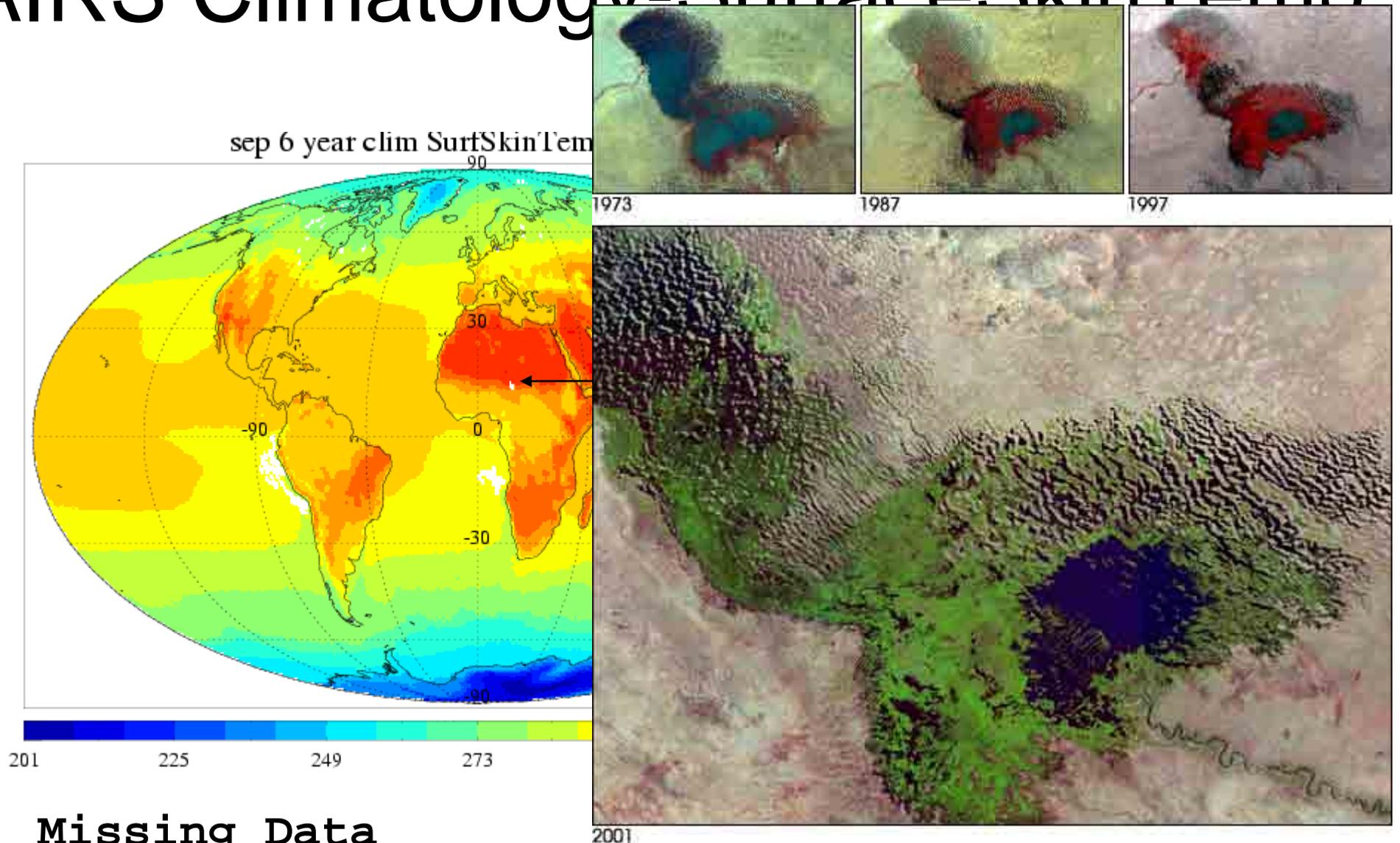
AIRS Climatology-SurfaceSkinTemp



Missing Data

- West coast of Africa and South America
- Lake Chad
- A few other locations

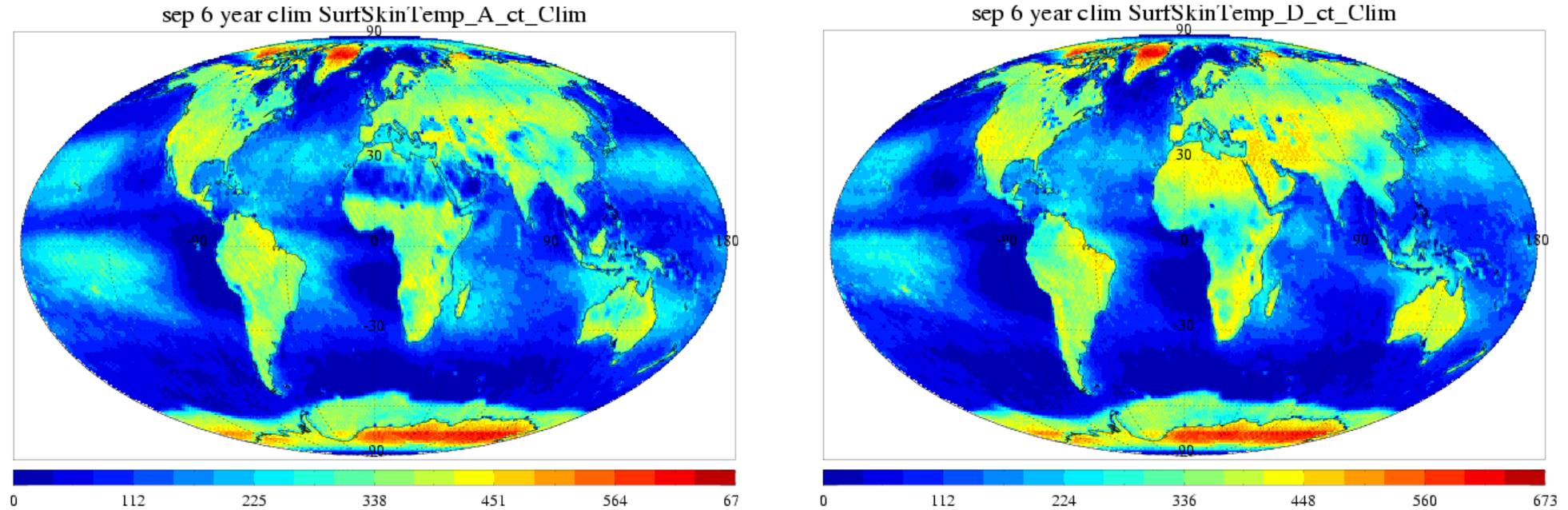
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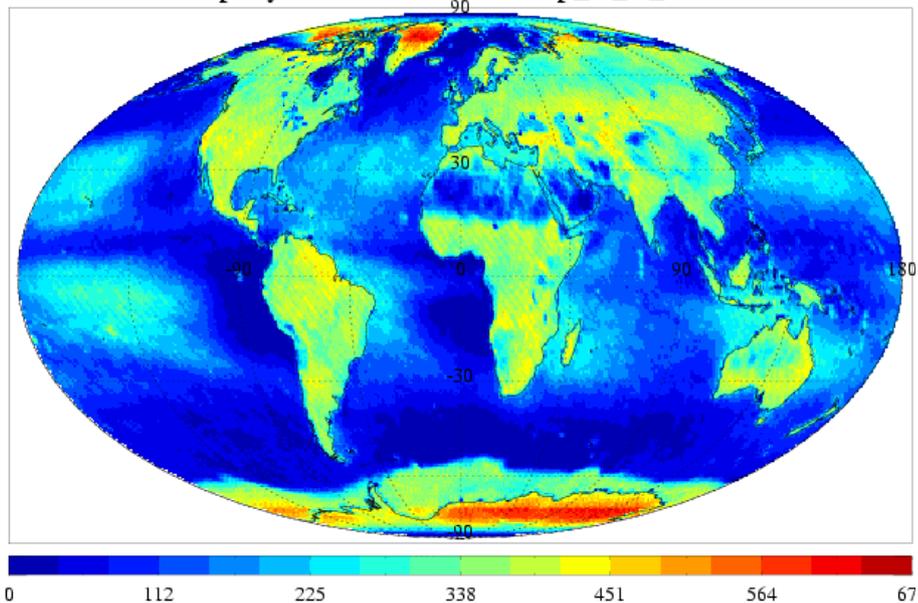
AIRS Climatology-Surface Counts



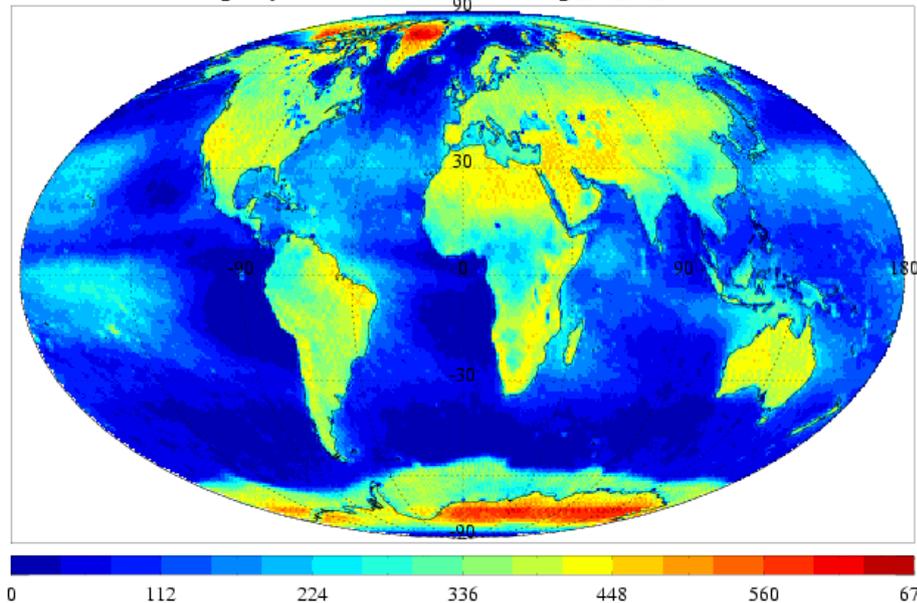
Low yield over the Daytime Desert
relative to night

AIRS Climatology-Surface Counts and Clouds

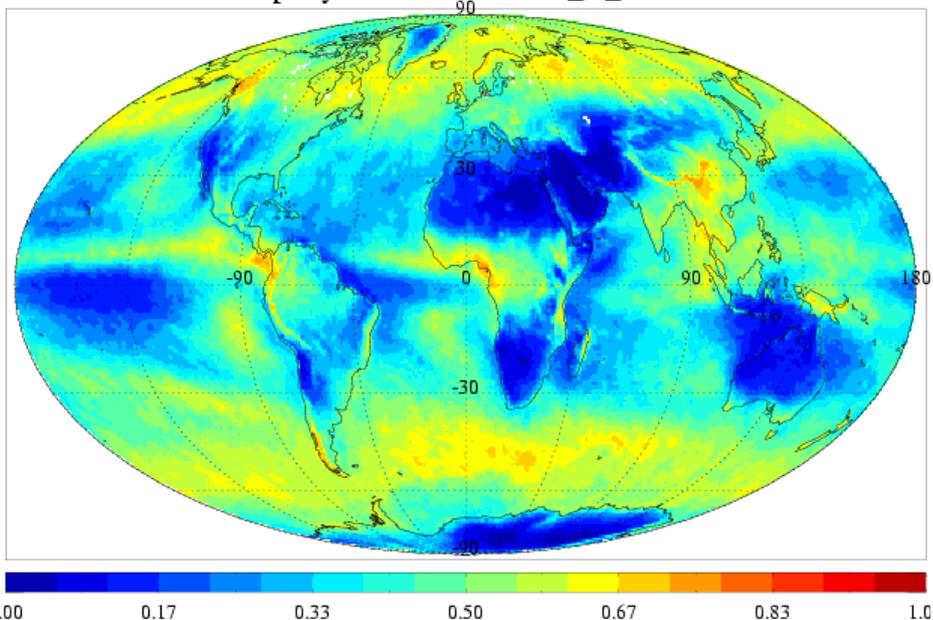
sep 6 year clim SurfSkinTemp_A_ct_Clim



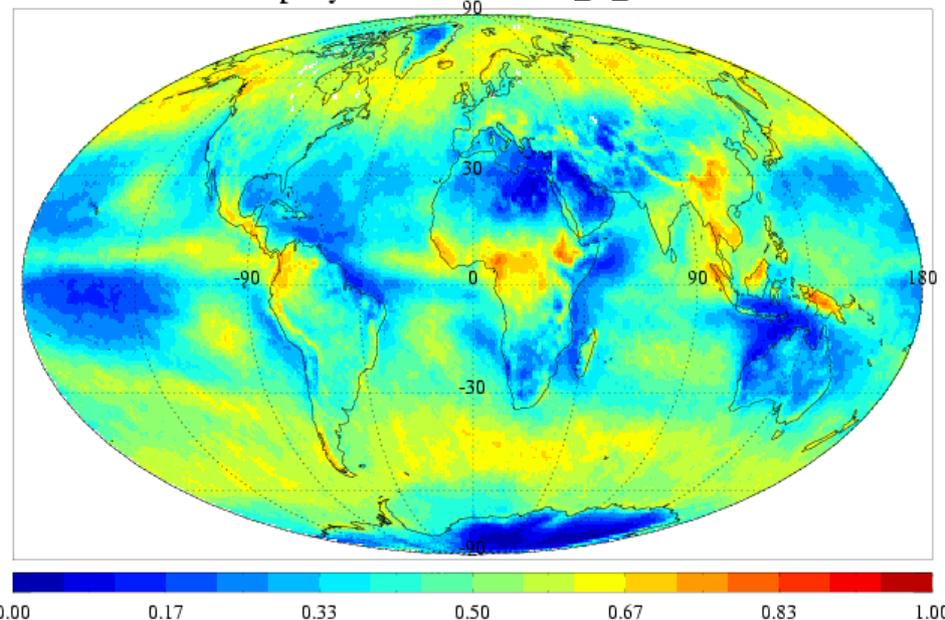
sep 6 year clim SurfSkinTemp_D_ct_Clim



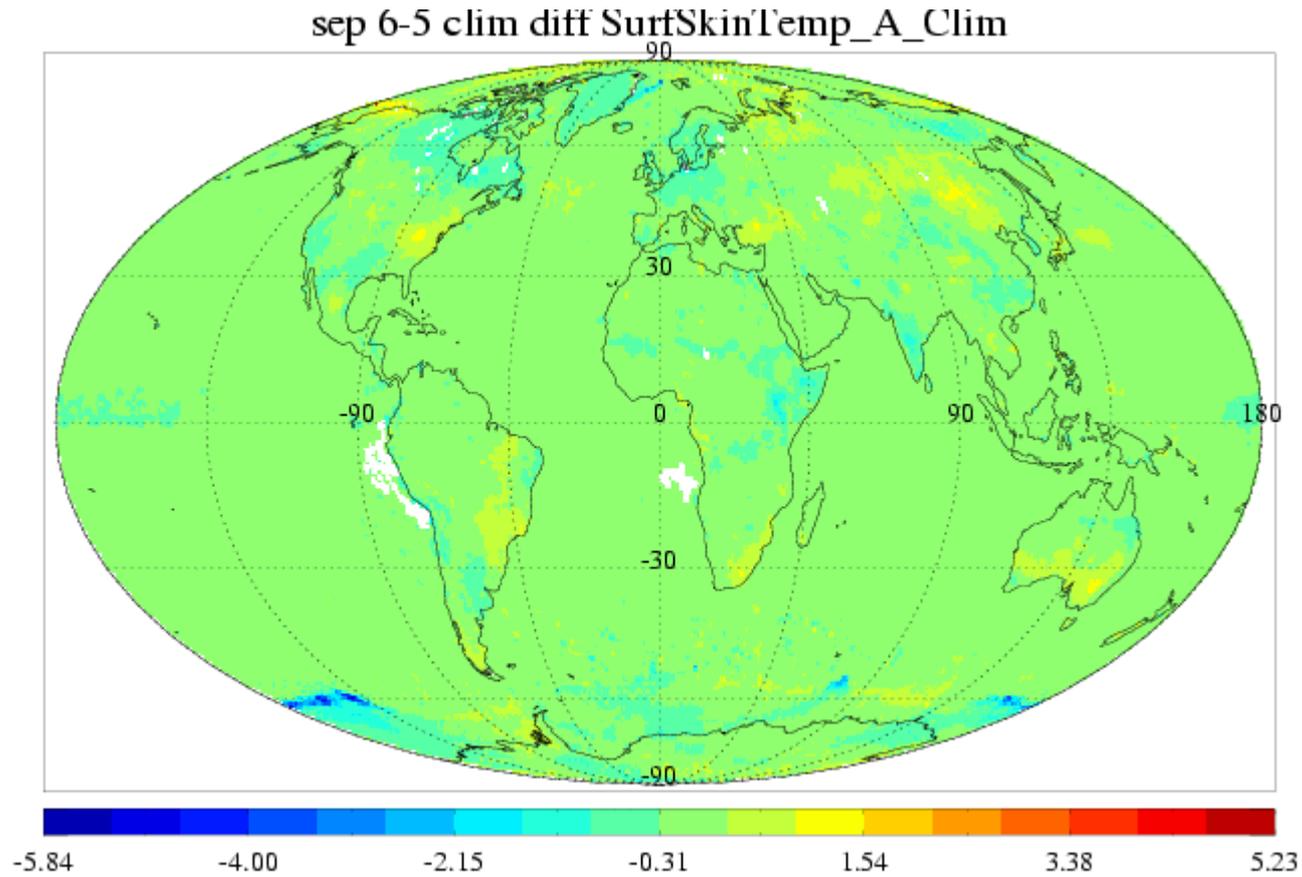
sep 6 year clim CloudFrc_A_Clim



sep 6 year clim CloudFrc_D_Clim



AIRS Climatology

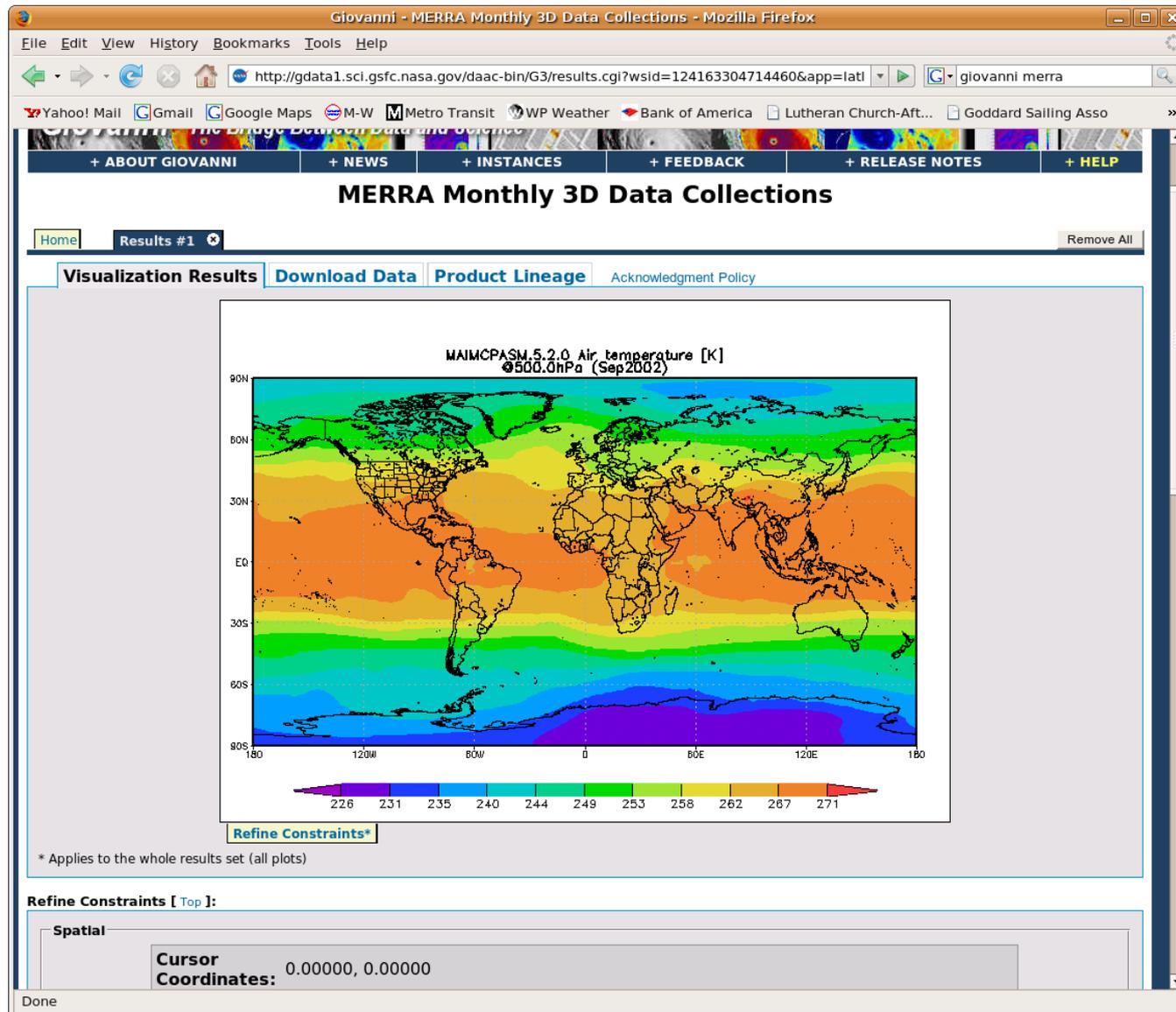


There can be discrepancies between 5 year and 6 climatologies

Modern Era Retrospective-analysis for Research and Applications (MERRA)

- Three-dimensional analyses are generated every 6 hours
- Three dimensional diagnostics, describing the radiative and physical properties of the atmosphere, are 3-hourly
- 3 separate streams
 - 1979 - 1989
 - 1989 - 1998
 - 1998 - present (Currently, the AIRS era is complete through Dec 2003)
- All data will be available by November 2009.

Modern Era Retrospective-analysis for Research and Applications (MERRA)



Summary

- We are preparing for V6
- "Whom" technology updated to "Mirador Projects"
- Data Conversion and subsets
- Near Real Time (NRT) and Web Map Service (WMS)
- AIRS Climatologies in Giovanni
- MERRA