AIRS Version 6 Processing Plan, Distribution Metrics, and Support at the GES DISC

Thomas Hearty (Thomas.Hearty@nasa.gov)

With contributions from

Bruce Vollmer, Mike Theobald, Andrey Savtchenko, Ed Esfandiari, Feng Ding, Elaine Vadnais, Fan Fang, Chris Lynnes, Guang-Dih Lei

Outline

- Version 5 and 6 Processing

- Distributions Metrics

- Status of Services

Version 5 Processing

- **Version 5 AIRS+AMSU** is now a static data set from 8/30/2002-2/28/2013.

- **Version 5 Level 2 IR-Only** is still being processed as input for the **AIRS CO$_2$ product** which is still Version 5

- Still processing **Version 5 Level 1B**

- **Updated Level 1B** from v5.0.0.0 to v5.0.21.0 on 1/21/2012 to account for channel properties and calibration properties files update.

Version 6 Level 2 and Level 3 Processing Schedule

- **AIRS+AMSU**: Forward stream processing and reprocessing of past data are underway:
    - Approximately 1 year/2.5 weeks
    - L3 lags L2 by a couple of data months
- **IR-Only**: Forward stream processing. Reprocessing of past data will begin when AIRS+AMSU reprocessing is complete.
- **AIRS+AMSU+HSB**: Reprocessing will begin when AIRS+AMSU and IR-Only are complete.

Version 6 Level 2 and Level 3 Processing Schedule

The status of what data are in the archive can be viewed by using the projects tab in Mirador (mirador.gsfc.nasa.gov):

Version 6 Level 2 and Level 3 Processing Schedule

After a few clicks you can navigate to the AIRS+AMSU Version 6 Level 2 product table

AIRX2RET.006 `info`

AIRS/Aqua Level 2 Standard physical retrieval (AIRS+AMSU)

■ **Spatial and Temporal Search**

Available Services:
- Download via HTTP

Note: The numbers refer to the number of files available from the archive for that month.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2002									240			
2003												239
2004	4810											
2005												239
2006	7435	6371										239
2007	7404	6715	7414	7139	7407	7190	7394	7440	7197	7440	7153	7380
2008	7390	6955	7410	7144	7437	7193	7412	7436	7200	7409	7197	7401
2009	7432	6712	7323	7051	7435	7193	7432	7414	7189	7434	7127	7435
2010	3224	6713	7351	7164	7437	7193	7407	7437	7145	7433	7172	7436
2011	7390	6673	7342	7135	7437	7110	7429	7411	7163	7410	7150	7380
2012	7402	6954	7405	7135	7345	7154	7440	7407	7127	7434	7124	7412
2013	7394	6402	7371	6844	3638							

Version 6 NRT Processing

Same rules as for Version5 + 1 more are used to meet the 3 hour latency requirement for NRT processing

- Whether or not previous or subsequent granules are present

- Less accurate ephemeris/attitude data

- Whether or not the forecast surface pressure is present

- Ice Cloud Properties retrievals are not performed
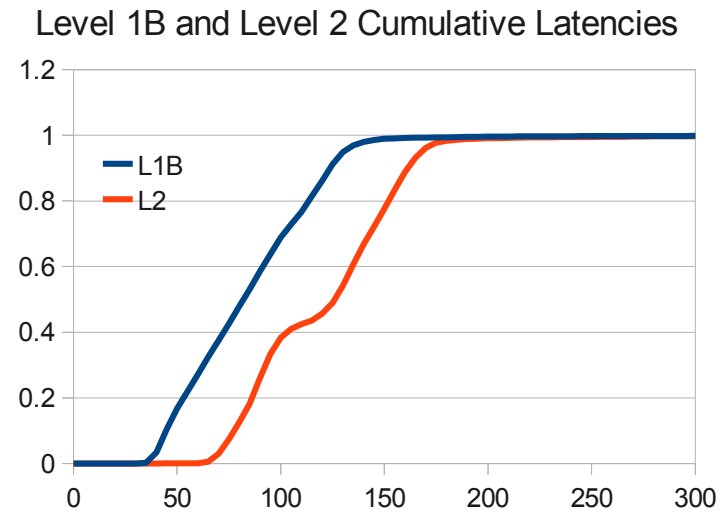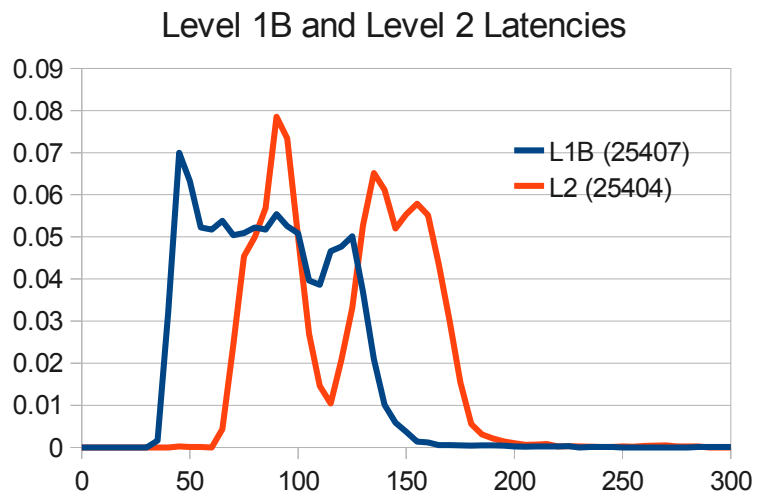
Version 6 NRT Processing

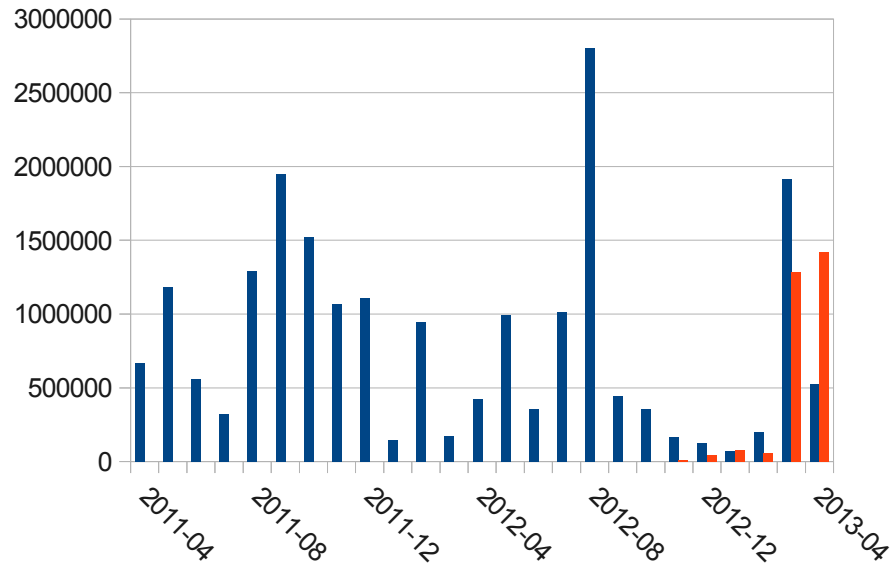|	Version 5	Version 6
Level 2 granules available within 3 hours	99.8%	99.0%
Average Level 2 Latency	100 minutes	125 minutes

NRT Latency

Version 5
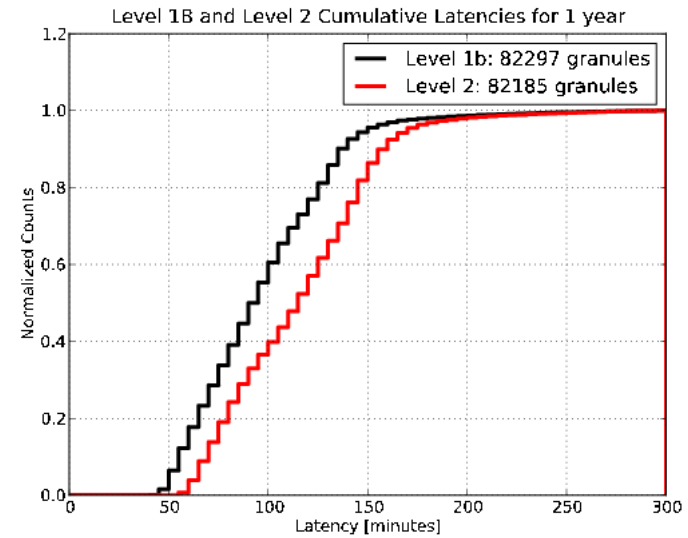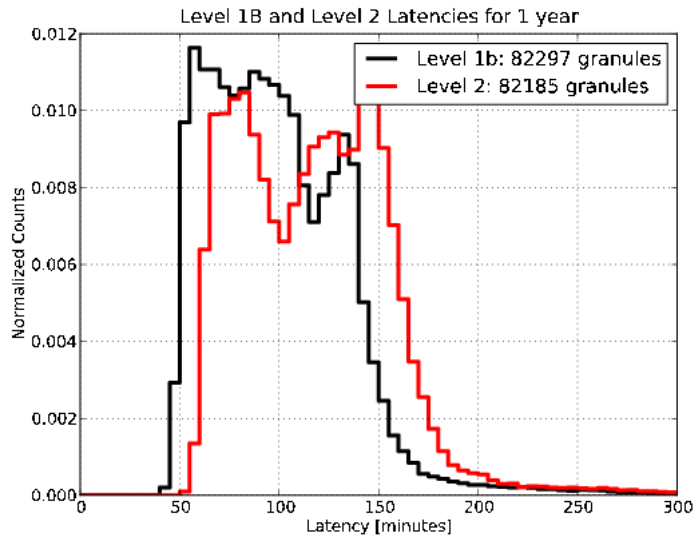
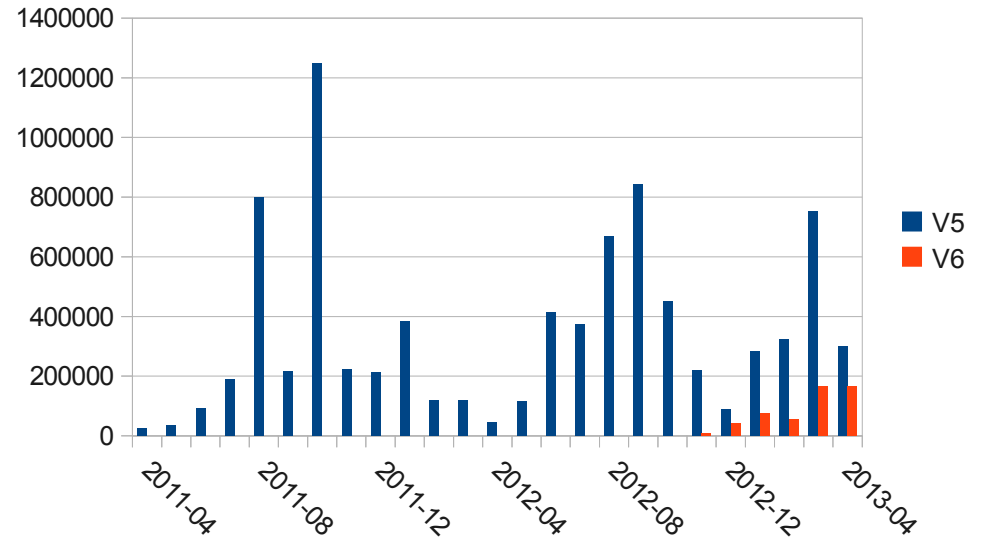## Version 6

Version 6 Level 2 Distribution: Granules
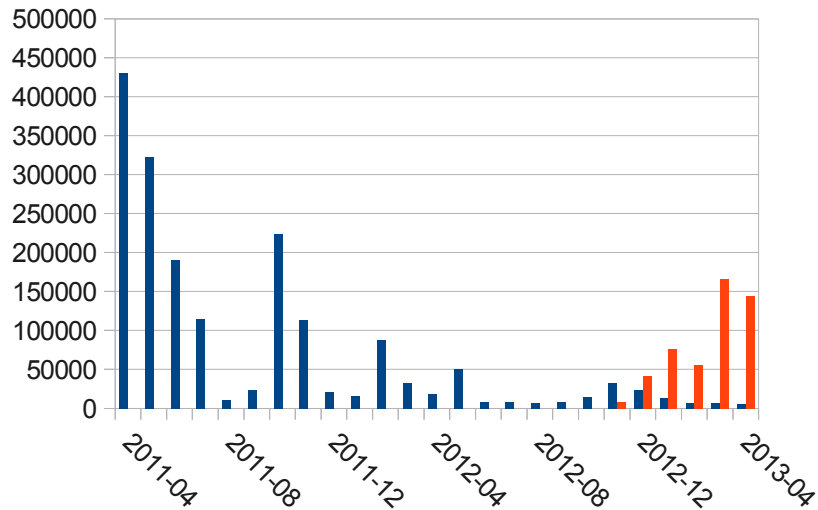
Version 6 Level 3 Distribution: Granules
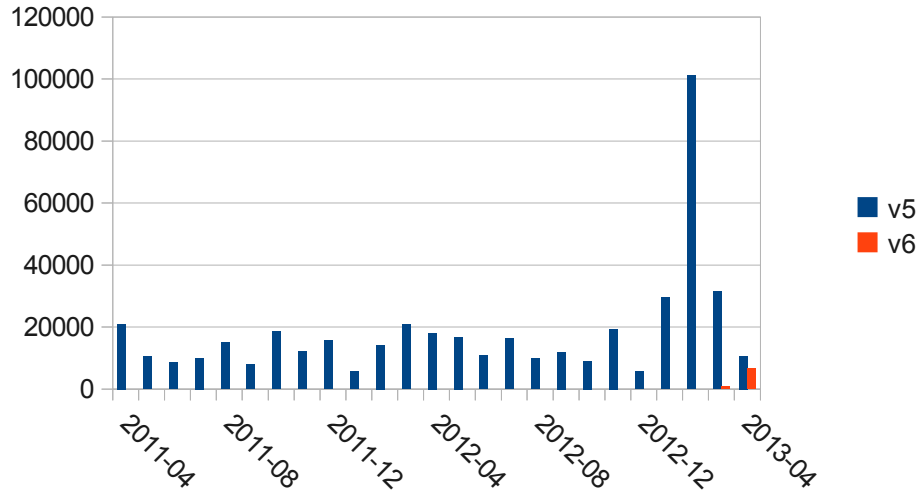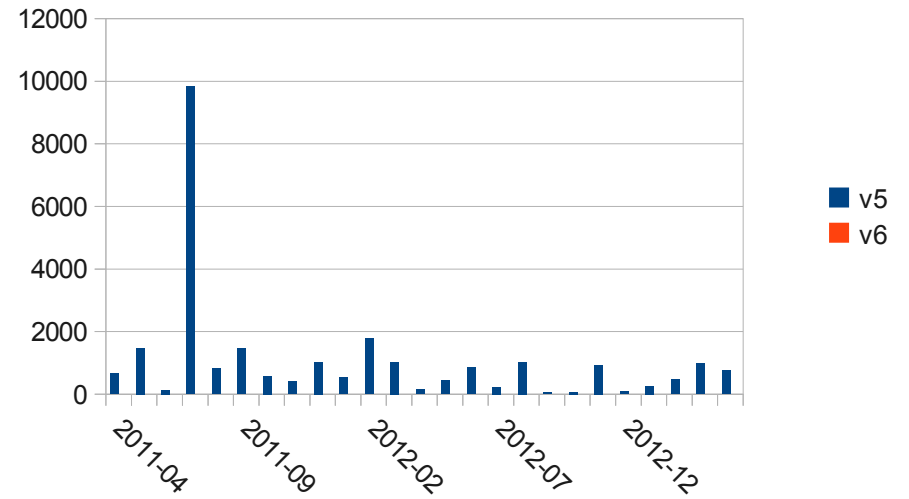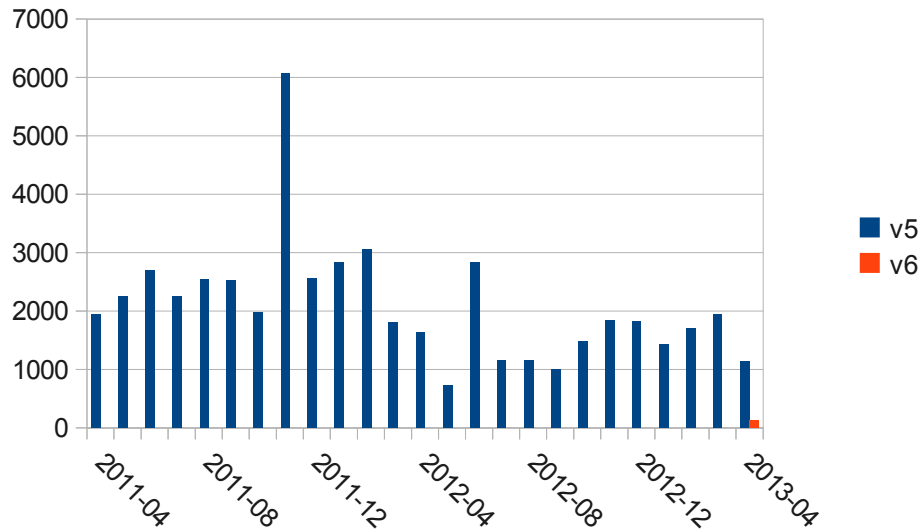
Data Services for AIRS Version 6

- **Mirador** spatial and time search, data discovery, and OpeNDAP

- **EOS Clearing House (ECHO)** V6 data is discoverable ECHO

- **Web Map Service (WMS)**

  - Version 6 NRT data.

  - Temperature and Relative humidity layers will be added.

  - Version 6 Level 3 WMS is still in development.

- **Granule Maps** are still built based on Level 1B data.

Data Services for AIRS Version 6

- **OPeNDAP** is working for Version 6

  - Need recommended longnames

  - Plans for Version 7 could include attributes for more CF compliance

  For example:

```
short sea_surface_temperature(time, nj, ni);
        sea_surface_temperature:long_name = "sea surface skin temperature";
        sea_surface_temperature:standard_name = "sea_surface_skin_temperature";
        sea_surface_temperature:units = "kelvin";
        sea_surface_temperature:add_offset = 290.0;
        sea_surface_temperature:scale_factor = 1.0e-3;
        sea_surface_temperature:valid_min = -32767s;
        sea_surface_temperature:valid_max = 32767s;
        sea_surface_temperature:_FillValue = -32768s;
        sea_surface_temperature:coordinates = "lon lat";
        sea_surface_temperature:comment = "Skin temperature of the ocean";
```

Data Services for AIRS Version 6

- **Giovanni** Team is rolling out Version 4 of Giovanni aka "G4" or "Agile Giovanni"

  - AIRS Version 5 data will continue to be available in G3.

  - AIRS Version 6 data is being integrated now and will be added to G4 this summer in phases. The first phase includes the following variables:

    – T**otH2OVap_A** & **_D**

    – **SurfAirTemp_A** & **_D**

    – **OLR_A** & **_D**

    – **ClrOLR_A** & **_D**

    – **H2O_MMR_A** & **_D**

    – **Temperature_A** & **_D**

    – **RelHum_A** & **_D**

  - We plan to include a Version 6 climatology generated using AIRS Level 3 code to be used for calculating anomalies.

Data Services for AIRS Version 6

- **Data Quality Screening Service (DQSS)** is being tested for Version 6 and should be available soon.

- **Simple Subset Wizard (SSW)** is being tested for Version 6 and should be available soon.

- **Earth System Grid (ESG)** Plan is to have Version 6 data updated "live" (automated each month) into the ESG. Currently following the same methodology as described by Baijun Tian's Obs4MIPs work.

Summary

- Version 6 Reprocessing is underway (except for CO_2)

- Version 5 is now a static data set (except for IR-Only)

- People are using Version 6 data (except for the 8 day Level 3)

- The following services are available now

  - **Mirador**, **ECHO**, **WMS**, **Granule Maps**, **OpeNDAP**

- The following services will be available soon

  - **DQSS**, **Giovanni**, **SSW**, ESG

- Questions: Thomas.Hearty@nasa.gov