V6 Summary: Status and Schedule

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Discussion Topics

- A word about AMSU-A Channel 5 and L2 Products
- V6 Product Development Status
- Detailed Review of Level 2
- Other PGEs for V6
- Plans for Completing V6
  - Closure of issues, PGE and product release
  - Schedule
AMSU-A Channel 5 NEΔT

- AMSU-A Channel 5 began to fail sometime during 2008
- Quality of Channel 5 began to rapidly fail in 2010 and NEΔT exceeded 1.0°K in early 2011
- Continuing degradation of AMSU-A Channel 5 has resulted in a significant drop-off Level 2 retrieval yields

- Fall-off is greatest near the surface
Version 5 is Past It’s Prime!

- Higher yields with AIRS-Only retrievals!
- However, AIRS-Only QC not rigorously engineered for V5
- We need of V6 now!
AIRS Software Development Activities
- Development Status

- Version 6 development began on 2007-07-11 w/ V5.1.0.0

- More than 66 builds, 6 since last Science Team

- Several test cycles, last one just before this ST Meeting

- Current V6 development version is V6.0.3.0
  (V6 test version has been V6.0.2.0)
V6 Product Development Status

- **Current Status**
  - L1B* - no changes planned
  - L2 - nearly complete (release soon)
  - L3 - under development (release beta with L2)
  - Calibration Subset - deferring development until L2 done
  - Climate Subset - deferring development until L2 done
  - CO2 - under development

- **Given schedule and resource limitations, V6 deliveries to the GES DISC will be staged.**
  - L2 to be released mid-2012
  - L3 and other products released late-2012
  - CO2 - probable late 2012 update

* Gain table uploaded to AIRS Instrument on January 21. Will necessitate delivery of new L1B Channel Properties to GES DISC and reprocessing of L1B since then.
Level 2 Development Status

- Changes Since November 2011 Science Team:
  - Improved QC throughout L2 product set
  - Added L3 Research Product
  - Added new “level quantities”
  - CO first-guess retrieval update
  - Cirrus retrieval update
  - Update to SDT Toolkit (V5.2.18) and work-around to bug with processing ephemeris data
Level 2 Development Status

- Work still remains, but the list of known issues is growing shorter:
  - Final Re-leveling updates (layer quantities to levels quantities)
  - Smaller technical issues with respect to L2 products
    - Methane - a fringe issue
    - Convection parameters
    - Final QC and re-leveling, plus unforeseen problems
  - Testing
    - We must complete checkout of all final code insertions
  - Documentation
    - L2 User Guide
    - L2 Test Report (largely incorporated in guide)
    - File Specification Document
The Final Statement of V6 L2

- **Final Delivery Considerations:**
  - For L2, we are now in the V6 wrap-up phase!
  - There is no more time to try *new* things
  - Not all desired features may make it into V6

*putting V6 L2 to bed*
Significant V6 Improvements... when compared to V5

- **Level 2**
  - Improved yields near surface
  - Reduced trends over time in many products
  - Modified retrieval not to use AMSU-04 and AMSU-05, and to gracefully handle future AMSU channel degradation issues
  - Improved AIRS-Only retrievals
  - Improved yield for both climate studies and numerical weather forecasts

- **AIRS Level 3**
  - Added new L3 quantities
  - Added TqJoint Grids to L3 STD product
  - Restructured L3 and added Research Product

- **Level 1B (code unchanged)**
  - Channel Properties update must be delivered (table update only)
New Level 3 Support field: Boundary Layer Top Pressure (Daytime Image)
Level 2 Testing
Extensive Test Evaluation Set Provided

- **Focus Days** - 12 focus days requested by various team members
  - AIRS+AMSU & IR-only

- **Radiosonde Matchups** for entire mission
  - Dedicated and PREPQC
  - AIRS+AMSU & IR-only

- **Trend test set**:
  - Nadir “1/3 swath,” every day of Jan & Jul, every year of the mission
  - AIRS+AMSU

- **Repeated Seasons**:
  - AIRS + AMSU
  - AIRS-Only
  - (currently in process)

- **Special campaigns**:
  - Global AIRS+AMSU May 8-15, 2004 for Juying Warner
  - North America for various days for Van Dang/Bjorn Lambrecht

We have two new processors, and we make full-use of them. Our processing power now enables us to run a month of standard L2 data (w/o cirrus) in about 2 to 2.5 days!
What about the rest of V6?
V6 Level 1C Status

- No significant changes in direction since last Science Team

- Level 1C possible release for V6
  - Level 1C products will not be produced at the GES DISC
  - We will publish algorithm for L1C calculations
  - May need to address additional issues... probably in V7
    - radiometric discrepancy between detectors
    - maybe Cij
  - Hand-off to NOAA to support creation of new BUFR product?
V6 Calibration Subset
  - Will be very similar to V5
  - Basic algorithm unchanged, but rules have been tweaked

V6 Climate Subset
  - NEW product based on Calibration Subset product
  - Is derived from L1B and L2 products

Both “subset” products are still under development
  - development deferred until after release of L2

AIRS Calibration Subset and Climate Subset may be modified to be compatible with corresponding Sounder PEATE products for IASI and CrIS
<table>
<thead>
<tr>
<th>Task Name</th>
<th>Start</th>
<th>Finish</th>
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</thead>
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<tr>
<td>Final V6 L2 Development and Check</td>
<td>Mon 7/11/11</td>
<td>Tue 7/17/12</td>
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<tr>
<td>L2 Development</td>
<td>Mon 7/11/11</td>
<td>Fri 11/4/11</td>
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<td>Code and Test</td>
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<td>Science Team Meeting</td>
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<td>Final L2 Development</td>
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<td>Final L2 Mods</td>
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<td>AIRS TLSCF DOWN - MANIT</td>
<td>Thu 12/8/11</td>
<td>Fri 12/30/11</td>
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<td>Extended Development (Maint S1)</td>
<td>Tue 1/3/12</td>
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<td>Build and PGE Verify</td>
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<td>Test Data Production (head start)</td>
<td>Mon 3/5/12</td>
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<td>Final V6 Updates</td>
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<td>Delivery Readiness Review</td>
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<td>Build, Deliver, Checkout at GSFC</td>
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<td>Hand-off to GES DISC</td>
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<td>Documentation - all testing</td>
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<td>GES DISC I&amp;T</td>
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- **End Development** 5/11/12
- **End Test** 6/1/12
- **Deliver to GES DISC** 6/4/12
- **Hand-off to GES DISC** 6/11/12
- **GES DISC I&T** 7/17/12
- **Public Release** 7/17/12

AIRS TLSCF was down for data archive maintenance 12/7/11 to 2/29/12, far longer than anticipated, resulting in delayed completion of V6 L2 and pre-delivery testing.
V6 Schedule - the “rest of the story”

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<td>Remainder of V6 Items</td>
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<td>Intensive development</td>
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<td>Basic Testing (beta)</td>
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<td>Code Mods</td>
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- End Development: 6/15/12
- End Test: 7/20/12
- Deliver: 7/23/12
- Hand-off to GES DISC: 8/3/12
- GES DISC I&T: 8/23/12
- Public Release: 8/24/12

AIRS Science Team Meeting 2012-04-26
Friedman - V6 Status: 17