



National Aeronautics and  
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**Jet Propulsion Laboratory**  
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# Progress Towards the Release of V6

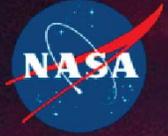
## Schedule and Status

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**AIRS Science Processing**

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## Themes

- **Version 6 Recap with emphasis on Level 2**
- **V6 Completion - Schedule**



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## AIRS Software Development Activities - Development Status

- **Version 6 development began on 2007-07-11 w/ V5.1.0.0**
  - Since then more than 45 builds
  - Several significant test cycles
  - Current V6 development version is V5.7.5.0
  - **Some Significant Builds:**
    - V5.1.7.0 - 2007-10-02 - MW RTA an tuning
    - V5.3.0.0 - 2008-02-27 - AMSU-A Ch4 quick-fix (still using)
    - V5.3.2.0 - 2008-09-20 - Surface emissivity hinge-points
    - V5.4.0.0 - 2009-01-26 - Improved CO2, surface retrieval
    - V5.4.5.0 - 2009-05-20 - ECMWF as climatology startup opt.
    - V5.4.14.0 - 2009-12-14 - Remove AMSU-A Ch 4,5 from MW and final retrievals
    - V5.5.1.0 - 2010-02-25 - Incorporate SCCN as startup option
    - V5.6.2.0 - 2010-07-19 - Stability parameters
    - V5.6.3.0 - 2010-07-17 - New Regression
    - V5.7.0.0 - 2010-10-07 - MODIS Emissivity, New var. freq. RTA, cloud phase

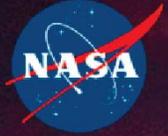


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## V6 Level 1 Status

- ***No significant changes in direction since last Science Team***
- **Level 1B will remain unchanged for V6**
  - V5 version of L1B is still good enough to go forward
  - Further upgrades will be deferred until V7
- **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  $C_{ij}$
  - Hand-off to NOAA to support creation of new BUFR product?



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## V6 Level 2 Status

- **Significant progress made towards achieving our key L2 goals:**
  - **Bias trend over time in mid-tropospheric temperature and water vapor retrievals**
    - *significantly improved*
  - **OLR computation** - *improvement noted*
  - **Retrieval yield** -
    - *Multiple QC flags serving weather/climate*
    - *Generally improved over land/water & "no pixels left behind"*
    - *Surface retrieval improved over land/water*
    - **Yield in problematic geographic regions** - *still pending testing*
    - **Yield for trace gases and other minor constituents** TBD
    - **Water vapor yield** - *still pending testing*
  - **Boundary layer sensitivity** - *not significantly improved*

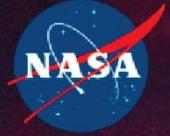


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## V6 Level 2 Status (cont'd.)

- **L2 Contributing Improvements**
  - **Start-up States** - Incorporated/tested new start-up states:
    - AIRS climatology
    - SCCNN - *yielding the best overall results (any statistical measures)*
  - **Regression:** Retrained regression over longer period
    - retrained atmosphere and surface regressions
    - revised channel list
    - *generally improved quality of L2*
  - **RTA:** Incorporated new RTA into the retrieval
    - variable frequencies, CO<sub>2</sub>, trace gases
    - *general improvement, some issues remain with trace gases - CO, CH<sub>4</sub>*
  - **Mitigated the loss of AMSU-A Channel 5**
    - Modified MW+AIRS retrieval, new regression - *least possible impact*
    - *Ensured that the AIRS-only retrieval is of high quality*



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## V6 Level 3 Status

- **L3 development continues**
- **Status already presented today**
- **Coding and testing can be extended past L2 timeframe for L3**
  - **No impact to overall delivery schedule**



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## Back to V6

- We've been working on V6 for quite some time...
  - We are close to making some major decisions  
and  
We are close to moving beyond V6
- There is still much to be accomplished!
  - Time is short!



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## Remaining V6 Goals

- We may have decided which start-up state to use...  
*but other V6 decisions still needed to be made.*
  - Further improvement of boundary layer retrievals (?)
  - Incorporation of back-end features  
(cloud properties, trace gases, ...)
  - Level 3, possibly new Level 3 climate products
  - Further refinement of QC and other status indicators  
expected





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## Upcoming V6 Milestones

- **V6 Concluding Timeline**
  - **JUN 30** - Final “final” V6 coding/mods incorporated
  - **JUL 25** - Final L3 coding mods
  - **Mid-JUN** - Testing and checkout begins (incl. SciTeam)
  - **AUG 1** - Testing/checkout ends
  - **AUG 9** - Final Build and checkout
  - **AUG 23** - Hand-off to GES DISC, code and documents
  - **SEP 28** - Public Release V6 Data Products
- *This schedule allows for some minimal code adjustments to be made during the testing period. Schedule risk is involved!*