

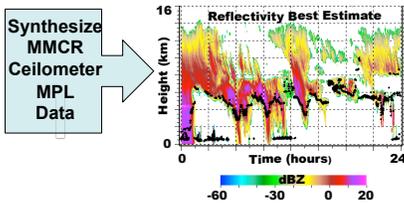
# “Turbo” ARSCL Towards Near Real-Time Availability With Enhanced Accuracy

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## TURBO-ARSCL PROJECT

The goal is to speed delivery of the widely-used ARSCL product while improving the accuracy of cloud boundaries.

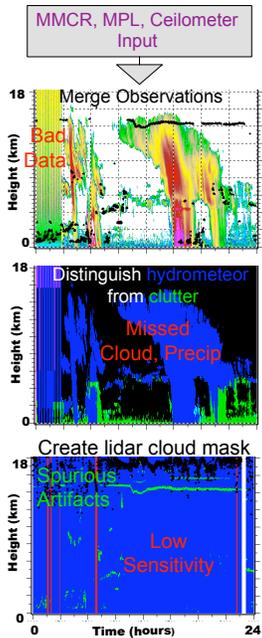
### 1) ARSCL VAP\* processing backlog persists.



\*Active Remote Sensing of Clouds Value-Added Product provides cloud boundaries, hydrometeor reflectivity, vertical velocities and spectral widths.

### 2) What slows the processing?

ARSCL requires hands-on corrections, or “QC,” between automatic processing iterations.



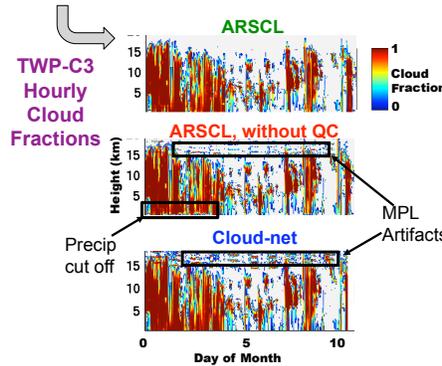
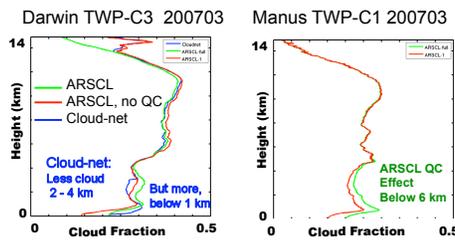
Review Output Images  
 Create QC Correction Commands  
 Update MPL ‘clear-sky’ profiles

Can require several iterations

### 3) Do “hands-on” corrections add value?

On individual days, corrections clearly make a difference. In long term averages, impact of QC varies from site-to-site, with most at TWP sites. At SGP, uncorrected errors tend to cancel out in averages.

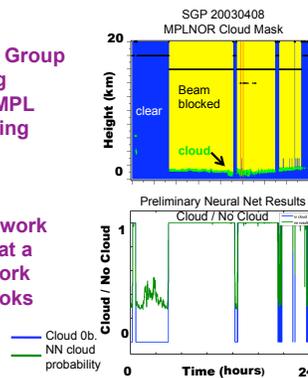
#### Monthly-averaged Cloud Fractions



### 4) Solution #1: Acquire MPL Cloud Masks from automated source

Lidar Focus Group is evaluating automated MPL Cloud masking algorithms.

Preliminary work suggests that a Neural network approach looks feasible.



## QUICK SUMMARY

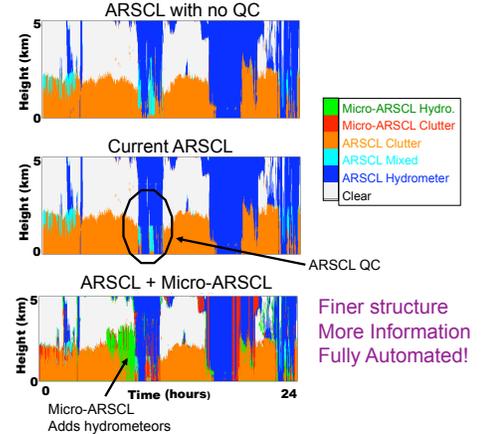
Work is underway to expedite ARSCL processing AND enhance accuracy. Elements of the plan include:

- Incorporating Micro-ARSCL clutter and hydrometeor masks
- Acquiring Micropulse Lidar cloud masks as input, rather than producing them as a by-product
- Developing a graphical user interface to facilitate remaining “hands-on” QC

### 5) Solution #2: Include Micro-ARSCL

Micro-ARSCL (spectra-based) clutter and hydrometeor masks seem quite reliable.

#### Hydrometeors vs. Clutter (SGP 20070610)



### 6) Solution #3: Graphical user interface for any “hands on” QC

