

***Summary of User Feedback on
GOES-R Air Quality Proving
Ground Summer 2011 Experiment***

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Proving Ground All-Hands Meeting
September 12, 2011

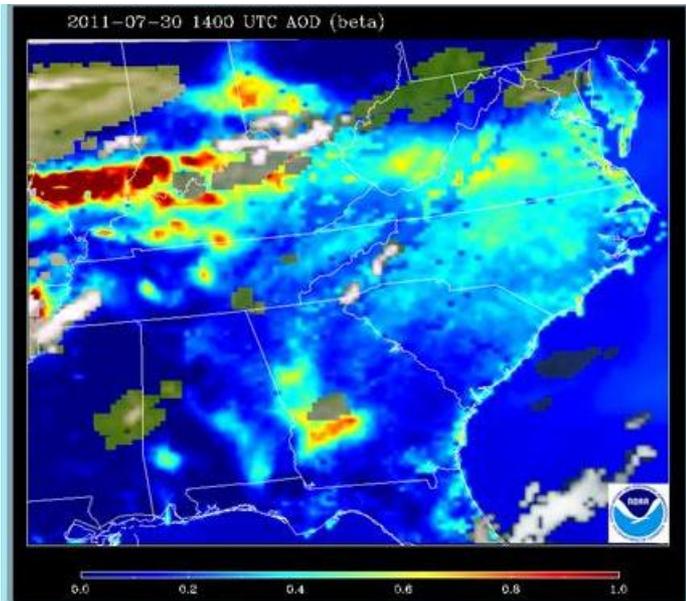
Overview of GOES-R AQPG Summer Experiment

- Objectives:
 - Test the generation of GOES-R ABI aerosol products using simulated radiances
 - Distribute the products to users in near real time
 - Obtain feedback from users on the usability of the products
- Proxy aerosol products:
 - AOD, aerosol type, RGB
 - Domain: Southeastern U.S.
 - Streaming hourly images, 12:00 – 23:00 UTC daily, July 12-30, 2011
- Experiment is being conducted during the NASA DISCOVER-AQ field campaign
 - Availability of aerosol vertical profiles and other physical/chemical properties for ABI validation

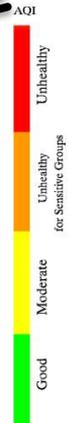
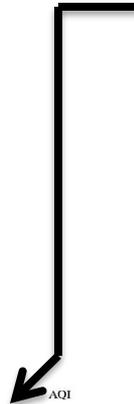
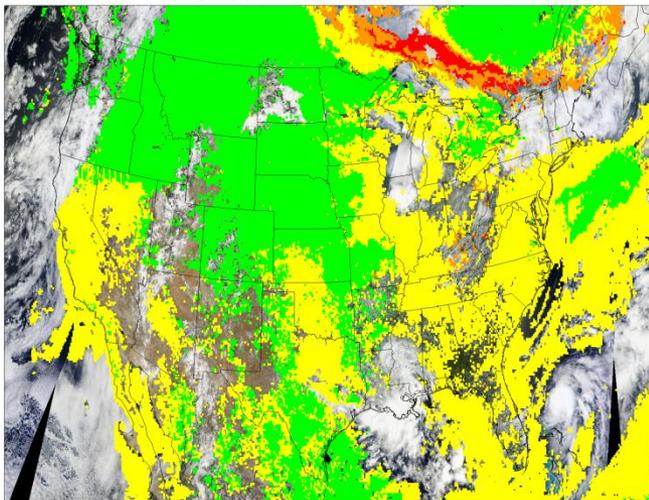
Feedback from User Community

- Selected members of [AQPG Advisory Group](#) providing feedback on streaming NRT proxy images:
 - Bill Ryan, forecaster for Philadelphia, PA
 - Howard Schmidt, analyst/modeler for EPA Region 3
 - Dan Salkovitz, forecaster for state of Virginia
 - Mike Goldstein, forecaster for Memphis/Shelby Counties, TN
 - Geoffrey Healan, forecaster for state of Alabama
- Focusing on **process** of receiving streaming images of dynamic, high accuracy, high temporal resolution (once per hour) aerosol imagery
 - Different from current satellite products (e.g., 2 static MODIS AOD images per day or lower spatial resolution GASP loops)

Feedback on AOD Product

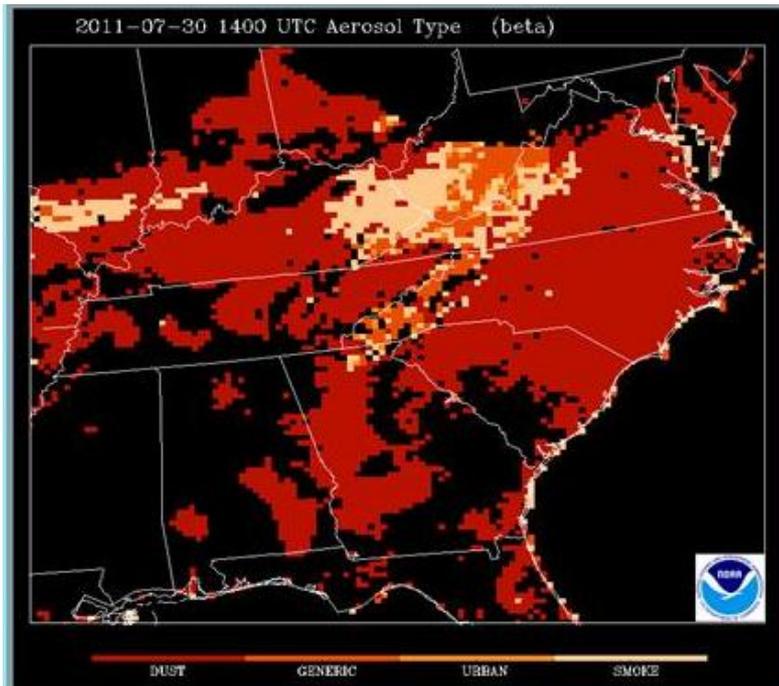


Air Quality Index (AQI) Derived from MODIS AOD 2011-07-18



- Clarify in “product description” that white areas are clouds and grey areas are missing retrievals,
- Use EPA Air Quality Index (AQI) colors,
- Create 3-6 hr. composite and add few critical contours corresponding to AQI,
- Provide forward trajectories,
- Provide ability to zoom into city-level for in-depth analysis,
- Overlay satellite-derived wind speeds at different heights over AOD image

Feedback on Aerosol Type Product



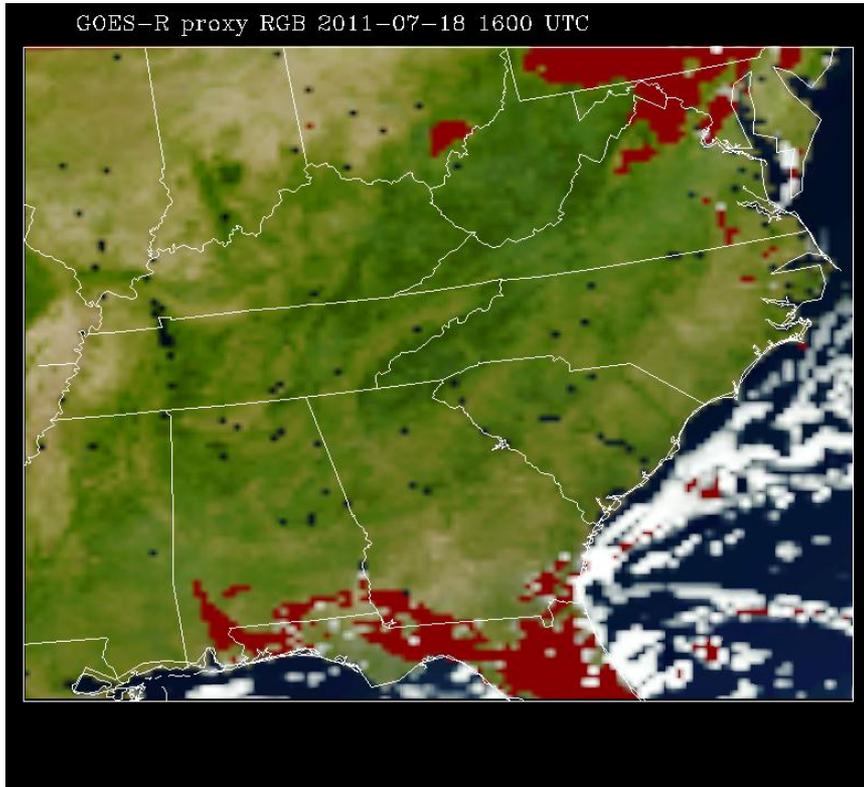
- Explain generic aerosol,
- Aerosol type color scale is difficult to interpret,
- Consistent shift in aerosol type from dust to generic to urban to smoke around 20:00 to 2100 UTC from day to day

Feedback on Synthetic Natural Color Product

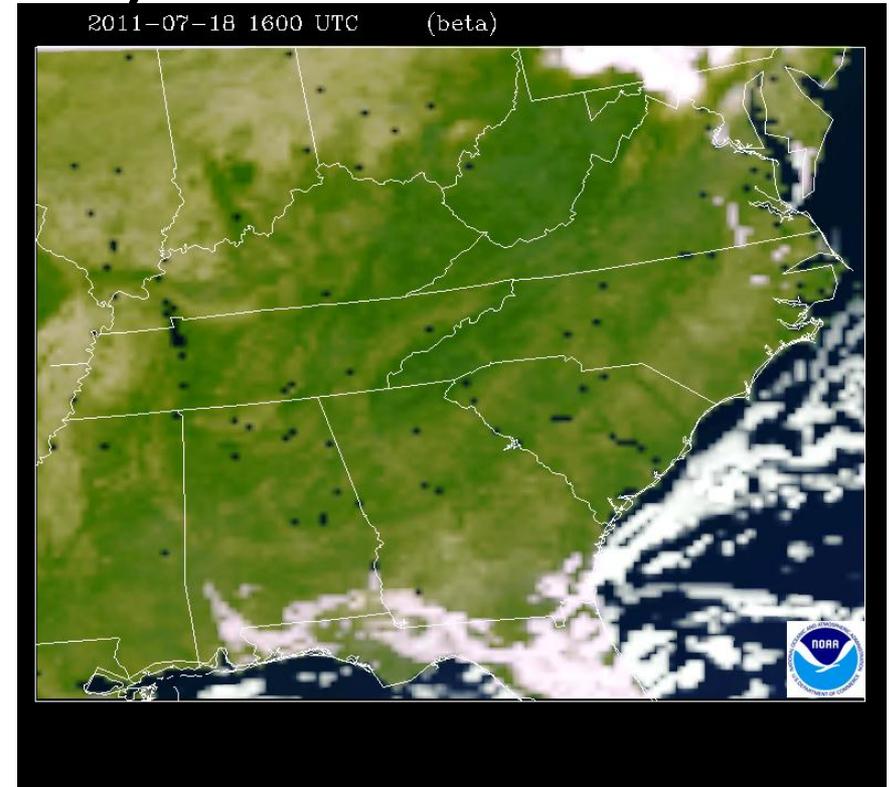


- Images became blurry and brighter after approximately 1800 – 2100 UTC,
- Clarify in “product description” that white areas are clouds and grey areas are smoke and haze

CIRA vs STAR Synthetic (Simulated Green Band) RGB



Synthetic RGB from CIRA Algorithm



Synthetic RGB from STAR Algorithm

Gaps (red color) in CIRA version of the synthetic RGB. LUTs are not fully populated (only 4%). Also, no viewing geometry dependency for reflectances in the LUTs and Rayleigh correction applied after the LUT search. Results were shared with Don Hillger (NOAA at CIRA).