Transition and Evaluation of RGB Imagery to WFOs and National Centers by NASA SPoRT

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Figure 4. Air Mass multispectral RGB imagery developed by CIRA based upon channels available on the GOES Sounder. In this case, a midlatitudinal cyclone was moving through the upper midwest on September 10, 2011, with various shades depicting cloud cover, moisture, and cold air moving in behind the cold front. Synoptic features and isolation provided by the NOAA/NCIP Hydrometeorological Prediction Center.

Applications in the GOES-R Proving Ground

- Although RGB composite imagery are 24-bit, current AWIPS and NAWIPS systems do not support their display.
- SPoRT has developed a technique to display these images in AWIPS and NAWIPS by quantizing each to the number of colors displayable by each system: 256 for AWIPS, 95 for NAWIPS.
- Images are provided to NOAA/NWS WFOs and NOAA/NCIP National Centers participating in the GOES-R Proving Ground.
- These products are evaluated by duty forecasters with responses provided to algorithm developers at SPoRT and CIRA in order to improve the products prior to their possible availability in the GOES-R era.

Table 2. RGB composites expected from sensors currently in orbit

- Interactions with forecasters, algorithm developers at CIRA, and discussions with EUMETSAT will continue to improve upon current products in advance of their potential availability from GOES-R.
- Additional forecaster feedback will be acquired to understand how to best apply these products to weather forecasting and analysis, with feedback implemented into future training materials.

Acknowledgements

Table 1. Recipe for construction of the Night Microphysic product designed by EUMETSAT, based on user feedback. Best practices for display of RGB images documentation.

Table 2. RGB composites expected from sensors currently in orbit

- The launch of NPP provides additional observations from VIIRS, which is similar to MODIS and will provide additional composites:

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Channel</th>
<th>Description</th>
<th>Clouds</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIIRS</td>
<td>R 12.0</td>
<td>MODIS Dust</td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td>G 10.8</td>
<td>MODIS Dust</td>
<td>Dusty</td>
</tr>
<tr>
<td></td>
<td>B 10.8</td>
<td>MODIS Dust</td>
<td>Total</td>
</tr>
</tbody>
</table>

Figure 5. Examples of VIIRS natural color product displayed in the current version of NEXRAD, and example of a MODIS air mass product displayed in AWIPS. These systems are used at NOAA/NWS Weather Forecast Offices and National Centers to integrate various data sets.

Summary and Future Work

- The launch of NPP provides additional observations from VIIRS, which is similar to MODIS and will provide additional composites: