

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

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The NASA Short-term Prediction Research and Transition (SPoRT) Center has provided multi-spectral red-green-blue (RGB) composite imagery to its NWS Weather Forecast Office (WFO) partners since 2004. True color MODIS imagery has provided value in the analysis of land features and smoke plumes. The Great Falls, MT WFO has used a false-color Snow/Cloud RGB product from SPoRT to monitor snow cover changes and potential impacts to stream and river flooding as part of the responsibilities of the local Service Hydrologist. SPoRT is working in several ways to support GOES-R Proving Ground demonstrations of future capabilities of the Advanced Baseline Instrument (ABI) through the transition of RGB imagery. SPoRT supported the use of RGB imagery within the GOES-R Tropical Proving conducted by the Cooperative Institute for Research in the Atmosphere (CIRA) at the National Hurricane Center (NHC). The Air Mass and Dust RGB products derived from a suite developed by the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), and were evaluated by operational forecasters at NHC during the 2011 tropical season. In addition forecasters at the Ocean Prediction Center, Hydrological Prediction Center, and Satellite Analysis Branch participated in evaluation of these RGBs through SPoRT's collaboration with the GOES-R satellite liaison (Michael Folmer) co-located at these centers. Products were created from multiple instruments: the Spinning Enhanced Visible and Infrared Imager (SEVIRI), the GOES Sounder (Air Mass only, provided by CIRA), and MODIS. Examples, from these centers will be shown as well as future plans for upcoming demonstration periods.

While satellite imagery has traditionally been used to monitor large scale features in data void areas, GOES-R will provide greater capabilities to WFO forecasters for mesoscale analysis via satellite remote sensing. RGB imagery will be a valuable product to help efficiently utilize the 3-fold increase in channels from GOES-R and increased scan frequency. Therefore, SPoRT is initially transitioning three RGB imagery products to its WFO Proving Ground partners: Dust, Night-time Microphysics, and Air Mass. These products are created using MODIS channels and the EUMETSAT standards. For the Air Mass RGB a hybrid product has been created that uses the GOES water vapor channel as a background. This provides continuity and context in order to loop the imagery. Examples from initial WFO forecaster feedback and applications will be shown. SPoRT has developed "Quick Guide" style training to

support transition activities and is developing an RGB Center for Excellence to demonstrate operational utility to the wider community.