

Using GOES-R Demonstration Products to Bridge the Gap Between Severe Weather Watches and Warnings for the 20 May 2013 Moore, OK Tornado Outbreak

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The Geostationary Operational Environmental Satellite R series (GOES-R) Proving Ground prepares the satellite user community for data, imagery, and products that have increased spectral, spatial, and temporal capabilities. This is accomplished by providing pre-operational products that use current GOES data, higher resolution data provided by polar-orbiting satellites, and model simulated satellite data. The research-to-operations loop is completed when feedback between users (e.g., National Weather Service forecasters) and developers (e.g., Cooperative Institute for Meteorological Satellite Studies) occurs in National Oceanic and Atmospheric Administration Testbeds and Proving Grounds.

Many GOES-R demonstration products allow forecasters to better monitor the atmospheric conditions preceding and associated with the development of deep convection; a time period that often occurs between the issuance of convective watches and warnings. For example, the NearCast Model provides short-term forecasts of convective instability using moisture retrievals from the GOES sounder, the Convective Initiation algorithm produces 0-2 hour probabilistic forecasts of cloud objects reaching 35 dBZ, and the Convective Cloud-Top Cooling product monitors cloud-top cooling rates of immature, vertically growing convective clouds. Once convection develops, the Pseudo Geostationary Lightning Mapper can enhance situational awareness for the severe weather warning forecaster. This presentation will show how these GOES-R convective products could have been used in the time period between convective watches and warnings for the 20 May 2013 Moore, OK tornado outbreak and propose the concept of a "convective toolbox" as the National Weather Service aims to bridge the gap between convective watches and warnings.