

Comparison of the March 2, 2012 storm between polar and geostationary orbiters within AWIPS

NOAA Satellite Science Week
Kansas City, MO
April 30 – May 4, 2012

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On March 2, 2012 the Storm Prediction Center (SPC) issued a rare high risk of severe weather for the Middle Tennessee and central Kentucky, which was later extended into Central and Southern Indiana and southern Ohio, with the potential for significant tornadoes, in advance of a deepening low pressure system developing over the Great Lakes. The SPC issued multiple particularly dangerous situation (PDS) tornado watches in advance of a line of discrete supercells that formed along the Ohio River and pushed eastward. While there were numerous severe weather reports, the most severe damage was from the storms which passed between Louisville, Kentucky and south of Cincinnati, Ohio. These storms resulted in an Enhanced Fujita scale (EF)4 tornado, which carved a 49 mi (79 km) path of damage from Fredericksburg, IN to Bedford, KY. In addition, there was a shorter EF1 tornado which passed to the south of Henryville, IN shortly after the EF4 struck. The most severe damage took place in New Pekin, Henryville, Marysville and Chelsea, IN, resulting in the hundreds of homes being destroyed along with 11 fatalities.

The first touchdown of the Southern Indiana EF4 tornado was approximately 1950Z (1450 EST) near New Pekin, IN, according to the Louisville, KY National Weather Service (NWS) Weather Forecast Office (WFO). GOES-East (GOES-13) was in Rapid Scan Operations (RSO) for the duration of the severe weather outbreak, which, along with Doppler radar, provided forecasters with information regarding the developing outbreak. However, shortly before the tornado touched down there were 4 passes over the area by polar orbiting satellites, including NOAA-18, NOAA-19, AQUA and Suomi NPP. This allowed for a unique look with three separate types of high resolution imagers at the developing storms as well as providing information that was unable to be seen from GOES.

This poster will provide a discussion and analysis of the storm using data from the AVHRR instrument on NOAA-18/19, MODIS on AQUA and VIIRS on Suomi NPP. More specifically, to illustrate the effect of high resolution data on the storm analysis, images from the 10.7 μ m channel (or similar from the given satellite) will be shown utilizing the Advanced Weather Interactive Processing System (AWIPS) terminal, which

is used in WFOs across the country. This will show what a forecaster would see when using data from these satellites.