

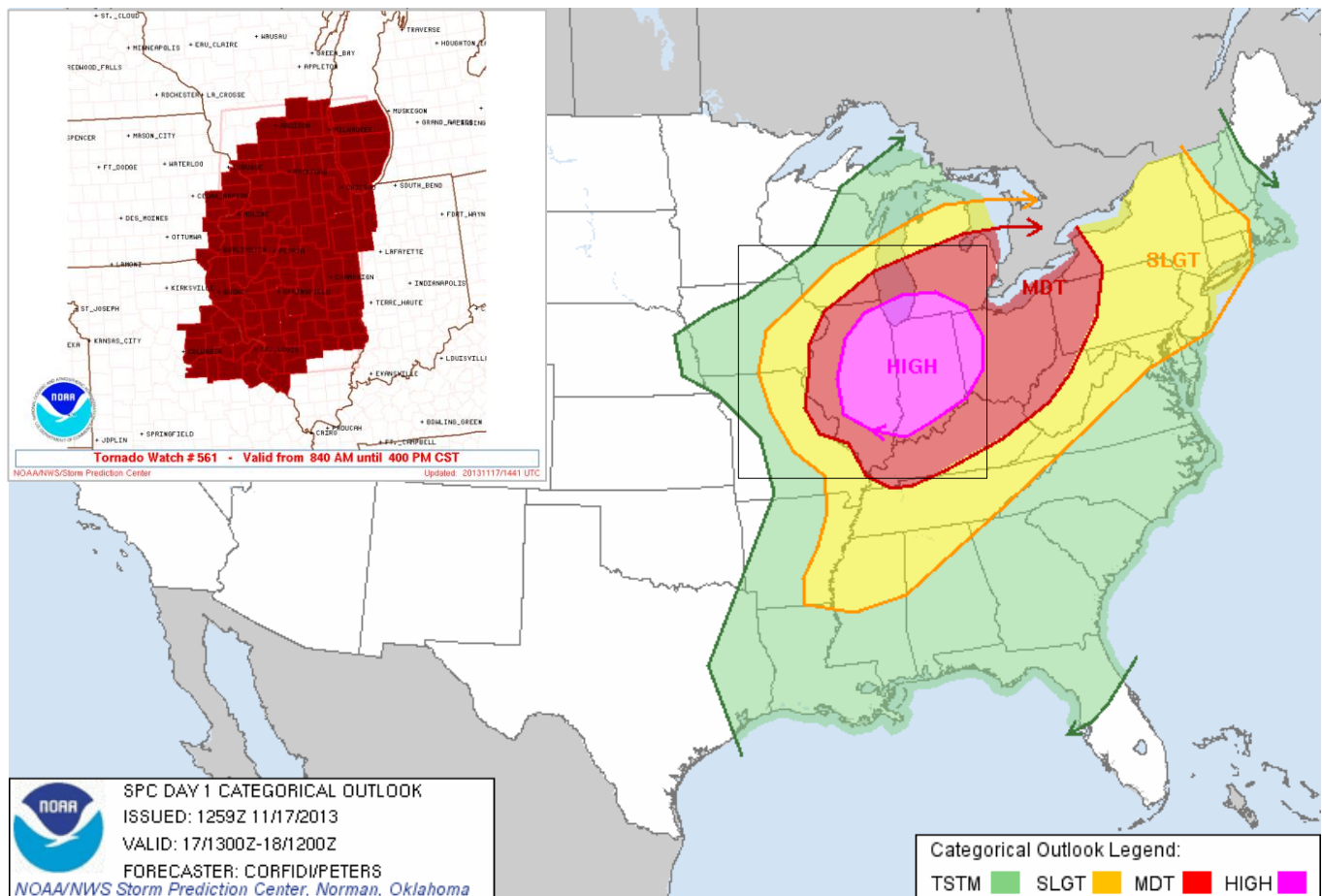
Tornado Outbreak

November 17th, 2013

Overview

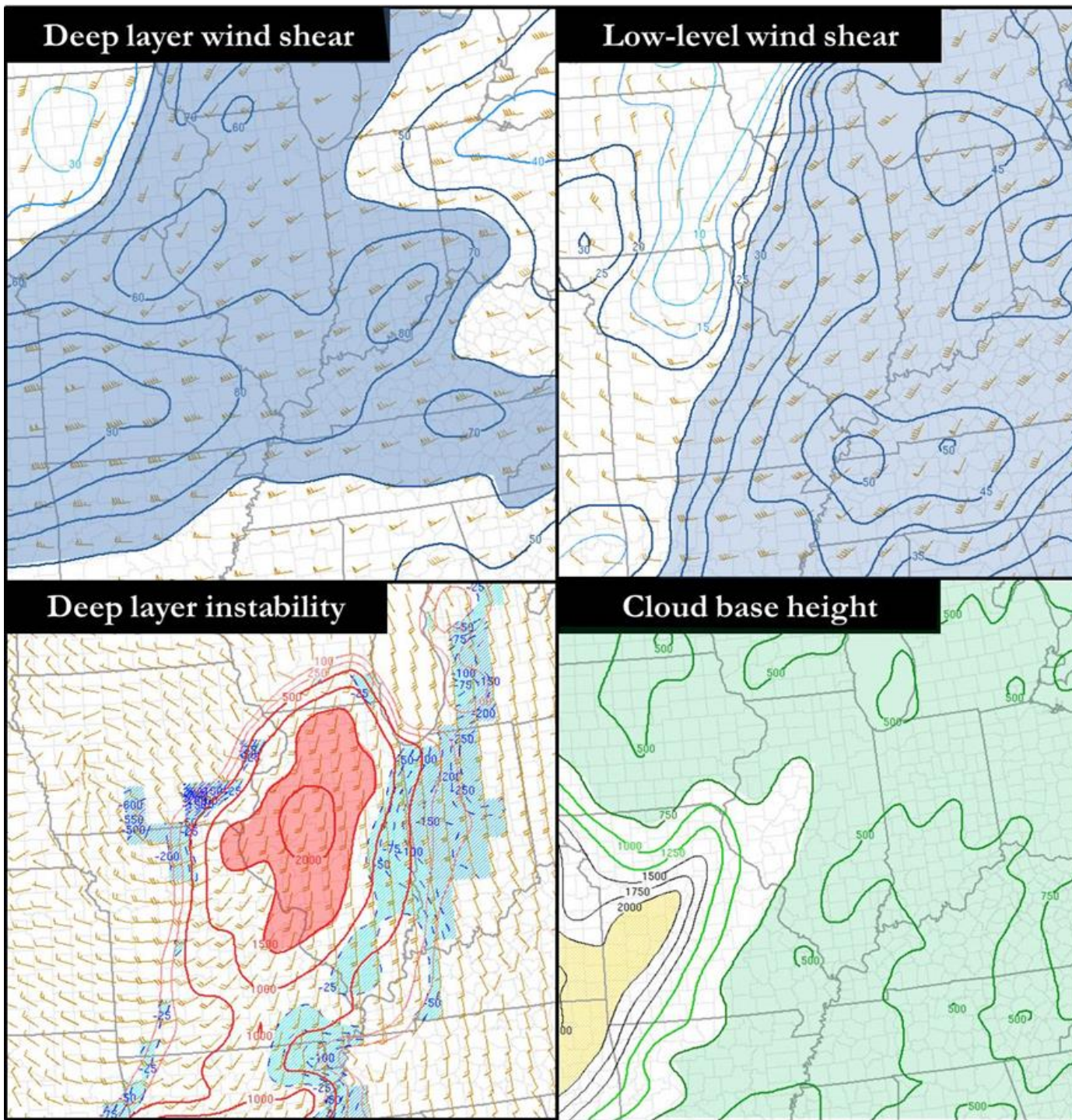
A fall season severe weather outbreak occurred across the Midwest on Sunday, November 17, 2013. Many tornadoes were reported, especially across Illinois and Indiana, and wind damage occurred from eastern Missouri eastward as far as New Jersey and New York City. Five tornadoes were documented to have occurred within the St. Louis County Warning Area.

A powerful low pressure system across the Plains steered a warm and moist air mass north for nearly two days, with moisture similar to spring/early fall values (dewpoints in the mid 60s). Temperatures soared into the 70s ahead of a cold front, owing to an unstable atmosphere, especially across eastern Missouri and Illinois. The strong storm system provided significant wind shear that acted in tandem with the instability to initiate severe thunderstorms known as supercells, which were capable of producing tornadoes.



Sunday morning convective outlook from the Storm Prediction Center. At 8:40 am, Tornado Watch #561 was issued for most of Illinois. SPC declared this as a "Particularly Dangerous Situation" (PDS) watch, meaning there was a threat for several intense, long-track tornadoes, potential for many reports of large hail over 2 inches in diameter, and damaging wind gusts potentially in excess of 80 mph. The NWS offices in Lincoln, Chicago, Milwaukee, Davenport, and St. Louis participated in a conference call with SPC around 8:30 am to discuss the issuance of this watch.

Environment



Severe weather parameters, going clockwise from top left: deep layer wind shear, low level wind shear, cloud base heights, and deep layer instability. (Provided by WFO Chicago)

Damage Surveys

EF4 Tornado: New Minden, Illinois

Maximum EF-Scale Rating: EF-4

Fatalities: 2

Injuries: 2

Begin Time/Location: 12:04 pm CST 4.4 miles southwest of New Minden

End Time/Location: 12:13 pm CST 2.6 miles north-northeast of Hoyleton

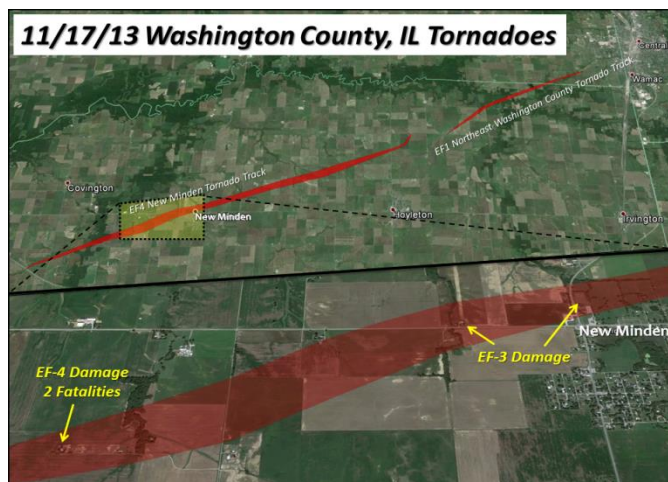
Maximum Estimated Wind Speed: At least 166 mph

Path Length: 10.6 miles

Maximum Path Width: 200 yards

The initial tornado touchdown occurred near Interstate 64, about 4.4 miles southwest of New Minden, blowing a tractor trailer off the interstate and causing minor injuries to the driver. The tornado then began moving towards New Minden. The worst damage was a few miles southwest of New Minden, where a small farm sustained a direct hit. The outbuildings and barns sustained varying degrees of damage, but the homestead was totally destroyed with only the foundation remaining. The damage at the homestead was rated EF-4, and two fatalities occurred at this location.

The tornado then raced northeast, hitting New Minden, and producing significant damage to the Lutheran Church and to several homes just northwest of the church. Damage to the two homes was rated EF-3. The tornado continued northeast, producing sporadic damage to just north of Hoyleton. A farm 2 miles west-northwest of Hoyleton sustained significant damage, as did a newly constructed home 2 miles north of Hoyleton. Damage at these two locations were rated EF-2. The tornado then veered a bit northwest and dissipated.



Washington County Illinois tornado tracks for 11/17/2013. The inset map is focused near New Minden where the greatest damage was observed.



A farm house was completely swept clean from its foundation. This damage was rated EF4. Two fatalities occurred at this location.



A mobile home is completely swept away with debris deposited northeast along a tree line. One serious injury occurred at this location.

Damage Surveys

EF1 Tornado: Northeast Washington County, Illinois (New Tornado From New Minden Storm)

Maximum EF-Scale Rating: EF-1

Fatalities: None

Injuries: None

Begin Time/Location: 12:14 pm CST 3 miles northeast of
Hoyleton

End Time/Location: 12:18 pm CST 3 miles southwest of
Centralia

Maximum Estimated Wind Speed: 95-100 mph

Path Length: 4.9 miles

Maximum Path Width: 100 yards

As the EF-4 tornado dissipated another tornado formed one mile to the east. This second tornado produced sporadic damage nearly 5 miles. The damage was rated EF-0 to EF-1, with the most widespread damage occurring near the Flying M Ranch, 3 miles southwest of the city limits of Centralia, Illinois. The tornado dissipated only 3/4 mile west of a large mobile home park in Wamac.



*Photograph of New Minden, Illinois Tornado.
Photographed by Jamie Wesselmann (1 SE of New
Minden, Illinois).*

Damage Surveys

EF1 Tornado: Breese Tornado

Maximum EF-Scale Rating: EF-1

Fatalities: None

Injuries: None

Begin Time/Location: 11:47 am CST 7 miles north of Breese

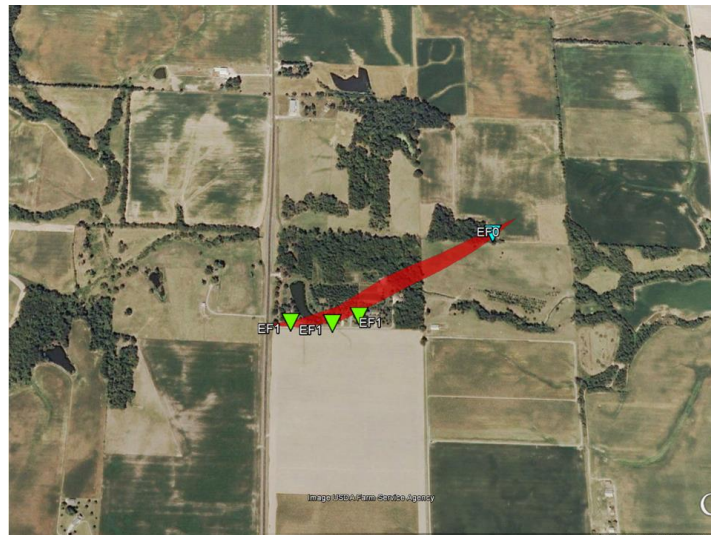
End Time/Location: 11:48 am CST 7 miles north-northeast of Breese

Maximum Estimated Wind Speed: 100 mph

Path Length: 0.4 miles

Maximum Path Width: 50 yards

A weak tornado touched down near the intersection of Jamestown Road and Low Bridge Road and moved east nearly a half mile before dissipating. It destroyed a garage, removed shingles from a house, destroyed a pole barn and snapped a number of large trees. This tornado was photographed by numerous people.



Tornado track north of Breese, Illinois along Low Bridge Road east of Jamestown Road.



Tornado damage to a garage along Low Bridge Road east of Jamestown Road (north of Breese, Illinois)

Tornado photograph north of Breese, Illinois.



Damage Surveys

EF2 Tornado: St. Elmo Tornado

Maximum EF-Scale Rating: EF-2

Fatalities: None

Injuries: None

Begin Time/Location: 12:22 pm CST 4.6 southwest of St. Elmo

End Time/Location: 12:32 pm CST 6.9 northeast of St. Elmo

Maximum Estimated Wind Speed: 120 mph

Path Length: 11.5 miles

Maximum Path Width: 200 yards

A strong tornado developed between Highway 40 and Interstate 70 about 5 miles southwest of St. Elmo. The tornado destroyed a barn, depositing the debris downstream into the adjacent open field. The tornado continued northeast across Highway 40 damaging a few outbuildings and silos on a farmstead. The tornado strengthened and grew in size as it moved just to the west of St. Elmo. Here it caused significant damage to three homes and severe damage/complete destruction to numerous outbuildings. Two of the houses were moved from their foundations. This damage was rated EF-2.

The tornado continued northeast toward the St. Elmo Golf Club, causing significant damage to trees and destroying a garage and two outbuildings at a residence located on St. Elmo Country Club Road. The tornado continued northeast crossing County Highway 2150, County Road 2300, Illinois Highway 128 (Fayette/Effingham County Line), and finally dissipating just northeast of the intersection of North 200th Street and East 1300th Avenue. Most of the damage observed along the remainder of the path was to trees and small outbuildings.



Tornado damage path near St. Elmo, Illinois.



Tornado photograph west of St. Elmo, Illinois.



Tornado damage to a house west of St. Elmo, Illinois.



Tornado damage to a house west of St. Elmo, Illinois.

Damage Surveys

EF0 Tornado: Litchfield, IL Tornado

Maximum EF-Scale Rating: EF-0

Fatalities: None

Injuries: None

Begin Time/Location: 11:30 am CST 6 miles northwest of Litchfield

End Time/Location: 11:34 pm CST 6 miles northwest of Litchfield

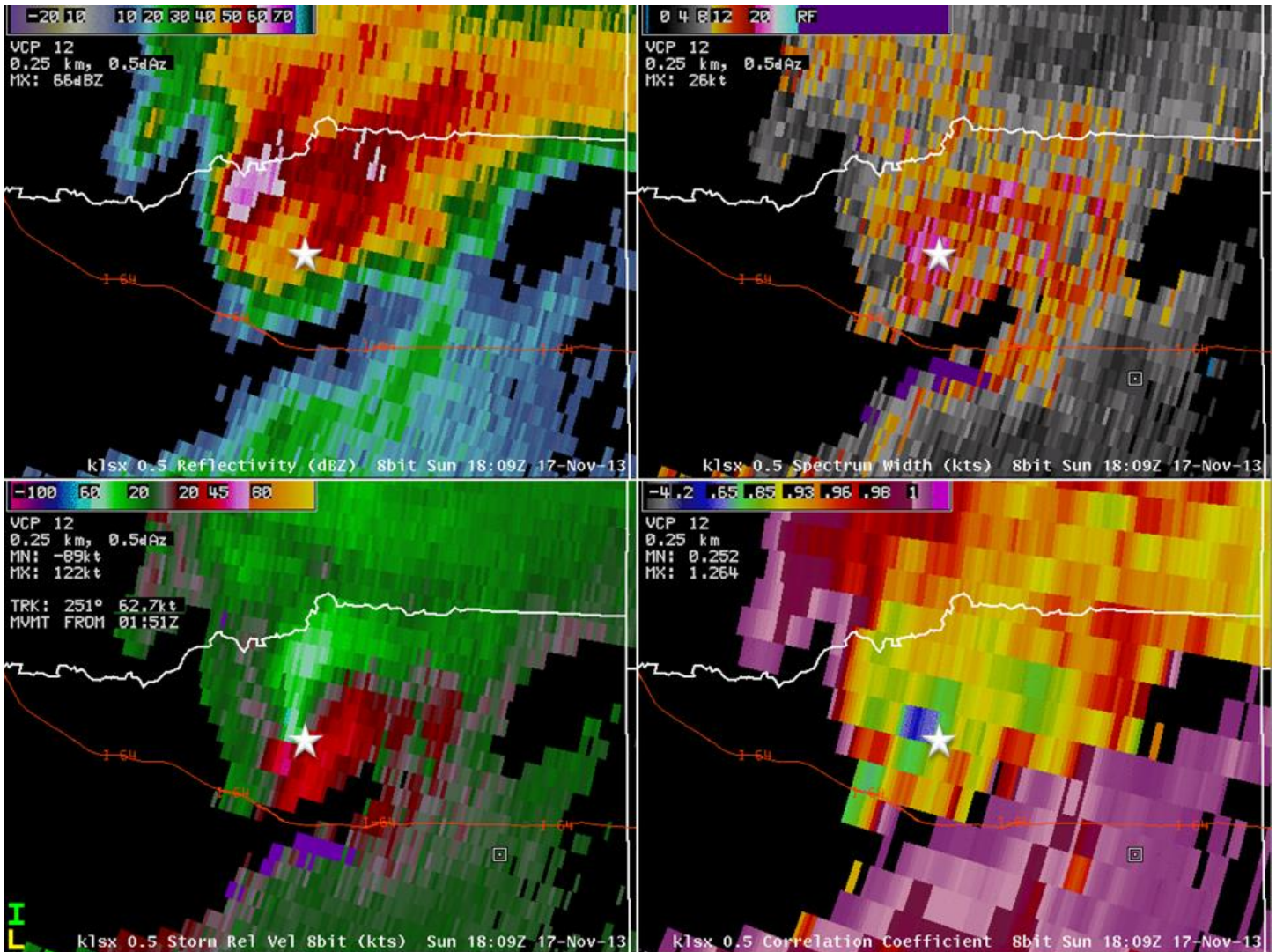
Maximum Estimated Wind Speed: 75 mph

Path Length: 4 miles

Maximum Path Width: 50 yards

Despite photographic evidence of a large tornado northwest of Litchfield, only minor damage to power poles and one barn was observed. Most of the area where the tornado occurred was bare farm fields which did not have any damage indicators

Radar Data



Tornado Debris Signature (TDS) noted on radar imagery from 12:09 PM CST. The dark blue color in the correlation coefficient (bottom right of the four panel image), collocated with high reflectivity (top left) and a strong velocity couplet signature (bottom left) signifies a high likelihood of lofted debris and therefore a tornado. This radar image is approximately at the time when the EF4/EF3 damage occurred just to the west of New Minden, Illinois (marked by the white star).

Please note that while the severe weather data presented in this event synopsis has been quality controlled, it is still considered unofficial. Official reports & statistics for severe weather events can be found in the **Storm Data** publication (<http://www.ncdc.noaa.gov/IPS/sd/sd.html>) or **Storm Events Database** (<http://www.ncdc.noaa.gov/stormevents/>), available from the National Centers for Environmental Information (NCEI) web page [formerly the National Climate Data Center (NCDC)].

More detailed tornado track information can be accessed using the National Weather Service Damage Assessment Toolkit for all tornadoes beginning in 2012. <https://apps.dat.noaa.gov/StormDamage/DamageViewer/>

Any questions regarding this event review should be address to w-lsx.webmaster@noaa.gov