



The June 30, 2011 Lake Michigan Supercell – An Overview

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Summary Of Events



- Storm formed over west central Lake Michigan, became a supercell and moved south-southwest into Chicago during the late afternoon and evening of 6/30/11.
- Produced wind damage from southeast Milwaukee County through eastern Racine, Kenosha and Lake Counties, even though storm never came onshore in these locations!
- Produced very large hail in Chicago, damaging many cars and windows.



Interesting Features



- Elevated in nature at initiation, continued to be fed by southwesterly low level jet during its existence (became surface-based once mature).
- Very high base reflectivity values well above the -20 degree Celsius level (indicative of very large hail potential).



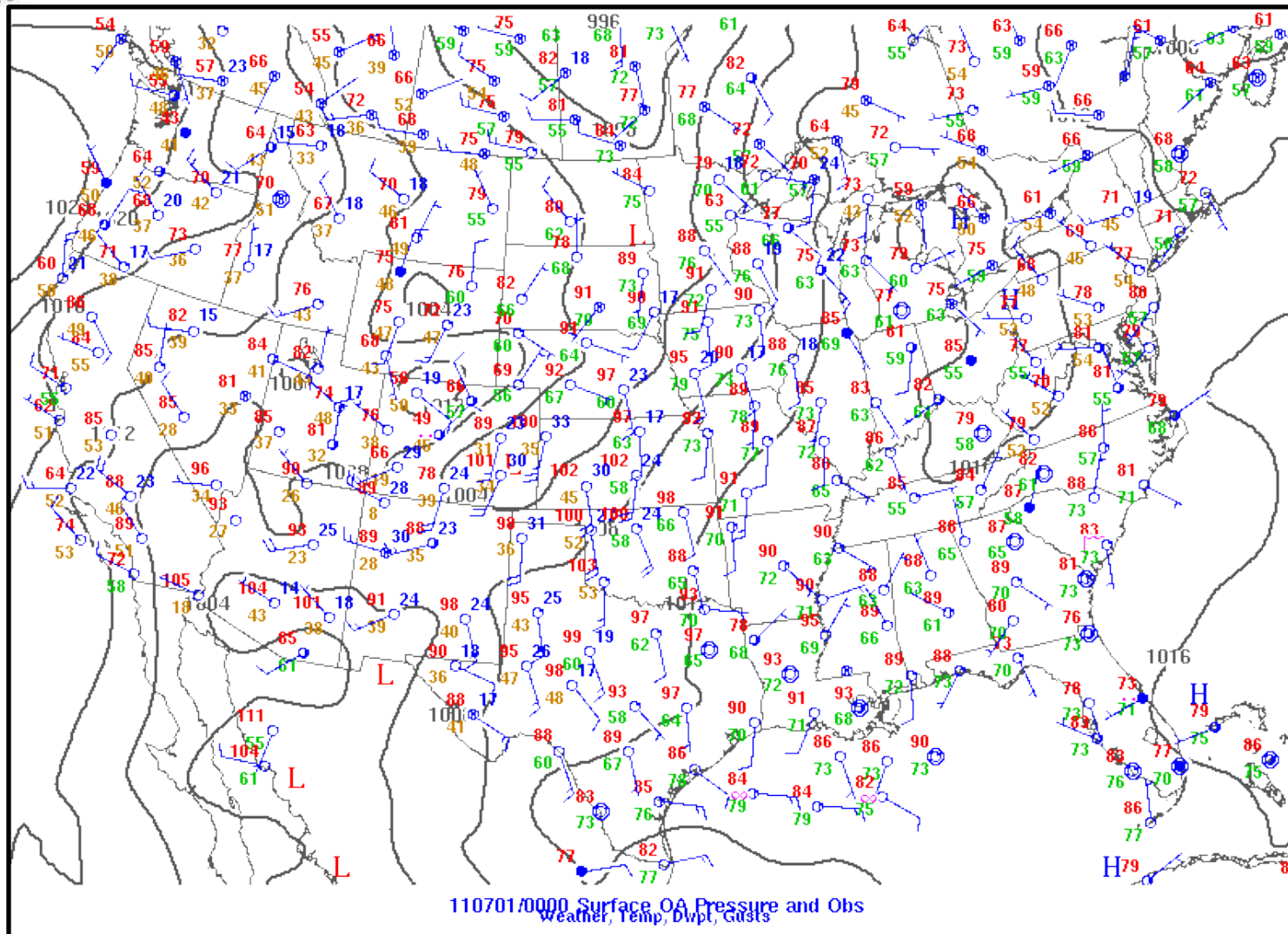
Interesting Features II



- Several significant severe reports (hail \geq 2 inches, wind gusts \geq 65 knots/74 MPH, SPC definition) were received as a result of this storm.
- Supercellular waterspout reported off far NE IL lakeshore.
- Reports and photos of gustnadoes as rear-flank downdraft (RFD) moved through Lake County, IL.

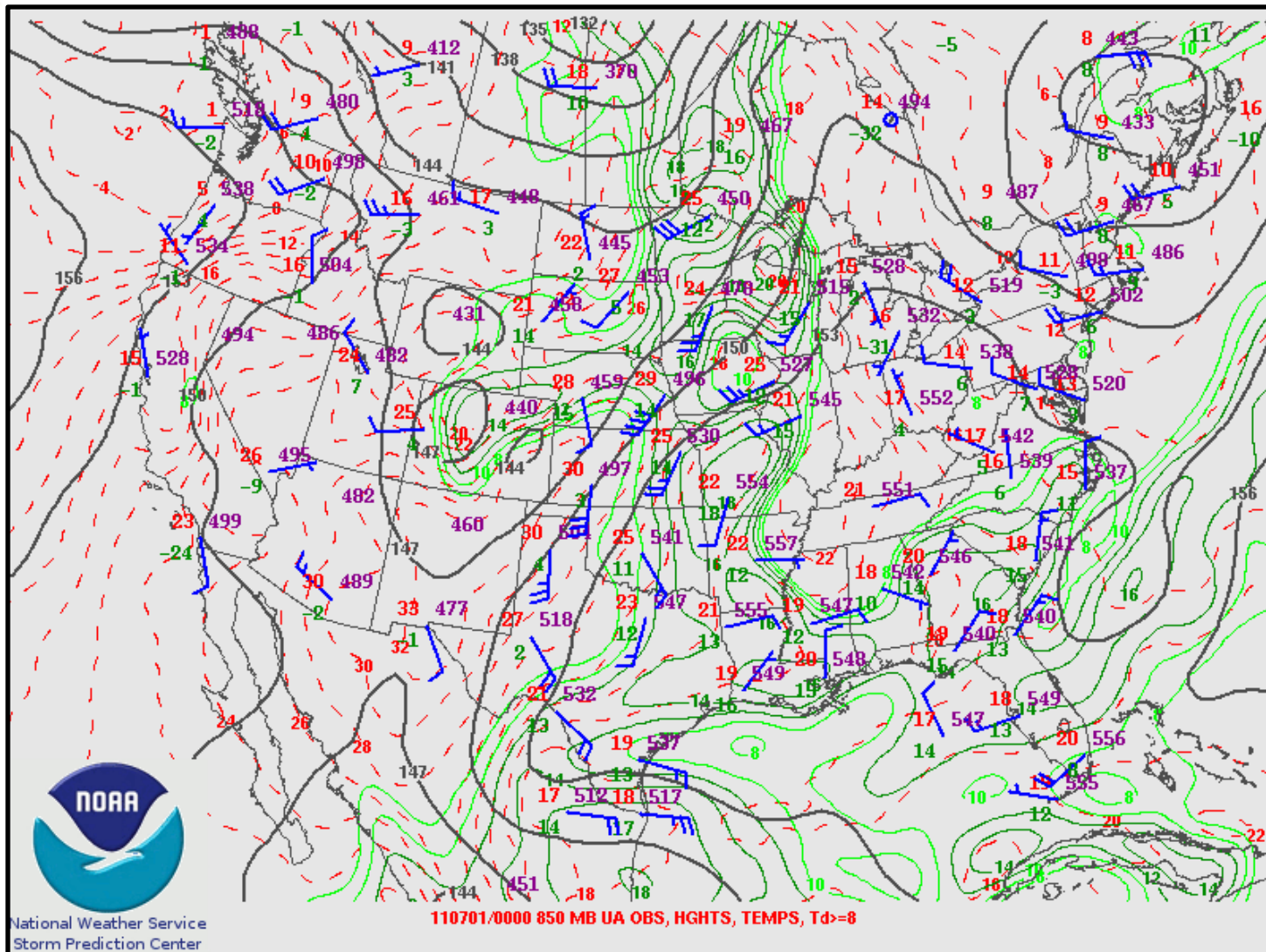


Surface Analysis – 00z July 1, 2011



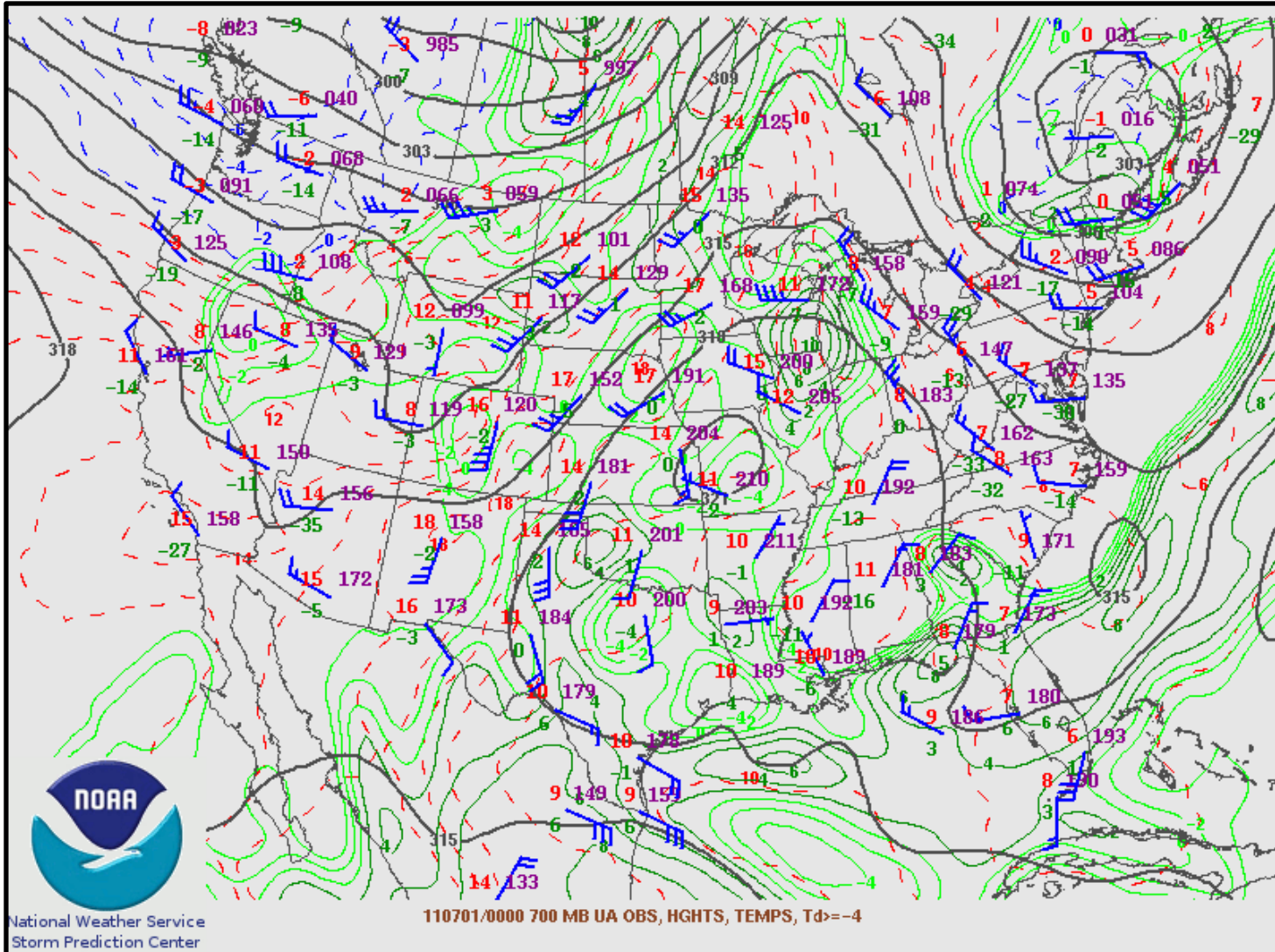


850mb Analysis – 00z July 1, 2011



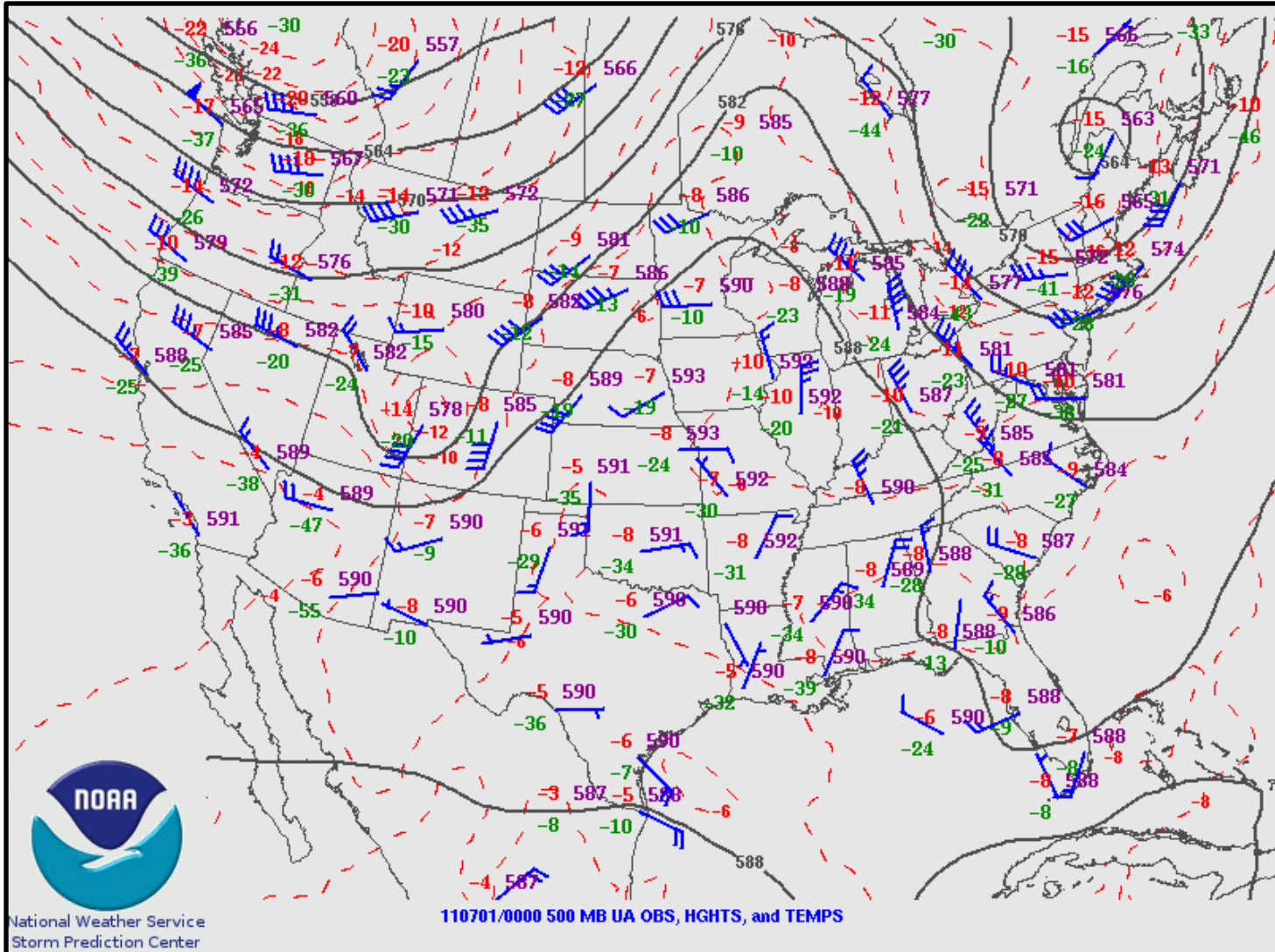


700mb Analysis – 00z July 1, 2011





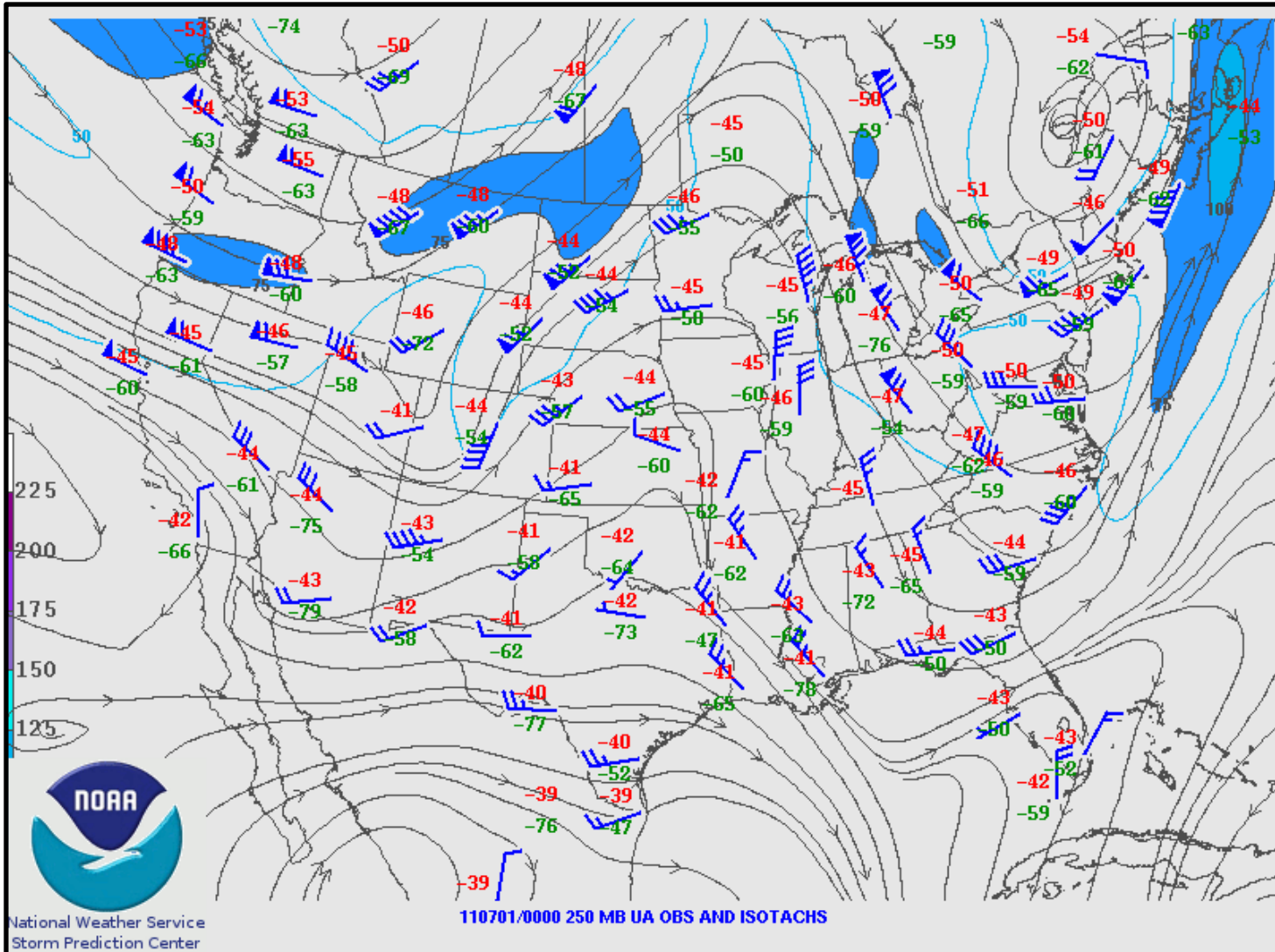
500mb Analysis – 00z July 1, 2011



110701/0000 500 MB UA OBS, HGHTS, and TEMPS



250mb Analysis – 00z July 1, 2011

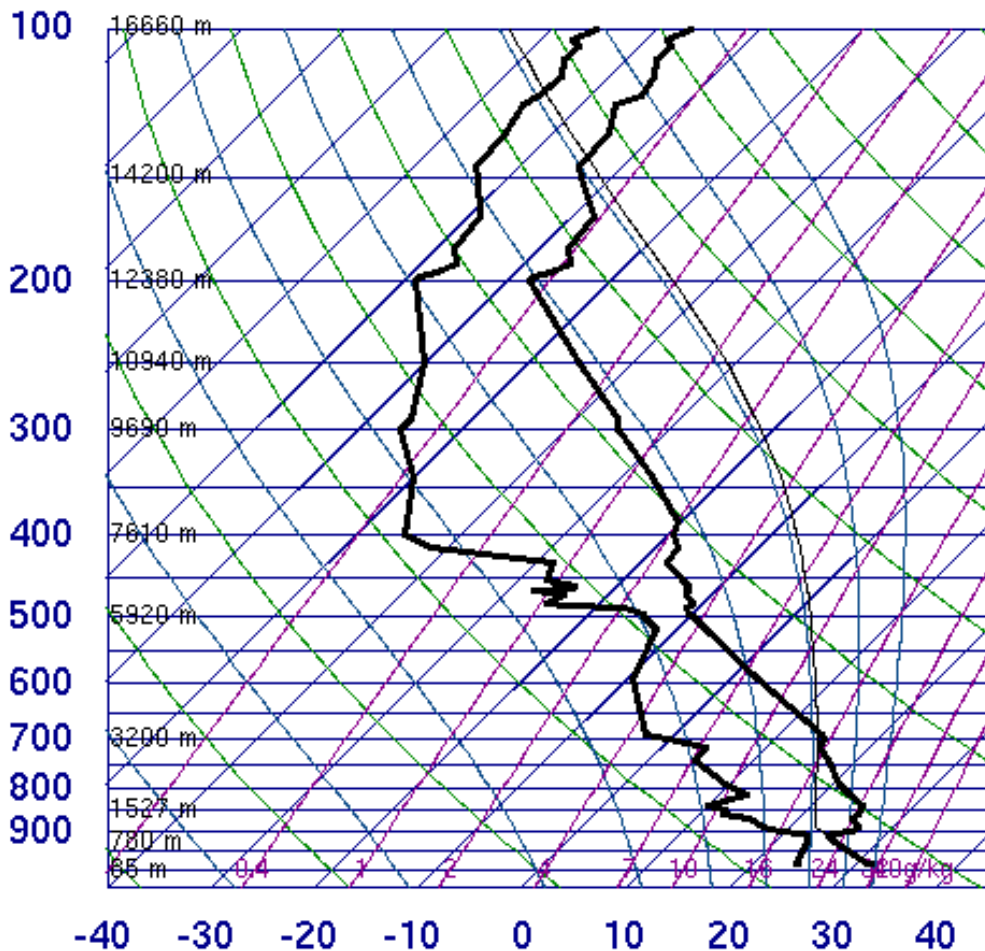




KDVN Sounding – 00z July 1, 2011



74455 DVN Davenport



SLAT	41.61
SLON	-90.58
SELV	229.0
SHOW	-5.02
LIFT	-11.4
LFTV	-12.5
SWET	364.4
KINX	32.10
CTOT	21.90
VTOT	34.90
TOTL	56.80
CAPE	4450.
CAPV	4728.
CINS	-185.
CINV	-99.9
EQLV	142.3
EQTV	142.2
LFCT	681.3
LFCV	755.4
BRCH	66.11
BRCV	70.24
LCLT	295.5
LCLP	887.7
MLTH	305.7
MLMR	19.64
THCK	5835.
PWAT	45.11

00Z 01 Jul 2011

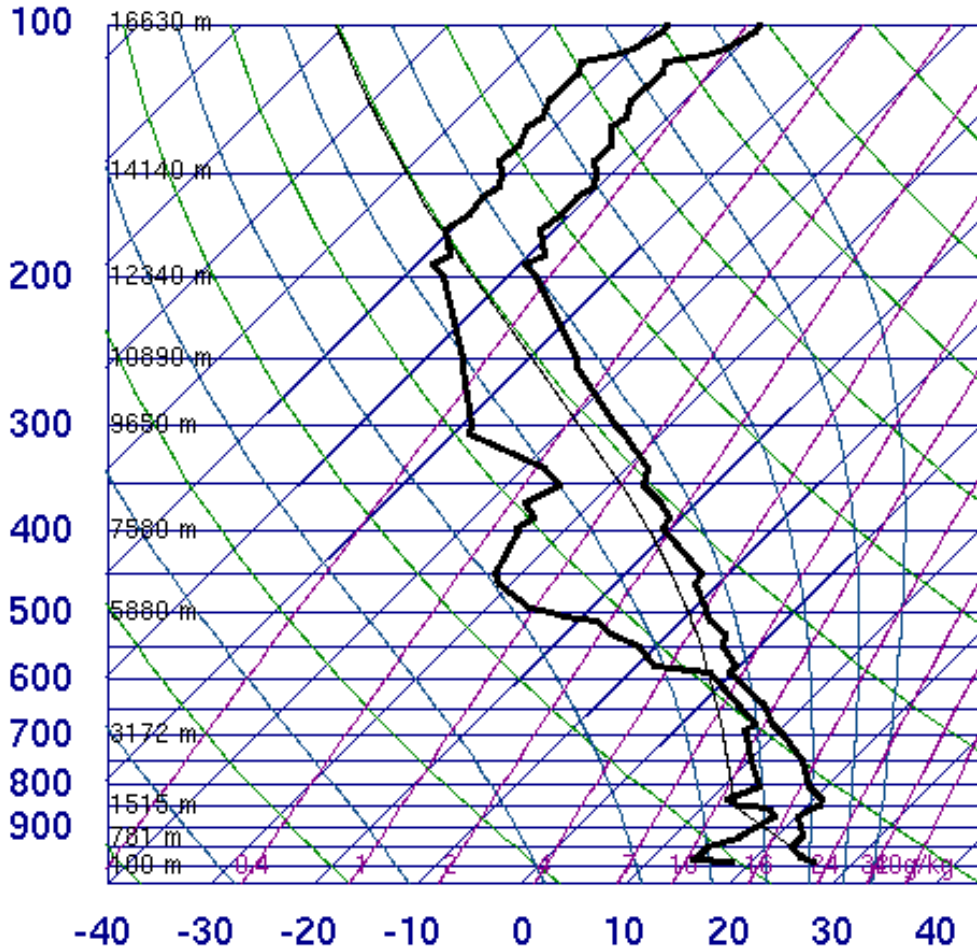
University of Wyoming



KGRB Sounding – 00z July 1, 2011



72645 GRB Green Bay



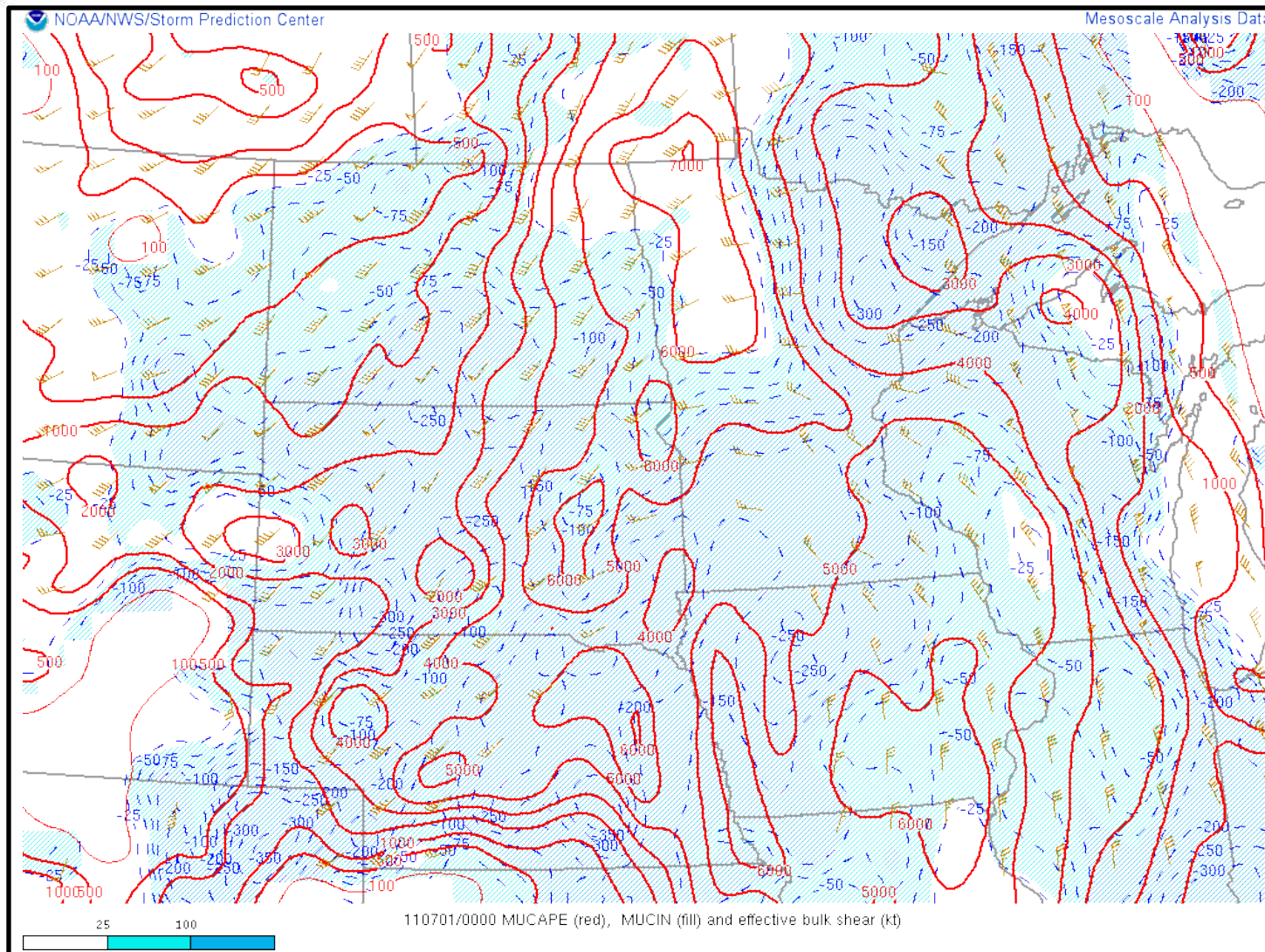
SLAT	44.48
SLON	-88.13
SELV	214.0
SHOW	-4.17
LIFT	1.74
LFTV	1.36
SWET	331.2
KINX	40.70
CTOT	23.30
VTOT	29.30
TOTL	52.60
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EQTV	-9999
LFCT	-9999
LFCV	-9999
BRCH	0.00
BRCV	0.00
LCLT	285.8
LCLP	844.3
MLTH	300.0
MLMR	11.09
THCK	5780.
PWAT	47.06

00Z 01 Jul 2011

University of Wyoming

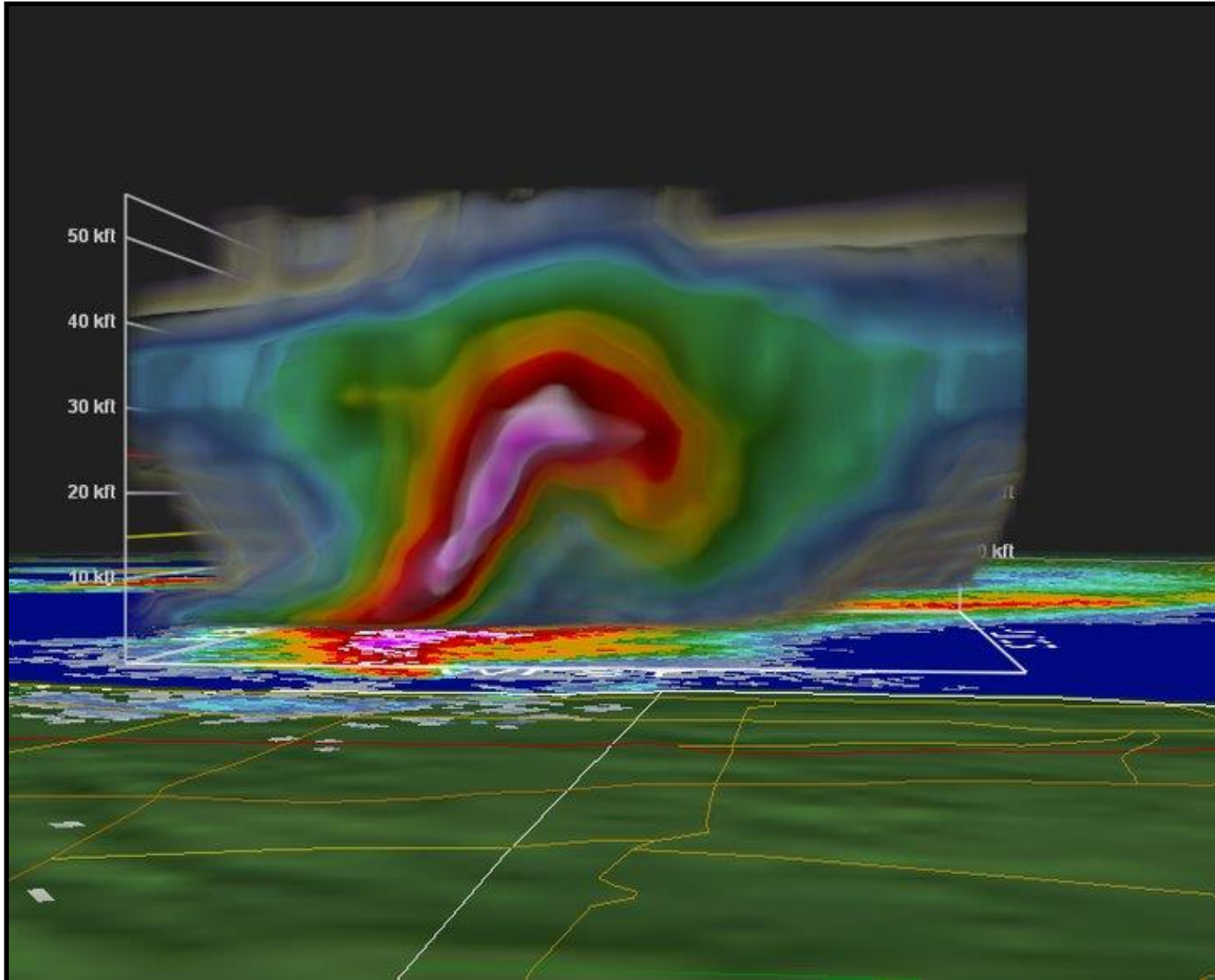


MUCAPE/0-6km Shear – 00z July 1, 2011





KMKX Cross Section Of Supercell – East of Racine





Local Storm Reports



Southeast Wisconsin (~7:35-8:40 PM CDT)

- Damage generally within 3 miles (4.8 km) of shore; piers and small recreational boats damaged throughout area.

- **Far Southeast Milwaukee County (~ 7:30-7:40 PM CDT)**
 - Cudahy – Numerous trees down.
Estimated gusts to 55 knots (63 mph) at 7:35 PM.

- **Far Eastern Racine County (~ 7:40-8:00 PM CDT)**
 - Wind Point & Elmwood Park – Numerous trees and power lines down. ***Measured gust of 71 knots (82 MPH) at Racine Airport at 7:45 PM.***



Local Storm Reports

Southeast Wisconsin (~7:35-8:40 PM CDT)



- **Far Eastern Kenosha County (~ 8:00-8:40 PM CDT)**
 - Somers & Downtown Kenosha – Numerous trees and power lines down. ***Estimated gusts to 65 knots (75 MPH).***
 - **One motorcyclist killed by falling tree, one person injured by flying debris.**
 - Kenosha C-MAN marine site – ***Measured gust of 57 knots (66 MPH) at 8:40 PM.***



Storm Damage Photos *Southeast Wisconsin*



South Milwaukee – Tree Damage



Caledonia – Tree Damage

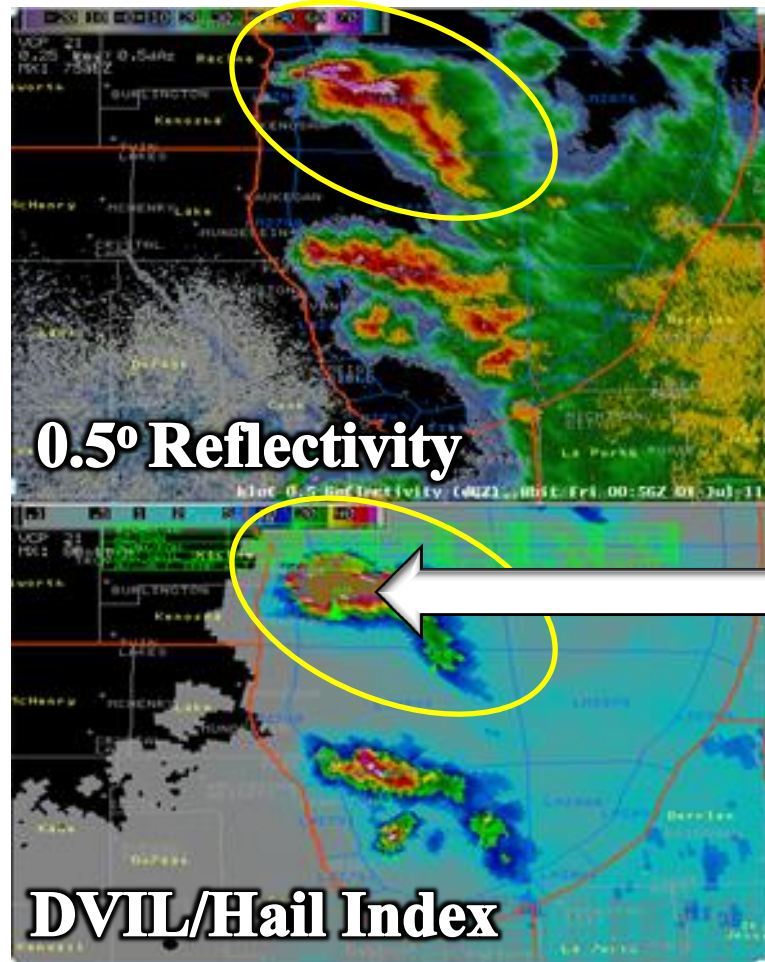


Kenosha – Fence Damage

Images From
WISN-TV
Milwaukee, WI



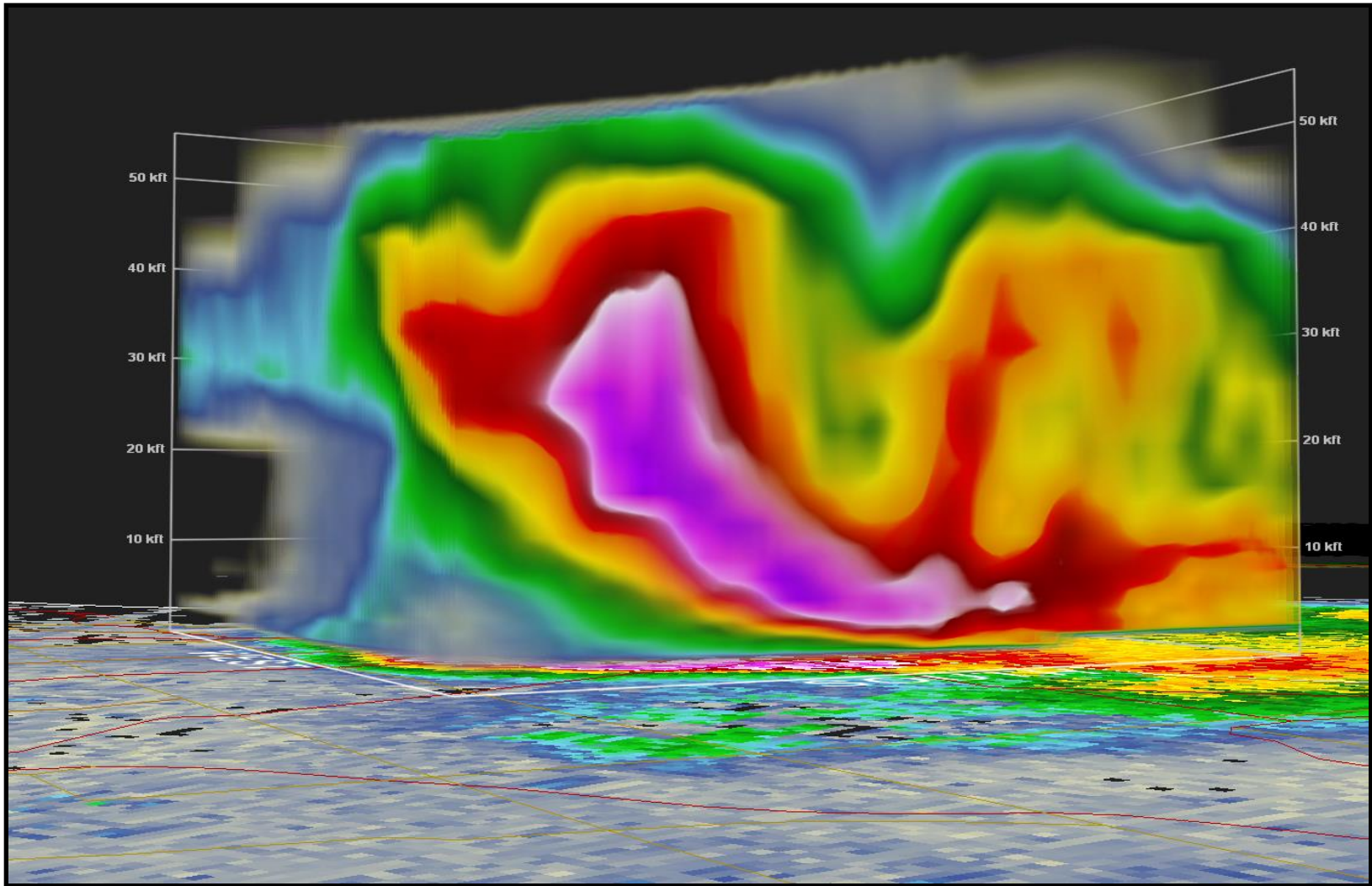
KLOT Radar – 7:56 PM CST June 30, 2011





KLOT Cross Section Of Supercell – Over Chicago

Looking from the southwest at 9:31PM CDT
60+ dbZ to almost 40kft!





Local Storm Reports Northeast Illinois Lake County (~ 8:15-8:30 PM CDT)



- Winthrop Harbor - Trees >1' diameter and light poles blown down at North Point Marina, along with damaged boats, including torn sails. ***Estimated gusts to 65 knots (75 mph).***
- East of Zion - Supercellular waterspout reported by US Coast Guard.
- Zion - Numerous large trees uprooted or blown down, along with tree limbs and power lines. ***Estimated gusts to 70 knots (81 mph).***
- Illinois Beach State Park - Over 1,000 trees uprooted or split in half. Many structures and mobile campers sustained damage from falling trees. ***Estimated gusts to 78 knots (90 mph).***
- Beach Park/Bonnie Brooks - A tree fell onto a car, structural damage to a house from a tree. ***Estimated gusts to 65 knots (75 mph).***
- Waukegan Harbor GLOS Weather Station - **Measured peak gust of 82 knots (94 mph) at 8:30PM.**



Local Storm Reports Northeast Illinois Cook County (~ 9:30-9:35 PM CDT)

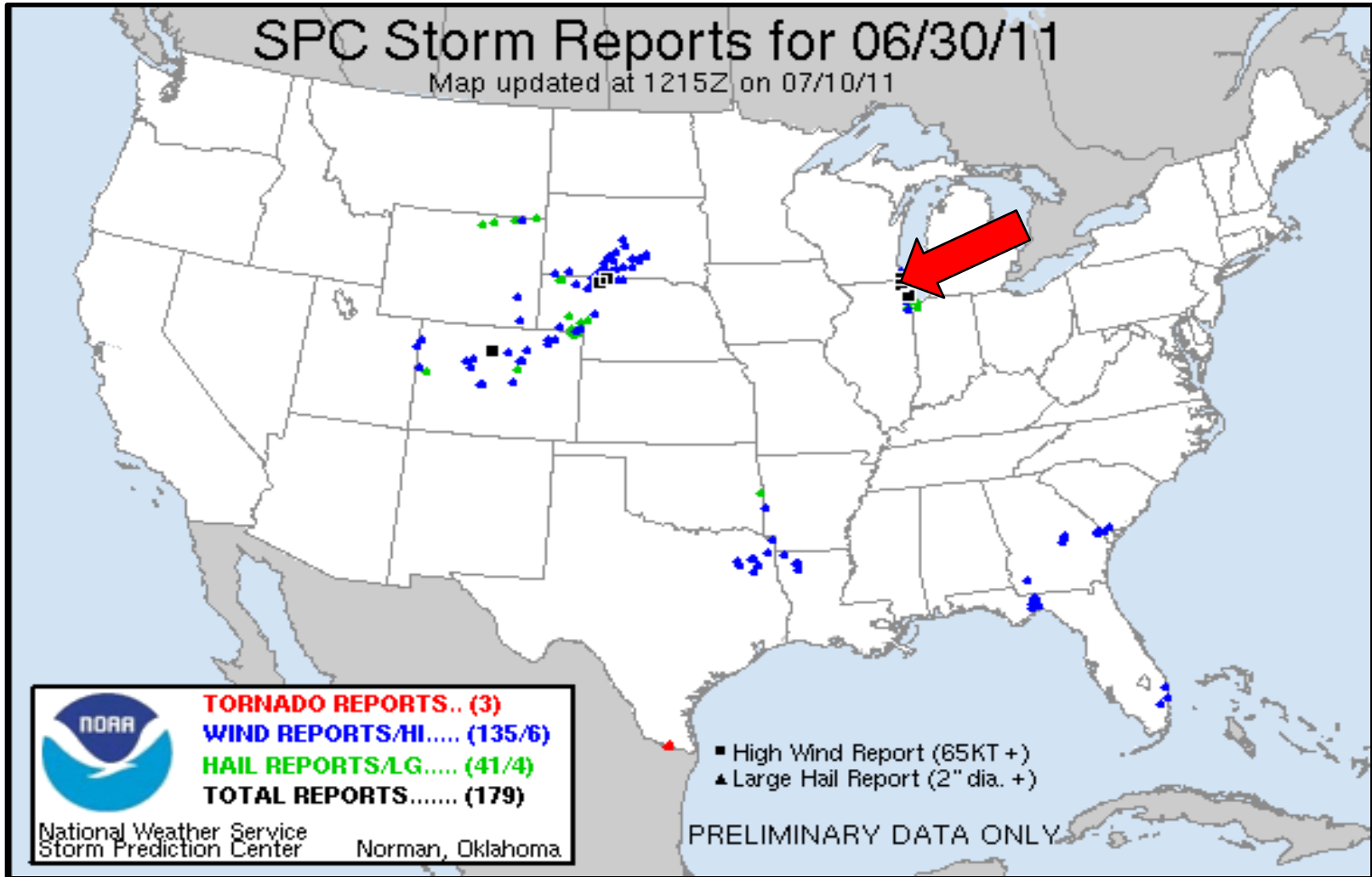


- Logan Square/Cragin – Hail 2” in diameter reported. *NW Chicago*
- Austin – Hail 2” in diameter shattered thousands of glass panes at the Garfield Park Conservatory, estimated \$2 million in clean up costs and repair and replacement costs estimated at \$15 million.
W Chicago
- Corwith – Hail 2” in diameter reported. *SW Chicago*
- Brighton Park (9:35 PM) – Hail up to **baseball size (2.75” estimated diameter)** reported. Hundreds of vehicles damaged including at least 130 police cars that suffered broken windshields and smashed rooftop lights. *SW Chicago*



SPC LSR Overview Plot

Concentration of Sig. Severe Reports





Storm and Damage Photos *Northeast Illinois*



Winthrop Harbor, IL
Tree Damage



Garfield Park Conservatory
Hail Damage



Gustnado
Great Lakes Naval Station
Waukegan, IL



Large Hail
Little Village, Chicago

Hail Damage to Police Car
in Chicago



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