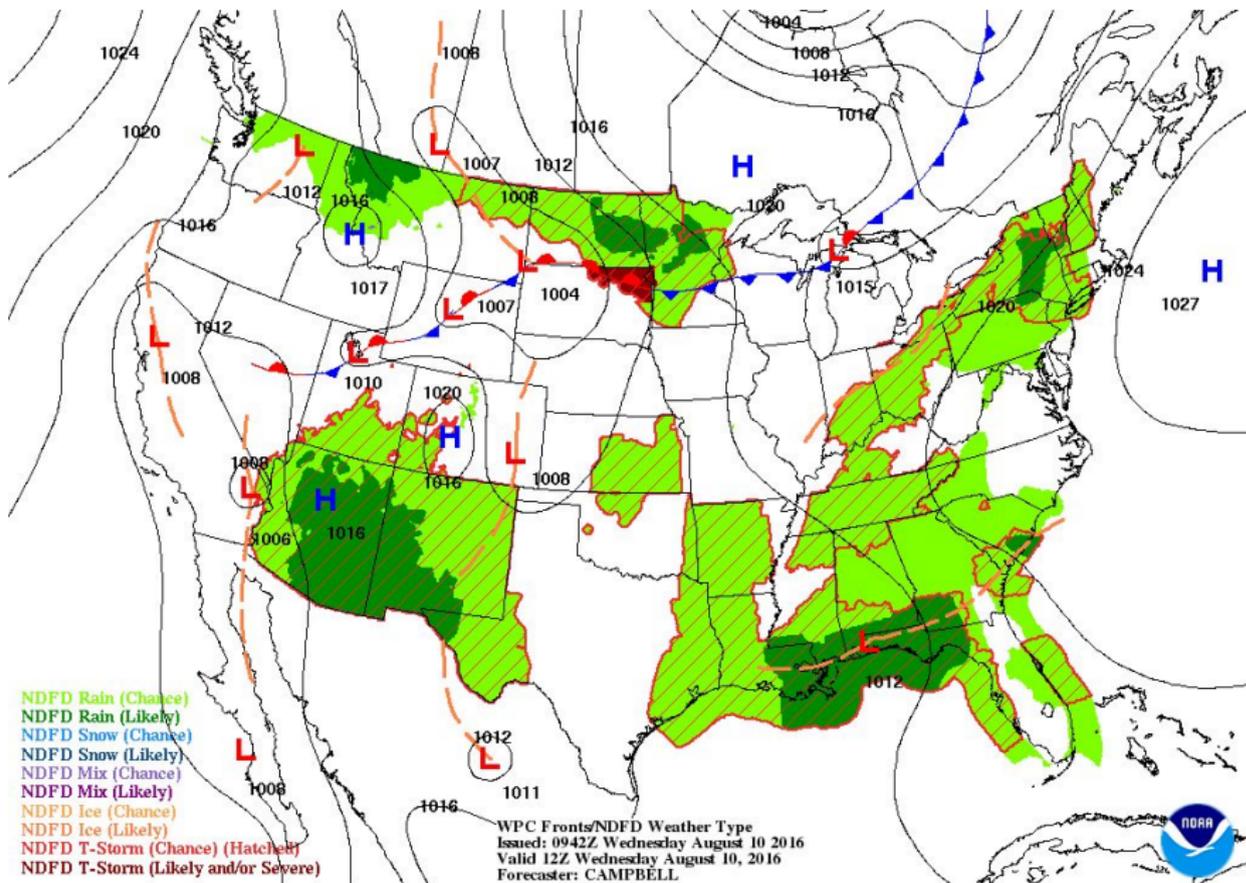
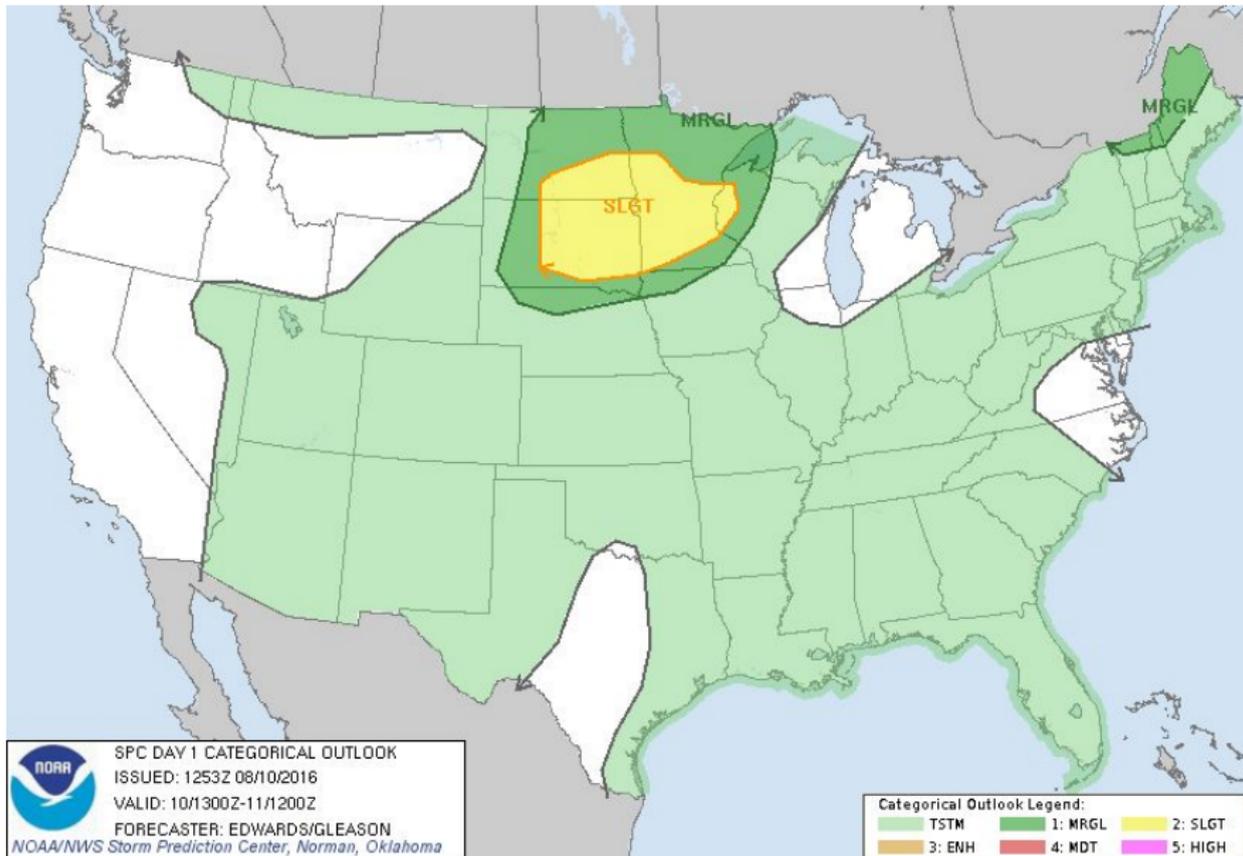


Morning Weather Briefing for 2016-08-10

August 10,
2016

Latest NWS Surface Analysis





TSTM DEVELOPMENT IS EXPECTED THIS AFTN AND ESPECIALLY EVENING INV OF SFC TROUGH...LOW AND WARM FRONT...WITH ALL MODES OF SVR POSSIBLE. AIR MASS E OF TROUGH AND S OF OUTFLOW/WARM FRONT WILL BE STRONGLY HEATED AND RICHLY MOIST...WITH SFC DEW POINTS COMMONLY UPPER 60S TO LOW 70S F...BENEATH 8-9 DEG C/KM 700-500-MB LAPSE RATES. THIS WILL SUPPORT LARGE BUOYANCY AND HIGH CAPE DENSITY...WITH MLCAPE 3000-4500 J/KG POSSIBLE AND -11 TO -13 LI SAMPLED THROUGH MUCH OF 500-250-MB LAYER. INCREASED MIXING AND DECREASING CAPE ARE EXPECTED WITH SSWWD EXTENT ALONG AND 50-80 NM AHEAD OF SFC TROUGH. HOWEVER... EVAPORTRANSPIRATION AND MOIST ADVECTION SHOULD COMBINE TO KEEP RICH BOUNDARY-LAYER MOISTURE AVAILABLE OVER ERN SD AND MN. UNCERTAINTY REMAINS REGARDING HOW FAR N BOUNDARY E OF SFC LOW WILL RETREAT TODAY...ESPECIALLY GIVEN DEEP OUTFLOW LAYER -- SFC-850 MB -- EVIDENT IN MORNING ABR RAOB. PRIND BULK OF SVR THREAT WILL BE ALONG AND S OF I-94 CORRIDOR WHERE AIR MASS NEAR AND S OF BOUNDARY HAS GREATEST CHANCE TO MOISTEN AND DESTABILIZE DIABATICALLY...THEREFORE NRN BOUND OF SLGT-RISK PROBABILITIES HAVE HAS BEEN PULLED SWD SOMEWHAT.

WITH MAIN MID/UPPER-LEVEL TROUGH SO FAR WNW OF THIS AREA AND POSITIVELY TILTED...LARGE-SCALE ASCENT AND SUBSTANTIAL MIDLEVEL WINDS ARE EACH EXPECTED TO REMAIN MODEST...PORTENDING MESSY/HEAVY- PRECIP STRUCTURES TO CONVECTION GIVEN LARGE AMOUNT OF WATER AVAILABLE IN INFLOW LAYER. HOWEVER...STG ANVIL-LEVEL FLOW SHOULD ALLOW FOR SOME VENTING ALOFT...AND LOW-LEVEL SHEAR WILL BE STG ALONG AND HOWEVER FAR N OF BOUNDARY THAT EFFECTIVE PARCELS REMAIN SFC-BASED. PARAMETER SPACE IN THAT REGIME WILL SUPPORT SUPERCELL/ TORNADO POTENTIAL...WITH FCST SOUNDINGS STRONGLY SUGGESTING FAVORABLE PROFILES FOR AT LEAST ISOLATED SIGNIFICANT/DAMAGING HAIL AS WELL. HOWEVER...MAIN UNCERTAINTY ATTM INVOLVES WHETHER SUITABLY DISCRETE CONVECTIVE MODES CAN INTERACT WITH THAT REGIME FOR LONG ENOUGH TO TAKE ADVANTAGE. FOR NOW...WILL MAINTAIN UNCONDITIONAL SLGT-RISK-EQUIVALENT PROBABILITIES FOR TORNADO RISK WITHIN BROADER SLGT AREA.

N ANY
EVENT...EVENTUAL/U
PSCALE EVOLUTION
OF CONVECTION IS
LIKELY

WITH ONE OR TWO
CLUSTERS OF TSTMS
PRODUCING
DAMAGING WINDS
AND

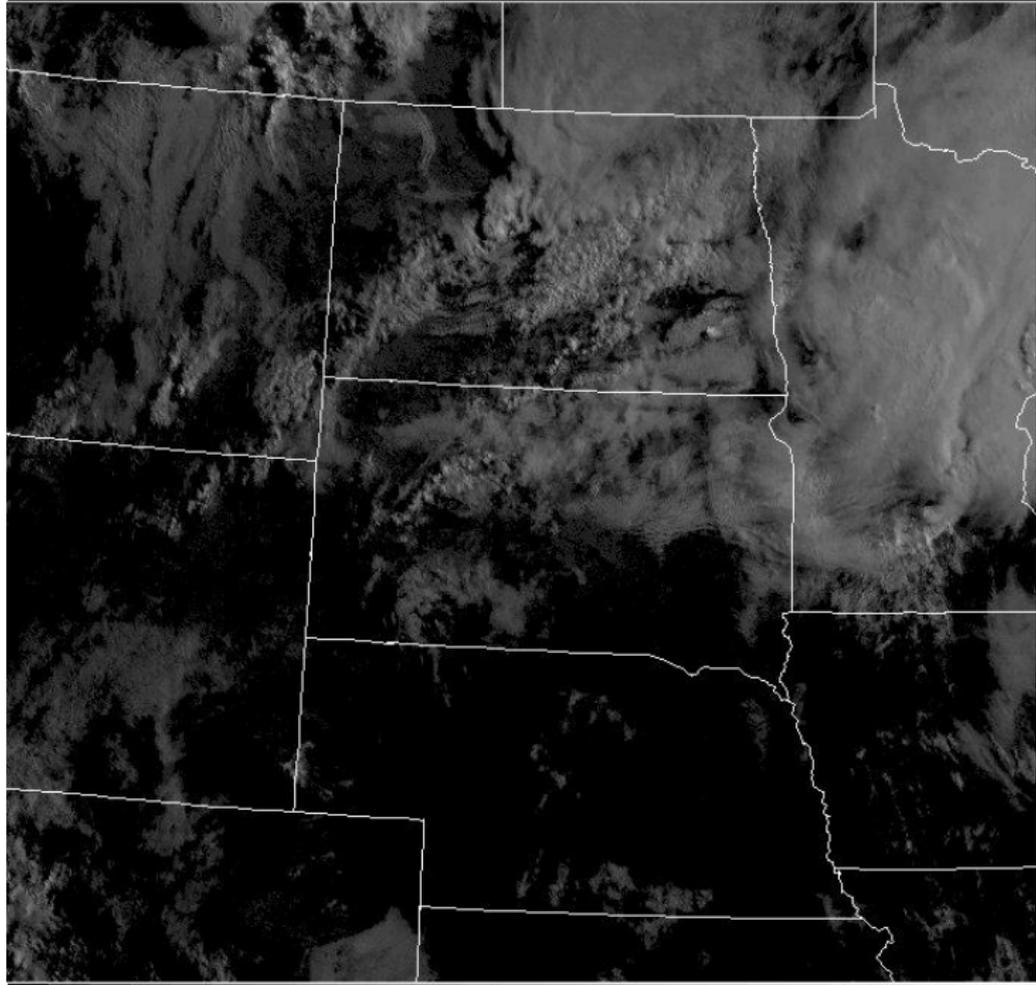
ISOLATED HAIL
INTO TONIGHT.
ADDITIONAL
DEVELOPMENT IS
POSSIBLE

FARTHER E
ACROSS MN...ALONG
OR MORE LIKELY N
OF SFC
BOUNDARY...AS

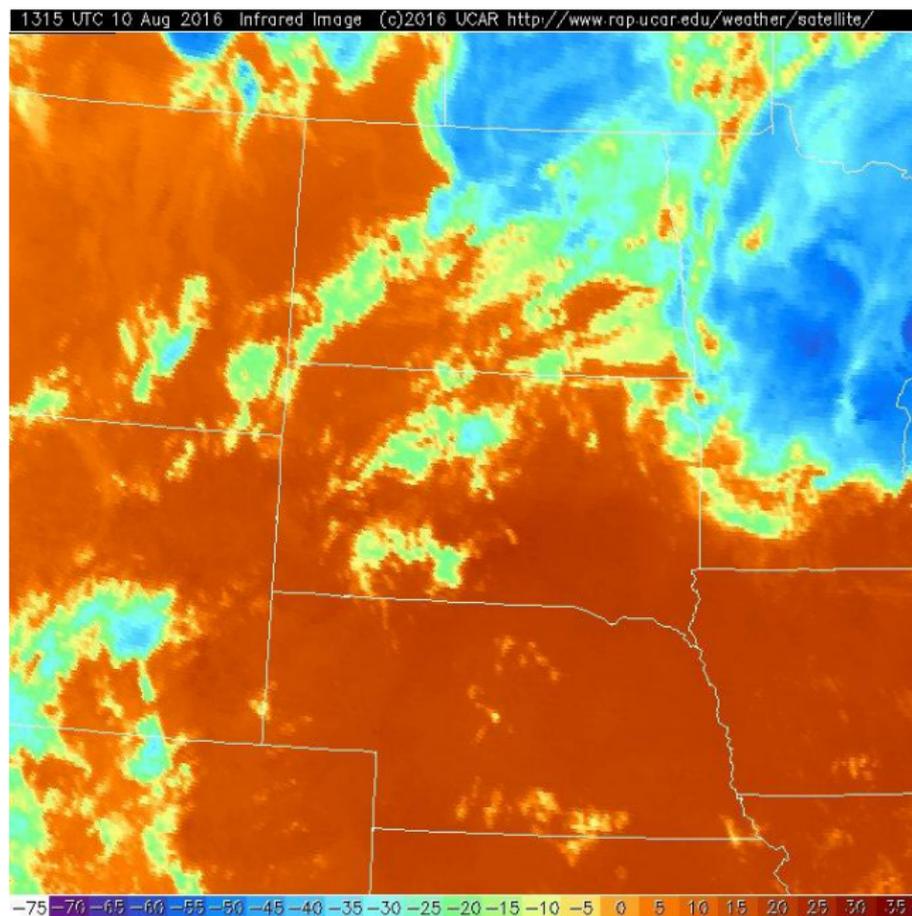
LLJ IMPINGES UPON
FRONTAL SFC ABOVE
GROUND...WHERE
PARCELS ARE

ISENTROPICALLY
BOOSTED TO LFC.

NOAA
Visible
Satellite
Image
(1315
UTC)



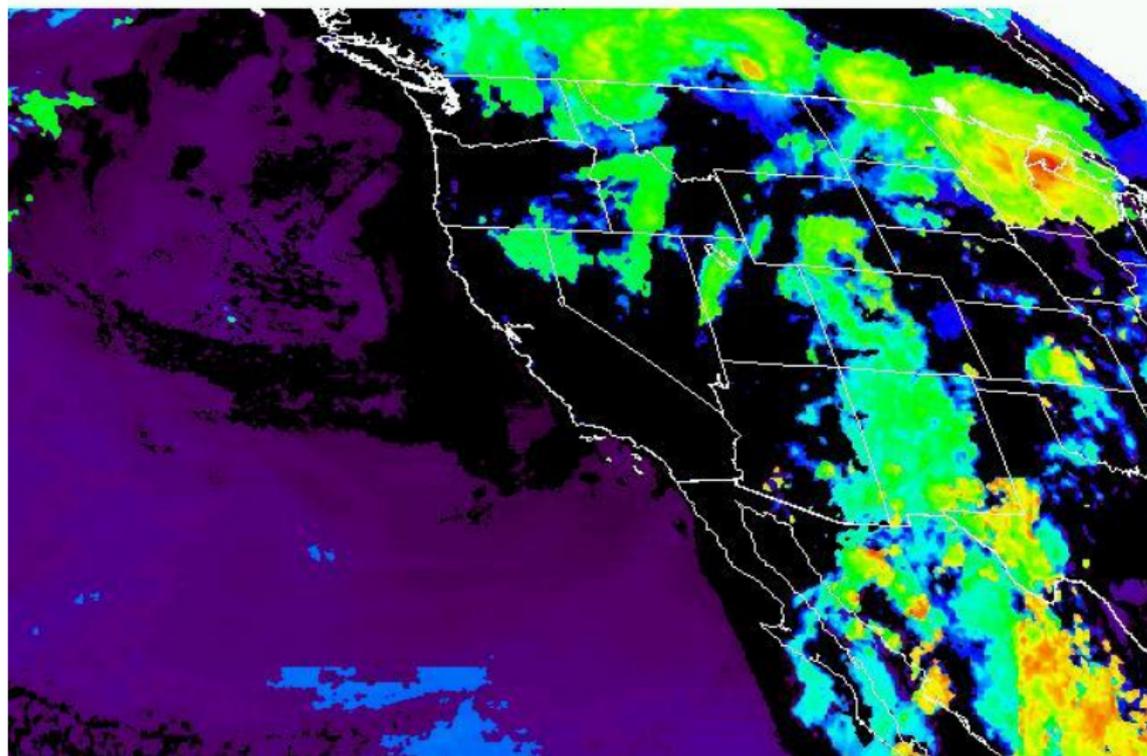
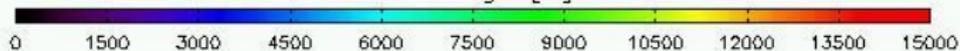
NOAA IR2 Satellite Image (1315 UTC)



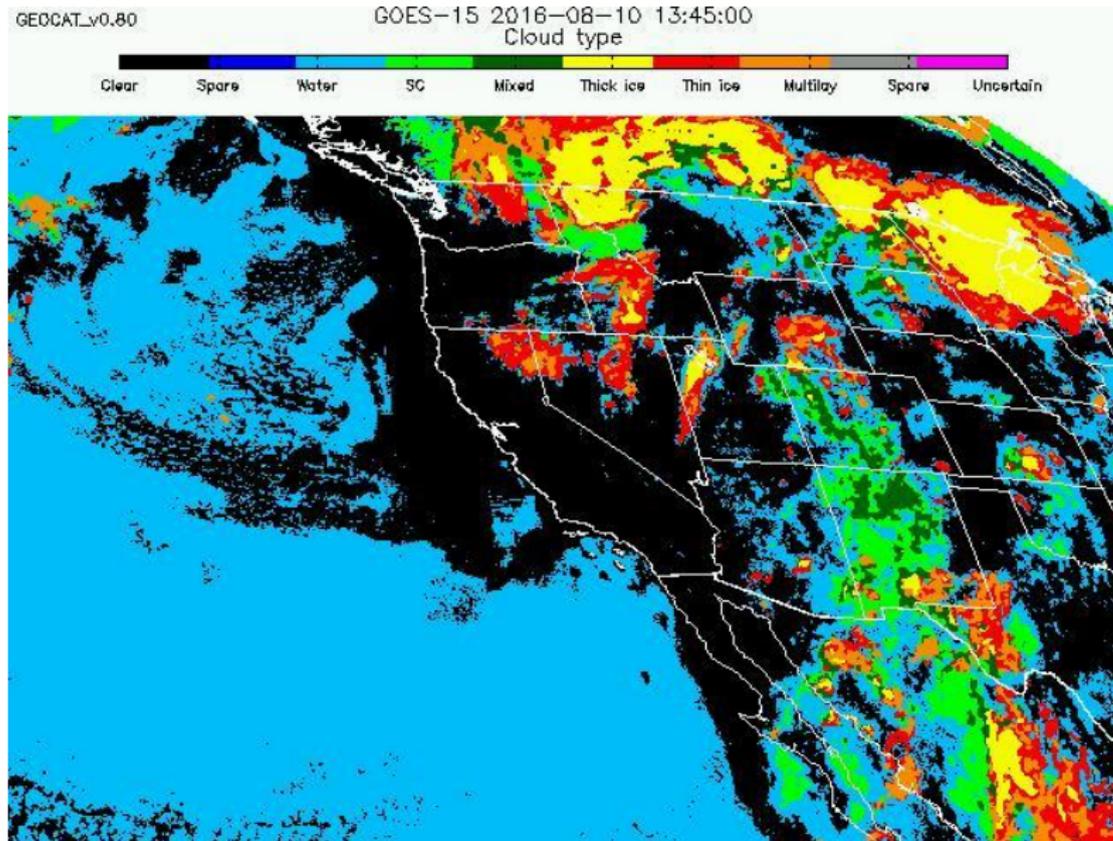
GEOCAT Cloud Height for 1145 UTC

GEOCAT_v0.80

GOES-15 2016-08-10 13:30:00
Cloud Height [m]

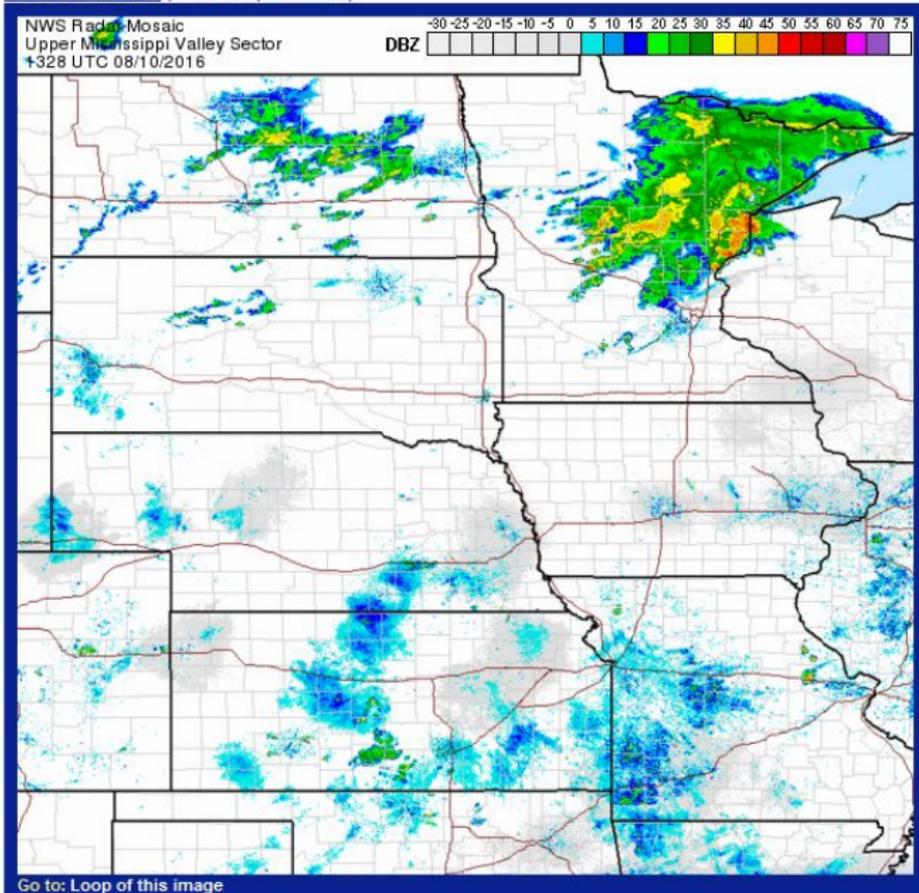


GEOCAT Cloud Type for 1145 UTC



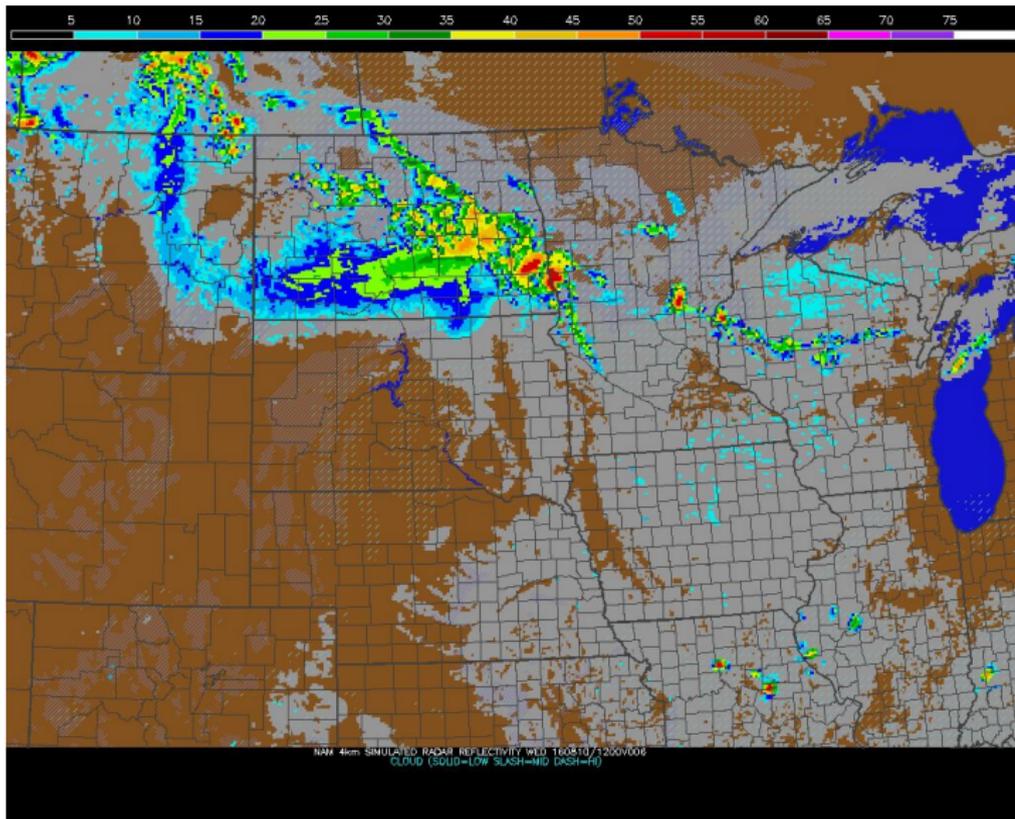
Base Reflectivity

[Full resolution version](#) (3400x1700 pixels - 220k)



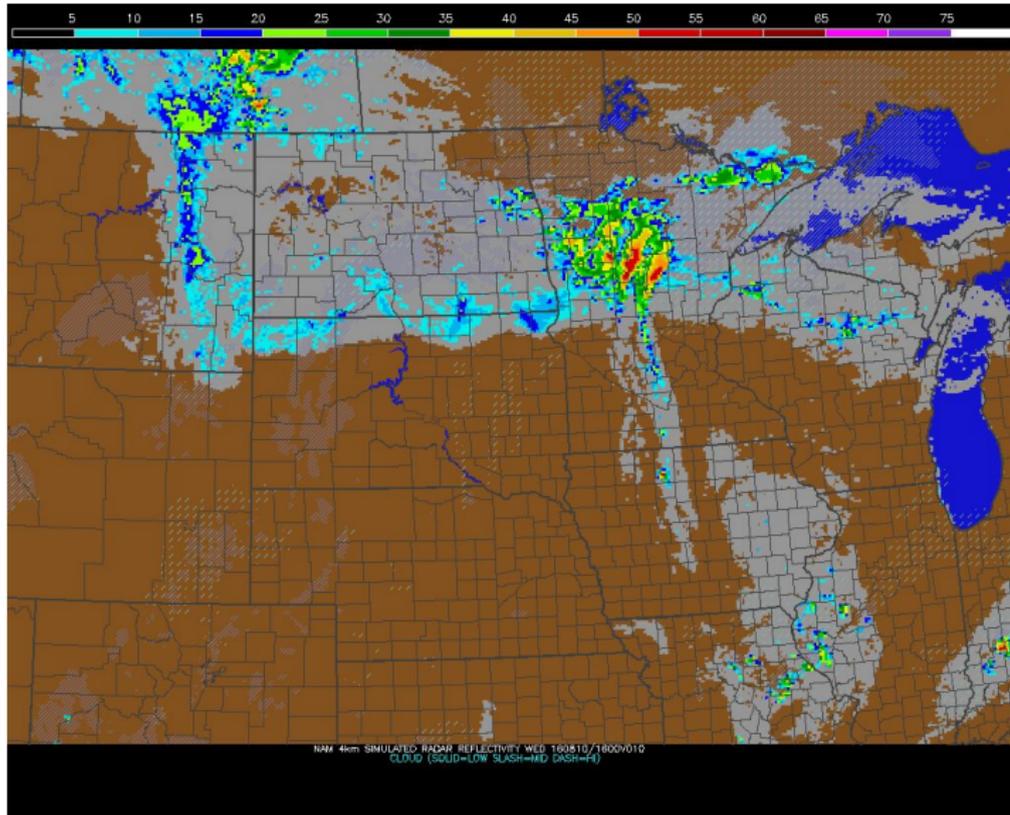
0600 UTC 4-km NAM Forecast (cloud, dBZ)

Valid: 1200 UTC = 0700 CDT



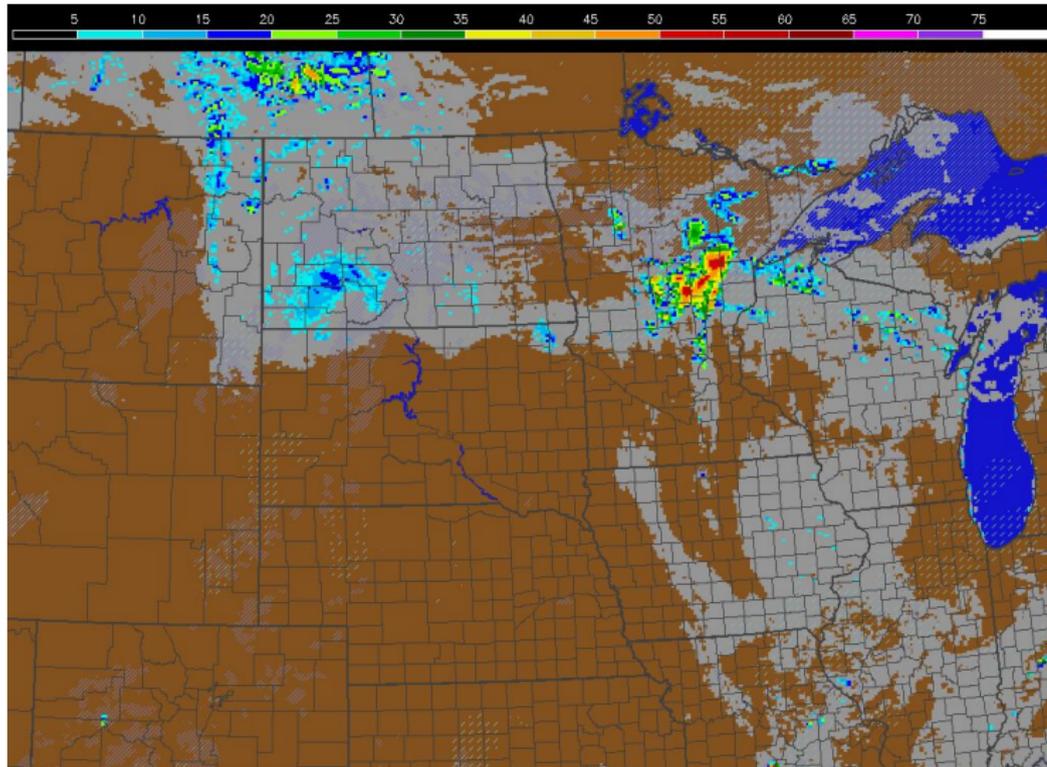
0600 UTC 4-km NAM Forecast (cloud, dBZ)

Valid: 1600 UTC = 1100 CDT



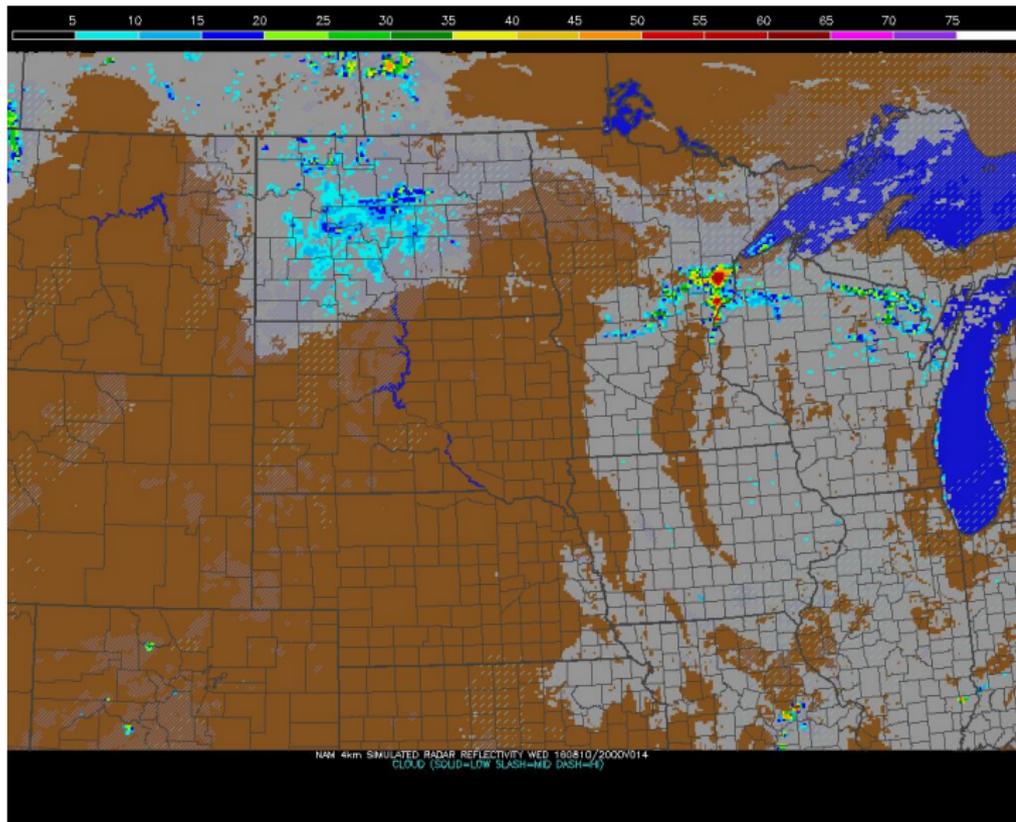
0600 UTC 4-km NAM Forecast (cloud, dBZ)

Valid: 1800 UTC = 1300 CDT



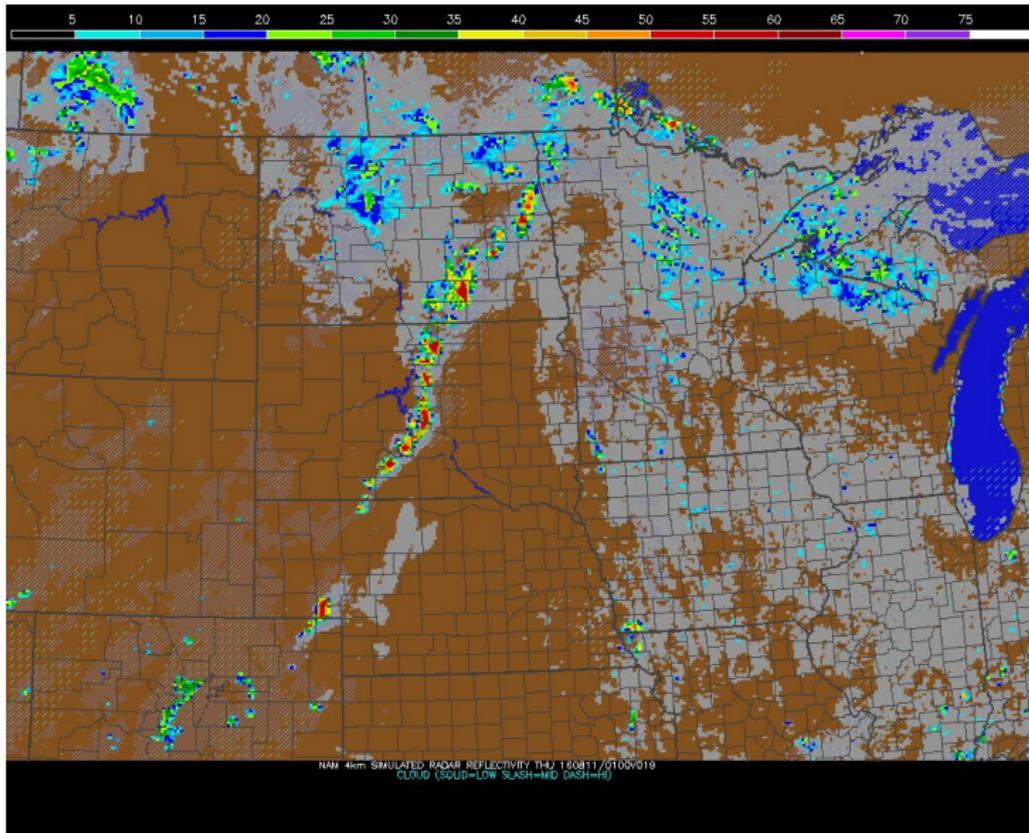
0600 UTC 4-km NAM Forecast (cloud, dBZ)

Valid: 2000 UTC = 1500 CDT

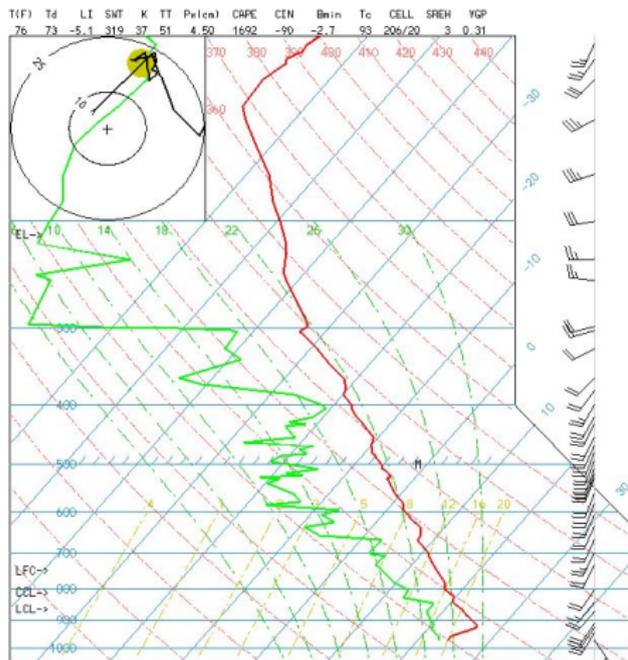


0600 UTC 4-km NAM Forecast (cloud, dBZ)

Valid: 0100 UTC = 2000 CDT

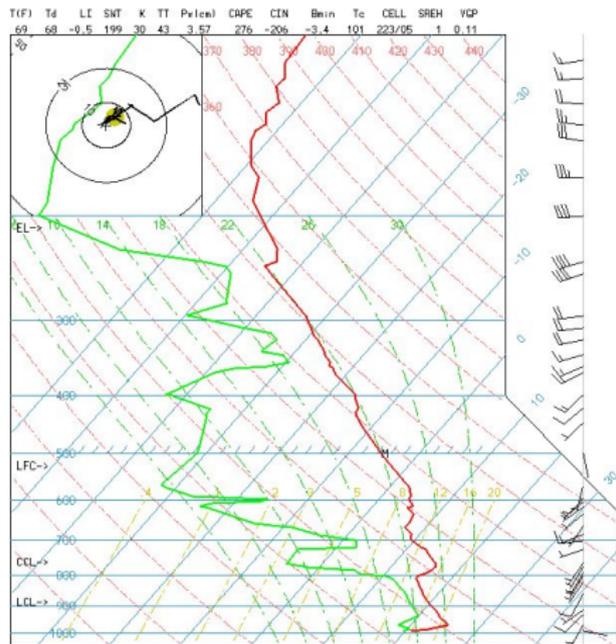


Omaha



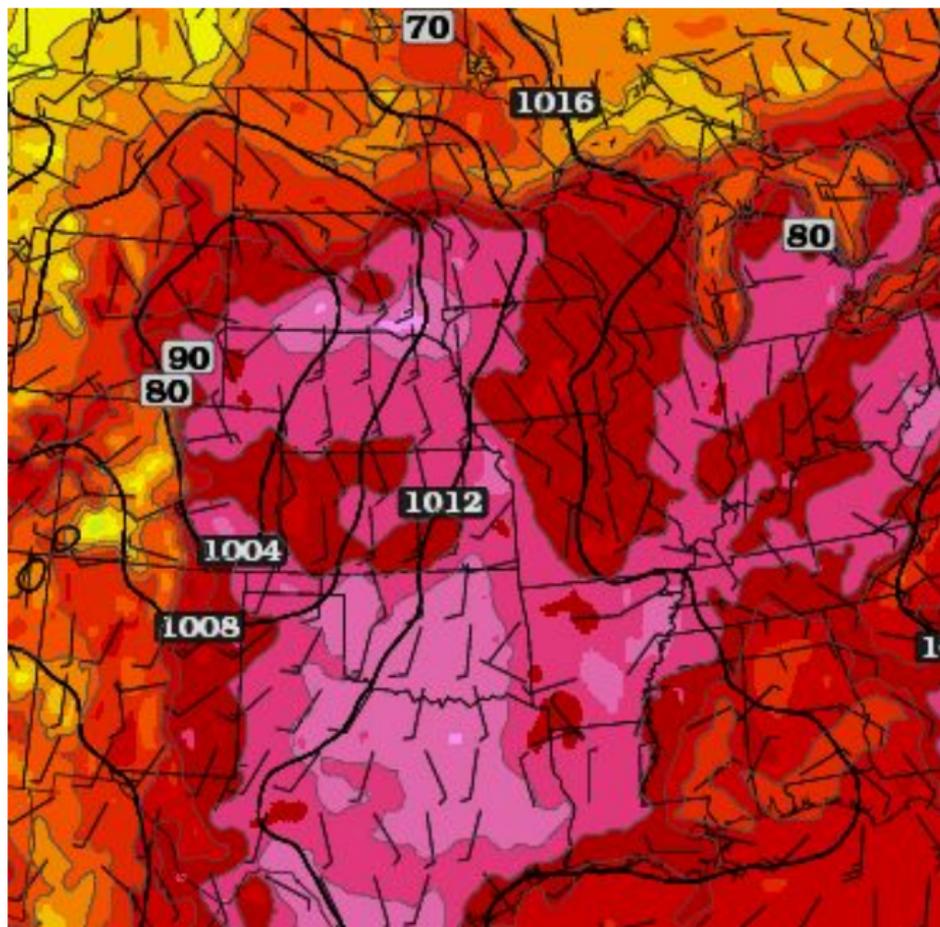
SKEW-T/LOG-P VALID 1200 UTC 08/10/2016 KORX Lat = 41.32 , Lon = -96.37

Davenport

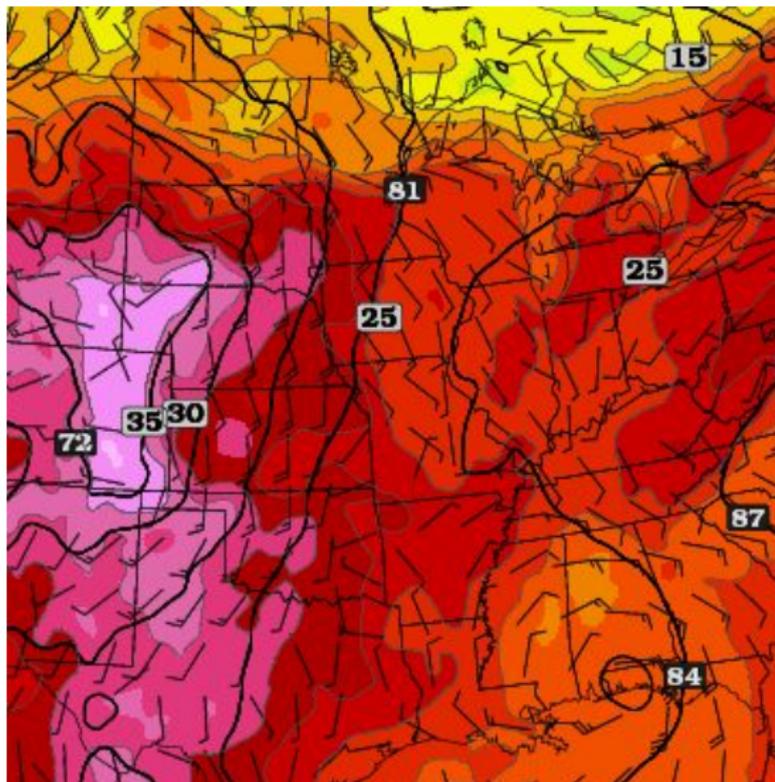


SKEW-T/LOG-P VALID 1200 UTC 08/10/2016 KDYN Lat = 41.62 , Lon = -90.58

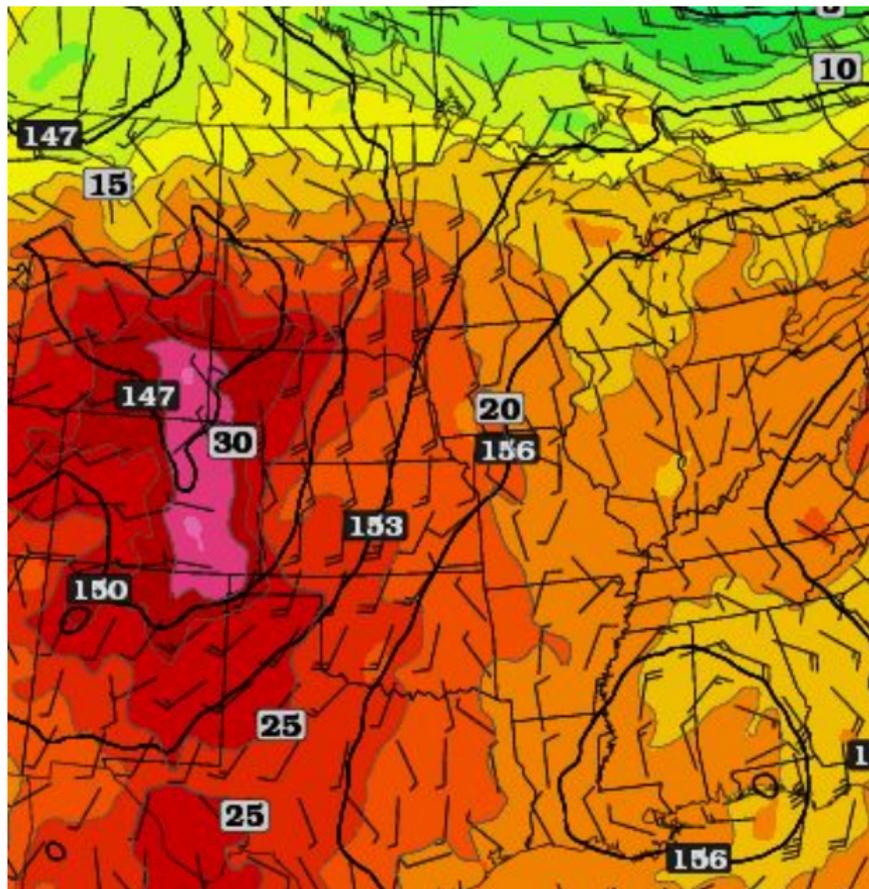
18-UTC RAP 5-hr forecast, surface



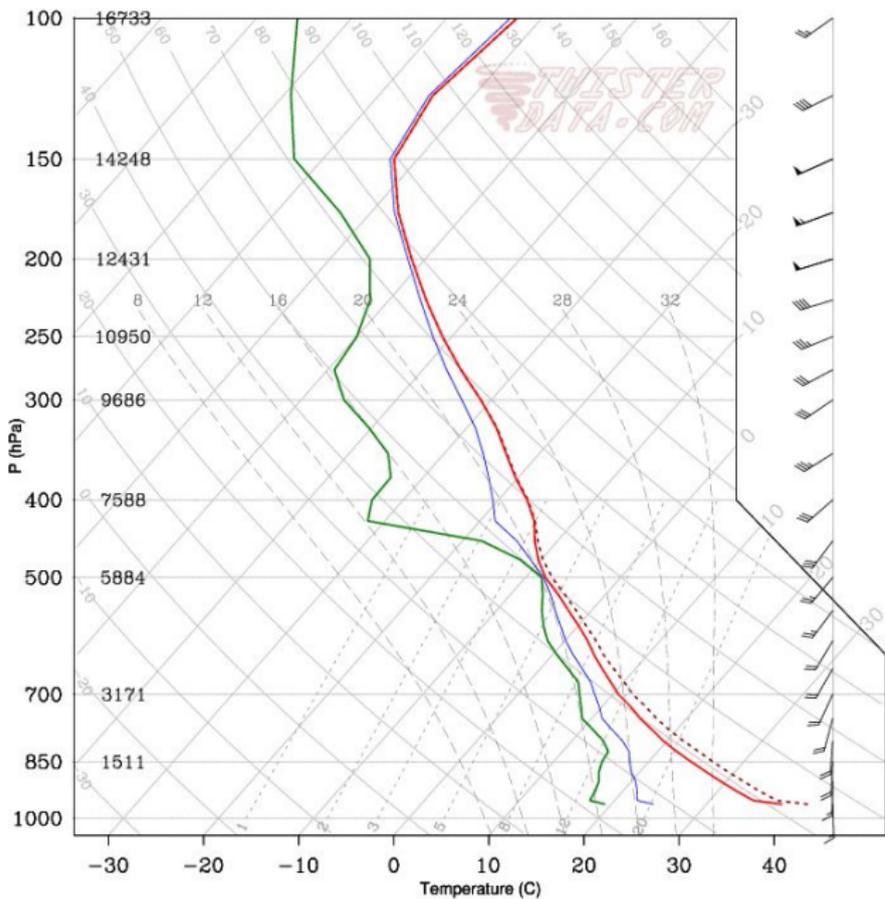
18-UTC RAP 5-hr forecast, 925-mb



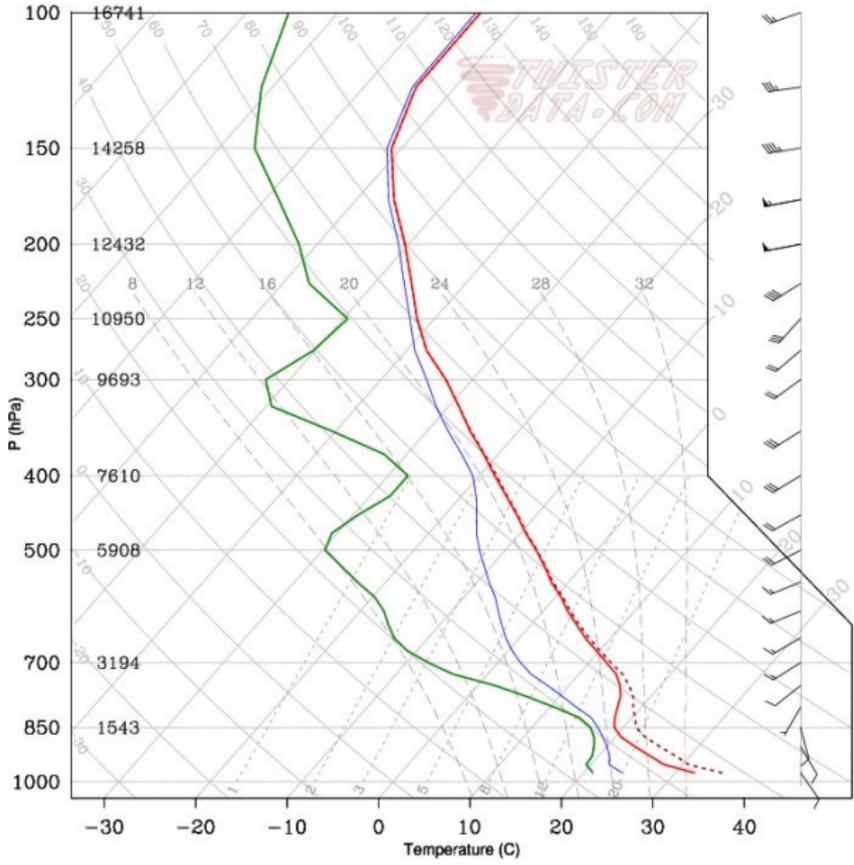
18-UTC RAP 5-hr forecast, 850-mb



RAP Sounding | 18 UTC Wed 10 Aug 2016 | Lat 43.4546 | Lon -98.0161



RAP Sounding | 18 UTC Wed 10 Aug 2016 | Lat 44.0483 | Lon -93.5642

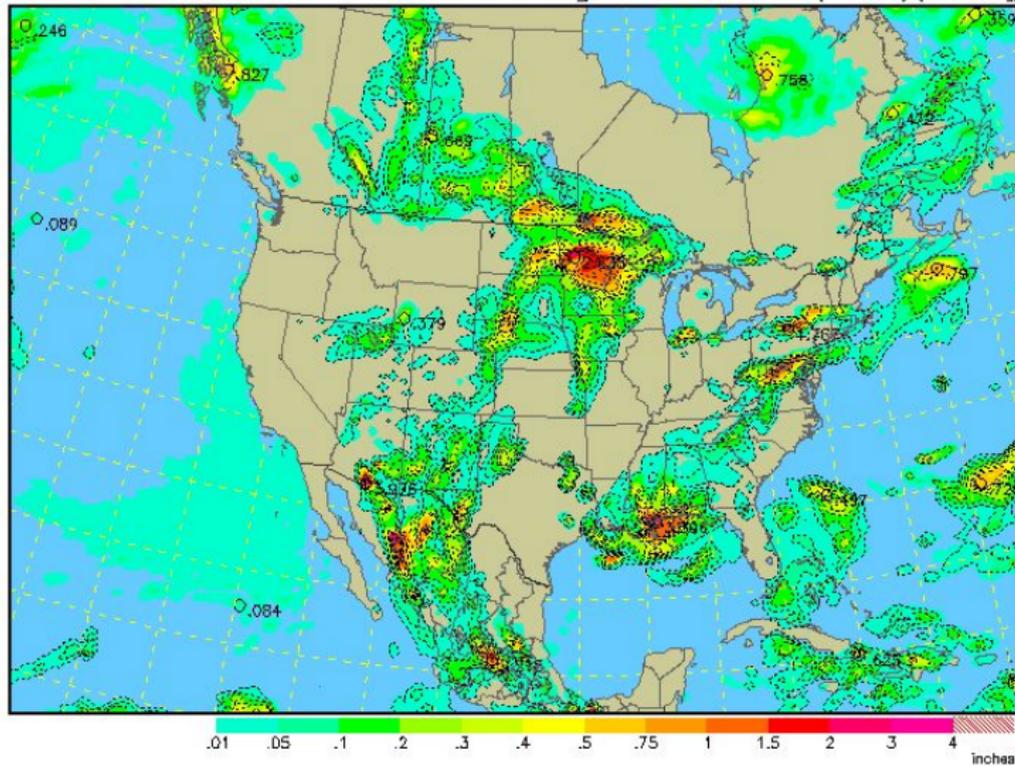


S MN

12-h accum precip (total-shaded; convect-dashed)

24-hour forecast valid 1200 UTC Thu 11 Aug 2016

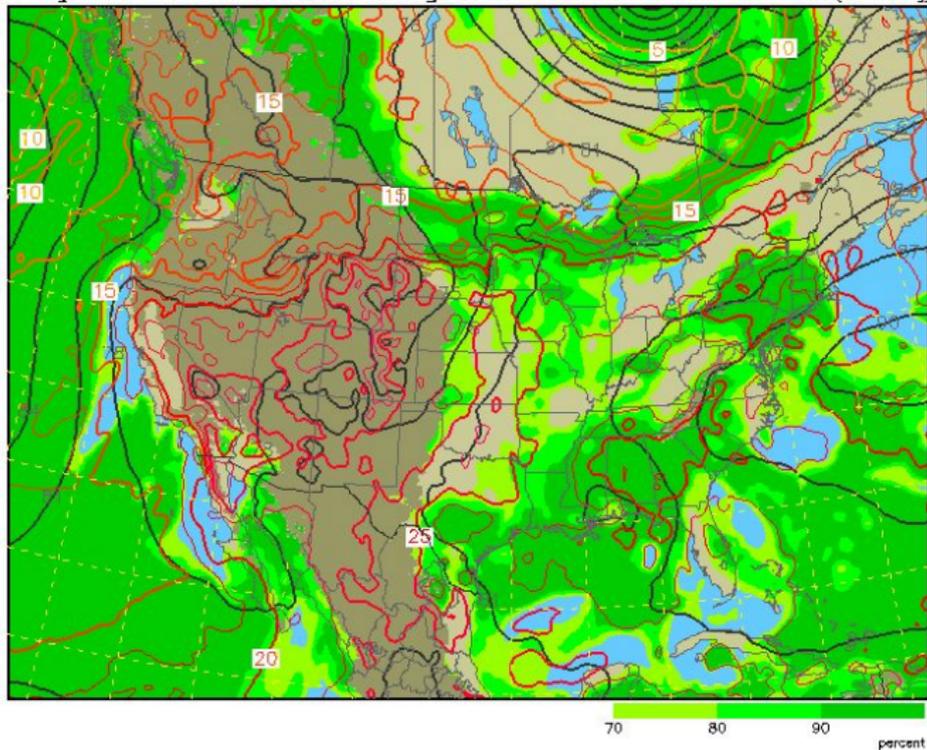
NAM (WRF-NMM) (12z 10 Aug)



925 mb Heights (dm) / Temperature (°C) / Humidity (%)

Analysis valid 1300 UTC Wed 10 Aug 2016

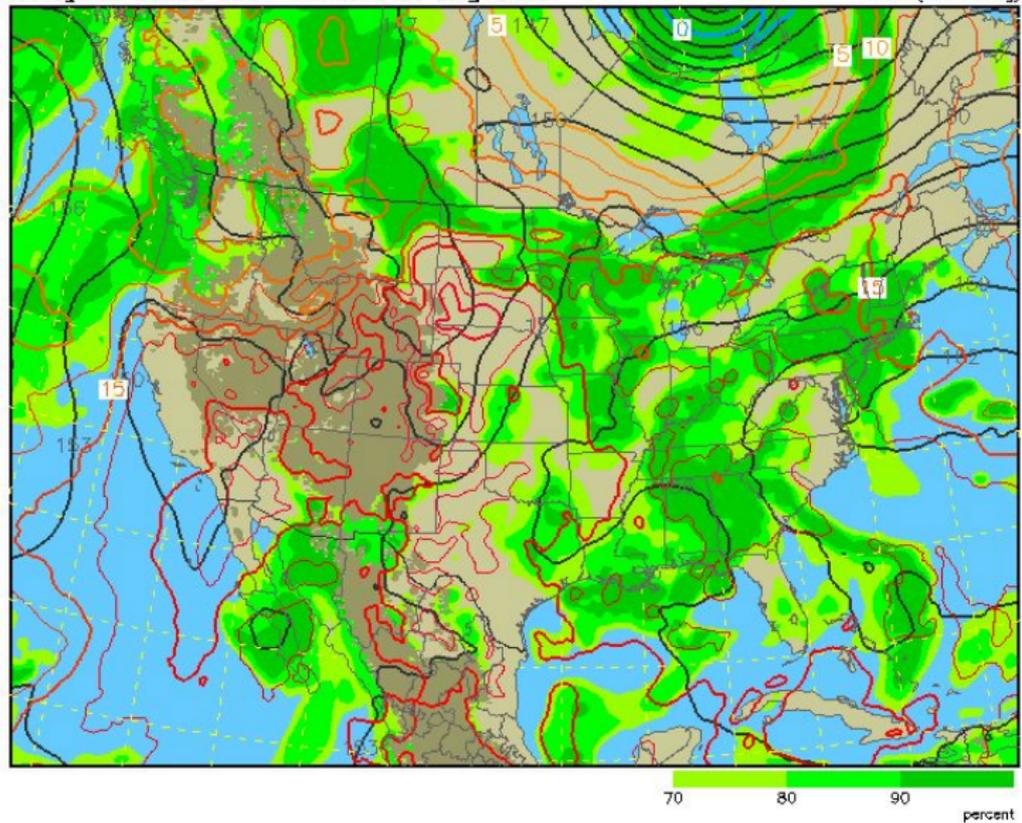
RAP (13z 10 Aug)



850 mb Heights (dm) / Temperature (°C) / Humidity (%)

Analysis valid 1300 UTC Wed 10 Aug 2016

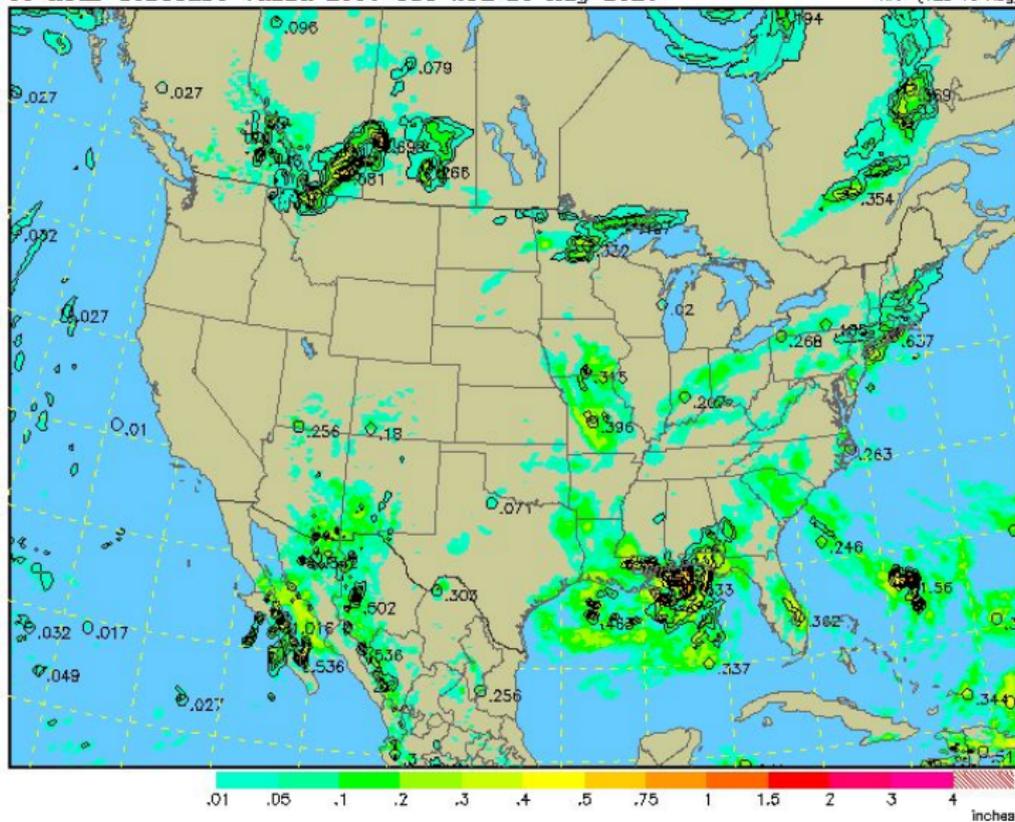
RAP (13z 10 Aug)



3-hr accum precip (total-shaded; nonconvect-solid)

06-hour forecast valid 1800 UTC Wed 10 Aug 2016

RAP (12z 10 Aug)



1-hr accum precip (total-shaded; nonconvect-solid)

10-hour forecast valid 2100 UTC Wed 10 Aug 2016

RAP (11z 10 Aug)

