Mesoscale Discussion 1449

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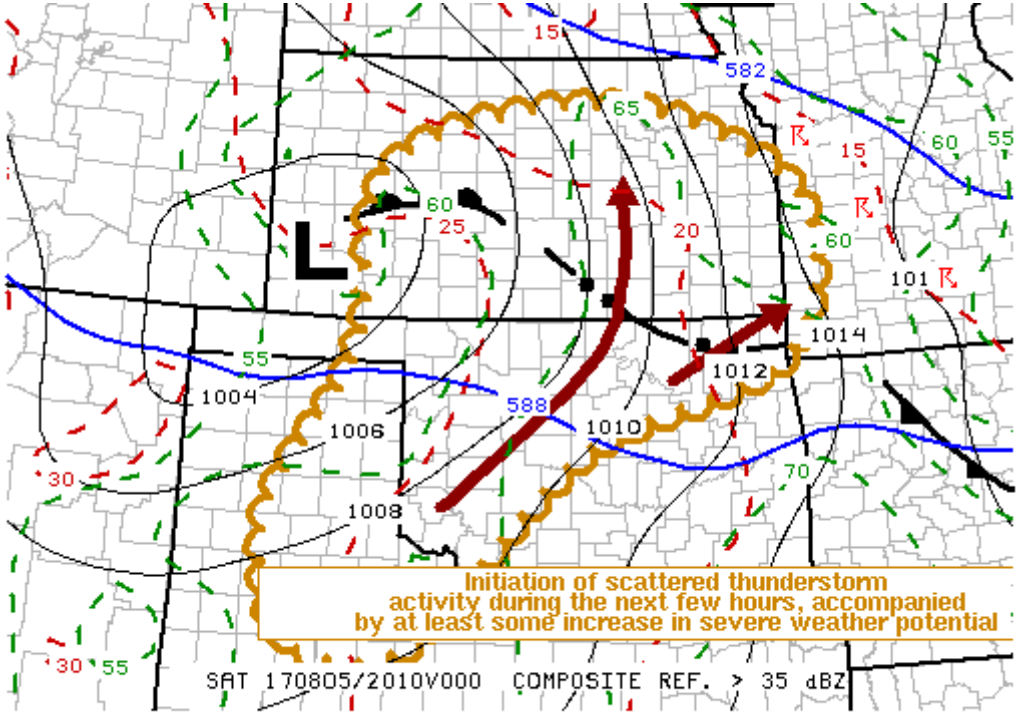

SPC MCD #1449

Mesoscale Discussion 1449
NWS Storm Prediction Center Norman OK
0325 PM CDT Sat Aug 05 2017

Areas affected...Much of the central Plains

Concerning...Severe potential...Watch possible

Valid 052025Z - 052230Z

Probability of Watch Issuance...40 percent

SUMMARY...Storms may begin initiating across parts of the central Plains during the next few hours. This probably will be accompanied by at least some increase in severe weather potential. Although this may remain somewhat isolated in nature into early evening, it is possible that a watch could eventually become necessary.

DISCUSSION...A moderate southwesterly low-level jet (30-40 kt at 850

mb) persists across much of the lower central Plains. Strongest near surface convergence appears focused across central Kansas, roughly between Great Bend and Salina, east of an area of low pressure centered over southwest Kansas, and near/to the cool side of a zone of strong differential heating on the western flank of a convectively reinforced boundary. This appears largely beneath substantive mid-level capping associated with a plume of warm elevated mixed layer which has advected east southeast of the Wyoming/Colorado Rockies. The nose of this elevated mixed layer remains stalled to the southwest of the lower/mid Missouri Valley, as an associated zone of stronger lower/mid tropospheric warm advection maintains renewed convective development across and southeast of the Kansas City metro area.

This capping is contributing to uncertain convective potential into and through the late afternoon hours. It seems at least possible that continued insolation near the stronger low-level forcing for ascent could eventually contribute to sufficient weakening of inhibition to support the initiation of boundary layer based thunderstorms across central Kansas. This might not be until after 22-23Z, but if/when activity initiates, the environment appears conducive to the development of supercells, as CAPE becomes moderately large in the presence of strong vertical shear.

Otherwise, latest visible imagery supports the latest high resolution Rapid Refresh, among other model output, suggesting that convective temperatures may be reached within the hot and deeply mixed boundary layer to the southeast of the surface low center within the next couple of hours. This may lead to the initiation of scattered vigorous thunderstorm activity across parts of the Texas Panhandle region through western Oklahoma and adjacent portions of south central Kansas, where the main severe risk appears to be locally strong surface gusts.

..Kerr/Dial.. 08/05/2017