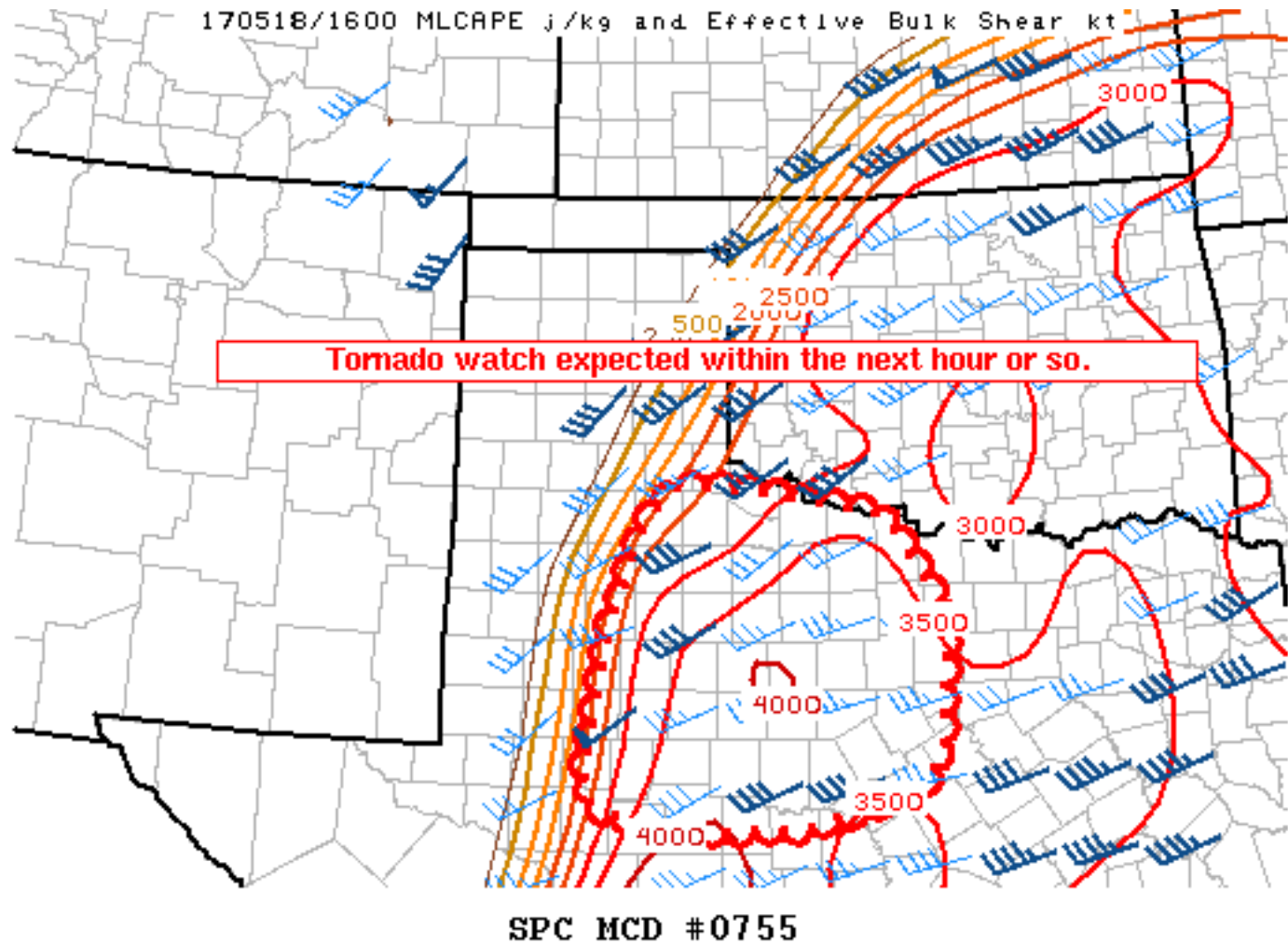# Mesoscale Discussion 755

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SPC MCD #0755

Mesoscale Discussion 0755
NWS Storm Prediction Center Norman OK
1203 PM CDT Thu May 18 2017

Areas affected...Portions of western north Texas

Concerning...Severe potential...Watch likely

Valid 181703Z - 181900Z

Probability of Watch Issuance...95 percent

SUMMARY...Thunderstorms are expected to increase in coverage early
this afternoon across the southern Plains. Very large hail,
tornadoes, and damaging wind gusts will be possible. A tornado watch
will be needed within the next hour or so.

DISCUSSION...Visible satellite imagery depicts a developing cumulus
field across parts of Texas Rolling Plains this afternoon. With
ongoing surface heating and continued moistening of low levels,
convective inhibition has diminished considerably, as suggested by

surface observations, mesoanalysis, and forecast sounding data. While not directly sampling the plume of greatest 850mb moisture farther west, the 15Z OUN sounding sampled a deepening/moistening boundary layer (as compared to the 12Z sounding). In turn, as broad ascent associated with the western U.S. trough overspreads the region, initiation of deep moist convection is expected early this afternoon, with storms likely forming across the Texas Rolling Plains along/east of the dry line. Indeed, two separate areas of initiation are possible -- one within the broad warm sector near subtle confluence/differential heating boundaries and another closer to the dry line.

Regional 12Z soundings sampled very steep mid-level lapse rates (8-9 C/km) atop rich boundary-layer moisture spreading northward. Continued heating of the boundary layer has promoted moderate/strong buoyancy across the warm sector, with MLCAPE values upwards of 3000-4000 J/kg. In combination with sufficient effective shear upwards of 40-45 kt, this thermodynamic environment will favor strong/rotating mid-level updrafts, quite favorable for very large hail in discrete cells and embedded cores. Additionally, some veering with height of low-level winds and ample boundary-layer moisture will encourage a tornadic threat, especially with supercells that acquire a more eastward propagation component. Damaging winds will also be a considerable threat, as dry mid-level air favors ample evaporative cooling and strong downward momentum in precipitation cores. Any upscale growth/cell mergers will further enhance this threat. A tornado watch is expected within the next hour or so.

..Picca/Goss.. 05/18/2017

...Please see www.spc.noaa.gov for graphic product...

ATTN...WFO...FWD...OUN...SJT...LUB...MAF...

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             33090130 34020093 34320062 34370040 34309954 34079829
             33129766 31889780 31609806

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