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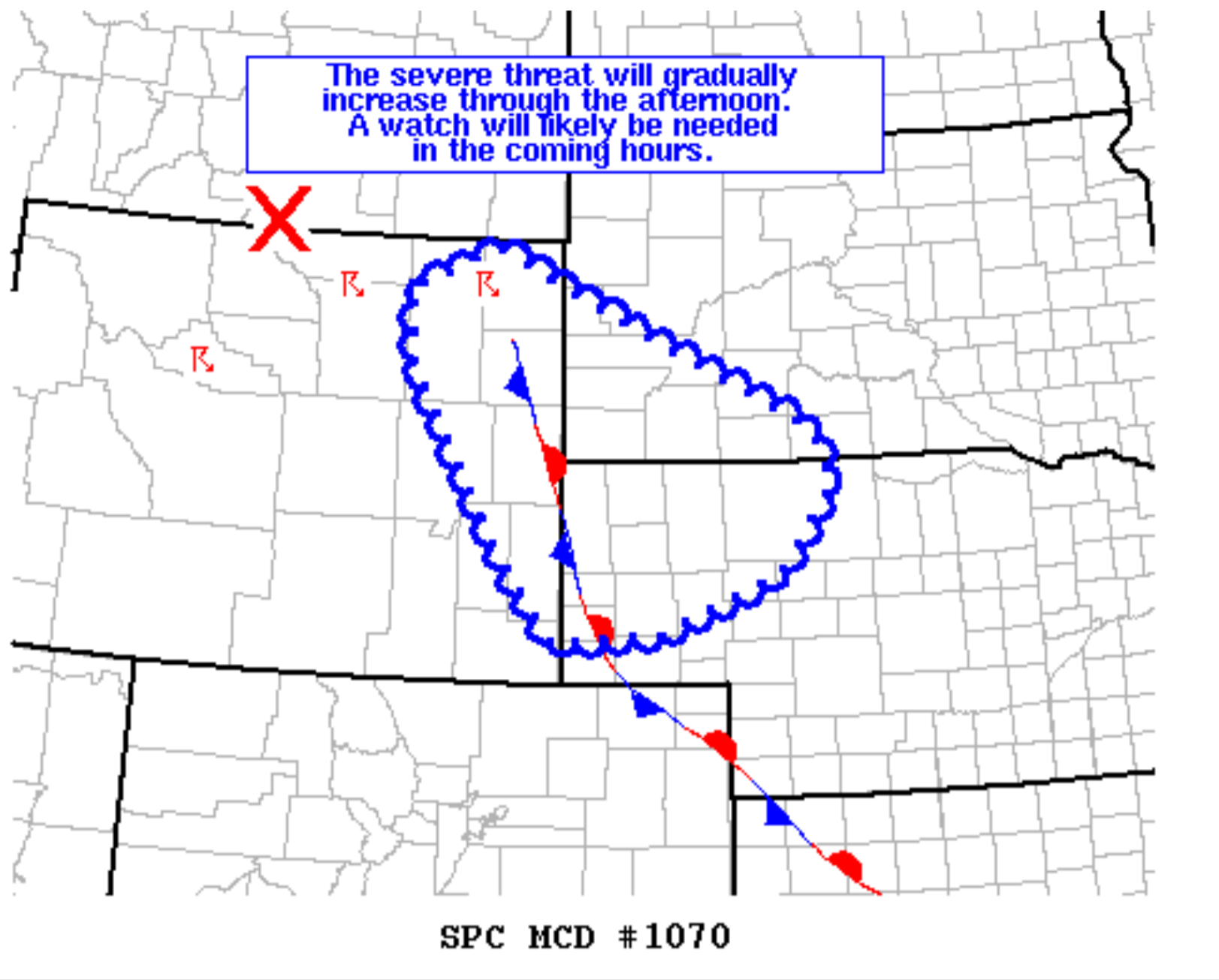
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Mesoscale Discussion 1070

< Previous MD Next MD >



Mesoscale Discussion 1070
NWS Storm Prediction Center Norman OK
1216 PM CDT Tue Jun 07 2022

Areas affected...Eastern Wyoming into southwest South Dakota and northwest Nebraska

Concerning...Severe potential...Watch likely

Valid 071716Z - 071945Z

Probability of Watch Issuance...80 percent

SUMMARY...Thunderstorms developing across the northern High Plains will gradually intensify through the afternoon. As this occurs, the probability for severe hail and wind will increase, including the potential for signification hail/wind as storms move into SD and NE. A watch will likely be needed in the coming hours.

DISCUSSION...Thunderstorms are already ongoing across the northern High Plains in advance of a progressive upper-level shortwave trough. Despite meager instability depicted in recent analyses, strong deep-layer ascent will continue to support isolated to scattered weak thunderstorms for the next several hours. Storms will become increasingly surface-based through the early afternoon, and will likely begin to propagate to the southeast along a diffuse stationary boundary/buoyancy gradient. As this occurs, gradual intensification is expected as storms move into richer low-level moisture across far southwest SD and northwest NE (where dewpoints are in the upper 40s and low 50s) and as daytime heating boosts boundary-layer instability and diminishes inhibition. Hints of downstream destabilization are already noted in recent GOES imagery in the form of increasingly agitated cumulus across portions of the NE Panhandle.

A 50-60 knot jet near 500 mb coupled with relatively weak low-level flow is supporting elongated hodographs with around 40-50 knots of effective bulk shear. In this kinematic environment, initially discrete cells may undergo splitting and will pose a threat for large to very large (up to 2 inches in diameter) hail. Low-level lapse rates have already steepened to near 8 C/km, and will support the potential for severe winds. The wind threat will likely increase late in the afternoon as storms begin to consolidate along the diffuse frontal boundary, though exactly when this transition will occur remains somewhat uncertain. Regardless, confidence remains high that a robust severe threat will emerge in the coming hours for portions of the central/northern High Plains, and a watch will likely be needed.

..Moore/Mosier.. 06/07/2022

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

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