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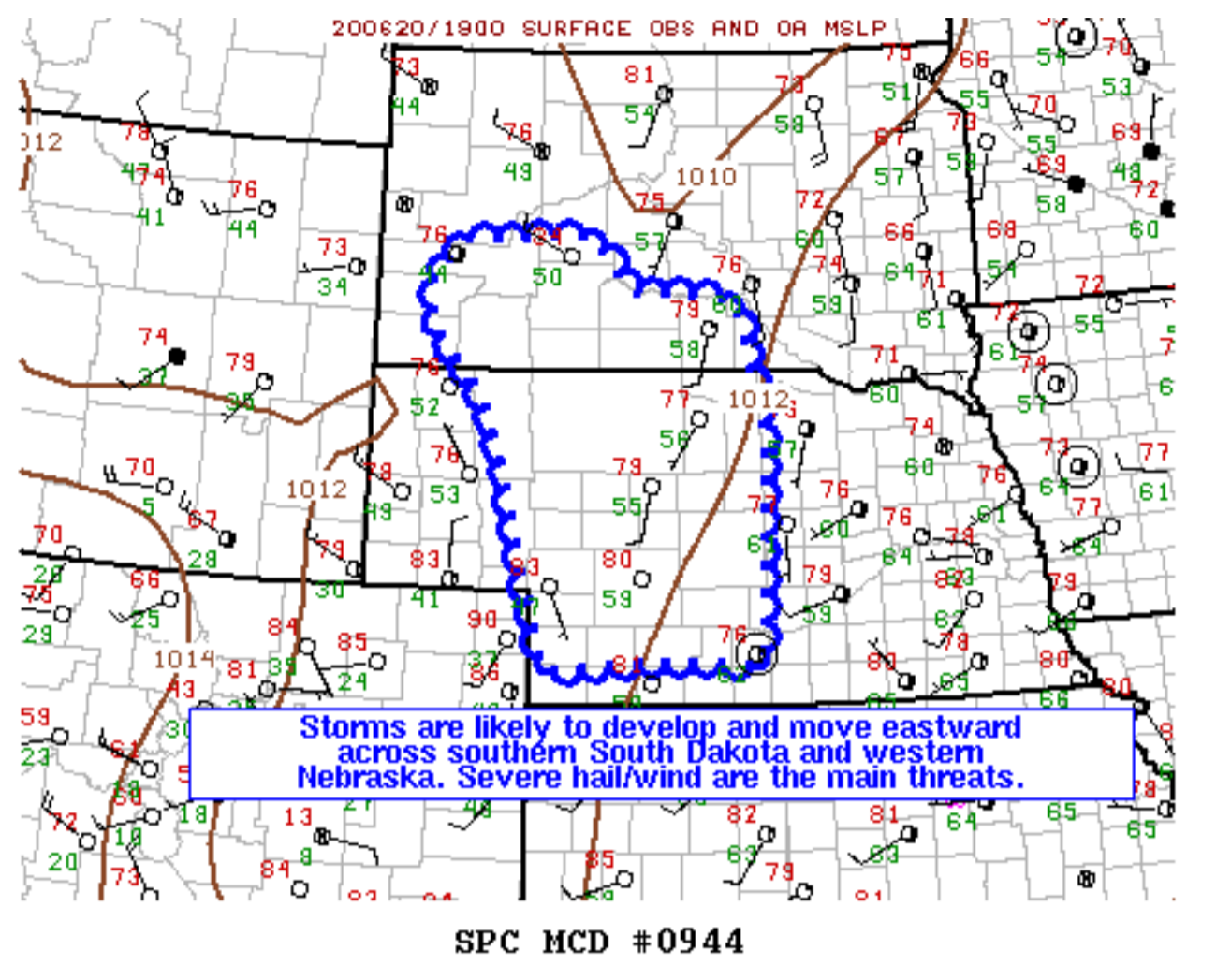
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Mesoscale Discussion 944

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Mesoscale Discussion 0944
NWS Storm Prediction Center Norman OK
0317 PM CDT Sat Jun 20 2020

Areas affected...southern South Dakota and western Nebraska

Concerning...Severe potential...Watch possible

Valid 202017Z - 202215Z

Probability of Watch Issuance...60 percent

SUMMARY...Storms are beginning to develop across western/central South Dakota and western Nebraska. Storms are likely to intensify this afternoon/evening across the area with large hail and damaging winds as the main threats. A watch issuance is possible, although there is some uncertainty regarding severe storm coverage.

DISCUSSION...A mid-level shortwave trough is rotating around the base of a larger, positively tilted upper-level trough over central Canada per water vapor imagery. Stronger winds and lower mid-level heights/temperatures are accompanying this feature as it moves southeast across eastern Montana and the western Dakotas. Enhanced surface convergence and upslope flow near the Black Hills has helped initiate thunderstorms across southwest South Dakota while convection is developing in central South Dakota along a surface trough. As storms move eastward they will encounter stronger instability/buoyancy with surface dewpoints of 55-60 F and MLCAPE of 1000-2000 J/kg. As it the wave progresses and insolation continues, mid-level lapse rates will steepen and mid-level flow will strengthen increasing chances for severe storm development.

Large hail and damaging winds are the main threats with these storms. Supercell development is possible with effective bulk shear of 25-40 knots, although it is likely convection will grow upscale by this evening. There is some uncertainty regarding severe storm coverage during the afternoon/evening, but severe hail/wind will be possible with any storm that develops across southern South Dakota and western Nebraska.

..Nauslar/Guyer.. 06/20/2020

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

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