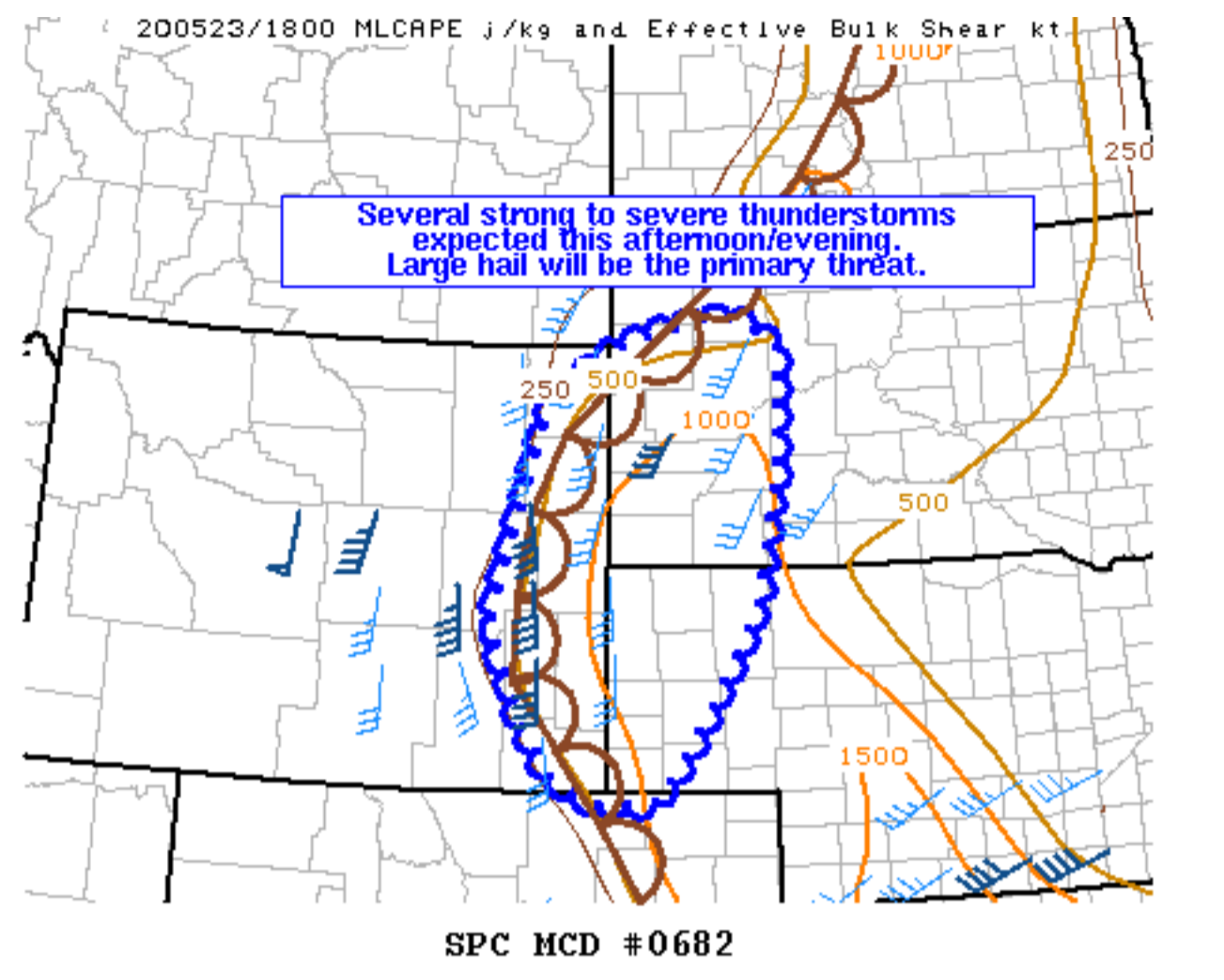


Local forecast by  
"City, St" or "ZIP"City, St  

## Mesoscale Discussion 682

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2D0523/1800 MLCAPE J/kg and Effective Bulk Shear kt



Mesoscale Discussion 0682

NWS Storm Prediction Center Norman OK

0148 PM CDT Sat May 23 2020

Areas affected...Southwest South Dakota...Eastern Wyoming...and the  
Nebraska Panhandle

Concerning...Severe potential...Watch likely

Valid 231848Z - 232045Z

Probability of Watch Issuance...80 percent

SUMMARY...Increasing thunderstorm coverage expected through the  
afternoon. Large hail (some very large) will be the primary threat  
with some severe wind gusts possible as well.

DISCUSSION...Thunderstorms have been ongoing over the Black Hills  
for several hours late this morning and into the early afternoon.  
Relatively weak instability and a strong cap has limited updraft  
strength thus far, but instability is quickly increasing with MLCAPE  
above 1000 J/kg across the region and SPC mesoanalysis suggests CINH  
has mostly eroded. Temperatures are expected to warm into the upper  
70s which should yield afternoon MLCAPE around 1500 J/kg. Expect  
storms to form in the next 1 to 2 hours near the Black Hills and  
eastward where the cu field has expanded substantially early this  
afternoon. The KUDX VWP shows effective shear around 30 to 35 knots  
which will support a combination of multicells and supercells given  
the aforementioned instability.

Additional storms are expected to develop along the dryline and  
higher terrain in eastern Wyoming and move northeastward through the  
afternoon. Limited instability across eastern Wyoming may mostly  
limit the storm intensity initially before expected strengthening  
near the NE/SD border as they encounter greater instability.

Mid-level lapse rates around 8 C/km and storm mode will support  
large hail as the primary threat with the potential for very large  
hail, especially with any supercells that can remain discrete.  
However, severe winds will also be possible considering the well  
mixed sub-cloud layer supportive of downdraft acceleration.

..Bentley/Hart.. 05/23/2020

...Please see [www.spc.noaa.gov](http://www.spc.noaa.gov) for graphic product...

ATTN...WFO...LBF...UNR...BOU...CYS...

LAT...LON 44520471 44920408 45160328 45290265 45020191 43870195  
42650220 41820275 40930342 40890410 41140471 41620507  
42480546 44410482 44520471

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