

ERTH 260: Physical Processes in the Atmosphere

Inclass Exercise 6 Key: **Student Discussion of Severe Weather Outbreak of May 1, 2008 (100 points)**

Preliminary Work and Instructor Check Wednesday 7 March
at around 11:30 AM (to allow you to finish collaborations and create jointly produced maps)

Presentations and Turn In: March 9, 2018

On the morning of May 1, 2008, a potent severe weather pattern was setting up for the southern Great Plains. A number of boundaries were evident in the surface weather data at 1500 UTC. (Note that all of the boundaries were in a different position at 1200 UTC, the time of the two soundings given below).

Today, the class will be assigned different items to analyze on the surface weather map for this pattern and the soundings for El Paso and Midland TX.

- Each of you will analyze one feature on the surface chart shown below. We will then have a discussion of each feature.
- Finally, you each will create a clean “master” map in which all the features are shown based upon your work and that of your classmates. You will turn in both the master map and the map with your particular assignment. Those of you who are paired with another student can just put both names on the collaborative map.
- In review, each student will turn in (a) their own analysis for their own assignment; and (b) one copy of the master map with all features shown obtained by careful collaboration. In other words, for the first 20 minutes students should work on their own assignment. Then, together, they will decide what goes on everyone’s Master Map. I will ask each student to describe what they did.

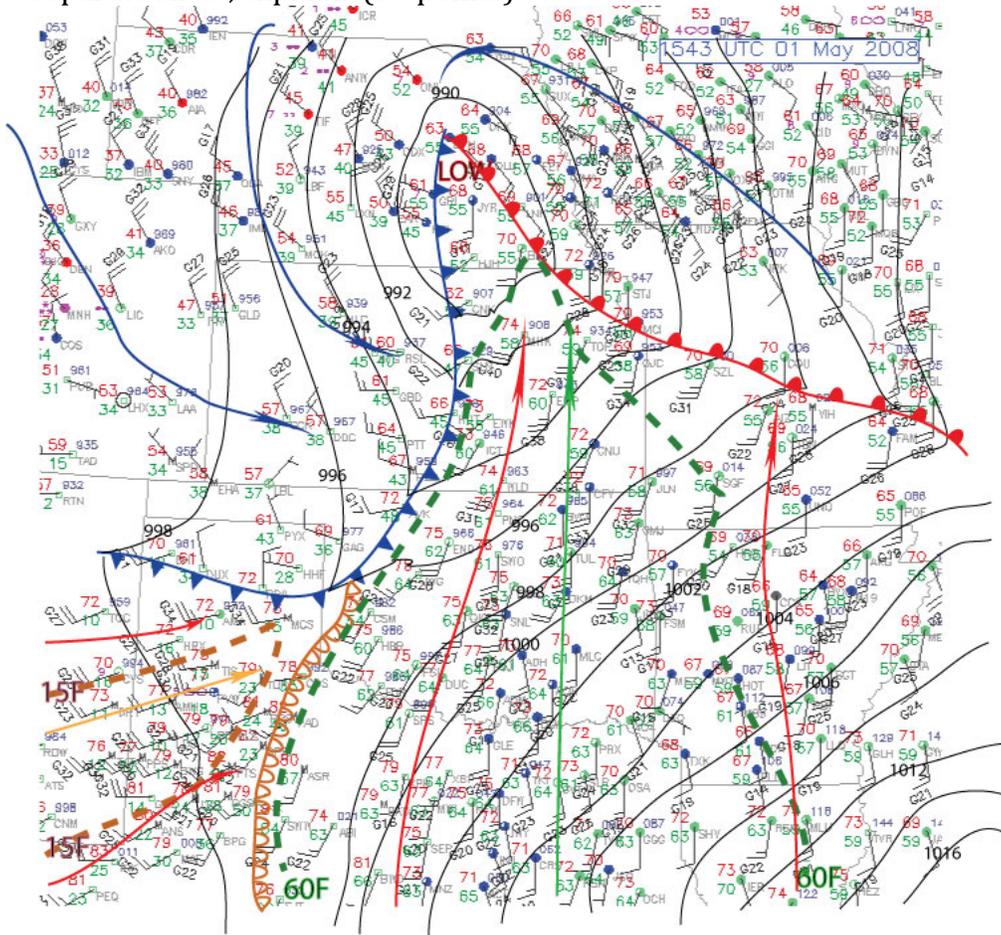
The Master Map will be projected in class and compared to mine.(50 points)

Yan Tung, Rami, Allen Cynthia and Kellen	Boundaries B and C Colorized streamlines (warm dry air, brown; warm moist air, green; cold air, blue.)
Emma Nicolas and Wyndham	Boundary A Isodrotherm encompassing area with 60F+ dew points (dashed green)

Tanay and Linda

Isodrosotherm encompassing area with 15F or less dew points (dashed brown)

All One of these sounding sites was east and one west of the Dry Line at 1200 UTC. Based upon a comparison, which was which? In several sentences on a separate sheet, explain. (50 points)



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The temperature at El Paso and Midland are basically the same. However, there is a large difference in dew points, nearly 20C, between the two stations. Clearly both stations have hot temperatures at the surface, but Midland has dew points that are very high. This suggests that there is a Dry Line between the two stations. And this is consistent with the boundary analyses above.

#1 - KLP.TXT // 72364 - KEPZ - EL PASO, TX US at 12Z 01 Mar 2015

#2 - KMAF.TXT // 72265 - KMAF - MIDLAND REGIONAL, TX US at 12Z 01 Mar 2015

