LAMONT, OKLAHOMA – 0000070506

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TTAA 55231 74646 99966 24625 15023 00008 ///// ///// 92691 21409 15526 85422

16800 18039 70058 08456 19539 50576 09969 21047 40744 23764 21557 30947 39958

22050 25069 49559 22549 20211 61357 23045 15386 69558 19031 10633 61577 22012

88161 69757 23036 77999 31313 48006 82329 51515 10164 00091 10194 16530 18538

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TTBB 55236 74646 00966 24625 11894 19000 22822 15200 33810 16208 44705 07621

55695 09864 66684 10871 77682 10871 88539 05969 99525 07378 11495 10372 22442

17969 33329 34759 44304 39361 55287 42557 66283 43356 77240 51560 88225 54956

99196 62557 11161 69757 22144 71159 33125 64169 44105 60576 55100 61576 31313

48006 82329

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\*Note: **77999** in TTAA shows that the maximum wind data is missing.

\*Note #2: In TTAA, **00008 ///// /////** shows that the 1000 mb temperature, dew point and wind data is missing. In this case, it is because the surface is at 966 mb, thus the 1000 mb level doesn’t exist. However, it is approximated that the geopotential height of the 1000 mb level (above sea level) is 8 m.

ATM 211: RAOB Plotting Exercise #2: Lamont, OK

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due date: Tuesday, February 15

On the attached page, you’ll find radiosonde and METAR data from 0000Z on a day in May in Lamont, Oklahoma. The TTAA (mandatory levels) and TTBB (Significant levels) are all given.

Plot the entire sounding on your Skew-T chart. A good method for doing this is:

1) Plot the TTAA (mandatory levels) temperature and dew points first, but don’t connect the points yet. Remember that the **dew point depression** is given in TTAA/TTBB data, so you have to subtract this number from the temperature to calculate the dew point. Also remember that the temperature is positive if the tenths place is even, and negative if the tenths place is odd. It might help to write down all the numbers before plotting. Also…it isn’t necessary to plot the dew points above the tropopause (the “88” group).

2) Mark and label the tropopause (“88” group)

3) Plot the TTBB (significant levels) temperature and dew points.

4) Connect the dew point and temperature points with a straight edge. Typically, temperature is red and dew point is green. Your dew point and temperature lines should *never* cross, but they may meet. If they meet, the air at this level is saturated.

5) Plot the winds from the TTAA data on one of the wind axes.

6) Write your name on the Skew-T (preferably on the name label on the reverse side).

Q1: At what level is the LCL for a parcel rising from the surface? Show your parcel path in blue or black on the Skew-T.

Q2: Now continue the parcel upward past the LCL. When the parcel reaches 500 mb, is it warmer or colder than the environment temperature? How much warmer/colder is it? Again, show your parcel path on the Skew-T.

Q3: Compute the 1000-500 mb thickness. Express your answer in dekameters (dam). *Hint: You are given the 1000 and 500 mb height in the RAOB code.*