SWAC – Weather Balloon Launch

24 July 2009

Overview

What's a RadioSonde

- What is a radiosonde
- What data does it collect
- Why are those data important

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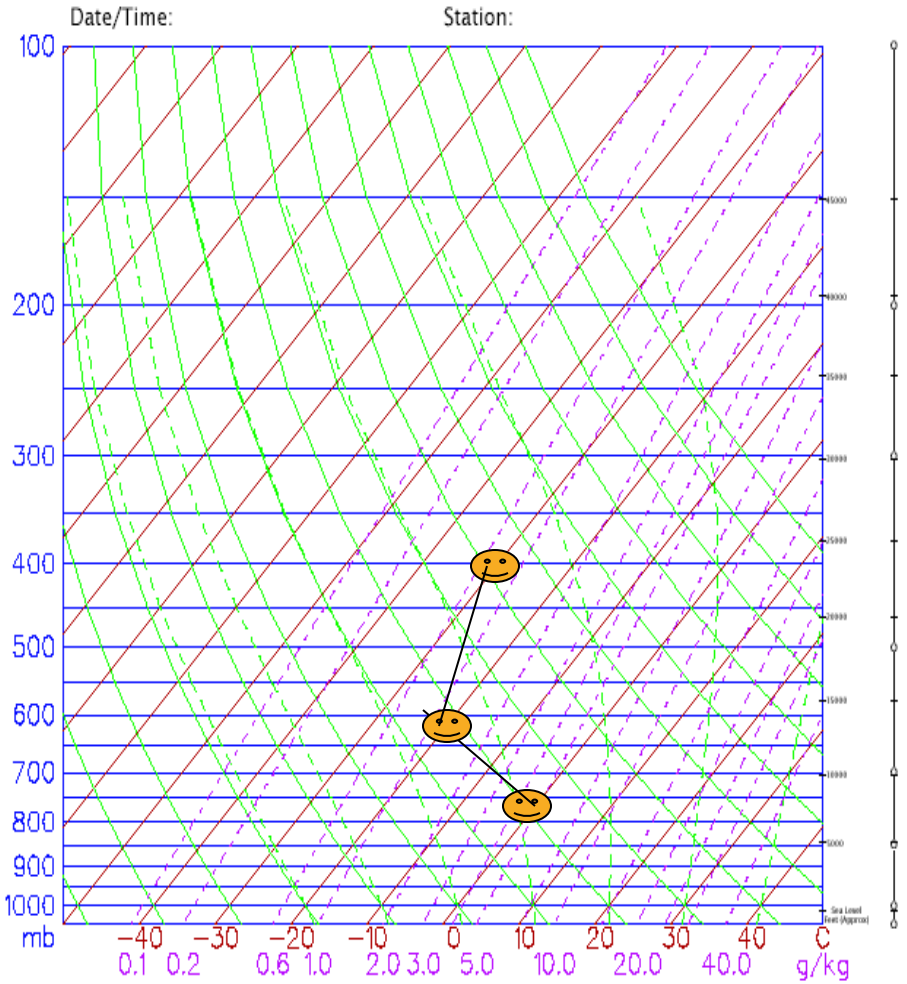
What is a Radiosonde

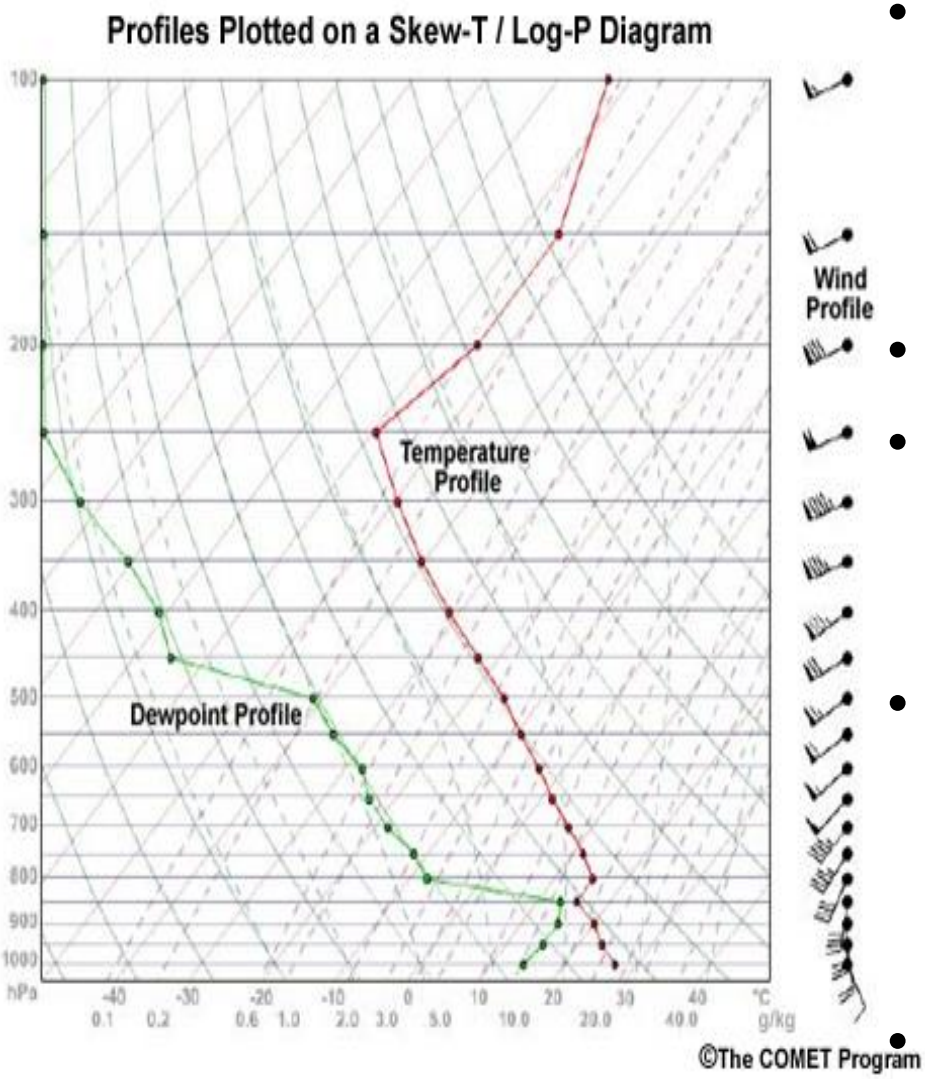
- balloon carries meteorological instruments aloft (radiosonde)
- temperature, dew point (moisture) and wind are measured at various levels
- when plotted a snapshot of the distribution of these variables in the vertical results
- this plot allows meteorologists to diagnose the atmosphere in the vertical

Plotting the data from a radiosonde on a SKEW-T chart



- SKEW-T chart (left) consists of pressure along the “Y” axis or vertical in millibars (MB)
- temperature along the “X” axis (Celsius), are solid red lines lower left to upper right.
- temperature and dew point values are plotted at junction of appropriate pressure and temperature lines.
- for example, the orange dot represents a temperature value of minus 20C at 500 MB pressure level.

What a vertical plot looks like

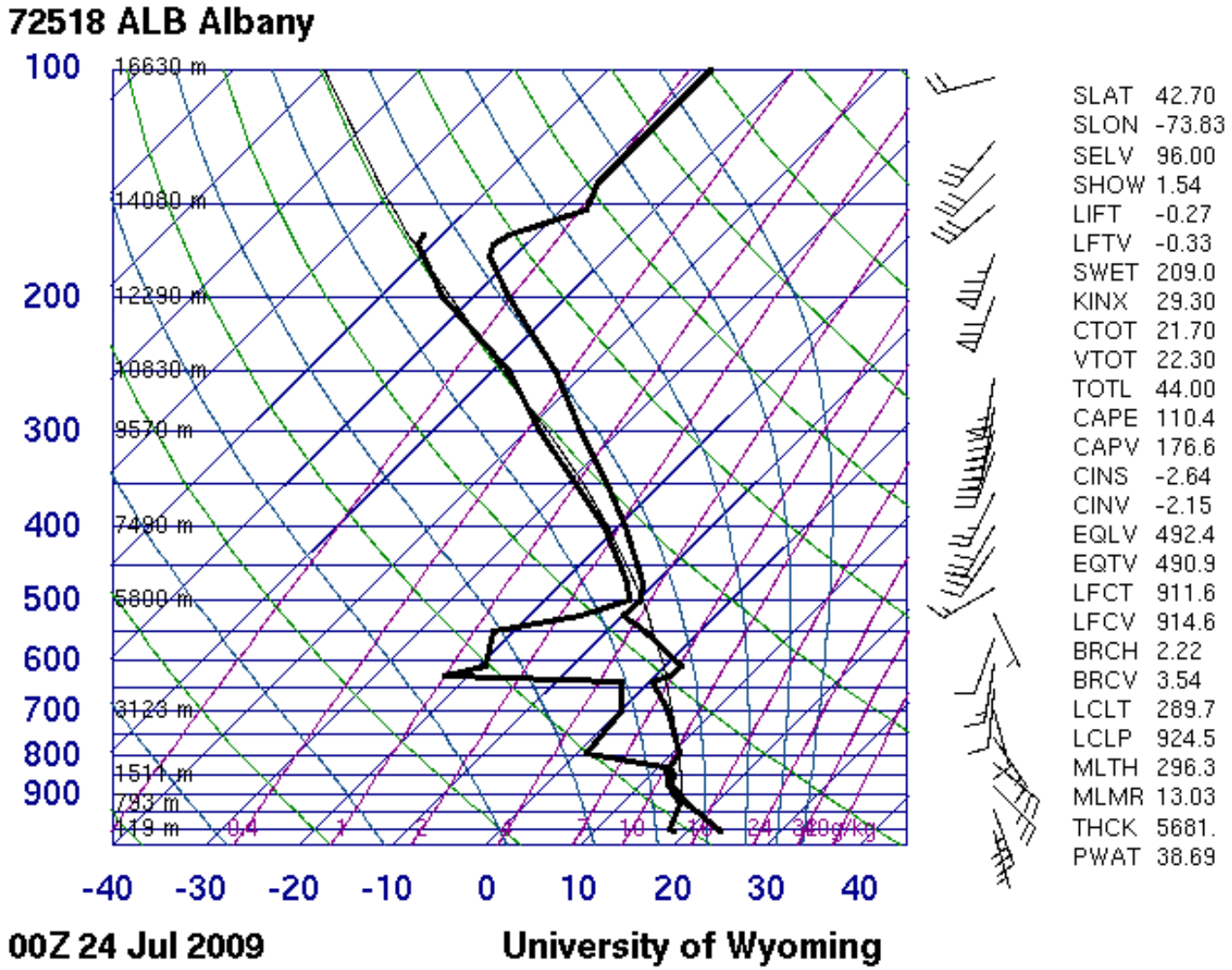


- temperature and dewpoint (moisture) are plotted at appropriate pressure levels
- temperature values - RED line
- dewpoint temperature values - GREEN line.
- the closer together the temperature and dew point, the more moist the air is.
- where the lines are close, clouds are likely

Why these measurements are important

- ***These observations allow us to diagnose the atmosphere similar*** to the snapshot that blood pressure measurements provide
- Without these data…we would be ***limited to observing the atmosphere in one dimension*** (horizontal)
- When coupled with surface weather reports and satellite data, ***we get a 3 dimensional view (horizontal, vertical and time) of atmospheric*** temperature, moisture and wind
- These measurements provide clues assisting the meteorologist in ***understanding and anticipating motion in the atmosphere***

Albany, NY sounding at 8:00pm last night



Maniwaki, PQ sounding at 8:00pm last night