

Station Plot Information

Atmospheric data is collected by radiosondes at many locations around the globe. This coordinated effort is undertaken every 12 hours at the times of 00Z and 12Z. The “z” stands for “Zulu” time, Greenwich Mean Time (GMT), or Universal Coordinated Time (UCT). 00Z is 6AM Central Standard Time (CST) or 5AM Central Daylight Time (CDT). 12Z is 6PM CST or 5PM CDT.

Each radiosonde, or balloon, must record data at the mandatory pressure levels of surface (sfc), 1000mb, 850mb, 700mb, 500mb, 300mb, 200mb, and 100mb. Data may also be recorded at elevations where tendencies for the variables of interest are changing. For example, if temperature begins to increase with height (denoting a temperature inversion), then a recording is made regardless of the pressure level.

These data are collected and recorded in chart form for each of the mandatory levels using a station format shown below.

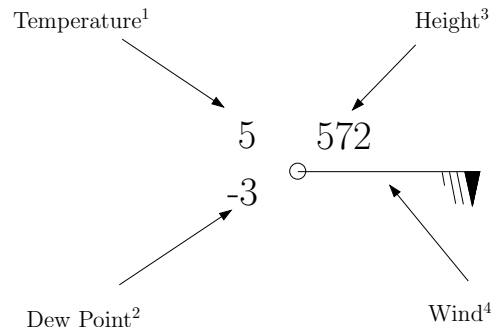


Figure 1: Station plotting format.

An explanation of these data is given below:

1. **Temperature** is given in degrees Celsius on upper air charts, and degrees Fahrenheit on the surface chart.
2. **Dew Point** is given in degrees Celsius on upper air charts, and degrees Fahrenheit on the surface chart. The dew point is the temperature at which condensation or deposition will begin. It usually is less than, sometimes equal to, but never greater than the air temperature. When equal, or nearly equal, to the air temperature, one would expect to see clouds at that level (fog at the surface).
3. **Height** is the elevation at which the given pressure level occurs. The list below gives the average height of the given mandatory level and an explanation of how one interprets the value on the plot.

Pressure	Ave z	Presentation Formula	Example
850 mb	1500 m	the first digit is a “1” and is omitted	478 = 1478
700 mb	3100 m	the first digit is either “2” or “3” is omitted	101 = 3101, 893 = 2893
500 mb	5500 m	the last digit is a “0” and is omitted	542 = 5420
300 mb	9300 m	the last digit is a “0” and is omitted	934 = 9340

On the **surface chart**, the surface pressure in mb is shown instead of the height. The convention is to drop the “1” if the pressure is greater than 1000mb. Therefore, 011 translates to a pressure of 1011mb and 996 is simply 996mb.

4. **Wind** is given as a “staff” or “barb” that indicates the direction *from which the wind is coming* and the speed. The speed is determined by using the triangles, lines, and half-lines drawn on the staff. The triangle represents 50 knots (A knot is one nautical mile per hour. A nautical mile is approximately 1.1 statute miles or “miles”), the line represents 10 knots and the half-line 5 knots. The staff in the figure above indicates a speed of 75 knots.