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
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 20°C 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