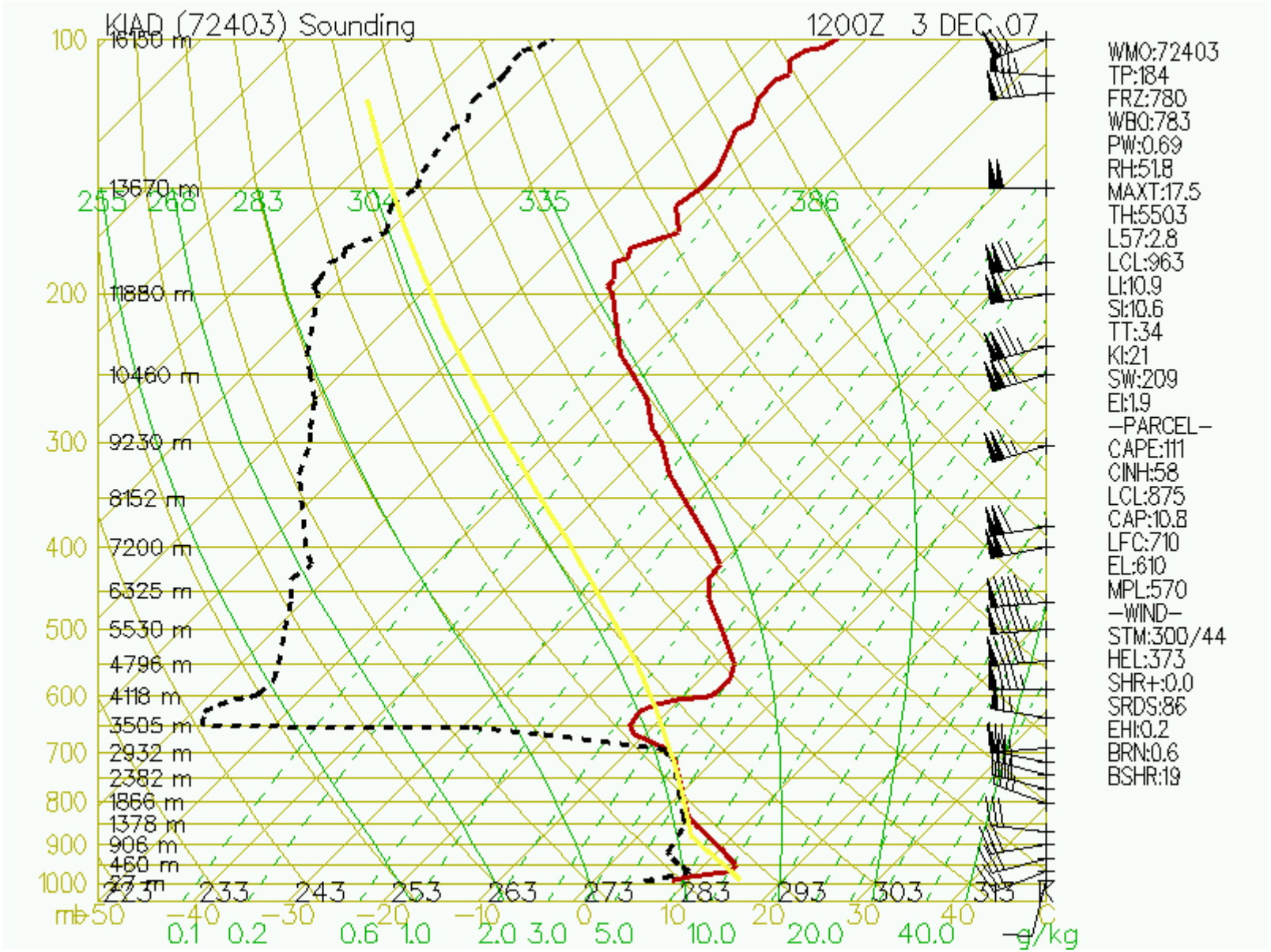
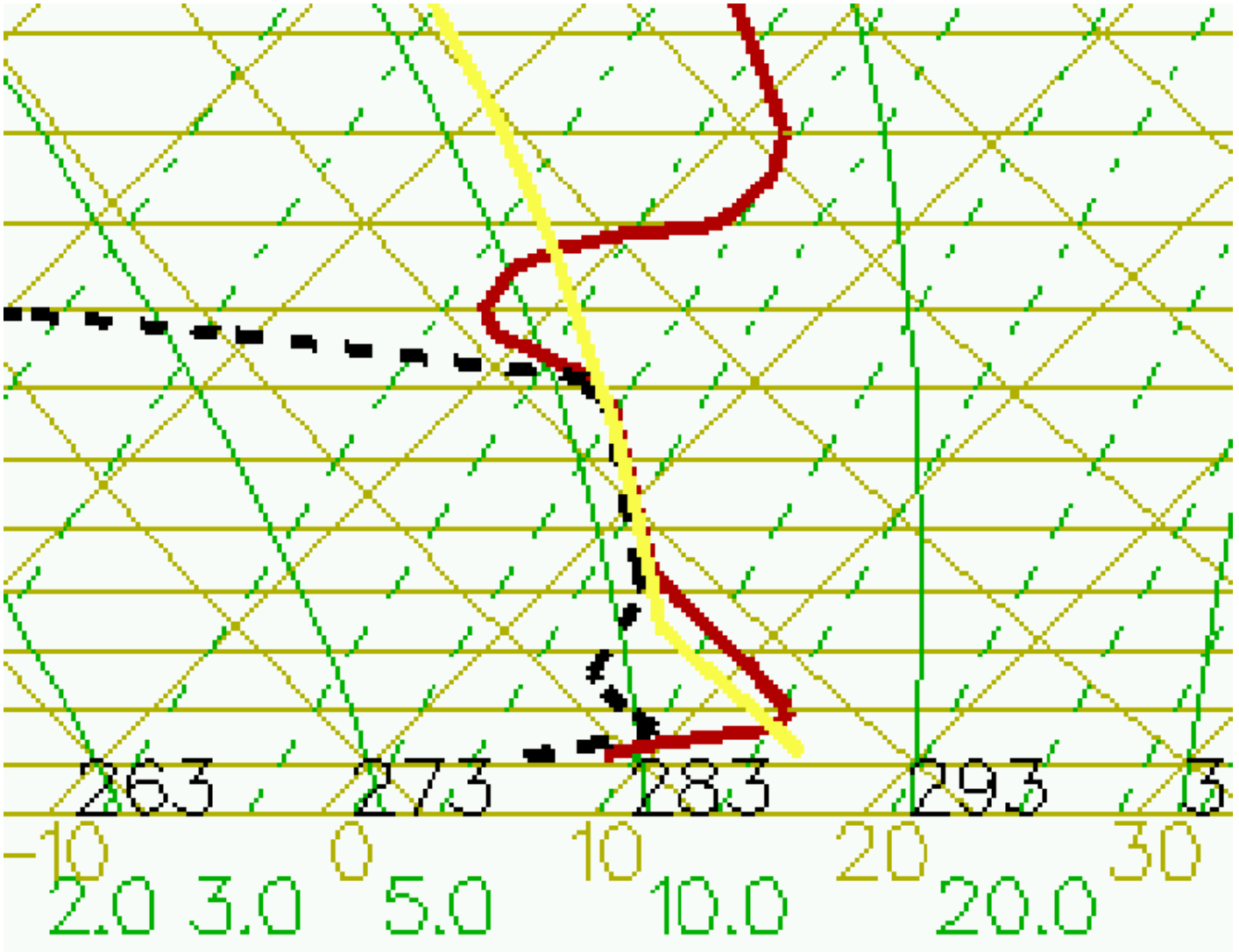
Two Skew-T log(p) scenarios

- Detecting icing conditions
- Low-level inversions

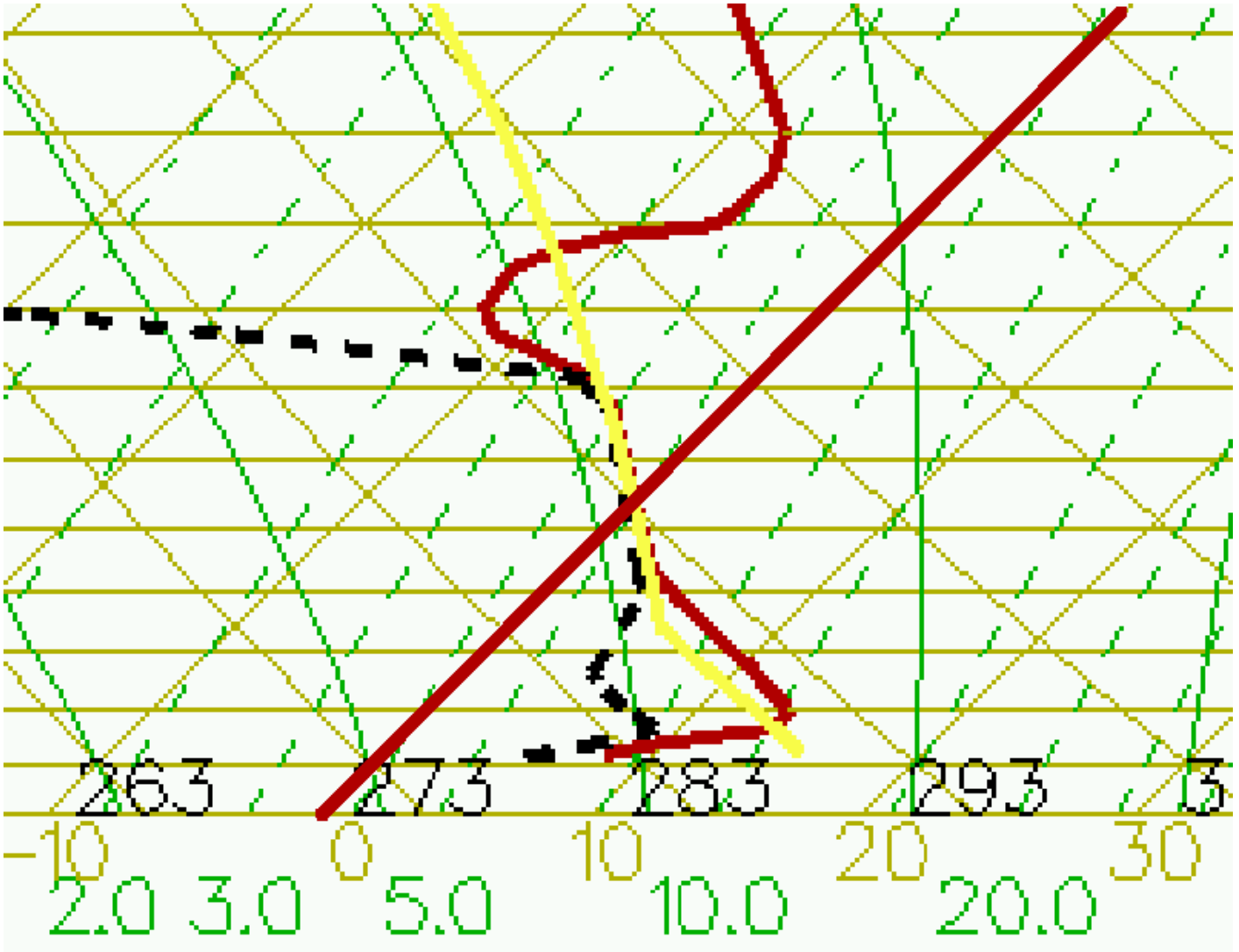
Plymouth State Weather Center



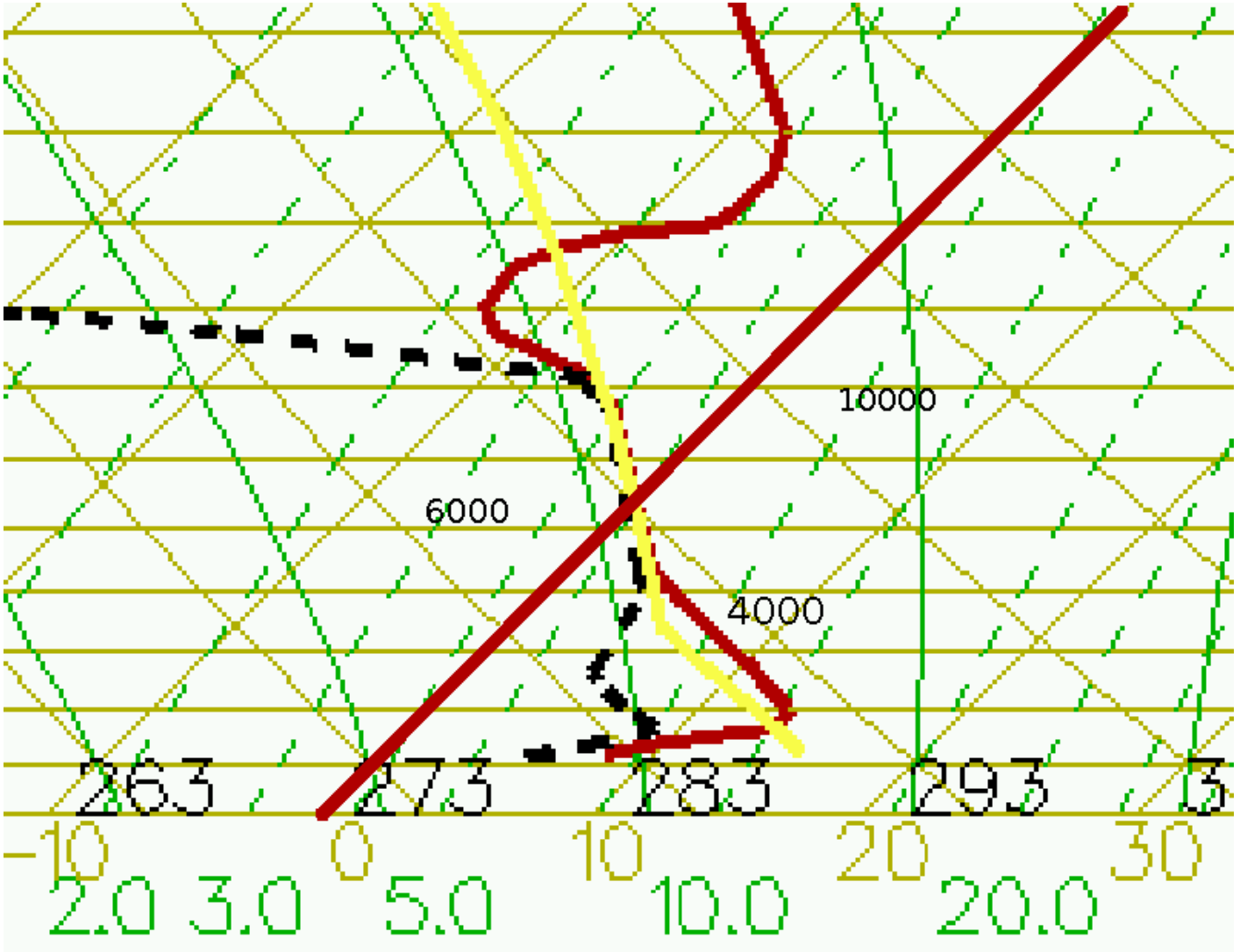
Zoom In



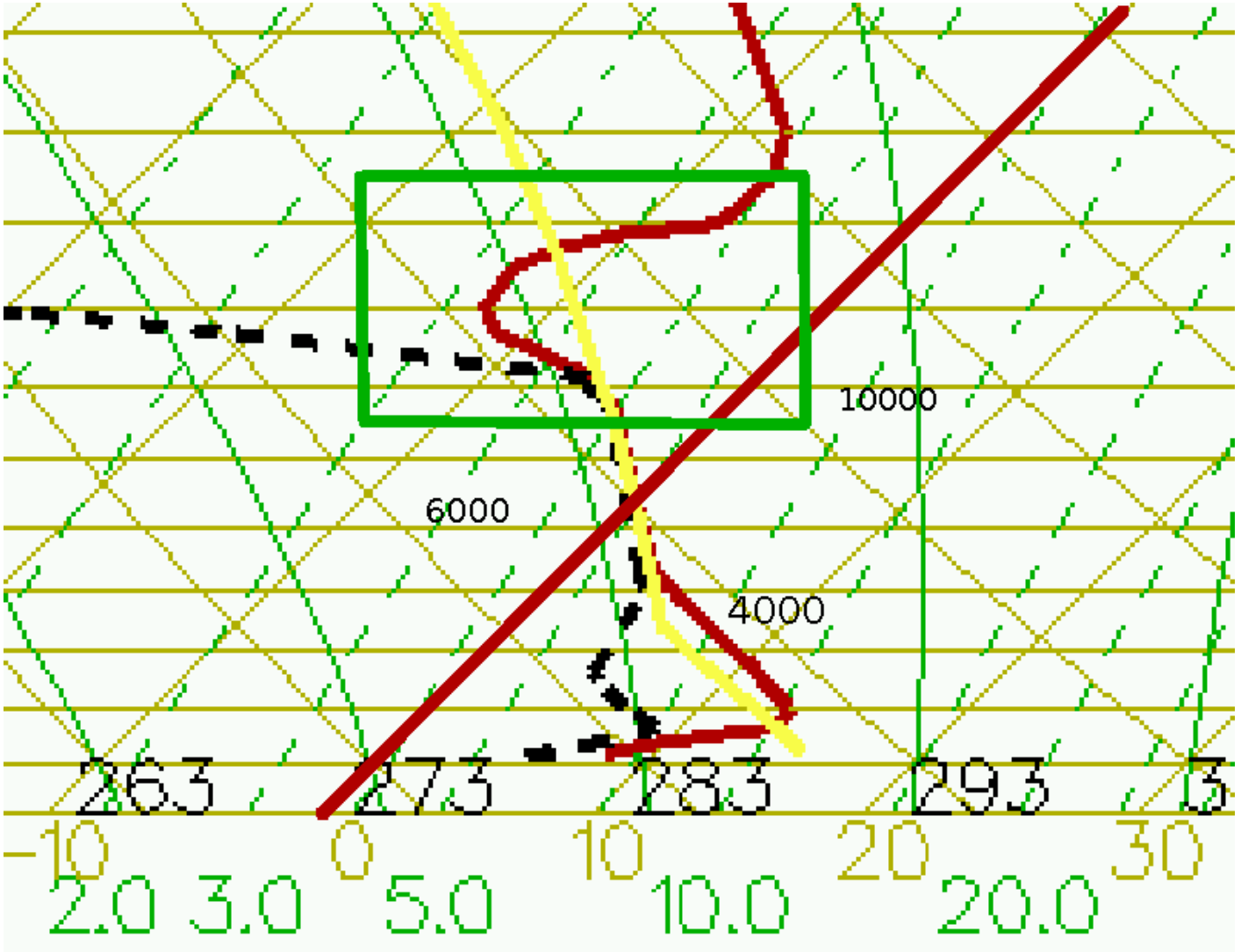
Zero Degree Line



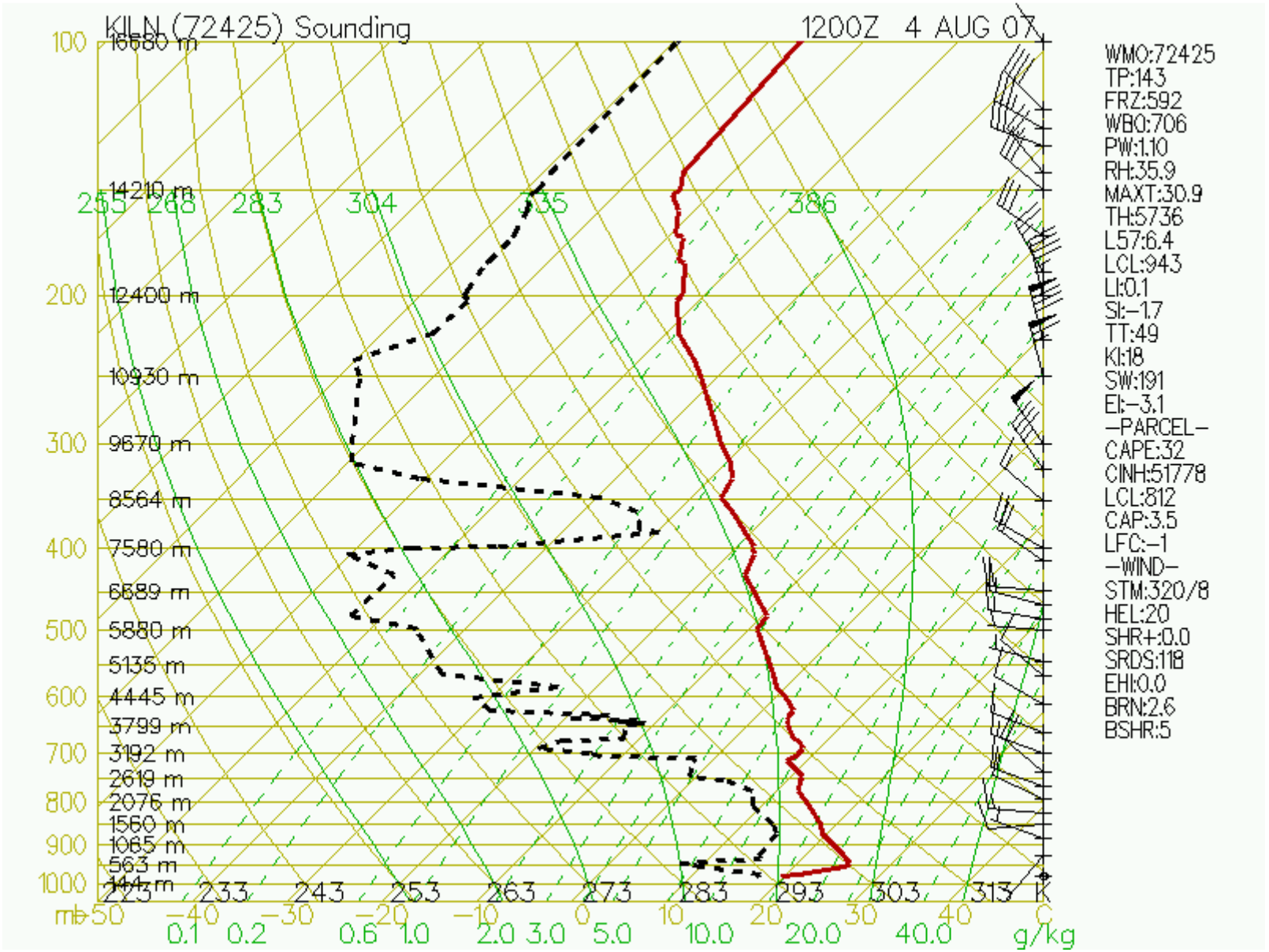
Saturated Layer, Freezing Level



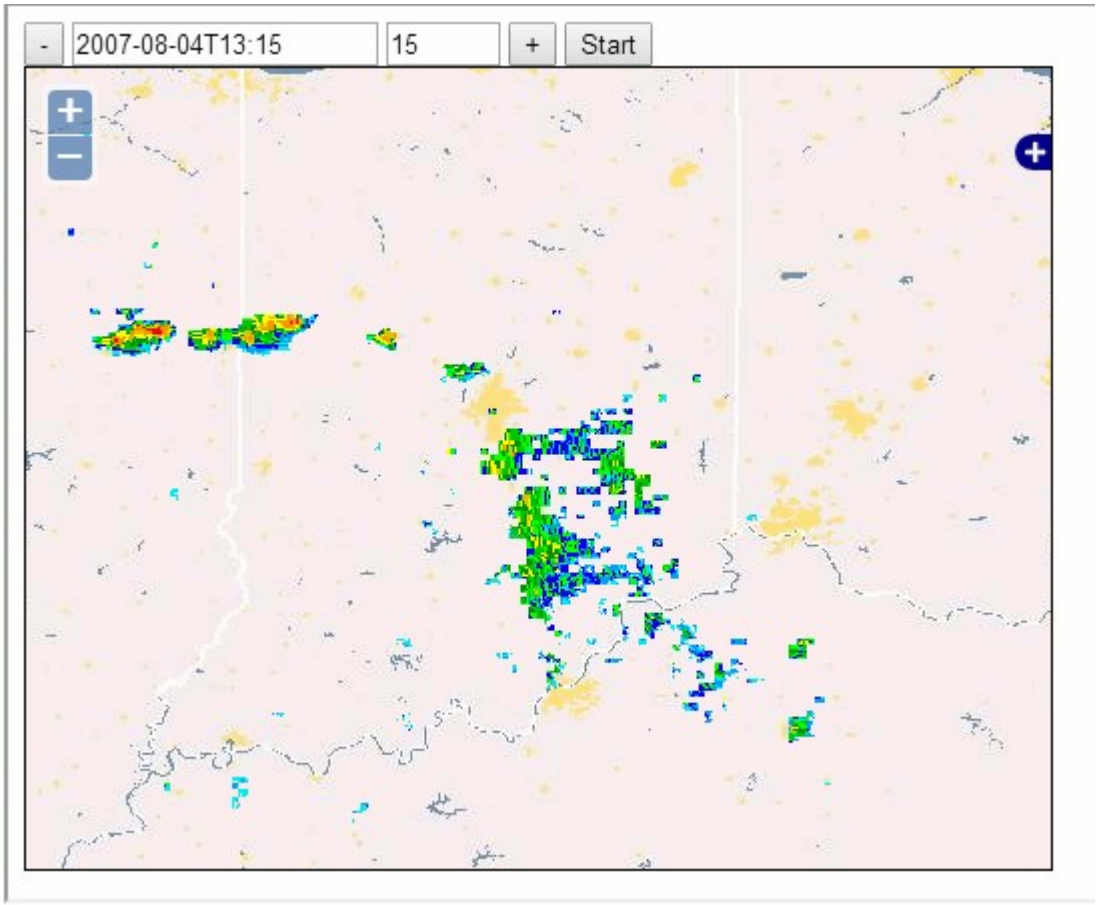
Super-adiabatic Lapse Rate



Plymouth State Weather Center



RADAR Shows Anomalous Propagation



Sources

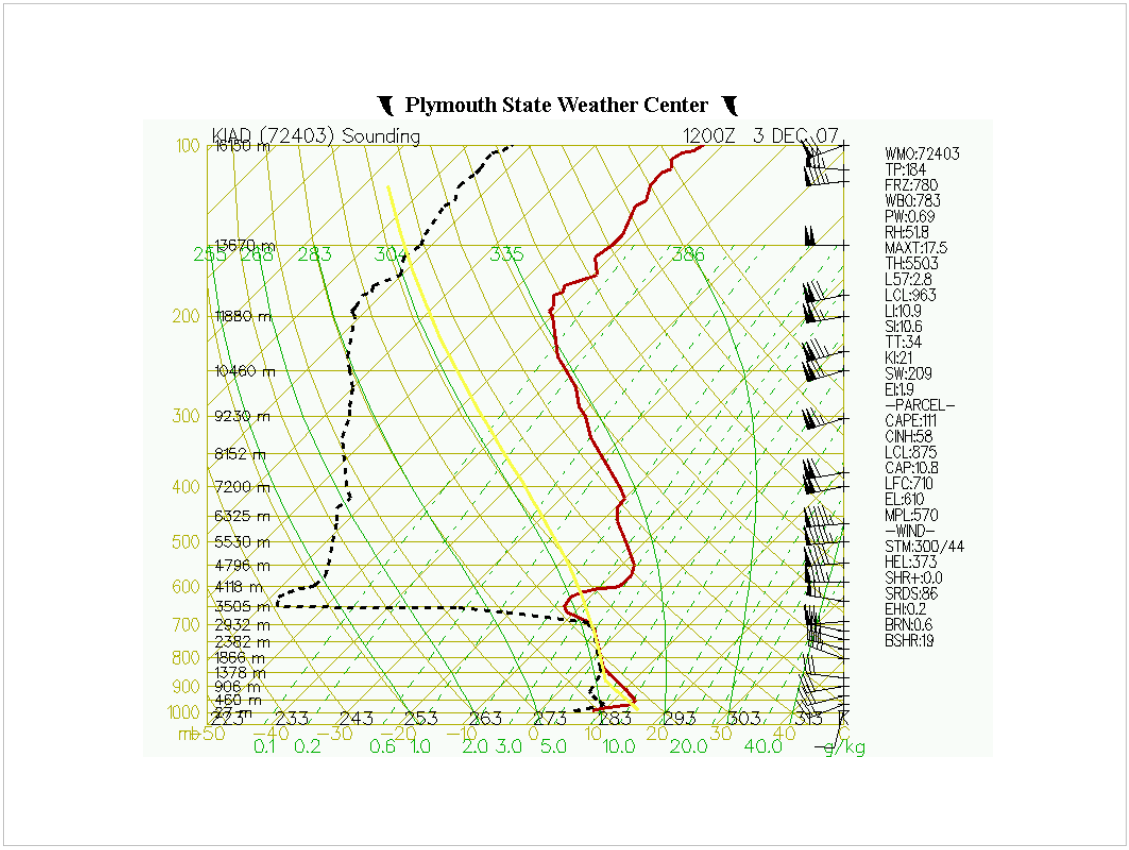
- Skew-T plots from:
  https://vortex.plymouth.edu/myo/upa/raobplt-a.html

- RADAR archive pictures from:
http://mesonet.agron.iastate.edu/docs/nexrad_composites/

- Skew-T course Pilot Workshop:
https://pilotworkshop.com/training/mastering-the-skew-t-diagram/

Two Skew-T log(p) scenarios

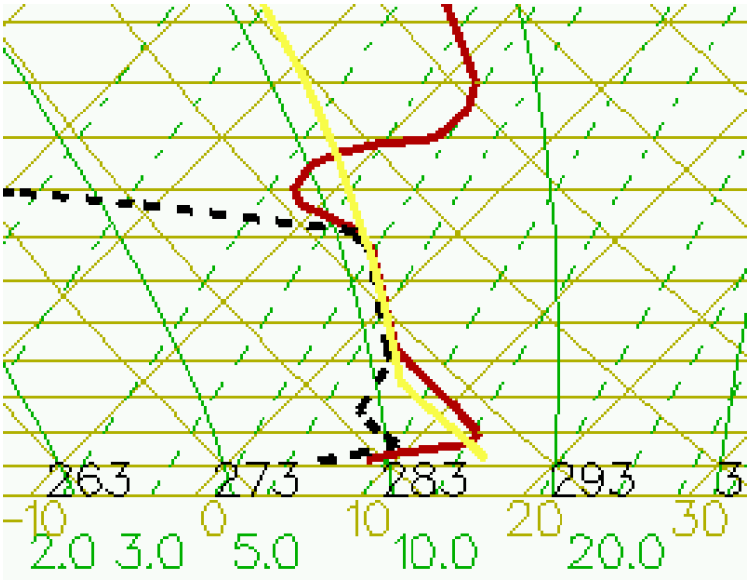
- Detecting icing conditions
- Low-level inversions



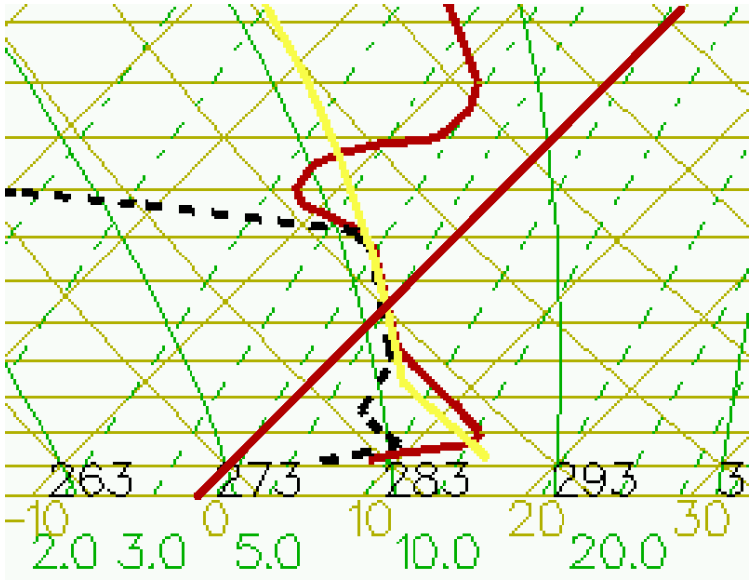
This is a RAOB – an observation, not a RUC. It was taken near Dulles airport in 2007.

It has features that you can't see on a RUC, but there are only a limited number of RAOBs.

Zoom In

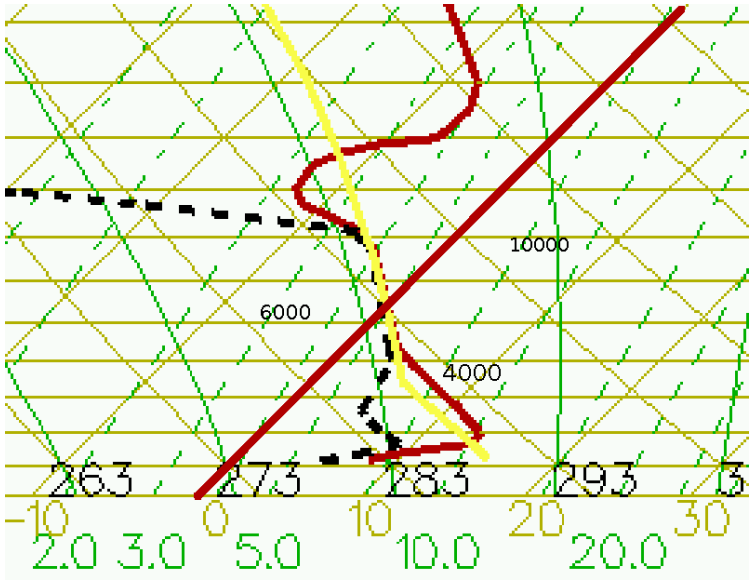


Zero Degree Line



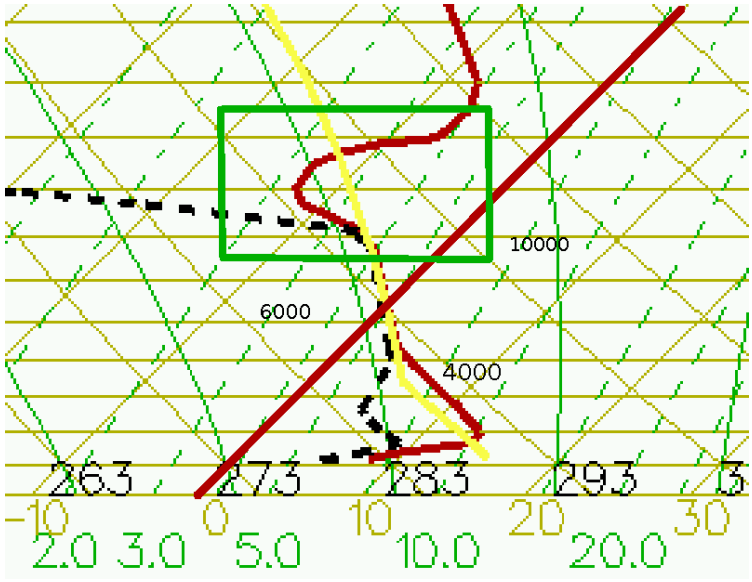
The zero degree line is highlighted in red.

Saturated Layer, Freezing Level



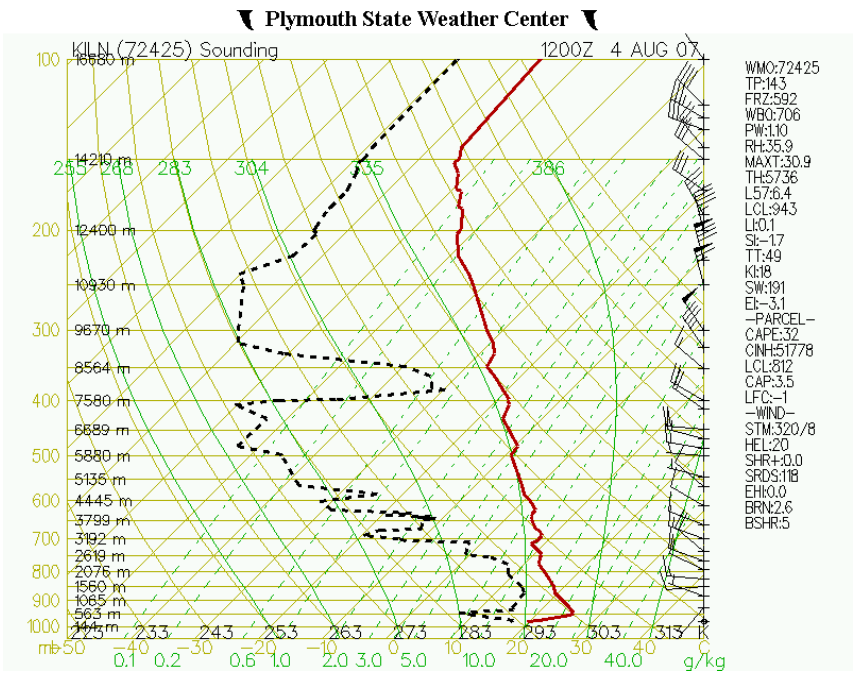
There's a saturated layer from 4000 feet to 10000 feet, with a freezing level of about 6000 feet. If you're going to get icing, it will likely be somewhere between 6,000 and 10,000 feet.

Super-adiabatic Lapse Rate



The temperature line bending left at 10,000 feet shows super-adiabatic cooling. This is because the probe was iced over, and the ice began evaporating at 10,000 feet on exiting the cloud layer. The evaporation cooled the probe. Once the ice was gone, the probe began to warm again.

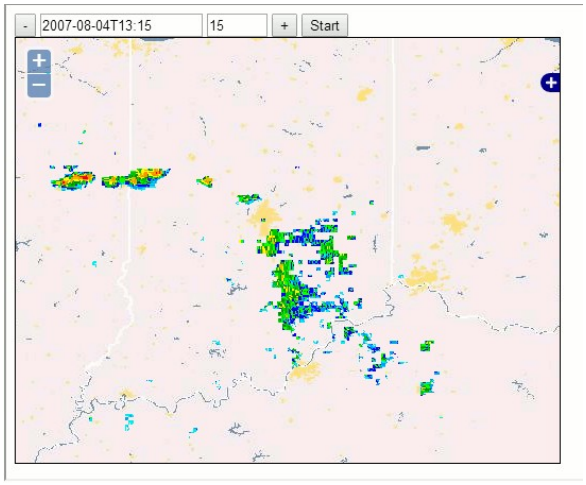
This is a clear indication of icing conditions.



Another RAOB, near Cincinnati.

Notice the strong temperature inversion near the surface.

RADAR Shows Anomalous Propagation



Most of the "weather" in this image is just AP. The only real storm here is the pair of small cells on the left-hand side. The larger area is just noise caused by AP – the RADAR signal is bent towards the ground by the inversion layer.

Sources

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