

Comparison Between Observed Soundings and WRF Model Soundings at the UU Roosevelt Site

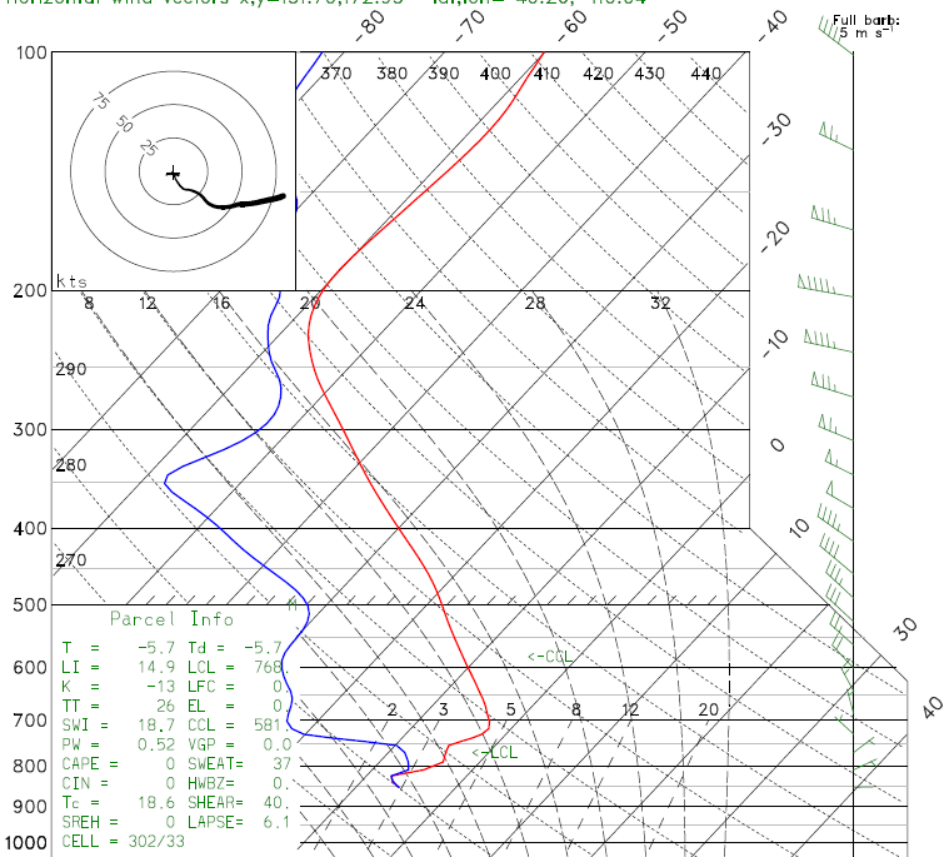
1-7 February 2013

Erik Neemann

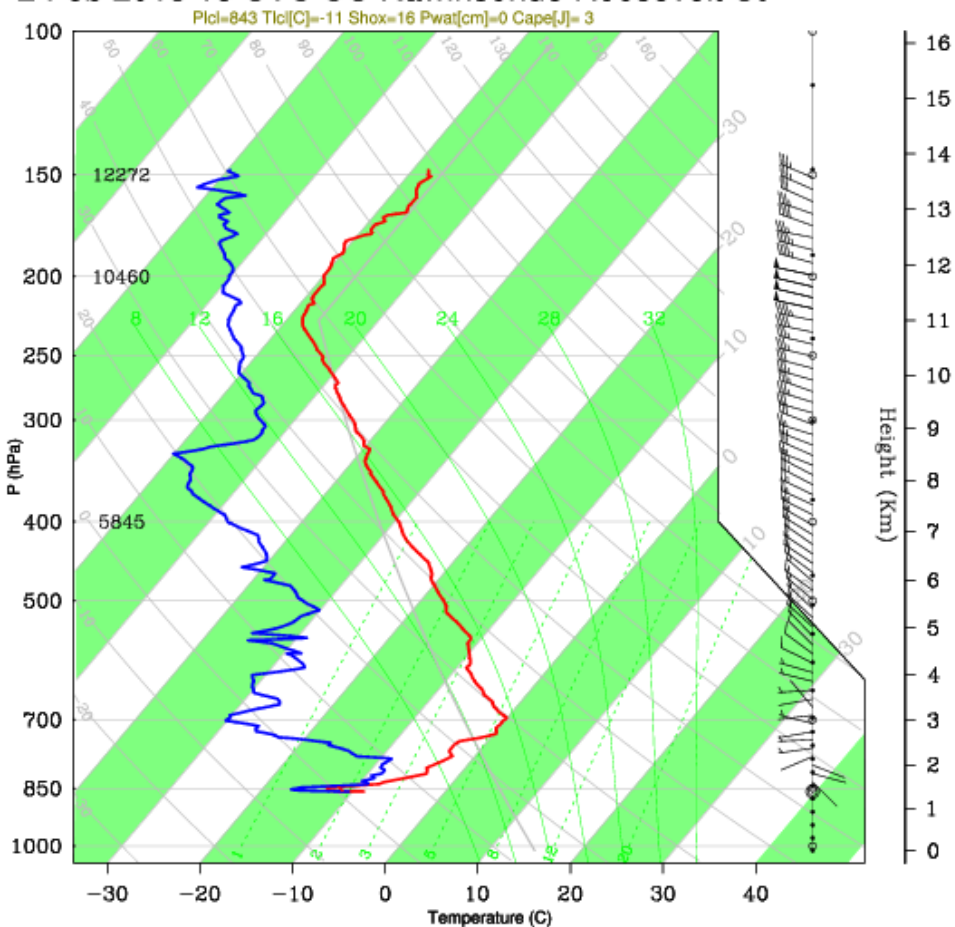
- Overall temperature profile well-represented above 800mb
- Near surface temps 6 C too warm
- Accurate inversion around 700mb, but 2 C too cool
- WRF 600-700mb winds a little too strong and northerly

*Note different wind barb convention
 Model sounding: full barb = 5 m/s
 Observed sounding: full barb = 10 m/s

Uintah Basin - Roosevelt Soundings
 Fcst: 42.00 h Valid: 1800 UTC Sat 02 Feb 13 (1100 MST Sat 02 Feb 13) Init: 0000 UTC Fri 01 Feb 13
 Temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Dewpoint temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Horizontal wind vectors x,y=151.70,172.93 lat,lon= 40.26,-110.04



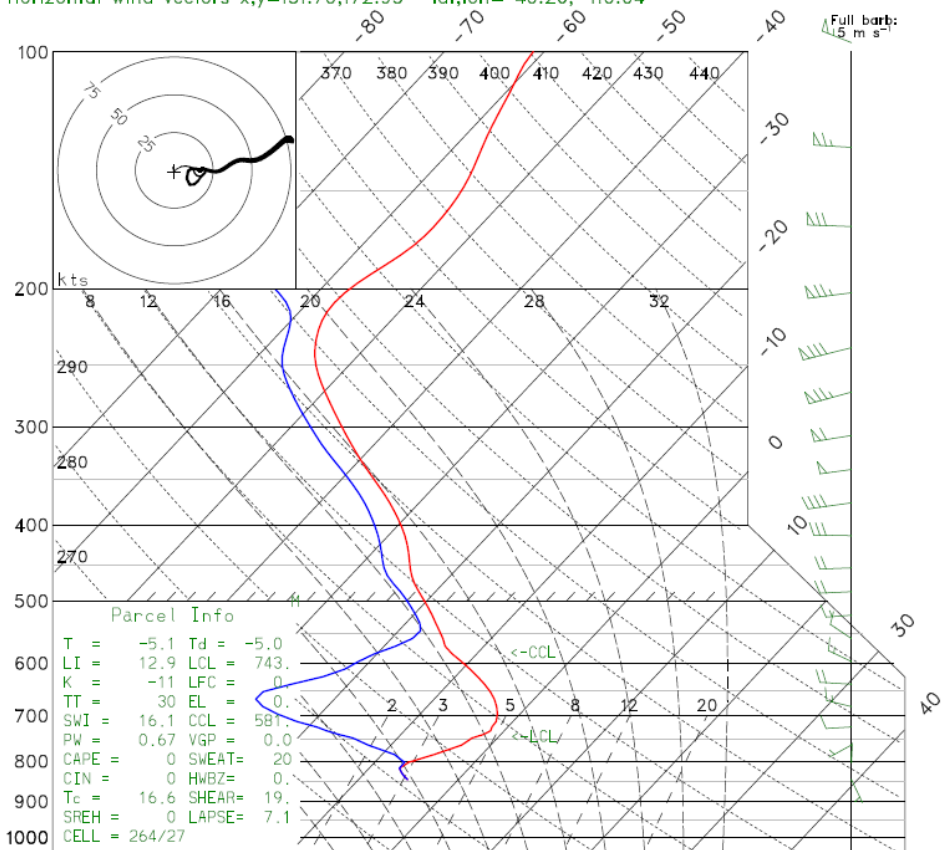
2 Feb 2013 18 UTC UU Rawinsonde Roosevelt Ut



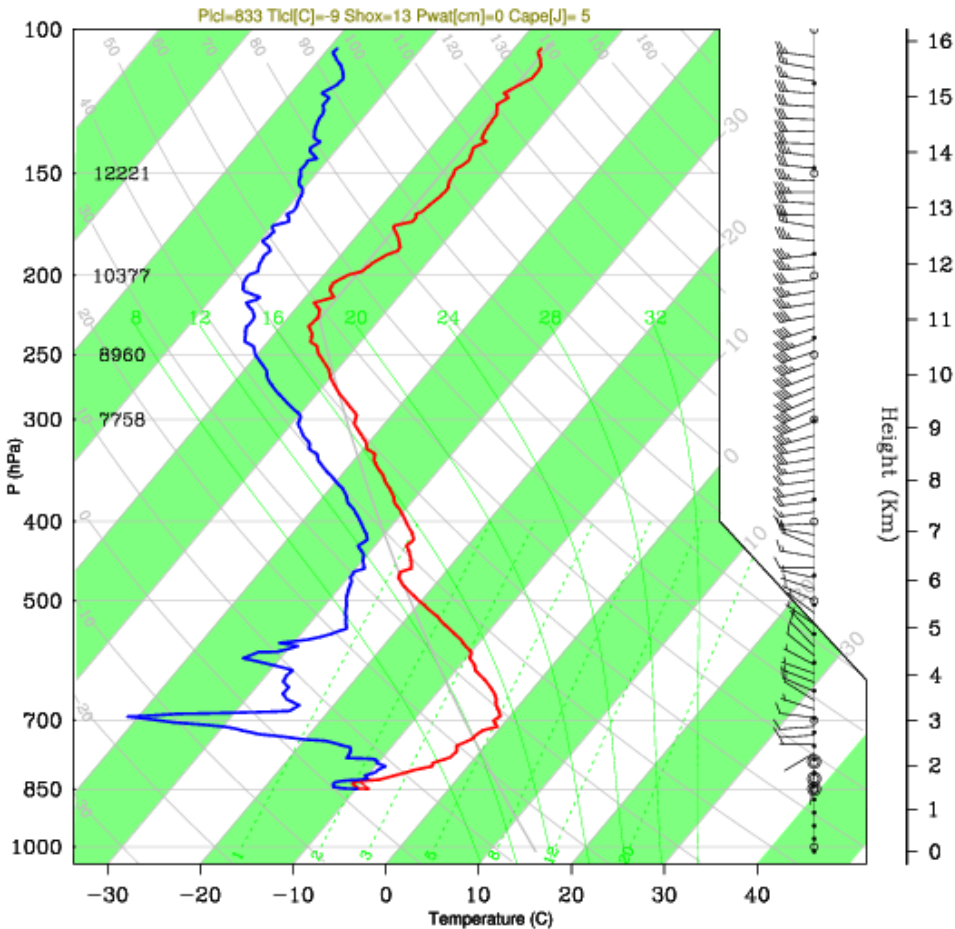
- Overall temperature profile well-represented to 800mb
- WRF too moist below 800mb
- Near-surface temperature 4-5 C too cool
- Accurate winds throughout profile

*Note different wind barb convention
 Model sounding: full barb = 5 m/s
 Observed sounding: full barb = 10 m/s

Uintah Basin - Roosevelt Soundings
 Fcst: 66.00 h Valid: 1800 UTC Sun 03 Feb 13 Init: 0000 UTC Fri 01 Feb 13
 Temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Dewpoint temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Horizontal wind vectors x,y=151.70,172.93 lat,lon= 40.26,-110.04



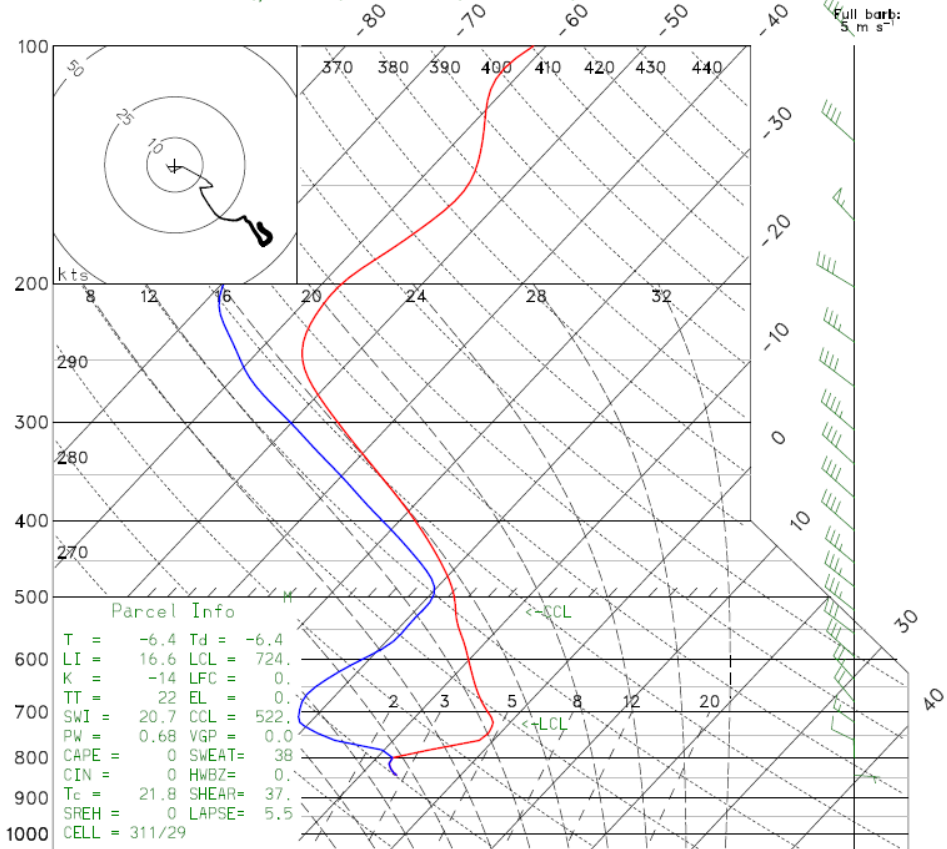
3 Feb 2013 18 UTC UU Rawinsonde Roosevelt Ut



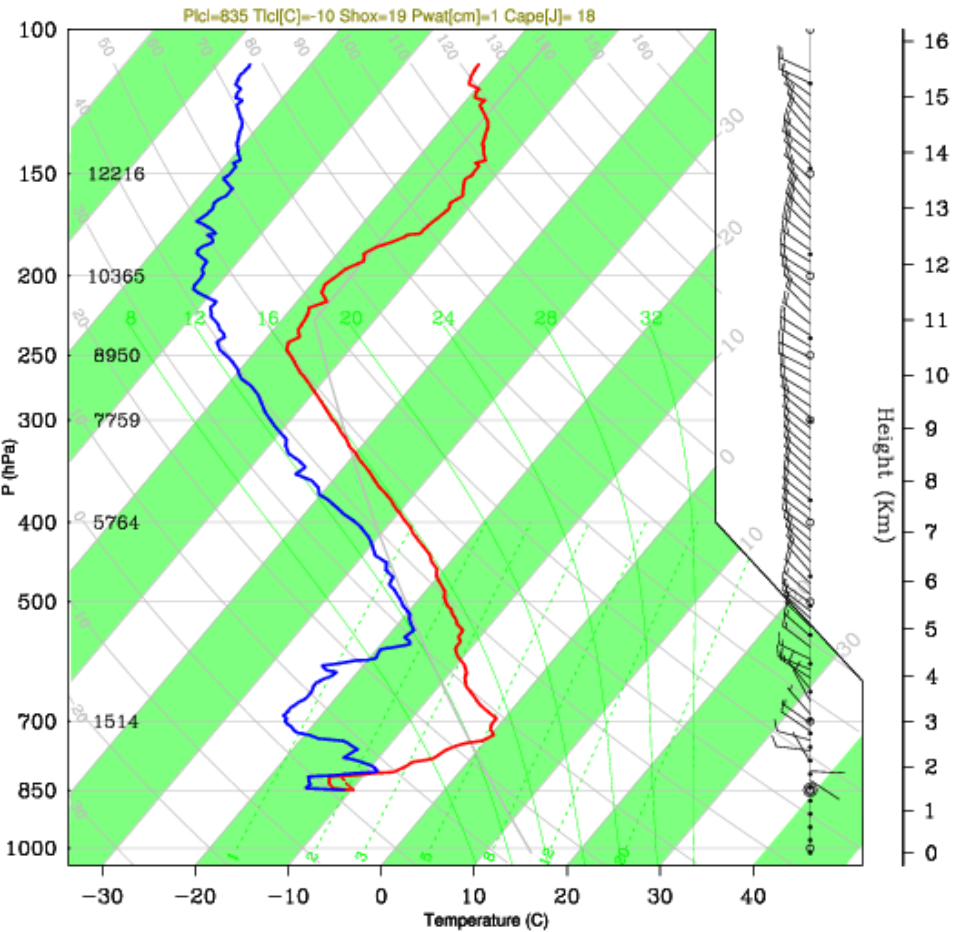
- Temp profile very good to 800mb, perhaps 2 C too warm at 800mb
- Too moist below 800mb
- Inversion height handled well, temp within 1 C
- Accurate winds throughout profile

*Note different wind barb convention
 Model sounding: full barb = 5 m/s
 Observed sounding: full barb = 10 m/s

Uintah Basin - Roosevelt Soundings Init: 0000 UTC Fri 01 Feb 13
 Fcst: 90.00 h Valid: 1800 UTC Mon 04 Feb 13 (1100 MST Mon 04 Feb 13)
 Temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Dewpoint temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Horizontal wind vectors x,y=151.70,172.93 lat,lon= 40.26,-110.04



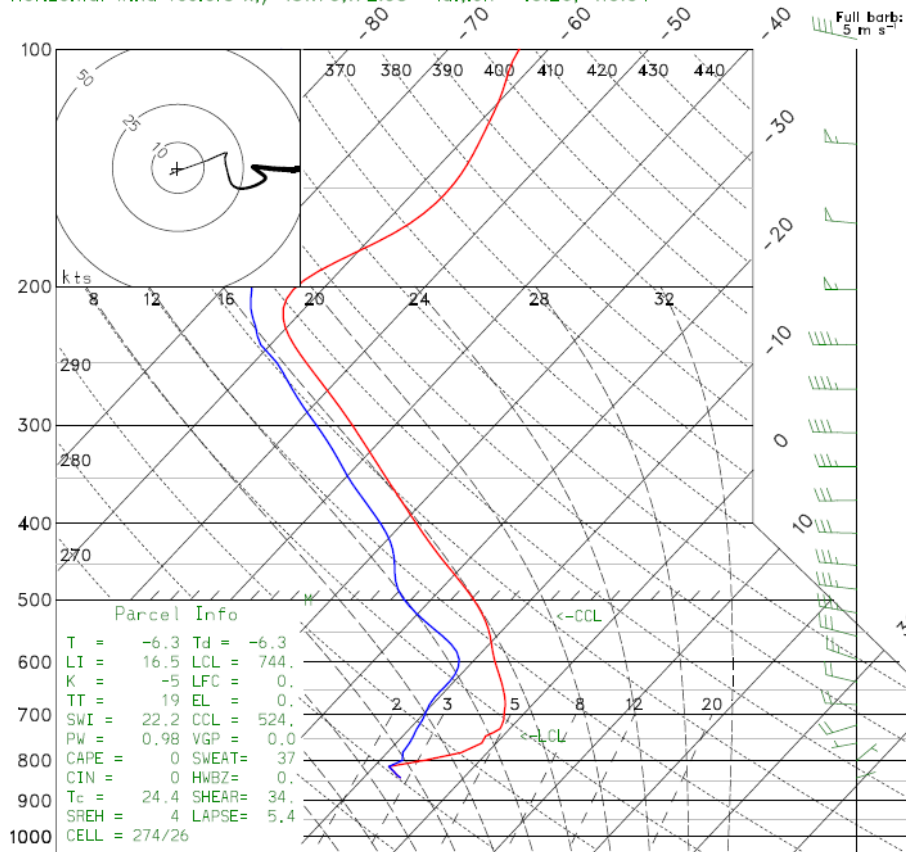
4 Feb 2013 18 UTC UU Rawinsonde Roosevelt Ut



- Overall temp/moisture profile very good
- Temp not cold enough near surface (below 800mb), too much moisture
- Inversion height well modeled with thin isothermal layer near 750mb
- Temp at top of inversion about 3 C too cool
- Accurate winds throughout profile

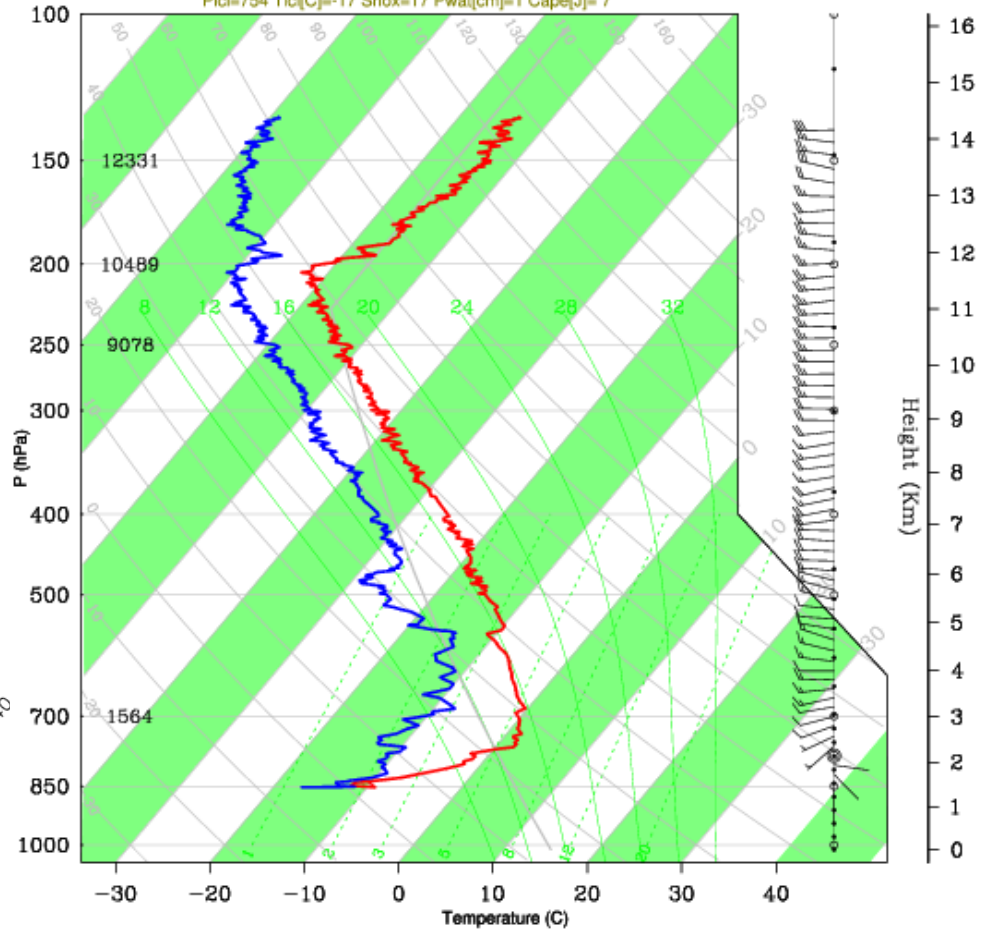
*Note different wind barb convention
 Model sounding: full barb = 5 m/s
 Observed sounding: full barb = 10 m/s

Uintah Basin - Roosevelt Soundings Init: 0000 UTC Fri 01 Feb 13
 Fcst: 114.00 h Valid: 1800 UTC Tue 05 Feb 13 (1100 MST Tue 05 Feb 13)
 Temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Dewpoint temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Horizontal wind vectors x,y=151.70,172.93 lat,lon= 40.26,-110.04



5 Feb 2013 18 UTC Rawinsonde Ft Duchesne Ut

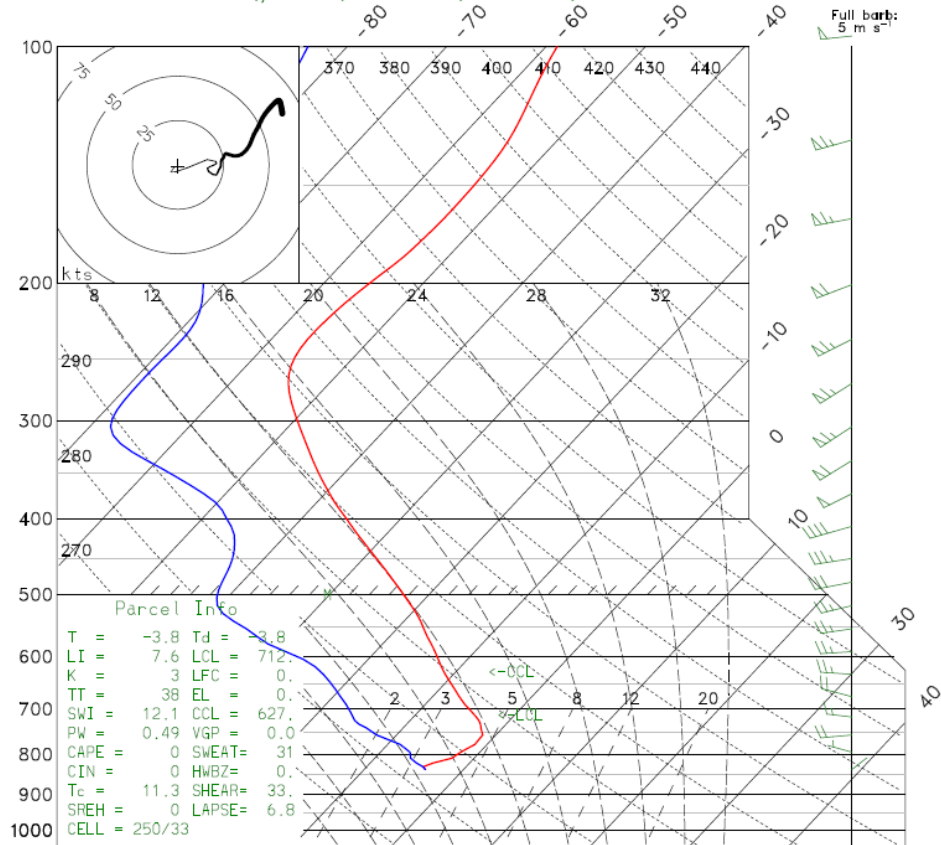
Ptcl=754 Tlc[C]=-17 Shox=17 Pwat[cm]=1 Cape[J]=7



- Accurate inversion height around 750mb
- Too moist at surface by ~4 C dewpoint
- Entire profile above 800mb too dry
- Light easterly winds observed above inversion, WRF has westerly at 10 m/s

*Note different wind barb convention
 Model sounding: full barb = 5 m/s
 Observed sounding: full barb = 10 m/s

Uintah Basin - Roosevelt Soundings
 Fcst: 138.00 h Valid: 1800 UTC Wed 06 Feb 13 (1100 MST Wed 06 Feb 13)
 Init: 0000 UTC Fri 01 Feb 13
 Temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Dewpoint temperature x,y=151.70,172.93 lat,lon= 40.26,-110.04
 Horizontal wind vectors x,y=151.70,172.93 lat,lon= 40.26,-110.04



6 Feb 2013 18 UTC UU Rawinsonde Roosevelt Ut

