Today: More Clouds
Meet your team

NO VERTICAL GRID?

So many lines! How many kinds? Constant pressure

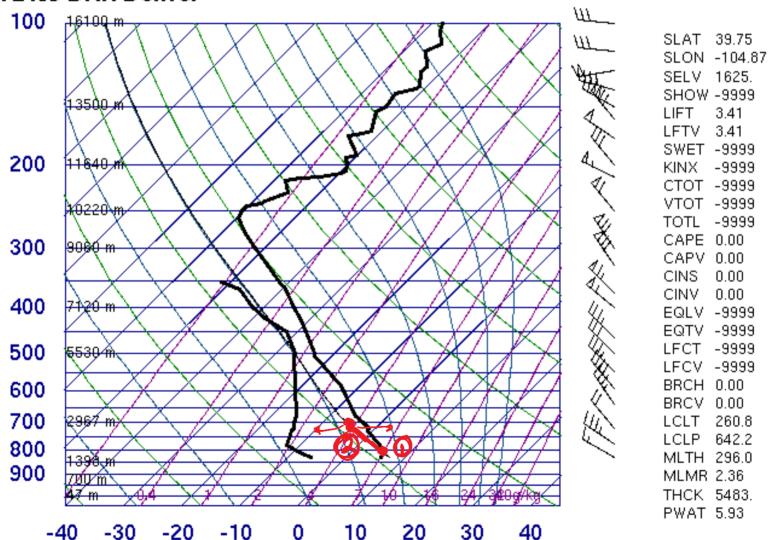| | |
|---|---|
| Horizontal blue | Constant temperature; isotherm. Angle     SKEW T |
| Angled blue | Dry adiabat. Lapse Rate. A dry parcel will follow this temperature line if cooled adiabatically |
| Angle/curve green | |
| Angle/curve blue | Moist, saturated adiabatic lapse rate |
| Purple | Lines of constant mixing ratio; absolute humidity for saturation. |
| Heavy black | Right line is temperature profile. Left line is dew point |
| Light black | Adiabat starting at the top of the boundary layer |



① Starting parcel

② Raise it, cool it adiabatically (move up along the adiabat), perturb the system

① Starting parcel

② Raise it, cool it adiabatically (move up along the adiabat), perturb the system

Check it, is my parcel warmer or cooler than the actual neighboring parcels?
  i. Cooler; more dense, wants to sink again, go back to origin STABLE
  ii. Warmer; less dense, wants to keep going up! UNSTABLE

Can start at any point on the actual temperature line. Go parallel to the adiabats. Choose dry adiabat (green) if below likely cloud level or wet (blue, saturated) if in a cloud.

Stable clouds = flat STRATUS type
Unstable clouds = puffy CUMULUS family

Atmosphere is all stable if CAPE = 0  Convective Available Potential Energy
Has unstable layers if CAPE > 0. Thunderstorms if CAPE > 500 or so.

Skew-T Times: 12Z, Feb 14 = ~6 am Feb 14 here
00Z, Feb 15 = ~6 pm Feb 14 here

Where are clouds? Where temperature is close to dew point, i.e. where the two heavy black lines come together.
Also, kink towards more steep in T line suggests clouds at that level.

Basics: http://www.theweatherprediction.com/thermo/skewt/
Skew T Mastery: https://www.meted.ucar.edu/loginForm.php?urlPath=mesoprim/skewt#

Skew-T download tips:
1. Choose correct date. 12z Feb X is the 6 am sounding, 00z X+1 is the 6 pm sounding for date X
2. Choose plot, not text
3. Will open in next browser tab

http://weather.uwyo.edu/upperair/sounding.html