

Today: More Clouds
Meet your team

NO VERTICAL GRID?

So many lines! How many kinds?

Horizontal blue — Constant pressure

Angled blue / Constant temperature; isotherm. Angle \rightarrow SKEW T

Angle/curve green \ Dry adiabat. Lapse Rate. A dry parcel will follow this temperature line if cooled adiabatically

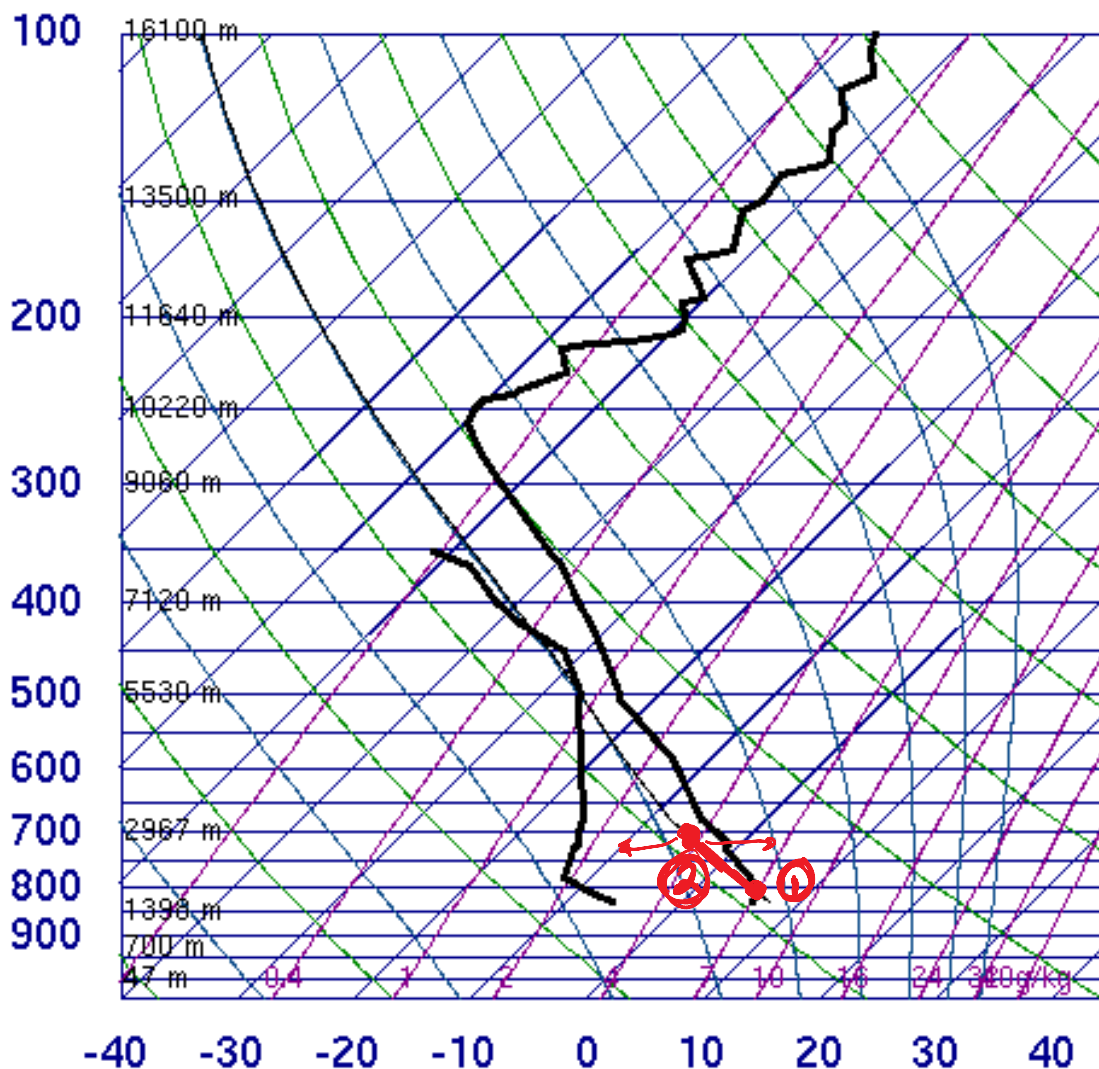
Angle/curve blue Moist, saturated adiabatic lapse rate

Purple Lines of constant mixing ratio; absolute humidity for saturation.

Heavy black Right line is temperature profile. Left line is dew point

Light black Adiabats starting at the top of the boundary layer

72469 DNR Denver



SLAT	39.75
SLON	-104.87
SELV	1625.
SHOW	-9999
LIFT	3.41
LFTV	3.41
SWET	-9999
KINX	-9999
CTOT	-9999
VTOT	-9999
TOTL	-9999
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EQTV	-9999
LFCT	-9999
LFCV	-9999
BRCH	0.00
BRCV	0.00
LCLT	260.8
LCLP	642.2
MLTH	296.0
MLMR	2.36
THCK	5483.
PWAT	5.93

12Z 05 Feb 2011

University of Wyoming



Starting parcel

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>

What was the surface weather on a given day?

<http://weatherspark.com/#!graphs;a=USA/CO/Boulder>

Awesome weather archive.