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MCEN 4151
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Cloud 2 Assignment

I took this picture of a cloud as I was driving from Boulder to the Flatiron's mall. I was on a back road and it was nice to have a plain view of the clouds save the few tall obstacles on the horizon. What I like most about this picture is the variety of clouds and colors in one area.



Figure 1: Post-Photoshop Photo

I took this photo from West 120th Avenue and was about to cross McCaslin Boulevard (39.911° N 105.179° W). The picture was taken at 6:29 pm on April 5th 2012, and I was facing east – southeast.

I think these clouds could be classified as altostratus and stratocumulus. Both of these types of clouds are stable clouds. I believe them to be stable because they are not big and fluffy (plus the CAPE value for the time was 0). I believe the dark clouds – in the top portion of the photo – to be the altostratus clouds; because they are darker in color, wispy, and are usually around 15,000 feet off the ground. According to the skew-T chart my clouds could be at about 13,250 feet above the ground. I think the other brighter white clouds are stratocumulus because they look to be right beneath the height of the altostratus clouds, and they are a tiny bit puffy.

The Skew-T chart can be found in the following figure and there's a good possibility that clouds were formed roughly 5690 meters above sea level, that's about 4040 meters above Boulder's elevation. I believe clouds formed at this height because the heavy black right line (temperature) and the heavy black left line (dew point) get close together at this height – which is the most anticipated spot for a cloud to form. The CAPE value also confirms that the clouds are in a stable atmosphere (CAPE >0 means unstable atmosphere).

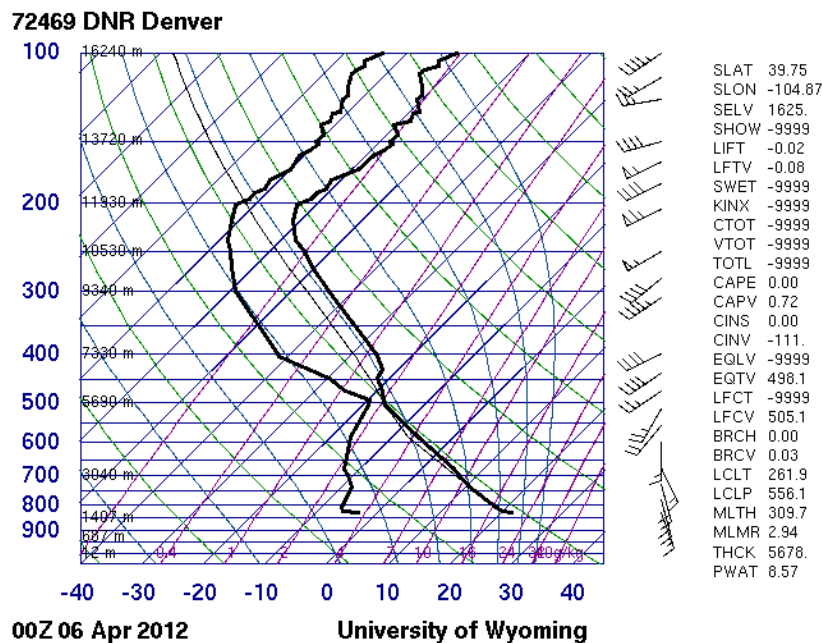


Figure 2: Skew-T [2]

The weather at 6pm was about 70°F and there were 9mph winds coming from the southeast. There was also 90% cloud coverage around the time that I took my photo. You can see in Figure 3 that there was no rain/snow in the previous days or in the following day. There had been lots of clouds in the preceding days and had been freezing two days before (high of 36°F) and then slightly warmer the day before (high of 61°F).

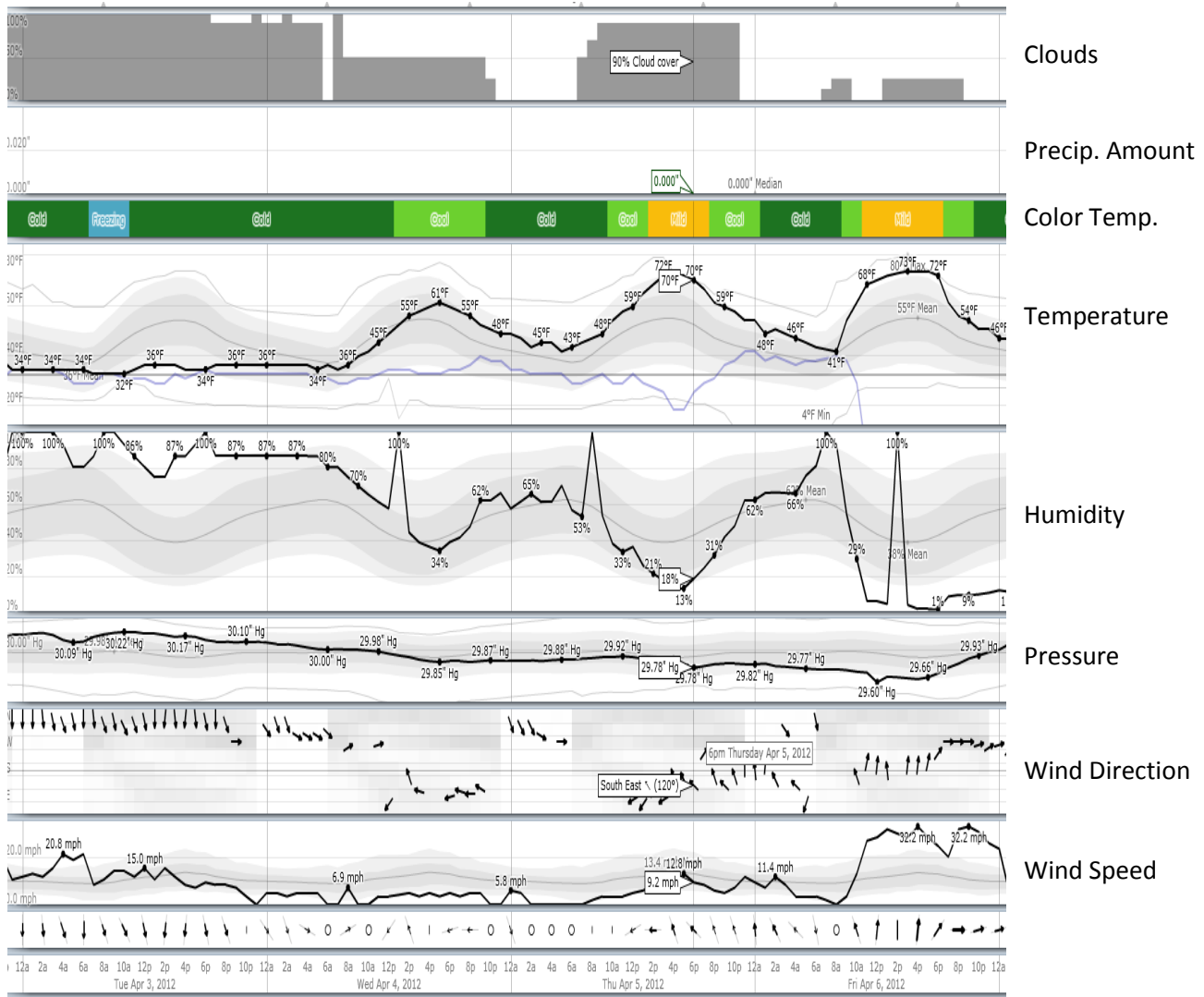


Figure 3: Weather Data [2]

The only editing I did on my original picture was a crop. I didn't want to change the coloring at all because I liked the colors in the sky – even though the not so blue color near the horizon is probably the result of smog. I also really liked the contrast of colors from bright white to mild grey in the clouds.



Figure 4: Pre-Photoshop Photo

This photo was taken with my iPhone 4S camera with the following specifications:

Table 1: Camera Settings & Specifications

Lens focal length	4.28 mm
Aperture	f/2.4
Shutter Speed	1/468 sec
ISO	64

Table 2: Number of Pixels

	Height	Width
Pre Photoshop	768*	1024*
Post Photoshop	379	860

I like how this photo came out, but again I'd like to have taken this picture with a nice camera. I would have been able to zoom in a bit on one section of the sky.

[1] "Weather". University of Wyoming – College of Engineering – Department of Atmospheric Science. Website. Accessed May 4th, 2012. <<http://weather.uwyo.edu/upperair/sounding.html>>

[2] WeatherSpark.com. Website. Accessed May 4th, 2012. <<http://weatherspark.com/#!graphs;a=USA/CO/Boulder>>