

MCEN 4151: Flow Visualization  
September 29, 2015  
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Flow Visualization 2<sup>nd</sup> Assignment: Clouds 1<sup>st</sup>



As seen in the Skew-T diagram above (Figure 1), the CAPE value for the 29<sup>th</sup> of September was 0.00. This implies that the atmosphere is stable. My cloud most likely was formed at around 4500 m above the ground. This can be seen by the fact that the two lines on the Skew-T diagram begin to converge around this point. The converging lines on a Skew-T diagram shows that the dew point (represented by the curve on the left) and the local temperature (shown by the curve on the right) are coming closer and closer together. When the local temperature nears the dew point temperature water droplets begin to form and clouds are created.

My photograph was taken right after a late afternoon rainstorm and I was able to capture the moment right as the storm clouds began breaking up. The storm could have been caused by local instabilities in the atmosphere or it is possible that there was a much more unstable atmosphere during the afternoon then what the evening Skew-T diagram tells us.

This image was taken outside of the Benson Earth Science building on the University of Colorado Boulder campus. I was facing West when I took this image and I angled my camera about 34 degrees from the horizon to cut out part of Libby Hall which can be seen at the base of my image. The camera settings for my image can be seen in Table 1.

**Table 1: Camera Settings**

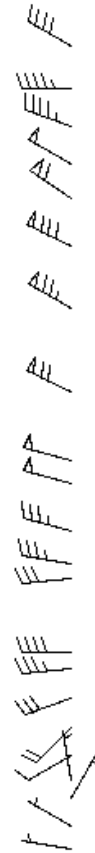
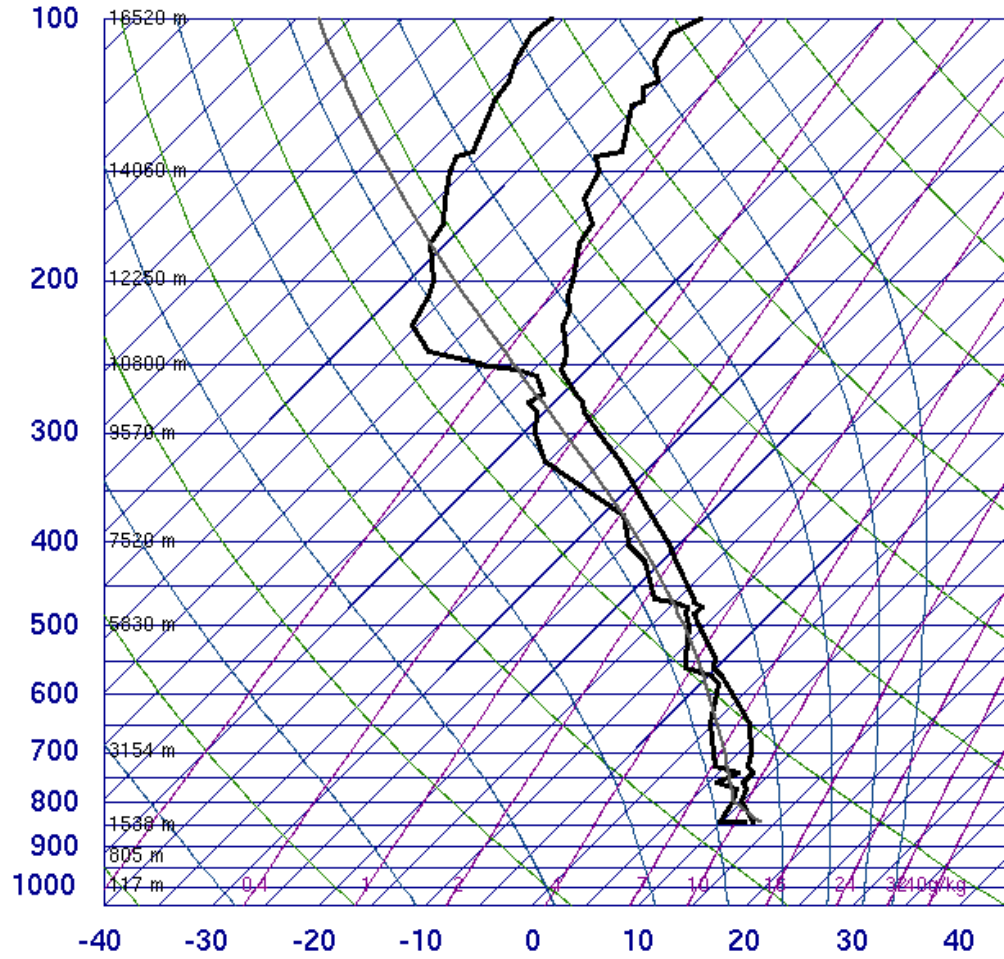
Focal Length	Exposure	f/	ISO
4.8 mm	1/3795 sec	2.2	40

Camera Model: Samsung Galaxy S5 Camera  
Image Size: 3264 × 1836  
Resolution: 72 Pixel Per Inch

The only post processing done on this image was to slightly tweak the color curves to add a little more contrast between the clouds and the sky. This image is very close to the original image taken.

I really like this image. I feel that it has some nice contrast between the sky and the clouds and I like how the lighting helped to darken the horizon of my image. I do wish that I could have found a higher spot to take this picture so that I could have kept the buildings out of this image, but I like the Flatirons. The shadowing on some of my clouds could be strengthened a little more, but I am not sure if I like how that change impacts the sky color. Other than those few changes I am very happy with my image. I really enjoyed running around with my camera trying to capture different types of cloud formations though out Boulder.

**72469 DNR Denver**



SLAT	39.77
SLON	-104.87
SELV	1625.
SHOW	-9999
LIFT	1.46
LFTV	1.46
SWET	-9999
KINX	-9999
CTOT	-9999
VTOT	-9999
TOTL	-9999
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EGTV	-9999
LFCT	-9999
LFCV	-9999
BRCH	0.00
BRCV	0.00
LCLT	282.2
LCLP	796.2
MLTH	301.2
MLMR	9.21
THCK	5713.
PWAT	25.48

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University of Wyoming

## Works Cited

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- "Cumulus Clouds." *Cumulus Clouds*. UCAR, n.d. Web. 1 Oct. 2015. <<https://eo.ucar.edu/webweather/cumulus.html>>.
- "How to Read a Skew-T." *UNDERSTANDING A SOUNDING/SKEW-T*. Millersvill University of Pennsylvania, n.d. Web. 1 Oct. 2015. <[http://www.atmos.millersville.edu/~lead/SkewT\\_HowTo.html](http://www.atmos.millersville.edu/~lead/SkewT_HowTo.html)>.
- Warrilow, Chrissy. "Sky Watching: Cumulus Clouds." *The Weather Channel*. Weather.com, 21 Mar. 2013. Web. 1 Oct. 2015. <<http://www.weather.com/science/news/sky-watching-cumulus-20130320>>.