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MCEN 4151
February 27, 13

Starry Day

This image was taken for the 1st cloud assignment in the class titled Flow Visualization. Its purpose was to familiarize us with the beauty and fluid characteristics of clouds. Clouds can enlighten us about future weather, current humidity, stability and many other things. The intent of this image was to capture a breathtaking image of clouds in an effort to describe the weather and atmospheric stability at the time of the picture. Clouds known as cirrus are the prelude to most weather systems; these are among the clouds portrayed in this image.



Figure 1: Photoshop Enhanced Image

This image was captured on February 19th, 2013 in Boulder, Colorado at Broadway and Regent Drive (40° N 150° W)[1]. The direction of the image was southwest and was taken at approximately 35° from the horizontal. The time of day was 12:20 pm.

The clouds portrayed in the background of this image are most definitely of the cirrus type. They appear long, wispy and high in the sky, as cirrus clouds should. The clouds in the foreground of this picture are most likely altocumulus due to their puffy nature and due to the fact that they do not appear to be high enough in the sky to be cirrocumulus. In the lower right hand corner, you can see a mountaintop, the top of the flatirons. At an elevation of approximately 7,000 feet (2130 meters) with the clouds being about 2.5 miles (4,020 meters) above the flatirons, we can say that the clouds in the foreground are at about 4,500 meters above the ground; which would designate them as too low to be cirrocumulus thus making them altocumulus [2].

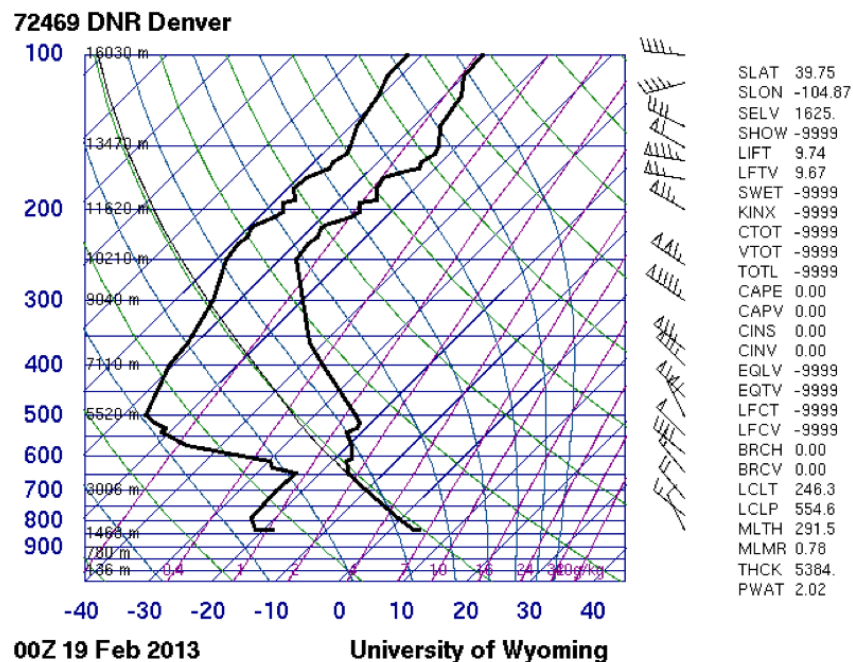


Figure 2: Skew T from February 19th, 2013 [3]

The Skew T (figure 2) shows the right line (dew point) moving in an unexpected direction and closer to the left line (temperature) between 4,000 and 6,000 meters and at approximately 10,000 meters. This designates the two likely elevations for clouds to form on this day at this hour. This supports the fact that the two clouds seen in this image are most likely cirrus or altocumulus. The cirrus clouds and swiftly changing cloud formations due to the wind indicate that there was a front moving in [4]. This observation is important because the day after this image was captured, it snowed. The atmosphere was stable on this day as the CAPE value was equal to zero. The atmosphere only becomes unstable when the value is above zero.



Figure 3: Original Image

This image was captured with no specific photographic technique in mind. I thought it would be cool to have a cloud picture with more than one type of cloud with the sun starkly contrasting everything around it. I simply pointed my camera at a portion of the sky that included various typed of clouds as well as the sun and took a picture. The picture reminds me of the Vincent van Gogh painting titled *Starry Night*. That is why I titled my picture *Starry Day*, due to the time of day and its similarities to that famous piece of art. The picture was taken with a Canon PowerShot SD1200 IS with the following capture and image specifications:

Table 1: Camera Settings/Specifications

Lens focal length	6.2 mm
Aperture	f/8
Shutter Speed	1/1250 sec
ISO	400

The image was 3648 x 2736 pixels before and after alterations. The image was not cropped in an effort to include all information captured by the camera at this specific point in time.

This image reveals important information about atmospheric stability on the day it was taken. It reveals the weather front being brought in as well as the wind direction and relative speed. I like the texture brought forth in the clouds that are contrasted by the darker sky in the background. I also like the exposure the sun creates on the surrounding clouds. I do wonder exactly how high the cirrus clouds in the background were. I know they were at least 10,000 meters but I would like to know if they are even higher than that. There's no proper way besides estimation. I believe my intent to capture a nice cloud image that told a story about the weather

surrounding it was definitely realized. I would decrease the washout around the sun if I were to go back and change things. In the future I would like to note more about the cloud movement and cloud altitude on the day the picture is actually taken. It's hard to estimate these things from just the picture taken.

References:

[1] itouchmap.com Website. Accessed February 27th, 2013
<http://itouchmap.com/latlong.html>

[2]Airlineworld.wordpress.com. Website. Accessed February 27th, 2013
<http://airlineworld.wordpress.com/2008/07/09/cloud-types/>

[3] "Weather". University of Wyoming – College of Engineering – Department of Atmospheric Science. Website. Accessed February 27th, 2013
<http://weather.uwyo.edu/cgi-bin/sounding>

[4] WeatherSpark.com. Website. Accessed February 27th, 2013.
<<http://weatherspark.com/#!/dashboard;a=USA/CO/Boulder>