Maxfield Scrimgeour Flow Visualization 12/2/16

Clouds Second Image



Background

This image was the second clouds image for the flow visualization class. The motivation behind this assignment is to photograph interesting cloud phenomena and learn about the physics behind what has been captured. This image was one of many different cloud images that were taken for this project. While looking for clouds on this project it was found to be an incredible amount of times that I would see some very nice cloud formations and not have my camera with me. I would find some very nice clouds while I was out for some runs or in some crowded areas. For the particular image that will be discussed in this report I was driving my motorcycle and pulled off on the side of the road once I spotted the cloud formation to take this picture.

Image Circumstances

This image was captured on November 5th 2016 at 7:55 AM. This image was taken from the Center For Community parking lot facing southeast. The camera was pointing at approximately 45 degrees above the horizontal from 5 feet above the ground to capture this image. This image was taken right before the switch of daylight savings and as stated above was spotted while driving my motorcycle which prompted me to pull off the side of the road and snap this image.

Clouds

The clouds in this image can be categorized as altocumulus clouds, which are characterized by the small light puffy clouds that are in the midrange of cloud heights. Based on the skew-T diagram chart for the day there was a stable atmosphere while this photo was taken. It was observed that these clouds disappeared as the day went on with a light breeze throughout the day. These clouds could be classified as they cellular version of the altocumulus clouds. These clouds generally from 6500 – 22000 feet in the atmosphere and consist of supper cooled water droplets around -10 C (WeatherOnline). The formation of these clouds can often signal a change in the weather pattern soon to come within the next few days. Based on the image I would estimate that the clouds are at about 10,000 – 15,000 feet as they appear relatively high in the atmosphere but not at the upper height of cloud formations.



Skew T for 6:00 AM Nov 5 2016

Photographic Technique

The photographic technique used in this photo could be best described as point and shoot. As this was taken with my iPhone it was held up at approximately shoulder height and at an angle, which captured the larges possible view of the clouds. I would estimate that the field of view in this photo from front all the way to the farthest point is approximately 2 miles. This photo includes a great depth of field within the image to represent the whole sky and the cloud conditions found throughout. Based on the height of the clouds I would estimate that the clouds above the camera are 1-2 miles from the lens at the time of the photograph. The camera details are as follows.

Lens: 3.99mm ISO: 20 F-stop: 1.8 Shutter: 1/2037

Post processing for this image included several different steps. One of these steps included editing out a light pole that was found to be distracting. The color balance and contrast were also adjusted to increase the color effect within the photo. These

minimal editing steps were done without altering the physics that is visible in the image. The original image is attached below.



Original Photo

Intent

The intent of this photo was to capture an interesting cloud formation, which I think was accomplished. I like the way that the photo turned out and the expansive view of the sky provides the viewer with a complete view of the sky. For improvement on this assignment next time I would carry my camera around with me more often, even if it were just my iPhone, but preferably my DSLR. This way, some of the cool cloud formations that I saw during this time wouldn't escape being photographed. Another thing that would help improve the study of this feature would be to take several photos throughout the day of the same piece of sky so that they physics of what is happening in the atmosphere could be better understood.

Sources

- "Altocumulus." *Weather Facts: Altocumulus*. WeatherOnline Ltd., n.d. Web. 02 Dec. 2016. http://www.weatheronline.co.uk/reports/wxfacts/Altocumulus.htm>.
- "72469 DNR Denver Sounding." *72469 DNR Denver Sounding*. University of Wyoming, 05 Nov. 2016. Web. 02 Dec. 2016. ">http://weather.uwyo.edu/cgibin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2016&MONTH=11&FROM=0512&TO=0512&STNM=72469>">http://weather.uwyo.edu/cgibin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2016&MONTH=11&FROM=0512&TO=0512&STNM=72469>">http://weather.uwyo.edu/cgibin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2016&MONTH=11&FROM=0512&TO=0512&STNM=72469>">http://weather.uwyo.edu/cgibin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2016&MONTH=11&FROM=0512&TO=0512&STNM=72469>">http://weather.uwyo.edu/cgibin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2016&MONTH=11&FROM=0512&TO=0512&STNM=72469>">http://weather.uwyo.edu/cgisounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2016&MONTH=11&FROM=0512&TO=0512&STNM=72469>">http://weather.uwyo.edu/cgisounding."