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Cloud Second Report



This image was part of the Clouds Second Assignment. It was my second attempt at capturing this commonly seen phenomenon. For a second time this semester, my camera's SD card became corrupt after having an amazing cloud image. However, I still was able to capture some clouds just before as a large storm front was coming in.

This image was taken out of my roommate's window on Friday, November 16, 2018 at about 12:30 PM (MST). The camera was near Canyon and 22<sup>nd</sup> in Boulder, CO, facing Southwest over the Flatirons.

This picture was taken just before a large storm front. The clouds seen in the top-left of the image are actually the edge of a massive cloud system that completely covered the sky less than an hour after the photograph. This front brought heavy snow that lasted for three days. It was mostly calm concerning the wind but was a very cold day. Using the Skew-T data from the University of Wyoming's Department of Atmospheric Science, I was able to analyze the atmosphere for that day at their nearest weather station in Denver Colorado. According to this data, the CAPE of the atmosphere was zero, meaning the atmosphere was stable at the time of the photograph. Boulder's elevation is about 5,300 feet above sea level. Stratocumulus clouds tend to form at elevations less than 6,600 feet above sea level. Using this data and prior knowledge from cloud studies, I believe these are stratocumulus clouds. Figure 1 below shows the Skew-T chart for Denver, Colorado during the time of the photograph.

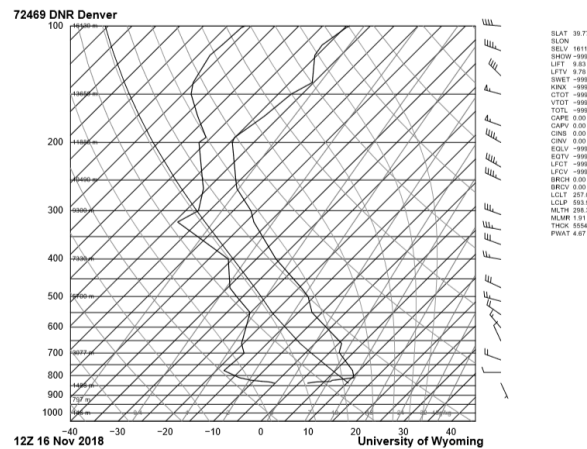


Figure 1: Skew-T chart from Denver, Colorado during the time of the photograph.<sup>1</sup>

It is difficult to give an exact estimate on the size of the field of view, but using the ridge of the Flatirons, the viewer can get a sense of the size of the image. This photo was taken around 8 miles away from the base of the Flatirons with the average height of the range of about 1,400 feet. The original image was 4,928 x 3264 pixels, and the final image was 1,300 x 861 pixels. The aperture was at f/8, the shutter speed was set to 1/2000 sec, the focal length was set to 55mm, and the ISO sensitivity was set to 200. This image was taken with the Nikon D5100

DSLR camera. In post processing, only the curves were affected. In order to darken the mountain range and add contrast to the blue and the clouds, the lower frequency colors were edited using a curve. The two figures below show the original image and the RGB curve applied to the image.



Figure 2: Original image

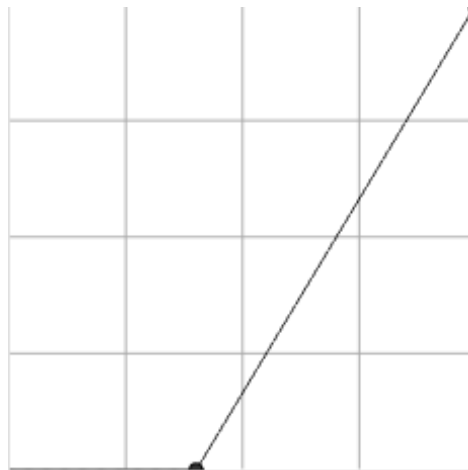


Figure 3: RGB curve edit used in post-processing.

I really love the contrast in the blue in the image. I may be bias due to the fact that it is my favorite color, but I believe the blue really gives context to the image beautifully. It was hard to photograph cloud physics on this particular day, but I think I managed to give some context to this image that a large storm is approaching. After gaining a new perspective on clouds thanks to these assignments, I will be more aware and appreciative of this natural phenomenon from now on.

