Madison Emmett MCEN 4151 Clouds Second Report April 20, 2018

Clouds Second Report:

Stratus, Cirrostratus, and Altocumulus Clouds in Delta, UT on March 30th, at 6:30 p.m.

Context

This image was taken for the Clouds Second assignment. I wanted to capture clouds when I was not in the mountains so I chose to take an image while traveling during Spring Break. I had wanted to use a nicer camera than my iPhone 6 but unfortunately it was all I had on hand. The clouds were really spectacular with the sun behind them so I took a picture out the open car window. I ended up capturing these stratus, cirrostratus, and altocumulus clouds in the final image in Figure 1.



Figure 1: Final image for Clouds Second.

Circumstances

I ended up taking a picture while driving through Delta, UT around sunset. The angle was pretty flat with the horizon in order to capture the sun and clouds together. We were driving east but the shot was facing west due to the location of the sun at sunset. It was taken on March 30th, 2018 at 6:30 p.m.

The Clouds

The clouds I captured include stratus, cirrostratus, and altocumulus clouds. They all range in levels in which they appear but can be seen in the same area. Since the altitude of Delta, UT is below 5,000 feet, it is fascinating that all these clouds can be viewed at once. Cirrus clouds are the thin, wispy clouds, usually occurring in high altitudes around 16,500 feet¹. These clouds indicate that weather conditions are about to worsen. The more uniform and very thin clouds are cirrostratus clouds. They are higher altitude clouds that can be seen far above the camera's point

of view². These clouds signal the approach of a warm front and often are a sign that a rain storm is coming. The altocumulus clouds are the puffy clouds that have relatively uniform shape³. They appear due to increased instabilities in the air and are often in between warm and cold fronts. These clouds formed in a stable atmosphere, as verified in the skew-T diagram in Figure 2.



The CAPE value is zero, which means the atmosphere was stable. Unfortunately, our road trip required that we drove on so I do not know if bad weather including rain did in fact follow in the wake of the clouds.

Photographic Technique

The field of view was quite large since it captured most of the sky. The distance from the clouds to my camera was also enormous especially since some of the clouds were being viewed far lower than where they were forming. I took this image with my iPhone 6, which has a 29mm f/2.2 lens and a 1/3" sensor. The original image was 3264×2448 pixels and was shot with a focal length of 4.15, an exposure time of 1/20,000 seconds, and an ISO of 40. The final image was 3264×1942 pixels. The original image is shown in Figure 3.



Figure 3: Original image.

I cropped and changed the curves of the image to make it more publishable. The exact changes are captured in Figure 4.



Figure 4: Altered curves in Photoshop.

The final image really brought out the beauty of the clouds and can be seen in Figure 1 and Figure 5.



Figure 5: Final image.

What the Image Reveals

I really like how this image captures so many different types of clouds. The colors of the sky and the clouds across the sun are really beautiful and they draw the eye across the image. I think the physics of the clouds are shown well since the weather system allowed so many types of clouds at the same time. If I were to improve this image, I would have liked to capture it with a nicer camera that would enable the finer details of the clouds to be seen better. I fulfilled my intent since I really enjoy looking at this image and the road trip it reminds me of.

Citations

- 1 Cirrus cloud. (2018, April 10). Retrieved April 19, 2018, from https://en.wikipedia.org/wiki/Cirrus_cloud
- 2 Cirrostratus cloud. (2018, April 10). Retrieved April 19, 2018, from https://en.wikipedia.org/wiki/Cirrostratus_cloud
- 3 Altocumulus cloud. (2018, April 10). Retrieved April 19, 2018, from https://en.wikipedia.org/wiki/Altocumulus_cloud