

Flow Visualization
Fall 2019
Clouds Second Report
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The goal for this assignment is to capture an image of a cloud for the second time this course. Although it's the same assignment as clouds first, I was able to capture more decent images of clouds, especially after the snowstorm that occurred late October for the first time. At first, I wanted to choose an image I captured on October 28th which was initially a picture of a cloud after the snowstorm with the mountains. However, I ended up choosing an image that I captured during sunset on October 22nd since I hadn't seen a cloud like that before and I thought it looked pretty. For the rest of the report, the circumstance of the image, the skew t diagram, camera settings, and conclusion are going to be illustrated.

This picture in figure 1 below was taken in Boulder, Colorado at the University of Colorado Boulder, precisely near the Leeds school of business. The date and time were 5:55 PM and 10/22/2019 respectively. The altitude was approximately 1639 meter the time the image was captured with a slight angle of 35 degrees facing the west direction.



Figure 1. Clouds Second Before Editing

Now for this section, the skew T diagram is displayed below in figure 2. We can notice that the cape value is zero which indicates that it was under a stable atmosphere. The wind on that day was slightly low with an average of 7.0 miles per hour. We can notice that the cloud formation was mostly occurring around 5710 m because of the temperature line and dew point being close. I believe the type of cloud of the image is called stratocumulus clouds. The weather in Boulder, Colorado on October 22, 2019 was chilly with a temperature ranging from 40°F to 58°F. Around 6:00 pm, it was one of the warmest times of the day.

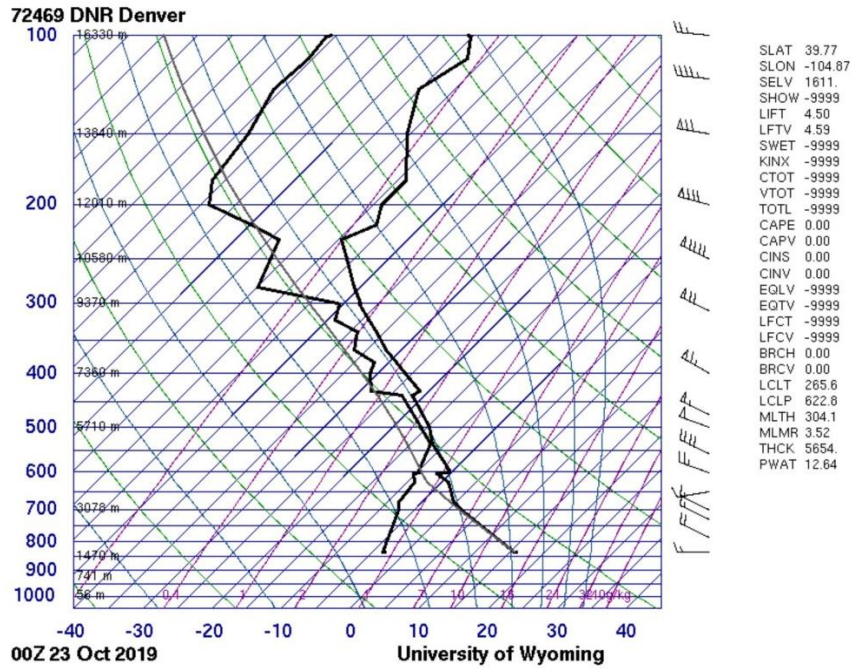


Figure 2. Skew-T Diagram for Oct 22 2019

For the camera used, an iPhone 6s from Apple was used with an aperture of F2.2, a shutter speed of 1/420 sec, a focal length of 4 mm, and an ISO setting of 25. The use of flash wasn't necessary during the time. The pixel dimension for the image is 4032 x 3024. With post processing as shown in figure 3 below, cropping, changing the exposure, and the size were adjusted. The size was shortened into the dimensions of 1191 x 671 pixels. The exposure was decreased a little all using GIMP.



Figure 3. Clouds Second After Editing

To conclude and overall thoughts, this cloud taken shows a great phenomenon. The intent of the cloud is unique as its so difficult to find this type of cloud on a regular day basis. What I like more about the image is the focus which made the cloud very clear to observe. I love how dark the cloud is which has a unique shape. On the other hand, I wish I had cropped the cars and the buildings which I thought it was distracting. Thus, having a background would have helped improve the image.