

Mary Rahjes
Clouds Second Image/Video
MCEN 5151: Flow Visualization
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I. Introduction

This assignment was the second clouds assignment of the semester. For this assignment, we were supposed to photograph any cloud formation from the initial assignment date to the due date (October 11 through November 13). Unlike my first clouds assignment, I ended up only taking one set of pictures, on October 17. I felt that the unique shape and movement of the clouds, as well as capturing a cloud formation during sunset, would be unmatched in any other clouds I took pictures of during the assignment period.

II. Circumstances

My cloud picture was taken at 6:24pm on Thursday, October 17, 2019. The picture was taken at the East exit of the Williams Village dining center, in Boulder, CO. I was facing East, and the angle that the picture was taken was roughly 45 degrees from the horizon line. Below is a figure depicting the photographic setup used. The figure is not to scale.

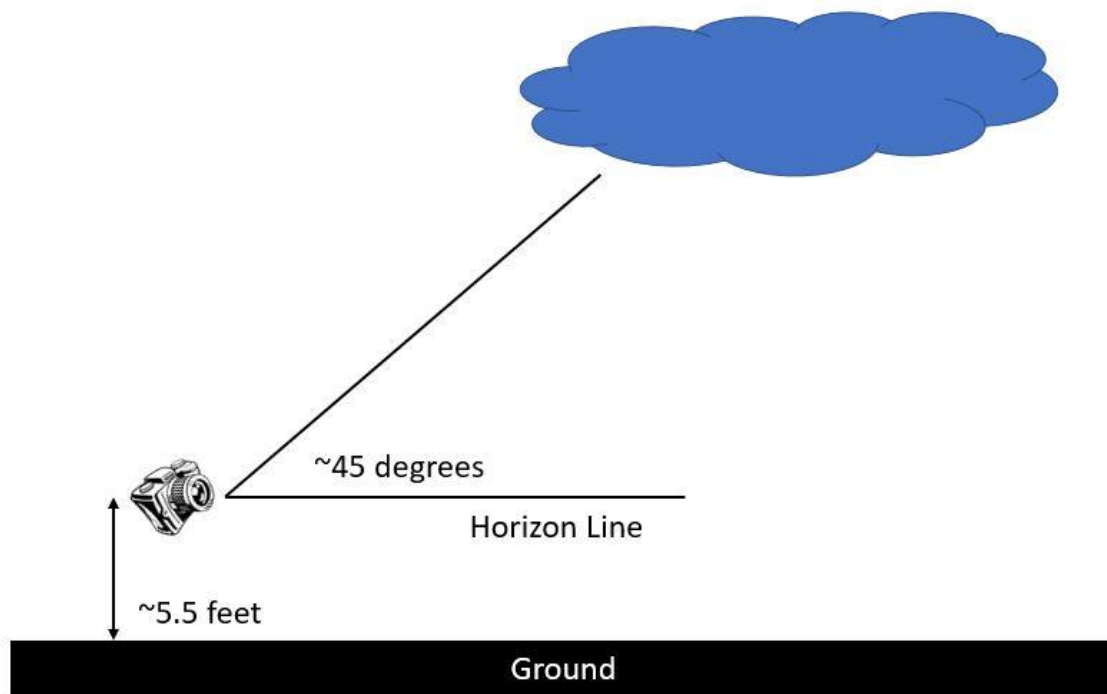


Figure 1: Diagram of Photographic Setup

III. Cloud Data

The cloud I captured is a cirrus cloud. I determined this using the Skew-T diagram. A Skew-T diagram measures different environmental factors at a multitude of altitudes to help predict cloud formation and weather. Skew-T measurements are done twice a day, at 6am and 6pm. Since my

picture was taken very close to 6pm, I decided to use the diagram from 6pm on October 17, measured at the Denver, CO location. Note that this correlates to 00Z on October 18, which is why the date on the diagram does not match the date of the picture. In the diagram it can be seen that the two thick black lines converge between 9400 meters and 11000 meters. Cirrus clouds can form anywhere between 5000 meters and 14000 meters, so this is within the expected elevations levels [1].

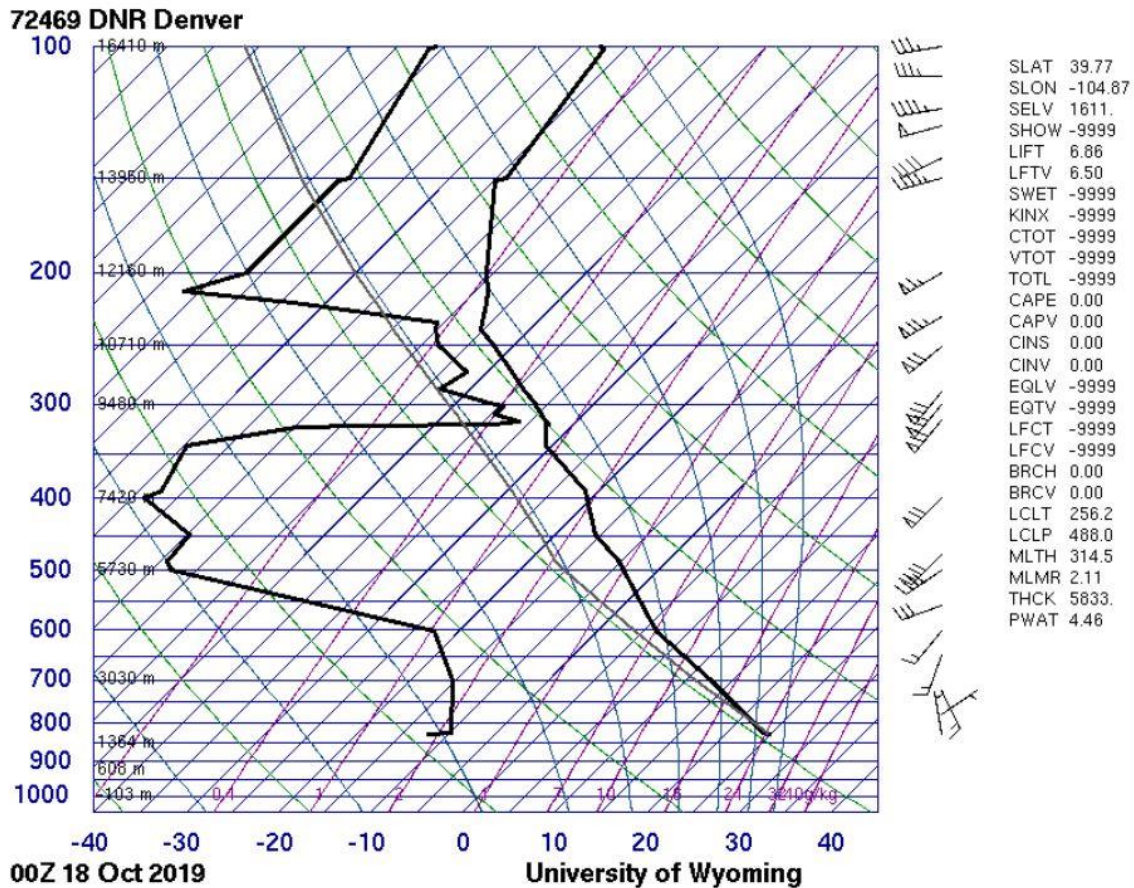


Figure 2: Skew-T Diagram [2]

IV. Photographic Technique

I took this picture using my Google Pixel 3 phone camera. The aperture was f/1.8, the shutter speed was 1/162 of a second, the focal length was 4.44mm, and the ISO was 101. These were the automatic settings that the camera used, no manual settings were used for this picture. I tried to minimize post processing in order to stay true to the natural image. In order to do this, I chose to only slightly increase the saturation of the picture. This allows the pinks in the clouds to stand out more, as well as the blues in the sky.



Figure 3: Unedited Picture



Figure 4: Edited Picture

V. Results

The cirrus clouds I was able to capture are unique and beautiful. Their sunset coloration plays nicely with the cool blue of the sky, and the size of the formation is impressive. I am pleased with the picture I was able to capture, especially because I learned after the fact that three other classmates (Peter Rosenthal, Brooke Shade, and Aaron Zetley) took pictures of the same clouds at slightly different times and locations. It was interesting to compare how one cloud could look so different with only the tiniest changes. If I were to do this over again, I would like to experiment with more post processing, specifically editing out the building and trees from the bottom of the frame. I would like to see how those changes would affect the impact and focus of the picture.

VI. References

[1] https://en.wikipedia.org/wiki/Cirrus_cloud

[2] <http://weather.uwyo.edu/upperair/sounding.html>