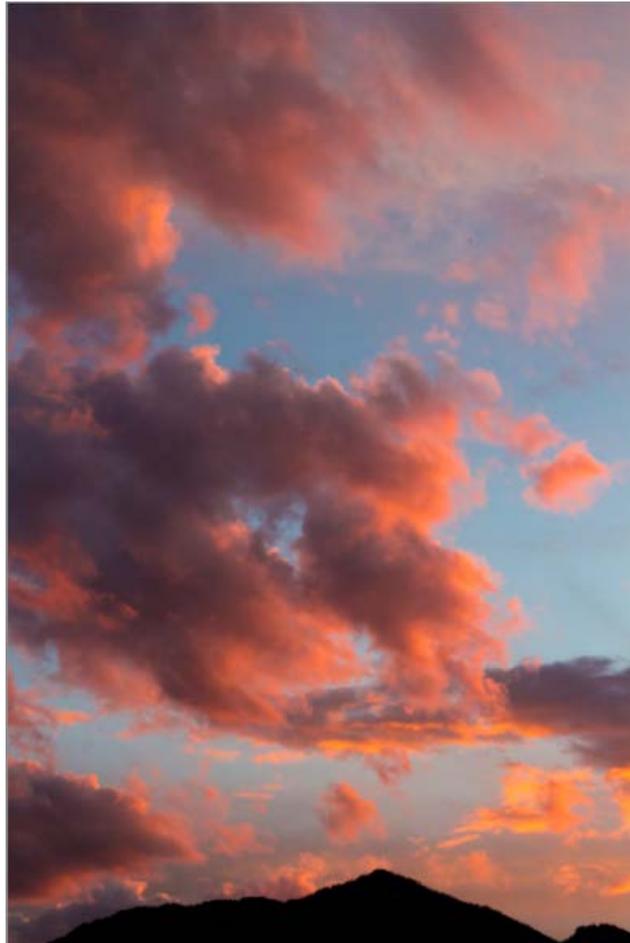


Liz Whitman
Flow Visualization 2015
Clouds 1



Introduction

This image was created for the Flow Visualization 2015 course, Cloud 1 assignment. The purpose of this assignment was to capture an image of an interesting cloud formation. Clouds are present almost every day, but I rarely ever pay any attention to them. This assignment pushed me to look up and pay attention to the clouds. The cloud type present on a certain day can give you insight into the fluid flow and stability of the atmosphere. The image I captured shows a stratocumulus cloud in a stable atmosphere.

Cloud Assessment

This image was captured on October 1st at 5:47 PM when the sun was setting. It was taken facing West in the King Soopers parking lot near Broadway St and Table Mesa in Boulder, CO. The clouds formed directly over the flatirons and reached very high into the sky. Therefore, I chose to capture a vertical image to include the silhouette of the flatirons and as much of the clouds as possible. The camera was held at roughly 45 degrees above the horizontal.

The clouds in this image are stratocumulus. Stratocumulus clouds can be described as puffy patches of cloud formations throughout the sky. Their typical altitude is between 2,000 and 6,500 ft. The clouds in the image were at about 2,000 to 3,000 feet above the ground. This can be determined by observing that the formations start above the flatirons, which are about 2,000 feet tall, and continue upward into the sky. Furthermore, stratocumulus clouds tend to be present in mostly stable atmospheres. Figure 1 shows the skew-T diagram from atmospheric data taken at Denver International Airport on October 1st at 5:00PM. We can conclude that the atmosphere is mostly stable from this Skew-T diagram. The line curves suggest so, and the cape number is small enough that can be assumed to zero. The adiabatic line, light grey, is cooler than its neighboring parcels all the way along the curve which creates a stable atmosphere.

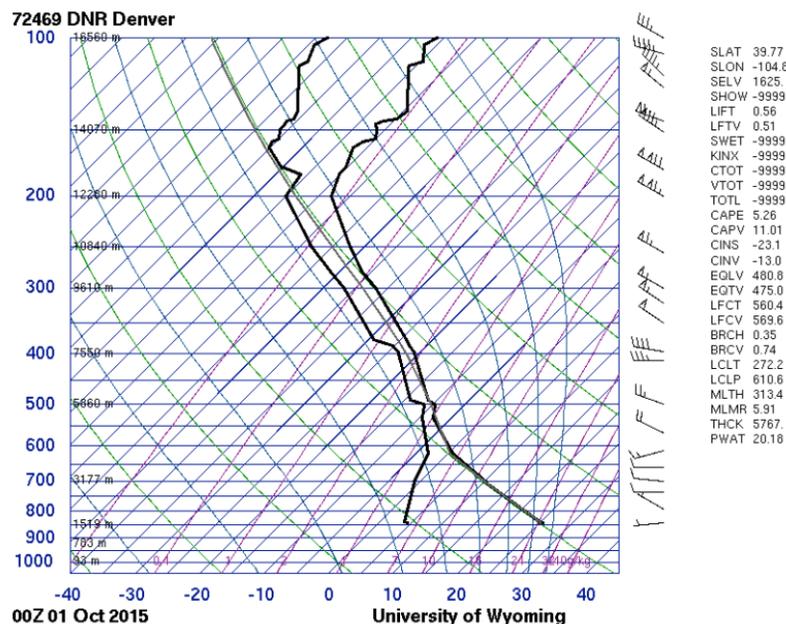


Figure 1: Skew-T diagram

Photographic Technique

Table 1 outlines the photographic specifications that were used to create this image.

Camera	Canon Rebel t5i
Lens	50mm
Aperture	f/8.0
Shutter Speed	1/250
ISO	800
RAW image size	3456 x 5184
Final edit image size	3546 x 5184

When shooting this image my main goal was to have the mountains as a completely black silhouette and the clouds exposed properly. This requirement dictated the shutter speed specifications. I was shooting in manual and chose the aperture and then took a light reading off the clouds to make them properly exposed, and subsequently the mountains became a perfectly black silhouette. I did not edit the image very much. I brought the down the highlights and whites and brought up the vibrance slightly to make the clouds more vibrant. Figure 2 shows the unedited image.

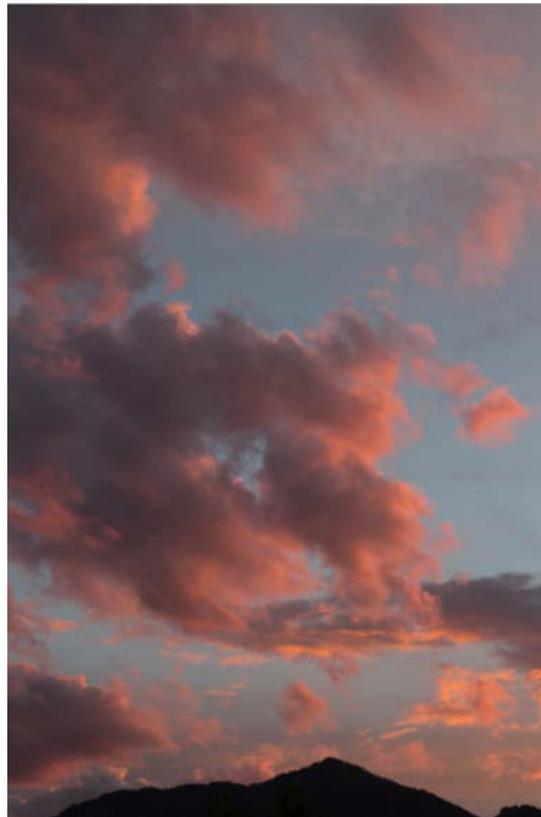


Figure 2: Unedited image

Conclusion

This was an interesting project that forced me to take the time to look at and appreciate something that is around me almost every day. I enjoyed learning about what clouds can tell us about the atmosphere. Overall, I am very happy with how my image came out. I like the colors from the sunset and the composition that includes the mountain silhouette. I would like to study a different type of cloud for the next cloud project in order to gain a fuller understanding of clouds in general.