Clouds 2

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Background

This image was taken while walking to campus for class and I didn't notice it until I came over the crest of the hill I was walking up. This was not too far off from when I took my photo for my clouds 1 photo (October 5th) and was not expecting to see such interesting clouds. It looked like a string of clouds of what just look like craters and I had never seen anything like them before and I just had to capture it with my camera. I found the stark difference between the clear skies to the west and the dense clouds to the east.

Image details

This photo was taken on October 14th at roughly 11:30 am on a Friday while walking towards the campus for Flow Vis class. The photo was taken near the buffalo outside the Coors Event Center just south of the engineering center at University of Colorado in Boulder. The photo was taken facing north with a small angle of roughly 10 degrees towards the sky.

Cloud information

From the skew-t diagram shown below in figure 1, the atmosphere was stable shown by the 0 CAPE. I would estimate the clouds to be fairly low, somewhere around 10000 ft – 15000 ft from the ground. However, from the skew-t it seems to suggest a relatively clear sky. This could be from the skew-t data

was collected by the Denver Airport, roughly 40 miles away. I believe these clouds are stratocumulus clouds based on estimated height and general shape of the clouds.

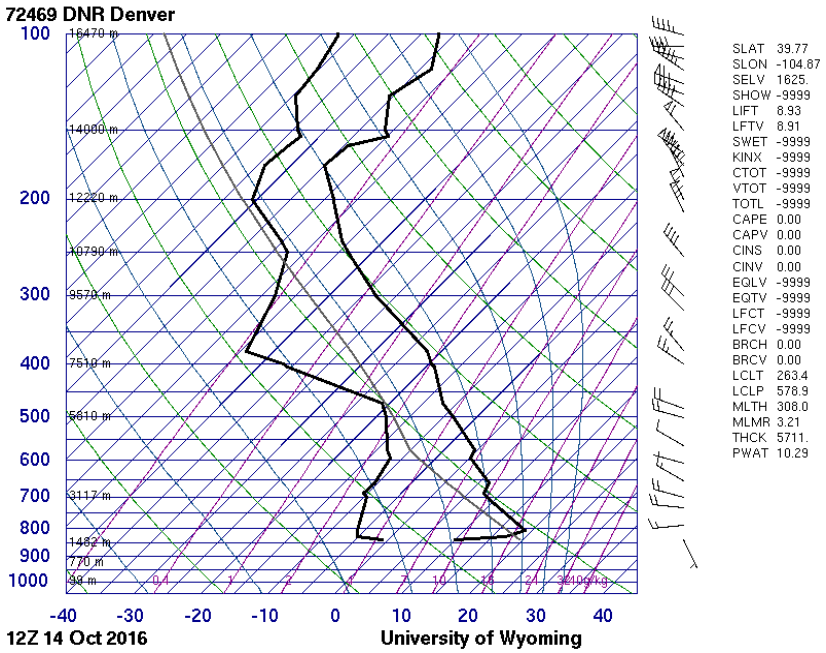

Figure 1: Skew-T Diagram on October 14th

The days leading up to the 14th of October were calm wind days with a consistent western direction but this day winds in Boulder were much higher at higher altitudes and as seen in figure 2, the wind directions were very erratic. I believe these changing wind directions and the strong high altitude winds shown in the skew-t were the source of the craters in the clouds.

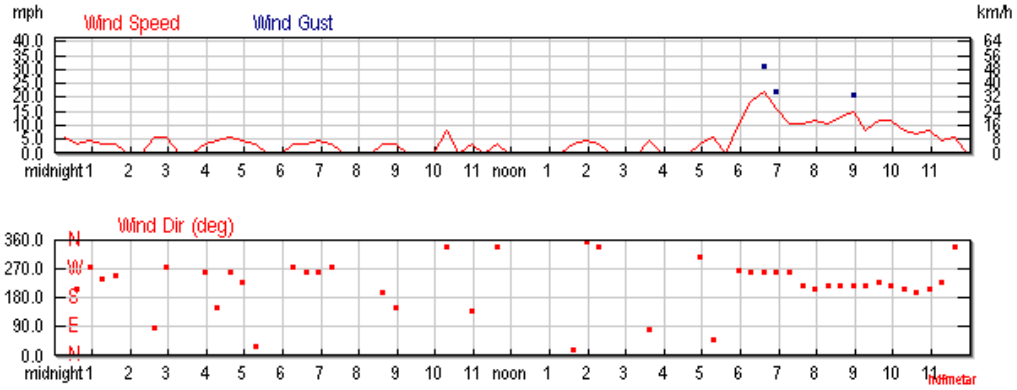

Figure 2: Wind Speeds and Direction on October 14th from Weather Underground website

Photographic Technique

This photo was taken with my iPhone 6s camera as I did not have my normal Canon EOS 30D camera I would normally take pictures with. Shown in figure 3 below are the camera settings from the iPhone 6s meta data.

Camera	
Camera maker	Apple
Camera model	iPhone 6s
F-stop	f/2.2
Exposure time	1/1040 sec.
ISO speed	ISO-25
Exposure bias	0 step
Focal length	4 mm
Max aperture	
Metering mode	Pattern
Subject distance	
Flash mode	No flash, compulsory
Flash energy	
35mm focal length	29

Figure 3: Camera Settings

I did not do too much post processing on this photo to try and preserve what I saw to the best of my abilities. When I saw it with my eyes I thought it was a pretty wild sight and when doing post processing work, I was just trying to keep the focus on the clouds. I did this by cropping out the street from the original but keeping the top of the engineering center to get a sense of direction and idea where the photo was taken. The original and post processed photo are shown below in figure 4.

Figure 4: Original photo (left) and Post Processed (right)

Final Thoughts

I'm happy with how this photo came out and also impressed with how well a cell phone camera was able to capture the unique cloud formation in the photo. I felt I could have gotten more of the sky above the flat irons, that were immediately to the left in the photo, to get a better grasp of just how clear the sky was over the mountains. I'm also happy I left a little early for class that day because I was watching these clouds as I continued walking towards the engineering center for class and the craters in the clouds disappeared and smoothed out by the time I reached my destination a few minutes later.