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Clouds Report

This image of altocumulus clouds was taken for my first cloud assignment. The goal of the assignment was to observe the ever-changing clouds and capture a unique image of the landscape that they create. Along with observing the clouds, observing the fluid property behind them is important in understanding why they appear the way they do. Initially I thought this assignment would be easy but it turned out to be more difficult than I thought. Having a camera around when I needed restricted my photo opportunities and when I did have my camera I often felt that the image did not do the clouds justice.

On February 18th I was leaving McGuckin's hardware store in Boulder, CO and saw these altostratus clouds covering the majority of the sky. I was facing southwest and shooting at close to 75 degrees above the horizon. The sun had just set behind the mountains and it was around 5:30 PM. The sky was still bright with the sun's light but the light was indirect as it was coming from behind the mountains.

After learning about cloud types, I concluded that the clouds in my image are altocumulus. The sky was mostly covered with these small puffy clouds. The day had been unstable as it was cloudy that morning with high winds and the clouds cleared as the day progressed. The altostratus clouds seemed to form in mid to late afternoon. The clouds did not appear to be moving at all and remained in the sky until the sun was completely set. The complete classification of this cloud would be an altocumulus stratiformis perlucidus. The genus of altocumulus are puffy, cloud groups that are mid-level in the atmosphere. The species of stratiformis means that the clouds cover most of the sky and lastly the perlucidus means there are spaces between the clouds. As seen in the attached skew-t plot, the atmosphere was unstable at the time of this image. The air temperature and dew point are closest around 6,000 m on the skew t plot suggesting there are clouds at that level. The instability in the atmosphere causes upward drafts that create vertical sheer, resulting in the puffy clouds seen in the photo.

The clouds are at an elevation of 2,400-6100 meters and the width of the image spans approximately 1,000 meters. The camera used was actually my cell phone camera, which has an 8 megapixel sensor. The phone is an HTC Incredible Android 6300. The focal was 4.92 and the

ISO speed was recorded as 110. Unfortunately no other data was recorded by the phone as it used it autofocus to capture this image. To enhance this image I slightly improved the contrast in Photoshop and also deepened the blues.

The image clearly shows the small puffy clouds covering the majority of the sky. I like how uniform the cloud cover was in this image but also how unique each of the clouds was. After seeing how unstable the atmospheric sounding was I was confused as to why the clouds seemed to be stable and not moving. I would have expected more visible turbulence given the apparent instability in the skew-t plot. To further enhance this image I wish I could have captured these clouds a little later as the sun was setting. I think it would have provided a better prospective to have less uniform lighting.