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Flow Visualization
Film 4200-001
3/4/14

Cloud Image 1 Report

The following report is for the first cloud image assignment. The main purpose for this image was to capture a visually pleasing photo of clouds. More specifically, the goal was to photograph an image of clouds with a silhouetted ground, a deep blue sky, and which employs principle photographic elements such as the rule of thirds. I did not want to capture another sunset photograph and I did not want big dense clouds. Rather, I wanted to capture clouds in a fleeting existence, gently brushing along the sky.

The image was taken outside of the Visual Arts Complex on the University of Colorado Boulder campus. It was taken facing southwest at an angle 20 degrees up from horizontal at 3:15pm on Monday, February 17th 2014.

Based on the skew-T plot¹ (refer to last page) for the time and place, it appears the atmosphere was stable in the image. Further data from CU's ceilometer² reveals that cloud height was at about 5,000 meters, or 16,400 ft. There were moderate winds earlier in the day, but at the time of the photo there were very light winds. Using this information and The Cloudspotter's Guide³, it is safe to classify the clouds in the center of the image as altostratus undulatus and the cloud in the upper left as cirrostratus.

Outside of the image the clouds do continue across the sky. There were no fronts prior to or following the image. Humidity was very low on the 17th, but on the day before it

¹ University of Wyoming College of Engineering.
<http://weather.uwyo.edu/upperair/sounding.html>

² Skywatch Colorado Ceilometer. <http://skywatch.colorado.edu/>

³ Pretor-Pinney, Gavin. *The Cloudspotter's Guide*. Perigee/Penguin, 2006.

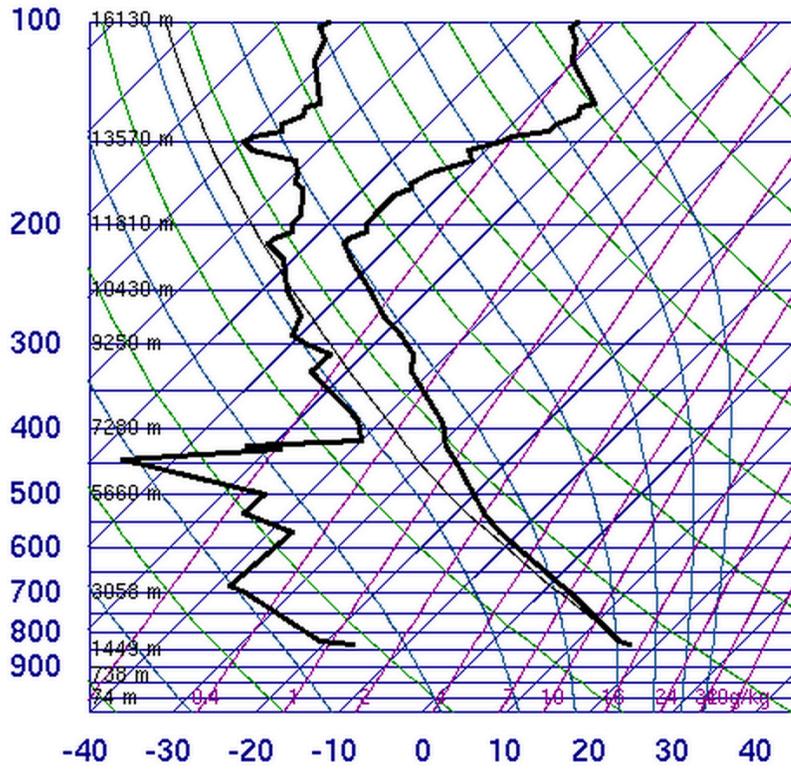
rained in the evening⁴, and the sky was completely covered in clouds. Based on the stability of the atmosphere and the weather, various types of stratus clouds would be expected, and so it is no surprise that that is what was observed.

The field of view of the background of the photograph, where the clouds are seen, is approximately two to three miles wide. And the foreground of the image is approximately 75 feet wide. The mountain in the distance is about three miles away and the trees in the foreground are about 60 feet away. An iPhone 5S was used to capture the image. The camera boasts a five-element 30mm equivalent F2.2 lens alongside an 8 megapixel 1/3-inch sensor on 1.5 micron photosites. The original photo was captured at 1/8264th seconds at f2.2 and ISO 800 for a 3264px wide by 2448px high image. The edited version reduces the height to 1915 pixels. The photo was edited using Adobe Lightroom to adjust brightness, contrast, hue, saturation and color balance, specifically to accentuate the silhouette effect and to bring out the deep blues in the sky.

Ultimately the image comes to represent the orderly chaos of the changing seasons in nature. A leafless tree often represents the cold darkness of winter, while the warm yellows in the clouds behinds the trees, along with the deep blue of the sky represent the foreshadowing of spring and the seasonal warmth from the sun. The clouds are also in transition, neither blocking the sun as they so often do in winter nor forming gigantic puffs as they do in summer. My favorite aspect of the image is how the light shines through the branches of the tree on the left. The photo vividly shows the fluid physics in the clouds and therefore serves as a successful submission.

⁴ WeatherSpark. <http://weatherspark.com/#!graphs;a=USA/CO/Boulder>

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SLAT 39.77
 SLON -104.87
 SELV 1625.
 SHOW -9999
 LIFT 3.75
 LFTV 3.60
 SWET -9999
 KINX -9999
 CTOT -9999
 VTOT -9999
 TOTL -9999
 CAPE 0.00
 CAPV 0.00
 CINS 0.00
 CINV 0.00
 EQLV -9999
 EQTV -9999
 LFCT -9999
 LFCV -9999
 BRCH 0.00
 BRCV 0.00
 LCLT 244.8
 LCLP 464.0
 MLTH 304.9
 MLMR 0.82
 THCK 5586.
 PWAT 1.49

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