Cloud 1 Assignment

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The purpose of this assignment was to capture an interesting photo of a cloud for the first cloud assignment of the semester. Clouds are a direct way to indicate the stability of the atmosphere and predict the weather. Here in Boulder, Colorado, the nearby Flatirons create unique cloud formations that awe many locals and visitors alike. The picture taken above shows two different variations of the same cloud family. At first sight, it could be safe to assume that they are in the cumulus family due to the puffiness seen in the lower clouds. These assumptions will be further verified with the skew-T taken from the University of Wyoming skew-T.

The cloud picture was taken on top of a house at 12th and College in Boulder, Colorado. The approximate camera direction was looking south at a 20 degree angle relative to the horizontal. The photo was taken after class at approximately 5 pm on February 19, 2014.

The CAPE in the skew-T is greater than 0, indicating a slightly unstable atmosphere. It makes sense then that the clouds observed in the the picture are of the cumulus family. After determining where the black lines on the skew-T touch to be around 6,300 m (20,700 ft) and 5,000 m (16,400 ft), it can further be that these cumulus clouds can be further classified as altocumulus and cumulus respectively. The winds at this time were traveling west at 17.2 mph. The sky eventually became overrun with clouds, eventually covering the entire sky.

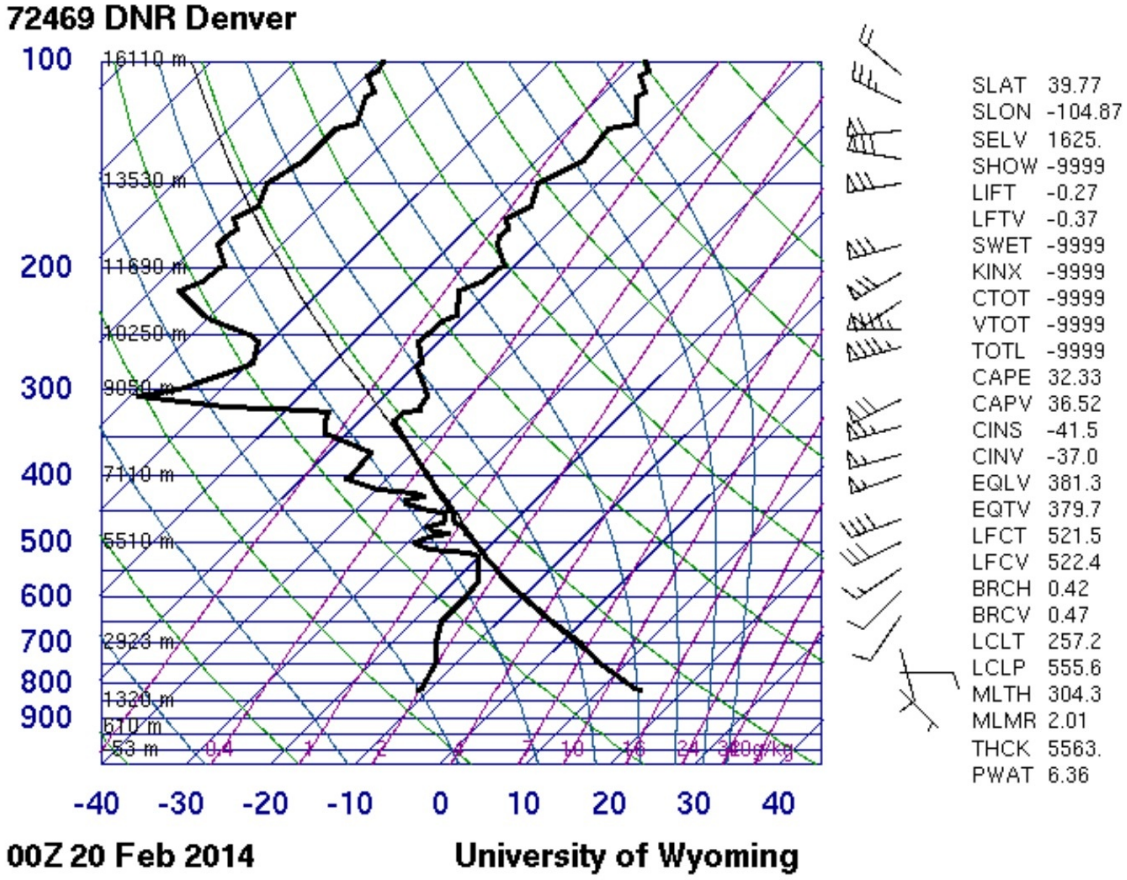

Figure 1. Skew-T

A Nikon D60 DSLR camera was used in the capturing of the cloud photograph. Attached to the Nikon was a Nikkor AF-S DX VR Zoom lens with focal length range of 18-55mm and aperture range of f/3.5-4.6. The original photo was 3872 x 2592 and was cropped down to 3398 x 1893 pixels. Slight modifications were made in iPhoto to enhance the clouds in the photo. First, saturation was increased to make the ski appear bluer. Then, definition was increased to provide more distinction between the clouds and the blue sky. The shadows were also increased to provide more depth to the clouds. The clouds needed slightly better focus, and the sharpness was slightly increased to provide the necessary crispness desired in the photo.

Table 1. Exposure Specifications

Aperture	f/6.3
Shutter Speed	1/800
ISO	100
Focal Length	36 mm

The image reveals relatively isolated clouds. As a result, one can easily distinguish between the two cloud types. Furthermore, the data in the skew-T was visibly confirmed in the corresponding cloud photograph. The photograph could have been improved by finding a taking it from a higher location in order to eliminate the trees from the field of view. This would also enable the viewer to see the cloud base. I had attempted to edit the trees out of the picture entirely but doing so resulted in an image were one would want essentially scroll down to see the rest of the picture. Overall, the editing of the photograph in iPhoto displayed the clouds much clearer against the blue background of the sky.

Sources

"72496 DNR Denver Skew-T." *University of Wyoming: Department of Atmospheric Science*. 20 February2014. <http://weather.uwyo.edu/cgibin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2014&MONTH=02&FROM=2000&TO=2000&STNM=72469>.

"The Cloud Collector's Reference." *The Cloud Appreciation Society*. 28 February 2014. <http://cloudappreciationsociety.org/collecting/>.

Weather Spark. 1 March 2014. <http://weatherspark.com/#!graphs;a=USA/CO/Boulder>.