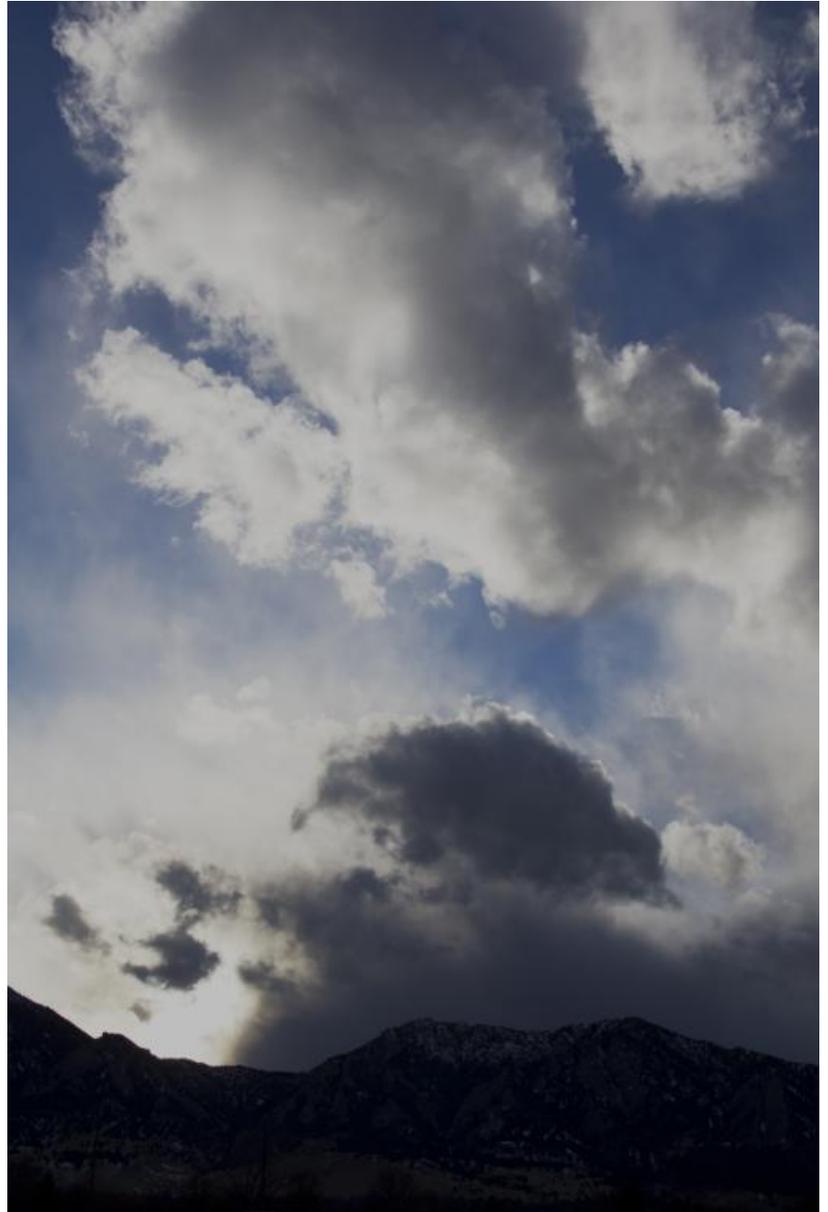


Unlucky Woman In the Sky

This image is the first clouds assignment for the spring 2011 Flow Visualization course at the University of Colorado at Boulder. The goal of this project was to capture a visual representation of clouds in a creative and artistic way so that we could present it to others. The great thing about this image is that when I look at it I see the screaming face of an unfortunate woman whose eye is in the process of exploding. It might be a stretch to see, but she has large hair at the top of the frame and her nose is pointing left about two-thirds of the way up the frame in the center of the image. The stability of the atmosphere on this day was important in the formation and movement of the clouds in order to create this image.

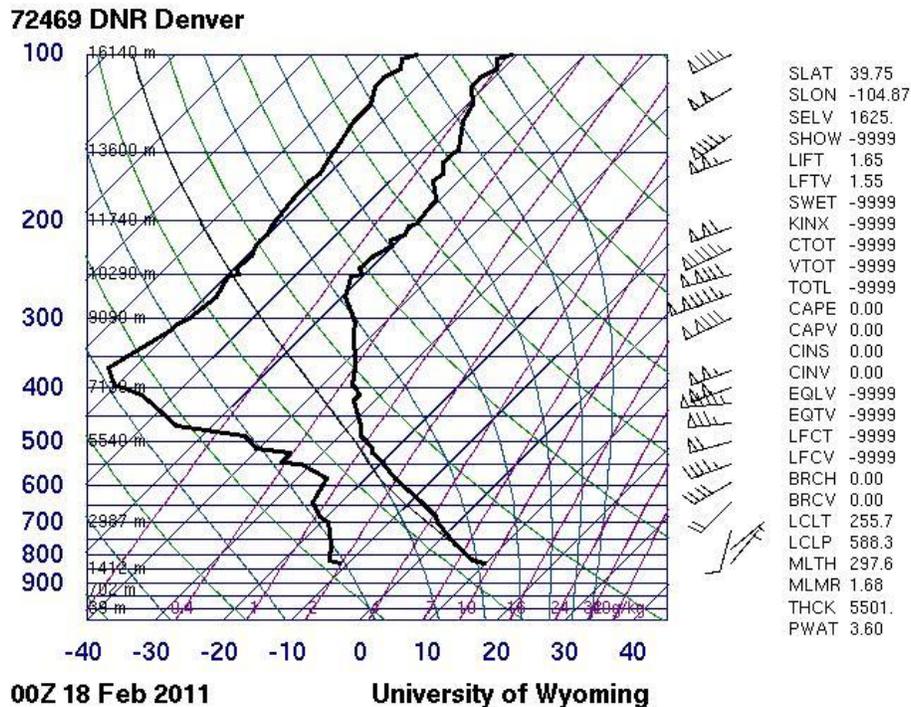
I chose this image of cumulus clouds as seen over the Boulder flatirons on February 17th 2011 because I really liked the shapes that they were forming and the appearance of the lighting. The image was taken at around 5 pm from the East Boulder Recreational center on Sioux Drive in Boulder Colorado just as the sun was hidden by the mountains to the west. During this sequence of photographs taken that day, the camera was held in the portrait position and tilted only a few degrees up from horizontal.



The weather on the day the photograph was taken was overall pretty nice, it was warm and there appeared to be scattered clouds and sun present throughout the day. As I recall, there were some turbulent and blustery winds on the days before and following February 17th which played a role in indication of the stability of the atmosphere. Further research of the atmospheric conditions that day was done by investigating a skew-t data plot provided by a weather balloon at the Denver International Airport. The balloon was released approximately fifty miles away from the location of the clouds in the

picture and an hour after the picture was taken, but provides important information of the behavior of the atmosphere at that time and in the general vicinity. The heavy black lines of the plot shown below indicate the presence of scattered clouds up to about 12,000 ft above ground level. When the photograph was taken, there wasn't much wind at ground level but the skew-t graph indicates increasing wind strength as we approach two- miles in altitude. These winds are varying and unpredictable as they contributed to the instability of the atmosphere that day. These winds played a key role in the creation, shape and location of the clouds which allowed me to take the photograph.

Skew-T Plot



Skew-t plot provided by the University of Wyoming

Since the atmospheric conditions were unstable that day and the clouds were below two miles in altitude they can be classified as Cumulus clouds. This is a common identification for cloud types and is present on the cloud identification table shown in the appendix. It was not stormy that day and the fractured and scattered appearance of the clouds indicates that the clouds shown can technically be classified as Cumulus Fractus clouds.

A Canon Rebel T2i digital SLR camera was used with a standard lens to take the picture and I held the camera in the portrait mode in order to capture the vast height that the clouds were covering. It seemed as if the clouds ranged in height from one to two miles and the width of the mountains seen in the picture is nearly two miles wide. I decided to keep the image as natural as possible so it is presented uncropped and unaltered by color modifications in Adobe Photoshop. The width of the image ended up being 4096 pixels and the height of the picture is 6144 pixels. According to the camera metadata the shutter speed was 1/800 seconds, the aperture value was set to f/7.1 and the ISO was

100. The 18mm lens had a focal length of 32mm while the clouds seen in the image are probably three to five miles from where I was standing. Overall it was a combination of camera settings and luck with the weather that allowed for a pleasing photograph.

I enjoy how the image turned out and I am happy with the quality of the picture. It displays a vast array of atmospheric physics which also create a beautifully artistic image. The shape and size of the clouds tells a lot about the stability of the atmosphere and the predictability of the wind patterns that were present. If it were easily possible, it would be amazing to capture the same cloud from many different angles and viewpoints; this would reveal even more details about the size, location, and physical features of the cloud being viewed, but this will have to wait for a future cloud project.

References and Image sources

Cloud Identification image provided by:

The cloud appreciation society

http://cloudappreciationsociety.org/shop/index.php?main_page=popup_image&pID=62&zenid=07712b8cc4847d090c555e584abacd45

Skew-t plot provided by

The university of Wyoming and Denver International Airport:

<http://weather.uwyo.edu/cgi-bin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2011&MONTH=02&FROM=1800&TO=1800&STNM=72469>

