

Clouds



Cloud Assignment 2

By
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The Image

Since this was my second try at photographing clouds it allowed me to focus on a different way to image them. For my first cloud picture I chose to do an image that had depth due to a multitude of clouds with only a small amount of sky showing. For this image I decided I wanted to capture a sunset. I wanted to do this because I feel a sunset is optimized when there are clouds to reflect the light. I also felt that picking a time when the sun was highlighting the clouds really helped view their size and shape. Being in Boulder offers many opportunities to view beautiful sunsets, and I took advantage of this. I took numerous pictures and I decided on my final image because it is so powerful. I was moved by the power of the cloud in the background pouring over the mountains and crashing on the foothills, then leaving only a few stragglers to make it all the way to Boulder's side of the Flatirons. I also felt that this image represented a lot of very interesting physics and chose this over my other final choice because of that fact.

Picture vantage point (set up)

I took this image at 6:44 pm on April 15th, 2006. I was facing west looking into the mountains from the second floor of LASP. LASP (the Laboratory for Atmospheric and Space Physics) is located at 1234 Innovation drive, a block to the east of Colorado and 30th.

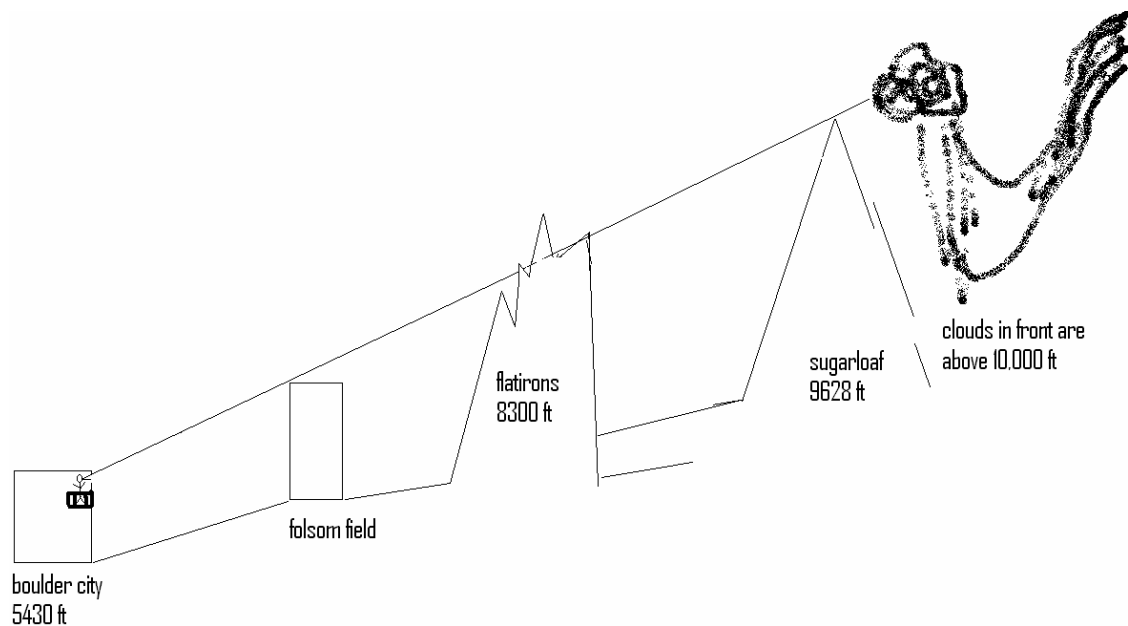


Diagram of line of sight and approximation of height of clouds in front

Cloud description (physics)

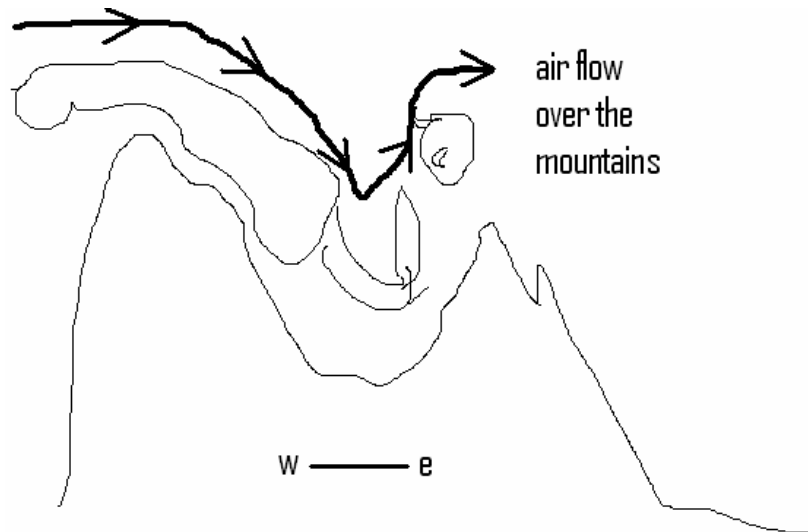
Cumulus clouds- Detached clouds, generally dense and with sharp outlines, developing vertically in the form of rising mounds, domes or towers, of which the bulging upper part often resembles a cauliflower. The sunlit parts of these clouds are mostly brilliant white; their base is relatively dark and nearly horizontal.

Humilis clouds- Cumulus clouds of only a slight vertical extent; they generally appear flattened

Fractus clouds- Clouds in the form of irregular shreds, which have a clearly ragged appearance. This term applies only to Stratus and Cumulus.

(Above is quoted from International Cloud Atlas)

My Image consists of Humilis Cumulus clouds in the background of the image and Fractus Cumulus clouds in the middle ground. The atmosphere is stable because the clouds are not rising. The edges of the clouds near the front have an iridescent glow to them and this is caused by the particles within the cloud being of the same magnitude. I identified the Humilis Cumulus clouds by the blanket shape they form over the top of the mountains. They are flattened on the top and do not appear to rise much above the top of the mountains. I identified the Fractus Cumulus clouds toward the front by the irregular shreds around the edge of the clouds and the shredded appearance of the clouds below the Humilis Cumulus wall. This formation is caused by the air flow over the mountains. The wind rushes over the clouds above the mountains and then follows the mountain down this gives the Humilis Cumulus its flattened appearance. Once the air hits the valley between the mountains and the foothills it dips and then pops up over the foothills creating the Fractus Cumulus clouds because of the air moving over the cloud in a less uniform way.



Photographic Technique

The basics for the photographic technique are as follows:

Camera: Nikon CoolPix5700

Resolution: Normal (300 in both x and y)

Shutter speed: 1/ISO speed rating

Exposure program: normal program

F stop: f/7.2

Max aperture value: f/2.8

ISO speed rating: 100

Focal length: 52.4 mm

Flash: No flash

Photoshop treatments: Adjusted Brightness and Contrast (see original image section)

Revelations

I enjoyed analyzing this image. I feel that the image invokes a feeling of a wave coming at you and it is interesting to me that the physics behind what caused it mimic that phenomenon. For that reason, I feel that this image really relates clouds to fluid flow. The visual interest in the image came from the sun setting above the clouds and adding another dimension and point of interest to the picture. This image appears less three dimensional than it obviously is. It was hard to get a feel for how far back and how tall the clouds actually are. I think that the presence of the sun and horizon above the clouds as well as the presence of Folsom field and the foothills gave it depth while allow to get a clear focused picture. These elements created a foreground, middle ground, and background. For me this image made me look at the clouds differently and not only did I appreciate the beauty of the sunset it heightened the experience by knowing the physics that accompanied it.

Original Image



References

1. "Cloud Chart Incorporated" Dept. of earth and atmospheric sciences, Purdue University
2. "International Cloud Atlas" World Meteorological Organization, 1969. Pgs. 6-12