Clouds

Assignment 2

By
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The Image

Cirrus, Cirrostratus, Cumulus, Cirrocumulus, Stratocumulus . . . and the list goes on. When choosing days to photograph clouds I found myself attracted to days when most of the sky was covered with clouds with a few pieces of sky peeking through. I like these days because the intricacies of the clouds are shown through shadows and this gives more depth to the image. Choosing an image that shows the sky beyond the clouds vs. an image that is purely filled with cloud optimizes this depth with an extra dimension. Having something in the foreground such as the ground also helps with an extra dimension but I found that the extra dimension only added to the image if it does not distract from the clouds.

I chose my image because it has bountiful depth due to a mountain and a tree in the foreground, a large expanse of cloud with shading due to the sun, and a view beyond the clouds. I feel that having the mountain and the tree anchor the picture and give it a scale without distracting from the cloud image. I think the dimension given to the image by the dark cloud that is in the front and slightly separated from the blanket of clouds adds interest to the image. I feel that the post-Photoshop image (see last section for a pre-Photoshop image) better shows the depth of the clouds by heightening the contrast between the light and dark.

Picture vantage point (set up)

When I took this picture I was on the balcony on the second floor of LASP (the Laboratory for Atmospheric and Space Physics, see figure below) in the CU Research Park.

Figure 1: LASP, circle shows balcony

I was facing southwest at 2:38 pm on Thursday February 9th. When looking at the picture the sun was above the clouds slightly to the right of center. There were no buildings or other objects that may have reflected the light so this was my only light source. For the framing of the picture it is not really appropriate to tell size of the field of view or the distance to the object. I can say that the distance to the tree in the foreground is around 10 yards and the distance to the mountain is probably around 10 miles. This provides a frame of reference for the scale of the picture.

Cloud description (physics)

I believe that these clouds are stratocumulus and stable due to the flat shape. Their flat shape implies they are stable because it means the molecules are not moving up anymore. I was not able to obtain a skew t chart for this day nor was I able to find any information on the atmospheric conditions. I only had the photograph to go off of and after looking at many pictures I decided that this was a stratocumulus cloud because where the cloud ends it seems to trail off in a manner consistent with stratus clouds and I chose stratocumulus over altostratus or cirrostratus because it is fairly opaque in most areas where with an altostratus the "sun appears behind frosted glass." (Cloud Chart)

The stratocumulus cloud is a "grey or whitish, or both grey and whitish, patch, sheet, or layer of cloud which almost always has dark parts, composed of tessellations, rounded masses, rolls, etc., which are non-fibrous." (Cloud Dynamics) In my image you can see these rounded elements in the break in the cloud.

Photographic Technique

The basics for the photographic technique are as follows:
Camera: Nikon CoolPix5700
Resolution: Normal (300 in both x and y)
Shutter speed: not recorded
Exposure program: normal program
F stop: f/7.5
Max aperture value: f/2.8
ISO speed rating: 100
Focal length: 29.5 mm
Flash: No flash
Photoshop treatments: Adjusted Levels for maximum contrast (see original image section)

Revelations

This image reveals the phenomenon of clouds by capturing a moment so it can be appreciated and even analyzed a little. When going over this image I really enjoyed seeing the depth and detail that the clouds had, this was something I didn't really notice when I was looking at the actual clouds. I also enjoyed the Photoshop effect because it brought forth different elements in the photograph that I had not noticed in the original. At first I had my reservations about this photograph because it doesn't focus very well in the middle of the image and my camera was set at a lower resolution. After looking at it and adjusting it in Photoshop I feel that the lack of focus in the center helps draw the eye to the near and the far which seems to give the image more depth. In this image the fluid flow is just the weather conditions combining with the moisture in the air. Having this image didn't leave much room for questions because the information was right there and ready to analyze. I think it was very difficult to determine which type of cloud this is though due to how large the clouds are and the fact that I did not obtain a skew t plot.

Original Image (before Photoshop)

References

1. “Cloud Chart Incorporated” Dept. of earth and atmospheric sciences, Purdue University
2. “Cloud Dynamics” Houze, Robert A., Dept. of atmospheric sciences, University of Washington. Pg. 9