Fall 2018 Cloud First
Stratocumulus
MCEN: 4151
By
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10/10/18

INTRODUCTION

Cloud first image of any cloud, an attempt to make the class look up at the sky more often and appreciate the beauty of clouds. We were attempting to capture a good high-quality picture of clouds above the horizon. The purpose of this assignment was to introduce us to the course as well as having an image to analyze in degerming cloud types and other physics of clouds.

SETUP, PROCEDURE, AND FLOW

This image was taken on October 2nd at 6:22pm in Boulder Colorado near Centennial Middle School. The exact location of the photo is 40° 2' 42.71" North and 105° 15' 56.61" West. The camera was facing west toward the mountains around 5 feet off the ground with an approximate angle from the horizontal of 30°. This is the location, time, and orientation of the camera or this photo.

VISUALIZATION AND LIGHTING TECHNIQUE

This is a stratocumulus cloud. You can tell this due to a few factors. One because the rest of the sky appears to be calm and bright saying it is a stable environment and stratocumulus clouds normally only appear in stable climates. Figure 1 confirms this, the skew T plot shows us the environment for that day, and since the cape is 0.00 for the time of this image we can conclude that it was a stable climate the day this photo was taken.
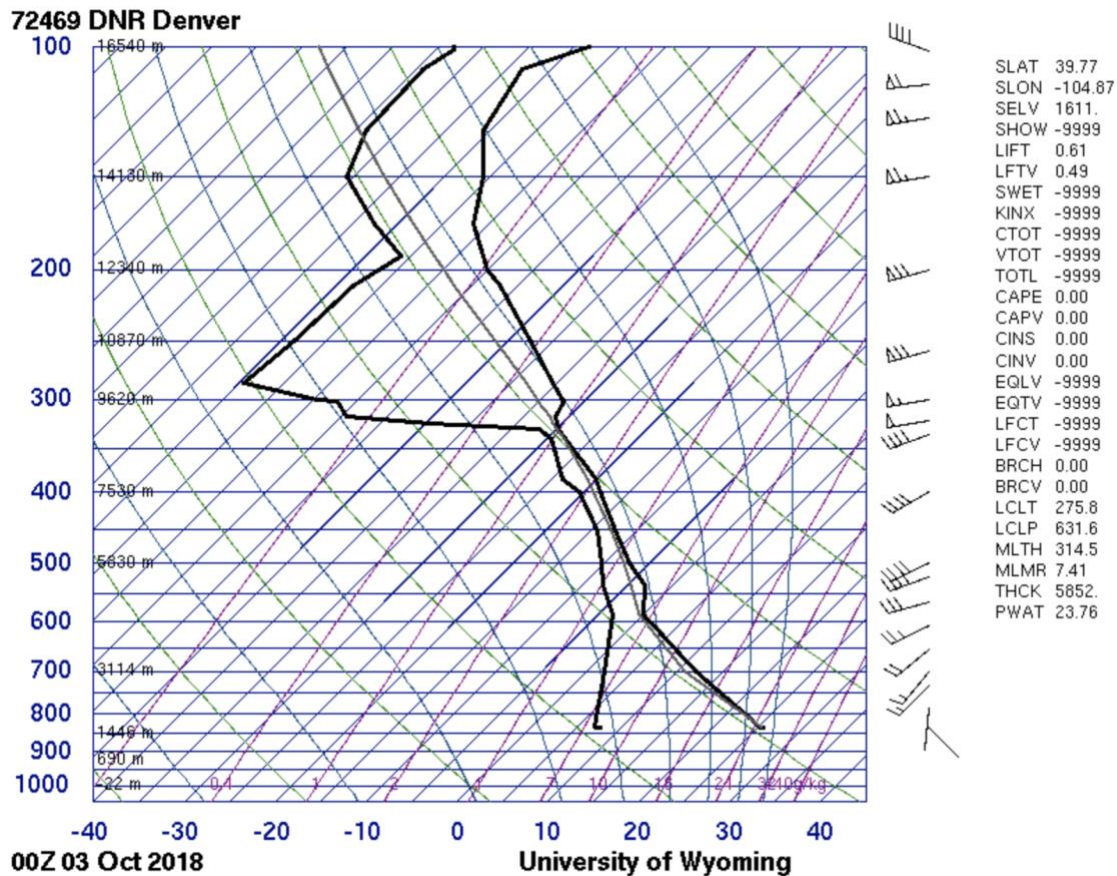

Figure1: Skew-T of DNR on 10/02/18 at 6:00pm

Among the skew-T plot data we also know that there was a stable climate for the photo and that it is a stratocumulus cloud because the weather had been clear the days leading up to the photo and the day after the photograph was taken. We also have the ceilometer data for this day and time in Figure 2. Which shows that around the time of the photo there was in fact clouds at a height of 2km which the typical height of a stratocumulus cloud is approximately. Based on all of the data it is safe to assume the image is of a stratocumulus cloud.
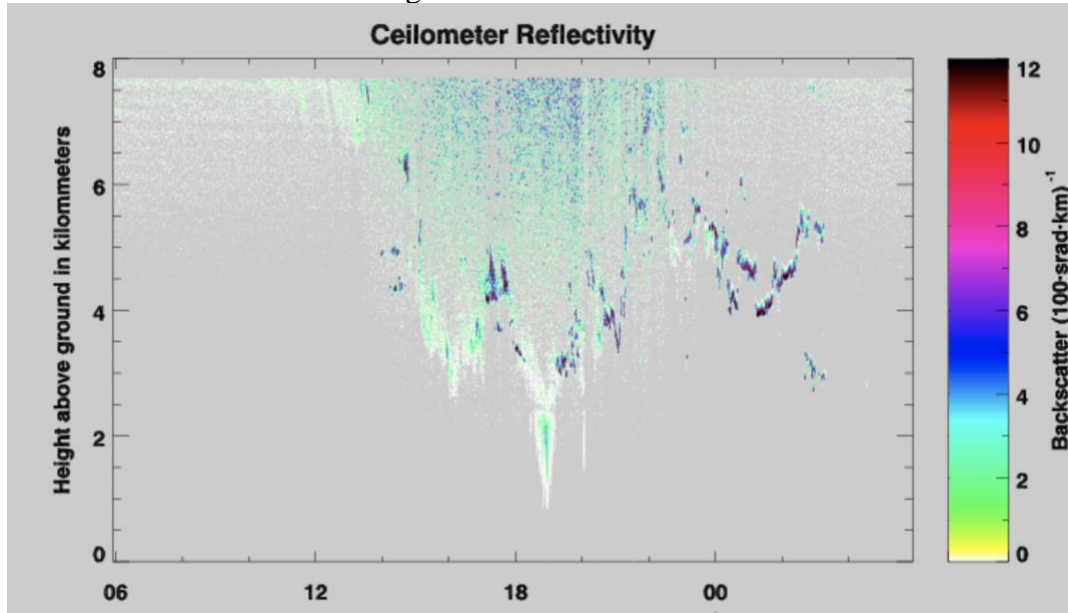

Figure 2: Ceilometer Data for Boulder, CO on 10/02/18

PHOTOGRAPHING TECHNIQUE & IMAGE

This image was taken using and iPhone 8 plus using the auto focus mode. The field of view is approximately the size of a baseball field approximately 60 feet. Since the clouds are approximately 6000ft above the horizon you can approximate that as the distance to the cloud in the image. This image was taken with a focal length of 3.99mm. The exposure time was 1/1,453 and an F number of f/1.8. The only post processing to the photo was cropping as you can see form Figure 3&4.

Figure 3&4: Original image (left) and Edited image (Right)

CONCLSUION

      This image really revels just how large a stratocumulus cloud can be and how shadowing can really affect their appearance. I like the simplicity of the image but feel the exposure could have been brought up to make a brighter image in the foreground. What effects cause the clouds to be so long and connected? This photo really caught my eye when looking at so many clouds over the course of this project. I think an improved camera and tripod could drastically improve this image.

REFRENCES

"Ceilometer data from sky watch 10/02/18." Accessed October 24, 2018.
    http://skywatch.colorado.edu/

"Skew-T data for 6pm 10/02/18." Accessed October 24, 2018.
    http://weather.uwyo.edu/cgi-bin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2018&MONTH=10&FROM=0300&TO=0300&STNM=72469