Fall 2018 Cloud Second
Altostratus
MCEN: 4151
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INTRODUCTION

Cloud second image of any cloud after October 12th, 2018, to see how the clouds have changed between the beginning and end of semester. We wanted to capture a high-quality image of the clouds that we may have missed in our ordinary life. The purpose of this assignment was to continue to look up from our daily lives and examine how the clouds change with the changing seasons.

SETUP

This image was taken on November 16th at 11:50am in Boulder, Colorado outside of the University of Colorado Boulder ITLL building. The exact location of the photo is 40° 0' 24.09" North and 105° 15' 43.842" West. The camera was oriented south, towards the CU boulder Business field. The camera was 5 feet off of the ground with an approximate angle from the horizontal of 45°. These locations and angle produced the cloud pic below.

CLOUD DETERMINATION

This is an Altostratus cloud. You can tell this because the entire sky is dark and filled with clouds but is a stable environment and altostratus clouds usually appear in stable climates. Figure 1 confirms this, the skew T plot shows us the atmosphere on November 16th, 2018. Providing cape is 0.00 on November 16th, 2018 we can see the cloud in this image is under a stable climate even given the dark nature of the image.
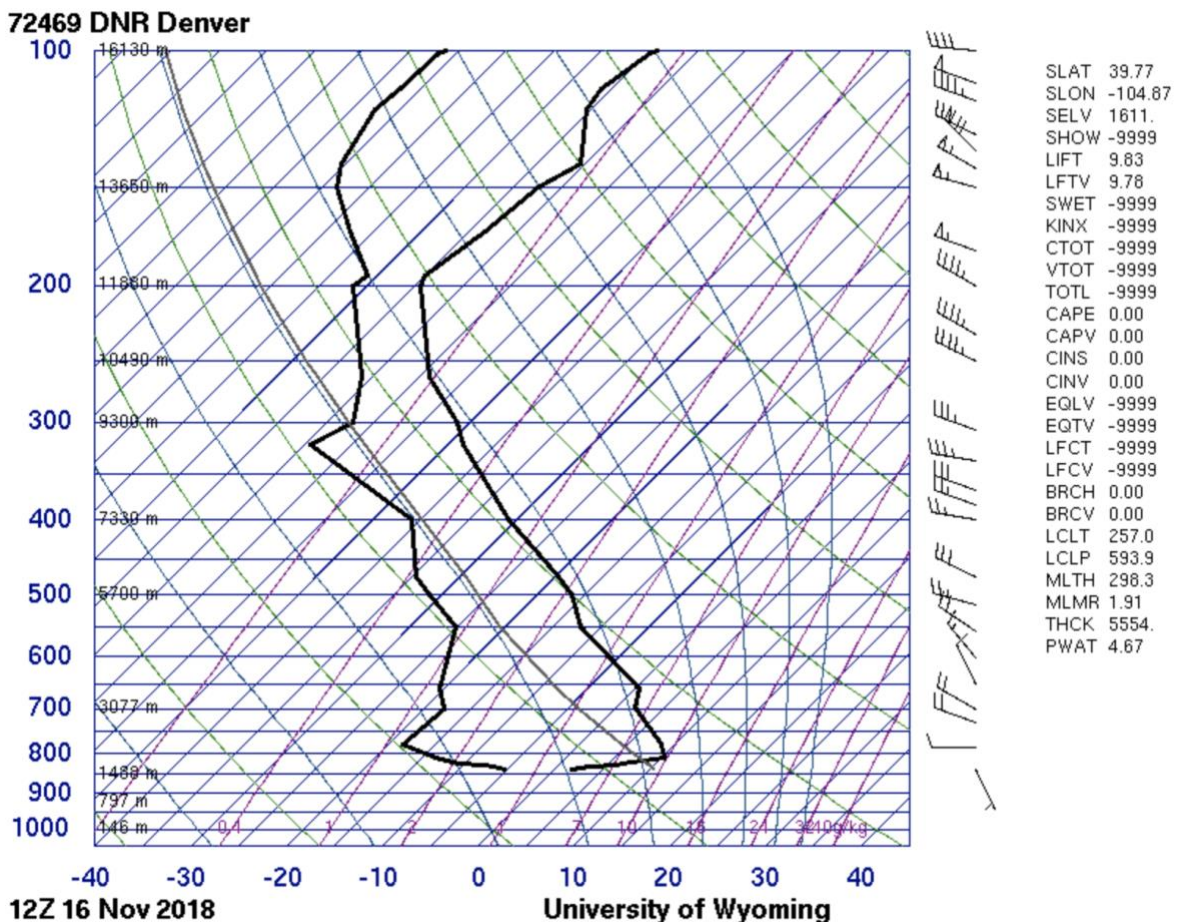
Figure1: Skew-T of DNR on 11/16/18 at 11:50am

Along with the skew-T data we also have the ceilometer data from the same day. Figure 2 shows that the clouds pictured are at a height of around 3.5 kilometers which is typical with altostratus clouds seen in the photo. Based on the skew-T and ceilometer data we can see determine this cloud is in fact an altostratus.
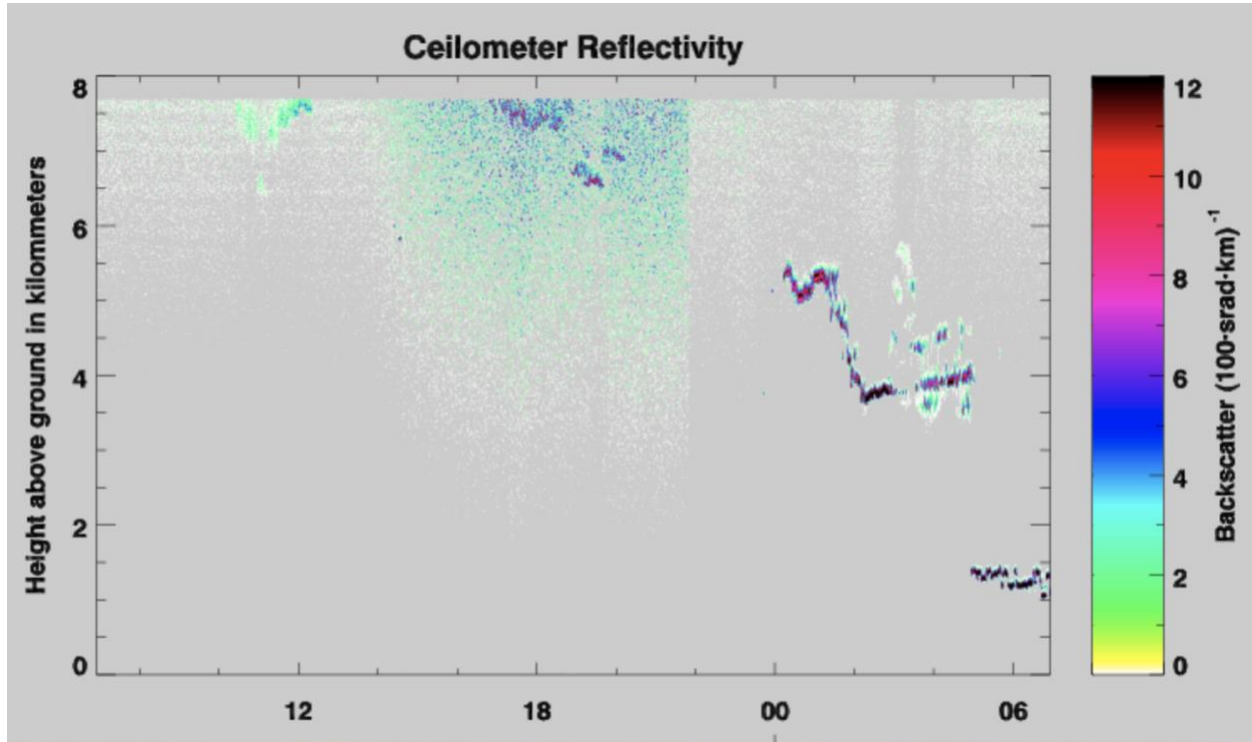

Figure 2: Ceilometer Data for Boulder, CO on 11/16/18

PHOTOGRAPHING TECHNIQUE & IMAGE

This image was taken with an iPhone 8 plus in the auto focus setting. The field of view of the image in figure 3 can be approximated as around a 3-mile expanse of the sky. Since the height of the clouds are around 3.5 kilometers, it can be assumed as the distance to the clouds. The focal length of the iPhone 8 was 3.99mm with a F number of f/1.8 and exposure time of 1/3,472. These are the settings and approximate details of the figure 3. To achieve the final product, figure 4, the image was cropped and then the curves were changed to achieve a more striking image.

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

CONCLSUION

      I really like the contrast of the blue on highlight on the mostly grey and how much the clouds fill up the majority of the image. I really like the way the clouds appeared to painted on the sky. Really curious as to how the layers of the cloud form and what makes the darkest parts sit at the bottom. I think a slightly higher ISO could've really brought up the information in the photo.

REFRENCES

"Ceilometer data from sky watch 10/02/18." Accessed December 7, 2018.
    http://skywatch.colorado.edu/

"Skew-T data for 6pm 10/02/18." Accessed December 7, 2018.
    http://weather.uwyo.edu/cgi-bin/sounding?region=naconf&TYPE=GIF%3ASKEWT&YEAR=2018&MONTH=11&FROM=1612&TO=1612&STNM=72469