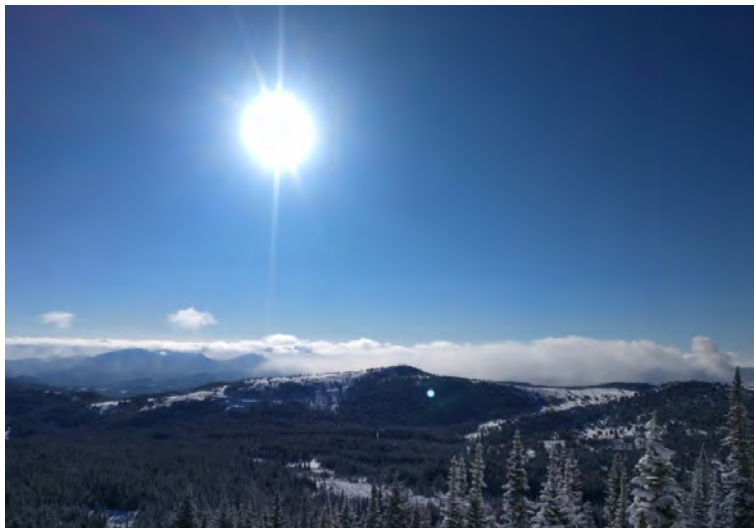


Cloud Second: Mountain Stratocumulus Lenticularis

Taken November 12th at 8:15 AM
Caribou, Colorado

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MCEN 4151: Flow Visualization

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1 Introduction

This image was taken for the Second Clouds assignment. I wanted to get a unique cloud type that wouldn't often be visible for most people. Another goal of this image was to include a beautiful landscape as a backdrop to the clouds. This image was one of about 20 that got the contrast and focus on the clouds that I really desired.

2 Circumstances

I took this image at around 8:15 AM on November 12th while skinning up a trail in Caribou, Colorado. The view from the top in the winter is something that can quite difficult to get to, and is absolutely stunning. I took this photo right before I skied down from the top of the mountain. I tried to keep the camera as level as possible so that you would be able to see the clouds in detail, as well as other features of the landscape. It was a nearly bluebird day, so there was plenty of light on the few low clouds that were around.

3 Type of Clouds

The main clouds that appear in this photo are Stratocumulus Lenticularis. These clouds are know as orthographic clouds because they are caused by the topography of the region in which they form. They are created because air is forced up over mountains. When this happens, the air cools and condenses. This is what creates the actual cloud that is visible. These clouds also form in a stable atmosphere. The CAPE for the atmosphere in this image was 0, meaning the atmosphere was very stable. Typically cumulus clouds will not form in a stable atmosphere, but orographic clouds are an exception to this rule. Looking at the Skew T diagram, you can see that the clouds were likely forming around 10,000 ft. This is also very close to the elevation I hiked to at Caribou. It seems clear that the elevation the clouds were at were also very similar to elevation that I hiked to. In this case the clouds were just above the ground. This is why they were classified as stratocumulous. This type of cloud suggests that wind was coming over the mountains, but has little to do with any other weather event occurring. Given the stability of the atmosphere and the topographic features creating the clouds, these suggest little about what will happen in the future.

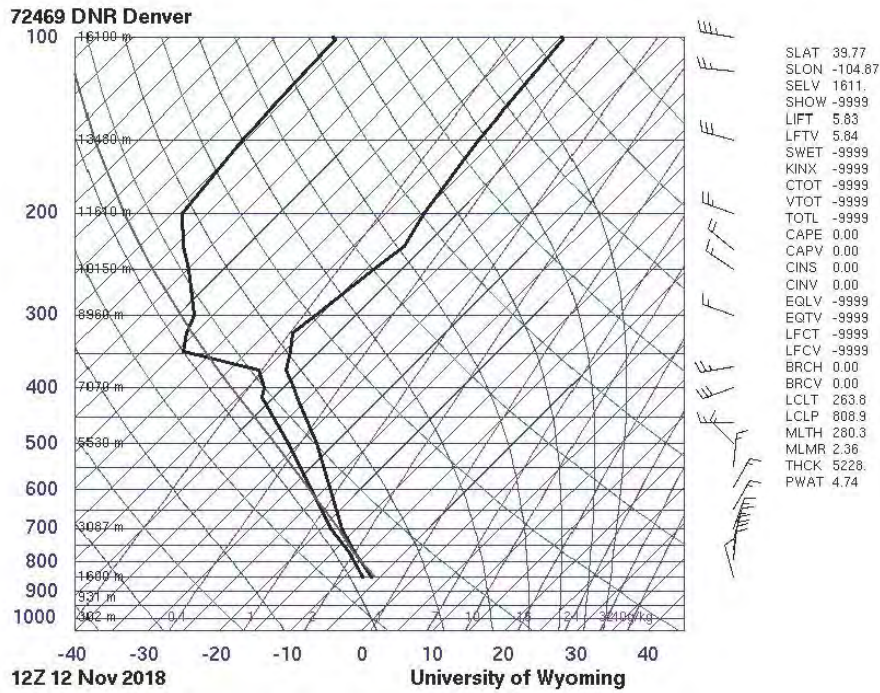


Figure 1: Skew T diagram for time image was taken

4 Photography Techniques

This image was taken from a OnePlus 3T camera. This camera is 16 MP with a f/2.0 lens. There was no digital zoom used when taking the image. The clouds visible take up around 1 mile. I was not extremely close or extremely far away from the clouds in this photo. The ISO was set at 125 and the exposure time was 1/5617 of a second. The focal length of this camera is 4.26 mm, making it very small when compared to a typical SLR camera. These settings were mostly chosen automatically as the lens does not have adjustable f-stops. There was very little post processing done on this photo other than adjustments to the saturation and realigning it so that the horizon was horizontal. These were both done to create a more balanced looking photo.



Figure 2: Raw image

5 Comments

I'm very happy with how this image came out. I think the view is absolutely gorgeous and the blue sky and snow covered trees add to the aesthetic. I do think that the sun in the image can come off as slightly distracting overall, and I I may consider editing it out completely. Getting a similar image with a different angle in which you cannot visibly see the sun would be ideal.