Wispy

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Cloud Report

Class: Flow Visualization - ARTF 5200-001

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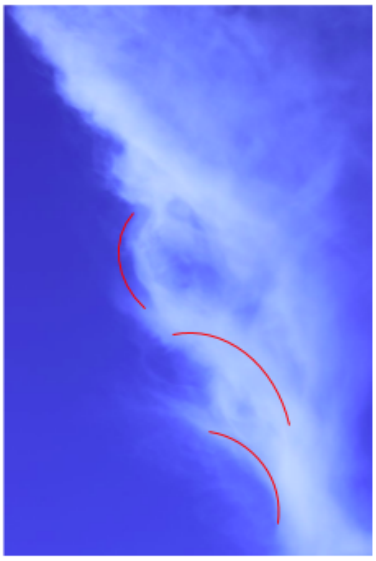
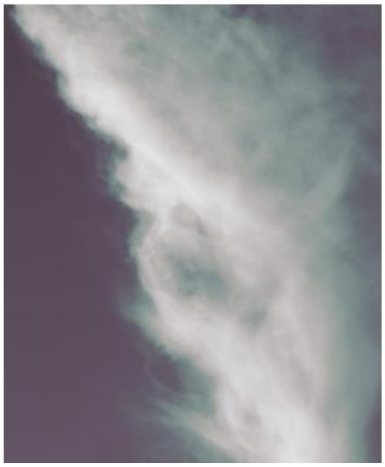
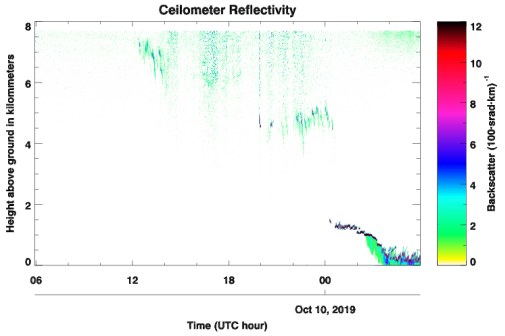


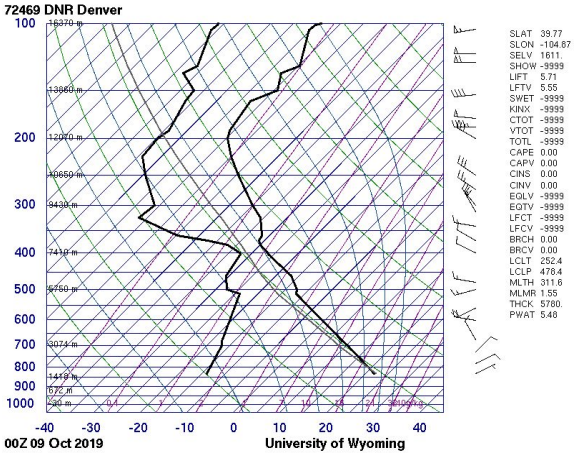
Cirrus Cloud

I thought my image was a Cirrus Uncinus at first. I had come to this conclusion because these are the type of clouds that tend to have curls. Cirrus clouds are known as "mare's tails" which I found interesting. In this photo I wanted to explore why this cloud was at an angle and creating wispy trails. After I did some research it looked like this photo was the trail of a Cirrus floccus formed over time by cirrostratus clouds below. According to UCAR Center for Science Education, "Cirrus clouds are often seen during fair weather. But if they build up larger over time and are followed by cirrostratus clouds, there may be a warm front on the way." This cloud description makes far more sense to the phenomena I experienced that day.

On October 9th, I took the picture shown to the right. It was taken at 6pm, across from the Libby Hall on campus. I faced north towards the stadium and I pointed up at an angle using a telephoto lens. Cirrus clouds are seen at high altitudes in the troposphere and again at higher points. The parcel is cooler and the ceilometer says the clouds where anywhere from 5 – 6 kilometers up high. Cirrus clouds can form at any altitude between 16,500 ft (5.0 km; 3.13 mi) and 45,000 ft (14 km; 8.5 mi) above sea level. (Cirrus Cloud, 2019).







In the photograph you can't see the cirrostratus clouds below however I believe that the phenomena is due to the crystal ice cloud, Cirrus floccus that formed from cirrostratus clouds. It was not windy and there was a warm front, making the weather conditions fair. The data suggest everything was very stable. A cold front was approaching the next day. The clouds had not been similar the day before. It seemed to be clear and empty of clouds. It did not rain or snow after the image was taken but there was a winter storm the next day. On this day it was warm and the CAPE was 0.00 = therefore stable. Condensed LCLP 478.0 and again at higher points. I think that the clouds expected in this weather condition were Stratus nebulosus and cirrus stratus clouds. If it had been windy then maybe I would have seen the Cirrus Uncinus clouds. The ceilometer suggested that the clouds were high in the troposphere approximately from 5 to 8 miles.

I used a Telephoto lens to get really close to a really high altitude cloud from the below. The field of view was rather big it might be 16 miles away. I was curious to try a lens that could get close to something so far away. I used a digital camera, Canon EOS 80D with a Zoom lens, EF 70 -200mm (1:4). Image size: 4000 x 6000. 1/800 sec, f/4, ISO 100; Manual Resolution per pixel per inch 72, flash did not fire. For photo editing I used Photoshop. The idea behind the processing method was to alter the two ends of the curves points and desaturating a percentage.

The image reveals the formation of trails of a Cirrus floccus developing. Which means that there were a series of cirrus spissatus, given that there would be a passage of a cold front. Usually they are "aligned transverse to the upper level winds and also show signs of convective development, suggesting instability at their level" (Cirrus Spissatus). This is confirmed by a distinctive patch of Cirrus floccus with trails and Cirrus floccus in the initial stage of development. I love how far the cloud was and how I was able to get so close. I wish that I had take video that day. This gives me ideas for the future ways to document the clouds. As far as the physics I love to learn more about how cirrus clouds morph. Also is it possible for a cloud formation to make it to another place without transforming?

Works Cited

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