Cotton Candy Swirl

By: Austin Sommars

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Context and Purpose

This image was one of several I had taken over the course of a few months, since hearing in the beginning of the course that we needed to produce an image of clouds. I think the color effects of sunset were the biggest influence for choosing to proceed with this particular one. This image captures many colors, and is not your average blue and white cloud image, it features many pastel-like colors such as yellow, green, pink, blue, and orange.

Another reason this picture is special to me, is because it was taken on a holiday weekend when my parents had come to visit me in colorado for the first time since I moved here to Boulder in 2020. It was early September for the Labor Day weekend, my Mom, Dad, and Aunt visited and I had taken them to Estes Park to see Rocky Mountain National Park. This image was taken just before Sunset at 7:45 PM on September 2nd, while waiting to get dinner at Smokin' Daves Barbeque. The elevation was about 7600 feet above sea level, and facing west toward the sunset and Rocky Mountains at an angle of 45 degrees.

Figure 1: Edited Image of Clouds.

Cloud Information

The image consists of a stratocumulus cloud, which was hovering just above a system of what appears to be light rain system in the distance. According to the National Weather Service, straocumulus clouds "are hybrids of layered stratus and cellular cumulus, i.e., individual cloud elements, characteristic of cumulo type clouds, clumped together in a continuous distribution, characteristic of strato type clouds. Stratocumulus also can be thought of as a layer of cloud clumps with thick and thin areas. These clouds appear frequently in the atmosphere, either ahead of or behind a frontal system.[1]" I have no experience outside of this class identifying clouds, but that is what my peers and I decided they were characterized as in this edited image. Referring to the data in figure 2, the CAPE (Convective Available Potential Energy) value was 0, indicating stable atmospheric conditions. However, this data was recorded in Grand Junction and not near Estes Park so it is not exact. These clouds were approximately at about 5600 meters (18,000 ft), the lines on the Skew-T chart cross, indication the depoint and air temperature are equal and therefore can cause rain (which was the case just outside of the frame of the edited image). The winds at ground level were not noticeable, and atmospheric winds were approximately 30 knots.
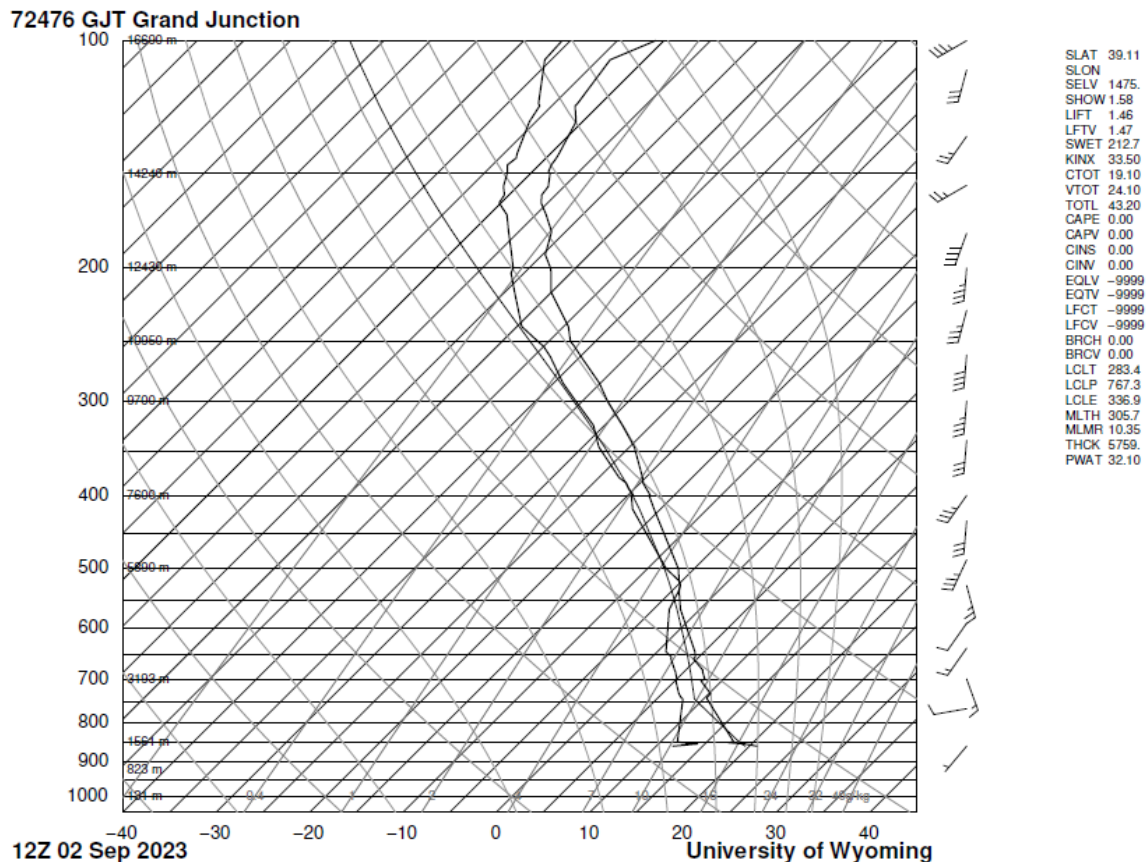

Figure 2: Skew-T Plot – Day of photo at Grand Junction, CO

Figure 3: Unedited Image of Clouds.

Photographic Technique

The image settings are described here as follows. The camera used was an iPhone 13 Pro. The Camera settings were an aperture of f/1.5, exposure of 1/60 second, focal length of 5.7mm, and ISO was 64. The subject of the image was approximately 3-5 miles away. The image resolution was 4032x3024. The raw image file was processed using Darktable, where brightness, RGB curve, and image size were edited to enhance the features.

Reflection

I am super happy with the results of this image. The range of color in it is fascinating to me, and offers alot of texture and "swirlyness". I initially thought I would use a less cropped image, as I think it is valuable to see the mountains and the stormy conditions, but I lacked the expertise in identifying clouds so I cropped it out. I am satisfied with the presentation and how I was able to showcase the clouds in my image!

References

[1] Atmospheric soundings. (n.d.). Retrieved October 30, 2023, from
https://weather.uwyo.edu/upperair/sounding.html

[2] US Department of Commerce, N. (2020, May 30). Cloud classification. National Weather
Service. https://www.weather.gov/lmk/cloud_classification