

Cloud First

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Introduction:

For the “Clouds First” assignment, our purpose was to capture the formulation of fluid physics with clouds. I captured this image of these stunning cloud formations. I took pictures of clouds throughout the month, seeing the variety of formations and colors that appear in the 3 month scope of this project. The picture I ended up using was the most visually appealing cloud from its layers and depth. I ended up capturing some of the foreground which I liked, but I didn’t take the “playground” aspect into consideration and decided to crop the picture to just the clouds instead.



Figure 1: Raw Image

Circumstances:

On September 4, 2024 at around 7:02PM, I decided to walk on a trail near my house in Boulder, CO. I realized that I needed to take pictures of clouds, and on this day, the cloud formations were beautiful and I was able to capture it on my Iphone 15. The camera was facing South/Southeast, and the elevation was approximately 5600 feet. It was overall a sunny/nice day out.

Description:

Stratocumulus clouds are low-level patches of clouds that can be found in groups. The beauty in this cloud form is the more defined bases. The clouds are typically gray and white but have a variety of shades creating definition. form when air masses of different temperatures mix, creating stable but mildly turbulent conditions, “They are indicators of a change in the weather and are usually present near a warm, cold or occluded front” (Met Office). Through the fluid dynamics, you can see how the lumpiness creates shear turbulence, getting diffused cloud edges. With how elongated the clouds look, the wind is moving at different speeds and directions, causing the clouds to stretch. With the bright patches peaking through the clouds, that means there are localized updrafts where warmer air rises and cools, forming clouds. When it isn’t as strong, there are more layers created hence the photo in Figure 1.

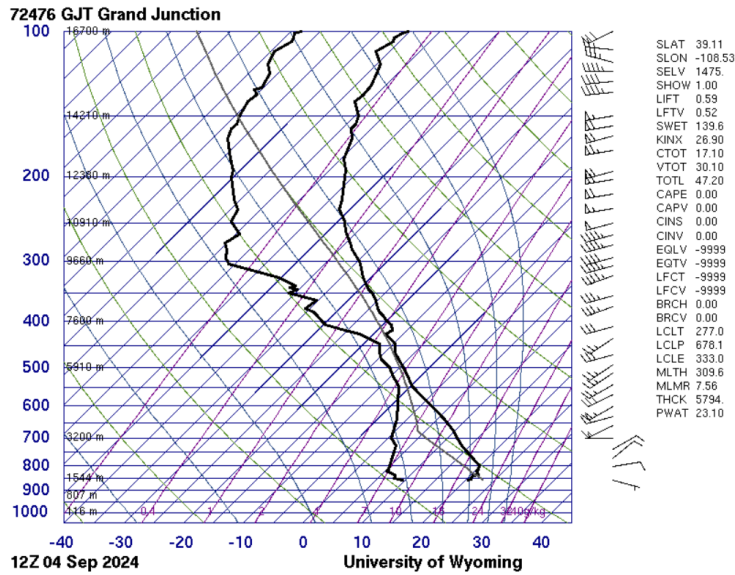


Image 2: Skew T Data

Technique:

Taken on my iPhone 15, here are the settings: ISO: 40, Aperture: f/1.6, Focal length: 26mm, SS: 1/200, Resolution: 4284 x 5712. The image was edited in Adobe Photoshop where exposure, brightness, contrast, and color adjustments were made.



Figure 3: Edited Photo

Conclusion:

Overall, the project was successful. I think that giving myself more opportunities to go outside to take pictures would've been helpful. Next time, I'd like to camp out and see the transformation of the sky and take before/after pics rather than just the finalized photo. I also liked the cropping of the photo but I was suggested to keep the objects in the photo because the foreground presented the scale of the clouds and how big they actually are.

References:

Met Office. (n.d.). Stratocumulus clouds. Met Office.

<https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/clouds/low-level-clouds/stratocumulus#:~:text=How%20do%20stratocumulus%20clouds%20form,warm%2C%20cold%20or%20occluded%20front>