

Qisheng Lei

MCEN 5151 - Flow Vis

Prof. Jean Hertzberg

Cloud First

30 October 2023

Cloud First Report

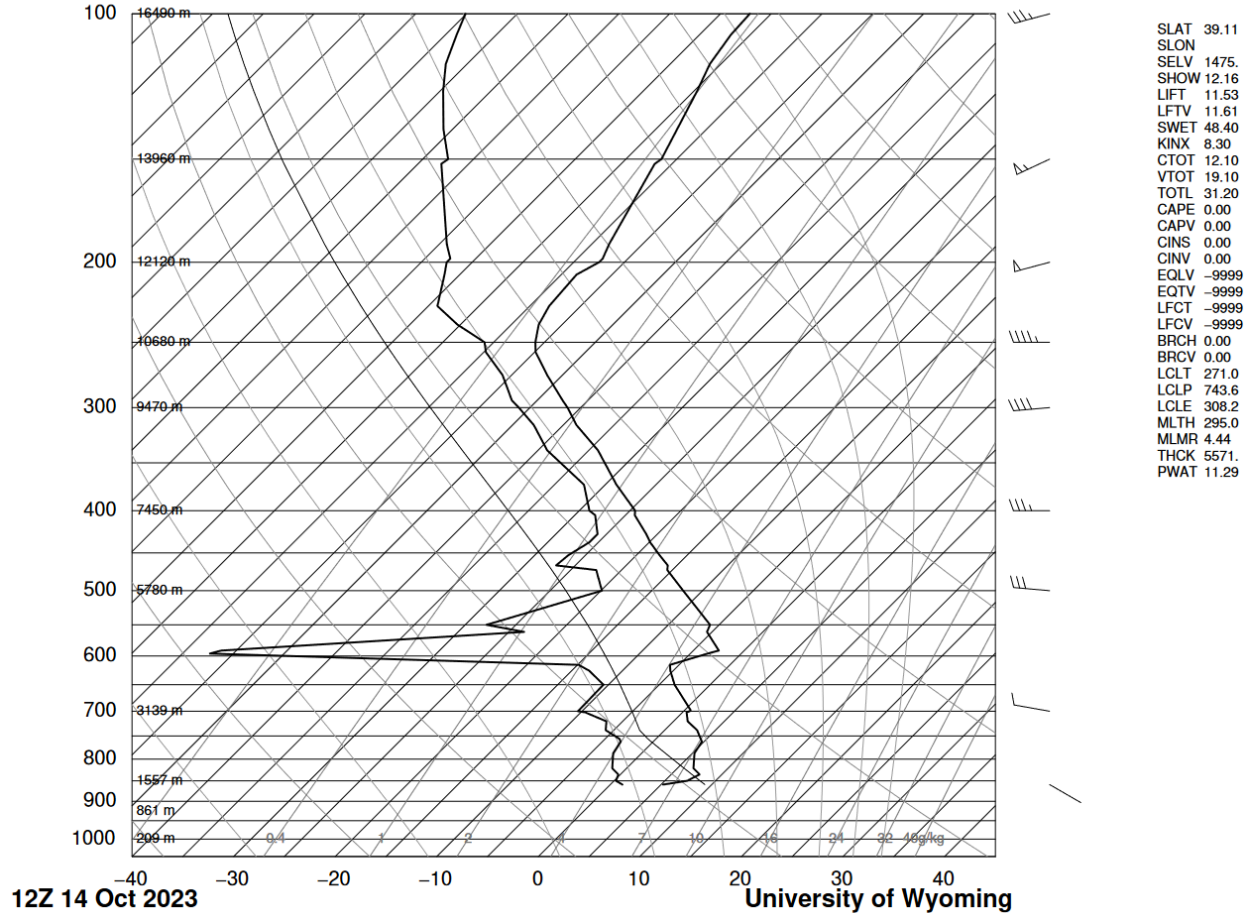


This is our first cloud assignment, we were tasked to observe and capture the clouds and learn the differences between them. The intent of the image was to capture different types of clouds in the same frame, it's intended to show the differences between clouds and what they look like in different altitudes.

I took this picture around Switzerland Trailhead which is west of Boulder right outside of a mountain town called Gold Hill. The elevation is roughly 8500 ft where the picture is taken and the time was 1719. From the Skew-T chart from University of Wyoming and University of

Colorado, Boulder Skywatch we can see more details about the clouds. The Skew-T chart is attached below.

72476 GJT Grand Junction



Some types of clouds we can observe from the picture include cirrostratus on the top left side of the picture, altostratus on the top right of the picture and stratocumulus on the bottom of the picture. From the atmosphere data and observations, we can also see that clouds are relatively stable. I did not have accurate data of the flow such as speed, time estimation of how clouds are moving.

There are not many visualization techniques used, besides keeping the camera framing as what I wanted to showcase different types of clouds. The lighting around 1700 is a bit dark, there are also no flash or anything else used, just a photo in RAW format.

I am trying to frame the clouds to fill the entire frame of the camera, so I won't have to crop later, because there are not big distractions like the other two assignments.

- Size of the field of view: 45.3 Degrees
- Lens focal length: 48mm
- Type of camera: Sony a7R Mk.ii. Full Frame digital camera.
- Original pixels: 7952x4472
- Final image pixels: 7952x4472
- Exposure specs: f/5, 1/1000 sec, ISO 100



The before and after image is basically identical, there are no cropping or much editing to it besides some small adjustments around brightness, exposure, contrast.

Image reveals three major and distinguishable types of clouds in one picture, at first I thought the cirrocumulus is from the wind blowing over from the altostratus on the right, since elevation is high, but it's not, it's two types of clouds one is just higher up and farther away. We

can see the low stratocumulus for lower elevation and how flat the bottom side of the cloud is. I like how I can capture all these in one picture, but at the same time, lacking a bit more details when diving into one of the specific clouds. Depends on how I am going to research the cloud next time, I may also take more pictures specifically for each type of clouds and everything in one as well.

References

Atmospheric Soundings, weather.uwyo.edu/upperair/sounding.html. Accessed 30 Oct. 2023.

Skywatch Observatory, skywatch.colorado.edu/. Accessed 30 Oct. 2023.