



Alto Stratus and Cumulus Clouds in Erie, CO

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Taken: 11/3/23, 6:09pm

This photo was taken for the Cloud Second assignment to capture cloud phenomena and analyze atmospheric conditions. Since the assignment start date, I had been trying to capture cloud formations before a heavy storm as strong, cold winds were creating grand cloud formations. However, I ended up going with a classic, Colorado sunset because the snow cloud formations were not distinguishable enough on camera. The final image has a few types of clouds in it to show the bright yellow-red spectrum and contrast with some darkness. The houses and cars were purposefully left in to reaffirm the sense of familiarity that we often miss out on with beautiful surprises in unexpected places.

Facing West (towards the mountains), this photo was taken on an iPhone 12 with the camera angle being 120 degrees from the horizon. In order to capture a more vertical part of the sky, the camera was tilted back. This is a classic sunset picture here in Colorado and was taken 11/3/23 at 6:09pm. It is worth noting that the straight streaks in the clouds are due to residual jet streams and are not natural cloud formations.

This photo was shot at an altitude of 5,130' with the clouds themselves being at an elevation of 3,500m-5,000m. This range is the expected of altostratus and altocumulus clouds (maybe even bordering along lenticularis), and from the skew-T diagram below, there is a point just above 3,500m where the dewpoint and temperature line come close together. From the report provided by University of Wyoming, the cape value, a measure of stability in the atmosphere, was recorded as 0 for both 11/3 and 11/4. This means that the atmosphere was in stable condition, without any significant differences in temperature/pressure to cause uplifts.

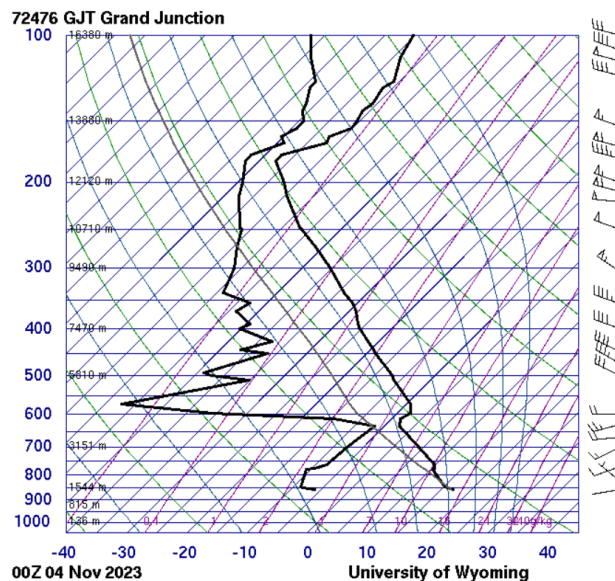


Figure 1: Skew-T diagram 6 hours after the photo was taken [1].

The weather conditions were calm, with no storms before or after this image within a day. These clouds are not typical indicators for storms, and I also found that no significant weather occurred, in fact it had been an unseasonably warm, bright day.

The altostratus clouds seen were incredibly flat, and this might be due to the fact that formation below 5,000m is atypical of these clouds. However, it would explain the appearance of flatness of these clouds, and along with the steady atmosphere, there would be no real height for these clouds. The range described above is more appropriate for altocumulus clouds, and given the fact that the range in the skew-T is almost identical, the data matches my observations and assumptions for these cloud types and their appearance.

There are few different perspectives to consider in this photo: the houses closing in the street, the clouds close to the camera, and the clouds over the mountains. The street is not too relevant but the clouds closest can be estimated as spanning 5 miles and the farthest ones (horizontally) would be closer to 20 miles. Since I am quite familiar with this location (not my house), the distance to the farther clouds is 27 miles. I wanted a long field of view to make the clouds grander than they were.

To reiterate, this was taken on my iPhone 12 with the wide camera lens (26mm f/1.6). The other settings are: ISO 50, 46mm, and 1/121s. To bring out the colors of the image, I lowered the brilliance (to get rid of glare from the cars), lowered exposure (decrease the brightness of the blue sky), and increased the shadows (so the foreground was not the main focus). The image was not cropped and is 3024 x 4032 pixels.



Figure 2: Original image (left) and edited image (right).

Leaving the houses and the cars was a risky move that I am still on the fence about because it almost gives “2016 Pinterest girl” vibes. I do, however, really like that I have developed my editing skills more to achieve a certain look I want. Having listened to the many

discussions from the more artsy people in the class, I took some of their advice for creating “darker” looks without muddling them.

Capturing these clouds was unintentional, but I find their formation interesting –apart from their light dispersion. Next time, I will work on capturing pre-snow clouds because I find their grandiose appearance to be captivating, as well as comforting. I am a big fan of cold weather, so I am always excited to see the large, cold clouds that strong winds bring in.

References:

[1] <https://weather.uwyo.edu/upperair/sounding.html>