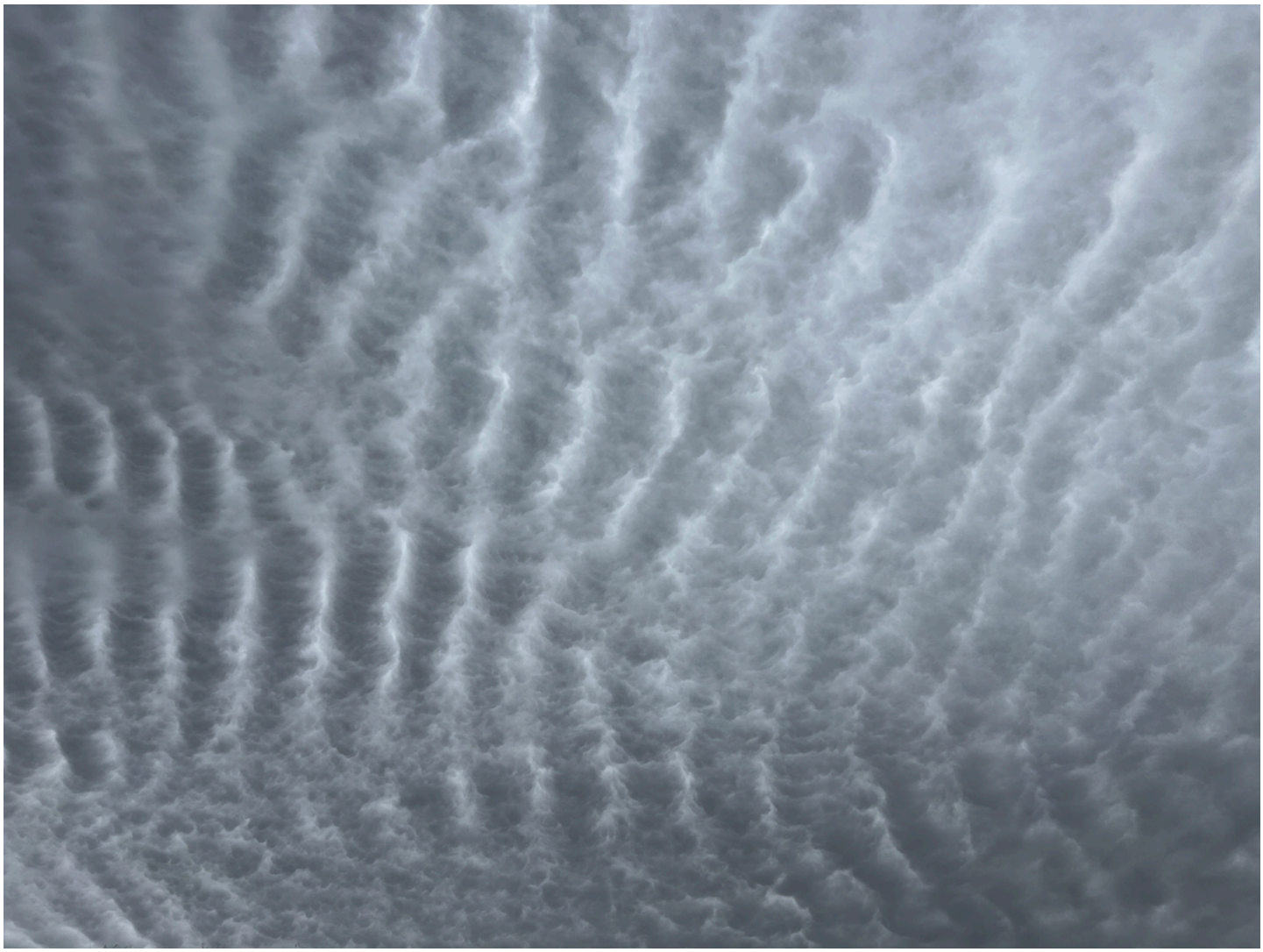
Hannah Brothers

Flow Visualization: Clouds Second
MCEN 5151
Cirrocumulus Cloud
November 12th, 2025
8:54am MDT
40°00’18.5″N, 105°15’10.7″W



This image was taken for the second clouds assignment for CU's Flow Visualization course. My intent for the second cloud assignment was to capture another beautiful cloud image and hopefully one that is more unique. This image shows a cirrocumulus cloud formation above Boulder Colorado that has created a Mackerel Sky. I feel that I have certainly met my intent for this image, and am also happy with the post-processing done.

This photo was taken on November 12th, 2025 at 8:54am MDT. This was taken almost directly above, located at 40°00'18.5″N, 105°15'10.7″W, while I was facing Southeast at the intersection of 30th Street and Euclid Ave.

The clouds in this image are likely cirrocumulus clouds. These clouds appear to be located higher in the atmosphere, as can be seen from the image below, which was taken from the same time to show the surroundings. Additionally, they are clumpier and more fluffy in appearance than would be expected of a stratus cloud. Cirrocumulus clouds are typically found at or above 7000m, which also aligns with the Skew-T diagram for the day. The Skew-T diagram can also be seen below. These clouds have also formed a "Mackerel Sky", which means that the sky has rippling formations present, often from wind shear. When this photo was taken, most of the sky had this pattern or consisted of cirrostatus clouds. The temperature was approximately 50 degrees Fahrenheit with low to moderate winds from the West. Clouds were similar the rest of the week, with other alto and cirrus clouds present, but without a pattern.

Fig. 1. Surroundings of Clouds 2 Photo

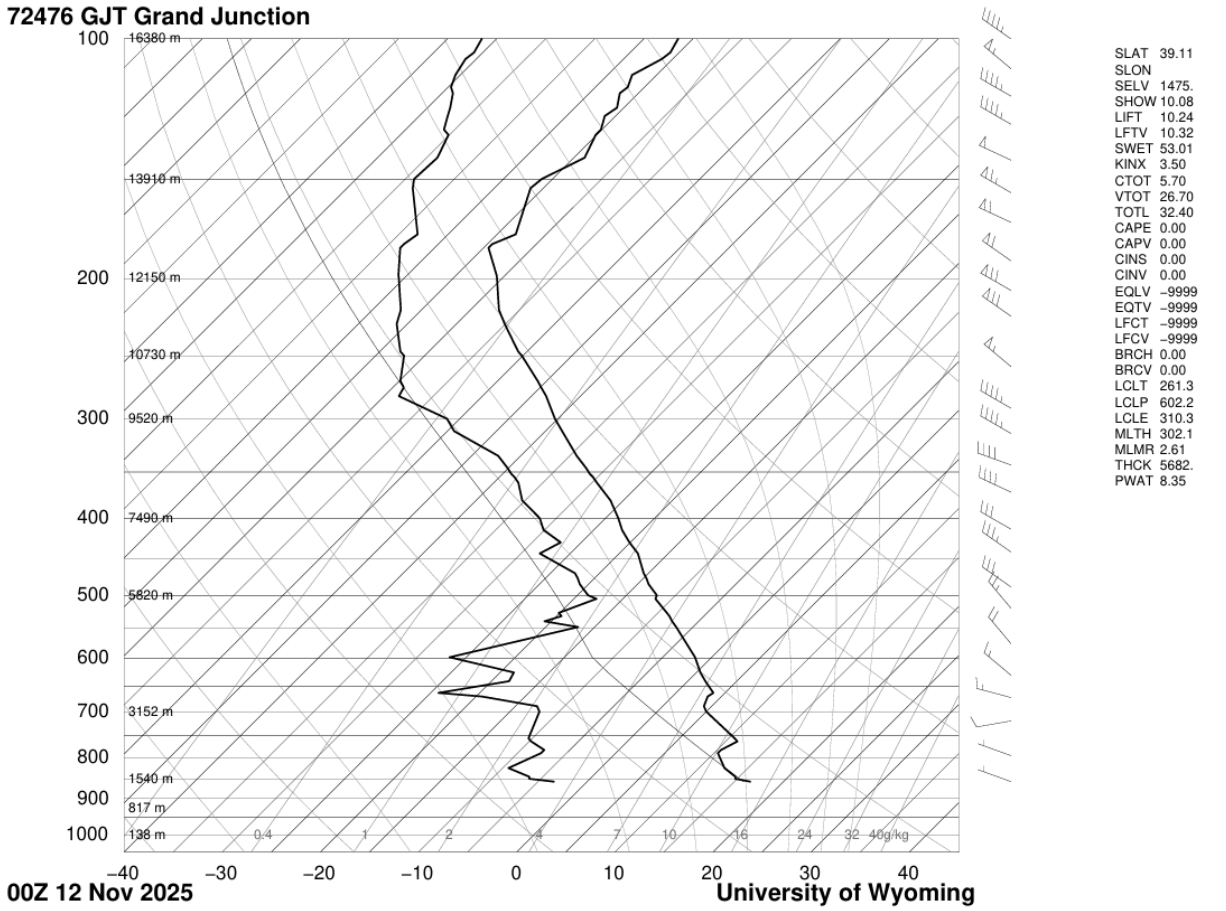


Fig.2. Skew T Diagram fromNovember 12th, 2025

As can be seen from this diagram, clouds are likely expected around 5620m, where the lines are closest. Because of this, I expect that the image that I captured is of Cirrocumulus clouds rather than altocumulus clouds, as the former are typically seen around 7000m and the later are seen around 3000m. The atmosphere is stable for all altitudes above approximately 2000m on this Skew-T diagram and the CAPE value is 0, also indicating a stable atmosphere. This is against the formation of cirrocumulus clouds, which typically form in unstable atmospheres; however, the rest of the sky does appear to have more stratus-like formations so it could still be reasonable. These cirrocumulus clouds only took up a small portion of the sky, so it's likely that they were formed due to instability from the mountains or instability that was not recorded in Grand Junction, where the Skew-T diagram is from.

This image was taken using my iphone 14, as I noticed this cloud on my daily routine to class. The image was recorded using my phone's main wide camera, which is equivalent to a 26mm lens with an equivalent wide aperture of f/1.5. The photo lists the shutter speed to be 1/2299s. The final image is 1200 x 900 pixels. The original image is shown below and is 4032 x

3024 pixels. This original image was altered in post processing through cropping, an alteration of the rgb curve, an increase in detail, and an increase in contrast.

Fig. 3. Original Cloud Image

The cloud image that I captured reveals the beautiful and eye-catching pattern that can form from cirrocumulus clouds being altered by wind shear. I like the contrast in my final image, as I think that it shows the clouds pattern well. I also think that this image shows the wind shear on the cloud well, as you can see sections that are blurred and not as patterned from the wind. I wish that I could improve the resolution of this image, as it was taken on my iphone; however, I still really like the image as a whole. In the future, I would like to further explore how wind can create these cloud patterns, and if they are impacted in formation by mountains. I could also further explore this idea by trying to capture an image of this cloud formation at sunset, which I imagine could be stunning.

References:

Atmospheric soundings. (n.d.). https://weather.uwyo.edu/upperair/sounding_legacy.html