Cloud 2
Cloud types: Stratocumulus
Cloud date and time: November 23, 2022, 14:26
Cloud Location: Pikes Peak Summit
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INTRODUCTION

I took this image for the second cloud assignment for the flow visualization course. I took this image after taking the Pikes Peak cog railway to the summit of Pikes Peak and found that the clouds there were very beautiful. I took several photos but decided on this because it was the most incredible.

CLOUD CIRCUMSTANCE

This image was taken on November 23 at 2:26 pm taken on the Pikes Peak summit near the Pikes Peak summit house. The camera faced northwest, with an angle of 15° from the horizontal and an altitude of 14,115 ft.

CLOUD PHYSICS

The clouds shown in this image are stratocumulus. Stratocumulus clouds are stable clouds that are flat on top with fluffy tops. The skew-T diagram in figure 1 below shows that the CAPE is zero indicating a stable environment. Additionally, the diagram indicates that clouds form at elevations of 4000 and again at 8000 ft, consistent with the ranges commonly associated with stratocumulus clouds (1). The clouds were also likely forced upward due to the mountains. Other clouds in the area were also Stratocumulus based on other images that I took in the area, as well as some thinner cirrostratus clouds. The weather in Colorado Springs, the closest town

to Peak was partially cloudly the day of and day before this image was taken and there were winds on the 23rd and the 24th of 26 mph (2).
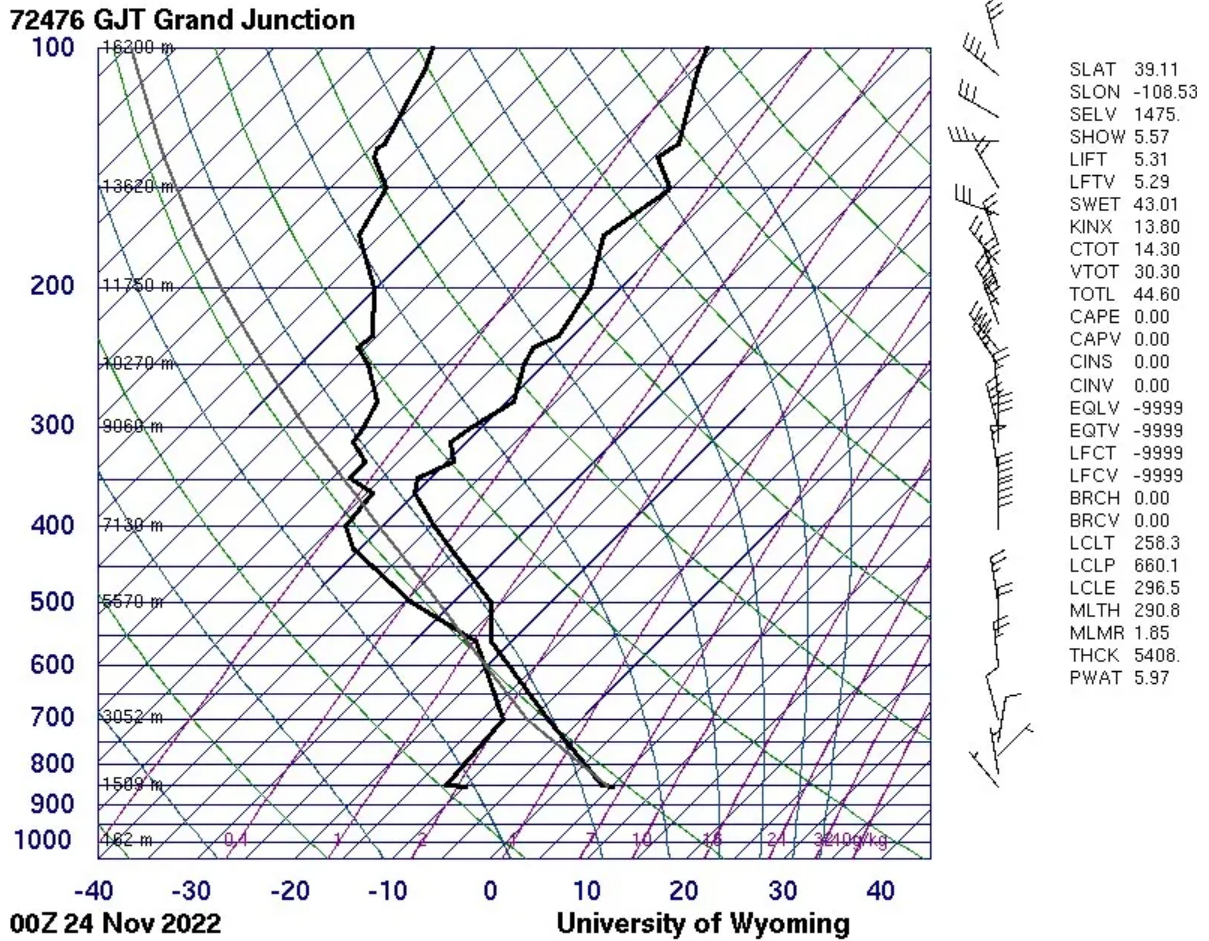

Figure 1: Skew-T diagram from Grand Junction station for November 23 at 6:00 pm local time (3)

IMAGING TECHNIQUES

A Samsung S10e was used to take this image. The field of view and distance of the clouds to the lens is too variable and expansive to estimate, but the closest clouds are likely only a few thousand meters above the camera. The camera specs were set to a focal length of 4.3mm, an ISO of 50, an aperture of f/2.4, and an exposure of 1/4572. I did not choose these settings as the phone's camera does not allow for advanced imaging techniques. This photo was edited using Darktable. First, I added a mild S-curve, then cropped the image to the desired size. I also sharpened the entire image by 0.5. The edited and unedited images are shown below in figure 2.

a. Unedited image: 4032 x 1908 pixels
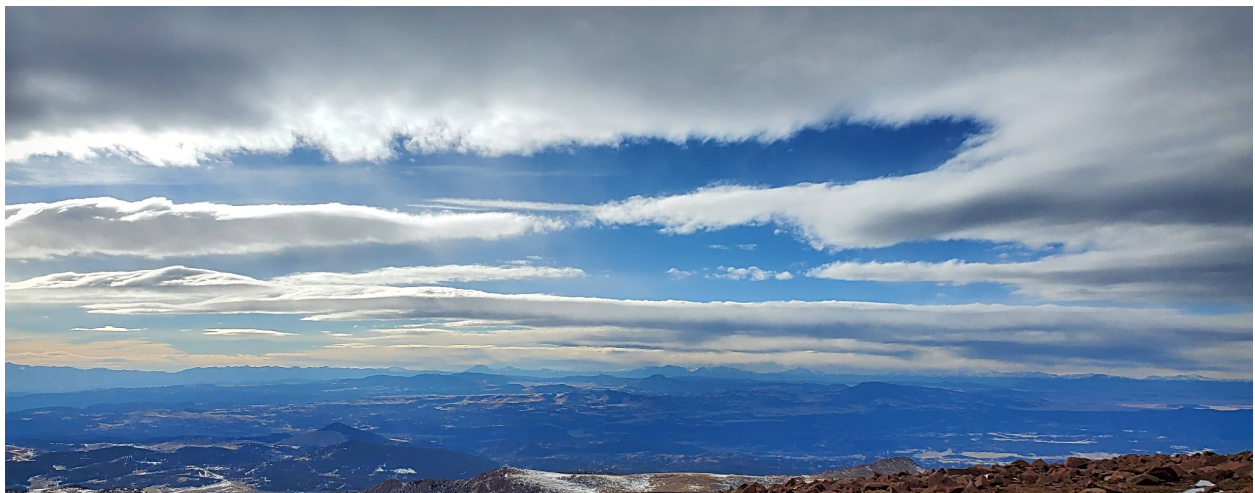
b. Edited image: 4032 x 1579 pixels

CONCLUSION

This image is beautiful and shows an incredible expanse, and I love that the clouds feel closer than they do on the ground. I wish I had brought my DSLR to take images because it would have been even better.

BIBLIOGRAPHY

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