Clouds Over the Flatirons

Alyx Ellington — Assignment: Clouds First — MCEN 5151 - 002
Date: November 30, 2025

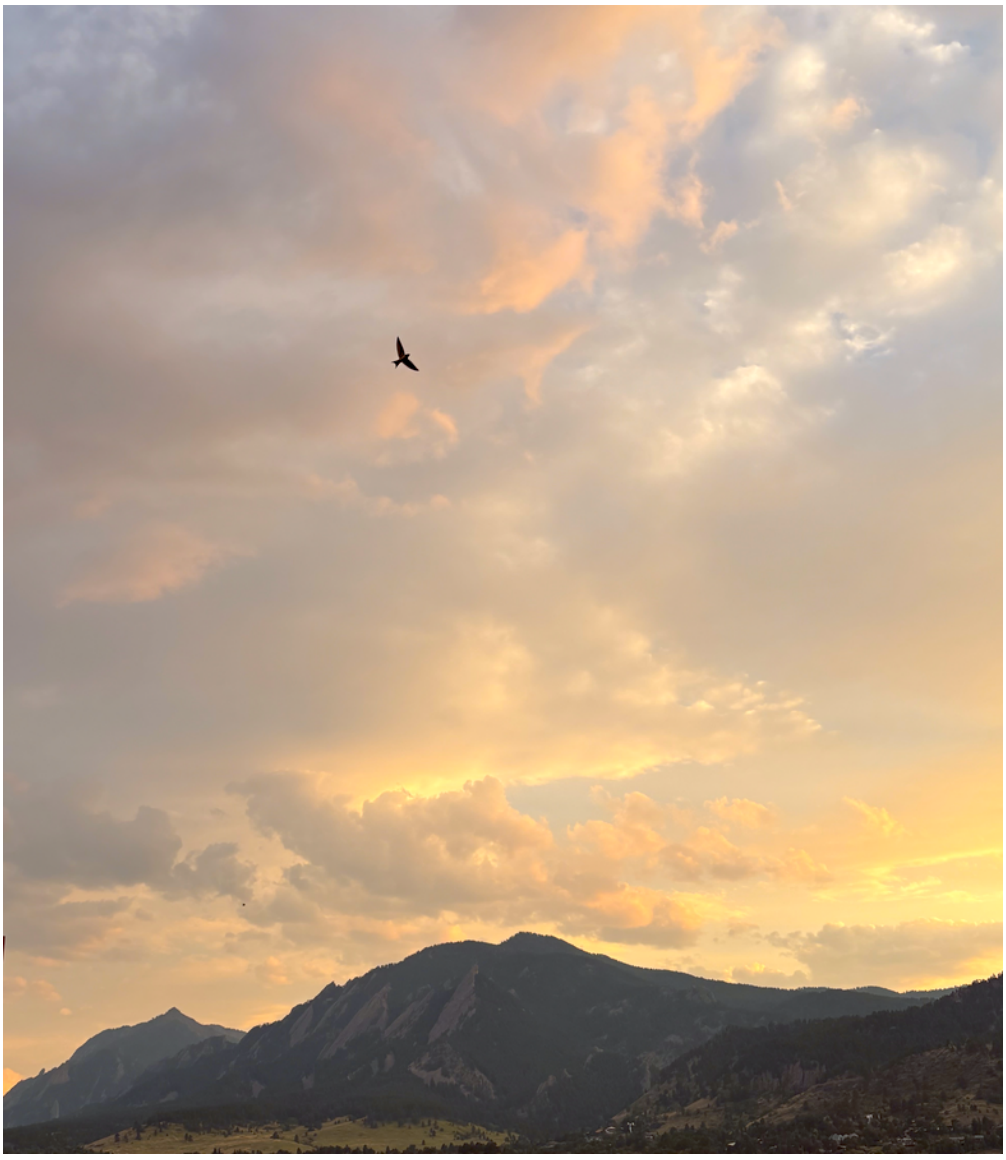


Figure 1: Clouds Over the Flatirons

Background

This image was taken with the intent of capturing cloud phenomina. The photo was taken at 6:59pm on September 8th from Pearl St. in Boulder Colorado. In the image, the camera is facing

south west. It was elevated only a few degress form horizontal. The first Flatiron in the image is roughly 1.7 miles from the location of the camera using information from Google Maps.

Cloud Analysis

A light rain shower moved through before the photo. It ended in less than an hour. Winds were moderate during the rain and then eased afterward. Low, patchy clouds remained. Therefore, the clouds appear to be stratocumulus.

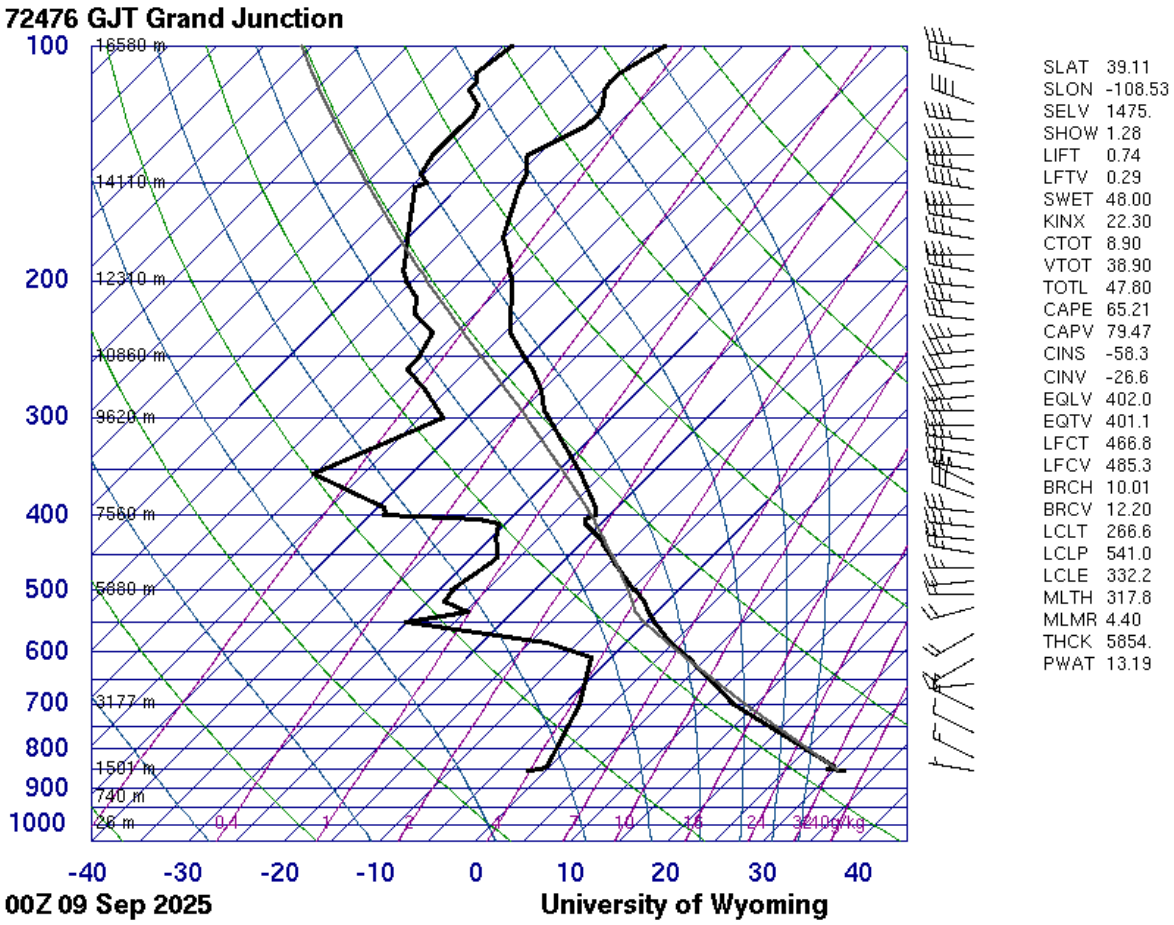


Figure 2: Skew-T Diagram [2]

A nearby Skew-T from the University of Wyoming shows a mostly stable atmosphere. CAPE is about 65 J/kg, which is very small. The LCLP is about 541 meters above ground. These values match the low cloud base seen in the image. Stratocumulus is common after light rain when mixing decreases.

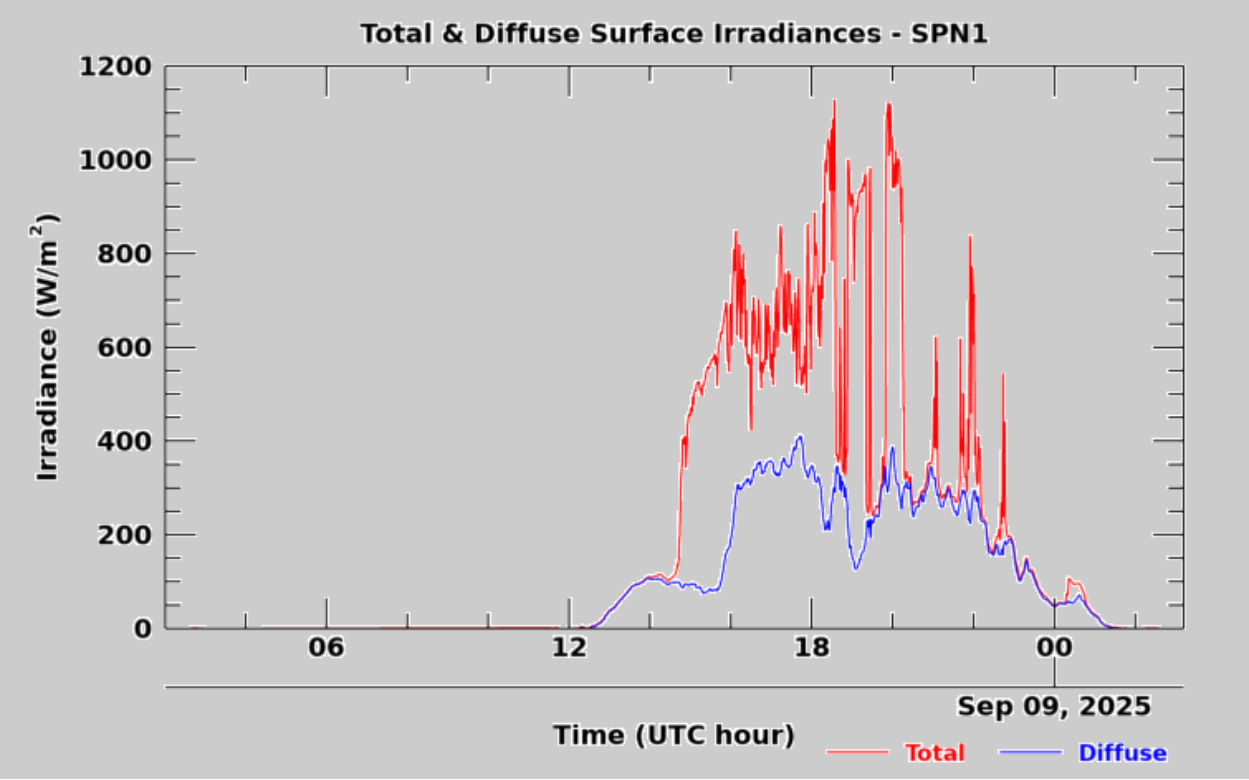


Figure 3: Irradiances from Skywatch Observatory [1]

Irradiance data from CU Boulder's Skywatch Observatory supports this. The total (global) irradiance has many sharp spikes. Diffuse irradiance stays relatively high. This pattern is typical of broken low clouds moving across the sun. Total irradiance also drops late in the day around 23–01 UTC (about 5–7 PM MDT). That timing matches the light storm and thicker clouds before clearing in the evening when the image was taken.

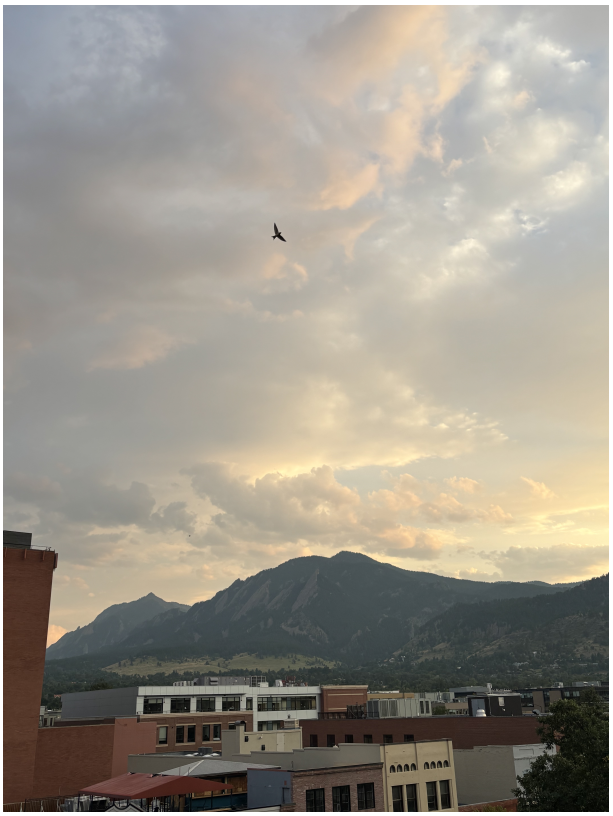
Photographic Technique

All camera settings, specifications, and edits are shown in the following table.

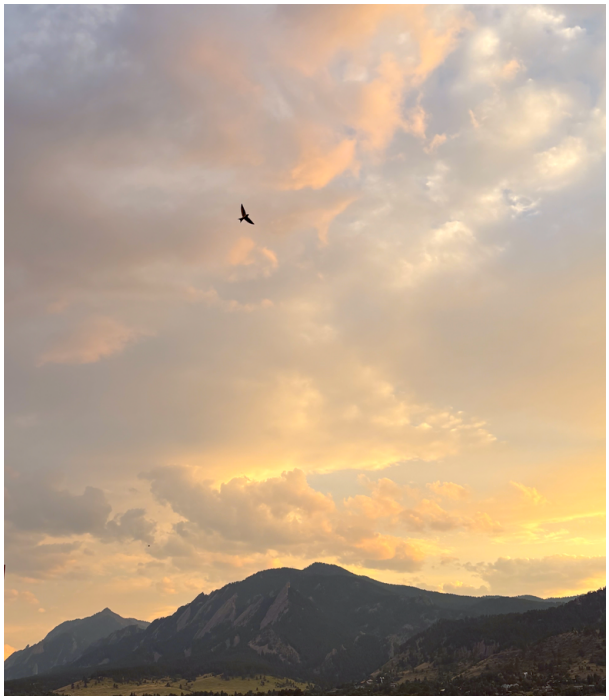
Table 1: Capture and Processing Details

Camera	iPhone 15
Image Size	Original image: [4284 × 5712] px Final image: [3658 × 4022] px
Seetings	1/711, f/1.6, ISO 50, and 6.0 mm focal length
Processing	Crop, sharpen, and increase contrast

The most notable difference between the original and final image is the cropping.



(a) Original



(b) Edited

Figure 4: Original vs. edited

Conclusion

Overall, I am happy with this image and it fulfills my intent. It is atheistically pleasing and well scaled with the mountains and bird. The contrast with the sunset provides depth to the stratocumulus clouds and makes them pop. After critique, I increased the contrast and changed to color balance to make the sky appear more pink. When capturing the image, they sky looked more pink to my eyes but the color was not captured in the image. I think the critique suggestion was a great idea and I am happy with the final result.

References

[1] CU Boulder Skywatch Observatory. (n.d.). Skywatch Observatory. Retrieved October 18, 2025, from `https://skywatch.colorado.edu/`

[2] University of Wyoming. (n.d.). Upper Air Sounding. Retrieved October 18, 2025, from `https://weather.uwyo.edu/upperair/sounding_legacy.html`