

September Dusk Sky

Alessandro Sanchez

Cloud First Assignment - MCEN 4151

Stratocumulus – September 5th, 2026 – 6:30 pm – East campus (40.009180, -105.251181)

October 19, 2026

Purpose

The purpose of this image was to capture a beautiful image of a cloud. It was chosen to prioritize the color of the clouds over a particular shape for this cloud's first assignment. This image was chosen over many other attempts due to its framing, color profile, and aesthetic.

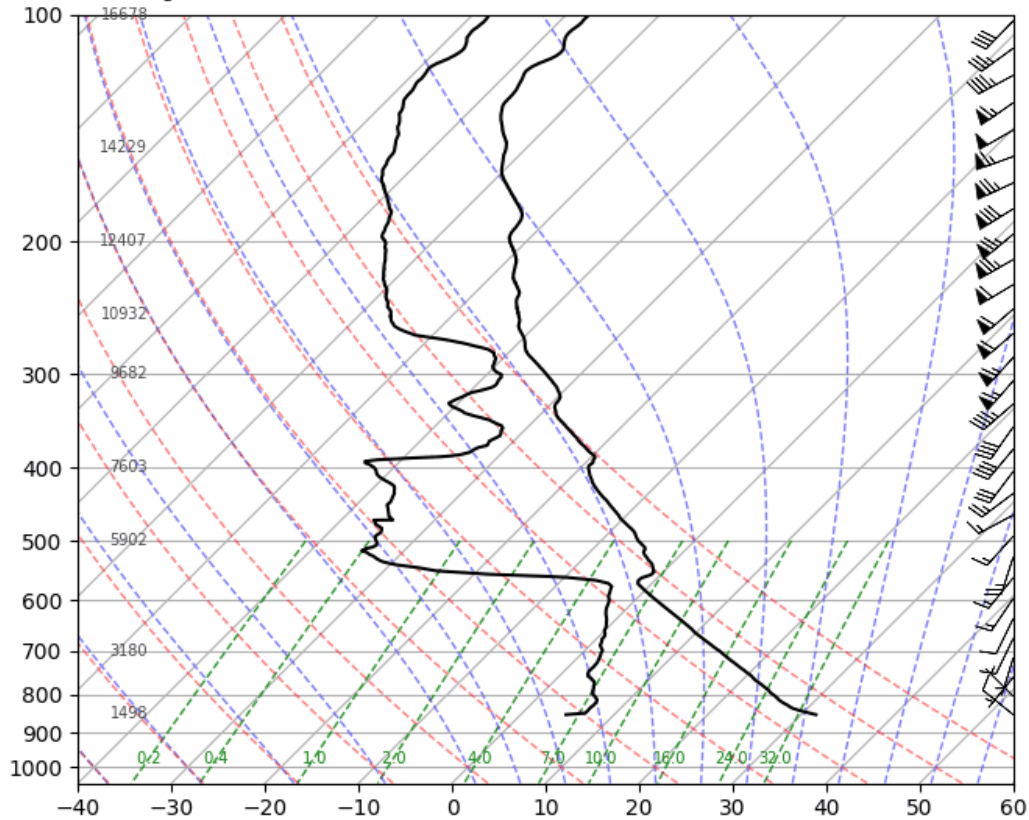
Circumstances

This image was taken from inside CU Boulder's East Campus parking lot 543. The specific location is at a latitude of 40.009180 and a longitude of -105.251181. The best location to capture the clouds as not to be blocked by the trees was about in the middle of the parking lot. The camera was pointed in a due west direction at an angle of inclination of 20 degrees from the horizon. As proclaimed by the soccer field next to the parking lot, the image was taken at an elevation of 5,480ft from sea level. The exact time of day this photo was taken was at 6:30 pm mountain time on September 5th, 2026.

Cloud Specifics

Based on the photo and the skew-t chart, the clouds in the photo are most likely stratocumulus clouds. Before this picture, there were a good number of clouds already in the sky throughout the day and into the night after this photo was taken. The weather was dry and around 80 degrees Fahrenheit with decent cloud coverage. Like most clouds by the front range, the clouds were moving due east towards the camera. There was very minimal wind on the ground and there had not been much rain that day or the day before. Below is the skew-t graph sourced from the University of Wyoming Atmospheric Science Radiosonde Archive.

Station 72476 at 00 UTC 06 Sep 2026
 GRAND JUNCTION/WALKER FIELD, CO., USA
 Latitude: 39.120 Longitude: -108.524



University of Wyoming Atmospheric Science

Figure 1. Skew-T Chart for September 5th, 2026, at 5:00pm [1]

The Skew-T chart is from the same day and an hour and a half ahead of the photo, sourced from Grand Junction, CO about 200 miles away from Boulder, CO. The chart suggests that clouds would form around the 570 millibar range. Which translates to around 15,000ft in elevation from sea level. That would put the clouds around 10,000ft at the altitude where the photo was taken. This is consistent with where you normally find stratocumulus clouds as they are a low-lying clouds type [2]. Cloud appreciation society defines these cloud formations as, “patches are either joined up, or have gaps in between.” [2] and this is consistent with the image. Altocumulus clouds are also common in this range but are higher up and much thinner and more spaced out. The skew-t chart indicated that some of the atmosphere could be unstable. However, stratocumulus clouds usually form in stable atmospheres, so this is not consistent [3]. While there was not a ton of wind on the ground, this is not the case for the upper atmosphere which makes sense as the clouds were rolling in.

Photography Specs

This image was shot on a Sony Alpha 6300 Mirrorless camera system with a 24.2-megapixel APS-C sensor. The lens used was a Sigma 18-50mm f/2.8 DC DN Contemporary lens. The focal length used for this photo was 50mm, which translates to a 75mm focal length with the APS-C sensor used. The original size of the image was 6000 pixels by 4000 pixels. The final image submitted was not cropped in any way but when saved as a PNG, its final dimensions were 6020 pixels by 4024 pixels. The aperture was f/4.0, the shutter speed was 1/160, and the ISO was 400. There was a fair bit of editing done on this photo post processing. First and foremost, there was color grading to try and bring out the reds, oranges, pinks, and purples of the image. The exposure was also changed to try and get a darker image, especially with the trees. The intent was to keep the trees in the photo to ground and give scale to the image but not be distracting detail wise. Below are the before and after images.



Figure 3. Original Image



Figure 4. Final Image

Further Discussion

This image reveals the extreme colors that can be captured when photographing clouds. As the sun sets, the rays of light must diffuse through more of the atmosphere, which creates these unique colors. The colors are the best part of this image and what makes the common cloud type of stratocumulus artistically interesting. The top left corner of this image is much darker than is desirable, so that is something that should be looked at to change. The clouds are clear and defined, which makes the physics visible. This does beg the question as to what these clouds would look like from further away or at a higher vantage point? There is much to explore in those two areas and are areas in which the photo could be taken to new levels. On top of this, a timelapse of these types of clouds being blown over the flatirons would be an interesting area of exploration. Overall, the intent to capture a beautiful colorful image of clouds was realized with this image. There are many avenues to explore when it comes to clouds which I look forward to exploring in the future.

Works Cited

1. University of Wyoming Department of Atmospheric Science. "Radiosonde Archive." *Wyoming Weather Web*, University of Wyoming, weather.uwyo.edu/upperair/sounding.shtml. Accessed 14 Oct. 2026.
2. Cloud Appreciation Society. "Stratocumulus." *Cloud Library*, Cloud Appreciation Society, cloudappreciationsociety.org/cloud-library/stratocumulus/. Accessed 14 Oct. 2026.
3. Finnish Meteorological Institute. "Stratocumulus Sheets: Meteorological Physical Background." *Satellite Manual (EUMETSAT)*, Cooperative Institute for Research in the Atmosphere (CIRA), Colorado State University, rammb.cira.colostate.edu/wmovl/vrl/tutorials/satmanu-eumetsat/satmanu/cms/scsh/backgr.htm. Accessed 14 Oct. 2026.