

# **Cloud First Assignment**

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MCEN 4151 - 001

Stratoculumus Cloud

Photo Taken: 9/12/23, 19:04, Boulder, CO

For my first cloud assignment, I captured a remarkable natural phenomenon that had long captured my imagination: a heart-shaped stratocumulus cloud. The intention behind this image was to showcase the beauty and elegance of nature's artistic expressions, as well as to demonstrate the intriguing shapes and patterns that can be found in the sky. This endeavor was not without its challenges including keeping the image's focus solely on the cloud. However, this report will focus on the culmination of these efforts, detailing how I came to the final image that successfully captured the heart-shaped stratocumulus cloud. This image will invite my audience to appreciate the breathtaking spectacle the sky had to offer that day.

The circumstances surrounding the creation of this image were as follows: I captured the heart-shaped stratocumulus cloud photograph on campus in Boulder, Colorado. With my camera facing east, the image was taken on the evening of September 12th, 2023 at precisely 19:04 local time. The camera was positioned at an elevation of 5,430 feet above sea level, capturing the cloud formation facing away from the backdrop of the scenic Colorado flatirons as it unfolded during the early evening hours. This is why my final image has hints of orange and pink from the reflection of the sunset.

My final image featured a heart-shaped stratocumulus cloud formation, which exhibited cloud formation characteristics under typically fair and stable weather conditions. I came to the conclusion that my clouds are stratocumulus clouds because of their low altitude, flat, layered appearance, white or light gray color, wavy texture, and the absence of significant precipitation. Above my stratocumulus cloud are altocumulus clouds. You can tell by the dot-like clouds they formed above my stratocumulus cloud. The rest of the sky remained relatively clear and exhibited a serene blue hue, a common feature of the Colorado skies during that time of year. Before capturing my photograph, the previous day had also showcased similar cloud patterns,

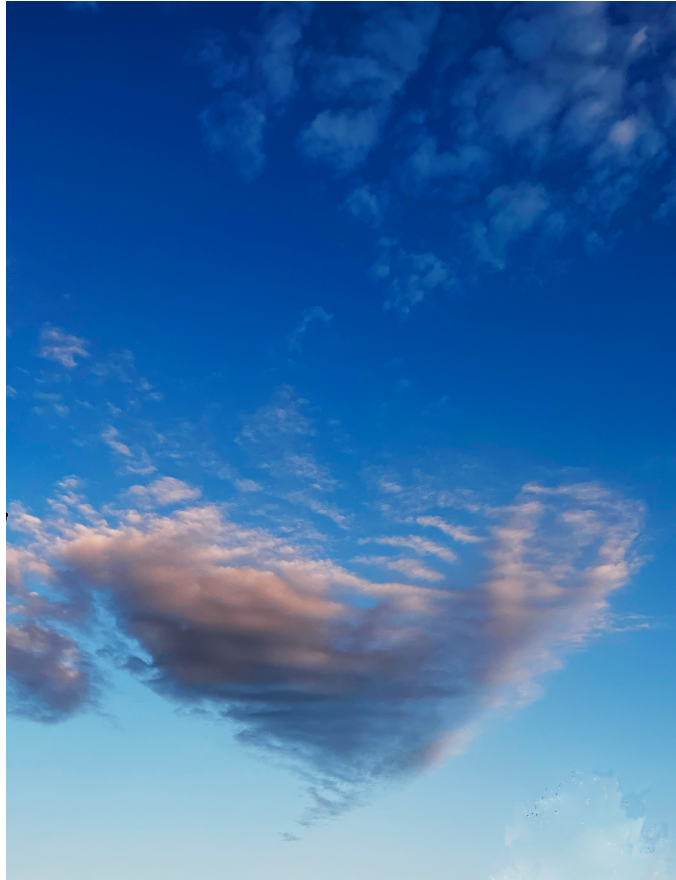
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with no recent rainfall or snowfall recorded within a few hours of taking the image. Winds in the vicinity were generally calm, adding to the tranquil atmosphere. The stability of the atmosphere was evident, with the closest skew-T plot indicating conditions were perfect for the formation of stratocumulus clouds at moderate altitudes. The physics underlying the heart-shaped stratocumulus cloud's formation are linked to the interplay of atmospheric moisture, temperature, and wind patterns that led to the captivating visual phenomenon captured in the image.

To capture the heart-shaped stratocumulus cloud image, I carefully considered my photographic technique and made specific choices to highlight the unique cloud formation. The estimated size of the field of view was relatively wide, encompassing a significant portion of the sky. The distance from the cloud to the camera lens was determined to be at a moderate range, allowing me to capture the cloud's distinct shape while maintaining clarity. I used a mobile phone camera for this shot, specifically an iPhone 13. The original image had a resolution of 3024 x 4032 pixels, while the final image was adjusted to 2129 x 2769 pixels. For exposure settings, I employed an aperture of f1.6, a shutter speed of 1/515 seconds, and an ISO setting of 50 to achieve a well-exposed image with crisp details. Significant image processing was applied, ensuring to highlight the best features of the photograph. After capturing the image, the original image file was loaded into Photoshop to remove distracting elements (such as trees and street posts) and boost the contrast, brightness, and sharpness of the image while also altering the color profile to manipulate the light and highlight the oranges and pinks streaked across the cloud. Both the unedited and edited photos are shown below:



*Figure 1: Unedited original photo of the heart-shaped stratocumulus cloud*



*Figure 2: Edited and final photo of the heart-shaped stratocumulus cloud*

In conclusion, the image of the heart-shaped stratocumulus cloud gave us a glimpse into the beautiful nature of the skies above us. I particularly appreciate how my cloud formation exemplifies the intricate patterns that can emerge from the fluid physics within our atmosphere. The image successfully conveys the peaceful aesthetic appeal of this natural phenomenon. However, I would have liked to explore the image further by including additional environmental elements, such as the landscape or surrounding weather conditions, to provide a more comprehensive context. While this photograph met the intent of showcasing the beauty of nature, further improvements could involve experimenting with different angles or perspectives to

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provide a fresh and unique portrayal of these cloud formations. In the future, I would consider the dynamic aspects of cloud formations and how they interact with our atmosphere, opening up new things for me to capture.

**References:**

- 1.) "Stratocumulus Clouds." Accessed October 29, 2023.

[<https://www.zmescience.com/feature-post/natural-sciences/climate-and-weather/weather-and-atmosphere/stratocumulus-cloud>]