Zach Cates

Dr.Sunberg

ATLS 4151

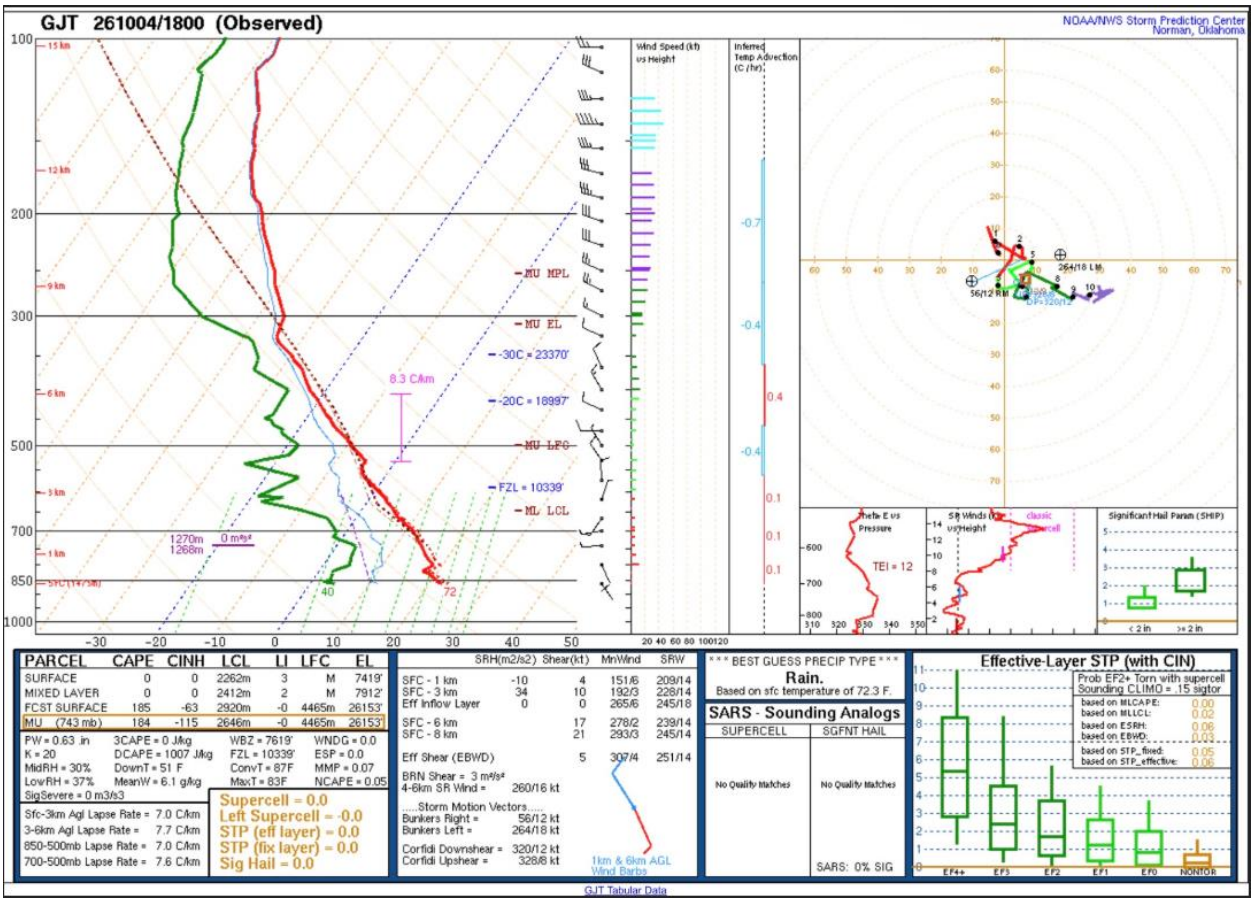
19 October 2026

Clouds First – Cumulus Congestus

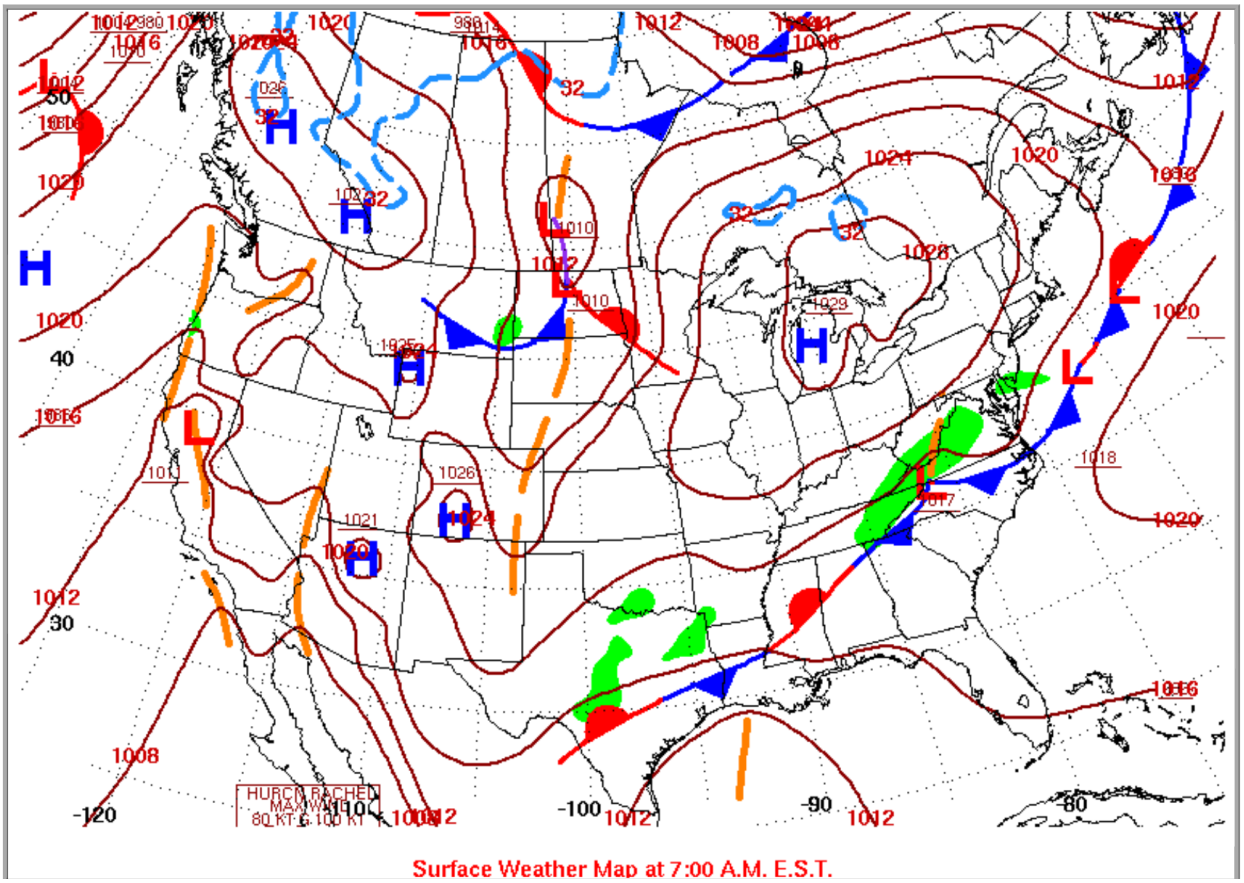
This photo was taken to photograph and understand different cloud types, as well as how they form. We were tasked to take atmospheric sounding data, weather, and other cloud images, to find out what kind of cloud we were imaging and how it forms.

This photograph was imaged in Salida, Colorado at about 7,000 ft elevation, with the camera 20 degrees from horizontal on October 3, 2026, at 6:43 pm. The camera faces north, toward Mt.Shavano.

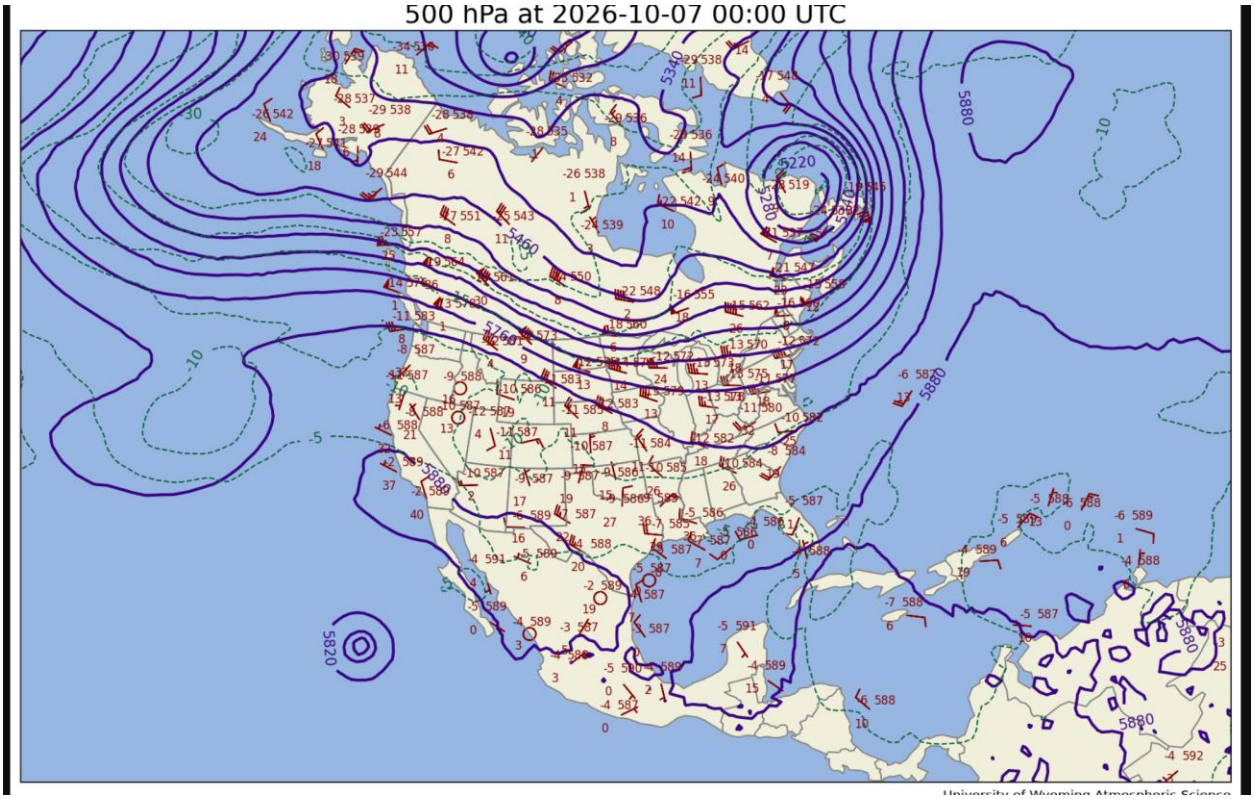
Imaged is a cumulus congestus. Based off the skew t the atmosphere was stable, however, due to the mountain ranges and the weather graph, the lifting necessary was created by a wind coming from north. There was not a substantial influence from a front, however this was imaged at sunset, and that could have caused a temperature gradient. Additionally, the Skew-T diagram shows a lifted condensation level around 2920m which indicates cumulus clouds. I estimate the height of the clouds to be around 5,000 ft high at their base due to the surrounding mountains.



Skew-t Diagram from Grand Junction



Weather map



The field of view of this photo is about 31 degrees. The clouds are around 3-5 miles away. The focal length was 77mm shot on an iPhone 15 pro. The original image was 5712 by 4284 pixels, and the final image was 4032 by 3024. The photo was shot at F2.8, 1/101s, and ISO25. All that was done to the image was cropping that removed people from the image as it was distracting.

The image shows how terrain and weather can alter what would otherwise be a mundane cloud, with the help of the sunset, into a beautiful work of art that amazes me every time I see it. I wonder why the clouds are so wispy at the edges. Out of all of the images I have seen, I am certain it is a cumulus. However, cumulus clouds tend to have a sharper definition, and this one bleeds at the edges. I did like how this image shows how unique the weather in my hometown is and it means a lot to me.

Works Cited

Daily Weather Map, www.wpc.ncep.noaa.gov/dailywxmap/index_20261003.html. Accessed 19 Oct. 2026.

Moushey, Tanner, and Tanner Moushey. "Main Cloud Types Archives." *Cloud Appreciation Society*, cloudappreciationsociety.org/family/main-cloud-types/. Accessed 19 Oct. 2026.

"Sounding Analysis Archive." *Storm Prediction Center*, www.spc.noaa.gov/exper/soundings/. Accessed 19 Oct. 2026.

"University of Wyoming Atmospheric Science Upper Air Maps." *University of Wyoming Atmospheric Science*, weather.uwyo.edu/upperair/uamap.shtml. Accessed 19 Oct. 2026.