

**Clouds First Report – Stratocumulous Clouds on Feb 7, 2018**



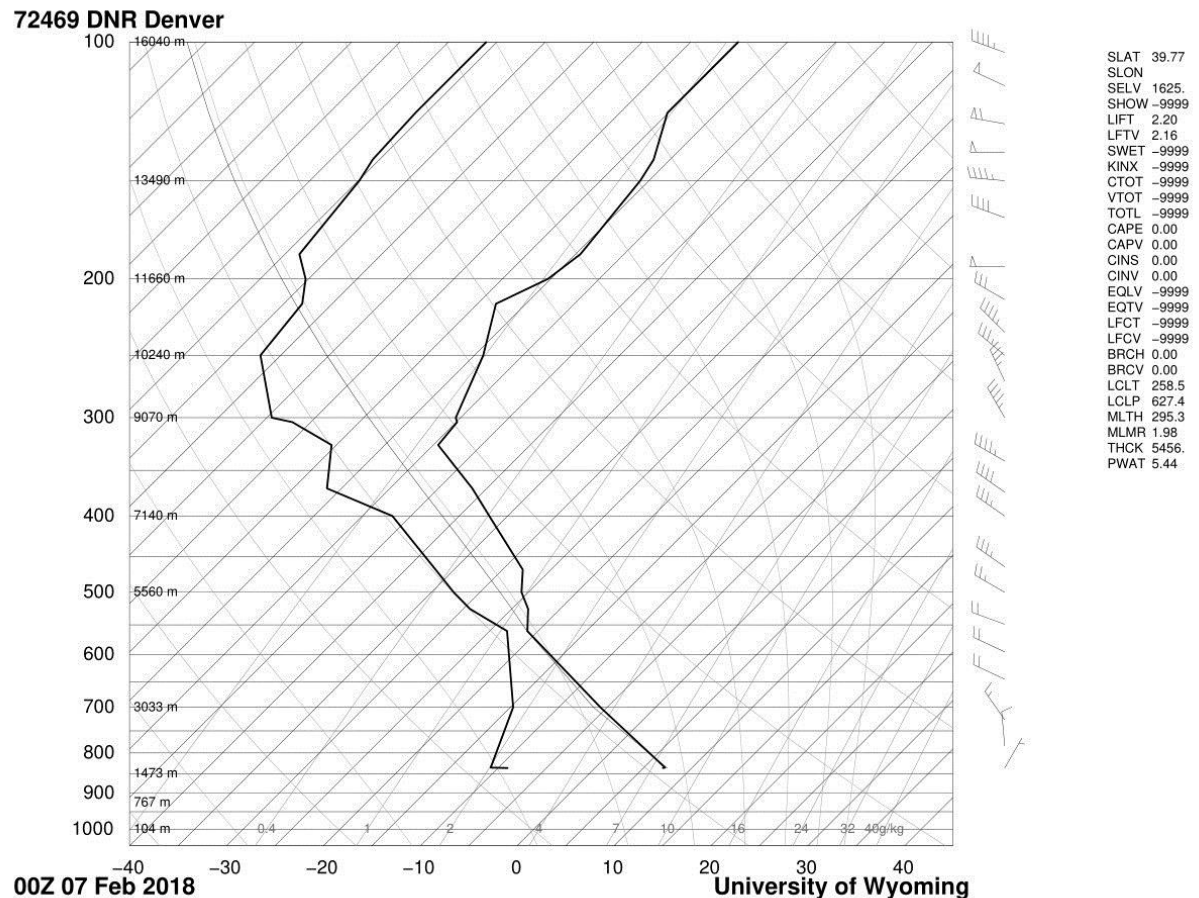
**Behind The Image**

This image was taken on February 7, 2018 at 4:35pm at Pennsylvania Avenue in Boulder, Colorado, right around the time the sun had begun to dip below the mountains. Upon seeing this cloud formation, I used a Vista Fusion tripod and a Blackmagic Pocket Cinema Camera to capture the photo above, snapping approximately 30 images of the cloud using a built-in time-lapse feature set to take images at 1-second intervals. After gathering the photos together, I batch color-corrected the images and chose the one with the zoom level and cropping that best demonstrates the cloud formation.

**Conditions**

Based on the shape and altitude of this cloud, I have determined the cloud to be a stratocumulus formation, due to its relatively low altitude (2000-6500 ft.) and its shape being a puffy and semi-continuous layer.<sup>1</sup> This cloud rests at an estimated 2500 ft. above the mountains, making this a likely contender for stratocumulus classification. In addition to its flat yet puffy shape, we can see background evidence of stratus clouds situated higher in the atmosphere alongside contrails from planes.

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Feb 21, 2018



### SKEW-T diagram for Feb 7, 2018 <sup>2</sup>

This SKEW-T chart represents an analysis of atmospheric conditions on February 7, with the CAPE value being noted as 0, indicating a stable atmosphere. Yet despite this stable atmosphere, upper parts of the cloud have been sheared off by winds, likely caused by turbulent air flow moving lower in elevation from the mountains. Since this characteristic of the cloud does not match the stable atmospheric conditions indicated by the SKEW-T, the explanation for this shape must have to do with mountain-related air flow.

### Photo Technique

The image was taken using a Blackmagic Pocket Cinema Camera with a Lumix G 12-35mm lens and an ND4 filter. The source image was shot in DNG RAW at 1920x1080 resolution, which allowed the ISO to be altered in post therefore lending lots of flexibility in the color correction stage. The lens is a zoom lens which was set at a focal length of 30mm, with the Super 16 sensor in the Blackmagic camera providing a fair amount of sensor crop (and therefore closer zoom)

### Artistic Intent

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I color corrected the RAW files using DaVinci Resolve, adjusting the ISO after the fact and using a value of 800 ISO. Through color grading, I tried to achieve the effect of having the color orange be subtly present in the image without appearing oversaturated. The final image wound up being slightly undersaturated (likely because of my monitor settings) but came out as acceptable quality.

### Bibliography

1. Common Cloud Names, Shapes, and Altitudes. *Cloud Microphysics Webpage*. July 25, 2014. <http://nenes.eas.gatech.edu/Cloud/Clouds.pdf>
2. *Atmospheric Soundings*, University of Wyoming College of Engineering  
<http://weather.uwyo.edu/upperair/sounding.html>