

Cloud Second Report – Stratocumulous Clouds on Mar 22, 2018

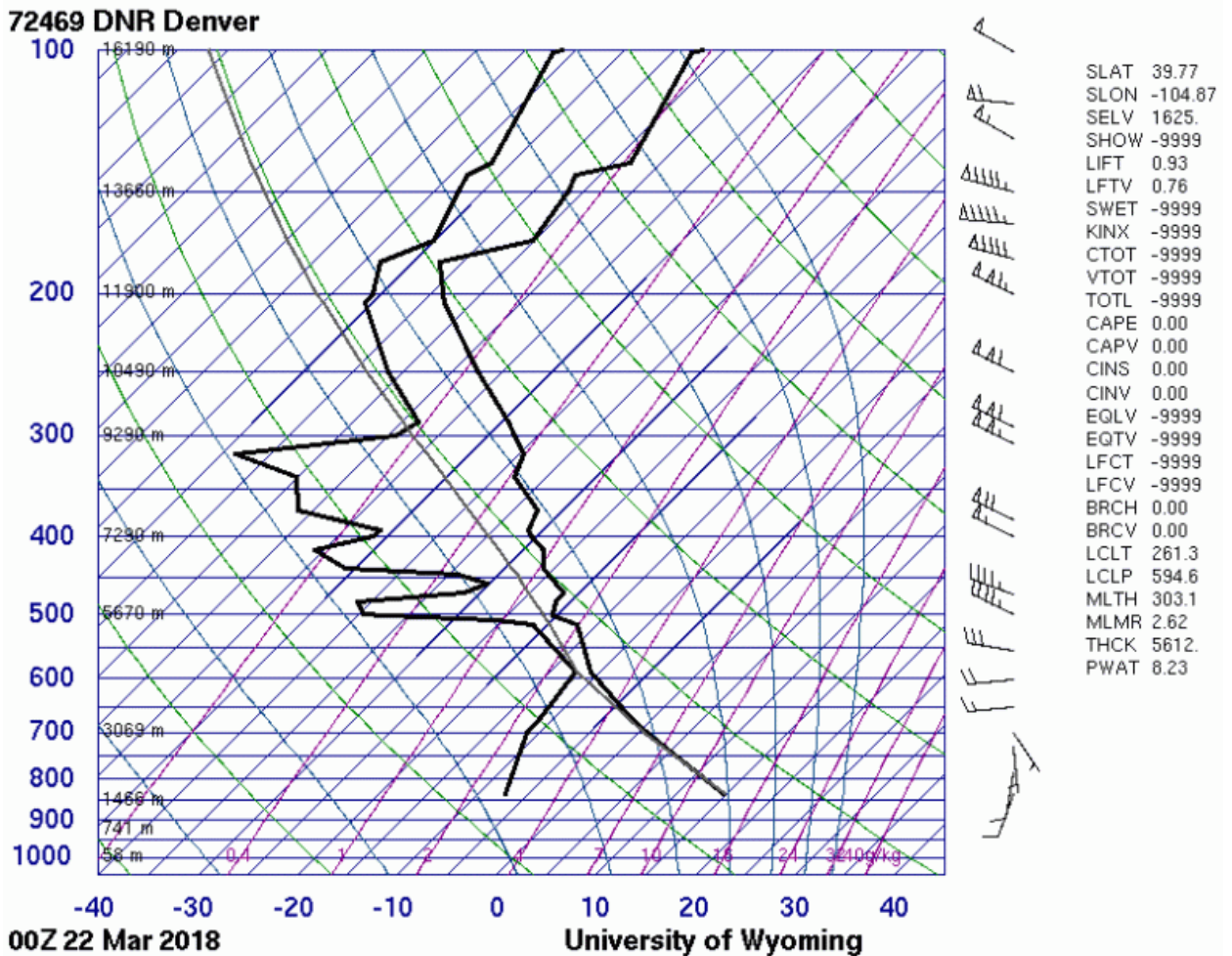


Behind The Image

This image was taken on March 22, 2018 at 6:55pm next to the Caruthers Biotechnology Building in Boulder, Colorado, right as a fissure in the constant layer of clouds had formed. Once I saw this cloud formation, I used a Blackmagic Pocket Cinema Camera to capture the photo above, snapping approximately 58 images of the cloud using a built-in time-lapse feature set to take images at 1-second intervals. I decided between two sets of photos and then I batch color-corrected all images and chose one from the first set 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.¹ This cloud rests at an estimated 2500 ft. above the ground, making this a likely contender for stratocumulus classification. In addition to its flat yet puffy shape, we can see background evidence of mountain wave clouds situated further back and slightly illuminated by the yellow sunset.



SKEW-T diagram for March 22, 2018 ²

This SKEW-T chart represents an analysis of atmospheric conditions on March 22, 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. Additionally, this fissure in the cloud formation shows the region in which mountain winds bisect the formation and flow towards the ground.

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 12mm, with the Super 16 sensor in the Blackmagic camera providing a fair amount of sensor crop (and therefore closer zoom) due to a sensor size of 15.8 x 8.9mm and a crop factor of about 3.0x.³

Cade Haley
FILM 4151
Apr 11, 2018
Artistic Intent

I color corrected the RAW files using DaVinci Resolve, adjusting the ISO after the fact and using a value of 400 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 representing a nice contrast in colors between the blue foreground and yellow-orange background.

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>
3. Lens Comparisons and Crop Factors. Daniel Haggett. 11 Apr 2018.
<http://www.danielhaggett.com/blog/136-lens-comparison-and-crop-factors>