



Sydney Levy

Clouds 1

MCEN 5151

Stratocumulus

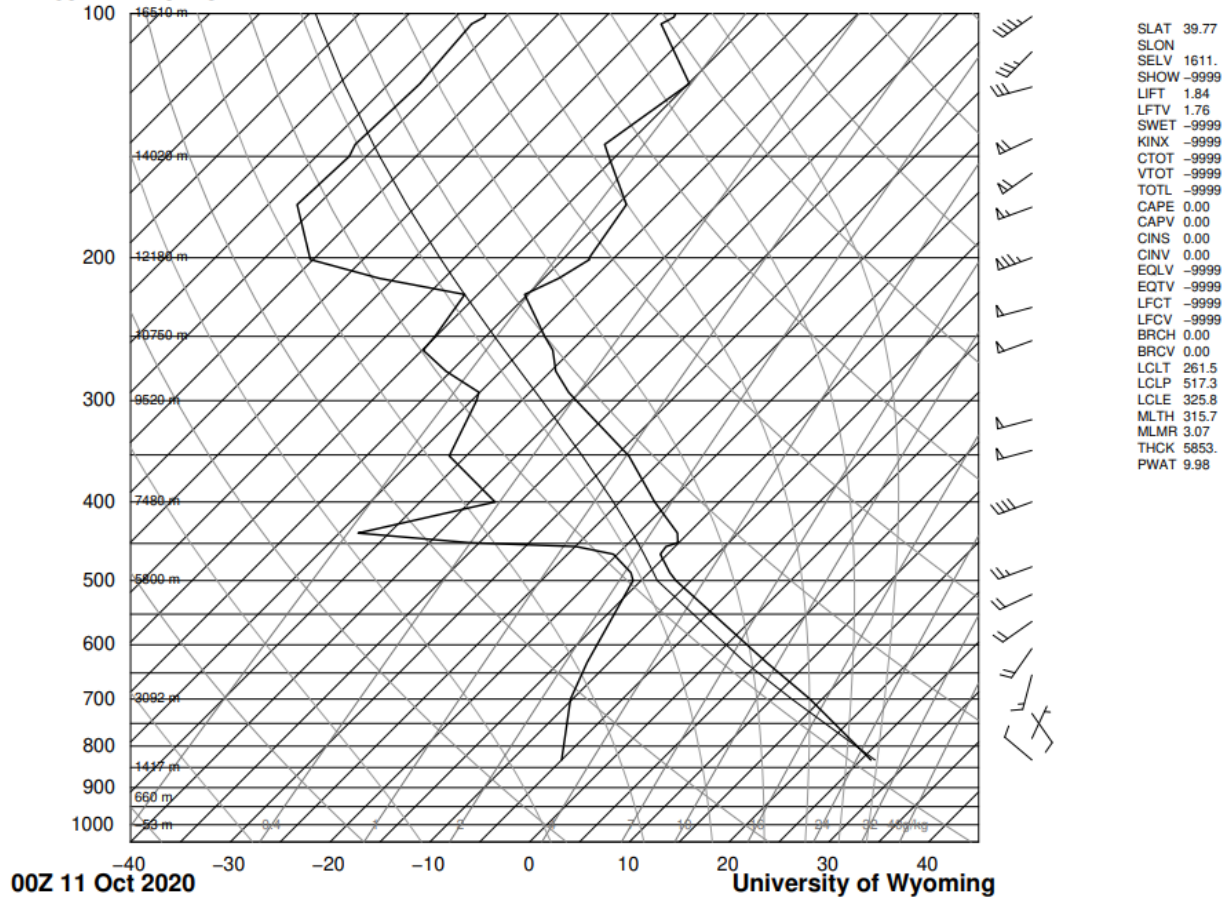
Taken 10/10/2020 // 6:31 PM

The purpose of this image is to capture a typical sunset over the Rocky Mountains for Cloud Assignment 1. The intent was to capture the color and depth characteristic to mountain sunsets while documenting stratocumulus clouds in a stable atmosphere.

The picture was taken at Levy Farm & Field in Berthoud Colorado. The camera was facing due west, 10 feet off the ground with 5° inclination above horizontal. The photo was taken at 10/10/2020 at 6:31 PM.

The clouds in the image are stratocumulus. We know they are stratocumulus because the CAPE at the time of photograph was 0.0, making the atmosphere stable, and the clouds were longer than they were tall, which is the classic stratocumulus shape. The rest of the sky was clear, there was no wind at ground level, and there was no significant weather like rain or snow within a day of when the picture was taken. The clouds were similar the days before according to a local farmer.

72469 DNR Denver



From the skew-T, we can estimate the LCL and CCL to be around 4500m and 5800m respectively, and would expect cumulus clouds to form somewhere in between. This is in line with our observations, as stratocumulus commonly form up to 6100m in this type of weather. We estimate the cloud elevation to be 5500m. The physics of formation was warm, moist air

rising until it condensed at around 5500m. Altocumulus lenticularis clouds could also form in this atmosphere near the mountains, but the image was taken too far away to be sure.

The field of view is roughly 40 miles, based on the mountain landscape. The tallest mountain in the distance is Long's Peak, which is 28 miles from where the picture was taken.

Camera	Sony α6000
Lens focal length	35 mm
Size of Field of View	40 mi
Distance from object to lens	28 mi
Original Image Size	6000 x 4000
Final Image Size	5162 x 2732
Shutter speed	1/20 sec
Aperture	f/10
ISO	100

Minor changes were made to the image in Photoshop. The image was cropped, rotated slightly to make the horizon horizontal, and the oranges and purples were boosted 10% each.

The image reveals the cloud formation over Rocky Mountain National Park during sunset on 10/10/2020. This includes altocumulus clouds, and suspected altocumulus lenticularis, although the latter could not be confirmed due to distance. I really like the colors in the image. The mountains are deep purple, but the clouds are bright orange. I have a question in post- is it possible to make the mountains lighter and break out more detail in the landscape without losing detail by making the clouds brighter? This is the aspect of the photo I would like to improve. Despite this, I fulfilled my intent because I believe I captured the beauty and splendor of a sunset over the mountains while still documenting an altocumulus cloud formation. I would want to develop this idea further by taking a time-lapse of the scene in order to better document the change in color that occurs during the sunset.