

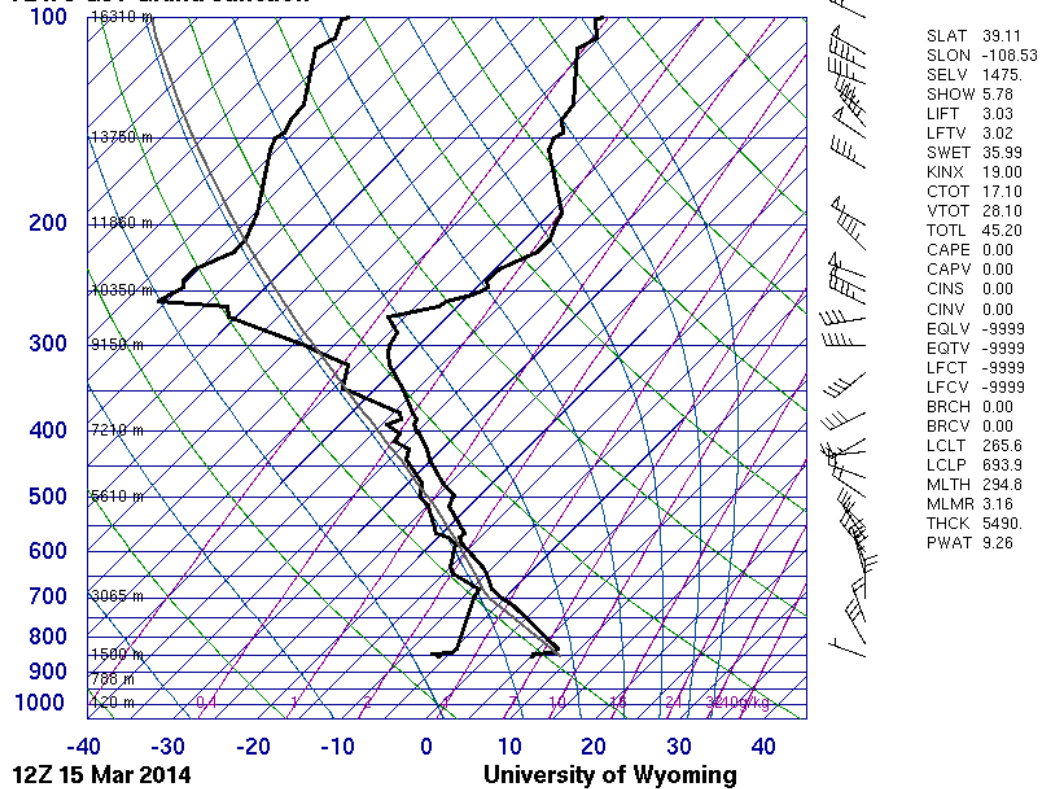
Taylor Powers
Jean Hertzberg
Flow Visualization
April 15, 2014

Clouds 2 Report

Driving west on the morning of March 15th toward the mountains at approximately 8am, I noticed this phenomenon happening in the sky; A layer of stratocumulus clouds hovering on the mountain line, and on top of that a layer of altocumulus Lenticularis clouds. It was stunning, especially with the blue sky and green mountains, for it hadn't snowed in a few days. I waited until we turned a corner so that I could get a view of the clouds behind the ascent of the mountains. I was at approximately 7,000 ft., heading farther west and up on interstate 70, just before Idaho Springs.

The clouds that are in the image are stratocumulus on the bottom, and altostratus lenticularis on the top. It was a stable environment that day, as you can see from the flatness of the clouds. Even though the stratocumuli were present, they are lower in the atmosphere and flatter than cumulus clouds. The rest of the sky during this picture was mostly clear, some clouds, my guess would be of altocumulus or cirrocumulus for they were higher in the atmosphere. Throughout the day it got more clear and had blue bird day on the mountain. It had not rained or snowed within at least 3 days of this picture, although winds were present. The winds were at approximately 30 during the night, and lessened in the morning and through the day. The cumulus clouds joined together, caused by an inversion, and rests on top of the mountains. The winds from the night shoot east over the Rockies, but were shot high enough to reach condensation because of the standing wave. They then lost altitude and the wave stayed in place above the stratocumulus.

72476 GJT Grand Junction



When I saw the mountain cloud phenomenon, I knew I had to capture it. I only had an iPhone camera however, and I was in a car that was not going to stop for me to take a picture. I did my best to wait until I had the best angle and view of both types of clouds, with the contrast of the mountains. Because it was very light out that morning, the f-stop was at approximately $f/5.6$ with a shutter speed of $1/30$. To edit the photo, I added light contrast and saturation, with a bit of sharpening from the unsharp mask.

The image reveals a unique phenomenon that not everyone is fortunate to see. Only us lucky enough to live or visit the mountains get to experience this sight. You can visibly see how the mountain clouds are trapped in between the layers and how the stratocumulus clouds are trapped below the lenticularis clouds. I love the beauty and physics of the picture, I just wish I had a better camera to capture it so

that it was of a higher resolution and sharpness. I would like to know if mountain clouds have a specific time that that they can be visible, as in this picture, the weather had been somewhat calm for a few days, just winds. I know that winds are necessary, but are the lack of other conditions necessary as well. I would love to keep photographing lenticularis clouds, but I would like to know how to track them better so I know when they will be coming and at what time of day. If they could be visible at sunrise, for example, I would like to get to the top of the mountains before the sun rises and capture a time lapse of the sunrise with the rising lenticularis clouds.