Smooth Spaceship

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Cloud Report

Class: Flow Visualization - ARTF 5200-001

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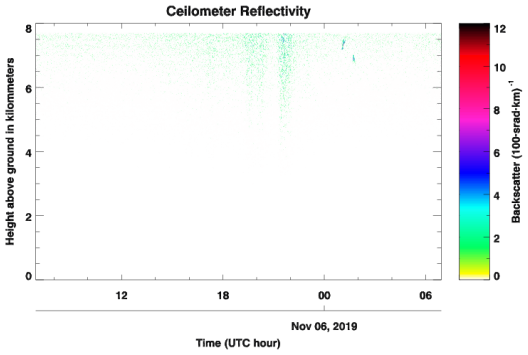
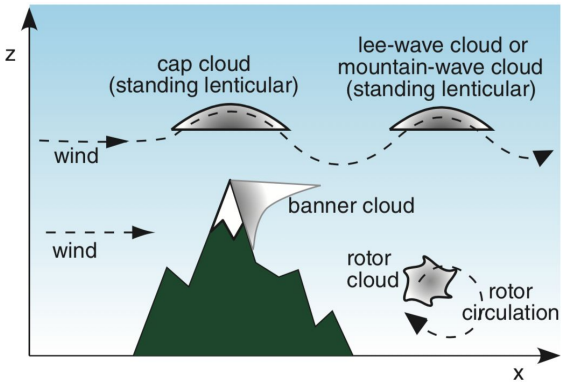
Altocumulus Standing Lenticularis

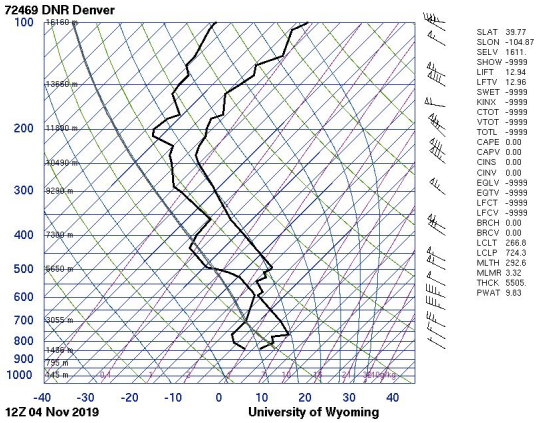
According to namesofclouds.com, altocumulus lenticularis clouds are spotted in a few locations such as: The Rockies, The Alps,The Andes and The Himalayas. I wanted to capture the phenomena of a cloud that stood out. This type of smooth curvy cloud is found in specific geographic conditions like in Boulder, Colorado.



The photograph was taken on November 5th, with an iPhone 11 Pro. I took the picture facing west outside of the Smiley Court apartment buildings across from the CU Boulder east campus. It was taken at 12pm, Latitude 40 degrees 0’ 31.71” N, Longitude 105 degrees 15’ 4.23” W. I tilted the phone towards me facing the sky and used the zoom lens. In the ceilometer the clouds have a mid- altitude of 6,000 and 20,000 feet. “Given that altocumulus clouds form over mountains their normal formation is going to be in the higher altitudes of this range… they form at about 10,000 feet or more up to 20,000 feet, this sets them aside from other altocumulus clouds (Altocumulus Lenticularis).

The graph to the right was taken from ATSC 113, it illustrates how the lens shape of an Altocumulus Standing Lenticularis is formed. The phenomena in the photograph happened when the wind was forced to rise over the mountains and bounces. The waves in the atmosphere developed when the CAPE (0.0) was stable and the wind was blowing west. “When sufficient moisture is present





above mountain-top level, ACSL clouds develop within the crest of these mountain waves where the air is rising. ACSL clouds are continually developing and dissipating in the vicinity of the wave's crest and immediately downwind of the crest, respectively. That is why they appear to remain stationary even though winds are swiftly moving through the entire cloud" (US Department of Commerce, and Noaa, 2018).

I used an iPhone 11 Pro with 6mm focal length. lens to get really close to a really high altitude cloud from the below. The field of view was approximately 26,000 miles away. For this photo I wanted to catch in the moment cloud formation. As you can tell previously to this last photo the clouds appear to have moved to combine together. Image size: 4032 x 3024. ¼ sec, f/2, ISO 100; For photo editing I used my phone editor. The idea behind the processing method was to desaturate it and bring up the brilliance and use the shadows to control the tone.

The photograph revealed how these types of clouds are formed even though they appear to look still they wind quickly joined them. The flow of moist air condenses from the mountains and moves on the downwind side to make the altocumulus standing lenticularis. I enjoyed seeing how the clouds formed in seconds and I got lucky to have captured different stages of the cloud formation. If I could change something, it would have been to have combined various moments of the clouds coming together. I wonder if "irisation" was present without the colors, since the final photograph has very distinct bright white highlights (Wmo).

Works Cited

"Altocumulus Lenticularis." *Names of Clouds.* http://namesofclouds.com/altocumulus/altocumulus-lenticularis.html.

"ATSC 113 Weather for Sailing, Flying & Snow Sports." UBC ATSC 113 - Lenticular Clouds, https://www.eoas.ubc.ca/courses/atsc113/flying/met_concepts/01-met_concepts/01b-special-clouds/lenticular.html.

US Department of Commerce, and Noaa. "Altocumulus Standing Lenticular Clouds." National Weather Service, NOAA's National Weather Service, 14 Sept. 2018, https://www.weather.gov/abq/features_acsl.

Wmo. "Altocumulus Lenticularis (Ac Len)." International Cloud Atlas, https://cloudatlas.wmo.int/species-altocumulus-lenticularis-ac-len.html.