MCEN 4151: Flow Visualization
Cloud Image One Report
3/10/14
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Figure 1: Cirrocumulus Formation

My intent in capturing this image was to find an attractive cloud formation that I could identify. I left my apartment one evening and was immediately struck by the beauty of the sky. This formation met those criteria for me. It's bright, sharp, and it was a cloud formation I could recognize.

I took this photo from the balcony of my apartment ½ mile east of the University of Colorado at Boulder. This image was captured on February 19, 2014 at 5 PM. I was facing south and aiming approximately 45 degrees from the horizon.

This cloud formation is of cirrocumulus clouds. A contrail is visible in the picture below, which helped me gage the altitude of the cloud.

Figure 2: Cirrocumulus with Contrail

Contrails typically form above 26,000 feet (8 km). Since the contrail in this photo is below the cloud formation, we know that that the formation is at least above 26,000. Cirrocumulus can form anywhere between 26,000 and 33,000 feet (8 and 10 km). Figure 3, below, shows a skew-t diagram from 12z on February 19th in Denver.

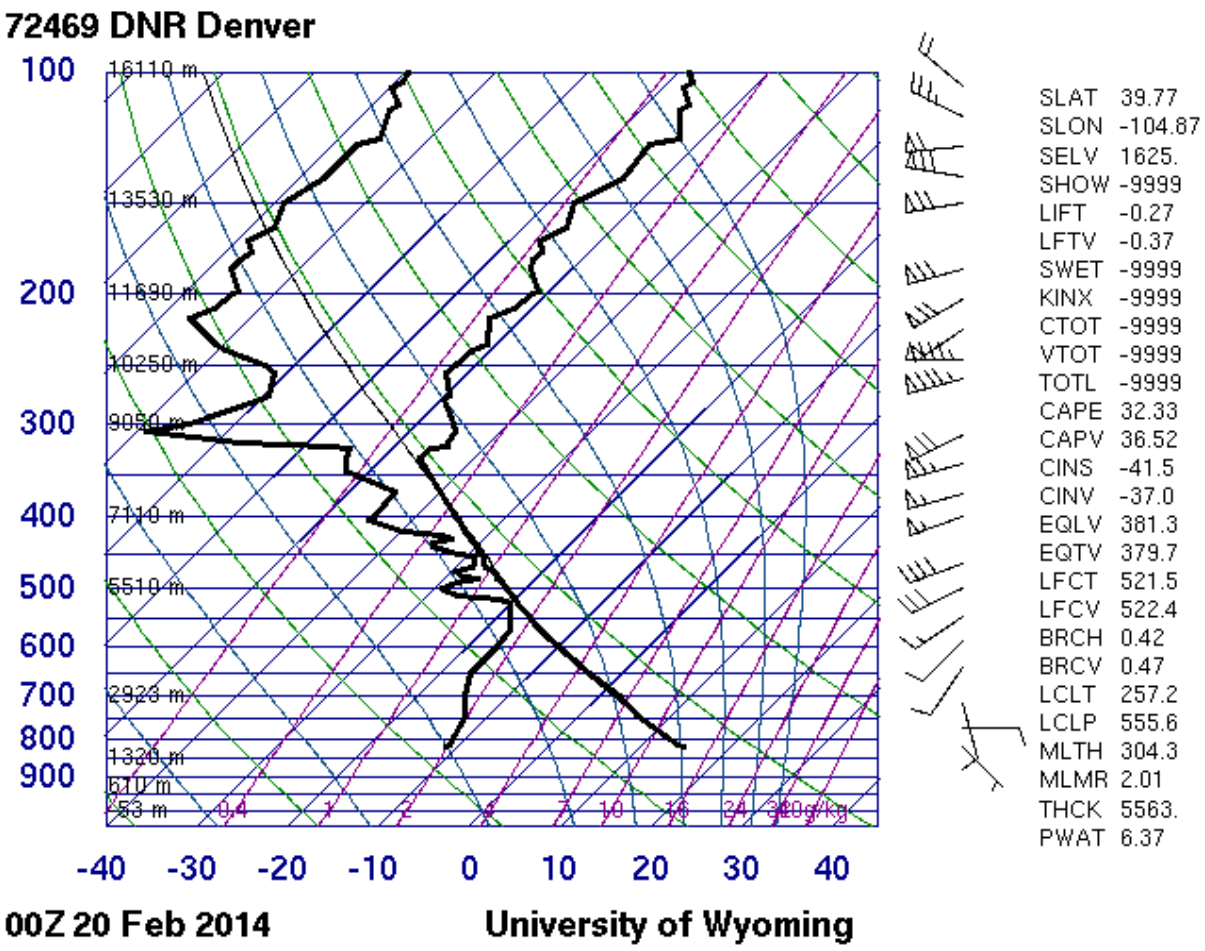

Figure 3: Skew-t diagram from the University of Wyoming

The skew-t chart reveals anunstable atmosphere, with a CAPE of 32.33. That evening a cold front came in, dropping the temperature quite a bit.

The angular field of view is 31.9 degrees horizontal, 21.6 degrees vertical, and 37.9 degrees diagonal. The approximate distance from object to lens is around 32,000 feet. The image was taken with a Nikon D3200 DSLR. Aperture was set to f/5.3 with an exposure time of 1/125 sec, and an ISO of 100. The focal length was 42 mm. No post-processing was performed on the image.

This image reveals the formation of a cirrocumulus cloud in a stable atmosphere. I like the lighting in this image, but I dislike that the formation isn't purely cirrocumulus. On the left-hand side the cirrocumulus is changing into another cloud type. In my next cloud photo I would like to capture an attractive image of one single cloud type.