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Cloud 1 Report
3/20/2012

This image was taken for my first cloud assignment. I was trying to capture a nice image of clouds above Boulder at sunset (particularly lenticular, disc shaped clouds). The image was taken east of Boulder and the flatirons can be seen silhouetted in the foreground. The lenticular clouds that formed above Boulder are a quite common occurrence and a distinctive feature of the area's atmospheric activity.

The image was taken east of Boulder on open space. The camera was facing roughly 15 deg above horizontal. I took a multitude of cloud images, and remembering when I took which is a little bit hazy. The computer pulled up the image as being created January 30th, but when I looked more deeply at the file I realized that it was actually taken January 5th. So I had a little bit of a head start to the semester with this image. I couldn't find the exact data on the time but after researching data on that day the image must have been taken around 4:45, around 5 minutes after sunset (<http://www.wunderground.com>).

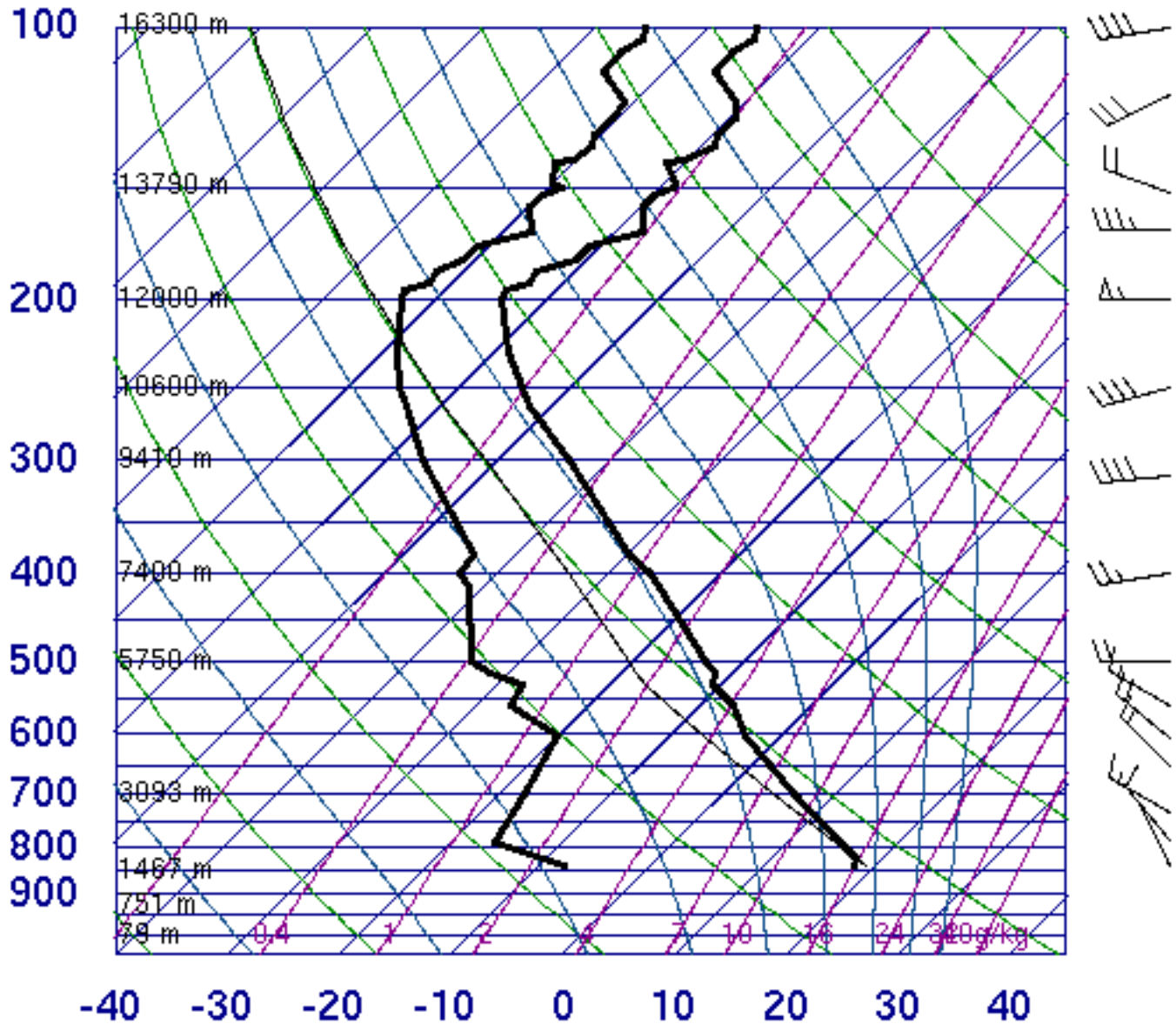
In the background, and near the lighter portions of the image there is a large amount of contrail activity, as well as some faint alto-stratus wisps. Though the most prevalent clouds are the altocumulus lenticularis. I would estimate the lenticularis clouds were around 30,000 ft in elevation. The alto-stratus appear to be higher at around 40,000 ft. It did not rain or snow within a few hours after the image but it did snow two days later (though only less than an inch). The winds were pretty average on the 5th and remained the same the next day, at an average of 10mph (<http://www.crh.noaa.gov>). According to the skew-T diagram from Denver on that day, there were no pressure inversions but there was a temperature inversion at around 42,000ft that would have created a mostly stable atmosphere. These altocumulus-lenticularis clouds are typical of a stable atmosphere, so they are appropriate clouds to have based on the skew-T information. Lenticular clouds are formed when masses of air move over a mountain range in a stable atmosphere. On the lee side of the mountains the air forms a wave consisting of rising and sinking patterns in the air. The uplift of air brings it to its dew-point and forms the cloud. <http://cloudappreciationsociety.org>).

I took this photo using my Canon EOS 7d. The resolution of the image is 5184 × 3456(pixels). As I was using my 4mm Rokinon fisheye lens, the field of view is huge and is also distorted. The horizon in the background stretches at least 20 miles. The mountains are probably 10 miles away from the camera and the clouds are another 30,000 ft up at least above the mountains. I was shooting at f 5.6 at a shutter speed of 1/500th of a second and an ISO setting of 640. In photoshop I darkened the image a little bit as well as added contrast.

I really like the distorted perspective that the fisheye gives. I also love the bright colors and high contrast. I like the framing of the mountains and the clouds for the most part. The image looks a little grainy, however, and if I was using a tripod I could have gotten better resolution. I think these clouds demonstrate an

amazing atmospheric flow. I particularly like the large wave system in the lentularis cloud on the left side of the image.

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Resources.

<http://cloudappreciationsociety.org/collecting/ryan-verwest/>

The Cloud Collector's Reference. An example of the species: Lenticularis. Ryan Verwest. 2009.

<http://www.crh.noaa.gov/bou/include/showClimate.php?month=janf6&year=2012>

NOAA Weather Archives. WFO Denver/Boulder Monthly Climate Products.
2/1/2012.

<http://weather.uwyo.edu/upperair/sounding.html>. University of Wyoming Dept of
atmospheric science. 1/05/2012.

http://www.wunderground.com/history/airport/KEIK/2012/1/5/DailyHistory.html?req_city=Boulder&req_state=CO&req_statename=Colorado. 1/05/2012.