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Cloud Report 1
February 20, 2011
Film Major

For my first cloud assignment I documented multiple time lapse images of clouds and arranged them into a short video. My purpose was to understand the formation and motion of clouds. I was hoping to see how clouds behaved at different times and under differing conditions. My desire was to obtain a better grasp on cloud phenomenon by observing the motion and formation of clouds over an extended period of time.

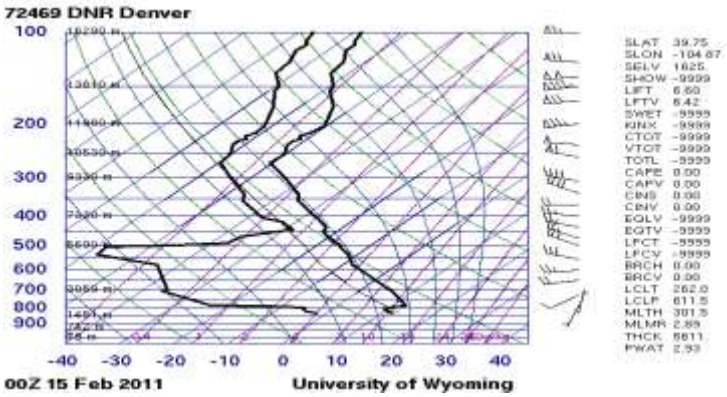
The video I produced consists of six different moving images that were captured at different times and dates. I will refer to these as Images 1 thru 6 in accordance with their position in the film.

- Image 1 was taken in Boulder, Colorado at table mesa and foothills on Monday February 14, 2011 at 4:38pm. The camera was facing northwest at an elevation of 5430ft, 14ft from ground level at a 46 degree angle.
- Image 2 was taken in Boulder, Colorado at 55th and Valmont on Sunday February 6, 2011 at 2:22pm. The camera was facing east at an elevation of 5430ft, 3ft from ground level at a 44 degree angle.
- Image 3 was taken in Boulder, Colorado at table mesa and foothills on Monday February 7, 2011 at 4:25pm. The camera was facing south west at an elevation of 5430ft, 14ft from ground level at a 42 degree angle.
- Image 4 was taken in Boulder, Colorado at table mesa and foothills on Monday February 7, 2011 at 3:13pm. The camera was facing south west at an elevation of 5430ft, 14ft from ground level at a 46 degree angle.
- Image 5 was taken in Boulder, Colorado at table mesa and foothills on Sunday January 16, 2011 at 5:34pm. The camera was facing east at an elevation of 5430ft, 14ft from ground level at a 42 degree angle.
- Image 6 was taken in Boulder, Colorado at table mesa and foothills on Sunday January 16, 2011 at 4:57pm. The camera was facing east at an elevation of 5430ft, 14ft from ground level at a 44 degree angle.

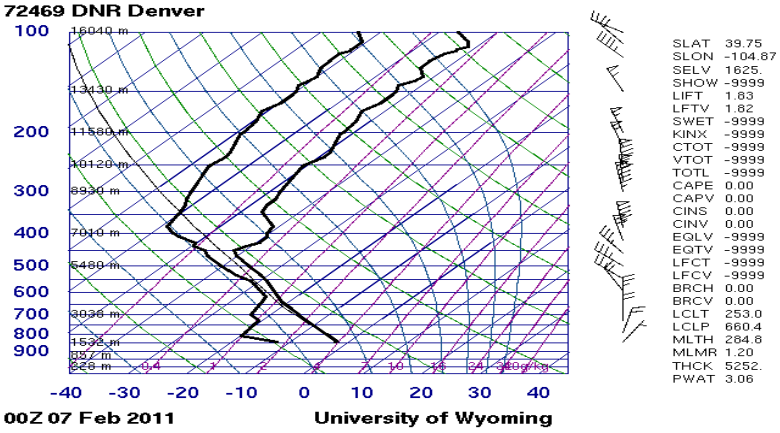
Cloud Identification, weather, and skew -T plots for Images 1 thru 6.

- Image 1 contains Altocumulus Lenticularis Opacus clouds.[1] The rest of the sky was partly cloudy on a cool afternoon. No rain or snow occurred as a result of these clouds. The clouds were not similar to this formation the previous day. At ground level light winds were blowing from the south west and at cloud level the winds were gusting from the northwest. The skew-T reveals a stable atmosphere with clouds forming around 6000 meters or 19685 feet which is in acceptable range for Altocumulus cloud formations or a mid-level cloud which is normally found between 6,500 feet and 20,000 feet.[2] Given the stability of the atmosphere and the weather Altocumulus clouds are expected to be present and are indeed captured in Image 1.

1 Gavin Pretor-Pinny, The Cloudspotter's Guide (New York: Penguin Group, 2006), 113.
2 Gavin Pretor-Pinny, The Cloudspotter's Guide (New York: Penguin Group, 2006), 113.



•Image 2 thru Image 4 were taken on the same day and thus use the same skew-T. Image 2 contains Altocumulus Opacus clouds.[3] Image 3 contains Altostratus clouds. Image 4 contains Altocumulus Translucidus clouds. The weather was relatively cold with no precipitation. The rest of the sky was partly cloudy and no rain or snow occurred as a result of these clouds. The clouds were not similar to this formation the previous day. At ground level winds were blowing from the north and at cloud level the winds were gusting from the north. The skew-T reveals a stable atmosphere with clouds forming around 4000 meters or 13,123 feet which is in acceptable range for all Altocumulus and Altostratus cloud formations or a mid-level cloud which is normally found between 6,500 feet and 20,000 feet.[4] Given the stability of the atmosphere and the weather these clouds are expected to be present and are indeed captured in Images 2 thru 4.



•Image 5 and 6 were captured on the same day and thus use the same skew-T. Image 5 contains Cirrostratus Translucidus clouds. Image 6 contains Alto Cumulus clouds. The rest of the sky was partly cloudy on a calm cool afternoon. No rain or snow occurred as a result of these clouds. The clouds were not similar to this formation the previous day. At ground level light winds were blowing from the north east and at cloud level the winds were gusting from the northwest. The skew-T reveals a stable atmosphere with clouds forming between 4000 meters and 6000 meters or 13,123 feet to 19685 feet which is in acceptable range for Altocumulus cloud formations or a mid-level cloud which is normally found between 6,500 feet and 20,000 feet.[5] The Cirrostratus clouds were coming over the mountain range and were higher in the atmosphere than the Altocumulus clouds.[6] Given the stability of the atmosphere and the weather Altocumulus clouds are expected to be present and are indeed captured in Image 6, but the Cirrostratus clouds were the result of other higher mountain effects.

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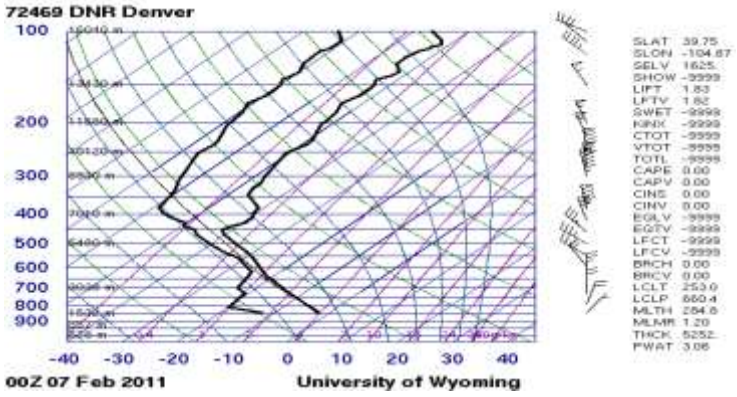
3 Gavin Pretor-Pinny, The Cloudspotter's Guide (New York: Penguin Group, 2006), 113.
4 Gavin Pretor-Pinny, The Cloudspotter's Guide (New York: Penguin Group, 2006), 113.
5 Gavin Pretor-Pinny, The Cloudspotter's Guide (New York: Penguin Group, 2006), 113.
6 Gavin Pretor-Pinny, The Cloudspotter's Guide (New York: Penguin Group, 2006), 171.



The photographic techniques used were very similar in all images. The distance from the object to the lens raged from 3,000 to 7,000 meters. The field of view is estimated to be 1,600 meters by 900 meters. The digital Panasonic Lumix FZ35 camera was used for all of the images. The resolution of the video is 1280x720 or 720p. The format of the files was .mov with motion jpeg compression. The camera was set between F2.8 and F8 with a shutter speed of 1/60 – 1/500 a focal length of 67mm with an iso of 80 for all of the shots. The still image thumbnail for the video was captured at 4000 by 3000 pixels. The zoom on the images was between 3 and 10 times optical. I edited the videos together with Final Cut Pro and produced and recorded the audio myself. The only effects used in the video were fades to transition between and combine the images and increasing the speed of the video files (from 2,000 to 10,000 times faster) to produce a time lapse effect. Videos ranged from 10 minutes to 2 hrs long and were compressed into clips lasting seconds. Image 1 also uses a reverse video shot.

These images reveal the motion and formation of numerous clouds. I liked the composition and fluid motion of these images as well as the amazing phenomenon being captured. I disliked the compression on Image 6 but was satisfied with the others. The fluid physics are shown clearly through the moving image. The time lapse motion picture reveals clouds behavior over time. The only questions I have are technical relating to the complex assessment weather formations. I believe I filled my intent although I hope to learn more in this area. I would like to improve my understanding of the conditions and propagators of particular cloud systems. To develop this idea further I would capture more cloud phenomenon and analyze the classification and origin of those cloud systems.

Works Cited:

Pretor-Pinny, Gavin, The Cloudspotter's Guide (New York: Penguin Group, 2006), 113-171.