

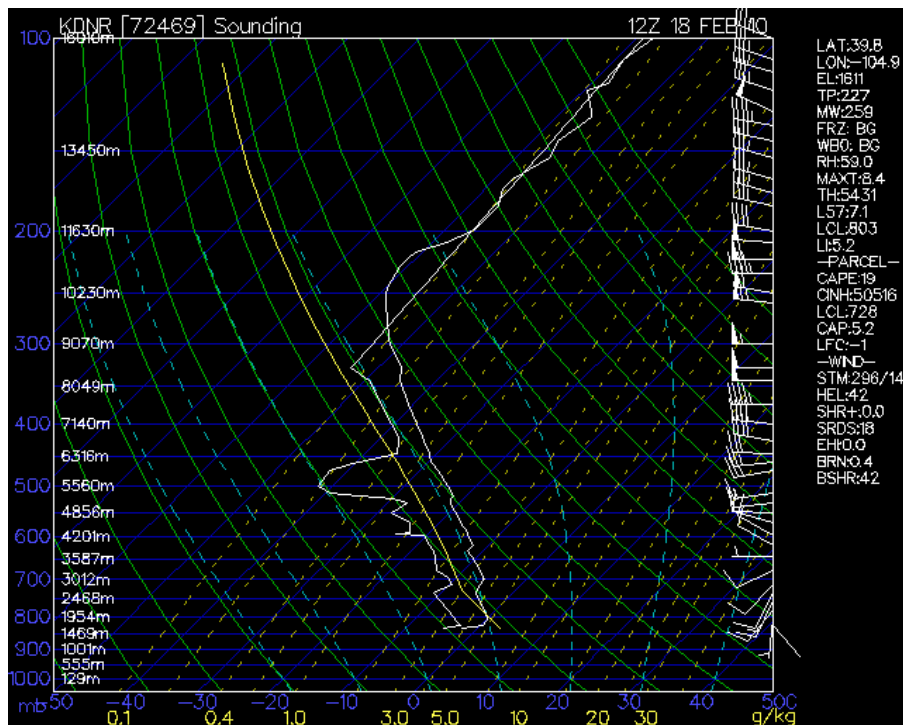
Flow Visualization: Cloud Photography 1

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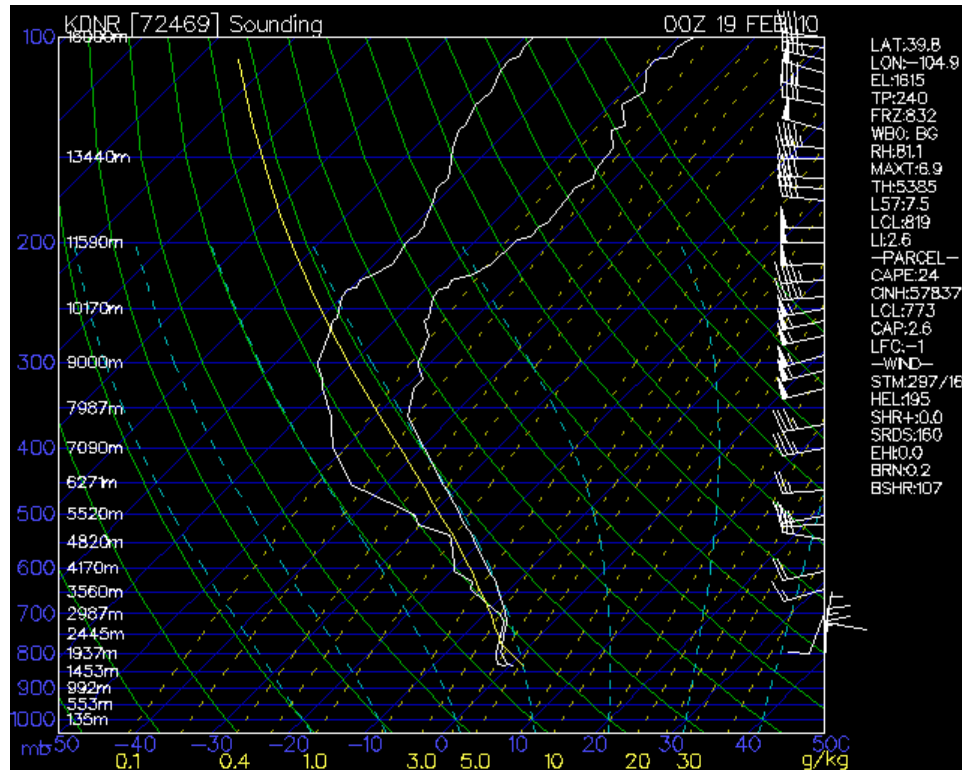
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The motivation leading to this photograph was to capture a cloud or cloud system in such a way that was both visually stunning and was able to give meaningful information about the weather that accompanied it. In this image I was able to capture both higher cirrus clouds as well as the lower cumulus clouds that were building into cumulonimbus clouds for the storm to come. With the dark blue background of the sky this image provides a glimpse into the formation of a winter snow storm that would last for three days following the taking of the image.

Below is the Skew-T plot data taken from Denver International Airport at 6am the same day as the image was taken. The data can only be considered accurate up to an altitude of approximately 8500 meters as the devices measuring the dew data appear to break at this altitude. When comparing the neighbors line to the parcel line we see that the neighbors are warming at a slightly faster rate than the parcel line, this means that there is a slight stability in the atmosphere causing no clouds to develop along the entire altitude range. This might lead one to believe that no clouds would form, but an inspection of the 6pm Skew-T plot from the same day is slightly more revealing into the conditions in which the clouds I photographed formed.



When looking at the 6pm Skew-T plot we can see that the neighbor line is nearly matching the parcel line from approximately 4000m to 8000m. This means that the clouds could be forming due to the borderline instability, this observation is confirmed by the cape of 24, which has increased from a cape of 19 earlier in the morning. This pattern shows us that as the day progressed clouds should have been forming, and my image captured this formation approximately half way through the formation.



The image was captured on the University of Colorado campus outside of the Baker Residence Halls. The image was taken pointed north north-west at an angle of approximately 30 degrees to the ground, and was taken at 11:30am on February 18, 2010. This shot was done using a Canon Rebel Xsi and was handheld with an exposure time of 1/1000s and f/3.5 at a focal length of 33mm. In addition, an iso-100 was used to minimize noise in the image that might take away from the definition of the clouds, and with the brightness of the scene so high no loss of spatial sharpness occurred from this iso choice.

In the frame I choose to have the foreground and the skyline of campus buildings removed. This is because to have their entirety in the frame created an effect making the clouds seem much smaller in the sky. So at the expense of losing relative size information of the clouds I was able to allow the clouds to take up more of the frame, and in turn have higher detail. To enhance the image I made adjustments of the curves of the image. First, I was able to remove much of the blown out whites of the image, allowing for a steeper contrast curve over the more interesting darker colors. Aside from this and the cropping of the frame no other editing or alterations were made to this image.

Overall I am happy with the outcome of this image. In the future I hope to try to do two things. First, capture the entire cloud phenomena in the frame (possibly using photo-stitching) and then to also

capture more unique and visually stunning clouds. To do this I will try to spend more time in the mountains, where the air is moving in more complicated patterns and can hopefully produce stunning and interesting images.