

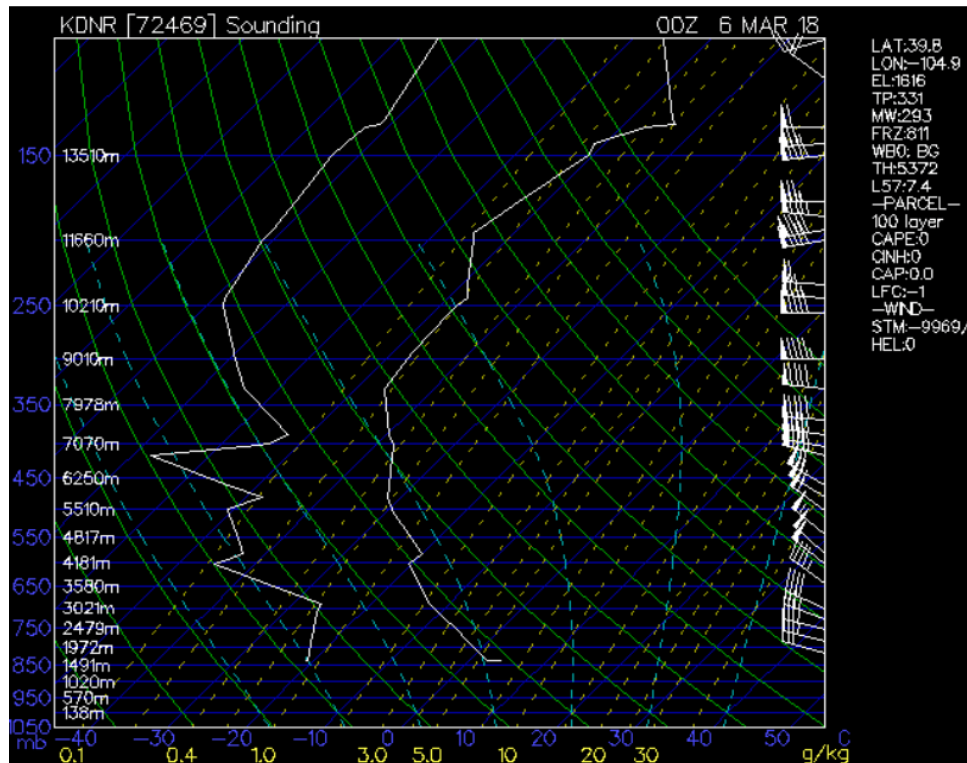
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Clouds 1st
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Smoke In The Hills



This picture named 'Smoke in the hills' is meant to show the clouds produced by the flatiron mountains. The image clearly shows the fluffy clouds commonly made in this type of environment. Note that in other regions the clouds are more bold and cover a greater percentage of the sky. As the picture was taken in Boulder, the air is too dry to produce such thick clouds unless there are more extreme weather conditions.

The flow shown in the picture is made from updrafts in the wind pushing moist air up, leading to cloud formation. The clouds shown are cumulus, however they were not made by traditional flat land as most cumulus clouds are [1]. Note that the clouds were made in a stable atmosphere, as seen by the Skew-T diagram below. Note that this Skew-T diagram was made for Denver, which is slightly offset from Boulder but still illustrates the stability.



As stated above, the clouds are fluffy because of the low humidity and stability of the atmosphere the day the picture was taken. If it had been more humid, the clouds would be much thicker and cover more of the sky. Further, the clouds are wispy and stringy because of the convective updrafts pulling them apart and creating plumes. Overall this made for a very interesting and lively picture of the clouds.

The picture was taken with a Samsung Galaxy S7 [2]. The image size is 4032x3024 pixels, giving a 4x3 aspect ratio. The focal length is 4.2 mm, and aperture F1.7. Note that the aperture and focal length are variable, and the camera chose the parameters to be optimal. The exposure time is 1/2672, and the ISO is 40. Note that these are all fairly standard parameters for a cell phone camera. The original, unedited image is shown below. Based on my estimations, the field of view is around 1300 feet, and the distance to the object is around 5000 feet.



Editing of the picture was done in Adobe Lightroom. First, the image was cropped to eliminate the buildings, grass, and glare from the sun as seen in the right of the image. Next, the contrast was increased, specifically the 'Blues' were increased to bring out the vibrancy of the sky. Note that this made the clouds more visible, but shut out some of the mountain landscape. Lastly, I adjusted the tone curve to make the brights a bit darker, and the darks a bit brighter. The final edited image can be seen on the first page.

Overall the image came out well and shows good detail in the clouds. I like how the editing brought out the vibrancy in the image, and how the mountains silhouette is clearly visible. I also appreciate how the cloud physics are clearly visible, and how the fluffy, stringy nature off the winds in the area are shown. Lastly, the physics for the image are very nice and show interesting concepts. In sum, I am very pleased with my clouds 1 image.

References

- 1 - <https://scied.ucar.edu/webweather/clouds/cloud-types>
- 2 - <http://www.samsung.com/sg/smartphones/galaxy-s7/camera/>