Clouds First Report

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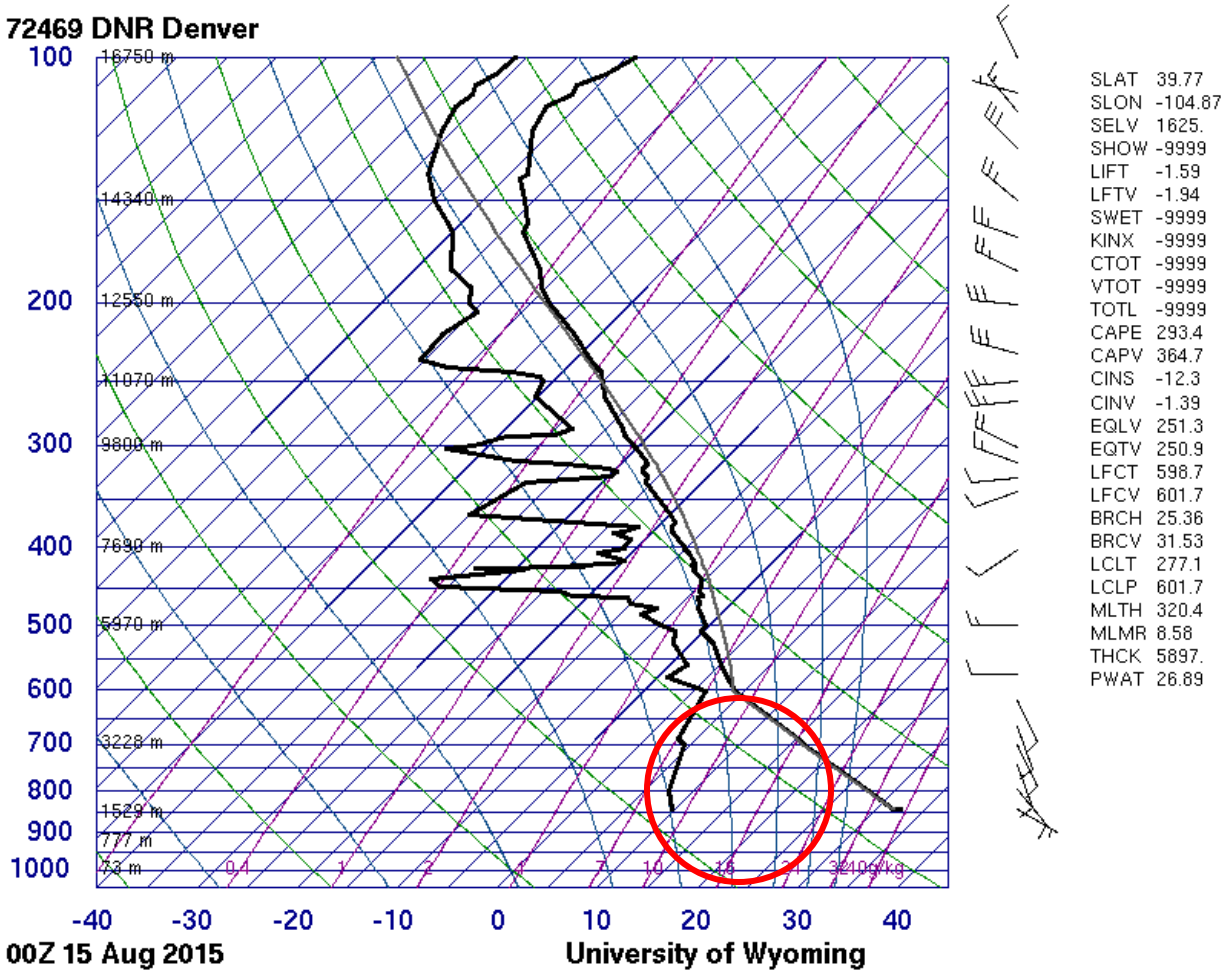
Flow Visualization: The Physics and Art of Fluid Flow

In this image, unstable cumulonimbus clouds can be seen within an approaching thunderstorm. This image was captured facing north in Erie, Colorado around 7:30 pm on August 14th, 2015. The gusts of the rain touching down to ground is seen beneath the bulk of the clouds, creating streaks through the lit background. Where I was standing to capture this image, the clouds were not yet overhead, and it was actually still sunny providing a great yellow tint to the foreground of this image. These streaks are also where the lighting would strike. The Denver Skew-T diagram for the latter half of August 14th, 2015 is shown below.



As shown in this diagram, the relevant temperature as captured was between ~ 20ºC and ~ 30ºC. Closer to the ground is where I assume I should look due to the fact that the clouds appeared so low. At this point, there is a very high pressure, somewhere around an 850 mb isobar, and it rests between an 8ºC and 25ºC isotherm. This Skew-T shows that the atmosphere was unstable, with a cape of 293.

Some editing was used for this photo using Adobe Photoshop CS6. The curves tool was used to enhance the appearance of the streaks and make them more predominant. The saturation of the image was also boosted, creating more of a contrast between the ground and sky. Aside from that, there was really no further processing of this image—I thought it contained a lot of natural beauty and didn't want to tamper with that too much.

A camera phone was used for this image was, more specifically the Samsung Galaxy S6. The specs were as follows:

- Exposure time: 1/40 sec.
- ISO Speed: ISO-50
- Focal length: 4 mm
- Max Aperture: 1.85

The dimensions of the original image was 5312x2988 pixels, whereas the final image was 5194x1806 pixels. About a third of the image was cropped from the bottom, so with that in mind there didn't seem to be a huge loss in data from the original image.

This image reveals the chaotic beauty of the unstable cumulonimbus cloud during thunderstorms. I'm quite proud of this final image—I feel that I haven't changed the initial image all that much and was able to obtain a beautiful capture. The feel and look of this image was meant to be contrasted and dark, yet beautiful, and that's what came of the final product.

WORKS CITED

1. "Introduction to Mastering the Skew-T Diagram." *YouTube*. Avwxworkshops, 19 June 2013. Web. 12 Oct. 2015. https://www.youtube.com/watch?v=CNBzdkmaAKE
2. Marlow, Sean. "SkewT/Sounding Tutorial." *Youtube*. Sean Marlow, 22 May 2014. Web. 12 Oct. 2015. https://www.youtube.com/watch?v=3kexXhluHes