

Clouds First

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Figure 1: A magnificent sunset, highlighting features of an unstable atmosphere

This picture was taken on September 1<sup>st</sup>, 2016, at approximately 7:30 PM on the rooftop of the Boulder Community Hospital parking garage. The image is of a spectacular sunset. Camera settings were a focal length of 18 mm, F-stop of f/5, a shutter speed of 1/100 seconds, and an ISO of 400. The photo does not depict the surrounding weather that was occurring, which was a powerful thunder storm with rain to the left (south, above the Flatirons), as well as heavy unstable clouds all around. This photo is of the bottom of a cumulonimbus cloud. As can be seen, the cloud extends toward the horizon, but is high enough as to not block the sunlight coming through at the very edge of the horizon. The sounding from the Denver International Airport, seen in figure 2 reveals that the atmosphere was very unstable at the time, yielding a CAPE reading of 1179. The light coming off of the sun is projected in rays, illuminating dust and precipitate, before it hits the bottom of the cloud. This allowed for a great color contrast between the illuminated orange clouds and the dark purple sky immediately above them. This light projection also helps to make light of the 3 dimensional texture of the bottom of the cloud. It is common to see the bottom of cumulonimbus clouds as flat, planar surfaces, however this image depicts how there are disruptions in the bottom surface of the cloud due to mixing, fluid flow, and rain itself.

### 72469 DNR Denver

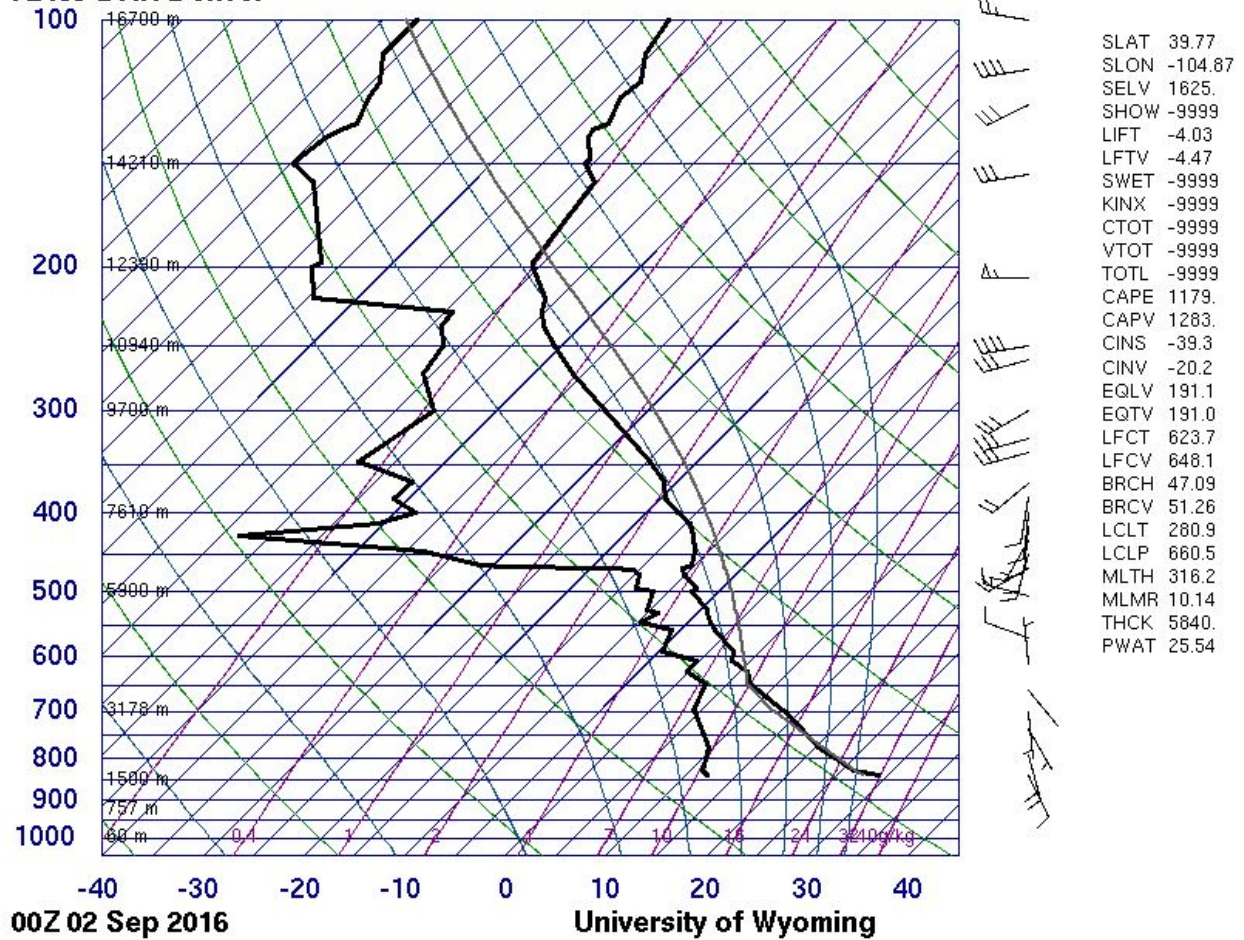


Figure 2: Skew-T diagram for Denver during the time closest to figure 1

The photo has been modified, using the curves feature in Adobe Photoshop in order to increase the contrast; however, this adjustment was made while carefully maintaining details within the photo that are important to studying the features of the clouds themselves. The vibrance was also modified slightly. The original image, as seen in figure 3, had a series of distracting buildings (the hospital) in the foreground. A better image would have been produced if the photo was taken from the tip of the hospital building itself, instead of from the top of the parking garage; the photographer was too excited for getting the shots to consider spending precious time going up and down stairs.



Figure 3: The original image