Harrison Fast

928-512

Clouds 2: Altocumulus

Background Information

This picture was taken from my apartment patio in Boulder, Colorado. The image was taken on 3/31/2010 at 5:41 pm. On this day there was a large amount of cloud cover. I initially captured several cloud images containing University of Colorado buildings. I found the buildings to be a distracting element and thus chose this picture to submit. This image was taken facing North-Northwest.

The image captures a classical altocumulus formulation. Altocumulus clouds form at 18,000 to 21,000 ft. altitude[1]. A guide to cloud formations can be seen in Figure 1 below. *Alto* in latin means high, while *Cumulus* means heaped[2]. This provides a perfect description for the clouds captured in this image. The formation of altocumulus clouds is often a sign of convection. There was a considerable amount of wind the day the photography was taken, also indicating convective currents.

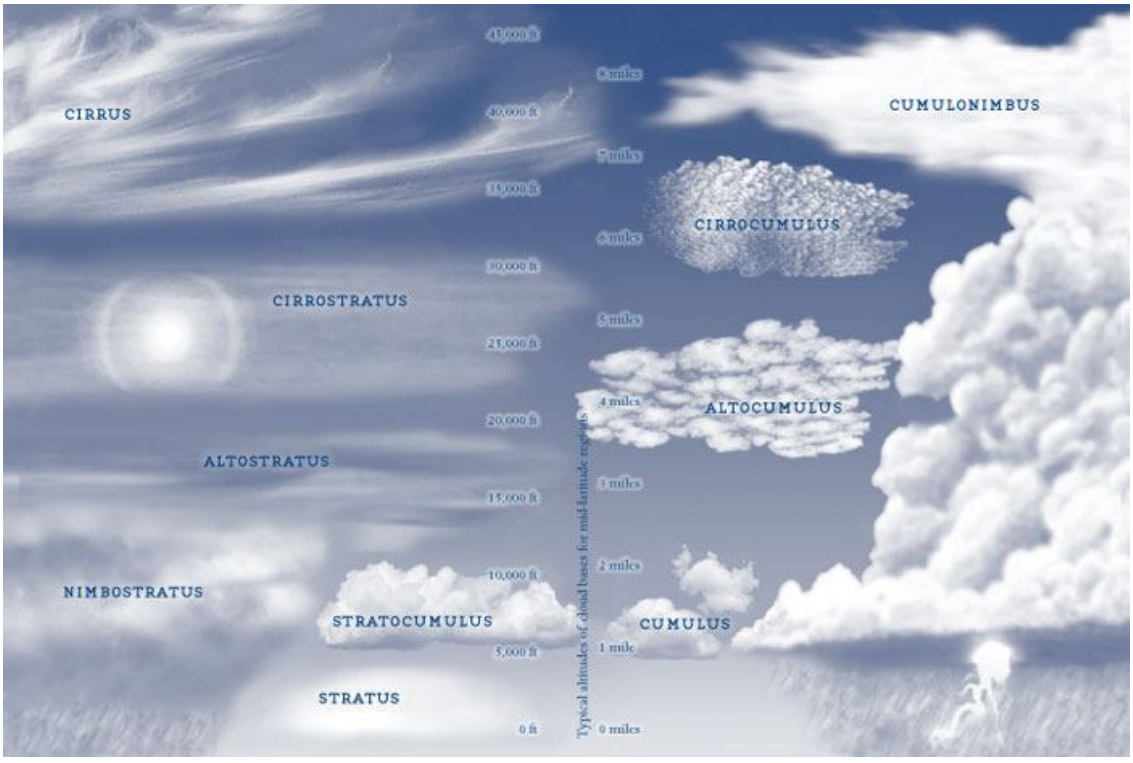

Figure 1: Common cloud formations

Atmospheric Sounding

Figure 2 contains a Skew-T plot for the day the picture was taken[3]. The sounding shows a stable atmosphere at 6000m (~20,000ft). If you would like to learn more about reading Skew-T plots please see [4].

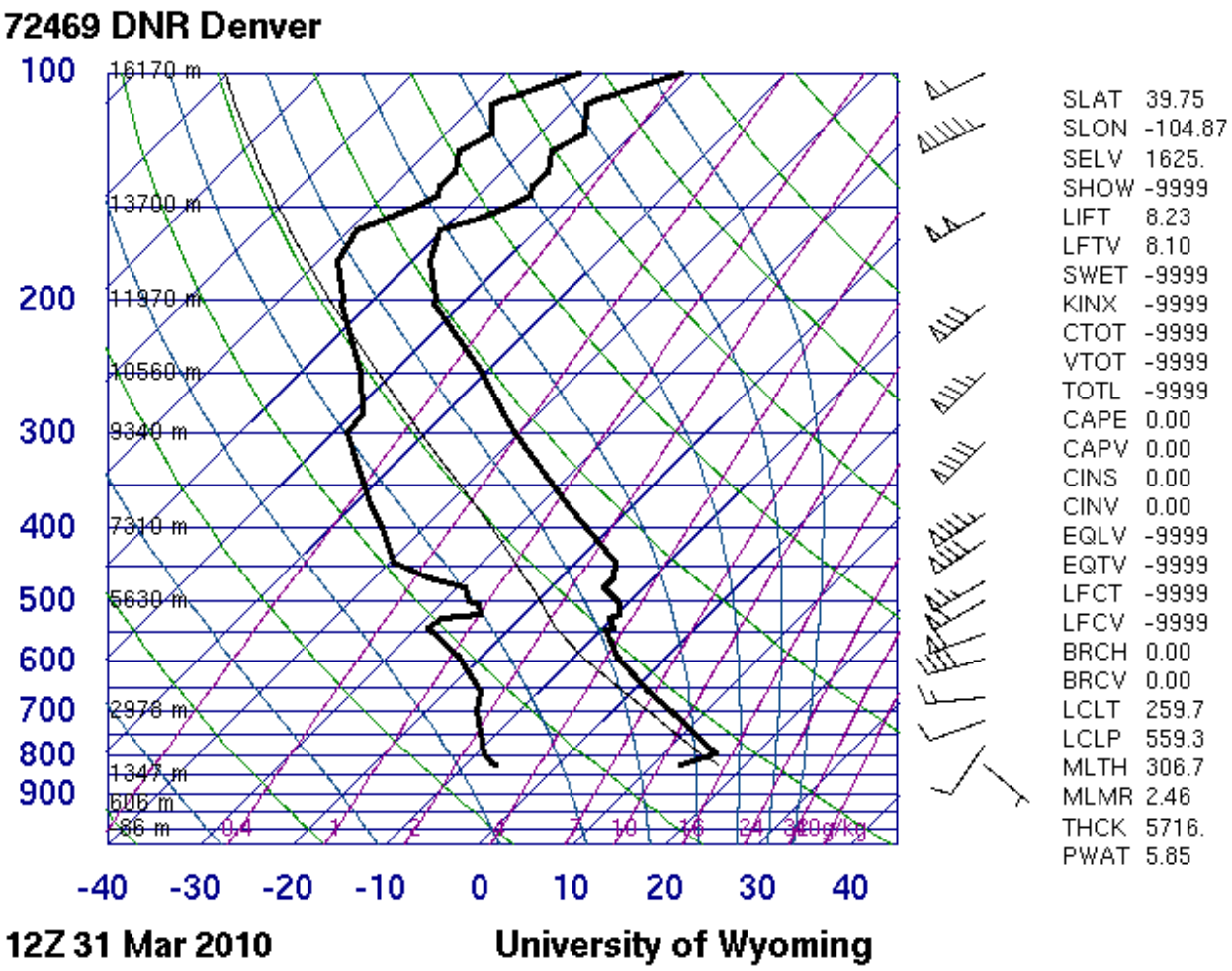

Figure 2: Skew-T for 3/31/2010

Photographic Data

Original Image Dimensions [X,Y] px: [4272,2848]

Final Image Dimensions [X,Y] px: [4272, 2442]

Aperture: F/9

ISO: 100

Shutter Speed: 1/200 s

Focal Length: 18mm

Camera: Canon EOS Rebel XSi

Image Processing

The image was touched up in Adobe Photoshop CS4 to produce a more aesthetic image with higher contrast. The image was cropped slightly to eliminate a distracting element at the bottom of the image. The image layer was then duplicated. The blend mode was set to overlay. Overlay blending results in light areas becoming lighter and dark areas becoming darker. This resulted in a much deeper blue sky and much whiter clouds. The sun was setting to the west (bottom right of the image). This resulted in the shadow gradient across the image. The image curves were then adjusted to further enhance contrast. The overlay mode was set to 50% opacity to achieve the final image.

Figure 3: Comparison of original (left) and processed (right) images

References:

1. http://cloudappreciationsociety.org/collecting/

2. http://en.wikipedia.org/wiki/Altocumulus_cloud

3. http://weather.uwyo.edu/upperair/sounding.html

4. http://www.theweatherprediction.com/thermo/skewt/