

## Clouds Second Fall 2018

MCEN 4151

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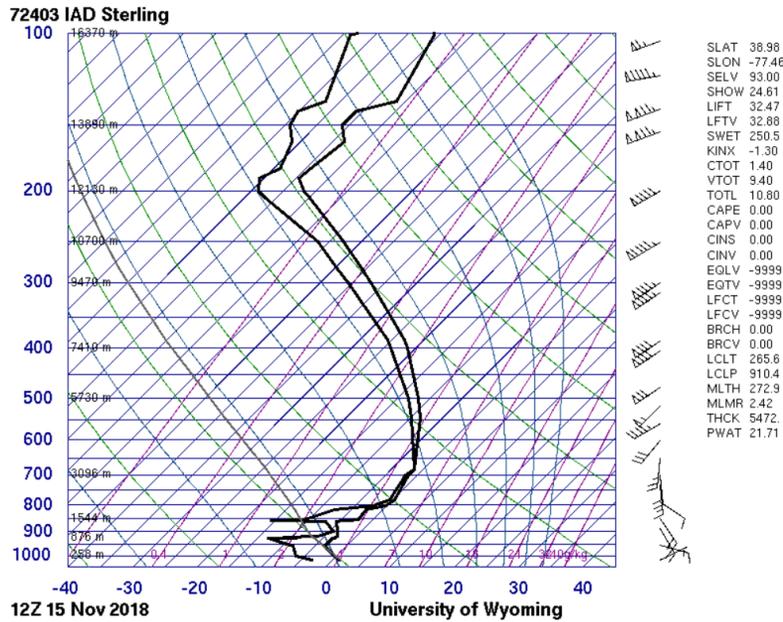
Alto-Stratus, 11/15/2018, 12:13pm, Northern Virginia

My second cloud assignment image was taken on an eastward flight just before coming in for a landing at Dulles International Airport in Northern Virginia. I planned to capture an alto-stratus layer of clouds as seen from above. I took multiple shots from the airplane window, but most were obstructed from the left-wing interference, which led me to settle on this shot. I like the layer of clouds imaged here, and the perspective including the broad horizon as well as depth in the bottom left corner of the image.



The image was most likely taken over northern Virginia near the Virginia-West Virginia border. At approximately 40,000 feet high, the plane window to the rear of the left wing allowed for an above, northwest-facing shot of the clouds. The image was taken at 12:13pm and the sun was at its peak in the sky.

Altostratus clouds are featured in the image in addition to some over-hanging cirrus clouds the create some grey splotches in the image. There was a warm front approaching as there had been rain a couple days before and the atmosphere was now stable. The skew-T plot below shows a CAPE of 0, demonstrating a fully stable atmosphere, and has the temperature profile and dew point line closest at an altitude of about 3100 m where altostratus clouds exist. These cloud formations agree with my observation of a sheet of altostratus clouds. Altostratus clouds also reflect a stable atmosphere which is evident in the skew-T plot [1]. Overall, the clouds pictured represent the remnants of a storm from days before turning stable.



The photo was taken with an iPhone 6s which has a lens with a focal length of 4mm. The field of view in the image is approximately 20 mi wide and 8 mi high. The original image had the dimensions of 4032 x 3024 pixels and was cropped to 4032 x 2868 pixels. An aperture of f/2.2 was used with an ISO of 25 to capture the depth of the clouds and the subtleties of the shadows in the shot. The shutter speed was 1/3663 sec which minimized motion blur. The photo was edited using digital photo professional where the tone curve was adjusted to enhance the saturation of the blues while providing more contrast throughout the image and more depth. The original, unedited image is shown on the next page.



The image shows the great expanse of an altostratus cloud sheet and the subtle cirrus clouds that hang overhead. The distant beauty is emphasized by the perspective of the cloud sheet. I would have liked to better capture the details of the clouds by getting a photo from a slightly lower altitude that provides more perspective. I wonder what the image would look like from the same point of view but at sunset. Overall, my intent of capturing an altostratus cloud sheet from above was achieved. Further development of this image would include using a wide-angle lens to better capture the breadth of the atmosphere and clouds.

## References

- [1] *Atmospheric Soundings*, [weather.uwyo.edu/upperair/sounding.html](http://weather.uwyo.edu/upperair/sounding.html).