

Clouds Image #2



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04/17/2014

Introduction

This image is for the “Clouds Image #2” assignment for the Flow Visualization class. For the first image I had captured a very cool sunset photo of the clouds, and I wanted to try and capture another one this time around. I had just arrived at my house, noticed a very beautiful sunset, and ran up to my roof to take several images. I ended up deciding on the contrail photo in the end mostly because I liked the simplicity of the image.

Setting

This photo was taken on March 19, 2014 around 6:30 at night, right as the sun was setting. From where the image was taken I was facing due west, at an approximate elevation of 50-75 feet above the ground (from the roof of my house). The camera was maybe pointed a couple degrees above the horizon, but considering I was on my roof it was mostly pointed horizontal.

Clouds

This was a sunset photo on a moderately very mild-temperature day in March. I believe that there had been a warm period of a couple days here, with a storm moving in several days after. March 21, 2014 was the start of spring break and on that Saturday there was rain and a storm system. For the day that the photo was taken however the atmosphere was stable with wind speed less than 5 knots at an elevation around 3000 m. The image I had taken was of a contrail, which has little to do with the atmospheric conditions, but I have a pretty good idea of the clouds surrounding the contrail. The CAPE value for the day was 0 and at low elevations the wind was very low, but from about 6000 m and above the wind was 50 knots and above perhaps indicating the incoming storm system two days later, as seen in the Skew-T diagram. That being said the clouds I saw were at a low elevation and I believe they were stratus clouds as can be seen in Figure 1.

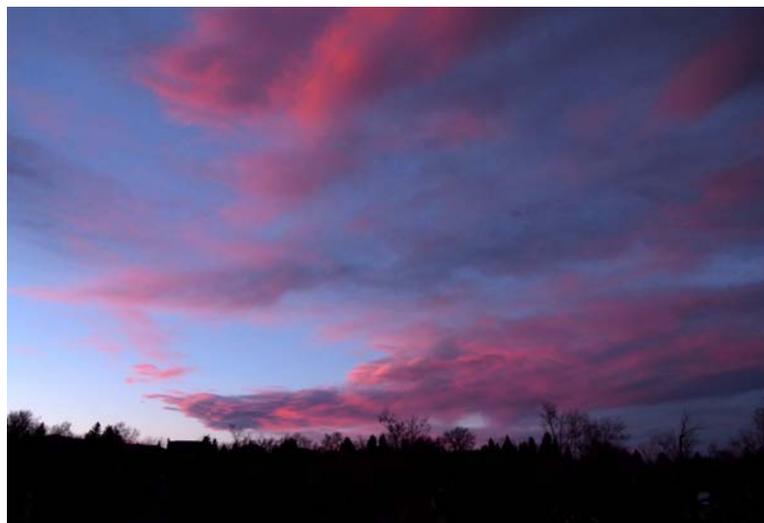


Figure 1-Stratus Clouds

As for the contrail, they are sometimes referred to as Cirrus, Cirrocumulus, or Cirrostratus clouds. Contrails are formed from the water vapor from the exhaust of aircraft engines, or from the pressure difference that the vortices from wingtips create¹.

Photographic Technique

The field of view is approximately a quarter mile, but it is hard to tell considering there are not too many visual indicators as to the size or distance away that the contrail is. Again it is hard to tell what the distance was from the contrail to the lens, but if I were to estimate a distance I would say several miles. I used a digital camera, the Olympus PEN E-PL5, with an Olympus 14-42 mm, 1:3,5-5,6 and 37 mm diameter lens. The focal length for this image was 40 mm. The aperture was f/5.5, the shutter speed was 1/250 s, and the ISO speed was 200. As far as post-processing goes I turned the exposure, contrast, and saturation up. The original image was a little darker than I was expecting so the exposure was necessary, and the increase in contrast and saturation was done to increase the warmth of the photo.

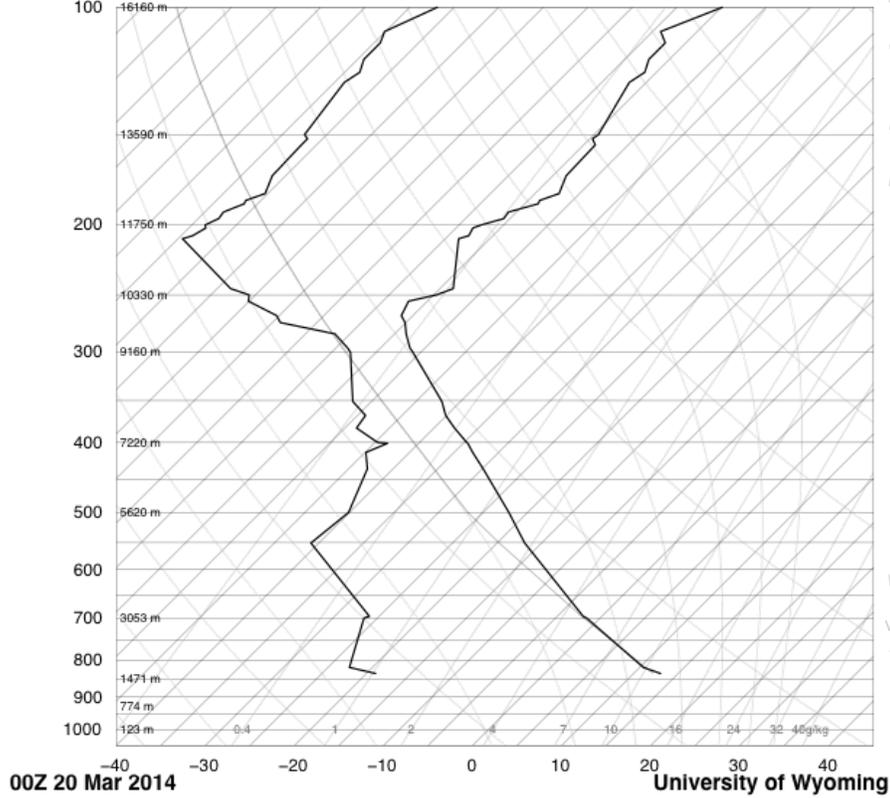
Image Results

I am quite happy with the image results. I have gotten a little flak and criticism for this photo saying that it is hardly a clouds image, but I like the simplicity of the photo. I would have liked it if there were more clouds surrounding the contrail, but at the same time there was just enough to change the colors of the sky.

References

1) "Contrail." *Wikipedia*. Wikimedia Foundation, 14 Apr. 2014. Web. 15 Apr. 2014. <<http://en.wikipedia.org/wiki/Contrail>>

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SLAT	39.77
SLOD	
SELV	1625.
SHOW	-9999
LIFT	4.76
LFTV	4.66
SWET	-9999
KINX	-9999
CTOT	-9999
VTOT	-9999
TOTL	-9999
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EQTV	-9999
LFCT	-9999
LFCV	-9999
BRCH	0.00
BRCV	0.00
LCLT	245.2
LCLP	491.3
MLTH	300.4
MLMR	0.79
THCK	5497.
PWAT	2.05