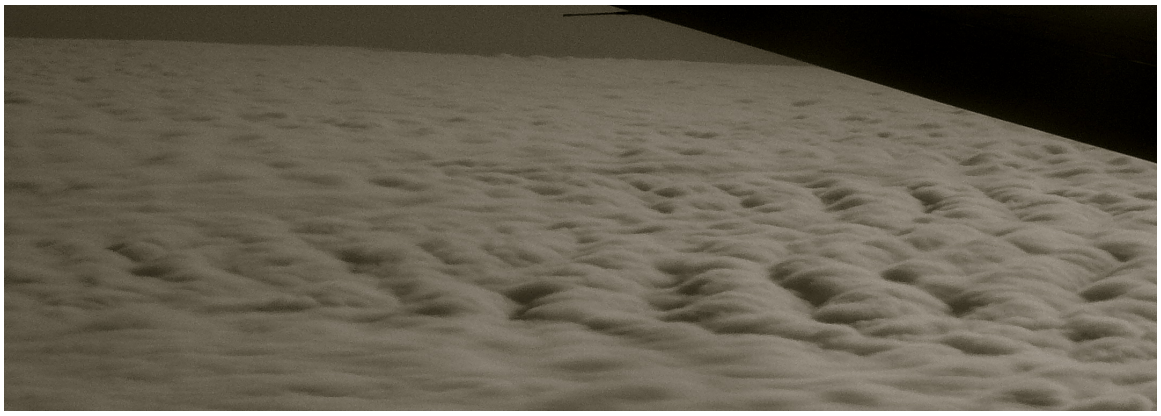

Image 1: Edited image

Clouds 1

Jade Jauquet

Flow Visualization

Prof. Jean Hertzberg

Sunday, February 28, 2010

My idea for the first cloud project was to capture something that we normally do not see with. The most obvious answer to this question was to get an image from above. The opportunity came to me a couple of weeks after enrolling into the class when I flew to Green Bay, WI for a funeral. I had brought both my SLR and a point and shoot camera on the trip with me but found out in the airport upon arrival that I had left my SLR battery on the charger in Boulder. At first I was disappointed in all the overcast weather that Green Bay was having for it limited my the possibilities of getting any cool cloud pictures form the ground, but when we left on January 26th my thoughts had changed.

This picture was taking shortly after take off form Green Bay, Wisconsin on the 26th of January. The picture was taken at 3:45pm, out of a plane window flying at approximately 24,000 feet (this was the height the pilot told us was cruising speed). The angle of the shot was about -15 degrees off the plane's wings horizontal.

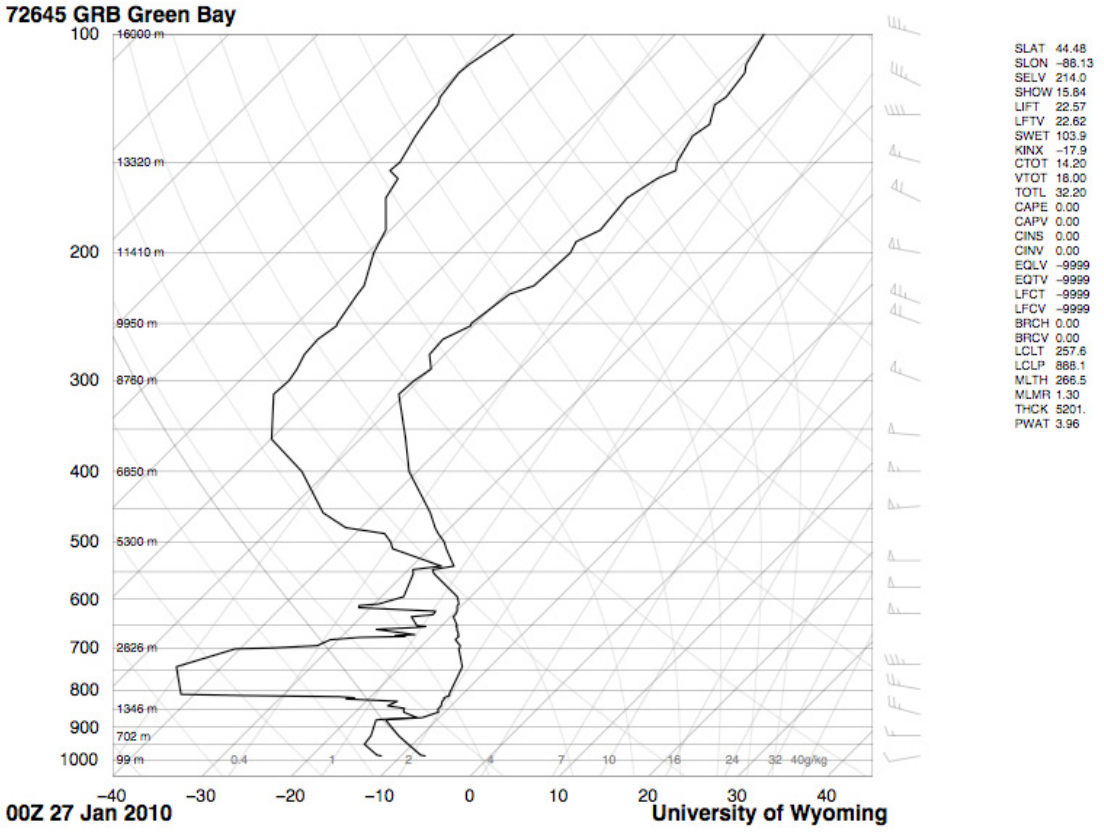

Figure 1: Skew-T test

These clouds are classified as altostratus clouds. The ripple looking ridges are called undulate. I first believed the undulating to have been Kelvin-Helmbolz billows. But after studying a Skew-T test I believe them to be only a rippling effect through out the plan of the clouds. Green Bay had been overcast for a couple of days before this picture. It had both rained and snowed some while I was there but over all it was very calm, only overcast. The Skew-T test should the atmosphere to be stable with a CAPV of 0.00. The possibility of these undulates having formed by wind sheer was ruled out because of the different cloud formations of the surrounding the undulating altostratus clouds. Because the clouds were round 24,000 feet it is hard to use the Skew-T test for wind velocity because the test go parallel at around 11,000 feet.

The image was taken out of a moving plane with a Panasonic Lumix DMC-FX07 camera. The f/stop was 16, the ISO was set to 100, and the shutter speed was 1/250 of a second. The field of view size for this image is very large, but I am unsure of its exact size because of the difficulty of knowing how high about the clouds the plane was flying at. This also makes the distance I was from the undulating clouds a mystery. I used iPhoto to crop and edit my photo. The original photo had the entire wing in it. Luckily I was able to still able to crop and blow up the image to a presentable size. Because of the angle the plan was flying to the sun I wasn't able to get a picture that showed the altostratus undulates as well as this one did. After cropping I turned the picture black and white and adjusted the color levels, and increased the contrast and increased the shadows. This allowed the shadow to come out, increasing our ability to see how the undulates of the cloud look from above.

Over all I am happy with this image. My image showed that what may be a sad and dreary day (an Overcast day) actually can be just as full of shapes as a hot summers thundercloud. Although I did fulfill my intent I do have questions in regard to why the altostratus clouds would have undulates? If it were because of a ripple effect, what would have cased the ripple with in the cloud layer? I do wish I had had my SLR battery so that I would have been able to have more control over my ISO, aperture speed, and f/stop. The use of a better zoom lens would have been nice too, and would have allowed for a better field of view of the altostratus undulating clouds. I believe that this image could be reproduced on a overcast day and you're able to be at 24,000 feet. Even though the use of these manual functions would have been nice, I believe that the image does well at showing clouds from a different angle than what we are used to. It was a fun experience searching for clouds!