

Cloud 2 Report



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Flow Visualization – Spring 2014

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I. INTRODUCTION

The purpose of this image was to capture a different set of clouds for the second cloud assignment. The goal of the image was to explore different atmospheres somewhere other than Boulder, CO. With so many different driving factors for clouds the intent was to capture a completely different scene while travelling to different locations during spring break.

II. IMAGE CIRCUMSTANCES

The image was taken on March 27th 2014 at 22° 53' 13.698" N 109° 54' 20.388" W, otherwise known as Cabo San Lucas, Mexico. On the seventh floor of a hotel at a rooftop restaurant the image was taken approximately 28.72 meters above sea level. The image captured is facing south as the sun sets in the west. In order to properly capture all the colors in the sky the iPhone was tilted at a 30° angle to the horizon facing up. The picture was taken at approximately 6 o'clock PM.

III. CLOUD IDENTIFICATION

There are a few types of clouds in the image cirrocumulus, altostratus clouds. The first clouds that can be identified are the clouds in the top right corner of the image. These rice puff like looking clouds are cirrocumulus clouds. The cirrocumulus clouds can be easily identified by their rippling appearance and are usually only apparent in a small portion of the sky¹. Typically cirrocumulus clouds are high-level clouds that can be in the troposphere of the atmosphere from anywhere between 16,500 feet and 45,000 feet. Generally, cirrocumulus clouds are formed by choppy winds with high moisture levels which can be a sign of bad weather to come.²

The next set of clouds that can be found in the image are the altostratus clouds, commonly identified by their grey like color and the mass amount of them. Altostratus clouds form in the middle of the atmosphere anywhere between 6,500 feet to 23,000 feet. Altostratus clouds are generally responsible for a little bit of rain thus form before storm that will have relatively continuous precipitation. It's common for the altostratus clouds to turn into nimbostratus clouds once precipitation from the altostratus clouds begins.

The local humidity was increasing during this period and a storm front was headed toward Cabo. Unfortunately no skew-T data was recorded on May 28th 00Z.

IV. PHOTOGRAPHIC TECHNIQUE

¹ Ahrens, C. Donald. *Meteorology Today: An Introduction to Weather, Climate, and the Environment*. S.I.: Brooks/Cole, 2013. Print.

² Nenes, Athanasios. "Clouds." *Athanasios Nenes*. Georgia Institute of Technology, n.d. Web. 2 Apr. 2014.

Smoke ball image was captured using an iPhone 4 camera, not the most ideal but works in a pinch. This image was captured at f2.8 with a shutter speed of 1/176 of a second. With no control of the settings for the image being captured the ISO was set to 80, the focal length was 3.85. The total size of the field captured in the photo is around 5-10 miles.

The final image was processed using iPhoto. Not much was done to adjust the colors just a little bit of adjusting the contrast, bringing out the warm hues in the photo as well as brightening the blue in the photo. The final image was cropped in order to try and remove the building with the distinct roof, but in order to remove the roof the yacht would have been gone and I thought it added an extra focal point to the image. The image was cropped down from the original 2,592 x 1,936 pixels to 2,592 x 1,716 pixels.



Figure 1: Unedited Cloud 2 Image

V. IMAGE ANALYSIS

The image really captures the upcoming storm. The clouds almost look as if they are a spirit sweeping in on Cabo San Lucas ready to start raining. While I initially did not like the distinct rooftop I ended up enjoying how the bumpy rooftop architecture contracted with the mountains and rocks in the background. It would have been really interesting to take a time lapse of the whole progression from sunny days with highs of 90's to cooler dreary days with highs of 70. While my spring break weather could not have been any better, this image captures the perfect ending to a warm sunny spring break trip.