

Nick Cote

Flow Vis Spring 2012

Clouds Assignment #1



Holy Cross Jan. 22nd 2012 2:00 PM MST

This photograph of Mt. Holy Cross was taken at the top of chair two in Vail, CO. It was a very snowy morning with little to no sun at all for most of the day. Just before leaving for the night the sky opened up for just a moment over Holy Cross, allowing this image to be taken. The reason I liked this photo so much was because of the blowing snow that can be seen. It not only shows us what the wind conditions were like that afternoon, but also that it had just snowed a whole lot. The blowing snow, as well as falling snow on the left side, blurs the image. I liked the way this made the image look, more like it was a painting rather than a photo.

This photo was shot using my Casio EX-H30 point and shoot camera resulting in a 4608 x 3456 pixel image. A shutter speed of 1/400s, an aperture of f15, and an ISO of 80 were used by the camera. I used Photoshop CS5 to do the editing. I did not crop the image and only used curves to enhance the color. I really wanted to make the

photo brighter, and I did, but reception was that it may have been too bright. Instead of changing it I decided to leave it the way that it was, as close to the image I saw that day. After it being so dark and snowy for most of the day when the sun finally did come out my eyes were not adjusted and the mountains and clouds did appear to be very bright, and extremely breathtaking. It was this fact that made me become so endeared to this particular image. I accomplished that in my editing and despite critiques I decided to leave it how I best remembered it.

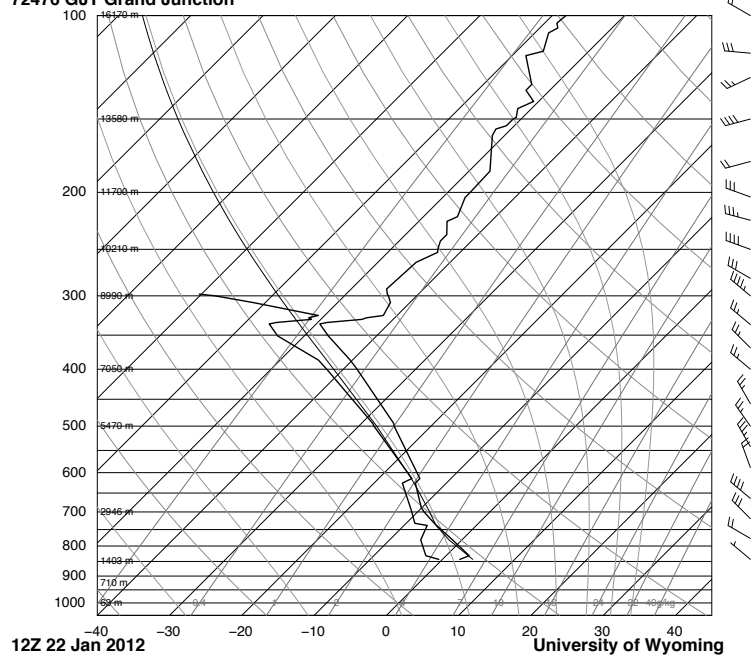
The main cloud types in this particular image are cumulus and cumulus fractus clouds¹. The dark cloud at the very top is a cumulonimbus¹, as it was snowing just below, and ones in the background are stratocumulus¹. This falling snow from that particular cumulonimbus cloud blurs part of the image, mostly the eastern side of the mountain, which I really enjoy. The skew-t plot² from Grand Junction was used for that day, and taken at 12Z on the 22nd. It has a CAPE of 19.54, signifying that the atmosphere in Grand Junction at that time was unstable. I can verify that in Vail at the time the photo was taken, the atmosphere was also not stable. We can make an educated guess about the atmospheric conditions based on the weather I experienced and the cumulus clouds that we observe in the photo. The mountain reported 11 inches of snow that morning and it continued to snow until just before this image was taken. The large quantity of snowfall indicates an unstable atmosphere, as well as the cumulus and cumulonimbus clouds observed. Cloud height can then be determined by knowing the heights of the surrounding mountains, and verified with the skew-t data. We know that Holy Cross is 14,005 ft. above sea level and, from a topographic map, the highest mountain with trees is at 11,880, making for a difference of about 2,000 ft. From these estimations I would put the cumulus band in this photo in between 2,000 and 4,000 ft. above Holy Cross, or 16-18,000 ft. above sea level. The skew-t shows possible cloud formation around 4200 m or about 14,000 ft. above sea level. Since Vail is in the middle of the Rocky Mountains, and Grand Junction is on the outside, the elevation change could account for the difference between my guess and the skew-t.

Overall I am very pleased with how this image turned out. It captured how I remember that day perfectly while also being a very intriguing, in my opinion, image. I enjoyed taking cloud pictures as they're always changing and so many fascinating things happen because of clouds. Learning more about how clouds are formed and the different species has become something I would like to pursue. Not only can we tell a lot about what the weather currently is like, but we can also have an idea of what it was like and how it is going to be.



Unedited Image

72476 GJT Grand Junction



SLAT 39.11
 SLON 1475
 SELV 1475
 SHOW -9999
 LIFT 2.42
 LFTV 2.42
 SWET -9999
 KINK -9999
 CTOT -9999
 VTOT -9999
 TOTL -9999
 CAPE 19.54
 CAPV 22.64
 CINS -9.26
 CINV -7.76
 EQLV 635.1
 EQTV 632.8
 LFCT 735.2
 LFCV 737.1
 BRCH 0.85
 BRCV 0.98
 LCLT 268.6
 LCLP 754.4
 MLTH 291.2
 MLMR 3.67
 THCK 5407
 PWAT 8.56

Skew-T: Grand Junction 12Z Jan 22 2012

Reference:

[1] "The Cloud Collector's Reference." *The Cloud Appreciation Society*. Web. 29 Apr. 2012.
<<http://cloudappreciationsociety.org/collecting/>>.

[2] "Atmospheric Soundings." *Wyoming Weather Web*. Web. 29 Apr. 2012.
<<http://weather.uwyo.edu/upperair/sounding.html>>.