

CLOUDS 2

March 27th, 2014
MCEN 5151



Low Hanging Clouds in St. George

By: Eric Fauble

Introduction:

The purpose behind this photo was to encourage students to start looking at clouds as being a part of the dynamic fluid that is our atmosphere, and how the shape and movements of clouds provide clues about what's really going on up there. This photo is the second of two cloud pictures taken for MCEN 5151. This picture illustrates how a landscape influences cloud formation.

Location:

This photograph was taken on the outskirts of St. George Utah in a residential community looking NNW towards the mountains of Snow Canyon State Park. The photo was taken in the morning around 9am just before all the low lying clouds burned off. Earlier that morning around 8am, these low lying clouds were very prominent hugging the mountains that bordered the valley. These clouds quickly evaporated as the day started to warm up.

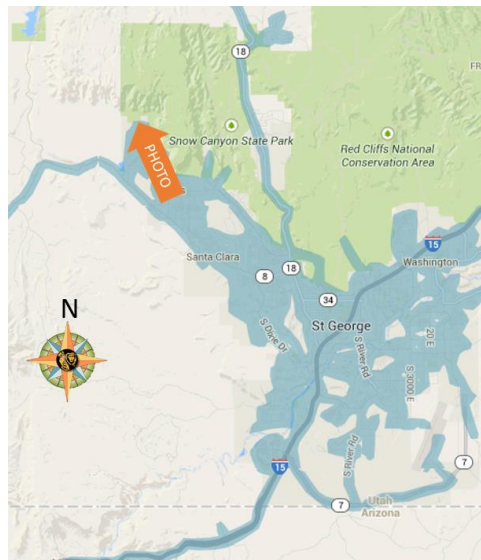


Figure 1: Map of St. George shows the location of the photo¹

About the Cloud:

The weather report for March 27th and over cast most of the day with a chance to rain in the afternoon. The graphs in Figure 2 from Weatherspark.com confirm this weather report. Weatherspark.com also was able to provide information regarding the cloud ceiling and cloud coverage. It indicates cloud layers around and above 8,000ft for most of the day with 80%-90% cloud coverage. However, it also shows that in the early morning the cloud layer was 500ft followed by insufficient cloud coverage.² The photo clearly illustrate this weather pattern from the deteriorating cumulus clouds with fraying edges and the bright blue sky in the background.³

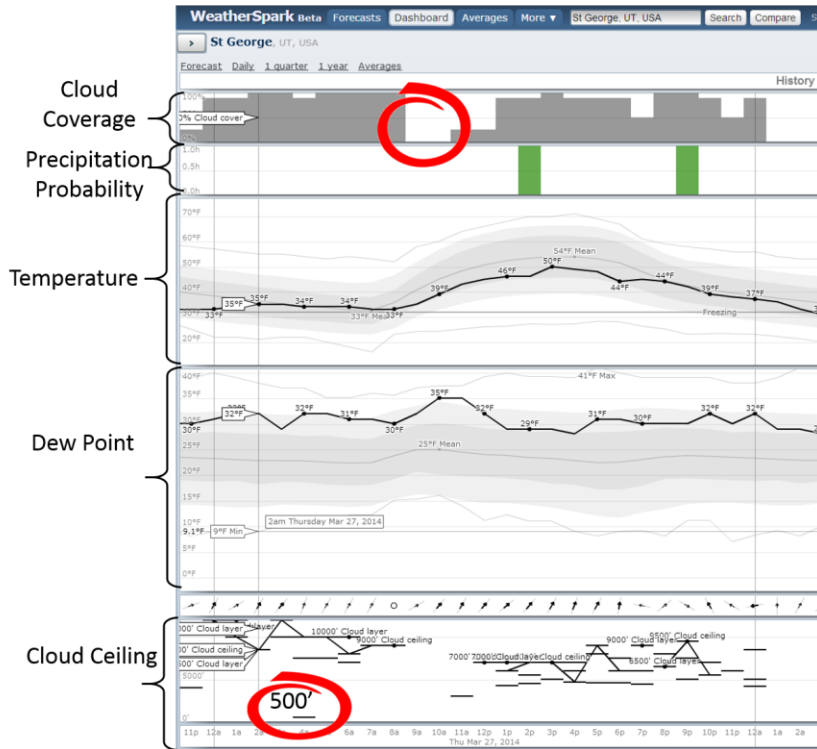


Figure 2: Weatherspark.com weather graphs for St. George on March 27th

The atmosphere that was associated with this cloud formation turned out to be stable according to the Skew-T plots (shown below) from Flagstaff and Las Vegas. ⁴ Both Skew-T plots display a CAPE is 0.00 indicating stability. Although Flagstaff and Las Vegas are both roughly 2hrs away from St. George, which means the atmosphere

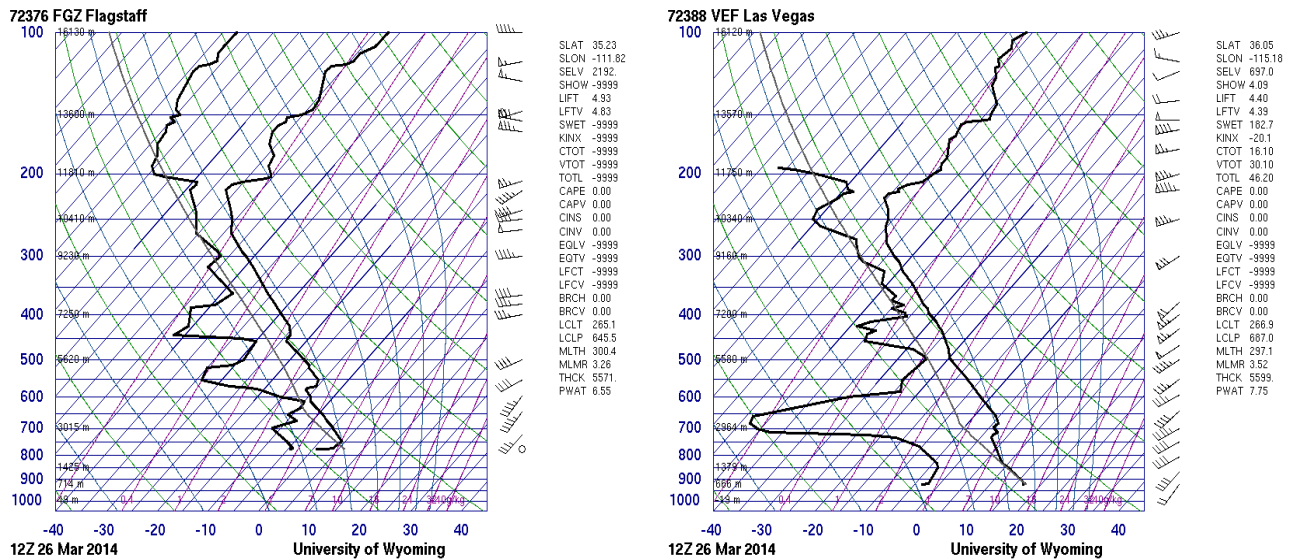


Figure 3: Skew-T plots Flagstaff (left) and Las Vegas (right) on March 27th at 6am

may have been different, in conjunction with the mild weather that occurred throughout the day it is safe to assume that the atmosphere above St. George was indeed stable.

Photographic Info:

This photo was shot using Canon EOS Rebel T1i. An ISO of 800, a 40mm focal length, an aperture of f/20, and a shutter speed of 1/640 were used to take this photo. These settings ensured that the picture was well lit, while maintain all detail within the white clouds. The original photograph underwent very little post processing; it was cropped to given a better sense of the broad horizon, and the saturation and contrast were increased just a little to amplify the beautiful colors of Utah. Figure 4 shows the original and edit photos.



Figure 4: Post Processing before (top) and after (bottom)

Reflection:

I like how this image captures the beautiful red rocks and desert landscape of southern Utah, while still illustrating the extremely low clouds left over from the low cloud layer of the early morning. I like how the cloud appears to be on top of its shadow which is only a few hundred feet below it. If I was to take this photo again, I think I would take a panoramic shot to show the other clouds hugging the ridges around the entire valley.

Bibliography:

[1] "St. George, UT". *Google Maps*. Web 27. March. 2014

[2] "WeatherSpark Beta." *Beautiful Weather Graphs and Maps*. N.p., n.d. Web. 17 Mar. 2014.

[3] Pretor-Pinney, Gavin, and Bill Sanderson. *The Cloudspotter's Guide: The Science, History, and Culture of Clouds*. New York: Berkley Pub. Group, 2006. Print.

[4] "Weather". University of Wyoming—College of Engineering—Department of Atmospheric Science. Website Accessed March 30^h, 2014.
<http://weather.uwyo.edu/upperair/sounding.html>