   This is my image for the first cloud assignment. The point of this assignment was to capture an image of clouds. I have always loved looking at clouds so I was excited to have an excuse to be photographing them. Originally, I wanted to take some sort of sunset image but as someone who does not have a car, getting to a nice spot to see the sunset proved to be difficult. Since I could not capture the pretty colors of a sunset, I decided to photograph the fluffiest cloud I could find.

   I was on my way to class when I took this photo in front of the Visual Arts Complex on the campus of the University of Colorado Boulder, facing southwest. It was taken on a mostly sunny day around 2 pm at an altitude of approximately 5,389.25 feet.

   The cloud in this image is either a cumulonimbus or a towering cumulus cloud. Most of the sky was clear and blue but there were collections of fluffy clouds here and there. The weather had been quite similar the days before and after this picture; temperatures stayed in 77-84 range. As that implies, there was no snow in the few days before or after this picture, and rain neither. Puffy clouds like this are born in unstable atmospheres when warm, moist air rises, and water vapor eventually cools and condenses into tiny water droplets. As this process continues, water droplets keep accumulating upwards, creating heaps visible in the sky that we see as white, fluffy clouds (Warrilow 2013). The skew T diagram for Denver is shown below. This skew T diagram contradicts my image because it indicates a stable atmosphere (CAPE 0.00) when a cloud formation like this occurs in an unstable atmosphere.

72469 DNR Denver

00Z 30 Aug 2016   University of Wyoming
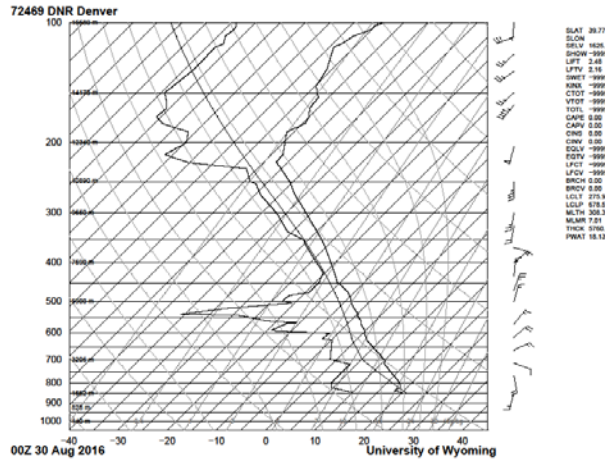
      I was standing on the floor when I took this picture, with my camera angled up towards the sky. My ISO was 80, f stop at 4.5, shutter speed at 1/250 of a second and my focal length was 9.55 mm. My camera is a digital Canon Powershot SX280 HS with a 20x optical zoom. I used Gimp to edit this image, primarily just trying to make the colors and contrasts more noticeable. I increased contrast and brightness, bumped up the blues and lastly burned the shadows of the cloud to make it appear even puffier. Below is the original image taken with my camera. After a little bit of cropping, image width and height was 4000 x 3000.

      My intent was to capture a fluffy cloud and I did do that. The physics of this cloud formation are condensation, I believe a cumulus cloud like this demonstrates that perfectly. I would have loved to capture beautiful hues of pinks and purples on this cloud, like the ones you see during a sunset.

References
Warrilow, C. (2013, March 21). Sky Watching: Cumulus Clouds. Retrieved November 02, 2016, from https://weather.com/science/news/sky-watching-cumulus-20130320

Image Assessment Form

Flow Visualization

2016

Assignment: Date:

Scale: +, ! = excellent √ = meets expectations; good. ~ = Ok, could be better. X = needs work. NA = not applicable

Art	Your assessment	Comments
Intent was realized	!	
Effective	!	
Impact	!	
Interesting	!	
Beautiful	!	
Dramatic	√	Sunset colors would've added drama
Feel/texture	!	
No distracting elements	√	Little tree on bottom right
Framing/cropping enhances image	!	

Flow	Your assessment	Comments
Clearly illustrates phenomena	!	
Flow is understandable	!	
Physics revealed	!	
Details visible	!	
Flow is reproducible	NA	
Flow is controlled	NA	
Creative flow or technique	!	

Publishable quality	√	I would've like a more crisp image

Photographic/video technique	Your assessment	Comments
Exposure: highlights detailed	!	
Exposure: shadows detailed	!	
Full contrast range	!	
Focus	√	Better quality camera could have gotten a sharper image
Depth of field	!	
Time resolved	!	
Spatially resolved	!	
Photoshop/ post-processing enhances intent	!	
Photoshop/ post-processing does not decrease important information	!	

Report		Your assessment	Comments
Collaborators acknowledged		!	
Describes intent	Artistic	!	
	Scientific	√	Not an engineer
Describes fluid phenomena		√	Not super detailed, scientific explanation, but there's explanation
Estimates appropriate scales	Reynolds number etc.	NA	
Calculation of time resolution etc.	How far did flow move during exposure?	NA	
References:	Web level	!	
	Refereed journal level	X	
Clearly written		!	
Information is organized		!	
Good spelling and grammar		!	
Professional language (publishable)		√	Not very scientific
Provides information needed for reproducing flow	Fluid data, flow rates	NA	
	geometry	NA	
	timing	NA	
Provides information needed for reproducing vis technique	Method	NA	
	dilution	NA	
	injection speed	NA	
	settings	NA	
lighting type	(strobe/tungsten, watts, number)	!	Natural light
	light position, distance	NA	
	Camera type and model	!	

Provides information for reproducing image	Camera-subject distance	X	I do not know how far I was from cloud
	Field of view	NA	
	Focal length	!	
	aperture	!	
	shutter speed	!	
	Frame rate, playback rate	NA	
	ISO setting	!	
	# pixels (width X ht)	!	
	Photoshop and post-processing techniques	!	
	"before" Photoshop image	!	