

For this project I wanted to visualize how light from a projector would interact with a cloud of fog. I had originally intended on projecting onto a mostly stationary cloud and filming from next to the projector. I soon found that the fog machine I was using expelled the fog a little too forcefully to create a coherent, stationary cloud. I decided to reposition the camera so it was pointing directly at the lens of the projector. This created a very interesting effect due to the fog that was still floating in the air. I was able to see the beams of light pass through the air and see them change as my source video changed. The result reminded me of lights at a concert.

I filmed directly at my projector, which was resting on the ground, with the camera about 12 feet away and about 2 and a half feet off the ground, for a couple minutes while the air was still fairly thick with fog. While I was filming, the machine let out a small puff of fog which floated gently in between the camera and projector. As the fog dispersed it acted like a screen and the image I was projecting became illuminated in the air. I choose to use this segment of my video because it allows you to see how the cloud interacts with the air around it as well as the light. You can see the difference in the projection as the cloud becomes less dense as well as how the cloud travels across the room horizontally.

The footage I choose to project at the camera was actually another example of flow visualization. I had filmed the wind screen on CU's engineering building that consists of many small metal medallions that hang and blow in the wind; this screen allows you to see how and where the wind is hitting the wall. I had also adjusted the color to slowly change as the video progresses. This source footage is the reason you can see all the little circles in the cloud and caused many of the beam effects that I discovered. The white fog I used was made from an average fog machine with the normal fluid that comes with it.

I choose to film the projector in the top right of the frame because I wanted the video to have a disco ball/celestial feel. I also wanted to catch as much of the full field of light coming may way as possible so I kept the lens short and the field of view fairly deep. I was using a Canon Rebel T3i Digital SLR at 30 frames a second to capture my images with an ISO of about 400. Although I had done several manipulations to my source video – changing color, adding, a second glow layer underneath the original, and upping the contrast – the video that I captured for this project didn't really need much alteration. The only adjustment I made, using Final Cut Pro's color corrector, was bringing the blacks down and the highlights up very slightly.

I ended up very pleased with my resulting video. It demonstrates how a cloud of vapor's dispersal into the surrounding air looks as well as how light from projectors can illuminate particles in the air. The fluid dynamics are clearly visible and the means of lighting them are aesthetically pleasing. Something I would like to try in order to take this idea further is to make a device which I can make a consistent screen of fog. I can attach to the end of the fog machine to a hose that runs into a PVC pipe that is closed off at the end with holes all along the tube. Hopefully this can yield an even, consistent, thin screen of fog.

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	□	
Feel/texture	□	
No distracting elements	□	
Framing/cropping enhances image	□	

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

Photographic technique	Your assessment	Comments
Exposure: highlights detailed	!	
Exposure: shadows detailed	!	
Full contrast range	!	
Focus	□	
Depth of field	□	
Time resolved	□	
Spatially resolved	□	
Clean, no spots	□	

