Get Wet Image Report

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The purpose of this assignment was to experiment with fluid photography. I decided to focus on water drop formations for my image. I wanted to show the structure of a water drop after it has impacted a liquid surface. I wanted this image to show off the fluid mechanics being demonstrated, but I also wanted the image to be aesthetically pleasing. I decided to experiment with backdrops to get reflections in the water of the pan.

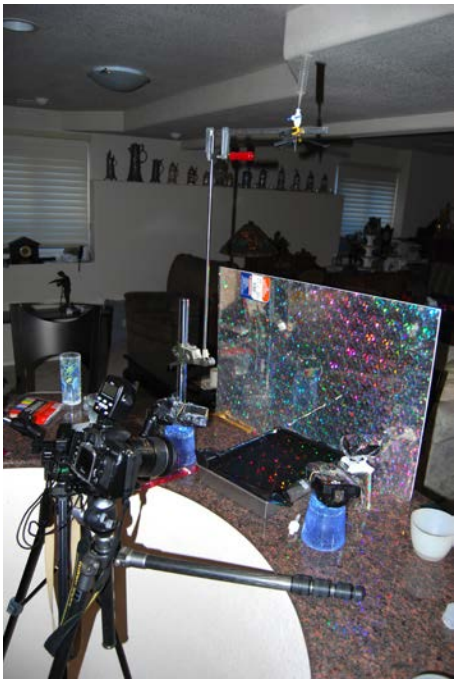

Figure 1: My Set-Up

To be able to take pictures of drops I created a setup to get consistent splashes. I had a tall stand that the water dropper was held from and then a pan of water underneath that the water drop fell into. The water that the drop splashed into was held in an 8” x 12” pan, lined with black plastic and filled to a depth of about 2”. The apparatus to create the drops was kind of jury rigged together. I had a stand with an adjustable height collar from that I had an apparatus to clamp the dropper onto to keep it stationary. There wasn’t any scientific calculation of timing for this image, it was mostly snap a picture and hope you got a splash in it.

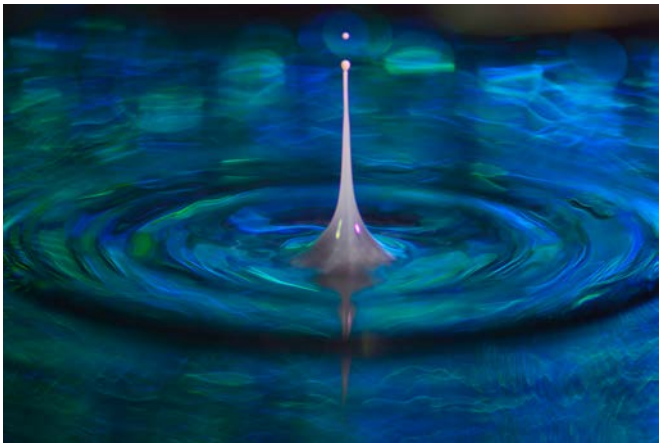

Figure 2: Worthington Jet

The concept I was trying to photograph was how water reacts when it impacts another fluid, in this case that fluid was water as well. There are several stages of a water drop impact. The first stage is essentially the "crater" the drops impact creates. The next stage, the stage shown in my picture, is when the edges eject back out, creating a crown type formation. After the crown phase, you get a jet of water from the center of the impact area. This jet is known as a Worthington Jet (to the right is a cool picture of a Worthington Jet that I got).

The visualization technique I used in this image was setting up a backdrop to get a reflection on the surface of the water. Initially, I started with different types of glittery scrapbooking paper, with varying sizes of glitter coarseness. I was able to get really cool effects in the background with those papers but I kept playing around. I found some foam board with an iridescent, almost holographic, pattern on it and tried using that for the backdrop (you can see this board in the image showing my setup). This gave a really cool and colorful reflection on the water. To light the image up I used 2 Nikon SB 800s and an SB 200 along with a wireless commander. One SB 800 and the SB 200 were pointed at the backdrop and the other SB 800 was pointed at the water drop location.

The camera I used to take this image was a Nikon D200. The image size my camera takes is 3872 x 2592 pixels. I knew the subject of my image would be fairly small so I decided to use a macro lens, specifically the Nikkor 105mm lens. The camera was about one foot away from the subject being photographed. The images to the right show how the reflections of the backdrop, or the depth of field, changes with a varying aperture. The images on the right show a range of f-stops from f-3.2, at the top, to f-36, at the bottom. I wanted a blurrier effect for the background so I

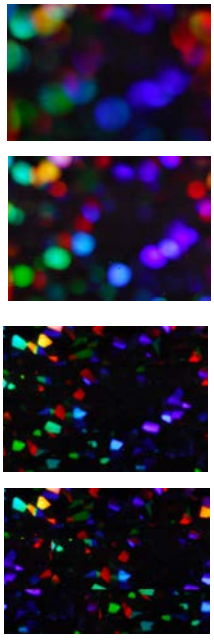

Figure 3: Varying f-stop

Figure 4: Original Un-edited Picture

went with a smaller f-stop, but not so small that the depth of field is too small to get the main subject of my image in focus. The f-stop in my final image was f-11 with an exposure of 1/60 and ISO 100. The final image did have some editing. The image was a little dark so I increased the exposure. I also increased the saturation to get the colors to really pop (my unedited image is above and to the left).

This image reveals the physics behind water drop impact formation. I am very pleased with the image I ended up with. From a scientific standpoint, I really like the shape of the formation. It could be a little more defined. Perhaps if it was a little earlier or later in the actual drop, but the occurrence is so fast it's impossible to time the picture to get the exact phase you want. Looking at the picture from an artistic view, I am very pleased with the picture as a whole. I wanted to get a really colorful image, and it took some playing around, but I think I achieved my goal. The only thing that could use some improvement would be the exposure. The original images were fairly dark, but luckily that can be photo shopped. I would really like to experiment more with water drop pictures. There is an artist, Corrie White, who takes amazing water drop collision pictures. I did try to get some collision pictures, but I think my setup was not ideal for drop collision pictures.