Fire Flow

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Team Zeta decided to play with Fire for the first group project. Ideas included pouring fire, igniting a hydrogen balloon, or even torching plastic army men like in middle school pyro days. We wanted to capture the fluidity of combustion without burning a house down. A lot of ideas were ditched for opting not to burn a house down, so we settled for the combustion of spray aerosol cans. The result was a turbulent burst of flames.

The apparatus was a dark alley, uncontrolled, open to the air. The oxygen in the air provided the combustion for the flame, and the pressure of the aerosol provided the projection of the combustibles. Combustion is a sequence of exothermic reactions between fuel and an oxidant. The result is heat and light in the form of flames.

The flow visualization technique was to create a steam of combustible particles suspended by aerosol. A lighter or a candle is used to ignite the stream of aerosol suspended flammable liquid. The combustion creates instabilities in the air that causes the turbulent action of the fire.

The field of view was 3 feet wide and the camera was approximately 3 feet from the flame. The camera is a Sony Cyber Shot dsc-h5 7.2 mega pixel digital camera. It shoots 3072 pixels by 2304 pixels which amounts to 7077888 pixels. The camera does not have a RAW function, with the FINE setting being the highest and the one that I used. I shot the image at 100 ISO, F8 and shutter at 1/1000. I did not alter it in Photoshop.

The image reveals the unstable air that is being heated and illuminated by the flames. I paired it up with a sunrise picture that I took on the 20th of October. The colors are very similar; they both describe a flow, and believe that they compliment each other. The scales are so drastically different, and the flow created is different physics. Despite differences, I feel as if they go really well together. I believe that this project can be pushed much farther; the combustions of gases captured by the mila second can be a beautiful thing, when in actuality it is a dangerous, perhaps deadly thing. With the variables in more control and a safe apparatus, I believe that this project can be pushed much farther.