# Masood Kamandy

Art.
Design.
Science.

A Portfolio for UC Santa Barbara's
Media Arts and Technology PhD Program

Masood Kamandy is an Afghan-American hybrid artist/designer based in Los Angeles. In his work, he incorporates concepts from the fields of computer science and photography.

Masood received his MFA from the University of California Los Angeles (2012) and his BFA from SVA (the School of Visual Arts) (2004) in New York.

He has had solo exhibitions in Los Angeles and the Netherlands and been shown at the the Contemporary Jewish Museum in San Francisco (2015), the Sharjah Museum (2014), the Torrance Art Museum (2012), UCLA New Wight Gallery (Los Angeles, 2012), and Control Room (Los Angeles, 2011). He participated in dOCUMENTA(13) in both Kassel and Kabul (Summer 2012).

Kamandy founded the first photography department at Kabul University (2002–05). Kamandy has been recognized by the Art Directors Club in New York and the American Photography Annual. Kamandy is an arts educator and a founder of the Design Media Art program at Pasadena City College in Pasadena, California.

Prior to his current practice, Kamandy worked in the magazine industry as a photo editor for *The New York Times Magazine*, and the agency ART+COMMERCE.

Kamandy's artworks are in the permanent collection of the Los Angeles County Museum of Art and the US State Department's Office of Art in Embassies.

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# Early Work from Afghanistan

2002

I travelled to the city my family originally came from, Kabul, Afghanistan, for the first time in September of 2002. This was one year after the destruction of the World Trade Center in New York on September 11th, 2001. Afghanistan had entered mainstream discourse and I was ready to get closer to my family's past.

I've lived most of my adult life estranged from my family and emerged from an adolescence filled with homophobia with a strong desire to form a personal connection to my family's language, culture, and heritage beyond my immediate family. All of my projects in Afghanistan were driven by this impulse for connection.

At this time, I was a photography student at the School of Visual Arts (SVA) in New York and I used the medium to structure my exploration of Kabul.

# Pile of Shoes

2002
C-Print

Kabul Plastics exists in the factory district outside of Kabul. It was once an industrial plant that produced products like shoes, polyester, piping and dishes.  My grandfather, Abdul Rashid, ran this factory with his two younger brothers from 1972 until his death in 1979, when he was imprisoned and summarily executed by Afghanistan's first Communist regime. I photographed it 23 years after it was abandoned.

Rack of Shoe Molds

2002
C-Print

# Engagement

2002
C-Print

My parents were engaged in Kabul in 1969. After their wedding, they left for a honeymoon in Moscow, and then moved to the United States, where my father was pursuing a PhD in Civil Engineering. They never returned to Kabul. The rest of my extended family would leave Afghanistan on the eve of the Soviet invasion in 1979.

# Photographic Education in Afghanistan

2002–2012

Upon returning from Kabul in 2002 to continue my studies in photography at the School of Visual Arts, I began to get closer to my eventual mentor and advisor Stephen Frailey. Stephen was the Chair of the Undergraduate Department of Photography.

In sharing the struggles of Kabul University art students, Stephen began to mobilize the charitable arm of the School of Visual Arts. We shared a vision of creating a photography program at Kabul University. Stephen wanted me to build it and teach the first courses. With this program in mind, Stephen organized an auction at Christies auction house and invited the photo industry to donate works to raise money at a silent auction. The auction raised a total of $75,000 which would be used to create the new department and ship equipment from New York to Kabul.

I laid the ground work traveling back and forth to Kabul and eventually living there for 6 months in 2005 while managing the construction process and teaching the first photography courses at Kabul University.

I taught 8 courses in photography that semester, including a history course, a faculty training course, a women-only Photoshop course, and a women-only black and white course to create a safe space for women in the darkroom environment.

In 2010, I began corresponding and eventually met with with Carolyn Christov-Bakargiev, curator of dOCUMENTA(13), who had heard about the department I created. In sharing how my work had evolved into writing software and computational photography, she was interested in giving me the opportunity to continue my teaching in Kabul and exhibit my works in Kassel and Kabul.

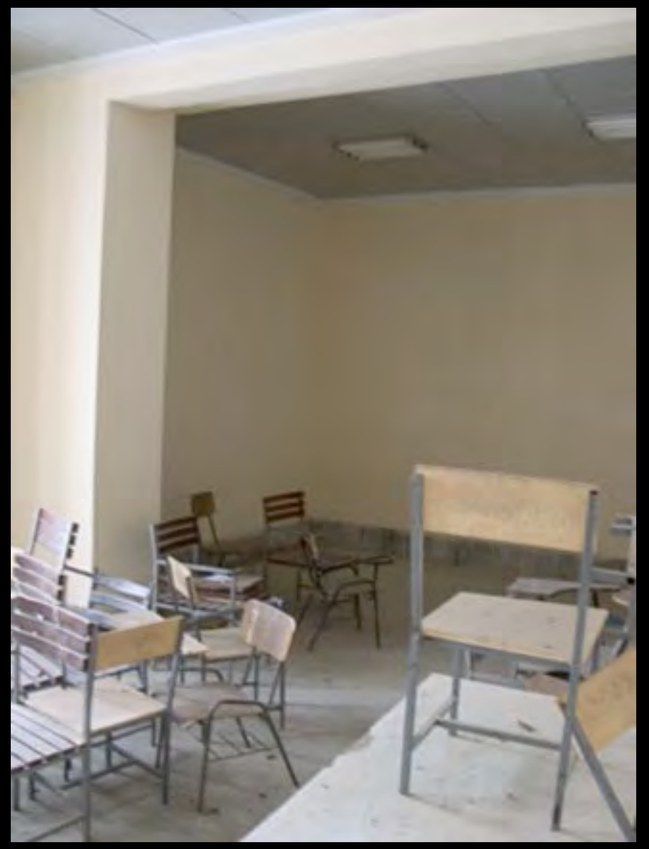
Kabul University's
Faculty of Fine Arts

2002

This is Kabul University's Faculty of Fine Arts. This photograph was taken in 2002 during my first visit there. During this trip I met the art professors who I would ultimately work with to create Kabul University's first Photography Department.

Room Chosen for
Classroom and Darkroom

Winter/Spring
2005



Finished Classroom

Winter/Spring
2005

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# Loading Film

2005
Photograph by Peter Ross

All photography students struggle to load film. My Kabul University students were no different. Once they learned, they produced amazing images.

Children Playing

2005
Photograph by A. F. Farahmand

This is a photograph created by one of my students. The photographs they produced with Russian film and chemicals found in Kabul were depictions of every day life, but made otherworldly by the intense light and dust in the air. I curated a selection of the photographs, which were exhibited at SVA's Visual Arts Gallery in New York.

# Teaching Students Processing

2012

As a part of dOCUMENTA(13), I returned to Kabul in 2012 to teach students a workshop called *Experimental Digital Photography*. In this workshop, students learned to work with a piece of code for image stacking that I had written. With digital cameras and computers provided by the project, students created their own images with my process. Their works were exhibited beside my own.

# dOCUMENTA(13) / Superpositional

2010–2012

The title of this project, Superpositional, is derived from quantum physics. A quantum superposition is a state of matter in which an object exists in all states simultaneously.

This project uses computer software written in the Processing framework which I developed to combine many images into single images. It is influenced by late 19th century chrono-photography as in the work of artist/scientist Étienne-Jules Marey, and also aleatory art practices as in the work of John Cage. This process has the ability to show the movement of my body, the movement of my subject and the passage of time. It also shows how subjects occupy space.

The photographs are installed in constellation-like configurations, a nod to the way that the images were generated using layers.

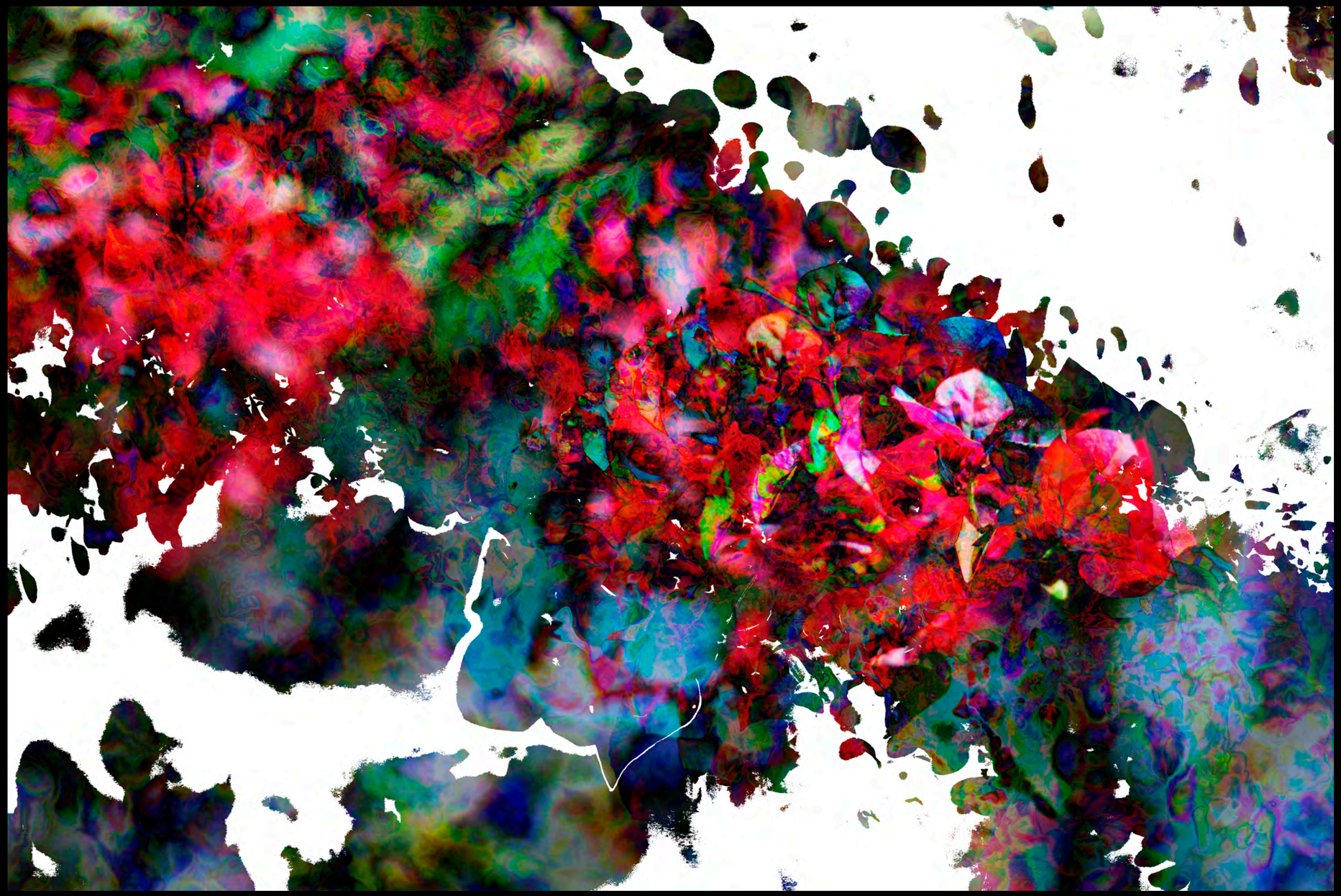
This project was also my master's thesis project at UCLA. My chair was James Welling. Additional advisors were Barbara Kruger, Hirsch Perlman, Casey Reas, and Amir Zaki.

This project was initially commissioned by dOCUMENTA(13) and exhibited from June 6 – June 13th, 2012.

A flying pelican (1882) photographed by Étienne-Jules Marey and my own interpretation of the process.

# Botanical

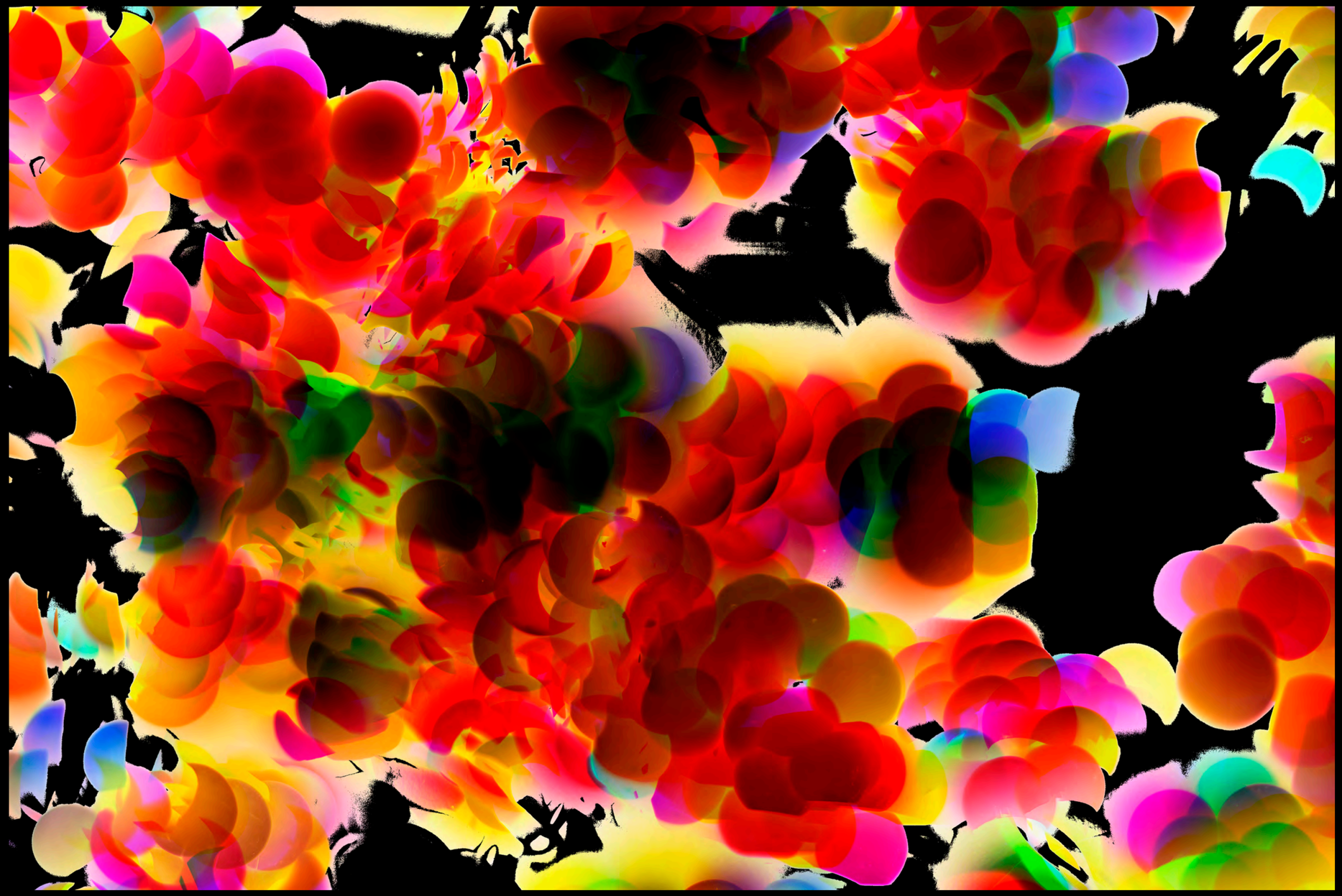
2012
Pigment Print



This photograph contains 38 images of bougainvillea stacked into a single image. Areas without change were dropped to white.

# Botanical

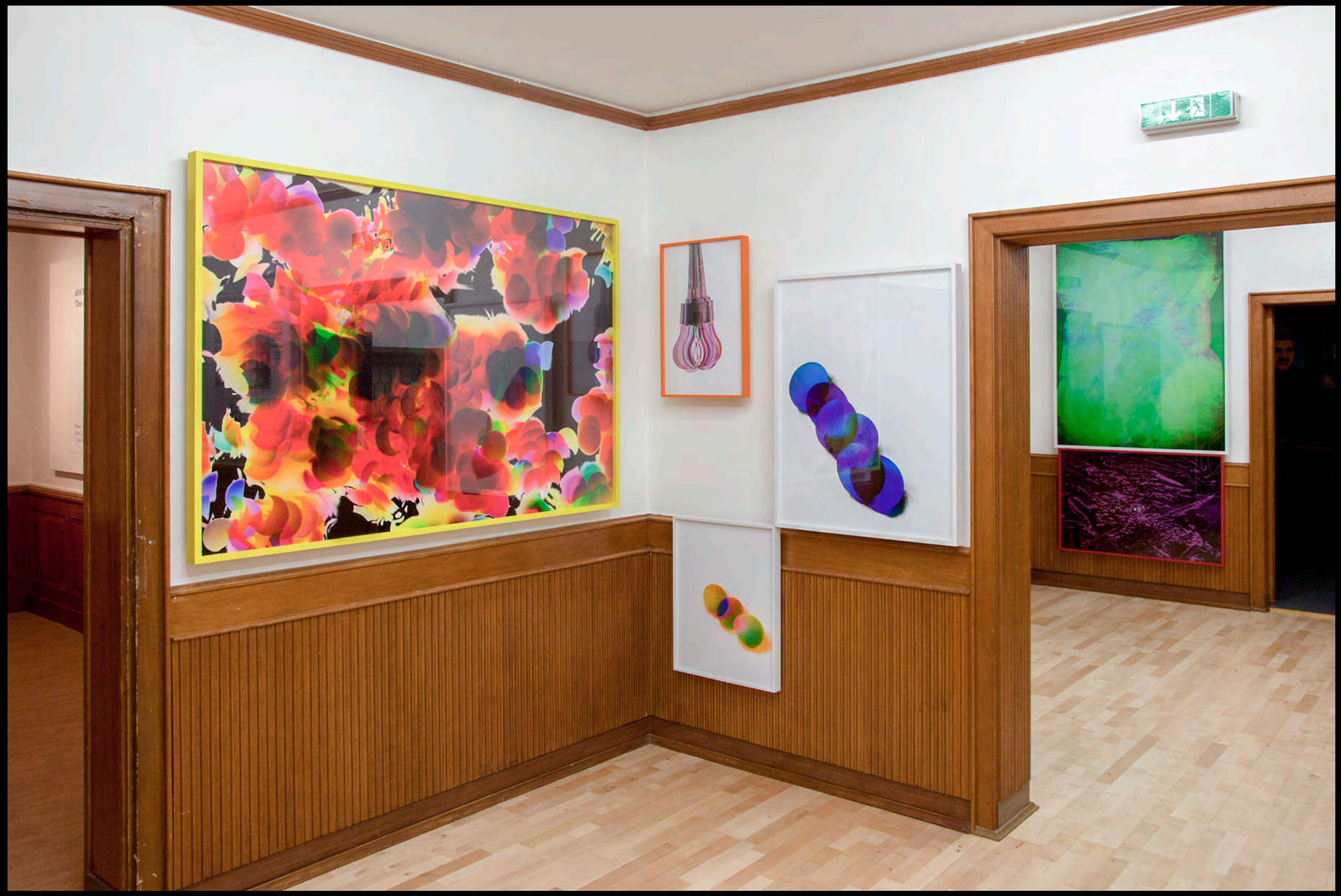
2012
Pigment Print



This photograph contains 33 images of Christmas lights stacked into a single image. Areas without change were dropped to black.

Installation View
dOCUMENTA(13)
Kassel, Germany

2012
Photograph by Krzysztof Zielinski



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This installation was in a space that has formerly been a hospital, Chinese restaurant, and biergarten. It was a unique space, and the photographs were arranged in constellations throughout the space.

# Collapsus

2012


*Collapsus* is the software I used to create works in Superpositional. The software was released as open-source during dOCUMENTA(13) and made available to the public. The web site was participatory and users could upload their works to be a part of the exhibition. The uploaded works were shown on a monitor alongside my own works.

Click for external link to video.

# Video Works

2010–2012

I've used video in my art practice to explore the connection between the environment, surveillance, consumerism, and erasure.

Many of the projects involve tedious, procedural manipulations of video done by hand. This work was created while I began to learn computer programming for the first time, and is no doubt influenced by the more procedural mindset I began to develop.

# Pools

2011
High Definition Video
6 min Loop

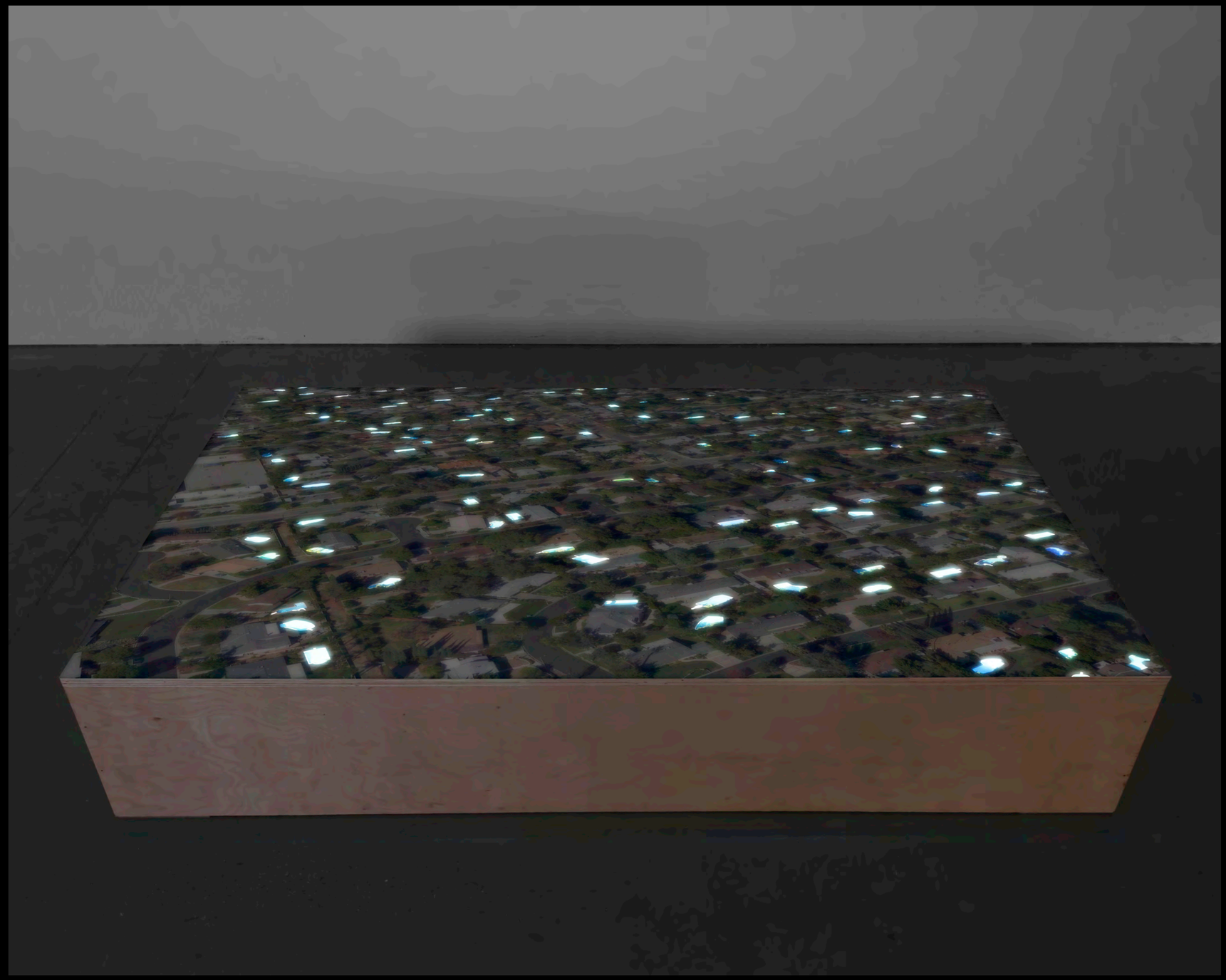
In this video, you are silently flying over a massive digital composite of satellite imagery. More specifically, you are flying over Granada Hills, California in the San Fernando Valley where water was scarce and pools are now plenty. Granada Hills is the endpoint of the Los Angeles Aqueduct, built between 1908 and 1913, which diverts water from the Owens River into Los Angeles. While it made development in the water-scarce San Fernando Valley possible, it also devastated the ecosystem of the Owens Valley.

Everything in the landscape has been darkened except for the swimming pools. The video is projected down onto a wooden platform that viewers can stand above as the landscape pans by.

Click for external link to video.

Installation View

2012
UCLA New Wight Gallery



# Mulholland

2011
High Definition Video
11 min 49 sec Loop

Late one night I took Mulholland Drive from the 405 to the 101 freeways. To make this video I suction-cupped a camera to the hood of my car pointing down to the ground. I then traced the yellow line in the video footage, and ultimately removed the footage itself leaving only the line as evidence of my drive.

For Rita and Betty.

Click for external link to video.

# Unspoken Portrait (Woman)

2010
High Definition Video
8 min 35 sec

These video portraits are explorations of erasure. Two people have agreed to speak about whatever they would like alone in a room with a camera under the assumption that no one will ever hear what they say. All of the speech in the video is erased through a process that permanently deletes the content without a person needing to see or hear the footage. What remains are the spaces in between and the beginnings and ends of words. A real connection to these subjects is denied by these videos. We can only relate through the information that is left behind. The videos are displayed vertically on monitors.

Click for external link to video.

# Matter Out of Place

2013-2016

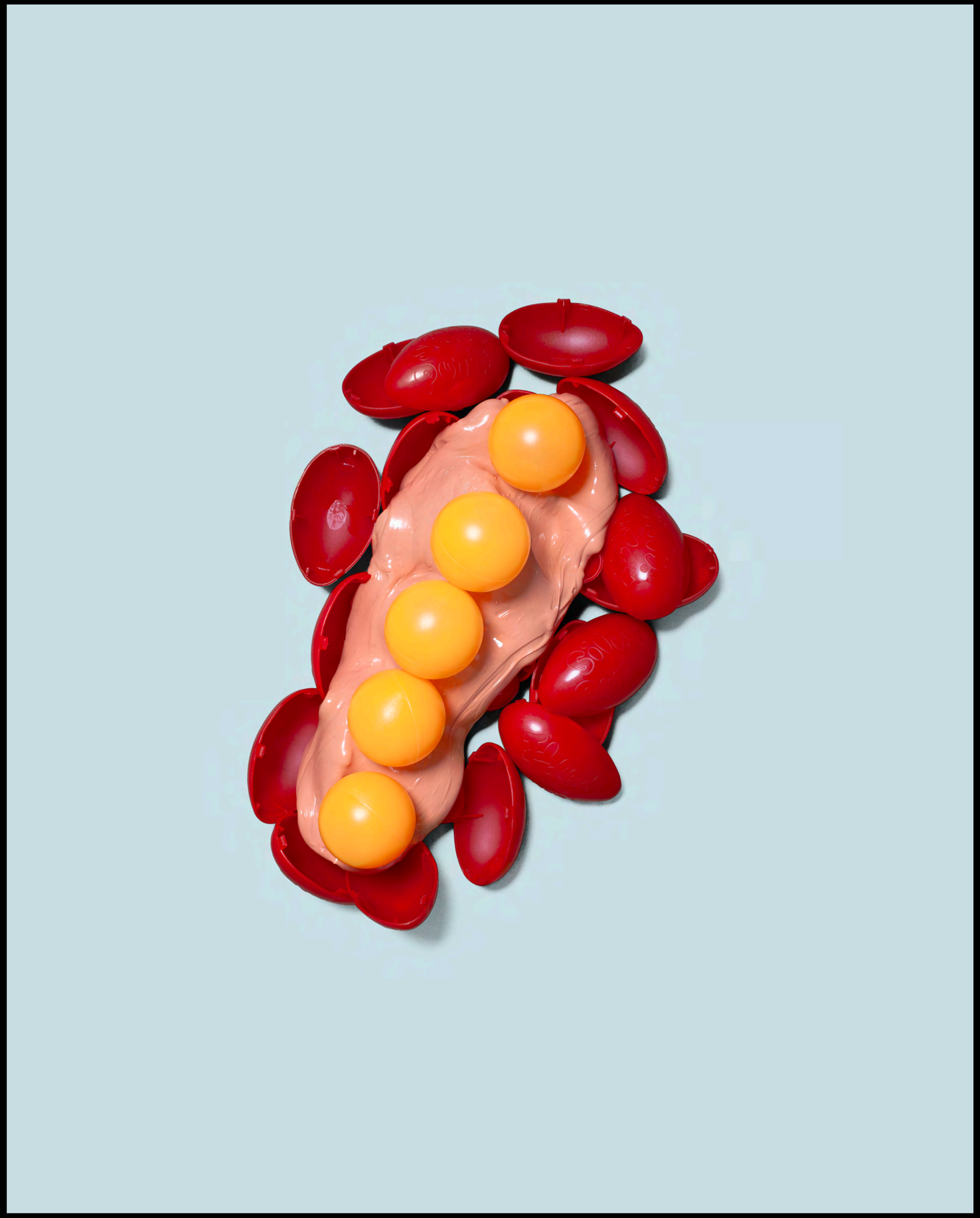
These photographs are an exploration of materialism and the idea of 'matter out of place' as explored by anthropologist Mary Douglas. Douglas was interested in phenomena that was anomalous and not easily categorized. Cultures commonly consider such phenomena as 'matter out of place' and view them as either sacred or polluting.

Materialism's meaning is multifold. It is a branch of philosophy in which everything is only matter and energy. It can imply consumerism, and many of the objects I photograph are things one will immediately recognize from any drugstore. It is also a reference to the photographic object, or the transition that an object must go through to become a photograph.

Materialism is always inherently in flux in the medium of photography. Objects are always a "translation" in photography. The picture is anchored in the real world, but the photograph carries with it a new set of meanings as well. It amplifies. It distorts. It selects. These photographs are my way of exploring materialism's expansive meaning.

Disparate Objects

2016
Digital C-Print



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# M.O.o.P.

2016
Digital C-Print

Custom software written in Processing
was used to draw tendrils out of the areas
with the blue color before printing.

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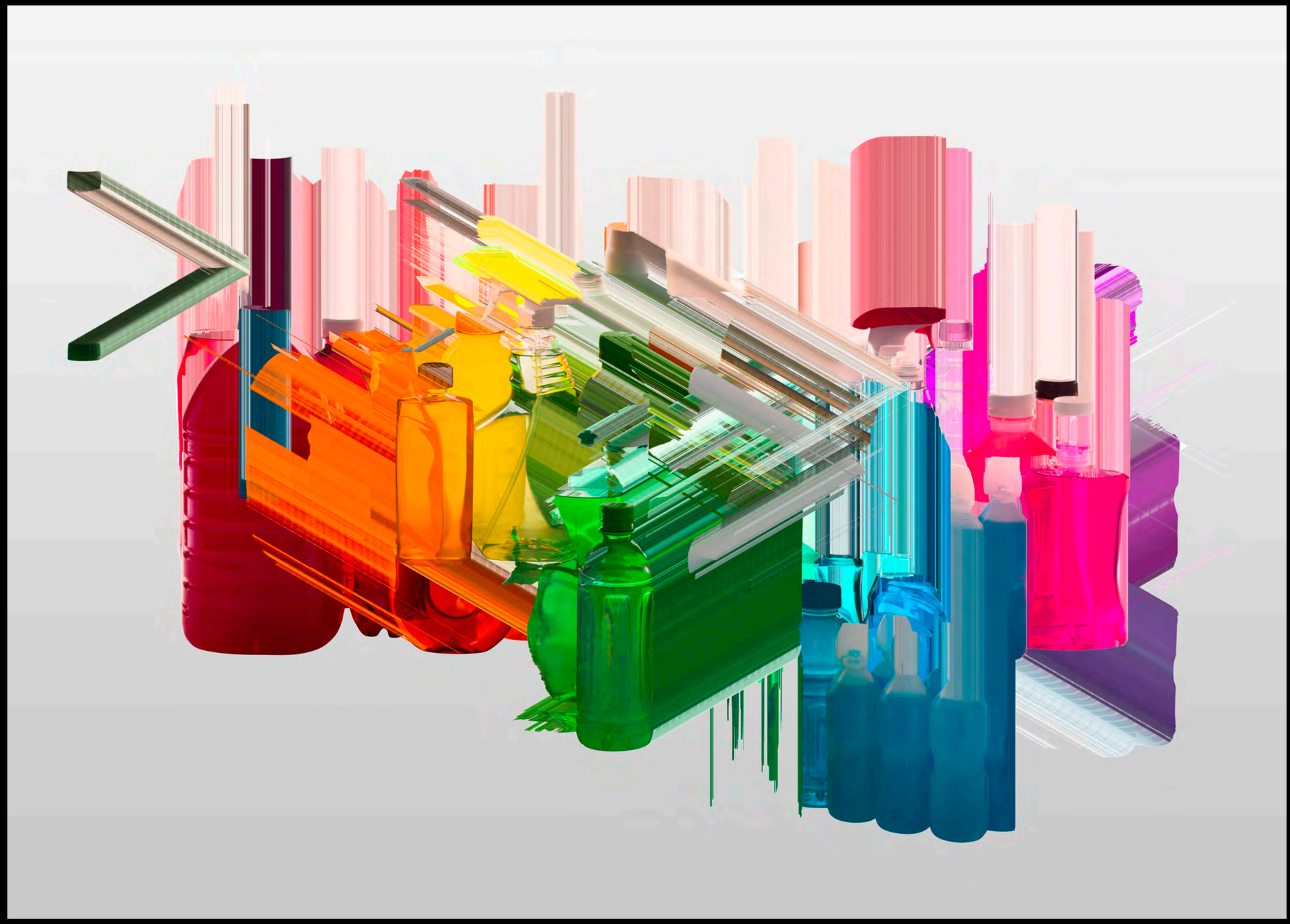
# The System at War with Itself

2016
Digital C-Print



Custom software written in Processing was used to stretch each of the colors out in their respective direction on the color wheel.

# The System at War with Itself

2016
Process Video

This video, which was an experiment while I was creating the work, shows the colors moving around in a circle relative to each other.

Click for external link to video.

# Oblique App for iOS

2015–*present*

Oblique is an iOS app developed for real-time image processing. The project was born out of a desire to leave my studio and spend more time out in the world making photographs.

The software was written in Objective-C, OpenGL GLSL, and utilized a framework called GPUImage, created by Brad Larson.

Oblique is a real-time camera app that allows you to apply custom filters and adjustments to your live camera view. The filters are powerful and interactive. They let you touch and manipulate your camera's view directly and in creative new ways.

Oblique was an attempt to eliminate the need to ever use post-production, but allowed me to apply shader code that I had written in real time to my images.

# Oblique User Interface

2017
iOS App

The interface for Oblique allows direct manipulation of the camera feed.

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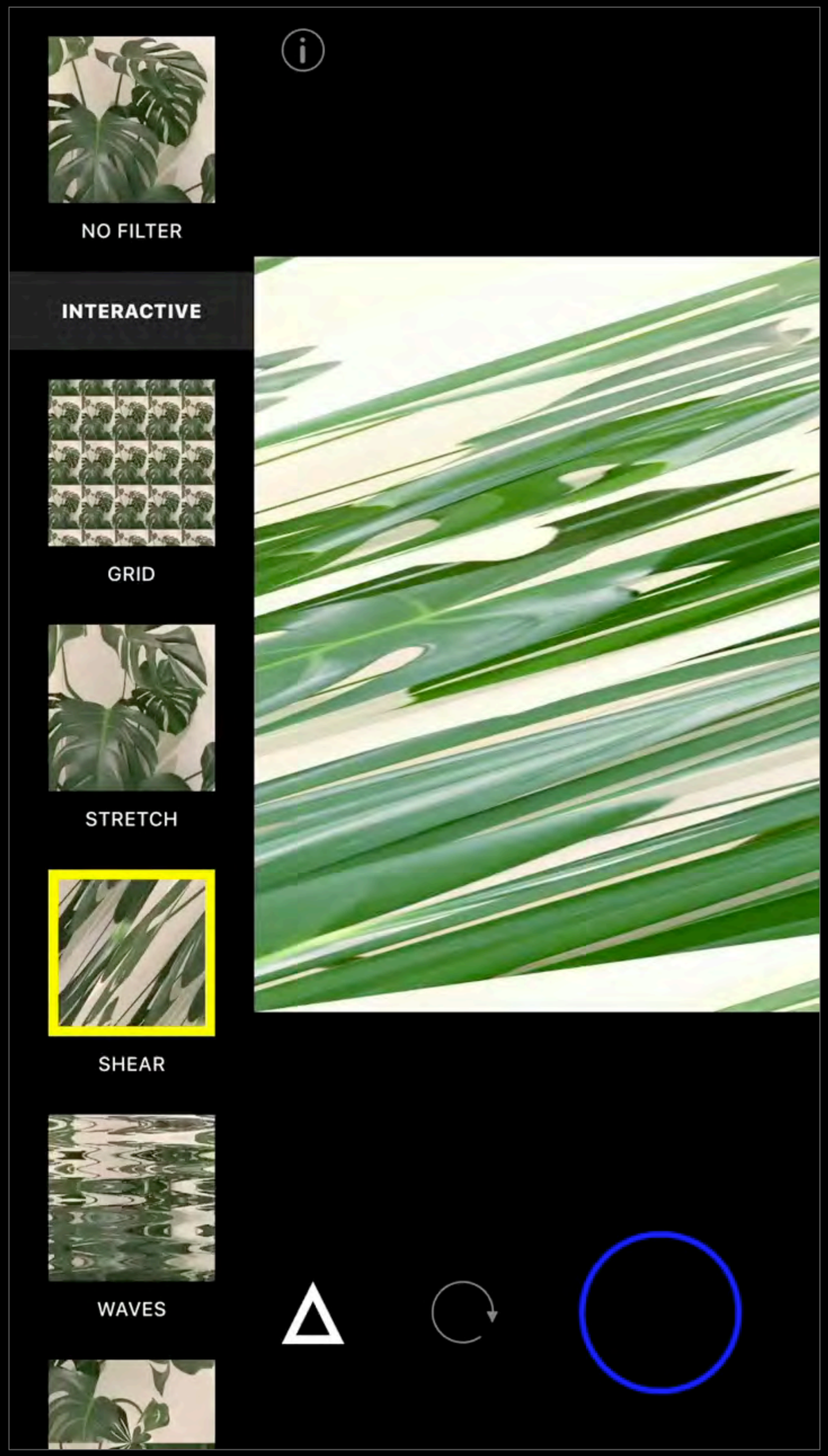
# Oblique Video Preview

2017
iOS App

The green triangle on the left are custom filters written in OpenGL ES GLSL.

The magenta dots on the right take you to image adjustments. Standard adjustments familiar to most people are available to try in real time.

Click for external link to video.



*Oblique* was selected by SIGGRAPH to participate in their *Appy Hour* program. As a part of the program, I was invited to submit an abstract to the *Proceeding for SIGGRAPH 2017*.

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# Oblique: A New Way to Photograph

## Real-time Filtration Using OpenGL and the iPhone

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Artist/Developer/Founder

**Figure 1:** *Oblique app icon.*

**Figure 2:** *Main interface.*


**Figure 3:** *Left slide-out drawer with live filter previews.*

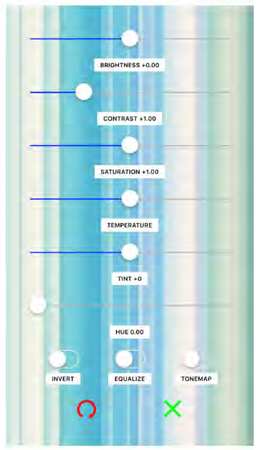


**Figure 4:** *Interface for live image adjustment.*

## ABSTRACT

*Oblique* is an iPhone app that allows users to apply real-time filtration and adjustments as they shoot photographs through a simple interface. Created by an artist who regularly combines photography and code, *Oblique* was born out of the desire to eliminate post-production and create dramatic images in real-time out in the world without having to adjust later. *Oblique* is an artist's studio within an app that alters the way users see and experience the world. *Oblique* includes dramatic filters and subtle adjustments that allow users to make slight brightness, contrast and brightness adjustments. A wide array of kaleidoscopic filters can be controlled and manipulated directly by touching a live view of the camera feed

## CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI)**; *Ubiquitous and mobile computing; Smartphones* • **Computing methodologies** → *Computer vision; Image and video acquisition; Computational photography* • **Computer Graphics** → *Image Manipulation; Computational Photography; Image Processing* • **Applied Computing** → *Arts and Humanities; Media Arts*

## ADDITIONAL KEYWORDS AND PHRASES

iOS, camera, photography, real-time, OpenGL ES, GPU, touch, media artist

## 1 INTRODUCTION

With the consistent increase in graphical power of smartphones comes the possibility to enable users to interact in real time with the images that they create. Relatively simple algorithms can mimic the effect of a range of optical phenomena and simultaneously offer incredible control over the image.

Oblique is an app that allows users to experiment with photography and how they see the world using filters that range from simple to extremely complex.

*Oblique* was selected by SIGGRAPH to participate in their *Appy Hour* program. As a part of the program, I was invited to submit an abstract to the *Proceeding for SIGGRAPH 2017*.

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## 2 ARTIST-CREATED PROJECT

### 2.1 Exhibition: The Effect of Lightning on a Rainbow

The creator of Oblique is a programmer and artist who sought to create a method for interacting with a live camera view. The exhibition was called *The Effect of Lightning on a Rainbow*. It was held from February 18 – March 25, 2017.

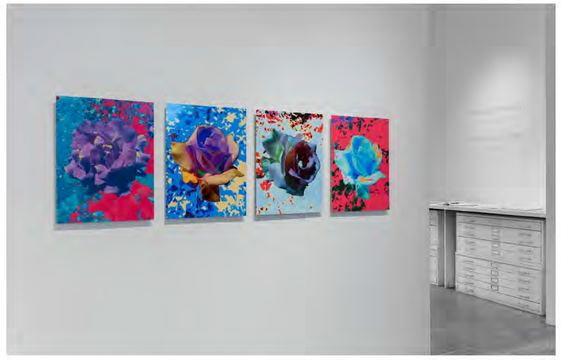

**Figure 5:** *Installation View of The Effect of Lightning on a Rainbow*

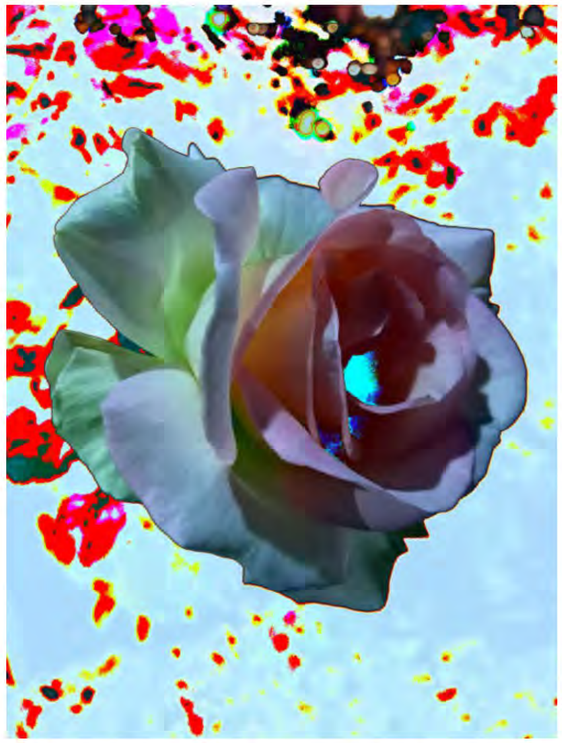

**Figure 6:** *Night Flower (White), 2017, Dye Sublimation on Aluminum, 24 x 18 inches*

## 3 TECHNOLOGIES

### 3.1 GPUImage and OpenGL ES

This project would not be possible without the open-source library created by Brad Larson called *GPUImage*. This library allows developers to access the GPU and apply shaders to a camera feed or images.

Most of the shaders are written in GLSL by the artist and applied to the rendering pipeline using the *GPUImage* framework. This structure allows the artist to easily continue to scale the filters available explore procedural and parallel-processing image manipulation.

## 4 USER TESTING

Oblique was released in late January of 2017 onto the iOS app store after a testing phase with 25 volunteer testers. Larger user-testing has not occurred, so SIGGRAPH will be an excellent opportunity to gain feedback and suggestions about the app.

## 5 FUTURE VERSIONS

Current plans include a video camera mode, still photography editing, and the exploration of filters that use computer vision and object detection. I will also be incorporating more discoverable user interface elements and tutorials through the interface.

## ACKNOWLEDGMENTS

This app would not have been possible without the support of numerous people within my network of friends and loved ones. I'd like to thank Derek Milne, Hester, Keijser, Shann Dornhecker, Luis De Jesus, Brad Larson for the excellent GPUImage framework, James Welling, Casey Reas, Adam Ferriss, and the supportive community at Pasadena City College.

# Lightning on a Rainbow

2016–*present*

This body of work was created using experimental camera software I developed for the iPhone. The software is the culmination of research in the fields of art, computer graphics and mathematics. It embodies my desire to dig deeper into the fundamental elements of digital images.

The iPhone is the single most-used camera in history. It is also a powerful, and programmable computer. The speed with which the computer processes a photograph creates new opportunities for real-time intervention and expression. The software I created, called *Oblique*, compresses all editing into a single shutter press. Custom filters I've written allow me to break apart the image using different algorithms in real-time to experience the world in new and unique ways.

My goal with photography has always been to continually refresh my perception and to use the medium as a way of getting closer to the world around me.

Cyan Rose

2017
Dye Sublimation on
Aluminum

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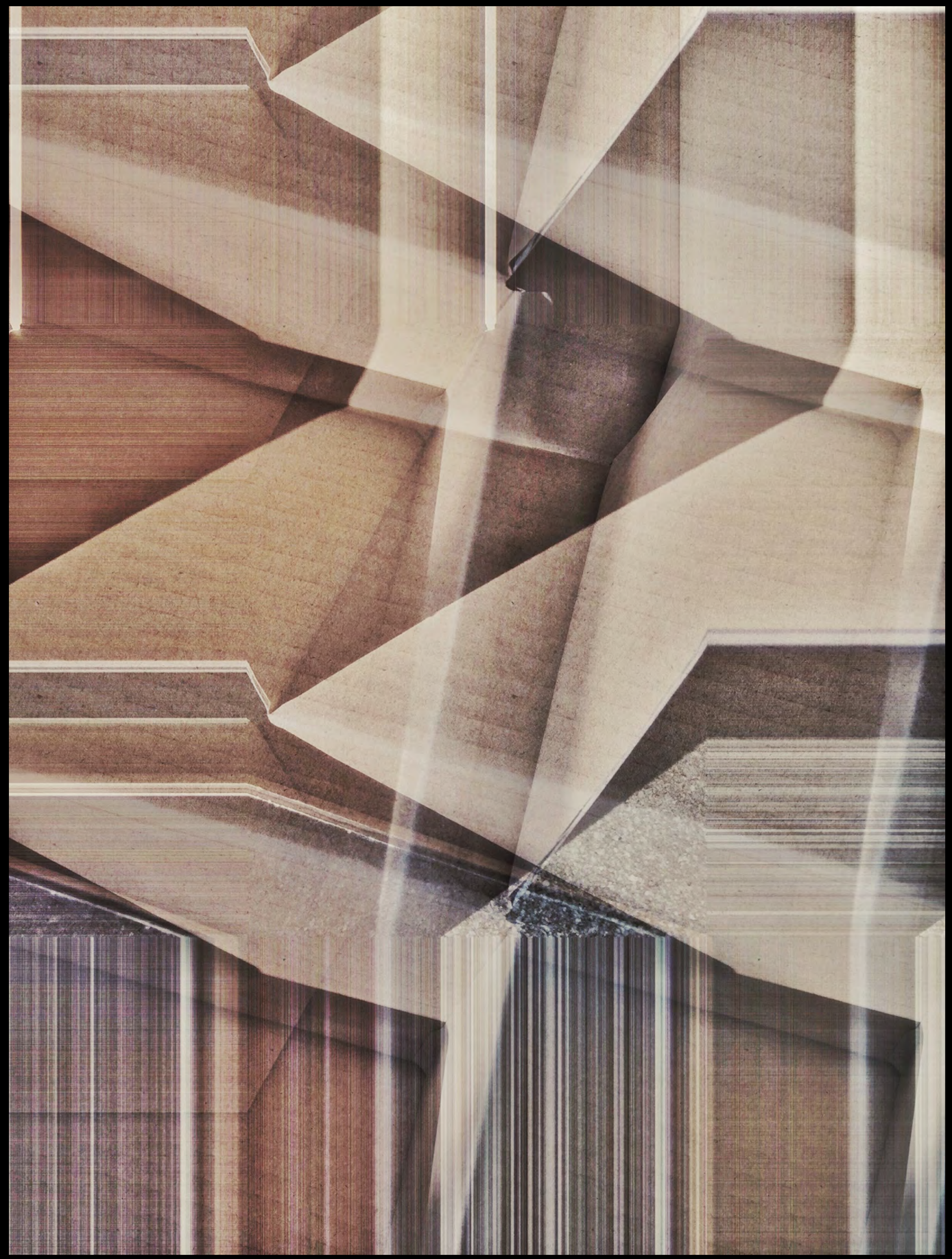
Open (Sunlight)

2017
Dye Sublimation on
Aluminum



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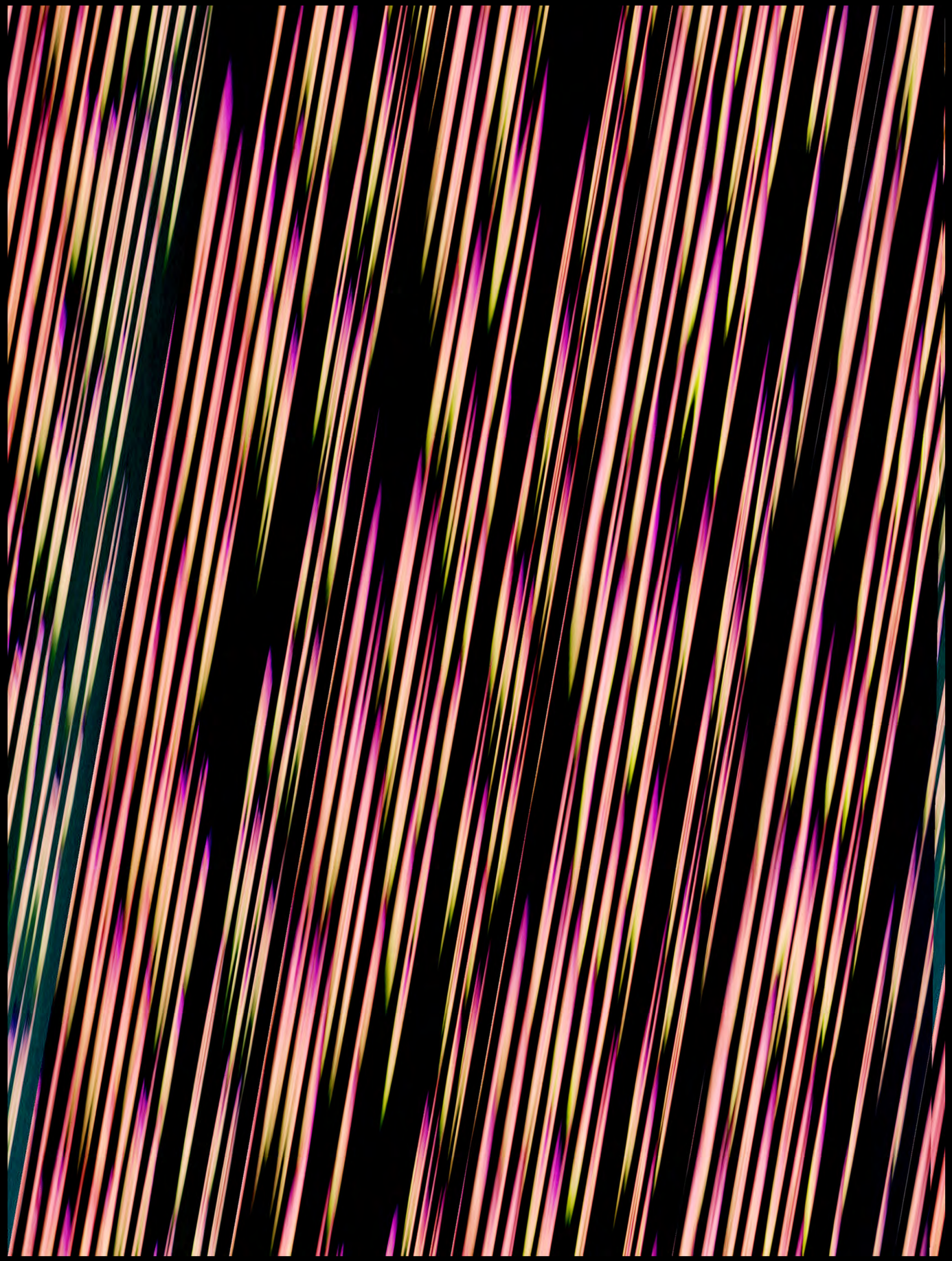
Shear Matrix

2017
Dye Sublimation on
Aluminum



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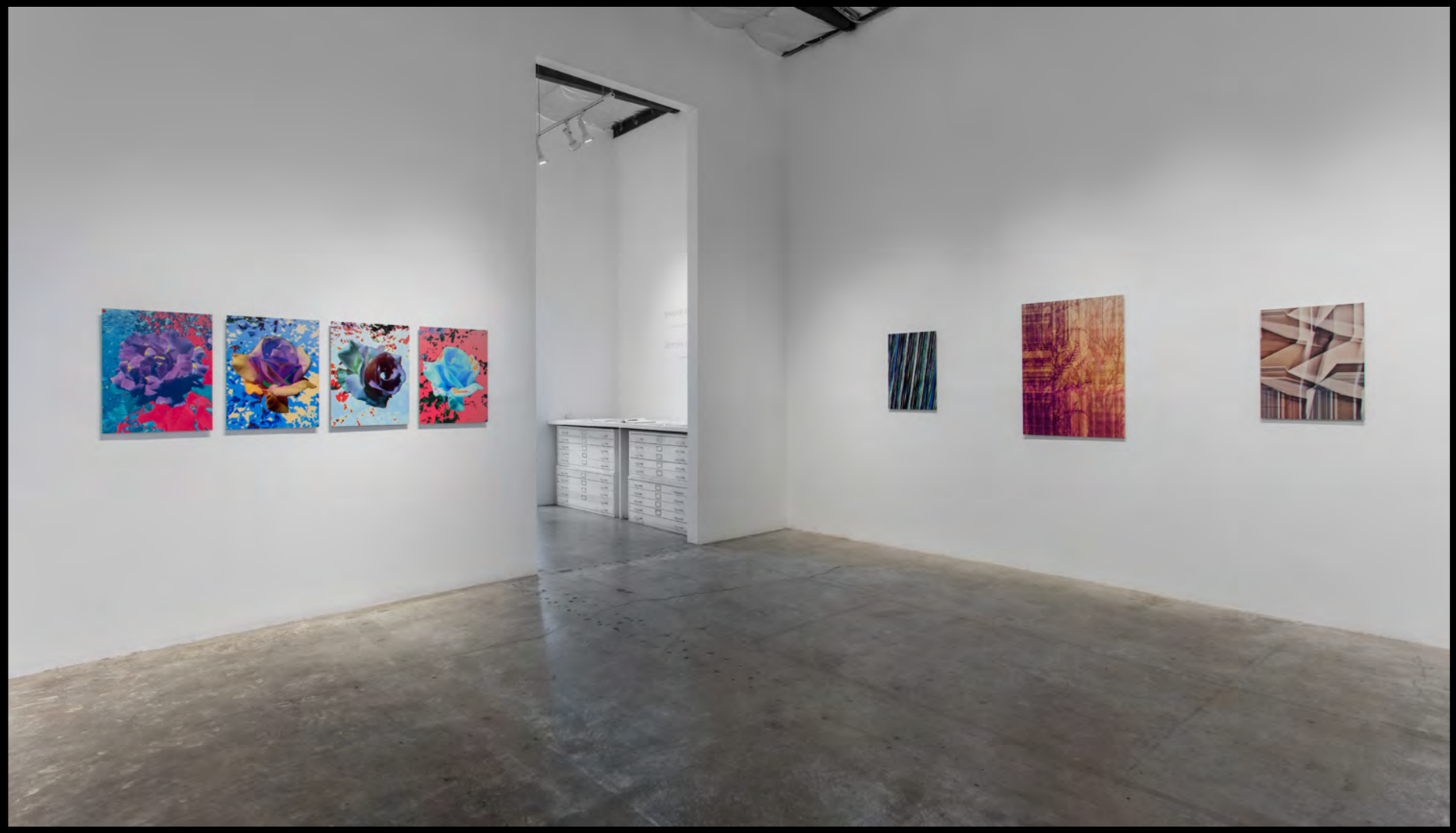
Lightning on a Rainbow



2017
Installation View
Photograph by Brian Forrest

# Untitled (Joshua Tree) 2017

The following short film was commissioned in 2017 for the Joshua Treenial in Joshua Tree, California. The prompt was to create a response to the desert that would be projected onto one of the mountain-sides using a powerful projector.

The piece was created using a custom-developed iOS camera that allowed me to manipulate my view through touch. There is no post production. All manipulation was done in the moment, through filters written by me and while filming in Joshua Tree.

The music is Aria from composer Paul Lansky's cantata *Threads*. It is performed by Sō Percussion. It is used here with the permission of the composer and performers.

# Untitled (Joshua Tree)

2017
High Definition Video
6 min

This video was projected onto a rock face in Joshua Tree as a part of the Joshua Treenial in April of 2017.

Click for external link to video.