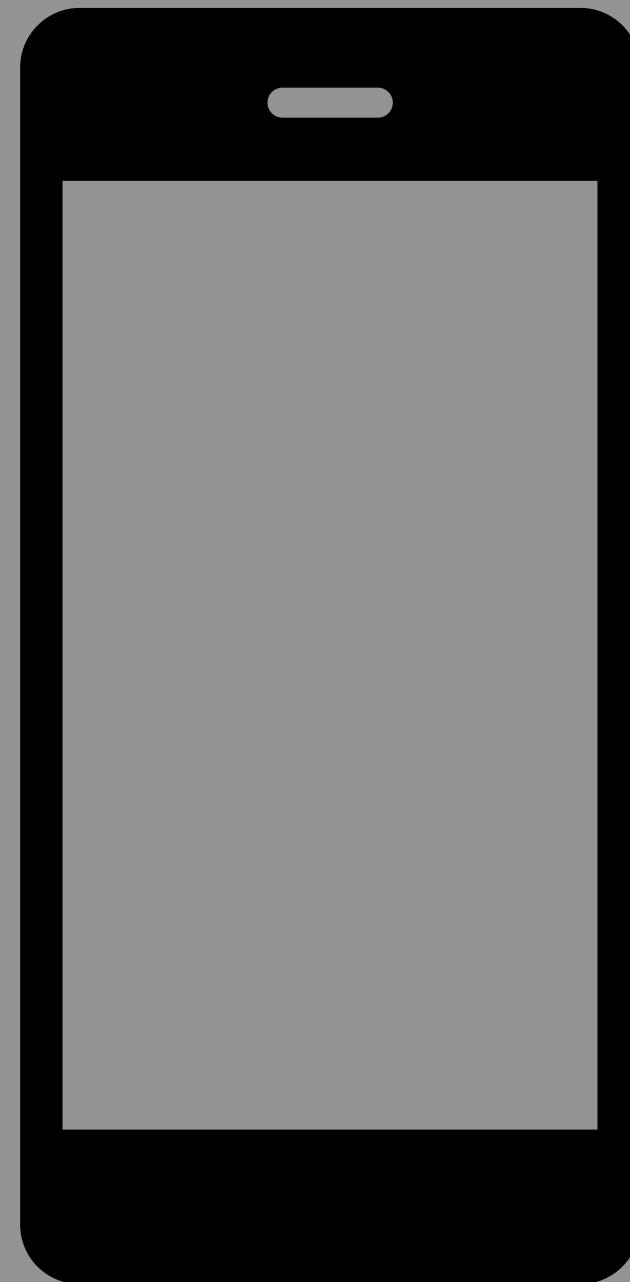


# Celagraph

# Celagraph Capture — a simple ninety degree turn



The intent of this project is to create an collection of images composed of at least two colors/textures that interact in a short transition layer to form a landscape with a defined horizon.

**short** - The capture period is brief and must be constrained to a region defined by the preview window at the start of the shot.

**abrupt** - The color change between the first half and the second half is sudden minimizing the creation of gradients.

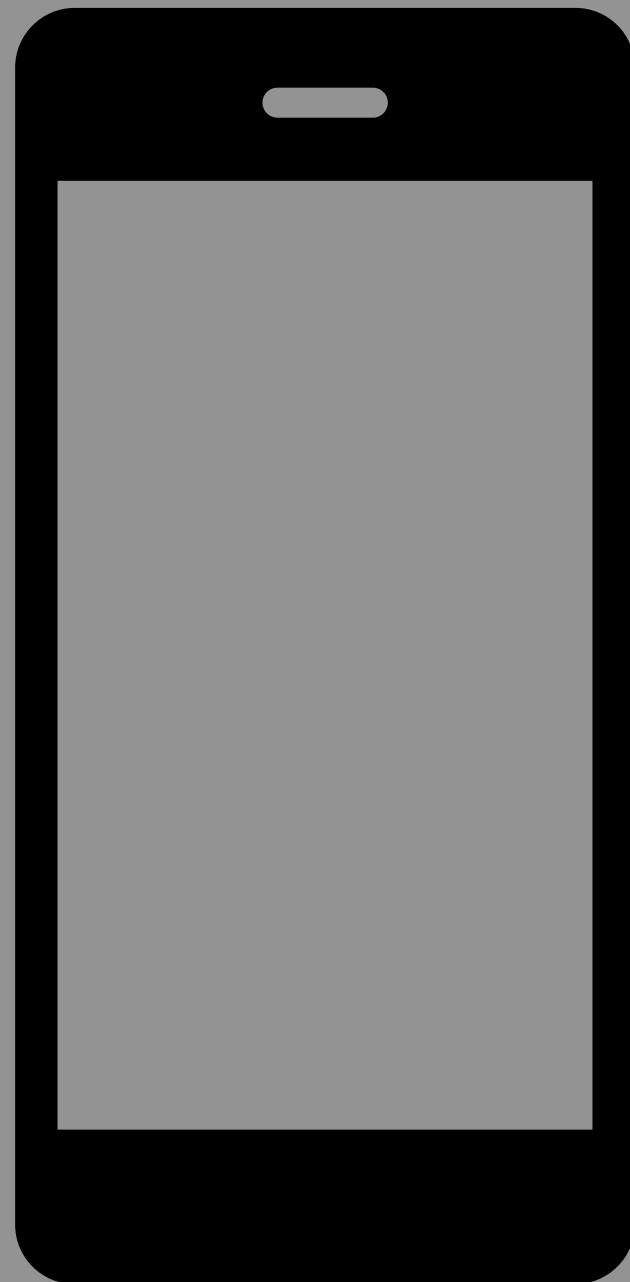
**a simple ninety degree turn** - the shot takes place in the time it takes to rotate the camera ninety degrees around a point fixed by the lens.

This document contains instructions and a description of the project.

\* It is possible to create lovely gradients. Today is not gradient day.

# Celagraph Capture

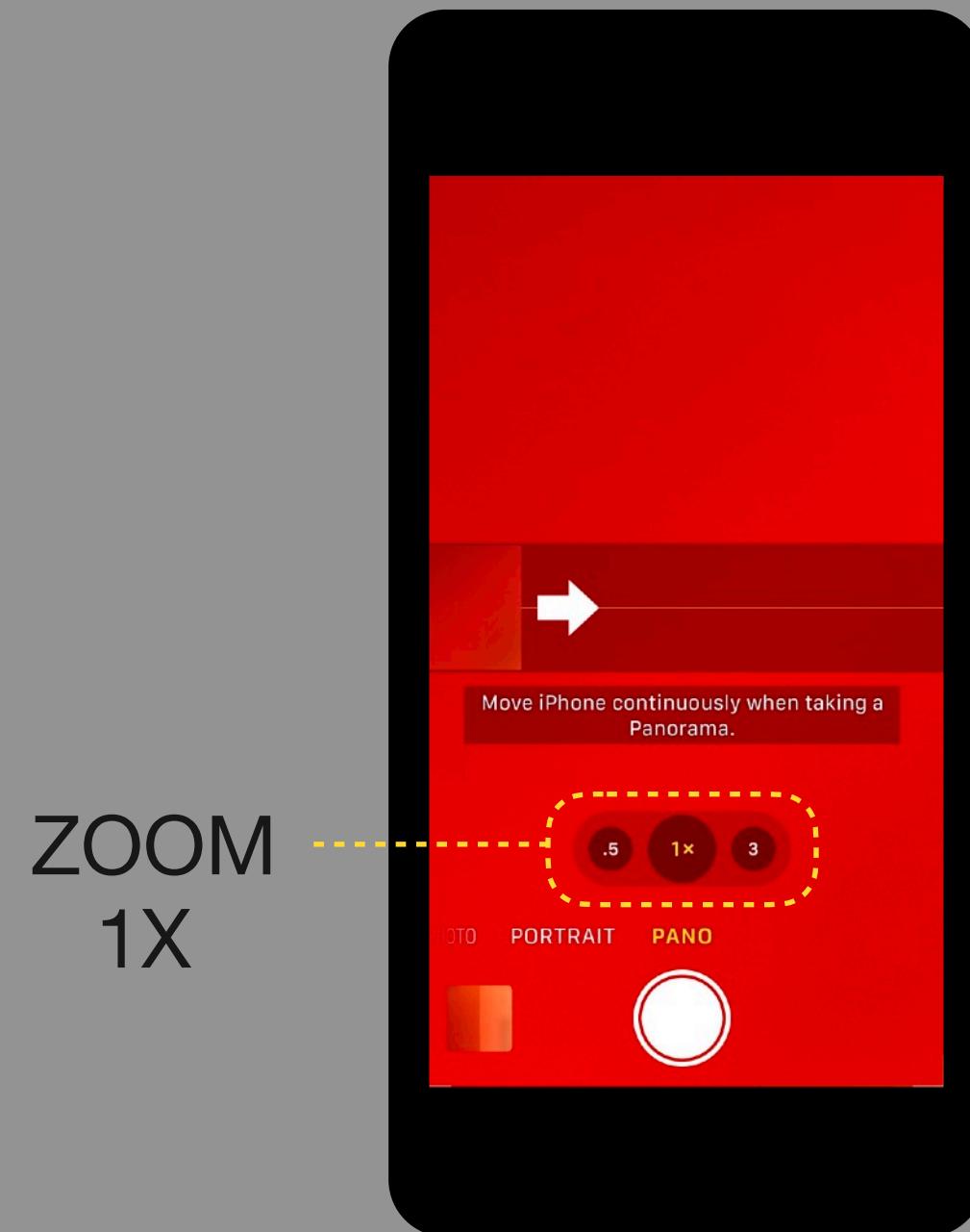
You will need the following



1. an **iPhone** — The pano function of the iPhone is central to this process. This has been tested on iPhone 6s, iPhone 8, iPhone 11 Pro, iPhone 12 Pro, and iPhone 13 Pro along with an iPad.
2. a **LIGHT** source — I like the sun but you should feel free to work with what you have. LED and other artificial light sources can be very effective.
3. the **INTERLOCUTOR** — According to wikipedia an **interlocutor** is “a person involved in a conversation or dialogue”. For our purposes it is the medium that controls the light getting to the lens. This can be a finger, a plastic bag, a piece of film, a page out of a catalog, or a bank note. You can also consider your engagement with this project to be that of an interlocutor.

The idea here is to provide a constrained recipe for a shot that should work for most people using the materials outlined above.

# Celagraph Capture — Step One



Test the process using your finger as the Interlocutor before selecting an object to use as the Interlocutor. If you have ever looked at a bright light source through your hand this will make sense. Blood is a primary filter of light in this case and the color spectrum should be in that orange to red range.

Using your finger to block the lens will make it easier to understand what steps are required to manage the phone, control the light entering the lens, and limit the movement of the camera in such a way that the resulting image stays within the desired preview window.

Decide how you want to hold the phone. This is going to depend on a lot of factors including your choice of Interlocutor.

# Celagraph Capture

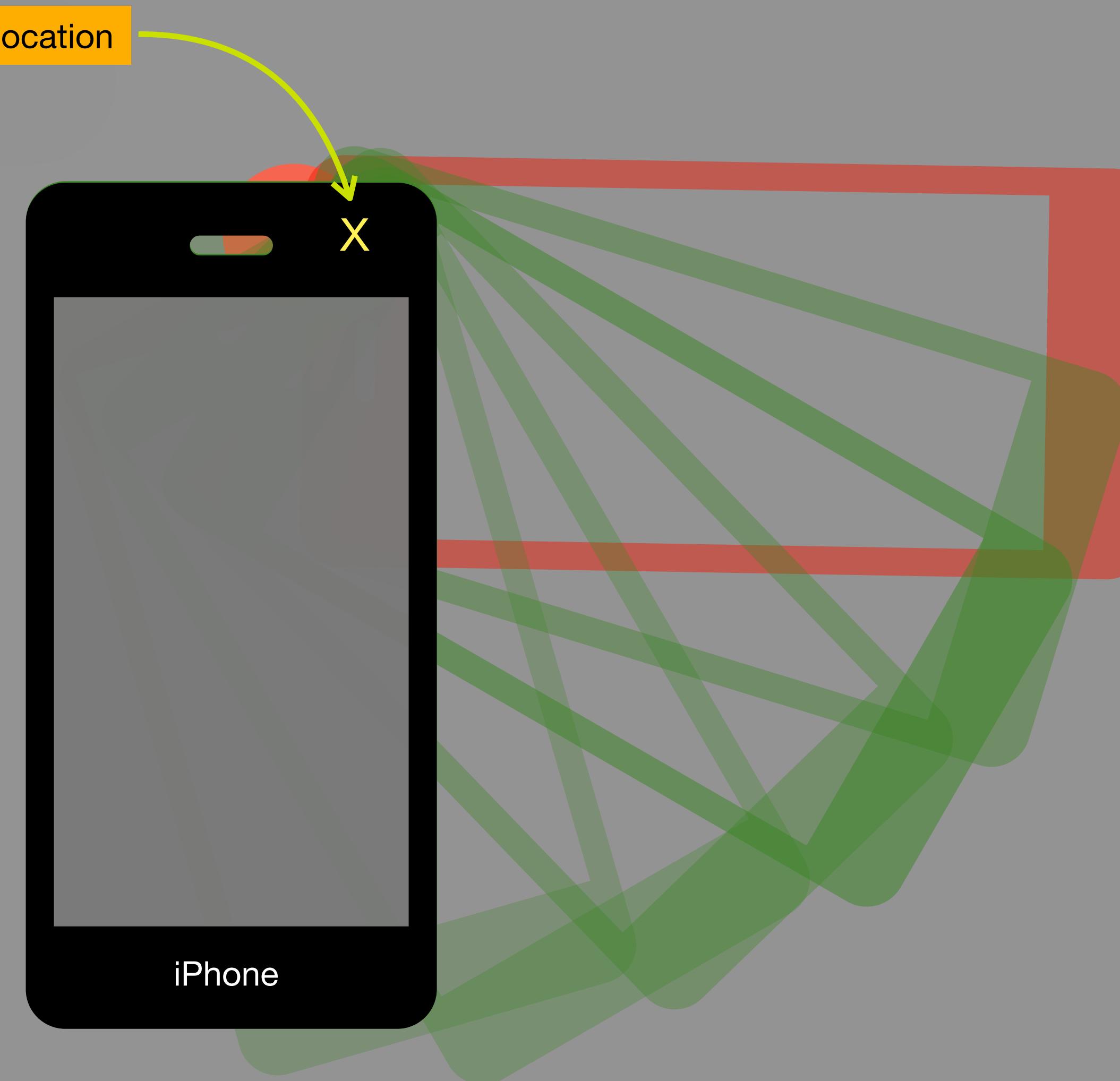
## — Step One

Rotating the phone  
during the shot

Imagine you put a nail  
through the lens of  
the camera and can  
easily pivot it on a  
wood block.

Don't actually put a  
nail through the lens  
of your iPhone.

Pivot around lens location



PHONE + INTERLOCUTOR + LIGHT

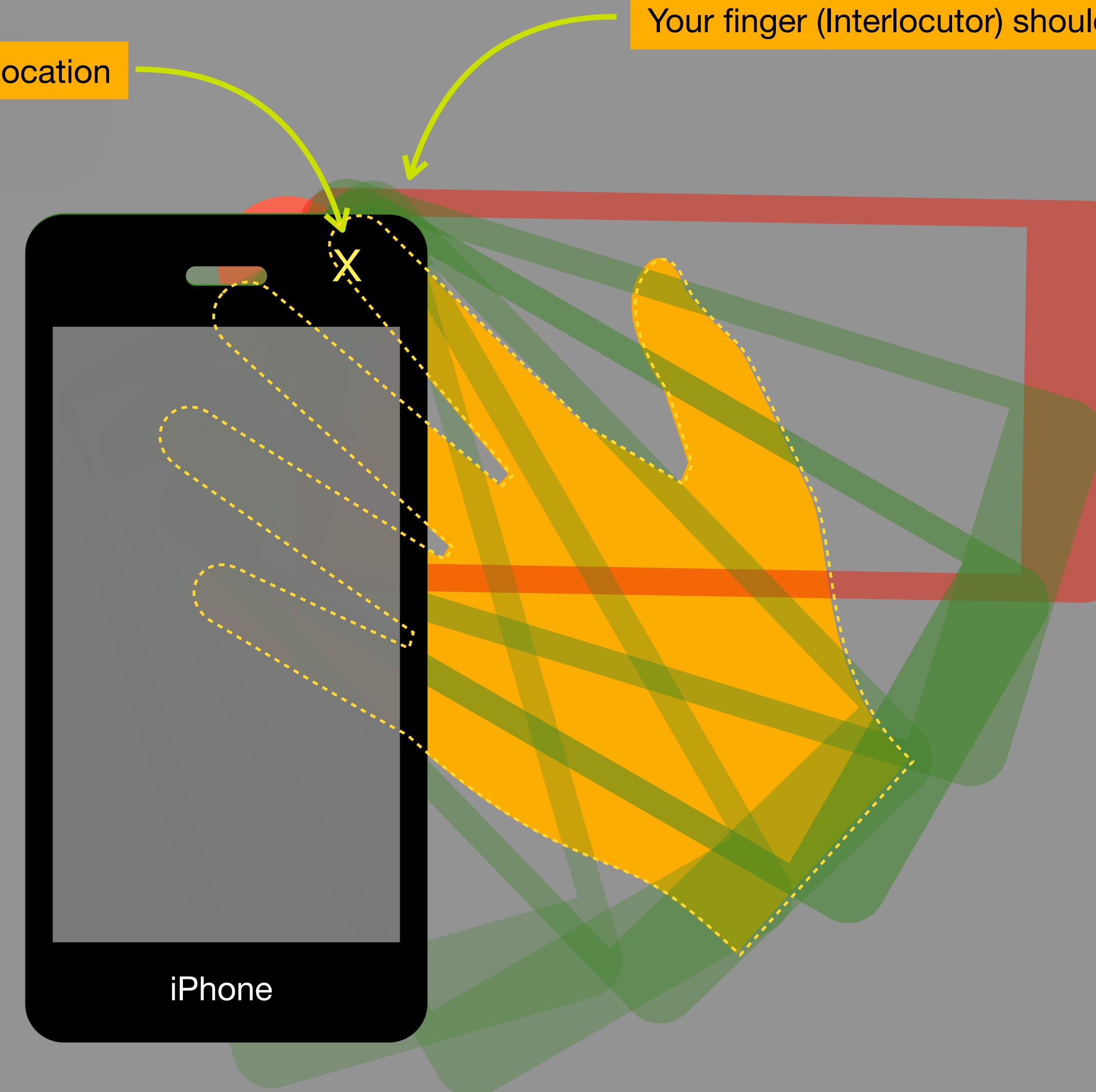
# Celagraph Capture

## — Step One

1. Use your **FINGER** as the Interlocutor
2. In Panorama mode set the camera to 1x zoom
3. Use a bright light source and check to see that the Interlocutor is well backlit.
4. Start the shot using the volume button
5. Move from the first color to the second color by moving your finger or moving the iPhone a small amount
6. With a steady even motion rotate the iPhone ninety degrees or until the shot fails
7. Move the Interlocutor a little during the rotation to vary color and create complexity in the landscape

Pivot around lens location

Your finger (Interlocutor) should not be in focus during the shot



This preview image should always be the about the size it is when you start the shot.

Part of the goal of the 90 degree rotation is to keep the shot in that initial window



PHONE + INTERLOCUTOR + LIGHT

| ..... 20 - 25 seconds ..... |

# Celagraph Capture

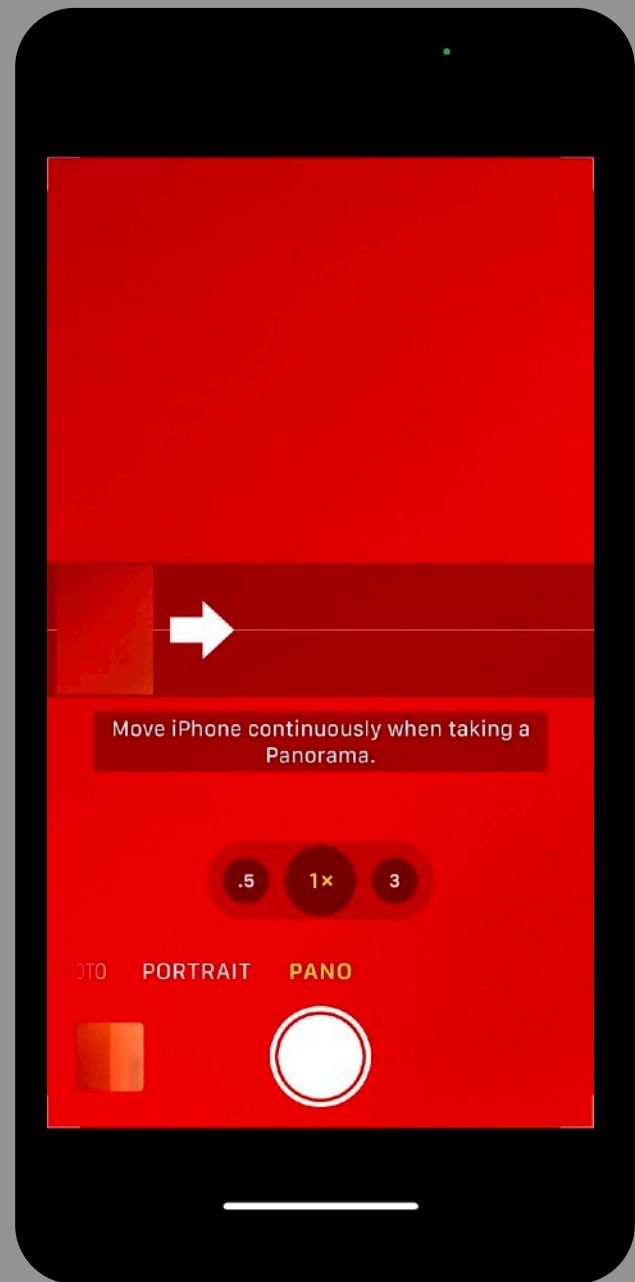
— The iPhone 13



These shots were taken in series on an iPhone 13 Pro set to 1x zoom using my finger as the interlocutor

# Celagraph Capture

## — Step Two



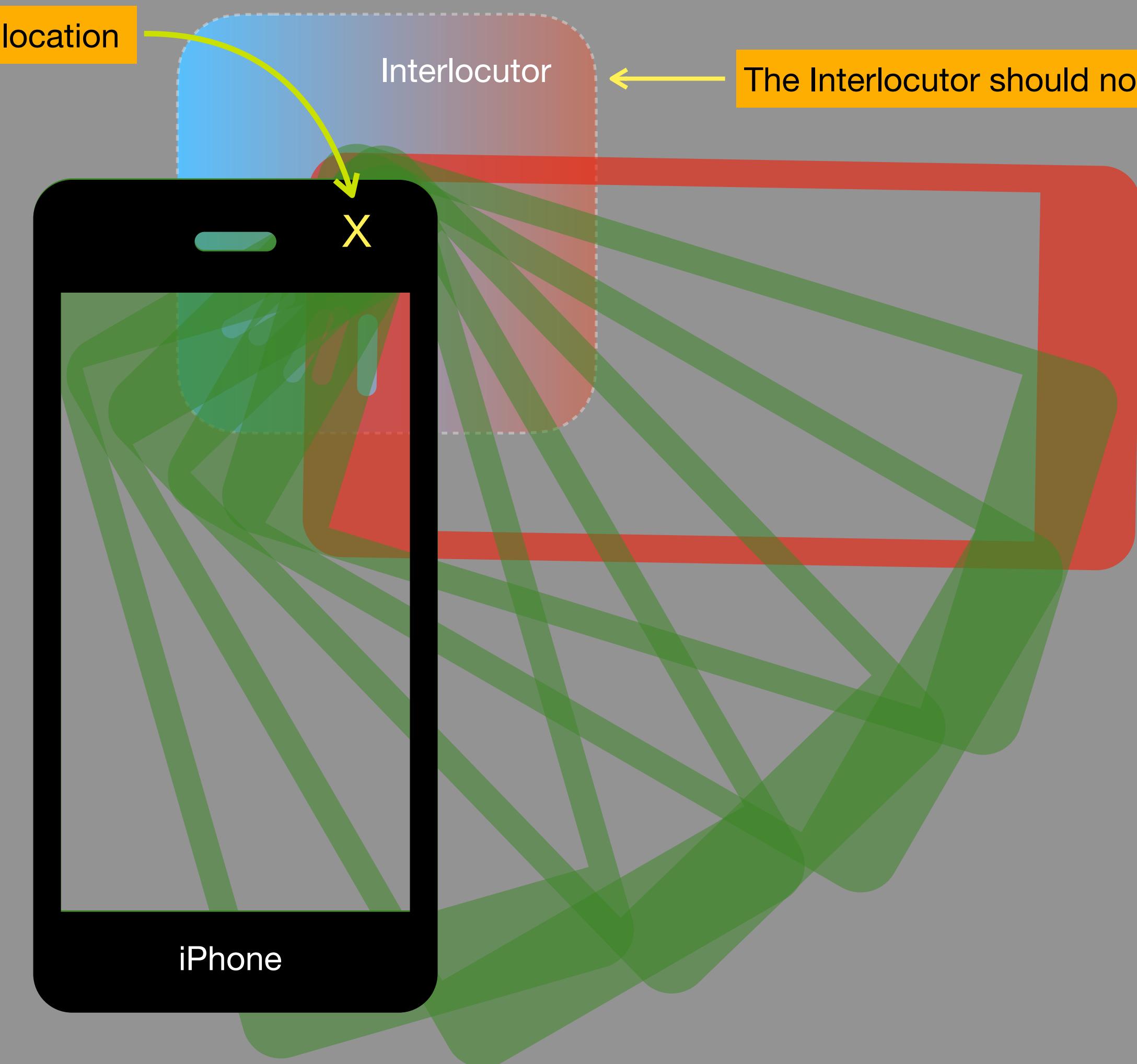
Before testing an Interlocutor of your own choosing you should test the process using your finger as the Interlocutor. If you have ever looked at a bright light source through your hand this will make sense.

You can also choose how you rotate the phone. The instruction are certainly influence by my being right handed. Try other ninety degree rotations that keep the lens position roughly constant.

# Celagraph Capture

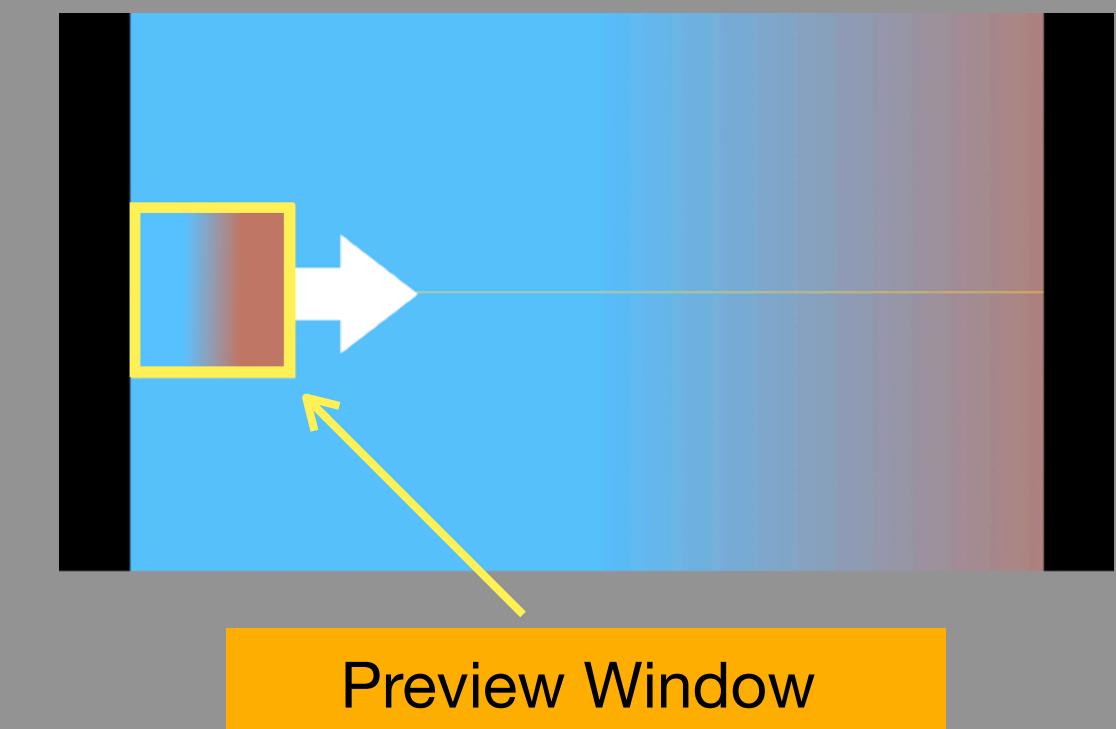
## — Quick Start Guide

1. Position the Interlocutor in front of the iPhone camera
2. In Panorama mode confirm that the camera is set to 1x zoom
3. Check to see that the Interlocutor is effectively illuminated
4. Start the shot using the volume button
5. Move from the first color to the second color by moving the Interlocutor or moving the iPhone a small amount
6. With a steady even motion rotate the iPhone ninety degrees or until the shot fails
7. Move the Interlocutor a little during the rotation to vary color and create complexity in the landscape



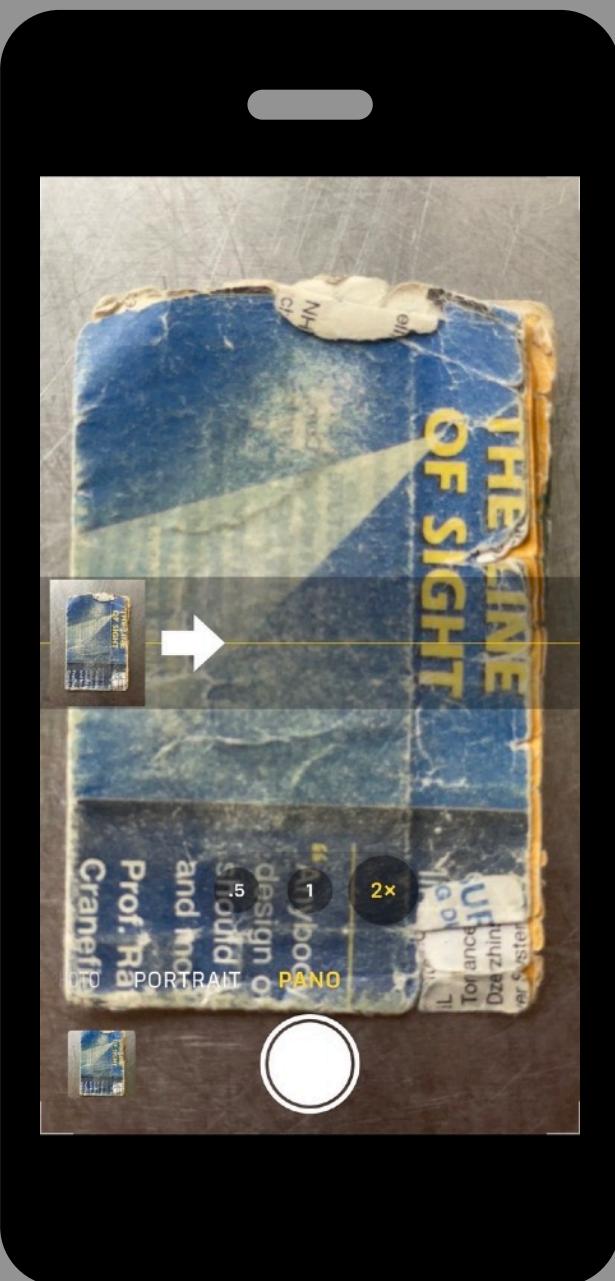
This preview image should always be about the size it is when you start the shot.

Part of the goal of the 90 degree rotation is to keep the shot in that initial window



# Celagraph Capture – The iPhone

iPhone 6



The images are exclusively the output of the iPhone pano function in the stock camera application. All image processing is handled by the panorama software.

The cameras and camera software in the iPhone have evolved more than almost any other feature of the phone. On the next page you can see the difference between the output of the iPhone 6s and the more recent iPhone 12 Pro and iPhone 13 Pro.

Examples from the iPhone 13 Pro are used to demonstrate outputs from the first set of images where a finger has been used as the interlocutor. The iPhone 13 is the most sensitive camera to movement during the rotation around the lens.

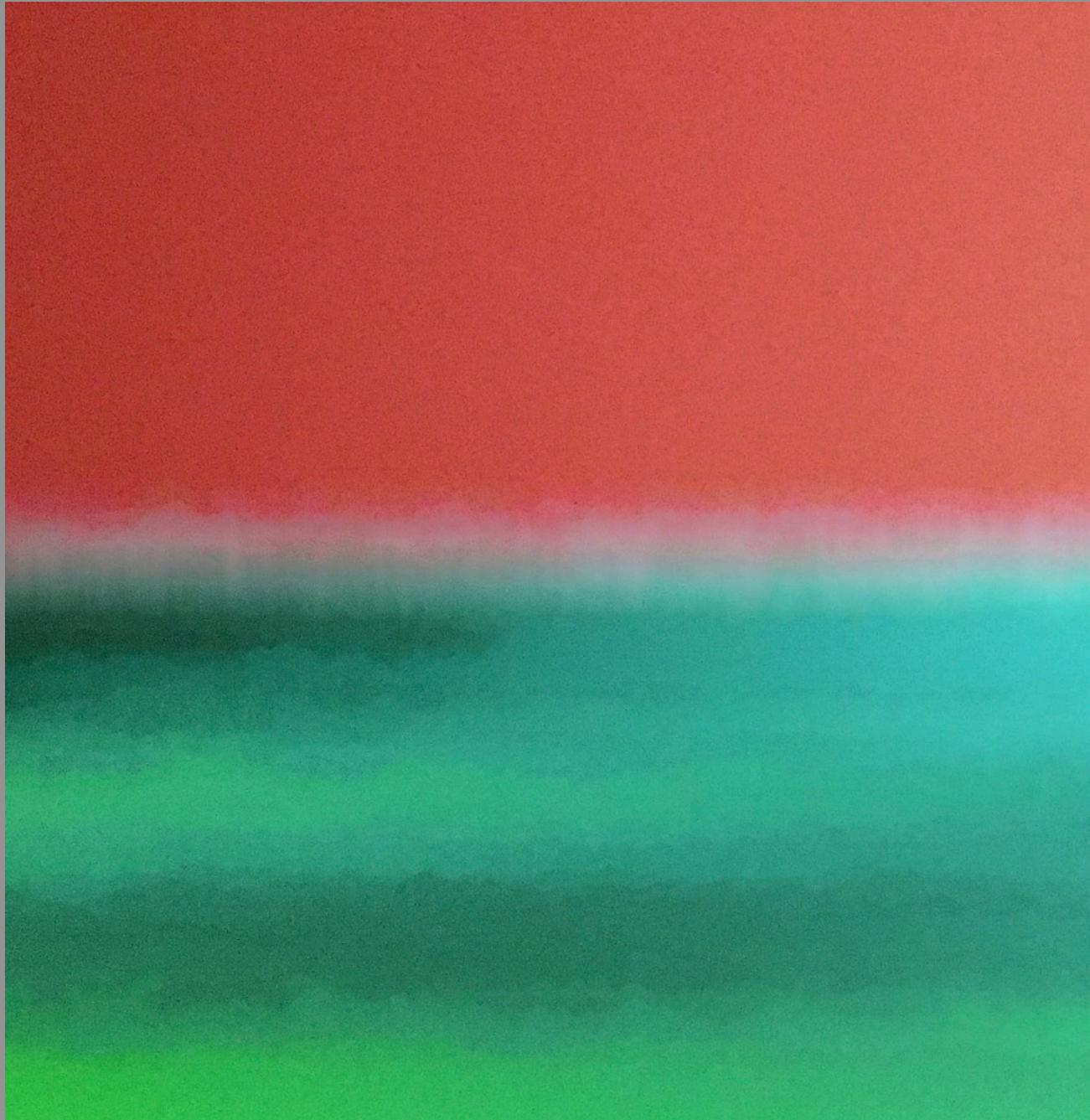
# Celagraph Capture

## — The iPhone

All shots for this example were taken at the same time  
using a finger + Tomato Leaf



iPhone 6



iPhone 12

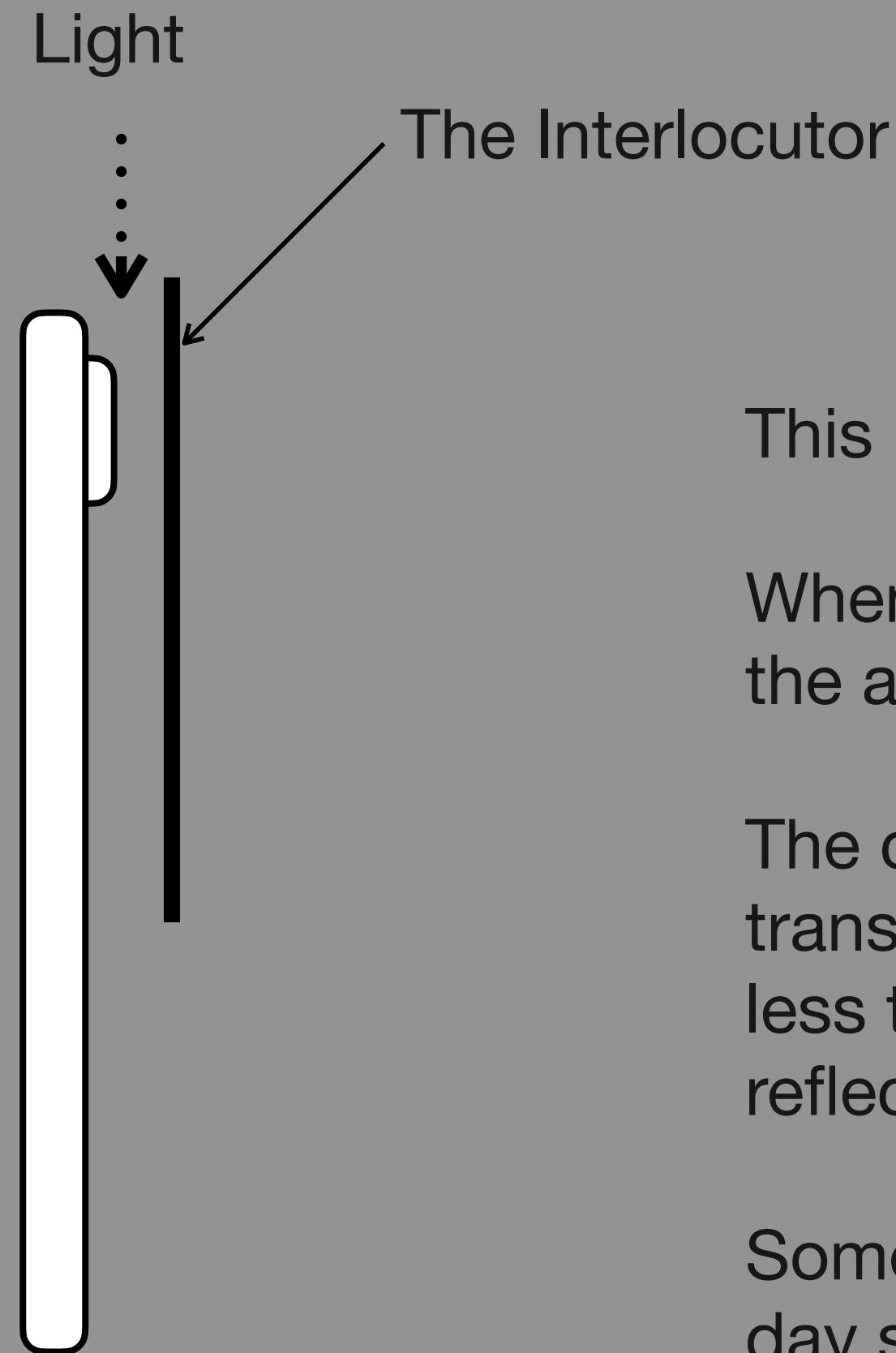


iPhone 13



# Celagraph Capture

## — The light



This is all about lighting.

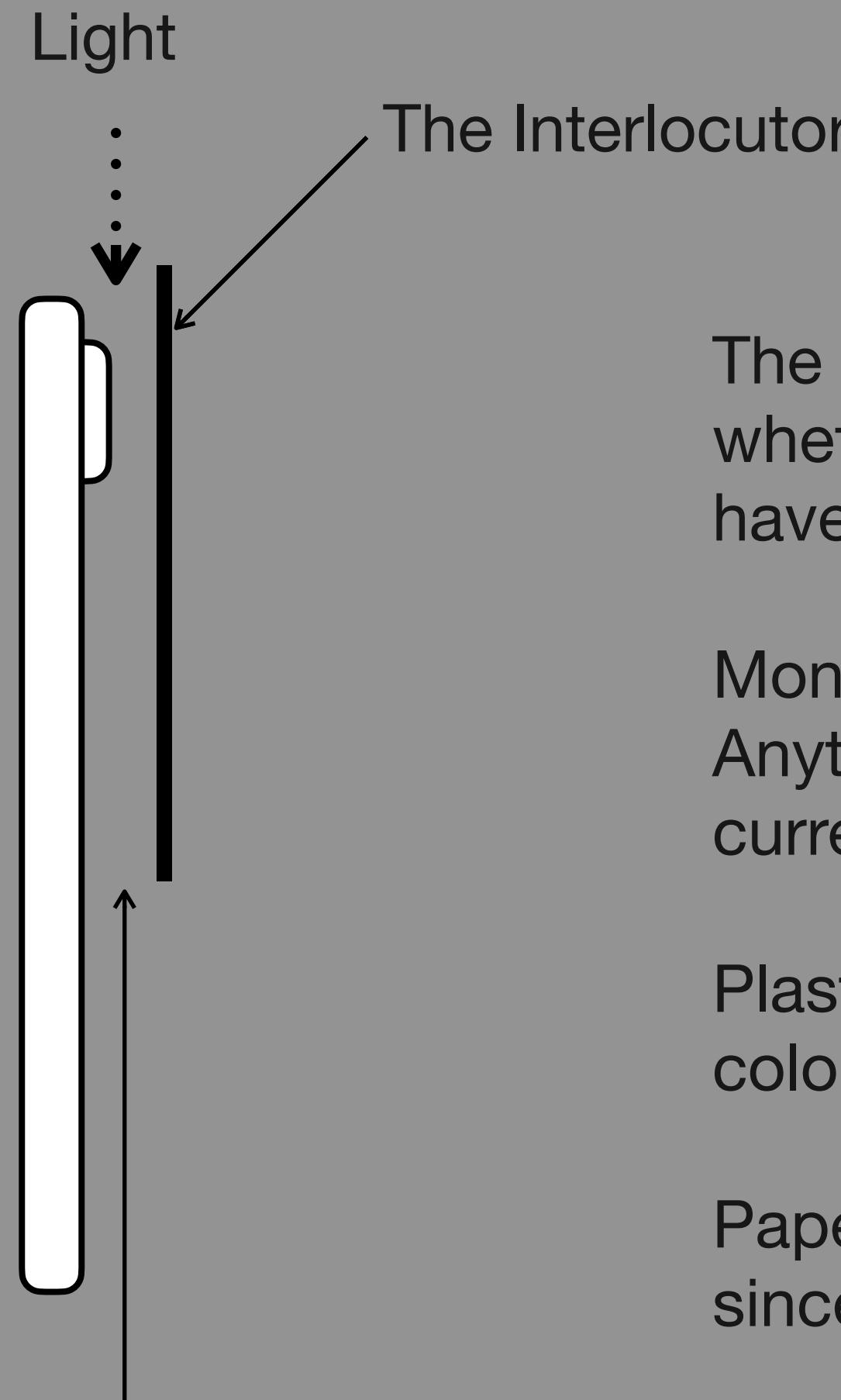
When taking the shot you will be holding the interlocutor on or close to the appropriate lens of the iPhone.

The choice of interlocutor impacts lighting. Paper and plastics are translucent and can be lit globally. Some paper and other materials are less translucent and must be lit from the side facing the camera. Highly reflective materials can cause glare or direct too much light into the lens.

Some amount of light is good and too much light is bad. Full direct mid-day sun will often stop the shot or render the output useless. Generally a structure of light and dark is ideal with few extremes.

# Celagraph Capture

## — The interlocutor



Distance between the interlocutor and the camera lens varies from close to zero to 10 mm / less than half an inch.

The Interlocutor is any object that interacts with light going to the lens whether it is a filter or a reflector or both. Here are some examples that I have used

Money - I have used a range of bank notes and credit card security films. Anything that reflects or filters light in an interesting way. And using fiat currency for a photo that might become an NFT is amusing.

Plastics - I had a plastic bag that I travel with and decided to try the two color zip lock as an element and have come to really like that.

Paper - I have used a blue and yellow page torn from an optics catalog since the day Russia invaded Ukraine.

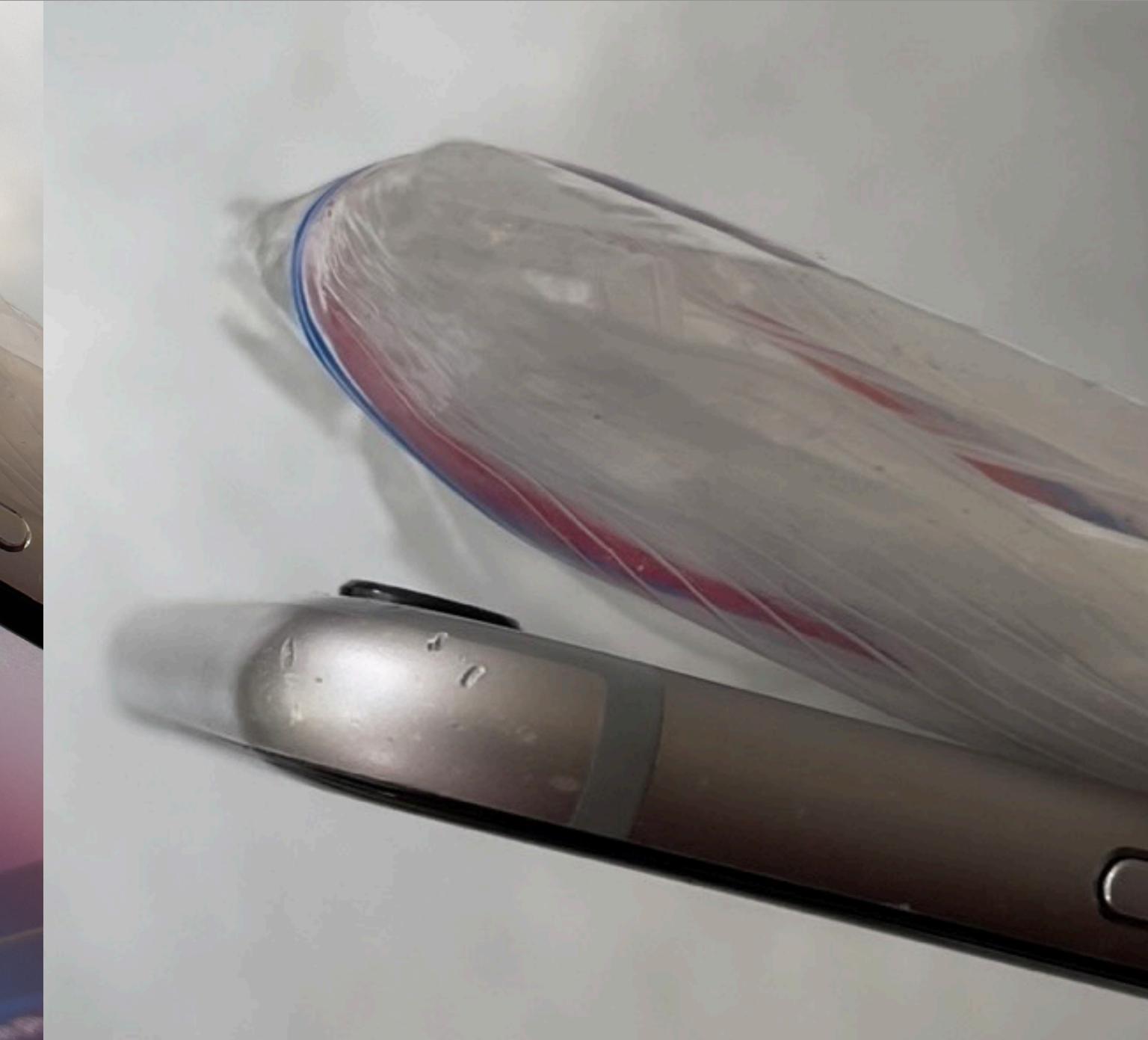
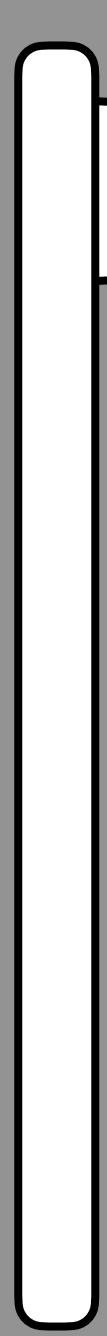
Other - The tomato leaf is not the first leaf I have tried. Leaves and other bits of nature can be very interesting in this role.

# Celagraph Capture

## — The interlocutor

Light

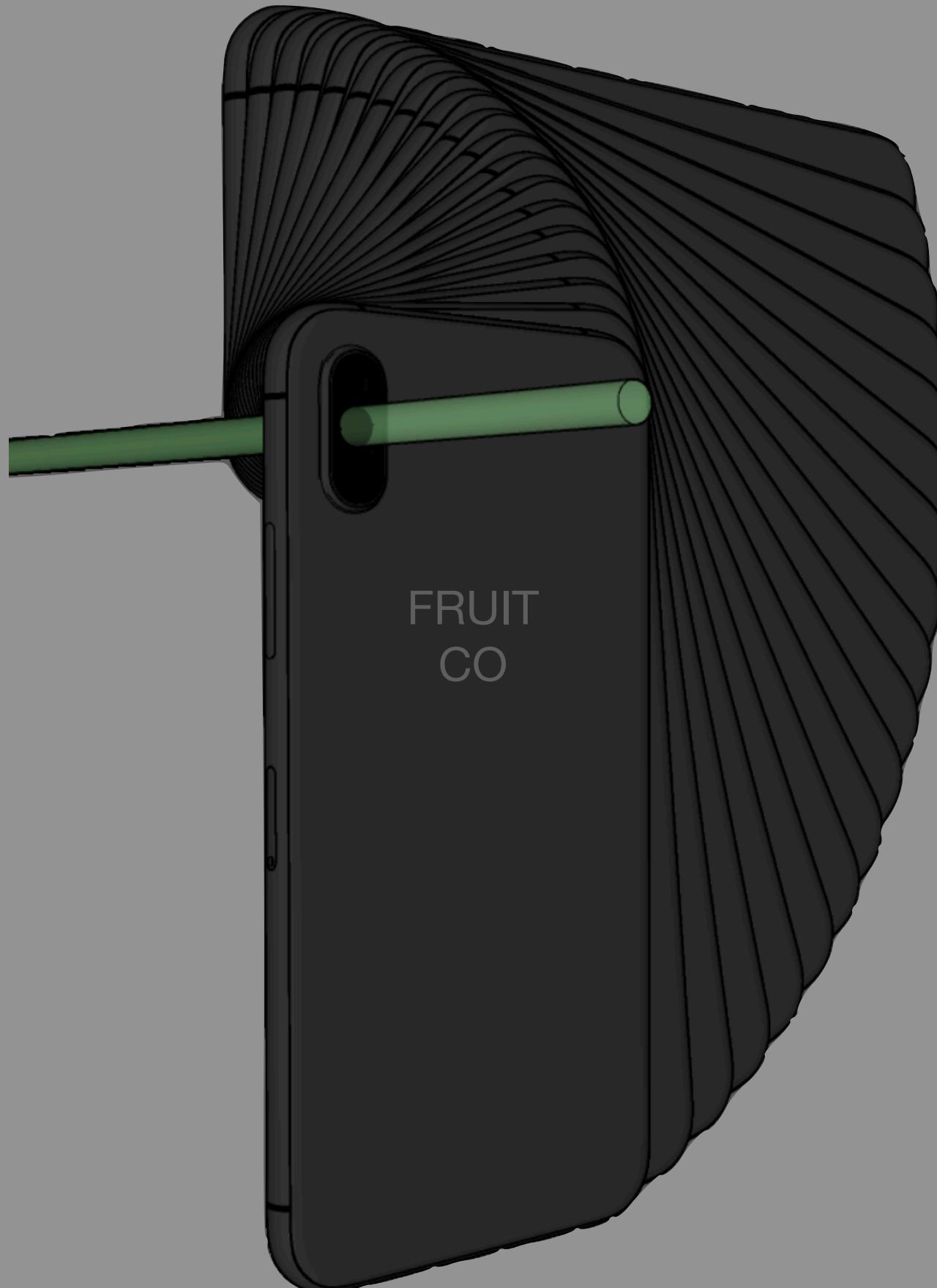
The Interlocutor



The interlocutor can move relative to the lens during the shot. This movement can add texture to the shot but too much movement will be averaged out.

# Celagraph Capture

## — Movement



It is best to move slowly and cautiously. The camera and the image stitching algorithm will do the hard work. You want to focus on creating blocks of color across the frame.

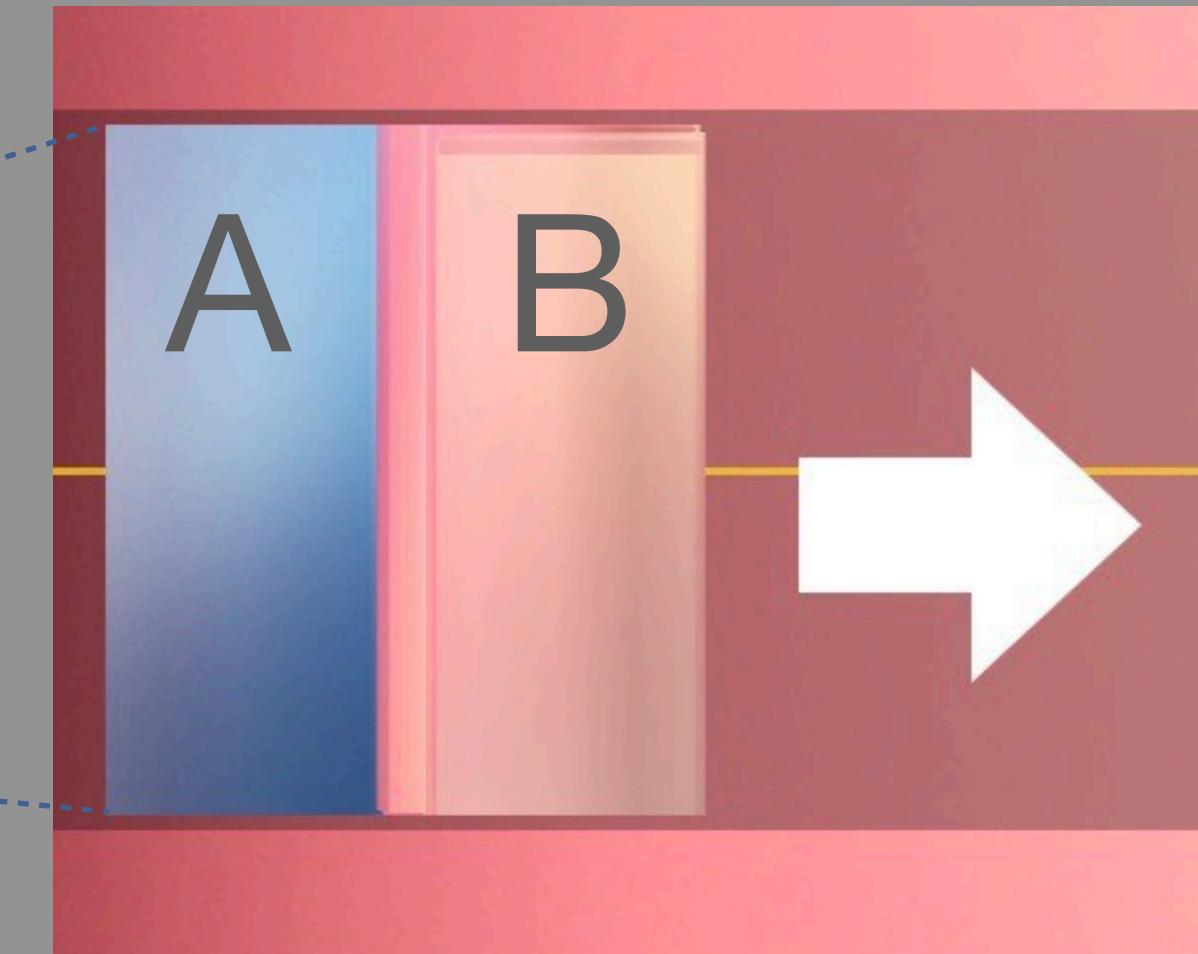
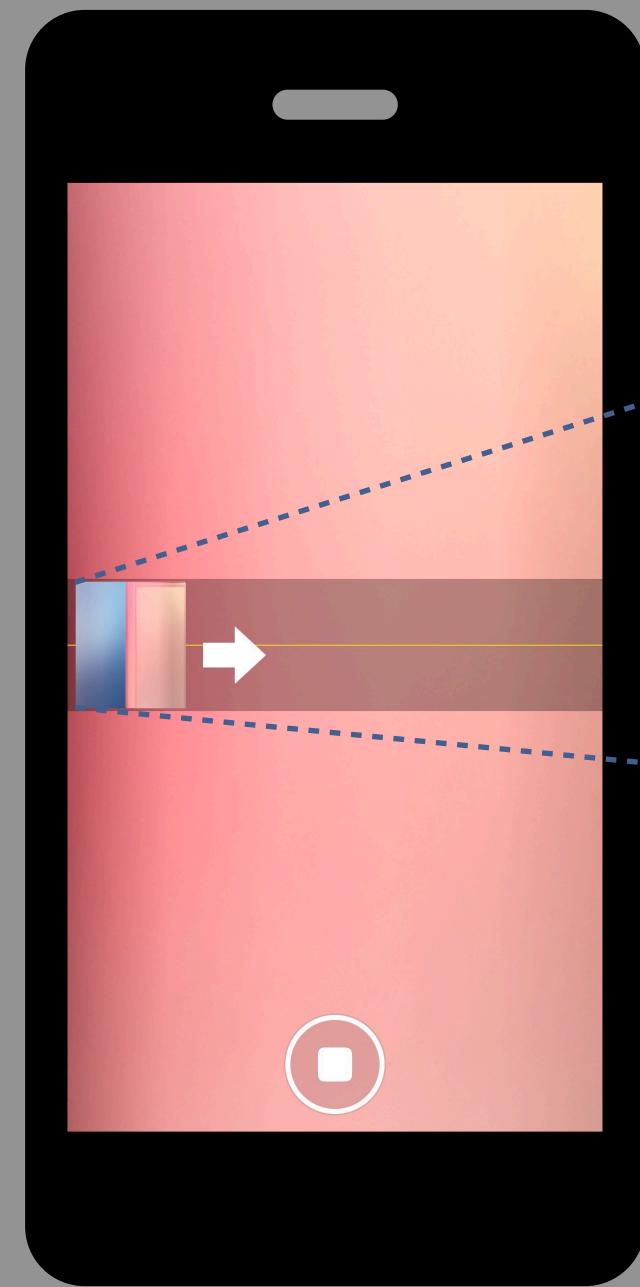
There are TWO types movement.

First, the movement of the camera in space rotating around the axis of the camera. This does not need to be precise. Just close. Keeping this rotation tight limits the area of the shot and provides better separation between the two half of the image.

Second, the movement of the interlocutor relative to the lens. This movement can add layers to the landscape and can be used to create third colors.

# Celagraph Capture

The iPhone panorama capture window divide into two parts.

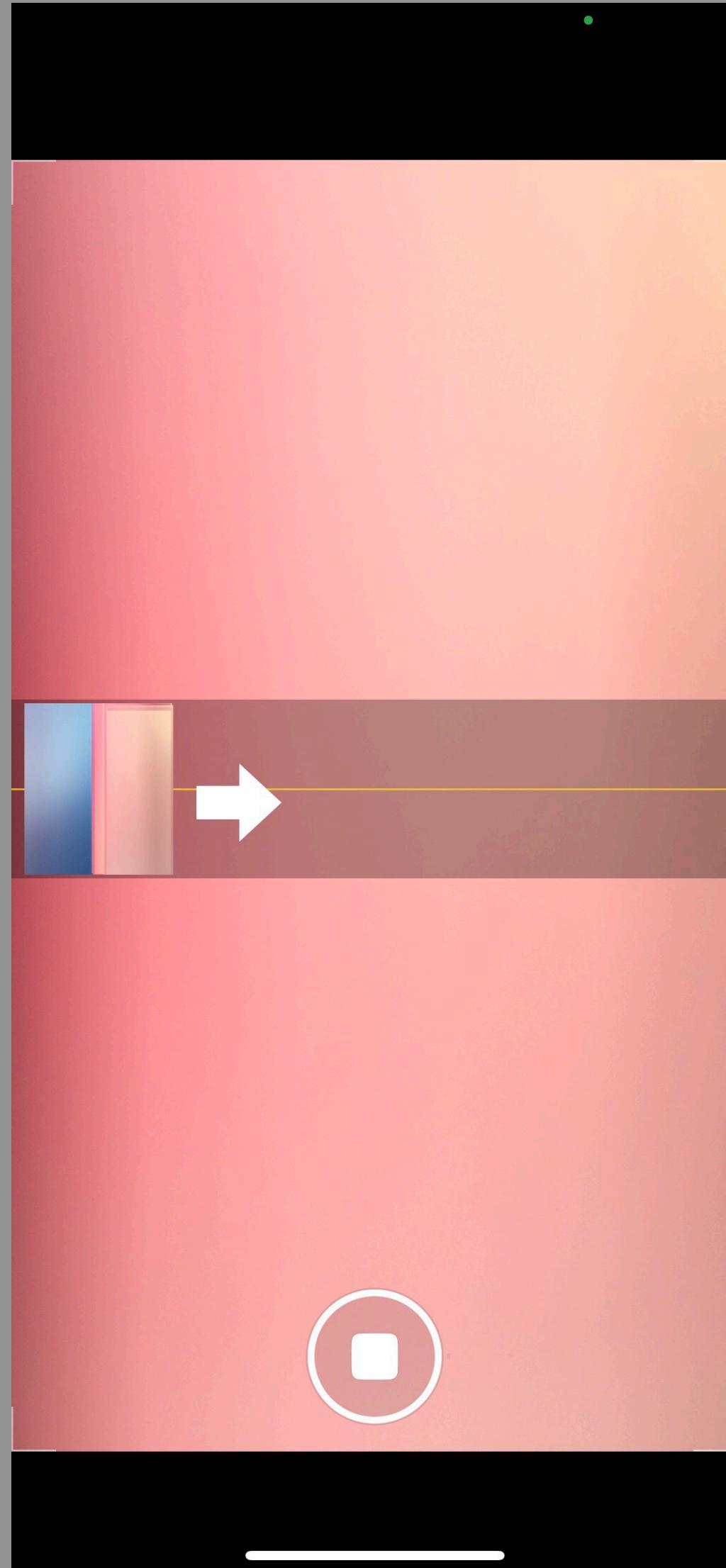


A - This is a fixed section of the image set at the start of the capture. I often think of this as the sky but it could end up as an ocean.

B - This section is where you get the movement as you start to rotate the camera. This is the area where mountains are created.

In between is the horizon.

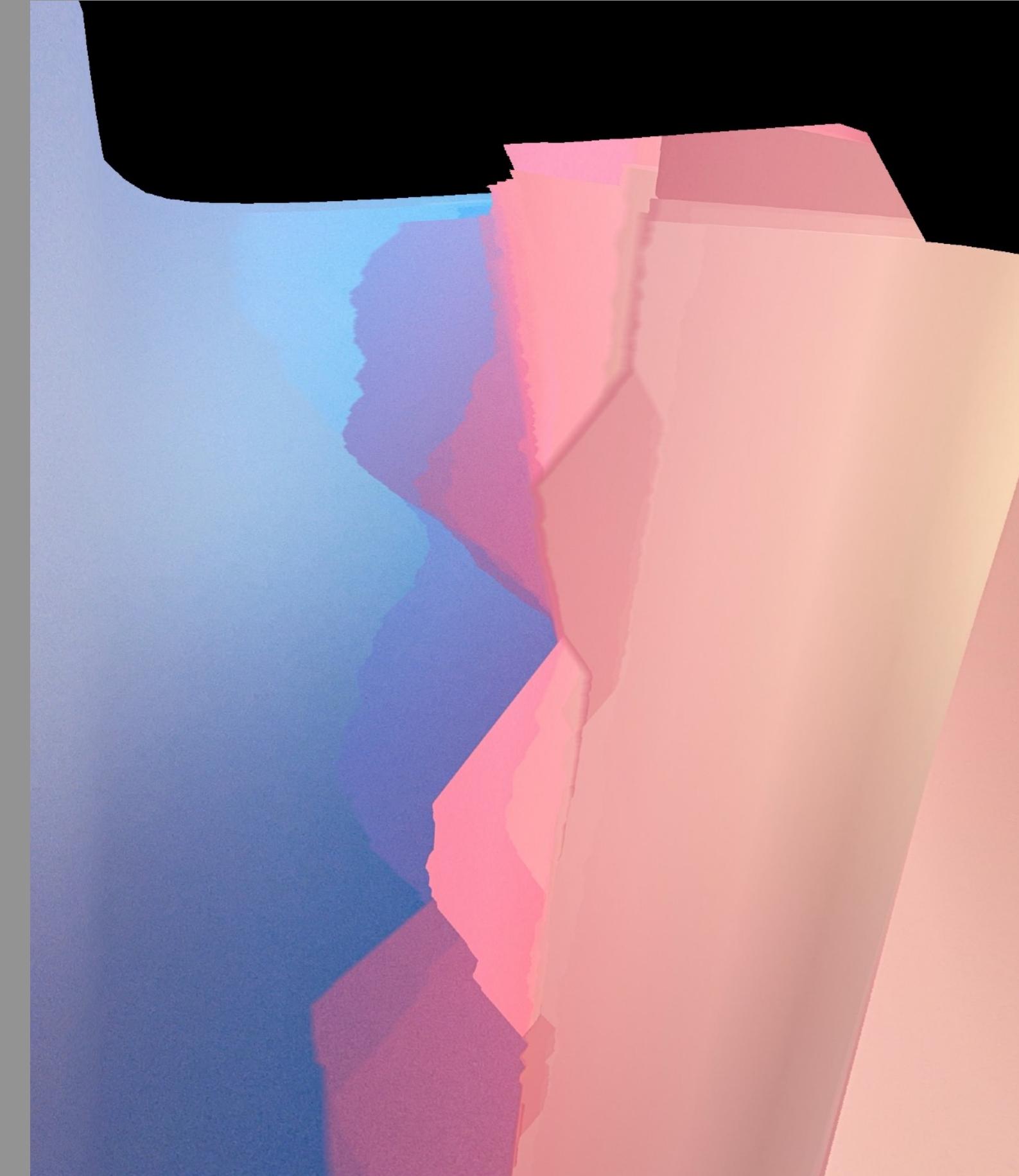
# Celagraph Capture



This is the preview for a shot on the left. The entire shot takes place in the two color blocks in the preview window.

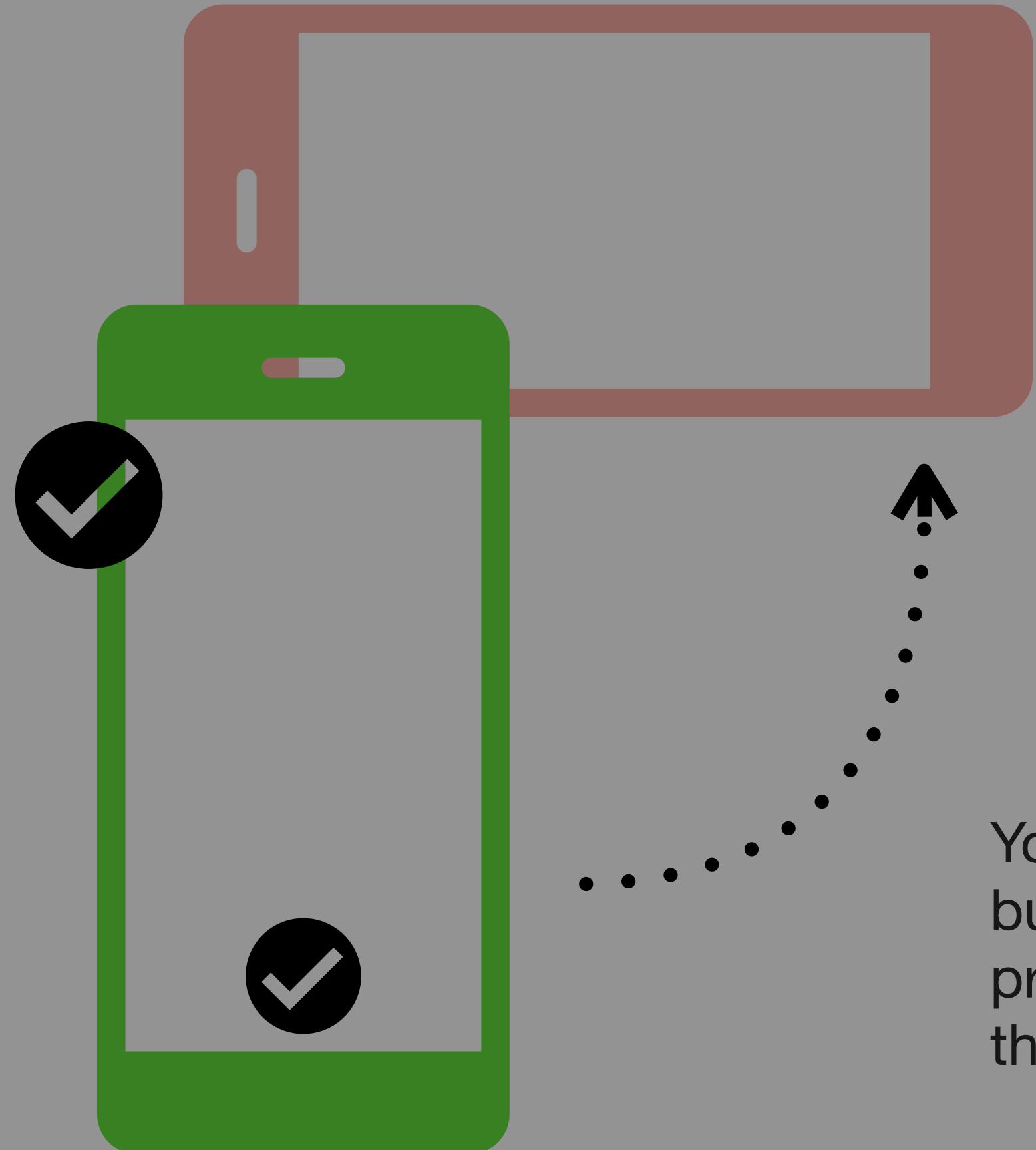
The resulting image is to the right. The image needs to be rotated 90 or 270 degrees to work as a landscape. But in the camera it will look like this.

It is possible to track the colors but the movement creates small areas of overlap that form the landscape.



# Celagraph Capture

## — Start

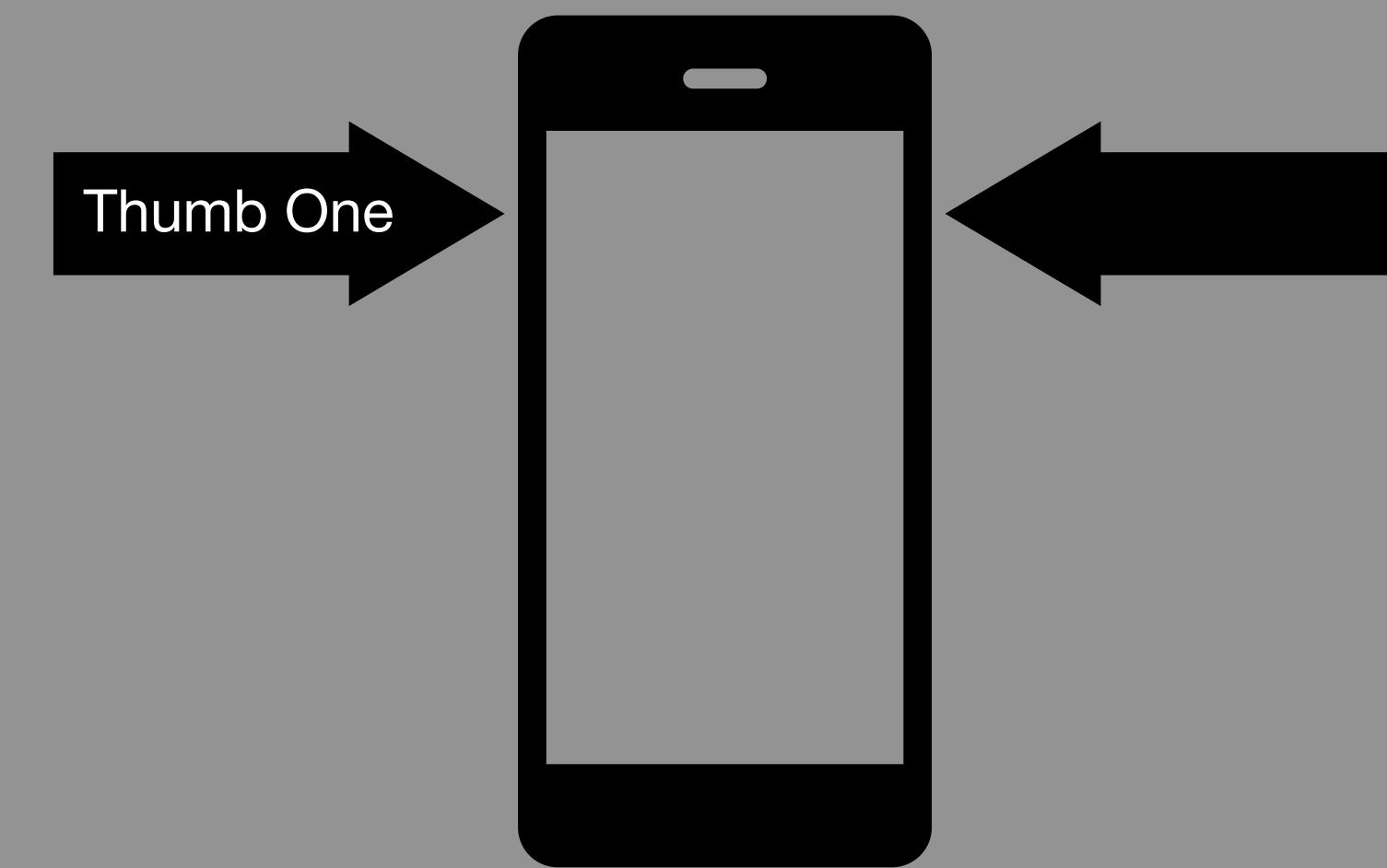


You start the shot by pressing the button in the camera app or by pressing the volume up button on the side of the phone.

I tend to hold the phone in two hands and trigger the start of the shot with my thumb.

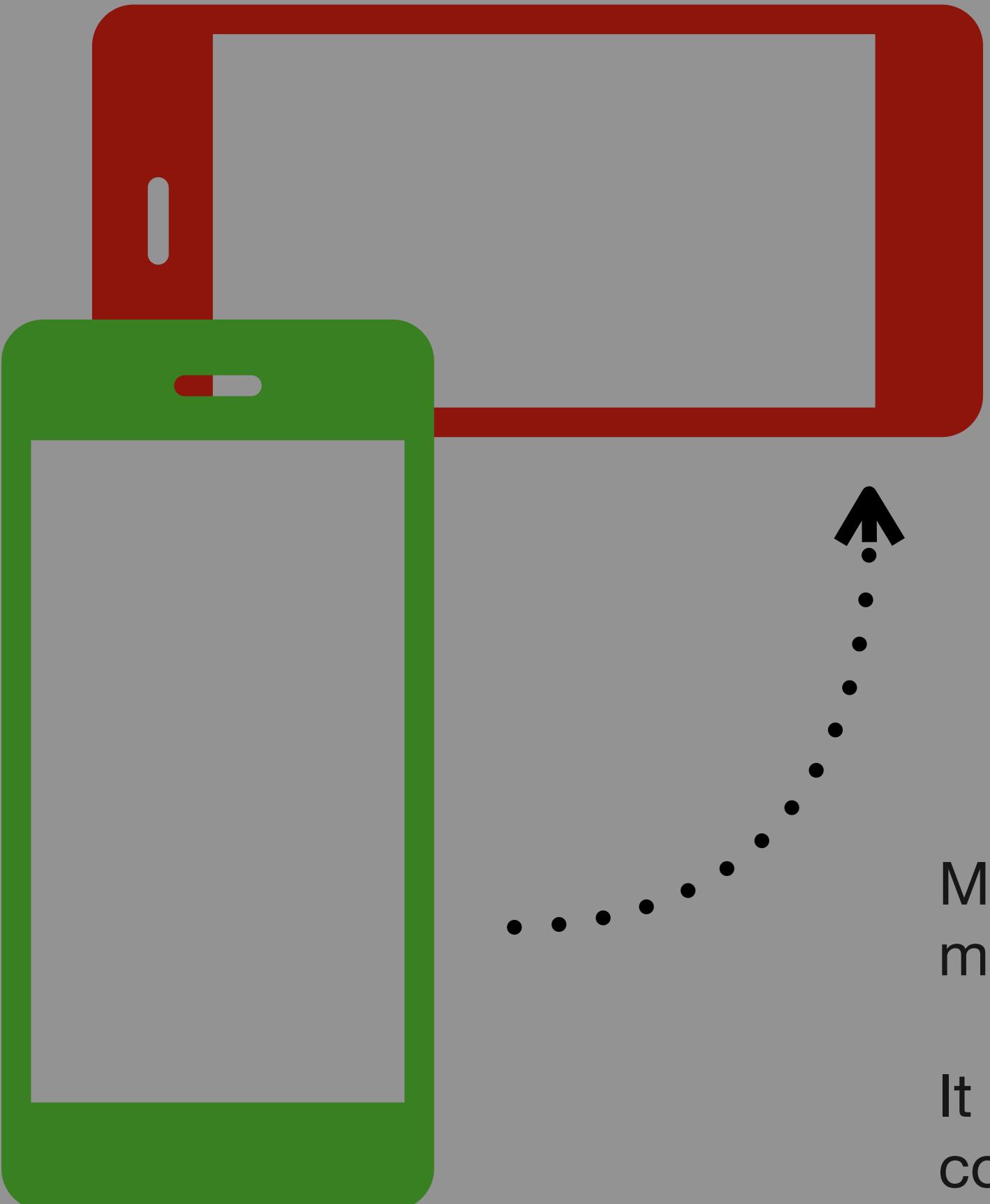
ORIENTATION is up to you.

You can do this vertically or horizontally. Do what is most comfortable with you.



You will need to hold the phone with both hands to have the most control with one hand controlling the interlocutor.

# Celagraph Capture



Move from a portrait to a landscape orientation while keeping the camera module as stable as possible.

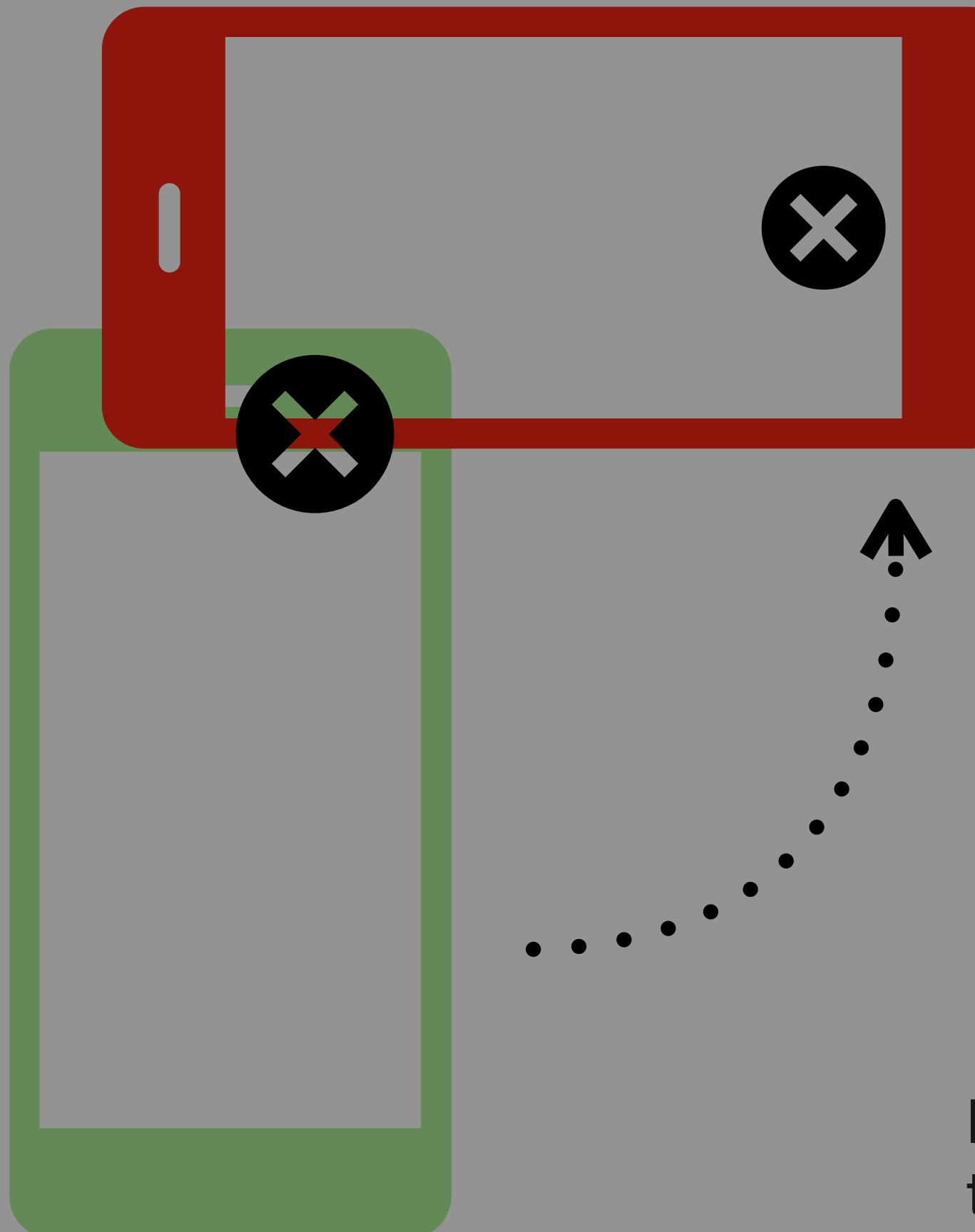
It is possible to start the shot and then pause for a moment before considering movement. The important thing is that once movement starts it should be continuous until the shot is stopped by the camera (yes, this will happen) or until you reach the 90 degree point and are able to stop the shot.

The shot may stop part way through the rotation and still be fine.

If the shot does stop in this manner it could be that you are moving too quickly or some aspect of your shot is problematic. Too much light will stop a shot. So will certain LED light bulbs.

# Celagraph Capture

## — Stop



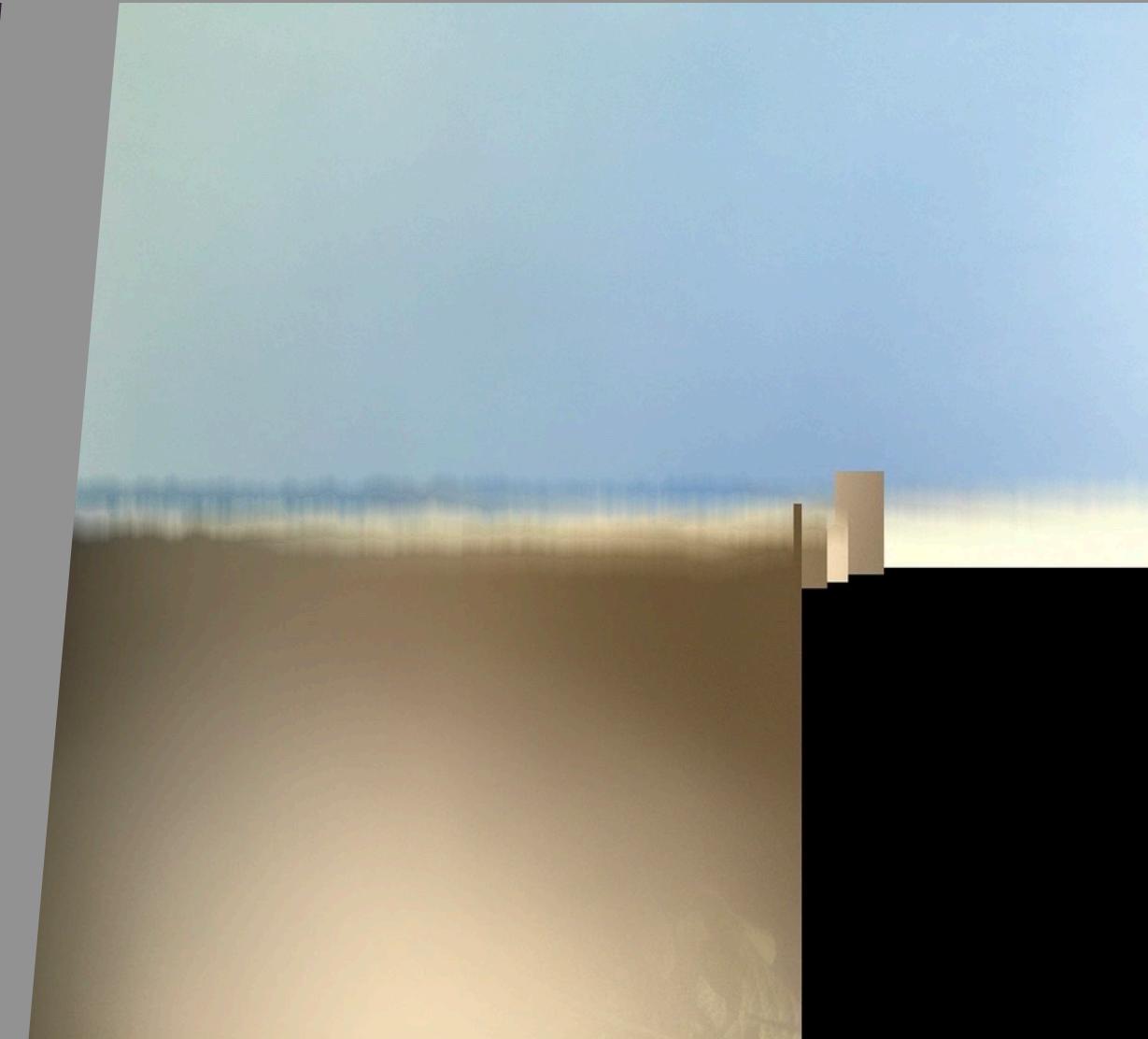
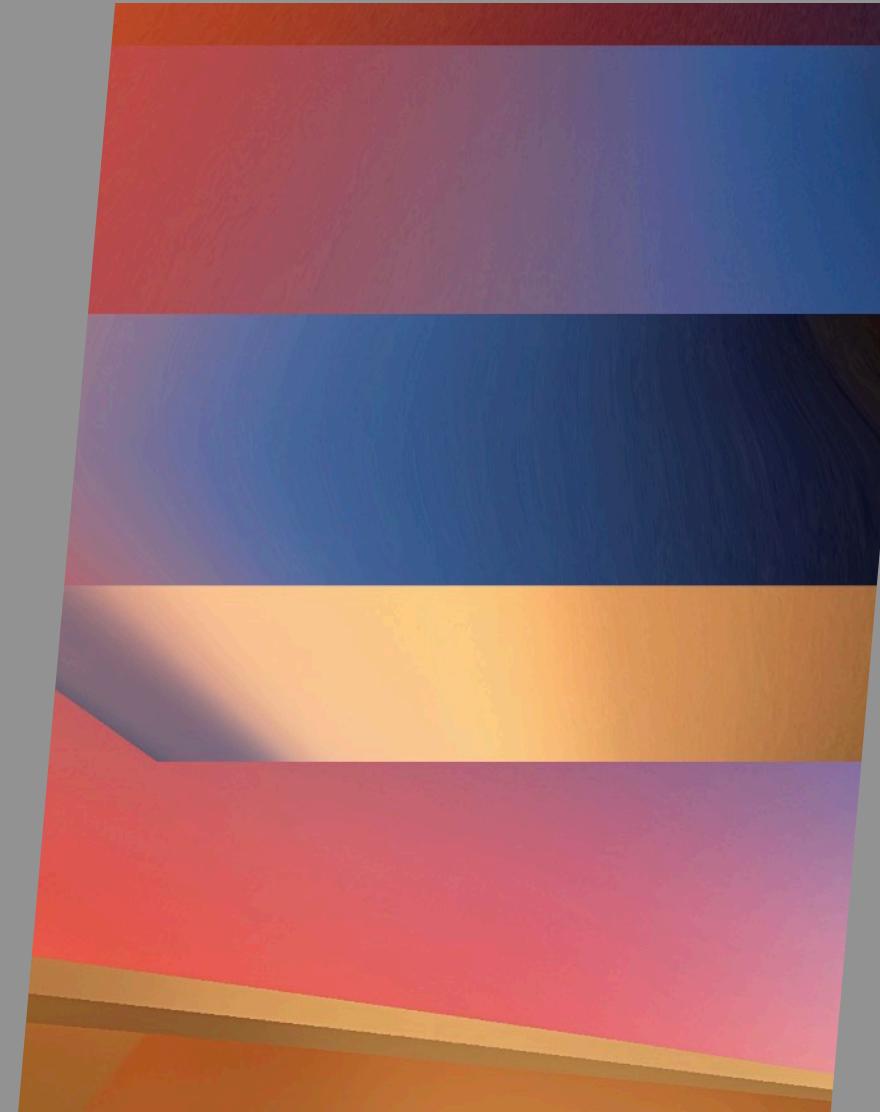
If the shot does not stop you will need to press the volume up button or the button in the photo app to stop the shot at the ninety degree mark.

# Celagraph Capture — Failures

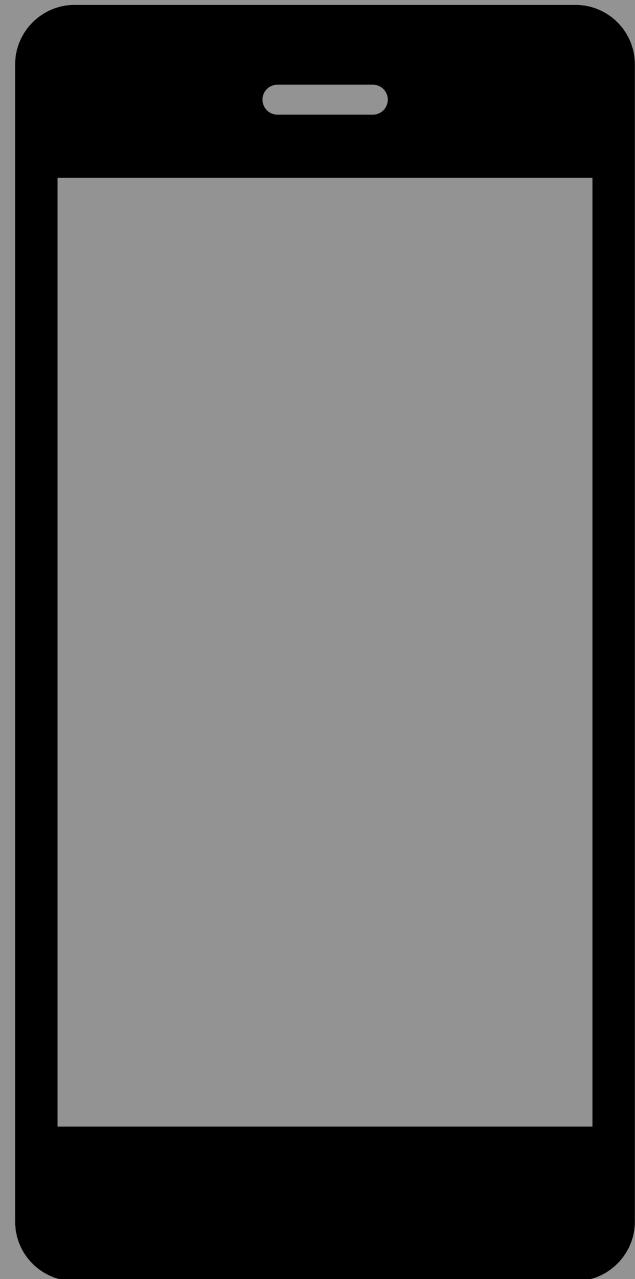
Not every shot works. Getting a landscape 50% of the time is good.

- The camera stops as you rotate iPhone
- A small change in movement stretches the image
- Shifting too far in one direct leaves an inactive area
- It just looks weird
- Moved too fast and the ridge line is unfocused

Remember - you are using the camera incorrectly



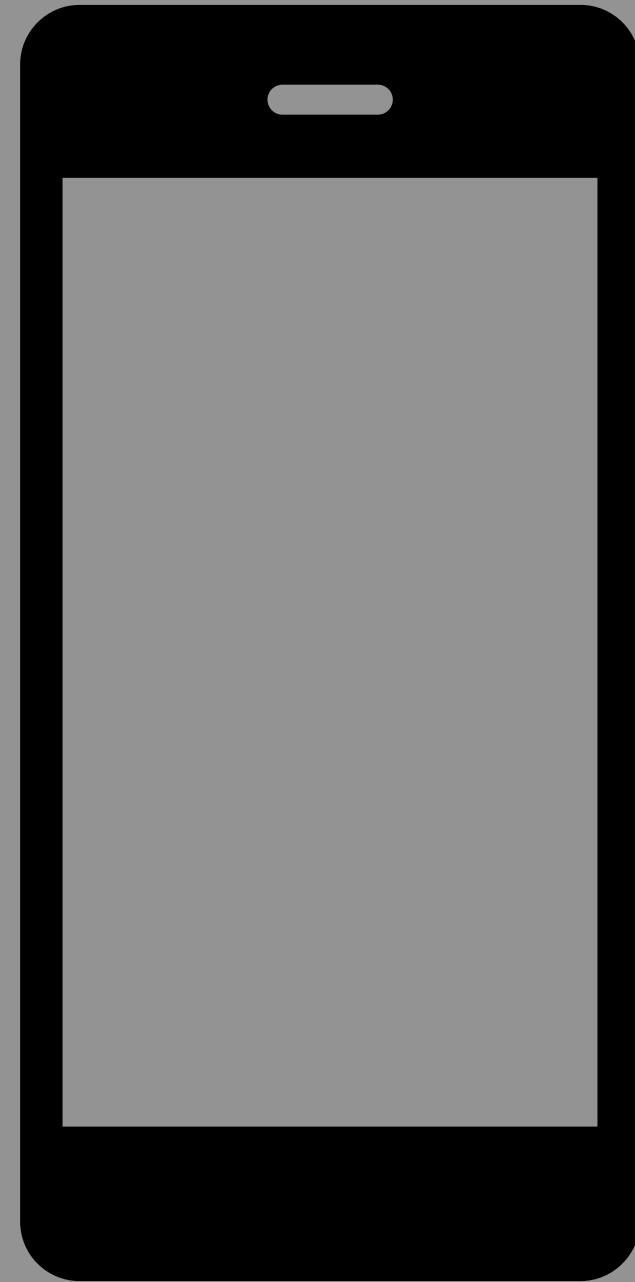
# Celagraph INTERLOCUTOR – a collection



The iPhone is an almost ubiquitous presence. There are 100's of millions of them in use every day. The camera on the iPhone has often been the top camera used for posts on photo sites. One of the ongoing internal conversations - in my head - about my work revolves around the fact that anyone can pick up an iPhone, open up the camera app, set the camera to pano, and take a picture. There is nothing rarefied or scarce about an iPhone picture.

This project arises out of a consciousness that the tool I am using is a mass produced consumer device that a lot of people have in their hands. You don't need to build an algorithm or learn to code. Just take a picture - and exploit someone else's algorithm and image processing engine that was developed to create panoramas by stitching multiple pictures together. Anyone can take a picture similar to the ones I take - particularly if I write them detailed instructions.

# Celagraph INTERLOCUTOR – a collection



This project will consist of a series of collections on [objkt.com](https://objkt.com) titled Interlocutor including (but not limited to) the following:

Interlocutor / Prologue - This collection will feature the images I took preparing this project

Interlocutor - This will feature images captured following the instructions in this document. Each photographer will be credited or not according to their individual preferences. 80% of the sales will go to a Teia based contract to be distributed equally to the wallets of all participants in the project.

Interlocutor / Irregular - This collection will feature a small number of interesting outliers following the same formula as the main Interlocutor mint.

Interlocutor PDF - This will be the final version of this document along with an appendix that documents each interlocutor used in the project. Each participant will get a PDF.

# Celagraph