Ghostly Impressions: An Introduction to Cyanotype Printing

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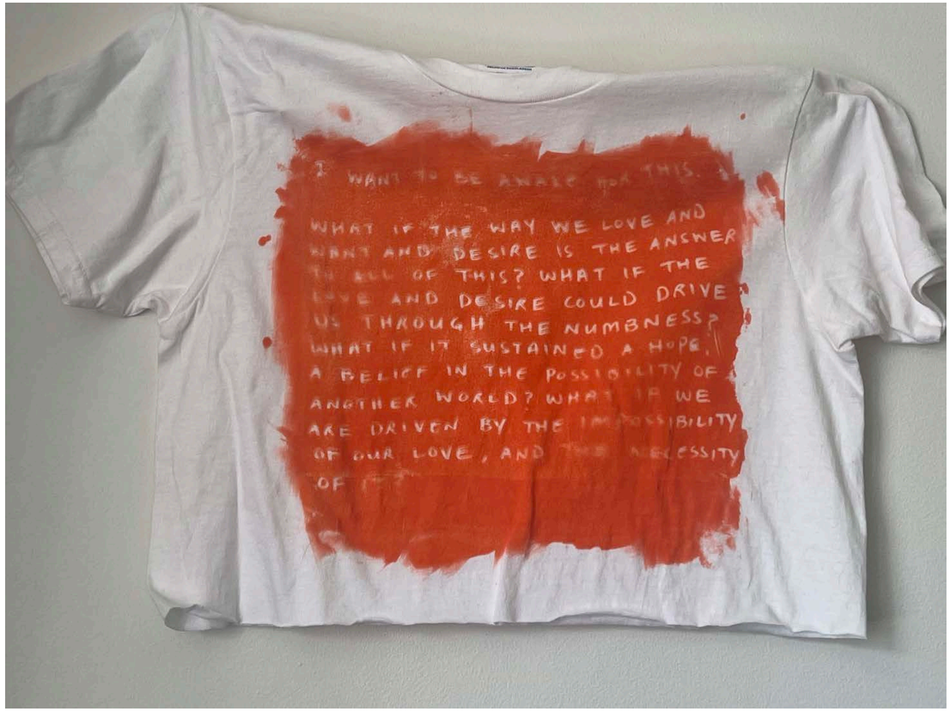
What is a Cyanotype?

- A cyanotype is a print or image made by placing objects on a light-reactive material.
- The image produced is monochrome, meaning it appears in varying shades of one color.
- Can print using photo negatives, drawings, and objects. When printing with objects only it is called a Photogram.
- The process was discovered by Sir John Hershel in 1842. It has been used widely by artists, as well as others who need to reproduce images such as engineers to create blueprints.
- The process is a chemical reaction between ferric ammonium citrate or ferric ammonium oxalate, and potassium ferricyanide. When combined in equal parts along with water, these chemicals develop when exposed to UV light, creating the image.
- The objects or images you use are negatives; their function is to block the UV light from developing the chemicals, and when you rinse the material after exposing it to the light, the chemicals will remain fixed and blue where the UV light touched them, and will wash out white where the objects or images were.

Examples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The Process

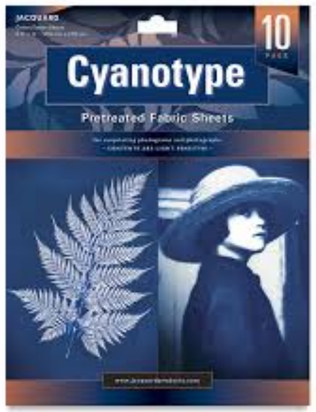
Overview

- Part 1: Preparation
    1. Preparing the solution
    2. Applying solution to your material
    3. Drying time
- Part 2: Exposing
    4. Placing objects/image
    5. Sun time !! The Exposure
    6. Rinse the solution from the substrate
    7. Drying time (again)

Methods and Materials

The Chemicals

- Traditional 2 part solution
  - Pros: better picture detail, particularly with photographic images and grayscale gradients
  - Cons: more time consuming, requires more troubleshooting and testing to get the desired effect due to higher photo-reactivity
- Pre-treated paper or fabric sheets
  - Pros: paper is ready to be printed on; less time consuming
  - Cons: little control over paper shapes, sizes, and textures



- Solarfast Kit
  - Pros: easy and comes with every thing you need, comes in different colors
  - Cons: not as sensitive (doesn't pick up as much detail), comes with smaller amounts of solutions, more expensive than buying materials separately
- Other kits
  - See a list of other kits available here

Methods and Materials

The Chemicals - Where to buy??

- In addition to the many kits available online, you can also buy paper that is pre-treated with the cyanotype chemicals online from Amazon or Etsy, or in art stores such as Blick.
- If you want to buy the chemicals and mix them yourself, most are available online from the company Jacquard. You can buy these, which come as two bottles of powder to which you add water yourself, online from Amazon, Cass Arts (UK), or Blick.

Methods and Materials

Substrates

- Paper
  - Ideally you want a paper that is relatively thick and durable—100GSM or higher—because you are going to be wetting the paper twice
  - Cartridge paper is popular and widely used for cyanotypes, but watercolour paper also works. Different paper will yield slightly different results, so experiment with a few. Importantly, the paper must be acid-free so that it doesn't interfere with the chemical reaction.
- Fabric
  - Must be 100% natural fabric
  - Best results are on 100% unbleached cotton, but you can experiment with different fabrics as long as they are 100% natural.

Methods and Materials

Subjects

- Objects (Photograms)
- Drawings
  - You can draw with an opaque marker directly onto transparency film and expose it.
- Photos
  - Photos must be prepped in order to be used for cyanotypes.
  - First they must be turned into negatives, then printed on transparency film.

Prepping Photos for Cyanotyping

Making Negatives

- I make negatives in Adobe Photoshop; here is how:
  - Open your image in Photoshop
  - Remember the dimensions you print your image at will be the same size as your cyanotype print
  - Check the levels of your image to ensure the contrast and brightness of the image are good. Image > Adjustments > Levels (Command L)
  - Next, make your image black and white. You want to do this a specific way so that the color data gets intelligently translated. Image > Adjustments > Black and White
  - To make the black and white image a negative, you need to invert it. Image > Adjustments > Invert (Command I)
  - You want to apply a curve that is made specifically for cyanotypes. The one I use is linked here. To load a preset curve, open the curve dialog box by going to Image > Adjustments > Curves (Command M) then select the gear icon  in the top middle of the screen. Then select Load Preset and select the downloaded curve from your desktop.
  - Finally, save your image as a copy as to not save over the original image. File > Save a copy. Save as a JPEG with Quality set to 12 and format set to Baseline.
  - Here is a video that details this process.

Part 1: Preparation

- Lay down plastic or newsprint to protect the surface you're working on. Prep your materials in a room without any UV light, and as little other light as possible while still being able to see what you're doing.
- Preparing the solution
  - If you haven't done so already, follow the instructions on the bottle to add water if you have the chemicals in powdered form
  - If using the traditional 2 part solution, mix Part A and Part B in equal parts, ideally using a graduated cylinder or measuring cup
- Applying solution to your material
  - Apply the solution with a brush or sponge - aim for even coverage
  - Make sure to saturate the material, but a little goes a long way so start sparingly
  - Wear gloves to protect your hands from the chemicals
- Allow the solution to dry
  - Dry the material in a dark place without UV light for at least 24 hours

Part 2: Exposure

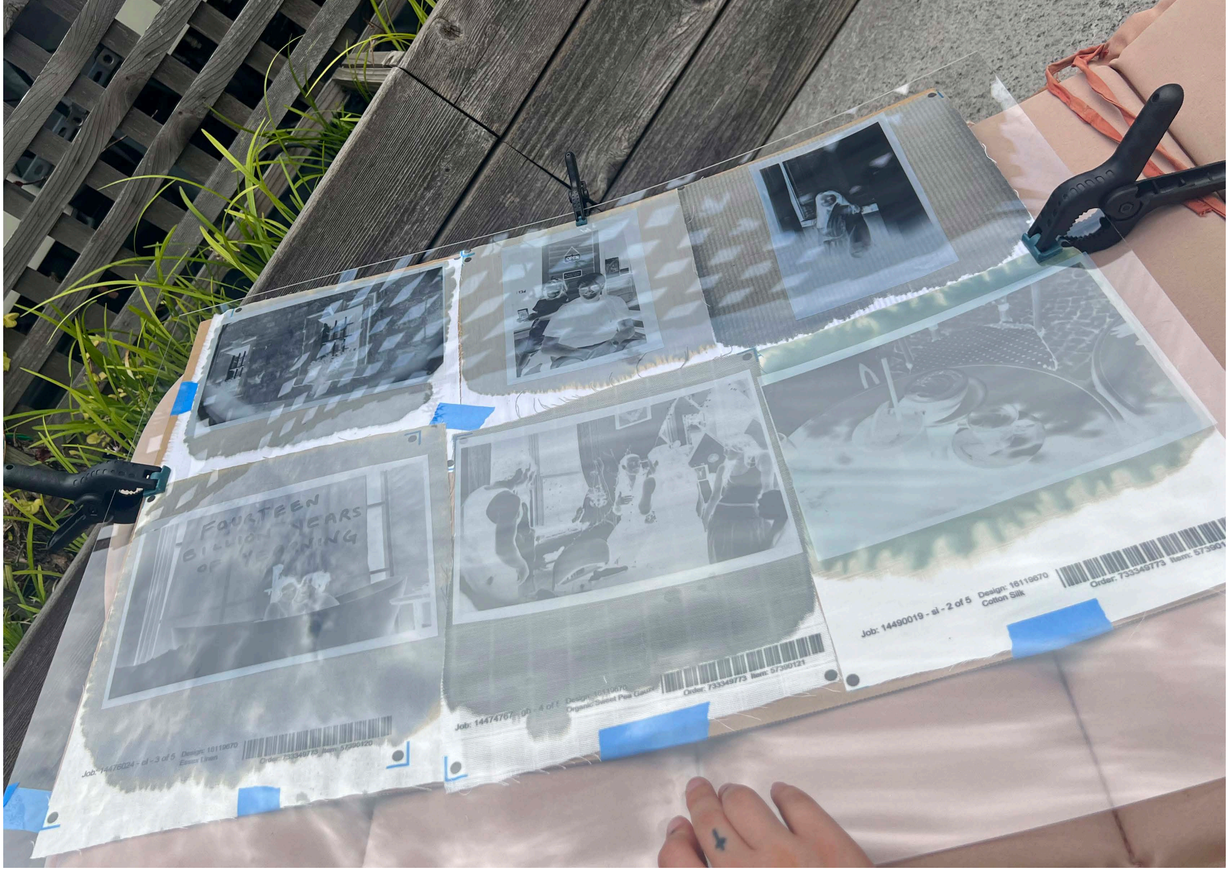
Placing your image or objects

- You can either arrange your image/objects onto your material in the sunlight or in your dimly lit room and transfer them to where you will expose them. I prefer to arrange things first, and then move them into the sunlight, but the exposure takes minutes, not seconds, so you can arrange them once outside as well.
- Once you arrange your image/objects, try not to move them, as it might create a blurring effect in the final image.
- Use a piece of glass to hold your image/objects in place and ensure they're flush with the material.
- I use a piece of cardboard followed by the material, the negative, and then glass, all clamped into place to keep them from moving.

Part 2: Exposure

The Exposure

- Depending on how strong the UV light is on any given day, the exposure will take anywhere from 2 - 5 minutes or up to an hour.
- Factors such as the time of year, your geographical location, cloudy vs sunny day, and the time of day will all affect how long the exposure takes.
- Plan to experiment with exposure times to get the best result. The longer the exposure, the darker the blue and the less detail may be captured.
- The cyanotype will turn a pale grey kind of color once fully exposed.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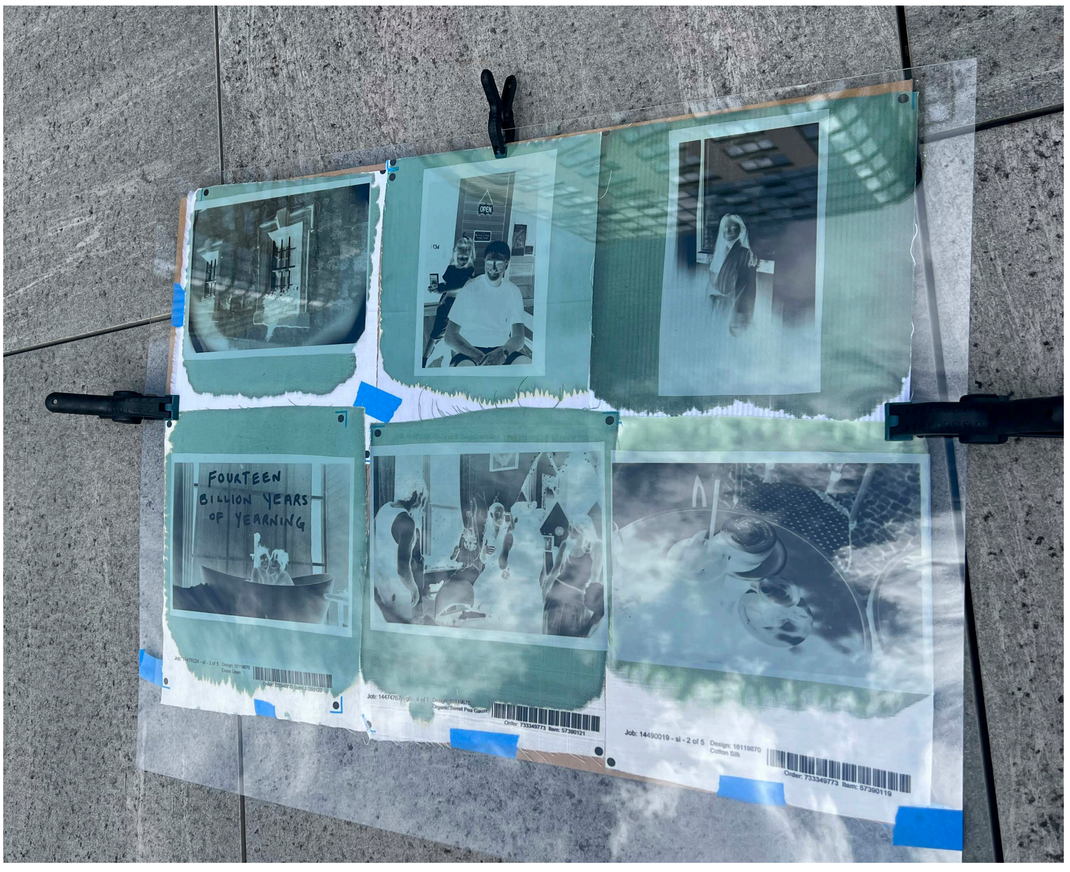
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Part 2: Exposure

Rinsing and Drying

- Rinse your material in a tray or bucket with cold water until the water runs clear.
- You can blot the excess water off with paper towels or a rag.
- Hang your material up to dry in a cool dark place.
- The color will continue to develop as it dries.

Questions