



a WOW Lab

**BLUEPRINT**

Solargraphy

## Inquiry Approaches

### Initial Inquiry

What causes the sun to move across the sky?

The sun does not move across the sky; it only appears to do so. The sun appears to rise in the east and set in the west. However, in actuality the Earth spins in a counter-clockwise direction while the sun remains in the same position.

### Experimental Procedure Inquiry

What are the white lines on the photograph?

The white lines in the sky represent the sun on sunny days when the photographic paper is exposed to direct sunlight. However, there are days when the sun is hidden behind the clouds so the photographic paper is less exposed to light and does not have bright lines.

Why do you have to scan the solargraph?

If you did not scan the solargraph, the photographic paper would continue to be exposed to light. Eventually the image will become overexposed and obscured. Encased in the pinhole camera, the photographic paper is exposed to only a small amount of light in comparison to when it is removed from the pinhole camera.

### In-Depth Inquiry

Do you need to develop the photographs?

No. Due to the length of exposure, the sun "burns" its path onto the photographic paper. A negative image is formed (it is dark where the sun has exposed the paper). Therefore, inverting the image in photo editing software is necessary. Altering the colour and contrast settings results in the final image.

Why use photographic paper?

Photographic paper is coated in a light-sensitive chemical emulsion. When exposed to sunlight, the chemical configuration is altered. Photographic paper is hundreds of times less sensitive than photographic film, therefore it's possible to expose the paper for long periods of time without it becoming overexposed. Even though black and white photographic paper is used, colour images are produced because of the length of time of exposure to the sun. After exposing the photographic paper to light, the image is visible on the emulsion.