

Solarigraphy: step-by-step Tutorial

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Invented around 2000, **Solarigraphy** (also known as **solargraphy**) uses photographic paper without chemical processing, a **pinhole camera** and a scanner to create images that catch **the daily journey of the sun along the sky with very long exposure times**, from several hours to several years.

Solarigraphy is a concept and a photographic practice based on the observation of the **Sun path in the sky** (different in each place on the Earth) and its effect on the landscape, captured by a specific procedure that combines **pinhole photography and digital processing**.

Unlike conventional photography, Solarigraphy doesn't freeze a moment—it **accumulates moments**, layering them into a single image. It uses a pinhole camera loaded with **black-and-white photographic paper** to record the sun's movement. The camera remains in place for an extended period, allowing the sun's light to directly darken the paper and create ghostly arcs that trace its daily journey

- **No chemical development:** "The paper is scanned after exposure rather than developed traditionally.
- **Sun arcs:** Each line in the final image represents a day's solar path. Gaps indicate cloudy days.
- **Landscape memory:** The background often appears faint or surreal, as it's slowly imprinted over time.

Step-by-Step: How to do Solarigraphy

1. Build a Pinhole Camera

You'll need:

- An aluminium can (beer or soda)
- Black-and-white photographic paper (semi-matte). The photographic paper should be loaded in dim red light
- A needle (for the pinhole)
- Electrical tape (to seal and create a shutter)

2. Set Up for Exposure

- Choose a location with a clear view of the sky.
- Mount the camera securely facing south in the northern hemisphere for optimal sun paths.
- Leave it undisturbed for weeks or months or even years¹.

¹ The longest exposure ever recorded with a pinhole camera is approximately 2,953 days, or eight years and one month, achieved using a beer can pinhole camera. <https://www.livescience.com/longest-exposure-photo-discovered-beer-can.html>

3. Retrieve and Process the Image

- Carefully open the can in a dim room.
- Scan the photographic paper (do not develop it chemically).
- Use photo editing software to enhance contrast and colour.

Solargraph Processing walks through digital editing techniques, including cropping, curves adjustment, and inspection using Photoshop or other image processing software.

You can easily build a Pinhole Camera or buy one².

I used a LataCam (Figure 1) to record the sun's daily journey across the sky on two occasions—once for 367 days and once for 221 days. The LataCam was securely fixed facing south (Figure 2).



Figure 1 – LataCam.

² Solarcan [Solarcan – Ready to use solargraphy camera](#) – LataCam [Cámara estenopeica, analógica y recargable](#)
[LataCam Estrella Galicia | Fotics Collection](#)

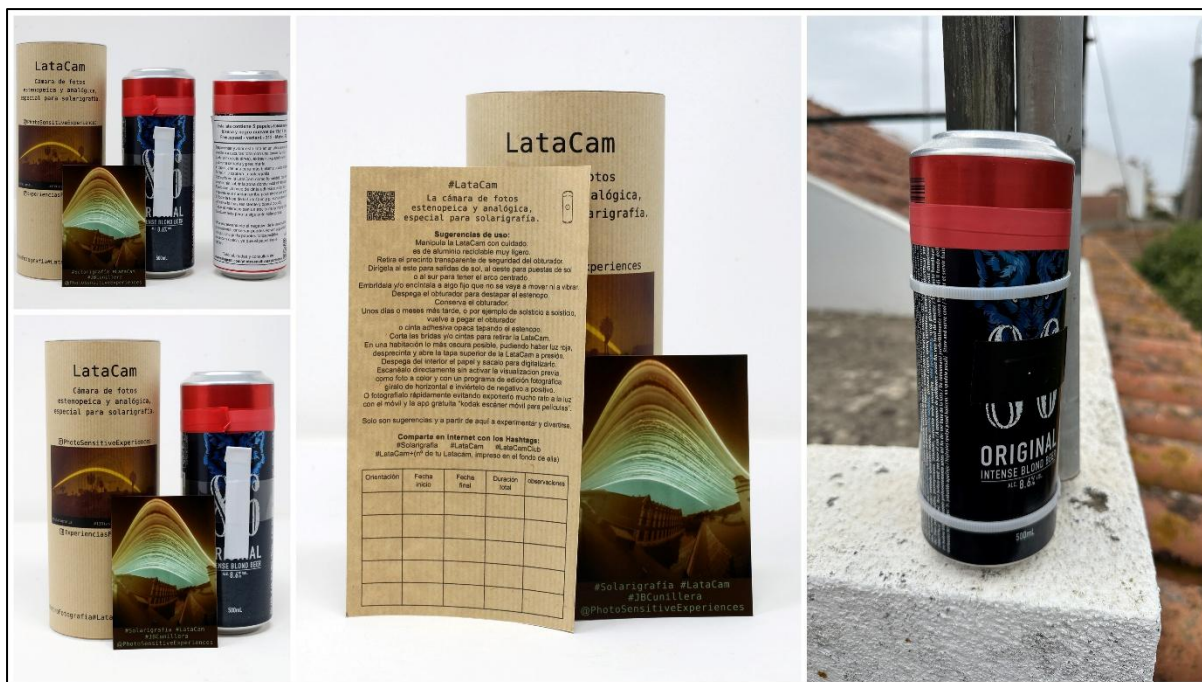


Figure 2 – LataCam.

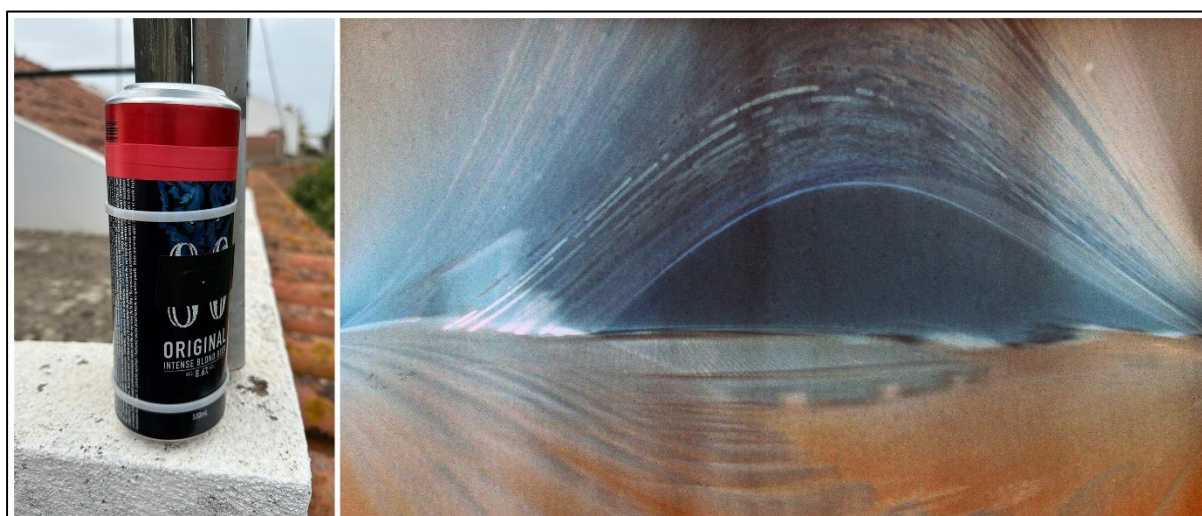


Figure 3- LataCam image 367 days (20231115/20241116). Pedro RÉ.

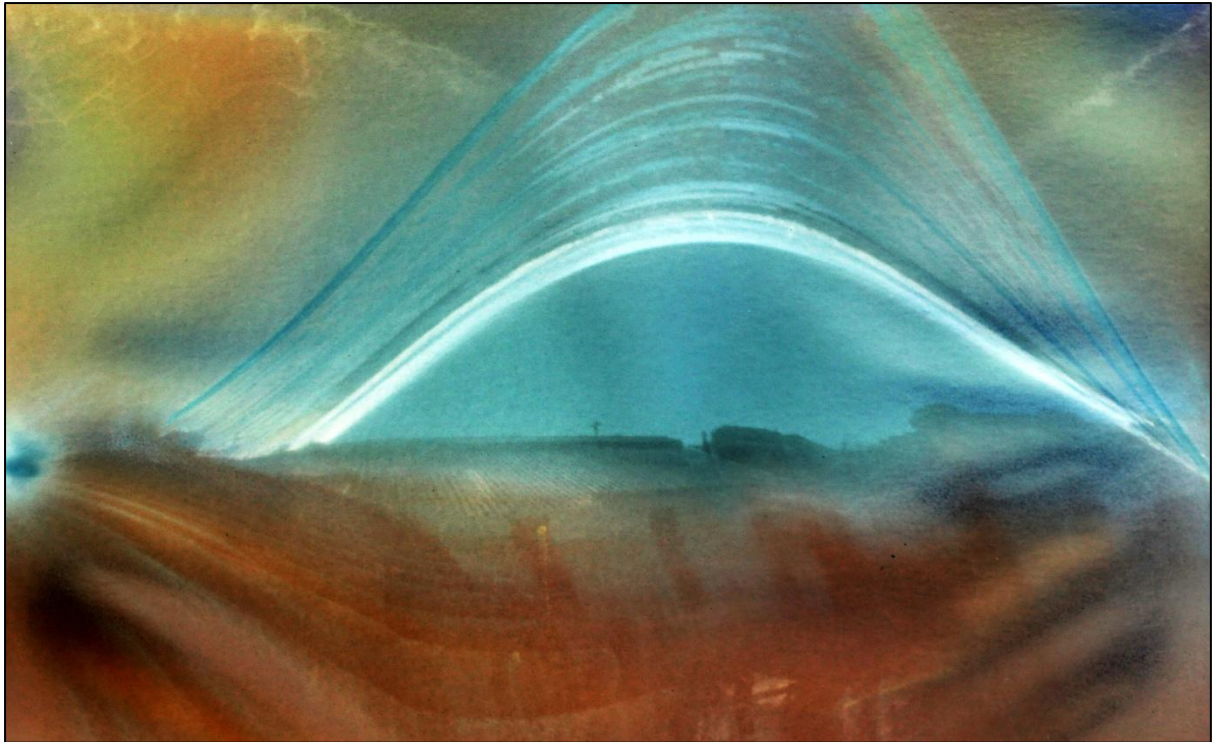


Figure 4 – LataCam image 221 days (20241116/20250625). Pedro RÉ.

Step-by-Step: How to Process Solarigraphy Images

1. Retrieve the Paper Negative

- Carefully open your pinhole camera (*e.g.*, LataCam) in **dim red light** to avoid further exposure (Figure 5 and 6).
- Remove the **black-and-white photographic paper**—it will already contain the image due to direct sunlight darkening the emulsion.

2. Scan the Image

- Use a **flatbed scanner** at high resolution (600–1200 dpi) or photograph the paper using a digital camera.
- Scan in **colour mode**, even though the paper is black and white—this helps capture subtle tonal variations.
- Avoid auto-enhancements during scanning.

3. Open in Editing Software

- Use **Photoshop**, **GIMP**, **Affinity Photo** or other digital imaging software.

4. Adjust Image Settings

- **Invert the image** if needed (some solarisographs appear as negatives).
- Use **Curves** or **Levels** to enhance contrast and bring out solar arcs.
- Apply **colour balance** and/or **false colour** to highlight the surreal hues often present in solarigraphy.



Figure 5- Unprocessed LataCam image (367 days).

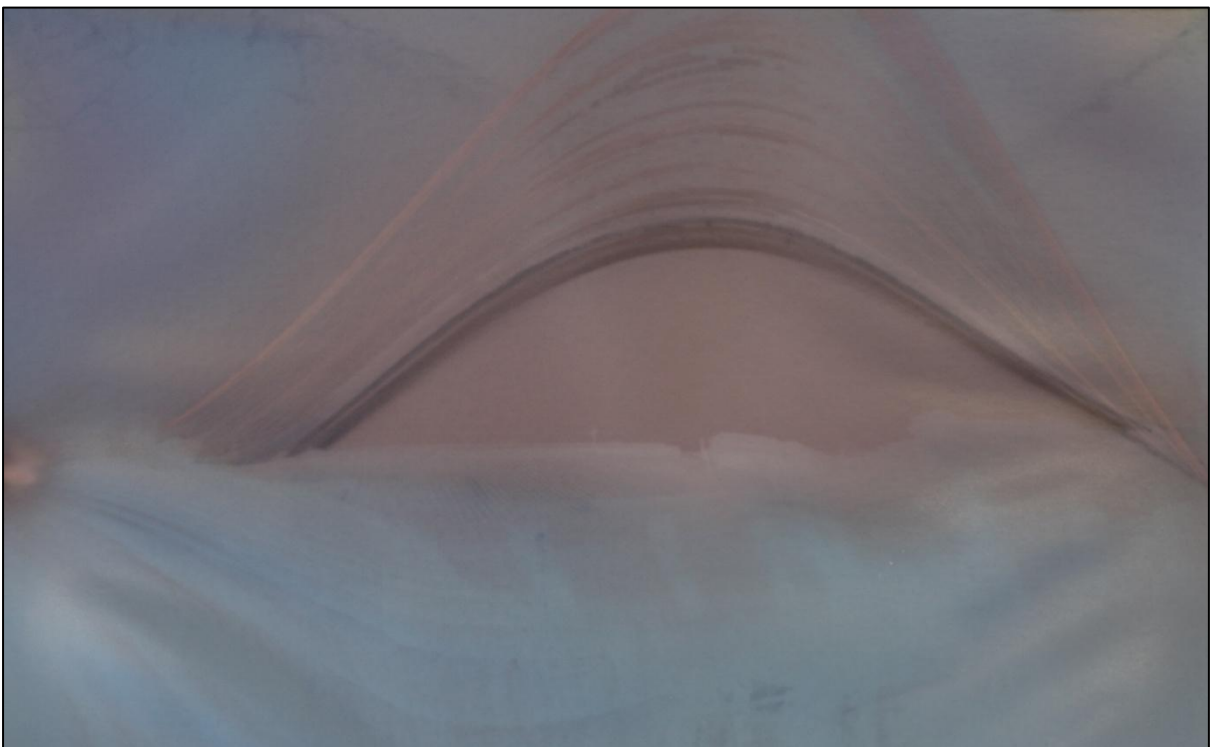


Figure 6- Unprocessed LataCam image (221 days).

Sources:

- [SOLARIGRAFIA SOLARIGRAPHY English.pdf](#)
- [Gallery: Solargraphs show half a year of Sun | New Scientist](#)
- https://www.iac.es/system/files/documents/2019-02/paralajes_luces_interactive.pdf
- [La solarigrafía, qué es y cómo se hace. Una técnica al alcance de todos](#)

Youtube Videos (Pedro RÉ):

<https://youtu.be/7Ct16pWUUqQ>

Solarigraphy | LataCam | Pedro RE'

<https://pedroastrophotography.com/>

<https://youtu.be/CcpoWcUHMM0>

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