



YOUR HANDY PUCK INSTRUCTION BOOKLET

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FOREWORD

Welcome to your handy Solarcan PUCK manual. Enclosed you will find everything you need to know on how to set up, use and capture the Sun's path with the world's simplest camera! But first, let's spend a bit of time being reflective.

I believe the idea of what a camera is has become warped in recent years. The advent of digital cameras brought instantaneous results, while the proliferation of the smartphone and social media put a camera in everybody's pocket and made them a photographer. It's certainly no criticism - I've seen with my students that imagery is better understood as a result. Conversely however, the way a camera works is becoming more of a mystery as the components and housing become increasingly complex. Ask the average user how a camera actually works and there'll probably be some confusion between hitting a button on a touchscreen and the image appearing. When teaching photography classes the best approach to understanding a camera is to simplify it to its core components and go from there. A lens, a mirror and a light sensitive surface is a camera - but as you will learn with the Puck, it can be simplified even more.

Designed to be more than just functional, the sleek, black look has a purpose - to blend in with its surroundings. Over the last 5 years we have become acutely aware that our cameras installed in public spaces need to be done so inconspicuously and to avoid the attention of any overly curious passers-by. Simply put, the Puck looks like part of the furniture when attached to the back of a street sign, or on a post and can remain in situ without interference.

What's more, there's no limit to how many images you can capture, once you've finished a day long exposure you can top it up immediately and start again. This infinite re-usability combined with modest appearance, makes it the perfect tool for understanding how a camera works and experimenting further.

**Good luck, we can't wait to see
what you capture!**

PREPARING YOUR PUCK!



1. Prepare a dimly lit room, away from any direct sunlight to work with your Puck. Normal household lighting in the evenings is ideal.



2. Remove a single circular disc from your refill pack. Check both sides and determine which is shiny - this is the photosensitive surface. Try not to touch it with greasy fingers!



3. Open your PUCK! and insert the disc shiny (emulsion) side up in the base that contains the white padding.



4. Close the PUCK! The internal diameter of the lid is smaller than the photographic disc and will hold it in place when closed.



5. Any sunlight that now passes through the pinhole will begin exposing the photographic emulsion inside. We don't want this to happen until you're ready and your Puck is in your desired place. For the time being you can pop it in the '**ready to expose**' black pouch that can be found in the accessories pack.



6. That's it! Now it's time to find somewhere to install your Puck.

**WATCH THE
'HOW TO
PUCK' VIDEO**



SETTING UP YOUR PUCK!

1. LOCATION Find a suitable location, such as a windowsill, drainpipe, fence post or tree that gets plenty of sunlight for at least part of the day.



2. PERMISSION Your Puck is designed to be inconspicuous, fitting in with typical street furniture. Even so, request permission from the authorities or land owner before installing. It's polite to do so, after all.



3. DIRECTION Consider which direction your Puck will face and how much of the Sun's path it will capture. We like to use an astronomy app called Stellarium if unsure where the Sun will be in the day.



4. OUTDOORS We've provided ample accessories with every Puck for you to choose on how it will be installed. A 'science experiment' band is provided to wrap around the Puck to improve water resistance, especially useful for longer exposures during inclement weather. If you have your own resourceful ideas, don't hesitate to try them out and let us know!



5. INDOORS A 'Tremlett' stand is supplied for windowsill installs. Simply pop the Puck in nice and tight and leave for the desired amount of time facing out your window. You know what this means? You can wear the science experiment band as a wristband and show off your fashion prowess.



6. TIME Decide the length of time you'll be leaving your Puck. We like to say anywhere between 1 day and 100 years, but make sure you give it at least 1 sunny day.

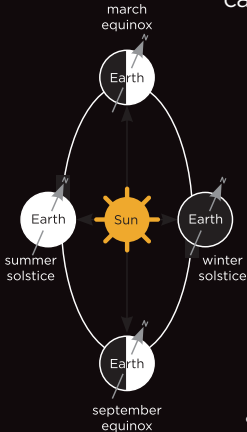


7. RECORD Use your phone to take a photograph of your Puck in situ - this will record the time and location, should you want to recall it later. If you plan to share your installation picture online, use the hashtag **#solarcan**.



SCIENCE BEHIND YOUR PUCK!

A PUCK! is an experience as well as a camera. Learning the science behind how it works and understanding its simplicity can be a real eyeopener.



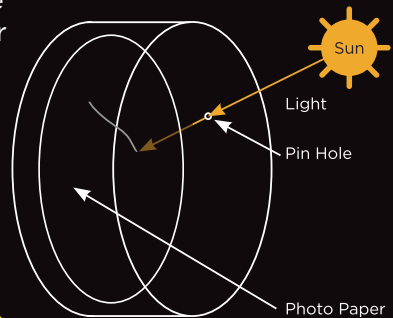
Why does the sun's path look like that?

As we observe the Sun in the daytime sky we can see that it rises in the east and sets in the west with it being highest around midday. This isn't because the Sun is moving, it's because the Earth is spinning. Once every 24 hours. The reason it rises and sets and doesn't just travel in a straight line through the sky is because Earth is tilted on its axis. 23.5 degrees to be exact.

This tilt also happens to be what causes the seasons we have throughout our Earth year. As we travel in Space around the Sun, different parts of Earth are exposed to the Sun's rays more than others, giving us our Summer and Winter. During the hottest season, Summer, the Sun is more direct and higher in the sky. Its highest point is during the Summer solstice on the 21st June and the lowest point is the Winter solstice on the 21st December.

HOW DOES A PUCK! CAPTURE THE SUN'S LIGHT?

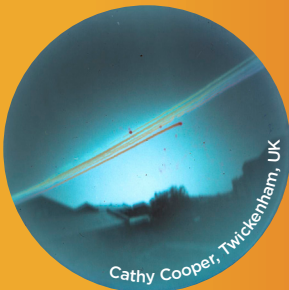
Inside the PUCK is a single sheet of light sensitive photographic paper. Once exposed to light a chemical reaction happens to the emulsion and it begins to change colour. Traditionally photographic paper captures a latent image that is not visible to the naked eye and requires chemical processing, however with a Puck the light from the Sun is so powerful as it passes across the paper it darkens visibly and no chemicals will be required to 'develop' the image.



To capture the image a simple pinhole is made in the Puck. This is the camera lens. Yes, it may just be just a very tiny (0.5mm) hole, but it enables a readable image to form internally. As light can only pass directly through the pinhole in one direction and not scatter out, the Sun's path and surrounding objects appear sharper.

COMMUNITY IMAGES

Would you like to see your Puck image in next edition's centrefold? Submit your best shot via our website.







COLLECTING YOUR PUCK!

1. Harvesting It's best to retrieve your Puck after the Sun has set, to avoid any unwanted solar streaks. If it's only possible to collect during daylight, cover the pinhole whilst doing so to avoid any stray light passing through.

2. Don't snip if you've used our releasable cable ties, try to avoid snipping them, and you'll be able to reuse them later. Nobody likes single use plastic! Clear up any rubbish and leave the location as you found it.

3. Find a room to work in with subdued light. You will be removing the paper from your Puck and handling it whilst it is still sensitive to light. Direct exposure from the Sun will quickly ruin any image. Complete darkness isn't necessary; a small shaded 60 watt lamp will be fine.

4. Prepare a scanner for use. Set to colour and perform a pre-scan on a piece of paper. This avoids light hitting the sensitive paper twice. We recommend scanning at 600dpi. If you don't have access to a scanner, try your phone camera.



5.

Remove the lid of

the Puck and tip out the exposure inside. Position it face down on your scanner in place of your guide paper and begin a high res scan. As scanners use light, continuous scans will affect the image over time.



6a. Using any basic photo editing software, import the scan then invert and rotate the image for your final result. Further improvements can be made using the 'curves' tool.

6b. Once scanning is finished, retrieve your extra exposures pack. While still in subdued light, open it and place the exposed image inside.



7. Retrieve a new piece of light sensitive paper to

reload your Puck. Place the paper into the base, ensuring the shinier side faces up (towards the pinhole) and replace the lid.

8. You are now ready to start the whole process again and capture another image of the Sun's path. Pop the Puck back in the 'ready to expose bag' and decide where your next capture will be!

DEVELOPING YOUR SOLARCAN

1. Recommended Software

- Photoshop • Lightroom • Gimp. Many other phone editing apps are available, we recommend 'Snapseed'.

2. Invert, flip & rotate

The first and most important part of the digital development process is inverting the colours of your Puck image. This will turn the darks, light and the whites black. This image is an example of a straight inversion. This is also a good time to flip the image horizontally to match the scene captured.

3a. Edit - Colour Balance

Adjust the white balance and tint of your solargraph in small increments until you feel the colours are evenly distributed.



3b.

Edit - curves

Onward to curves, highlights & lowlights. Here you can add a bit of punch to your image by adjusting your straight line curve to an 's' shape and increasing contrast. It can be useful to use the highlight and lowlight sliders to even out the brightness across your image.



3c. Edit - AI

Clarity, Dehaze & Texture. Perhaps some of the most controversial of photo editing tools. However for solargraphy they can really finish off the pictures with a bit of intelligent sharpening.

4. VOILÀ!

Submit your image through our website
<https://solarcan.co.uk/submissions>.

**Share your image online and tag us
@thesolarcan or #solarcan.**

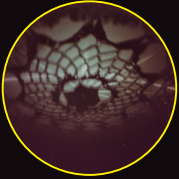
TIPS AND TRICKS

Difficulty: *easy **moderate ***expert



1. Reflections*

Anything that's shiny enough to reflect bright sunlight in the frame could possibly mirror the Sun's path. This could be a window, a car or even a body of water.



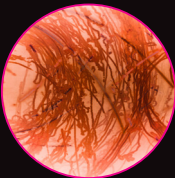
2. Interesting window**

Consider placing your Puck indoors, using The Tremlett, looking through a window with a direct view of the Sun's path. Patterns on the window could lead to an interesting result.



3. Non Fixed**

Who says your Puck even has to be fixed? By hanging a Solarcan from a swing these ethereal lines were created from the Sun's path.



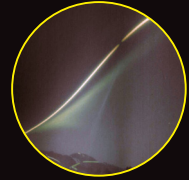
4. In a car **

By either fixing the Puck to the inside of a car window or using The Tremlett to stand it on the dash or boot shelf you can get an incredibly abstract result.

5.

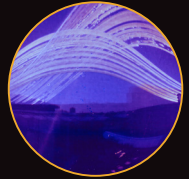
Solar eclipse ***

If you can arrange for the Moon to pass in front of the Sun for just a few minutes, a single day exposure can capture this event. Photographer Don Hladiuk did just that with a Solarcan.



6. Double exposure ***

After you've finished exposing for one period of time. Move to a different location and expose again on the same shot.



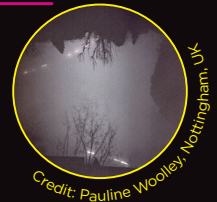
7. Object/Scene**

Got a windowsill facing the Sun? Why not use The Tremlett and set an object in front, like this toy dinosaur. You get some great plays on scale from it being so close.



8. Rotate*

Instead of taking your Puck down why not rotate it and leave it to carry on capturing more Sun.



Credit: Pauline Woolley, Nottingham, UK

• Solarcan Solarcan is manufactured in Hawick in the Scottish Borders. • The PUCK! is more than just a camera, it's an experience. There's an online community out there ready to help, advise and learn. Just like you. Join in and be part of the conversation. • #Solarcan



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