



YOUR HANDY SOLARCAN INSTRUCTION BOOKLET.

Issue One | Summer 2018



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Sam Cornwell



SOLARCAN'S STORY, THE BEGINNING



Almost a year marks the day since Solarcan became a fully funded photographic Kickstarter project. Its success on the crowd funding website is where most will have first heard of it, with over 800 individual pledges and nearly 2000 units sold. But did you know it began life the year before as an ad-hoc gift between friends and family?

It was winter 2016, Christmas was approaching, I had very little cash and was thinking about buying presents. I spotted some buzz on social media about a beer can pinhole camera being made in time for the winter solstice - the moment during the seasons when the Sun is at its lowest point in the sky. I rattled through our home recycling bin to pick out some cans, found some undeveloped photographic paper I had stored in an old caravan-turned-darkroom and got to work making some of my own pinhole solargraphy cameras. They were a hit! Despite being a simple process (gosh, you should've seen them), gifting them as ready made cameras was a real treat for friends who wouldn't typically have the

darkroom knowledge or photographic materials to make one themselves. I knew then that I had to develop a more professional version so more people could experience the thrill of using such a simple camera.

The task of doing so certainly took its toll. What I initially thought would amount to a week's research and perhaps some pocket change turned into a full blown project taking several months and requiring funding from what additional work I could find. But in doing so I was able to combine my own interests of astronomy, photography, science and art and create what we now know as The Solarcan. Fast forward to today and two solstices later and we find ourselves with a burgeoning online community and for the first time a fully retail version of Solarcan ready to introduce even more people to the wonderful world of extreme time exposure photography.

You are now part of this community, I will be forever grateful for the support you've given Solarcan.

follow @thesolarcan |   

3





SETTING UP YOUR SOLARCAN

1



Find a suitable location facing the Sun with a good view of the sky and horizon. The higher the better, but don't do anything too risky.

2



Seek permission for the location you intend to install your Solarcan. A silver tube mounted in a public location can spook the authorities.

3



Consider when to install your Solarcan. Ideal times are the summer or winter solstice as the Sun will be at its highest or lowest point.

4



Using the supplied cable ties, mount the Solarcan vertically to something sturdy. Drainpipes, railings or fence posts are handy for this. Be careful not to tighten the cable ties too much - you don't want to squash it.



5



Make sure your Solarcan is fixed in place. It's likely to experience many different types of weather and curious animals (including humans).

6



When you're ready, carefully remove the black label covering the pinhole and let the magic begin

7



Place the black label on the end of your Solarcan for safe keeping and mark a date in your calendar for retrieval.

8



Take a photograph on your phone of where you left it. If you plan to share the photograph online use the hashtag #Solarcan. Gaffer tape is your friend!

NB. Check on your camera every once in a while.

follow @thesolarcan |   

5





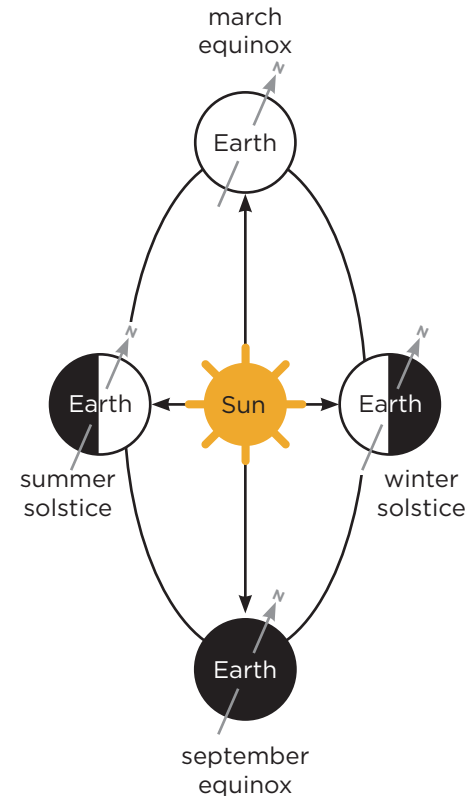
SCIENCE BEHIND YOUR SOLARCAN

A Solarcan is as much an experience as it is 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. The lowest point is the winter solstice on the 21st December.

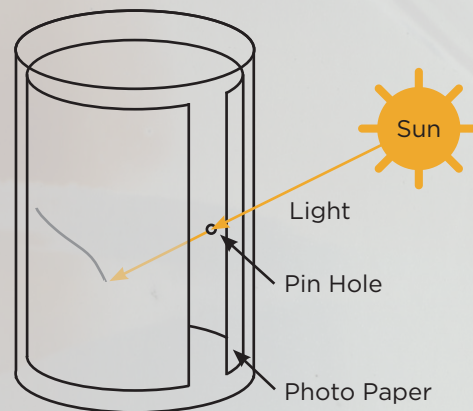




How does a Solarcan capture the Sun's light?

Inside the Solarcan 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 Solarcan the light from the Sun is so powerful that as it passes across the paper it darkens visibly and no chemicals will be required to 'develop' the image.

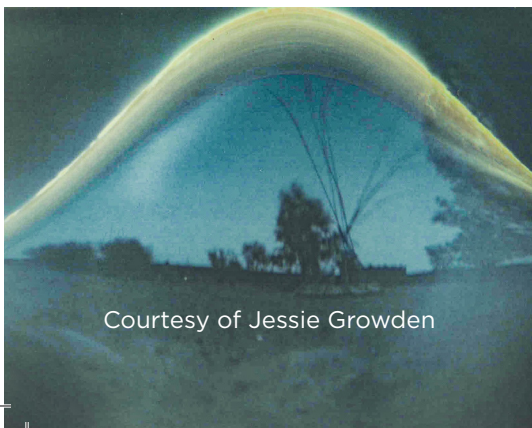
To capture the image a simple pinhole is made on the side of the Solarcan. This is the camera lens. Yes, it may be just a very tiny (0.5mm) hole, but it enables a readable image to form internally. As light can only pass directly through the pinhole in one direction and not scatter out, the sun's path appears as sharp.



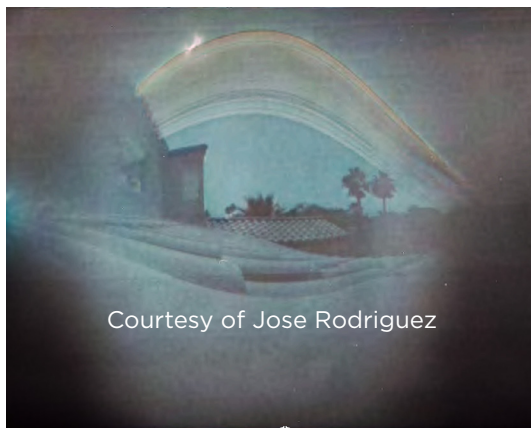


PICTURES FROM THE COMMUNITY

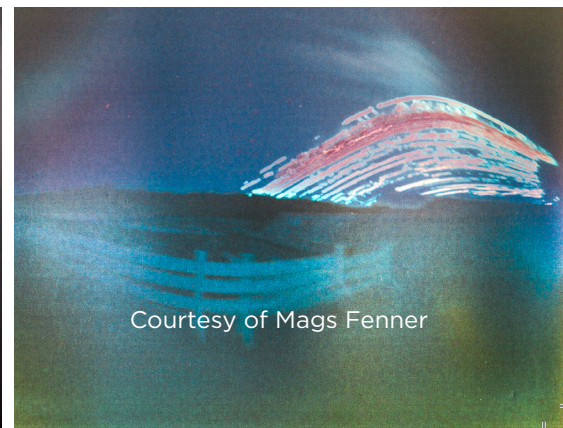
Courtesy of Billae Rae



Courtesy of Jessie Growden

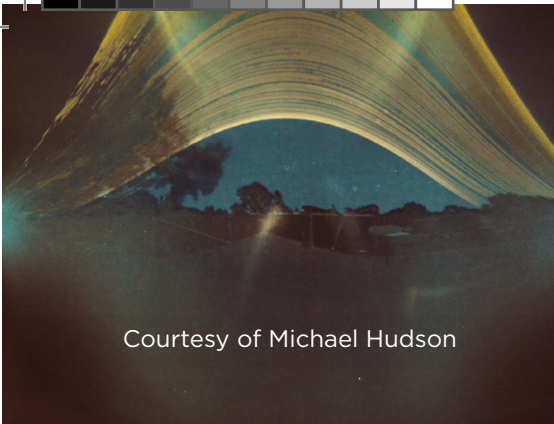


Courtesy of Jose Rodriguez



Courtesy of Mags Fenner

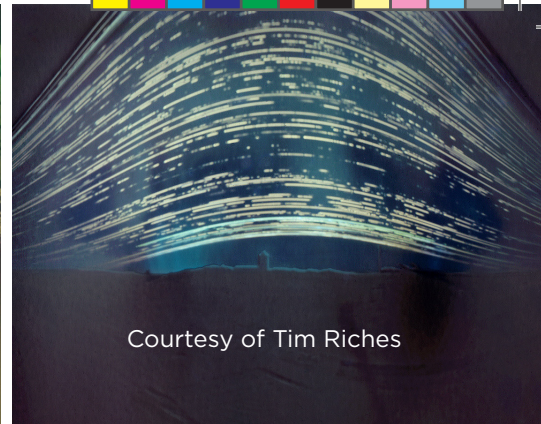




Courtesy of Michael Hudson



Courtesy of Stu Weston



Courtesy of Tim Riches



Courtesy of Robert Shaw





COLLECTING YOUR SOLARCAN

1



Prior to removal cover the pinhole using the black tab you saved to end the exposure and stop any unwanted light passing through.

2



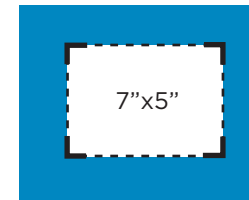
Snip the cable ties and carefully retrieve your Solarcan, placing it back into its original postal tube. Clear up any rubbish and leave the location as you found it.

3



Find a room to work in with subdued light. You will be removing the paper from your Solarcan 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 prescan on a 7"x5" piece of paper. This avoids light hitting the sensitive paper twice.





5



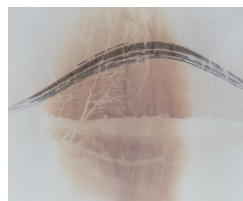
Using a standard food tin opener remove your Solarcan's lid (end with the ring pull) carefully. If you're under 16 ask an adult to supervise.

6



Retrieve the exposed paper from inside the Solarcan and quickly place it facedown onto the scanner in place of your guide paper and begin a high res scan.

7



Once scanning is finished immediately return the paper to the Solarcan and cover. As scanners use light, you'll only be able to do this process a few times before the image is unuseable.

8



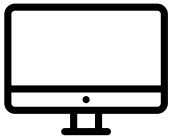
Using any basic photo editing software import the scan and invert the image for your final result. Further improvements can be made using the 'curves' tool.





DEVELOPING YOUR SOLARCAN

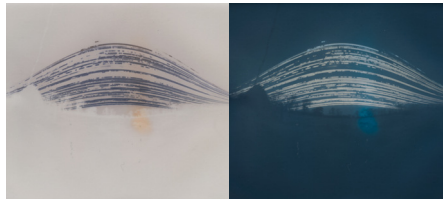
1



Recommended software:

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

2

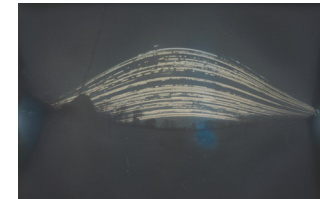


Invert colours:

- The first and most important part of the digital development process is inverting the colours of your Solarcan image. This will turn the darks, light and the whites black. Above is an example of a straight inversion.

3

A



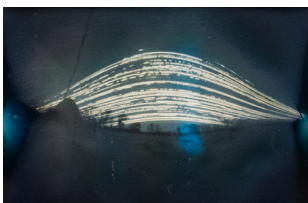
The edit: Balance

Adjust the white balance and tint of your inverted Solargraph in small increments until you feel the colours are evenly distributed. Not too blue, not too yellow, just right.





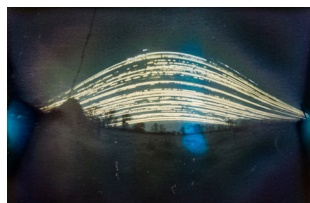
3 B



The edit: Curves

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

3 C



The edit: Clarity

Clarity & Dehaze tool. Perhaps the most controversial of photo editing tools, however for Solargraphy they can really finish off the picture with a bit of intelligent sharpening.

3 D



The edit: Cropping

Crop for ultimate sweetness.

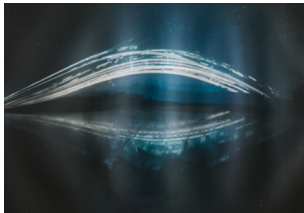




TIPS AND TRICKS

Difficulty rating. * 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



*****More Pinholes:**

By adding additional pinholes to your Solarcan you could end up with repeater sun trails.

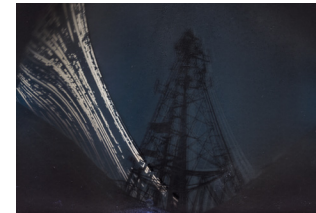
3



****Water Ingress:**

Just the right amount of water over the right amount of time will cause dramatic imperfections to your Solarcan image. However you must be careful as too much can destroy it all together.

4

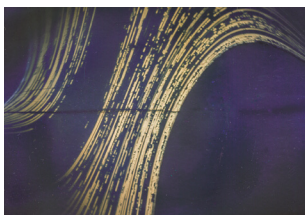


***Foreground Subject:**

Considering where to place your Solarcan so the sun's path is partially blocked out by a building or a tree could lead to an interesting result.



5



****Mounting angle:**

You don't have to position your Solarcan vertically, that's just to achieve a standard landscape image. If you change the orientation all sorts of strange patterns can occur.

The Solarcan that created this image was facing due South for 6 months horizontally.

6



****Non-fixed:**

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

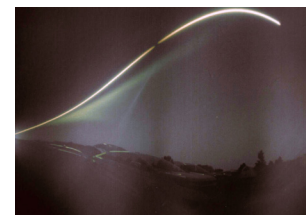
7



*****Out at sea:**

A difficult but possibly audacious stunt is to fix your Solarcan to a boat out at sea. As long as it doesn't get too wet, the result can be incredibly dramatic.

8



*****Solar Eclipse:**

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



Solarcan 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

Solarcan is manufactured in Hawick in the Scottish Borders.

info@solarcan.co.uk

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