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# CAMERACRAFT



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**PAUL HILL**, one of the most respected photographic educators, took to campaigning at the end of 2014 to prevent the UK's 'second city' reducing its library hours to 40 hours per week and staffing by just over 50 percent by April 2015.

This was not just a matter of a library. It's an iconic new building, one of the favourite subjects for photographers, and also houses a photographic collection which could equally well belong in any national museum, archive or art gallery in the world – though very English in character.

"When I, and other depositors, who include such renowned British photographic figures as Daniel Meadows, Martin Parr, John Blakemore, Brian Griffin, Vanley Burke, John Myers, Anna Fox, Nick Hedges, and Val Williams, agreed to the library acquiring our archives or collections we were assured that they would be accessible to the public as well as specialist researchers", Paul says.

"As the proposal currently stands there will be no Photography Collections Team. Indeed there may not be anyone left with any specialist knowledge of these nationally and internationally significant collections in the near future."

As we went to press, the public consultation process was closing and Paul's petition had reached almost 3,000 supporters with just over 2,000 required to be presented to the council.

The Museums, Libraries and Archives Council (MLA) who have awarded six of the library's collections 'designated' status but the new proposals mean, for example, they would stop acquiring new work, new books, new media and no exhibitions would be held unless there was a commercial sponsor to pay for them.

Photography will need more expert conservation in future, not less. Let's hope they moderate the cuts.

– *David Kilpatrick*



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# Recapturing the moment – Cartier-Bresson's great book returns to print

First published under the French title of 'Images à la sauvette', or pictures on the run, *The Decisive Moment* was the American market title given to Henri Cartier-Bresson's retrospective in 1952

A time machine might take me back to sitting in the science lab of a great British public school, gazing upon the slightly wild features of Sir John Herschel gazing back in return from a large Julia Margaret Cameron original print. I've always wondered where that print ended up.

What, in the same fashion, can have become of rare copies of *The Decisive Moment*, which was a volume to search for in municipal libraries of the 1960s following its rise to fame with Henri himself the decade before?

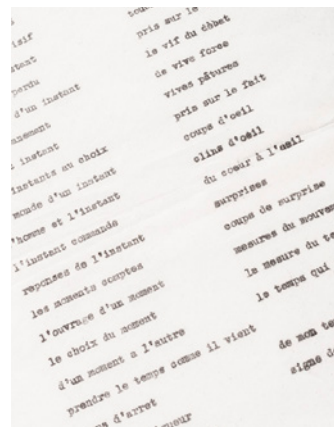
Today a copy would set you back £400 and examples of this and other H C-B books often say 'ex-library' in Amazon sale listings. Look for the distinctive cover by Matisse.

More easily found is the 1964 monograph simply entitled *Henri Cartier-Bresson* published in the UK by Jonathan Cape, with essays by Lincoln Kirstein and Beaumont Newhall, and 47 individual images presented one per page, selected by the photographer himself. This was most certainly to be found in libraries, and was my favourite repeated borrowing. It's the pictures from this later book, which are best known.

Now, thanks to the German publishing house Steidl, you can obtain a new edition of *The Decisive Moment*, a facsimile of the 1952 book. Steidl's speciality is the sourcing of papers and printing methods to reproduce such books, and £78 (€98) seems a fair price given its impressive size. A new essay by the Centre Pompidou curator Clément Chéroux is included with the book as a separate item.

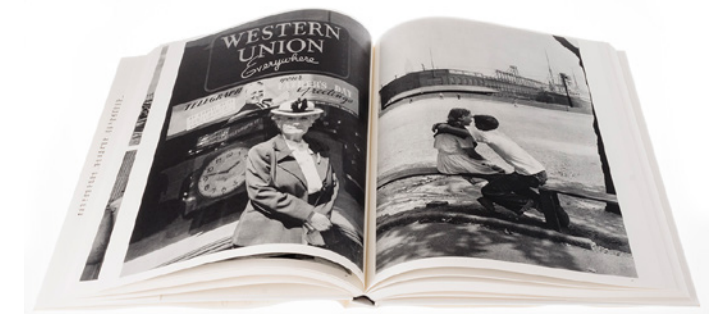
Because of the tight control maintained by Magnum over the reproduction of Cartier-Bresson's work, we can not do the usual and show any – only a photograph of the book itself and a sample of the contents.

Anything more becomes very expensive indeed. With the publication of this book at the end of 2014, there has been some re-examination of the way that the English language title affected photography generally. It was one of many options Cartier-Bresson mulled over in French, which translated well into English. A page in the essay reproduced his original typed-out list of possible descriptions for his work.



As Magnum-released contact prints have shown over the years, there was not one decisive moment and Henri frequently took many pictures, and clearly directed his subjects. He was discreet but it's a myth that he was invisible or not noticed by the people he portrays. Sometimes, that is certainly so, but other pictures have direct eye contact.

However, when I was taking up the camera seriously as a teenager in the mid-60s this idea of the Decisive Moment was pervasive. Even if you



*The Decisive Moment* – originally called *Images à la Sauvette* – was published in 1952 by Simon and Schuster, New York, in collaboration with Editions Verve, Paris. This new publication is a meticulous facsimile of 160 pages, 27.4 x 37cm, clothbound hardback in slipcase, with an additional 48 booklet. ISBN 978-3-86930-788-6.

didn't adhere to the other myth (that he only used a 50mm lens) there was a high value attached to images which showed unusually lucky or prescient timing.

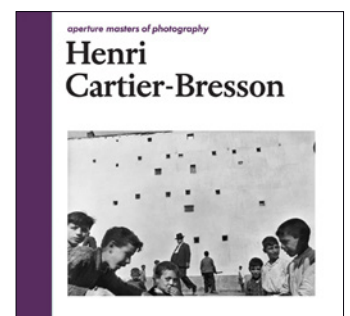
Much in the same way that a landscape photographer will wait for the dawn, disciples of the master would hang around a street corner or sit on a special conjunction of buildings and light in mind, waiting for the right human figures to place themselves in the scene. The weakness of this was that more often than not the figures were irrelevant and the scene had no significance, unlike the originals where Cartier-Bresson was on an active assignment illustrating editorial points. And that's also why did sometimes give his subjects gentle 'direction' and it was not all entirely down to superhuman luck.

The Magnum preference for printing the entire 35mm frame led to others including a black border created by the negative carrier of the Leitz

enlargers used to prove their original image had not been cropped. This was not a myth and continued to dominate photojournalism into the 1970s and beyond, almost to the end of the film era. Cartier-Bresson did not use black borders and all his images are shown very simply on white.

This seems to the year for Monsieur Henri, as on April 6th Aperture is to release a reprint of the *Aperture Masters of Photography* monograph below (first produced in 1976) for a very affordable £12.95 – ISBN-13: 978-1597112871, and already showing up for pre-order on Amazon.

– DK



# CAMERACRAFT

## UPDATE

The first quarter of the year always sees many new products and updates, but we can't hold off sending the magazine to print to learn what they are. Fortunately, one of the major names chose to release information at the mainly electronic trade show in the first week of the year. Nikon introduced a new D5500, building on the 24 megapixel DX format by removing the low pass filter from the sensor and making a few other improvements.

Along with the new camera Nikon introduced a new version of the 55-200mm *f*4-5.6 travel tele zoom, a lightweight LED video light equipped SB500 flash, and a new 300mm *f*4 VR telephoto which despite its more professional price level should be impressive on this super-sharp high resolution body.

As with so many current models, great emphasis is placed on WiFi and NFC (Near Field Communication) to transfer pictures to smartphones, tablets and directly to web hosting. This continues to baffle me, as the cameras in mobile phones have improved beyond recognition and for most owners offer a more friendly perspective and depth of field than a DSLR.

What this has done is create a 'selfie' look, which we should record for posterity. Millions of selfies, taken at arm's length with phone cameras, will in due course be lost for ever as the successive compressed strata of web palaeogeology weigh down on them. Dinosaurs got buried below thousands of feet of sedimentary rock. Today's digital photos will be buried beneath millions of megabytes of sedimentary data.

That will leave only *Cameracraft*, surviving as a rare artefact of the era of the printed page and found in lost libraries and mummified museums, to tell the future what a selfie is. So, for all of you reading this in 2115, here's the definition: it is a self-portrait taken in an unguarded moment of exuberant



New from Nikon: D5500, SB-500 flash, new 55-200mm DX VR zoom, and 300mm *f*4 VR telephoto



enjoyment of the real world by someone who mostly lives in the virtual universe.

If your arms are not long enough, you can buy a *selfie stick*, to hold your phone camera at a suitable distance and enable selfies of two or even three people in one shot.

Pictures of people dressed as Santa's Christmas helpers are known as *ellies*. Pictures of ostentatious display of material gains are called *weallies*. Pictures of people who have lost several kilos and just run a charity marathon are called *heallies*. Because the

inhabitants of Britain's capital city no longer differentiate the sounds of *th* and *f*, this works. In a world of received pronunciation ruled by the grammar police, it would have been outlawed.

On a serious note, the look of selfies is created mostly by using a wide angle lens close in, from above eye level, looking up into the camera. This produces a flattering look for female faces, similar to the technique for shooting 'boudoir' images where the subject lies down head towards the camera. Not many people shoot upwards from waist or chest level, looking down at the camera, though this might create a better look for male faces. As a result we've become used to seeing this very close perspective and it has changed tastes in portraiture generally, making wider angle shots more acceptable.

### Wide choices

Sony's A7 series of full frame mirrorless cameras has a natural concentration on the wide angle end. So far, the company has not introduced any lens going beyond a very modest 200mm for the 24 x 36mm format, and the longest in the pipeline apart from adapted A-mount SLR lenses is a 24-240mm zoom. But at the wide angle end there is an impressive 10-18mm for APS-C which happens to cover full frame at around 15mm, and a new 16-35mm *f*4 Carl Zeiss joining the 24-70mm *f*4. A 28mm *f*2 will reach retailers shortly at £499 with 21mm wide and 16mm fisheye front converters at £299 each. In APS-C, though the original 16mm *f*2.8 seems to be discontinued and the 20mm *f*2.8 is hard to find, there is a high end standard 16-70mm *f*4 Carl Zeiss available.

Samyang has produced the best wide angles for APS-C cameras – last year their 12mm *f*2, purely manual focus and with no EXIF data transferred to the camera, proved to have unrivalled optical performance. To this they have now added a 16mm

$f2$  and a 10mm  $f2.8$ , not to mention their existing fisheyes. All of these new designs seem technically superior to the full frame 14mm  $f2.8$  which is now an old design, and has strong complex distortion.

To avoid distortion and produce perfectly straight lines, a non-retrofocus ultrawide is needed. One maker dominates the full frame mirrorless market – Voigtländer. Their 12mm  $f5.6$  remains the widest angle lens made and has been popular with Leica and Sony despite issues with colour shading. The 15mm  $f4.5$  is more affordable and probably rather more versatile as 12mm really is an extreme view, but if anything it's had worse colour shading towards the corners, with a marginal improvement to contrast and ergonomics in version II.

Now there is a version III, completely redesigned, which is intended to reduce or cure the magenta vignetting (it probably will not fix the yellow patch which appears at the top of Sony A7R frames). This lens seems set to answer the requirements of both Leica and Sony full frame users for an affordable ultrawide.

In November, Sony launched the A7 Mark II, the first full frame mirrorless to have five-axis sensor based stabilisation, though otherwise similar to an updated and slightly improved original A7 at 24 megapixels. Through the menus, manual lenses like the 12mm or 15mm can be programmed in for in-body stabilisation. This systems works intelligently with OSS lenses, switching between lens and body based methods and even combining the two for super-steady shooting. The in-body SSS also recognises the focal length of suitably adapted M-AF and Canon EF lenses, a big plus point for many users.

## The bokeh thing

Despite the popularity of selfie-like wide angle shots, traditional portraiture still prefers a standard to short telephoto lens. The revival in standard lenses has been



## Mirrorless gets bigger - actual size

We thought we would reproduce the new Fujinon XF 16-55mm  $f2.8$  R LM WR lens precisely the 83.3mm diameter it has. You can use this photo to work out exactly how the fast wide to portrait zoom will fit your Fuji X outfit!

For the best results, you need an X-T1 or X-E2 body, as these have the advanced Lens Modulation Optimiser which improves the apparent sharpness of image at all apertures. It's weather resistant and uses super-fast linear motors for focusing. With its 655g weight and 77mm filter size, it is one of a new breed of lenses changing the 'small is beautiful' limitations of mirrorless cameras – and meeting the demands of Canon and Nikon or other SLR system owners moving to the Fuji system.



*The new 15mm  $f4.5$  version III Voigtländer Super Wider Heliar in Leica M mount offers the promise of reduced colour shift and smearing towards the ends of the frame on various full frame digital rangefinder/mirrorless bodies (also great on APS-C).*

surprising, with Zeiss's OTUS 55mm  $f1.4$  selling for thousands and even a fairly ordinary lens like the CZ 55mm  $f1.8$  for Sony priced at £999. Although this lens has gained acclaim in lens tests, I don't think it is anything special – the camera makers used to issue 50mm  $f1.8$  or similar lenses as 'standard' not because buyers really wanted this focal length, but because lenses like this gave fantastic test-chart readings. It was and is the easiest specification to make to perfection. Systems were judged on their standard lens. There's no doubt the 55mm is a top lens for geometry and resolution of fine

detail, but so it should be as Carl Zeiss 50 to 55mm lenses have been so for decades. I remember testing a 35mm  $f2.8$  on the original Contax RTS, one of the first T\* coated lens ranges for 35mm, and finding it far ahead of anything else of the time but just not wide enough for all the subjects I needed to photograph. I took it to a location – the Abbeydale Industrial Hamlet in Sheffield – which is still in operation 40 years later. A 35mm lens just couldn't get the buildings in with a good composition within the courtyard. Main thought: if only this was a 28mm, or a 25mm... and that was a thought shared by most SLR users.

Today the emphasis is slightly changed. Unusual out of focus image characteristics, bokeh, determine how sought-after a lens becomes. Chinese makers like Mitakon produce designs like a 50mm  $f0.95$  even though such a wide aperture is impractical for anything except small web viewed images or postcard size prints. Try making a 20 x 30" print from FF 36 megapixels taken at even a modest  $f2.8$  on a 50mm, and you discover that depth of field is related to viewing distance and print size. These exotic new super-fast lenses are perfect for Facebook's 960 pixel wide compressed images, viewing on smartphones, or on tablets.

The Petzval Portrait Lens, which we reviewed in a first production batch form at the beginning of last year, did not take over the world but has sold well. Instead, the similar 'swirly' bokeh of various other lenses became better known. The price of Russian Jupiter 58mm  $f2$  lenses has been considerably more robust than the value of the rouble. What people are paying for is a design shortcoming of mid-20th century optics which gave some images a certain look you can't imitate using a *Photoshop* filter, or add with a camera filter. The only way to get this look is to obtain a vintage lens, or a recent one produced using a vintage formula.

If you still have a Zenith in the attic, with that 58mm  $f2$ ,

dig it out and get an adaptor for your lens to go on your Olympus, Fuji, Sony mirrorless body or even on your DSLR as 42mm thread lenses can be used on most systems. You'll then have the optical look of a classic Zeiss Biotar for almost nothing.

## Focus and refocus

The question of bokeh introduces the big innovation of 2015, which we covered briefly as news. That's the Lytro Illum, the company's new Light Field camera.

The problem with the Illum lies in knowing where to start explaining how it works, or even whether to try.

Rays coming in through a lens all have a direction you can visualise. When an image is focused, rays from all over the lens diameter converge on a film or sensor plane as sharp points – circles of confusion, as there's such thing as a 'point' in real terms.

Any taking lens will focus the image it's aimed at. Even if you remove the film or sensor entirely, there is still a real image waiting to be focused. Not only that, there are sharp images of the entire depth in front of the lens being 'focused' on thin air at different depths behind the lens.

Film or regular imaging sensors don't have any way of recording the direction of the rays hitting them. It's all down to the number and intensity of the rays hitting a given film grain or pixel.

What Lytro has done is design a sensor with a double layer of microlenses. On top there are about 4 million microlenses, and below these with a small gap sit 40 million (it is a 40 megapixel sensor). With a very wide aperture –  $f2$  – zoom lens forming the image, individual pixels can record not only the brightness of the light ray hitting them, but its direction. This is done by ensuring that only some pixels see rays at certain angles. The angle changes with focus, both in front of and behind the actual plane of focus. By knowing which pixels need to be used to build a 4 megapixel



*It may look like a bridge camera, but the Lytro Illum is about half as big again in all dimensions. The non-extending 30-250mm  $f2$  equivalent zoom is a very impressive bit of glass considering that the sensor behind it is the same size as that in a Nokia 1020 smartphone.*

image for any given plane of focus, the Lytro Desktop software and corresponding camera firmware can reconstruct a range of focus. We know that this can not be truly continuous, but Lytro's powerful computing makes it appear so. There might be perhaps ten steps from foreground to background but you only ever see an apparent stepping effect if you use a computer below their recommended specification.

On the 16GB memory powerful Mac laptop provided with a test camera, each shot took from one to three minutes to extract from the memory card and turn into a clickable pre-processed icon. A screen full of the 53MB raw images certainly needed to be left for a long time – lunch break not coffee break – before returning to look at the shots.

When you do open the editor/viewer with images at full screen size (less the necessary controls shown to the left side, and thumbnails

below) the picture is fairly quick to manipulate. A simple slider lets you move the point of focus anywhere within what seems to be an  $f22$  equivalent depth of field, initially showing the result at  $f2$ . Since this is a really small sensor,  $f2$  is more like viewing at  $f8$  on full format.

This effect is compelling as you really can refocus your image. An auto animation – click the 'play' arrow – sends the focus travelling through the depth of the shot, before changing the depth of field to maximum and presenting a totally sharp image.

Because the digital image is assembled from light rays entering across the whole width of a lens with a large front element, there is a 3D effect, both sideways and in any other direction. Grabbing the image (mouse or trackpad control) lets you rotate your viewpoint by a tiny amount, but enough for foreground and background to move relative to each other. You can not see

'round' items to show anything which the lens could not see to start with, but some clever interpolation rather like *Photoshop* content aware fill repairs gaps.

It's still possible to get some strange effects, with ragged edges to objects, or floating fragments of the foreground mirrored in the sky, but with care and control you really can focus through your shot and make small changes to apparent viewpoint. You can also ask the program to display in anaglyph 3D, and put your red/green spectacles on!

There's future scope for 3D televisions, 3D prints, and with the software in its present state you can create carefully timed audiovisual shows with dissolves and transitions, zooms, rotation and focus or viewpoint effects. Lytro call this 'living' pictures and it is indeed more like the visual experience of life, where your head moves a little all the time and your eyes scan the scene.

You can't print out directly from the program right now, but a large screen grab can be printed (or you see nothing on these pages).

The Lytro Illum camera itself is very large, with a four-inch touch screen and a monster lens taking 72mm filters. It needs an ND filter for some situations such as flash lighting in the studio, and one is supplied. It's the exact reverse of pocketable, but weighs only 1100g. At £1299 (UK) it is only going to appeal to wealthy experimenters.

The finished images can be hosted, free, on Lytro's own web space with special viewing animation and controls, or turned into a video which goes on their YouTube space. All this is part of the service and you can download the software and sample images free from:

[www.lytro.com](http://www.lytro.com)

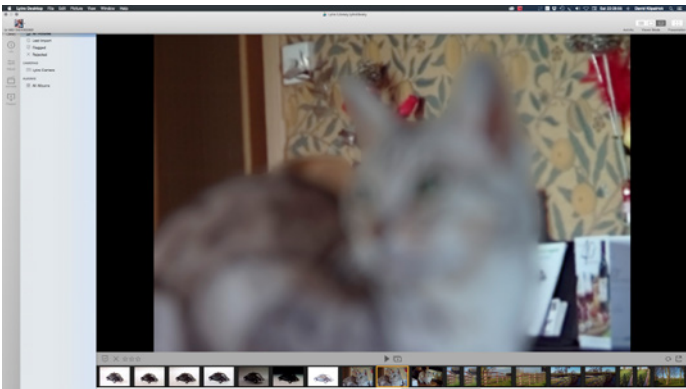
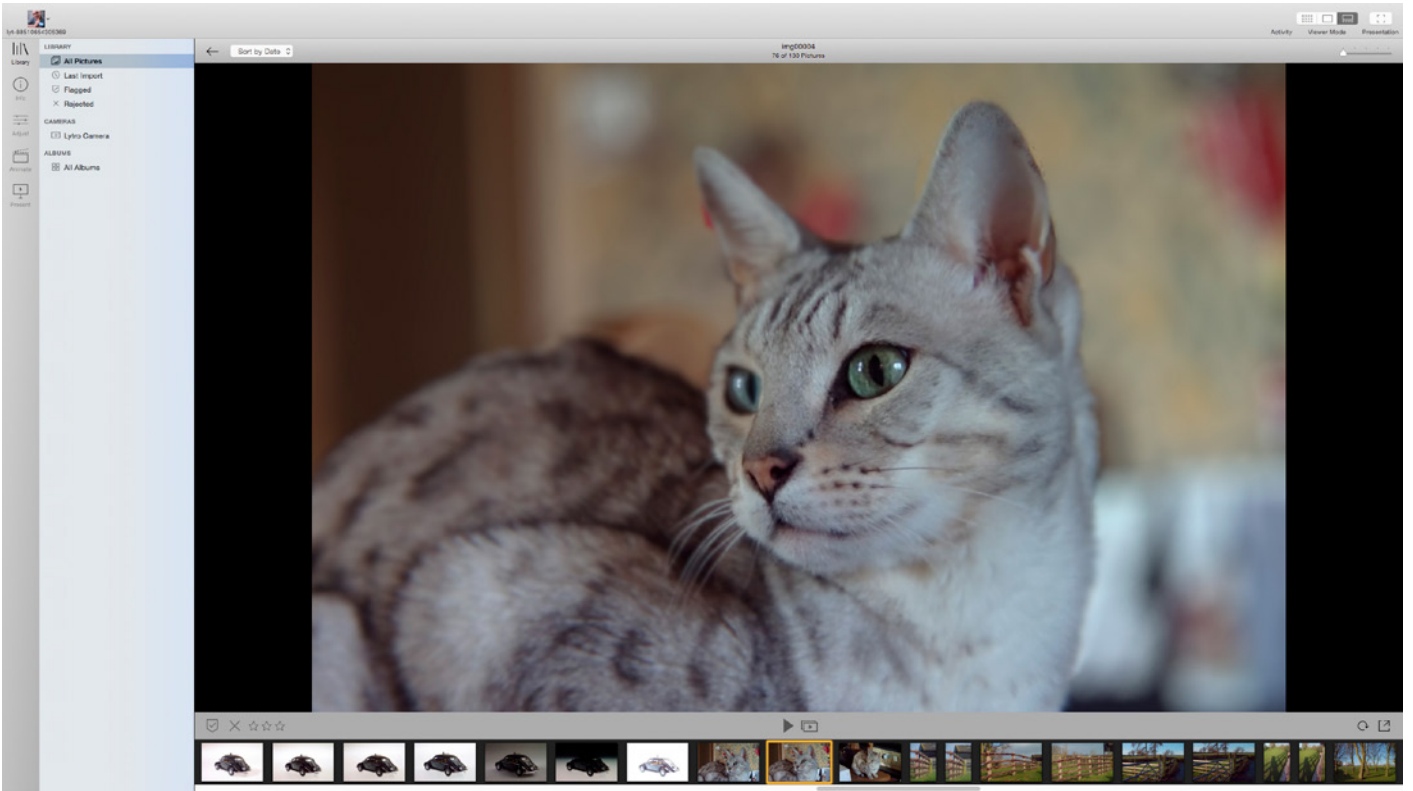
Is it really the future of photography? Well, the daguerreotype was the future of photography once.

Who is to say this is not?

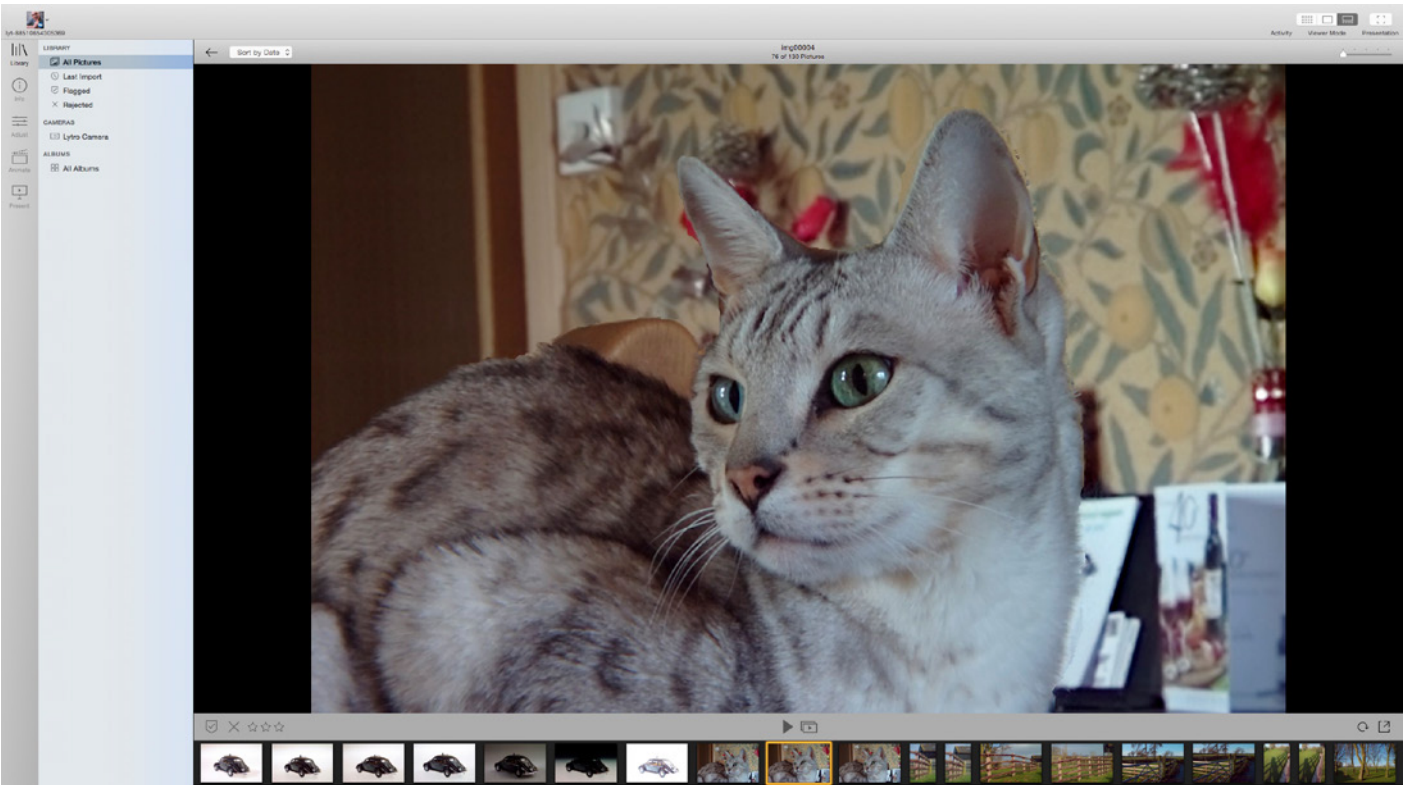
One thing is sure – it has light years yet to go...

– DK





Shifting focus in Lytro Desktop – top, forward eye focus; above, background focus and further eye focus; below, maximum depth of field.





# PENOGRAPHY

VICKI-LEA BOULTER COMBINES ART SKILLS WITH CAMERAWORK AND THE COMPUTER FOR A NEW PORTFOLIO PROJECT SHE PLANS TO COMPLETE IN 2015

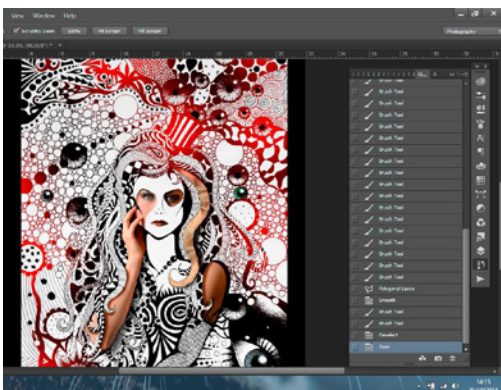
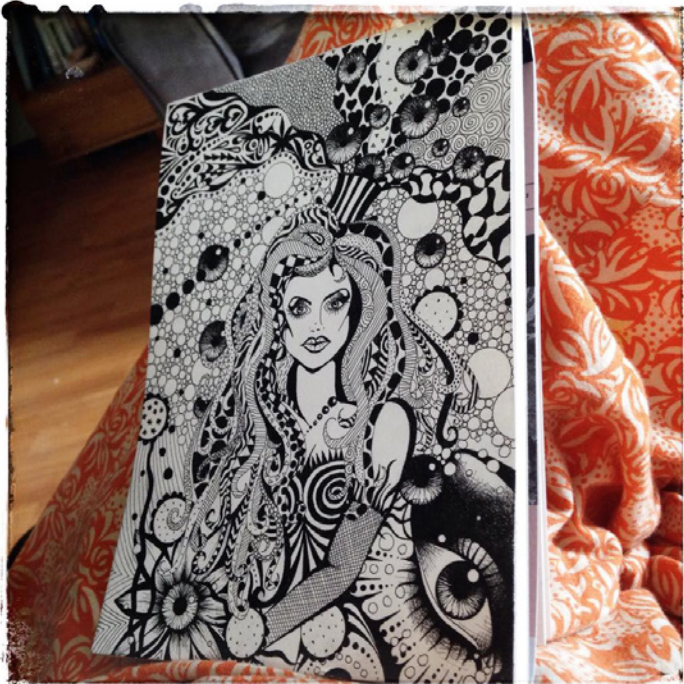
After a glittering year in 2014, British photo-artist Vicki-Lea Boulter proved to the world that her skills with a Wacom tablet were matched by skills with pencil and pen. "My 'penography' images start as a loosely-sketched idea", she explains. "I shoot the model with the image shapes and positioning in mind, I then do the more intricate design work around the image of the model's outline traced in pencil. Then I can work around it in ink. These images probably take about five hours with the photography time as

well. If I use paint, fabrics, or other media, it can take considerably more time..."

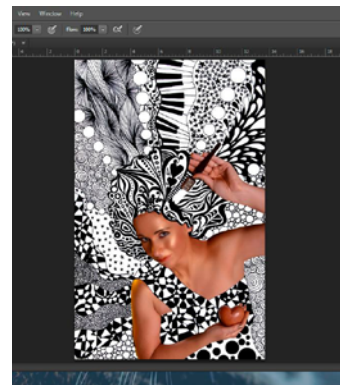
Vicki-Lea's personal and commercial portrait work has yielded Royal Photographic Society medals. At the end of 2014 her 'dreams come true' fantasy portraiture of children was featured by the *Daily Mail* on-line (the world's busiest newspaper website) and printed in *The Times*. Now she has created a book, *I Can be Anything*, featuring fifty of these images (Amazon, £37, ISBN 9781320335089).



See: [www.devonportfolio.com](http://www.devonportfolio.com)



Steps in the process: Vicki's art is not produced on a large easel – it's drawn on regular A4 paper for scanning. Layer work in Photoshop completes the compositions.



# FREEZE FRAME

SPRAGUE THEOBALD SET OUT TO DOCUMENT THE GHOSTS OF SIR JOHN FRANKLIN'S EXPEDITION TO OPEN UP THE NORTHWEST PASSAGE, TAKING MANY IMAGES... AND ALSO TAKING A REGULAR TRAWLER THROUGH THE HAZARDOUS FIELDS OF ICE AND WATER FOR THE FIRST TIME EVER.



In 1845 Sir John Franklin, his crew of 120 men and two of the British Admiralty's best ships – HMS Erebus and HMS Terror, each approximately 100ft – set sail from England to find and transit the Arctic's infamous Northwest Passage.

It was their hope that by their doing so England would be the first nation to find and utilise the theoretical shortcut between the Atlantic and Pacific oceans. Up until this point all trade from east to west and back again had to sail around the notorious Cape Horn, a trip taking months and historically costing hundreds of lives. Franklin's expedition through the Arctic was equipped for three rugged



*Above: Bagan safely moored in Greenland on July 16th, 2009. Top: a little over a week later, encountering the majesty of icebergs.*

years of survival. Both ships had been ice-proven in that they had together made three successful forays into the then unknown waters of Antarctica. They were state of the art, the 19th century equivalent

of today's NASA Space programme. Six years later Franklin, his 120 men and the two ships simply vanished off the face of the earth.

As a boy who was fascinated with all aspects

of the ocean and its lore, this enduring and powerful maritime mystery grabbed ahold of my young, fertile imagination and never let go. So much so that in 2009, at the age of 59, I found myself aboard my own boat, a 57 foot trawler named *Bagan*, and on my own Arctic expedition. We were a crew of six heading from my home port of Newport Rhode Island, up to the Arctic in search of the Northwest Passage and Franklin.

With luck – lots of luck – we planned on arriving in Seattle, Washington an estimated five months later. That was the plan. As we were to find out nobody takes on the ferocity of the high Arctic and has an



easy passage of it. My main objective in taking on an expedition of this scope was to fulfil that childhood dream to get to Beechey Island, Franklin's only known stop, and spend some time around the site where the Franklin Expedition was trapped by ice for two brutal years.

As a professional sailor with 40,000 off-shore miles under my belt as well as being a documentarian by trade, I felt that I had the background to take on and document such a trip.

Our journey was broken down into three legs; the first was the "delivery" from Rhode Island to the west side of Greenland, where we would stage ourselves to wait for a break in the central ice in the Passage. The second leg would be into and hopefully through the Passage, with the third being the long and brutal one from Passage's exit through the Beaufort, Chukchi and Bering Seas, down through the Gulf of Alaska and on into Seattle. All three legs were potential ship-killers.

The timing on such a transit is a gamble at best. Historically the ice in the Central Passage doesn't open fully until the last week of July,



*Top: whales and icebergs in July, leaving Greenland. Above: first encounter with an alien wasteland of floating ice.*

first week of August, roughly around the same time the deadly winter Arctic storms are forming in the Siberian Sea. These storm winds combined with shallow seas and strong counter currents would and have made up conditions that have sent even the largest of offshore fishing trawlers to the bottom.

The first leg, the "delivery" to Greenland was textbook;

predicted, easy winds, dropping temperatures and a stunning display of ethereal icebergs. So large and powerful are these maritime mammoths that as they pass by they overwhelm and leave a wake of fear and respect. The constant melting and shifting of the berg has them cracking, groaning, shrieking like things possessed. Passing by a berg in the usual fog to be found in

Greenland's Baffin Bay is as surreal as it comes.

While hunkered down in various Greenland anchorages we downloaded the Canadian Ice Service's ice charts, colour coded renditions of where the sheet ice in the Passage currently was and projections of where it would be in the next 36 hours. But as wonderful as these charts were we knew full well that they were simply forecasts, predictions. Unlike its cousins the bergs, sheet ice isn't driven by the wind as much as by deep, underwater currents. So remote is the Arctic's Northwest Passage that what surveying that has been done for charts and currents is slight and old at that.

On July 29th we saw what we felt was a good trend in the ice inside the Passage, left Greenland, headed west across Baffin Bay and two days later entered into Lancaster Sound, the official eastern entrance to the Northwest Passage. Immediately we knew we were *Through the Looking Glass* – for almost all of nature seemed to desert us. Only hours earlier we were in the company of whales, icebergs and bird life. Now we were in a harsh and barren void. Apart from a

chance encounter with a herd of walrus the overwhelming sense of isolation was lost on none of us as we slowly and carefully made our way west, deeper into the Passage to Beechey Island. It was here I was hoping to get a sense of Franklin.

Within moments of anchoring at Beechey even the most hardened of our small crew could feel a heavy 'presence'. One called this feeling that of being "watched, spooky, like the back side of Mars". We were indeed being watched, constantly, by stealthy and cunning polar bears. While filming underwater I was constantly looking up through the sixty feet of freezing water above, for time and time again I felt that there were two 19th century wooden hulls floating above me.

To compound the powerful, haunting feeling, four graves on land, three being the first of Franklin's crew to die, reminded us of where we were. Every now and then we'd come across the food tins that Franklin and his men ate from. A large part of their demise started with these tins for in 1984 a forensic anthropologist, Owen Beattie, a professor of anthropology at the University of Alberta, performed an autopsy on a few of the bodies which were buried there. Among other things, he found that every man had extremely high concentrations of lead in his system, lead which most assuredly came from the heavy lead seals in the food cans we'd seen.

Yet what was perhaps the most unsettling of all the sights we took in were the remains of what was called Northumberland House, the ruins of a stone walled supply depot and emergency shelter built by the Belcher Expedition in 1852. Sir Edward Belcher led the final British government sponsored Franklin search expedition. Not finding any trace of him, they built Northumberland House and filled it with barrels packed with food and clothes. The hope was if Franklin and his men were to come back



*On Beechey Island, the gravestone markers stand recording the deaths of Franklin's men. Below, the ruins of Northumberland House, and the rusted hoops of the food barrels left in vain hope of survival.*



to Beechey they would have shelter and food waiting.

By now it was mid-August and the central ice was late in opening. For several days the ice charts showed no movement which would allow us through this solid pack. There were no hopeful trends projected for the next week. While waiting for a break in the ice, we slowly hopped from anchorage to anchorage, all the while keeping an eye on the low pressure systems building up over Siberia, systems which would spawn the powerful winter storms. Along the way we took advantage of the downtime and filmed as much as we could, always keeping two crew to stand polar bear watch. Despite what I'd read about the situation of these bears due to the climate change, all that we encountered – at least 25 – seemed nourished and very well fed!

The evening of August 15th we once again download an ice chart and saw what we'd been waiting for; the beginnings of an opening in the Central Ice not 15 miles away. We immediately up-anchored, left our secure anchorage and headed toward what would be our path to and through the massive sheets of ice to the south. Were it only so.

After spending hours pacing back and forth and finding no opening in the central ice we decided to head back north to our previous anchorage and try to figure out our next move, which included abandoning the trip and heading back home to RI. With the weight of

the defeating potential of this decision in mind we powered north for about two miles and came across a sight which will surely haunt me for the rest of my days; a solid sheet of ice reaching the full width of the Central Passage making its way south. While the ice charts had shown a suggestion of ice gathering at the north end, the top of the Passage, they weren't able to predict accurately what underwater currents and wind would do with this ice. Long story short, we were in the middle of a very deadly squeeze play and the odds of us getting out in one piece were small and diminishing quickly.

For the next 18 hours the crew of Bagan searched for a way out of the closing ice pack but to no avail. On August 16th at 2.00am Bagan and crew were solidly in the grip of the Arctic's ice and were slowly but inexorably being pushed toward a rock-bound coastline. Not a mile and a half away we could see pressure driven ice sheets exploding against this coastline, the very same ice sheets we were now trapped in. Judging by the drift over time it was only a matter of when, not if. Our fate seemed like that of so many of the hundreds of dead who had gone before.

With great potential damage to Bagan, we chose to fight our way off shore and away from our fate on the rocks. Hours later we became hopelessly trapped again. This time we had managed to get far enough away from the rocks to breathe easy but still had the killing pressures of the ice to contend with. After 18 hours on the helm and only gaining nine miles I fell into my bunk to sleep the sleep of the dead. Five hours later I was awoken with a start and called up to the pilot house. The very same uncharted currents which were earlier pushing us towards the rocks were now pushing us away from danger. We were seven miles down the coast, well away from the shore. We were still trapped by the ice but were slowly drifting with it with no apparent danger ahead.



*Above, Bagan locked in channels between ice with no visible exit on August 18th. Below, the abandoned hut of whale harvesters in Barrow, Alaska, and the grim relics of their slaughter.*



With the strongest of admonitions to never even think of coming this way again, the Northwest Passage had given us a reprieve and at 1.30pm on August 30th Bagan and her small crew made their exit from the Arctic Grail, the infamous Northwest Passage. But now the race was on for the Siberian storms were already starting to pound the seas to the west and south of us. Despite the overwhelming sense of accomplishment we all felt, we still had a brutal 3,500 miles to go to Seattle.

It was a drag race home against the impending weather. While filming the residuals of cultural whale-harvesting in Barrow, Alaska, we had been warned by the captain of a 100ft fishing vessel to be "off the waters" by September 13th. We were well beyond that date and had thousand of miles to go. For the next two months we scarcely had winds under 40 knots with seas averaging six to ten feet. Mother Nature's display continued to overwhelm us, never more so than with a sight I little thought I'd ever be blessed to see; humpback whales bubble net feeding in one of Northwest Alaska's more remote anchorages. Nature at her best.

On November 5th, 2009, after five months and 8500 miles, in the dark of night, Bagan and crew sailed into Seattle in the teeth of a raging gale. She was the first production powerboat in history to find and transit the Arctic's Northwest Passage.



[www.spraguetheobald.com](http://www.spraguetheobald.com)

# JOHN CREDLAND

# STREET HDR

This is not really a camera review but a warning against an addictive technique...

I bought a new camera earlier in the year to experiment with time-lapse. I bought the camera but still haven't done the time-lapse because I found HDR.

The name Casio does not come up for discussion at high table but in January last it came up twice in one week – I found a man doing time-lapse with an elderly version, and I read an article by David Kilpatrick that said the Casio EX ZR-1200 had the fastest shutter speed of any compact

A CASIO POCKET DIGITAL PROVES ITS WORTH  
IN MULTI-SHOT ART HDR MODE



on the planet. Twice in one week had to be investigated.

*Interesting statistic:*  
dpreview.com has reviewed 116 Canons, 107 Nikons and just 12 Casios... so we should not expect much – or should we?

I went to eGlobal.com for a deal and paid a little over £200 instead of £420, plus £28 to pay DHL for the duty and that's all OK, it's what we expect now. This Casio does triple shots and fast shutter and time-lapse but I'm afraid I stumbled across a setting for HDR in-camera. I walked around Bath on a photo jaunt and tried all the art settings and found





Although the images from the Casio are small, the processing means they can be printed much larger than conventionally detailed photographs. Normally, these would be limited to a quarter page size. Taken in London by John Credland APAGB DPAGB BPE3\*. See: [www.johncredland.co.uk](http://www.johncredland.co.uk)





HDR with five sub-settings within. Faced with a choice like that I always go for the extreme – in this case the EX2 setting. I hear the ‘shutter’ go *prrrrrt* taking five shots so quickly – the system destroys two and processes ‘the most appropriate’ three in camera (about 15 seconds) It’s similar effect to *HDR Soft’s* ‘Painterly’ but it sorts out the moving bits for you to make a sharp(ish) image from moving subjects. And it does this whether the subject is approaching or traversing the field of view, unlike the recently bought Canon G7X which is likely to yield a rather disappointing man with three legs.

These images are unusual. They are not biting sharp but they are colourful and atmospheric and, most of all, addictive! Be careful. One of my students, attracted to this style of imaging, tried for weeks to find one of these cameras and eventually had to settle for a bright yellow one on eBay vendor for £120.



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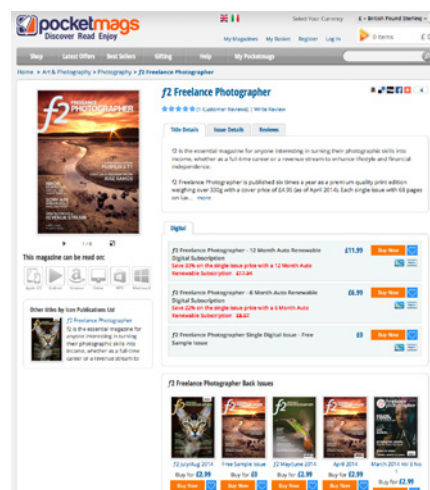
In the last few years, wedding photography has changed with a high proportion of weddings held at special venues or destinations, removing the local aspect and giving wedding photography a much higher value. It is now a vital part of celebrations which may cost tens of thousands and take place hundreds of miles from the couple's home ground. The same process is also changing portrait photography, as high value commissions involve full day shoots at special locations.

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# DÉJÀ VIEW

## THE CHANGING SCALE OF ARCHAEOLOGICAL RECORDING

Moments of déjà vu are quite rare, unless of course you are a psychic, but this one was genuine enough. Recently, I was visiting a local dig, and was asked to photograph a broken sarcophagus. After a brief clean up, I placed the measurement scales as near parallel to the frame-edges as possible, and was peering through the viewfinder, when it occurred to me just how often I had repeated this action since 1957, writes *Eric Houlder*.

Back then I had joined my first dig as a local volunteer, and noticed other diggers photographing themselves and the features which they were working upon. The director would come along and put scales or ranging poles on the feature in a pattern that was then quite mysterious, finding a high-level viewpoint from which he would shoot a number of photographs.

I borrowed my father's Vest Pocket Kodak and took a number of pictures. However, they were less than satisfactory so I bought a modern-looking Coronet Viscount from my aunt's catalogue club and for the first time peered through an eye-level viewfinder.

There was no display other than the actual subject, small but a big improvement upon the tiny waist-level equivalent in the Vest Pocket. The negatives were also small and required enlargement to 3.5x5" size.

I spent a significant part of my student grant on the only book (then) on the subject, Maurice Cookson's *Photography for Archaeologists* (London 1956). Cookson recommended the *large plate camera*, and discussed both *panchromatic* and *orthochromatic* plates. I soon realised that even then he was something of a photographic dinosaur though brilliant at preparing features for photography.

Though I wanted better modern equipment, my mother gave me a beautiful pre-war wood and brass quarter-plate, and I used this for a while just for the experience. I started to do my own black and white processing, later in colour.

In 1961, I bought an Aires Penta 35, one of the earlier Japanese SLRs to reach Britain. It had a viewfinder with a basic focusing circle in the centre of the groundglass screen image, which mysteriously disappeared when the shutter release was pressed – no instant return mirror! My next was a Minolta SR1v, a big improvement as it had a microprism grid for focusing, an instant return mirror,



*Top: 1957 – my Viscount camera had two apertures and fixed focus, so the sharpness was not under the user's control. Above: today – Panasonic Lumix G1 with 14-45mm lens. Below: the author at work on site.*



and a small range of lenses. Exposure was determined with a hand-held meter. Then TTL metering came along in the shape of the SRT101. From this point onwards, viewfinders began to accumulate exposure and focusing data, more advanced metering and eventually auto exposure.

Dig succeeded dig, including Britain's top site, Sutton Hoo, where I was on the staff. Shortly afterwards I had the opportunity to fly, and pioneered aerials using colour infrared film in Britain.

So for almost 60 years I have been viewing burials of different periods through increasingly sophisticated viewfinders, culminating in the wonderful Panasonic display. The grid lines make placing scales a doddle, the histogram aids correct exposure, whilst auto focusing and image stabilisation compensate for my septuagenarian eyesight and poor balance. At the click of a button I can revert to a plain finder and 1957 if I wish. Pity the human body does not have a similar button!

Few of us become hooked on anything for a lifetime, and even fewer of us have two obsessions for the same length of time. That first sarcophagus through an eye-level viewfinder determined the course of my life, during which I have taught history and archaeology, and even run courses on archaeological photography, including one (with another in the pipeline) at Sutton Hoo itself.

That first view through a primitive viewfinder eventually led me into ancient dwellings, medieval monasteries, Roman forts, sunken

ships and even a mass grave from a medieval battlefield, invariably accompanied by at least one camera. I regret none of it, even the near-fatal disease I picked up in a medieval drain, or the close encounter with a C130 over the Humber.

I still photograph digs when I get the chance, and youngsters sometimes ask for advice. I just say – "be careful where you point your camera!"



*Eric Houlder has been involved in archaeology since 1957, finally retiring as Photographer to the Wood Hall Archaeological Trust. He is currently chairman of his local archaeological society, a committee member of the Council for British Archaeology (Yorkshire), and Editor of the RPS Archaeology & Heritage Group Journal Heritage Photography.*  
[erichoulder@gmail.com](mailto:erichoulder@gmail.com)

CAMERACRAFT PORTFOLIO

No 10

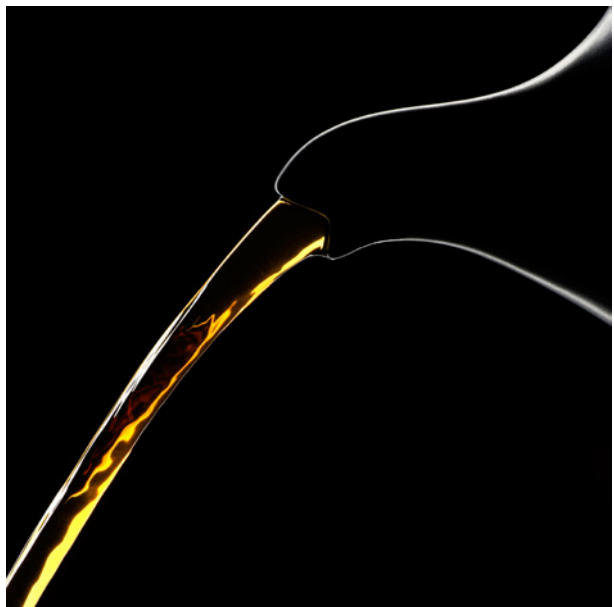
# KATE COOPER

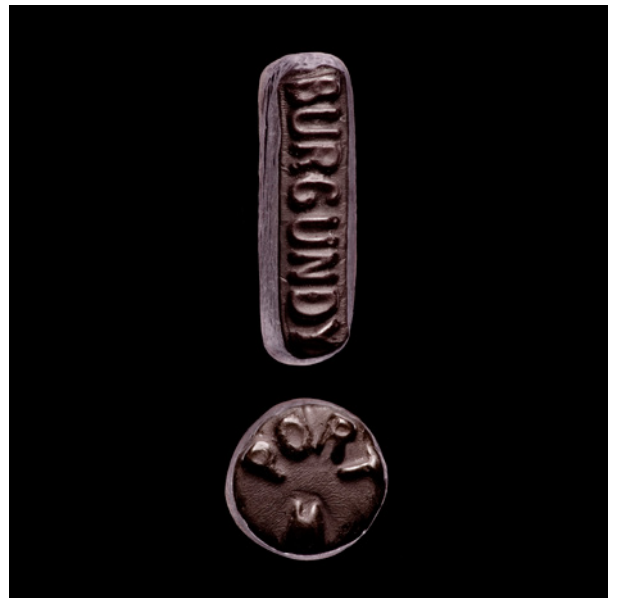
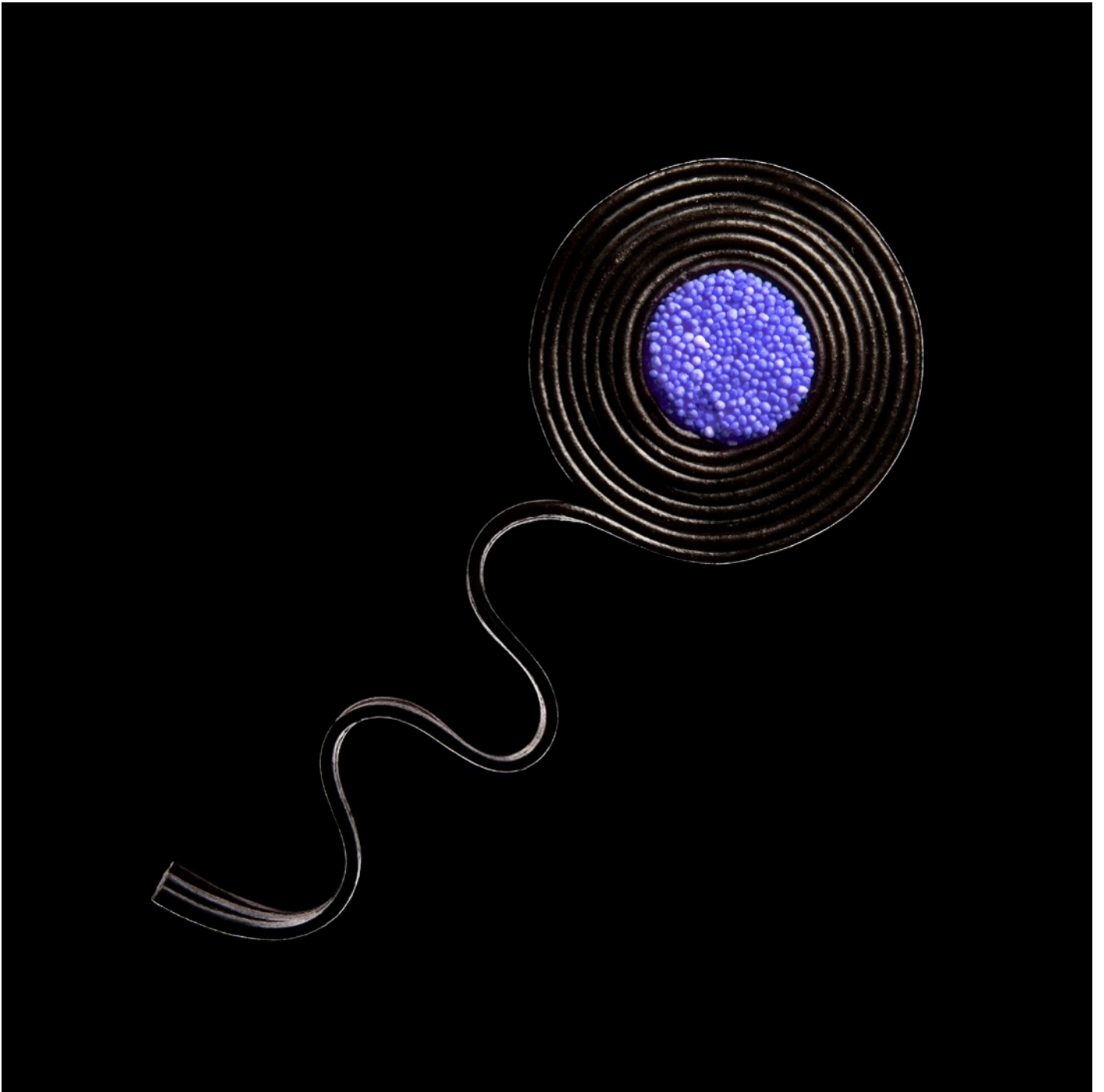


*Black Pudding*

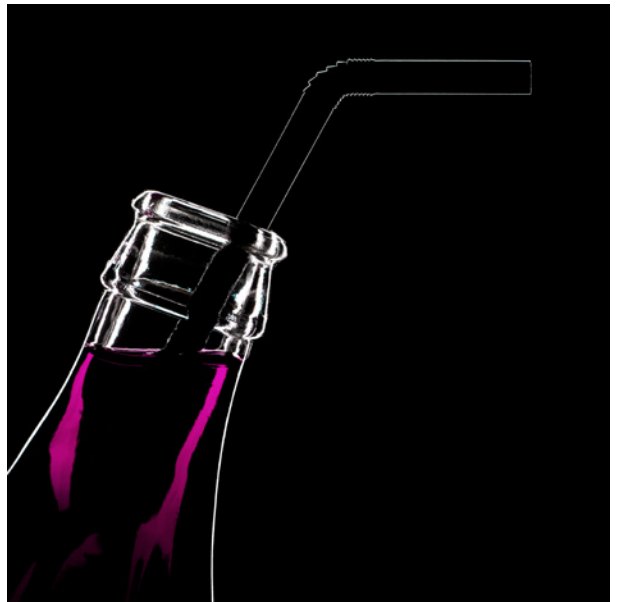
CUISINE NOIRE

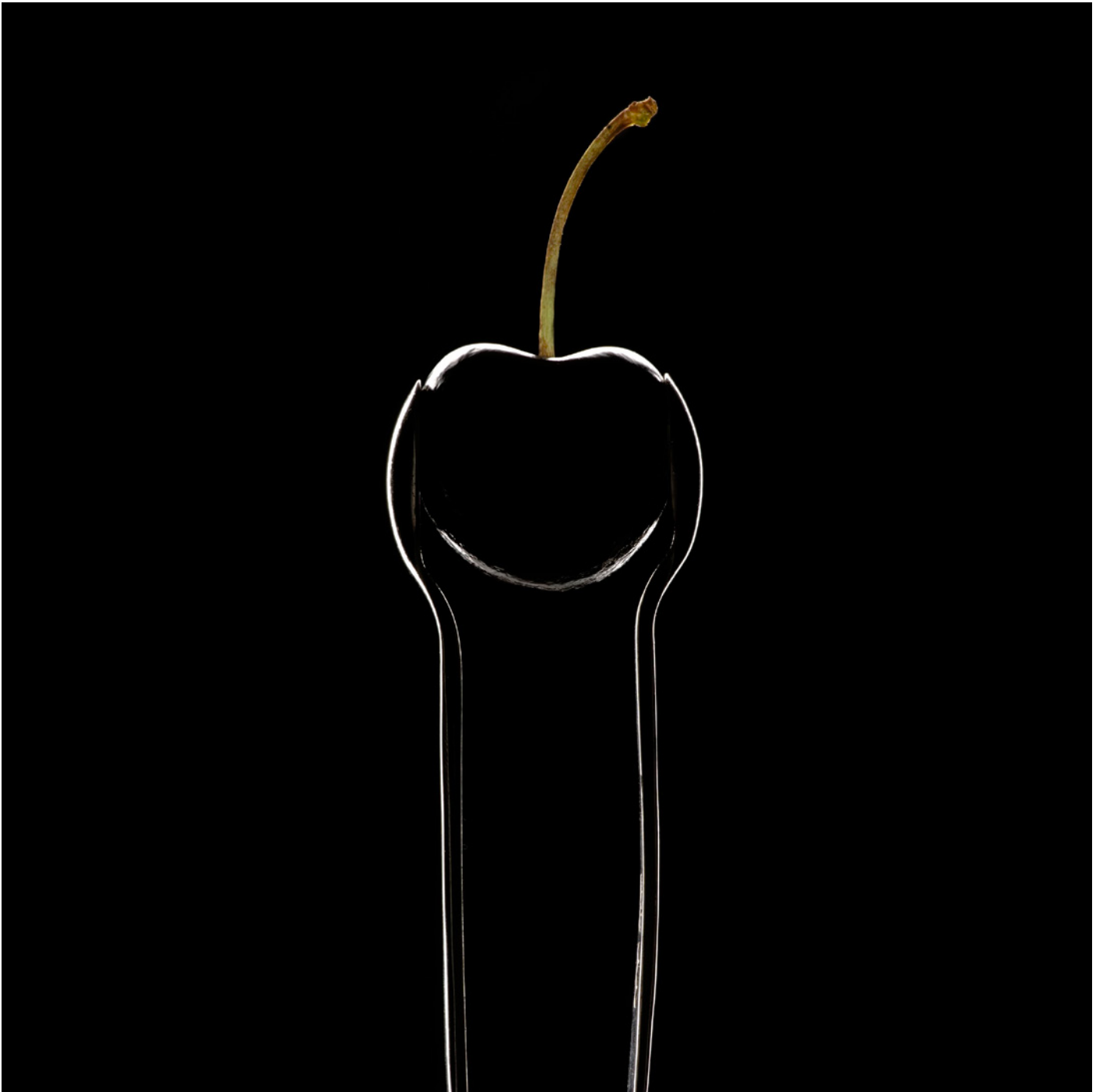












# CUISINE NOIRE BY KATE COOPER - A COMMISSION WHICH EARNED HONOURS

Recession hit the world just after British commercial photographer Kate Cooper was asked, by one brave client, to create a complete matching portfolio of food themed images. She proposed a black theme – ‘Cuisine Noire’ in a gentle dig at the portrait photographers who were called anything in black and white with a low key look ‘photo noir’ and ignoring the gender of ‘photo’ in French (hint: film is masculine, photo is feminine... like cuisine).

“We’re just beginning to see the food photography pick up again”, Kate said, “but it’s mostly on white backgrounds”. She’s hoping that the economy will turn round put the food industry back into a creative mood.

This series was taken before we started *Cameracraft*, and we haven’t yet seen anything with quite the same style and integrity. And that’s why it is worth bringing it to wider notice.

We first came across Kate Cooper as a creator of top quality ‘studio still life light table’ single product shots, created in the smallest of workspaces using very simple backgrounds and off-the-shelf items from supermarkets and hardware stores. These were destined for picture libraries and have proved to be consistent sellers.

Kate – half of Bailey-Cooper Photography, the business she runs with her husband Paul – made a ‘small investment’ in tracing paper, black and white foam boards, masking tape, clamps, glass, and the products themselves. Initially, she used a glass-topped coffee table in a living room as her work space. Lighting was from a pair of Elinchrom RX600 flash heads, diffused with a plastic sheet curved in a tunnel over the subjects, and a background on the floor below the glass to create a shadowless floating effect.

With the earnings from this work they invested in high end digital SLRs from Nikon, added



*It took many attempts and a metal guide to aid flow to achieve this.*

purpose-built small studio annexe to their home in York, and went for one of the best and most expensive studio lighting systems in the world, Swiss Broncolor studio flash.

The 4.5 x 3m studio is large enough for portraits as well as still life. It is small but efficient. Kate decided to propose the black food theme to her clients after first considering a white portfolio, but she was worried about ‘muddy reproduction’ and the way white dominates tones and colours when seen on screen or printed. The project took a year to complete, and involved using double the number of black food products expected, with Kate obtaining large quantities of sweets to search for perfect specimens.

Each shot was taken with a Nikon D2X camera fitted with a 105mm Nikon macro lens and tethered to a laptop computer, providing a much larger review image than the rear LCD screen. “I then took the images over to our main system and viewed them large on a calibrated monitor”, Kate explained, “and I would often spot something which needed changing”.

Kate’s method for lighting a transparent or reflective

subject against a dark ground can be described easily enough. Using a one metre square softbox she masking-tapes a slightly smaller opaque black foamboard on to the centre of the front scrim fabric, leaving just a narrow strip of light round the *edges*.

The softbox, with its black background panel fixed centrally, sits right behind the subject and faces the camera. This is equipped with an effective lens hood and French flags (more black foam panels) to mask any of the rim light from flaring into the lens.

Catalogue studios normally have a choice of black painted and white painted workspaces, and for this type of shot, the black studio would always be picked. The Bailey-Cooper studio is light, so black panels were placed all round to enclose the setup.

With reflective subjects, the camera may appear as a reflection, so real care was also be needed to cover everything except the lens with a black cloth. Again, the black foamboard sheets did the work. Some frontal fill-in light may be needed on the subject, and this was normally created using a white reflector – foamboard again. Kate also used two

small box-lights placed either side of the camera lens.

Accurate proportional modelling lamps, preferably tungsten-halogen and perfectly coincident with the flash source, work better than larger incandescent bulb type modelling for such small set-ups. With top-grade lighting in place, the next requirement is the perfect subject. Kate has an eye for photogenic products, but still had to sort through a whole load of blackberries to find the right example.

“The worst one for me was the black pudding”, she told us. “I am a vegetarian and I have a phobia about blood – I cut myself when doing the first black pudding shot and fainted, hitting my head when I fell. So making the black pudding look like a devil with horns on the fork was my response...”

Liquids were poured using guides, or inserted into surgically clean bottles without a single droplet astray; syrup drops or falling peppercorns had to be formed and caught with precision timing. Paul acted as assistant, keeping his finger over the teapot spout then letting go when Kate gave the word.

Even the smallest speck of dust is highlighted by this special back rim lighting on small, black subjects. The digital image must be examined at 100 per cent, and precisely retouched. Kate hates retouching – “I like to get everything perfect in the camera”, she says. So she used cans of compressed air to blow every tiny speck of dust off each setup, no easy task next to a main road with building work going on nearby.

The picture series went on to earn Kate Best Fellowship Panel awards from both of the UK’s two main professional associations. She is now a Qualified European Photographer, awarded by the Federation of European Photographers and acknowledged as recognition which is not easily obtained.

– DK

See: [www.baileycooper.co.uk](http://www.baileycooper.co.uk)



# CAPTIVATING CAPTURES

ZOOS, PARKS, WILDLIFE SANCTUARIES AND YOUR OWN BACK YARD OFFER GREAT SUBJECTS EVEN IF THE ANIMALS ARE NOT IN A WILD ENVIRONMENT

A few years ago, in response to a request by Whipsnade Zoo in Britain to remove some pictures from the stock library Alamy, we fought back and cited the long photographic history of the zoo and its London Zoo parent. Fifty years ago hardly a single popular family magazine or newspaper in the country was missing its humorous or appealing zoo animal shot, most provided by amateur enthusiasts or a handful of Fleet Street regulars with a hotline to the zoo staff for new arrivals.

Something has happened to make all kinds of organisations, zoos and wildlife parks included, feel that pictures taken on their premises almost amount to theft of their copyright animal property. Whipsnade and RZS relented, and set up ways for freelancers (amateur or professional) to take pictures without being prevented from publishing or exhibiting them. Many zoos round the world impose no restrictions, even if they are sometimes the worst to take photographs in. Some come down heavily on



Verde Valley, Arizona, wildlife park zebra says hello to Shirley Kilpatrick – the benefits of a fast zooming 18-250mm lens!

commercial uses of pictures taken on-site but don't seem to mind the odd shot appearing in a travel guide and have no problem at all with photographic exhibitions and contests.

It's ethical never to pass off captive or tame animal pictures as wildlife, or submit them to nature and wildlife contests. Better, by far, to show zoos and parks for what they are and aim for pictures of interaction with people, education or the environment. Some zoo pictures will show the negative side, animals in poor condition or badly housed, and it's equally important that this should be recorded.

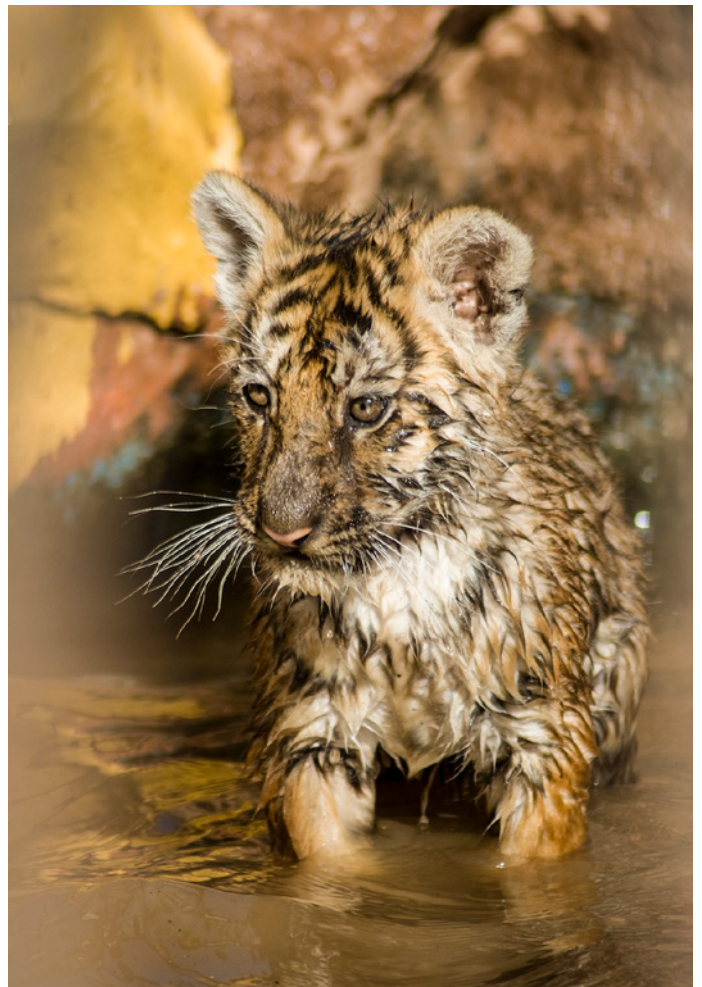
For the most part, people love to see animal humour if not contrived, and baby or young creatures in particular. It's a challenge to get close enough, to overcome barriers of wire or glass, find good light and catch the moment. It can help you refine your photographic technique and enjoy a day out in the process. We hope our pictures give you some inspiration.



Education sessions are always a good photographic subject, left (at Edinburgh Butterfly World – [www.edinburgh-butterfly-world.co.uk](http://www.edinburgh-butterfly-world.co.uk)). Sometimes, visitors and inmates make contact, right (Tenerife Monkey Park, with hand sanitiser nearby). Photographs by David Kilpatrick.



Babies are universally popular, and you have to visit many times a year to be sure of catching the young and their parents – or strike lucky. Edinburgh Zoo had successive births of pygmy hippos for several years running (top left) and the most photogenic view was not the expected angle (SK). Whipsnade Zoo had a baby elephant at exactly the right age to contrast with its mother, but permission had to be obtained afterwards to publish this picture (DK). The baby Bengal Tiger, right, was from a rescued mother at the Parque Cocodrilos sanctuary in Gran Canaria – they did not intend to breed, so this won't happen again, and he's now a very large solitary male (DK). Your own backyard may have residents, so when something photogenic happens, catch it! Here, with flash on a dull day (DK).



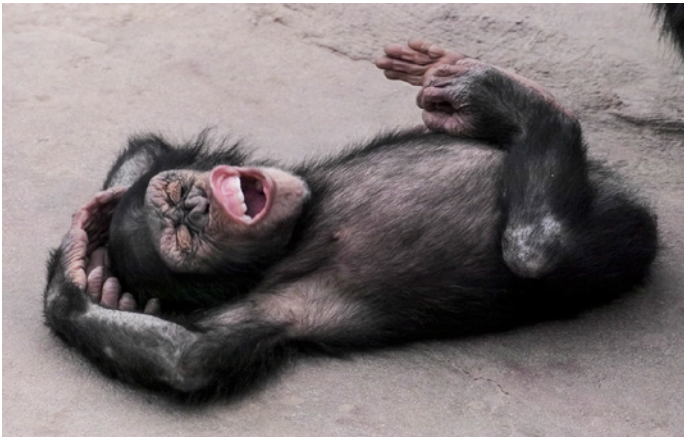


*The most popular zoo animal in Britain today is the meerkat, and it's partly down to a very successful insurance advertising campaign. For photographers, meerkats are a great model – they don't mind bright daylight, they seek out high points to keep watch, they stand upright and look all round them. They also have very cute meerkat cubs.*

*Family in Gran Canaria's Los Palmitos Parque, left, and 'couple' (probably both female and not a couple at all) in La Lajita Zoo, Fuerteventura.*

*Both photographs by Shirley Kilpatrick, Sigma 18-250mm OS lens.*





*With primates, facial expression and eye contact make all the difference. Chimpanzee baby in Fuengirola Zoo (SK), Spain; Cotton Headed Tamarin marmoset, Monkey Park, Tenerife; and young spider monkey at Aktun Chen Cenote Park, Tulum, Mexico (DK).*



*The Fennec Fox was photographed by Shirley Kilpatrick at Five Sisters Zoo in Scotland in a glass-windowed house later destroyed by fire (the foxes were rescued). The new house lacks the same daylight and the 'desert sand'. The fire, with the loss of most of the nocturnal and reptile house and some other animals, led to major donations and the zoo is now expanding to a very high standard. See: [www.fivesisterszoo.co.uk](http://www.fivesisterszoo.co.uk)*



*British wildlife of farm, field, woodland and garden as captured by Peter Karry. The field mouse on the teasel, the red squirrel and polecat were all taken with an 18-250mm lens (this or a 70-300mm seem to be behind most of the shots in this article). Peter is fortunate enough to live near the British Wildlife Centre ([www.britishwildlifecentre.co.uk](http://www.britishwildlifecentre.co.uk)) which organises special photographic days when closed to the public.*

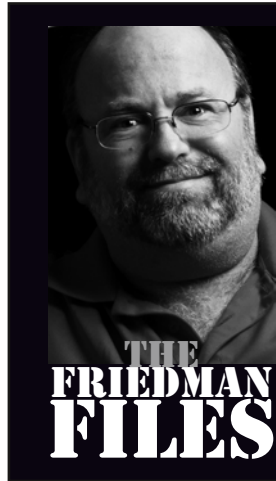
# A MOMENTARY FLASHBACK

Once upon a time, back in the days of Kodachrome, there was no such thing as *Photoshop*. If you wanted any kind of special effect, like being able to change the color of the sky but not your subject, you usually had to invest in some fancy filters and do it all in-camera. And although the technique worked moderately well, I've discovered a better technique for doing the same thing using only ONE tiny filter and a digital camera!

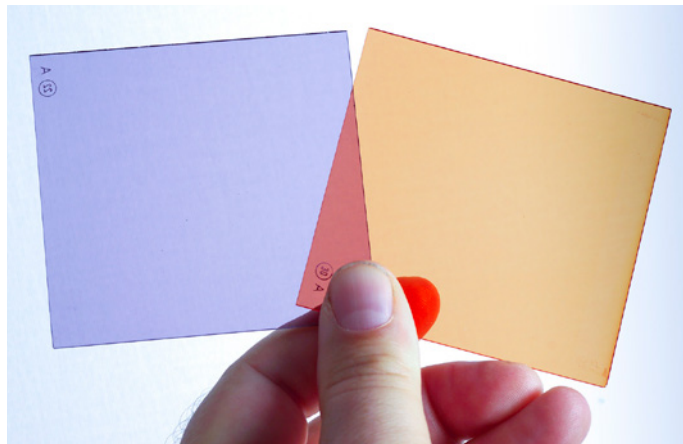
First, some background: you know you can put a filter in front of your lens and apply a tint to the entire image. But what if you possessed a **MATCHED** pair of filters – filters of opposite colors, such as blue and orange?

The idea is that you put one filter in front of your lens (*such as the orange one, right*) to make a nice sunset, then you put the blue one (*left*) in front of your flash and illuminate your subject with a bluish light designed to cancel out the orange cast of the lens' filter. Your background changes to orange but your subject lit by "correct" light!

I played around with this technique briefly in the days of film, but the results didn't "wow" me enough and so I dropped it. 30 years later,



Gary Friedman goes back in time to the 1970s Cokin ColorBack concept – and explores how 14-bit raw capture and the power of Custom White Balance, raw conversion control and Photoshop updates the idea for the future.



I exhumed the very same matched Cokin filters to try it again for this article. In this instance I wanted to turn a *blah* grey sky into something more appealing, and so I put the blue filter in front of the lens and placed the

complementary orange filter on the flash. Like before, I saw moderate success (*straight and color-back filtered, below*) but nothing like the examples I remember seeing back in the 1970s. Perhaps I should have shot closer to sunset... still, nothing to write home about.

Can I do this same thing (but easier) using modern technology? Here was my thought: with digital cameras, we no longer have to put color filters in front of lenses to compensate for non-white light like incandescents; we use the **White Balance** function instead. So why not just put a small filter in front of the flash and use the camera custom white balance to act as the lens' filter?



I tried this technique outdoors, turning a neutral blue sky to a nice golden color as you can see in the shots at the top of the facing page. I'd say that's pretty compelling!

Here's how I did another example, step by step: first, I



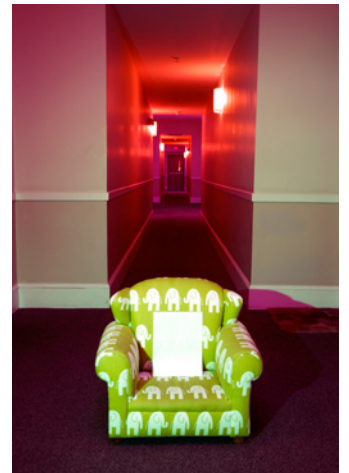
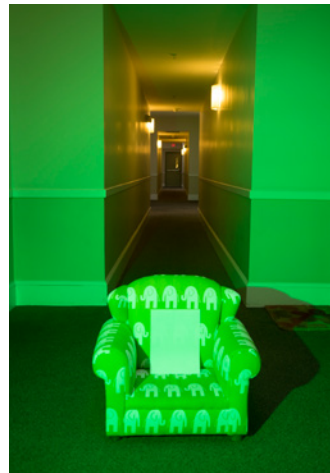


set up my shot (*right*), putting a white cardboard in the armchair for calibration. I put a dark green filter in front of the flash (*taped in place, on flash, bottom*) and took the intermediate shot shown in the center of the three, which is illuminated with strong green light.

I took the camera off the tripod, and composed a shot of just the white cardboard. Then I used my camera's **Custom White Balance** function, essentially telling the camera "See that white piece of cardboard in the shot? Add whatever colors you need to add, and subtract whatever colors you need to subtract, in order to make that cardboard look white!".

Then I put the camera back on the tripod and shot again, resulting in color correction for the subject and the background turning red – the final shot in the sequence of three here.

Then I added an uncooperative subject and shot away – as you can see on the right.



*All these shots use only the white balance function of the camera and color filtered flash. Sony A99 Custom White Balance is able to handle a vivid green illumination well.*



So this is the essence of the technique – use the camera's custom white balance to match whatever filter you happen to have. There is a downside, in that you actually reduce the overall dynamic range of the image. But if you choose your subject carefully this won't be a limiting factor.

*Can I make it better?*

The time-honored appeal of this technique was that no *Photoshop* was necessary to



create such special effects – what you see is straight out of the camera. But the technique has its limits – your filters couldn't be too intense otherwise the overlap of the two wouldn't have enough of a full-spectrum to make the subject look normal.

I wanted to push this technique a little just to see how extreme I could go.

And so I got the most intense filters I could find AND I used the Sony Alpha 99's 14-bit RAW mode. Ironically, this would necessitate using *Photoshop* to do the RAW conversion and the color balance, but hey, this is for Science.

I started with a beautiful model just after sunset. Then I found the most intense magenta filter I could find and added it to the flash (*center*). Here, *Photoshop* was required – I had to open the RAW file and color correct for it TWICE since the amount of adjustment needed exceeded the slider limits of the color balance tool. This was the first practical application I found for the 14-bit RAW mode – in my tests, the normal 12-bit RAW



Above – the straight shot, an intense magenta on the flash (green sky) and top right, an intense green (magenta sky). Below, maximum green and after the best correction in both *Lightroom* raw conversion and *Photoshop*, the model's flesh tone and the dress colour are both lost.

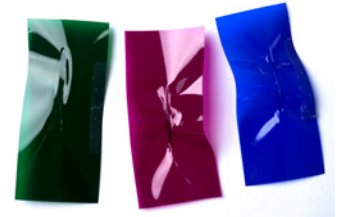


mode that exists on most other cameras produces channel clipping when color corrected this intensely.

A more intense Green filter showed just where this technique breaks down – there was insufficient spectrum coming from the flash to make the subject's flesh tones look normal after compensation in the final shot, *bottom of page*.

One caveat to know if you're planning on trying this yourself – when mounting the filters to your flash, it's best to use a filter holder rather than just tape the filter to the front of the flash. How do I know this?

See below...



# FROM THE FRIEDMAN ARCHIVES



*Normally mirror lenses produce background artefacts that look like a special effect or an image fault (rendering specular highlights as donut-shaped blobs); however when your background is plain and far away, these lenses can do just as well as larger, heavier, and more expensive “pro” lenses. This Alaska shot, taken from a moving boat in bad light, was made with a Konica Minolta 7D with the 500mm f/8 mirror lens.*

# CLOSER ENCOUNTERS

Finding that so many pictures considered for the zoo photography in this issue had been taken with wide to tele superzooms, or moderate aperture longer range zooms, was not a complete surprise.

Peter Karry had this to say – “The lens I prefer to use depends on APS-C or full frame. If I am using the Sony A700 I use mostly the Sony 18-250mm if I want the wide choice of focal lengths. If I feel I will be further away with a subject like an owl, I use a 100-300mm APO zoom, backed up by 90mm macro and a wide angle zoom. For full frame the 100-300 is my choice”.

This isn't just a matter of travelling light or finding low cost solutions.

We looked at a wide range of tele zooms and other lens types from all the major makers and found one trend which has taken photography backward. The limits of close focusing are being eroded by the use of in-lens stepping, ultrasonic or linear motors.

This doesn't just apply to long lenses. A direct example could be found when the Tamron/Konica Minolta 28-75mm *f*2.8 design was adapted by Sony to use an internal focusing motor (SAM). The close focus changed from 33cm to 38cm, and the subject scale from 0.26X to 0.22X. This is a fairly significant, though the Tamron Nikon version with built-in motor still does achieve 33cm.

Much greater changes can be found in popular tele lenses. The Sigma 70-200mm *f*2.8 has been through many versions. The most desirable is probably the non-stabilised Macro EX DG HSM from 2008 – it focuses down to one metre, and gives

**If you want your subject to fill the frame, think carefully about your camera format and lens choices. Large fast zooms and full frame may limit your scope.**



*Peter Karry has both full frame and APS-C systems, but for subjects like this prefers the smaller sensor as it allows a more effective telephoto range. He used a 100-300mm APO tele zoom for this owl, at 230mm with scope to zoom in closer if needed.*

a maximum subject scale of 0.28X. The stabilised OS version of two years later can't focus closer than 1.4m and the scale is 0.125X, less than half

the apparent size in the frame. This is the current version. Buy an older secondhand one, and the EX DG APO and IF models were limited to a

very inconvenient 1.8m but somehow achieved 0.13X – we will come to this later.

Taking zoo photography, or anything in enclosed areas like offices or a small studio, there's a big advantage in being able to stand one metre from your subject. Even the extra 40cm of the OS version can put your back against the wall, or allow people to stand in front of you because they see a 1.4m (and definitely a 1.8m) space as something they are entitled to pass through. A 1m space is a bit more of a squeeze, as the lens itself is included in that space, the measurement is from the focal plane.

A more descriptive way of stating the difference between a Sigma HSM Macro and the later OS is that the Macro puts the subject 77cm in front of the lens, the OS forces you back to 116cm 'clear space'.

As for Tamron, their 2008 non-stabilised version focuses right down to 95cm despite not being labelled 'Macro', and achieves 0.32X, with 70cm between lens and subject. The current USD ultrasonic focusing still non-stabilised model can only focus to 1.3m and achieve a 0.125X scale, with 106mm lens to subject. It's worth asking whether the smooth USD focus is worth having when an older, lower cost but still excellent lens puts you so close for many subjects.

If you are using an adaptor on a mirrorless camera, you might think that the USD drive could enable contrast detect focusing. Well, it doesn't. You still have to focus manually. For Sony users, the screw-drive powered LA-EA2 and LA-EA4 adaptors together with the older lens are an optimal combination.

## Vintage design

The one lens which always stands in the way of new investments in the Sony range is Minolta's original 1984-5 (launch) 70-210mm *f*4 AF, the 'beercan'. For whatever reason, very few modern lenses come close to performing as well. Back in 2004 when the first Konica Minolta digital SLR (7D) appeared, the lens seemed to have considerable purple fringes. This has now been seen to be partly a function of the sensor, and Adobe Camera Raw correction renders it about as clean as a Canon 70-200mm *f*4 current design.

The appeal of the old 70-210mm is its quarter life size repro, a 0.25X scale at 1.1m close focus. Sony's very expensive new 70-200mm *f*4 somehow manages to be much larger and heavier (72mm filters versus 55mm) and is not a true zoom either. Where the Beercan maintains focus as well as aperture as you zoom, the Sony G changes. At 70mm focal length it can focus down to 1m, but at 200mm it won't go closer than 1.4m. And, as you might expect, it will only achieve half the image size of its 30-years-gone ancestor.

Canon's 70-200mm *f*2.8 version II focuses to 1.2m and 0.21X, where the original L USM model only managed 1.5m and 0.16X. So Canon has shown an improvement – but only by starting out with a very modest specification. The current *f*4 model matches the *f*2.8 at 1.2m and 0.21X.

How about lenses which extend to 300mm? Here, there has always been one clear winner, and it's still on the market and still costs less than any other. The Tamron 70-300mm LD Di Macro focuses right down to 95cm and does this with a switch to allow macro between 180mm and 300mm focal lengths. At 95cm and 300mm, it achieves a remarkable half life size, 0.5X. Though this lens has a low dispersion element it is not apochromatic, and retains some softness wide open. It is the lens used for the Bengal Tiger cub picture in the zoo



*The Canon 70-200mm *f*4 IS USM compared in size to the 1985 Minolta 70-210mm *f*4 AF. Both are internal zooming, front group focusing designs which do not extend, though the Minolta has a rotating front rim. The Canon focuses down to 1.2m, as does its non-stabilised version, with 0.21X subject scale. The vintage Minolta focuses to 1.1m with 0.25X scale. The Canon weighs 760g (705g for the non-IS version) and is 76 x 172mm in size.*



*The Sony FE 70-200mm *f*4 G OSS – which you might expect to be as small as possible for the mirrorless system – weighs more than the Canon at 840g without tripod mount, is 80 x 175mm, takes 72mm filters instead of 67mm, costs £100 more and has a variable minimum focus of 1 to 1.35m with a maximum subject scale of 0.13x at 200mm.*

feature, at full aperture. This was taken on an APS-C body without provision for focus adjustment and for under £100 in the UK there really is no competitor – it is definitely worth trying!

How about the new Tamron VC USD 70-300mm? Well, it does achieve 0.25X scale but with focusing from 1.5m only, it pushes you back so far from the subject that many pictures will be difficult to get.

Sigma also has a choice of 70-300mm lenses. There's a regular Macro, an APO Macro at about twice the street price, and a discontinued OS stabilised model. The first two have screw-drive or very conventional focus motors; the OS has an internal motor for all makes, including Sony, but it's not a stepper or ring motor and grinds very slowly.

The Macro version, non APO, focuses down to 1.5m before switching the focus to allow focal lengths from 200 to 300mm to go right down to 59cm and 0.5X scale, though even at 1.5m it's a respectable 0.26X. The APO Macro version has exactly the same specs but (this we can confirm) has exceptional sharpness for a telephoto. Of all the 70-300mm choices out there, the APO Macro Sigma offers the highest resolution and freedom from chromatic fringes.

The OS version, an excellent lens optically but no longer made, achieves a slightly better subject scale at 1.5m but that's as close as it will focus – rather like the Tamron. They must surely be working on an HSM focusing version of this lens, as this is a very popular lens type and having only the now very old Macro and APO Macro designs on the market can't be good.

The rather outdated design and focusing mechanism of the APO Macro Sigma is easier to live with when you see the results, as it doesn't just focus very close with acceptable sharpness, it handles distant views with more detail than most 70-300mm designs costing three or four times as much.

Looking at the history of 70-210mm or close equivalent lenses from Minolta, there was an intent to keep around 1.1m and 0.25X scale. Similarly, with 70-300mm types the 0.25X scale was nearly always achieved, but designs from 1986 to 2000 never got closer than 1.5m. Sony changed this with their 70-300mm SSM G focusing down to 1.2m though it gained nothing in subject scale, just a closer working distance. This is generally a good thing with AF lenses as

it allows for subjects moving towards you and for smaller working spaces.

For Canon, the 70-300mm remains a fairly old design. The current IS USM  $f/4-5.6$  has a close focus of 1.5m and scale of 0.26X. Two models will focus closer, the DO (diffractive optics) compact version to 1.4m but with a much smaller image scale of 0.19X, and the expensive larger heavier L version to 1.2m with a scale of 0.21X. These figures are a result of changes to internal focusing design.

Nikon's 70-300mm VR lens also goes to 1.5m and 0.25X. You can hunt round looking for lenses but examining exhausting every single obsolete example, one thing seems clear – Sigma and Tamron, in the period around 2008 before a combination of stabilisation and ultrasonic motors seemed to turn the clock back, produced the best specified close-focusing 70-200mm  $f/2.8$  and 70-300mm  $f/4-5.6$  designs.

It's worth adding that in the case of the 70-200mm  $f/2.8$  models, adding a 1.4X teleconverter maintains the close focus distance and provides an even greater subject scale. But there's one way to get this – and more – with even better results.

## Sub-miniature

There's a forgotten term! In the past, everything smaller than 24 x 36mm was called sub-miniature though the meaning eventually shifted to 16mm and Minox cameras.

Today, we are back with sub-miniature – APS-C is effectively similar to what used to be called half-frame, FourThirds or MicroFourThirds (the same size sensor) is 'quarter frame' and the one inch sensor used in the Nikon 1 system is almost one-ninth.

The factors are 1.6X for Canon APS-C, 1.5X for Sony/Pentax/Nikon/Samsung/Sigma, 2X for Olympus/Panasonic and 2.7X for Nikon 1.

These factors represent the effective magnification of the image compared to full frame. So, using a 70-300mm lens



*Smaller format cameras can be effective telephoto bodies – left, the Canon EF-S 55-250mm IS lens, designed for their 1.6X factor sensor. Right, Nikon V1 fitted with Nikon 28-300mm VR lens (=810mm at the long end). Below, a 1020 pixel wide image crop (ISO 220, 1/500th at  $f/8$ , 300mm) – equal to a 1.5 megapixel image with a 2,300mm lens.*



with a 0.25X subject scale on a full frame camera equates to using:

- 43-187mm on Canon EF-S
- 45-200mm on APS-C
- 35-150mm on 4/3
- 25-111mm on Nikon 1

Or, seen the other way, if you fit a 70-300mm via an adaptor or directly to these formats, you get the equivalents of:

- 112-480mm on Canon EF-S
- 105-450mm on APS-C
- 150-600mm on 4/3
- 190-810mm on Nikon 1

So, if we look at some lenses actually made for the smaller formats, we find for example that most 55-200mm low cost zooms for APS-C will focus to around 1m to 1.1m and give 0.23-0.25X scale, which translates to something you can't get at all in full frame, 0.375X. On a 4/3 camera body it's equivalent 0.5X, the same as Sigma and Tamron's 70-300mm macro designs on full frame.

This is a bit confusing only because the reproduction ratio is always quoted independently of the sensor size. Anyone who has worked in a studio with 5 x 4" (let alone 10 x 8") will be aware that 1:1 life size macro means a normal composition for a small object and watches or jewellery were often photographed at two or three times magnification on the film. Of course, if you use a 1:1 macro lens on a 4/3 camera an object only 13 x 17mm will fill the frame, and with a full frame camera it will occupy just a quarter of the image.

In real world shooting, you can get away with a smaller scale on smaller sensors. They also have greater depth of field for the same view angle and focus distance, which can help with macro subjects. We have found that with a camera like the Nikon D810 or Sony A7R – 36 megapixels – there is not enough depth of field in most macro shots even at apertures like  $f/22$ . The purpose of these large files is presumably to make very large prints. Most depth of field tables from the past were based on viewing a 10 x 8" print at arm's length and this is very different from viewing a 27" iMac screen, or



*The 16-50mm f3.5-5.6 OSS kit zoom for Sony's A6000 is a strikingly sharp lens when used closed down by about half to one stop. It also focuses very close, and 31mm seemed to be the best focal length to get maximum image scale for this shot at f8.*

even an HD1080p television. Soon we will have 4K television screens, and large computer monitors are now increasing in resolution to match this.

Odd though it may sound, smaller sensor formats producing higher resolutions may offer better performance for telephoto, macro and close-up photography in general. The Olympus 4/3 format is particularly good for macro work as its lenses do not obstruct or shade the subject.

## The megapixel factor

It is not the actual size of the sensor which counts in the end – it is the pixel density. This is what gives you telephoto or macro/close-up power.

You might think the Sony A7S or Nikon D4S would be ideal tele shooting cameras – fantastic low light performance at ISO 25,600 and potential moonlight captures at ISO 409,600 maximum.

These sensors are full frame, 12 and 16 megapixels respectively. The full frame

must be used to get the kind of minimum resolution most people expect today. That means if you want a 500mm lens view, you'll be in for a real life-size 500mm lens and it may be *f*4 at the fastest (assuming a big bank balance to pay for it) or *f*5.6 in a budget version. If, instead, you use a camera body like the Sony A6000 or the Olympus OM-D E-M1 you get a smaller sensor with a much higher pixel density. The A6000 is equal to a 57 megapixel full frame and the E-M1 to a surprising 62 megapixels.

At pixel level, to capture the same shot a Sony A7S takes with a 500mm lens requires just under half the focal length (0.47X) meaning that a 250mm lens used on 24 megapixel APS-C is a more powerful tele than a 500mm used on the A7S. For the 4/3 system with a 16 megapixel sensor it's much the same.

We then come to the most useful lenses for APS-C and smaller sensors. The various 18-250mms, 18-300mm (new

Sigma) or 16-300mm (Tamron) all have much more versatile angles of view and excellent close focusing, before the effect of the smaller sensor is considered. It's true that they tend to be weak at full aperture and full zoom, at the image edges. However, they also tend to be very sharp centrally, and if you crop an APS-C image down to 12 megapixels from 24, you are using the centre only.

There are some 'sleepers' out there like Sony's 55-210mm *f*4.5-6.3 SEL, a fast sonic motor focusing E-mount tele which has cost very little especially when bundled in kits, but proves able to deliver great central sharpness on 24 megapixels. It also focuses down to one metre at all focal lengths, with a 0.23X subject scale, and has effective stabilisation.

So – what do you go for, a Sigma 150-500mm *f*4.5-6.3 OS on your faithful Nikon D700 or D3S, or a far more easily handled zoom on a new Fujifilm X-T1 (their promised

high speed 85-300mm)?

Many photographers have not been doing the sums or checking the specs, they have just realised their smaller mirrorless or consumer level DSLR systems somehow enable them to be closer to subjects and show them larger. It even applies to comparing kit zoom lenses with premium glass alternatives – often the kit lens wins. There are other things to consider here too. The Sony kit 16-50mm *f*3.5-5.6 has a tiny 40.5mm filter thread and small front rim. It doesn't just focus down to semi-macro range, it can also pop through a chain link fence for a perfect shot when the camera with a much 'better' Carl Zeiss 16-70mm *f*4 is stuck with wires crossing the image.

This brings up another issue – of filter threads and filter fits, built-in lens hoods on wide angles, special adaptors for filter systems on convex front wide-angle lenses and so on. We'll examine this in the next edition.





CAMERACRAFT  
REARVIEW

*One of the best-known iconic photo opportunities for the well-travelled lens, the Chinese fisherman and his cormorants on the Li River, China, was captured by Sue Black in one of the best images we have seen of this subject.*

*Sue, from Queensland, used the Sony A7R with new 16-35mm f4 Carl Zeiss lens to produce detail which would once have demanded rollfilm. The articulated rear screen of the camera, acting like a waist-*

*level finder, allowed her to compose and time the shot (using the USB remote release) while resting the camera on a rock just above the surface of the water. With the lens at 18mm and wide open at f4, a shutter speed of 1/125th was fast enough to freeze the moment but allow just a hint of natural movement to the foreground cormorant's wing. ISO 800 is effectively grainless for the beautifully graded evening sky. [www.sueblackphotos.com](http://www.sueblackphotos.com)*



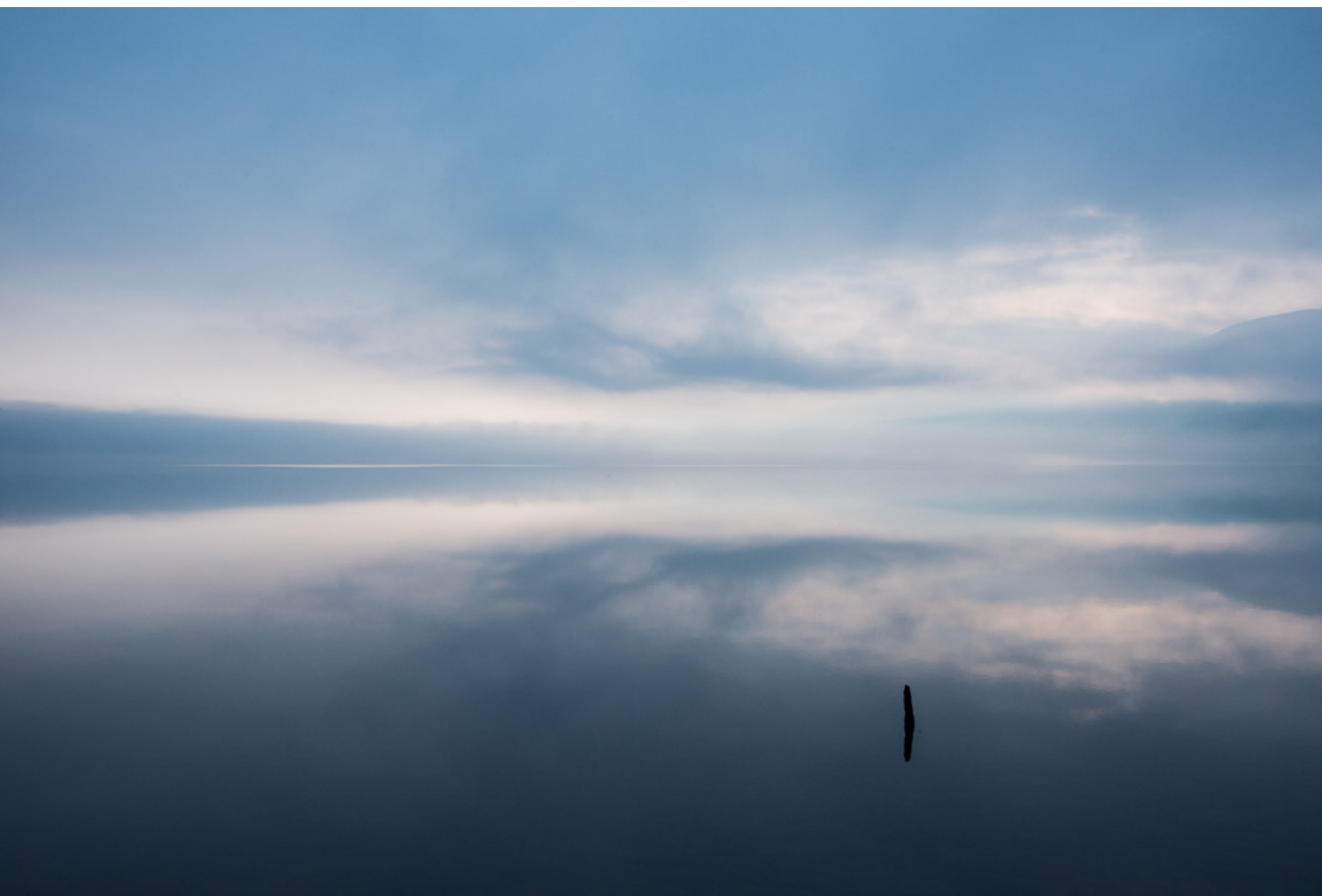
# CAMERACRAFT REARVIEW

Right, Crummock Water by Helen Herbert, who's lucky enough to live nearby in Cumbria. A favourite location for Colin Westgate's Quest Photographic workshops. Square crop from a Nikon D700 frame.  
[www.helenherbertphotography.co.uk](http://www.helenherbertphotography.co.uk)

Below: by Scottish landscape photographer Margaret Soraya, from the Master Photography Awards 2014/15 ([www.mpaawards.co.uk](http://www.mpaawards.co.uk)). Margaret's work is often very subtle and best seen in large print form.  
[www.margaretsorayaphoto.com](http://www.margaretsorayaphoto.com)

Top right: mist and light in winter woods, by Simon Halstead. Taken wide open at 200mm on the Canon 70-200mm *f*4 lens, 1/1250th at ISO 100 on the EOS 6D.  
[www.simonhalsteadphotography.co.uk](http://www.simonhalsteadphotography.co.uk)

Bottom right: beautiful tones for a shot of a horse running on the dunes at Luskentyre on the Isle of Harris, for Irene Froy from Shropshire.  
[www.irenefroy.com](http://www.irenefroy.com)





*If you would like your work considered for Rearview gallery, email no more than three images to [cameracraft@iconpublications.com](mailto:cameracraft@iconpublications.com)*





*In the troubled times following the Charlie Hebdo murders and terrorist attacks in Paris, Martin Argyroglo, a member of Divergence Images, found a composition and moment in the spirit of Henri Cartier-Bresson, where all the elements conspire to create art while recording momentous events. See: <http://www.martin-argyroglo.com>, [www.divergence-images.com](http://www.divergence-images.com)*

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