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CAMERACRAFT



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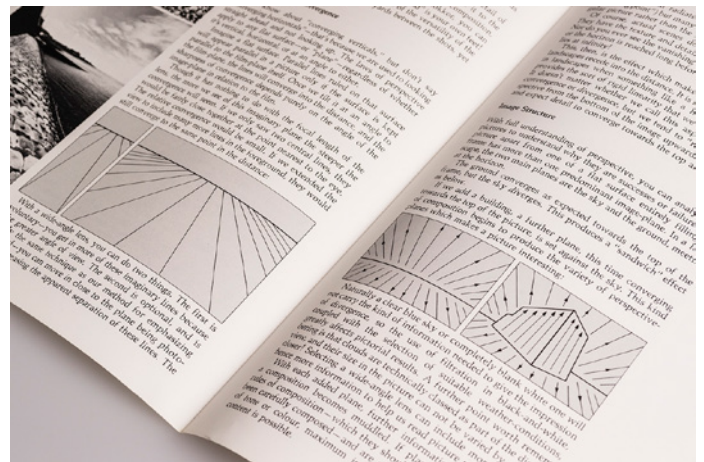
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Memes have become popular. They've always been around, as that's what they do, but the word has become more current. It's the successor to going viral. Photography is particularly susceptible to them. Ideas spread until it seems that the whole photographic world has just a dozen ways of seeing.

Choosing José Ramos for our first colour portfolio, we're spreading a visual meme. We've selected José's work because of his use of light and colour. We also happen to like wide-angle views, and the effective use of foregrounds.

This is where we started, with one of the very first affordable 17mm lenses in 1974, but mainly in black and white. There has rarely been a time when we did not own the widest possible angle of lens regardless of format. In 1976, *Minolta Mirror* published our article called *A New Perspective on Wide Angles*, which analysed how 17-35mm lenses so effectively describe the structure of land, sea, sky, buildings and objects in the scene.



Back then, this was new. Reading this article we realise it's still as valid now and has never been reprinted (and it does need its nine pages).

You can download a PDF from: <http://bit.ly/15FuGZ2>
– David & Shirley Kilpatrick



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Casting light on the past and present

Two books which span two lives and lifetimes can help us understand how today's photographic styles, and the environment we live in, developed.

In our first issue we took a theme of shadows; in this issue, we've got a similar bias towards light. So when a book on the life work of Bill Brandt arrived from Thames & Hudson, it was a natural fit: *Bill Brandt, Shadow and Light* by Sarah Hermanson Meister.

This book is a complete retrospective and life catalogue of his work, and has 162 duotone reproductions which are presented more or less in date order. This enables you to trace the development of his technique and ideas. In the process, it's often the dates which surprise most as Brandt was not a follower of fashion. He created many of the visual memes which have survived best from the 1930s without looking dated; if you imitate the techniques of Beaton or Man Ray, you are clearly aiming for a period pastiche or a historic process. Take the lead from Brandt and it will be timeless.

There's an exhibition associated with this book (Museum of Modern Art, New York, where the author is a curator in the department of photography, to August 13th 2013). No doubt it will also be seen elsewhere in future.

I recommend the book even if you have no chance of seeing the show. Throughout it you'll find images which you already know well, that are constantly mirrored in the work of other photographers. I am sure many have tried to produce a view of Hadrian's Wall at

Cuddy's Crags which gets close to his 1943 print – I've seen countless pictures from the same position, but never anything which comes close to the Brandt. The cover is one which everyone knows, *Francis Bacon Walking on Primrose Hill, London, 1963*. In 1981 I interviewed Andy Earl during a week when he was shooting album pictures for Duran Duran – heading off to Primrose Hill to look for that lamp-post and have a bit of fun.

Though Brandt used the full range of angles of view, his adoption of an ultra wide angle technical camera in 1945 led him to create unusual nude studies using close viewpoint perspectives. It's possible that Brandt's wide-angle work helped Zeiss and Schneider sell the new Biogon, Distagon and Super-Angulon lenses to Hasselblad and Leitz and their users. Certainly by the time he published *Perspective of Nudes* in 1961 every camera maker wanted to have a 21mm lens and from then on wide-angle Brandt disciples like Jean-Loup Sieff ensured every photographer wanted one too.

Brandt's black and white darkroom techniques, or the distinctive high contrast style he created, are examined and of course shown most effectively using duotones, now a rare printing method when four colour process is such a common method for handling mono work. As with his effect on the popularity of wide-

angles, his dramatic handling of tones and dense blacks led to a change in the look of most monochrome work. Agfa would never have sold as much Grade 6 or Ilford as much Grade 4 paper without Brandt!

This book is a key addition to any photographer's library at £34.95, ISBN 978 0 500 544242 (\$50 USA, or \$40 to Friends of MOMA).

Light and shadow are also integral to the work of architects, and here's another Thames and Hudson book which may surprise – *Le Corbusier and the Power of Photography*, created with a preface by Norman Foster and contributions from six essay authors.

This volume reveals Le Corbusier to have been an observant photographer, looking for shape and form, light and shadow. He also collected or found countless

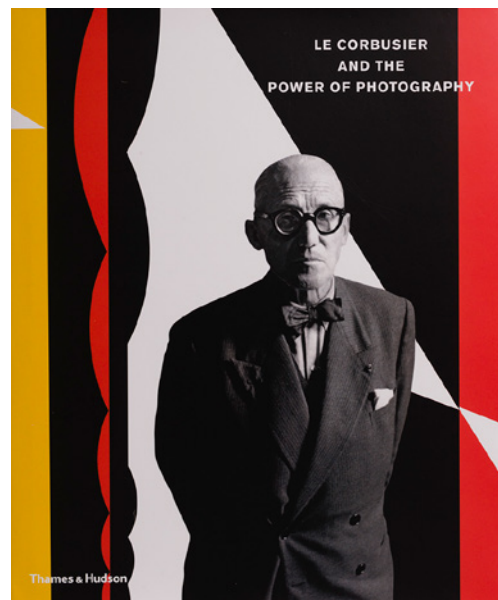
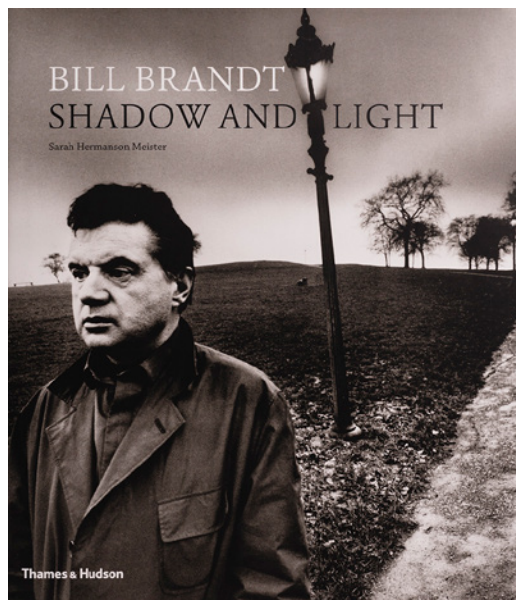
images from others, and used these to create interiors plastered with large prints in a way we would find avant-garde even now.

To add to an understanding of how the architect used the camera and photographs, we find in this book many of the best contemporary (of his time) and new photographs of his work, and a section of photographs of the man himself.

Though this is not a photography book, you'll learn a great deal from it about photography, and maybe also gain a new appreciation of how to portray modern architecture. Concrete ramps and run-down shopping malls will have a new appeal!

ISBN 978 0 500 544228, £32.00.

– DK



How Bill Brandt used the new wide-angles for 35mm cameras: Seaford, East Sussex Coast. 1957. From the MOMA show and book. Gelatin silver print. 9 x 7 11/16" (22.9 x 19.5 cm). The Museum of Modern Art. Gift of David Dechman and Michel Mercure. © 2013 Bill Brandt Archive Ltd



Figures released by the industry in the first half of 2013 show that the public is falling out of love with compact digital cameras. For the first time, sales have been falling despite the growth of photography. The reasons don't seem to need much analysis – smartphone cameras are now good enough to do most things which any regular user wants, and there are many better alternatives to pocketable, small-sensor digital compacts.

Exceptions to this decline include non-pocketable small sensor cameras with extreme zoom lenses, always combined with image stabilisation and usually with an electronic viewfinder. Even in this group, some cameras are slim and omit the eye-level finder. Zoom lenses going to an equivalent of over 500mm (20X, typically with a 28-560mm equivalent range) are designed to collapse into a body only 35mm thick, like the Fuji F770EXR I have sitting on my desk. Sales of cameras like this have only been maintained by a drop in street prices, while one tier above, even more extreme telephoto ranges into four figures of millimetre equivalent are now with us.

If anyone had told a motorsport or bird-watching enthusiast ten years ago that they would be able to buy a camera with a 1200mm lens capable of capturing 13 frames per second, they would probably have believed you because technology was moving forward. If you'd given them its price (for the Canon PowerShot SX50) of under £450 RRP UK and only £270/\$400 from international tax free discounters, it would have been harder to believe. This camera does have enough resolution (12 megapixel sensor) to double the zoom using digital crop and interpolation, giving those who need it a 2000mm equivalent or 2° angle of view and an image able to fill the largest computer screen or TV without loss of detail.

Smartphones can't compete with this, and the super-zoom compact digital is a new genre of camera developed over

CAMERACRAFT UPDATE

The Ricoh GR has everything except interchangeable lenses



Here is it seen with an ultrawide converter and finder

The Nikon Coolpix A has an 18.5mm fixed f2.8 wide angle and appeared a month before the Ricoh which also has a 16MP sensor



the last three years which looks to be here to stay. Up to 20 or 25X zoom, expect pocketability; from 25 to 50X, expect more of a bridge camera shape.

If all you need is a 3X or 5X zoom – the miniaturised equivalent of the popular 24-105mm or 120mm range – development is going in two directions. Small sensors allow extremely wide aperture lenses to be designed yet still remain compact. The latest wave sees faster apertures extended to the long end of the range, which remains a relatively short focal length. This counters the problem that small sensors suffer from high

ISO noise, as there's no need to use high ISOs when your lens is $f2.8$ or faster over its entire range.

The APS-C trend

Against this, the same modest zoom range has appeared in a new fixed lens APS-C compact – the Leica X Vario. And it's far from fast, ranging from a reasonable $f3.5$ at 18mm to a very modest $f6.7$ at 46mm. The exceptional high ISO performance of the 16 megapixel Sony sensor inside this Leica means you can use ISO 1600 and get results as good as a small sensor at ISO 200, so a fast lens is not needed. This camera at well over £2,000 also sums up the trends in markets and pricing; assuming the 28-70mm equivalent Leica zoom is of impeccable quality, the combination of this with a manual shutter speed dial and also a dial-set aperture on the body can appeal to an affluent and knowledgeable buyer.

Leica historians and enthusiasts will like the use of the term 'Viso-Flex' (written with a hyphen) for the new EVF2 1.4 megapixel electronic viewfinder fitting this and the fixed focal length X2 body. Even the shape of this little 90° hinged finder is based on the original Visoflex, a reflex housing which went between the Leica rangefinder body and a long or macro lens to provide SLR-style viewing.

But it's hard to see just how much this non-pocketable camera beats a Sony NEX-6

The Leica X Vario is not the first APS-C fixed zoom compact, though it is the first to have a full 1.5X sensor. Canon's G1X can claim to be the progenitor of this type of camera. Unusual features of the Leica include a distance-marked manual focusing scale with a position for AF, a shutter dial with 1sec to 1/2,000th plus A, and an aperture dial on the camera body which also has an A mark. The body has a metal top plate designed to feel like an M-series Leica and the camera is being dubbed the 'Mini-M'.



with 16-50mm $f3.5-5.6$ OSS collapsible zoom – a 24-75mm equivalent range, similar sensor, and built-in EVF.

When you add the Nikon Coolpix A and the Ricoh GR to the line-up of APS-C cameras without interchangeable lenses, a distinct pattern emerges. Initially, we had the Fujifilm Finepix X100 and the first Sigma DP models as the only representatives of a new camera type. The Sigmas never gained popularity even with the change to a 1.5X sensor from 1.7X in the greatly improved 16 megapixel DP Merrill models have not broken into the market the way the Fuji X100 did. Then there was the Leica X1 which shared its 35mm-equivalent, 12 megapixel sensor. And Canon surprised everyone with the zoom G1X.

Roll on 2013, and suddenly the cult following for the X100 has inspired a Nikon with a fixed 28mm equivalent view $f2.8$ lens and 16 megapixel sensor, a Ricoh with almost identical specifications but different ergonomics, a Leica X2 revision boosting the sensor to 16 megapixels with the same 24mm $f2.8$ Elmarit lens, a Fujifilm upgrade to the X100S matching the new 16 megapixel standard... and in June, the announcement of this zoom Leica.

These cameras range from £600-2000 (\$900-3000) and you can't change their lenses. Only the Fuji has an optical viewfinder built-in. Yet they are gaining a market which no-one ever dreamed could exist. Alongside them the most expensive fixed lens 'compact' in the form of the Sony RX1 sets an upper point for pricing which even Leica does reach – and it has been selling well.

I've been trying the Nikon Coolpix A, which has a wider angle lens than most. It is a very straightforward camera to use. The results are as close to perfect as you could want, as long as what you want is a 28mm lens.

Comparing these new fixed-lens compacts to the favourites of a past era – cameras like



Top: the Nikon Coolpix A is a perfect instrument for available light, wide angle journalistic work. Above: cameras with LCD rear screen composition allow easy close-ups, unlike older rangefinders (RX100).

the Minolta Hi-Matic 7SII, the Olympus Pen D2 or Ricoh 500G – even the few which offer an optical finder have one massive advantage. Because they can all use their rear LCD for focusing and viewing, they don't have any of the parallax and minimum distance problems which pushed a generation of photographers away from rangefinders into system SLRs.

In the last issue I wrote that Sony's failure to use their superb 20 megapixel sensor from the RX100 in any other

camera was a mystery. It still is. My opinion of this sensor has not changed; I bought another RX100, and many professionals I know have bought one too. Everyone agrees that this little compact zoom camera has hit a sweet spot. Indeed, that's why even with a Coolpix A round my neck and the RX100 in my pocket, nearly all the shots get taken on the RX100. The Coolpix A only wins when there's hardly enough light to see by.

So many photographers I know are abandoning

their DSLR outfits for all general photography, travel, landscapes and even some commissioned work. The new-found freedom of 'this is all I need' when it's also just a palm-sized camera in your pocket open doors to better photography.

That, also, is why the smartphone market is killing the ordinary little digital compact. Who wants to carry an extra gadget when you have your phone on you 24/7?

– David Kilpatrick



COLOUR OF LIGHT

by David Kilpatrick

Saints and philosophers have devoted lifetimes to the study of things which probably don't exist at all – deities, souls, abstracts like good and evil. Such things appear because whether they exist or not, humans perceive them.

Scientists rarely spend too much time investigating things that depend entirely on the human physiology and mind for their apparent existence.

Except for colour.

Colour is completely subjective. The colour management we use today has been based on relatively small samples of the human race, tested to define the 'Standard Observer'. We now know that genetic differences give individuals a wide range of response to sound, taste, smell, touch and vision. It also remains a mystery whether all humans 'see' colours the same way in the brain. How we see colour can be measured in relative terms, but the fact is that no two people can be sure they see alike.

The starting point for everything is the Sun, and the particular spectrum it yields after the filtering effect of Earth's atmospheric layers. This band of visible light, more or less in the 400 to 750 nanometre range, is what we call 'white light' or daylight when it is equally balanced across its range. It is also what produces an equi-energy spectrum, or a straight-line (flat) response when measured.

Many animals see beyond our range, or are blind to the colour differences within it. Humans vary, some being able to distinguish fine differences accurately, others being colour-blind to the extent of seeing completely different



Simulating filters

Digital processing gives us the ability to use 'filters' in the traditional black and white sense, working from any colour original. To make the black and white image, the colour source file has been opened from a JPEG through Adobe Camera Raw. Luminosity of green and aqua has been increased, blue decreased, and red increased along with a shift in exposure and black clipping. Daylight contains all the colours – we can now 'filter' in a way which would have impossible.



wavebands as the same hue. Throughout the history of photography, photosensitive materials have had the same range of different characters. You can use a basic knowledge of how film emulsions responded and apply this to techniques with digital sensors to re-create historic black and white looks.

Ordinary to red pan

The first sensitive materials – not emulsions but salts formed on a metal surface or absorbed by paper – responded mainly to blue and ultra-violet light. Greens were recorded darker than we now expect. Lips and hair gain contrast and suntan, freckles or darker skin tones become exaggerated. Blue skies are often pure white.

This 'ordinary' sensitivity continued to be standard for many black and white films until end of the 19th century, and it's common for portraits and snapshots to have this look. Even well into the 20s and 30s you can find portraits with the panda eyes and vampire lips of the Ordinary Plate. Subjects with brown eyes appear to have huge atropic pupils – those with blue eyes, a Nordic icy gaze.

You can re-create this look by using a deep blue filter on today's b&w films or digital cameras. If you shoot raw digital files, mono conversion to use the blue channel only with just a hint added from green will do the same.

By the late 1800s orthochromatic emulsions were available at extra cost. 'Ortho' has good sensitivity to green and some to yellow, but hardly any to orange and red. Portraits still have that theatrical look, leading the

modern viewer to think that eye-shadow, lipstick and white face powder were worn – even by men and children!

The 'ortho look' is the one we most associate with silent movies and film stills, for which the actors did of course wear make-up. Stage makeup had been developed to suit limelight, which has a much higher blue content than any other artificial light of the era at around 4200K. The same makeup worked well with ortho films in daylight.

You can imitate the effect of ortho film using a medium blue filter, or raw digital processing to boost the blue channel and cut red. Isochromatic sensitisation was an improvement on ortho, bringing a better response to green and yellow with brighter greys to represent orange, but still very dark shades at the red end of the rainbow. Both designations cover a wide variation in actual colour sensitivity.

A D to A (80B) blue filter simulates isochromatic mono film well enough. The effect is subtle, changing skin tones, brick and stone, foliage and sky density. You see a world from circa to 1950.

Panchromatic sensitisation was the breakthrough which made colour photography practical, though experiments with green and orange filters had produced crude colour separation. Panchromatic film recorded reds to the right visual brightness on the greyscale of b&w prints, but the expensive dyes used to make the emulsion go into the red also did the same to bank accounts. For this reason, ortho films continued to be made; the small British firm of H R Bott & Sons, which made film for Woolworths, only discontinued low-cost snapshot ortho in the 1970s. For entirely different creative reasons, ortho has been reintroduced in most formats by specialist manufacturers today.

All panchromatic films were and are not equal; some, especially the faster black and white films, are more sensitive to red or extend sensitivity to far red (the edge of the



ProPhotoRGB



Ordinary Plate: mid-1800s



Orthochromatic: late 1800s



Isochromatic: early 1900s



Panchromatic: 20th century



Red Pan (like Ilford SFX): late 20th century



Panchromatic used with a red filter

For an Elinchrom/Flash Centre workshop, Frank Doorhof (www.frankdoorhof.com) set up this shot with model Nadine in a pure red dress of her own design. Working from a raw image taken on my Alpha 99, I've used Adobe Camera Raw to simulate the colour response of black and white materials from around 1850 to the present day. A Victorian photographer would have avoided a red dress in bright sun – but so would a Victorian lady... after all, the world was in black and white back then!

invisible infrared zone). Kodak T-Max 400 is more sensitive to red than traditional Plus-X. Ilford still manufactures a special film, SFX 200, with extended 'red pan' response. Such films record lighter skin texture, paler lips and hair, and more tone in blue skies. To achieve similar results with a digital camera, the infrared cut filter must be removed. Some early digital models have weak IR cut filters, as they relied on the high infrared sensitivity of silicon CCD sensors to boost their apparent ISO rating. The pallid putty-coloured images from early Kodak DCS professional press cameras were a result of this decision. Sigma DSLRs, using the highly IR sensitive Foveon X3 sensor, all have removable IR cut filters. They are able to imitate any type of mono or colour film in the history of photography by the use of different colour filters and raw conversion settings.

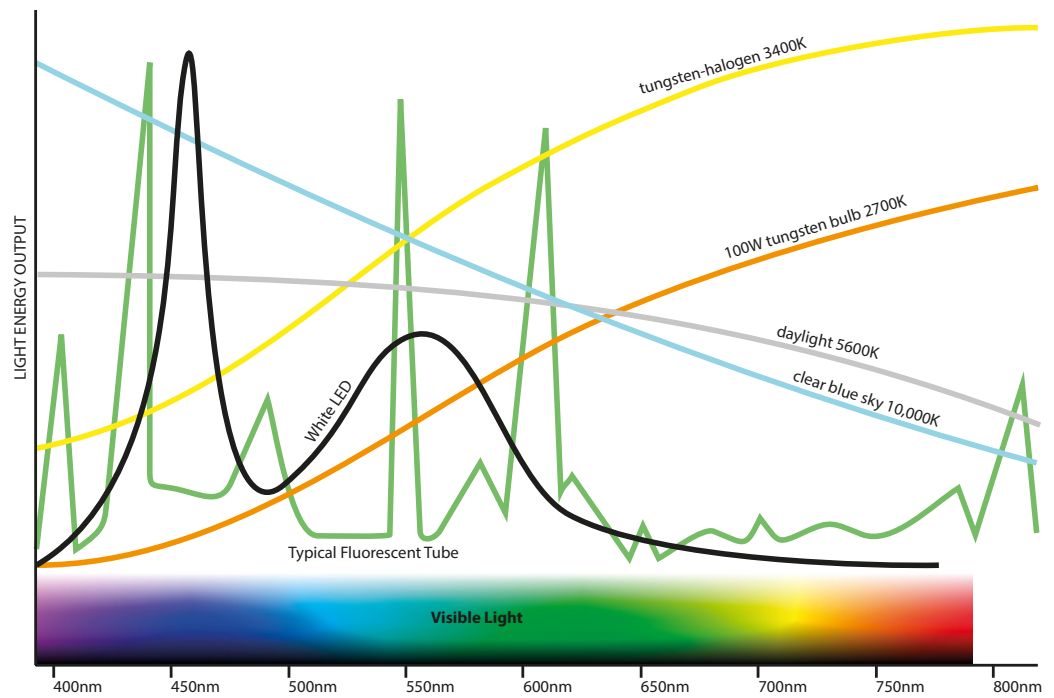
With both ortho and pan films, the light green filter became popular for portraits. This might seem to be a strange choice to anyone except a mortician; as Minolta explained when they released the unique Portrayer P filter in the 1980s, there is a green element underlying skin which is responsible for most of its mottled or uneven look in photographs (colour or b&w). The 2.5X Green filter removes this hidden shading, while slightly darkening lips and having no serious effect on eye iris rendering.

Panchromatic and red pan films changed the way everything was done. The first photographs could be developed by candle-light or firelight, and ordinary plates (like bromide prints) required only an amber safelight. A recent television historical drama series showed a Victorian photographer working by red safelight. This didn't happen; photographers worked in a murky brownish orange light, often coming from a window covered in waxed brown paper. The pure red safelight arrived with orthochromatic film and plates and found new life when multi-

contrast b&w printing paper arrived (amber and orange light could fog this colour sensitive material).

Today we think of red light for darkrooms, though originally it was only used for developing films and not for printing. No film director would show anything else in a movie or TV production! It's visual shorthand for darkroom. In fact, lights of many colours have been used including an extremely dim green (for handling panchromatic film).

It's when you use colour film or digital sensors – and these have developed in much the same way that black and white did in the first 100 years – that the make-up of *light* becomes far more important.



Spiked light

One type of safelight allowed a fairly bright orange illumination with films that normally required deep red – the low-pressure sodium lamp. The orange of sodium lighting is getting less common in the world's cities, as low energy LED lighting is taking over. Exactly the property which made sodium a good safelight is found in LED lights – a limited spectrum with a strong wavelength peak.

Low-pressure sodium is extremely monochromatic and produces what looks like a single peak at around 589nm. It's so bad at showing colour it is given a 'minus' rating for CRI, the Colour Rendering Index. All its very efficient energy is concentrated in one band, so narrow that it doesn't matter what you do with filters or white balance, you can never extract colour from a low-pressure sodium lit scene unless some other source like the Moon or other white lights add to the spectrum.

LED lighting is the future of continuous light for photography. It's already taken over from the brief period where fluorescent tubes replaced photofloods in many amateur studio and video set ups. Daylight reflected from a neutral grey or white surface will produce what is called an equi-energy spectrum. That is



Above: how the 'white' light is made up from various sources. Left: the R1-8 test patches used to determine Colour Rendering Index, by visual assessment.



A low-costs Aputure LED video light, fitted with its tungsten balance filter, shows the failings of such lights in the green reflection off the camera lens hood. It's an LED with a low CRI.

just a fairly flat level response, so every point across the range of visible light has a similar value. Other photographically good continuous sources also produce a straight line or a gentle curve, even if it is not flat. Tungsten light, the traditional filament bulb, makes an angled graph starting low at the violet end of the spectrum (left) and ending high at the red end (right). When a correction filter



The Macbeth (now X-Rite) Color Checker 24-patch test card, which can be used for camera profiling and calibration, includes stronger red hues which white LED lighting can render too dark. CRI is now being measured using more of the saturated colour patches. Photographers need to be aware of the shortcomings of today's new technology light bulbs and tubes. Use window light, go outdoors, or go back to old-fashioned tungsten filament bulbs if you want the best colour.

is used, it levels this out to resemble daylight.

In contrast, both fluorescent tubes and light emitting diodes depend on complex mixtures of elements to add output boosts over much the spectrum. They are non-continuous in some cases and have gaps where little energy is emitted. An LED 'white' source starts out with a blue-violet emitter and adds a yellow phosphor, creating two peaks with a distinct gap

for greens and cyans and a sharp fall-off at the red end. It's a 'cold' light which can look slightly magenta despite failing to show oranges and reds well.

Colour Rendering Index is measurement of how closely any source matches its continuous-spectrum equivalent. Daylight has the best CRI at 100, and tungsten is very close to this. Low energy light bulbs in your house probably have a reasonable CRI around 70 or you'd find them hard to live with; expensive tri-phosphor fluorescents can manage better than 80.

Lights with a low CRI can make many things look unappealing, including the food we eat. That's why supermarkets spend big money on special lights with a high CRI to go over the meats and fresh vegetables, and fashion stores put high CRI lights into changing rooms. Sometimes that means using tungsten light. The best make-up mirrors have tungsten bulbs not LEDs or fluorescent tubes, because your reflection looks so much better.

With today's demands for low power consumption, we live in a world where true colour disappears at dusk. LED lights are destined to take over as they produce two to three times as much light for the same power as filament bulbs. It's possible to obtain

LEDs with a high CRI instead of cheap ones you'll find in torches and domestic ceiling spots, but these cost ten times as much (or more). One solution used by LitePanels, an expensive professional TV studio and video light brand, is to mix two types of LED in an array for a more complete spectrum. These lights also have a colour temperature control, so they can be tuned between tungsten and daylight.

We have tested a variety of LED lights made for camera top video and macro use, alongside cheap sources from supermarkets and garage forecourt offers. You get exactly what you pay for; the £50 eBay battery video light gives a very unpleasant looking skin hue compared to the £250 professional item it's copying. Most of these cheaper lights are blue compared to D65 (6500K) standard daylight let alone the warmer D50 (5000K) standard.

Ultimately, if you want truly excellent colour in your images (whether on film, or digital) you must use a continuous spectrum source or pay highly for the best CRI fluorescent or LED. High CRI lighting used by shops is often specific to the kind of product being lit, with different tubes for the butchery counter and the salad shelves. Lighting for video and still photography is specialised and it costs even more for good reasons.

The good stuff is free

The good news is that all daylight, from dawn to dusk, has a spike-free full spectrum regardless of its colour shifts to cool blue skylight or warm sunset glow. The duller overcast cloudy day may offer you the purest light for colour. And it's free. Use window light, shoot outdoors, use simple low cost solutions like white garden gazebo shelters.

Your old inefficient heat-producing friend, the tungsten light bulb, is equally good for excellent colour. Higher power photofloods are still made, used in tungsten studio kits by brands like the British company Interfit. It is easy to



Shooting this dish of pigeon breast for a local restaurant, I used window light combined with the tungsten light from a flash unit's modelling lamp. The contrasting neutral/warm light – both with excellent colour rendering – is ideal for making food look good.



Nothing beats daylight if you can use it! Here, there were windows either side of the group, just out of shot, with sunlight streaming in and hitting the wall behind the camera. I had a full flash system with me but as soon as I saw this light, I knew it was not needed. String Jam Club, Galashiels – Allie Fox and the 'crew' in front of 16 years of gig posters plastered on a wall, before the redevelopment of the venue.

fit an 80B D to A (daylight to artificial) filter on your lens, but there is a secret hidden away by most digital cameras. They are actually more equally balanced to tungsten light than they are to daylight. If you use the tungsten white balance setting, or process your raw file to tungsten WB, the image you get can have lower noise than a daylight balance shot. Normally it does not because a higher ISO is used in tungsten

light, underexposure is common, and the lighting can be too direct and contrasty.

Finally, electronic strobe flash offers a range of qualities from slightly 'spikey' to matching the best daylight. Generally, professional studio flash with relatively long flash durations (1/250th-1/2,000th) gives a better equi-energy spectrum than small battery flashguns, especially when these are used with a curtailed

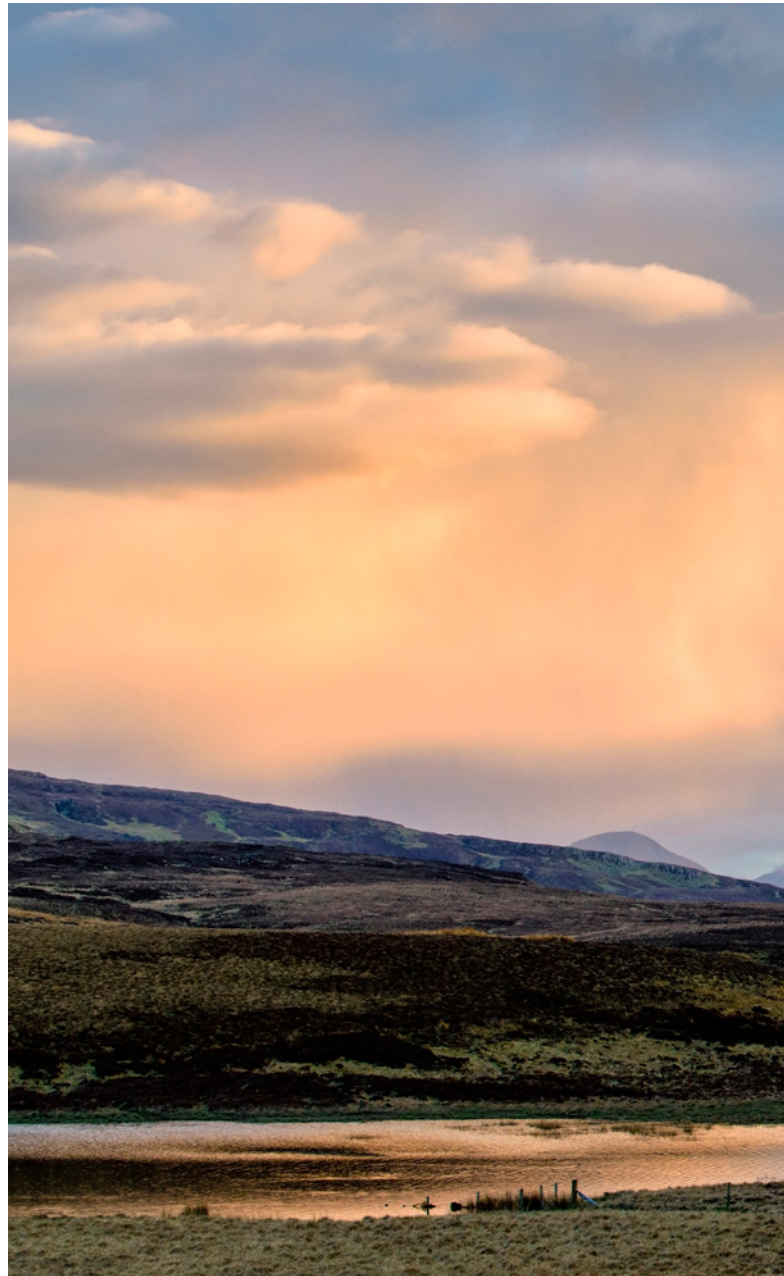
duration. Flash designers overcome a bias towards blue-violet by using a gold tinted tube or reflector. When experienced photographers claim that a particular make or type of flash gives them better results, it's nearly always the completeness of colour rendering they are talking about.

We are now seeing LED modelling lights appear in flash heads. With these, it's going to be very important to keep the shutter speed short. Chris Whittle, MD of Photo Studio Consultants Ltd in the UK and importer for Elinchrom, has told us that despite making some use of LEDs for their battery powered Ranger Quadra system they are not making the change yet for other heads. The CRI of affordable LED modelling lamps is not good enough for video use, and might also affect the colour of stills.

It's a long time ago that my own studio invested in what were the most expensive Multiblitz studio flash heads. These heads not only had very long flash durations, taking up to 1/125th of a second to deliver all the useful light, they also had extremely bright modelling with 300W tungsten halogen for the 250Ws heads and a 650W lamp in the 500Ws head. We tended to work with the modelling at full power to help composition and focusing on the groundglass screens of our Sinar and Mamiya RB67.

At the same time we had changed to using the new Fujichrome film, when most local rivals were still using old Bowsens or Courtenay flash and Kodak Ektachrome. Our sales really took off – everyone wanted our studio work, especially clients with colourful packaging or products. The colours just popped out compared to the what looked cold, grey, desaturated product shots from other studios.

What was partly responsible for this was the power of the tungsten modelling, contributing a third of the total exposure for many images, or even more if we used 1/60th or 1/30th for the shutter instead

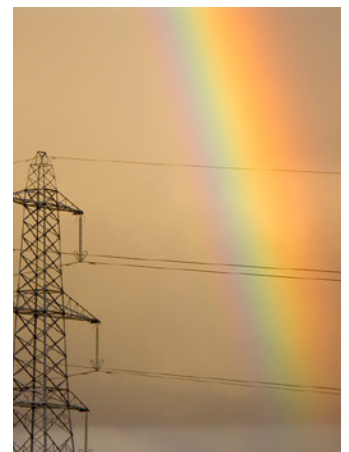


I took the gable-end above walking back home one evening; warm room lights against a dark sky. On the right is a different view of the over-photographed Cuillins of Skye, by Parisian Mark Holdefehr. "I made a quick stop on the road and as I had my D800E with the 70-200 f4 mounted on it I was fortunate to be ready. Just a minute later the entire scene had changed." Look at the colours – from 'tungsten' at the left, to 'daylight' on the right, a wonderful panoramic transition.

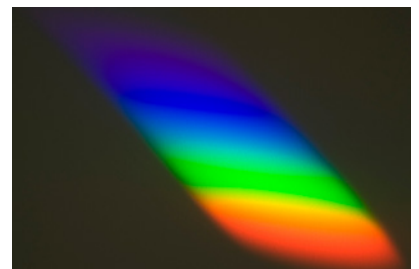
of the normal 1/125th. It was not just a warm-up effect. The tungsten and flash combined for a CRI (in hindsight) which Fujichrome's colours could exploit. My studios were amongst the first in Britain to switch to using Fujichrome around 1980. The industry in general shifted from Kodak, labs changing their process to match Fuji's E6 films better, by the 1990s Kodak embarked on a series of changes to their reversal films without ever hitting the right spot. The outcome was inevitable though it has taken two decades. As we went to press, Kodak announced they would cease making acetate film base – and on the same day, a new dedicated Fujifilm direct sales site, www.photouk.co.uk, opened for business selling

traditional film materials. Fuji sponsored the ChooseFilm Facebook group. The new site, connected to this, will also stock Kodak and Ilford materials.

Completing the cycle, I was able after five years of searching to buy a replacement lamp for my Minolta Dimage Scan Pro. This transformed the scanner's performance for dynamic range, d-Max and colour rendering. I am once again able to see how well light and colour were handled by films in the past. But I'm also completely happy with the latest digital camera sensors and new software like *Lightroom 5*, *DxO Optics Pro 8* and *Capture One Pro 7*. Use the right light – and you'll get wonderful colour.



How complete is light? Above – colour content of light near mid-day, Tenerife, November; top right, just before sunset, Scotland, September (almost no blue). Right, mid-day, late May, full sun spectrum in Scotland.





Midwinter light (in this case, January 6th) can show the world with very little colour. It's best to leave it that way – boosting saturation would not improve this scene in any way.



This is not the result of using filters, but the transition which was present has been emphasised using increased saturation and vibrance. Port d'Andratx in Mallorca is well known for exceptional sunsets and this is typical of the light and colour after the sun has disappeared, with mercury vapour street lights looking very blue-green and cool against the sky. Afterglow conditions like this also create interesting light on subjects, especially reflective surfaces like cars. A great time to head for a beach with your new Aston Martin...

LIGHT

FROM WITHIN

Many people turn to religion for answers to life's big questions. Melisa Teo started on that very path but discovered that her camera – not the religions themselves – became the catalyst for her spiritual journey.

In 2008, Melisa abandoned a successful career in book publishing in her native Singapore, to reinvent herself as a globe-trotting photographer. This was the beginning of a photographic odyssey that has taken her from Thailand, Vietnam, Tibet and Japan to Sri Lanka, Indonesia, India, Nepal, Cuba and America.

With her camera very often as her only companion, she has travelled the globe photographing people and their practices of faith. It has been a journey of discovery that has led her to confer with shamans, witches, Santeria priests, astrologers, psychics, crystal-ball and tarot-card readers.

"The more I saw, the more curious I became. The more I clicked, the more I wanted to leave my old life far behind," she reflected. "Photography is my escape into a world that I once barely noticed. Since I surrendered to the whims of light – allowing its rays to cast fresh insights on familiar subjects and reveal others that had previously slipped past my eyes – I have begun to embrace life, instead of running from it."

This has led her to dance with the "dead", converse with spirits, sleep with raw fish on her head and walk barefoot through warm blood gushing from the throats of freshly sacrificed birds and goats. Exploring the sacred realms of religion and witchcraft enabled

Melisa Teo takes her camera into the shrines and ceremonies of a world alien to most of us. Gary Friedman met her in Singapore.

*Portrait of Melisa
©Abbas/Magnum*



her to also seek answers to her own questions on life.

These diverse experiences have added a deeply moving and spiritual dimension to her work. Her Sony Alpha 900 has become her "third eye" and she is guided intuitively by the light. The result is rich and multi-layered images of great depth and beauty.

Unlike most photographers, she is less interested in following rules and reason than intuition. Her style is to shoot first and reason later, using the camera to see what is felt by her heart rather than being influenced by her head and photographic conventions. The aim is not to capture the obvious but the doorway between the visible and invisible worlds.

It's a fluid style that carries the viewer deep into her photographs and lingers long in the memory. Look closer at her images and you see how an unexpected ring of smoke is transformed into a thousand spirals. While normal people take on phantom forms as their bodies are embraced by flames or veiled by the rain. What was once an ordinary scene becomes surreal when seen through her lens.

Melisa's aim is to transcend reality and reveal the unexpected and beautiful world hidden from our view. A world we too often overlook or dismiss out-of-hand.

She wants light, colour and form to suggest an alternative reality to the one that is dictated or preconceived. This way the viewer is free to interpret what appears in the frame rather than be told by her – the photographer – what they should or ought to see.

Left: Mexico, 2009

Her images are often blurred and glowing with colours. The photographer acknowledges that it is not a style that is to everyone's taste, but "catering to demand" is not her end goal. Rather, the photographs are the result of a meditative process which is the essence of her work.

Ironically, it was from the creation of her images – more than the religious teachings themselves – that her concept of spirituality evolved. "My beliefs have shifted from emphasizing the external to drawing on the internal," says Melisa.

"Life change starts from within. When your perspective changes, your world changes with it. I used to regard devotion, magic, ritual and prayer as key to fulfilling ambitions and dreams. Now I see consciousness, courage and action as essential in realizing the full human potential. My beliefs have shifted from emphasizing the external to drawing on the internal," says Melisa.


"It's why one fallen flower has a far greater effect on me today than one hundred long-



Images copyright © Melisa Teo – www.melisateo.com

stemmed roses wrapped in expensive paper and ribbons. A universal truth of world religions and great universal philosophies is that: "The Kingdom of Heaven is within you."

Melisa's work has been honored by three art exhibitions; one in Paris and two in Singapore. She recently compiled the best of her work into a new book, *Light from Within*, which can be purchased through www.lightfromwithin.net.

It was all a far cry from her former life in Singapore. But she never regretted a second. "My savings are long gone but the riches I have earned will last me through eternity." 

Limited edition prints of Melisa's work are available from:

Jas Gallery
17 rue des Saints-Pères
75006 Paris, France
Tel: +33.9.17 81 08
www.jas-gallery.com
The book is also available on www.melisateo.com

Left: Sadhu, India, 2011

Below: Har Ki Pauri, India, 2011







*Left: Shalu Monastery, Tibet, 2009
Above: Pagerwesi, Bali, 2011
Below: Wings of Fire, Tibet, 2008*





Above: Green Sulphur Springs, USA, 2010
Below: Fallen Angel, Mexico, 2009



CAMERACRAFT

We hope to build a *Cameracraft* readership community over the coming year, as we reach the fourth issue and end of our first year. Everyone reading this issue made a decision to subscribe, and we will have reached over 1,000 new subscribers. That's nothing by the standards of news-trade magazines but it is larger than many professional organisations or internet interest groups. We can think of it as being already one-eleventh of the size of the Royal Photographic Society!

For the first three issues, part of the readership came from the former *Photoworld* magazine subscriber base. It's not unusual for specialist magazines to hit the buffers, and in the case of *Photoworld*, we had started in 1981 with 800 readers, grown into the teens of thousands, then gently declined along with the fortunes of Minolta and the interests of their responsible staff. We already planned to end the magazine if numbers fell below 800, but kept all the information so that when a new magazine was ready to roll out, we could honour the unused subscriptions.

Over the years, Icon Publications Ltd has been given the Nikon Club UK and the Bronica User Group amongst many other small subscription lists because in every case their owners could not continue – always because there was no support from the brand involved. Our magazines were at least of some interest, and in return for an infusion of readers, we gave the former operators of these subscription clubs a way out which did not involve losing houses or losing face.

It is therefore good to see that *Cameracraft* is a growing readership, and that we are completely independent of advertising or sponsors. Our contributors have been

wonderful, writing and providing portfolios without expecting a cheque in the post. Internet has much to do with this. Great photographers put many hours into creating web galleries and writing blogs which are free of charge to the whole world. It's not so bad to work with an editor who can make this into a permanent thing – a publication which will be there in the collections of the British Library, the National Library of Scotland, and the Library of Congress for all time. We could even be one of the last printed magazines (along with all the millions of other magazines now produced!) if predictions about future media come true.

The subscriber card

Everyone is waiting for the promised Charter Subscriber card. After August, we will have all our first year subscribers, and the card will go out. It will not look exactly like the artwork on the website because there's another idea to consider, one that may print more faithfully and usefully. It seems we can't really trust the colour management of card printers producing these vinyl credit-card sized products. Change of design ahead!

The Forum

The *Cameracraft* reader forum is now ready to roll, and we're sticking with the subdomain at www.iconpublications.com – attempts to find a better way to give *Cameracraft* an identity have led to a Facebook Page only (just look for *Cameracraft*, and click the magazine, not the photographer who decided to join Facebook with the same name on May 31st this year).

We'll email all readers directly about the Forum, as we now have email for all but a few. Richard Kilpatrick is handling forum admin.



Three-year binder

Our Cordex magazine binders will hold 12 issues, or three years in each bookshelf volume, and are black kraft on board with a silver foiled spine logo. You will want to look back on our editions in the future, and we will not fill your entire house with piles of magazines to do this! See our web page www.iconpublications.com/cameracraft for details of how to obtain your Cordex bookcase binders by mail.

As an alternative to the binder, we will be offering a digitally printed annual with on-line ordering. We can not do this until this issue has been produced and mailed. Because this will be a 176-page A4 volume, it will have a certain cost, similar to other books from Blurb or Lulu. We'll give it hard and softback options but it may only be available in a heavier paper weight, not the lighter stock used for books which are mainly words.

At the same time, a complete PDF of the first year will be available as a download and subscribers will have free access to this, and to individual edition PDFs.

We also still have back issues of *Cameracraft* Nos 1, 2 and 3 but stocks of #1 are likely to run out by the end of 2013. When this happens we'll have print on demand single back issues available.



Our binders have a 2-inch spine and cords for 12 magazines, black leather-textured paper and marbled lining, silver blocked logo.

Postal weight: 500g rate in packing.

DÉJÀ VIEW



Ohio photographer Mike Lynaugh originated what are known as 'ghost' images, from the American Civil War with his book published in 2003. We now see similar images of WWII Europe, and historic photographs of battle scenes imposed on their current equivalent have become a genre. Here's what Mike said of this subtle overlay:

"Mr Samuel Mumma, who owned the farmland near this little church which still bears his name, donated the land to build a modest little house of worship for the local Dunkers in 1852... dedicated after its completion in 1853 and home to a congregation of approximately a half dozen families from the local area.


When war came to this sleepy town of Sharpsburg, near the Antietam creek on September 17, 1862, this little



unimposing church became the focal point for many of the battles of the day. Union General Joseph Hooker and Confederate General Thomas 'Stonewall' Jackson, both make note of the church in their after battle reports. The church received much damage during the fighting and was converted to a field hospital during the fighting, and an embalming station after the fighting was completed. It is also rumored that President Abraham

Lincoln visited this church... on October 3, 1862.

In 1921, the church was still in a weakened state and a violent wind storm flattened the church. In 1924, the land was sold to a Sharpsburg resident, Elmer Boyer, and he salvaged much of the original materials from the church and sold it again. The new resident built a home and operated a gas station on this ground in the 1930s. The Washington County Historical Society

purchased the property in 1951, and donated it to the National Park Service; the original structure was rebuilt in 1961... using many of the original components of the original church that were salvaged by Mr Boyer." 

See: 'Ghosts of the Field' book www.mikelynaugh.com Mike plans a sequel later in 2013 for the 150th anniversary of the Battle of Gettysburg, just as this marked the 140th.

CAMERACRAFT PORTFOLIO

No 4

JOSÉ RAMOS



COLOUR AND LIGHT ON THE ATLANTIC SHORE



*Above: The Present – Vila Nova de Milfontes.
Below: The Natural Networks – Vila Nova de Milfontes.*



*Previous page: Illusion – Vila Nova de Milfontes.
Facing page: The Self – Praia das Maças, Sintra.*





Existential Divide – Cais Palaftico in Carrasqueira.



All images © José Ramos. Locations are all in Portugal.





*Above: Life Lines – Praia das Maças, Sintra.
Below: Echoes – Alvor,*



Left: Mesmerizing Bends – Portimão.

All images taken on Sony Alpha 77, Sony Alpha 55 and Pentax K10D cameras using Sigma 10-20mm lenses, and an 8X Neutral Density filter with additional graded ND to secure exposures typically ranging from 10 to 90 seconds.

GO WEST, YOUNG MAN - SEEKING THE LIGHT ON THE COAST OF PORTUGAL

Almost 30 years ago, your publishers spent weeks in Portugal where the *Guardian* photojournalist Peter Johns and his wife Val had set up a photographic workshop centre. For Peter, the world was in black and white or a very plain version of colour. The Algarve, for all its sunlight and colour, was valued mostly for the way the whitewashed walls set off locals dressed in dark traditional clothes, women in widow's weeds and men in sober suits with flat caps.

So, we still have a view of Portugal coloured – or removed from its colour – by the dour fishermen and peasant farmers of a 1980s world we photographed mostly in monochrome.

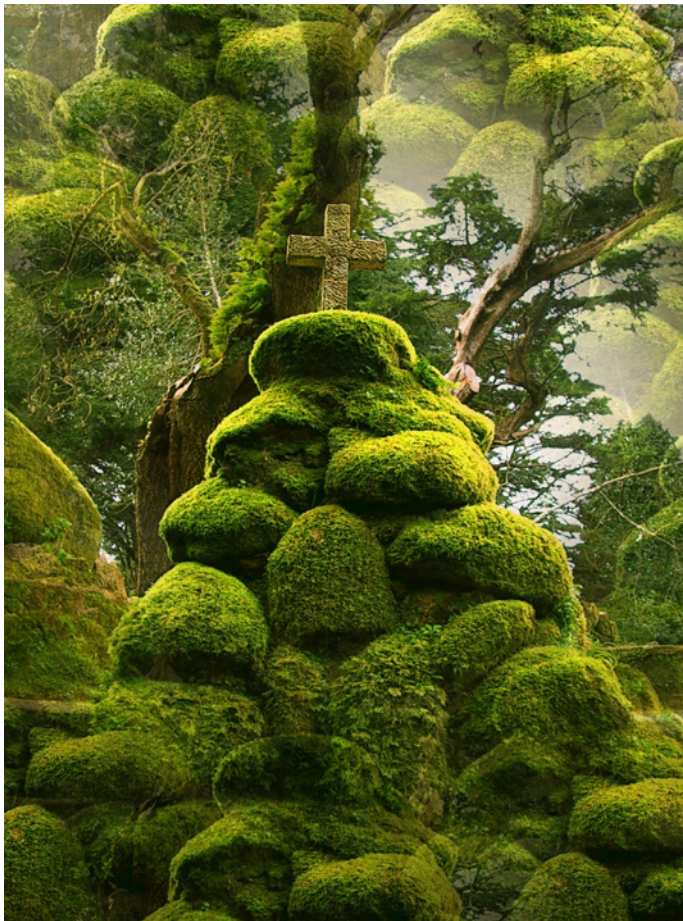
Then, today, we see the work of José Ramos. Since 2005, José has been refining a style which has much in common with landscape photographers all over the world. On the internet site Deviantart, his portfolio has developed through stages, from early work of a relatively random and ordinary kind to today's less frequent but very distinctive works.

During the eight years he has spent building a reputation, José has moved from extreme rendering of images with saturated colour to a mature appreciation of very subtle tonality. Throughout, he has been in love with the extreme wide-angle lens. The west and south-west coastal light of Portugal offers year-round sunset and twilight photography lit by the vast expanse of the Atlantic Ocean, often demanding both graduated ND filters to control the balance of sky and ground, and overall ND filtering to allow long enough exposures to tame the texture of the sea.

José is never without a tripod – his exposures for the images here have been as long as 300 seconds. He has progressed through using Pentax DSLRs of modest resolution, through the Sony



José explores the world with a Hitech filter in hand, above. Below, an early work using a PaintShop Pro preset effect which mimics the 'prismatic' effects pioneered by David Douglas Duncan. Bottom: the photographer drawn to, and by, the light of the Atlantic coast.



Alpha 55's larger image, to the ultimate big pixel count of the Sony Alpha 77 which enables wall prints to be offered from his photo art websites. He now also leads photographic workshops, as the many locations he has found over the years are not easily chanced on by tourists.

José uses lenses like the Sigma 10-20mm models to put relatively small foreground areas into perspective against huge skies. For this type of photograph, the foreground scene may be just a metre or two of beach or rocks. There could be hundreds of possible foregrounds to find with just a single background in the distance. The knowledge of where these exceptional foreground are, and when the tides and sunset positions create the best conditions, takes hundreds of visits to acquire.

José is currently planning both group and one-on-one workshops and photo tours in the landscapes of Portugal. He sells prints of his work through Zenfolio, and through direct contact. "My biggest source of sales has been through local exhibitions, as there is nothing like seeing a printed and framed image", he says.

For information, see: www.joseramos.com or 'like' [joseramosphotography](https://www.facebook.com/joseramosphotography) on Facebook.

You can find versions of most of our featured images at: inebrianta.deviantart.com and these have technical data on matters like the camera and lens, the exposure, and any neutral density or graduated filters used. Some images can be ordered as wall prints – orders for USA clients are printed by MPix Pro and orders in Australia are printed by NuShots. Those for Europe, through Zenfolio, are printed through One Vision Imaging, the UK lab which incorporates A H Leach & Co. – who once did the prints for many great Victorian and 20th century landscape photographers. 

UNSEEN IN ISTANBUL

Mark Seymour

As more photographers turn to compact mirrorless cameras which function almost like a rangefinder Leica, this classic street coverage of daily life in Istanbul reminds us that the unobtrusive observer does not need to take this route.


Mark Seymour, who for many years championed the use of film, took a Nikon D3S to the city with a collection of prime lenses. He adopted digital, and the D3S, because of the new extreme sensitivity in all light conditions which this Nikon generation introduced. To make the most of it he took 20mm *f*2.8, 28mm *f*1.4, 35mm *f*1.4, 50mm *f*1.4 and 100mm *f*2 lenses.

He was visiting Turkey with a small group of professional photographer friends who make trips like this to refresh their vision and interest. For the photography in the mosque, often considered a difficult place to use a camera, Mark and a colleague arrived for the early morning prayers and were



welcomed, and allowed to take pictures. It then turned out that they had been greeted by the Imam himself, who extended an invitation to them to take breakfast at his house afterwards.

Mark is one of Britain's best-known photographers of Jewish weddings, and as we went to press was preparing two assistant photographers and a clutch of Nikon D4s for a 550-guest celebration. He has been made a Nikon Ambassador, with the setting up of a new Nikon School just off Oxford Street in London, representing social photography (with four colleagues from the specialisations of news, sports, landscape and wildlife).

Istanbul has been in the news in June 2013. Mark's pictures remind us of the warmth and traditional values of Turkish society from a public funeral to private meditation and the working life of the souks – a good place to be with your lens. 

www.markseymourphotography.co.uk





*On the previous page – a boy washes his feet before entering a mosque, and a funeral gathers mourners.
This page, above, early morning prayer; below, pondering.*





*Above, health and safety – the fishmonger.
Below, the street seller.*





*Above: let's go shopping.
Below: afternoon tea.*





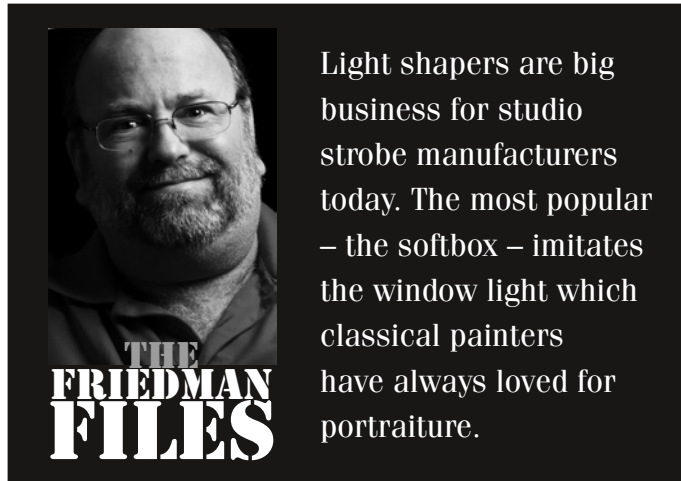
*Above: old-fashioned sweet shop.
Below: please help.*



THE ARTIST'S LIGHT

I was pretty ignorant about painting until I became serious about photography. It was then I realized that the famous painters of centuries ago all valued the kind of light we now get from softboxes and umbrellas, long before they were invented for photographic use.

For a great example of 'softbox light' in a painting, have a look at the well-known painting of George Washington (lower right), a founding father of the US and loser of more battles than he had won. And while I never saw anyone editorializing the fact that this painting compared George Washington to a horse's ass, Gilbert Stuart (the painter) created the dramatic



Light shapers are big business for studio strobe manufacturers today. The most popular – the softbox – imitates the window light which classical painters have always loved for portraiture.

feel by thinking, "How would everything look if the sole source of light came from a large, soft light source just out of the left frame?". He has painted a landscape and

sky to make this interior lighting look more natural in an outdoor scene. All painters from this era seemed to employ softboxes before they were invented – working by the light

from high-up windows facing north, still the preference for art studios.

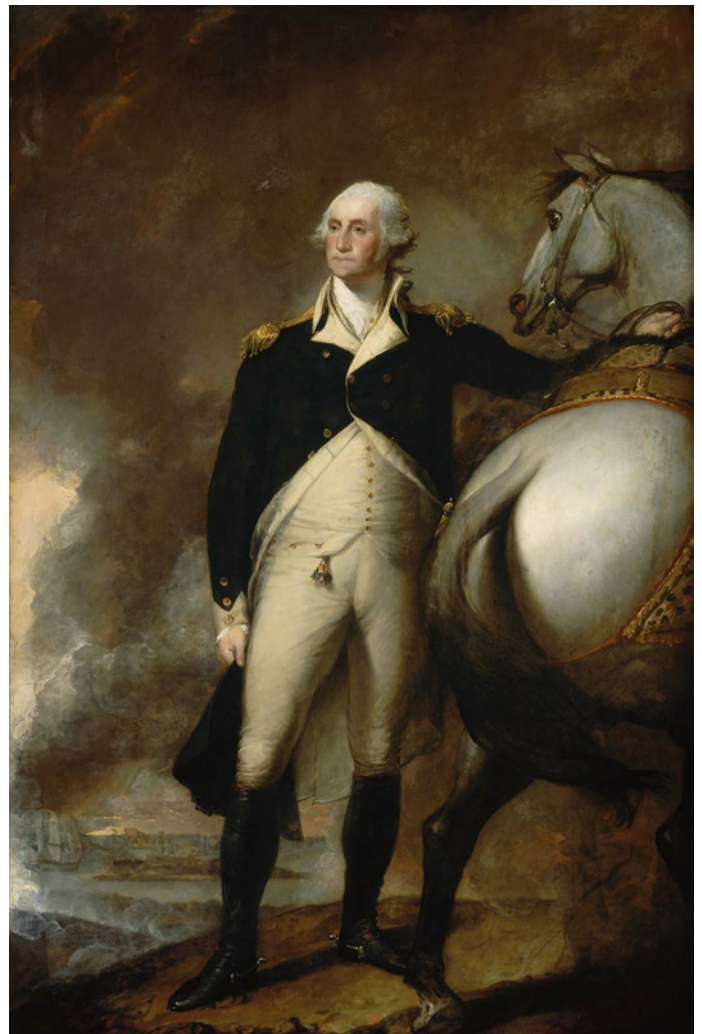
In studio vernacular this kind of single-point, soft lighting is known as Rembrandt lighting and can be created by positioning a light source 45° to one side, and 45° up relative to the sitter's eye line.

An example of Rembrandt lighting appears in the image lower left, using a set-up very similar to the diagrams on the next page.

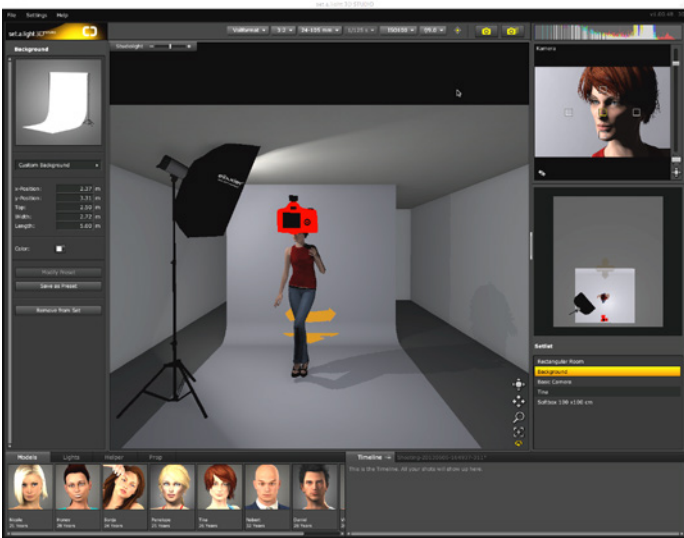
The easiest part about this picture was the lighting, and that's why many professional studios always start with this basic arrangement. The hardest part was to get the boy to sit still. Every time I picked up the camera he ran away!



I was able to achieve this classic painting look by using one softbox in a "Rembrandt" position, while underexposing the ambient light about 2.5 stops to keep the background dark.



Washington at Dorchester Heights by Gilbert Stuart, 1806. Painters might add an outdoor background scene, but nearly always worked by north window light which does not look like outdoor lighting.



Try your own lighting with a virtual studio

There's a neat Mac or PC program called Elixier *set.a.light 3D STUDIO*. You can adjust room size, position camera and lens, choose a model, lights, props and backgrounds. Each component has 3D controls and working functions, like lens zoom and light power. Ray-tracing previews the lighting; you can press the shutter to capture a virtual shot, and export a lighting diagram with front and overhead views. See www.elixier.com (a trial download works free for 14 days). For simple studio diagrams, see the free on-line tool at www.lightingdiagrams.com.



A typical Rembrandt or short portrait lighting setup created using the software (the red dot represents the lens position). Normally you would work with a seated subject to allow room to raise the light.



Another portrait made using a single softbox light, in a slightly lower position than the 45° Rembrandt set-up. 'Short lighting' keeps the light on the side of the face further from the camera.





Pageant of the Masters

So photography imitates art, and art imitates life. Bringing things full circle, there is an annual show (July 7-August 31, 2013) in Laguna Beach, California where famous paintings are re-created using actors and theatrical lighting which is carefully designed to duplicate the kind of light originally designed into the painting. If you want to be blown away by what proper sets, staging and lighting can do, have a look at the video given in the web link in our caption.

Top: a picture taken at the Pageant of the Masters – spot the director getting the actors into position. Above: the venue (left) and a recreation. See the webpage with details and a short video promotion: <http://www.foapom.com/pageant-of-the-masters/about-the-pageant/>

Once you start to become aware of lighting in this way, it's impossible to watch a Hollywood movie without taking notice of how every scene was lit. In fact, the only

time I watch movies nowadays is on a plane with no sound. There are only seven basic story plots anyway... that's how I became enthralled with the stupidest movie ever:

Abraham Lincoln: Vampire Hunter. But it had AMAZING LIGHTING! Then I learned Tim Burton directed it. Well, no wonder!



FROM THE
FRIEDMAN
ARCHIVES



I was shooting skateboarders at the X-Games in 2001, and thought I was finished when I saw this image while walking to the parking lot. Having only five frames left of the 15 rolls of Fujichrome Velvia I brought with me, I spot metered for the sky (knowing this would silhouette the subjects) and waited for just the right moment. This turned out to be one of the most iconic shots I've ever made, and has been licensed as architectural art many times around the world. Skateboarding magazines weren't interested in running it, since it wasn't taken six inches away with a fisheye lens...

SHIFT & TILT

Study current TV and movie technique and you'll find many takes where attention is focused on the subject by blurring out detail to either side. It's arrived with the use of full frame DSLRs for feature and advertising production. It relies not on software processing but on the use of a tilted, or rather swung lens (video tends to use this effect horizontally on widescreen).

Putting the lens out of parallel to the sensor or film plane changes the plane of subject focus. As the lens is tilted, the subject plane tilts in the same direction, something known as the Scheimpflug principle. You can download a paper written for Alpa Switzerland which explains it in detail:

<http://bit.ly/14HuTfe>

The effect is such that if the lens is focused at infinity at one extreme of its coverage, the new focus plane will connect infinity with the point where the lens plane intersects the focal plane. That's somewhere at ground level or deep underground for most typical shots. In practice, you get to know that a modest tilt at the lens will give you many more degrees of tilt for the plane of focus. Depth of field ends up wedge-shaped, and when tilt is used for maximum sharpness, it's normal to stop lens well down.

We look at the options from mirrorless adaptors to dedicated SLR lenses – or a monorail kit



Two examples of reversed tilt – above, the 'miniature world' effect. Right: a narrow plane of focus between strong blur. The tilted focus plane makes a small area of background sharp. Software focus-vignetting tools may be a better solution.

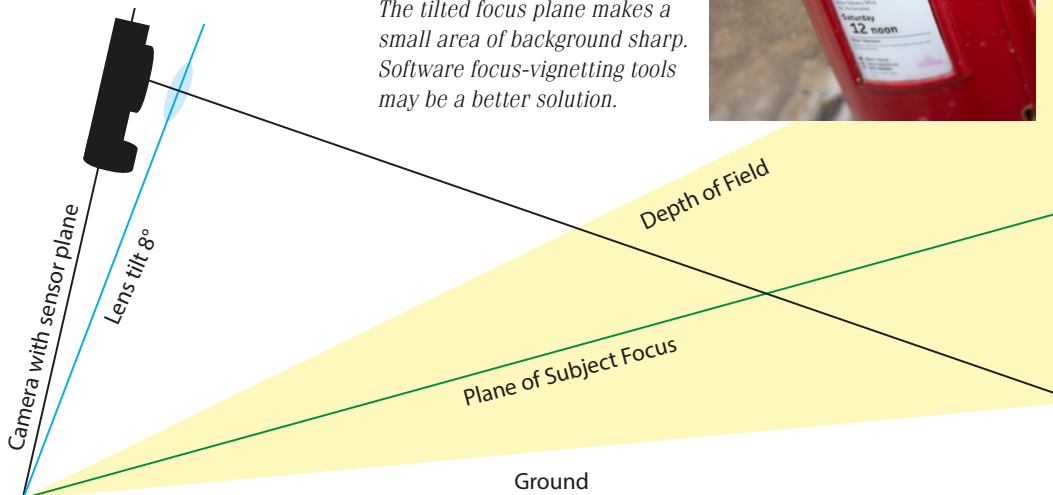
The 'miniature world' effect is achieved by opposing the tilt to the plane of the subject and opening up the lens. Depth of field can then be forced into a very restricted band across the image. TV and video photographers like to achieve this effect using lenses, rather than post-processing the shoot, because it's all done in-camera and much faster for editing and final production.

Be careful as it locks in an effect which can be achieved using a custom *Photoshop* filter like *onOne Focal Point*. This plug-in filter (also now a stand alone process, not requiring *Photoshop*) may not exactly reproduce a lens tilt effect but can 'focus' and peripherally blur images with far more control over the shape and position of the sharp zone.

Tilt for sharpness

Using tilt the traditional way – to achieve extreme depth of field – involves more disciplined technique. It also means gaining some understanding of why tilt alone is not enough.

With field, technical and monorail cameras in the past the term 'swing' was used to describe the action of angling the film plane, or the camera back. The camera would be aimed at the composition normally, and then the back would be tilted or swung around its centre, out of parallel. Since doing this would put one side of the film closer to the lens, and force the focus to be beyond infinity at that edge of the frame, the actual movement rarely pivoted round the centre after refocusing. The Mamiya Press Super 23 camera had a back on four posts with a short bellows, so that any corner could be pulled out around 1cm – pull all four, and it allowed closer focus, pull two only and a back tilt or swing would put the foreground in sharp focus. To allow for the





The Hartblei Rotator and studio product shots

This Ukrainian (not German) Hartblei 80mm f2.8 tilt-shift lens has sufficient clearance to fit DSLR bodies with overhanging prism/flash housings. All the movements can be operated without the controls fouling on most cameras though space is tight.

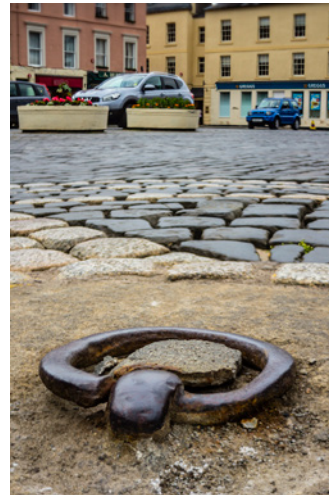
The Rotator offers independent rotation in 30° steps at three stages – the entire lens on its mount, the tilt section which comes next, and the final outermost shift section. The 80mm is really a studio still life lens, and a typical use is shown on the right.

Top, a dropped lens shift for a natural perspective and drawing. Bottom, the same shot on a 70mm macro lens, then 'straightened' using Adobe Camera Raw lens correction. Even this relatively small correction has a serious effect on shapes (note the lens hoods) and can cause problems with the crop as well.

Technically, the Hartblei is superb – one of the sharpest lenses around – but don't expect extreme results. 10mm of shift on an 80mm lens is not that much. Canon's 17mm offers 12mm.



A classic use of lens swing (sideways tilt) to place the focus plane from a few inches at the left, to the distance at the right. This picture and the two on the facing page were made with a Sony NEX-5n, Kipon tilt adaptor, and a Pentacon 30mm f3.5 manual lens at f3.5 full aperture (DK).



geometry of this, the lens could also be pushed back slightly, something you can't do with any DSLR or mirrorless digital system today.

If the lens is tilted, the ideal outcome is that its new axis remains centred on the image area. This can not happen if the tilt pivots round the optical centre of the lens, its nodal point (or a position between the front and rear nodal points in any modern lens design, as we're not dealing with a symmetrical double meniscus lens). A tilt which operates entirely behind the lens, like a typical Kipon or similar adaptor, can keep the optical axis of the lens centred on the sensor and therefore ensure proper field coverage even with lenses never designed to cope with movements. In view camera terms, these adaptors are combining a tilt and shift action and imitating the effect of a swing back rather than front standard movements.

The ultimate tool is, however, the tilt-shift lens. This adds the function of the rising front (or drop front, or cross movement) of traditional technical cameras. It's worth looking at shift on its own, though there are very few shift adaptors made and only a couple of dedicated shift lenses which do not also have tilt. This is a recent change, as at one time it was easy to get shift lenses. The last ten years have seen major advances in combined tilt and shift lenses led by Canon and Nikon, and ultimately adopted for some of the best still and movie dedicated lenses by Schneider.

You may think that these

Above: the 12mm shift of the Canon 17mm TS-E lens is not even touched in this comparison between a centred up shot, and a shifted one, on Canon EOS 60D. The lens shift was about 4.5mm. The 8° tilt of a typical lens allows the camera to be just inches above ground, yet focus from a foot away to the horizon (Kipon with 30mm at maximum tilt, upper right). The Samyang 24mm, right, offers 8.5°.

movements naturally belong to wide-angle lenses, but professional techniques require them for standard and narrower angles of view. Canon offers 17mm (which is not for APS-C, it covers a full frame), 24mm, 45mm and 90mm. Nikon offers 24mm, 45mm and 85mm. Because of the way the movements affect focusing, these lenses also focus beyond infinity and into the close-up or macro range.

Shift alone

Shift is used to allow the camera and the subject to remain parallel and perspective to be free from convergence or divergence of verticals. The obvious use is with a wide angle, for a building seen from a fairly close ground level position. The camera is aimed at a point precisely its own height above ground – if your tripod is at 180cm, you centre the viewfinder on a point 180cm up the wall of the building. Most cameras now have built-in electronic levels, most good tripods have spirit levels, and you can buy both as accessories. The



centre focusing spot of your viewfinder remains as good a way of getting your view straight as anything.

Professionals break the rule slightly. They aim the camera just a little above its level, by an almost imperceptible amount.

The lens shift is then used to move the entire lens upwards, off the axis of the image area. Such lenses have a greater than normal coverage; usually, one made for a 35mm full frame will be similar to a lens covering 6 x 6cm. This coverage means light fall-off is reduced when the image frame is placed off-axis.

Because of lens projection geometry, wide-angle lenses may appear to exaggerate the top of buildings. If the sides of the subject are kept exactly parallel, this combines with the psychology of vision to give an unnatural effect in which the building appears to the spreading out towards the top.

This is why experienced users allow the camera to be angled upwards just a fraction of a degree. They do not aim to have the subject exactly parallel, but retain a slight

convergence of the verticals. It might only be 1mm in a full page image. This makes the shot appear natural.

The worst sin with a shift lens is to end up doing the reverse, and the same applies to using software corrections and dragging ruler guides across *Photoshop* to get your subject straight. Always go for a touch less than an exact match, and never go too far.

The argument against dedicated shift lenses for digital systems is strong. Software correction now works well – *DxO ViewPoint* is the latest refinement. Secondly, you can achieve the same results using a 17mm, a 14-24mm zoom, or 12-24mm zoom on a higher resolution body like the Nikon D800 and cropping the image.

The uses for longer shift lenses are less well known (see the previous page, and the Hartblei rotator example). The 45mm focal length is well suited to APS-C cameras for this use, and for full format, lenses as long as 120mm. There is a potential use for normal and even wide lenses with a drop shift to photograph fashion or full length standing groups, enabling the camera to be at eye level but the figure to be shown without any hint of short legs. In practice most photographers just drop to kneel and shoot from waist level to keep people looking straight and tall in shots.

Two other rise/fall uses are worth mentioning. One is for room interiors, and can also apply to gardens or similar spaces. A high viewpoint will show the ground or floor best, and for interiors, the floor layout and furniture is nearly always to focus, not the ceiling! So you place your camera close to the ceiling and drop your shift lens down. This is a classic approach to domestic interiors. For very large halls, churches and similar subjects tripods requiring a stepladder have always been part of the professional kit.

The second is for paintings, including those behind glass, and mirrors. Paintings are often placed high up on walls and can be very difficult to

photograph in copy-stand mode as you can't get that tall tripod in the right place. They can instead be framed up using a shift lens for perfect geometry with the camera sitting below their level. Today, digital correction means it's not so vital to photograph works of art square-on or use a shift movement.

Mirrors and glass will reflect the camera and photographer if you try a squared up approach. To get round this, the camera is placed to one side, and a cross movement used to keep the image of the frame, painting or mirror square. Shift, rise, drop and cross movements are also widely used when photographing polished engineering work, silverware, watches and jewellery to avoid camera reflections.

Shift stitching

Because shift lenses have such excellent geometry and illumination, they offer a perfect tool for two to six shot stitching. This technique is ideal with very high resolution DSLRs like the Sony Alpha 99 or the Nikon D600 and D800, creating very large final files.

The camera must be firmly tripod mounted and exposure and focus should be manual, with a constant lighting (clear sky and sun require fast work, that's all). Most shift lenses rotate 90° very quickly but you must be sure not to move the tripod.

Take one shot with the lens fully left on a horizontal composition, then rotate it fully right. With a lens offering 10mm of shift, the two files when stitched (using *Photoshop* Automate menu Photomerge, or other program) you obtain a 24 x 56mm panorama. The same used with a vertical camera position can produce a 36 x 44mm.

You do not actually need a shift lens to achieve some of this, as *Photoshop's* merge function is so good you can shoot a batch of pictures quickly with a 50mm lens, overlapping, and as long as the light doesn't change you'll get a perfect stitch.



Cambo tilt-shift technical solutions include a DSLR mount for a regular 4 x 5 Ultima system, with bag bellows



The Cambo X2-Pro is a low-cost chassis for a DSLR and lens in panel

Where it starts – a 4 x 5 Cambo with the ground-glass screen used for composition. This amount of swing back and front would not be useful – it's just to show flexibility...

Current tilt-shift or PC lenses

Rot = separately rotatable tilt and shift axis vs fixed.

Samyang – for Canon, Nikon, Sony or Pentax

24mm f3.5 T-S FF, rot., ±8.5°, 12mm shift

Canon

17mm f4 EF TS-E FF, rot., ±6.5°, 12mm shift

24mm f3.5 TS-E FF, rot., ±8.5°, 12mm

45mm f2.8 TS-E FF, fixed, ±8°, 11mm

90mm f2.8 TS-E FF, fixed, ±8°, 11mm

Nikon

24mm f3.5 PC-E FF, fixed*, ±8.5°, 11.5mm

45mm f2.8 PC-E Micro FF, fixed*, ±8.5°, 11.5mm

85mm f2.8 PC-E Micro FF, fixed*, ±8.5°, 11.5mm

Schneider – for Canon, Nikon, Sony (FF) and Mamiya (MF)

28mm f4 PC-Super-Angulon FF, no tilt, 11mm shift

50mm f2.8 PC-TS Super-Angulon FF, rot., ±8°, 12mm

90mm f4 PC-TS Makro-Symmar FF, rot., ±8°, 12mm

120mm f5.6 PC-TS Apo-Digital MF, rot., ±8°, 12mm

Hartblei – for most mounts, including M42 screw

35mm f2.8 Super Rotator FF, rot., ±8°, 10mm shift

45mm f3.5 Super Rotator MF, rot., ±8°, 12mm

65mm f3.5 Super Rotator FF, rot., ±8°, 10mm

80mm f2.8 Super Rotator FF, rot., ±8°, 10mm

120mm f2.8 Super Rotator FF, rot., ±8°, 10mm

** Nikon service can align tilt and shift in place of 90° crossed.*

The ultimate - tilt-shift

If a lens combines tilt and shift, all of these techniques can be used and more besides. It's a complex subject and there are dozens of specific ways of using movements. The fairly simple tilt-shift lenses for 35mm DSLR systems only touch the surface. Monorail makers like Sinar run training courses and offer textbooks and journals.

Until recently, all SLR tilt-shift lenses came with tilt in one direction, shift in the other. This is not an ideal set-up. Nikon can modify PC-E lenses to put tilt and shift in the same direction. If you buy a new Canon, Schneider or the recently introduced manual Samyang 24mm the orientation of tilt and shift can be rotated as with the Hartblei that gets its name from this ability.

Since all these lenses are manual focus and most are either manual aperture or a basic form of auto setting, Samyang has entered the market without the disadvantages their manual prime lenses have had to date. This lens is certainly one to try, remembering the many functions it has and the useful 24mm angle.

An interesting alternative is the Cambo X2-Pro, a low-cost (£1299 UK) solution which goes between a DSLR body and a suitable lens (28mm to 150mm). It offers rise, fall, swing, tilt and shift using just two clever gear drives and the camera mount positions each DSLR type precisely with the sensor on the optical axis for rear movements. It can also be used directly with medium-format backs from Phase One providing live view.

Though Cambo only mention older models of full-frame Canon, Nikon and Sony (with the A900 and 850 specifically listed) there's no reason to think a Sony SLT Alpha 99 could not be used with full live view focusing and focus peaking – the one feature which really gives ALL manual focus tilt-shift lenses the potential to shine.

– D & RTK



This photo, taken in one of Dublin's Tenement buildings, shows the Winston family who spent a weekend living in their old home which was a single room in No.7 Henrietta Street for a TV series called 'The Tenements' presented by actor Bryan Murray. The documentary took the family back in time to discover their ancestors' living conditions. The 1911 census of No 7 Henrietta Street was used to help portray the history of the overcrowded, harsh living conditions in the Dublin slums.

The grandmother in the photo is May – born in 1945, she was the eldest of ten children and spent her childhood sharing one room with her parents, her grandmother, her uncle and four of her younger siblings, sleeping on mattresses filled with horsehair and sharing a toilet with several other families. According to the 1911 census, nineteen families were living in No. 7 – a total of 104 men, women and children.

When I arrived at the Tenements I was a little overwhelmed by the massive rooms and high ceilings. As a photographer, you sometimes arrive at a venue and have difficulty figuring out what to do with your subjects due to various limitations. Not on this occasion! You immediately sense the grandeur of this building, the rooms are adorned with old oil paintings, statues, artefacts, mirrors and ornate furnishings. It was of course at one time the dwelling of the elite, taken over by the local authority to house the working class during Ireland's independence. The high ceilings and beautiful natural light flowing through the rooms with all its faded glory was the perfect setting for a family portrait.

I used a Nikon D800 with Nikkor 24 -120mm lens, working by natural light with two reflectors.

– Dominic Lee AMPA, Priory Studios, Dublin

www.priorystudios.ie



CAMERACRAFT REARVIEW

Objects seen in this mirror may be closer than they look.
A curated gallery of selected or submitted images.





CAMERACRAFT REARVIEW

Above: The Cross by the Window, by Winston Llamas. Alpha 700, 16-105mm lens at 35mm, 1/125th at f7.1, ISO 200. El Santuario de Chimayo, New Mexico, visited by people from all parts of the world, many claiming to have been healed by the soil inside the church.

The Old Ford, below, by Mike Hendren, was processed from three exposures using Nik HDR Efex Pro – a very natural result, the best way to use HDR. Nikon D7000, 35mm, f8, ISO 200.





Above: by Sam Morris. Peggy's Cove Lighthouse, Nova Scotia. Canon EOS 50D, 24mm lens, ISO 100, an exposure of 39 seconds at $f8$.
Below: a puzzling but 'straight' shot by Peter Karry. A sanctified lake, originally from the 17th Century, on the outskirts of Yuksom in Sikkim. The prayer flags are reflected in the lake. Alpha 700, 100mm lens, 1/100th at $f14$, ISO 250.





by Steve Barnett

Landscape for me is about light, or lack of it, whichever way it comes I'm drawn primarily to the images it creates rather than the things it illuminates. So for me this is a rather literal photograph, and the nearest I'd come to a self portrait. The tunnel - discarded scrap at a disused quarry - is, like the camera itself, grading the light and filtering its effects, editing and composing and creating an image of the landscape through multiple apertures.

CAMERACRAFT

REARVIEW

If you would like your work considered for our Rearview gallery, email a webpage link to editor@iconpublications.com or send no more than three email-friendly attached images. We will request a larger file if you're shortlisted.