

# BEST 4K FILM-MAKING CAMERAS

WE TEST DSLR, MIRRORLESS AND CINEMA OPTIONS FOR VIDEOGRAPHERS



THE WORLD'S BEST-SELLING DIGITAL PHOTO MAGAZINE

20-26 SEPTEMBER

ISSUE 313

# Photography Week



INSPIRATION | IDEAS | IN-DEPTH REVIEWS



**FUJIFILM X-T3**  
'COMPLETE UPGRADE'  
TO POPULAR X-T2  
IS UNVEILED

# 60

# LANDSCAPE TIPS

EXPERT TIPS AND TECHNIQUES TO HELP YOU  
CAPTURE YOUR BEST-EVER SCENIC SHOTS

# W E L C O M E

# Photography Week



## JOIN THE CLUB...



Welcome to the world's No.1 weekly digital photography magazine. If you're already a

reader, thanks for your continued support and involvement; if you're new to *Photography Week*, you've come to the right place! In addition to expert advice, brilliant tips and step-by-step tutorials, every issue features interactive galleries of the best new photos, how-to videos on

essential shooting and editing techniques, and in-depth reviews of the latest camera kit.

But that's not the whole story. *Photography Week* is more than a magazine – it's a community of like-minded people who are passionate about photography. To get involved, just follow any of the links below and share your shots and comments – your photo might even appear on our cover!

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We're more than just a magazine – read on and discover the many ways you can interact with and enjoy *Photography Week*

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N E W S

# WHAT'S HOT

THE WEEK'S TOP HEADLINES IN PHOTOGRAPHY

## NEW FUJIFILM X-T3 BRINGS A HOST OF UPGRADES

The X-T3 arrives with a raft of changes to the X-T2's core



**F**ujifilm has confirmed the latest mirrorless addition to its X series, the X-T3. Described as a "complete upgrade" over the X-T2, the X-T3 features a new 26MP back-illuminated X-Trans CMOS 4 sensor, with a readout speed around 50% faster than that of the sensors in current models.

The sensor lacks an optical low-pass filter, and is said to maintain the same noise levels as on previous models despite the higher pixel count, while the base native ISO begins at ISO160, which was previously only available as an

extension. The new sensor is partnered with a fresh X-Processor 4 processing engine, which boasts four separate CPU units to deliver image processing speeds said to be around three times as fast as those on current Fujifilm models.

Autofocus performance is improved, in particular to track moving subjects more accurately. There are now 2.16 million phase-detect AF pixels – four times the number on the X-H1 and X-T2 – and these cover 100% of the frame.

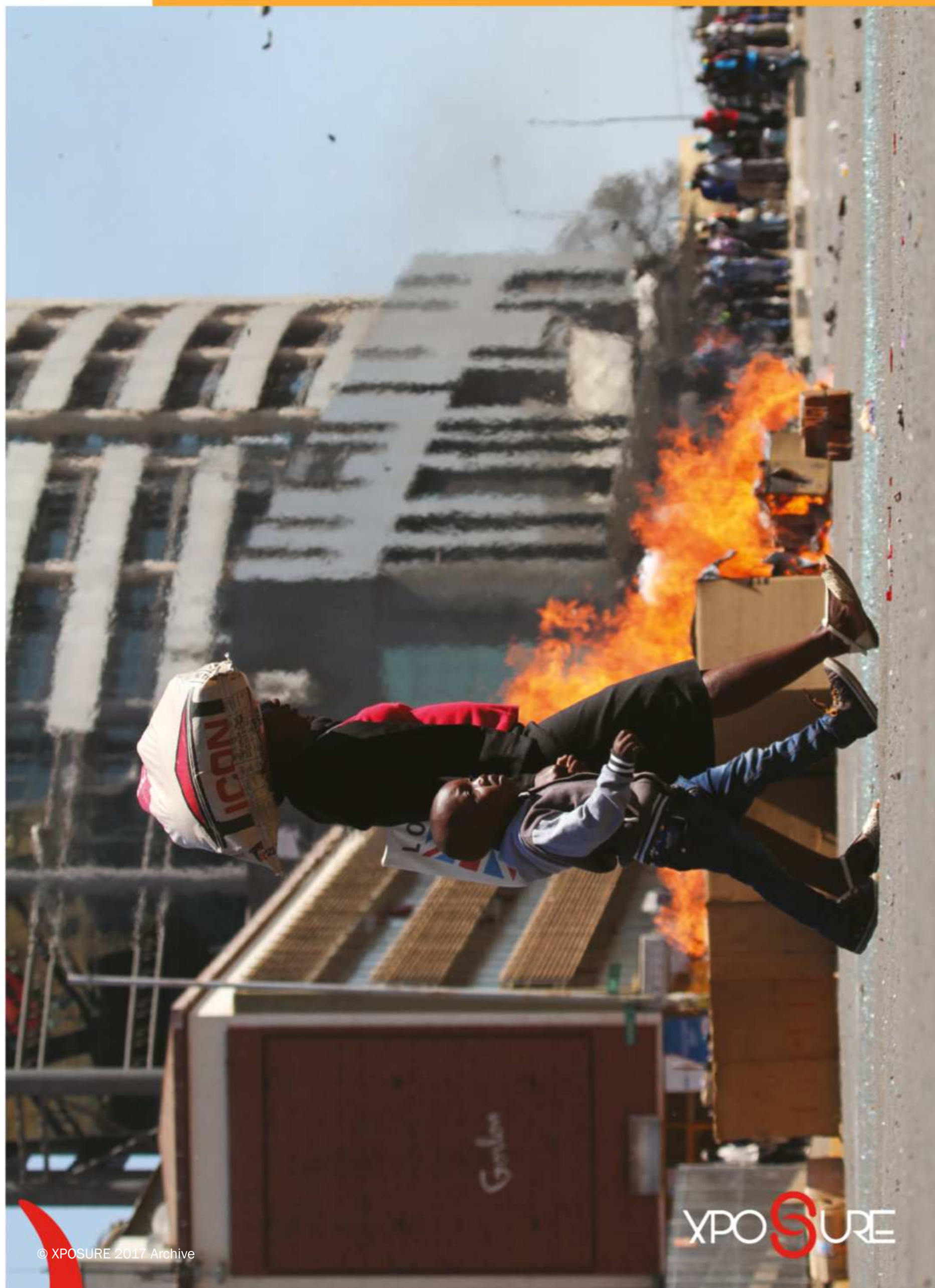
The X-T3 is also said to deliver substantially enhanced performance in

face/eye detection AF modes, while AF sensitivity is now rated down to -3EV.

It's also first mirrorless camera based on an APS-C sensor that can capture 4K/60p footage in 10-bit. It's capable of 4K/60p 4:2:0 10-bit recording internally, and 4K/60p 4:2:2 10-bit output through its HDMI port, and includes headphone and microphone ports.

The X-T3 is available now in black and silver options, priced at £1,349 / \$1,499.95 for the body on its own, while a kit with the XF 18-55mm f/2.8-4 R LM OIS lens is £1,699 / \$1,899.95.

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**INSPIRING MOMENTS**



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XPO**S**URE

F E A T U R E

# 60 LANDSCAPE TIPS

Give your scenic photography the edge with our collection of indispensable tricks and techniques

1

**SHOOT THE BLUE HOUR**

If you like moody landscapes, wait beyond the evening golden hour (or arrive before the morning golden hour) and shoot in the blue hour; the cool, blue tones add an air of tranquillity and mystery.



# 60 LANDSCAPE TIPS



2

## INVESTIGATE AND DECIDE

Cast your eye around the entire outside edge of the viewfinder, and make sure to do so twice to be totally familiar with all that exists on the perimeter of a shot. Decide whether what exists on the outside edge supports what takes place within the body of the image. Omit any redundant elements. A painter would not neglect the edges of their frame.

## 3 DO YOUR OWN TESTS

Don't trust others to inform you about your camera and its performance. Experiment with all ISOs yourself and check to see when image degradation sets in. Test at what aperture and with what lens any diffraction appears. Don't sacrifice a sacred small aperture if little or no diffraction is evident at that aperture.

## 4 VISUALISE A PRINT

When looking through the viewfinder or in live view, try to envisage the image as a giant print. It will help you to take your photograph seriously if you can make the leap from the small preview to imagining it becoming a print 1,000 times bigger.

## 5 RESTRAINT AND INTEGRITY

For classic landscape photography, your audience needs to trust your image. Maintain your integrity with restrained post-production manipulation. A good maxim is: in-camera, on the day.

## 6 CONSIDER SHADOWS AND HIGHLIGHTS

Look at where shadows are and how deep they are. It's surprising how deep black 'nothingness' can dominate a photograph as much as unwanted highlights. Find a balance. Squint to evaluate brightness range.

## 7 REFINE YOUR VISION

Only purchase a new camera if you can really justify the expense. It's better to develop your perception than to buy another camera that you may not need.

## 8 HIGH DYNAMIC RANGE

If you decide to use HDR, ensure that you're familiar with lighting ratios, and don't underestimate the human eye and brain to detect where these ratios are skewed, e.g. too much light drenching a foreground shadow when the light source is in front of you.

## 9 A WAY OUT

If there's a rhythmical and sinuous river or road in your image, try and find an easy departure for it through a corner. Better that exit rather than slamming abruptly into the edge of the frame in an ungainly fashion.



© Charlie Waite

© Charlie Waite

© Charlie Waite



## 60 LANDSCAPE TIPS

10

## DON'T PANIC

There will be times when you may feel 'photographically blind'. Don't panic, as your vision will eventually return. Any artistic endeavour is fraught with decline of confidence, anxiety and joy. Doubt your doubt and build back your confidence.



© Charlie Waite

## 11 USE SHADOWS FROM CLOUDS

Use cloud shadow to conceal any ugly features of the landscape. Look up to see what the clouds are doing and use them. Clouds that are not in your image are often actually more useful than the ones that are.

## 12 USE THE HISTOGRAM

If the subject brightness range is compressed, then no need to bracket. Think of bracketing with extreme contrast. Highlights and shadows will be on the margins; decide which is sacred. There's no need to bracket if the contrast is low. The histogram is all-knowing and super informative, so make the most of it.

## 13 CREATE A PORTFOLIO

Build a website that includes everything that you want to say, but no more. Less can often mean more. Be sure to check that all the images you present in your gallery are your best, so that they're representative of your skill level. Also, create a print portfolio.

## 14 ATTEND AND INTEND

Try and attend to all the elements within the image that you plan to make. Landscape photographs can often be made up of many components. Get to know all of them, and ensure that you intended for them to be there before pressing the shutter release.



© Charlie Waite



# 60 LANDSCAPE TIPS

15

## BE THE LIGHTING DIRECTOR

Make sure that you're always consciously aware of the light. A photographer must be acutely aware of nature and the quality of light, as well as how the light is falling on the subject and how the light is absorbed and reflected by different surfaces.



© Charlie Waite

16

## MONITOR THE SKY

Try to monitor the movement of the sky. If it's lacking in interest, consider omitting it altogether. If you want to include it, look at the wind direction and prepare for a better sky than the one that you found on your arrival.

17

## LOOK AT POSTCARDS

Look at postcards with a critical eye, and compare relevant postcards of the same subject – which ones work, and why? Check out photography exhibitions whenever you can. Go to talks and

fill yourself up with photography and further your inspiration.

18

## USE YOUR TRIPOD

Your tripod has two functions. First and obviously to enable long exposures, but secondly, and as important, it helps you take your photograph seriously. With the aid of a tripod fine adjustments can be made. Think of your photograph as being an important, considered production.

19

## BE CLEAR

Big views can at times be overwhelming and difficult

to manage and make sense of. Aim to make them coherent and cohesive; don't be scared of them. Try to look for relationships, no matter how tenuous they are. If you can find them then your audience will too.

20

## DEVELOP A STYLE

When you look at a photograph that you like, try and deconstruct it to learn what it is about the image that you enjoy. Take a workshop, or a private one-to-one session with a landscape photographer you admire. Aim to develop your own personal style.



# 60 LANDSCAPE TIPS



21

FRAME UP

Form a rectangle with your hands to see whether there's a photograph to be made, or cut a piece of thick and durable black card about 4 x 5 inches with a rectangular aperture cut out of it. This will help a great deal to remove the potential image from its wider context.

**22 EXPLORE NEW LOCATIONS**  
On days when the light and weather are poor, invest some time in scouting new locations. Check out viewpoints and potential compositions, and you'll have something to look forward to when the light is good.

**23 HIGHLIGHT THE FOCAL POINT**  
Most landscapes benefit from having a clear focal point, and compositions are strengthened if you

exploit natural features to lead the eye towards that point. Lines such as rivers and paths are ideal, while objects pointing in from the corners direct attention into the frame

**24 SHOOT A PROJECT**  
To boost your motivation, shoot a project where you concentrate on one type of subject or technique – for example, shooting only monochrome, or with a single focal length.

**25 BE FLEXIBLE**  
We often plan shoots with a particular viewpoint or composition in mind. Don't let this close your mind to other opportunities; be prepared to react to the conditions and go off plan.

**26 ADD A SENSE OF PLACE**  
Many landscape photographs are anonymous; try to include features that identify your location and add a sense of place.

# FEATURE

## 60 PORTRAIT TIPS

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### 27

#### MAKE USE OF BAD WEATHER

Although some weather is nearly impossible to shoot in, overcast and dull days present plenty of opportunities. For example, head to the coast and shoot long exposures with an 'extreme' ND filter, or go to the woods, where the soft lighting will keep contrast low and allow you to capture plenty of detail.

# 60 LANDSCAPE TIPS

28

## BREAK THE RULES

Most photographers are familiar with the 'rules' of composition, such as the rule of thirds, golden section and so on. They work well, but can be a little constraining. Don't just break them for the sake of it, however; know when doing so will work, for example when a scene naturally lends itself to symmetry.



© Mark Bauer



© Mark Bauer

## 29 LESS IS MORE

The best compositions are often the simplest. Composition is a reductive process – starting with everything in front of you, exclude any items from the frame that do not enhance the mood you're trying to evoke.

## 30 IGNORE THE FORECAST

The most dramatic light is often in marginal conditions. Forecasts can tell us that, for example, it will be cloudy, but they can't predict things like small gaps in the cloud, which can let light through and transform a scene. So head out, whatever the forecast.

## 31 ENJOY THE PROCESS

Slow down and make sure that you enjoy the experience of being out in the landscape with your camera, rather than treating it like a job – even if it is your job. Your images will really benefit as a result.

## 32 TRY A NEW TECHNIQUE

It's very easy to get stuck in a rut, taking the same kinds of photos over and over again. To add some variety to your landscapes, consciously try out something different – whether that's night shots, cityscapes, long exposures... anything that you've not tried before, and which may kickstart your creativity.



# 60 LANDSCAPE TIPS

**33 USE LONG FOCAL LENGTHS**  
It's easy to get obsessed with wide angles; don't ignore the possibilities offered by telephotos for focusing on shape, pattern and texture, as well as their ability to compress perspective and create layered landscapes.

**34 LOOK FOR SHAPES**  
Instead of only looking at the details in a landscape, look at the overall shapes that are being made; for example, a group of rocks may form a triangle or a line of trees may create an 'S' curve. How shapes interact with each other helps to create balance, harmony and mood in a composition.

**35 RESPECT THE ENVIRONMENT**  
Don't be tempted to trample over wild flowers or do other damage to a location in order to get the shot you're after; the environment is always more important than your photograph.

**36 USE FOREGROUND INTEREST EFFECTIVELY**  
Getting in close to foreground objects with a wide-angle lens is an effective technique for enhancing the perception of depth in a scene. However, don't just set up in front of the nearest big rock – choose foregrounds that connect with the rest of the scene.

**37 LEARN YOUR KIT**  
Spend time familiarising yourself with the controls on your camera and accessories, and the adjustments on your tripod. Being able to change settings quickly and instinctively allows you to concentrate on composition, without the camera 'getting in the way'.

**38 ANTICIPATE THE LIGHT**  
Great light is fleeting, and you must be ready to shoot before it happens, or you'll miss it. So, for example, to capture a rainbow you'll need to stand in the rain waiting for it to clear. Observe carefully, and predict how conditions will develop.



39

**USE DOUBLE-DISTANCE FOCUSING**

If shooting with a wide angle and smallish aperture, this technique will help you maximise depth of field without complicated hyperfocal distance calculations. Estimate the distance from the camera of the nearest object you want to keep sharp, and set your focus at double that distance.

**40 CHOOSE THE RIGHT HEIGHT**  
Camera height has a huge impact on composition. High viewpoints help to separate planes and key elements in the composition, therefore creating depth in the image. Low viewpoints can reduce separation and therefore depth, but can be necessary if there's little interest in the middle distance.

**41 BACKPACK CHOICE**  
It's wet, muddy and you need to put your backpack down to get your camera out – you need a design like the Lowepro Whistler, which opens on the inside, so mud doesn't dirty your jacket when you put the pack back on.

**42 MAKE USE OF CONTRAST**  
When processing your files to make your subject more prominent in the frame, don't only use exposure to make subjects lighter or darker – consider using contrast. Increasing the contrast of your subject will bring it forward, decreasing the contrast of your background.

**43 LENS HOOD FLARE CONTROL**  
Direct light hitting the front element of your lens can bounce around through the lens and onto the sensor, lowering image contrast or, worse, creating unwanted flare marks. Putting on your lens hood is an easy habit to get into, and it avoids problems like this.



## 60 LANDSCAPE TIPS

44

**WARM FOREGROUND, COOL BACKGROUND**

Introduce depth into an image by using colour theory: warm colours approach, cool colours recede, so warm up your foreground or subject so it stands out against a cooler or bluer background.



© Peter Eastway



© Peter Eastway

**45 PINCH BLACKS FOR IMPACT**

Photographs can look more powerful if they have a base of solid black. Achieve this by 'clipping' the black point, or use the Blacks slider in Lightroom or your preferred editing software.

**46 GREY CARD COLOUR CORRECTION**

How do you always ensure correct colour balance? Whether indoors or outdoors, shoot a grey card, or a set of colour patches (like the Datacolor SpyderCheckr), in a test shot. Take one for each different lighting condition, then use it in post-production.



# 60 LANDSCAPE TIPS



© Peter Eastway

47

## DON'T OVERDO THE CLARITY!

One of the great discoveries for photographers editing their photos is the Clarity slider. You can use it to add a beautiful sense of sharpness and detail to images, but push the slider too far and you can end up with unwanted haloes around your subject, especially when your subject sits against a light background.

## 48 GREY CARD IN EDITING

Remember that grey card you photographed to determine the correct white balance (see tip 46)? Using the white balance colour picker in Lightroom or Camera Raw, click on a mid-grey square to set the correct colour, and apply the same settings to all the other images from the same shoot.

## 49 AUTO ISO = EASY LIFE

Travel photographers shoot under a wide variety of lighting conditions, and the Auto ISO feature on modern cameras is a huge help in ensuring your shutter speeds are sufficiently fast at all times.

## 50 CHOOSE SPIKED TRIPOD LEGS

High-pixel camera images are more likely to suffer from visible camera shake, even when on a tripod. Rather than using the normal rubber feet, consider steel spikes, which can be driven into the ground for a much more stable platform.

## 51 KEEP YOUR KIT IN THE CABIN

When travelling by air, take a full camera kit with you in your cabin bag, so that if your checked luggage goes astray you can still shoot; sacrifice a change of clothes if necessary!

## 52 CAPTURE ONE VS LIGHTROOM

Not all raw processing software is the same. Different processors deal with colour, contrast and tonality in different ways, so if you currently use Lightroom or ACR, check out Capture One and other raw processors as well – you may find one that suits your style better.



# 60 LANDSCAPE TIPS

## 53 WATCH YOUR HISTOGRAM'S HIGHLIGHTS

We're more forgiving of black shadows than we are of white, detail-less highlights. To help ensure that your files have enough detail in the highlights, keep an eye on your camera's histogram, making sure it's close to, but not touching, the right side of the graph.

## 54 GEARED HEADS FOR CONTROL

Are you frustrated every time you release your ball head to adjust the camera position, because it moves too far and is difficult to fine-tune? A geared tripod head, such as the Arca Swiss D4, is the solution, as minor adjustments are very easy to achieve.

## 55

### POLARISER BEST FOR REFLECTIONS

While polarising filters are problematic with skies, they're incredibly useful for controlling reflections on water (either enhancing them or minimising them), and are also great on wet days for reducing specular highlights on foliage.

## 56 LENSES FOR BEAUTIFUL BOKEH

'Bokeh' refers to the quality of the out-of-focus areas in front of and behind your sharply focused subject. It's the result of shallow depth of field, and you get the shallowest depth of field when using lenses with a very wide maximum aperture, like f/1.8, f/1.4, f/1.2 or f/1.0 – and the good news is that 50mm f/1.4 and 85mm f/1.8 lenses are very affordable!

## 57 WHY F/22 IS NO GOOD!

When light passes through very small apertures, like f/22 and smaller, it can bend or interfere with itself, resulting in blurred images. This effect is called diffraction.

## 58 SHOOT WIDER, CROP LATER

Some experts recommend cropping your subject in the viewfinder as you take your

photograph, but not every image works best as a 3:2 or 3:4-ratio rectangle. Take a step back, shoot a slightly wider scene, and then take some time to consider the best framing and cropping for your image during post.

## 59 KNOW YOUR SHARPEST APERTURE

If you want big prints with optimum sharpness from corner to corner, determine the sharpest aperture for your lens. You can work this out by taking a series of photos at different apertures and comparing them.

## 60 'BORROW' A SHOWER CAP

Is it theft to take a shower cap from your hotel room if you don't use it there? If it isn't, they actually make very effective rain protectors for your camera!



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G A L L E R Y

# XPOSURE

THE WEEK'S MOST INSPIRING READER PHOTOS



GEORGIA

**GEORGIOS MARINAKIS**

"This is one of a portfolio of images I shot of the Greek actress and singer Georgia Siakavara."  
<http://tiny.cc/nv72xy>

# GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



## THE ROAD TO HOPE

**GEORGE JOHNSON**

"The morning sunlight added a lovely atmosphere to this tunnel-like avenue of intertwined beech trees."

<http://tiny.cc/v6dfwy>



## SAND ABSTRACT 1

**JULIE RUTHERFORD**

"These are patterns created by the tide on a beach on the Scottish island of Jura."

<http://tiny.cc/1me5wy>

# GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



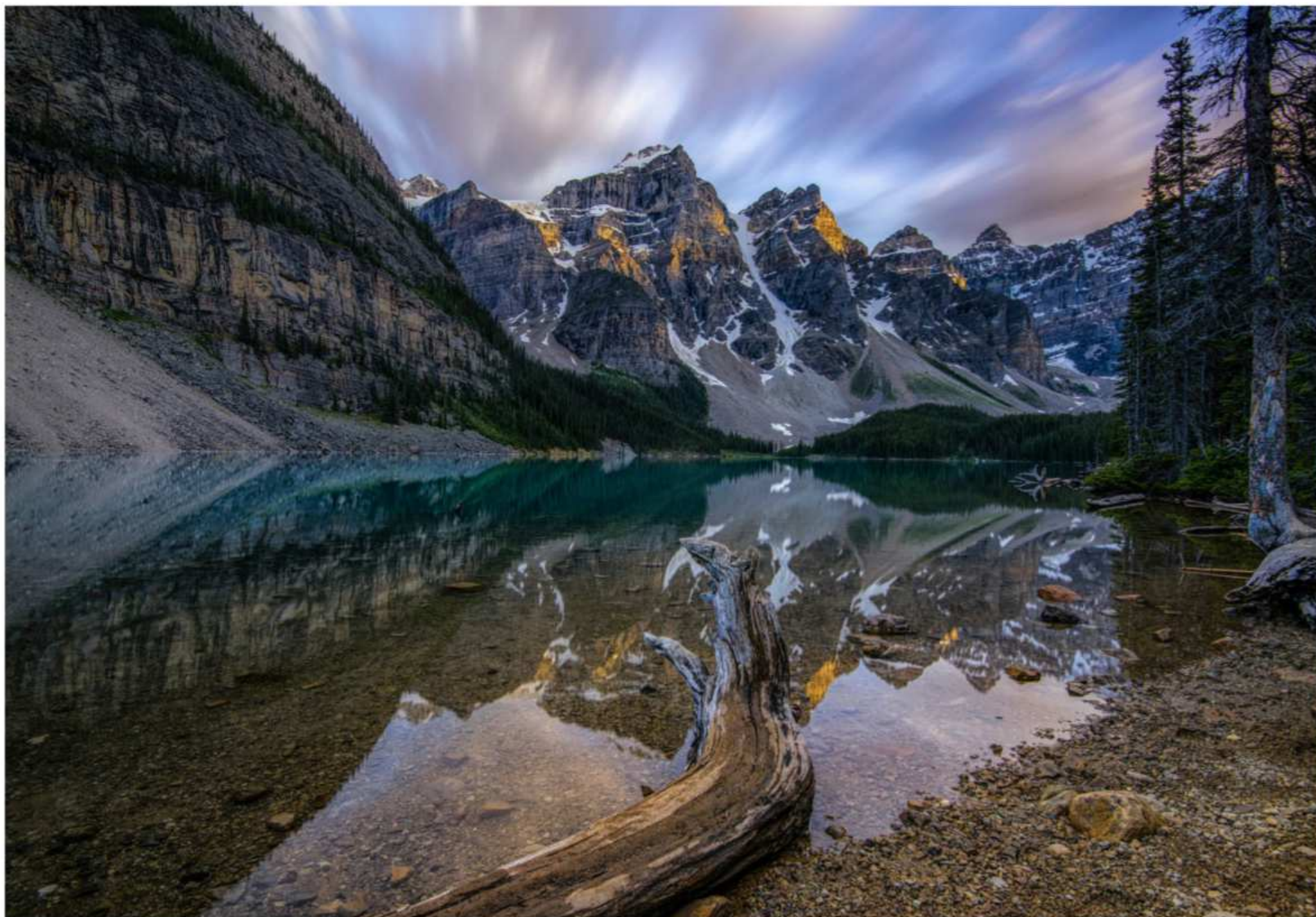
**ANA**

**LUCA SANTORO**

"I shot this portrait of model Ana Trocin in Ducos Park in Brescia, Italy."  
<http://tiny.cc/h9fmtv>

# GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



## MORAINE LAKE, BANFF

**NAVJIT BHAMRA**

"I haven't seen many pictures of the iconic vista of Canada's Banff National Park taken from this angle. It had been cloudy during the day, but the sun broke through in the evening just before it set, and I was able to capture the last of the light."

<http://tiny.cc//xdgmtv>



FACEBOOK

<http://tiny.cc/qi0oey>



FLICKR

<http://tiny.cc/rn0oey>

## PHOTOGRAPHY WEEK WANTS YOUR PHOTOS!

Taken a portrait you're particularly proud of? Shot a sensational sunset you'd like to show off? Then join the *Photography Week* Facebook community and share your best photos today! You'll get feedback from fellow readers and the *Photography Week* team, plus the chance to appear in *Xposure*, or even on our cover!

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I N S P I R A T I O N

# IT'S COOL, THAT

THE BEST THING WE'VE SEEN THIS WEEK



© Enda Bowe



© Joey Lawrence



© Alice Mann



© Max Barstow

## THE POWER OF PEOPLE SHOTS

Shortlist announced for the 2018 Taylor Wessing Portrait Prize

**F**our photographers have been shortlisted for this year's Taylor Wessing Photographic Portrait Prize, the prestigious international photography competition organised by London's National Portrait Gallery.

The prize-winning portraits include photographs of a mother holding her baby; a child from a remote village in the jungle of Sierra Leone's Eastern Province; a series on

the all-female teams of drum majorettes in South Africa's Western Province; and a double portrait of a pair of London shoppers. An exhibition of winning and commended images will be held at the NPG from October 18 to January 27 2019.

Click the link to visit the competition website, where you can see all the shortlisted images and learn about the photographers, and see images from previous contests.



SEE MORE IMAGES  
<http://tiny.cc/zqihyy>

S K I L L S

# CRASH COURSE

ESSENTIAL PHOTO SKILLS MADE EASY



## BLAZE A SMOKE TRAIL!

Jason Parnell-Brookes shows you how to create an action-packed and colourful image by attaching smoke grenades to a mountain bike

1  
HOUR

Misty portraits in the woods, with ethereal tones and flowing dresses? Been there, done that. It's time to get down and dirty with this project, as we create a dramatic action sports portrait using a very different kind of fog. As you'll see, there's no need to wait for the perfect mist to descend in order to capture an atmospheric image – get hold of some smoke grenades and you

can create billowing clouds of colour any time, anywhere.

Smoke grenades are often used for adventurous activities such as paintballing, and can be purchased from specialist stores or online for a few pounds or dollars. About the size of your fist, they can be placed around a scene or on a moving subject, making them versatile instant smoke-makers for all kinds of photography scenarios.

For this project we're taping them to a mountain bike, which our biker buddy Tom Welsh will be taking through its paces along a wooded downhill dirt track. We'll be capturing the smoke belching out from behind as Tom zooms along, and we'll also use a pair of flashguns to pack some punch into the shot, highlighting the edges of our rider to create a shot that's as atmospheric as it is action-packed.



# S K I L L S

## STEP BY STEP CAPTURE SMOKIN' ACTION



1

### POSITION THE CAMERA

We got into position at the side of the bike track. The plan was to capture Tom as he zoomed down the track, leaving enough space behind him to include the coloured smoke billowing out behind.

2

### ADJUST AS NEEDED

We used a 50mm f/1.4 lens to get us a little closer to the action than a wide-angle lens, but not too close. We did a test run, without smoke, and discovered that we'd have to take another few steps back to ensure we didn't cut off any part of Tom or his bike.



3

### SET BURST MODE

To increase your chances of getting a few stand-out frames, select your camera's burst shooting mode. This will keep on taking exposures for as long as the shutter button is depressed, while you track the movement of the bike as it hurtles through the frame.



### ADJUSTMENTS

We originally shot at 1/200 sec and ISO100, but found there wasn't enough ambient light to make the parts of the scene that weren't lit by flash bright

enough. A longer exposure gave us a brighter background, but we couldn't go too slow with our shutter speed as we'd blur the bike, so we increased our ISO.



# SKILLS

## STEP BY STEP CAPTURE SMOKIN' ACTION



4

### PRE-FOCUS THE LENS

We got Tom to stand on the spot along the path where we would be taking the shot so that we could pre-focus on him. With the lens in autofocus (AF) mode we focused on Tom, then switched to manual focus (MF) to lock the focus, taking care not to nudge the focus ring.

5

### POSITION THE LIGHTS

With Tom still in position we set up our flashguns either side of the focus point on the track with wireless triggers attached, and set the power to 1/4 to test how the light fell. We wanted the light to fall either side of the bike for dramatic highlights.



6

### SET THE EXPOSURE

In Manual mode we set an aperture of f/3.2 to blur the background; that meant only a small area in front of or behind the focus point would be sharp. We then set our shutter speed to 1/160 sec to sync with the lights, and adjusted the ISO (to 800) to get a correct exposure.



### QUICK TIP

As Tom travelled faster the smoke spread out too thinly, but we needed him to move fast for realistic action shots, so we used three smoke grenades to give us a nice dense cloud.

E D I T I N G

# PHOTOSHOP

LEARN ESSENTIAL EDITING SKILLS FAST!

HOW TO...

## CREATE A DREAMY COMPOSITE

Learn how to combine several photos with simple layer blending skills to make an atmospheric dreamscape

**I**n this video tutorial we'll show you how to combine a variety of images from different sources to create an engaging and slightly surreal fantasy-themed composite image. We'll be using all manner of tools and techniques to combine and blend our images in Photoshop, but part of the secret to creating convincing composites like this is finding source images that are suitably interesting or unusual. There are lots of very good free stock sites out there – we've used Pixabay.com – and you can of course use your own photos.



### WANT MORE PHOTOSHOP TUTORIALS? CHECK OUT PRACTICAL PHOTOSHOP

For more Photoshop tutorials, tips and advice subscribe to Practical Photoshop, the world's premier Photoshop magazine. Each month you'll find an array of inspirational tutorials and accompanying video lessons that will help you master Adobe's industry-leading photo-editing software, plus amazing images from the world's best Photoshop creatives, free downloadable content, and a beginner's guide to the basics.

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G E A R

# GROUP TEST



Chiara Salvadori / Getty

## BEST 4K FILM-MAKING CAMERAS

What's the best 4K camera for videographers? Rod Lawton auditions seven hopefuls

**T**here's a growing crossover between stills photography and video. Working photographers are increasingly being asked by clients to shoot video as well as stills, and camera makers are incorporating ever more professional video capabilities in their mainstream stills cameras. It's a revolution we can't ignore, and neither can today's pro or semi-pro photographers.

So we've gathered together seven of the most interesting 4K crossover stills/video cameras across a range of price

points, including two specifically video-centric models. We'll look at what they do that's different, and at why many pros choose to pay the extra for dedicated video cameras. Our guide isn't designed for professional videographers, but rather for regular stills photographers who are moving into shooting video for the first time, or for anyone who's upgrading their camera to cope with a demand for premium-quality 4K video.

And that's what all these cameras have in common – the ability to shoot in 4K. Not

everyone needs 4K video, of course, as 1920 x 1080 (Full HD) video will be fine in many instances. But 4K is rapidly becoming a mainstream specification, and it's also a way of future-proofing your content for clients, so that a video you shoot today has the quality they'll need in five or 10 years' time.

The video market is filled with a whole new alien language of terms, so before getting to the cameras we'll explain some of the key terms you'll need to know to make sense of this brave new world.



# GROUP TEST BEST 4K FILM-MAKING CAMERAS

## WHAT TO LOOK FOR IN A 4K VIDEO CAMERA Your guide to video camera specifications and accessories



### 1. Sensor size

4K crossover camera sensor sizes include the familiar full-frame, APS-C and Micro Four Thirds. Some pro video cameras use Super 35mm, which is roughly the size of APS-C but with a wider aspect ratio.

### 2. Crop factors

Not all cameras capture 4K video across the full width of the sensor, which can introduce a 'crop factor'.

### 3. Autofocus

Most makers offer fast hybrid phase/contrast-detection on-sensor autofocus systems. Nikon DSLRs still use contrast autofocus in video mode. In reality, many videographers prefer manual focus.

### 4. Live view

Mirrorless cameras offer full-time live view both on the rear screen and in the viewfinder. DSLRs only offer rear-screen viewing.

### 5. Touchscreen control

Useful in videography because you're less likely to jog the camera.

### 6. Tilting screen

Useful when filming at low angles or ground level.

## TECH TALK Video terminology can be intimidating, so here's a quick jargon buster

### 4K UHD vs Cinema 4K

What most people refer to as '4K' is actually UHD, or 3840 x 2160 pixels. It has the same 16:9 aspect ratio as Full HD, with twice the horizontal and vertical resolution. Cinema 4K has a resolution of 4096 x 2160 pixels, which gives a slightly wider 17:9 aspect ratio.

### Bit rate

The term for the level of compression applied to video footage. Higher compression (a lower bit rate) produces smaller files but lower-quality video, while lower compression (higher bit rate) produces larger files but better-quality video. Different cameras record video at different bit rates.

### Bit depth

Most cameras capture 8-bit video, which has similar limitations to 8-bit JPEGs, and can start to break up and show banding or posterisation effects with heavy editing (or 'grading', to use the video term). Some cameras can capture 10-bit video, which offers more scope for editing later.

### Colour sampling

Video is recorded as a luminance channel and two chroma channels. Compressing chroma (colour) data is less harmful to the image quality; this compression is quoted as a ratio. Ideally, cameras would record 4:4:4 video but usually compress to 4:2:0 (basic) or 4:2:2 (better).

### Frame rate

The traditional frame rate for movies is 24fps; for PAL broadcast TV it's 25fps; and for NTSC broadcast TV it's 30fps. Now that most video is transmitted and viewed digitally, distinctions between PAL and NTSC are less relevant, but the frame rate still affects the 'look' of footage.

### Interlaced vs progressive

Interlacing is where two 'fields' of odd and even scan lines are stripped together. It saves on processing power and bandwidth, but isn't as good as 'progressive' video, where each frame is captured whole. Interlaced video has an 'i' suffix; progressive video has a 'p'.

### Intra-frame vs inter-frame

Intra-frame compression compresses each frame individually and gives the best quality frame by frame. Inter-frame compression only stores the changes between 'key' frames. The choice may be expressed as 'All-I' (intra-frame) and 'IPB' (inter-frame) compression.

### Log modes

these capture 'flat' video with a wider brightness range, which is designed to be edited (or graded) later. All camera makers have their own versions of log modes, such as S-Log (Sony) and C-Log (Canon). Log modes are a selling point for video-orientated cameras.

### Oversampling

A processing technique where video is captured at a higher resolution than 4K then 'downsampled' to its final 4K resolution. This can produce better-quality video and is sometimes used on cameras where the native sensor resolution is much higher than 4K.



# GROUP TEST BEST 4K FILM-MAKING CAMERAS

## 4K VIDEO ACCESSORIES

### CINE LENSES

Regular lenses are fine for video, but cine lenses have special adaptations that can make adjusting focus and exposure easier.



### MEMORY CARDS

Look for a minimum sustained speed above 10MBps (UHS Class 1, V10); 30MBps is better (UHS Class 3, V30), and 60MBps is ideal.



### VIDEO TRIPOD AND HEAD

A dedicated video tripod such as this Manfrotto will have twin legs for extra stability and vibration reduction.



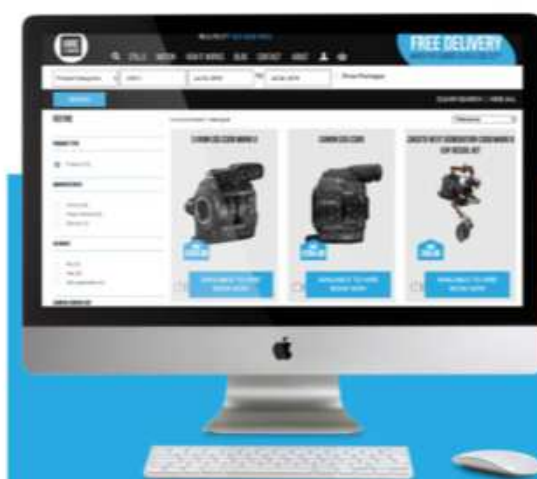
### EXTERNAL RECORDER

Video cameras can record compressed video internally, but you can usually record 'clean' uncompressed video to an external recorder.



### LED LIGHTS

Naturally, flash is no good for video, so if you intend using artificial light it will need to be 'continuous' lighting, such as LED panels.



## WHY BUY WHEN YOU CAN HIRE?

It's cheaper than spending thousands on kit you might only use rarely

Video cameras and lenses are expensive investments, especially if you're only going to need them a few times a year, so why not hire your gear instead? We did...

We got the Sony Alpha 7 III and 24-70mm f/2.8 for our group test from UK-based hirecamera.com on a one-week rental – time for us to give it a proper test and more than long enough for a video shoot. Hiring makes a lot of business sense, because you're not tying up capital in rarely used equipment, and it's much easier to account for rental charges when costing a job than it is to try to factor in long-term depreciation for your own gear.

For the rest of us, camera hire is a straightforward way to try out equipment before buying it, or to get our hands on gear we could never afford to buy outright. You can use [www.hirecamera.com](http://www.hirecamera.com) to check for equipment, availability and prices; there's a network of click-and-collect locations to pick up equipment.



## GROUP TEST BEST 4K FILM-MAKING CAMERAS



## HOW WE DID OUR TESTS

To ensure the most stable platform possible for shooting during our video tests we used a Manfrotto 546B twin-leg video tripod with middle-spreader bracing struts and a half-ball levelling base. This was fitted with a Nitrotech N8 fluid head.



## TRAFFIC

Our traffic test was shot both as a still and as a static video sequence to compare the real-world resolution of each camera with moving subjects and fine, textured detail.



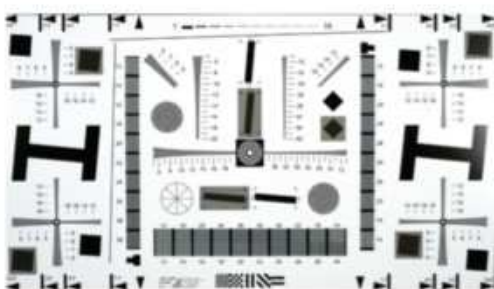
## ROLLING SHUTTER

A second urban scene was chosen as a further outdoor test, and also to check for rolling shutter effects with panning movements. (These make vertical buildings appear to 'slant'.)



## LAB TEST: STUDIO SCENE

This static scene was used to show differences in contrast and colour rendition with standard lighting and subject matter. All the cameras were set to their default picture style.



## LAB TEST: RESOLUTION CHART

For our final video camera test, we used our regular stills camera resolution test chart to see how much detail each camera could actually capture.


[www.canon.co.uk](http://www.canon.co.uk)

## Canon EOS 5D Mk IV

£3,249/\$3,099

## KEY FEATURES

**SENSOR SIZE:** FULL-FRAME  
**SENSOR RESOLUTION:** 30.4MP  
**4K FRAME RATES:** 30/25/24P  
**SLOW MOTION (FHD):** UP TO 60FPS  
**4K SENSOR CROP FACTOR:** 1.74X  
**STANDARD ISO RANGE:** 100-32,000  
**4K BIT DEPTH:** 8-BIT  
**MAX BIT RATE:** 500MBPS  
**LOG MODES:** C-LOG (VIA UPGRADE)  
**MEMORY CARDS:** CF (UDMA 7), SD/SDHC/SDXC (UHS I)



The 5D IV's video technology may be looking dated now, but there's nothing wrong with its image quality.

## VERDICT

The EOS 5D IV is a great all-round camera, but its 4K video capabilities come with limitations that newer rivals don't have. It's good, but starting to look its age.



Canon has always been ahead of the curve in the DSLR video market. The EOS 5D Mark IV is an all-rounder that has proved a big hit with pros for its durability, versatility and affordability as a pro DSLR – and it shoots 4K video too.

There are some limitations. First, the 4K video mode does not use the full width of the sensor, so there's a fairly substantial 1.74x 'crop factor' in this mode. Second, the EOS 5D IV supports Canon's Log Gamma mode for extended dynamic range, but only via a paid upgrade at a Canon service centre. Most surprisingly, it can only record 4K to internal memory cards; you can use an external HDMI recorder, but only for Full HD resolution.

## Performance

The 5D IV's Motion JPEG video files are huge, and the 4K crop factor makes 'wide' shots more difficult, but the quality proved very good in our tests. The rolling shutter was the worst of the cameras in this group, though.



## GROUP TEST BEST 4K FILM-MAKING CAMERAS


[www.canon.co.uk](http://www.canon.co.uk)

## Canon EOS C300 Mk II

£8,999/\$9,999

The C300 II is in the middle of Canon's Cinema EOS range. While it costs substantially more than any of the DSLR and mirrorless cameras in this group, it goes a lot further towards meeting the needs of pro videographers, with a modular design suited to attaching external monitors, grips and sound equipment.

It uses a Super 35mm CMOS sensor, similar in size to APS-C and corresponding to the old 35mm movie format. The 8-megapixel sensor captures 4K video directly without cropping, oversampling or pixel binning, and can capture at 4:2:2 10-bit quality internally to twin CFast memory cards. It can also capture raw 4K to an external recorder.

### Performance

The built-in ND filters are a major asset outdoors, and there was little visible rolling shutter effect in our panning tests. The footage is excellent for grading later, but video straight from the camera is no better than rivals.

#### KEY FEATURES

**SENSOR SIZE:** SUPER 35MM  
**SENSOR RESOLUTION:** 8.85MP  
**4K FRAME RATES:** 60/50/30/25/24P **SLOW MOTION (FHD):** UP TO 120FPS **4K SENSOR CROP FACTOR:** 1X **STANDARD ISO RANGE:** 160-25,600 **4K BIT DEPTH:** 10-BIT (INTERNAL) **MAX BIT RATE:** 410MBPS **LOG MODES:** C LOG, C LOG 2, C LOG 3 **MEMORY CARDS:** 2 X CFAST 2.0 (4K), 2 X SD (FHD ONLY)



The Cinema EOS C300 II outstrips the rest for potential, but expect to do some grading later to get the best results.

#### VERDICT

**The slow and deliberate handling, reliance on colour grading later and Canon's tricky MFX file format make this a camera for experts, not amateurs.**


[www.fujifilm.co.uk](http://www.fujifilm.co.uk)

## Fujifilm X-H1

£1,699/\$1,899

The X-H1 is Fujifilm's top APS-C X-mount camera. It's the first in the Fujifilm X range to feature in-body stabilisation, which works alongside the optical image stabilisation in many Fujifilm lenses. The X-H1 can capture both 16:9 UHD video and DCI 4K, with a bit rate of up to 200Mbps and an F-Log gamma option. It also comes with a new Eterna Film Simulation mode, which can be used with the camera's 400% dynamic range setting for up to 12 stops of dynamic range – and less grading work compared with log modes.

There is a crop factor when shooting 4K video, but it's relatively small at 1.17x. It's also possible to shoot Full HD at up to 100/120fps.

### Performance

With crystal-clear footage, the X-H1 makes up for in out-of-the box 4K quality what it lacks in professional video specifications. There is a moderate rolling shutter effect with quick panning movements, though.

#### KEY FEATURES

**SENSOR SIZE:** APS-C  
**SENSOR RESOLUTION:** 24.3MP  
**4K FRAME RATES:** 24P  
**SLOW MOTION (FHD):** UP TO 120FPS **4K SENSOR CROP FACTOR:** 1.17X **STANDARD ISO RANGE:** 200-12,800 **4K BIT DEPTH:** 8-BIT **MAX BIT RATE:** 200MBPS **LOG MODES:** F LOG, ETERNA FILM **SIMULATION MEMORY CARDS:** 2 X SD/SDHC/SDXC (UHS II)



Its video specifications don't match those of specialist 4K cameras, but the X-H1's video quality is excellent.

#### VERDICT

**In our tests, this camera gave the best results with the least effort. Footage is crisp and sharp straight from the camera, and an F-log mode is included.**



## GROUP TEST BEST 4K FILM-MAKING CAMERAS


[www.nikon.co.uk](http://www.nikon.co.uk)

## Nikon D850

£3,499/\$3,297

As a high-resolution multi-purpose DSLR, the Nikon D850 is more or less a direct rival to the Canon EOS 5D Mk IV also on test here, but offers both higher resolution and, via an optional battery grip, higher continuous shooting speeds. Its advantage for video is that it captures full-width 4K video with no crop factor, so your lenses have the same angle of view for video as they do when you're shooting stills.

Another advantage the D850 has over the 5D Mk IV is that it can output clean 4:2:2 8-bit 4K video to an external recorder; the Canon's external output is restricted to Full HD. There are no log modes, but there is a Flat Picture Control designed to capture a wider brightness range.

### Performance

The D850 relies on contrast AF when shooting video, which slows things down a little, but the video quality itself is very good, albeit with moderate rolling shutter if the camera is moved too quickly.

#### KEY FEATURES

**SENSOR SIZE:** FULL-FRAME  
**SENSOR RESOLUTION:** 45.4MP  
**4K FRAME RATES:** 30/25/24P  
**SLOW MOTION (FHD):** UP TO 60FPS  
**4K SENSOR CROP FACTOR:** 1X  
**STANDARD ISO RANGE:** 64-25,600  
**4K BIT DEPTH:** 8-BIT  
**MAX BIT RATE:** 144MBPS  
**LOG MODES:** FLAT PICTURE  
**CONTROL MEMORY CARDS:** XQD, SD/SDHC/SDXC (UHS I)



The DSLR design may not seem best suited to video, but the D850 does a great job, rendering moving and static subjects well.

#### VERDICT

**The D850 combines great stills resolution with good uncropped 4K video. It lacks hybrid on-sensor AF, but many videographers use manual focus anyway.**


[www.olympus.co.uk](http://www.olympus.co.uk)

## Olympus OM-D E-M1 II

£1,499/\$1,599

Olympus hasn't built quite the same reputation for 4K video as rival Micro Four Thirds camera maker Panasonic, but the OM-D E-M1 II still offers some powerful video tools for stills shooters. It can shoot both 4K UHD (3840 x 2160) and Cinema 4K video (4096 x 2160) at 30 or 24fps, and with a maximum bit rate of 237Mbps – pretty good for a consumer-focused crossover camera.

The camera also benefits from Olympus's five-axis in-body stabilisation, while the M.Zuiko Digital ED 12-100mm 1:4.0 IS Pro lens is the perfect partner, with a constant f/4 maximum aperture and its own in-built stabilisation, for a combined stabilising effect of up to 6.5 stops.

### Performance

The Olympus captures crisp, clear and natural-looking video with only slight rolling shutter effects if the camera is moved quickly. But it's harder to get 'cinematic' depth of field with the smaller Micro Four thirds sensor size.

#### KEY FEATURES

**SENSOR SIZE:** MFT SENSOR  
**RESOLUTION:** 20.4MP **4K FRAME RATES:** 30/25/24P **SLOW MOTION (FHD):** UP TO 60FPS **4K SENSOR CROP FACTOR:** 1X **STANDARD ISO RANGE:** LOW-25,600 **4K BIT DEPTH:** 8-BIT **MAX BIT RATE:** 237MBPS **LOG MODES:** FLAT LUT (VIA DOWNLOAD) **MEMORY CARDS:** SD/SDHC/SDXC UHS I, SD/SDHC/SDXC UHS II



With dual stabilisation and crisp 4K capture it's easy to get good results with the OM-D E-M1 II, even if you're no expert.

#### VERDICT

**The Olympus combines portability, speed and value. It excels at high-speed stills, while its dual stabilisation (with certain lenses) benefits video too.**



## GROUP TEST BEST 4K FILM-MAKING CAMERAS


[www.panasonic.co.uk](http://www.panasonic.co.uk)

## Panasonic Lumix GH5S

£2,199/\$2,298

Panasonic has made 4K crossover cameras its speciality, but with the GH5S it's gone a step further, sacrificing outright resolution for high-end video features. The sensor has only 10 million pixels, which dents its appeal for stills photography but is ideal for 4K, especially as this is a 'multi-aspect' sensor that can shoot in the 17:9 Cinema 4K ratio, 16:9 for 4K UHD and regular 3:2 and 4:3 stills ratios using the maximum sensor area.

Uniquely among 'crossover' cameras it can capture 4:2:2 10-bit video internally to suitably fast SD cards; most rivals can only capture 8-bit video. The GH5S also comes with Panasonic's V-logL log mode pre-installed for extra dynamic range.

### Performance

Performance is first rate, with great clarity, contrast and colour. Panasonic says the sensor readout is 1.3x faster than the GH5, but there's a still a rolling shutter effect with fast panning.

#### KEY FEATURES

**SENSOR SIZE:** MFT **SENSOR RESOLUTION:** 10.28MP **4K FRAME RATES:** 60/50/30/25/24P **SLOW MOTION (FHD):** UP TO 240FPS **4K SENSOR CROP FACTOR:** 1X **STANDARD ISO RANGE:** 160-51,200 **4K BIT DEPTH:** 10-BIT **MAX BIT RATE:** 400MBPS **LOG MODES:** V-LOGL, HLG **MEMORY CARDS:** 2X SD/SDHC/SDXC (UHS II)



A step ahead of its crossover rivals for 4K video specs, the GH5S is compromised for stills but delivers top-quality video.

#### VERDICT

**As a 4K video camera the GH5S delivers excellent features and performance for its price. The modest 10MP resolution, though, makes it little use for stills.**


[www.sony.co.uk](http://www.sony.co.uk)

## Sony Alpha 7R Mk II

£3,199/\$2,998

Sony's full-frame mirrorless cameras have earned quite a reputation with videographers. The A7S II is arguably the most video-centric of the A7 series, but it's also the oldest (and strongly tipped for an update), so we've selected the A7R III here: it offers the best of both worlds for both stills and video shooters.

With 42.4 million pixels it offers the second-highest stills resolution of all the cameras on test, and can capture either full-frame 4K video or 5K 'oversampled' video in its cropped Super 35mm mode, which Sony says offers the best picture quality. HLG (Hybrid Log Gamma) mode is included, plus S-Log2 and S-Log3 for higher dynamic range capture.

### Performance

The A7R III was the only camera to properly capture the green wool ball at the top-right of our studio test scene. The full-frame 4K is useful for avoiding lens crop factors, but we'd go for the sharper Super 35mm crop format.

#### KEY FEATURES

**SENSOR SIZE:** FULL-FRAME **SENSOR RESOLUTION:** 42.4MP **4K FRAME RATES:** 30/24P **SLOW MOTION (FHD):** UP TO 120FPS **4K SENSOR CROP FACTOR:** 1X, SUPER 35MM **STANDARD ISO RANGE:** 100-32,000 **4K BIT DEPTH:** 8-BIT **MAX BIT RATE:** 100MBPS **LOG MODES:** S LOG 2, S LOG 3, HLG **MEMORY CARDS:** MS/SD, SD/SDHC/SDXC (UHS II)



A fraction less crisp in full-frame 4K mode, the A7R III proved best at capturing the tricky green wool ball in our studio test.

#### VERDICT

**The in-body stabilisation, mirrorless design and in-built log modes give the A7R III the edge over 4K DSLR rivals, but there are cheaper alternatives.**



## GROUP TEST BEST 4K FILM-MAKING CAMERAS

## HOW THE CAMERAS COMPARE



Canon  
EOS 5D IV



Canon  
EOS C300 II



Fujifilm  
X-H1



Nikon  
D850



Olympus  
OM-D E-M1 II



Panasonic  
Lumix GH5S



Sony  
Alpha 7R III

|                              |                                                      |                                                      |                                                            |                                                      |                                                          |                                                              |                                                    |
|------------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------|
| <b>Contact</b>               | <a href="http://www.canon.co.uk">www.canon.co.uk</a> | <a href="http://www.canon.co.uk">www.canon.co.uk</a> | <a href="http://www.fujifilm.co.uk">www.fujifilm.co.uk</a> | <a href="http://www.nikon.co.uk">www.nikon.co.uk</a> | <a href="http://www.olympus.co.uk">www.olympus.co.uk</a> | <a href="http://www.panasonic.co.uk">www.panasonic.co.uk</a> | <a href="http://www.sony.co.uk">www.sony.co.uk</a> |
| <b>Street price</b>          | £3,249/\$3,099                                       | £8,999/\$9,999                                       | £1,699/\$1,899                                             | £3,499/\$3,297                                       | £1,499/\$1,599                                           | £2,199/\$2,298                                               | £3,199/\$2,998                                     |
| <b>Mount</b>                 | Canon EF                                             | Canon EF                                             | Fujifilm X                                                 | Nikon F                                              | MFT                                                      | MFT                                                          | Sony FE                                            |
| <b>Sensor size</b>           | Full-frame                                           | Super 35mm                                           | APS-C                                                      | Full-frame                                           | MFT                                                      | MFT                                                          | Full-frame                                         |
| <b>Sensor resolution</b>     | 30.4MP                                               | 8.85MP                                               | 24.3MP                                                     | 45.4MP                                               | 20.4MP                                                   | 10.28MP                                                      | 42.4MP                                             |
| <b>4K frame rates</b>        | 30/25/24p                                            | 60/50/30/25/24p                                      | 24p                                                        | 30/25/24p                                            | 30/25/24p                                                | 60/50/30/25/24p                                              | 30/24p                                             |
| <b>Slow motion (FHD)</b>     | Up to 60fps                                          | Up to 120fps                                         | Up to 120fps                                               | Up to 60fps                                          | Up to 60fps                                              | Up to 240fps                                                 | Up to 120fps                                       |
| <b>4K sensor crop factor</b> | 1.74x                                                | 1x                                                   | 1.17x                                                      | 1x                                                   | 1x                                                       | 1x                                                           | 1x, Super 35mm                                     |
| <b>Standard ISO range</b>    | 100-32,000                                           | 160-25,600                                           | 200-12,800                                                 | 64-25,600                                            | Low-25,600                                               | 160-51,200                                                   | 100-32,000                                         |
| <b>4K bit depth</b>          | 8-bit                                                | 10-bit (internal)                                    | 8-bit                                                      | 8-bit                                                | 8-bit                                                    | 10-bit                                                       | 8-bit                                              |
| <b>Max bit rate</b>          | 500Mbps                                              | 410Mbps                                              | 200Mbps                                                    | 144Mbps                                              | 237Mbps                                                  | 400Mbps                                                      | 100Mbps                                            |
| <b>Log modes</b>             | C-Log (via upgrade)                                  | C Log, C Log 2, C Log 3                              | F Log, Eterna Film Simulation                              | Flat Picture Control                                 | Flat LUT (via download)                                  | V-LogL, HLG                                                  | S Log 2, S Log 3, HLG                              |
| <b>Memory cards</b>          | CF (UDMA 7), SD/SDHC/SDXC (UHS I)                    | 2 x CFast 2.0 (4K), 2 x SD (FHD only)                | 2 x SD/SDHC/SDXC (UHS II)                                  | XQD, SD/SDHC/SDXC (UHS I)                            | SD/SDHC/SDXC (UHS I), SD/SDHC/SDXC (UHS II)              | 2 x SD/SDHC/SDXC (UHS II)                                    | MS/SD, SD/SDHC/SDXC (UHS II)                       |
| <b>File formats</b>          | MOV/Motion JPEG                                      | XF AVC/MXF                                           | MOV                                                        | MOV, MP4                                             | MOV, AVI                                                 | MOV/MP4, AVCHD                                               | X AVCS, AVCHD                                      |
| <b>Live view AF</b>          | Dual Pixel CMOS AF (multi-area)                      | Dual Pixel CMOS AF (multi-area)                      | 91/325-point hybrid phase/contrast AF                      | Contrast AF (any area)                               | 121-point phase detection AF                             | 225-area DFD contrast AF                                     | 399/425-point hybrid phase/contrast AF             |
| <b>Dimensions</b>            | 151 x 116 x 76mm                                     | 190 x 183 x 187mm                                    | 140 x 98 x 86mm                                            | 146 x 124 x 79mm                                     | 134 x 91 x 69mm                                          | 139 x 98 x 87mm                                              | 127 x 96 x 74mm                                    |
| <b>Weight</b>                | 800g                                                 | 3,435g                                               | 673g                                                       | 1,005g                                               | 574g                                                     | 660g                                                         | 675g                                               |

## THE WINNERS ARE...

## CANON EOS C300 II AND PANASONIC LUMIX GH5S

**F**or full-on professional video features and quality, two cameras stand out. The Canon Cinema EOS C300 Mark II and the Panasonic GH5S outshine their rivals with better quality 10-bit video, higher 4K frame rates and a video-centric bias that makes few concessions to stills.

But that's the problem. The C300 II is an out-and-out professional video camera that effectively doesn't shoot stills at all, and it also demands a high level of technical know-how to operate. The GH5S is much more approachable, and is also cheaper, lighter, simpler and works much more like a regular DSLR or mirrorless camera, but it's

limited to 10-megapixel stills.

So if you want a crossover stills/video camera that does both equally well, you'll need to compromise just a little on video features. This is where the Fujifilm X-H1 impressed us. It shoots clean, sharp video, with in-body stabilisation and an affordable price tag. The full-frame Canon EOS 5D IV's drawbacks include a heavy 4K crop factor, while the Nikon D850 shoots full-frame video, but has to make do with contrast-based live view autofocus. The Sony A7R III beats both with its 4K video features and constant live view.

The Olympus OM-D

E-M1 II is a great choice for Micro Four Thirds users, but then so is the rival Panasonic GH5 (not tested).



# A P P S

## MORE GREAT MAGAZINES FROM THE MAKERS OF PHOTOGRAPHY WEEK

### N-PHOTO

N-Photo is a monthly magazine for Nikon photographers, and is packed with technique and Photoshop video lessons every month.



<http://tiny.cc/x2ehfy>



<http://tiny.cc/32ehfy>



### PHOTOPLUS

PhotoPlus is a monthly magazine for Canon photographers that features expert advice, tips and video tutorials on all things Canon.



<http://tiny.cc/i4ehfy>



<http://tiny.cc/y5ehfy>



### DIGITAL CAMERA WORLD

A monthly magazine that aims to improve your photography with an inspirational mix of amazing images and how-to articles.



<http://tiny.cc/s6ehfy>



<http://tiny.cc/b7ehfy>



### PRACTICAL PHOTOSHOP

Improve your Photoshop skills with the monthly guide to creating stunning images. Each issue comes with expert video lessons.



<http://tiny.cc/l8ehfy>



<http://tiny.cc/99ehfy>



Check out these other fantastic photography apps for iPad & iPhone



### TEACH YOURSELF PHOTOSHOP

Transform your images with the expert tips and advice in 50 Photoshop video tutorials. Discover the power of layers, blending modes, raw file editing and more with this easy-to-follow course.

<http://tiny.cc/2oxogy>



### TEACH YOURSELF LIGHTROOM

Unleash the creative power of the Lightroom digital darkroom with this 50-part video course. Enhance landscapes, master black and white, make gorgeous portraits and more.

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