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THE **CANON** MAGAZINE

Issue 162 • March 2020

2020 VISION

20 ESSENTIAL CANON TECHNIQUES

Improve your camera skills to make this
your best year for photography

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SHOW 2020
GUIDE**

PHOTO PROJECTS

GET CLOSER TO NATURE

How to go longer and
lighter and on a budget



EXPERT SKILLS

LANDSCAPE PHOTO TIPS

Instantly improve your
images with pro advice



SUPER TEST

TOP 10 CANON ZOOM LENSES

We put the full range of Canon
everyday zoom lenses to the test

**// I'd never use flash during
the ceremony or speeches
because straightaway that
private moment is gone //**

Lyndsey Goddard – documentary wedding photographer



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20 TIPS FOR 2020

Keep improving
your photos in 2020
with our dedicated
Canon camera and
photography guide!
Page 28

Image: Drew Buckley

OUR GUARANTEE

- We're the only photo magazine in the newsagent that's **100% DEDICATED TO CANON EOS CAMERA USERS** so we're 100% relevant to your needs.
- **WE'RE 100% INDEPENDENT** which means we're free to publish what we feel is best for **EVERY CANON DSLR OR MIRRORLESS PHOTOGRAPHER** from beginners to enthusiasts to full-time professionals.
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- Our Video Disc has **THE VERY BEST DSLR TECHNIQUE & PHOTOSHOP VIDEO GUIDES**, which can also be viewed via our digital editions.
- We're proud to use **THE WORLD'S TOP CANON PHOTOGRAPHERS** and experts. Meet them on page 6.



Peter Travers
Editor

Welcome

This issue we bring you 20 top Canon tips and techniques to continue to help improving your photography in 2020. From stunning landscapes and wonderful wildlife, to creative close-ups and beautiful portraits – there's essential advice for every type of Canon photographer, starting from page 28.

Also inside this issue, our plucky Apprentice hits the streets of Soho with Canon professional photographer Alastair Batchelor, to learn how to use neon shop lights at night for creative portraits. See page 8.

We also bring you the new Canon EOS-1D X Mark III, a pro-level and advanced hybrid/DSLR – we reveal our early verdict after a thorough testing on the race track, check out page 92 for more details. While in our Super Test we Canon top 10 standard zoom lenses, page 100.

We speak to award-winning documentary wedding photographer Lyndsey Goddard about her ten-year career to date, and her global client base and year-long wedding season, from page 64.

We have new and creative photo projects, including how to get closer to wildlife without splashing out on expensive telephoto prime lenses; budget lens hacks; and capturing cinematic-style portraits; plus tutorials for editing images in Photoshop, Elements and Affinity Photo. All with free video guides – from page 45.

I also just want to quickly remind you of our various online presences and to announce that we now have a new Instagram page (@PhotoPlusCanonMag). All the web/app links are below. Follow along with the team, join in the fun and send us your photos!

Peter

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Messenger bag
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Become the best photographer you can be! There's landscapes, portraits, wildlife and more techniques to improve your images



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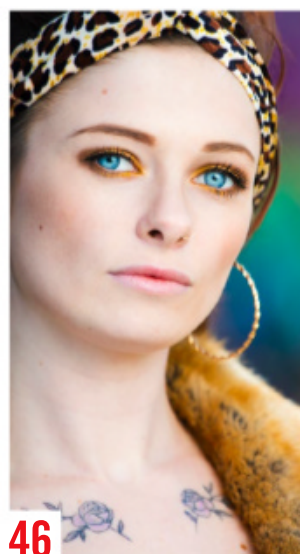
See what the Photography Show 2020 has in store – download our handy guide at <http://downloads.photoplusmag.com/tps2020.pdf>

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PhotoPlus CanonSkills

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To view our 'pop-out' videos, tap these badges that appear alongside the tutorials inside the magazine, or type the link that appears alongside into your web browser.

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Meet the team...

PhotoPlus

THE CANON MAGAZINE

Who we are, what we do, and our favourite bits from this issue...



Peter Travers

Editor • 5D Mark IV
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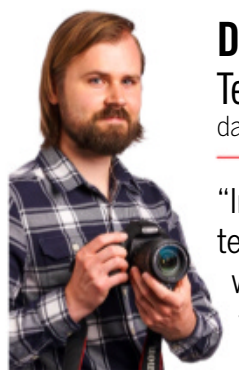
"In this issue we've shot and collated 20 top Canon tips to ensure you make 2020 the year you become the best photographer you can be! Start improving now!" **PAGE 28**



James Paterson

Technique writer • 5D Mark IV
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"Sometimes portraits needs that X factor to take them to the next level. I show you how I do that with my cinematic headshot photog project inside!" **PAGE 46**



Dan Mold

Technique editor • 7D Mk II
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"In this month's Apprentice I teamed up reader Shana-Rochelle with Canon pro Alastair Batchelor to get some slick neon portraits around London's Soho." **PAGE 08**



Martin Parfitt

Art editor • 600D
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"David Noton dares to get his camera out in the melting pot that is St Louis, West Africa. How does he unlock the photographic potential somewhere he'd not visited before?" **PAGE 42**



Ben Andrews

Lab manager • 5D Mark III
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"Canon proves the DSLR is far from a dying breed with the new EOS 1D X Mark III. Its exciting new tech could make it the best camera on the market!" **PAGE 92**



Matthew Richards

Technical writer • 6D Mk II
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"Most Canon cameras are available as a kit with a standard zoom, but how good are they? Are they worth upgrading – find out in our ten lens Super Test..." **PAGE 100**

This issue's contributors...



Alastair Batchelor

Take a masterclass in neon lighting at night in Soho with pro portrait photographer Alastair. **PAGE 08**



David Noton

In West Africa, David tries to capture imagery that represents the hustle and bustle of St Lois. **PAGE 42**



Lyndsey Goddard

Wedding/Canon pro photographer Lyndsey shares her secrets of getting stuck in at big weddings. **PAGE 64**



Chris Grimmer

What does this astrophotographer use to tame the beautiful night sky? Check out what's in Chris's bag. **PAGE 76**



Marcus Hawkins

Sometimes you need to keep your camera quiet! Marcus shows you how to turn your camera into a sneaky beast. **PAGE 82**



Brian Worley

Is there anything about Canon gear that Brian doesn't know? Find out in the latest batch of techy Q&As. **PAGE 86**

Our contributors Ben Andrews, Alastair Batchelor, Marcus Hawkins, Lyndsey Goddard, Chris Grimmer, Gareth Jones, David Noton, James Paterson, Matthew Richards, Brian Worley



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THE APPRENTICE

CANON PRO

NAME:

ALASTAIR BATCHELOR

CAMERA:

CANON EOS 5D Mk III

ALASTAIR'S photographic journey began in London at 19 when he would shoot the city's abandoned architecture. He loves portraiture, and shooting headshots for actors, promo work for bands and artists, or for editorial purposes. He's built up an ace collection of locations around London, including neon signs in Soho that make for amazing low light portraits. For more info visit www.alastairbatchelor.com

APPRENTICE

NAME:

SHANA-ROCHELLE
GRAVILLIS

CAMERA:

CANON EOS 5D Mk III

SHANA-ROCHELLE graduated last year from University of East London in Photography and has a passion for people portraits. After a fall that damaged a tendon in her leg she's been bound to crutches for at least a year. But she's determined to not let this stand in the way. Her confidence knows no bounds when shooting in a studio, but she's more hesitant with shooting outdoors where the light is less controllable. So we've teamed her up with portrait pro Alastair to take some portraits in some vibrant spots around Soho.



SHOOT WITH A **PRO**

CITY OF LIGHTS

Canon professional portrait photographer Alastair Batchelor shows Apprentice Shana-Rochelle the best hot spots in London to capture stunning portraits at night

THE APPRENTICE

TECHNIQUE ASSESSMENT

Alastair helped Shana-Rochelle prepare her camera for neon fuelled night portraits



DIAL IN THE RIGHT SETTINGS

ALASTAIR set up Shana-Rochelle's 5D Mark III with identical settings to his. He dived into Manual mode and set the ISO to 100 and went for a Raw, for best image quality. He then opened the aperture of her 35mm lens to f/2.2 and set a shutter speed of 1/60 sec, which is fast enough to stop camera-shake appearing when shooting handheld.

CONTROL THE FOCUS

SWITCHING the autofocus mode to one point AF means you can select a single point in the frame you want the camera to focus on (these look like tiny squares in the viewfinder). Alastair also set the autofocus to One Shot, which means the autofocus will focus when you half-press the shutter and lock in place.



EXPERT INSIGHT

FOCUS MORE ACCURATELY

ALASTAIR has set up his 5D Mark III so that only the first two AF area selection modes are engaged, Single-point Spot AF and Single-point AF. This allows him to precisely place an AF point over his model's eye to make sure it's pin-sharp. He also exclusively shoots through the viewfinder to make sure he's using the more accurate and faster phase detection autofocus points.

TOP GEAR #1

Sigma 50mm f/1.4 DG HSM Art

I USE this lens 99 per cent of the time – it's the greatest lens I've ever owned. This is the first time I've had a wide aperture lens that is perfectly pin-sharp when wide-open. Shooting with wide apertures is crucial for my night shots and this lens is amazingly sharp at f/1.4.



PRO TIP

CHECK YOUR SHOTS

ONE of the biggest advantages of modern digital cameras is the LCD screen on the back – ensure you take full advantage of it. Every time you take a really important shot, check it on the screen and zoom in to make sure the eyes are pin-sharp and the image is exposed as you want – there's no time like the present to fix any exposure problems you may have!



SHOOT WITH A **PRO**

HOT SHOT #1

Lens	Sigma 50mm f/1.4 DG HSM Art
Exposure	1/320 sec, f/1.4, ISO100

ALASTAIR'S COMMENT

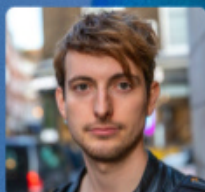


We met up with our first model, Katarzyna Pachelska (@kasiapachelska), in Soho. Soho is an energetic part of central London, and gives us plenty of chances to take some brilliant portraits. The idea was to illuminate our models with the neon signs of shops and bars around this vibrant part of the city at night, but as it was still light when we met up we took the opportunity to take a few shots in softer light as the sun set.

THE APPRENTICE

HOT SHOT #2

ALASTAIR'S COMMENT



With the light levels dipping we headed over to a location I'd scouted a neon sign that was a little out of the way of the busy London

streets. Here Shana-Rochelle and I could take our time and not worry about people walking past. I loved the pink light this 'Stay Curious' sign was emitting. We positioned Katarzyna in front of it to backlight her, and create a pink rim light around her profile. As the rest of her was in shadow the tones were much cooler. The juxtaposition of blue and pink hues gives this shot an enjoyable '80s vibe.

Lens	Sigma 50mm f/1.4 DG HSM Art
Exposure	1/125 sec, f/1.4, ISO200

ALASTAIR'S TOP TEN TIPS FOR PORTRAITS

- 1 Keep it low**
Alastair rarely pushes the ISO above 400 as he's looking for the best quality with the least noise.
- 2 Location, Location, Location**
Make a note when you see a cool spot to shoot at – include a post code or drop a pin on the Google Maps app on your smartphone to make it easier to find.
- 3 Steady as she goes**
Alastair recommends switching on Image Stabilisation if your lens has it, to help banish shaky shots.
- 4 Optical Prime**
Prime lenses have a fixed focal length, such as 35mm or 50mm. Alastair loves them as their image quality is usually top-notch and they have super wide apertures.
- 5 Zoom with your feet**
As Alastair shoots with primes, he can't zoom in or out, instead he moves closer or further physically.
- 6 All about the eyes**
Ensure your model is giving you the eye contact you want and focus on the eye closest to the camera.
- 7 Use a fast shutter speed**
Ramp up shutter speeds to help banish camera shake. Generally, you want twice that of the focal length, so 1/200 sec when shooting at 100mm and so on.
- 8 Go high or low**
Shooting at eye-level can get a bit repetitive, so give pictures some variety by shooting with a high or low angle to make the subject look more or less dominant.
- 9 Change it up!**
Get multiple looks out of a model by bringing along props like glasses or hats, and or ask them to bring a costume change.
- 10 Have fun! Keep talking**
Photography is all about having fun so enjoy yourself!

HOT SHOT #3

Lens	Tamron 35mm f/1.4 SP Di USD
Exposure	1/125 sec, f/1.4, ISO100

SHANA-ROCHELLE'S COMMENT



// Alastair let me use his Tamron 35mm f/1.4 Di USD, which was wider than the 50mm I had. This let me frame up with a wider composition to show off more of the environment and include Katarzynas reflection. I also used a wide aperture of f/1.4 to turn the lights in the background into luscious bokeh. Following Alastair's advice, I set up in Manual with an ISO of 100 for best quality and a fast shutter speed of 1/125 sec to avoid camera-shake. This is my favourite of the shots I took as Katarzyna looks very 'in the moment' and the lighting is so cinematic. **//**

TOP GEAR #2

Full-frame Canon camera

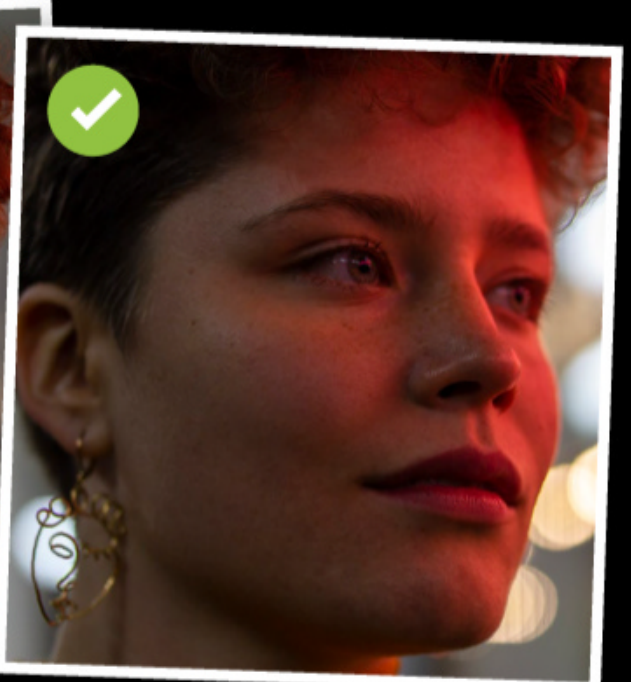
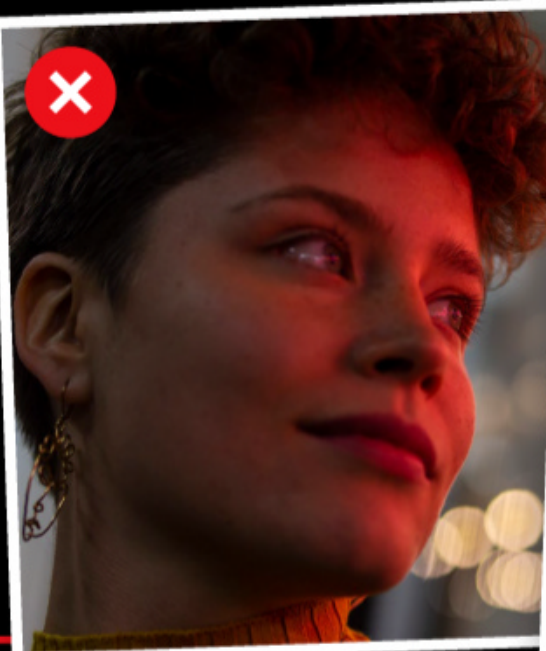
WHEN I moved to full-frame I saw a massive step up in quality and also a much more pleasing depth of field when shooting wider. The 5D Mk III isn't the newest camera, but works perfectly for me. I love its image quality and also the size of the Raw files aren't too large either.



PRO TIP

FOCUS ON CLOSEST EYE

THE eyes are the window to the soul and they're also the key to great portraits. Make them your focal point by focusing on them. When using super wide apertures such as f/1.8, or f/1.4, your zone of sharpness is often not large enough to get both eyes sharp if the model isn't looking straight-on to you. Portraits tend to look their best if you focus on the eye closest to the camera, so make sure this is where your active AF point is.



THE APPRENTICE



HOT SHOT #4

SHANA-ROCHELLE'S COMMENT



// We headed out to find another light source and came across this large white neon sign that filled a shop window – this would be ideal for lighting a model from head to toe. There was a lot of light being emanated by the sign here, and there was also lights from the shops in the background which could be defocused with a wide aperture – this added together to make an interesting backdrop. I directed Katarzyna to move close to the window, bathing one side of her face in light, while leaving the other in shadow. I caught this shot where she's looking over her shoulder at me and I just love the eye contact. **//**

EXPERT INSIGHT HUG THE WALL

SOMETIMES, I'll need to get the camera right up to the wall or window to get the shot I'm after. Thankfully, I've developed a technique for this. I'll hold the camera lens with my left hand, then look through the viewfinder with my right eye and carefully press the shutter with my right hand – it's a bit of a balancing act and takes some getting used to, looking through the viewfinder with my right eye, but it gets results every time.

PRO TIP

SHOW THE MODEL YOUR SHOTS



AS WELL as checking your images to make sure you're happy with them, it's a good idea to show your model some of your favourite pictures. This helps build a rapport and get them excited about the pictures. After looking at the pictures you and the model can come up with and suggest different poses or looks.

TOP GEAR #3

Tamron 35mm f/1.4 SP Di USD

A 35mm lens is perfect for these neon portraits, as it lets you fit more of the scenery in frame for a bit of context. I don't own a 35mm, so I hire one in from places, like hireacamera.com, for shoots like this where I think I'll need it. The rental prices are reasonable too. I've been impressed by this Tamron 35mm f/1.4 SP Di USD lens from its sharp images wide-open and accurate AF in low light.





Lens	Tamron 35mm f/1.4 SP Di USD
Exposure	1/125 sec, f/1.4, ISO100

SHOOT WITH A **PRO**

ALASTAIR'S 3 FAVE PICS

Striking portraits galore in Alastair's alluring style



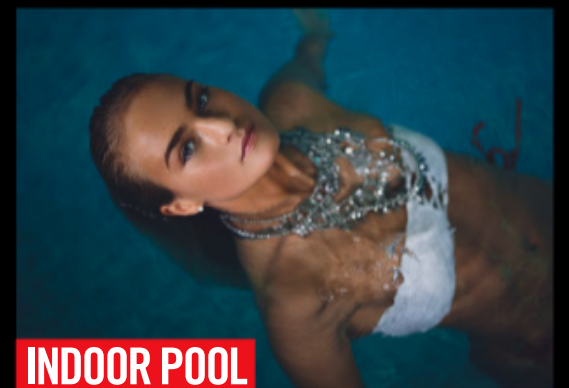
BEAUTIFUL BOKEH

THIS image of my friend Kim Engelhardt was shot during a cloudless day with the sun overhead. I rarely shoot with direct sunlight, but when done right, it can produce stunning results.



GLOW

I LOVE this shot of model Megan Holtby. I worked with makeup artist @geesmakeupuk to get the look I was after and used the low chandelier to provide soft lighting.



INDOOR POOL

WE asked our model to lie back in this swimming pool near to the side where light came in through a large door and I got to a position where I could shoot down.

PRO TIP

LOW LIGHTS

WHEN you're working in low-light conditions looking at a bright camera screen can ruin your night vision. If you go into the Settings section of your Canon camera's menu, which is denoted by a spanner icon, you'll see the LCD Brightness option. Click this and then dial it down to a low value like 1 or 2. This will put less strain on your eyes.



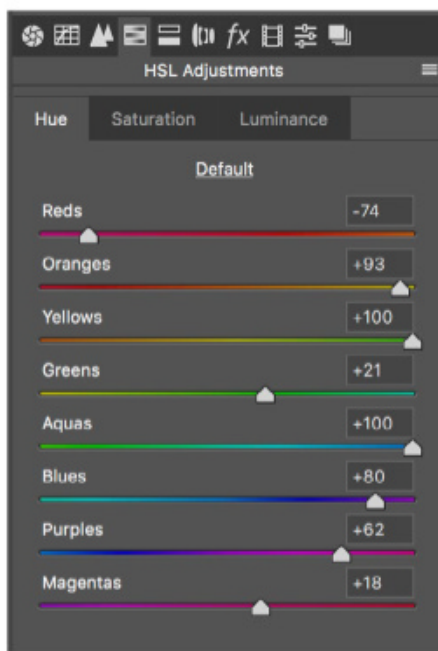
EXPERT INSIGHT

EDIT YOUR PICTURES

ALASTAIR shoots in the Raw file format for extra exposure data and works up his images in Adobe Lightroom Classic CC.

A large part of the editing process is tweaking the colours when shooting with neon lights, which is done through the HSL Adjustments panel, also available in Adobe Camera Raw.

This panel makes it easy to tweak the Hue, Saturation and Luminance of each colour channel to get a totally different feel, so if you haven't tried it have a fiddle around and see what does what!



BEFORE



AFTER



TAKING the picture is only half of the process when shooting neon lit portraits, and Alastair is known to spend hours tweaking each image in Photoshop and Lightroom until the colours are absolutely perfect.

ALASTAIR'S COMMENT



To give Shana-Rochelle a bit of variety in her portraits I'd arranged to meet up with a second model, so we met up with Alexandra Victoria (@alexandrarinner) at Barbican, near the Museum of London. Here there are two large concentric neon signs, and on this occasion the left one was made up purely of shades of blue, while the one on the right looked more like a rainbow and was cycling through different hues. We just had to wait for the right colours to appear before capturing this shot.

Lens	Sigma 50mm f/1.4 DG HSM Art
Exposure	1/160 sec, f/2, ISO100

TOP GEAR #4

Yongnuo flash YN560 III

THE vibrant colours in my images are from the neons, so I sometimes use my flashgun off-camera with triggers to inject a little fill. The light from the flash is white, unless I add coloured gels. It helps the subject pop out and stop them looking so dark without altering the colours.



PRO TIP

COLOURFUL FLASH PORTRAITS

ALASTAIR explained how he uses off-camera flash for his portraits at night by using remote radio triggers on his flashgun, adding a red gel to the front, then mounting the flash inside a softbox to soften the light. He set his flash to around 1/64th power and then held the flashgun set up a few metres away from Alex (above), being sure to point it at her from the side, so the background remained blue.



HOT SHOT #5

SHOOT WITH A **PRO**



TOP GEAR #6

Coloured flash gels

THESE are probably the most basic and unexciting bits of kit to look at, as they're just clear strips of translucent coloured acrylic! But using one or more of these on flashguns will open up a world of creative opportunities. These are unbranded gels that I picked up online for a minimal amount of money.



TOP GEAR #5

Lastolite Ezybox Pro Square Large 90cm with Lastolite Ezybox Pro Speedlight Bracket

WHEN using flash Alastair may use a Lastolite Ezybox Pro Square Large 90cm softbox, which makes the light from the flashgun less harsh and gives a studio look. He's also fitted the softbox with a Lastolite Ezybox Pro Speedlight Bracket, letting him mount a flashgun. This allows for it to be used on a light stand, but it also works with an assistant holding it.

PRO TIP



CHANGE THE WHITE BALANCE

A QUICK way to give your images a totally different feel is to go into the Canon Quick Menu and change the White Balance. If you're shooting a 'true' white neon light, this will make it more cooler and blue or warmer and more yellow. You can also do this in post-processing if you shoot in the Raw image format.

THE APPRENTICE

EXPERT INSIGHT

ADD REFLECTIONS

WHAT LOOKS

better than one neon sign? Two of course! Use the glossy black mirror of a smartphone screen to create a reflection of the lights in your composition, injecting even more neon goodness. Hold your phone at an angle close to the front of the lens and use a wide aperture, so that the phone becomes out of focus and then look through the viewfinder to position the phone's reflection where you want it to appear in the frame.



ALASTAIR'S COMMENT



I couldn't have asked for a more enthusiastic and determined Apprentice than Shana-Rochelle, she was game for trying out everything! I couldn't be happier with the portraits she's taken and her confidence

and interaction with the models was just what was needed to get the best poses out of them. It can't be easy for her to get out and take pictures while she's bound to crutches, but I hope that when her injury has fully healed she'll have the confidence to go outside and experiment with portraits in an outdoor setting, rather than just indoors using studio flash.

SHANA-ROCHELLE'S VERDICT



For this last shot we switched over to the more colourful circular neon sign and Alastair suggested using the reflective surface of a smart phone to inject even more colour into the foreground. He held

it close to the lens while I focused on Alex and used a wide aperture to blur the phone, creating this diffused abstract shot. Portraits are certainly my niche and I've loved every second of being a *PhotoPlus* Apprentice this month, it's given me the confidence to get out of my comfort zone, try shooting more outside and in low-light conditions as well.

BE OUR NEXT APPRENTICE

Do you need some help to take your Canon photography to the next level? Let us know what you'd like help with and we could pair you up with a top pro for the day! Send an email to photoplus@futurenet.com with 'PhotoPlus Apprentice' in the subject line, and include your telephone number and address.



SHOOT WITH A **PRO**

SHOT OF THE DAY!

Lens	Tamron 35mm f/1.4 SP Di USD
Exposure	1/125 sec, f/1.4, ISO200

INSPIRATIONS

STUNNING IMAGERY FROM THE WORLD OF CANON PHOTOGRAPHY





01

SKI IS LIFE BY SANDI BERTONCELI

Sandi captured the perfect moment when a freeride skier jumped between these perfectly spaced trees and into the sunlight. Shot in Zauchensee, Austria, the landscape is covered with fresh snow which can throw off exposures, but not Sandi. He opened the aperture of his lens all the way to f/2.8 for a fast shutter speed of 1/6400 sec which has frozen the skier mid-jump. He's pin-sharp and virtually pops out of the frame – it almost looks 3D!

Lens	Canon EF 70-200mm f/2.8L IS USM
Exposure	1/6400 sec, f/2.8, ISO100

INSPIRATIONS

02



Photocrowd

This month's Inspirations features our 'Let it Snow!' Photocrowd competition. Our favourite image wins a Manfrotto Pro Light RedBee-310 backpack (worth £160), and a selection from our top ten choices get published. The theme for the next competition is 'minimalist landscapes', enter and vote at: www.photocrowd.com

02

POLINA BY ANASTASIYA KUSHNYR
Anastasia zoomed into 150mm on her trusty 80-200mm f/2.8L lens to compress the perspective and brings the background to life. She focused on the model's eyes to ensure they're pin sharp and a wide aperture of f/2.8 was used to throw the background into a pleasing blur. This has turned the highlights in the woodland behind into beautiful bokeh circles.

Lens	Canon EF 80-200mm f/2.8L
Exposure	1/250 sec, f/2.8, ISO500

03

THE HERMIT BY JOHN MIHOPULOS
John captured this shot of a griffon vulture in the East Rhodope Mountains in Bulgaria. The composition works well, with the vulture looking into the right of the frame, creating active space and leading the eye into the shot.

Lens	Canon EF 600mm f/4L IS III USM + 1.4x III Extender
Exposure	1/1000 sec, f/5.6, ISO800

04

WINTER SUNSHINE BY ANGI WALLACE
The little river at Buachaille Etive Mòr in Glencoe, Scotland has to be one of the most photographed landscapes in the UK, but composition, lighting and toning make this image unique, and different from the shots of it we've seen previously.

Lens	Sigma 10-20mm f/3.5 EX DC HSM
Exposure	1 sec, f/18, ISO400



03



INSPIRATIONS





FANTASTIC CANON **PHOTOGRAPHY**

06



07

05

LOVE BELOW ZERO BY CARON STEELE

Caron used some top-end kit to get this arresting shot of two red crowned crane in striking poses. She used a Canon EF 500mm f/4L IS II USM with a 1.4x teleconverter that gave her an effective focal length of 700mm – long enough to get a frame-filling shot of these two majestic birds entering courtship.

Lens	Canon EF 500mm f/4L IS II USM + 1.4x III Extender
Exposure	1/1600 sec, f/6.3, ISO1000

06

COVERED IN SNOW BY GARY HUNTER

Gary's shot impressed us as the interesting shadows and curves show us snow in a way we don't normally see, and by using a 400mm focal he's been able to pick out a small detail in the landscape, rather than shoot with a wide-angle.

Lens	Canon EF 100-400mm f/4.5-5.6L IS II
Exposure	1/1000 sec, f/16, ISO400

07

DRESSED FOR WINTER BY MALCOLM BAWN

Malcom photographed ponies on Exmor's Cleadon Hills, and used an interesting square crop and central composition, which works well to make sure the pony in the foreground is clear and sharp. His aperture of f/4 has blurred the background enough to keep the eye on the focal point.

Lens	Canon EF 24-105mm f/4L IS USM
Exposure	1/320 sec, f/4, ISO100



Photocrowd

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INSPIRATIONS

08



Photocrowd

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08

HELLNAR ICELAND BY ANDY GRAY

Shooting with a wide focal of 26mm, Andy has squeezed a lot into this snowy landscape, positioning this impressively large antique wheel on the left, dominating that side of the frame and the church on the right in the background.

Lens Canon EF 16-35mm f/2.8L II USM

Exposure 1/15 sec, f/11, ISO100

09

GREAT SPOTTED WOODPECKER BY RON MCCOMBE

Ron took this image in a snow-filled forest in Northern Sweden. He was out there to shoot Golden Eagles in the Arctic Circle and tells us: "In temperatures of -25°F this woodpecker kept appearing to steal some of the eagle's food. Now and again it would land on this small pine tree so I waited for it to land and took this shot".

Lens Canon EF 300mm f/2.8L IS USM

Exposure 1/500 sec, f/2.8, ISO640

10

DANCING TREES BY LIANE DEPROST

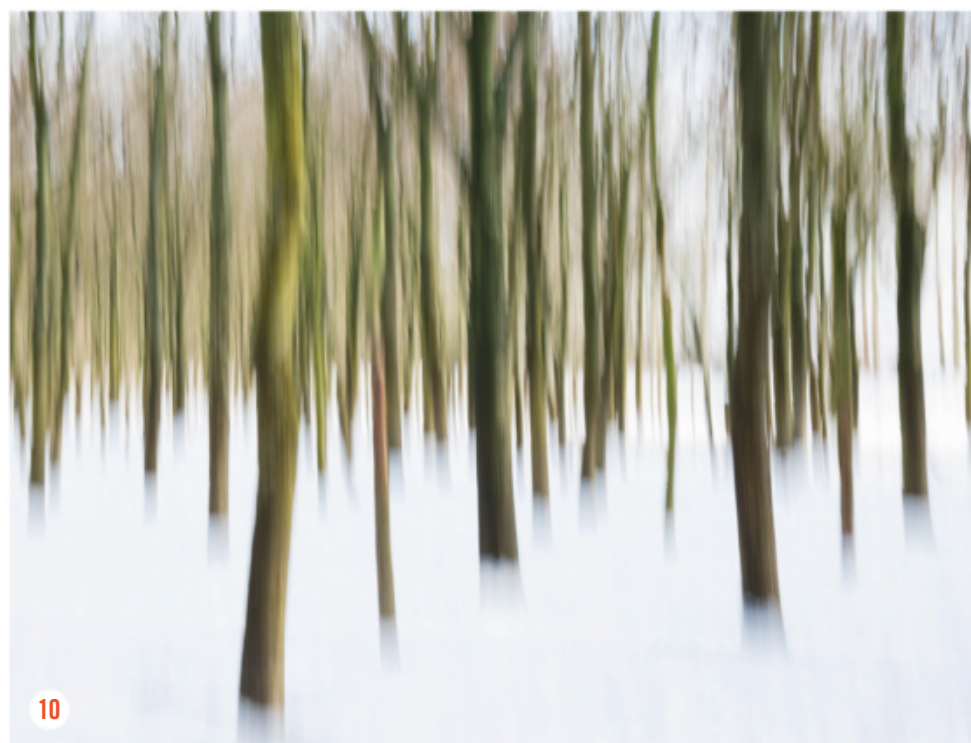
We've seen hundreds of tilt tree blur images over the years, but Liane's stands out as one of the best. Not only has she perfected the amount of blur to create an impressionist painterly feel, she's taken the image while there is fresh snow on the forest floor, creating a fresh twist.

Lens Canon EF 16-35mm f/4L IS USM

Exposure 1/15 sec, f/11, ISO100



09



10

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NEW 2020 VISION!

20 CANON TIPS FOR 2020

Learn essential camera skills to make this your best year for photography

To ensure you continue 2020 on the right track, we've shot, created and collated the best 20 Canon tips to help you improve your photography. Whether you use an old DSLR or latest mirrorless EOS camera, these subject-specific skills will help enhance your imagery.

We've enlisted regular *PhotoPlus* contributor and Canon pro Drew Buckley to share his secrets to successful shots. He guides you through essential techniques for better landscapes, talking about composition and depth of field as well as advice on focusing and shutter speeds needed for stunning wildlife.

We help you capture brighter and better close-up images, with

simple techniques using a standard zoom, as well as pro tips for sharper macro pictures.

Also Canon portrait pro Alastair Batchelor shows you how to take professional people photos with his cracking tips, as well as how to take your flash portrait skills to the next level.

Turn the page to get stuck in and make 2020 a fantastic year for your Canon photography...

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Landscapes

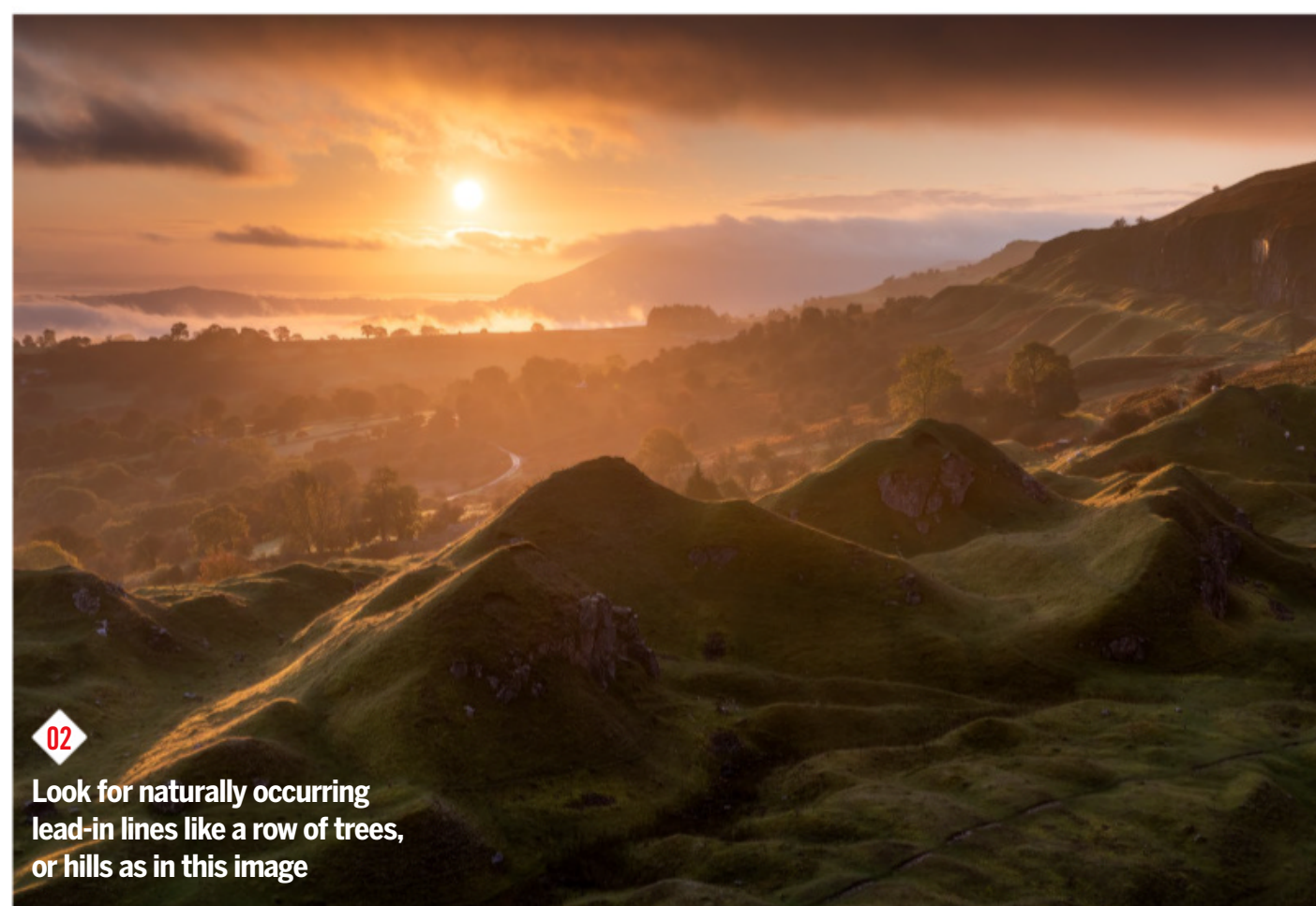
Canon pro Drew Buckley shares his fab four tips to get the most out of stunning vistas

01 Use a tripod

ONE OF the most important pieces of photographic equipment is a sturdy tripod that can be relied upon in all weathers and conditions. Not only does it stabilize the camera to combat any camera shake when using slower shutter speeds, or in windy weather, it also helps slow down your photography and force you into thinking more about your compositions. It's a good idea to splash out on a carbon fibre model for lightness and strength. Go for one that has a weight rating higher than your equipment for extra stability.

02 Think about the foreground

WHEN composing a scene, I generally start with a background focal point and then look for interesting foreground elements to link the two – preferably diagonally across the frame using natural lines and shapes that help guide the eye through the image. Using a rule of thirds grid can help you structure the elements together. It's also important to try a few versions of the same scene at varying camera heights, closer and further from your foreground subject and also different focal lengths and you'll quickly learn the relationship how all three of these can really change the visual impact.



02 Look for naturally occurring lead-in lines like a row of trees, or hills as in this image

Drew Buckley

03 Go into Aperture Priority mode

USING a semi-auto mode, such as Aperture Priority, is the perfect step to advancing your camera knowledge. You'll have full control over the depth of field and that's an important factor when it comes to shooting landscapes. For general vistas or when you want the entire scene to be sharp, using a narrower aperture of around f/16 will give you enough sharpness throughout the frame (unless there's an object really close to the camera). Focus about a third of the way into the scene for maximum sharpness.





01

Even basic tripods let you get creative with your shutter speed to inject movement



03

Focus a third of the way into the scene with an aperture of f/16 for ultimate sharpness

Drew Buckley

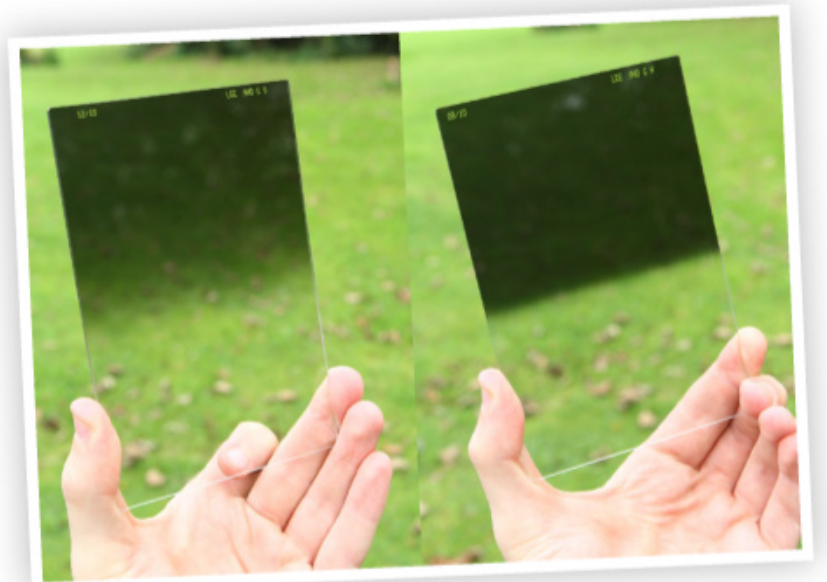


Drew Buckley

04

Balance exposure with ND grad filters

BRING your skies back to life by correctly using a graduated Neutral Density (ND) filter. Ever had a blown-out sky or underexposed foreground? Using one of these filters can help you to darken down a bright sky for a balanced exposure. This is done by placing your chosen strength ND Grad in front of the lens and aiming it where the sky meets the land. While some would argue there is scope for blending multiple bracketed images for some scenes, the beauty of using ND grads is that you can capture your final image in one frame, especially if there's motion such as coastal waves where blending would fail. Just be sure to choose the right filter density to achieve a balanced exposure.





Wildlife

Drew shares his top tips for professional animal portraits

05

Use AI Servo

FOR MOVING subjects, you'll need a responsive autofocus setting. Switching the autofocus setting to AI Servo is the key to capturing sharp, action-packed images. AI Servo is Canon's continuous autofocusing mode, meaning when the focus is activated by half-pressing the shutter button (or with AF-ON) the focusing system will fire into life and will continually refocus on your active AF point. This happens for as long as you're half-pressing the button. It's the best

setting to use for birds in flight, motorsports, athletic events and anything where you need to track a moving subject while shooting a sequence of action images on high speed drive mode.

06

Setup your autofocus

DIFFERENT moving subjects require a different autofocus approach and that's where Canon's great autofocus scenarios come into play. Navigating to the second tab in the menu (AF1: AF config tool) will reveal autofocus presets to help you



Canon's AI Servo autofocus mode allows you to continually refocus on a subject

choose the correct setting for your scenario. If it's not working how you want it, this could be because the focus system isn't responsive enough for your subject or, for instance, it's not predicting the movement correctly. By tapping the RATE button, you can go in and tweak the three parameters to really fine-tune these variables.



06

Create custom autofocus settings that work best for the moving subject you want to track

Drew Buckley

07

Invest in a telephoto lens

MOST wildlife species behave naturally when they're not feeling threatened, and that means a safe distance between you and the subject. A longer lens will allow you to fill the frame with the subject while being a safe distance away. Zooms such as 100-400mm work well, if your subject feels comfortable and walks towards you, you can simply zoom out to reframe your shot.

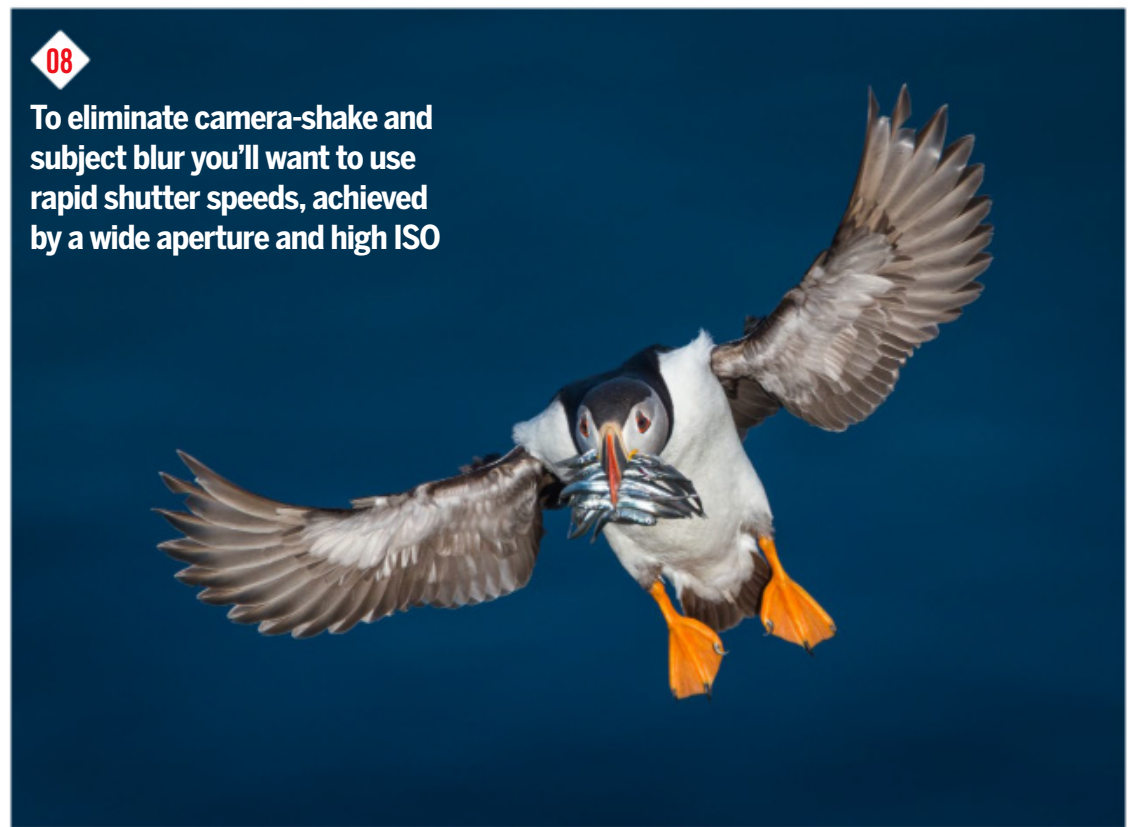


07

A long lens helps you get the shot while keeping a safe distance

08

To eliminate camera-shake and subject blur you'll want to use rapid shutter speeds, achieved by a wide aperture and high ISO



Drew Buckley

08

Get to grips with shutter speed

ALL WILDLIFE images are judged on their aesthetics and one major factor is how any movement is portrayed. Out of the three main settings on any camera, the shutter speed has the biggest effect on the final 'look'. Experimenting with shutter speeds on moving subjects can be a risky business, especially if the subject you're photographing

is quite elusive, then I'd always recommend aiming for a fast shutter speed, such as 1/2000 sec. This will ensure you at least come away with some sharp images. But if you have a tolerant subject then do play around with slower shutter speeds to see what creative effects you can create. A slow shutter speed around 1/50 sec can really convey a sense of motion, so they could end up being your favourites from the shoot!

Experimenting with shutter speeds on moving subjects can be a risky business



08

Use a shutter speed twice that of your focal length, such as 1/200 sec at 100mm and so on

Drew Buckley

Close-ups

Macro photography reveals a whole new miniature world that you can only capture on camera



09

Two flashes were used to light the background and flower head of the gerbera for this shot

09

Brighter close-ups

FOR THE ABOVE

close-up shot, we used Manual mode to set the aperture and shutter speed, as we used two off-camera flashguns; one pointing at the purple backdrop, another with a softbox attached to light the yellow gerbera flower. Depth of field is reduced the closer your focus on subjects, so instead of shooting at $f/2.8$, we used an aperture of $f/11$ which has ensured the entire flower head is sharp. We used a Canon EF 100mm $f/2.8$ Macro USM lens, but sometimes all you need is a telephoto zoom lens that will let you focus close enough for frame-filling flower photos.

10

Utilize Image Stabilisation

CAMERA-SHAKE is more pronounced and appears more easily in macro photos because you're so close to your subject that any tiny movements and vibrations in your hands are amplified. Many of the macro lenses for Canon DSLR and mirrorless systems have



10

When shooting macro subjects handheld it's best to switch on image stabilization

an optical image stabilizer built in, such as Canon's IS, Tamron's Vibration Compensation (VC) and Sigma's Optical Stabiliser (OS). They all have the ability to move a section of the glass inside the lens barrel to compensate for the movement of your hands, for

sharper shots at slower shutter speeds, and is definitely worth engaging when you're shooting macro pictures handheld. But if you're shooting on a locked off tripod it's best to keep it switched off this can actually lead to a more blurry picture.





11

For sharp macro images make sure you use the Mirror Lockup mode to reduce vibrations

Getty

11

Mirror lockup mode

WHEN the mirror slaps up and down at the beginning and end of your exposure in your Canon DSLR it creates a tiny vibration. This is usually so tiny that you won't see it in landscapes or portraits and so on, but when shooting macro images it can become apparent. Luckily, you can activate the Mirror Lockup mode by choosing any of the creative P, Av, Tv or M modes on the mode dial. Then you go to the Menu and enable the Mirror Lockup which will prevent this from happening, but will also block the viewfinder so composing will need to be done via the LCD screen in Live View mode. If you shoot on one of Canon's mirrorless cameras you have nothing to worry about as they have no mirror to lock up!

12

Focus carefully with a handy paper slide

FOCUSING on the precise part of your subject when shooting macro isn't without its challenges, especially as depth of field becomes much more shallow when you're focusing so close, even when you're using those higher aperture values. If your subject can be set up on a table, then the easiest solution is to compose on a tripod and place your subject on a plain white piece of paper. You can then move the piece of paper closer or further away from the lens until your chosen focal point becomes nice and sharp. This stops you having to refocus with the focus ring every time on your lens as this has the adverse effect of changing your maximum magnification.



12

The easiest way to focus when shooting macro is to place your item on a piece of paper and move this closer or further away

Portraits

Get stunning daylit portraits with Alastair Batchelor's tips

13 Focus on closest eye

WHEN shooting portraits with a shallow depth of field, it's important for us to focus on the closest eye to the camera. But why is that exactly? A lot of the time when we create an image it's easy to forget how our brains work when we view a photograph. The human eye is often drawn to elements within the foreground of an image first, so for these to be in focus makes sense to our brain. A person's eyes are also a natural point of focus when we engage in a conversation and interact with people in daily life, so it's important to keep them as a focal point if we want to create an engaging portrait of someone.

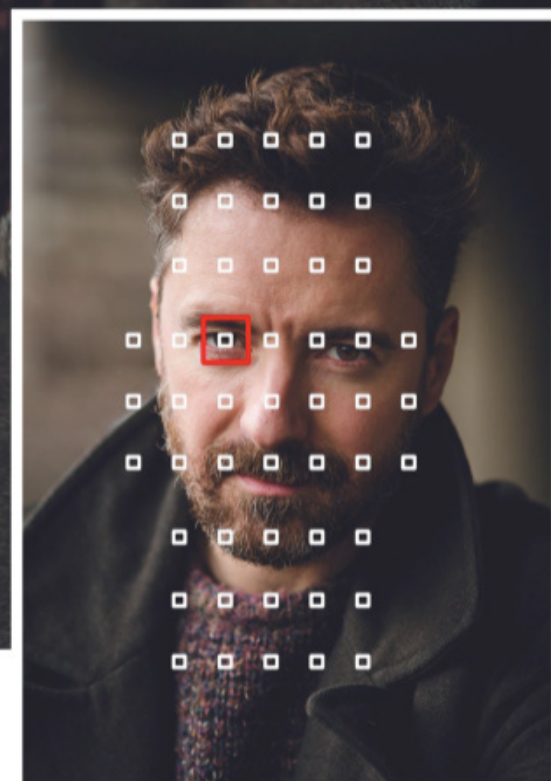


14 Invest in a prime lens

PRIME lenses are one of the strongest allies to any natural-light portrait photographer. A combination of their wider apertures, sharp optics and generally more affordable price-tags make them invaluable. Wider apertures like f/1.4 allow a great deal more light in than most zoom lenses, meaning we can keep our ISO lower, and add more separation to our subjects with a narrower depth of field. Not being able to zoom when using a fixed focal length prevents us from being lazy with our composition and encourages us to think more creatively when shooting.



Most of the time the eyes are the focal point of your portrait so these should be the sharpest part of the shot. Position your active autofocus over the eye that's closest to the camera



15

Look out for reflective surfaces that you can use to duplicate your subject in shot

15

Embrace reflections

A COUPLE of other great techniques to draw upon when creating engaging images of people, are both depth and symmetry. One fun way of implementing this is by using reflections. It's certainly not a new concept to photography, but it remains a powerful one. Capturing a reflection of your subject in a window, mirror, or water etc, can help to add an extra sense of interest for the viewer. It also helps add an eye-catching sense of symmetry which in turn can create a pleasing composition.

16

Use a low ISO

CAPTURING perfectly clean and sharp images isn't always everything in photography, but it makes for good practice. Aiming to use the lowest ISO possible in any given portrait situation will result in the cleanest images. This isn't of course entirely dependent on the available light in any given situation, but understanding your gear and the exposure triangle well enough will help you explore the use of wide apertures, slower shutter speeds and lower ISO values too.

Alastair Batchelor



HIGH ISO6400



16

LOW ISO100



16

Alastair Batchelor



17

Alastair used two flashes with red and blue gels to give this portrait contrasting colours

Studio flash

Take your portraits to the next level with Canon strobes

Alastair Batchelor

17

Add colour with gels

WHETHER you're using a single flashgun or multiple light sources, a fantastic way to add extra interest and depth to your portraits is with colour gels. This can involve adding a subtle bounce of coloured flash within an ambient light portrait for a hint of extra colour, or using a gel on your main light (also called a key light) for your subject on a location or studio shoot. You can purchase colour acrylic gels pre-cut for use on flashguns, or fashion your own from sheets of coloured acrylic and they cost just a few pounds so it's well worth investing in a set.

18

Modify the flash

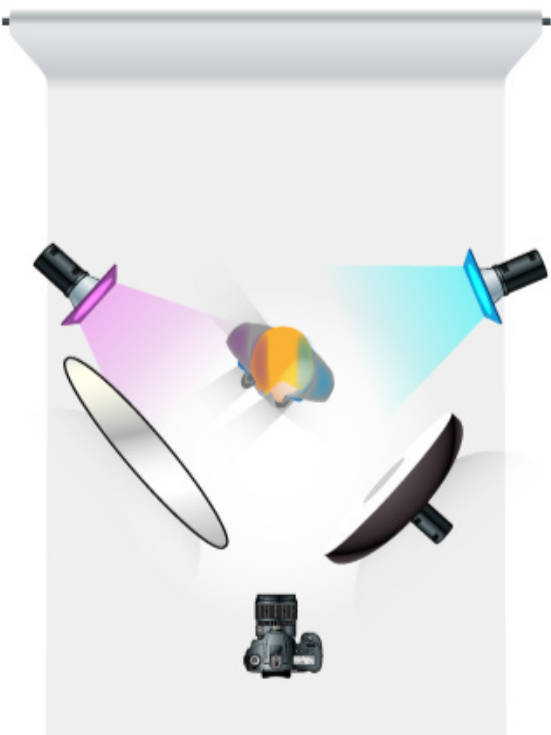
THERE are an abundance of different types of modifiers that can be used with both flashguns and studio flash heads. We're often made to believe that 'soft light is the best light', but this isn't always the case – it's entirely dependent on the type of look you're after. While there are many types of softboxes and umbrellas available to produce beautiful soft light for flattering portraits, it is well worth exploring hard light modifiers such as beauty dishes, grids and snoots. These can produce much more striking and creative results, just be sure to get modifiers that fit your system.



There's a whole host of flash adapters that will help you modify the flash light

19**Set up multiple lights**

THERE are endless lighting setups that can be used by mixing multiple lights, different modifiers, coloured gels, and reflectors/flags. Using lighting setups that implement all of these elements can produce stunning and richly coloured images with great depth and dimension. One great example is to use a white key light with a soft light modifier (umbrella), a reflector to fill shadows, and two bare flashes with different coloured gels as 'rim' lights behind the subject. This combination of hard/soft light, along with different coloured gels, creates separation and dimension within the portrait.



If you have access to a photo studio or multiple flashes you can get creative with coloured gels and modifiers

**19**

Two flashguns with purple and blue gels behind the model give this shot some subtle extra colour

Alastair Batchelor

20**Brave Manual mode**

MANUAL mode is the only way to truly maintain 100% control over your portrait photography. This is even more the case when using off-camera flash, whether it's a Speedlite or a flash head. By not letting the camera decide any settings independently, it means we can

control every element and make creative decisions that the camera itself is incapable of making. A great example is mixing flash with ambient light on location. We can use both ISO and shutter speed to control the amount of ambient light we want in the exposure, and the aperture and flash power to determine the amount of flash within the final image.

// In Manual you control every element and make creative decisions that the camera itself is incapable of making //



When working with flash, shoot in Manual mode and keep your shutter speed to 1/160 sec or lower to avoid black banding

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St Louis

St Louis, Senegal. 17:57pm. 8 December 2019.

David Noton tries his hand at photographing the hustle and bustle eternally present in West Africa...

It won't be light for another hour and a half, but the wailing that is the morning call to prayer has been under way for an hour or so already. In Dakar my hotel was right next to a mosque; it seemed the tannoy used to summon the faithful was virtually in my room, but at least it was brief. Here the chanting is continuous, and coming from a few mosques on the island, but it's evocative, almost musical, leaving no doubt in my semi-consciousness as to where I am. What with the mosquito which is now buzzing around, trying to find the holes in the moth-eaten net draped over my bed sleep seems an unlikely prospect, so I might as well catch up on my travel notes; a daily chore I ignore at my cost. The thoughts and observations, which are gold dust for these columns, come at the most unlikely times – I think I'll remember them later, but I rarely do; now is the time. I switch on the lamp, gulp down my malaria pill and grab my laptop, ignoring the distraction of the news, email or social media; let's get this done before Djiby comes at 9am.

We've a long drive south today to Joal-Fadiouth, a village in an estuary built on a foundation of thousands of years of discarded sea shells. Now surely there's a story in that? The stories have come thick, fast and easy here over the last week, but as for the pictures...

I dip into Lightroom to prompt my thoughts. It always come back to the pictures. I've certainly shot plenty; another cursory review gives me a comforting, warm, glow of satisfaction. I think I've done okay, but there's a big difference going on here on this foray, my first to West Africa. Every trip has its high points, and low points.

Normally the high points are those moments of life-enriching revelation behind the lens that we photographers are so hooked on. I live for those times, they are why I do what I do, and why I put up with all the low points; the waiting in departure lounges; the churning guts and sleepless nights in seedy hotels. But here in Senegal the times I've been out doing the actual photography have been the low points. In a nutshell my photographic sessions here have been edgy, stressful experiences, and not at all to be confused with enjoyment. I've approached them with trepidation and concluded them with relief. It's a first, and hopefully a last.

Yesterday I was out down by the river here in St Louis as the sun settled to the west. The scenes all around me were almost biblical. Rows and rows of shapely, brightly painted pirogues were moored on both banks as West Africa's teeming multitudes bought, sold, tended, traded, played, relaxed, chatted, hustled and harangued inbetween. All around were pictures to be captured. Every face begged a portrait. Every costume

West Africa can offer a treasure trove of colourful yet challenging photographic opportunities

Lens	Canon RF 85mm f/1.2L USM
Exposure	1/125 sec, f/9, ISO100

demanded a record. Knowing which way to look first was a real challenge. Where to start? I have been few places in all my years of travels that have presented such a rich seam of photographic potential. Yet I have never been so photographically frustrated.


I reached in my bag for the EOS R, the light mirrorless full-frame body that is just the job here, especially when twinned with the superb and super-fast new RF 85mm f/1.2L lens, but as soon as the camera comes out, I start attracting attention. People shout at me, waving fingers in

**NEXT
MONTH
JURASSIC
COAST**



admonishment. Women hide their faces. Children wave their arms in front of my lens. Every opportunist in Africa flocks toward me, sensing the prospect of a rich picking. A passer by is almost frothing in indication as I point the camera at the river scene. Another approaches, demanding money for shooting a picture which included

his boat. Another expects me to pay for his groceries, one wants to sell me his carvings, another demands help getting to Europe. I persist.

I won't trample on anyone's sensibilities, or beliefs, but I've a job to do. This is what being a professional is all about. And no one ever said it's easy, especially here in West Africa. 

 I have been few places in all my years of travels that have presented such a rich seam of photographic potential 

DAVID NOTON

Pro travel & landscape photographer

DAVID IS AN AWARD-WINNING Canon photographer with more than 30 years' professional experience. During his career David has travelled to just about every corner of the globe. In 2012, Canon invited David into its Ambassador Program by designating him an Official Canon Explorer. Info and photos at www.davidnoton.com





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Dan Mold
Technique editor
dan.mold@futurenet.com

New projects with video guides

Follow our Canon DSLR walkthrough guides and Photoshop editing videos

Welcome...

CANON CAMERAS are fantastically versatile tools that are great for capturing a whole raft of photographic genres. So this month we want to show you how to shoot different subjects to get the most out of your kit.

If you'd like 2020 to be the year you lend your hand to portraits, then be sure to check out our big project on page 46 – and discover the easy way to create classy, cinematic headshots. Or take a look at the lens hacks project, on page 52, for four budget ways to modify your lenses to inject arty flare in to your people pictures.

Using a long lens for wildlife shots doesn't have to break the bank, in our project on page 56 we show you how to extend your zoom on a budget, plus find out how to create abstracts with a long lenses and long exposure on page 50.

To help improve your editing skills see our tutorials on pages 58-62, covering Photoshop CC, Elements and Affinity.



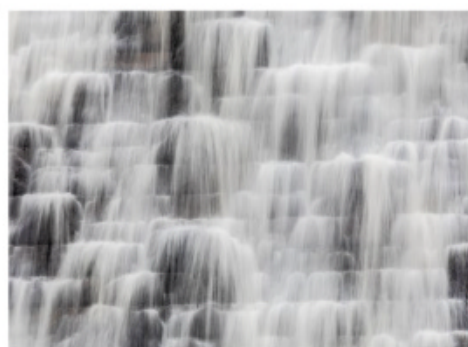
46 Cinematic portraits
Get eye-catching headshots with creative shallow depth of field



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Extend your reach on a budget to get closer to wildlife



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Reveal hidden details in dark areas of your shots in Photoshop CC



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Turn moving water into an ethereal blur with long exposures



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Merge two pictures of fruit to create your own tasty mash-ups



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Use Affinity Photo editor to create sumptuous mono edits



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Inject arty haze and flare with four brilliantly simple lens tricks

VIEW THE VIDEOS

WHENEVER you see this icon you'll find an accompanying video on our Video Disc. You'll also find these videos online – so you can view them on a tablet or computer without an optical drive. See the links on the project page.



PROJECT 1



THE MISSION

Shoot a cinematic head shot with a Speedlite and long lens

Time needed
 One hour

Skill level
 Intermediate

Kit needed

- Long lens
- Speedlite
- Umbrella/softbox
- Reflector
- Light stand
- Wireless flash trigger

Ready for your close-up?


James Paterson crafts cinematic headshots with off-camera flash

If you want headshot portraits to have a vibrant, polished look then why not try a cinematic style? With a few simple camera skills we can get the look of a film still and transform subjects into would-be movie stars.

As with most successful portraits, this has a lot to do with lighting, but it's also about knowing how to get a lovely soft background. Combine these and you'll be able to shoot portraits with star power.

There are two key elements that go into creating a cinematic headshot. The first is the backdrop. Ideally, this should be a jumble of details, colours and changes in light. With simple camera skills and the right lens, we can blur out the backdrop and reduce the detail to wonderful soft background blur. We went to a graffiti-covered skatepark for our shoot, but you can find interesting backdrops in almost any location.

The second important element here is the lighting. Natural

daylight can be great for portraits, but if we want more control over both the light hitting our subject and the exposure of the background, then flash is the way to go. We don't necessarily need a big setup, a single Speedlite will do the trick. By lighting the face with the flash, we are able to underexpose the background slightly which helps to boost the colour and saturation. When the flash and daylight come together in harmony, the results can be showstopping. 

ON LOCATION CINEMATIC PORTRAIT SETUP

Discover how to set up both flash and camera for enchantingly beautiful headshots

01 KEY LIGHT

The face is lit with one Speedlite, fitted to a light stand and used with an umbrella softbox by Wallimex. Modifiers like this offer a soft spread of diffuse light that's perfect for portraiture. A wireless trigger is attached to the camera, and a receiver fitted to the Speedlite.

02 REFLECTOR ON STAND

A silver reflector is placed opposite the key light and below the face, angled back towards the subject, so that it bounces light into the shadows. This helps to lift the dark areas under the eyes and offers an attractive second catchlight in the eyes. A handy reflector holder keeps it in place.

03 LONG FOCAL LENGTH

Longer lenses, like the 70-200mm, are better for headshots – they result in a nicely proportioned face, as opposed to wide angles that can exaggerate features and cause distortion. A long focal length also accentuates the backdrop bokeh by offering a more acute angle of view.



04 DISTANCE FROM BACKDROP

An array of graffiti gives us a vibrant backdrop. The distance between the subject and backdrop is important – the further the backdrop is from the subject's position, the more blurred it will be. So if you want stronger blur, move the camera and subject further from the backdrop.

05 IN THE SHADE

We're after a harmonious mix of daylight and flash, so observe the natural light on the face. A position in the shade like this is ideal, as it results in soft light. By shooting from the shade into a brighter backdrop, we can underexpose the daylight and use the flash to lift our subject.

06 FOCUSING

Whenever we use a very wide aperture, like $f/2.8$, we need to be very precise with our focusing. Here our depth of field will only amount to a couple of centimetres at most, so it's absolutely vital to focus precisely on the eyes, or the closest eye if the face is side on.

STEP BY STEP NAIL THE FLASH EXPOSURE

Find out how to set up your camera and flash so they work together in harmony

ANGLING THE LIGHT

The position and angle of the flash is one of the most important parts to this technique. We usually want to angle the light so that it comes from above. This helps to accentuate cheekbones and jawlines by forming soft shadows underneath the facial features. Bringing the softbox or umbrella in close to the face will make the light softer, and angling it so that the light floods across the front of the subject, rather than directly at them, will feather the light, giving it a wrap-around quality over the face.



01 EXPOSE FOR THE BACKDROP

Look for an angle where the backdrop is lighter than the subject and try a test shot. Set Manual mode with shutter speed at 1/200 sec and a wide aperture like f/2.8, then use a low ISO of 100. We want the backdrop correctly exposed, and the subject to be slightly dark.



02 WORK OUT A FLASH POWER

Next, we set up a Speedlite in an umbrella or softbox, to the side and in front of our subject. Attach a trigger, so we can fire it wirelessly. Using manual flash take a couple of test shots to determine the right power to light the face. Our flash is at 1/8th power.



03 POSITION A REFLECTOR

With the flash positioned above and to the right of the camera, the shadows will fall to the left. We can use a reflector to lift these shadows. Placed opposite the key flash and angled back towards the face, it acts almost like a second, lower-powered flash.



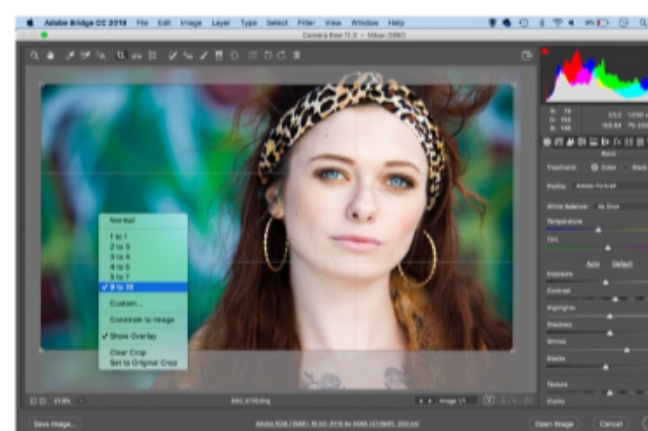
04 FIND THE BALANCE

The flash lights the face, bringing it into balance with the backdrop and giving us our look. We can change the balance of flash and natural light by lowering our shutter speed to lighten the backdrop, or by upping flash power and lowering ISO to darken the backdrop.

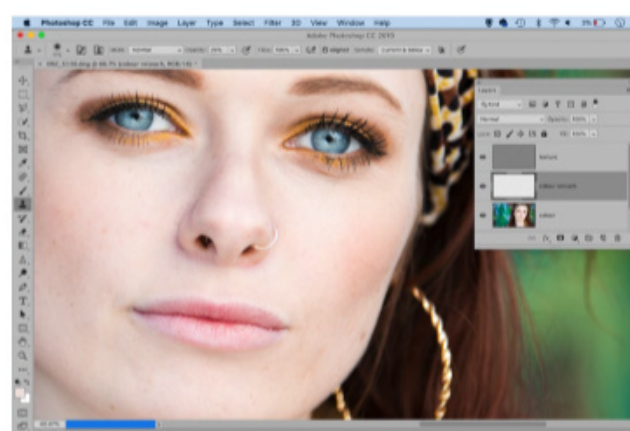
NEXT MONTH
ASTRO
PHOTOGRAPHY

STEP BY STEP CREATE A CINEMATIC FRAME IN PHOTOSHOP

Utilize guides to finish off your portrait with a filmic aspect ratio and letterbox border



AS WE'RE going for cinematic, why not try a cinematic aspect ratio? Go to View>New Guide. Check Horizontal and set Position 8%, then repeat and set Position 92%. Next grab the Rectangular Marquee tool. Drag a box over the top then hold Shift and add the bottom.



MAKE A new layer then go to Edit>Fill and set Contents: black. Hit Cmd/Ctrl+D to deselect then go to View>Clear Guides. You may want to reposition the portrait. Double-click the bottom layer and use the Move tool to tweak the positioning.

TOP TIPS PERFECT THE CINEMATIC LOOK

Take your portraits to the next level with these simple skills



01 SHOOT SOFT BACKGROUNDS

When looking for backdrops experiment by defocusing the lens, then take some test shots to see how the background looks. The best have a mix of light and dark. Specular highlights, like lights, can look beautiful when blurred, resulting in lush bokeh.



02 USE A WIDE APERTURE

A wide aperture gives us the lovely blurred backdrop that we want for this kind of portrait. Most of our shots were taken at f/2.8, but for comparison here's one at f/8. This gives us a more detailed background. So the wider the aperture, the more blurred the backdrop.



03 CROP INTO THE HEAD

Including the entire head can result in a shot that looks like a passport photo, and also leaves too much dead space around the head. So it's best to crop into the head. But where to crop? As a rule of thumb, crop halfway between the hairline and the crown.

04 HEAD INTO THE LIGHT

Experiment with different angles to the face – a slight adjustment can make a big difference. If in doubt, ask your subject to angle their face towards the key light. This means the light will fall evenly across the face and you won't have unsightly shadows cast by the nose.



05 BACKLIGHT WITH DAYLIGHT

Used in film, backlighting is great for separating your subject from a background. It results in a highlight along the outline of the body (as seen along the shoulder in tip 3). Place your subject with their back to the sun, or lightest part of the sky on an overcast day.

06 THE SHOULDER LINE

Even though we can't see most of the body, it's crucial to get your subject into an attractive, natural position. Asking your subject to stand slightly side on can give the body a great angle, and creates a strong diagonal leading line from the front shoulder towards the face.

PORTRAITS WITH LEDS

Although we've used flash for our portrait here, you could use a high-powered LED instead, if you have access to one. LEDs simplify the process, as there's no need to work out flash power or take test shots, you can simply eyeball the light and meter for the scene as if shooting under natural light alone. LEDs often come with colour temperature control, so you also have the option either to balance the colour of the light with the scene (especially useful if shooting in tungsten interiors), or instead to intentionally skew the white balance by using a warmer or cooler tone.

THE MISSION

Use long focal lengths to shoot an abstract scene

Time needed
 30 minutes

Skill level
 Beginner

Kit needed
 • Lens (with a focal length longer than 100mm)

Abstract long lens artistry

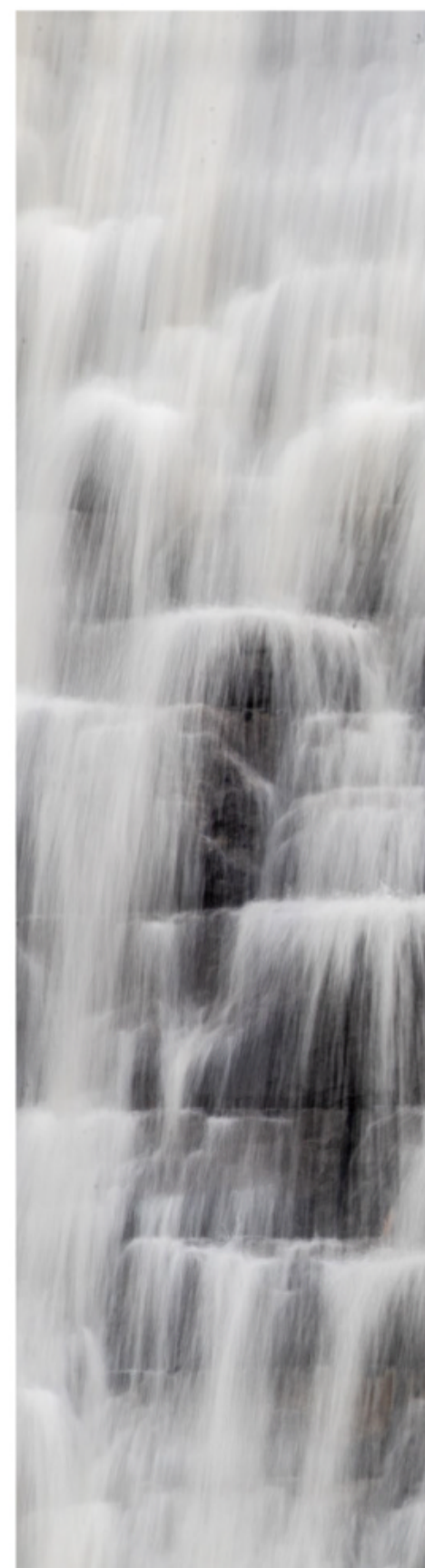
Matty Graham explains how to pair a long lens with slow shutter speed to create an arty isolated abstract scene

When photographers are greeted by vast landscapes, it's too easy to fall into the trap of trying to capture the full view. There's nothing wrong with this, but you could be missing a great opportunity to take a closer look and capture an isolated area of the frame to create an arty abstract image. So, instead of reaching for that wide-angle, grab your longest lens! Focal lengths above 100mm work best when trying to capture these images, but if you have a longer optic – one that goes up to 200mm or 300mm – that'll work even better.

The magic to this technique is finding areas of a scene that, through a wide-angle lens, would be easily identifiable, but when isolated using a long lens makes the viewer take a second glance at the abstract frame.

To add an extra layer of interest to the scene, locations that provide movement will afford photographers opportunity to experiment with longer shutter speeds. This extended exposure will create motion within the frame, injecting an abstract, arty feel. In fact, long lens abstracts are a great technique to try out at well-known, over-photographed, tourist spots as the abstract nature of the image will provide a much-needed, refreshing, alternative. This was the case at the location I visited, the dam at Derwent Water, which was besieged with visitors – all capturing the same image.

The main challenge when using a long lens, particularly when paired with a slower shutter speed, is the risk of any camera shake resulting in a blurred image. But fear not, follow these steps and you'll banish blur while capturing an arty long lens abstract to be proud of...



STEP BY STEP TAKE BACK CONTROL

Capture better images by understanding your exposure settings

HOW SLOW DO YOU GO?

When you're shooting a scene with moving elements, such as the water over the Derwent Reservoir in our shot, you need to work out which shutter speed will be best. The faster the water is flowing, the less the need for a really slow shutter speed. If we'd shot at around 1 or 2 secs the water would've been too blurred, instead using 1/10 sec captured the water movement well.



01 FIND THE RIGHT SPOT

Don't rush to capture your shots. Start by exploring your location. Take the camera out and, with the long lens attached, look through the viewfinder as this will help you pre-visualize the scene. If you are setting up near water, be careful to ensure no spray is hitting the lens as this will lead to more work in post-production.



02 REACH FOR THE TRIPOD

Even the tiniest movements are exaggerated when using a long lens, so the safest bet is to set up a tripod to keep the setup steady. Ensure the surface below the tripod is sturdy and that the legs won't sink. Compose the scene using the viewfinder or Live View and tighten the tripod head to make sure the camera won't slip.



03 CONTROL THE EXPOSURE

As there's moving water here we slowed the shutter speed to about 1/10 sec, causing the movement of the water to create an abstract effect. The easiest way to control the shutter speed is in Shutter Priority mode (Tv). To ensure the best image quality, select a low ISO, such as ISO100.



04 ADJUST THE EXPOSURE COMPENSATION

When shooting dark/light scenes, the camera's metering system can get a bit flummoxed and return an image that is too dark or too light. To fix this, use the Exposure Compensation dial. When the exposure is too bright, dial down the Exposure Compensation a -1-stop, and when it's too dark, increase it by +1-stop.



THE MISSION

Add atmosphere and mood using DIY lens hacks

Time needed
30 minutes

Skill level
Beginner

Kit needed

- Kit lens or 50mm
- Tripod
- Smartphone
- Hair wax
- Compact Disc
- Lensbaby Omni or glass prism

Budget lens hacks

Need to inject some atmosphere into your portraits? **Matty Graham** shares four lens hacks that will transform your results...


Stuck in a rut with your picture-taking? It happens to us all and one solution that always comes up trumps is to try something new and creative. Hacking your lens by using props to enhance or generate flare and reflections is a perfect route to injecting some much-needed mood and atmosphere into images.

These days, you can buy off-the-shelf kits like the Lensbaby Omni bundle (around £90), which

screws onto the front of your Canon lens to help you get creative. But if you don't want to spend much money, there's a number of more DIY options using objects from around the house.

From using a CD to generate flare, to using the screen of your smartphone, or even using some hair wax, the key to these DIY lens hacks is to experiment – work through the trial and error and work out what works best for the scene you've lined up.

As you could be holding a prop in one hand, consider how you

can make creating the image a little simpler – the easiest way to do this is to set up your camera on a tripod. Although you may choose to use Manual mode, the simplest option to use when capturing these images is Aperture Priority (Av on the mode dial) as this will allow you to select the aperture, controlling the depth of field within the frame, while the camera works out the best shutter to deliver a balanced exposure. Time to get creative and try out these four easy DIY hacks... 

AFFORDABLE LENS HACKING KIT

Spend a few pounds or spend nothing – you can still find great props to help hack your lens

01 TRIPOD

Any tripod will do the job, but if you have a choice, grab one with a ball head as this will enable you to quickly change the position of the camera, speeding up operation and allowing you to make more of the limited golden light.

02 CAMERA

Much like the tripod, any Canon EOS camera can be used for these lens hack techniques. If your camera has the feature, take advantage of the Live View option, especially if focusing is critical as this will allow you to zoom in to check sharpness.

03 LENSES

Lens choice will come down to the sort of image you are trying to capture, though there are some lenses that are better suited. For example, ultra wide-angle lenses have a more curved front element, making it easier to create flare.



04 HAIR WAX AND CD CASE

Smearing Vaseline or hair wax around your lens is an old trick that can result in a soft focus effect that will draw the eye to the middle of your images. But you'll want to apply it to a clear CD case so you don't get product all over your pricey lenses!

05 LENSBABY OMNI OR PRISM

To distort the light coming through the lens for strange effects and extra flare you can pick up the Omni kit from Lensbaby which screws into your lens. Or for similar results on a tight budget pick up a glass prism for around £4 on www.ebay.co.uk

06 A CD, DVD OR YOUR PHONE

Even items that you have around your home like an old CD can be held close to the lens and angled to create distorted abstract reflections and flare. If you forget to take one with you, don't worry you can use your phone's screen too.

PROJECT 3



SETUP 1 LENSBABY OMNI

Priced at around £90, the Lensbaby Omni kit is as close as you can get to an all-in-one lens hack bundle. The system screws onto the front of your optic via a choice of filter rings to match your lenses thread size, which will enable you to use this kit on multiple lenses. On the main ring, small magnets can be moved and rotated around and these little devices hold the 'wands' which create the magical effects. Included in the kits are a Crystal Seahorse Effect Wand, Stretch Glass Effect Wand, Rainbow Film Effect Wand – with my personal favourite being the Rainbow Wand. Strong, directional light makes the most of the effects.

Exposure: 1/100 sec, f/4, ISO800



SETUP 2 SOFT FOCUS

While you can actually buy special filters to create a soft focus effect, there's a much more affordable solution that will still introduce that soft, ethereal effect to your frames. Hair wax or Vaseline will replicate that diffused look but, as you wouldn't want to put this directly onto your optic, apply it to a clear piece of plastic instead – the front half of a CD case works perfectly. Once the wax is on the CD case, be careful not to transfer it onto either the camera body or, worse still, the front optic of your lens as it can be a nightmare to clean up. Look through the viewfinder, or use Live View, and move the case around until you get the general look that you desire.

Exposure: 1/2000 sec, f/2.8, ISO200





SETUP 3 USE YOUR PHONE

One item that you're virtually guaranteed to have on your person during a walk with the camera is your smartphone and there's a special way you can put this black mirror to good use. Place the phone just below the lens and then raise it up until you can see a reflection effect through the viewfinder or via the LCD if you prefer to use Live View. An amount of trial and error is needed to absolutely nail the best possible reflection, but using the larger Live View instead of the viewfinder will help. This lens hack enables you to produce reflections at any location and can produce some strong effects.

Exposure: 1/320 sec, f/18, ISO250



WHY DIRECTIONAL LIGHT IS IMPORTANT

While these props are useful, the quality and direction of light also make a big difference. During midday, the sun is high in the sky, leading to harsh results. However, during the golden hour light of dawn and dusk, the sun is lower in the sky and casts directional light, making it easier to reflect these golden tones using your lens hacks props.



SETUP 4 USE A CD

The humble CD can be used for more than simply listening to music. Just turn a CD over, give it a wiggle and you'll see the rainbow reflections in the plastic, which can be used to create flare within your frame. Some strong sunlight is needed to get the effect and the best approach is to place the camera on a tripod and frame up before moving to the side of the camera so you can see the lens, tilt the CD until you can bounce light directly onto the lens and then click the shutter. Make sure you keep the actual CD out of the frame or you'll end up with more work to do on the computer to crop it out. For a stronger effect, consider using two CDs to reflect more of the sun's rays.

Exposure: 1/8000 sec, f/2.8, ISO200



PROJECT 4

THE MISSION

Zoom in on distant animals on a budget

Time needed
One hour

Skill level
Beginner

Kit needed
• Extender
• Telephoto zoom lens

RESEARCH YOUR KIT

If weight and size are genuinely an issue when it comes to selecting your equipment, then be wise and do the research. Check out our extensive buyers guide of lenses from page 118, which will tell you all about every Canon-fit lens's specs, price, weight, and also our test ratings and which issue for the full reviews for reference.

Extend your reach and reduce weight

This month, Canon photographer **Matty Graham** shows how to achieve the wildlife shooter's dream of going longer and lighter and on a budget


Picture a wildlife or sports photographer in action and the first item that's likely to form in your mind is a bulky, heavy, large telephoto lens – lumped over their shoulder as it's the only way to carry such a big optic. But I'm here to show you how to get closer to nature without those hefty lenses. Going light isn't just about saving your back, it's also about making a day of wildlife or sports photography more pleasurable. With a lightweight set up, you can move around more easily and shoot for longer, giving you better odds of getting amazing images.

The great news is that Canon produce a number of lenses that

achieve the magical combination of being lightweight and compact, while still offering long focal lengths – this extended focal length is particularly important when shooting wildlife.

Why? Well, firstly, many subjects in the UK such as deer, rabbits and birdlife are shy and skittish and will disappear if you get too close with the camera. Secondly, bigger subjects, such as deer, can actually be quite dangerous to get close to. So, using an effective focal length of at least 300mm will enable you to capture images from a distance without being in direct danger and won't stress the subjects, but will deliver frames that show the subjects at a prominent size. After all, no wildlife image is worth

risking any stress on your furry subject, or yourself!

On top of this, there are additional accessories called teleconverters that photographers can use to further extend their focal length without adding huge weight to their set up. So, what are the secrets to going longer the light way? Let's get started and find out... 



STEP BY STEP GO LONGER FOR LIGHTER

Extend your focal length reach without shelling out for a pricey, heavy telephoto zoom



01 PICK THE RIGHT LENS

Some lenses offer a better focal length/weight ratio than others. For example, the Canon EF 70-300mm f/4.5-5.6 DO IS USM measures just 10cm long and tips the scales at only 720g, while the Canon EF 70-200mm f/4L is even lighter at 760g.



02 USE AN APS-C BODY

You don't need a full-frame body for great images. Canon crop-sensor cameras, such as the 90D or 7D Mk II, feature a 1.6x crop factor, which changes the effective focal length of your lens – for example, my 200mm prime optic changes to 320mm.



03 ATTACH YOUR TELECONVERTER

By combining an APS-C sensor camera with an extender, you can maximize your focal length. Pairing my 200mm lightweight prime with a 7D Mk II, plus a 1.4x extender, increases the focal length to 448mm – getting me even closer.



QUICK TIP!

Don't have a tripod or monopod but still need some support? Look out for a fence or tree to lean against, this will steady your stance and camera.



04 USE THE RIGHT LENS

Teleconverters, also called extenders, come in many varieties. We used a 1.4x model and you can see its front element juts out a little and will only be compatible with certain optics, like our Canon EF 200mm f/2.8. Be sure to check the compatibility to make sure yours will work.



05 USE A MONOPOD FOR STABILITY

Tripods, paired with gimbals are stable but very heavy – plus, swapping a heavy lens for a lightweight alternative means there's less need for the tripod. Meaning you can switch to a monopod, which is not only lighter (especially carbon fibre models), but also easier to carry.



06 FOCUS ON YOUR SUBJECT

Use AI Servo autofocus mode and the joystick or D-pad on the back of your Canon camera to set where the active AF point appears in the frame. We moved the AF point down a little bit in this frame so that it was directly over the head of the deer on the left of the frame.

BEFORE



AFTER

THE MISSION

Combine pictures of fruit to create fun creations from your imagination

Time needed
20 minutes

Skill level
Beginner

Kit needed
Photoshop
Elements

DOWNLOAD PROJECT FILES
TO YOUR COMPUTER FROM:
[http://downloads.
photoplusmag.com/pp162.zip](http://downloads.photoplusmag.com/pp162.zip)

Frankenstein fruit

Make fantasy fruit mash-ups using Photoshop's layers, **Dan Mold** shows you how to do it the easy way in this fun Elements step-by-step

Photoshop gives users the ability to create images otherwise impossible in real life. So this month we're taking full advantage of this powerful editing software by creating our very own Frankenstein fruit creations. We'll do this by merging different pieces of fruit together, which can be done in Photoshop and Elements, but we're using the latter in this case.

You'll find the fruit start images in the Resources folder on your

disc or download (via link bottom left) to use them to nail down the technique. However, there's great fun to be had taking pictures of the specific fruits or vegetables you'd like to merge together for your own custom creations.

If you go down this route be sure to set up your fruit on a table near a bright window for a good source of light. Then you'll want to lock your camera off on a tripod, so that the lighting and the composition won't change when you swap the fruit over, a tripod will also help reduce camera shake. Go into your Canon

camera's Aperture Priority (Av) mode and dial in an aperture of f/11 for a strong depth of field, so both pieces of fruit are equally sharp – making it easier to create a realistic composite afterwards.

All that's left is to follow the six easy steps here on the right to create your composite image. Along the way you'll discover how to merge parts of pictures together, make precise selections and also use Photoshop's layers – all essential editing skills. And be sure to check out the accompanying Photoshop Elements video too. 

STEP BY STEP CREATING FANTASTICAL FRUIT

Use layers and create fun composite images in Photoshop Elements



01 SELECT YOUR FIRST FRUIT

In Photoshop Elements go to File>Open and open up the fruit image that you want to select and paste into your main fruit image. Now zoom in tightly by pressing Ctrl/Cmd+Plus and use the Polygonal Lasso Tool to draw around the whole, or half, of the fruit.



02 COPY AND PASTE IT IN

Hit Ctrl/Cmd+C to copy the selection, then in your main fruit shot hit Ctrl/Cmd+V to paste it in. It'll probably need resizing now and some digital manipulation to get it into the right position to match the perspective of the image in your background layer.



03 TRANSFORM THE FRUIT TO FIT

Hit Ctrl/Cmd+T to put it into Free Transform Mode and then drag it so it sits above the piece of fruit you want it to replace. Now hold Ctrl/Cmd and drag in the corners of the bounding box to line up the perspective and hit Return to set it in place.



04 SELECT THE OTHER SEGMENT

In the Layers panel click on the eye icon of your top layer to temporarily hide it, then zoom in and use the Polygonal Lasso Tool to select the inside edge of the other piece of fruit. When your selection is made click on Refine Edge, set the Feather to 1px and hit OK.



05 APPLY A LAYER MASK

Head back to the Layers panel and click the eye icon of the top layer once again to unhide it, then click on the Add Layer Mask icon to turn your selection into a Layer Mask. You'll now see your new fruit only appears through the area you just selected.



06 MATCH UP THE LIGHT LEVELS

To match up the lighting between the two shots select the top layer and hit Ctrl/Cmd+L to bring up Levels, then tweak the Midtones slider until the lighting in both shots is seamless. You can then repeat the process for the inside part of fruit if you wish too.

QUICK TIP!

Try to capture your fruit at the same shooting angle and with similar lighting to make the images stitch together seamlessly

NEXT MONTH
HOW TO SWAP
COLOURS

BEFORE



AFTER

THE MISSION

Boost overly dark or bright details to balance the tones in a landscape image

Time needed
 15 minutes

Skill level
 Beginner

Kit needed
 Photoshop CC

DOWNLOAD PROJECT FILES
 TO YOUR COMPUTER FROM:
<http://downloads.photoplusmag.com/pp162.zip>

Attention to detail

James Paterson teases out hidden details from shadows and highlights in Raw images in Photoshop CC for perfectly balanced landscape photos

Have you ever shot a landscape under glorious conditions then rushed home to look at the results, only to find they are slightly underwhelming? It's happened to me more than once. It doesn't necessarily mean you did something wrong... it might be that the image needs a little coaxing into life. Often the challenge with landscapes is in recording detail in the brightest and darkest parts of the scene.

When the sun is low in the sky this can be doubly difficult, as the highlights will be strong and the shadows can be very deep. As such, on initial inspection the scene can be a disappointment, with detail-less dark areas or blown out skies.

However, just because the detail isn't visible at first, it doesn't mean it's not there. As long as pixels aren't clipped to pure black or white, then there's a good chance we can pull detail out of the tonal extremes and balance

the image. This is especially true if the image is a Raw file as Raws have greater dynamic range than JPEGs, which means they hold extra detail in the highlights and shadows. But even JPEGs can be enhanced to tease out extra detail.

We'll do this using the local adjustment tools in Camera Raw (you'll find near-identical tools in the Lightroom Develop Module). The key tools are the Graduated Filter and Adjustment Brush. They let us isolate and adjust areas with ultimate control... 

STEP BY STEP REVEAL HIDDEN DETAIL

Use the local adjustment tools in Camera Raw to pull lost detail out of dark and bright areas



01 LIFT THE LAND

Open the image in Camera Raw (or go to Lightroom's Develop Module), then go to the Basic panel and lift Exposure and Shadows as shown to brighten the land. Our scene is hazy, so we set Dehaze to +20. To warm up the shot, we dragged Temp and Tint to the right.



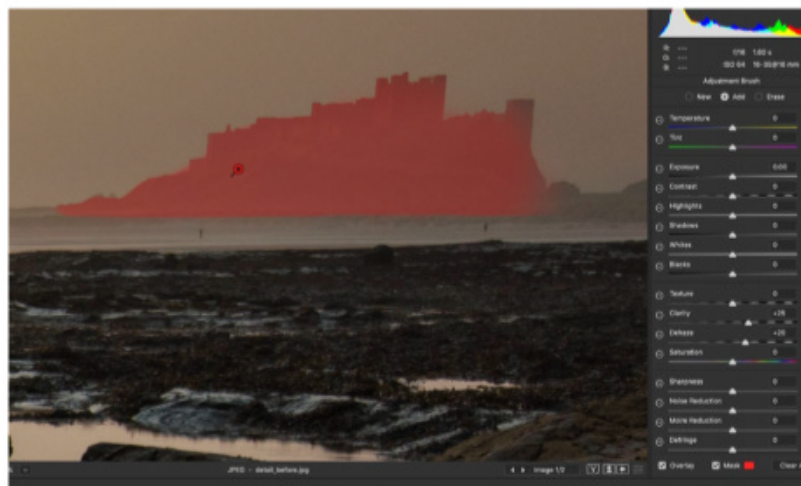
02 DARKEN THE SKY

Now the sky is too bright. Grab the Adjustment Brush, go to the settings on the right and check Auto Mask. Hit Y to toggle the mask overlay on, then paint the sky to isolate it. Hit Y to hide the mask, then reduce Exposure, increase Clarity and Dehaze like so.



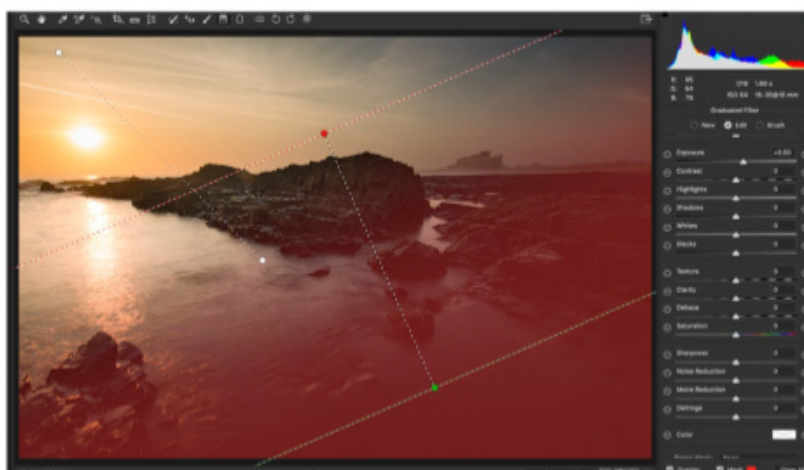
03 BOOST THE ROCKS

Hit N for a new adjustment, uncheck Auto Mask and paint over the rocks. Increase Exposure and Shadows. We can use Range Masking to target the darker tones in the rocks. Set Range Mask: Luminance, then hold Alt and drag the white point in to exclude the highlights.



04 ENHANCE THE CASTLE

We can make another adjustment so that the castle stands out. Hit N again and check Auto Mask then paint over the castle. Increase Clarity and Dehaze to enhance the detail. If you need to subtract from any mask overlays, hold Alt and paint to remove areas.



05 BALANCE THE BRIGHTNESS

The top left side of the image is a bit bright, and the bottom right too dark. Grab the Graduated Filter, click the minus icon, then drag from top right to the centre. Click the Exposure plus icon and drag up from the bottom right to lift the corner and balance the tones.



06 DRAW THE EYE

Finally, a subtle radial filter can be used to draw the eye towards the subject by lightening the area. Grab the Radial Filter tool from the toolbar and drag a circle over the castle. Check 'Inside' on the right then increase Exposure slightly to lift the area.

QUICK TIP!

The Adjustment Brush's Auto Mask targets colours similar to the point first clicked, so it ups the precision by snapping to edges

CONTROLLING YOUR ADJUSTMENTS

The local adjustment tools in Camera Raw and Lightroom work by isolating part of an image. But there are features within the tools that allow you to fine-tune what's included. Range Masking lets you target specific parts of the area defined by the tool based on luminosity or colour, so you can restrict an adjustment to the shadow tones as we've done here to pull detail out of the darker rocks. Similarly, the Color Range Mask setting lets you zero in on specific colour ranges.

**NEXT MONTH
SHARPENING
SKILLS**

AFFINITY PHOTO



THE MISSION

Convert an image to black and white in Affinity Photo, then enhance with selective overlays and split toning tools

Time needed
 15 minutes

Skill level
 Beginner

Kit needed
 Affinity Photo

DOWNLOAD PROJECT FILES
 TO YOUR COMPUTER FROM:
<http://downloads.photoplusmag.com/pp162.zip>

Get the moody monochrome look

James Paterson demonstrates how to create punchy black and white effects and gorgeous split-toned photos with Affinity Photo

There are several ways to convert to mono in Affinity Photo, but the two most useful methods both offer crucial control over the brightness of different colours during the conversion.

One of these is the Black & White adjustment layer, which is found within the Photo Persona. The other is the Black & White panel within the Develop Persona. Both offer a set of colour sliders

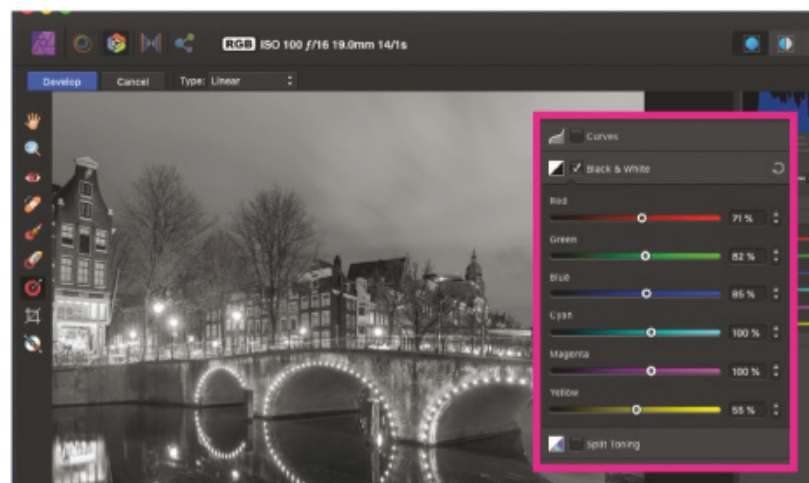
that let you tune the look of black and white by, say, darkening a blue sky or lightening foliage. We've used the Develop Persona (can be used for Raws and JPEGs). The controls allow us to lower the brightness of the blown-out lights in the scene, revealing detail and balancing out tones.

Converting to mono is often only the starting point for other edits. Initially, black-and-white images can look a little flat, so we'll go on to boost contrast here

with Curves. Black-and-white images also offer the chance for selective lightening and darkening (often to a greater degree than the coloured one), so we can dodge and burn parts of the scene to balance the dark foreground with the brighter sky. We do this using the Develop Persona's Overlays – the best tool for selective adjustments. Finally, we can add a colour toning effect. We created a warm tone using the Develop Persona's Split Toning controls. 

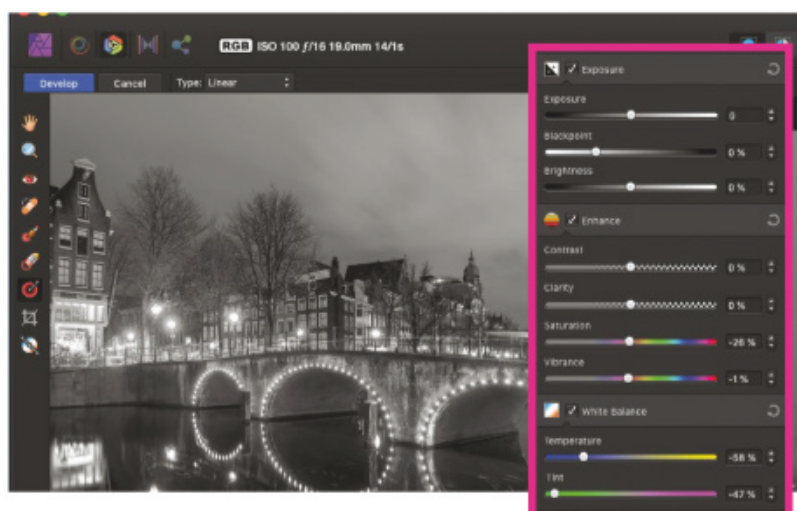
STEP BY STEP CRAFT MOODY MONOCHROMES

Follow these steps to turn black and white images into something more spectacular



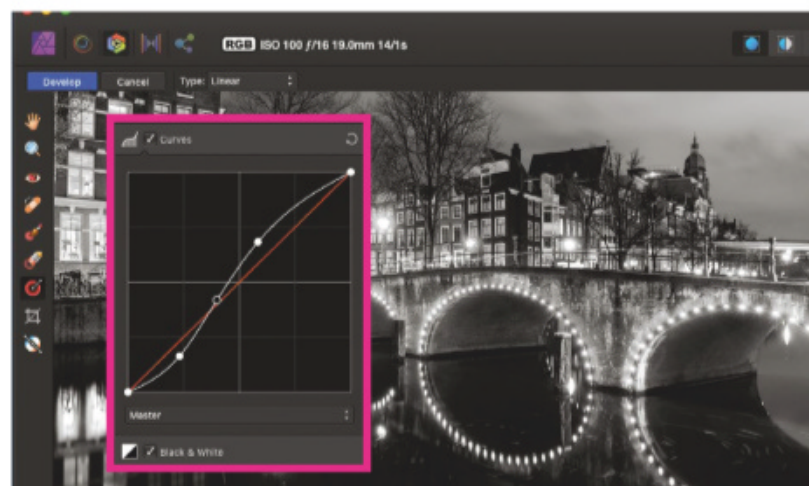
01 CONVERT TO MONO

Open the image then click on the Develop Persona at the top left. Next, go to the Tones tab on the right and check Black & White. These sliders let us alter the brightness of the colour ranges in the shot. Drag the Yellows slider to the left to darken down the lights.



02 TWEAK WHITE BALANCE

The conversion is based on the colour info in the photo, so we can affect the look of things by altering the other colour settings in the Develop Persona. Click on the Basic tab, then go to the WB settings and tweak the Temperature, Tint and Saturation to alter the feel.



03 USE CURVES FOR CONTRAST

Click the Tones tab and check Curves, then drag the line up near the top and down near the bottom to make an S-shaped curve that ups contrast. You can click the Preset dropdown at the top to make a new preset, so you can use the same settings on other shots.



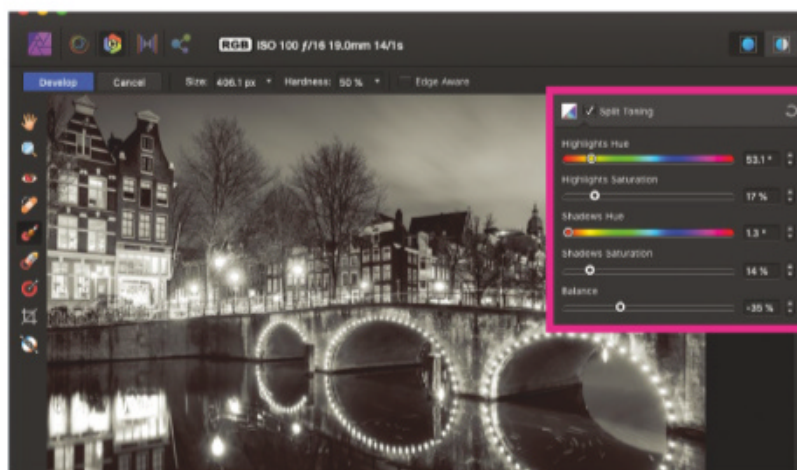
04 DARKEN THE SKY

The sky is looking too bright, so grab the Gradient Overlay tool from the toolbar, then click-and-drag downwards from the top of the frame towards the middle. Once done, click the Basic tab and drag Exposure downwards to darken the sky.



05 LIFT THE FOREGROUND

Sometimes a second gradient to darken the very top of the sky can be effective. Go to the Overlays tab and click the Gradient tool, then make another gradient. Next, grab the Brush overlay tool. Paint over the water, then use the Basic panel sliders to lighten the area.



06 TRY SPLIT TONING

Go to the Overlays tab and highlight the Master Overlay, then go to the Tones tab and check Split Toning. Drag the Highlights Hue to yellow and use the Saturation slider to control the strength. Add a red hue to the shadows, then use the Balance slider to control the split.

BLEND MODES

Using a Black & White adjustment layer in combination with certain layer blend modes can give some very interesting tonal effects to our photograph. By first of all adding a Black & White adjustment layer, then changing the blend mode to Overlay, we can get a rather fun grungy high-contrast look. Of course, we can still fine-tune the effect by altering the colour range sliders within the Black & White settings. The Luminosity blend mode is another one to try out – it keeps the original image in colour, but lets you alter the luminance of the different colour ranges.

**NEXT MONTH
FIX COLOUR
CASTS**

STORY BEHIND THE SHOT

IT'S RAINING CONFETTI

These wedding guests were about to climb the stairs for dinner when they were taken by surprise...

This photo was taken at the Institution of Civil Engineers, in London. I had just taken a large group photo from the upper balcony, looking down on all the guests, and everyone was turning around ready to head up the staircase to dinner. At that moment, one of the staff members from the venue, who was on the balcony across from me, tipped a basket of confetti over the guests! I was shooting with the 24-70mm f/2.8 and had taken the group shot wide to get everyone in. As soon as the confetti started to rain down, I zoomed in to 70mm and focused on the bride. It was lucky, and if it weren't for the bride, Chloe, in the centre with her head turned towards me, eyes closed and such a joyful look on her face, I doubt it would have as much impact. It all came together and it's ended up being one of my favourite images.

LYNDSEY GODDARD

Photographing a wedding is not for the faint-hearted, but Lyndsey Goddard has found a lucrative niche with her documentary style, willingness to travel and love of her 24-70mm f/2.8 and natural light, as Keith Wilson discovers...

WEDDING photography isn't what it used to be. Not so long ago, couples would book a professional photographer who would spend the day taking a list of formal poses of the bride and groom and their families, as well as the kisses and confetti. There was even a 'wedding season', with spring and summer being the peak time for couples tying the knot, while the photographer was usually locally-based with a studio in the High Street. As for receiving bookings for overseas weddings, they were virtually unheard of. But the dawn of the Internet and digital age has seen this most traditional genre of photography undergo a major makeover as wedding photographers no longer occupy a broad church of conventional style and services. Today, the new niches of 'destination', 'reportage' and 'documentary' wedding photography are proving increasingly popular and photographers are travelling further afield for their shoots. For Lyndsey Goddard, her clients are now global and the season never ends...

01 SURPRISE!

The bride and guests were caught unaware when confetti rained down from the top of the stairs in this great shot

Lens	Canon EF 24-70mm f/2.8L II USM
Exposure	1/160 sec, f/4, ISO4000

02 FRAUGHT IRON

With one iron and lots of shirts, there's only one thing to do – form an orderly queue!

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/200 sec, f/5, ISO1250

03 HAND OF DOG

Keeping an eye open for the unexpected, Lyndsey captured this light-hearted moment of a dog getting a friendly scratch

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/320 sec, f/4, ISO250

04 WITH THIS RING

It may be the critical moment of the wedding when the groom slips the ring on the bride's finger, but this little girl became the focus of attention

Lens Canon EF 85mm f/1.8 USM

Exposure 1/160 sec, f/3.5, ISO2500

When did you see the emergence of the documentary wedding photographer as a popular choice?

When I started I knew the style of wedding photography that I wanted to do, which was documentary, although there wasn't a word for it back then. There were people doing it at that time, like Jeff Ascough for example, but more and more it's becoming the style of choice. To a certain extent everybody is documentary because you can't orchestrate the entire day, but there will be elements of the day that people expect to be orchestrated. So when you're documentary it means you're hands-off everything.

You're being more reactive to what you see in front of you?

Yeah, absolutely.

But there are still parts of the wedding that you have to get, those sacred moments...

Not every wedding is the same, but for most the bride will walk in, on the arm of her father, or her mum, or her brother or best friend, and then meet the groom at the top of the aisle. Often, couples walk in together so the key moments are the bride coming in, capturing that, the ring exchange, the kiss, them coming out, the confetti. These are all standard, but it doesn't mean you have to capture them in a cliché way, you can put your own spin on it. I've got a photo that's well known of a couple having a ring exchange and behind them there is a flower girl in the aisle having a meltdown (see above right, page 67) and I focused on her. You can still see them but they're blurred out and she's the focus.



How long have you been doing this for as a career?

Full-time, 10 years. I shot my first wedding in 2003, then I had a break and started shooting again in 2006, 2007, 2008, just for friends. From there it snowballed and I realized I could do it full-time, so I cut all my other work out.

How did your interest in photography start?

I've always been into it. My dad's a keen photographer – he's very much into bird photography. He gave me my first camera when I was about 13, which was an Olympus OM-10, and I used it to photograph my school friends. I used to mess about by turning all the lights off and I'd get directional lamps and have

them in the light, and then go into the darkroom at lunchtime and process them.

Did your dad introduce you to the darkroom too?

No, he didn't. After school, I went to art college and studied art, but always loved photography and did quite a lot of travel trips; I went to Cuba for a month with two female friends, all film photography, then studied and did a couple of photography courses at the London College of Printing (now London College of Communications), so it grew from there. It's photographing people I love. The way I see weddings is as social documentary.

On your website you emphasize that you like to stay close to



04

people and everything that's happening on the big day...

It's hiding in plain sight. If you shoot with a long lens and you're darting in and out of bushes, people will see and they'll feel that you're trying to catch them out and they will be on guard. It sounds counter-intuitive, but to be unobtrusive you have to be with people, standing there with them, making eye contact with them, listening to jokes and stories.

That way they also feel that you're part of their group?

Yeah, exactly. It's acceptance. People start to see you around, you're not the shady figure that's just lurking. I also talk to people which breaks down barriers, chat to them, how do they know the bride and groom? People like to talk about themselves and they may float off and you can just stay in position and watch what unfolds.

Do you pick up future bookings while working as well?

A lot of the time. It's very flattering when people get in touch and say they saw you working at someone's wedding three years ago. For example, now let me get this right... the last wedding I shot is the brother of a bride whose husband I first met at a wedding in 2008 and he wasn't

even with his girlfriend then, she's now his wife, and he loves how I work and loved the pictures that he saw from that wedding. He recommended me to at least four other people that were getting married in the interim, then I shot his wedding in 2017. So that's someone who always kept me in mind right from then; "if I ever get married I'm going have this person photograph my wedding."

Nine years later!

Yeah. He passed my name to various people and I photographed their weddings and then he got married himself, two years ago, and I photographed his bride's brother's wedding last month!

What is the essential information you find out to prepare for the shoot of the wedding?

When I get an enquiry I send them my prices and also a link to a page on my website which talks about my approach. I want it to be as transparent as possible about what I offer so that we're going to be a good match for each other. I send them links to my 'best of' posts from previous years which is my favourite pictures from any given years, which I think shows my style quite concisely in one straightforward post.

Do you tend to have a meeting with them as well?

I don't always meet my couples in advance of the day, it's not always logistically possible if they don't live anywhere near me, but we'll always have a FaceTime or phone call. Really, all I want from them is a rough outline of the day: what's happening where; time of speeches; anything special I need to know about; other than that I don't need to know anything because I'm not working to a checklist. The more rules and restrictions they impose on me the more difficult it is. If somebody says, 'we love your style, we trust you to just get on with it', then that's perfect. We're the best fit for each other.

Naturally, the weather plays a huge part, including lighting, so how do you work with lighting?

I'd never use flash during the ceremony or during the speeches because straightaway that private moment is gone



05 HEEL AND VEIL

The almost inevitable moment when a bridesmaid's heel is caught in the bride's veil, yet perfectly composed against a beautiful background

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/400 sec, f/4.5, ISO200

06 INDIAN NIGHTS

A stunning setting for this sunset wedding at Mihir Gahr in Rajasthan, India

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/160 sec, f/3.5, ISO3200

07 SPEECH WEARY

For at least one guest at Rye Town Hall, East Sussex, the speeches were proving to be a little too long

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/160 sec, f/2.8, ISO2500

The 24-70mm f/2.8 is the most used. It's definitely the workhorse lens

Just with the available light. I'll use flash during the dancing and that's the only time I'll use it. By that point in the day there's probably disco lights and all sorts of strange sources, so another light isn't going to change things too much. I'd never use it during the ceremony or during the speeches because instantly that private moment is gone.

It's a distraction?

It's a distraction for everybody and it'd limit the shots that I can take, because often I'm shooting on a longer lens during the ceremony and the speeches. You have to be right up close to somebody to be shooting with flash, so it's going to change the look of the photos; it's going to change everything. I say to people that if they are getting married late in the day and I know it's going to be dark, their photos will be lit by low light, so they'll have a very specific look of grain to them, and they get that, they understand that.

What lenses do you prefer use for a wedding?

My most used lens is the 24-70mm f/2.8. At every wedding, I have camera straps with two cameras attached, 24-70mm on one, 85mm f/1.8 on the other. They're my standards. I also have the 135mm in my

bag which can help me out in any tricky situations, large ceremony rooms, speeches. I also have the 35mm f/1.4 which can be nice on the dance floor if you shoot wide open into the light. You get quite an ethereal look to it and I like having a mix of flash and ambient light.

Three out of those four lenses are primes, do you prefer prime lenses to zooms?

But the 24-70mm f/2.8 is the most used. It's definitely the workhorse.

Do you use the same camera?

Yes, the 5D Mark IV. I've always had Canons. I've gone from the 10D to the 20D, the first 5D, then the Mark II, Mark II, Mark IV. I update them as and when I need it. I'm not one of those people who has to get the latest camera as soon as it comes out. I feel if my bodies are doing the job then I don't need to update them.

Let's talk about awards. 2017 was a big year for you...

I won wedding photographer of the year at the National Wedding Industry Awards.

How do you win an award like that?

It's a combination of comments and scores from your previous year's clients, so only



06

people whose wedding you've shot in that 12-month period can vote for you, and a judging panel looking at your portfolio, looking at your online presence. It's a good one to win because it's your clients saying we think you did an amazing job. It's divided into seven regions and each regional winner goes into the national finals, so I won my region, the Southeast, and then I won the national finals.

Are there any weddings that stick in your mind, where you think you did something exceptional?

I think the wedding in India is the one that sticks in my mind most, because it was so far removed from anything I'd ever done. Not because it was an Indian wedding, because I have shot Indian weddings in the UK. It was small by Indian standards, only a hundred guests, and they had a three-day event which culminated in a sunset ceremony at a hotel built out of sand in the Rajasthan desert. They transported all their guests in darkness by torchlight and candles on camels into the middle of the desert for a huge feast and party. That was special.

That sounds amazing...

Photographically, to get your teeth stuck into that was brilliant and the couple



07

were a hundred percent on board for the documentary style, so the whole weekend I took just two portraits of them and one family group shot. That was it. Everything else was completely documentary-style.

Did it feel more like a travel shoot than a wedding?

A bit. For a normal wedding, I'd be there for 12 hours and you're in amongst all these people and trying to tell their

They transported all their guests in darkness by torchlight and candles on camels into the middle of the desert for a huge feast and party



08 SAY IT WITH FLOWERS
Staring at a bouquet this flower girl seems lost in her head while the party continues

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/160 sec, f/4.5, ISO2500

09 PHONE VIEW
A clever take on how most wedding guests record the big day

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/160 sec, f/5, ISO1000

10 WHEN I GROW UP...
A pensive moment for this young girl watching the bride getting into her dress

Lens Canon EF 24-70mm f/2.8L II USM

Exposure 1/200 sec, f/5, ISO1600

I don't have someone else managing my social media because that would feel disingenuous

different stories, but for a three-day period you can get under the skin of it.

For a wedding over such an extended period you must have taken many more pictures?

I probably took about five or six thousand. They got more pictures than your average wedding, purely because I was shooting for a lot longer. It took me a long time to edit it down and process it.

Which other countries have you shot weddings?

I've shot weddings in France, Italy, Spain, Portugal, Poland and India.

What have been the most marked changes that you've seen in the market since going professional?

I think couples now are very keen to put their own mark on their wedding, so all of the weddings I do are individual and unique. They also have the pick of the entire Internet for who to book; it's no longer a case of which photographer is local to the area. They can choose someone who they feel can tell their story in a style that matches what they want.

In which case they will choose someone from anywhere?

Photographers travel. I know other photographers who have travelled all over the place. In the pre-Internet days, people tended to choose someone who was local – couples would just need to look through the Yellow Pages.

Do people approach you through Instagram?

I get a lot of people getting in touch on Instagram. It's the same method: I post what I want to show, so what I want to shoot. How I talk on Instagram is the same as how I would talk on the website. I don't have someone else managing my social media because that would feel disingenuous. I don't simply schedule posts to go out at a certain time. I feel I need to talk in my own voice, so couples can feel that what they're reading online is going to be the same if they talk to me on the phone or meet me in person.

When did you start getting into Instagram?

I had an account for myself before I had one for business. That was probably 2012, then I thought I should have one for my photography, so I started from there. I've never bought followers, it's all organic. It's the platform I use the most, more so than Twitter or Facebook.

PROFILE

LYNDSEY GODDARD
Documentary wedding photographer

Accolades for Lyndsey's style of photography include winning the 2017 National Wedding Industry Awards. In 2016 she was named by the Wedding Photojournalist Association as the UK's best documentary wedding photographer, coming 11th worldwide. For the past four years she's made the association's list of '50 Best Wedding Photojournalists in the World'. Before starting working life as a photographer, Lyndsey studied Art at De Montfort University in Lincoln, then finished photography at the London College of Printing and University of the Arts. Now a Canon Ambassador, she shoots weddings all year round across Europe and the UK. www.lyndseygoddard.com



Next issue: Susan Meiselas, American professional documentary photographer



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Are there any accessories that you always take to a wedding shoot?

I have Holdfast MoneyMaker camera straps, just like a leather holdster with the cameras attached to it. I find that they are the only way I'm not going to have a sore back the next day because you can relax your shoulders. With conventional straps you keep your shoulders hunched because you're afraid the camera's going to slip off your arm, whereas with these they are attached to it. I also have a flashgun and a small Manfrotto video light, which you can handhold or simply use on the camera hotshoe.

Is that the one with the LED lights?

Yes. It can be quite nice if you're going to shoot the first dance ambiently, but you need some light. I've asked guests, "can

you hold this, you don't need to move," and I move around. It's not very big, it's no bigger than your phone, but just gives another pop of light. I don't use it at every wedding but it can be helpful and it doesn't take up much space!

Do you get requests to shoot video?

People ask me if I do and the answer is "no". I always recommend people to them. It's very important to me that the videographer's style blends well with mine. There's a lot of videographers out there who work in a documentary style and we work very well with each other.

What's the best piece of advice you'd give to someone who wants to break into this market?

Shoot, shoot and keep shooting.

Somebody said to me when I was starting out, "you're not photographing enough". Go to family events, photograph them. Go to christenings, birthday parties. If it's documentary photography you're wanting to get into then photograph other events that are similar.

When do you think, 'the wedding is over, I've got the last shot'?

It's nice to be there all night on the dance floor and I often stay right to the end. Then it's the closing shot which will be the venue from the outside, or shooting up at a window where a light is on.

Or someone slumped asleep in a chair, perhaps?

That too! As soon as I think I've told the story in its entirety. ♦♦

PHOTOSTORIES

*Photo essays from PhotoPlus readers
and professional photographers alike*

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THE FUN!

One of the great things about photography is being able to share your view of the world. One reader heads the calls of the African wild! While another one shoots to infinity and beyond.

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01

PROJECT INFO



NAME: Adrien Marquet

LOCATION: Botswana & Tanzania

MISSION: Document his once in a lifetime travels on a safari trip around Africa

KIT: Canon EOS 700D and EOS R, Canon EF 100-400mm f/4.5-5.6L IS II USM, Canon EF 70-200mm f/2.8L IS II USM

INSTAGRAM:
@marquet_photography

Once in a lifetime

Adrien explains how he took some of his favourite photos from his Safari trip to Africa

I used to live in Africa, Ghana and later South Africa, but this was my first time going to Tanzania and Botswana. Really it was the definition of a once in a lifetime opportunity.

I've been interested in photography and videography for the last five years and often rent better cameras for my more important shoots. I'm also completely self-taught.

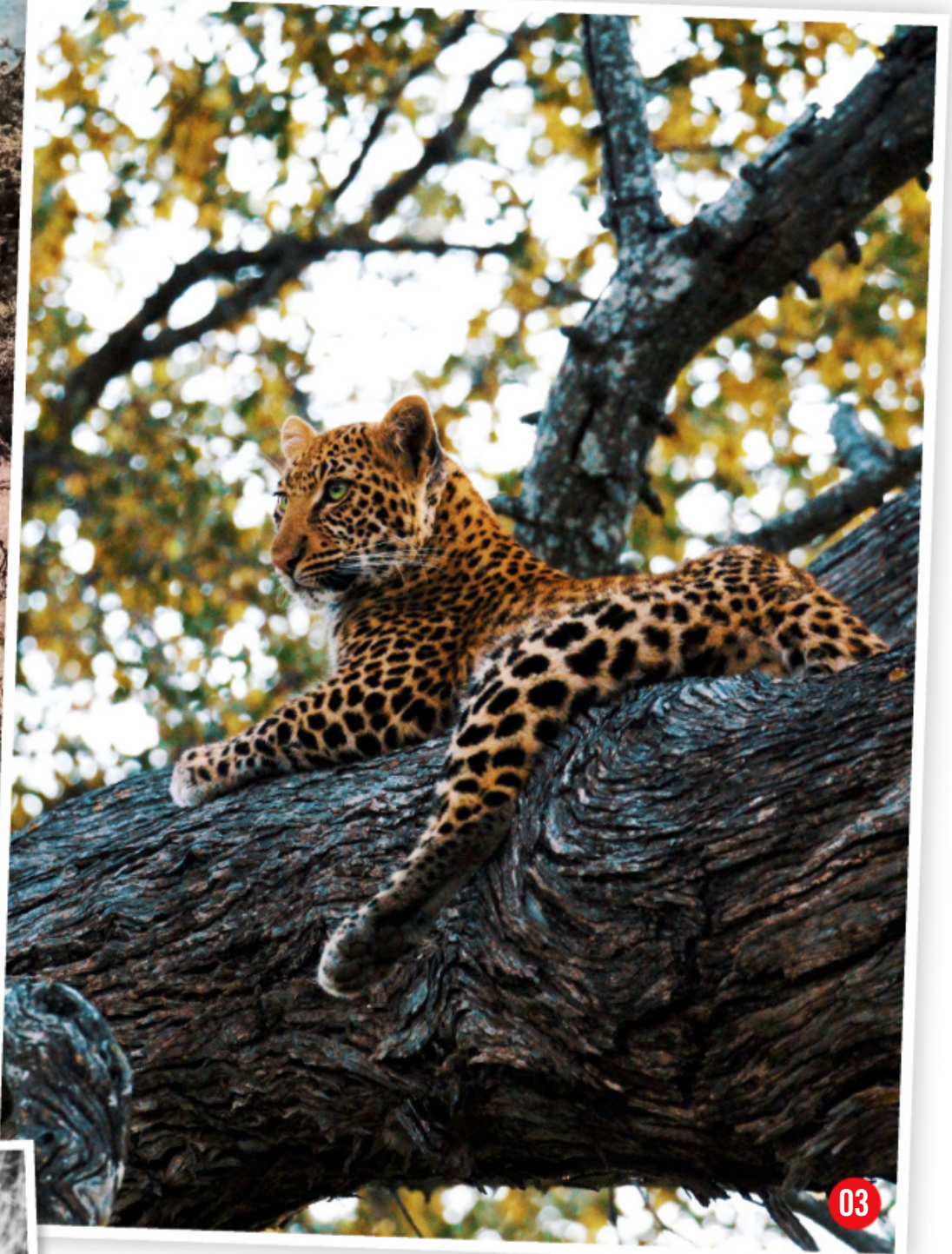
The capture of the lion cub in deep grass was taken in the Okavango Delta, Botswana [1].

His mother and grandmother were only a few feet away, with five other siblings. He's resting after a long day, as he hides under leaves and tall grass in order to avoid threats. The height of the tall grass kept him safe, but made it tough to get the shot. With this image, I wanted to show his purity and innocence. I zoomed in to get a frame-filling shot and focused on the eye closest to the camera.

While heading out of the Ngorongoro Crater on a



02



03

winding, rocky road, we crossed two boys from the indigenous people of Tanzania, the Maasai [2]. Initially, I did not notice the giraffe in the distance staring right at our vehicle. After a short conversation with the boys, I realized that the car, luckily, was perfectly aligned with the boy and the giraffe. This image represents the co-existence of wildlife and humanity. I edited the hues of the picture to add a teal and orange fade in order to enhance the colours.


Safaris are thrilling – the visual hunt for wild animals hidden in the savannah until a slight movement is detected by the ranger. That's how I found this two-month-old leopard cub awaiting its mother in the Okavango Delta, Botswana. It was hanging in the tree, tail wagging while looking into the distance for its mom.

I tried to get several different angles of the cub, but didn't like that many. I went



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home that night to discover this picture – the perfect colours, the perfect visual representation of what I saw, and the perfect pose [3].

I converted my image of a male lion to black and white to give it a filmic quality and show the detail in his fur [4]. He has an glorious mane and battle scars on his face, that I wanted to really bring out. Turning the shot monochrome meant I could increase the contrast and bring out more details of this majesty. 

01 HEIR TO THE THRONE

Adrien catches the moment a lion cub looks back over its shoulder towards him

Lens Canon EF 100-400mm f/4.5-5.6L IS II USM **Exposure** 1/2000 sec, f/5.6, ISO3200

02 THE AMALGAMATION OF TANZANIA

A Maasai boy holds a firm stance in this incredible Tanzanian landscape

Lens Canon EF 70-200mm f/2.8L IS II USM **Exposure** 1/8000 sec, f/13, ISO12,800

03 THE AFRICAN WATCHTOWER

A baby leopard is on lookout from high up in a tree

Lens Canon EF 100-400mm f/4.5-5.6L IS II USM **Exposure** 1/160 sec, f/5, ISO6400

04 THE SCARRED KING

A mature male lion with an incredible mane and battle scarred face

Lens Canon EF 100-400mm f/4.5-5.6L IS II USM **Exposure** 1/2000 sec, f/5.6, ISO800

PhotoPlus FEEDBACK

Adrien should be proud of the pictures he's come back with. Considering he's 16, and is a self-taught, his shots are impressive and show he's a natural with an eye for a great image.

He may want to watch his ISO value as it's a tad high and can reduce quality. As a rule of thumb you only need to boost your ISO until you get a shutter speed equal to or faster than the reciprocal of your focal length, such as 1/200 sec with a 200mm lens and so on. However, the grain does add to the filmic style he strives for.

PROJECT INFO



NAME: Sumith Raj

LOCATION: Swiss Alps

MISSION: Capture incredible low-light images containing the Milky Way on my travels

KIT: Canon EOS 5D Mark IV & Canon EF 24-105mm f/4L IS II USM

INSTAGRAM: @r.sumith

Shooting stars

Sumith has made it his mission to capture interesting night landscapes that include the Milky Way

As an avid traveller my love for photography has taken me to all sorts of places. I am grateful that I've been able to combine both of my hobbies together, all while capturing the beauty of the planet in the process.

My first stint shooting the Northern Lights opened up the whole world of night and low-light photography and to this day was one of the most beautiful things I've ever seen.

It was my good friend Alex, who I visited in the Swiss Alps, that introduced me to astrophotography. All of my images in this series were taken in the Alps, in Italy or Switzerland – it's an incredible place to shoot images of the sky at night and the Milky Way, because it gets so dark and it's free of light pollution.

The idea of capturing our Milky Way, is in itself an amazing feeling. Enjoying the dark nights with clear sky and witnessing our Milky Way unfold is a treat by itself.

When I captured my first I just fell in love with it. Since then whenever I get a chance to shoot I do not miss it.

Obstacles are many, just because it is in the night. Firstly, to shoot Milky Way you need a very dark place and clear sky. Secondly, you should be aware of the climatic conditions around the area and be ready to improvise when you are looking for the perfect shot.

I make a point to visit the place I want to shoot during the day time and find the



perfect spot, then mark the coordinates so it's easy to get back to in the dark. I also use a few phone apps; Light Pollution map, PhotoPills and Sun surveyor, which help plan your shot better and get an idea of where the sun is going to set and so forth.

It's crucial you come prepared with the right gear, and warm clothing as it can be brutally cold. A head torch is a great accessory for finding your way in the dark while keeping your hands free for setting up your gear.

My next challenge will be to shoot the Milky Way in various countries and continents. 📷

PhotoPlus FEEDBACK

Sumith's love for the night sky is clear in this series of images. He's got a great eye for balancing the frame with interesting, varied foregrounds, including roads, forests, churches and mountains.

His technique of merging two exposures together works for exposing different parts of the scene. It's a lovely range of shots that really show the Milky Way, and if he made a small tweak to his Raws they'd be next level.

// I make a point to visit the place I want to shoot during the day time and find the perfect spot //



01 DOLOMITES, ITALY

For this shot Sumith found a beautiful spot to capture the Italian mountain range with the Milky Way in the frame too

Lens	Samyang 135mm f/2	Exposure	4 mins, f/9, ISO800
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02 JULIER PASS, SWITZERLAND

The famous Julier Pass. Heavy traffic is normal through this pass which helps to make it easier to capture dense light trails.

Lens	Samyang 14mm f/2.8	Exposure	2.5 mins, f/9, ISO200
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03 NIGHT TIME MAGIC

One of the starry nights in the Swiss Alps

Lens	Canon EF 24-105mm f/4L IS II USM	Exposure	4.5 mins, f/8, ISO100
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04 THE CHURCH OF ST GIOVANNI

One of Europe's most photogenic churches with an amazing night sky

Lens	Canon EF 24-105mm f/4L IS II USM	Exposure	4 mins, f/4, ISO800
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MYKIT

Professional photographers reveal their top six tools of the trade they couldn't shoot without

“ One night my friend showed me Jupiter through his telescope and from that moment I was hooked! ”

Chris Grimmer

Shooting for the stars, Chris has a passion for photographing the sky at night and exploring new corners of the galaxy with an impressive array of equipment

Living in Norfolk gives me access to some superb dark skies. This enables me to capture those faint and fuzzy deep space phenomena or wide sweeping Milky Way panoramas, without the horrible orange glow of light pollution.

My passion is for shooting deep space nebula and galaxies; those distant objects Astronomers spend their lives trying to see. To achieve the best, most detailed results I usually build up exposure

time of around nine hours; created by stacking 15-minute exposures from a specialist cooled mono camera with filters, attached to a telescope on a tracking mount.

Shooting in unsociable hours is inevitable. Long nights outside, mostly over the winter months in minus temperatures, means that having my setup controlled by the SGPpro software on my laptop is crucial. This allows me to head in and get a well needed coffee, safe in the knowledge that the software has everything under control.

It also means I can point the telescope to the same spot night after night and keep the alignment perfect.

I own several DSLRs, one of which I have modified by removing the internal filters. Hydrogen is the most abundant gas seen in the nebulae I photograph, but this wavelength of light is partially blocked by the internal filters in cameras. Removing these filters has solid advantages in astrophotography, however it also comes with some real big disadvantages too; including voiding your warranty! 💎

WHAT DO I DO?



Chris Grimmer

www.chrisgrimmerphoto.com

I HAVE always had a fascination for the night sky. One slightly drunken night at my local pub I got talking to the landlord's son and found out he owned a telescope. This resulted in my first view of Jupiter, and from that moment on I was hooked! The photography soon followed and I quickly progressed to Canon DSLRs, as well as specialist cameras and telescopes. In 2015 I was shortlisted for the Insight Astronomy POTY and had a double shortlisting in the UK Astrophotographer of year too!

IN CHRIS'S BAG



01 Starlight Xpress H694 Mono CCD

WEB: www.sxccd.com

THIS is a specialist camera for shooting stars, with features like a fan and electronic cooling. This enables me to run the 15 minute exposures, while maintaining a sensor temperature of around -10 to keep digital noise to a minimum. It has a resolution of just 6Mp, but is incredibly sensitive in low light and it's still possible to make prints one meter long. I control it fully from my computer using a USB as it has no built-in controls.

02 Canon EOS 550D full spectrum mod

WEB: www.canon.co.uk

I PICKED this up second hand purely so I could modify it. It's an older model so is missing some handy features, like an adjustable screen. But, I control the camera from an app on my phone, so it's no big deal and a great example of upgrading a well-trusted workhorse with new technology. I took the camera to pieces to remove internal filters from the camera's sensor to make it sensitive to the full spectrum of light.

03 Canon EOS 70D Infrared conversion

WEB: www.canon.co.uk

THIS is my favourite go-to camera, but is not a camera I use for astrophotography. Another camera I have self-modified, but this time I inserted a InfraRed (IR) pass filter. This filter is enhanced IR, so allows me to shoot in colour or black and white. I love the way IR can change a relatively boring scene into something truly magical.

04 Skywatcher Star Adventurer

WEB: www.skywatcher.com

FOR a small and lightweight piece of kit, the Star Adventurer is amazing. This little tracker will carry up to 5KG of camera kit, enough for a telephoto lens or small telescope and camera. The mount runs on AA batteries, so no mains requirement and is accurate enough to give multiple minute exposures. I have this mounted on a standard photo tripod.

05 William Optics GT81 refractor

WEB: www.williamoptics.com

THIS is my main telescope and effectively acts like a specialist camera lens. It may only be 80mm in aperture, but the detail in the images come from being able to build multiple hours of exposure time. The only change I have made is to add a motorized focuser, which ensures my focus is always perfect.

06 Astrodon Narrowband filters

WEB: www.astrodon.com

AS MY Starlight Xpress shoots in mono I use filters to separate out the light spectrum. This could be just red, green and blue (RGB) to give you a full colour image, the same as any colour camera. For nebula images however, we look at a much narrower bandwidth of light, mainly from Hydrogen, Oxygen and Sulphur and then map these to green, blue and red respectively – a technique borrowed from Nasa and the Hubble Telescope!

PUT A PAUSE IN YOUR DAY

With so many demands from work, home and family, there never seem to be enough hours in the day for you. Why not press pause once in a while, curl up with your favourite magazine and put a little oasis of 'you' in your day.



PRESS PAUSE
ENJOY A MAGAZINE MOMENT

To find out more about Press Pause, visit;
pauseyourday.co.uk

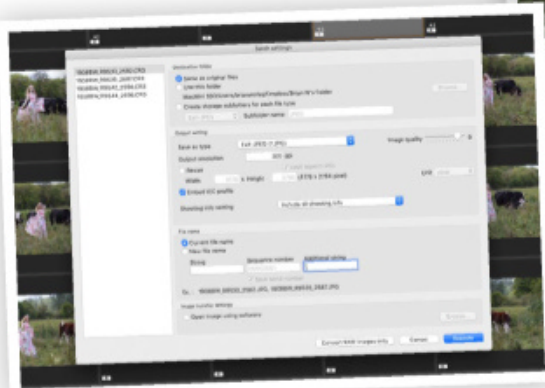
CANON SCHOOL

Your ultimate photographic reference guide to the complete Canon EOS DSLR system

CANON EOS SOLUTIONS

PAGE 80

Organize your workflow



WITH **PhotoPlus** EXPERT

BRIAN WORLEY

CAMERA EXPERT

Brian has unrivalled EOS DSLR knowledge after working for Canon for over 15 years. He now works as a freelance photographer and photo tutor in Oxfordshire.



DIGITAL SLR ESSENTIALS

PAGE 82

Keep your camera quiet with these clever tips



WITH **PhotoPlus** EXPERT

MARCUS HAWKINS

PHOTO EXPERT

Marcus has more than 30 years of photography experience. A former editor of our sister publication *Digital Camera*, he has written about photography for Canon and Jessops, and uses a Canon EOS 5D Mk IV.



EOS S.O.S

PAGE 86

Brian answers all of your tricky Canon questions



WITH **PhotoPlus** EXPERT

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CAMERA EXPERT

Brian has unrivalled EOS DSLR knowledge after working for Canon for over 15 years. He now works as a freelance photographer and photo tutor in Oxfordshire.



CANON EOS SOLUTIONS

Introducing a new regular series where we go in-depth into Canon's free imaging software

PhotoPlus EXPERT

BRIAN WORLEY

CANON PRO

Brian is a freelance photographer and photo tutor, based in Oxfordshire. He has unrivalled EOS DSLR knowledge, after working for Canon for over 15 years, and is the perfect man to help you master Canon's software.



Workflow with Canon software

Import, organize and edit your photos with EOS Utility and Digital Photo Professional

Your EOS camera includes Canon's EOS Utility and Digital Photo Professional to make it easy to import, organize and edit your images.

Being free, many may bypass these applications, missing out on a simple way to work with photos on their computer. There are two key applications for importing,

organizing and editing your JPEG or Raws: EOS Utility and Digital Photo Professional (DPP). EOS Utility connects to your camera, and transfers photos to your computer in an ordered manner. Organization is key to being able to find your photos – EOS Utility stores images in folders based on the date they were taken. You may find it easier to use a simpler structure of folders for

each month to store your photos, only twelve folders not hundreds each year.

DPP has two main capabilities, sorting and post processing your pictures. You can add star ratings and check marks to your favourite shots and filter them, making it easy to find the best. Editing, particularly for Raw, is powerful, using the same proven image processing

algorithms as the cameras for optimum image quality.

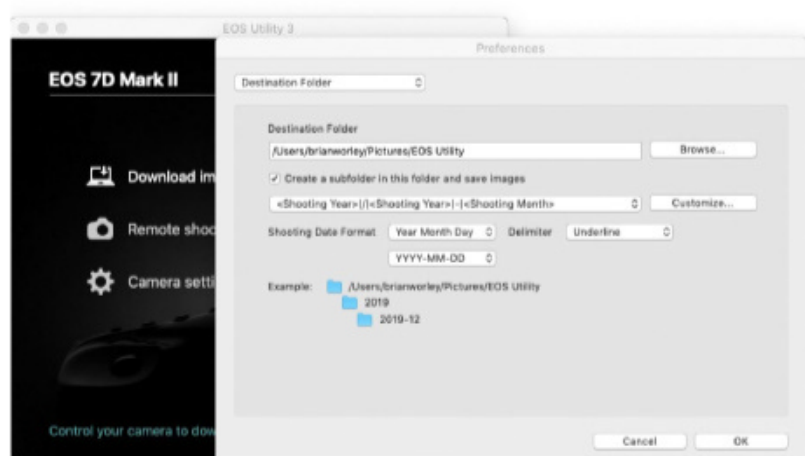
If you can't locate the software for your computer, it's just a few clicks away to download the latest version from Canon for free. Visit www.canon.co.uk/support and enter your camera model, then download the software. You may need the camera serial number on the bottom of your camera.

STEP BY STEP STAY ORGANIZED FOR A FIVE-STAR WORKFLOW

Keep your folders and workflow tidy with this short list of tweaks

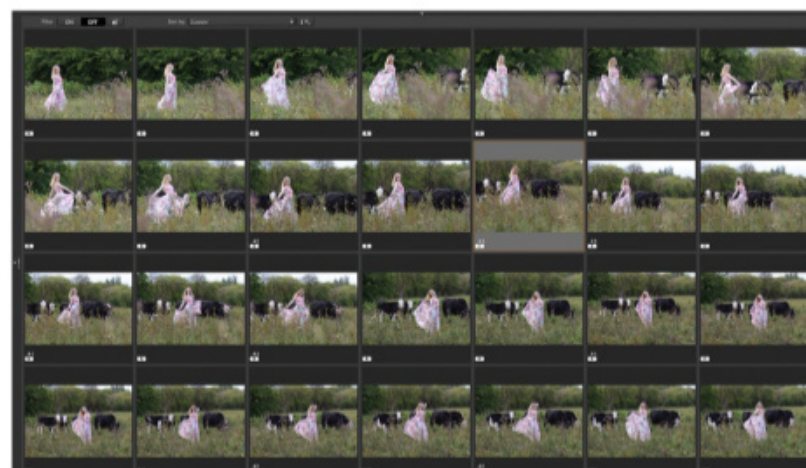
ORGANIZE, SORT AND PROCESS

Finding your favourite photographs on your computer, can take a little bit of organization, and EOS Utility can do that for you automatically. Use stars and checkmarks to indicate your favourite shots. DPP tools make it simple to enhance your pictures, and process them for final output as JPEG or TIFF images.



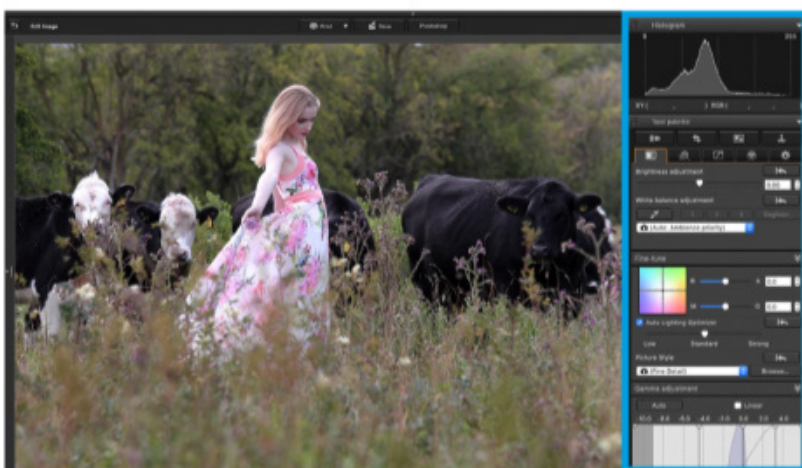
01 GET STARTED

Connect your camera to the computer and turn the camera on to start EOS Utility. Click on preferences and choose the destination folder. Add a subfolder. Customize the subfolder with the year and month, so photos get automatically organized. You can also customize filenames, adding years and months.

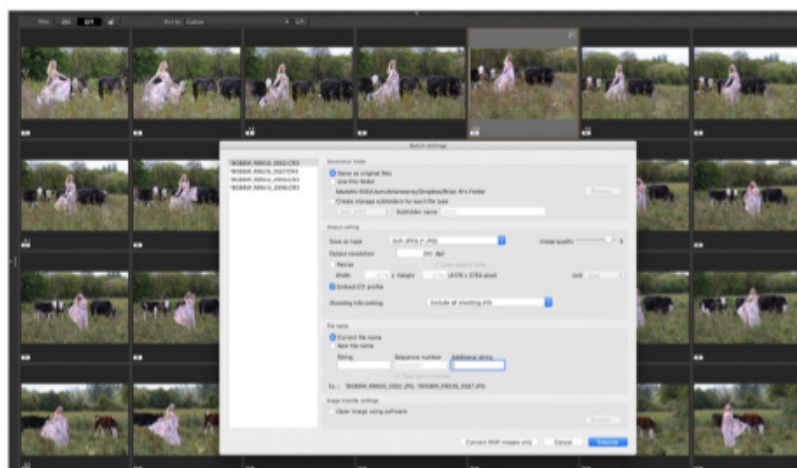


02 REVIEW & RATE YOUR PICTURES

Allocate star ratings and or checkmarks to your best photos. You can use the icons at the bottom of the screen in the thumbnail view to assign stars or checkmarks. It's much faster to use the keyboard shortcuts though, simply press the numbers 1 to 5 to allocate star ratings, and the 0 key to clear them.

CANON SOFTWARE**03 IMPROVE YOUR BEST PICTURES**

Editing your photos is easy with DPP, and if you don't like the final edit you can revert to the original. Edits are automatically saved as a recipe, not a new image. Basic adjustments are ideal for optimizing shots, choose the crop and rotate tool to trim or change the aspect ratio of shot.

**04 OUTPUT YOUR EDITED PICTURES**

Once you have finalized the cropping, and any adjustments it's time to save the edited files ready to share, post online or print. Raw files need to be saved in a standard format, so select your edited images and hit Cmd/Ctrl+B to start DPP's batch processor to create the finished images.

DIGITAL SLR ESSENTIALS

In this edition of Digital SLR Essentials we explain all you need to know about keeping your camera quiet

PhotoPlus EXPERT

MARCUS HAWKINS

PHOTO EXPERT

Marcus has been passionate about photography for more than 25 years. A former editor of our sister publication *Digital Camera*, he has written about photography and cameras for a wide range of clients, including Canon and Jessops, and uses a Canon EOS 5D Mk IV.



Enjoy the silence

What options are available on EOS cameras if you need to take pictures very, very quietly?

Canon DSLRs have a relatively large mirror positioned in front of the imaging sensor. This mirror reflects the light up to the optical viewfinder so that you can compose your shot, and it also allows light to strike the camera's dedicated AF module.

In order for the sensor to create an image, the mirror has to be lifted out of the way before the shutter curtains open to start the exposure. When the shutter curtains close to end the exposure, the mirror thumps back down and the AF module can get to work again. This happens multiple times a second when

continuous drive has been selected, so it's no wonder it can make a bit of a racket.

Of course, you can use Live View with the mirror locked out of the way, but in most cases you'll still have the noise of the shutter opening and closing. It's the same with a

mirrorless camera, which doesn't have a mirror assembly and is basically in permanent Live View mode. As a result, it's quieter than a DSLR, but it still has the mechanical shutter starting and stopping an exposure. Taking the next step towards truly silent

shooting, Canon has started introducing an electronic shutter option to the EOS range. The electronic or 'silent' shutter works by switching the sensor on and off to start and stop the exposure, rather than using a moving mechanical shutter to do so.



Mirror box

The EOS-1D X Mark III's mirror can be moved up and down at 16 frames per second

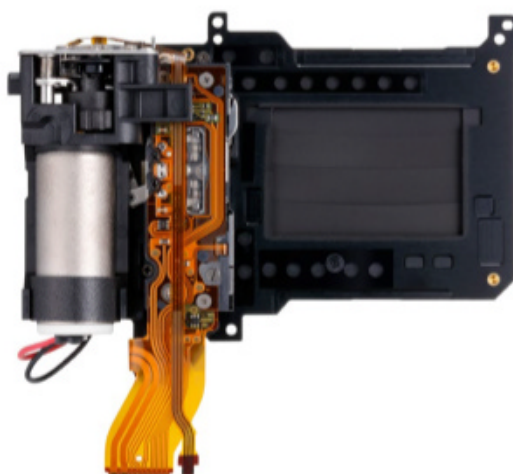


Shutter noise

Switching to Live View locks the mirror up, but there's still the noise of the shutter to contend with

Shutter noise

THE MECHANICAL shutter in the EOS-1D X Mark III is reasonably quiet, but when you're working in a quiet environment or in close proximity to a subject, it will still give the game away when you're shooting at 20fps in Live View mode. To avoid this, the camera also has an electronic shutter that also gives you 20fps shooting speed – albeit with some caveats.



KEEP IT DOWN

Quieter drive modes

Pump down the volume with the 'S' modes available in advanced DSLRs

Several different 'silent' shooting options are available in the Canon EOS DSLR range. The most common of these is the Silent drive mode, which you can find in the EOS 90D and upwards.

This mode slows the action of the mirror mechanism and, while it's not silent – it appears to have been rebranded as 'soft shooting mode' in the EOS-1D X Mark III – it does soften the 'thunk' of the mirror when using the optical viewfinder (it doesn't work when the camera's in Live View mode).

There are Silent options for both the single shot and continuous drive modes – look for the ones marked with an 'S'. One thing to bear in mind is that continuous shooting speed is noticeably slower with the Silent option engaged. With the EOS 7D Mark II, for example, it drops from around 10 frames per second (fps) to approximately 4fps.

There is another factor you'll need take into account when shooting with Silent drive mode: shutter lag. With the mirror movement slowed down, there is a slight delay

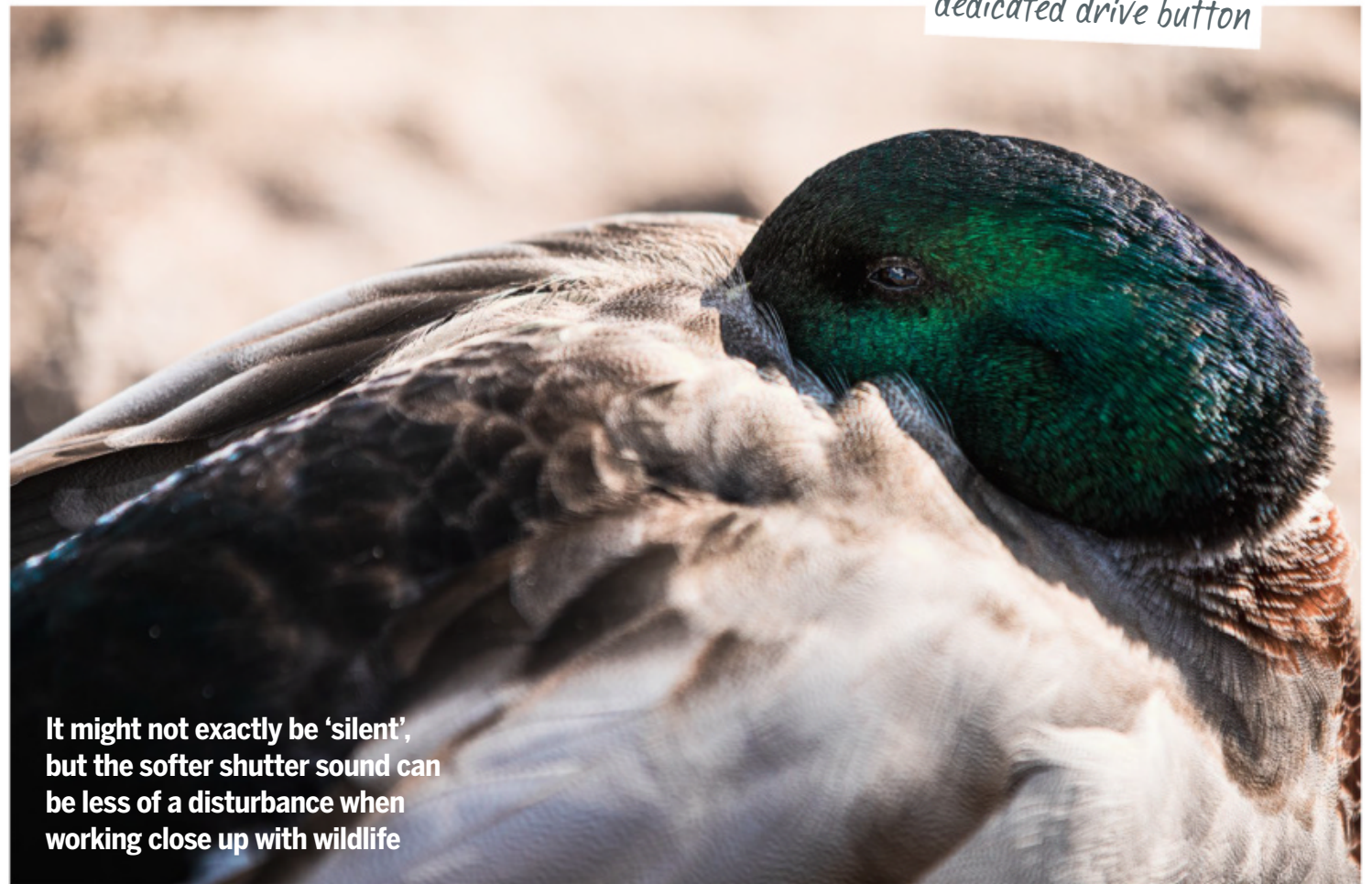
between the shutter button being pressed and a picture being taken. While this is fine for subjects that aren't moving, it can be a problem for images where split-second timing is important. I sometimes end up with more 'blinking' rejects when I'm photographing people with Silent drive mode than do with the standard

'noisy' options, as the camera has tripped the shutter a fraction of a second too late and the subject has their eyes partially or fully closed. You can, of course, work on your timing to try and remedy this, but sometimes there's no option but to shoot with a little more clatter in order to get the shot that you need.



Soft drive

You can select the 'S' drive options on the Quick Control Screen or Menu. Some cameras also have a dedicated drive button



It might not exactly be 'silent', but the softer shutter sound can be less of a disturbance when working close up with wildlife

Silent Live View shooting

How to minimize mechanical noise – or pause it and take it somewhere else...

As well as having 'silent' drive modes or an electronic shutter, some advanced EOS cameras, including the EOS 5D Mark IV, 7D Mark II and 6D Mark II have an additional 'Silent LV Shooting' option available in the red Shooting menu.

This is designed to reduce the noise level when taking pictures in Live View, and there are two different modes to choose

from, as well as an option to switch it off.

Mode 1 is the default setting and is designed to suppress mechanical noise, but Mode 2 takes a slightly different approach. Unlike Mode 1, you can only shoot a single frame even when you've set the drive mode to continuous. The reason for this is that once you fully press the shutter button and a photo is taken the camera will suspend operation.

It will only resume operation again when you lift your finger and the shutter button returns to the half-way point. This gives you control over when the noisy part of taking a shot kicks in; if you don't want to disturb a subject, you can move somewhere else – or hold the camera under your coat or behind your back – before you release the shutter button.



Using an electronic shutter

Remove all mechanical sound with this new feature

Mirrorless cameras are quieter in operation than DSLRs because they don't have the mirror mechanism slapping around inside.

Most still use a mechanical shutter to start and stop the exposure, however, so they aren't exactly silent. But the introduction of electronic shutters has changed all that.

Although the number of cameras that offer an electronic 'silent' shutter function will certainly grow, there are currently only three EOS bodies that offer it as an option: the EOS R, RP and 1D X Mark III. The astrophotography-focused EOS Ra also offers this function, but it's essentially a clone of the EOS R.

The function is disabled by default as there are some trade-offs that come with using an electronic shutter. In the EOS R you have to dip into page 6 of the red Shooting menu to enable it. You can use the function in any of the Creative Zone modes, and choose to shoot in single or continuous drive modes too. When the camera was first launched, silent shutter was only compatible with single shot drive mode, but a firmware upgrade has

amended this. If your EOS R doesn't allow you to combine the silent shutter with continuous drive, you can download the firmware from Canon's website.

You won't find the same silent shutter option in the EOS RP's menu. Instead, you have to set the mode dial to 'SCN' (Special Scene Mode) and then select Silent Mode from here.

The reason Canon have designed it a little bit differently is that the RP is aimed at those photographers taking their first-steps into full-frame photography. As such, they are unlikely to be aware of the side effects of using an electronic shutter in photography.



On the hush hush

Use the silent shutter to stay unnoticed in quiet, candid situations

Silent shutter trade-offs

Common electronic shutter side effects to be aware of

AN ELECTRONIC shutter is slower at processing an image than a mechanical shutter. This is because the camera scans the sensor line by line, not all in one go, and this means there's a risk that fast-moving subjects may have moved from when the sensor readout starts and finishes. This 'rolling shutter' can



lead to objects looking distorted and any lines appearing wavy and bent.

Uneven exposure

THE WAY in which an electronic shutter scans the sensor can lead to 'banding' in images shot under artificial light. If the frequency of the light doesn't match the readout speed of the sensor then there will be an exposure difference between the areas as the light flickers on and off – in other words, you end up with darker bands across the image when the light is off.

Flash: not a bright idea

DUE TO the way that the sensor is scanned line by line with an electronic shutter, you can't use flash – only the part of the image that's being scanned at that time will be illuminated by the very brief burst of light. Switching to high-speed flash can't fix this; the light is rapidly pulsed on and off in this mode, so there will still be periods where the light doesn't hit the sensor.

QUIET FILM

Shooting 'silent movies'

How lenses with STM and Nano USM autofocus technology can make a vital difference

Even though there's no mirror or shutter sound to suppress with when you're shooting video, keeping a lid on noise becomes even more of an issue if you're recording an audio track.

This is especially true if you're using the camera's built-in microphones. Not only will these pick up button and dial clicks, they can potentially record mechanical noises from the lens, such as autofocus and image stabilization. Even the sound of the aperture opening and closing may be audible if you're shooting in an especially quiet environment – although, to be fair, changing the aperture while recording a video isn't recommended as changes in the exposure may also be recorded.

One way to reduce lens noise is to use an STM (Stepping Motor) or Nano USM

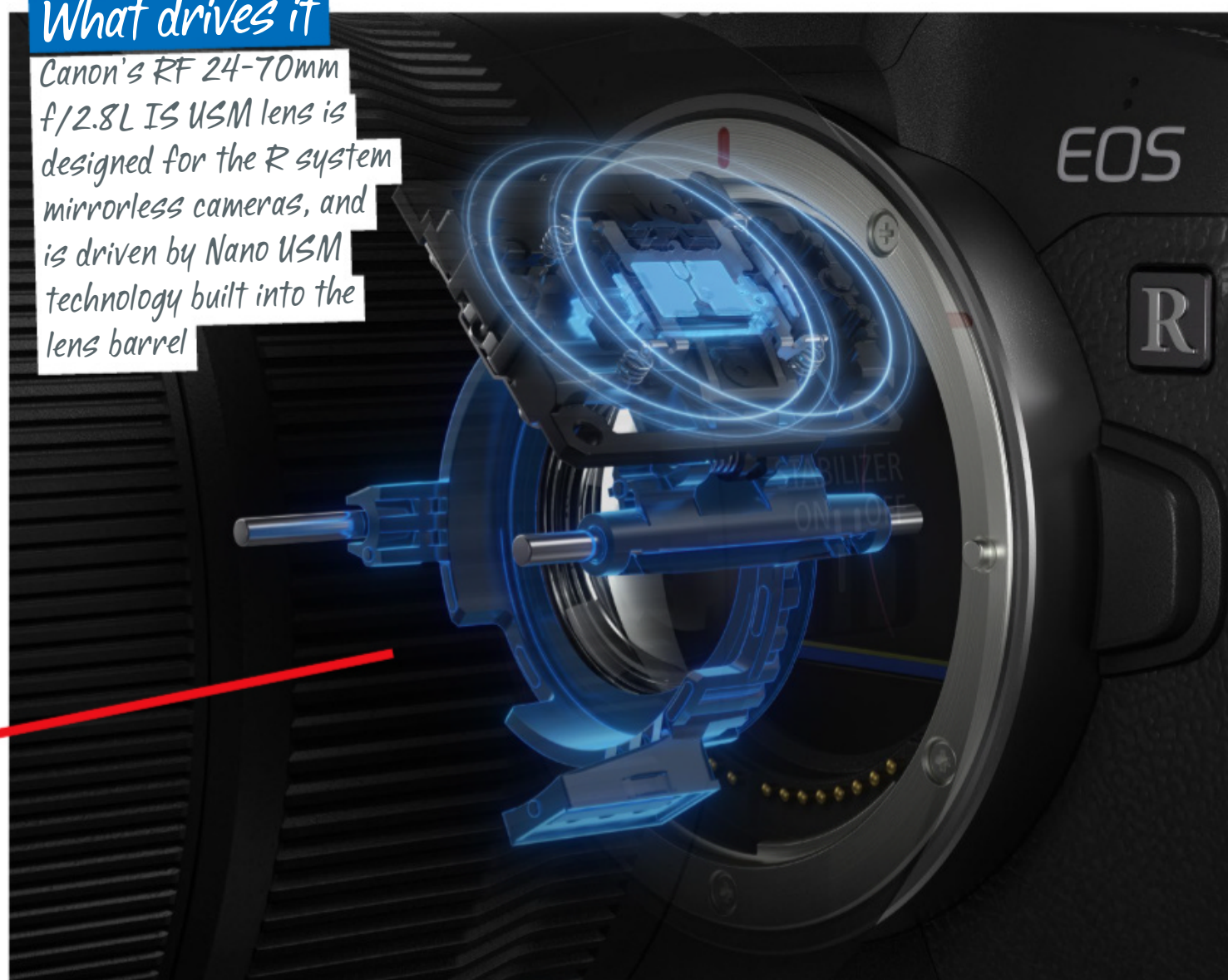
(Ultrasonic Motor) lens. These are designed with video in mind and are much quieter in operation than standard USM lenses. The STM (Stepping Motor) lenses are generally not as fast as USM lenses, as they're designed to produce smooth, near-silent autofocus.

Nano USM focusing technology was first seen in the 18-135mm f/3.5-5.6 IS USM launched in 2016 and made its 'L' series debut in the RF 24-105mm f/4L IS USM. Rather than using a large rotating ring-type AF motor like the majority of professional

USM lenses, it uses a much smaller, thinner unit that fits into the lens barrel itself and which moves the focus lens backwards and forwards. It combines the best bits of USM (high-speed autofocus for stills) with STM (smooth and quiet autofocus for video).

What drives it

Canon's RF 24-70mm f/2.8L IS USM lens is designed for the R system mirrorless cameras, and is driven by Nano USM technology built into the lens barrel



School tip Sound recording level

Capture better audio when you're shooting video

WHEN YOU record video with your camera, the sound recording level is set automatically, but if you need consistency between clips that you're going to edit together later, you can choose to set it manually. Use the level meter as your guide to getting it right; you want the 'peak hold indicator' to sometimes move past the -12db mark for the loudest

sounds. If it reaches 0 then you'll need to reduce the recording level to avoid the sound being distorted.

If your camera has a headphone socket, then it's worth monitoring the audio as you make adjustments. That way you can make sure the subject you want to record isn't too quiet or too loud – and that you're not picking up unwanted noise from the camera.



EOS.S.O.S

Our technical guru is here to help. No Canon conundrum is too big or small. Get in touch today at EOSSOS@futurenet.com

PhotoPlus EXPERT

BRIAN WORLEY

CANON PRO

Brian is a freelance photographer and photo tutor, based in Oxfordshire. He has unrivalled EOS DSLR knowledge, after working for Canon for over 15 years, and is on hand to answer all your EOS and photographic queries



What can I use the W-E1 wireless card for in my Canon EOS 7D Mark II?

Stuart Downs, Cardigan

BRIAN SAYS... The W-E1 wireless card adds two key capabilities to the EOS 7D Mark II. Firstly, you can transfer images and remote control the camera and transfer images to your smartphone or tablet. You'll need to install the Canon Camera Connect app on your device. Secondly you can use the EOS Utility without a cable for tethered shooting or

remote camera control. For both you can use an existing Wi-Fi network, or have the camera create one for you.

If you use the card, then you need to have a CF card in the other slot to store your images as the W-E1 has no storage capability. Also you cannot connect anything to the HDMI or USB ports as this switches off the wireless transmission.



W-E1 wireless card in certain Canon cameras adds the ability to connect to a computer, smartphone or tablet using Wi-Fi



Simulating the manually set exposure in Live View is helpful, but not possible when taking fill-in flash photos like this

When I use Live View (LV), why does the 5D Mark IV only simulate my manually set exposure some of the time?

Tácio Moreira, Brazil

BRIAN SAYS... Like most EOS cameras, including mirrorless, the 5D Mark IV is set to simulate the exposure in LV. Usually it's noticeable with manual exposure, or when significant exposure compensation is used. But there are times the exposure simulation setting is overridden.

If you press the INFO button while in LV you'll see a white icon Exp.SIM on some displays. This is to show the exposure is being simulated in response to the camera exposure settings. This icon switches to dark grey if the exposure simulation isn't active, and one of the most common situations is when a flash is used. This is because a flash is often used in dark

conditions and you wouldn't be able to see to frame the subject. It's less helpful if you're doing fill-in flash in the daytime though.



Top shows the simulated exp, and the lower shows the simulation is deactivated when the flash is on

WONDERFUL JPEGS

Ask Brian!
Confused with
your Canon DSLR?
Email **EOSSOS@**
futurenet.com



Great colours straight from the camera with the right settings for white balance and picture style puts the fun back in photography

Making the most of JPEG

Set up your Canon to produce amazing looking JPEGs straight out of camera

I will draw a parallel with the past, where many people took photos and loved them, yet few processed their own films and prints. So why don't you try making certain choices before you press the shutter, shoot in JPEG and your pictures are ready right after being saved.

Set your camera to JPEG and you're done – if only it was that simple. Your choice of camera image processing settings has a big impact on how your photos look. Get them right in-camera and you've got great files instantly. There are a few settings to consider, exposure, white balance, Picture Style, noise reduction, lens corrections and compression. As cameras have moved on, metering has got more consistent, and I'm using less exposure comp in day-to-day photography. With large

memory cards so cheap, shoot in the fine quality JPEG at full resolution. White balance is important for the appearance of colour, Canon auto WB and colour science is possibly the best out there, so use it. You can also add a touch of warmth by choosing Cloudy white balance, but reset it afterwards.

I find I prefer the look of Fine Detail Picture Style over standard, it has a little less contrast and I prefer the colours. For images that primarily go on screens, devices and minilab prints, use sRGB colour space for colours that look good. If you need to up the ISO, in-camera noise reduction will optimize your shots. Don't disable noise reduction, leave it at the standard. Lens corrections, makes your images sharper and all but removes lens aberrations, yet the same processing

takes twice as long to process with each Raw in DPP.

As for me, I shoot Raw. I like the freedom it gives me and I'm prepared for the work required in post, but this is not the only way to take great photos.



Sports and action scenes, where many hundreds of photos are taken, lend themselves to shooting in JPEG instead of Raw



You can use a USB 2 port on your computer to connect to a camera with USB 3 connections, but data will transfer a bit slower

I've got an old computer with USB 2 ports, can I use it with the USB 3 connection from my EOS 5D Mark IV?

Gina Kiel, Malvern

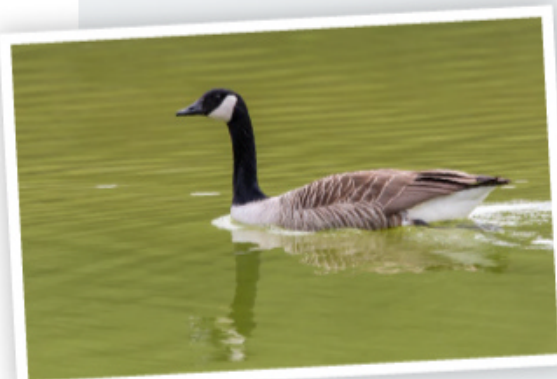
BRIAN SAYS... USB 2 connections operate at a speed of up to 480Mb/s, USB 3 as found on the EOS 5D Mark IV is 10x faster, in theory. The connections are the same, so you can use the USB 3 camera with your computer, but you won't benefit from the faster transfer rate. Generally EOS cameras don't transfer images at the speed that is possible, so you might not see much difference. The key will be if your computer can use the OS required to run the latest editions of the software for transferring or editing your images. Get the software from www.canon.co.uk/support

Would you suggest the EOS 80D or the EOS 77D for sports and wildlife with a Canon EF 100-400mm?

Alexander Harris, Keswick

BRIAN SAYS... You might think the EOS 77D is close to the EOS 80D, they both have the 45-point AF sensor, and 24Mp sensor. But that's where the similarity ends. The EOS 77D was an updated EOS 760D, so closer to the specs and performance of the EOS 800D. The EOS 80D has a more configurable AF system that is better able to track moving subjects. EOS 80D custom settings allow the 45-point AF area to be targeted to a single point for the initial focus, making it quicker for AF to lock on to wildlife and sports action. It has a faster continuous frame rate, and balances better with the EF 100-400mm lens. You should consider the newer EOS 90D also.

EOS 80D has great control of the 45-point AF system and that makes it suitable for wildlife and action



Can you take a still while filming a movie clip?

Adrian Thorne, Oxford

BRIAN SAYS... Initially EOS DSLRs with Movie mode allowed a still image to be taken – it caused a 1-second gap in the movie clip. For more recent cameras the option to capture a still while filming has been removed. Some cameras allow a still image to be extracted from movies shot in 4K.

How do you choose a Kelvin temperature white balance on the EOS 450D?

Phillip Earnshaw, Kelso

BRIAN SAYS... The EOS 450D doesn't include Kelvin temperature as one of the white balance presets. Try using the Daylight or Tungsten white balance presets, and they cover a limited range of kelvin values. Or shoot in Raw and set the Kelvin temp in DPP or your chosen Raw software.

Why doesn't my EOS RP have the option to record 4K, but the specs says it will?

Steve Sandham, Barrow-in-Furness

BRIAN SAYS... The movie record size setting in the red SHOOT menu changes depending on the position of the mode dial. Only when Movie mode is selected on the mode dial, does the menu for 4K movie recording display. Use SD cards with fast write speeds for 4K.



EOS R info display fields can be customized, ensure the display is active when using GPS

I use Bluetooth to get the GPS from my phone in my EOS R, where can I see the info in the photos?

Keith Melvin, Bridgnorth

BRIAN SAYS... If the GPS symbol is shown on your camera display, it indicates the phone is connected for GPS, and the info will be stored in the metadata of your shots. Press the INFO button to show the extended info and scroll down to the GPS info display. EOS R displays are highly configurable, so ensure you have the INFO display active, and that GPS info field is shown.



Setting 2nd curtain sync on the Speedlite 430EX III-RT can be done on the flash or the camera

How do you set rear curtain sync flash on the Speedlite 430EX III-RT?

Bryony Appleford, Teeside

BRIAN SAYS... Rear curtain sync, where the flash fires at the end of the exposure, is termed second curtain sync by Canon. If the flash is on the hot shoe, you can select second curtain sync on the flash itself, or in the camera's flash menus. Canon's wireless flash system doesn't support second curtain sync when using a flash off the camera. You also need to use a shutter speed slower than 1/30 sec for most, or first curtain sync will be used.

TIME-LAPSE CAPTURE

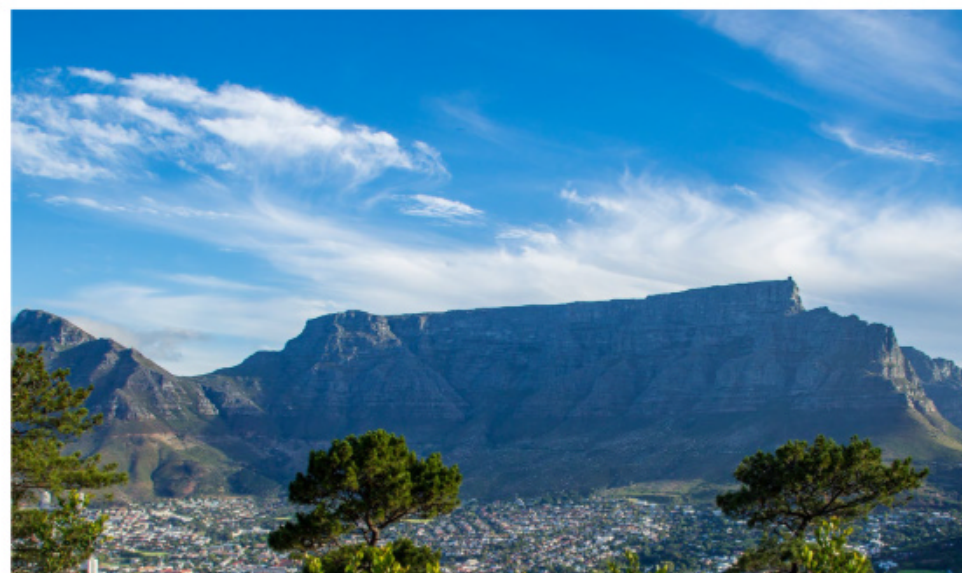
“I have always wondered how to shoot a time-lapse. I have a Canon EOS 80D and would like a few tips please...”

Alison Kent, Milton Keynes

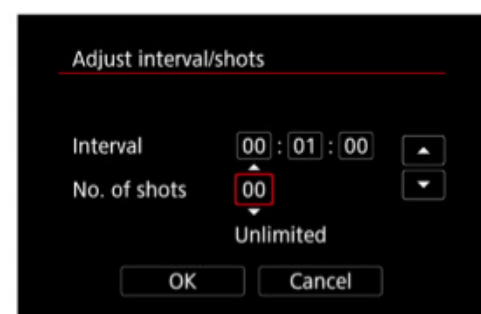
BRIAN SAYS... A time-lapse is when a series of stills are taken at a set interval and combined in to a movie that shows a sped-up version of the scene. Popular subjects for time-lapse are clouds moving over a landscape, flowers opening, buildings being constructed and so on. Due to the increased use of moving

images, time-lapses are commonplace online, and your EOS 80D is ideal for the task. When shooting time-lapse keep the exposure consistent by using manual exposure if the light is constant. In variable light, Auto ISO and Aperture Priority keeps the depth of field consistent.

An EOS 80D includes two ways to create time-lapses, one using Movie mode and one with a stills mode. The simplest method is to use Movie mode, as the camera will create the finished movie for you. Just set the camera to Movie mode and enable the time-lapse movie in the red SHOOT5 menu. Then press the INFO button to be able to



Tracking the passage of clouds over a landscape over set period of time is a popular subject for time-lapse photography



With Unlimited, shooting stills at 1 min intervals last until the battery runs out or memory card fills up

set the interval between the individual pictures, and the number of shots you want. The camera shows you how long the time-lapse will take to capture, and how long the finished movie will be. It's a good idea to shoot a bit longer than you think you may need.

The second option is to shoot individual stills using the timer. This allows images to be

captured at full resolution, Raw images even, and they are stored on the card. Using this you'll have to assemble the frames on your computer to make the time-lapse clip, but it is possible to pan around the frame and zoom in at the editing stage as you'll have much more resolution than with the camera created time-lapse movie clip.

RATE MY PHOTO

Nuthatch

BARRY RASBERRY, KING'S LYNN SAYS... This photo was taken in my back garden from my 'bird hide' which doubles as my conservatory, or is it the other way around? After seeing other wildlife images taken with a flash, it was my intention to give the technique a try. Using a Speedlite 580EX on my camera I set the exposure for the ambient light, so that the image was nearly but not quite dark and set the Speedlite to ETTL and High Speed Sync. I preset the focus manually as birds tend not to wait around for a camera to focus accurately enough for the sharp image that we all strive for.

BRIAN SAYS... A great shot of the nuthatch in your garden. One of the challenges

with this kind of shot is freezing the motion of the birds – they're so fast. Using a Speedlite with high speed sync can create slightly soft images, as the flash fires over a longer time to illuminate the whole sensor in high speed sync mode. For your shot, using 1/200 sec with f/8 might get even sharper results, as then the flash duration is thousandths of a second, not 1/250 sec.

Apart from the technical, the composition is great, the bird is isolated from the background and you have the catchlight in the eye. I would try reducing the flash exposure compensation a little or darken the branch in post as it's a little bright. I look forward to your results.

Get critiqued!
Email photos to
EOSSOS@futurenet.com
with the subject
'Rate My Photo'

Lens	Canon EF 70-300mm f/4-5.6 IS II USM
Exposure	1/250 sec, f/7.1, ISO100



CLASSROOM

Keep it classic. Well, not that classic. Forget the schoolroom, these lessons are friendly and informal. Courses include full workbook and lunch (flash includes practical model session).

EOS for Beginners

Beginners | Max. 12 | £125

This essential one-day course is the place to master the basics in order to really improve your photography.

DATES

London (Victoria) NEW!	21/02/2020
Oxford (Tackley)	26/02/2020
Canon HQ (Reigate)	27/02/2020
Southampton NEW!	26/03/2020
London (Victoria) NEW!	06/04/2020
Mansfield (M1 J28) NEW!	29/04/2020
Bristol (M4/M5) NEW!	15/05/2020

Digital Photo Professional

Beginners & up | Max. 12 | £125

Learn how to use the many tools of Canon's free RAW editing software to enhance what you capture.

DATES

London (Victoria) NEW!	22/02/2020
Canon HQ (Reigate)	28/02/2020
Peterborough	27/03/2020
Chesterfield NEW!	24/04/2020

Flash for Beginners

Intermediate | Max. 10 | £160

Ready to take your imagery to the next level? Learn how to add some light!

DATES

Canon HQ (Reigate)	02/03/2020
Cardiff (Barry) NEW!	25/03/2020
Princes Risborough NEW!	24/04/2020
Stoke-on-Trent (Trentham)	30/04/2020

New for 2020

- **NEW** classroom locations including central London, Bristol, Southampton, Chesterfield and Preston.
- **NEW** practical course notes to reinforce your learning once you're back home.



PRACTICALS

For the trigger-happy. Learn hands-on in a small group in a pretty place. Simple. All practical courses include a comprehensive pre-course video tutorial and course notes.

Get off Auto

Beginners | Max. 5 | £175

Same core content as our classroom course, but learning hands-on with tailored tuition from your tutor.

DATES

London (South Bank)	09/03/2020
Cotswold Wildlife Park	20/03/2020
Savill Garden (Berkshire)	15/04/2020
Crich Tramway (Derbyshire)	23/04/2020



Mastering your EOS: Wildlife

Intermediate | Max. 5 | £175

Step up your skills and take full control of your EOS camera, whilst learning techniques for wildlife photography.

DATES

Cotswold Wildlife Park	27/04/2020
WWT London Barnes	02/05/2020
WWT Slimbridge	13/05/2020
WWT Arundel (W Sussex)	03/06/2020

Close-up & Macro

Intermediate | Max. 6 | £150

It's all in the detail, and you'll learn how to showcase the natural world in all its beauty on this one-day practical.

DATES

RHS Wisley	05/05/2020
RHS Hyde Hall	16/05/2020
Ness Gardens (Liverpool)	11/06/2020
Savill Garden (Windsor)	16/06/2020

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G E A R

*The latest Canon cameras and photo gear tested.
Independent advice to help you buy smarter*



Ben Andrews
Lab Manager
ben.andrews@futurenet.com

Welcome...

THERE'S something for everybody! We get to test out the new mirrorless/DSLR hybrid Canon EOS-1D X Mark III. Check out page 92. We also fully test ten Canon standard zooms, both APS-C and full-frame, page 100. And we have two mini tests this issue: one testing the best camera phones (page 96) and the other testing camera remotes (page 98).

HOW WE TEST



Lens tests are carried out with Imatest suite, with specially designed charts and data analysis to test lens performance



We test cameras in laboratory conditions using DxO Analyzer hardware and software to check dynamic range and image noise

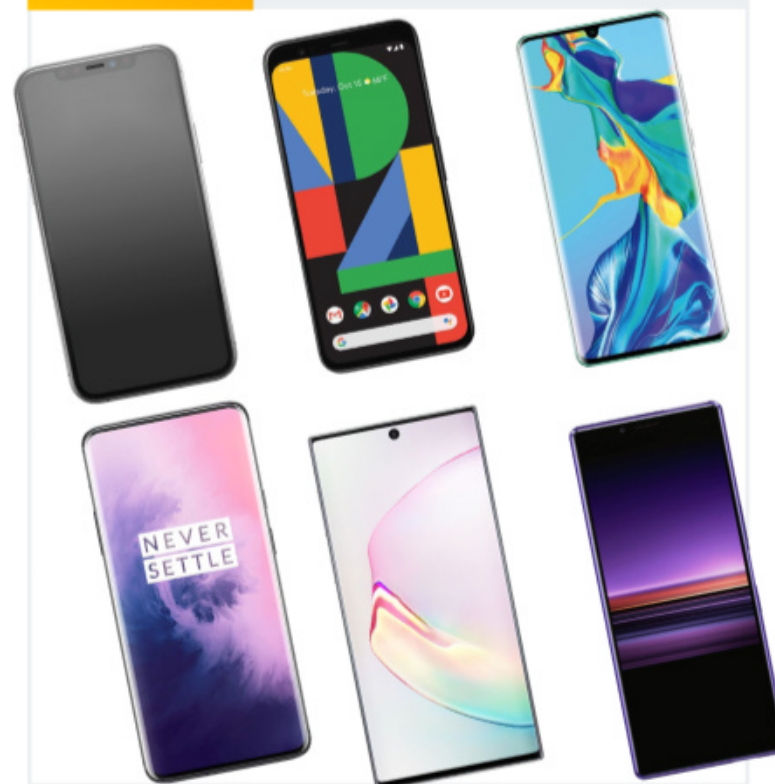
PAGE 100 CANON STANDARD ZOOMS



PAGE 92 CANON EOS-1D X Mark III



PAGE 96 CAMERA PHONES



TESTS & AWARDS

WHEN WE test Canon EOS cameras, lenses, photo gear and services in *PhotoPlus*, we tell it like it is. We're 100 per cent independent and we use our in-depth lab tests to find out how kit really performs and compares. Here are our main awards...



Buy for the best combination of quality and value



Only the best of best win our coveted award



CANON EOS-1D X Mark III

It's a hybrid EOS DSLR/mirrorless for pros, so is the new 1D X Mark III now the most advanced camera in the world?

The new Canon EOS-1D X Mark III has a lot to live up to – while the world of professional sports photography is still dominated by DSLRs (with 70% of pros at last year's Rugby World Cup using Canon DSLRs), mirrorless cameras, like the Sony A9 II, have become strong and viable photographic tools.

Thankfully, Canon's new flagship camera has delivered a true hybrid DSLR/mirrorless camera that packs leading-edge technology. There's a new image format and memory standard to a truly innovative new control input that will almost certainly become the new norm for cameras that shoot action. Not only is the 1D X

Mark III set to steal the best pro camera crown, it's also attempting to become the best DSLR for the foreseeable future.

While the EOS-1D X Mark III is brimming with the latest technology, it's built around one fundamental piece of throwback

The 1D X Mark III's body is the same ergonomically, but now weighs 100g less than the 1DX Mark II

Canon's new deep learning AF system enables the 1D X Mark III to track subjects with supreme accuracy

hardware: an optical viewfinder. Mirrorless may indeed be the future of photography, but right now a lag-free electronic viewfinder (EVF) only exists in the foreseeable future.

Even the best EVF suffers from lag. Therefore there has to be a lag, even if it's only a matter of milliseconds, and in those milliseconds, a DSLR with its lag-free optical finder can take 2 or 3 images before the EVF has even displayed the action.

So the 1D X Mark III features an optical viewfinder (OVF) which can shoot 16 frames per second (mechanical shutter) using a 400,000-pixel metering sensor in conjunction with a dedicated DIGIC 8 processor, with 191 AF points (155



// The camera can shoot 20 frames per second using the full 20.1 million-pixel readout //

// The 1D X Mk III gets a new DIGIC X processor: this is a whole new family of processors for Canon cameras //

The new 1D X Mark III also gets a new processor: the DIGIC X. This is a whole new family of processors for Canon cameras, which will be used across the board and fine-tuned to each individual product (see X Marks The Spot, page 94).

This plays a big part in the Canon EOS-1D X Mark III's most talked-about party trick: deep learning AF. Or, to give its official name, EOS iTR AFX. This deep learning algorithm enables the AF system to teach itself far quicker than could be physically programmed by human engineers.

Canon used the image databases of all the major photo agencies, as well as its own ambassadors, to supply the algorithm with millions of reference images. EOS iTR AFX was then able to teach itself how to recognize human figures – and specifically how to prioritize the human head, regardless of whether the face is visible, looking the other way, or even obscured by goggles or helmets. However, it's not true AI as the name 'deep learning' suggests, as it's not continually learning; it has already done all the learning it will do!

New image format

The Canon EOS-1D X Mark III really is the future as it introduces a new image format: HEIF files (pronounced 'heff'). The format is based on the H264 codec, this 10-bit format offers superior fidelity than 8-bit JPEGs and is four times more efficient, meaning that you can capture images with Four times the amount of data in the same filesize – though, thankfully the camera still supports JPEG as well as Raw imaging.

Canon knew that it had fallen behind in the video sphere and has



James Artaius / Digital Camera World

of which are cross-type). Using the OVF, the camera is capable of tracking with face detect AF.

However, when switched to Live View, the camera can shoot 20 frames per second (mechanical or electronic shutter) using the full 20.1 million-pixel readout of the image sensor. And this is combined with the power of the all new DIGIC X processor and an enormous 3869 Dual Pixel CMOS AF points. In Live View, the 1D X III is capable of full eye detect AF (using the same tech as the EOS R).

New sensor, new processor

Did you say the new sensor size is only 20.1Mp? Yes, but Canon assures us that not only is 20Mp the sweet spot for optical performance – dynamic range, high ISO, Dual Pixel and so on – but this new 20.1Mp sensor actually produces sharpness and resolution equal to a pro 24.2Mp sensor.

That's because traditional low pass filters used by pro sensors (to get rid of moiré) introduce a layer of softness to images. For the sensor in the 1D X Mark III, Canon redesigned the filter; where a

traditional low pass filter employs dual-layer, four-point subsampling, Canon's uses quad-layer, 16-point subsampling and combines it with a Gaussian distribution technique. We'll be carrying out proper lab tests soon, but the images certainly passed the eyeball test and do seem to 'pop' with clarity.

With face, eye and head tracking, the 1D X Mark III is as capable at portraits as it is fast action



The Canon EOS-1D X Mark III gets a new Smart Controller (under AF-ON) for a faster, responsive way to move the AF



finally caught up to the level of its contemporaries. The 1D X III is capable of full-width internal 12-bit 4K Raw recording at 5472x2886 (oversampled 5.5K) up to 60fps (with a 2600Mbps bitrate) – though AF/E and tracking are only supported up to 30fps (1800Mbps bitrate). In addition to a selection of 4K crops, it also supports 1080p video at up to 120fps with AF/E and tracking. Canon Log offers 4:2:2 10-bit with HEVC using the H.265 codec, with a claimed 12-stop dynamic range (at a recommended ISO400).

The camera can record Raw and MP4 video simultaneously to two separate memory cards – which are now dual CFexpress cards. These are a true revelation for shooting, particularly in terms of stills, with a virtually unlimited buffer capable of capturing bursts of up to 1000 Raw or Raw + JPEG images. For reference, you can hold the shutter down for a two-minute burst, and the buffer still won't fill up. It's utterly insane to say the least.

CFexpress cards enable bursts of over 1000 Raw + JPEG images to be taken at a time!

SPECIFICATIONS

SENSOR 20.1Mp full-frame CMOS sensor

IMAGE PROCESSOR DIGIC X

AF POINTS Optical viewfinder – phase detection using AF-dedicated sensor, 191 points (155 cross-type) / Live View – Dual Pixel CMOS AF, 3869 points

ISO 100-102,400 (exp. 50-819,200)

MAX IMAGE SIZE 5472x3648

METERING ZONES Evaluative, partial, spot, centre spot, AF point-linked spot, multi-spot, centre-weighted average

VIDEO 4K Raw, 4K DCI, 4K UHD, 4K DCI Cropped at 23.98-59.94fps / 1080p

VIEWFINDER Pentaprism 100%, 0.76x

MEMORY CARD 2x CFexpress 1.0 Type B

LCD 3.2-inch touchscreen, 2.1million dots

MAX BURST Optical viewfinder 16fps mechanical shutter / Live View 20fps

CONNECTIVITY Wi-Fi (2.4GHz), USB-C (USB 3.1 Gen 2), Bluetooth, HDMI mini, external microphone, headphone jack

SIZE 158x168x83mm

WEIGHT 1250g

Handling & performance

It also gets the new Smart Controller – which complements the traditional joystick for moving your AF points around at speed. It works a bit like an optical mouse, turned upside-down – you can whizz your thumb across it and ping the AF point around the screen, or viewfinder, as fast or as slow as you want to. It's so good that it will inevitably find its way to other action-oriented Canon bodies in the future.

While the body feels almost exactly the same in layout, the

magnesium alloy body has actually been re-engineered, with some changed internal components meaning that it's structurally more sound while also having some weight shaved off. So the camera is actually stronger, but also 100g lighter than the Mark II. It's still a solid unit, and size and heft are really non-factors when it comes to pro bodies, given the size of lenses you'll typically be using.

The rear LCD is now a touchscreen with an increased resolution of 2.1 million dots (versus 1.6 million on the Mark II).

X MARKS THE SPOT

Every speedy machine has a fast engine hiding under the bonnet...

THE NEW Canon EOS-1D X Mark III comes equipped with an all-new DIGIC X processor. When ultimate precision tracking is required, shooting in Live View enables the camera to capture a ferocious 20 frames per second (using either the mechanical or electronic shutter), powered by the brand new DIGIC X processor using the full 20.1 million-pixel readout of the image sensor, combined with an enormous 3869 Dual Pixel CMOS AF points. In Live View, the 1D X Mark III is

capable of full eye detect autofocus, using the same tech as the Canon EOS R's latest firmware update. This all means that the 1D X Mark III's new DIGIC X processor is a whopping 380 times faster in terms of computational processing and 3.1 times faster at image processing than the previous 1D X Mark II – remember that's a pro camera that has dual processors, whereas this only has one. Yes, the new DIGIC X processor is that fast!



The 1D X Mark III's DIGIC X processor is 380 times faster than the two processors in the 1D X Mark II

James Artaius / Digital Camera World



// It's a true hybrid system that moulds to the needs of individual professionals //

same tech as eye detection on the EOS R, and seems to perform just as well as it.

The Canon EOS-1D X Mark III is every bit the professional powerhouse camera you would expect it to be. Unlike other Canon products, however, this one really doesn't hold back and introduces some serious next-generation technology that will fundamentally improve your shooting experience, your images and your workflow.

Offering the best of both worlds, with the sheer speed of an optical DSLR with the advanced accuracy of mirrorless, it's a true hybrid system that moulds to the needs of individual professionals and individual shooting scenarios.

While new mirrorless cameras have the tech of today, the 1D X III has the tech of *tomorrow* – so if you're looking at a professional camera that will last, the Canon EOS-1D X Mark III is the more compelling choice.

The Canon EOS-1D X Mark III will be available from the end of February for \$6499/£6499. Aware that CFexpress cards are currently tricky to come by, the Canon is also partnering with manufacturers to offer a bundle including a card and reader, which will determine the final release date. **PP**

It's not the most pixel-dense display out there, and it is still a fixed screen – both of which are somewhat disappointing, given that the LCD is the only way to access the camera's high-end Live View capabilities, and especially when it comes to shooting video.

While some might scoff at the Canon EOS-1D X Mark III only having a 20.1Mp sensor, the proof is definitely in the pictures. We can't say whether they're really as sharp as a 24Mp sensor would produce, but they're certainly more than sharp enough, and the increased dynamic range and ISO

Even at 600mm with lightning-fast cars, the 1D X Mark III's clever AF and head tracking ensures that the driver stays sharp

(both improved by a stop, according to Canon) results in meaty images with a lot of play in them – even in the JPEGs, but especially in the HEIF files.

The 4K video is crisp and clean, and we're so happy that Canon has finally cracked the full-frame (well, full-width) cropping problem.

The new deep learning AF really does feel like it makes a difference. When photographing cars zipping round the track, the camera knew to prioritize the drivers' heads rather than the car bodies,

In Live View, though, the full power of Dual Pixel AF and the DIGIC X processor mean that subtle focus shifting and high contrast focus is superior, and eye detection becomes available. This uses the



THE EARLY VERDICT

Too early to tell? Not really, this camera is set to impress on its release

With the Canon EOS-1D X Mark III, the typically cautious company has released a camera packed with leading-edge tech, including deep learning AF, an optical Smart Controller, HEIF and HDR PQ support, CFexpress, 12-bit internal 4K Raw, head tracking and so much more.

Canon has combined the advantages of DSLR and mirrorless to produce a hybrid body that can shoot according to what the situation demands. While it doesn't quite deliver everything on our wish list, it does so much that no other camera can – this is a real glimpse into the future. **PP**

Camera phones

Smartphones have killed the conventional compact camera, and these superb snappers make it easy to see why

THE LAUNCH of the new Apple iPhone 11 models shook up the camera phone market – again! So choosing the best camera phone just got even harder. With multi-camera arrays, 48-megapixel sensors, time-of-flight depth cameras and zoom capability, camera phones can rival some budget cameras.

We know that even the best smartphones can't honestly challenge proper DSLRs or mirrorless cameras for quality, but they're easily a match for cheaper point and shoot cameras – and they have two unique selling

points: one, they're always with you; two, you can share images and videos instantly.

Camera phones have to rely on small sensors and – usually – fixed focal length lenses, just to keep the slim profile that makes them pocketable. But the latest multi-lens arrays and computational photography from the likes of Google, Apple and Huawei are pushing boundaries when it comes to low-light shooting and dynamic range. In addition, Huawei is even featuring a 5x optical zoom, using a prism to create a kind of 'periscope' lens system, lifting the lid on versatility never seen before in the smartphone market.

FIVE THINGS TO LOOK OUT FOR

All these pocket picture-machines are impressive, but here are five things to keep an eye on when shopping around...

01 Megapixels aren't the be all end all

40+ megapixel sensors may sound superior, but they often pixel-bin down to 10/12Mp in normal shooting modes.

02 A variety of 'lenses'

Phones with multiple rear-facing cameras fronted by different focal-length lenses enable optical 'zoom'.

03 Additional features

Current flagship phones are capable of advanced HDR and sky-high ISO sensitivities – useful for low-light shots.

04 Oversharpening

Image processing is now so powerful images can look far too sharp! The best smartphones process with restraint.

05 Be battery savvy

Steer clear of power-hungry apps and most phones can snap more shots per charge than a typical compact camera.

Apple iPhone 11 Pro

From £1049/\$999 www.apple.com

★★★★★

THE 11 Pro's triple-camera array is hardly cutting-edge, but it works brilliantly. The colours, tones and exposures are consistent across all three cameras – but it's Apple's approach to processing that sets the iPhone 11 Pro apart from the others. Where flagship phones like the Samsung Note 10 and the Huawei P30 Pro tend to produce with aggressive HDR, noise reduction and sharpening the iPhone's images look 'true-to-life'.

The 12Mp, 13mm-equivalent ultra-wide camera is just ace for travel photography, landmarks and spectacular interiors. We like the regular iPhone 11 Pro best – the iPhone 11 Pro Max has the same cameras but it's just a bit big, while the regular iPhone 11 is cheaper but doesn't have the 52mm telephoto lens.



PhotoPlusVERDICT

PROS: The right choice for quality; versatile triple camera setup

CONS: Not 5G; P30 Pro offers more optical zoom

WE SAY: A premium price tag for a premium product

OnePlus 7T Pro

£699 www.oneplus.com

★★★★★

THE ONEPLUS 7T Pro features a triple camera array, headed by a 48Mp half-inch sensor and a wide f/1.6 lens. There's also an 8Mp telephoto camera giving 2.87x zoom, plus a 16Mp ultra-wide camera capable of a 117-degree field of view. The primary and telephoto modules benefit from OIS. Like the iPhone 11 Pro and Pixel 4, the OnePlus 7T Pro has a night mode: Nightscape. This long-exposure mode can keep the shutter open for as long as 30 seconds.

Despite the main camera using a 48Mp sensor photos are taken at 12Mp unless you fire up the Pro mode. This pixel-binning produces shots with lower overall resolution, but better dynamic range and noise handling. The 7T Pro also features a 6.67-inch, 90Hz refresh rate and high 500ppi pixel density display.



PhotoPlusVERDICT

PROS: Versatile cameras; class-leading screen specs

CONS: No waterproofing; limited improvement over previous model

WE SAY: An amazing bang-for-your-buck phone that looks sublime

Google Pixel 4 XL

£829/\$899 www.store.google.com



THE PIXEL 4 XL's 28mm-equivalent camera features a 12Mp sensor, dual-pixel and phase-detection autofocus, OIS and a f/1.7 max aperture. This is the first Pixel with more than one rear-facing camera, as the Pixel 4 XL gets a 16Mp secondary camera with a 45mm focal length, equating to a 1.6x zoom.

In normal auto mode, the Pixel 4 XL captures punchy images with plenty of detail. Compared to the iPhone 11 Pro, the Pixel exposes scenes a little darker. Dynamic range is great, with the Pixel doing a good job of evening out highlights. But when the lights go down, the phone generates more noise than its rivals, although this is a product of Google's more restrained noise reduction.



PhotoPlusVERDICT

PROS: Great image quality; awesome Astro mode
CONS: 'Only' two rear-facing cameras; expensive; slim storage
WE SAY: Lots going for it, but you can get more for less elsewhere

Huawei P30 Pro

£800 <https://consumer.huawei.com>



THERE'S A lot to love about the P30 Pro. It's a camera phone that has it all: superb low-light abilities, a depth-sensing Time of Flight camera, and unbelievable zoom capabilities, courtesy of an 8Mp telephoto camera that provides 5x seamless optical zoom. Add the gorgeous 6.47-inch HDR10-capable screen and the P30 Pro is a desirable phone that performs well in virtually any situation.

Judged purely on image quality, however, the P30 Pro is no longer on top. While HDR that preserves every pixel of highlight detail is technically impressive, it can leave some high-contrast shots looking flat, while aggressive sharpening and noise reduction cause some shots to look slightly painterly.



PhotoPlusVERDICT

PROS: 5x optical zoom; best bokeh; awesome low-light shots
CONS: Strong noise reduction and HDR; support uncertainty
WE SAY: A strong contender let down by its strong processing

Samsung Galaxy Note 10 Plus

From £999/\$1100 www.samsung.com



THE Galaxy Note 10 differs from its S10 sibling by including a stylus that slots into the phone's base. It delivers 4096 levels of pressure sensitivity and can be used for a variety of pen-specific inputs. The Note 10 Plus's quad rear cameras include a 12Mp camera, complete with Dual Pixel phase-detection AF and OIS. The 12Mp, 52mm-equivalent telephoto camera also has OIS and provides 2x optical zoom. There's also a 16Mp, 12mm-equivalent ultra-wide, and a Time of Flight camera.

Auto mode delivers a fantastic experience, while Samsung's Auto HDR feature captures plenty of detail. It looks great on the 6.8-inch screen, but on a computer, some images have a tendency to look over-sharpened, while the impressive HDR can be too aggressive.



PhotoPlusVERDICT

PROS: Gorgeous display; pen input is a dream for Lightroom Mobile
CONS: Big and expensive; image processing can look unnatural
WE SAY: Beastly in size and build, but maybe too big for most

Sony Xperia 1

£850/\$950 www.sony.co.uk



THIS ONE draws you in with a stunning 4K HDR 21:9 screen. Round back there's a triple-camera setup consisting of wide, telephoto and ultra-wide cameras. The main 12Mp camera features a 26mm equivalent focal length, an f/1.6 aperture, Dual Pixel PDAF and five-axis OIS. It's flanked by a 12Mp, 52mm-equivalent telephoto camera, also sporting Dual Pixel PDAF and OIS. Finally, the ultra-wide camera is equivalent to 16mm.

All cameras grab punchy shots, with healthy saturation and detail. Low-light shots look the part, with respectable amounts of noise. Unlike flagship phones from Samsung and Huawei, the Xperia 1 doesn't artificially brighten dimly lit scenes – it keeps them dark and moody. However this is partly symptomatic of the Xperia 1's limited dynamic range.



PhotoPlusVERDICT

PROS: Standout screen; premium design; class-leading video
CONS: Still image quality not the best; mediocre battery life
WE SAY: Not the best shooter here, but delightful to look at

Camera remotes

Stay out of sight, avoid camera shake, and program a timelapse: it's all possible here

T HERE ARE times when it's more beneficial to have a more hands-off approach to photography. Physically pressing a shutter button during focus-critical macro work, or a long exposure shot, could cause slight motion blur – enough to ruin your shots.

Alternatively, you may need to trigger from a distance to avoid casting a shadow over your subject, or in the case of wildlife, to keep yourself concealed from any potentially shy subjects.

Remote releases used to take the form of plunger-type cables that screwed directly into a shutter button, but

these days you can opt for various wireless solutions. Basic infra-red button remotes are good, but more advanced radio frequency triggers offer a much greater range and don't require a direct line of sight. Then there are Wi-Fi adaptors that plug into your Canon and create a wireless hotspot, so your smartphone or tablet can control your Canon via a handy little companion app.

We've selected six remotes that all offer something a bit more special than just a basic remote shutter release, meaning you'll be able to find one that suits your own personal needs and style of photography.

FIVE THINGS TO LOOK OUT FOR

As with any camera accessories, it's best to do your homework to ensure you get the right remote for you and your Canon

01 Wired or wireless?

Radio frequency wireless remotes are now affordable, but if you don't need wireless range, a wired remote will give an uninterrupted connection and needn't sacrifice features.

02 Wi-Fi

The next step up from an RF remote, Wi-Fi triggers harness the power of your smart device for comprehensive remote camera control, but establishing an initial connection can be a faff.

03 Extra features

Remotely triggering your Canon is just the start. In addition to time lapse features, some remotes also pack auto bracketing, HDR, and focus stacking modes.

04 Cable concerns

Even wireless remotes will have a receiver that plugs in to your Canon. Some include a selection of sync cables to suit multiple brands, while other remotes may have a Canon-specific model.

05 DIY hacks

Forgot your remote? There's always your camera's self-timer; some cameras have a built-in intervalometer.

CamRanger Mini

£229/\$200 www.camranger.com



THE ORIGINAL CamRanger was a clever box of tricks that connected via USB to almost all Canon DSLRs, emitting a Wi-Fi signal so you could wirelessly connect an Android or Apple device to use as a remote control. This new Mini version does the same, and is about half the size of the original. Remote range is increased to 120m, but battery life is reduced at 3-4 hours.

Once you've downloaded the app, you can wirelessly stream your camera's Live View, then tap to focus and capture a still with no perceptible lag. There's a 1-2 second delay before the image is viewable on your smart device, but it's rarely annoying unless you're shooting at a fast pace. Extra shooting features really add value: use the intervalometer to program timelapses that can last



up to 12 hours, thanks to the low consumption in this mode. Multi-shot HDR sequences can be shot independently or in a timelapse, and there's an auto focus-stacking mode.

PhotoPlus VERDICT

PROS: Compact; feature-packed; slick connection and interface

CONS: Can struggle if the camera isn't set to an appropriate mode

WE SAY: The Mini is a worthy successor to its older sibling

Hama Timer Remote Release DCC System Base

£50/\$44 uk.hama.com



HAMA'S ENTRY is designed with compatibility in mind: this wired remote can be hooked up to various Canon DSLRs. The slight catch is you'll have to purchase the cable for your camera model separately, for an extra £10/\$10. Once connected, the remote can be used to program a timelapse sequence, with customizable start time, total number of shots, exposure time and interval duration.

In addition to its timelapse capabilities, the remote can also double as a conventional remote shutter release, for single-shot and continuous shooting.

Beng part of Hama's DCC System also opens up other triggering possibilities. Hama's IR Remote Release with



Photoelectric Detector (£70) comprises an infrared transmitter and receiver. Place them opposite each other, up to five metres apart, and your camera will trigger when a subject breaks the beam.

PhotoPlus VERDICT

PROS: Fairly easy to use; compatibility; other accessories

CONS: Requires extra camera connection; no timelapse ramping

WE SAY: A simple and effective piece of kit with fun features

Foolography Unleashed

£165 www.foolography.com



CAMERA remotes don't get much smaller than Foolography's Unleashed. Our Canon C1 sample is a tiny 35x13mm dongle that plugs into the camera's remote socket, and barely protrudes. It's compatible with a few high-end Canon DSLRs, while the C2 version caters for lower and mid-range models.

You control everything from a slick app, available for iOS and Android. This enables remote stills and video shooting, with full control over your camera's shooting settings, along with a comprehensive timelapse mode with exposure ramping options. There are even preset algorithms to automatically adjust exposure for sunrises or sunsets.

With such a pared-down physical design and a reliance on camera power, it's not surprising



there isn't enough oomph to wirelessly transmit your camera's Live View, but you can review captured stills, and the whole system responds quickly.

PhotoPlusVERDICT

PROS: Small; well-designed app;

slick; can use camera's power

CONS: Can't remotely transmit Live View; limited compatibility

WE SAY: Very compact yet flawless in operation: the future of

Hähnel Captur Timer Kit

£79/\$92 www.hahnel.ie



THIS convenient remote is all about long exposure and timelapse shooting. You can shoot a sequence that's up to 100 hours long and split down to one-second increments. There's a secondary timer that'll repeat the first sequence, also with controllable frequency.

The Captur can be used as a remote release, with the 2.4GHz wireless connection giving a range up to 100m, while Digital Channel Matching guards against unwanted signals. The wireless remote communicates with your camera via a separate hotshoe-mounted receiver unit, which connects via a sync cable. It's a bulky combo compared with the CamRanger Mini; but no other device, like a phone or tablet, is required, and the radio frequency connection works instantly.



You will need to spend some time with the instructions, as the controls and basic info screen result in a cryptic interface that requires practice to master.

PhotoPlusVERDICT

PROS: Hassle-free, long-range radio frequency link; easy to use

CONS: Study is needed to interpret the display; bulkier than some

WE SAY: Can be a bit tricky to use, but a decent budget option

Manfrotto Digital Director

£199/\$230 www.manfrotto.co.uk



THE DIGITAL Director doesn't resemble a typical remote: it's designed as a form-fitting case that holds an iPad, which you then use as the control. Powerful processing hardware is built into the base of the Director; here you'll also find space for four AA batteries. A mains adaptor is also included.

This isn't a wireless remote: your iPad docks with the Digital Director's Lightning connector, and this in turn connects to your camera via a USB lead.

You're tethered to your camera, but you get an instant response. A well designed app displays a plethora of controls. You get auto exposure bracketing, intervalometer, timelapse and video modes – all are simple to use. You can even use the Digital Director to remotely control up to 13 select Manfrotto light panels.



Drawbacks? It's only compatible with an iPad, but various models are supported, and the tethered connection means it's best mounted to a tripod accessory arm.

PhotoPlusVERDICT

PROS: Intuitive interface; loaded feature set; smooth to set up

CONS: Requires an iPad, and tripod arm; limited wired range

WE SAY: Powerful, but requiring an iPad may be a deal breaker for some

Phottix Taimi

£40/\$43 www.phottix.com



THIS IS the cheapest option, but that's because this is a wired remote, limiting it. But this needn't be a deal-breaker... like the Hähnel Captur, Taimi can be pre-programmed with a timelapse, so once you've dialled in your parameters, you can leave the device to do its thing. The wired link also keeps power consumption down, resulting in a 300-hour battery life from two AAA batteries.

Phottix's button and screen design is very similar to Hähnel's, so don't discard the manual: it will be required to decipher the timelapse and shutter release options. As with the Captur, you can program sequences up to 100 hours long and repeat them. It's a pity there are no exposure ramping options for changing lighting conditions, but it's understandable at this price.



You do at least get a bulb mode and conventional remote release function with burst shooting capability, along with a display backlight and optional button beep feedback.

PhotoPlusVERDICT

PROS: Very compact; the easiest remote to connect; huge battery life

CONS: Can be hard to programme; connection restricts remote range

WE SAY: Considering the price, you can't go too far wrong here



THE CONTENDERS

APS-C



Canon EF-S
18-55mm
f/3.5-5.6 IS STM
£214/\$106



Canon EF-S
18-135mm
f/3.5-5.6 IS USM
£449/\$399



Canon EF-S
15-85mm
f/3.5-5.6 IS USM
£690/\$799



Canon EF-S
17-55mm f/2.8
IS USM
£790/\$549



Canon EF
24-105mm
f/3.5-5.6 IS STM
£579/\$599



Canon EF
24-105mm
f/4L IS II USM
£998/\$1099



Canon EF
24-70mm f/4L
IS USM
£800/\$849



Canon EF
24-70mm
f/2.8L II USM
£1740/\$1599



Canon RF
24-105mm
f/4L IS USM
£1029/\$899



Canon RF
24-70mm
f/2.8L IS USM
£2329/\$2299

FULL-FRAME

TOP 10 CANON STANDARD ZOOMS

Stick or twist? Here's how 10 basic standard zoom lenses compare with more exotic upgrade options

A standard zoom lens covers most eventualities for day-to-day shooting, so it pays to have a good one. You can buy the vast majority of Canon DSLRs and mirrorless cameras as a complete kit, which includes a standard zoom. In the APS-C format DSLR camp, these include the compact, lightweight and fairly unassuming EF-S 18-55mm IS STM, and the larger EF-S 18-135mm IS USM. For full-frame DSLR and mirrorless bodies, there's the EF 24-105mm IS STM and the RF 24-105mm IS USM respectively.

All of these 'kit' zoom lenses are solid performers, combining quick and virtually silent autofocus systems with highly effective optical image stabilizers. Image quality tends to be very good as well, so why exactly would you need to upgrade?

Most kit zooms feel like they're built down to a price. None of them feature a focus distance scale and, apart from the RF 24-105mm, none have weather-seals. As with the EF-M 15-45mm kit zoom for EOS M cameras, the EF-S 18-55mm even has a plastic, rather than metal, mounting plate.

Shift up to a more exotic standard zoom and you can expect premium or fully pro-grade build quality and optical prowess, usually with a faster aperture rating that remains constant throughout the zoom range. As we'll see later, however, there are pros and cons to faster apertures. Let's see how the entire current Canon range stacks up.

APS-C

CANON EF-S 18-55mm f/3.5-5.6 IS STM £214/\$106

The latest reinvention of Canon's 18-55mm kit zoom for APS-C format DSLRs is the best yet



FEATURES

- 01 The lens features Super Spectra coatings to reduce ghosting and flare.
- 02 The non-rotating front element enables the use of an optional petal-shaped hood.
- 03 As with other STM lenses, there's a 'fly by wire' focus ring.
- 04 4-stop image stabilization comes with a physical on/off switch.
- 05 The mounting plate is plastic rather than metal.

VERDICT

FEATURES ★★★★★
BUILD & HANDLING ★★★★★
IMAGE QUALITY ★★★★★
VALUE ★★★★★
OVERALL ★★★★★



Marginally larger and heavier than Canon's previous EF-S 18-55mm IS II kit lens, the latest IS STM boasts some key advantages. The optical path is more complex, based on 13, rather than 11, elements and the aperture is more well-rounded, thanks to an increase from six diaphragm blades to seven.

The biggest upgrade is in the autofocus (AF) system. Previous 18-55mm lenses relied on a basic electric AF motor which was noisy and sluggish. Worse still, the manual focus ring and the front element both rotated during AF, impairing handling and making it tricky to use filters like circular polarizers and ND grads. The stepping motor in the new lens addresses all of these issues.

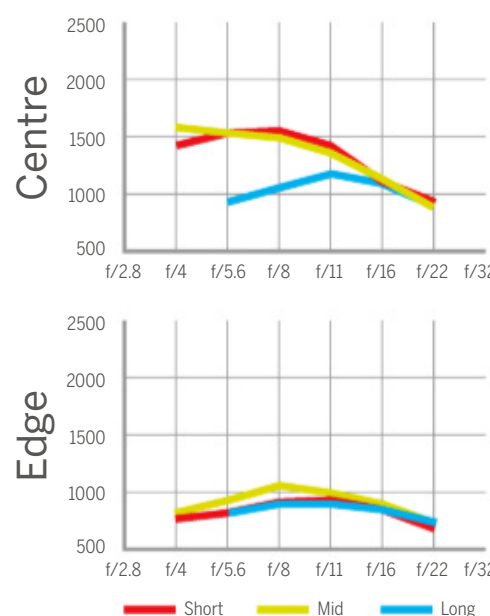
AF is fast yet virtually silent, and enables smooth transitions when filming. Focusing is fully internal so the front element no longer rotates. And finally, the manual focus ring is electronically coupled, so it doesn't rotate during AF and there's no need to keep your fingers clear of it while shooting. Like its

predecessor, the STM lens has a 4-stop image stabilizer and a plastic mounting plate.

Performance

Centre-sharpness is pretty good on the whole, but drops off quite noticeably at the long end of the zoom range, while corner-sharpness is merely mediocre. Barrel distortion is similar to that of the EF-S 15-85mm when using both lenses at their shortest zoom setting, despite the 18-55mm having a more limited viewing angle. All in all, image quality is good rather than great.

SHARPNESS



HOW WE TEST

We combine real-world shooting results with rigorous lab testing to arrive at our overall ratings



To test real-world performance, we use lenses in all sorts of lighting conditions, for indoor and outdoor shooting. We check for build quality and handling, smooth and precise operation of all controls, and we test the speed and accuracy of AF.

We typically test full-frame compatible EF lenses on a range of full-frame and APS-C format bodies, whereas EF-S lenses that are designed specifically for APS-C format bodies are only tested on cameras like the EOS 90D and 7D Mark II. EF-M and RF lenses are tested on respective EOS M and EOS R type mirrorless bodies. In-camera corrections for chromatic aberrations and peripheral illumination are disabled throughout all testing.

We also run a full range of lab tests under controlled conditions, using the Imatest Master and DxO Analyser suites. Photos of test charts are taken across the range of apertures and zooms, then analysed for sharpness, distortion and chromatic aberrations.

APS-C**CANON EF-S 18-135mm
f/3.5-5.6 IS USM** £449/\$399

It rules the roost of APS-C format kit zoom lenses for telephoto reach

Available to buy separately or as a kit lens option with more up-market APS-C format SLRs, this is the third incarnation of Canon's EF-S 18-135mm zooms. The first had a basic electric AF motor, the second switched to a stepping motor, and this latest edition boasts a revolutionary Nano USM system, which has since been adopted in both of the RF lenses on test for mirrorless full-frame bodies.

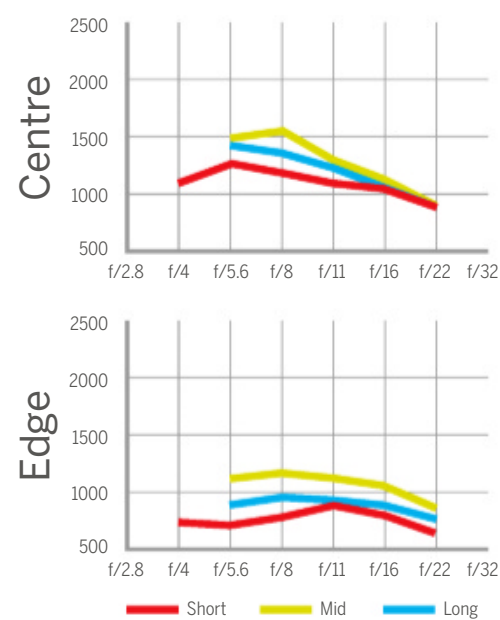
Nano USM is based on a drive unit with an 'elastic metal' body and a ceramic voltage element. It enables super-fast AF for stills, along with ultra-smooth and near silent AF tracking for film.

There are some cosmetic changes, but the optical design remains unchanged from the previous STM edition. As such, it's based on 16 elements in 12 groups, with a 7-blade diaphragm. Again, there's a 4-stop image stabilizer, with the same effectiveness as in the 18-55mm kit lens. Naturally, the 18-135mm is larger and heavier due to its extra telephoto reach, but it's only slightly bigger than the

16-85mm lens. Build quality feels better than in the 18-55mm lens and the construction features a metal mounting plate.

Performance

True to its claims, AF rises from 2.5x to 4x faster than in the previous 18-135mm lens, as you stretch through the zoom range. Performance in terms of sharpness is less impressive. It's a little lacklustre at short zoom settings and average at mid to long focal lengths. Distortions are well controlled, considering the large zoom range.

**SHARPNESS****FEATURES**

- 01** The hood is sold as an optional extra.
- 02** Super Spectra coatings are featured, along with one aspherical and one UD (Ultra-low Dispersion) element.
- 03** The barrel accepts an optional PZ-E1 Power Zoom Adaptor – great for movie capture.
- 04** The optical design is identical to that of the preceding STM edition.
- 05** This one has a metal mounting plate.

VERDICT**FEATURES**

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

VALUE

★★★★★

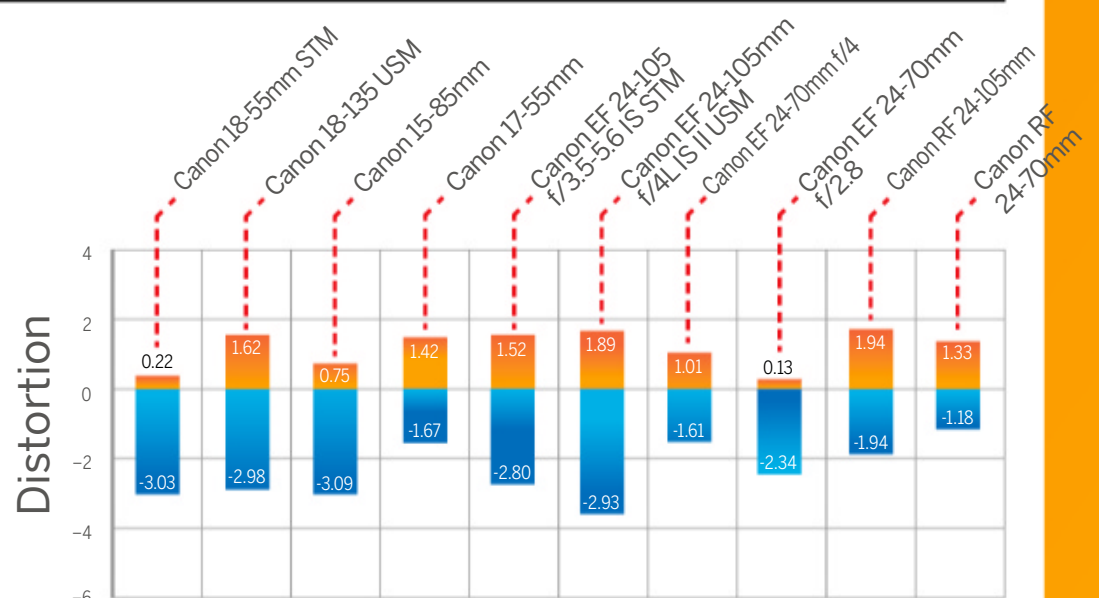
OVERALL

★★★★★

DISTORTION

You can expect some barrel and pincushion distortion

Standard zoom lenses typically produce noticeable barrel distortion at or near the wide-angle end of the zoom range, and a little pincushion distortion at mid to long focal lengths. For the APS-C lenses on test, the 17-55mm is rather better at controlling barrel distortion than the other three contenders, while the 18-55mm and 15-85mm give less pincushion towards the long end. For the full-frame compatible lenses, the two RF zooms for mirrorless cameras are particularly good at minimizing barrel distortion, whereas the EF 24-70mm f/2.8 rules for negligible pincushion.



Negative results show barrel distortion, positive indicates pincushion

APS-C

CANON EF-S 15-85mm f/3.5-5.6 IS USM £690/\$799

This lens goes wider than any other standard zoom for Canon APS-C format DSLRs

If you prefer maximizing your viewing angle and are not so fussed about telephoto reach, you'll find this lens a better fit for you than the EF-S 18-135mm. In full-frame terms, it delivers a class-leading 24mm 'effective' wide-angle focal for APS-C format DSLRs at the short end, while still stretching to an equivalent 136mm of telephoto reach. As such, it beats the EF-S 18-55mm and 17-55mm lenses at both ends of the zoom.

The lens looks and feels comparatively old-school, which isn't surprising as it was launched 10 years ago. Up-market attractions include a ring-type ultrasonic AF system with mechanically coupled full-time override. It's quick, but not as near-silent as in most lenses that use stepping motors. Another plus for the traditional ring-type USM system is that the lens features a focus distance scale, mounted beneath a viewing panel.

This lens is a little wider and heavier than the 18-135mm and has a larger 72mm filter thread, although it's not as long. Our sample proved much more prone to

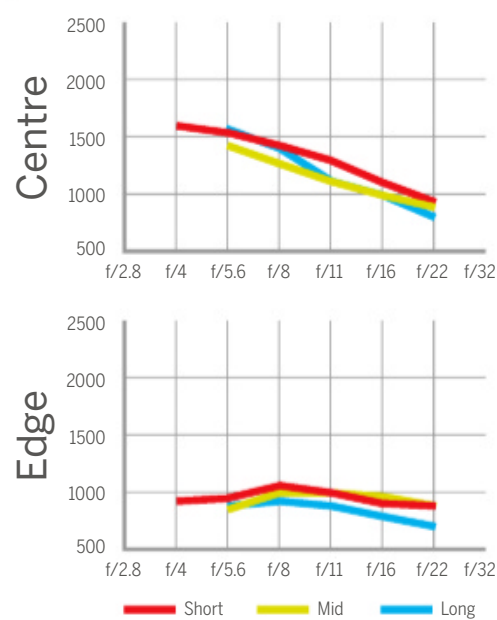
zoom creep than the 18-135mm and 17-55mm lenses and, unlike those, it has no zoom lock switch.

Performance

There's good performance on tap from the AF system and 4-stop stabilizer, but sharpness is a little disappointing. Our review sample delivered the best sharpness when shooting wide-open, throughout the zoom range. Even then, it was merely average and dropped off steadily when stopping down. Barrel distortion and vignetting are also quite heavy at the short end of the zoom range.



SHARPNESS



FEATURES

- 01 The front element isn't as large as in the 17-55mm, but this lens is more prone to zoom creep.
- 02 As with other EF-S lenses, the hood is sold separately.
- 03 This one has the focus ring at the rear of the barrel.
- 04 UD and aspherical elements are in the optical path, plus Super Spectra coating.
- 05 Has a handy focus distance scale.

VERDICT

FEATURES

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

VALUE

★★★★★

OVERALL

★★★★★

ZOOM RANGE

The more the merrier? Here are the popular cut-off points

With its 1.6x crop, every millimetre counts at the short end of the zoom range for APS-C lenses. 15mm and 18mm focal lengths equate to 24mm and 29mm respectively, in full-frame terms. At the long end, 55mm, 85mm and 135mm focals give the same reach as 88mm, 136mm and 216mm on a full-frame camera. These shots demonstrates how it works out in practice.

15/24mm



18/29mm



WHAT IS AVAXHOME?

AVAXHOME-

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providing you various content:
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fresh magazines, hot games,
recent software, latest music releases.

Unlimited satisfaction one low price

Cheap constant access to piping hot media

Protect your downloadings from Big brother

Safer, than torrent-trackers

18 years of seamless operation and our users' satisfaction

All languages

Brand new content

One site



AVXLIVE ICU

AvaxHome - Your End Place

We have everything for all of your needs. Just open <https://avxlive.icu>

APS-C**CANON EF-S 17-55mm
f/2.8 IS USM** £790/\$549

An oldie but goodie, this APS-C format lens still takes a lot to beat

**FEATURES**

- 01** Compared with other APS-Cs, there's a larger 77mm filter thread.
- 02** The old-style config of zoom and focus rings matches that of the 15-85mm.
- 03** Ring-type ultrasonic AF comes with a focus distance scale.
- 04** Less effective than in recent lenses, image stabilization is rated at 3-stops.
- 05** Build quality is very good overall but there are no weather-seals.



The closest thing that Canon has ever made to a pro-grade APS-C format lens, this one was originally launched back in 2006. Its starring attraction is a fast f/2.8 aperture rating, that remains constant throughout the entire zoom range. That makes it two full f-stops faster than any of the other APS-C format standard zooms on test, at the long end of the zoom range.

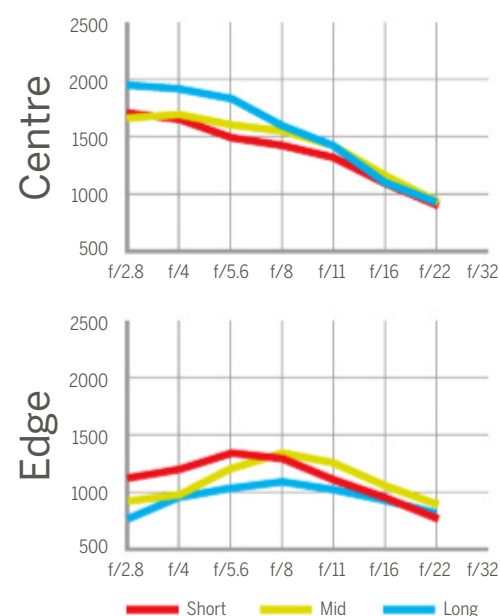
Although the relatively fast, constant-aperture design is a bonus, the downside is that this is the biggest and heaviest of all the APS-C format standard zooms. Even so, at 645g it's still 160g lighter than the equivalent EF 24-70mm f/2.8 for full-frame SLRs.

With its gold 'ultrasonic' ring around the front, the lens has styling from a somewhat bygone era. Inside, the relatively old-generation image stabilizer only gives a 3-stop benefit. Canon has never made an L-series lens for APS-C format cameras but this one comes the closest. However, it still lacks weather-seals and you need to buy the hood separately.

Performance

The ring-type ultrasonic autofocus system is fast and accurate, complete with the usual full-time manual override. Sharpness is noticeably better than from any other APS-C format lens in Canon's current catalogue, while colour fringing and distortions are better controlled and bokeh is better.

All in all, this lens really does prove that 'new' doesn't necessarily mean 'improved'. That said, we'd still like to see an updated version of the lens for use with Canon's latest top-end APS-C format cameras like the 90D.

SHARPNESS**VERDICT****FEATURES**

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

VALUE

★★★★★

OVERALL

★★★★★

55/88mm**85/136mm****135/216mm**

FULL-FRAME

CANON EF 24-105mm f/3.5-5.6 IS STM £579/\$599

A great budget buy, especially as a kit lens with the Canon EOS 6D Mark II

This kit lens is the only non L-series full-frame standard zoom on offer. Unlike all of its other EF and RF competitors, it lacks the red stripe around the front and the weather-seal on the mounting plate. It's slightly smaller than the EF 24-105mm f/4L lens on test, and noticeably lighter in weight. Autofocus is driven by a stepping motor, rather than being based on an ultrasonic system and, typically, there's no focus distance scale. Naturally, the zoom range is identical in both lenses and despite this one having a narrower, variable aperture rating that shrinks to f/5.6 at the long end, both have a 77mm filter thread.

AF is fast and virtually silent, whereas it's audible in the other full-frame EF lenses on test. This lens matches its stabilized siblings for 4-stop effectiveness, although the top-end 24-70mm f/2.8 has no image stabilizer, and the RF lenses have an enhanced 5-stop rating.

Despite lacking L-series credentials, the lens is impeccably turned out. It looks and feels solid, and its zoom and focus rings

operate with smooth precision. As usual for STM lenses, the focus ring is electronically coupled and enables fine adjustments.

Performance

Although it's the lightest full-frame lens in our test, the kit zoom punches above its weight in terms of image quality. There's plenty of sharpness on tap throughout the zoom range, even when shooting wide-open. Distortions, colour fringing and vignetting are minor and automatic corrections are available in the 6D Mark II and most other recent full-frame DSLRs.



FEATURES

- 01** Unlike every other full-frame lens in the group, this one's hood is sold as an optional extra.
- 02** The 77mm filter thread is the same as in the EF and RF 24-105mm f/4L.
- 03** Is the only full-frame lens for DSLRs in the group with a 'fly by wire' focus ring.
- 04** As usual for an STM lens, there's no focus distance scale.
- 05** Build quality is good overall, but lacks any weather-seals.

VERDICT

FEATURES

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

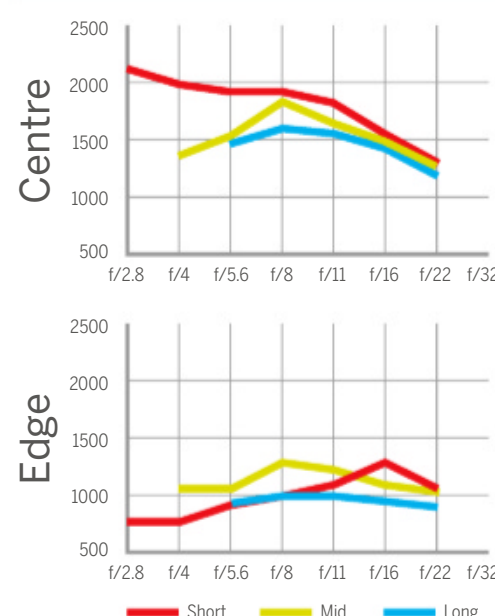
VALUE

★★★★★

OVERALL

★★★★★

SHARPNESS



APERTURE RATING

Wider apertures bring two-fold advantages and disadvantages

Lenses with fixed wide apertures enable a tighter depth of field (DoF) at any focal length, great for blurring surroundings to make subjects stand out. But faster zooms are bigger, heavier and more expensive. These shots show how DoF differs at 70mm with popular apertures.



FULL-FRAME

CANON EF 24-105mm f/4L IS II USM

£998/\$1099

The Mark II edition of this classic zoom lens is a clear improvement

Launched back in 2005, the original version of this lens was available as part of a kit with the first three editions of the EOS 5D, as well as the 6D. But it wasn't sharp enough to make it onto the approved list of lenses for use with the high-resolution 5DS and 5DS R, and this revamped Mark II edition of the lens was launched in 2016.

Top of the agenda for the Mark II was a redesigned optical path, which also gains high-tech 'Air Sphere Coating' for keeping ghosting and flare to a minimum. Keep-clean fluorine coatings are added to the front and rear elements, and the build-quality has been enhanced for greater resistance to vibration and shock. The image stabilizer is also improved, rising from 2.5-stop to 4-stop effectiveness. As you'd expect from an L-series, it comes with weather-seals and a hood.

Naturally, this lens is an f-stop slower than Canon's 24-70mm f/2.8 lenses for full-frame DSLRs and mirrorless bodies but gains a useful extension in telephoto reach,

while also beating the EF 24-105mm IS STM by an f/stop at the long end of the zoom range.

Performance

Sharpness is better than in the original edition at short to medium zoom settings but drops off noticeably towards the long end. Bokeh remains smoother when stopping down a little, helped by the new 10-blade diaphragm. Another significant area of improvement is in barrel distortion at the short end of the zoom range, which was notoriously bad in the original edition of the lens.



FEATURES

- 01 Fluorine coatings on the front and rear elements help to repel moisture.
- 02 ASC (Air Sphere Coating) is applied to minimize ghosting and flare.
- 03 IS is more effective and adds auto panning detection.
- 04 Revamped ring-type ultrasonic autofocus system feels faster than in the original.
- 05 Construction is robust and features extensive weather-seals.

VERDICT

FEATURES

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

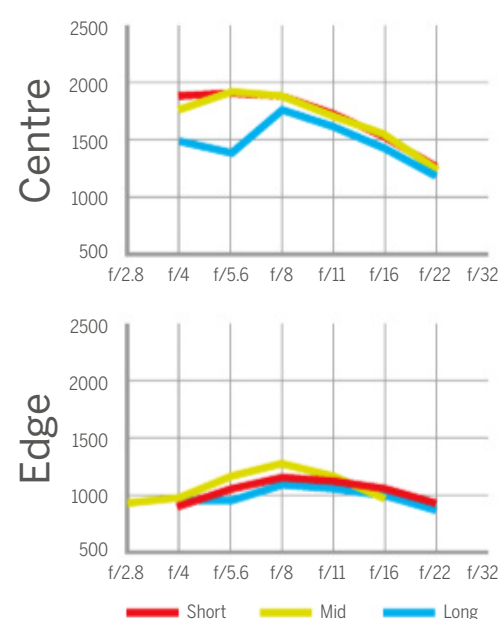
VALUE

★★★★★

OVERALL

★★★★★

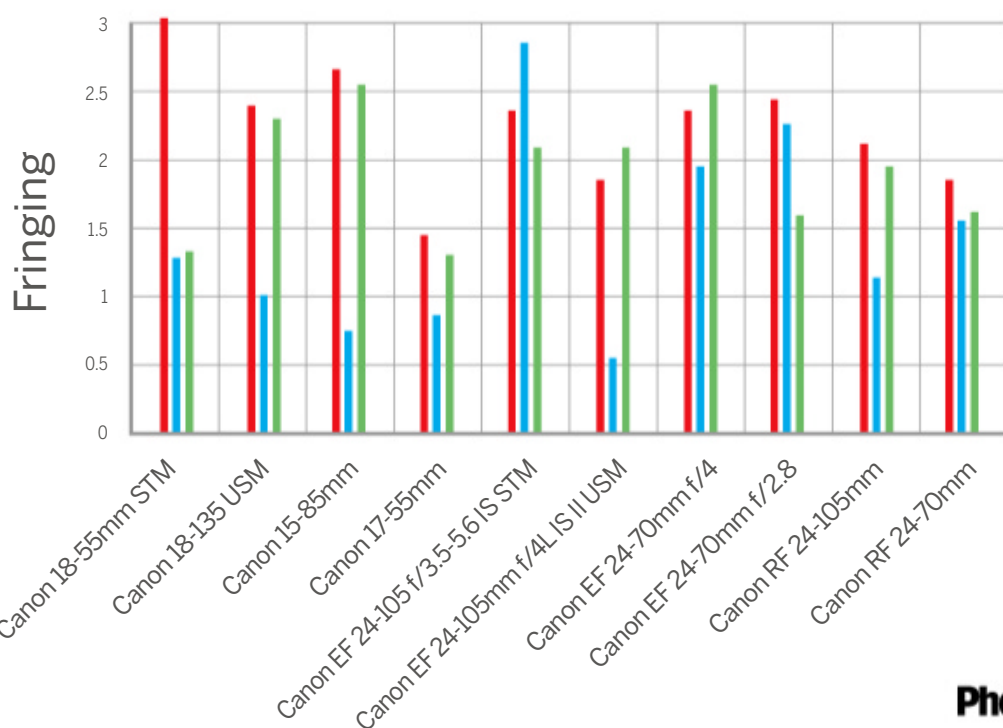
SHARPNESS



COLOUR FRINGING

Chromatic aberrations are fairly well controlled on the whole

Comparing the APS-C format lenses on test, the 18-135mm and 15-85mm both give minimal colour fringing towards both extremes of the zoom range, and very little in the middle section. The 18-55mm is a little worse at the short end but better at the long end, while the faster 17-55mm f/2.8 controls fringing very well throughout its entire zoom range. The full-frame compatible lenses are mostly similar.



Lower values represent less fringing, and therefore better performance

Short
Mid
Long

FULL-FRAME

CANON EF 24-70mm f/4L IS USM

£800/\$849

The modest aperture rating enables a fairly compact, lightweight build lens

Pro photographers generally opt for a 24-70mm f/2.8 lens as their go-to standard zoom. However, these lenses are typically big and hefty, often weighing in at around a kilogram. The f/4 aperture of this lens enables a smaller, more lightweight build but, at 600g, it's still 75g heavier than the EF 24-105mm f/3.5-5.6 IS STM.

L-series trappings include weather-seals and a supplied petal-shaped hood. The ring-type ultrasonic AF system is typically quick and whisper-quiet, and features the usual full-time manual override and focus distance scale beneath a viewing window. Build quality feels very good and fluorine coatings are on hand.

A lesser-known attraction is that the zoom lock switch has an extra push-action position that unlocks an extended range for macro shooting. This boosts the max magnification factor to an impressive 0.7x, which is two to three times greater than in most standard zooms. Better still, 'hybrid stabilization' is available in Macro

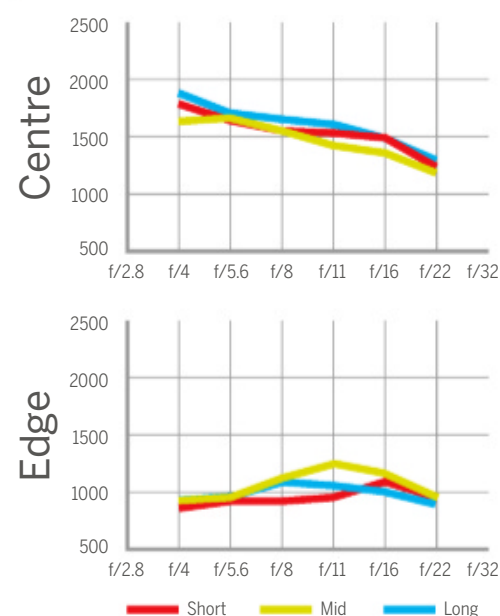
mode, which corrects for vertical and horizontal shift as well as the more usual angular vibration. As featured in Canon's latest dedicated 100mm macro lens, this makes stabilization much more effective when shooting extreme close-ups.

Performance

On paper, the lens looks like it should be a star performer. In our tests, however, sharpness proved lacklustre across the zoom range, at all apertures. The IS is typically effective and there's good control over distortions and fringing, but it's not the sharpest tool in the box.



SHARPNESS



FEATURES

- 01 It's compact for a 24-70mm, thanks to the narrower aperture.
- 02 Has a 77mm filter thread, compared with 82mm for the 24-70mm f/2.8.
- 03 A generous 0.7x reproduction ratio is available in Macro.
- 04 The optical path features two aspherical and two UD elements.
- 05 Steadiness in close-up shooting is helped by the 'hybrid' IS.

VERDICT

FEATURES

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

VALUE

★★★★★

OVERALL

★★★★★

INDIE LENSES

There are tempting lenses for full-frame DSLRs

There aren't any standard zoom lenses for APS-C format cameras from the likes of Sigma and Tamron, that really make it worth switching from own-brand Canon lenses. That said, the Sigma 17-70mm f/2.8-4 DC Macro OS HSM Contemporary lens works well and is good value for money. Both offer stiffer competition for full-frame DSLRs. The Sigma 24-70mm f/2.8 DG OS HSM Art, Sigma 24-105mm f/4 DG OS HSM Art and Tamron SP 24-70mm f/2.8 Di VC USD G2 are all high-performance lenses at attractive prices.

Sigma 24-70mm



Tamron 24-70mm



Both lenses deliver great image quality but the Sigma has the edge and enables in-camera corrections

FULL-FRAME

CANON EF 24-70mm f/2.8L II USM

£1740/\$1599

It's compact, for a 24-70mm f/2.8 zoom, but lacks stabilization

Designed for the most demanding enthusiast and pro photographers, the original edition of this lens was launched back in 2002. The Mark II is the result of a major revamp and hit the market 10 years later. The upgraded optical design features three aspherical elements which aim for greater sharpness along with a reduction in distortions, colour fringing and colour blur. The aperture is also more well-rounded for enhanced bokeh when stopping down, based on nine rather than eight blades.

The Mark II is more robust and sturdy than the original, and is weather-sealed. As we're seeing in a growing number of new lenses, fluorine coatings are applied to the front and rear elements, to repel moisture and grease, and to enable easier cleaning.

Given that Sigma and Tamron have built effective image stabilizers in their latest 24-70mm f/2.8 lenses, it's disappointing that this Canon lacks stabilization. The f/2.8 aperture enables fast shutter speeds under dull lighting

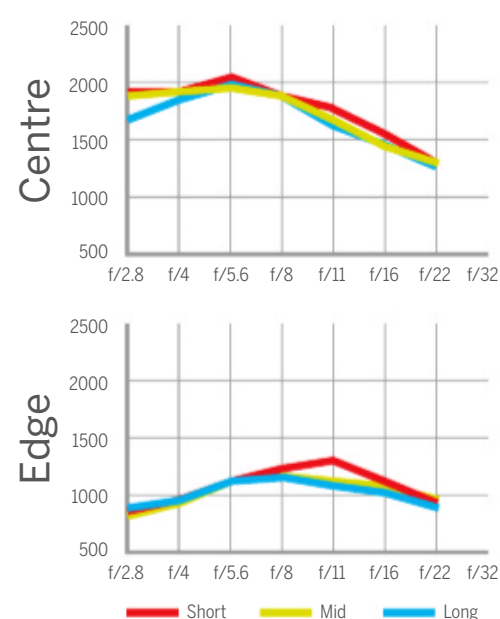


conditions, so stabilization is less of a 'must have' feature. However, you might often want to shoot at narrower apertures to gain extra depth of field.

Performance

Sharpness is excellent, even when shooting wide-open at f/2.8, although it generally doesn't reach the dizzying heights of the new RF 24-70mm f/2.8 lens. It also loses out to the newcomer for levels of colour fringing and barrel distortion at 24mm, although there's less pincushion at the long end of the zoom range.

SHARPNESS



FEATURES

- 01** It's particularly well weather-sealed.
- 02** Typical of 24-70mm f/2.8 lenses, it has an 82mm filter thread.
- 03** As with most recent Canon standard zooms, the zoom ring is positioned at the rear.
- 04** The build is relatively compact and lightweight for a modern 24-70mm f/2.8 lens.
- 05** Fluorine coatings are applied to the front and rear elements.

VERDICT

FEATURES

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

VALUE

★★★★★

OVERALL

★★★★★

EOS M ZOOMS

Dial M for modesty

The modestly sized and lightweight EF-M 15-45mm f/3.5-6.3 IS STM has taken over from the older EF-M 18-55mm as the standard kit zoom for EOS M cameras. Although it has slightly less telephoto reach than the older lens, it gives more generous wide-angle coverage and is physically smaller, thanks to a retractable design. An EF-M

18-150mm f/3.5-6.3 IS STM lens is also available, but we prefer to stick with the smaller 15-45mm lens, paired with an additional EF-M 55-200mm f/4.5-6.3 IS STM for when we need telephoto shooting. Using the 18-150mm superzoom on a dinky little EOS M body for general shooting literally outweighs the advantage of having a relatively small, lightweight camera.



The retractable EF-M 15-45mm is the perfect daily zoom lens for any EOS M camera

FULL-FRAME

CANON RF 24-105mm f/4L IS USM

£1029/\$899

Probably the best 'kit' zoom lens that Canon has ever made

Available in kit form with EOS R and RP bodies, this lens takes advantage of the RF mount's wide flange and close proximity to the image sensor, compared with EF lenses for SLRs. It's shorter and lighter than the EF 24-105mm f/4L, at 84x107mm and 700g, making it an ideal match for a sleek mirrorless. Typical of L-series rather than more modest 'kit' zooms, it has excellent build with extensive weather-seals and comes with a hood.

Highlights include aspherical and UD elements, a 9-blade diaphragm and fluorine coatings. As in the RF 24-70mm lens, there's a 5-stop image stabilizer that outperforms anything in Canon's range of standard zooms for SLRs. Like the EF-S 18-135mm, this lens has Nano USM AF, which is rapid for stills and enables super-smooth focus for movie capture.

An extra handling benefit featured in RF mount lenses is the customizable control ring. This is mounted at the front end of the lens and operates with click-stops. Canon offers a 'de-click' service for

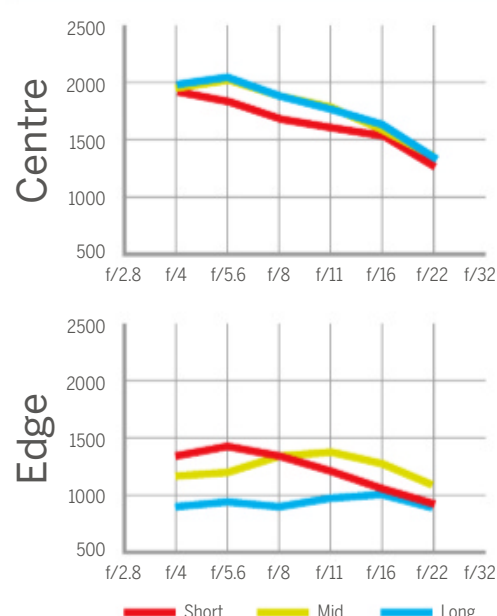
videographers who will prefer stepless control. The control ring can be assigned to functions like aperture, shutter speed and ISO.

Performance

At short to medium zoom, this lens wins out over its EF 24-105mm L-series counterpart for DSLRs in maintaining impressive sharpness across the entire image frame. Centre-sharpness is better towards the long end, although both lenses are equal for corner-sharpness. The RF lens also keeps tighter control over barrel distortion at short zoom settings.



SHARPNESS



FEATURES

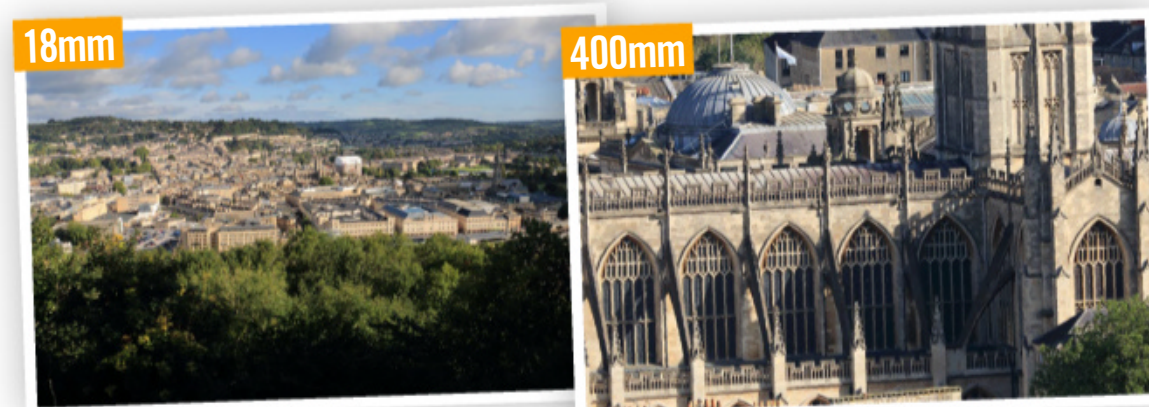
- 01 The build is 11mm shorter and 95g lighter than the equivalent EF L-series lens.
- 02 The control ring at the front adds some hands-on adjustments.
- 03 Extensive weather-seals are applied throughout the construction.
- 04 The Nano USM autofocus system is fast yet smooth.
- 05 Highly effective 5-stop IS lives up to its billing.

VERDICT

FEATURES ★★★★★
BUILD & HANDLING ★★★★★
IMAGE QUALITY ★★★★★
VALUE ★★★★★
OVERALL ★★★★★

SUPERSIZED ZOOMS

A so-called 'superzoom' lens boosts telephoto reach



Despite what we said about the EF-M 18-150mm on the previous page, many photographers prefer to have a single zoom lens that covers everything from wide-angle to long telephoto focal lengths, rather than swapping between lenses mounted on the camera. Superzooms are more practical for APS-C rather than full-frame, although the new RF 24-240mm f/4-6.3 IS USM is a notable exception. Our current favourites for DSLRs include the Sigma 18-300mm f/3.5-6.3 DC Macro OS HSM Contemporary and Tamron 18-400mm f/3.5-6.3 Di II VC HLD.

The Tamron 18-400mm really pushes the envelope with the biggest outright zoom range on the market

FULL-FRAME

CANON RF 24-70mm f/2.8L IS USM

£2329/\$2299

It's a highly appealing lens, if you can see past the huge price tag

A bit bigger and weightier than the EF 24-70mm f/2.8 for SLRs, this one weighs in at 900g, and its 89x126mm dimensions dwarf an EOS R or RP body. It's not just the build that's big, as the asking price is far higher than for Canon's pro-grade zoom for DSLRs and almost 2.5x that of the RF 24-105mm.

Build quality is every bit as good as in the EF lens, arguably even better, and comes complete with a full set of weather-seals plus the now usual fluorine coating on the front and rear elements. The optical path includes no less than three moulded aspherical elements and three UD elements, plus Air Sphere Coating. Handling is enhanced by a customizable control ring, there's super-fast Nano USM autofocus and 5-stop image stabilization, all of which are lacking in the equivalent EF lens.

As well as the 'de-click' option for the control ring, another bonus for serious videographers is that there's virtually no focus breathing (a small change in focal length when adjusting the focus position).



Furthermore, the minimum focus distance is impressively short at the minimum focal length, shrinking to just 0.21m.

Performance

Centre-sharpness is stunning throughout the entire zoom range, even when shooting wide-open. It easily beats the EF 24-70mm f/2.8 in this respect, as well as giving a noticeable improvement in corner-sharpness. Colour fringing is reduced at short to medium zoom settings, as is barrel distortion at the short end. All in all, image quality is spectacular.



FEATURES

- 01** The diameter of the lens and the 82mm filter thread are the same as in the EF 24-70mm f/2.8.
- 02** Air Sphere Coating and fluorine coatings are featured in the design.
- 03** With Nano USM autofocus, manual focusing is via a fly-by-wire focus ring.
- 04** No distance scale.
- 05** Switches are on hand for AF/MF, Stabilizer on/off and zoom lock.

VERDICT

FEATURES

★★★★★

BUILD & HANDLING

★★★★★

IMAGE QUALITY

★★★★★

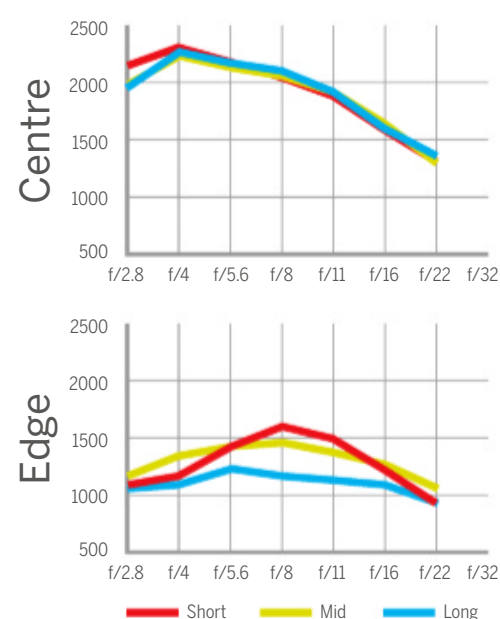
VALUE

★★★★☆

OVERALL

★★★★★

SHARPNESS



THE MIGHTY RF 28-70mm

Supersized in build, if not in zoom range











Compared with the Canon RF 24-105mm f/4L IS USM kit lens for EOS R and RP cameras, the RF 28-70mm f/2L USM is a real monster. It has an oversized 104x140mm build with a 95mm filter thread and is more than twice as heavy, at 1,430g. Indeed, it's more akin to the size and weight of a 70-200mm f/2.8 telephoto zoom. The super-fast

aperture rating, for a zoom lens at least, helps to enable beautiful bokeh, while sharpness is fabulous apart from in the corners of the image frame when shooting wide-open.

Performance and image quality are spectacular. However, AF is merely whisper-quiet rather than near-silent, there's no image stabilization and wide-angle coverage is limited.



COMPARISON TABLE

APS-C					FULL-FRAME					
										
	CANON EF-S 18-55MM F/3.5-5.6 IS STM	CANON EF-S 18-135MM F/3.5-5.6 IS USM	CANON EF-S 15-85MM F/3.5-5.6 IS USM	CANON EF-S 17-55MM F/2.8 IS USM	CANON EF 24-105MM F/3.5-5.6 IS STM	CANON EF 24-105MM F/4L IS II USM	CANON EF 24-70MM F/4L IS USM	CANON EF 24-70MM F/2.8L II USM	CANON RF 24-105MM F/4L IS USM	CANON RF 24-70MM F/2.8L IS USM
Web	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk	www.canon.co.uk
Full-frame compatible	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Effective zoom range (APS-C)	29-88mm	28.8-216mm	24-136mm	27-88mm	36-168mm	36-168mm	38-112mm	38-112mm	N/A	N/A
Elements/groups	13/11	16/12	17/12	19/12	17/13	17/12	15/12	18/13	18/14	21/15
Diaphragm blades	7 blades	7 blades	7 blades	7 blades	7 blades	10 blades	9 blades	9 blades	9 blades	9 blades
Optical Stabilizer	4-stops	4-stops	4-stops	3-stops	4-stops	4-stops	4-stops	None	5-stops	5-stops
Autofocus type	Stepping motor	Ultrasonic (Nano)	Ultrasonic (ring type)	Ultrasonic (ring type)	Stepping motor	Ultrasonic (ring type)	Ultrasonic (ring type)	Ultrasonic (ring type)	Ultrasonic (Nano)	Ultrasonic (Nano)
Manual focus override	Electronic	Electronic	Full-time	Full-time	Full-time	Full-time	Full-time	Full-time	Electronic	Electronic
Min focus distance	0.25m	0.39m	0.35m	0.35m	0.4m	0.45m	0.38m	0.38m	0.45m	0.21-0.38m
Max reproduction ratio	0.36x	0.28x	0.21x	0.17x	0.3x	0.24x	0.7x (macro mode)	0.21x	0.24x	0.3x
Focus distance scale	No	No	Yes	Yes	No	Yes	Yes	Yes	No	No
Mounting plate	Plastic	Metal	Metal	Metal	Metal	Metal	Metal	Metal	Metal	Metal
Weather seals	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
Filter size	58mm	67mm	72mm	77mm	77mm	77mm	77mm	82mm	77mm	82mm
Lens hood	EW-63C, £15/\$23	EW-73D, £40/\$35	EW-78E, £38/\$30	EW-83J, £29/\$49	EW-83M, £29/\$27	EW-83M, supplied	EW-83L, supplied	EW-88C, supplied	EW-83N, supplied	EW-88E, supplied
Dimensions (dia x length)	69x75mm	77x96mm	82x88mm	84x111mm	83x104mm	84x118mm	83x93mm	89x113mm	84x107mm	89x126mm
Weight	205g	515g	575g	645g	525g	795g	600g	805g	700g	900g
Target price	£214/\$106	£449/\$399	£690/\$799	£790/\$549	£579/\$599	£998/\$1099	£800/\$849	£1740/\$1599	£1029/\$899	£2329/\$2299
FEATURES	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
BUILD & HANDLING	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
IMAGE QUALITY	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
VALUE	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
OVERALL	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★

THE WINNERS ARE... CANON EF-S 17-55mm f/2.8 IS USM & CANON RF 24-70mm f/2.8L IS USM

Faster lenses win out for both APS-C and full-frame cameras

The single most impressive lens here is the RF 24-70mm f/2.8L IS USM. It delivers the most outstanding quality, has a fast yet deadly accurate AF system, along with superb handling and an excellent 5-stop IS. It beats the EF-24-70mm f/2.8 lens in all these respects. But it's also very expensive, and the RF 24-105mm f/4L IS USM is much better value.

For full-frames, the EF 24-70mm f/2.8L II USM is quality, but the lack of IS can be a pain. The next best choice is the EF 24-105mm f/4L IS II USM. The EF 24-105mm f/3.5-5.6 IS STM is a good performer for a low-budget kit lens. In the APS-C format, the EF-S 17-55mm f/2.8 IS USM is the best. Image quality isn't convincing in the EF-S 18-135mm f/3.5-5.6 IS USM and EF-S 15-85mm.



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HURRY!
OFFER ENDS
31 MARCH
2020

BUYERS' GUIDE

With prices ranging from a couple of hundred quid to several thousand, Canon has a DSLR to suit everyone, from the complete beginner to most demanding pro...

What to look for

Canon EOS cameras

Canon splits its EOS DSLR lineup into entry-level, enthusiast and professional ranges; the 4000D is the most basic, the 800D and 77D for intermediates, the 80D and full-frame 6D Mk II for more advanced enthusiasts, while the 7D, full-frame 5D and 1D lines have pro-level features. With more expensive models, expect greater handling, more robust build quality (weather-sealing and magnesium-alloy shells), more advanced features, and full-frame rather than APS-C image sensors.

We also now have the full-frame EOS R cameras for mirrorless fans, the EOS RP as an 'entry-level' and more affordable option, with the EOS R for more serious photographers. Plus not forgetting Canon's compact system APS-C EOS M camera range.



DSLR CAMERAS

PRICES QUOTED ARE BODY-ONLY UNLESS STATED

CANON EOS 4000D



CANON has stripped everything down to its bare essentials for the 4000D, and it's a great if basic DSLR for beginners, and at only £329 (body), it's the cheapest new EOS DSLR. Sadly, it's let down by a cheap kit lens, that's tough to tolerate, so we suggest buying the better IS lens. ★★☆☆☆

TESTED IN ISSUE 140 PRICE: £250/\$N/A

Sensor	18Mp APS-C CMOS
Viewfinder	Pentamirror, 0.8x, 95%
ISO	100-6400 (12,800 exp)
AF	9-point (1 cross-type)
LCD	2.7-in, 230k-dot
Max burst (buffer)	3fps
Memory card	SD/SDHC/SDXC

CANON EOS 2000D (REBEL T7)



THE 2000D is a better-spec Canon camera than the 4000D, but comes with a step up at its RRP current price. It's arguably worth the extra, but that puts it in a difficult spot, where another step up in outlay will get you an EOS 200D, which is a far better overall DSLR camera. ★★☆☆☆

TESTED IN ISSUE 149 PRICE: £290/\$360

Sensor	24.1Mp APS-C CMOS
Viewfinder	Pentamirror, 0.8x, 95%
ISO	100-6400 (12,800 exp)
AF	9-point (1 cross-type)
LCD	3-in, 920k-dots
Max burst (buffer)	3fps
Memory card	SD/SDHC/SDXC

CANON EOS 250D (REBEL SL3)



THE new EOS 250D/Rebel SL3 is not Canon's cheapest entry-level DSLR, but we think it's the best budget/beginner DSLR with the perfect blend of power and value. This is the body that will take people from snapping on their smartphones, to getting into the hobby. ★★★★★

TESTED IN ISSUE 156 PRICE: £519/\$600

Sensor	24.1Mp APS-C CMOS
Viewfinder	Pentamirror, 0.87x, 95%
ISO	100-25600 (51,200 exp)
AF	9-point (1 cross-type)
LCD	3-in vari-angle touch screen, 1040k
Max burst (buffer)	5fps
Memory card	SD/SDHC/SDXC

CANON EOS 800D (REBEL T7i)



CANON has shoehorned much of the tech of the enthusiast-level 80D into a beginner body. The 800D inherits its bigger brother's 24Mp Dual Pixel sensor for superior Live View autofocus, uses the same 45-point module for viewfinder autofocus, and better its ISO performance. ★★★★★

TESTED IN ISSUE 149 PRICE: £579/\$899

Sensor	24.2Mp, APS-C (6000x4000 pixels)
Viewfinder	Pentamirror, 0.82x, 95%
ISO	100-25600 (51,200 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	6fps (27 Raw/Unlimited JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 77D



THE key specs are identical to the 800D, but the extra top-plate LCD gives at-a-glance access to vital shooting info, while a rear control wheel makes dialing in exposure settings much quicker, promoting it to Canon's 'enthusiast' range. Super image quality – even at high ISOs. ★★★★★

TESTED IN ISSUE 156 PRICE: £700/\$800

Sensor	24.2Mp, APS-C (6000x4000 pixels)
Viewfinder	Pentamirror, 0.82x, 95%
ISO	100-25,600 (51,200 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	6fps (27 Raw/Unlimited JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 90D



THE Canon 90D is a heavyweight replacement for the 80D, and this decathlete crop-camera comes with a new 32.5Mp sensor, super-quick 10fps continuous shooting and 4K video, plus improved handling. This camera is an ideal APS-C camera upgrade for enthusiasts and beyond. ★★★★★

TESTED IN ISSUE 159 PRICE: £1209/\$1200

Sensor	32.5Mp, APS-C (6960x4640 pixels)
Viewfinder	Pentaprism, 0.95x, 100%
ISO	100-25,600 (51,200 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	10fps (25 Raw/58 JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 7D Mk II



HERE'S the king of action-packed APS-C format cameras. A long-overdue revamp of the original 7D, it has 65-point AF with advanced tracking, 10fps continuous drive, dual DIGIC 6 processors and GPS, all wrapped up in a tough, weather-sealed magnesium alloy shell. ★★★★★

TESTED IN ISSUE 159 PRICE: £1350/\$1649

Sensor	20.2Mp, APS-C (5472x3648 pixels)
Viewfinder	Pentaprism, 1.0x, 100%
ISO	100-16,000 (51,200 exp)
AF	65-point (all cross-type)
LCD	3-in, 1040k dots
Max burst (buffer)	10fps (31 Raw/Unlimited JPEG)
Memory card	CompactFlash + SD/SDHC/SDXC

CANON EOS 6D Mk II



THE world's smallest full-frame DSLR – with a vari-angle touchscreen LCD – gets a major upgrade over the original 6D with improved speed and performance rather than outright image quality. It's a great all-rounder now thanks to an improved AF system and burst rate. ★★★★★

TESTED IN ISSUE 156 PRICE: £1349/\$1600

Sensor	26.2Mp, full-frame (6240x4160 pixels)
Viewfinder	Optical pentaprism, 98%
ISO	100-40,000 (50-102,400 exp)
AF	45-point (all cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	6.5fps (21 Raw/150 JPEG)
Memory card	SD/SDHC/SDXC

CANON EOS 5D Mk IV



A SUPERB all-rounder, the pro-level weather-sealed full-frame 5D Mk IV combines a stunning hi-res 30Mp sensor with a swift 7fps frame rate. Its impressive specs list includes 4K video, a touchscreen LCD, Wi-Fi and NFC connectivity, and GPS to automatically geotag images. ★★★★★

TESTED IN ISSUE 156 PRICE: £2800/\$3100

Sensor	30.4Mp, full-frame (6720x4480 pixels)
Viewfinder	Pentaprism, 0.71x, 100%
ISO	100-32,000 (50-102,400 exp)
AF	61-point (41 cross-type, 5 dual-cross)
LCD	3.2-in touch-screen, 1620k dots
Max burst (buffer)	7fps (21 Raw/Unlimited JPEG)
Memory card	CompactFlash + SD/SDHC/SDXC

CANON EOS 5DS (5DS R)



THE world's first 50Mp full-frame DSLR delivers huge and amazingly detailed hi-res images. The higher-cost 5DS R adds a 'low-pass cancellation filter' for marginally sharper shots. As expected with such a high-res sensor, max ISO and drive rate are lower than with the 5D Mk IV. ★★★★★

TESTED IN ISSUE 148 PRICES: £2349/\$3700 (£2500/\$3899)

Sensor	50.6Mp, full-frame (8688x5792 pixels)
Viewfinder	Pentaprism, 0.71x, 100%
ISO	100-6400 (50-12,800 exp)
AF	61-point (41 cross-type, 5 dual-cross)
LCD	3.2-in, 1040k dots
Max burst (buffer)	5fps (14 Raw/510 JPEG)
Memory card	CompactFlash + SD/SDHC/SDXC

CANON EOS-1D X MARK II



CANON'S Mark II flagship full-frame pro-level EOS boasts ultra-fast 14fps shooting (16fps in Live View) and super-high ISO, along with sublime handling. It sports 4K video, body build quality is rock-solid, yet its 20Mp image resolution is relatively modest when compared to the 50Mp 5DS/R. ★★★★★

TESTED IN ISSUE 148 PRICE: £4800/\$6000

Sensor	20.2Mp, full-frame (5472x3648 pixels)
Viewfinder	Pentaprism, 0.76x, 100%
ISO	100-51,200 (50-40,9600 exp)
AF	61-point (41 cross-type, 5 dual-cross)
LCD	3.2-in, 1620k dots
Max burst (buffer)	14-16fps (170 Raw/Unlimited JPEG)
Memory card	CompactFlash + CFast

MIRRORLESS CAMERAS

PRICES QUOTED ARE BODY-ONLY UNLESS STATED

CANON EOS M200

TESTED IN ISSUE 160 PRICE with 15-45mm kit lens: **£499/\$549**



CANON'S EOS M200 is aimed at attracting Instagramers and smartphone upgraders to Canon's mirrorless M range, and has an appealing spec list including its 24Mp sensor and plenty of easy-to-use features for beginners. It shoots 4K video to seal the deal. ★★★★★

Sensor	24.1Mp APS-C CMOS
Viewfinder	No
ISO	100-25,600 (51,200 exp)
AF	143-point AF
LCD	3-in tilting touchscreen, 1040k dots
Max burst (buffer)	6.1 fps
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS M50

TESTED IN ISSUE 156 PRICE: **£490/\$800**



THE M50 produces the same quality and performance as the more expensive M5. Its features probably won't tempt any Canon DSLR users to the mirrorless camp, but for new users looking for a smaller body and trying to get into photography, it's a marvellous route inside the Canon system. ★★★★★

Sensor	24.2Mp, APS-C CMOS
Viewfinder	OLED EVF, 2,360k dots
ISO	100-25,600
AF	143/99-point (1 cross-type)
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	10fps, 7.4fps with autofocus
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS M6 MARK II

PRICE: **£869/\$849**



THE EOS M6 Mark II is Canon's new compact, yet powerful mirrorless camera designed to deliver sharp images for amateurs always on the move. It has the same 32.5Mp APS-C sensor as the new Canon EOS 90D DSLR, but it's able to shoot in 14fps blasts, and even 30fps Raw image bursts with electronic shutter, plus 'uncropped' 4K video.

Sensor	32.5Mp APS-C CMOS
Viewfinder	No
ISO	100-25,600
AF	143/99-point
LCD	3-in tilting touchscreen, 1040k dots
Max burst (buffer)	14fps (23 Raws, 54 JPEGs)
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS M5

TESTED IN ISSUE 156 PRICE: **£599/\$679**



AS Canon's flagship mirrorless M camera for enthusiasts, the EOS M5 really opens up the DSLR vs CSC debate. It shares much of the tech as the 80D, but swaps the optical viewfinder for an electronic version, making this compact system camera a pocket rocket. ★★★★★

Sensor	24.2Mp APS-C CMOS
Viewfinder	OLED EVF, 2.36 million dots
ISO	100-25,600
AF	49-point AF
LCD	3.2-in tilting touchscreen, 1620k dots
Max burst (buffer)	9fps
Memory card	SD/SDHC/SDXC and UHS-1

CANON EOS RP

TESTED IN ISSUE 156 PRICE: **£1399/\$1299**



CANON is catering to crop-sensor CSC M or EOS DSLR users looking for a full-frame upgrade that won't break the bank. The EOS RP is strong spec package that's notably smaller, lighter and cheaper than almost all its rivals, and ideal as an 'entry-level' full-frame camera. ★★★★★

Sensor	26.2Mp, full-frame CMOS
Viewfinder	0.39-in EVF, 2.36 million dots
ISO	100-40,000 (50-102,400 exp)
AF	4779 Dual Pixel AF positions
LCD	3-in vari-angle touch-screen, 1040k
Max burst (buffer)	5fps (50 Raw/Unlimited JPEG)
Memory card	SD/SDHC/SDXC and UHS-II

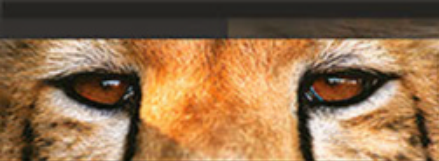
CANON EOS R

TESTED IN ISSUE 156 PRICE: **£2149/\$2300**



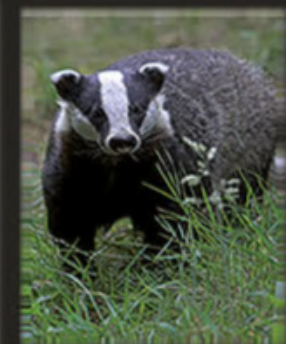
THE full-frame mirrorless Canon EOS R boasts the new RF mount and fully articulated Dual Pixel AF touchscreen with 5655 AF points. Equivalent in many specs to the EOS 5D Mark IV, it's an attractive way for those looking to experience mirrorless photography. ★★★★★

Sensor	30.3Mp full-frame CMOS
Electronic viewfinder	0.5-in EVF, 3.69million dots
ISO	100-40,000 (50-102,400 exp)
AF	5655 Dual Pixel AF points
LCD	3.2-in fully articulating touchscreen
Max burst (buffer)	Approx. 8fps (47 Raw, 100JPEG)
Memory card	1x SD/SDHC/SDXC and UHS-II



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British Wildlife Centre, Surrey

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Cheetahs, Corsac Foxes, Lions,

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Cheetahs & Tigers in superb natural settings. Malayan and White Bengal Tiger. Maned Wolf, Lynx and Corsac Foxes. £129

Golden Eagle Experience, Leics.

May 3rd, August 3rd; Max 8 persons. Static & flying of Golden Eagle in stunning location. Other birds from Owls, Hawks, Goshawk £89

Bats & Fill-in Flash Tuition, Oxford

April 29, 30th; Indoor & outdoor venue. Max 4 persons. Expert tuition on all fill-in flash techniques. Free loan of flash if req'd. £139

Small Cats Workshop, Herts

April 11th, 12th. Snow Leopards, Amur Leopards, Pumas, Lynx, Leopard Cat, Caracal, Serval, Jaguarundi & more. £119

Gannets diving off Bass Rock

June 8th, 22nd; Amazing diving shots. Sail around Bass Rock without landing on the island. 1 hour of throwing fish in the sea for Gannets to catch. A spectacle that must be seen to be believed. £99

Farne Islands Puffins (Northumberland)

June 6th, 13th, 17th, 20th; Approx 4 hours on islands. 20 species birds. 70,000 Puffins. Can also combine with Bass Rock. Guillemot, Razorbill, Shag, Arctic Terns etc. Tips & Tuition. £85

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- Now including Snowy & Short Eared Owls

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Unique. Up to ten different species of birds photographed. £139

Basic 1.1 Photo Editing Workshop, Rutland

March 3, 4, 5, 17, 18, 19. April 1, 2, 7, 8, 9. May 5, 6, 7

Bring your own photographs to our new studio in Rutland. Learn how to improve your photos at your own pace. No other photographers will be present on the day. One-to-One tuition. This will be a day of learning basic techniques that will teach you how to improve your own collection of photographs. It is not a Photoshop Masterclass. We will demonstrate basic editing that will apply to many programs. Bring your Raw or JPEG photos and we will work through them together. You will be amazed at what you can do. £160

Gift Vouchers available for any Workshop or Value & make wonderful Gifts for all Occasions

Ospreys in Rutland - AM & PM sessions

May 11PM with May 12 AM, July 14PM with July 15 AM. Afternoon & morning sessions combined in specialist osprey hide a few miles from Rutland's resident ospreys. Provides the best opportunities in the whole of England to photograph ospreys catching live trout.

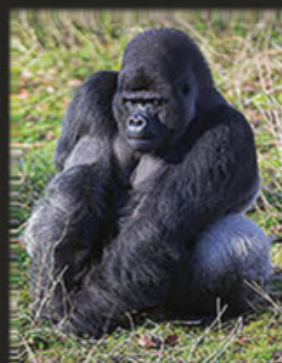
10,000 trout in one pond 100 feet x 50 feet. Exclusive use of 6 person hide. Tips & tuition to assist you throughout both sessions plus classroom session to show how to work your photos to their best advantage. Breakfast incl. £299

Bass Rock Gannets (60 miles north Farne Is.)

June 7th, 12th, 21st; Private boat. Exclusive use of Island. 150,000 Gannets. Absolutely amazing Photos. 4.5 hours on Bass Rock. Get really close. Sole use of island for our workshop £199

Small Mammals, Insects & Reptiles in Northumberland

June 14th, 25th. Indoor studio set-ups ensuring professional quality photos of stunning subjects. Studio LED lighting set up for you. Cameras and lenses can be loaned without charge. Innovative set-ups to maximise your opportunities. Max 4 persons. Harvest Mice, Red Eyed Tree Frogs, Praying Mantis, Bearded Dragon, Scorpion, Tarantula, Geckos, Snake, Millipede etc. £199



For more information, please visit the website or call John or Nadine Wright on 01664 474040 (anytime) or 07779 648850. We will be most happy to discuss any workshop in detail, or to send more detailed information to anyone without internet access. Photographers on Safari, West End Studios, 55 Stapleford Road, Whissendine, Oakham, Rutland. LE15 7HF



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PhotoPlus

BUYERS' GUIDE

With more than 150 lenses for Canon DSLRs, picking the best for the job can be a minefield. Here's the lowdown

Choosing lenses

Key factors to watch out for



THE MAIN factors to consider in a lens are its focal length, maximum aperture, and whether or not it's full-frame compatible. We've categorized lenses by focal length range – from wide-angle to telephoto. The larger a lens's maximum aperture, the 'faster' it's considered to be – allowing you to control depth of field more, and offering better options in low light. Zooms are more flexible than primes, but tend not to have such fast maximum apertures. Full-frame lenses will also work with 'crop-sensor' EOS DSLRs, but crop-sensor lenses aren't compatible with full-frame cameras.

KEY: ● BEST VALUE AWARD ● BEST ON TEST AWARD

WIDE-ANGLE ZOOMS

WIDE-ANGLE ZOOMS	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF 8-15mm f/4L Fisheye USM	£1120/\$1250	Yes	1.9x	No	f/4	540g	0.15m	0.34x	None	7	90	★★★★★	
Canon EF-S 10-18mm f/4.5-5.6 IS STM	£239/\$279	No	1.8x	Yes	f/4.5-5.6	240g	0.22m	0.15x	67mm	7	143	★★★★★	●
Canon EF-S 10-22mm f/3.5-4.5 USM	£500/\$650	No	2.2x	No	f/3.5-4.5	385g	0.24m	0.17x	77mm	6	131	★★★★★	
Canon EF 11-24mm f/4L USM	£2700/\$2800	Yes	2.2x	No	f/4	1180g	0.28m	0.16x	None	9	131	★★★★★	
Canon RF 15-35mm f/2.8L IS USM	£2330/\$2300	Yes	2.3x	Yes	f/2.8	840	0.28m	0.21x	82mm	9	159	★★★★★	
Canon EF 16-35mm f/2.8L III USM	£1849/\$1899	Yes	2.2x	No	f/2.8	790g	0.28m	0.22x	82mm	9	155	★★★★★	
Canon EF 16-35mm f/4L IS USM	£950/\$1000	Yes	2.2x	Yes	f/4	615g	0.28m	0.23x	77mm	9	143	★★★★★	●
Canon EF 17-40mm f/4L USM	£720/\$750	Yes	2.4x	No	f/4	500g	0.28m	0.24x	77mm	7	113	★★★★★	
Sigma 8-16mm f/4.5-5.6 DC HSM	£600/\$800	No	2.0x	No	f/4.5-5.6	555g	0.24m	0.13x	None	7	143	★★★★★	
Sigma 10-20mm f/3.5 EX DC HSM	£330/\$400	No	2.0x	No	f/3.5	520g	0.24m	0.15x	82mm	7	143	★★★★★	
Sigma 12-24mm f/4 DG HSM A	£1400/\$1600	Yes	2.0x	No	f/4	1150g	0.24m	0.2x	None	9	143	★★★★★	
Sigma 14-24mm f/2.8 DG HSM A	£1169/\$1299	Yes	0.19x	No	f/2.8	1150g	0.26m	0.19x	None	9	155	★★★★★	
Sigma 24-35mm f/2 DG HSM A	£760/\$900	Yes	1.5x	No	f/2	940g	0.28m	0.23x	77mm	7	113	★★★★★	
Tamron 10-24mm f/3.5-4.5 Di II VC HLD	£450/\$500	No	0.19x	Yes	f/3.5-4.5	440g	0.24m	0.19x	77mm	7	143	★★★★★	●
Tamron SP 15-30mm f/2.8 Di VC USD	£930/\$1100	Yes	2.0x	Yes	f/2.8	1100g	0.28m	0.2x	None	9	143	★★★★★	
Tamron SP 15-30mm f/2.8 Di VC USD G2	£1279/\$1299	Yes	2.0x	Yes	f/2.8	1110g	0.28m	0.2x	None	9	155	★★★★★	
Tokina 11-16mm f/2.8 AT-X PRO DX II	£480/\$500	No	1.8x	No	f/2.8	560g	0.28m	0.12x	77mm	9	87	★★★★	
Tokina 11-20mm f/2.8 AT-X PRO DX	£529/\$469	No	1.43x	No	f/2.8	560g	0.28m	0.12x	82mm	9	155	★★★★★	
Tokina 12-28mm f/4 AT-X Pro DX	£450/\$400	No	2.3x	No	f/4	530g	0.25m	0.2x	82mm	9	116	★★★★★	
Tokina 16-28mm f/2.8 FF	£699/\$699	Yes	1.8x	No	f/2.8	940g	0.28m	0.19x	82mm	9	154	★★★★★	
Tokina 17-35mm f/4 AT-X PRO FX	£570/\$450	Yes	2.1x	No	f/4	600g	0.28m	0.21x	82mm	9			

TELEPHOTO ZOOMS

TELEPHOTO ZOOMS	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF-S 55-250mm f/4-5.6 IS STM	£270/\$300	No	4.5x	Yes	f/4-5.6	375g	0.85m	0.29x	58mm	7	137	★★★★★	
Canon EF 70-200mm f/2.8L IS III USM	£2099/\$2099	Yes	2.9x	Yes	f/2.8	1480g	1.2m	0.21x	77mm	8	151	★★★★★	
Canon EF 70-200mm f/2.8L USM	£1330/\$1250	Yes	2.9x	No	f/2.8	1310g	1.5m	0.16x	77mm	8	64	★★★★★	
Canon EF 70-200mm f/4L IS II USM	£1299/\$1299	Yes	2.9x	Yes	f/4	780g	1.0m	0.27x	72mm	9	151	★★★★★	
Canon EF 70-200mm f/4L IS USM	£899/\$1099	Yes	2.9x	Yes	f/4	760g	1.2m	0.21x	72mm	8	151	★★★★★	
Canon EF 70-200mm f/4L USM	£670/\$650	Yes	2.9x	No	f/4	705g	1.2m	0.21x	67mm	8	123	★★★★★	
Canon EF 70-300mm f/4-5.6 IS USM	£400/\$650	Yes	4.3x	Yes	f/4-5.6	630g	1.5m	0.26x	58mm	8	123	★★★★	
Canon EF 70-300mm f/4-5.6 IS II USM	£425/\$500	Yes	4.3x	Yes	f/4-5.6	710g	1.2m	0.25x	67mm	9	137	★★★★★	
Canon EF 70-300mm f/4-5.6L IS USM	£1030/\$1350	Yes	4.3x	Yes	f/4-5.6	1050g	1.2m	0.21x	67mm	8	117	★★★★★	
Canon EF 70-300mm f/4.5-5.6 DO IS USM	£1380/\$1400	Yes	4.3x	Yes	f/4.5-5.6	720g	1.4m	0.19x	58mm	6	90	★★★★	
Canon EF 75-300mm f/4-5.6 III	£210/\$200	Yes	4.0x	No	f/4-5.6	480g	1.5m	0.25x	58mm	7	15	★★★★	
Canon EF 75-300mm f/4-5.6 III USM	£260/\$190	Yes	4.0x	No	f/4-5.6	480g	1.5m	0.25x	58mm	7	70	★★★★	
Canon EF 100-400mm f/4.5-5.6L IS II USM	£1950/\$2050	Yes	4.0x	Yes	f/4.5-5.6	1640g	0.98m	0.31x	77mm	9	152	★★★★★	
Canon EF 200-400mm f/4L IS USM Extender 1.4x	£11,000/\$11,000	Yes	2.8x	Yes	f/4	3620g	2.0m	0.15x	52mm	9	152	★★★★★	
Sigma 50-100mm f/1.8 DC HSM A	£949/\$1099	No	2.0x	None	f/1.8	1490g	0.95m	0.15x	82mm	9	151	★★★★★	
Sigma 50-500mm f/4.5-6.3 DG OS HSM	£1160/\$1660	Yes	10.0x	Yes	f/4.5-6.3	1970g	0.5-1.8m	0.32x	95mm	9	130	★★★★★	
Sigma 60-600mm f/4.5-6.3 DG OS HSM Sport	£1899/\$1999	Yes	10.0x	Yes	f/4.5-6.3	2700g	0.6-2.6m	0.3x	105mm	9	152	★★★★★	
Sigma 70-200mm f/2.8 EX DG OS HSM	£900/\$1300	Yes	2.9x	Yes	f/2.8	1430g	1.4m	0.13x	77mm	9	137	★★★★★	●
Sigma 70-200mm f/2.8 DG OS HSM S	£1349/\$1499	Yes	2.9x	Yes	f/2.8	1805g	1.2m	0.21x	82mm	11	151	★★★★★	●
Sigma 70-300mm f/4-5.6 DG Macro	£130/\$140	Yes	4.3x	No	f/4-5.6	545g	0.95m	0.5x	58mm	9	123	★★★★	
Sigma APO 70-300mm f/4-5.6 DG Macro	£180/\$180	Yes	4.3x	No	f/4-5.6	550g	0.95m	0.5x	58mm	9	137	★★★★	
Sigma 100-400mm f/5-6.3 DG OS HSM C	£689/\$699	Yes	4x	Yes	f/5-6.3	1160g	1.6m	0.26x	67mm	9	152	★★★★★	
Sigma 120-300mm f/2.8 DG OS HSM S	£2700/\$3400	Yes	2.5x	Yes	f/2.8	3390g	1.5-2.5m	0.12x	105mm	9	151	★★★★★	
Sigma 150-600mm f/5-6.3 DG OS HSM C	£790/\$1000	Yes	4.0x	Yes	f/5-6.3	1930g	2.8m	0.2x	95mm	9	152	★★★★★	●
Sigma 150-600mm f/5-6.3 DG OS HSM S	£1330/\$1800	Yes	4.0x	Yes	f/5-6.3	2860g	2.6m	0.2x	105mm	9	152	★★★★★	●
Sigma 300-800mm f/5.6 EX DG HSM	£6500/\$6800	Yes	2.7x	No	f/5.6	5880g	6.0m	0.14x	46mm	9			
Tamron SP AF 70-200mm f/2.8 Di LD (IF) Macro	£630/\$770	Yes	2.9x	No	f/2.8	1320g	0.95m	0.32x	77mm	9	137	★★★★★	
Tamron SP 70-200mm f/2.8 Di VC USD G2	£1289/\$1299	Yes	2.9x	Yes	f/2.8	1500g	0.95m	0.16x	77mm	9	151	★★★★★	●
Tamron 70-210mm f/4 DI VC USD	£599/\$699	Yes	2.9x	Yes	f/4	860g	0.95m	0.32x	67mm	9	151	★★★★★	
Tamron AF 70-300mm f/4-5.6 Di LD Macro	£130/\$145	Yes	4.3x	No	f/4-5.6	458g	0.95m	0.5x	62mm	9	137	★★★★	
Tamron SP AF 70-300mm f/4-5.6 Di VC USD	£330/\$450	Yes	4.3x	Yes	f/4-5.6	765g	1.5m	0.25x	62mm	9	137	★★★★★	●
Tamron 100-400mm f/4.5-6.3 Di VC USD	£750/\$700	Yes	4x	Yes	f/4-5.6	1135g	1.5m	0.28x	67mm	9	152	★★★★★	
Tamron SP 150-600mm f/5-6.3 Di VC USD	£830/\$870	Yes	4.0x	Yes	f/5-6.3	1951g	2.7m	0.2x	95mm	9	130	★★★★★	
Tamron SP 150-600mm f/5-6.3 Di VC USD G2	£1129/\$1299	Yes	4.0x	Yes	f/5-6.3	2010g	2.2m	0.26x	95mm	9	152	★★★★★	

BUYERS' GUIDE LENSES

KEY: ● BEST VALUE AWARD ● BEST ON TEST AWARD

STANDARD ZOOMS														Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon	EF-S 15-85mm f/3.5-5.6 IS USM	£690/\$800	No	5.7x	Yes	f/3.5-5.6	575g	0.35m	0.21x	72mm	7	142	★★★★★													
Canon	EF-S 17-55mm f/2.8 IS USM	£790/\$800	No	3.2x	Yes	f/2.8	645g	0.35m	0.17x	77mm	7	142	★★★★★													●
Canon	EF-S 18-55mm f/3.5-5.6 IS II	£170/\$200	No	3.1x	Yes	f/3.5-5.6	200g	0.25m	0.34x	58mm	6	110	★★★★													
Canon	EF-S 18-55mm f/3.5-5.6 IS STM	£200/\$250	No	3.1x	Yes	f/3.5-5.6	205g	0.25m	0.36x	58mm	7	110	★★★★★													
Canon	EF 24-70mm f/2.8L II USM	£1740/\$1600	Yes	2.9x	No	f/2.8	805g	0.38m	0.21x	82mm	9	142	★★★★★													
Canon	RF 24-70mm f/2.8L IS USM	£2330/2300	Yes	2.9x	Yes	f/2.8	900g	0.21x	0.30x	82mm	9	159	★★★★★													
Canon	EF 24-70mm f/4L IS USM	£800/\$900	Yes	2.9x	Yes	f/4	600g	0.38m	0.7x	77mm	9	142	★★★★★													
Canon	RF 28-70mm f/2L USM	£2500/\$3200	Yes	2.9x	No	f/2	1430g	0.39m	0.18x	95mm	9															
Canon	EF 24-105mm f/3.5-5.6 IS STM	£380/\$600	Yes	4.4x	Yes	f/3.5-5.6	525g	0.4m	0.3x	77mm	7															
Canon	EF 24-105mm f/4L IS II USM	£1065/\$1000	Yes	4.4x	Yes	f/4	795g	0.45m	0.24x	77mm	10	127	★★★★★													
Canon	RF 24-105mm f/4L IS USM	£1119/\$1099	Yes	4.4x	No	f/1.2	700g	0.40m	0.19x	77mm	9	146	★★★★★													
Sigma	17-50mm f/2.8 EX DC OS HSM	£330/\$370	No	2.9x	Yes	f/2.8	565g	0.28m	0.2x	77mm	7	127	★★★★★													
Sigma	17-70mm f/2.8-4 DC Macro OS HSM C	£350/\$500	No	4.1x	Yes	f/2.8-4	465g	0.22m	0.36x	72mm	7	142	★★★★★													●
Sigma	18-35mm f/1.8 DC HSM A	£650/\$800	No	1.9x	No	f/1.8	810g	0.28m	0.23x	72mm	9	90	★★★★★													
Sigma	24-70mm f/2.8 DG OS HSM A	£1200/\$1200	Yes	2.9x	Yes	f/2.8	1,020g	0.38m	0.2x	82mm	9	142	★★★★★													●●
Sigma	24-105mm f/4 DG OS HSM A	£600/\$900	Yes	4.4x	Yes	f/4	885g	0.45m	0.22x	82mm	9	127	★★★★★													
Tamron	SP AF 17-50mm f/2.8 XR Di II VC	£420/\$650	No	2.9x	Yes	f/2.8	570g	0.29m	0.21x	72mm	7	142	★★★★★													
Tamron	SP AF 24-70mm f/2.8 Di VC USD G2	£1250/\$1200	Yes	2.9x	Yes	f/2.8	905g	0.38m	0.2x	82mm	9	142	★★★★★													
Tamron	SP AF 28-75mm f/2.8 XR Di	£450/\$500	Yes	2.7x	No	f/2.8	510g	0.33m	0.26x	67mm	7	57	★★★★													

STANDARD ZOOMS

SUPERZOOMS														Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon	EF-S 18-135mm f/3.5-5.6 IS STM	£429/\$449	No	7.5x	Yes	f/3.5-5.6	480g	0.39m	0.28x	67mm	7	153	★★★★★													
Canon	EF-S 18-135mm f/3.5-5.6 IS USM	£469/\$600	No	7.5x	Yes	f/3.5-5.6	515g	0.39m	0.28x	67mm	7	153	★★★★★													
Canon	EF-S 18-200mm f/3.5-5.6 IS	£470/\$700	No	11.1x	Yes	f/3.5-5.6	595g	0.45m	0.24x	72mm	6	128	★★★★★													
Canon	RF 24-240mm f/4-6.3 IS USM	£899/\$1150	Yes		Yes	f/4-6.3	750g	0.5m	0.26x	72mm	7	159	★★★★★													
Canon	EF 28-300mm f/3.5-5.6L IS USM	£2289/\$2450	Yes	10.7x	Yes	f/3.5-5.6	1760g	0.7m	0.30x	77mm	8	153	★★★★★													
Sigma	18-200mm f/3.5-6.3 DC Macro OS HSM C	£279/\$400	No	11.1x	Yes	f/3.5-6.3	430g	0.39m	0.33x	62mm	7	153	★★★★★													
Sigma	18-250mm f/3.5-6.3 DC Macro OS HSM	£350/\$350	No	13.9x	Yes	f/3.5-6.3	470g	0.35m	0.34x	62mm	7	92	★★★★★													●
Sigma	18-300mm f/3.5-6.3 DC Macro OS HSM C	£370/\$399	No	16.7x	Yes	f/3.5-6.3	585g	0.39m	0.33x	72mm	7	153	★★★★★													●
Tamron	16-300mm f/3.5-6.3 Di II VC PZD Macro	£499/\$629	No	18.8x	Yes	f/3.5-6.3	540g	0.39m	0.34x	67mm	7	153	★★★★★													
Tamron	18-200mm f/3.5-6.3 Di II VC	£199/\$199	No	11.1x	Yes	f/3.5-6.3	400g	0.49m	0.25x	62mm	7	153	★★★★★													●
Tamron	AF 18-270mm f/3.5-6.3 Di II VC PZD	£300/\$450	No	15x	Yes	f/3.5-6.3	450g	0.49m	0.26x	62mm	7	128	★★★★★													
Tamron	18-400mm f/3.5-6.3 Di II VC HLD	£650/\$650	No	22.2x	Yes	f/3.5-6.3	710g	0.45m	0.34x	72mm	7	153	★★★★★													

SUPERZOOMS

WIDE-ANGLE PRIMES														
Canon	EF 14mm f/2.8L II USM	£2000/\$2100	Yes	None	No	f/2.8	645g	0.2m	0.15x	None	6			
Canon	TS-E 17mm f/4L (tilt & shift)	£2000/\$2150	Yes	None	No	f/4	820g	0.25m	0.14x	77mm	8	90	★★★★★	
Canon	EF 20mm f/2.8 USM	£450/\$540	Yes	None	No	f/2.8	405g	0.25m	0.14x	72mm	5	114	★★★★★	
Canon	EF-M 22mm f/2 STM	£195/\$230	No	None	No	f/2	105g	0.15m	0.21x	43mm	7	158	★★★★★	
Canon	EF 24mm f/1.4L II USM	£1500/\$1550	Yes	None	No	f/1.4	650g	0.25m	0.17x	77mm	8			
Canon	EF 24mm f/2.8 IS USM	£519/\$550	Yes	None	Yes	f/2.8	280g	0.2m	0.23x	58mm	7	158	★★★★★	
Canon	EF-S 24mm f/2.8 STM	£155/\$130	No	None	No	f/2.8	125g	0.16m	0.27x	52mm	7	158	★★★★★	🔵
Canon	TS-E 24mm f/3.5L II (tilt & shift)	£1690/\$1900	Yes	None	No	f/3.5	780g	0.21m	0.34x	82mm	8			
Canon	EF 28mm f/1.8 USM	£420/\$510	Yes	None	No	f/1.8	310g	0.25m	0.18x	58mm	7	67	★★★★	
Canon	EF 28mm f/2.8 IS USM	£390/\$500	Yes	None	Yes	f/2.8	260g	0.23m	0.2x	58mm	7	114	★★★★★	
Canon	EF 35mm f/1.4L II USM	£1650/\$1650	Yes	None	No	f/1.4	760g	0.28m	0.21x	72mm	9	141	★★★★★	
Canon	RF 35mm f/1.8 IS Macro STM	£495/\$450	Yes	None	Yes	f/1.8	305g	0.17m	0.5x	52mm	9	158	★★★★★	🔴
Canon	EF 35mm f/2 IS USM	£520/\$550	Yes	None	Yes	f/2	335g	0.24m	0.24x	67mm	8	158	★★★★★	
Irix	11mm f/4 Blackstone	£609/\$650	Yes	None	No	f/4	790g	0.28m	0.13	None	9			
Irix	15mm f/2.4 Blackstone	£599/\$675	Yes	None	No	f/2.4	685g	0.25m	0.11x	95mm	9	155	★★★★★	
Peleng	8mm f/3.5 Fisheye	£250/\$215	Yes	None	No	f/3.5	400g	0.22m	0.13x	None				
Peleng	17mm f/2.8 Fisheye	£290/\$290	Yes	None	No	f/2.8	630g	0.3m	N/S	None				
Samyang	8mm f/3.5 IF MC CSII DH Circular	£240/\$260	No	None	No	f/3.5	435g	0.3m	N/S	None	6			
Samyang	10mm f/2.8 ED AS NCS CS	£379/\$399	No	None	No	f/2.8	590g	0.25m	N/S	None	6	155	★★★★★	🔵
Samyang	12mm f/2.8 ED AS NCS Diagonal	£360/\$470	Yes	None	No	f/2.8	530g	0.2m	N/S	None	7			
Samyang	XP 14mm f/2.4	£899/\$999	Yes	None	No	f/2.4	791g	0.27m	0.08x	None	9	155	★★★★★	🔴
Samyang	16mm f/2 ED AS UMC CS	£330/\$360	No	None	No	f/2	590g	0.2m	N/S	77mm	8			
Samyang	24mm f/1.4 ED AS UMC	£480/\$470	Yes	None	No	f/1.4	680g	0.25m	N/S	77mm	8			
Samyang	T-S 24mm f/3.5 ED AS UMC (tilt & shift)	£680/\$760	Yes	None	No	f/3.5	680g	0.2m	N/S	82mm	8	90	★★★★★	
Samyang	35mm f/1.4 AS UMC AE	£489/\$499	Yes	None	No	f/1.4	660g	0.3m	N/S	77mm	8	158	★★★★★	
Sigma	4.5mm f/2.8 EX DC HSM Circular Fisheye	£700/\$900	No	None	No	f/2.8	470g	0.14m	0.17x	None	6	87	★★★★★	
Sigma	8mm f/3.5 EX DG Circular Fisheye	£700/\$900	Yes	None	No	f/3.5	400g	0.14m	0.22x	None	6	87	★★★★★	🔵
Sigma	10mm f/2.8 EX DC HSM Diagonal Fisheye	£600/\$600	No	None	No	f/2.8	475g	0.14m	0.11x	None	7	87	★★★★★	
Sigma	14mm f/1.8 DG HSM A	£1299/\$1399	Yes	None	No	f/1.8	1170g	0.27m	0.19x	None	9	155	★★★★★	
Sigma	15mm f/2.8 EX DG Diagonal Fisheye	£600/\$610	Yes	None	No	f/2.8	370g	0.15m	0.26x	None	7	44	★★★★★	
Sigma	16mm f/1.4 DC DN C	£449/\$400	Yes	None	No	f/1.4	405g	0.25m	0.1x	67mm	9	161	★★★★★	
Sigma	20mm f/1.4 DG HSM A	£700/\$900	Yes	None	No	f/1.4	950g	0.28m	0.14x	77mm	9	114	★★★★★	
Sigma	24mm f/1.4 DG HSM A	£650/\$850	Yes	None	No	f/1.4	665g	0.25m	0.19x	77mm	9	114	★★★★★	🔴
Sigma	30mm f/1.4 DC DN C	£329/\$339	Yes	None	No	f/1.4	270g	0.3m	0.14x	52mm	9	161	★★★★★	
Sigma	35mm f/1.4 DG HSM A	£650/\$700	Yes	None	No	f/1.4	665g	0.3m	0.19x	67mm	9	158	★★★★★	
Sigma	56mm f/1.4 DC DN C	£339/\$479	Yes	None	No	f/1.4	280g	0.5m	0.14x	55mm	9	161	★★★★★	
Tamron	SP 35mm f/1.8 Di VC USD	£700/\$600	Yes	None	Yes	f/1.8	480g	0.2m	0.4x	67mm	9	158	★★★★★	
Zeiss	Milvus 15mm f/2.8 ZE	£2330/\$2700	Yes	None	No	f/2.8	947g	0.25m	0.11x	95mm	9			
Zeiss	Distagon T* 18mm f/3.5 ZE	£1090/\$1395	Yes	None	No	f/3.5	510g	0.3m	0.08x	82mm	9	44	★★★★★	🔴
Zeiss	Milvus 21mm f/2.8 ZE	£1400/\$1850	Yes	None	No	f/2.8	851g	0.22m	0.2x	82mm	9			
Zeiss	Distagon T* 25mm f/2 ZE	£1270/\$1700	Yes	None	No	f/2	600g	0.25m	0.17x	67mm	9			
Zeiss	Distagon T* 28mm f/2 ZE	£980/\$1285	Yes	None	No	f/2	580g	0.24m	0.21x	58mm	9			
Zeiss	Otus 28mm f/1.4 ZE	£3500/\$5000	Yes	None	No	f/1.4	1350g	0.3m	0.2x	95mm	9			
Zeiss	Milvus 35mm f/2 ZE	£935/\$1120	Yes	None	No	f/2	702g	0.3m	0.19x	58mm	9	141	★★★★★	

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KEY: ● BEST VALUE AWARD ● BEST ON TEST AWARD

STANDARD PRIMES	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF 40mm f/2.8 STM	£200/\$180	Yes	None	No	f/2.8	130g	0.3m	0.18x	52mm	7	141	★★★★★	
Canon TS-E 45mm f/2.8 (tilt & shift)	£1200/\$1400	Yes	None	No	f/2.8	645g	0.4m	0.16x	72mm	8			
Canon EF 50mm f/1.2L USM	£1370/\$1350	Yes	None	No	f/1.2	580g	0.45m	0.15x	72mm	8	103	★★★★★	
Canon EF 50mm f/1.4 USM	£385/\$350	Yes	None	No	f/1.4	290g	0.45m	0.15x	58mm	8	146	★★★★	
Canon EF 50mm f/1.8 STM	£120/\$125	Yes	None	No	f/1.8	160g	0.35m	0.21x	49mm	7	146	★★★★★	●
Canon RF 50mm f/1.2L USM	£2349/\$2299	Yes	None	No	f/1.2	950g	0.40m	0.15x	77mm	10	146	★★★★★	
Samyang 50mm f/1.4 AS UMC	£310/\$350	Yes	None	No	f/1.4	575g	0.45m	N/S	77mm	8			
Sigma 30mm f/1.4 DC HSM A	£360/\$500	No	None	No	f/1.4	435g	0.3m	0.15x	62mm	9	146	★★★★★	●
Sigma 50mm f/1.4 DG HSM A	£600/\$950	Yes	None	No	f/1.4	815g	0.4m	0.18x	77mm	9	140	★★★★★	●
Tamron SP 45mm f/1.8 Di VC USD	£480/\$400	Yes	None	Yes	f/1.8	540g	0.29m	0.29x	67mm	9	146	★★★★★	
Tokina Opera 50mm f/1.4 FF	£879/\$949	Yes	None	No	f/1.4	950g	0.4m	0.18x	72mm	9	148	★★★★★	
Zeiss Milvus 50mm f/1.4 ZF.2	£1000/\$1200	Yes	None	No	f/1.4	922g	0.45m	0.15x	67mm	9	146	★★★★★	
Zeiss Planar T* 50mm f/1.4 ZE	£560/\$725	Yes	None	No	f/1.4	380g	0.45m	0.15x	58mm	9			
Zeiss Otus 55mm f/1.4	£2700/\$3990	Yes	None	No	f/1.4	1030g	0.5m	0.15x	77mm	9			

TELEPHOTO PRIMES	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF 85mm f/1.2L II USM	£1849/\$1899	Yes	None	No	f/1.2	1025g	0.95m	0.11x	72mm	8	159	★★★★★	
Canon EF 85mm f/1.4L IS USM	£1379/\$1599	Yes	None	Yes	f/1.4	950g	0.85m	0.12x	77mm	9	159	★★★★★	●
Canon EF 85mm f/1.8 USM	£365/\$369	Yes	None	No	f/1.8	425g	0.85m	0.13x	58mm	8	159	★★★★★	
Canon TS-E 90mm f/2.8 (tilt & shift)	£1240/\$1400	Yes	None	No	f/2.8	565g	0.5m	0.29x	58mm	8			
Canon EF 100mm f/2 USM	£410/\$500	Yes	None	No	f/2	460g	0.9m	0.14x	58mm	8	46	★★★★★	
Canon EF 135mm f/2L USM	£940/\$1000	Yes	None	No	f/2	750g	0.9m	0.19x	72mm	8			
Canon EF 200mm f/2L IS USM	£5400/\$5700	Yes	None	Yes	f/2	2520g	1.9m	0.12x	52mm	8	98	★★★★★	
Canon EF 200mm f/2.8L II USM	£700/\$750	Yes	None	No	f/2.8	765g	1.5m	0.16x	72mm	8	98	★★★★★	
Canon EF 300mm f/2.8L IS II USM	£5800/\$6100	Yes	None	Yes	f/2.8	2400g	2.0m	0.18x	52mm	9	54	★★★★★	
Canon EF 300mm f/4L IS USM	£1140/\$1350	Yes	None	Yes	f/4	1190g	1.5m	0.24x	77mm	8	117	★★★★★	
Canon EF 400mm f/2.8L IS II USM	£9900/\$10,000	Yes	None	Yes	f/2.8	3850g	2.7m	0.17x	52mm	9	54	★★★★★	
Canon EF 400mm f/4 DO IS II USM	£7000/\$6900	Yes	None	Yes	f/4	2100g	3.3m	0.13x	52mm	9			
Canon EF 400mm f/5.6L USM	£1180/\$1180	Yes	None	No	f/5.6	1250g	3.5m	0.12x	77mm	8	117	★★★★	
Canon EF 500mm f/4L IS II USM	£8400/\$9000	Yes	None	Yes	f/4	3190g	3.7m	0.15x	52mm	9			
Canon EF 600mm f/4L IS II USM	£11,350/\$11,500	Yes	None	Yes	f/4	3920g	4.5m	0.15x	52mm	9			
Canon EF 800mm f/5.6L IS USM	£11,900/\$13,000	Yes	None	Yes	f/5.6	4500g	6.0m	0.14x	52mm	8			
Samyang MF 85mm f/1.4 RF	£319/\$379	Yes	None	No	f/1.4	730g	1.1m	0.09x	72mm	8	159	★★★★★	●
Samyang AF 85mm f/1.4 EF	£599/\$699	Yes	None	No	f/1.4	485g	0.9m	0.11x	77mm	9	159	★★★★★	
Samyang 135mm f/2 ED UMC	£370/\$530	Yes	None	No	f/2	830g	0.8m	N/S	77mm	9			
Samyang 500mm MC IF f/6.3 Mirror	£125/\$150	Yes	None	No	f/6.3	705g	2.0m	N/S	95mm	0			
Samyang 800mm MC IF f/8 Mirror	£170/\$190	Yes	None	No	f/8	870g	3.5m	N/S	30mm	0			
Sigma 85mm f/1.4 DG HSM A	£899/\$1199	Yes	None	No	f/1.4	TBA	0.85m	0.12x	86mm	9	159	★★★★★	
Sigma APO 300mm f/2.8 EX DG HSM	£2600/\$3400	Yes	None	No	f/2.8	2400g	2.5m	0.13x	46mm	9	98	★★★★★	
Sigma APO 500mm f/4.5 EX DG HSM	£3600/\$4400	Yes	None	No	f/4.5	3150g	4.0m	0.13x	46mm	9			
Sigma 500mm f/4 DG OS HSM S	£5000/\$6000	Yes	None	Yes	f/4	TBA	3.5m	0.15x	46mm	9	9		
Sigma APO 800mm f/5.6 EX DG HSM	£5000/\$6600	Yes	None	No	f/5.6	4.9kg	7.0m	0.11x	46mm	9	21	★★★★★	
Tamron SP 85mm f/1.8 Di VC USD	£750/\$750	Yes	None	Yes	f/1.8	700g	0.8m	0.14x	67mm	9	159	★★★★★	
Zeiss Milvus 85mm f/1.4 ZE	£1380/\$1800	Yes	None	No	f/1.4	1280g	0.8m	0.14x	77mm	9			
Zeiss Milvus 135mm f/2 ZE	£1900/\$2200	Yes	None	No	f/2	1123g	0.8m	0.28x	77mm	9			

MACRO	Price	Full-frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
Canon EF-S 60mm f/2.8 Macro USM	£380/\$400	No	None	No	f/2.8	335g	0.20m	1.0x	52mm	7	138	★★★★	
Canon MP-E65mm f/2.8 1-5x Macro	£980/\$1050	Yes	None	No	f/2.8	710g	0.24m	5.0x	58mm	6	50	★★★★★	
Canon EF 100mm f/2.8 Macro USM	£420/\$600	Yes	None	No	f/2.8	600g	0.31m	1.0x	58mm	8	138	★★★★★	
Canon EF 100mm f/2.8L Macro IS USM	£800/\$800	Yes	None	Yes	f/2.8	625g	0.3m	1.0x	67mm	9	138	★★★★★	
Canon EF 180mm f/3.5L Macro USM	£1330/\$1400	Yes	None	No	f/3.5	1090g	0.48m	1.0x	72mm	8	69	★★★★★	
Sigma 70mm f/2.8 DG macro Art	£449/\$469	Yes	None	No	f/2.8	515g	0.26m	1.0x	49mm	9	156	★★★★★	
Sigma 105mm f/1.4 DG HSM Art	£1499/\$1599	Yes	None	No	f/1.4	1645g	1.0m	0.12x	105mm	9	144	★★★★★	
Sigma Macro 105mm f/2.8 EX DG OS HSM	£360/\$570	Yes	None	Yes	f/2.8	725g	0.31m	1.0x	62mm	9	138	★★★★★	●
Sigma APO Macro 150mm f/2.8 EX DG OS HSM	£780/\$1100	Yes	None	Yes	f/2.8	1150g	0.38m	1.0x	72mm	9	138	★★★★★	
Sigma APO Macro 180mm f/2.8 EX DG OS HSM	£1250/\$1700	Yes	None	Yes	f/2.8	1640g	0.47m	1.0x	86mm	9	102	★★★★★	
Tamron SP AF 60mm f/2 Di II LD (IF) Macro	£350/\$525	No	None	No	f/2	350g	0.23m	1.0x	55mm	7	138	★★★★	
Tamron SP AF 90mm f/2.8 Di Macro	£350/\$500	Yes	None	No	f/2.8	400g	0.29m	1.0x	55mm	9	102	★★★★	
Tamron SP AF 90mm f/2.8 Di VC USD Macro	£580/\$650	Yes	None	Yes	f/2.8	610g	0.3m	1.0x	62mm	9	138	★★★★★	●
Tamron SP AF 180mm f/3.5 Di Macro	£800/\$740	Yes	None	No	f/3.5	985g	0.47m	1.0x	72mm	7	69	★★★★	
Tokina 100mm f/2.8 AT-X PRO Macro	£350/\$410	Yes	None	No	f/2.8	540g	0.3m	1.0x	55mm	9	118	★★★★★	
Zeiss Makro Planar T* 50mm f/2 ZE	£950/\$1285	Yes	None	No	f/2	570g	0.24m	0.5x	67mm	9			
Zeiss Milvus Makro Planar 100mm f/2 ZE	£1300/\$1840	Yes	None	No	f/2	843g	0.44m	0.5x	67mm	9	50	★★★★★	

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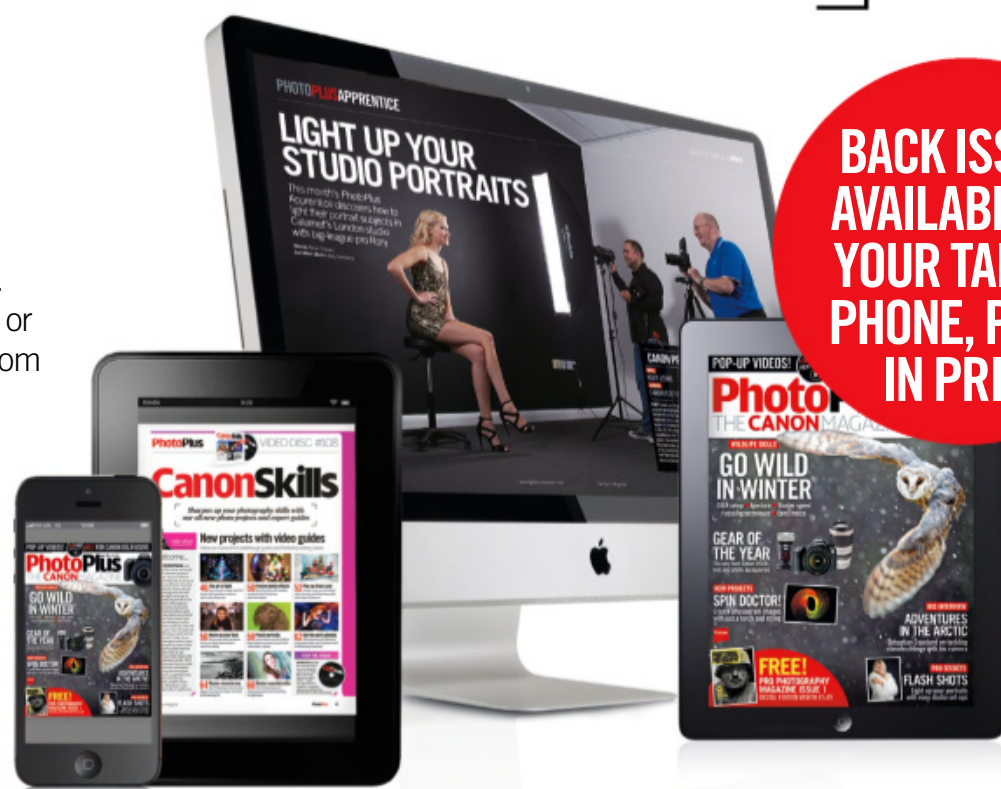
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LAST MONTH



Issue 161 February 2020

WINTER LANDSCAPES FOR 2020 Take advantage of the year's toughest season and venture outdoors to take incredible landscape shots

- Set up a home studio for delightful floral photos with flash
- Fashion photographer, Wanda Martin, talks about her inspirations and close encounters with bad boys of ballet
- Which flashgun is the quickest on the draw? Find out in our comprehensive Super Test
- Sigma's brand new M-mount lenses join the party, but are they any good? The full verdict here
- Winning Canon images from the NHM Wildlife POTY
- Lots of exciting Canon related tutorials to get you shooting and learning



Issue 160 January 2020

TAME WINTER WILDLIFE Ensure your photos of all that nature has to offer in winter are pin-sharp with these tips and tricks

- 53 great gear-related gifts that you can buy for Christmas and beyond
- We roll out the red carpet and reveal the winners of our Canon Gear of the Year
- Up-and-coming photography star, Michel D'Oultremont, talks passion and the magic of nature photography



Issue 159 December 2019

MASTER YOUR CANON Take better landscape shots with our guide to lens filters

- Our Apprentice heads to the kitchen and learns how to shoot foodie photos with a Canon pro
- Take to the depths of volcanos for a chat with pro photographer Ulla Lohmann
- Prepare for close ups as we test fast 85mm portrait lenses in our Super Test
- We find out how the EOS 90D compares with the two crop-sensor DSLRs it's replacing

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Issue 158 November 2019

THE ULTIMATE GUIDE TO EXPOSURE Get the most out of your exposures with our all essential Canon skills guide ● Intense high-speed motorsport photography for our Apprentice ● Simon Annand talks about his intimate photos backstage at the theatre ● The Canon EOS 90D gets a full test in our tech lab ● We test which lenses should be accompanying you on your street photography quest



Issue 157 October 2019

TRAVEL PHOTO TECHNIQUES Understand what it takes to take amazing travel shots while still having a great holiday ● Head to the coast with another Canon pro in the Apprentice ● We get an exciting preview of Canon's upcoming EOS 90D DSLR ● The best of the best lighting kits go head to head in this month's Super Test ● Wildlife Canon pro Ellie Rothnie tells her story of passion and admiration



Issue 156 September 2019

THE ESSENTIAL LANDSCAPE PHOTOGRAPHY GUIDE Improve every type of landscape photo with these 23 fantastic tips and tricks ● Another Canon pro teaches a budding Apprentice, this time on how to improve their portrait photography ● Pro Ilvy Njiokiktjien explains her work in South Africa ● Canon EOS DSLRs vs EOS mirrorless, get the lowdown in our Super Test



Issue 155 August 2019

MASTER YOUR CANON LENS Learn how to get the most out of all the lenses in your arsenal ● David Noton details his exploits on the island of Corsica ● We pick the best lenses for astrophotography in our Super Test ● We forget focal length and dive inside some fun lenses for this month's Mini Test ● Pro sports photographer Dave Rogers talks about his expansive sports photographic career



Issue 154 July 2019

OUR BEST-EVER CANON OUTDOOR PHOTOGRAPHY GUIDE Get creative outside in the lovely sunny weather with our best outdoor photography guide yet ● Another Canon pro teaches our Apprentice, this time they're shooting ancient castles in the endlessly beautiful South Wales ● We put travel tripods to the test to see which one you should be taking around the world and back



Issue 153 June 2019

10 ESSENTIAL CANON TECHNIQUES Ten of the best tips to help you shoot your best ever images ● Improve your landscape compositions with these cheeky photography hacks ● Summery portraits that would make mother nature herself jealous – join our Apprentice with another Canon pro ● Eight superzooms go head to head to uncover which should be your most prized summer shooter



Issue 152 May 2019

PHOTO SKILLS FOR WILDLIFE Learn how to photograph animals in their natural habitat in our big guide ● We do like to be beside the seaside – shoot gorgeous harbours with our Apprentice and Canon pro ● The astounding story of nature photojournalist Christian Ziegler in our exclusive interview ● Magical Canon related camera skills to keep you busy and creative, with free videos



Issue 151 Spring 2019

MASTER YOUR CANON SKILLS THIS SPRING Capture the majesty of Spring with your Canon camera ● Get up close to take some amazing macro shots of tiny creatures in the studio with our Apprentice ● David Noton shoots some of in Portugal for his column this issue ● We test continuous lighting to help you get the most from your video shoots ● Eight of the fastest telephoto zooms are tested to the max



Issue 150 April 2019

TAKE CONTROL OF YOUR CAMERA FOR BETTER LANDSCAPES Use long exposures, Manual mode, creative compositions, the light and important camera settings to improve your scenic shots ● We dive deeply into a conversation with famous underwater photographer, Ali Khalifa Bin Thalith ● Get some inside tips on how to take great interior shots with our Canon pro and PhotoPlus Apprentice



Issue 149 March 2019

UNLOCK THE TRUE POTENTIAL OF YOUR PHOTOS WITH RAW Shot with Raw to get the most out of your photos ● Shoot heavenly family portraits outside with award-winning pro family photographer, Nina Mace ● We have a chat with former White House photographer, Pete Souza ● Discover which of Canon's APS-C DSLRs you should spend your cash on in this Month's Super Test

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- How to capture and create smoking portraits
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PLUS ALL THIS...

- The *PhotoPlus* Apprentice: Pro tips for better night photography
- The Interview: Susan Meiselas, American professional documentary photographer
- Super Test: The best telephoto zooms to get closer to action

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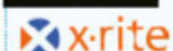


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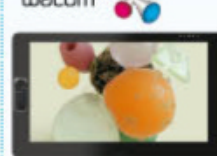
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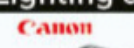


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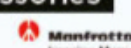
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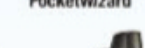
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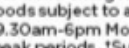
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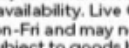
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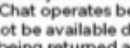
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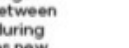
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FOCUSPOINT

We'd love to hear your thoughts on the magazine and all things photographic! Email us at photoplus@futurenet.com

Letter of the Month

I think I slightly disagree with John Stinchcombe (Focuspoint, issue 160). I don't think the Canon EOS 70D is long in the tooth at all. Mine still performs as well today as it did when I bought it in 2015. It did not become a worse camera when the 80D and 90D were released. Would the extra couple of frames per second, faster autofocus and processor, and higher pixel count improve my composition skills, my use of light and eye for a picture? Would locations become more picturesque, models more beautiful and the weather better? While my 70D lives I don't feel the need to replace it.

Graham Easby, Pudsey, West Yorkshire

Thanks for getting in touch, Graham, and we like your response. There's a lot to be said that it's not how new your camera is, but the ability of the



user that dictates the standard of photography. We'd also add that investing in lenses is usually a better route to improved photos than buying new camera bodies every year.

Send us your letters and images to photoplus@futurenet.com

THIS MONTH'S PRIZE!

Each issue, every letter printed wins an Experience Seminars EOS training DVD. More info at www.eostrainingacademy.co.uk



The month in numbers

2020

We bring you 20 great Canon tips for 2020 for your best-ever landscape, wildlife, close-up and portrait photos – see page 28

1D X

The just launched Canon EOS-1D X Mark III uses a new DIGIC X processor – turn to page 92

10

We test Canon's ten standard zoom lenses for APS-C and full-frame cameras – results are on page 100

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Canon releases firmware to fix the Canon RF 70-200mm f/2.8L's focusing issues

Corrective firmware for the Canon RF 70-200mm f/2.8L's minimum focusing distance issues is now available. For more information go to DigitalCameraWorld.com via our quick link bit.ly/dcw_rf



CES 2020: all the new cameras and imaging tech at the super show

The world's premier technology show is playing host to all manner of new cameras and imaging kit. More information on CES in Vegas at DigitalCameraWorld.com via this quick link bit.ly/dcw_ces



There are over 100 updates on the new Canon EOS-1D X Mark III camera

The 102 updates in the Canon EOS-1D X Mk III show just how much has been upgraded in Canon's new flagship camera. More news on our site at DigitalCameraWorld.com via our quick link bit.ly/dcw_1dx3



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