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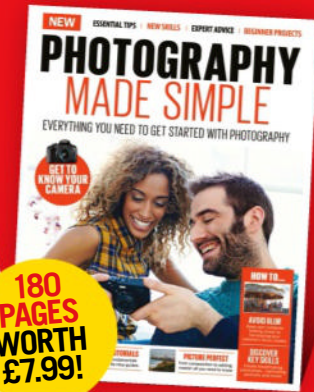


FREE PHOTO SKILLS EBOOK

# PhotoPlus

THE CANON MAGAZINE

Issue 214 • March 2024



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NEW PHOTO SKILLS

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THE PRO INTERVIEW

### YOUR MACRO MASTERCLASS

Matt Doogue's photo therapy capturing creature close-ups



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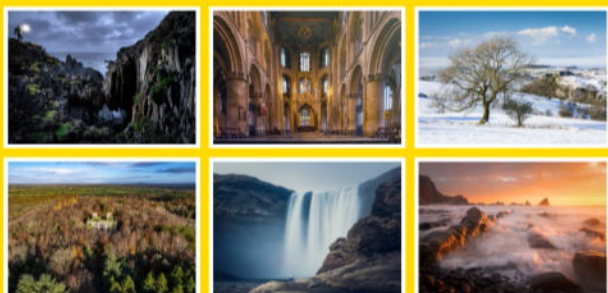
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**WINTER SCENES**

Learn how to capture better landscape photos this winter, with Canon pro Drew Buckley  
**Page 50**



Drew Buckley

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- **WE'RE 100% INDEPENDENT** and we cater for **EVERY CANON EOS DSLR & MIRRORLESS PHOTOGRAPHER** from beginners to enthusiasts to pros.
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- We offer **THE VERY BEST CANON TECHNIQUE & PHOTOSHOP VIDEO GUIDES** – see our Canon Skills section.
- We're proud to use **THE WORLD'S TOP CANON PHOTOGRAPHERS** and experts. Meet them on page 6.



**Peter Travers**  
Editor

# Welcome

**W**hile it's generally accepted that editing your images goes hand in hand with digital photography, nothing beats capturing the best photos correctly in camera. That feeling of nailing a top shot with your Canon camera is one of the best feelings you can get as a photographer – especially when you know it will require minimal post processing. But it's not just about saving yourself time in Photoshop, there are key settings you have to get right in camera, which simply can't be changed at the editing stage! Your aperture, shutter speed, focusing, metering and composition all need to be aligned when you're taking your shot. We explain how to get it right in Canon, from page 28.

Also inside this issue, our *PhotoPlus* Apprentice learns how to take amazing astro photos, with top tips for night shots of starry skies with Canon pro Chris Grimmer. See page 8 to start shooting after dark.

We have some great photo projects for you – all with free video guides! Canon pro landscape photographer Drew Buckley teaches you how to take great winter scenic photos, and James Paterson explains how to use a Speedlite to paint a coastal landscape. Plus Matty Graham shows you how to use a clever vertical panoramic technique for big shots inside cathedrals. Also there's new Photoshop image-editing tutorials on page 54.

Master macro Matt Doogue talks to us about his 'photo therapy' while capturing close-ups of tiny wildlife subjects with his Canon kit, on page 60.

From page 68, we have your new Photo Stories, and Canon School and EOS SOS, plus in Super Test we review the best budget lenses for Canon EOS DSLRs, prices from only £129!

Also don't miss your free 180-page *Photoshop Made Simple* ebook worth £7.99, download details over the page.

*Peter*

**NEW OFFER!**  
Subscribe now and save money plus get a free Lowepro camera bag worth £30. **Page 38**

Scan this QR code to get our FREE Digital Camera World newsletter every week day!



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### READ THE TUTORIALS... THEN WATCH OUR EXPERT VIDEOS

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Meet the team...

# PhotoPlus

## THE CANON MAGAZINE

Who we are and our favourite Canon content in this issue...



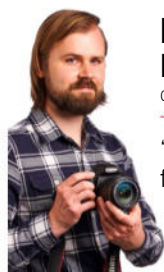
**Peter Travers**  
Editor • 5D Mk IV & R6  
peter.travers@futurenet.com

"This issue's big Canon techniques guide is all about how to capture the best possible shots in your camera, with the correct settings, and minimal Photoshop!" **PAGE 28**



**James Paterson**  
Technique writer • R5  
james.paterson@futurenet.com

"In my big photo project this issue I show you how to partially paint dark landscapes with off-camera flash, and even include yourself in scenes, to bring them to life." **PAGE 44**



**Dan Mold**  
Deputy editor • R & 7D Mk II  
dan.mold@futurenet.com

"We have some great photo projects for you to try this month, with Drew Buckley's winter landscape tips, and Matty Graham getting creative with big vertical interiors." **PAGE 43**



**Matthew Richards**  
Technical writer • R5  
photoplus@futurenet.com

"This is always a tight time of year financially, so this issue in our Super Test I look at the best budget lenses for Canon EOS DSLRs, with prices starting at only £129." **PAGE 88**

## This issue's contributors...



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Chris teaches our PhotoPlus Apprentice how to capture amazing astro photos and galaxies far away. **PAGE 8**



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**Marcus Hawkins**  
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EOS expert Brian answers your toughest Canon EOS technical questions, and rates your images. **PAGE 82**

**Our contributors** Jon Adams, Ben Andrews, David Clapp, Joana Cruse, Matt Doogue, Chris Grimmer, Marcus Hawkins, Andrew James, Pritesh Katiya, Sean McCormack, James Paterson, Matthew Richards, Lauren Scott, Brian Worley



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# THE APPRENTICE

## CANON PRO

**NAME:**

CHRIS GRIMMER



**CAMERA:**

CANON EOS 6D,  
7D AND 70D

**IN 2015** Chris was shortlisted for the incredible Insight Astronomy Photographer of the Year, and was also shortlisted twice for the UK Astrophotographer of the Year! It's safe to say Chris knows a thing or two about capturing great shots of starry skies, and he uses a whole host of equipment, from converted EOS cameras to tripod heads that rotate to track stars – and even telescopes. We've joined him up with *PhotoPlus* Apprentice Steve to master the technical challenges. [www.chrisgrimmerphoto.com](http://www.chrisgrimmerphoto.com)

## APPRENTICE

**NAME:**

STEVE DYTHAM



**CAMERA:**

CANON EOS R6

**RECENTLY** retired, 60-year old Steve, picked up photography as a hobby over the Covid lockdowns in 2020 and 2021. He's based in Peterborough and is often out with his Canon EOS camera to shoot wildlife at some of his favourite local nature spots. But, he has a passion for all things nature and would love to know how to take better landscapes and night shots, which he admits are a different world to him. We paired him with astro pro Chris Grimmer at a brilliant church ruin near King's Lynn to show him the ropes.





# SHOOT FOR THE STARS

This month *PhotoPlus* reader Steve Dytham joins Canon astro photographer Chris Grimmer to learn to take amazing photos of starry skies at night



# THE APPRENTICE

## HOT SHOT #1

BEFORE



### CHRIS'S COMMENT



“ I met up with Steve a few hours after sunset at Wigenhall St Peter Church, south of King's Lynn. Now a ruin, the church is a striking bare-bones

skeletal structure without a roof or rafters so you get an amazing view of the night sky behind. I suggested composing with a wide-angle lens to include lots of the church in the foreground and using the stone arch to frame the tower, the stars and Milky Way. I used an equatorial mount which tracks the stars at the same rate as the Earth's rotation. ”

Lens	Samyang 14mm f/2.8 IF ED UMC
Exposure	30 secs, f/2.8, ISO3200 (seven images stacked)



# TECHNIQUE ASSESSMENT

Chris showed Steve how to use the Manual mode and manually focus to take full control

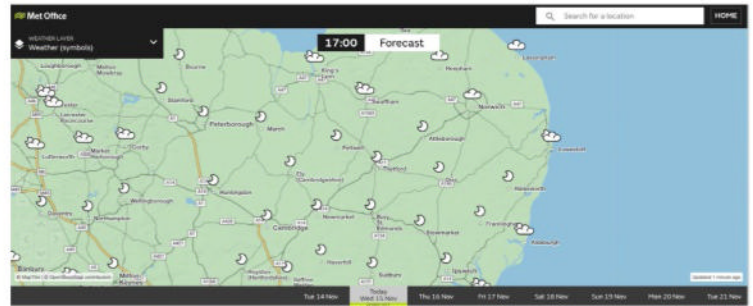
## STARTING SETTINGS

**CHRIS** suggested starting in Manual mode so that Steve could take total control over his exposures. Chris recommended starting with a shutter speed of 30 secs for pin-sharp stars when using his equatorial mount. He also suggested boosting the ISO to 3200 to make the sensor much more sensitive to light, and also to open the aperture on his lens as wide as it can go to suck in as much light as possible.



## MANUAL FOCUSING

**FOCUSING** at night can be tricky and Chris explained you have two options; focus on the foreground, or focus on the stars (depending on which you'd prefer to be sharp). To focus on the foreground he shone a bright torch on the church so that Steve's camera could lock autofocus, and then switched to MF to lock it off. He also showed Steve how to focus on the stars by going into live view and pressing the magnifying glass button to zoom in so I could see the stars clearly enough to manually focus on them until they were pin-pricks of light.



## EXPERT INSIGHT

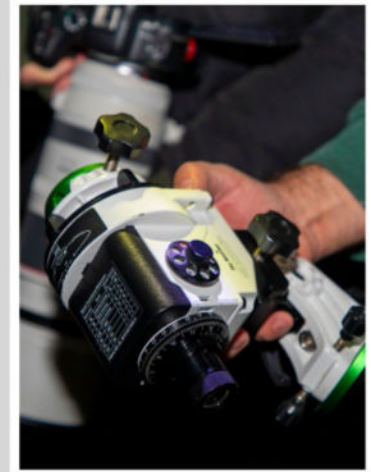
### CHECK THE WEATHER

**CRISP WINTER** nights free from clouds are perfect for astro shoots so be sure to check as close to your chosen night as possible for the most accurate forecast. Sites like [metoffice.gov.uk](http://metoffice.gov.uk) and [bbc.co.uk/weather](http://bbc.co.uk/weather) will give you a good indication of cloud cover in the area you wish to shoot. Apps like Clear Outside are even better as it shows you the low, medium and high cloud coverage in more detail.

## TOP GEAR #1

### Equatorial mount

**LONG** exposures tend to pick up the Earth's rotation and turn the stars from pin-points of light into trails. This means Chris needs to track the stars at the same speed as the Earth's rotation. He uses a battery-powered Sky-Watcher Star Adventurer Pro equatorial mount on his Three Legged Thing Charles 2.0 tripod which is lined up with the Polaris star.



## PROFESSIONAL TRIPOD

PRO TIP



**TO SUPPORT** the weight of equatorial mounts and heavy telephoto lenses, Chris uses a Charles 2.0 pro tripod from Three Legged Thing. Its magnesium alloy construction can handle loads of up to a whopping 40kg. He also uses a 3LT Airhed Pro ball head for fast adjustments which can be mounted directly to the tripod, or equatorial mount. The ball head also has an

Arca-Swiss mount which works with his L-bracket so he can quickly switch between portraits and landscapes.





## TOP GEAR #2

### Modified camera bodies

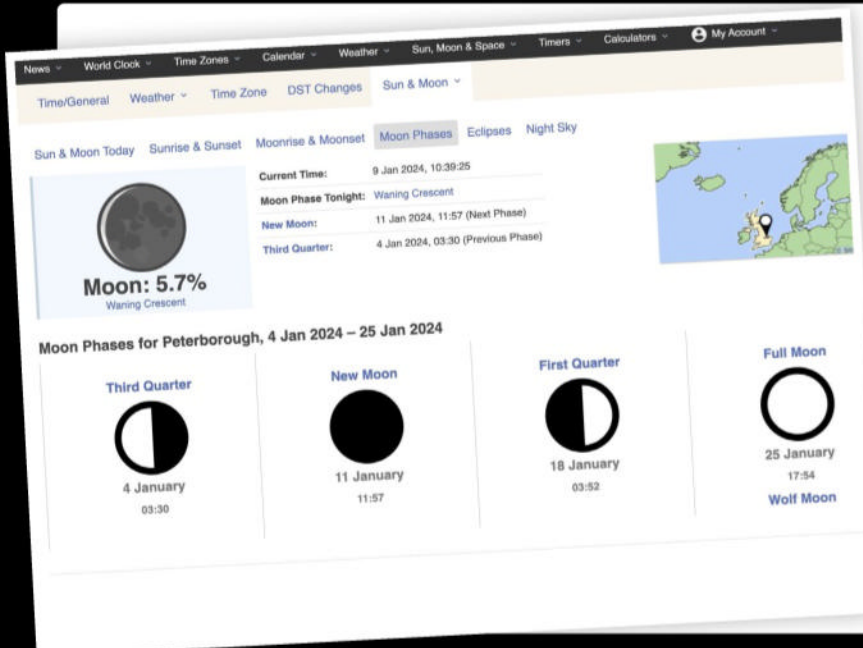
**CHRIS OWNS** a standard Canon EOS 7D and two modified bodies – a Canon EOS 70D and full-frame EOS 6D. With the modified DSLRs, he's removed the internal IR and UV filter, which allows more red spectrum to be recorded and makes them optimized for astrophotography. On his 70D he added a Skytech Quad band filter, which lets in hydrogen, oxygen, nitrogen and hydrogen beta.



## PRO TIP

### PAINTING WITH LIGHT

**SHOOTING** in low ambient light levels at night can make your foreground look very dark. While it can look good to have a silhouetted structure, it's also worth carrying a powerful hand torch (or flashgun) that you can use to light up your foreground to reveal detail. Chris uses a small hand torch to evenly paint over architecture at night to stop it being in silhouette. He explained: "Painting with light is a handy trick to reveal detail in your focal point, but I'd refrain from shining bright lights in designated astronomy locations out of respect for other photographers and astronomers as it could spoil their images."



## EXPERT INSIGHT

### GET TO KNOW YOUR MOON PHASES

**AN IMPORTANT** yet overlooked aspect of astro photography is the moon's phase in the lunar calendar. We all know that on a full moon it's at its brightest: while this can be an interesting way to light a landscape at night, you'll need the sky to be as dark as possible for stars to be vivid and clear. Shooting around a 'new moon' is ideal. It's also worth checking the moonrise and moonset times: shooting when the moon is below the horizon will help to cut down light pollution and boost contrast. The Moon Phase 2024 Lunar Calendar featured on [www.timanddate.com](http://www.timanddate.com) is a great resource for planning astro shoots.



# HOT SHOT #2

## STEVE'S COMMENT



“ Next, we headed ‘outside’ to take some shots of the church exterior to add scale and context. Once again using Chris’s equatorial mount tripod head, we were able to shoot long exposures to capture a

really deep Milky Way. The church has a few houses either side of it so there was some light pollution, though I was surprised with how much star detail we captured on Chris’s astro-modified Canon EOS 6D camera. Light pollution has actually helped to light the church a little bit here. We took six shots of the stars and stitch them together to build up the Milky Way and a seventh shot for a sharp foreground. ”

Lens	Samyang 14mm f/2.8 IF ED UMC
Exposure	30 secs, f/2.8, ISO3200 (seven images stacked)



# THE APPRENTICE

## CHRIS'S TOP 10 TIPS FOR SUPERB STAR SHOTS

- 1 Bulb mode**

While primarily shooting in Manual mode, Chris is often limited to max shutter speeds of 30 secs. When he needs to shoot longer he'll use Bulb mode.
- 2 Turn the self-timer off**

Any delay between shots when shooting star trails will appear as gaps in-between the trails, so switch the self-timer off, and use a remote release cable.
- 3 Avoid light pollution**

It's best to travel as far as you can from the bright glow of city lights as these can limit how 'dark' the sky is. Visit [www.darkskydiscovery.org.uk](http://www.darkskydiscovery.org.uk) to find a dark sky zone near to you.
- 4 In-camera Noise Reduction**

With low light levels and high ISO values, digital noise can be a problem. A common feature on Canon's is Long Exposure Noise Reduction which can be applied to exposures longer than 1 sec. This method requires a second 'blank' exposure to be taken, so it's not suitable for star trail sequences.
- 5 Use the '500' rule**

This rule helps you work out the exposure needed to take pin-sharp star shots by dividing 500 by your focal length: at 20mm your exposure can be no longer than 25 secs. With modern high-res Canon's it's worth being conservative and reducing the exposure length even more to ensure sharp stars.
- 6 Buddy up!**

When venturing out at night with your expensive camera kit be sure to team up with a photographer friend to stay safe and have fun together.
- 7 Look out for celestial events**

The night sky is ever changing. From lunar eclipses to meteor showers, and comets whizzing past to solar flares, resources like the BBC and *BBC Sky at Night Magazine* can help you plan shoots in 2024.
- 8 Power up!**

Cold nights and shooting for long periods will undoubtedly drain your batteries. Make sure you charge up and take plenty of spares.
- 9 Stop your lenses fogging**

Condensation forms when bringing a cold lens into a warm home. Wipe off moisture with a microfibre towel, then leave it in your kit bag in a cold room so that it can acclimatise slowly.
- 10 Bring a backup camera**

Bring a spare camera and tripod so you can work on alternative angles to keep you busy while your main camera is recording deep sky or star trail shots.



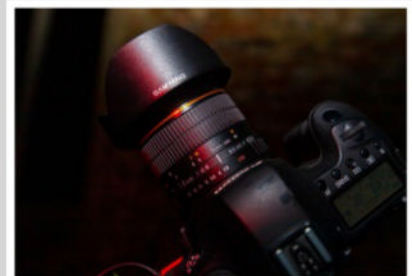
## HOT SHOT #3

Lens	Canon EF-S 18-55mm f/3.5-5.6 IS STM
Exposure	30 secs, f/3.5, ISO1600 (60 images stacked)

## TOP GEAR #3

### Wide-angle lenses

**50mm** is considered to be a 'standard' focal length on a full-frame body as it has roughly the same angle of view as the human eye, so images have a natural look to them. A lens with a focal length wider than 50mm is therefore considered to be a 'wide-angle', with a much wider perspective which is perfect for squeezing in loads of starry details above your night scenes. Chris uses a Samyang 14mm f/2.8 IF ED UMC on his full-frame Canon EOS 6D and a Canon EF-S 10-18mm f/4.5-5.6 IS STM on his Canon APS-C DSLRs when he needs to go wide.





## EXPERT INSIGHT

## SHUTTER RELEASE CABLE

**A SHUTTER** release cable plugs into your Canon EOS camera body and allows you to fire it remotely so that you don't risk introducing blur when you press the shutter button, it also means you no longer need to enable the 2-sec self-timer drive mode. They allow you to lock the shutter button down to fire continuous exposures, and also set custom exposure times by using Bulb mode. More advanced shutter releases have features like an intervalometer which comes in handy for recording time-lapses.



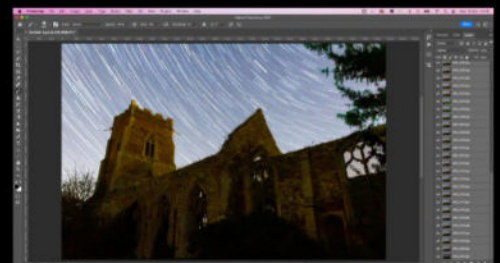
## STEVE'S COMMENT



Chris said instead of shooting pin-sharp stars you can lean into the blur caused by the Earth's rotation and shoot 'star trails'. We framed up on a tripod without the need for an equatorial mount. Chris pointed out Polaris (the North Star) in the sky and explained that all of the stars will rotate around this point. We set the focus on the church and took a test shot at 30 secs, f/3.5, ISO1600. We then set the camera to continuous drive mode, inserted a shutter release cable and locked it down so that it would fire 30-second exposures back-to-back. For this image we left the camera running for about an hour, merging a total of 60 exposures.



## PRO TIP



## EDITING SOFTWARE

**TO MERGE** all of the exposures to create a star trail image you can load all of your files into Photoshop as layers from Adobe Bridge via Tools>Photoshop>Load files in Photoshop Layers, and then change the Blending Mode of all of your layers to Lighten. Alternatively, Chris uses the free Startrails software for Windows to create star trail images, time-lapse movies, reduce gaps and has a 'falling stars' mode.



## HOT SHOT #4



PRO TIP

### TURN UP THE HEAT

**CONDENSATION** will be your biggest enemy when shooting stars for long periods on cold winter nights. Moisture can find its way onto the front element of your lens when you're set up over long stints for deep space or star trail images which can make details look blurry. To prevent this, Chris uses a lens heat wrap which he bought on Amazon for less than £20 and is powered by USB power bank to ensure lenses stay warm and keep condensation at bay.

Lens	Canon RF 100-500mm F4.5-7.1L IS USM
Exposure	30 secs, f/5.6, ISO3200 (120 images stacked)

## CHRIS'S FAR-OUT STARS & GALAXIES

Professional astronomy photographer Chris reveals his three favourite astro images



### BUBBLE AND LOBSTER CLAW

**THIS OBJECT** was one of the first Nebula I photographed, so seven years on I wanted to revisit and do it justice. This is a two panel mosaic looking at Hydrogen and Oxygen emissions.



### DUNWICH MILKYWAY

**DUNWICH** is one of the darkest locations I have been and as such I'm a bit of a regular. This is a multi-panel mosaic using a standard DSLR and sturdy tripod.



### JELLYFISH NEBULA

**THIS IS** another revisit from an image originally done back in 2017. Better kit and six years of experience resulted in a very different nebula image.



**EXPERT INSIGHT**

**ASTRO APPS**

**CHRIS USES** a whole host of apps on his phone to help him take astro images, in fact he's created a folder on his phone to keep them all organized. His favourite two apps are Stellarium Mobile Star Map (free for iOS and Android but with in-app purchases), which locates the Milky Way. He also uses PhotoPills (£10.99 iOS / £10.99 Android), which is useful for night shots too.



**CHRIS'S COMMENT**



“ I wanted to show Steve how to zoom closely into star constellations and interesting nebulae for mesmerizing deep sky photos.

Steve had his Canon RF 100-500mm F4.5-7.1L IS USM lens with him which was perfect. We only needed to zoom into about 300mm on his Canon EOS R6 to fill the frame with this gorgeous North American Nebula. When choosing which nebula or galaxy to focus on you're at the mercy of what is 'up' in the sky at the time of year: the North American Nebula was a good target for us to set our sights on and shoot continuously for an hour – the more images you take, the better. ”



**TOP GEAR #4**

**Telephoto lens**

**A TELEPHOTO** lens has a focal length above the 'standard' 50mm and will bring distant details into view. Steve has a passion for wildlife photography and had his telephoto Canon RF 100-500mm F4.5-7.1L IS USM to hand which was perfect for the task. You may be surprised to learn you don't need a super-long focal length to fill the frame with distant nebulae or galaxies. 300mm is usually powerful enough on a full-frame body and Chris's go-to telephoto lens is a William Optics RedCat 51 which has a focal length of 180mm, or 288mm when attached to his APS-C Canon's due to the 1.6x crop factor.



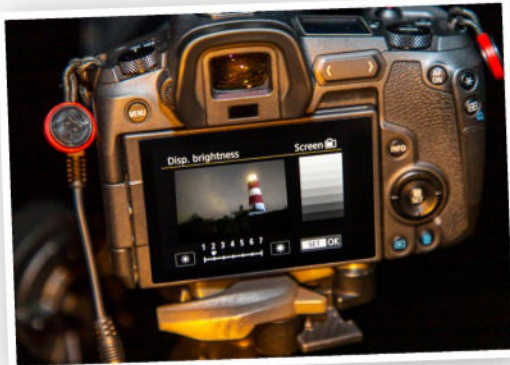


# THE APPRENTICE

## EXPERT INSIGHT

### LCD BRIGHTNESS

**THE BRIGHT** glare from your camera's LCD screen will reduce your night vision which will make it harder to see in the dark and compose.



There is a handy solution though, simply go into your Canon's Menu and lower the LCD brightness to its minimum setting to stop this from happening. Just remember to turn it back up to a middle value when you're back out shooting in the daytime.

## TOP GEAR #5

### Good head torch

**A HEAD** torch is a must for budding astrophotographers as it'll help you stay safe and see where you're walking, plus it frees up your hands to compose and operate your camera. Make sure you get a head torch with a red filter as bright white LEDs are a surefire way to reduce your night vision – and annoy any fellow astrophotographers that may be taking shots!



## STEVE'S COMMENT



“ For this shot we headed 'inside' and Chris suggested using his wide Samyang 14mm wide-angle to squeeze in more of the interior architecture, allowing room for the stars and Milky Way above too.

With Chris's help we composed looking up at this tower and I was able to focus on it when Chris shone his head torch on it giving me enough light to lock the autofocus. It was then a case of shooting in Manual mode with a wide aperture, high ISO sensitivity and a shutter speed of 10 secs – as without the equatorial mount longer exposures would turn the stars into trails rather than pin-points of light.



## CHRIS'S VERDICT



“ It was fantastic sharing my passion for the stars with Steve and he dived head first into this brand-new frontier. As with any architectural shot, it's important to get the right perspective so that straight lines

look straight and we also wanted this image of the tower to be symmetrical, so we moved around until the camera and tripod were in the centre of the church. I also nudged some of the architectural lines into place to make them look straight in Photoshop, and boosted the contrast of the Milky Way above the tower to make it more prominent. I hope I've shown Steve a new location to practise his astrophotography, and also prove that you don't need to be in a totally dark sky area to take top astro shots with the right know-how.



## PRO TIP



## SHOOT RAW+JPEG

**RAW FILES** are larger than JPEGs and capture much more exposure information,

which is very handy when shooting in low light. Chris also likes to shoot in the JPEG format, as these smaller files can be more manageable to work with when loading a big batch of star trail photos into software such as the free Startrails program. A good idea is to load up your Canon EOS camera with a large capacity memory card and shoot both RAW+JPEG so you have both file types for editing.

## BE OUR NEXT APPRENTICE

Do you need help to take your Canon photography to the next level? Let us know what genre 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](mailto:photoplus@futurenet.com) with 'PhotoPlus Apprentice' in the subject line, and include your Canon kit, telephone number and address.



# SHOT OF THE DAY!

Lens	Samyang 14mm f/2.8 IF ED UMC
Exposure	10 secs, f/2.8, ISO3200



# INSPIRATIONS

WINNING CANON IMAGES FROM THE CLOSE-UP PHOTOGRAPHER OF THE YEAR







**01 A PAIR OF SPRING CROCUSES BY SOPHIA SPURGIN** **CATEGORY: PLANTS**



"Every year my front garden turns into a lawn of purple crocuses. I wanted to take a photo of them as the petals make such a lovely shape, and the yellow stamens contrast beautifully with the purple. I brought two of them into my conservatory so I didn't have to lie down on the lawn, and to avoid any wind on the flowers as I wanted to focus stack them so you can see all the petal detail. The flowers slowly opened in the warmth and I took photos of several stages."

**Lens** Canon EF 100mm f/2.8 Macro USM

**Exposure** 1/25 sec, f/6.3, ISO160



# INSPIRATIONS




02



Close-up  
Photographer  
of the Year


All of the images in this month's gallery were taken on Canon EOS cameras and shortlisted for Close-up Photographer of the Year 05. CUPOTY 06 opens May 2024 with prizes of up to £2500 up for grabs. Be sure to check the CUPOTY website regularly for entry details and for your chance to win. [www.cupoty.com](http://www.cupoty.com)

**02 WINGS ON FLARES BY EMMANUEL GRAINDÉPICE** CATEGORY: BUTTERFLIES & DRAGONFLIES

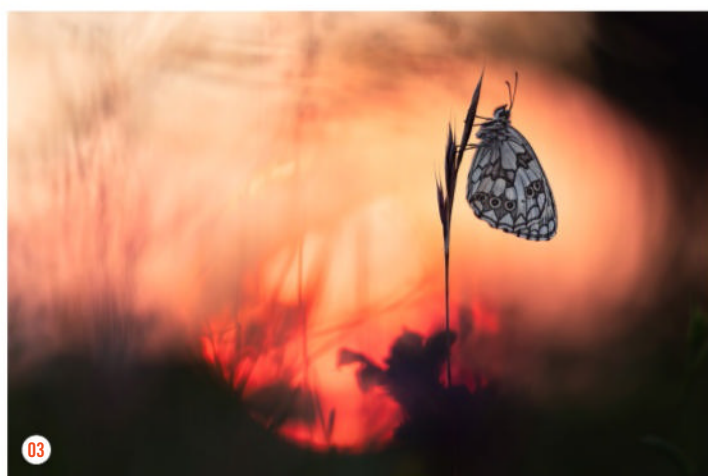
 Emmanuel took this stunning shot of a damselfly (Calopteryx) by a river in the south of France. He told us, "On this late summer afternoon, the sun broke through the vegetation to hit the surface of the water, generating numerous light flares. A damselfly flitted around me before landing close to the water's surface. I moved to find the right angle that would create a luminous, dreamlike atmosphere, and waited for her to open her wings before firing the shutter."

Lens	Canon EF 70-200mm f/4L USM
Exposure	1/320 sec, f/5.6, ISO1250

**03 FIREBALL BY HENRIK SPRANZ** CATEGORY: BUTTERFLIES & DRAGONFLIES


 Henrik's ethereal shot of a marbled white butterfly (Melanargia galathea) was taken at dawn, south of Vienna in Austria. He explained, "Every year I try to photograph butterflies in front of the rising sun. On this day there was a bit more than a light breeze and I had to increase the ISO to get the short shutter time needed for a sharp photo. I used my long Sigma 180mm telephoto lens with an almost open aperture to get this big sun disc in the background to enhance the overall mood of the photo."

Lens	Sigma 180mm f/2.8 APO Macro EX DG OS HSM
Exposure	1/400 sec, f/3.2, ISO1000



03

**04 PROTECTED BY LAW BY STEFAN GERRITS** CATEGORY: BUTTERFLIES & DRAGONFLIES

 "Every summer when I go to my regular place to photograph these beautiful Mountain Apollos (Parnassius apollo) in Finland I am worried that they will no longer be there due to global warming and loss of habitat. I was therefore very happy to find a few resting in the grass in the early morning. Perhaps these butterflies are stronger than we think as I saw a fair amount of them flying around later in the morning. That, of course, doesn't mean all is going well, the species is still protected by law."

Lens	Canon EF100mm f/2.8L Macro IS USM
Exposure	1/200 sec, f/4.5, ISO400







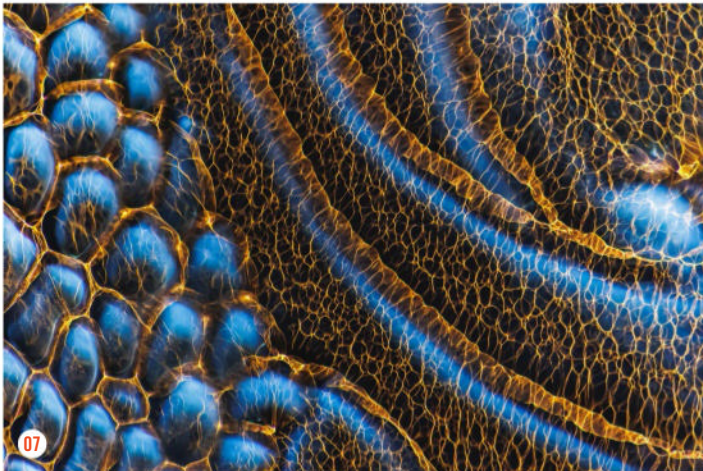
# INSPIRATIONS








06



07


**06 HEART OF THE SEA BY LIANG FU**  
**CATEGORY: UNDERWATER**

 "I took this photograph during a blackwater dive in Romblon, Philippines. Blackwater diving is a type of scuba diving that takes place at night in the open ocean, with thousands of meters of water below the boat. Divers descend a rope with underwater lights as their only orientation system. When the tide and moon phase are right, creatures from the deep migrate to shallower waters. This vertical migration is one of the most remarkable natural phenomena. Under my searchlight at 28 metres deep, I found a lava moray eel curled into a heart shape."

**Lens** Canon RF 35mm F1.8 Macro IS STM

**Exposure** 1/200 sec, f/13, ISO400


**07 MAGNETIC WAVES BY CHRIS MILLS**  
**CATEGORY: HUMAN MADE**

 "I started by photographing my bathroom window with the moonlight glowing through the glass and loved how it looked, before moving onto my front door which I used for this image. I thought the colours from the street lights and neon lights from the business over the road looked great together. To take this image I had to wait until the evening. I set my lens to manual focus and selected a close focusing distance. I then moved myself back and forth until I got this 'electric' effect and kept taking different compositions until I got one I really liked."

**Lens** Sigma 105mm f/2.8 Macro EX DG OS HSM

**Exposure** 1/160 sec, f/2.8, ISO5000

**05 BLOOMING SPIRIT BY DR GERALD HAAS**  
**CATEGORY: PLANTS**

 "Local wildflowers never fail to astound me. Since their habitat is becoming increasingly restricted and their flowering splendour often lasts only a few days, this is a special challenge for me. For more than two years I have been trying to capture the extraordinary beauty of wildflowers with a special flash and lighting technique. The veil of colour over the blossoms of the corn poppy (*Papaver rhoeas*) emphasizes its elegance and is, at the same time, a symbol of its transience."

**Lens** Laowa 100mm f/2.8 CA-Dreamer Macro 2x

**Exposure** 2.5 secs, f/4.5, ISO1250



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# INSPIRATIONS



08



Close-up  
Photographer  
of the Year

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## 08 CHROMATIC COLUBRID BY SADIE HINE CATEGORY: ANIMALS

 "Ring-necked snakes use their colours as a way to ward off predators and will often expose their underside to do so. I wanted to highlight this by putting the snake on a black background, but didn't have my usual setup, so I had to improvise. To create a more neutral background, I gently placed the snake on the back of my backpack, using the fabric to help me create a proper black background during post-processing. This individual snake struck this pose on its own almost immediately, I took the shot and then quickly released it back where I found it."

Lens Canon EF 100mm f/2.8L Macro IS USM

Exposure 1/320 sec, f/14, ISO1250

## 09 THE MASK BY PEDRO JARQUE KREBS CATEGORY: ANIMALS

 "I visit Expoterraria in Madrid, Spain annually to photograph amphibians and reptiles. The chameleon is a species that particularly fascinates me, not only due to its remarkable mimicry abilities, but also its distinctive visual features. The eyes of chameleons are one of the most accurate in existence. They have the ability to move independently, giving them 360° vision. Looking at this photo taken from above, I couldn't help but think of the wonderful African masks, reminding me of the intricate beauty and diversity found in the natural world."

Lens Canon EF 100mm f/2.8L Macro IS USM

Exposure 1/60 sec, f/4, ISO1000





09



10

**10** EVER WATCHFUL BY DAVID OLDHAM  
**CATEGORY: ANIMALS**



"I was staying in a very remote part of Iceland to photograph Arctic foxes in their natural winter environment. This particular female fox spent a lot of her time near where we were staying and would chase away the occasional male who approached her. On this afternoon, she spent a couple of hours sleeping in the snow but keeping a watchful eye on what was going on around her. Lying on the snow for some time so that she perceived no threat from me, I was able to take an intimate close-up photo of a beautiful relaxed Arctic fox, resting but still very aware of what was happening in her territory."

**Lens** Canon EF 300mm f/2.8L IS II USM

**Exposure** 1/250 sec, f/6.3, ISO2500



# GET IT RIGHT IN CANON

Learn to get the best possible photos with your Canon kit so you don't have to rely on Photoshop to rescue average shots!

Andrew James and Jon Adams

**C**ontemporary Canon photography involves two separate stages. One is the RAW image you save to your memory card, and the other is the post-processing, where you fine-tune your capture to reflect the vision or mood you want to express. It's all too easy to think that you can do everything in the second stage, especially with the flexibility that editing RAW images gives you. But this isn't the case, as there are certain fundamentals that you must get right in-camera. These are the elements that cannot be

rescued or fixed, no matter how good your post-processing skills in Photoshop may be.

It's true that the RAW format presents you with a plethora of floating values – all of which can be shaped to align with your creative ideas for the finished photo. However, certain photographic settings have to be nailed down at the capture stage because they simply can't be changed.

And these are the aspects we'll be looking at in detail over the following pages. If you get these right in-camera, then the standard of your images can only improve.

## CONTENTS IN YOUR CANON GUIDE

1 USE THE RIGHT FILE FORMAT	29
2 SET THE CORRECT FOCUSING MODE	30
3 CHOOSE THE RIGHT APERTURE	32
4 SET APPROPRIATE SHUTTER SPEEDS	34
5 USE BURST MODE FOR ACTION	36
6 TAME SHADOWS AND HIGHLIGHTS	37





GET IT RIGHT IN **CANON**

Always remember that the fundamentals of shutter speed, aperture choice, focusing and timing have to be nailed down at the capture stage in camera

Exposure f/3.5, 30 secs, ISO100



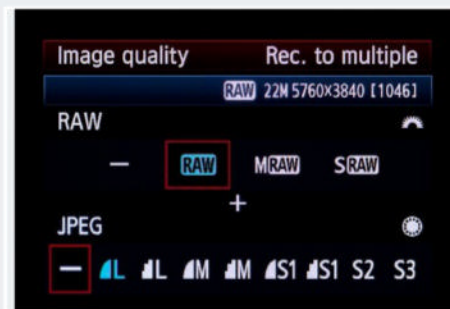
**PRO ADVICE**

# 1 USE THE RIGHT FILE FORMAT IN CAMERA

With today's Canon EOS DSLRs and mirrorless cameras, there are basically two choices of file format: JPEG or RAW – or both at once! If you want the best quality shots, then RAW (Canon's .CR2 and .CR3 files) is the default option, as it gives the ultimate flexibility for producing the highest image quality. This is because a RAW file has a broad range of 'floating values', which can be adjusted in software after the shot has been taken. These include the contrast, colour, sharpening and even the exposure itself.

With a JPEG, all these values are fixed in the file, and although it is possible to make changes, the image quality will be degraded and the amount of leeway for adjustment is much more restricted.

The simple advice is to choose RAW (as below), but make sure you pick the highest resolution option, as many cameras offer the option of smaller RAW file sizes. While these will save space on your card, they won't offer the same scope for big prints.





## 2 SET THE CORRECT FOCUSING MODE

Sharpen up your technique by selecting the right settings for your subject

**G**etting your shot precisely in focus on the desired area is one of the fundamentals of good photography. The autofocus systems on modern DSLRs and mirrorless cameras are excellent, but they still need help to control where and how they choose focus.

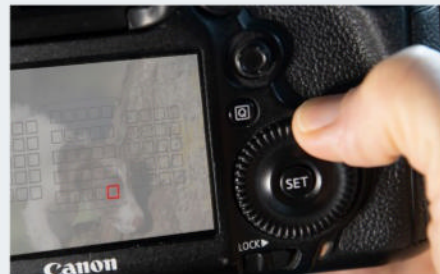
Without this, it's easy to focus in the wrong place. Accurate focusing is one of the best reasons to get away from full Auto mode. Leave it to your camera to make this decision and the chances are it won't get it right. It'll base its decision on what's nearest and what has the most amount of contrast. But there's a strong chance that this isn't where you want your focus to be, and you can't change the focus point after you've taken your shot. Therefore, it's absolutely vital that you select the right AF mode for the subject that you are shooting.

These AF modes alone can be the difference between getting your shot sharp or not, so take some time to understand what each AF mode does. Combine the right AF mode with taking control of your active AF points and you'll give yourself every chance of creative and accurate focusing, whatever the subject is.

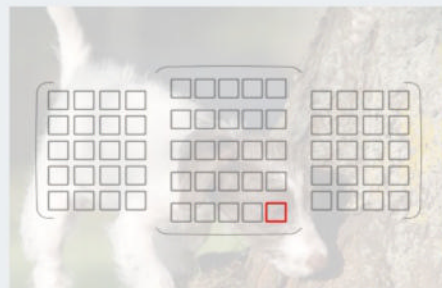
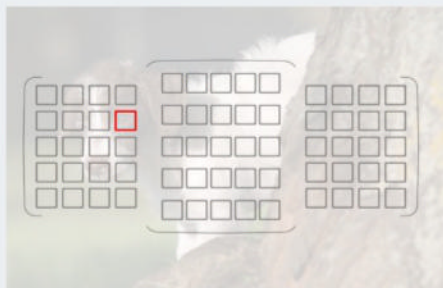
### PRO ADVICE

#### Move active AF points

With a static subject, you have time to consider where you're focusing, but lots of subjects move! You can use a central AF point (or group of AF points) to lock focus and continually recompose your shot, but it also pays to move the active AF points around. If you are photographing a dog that is walking around a tree and you're trying to keep the focus on its head, you can use your rear/top control wheel, or with some cameras an AF selector toggle/D-Pad on the back of the body, to move the active AF point's position. This way, you can focus on the subject, or even change the area



you want to be sharp, without having to reframe. Some cameras have more focus points than others, but even with lots of AF points, there is a limit to where in the frame you can focus.



Andrew James

## WHEN TO USE DIFFERENT AF MODES

Discover the best autofocus modes to use for different subjects



Jon Adams

### 01 SINGLE-SHOT AF

Known as One Shot on Canon EOS cameras, this is the mode to use when you have a static subject. To use it, lock focus on the appropriate point with a half press of the shutter, then reframe and press it fully to shoot. For portrait subjects, always focus on the eyes.



Andrew James

### 02 CONTINUOUS AF

Known as AI Servo AF or Servo AF on Canons, this autofocus mode is designed for moving subjects. In this mode, as long as you keep the shutter half-pressed and the AF point over the subject, the AF system will do its best to maintain sharp focus.



Jon Adams

### 03 MANUAL FOCUS

This mode is used when you want to take precise control of the focusing point, or in tricky conditions when the AF options won't achieve an accurate focus lock. This may be in the dark, in low-contrast conditions, or when using a macro lens.





A central group of AF points makes it relatively easy to lock focus on the mountain biker, even though the cycle is travelling at speed

Lens	Canon EF 15mm f/2.8 Fisheye
Exposure	f/5.6, 1/250 sec, ISO400

## The key to using and grouping AF points

When shooting fast-moving subjects, it can be impossible to keep a single AF point in the right place. To increase your chances of a sharp shot, most cameras allow you to group AF points together to hedge your bets. However, there's a downside to this, because the more active AF points you use, the more you increase your chances of getting the focus point in the wrong place. If your subject is moving at speed, it is often best to select a small, central group of AF points, as this will offer the best balance between accuracy and utility. But of course, you have to help the AF system by tracking your subject as it moves. So stay on target!



### PRO ADVICE

## Use Live View to focus precisely

When you have a static subject and can shoot from a tripod, using Live View with manual focus is an excellent option, as it allows for precision in focusing. This is why it's a favourite for macro and still-life. In Live View mode, you can use the screen to frame up and focus, and zoom in up to 10x on the image. This allows you to be sure that your focus is exactly at the point you want it, though it's best to use the self timer or a cable release so you don't nudge the camera at the moment of exposure, especially when shooting at f/2.8 when a slight jog of the camera can change the focus point. You can also use AF in Live View mode, and many cameras offer touch-focus too, like you'd find on a smartphone screen. Canon's Face and Animal Eye AF detection make it easy to continually track and refocus on your subject using Live View.



### SHOT AT f/2.8



## Focusing manually with Live View

A shot taken on a macro lens at a large aperture of f/2.8 has an incredibly shallow depth of field that can be as small as a millimetre or two. This makes using manual focus with Live View and zooming in to magnify the point of focus an essential technique if you want to ensure the image is pin sharp at exactly the right spot.

Andrew James



## 3 CHOOSE THE RIGHT APERTURE

Master this vital creative control and take charge of the zone of sharply focused content in your photos

**D**epth of field is the zone of sharpness in an image. A shallow depth of field keeps only a small area around the focus point sharp, while a deep depth of field creates a picture that is sharp all the way through the frame, from front to back. The 'look' you go for has a dramatic impact on the resulting shot, and it's all controlled by the aperture setting you choose. The aperture itself is basically the size of the hole in the lens that lets light through to the sensor, and low numbers (such as  $f/2.8$ ) use a very large hole, while high numbers (like  $f/22$ , for example) use a very small hole.

The effects of aperture and depth of field can't be created in software, because

if you've taken a shot with just a shallow band of sharp focus, you can't then make the whole image look sharp in software, as the data isn't there. To a degree, you can blur sharp areas to emulate a shallow depth of field in post processing, but it's time-consuming to do, and the results are often unsatisfactory compared to the real thing. For that reason, this is one thing you need to get right in-camera!

**The boat was the point of focus and a large aperture of  $f/2.8$  ensured that the foreground and background were both outside the zone of sharp focus, and pleasingly diffused**

Exposure  $f/2.8$ , 1/1000 sec, ISO400

### PRO ADVICE



### Using a deep zone of sharpness

The composition above is exactly the same but this time, a small aperture of  $f/16$  was used to make the zone of sharp focus extend right through the frame, from the texture of the salt marsh in the foreground to the trees on the horizon. Both shots work, but are aesthetically distinct.

Exposure  $f/16$ , 1/30 sec, ISO100



# USE APERTURE CREATIVELY

For pro-quality shots, make your subject emerge from a sea of blur

**F**or many photographers, choosing the aperture that offers the most appropriate zone of sharpness is as important as your composition.

How much of the scene you hold in focus makes a huge difference to the story you're trying to tell and how that story is perceived by the viewer. With a scenic landscape, it's common to hold everything in focus so the viewer can 'walk into' the scene and discern detail throughout the entire depth of the shot. But when you want to isolate a specific subject – and make the shot about them – restricting the depth to make them stand out against a blurred background is a core technique that you will need to master. Here's how it's done.

**Blurring the background is a key skill that can only be done successfully in-camera**

Exposure f/3.5, 1/125 sec, ISO100



Getty Images

## BLUR BACKGROUNDS THE EASY WAY

Get a sharp subject on a cleaner backdrop in just a few steps



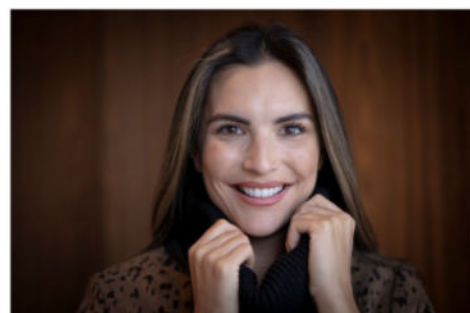
### 01 DIAL IN YOUR SETTINGS

Use Aperture Priority (Av) mode and dial in the lowest f/number your lens allows. Pro lenses will give you f/2.8 or even faster such as f/2, but 'kit' lenses will usually offer a maximum aperture of f/3.5 to f/4. Use ISO100 to produce the best image quality.



### 02 FRAME UP AND FOCUS POINTS

For a head and shoulders portrait, use a focal length of at least 70mm to avoid distorting facial features, and compose your shot. Focus on the closest eye by moving the active AF point over it and half-pressing the shutter button. Take a test shot.



### 03 CHECK FOCUS ON SCREEN

Check the focus point and the background blur on screen. If the blur is not enough, increase the distance between subject and background, or move the camera closer to the subject (if possible). Doing this will create more background blur.



## 4 SET SHUTTER SPEED TO CONTROL MOTION

Frozen or blurred – this creative choice is yours

**A** lot of the time, we worry about whether we have a shutter speed that's fast enough to stop us from ruining a shot with camera shake. But shutter speed is a creative choice too, and whether you want to freeze-frame the moment or somehow give the impression of movement through selective blur, it all comes down to how short or long a period you keep the shutter open, exposing the camera's sensor to light. Using aperture in combination with on-camera filters, such as a 10-stop ND filter (below), you can control the amount of light available, and get quite arty as well.



Future

### PRO ADVICE

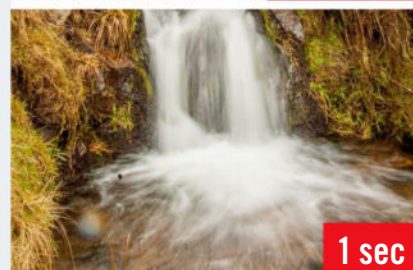
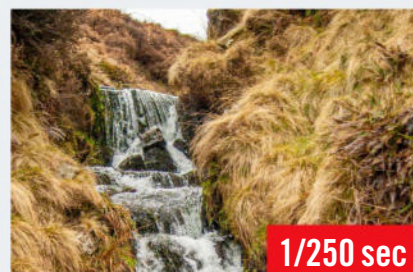
#### How shutter speed affects motion

Do you freeze it or let it flow? It's a decision that changes the appearance of a moving subject, such as water, considerably.

To the naked eye, water isn't a diffused blur, but if you want to have a strong contrast between soft and sharp areas in the frame the camera can record it this way.

A fast-ish shutter speed, such as about 1/250 sec, will usually freeze the movement of flowing water. But slow that shutter speed down by narrowing the aperture or adding an ND filter (or both), and you'll see that shutter speeds from 1/30 sec and slower will have a dramatic effect on the water in shot. The slower you go, the softer and more ethereal the water will appear.

Often, a balance between some motion blur and some water definition is best, but the only way to find out what works is trial and error on the day, as the speed of the water itself makes a difference.



#### The impact of shutter speed

The two shutter speeds used above give very different results. The frozen water at the top doesn't create the same differentiation between the stream and the land that the lower image, taken at the much slower shutter speed, does more clearly.

## GO FAST TO FREEZE THE MOMENT

A very fast shutter speed can capture detail that would otherwise be missed

**W**hen you want to capture the beautiful detail and drama in something that's happening very quickly, you need accurate AF, quick reactions and a fast shutter speed! For this kind of shot, you can't choose a shutter speed that's too fast, so don't be scared of 1/2000 sec or quicker. To get a fast shutter speed, you need lots of light or a very high ISO setting, and often a combination of both. In this shot, the subject and water are all sharp, and using Continuous AF was also an important factor in its success.

Lens	Canon EF 300mm f/2.8L IS II USM +1.4x III Extender
Exposure	f/5.6, 1/2000 sec, ISO400



Andrew James



A 10-stop ND filter extended the shutter speed from 1/30 sec to 30 secs, allowing the movement in the crops and the clouds to be recorded as motion blur	
Lens	Canon EF 17-40mm f/4L USM
Exposure	f/16, 30 secs, ISO100



Andrew James

# TRY PANNING TO CONVEY SPEED

Add a sense of speed to action shots with camera movement and shutter speed

**W**hen a fast subject goes across your frame, we can convey speed with a combination of camera movement and a slower shutter speed than you'd normally select. While 1/125 sec isn't really slow, when combined with a car travelling over 100mph and some panning movement, the subject can be kept sharp while the background streaks with motion blur. You must lock focus on the subject and move the camera with it, firing the shutter during the motion so you get smooth blur in front and behind.

Andrew James

Lens	Canon EF 70-200mm f/2.8L IS II USM
Exposure	f/8, 1/125 sec, ISO100







By using a high-speed burst rate of 10fps, a cracking shot of this osprey was captured, from a sequence of five frames (below), which lasted for just 1/2 second!

Exposure f/4, 1/1000 sec, ISO1600



Andrew James

# 5 SHARPEN YOUR BURST MODE SKILLS

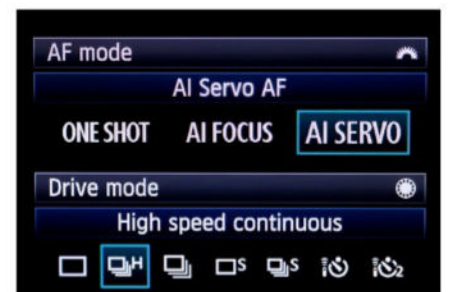
Continuous drive mode will increase your chances of success

**T**he light you capture on your Canon EOS camera sensor is always fleeting, but in some situations it's more fleeting than others! With a landscape or a static portrait, for example, you may have a relatively relaxed window of opportunity to catch the moment. This might be only a few seconds when the sun breaks through the clouds, but anyone can push a shutter button if they have enough time to react.

When it comes to much faster action subjects – whether it's sport or wildlife – that reaction time often needs to be much quicker! You may have just a millisecond to get the shot so there are ways you can use the technology built into your camera to help you grab that perfect moment.

When faced with a fast-moving subject, make sure you have the right Drive Mode selected. Your camera will offer you various Drive Modes to choose from, and the default setting will be to take one shot each time you press the shutter button. But for rapid action you need to use high-speed continuous shooting, so the camera keeps firing as long as you have the shutter button pressed down and the AF locked on.

A combination of continuous AF (AI Servo) and continuous shooting is always your best option here. However, it's not simply a case of pointing the lens and keeping the shutter pressed. Instead, try to shoot in short bursts of 5-10 frames, and time these to maximise your chance of achieving critical focus.



## Selecting the right drive mode

Setting your drive mode to its highest speed and using Continuous AF (AI Servo) will give you the best chance of capturing the decisive moment when shooting high-speed action.



# 6 MASTER METERING AND EXPOSURE COMPENSATION

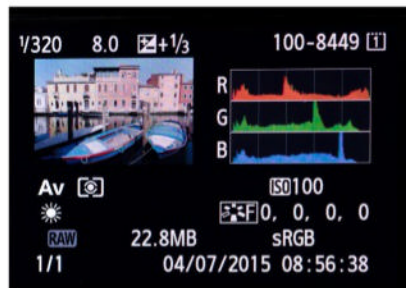
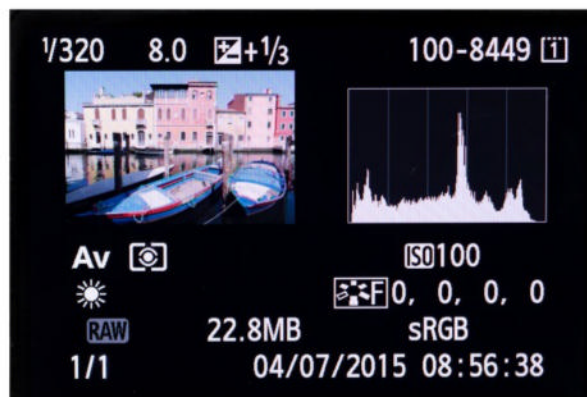
Keep your highlights and shadows within range for balanced shots

**A**lthough there's a lot you can do to adjust exposure in RAW processing software, it's vital to get it within one stop or so in camera. Why? If you overexpose an image and blow out your highlights, that detail cannot be rescued, however much editing you apply. If you underexpose, you can brighten up the shadows to restore detail in the darker areas, but you will introduce noise and degrade the image quality. So while perfection in metering is not vital, getting close is really important.

Creative cameras offer at least three metering modes (Evaluative, Centre-weighted and Spot), and in most circumstances, the Evaluative (Matrix/Multi-zone) option is all you need. After you've taken a test shot, check the screen and bring up the Histogram display. The graph should not go off the scale at either the left or right-hand sides unless you're after very deep blacks or peak whites. If the histogram (and the image) is too bright, dial in some negative exposure compensation to make the shot darker, and reshoot. If it's too dark, use a positive value.

## Reading a histogram

The histogram from the shot below shows a full range of tones between black (left) and white (right), but it doesn't extend off the right-hand side, revealing that the highlights aren't blown, even though +1/3-stop exposure compensation has been used.



## RGB histograms

Many cameras also offer RGB histogram displays, which give more detail for individual colour channels, but this extra information isn't needed for getting good-quality exposures.

Exposure f/8, 1/320 sec, ISO100

Andrew James



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# The changing landscape of photo tourism

Vestrahorn, Iceland. 17:47pm. 15 January 2016.

*A trip to the Vestrahorn mountains reveals eye-rolling profiteering taking place in Iceland where everything now has a price*

**L**andscape photography has changed drastically, since I began the pursuit 23 years ago. Luckily for me, my creative curiosity has me chasing after every other genre, allowing me to explore all manner of subjects and exciting equipment. During a studio podcast last week, my host labelled me an ‘everything photographer’. To be frank, I think this has been my strength to career longevity and, more importantly, creative interest.

I have to admit I find landscapes hard to pursue these days. I still have my radar spinning with nostalgia for compositions wherever I go, but the shift from reality over to hyper-reality, both photographically through editing deception using Photoshop, or in output objectives (primarily nothing but social media) has made me feel as though my ‘real’





Lens	Canon EF 16-35mm f/4L IS USM
Exposure	4 secs, f/16, ISO400

landscape photos just cannot compete in the hum of modern static.

My final trip to southern Iceland was in 2016. Even then it was getting overrun with drones and composition collectors, but regardless I was still optimistic. I had found that by talking to other people rather than appearing preoccupied and disinterested on a crowded Jokulsarlon beach, brought out the good in everyone, or that's what I felt.

Everyone's reason to be there is different and Iceland can be regarded as communion for landscape disciples, but over-popularity does weird things and that can hurt, especially if you are local.

"Try living here now. We can't even go for a walk on the beach," said an Icelandic lady I met in Hofn. "The cafés and car parks are full, accommodation is multiplying exponentially and, worst of all, I have lost my beautiful country to an army of tripods." This small population is not always 'grateful for our tourism' as we



think they should be, as the residents of Provence, Tuscany, Outer Hebrides and many more will certainly agree.

For me the last straw was Vestrahorn. I had never been shooting a beach and then 'chased on horseback for cash' while taking photos before. The 'landowner' was determined to get his entry fees. Initially the road was open when I first visited in 2010, then a few years later barriers appeared, then fees arrived – fees for each person in my bus.

'Everyone has to make a living', I construed, but then the following year the fees went up, and up again. A full van was costing 7 x 900ISK (about £40 to visit a beach?) so with this, the drones, the general overcrowding, and the memory of that sad lady in Hofn, I drew the line.

It's a very cold afternoon and the clouds are making our visit look uneventful, but the sight I am about to see is unrepeatable. The strong overnight winds have blown the black volcanic sand into strange repeating patterns. Then to add some contrast, the sugary waves are accentuated with frost.

The mountain is revealed from its covering of ocean cloud and I have to reside myself to the fact that there will be no light. In my book, composition always

trounces light, especially if the conditions are as remarkable as this.

I am using my Canon EOS-1D X, Canon EF 16-35mm f/4L IS USM, the lens set to 24mm, to keep the foreground bold and to stop the mountains from shrinking back. I shoot at f/16, 4 secs with a polarizer, and detail shots are taken to the left and right using a 24-70mm.

It was the last time, a wonderful finale shall we say. I always ache with nostalgia and then I am left with sadness when I see these poignant images. 📷

## NEXT MONTH DARTMOOR



### DAVID CLAPP

Canon professional photographer

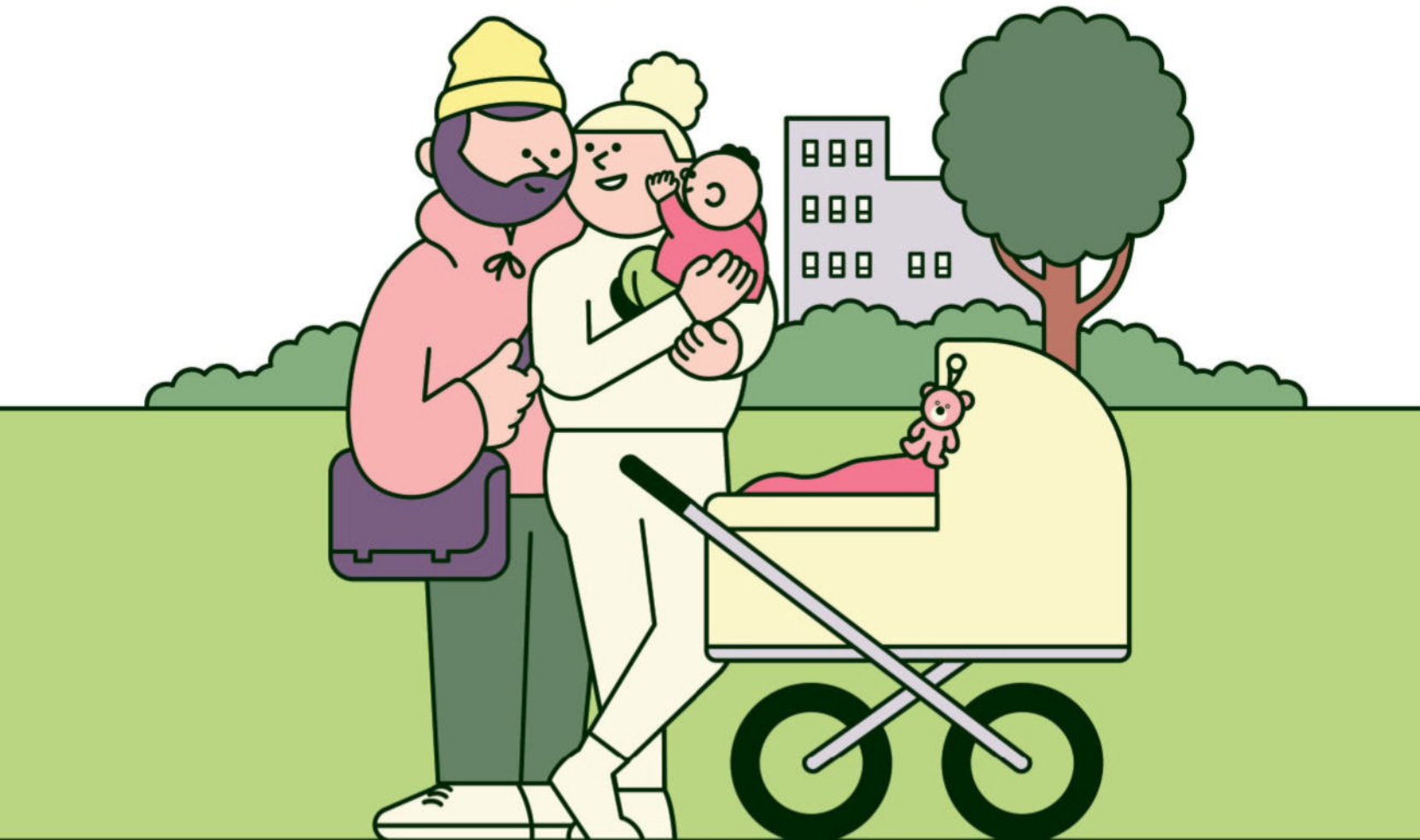
**DAVID CLAPP** has been a full-time Canon professional photographer for 15 years and for the last 12 he has lead exciting workshops. He regularly works for Canon UK and is represented by Getty Images. Visit [www.davidclapp.co.uk](http://www.davidclapp.co.uk) for a portfolio of inspiring photos and information on all of his workshops.

**"The strong overnight winds have blown the black volcanic sand into strange repeating patterns"**



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 ALL OF OUR NEW PHOTO PROJECT AND IMAGE-EDITING VIDEOS CAN BE VIEWED ONLINE VIA THE WEB LINKS ON PAGES 44-59!

# CanonSkills

*Sharpen up your photography skills with our all-new photo projects and expert guides*



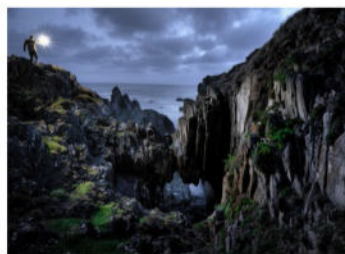
**Dan Mold**  
 Deputy editor  
 dan.mold@futurenet.com

## New projects with video guides

Follow our Canon camera walkthrough guides and Photoshop editing videos

Welcome...

**THIS** month we have a brilliant bunch of projects you can get stuck into and flex your camera skills, whether it's heading out with your Canon EOS to take a dramatic self-portrait (page 44) or squeezing in vast interiors with a vertical panorama (page 48). As we enter February we could still see some snow and frosty conditions, so be sure to check out landscape pro, Drew Buckley's top tips for winter landscapes on page 50 too. If you'd rather stay warm and cosy indoors then you won't want to miss our top editing tutorials this month. Kicking us off on page 54 Sean takes us through his process for editing pictures taken from the skies using a drone, while James shows you how to use the latest AI tools in Photoshop CC to remove people from your scenic shots the easy way (page 56). Plus, learn how to fake the long exposure look by blending images together in Affinity (page 58).



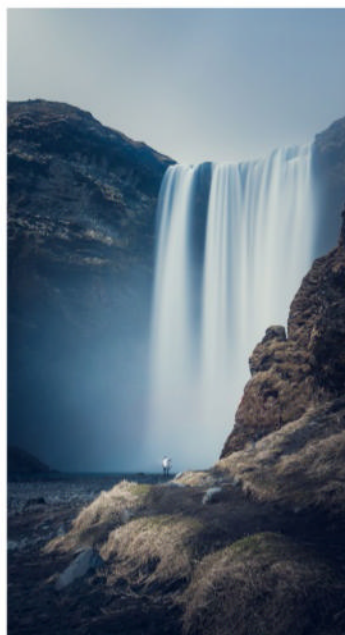
**44 Lighting landscapes**  
 Use off-camera flash to dramatically bring landscapes to life



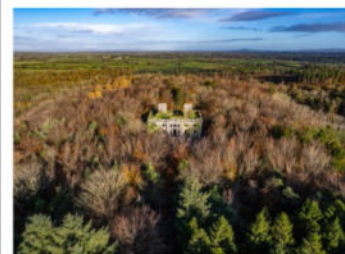
**48 Vertical panoramas**  
 Shoot and stitch images together to gain extra verticality



**50 Winter landscapes**  
 Take top shots of snowy scenes in this magical season



**56 Tool School**  
 Use Photoshop CC's Content Aware Fill AI to remove distractions



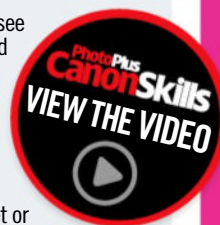
**54 We have lift off!**  
 Enhance photos taken with a drone in Lightroom Classic CC



**58 Affinity Photo**  
 Get the long exposure look with image averaging in Affinity Photo

**VIEW THE VIDEOS**

**WHENEVER YOU** see this icon, you'll find an accompanying video to watch online, so you can follow along. You can view the videos on a smartphone, tablet or computer. See the links on the project pages.







## THE MISSION

Light a landscape scene with a flash at twilight

**Time needed**  
2 hours

**Skill level**  
Expert

**Kit needed**  
Camera, tripod, flash, wireless flash triggers

# Enter frame left

Capture yourself in a landscape for a sense of scale, and learn how to light twilight scenes using your flashgun with **James Paterson**

**F**ew things are better than capturing a landscape under the perfect light. But often we're met with less-than-perfect conditions, dull skies and flat light. This could be a time to try flash painting. By using a portable flashgun or Speedlite, you can pick out details and highlight the contours in a scene. This could also be an opportunity to include a figure – or yourself if shooting solo like me – in the shot while holding up

your light, as I've done here. You don't necessarily need an expensive flash for this, almost any Speedlite will do. Getting the flash off-camera is essential so you'll need a wireless trigger and receiver to fire it, but these can also be picked up very cheaply.

Twilight can be the best time to head out, as skies are dark and moody, the remaining daylight becomes a cool blue in colour, and scenes take on an atmosphere that feels entirely different to daylight. The technique for this might seem complicated, but when it boils

down to it, there are two key skills to grasp. First, we use an exposure that underexposes the daylight, so that – without flash – the scene appears very dark in shot. Then with our exposure locked in, we simply fire our flash around the scene to light the parts that we want to showcase. This way, everything else comes out dark and moody, while the flash-lit parts can look spectacular. To make things easier, we can pop our flash in different places over several frames, then combine the best parts later in Photoshop. 📷



# ON LOCATION LANDSCAPE LIGHTING

Get set up for flash painting and light your landscapes from any angle

## 01 GOOD TRIPOD

We set up our camera on a tripod to keep it still, which not only means we can shoot with a slow shutter speed of 1 sec, but also fire off multiple frames from the same position. This allows us to experiment with our flash, lighting the scene from different positions to give us options for exposure blending and compositing later.

## 02 CAMERA SETTINGS

Our Canon EOS camera was set to Manual mode at aperture f/11, shutter speed of 1 sec, ISO100. Keep in mind the shutter speed has no bearing over the impact the flash has on your exposure, because the burst of flash is incredibly fast. The shutter speed only impacts the ambient exposure, which in this case, is the fading daylight.

## 03 FOCUS & IMAGE QUALITY

When shooting in low light the autofocus can hunt. So after focusing on a point a third of the way into the scene, we've switched to manual focus to lock it in place. It's best to shoot in RAW image quality as this gives you greater dynamic range, which makes it easier to pull detail out of deep shadows during editing.



## 04 MULTIPLE FLASHES

We fired our flash (a Godox AD300 Pro set to 1/8 manual power) multiple times in different positions around the frame. This way, we can light different parts of the scene to choose bits that look the best. We kept the direction of the light from left to right, and angled back towards the camera to emphasize the jagged edges.

## 05 FIGURE IN SCENE

If you like, you can include a figure in the scene – or yourself – to create a point of interest. By angling the flashgun back towards the camera it creates a starburst effect in the image. This is emphasized if you use a narrow aperture such as f/11 or narrower like f/16, which leads to a stronger star shape.

## 06 SAFETY

When the light is low you need to tread carefully and not take any unnecessary risks, especially when shooting near to long drops and around the coast. Be sure to scope out the place during daylight and make a plan for your camera position, and the parts of the scene you intend to light with your flash.



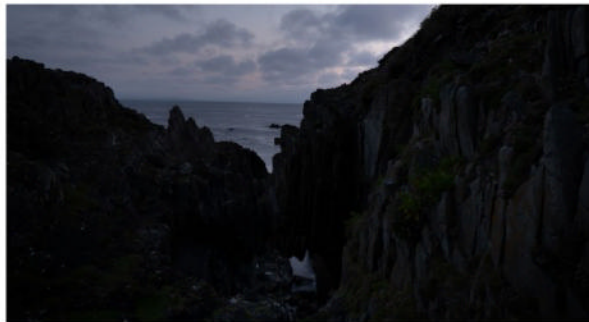


## TOP TIPS FLASH FIGURES IN SCENES

Get your Speedlite skills up to scratch for balanced outdoor lighting

### ANGLING YOUR LIGHT

The best thing about using your own light to illuminate a scene is how you can choose the angle of the light. For our scene, the light comes from behind and to the left side, but we could create all kinds of different looks by firing it elsewhere, perhaps from behind the figure to create dramatic edge lighting, or from the right side to highlight different textures and shapes in the scene. Experimentation is key so the best approach is to try a few different angles and see which works best for the landscape in front of you.



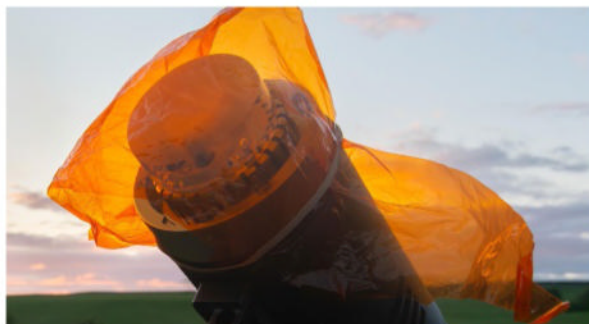
#### 01 WORK OUT AN AMBIENT EXPOSURE

Begin by setting your camera to Manual exposure mode and work out an exposure that leaves the foreground looking dark and moody. Here our settings are aperture f/11, shutter speed at 1 sec, ISO100. From this base exposure, we can use our flash to pick out details in the dark landscape areas.



#### 02 CONNECT A WIRELESS TRIGGER

You'll need to connect a flash trigger to your camera to fire your off-camera flash. This Godox trigger links with the Godox AD300 Pro flash we used, but any cheap flash trigger and receiver can be used to fire an off-camera Speedlite. In a pinch you can use a pop-up flash (if your camera has one) to fire another flash.



#### 03 GEL YOUR FLASH

Bare flashes usually produce light similar in colour to daylight, which has a colour temperature of around 5600 Kelvin. But at sundown, the light can become warmer, then at twilight it becomes much cooler. You might want to try gelling your flash with a CTO gel to match the evening light, or to contrast with it.



#### 04 SET UP SELF TIMER

If you have a wireless shutter release then you can use this to set off the shutter while you hold the flash in place. If not, you could equally use the self timer (C mode lets you fire several frames). Alternatively, use the Canon Camera Connect app to trigger the camera with your smartphone.



#### 05 DON'T GO FULL FRONTAL

Here's what not to do! If you use your flash from a similar position to the camera (or worse, use an on-camera flash) then the light will be straight-on. This results in flat, frontal light that falls away quickly, so close details are overly bright, and distant areas are near-black. Instead, fire your flash from the left side.



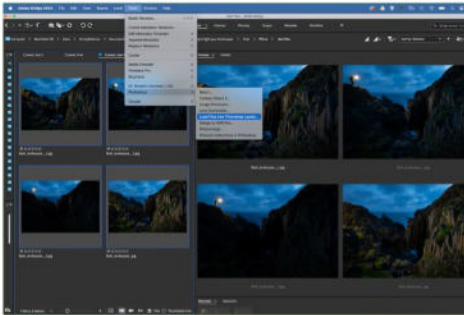
#### 06 MATCH FLASH WITH SKIES

The great thing about using flash light in landscape photography is that you can fine tune your exposure for the optimum sky. The delicate colours of twilight are usually very difficult to capture without leaving the foreground very dark, but as we're using a flash to light the foreground this hardly matters.



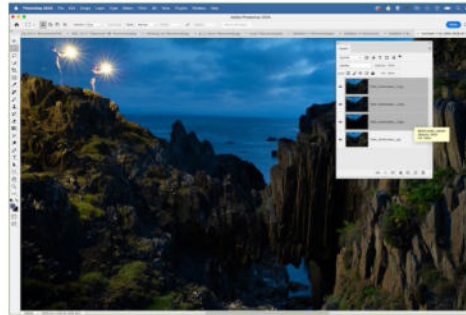
## EDITING TIPS BLEND YOUR FLASH FRAMES

Learn how to combine several flash-lit frames for spectacular landscapes



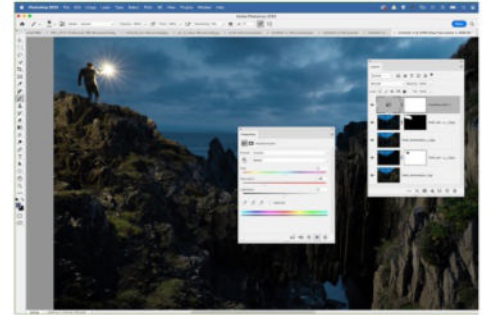
### 01 PREPARE YOUR LAYERS

Choose the images you'd like to combine – we used four – then make any changes you like to the entire set using Adobe Camera Raw or Lightroom. Once done, Cmd/Ctrl+click to highlight the images in Bridge, then go to Tools > Photoshop > Load files into Photoshop Layers.



### 02 COMBINE THE BEST BITS

Now in the Photoshop workspace, go to the Layers Panel and Cmd/Ctrl+click to highlight all but the bottom layer, then change the Blending Mode (from the drop-down menu) of them all to Lighten – this instantly combines all the brighter parts of those layers.



### 03 REVEAL THE FIGURE

If you want to include a figure like this, drag the layer to the top of the stack and set the Blending Mode back to Normal. Hold Alt and click the Add Mask icon to add a full black mask, then paint with a white brush to reveal the figure. Make any tonal changes you like to finish the editing.

## TOP TIPS PAINT WITH A TORCH

A powerful torch can work wonders over night-time scenes

**IF YOU'RE** shooting at night, perhaps to capture stars or city scenes, then don't forget to bring a torch. Not only will you need for practical reasons, but also as a light to lift parts of the scene. Simply set up your camera on a tripod and set an exposure that lasts for a few seconds, then fire the shutter and use your torch to paint parts of the scene. Here it allowed us to light the tree from the side, while shooting a series of 30-second exposures for a star trail image (each frame blended with the Lighten Mode just as we've done in the three steps above). As with our flash painting, you'll tend to get more interesting light if you move off to one side or the other to light the objects in the scene with your torch.







## PROJECT 2

### THE MISSION

Shoot and stitch together a vertical panoramic image

**Time needed**  
30 minutes

**Skill level**  
Beginner

**Kit needed**  
Canon EOS camera

# Tall stories

**Matty Graham** shares how to shoot a vertical panorama for vast interiors

**Y**ou may sometimes struggle to capture what you see with your eyes in your Canon camera. This could be down to the limited focal lengths you have at your disposal but, in some situations, it may well just be down to the vastness of the scene.

Ultra-wide lenses are an option, but they are often expensive and distort the perspective of the frame, resulting in converging verticals; where the lines of a subject appear to lean in towards the top of the frame. The solution is to instead shoot multiple images and merge them together into a panorama on your computer to

capture more of the scene without the drawbacks of lens distortion issues. You may have created a panorama before, but have you ever tried stitching together a series for an extra big vertical? This technique is perfect for shooting large interior spaces, huge skyscrapers, and landscape scenes like waterfalls. 📷

## HOW TO CREATE VERTICAL PANORAMAS

Learn to set up and catch incredible details of stunning interior spaces



### 01 PICK THE RIGHT LENS

Resist the temptation of an ultra wide lens, instead, go for a standard zoom optic – something like a 24-70mm or 24-105mm. Then, zoom into 35-40mm to cut down perspective distortion, especially in the corners of the frame.



### 02 ACTIVATE GRID LINES

Head into your Canon EOS Menu and turn on the grid lines. The 3x3 grid will help you compose your scene so that the horizon is level and will also help you overlap the exposures as we shoot our multiple images to build up the vertical panorama.



### 03 DIAL IN YOUR SETTINGS

Set your Canon mode dial to Aperture priority mode (Av) and set a mid-aperture of around f/8, as this will give a decent field of focus. We couldn't use a tripod in this cathedral so we boosted the ISO to 1600 for a shutter speed of 1/100 sec.



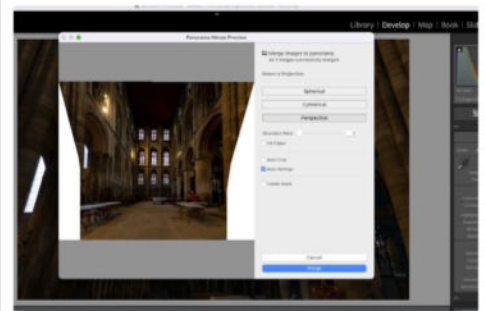
### 04 LOCK THE FOCUS

Position your active AF point over the focal point of your scene, where you want the focus to be sharpest, then switch from AF to MF to lock it in place so that it doesn't shift. Now compose so that your first shot is at the base of your tall scene.



### 05 START SHOOTING

Shooting in landscape orientation, take your first image. Then, move the camera slightly up, overlapping the previous frame by around 40% to capture your second frame, and keep moving up until you've captured the whole scene.



### 06 COMBINE YOUR IMAGES

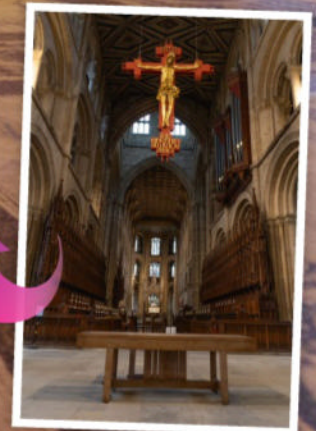
Import your photos into Lightroom, then in the Develop module select and right-click them, then hit Photo Merge > Panorama. Click Perspective and experiment with the other settings to get your panorama looking perfect before pressing Merge.



## VERTICAL PANORAMAS

### QUICK TIP!

Shoot in RAW rather than JPEG as this will give you more options when editing your panorama as you merge the files







PROJECT 3

THE MISSION

Learn to take some top seasonal winter landscape photos

**Time needed**  
One hour

**Skill level**  
Intermediate

**Kit needed**  
 • EOS camera  
 • Wide or telephoto lens  
 • Tripod

# Winter landscapes

Drew Buckley's pro tips for stunning snowy scenes this winter

**It seems to be getting rarer each winter; especially where I'm based in Pembrokeshire, south Wales, but when the conditions are right, the landscape can become enveloped in a blanket of snow which completely transforms the scene.**

Everyday landscapes take on a whole new perspective and the world around us is turned into a magical winter wonderland.

While it may look like a scene from a fairytale cartoon, winter landscapes bring their own set of challenges for us photographers, and sometimes our images don't quite convey the feeling or

incredible sights that we see with our own eyes.

In this photo project I'll run through some of my favourite tips and advice I can offer you to help you create some memorable seasonal snowy scenes with your Canon EOS camera. So if it snows this winter be sure to follow my top winter landscape tips. 📷

## PRO TIPS SHOOTING IN A WINTER WONDERLAND

Head out with the right kit and when the weather conditions are perfect for photos



### 01 CANON EOS KIT

Drew uses a Canon EOS R5 full-frame mirrorless and lenses like the Canon RF 15-35mm F2.8L IS USM for wide vistas or his Canon RF 70-200mm F2.8L IS USM for tighter telephoto landscapes to cut any unwanted distractions out of the frame.

### 02 SNOW-COVERED LANDSCAPE

There's always a chance of snow in the UK, although frost is pretty much guaranteed and can also give your scenes a wintry feel. Or you can visit mountains around the UK where the cooler temperatures makes it easier for snow to settle.

### 03 WEATHER CONDITIONS

Shoot in a blizzard and you won't be able to see much of anything, also a totally blue sky may look a little flat and boring. A bright, sunny but overcast day tends to look most interesting, and you'll have more dramatic lighting in the golden hour too.





## QUICK TIP!

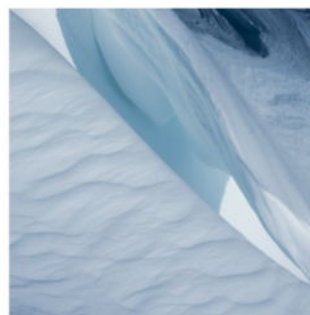
Always let someone know where you are on winter shoots, once the sun dips below the horizon temperatures can plummet – so always be safe

## EXPERT ADVICE ABSTRACT IMAGES

Zoom in with a macro or telephoto lens for artistic winter details



**WHEN** temperatures drop, frost and ice can form making a whole host of interesting shapes and patterns. It's worth dusting off your macro lens to achieve frame-filling shots of these magnificent details or use a cheap reversing ring if you're on a budget.



**IF YOU'RE** able to get up high for a different perspective, perhaps in a plane or even using a drone, shooting down at snow-covered landscapes with a telephoto lens can net you some wonderfully abstract winter landscape photos. I shot this at 135mm on my Canon EF 70-200mm f/2.8L IS II USM at f/9, 1/1000 sec, ISO200.





## PROJECT 3



### STEP 1 WHAT TO WEAR

There's nothing worse than being cold when out taking photos. The main aim is to keep warm but not overheat, so layering your clothes is the best bet. Merino wool is a great base layer and you can add (or remove) more layers as required. A scarf, hat and gloves are essential, as are two pairs of socks and insulated boots. A waterproof layer is ideal for keeping snow off your body and staying dry. You'll also want a waterproof cover for your camera and bag. Sunglasses are handy when walking through snow on bright sunny days, and grips over your footwear will give you lots of traction. Lastly, bring plenty of food, water and a hot drink to keep you warm while you're waiting for the light.



### STEP 2 PLAN YOUR SHOOT

I avoid very windy days as it's unpleasant to shoot in and photo opportunities will be low. Most of the snow around me is on the hills so I'll check the designated mountain weather forecast ([www.mwis.org.uk](http://www.mwis.org.uk)) for an in-depth forecast, explaining snow height, whether the summits are cloud free, wind speed on the tops and more. There's no point in putting the effort in the climb up if you'll be in thick cloud all day! Of course, not all winter landscapes involve a hikes across summits, if you have snow at a low level then this makes for an easier shoot. Working out where the sun will be throughout the day will help you to use the light most effectively, apps such as PhotoPills can help you in planning your locations and potential compositions.



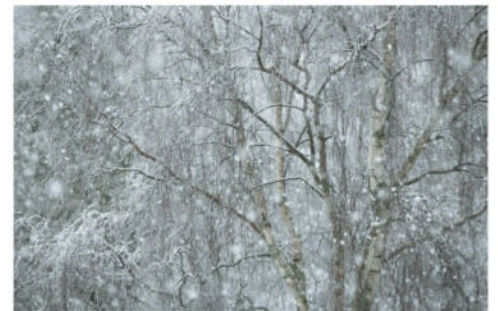




## STEP 3 CAMERA SETTINGS

Camera technology has improved over the years, but can still be fooled into less than optimum results when shooting snow. Images can end up underexposed as the camera's light meter forces an average scene tonality of 18% grey. In everyday scenarios this is fine, but when the scene is covered in snow it thinks it's too bright and underexposes it resulting in a grey, lifeless image. The solution is to add +1 or +2-stops of positive exposure compensation, and shoot in RAW for extra editing leeway too.

In some snowy scenes, blue sky shots may look too 'cool' so check and adjust your White Balance as needed. I tend to edge towards the warmer tones in the range of 6500-9000K.



## STEP 4 GET CREATIVE

Wintry conditions can make the most mundane scenes look beautiful, but it's a good idea to have some pre-visualised compositions. Also try varying your focal lengths: around 200-300mm are good for compressing elements in shots. A snowy mountain backdrop with wintry fields and trees in the foreground will make a great landscape shot. Capturing the shapes of snow-covered branches work better with telephoto focal lengths (the shot above was taken at 300mm and f/5), allowing you to pick out interesting shapes. Bodies of water are also usually not far away, so look out for interesting reflections in water or even capturing waterfalls, icicles, or ice-covered lakes among the landscape.





BEFORE

AFTER

## THE MISSION

Personalize your drone settings for better results faster

**Time needed**  
20 minutes

**Skill level**  
Beginner

**Kit needed**  
Adobe Lightroom  
Classic CC

# Make your drone photography take off

Sean McCormack shows how Lightroom can help you to enhance your aerial captures

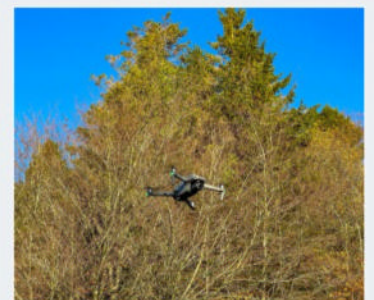
**When drones come to mind, you often think of cool shots following rivers or cars at high speeds, or whizzing through windows or doors. This FPV (first person view) drone video is exciting, but probably not the best path for beginner pilots.** While newer FPV drones like the DJI Avata are more crash-resistant, it's probably best to learn to fly a normal drone first.

Getting a drone is among the lowest barriers to entry for photography: you get a camera with a lens that can stay in place

wherever you put it. But why buy one? First, for an alternative perspective – there's just something about aerial views that fascinates people. The second reason is to get shots from a location with limited access. It might be that the best composition is 10 feet over a cliff edge, or from the middle of that deep river.

Lightroom recently added Adobe profiles for DJI drones, so you're not limited to a single colour or monochrome profile. Let's build on these settings for better drone photos quickly. Open up the start.jpg image or your own drone shot to get started. 📸

## BEFORE YOU START



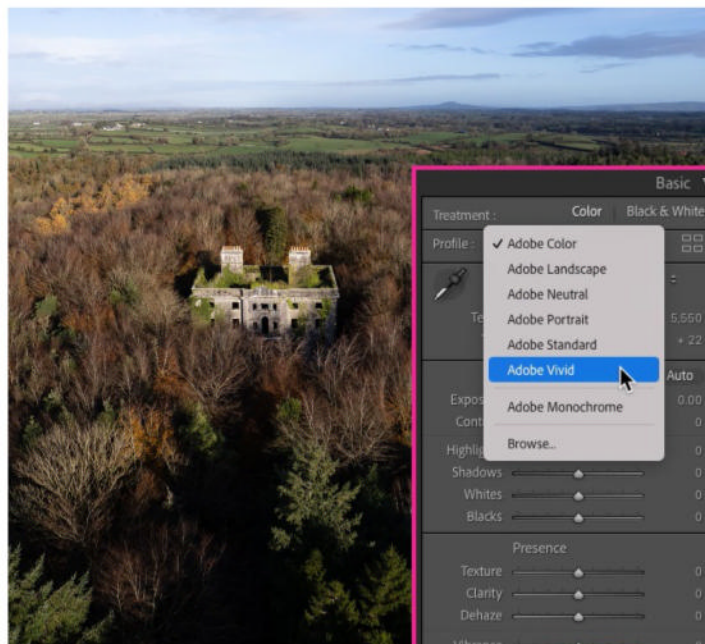
**TO USE** a drone, you must abide by your country's drone laws. In the UK, users of most types of drone must pass a theory test and register for an operator ID with the Civil Aviation Authority: find out more at <https://register-drones.caa.co.uk>. An internet search will show the drone laws for your country.

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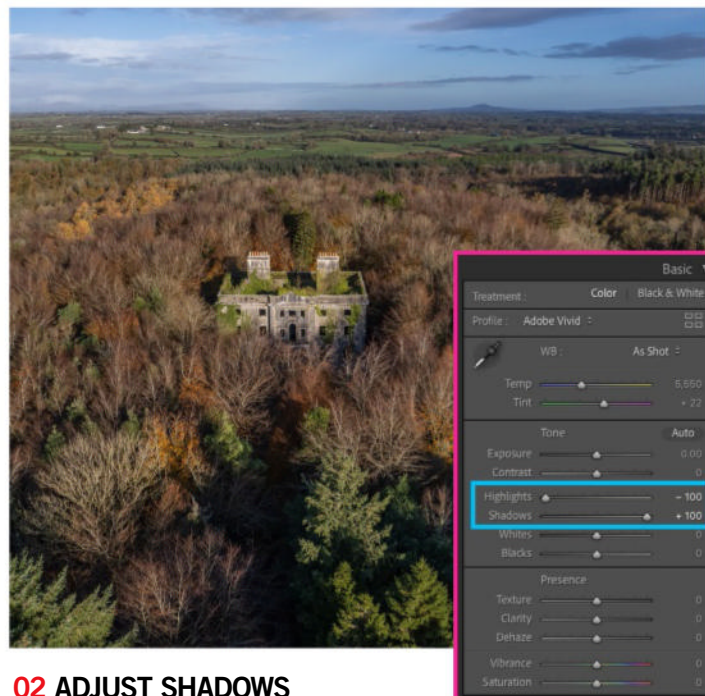
# STEP BY STEP CHANGE YOUR VIEW OF THE WORLD...

New Adobe profiles enhance dynamic range and depth in the final cut



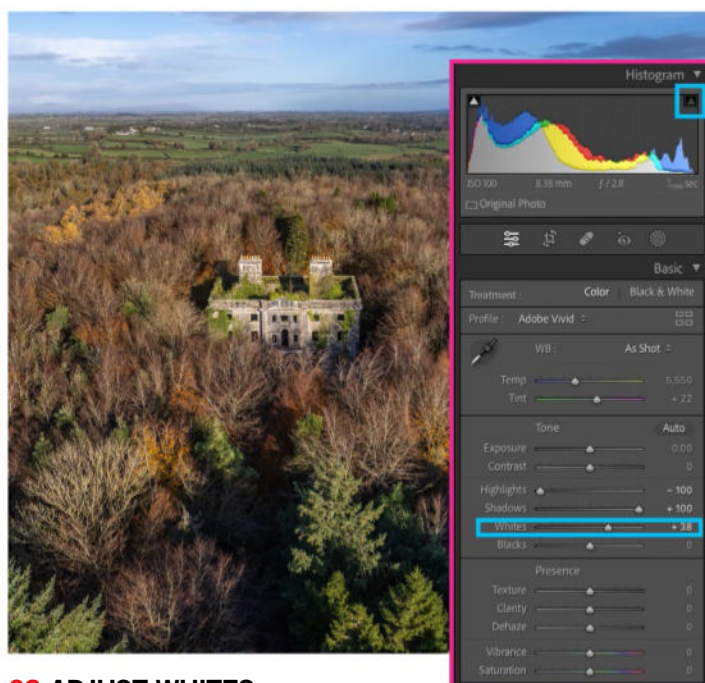
## 01 PICK A PROFILE

By default, you now have Adobe Color as the profile for drone photos on Import. The others are available in the Profile dropdown menu in the Basic panel. Choose Adobe Vivid to increase both saturation and contrast. Normally, Adobe Color looks good, but it's still flat on these files.



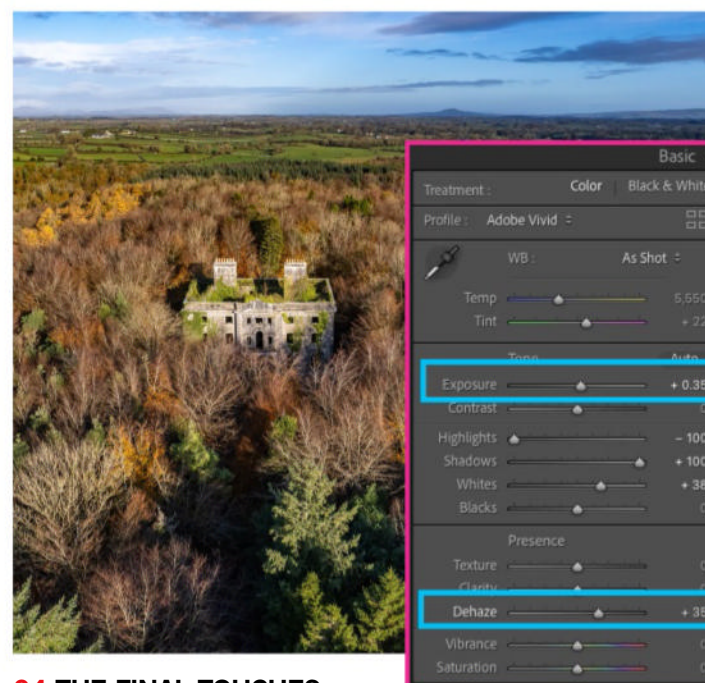
## 02 ADJUST SHADOWS AND HIGHLIGHTS

You can increase the apparent dynamic range by increasing the Shadows and reducing the Highlights. Try the extremes first: Shadows of +100 and Highlights of -100. This can look fake, but in this example it shows that the photo is a little underexposed.



## 03 ADJUST WHITES

Given the underexposure, you'd think that the Exposure slider is the fix, but in this case it's the Whites that makes the difference. This will be different for each photo, but +38 is perfect here. To avoid clipping the highlights, keep an eye on the Histogram.



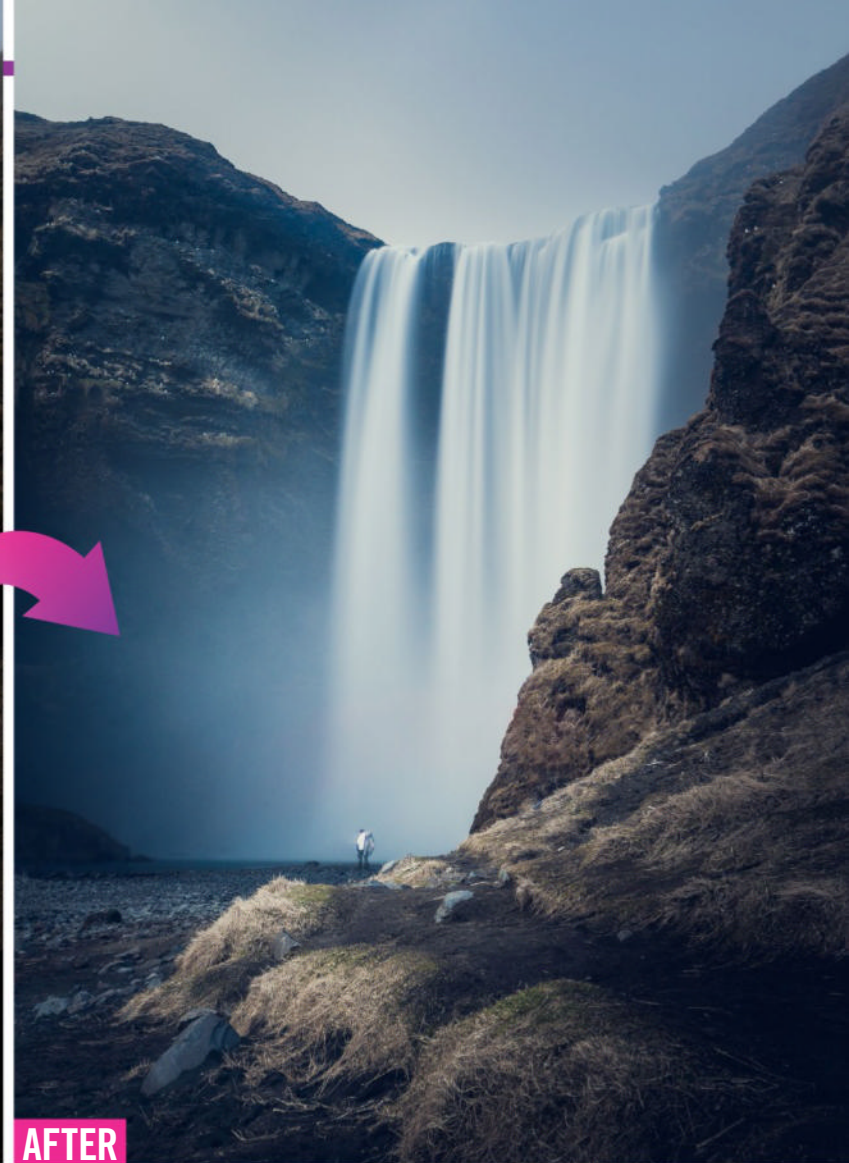
## 04 THE FINAL TOUCHES

Your next enhancement will introduce depth. Increase Dehaze to 35: this raises contrast and saturation but darkens the photo. Increase Exposure to 0.35 to give a sense of detail and dimension. It can interact with Whites, so balance them if required.





**BEFORE**



**AFTER**

## THE MISSION

Make powerful content-aware edits using AI on your RAW images

**Time needed**  
20 minutes

**Skill level**  
Beginner

**Kit needed**  
Adobe Photoshop CC or Lightroom Classic CC

# Use AI to remove people from images

**James Paterson** shows you how new content-aware tools can be used to clean up RAWs

**M**any of us who've been using Adobe editing tools for years find there's less and less reason to open our images in Photoshop CC. Instead, Camera Raw and Lightroom offer almost everything we need. But for precise retouching work, Photoshop has always been better – until now. Updates to Camera Raw and Lightroom include a healing feature that could be a gamechanger for your RAW editing workflow, as now we can use Content-Aware Fill to process our RAW photographs,

Content-Aware Fill lets you target an object, then watch as Photoshop removes it. Now, we can use it with the Healing brush in Camera Raw, as well as with the near-identical tools in Lightroom's Develop Module. So if there's a distracting object or detail that you want to be rid of, you can simply paint over it. Of course, it's not going to be perfect every time. But with the other features in the Healing tool, you can always tidy up. Once done, you can finish the image with one of our 10 free winter-themed profiles, see the download link on the left... 📄

## FREE WINTER PROFILES



### WE'VE SUPPLIED

10 wintery profiles – import them into Camera Raw or Lightroom and use them to add colour treatments. In Camera Raw, go to the Basic panel, click the Profile Browser grid, click the 3-dot icon and choose Import Profiles and Presets. The profiles will sync to Lightroom when you open it. This feature is handy when the image has sensor spots.

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## STEP BY STEP DITCH THE DISTRACTIONS

Use new features in ACR and Lightroom Classic CC to remove intruders!

### 01 CONTENT AWARE FILL

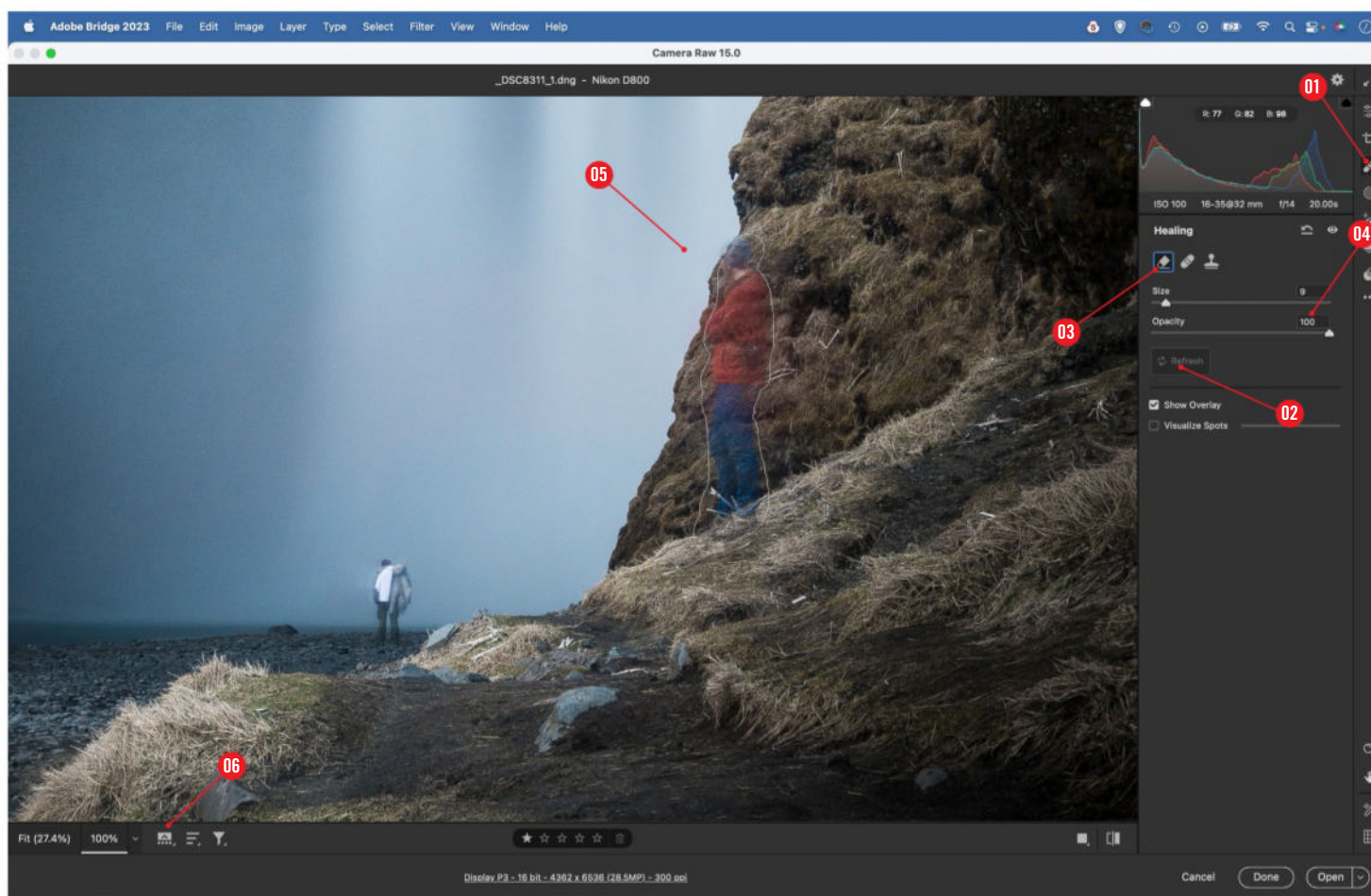
Open your photo or our free start.jpg image in Camera Raw (or in Lightroom, import the image and go to the Develop Module). You'll find the Healing Brush in the toolbar, or you can hit B. With Content-Aware mode selected, paint over objects to remove them. It analyses the content and generates new pixels to fill the area. Here, it lets us remove tourists around the waterfall seamlessly.

### 02 SOURCE AREAS

After filling an area with the Content-Aware Fill tool, you may find that the first attempt isn't right. Hit Refresh to make the tool try again, or tap the / key. If this doesn't give you the results you want, hold Cmd/Ctrl and drag to make a rectangular box over part of the photo. This lets you target a specific area for the fill, which can be handy when there isn't a large, clean area to sample from.

### 03 CLONE AND HEAL

Alongside Content-Aware Fill, you'll find Heal and Clone modes. Clone works by copying pixels from the source area to the target area. Heal attempts to adjust colours and tones in the source area to match the target area. Both will create a Source point each time you target an area, although you can hold Cmd/Ctrl and drag when laying down the point, or drag the source point to a different spot.



### 04 BRUSH SETTINGS

The brush sliders here let you set the size, opacity and feather for your brush tip. The feather setting determines how soft-edged the brush is. In general, it's best to use a high feather when cloning and a slightly harder feather when healing. A low opacity can be useful for cloning, especially when tidying up slightly messy fill areas, as it lets you gradually blend pixels using a clean area nearby.

### 05 USEFUL SHORTCUTS

Use the right mouse button and drag to resize the brush tip, or tap the ] and [ keys. Hold Shift and use ] or [ to change feather size. To heal in a straight line, click on one spot, hold Shift, then click another to make a line. Tap V (H in Lightroom) to toggle the overlay. Highlight a spot and hit Delete to remove it, or hold Alt and drag a box to remove several points. Hold Shift and tap the arrows to nudge a source point.

### 06 VISUALIZE SPOTS

This turns on an overlay that makes it easier to see sensor spots, especially in areas like skies. The slider lets you fine-tune the edge details to see spots more clearly. Once you've fixed a photo, you can sync the edit to remove recurring spots from others. Open the entire set in Camera Raw, right-click and 'Sync Settings'. In the sync options, make sure only Spot Removal is checked.





**AFTER**

## THE MISSION

Use the Stack blending feature in Affinity Photo to combine a set of sea waves photos

**Time needed**  
15 minutes

**Skill level**  
Easy

**Kit needed**  
Affinity Photo

# Get the long exposure look

No ND filter? Use the Stack feature in Affinity Photo to combine photos and blur waves with **James Paterson**

**F**ew photography effects can beat the look of a long exposure, especially the beautiful motion blur you get when shooting moving water with a slow shutter speed. During daylight hours, the sort of slow shutter speeds you need can usually only be achieved with the use of a neutral density filter, which reduces the flow of light into your camera. But sometimes you can be caught short without a neutral density filter and the

water appears too choppy and detailed. If so, there's another option. Using a tripod, shoot a series of frames in quick succession of the moving water and then blend them together afterwards in Affinity Photo.

It helps if the frames you intend to use are shot at your slowest possible speed. Here, our shots were taken with an aperture of f/16 and ISO100, allowing us to achieve a shutter speed of 1/2 sec at sunset. This was long enough to create a touch of blur in the waves, but nowhere near long

enough to get the misty water effect in seascapes you really only see with exposures upwards of 30 seconds.

We'll begin here by using the Stack feature in Affinity Photo to blend our frames with a neat trick that averages out the motion in each, then combine two blending methods before adding filters to enhance the blur. Finally, we can reveal parts from our original images to complete the effect.

It's not quite as good as real in-camera motion blur, but it's the next best thing. 📷

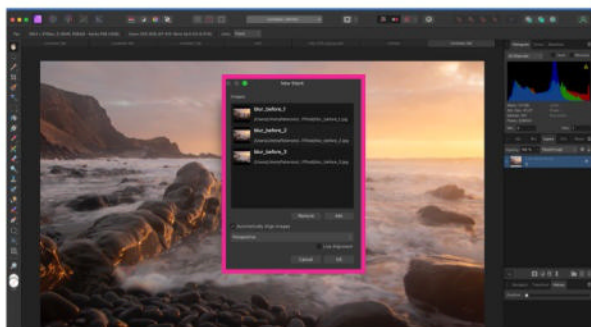


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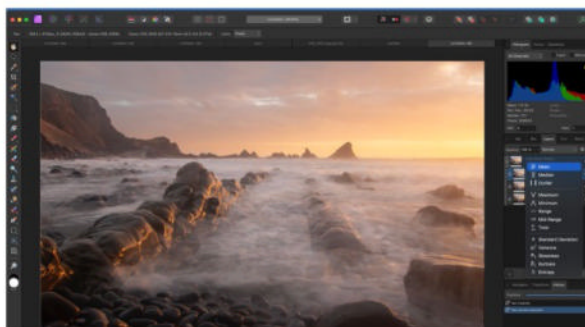
## STEP BY STEP BLUR THE WAVES IN YOUR SCENES

With photo stacking controls in Affinity Photo, you can replicate the look of motion blur in water



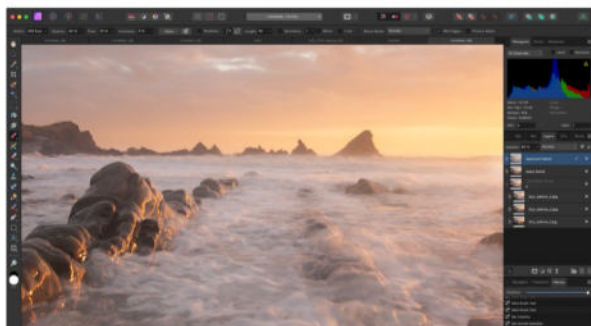
### 01 LOAD INTO A STACK

Use the start files or your own set of rapid-fire photos of waves or waterfalls. Open Affinity Photo then go to File > New Stack. Click Add and navigate to your images. Load them. Check Automatically Align Images if you shot the sequence handheld or if there's movement between frames. Hit OK.



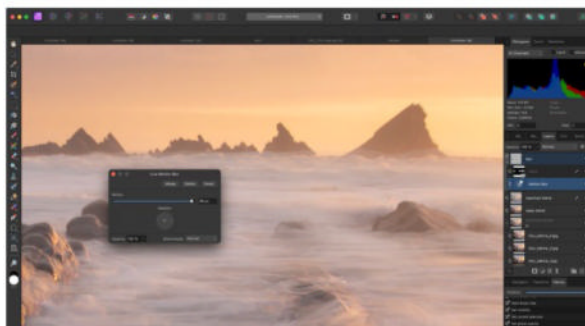
### 02 SET TO MEAN

Go to the Layers Panel and you'll see a new stack group. You can expand this to see all the images within. Click the small icon on the Live Stack Group. This gives you a list of blending options you can hover over to experiment with. Mean, Median and Maximum work best for blending water. First set it to Mean.



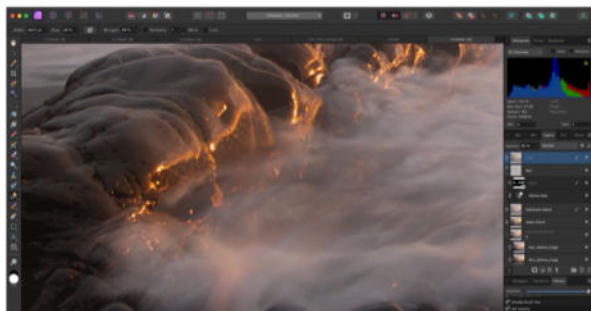
### 03 MERGE TWICE & BLEND

Press Cmd/Ctrl+Shift+Alt+E to merge a copy of all the layers into a new layer. Hide the layer for now. Go back to the stack blending menu and this time set it to Maximum and again merge another copy. Experiment with layer opacity to combine the two merged layers until you get a satisfactory blur effect.



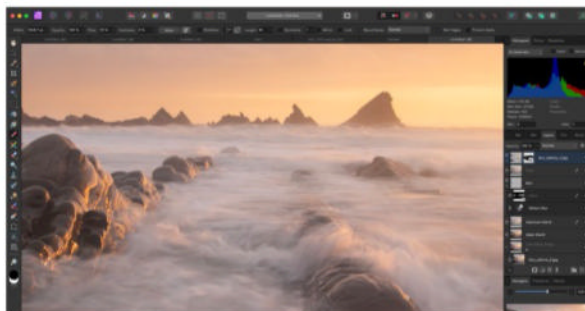
### 04 ADD A BLUR FILTER

Hit Cmd/Ctrl+Shift+Alt+E to merge another copy, then go to Layer > New Live Filter Layer > Blur > Motion Blur. Click in the image and drag to the right or left to make a horizontal blur effect. Next click the Add Mask icon, then hit Cmd/Ctrl+I to invert the mask to black. Paint white to reveal the blur over the water.



### 05 SMUDGE THE WAVES

Merge another layer with Cmd/Ctrl+Shift+Alt+E. Grab the Smudge tool and set the Flow to 40, Strength 70. Zoom in close and use the tool to smudge the waves into blurred shapes that follow the natural flow of the water. Experiment with layer opacity to tone the effect down until it looks right.



### 06 BLEND ORIGINAL DETAILS

Alt-click on the layer thumbnails of the three original images in the stack to check if there's a better area in any of them that you can blend with your overall image. If so, duplicate the layer with Cmd/Ctrl+J, drag to the top of the stack then add a layer mask and paint black to hide all but the area you want.

### QUICK TIP!

If you want to look at an individual layer in your stack, hold Alt and click on the layer thumbnail to hide all others

## WATERFALL MOTION

We've blended three frames of our coastal scene here, but you could take it a step further and blend tens or even hundreds. When shooting your scene with the moving water, set your camera up on a tripod and try using your camera's high speed drive to capture a rapid sequence, or set up an interval timer shooting sequence that fires a set of images in quick succession. This can be especially good for waterfalls, as you can transform the fast-moving water into beautiful blurred streaks simply by blending your set of photos using the stacking method we've described here.



THE **PRO** INTERVIEW

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# MATT DOOGUE







*Macro master Matt Doogue shares why close-up photography is good for his mental health, and how the latest Canon cameras are making it easier for everyone to try*

**I**n our busy, always-on world, the art of macro photography can be a balm for mental health. When you're engaged in capturing the intricate details of flowers and insects, it's harder to focus your attention elsewhere. For many photographers, macro lets them escape their everyday stressors – on top of being a rewarding and creative outlet in itself.

Canon pro photographer Matt Doogue has been photographing close-ups in nature for over a decade and has found comfort by immersing himself in the beauty of the miniature world. Based in the UK, he has become something of a mental health speaker, and he regularly gives talks on how the slowness of the genre can create a sense of calm and concentration. With a profound respect for the natural world, Matt often describes what he does as photo therapy and credits photography with being a life-saver in his darkest times.

Macro may help with mindfulness, but that doesn't mean it's easy from a technical point of view. For a start, you'll need a lens that's capable of focusing at close distances. And even then, it can be very challenging to precisely focus on extremely small subjects and manage

**01 GHOST**

Matt's favourite Canon MP-E 65mm f/2.8 specialist macro lens enables him to capture up to five times their real-life size

Lens Canon MP-E 65mm f/2.8 1-5x Macro Photo

Exposure 1/180 sec, f/9, ISO320



## 02 ORCHID MANTIS

Matt encourages people to connect with nature and demystifies subjects that are typically “creepy”

**Lens** Canon MP-E 65mm f/2.8 1-5x Macro Photo

**Exposure** 1/200 sec, f/11, ISO320

## 03 DAMSELFLY

Matt’s exposure settings don’t change much between shots: “I adjust my aperture based on the size of subjects”

**Lens** Canon MP-E 65mm f/2.8 1-5x Macro Photo

**Exposure** 1/160 sec, f/9, ISO320

## 04 HIDDEN DEPTHS

“Focus stacking transforms the ordinary into the extraordinary,” says Matt

**Lens** Canon MP-E 65mm f/2.8 1-5x Macro Photo

**Exposure** 1/100 sec, f/9, ISO320

a shallow depth of field at higher magnifications. One technique that Matt uses to increase the sharpness throughout his images is focus stacking, both manually and using the latest automated stacking features in Canon’s EOS R5 and EOS R7 mirrorless cameras.

In this interview, we discover how macro helps Matt to stay connected to the present moment, plus the technical skills he uses for the sharpest shots.

### Hey Matt. What are you working on right now?

I am putting the final touches to my macro photography book, *Close-Up: The Complete Guide to Macro Photography* (title to be confirmed) and also looking at a new project that doesn’t involve arthropods. It’ll be a more abstract approach this time.

### So, how would you describe your usual approach?

I’ve dabbled in various macro techniques over the years, but have found my sweet spot in a softer, more artistic aesthetic. It’s about capturing not just the subject but its essence, you know? I want to compose shots that reflect the character of what I’m shooting, along with some of

**“Each shot helped me focus, find peace, and truly appreciate the small, intricate details around me”**



its environment or habitat. It’s all about finding that perfect balance between artistry and showcasing the true nature of my subjects.

### Why and how did you get into close-up photography?

I actually found photography during a tough time in my early twenties. I was dealing with some mental health battles and found solace in nature. There’s something about the quiet beauty of the natural world that’s incredibly calming. As I started exploring the macro world, photography became more than just a hobby – it became a form of mindfulness for me. Each shot helped me focus, find peace, and truly appreciate the small, intricate details around me. So, in a way,

photography found me when I needed it the most.

### You often talk about mental health and photography going hand in hand. Would you go as far as to say it was a type of therapy?

For me, photography became this incredible form of therapy, almost unexpectedly. When I was going through a bit of a breakdown, I started exploring macro photography, and it was like a whole new world opened up.

The act of capturing those intricate details, being fully present in the moment, was almost meditative. It allowed me to step away from the chaos in my mind. It wasn’t just about taking pictures; I was expressing myself





03

**“I’ll manually focus on the nearest part of my subject first, zooming in with my camera’s Live View screen”**

**Talk us through your Canon gear. Have you made the move from EOS DSLRs to mirrorless?**

I started with a Canon EOS 6D, and while I still have it and use it, I’ve now got the Canon EOS R5 which I switched to in 2022. The latest mirrorless cameras have so many benefits, one being the high ISO range and noise handling performance in low light. I wanted to explore more macro photography in natural light, and I knew the EOS R5 would allow me to push the boundaries of ISO. That’s one of the things I love about the EOS R5; it gives me greater flexibility with my work.

**You’ve also been playing with the EOS R7 and R10, haven’t you?**

Yes. I’ve tried the in-camera stacking feature found in the Canon EOS R7. Because it captures a series of images with different focus points, internally stacks your frames, and gives you the composite, it saves so much time in post-processing. You can set the increment that you want the camera to adjust focus, from narrow to wide, and then the number of shots you want taken during a single stack. The EOS menu functions are easy to access and understand, opening up focus stacking for amateurs and not just professional Canon photographers.

**You still do a lot of manual focus stacking, don’t you?**

Focus stacking is the same idea as in-camera stacking, except I have to take each shot at different focus increments and process the final images into a composite stacked image myself. I’ll manually focus on the nearest part of my subject first, zooming in with my camera’s Live View screen to get a precise focus. Then I’ll subtly adjust the focus point – taking another shot each time – until I get to the furthest part.

Most of my focusing techniques are manual. Despite how good autofocus is now, it generally works by detecting contrasts, and the closer you get to your



04

artistically, and reconnecting with the world in a way that brought a sense of purpose. Photography became my therapy, my way of healing, and I’m grateful every day for how it’s helped me through those tough times.

**You’ve been taking photos for decades. Has your approach to bug hunting and photography evolved over the years?**

To begin with, you could say I was almost ignorant in my approach. Over the years, I began to study my subjects, learn about their habits and behaviours, improving my fieldcraft and ethical approach to anything I wanted to photograph.

As I did this, my respect and understanding of the natural world

increased. It used to be all about capturing the shot, but now it’s about creating art, forming a bond with nature, and capturing these amazing subjects as they live.

**Given that you also lead photo workshops abroad, do you prefer to capture local subjects or travel?**

The UK has some amazing creatures for sure, but my heart lives in Greece. I’ve visited many times, and each time I discover a new and fascinating subject.

A dream location that I haven’t yet visited is Costa Rica, as the diversity there is incredible. I’ll often research a spot before visiting, but it can be equally as rewarding to go in blind and see what you get from a location.





## 05 PASTEL PICTURE

Most Canon EOS R cameras have focus bracketing built-in, allowing you to take a series of pictures for extra sharpness

**Lens** Canon MP-E 65mm f/2.8 1-5x Macro Photo

**Exposure** 1/160 sec, f/6.3, ISO200

## 06 ON THE FLY

For manual focus stacking Matt says: "Use a sturdy tripod to avoid any camera movement between your shots."

**Lens** Canon MP-E 65mm f/2.8 1-5x Macro Photo

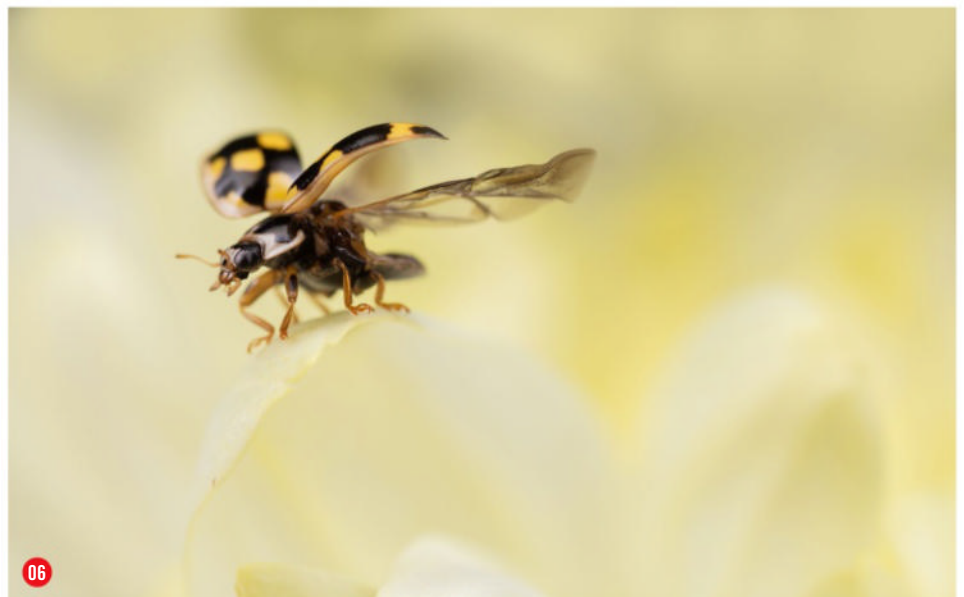
**Exposure** 1/125 sec, f/8, ISO400

## 07 SILHOUETTE STRUCTURE

Matt's eye for macro photography is creative and, at times, abstract

**Lens** Canon MP-E 65mm f/2.8 1-5x Macro Photo

**Exposure** 1/80 sec, f/10, ISO320



subject the harder it is to find it. That's when the autofocus will hunt for your subject as it fails to lock on. Macro lenses aren't the fastest when it comes to autofocusing, especially at higher magnifications, and this delay can mean that you miss opportunities.

### What are your favourite Canon macro lenses?

The Canon EF 100mm f/2.8L Macro IS USM and the Canon MP-E65 mm f/2.8

1-5x Macro Photo. The latter has now been discontinued, but I can still use it on an EOS R mirrorless camera with the Canon Mount Adapter EF-EOS R. I hope that Canon has something in the works to replace or improve on this flagship macro lens, as it's one of the best I've ever had the pleasure of using.

### Lighting and focusing are the two of the most challenging aspects of close-up photography. What are

### your tips for brighter and sharper close-up images?

Don't always be tempted to shoot with a deeper depth of field, say for example f/16. The logical thought is that yes, you will have more of the subject in focus, but it may suffer from diffraction [when light waves bend as they pass through small openings and impact the image's sharpness]. If you can, try a shallower depth of field and stack the subject, as this will create a sharper overall image.





07

Image stabilization and how you move also affect the overall sharpness, as does your shutter speed. A tripod can help keep things steady, but it also can become a hindrance to your movements. It's all about finding that balance.

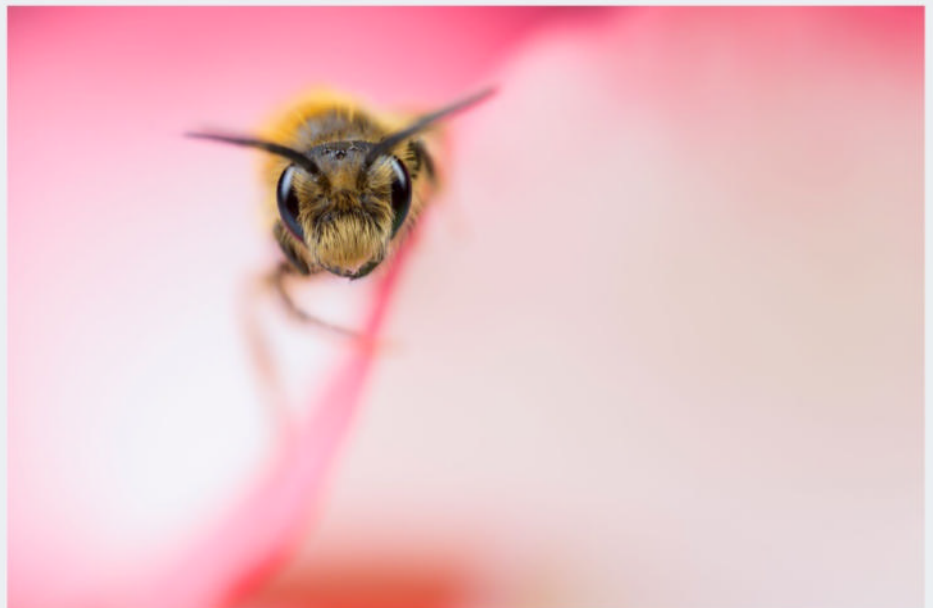
For lighting, a flash or external light source can enable you to increase the brightness. However, Canon's modern cameras such as the EOS R10 allow you to increase your ISO so much that you can still achieve a balanced exposure while maintaining your desired aperture and shutter speed.

#### **Are there any exposure settings that you use most often?**

My settings don't tend to change much as I use dual flash, which keeps my lighting consistent. I shoot everything in Manual exposure mode, as I've always believed that the more control you have over

**“If I'm shooting with the 100mm macro lens and using natural light, I will use image stabilization”**

#### **STORY BEHIND THE SHOT**



### **Peekaboo bee**

Matt captured a solitary bee behind a rose petal

“I was busy photographing the solitary bees in Almondell Country Park in Scotland; they nest in the sandy banks along the river and I visit them every year. I was studying this bee roaming the rose petal and just before it flew away, it perched on the edge and looked right down my lens. I managed to fire off a quick series which allowed me to create a stacked shot of the bee's head. The lighting was subtle and diffused which lent itself perfectly to the pink flower,” says Matt.



08



## 08 BOKEH BUTTERFLY

The f/2.8 wide aperture sees this butterfly in sharp focus against a blurred backdrop

**Lens** Canon EF 100mm f/2.8L Macro IS USM

**Exposure** 1/2500 sec, f/2.8, ISO500

## 09 SUNLIT SPIDER

"Spiders get bad press yet are some of the most beautiful, and interesting creatures to photograph in close-up," smiles Matt

**Lens** Canon EF 100mm f/2.8L Macro IS USM

**Exposure** 1/160 sec, f/9, ISO250

## 10 AMPHIBIAN ACTION

A longer 100mm working distance allowed Matt to capture this obscured portrait

**Lens** Canon EF 100mm f/2.8L Macro IS USM

**Exposure** 1/250 sec, f/4, ISO500

**"Flash is recommended the further you go with magnification, as it just makes things easier"**

your camera, the more control it gives you over the output of the final image. Each subject and scene can determine how much or how little light is needed, and I've found that using automatic exposure modes produces mixed results.

Take a white orchid mantis for example (see page 62). The camera's exposure metering will detect an overall white scene and reduce the exposure to avoid overexposing the image. Technically this is correct, as we don't want to blow out any highlights on the orchid mantis, however in doing so it will underexpose the insect.

This gets even trickier to expose when using flash lighting, so I have that in manual power mode, too. There needs to be the right mix of ambient light, flash power, aperture, and ISO.

If I'm shooting with the 100mm macro lens and using natural light, I will use image stabilization, as it helps keep shots sharp and allows you to shoot with slow shutter speeds. But, as a general rule of thumb, I'd never lower my shutter speed by less than the focal length of the lens. So for a 100mm lens, that would mean a 1/100 sec shutter speed or higher.

## Great tip. How do you balance ambient and artificial light?

It depends on the subject and lens combo for me. The Canon 100mm images above are always natural light images, if I'm using the MP-E 65mm then I use dual flash. Certain subjects don't photograph well using flash, especially if they're reflective or iridescent, so you have to go with what works for the subject too.

Flash fall-off is the biggest issue most photographers face when using flash. This is where there's nothing behind the subject to bounce the light back into the sensor so the background is black. Lots of photographers combat this by placing coloured cards behind their subjects, but this can give an almost 'artificial' feel to the image. You can learn a technique called shutter dragging, which allows you to drag in ambient light whilst still using your flash to illuminate your subject. This only works if you have enough ambient light and, more often than not, the photographs you see where the background cards have been used have been shot early in the morning to take advantage of the insects being slow and warming up.



## PROFILE

**Matt Doogue**

Macro photographer

Professional macro photographer Matt Doogue has over a decade of experience shooting for the likes of National Geographic and BBC Earth, and he's recently been featured by Canon Europe for his expert focus stacking advice. Aside from shooting award-winning nature images, Matt is also a dedicated conservationist and uses his social platform – plus school outreach visits as a teacher – to raise awareness and support for environmental issues.

Matt is also an advocate for mental health awareness and support, having struggled with his own health in the past. Through talks and presentations, he aims to break down the barriers and stigma that still surround mental health. Matt offers workshops and photography holidays – inspiring others to protect the planet and improve their macro skills in the process – as well as friendly 1-2-1 photo sessions for photographers of all levels to elevate their close-up captures. His book, a guide to macro photography, will be released in the summer of 2024.

**Instagram:** @mattd85**Website:** www.mattsmacro.co.uk

09



10

**Are there situations where flash or LEDs are better?**

Flash is recommended the further you go with magnification, as it just makes things easier. The further you increase magnification, the shorter the working distance becomes between the lens and the subject. This means that the working area for available light becomes restricted, and adding a flash, especially at the end of your lens, helps to illuminate your subject and scene.

Flash also helps to freeze the photographer's motion and, in some cases, the subject, resulting in an overall sharper image. It depends on the subject, though. A shiny beetle's elytra [wing cases] don't photograph well with flash due to its reflective surface, so natural light would be my preferred choice.

Smaller, more intimate creatures may hide certain details that a flash can help to bring out. Over the years you begin to learn what works best for what subjects and settings.

**Macro photography can seem very technical, so what's your top tip for beginners?**

Buy a second-hand dedicated macro lens and flash if you can. Get used to working at 1:1 magnification and experiment with lighting by photographing objects at home, start with flowers indoors. In the comfort of your home, you can experiment with your creativity and camera gear without worrying about fieldcraft or losing a subject. Then get out there and get lost in an amazing world we often overlook. 📷



**Next issue:** Canon wildlife photographer and Conservationist, Esteban Frey



# PHOTOSTORIES

Photo essays from *PhotoPlus* readers and professional photographers alike

JOIN IN  
THE FUN!

One of the great things about photography is being able to share your view of the world.

This month one reader photographs lions in their natural habitat, while a travel fanatic hits the road in her Fiat 500e electric car.

**We want your photos and stories!** For your chance to show off your images in *PhotoPlus*, email three to five high-resolution JPEGs, along with a brief synopsis – explain why you took the shots, the location, whether they're part of an ongoing project or a one-off shoot, and anything else unusual or interesting. Also include Canon EOS camera, lens and exposure details.

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## PROJECT INFO



**NAME:** Pritesh Kateliya

**LOCATION:** Gir National Park & Sanctuary, Gujarat, India

**MISSION:** To take some top shots of big cats at the Gir National Park & Sanctuary

**KIT:** Canon EOS 700D, Canon EOS 7D Mark II, Canon EF-S 55-250mm f/4-5.6 IS II, Canon EF 100-400mm f/4.5-5.6L IS USM

**INSTAGRAM:** @girlionwhisperer\_

## Feline fine

Wildlife fan Pritesh photographed some wonderful and rare big cats at the Gir National Park and Sanctuary in India

**M**y name is Pritesh Kateliya, and I live in Gujarat, India. I am a beginner Canon photographer, and a Gir Forest and Asian Lion Lover.

All of these photos were taken at the Gir National Park and Sanctuary, Gujarat, India. Gir Forest is home to more than 300 birds and is the only place in the world where you can see Asiatic lions in their natural habitat. I love to visit

Gir Forest regularly, but I don't take photographs every time.

I took all these photos on a Gir jungle safari at different times of year and in different seasons, some wildlife such as birds, can only be seen at certain times of the year so planning my excursions was very important.

In the beginning, I was not interested in photography, but I had a love for Gir Forest and Asiatic lions. That's why I joined the Forest Department and NGO and became





02

involved in its programme to rescue wild animals and birds. After that, I gradually picked up a Canon EOS camera as a hobby to take pictures.

I want to show the reality of the jungle and the behaviour of the creatures within, so people are able to glean information from my work and to also be useful for

conservation purposes in the future. Wildlife photography is very challenging – you're not guaranteed to see anything. Wildlife, wild animals, and birds all depend on luck – sometimes you see it, other times you don't. Wildlife photography requires dedication, patience and a true passion. 🐾

## PhotoPlus FEEDBACK

*Pritesh has bagged some wonderful big cat shots from his time at the Gir National Park. His compositions and eye contact with the animals works well, although some of his pictures are a little soft and out of focus. His camera settings are pretty solid, but it wouldn't hurt to push the ISO up a little more for faster shutter speeds to eliminate subject blur and camera shake. A black and white conversion is also a good way to ramp up the contrast and make soft shots look a little sharper. It would also be worth using a single active AF point on his Canon EOS 7D Mark II and placing this over the animal's closest eye to the camera. Newer Canons like the EOS R7 and R5 have brilliant Animal Eye Detection AF which make this even easier. These are still some lovely portraits of rare big cats and we hope he finds our advice useful on his next outing in the stunning Gir Forest.*



03

### 01 LIONESS

A lioness turns towards Pritesh and looks directly down the lens

Lens Canon EF 100-400mm f/4.5-5.6L IS USM Exposure 1/200 sec, f/5.6, ISO400

### 02 JAGUAR

The jaguar stands out against the tall grass in the background

Lens Canon EF-S 55-250mm f/4-5.6 IS II Exposure 1/2000 sec, f/6.3, ISO400

### 03 ASIATIC LION

Pritesh caught this lovely portrait of a very rare Asiatic lion

Lens Canon EF-S 55-250mm f/4-5.6 IS II Exposure 1/400 sec, f/6.3, ISO400





## PROJECT INFO



**NAME:** Joana Kruse

**LOCATION:** British Isles and Republic of Ireland

**MISSION:** To prove a road trip adventure can be achieved in an EV and to document the journey

**KIT:** Canon EOS R5, Canon EF 16-35mm f/2.8L II USM and Canon EF 24-105mm f/4L IS II USM

**WEBSITE:** [www.joanaimages.com](http://www.joanaimages.com)

01

## Electric dreams

Joana documents her road trip around the world in her electric Fiat 500 and Canon EOS camera – taking over 33,000 shots!

**A**s a travel and landscape photographer who has spent 15 years capturing the beauty of the world through my lens, I've always been drawn to the less-trodden paths. This

was certainly the case during my most recent expedition: a five-month road trip across the British Isles in an electric vehicle (EV) where I wanted to uncover the hidden gems that often lie beyond the Instagram-famous hotspots.

During my epic five month

electric car road trip, I had travelled through 10 countries and covered more than 10,500 miles in my Fiat 500e and with my Canon EOS R5. I wanted to challenge myself and also aimed to prove that a 'real' photography adventure could be completed in an EV.





I set off from my temporary home in Italy, traversing through Germany and the Netherlands before crossing the English Channel in a ferry to the enchanting landscapes of the British Isles. My planned

**“I covered more than 10,500 miles in my Fiat 500e with my Canon EOS R5”**

itinerary included East Scotland, the Orkney archipelago, Shetlands, Scottish Highlands, Lewis and Harris, Northern Ireland, Republic of Ireland, and not forgetting North Wales.

I took over 33,000 photographs on my travels, which I carefully curated 1,757 for editing. I was particularly drawn to the off-the-beaten-path locations, seeking out hidden gems that often go unnoticed by the masses. While the well-known photo spots like The Dark Hedges in Northern Ireland

**01 DERRYCLARE LOUGH, REPUBLIC OF IRELAND**  
Derryclare Lough is a freshwater lake surrounded by the Twelve Bens mountains and forests in Connemara, Ireland

Lens	Canon EF 16-35mm f/2.8L II USM	Exposure	3 mins, f/14, ISO50
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**02 ISLE OF LEWIS, SCOTLAND**  
Stac a'Phris Arch, a towering natural rock arch on the Isle of Lewis, Outer Hebrides, Scotland

Lens	Canon EF 16-35mm f/2.8L II USM	Exposure	5 mins, f/20, ISO50
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**03 DUNSEVERICK CASTLE, NORTHERN IRELAND**  
Dunseverick Castle is a ruined medieval castle located on the Antrim coast of Northern Ireland

Lens	Canon EF 16-35mm f/2.8L II USM	Exposure	120 secs, f/16, ISO100
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**04 YESNAB, ORKNEY ISLANDS**  
A famous two-legged sea stack near Sandwick on the mainland

Lens	Canon EF 16-35mm f/2.8L II USM	Exposure	61 secs, f/20, ISO50
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are undoubtedly stunning, I found that the lesser-crowded routes held an even greater appeal to me. I visited 192 stunning photo spots, from decaying castle ruins in Tantallon, East Lothian to the plethora of lighthouses in North Wales, and from unique seastacks in the Orkney islands to the natural rock arch on the Isle of Lewis.

One of the most rewarding aspects of venturing off the popular roads was the serenity of the surroundings. I was

often the only photographer at the spots, allowing me to fully immerse myself in the beauty of the landscape without distraction. The locals were also more relaxed and welcoming, eager to share their knowledge and insights. They provided invaluable information on the best places to visit and times of day.

My favourite destinations were the Shetlands and Isle of Harris. The Shetlands captivated me with their friendly inhabitants,





breathtaking scenery, and the abundance of wildlife. Harris, on the other hand, charmed me with its quirky photo opportunities, featuring

**“My two favourite destinations were the Shetlands and Isle of Harris”**

abandoned structures like shipwrecks, shielings, food vans, telephone booths and more. It was a haven for discovering beauty in decay.

My advice to any fellow photographers is take your time, explore beyond the Instagram-hotspots, and embrace the unexpected. I can assure you that you'll be rewarded with unique and memorable photographs, and you will discover the true essence of each and every place you visit. 📷



**05 TRWYN DU LIGHTHOUSE, WALES**  
Trwyn Du Lighthouse on the island of Anglesey in North Wales

Lens	Canon EF 16-35mm f/2.8L II USM	Exposure	150 secs, f/20, ISO50
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**06 TANTALLON CASTLE, SCOTLAND**  
The ruined clifftop castle Tantallon in North Berwick, East Lothian, Scotland

Lens	Canon EF 24-105mm f/4L IS II USM	Exposure	10 secs, f/10, ISO100
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**07 WESTERWICK CLIFFS, SHETLANDS**  
The Westerwick Cliffs in the South Mainland of the Shetlands are made of red granite

Lens	Canon EF 24-105mm f/4L IS II USM	Exposure	13 secs, f/20, ISO50
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**08 LOCH STACK BOTHY, SCOTLAND**  
Loch Stack is an idyllic lake in the Northwest of Scotland. The bothy at the shore of the loch is a famous photo spot

Lens	Canon EF 24-105mm f/4L IS II USM	Exposure	16 secs, f/14, ISO100
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## PhotoPlus FEEDBACK

Joana's epic road trip landscape shots serve as brilliant inspiration for anyone getting itchy feet and looking to plan an adventure with their camera in 2024. It's also great to see the diversity of landscapes and locations close to home, around the British Isles and neighbouring countries. What's even more impressive is that she pulled off her five-month road trip in an electric Fiat 500e - which took her from Italy to Germany, the Faroe Islands to Aberdeen, and everywhere in between. She undoubtedly has a keen eye for composition and her images are nothing short of breath-taking. We can't wait to see where her electric car takes her next!



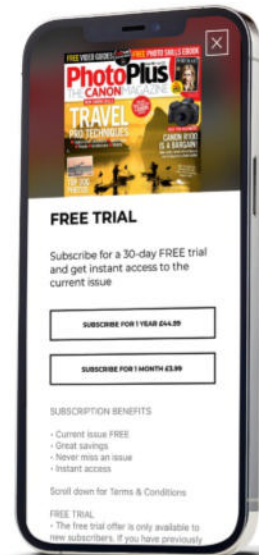
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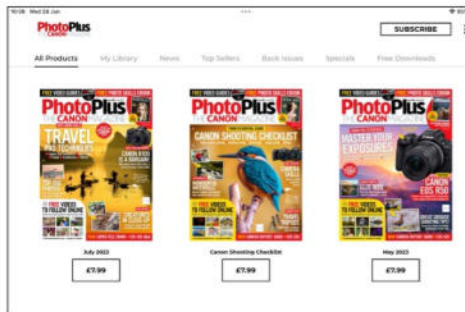
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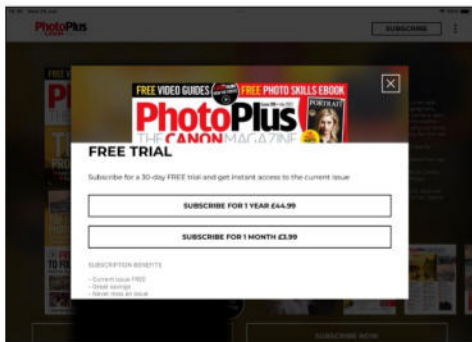
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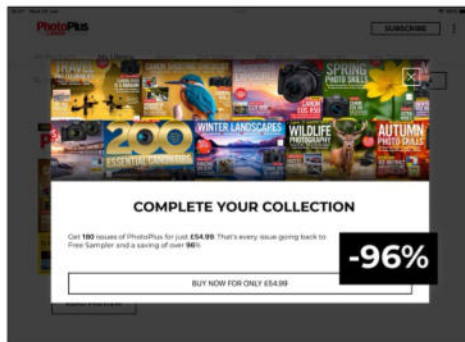
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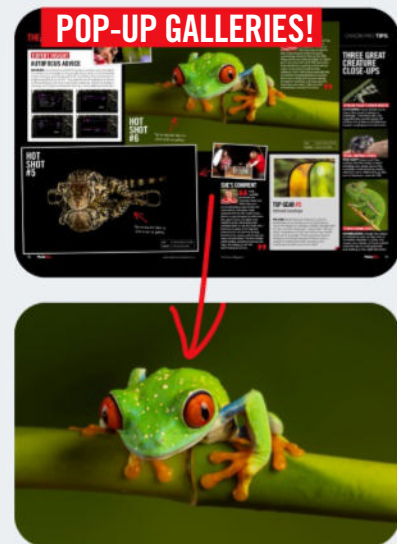
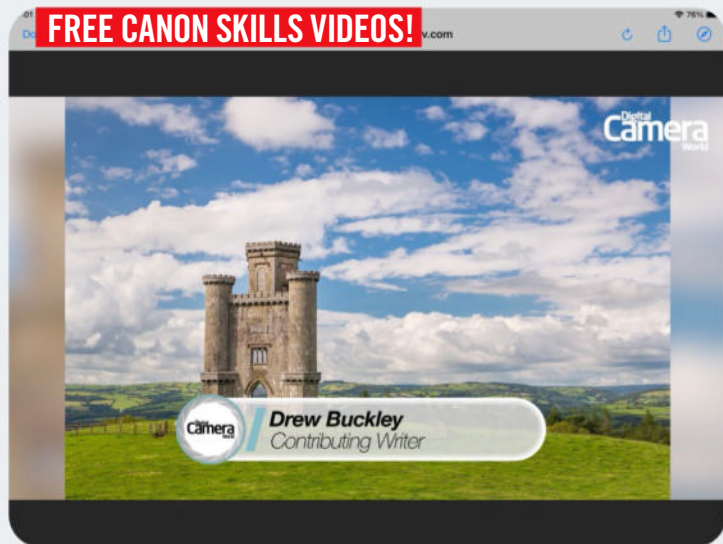


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### time

ation blur into moving water in your set your shutter speed to 1/30 sec ht will enter your camera at this speed, so adjust your aperture to a ompensate for a correct exposure. l below 1/60 sec will likely require r support to stop camera shake.

### ire triangle

the exposure triangle is the key l on your Canon camera and toghy to the next level. By relationship between aperture, and ISO, you'll be able to create perfectly exposed and creatively e the time to learn about the le and how one setting affects the amazed at how quickly your our images will benefit.



Learn the exposure triangle to master the roles of aperture, shutter speed and ISO settings – and you won't look back



# CANON SCHOOL

In part 36 of our series: Expand your kit collection and add versatility with faster connections and better results

## 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.



## Get connected

What do the terminals and ports on your Canon EOS camera let you do?

**Y**our EOS camera isn't a standalone light-tight box. It can be accessorized, whether that's with lenses, flashguns or microphones, and hooked up to computers and TVs. The number and sophistication of the various connections varies across the EOS range though. USB and HDMI terminals, along with a microphone socket are the minimum you should expect and what the EOS R50 shown comes equipped with. More advanced cameras, such as the EOS 5D Mark IV, shown to the right, come with a headphone socket, and additional features such as a PC terminal (the shiny input at the top) that allows them to be wired up to studio lighting. While the push towards wireless connectivity

has left some terminals looking long in the tooth, there is still a place for wired accessories. A wired remote release can be more straightforward to use than setting up and powering wireless options for example. Hooking up your camera to a computer using a USB cable can provide a more robust and faster connection than doing it wirelessly as well – although the USB terminal, in particular, needs to be treated with kid gloves.



EOS R50



EOS 5D Mark IV

### Should you use a wired remote release?

**MODERN** EOS cameras are equipped with Wi-Fi and Bluetooth, enabling them to be controlled remotely by mobile devices, computers and Bluetooth remote releases. Your camera may have a legacy remote terminal built into the body though, either on the side with the other connections, or on the front. Wired releases can be more restrictive when

it comes to distance and features, but they require no setting up in the menu and are easier on the camera battery – if less easy on your wallet.

Check the type of terminal your camera has before you invest: most use the E3 mini-jack connector (which looks a little like a headphone terminal), although higher-end bodies have an N3-type socket.



EOS RP



EOS 5D Mk IV



IF THE SHOE FITS...

# Hot shoe v multi-function shoe

What does Canon's next-gen connection offer over the standard shoe?

**T**he hot shoe on top of an EOS camera is a standard connection that can accept a number of accessories. Speedlites are the most commonly used – not that having a flashgun directly above the lens gives the best results, of course. An off-camera shoe cord allows you to take the Speedlite away from the camera while maintaining the physical connection between the electrical connections on the hot shoe and the Speedlite's hot shoe mounting foot.

For the ultimate in creative convenience, ditch the cord and attach a wireless controller to the hot shoe; the Canon ST-E3-RT can fire up to 15 compatible Speedlites, for example.

A number of cameras in the mirrorless EOS R System range are fitted with Canon's multi-function shoe instead of a standard hot shoe. This new design offers high-speed communication and enables compatible accessories such as the DM-E1 directional stereo microphone and

Speedlite Transmitter ST-E10 to be powered by the camera battery. Some Speedlites and accessories designed for a regular hot shoe cannot be attached directly to the newer multi-function shoe.

These include a number of Canon's professional Speedlites for DSLRs, such as the EL-1 and 600EXII-RT. To use these, you'll need to first attach Canon's AD-E1 Multi-Function Shoe Adapter to the top of the camera. Other accessories that are designed for standard hot shoes can easily be slotted straight onto the multi-function shoe.

Canon has released a handful of native multi-function shoe accessories so far, including Speedlite EL-5, Off Camera Shoe Cord OC-E4A and the AD-P1 multi-function shoe adapter and smartphone holder that allows an Android phone to be attached to the camera for faster file transfer. The shoe cover supplied with the camera can be used to protect the multi-function shoe from dust and water when an accessory is not attached.

## Hot shoe

The standard 5-pin hot shoe, as seen on the EOS R6 here, accepts a wide range of accessories – including the majority of Speedlites



## Multi-function shoe

The EOS R6 Mark II's multi-function shoe accepts compatible 5-pin hot shoe Speedlites and multi-function Speedlites, such as the EL-5 shown in the inset here



## Wired for sound

Make the most of the audio jacks when recording video

**A CANON EOS** camera's built-in microphone is only good for picking up sounds close to the camera – including any mechanical noises generated when you operate the controls on the body and the lens. If you shoot a lot of video and want your audio to match the quality of your pictures, then a microphone is a worthy investment.

The majority of modern EOS cameras are equipped with an external microphone socket that accepts a 3.5mm stereo mini jack. There are a range of different mics

that feature this type of input, including clip-on mics that are useful when shooting interviews, and shotgun mics that allow you to record sound in a specific direction. You can monitor the audio recording level using the bars shown on the camera's display, and manually adjust the level if it appears excessively loud or quiet. Being able to listen to the sound as you record it makes a big difference here, although note that not all cameras fitted with microphone jacks include a headphone jack.



Headphones enable you to pick up on any sound problems before it's too late, while a plug-and-play external stereo mic, such as Canon's DM-E100 above, is a very convenient audio upgrade



# Get a grip! (Or maybe not...)

Raise your shooting time and stability when you're taking vertical shots

**A** battery grip can be a useful addition for certain types of photography, although not all EOS cameras support them, and where they do, they are model-specific.

Grips allow you to use two batteries at once, essentially doubling your shooting time. You can also power the camera using an AC adapter and you may be able to use AA batteries. You're unlikely to see the best performance with the latter, but it's an option if you're in the middle of nowhere. You

may also be able to charge camera batteries via USB without having to remove them from the grip.

Battery grips are equipped with controls that mirror those on the camera that are operated by your right thumb and index finger; such as the shutter button, main dial, AE and AF buttons. This can improve handling when you're shooting vertically, as it feels similar to using the camera horizontally. The grip itself makes it easier to support the camera too, particularly when

you're shooting with a heavier lens, where it can help to balance the weight.

Grips are a practical option for wildlife and sports photography, where you're typically working with longer lenses, or when you're controlling the camera remotely, where the additional power enables you to extend your shooting time. However,

for most photography, the additional weight, bulk and cost of a battery grip may actually be unnecessary.



# Go bigger with HDMI

See your Canon images come to life on your TV

**A** ll current EOS cameras are fitted with a High-Definition Multimedia Interface (HDMI) terminal. This is similar to the one on the back of your flat-screen TV, but requires a smaller connector. EOS bodies are either fitted with a Mini HDMI (Type D) output or, in the case of EOS R and EOS M bodies, the even smaller Micro HDMI (Type C).

Using an HDMI cable that has a standard HDMI (Type A) connector at one end and the correct HDMI connector for your camera at the other, you can play your stills and movies on your TV. Plug in each end of the cable before you switch the camera or TV on, then set the TV to the correct HDMI input. The controls on your camera remain active even though there's no image displayed on



the camera, so you can scroll through the menus and the play your files. You might even be able to use your TV remote to control playback (look for 'Ctrl over HDMI' in the camera's blue Playback menu).

The HDMI terminal also enables you to send video and audio to a compatible recording device, such as an Atomos Ninja. Many cameras

allow you to record 'clean' video over HDMI, so that no shooting data, AF points or other information is visible.

On the EOS R7 you can use the 'HDMI display' option in the red Shooting menu to change how movies are displayed as they're recorded via HDMI, with a tap of the INFO button being used to stop the output of information as required.



**Once you've connected via HDMI, you can use the camera controls, and even the touchscreen, to scroll through your photos**



## KEEP IN CONTROL

# Remote shooting using USB

Use the digital terminal to control your camera from your computer

**T**he functionality that's available via the 'Digital terminal' (or USB port) depends on the camera you're using. Some EOS bodies have a Micro-B USB connector, others have a USB Type-C connector – and even with the more modern USB C cameras, some offer Hi-Speed USB 2.0 while others have SuperSpeed USB 3.1 or 3.2.

When you connect your Canon camera to your computer via a USB cable, you're able to use Canon's EOS Utility 3 software to download images from the memory card and carry out other functions, such as updating the camera firmware, registering new Picture Style files and adding IPTC metadata and image copyright details.

With the camera connected via USB, you're also able to control it remotely using EOS Utility 3. If your camera is

## Remote control

*Using Live View on a monitor in a home studio makes it easier to step back and assess the framing and composition of shots*

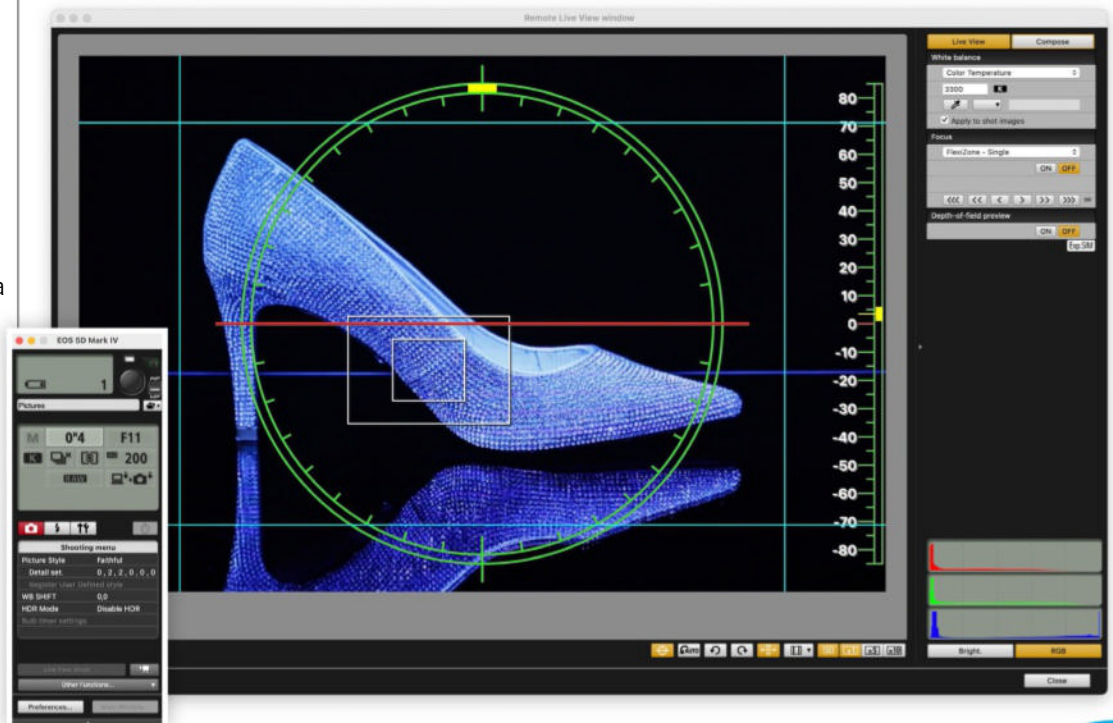
supported by Lightroom Classic, you can also shoot tethered via Adobe's software. Some EOS cameras can also be connected to a smartphone via USB, enabling you to control the camera or transfer your images using Canon's Camera Connect app.

While it may be possible to carry out some of these functions wirelessly with your camera, a wired connection is more efficient and you are

less likely to experience lag when you're shooting with Remote Live View and transferring your files to your computer.

More recent EOS R System cameras such as the EOS R7 and EOS R50 allow you to pre-select the app you connect to when using the USB connection, with options including Canon apps for

iPhone and UVC/UAC compatible applications on a computer. The latter option enables you to use the camera for video calls and streaming in Full HD. These cameras also enable you to power the camera over USB, or charge the battery without removing it from the camera.



## School tip Check the flaps

Prevent water and dust getting into your slots

**TO PREVENT** water and dust entering the ports, check that the terminal covers are securely in place after you've removed any connected accessories, and before you take your camera out of your bag or put it away. It's surprisingly easy to inadvertently catch one of the edges of the flaps when you're packing away your kit, and even when you're carrying it

around. Press firmly around the edges of each rubber cover to make sure that they're in place, as although the cover can feel it's locked in place at one end, it might not be quite so secure at the other. When you're cleaning your camera, take the opportunity to use a bulb blower to remove dust from around the terminals and the covers.



### PART 37

Next issue:  
The best Custom Functions you should use



# SOFTWARE SOLUTIONS

Canon expert Brian explains how to use Canon's free Digital Photo Professional software for better results

## PhotoPlus EXPERT

**BRIAN WORLEY**

CANON PRO

Brian is a freelance photographer and photo tutor, based in Oxfordshire. He has unrivalled EOS camera knowledge as he's been working for Canon for over 15 years, and can help you master all EOS products. [www.p4pictures.com](http://www.p4pictures.com)



# Maximize your image quality

Discover how to use your camera and Digital Photo Professional's array of lens corrections

**Quality lenses help to deliver optimum results, and quality costs. EOS cameras, especially EOS R-series, apply corrections to JPEG images in-camera.** When capturing RAW images, Digital Photo Professional has the tools to extract the best quality from images captured with Canon lenses. High resolution

image sensors combined with narrower apertures introduce diffraction losses that result in softer images, yet even this can be overcome with digital lens optimizer in DPP.

EOS DSLR cameras using EF and EF-S lenses have capacity to store up to 40 different lenses info so that in-camera corrections can be applied to JPEGs as you shoot.

Like a digital bookshelf you can update the lenses as new models or less common lenses are used. EOS R mirrorless cameras have in-built corrections for RF lenses and you can add some additional EF lenses to the camera with EOS Utility.

Working with RAW images, Digital Photo Professional reads from the image if lens

corrections and or Digital Lens Optimizer, DLO, was active when the image was captured. These defaults can be changed in the lens corrections. Lens corrections are intensive calculations and do have an impact on the time to create a finished image from a RAW file. Use DPP to download lens profiles for any lenses that are not already installed. 📷

## STEP BY STEP SIMPLY THE BEST USING DPP

In-camera corrections with DPP reduce aberrations and combats soft images

### THESE LENS CORRECTIONS ARE FOR CANON LENSES ONLY

In-camera lens corrections, and those made using DPP are only possible for images captured with a Canon lens. If you use third-party lenses with your EOS, then you may find it necessary to disable lens corrections when using such lenses as there have been some examples where the corrections create strange results visible in your pictures.



#### 01 IN-CAMERA LENS CORRECTIONS

Most EOS cameras can apply lens corrections as you shoot, which is perfect for making your JPEG images look their best. The camera uses the hardware processor in the camera and RF lenses. When using a less common lens, you may need to add a profile. The highest level of DLO processing is intensive and can slow continuous shooting.



#### 02 ADD LENS PROFILES TO YOUR CAMERA

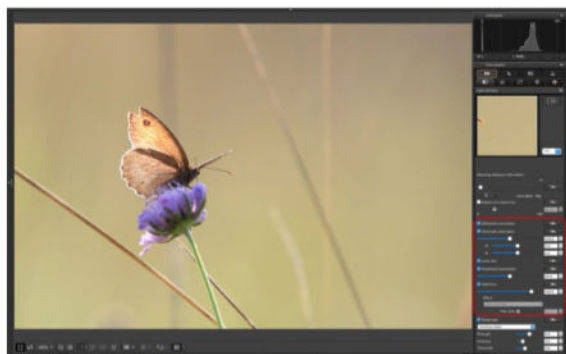
Use EOS Utility to add lens profiles to your camera, EOS R-series only have limited space for EF lens profiles so it is worth adding the lenses you use the most if you shoot JPEG. Open EOS Utility and select Camera Settings, then Register lens aberration correction data. Select additional lenses and the profiles will be downloaded from the Canon server.





### 03 DIGITAL LENS OPTIMIZER

Digital Lens Optimizer (DLO) processing works with DPP and in-camera for the latest EOS models. Select the lens correction tab and make sure the lens data is available. If it's not, then click the refresh button to download it. DLO reduces aberrations and combats soft images produced when shooting with stopped down apertures.



### 04 DETAILED LENS ADJUSTMENTS

While DLO does include diffraction loss correction, disable DLO to be able to manually change the settings for diffraction correction and chromatic aberration. Additional controls for colour blur, peripheral illumination and distortion can be adjusted at any time even with DLO active. The effect setting is only for correcting fish-eye lens images.



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## PhotoPlus EXPERT

**BRIAN WORLEY**

CANON PRO

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



In low light settings, EOS mirrorless cameras don't use the red AF assist beam from a Speedlite, instead the flash fires intermittently to focus

## Why doesn't the Canon EOS R5 use the Speedlite 600EX II-RT red AF pattern to focus in low light?

Nigel Gunn, Southwold

**BRIAN SAYS...** When using a Speedlite in low light, the behaviour of mirrorless and DSLR cameras is different. The red grid pattern of AF that the flash can emit is not used. The camera will either use the AF assist lamp on the body, or fire a few short bursts of light from the flash tube to focus.

The intermittent flash and the camera's built-in AF assist

lamp are not used if the camera is set to Servo AF, and unfortunately this is much more regularly used with the EOS mirrorless models than DSLRs. This is one of the weaker aspects of a mirrorless camera compared to DSLR. The newer Speedlite EL-5 has a modelling LED light that is activated when certain R-series cameras are used.



With an initial AF point it is possible to target a specific person's face in the frame to focus on and track them among a crowd of people

## I've upgraded from an EOS 70D to an EOS RP and want to know how face tracking works as I can't make it work with 1-point AF?

Sue Bishop, North Wales

**BRIAN SAYS...** Canon's EOS RP does track faces, but you need to use the correct AF area, face detection and tracking or zone AF. Eye detection only works with face detection and tracking. 1-point AF and AF with expansion settings are not so intelligent and will not identify a face or move the AF point position to track it. The challenge with using face detection and tracking is that you have to rely on the camera finding the

face you want. You can then select another one if needed. There is a setting for the initial AF point when using face detection and tracking, which when set correctly displays an AF point to identify where the camera is initially looking for a face to track. Navigate to the custom functions to C.Fn II-7 Initial Servo AF pt for face detection and choose option 1 or 2. Now an AF point will be displayed and it is used to target a specific face.



## TRACKING TIME

The interval timer was used here to capture individual images of the clouds to provide the most editing flexibility

**Ask Brian!**  
Confused with your Canon camera? Send your questions to [EOSSOS@futurenet.com](mailto:EOSSOS@futurenet.com)



# Timelapse movie or interval timer?

Shoot interval timer or timelapse movies to show a subject changing

**T**imelapse movies and the interval timer are quite similar, in that they capture a series of still images at a preset time interval. Capturing images over extended periods of time is a great way to show progression – such as a large building project or the transition from daytime to night-time – and is primarily used for movies, but not exclusively.

The interval timer function is available when shooting still images, the interval between shots can be configured from 10 seconds to 99 hours, 59 minutes and 59 seconds. You can select a specific number of images up to 99 or leave the camera to run until the card fills up or the battery runs out. Once the sequence starts, the camera will save images as RAW or JPEG still frames based on your camera settings and with the resolution you choose.

If you want to make these in to a movie you need to edit them with a

computer or mobile app. Time-lapse shooting is a function available when the camera is set to movie shooting mode. Similar to the interval timer, you preset the number of pictures to be captured and the interval.

Helpfully most cameras show you how long the sequence will take to capture and the duration of the finished movie clip. You can capture up to 3600 frames at intervals from 2 seconds to 99 hours, 59 minutes and 59 seconds. Depending on the camera you might be able to FHD with 1920 x 1080 pixels resolution, 4K resolution with 3840 x 2160 pixels or even 8K on the EOS R5. The camera captures the still images and compiles them in to a single movie.

Typically most sequences of images captured are compiled in to a movie clip, and for this timelapse makes the movie clip for you so is a good choice. While the interval timer option needs additional processing, you gain a lot of



**A timelapse movie would be ideal to show how the insect moves around the mushroom**

flexibility to adjust exposure by individually processing RAW images. This makes it the preferred choice for specialists who capture day to night sequences where the exposure changes significantly. Interval timer shooting is the better choice if only a few images are needed to show progression of construction project or even leaves falling from a tree in autumn. The interval timer captures images at the camera's full resolution which also allows larger prints, or flexibility to pan over the movie clip when editing.





EOS R6 Mark II can be used as an exceptionally high-quality webcam

## Can I use an EOS R6 Mark II as a camera for video conferences?

Graham Marshall, Manchester

**BRIAN SAYS...** The EOS R6 Mark II is eminently suitable for video conferencing as it supports the UVC/UAC protocols so that it appears as a webcam in most software. UVC stands for USB device video class, while UAC is USB device audio class. Set up is straightforward. Firstly navigate to the setup menus and locate Choose USB connection app, then select video calls/streaming from the menu options. Connect the EOS R6 Mark II to your computer with a USB cable. Within your conferencing software, select Canon digital camera as the video and audio source. The camera has a built-in mic or you can plug in an external mic if needed. The camera will not be powered by the computer so start with a charged battery.

## How does the modelling flash work on the Speedlite EL-5, I can't get anything to happen?

Zack Murray, Derby

**BRIAN SAYS...** The modelling flash is a short duration of near constant light created by pulsing the flash tube. It's designed to be used with off-camera flash to check where the light will illuminate a subject. It's helpful as Speedlites don't have a modelling bulb like a studio flash.

If your Speedlite EL-5 displays the modelling setting you have to be using the EL-5 off-camera with a DSLR fitted with a suitable radio wireless sender unit. Pressing the button sends a message via the radio system to all the off-camera units to emit their modelling light. The modelling light provide the photographer with an idea of where the light is illuminating the subject, similar to a modelling lamp on a studio flash.



## Why are there movie settings on the last of the red menus when the EOS R10 is in the Aperture priority mode?

Sam Jenkinson, Tipton

**BRIAN SAYS...** You can select the resolution and frame rate for any movies captured while in stills mode. If you don't want movie, allocate a different capability.

## Is it possible for the EOS R100 to identify and focus track animals?

Lynn Bluett, Salford

**BRIAN SAYS...** The EOS R100 identifies human faces, yet this can also work for primates. The EOS R50 is better for wildlife than the EOS R100.

## Why are some SD UHS-II cards more expensive than others with the same capacity?

Mel Bailey, Crawley

**BRIAN SAYS...** SD UHS-II cards have an additional row of connections for faster read and write speeds.



The R50, R8 and R6 Mark II can display aspect ratio markers, like this square aspect marker

## The EOS R50 has movie aspect ratio markers, what are they used for?

Nicole Dunnell, Chester

**BRIAN SAYS...** Advanced movie makers use aspect ratio markers to previsualise how the captured footage might be reformatted to playback on a device with a different aspect ratio display. Movies are captured with a 16:9 aspect ratio for playback on televisions. The same video might be shared on mobile devices where vertical video with a 9:16 ratio is better. Aspect ratio markers are a guide while shooting only.



Shutter speeds change in small increments with high frequency antiflicker switched on

## How do I change the shutter speed on my R8 so it's not decimal places?

Alex Keeley, Ely

**BRIAN SAYS...** If the shutter speed displays a decimal place it's because high frequency anti-flicker shooting has been activated. This is designed to reduce banding that can occur when the shutter speed synchronises with a light source that flickers are high frequencies. Many household LED lights cycle on and off at high frequencies that are invisible to people, but can cause banding in images. The EOS R8 and R6 Mark II have the high frequency anti-flicker setting to avoid such banding.

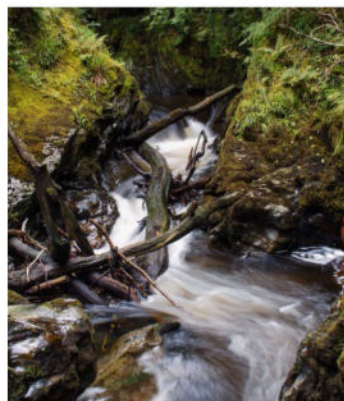


## STAY STABLE

## Is it better to have a lens with optical image stabilization, or a camera with in-body stabilization, what about both?

Donna Atkinson, Newcastle-under-Lyme

**BRIAN SAYS...** Image stabilization helps to avoid blurred images caused by the camera moving during the exposure when a slow shutter speed is used. Unfortunately



Without using a tripod, IBIS enabled a slow 0.6 sec handheld exposure to show the movement in the water, with sharp surrounds

stabilization cannot compensate for the movement of the subject. Optical stabilization employs gyroscopic sensors in the lens and then special floating elements within the lens are moved to compensate for the direction and amount of the movement. In-body stabilization works by moving the image sensor to counteract movement.

In-lens optical IS is better suited to correcting angular movement such as that which occurs with longer lenses used to photograph distant subjects. In-body IS is good for compensating for the shift movement that is more noticeable when using wide-angle and macro lenses. There are a small number of lenses that feature hybrid IS



An image stabilized lens keeps the stationary subject sharp even when the shutter speed is less than ideal – but it can't freeze moving subjects

in the lens, this special kind of stabilization corrects both shift and angular motion. Hybrid IS was first introduced with the EF 100mm f/2.8L Macro IS USM lens and is also found in the RF 100mm F2.8L Macro IS USM lens and a few others wide-angle lenses.

Canon's first cameras with in-body IS was the EOS R5

and R6, since then some other EOS R-series cameras also have in-body IS. It works in combination with optical IS in the lens. The amount of stabilization that is achieved depends on the lens, with the RF 85mm F1.2L USM it's up to 8-stops, while in-body stabilization is normally 5-stops maximum.

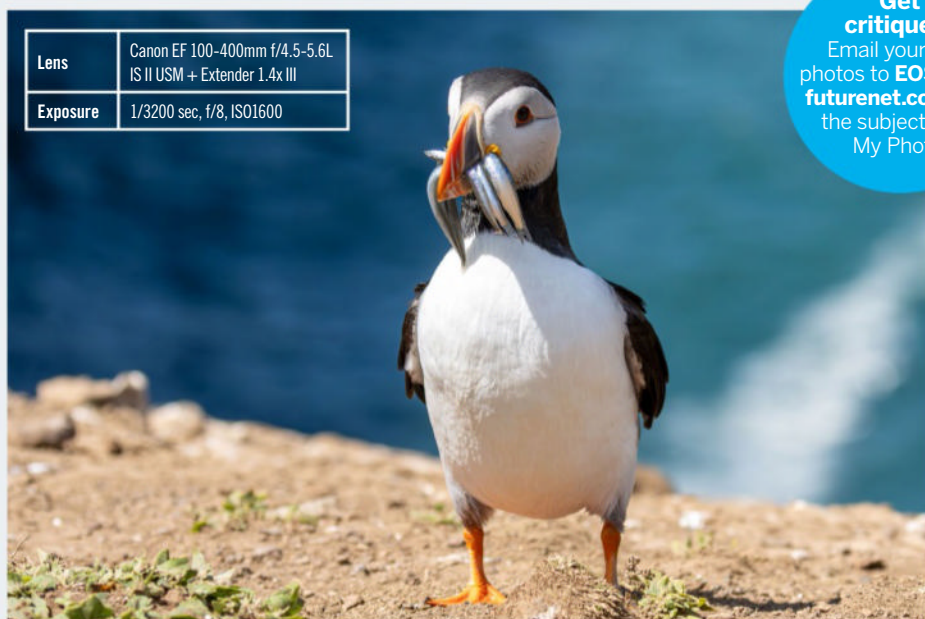
## RATE MY PHOTO

### I've brought lunch!

**CAROLINE PETCH,**

**BUCKINGHAMSHIRE SAYS...** This was taken when I was lucky enough to visit Skomer Island for the first time. I had never seen a puffin in the wild and I was keen to capture as many as I could with an EOS 90D with an EF 100-400mm lens plus Extender. I was unaware they would come so close and I wouldn't necessarily need a long lens, many of my pictures were captured at less than 200mm. I used Adobe Lightroom for some basic adjustments and cropping. ISO1600 is not so clean on the EOS 90D so I used the denoise tool to improve the image.

**BRIAN SAYS...** You have certainly got closer than I would have expected, and the resulting image is sharp and full of colour with the puffin carrying lunch well separated from the background. The light looks to be mostly above the



bird but the top of the white chest still has detail in almost every feather. The brightness of the ground around the bird does draw my eye away so it would be worth darkening a little. You have left enough space around the bird, but

maybe waiting for it to come one step closer would result in both feet being visible. You might also try shooting closer to the ground to reduce the foreground, but this is a great shot and certainly makes me want to go there!

Lens	Canon EF 100-400mm f/4.5-5.6L IS II USM + Extender 1.4x III
Exposure	1/3200 sec, f/8, ISO1600

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## THE CONTENDERS



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10-18mm  
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Canon EF-S  
24mm f/2.8 STM  
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Canon EF-S  
55-250mm  
f/4-5.6 IS STM  
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Canon EF  
17-40mm f/4L  
USM  
£779/\$799



Canon EF 50mm  
f/1.8 STM  
£129/\$125



Canon EF 85mm  
f/1.8 USM  
£489/\$499



Canon EF  
70-300mm  
f/4-5.6 IS II USM  
£639/\$599



# BUDGET LENSES

*We test the top lenses for Canon EOS DSLRs (and mirrorless EOS R cameras) that won't break the bank. Here are the best buys...*



**A**fter all the Christmas and festive fun and spending, we're all feeling the pinch. If you're not, please write in and tell us your secrets. And if you didn't get the gifts you really wanted (don't write in, we know how that is), it's only natural to want to treat yourself. With all of this in mind, we've rounded up the most alluring lenses for Canon EOS DSLRs that go large on performance, little on price.

With so much focus on mirrorless EOS R System cameras, it's easy to lose sight of the fact that many of us still shoot with Canon EOS DSLRs, which still have a great deal to offer, financially as well as in quality, versatility and handling prowess, not to mention battery life. We're therefore majoring on best-buy budget lenses in EF and EF-S mount for this Super Test. And let's not forget that these cut-price Canon lenses are also eminently suitable for R-system cameras with the addition of a mount adapter. That said, independent manufacturers, as well as Canon, have been phasing out DSLR lenses, so you may need to be quick to find a bargain.

There are also some great budget RF and RF-S lenses. Along the bottom of the following pages you'll find mini-reviews of our favourite wallet-friendly RF lenses. We're not including 'kit' lenses that are offered with cameras as the chances are you've probably got one already. For best-buy additions, read on...



# CANON EF-S 10-18mm f/4.5-5.6 IS STM £249/\$299

A real lightweight with a price tag to match, this lens is particularly compact and affordable

**C**arrying around additional lenses is no fun when they're big, heavy and cumbersome. This offering from Canon is refreshingly small for a wide-angle zoom and tips the scales at less than half the weight of many competing lenses. Its 67mm filter thread is also a lot smaller than usual, so filters are relatively inexpensive to buy.

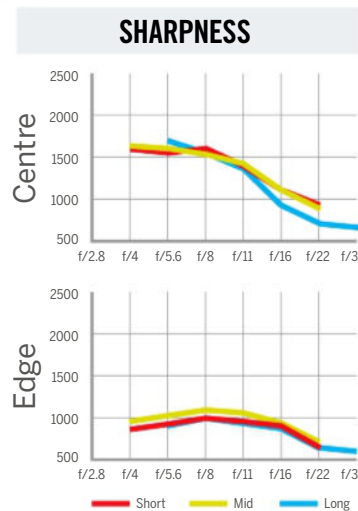
One weight-saving feature is the plastic mounting plate but build quality feels reasonably robust. It features an STM (Stepping Motor) autofocus system which is fast for stills, smooth for video and virtually silent. The electronically-coupled focus ring enables manual override of autofocus but, as usual for an STM lens, there's no focus distance scale.

Less than half the price of Canon's relatively ancient EF-S 10-22mm wide zoom for APS-C cameras, this lens adds the bonus of image stabilization. As normal with non L-series Canon lenses, you need to buy the lens hood separately, the genuine EW-73C costing around £21/\$25.



## Performance

No lightweight in terms of performance, this lens matched or beat Canon's pricier EF-S 10-22mm lens for sharpness in our lab tests, throughout its zoom and aperture ranges. Colour fringing is also less noticeable but barrel distortion is slightly worse at the short end of the zoom range. Even so, it's easy to correct, either during editing or when using the automatic in-camera fix that's available in recent Canon cameras. For an own-brand Canon lens, it's a steal at the price.



## FEATURES

- 01 Super Spectra coatings reduce ghosting and flare.
- 02 The 67mm filter thread is a tell-tale sign of the diminutive build.
- 03 The EW-73C petal shaped hood is an essential buy.
- 04 The longest focal length follows 'kit' zooms like the 18-55mm and 18-135mm.
- 05 Typical of Canon's STM lenses, there's no focus distance scale.

## VERDICT

**FEATURES**  
★★★★☆

**BUILD & HANDLING**  
★★★★☆

**PERFORMANCE**  
★★★★☆

**VALUE**  
★★★★☆

**OVERALL**  
★★★★☆

## HOW WE TEST

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



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

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 tested just on cameras like the EOS 90D and 7D Mark II. EF-M, RF and RF-S

lenses are tested on respective EOS M and EOS R system bodies. In-camera corrections for chromatic aberrations, distortion and peripheral illumination are disabled, throughout lab-testing, to better reveal the true optical performance of each lens.

In our lab, we test lenses under controlled conditions, using the Imatest Master and DxO Analyser suites. Photos of test charts are taken across the range of apertures and zoom settings (where applicable), then analysed for sharpness, distortion and chromatic aberrations (colour fringing).



# CANON EF-S 18-135mm f/3.5-5.6 IS USM £484/\$599

It rules the roost of APS-C format EF-S standard zoom lenses for telephoto reach

This is the third incarnation of Canon's EF-S 18-135mm zooms. The first had a basic electric autofocus motor, the second switched to a stepping motor, and this latest edition boasts a revolutionary Nano USM system, which has since been adopted in other EF and RF mount lenses for DSLR and mirrorless bodies.

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

Although there are some cosmetic changes, the optical design remains unchanged from the previous STM edition of the lens. 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 Canon's latest EF-S 18-55mm kit lens. Naturally, the 18-135mm is rather larger and heavier due to its extra telephoto reach, but it still only weighs 515g and is easily manageable. Build quality feels a

little better than in the EF-S 18-55mm lens and the construction features a metal mounting plate.

### Performance

Autofocus rises from 2.5x to 4x faster than 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 pretty well controlled, considering the large zoom range. All in all, it's a very versatile lens and our pick of the crop for EF-S standard zooms.



### FEATURES

- 01 The hood is sold as an optional extra.
- 02 It has Super Spectra coatings along with one aspherical and one UD (Ultra-low Dispersion) element.
- 03 The optional PZ-E1 Power Zoom Adaptor is great for movie capture.
- 04 The optical design is identical to the STM edition.
- 05 Unlike some budget-friendly EF-S lenses, this one has a metal mounting plate.

### VERDICT

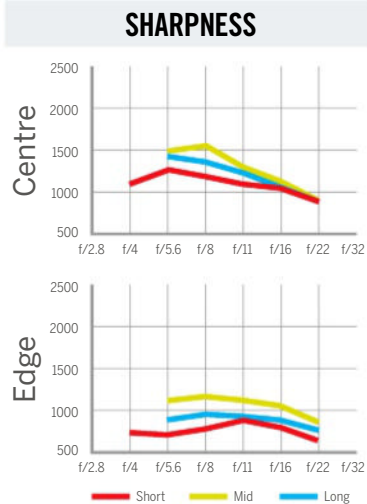
**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

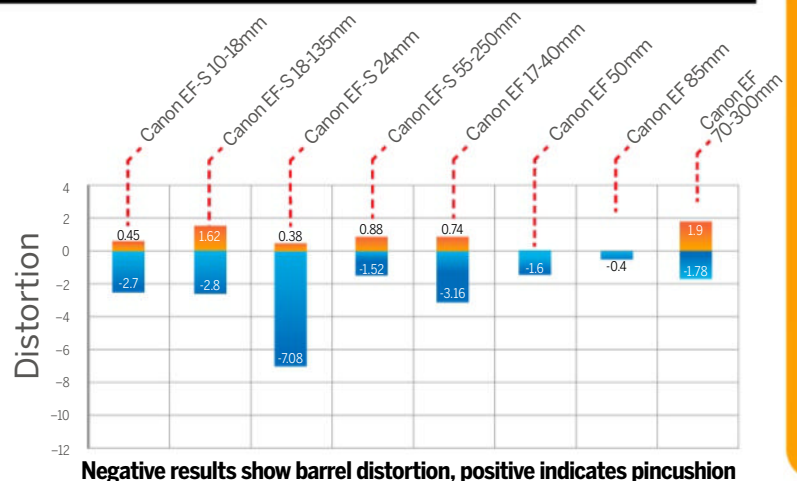
**OVERALL**  
★★★★★



## DISTORTION

There's nothing too extreme from these lenses

All of the lenses in this test group exhibit some barrel distortion, for the zoom lenses, at the short end of the zoom range. As we'd expect, the wide-angle EF-S 10-18mm f/4.5-5.6 IS STM and EF 17-40mm f/4L USM zooms are the worst offenders for barrel distortion but the amounts are still quite modest, compared with many newer lenses designed for mirrorless cameras. Pincushion distortion for zoom lenses at their longest settings is quite minimal. Either way, automatic in-camera corrections are available in all current and recent Canon DSLRs and mirrorless cameras.





# CANON EF-S 24mm f/2.8 STM **£159/\$129**

As a 'pancake lens' the EF-S 24mm is amazingly small, ideal for travel and walkabout shooting

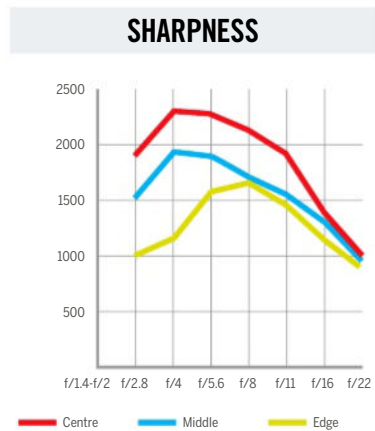
**T**his Canon lens for APS-C format DSLRs has a pancake design that enables a super-slim profile, measuring just 23mm in length – just under an inch. It's particularly lightweight as well, tipping the scales at a mere 125g – about half the weight of the Canon EF-S 10-18mm lens on test, which we'd class as lightweight.

Shoehorned into the small build are an aspherical optical element, Super Spectra coatings and a fairly well-rounded seven-blade diaphragm. As with the Canon 10-18mm and 50mm lenses on test, autofocus is courtesy of a quick and quiet stepping motor, with an electronically coupled manual focus ring. The focus ring is rather small and fiddly but on the plus side, the aperture rating is fairly wide at f/2.8.

The 24mm focal length gives an 'effective' 38.4mm in full-frame terms, which is a good fit for walkabout and general photography. Canon used to make a very similar EF 40mm f/2.8 STM pancake lens for full-frame DSLRs. That one was discontinued a while ago but is a good second-hand buy.

## Performance

As with other STM lenses, focus drive relies on power from the camera, so you need to apply a light press on the shutter button to activate the system, even when focusing manually. Image quality is impressive with excellent sharpness across the frame and amazingly little colour fringing, even without using in-camera corrections. There's no image stabilization but the fairly 'fast' aperture is usually enough to keep shutter speeds quick and fend off camera-shake.



## FEATURES

- 01** Qualifying as a pancake lens, the EF-S 24mm has an 'inch-thick' profile.
- 02** The filter thread is much larger than the front element, measuring 52mm.
- 03** Manual focusing is a bit fiddly, due to the thin nature of the operating ring.
- 04** The Canon ES-52 hood costs an extra £22/\$25.
- 05** Despite being ultra-lightweight, the lens has a metal mounting plate.

## VERDICT

- FEATURES** ★★★★★
- BUILD & HANDLING** ★★★★★
- PERFORMANCE** ★★★★★
- VALUE** ★★★★★
- OVERALL** ★★★★★

# CANON RF-S 55-210mm F5-7.1 IS STM **£379/\$349**

This telephoto zoom for APS-C format R-system cameras is compact and lightweight

**T**he third RF-S lens to be launched, this one offers an 'effective' zoom range of 88-336mm on APS-C format R-system cameras. That's a big stretch for a lens that only weighs 270g. There's still a lot packed in though, including a 4.5-stop optical stabilizer that gives a 7-stop overall effectiveness in conjunction with the in-body stabilization of the EOS R7 and various full-frame R-system cameras. The lens feels pretty

robust, although it has a plastic rather than metal mounting plate.

Clarity, colour quality and sharpness get a boost from the inclusion of two UD (Ultra-low Dispersion) elements and one precision-moulded element. Outright sharpness is good rather than great but overall image quality, autofocus and stabilization are impressive.

★★★★★





# CANON EF-S 55-250mm f/4-5.6 IS STM £309/\$299

This APS-C format telephoto zoom is a significant step up from the previous version of the lens

**D**esigned for APS-C format DSLRs, this and other EF-S lenses can also be used on both APS-C format and full-frame mirrorless bodies, the latter in crop mode, via an EOS M and R system mount adapters. It's larger and heavier than the M-system EF-M 55-200mm zoom, with more traditional DSLR-type styling. It also adds physical switches for AF/M focusing modes and stabilization on/off, as well as chunkier rubberised grips for the zoom and focus rings.

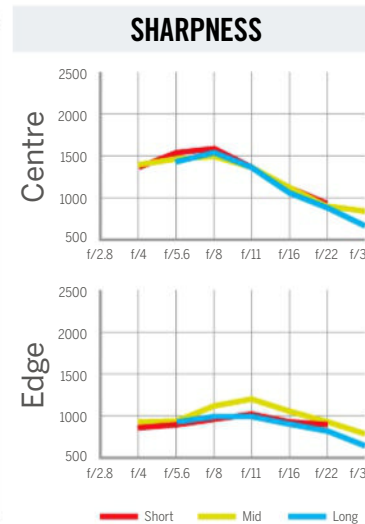
The overall zoom range is impressive, equivalent to 88-400mm in full-frame terms and stretching into super-telephoto territory. It also has a faster aperture rating than the competing RF-S 55-210mm F5-7.1 IS STM for mirrorless cameras. Similarities between the two lenses include fast and virtually silent stepping motor-driven autofocus and optical image stabilization, in this case with 3.5-stop effectiveness. Compared with the previous edition of the EF-S 55-250mm, it has a more complex optical path with three extra elements,



including the addition of a UD (Ultra-low Dispersion) element to reduce chromatic aberrations while boosting sharpness and contrast.

### Performance

Levels of centre-sharpness are mediocre throughout the zoom range but sharpness holds up quite well towards the edges and corners. There's very little colour fringing, while distortions are quite well controlled. It's a solid performer for APC-S format DSLRs but we'd still go for the full-frame compatible EF 70-300mm lens on test, for enhanced performance.



### FEATURES

- 01** The optional ET-63 cylindrical lens hood costs around £13/\$23.
- 02** Super Spectra coatings are applied to reduce ghosting and flare.
- 03** A handling bonus is physical switches for AF/M focusing and stabilization on/off.
- 04** The 3.5-stop image stabilizer comes complete with auto panning detection.
- 05** The plastic mounting plate keeps weight to a minimum.

### VERDICT

**FEATURES**  
★★★★☆

**BUILD & HANDLING**  
★★★★☆

**PERFORMANCE**  
★★★★☆

**VALUE**  
★★★★☆

**OVERALL**  
★★★★☆

# CANON RF 16mm F2.8 STM £279/\$299

It's great for everything from cramped interiors to landscapes and starry skies

**T**he full-frame compatible RF 16mm has a featherweight 69x40mm, 165g construction. That's pretty astonishing, given its ultra-wide-angle 16mm focal length and fast f/2.8 aperture. With its minimum focus distance of just 0.13m, you can get in really close and exaggerate perspective effects, making full use of the short focal length. The lens is also great for

capturing starry skies in astrophotography. Build quality feels very good but, as you'd expect at the price, there are no weather-seals.

Sharpness across most of the frame is very good when shooting wide-open but it pays to stop down to between f/5.6 and f/11 if you want to maximise sharpness out to the edges and corners. ★★★★★





# CANON EF 17-40mm f/4L USM **£779/\$799**

This affordable old-timer is an L-series lens that can still hold its own against newer competition

**N**ow 20 years old and counting, the 17-40mm remains an attractive choice for full-frame cameras. It's great value for a weather-sealed L-series lens and we know professional photographers who are still using this lens, even with EOS R-system cameras via a mount adapter. It has fast and quiet ring-type ultrasonic autofocus, and a sophisticated optical line-up that includes three aspherical elements and one Super UD element instead. It's also refreshingly compact and lightweight for a full-frame compatible wide-angle zoom, at 84x97mm and 500g, with 77mm filter attachment thread.

Although the lens doesn't technically have an internal zoom mechanism, the travel of the front element remains within the outer lens barrel. The overall physical length therefore doesn't extend at any zoom setting.

One thing the lens lacks is optical image stabilization but it does have a constant-aperture design, so f/4 remains available throughout the entire zoom range. The zoom range itself is generous,

and is ideal for shooting landscapes and cityscapes, as well as for architectural interiors. The field of view stretches to 104 degrees at the lens's shortest focal length.

### Performance

Sharpness is excellent in the central region of the frame, throughout the entire zoom range, and it hold up pretty well at the edges and corners. Autofocus is quick and quiet, with the usual full-time manual override that's available in ring-type ultrasonic systems. Overall, it's a great lens and a star buy for an L-series lens.



### FEATURES

- 01** The 77mm filter thread is modest for a full-frame wide-angle zoom.
- 02** Super Spectra coatings are applied to keep ghosting and flare to a minimum.
- 03** The zoom and focus rings are smooth and precise.
- 04** The build is compact and lightweight for a full-frame wide-angle zoom.
- 05** Weather-seals include a rubber gasket on the metal mounting plate.

### VERDICT

#### FEATURES



#### BUILD & HANDLING



#### PERFORMANCE



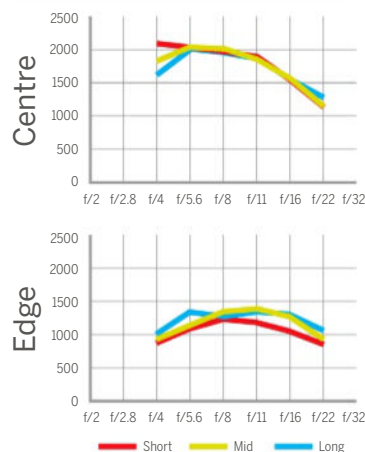
#### VALUE



#### OVERALL



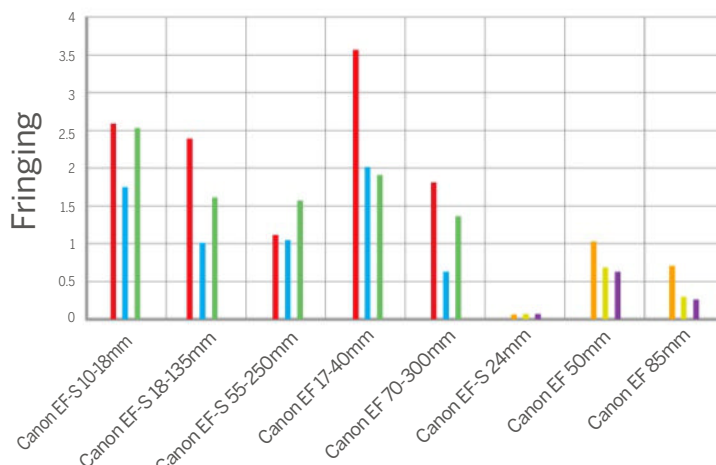
### SHARPNESS



## COLOUR FRINGING

The prime lenses do better than the zooms

**A**ll three of the EF-S 24mm, EF 50mm and EF 85mm prime lenses on test perform remarkably well to keep colour fringing to an absolute minimum. Lateral chromatic aberration causes colour fringing around high-contrast transitions in scenes. It's most noticeable in the wide-angle EF-S 10-18mm and EF 17-40mm, as with barrel distortion. Again though, automatic in-camera correction is available in all current and recent Canon cameras.



Lower values represent less fringing, and therefore better performance

#### ZOOM LENSES

- Short
- f/8
- f/16

#### PRIME LENSES

- f/2.8
- f/8
- f/16



# CANON EF 50mm f/1.8 STM **£129/\$125**

Small but mighty, it's a brilliant lens that works equally well with APS-C and full-frame DSLRs

**T**he latest and greatest in a long line of Canon EF 50mm f/1.8 lenses for SLRs for both film and digital cameras, the STM edition is by far the best yet. The previous edition had a noisy autofocus system based on a basic electric motor, and a 5-blade diaphragm that gave pronounced pentagonal shapes to defocused lights when you weren't shooting 'wide-open'. The plastic mounting plate was certainly lightweight but not particularly robust.

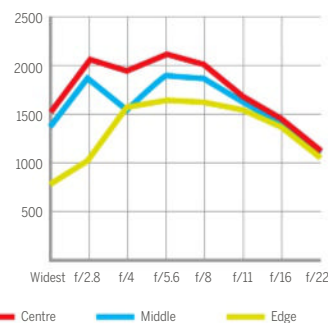
The STM edition puts all those wrongs to right. The STM (Stepping Motor) autofocus system provides fairly speedy yet very quiet operation for stills, along with smooth autofocus transitions during movie capture. The focus ring no longer rotates during autofocus, which improves handling, while also giving the bonus of manual override in Single AF mode. Further upgrades include a metal mounting plate, and a more well-rounded aperture based on seven diaphragm blades. Despite feeling more robust than earlier versions, it's still small and lightweight at 69x39mm and 160g.



## Performance

Although it's the most inexpensive lens in the whole group test, performance is very good. Sharpness is good even when shooting wide-open at f/1.8, where the quality of bokeh is nice and smooth. Stop down to f/2.8 or narrower apertures, and sharpness becomes excellent. Colour fringing and distortion are well controlled and, overall, the lens delivers very pleasing image quality. It's arguably the most essential prime lens to complement a DSLR and standard zoom kit.

## SHARPNESS



## FEATURES

- 01** The front element is well recessed, so the optional hood really is optional.
- 02** A giveaway to the lens size is the lens's 49mm filter thread.
- 03** The fly-by-wire focus ring requires power from the camera body.
- 04** As with most Canon STM lenses, there's no focus distance scale.
- 05** The latest edition feels better built and boasts a metal mounting plate.

## VERDICT

**FEATURES** ★★★★★

**BUILD & HANDLING** ★★★★★

**PERFORMANCE** ★★★★★

**VALUE** ★★★★★

**OVERALL** ★★★★★

# CANON RF 35mm F1.8 MACRO IS STM **£429/\$499**

This lens gives a natural viewing perspective on full-frame EOS R-series bodies, and more besides

**T**his RF mount lens is pretty compact and lightweight for a full-frame compatible 35mm prime, weighing 305g. And that's despite having a fast f/1.8 aperture. It delivers superb image quality and adds a 5-stop optical image stabilizer, as well as featuring a 0.5x macro facility for extreme close-ups. In fact, the 'hybrid'

image stabilizer works really well for close-ups, as it corrects for x-y shift as well as the usual angular vibration. Handling highlights include a customisable control ring and, while it's not an L-series lens, build quality and handling are excellent. All in all, it's one of our absolute favourite RF prime lenses.





# CANON EF 85mm f/1.8 USM

£489/\$499

A long-time favourite, this lens ticks all the right boxes for compactness and affordability

Unless you're a professional portrait photographer, the chances are that you won't want to blow your budget on a single lens. This veteran Canon lens is still a firm favourite, not least because it's reasonably compact and lightweight, ideal for popping in a spare corner of a gadget bag. Better still, it only costs a small fraction of Canon's 'faster' 85mm lenses and is much more lightweight, at just 425g.

Naturally, downsizing and cheaper manufacturing costs are mostly due to the narrower aperture rating of f/1.8, compared with the f/1.4 or f/1.2 of the quicker Canon lenses.

The optical path is fairly simple, based on nine elements in seven groups, but includes Super Spectra coatings to reduce ghosting and flare. The ring-type ultrasonic autofocus system is fast, whisper-quiet and has the usual full-time manual override with a purely mechanical linkage. Handling is good and the lens feels well-built although, typical of non-L-series models, it's not weather-sealed and you have to buy the optional hood.



## Performance

Given the modest aperture rating, sharpness isn't particularly impressive when shooting wide-open but still remains sufficient for plenty of detail in the eyes. Colour fringing and distortion are minimal.

The quality of bokeh is very pleasing when shooting wide-open but the 8-blade diaphragm isn't quite as well rounded as in some competing lenses, tending to give a noticeable octagonal shape to defocused points of light and bright objects when you stop down the lens a little.

## SHARPNESS



## FEATURES

- 01 Focusing is internal so the front element remains fixed.
- 02 Canon sells the ET-65 III hood as an optional extra, at £22/\$23.
- 03 Super Spectra coatings reduce ghosting and flare.
- 04 Ring-type ultrasonic autofocus comes complete with a focus distance scale.
- 05 Build quality feels solid and robust, although the lens doesn't feature weather-seals.

## VERDICT

**FEATURES**  
★★★★☆

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

# CANON RF 50mm F1.8 STM

£179/\$199

A standout bargain among pricey RF lenses and it's refreshingly lightweight

This is Canon's highly-popular EF 50mm f/1.8 STM lens, repurposed for mirrorless EOS R-series cameras. As such, it features the same number of optical groups and elements, along with a 7-blade aperture diaphragm and stepping motor-based autofocus system. The addition of an aspherical element in the RF lens

enhances edge-to-edge sharpness, while the same Super Spectra Coating helps to minimize ghosting and flare. The build quality of the RF lens feels a little better and an onboard Control/Focus switch is added, to enable different functions like aperture adjustment via the control ring when you're in autofocus mode.





# CANON EF 70-300mm f/4-5.6 IS II USM £639/\$599

A high-tech yet lightweight telephoto zoom with solid full-frame performance, at a keen price

The Mark II edition of this lens could barely be any more different to its predecessor. As well as a redesigned and upgraded optical path featuring new specialised UD elements, the exterior has a much more modern look and feel and the internals are completely overhauled. The old lens had an autofocus system based on an ultrasonic micro-motor. Compared with the more usual ring-type arrangement, it was clearly audible and rather sluggish. The front element rotated during focusing, which impaired handling and made using filters like circular polarizers and ND grads a chore.

The new lens features Canon's state-of-the-art Nano USM autofocus system, as featured in some of the top-grade RF lenses for mirrorless cameras. It's incredibly rapid for stills, while enabling similarly smooth focus transitions as a stepping motor system for video capture, as well as being almost silent in operation. Focusing is now internal and the manual focus ring is electronically coupled. The lens features a digital display with alternative modes for focus



distance, focal length and severity of camera shake. You can cycle through these with the Mode button. The image stabilizer now boasts 4-stop effectiveness and auto panning detection.

### Performance

Overall performance and image quality are highly impressive, the only exception being that corner-sharpness is mediocre at the short end of the zoom range. It's a great option for both full-frame and APS-C format DSLRs, the latter boosting the 'effective' zoom range to a super-telephoto 112-480mm.



### FEATURES

- 01 The ET-74B costs £76/\$45 – cheaper copies are available.
- 02 Switches control AF/M focusing, IS on/off, display mode and zoom lock.
- 03 Aperture control is based on nine-blade diaphragm.
- 04 With three display modes, the focal length option coming with auto APS-C conversion.
- 05 The mounting plate is metal but doesn't feature a weather-seal ring.

### VERDICT

**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

# CANON RF 85mm F2 MACRO IS STM £569/\$599

Incredibly versatile, this is a practically perfect portrait lens that's also great for macro shooting

Following in the footsteps of the Canon RF 35mm F1.8 Macro IS STM, this newer 85mm lens delivers a useful 0.5x magnification at its closest focus distance. However, the 85mm focal length enables a more comfortable working distance at the closest focus distance of 0.35m, about twice that of the 35mm lens's 0.17m. The combination of the 85mm focal length and f/2 aperture rating

enables a tight depth of field, making this lens eminently suitable for portraiture and still life. The 5-stop optical stabilizer gives up to 8-stop performance with in-body stabilization, so you can pretty much take a handheld 'shot in the dark'. Sharpness remains fabulous, colour fringing is entirely negligible and there's only a hint of pincushion distortion. It's a superb lens.





## COMPARISON TABLE

								
	CANON EF-S 10-18mm f/4.5-5.6 IS STM	CANON EF-S 18-135mm f/3.5-5.6 IS USM	CANON EF-S 24mm f/2.8 STM	CANON EF-S 55-250mm f/4-5.6 IS STM	CANON EF 17-40mm f/4L USM	CANON EF 50mm f/1.8 STM	CANON EF 85mm f/1.8 USM	CANON EF 70-300mm f/4-5.6 IS II USM
	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
Mount	EF-S	EF-S	EF-S	EF-S	EF	EF	EF	EF
Full-frame compatible	No	No	No	No	Yes	Yes	Yes	Yes
Effective focal length (APS-C)	16-28.8mm	28.8-216mm	38.4mm	88-400mm	27.2-64mm	80mm	136mm	112-480mm
Elements/Groups	14/11	16/12	6/5	15/12	12/9	6/5	9/7	17/12
Image stabilization	4-stop	4-stop	None	3.5 stops	None	None	None	4 stops
Autofocus type	Stepping motor	Ultrasonic (Nano)	Stepping motor	Stepping motor	Ultrasonic (ring)	Stepping motor	Ultrasonic (ring)	Ultrasonic (nano)
Manual autofocus override	Electronic	Electronic	Electronic	Electronic	Full-time	Electronic	Full-time	Electronic
Min focus distance	0.22m	0.39m	0.16m	0.85m	0.28m	0.35m	0.85m	1.2m
Max magnification factor	0.15x	0.28x	0.27x	0.29x	0.24x	0.21x	0.13x	0.25x
Focus distance scale	No	No	No	No	Yes	No	Yes	Yes
Diaphragm blades	7 blades	7 blades	7 blades	7 blades	7 blades	7 blades	8 blades	9 blades
Filter size	67mm	67mm	52mm	58mm	77mm	49mm	58mm	67mm
Hood	EW-73C, £21/\$25	EW-73D, £48/\$35	ES-52, £22/\$25	ET-63, £13/\$23	EW-83E, included	ES-68, £22/\$25	ET-65 III, £22/\$23	ET-74B, £76/\$45
Dimensions (Dia x Length)	75x72mm	77x96mm	68x23mm	70x111mm	84x97mm	69x39mm	75x72mm	80x146mm
Weight	240g	515g	125g	375g	500g	160g	425g	710g
Target price	£249/\$299	£484/\$599	£159/\$129	£309/\$299	£779/\$799	£129/\$125	£489/\$499	£639/\$599
FEATURES	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
BUILD & HANDLING	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
PERFORMANCE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
VALUE	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆
OVERALL	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆	★★★★☆

## THE WINNER IS... CANON EF 17-40mm f/4L USM

An epic Canon EF wide-angle lens that has truly stood the test of time

**S**ure, the EF 17-40mm f/4L USM is the most expensive lens in our 'budget' round-up, but not by much. It's actually terrific value for a pro-grade, L-series Canon lens. At the other end of the market, there's the EF 50mm f/1.8 STM. What the lens lacks in zoom versatility, it makes up for with a faster aperture, enhancing creativity. This lens easily wins our Best Value award. It's also great for portraiture on APS-C format cameras while, for

price and performance, the EF 85mm f/1.8 USM wins out for full-frame bodies. As a downsized delight for APS-C cameras, the EF-S 24mm f/2.8 STM is a brilliant pancake lens for travel and walkabout photography. Sticking with APS-C, the EF-S 10-18mm f/4.5-5.6 IS STM is a smart wide-angle zoom but the EF-S 55-250mm f/4-5.6 IS STM loses out to the full-frame compatible EF 70-300mm f/4-5.6 IS II USM, unless you're on a really tight budget. 📷





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# BUYERS' GUIDE

With prices ranging from a couple of hundred to a few thousand, Canon has an EOS camera to suit everyone, from the complete beginner to most demanding pro. . .

## What to look for

Canon EOS camera ranges

Canon splits its EOS range into mirrorless cameras and DSLRs. Its older DSLR line-up includes beginner, enthusiast and pro ranges; the EOS 4000D is the most basic, the 850D for intermediates, the 90D and full-frame 6D Mk II for advanced enthusiasts, and the full-frame pro-level 5D and 1D lines. Over the page are the two EOS mirrorless ranges: Canon's smaller, older APS-C EOS M cameras, and Canon's EOS R System APS-C and full-frame cameras that offer the very latest digital technology. The APS-C crop-sensor EOS R50, R10 and R7 are smaller, affordable entry-level options. While the EOS R8 up to the R6 Mark II, R5 and flagship R3 are full-frame for serious enthusiasts to professionals. Canon's EOS R cameras are packed with intelligent features and most have IBIS, new AF tracking for any moving subject you shoot, and 20fps to 40fps continuous shooting bursts are common place using the speedy electronic shutter modes.

## DSLR CAMERAS

PRICES QUOTED ARE BODY-ONLY UNLESS STATED

### CANON EOS 4000D

TESTED IN ISSUE 140 PRICE: £370/\$N/A



**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 £370 (body), it's the cheapest 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. ★★☆☆☆

<b>Sensor</b>	18MP APS-C CMOS
<b>Viewfinder</b>	Pentamirror, 0.8x, 95%
<b>ISO</b>	100-6400 (12,800 exp)
<b>AF</b>	9-point (1 cross-type)
<b>LCD</b>	2.7-inch 230K dots
<b>Max burst (buffer)</b>	3fps
<b>Memory card</b>	SD/SDHC/SDXC

### CANON EOS 2000D (REBEL T7)

TESTED IN ISSUE 194 PRICE: £349/\$479



**THE 2000D** is a better-spec Canon camera than the 4000D, but comes with a modest step up in 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. ★★☆☆☆

<b>Sensor</b>	24.1MP APS-C CMOS
<b>Viewfinder</b>	Pentamirror, 0.8x, 95%
<b>ISO</b>	100-6400 (12,800 exp)
<b>AF</b>	9-point (1 cross-type)
<b>LCD</b>	3-inch 920K dots
<b>Max burst (buffer)</b>	3fps
<b>Memory card</b>	SD/SDHC/SDXC

### CANON EOS 250D (REBEL SL3)

TESTED IN ISSUE 194 PRICE: £549/\$649



**THE** 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. ★★☆☆☆

<b>Sensor</b>	24.1MP APS-C CMOS
<b>Viewfinder</b>	Pentamirror, 0.87x, 95%
<b>ISO</b>	100-25,600 (51,200 exp)
<b>AF</b>	9-point (1 cross-type)
<b>LCD</b>	3-inch vari-angle touchscreen 1040K
<b>Max burst (buffer)</b>	5fps
<b>Memory card</b>	SD/SDHC/SDXC

### CANON EOS 850D (REBEL T8i)

TESTED IN ISSUE 194 PRICE: £919/\$749



**FOR ENTHUSIASTS** looking to take the next step, the Canon EOS 850D is an impressive, lightweight yet powerful DSLR that captures detailed, colourful and sharper images, as well as 4K movies. Featuring iTR Face and Eye Detection AF, and accurate Auto AF via optical viewfinder, the 850D is sure to satisfy. ★★☆☆☆

<b>Sensor</b>	24.1MP Dual Pixel APS-C CMOS
<b>Viewfinder</b>	Pentamirror, 95% coverage, 0.82x
<b>ISO</b>	100-25,600
<b>AF</b>	45 cross-type AF point system
<b>LCD</b>	3-inch vari-angle touchscreen 1040K
<b>Max burst (buffer)</b>	7fps
<b>Memory card</b>	SD/SDHC/SDXC



## CANON EOS 77D

TESTED IN ISSUE 194 PRICE: £710/\$550



**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. ★★★★★

<b>Sensor</b>	24.2MP, APS-C (6000x4000 pixels)
<b>Viewfinder</b>	Pentamirror, 0.82x, 95%
<b>ISO</b>	100-25,600 (51,200 exp)
<b>AF</b>	45-point (all cross-type)
<b>LCD</b>	3-inch vari-angle touchscreen 1040K
<b>Max burst (buffer)</b>	6fps (27 Raw/Unlimited JPEG)
<b>Memory card</b>	SD/SDHC/SDXC

## CANON EOS 90D

TESTED IN ISSUE 194 PRICE: £1299/\$1199



**THE** EOS 90D is still Canon's decathlete crop-camera that comes with a better 32.5MP sensor, super-quick 10fps continuous shooting and 4K video, plus improved handling and decent AF. This camera is an ideal APS-C camera upgrade for enthusiasts and beyond. ★★★★★

<b>Sensor</b>	32.5MP, APS-C (6960x4640 pixels)
<b>Viewfinder</b>	Pentaprism, 0.95x, 100%
<b>ISO</b>	100-25,600 (51,200 exp)
<b>AF</b>	45-point (all cross-type)
<b>LCD</b>	3-inch vari-angle touchscreen 1040K
<b>Max burst (buffer)</b>	10fps (25 Raw/58 JPEG)
<b>Memory card</b>	SD/SDHC/SDXC

## CANON EOS 7D MARK II

TESTED IN ISSUE 159 PRICE: £1050/\$725



**HERE'S** the king of action-packed APS-C format EOS cameras. A little long in the tooth now, but it still 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. ★★★★★

<b>Sensor</b>	20.2MP, APS-C (5472x3648 pixels)
<b>Viewfinder</b>	Pentaprism, 1.0x, 100%
<b>ISO</b>	100-16,000 (51,200 exp)
<b>AF</b>	65-point (all cross-type)
<b>LCD</b>	3-inch 1040K dots
<b>Max burst (buffer)</b>	10fps (31 Raw/unlimited JPEG)
<b>Memory card</b>	CompactFlash + SD/SDHC/SDXC

## CANON EOS 6D MARK II

TESTED IN ISSUE 194 PRICE: £1339/\$1399



**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. ★★★★★

<b>Sensor</b>	26.2MP, full-frame (6240x4160 pixels)
<b>Viewfinder</b>	Optical pentaprism, 98%
<b>ISO</b>	100-40,000 (50-102,400 exp)
<b>AF</b>	45-point (all cross-type)
<b>LCD</b>	3-inch vari-angle touchscreen 1040K
<b>Max burst (buffer)</b>	6.5fps (21 Raw/150 JPEG)
<b>Memory card</b>	SD/SDHC/SDXC

## CANON EOS 5D MARK IV

TESTED IN ISSUE 194 PRICE: £2869/\$2699



**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. ★★★★★

<b>Sensor</b>	30.4MP, full-frame (6720x4480 pixels)
<b>Viewfinder</b>	Pentaprism, 0.71x, 100%
<b>ISO</b>	100-32,000 (50-102,400 exp)
<b>AF</b>	61-point (41 cross-type, 5 dual-cross)
<b>LCD</b>	3.2-inch touchscreen 1620K dots
<b>Max burst (buffer)</b>	7fps (21 Raw/unlimited JPEG)
<b>Memory card</b>	CompactFlash + SD/SDHC/SDXC

## CANON EOS 5DS (5DS R)

TESTED IN ISSUE 148 PRICE: £2740/\$1499



**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. ★★★★★

<b>Sensor</b>	50.6MP, full-frame (8688x5792 pixels)
<b>Viewfinder</b>	Pentaprism, 0.71x, 100%
<b>ISO</b>	100-6400 (50-12,800 exp)
<b>AF</b>	61-point (41 cross-type, 5 dual-cross)
<b>LCD</b>	3.2-inch 1040K dots
<b>Max burst (buffer)</b>	5fps (14 Raw/510 JPEG)
<b>Memory card</b>	CompactFlash + SD/SDHC/SDXC

## CANON EOS-1D X MARK III

TESTED IN ISSUE 194 PRICE: £6999/\$6499



**THE** Canon EOS-1D X Mark III is the ultimate hybrid DSLR/mirrorless machine, with superb low-light performance up to ISO102,400, expandable to 819,200, Deep Learning AF and 5.5K Raw video. It can also capture up to 20fps in Live View mode, making it a dream to shoot any action. ★★★★★

<b>Sensor</b>	20.1MP full-frame (5472x3648 pixels)
<b>Viewfinder</b>	Pentaprism, 0.76x, 100% coverage
<b>ISO</b>	100-102,400 (exp 50-819,200)
<b>AF</b>	191-point (155 cross-type)
<b>LCD</b>	3.2-inch touchscreen 2.1m dots
<b>Max burst (buffer)</b>	20fps (1000 Raw/unlimited JPEG)
<b>Memory card</b>	2xCfexpress 1.0 Type B



# MIRRORLESS CAMERAS

PRICES QUOTED ARE BODY-ONLY UNLESS STATED

## CANON EOS M200

TESTED IN ISSUE 194 PRICE with 15-45mm kit lens: **£570/\$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. **★★★★☆**

<b>Sensor</b>	24.1MP APS-C CMOS
<b>Viewfinder</b>	No
<b>ISO</b>	100-25,600 (51,200 exp)
<b>AF</b>	143-point AF
<b>LCD</b>	3-inch tilting touchscreen 1040K dots
<b>Max burst (buffer)</b>	6.1fps
<b>Memory card</b>	SD/SDHC/SDXC and UHS-1

## CANON EOS M50 MARK II

TESTED IN ISSUE 194 PRICE: **£589/\$599**



**IF YOU'RE** coming to the EOS M system afresh, the EOS M50 Mark II is a compact and capable camera, taking great stills and 1080p video, ideal for travel, everyday imaging, plus vlogging and content creation. But if you need to record 4K, this isn't the camera for you. **★★★★☆**

<b>Sensor</b>	24.1MP CMOS APS-C
<b>Viewfinder</b>	OLED EVF, 2.36 million dots
<b>ISO</b>	100-25,600 (exp. to 51,200)
<b>AF</b>	Dual Pixel CMOS AF, 3975 focus positions
<b>LCD</b>	3-inch vari-angle touchscreen 1040K dots
<b>Max burst (buffer)</b>	10fps
<b>Memory card</b>	1x SD UHS-I

## CANON EOS M6 MARK II

TESTED IN ISSUE 194 PRICE: **£799/\$849**



**THE** M6 Mk II is Canon's compact yet powerful APS-C mirrorless, designed to deliver sharp images for amateurs on the move. It has the same 32.5MP APS-C sensor as the Canon 90D DSLR, but it's able to shoot in 14fps blasts, and 30fps Raw image bursts, plus uncropped 4K video. **★★★★☆**

<b>Sensor</b>	32.5MP APS-C CMOS
<b>Viewfinder</b>	No
<b>ISO</b>	100-25,600
<b>AF</b>	143/99-point
<b>LCD</b>	3-inch tilting touchscreen 1040K dots
<b>Max burst (buffer)</b>	14fps (23 Raws, 54 JPEGs)
<b>Memory card</b>	SD/SDHC/SDXC and UHS-1

## CANON EOS M5

TESTED IN ISSUE 168 PRICE with 15-45mm kit lens: **£780/N/A**



**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. **★★★★☆**

<b>Sensor</b>	24.2MP APS-C CMOS
<b>Viewfinder</b>	OLED EVF, 2.36 million dots
<b>ISO</b>	100-25,600
<b>AF</b>	49-point AF
<b>LCD</b>	3.2-inch tilting touchscreen 1620k dots
<b>Max burst (buffer)</b>	9fps
<b>Memory card</b>	SD/SDHC/SDXC and UHS-1

## CANON EOS R100

TESTED IN ISSUE 206 PRICE with 18-45mm kit lens: **£669/\$599**



**THE** Canon EOS R100 is effectively the mirrorless replacement for the 250D and 2000D, aimed at first-timers looking for better image quality than a smartphone. It boasts a robust 24.1MP APS-C sensor, great autofocus and wide-spanning lens line-up, all without breaking the bank. **★★★★☆**

<b>Sensor</b>	24.1MP APS-C CMOS
<b>Viewfinder</b>	2.36 million dots, 60fps
<b>ISO</b>	100-12,800 (25,600 exp)
<b>AF</b>	Dual Pixel CMOS AF II (88% coverage)
<b>LCD</b>	3-inch fixed (non-touch) screen 1.04m dots
<b>Max burst (buffer)</b>	6.5fps (3.5fps with AF)
<b>Memory card</b>	1x SD/SDHC/SDXC slot

## CANON EOS R50

TESTED IN ISSUE 204 PRICE: **£789/\$679**



**UTILIZING** the small and compact size of the M50 yet improving upon its specs in every way, with the sensor/processor from the R10, the R50 is one of the best pocket-friendly cameras today. With a 24.2MP APS-C sensor, 4K video, intelligent AF modes, and 15/12fps continuous shooting, the R50 is a great beginner camera. **★★★★☆**

<b>Sensor</b>	24.2MP APS-C CMOS
<b>Viewfinder</b>	0.39 OLED, 2.36 million dots, 120fps
<b>ISO</b>	100-12800 (25600 exp)
<b>AF</b>	Dual Pixel CMOS AF II
<b>LCD</b>	3-inch vari-angle touchscreen 1.62 dots
<b>Max burst (buffer)</b>	15fps electronic, 12fps electronic 1st curtain
<b>Memory card</b>	1x UHS-1 SD

## CANON EOS R10

TESTED IN ISSUE 194 PRICE: **£899/\$979**



**CANON'S** budget, beginner EOS R10 – with pro-level autofocus and 15fps speed, 4K 60p imaging and 120p slow motion at 1080p – offers performance that punches well above its weight. The lack of in-body image stabilization or the crop at 4K 60p are the only drawbacks. **★★★★☆**

<b>Sensor</b>	24.2MP APS-C CMOS
<b>Viewfinder</b>	2.36 million dots, 120fps
<b>ISO</b>	100-32,000 (51,200 exp)
<b>AF</b>	651 Dual Pixel CMOS AF II divisions
<b>LCD</b>	3-inch vari-angle touchscreen 1.04m dots
<b>Max burst (buffer)</b>	23fps electronic, 15fps mechanical
<b>Memory card</b>	1x SD/SDHC/SDXC, UHS-II

APS-C EOS M

BEGINNER EOS R



**CANON EOS RP**

TESTED IN ISSUE 194 PRICE: £1049/\$999



**CANON'S** RP is ideal for 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. ★★★★★

<b>Sensor</b>	26.2MP full-frame CMOS
<b>Viewfinder</b>	0.39-inch EVF, 2.36 million dots
<b>ISO</b>	100-40,000 (50-102,400 exp)
<b>AF</b>	4779 Dual Pixel AF positions
<b>LCD</b>	3-inch vari-angle touchscreen 1040K
<b>Max burst (buffer)</b>	5fps (50 Raw/Unlimited JPEG)
<b>Memory card</b>	SD/SDHC/SDXC and UHS-II

**CANON EOS R7**

TESTED IN ISSUE 194 PRICE: £1349/\$1499



**THE** Canon EOS R7 is the first mirrorless camera to reach for if you want the advantages of APS-C with pro-level 15fps speed, intelligent AF, IBIS, and big-time image resolution. It's a fantastic addition to the EOS R ecosystem and a worthy successor to the 90D and 7D DSLR lines. ★★★★★

<b>Sensor</b>	32.5MP APS-C CMOS
<b>Viewfinder</b>	2.36 million dots, 120fps
<b>ISO</b>	100-32,000 (51,200 exp)
<b>AF</b>	651 Dual Pixel CMOS AF II divisions
<b>LCD</b>	3-inch vari-angle touchscreen 1.62m dots
<b>Max burst (buffer)</b>	30fps electronic, 15fps mechanical
<b>Memory card</b>	2x SD/SDHC/SDXC, UHS-II

**CANON EOS R8**

TESTED IN ISSUE 203 PRICE: £1699/\$1499



**CANON'S** R8 is the lightest full-frame EOS R camera, and can shoot it all, with the same sensor and processor as the R6 Mk II, latest AF subject recognition, 24.2MP images, and rapid 40fps shooting. But there's no joystick or thumb dial, no IBIS, and smaller batteries. ★★★★★

<b>Sensor</b>	24.2MP full-frame CMOS
<b>Viewfinder</b>	0.39 OLED, 2.36 million dots, 120fps
<b>ISO</b>	100-25600 (102,400 exp)
<b>AF</b>	Dual Pixel CMOS AF II
<b>LCD</b>	3-inch vari-angle touchscreen 1.62 dots
<b>Max burst (buffer)</b>	40fps electronic, 6fps electronic 1st curtain
<b>Memory card</b>	1x UHS-II SD

**CANON EOS R**

TESTED IN ISSUE 194 PRICE: £1449/\$1799



**THE** first full-frame mirrorless Canon EOS R boasts the RF mount and fully articulated vari-angle Dual Pixel AF touchscreen with 5655 AF points. Equivalent in many specs to the 5D Mark IV DSLR, it's now a cheaper EOS R option for those looking to experience mirrorless photography. ★★★★★

<b>Sensor</b>	30.3MP full-frame CMOS
<b>Electronic viewfinder</b>	0.5-inch EVF, 3.69 million dots
<b>ISO</b>	100-40,000 (50-102,400 exp)
<b>AF</b>	5655 Dual Pixel AF points
<b>LCD</b>	3.2-in vari-angle touchscreen 2.1m dots
<b>Max burst (buffer)</b>	Approx. 8fps (47 Raw, 100 JPEG)
<b>Memory card</b>	1x SD/SDHC/SDXC and UHS-II

**CANON EOS R6 MARK II**

TESTED IN ISSUE 200 PRICE: £2779/\$3599



**WHAT** can't this camera do? The R6 Mark II is a hybrid camera that packs an obscene amount of firepower, with up to 6K video and 24.2MP stills at a startling 40fps. Plus updated AF detection for tracking trains, planes and horses (with the usual animal, people, vehicles AF detection) for sharp shots of anything that moves. ★★★★★

<b>Sensor</b>	24.2MP full-frame CMOS
<b>Viewfinder</b>	0.5-inch OLED, 3.69 million dots
<b>ISO</b>	100-102,400 (50-204,800 exp)
<b>AF</b>	4897 Dual Pixel AF positions
<b>LCD</b>	3-inch vari-angle touchscreen 1.62m dots
<b>Max burst (buffer)</b>	12fps mechanical, 40fps electronic
<b>Memory card</b>	2xUHS-II SD

**CANON EOS R5**

TESTED IN ISSUE 194 PRICE: £4299/\$3899



**THE** Canon EOS R5 is deserving of the hype: it's the perfect amalgamation of the R's full-frame form, the 5D's function, the pro-grade autofocus of the flagship EOS-1D X Mark III DSLR, plus with near-medium format resolution, 20fps burst speeds and mirrorless magic such as IBIS and amazingly-intelligent Animal AF. ★★★★★

<b>Sensor</b>	45MP full-frame CMOS
<b>Viewfinder</b>	OLED EVF, 5690K dots
<b>ISO</b>	100-51,200 (50-102,400 exp)
<b>AF</b>	5940 Dual Pixel CMOS AF II
<b>LCD</b>	3.15-in vari-angle touchscreen 2100K dots
<b>Max burst (buffer)</b>	12fps mechanical, 20fps electronic
<b>Memory card</b>	CFexpress type B, UHS-II SD/SDHC/SDXC

**CANON EOS R3**

TESTED IN ISSUE 194 PRICE: £5879/\$5999



**CANON'S** sporty pro mirrorless R3 has clever AF that's amazing at detecting vehicles as well as people and animals, Eye Control AF, faster 30fps, blackout-free EVF, and it can take 4K 60p video without overheating, which means the R3 succeeds where the R5 fell short. ★★★★★

<b>Sensor</b>	24.1MP stacked CMOS
<b>Viewfinder</b>	0.5-inch EVF, 5.76 million dots
<b>ISO</b>	100-102,400 (50-204,800 exp)
<b>AF</b>	4779 Dual Pixel AF positions
<b>LCD</b>	3-inch vari-angle touchscreen 4.15m dots
<b>Max burst (buffer)</b>	12fps mechanical, 30fps electronic
<b>Memory card</b>	CFexpress type, SD/SDHC/SDXC

ENTHUSIAST EOS R

PROFESSIONAL EOS R



# PhotoPlus BUYERS' GUIDE

## Choosing lenses

### Key factors to watch out for

The main factors to consider in a lens are its focal length, maximum aperture and if it's full-frame compatible or not. We've categorized lenses by focal length range from wide-angle to telephoto. The larger a lens's maximum aperture, the 'faster' it is. 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. For Canon EOS R mirrorless cameras the dedicated Canon RF lenses are best, but using Canon's Mount Adapter EF-EOS R enables EF-S and EF lenses to be used on EOS R cameras.



With over 200 lenses we've listed for Canon EOS cameras, picking the right one can be tough. Here's the lowdown!

**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	£249/\$299	No	1.8x	Yes	f/4.5-5.6	240g	0.22m	0.15x	67mm	7	203	★★★★☆	
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	£3099/\$2899	Yes	2.2x	No	f/4	1180g	0.28m	0.16x	None	9	203	★★★★☆	
Canon RF 10-20mm F4L IS STM	£2579/\$2299	Yes	2.0x	Yes	f/4	570g	0.25m	0.12x	N/A	9	211	★★★★☆	
Canon RF 14-35mm F4L IS USM	£1749/\$1399	Yes	2.5x	Yes	f/4	540	0.20m	0.38x	77mm	9	210	★★★★☆	●
Canon RF 15-35mm F2.8L IS USM	£2599/\$2199	Yes	2.3x	Yes	f/2.8	840	0.28m	0.21x	82mm	9	210	★★★★☆	
Canon RF-S 10-18mm F4.5-6.3 IS STM	£379/\$329	No	1.8x	Yes	f/4.5-6.3	150g	0.14m	0.23x	49mm	7	212	★★★★☆	
Canon EF 16-35mm f/2.8L III USM	£2199/\$2199	Yes	2.2x	No	f/2.8	790g	0.28m	0.22x	82mm	9	195	★★★★☆	
Canon EF 16-35mm f/4L IS USM	£1389/\$1299	Yes	2.2x	Yes	f/4	615g	0.28m	0.23x	77mm	9	210	★★★★☆	●
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	£319/\$399	No	2.0x	No	f/3.5	520g	0.24m	0.15x	82mm	7	176	★★★★☆	
Sigma 12-24mm f/4 DG HSM A	£1269/\$1239	Yes	2.0x	No	f/4	1150g	0.24m	0.2x	None	9	203	★★★★☆	
Sigma 14-24mm f/2.8 DG HSM A	£1269/\$1299	Yes	0.19x	No	f/2.8	1150g	0.26m	0.19x	None	9	195	★★★★☆	●
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	£449/\$499	No	0.19x	Yes	f/3.5-4.5	440g	0.24m	0.19x	77mm	7	176	★★★★☆	●
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	£1099/\$1299	Yes	2.0x	Yes	f/2.8	1110g	0.28m	0.2x	None	9	176	★★★★☆	
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	£493/\$549	No	1.43x	No	f/2.8	560g	0.28m	0.12x	82mm	9	195	★★★★☆	
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-M 55-200mm f/4.5-6.3 IS STM	£299/\$349	No	3.6x	Yes	f/4.5-6.3	260g	1.0m	0.21x	52mm	7	196	★★★★☆	
Canon RF-S 55-210mm F5-7.1 IS STM	£429/\$349	No	3.8x	Yes	f/5-7.1	270g	1.0m	0.28x	55mm	7	209	★★★★☆	
Canon EF-S 55-250mm f/4-5.6 IS STM	£309/\$299	No	4.5x	Yes	f/4-5.6	375g	0.85m	0.29x	58mm	7	196	★★★★☆	
Canon EF 70-200mm f/2.8L IS III USM	£2149/\$2099	Yes	2.9x	Yes	f/2.8	1480g	1.2m	0.21x	77mm	8	175	★★★★☆	
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	£1629/\$1499	Yes	2.9x	Yes	f/4	780g	1.0m	0.27x	72mm	9	210	★★★★☆	
Canon EF 70-200mm f/4L IS USM	£360/\$500 (used)	Yes	2.9x	Yes	f/4	760g	1.2m	0.21x	72mm	8	196	★★★★☆	
Canon EF 70-200mm f/4L USM	£589/\$599	Yes	2.9x	No	f/4	705g	1.2m	0.21x	67mm	8	163	★★★★☆	
Canon RF 70-200mm F2.8L IS USM	£2999/\$2699	Yes	2.9x	Yes	f/2.8	1070g	0.7m	0.23x	77mm	9	210	★★★★☆	
Canon RF 70-200mm F4L IS USM	£1769/\$1499	Yes	2.9x	Yes	f/4	695g	0.6m	0.28x	77mm	9	210	★★★★☆	
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	£639/\$599	Yes	4.3x	Yes	f/4-5.6	710g	1.2m	0.25x	67mm	9	196	★★★★☆	●
Canon EF 70-300mm f/4-5.6L IS USM	£690/\$800 (used)	Yes	4.3x	Yes	f/4-5.6	1050g	1.2m	0.21x	67mm	8	196	★★★★☆	
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	£2599/\$2399	Yes	4.0x	Yes	f/4.5-5.6	1640g	0.98m	0.31x	77mm	9	210	★★★★☆	
Canon RF 100-400mm F5.6-8 IS USM	£699/\$649	Yes	4.0x	Yes	f/5.6-8	635g	0.88m	0.41x	67mm	9	210	★★★★☆	●
Canon RF 100-500mm F4.5-7.1L IS USM	£2939/\$2699	Yes	5x	Yes	f/4.5-7.1	1530g	0.9-1.2m	0.33x	77mm	9	210	★★★★☆	●
Canon RF 200-800mm F6.3-9 IS USM	£2299/\$1899	Yes	4.0x	Yes	f/6.3-9	2050g	0.8m	0.25x	95mm	9	213	★★★★☆	
Canon EF 200-400mm f/4L IS USM Extender 1.4x	£11,209/\$10,999	Yes	2.8x	Yes	f/4	3620g	2.0m	0.15x	52mm	9	182	★★★★☆	
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	175	★★★★☆	
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	£1699/\$1999	Yes	10.0x	Yes	f/4.5-6.3	2700g	0.6-2.6m	0.3x	105mm	9	182	★★★★☆	
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	£1179/\$1499	Yes	2.9x	Yes	f/2.8	1805g	1.2m	0.21x	82mm	11	190	★★★★☆	●
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	£899/\$799	Yes	4x	Yes	f/5-6.3	1160g	1.6m	0.26x	67mm	9	196	★★★★☆	●
Sigma 120-300mm f/2.8 DG OS HSM S	£2699/\$3599	Yes	2.5x	Yes	f/2.8	3390g	1.5-2.5m	0.12x	105mm	9	175	★★★★☆	
Sigma 150-600mm f/5-6.3 DG OS HSM C	£849/\$899	Yes	4.0x	Yes	f/5-6.3	1930g	2.8m	0.2x	95mm	9	193	★★★★☆	
Sigma 150-600mm f/5-6.3 DG OS HSM S	£1279/\$1699	Yes	4.0x	Yes	f/5-6.3	2860g	2.6m	0.2x	105mm	9	206	★★★★☆	
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	£1249/\$1299	Yes	2.9x	Yes	f/2.8	1500g	0.95m	0.16x	77mm	9	175	★★★★☆	●
Tamron 70-210mm f/4 Di VC USD	£549/\$599	Yes	2.9x	Yes	f/4	860g	0.95m	0.32x	67mm	9	175	★★★★☆	
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	£230/\$250 (used)	Yes	4.3x	Yes	f/4-5.6	765g	1.5m	0.25x	62mm	9	196	★★★★☆	●
Tamron 100-400mm f/4.5-6.3 Di VC USD	£819/\$799	Yes	4x	Yes	f/4-5.6	1135g	1.5m	0.28x	67mm	9	196	★★★★☆	
Tamron SP 150-600mm f/5-6.3 Di VC USD G2	£1299/\$1399	Yes	4.0x	Yes	f/5-6.3	2010g	2.2m	0.26x	95mm	9	206	★★★★☆	
Tokina SZX Super Tele 400mm F8 Reflex MF	£250/\$239	No	N/A	No	f/8	355g	1.15m	0.4x	67mm	9	206	★★★★☆	



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	£779/\$699	No	5.7x	Yes	f/3.5-5.6	575g	0.35m	0.21x	72mm	7	207	★★★★☆	
Canon EF-S 17-55mm f/2.8 IS USM	£849/\$879	No	3.2x	Yes	f/2.8	645g	0.35m	0.17x	77mm	7	207	★★★★★	●
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	£219/\$249	No	3.1x	Yes	f/3.5-5.6	205g	0.25m	0.36x	58mm	7	207	★★★★☆	
Canon RF 24-50mm F4.5-6.3 IS STM	£379/\$299	Yes	38.4x	Yes	f/4.5-6.3	210g	0.35m	0.19x	58mm	7	207	★★★★☆	
Canon EF 24-70mm f/2.8L II USM	£1740/\$1599	Yes	2.9x	No	f/2.8	805g	0.38m	0.21x	82mm	9	162	★★★★★	
Canon RF 24-70mm F2.8L IS USM	£2519/2199	Yes	2.9x	Yes	f/2.8	900g	0.21m	0.30x	82mm	9	210	★★★★★	●
Canon EF 24-70mm f/4L IS USM	£800/\$849	Yes	2.9x	Yes	f/4	600g	0.38m	0.7x	77mm	9	162	★★★★☆	
Canon RF 28-70mm F2L USM	£2500/\$3200	Yes	2.9x	No	f/2	1430g	0.39m	0.18x	95mm	9			
Canon RF 24-105mm F2.8L IS USM Z	£3439/\$2999	Yes	4.4x	Yes	f/2.8	1330g	0.45m	0.08-0.29m	82mm	11	212		
Canon EF 24-105mm f/3.5-5.6 IS STM	£579/\$599	Yes	4.4x	Yes	f/3.5-5.6	525g	0.40m	0.3x	77mm	7	162	★★★★☆	
Canon EF 24-105mm f/4L IS II USM	£1389/\$1299	Yes	4.4x	Yes	f/4	795g	0.45m	0.24x	77mm	10	210	★★★★☆	
Canon RF 24-105mm F4-7.1 IS STM	£429/\$399	Yes	4.4x	Yes	f/4-7.1	385g	0.13m	0.34x	67mm	7	209	★★★★☆	
Canon RF 24-105mm F4L IS USM	£1389/\$1299	Yes	4.4x	Yes	f/4	700g	0.40m	0.24x	77mm	9	210	★★★★☆	
Canon RF-S 18-45mm F4.5-6.3 IS STM	£299/\$299	No	2.5x	Yes	f/4.5-6.3	124g	0.20m	0.16x	49mm	7	210	★★★★☆	
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/\$399	No	4.1x	Yes	f/2.8-4	465g	0.22m	0.36x	72mm	7	180	★★★★☆	
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	£1149/\$1299	Yes	2.9x	Yes	f/2.8	1,020g	0.38m	0.2x	82mm	9	190	★★★★☆	
Sigma 24-105mm f/4 DG OS HSM A	£639/\$899	Yes	4.4x	Yes	f/4	885g	0.45m	0.22x	82mm	9	207	★★★★☆	
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	★★★★☆	

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 USM	£484/\$599	No	7.5x	Yes	f/3.5-5.6	515g	0.39m	0.28x	67mm	7	209	★★★★☆	
Canon EF-M 18-150mm f/3.5-6.3 IS STM	£459/\$499	No	8.3x	Yes	f/3.5-6.3	300g	0.25-0.45m	0.31x	55mm	7	209	★★★★☆	
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 F4-6.3 IS USM	£999/\$899	Yes	10x	Yes	f/4-6.3	750g	0.5m	0.26x	72mm	7	209	★★★★☆	●
Canon RF-S 18-150mm F3.5-6.3 IS STM	£499/\$499	No	8.3x	Yes	f/3.5-6.3	310g	0.17m	0.31x	49mm	7	209	★★★★☆	
Canon EF 28-300mm f/3.5-5.6L IS USM	£2479/\$2449	Yes	10.7x	Yes	f/3.5-5.6	1760g	0.7m	0.30x	77mm	8	191	★★★★☆	
Sigma 18-200mm f/3.5-6.3 DC Macro OS HSM C	£269/\$399	No	11.1x	Yes	f/3.5-6.3	430g	0.39m	0.33x	62mm	7	172	★★★★☆	
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	£369/\$579	No	16.7x	Yes	f/3.5-6.3	585g	0.39m	0.33x	72mm	7	191	★★★★☆	
Tamron 16-300mm f/3.5-6.3 Di III VC PZD Macro	£499/\$629	No	18.8x	Yes	f/3.5-6.3	540g	0.39m	0.34x	67mm	7	172	★★★★☆	
Tamron 18-200mm f/3.5-6.3 Di II VC	£209/\$249	No	11.1x	Yes	f/3.5-6.3	400g	0.49m	0.25x	62mm	7	191	★★★★☆	●
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	£599/\$649	No	22.2x	Yes	f/3.5-6.3	710g	0.45m	0.34x	72mm	7	191	★★★★☆	

WIDE-ANGLE 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 14mm f/2.8L II USM	£2000/\$2100	Yes	None	No	f/2.8	645g	0.2m	0.15x	None	6			
Canon RF 16mm F2.8 STM	£299/\$249	Yes	None	No	f/2.8	165g	0.13m	0.26x	43mm	7	209	★★★★☆	●
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	£229/\$249	No	None	No	f/2	105g	0.15m	0.21x	43mm	7	180	★★★★☆	
Canon EF 24mm f/1.4L II USM	£1500/\$1550	Yes	None	No	f/1.4	650g	0.25m	0.17x	77mm	8			
Canon RF 24mm F1.8 Macro IS STM	£669/\$499	Yes	None	Yes	f/1.8	270g	0.14m	0.5x	24mm	9	209	★★★★☆	
Canon EF 24mm f/2.8 IS USM	£529/\$599	Yes	None	Yes	f/2.8	280g	0.2m	0.23x	58mm	7	180	★★★★☆	
Canon EF-S 24mm f/2.8 STM	£159/\$149	No	None	No	f/2.8	125g	0.16m	0.27x	52mm	7	190	★★★★☆	
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 F1.8 IS Macro STM	£499/\$499	Yes	None	Yes	f/1.8	305g	0.17m	0.5x	52mm	9	202	★★★★☆	●
Canon EF 35mm f/2 IS USM	£539/\$599	Yes	None	Yes	f/2	335g	0.24m	0.24x	67mm	8	180	★★★★☆	
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	£574/\$675	Yes	None	No	f/2.4	685g	0.25m	0.11x	95mm	9	167	★★★★☆	
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	167	★★★★☆	
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	167	★★★★☆	
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	180	★★★★☆	
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 I A	£1399/\$1599	Yes	None	No	f/1.8	1170g	0.27m	0.19x	None	9	203	★★★★☆	
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 I 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 I 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	£699/\$699	Yes	None	No	f/1.4	665g	0.3m	0.19x	67mm	9	180	★★★★☆	
Sigma 56mm f/1.4 DC DN I C	£379/\$479	Yes	None	No	f/1.4	280g	0.5m	0.14x	55mm	9	202	★★★★☆	
Tamron SP 35mm f/1.8 Di VC USD	£649/\$599	Yes	None	Yes	f/1.8	480g	0.2m	0.4x	67mm	9	180	★★★★☆	
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			



# PhotoPlus BUYERS' GUIDE

## Contacts

**Canon** [www.canon.co.uk](http://www.canon.co.uk)  
**Peleng** [www.digitaltoystore.co.uk](http://www.digitaltoystore.co.uk)  
**Samyang** [www.samyang-lens.co.uk](http://www.samyang-lens.co.uk)  
**Schneider** [www.linhofstudio.com](http://www.linhofstudio.com)

**Sigma** [www.sigma-imaging-uk.com](http://www.sigma-imaging-uk.com)  
**Tamron** [www.tamron.co.uk](http://www.tamron.co.uk)  
**Tokina** [www.tokinaleus.com](http://www.tokinaleus.com)  
**Zeiss** [www.zeiss.co.uk](http://www.zeiss.co.uk)

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
<b>7Artisans</b> 50mm f/1.05	£450/\$486	Yes	None	No	f/1.05	606g	0.57m	0.13x	58mm	13	202	★★★★★	
<b>Canon</b> EF 40mm f/2.8 STM	£200/\$180	Yes	None	No	f/2.8	130g	0.3m	0.18x	52mm	7	141	★★★★★	
<b>Canon</b> TS-E 45mm f/2.8 (tilt & shift)	£1200/\$1400	Yes	None	No	f/2.8	645g	0.4m	0.16x	72mm	8		★★★★★	
<b>Canon</b> EF 50mm f/1.2L USM	£1370/\$1350	Yes	None	No	f/1.2	580g	0.45m	0.15x	72mm	8	103	★★★★★	
<b>Canon</b> EF 50mm f/1.4 USM	£389/\$400	Yes	None	No	f/1.4	290g	0.45m	0.15x	58mm	8	185	★★★★★	
<b>Canon</b> EF 50mm f/1.8 STM	£109/\$125	Yes	None	No	f/1.8	160g	0.35m	0.21x	49mm	7	202	★★★★★	
<b>Canon</b> RF 50mm F1.2L USM	£2389/\$2299	Yes	None	No	f/1.2	950g	0.40m	0.15x	77mm	10	185	★★★★★	
<b>Canon</b> RF 50mm F1.8 STM	£199/\$149	Yes	None	No	f/1.8	160g	0.30m	0.25x	43mm	7	202	★★★★★	●
<b>Samyang</b> 50mm f/1.4 AS UMC	£310/\$350	Yes	None	No	f/1.4	575g	0.45m	N/S	77mm	8		★★★★★	
<b>Sigma</b> 30mm f/1.4 DC HSM A	£349/\$499	No	None	No	f/1.4	435g	0.3m	0.15x	62mm	9	166	★★★★★	
<b>Sigma</b> 50mm f/1.4 DG HSM A	£649/\$949	Yes	None	No	f/1.4	815g	0.4m	0.18x	77mm	9	185	★★★★★	●
<b>Tamron</b> SP 45mm f/1.8 Di VC USD	£415/\$549	Yes	None	Yes	f/1.8	540g	0.29m	0.29x	67mm	9	185	★★★★★	
<b>Tokina</b> Opera 50mm f/1.4 FF	£879/\$949	Yes	None	No	f/1.4	950g	0.4m	0.18x	72mm	9	148	★★★★★	
<b>Zeiss</b> Milvus 50mm f/1.4 ZF.2	£1159/\$1199	Yes	None	No	f/1.4	922g	0.45m	0.15x	67mm	9	185	★★★★★	
<b>Zeiss</b> Planar T* 50mm f/1.4 ZE	£560/\$725	Yes	None	No	f/1.4	380g	0.45m	0.15x	58mm	9		★★★★★	
<b>Zeiss</b> Otus 55mm f/1.4	£2700/\$3990	Yes	None	No	f/1.4	1030g	0.5m	0.15x	77mm	9		★★★★★	

### TELEPHOTO PRIMES

<b>Canon</b> EF 85mm f/1.2L II USM	£1999/\$1999	Yes	None	No	f/1.2	1025g	0.95m	0.11x	72mm	8	179	★★★★★	
<b>Canon</b> EF 85mm f/1.4L IS USM	£1489/\$1599	Yes	None	Yes	f/1.4	950g	0.85m	0.12x	77mm	9	179	★★★★★	●
<b>Canon</b> EF 85mm f/1.8 USM	£365/\$369	Yes	None	No	f/1.8	425g	0.85m	0.13x	58mm	8	159	★★★★★	
<b>Canon</b> RF 85mm F1.2L USM	£2869/\$2699	Yes	None	No	f/1.2	1195g	0.85m	0.12x	82mm	9	179	★★★★★	●
<b>Canon</b> TS-E 90mm f/2.8 (tilt & shift)	£1240/\$1400	Yes	None	No	f/2.8	565g	0.5m	0.29x	58mm	8		★★★★★	
<b>Canon</b> EF 100mm f/2 USM	£410/\$500	Yes	None	No	f/2	460g	0.9m	0.14x	58mm	8	46	★★★★★	
<b>Canon</b> EF 135mm f/2L USM	£940/\$1000	Yes	None	No	f/2	750g	0.9m	0.19x	72mm	8		★★★★★	
<b>Canon</b> EF 200mm f/2L IS USM	£5400/\$5700	Yes	None	Yes	f/2	2520g	1.9m	0.12x	52mm	8	98	★★★★★	
<b>Canon</b> EF 200mm f/2.8L II USM	£700/\$750	Yes	None	No	f/2.8	765g	1.5m	0.16x	72mm	8	98	★★★★★	
<b>Canon</b> EF 300mm f/2.8L IS II USM	£5800/\$6100	Yes	None	Yes	f/2.8	2400g	2.0m	0.18x	52mm	9	54	★★★★★	
<b>Canon</b> EF 300mm f/4L IS USM	£1140/\$1350	Yes	None	Yes	f/4	1190g	1.5m	0.24x	77mm	8	117	★★★★★	
<b>Canon</b> 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	★★★★★	
<b>Canon</b> EF 400mm f/4 DO IS II USM	£7000/\$6900	Yes	None	Yes	f/4	2100g	3.3m	0.13x	52mm	9		★★★★★	
<b>Canon</b> EF 400mm f/5.6L USM	£1180/\$1180	Yes	None	No	f/5.6	1250g	3.5m	0.12x	77mm	8	117	★★★★★	
<b>Canon</b> EF 500mm f/4L IS II USM	£8400/\$9000	Yes	None	Yes	f/4	3190g	3.7m	0.15x	52mm	9		★★★★★	
<b>Canon</b> EF 600mm f/4L IS II USM	£11,350/\$11,500	Yes	None	Yes	f/4	3920g	4.5m	0.15x	52mm	9		★★★★★	
<b>Canon</b> RF 600mm F11 IS STM	£829/\$799	Yes	None	Yes	f/11	930g	4.5m	0.14x	82mm	N/A	206	★★★★★	
<b>Canon</b> RF 800mm F11 IS STM	£1099/\$899	Yes	None	Yes	f/11	1260g	6.0m	0.14x	95mm	N/A	196	★★★★★	
<b>Canon</b> EF 800mm f/5.6L IS USM	£11,900/\$13,000	Yes	None	Yes	f/5.6	4500g	6.0m	0.14x	52mm	8		★★★★★	
<b>Samyang</b> MF 85mm f/1.4 RF	£319/\$399	Yes	None	No	f/1.4	730g	1.1m	0.09x	72mm	8	202	★★★★★	
<b>Samyang</b> AF 85mm f/1.4 EF	£599/\$699	Yes	None	No	f/1.4	485g	0.9m	0.11x	77mm	9	159	★★★★★	
<b>Samyang</b> 135mm f/2 ED UMC	£370/\$530	Yes	None	No	f/2	830g	0.8m	N/S	77mm	9		★★★★★	
<b>Samyang</b> 500mm MC IF f/6.3 Mirror	£125/\$150	Yes	None	No	f/6.3	705g	2.0m	N/S	95mm	0		★★★★★	
<b>Sigma</b> 85mm f/1.4 DG HSM A	£929/\$1099	Yes	None	No	f/1.4	TBA	0.85m	0.12x	86mm	9	179	★★★★★	
<b>Sigma</b> APO 300mm f/2.8 EX DG HSM	£2600/\$3400	Yes	None	No	f/2.8	2400g	2.5m	0.13x	46mm	9	98	★★★★★	
<b>Sigma</b> APO 500mm f/4.5 EX DG HSM	£3600/\$4400	Yes	None	No	f/4.5	3150g	4.0m	0.13x	46mm	9		★★★★★	
<b>Sigma</b> 500mm f/4 DG OS HSM S	£4699/\$5999	Yes	None	Yes	f/4	TBA	3.5m	0.15x	46mm	9	206	★★★★★	
<b>Sigma</b> 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	★★★★★	
<b>Tamron</b> SP 85mm f/1.8 Di VC USD	£750/\$750	Yes	None	Yes	f/1.8	700g	0.8m	0.14x	67mm	9	159	★★★★★	
<b>Zeiss</b> Milvus 85mm f/1.4 ZE	£1380/\$1800	Yes	None	No	f/1.4	1280g	0.8m	0.14x	77mm	9		★★★★★	
<b>Zeiss</b> Milvus 135mm f/2 ZE	£1900/\$2200	Yes	None	No	f/2	1123g	0.8m	0.28x	77mm	9		★★★★★	

### MACRO

<b>Canon</b> EF-M 28mm f/3.5 Macro IS STM	£309/\$299	No	None	Yes	f/3.5	130g	0.097m	1.2x	44.8mm	7	177	★★★★★	
<b>Canon</b> EF-S 35mm f/2.8 Macro IS STM	£379/\$349	No	None	Yes	f/2.8	190g	0.13m	1.0x	56mm	7	177	★★★★★	
<b>Canon</b> EF-S 60mm f/2.8 Macro USM	£399/\$350	No	None	No	f/2.8	335g	0.20m	1.0x	52mm	7	164	★★★★★	
<b>Canon</b> MP-E65mm f/2.8 1-5x Macro	£980/\$1050	Yes	None	No	f/2.8	710g	0.24m	5.0x	58mm	6	50	★★★★★	
<b>Canon</b> EF 100mm f/2.8 Macro USM	£499/\$599	Yes	None	No	f/2.8	600g	0.31m	1.0x	58mm	8	177	★★★★★	
<b>Canon</b> EF 100mm f/2.8L Macro IS USM	£999/\$1099	Yes	None	Yes	f/2.8	625g	0.3m	1.0x	67mm	9	204	★★★★★	
<b>Canon</b> EF 180mm f/3.5L Macro USM	£1330/\$1400	Yes	None	No	f/3.5	1090g	0.48m	1.0x	72mm	8	69	★★★★★	
<b>Canon</b> RF 85mm F2 Macro IS STM	£649/\$549	Yes	None	Yes	f/2	500g	0.35m	0.5x	67mm	9	204	★★★★★	
<b>Canon</b> RF 100mm F2.8L Macro IS USM	£1239/\$1199	Yes	None	Yes	f/2.8	730g	0.3m	1.4x	67mm	9	204	★★★★★	●
<b>Irix</b> 150mm f/2.8 Macro 1:1 Dragonfly	£449/\$495	Yes	None	No	f/2.8	848g	0.35m	1.0x	77mm	11	204	★★★★★	
<b>Laowa</b> 90mm f/2.8 2X Ultra Macro APO	£569/\$499	Yes	None	No	f/2.8	619g	0.21m	2.0x	67mm	13	204	★★★★★	
<b>Laowa</b> 100mm f/2.8 2.1 Ultra Macro APO	£499/\$499	Yes	None	No	f/2.8	638-650g	0.25m	2.0x	67mm	7-13	202	★★★★★	
<b>Sigma</b> 70mm f/2.8 DG Macro Art	£449/\$569	Yes	None	No	f/2.8	515g	0.26m	1.0x	49mm	9	204	★★★★★	
<b>Sigma</b> 105mm f/2.8 EX DG OS HSM Macro	£359/\$569	Yes	None	No	f/2.8	725g	0.31m	1.0x	62mm	9	204	★★★★★	●
<b>Sigma</b> 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	★★★★★	
<b>Sigma</b> 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	★★★★★	
<b>Tamron</b> 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	★★★★★	
<b>Tamron</b> SP AF 90mm f/2.8 Di Macro	£350/\$500	Yes	None	No	f/2.8	400g	0.29m	1.0x	55mm	9	102	★★★★★	
<b>Tamron</b> SP AF 90mm f/2.8 Di VC Macro	£649/\$649	Yes	None	Yes	f/2.8	610g	0.3m	1.0x	62mm	9	184	★★★★★	
<b>Tamron</b> SP AF 180mm f/3.5 Di Macro	£800/\$740	Yes	None	No	f/3.5	985g	0.47m	1.0x	72mm	7	69	★★★★★	
<b>Tokina</b> 100mm f/2.8 AT-X PRO Macro	£464/\$429	Yes	None	No	f/2.8	540g	0.3m	1.0x	55mm	9	204	★★★★★	
<b>Zeiss</b> 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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TELEPHOTO PRIMES

MACRO



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Aperture advice • Depth of field • Shutter speed skills to master movement • ISO explained



Future / Peter Travers

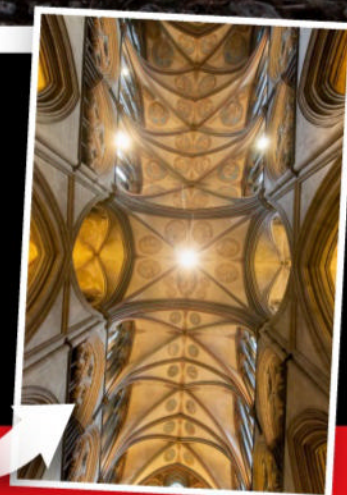
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- Forest lighting masterclass
- Remove people from street scenes
- Master macro on a budget
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## PLUS ALL THIS...

- **Profile:** Esteban Frey, Canon wildlife photographer and conservationist
- **Super Test:** The best prime lenses for Canon EOS R mirrorless cameras
- **PhotoPlus Apprentice:** Canon pro David Clapp teaches a reader to take great shots at Salisbury Cathedral



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ISSUE 215 ON SALE 29 FEB 2024

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## LAST MONTH



### Issue 213 February 2024

**CANON GEAR OF THE YEAR** The best Canon EOS cameras, lenses and kit • Canon pro Nick Hanson reveals his top tips for capturing great landscapes • Our Apprentice learns to take paw-fect pet photos of well-behaved dogs and cats • Learn how to control depth of field for more creative photos in our Canon School • Your Photo Stories • David Clapp reveals how he took great snowy scenes in the Canadian Rockies – and rescued a stranded family! • Best buys from compact, small-volume models to super-sized photo printers • New Canon RF 200-800mm super-telephoto zoom lens tested – it's got our reviewers raving about its unbeatable focal length range



### Issue 212 January 2024

**GREAT WINTER LANDSCAPES** Snowy scenes and amazing astro to lens advice and tips • Winning Canon images from the Red Bull photo competition • Long exposures and traffic light trails on a city night shoot in Bristol • Canon photographer David Clapp captures an aurora borealis light show • Wildlife photographer Sam Hazell on the mental health benefits of photographing nature



### Issue 211 December 2023

**FEEL-GOOD PHOTO SKILLS** Discover how photography can help your mental health • Canon Pro Drew Buckley shows our Apprentice how to capture scenic shots in Wales • We speak to Canon pro Chris Priestley • Canon School explains slower shutter speeds • Canon RF 10-20mm F4L IS STM review • Your best-buy flashguns for Canon cameras • New photography projects

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**Issue 210**  
**November 2023**

**THE MAGIC OF AUTUMN** 10 photo projects  
 • Our Apprentice gets a masterclass on simple studio lighting setups for portraits • We test essential Canon EOS R zoom upgrades • Interview with Canon photographer James Musselwhite • Learn the best kit for tasty food photography • Turn down the noise in images in Canon School • New projects and tutorials • **FREE Raw in Photoshop** ebook worth £17.99



**Issue 209**  
**October 2023**

**MAKE CASH WITH YOUR CANON** Follow our expert guide • Wildlife pro photographer Paul Fowle proves to our Apprentice that it's possible to take top shots of animals even when it's raining! • New photo projects and image-editing tutorials • Incredible photographer David Lund who's made liquid splash shots into a photographic art form • We test eight of the best lightweight lenses



**Issue 208**  
**September 2023**

**CANON GUIDE TO OUTDOOR PHOTOS** Take stunning shots of wildlife, landscapes, coastal scenes and insect close-ups • Canon pro Adam Bulley hits the streets of Glasgow to show how to take stunning cityscapes • Avid hill walker Jen Rogers shoots incredible astro photos and seascapes with her favourite Canon kit • Plus, eight of the latest Canon EOS R mirrorless cameras tested



**Issue 207**  
**August 2023**

**CAPTURE CRACKING COASTAL PHOTOS** with Canon pro landscape and travel photographer David Clapp in north Cornwall • Master your Canon exposure modes with our big EOS camera skills guide • We speak to beauty and fashion portrait photographer Siân Elizabeth • New photo projects and image-editing tutorials to try, all with free video guides • We show you how to create a great photo book



**Issue 206**  
**July 2023**

**TRAVEL PRO TIPS** Award-winning Canon pro Jeremy Flint's top 20 photo tips  
 • Our Apprentice masters close-up wildlife photos • In Canon School, make the most of the longer summer days • New Canon EOS R100 could be the budget-beginner mirrorless camera you need • In our Super Test we put super-telephoto zooms in the lab • New photo projects, all with free video guides to follow along



**Issue 205**  
**June 2023**

**CANON SHOOTING CHECKLIST** 25 essential tips for better images • Canon pro James Abbott teaches our Apprentice how to shoot slow-motion waterfalls • Travel tripods on test – the best buys that won't break the bank or your back • We put the new Canon PowerShot V10 vlogging cam through its paces • Brian Worley answers your questions in EOS SOS • In-depth photo projects with video guides



**Issue 204**  
**May 2023**

**LEARN CANON PRO TECHNIQUES** Master your exposures • Nature and travel photographer Damian Waters helps you set up your camera depending on subject or scene • Our Apprentice learns how to photograph birds in the wild • Canon's new EOS R50 tested • In Canon Skills, from sunburst effects in landscape shots to taking creative castle photos, plus new image-editing tutorials – all with free videos



**Issue 203**  
**Spring 2023**

**NEW SPRING PHOTO SKILLS** Your Canon guide to better seasonal photos • Canon R8 budget lightest full-frame mirrorless tested • Pro secrets to utilize the latest technology to improve your photos • Great flower macro photo skills with Canon pro Clive Nichols at RHS Wisley gardens • Eight great ultra-wide lenses tested • New photo projects, including how to capture bluebell scenes in your own local forests • Free videos



**Issue 202**  
**April 2023**

**RAW IMAGES SKILLS** 10 essential RAW image-editing tips • Our Apprentice spends a day in the studio with a Canon pro learning to take close-ups of reptiles • New budget Canon EOS R8 and EOS R50 • New photo projects, including how to use cool coloured gels on flashguns • Top 'Dogtographer' Kaylee Greer and her stunning close-up dog photos • We also test eight of the best budget Canon-fit lenses • Free videos



**Issue 201**  
**March 2023**

**101 GREAT CANON TIPS** We answer your toughest technical questions • Landscape pro photographer Justin Minns interviewed • 12 of the latest photo editors tested • Canon photographer Andrew James teaches our *PhotoPlus* Apprentice how to capture stunning seascapes on the beautiful Norfolk coastline • New inspiring photo projects with free videos • Plus free *Creative Photography* ebook





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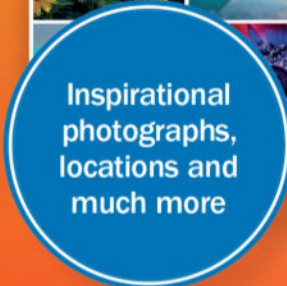
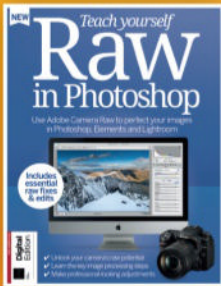
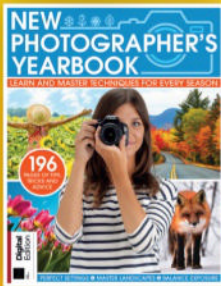
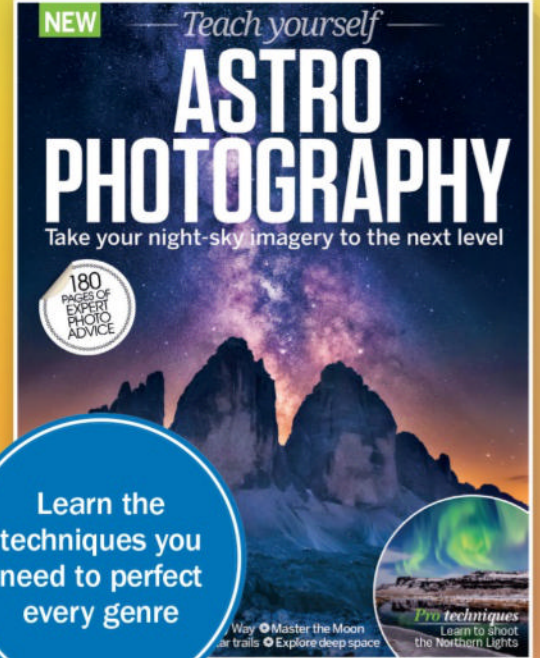
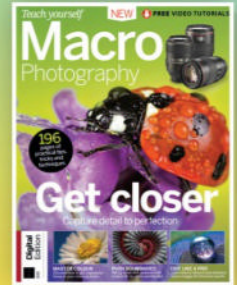
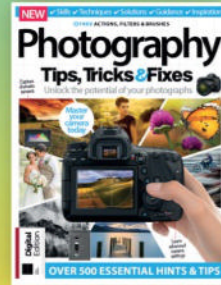


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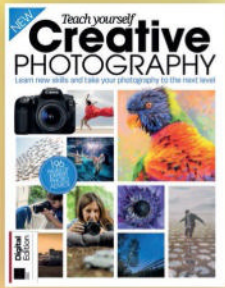
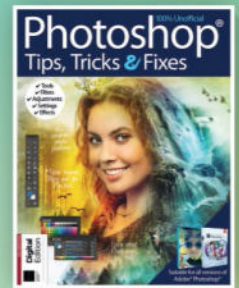
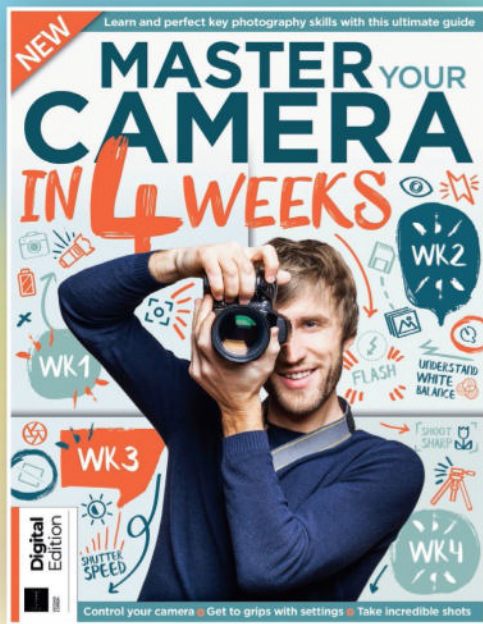
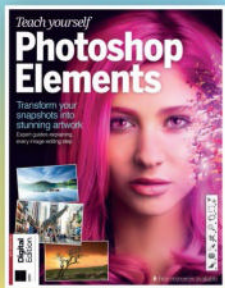


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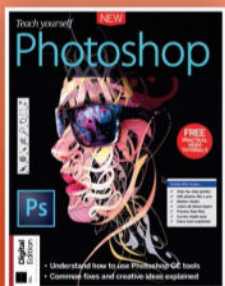
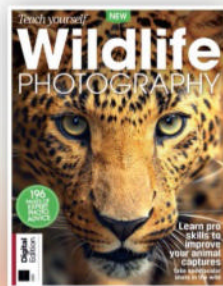
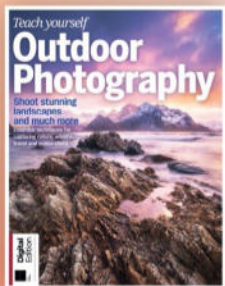
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# FOCUS POINT

We'd love to hear your thoughts on the magazine and all things photographic! Email us at [photoplus@futurenet.com](mailto:photoplus@futurenet.com)

## Letter of the Month

Hi there, you deliver a fantastic magazine in *PhotoPlus: The Canon Magazine*. I do think though I often see equipment used that's out my price range. I have a Canon EOS 2000D DSLR, and I could only ever dream of using some of the equipment featured in the mag. It would be great to see some camera gear used for people on the breadline, but who still love photography. Many thanks.  
**Steve Jevons, Bridgnorth**  
via Instagram messages

Thanks for the message, Steve. You can actually follow and copy most of our Canon camera techniques and photo projects using your 2000D! As an example, this issue's *PhotoPlus* Apprentice captured an amazing star trails image from 60 exposures – all shot on an entry-level Canon EOS 100D with EF-S 18-55mm f/3.5-5.6 IS STM kit lens. See page 14.



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## The month in numbers

# £129

The brilliant budget Canon EF 50mm f/1.8 STM lens wins our Best Value award in this issue's Super Test, and only costs a mere £129 (\$125) – Page 95

# 30K 16

Canon travel landscape photographer Joana Kruse took over 30,000 photos during a five-month electric car road trip – Page 70

*PhotoPlus: The Canon Magazine* began life in 2007, and we're now entering our 16th year of serving Canon users around the world!

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Image: Canon

### Canon is team AI as it encourages photographers to embrace the technology

Canon is encouraging you to embrace AI as it will enable you to spend more time being creative, less time editing, retouching and even shooting. See [DigitalCameraWorld.com](http://DigitalCameraWorld.com) via our quick link [bit.ly/embrace\\_ai](https://bit.ly/embrace_ai)



Image: Jordan McNally

### Winning images from Northern Lights Photographer of the Year out of this world!

Capture the Atlas has a photo competition dedicated to the Aurora Borealis, with winning images including 'Lost Who I Want to Be' shot by Jordan McNally on a Canon 6D (see above). More via our quick link at [bit.ly/NLPOTY6](https://bit.ly/NLPOTY6)



Image: Future

### Canon looks into the future with two eyes – or is that dual fisheyes – at CES 2024

Although we've seen evidence at previous shows, we can confirm Canon is still pushing VR content creation. See more at our website [DigitalCameraWorld.com](http://DigitalCameraWorld.com) via our quick link [bit.ly/canonvr](https://bit.ly/canonvr)



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