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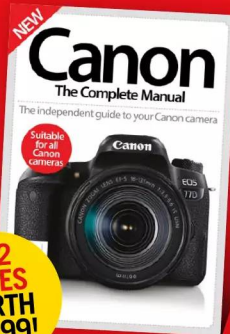
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# PhotoPlus

THE CANON MAGAZINE

Issue 216 • Spring 2024



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NEW SPRING GUIDE

# OUTDOOR PHOTO SKILLS

Canon pro tips for great spring photos of landscapes, wildlife and flower close-ups



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BIG INTERVIEW

## SCOTT KELBY REVEALS ALL

Multi-talented author, tutor,  
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FUTURE

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Canon's most popular  
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CANON PRO

## FUN FAMILY PORTRAITS

Catherine O'Donnell's tips



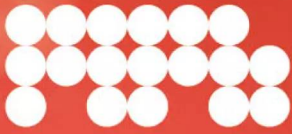
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Draw Buckley

**SPRING TIME PHOTO SKILLS**

Great Canon landscape and nature photographer Drew Buckley shares his tips for taking beautiful spring shots like this!  
**Page 28**

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**Peter Travers**  
Editor

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Inside this issue, Drew Buckley shares his top tips for stunning shots of spring landscapes, wildlife and close-ups of insects and flowers, page 28. Our *PhotoPlus* Apprentice learns how to capture natural-looking family portraits inside with the help of Canon pro Catherine O'Donnell, page 8.

More great photo projects and image-editing tutorials, with free video guides! Multi-talented Scott Kelby tells us the secret to his success as an author, photographer, tutor and speaker, see page 60.

New Photo Stories from you, there's Canon School and EOS SOS, and we put popular Canon EF and RF lenses head to head. Get your free *Canon The Complete Manual* ebook worth £10.99, download info on page 5.

*Peter*



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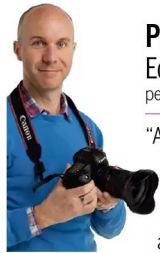
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# PhotoPlus

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



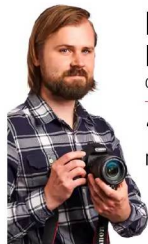
**Peter Travers**  
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Technique writer • R5  
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Deputy editor • R & 7D Mk II  
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Technical writer • R5  
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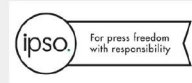


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**Our contributors** Ben Andrews, Drew Buckley, David Clapp, Phil Dunn, Marcus Hawkins, Scott Kelby, Sean McCormack, Premjith Narayanan, Catherine O'Donnell, James Paterson, Matthew Richards, Lauren Scott, Brian Worley



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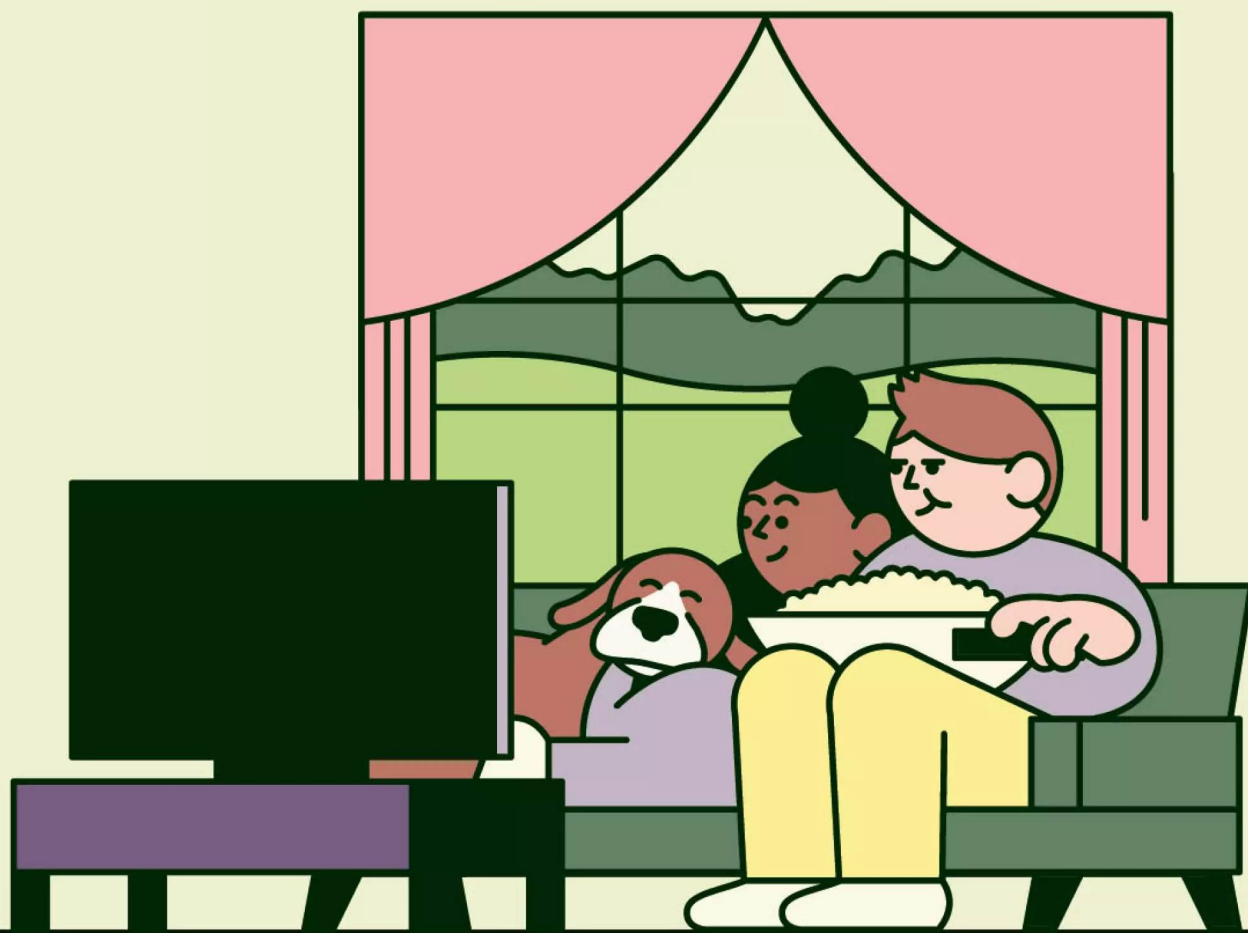
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# HAPPY FAMILIES

Professional portrait photographer Catherine O'Donnell shows our *PhotoPlus* Apprentice how to take natural family photos in a studio







## CANON PRO

**NAME:**

CATHERINE  
O'DONNELL



**CAMERA:**

CANON EOS 5D Mk III

**CATHERINE** is an award-winning portrait photographer who's been published in magazines globally. She's known for her laidback approach to family portraiture, which helps her capture natural poses and special moments that don't look forced. Being a mum of three keeps her on her toes, but also gives her ample opportunities to perfect her portraits – making her the ideal Canon photographer to help leaun improve his shots!  
[www.catherineodonnell.co.uk](http://www.catherineodonnell.co.uk)

## APPRENTICE

**NAME:**

IEAUN  
WILLIAMS



**CAMERA:**

CANON EOS R5

**IEAUN IS** a teacher based in South London, and in his spare time loves to get out with his camera and try everything from landscapes to weddings. He's looking to change career and move into portraiture. While he has a few weddings under his belt, he admits he sometimes struggles with posing his clients or which settings would give him the best results. So to help show him the ropes we've teamed him up with portrait pro Catherine at Lite Studio in Northamptonshire.

# THE APPRENTICE

## TECHNIQUE ASSESSMENT

Portrait pro Catherine showed enthusiast leaun how to set up his Canon for top people pictures



### MANUAL MODE

**IEAUN WAS** well versed in shooting in Manual mode so Catherine suggested continuing to do so. This M mode gives leaun full control of the three core exposure variables: shutter speed, aperture

and ISO. Catherine was looking for a minimum shutter speed of 1/100 sec or faster for sharp handheld shots, and would use a wide aperture for single subjects, or a more narrow aperture of f/8 for group shots. It was then just a case of adjusting the LED power and ISO sensitivity to achieve a well-exposed image.



### DRIVE MODES

**IEAUN** started off in the High Speed Continuous drive mode on his Canon EOS R5. However, when Catherine noticed he had quickly filled a 32GB card with the EOS R5's large 45MP images firing off at

20fps, she suggested he switch over to Single Shot drive mode! This allowed him to really slow down and take his time to finesse his compositions before firing the camera, rather than relying on a fast burst to catch every pose. Although Catherine added: "It's worth switching to High Speed Continuous for action shots, such as trying to catch a child laughing at a precise moment, or little ones running around."

## TOP GEAR #1

### Simple studio lighting

**CATHERINE** predominantly shoots outside with natural light.

However, on rainy days there's sometimes no option but to replicate it indoors. Catherine uses a bright Jinbei EF-200 LED fitted with a large globe diffuser which has a Bowen mount. This large semi-transparent orb does a brilliant job at softening the light for better portraits. While LEDs are predominantly used for video, Catherine finds them essential for indoor stills as you don't get the distracting flash that can distract some children. It's also easier to work with because the lighting you see is exactly what you get!



## PRO TIP



## CAPTURE THE FUN MOMENTS

**ALWAYS** keep shooting and don't leave out any shots of the families having fun together. As well as allowing the kids and parents to relax and enjoy the space, you may well capture some lovely moments too.

## EXPERT INSIGHT

### SET THE MOOD

**PUTTING** together a mood board on sites like [www.pinterest.com](http://www.pinterest.com) can be really beneficial to help you nail down the themes you'd like to cover in your photoshoot. It's good to share these with your clients and models so they have an idea of the style and colours of garments to bring along to the shoot so you're all on the same page, and all fully prepared before the day.



## IEAUN'S COMMENT



“ I met up with Catherine at Lite Studio in Northamptonshire, which had a fantastic range of backgrounds and sets to play around with. She prefers to shoot outdoors with natural lighting, but on rainy days she has no option but to replicate soft overcast sunlight indoors with bright LEDs and window light. When our first family, Millie, Matt and their three-year-old son Maverick arrived, Catherine suggested having a bit of fun to loosen them up, so we had dad put Maverick on his shoulders and I captured some fun, quirky family portraits. ”

SHOOT WITH A PRO

HOT  
SHOT  
#1



Lens	Canon RF 50mm F1.8 STM
Exposure	1/160 sec, f/3.2, ISO640

# THE APPRENTICE

## CATHERINE'S TOP 10 TIPS FOR FAMILY PHOTOS

- 1 One lens to rule them all**

Catherine always takes her Canon EF 24-70mm f/2.8L USM with her and could quite happily shoot on it all day with its versatile zoom and f/2.8 maximum aperture.
- 2 Discreet camera bag**

Catherine has been using her Jo Totes Gracie for years which looks like an ordinary brown leather handbag so it doesn't scream 'photographer'.
- 3 Shoot at eye level**

Rather than shooting down at kids from your head height, go down on one knee or use the Vari-Angle screen to get lower to blur backgrounds easily.
- 4 Photoshop tips**

I keep my editing minimal for a more natural look. I use Lightroom Classic CC to batch edit my RAW files and Photoshop CC for advanced edits like spot removal. I also use Exposure XP for a filmic look.
- 5 Share your shots**

Get the kids involved and show them some of the shots you've taken on your Canon's rear LCD screen so that they can see the images and get excited.
- 6 Keep the conversation flowing**

Be chatty and build a rapport so that the families feel comfortable and you get the best poses out of them. Playing music in the background to keep the mood light and avoid any awkward silences.
- 7 Sync speed for flash**

If you're using flash it's important that your shutter speed is lower than the max sync speed, usually 1/200 sec on Canon EOS cameras, so that you don't end up with a black band across your shot.
- 8 Flicker-free LED lighting**

With budget constant lights you'll usually see an undesirable flickering effect when using fast shutter speeds. This wasn't an issue with Catherine's premium Jinbei EF-200 LEDs though.
- 9 Highlight Alert**

It's important to retain highlight detail. Be sure to shoot in the RAW file format to capture more exposure data and also enable the Highlight Alert in the Playback Menu to check for blown highlights.
- 10 Don't force the families!**

You'll do well to get more than 45 minutes out of little ones as their attention wanes. Be sure to keep things fun with props, toys and activities you can get them involved in, but if you run into tears and tantrums don't force it, photograph other family members until they're ready to be involved again.

### EXPERT INSIGHT

## THE BENEFIT OF BLACK & WHITE

**THE BLACK**-and-white treatment works well for portraits, adding a timeless and classic look. It can also be a clever way to process your images if skin colours don't look consistent, or shots are slightly soft, as you can boost the contrast to make images look a little sharper. You can shoot in black and white on your Canon EOS camera by changing the Picture Style to Monochrome; just be sure to shoot in RAW so you can choose to edit for a colour version, or convert to mono.



## TOP GEAR #2

### Full-frame Canon EOS

**AFTER** more than six years of use, Catherine's workhorse camera remains her Canon EOS 5D Mk III, which goes to show you don't need the latest kit to take top professional portraits. Her full-frame DSLR outputs 22.3MP images. While leaun's EOS R5 is a newer full-frame mirrorless model that can take 45MP at 20fps. It also has modern conveniences like a flip-out LCD, 4K video and a stabilized sensor, though as Catherine's older camera proves these aren't essential.



### PRO TIP



## BACKGROUNDS

**LITE STUDIO** is kitted out with a great selection of backgrounds, from the large white infinity curve to painted walls, and even paper colour rolls. Catherine and leaun set up a background stand and draped over Catherine's seamless canvas. This adds a lovely beige tone which fitted perfectly with the clothing colours in her mood board, and added some texture too. It was secured to the background stand with large clamps.



SHOOT WITH A PRO

# HOT SHOT #2



## CATHERINE'S COMMENT



“ For our next set-up we went for a simple canvas background on stands in front of the infinity curve. We still had the window light flooding the room from the right but I added two large LED lights with diffusers attached to soften the light and fill in any shadows from the front. The dad Matt was very tall, so I had mum Millie sit on a stepladder and both holding on to Maverick sandwiched between them. This cures any height discrepancies, plus the mono conversion adds a timeless feel. ”

Lens	Canon EF 50mm f/1.2L USM
Exposure	1/400 sec, f/2.5, ISO800

# THE APPRENTICE

## EXPERT INSIGHT

### BRING YOUR OWN PROPS

**CATHERINE** always brings a selection of props with her to photo shoots such as teddy bears, hats, books, toy cars and even musical instruments. The idea is to help keep the children stimulated and engaged, although it also makes your portraits look fresh and different. Catherine had a car boot full of props for our shoot, but she stressed if she was shooting outdoors she might only bring a few props to save her lugging lots of equipment around on location.



## TOP GEAR #3

### Prime time

**CATHERINE** likes to use prime lenses (optics with no zoom), such as her Canon EF 35mm f/2 IS USM and Canon EF 50mm f/1.2L USM lenses. Primes often have fewer moving parts to zooms, so they can be calibrated to a specific focal length and therefore often deliver better image quality. As 50mm is roughly what the human eye can see, images taken with this lens result in a natural field of view, while 35mm is a little wider and great for larger group shots.



Lens	Canon EF 50mm f/1.2L USM
Exposure	1/250 sec, f/2.2, ISO640

## CATHERINE'S COMMENT



“ After our 'posed' family photos, we let Maverick have a play around in the studio to just let his curiosity run for a while. He took an interest in the large industrial windows in the studio, and dad Matt lifted him up onto the windowsill and let him play, under supervision of course. leaun and I were shooting away the whole time, taking lots of lovely candid portraits full of fun and smiles. One of the reasons I prefer working with LEDs over flash is that it's not so obvious when you're firing off an exposure, so you can catch wonderfully natural portraits like these. ”

## PRO TIP

### SUBJECT DETECTION



**CATHERINE** uses a single autofocus placed over the nearest eye on her Canon EOS 5D Mark III to achieve sharp focus.

leaun's newer EOS R5 has Subject detection AF which can track faces and ensure the eyes are sharp. leaun enabled this using the asterisk symbol on the back of his EOS R5 and could override it with the joystick and AF-ON button.



## IEAUN'S COMMENT



“ One corner of the studio had a lovely textured wall which fitted in nicely with Catherine's theme of light and neutral colours that the families were dressed in. We positioned a small bench in front of it and decorated the scene with a large plant and rug for a fresh and airy home vibe. To begin we had Maverick on his own with dad, Matt, sliding him along the bench to get a few laughs and smiles. Then we had dad join him and eventually mum Millie too, although this is one of my favourites – a tender moment between father and son. ”

”

Lens	Canon RF 50mm F1.8 STM
Exposure	1/160 sec, f/3.2, ISO640



# THE APPRENTICE

## HOT SHOT #5



Lens	Canon EF 50mm f/1.2L USM
Exposure	1/500 sec, f/3.5, ISO640



# CATHERINE'S TOP 3 PORTRAIT PICTURES

Capturing the look of love in magical moments



## BEAUTIFUL BELLE

**THIS** portrait taken in the Lavender Fields in Hitchin is an all-time favourite of mine. I was exhausted after running up and down after this beautiful little lady. This picture is also framed and hangs in her parents' home, which is extra lovely.



## A MOTHER'S LOVE

**THERE'S** something really special about this portrait to me. In the mother's eyes I just see pure love, and I adore how her daughter is nestling into her, that moment in time that goes by too fast.



## DADDY'S GIRL

**A PERSONAL** portrait of my husband with our daughter. She was about a week old, so tiny and delicate, my husband is holding her on our bed and it captures the love he has for our baby girl.

## TOP GEAR #4

Short telephoto lens

**ALSO IN** Catherine's kit bag are short telephoto lenses, the EF 70-200mm and 135mm. These longer focal lengths are great for tighter head-and-shoulders portraits, and cropping out distractions so the eye is focused on the subjects. We got hold of a Canon RF 70-200mm F4L IS USM (right) for leaun so that he could compress the perspective and pick out poses from afar.



PRO TIP

## 5-IN-1 REFLECTOR

**CATHERINE** never leaves home without her trusty 110cm reflector for portrait shoots. She says: "Silver creates a cool light, while gold can add warmth. The white side reflects a neutral white light and the internal diffusion layer acts as a scrim to soften direct sunlight. I had leaun fan the reflector on Jo's hair to make her look a little windswept!"



## CATHERINE'S COMMENT



“ After a few hours it was time to move onto our next family, mum and dad Jo and Harvey, and their three-year-old daughter Sailor, and five month old baby boy, Oakley. It was a bit more difficult to get the whole family into one frame with this group as there were a few tantrums but, of course, you don't want to push them, so we got some toys out and let Sailor join in the photos when she felt comfortable. While leaun was taking some lovely shots of dad Harvey and baby Oakley, I spotted mum Jo doing her best to calm down Sailor on the windowsill so simply I had to get a photo. They're predominantly backlit by the window producing some wonderful rim lighting in Jo's hair, and I shot with my EF 50mm f/1.2L prime at f/3.5 which gave me a relatively loose composition that I could crop into later if needed. ”

## EXPERT INSIGHT

### CATCH THE ACTION

**FROM** children running around, to bouncing on beds or even being thrown up and caught in the air like baby Oakley here, you'll need a fast shutter speed to freeze the action. While flash can freeze people still, this is a luxury you don't have when working with natural light and constant LEDs. Instead you'll need to boost your shutter speed, aim for at least 1/250 sec (or even faster) by opening up your aperture, increasing the ISO, or using more powerful lights.



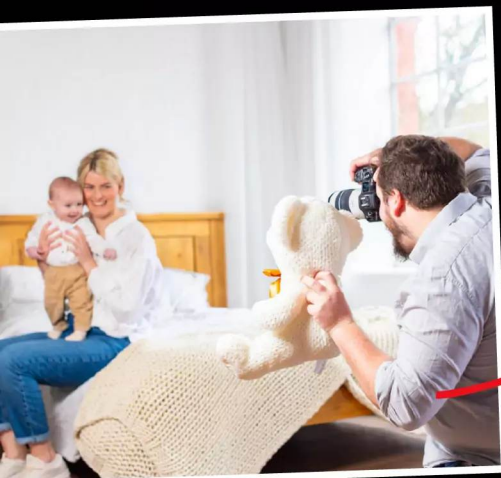
# THE APPRENTICE

## HOT SHOT #6

### LEAUN'S COMMENT



“ One of my favourite shots of the day came from this tender moment between mum Jo and baby Oakley. He was getting a little cold so he's wearing a knitted jumper which makes him look extra adorable. To get his eye contact I tried holding a teddy bear in my left hand and my camera in my right, and we also tried having dad Harvey stand behind me and pulling silly faces to get his attention and smiling. Thank you *PhotoPlus* for allowing me to spend the day under Catherine's wing and learning her pro tips and tricks. The experience has definitely made me more confident working with families and it's something I hope to pursue as a career in the future. ”



Lens	Canon RF 70-200mm F4L IS USM
Exposure	1/160 sec, f/4, ISO640

### PRO TIP

## BEDTIME PHOTOS

**WE HIRED** Lite Studio, which came equipped with a double bed on casters that Catherine moved against a painted white brick wall next to a large window to flood the scene with light. Shooting on a bed is a fun way to give family portraits a cosy and 'homely' feel with the whole family getting involved. Or even for close-ups of baby Oakley on bright white fabrics and Maverick having fun jumping up and down too – something he's not allowed to do at home! You can try taking shots like this in your own home, but the studio setting meant there was plenty of space for us to work with.



## CATHERINE'S VERDICT



“ In another breather between family group shots, mum Jo took a break to feed baby Oakley on the white sofa in the studio.

One of my favourite shots came from this tender moment after they were all done, with little Oakley looking directly at the camera and Jo has a this wonderful smile. I couldn't have asked for a better Apprentice on the day! leaun's enthusiasm shone through, and being a teacher, he clearly already had the people skills needed to communicate effectively with clients and children to get the best out of them. His willingness to try new things and get involved really stood out and he should be really proud of some of the lovely portraits he was able to take on the shoot. I wish him all the best if he does decide to pursue portraiture full time! ”

NEXT MONTH **DORSET SCENES**

# SHOT OF THE DAY!



## 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.

Lens	Canon EF 50mm f/1.2L USM
Exposure	1/320 sec, f/2.5, ISO640

# INSPIRATIONS

STUNNING IMAGERY FROM THE WORLD OF CANON PHOTOGRAPHY





**01 WINNER LOCH RUSKY SUNRISE  
BY JOE GILHOOLEY**



Joe's sublime sunrise image of the beautiful Loch Rusky, found in Trossachs in Scotland, has been captured masterfully and takes the top spot in our Minimalist Landscapes photo contest this month. We love the simplicity of the four empty boats floating on the ethereal loch on a misty morning, the lovely reflections, with a stunning sunrise colour palette bursting out from behind the trees on the horizon.

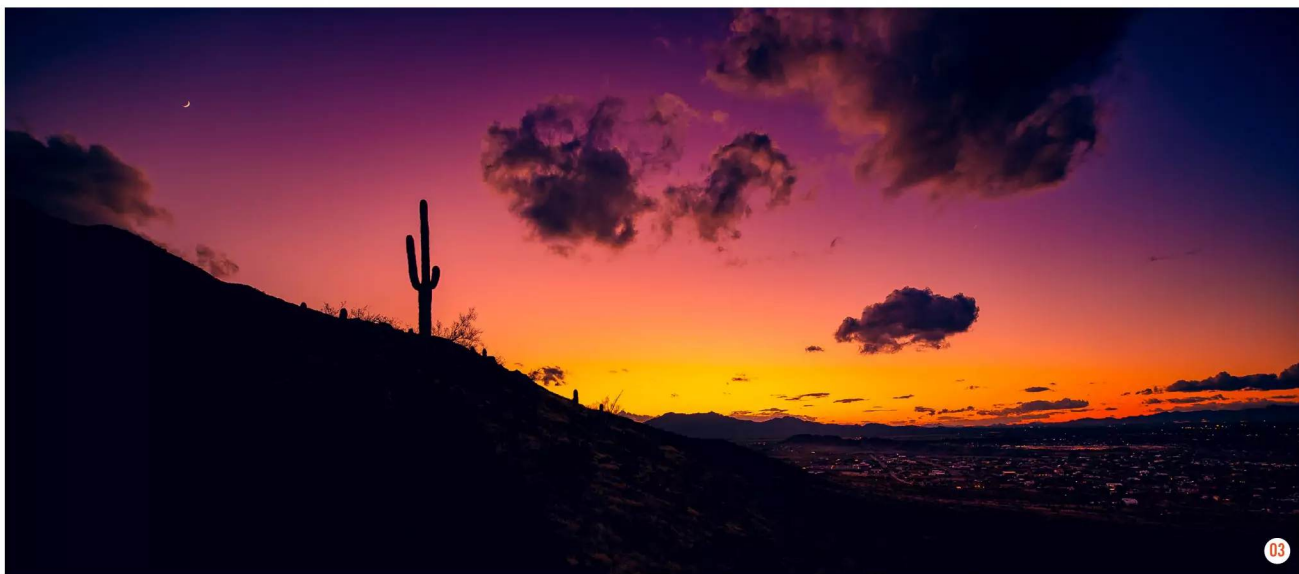
**Lens** Canon EF 24-105mm f/4L IS USM

**Exposure** 1/4 sec, f/11, ISO500

# INSPIRATIONS



02



03



## Photocrowd

All of the images in this gallery were entrants to the *PhotoPlus* 'Minimalist landscapes' competition hosted on Photocrowd – a website where a public vote on the best-liked images is pitted against expert opinion. To enter current contests, and vote for your favourite photos, simply visit [www.photocrowd.com](http://www.photocrowd.com)



### Competition prize

The winner of this month's contest will receive a Lowepro Trekker Lite BP 250 AW professional camera backpack in black. Made from 80% recycled and solution-dyed fabrics, the Trekker Lite BP 250 AW is big enough to fit a full-frame mirrorless body, a 24-70mm f/2.8 lens and another additional lens.

### 02 GOLDEN GATE BRIDGE BY ALAIN BOULARAN



Alain's wonderful blue hour shot of the iconic golden Gate Bridge in San Francisco, uses the classic orange and teal colours to add contrast and give his landscape a cinematic look. The warm, bright lights from the bridge do a top job of pulling your eye in from the dark and cold blue surrounding.

Lens	Canon EF 70-200mm f/4L USM
Exposure	25 secs, f/9, ISO200

### 03 SOUTH MOUNTAIN SUNSET BY MATT PERKINS



Matt took this graphic sunset scene in Phoenix, Arizona, telling us: "I hiked up the western slope of South Mountain and came across this lone cactus rising against the hillside. I set up and waited for the lighting to be just right." The sunset light looks perfect to us and the lone cactus standing proud on the hill, with the view of Phoenix in the background, works marvellously.

Lens	Canon EF 16-35mm f/2.8L III USM
Exposure	1/50 sec, f/2.8, ISO100



**04** **SUNSET FISH STRUCTURE**  
**BY MONICA SILVA**



Monica's lovely landscape taken at a fishing village in Setubal, Portugal, has been kept simple, framing up on a single walkway that curves through the water, with a magical pastel sunset colours lighting the scene. It's remarkably minimal but works excellently here. Shot with a Canon EOS 250D.

**Lens** Canon EF-S 18-55mm f/4-5.6 IS STM

**Exposure** 1/400 sec, f/18, ISO100

# INSPIRATIONS



05

## 05 THE LONE RANGER BY MIROSLAV NIKOLOV

Miroslav's stunning seascape photo does a wonderful job at capturing the raw power of the sea, using a slow 1/6 sec exposure to catch a little motion as the waves crash into lighthouse. His conversion to black and white also helps to bolster the impact and overall contrast.

**Lens** Canon EF 70-200mm f/4L IS USM

**Exposure** 1/6 sec, f/6.3, ISO100

## 06 WANAKA TREE BY CHRISTOPH SCHAARSCHMIDT

There are few spots in the world as stunning and suitable for a top minimalist landscape as the legendary Wanaka tree in New Zealand. Christoph has done a beautiful job catching this famous spot with brilliant lighting hitting the mountain tops in the background, and using a long exposure of 10 secs to blur the water around the tree.

**Lens** Canon EF 50mm f/2.5 Compact Macro

**Exposure** 10 secs, f/8, ISO100

## 07 FATHER BY EVGENY TABALYKIN

Minimalist landscapes don't get much more minimal than this, with Evgeny capitalizing on the snowy conditions to wash out everything in the landscape apart from this one lone tree, drawing the viewer's eye directly to the heart of the photo.

**Lens** Canon EF 24-105mm f/4L IS USM

**Exposure** 1/250 sec, f/5.6, ISO100





06



07



**Photocrowd**

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# INSPIRATIONS



08

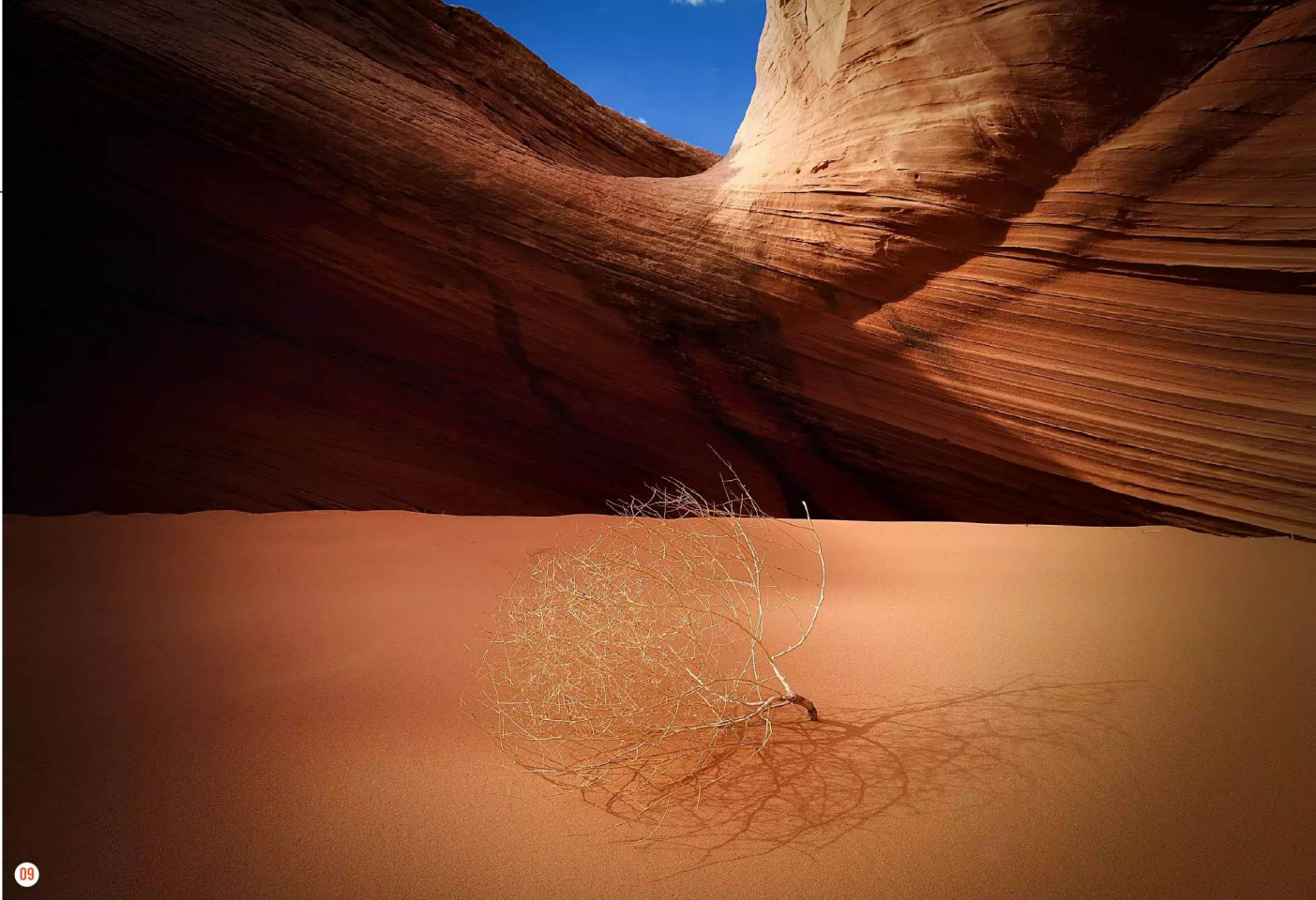
## SLEEPING DRAGON BY KIERAN STONE



Kieran's seascape of the stunning Dragon's Head viewpoint at Number 16 Beach, Rye, Australia is nothing short of breathtaking, using a long exposure to turn the swells into an mesmerising mist, while the sun illuminates his rocky focal point beautifully. He explains: "This section of rocky reef is only accessible around low tide. Timing your trip here is crucial, as if the tide is too low, water doesn't flow over the rocks, while if the tide's too high you'll be swept away with the swell!"

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

**Exposure** 110 secs, f/8, ISO50



09



10

**09 LONE TUMBLEWEED  
BY MIRANDA SIGNORE**

Miranda's minimalist landscape consists of a lone piece of tumbleweed to anchor the foreground of her shot taken in the desert in Page, Arizona. The untouched sand really helps to keep the foreground clean and free from distractions.

**Lens** Canon RF 14-35mm F4L IS USM

**Exposure** 1/200 sec, f/7.1, ISO100

**10 LIVE IN THE SUNSHINE  
BY LLILYS BENAVIDES**

Llilys took this impressive seascape at the historic Naples Pier, located on the Gulf of Mexico. She tells us: "I recently got into long exposure photography and decided to start using Manual mode instead of Auto. This was very scary for me because I never like to miss the shot by making mistakes while playing with settings. Shooting into the sun proved to be a challenge for sure. After more than 20 wrong shots I was finally able to strike the right exposure balance with my 10-stop ND filter, and this was the final image."

**Lens** Canon EF 17-40mm f/4L USM

**Exposure** 30 secs, f/11, ISO100



**Photocrowd**

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**YOUR SPRING GUIDE**

# OUTDOOR PHOTO SKILLS

Canon photographer Drew Buckley shares his top tips for spring landscape, wildlife and flower photos



**A**fter the long slumber of winter, which feels like it goes on forever these days, suddenly there are signs of life that invigorate and inspire us photographers. With the ever-changing climate and milder winters, there's always a crossover of winter and spring seasons, so depending on which part of the country you are in Spring may come sooner or later than usual. Either way, it's a fantastic time of year to dust off your camera and lenses and head out to explore what's on offer and capture as many seasonal images as you can.

Spring is one of those seasons when there's lots of fascinating subjects on offer, but unlike summer, for instance, we're not bombarded all at once: we can spread out what we shoot over the months between March to June.

Potential subjects in the world of flowers are the classic snowdrop, crocus and daffodil, before wild garlic and bluebell carpet our woodland floors as the trees start to produce leaves and we head into the warmer months. It's around then the wildlife kingdom really ramps up too, with insects on the move and many mammals and birds having young,

with our coastline becoming packed with migratory seabirds.

In this guide, I'll share my favourite photography skills during this magical period and how to implement them, so you can get out into the great outdoors with your Canon, and take some really compelling spring photos yourself.

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## PROFILE

Drew Buckley



Drew is a Canon professional photographer based in Pembrokeshire, Wales. Drew happily turns his hand to all sorts of genres, with landscape, wildlife, astrophotography and timelapses being just a few. He runs workshops throughout the year and has been featured in a range of publications. He also wrote and took the photos for his book *Photographing South Wales* and the photos for the book *Wilder Wales*. [drewbuckleyphotography.com](http://drewbuckleyphotography.com)



## Get that floral feeling

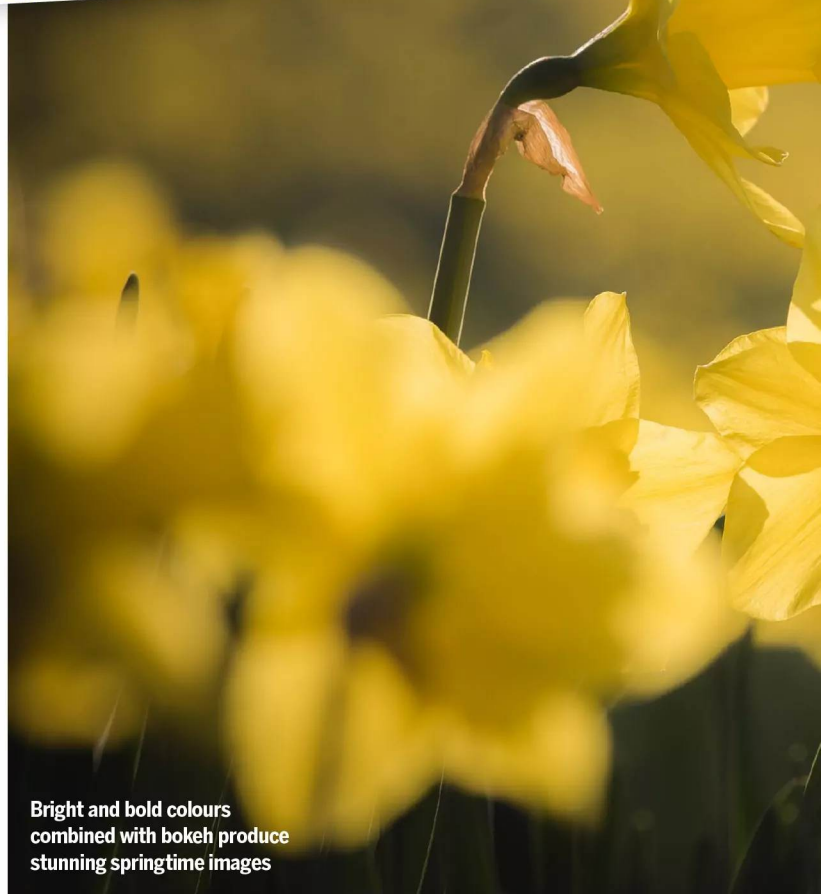
Capitalize on daffodils, bluebells, snowdrops and wild garlic sprouting across the country

### Fill the frame

**01** **START** off your spring photo sessions by taking photos of flowers in your garden or local parks. Choose a main flower and fill the frame, washing the background with the rest of the plants. Spring is a great time to get photos with bags of colour; increasing temperatures trigger the burst of activity from beneath the ground and buds begin to open. Don't just think about the subject when you're composing a shot, be aware of its surroundings. In some instances, you may want to include empty space (known as negative space) to enhance and give the subject some 'grounding'. With a collection of flowers with an array of shapes and colours on display, forget negative space and get in really close. This is what I've done for my close-up photo below of a Pale Flax flower. I used a wide aperture of f/3.5 with my Canon EF 100mm f/2.8L Macro IS USM lens.



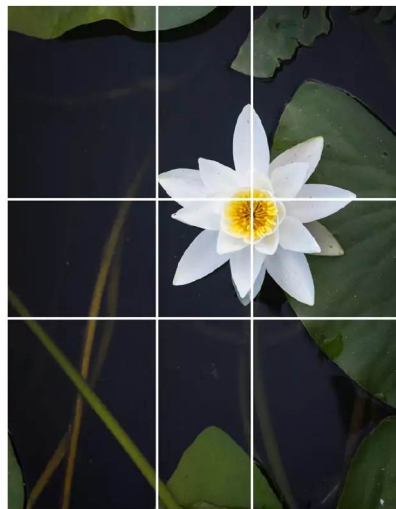
Filling the frame with a single flower will focus the viewer's eye when you've blurred the background with a wide aperture



Bright and bold colours combined with bokeh produce stunning springtime images

### Golden ratio

**02** **USE THE** golden ratio for flower photos to draw the eye around the image to the centre of the flower. The golden ratio, like the rule of thirds, is a great technique to implement in your florals. It's a geometric formula used since Renaissance times by artists and architects alike to create aesthetically pleasing compositions. While the mathematical principles are complex, the concept is simple. If you're shooting a subject such as a flower that has a distinctive central feature and focal point, don't position it in the centre of the frame; position it to the sides where the lines intersect with each other, and think about how the eye is led on a journey around the image to the main point of focus. When cropping in Photoshop you can use overlay grids such as a Golden Ratio (shown above) and Golden Spiral.



## Stand proud

**03** **YOU DON'T** have to go far to find spring flora, in fact, you could bag some nice images simply by heading down to the park during your lunch hour. Public gardens are some of the best places available to visit all year round; there's always a vast array of colours and types of flowers and they're usually always regimentally planted, so you can really play with shapes and lines in your compositions. Look for patterns, blocks of colour and even the one that stands out, all of these can make for some interesting images. Use the composition and camera technique tips to your best advantage.

## FLORAL TIPS



### Watch the exposure

**05** **SOME** plant foliage and petals on flowers reflect light stronger than others, dialling in the correct exposure can help and make sure you don't blow out details. When shooting in semi-auto Shutter priority (Tv) or Aperture priority (Av) modes, you can brighten or darken shots with exposure compensation. This is ideal if your camera's choice of exposure isn't correct. Choosing between positive or negative compensation, and keeping an eye on the exposure level indicator as you change these, will create your desired effect and help so you don't blow out your highlights.

### Colour is crucial

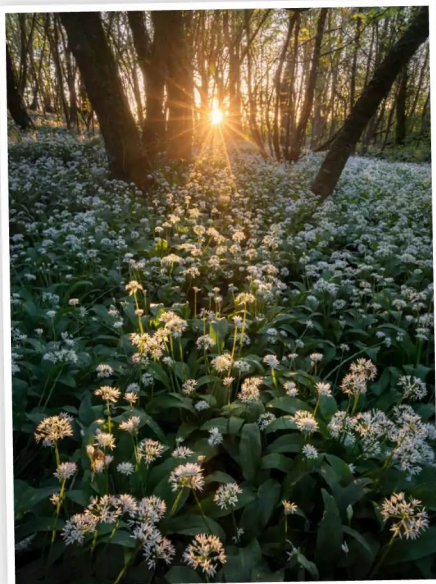
**04** **SPRING** is all about colour, so try to dominate the scene with a single bold colour. Yellow daffodils, lovely bluebells, even a sea of snowdrops can invigorate and create impactful shots. Close-up macro shots can capture incredible detail but it's also worth including these vibrant flowers in your wider landscapes too. If you're lucky to find a large area or even a field of flowers, you're in for a treat with lots of options for compositions. In my daffodil field, leading lines draw the viewer's eye through the scene to the horizon, and setting sun. Also, look for other interesting directional features, such as walls or paths going through flowerbeds.



Vast swathes of rapeseed and a popping sky shows what the season has to offer

## Top tips for spring landscapes

Step into nature and capture landscape scenes as forests and fields burst into life



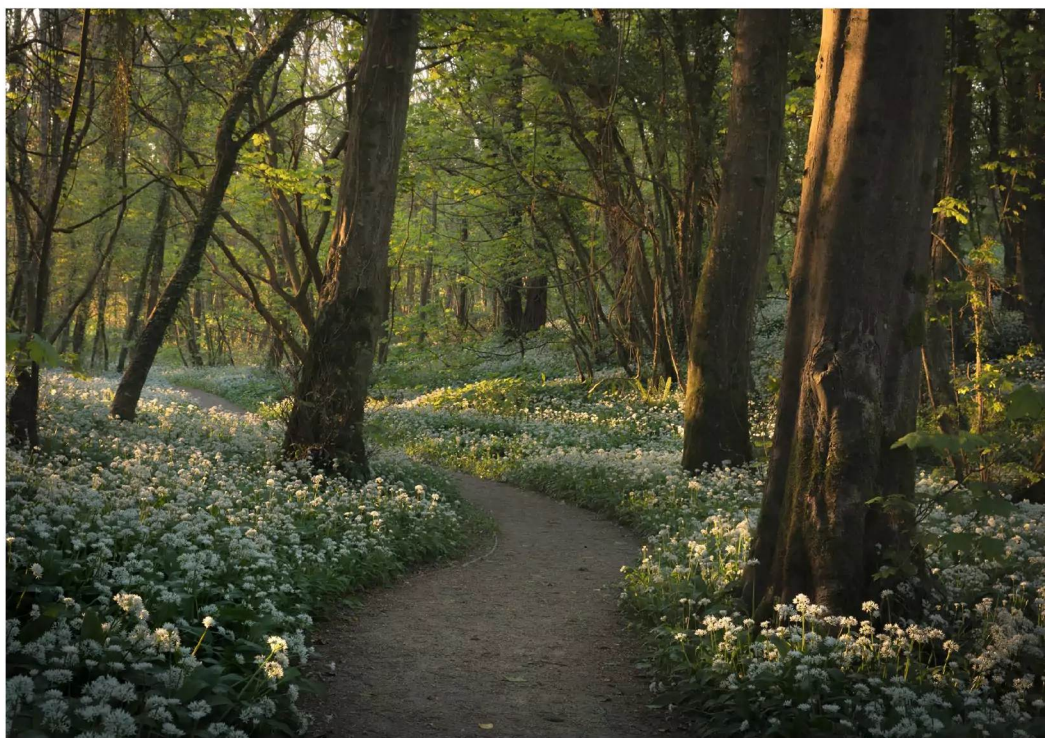
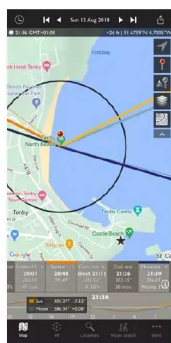
### Sun stars

**06** **SUN STARS** can be a great addition to your images, adding that extra sparkle and flare. Choose the right aperture – smaller is better! Around the f/16-22 mark is perfect for making large, crisp-looking stars. Sun stars are caused by the light passing through the small aperture and being diffracted across the aperture blades inside the lens. The number of aperture blades in your lens determines the number of stars visible. A good place to position the sun is where it's just peeking out behind an element, such as trees or plants.



### Plan for sunlight

**07** **A KEY** aspect to successful images comes in the planning stage, and knowing what light you have to play with and how it interacts with a scene is half the battle. Using apps like PhotoPills or The Photographer's Ephemeris will ultimately help in planning where the sun will be for your given compositions. These apps will also mention at what time the 'golden hour' will be, and this is a great time to take your landscape images.



Woodlands can be dark and poorly-lit so plan your shoot around optimal light conditions with a dedicated app





## Simplify scenes

**09** **SPRING** is a time when natural colours are plentiful, so it's a good opportunity to play around with contrasting colours and simplify your scenes' colour palette. Using techniques from the basics of art with the colour wheel and primary colours, the most obvious idea is to play blues and yellows against each other. Potential subjects for these colours include daffodils, tulips or – later in spring – rapeseed fields that are dotted across the countryside. Shoot these subjects on a sunny day and remember to fit that polarizing filter too and really make those blue skies pop!



Floral splashes create compelling foregrounds

## Floral vistas

**08** **SPRING** photography is not always close-up macro images of single flowers; sometimes you can capture flowers in a wider view. Adding a splash of floral colour to your landscape images works wonders for creating foreground interest and adding scale and depth.

I love photographing our coastline and this time of year is a delight. Venture along any coast path or clifftop and you'll find flowers blooming from plants such as gorse, sea campion or thrift (sea pinks). These can make superb foregrounds coupled with a nice landscape behind.

## Misty moments

**10** **JUST LIKE** autumn, spring is a particularly good season for capturing early morning mists. With plenty of cold nights followed by warmer days, it's the perfect recipe for misty scenes. Like with anything in nature, it's never guaranteed when and where it will happen, but there are a few telltale signs to look for. It is formed when warm, moist air reaches the dewpoint and condenses into what are essentially clouds, but at ground level. So, keep an eye out for high humidity and little or no wind. Get up to a high point at sunrise to find yourself 'above the clouds'. The same effect can happen on the coast, too, with sea fog.





## Live on the wild side

Take top shots of animals and insects as the booming flora and fauna provides the perfect environment



### Zoom in on details

**11** **SPRING** is a time to crack out that macro lens in full force. From close-up flower heads to bugs and insects, the smaller world comes to life and gives you a whole host of potential subjects. One of the stars of the show are our amazing dragonflies and damselflies. Keep on the lookout for their usual haunts such as shallow pools and bodies of water and learn when they spend their time. You may be lucky to come across newly emerging individuals and this will give you a superb opportunity to get up close and personal to them. First thing in the morning is best as they sit for hours morphing into fully, grown adults. This time will give you the chance to capture all the intricate details on this incredible insect, such as its amazing wings, without worrying about it flying off.

### Subject sharpness

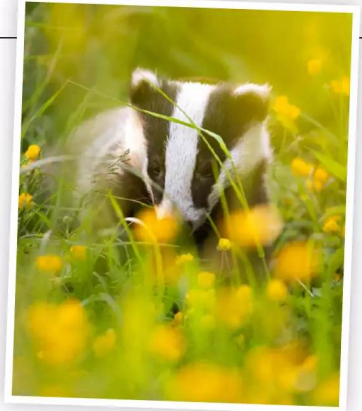
**12** **TAKE** control over how much 'in focus' scenes are around subjects by shallowing your depth of field via a wide aperture and long focal length. A shallow depth of field can be your best friend when it comes to taking close-ups of wildlife. Selecting Av (Aperture priority) mode will allow you to choose the wide aperture and let the camera decide on a suitable shutter speed. For this shot of a puffin I used my RF 100-500mm F4.5-7.1L lens at f/7.1 and 500mm, including flowers in the foreground to blur, but also to frame the bird. Most plants and flowers are generally found in woodlands which are poorly lit; so, make sure the shutter speeds don't drop too much which will result in blurry images, especially when hand holding. If you're not using a tripod and shooting hand-held, don't forget to turn on image stabilizer.

Keep it clean for vivid and vibrant images without unwanted clutter



### Decluttering

**13** **IT'S ALWAYS** easier to recompose or remove unwanted twigs before taking a shot. When shooting clean flower or insect portraits, you want them to pop out of the scene and not be affected by distracting objects or shapes in the background. Check for any different colours in the background that might detract from your main subject – if, for example, you're photographing a butterfly and there's bright yellow out-of-focus flower in the background. Usually, moving to one side will fix this issue. It will also help in some instances to 'open up' the macro lens to a wider aperture (eg f/4) for a shallower depth of field to make any objects in the background appear less obvious.



## Signs of spring

**15 IT'S NOT** just about plants in this magical season, there's plenty of activity among the animal world as well. Spring is a time for new life with the classic scenes of frogspawn filling ponds, birds building nests, mammal cubs, swallows returning and gambolling lambs. As with any wildlife image, it's about creating a connection with the viewer and the best way to do this is to get down to their level. This enhances the three-dimensional feel of the image and brings the viewer into the subject's world. Focus on the eye and use a wider aperture for superb out-of-focus foreground and background compression.

## Birds in flight

**14 SPRING** is the perfect time to put your bird in-flight skills to the test. It is the time of year when the world awakens once more, and with the animal kingdom, that means the upcoming breeding season. Swallows and house martins will return to our shores, the resident garden birds will start nesting, and seabirds will return to our cliffs. The main aspect to any bird in-flight image is the aesthetic and that's controlled by your shutter speed. Start by putting your camera in Shutter priority (Tv) mode and choose a value of at least 1/1000 sec. Using a fast shutter speed will freeze the subject in motion, and a slower shutter speed will cause some subject blur. Use a faster shutter speed and then hone your tracking skills.



Start on faster shutter speeds and gradually hone your in-flight skills for birds

## Get creative

Drew's pro tips will help you squeeze more out of spring with your Canon EOS camera

### Use a tripod

**16** **PLANTS ARE** mostly found in poorly lit areas and usually affected by the slightest breezes, so higher shutter speeds will be essential to ensure your images are super sharp. Always use a sturdy tripod when shooting plants and flowers, preferably one that has short legs or that allows you to position your camera low to the ground. Smaller wrap-around pods

or tabletop tripods can be perfect for this, but not good on uneven ground so take the right gear for your locations. Using a cable release, remote or a self-timer will keep the camera untouched when using slower shutter speeds, helping to reduce any unwanted camera shake leading to blurry subjects.



Smaller tripods allow you to get closer to the ground and amongst the action



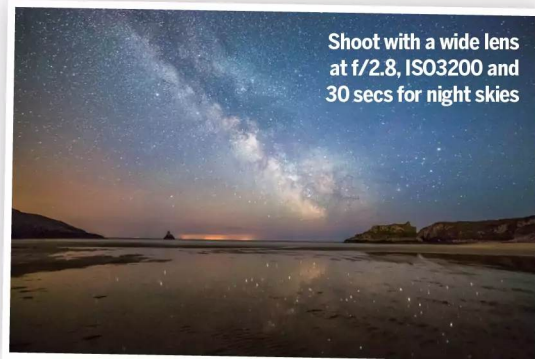
### Out early, back late

**17** **JUST LIKE** with landscape images, the light is the best when the sun is low in the sky. After sunrise or before sunset can be a stunning time to photograph plants, insects or animals and really helps to boost an image. Either aim for a warm glow across your subject, perhaps placing it against a dark background to make it stand out more or position the subject between you and the sun and shoot for a backlit image. Or you could under expose the subject to create an attractive silhouette.

Take advantage of sunrise and sunset to ramp up the contrast in your spring shots



Shoot with a wide lens at f/2.8, ISO3200 and 30 secs for night skies



### Starry skies

**18** **SPRING IS** also the best time to head out to photograph the Milky Way! The galactic core is the most appealing part to photograph, and this area is revealed above the horizon between March through to September. Around a new moon is the best time for dark skies. A full-frame EOS camera with good high ISO performance is best for night, while for lenses, go wide as they'll fit more sky into your shots, and the faster the better; a lens with a maximum aperture of f/2.8 or faster will really help you gather light at night! Focus on the stars and you will almost certainly be shooting long exposures of around 20-30 secs, so use a tripod.

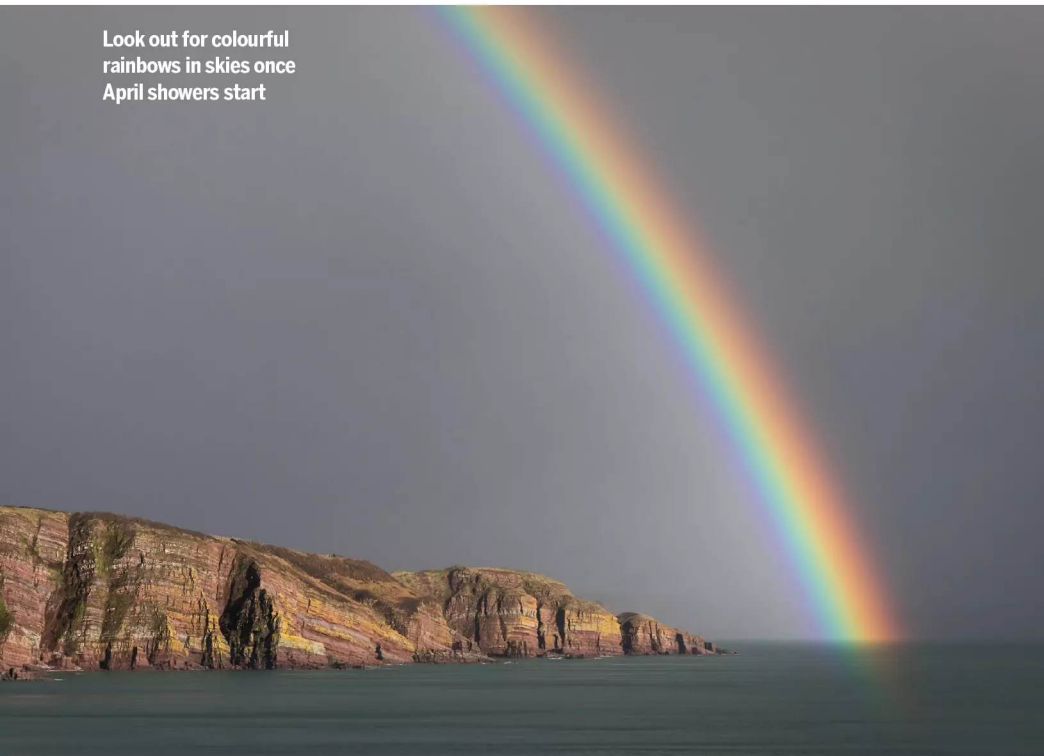
## GET CREATIVE



### What weather?

**19 IT'S GOOD** to get out whatever the weather as, in most cases, you'll find the best light before or after any weather fronts. Dramatic-looking clouds in your images can provide impact and create a moody feel. Either side of any downpour you can expect shapely cloud formations, filling the skies or even backlit or silhouetted downpours on the horizon; especially if you're on the coast shooting out to sea. Images like this can really sum up a season, especially spring which is famed for its heavy squalls and showers, so always be on the lookout before and after the rain reaches you, for dramatic skies bathed in sunshine!

Look out for colourful rainbows in skies once April showers start



### Use a circular polarizer filter

**20 A CIRCULAR** polarizing (CPL) filter can reduce the reflected glare from wet rocks, water, shiny leaves and highlights to ultimately increase colour saturation – perfect for capturing vivid, green spring leaves. They can also act like a neutral density filter, blocking the incoming light by 1- to 2-stops, increasing shutter speeds to blur any water movement in your scenes. Another use for them is to boost the appearance of rainbows among the April showers. 🌈



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# Spiral-eyed in Brittany

Île Vierge, Brittany, France. 15:46pm. 10 September 2018

*How using a Canon crop-sensor camera trounced full-frame in every respect when shooting a lighthouse staircase in Brittany*

**A**re you of the opinion that Canon's APS-C sensor cameras are for beginners or perhaps for wildlife photographers who need the extra reach?

At the time when I bought my original EOS 5D (vintage digital fondly known as the 'classic') the concept of leaving full-frame film photography for a crop-sensor EOS 10D did very little to ignite my passions. The reason was simply to do with wide-angle lenses. I had saved hard to buy an EF 17-40mm f/4L lens, so the idea of tumbling back to a 28-64mm (equivalent of 17-40 x 1.6) was a severe back step. I was young, in love with putting rocks in the foreground of landscapes, a depth of field trend that was taking off in photography magazines.

Moving on to 2016, I was asked by Canon to create an in-depth review of the new Canon EOS M3, a 1.6x crop sensor body with a very small footprint. I was given three small Canon EF-M lenses with the package – 11-22mm, 18-55mm and 55-200mm zooms. I bought a charity shop camera bag, threw in a few filters and some cleaning kit, and to my surprise the whole lot weighed just under a kilo and a half! It became my ultimate travel set-up for many years.

Now let us fast forward to 2018, and I am in the Île Vierge lighthouse off the coast of Brittany. We step off the boat and

marvel at the impossible height of the largest traditional lighthouse in the world. Standing at 82m, it has an incredible blue tiled interior with a spiral staircase which can be shot from the base.

The hoards of phone photographers prompt me to climb to the top. When they go up, I will go back down. The circular view from the lantern room balcony is amazing and I realise how treacherous the seas are around this coastline.

On my return to the bottom, I see a photographer struggling. He has a full-frame camera on a tripod, the camera facing vertically upwards with a wide-angle lens. He is crouched underneath (no Vari-Angle screen), neck crunched, unable to align everything. We chat about the technical issue – depth of field. The full-frame camera needs a narrow aperture and possibly hyperfocal distance to get everything sharp. This means a shutter speed of over 1 sec at f/16 or perhaps f/22. He is welded to the tripod, and steam is pouring from his ears.

On the other hand, I have tested the tiny Canon EF-M 11-22mm f/4-5.6 IS

**“At 11mm I only need an aperture of f/4 to get everything sharp from just 1.5m”**



## DAVID CLAPP

Canon professional photographer

**DAVID CLAPP** has been a full-time Canon professional photographer for 15 years and for the past 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.

STM lens and found its depth of field to be vastly greater than the EF 16-35mm the full-frame photographer is using. If the EF-M 11-22mm is manually focused at infinity, at 11mm I only need an aperture of f/4 to get everything sharp from just 1.5m to beyond! This f/4 aperture means loads more light is let into the M3 camera (compared with f/16) and no need for hyperfocal distance or, more importantly, a cumbersome tripod.

I set the camera to ISO1600, then f/8 (just to be sure), make sure the image stabilisation is switched on the lens and take a few shots handheld at 1/20 sec. All pin sharp, all corners are nice and sharp too. I am now free to politely push our full-frame friend to one side. I lift the M3 camera, compose with precision, capture the spiral staircase perfectly centred, and go about getting on with my day. The M3's APS-C sensor all made it that simple.

By the way, although the 1/focal length rule (1/11mm in this case) should make you think that a 1/11 sec shutter speed would be enough, it is actually the effective focal length that matters, so  $11 \times 1.6 = 17.6\text{mm}$  so you need to use at least 1/18 sec, which in reality is 1/20 sec.

The magic of APS-C! EOS cameras? They're all just spanners in a tool box at the end of the day. 📷

**NEXT MONTH WEST DEVON**



CANON PRO CLAPP

Lens	Canon EF-M 11-22mm f/4-5.6 IS STM
Exposure	1/20 sec, f/8, ISO1600

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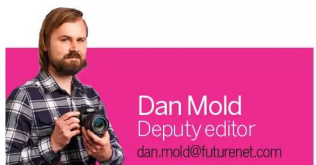
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 ALL OF OUR NEW PHOTO PROJECT AND IMAGE-EDITING VIDEOS CAN BE VIEWED ONLINE VIA THE WEB LINKS ON PAGES 44-59!

# CanonSkills

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



## New projects with video guides

Follow our Canon camera walkthrough guides and Photoshop editing videos

Welcome...

**THIS** month we've got fantastic photo projects and tutorials for you to get stuck into. Kicking us off on page 44, James shows you how to harness polarized light with an LCD screen, a few champagne flutes and a polarizing filter. Meanwhile, I show you how to achieve a fun miniature effect in Photoshop, even if you don't own a pricey tilt-shift lens, page 48. Spring has finally sprung! So now is the perfect time of year to give your entire kit bag a good clean, to keep your Canon spick and span for another year and banish those pesky dust spots (page 50).

If you'd rather brush up on your image-editing skills, don't miss this month's Fundamentals where Sean shows you how to colour grade your images (on page 54), and James shows you how to pull off Luminosity masking in Photoshop using Channels (page 56). Plus find out how to bolster your RAW portraits in Affinity Photo on page 58.



**44 Cross polarisation**  
 Harness polarized light for stunning abstract still life images



**48 Tiny toy towns**  
 Achieve the 'tilt-shift' look both in-camera and using Photoshop



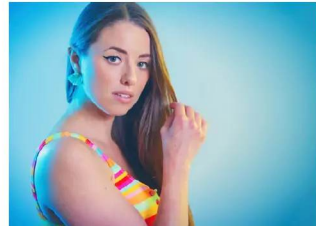
**50 Spring cleaning**  
 It's time to clean your Canon kit and remove dust from sensors



**54 Adobe Lightroom**  
 Add movie magic to your photos with simple colour grading



**56 Tool School**  
 Get to grips with Channels and Luminosity masking in Photoshop CC



**58 Affinity Photo**  
 Use the Develop persona in Affinity to enhance RAW portraits

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.





PROJECT 1



THE MISSION

Use the cross polarization technique to create striking colour abstracts

**Time needed**  
 One hour

**Skill level**  
 Beginner

**Kit needed**  
 Camera, polarizing filter, TV or laptop

# Creative cross polarization

James Paterson shows you how to create striking and vibrant abstracts

**M**any of us are now accustomed to using circular polarizing filters on our lenses. They're useful for enriching colours in landscapes – especially blue skies and foliage – and invaluable for cutting through reflections or atmospheric haze. But polarizers aren't just for lenses. Something magical happens if we polarize our light source too. This is called cross polarization, and the technique is simple. We need both the light entering our camera

and the light emitting from our source to be polarized light. It's a classic technique that has many uses, both practical and creative. Cross polarization can result in photos with zero reflections and glare, which makes the technique useful for practical things such as dental photography, because eliminating the glare allows for clearer pictures of teeth.

But if you want to get creative, it also allows you to capture otherworldly colour spectrums. Captured under cross-polarized conditions, any hard, clear plastic

objects like the plastic champagne flutes here are transformed into vivid, rainbow displays of colour. You probably have everything you need to get started at home. As well as a polarizing filter for your lens, you'll also need a polarized light source. Most LCD screens emit polarized light, so it's fairly easy to get set up in front of a laptop or a large TV. The only other thing you need is an array of hard, clear plastic objects and a surface to place them on, like Perspex or glass. It takes minutes to set up and is great fun. ☺

## THE SET-UP CROSS POLARIZATION

Shoot with the polarized light from your TV for striking abstracts

### 01 POLARIZING FILTER

Attach a polarizing filter to your lens. You can use either a circular or linear polarizer. You might need to use step-up-rings depending on your filter size and the lens thread size (but don't worry if you can't screw on the filter, simply hold it in front of the lens). We used a 77mm B+W circular polarizer here.

### 02 TV SCREEN

Most LCD screens emit polarized light. A TV is a good option as it gives you plenty of room to work with. If your TV has the YouTube app, simply search for 'white screen' and you'll find plenty of blank screen videos (or alternatively, display a plain white JPEG). Increase the brightness of the TV for a stronger light.

### 03 HARD PLASTICS

Clear hard plastic objects like the plastic champagne flutes here are ideal for this project. The cross polarization shows the residual stresses in action within the plastic as a vivid colour spectrum. Experiment with positioning the objects. You'll often find that a slight rotation can result in a different array of colours.



### 04 TRIPOD

A tripod isn't essential for this project but it is very helpful as it allows you to tweak the position of the plastic objects. It also allows you to shoot with a slower shutter speed, which comes in handy if you want to use a low ISO and a narrow aperture to expand the depth of field.

### 05 CAMERA SETTINGS

There's no right or wrong when it comes to exposure, so use whatever settings you're comfortable with. You might want to use exposure compensation to dial the light up or down to suit the subject. We're in Manual mode here with aperture f/8, ISO100, and shutter speed 1/10 sec.

### 06 REFLECTIVE PERSPEX

We've used a Perspex sheet placed on top of a black wooden board as a base for our cross polarized still life. This creates an array of colourful reflections that adds to the vivid effect. Turn off any other lights and close the curtains so that the TV is the only light source.

## TOP TIPS CROSS POLARIZATION PHOTOS

Experiment with different hard plastics and camera techniques

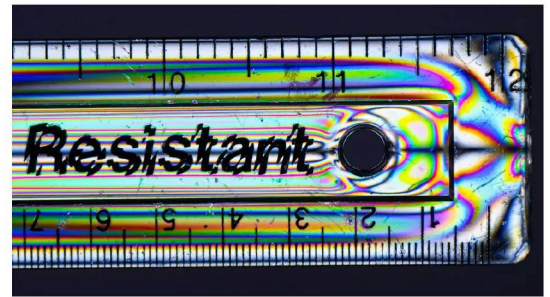
### WHAT IS POLARIZED LIGHT?

Light that is emitted from a source like the sun or a lightbulb has a random wave structure. Think of a wavelength drawn on paper, then imagine it in 3D, with the up/down wave structure oscillating out in all directions a bit like a helix. This is what non-polarized light looks like. By contrast, polarized light oscillates in one linear direction, kind of like reducing that 3D wave to 2D. When light reflects off a surface, it becomes partially polarized. As such, by rotating our polarizing filter, we can filter out the polarized light bouncing off the surface and cut through the glare in the reflected light.



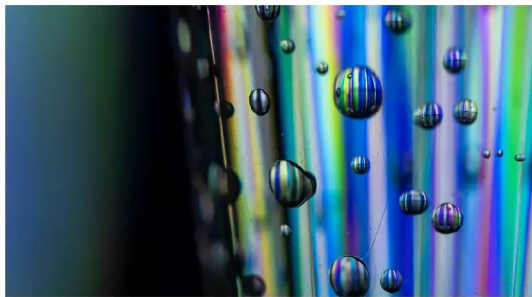
#### 01 CHOOSE WHITE OR BLACK

One of the most magical things about the project is how the TV or laptop screen behind the plastics can be made either totally black, white or something in between, depending on the rotation of the circular polarizing filter. So try rotating the filter to change the contrast and create a range of interesting effects.



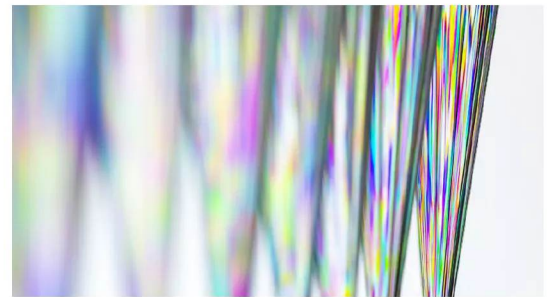
#### 02 USE DIFFERENT PLASTICS

Root around the house and you're likely to find all sorts of interesting objects that can be transformed into a vibrant still life subject thanks to cross polarization. Arrange the objects so that the screen backlights them from behind and, if the plastic is suitable, you'll be treated to a colourful spectrum.



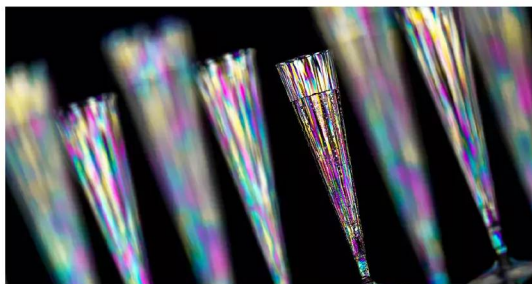
#### 03 TRY A MACRO LENS

If you have a macro lens this is a great time to experiment with extreme close ups. Go in tight on parts of the plastic object like the bubbles in the champagne flute here. Use a fairly narrow aperture like f/11 to expand your depth of field so that more of the close up details are in-focus.



#### 04 CREATE DEPTH

The great thing about using a TV for your polarized backlighting is that - as long as it's a fairly large screen - you can arrange your plastic objects at different distances to create a sense of depth in your cross-polarized photos. Here by focusing on the last in a line of flutes we get lovely foreground blur.



#### 05 EXPERIMENT WITH TILT

When capturing an array of similar objects like this it's worth experimenting with pattern-like arrangements, perhaps by spacing them all at equal distances. Try tethering your camera to a laptop or your phone to help you arrange things. Once done, an intentional tilt to the camera can lead to a dynamic composition.



#### 06 SHOOT A LONG EXPOSURE

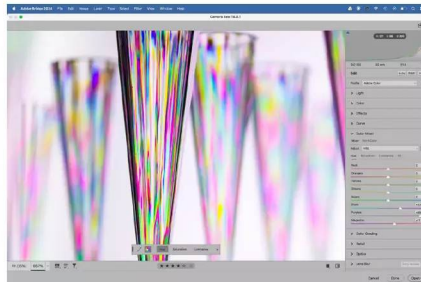
You can create interesting blur effects by slowing down your shutter speed and moving the plastic object during the exposure. This was shot at 2 seconds, aperture f/16, ISO100. This will only work with a black background, so first rotate your polarizer to make the TV screen go black.

# STEP BY STEP COLOUR-BOOSTING TIPS

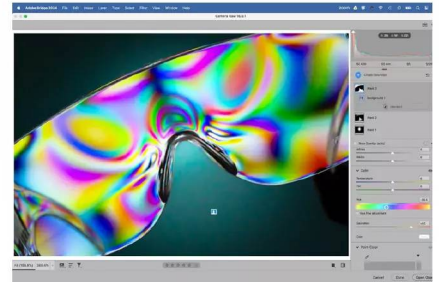
Top techniques for shifting and perfecting your colours in Photoshop



**01 MASTER THE CHANNEL MIXER**  
Photoshop's Channel Mixer Adjustment Layer is great for creative colour shifts. Use the dropdown menu to target the RGB channels and experiment with values. The combined value for each channel should be around +100. For instance, on the Blue channel you could use R -100, G 0, B +200.



**02 USE THE COLOR MIXER**  
The Color Mixer Panel in Camera Raw/Lightroom is one of the easiest tools for making colour changes. Go to the Hue tab then grab the target tool and drag over colours in the image. You can also adjust the colour saturation. For further control, experiment with the Point Color options.

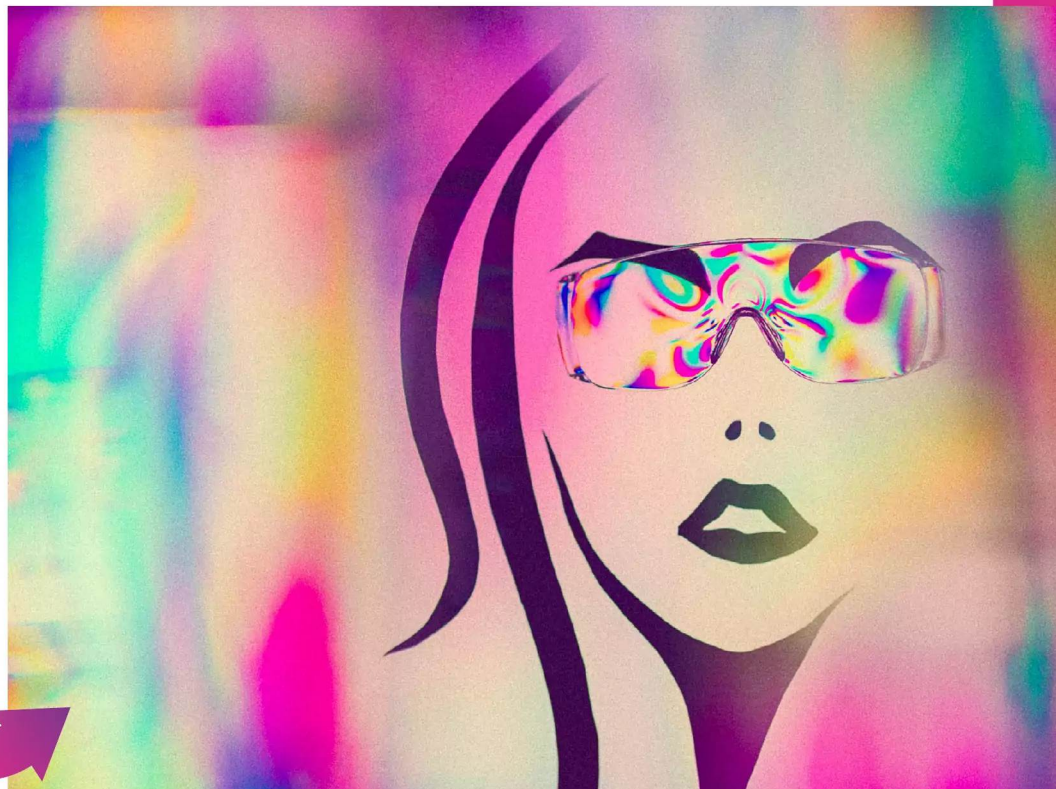


**03 COLOUR THE BACKDROP**  
A twist of your circular polarizer can turn the background black or white. But something in between will give you a grey that can be colorized. Open into Camera Raw or Lightroom, go to the mask panel and choose Select Background, then use the Hue control to change the colour.

# TAKE IT FURTHER GET CRAFTY WITH CROSS POLARIZATION

Cut out paper shapes and combine them with plastic objects for creative results

**START TO** experiment with cross polarization along with other creative techniques and you can come up with all kinds of interesting artwork. For instance, why not try combining the cross polarization technique with a bit of craftwork? For this image we cut out a few shapes from a sheet of black paper, then stuck them to our board of Perspex (now placed vertically and held in position with a clamp). We then stuck a pair of plastic goggles to the board, and experimented by placing other plastic objects very close to the camera lens to create blurry, out-of-focus colours in the foreground. Of course, the TV screen needs to be captured as white for this to work, so we need to rotate the circular polarizer on the lens until we have a bright backdrop rather than a dark one.





PROJECT 2

THE MISSION

To give photos the toy-town treatment

**Time needed**  
 One hour

**Skill level**  
 Beginner

**Kit needed**

- Any Canon EOS mirrorless camera or DSLR
- A telephoto lens (tilt-shift lens optional)

# Create a miniature toy-town scene

**Dan Mold** shows you how to turn cityscapes in to fantastic toy towns both in-camera and by using Photoshop CC

## PRO TIP

Camera-shake can be more prone to creeping in when taking photos with a telephoto lens. It's therefore worth using Image Stabilization, or setting up on a tripod if possible. Aim for a shutter speed that is at least the reciprocal of your focal length, such as 1/200 sec when shooting at 200mm, and so on.

**While we call this miniaturization look a 'tilt-shift' effect, it's actually only the tilting part of an expensive, specialist tilt-shift lens that will have the ability to shift the zone of focus in this artful way.**

Tilt-shift lenses are specialist optics, out of reach for most photographers (myself included). But for architectural and city photographers they're the holy grail, allowing users to move the lens along its axis, either left/right and the pitch, or up/down and the yaw, depending on which way the lens is set up, while still attached to its Canon body. Needless to say, this fancy functionality comes with a high price tag.

Fortunately the 'tilt' aspect, responsible for creating these toy-town effects, can be easily replicated in-camera, using Scene modes of some entry-level Canons, as well as in Photoshop. Shooting your start image with a telephoto lens provides the best results, as not only will you have a totally sharp shot to begin with to add blur in Photoshop; unlike with the in-camera filters, or even a tilt-shift effect, you'll be able to refine the blur after you've clicked the shutter button.

In this project we take a look at how you can achieve tilt-shift shots in-camera, as well as how to transform ordinary pictures into toy-town scenes. You can set the exact amount of blur, fine-tune where the sharp band of focus sits

on your image, and also boost the colours to really ramp up the playful miniaturized look, with the end result looking like a fabulous tiny toy town.

It helps to shoot from up high, whether that's from the stands at a football game, a cityscape from the top of a skyscraper or bridge, or a landscape from the top of a hill. This is so you can replicate the view we associate with those toy town scenes, like old children's TV shows, so things will look miniature once blur is added.

You'll also want a clear focal point that you can firmly fix your band of sharpness on, such as a person, vehicle, building, or the two cyclists in our example. Without further ado, let's get to it and create a toy town!

## STEP BY STEP ACHIEVE THE TOY-TOWN LOOK

Follow our expert tips to shoot a miniature effect in-camera or use post-production



### 01 IN-CAMERA SCENE MODES

Many entry-level Canons have a large bank of Scene modes to choose from. Cameras like the EOS R50 have a Miniature Effect mode, or Miniature Effect Movie mode as in the EOS M50 Mk II (above), allowing you to get the tilt-shift look in-camera.



### 02 TILT-SHIFT LENSES

Tilt-shift lenses, such as the Canon TS-E 24mm f/3.5L II, are expensive specialist optics that allow the lens to be tilted or shifted. While useful for correcting verticals in architecture, they can also shift the focus zone for a miniature effect in-camera.



### 03 USE A STANDARD ZOOM LENS

The most accessible way is to use a zoom lens, such as a 70-200mm on a full-frame (above) or 55-250mm on an APS-C. Shoot from somewhere high up such as a hill or a tall building so you can achieve a high perspective across your landscape.

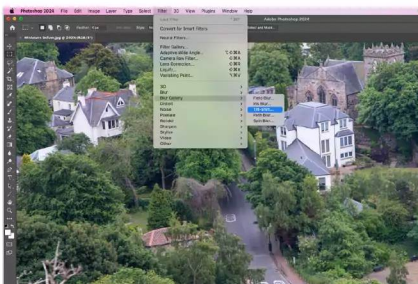


**BEFORE**



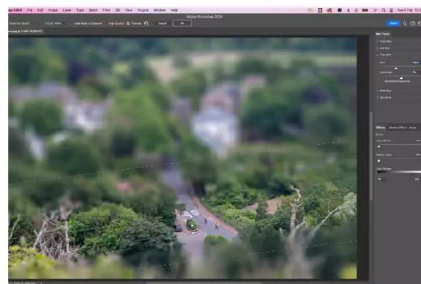
## QUICK TIP!

When editing in Photoshop hit Ctrl/Cmd+J to duplicate your background layer so that you're not working on the original image



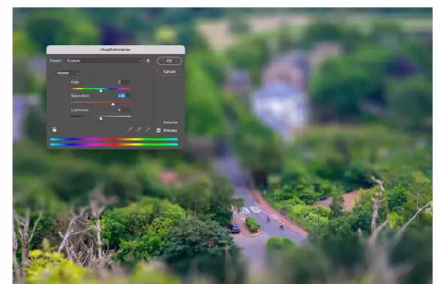
### 04 EDIT IN PHOTOSHOP

Shooting with a standard lens, your depth of field is likely to be fairly sharp across the scene, so we'll need to selectively add some blur to mimic the look of an expensive tilt-shift lens and create the toy-town effect. In Photoshop open your shot and go to Filter>Blur Gallery>Tilt-Shift.



### 05 REFINE THE EFFECT

Set Blur to 20px and Distortion to 0% then drag the centre reticule down to where you want the sharp band to be in your scene, and drag outside of it to change the angle. The two bands of straight and dotted lines either side can be dragged in or out to change the size of the sharp zone.



### 06 BOOST THE COLOURS

Click OK at the top of the screen to apply the effect then hit Ctrl/Cmd+U to bring up the Hue/Saturation panel and boost the Saturation to make the colours punchy and hit OK to apply. Then go to Image>Adjustments>Brightness/Contrast and give the Contrast a boost too.



PROJECT 3

THE MISSION

Deep clean your camera and lenses

**Time needed**  
 One hour

**Skill level**  
 Beginner

**Kit needed**

- Canon EOS & lens
- Rocket air blower
- Lens pen
- Microfibre cloth
- Sensor swabs

# Spring clean your kit

Dan Mold shows you how to give your Canon gear a professional clean

**D**ust is the nemesis of all photographers. Grit, grime, dirt and even sand can all find their way inside the intricate workings of your camera body or in the optics of your lenses to cause havoc.

While it's not the sexiest subject around, it's vital to keep kit clean,

and since cameras and lenses can cost a small fortune, it's only right that we give them the care they deserve to keep them in top condition. This also helps you keep the resale value high and stops those annoying little dust spots appearing in your photos.

Spring is the perfect time to do an annual deep clean of all your

camera kit, from lenses and bodies to camera bags. And while we probably should do it more often, once a year will probably suffice. While cleaning more serious dust and fungus from the inside of a lens is best left to an expert, we can do most of the essential cleaning at home with a few essential tools. 📷

## THE SETUP YOUR ESSENTIAL CLEANING TOOLS

The cleaning kit you'll need to keep your camera and lenses in tip top condition



**01 ROCKET AIR BLOWER**

A handheld rocket-style air pump is ideal for blasting off loose bits of dust and debris from your camera and lenses. They have a gentle pressure, and unlike canned air cleaners, an air blower won't spray moisture onto your sensitive equipment.

**02 LENS PEN & MICROFIBRE CLOTH**

For more stubborn grime you'll need to turn to a lens pen or microfibre cloth, although you'll want to use air power first so that you don't risk rubbing any grit or dirt further into your optics which could result in scratches.

**03 SENSOR CLEANING SWABS**

If dust spots still appear in your photos after cleaning your lenses then the dust is likely on the camera sensor. While we run through how to use sensor swabs to fix this issue, if you're unsure you could send off your body to be professionally cleaned.

## SPRING CLEANING

BEFORE



AFTER



### PRO TIP

Most lenses have a front filter thread that you can screw a filter into unless the front element is very bulbous, such as on some super wide-angle or fisheye lenses. A pro tip is to fit a high quality UV filter to your best lenses to keep the front element protected and free from dust. Your camera sensor will already have a UV filter on it, so the additional UV filter on the lens will have little effect on your images.

### QUICK TIP!

Try not to change lenses in windy conditions or at a sandy beach. Shield your kit from wind, dust and sand inside your kit bag or in a car

## PROJECT 3



### STEP 1 AIR POWER

The first step when cleaning delicate camera parts or optics is to use air power from a handheld rocket-style blower to knock off any loose dirt and debris so that these dirt particles don't get worked in further when using the next methods. Remove any lens filters too, and blow dust off them and the front element.

An often overlooked piece of kit is your camera bags and backpack. These can get filthy and any dirt or sand inside them from trips outdoors or to the beach can then end up on your nice clean equipment so give your bags and the internal dividers a good vacuum to suck up any loose sand, grit and debris to stop this finding its way back onto your lenses and camera bodies.



### STEP 2 MAKE CONTACT

When an air blower fails, you'll need to turn to a more powerful tool. It's worth moving onto using a lens pen or microfibre cloth. Official Lenspen products have soft lint-free brushes you can use to flick away any loose dust, and have a felt pad at the other end you can use to carefully buff out any dirty problem areas.

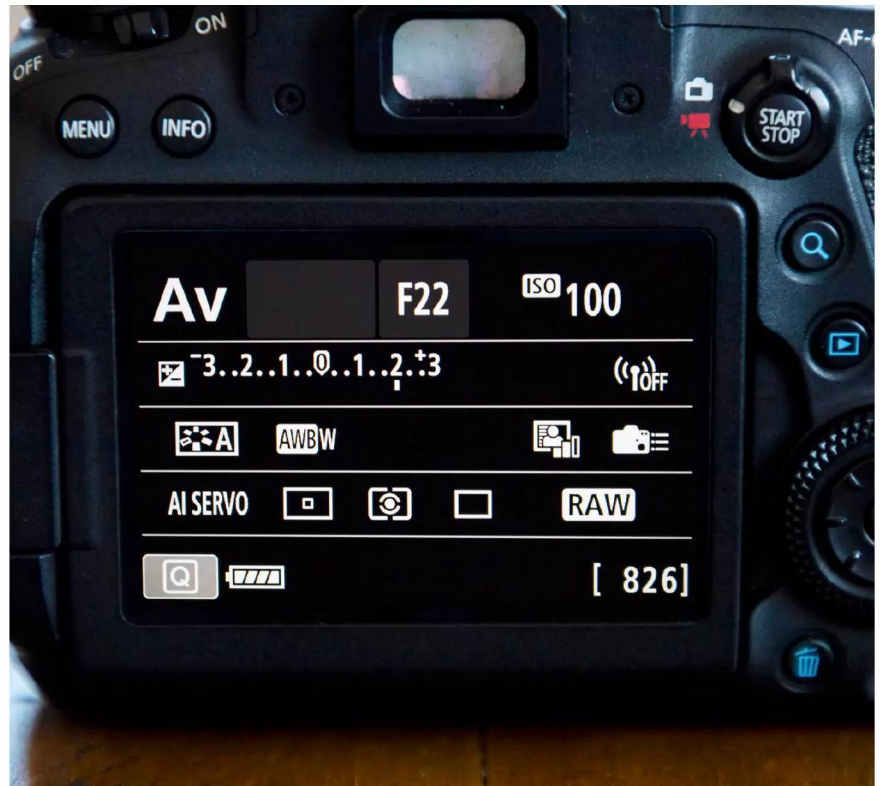
For more stubborn grime on your lenses, like greasy fingerprints, a microfibre cloth is a good choice. Make sure your cloth is clean and then breathe on to your front or rear element to create some clean condensation. Before the condensation evaporates you'll need to quickly buff it out with your microfibre cloth. The same process can be applied to all of your filters to keep them clean.





## STEP 3 CHECKING FOR DUST

An easy way to see if your sensor has dust spots is to take a photo of white A4 paper with a cross drawn in the middle, stuck to a wall. Use a tripod, a focal length around 50mm, and set your Canon to Av mode with a narrow aperture of f/22, and ISO100. Add +2-stops of exposure compensation so the white paper is exposed well. Fill your frame with the paper, autofocus on the cross in the middle, and take the shot. You'll then clearly see any dark dust spots on your sensor against the bright white paper. You can manually start in-camera sensor cleaning on your Canon via Sensor Cleaning>Clean Now in the menu (see below). But if dust spots remain you'll need to clean it with swabs, see Step 4 below.



## STEP 4 SENSOR CLEANING

When cleaning the sensor you're usually cleaning a UV filter sitting on top of the sensor, so they're not as delicate as you might think. But if you have any doubts you should send your EOS camera to be cleaned professionally. If you fancy doing it yourself you'll need quality swabs like the ones we used from Visible Dust. Remove the lens and put your Canon into its sensor cleaning mode via Sensor cleaning>Clean Manually. Use your swab and cleaning solution to go back and forth over the sensor with even, soft strokes. Then follow Step 3 to check for dust spots and if any persist you'll need to give it another treatment until all of the dust spots have been cleaned away.



LIGHTROOM CC



THE MISSION

Use Lightroom's colour tools to add Hollywood highlights

**Time needed**  
30 minutes

**Skill level**  
Beginner

**Kit needed**  
Lightroom CC

# Use colour grading for a cinematic look

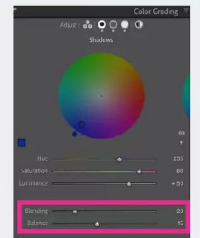
Sean McCormack shows you how to add movie magic to your photos in Lightroom using colour tools for a simple transformation process

Sometimes we all wish we could sprinkle a little movie magic on our photos. In fact, it's pretty simple to do and there are numerous colour tools in Lightroom to help us. You could use the Tone Curve's individual colour channels, or the often-missed Calibration panel. Even the HSL panel can be used for creative rather than corrective means. Here, though, you'll see the Color Grading panel in action. Located in the Develop module, Color

Grading makes use of three colour wheels: Shadows, Midtones and Highlights. The dot in each allows for simultaneous Hue and Saturation changes, while a slider below handles Luminosity changes. Holding down Shift while dragging the dot limits you to Saturation; holding the Command or Control key limits it to Hue only. In the individual views, you can click the disclosure triangle below the wheel to see all three control sliders. Open up the Lightroom.jpg start file, or one of your own images to begin. 📌

BLENDING SLIDER CONTROLS

**THE** Blending slider controls the overlap between sections. Balance shifts the colour to the Shadows on the left, or to the Highlights on the right.

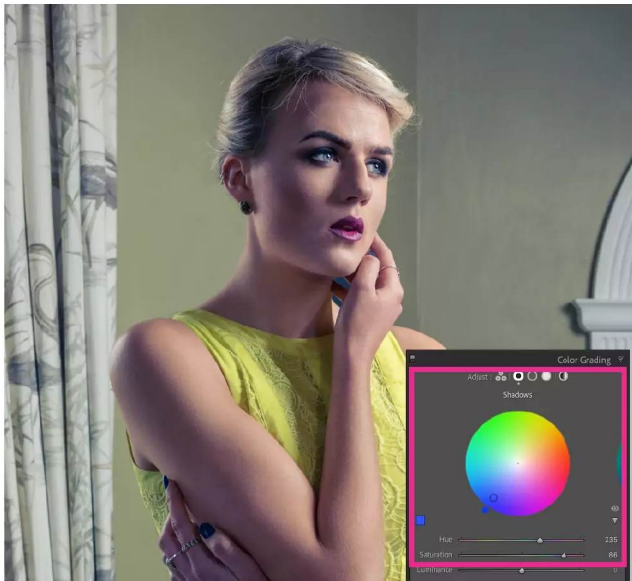


Try a Blending value of 20 and a Balance of -15 for this.

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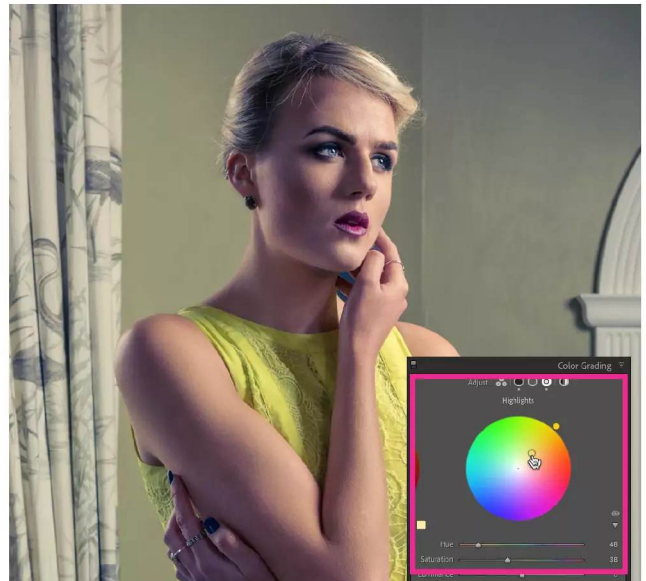
# STEP BY STEP SHADOWS TO MIDTONES TO HIGHLIGHTS

Get creative in Adobe Lightroom by working on colour grading to produce stylish retro images



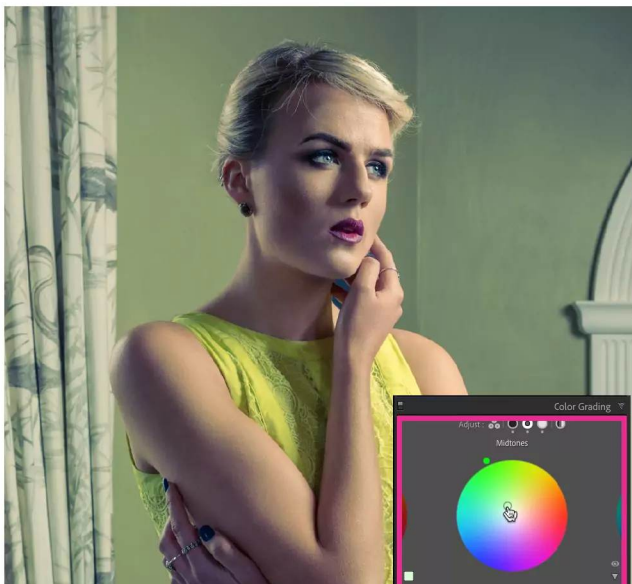
## 01 SELECT SHADOWS...

Select the three wheels together or individually. Selecting Shadows, we'll try a cooler tone. It helps to have high Saturation – a blue tone works well (H235, S86). While subtle is always better, this actually needs more Saturation.



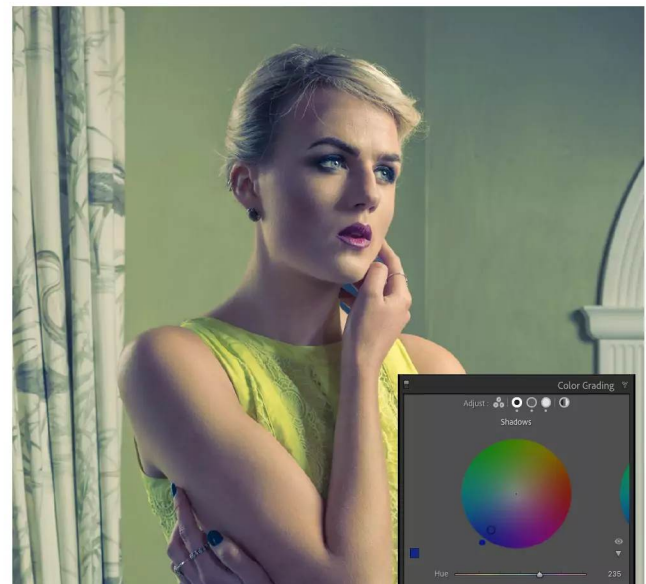
## 02 ... AND HIGHLIGHTS

Move to the Highlights wheel and look for a colour that enhances the natural warmth in the shot. Again, use a high Saturation value to find the right Hue, then decrease it. A yellow-orange tone looks good (H48, S36).



## 03 MOVE TO MIDTONES

Next, go to Midtones. So far you've been slightly off using complementary colours, so let's consider being close to tertiary colours – a mix of primary and secondary. As there's lots of green in the photo, add a green tone (H115, S18).



## 04 AND FINALLY...

For the final step, go back to Shadows. You've used Hue and Saturation, but not Luminosity. Increase Luminosity to make the black parts of the photo lighter in tone. Producing that really retro 'matte' look, a value of 50 is doing the business here.



BEFORE

AFTER

# Luminosity masking sets the tone for perfection

## THE MISSION

Take control of the brightness of different tonal ranges in images

**Time needed**  
45 minutes

**Skill level**  
Intermediate

**Kit needed**  
Photoshop CC

James Paterson shows you how to get to grips with this Photoshop CC Channels challenge

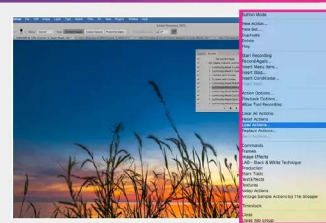
**L**uminosity masking is a powerful technique for selective tonal adjustments. It's often favoured by landscape photographers because it offers a fine degree of control over the brightness of different tonal ranges.

Essentially, Luminosity masking allows us to create selections of different areas of brightness. In our coastal scene here, it means we can target the bright areas of sky around the sun, or the dark groynes in the foreground, then enhance those areas with adjustments. There are several plug-ins that make Luminosity

masks, but to understand how they work, it helps to know how to create your own. We can do so by using simple selection shortcuts in combination with Channels in Photoshop. Our Channels panel enables us to isolate Luminosity by loading selections of different channel information.

From here, we can target the brighter and darker ranges of the image so we have several 'levels' of brightness and darkness. Once channels are set up, you can select a section of the tonal range, then use an Adjustment Layer to tweak the area. Open the Luminosity.jpg start file, or one of your own images and let's get started...

## FREE ACTIONS



**WE'VE** supplied a set of 10 Actions that create Luminosity masks. Download link on the left. To load them in Photoshop, go to Window > Actions and click the menu at the top. The first Actions let you create either three or five levels of Luminosity channels, either with or without Curves layers for each. Several of the Actions let you apply specific edits, like shifting the colours in a sky to make it more pink. Experiment with the Actions, then go to the Layers panel and tweak the Adjustment Layers to suit your image.

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# STEP BY STEP MASTERING LUMINOSITY MASKS

Use our free Actions to create your own Luminosity masks for a fine degree of control

## 01 CHANNELS PANEL

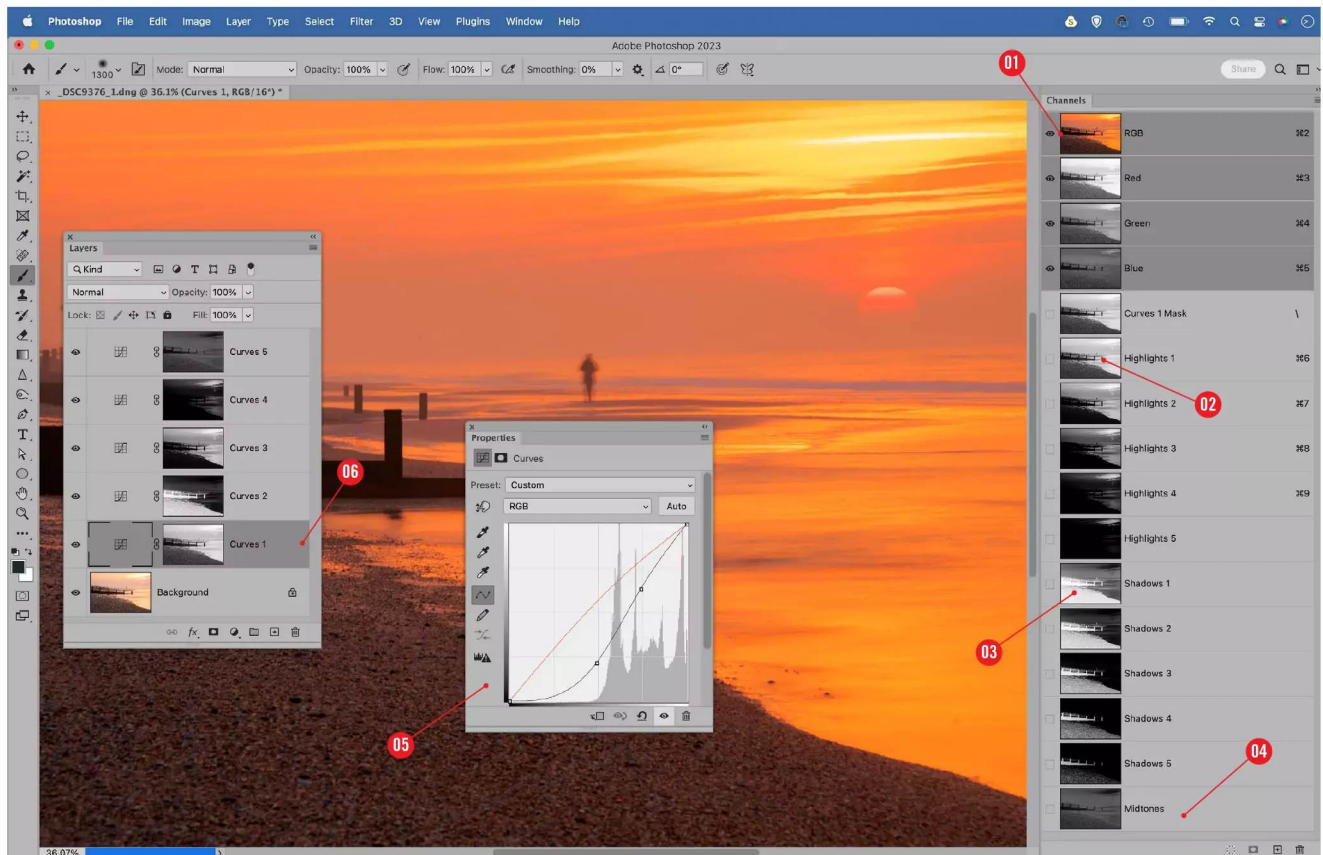
This separates the image into red, green and blue channels (for RGB images). We can also create our own channels. To begin making Luminosity masks, hold Cmd/Ctrl and click on the RGB channel. This loads the Luminosity of the image as a selection. Once done, click the 'Save selection as channel' icon. This is the first level of Highlights. Double-click to rename it as Highlights 1.

## 02 MAKE HIGHLIGHT CHANNELS

After making an initial channel, you can target the next level of brightness within this channel. Hold Cmd/Ctrl+Shift+Alt (this is the keyboard shortcut for Intersect) and then click on Highlights 1 to load the Luminosity of this channel as a selection, then click the 'Save Selection as channel' icon to create a new channel. Introduce as many highlight levels as you like.

## 03 CREATE SHADOWS CHANNELS

To create shadows levels, Cmd/Ctrl+click the RGB channel, then go to Select > Inverse. Now you can make your first shadows channel, renamed Shadows 1. From here, hold Cmd/Ctrl+Shift+Alt and click on the Shadows 1 channel to load the darker parts of it as a new selection, then make a new channel named Shadows 2. Now you can make more channels to target darker and darker ranges.



## 04 MAKE A MIDTONES CHANNEL

As well as making channels for different highlight and shadow levels, you can do it for midtones. Hold Cmd/Ctrl and click the Highlights 1 channel to load it as a selection, then hold Cmd/Ctrl+Shift+Alt and click Shadows 1. You might see a warning that nothing above 50% is selected, but that's fine; areas will still be included. Hit OK, click 'Save selection as channel' and rename it 'Midtones'.

## 05 USE ADJUSTMENT LAYERS

Use channels to target areas with precision. If the highlights are washed out then click through the highlight channels to find the best option – targeted areas will be white. Cmd/Ctrl+click the chosen channel, then click on the RGB channel to go to the normal view. Now go to the Layers panel, click the Create Adjustment Layer icon and choose Curves. Move the line to lighten or darken the area.

## 06 FINE-TUNE MASKS

When adjusting ranges of Luminosity you might find that you get some unwanted results. If so, highlight the layer mask of the relevant Adjustment Layer, then grab the Brush tool and paint black over the affected parts to exclude them from the effect. It usually takes a couple of strokes to fix the problem. To copy a mask to a new Adjustment Layer, hold Alt and drag the thumbnail across.



AFFINITY PHOTO



THE MISSION

Use the Develop Persona in Affinity Photo to boost your RAW portraits

**Time needed**  
15 minutes

**Skill level**  
Easy

**Kit needed**  
Affinity

# Portrait perfection

**James Paterson** shows you how to use the Develop Persona's powerful features in Affinity Photo to enhance your RAW portraits

**W**hen it comes to editing portraits, a few simple techniques can take your image in all kinds of interesting directions. In this project we'll explore a range of edits you can make in Affinity Photo. Most of these are carried out in the Develop Persona, which is the workspace for RAW editing. This is the place to process and enhance your raw photos before – if necessary – taking them into the main Photo Persona for further editing.

Straight out-of-camera RAW files tend to look a little flat and dull. But this is because RAWs are meant to give you the best possible starting point for editing. RAWs contain greater dynamic range and colour data than JPEGs, and we can use the tools in the Affinity Photo Develop Persona to harness all this extra data. This is why, as a rule of thumb, it's best to take a RAW image as far as we can using RAW the development tools, and only then open it into the Photo Persona for further editing if necessary. While the

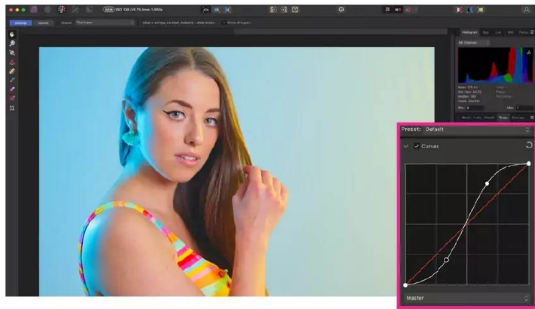
RAW tools in the Develop Persona lack the depth of features in the Photo Persona, there are still several powerful features like Curves and Overlays. We can use these to enhance our portrait, make local adjustments and to boost the colours.

We've supplied a portrait for you to try out but better to use your own, and it needn't even be a RAW file. You can edit JPEGs or TIFF files in the Develop Persona too, just click the icon at top left to open any image into Affinity Photo's RAW workspace. 📄

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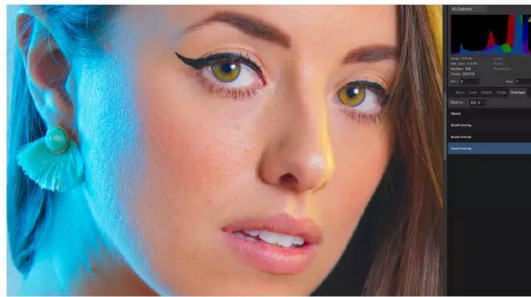
# STEP BY STEP RAW TRICKS FOR PORTRAITS

Boost portrait colours, add a vignette and enhance the eyes with simple edits



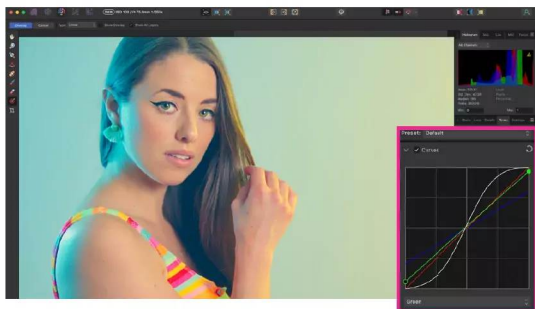
## 01 CLASSIC S-CURVE

Go to the Develop Persona. Go to the Curves panel and plot an S-shaped curve to boost contrast and saturation. Sometimes it's worth reducing the contrast using the Contrast slider, then adding it with an S-curve instead. This gives you a finer degree of control over shadows and highlights.



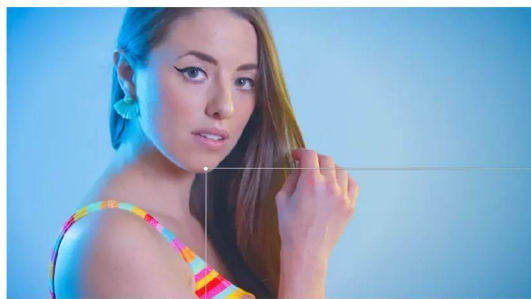
## 02 BOOST THE EYES

The Overlay tools allow you to paint over areas to make local adjustments. A subtle boost to the eyes can be very effective. Go to the Overlay panel and click on the brush then paint over the iris. Go to the Basic Panel and increase saturation and contrast. Repeat to lighten the whites of the eyes slightly.



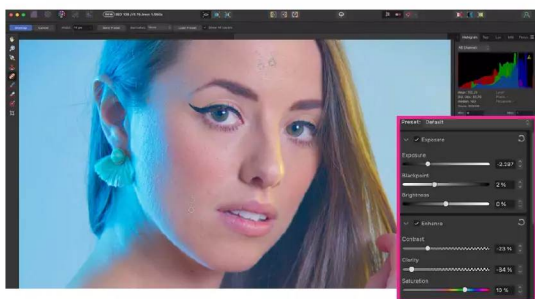
## 03 EXPERIMENT WITH CURVES

You can get all kinds of creative colour effects by experimenting with the curves channels. Go to the Curves Panel and change the dropdown from Master to Red, Green or Blue. Drag the top right and bottom left points inwards or up/down to introduce colour shifts to the shadows or highlights in the image.



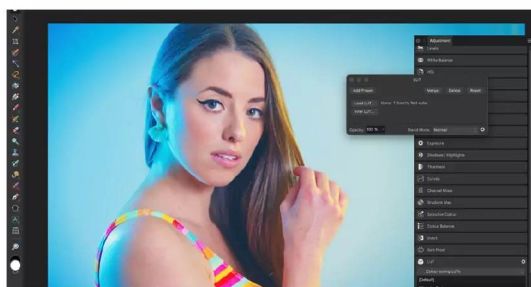
## 04 ADD A VIGNETTE

Portraits will often benefit from a vignette. First darken the image by reducing Exposure, and if you like drag the White Balance Temperature slider left to skew colours. Next grab the Gradient Overlay tool, set mode to Radial and drag out from the face to make an overlay, then increase Exposure to lift the face.



## 05 CLARITY REDUCTION

The Clarity setting can often look a little heavy, so try reducing it for a softer feel and act more kindly over skin. To remove spots or marks on the skin, grab the Blemish Removal tool. Use the ] and [ keys to resize the brush tip. Click over a mark, then if necessary drag the sample point to a clean area of skin nearby.



## 06 OPEN INTO THE PHOTO PERSONA

The RAW tools in Affinity Photo are basic compared with what can be done in the main Photo Persona. So once you have taken the RAW image as far as you can, click the Develop button at top left. If you like, you can try out the free LUT presets supplied in the project files (see right for our guide).

## QUICK TIP!

The Snapshot panel allows you to save points in your RAW workflow so you can create different snapshots of your images

## USE THE FREE LUTs

We've supplied a set of Colour Lookup Tables (LUTs) that allow you to quickly add colour treatments and different looks to your images in Affinity Photo. To load the LUTs, go to the Photo Persona, then go to Window>Adjustments. Expand the LUT section, click the cog and choose Import LUTs (you might also want to make a new category to house them). Once done, click through the LUTs to try them out. If an effect looks too strong, go to the Layers Panel where you'll find the LUT adjustment layer. Reduce the layer opacity to suit your image.

**NEXT MONTH  
FLARE EFFECTS**



*Scott Kelby is one of the biggest global names in photography training, as well as an author, podcaster, editor, blogger, and designer. We find out how he balances it all and still finds the energy to connect with live audiences*

**I** F YOU had to describe Scott Kelby's career in one word, it would be prolific. He's written over 100 books and is best known to many as the CEO of KelbyOne, one of the most comprehensive online training platforms for photography and image processing. And yet the qualities that stand out when speaking to Scott (or reading one of his books) are his warmth, humility and sense of humour.

In his twenties, he was making a living by playing keyboards full-time in bands and clubs, or as he puts it: "Mostly fulfilling the dream of being a starving musician." After a brief stint in the finance industry, Scott quit to start a graphic design business with his wife. This led to him starting a local newspaper for Mac enthusiasts, which over time grew into a national magazine available on bookstands. That got him into writing, and eventually a book publishing deal, and helped him launch his first live Photoshop seminar.

"I would sound a lot more intelligent if I said it was all carefully planned," says Scott, who believes that a lot of his career

# SCOTT KELBY

## 01 GUILIN, CHINA

The blue hour lends a mysterious atmosphere to this cormorant fisherman

Lens Canon RF 24-240mm F4-6.3 IS USM

Exposure 1/5 sec, f/5.6, ISO800



## 02 VALENSOLE, FRANCE

A single tree adds a focal point and contrast in these lavender fields

**Lens** Canon EF 70-200mm f/2.8L IS II USM

**Exposure** 1/80 sec, f/7.1, ISO100

## 03 NORWAY'S LOFOTEN ISLANDS

A 210-second exposure renders the water and clouds silky-smooth

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

**Exposure** 210 seconds, f/16, ISO100

## 04 SANTA MADDALENA

"The village is mostly to the right of this frame, but it's not as picturesque as this view," says Scott

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

**Exposure** 1/200 sec, f/7.1, ISO100

**"Taking my love of photography and joining it with my love of travel, makes the whole experience much more fun"**

was luck, a door opening when he least expected it, or one thing leading to another. It's easy to be carried along by Scott's optimism and energy, and it feels like he's been making much of his own luck all along. Here, we find out what he makes of AI photo editing, what photography worlds he wants to tackle next, and what the success of having the world's best-selling photography book really means...

### You've had a hugely varied career.

#### What got you into photography?

I'd never really thought much about photography growing up, but one day, my older brother came home with some 8x10 glossy prints from a trip he took to Europe, and I was just blown away. I couldn't believe someone I knew could take photos like that, and it intrigued me. My brother saw my enthusiasm for it, and when he bought a new camera, he gave me his old one (a Minolta SRT 101 film camera). I was off and running.

It wasn't long before a friend and I opened a small portrait studio, and I was shooting day and night non-stop. Shooting so much that I burned out on photography. I literally just stopped. I closed the studio, packed up my gear, and stored it all up in the attic, and I didn't touch it for about 10 or 12 years.

I was done with photography... until the day I held my first DSLR (a Nikon D1, back in 1999 or 2000). Seeing that image appear instantly on the back of the camera reignited my passion for photography, and I've been shooting and loving it, ever since.

### Was there a 'big break' moment?

I think it was when I wrote my book, *The Digital Photography Book* (I know, kind of an obvious name), as that book took off and sold millions of copies. It's translated into dozens of different languages. It's the no.1 bestselling book on digital photography in history, and it set off my career as an author, speaker, and instructor. That was a real turning point for me.

### For several years you were named as the top-selling author of books on photography globally. How does that make you feel?

Weird. This is something I'm sure a therapist or psychologist would have a field day with, but I work hard to write great books that I feel will help people – that will get results and make a significant difference in their enjoyment of photography. That leads to books that sell, sure, but then we receive awards or accolades, and I almost feel like it's



**As a photographer, you've shot many different genres. Do you follow your interests?**

Although I shoot many different genres (because I teach them), my passion lies in travel photography, portraiture, and sports photography. Take travel photography, for example. I love to travel – love it! So, taking my love of photography and joining it with my love of travel, makes the whole experience much more fun. Add my love of people, and toss in the occasional stop at a local burger joint, and it makes you want to grab a camera and run to the airport.

**Do you have a constant approach or style? It feels like sports photography requires a different mindset to your work on *The Great Indoors*, for example.**

You have to switch gears a lot mentally, but I enjoy that aspect of it. If I'm shooting portraits, a lot of the time, it's with flash or strobes; if I'm shooting sports or aviation, it's with long lenses outside and a totally different technique. Travel is a short compact lens (and lots of pasta). The varied gear and techniques keep things from getting stale or boring.

**You must have seen a lot of change in the photography**

happening to someone else. I'm very shy about it, and my publisher has to push me even to share the news because I don't like to toot my own horn. I guess I just want to focus on the education and not the accolades or high sales numbers.

**Does that success come with a certain level of pressure to follow up with more content? How do you deal with that?**

Oh my gosh, does it ever? It's like a band releasing a hit album. How do you follow it up? There's a lot of pressure to make the next one bigger and better, but I just try to keep my head down, do the right thing for the reader, and not get distracted by that pressure.

It's not easy to do because a lot of people are really counting on you. Following up a smash bestseller is not for the faint at heart.



**05 BEHIND-THE-SCENES STUDIO LIGHTING**  
This was captured with a simple one-light set-up – a 53-inch octa softbox

Lens	Canon EF 70-200mm f/2.8L IS II USM
Exposure	1/125 sec, f/9, ISO100

**06 THE HOWEY MANSION**  
The challenge here was taming the light coming in through the windows

Lens	Canon EF 16-35mm f/2.8L II USM
Exposure	1/25 sec, f/2.8, ISO400

**industry since you started. Do you think it's a different landscape now (no pun intended)?**

I do, and I think AI is already starting to turn our world a little upside down in that regard. We see it a lot in our post-processing in Photoshop and Lightroom and a little in our cameras themselves (features like eye autofocus) but things seem to be moving rapidly. Things that used to be so tedious in post-production have gotten almost ridiculously easy.

That has lowered the bar to entry for professional-level editing, and I know that has upset some folks who learned how to do all this stuff 'the hard way'. I get it, but it's here, and complaining about it won't make it go away. It's time to embrace and enjoy it or watch it run

over you. I saw this happen back in the transition from film to digital. It freaked many people out, but most eventually embraced it.

**Many know you as the president and CEO of KelbyOne – the online educational community for Photographers, Photoshop and Lightroom users. Were you an early adopter of Adobe editing software?**

I started using Photoshop in my day job as a graphic designer way before photographers embraced it for their work. I started back on Photoshop 2.0, so I was black-and-white scanning, colour conversions, and pre-press type stuff for years before it hit with photographers. When we completed our first full-day Photoshop seminar back in 1993, there was nothing out there like it and that propelled everything.

By 1999, we formed The National Association of Photoshop Professionals (NAPP). Then, a few years later, we started an online training platform called Kelby Training. When Adobe launched its subscription model, a lot of people were upset. People started dropping their memberships, telling us they wouldn't be 'renting' their software, so they would no longer be using Photoshop,

and thus, they would no longer need us to teach them. #ouch!

**How did KelbyOne grow into the huge platform it is now?**

We were losing 1,500+ members a month, but at the same time, our online training unit was taking off, so we merged NAPP and KelbyTraining into KelbyOne. Thankfully, everybody overcame their fear of a Photoshop subscription model (well, almost everybody), and we could grow again.

**You're no stranger to public speaking or giving photo talks. Have you always enjoyed that?**

There is nothing like the energy you get from speaking to a live audience. It is just about the most fun thing I get to do. You know that you have people in your life who, if they go to a great new restaurant, can't wait to tell all their friends so they can try it out? That's me. If I learn

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**“There is nothing like the energy you get from speaking to a live audience”**

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06

something new, I can't wait to share it, and when you're on stage sharing these things, and you see the light bulb go off in your audience's head, and they are right there with you – it's exhilarating. As an educator, it's so much fun connecting with your audience, and the energy and ideas that go back and forth.

### You haven't always shot with Canon. Why the switch?

I had been a Nikon user for many years – not because I did the research and carefully picked the right platform for me. It was because my brother gave me one of his hand-me-down Nikon cameras, so I was a Nikon guy from the start. But the first time I shot a pro football game with a Canon rig, that was it for me – I fell in love. Before long, I had switched entirely over to Canon.

I think your choice of camera is a very personal thing. This is the tool you use to make your art, and it has to connect with you. It has to feel right in your hands, and the menus have to make sense to you. You want to feel like you are working together to achieve a common goal – to create something beautiful, interesting, or fun, so it has to be a fit.

Nikon makes great cameras. But Canon speaks to me on an artistic level and a technical one as well. For example,

## STORY BEHIND THE SHOT



### Sunset in the Faroe Islands

Scott's patience was rewarded when the fog cleared at sunset

It's hard to believe that 15 minutes before I took this shot, the landscape was so heavily soaked with fog that we could barely see the waterfall. But, we set up our tripods, waited and suddenly it cleared. There's a lesson in

that. This was taken with the Canon EOS R full-frame mirrorless, and I was loving it, having previously come from a long line of DSLR cameras. I had the Canon EF 16-35mm f/4L IS USM attached using the EF-EOS R lens adapter.



## PROFILE

### Scott Kelby

Travel photographer, author, tutor and KelbyOne CEO

Scott Kelby is a photographer, designer, podcast host, and the award-winning author of more than 100 books, including *The Digital Photography Book* series and *The iPhone Photography Book*. He lives in the US in the Tampa Bay Area of Florida with his wife, daughter and three 'awesome doggos' (two Belgian Tervurens and a small Coton de Tuleur) but loves to travel as often as he can.

Scott shoots a wide variety of subjects and photo genres, including sports, portraits, automotive, fashion, and travel. He started taking photos in the film era and began his digital career with a Nikon D1 at the turn of the millennium, but he's been using Canon since testing the EOS-1D X at a football game.

Scott was also the president and founder of the National Association of Photoshop Professionals (NAPP), which merged with Kelbytraining.com in 2008 to become KelbyOne, a huge online training platform for Adobe Photoshop, Photography and Lightroom. Currently, Scott is working on a new book called *Crush The Composition* which looks at photographic composition outside the typical rules.

**Instagram:** @scottkelby  
**Website:** www.scottkelby.com

**Next issue:** Tommy Reynolds, professional wedding and portrait photographer

I love the way Canon cameras render skin tone, and I don't think any other camera matches it. And without doubt, Canon glass is also unbeatable.

#### What Canon gear would we find in your bag now?

My go-to body is my Canon EOS R6 Mark II full-frame mirrorless camera, which does everything I want and more. I primarily use one lens for travel – the RF 24-240mm F4-6.3 IS USM – but I also have the wide RF 14-35mm F4L IS USM in case I shoot a classic interior shot. My go-to lenses for portraits are my Canon EF 70-200mm f/2.8L USM and my RF 85mm F1.2L USM. For sports, it's my Canon EOS-1D X and my EF 400mm f/2.8L IS III USM telephoto prime.

#### It's such a cliché question, but do you prefer working in natural light or a studio? Actually, does it even matter?

I love them both. When you use natural light, you can only shoot in the day and you're somewhat at the mercy of Mother Nature, and when you get gorgeous window light, there's just nothing like it. But, at the same time, I love using flash or strobes because you can control and shape the light in ways you rarely get to do with natural light. The best part is – we can do both, and I love both for their unique qualities.

#### What's been the highlight of your photography work so far?

I think it's been those opportunities when you get to do something or get special after-hours access to shoot somewhere

that would normally be off-limits. I'll never forget my first time walking out of the stadium tunnel onto the field to shoot my first NFL Football Game (American football). I thought my heart was going to burst. Or the time I got permission to shoot from the second floor of a monastery library in Prague – I couldn't believe it was happening.

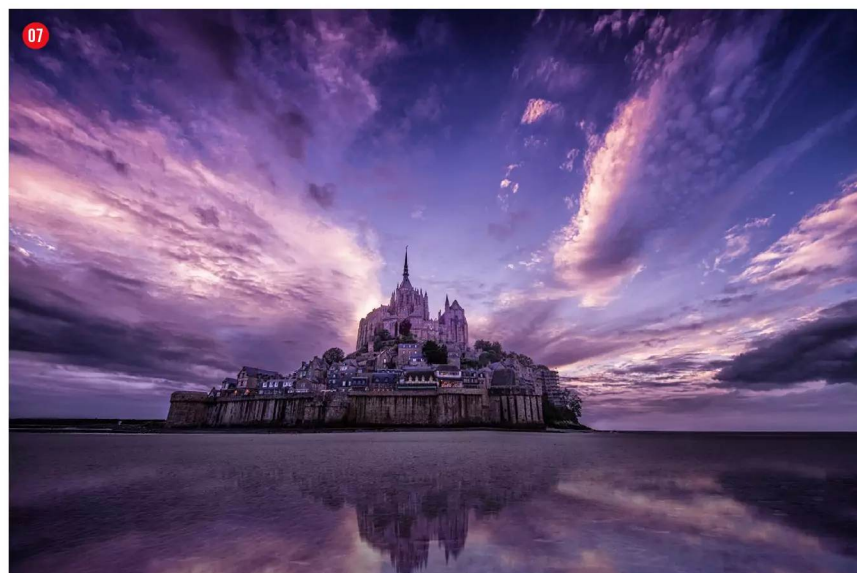
I've been very fortunate to have opportunities like that, in some cases from being a book author or magazine publisher or from just asking nicely, and I never take them for granted. It's such a treat, and the euphoric feeling you get when you know you're getting into one of those places or getting access to shoot an event is so memorable and exciting.

#### I see the 'creative pause' on your scottkelby.com, which has been running for almost 19 years...

I write two blogs, scottkelby.com and lightroomkillertips.com, and it's kind of like that old Russian proverb, 'If you chase two rabbits, you'll catch neither one.' I wasn't giving either one of them the care and attention they deserve, so I decided to focus on lightroomkillertips. Now I enjoy blogging again as I don't feel guilty and I'm doing my readers a solid.

#### We spoke earlier about having a varied career. Is it challenging to find time to fit in everything?

Sometimes, but the nice thing about running your own company is that you have a team behind you, so fairly often you can step away to do other things, like travel or shoot a game or an airshow, and everything doesn't fall apart. I've got an





amazing team at KelbyOne, with lots of support, and that frees me to have time to be creative and spend time with my family and friends.

### And if you could only focus on one area for the rest of your career...?

It would be travel photography. I so love to travel, and I go light with my gear and still get the type of shots I want to. I can photograph people through my travel images, and I get to see incredible places, meet neat people, eat great food, and learn about different cultures. Plus, my family loves to travel with me, so we go on a lot of fun holidays together.

### You lead many training sessions with photographers and editors of all levels. What is your advice to hobbyists who want to turn pro?

If you want to go pro, you need to

**“ I get to see incredible places, meet neat people, eat great food, and learn about different cultures”**

develop your signature look – one that’s repeatable for you again and again. The more unique it is to you, the more you’ll work. Today’s cameras are so good – heck, even our phones can take great photos – so if everybody today can take a pretty decent photo, why would anybody pay to hire you? They will hire you if you have a unique look they can’t easily achieve on their own or from their ‘friend with a nice camera’.

Chances are a lot of this look will come from what you do in post-processing, but it might also have to do with how you compose or see a scene. Realistically, it’s probably mostly coming from your post-processing in Photoshop.

You’ll know you have a style or a look when friends or other photographers look at one of your images and say something like, ‘I knew that was one of yours’.

That’s when you know you’re developing your signature look – when other people start to recognize your images as one of yours immediately. I could pick a Joe McNally portrait from a stack of prints in two seconds. That’s what I’m talking about. The same goes for a Peter Hurley headshot.

I can tell you if it’s one of Peter’s (or one of his students or proteges). That’s the first step – getting your look. Then, I would recommend putting the rest of

### 07 MONT SAINT-MICHEL, NORMANDY, FRANCE

After four hours of driving under grey skies, the rain stopped and an incredible sunset emerged over Mont Saint-Michel

Lens Sigma 14-24mm f/2.8 DG HSM Art

Exposure 1/30 sec, f/11, ISO100

### 08 ALL ABOARD

A tram winds up the streets of Lisbon, Portugal

Lens Canon EF 70-200mm f/2.8L IS II USM

Exposure 1/25 sec, f/2.8, ISO800

your energy into getting good at marketing yourself or getting signed on with an agent to do it for you.

### What’s next for you?

I feel like my best images are still inside me. I’m pretty consistently frustrated with my work because I know I can do better, and what’s next for me this year is setting aside some time to work on personal projects and shooting for my portfolio.

I spend so much time creating images during an online course recording or during a live on-stage demo that I don’t often take the time to plan and set up a shoot just for me, so this year, I’m going to focus more on that. 📷

# PHOTOSTORIES

Photo essays from *PhotoPlus* readers  
and professional photographers alike

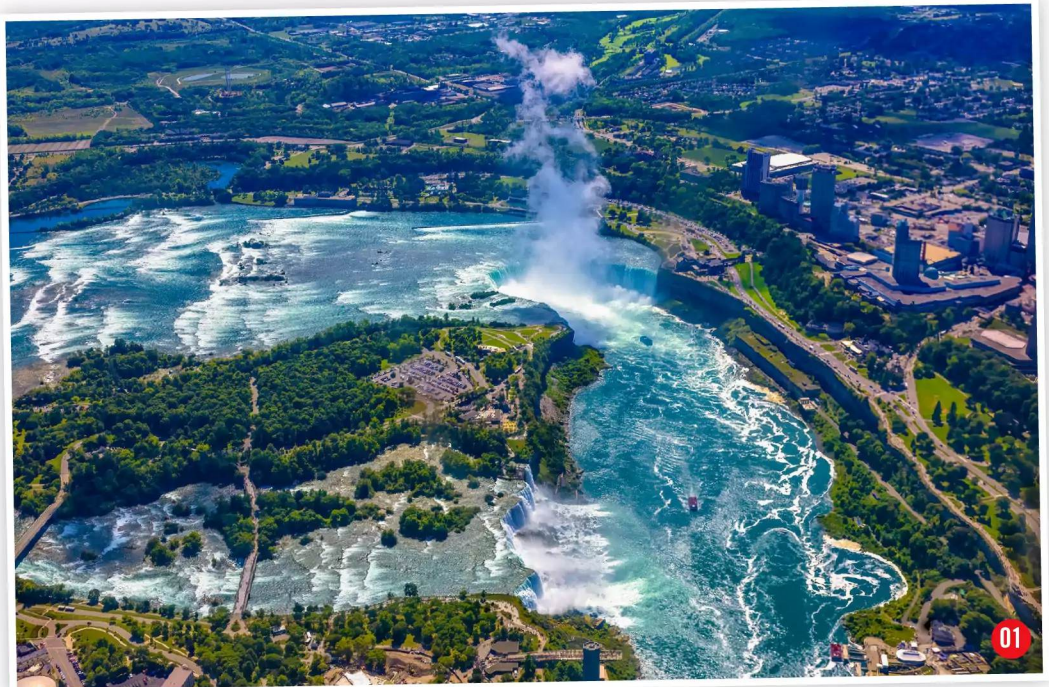
JOIN IN  
THE FUN!

One of the great things about photography is being able to share your view of the world. This month one photographer braves Niagara Falls from the air, while another hits the road to capture the nation's beauty spots.

**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:** Premjith Narayanan

**LOCATION:** Niagara Falls

**MISSION:** To showcase the raw power awe of this stunning landmark in North America

**KIT:** Canon EOS R3, Canon EF 16-35mm f/2.8L III USM and Canon RF 24-70mm F2.8L IS USM

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

## Niagara Falls

Premjith takes to the sky with his new friend to capture a unique view of North America's most powerful waterfalls

**N**iagara Falls sits on the border of New York State in the US and Ontario in Canada. I wanted to cover all angles so I arranged to take photos from the skies in a helicopter, and later at eye-level from a boat.

I have past experience in aerial photography in Switzerland, Iceland and Bahrain, mainly terrestrial and alpine mountain shoots. I knew that it was important

to select the right camera and lens combination. In this case I chose a Canon EOS R3 which has a super-high speed burst rate to help me maximise my chances of catching the perfect moment, as well as the crisp and sharp Canon RF 24-70mm F2.8L IS USM lens which offered a lot of flexibility with its zoom range.

I ensured that my shutter speed was high enough to counter any movement and vibrations caused by the chopper, trying to achieve



02



03

around 1/1000 sec. For some angles I was shooting into the strong sunlight which was challenging and I needed to check my images regularly to make sure the highlights weren't over exposed.

I also wanted to take some pictures downstream from a boat to get a totally different perspective. The results from both were quite heartening.

Shooting from the boat had its own set of challenges. Water spray was very high and this can cause severe damage to the lens and the camera, so precautions had to be taken. The rocking motion of the

boat was also destabilising, but shooting with the EOS R3's blisteringly quick burst mode helped ensure at least one of my images would be sharp and well composed.

At close quarters it was difficult to squeeze in the vast falls into a single frame, but taking multiple images and stitching them into a panorama worked well.

My top tip if you want to shoot Niagara Falls from the skies, or any location for that matter, is to make the pilot your best friend and the world below will be yours for the taking! 📸

**01 NIAGARA FALLS AND AMERICAN FALLS BY HELICOPTER**

Shooting at 40mm Premjith has caught a wonderful aerial landscape with both the Niagara and American waterfalls in shot

**Lens** Canon RF 24-70mm F2.8L IS USM **Exposure** 1/800 sec, f/9, ISO250

**02 AMERICAN FALLS BY BOAT**

Premjith took a panorama to squeeze in all of the detail of the awesome American Falls up close

**Lens** Canon RF 24-70mm F2.8L IS USM **Exposure** 1/1250 sec, f/7.1, ISO100

**03 NIAGARA FALLS BY NIGHT**

From May through to October, Niagara Falls is illuminated at night with a fireworks display

**Lens** Canon EF 16-35mm f/2.8L III USM **Exposure** 1/5 sec, f/5, ISO3200

**PhotoPlus** FEEDBACK

*Premjith has done a cracking job at capturing these stunning waterfalls by air and by water, he's taken his photography to new heights - literally! He's done a superb job at ensuring his images are nice and sharp, by masterfully focusing and opting for a fast shutter speed to counteract any movement from the boat or helicopter. His images are also beautifully sunny and colourful, as well as retaining some of the brighter details without them burning out. Our only slight issue is that his horizontal panorama from the boat looks a little squished and we think it just needs stretching ever so slightly to make the proportions of the falls look natural. This small issue aside, his waterfall shots are fit to appear on a postcard!*



01

## PROJECT INFO



**NAME:** Phil Dunn

**LOCATION:** Lee Bay, Anglesey, Southwold, Tollesbury

**MISSION:** To travel the UK by camper van and take top shots of beautiful coastal towns

**KIT:** Canon EOS 850D and EOS 6D Mark II, Canon EF 16-35mm f/4L USM and Canon EF 24-105mm f/4L IS USM

**INSTAGRAM:** @phil.dunn.pics

## By the seaside

Newly retired Phil has been travelling the UK and rising early to enjoy photographing seaside towns in all their glory

**A**fter our retirement a few years ago, my wife and I found we were able to spend much more of our time travelling the UK in our

beloved motorhome, and exploring the wonderfully varied scenery around our islands. Ranging from the nearby wild areas of East Anglia to stunningly beautiful distant places such as Loch Lomond and Skye. Presented with such excellent photo opportunities, my thoughts soon turned to photography, so I bought my first Canon EOS DSLR and slowly built up a selection of second-hand lenses.

I soon realised there was much more to successful photography than I anticipated, and I joined a local photographic society to help me get to grips with the skills I needed to do justice to the beautiful locations we were visiting. What I did not

appreciate was the peace and tranquillity that photography would bring me. Of course, having more time to explore our beautiful country plays a big part in allowing me to relax, but I feel that the photography, by thinking about photographic techniques, especially when using a tripod, makes me really take my time and think more about my surroundings and how best to capture the

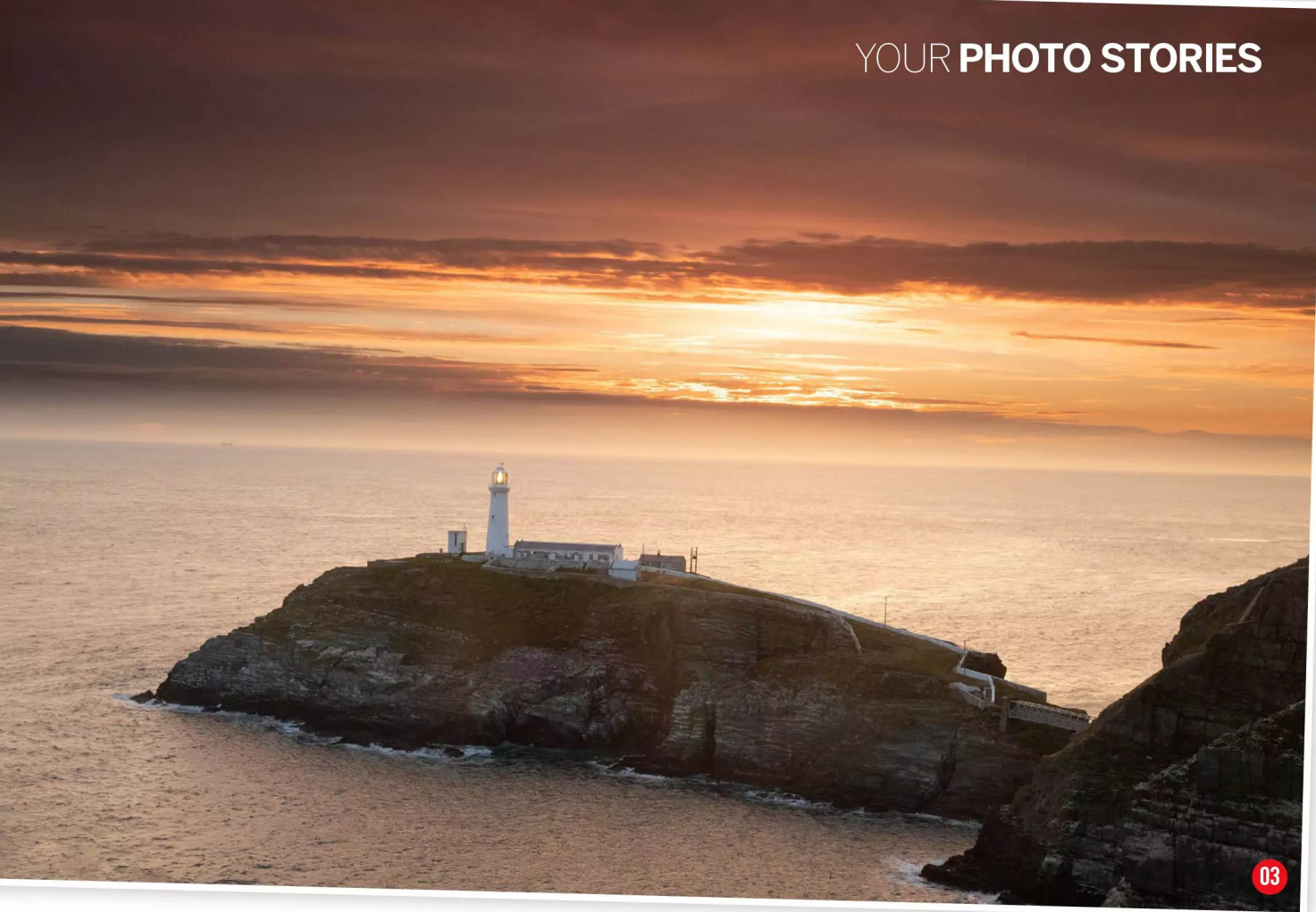
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**“I got up early enough to take photos of the sunrise from the beach”**

---



02



**01 TOLLESBURY**  
A row of trees makes for an interesting composition at Tollesbury

Lens Canon EF 24-105mm f/4L IS USM Exposure 30 secs, f/11, ISO100

**02 LEE BAY**  
Sea fog in the afternoon resulted in some moody lighting

Lens Canon EF 24-105mm f/4L IS USM Exposure 190 sec, f/11, ISO100

**03 SOUTH STACK**  
The iconic lighthouse at South Stack in Anglesey is lit beautifully at sunset, Phil using a long exposure to subtly blur the waters

Lens Canon EF 24-105mm f/4L IS USM Exposure 4 secs, f/11, ISO400

**04 SOUTHWOLD BEACH HUTS**  
One of Phil's most profound photographic experiences was this Southwold sunrise – and the feeling of peace with the world after

Lens Canon EF 24-105mm f/4L IS USM Exposure 1/250 sec, f/5, ISO4000

joy of moment. Consequently, nothing raises my spirits more than when, back home, I go through my photos and see something which reflects, at least to some extent, the beauty of the wonderful places we have seen. Couple that with the copious outdoor walking we enjoy during those travels and I can't imagine a more rewarding and relaxing way to spend my time.

One of my fondest memories was in Southwold where, one fine morning, I got

up early enough to take photos of the sunrise from the beach. After enjoying the beautiful sunrise, I walked along the beach into the village, where I bought a coffee and sat outside the church on the high street, watching shopkeepers setting up for the day as the town slowly stirred from its slumber. I don't ever remember feeling a greater sense of peace with the world as I did that morning, which I wouldn't have witnessed were it not for my Canon DSLR. ☘

## PhotoPlus FEEDBACK

*Phil has done a lovely job at capturing the best of the British coastline and we're sure he'll continue to do so as he visits more stunning scenery in his motorhome. It's a great reminder that photography can be a really helpful hobby for keeping active, expressing your creativity and getting you out into nature. There's a lot to like about Phil's technique and compositions, the exposures all look pretty spot on and he's been rewarded with some belting sunrises by getting up at the crack of dawn. We look forward to seeing where he ends up next!*

# MYKIT

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

“My love and passion for the great outdoors came at a young age as I grew up in Dorset on the south coast”

## Jack Lodge

Canon professional landscape and wildlife photographer Jack Lodge lives on the Jurassic Coast, where he's in the prime position to catch top scenic shots

**picked up my first camera, a Canon EOS 100D, back in 2014, just after starting my architectural studies.**

**I wanted to document my travels in Europe and I found the steep learning curve very addictive.**

From that moment on, I fell in love with photography. My love and passion for the great outdoors came at a young age as I grew up in Dorset on the south coast; it's a playground for exploring the Jurassic Coast, countryside and magical woodlands.

I started taking landscape photography seriously in 2017. I fell in love with capturing the changing seasons. Chasing light across the landscape in summer, walking through enchanting woodlands during spring, catching crashing waves at sunrise in winter, and surrounding myself with mesmerizing autumn colours. Capturing the change of seasons quickly became 'my thing' and landscapes became my happy place.

I soon discovered my day job in architecture wasn't for me, so over the next five years,

I planned my journey into taking my photography full-time, and in 2022, I finally took the plunge to go pro.

Fast-forward to the present day and I'm beyond happy. I run workshops up and down the country, work with big brands, and share my passion with as many people as I can. All I can recommend to anyone who has found their passion in life is to pursue that, surround yourself with good people and friends who support you, and, more importantly, believe in yourself. 📷

### WHAT DO I DO?



**Jack Lodge**

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

**BASED** down in Wimborne, Dorset, Jack is perfectly placed for landscapes and seascape on the stunning Jurassic Coast. His image 'Winter at Win Green' was shortlisted in the Landscape Photographer of the Year 2022 contest, and he runs landscape and wildlife workshops, from Dorset to Snowdonia, all year round. Be sure to check out his Instagram @jacklodgephotography to see more of his wonderful landscapes and visit his website (linke above) if you are interested in booking a workshop.





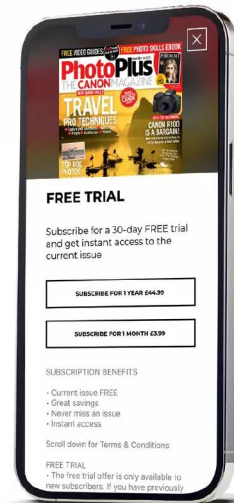
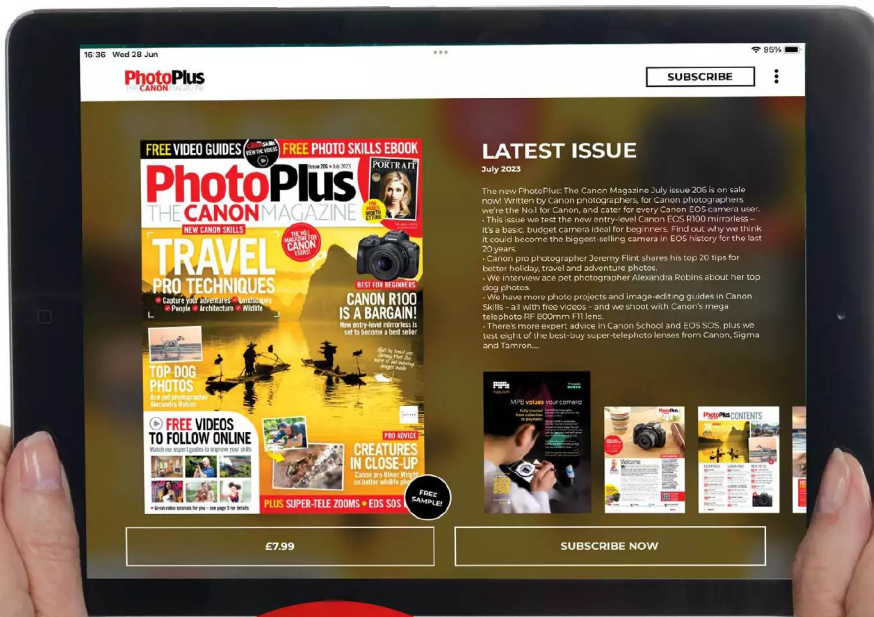
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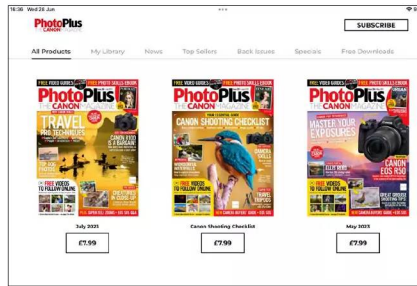
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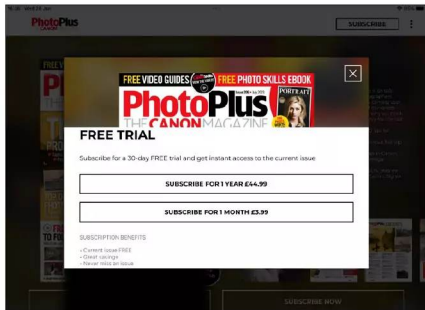
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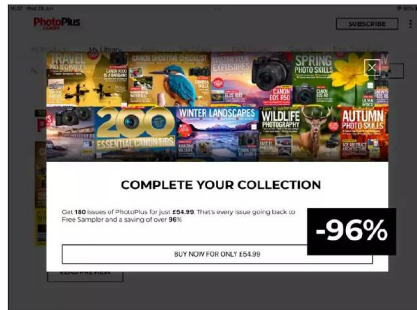
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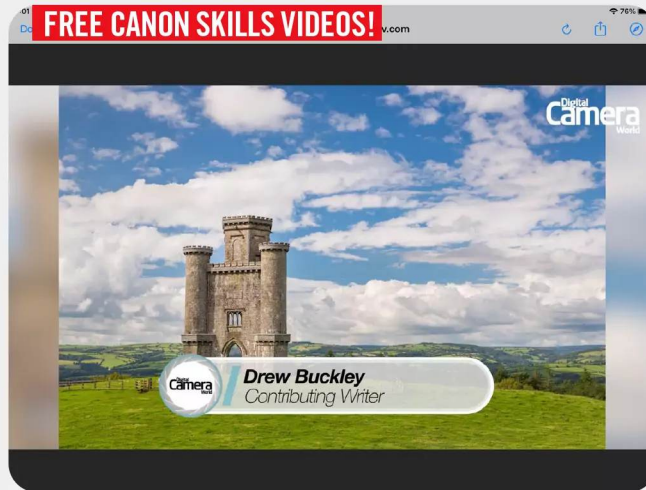
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### time

motion blur into moving water in your set your shutter speed to 1/30 sec it will enter your camera at this speed, so adjust your aperture to compensate for a correct exposure. Below 1/60 sec will likely require support to stop camera shake.

### exposure triangle

The exposure triangle is the key to your Canon camera and photography to the next level. By understanding the relationship between aperture, shutter speed, and ISO, you'll be able to create perfectly exposed and creatively interesting images. It's time to learn about the exposure triangle and how one setting affects the others. Learn how quickly your 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 38 of our series: The EOS R System autofocus is out of this world, but some conditions demand manual focus

## 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.



## Manual focusing

How to get sharper results without AF

**C**anon EOS R System cameras have taken AI autofocus to another level.

The intelligent subject detection in models such as the EOS R6 Mark II and EOS R3 is so good that you really can let the camera take care of autofocusing, while you work on other aspects of creating a great photo.

There are still occasions when you'll want to touch up the focus distance manually or take complete control though. If there's not enough contrast between the subject and the rest of the scene, for example, then there won't be anything for the AF system to 'bite' onto. The lens will repeatedly try to focus back and forth, from the closest distance to the horizon and back again, without locking on. The same can happen in low light conditions.

Fast subjects can cause problems too, particularly for EOS cameras that aren't equipped with a slew of sensitive AF points or the latest DIGIC X image processor. Pre-focusing the lens at a point where you anticipate the subject is going to appear, and then switching the lens to manual focus (MF), can allow you to capture a shot without delay when the subject appears. The drawback is that the camera won't refocus as the subject moves.

Some shooting situations can confuse the AF system such as shooting through a window where the AF might lock onto a reflection or the glass. But taking charge of manual focusing isn't as daunting as it sounds, as EOS cameras are equipped with a number of functions that enable you to get sharp results with the minimum of hassle.

### Autofocus isn't always an option

**THERE MAY** be creative reasons to turn to manual focusing. If you're going to combine images in software later, such as when you're shooting a panorama, then it often pays to keep the focus locked in the same position so that you have consistency across the sequence. Shots that involve moving the camera during a long

exposure to get intentionally blurred results can benefit from being pre-focused manually, as it will allow you to then concentrate on composition and movement. There are also a handful of lenses that don't have autofocus – such as tilt-shift lenses – so you will have to brush up on your manual focus skills.



Manual focus is ideal for shooting macro subjects, where you want to control the magnification



## FIND THE SWITCH

# Switching to manual focus

Most lenses have an MF switch, but some cameras do as well

**Y**ou won't find a manual focus option on the majority of EOS cameras. To use manual, you'll generally need to set the AF/MF switch on the lens to MF – look for 'MF' or 'M Focus' on the camera's display(s) and in the viewfinder to confirm the change. If you're using a lens that isn't equipped with a focus mode switch, then you'll need to set 'MF' in the menu or via

**the dedicated button (or customizable button) on the camera, if present.**

Many lenses offer full-time manual focusing (FTM), which means that you can turn the focus ring to touch up the focus even when the focus switch on the lens is set to AF.

This is designed to be used when the autofocus is set to One-Shot AF – with Servo AF, the camera will simply readjust the focus as you rotate the focus ring. To use FTM, you'll

need to keep your finger half-pressed on the shutter release once the camera has achieved focus in One-Shot AF. If you take your finger off the shutter button, focus manually and then press the shutter button to take a picture, the autofocus will kick into life again. You can get around this by removing the AF function from the shutter release button via your

camera's Custom Functions, and assigning it to one of the thumb buttons on the back of the camera – aka back button focusing. That way, you don't have to keep your finger on the shutter button, and when you do press it, only the metering will activate before you take your photograph.



## Electronic focusing

Manual doesn't always mean mechanical

**T**he majority of Canon's EF and EF-S 'USM' (Ultrasonic Motor) lenses for EOS DSLRs have a physical connection between the focusing ring and the focusing optics. There are exceptions though, such as the EF 85mm f/1.2L II USM and the EF-S 18-135mm f/3.5-5.6 IS USM, both of which utilize electronic manual focusing instead.

Electronic focusing is a focus-by-wire system, where the camera adjusts the focusing distance via a motor when you turn the focusing ring. Lenses that are designed for the mirrorless EOS R System, as well as DSLR lenses that are equipped with an 'STM' (Stepping Motor) instead of a USM, also only offer electronic focusing.

One of the potential drawbacks with an electronic focusing ring is that isn't as tactile; there can be a lag



You can customize electronic MF and Canon RF lenses give you even more options



between the ring being rotated and the focus distance changing. It can be very subtle, but it's typically more noticeable on STM lenses than those that are fitted with the newer Nano USM motors. The electronic-only connection means that the camera has to be powered on for manual focus to work too.

An electronic focusing ring has some advantages though.

You can change how it operates via the 'Lens electronic MF' or 'Electronic full-time MF' options, if they're available in your camera's menu. You can choose whether manual focusing is disabled when the lens focus switch is set to AF, for example. This is can be handy if you don't want to inadvertently adjust the focus ring when you're supporting the lens, or if

manual focus is enabled up until One Shot AF has achieved focus. Most EOS R System cameras also give you the chance to change the sensitivity of the electronic focusing ring on RF lenses. By default, the sensitivity is linked to the rotation speed – so the faster you turn the ring, the greater the focus adjustment – but you can link it to the degree of rotation instead.

## Checking for sharpness

How to take the guesswork out of manual focusing

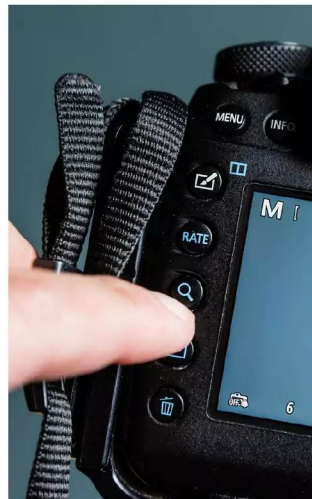
**M**odern EOS cameras have a number of features and functions to help you to focus manually. Mirrorless models are better equipped in this department, but EOS DSLRs also include some useful indicators.

For a start, there's the focus indicator. Select a single AF point, point it at the detail you want to focus on, and the circular focus indicator at the bottom of the viewfinder display will illuminate once the area covered by the AF point is into focus. The AF point itself will also blink red.

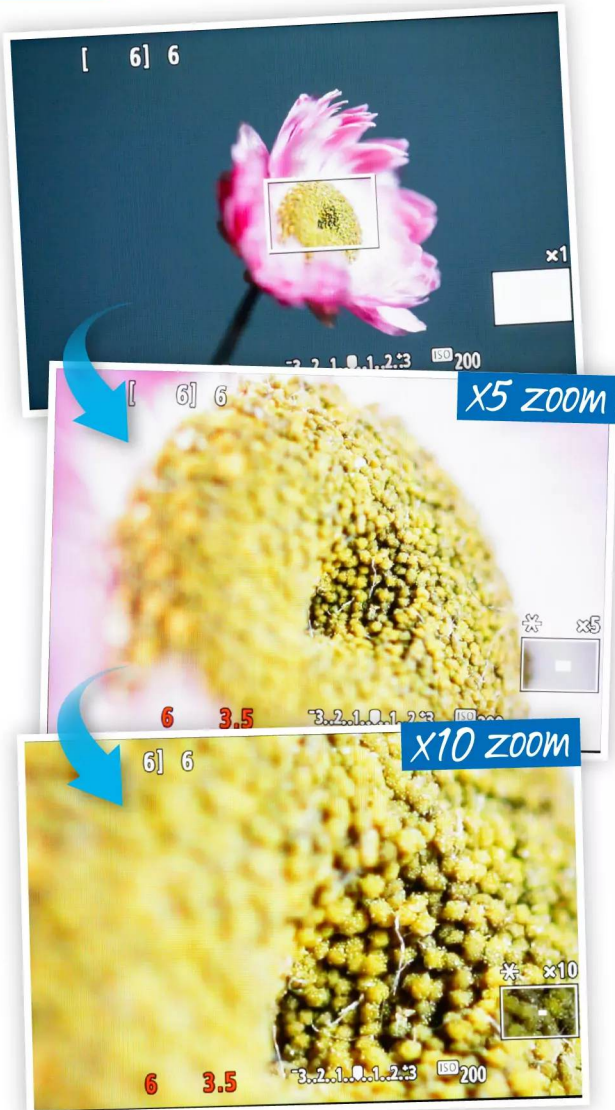
Switch to Live View mode, and you'll be able to take advantage of the magnified rear display to check that small details are in focus. Repeatedly press the magnifying glass button to blow up the area covered by the focus square: from x5 to x10 zoom, returning to the full (x1) image again.

With an EOS DSLR, the Live View image is shown at the maximum (largest) aperture on the lens, which can make it easier to show when details

snap into focus. If you activate Depth of Field preview though, you'll be able to see how much of the image looks sharp in addition to the point you're focusing on. This can be useful if you're shooting a landscape and want to focus at a third of the distance which will bring more of the scene into sharp focus (an in-depth technique called hyperfocal focusing).



Tap this button to change different magnification options in Live View



## Further focusing aids

Speed up your focusing with the help of on-screen guides

**AS WELL** as enabling details to be magnified during manual focusing, EOS mirrorless cameras offer a few additional manual focusing aids. Electronic viewfinders mean that you can take advantage of these with the camera pressed to your eye too.

'MF peaking' is available across EOS R and EOS M Series cameras (and it's also available during Live View on the EOS 90D and EOS-1D X Mark III DSLRs). When it's activated via the camera menu, a coloured overlay is displayed on the image. You'll find this option in the AF menu

or the Shooting menu, depending on which camera you're using. You're also able to change the colour and the sensitivity of the overlay to suit the scene you're shooting.

The colour corresponds to edges which have a high contrast – the sharpest bits, in other words. When you rotate the focusing ring, you'll see the colour move across the image to indicate the area that's now in focus distance. Unlike the other manual focusing aids, MF peaking is able to show you where the sharpness falls across the image

(the plane of focus) rather than at a single point. Some photographers find this makes it faster to set the focus while others prefer the precision that comes from magnifying a detail.

'Focus guide' is an assist feature available on some cameras that helps you to focus on a specific detail via a visual indicator. It uses distance information to show you whether the focus is in bang-on the subject, or if

you've focused either in front or behind it. Three pointers indicate the extent to which you're out of focus – showing whether you need to make significant or slight adjustments to bring the detail into focus.



RIGHT IS TIGHT!

# Tighten up your MF technique

Get to grips with EOS camera handling

**T**he key to faster manual focusing is knowing which direction you need to rotate the focusing ring to move the focus closer or further away. If I haven't used manual for a while, I have to remind myself that 'right is tight'. On EOS R System cameras, you can change the direction that the focusing ring needs to be rotated for lenses that use electronic focusing (which is all RF/RF-S lenses, all EF/EF-S STM lenses and some EF/EF-S USM lenses).

Some lenses have a long 'focus throw' which means that a greater rotation of the focusing ring is required to

move from the closest focusing distance to infinity. Lenses that have a short focus throw are good for action and other subjects where autofocus speed is important. A long focus throw is better for situations where you want to make small, precise adjustments, such as when you're shooting close-up subjects and working with at a wide aperture and, therefore, with a minimal depth of field.

If you're photographing close-up details with a macro lens, then you will probably want to factor in the magnification. The greatest magnification is achieved when the lens is set to its minimum

focusing distance. To achieve this, set the lens to MF and rotate the lens to the closest focusing distance, before moving the camera closer or further from the subject to fine-tune the focus.

With your landscapes, you can manually focus at the



A lens with a long focus throw makes it easier to selectively focus on a specific detail in your close-up shots

hyperfocal distance in order to maximize the depth of field – or depth of sharpness – for a given aperture. There are several apps that can calculate this distance for you. Many lenses have a distance scale that enables you to manually

set the focus at the hyperfocal distance. Canon EOS R System cameras can display the focus distance in the viewfinder as you focus, which is even easier – you can customize this option under 'Shooting info. disp' in the Shooting menu.



Distance scales aren't always very detailed, which prevents setting the hyperfocal distance precisely

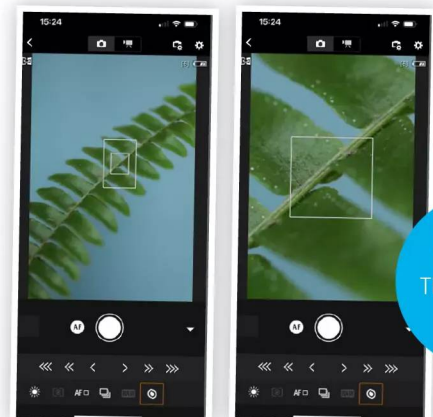
## School tip

### Refining the focus remotely

How to focus manually without touching the camera

**YOU CAN** manually focus if you're shooting remotely with your EOS camera, using either Canon's Camera Connect app for your mobile device or EOS Utility (see page 80) on your computer. If you're using a lens that has an AF/MF switch, you'll need to make sure this is set to AF, even though you'll be focusing manually!

You can operate the autofocus as normal to get you in the ballpark, then take over by tapping the on-screen arrows to manually nudge the focus in either small or large increments. You can also magnify the image covered by the focus point to for precise adjustments, as shown here in Canon's Camera Connect app.



**PART 39**  
Next issue:  
The benefits of  
in-camera  
effects

# SOFTWARE SOLUTIONS

Canon expert Brian turns to EOS technology to create a portfolio of consistent images for specialized photography

## 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)



# Product project using EOS Utility

Discover the range of functions that assist photographers to capture consistent still-life shots

**E**OS Utility includes a wide range of capabilities that are helpful for still-life and product photography. In this specialized genre, consistent and accurate colour is a requirement at the capture stage which the EOS Utility software handles with ease. In some situations it is necessary for

you to capture images that are not only well composed, but also consistent with other shots of similar items. Space for text or graphics might need to be accommodated at the taking stage which is achieved with the guides and overlays.

Product photography is a skilled and technical discipline where the alignment and position of the subject within

the frame is vitally important. EOS cameras with Live View help photographers accurately previsualize the photo before it is captured. Shooting in Live View means that the computer screen becomes the viewing window for the shot, enabling a range of tools to assist in alignment, placement and colour consistency. A camera set to Auto White Balance will

change colours from shot to shot if the subject changes colour. Using EOS Utility, the white balance can be measured and set in the camera for consistency.

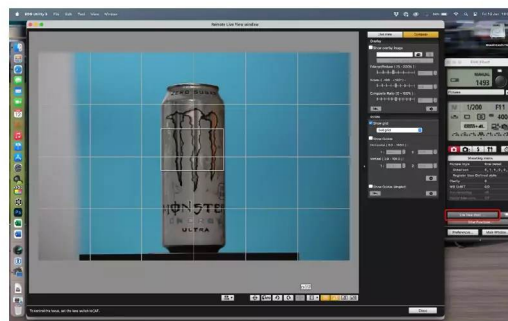
To present a product in the best way, composition and alignment are key factors. EOS Utility has a grid overlay and movable guides for placement and alignment.

## STEP BY STEP AUTOMATIC TRANSFER WITH WIFI CONNECTION

Save time in EOS Utility with remote Live View by shooting two formats and sending smaller JPG to computer

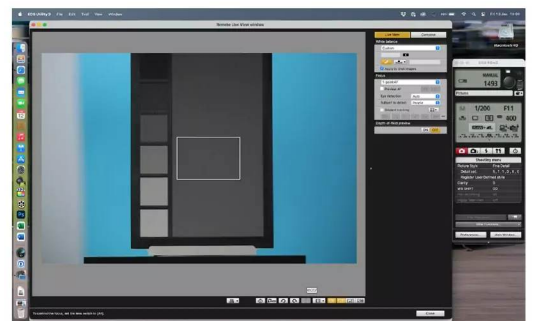
### SHOOT RAW + JPG, THEN ONLY TRANSFER THE JPG WITH WIFI

When pictures are captured, they are transferred to the computer automatically. When using a WiFi connection, it is faster to only transfer JPG images, so set the camera to RAW + JPG and set EOS Utility to only transfer JPG images. Small size JPGs are often large enough as the resolution will still be more than the computer display.



#### 01 SHOOTING WITH REMOTE LIVE VIEW

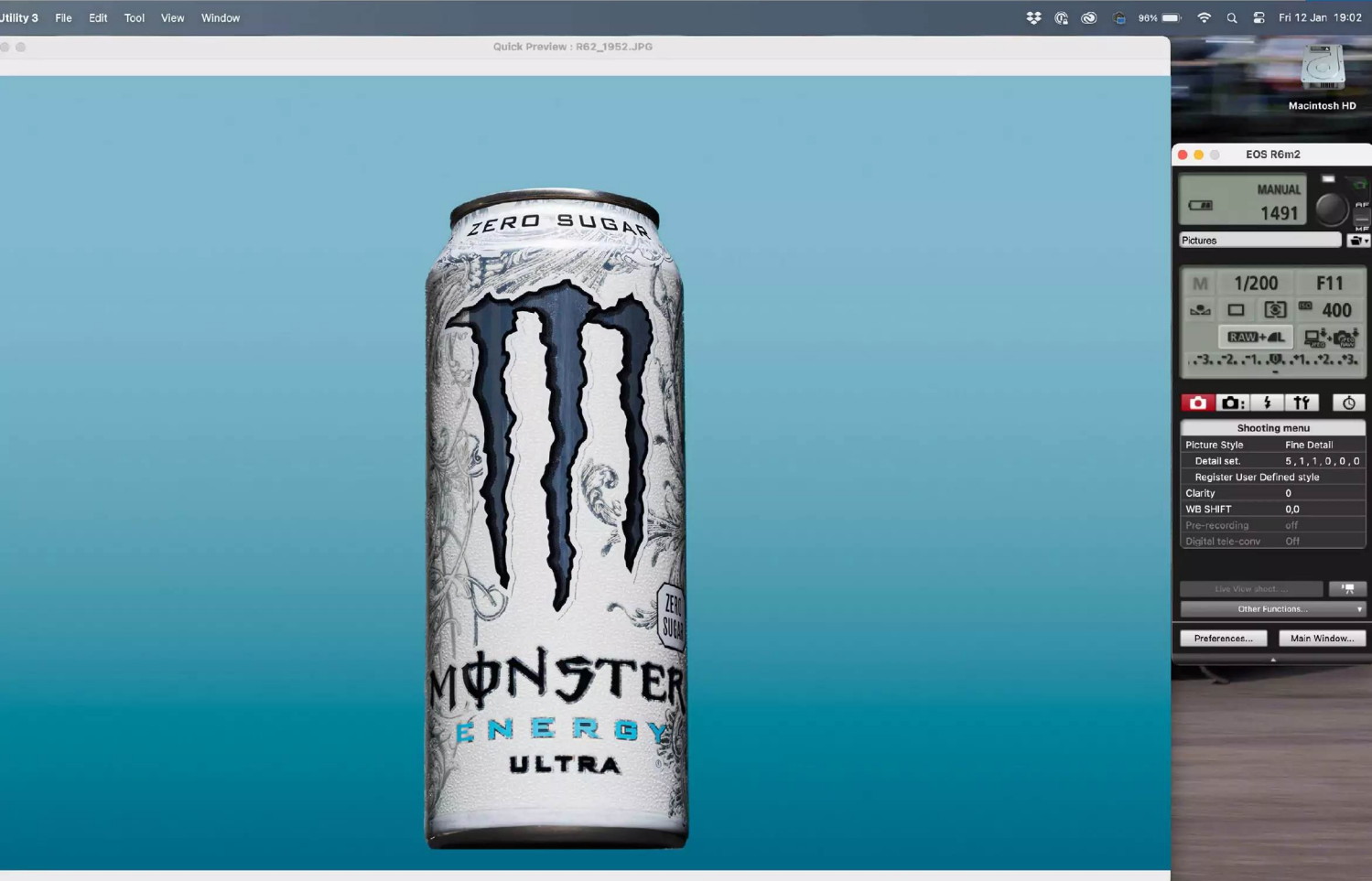
Connect your EOS camera to the computer with a USB cable or WiFi, and when EOS Utility starts up select Remote shooting to display the camera remote control panel. Settings changes on the computer or camera synced automatically. Click on the Live View shoot button at the bottom of the window to display the remote Live View window.



#### 02 SET THE WHITE BALANCE

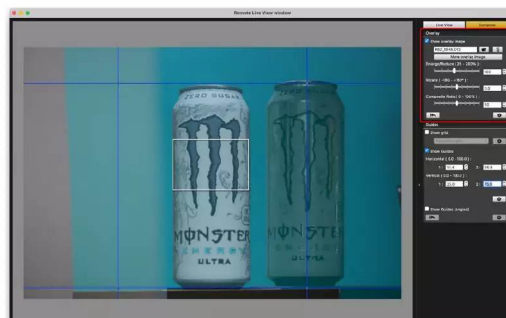
For consistent colour select either Kelvin or custom white balance, all the other options have flexibility in the range of colour temperatures. Add a grey card in to the scene and click white balance to measure the colour. If you are using flash to illuminate the subject, set the white balance in the camera from one of the captured photos where the flash fired.





### 03 ACHIEVE ACCURATE POSITIONING WITH ALIGNMENT GUIDES IN EOS UTILITY

Choose the Compose panel at the top right of the remote Live View window to show the guides section. You can use 3x3, 6x4 or custom grids with the guides for composition and alignment. Using guides ensures shots stays the same even if the product is changed in the shot, or when you want to have space for graphics or text block overlays.



### 04 USING OVERLAY IMAGES

The overlay panel is used to combine the Live View image and a previously captured or created image in real-time. The size, rotation, position and transparency of the overlaid image are freely adjustable. RAW images, JPG or TIFF can be selected as the overlay image. Overlays are helpful if you have to replicate the viewing angle from a shoot in the past.

## HOW TO GET CANON'S FREE EOS UTILITY

You can use Canon's free EOS Utility software to transfer images and movies to your PC or Mac, or remote control your camera for tethered shooting. Use a USB cable or Wi-Fi for wireless image transfer and remote control. Every Canon EOS camera user can download EOS Utility to their PC or Mac computers for free from Canon's website [www.canon.co.uk/software/eos-utility](http://www.canon.co.uk/software/eos-utility)

# EOS S.O.S

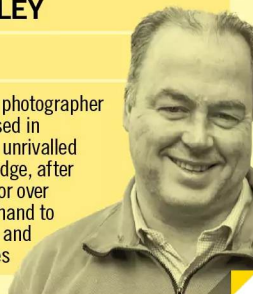
Our technical guru is here to help. No Canon conundrum is too big or small. Get in touch today at [EOSSOS@futurenet.com](mailto:EOSSOS@futurenet.com)

## 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



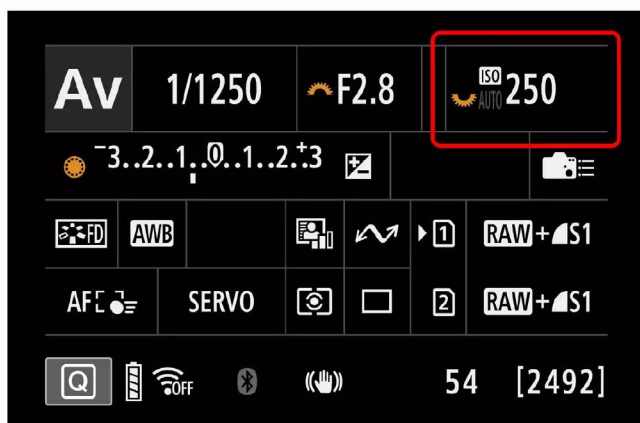
An extension tube reduces minimum focus distances, and increases the lens maximum magnification, enabling for greater close-up photos

## How can I realise greater than life-size macro shots with an EOS 80D and Tamron 1:1 macro lens for minimal outlay?

David Warriner, Hemel Hempstead

**BRIAN SAYS...** Macro photos larger than life-size are the realm of the specialist lens or some add-ons to your lenses. You can add a Canon close-up lens (looks like a filter) to your current macro lens which acts like a magnifying glass and attaches to the lens filter thread, but as they are optical elements they can be pricey. Another choice is to use an extension tube, this moves the lens away from the sensor and

so allows it to focus closer but at the expense of being able to focus on infinity. Extension tubes are generally inexpensive and a 25mm tube should give your 90mm lens almost 1.4x magnification. There are also reversing rings to mount old manual focus lenses in reverse. This is the least expensive choice, but magnification is less than extension tubes and close-up lenses.



ISO was overridden by turning the quick control dial after metering, and will reset to Auto ISO after metering timer ends or the photo is taken

## Why does ISO keeps reverting to Auto ISO if it's changed using the control dial on the EOS R6 Mark II, but not if changed on the screen or menus?

Alan Day, Wrexham

**BRIAN SAYS...** When you are using Auto ISO and override the camera-selected value using the control dial on the top of the camera, it is only a temporary override. If the camera is set to Auto ISO, when the scene is metered, an appropriate ISO value is selected but can be changed by turning the quick control dial on the top of the camera. There is an indication of this as the small AUTO text turns grey to indicate that there is an override of the auto setting. When ISO is changed to a specific value from the menu, quick control display or before metering the scene, then it is set to that value and



will not return to Auto ISO by itself. This was designed to avoid photographers forgetting they changed the ISO after the metered value was determined.

You can change this with a custom function, navigate to the custom function menu and select Speed from metering/Auto ISO and select the option to retain the speed after metering.

## STAY SHARP

Manually choose AF case 3 for birds in flight, especially when the bird is distinct from the background



Select AF case 2 for circuit-based motorsports so that focus will keep on the initial subject even if briefly obscured

**Ask Brian!**

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

# Advanced mirrorless AF settings for action photos

Optimize autofocus case settings on your Canon camera for different kinds of subject movement

**A**ction photos require your EOS camera to track a subject and continually update focus until the photo is captured. Selecting Servo AF is only the most basic step to make this happen. Many cameras have a range of additional settings to refine how a camera autofocus responds to different subject dynamics. Almost regardless of the actual subject speed, it's how it moves that determines how AF needs to respond; a fast car on a race track moving towards or away from the camera is consistent and quite easy for the camera to predict where it will be when the photo is taken. A small bird in flight changes direction much more rapidly and so benefits from different focus settings to maximize the chance of each shot being sharp.

Most EOS R System cameras have a range of subjects that can be detected

to aid positioning of the AF point, but it doesn't change how the camera focuses. This is why AF cases are important. Mirrorless cameras have four preconfigured AF cases, plus an auto case that profiles the subject movement and selects suitable settings automatically. Auto is suitable for all general photography, but there are situations requiring a specific response.

**AF tracking**

Each AF case has two parameters; tracking sensitivity, and acceleration or deceleration tracking. Tracking sensitivity is used to change the AF response when the in-focus subject moves away from the AF points. Selecting negative values keeps the initial subject in focus even if they briefly move away from the AF point. Selecting positive values makes the

camera start tracking new subjects even at different subject distances. You don't want the camera to focus on a closer tree when you're panning with a bird in the woods, yet you may want to track a player who has run in to tackle the one you were following. Acceleration and deceleration tracking changes the response to changes in the subject acceleration, deceleration or stopping.

Think of the basketball player that runs with the ball, then stops to take a shot at the hoop. Positive settings make the AF respond more quickly and track erratic subjects, but focus can be inconsistent. Negative values are better for subjects like vehicles that move at consistent speed. Choose AF case 2 for track-based motorsports, case 3 for photographing fast moving and smaller birds in-flight, and case 4 for small children and pets at play.



Info displays can be freely customised, remove the quick control screen display to reduce the chance of changing AF point position inadvertently

## How can I stop an inadvertent press of the AF point selection button from activating the touch screen and changing AF point locations with my EOS 5D Mark IV?

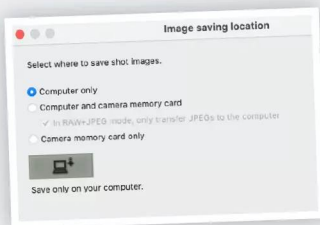
John Graham, Quorn

**BRIAN SAYS...** On most cameras, if the AF point selection button is pressed then the touchscreen is activated, making it possible for your nose to change the AF point location if the quick control screen is displayed. There are two ways to avoid this, disable the touch screen from the camera menu, or make sure that the quick control screen is not displayed. For the EOS 5D Mark IV it is possible to eliminate the quick control display from the available screen displays by configuring the options for the INFO button displays in the Set-up 3 menu.

## Why does my camera take photos without a memory card, and where are they stored?

Andy Hammond, St. Albans

**BRIAN SAYS...** EOS cameras take photos without a card so they are ready for in-store demonstration. Early cameras needed a card to work, and the demo capability was added so that shops didn't need a supply of cards with the cameras. When there is no card, the last picture taken is retained in the camera memory so that it can be reviewed on the LCD screen. Images captured like this are not possible to save to a card or transfer to a computer, and are lost when the power is switched off. In some commercial studios, cameras are permanently connected to a computer for remote shooting. Captured images are sent to the computer to avoid a camera memory card filling up.



## For each minute of a movie, does the subject affect the file size?

Chris Waymouth, Buckinghamshire

### BRIAN SAYS...

Movie files are a series of images. Just like other still images, the content of the captured scene does affect the file size.

## My EOS R10 is stuck in manual focus when using the 18-150mm kit lens, how do I get AF back?

Julie Bennett, Telford

### BRIAN SAYS...

The EOS R10 and R7 have multiple settings for AF or MF. The priority order is lens switch, body switch and menu, but the RF-S 18-150mm lens has no AF/MF switch.

## Is it possible to stop the EOS R from starting to record movies when it is set to stills mode?

Eddie Sexton, Winchester

### BRIAN SAYS...

Custom settings for the movie record button can be deactivated in stills mode.



The infra-red sensor is only activated when the drive mode is set to 2-sec or 10-sec Self-Timer

## Why is it necessary to select the Self-Timer drive mode to use the RC-6 remote with EOS R6, but not when using a Bluetooth remote?

Christie Arnold, Chester

### BRIAN SAYS...

The RC-6 remote uses infra-red to release the shutter. The infra-red receiver on the front of the hand grip is only activated when the Self-Timer drive mode is selected. The camera Bluetooth function is switched on from the communication menu.



Disable display or exposure simulation when shooting in low light or when using flash

## Why does the EOS R7 fail to focus when I'm doing night photography with flash, the EVF and LCD display don't show anything before I take a shot?

Lee Myers, North Yorkshire

### BRIAN SAYS...

EOS R System cameras simulate the current exposure settings to show a preview of how the scene looks. But it cannot simulate the flash that hasn't fired yet. You need to change the display simulation setting to disable and then the scene you're capturing will be visible.

## FOCUS OPTIONS

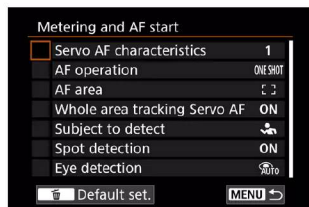
## Can you explain why the AF-ON button overrides my chosen AF settings as well as operates focus, but the shutter button doesn't on my Canon EOS camera?

Joe Bromfield, Mablethorpe

**BRIAN SAYS...** EOS cameras that have the AF-ON button are configured by default so that both a half-press of the shutter button and the AF-ON button will initiate focus. If the AF-ON button is pressed and held down, then the shutter button is pressed to take a photo, the AF function assigned to the AF-ON button

will take priority. If the AF-ON button is pressed and then released, the shutter button controls the AF. It's common to stop the shutter from initiating focus by changing it to a metering or metering lock function only.

The AF-ON button can be configured for a wide range of capabilities, and even when used to initiate AF, there can be a lot of choices beyond simply initiating AF. The choices on the EOS mirrorless cameras are extensive and can be used to force the camera to Eye detection mode and start focusing, or just switch Eye detection on and off. Depending on the camera there may be three to seven sub options to change the AF area, switch to Servo



A sub-level of settings for the AF-ON button is available that can override the camera settings when AF-ON is pressed



Back button focus with the AF-ON button on the rear of EOS cameras is favoured by photographers for its added range of settings and control

or One Shot, and for some cameras change the subject to detect. A number of photographers have made settings in this sub-level of menus and then forgotten they had done so which leads to unexpected operation. Recent camera manuals do not cover the settings in this

extra level of menus. For the EOS 7D Mark II there are four settings that singly (or in combination) will override the camera settings when the button is pressed; AF point location, focus mode, focus area and AF case. For the EOS R6 Mark II there are seven options.

## RATE MY PHOTO

### Panning Porsche

**PAUL RICHARDSON, NEWARK ON TRENT SAYS...**

I'd set myself the goal of getting my shutter speed as low as possible while keeping a low failure rate. I picked a spot at Redgate Corner at Donnington Park as this is a relatively high speed corner after the pit straight. The challenge is that there's a barrier 2m away from the 3m safety fence. I shot at 200mm and started at 1/160 sec to gauge my panning speed to match the cars. Once I had a got into a rhythm, I reduced the shutter speed in steps to 1/60 sec with a low attrition rate of 6-7 shots out of 10. Editing was with Lightroom with minimal light correction and with no added motion blur.

**BRIAN SAYS...** It looks like you have tackled panning with a great result. The key is the car and all the sponsor stickers are really sharp. The track's



Lens	Canon RF 70-200mm F4L IS USM
Exposure	1/60 sec, f/9, ISO100

background and the car's wheels are appropriately blurred. Panning has also helped reduce the visibility of the safety fence. To draw more attention to the car, I would crop to remove the white and red barrier at the top of the frame,

and the empty space in the bottom half of the frame; you could use a 'letterbox' crop or keep the current aspect ratio. The car appears to be going uphill, it would make the shot more dynamic if it was level or travelling downhill.

Get critiqued!  
Email your best photos to [EOSOS@futurenet.com](mailto:EOSOS@futurenet.com) with the subject 'Rate My Photo'



**Guru's Top Pick: Federico Gentili** Italy

# GuruShots

We've joined up with online photo game GuruShots to print the winning images from the Animals challenge. Over 21 million votes were cast – these are the best photos!

GuruShots is billed as the world's leading photo game. It's an online platform that gives global exposure to people who love taking photographs. GuruShots members start out as Newbies and compete with other photographers to win challenges, increase their ranking on the site and eventually progress to coveted 'Guru' status.

Challenges are voted on by Gurus and the wider GuruShots community, and there's a fresh photo challenge every day – like 'Animals' here. Winners receive prizes from GuruShots' sponsors, including Lowepro, Kodak and Lensbaby. Check out [www.gurushots.com](http://www.gurushots.com) to find out more. 📷



**Mark Strain** UK



**Unnamed** Australia



**Luca Sharabidze** USA



**Dave Olsen** USA



**Unnamed** Canada



**Glen Gebert** Canada

# ANIMALS



**Top Photographer: Ilan Horn** Israel



**Top Photo: Frank Werle** Germany



**Fico C** Costa Rica



**Mike Johnson** USA



**Gil Shmueli** Israel



**Luc Bussieres** Canada



**Camille** USA



**Radek Matouš** Czechia



**Roberto** Cuba



**Royce Robison** USA



**Oline Aukrust** Norway



**Valdis Kundziņš** Latvia



**Daniel Veselý** Czechia



**Cynthia Hori** USA



**Saurav Dutta** Germany



**Ryan** Philippines



**Charly Vojin** Canada



## THE CONTENDERS



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



**Canon RF-S  
10-18mm F4.5-5.6  
IS STM**  
£379/\$329



**Canon EF  
16-35mm f/4L IS  
USM**  
£1,389/\$1,299



**Canon RF  
14-35mm F4L IS  
USM**  
£1,599/\$1,299



**Canon EF 24-105mm  
f/4L IS II USM**  
£1,389/\$1,299



# CANON LENSES EF vs RF

*Are newer Canon lenses always better? We put some of the most popular Canon EF and RF lenses in head-to-head tests to find out!*



**T**here has been so much hype over mirrorless cameras over the past few years, it's easy to lose sight of just how great Canon DSLR and their companion EF and EF-S lenses have been over the past couple of

decades. In short, Canon's conventional EOS kit has been setting the standard for many years. But then everything went mirrorless.

If you've got a perfectly good EOS DSLR and collection of lenses, you need a very good reason to trade it all in for R System replacements. We tend to think that camera bodies come and go but quality lenses potentially last a lifetime. Changing lenses is even more of a tricky decision as EF-mount lenses work perfectly well on EOS R System bodies via an EF-EOS R mount adaptor. So are there any compelling reasons to jump ship?

Taking the reflex mirror assembly out of the equation, the EOS R System enables the proximity of the rear element of a lens to be much closer to the image sensor and there's also a growth in the diameter of mounting flange, both of which give the potential for superior image quality. And then there's the data transfer speed between the camera body and the lens, for improving performance factors like autofocus speed, tracking and image stabilization. One Canon boffin described it like this; if the data speed of original EOS film cameras and lenses was walking speed, the latest DSLRs and EF lenses are like a moped, whereas the EOS R System and new RF lenses are like a bullet train! So how do the rivals compare in practice?



**Canon RF 24-105mm  
F4L IS USM**  
£1,389/\$1,299



**Canon EF 100-  
400mm f/4.5-5.6L IS  
II USM**  
£2,599/£2,399



**Canon RF  
100-500mm  
F4.5-7.1L IS USM**  
£2,939/\$2,599

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

Compact, lightweight and stabilized, this EF-S lens rewrote the wide-angle zoom rulebook when it was launched

**C**arrying around additional lenses is no fun when they're big, heavy and cumbersome. This offering from Canon for APS-C cameras 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 of the lens is that it has a plastic mounting plate, but build quality feels reasonably robust. Typical of many recent Canon lenses, it features an STM (Stepping Motor) autofocus system which is fast for stills, smooth for video capture and virtually silent. The electronically-coupled focus ring enables manual override of autofocus but there's no focus distance scale.

Less than half the price of Canon's ancient EF-S 10-22mm wide zoom, also 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/\$40.

## Performance

Centre-sharpness is very respectable even when combining the widest viewing angle and aperture, at the short end of the zoom range. However, it's not as sharp as the equivalent RF-S 10-18mm lens towards the edges and corners of the image frame, and colour fringing can be more noticeable at both ends 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** At 18mm, the longest focal length picks up the baton from 'kit' standard zooms.
- 05** Typical of Canon's STM lenses, there's no focus distance scale.

## VERDICT

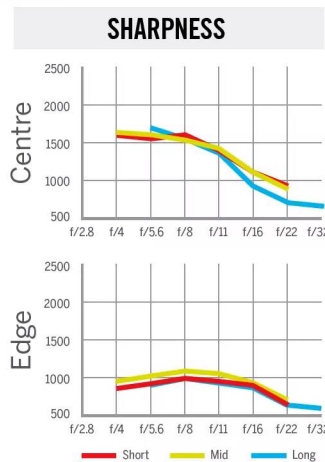
**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★



## HOW WE TEST

We combine real-world 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.

# CANON RF-S 10-18mm F4.5-5.6 IS STM £379/\$329

The RF-S wide-angle zoom for APS-C format R-system cameras takes downsizing to a whole new level

**Y**ou might well think that the EF-S version of this lens is small and light, and you'd be right. But the newer RF-S lens is unfeasibly tiny for a wide-angle zoom, even considering that it's for APS-C format rather than full-frame cameras. Unlike with EF-S lenses on DSLRs, you can use the RF-S lens on full-frame EOS R System mirrorless cameras in APS-C crop mode.

Unlike the EF-S lens, it has a retractable design, shrinking the dimensions to just 69x45mm compared with 75x72mm. It also has a smaller filter attachment thread of just 49mm. The RF-S lens has two fewer optical elements, at 12, and again has a plastic mounting plate, the overall weight being a mere 150g compared with 240g for the EF-S lens.

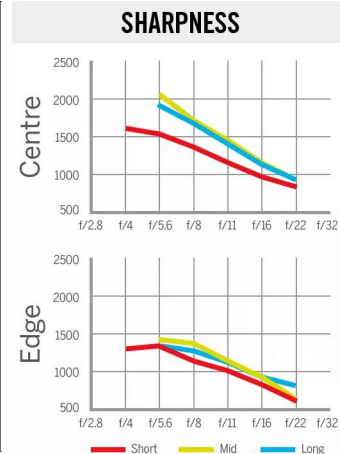
The lens relies entirely on in-camera correction to combat distortion. Indeed, it is basically unusable without auto correction, the option to disable it being greyed out in camera menus. The combination of stepping motor based autofocus and optical image stabilization is the same in both

lenses and there's no improvement in the effectiveness of stabilization, both being rated at 4 stops.

### Performance

Centre-sharpness is similar to that of the EF-S 10-18mm lens at the short end of the zoom range, and a little better at mid to long zoom settings. There's a significant improvement in edge/corner-sharpness, while colour fringing is better controlled.

Distortion is pretty much off the scale when uncorrected, but that is now becoming par for the mirrorless course.



### FEATURES

- 01 The EW-53B hood costs £19/\$29.
- 02 The lens is outrageously small and light weight.
- 03 The optical path includes one aspherical element and two UD (Ultra-low Dispersion) elements.
- 04 In manual focus mode you can get 0.5x macro magnification.
- 05 The EF-S and RF-S lenses have a plastic mounting plate.

### VERDICT

**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★☆

**PERFORMANCE**  
★★★★★

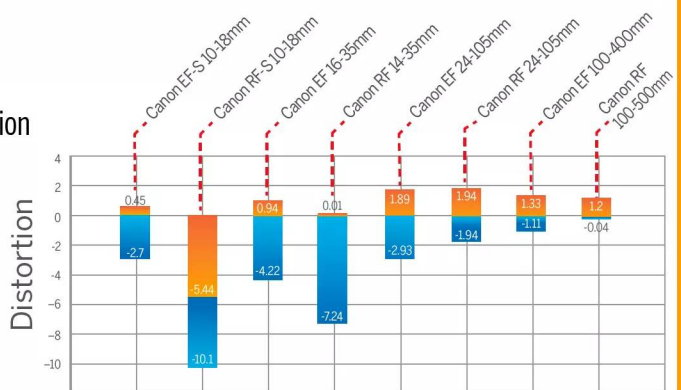
**VALUE**  
★★★★★

**OVERALL**  
★★★★★

## DISTORTION

The lenses on test are a mixed bag in terms of optical distortion

**H**istorically, lenses designed for film cameras and DSLRs were engineered to keep levels of distortion to a minimum. More recently, lenses for mirrorless cameras from all manufacturers including Canon tend to rely much more heavily on automatic in-camera corrections, which can't be disabled in the menu systems of host cameras. It makes sense, because the lenses can be designed to be more compact and lightweight, in keeping with downsized mirrorless camera bodies. Even so, as you'll see from our lab test results, some RF lenses actually produce less distortion than their older EF counterparts.



Negative results show barrel distortion; positive indicates pincushion distortion. Blue represents zoom's short end; orange is the long end

# CANON EF 16-35mm f/4L IS USM

£1,389/\$1,299

For wide-angle shooting with full-frame DSLRs, this lens has a lot going for it

**L**aunched at the same time as the EF-S 10-18mm lens for APS-C format cameras (also on test), this was Canon's first ultra-wide zoom for full-frame DSLRs to feature optical image stabilization. The newly designed stabilizer gives a 4-stop benefit in beating camera-shake.

Having an f/4 aperture rating, the lens is considerably smaller and lighter than Canon's 16-35mm f/2.8 zoom. That's a big plus point for landscape and cityscape shooting, when you want to keep carrying weight to a minimum, and the optical stabilization can save taking a tripod as well. The lens has premium optics with GMo (Glass Moulded) aspherical elements, including a large-diameter one at the front, plus two UD (Ultra-low Dispersion) elements. Super Spectra Coating is applied, as well as fluorine coatings on the front and rear elements.

Build quality is up to the usual L-series standard and the lens comes complete with weather-seals and a bayonet-fit hood. The filter thread is 77mm, the same as with the competing RF 14-35mm lens.

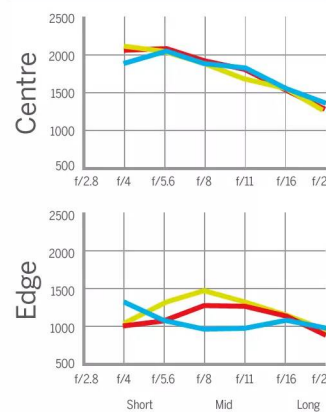


Autofocus is taken care of by a fast and whisper-quiet ring-type ultrasonic motor, with the usual availability of full-time manual override and a focus distance scale.

### Performance

Centre-sharpness is excellent even when shooting wide-open at f/4 and remains very good towards the edges of the frame, although it drops off at the corners. Colour fringing is minimal, although not as entirely negligible as with some competing lenses, and distortion can be a little noticeable at the short end of the zoom range.

### SHARPNESS



### FEATURES

- 01 A 77mm attachment thread enables straightforward fitment of filters.
- 02 The petal-shaped hood supplied has a locking release button.
- 03 Switches are on hand for AF/MF and image stabilizer on/off.
- 04 The upmarket L-series construction features weather-seals.
- 05 Fluorine coatings are applied to the front and rear elements.

### VERDICT

**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

## TRINITY STANDARD ZOOMS

RF lenses give you better quality and more options

**T**he Canon EF 24-70mm f/2.8L II USM lens has been a favourite of professional and enthusiast photographers since it was launched in 2012, ten years after the original edition of the lens. There's no denying it's a great lens but the newer RF 24-70mm f/2.8L IS USM is better in every way. It's sharper, delivers less wide-angle barrel distortion and keeps a tighter rein on

colour fringing. Crucially for handheld shooting, it also adds the bonus of optical image stabilization with 5-stop performance. The RF line-up also gives you more choice when it comes to fast standard zooms. As well as the RF 24-70mm F2.8, there's the RF 24-105mm F2.8L IS USM Z, which is equally adept for video and stills, and the even faster RF 28-70mm F2L USM.



A full f/stop faster than an f/2.8 lens, the Canon RF 28-70mm F2L USM is an absolute gem for wedding and event photographers

# CANON RF 14-35mm F4L IS USM

£1,599/\$1,299

Compared with its EF 16-35mm f/4L sibling, this RF lens goes ultra-wide with viewing angles

This lens gives a noticeably wider maximum field of view than the EF 16-35mm, equating to 114 degrees compared with 108 degrees. The difference of 2mm at the short end of the zoom range might not sound much, but it makes a big difference. Weighing 540g, it's 75g lighter than the EF lens and easily manageable for handheld shooting.

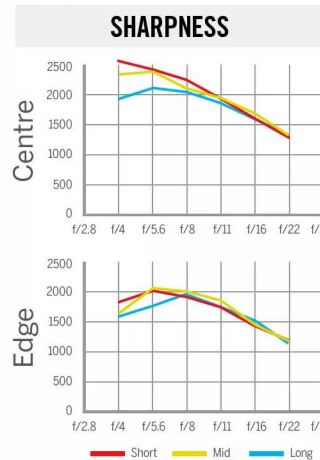
There's some seriously upmarket glass shoehorned into this small lens. The total count of 16 elements includes three GMo (Glass Moulded) aspherical elements, two UD (Ultra-low Dispersion) elements and one UD aspherical element. Fluorine coatings are applied to the front and rear elements to repel moisture and grease. As you'd expect from a current Canon L-series lens, it features extensive weather-seals and comes complete with a hood.

Autofocus is driven by a Nano USM motor and features an 'elastic metal' body. It's astonishingly fast for stills, virtually snapping into place, while also enabling smooth and virtually silent autofocus transitions for movie capture.



## Performance

The optical image stabilizer delivers a highly impressive 5.5-stop benefit in its own right, boosted to 7-stop effectiveness when combined with the in-body stabilization of later EOS R system cameras. Centre-sharpness is spectacular and, compared with the EF 16-35mm lens, remains excellent right out to the extreme edges and corners of the frame. Both lenses are pretty equal in good control over colour fringing but there's a heavy reliance on automatic in-camera corrections for distortions and vignetting.



## FEATURES

- 01 Advanced coatings include SWC (Subwavelength Structure Coating) and ASC (Air Sphere Coating).
- 02 A third customizable control ring can be assigned to various functions.
- 03 The Nano USM autofocus system works down to just 20cm.
- 04 Switches control AF/MF focusing modes and Stabilizer on/off.
- 05 The lens has a full set of weather-seals.

## VERDICT

**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

## L-SERIES TELEPHOTO ZOOMS

The new RF lenses have notable advantages but lose something along the way

The EF 70-200mm f/2.8L IS USM III is a world-class 'trinity' telephoto zoom and we're also big fans of the smaller EF 70-200mm f/4L IS USM II. Both of these constant-aperture telephoto lenses have a fixed physical length, so there's no inner barrel that extends at longer zoom settings. The f/2.8 lens is quite big and weighty, measuring 89x199mm and 1,480g. The RF 70-200mm F2.8L IS USM lens is smaller and lighter, at just 146mm long

and 1,070g in weight. However, it extends at longer zoom settings to 204mm. The same goes for the super compact and lightweight RF 70-200mm F4L IS USM lens, which measures 83x120mm and weighs 695g. This one stretches to 174mm at maximum extension. A major downside is that these RF 70-200mm lenses are not compatible with 1.4x or 2x Extenders.



Physically the smallest 70-200mm in the world, the RF 70-200mm F4L IS USM is barely bigger than a can of fizzy drink when zoomed in

# CANON EF 24-105mm f/4L IS II USM £1,389/\$1,299

The Mark II edition of one of Canon's most popular DSLR lenses comes with some notable improvements

**L**aunched back in 2005, the original version of this lens was available as part of a kit with the first three editions of the EOS 5D, as well as the 6D. However, it wasn't sharp enough to make it onto the approved list of lenses for use with the high-resolution 5DS and 5DS R, and this revamped Mark II edition of the lens was launched in 2016.

Top of the agenda for the Mark II was a redesigned optical path, which also gains high-tech 'Air Sphere Coating' for keeping ghosting and flare to a minimum. Keep-clean fluorine coatings are added to the front and rear elements, and the build-quality has been enhanced for greater resistance to vibration and shock. The image stabilizer is also improved, rising from 2.5-stop to 4-stop effectiveness. It comes with weather-seals and a hood.

Compared with 'trinity' 24-70mm f/2.8 standard zooms, this lens is naturally an f/stop slower but at least it's still a constant-aperture design, f/4 being available at any zoom setting. As with the competing RF lens, the



longer 24-105mm gives a bonus in telephoto versatility.

### Performance

Sharpness is better than in the original edition at short to medium zoom settings but drops off noticeably towards the long end. It lags behind the newer RF 24-105mm lens in this respect. Bokeh remains smoother when stopping down a little, helped by the new 10-blade diaphragm. Another improvement is in barrel distortion at the short end of the zoom range – notoriously bad in the original edition of the lens.

### FEATURES

- 01** Fluorine coatings at the front and rear repel moisture and grease.
- 02** ASC (Air Sphere Coating) minimizes ghosting and flare.
- 03** The updated image stabilizer is more effective and adds panning detection.
- 04** Revamped ring-type ultrasonic autofocus system feels a little faster than in the original lens.
- 05** The lens is robust and features weather-seals.

### VERDICT

**FEATURES**  
★★★★★

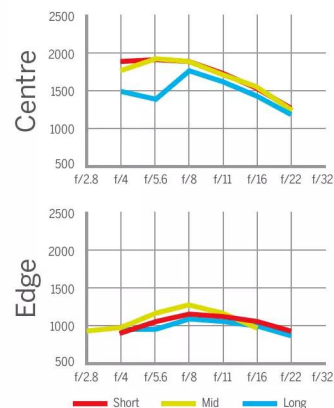
**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

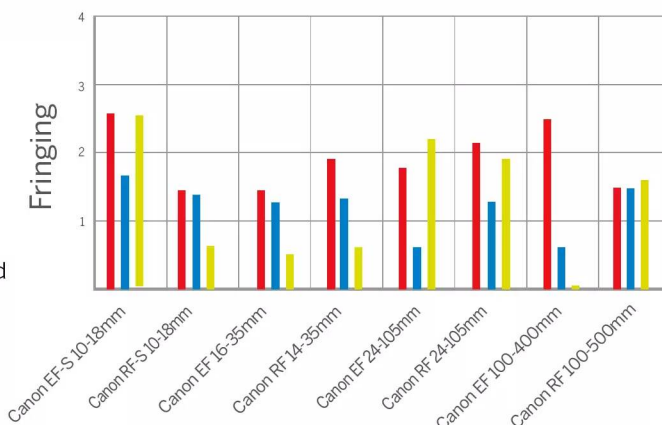
### SHARPNESS



## COLOUR FRINGING

Levels of colour fringing are generally low

**C**olour fringing is generally most visible as lateral chromatic aberration, and most noticeable around high-contrast areas in scenes towards the edges and corners of the image frame. For example, you may spot coloured fringes around the likes of dark tree branches or the edges of buildings against a bright sky. The RF-S 10-18mm does better to minimize colour fringing than its EF-S counterpart but, in other cases, EF and RF lenses give fairly similar results.



Lower values represent less fringing, and therefore better performance

- Short
- Mid
- Long

# CANON RF 24-105mm F4L IS USM **£1,389/\$1,299**

The RF 24-105mm takes a winning formula from Canon's back-catalogue and enhances it for mirrorless cameras

**V**arious EOS R System full-frame cameras are available as a complete kit with this lens. Typically, it takes full advantage of the revised RF mount, compared with EF lenses for DSLRs. It's little shorter and lighter than the EF 24-105mm f/4L, at 84x107mm and 700g, making it an ideal match for slim-line mirrorless bodies. Typical of L-series lenses, it has excellent build quality with extensive weather-seals and with a hood.

Optical highlights include aspherical and UD elements, a 9-blade diaphragm and fluorine coatings. Compared with its older EF counterpart, there's a more effective 5-stop rather than 4-stop image stabilizer, and it gets a boost to 8-stops with in-body stabilization, where featured in EOS R System cameras. Nano USM autofocus is very fast for stills and enables super-smooth focus transitions for movie capture.

There's an additional customizable control ring at the front end. Canon offers a 'de-click' service for videographers who will generally want stepless aperture

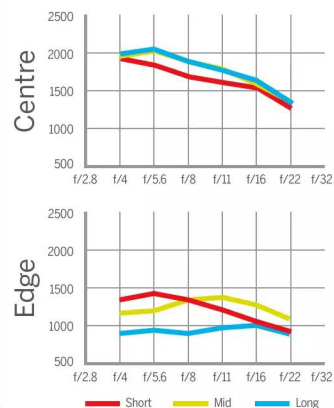


control. The control ring can be assigned to functions including aperture, shutter speed and ISO.

## Performance

At short to medium zoom settings, there's not much to choose between this lens and the EF 24-105mm for centre-sharpness, although the RF lens wins out towards the edges and corners, and retains superior centre-sharpness at long zoom settings. The RF lens also keeps tighter control over barrel distortion at short zoom settings, – somewhat unusual for recent lenses for mirrorless cameras.

## SHARPNESS



## FEATURES

- 01** The build is 11mm shorter and 95g lighter than the equivalent EF L-series lens.
- 02** The control ring at the front adds hands-on adjustment.
- 03** Extensive weather-seals are applied in the construction.
- 04** The Nano USM autofocus system is fast yet smooth.
- 05** Highly effective 5-stop optical stabilization lives up to its billing.

## VERDICT

### FEATURES

★★★★★

### BUILD & HANDLING

★★★★★

### PERFORMANCE

★★★★★

### VALUE

★★★★★

### OVERALL

★★★★★

## SUPER-TELEPHOTO PRIMES

Some super-telephoto EF vs RF prime lenses are virtually identical

**T**he big-money super-telephoto primes are some of the most impressive and imposing lenses in the RF line-up. They include the RF 400mm F2.8L IS USM at £13k/\$12k, the RF 600mm F4L IS USM at £14k/\$13k and the RF 800mm F5.6L IS USM at £19k/\$17k. They're incredibly sophisticated, top-performance lenses catering to the most demanding action,

sport, press and wildlife photographers. But haven't we seen these lenses before? As it turns out, all three of these new RF lenses are virtually identical to the previous EF versions. The only real differences are that an EF to RF mount converter is built into the back of each of these lenses, and they're rewired to take full advantage of the EOS R-system's faster data transfer rate.



The RF 400mm F2.8L IS USM is essentially the same lens as the EF 400mm f/2.8L IS III USM, rewired for the EOS R System and with a mount adapter

# CANON EF 100-400mm f/4.5-5.6L IS II USM **£2,599/\$2,399**

This high-performance lens remains a favoured super-telephoto for DSLRs with a relatively fast aperture

**C**anon's original 100-400mm IS USM lens was launched all the way back in 1998, with film cameras firmly in mind. It continued to be highly desirable with the advent of digital SLRs, both for full-frame and APS-C format bodies, having an effective zoom range of 160-640mm on the latter. Less popular was its trombone-style, push-pull zoom mechanism. That's been changed to a more regular twist-action zoom ring in this second edition, which replaced the original in late 2014.

The optical path includes top-grade fluorite and Super UD (Ultra-low Dispersion) glass, and is more sophisticated than in the original lens, with four additional elements. As with some of Canon's more recent top-flight lenses, high-tech ASC (Air Sphere Coating) is featured, plus fluorine coatings on the front and rear elements.

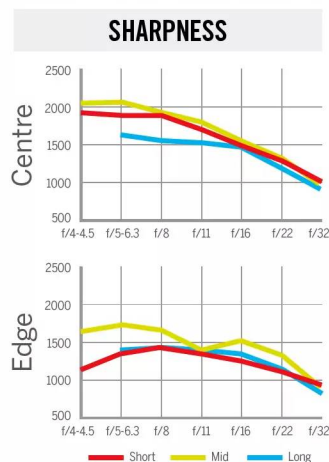
Another neat feature is the triple-mode image stabilizer. As well as the more usual switchable static and panning options, the third mode applies stabilization only during actual exposures. The



viewfinder image is unaffected, making it easier to track erratically moving objects. The stabilizer is rated at 4-stops, compared with just 1.5-stops in the original lens.

### Performance

Autofocus is very fast and retains particularly good tracking performance even under very dull lighting conditions. Sharpness and contrast are impressive at short to mid-zoom settings, but there's a noticeable drop at the long end, and it's certainly outclassed by the RF 100-500mm lens at all focal lengths.



### FEATURES

- 01** The redesigned hood has a sliding panel for filter rotation.
- 02** Keep-clean fluorine coatings are applied to the front and rear elements.
- 03** An adjustable friction damper can avoid zoom creep.
- 04** The triple-mode stabilizer has a 4-stop rating.
- 05** The tripod mounting foot can be detached without removing the lens from the camera.

### VERDICT

**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

## ULTRA-TELEPHOTO ZOOMS

What if you want to supersize your telephoto reach with a zoom lens?

**F**or sports, wildlife and other shooting scenarios where you need plenty of reach, the undisputed king of Canon's EF line-up of zoom lenses is the EF 200-400mm f/4L IS USM Extender 1.4x. The built-in 1.4x 'extender' gives it a maximum coverage of 560mm with a drop in aperture rating to f/5.6. You'll need deep pockets though, as it retails for

around £12,069/\$11,997 and it's been discontinued so stocks are dwindling. In the RF camp, there's the new RF 200-800mm F6.3-9 IS USM, which gives even greater and truly impressive zoom range, albeit with a relatively sluggish f/9 aperture at the long end. Even so, it's much more manageable and affordable, at the relatively bargain price of £2,299/\$1,899.



The RF 200-800mm F6.3-9 IS USM certainly isn't massive for such an 'ultra-telephoto' zoom, only measuring 102x314mm and weighing 2kg



# CANON RF 100-500mm F4.5-7.1L IS USM £2,939/\$2,599

This super-tele zoom for R-system cameras represents a major step forward from the EF 100-400mm

There's a wealth of super-tele zooms that you can fit to an EOS R System camera via an EF-EOS R mount adapter but, as an RF lens, the 100-500mm is naturally a perfect fit. It takes cues from the well-established EF 100-400mm, also on test and is physically slightly longer but a little lighter. It adds an extra 100mm of telephoto reach, albeit with a slowing in aperture by two-thirds of an f/stop, to f/7.1. The autofocus system, based on dual Nano USM motors, is blazing fast and well able to track moving subjects.

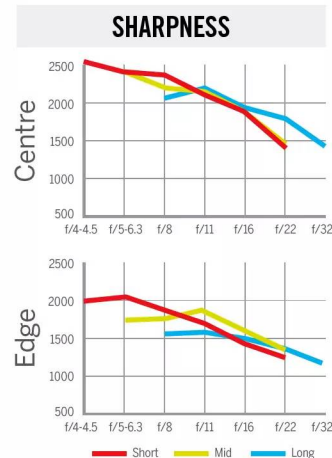
The optical path incorporates no fewer than six UD (Ultra-low Dispersion) elements and one Super UD element, while the image stabilizer is rated at an impressive five f/stops, the effectiveness of which is further boosted when used in conjunction with the in-body stabilizers of the latest EOS R cameras. Handling is enhanced by a similar torque adjustment ring for stiffening or loosening the zoom ring, as featured in the EF 100-400mm lens, along with the addition of a customisable control ring for altering the likes of



aperture or ISO setting. High-end build quality sees the application of comprehensive weather-seals and fluorine coatings on the front and rear elements.

### Performance

The autofocus system makes the most of the advanced 'Deep-learned AI' tracking abilities of recent R-system cameras, combining with a highly effective 5-stop image stabilizer to deliver an excellent hit rate for action, sports and wildlife shots. Sharpness itself is excellent throughout the entire zoom range.



### FEATURES

- 01 Fluorine coatings are applied to the front and rear elements.
- 02 The triple-mode optical image stabilizer gives 5-stop effectiveness – 6 stops with IBIS.
- 03 Dual Nano USM autofocus is super-fast and silent.
- 04 There's a mechanism for adjusting the torque of the zoom ring.
- 05 The rear control ring can be used for ISO, aperture, exposure compensation.

### VERDICT

**FEATURES**  
★★★★★

**BUILD & HANDLING**  
★★★★★

**PERFORMANCE**  
★★★★★

**VALUE**  
★★★★★

**OVERALL**  
★★★★★

## MIND THE GAP WITH PRIMES

There are still gaps in the RF line-up, but they're quite few and far between

The EOS R System is still very young, the first camera and lenses being launched in late 2018. Even so, we've seen a wealth of full-frame compatible RF mount lenses being released over the past five years. More recently, there's been a scattering of APS-C format RF-S zoom lenses but, as yet, no primes. Naturally, you can use any full-frame RF lens on an APS-C format

body like the EOS R100, R50, R7 and R10, with no restrictions. For full-frame, most of the initial gaps have been filled and we've seen some groundbreaking new lenses like the RF 5.2mm f2.8L Dual Fisheye for virtual reality capture, and the budget-friendly, fixed-aperture RF 600mm and 800mm f11 IS STM super-telephoto primes. In some cases, you'd still need to use an EF lens on an EOS R System body.



Canon doesn't yet make any of its excellent Tilt-Shift lenses in RF mount, like the TS-E 24mm f/3.5L II pictured


## COMPARISON TABLE

	 <b>CANON EF-S 10-18mm f/4.5-5.6 IS STM</b>	 <b>CANON RF-S 10-18mm F4.5-5.6 IS STM</b>	 <b>CANON EF 16-35mm f/4L IS USM</b>	 <b>CANON RF 14-35mm F4L IS USM</b>	 <b>CANON EF 24-105mm f/4L IS II USM</b>	 <b>CANON RF 24-105mm F4L IS USM</b>	 <b>CANON EF 100-400mm f/4.5-5.6L IS II USM</b>	 <b>CANON RF 100-500mm F4.5-7.1L IS USM</b>
	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
<b>Mount</b>	EF-S (APS-C)	RF-S (APS-C)	EF (full-frame)	RF (full-frame)	EF (full-frame)	RF (full-frame)	EF (full-frame)	RF (full-frame)
<b>APS-C focal length (FF eq)</b>	16-28.8mm	16-28.8mm	25.6-56mm	22.4-56mm	36-168mm	36-168mm	160-640mm	160-800mm
<b>Elements/groups</b>	14/11	12/10	16/12	16/12	17/12	18/14	21/16	20/14
<b>Aperture diaphragm</b>	7 blades	7 blades	9 blades	9 blades	10 blades	9 blades	9 blades	9 blades
<b>Narrowest aperture</b>	f/22-29	f/22-32	f/22	f/22	f/22	f/22	f/32-38	f/32-54
<b>Optical stabilizer</b>	4-stop	4-stop	4-stop	5.5-stop	4-stop	5-stop	4-stop	5-stop
<b>Autofocus type</b>	Stepping motor	Stepping motor	Stepping motor	Nano USM	Ultrasonic (ring type)	Nano USM	Ultrasonic (ring type)	Dual Nano USM
<b>Manual AF override</b>	Electronically coupled	Electronically coupled	Electronically coupled	Electronically coupled	Full-time	Electronically coupled	Full-time	Electronically coupled
<b>Min focus distance</b>	0.22m	0.14m (0.09m MF)	0.28m	0.2m	0.45m	0.45m	0.98m	0.9-1.2m
<b>Max reproduction ratio</b>	0.15x	0.23x (0.5x MF)	0.23x	0.38x	0.24x	0.24x	0.31x	0.33x
<b>Filter size</b>	67mm	49mm	77mm	77mm	77mm	77mm	77mm	77mm
<b>Weather-seals</b>	No	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>Hood</b>	EW-73C, £21/\$40	EW-53B, £19/\$29	EW-82 (included)	EW-83P (included)	EW-83M (included)	EW-83N (included)	ET-83D (included)	ET-83F VIII (included)
<b>Dimensions (dia x length)</b>	75x72mm	69x45mm (retracted)	83x113mm	84x100mm	84x118mm	84x107mm	94x193mm	94x208mm
<b>Weight</b>	240g	150g	615g	540g	795g	700g	1,640g	1,530g
<b>Street price (UK, USA)</b>	£249/\$299	£379/\$329	£1,389/\$1,299	£1,599/\$1,299	£1,389/\$1,299	£1,389/\$1,299	\$2,599/£2,399	£2,939/\$2,599
<b>FEATURES</b>	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★	★★★★☆	★★★★★
<b>BUILD &amp; HANDLING</b>	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★	★★★★☆	★★★★★
<b>PERFORMANCE</b>	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★	★★★★★
<b>VALUE</b>	★★★★★	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★	★★★★☆	★★★★★
<b>OVERALL</b>	★★★★☆	★★★★☆	★★★★★	★★★★★	★★★★☆	★★★★★	★★★★☆	★★★★★

## THE WINNER IS... CANON RF 14-35mm F4L IS USM

Canon's newer RF lenses come out on top, but the EF/EF-S lenses tested still score highly

**T**here are some crucial advantages of the RF lens mount of EOS R System cameras, compared with the older EF mount for DSLRs. Key benefits are a wider flange and a much closer proximity to the camera's image sensor. The typical outcome is better sharpness and clarity, especially out towards the edges and corners of the image frame, while the much higher data transfer speed between RF lenses and EOS R mirrorless cameras gives a boost in autofocus and image stabilization. Our pick of the crop we tested is

the RF 14-35mm F4L IS USM for its outstanding performance and versatility, while the RF-S 10-18mm F4.5-5.6 IS STM is incredibly compact and lightweight, and great value for APS-C mirrorless cameras. However, it's the EF-S 10-18mm f/4.5-5.6 IS STM that wins Best Value. The RF 24-105mm F4L IS USM takes a tried and trusted formula, and upgrades it for the mirrorless age. For a super-telephoto zoom, the RF 100-500mm F4.5-7.1L IS USM might not be 'fast' in terms of aperture rating, but it's a phenomenal lens with great reach. 



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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. ★★☆☆☆☆

Sensor	18MP APS-C CMOS
Viewfinder	Pentamirror, 0.8x, 95%
ISO	100-6400 (12,800 exp)
AF	9-point (1 cross-type)
LCD	2.7-inch 230K dots
Max burst (buffer)	3fps
Memory card	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 250D, which is a far better overall DSLR camera. ★★☆☆☆☆

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

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

Sensor	24.1MP Dual Pixel APS-C CMOS
Viewfinder	Pentamirror, 95% coverage, 0.82x
ISO	100-25,600
AF	45 cross-type AF point system
LCD	3-inch vari-angle touchscreen 1040K
Max burst (buffer)	7fps
Memory card	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>	2xCExpress 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-I 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 1.62m 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>	2x UHS-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	214	★★★★★	
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	1.14m	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	£779/\$799	Yes	2.4x	No	f/4	500g	0.28m	0.24x	77mm	7	214	★★★★★	
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/\$1239	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

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	214	★★★★★	
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	214	★★★★★	●
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/4-5.6L 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

Model	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													
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	214	★★★★☆	
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 II 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													
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/\$299	Yes	None	No	f/2.8	165g	0.13m	0.26x	43mm	7	215	★★★★☆	
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/\$599	Yes	None	Yes	f/1.8	270g	0.14m	0.5x	24mm	9	215	★★★★☆	
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/\$129	No	None	No	f/2.8	125g	0.16m	0.27x	52mm	7	214	★★★★☆	
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	£479/\$499	Yes	None	Yes	f/1.8	305g	0.17m	0.5x	52mm	9	215	★★★★☆	●
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 CS II 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   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   C	£449/\$400	Yes	None	No	f/1.4	405g	0.25m	0.1x	67mm	9	161	★★★★☆	
Sigma 20mm f/1.4 DG HSM A	£700/\$900	Yes	None	No	f/1.4	950g	0.28m	0.14x	77mm	9	114	★★★★☆	
Sigma 24mm f/1.4 DG HSM A	£650/\$850	Yes	None	No	f/1.4	665g	0.25m	0.19x	77mm	9	114	★★★★☆	●
Sigma 30mm f/1.4 DC DN   C	£329/\$339	Yes	None	No	f/1.4	270g	0.3m	0.14x	52mm	9	161	★★★★☆	
Sigma 35mm f/1.4 DG HSM A	£699/\$699	Yes	None	No	f/1.4	665g	0.3m	0.19x	67mm	9	180	★★★★☆	
Sigma 56mm f/1.4 DC DN   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	141	★★★★☆	

# PhotoPlus BUYERS' GUIDE

## Contacts

**Canon** www.canon.co.uk  
**Peleng** www.digitaltoyshop.co.uk  
**Samyang** www.samyang-lens.co.uk  
**Schneider** www.linhofstudio.com

**Sigma** www.sigma-imaging-uk.com  
**Tamron** www.tamron.co.uk  
**Tokina** www.tokinalens.com  
**Zeiss** www.zeiss.co.uk

**KEY:** ● BEST VALUE AWARD ● BEST ON TEST AWARD

STANDARD PRIMES

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	£129/\$125	Yes	None	No	f/1.8	160g	0.35m	0.21x	49mm	7	214	★★★★★	
<b>Canon</b> RF 50mm F1.2L USM	£2449/\$2299	Yes	None	No	f/1.2	950g	0.40m	0.15x	77mm	10	215	★★★★★	
<b>Canon</b> RF 50mm F1.8 STM	£199/\$199	Yes	None	No	f/1.8	160g	0.30m	0.25x	43mm	7	215	★★★★★	●
<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

TELEPHOTO PRIMES	Price	Full frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
<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	£489/\$499	Yes	None	No	f/1.8	425g	0.85m	0.13x	58mm	8	214	★★★★★	
<b>Canon</b> RF 85mm F1.2L USM	£2999/\$2799	Yes	None	No	f/1.2	1195g	0.85m	0.12x	82mm	9	215	★★★★★	
<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	215	★★★★★	
<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

MACRO	Price	Full frame	Max zoom	Image stabilization	Max aperture	Weight	Min focus distance	Max magnification	Filter size	Iris blades	Issue reviewed	Rating	Awards
<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	£619/\$599	Yes	None	Yes	f/2	500g	0.35m	0.5x	67mm	9	215	★★★★★	
<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 USD 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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## LAST MONTH



### Issue 215 April 2024

#### EXPOSURES MADE EASY

Learn all you need to know about your aperture, shutter speed and ISO settings

- Canon pro David Clapp inspires our Apprentice to take top shots inside and outside stunning Salisbury Cathedral
- RF prime lenses in Super Test
- Portrait pro Newo Ikkin reveals her favourite Canon equipment
- Photo Stories: one reader shares his passion for wildlife while another dives underwater to learn new skills
- Canon pro Brian Worley answers your technical questions in EOS SOS
- Photo expert Marcus Hawkins unravels the art of manual focusing
- We try out the Canon Speedlite EL-5
- In-depth photo projects and image-editing tutorials with video guides



### Issue 214 March 2024

#### GET IT RIGHT IN CANON

Learn to take better photos in camera so you don't have to rescue bad images in Photoshop!

- Macro master Matt Doogue's photo therapy capturing creature close-ups
- New budget lens tests – great lens for Canon DSLRs from only £129
- Our Apprentice shoots for the stars with Canon astro photographer Chris Grimmer
- The changing landscape of photo tourism in Iceland



### Issue 213 February 2024

#### CANON GEAR OF THE YEAR

The best Canon EOS cameras, lenses and kit

- Canon pro Nick Hanson's top tips for capturing great landscape photos
- Our Apprentice learns to take paw-fect pet photos of well-behaved dogs and cats
- Control depth of field for more creative photos in our Canon School
- Canon's new RF 200-800mm super-duper telephoto zoom lens tested

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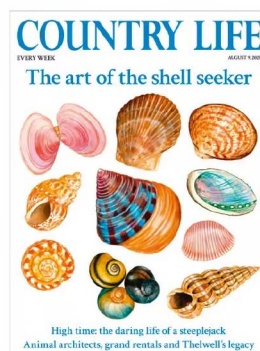
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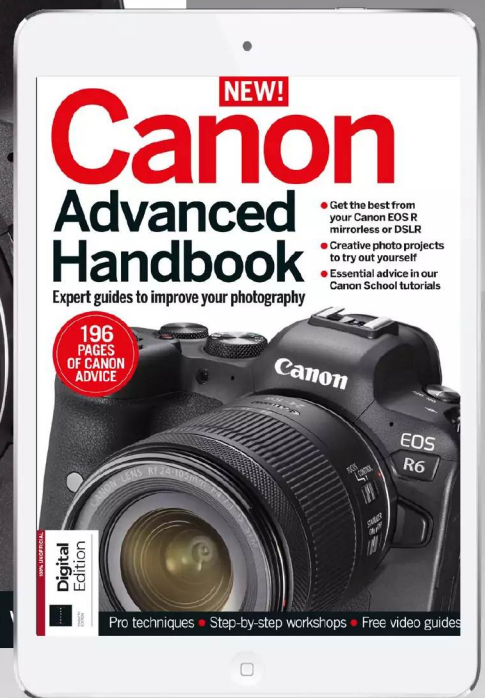
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## 14mm

In Super Test this issue, we put the most popular Canon EF and RF lenses head to head. The Canon RF 14-35mm wide-angle impressed us. Page 88

## 20

Canon professional landscape and nature photographer Drew Buckley shares his top 20 tips for great spring photos. Page 28

## DigitalCameraWorld.com The best from our brilliant website



Image: Canon

### Canon retains its title as No.1 brand for interchangeable-lens digital cameras

More accolades for Canon as it earns the top spot for interchangeable lens cameras for the 21st year in a row! More on this Canon news story at our website [DigitalCameraWorld.com](http://DigitalCameraWorld.com) via our quick link [bit.ly/canon21wins](http://bit.ly/canon21wins)



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### The Canon EOS 7D Mark II is 10 years old but is it still any good?

One of the most beloved Canon DSLRs for wildlife and sports, does the Canon 7D Mark II still have anything to offer a decade later? Find out more at [DigitalCameraWorld.com](http://DigitalCameraWorld.com) via our quick link at [bit.ly/canon7d2](http://bit.ly/canon7d2)



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### Canon RF 24-105mm F2.8L IS USM Z review: reinventing the standard zoom

A 24-105mm with a constant f/2.8 aperture has been the dream of many for a long time, and Canon has finally delivered in the hybrid RF 24-105mm F2.8L IS USM Z! Full review at [DigitalCameraWorld.com](http://DigitalCameraWorld.com) via [bit.ly/rf24-105](http://bit.ly/rf24-105)

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