

THE WORLD'S BEST-SELLING DIGITAL PHOTO MAGAZINE

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Photography Week



INSPIRATION | IDEAS | IN-DEPTH REVIEWS



**REVIEW: LUMIX S
100MM F/2.8 MACRO**
WE GET UP CLOSE WITH
PANASONIC'S COMPACT
MACRO OPTIC

SHOOT FOR THE STARS

PRO TECHNIQUES AND TIPS FOR CAPTURING
INCREDIBLE IMAGES OF THE NIGHT SKY

W E L C O M E

Photography Week



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Welcome to the world's No.1 weekly digital photography magazine. If you're already a reader, thanks for your continued support and involvement; if you're new to *Photography Week*, you've come to the right place! In addition to expert advice, brilliant tips and step-by-step tutorials, every issue features interactive galleries of brilliant photos, how-to videos on

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

Jeff Meyer, Editor

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



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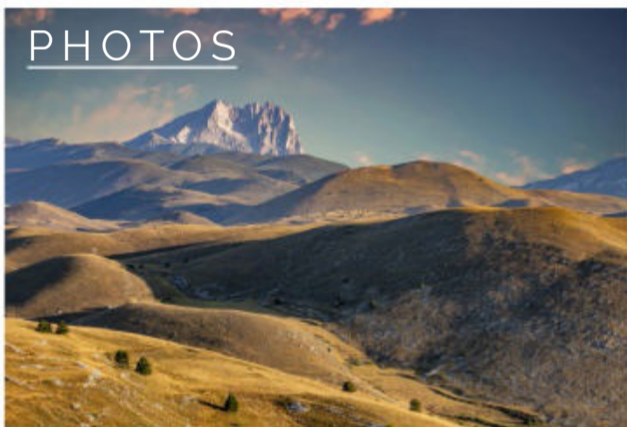
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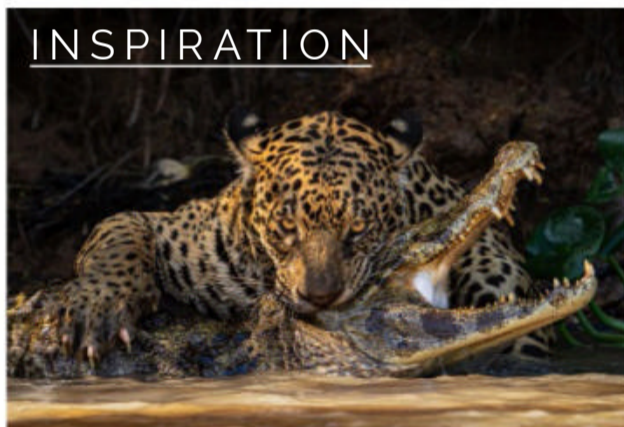
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REVIEW

LUMIX S 100MM F/2.8 MACRO

It plugs a gap in Panasonic's L-Mount lineup, and it's impressively compact and light – but does that mean compromises on handling and image quality? Find out in our in-depth review



Cover image © Getty

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WHAT'S HOT

THE WEEK'S TOP HEADLINES IN PHOTOGRAPHY

THESE COMPACT LIGHT METERS FIT ON YOUR CAMERA HOTSHOE

They're stylish, feature-packed and easy to use, and will fit almost any camera



© Capix

Capix, a UK brand that markets film processing and scanning equipment, has launched a pair of new, compact, and innovative hotshoe-mounted light meters, the KEKS KM02 OLED and KM-Q.

The KEKS KM02 (pictured above) is the more advanced of these two new light meters. It has a metering cell at the front and an OLED exposure display at the back, with customisable options for shutter speed, lens aperture and ISO settings, together with the ability to shift exposure compensation from -3EV to

+3EV. It's powered by an internal battery offering 21 hours of continuous use, and you can create presets for up to three camera and lens combinations.

We don't have any more detailed specifications at the moment, except that it offers continuous and single metering modes and a VEML7700 "high accuracy ambient light 16-bit digital resolution sensor".

The continuous and single metering modes look interesting because you can take a fixed one-click exposure reading, or move the camera around to see how

the exposure changes with framing and pointing at different areas of the scene.

It doesn't rely on any electrical connections with the camera, so you should be able to attach it to pretty much any camera maker or model with a hotshoe – or on a coldshoe, for that matter. It's available now, and costs £139 / \$112.

The KM-Q is smaller – about the size of a sugar cube – and has fewer features, but it also has the metering cell on the front and an OLED panel on the back. It costs £119 / \$85.



**PRO
CHRIS GRIMMER**

**CAMERA:
CANON EOS 6D,
7D & 70D**

Chris was shortlisted for the Insight Astronomy Photographer of the Year in 2016, and he's also been shortlisted for the UK Astrophotographer of the Year – so it's safe to say he knows a thing or two about capturing great shots of starry skies. Chris uses a whole host of equipment, from converted EOS cameras to tripod heads that rotate to track stars. You can see his work at <https://bit.ly/3M2SBe8>

SHOOT FOR THE STARS

Astrophotography pro Chris Grimmer shows an enthusiast with just a couple of years of taking photos under his belt how to capture amazing images of the night sky

**APPRENTICE
STEVE DYTHAM**

**CAMERA:
CANON EOS R6**

Steve took up photography as a hobby over the Covid lockdowns in 2020 and 2021. He's based in Peterborough, UK, and is often out with his camera shooting wildlife at some of his favourite local nature spots. While he has a passion for nature, he also wants to learn how to take better landscapes and night shots, so we paired him with astro pro Chris to show him the ropes at a suitably dramatic ruined church near King's Lynn in Norfolk.



F E A T U R E

TECHNIQUE ASSESSMENT

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



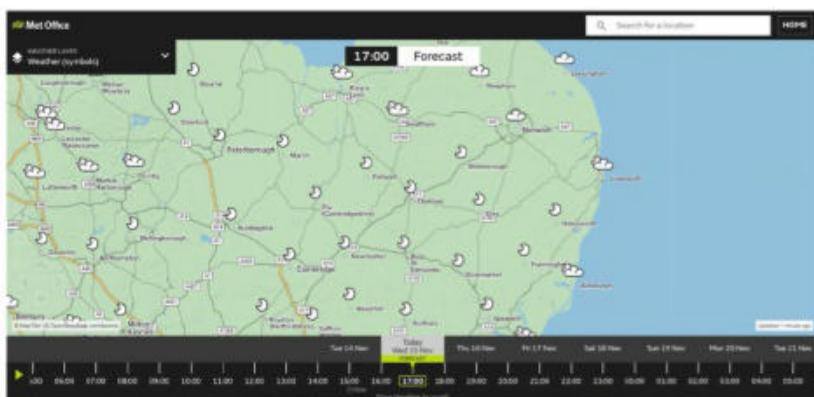
STARTING SETTINGS

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



MANUAL FOCUSING

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



Crisp winter nights free from clouds are perfect for astro shoots, so check as close to your chosen night as possible for the most accurate forecast. In the UK, sites like metoffice.gov.uk and bbc.co.uk/weather will give you a good indication of cloud cover in the area you wish to shoot. An app like Clear Outside is even better, as it shows you the low, medium and high cloud coverage in more detail.

PRO TIP SHOOT RAW+JPEG

Raw files are larger than JPEGs and capture much more tonal information, which is very handy when shooting in low light. However, Chris also likes to have JPEG images to work with, as these smaller files can be more manageable when loading a big batch of star trail photos into software such as the free Startrails program. A good idea is to use a high-capacity memory card, and shoot both raw+JPEG so that you have both file types for editing if needed.



PRO TIP PROFESSIONAL TRIPOD



To support the weight of equatorial mounts and heavy telephoto lenses, Chris uses a Charles 2.0 pro tripod from Three Legged Thing – its magnesium alloy construction can handle loads of up to a whopping 40kg. He also uses a 3LT Airhed Pro ball head for fast adjustments, which can be mounted directly to the tripod or equatorial mount. The ball head has an Arca-Swiss mount that works with his L-bracket, so he can quickly switch between portrait- and landscape-orientation shooting.

EXPERT INSIGHT CHECK THE WEATHER



HOT SHOT #1



CHRIS'S COMMENT

I met up with Steve a few hours after sunset at Wiggshall St Peter Church, south of King's Lynn. Now a ruin, the church is a striking bare-bones skeletal structure without a roof or rafters, so you get an amazing view of the night sky behind and above. I suggested composing with a wide-angle lens to include lots of the church in the foreground, and using the stone arch to frame the tower, the stars and Milky Way. I used an equatorial mount, which tracks the stars at the same rate as the Earth's rotation.

LENS 14mm f/2.8

EXPOSURE 30 secs, f/2.8, ISO3200
(seven images stacked)

EXPERT INSIGHT LCD BRIGHTNESS

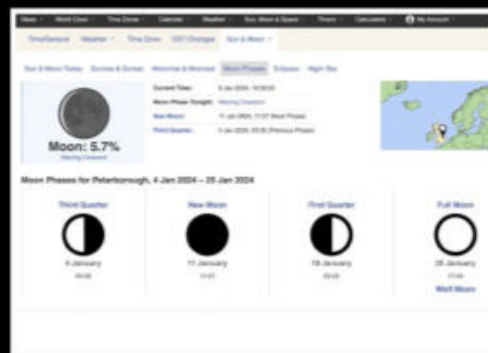
The bright glare from your camera's LCD screen will reduce your night vision, which will make it harder to see in the dark and compose. There is a handy solution though: simply go into your camera's menu and lower the LCD brightness to its minimum setting. Just remember to turn it back up to a middle value when you're back out shooting in the daytime.



F E A T U R E

EXPERT INSIGHT GET TO KNOW YOUR MOON PHASES

An important aspect of astro photography is the moon's phase in the lunar calendar. We all know that on a full moon the moon is at its brightest, and while this can be an interesting way to light a landscape at night it's not ideal for astro, as you need the sky to be as dark as possible for stars to be vivid and clear. Shooting around a 'new moon' is ideal. It's also worth checking the moonrise and moonset times: shooting when the moon is below the horizon will help to cut down light pollution and boost contrast. The Moon Phase 2024 Lunar Calendar featured on www.timanddate.com is a great resource.



LENS 14mm f/2.8

EXPOSURE 30 secs, f/2.8, ISO3200
(seven images stacked)

PRO TIP PAINTING WITH LIGHT

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



HOT SHOT #2



STEVE'S COMMENT

Next, we headed 'outside' to take some shots of the church exterior to add scale and context. Once again using Chris's equatorial mount tripod head, we were able to shoot long exposures to capture a really deep Milky Way. The church has a few houses either side of it, so there was some light pollution, though I was surprised with how much star detail we captured on Chris's astro-modified Canon EOS 6D, and the light pollution has actually helped to light the church a little bit here. We took six shots of the stars and stitched them together to build up the Milky Way, and a seventh shot to capture a sharp foreground.



F E A T U R E

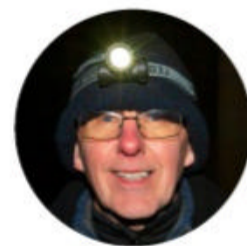


LENS 18-55mm f/3.5-5.6
EXPOSURE 30 secs, f/3.5, ISO1600 (60 images stacked)

EXPERT INSIGHT SHUTTER RELEASE CABLE



A shutter release cable plugs into your camera body, and allows you to fire the shutter remotely so that you don't risk introducing blur when you press the shutter button; it also means you don't need to enable the 2-sec self-timer drive mode. They allow you to lock the shutter button down to fire continuous exposures, and also set custom exposure times by using Bulb mode. More advanced shutter releases have features like an intervalometer, which comes in handy for shooting timelapses.



HOT SHOT #3

STEVE'S COMMENT

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



F E A T U R E

LENS 100-500mm f/4.5-7.1
EXPOSURE 30 secs, f/5.6, ISO3200 (120 images stacked)



HOT SHOT #4



CHRIS'S COMMENT

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

PRO TIP TURN UP THE HEAT



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



SHOT OF THE DAY!



LENS 14mm f/2.8 IF ED UMC
EXPOSURE 10 secs, f/2.8, ISO3200



STEVE'S COMMENT

For this shot we headed 'inside', and Chris suggested using his Samyang 14mm wide-angle lens to squeeze in more of the interior architecture, allowing room for the stars and Milky Way above too. With Chris's help we composed looking up at this tower, which I was able to focus on when Chris shone his head torch on it, giving me enough light to lock the autofocus. It was then a case of shooting in Manual mode with a wide aperture, high ISO sensitivity and a shutter speed of 10 secs – as without the equatorial mount longer exposures would turn the stars into trails rather than pin-points of light.



CHRIS'S VERDICT

It was fantastic sharing my passion for the stars with Steve, and he dived head first into this brand-new frontier. As with any architectural shot, it's important to get the right perspective so that straight lines look straight, and we also wanted this image of the tower to be symmetrical, so we moved around until the camera and tripod were in the centre of the church. I also nudged some of the architectural lines into place to make them look straight in Photoshop, and boosted the contrast of the Milky Way above the tower to make it more prominent. I hope I've shown Steve a new location to practise his astrophotography, and also proved that, with the right know-how, you don't need to be in a totally dark-sky area to take top astro shots.



CHRIS'S TOP 10 TIPS FOR SUPERB STAR SHOTS



1 BULB MODE

While he primarily shoots in Manual mode, Chris is often limited to maximum shutter speeds of 30 secs. When he needs to shoot for longer he'll use Bulb mode.

2 TURN THE SELF-TIMER OFF

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

3 AVOID LIGHT POLLUTION

It's best to travel as far as you can from the bright glow of city lights, as these can limit how 'dark' the sky is. Visit www.darkskydiscovery.org.uk to find a dark-sky zone near to you.

4 IN-CAMERA NOISE REDUCTION

With low light levels and high ISO values, digital noise can be a problem. Many cameras have a Long Exposure

Noise Reduction feature, which can be applied to exposures longer than 1 sec. This method requires a second 'blank' exposure to be taken, so it's not suitable for star-trail sequences.

5 USE THE '500' RULE

This rule helps you work out the exposure needed to take pin-sharp star shots by dividing 500 by your focal length – so, for example, at 20mm your exposure can be no longer than 25 secs. With modern high-resolution cameras it's worth being conservative and reducing the exposure length even more to ensure sharp stars.

6 BUDDY UP!

When venturing out at night with your expensive camera kit be sure to team up with a photographer friend to stay safe and have fun together.

7 LOOK OUT FOR CELESTIAL EVENTS

The night sky is ever-changing, and

from lunar eclipses to meteor showers, and comets whizzing past to solar flares, resources like the BBC Sky at Night Magazine can help you plan shoots throughout the year.

8 POWER UP!

Cold nights and shooting for long periods will drain your batteries, so make sure you charge up, and also take plenty of spares.

9 STOP YOUR LENSES FOGGING

Condensation forms when you bring a cold lens into a warm home. Wipe off moisture with a microfibre towel, then leave the lens in your kit bag in a cold room so that it can acclimatise slowly.

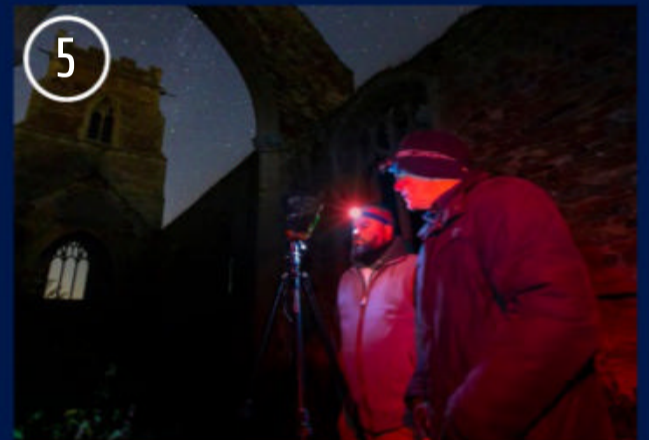
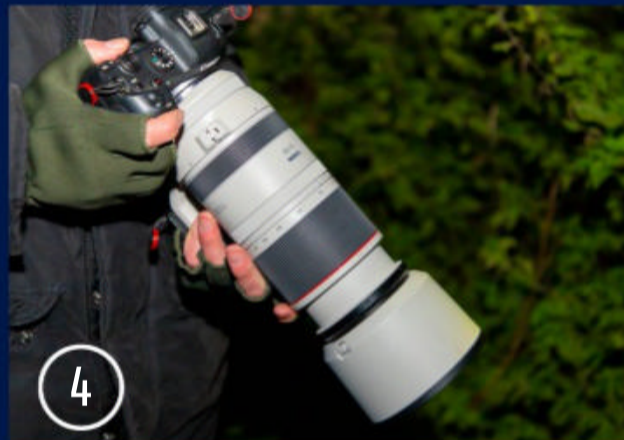
10 BRING A BACKUP CAMERA

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



ESSENTIAL GEAR

The kit Chris relies on for capturing top night sky shots



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

2 MODIFIED CAMERA BODIES
Chris owns a standard Canon EOS 7D and two modified bodies – an EOS 70D and full-frame EOS 6D. He's modified the DSLRs by removing the internal IR and UV filter, which allows more red spectrum to be recorded and optimises them for astrophotography. On his 70D he's also added a Skytech Quad band filter, which lets in hydrogen, oxygen, nitrogen and hydrogen beta wavelengths to capture more detail.

3 WIDE-ANGLE LENSES
50mm is considered to be a 'standard' focal length on a full-frame body as it has roughly the same angle of view as the human eye, so images have a natural look to them. A lens with a focal length wider than 50mm is considered to be a 'wide-angle', with a much wider perspective, which is perfect

for squeezing in loads of starry details above your night scenes. Chris uses a Samyang 14mm f/2.8 IF ED UMC on his full-frame EOS 6D and a Canon EF-S 10-18mm f/4.5-5.6 IS STM on his Canon APS-C DSLRs when he needs to go wide.

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

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



F E A T U R E

PRO TIP EDITING SOFTWARE

To merge a series of exposures to create a star trail image, start by loading all of your files into Photoshop as layers from Adobe Bridge via Tools > Photoshop > Load files in Photoshop Layers, then in the Layers panel change the blending mode of all of the layers to Lighten. Alternatively, Chris uses the free Startrails software for Windows, which you can use to create star trail images and timelapse movies.



EXPERT INSIGHT ASTRO APPS



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

CHRIS'S FAR-OUT STARS & GALAXIES

Professional astronomy photographer Chris reveals his three favourite astro images



BUBBLE AND LOBSTER CLAW This nebula was one of the first that I photographed, so seven years on I wanted to revisit it and do it justice. This is a two-panel mosaic looking at hydrogen and oxygen emissions.



DUNWICH MILKYWAY Dunwich is one of the darkest locations I've visited, and I shoot there regularly. This is a multi-panel mosaic using a standard DSLR and sturdy tripod.



JELLYFISH NEBULA This is another revisit, of a subject that I first captured back in 2017. Better kit and six years of experience resulted in a very different nebula image.

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G A L L E R Y

XPOSURE

THE WEEK'S MOST INSPIRING READER PHOTOS



CURVED LINES TO THE BIG MOUNTAIN

MARIO OTTAVIANI

"This is the typical 'lunar' landscape in the heart of Italy's Abruzzo region. The mountain in the distance is the 'Gran Sasso', the highest of the Italian Apennines."

<https://bit.ly/3Akm016>

GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



THE TUNNEL

MARK GREENFIELD

"I took this photo early in the morning, in an attempt to avoid being run over by cyclists in this bike tunnel near Rotterdam central station."

<https://bit.ly/3v1BExW>

GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



PRINCESS ZELDA

SALVATORE VITALE

"I took this photo at the 2023 Lucca Comics & Games fair in Tuscany. The model photographed is dressed as the character Princess Zelda from the video game *The Legend of Zelda: Tears of the Kingdom*."

<https://bit.ly/3zmSje4>

GALLERY

THE WEEK'S MOST INSPIRING READER PHOTOS



BENCH

JEAN-YVES BESSELIEVRE

"The transition from sunset to the blue hour. Taken with my iPhone 13 Pro Max."

<https://bit.ly/3N9H0NS>



FACEBOOK

<http://bit.ly/39py9lg>



FLICKR

<http://bit.ly/2VIgsJ0>

PHOTOGRAPHY WEEK WANTS YOUR PHOTOS!

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

I N S P I R A T I O N

IT'S COOL, THAT

THE BEST THING WE'VE SEEN THIS WEEK



Ana Skobe, Winner, Architecture



Ian Ford, Winner, Natural World & Wildlife



Michelle Sank, Winner, Portraiture

Images © The photographer and courtesy Sony World Photography Awards

PORTRAITS AND PREDATORS: WPA ANNOUNCES OPEN WINNERS

Prestigious contest reveals its latest round of amazing winning images

The World Photography Organisation has announced the category winners and shortlisted images in the Open competition of the 2024 Sony World Photography Awards, showcasing a stunning and diverse collection of images from photographers around the world.

Winners were announced in 10 categories, including Travel, Landscape, Portraiture, and Natural World & Wildlife. The awards include several competitions,

and the winners of the Youth, Student, National and Regional contests have already been announced. The overall winner of the Open competition, along with the other overall winners, will be announced at the awards ceremony in London on April 18.

A selection of images will be featured in the Awards exhibition, which is at Somerset House in London from April 19 to May 6, before going on tour. Click the link to see more images at the competition website.



SEE MORE IMAGES
<https://bit.ly/3Vf0gN0>

S K I L L S

CRASH COURSE

ESSENTIAL PHOTO SKILLS MADE EASY



FLASH FUNGI

Master macro with off-camera flash to capture mushroom photos with James Paterson

From antibiotics to alcoholic drinks, and from organic decay to delicious food, fungi play an important role in all manner of things. They range in size from tiny microscopic structures to the largest living organisms on the planet. Underground, the 'wood-wide web' of fine tendrils creates a network that connects plants and trees. Above ground, the fruiting bodies form as mushrooms and other stunning structures that offer some wonderful opportunities for macro photography.

Fungi – and mushrooms in particular

– tend to prefer dark conditions like dense woodlands, crevices in rotten wood and shady areas. When you're photographing in these murky spots, a burst of flash can provide a welcome lift to the scene. But it's not just about increasing the light levels – a flash also gives you the opportunity to enhance the mood. By firing the flash off-camera, either from the side, above, behind or even below, we can highlight the fine fungi features, draw attention to colours and textures, or show the delicate gills on the underside.

Whenever we add our own light into a

scene like this, the ambient daylight becomes almost like a secondary light source. We can decide whether the daylight plays a major or minor role in the exposure, either by balancing our flash with it for a subtle lift, or by overpowering it for a spotlight effect.

But before you head out in search of fantastic fungi, it's worth saying that you shouldn't touch anything you don't know. Do not inhale spores, and be sure to wash your hands. As for eating foraged mushrooms, please heed the wise words of Terry Pratchett: "All fungi are edible. Some fungi are only edible once."



SKILLS

HOW TO SHOOT MAJESTIC MUSHROOMS

Get your off-camera flash set up for fungi close-ups

1 EXPOSURE & APERTURE

Set the camera to Manual mode with a 1/30 sec shutter speed at f/8 and ISO100. A mid-range aperture like this will give you the sharpest results; lenses tend to perform their best a couple of stops down from the maximum aperture. Even at f/8, the depth of field will be very limited, so precise focusing is crucial.

2 TRIPOD AND FOCUSING

A tripod is a must for macro photography, not just because it lets you slow your shutter speed, but also because it means you can be really precise with your focusing. Manual focus is best. Use Live View and zoom in, then use the focus ring to ensure the front edge of the mushroom is sharp.

3 SPEEDLIGHT

Fired at 1/4 manual power, the flashgun is placed slightly behind the subject and angled back towards the camera so that it doesn't spill onto the area beyond the subject. This helps the backdrop to come out nice and dark, which, in turn, helps the water drops to stand out.



4 FLASH TRIGGERS

Key to this technique is learning how to fire your flash off-camera. You'll need a wireless trigger and receiver for this (we used a set of Godox triggers). With tiny macro subjects the slightest change to the position and angle of the flash can have a huge impact, so experiment with your flash placement.

5 SMALL SOFTBOX

A small portable Lastolite softbox is fitted over the flashgun. This diffuses the harsh light from the flash bulb so that it looks softer and more natural. The softbox is angled so that the edge of it catches the subject, rather than directed straight at it – this feathers the light to give it more of a wraparound quality.

6 WATER SPRAYER

Water spray can add extra atmosphere to your macro photography, especially if you're using flash. The flash will freeze the droplets and make them sparkle and glow. Try spraying water over the mushroom and capture drops falling off the bonnet. If your camera is on a tripod, combine several frames with the best droplets.



S K I L L S

TOP TIPS FOR FUNGI PICS



1

BRING A BEANBAG

You'll often need to be shooting low to the ground to capture mushrooms and fungi. As such, a small beanbag like this comes in very handy to prop up your camera. A flip-out screen is also hugely useful for shooting at low angles, and waterproof trousers will come in handy when you're kneeling down on damp ground for close-in shots.

2

CONTROL THE FLASH

Setting the right flash power can be a matter of trial and error. Begin by working out a manual exposure without the flash. Set an aperture f/8 and ISO100, and adjust the shutter speed until things look dark. Now turn on the flash and use it to lift the subject – here the flash is at 1/16 manual power.



3

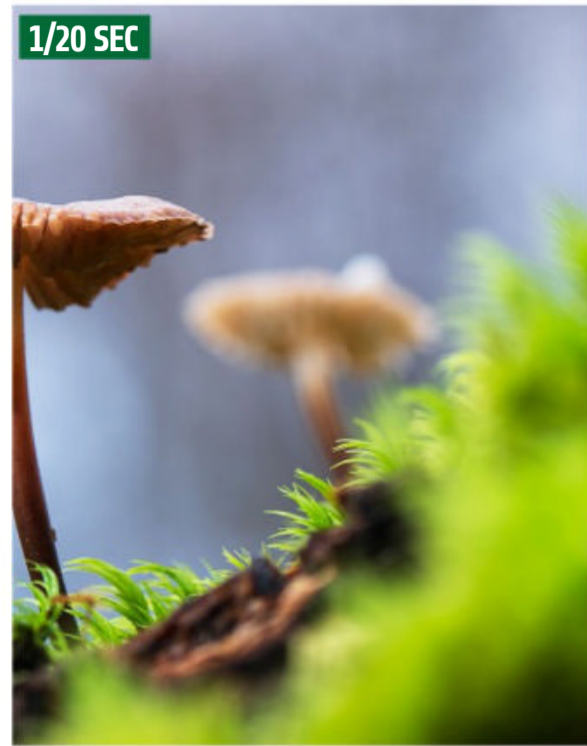
CREATE DEPTH

For a sense of depth and to blur out the background, find an angle with empty space. Shooting down the length of the fallen tree gives us space beyond the common bonnet mushrooms. If we shot straight on, it would be difficult to get the flash to the side and darken the backdrop.



S K I L L S

TOP TIPS FOR FUNGI PICS



4

AMBIENT EXPOSURE

Your shutter speed has no influence on the flash, only on the ambient light. Here, the left side was shot at 1/40 sec, the right at 1/20 sec. The subject stays similarly lit, but the light behind it changes. For a brighter or darker backdrop with flash, tweak your shutter speed.

5

DRESS THE SCENE

When shooting close-ups the tiniest distractions really stand out, so take the time to tidy any messy details, like stray strands of grass or flecks of mud. You might also want to 'dress' the scene – here, for instance, the red berries were scattered around the black earth tongue fungi to add a splash of colour.



6

FINDING FUNGI

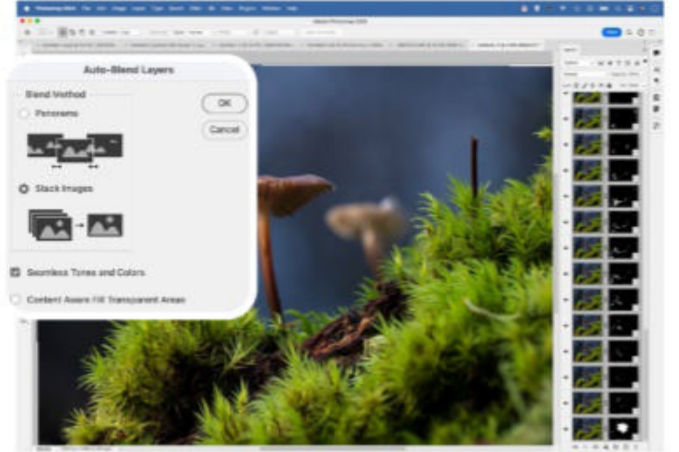
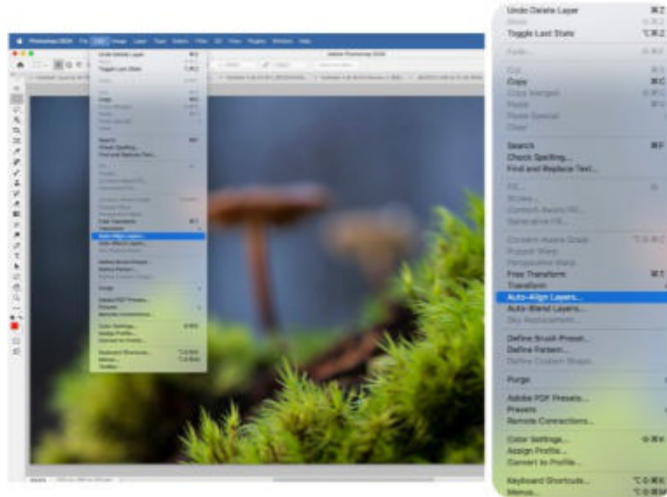
Fungi grows year round in all kinds of conditions, and it's amazing how many you can find once you start looking. Most prefer dark, damp conditions, although some like open spaces, like fields. Check decaying wood and inspect the forest floor. This yellow spindle coral fungi can be found in mossy lawns.



SKILLS

HOW TO FOCUS STACK YOUR FUNGI PHOTOS

Shoot a set of images for a focus stack, then merge them in Photoshop for front-to-back sharpness



1 SHOOT FOR A STACK

To get macro subjects sharp you could try shooting for a focus stack. Focus on the closest point and take a shot, then shift the focus point backwards and take another. Continue until you've captured sharpness across the subject. Some cameras have a focus shift mode that can shoot the stack for you.

2 ALIGN THE LAYERS

You can use Photoshop to automatically combine the sharp parts into a single image. Go to File > Scripts > Load Files into Stack and load in your set of images. Once done, go to the Layers panel, highlight the top layer, then hold Shift and click on the bottom layer to select them all. Go to Edit > Auto-Align Layers.

3 BLEND THE LAYERS

In the Auto-Align settings choose Auto and hit OK. Ensure the layers are highlighted then go to Edit > Auto-Blend Layers. Set 'Stack Images' and hit OK. Grab the Crop Tool and crop off the messy edges. Make any tonal changes you like, then sharpen the image to finish off with Filter > Sharpen > Unsharp Mask.

PUFF PIECE

Create a spotlight effect with a flash to capture the wonderful wolf fart

A flash is a brilliant tool for nature close-ups. Here, for instance, by picking out the subject with the flash we can create a spotlight effect and allow the backdrop to become moody and dark. To do so, we set a manual exposure that underexposes the natural light (1/100 sec, f/8, ISO100), then turned on our flash and used it to lift the foreground. This is the ideal setup to show the puff of spores emitting from this little stump puffball – the puff wouldn't stand out without the flash to darken the background and light the spores. Spores are usually released by raindrops, but a gentle poke doesn't do the puffball any harm (take care, as inhaling large quantities can be dangerous). The scientific name for this family of mushrooms is Lycoperdon, which, rather wonderfully, translates as 'wolf fart'!



E D I T I N G

AFFINITY PHOTO

LEARN ESSENTIAL EDITING SKILLS FAST!



HOW TO...

GET THE LONG-EXPOSURE LOOK

James Paterson shows you how to use the Stack feature in Affinity Photo to combine a set of photos and blur choppy waters

Few photography effects can beat the look of a long exposure, especially the beautiful motion blur you get when shooting moving water with a slow shutter speed. During daylight hours the slow shutter speeds you need can usually only be achieved with the use of a neutral density filter, which slows the flow of light into your camera. But sometimes you can be caught short without a neutral density filter, and the water comes out looking too choppy and detailed. If so, there's

another option. Using a tripod, you can shoot a series of frames of the moving water in quick succession and then blend the images together in Affinity Photo, and we'll show you how it's done in this issue's video tutorial.

It helps if the frames you intend to use are shot at your slowest possible shutter speed. Ours were taken at f/16 and ISO100, allowing us to achieve a shutter speed of half a second at sunset. Using a tripod, we captured a set of half-second frames. That's long enough to create a

touch of blur in the waves, but nowhere near long enough to get the misty water effect you really only see with exposures upwards of 30 seconds.

We'll begin here by using the Stack feature to blend our frames with a neat trick that averages out the motion in each, then combine two blending methods before adding filters to enhance the blur. Finally, we can bring in parts from our original images to complete the effect. It's not quite as good as real in-camera motion blur, but it's the next best thing.



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PROJECT FILES
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ON A PC OR MAC

G E A R

LENS TEST

EXPERT OPINION ON THE LATEST KIT



LUMIX S 100MM F/2.8 MACRO

It ticks many boxes, but it's not a total success

www.panasonic.com [£999/\\$999](#)

Panasonic cameras go from strength to strength, and it was the fastest-growing full-frame camera brand in 2023. However, the company's Lumix S L-Mount lineup still lags a little way behind the competition, with one major omission being the lack of a standard macro lens. The L-Mount Alliance has in the past saved the day for Panasonic shooters, with fellow members Leica and Sigma filling the gap with some superb choices, including the Sigma 105mm f/2.8 DG DN Macro, while Venus Optics and TTArtisan offer more affordable options.

Key features

But what is a camera system without good first-party lenses? Finally

Panasonic has seen fit to plug this non-macro-sized hole with the new Lumix S 100mm f/2.8 Macro; although with Panasonic having a reputation of notching up 'firsts' with its Lumix cameras, this, not surprisingly, isn't your typical macro lens.

Instead, Panasonic hopes to set a new bar for macro lenses everywhere with the world's smallest and lightest full-frame autofocus macro lens over 90mm with 1:1 magnification. The lens also has the world's closest focusing distance for a macro lens of the same description. That's a lot of caveats to being a 'world first', but Panasonic's reduction in size here is genuinely impressive.

Panasonic has achieved this size reduction with a newly developed

1 Image quality isn't as sharp as you'd expect from a lens of this class.

2 There's a noticeable lack of switches and buttons on the lens.

3 A new Dual Phase Linear Motor has aided the reduction in size.

Dual Phase Linear Motor (the motor used for focusing), which Panasonic claims offers the same performance at a fraction of the size. Eagle-eyed readers will spot fewer elements than rivals and no optical image stabilisation (OIS) as factors that have also most likely contributed to a much smaller body. But has



LENS TEST LUMIX S 100MM F/2.8 MACRO



We encountered occasional struggles with close focusing, with the lens hunting for focus before eventually locking on. However, this could be in part down to the camera, and it's something that could be improved with a firmware update in the future

this size reduction also reduced the performance? Let's find out.

Build and handling

There's nothing else to do but give a round of applause to Panasonic's lens design team – for a standard-length 1:1 macro lens designed for full-frame cameras, it has really achieved something special with this lens. At only 82mm in length and 300g in

We have to applaud Panasonic's lens design team for achieving something special here

weight, there's no comparison with the equivalent Canon 100mm, Nikon 105mm or Sony 90mm – with those lenses being 385g, 330g and 302g heavier respectively, and 66mm, 58mm and 48.5mm longer.

One undeniable benefit of Panasonic's Lumix S prime lens lineup is that each lens is designed to be the same length and have the same filter thread, which is a huge benefit to anyone balancing a camera for video on a stabiliser or gimbal. Weight is also remarkably consistent, with the lineup – from the 18mm all the way to the 100mm lenses – only differing in weight by 60g between the lightest (35mm at 295g) and the heaviest (85mm at 355g).

With Panasonic being the hybrid video camera brand to beat at present, it's great to see video-first design running through everything Panasonic puts out. Seeing its design foresight come to pass like

this gives me confidence in Lumix going forward.

The lens follows the exact same design language as the rest of Panasonic's Lumix S lenses. Panasonic lenses are generally good, although I don't find them as premium-looking or feeling as those of other brands. The lens is made out of solid plastic, and features a rubberised manual focus ring that's easy to find and grip without taking your eye away from the viewfinder. The lens is weather-sealed and freeze-resistant, so can resist the elements when shooting outdoors, although that should be expected on a lens at this price.

The focus ring offers a good amount of resistance and avoids being overly sensitive, which is essential for precise macro focusing. There's a noticeable lack of switches and buttons on the lens, although with no OIS in the Lumix S 100mm, perhaps there isn't much need for



LENS TEST LUMIX S 100MM F/2.8 MACRO



Shooting wide open in challenging light situations, a few contrast issues were evident in JPEG files, with out-of-focus areas looking a little lacklustre

more switches. But with other brands adding more custom function buttons to their lenses, it's a shame not to see at least one here.

Performance

Image quality is very good, but sadly not as sharp as I would have hoped for from a lens of this class and given Panasonic's usual quality. Images look a little soft at wider apertures, only becoming clinically sharp when you stop down to around f/8. That's not uncommon, but it does lag behind rivals if peak sharpness is your number one priority.

Occasionally, when I was shooting wide open in challenging lighting

S P E C S

MOUNT: L-MOUNT **FULL-FRAME:** YES
CONSTRUCTION: 13 ELEMENTS IN 11 GROUPS **ANGLE OF VIEW:** 24° **AUTOFOCUS:** YES **MAX APERTURE:** F/2.8 **MIN APERTURE:** F/22 **DIAPHRAGM BLADES:** 9 **MIN FOCUSING DISTANCE:** 0.2M **MAX MAGNIFICATION RATIO:** 1.0X **FILTER SIZE:** 67MM **DIMENSIONS (L X D):** 82 X 73.6MM **WEIGHT:** 300G

situations, the lens suffered from a few contrast issues in the JPEG files, with out-of-focus areas sometimes being a little lacklustre and drifting into muted grey. However, if you're shooting in raw format this will be less of a concern, as Panasonic's raw files are excellent.

Focusing was good and snappy when shooting at a distance, with the new Dual-Phase Linear Motor being near silent in operation. The Lumix S 100mm combined with a Lumix S5 IIX body had no issue locking onto and tracking subjects across the frame during stills shooting and also in video. Panasonic has claimed the new lens motor is faster than its previous incarnation – although I didn't notice any dramatic difference in speed when driving focus from near to far than with other Panasonic lenses.

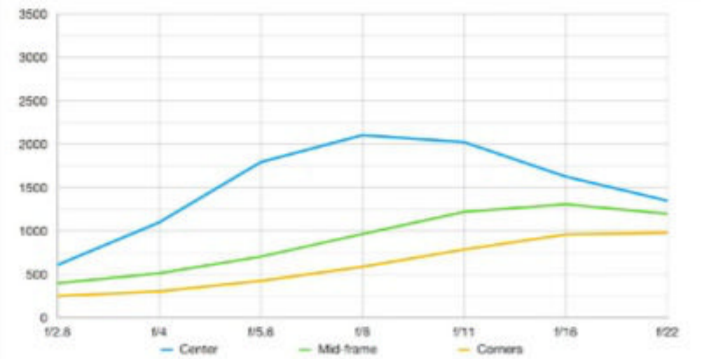
However, there were occasional struggles when it came to close focusing, with the lens sometimes hunting for focus when used close up to a subject before eventually locking on. This was occasional, but unfortunately happened more frequently than I found ideal, although I'm not sure how much responsibility to assign to the camera and how much to the lens – and this is something that could be improved with firmware down the line.

Panasonic's implementation of in-body image stabilisation is absolutely rock solid – though it's unsurprising when you remember that Panasonic invented IBIS – and the Lumix S 100 on a camera with IBIS like my S5 IIX should offer up to seven stops of correction. In reality, it does – shooting in low light with the Lumix S 100mm I was able to stop down to around 1/15 sec handheld and still get plenty of usable shots, although your experience might vary depending on how steady your hands are.

However, there's no optical image stabilisation in the lens, which is likely a sacrifice made in order to get it down to such a compact size, but I can't help wondering whether a hybrid stabilisation system could have achieved even greater heights of handheld steadiness.

Gareth Bevan

SHARPNESS



Sharpness isn't as impressive as we'd hoped for. Centre sharpness is poor at larger apertures, and you only get the best out of the lens at f/8. However, it's worth noting that we tested an early production sample lens, so it's possible that retail models will perform better.

FRINGING

SHORT 0.23

Colour fringing is very well controlled, and of a low order across the entire image frame.

DISTORTION

SHORT 2.0

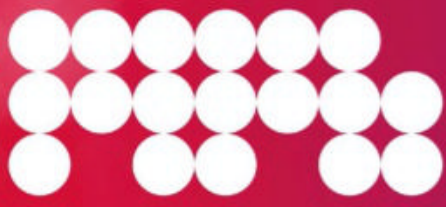
The lens produces moderate pincushion distortion, though this is without any in-camera distortion correction applied.

VERDICT

For a full-frame macro lens, the compactness and lightness Panasonic have achieved with the Lumix S 100mm f/2.8 Macro are genuinely remarkable. The downside is that there are a few compromises in performance. At the near end the lens hunted for focus more than I'd have liked; it could also be a bit sharper throughout the frame, and JPEGs lack contrast, so if you're a Panasonic shooter waiting for a Lumix S macro lens this isn't quite a flawless entry.

It's nonetheless a very good compact macro lens that's worth adding to your collection, but you might still look at rival systems with a pang of jealousy.





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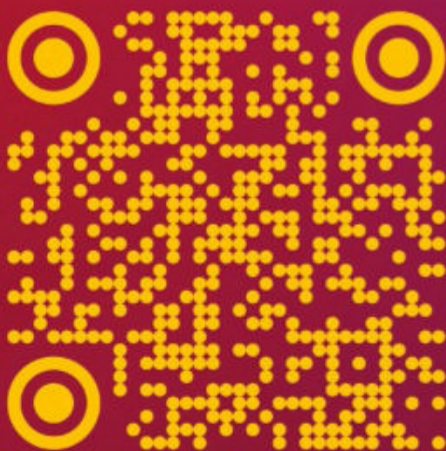
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ADVERTISING

UK Commerical Sales Director

Clare Dove

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Head of Market

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matthew.johnston@futurenet.com

Account Sales Director

Matt Bailey

matt.bailey@futurenet.com

MARKETING

Head of Acquisitions

Helen Harding

LICENSING

International

Licensing Director

Rachel Shaw

licensing@futurenet.com

Editor Jeff Meyer

jeff.meyer@futurenet.com

Art Editor

Alvin Weetman

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Gareth Bevan

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REGULAR CONTRIBUTORS

Mike Harris, Marcus Hawkins,

Rod Lawton, James Paterson,

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SENIOR CREATIVE TEAM

Content Director

Chris George

chris.george@futurenet.com

Senior Art Editor

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SENIOR MANAGEMENT

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