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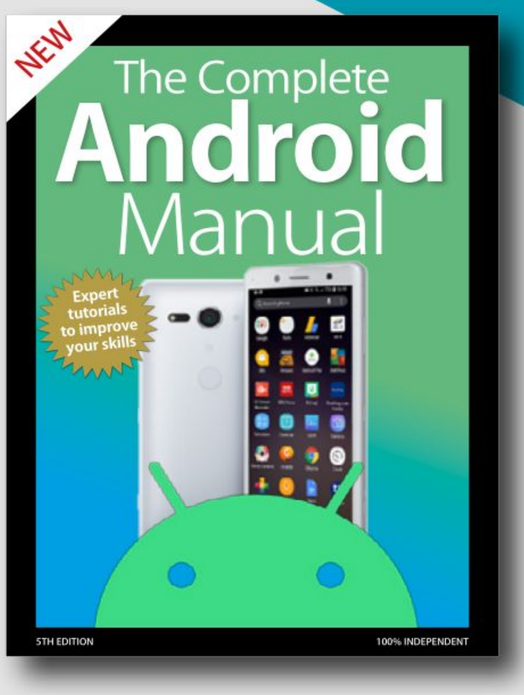
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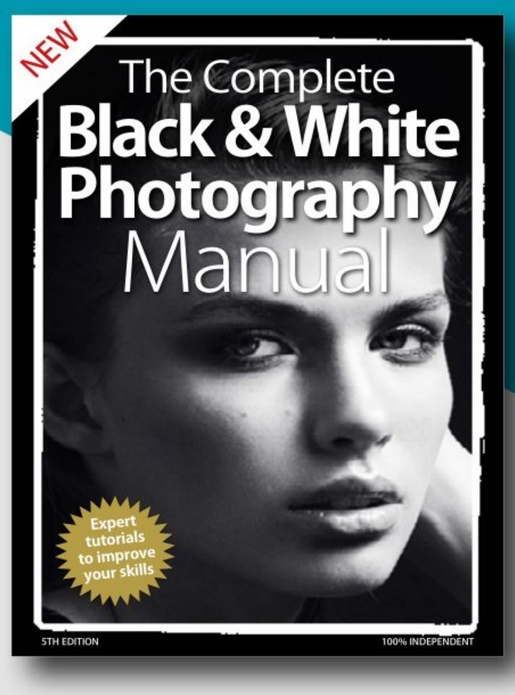
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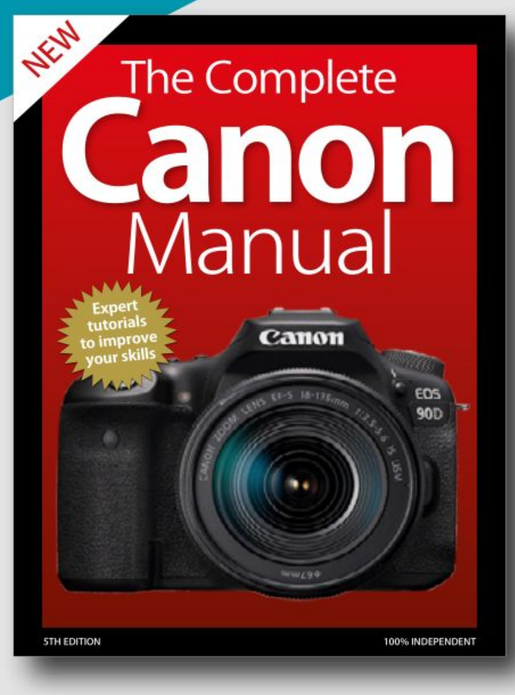
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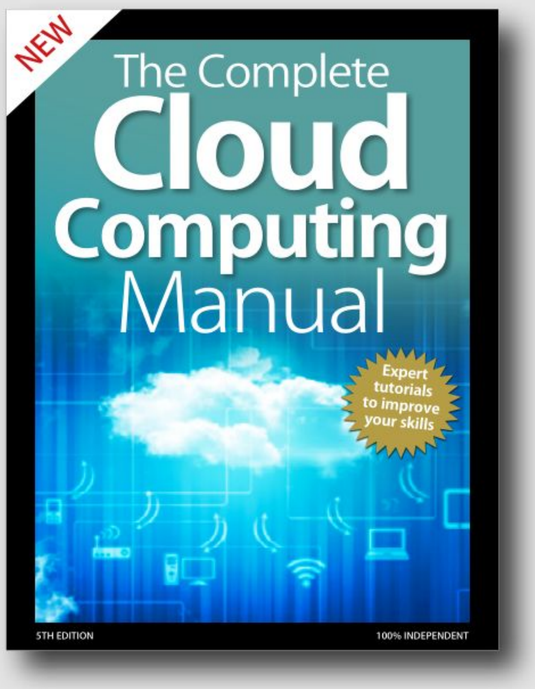


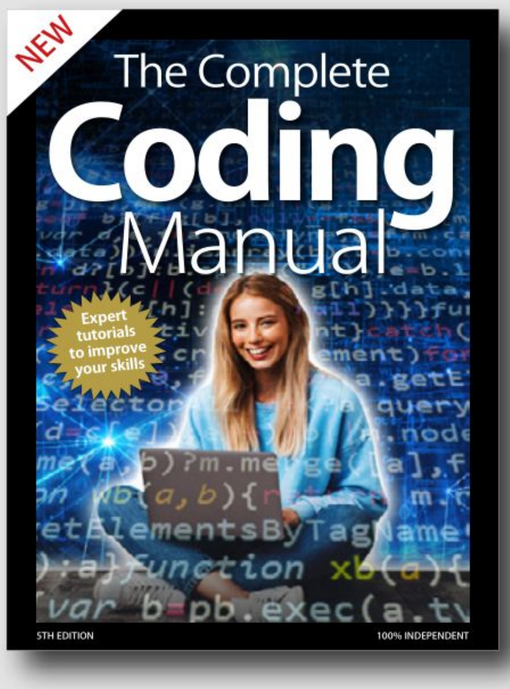



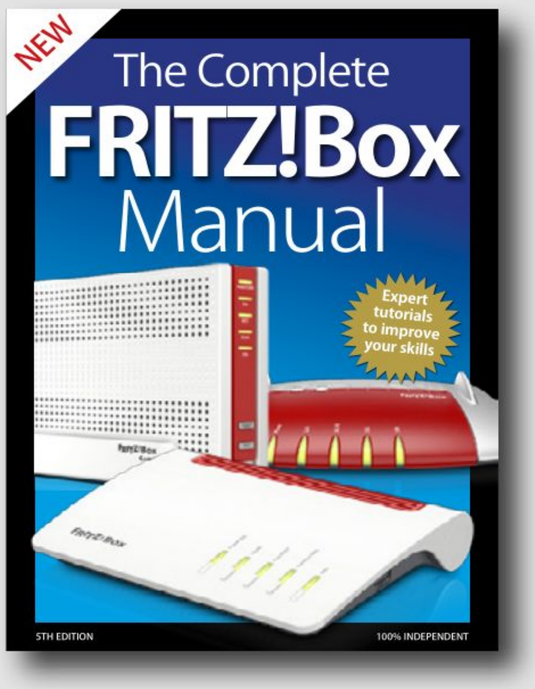






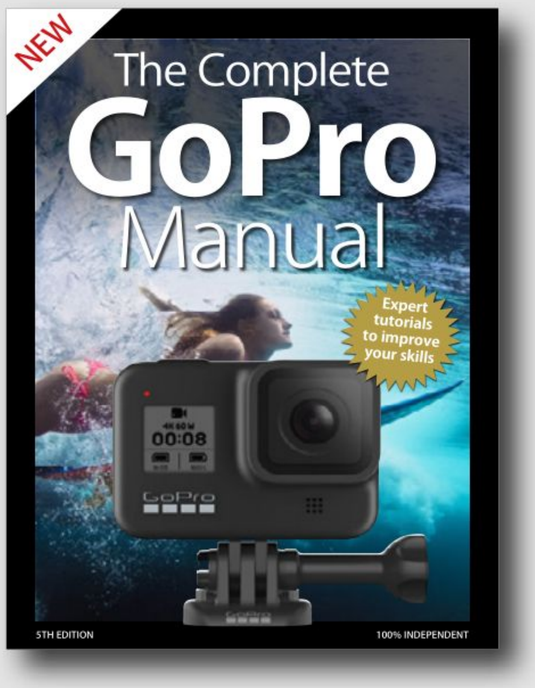



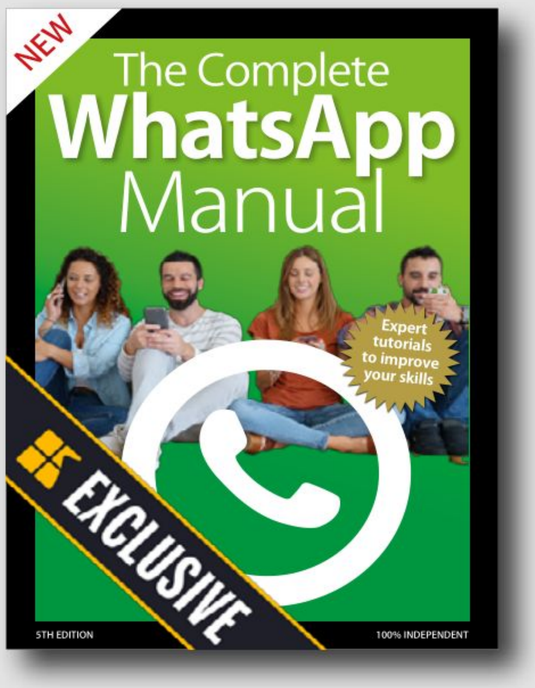


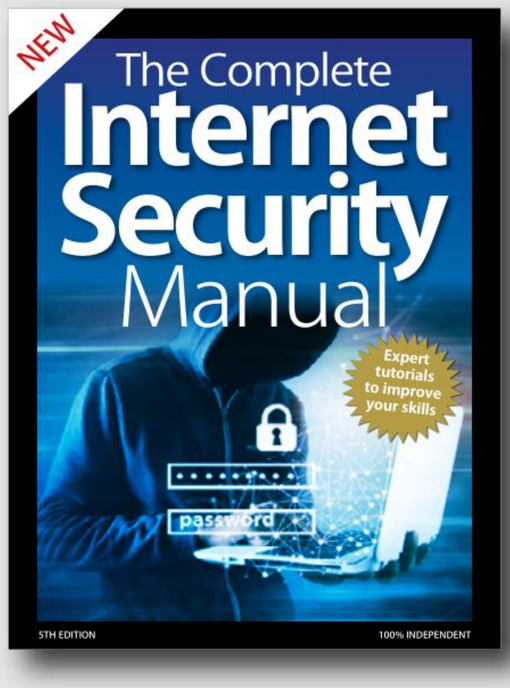


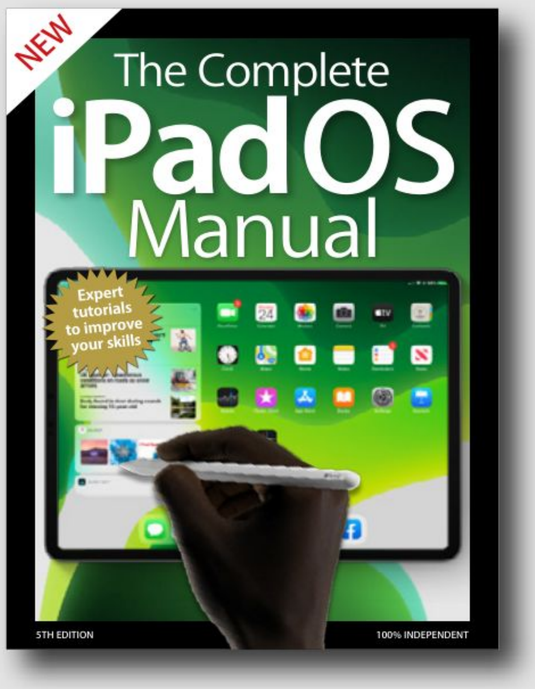






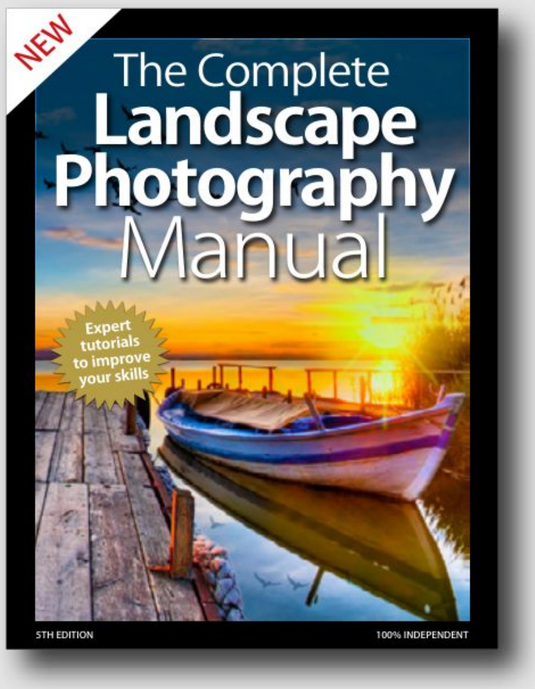


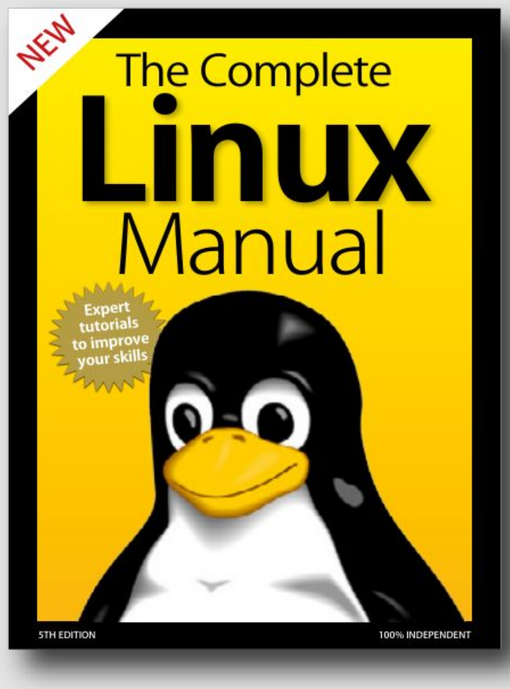









# The Complete Landscape Photography Manual

## Welcome

### Your introduction to the world of landscape photography begins here

**As a genre landscape photography is probably one of the most popular. There is something special about being out in the world capturing the landscape around you. Whether it is the vast openness of a particular space or a more intimate scene viewed in close-up, the landscape is certainly the most accessible type of photography that everyone can enjoy without needing very expensive equipment and studio space.**

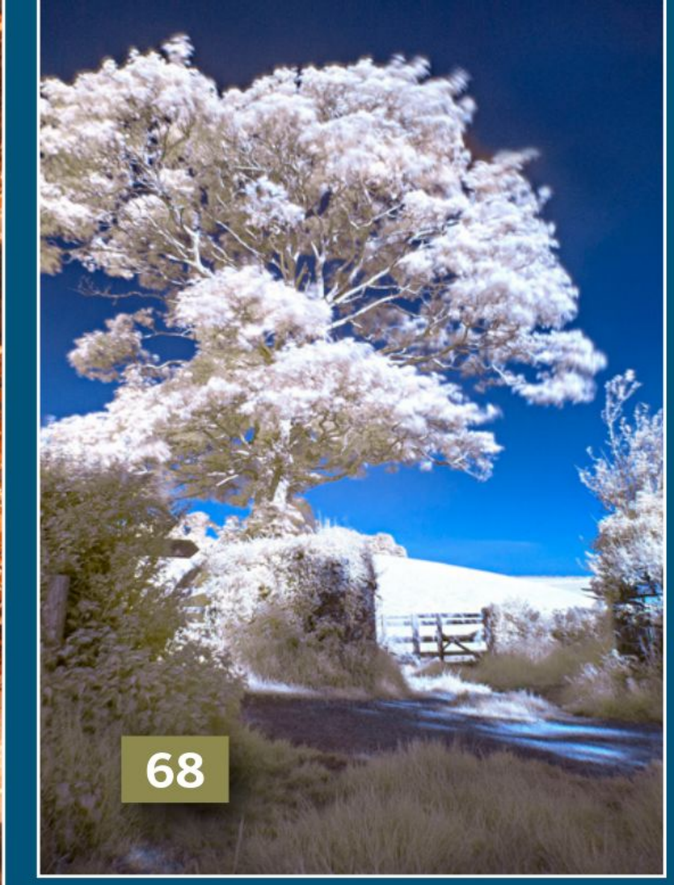
Landscape photography shows us places within the world that can capture the beauty and grandeur of unspoiled nature, as well as the more familiar aspects of the man-made world and its presence within the landscape too. From coastal scenes to cityscapes and the rural expanses beyond the city limits, there is an unending array of subjects both great and small waiting to be captured.

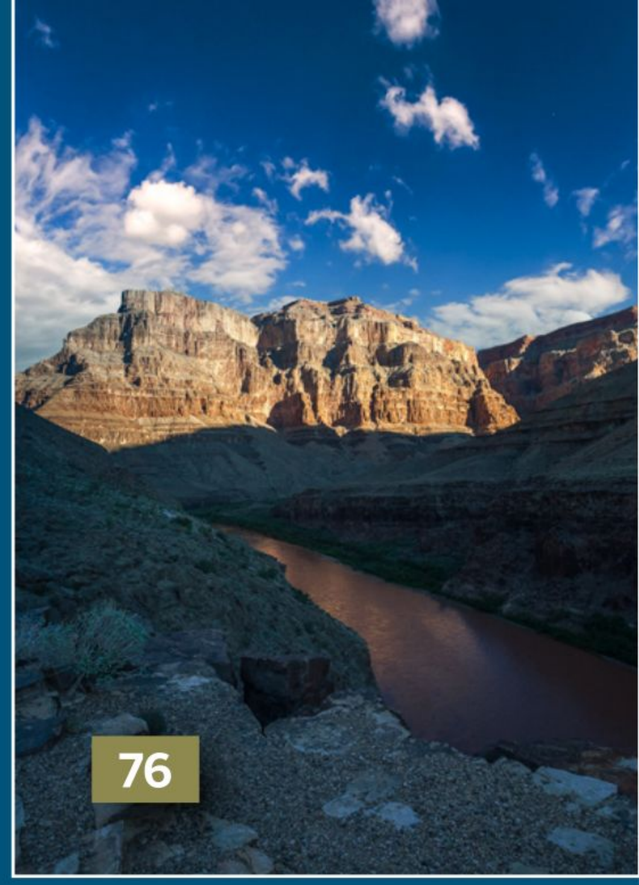
You don't have to be Ansel Adams or require every piece of photographic equipment known to science in your backpack in order to get the best shots. You just need to get yourself outdoors and enjoy being out there. Landscape photography is within the reach of anyone who is in possession of even the most basic camera equipment. In fact even a modest camera phone can get your photographic journey under way if that's all you have.

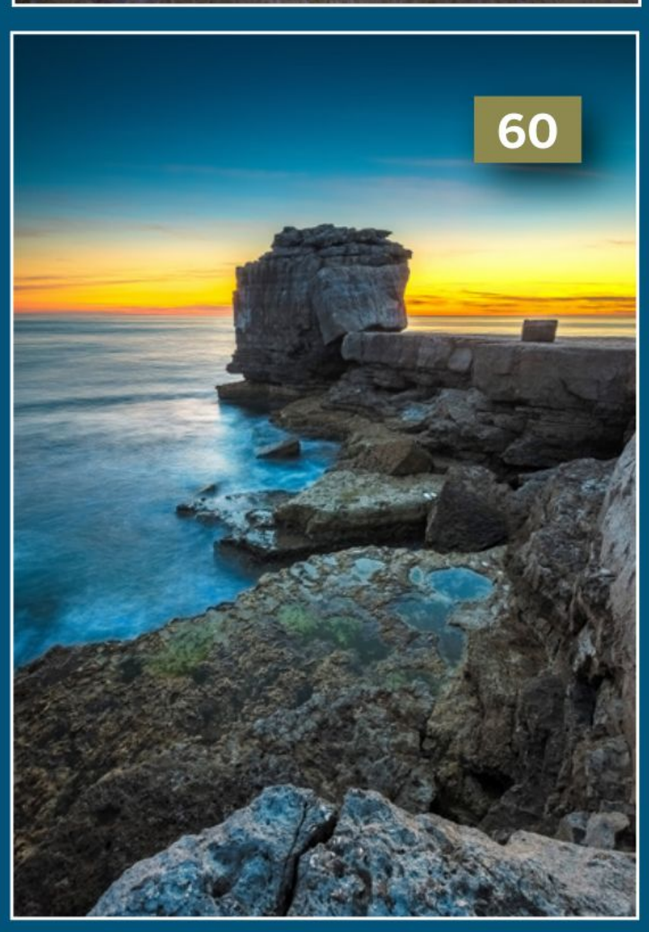
The aim of this bookazine is to help you, the budding landscape photographer, into the world of photography; to explore cameras, lenses and accessory options and then to help you get the best out of them. Whether you're just looking to take your holiday snaps or you're interested in landscape photography as a hobby and would like to know more about it, we're here to help you. Starting from the basics we'll guide you though the world of landscape photography and hopefully help you to enjoy using your camera and take better photos with it. Who knows? We may even start you on a whole new hobby or maybe an enjoyable and profitable career.

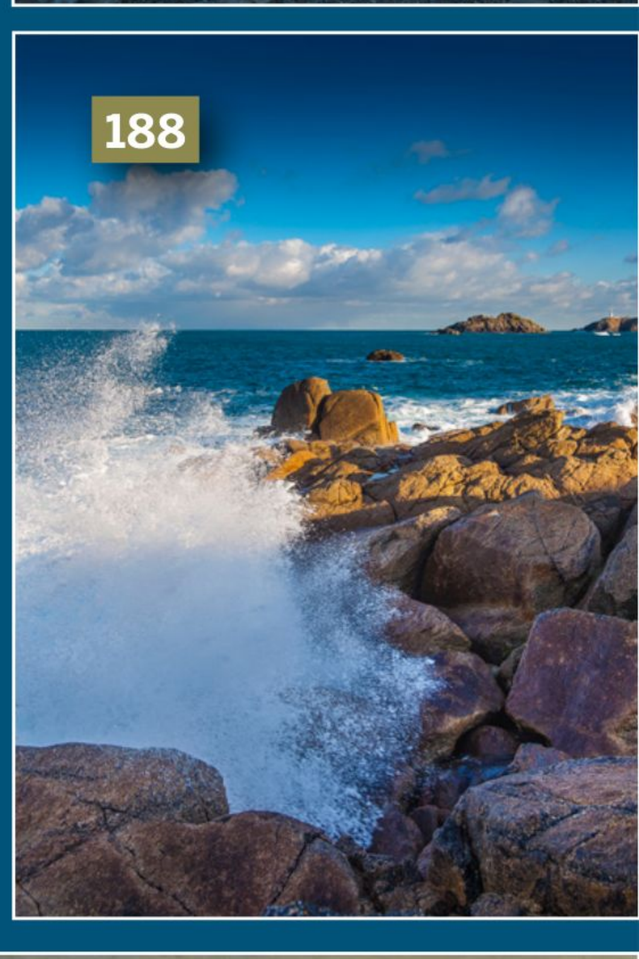



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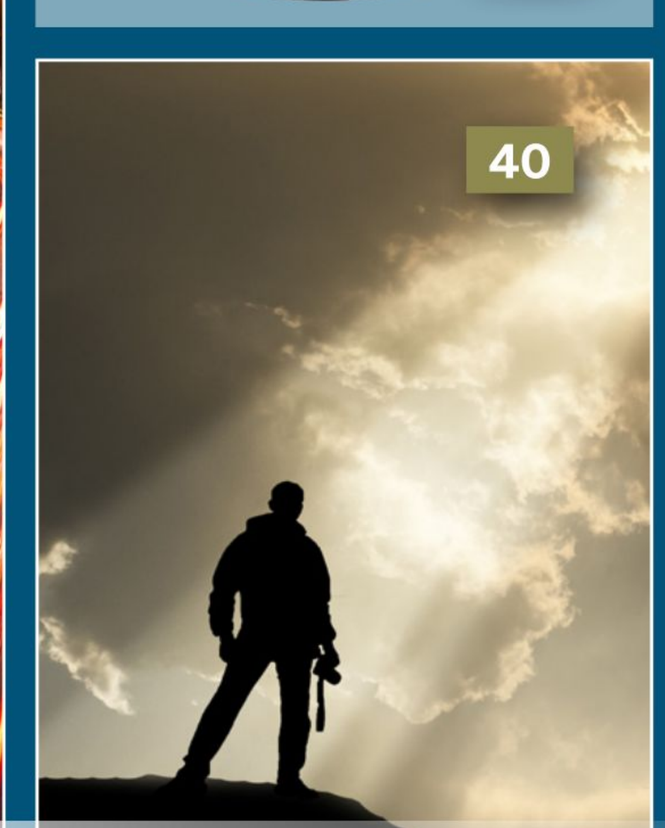

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# Introduction to landscape photography


10 Types of landscape photography

12 Inspirational images




The Sumi-e ink paintings are a very prestigious form of art in East Asian culture.

**What is landscape photography? This is a more complex question than you might at first assume. There are numerous definitions out there that try to sum up what landscape photography actually is. It can range from such matter-of-fact definitions as: "The dominant use of the term is in reference to photography of naturally occurring scenery in open spaces" to a more simple and broader: "Photographs taken outside".**

Many regard a landscape to be a representation of a place that has little or preferably no sign of human activity. It is meant to be an untouched and pure depiction of nature. For others the inclusion of man-made objects that range from walls, fields, gardens and structures is just as valid a landscape image as any other. If presented in a suitably artistic way, cities, public spaces and man-made art installations can all be considered landscapes too; more appropriately they are called ' cityscapes'. These days it seems that there aren't any outdoor places, natural or not, that cannot be considered as a potential landscape. The landscape is in the eye of the beholder.

Long before photographic techniques had been invented, landscape paintings were very simple affairs; in fact the earliest forms of art around the world would show very little that could be construed as a landscape. Only the very simplest indications of a horizon line and perhaps trees and mountains are all you would be likely to see. As art forms developed though, the representation of the natural world became a much more accepted genre. Oddly it was the western world that was the last to elevate the landscape to greater art form status around the 19th century; whilst in East Asia the landscape painting was probably one of the most prestigious forms of art. ■

William Turner's distinctive style of artistry captures the essence of the scene without the need for detail. He is regarded by many as the father of impressionism and instrumental in giving prestige to landscape painting.



Falaise à Varengeville by Claude Monet. An impressionistic style that is at the core of many landscape images today.

# Types of landscape photography

## There's more to a landscape than you might imagine

**The word 'landscape' is thought to have entered the English language around the 17th century as the word 'landskip' and is derived from the Dutch 'landschap'. It was originally used as a general term for any work of art. With the passing of time, it eventually became a term to describe a scene as used in poetry and then as a term for real views.**

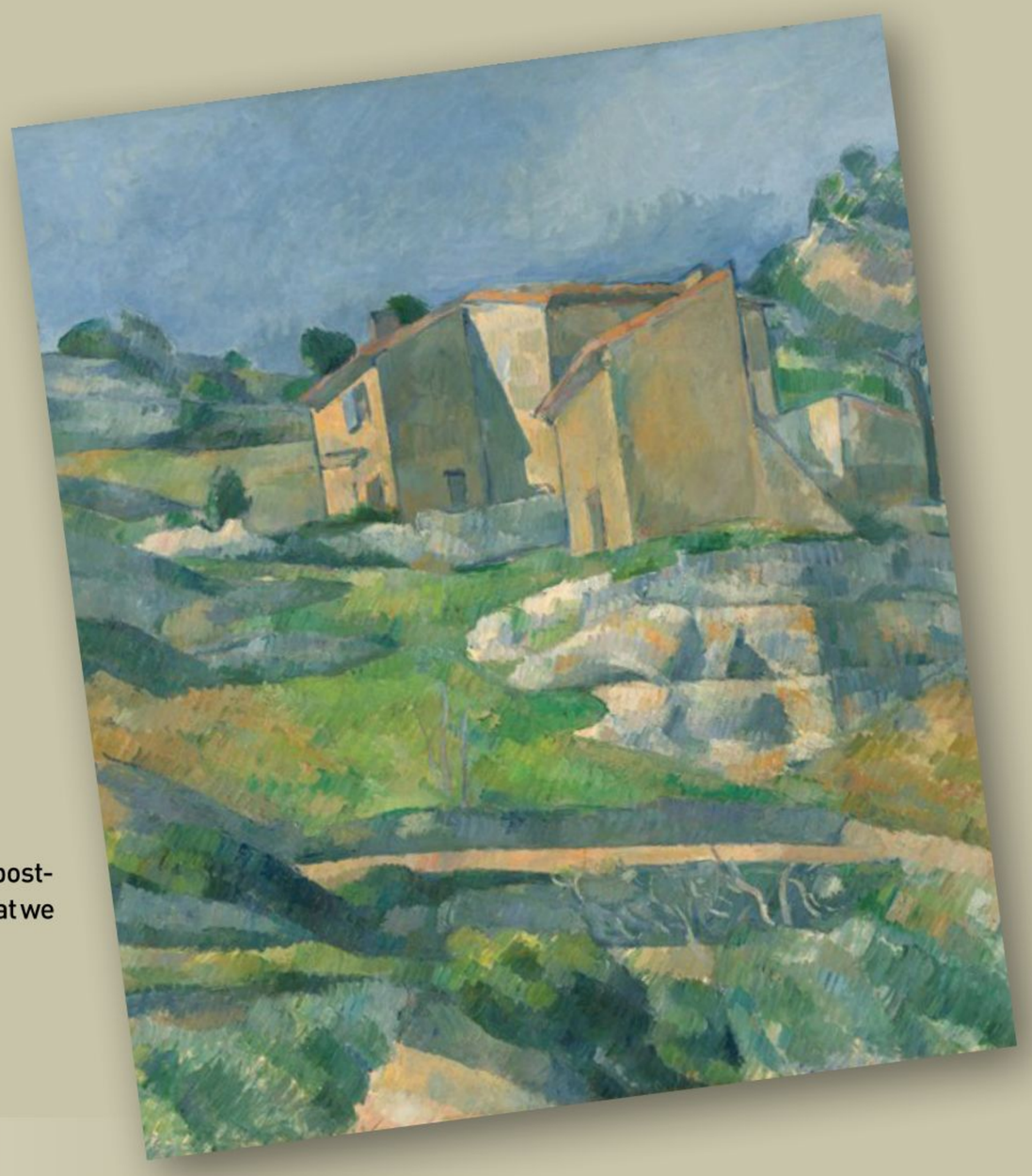
In terms of types of landscape photography, there are several main styles. The first is known as representational, also called descriptive style. These types are the most natural looking of all the various types of landscape photography. There are no additional unwanted components or artificial elements. There is also very little in the way of post-processing to sully the final result. Realism is the key. It is a pure landscape where only the lighting, framing and composition of the image are the main styling factors.

Next we have the impressionistic style. Like the works of art that preceded them, painted by the likes of Cezanne and Monet, impressionistic landscape images have a much greater sense of the unreal and ambiguity. The landscape is present in the shot so you still have a connection to it but it is not necessarily the main focus. Shape, colour and texture, for instance, may become the important factors within the image and realism is not a key consideration. Post-production techniques can also come into play as well to complete the photographer's impression of the original landscape.

Finally we come to abstract landscapes. An abstract landscape may actually not be recognisable as an actual landscape photograph. Abstraction occurs when you look at something that is devoid of context. It is far from being a literal representation of the scene itself. It is more the essence of the scene, the idea communicated by only showing part of the whole. The image can be expressed just by its shape, colour, texture and proximity. It often becomes only about the 'feel' of it and is more to do with an emotional connection than a literal one.

So a stunning sunrise, a beautiful rock-strewn river or a leafy autumnal woodland. All these images and so many more, are out there waiting for the photographer to capture. Over the following pages we hope to introduce you to the beauty, excitement and creativity that landscape photography has to offer. ■

**"Over the following pages we hope to introduce you to the beauty, excitement and creativity that landscape photography has to offer."**



Paul Cézanne, a popular exponent of post-impressionism, paved the way for what we now consider modern art.

A pure record of the scene. Just careful use of exposure and framing deliver a realistic and unmodified representational capture.

The gentle pastel colours and soft misty atmosphere create an image truly representative of the impressionist style.

Light and shadow on the terrain reduce the image to shape and colour. A lovely abstract landscape image.





# Gear up for landscapes!


18 Cameras for landscapes

20 Lenses for landscapes

22 The tripod

24 Filters and filter systems




**Choosing a camera system, lenses or accessories for landscape photography may seem daunting at first because there is so much choice out there. Manufacturers inundate us with features and gadgets that they tell us make their camera so much better than everyone else's. Beneath all the marketing babble, there is a wealth of choice available for every budget and skill level. With a little research and keeping a budget in mind, there is some great photography gear to be had out there. The following pages will give you a head start on where to begin and what to keep in mind as you search for your gear.**

It's worth noting as well that the cost of the camera is secondary to the skill and creativity of the photographer. An expensive camera does not automatically make you a better photographer. Many extraordinary images are taken with modest cameras, so don't get too bogged down with price tags. Although there are many new cameras on the market stuffed to the gills with all the latest tech, there are also a large number of older models out there that still offer amazing performance and could well be a secondhand bargain. ■



# Cameras for landscapes

Looking for a camera to shoot landscapes?

**Is there such a thing as the perfect landscape camera? The answer is going to have to be no. It's hard to imagine that there is a single camera out there that is perfect for one specific purpose. Certainly some cameras are more suited to landscape photography than others and there are a few key factors that are worth mentioning.**

Sensor size is not necessarily a prime consideration as you are most likely going to demand as much depth of field as possible in your shots anyway. Megapixel size is also not a major concern unless you are going to be producing enormous prints well in excess of A2 sizes. To be honest the idea of a one shot capture of a landscape is being overshadowed by the use of multi-shot panoramas that are combined later in programs such as Photoshop. There are even devices that control your camera and allow the capture of landscapes comprised of dozens, even hundreds of shots to create a final photo that is measured not in megabytes but gigabytes!

Image quality will be somewhere at the top of your list, as will dynamic range, which is your camera's ability to discern as broad a spectrum of light and shadow as possible. Shooting in the great outdoors does require a robust camera that is weather sealed against dust and moisture. The weight of the camera is something to bear in mind too if you think that you would be hiking long distances.

Ultimately technical quality and larger sensor formats will rule the roost. 35mm full-frame DSLRs offer great quality but even they have struggled to match the medium format digital cameras such as the Hasselblad H5D-50 with a price tag up to ten times the cost of a professional DSLR. They are getting close though. Cameras like the Nikon D800 with its 36MP sensor and the Canon 5DSR with a 50MP sensor are starting to challenge the medium format heavyweights.

Lets take a look at four main areas of camera design and try to pick out a few of the main contenders.

## Point and Shoot Cameras

Point and shoot cameras are relatively cheap, small and light, measuring around 10cm long with a built-in zoom lens. They tend to be geared more towards their automatic shooting ability but more and more models offer full manual control and Raw shooting capability. Sensor sizes can range from about 12MP to 20MP. If you are looking at producing large professional prints, then this may not fit the bill. Keep in mind the main considerations of megapixel and sensor size, the focal length of its built-in zoom lens, battery life and cost.

High end models such as the Sony DSC-RX100M3 at £525 and the more modest Canon PowerShot S110 at £250 fall into this particular category.







## Mirrorless Interchangeable lens Cameras

Mirrorless cameras are a more recent development in camera technology. They were designed from the outset to be intended purely for digital. Unlike the mirror systems built into DSLRs, incoming light passes directly through the lens and hits the sensor. In that way it is much like a point and shoot camera. The space saved by not having a bulky prism and mirror setup is that you can install a larger sensor within a relatively compact body. You can purchase a number of different lenses that you can swap out depending on your needs. One thing to note is that lenses, particularly wide angle lenses, can be quite expensive.

Top of the range devices include the full-frame 36MP Sony A7R at £990 and the more budget conscious Olympus OM-D E-M10 with a pancake lens at £475.






## Entry level DSLRs

Digital SLRs are bigger cameras with larger APS-C sensors and a wide range of interchangeable lenses. They offer full manual and creative control. These cameras also command higher prices and many are quite heavy and bulky. That said the fact you have complete control over shutter speed, aperture and ISO, means you have a very hands on experience and can learn much about your camera's capabilities (and your own) by using it in full manual mode. They take pro level images with great detail and colour but they do require you to be on your game in terms of your technical ability.

The 24.2MP Nikon D7200 with an 18-105 lens is an excellent all rounder at £775 as is the 24.2MP Canon EOS 750D with 18-135 lens for £740.







## Professional level DSLRs

One of the main differences between an entry level and professional DSLR is the sensor size. Pro DSLRs have larger full-frame sensors that are equivalent to original 35mm film and measure 36mm x 24mm. The larger sensors allow you to resolve greater detail in your images that is critical if you are intending to shoot landscapes. Cost is a limiting factor, these are not cheap. If you are moving to one of these after using a point and shoot, then expect a steep learning curve as well. Be prepared to put in some time to get used to the camera. Also be aware that good cameras need good glass. You will have to put your hand deep in your pockets for lenses.

The Canon EOS 5DSr has a huge 50MP sensor and costs £2900 while the Nikon D810 has an impressive 36MP sensor and costs £1800. More cost effective models include the £950 20.2MP Canon EOS 6D and the Nikon D750 with a 24.2MP sensor costing £1500. ■









# Lenses for landscapes

## What you need to know about choosing a lens

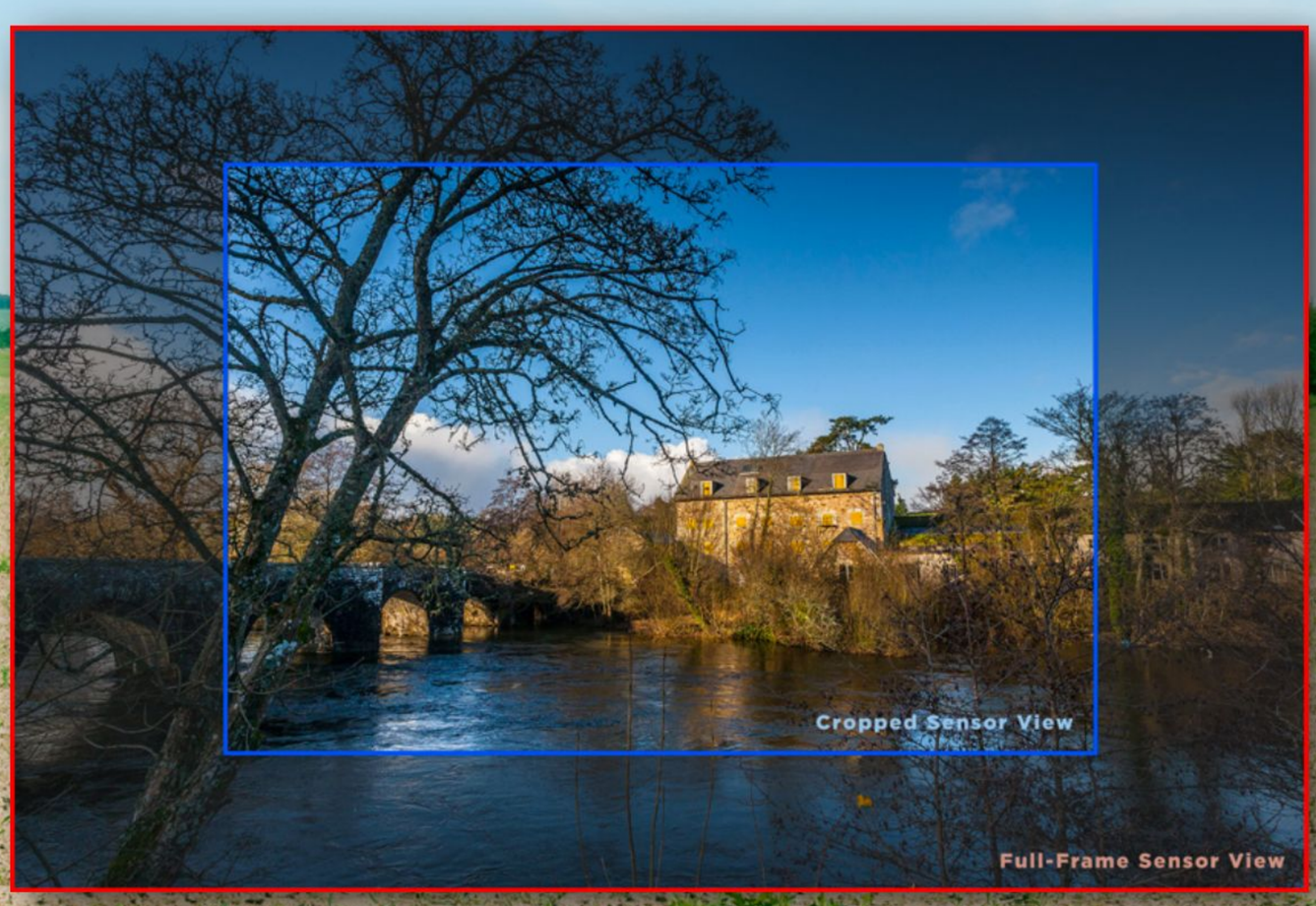
**It is an accepted fact that if there is one lens that is inextricably linked to landscape photography, it is the wide-angle lens. It is often said that the lens influences the shot, not the camera. That is particularly true of the wide-angle lens in landscape photography. As the name implies, a wide-angle lens captures a very wide field of view. This is ideal for capturing the broad expanse of the scene the photographer is in. It also draws in the viewer of the final image in ways that a zoomed narrow angle image does not. Good wide-angle lenses are also sharp and capture great detail.**

With the advent of digital cameras and their various sensor systems, pinning down what a wide-angle lens is can be tricky. If we stick with full-frame photography (a sensor size of 36x24mm to match the old film negative size) then a good wide angle prime lens starts at around 14mm, capturing 114° field of view; a versatile wide angle zoom lens gives you a range of 16-35mm, capturing around 98° field of view at the wide end. However a lot of camera systems use different sensor sizes and this means you have to bear in mind what is known as the 'crop factor'.

What this means is that a 16-35mm lens designed to work on a 36x24mm full-frame sensor will project an image that is too large for an APS-C camera with a sensor size of just 22.2x14.8mm (a crop factor of 1.6). The APS-C sensor is capturing image data from a smaller area; the remaining image has been 'cropped' by the smaller sensor. The 16-35mm lens will appear to work as if it were a 25.6x56mm lens. The same lens on a micro four thirds camera would appear to be a 29.4x64.6mm lens. Because of lens mount systems, there are only a few lenses that can be used on different camera types. For instance you can mount a Canon full-frame EF lens on one of their APS-C DSLR cameras but you cannot mount a Canon APS-C EFs lens on a Canon full-frame camera.

If purchasing a compact camera with a non-removable lens, your choices for shooting wide angle may be limited. A lot of compacts focus more on their zoom capabilities rather than their wide-angle ability. Most compact cameras offer no more than about a 28mm equivalent wide angle. Image quality is also a factor, as the lenses on compact cameras are tiny in comparison to their DSLR counterparts and this limits the maximum quality you can glean from the camera. It's not until you move up to the Compact System Camera bracket that you are able to swap lenses from a range that offer so called pancake lenses around the equivalent 20mm mark as well as longer telephoto lenses.

Although the often stated golden rule for landscapes is wider is better, it doesn't mean you shouldn't consider other focal lengths for your landscapes. Telephoto lenses by contrast, offer smaller glimpses of the greater whole. Parts of a landscape can be viewed in isolation, with a greater sense of distance between the viewer and the subject in the photo when using focal lengths up around the 100mm, 200mm and even 400mm mark. ■




**This diagram illustrates how a scene viewed with a full-frame camera and lens would look compared to that same lens being used on a camera with an APS-C or 'cropped' sensor.**

The EF-S range of Canon lenses are designed for their cameras with cropped sensors. The 10-22mm wide-angle lens shown below is equivalent to the full-frame 16-35mm lens shown to its right.







All the main lens manufacturers have lenses suitable for wide-angle landscape work. Sigma make lenses for both Nikon and Canon fit, such as this 10-20mm wide-angle shown below.










Pancake lenses are built for compact cameras with interchangeable lenses. They are prime lenses and despite their diminutive size, they can produce some great quality images.

Covering a fairly wide range from wide-angle to medium zoom, a lens in the 28-135mm range is good as a general 'walking around' lens, with decent compositional scope.




Although not an immediate first choice for landscape work, longer lenses in the 100-400mm range can still be used to capture parts of the landscape in a more intimate and isolated manner.

# The tripod

## An essential purchase for the landscape photographer




The PIXI EVO 2 mini tripod, capable of holding a DSLR with a 200mm lens, is available with a universal Smartphone clamp too.

**If you want to take better landscape photographs, the single most useful accessory you can buy is a good quality tripod. By using a tripod you can completely eliminate camera shake, the number one cause of unsatisfactory photos. A tripod is also essential when using long exposures, powerful telephoto lenses or when shooting in low light conditions.**

There are many different makes and types of tripod, from cheap budget models costing under £15 up to professional grade tripods made of carbon fibre and magnesium alloy which cost hundreds of pounds. They come in all sizes too, from pocket sized mini tripods suitable for small compact cameras, to heavy studio tripods mounted on castors. The type that you should buy depends on how much you want to spend and what sort of photography you're going to use it for.

Key factors when choosing a tripod are rigidity and carrying weight. The tripod you choose has to be able to support the weight of your camera and hold it perfectly still. Some cheaper tripods with plastic heads and thin aluminium legs are too 'bouncy' to be used with anything heavier than a compact or light superzoom. Set the tripod up and press down on the top of it. If it flexes by more than a few millimetres it's not going to be stiff enough to support a heavy camera.

## Pocket tripods

These are miniature tripods designed for small compact cameras and are ideal for table top use or for positioning your camera for a self-timer group shot. They're small enough to slip into a jacket pocket or into your camera pouch. There are several different types, including ones with telescopic legs, ball or pan-tilt heads and even flexible legs. One unique and extremely versatile design is the Joby Gorillapod, which can grip onto almost any object or work as a tripod.




## Budget tripods

There are many cheap tripods on the market, many costing less than £20. There are some very good ones, such as this Velbon DF-41 but many lack the rigidity to support heavier cameras and lenses.



## Travel tripods

Travel tripods are designed for general use where low weight and portability is an important factor. They are made of lightweight materials, usually aluminium or carbon fibre and are suitable for most types of camera from compacts up to mid range DSLRs, although not with large telephoto lenses.

## Professional grade tripods

Top quality tripods are made from high tech materials like carbon or basalt fibre, with magnesium alloy fittings and superior workmanship. They offer the best rigidity and support for even the heaviest cameras and lenses but they are very expensive; the Gitzo Mountaineer Series 1 seen here costs over £800.

## Monopods

If carrying a tripod around is inconvenient, a good alternative is a monopod; essentially it's a single telescopic support leg with a camera mounting on the top. Obviously they don't provide the stand alone support of a tripod but they can be a big help in reducing camera shake. They are also handy for shooting in confined positions where a tripod won't fit, such as in a crowded space. ■








# Filters and filter systems

## Some must have filters for your landscapes

**Filters have been an essential part of photography since its very beginnings. Used creatively they can improve a hard-to-capture scene, add an extra artistic element to an image or just provide a bit of fun. Modern digital photo editing has provided an almost too easy method to add filter effects to an image after it has been taken; some effects are better when applied by actual physical filters fitted to the camera when the photo is taken and this is particularly true with black and white photography. Let's take a look at some of the different types of filter and how they can help to improve your photos.**

## 1. UV filter

This screw-on filter was used originally to block UV light from hitting the film in old cameras. Modern digital cameras have UV and Infra Red protection on their sensors now, so a UV filter is employed as a method of protection against scratches and dust getting on the front lens element. Optionally you can just use a good quality clear glass filter instead. The higher the quality of glass the better, so as to avoid ghosting and flare in your shots.



1

## 2. Circular polarizing filter

Circular polarizers are ideal for digital cameras. When correctly aligned, the filter can render blue skies darker with brighter, white clouds. They can also increase saturation and reduce reflections on shiny surfaces and water as well as reduce haze. Polarisers work best when the camera is about 90° either side of the sun. The polariser has to be rotated until the maximum effect is achieved, blocking certain light waves. These filters come in both screw-on and filter holder varieties.




## 3. Neutral density filter

ND filters limit the amount of light that is able to fall on the sensor and therefore require much longer shutter duration. They are made from darkened materials that are designed to be optically neutral so as not create a colour cast. The darker the filter the longer your exposures can be. ND filters can range from a 2-stop filter to 10-stops of light reduction. They are excellent for use in daytime to create motion blur in water and clouds.

## 4. Graduated neutral density filter

ND grads work similar to standard ND filters but instead of being one solid dark material, the filter fades from dark to clear. They are useful in high contrast situations such as a bright sky versus a dark foreground where you can use the filter to darken the sky enough to balance the overall exposure in the scene.













## Filter types

1. Circular screw on filters are the most common type that fits directly on your lens filter thread. They come in different thicknesses, the thickest of which can potentially cause vignetting to your shots. Ultra thin filters get around this but can be more expensive.

2. Square filters are popular with landscape photographers. A holder designed to house the filters directly attaches to the lens filter thread and can hold several filters. Generally they range in size from around 75mm to 150mm

3. Rectangular filters are another popular choice among landscape photographers. These are mounted in the same fashion as their square counterparts, the main difference is because they are rectangular; they have more scope to move up and down within the holder.

4. Filter holders are plastic and metal mounting devices that screw onto the filter thread of your lens. They have several slots moulded into them to accommodate several filters at once. The most popular filter system manufacturers are Cokin and Lee and Hitech.

# Get more from your landscape photography


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**If you are new to photography in general or perhaps you are stepping up from a modest point and shoot camera to a more fully featured DSLR, it can often be intimidating for the beginner when faced with getting to grips with the knowledge and jargon that is required to shoot more creatively. Landscape photography makes it easy to get outside and shoot straight away; it is more challenging however to do it well and consistently.**

Even though you may be itching to get out and shoot, take the time to explore the settings of your camera. More importantly you need to have an understanding of the relationships between aperture, shutter speed and ISO sensitivity. Things like knowing the different exposure modes available on your camera are essential to grasp quickly. Understanding metering, focusing and depth of field is also very important but don't be put off. Over time the basics will make sense to you. The more you shoot and experiment, the more you will learn. You may find you get things wrong. When you do it's important that you are able to learn how exactly it went wrong. That way you are primed to go out and do it right next time. Even seasoned photographers are still learning new things as they develop and that is the key to getting better as a photographer. Keep learning, make mistakes, figure out where it went wrong and then do it again, only better this time. Above all else though, the main thing you need to carry you through, is a passion for what you do and a love of photography.

So shall we have a look at some of the things you need to know to get you started? The following pages cover some fairly essential camera craft. Even for the experienced, it is sometimes great to refresh your mind and see a better way of approaching your photography. Hopefully this will help you get informed, inspired and taking great photos. ■



# Understanding your camera

Let's brush up on our camera craft

## File format

Where your camera allows, always select Raw not Jpeg. Raw is an uncompressed format that gives you much more scope when it comes to the post-processing of your images. You would be surprised how much you can recover a shot that at first glance looks either too overexposed or vice versa. It is fairly common to be able to recover up to 2-stops of exposure information before the image starts to become degraded.

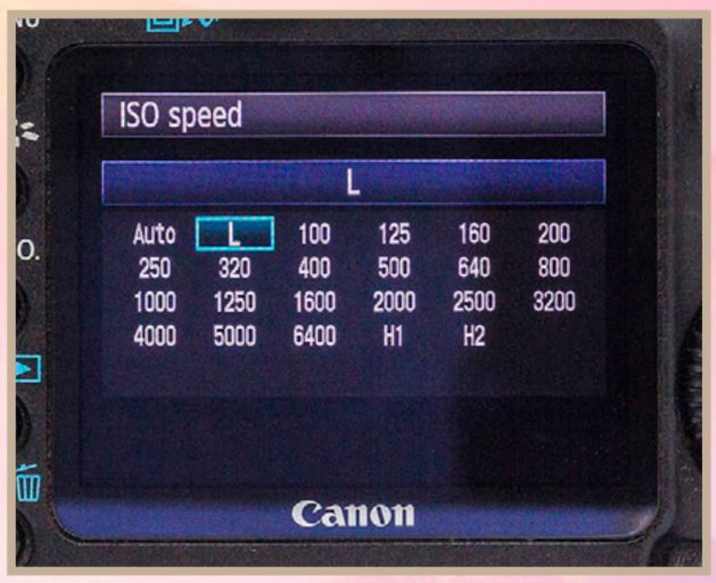
## ISO

ISO refers to the sensitivity of the sensor to light. The lower an ISO value, the less sensitive it is. This will result in longer shutter speeds but the bonus is less image noise and therefore more detail is retained in the shot. High ISO values result in high levels of image noise and a loss of sharpness and detail.

## Exposure mode

For most landscape photography, setting your camera to Aperture Priority (AV) is preferred. You can set your aperture to about f/11-f/16 and the ISO to 100 or lower if your camera allows and the camera will figure out the shutter speed itself. If your shutter speeds are dropping below 1/60th of a second, it's best to set your camera on a tripod to avoid camera shake.






## Focus

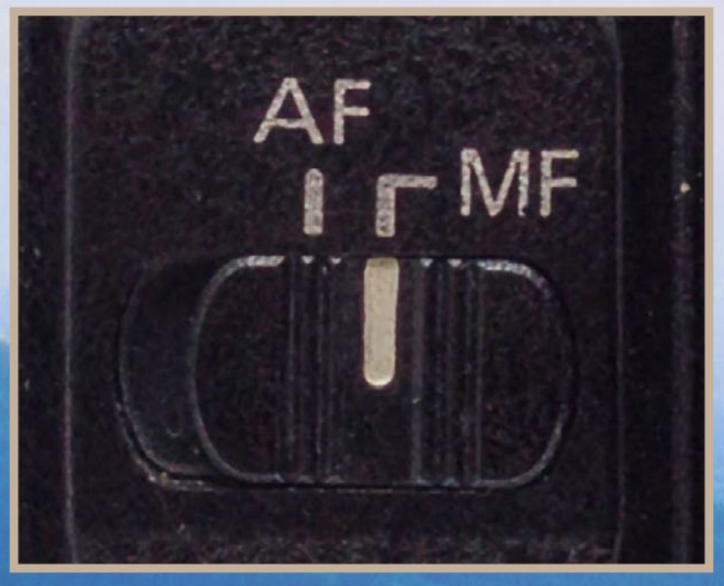
It can be all too easy to rely on your camera's autofocus but try and get yourself into the routine of setting it to manual focus. You may think it is ok to focus on the immediate foreground but that will result in distant objects probably being quite soft. For maximum sharpness with a wide-angle lens, manually set your focus to roughly 10ft into the scene. It is a rough guide but it works well.

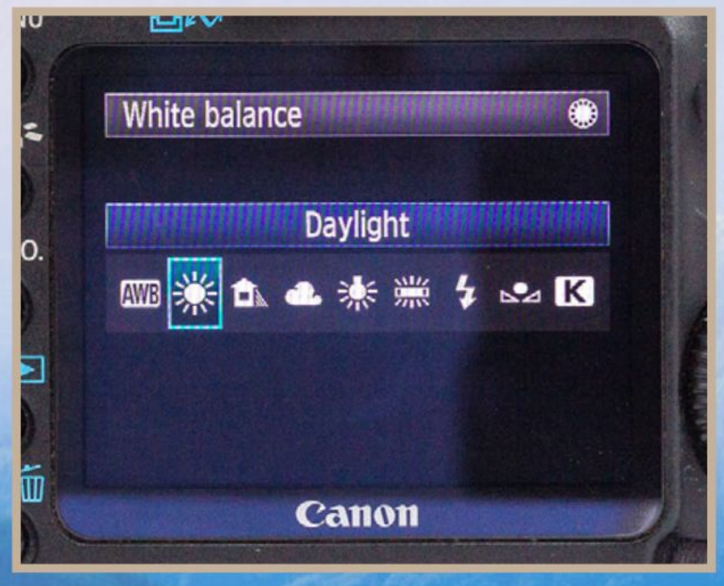
## White balance

Another thing you find you rely on is the Auto White Balance. In most cases this is not an issue if you are shooting Raw because you can post-process the image as you wish. The main issue comes with consistency. Using AWB doesn't always guarantee consistency between shots taken in the same conditions. It's better to shoot a sequence using an AWB preset such as Daylight so the sequence can be batch processed consistently.

## Exposure compensation

When you shoot Raw, your histogram is actually based on a Jpeg version of the shot. It may tell you your sky is overexposed, with highlight data being lost but the truth is that you may discover it is not when you finally view the Raw image. Bear that in mind and try not to use too much negative exposure compensation.






## Aperture

When taking shots it is a common belief that the smaller the aperture, the greater an area of the shot is is much sharper focus. Whilst this is true be aware that as you step down beyond f/16 and start using apertures of f/22 and even f/32 you can encounter an optical issue know as diffraction. Simply put, even though you may have a larger depth of field, your images will be softer overall as a result of this optical phenomenon.




## Metering

Try to familiarise yourself with the metering modes available to your camera. DSLRs offer various options. More modest cameras may have less choice. The most common are Evaluative metering, which analyses the entire scene and sets an exposure accordingly and is good for most occasions. The next is Centre-weighted metering that reads the central portion of the frame. Spot metering is used to take a reading from one tiny portion of the scene. ■






# The exposure triangle

## Don't get lost in the triangle

**If you are keen to express your creativity and learn more about the nature of photography, then you will need to be daring and take your camera out of fully automatic mode and explore the skills required for shooting in manual mode. When you shoot fully manual, you have to be aware of the interplay between each of your camera's main settings of ISO, Aperture and Shutter Speed.**

### Connect them up

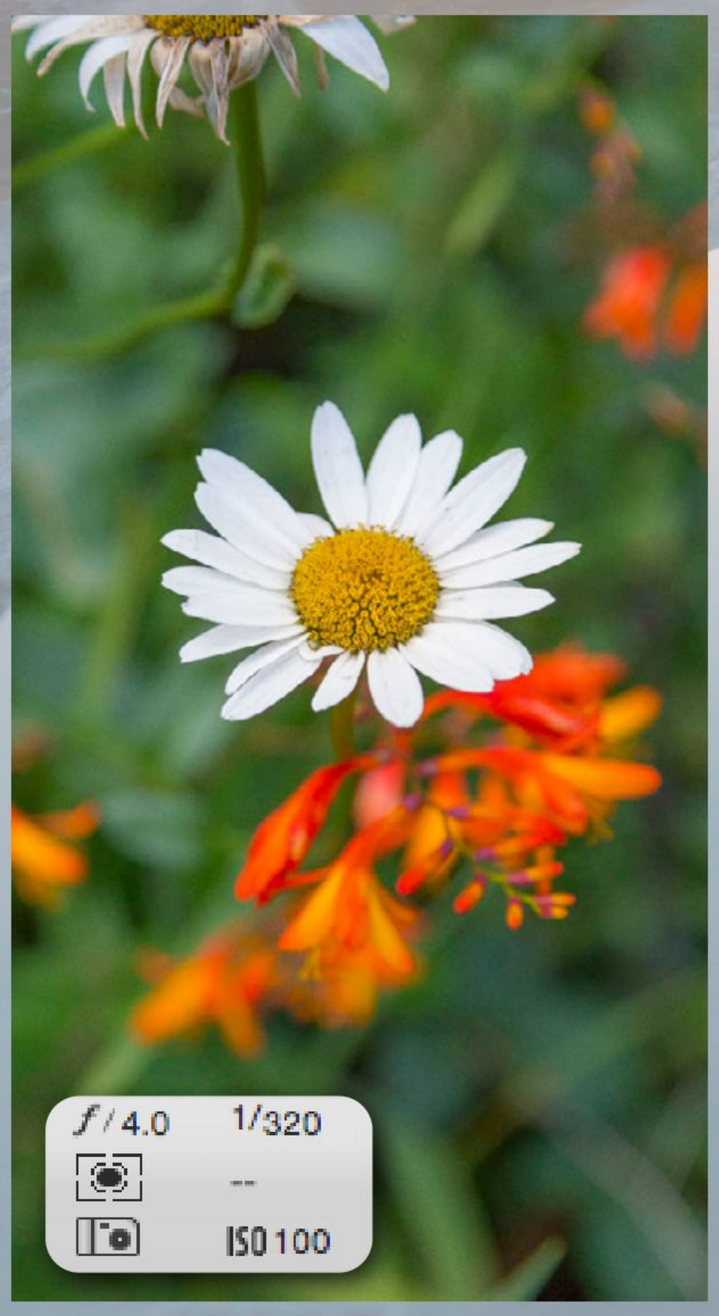
The exposure triangle is a popular visual method to connect the three main variables of aperture, shutter speed and ISO amplification that govern the final look of your image. Photography is a balancing act of these three elements when you capture an image. Once you have your camera ready and have a set of variables in place to give you a balanced shot, as soon as you adjust one of the three, at least one of the others has to be adjusted as well, in order to maintain the desired effect you are after in the shot. You are not only altering the exposure but also the quality and appearance of the image.

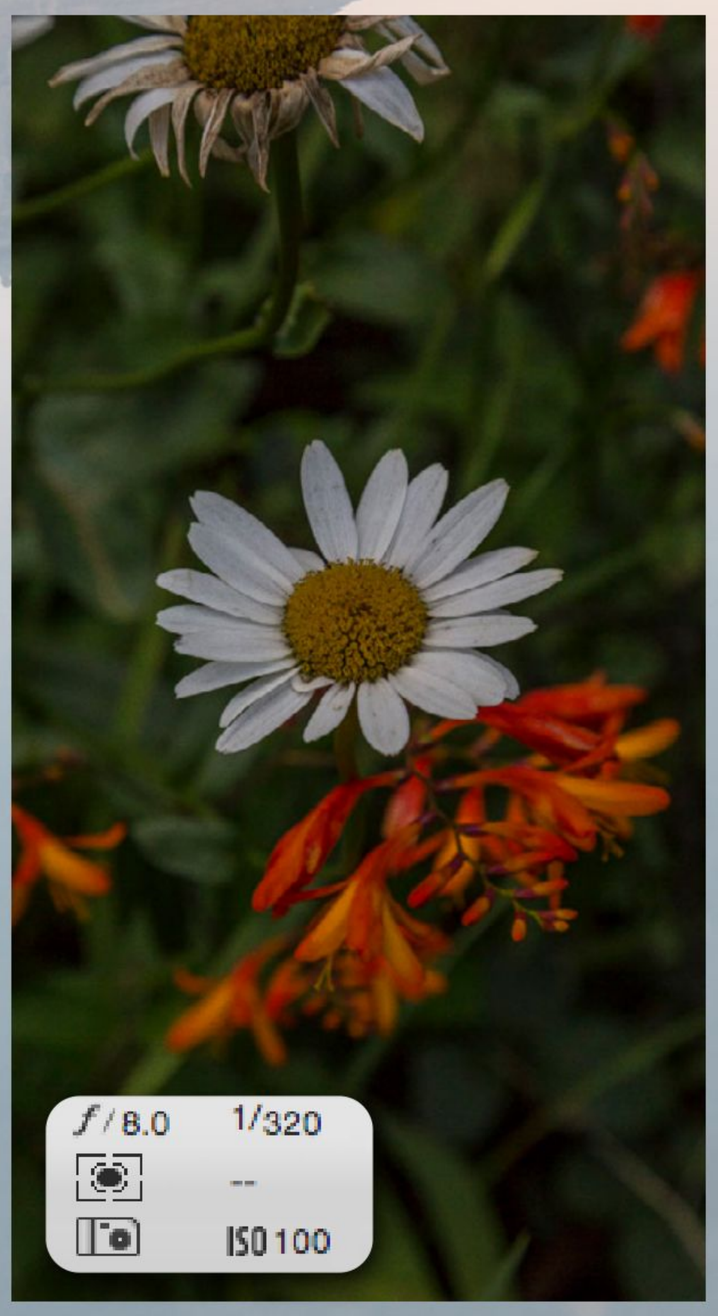
### An example

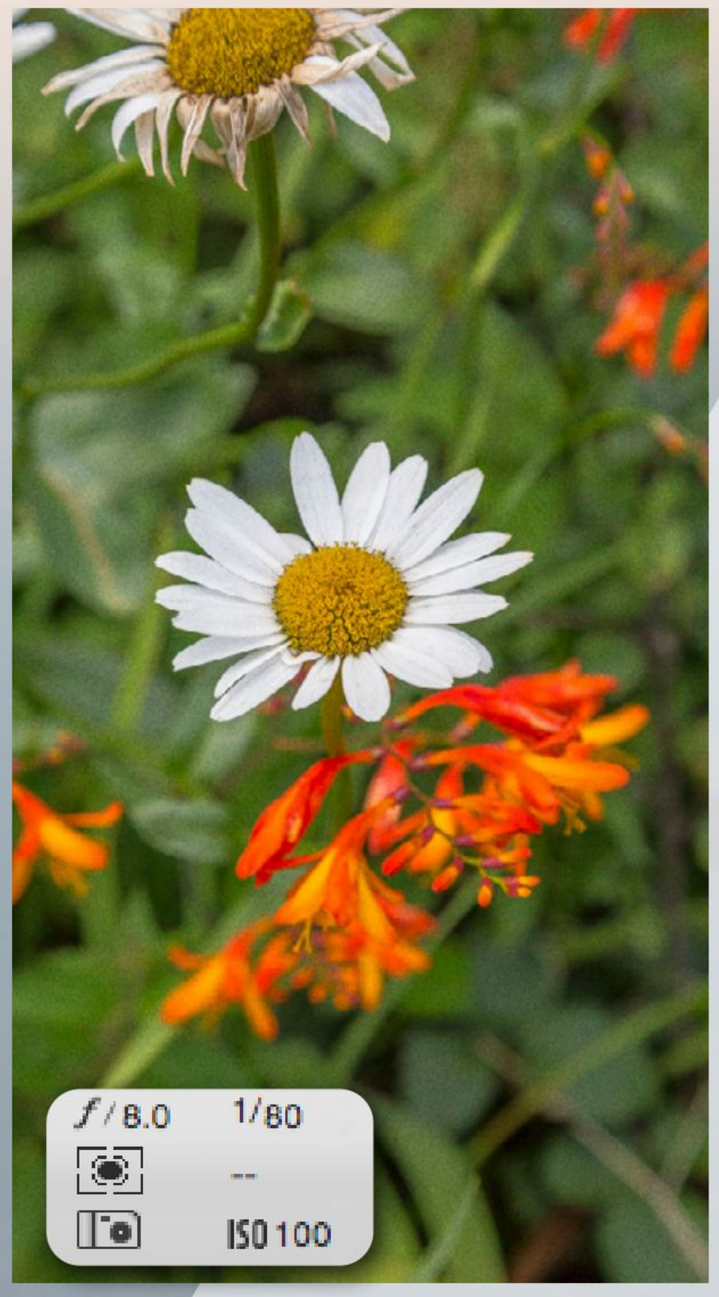
We'll try and sum it up in a theoretical example. If you are shooting a subject such as a flower in a shaded wood, with your camera in manual mode (this is important to keep in mind), you will need to balance your ISO, aperture and shutter speed to give you a well exposed image. The parameters you choose are down to your personal choice of course. In our theoretical example the settings were as follows: ISO 100, aperture f/4 and shutter speed 1/320 of a second (this was to keep the flower's motion frozen as it was a breezy day), all well and good.

### Making changes

If you decide however, that you need greater depth of field, you might change your camera's aperture to f/8, making the diameter of the aperture smaller, blocking more light but increasing depth of field. If you take the shot now, your image will have more depth of field but it will be very underexposed. What happened? Now that you are in manual mode, you have currently altered only one side of the exposure triangle. You would need to alter at least one of the other two in order to bring your image back to its proper exposure. You decide to keep the ISO at 100, so the shutter speed will have to alter. If you increase the duration that the shutter is open, you can allow the camera to gather light for an extended period of time. In this case, because we changed from f/4 to f/8, which is 2-stops, we need to allow for 2-stops more light gathering from the shutter speed we use. 1/320 of a second would need to become 1/80 of a second to allow for the 2-stop alteration you made to the aperture with the ISO remaining unchanged. A basic rule of thumb to keep in your mind is that a 1-stop alteration is equal to either a halving or doubling of a particular parameter. In this case the 2-stop alteration to our theoretical shutter duration means 1/320 of a second slows to 1/160 and then slows a second time to 1/80. ■






## A word about ISO

Although ISO is included as part of the exposure triangle, it is worth noting that on digital cameras, higher ISO settings amplify the amount of light recorded in a scene depending on the ISO value you use. ISO is often referred to as the sensitivity of the sensor to light, but it is more accurate to understand that it is light/image amplification, rather than sensor sensitivity. Back in the days of film, if you used a film stock of ISO200 for example, you set your camera's ISO to match. From then on, only the other camera settings of shutter speed and aperture were used to get the correct exposure you wanted, as well as supplemental lighting if needed. The ISO value always had to remain at 200. These days, changing the ISO value only simulates different light sensitivities. ■

# What is an f-stop?

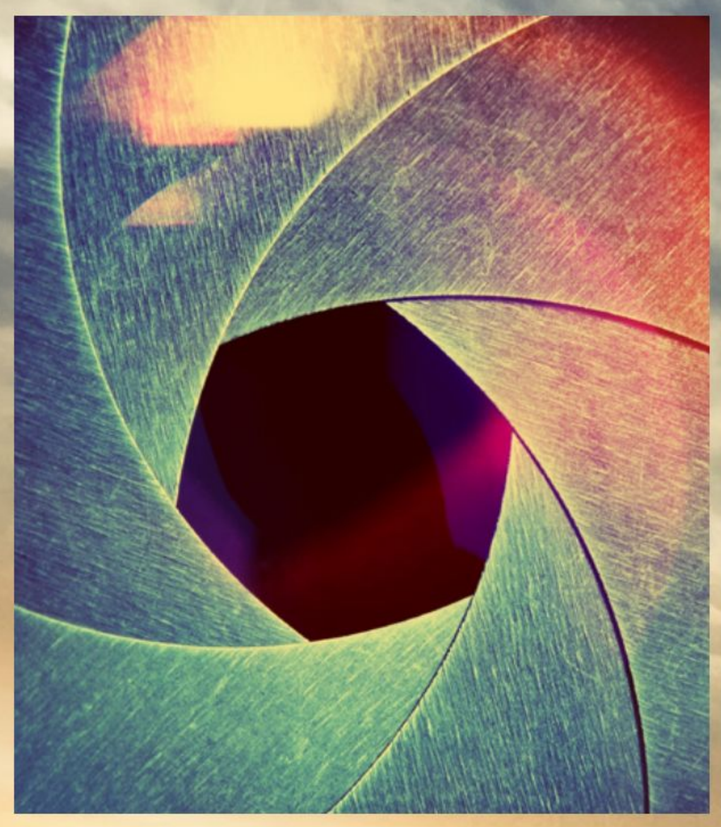
## The mathematical bit

**Let's get some of the mathematical theory out of the way. In photography an f-stop is a unit to quantify ratios of exposure. Each added stop of exposure means a doubling or increase by a factor of two. A subtracted stop is a factor of one half. So in simple terms an f-stop, or one EV (exposure value), is halving or doubling your exposure.**

As an example of how an f-number is calculated, we need to look at the equation N=f/D. The f-number (N) is calculated by the lens' focal length (f) divided by the diameter of the lens aperture (D). As an example, if a 100mm lens (f) has a maximum aperture diameter (D) of 50mm, its f-number (N) would be expressed as f/2.

The amount of light that enters your camera is governed by the aperture. It is a mechanical diaphragm that mimics the human eye. You can close the aperture down to a very small diameter, restricting the amount of light that can enter the camera or you can open it up to enable more light to pass through the lens and onto the camera's sensor.

Modern lenses employ a standard f-stop scale. It is an approximation of a geometric sequence of numbers where the number that precedes it is one stop lower, or the number that follows it is one stop higher. For the fledgling photographer this can all be confusing. To try and help out we have a diagram that will hopefully explain in a more visual form. ■



| FULL STOPS | 1/2 STOPS | 1/3 STOPS |
|---|---|---|
| f/2.8 | f/2.8 | f/2.8 |
| | | f/3.2 |
| | f/3.3 | |
| | | f/3.5 |
| f/4 | f/4 | f/4 |
| | | f/4.5 |
| | f/4.8 | |
| | | f/5 |
| f/5.6 | f/5.6 | f/5.6 |
| | | f/6.3 |
| | f/6.7 | |
| | | f/7.1 |
| f/8 | f/8 | f/8 |
| | | f/9 |
| | f/9.5 | |
| | | f/10 |
| f/11 | f/11 | f/11 |
| | | f/13 |
| | f/13 | |
| | | f/14 |
| f/16 | f/16 | f/16 |
| | | f/18 |
| | f/19 | |
| | | f/20 |
| f/22 | f/22 | f/22 |

MORE LIGHT IN
SHALLOW DEPTH OF FIELD
LESS LIGHT IN
GREATER DEPTH OF FIELD
WIDER APERTURES
SMALLER APERTURES



# ISO, aperture and shutter speed

## Our at a glance guide

Although the previous pages deal in the general principles of how ISO, shutter speed and f-stop settings interact with each other. We have another diagram that gives a simple overview of how those individual settings affect the look and quality of your images. We've laid out, in a more visual form, the basic effect of wide and narrow apertures, slow or fast shutter speeds and high or low ISO settings. Learning the interplay of these three basic values can appear daunting at first but with practice you will see how one setting affects your image and how the other settings need to work in balanced combination to give you the shots you require. ■




"We've laid out, in a more visual form, the basic effect of wide and narrow apertures, slow or fast shutter speeds and high or low ISO settings."

# Less Light Required

| Wide Aperture | Slow Shutter | High Amplification |
|---|---|---|
| f/2.8 | 1/15 | ISO 6400 |
| f/4 | 1/30 | ISO 3200 |
| f/5.6 | 1/60 | ISO 1600 |
| f/8 | 1/125 | ISO 800 |
| f/11 | 1/250 | ISO 400 |
| f/16 | 1/500 | ISO 200 |
| f/22 | 1/1000 | ISO 100 |




| Small Aperture | Fast Shutter | Low Amplification |
|---|---|---|

# More Light Required

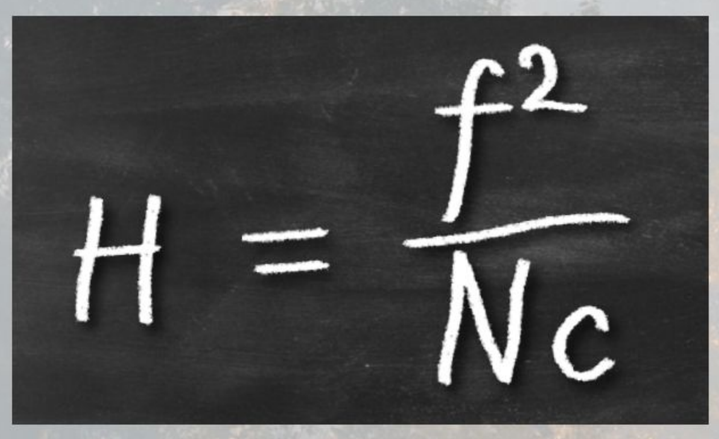
# Understanding hyperfocal distance

## Calculating the best depth of field

**A very important part of photography in general and landscape photography in particular is to ensure that your prime point of interest, your main elements are in sharp focus. Nothing ruins a shot more than the image being fuzzy and blurry when you need it to be tack sharp. The problem however, is that in many cases in landscape photography you have a foreground element as well as a distant object that you want to be in as sharp focus as possible at the same time. Shooting with a wide angle lens and setting a very narrow aperture of f/22 or even f/32 will yield greater depth of field but you will also run into the optical phenomenon know as diffraction, which is a softening of the image due to the bending of light rays as is passes through the narrow aperture of your lens. This means you will normally be operating around the f8 - f/16 mark when setting aperture. You may find that the depth of field provided at these apertures is not enough to render everything you need in sharp focus.**

This is where the hyperfocal distance comes into play. When you focus on an object, technically speaking, only that point of focus is sharp. Beyond that focus point, extending both in front of and behind, is a plane of focus running parallel to the camera sensor. This area is known as the depth of field and it is this region that is deemed to contain an area of acceptable sharpness. They key to hyperfocal distance is knowing the closest distance at which a lens can be focused while keeping objects at infinity as acceptably sharp as possible. Everything from half the hyperfocal distance out to infinity will be in focus.

A very basic rule of thumb is to compose your scene and then focus roughly one third of the distance into the scene. This can be quick and reasonably helpful, particularly where your scene has excluded the horizon or near foreground, but rarely is it optimal to get the best out of the depth of field. You could use your camera's live view function to visually set focus on the most distant object in your scene and then slowly adjust the focus closer whilst keeping an acceptably sharp background. Finally of course, there is the mathematical way to calculate the exact point. There is a bit of assumed knowledge when using the mathematical formula. You will need to provide the focal length of the lens you are using, the Circle of Confusion value for a given sensor size, which is the largest blurred spot that the human eye can detect (usually a value of around 0.03 - 0.02) and the f-stop you are using. If you have a calculator you can do the following:



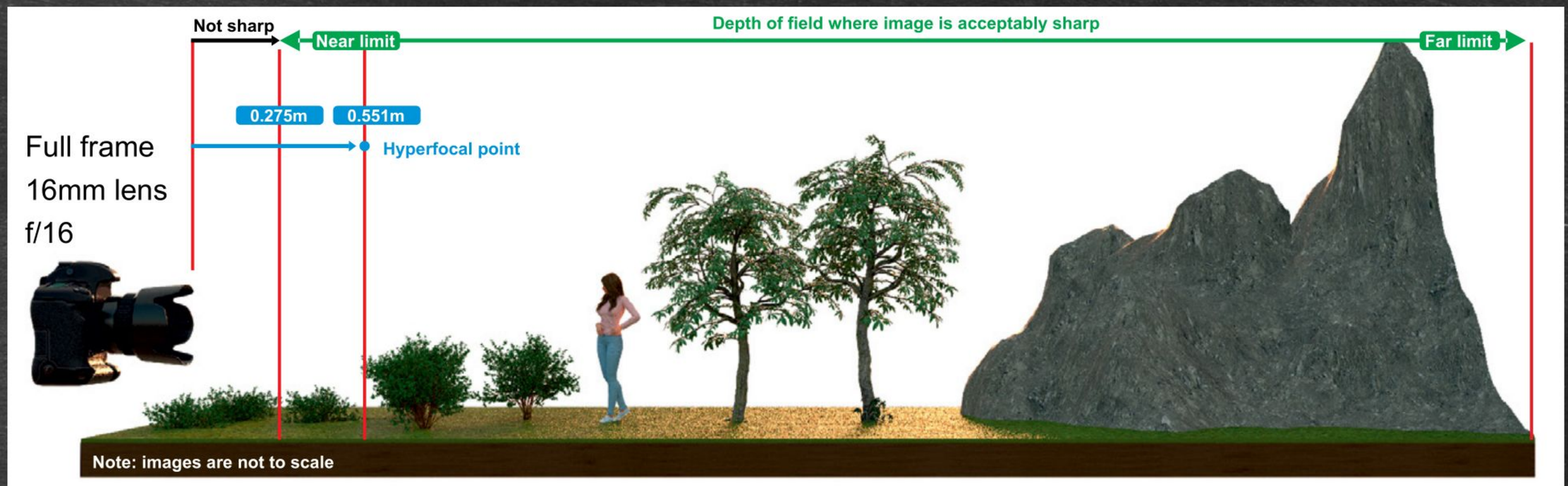

H = Hyperfocal distance
$f^2$ = focal length x focal length
N = Aperture number (f-stop)
c = Circle of confusion

The result, in millimetres, will be the distance at which you need to focus to attain greatest depth of field. Thankfully there are plenty of on-line calculators and apps for your phone that can do all the heavy lifting for you. Just so we can say we understand the theory, lets try out a couple of examples as shown here. We're using a full frame camera with a Circle of Confusion value of .029 as an average on a 16mm lens and a 50mm lens. Both are set at an aperture of f/16. ■

## Example 1 - 16mm lens @ f/16

$$H = \frac{16mm \times 16mm}{f/16 \times 0.029} = 551mm\ (0.551m)$$

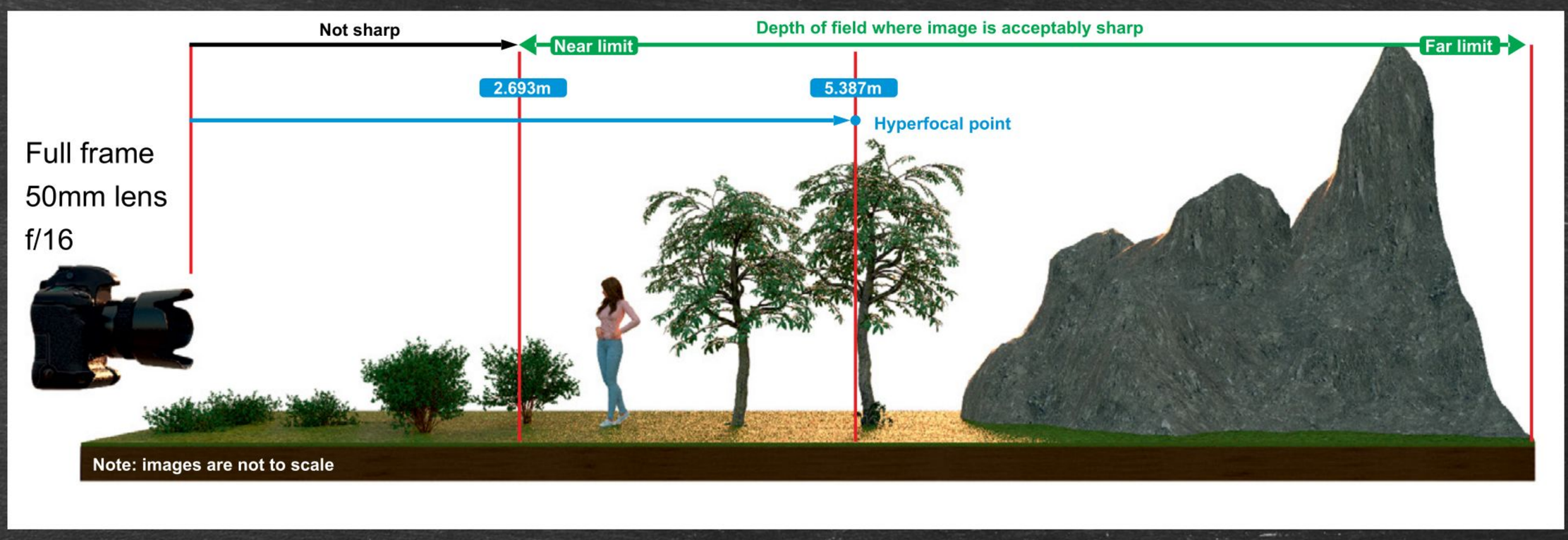
The near limit of acceptable sharpness is half of the hyperfocal value, stretching out to infinity.




## Example 2 - 50mm lens @ f/16

$$H = \frac{50mm \times 50mm}{f/16 \times 0.029} = 5387mm\ (5.387m)$$

The near limit of acceptable sharpness is half of the hyperfocal value, stretching out to infinity.




f2

# Software and apps

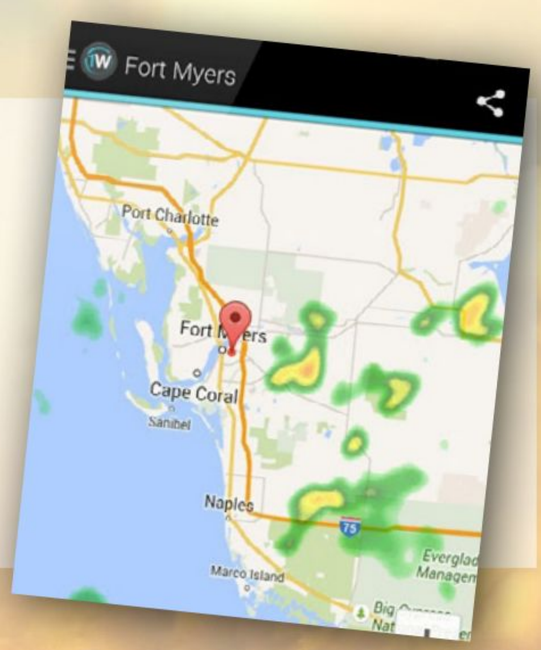
## Helpful and essential, the software you need

**Whether it's something to calculate hyperfocal distance or a handy app that can control your camera like an intervalometer, there are a vast number of apps out there to aid the landscape photographer while they are out in the field. From iPad to iPhone, and Android phones and tablets, you are well catered for when it comes to the next handy application to make your job of capturing the perfect landscape that much easier. ■**

### 1weather

Android

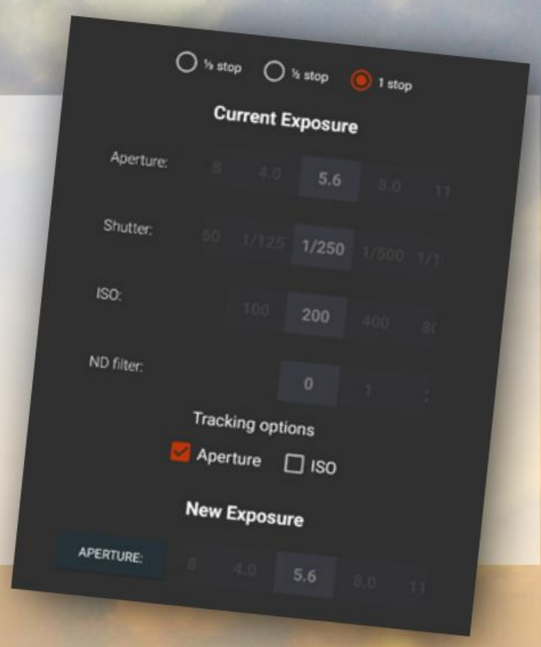
Track and view weather forecasts and current conditions to get real time updates wherever you go, or add any location you choose.




### Exposure Calculator

Android

Input an exposure and then recalculate equivalent exposures when you alter any of the various parameters. You can also specify ND filters up to 30-stops.




### Accuweather Platinum

iOS/Android

Detailed current local weather conditions that are updated every 15 minutes. Comprehensive forecasts with day and night conditions and Weather Alarms.




### f/8 DOF Calculator

iOS

Get perfect depth of field with this hyperfocal distance calculator. Enter your lens info and the app will do the rest.




### Dark Sky

iOS

State-of-the-art technology is used to predict weather patterns, right down to the minute, wherever you may be.




### Golden Hour Calculator

Android

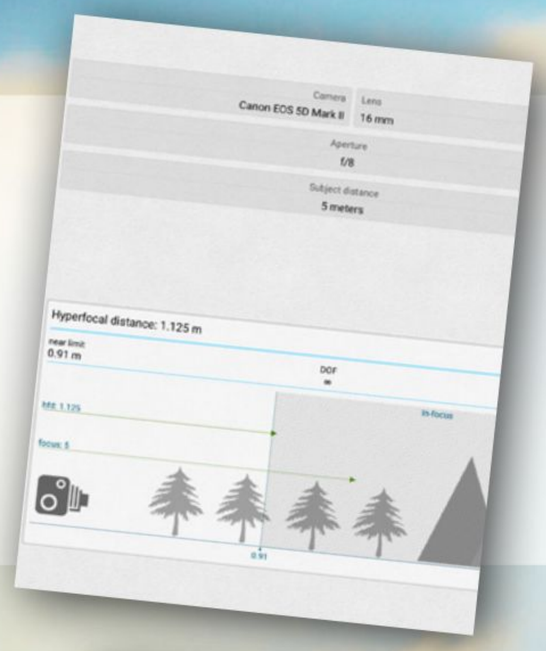
Golden Hour Calculator allows users calculated moment when Golden and Blue Hours happens at sunrise and sunset.



## HyperFocal Pro

Android

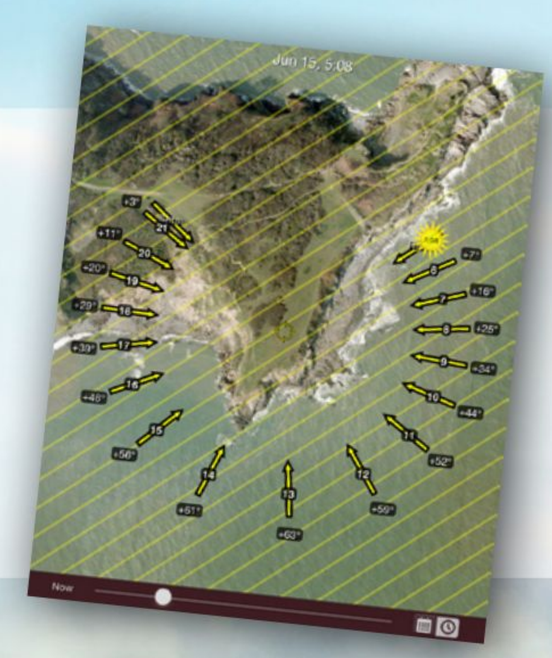
A great companion for on-the-spot calculations of the optimum hyperfocal distance. It provides intuitive, graphical representations of the info you need.




## Sunseeker

iOS/Android

With flat view compass and a 3D augmented reality camera view, plan your shots and predict the path of the sun for every daylight hour.




## Long Exposure Calculator

iOS

Long exposure calculators are very useful for working out exposure modification when shooting with ND filters or long exposures at night.




## The Photographer's Ephemeris

iOS/Android

Great for planning landscape and urban scenes. It is a map centred Sun, Moon and Milk Way calculator for any location on the planet.



## Star Walk 2

iOS/Android

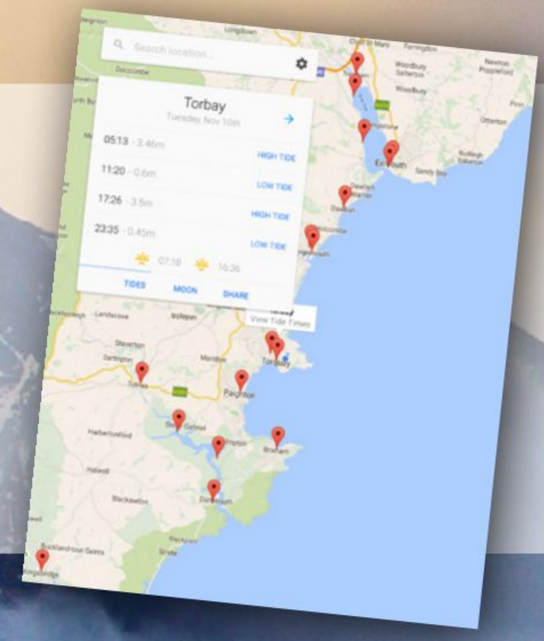
Learn the exact position of stars, planets, constellations, comets, star clusters, nebulae and meteor showers in the night sky.




## My Tide Times

iOS/Android

Ideal for predicting high and low water times for all of your coastal photo shoots. 9000 tidal points across 25 countries are supported.




## Sun Surveyor

iOS/Android

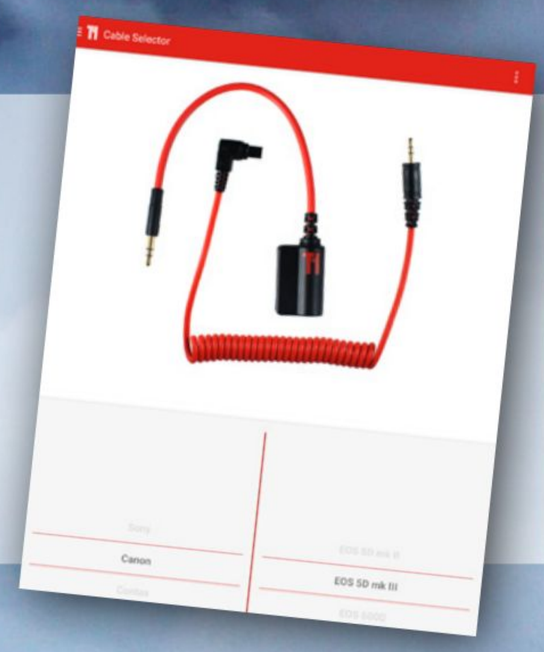
You can view the positions of the sun and moon in any location at any time. There is also an augmented reality function to visualise a scene in real time.




## Trigger Trap

iOS/Android

Connect up your camera and use this creative app creative to trigger your camera using various sensors including sound and vibration modes.



# Top 30 landscape photography tips

## A guide to getting the most from your landscape photography

**For many people new to the world of photography, one of the easiest and most accessible areas first explored is the great outdoors and why not? You don't need a studio or masses of expensive equipment. There is plenty of available light, unless you're feeling adventurous and want to try night photography and beautiful seaside or countryside scenes are usually not too far away by car or a brisk walk.**

Landscape photography is an amazing and rewarding experience for both novice and seasoned professional. Whether it's just a record of a day trip you've made to a new location with the family or a more serious professional endeavour, landscapes when taken well, are able to instil all sorts of emotions in the viewer of the final shot. Even if it is that most mundane of emotions summed up in the simplest way: 'wish you were here'.

Before you venture out there, why not take a quick look at our 30 essential landscape photography tips. Over the following pages we have assembled a useful quick reference guide to landscape photography that can take your photographs to the next level. Go from 'snap' to 'masterpiece'. There is so much that could be covered but we will show some of the main tips and tricks to get you on your way to being the next Ansel Adams. ■

"Landscape photography is an amazing and rewarding experience for both novice and seasoned professional."





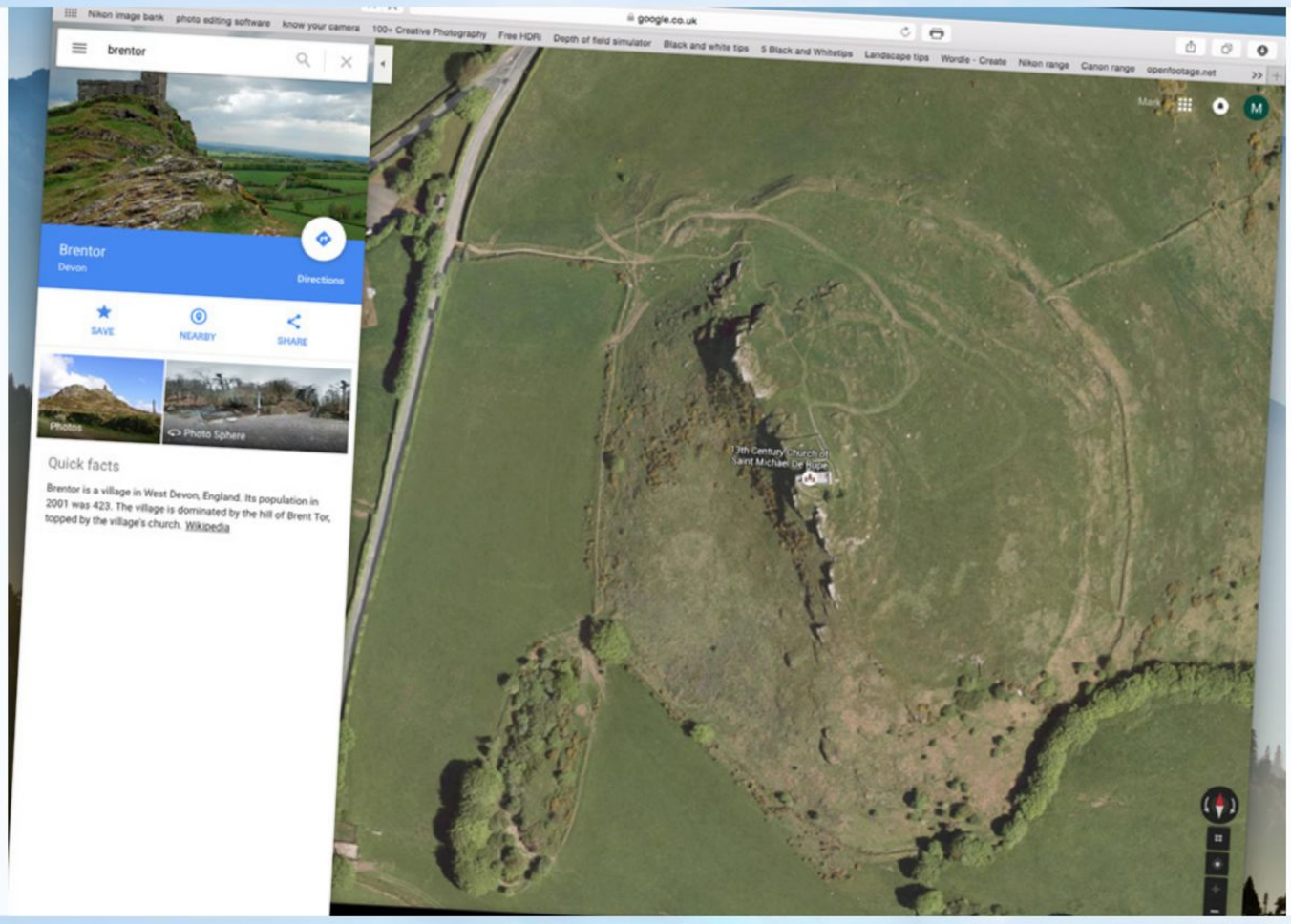
TOP TIPS

# Top 30 landscape photography tips

## 1

## Research your location

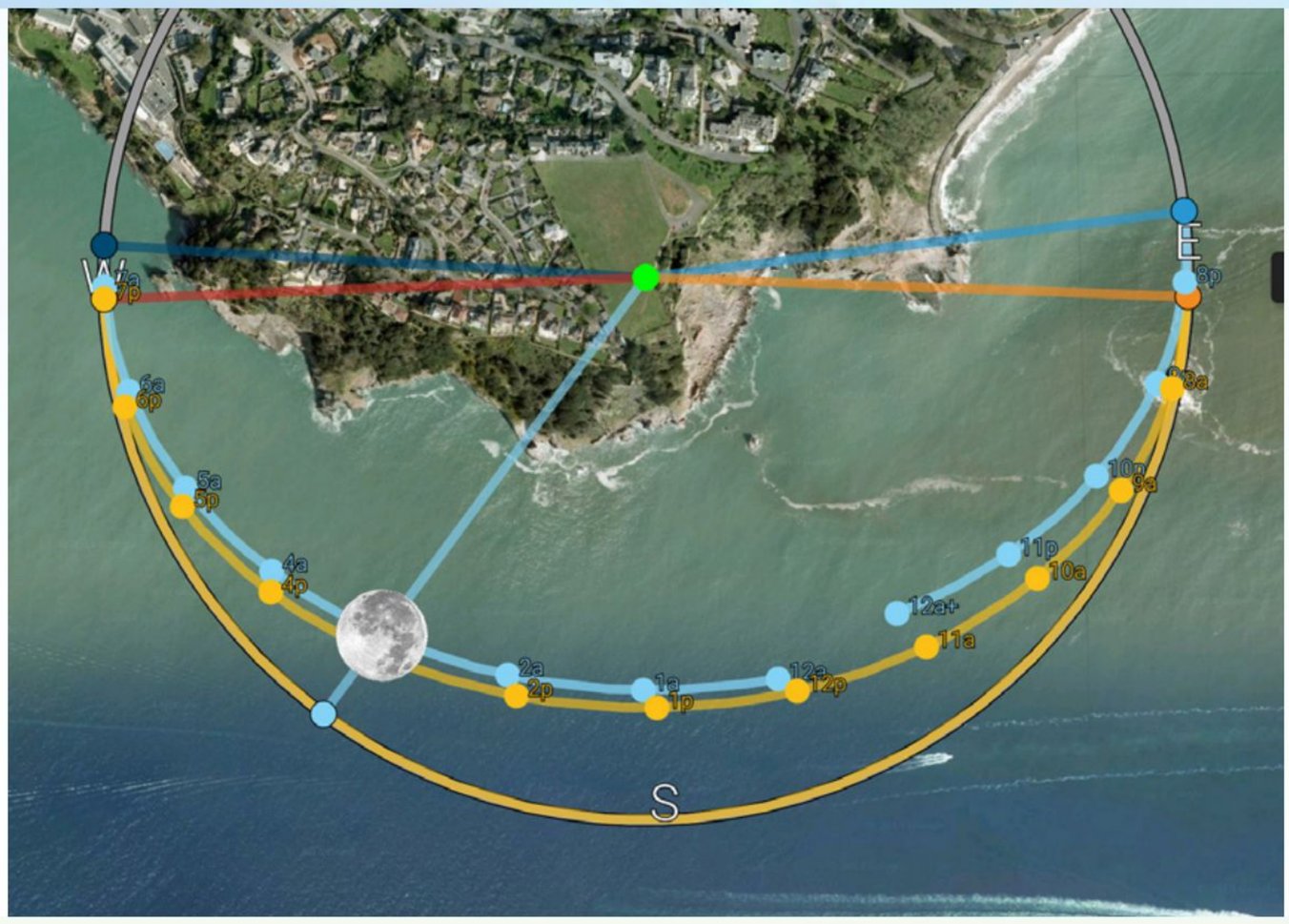
Take time to research your possible shooting destination if you have not been there before. Just Googling the location you want to shoot will call up all sorts of information. Most of it may be useless to you but you can guarantee that there will be examples of other photographs taken there. The experiences of other photographers in this location will give you the heads-up as to whether it is an easy or difficult place to reach. There may be tips concerning local by-laws and the best nearby parking spots etc.




## 2

## There's an app for that

There are apps available that can tell you where the sun will be at any point on any given day. These apps can overlay information on a map of your given destination, showing where the sun will rise and fall and where it will track through the sky on whichever day you choose. This is great for working out what time is best for you to shoot in the location you are researching. Sunseeker for iOS and Sun Surveyor for Android are two great examples of these types of app.




## 3

## Be prepared

Make sure you dress for the conditions you are shooting in. If you are going to be on rough terrain, then sturdy shoes are essential. A sprained ankle miles from anywhere, could be very unpleasant. Travel light if possible and the purchase of a good quality rucksack or rough terrain camera bag will stand you in good stead for your journey. Make sure someone knows you are out there and that you have your phone with you at all times. You never know.



4

## Visualise the shots

Before taking any photos, scan your surroundings and try to visualise where the best shots may be taken from. In fact it is sometimes good practice to go to a location in advance of taking any actual shots and just walk through the landscape, taking note of the best positions, angles and viewpoints for future reference. Create a list that you can reference when you arrive to take the shots in earnest.



5

## Don't lose it

A handheld GPS unit may be a bit of a luxury but if you are out wandering the hills and valleys and happen upon some quiet unseen beauty spot, a GPS device can mark its co-ordinates to enable you to find it again if you wish to return to shoot more images. Manufacturers such as Garmin have a range of devices starting at reasonable prices; useful if you get lost too.




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## Get motivated

If you want the best shots, then you need to be motivated to go out and get them. Remember, in summer, the sun is rising around 5am. Even for relatively local beauty spots, factor in journey times and then time to walk to the location, you are probably starting your journey at 3am. This is the time you discover you want to roll over and go back to sleep. If you can overcome this and venture out, the rewards are extraordinary. Teaming up with other photographers is a big motivational tool.





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## Light fantastic

In photography you may hear reference to ‘the golden hour’. For gorgeous landscapes you cannot do better than to shoot at sunrise and for an hour or so after that; or at sunset and the hour or so before it sets. The light has a luminous warm glow, shadows are long and show off the contours of the land. The sky ignites in pink, orange and red hues and if you catch a sunrise or sunset with an interesting set of cloud formations, then all the better.



8

## Blue hour

There is also what is referred to as ‘the blue hour’. This is the twilight period you experience at either end of the day when the sun is a fair distance below the horizon but its influence can be seen in the sky. It is ideal for cityscapes where you can capture the city lights against a deep, inky blue sky. The window of opportunity is relatively small before either the sun rises and lights the sky or it sinks and renders the sky black. It usually lasts about 45 minutes after the sun has set or before it rises.



9

## Stable conditions

A tripod is a must for landscape work. You may be working in low light conditions and handheld shots are not going to yield sharp images. You might also want longer exposure times to render water soft and misty or show clouds moving in the shot over a number of seconds for added drama. There are plenty of strong, lightweight tripods to choose from that won’t be a chore to carry with you on your shoot; couple a cable release with it and you are set.



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## A golden rule

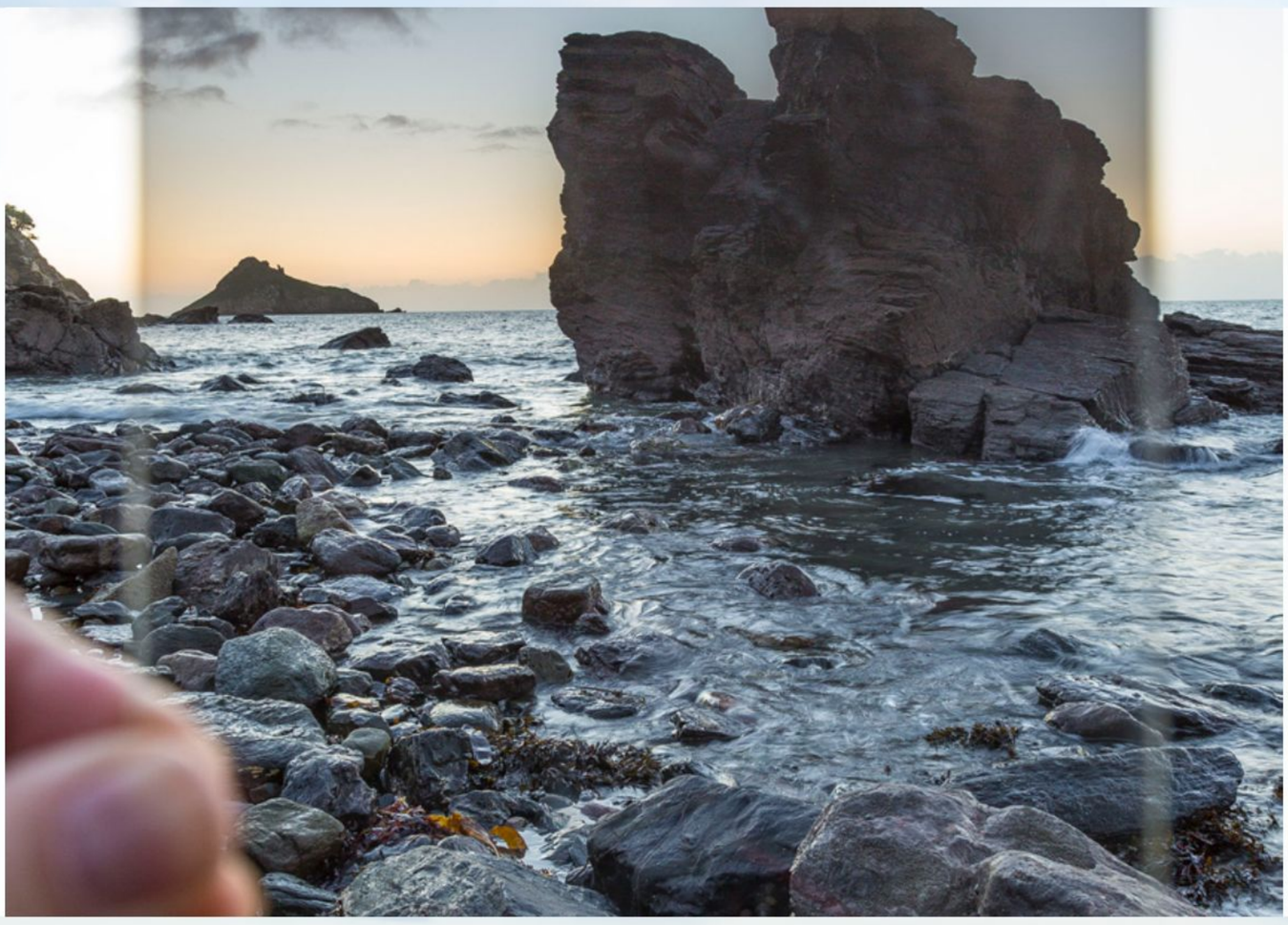
It can't be stressed enough, if you want the best from your shots, you need to switch to Raw shooting mode. Most modern cameras now allow you to capture your images in Raw format. Raw as the name suggests is the uncompressed and unprocessed image data straight from the camera's sensor. The files are much bigger than their jpeg counterpart but they give much greater latitude when it comes to processing your final image.




11

## Filter systems

Think about investing in some filters. A circular polariser is very useful. It can boost the contrast in blue skies and is very useful for reducing or even eliminating reflections in water; just be aware that polarisers work best when the sun is at 90° to you. If you are shooting a scene where there is a large difference in the tonal values between your land and a bright sky, an ND grad will help stop those skies from burning out.



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## Off in the distance

Don't always assume that your landscape has to be shot with the widest lens you have. Sometimes a longer focal length is great for picking out distant details that a wide angle lens could not. Zoom lenses are also a good choice as they allow you to zoom in and out, allowing you to crop your shots and alter the composition without having to move large distances. Lenses in the 24mm-105mm range are good intermediate wide angle zooms which give you a lot of framing choices.





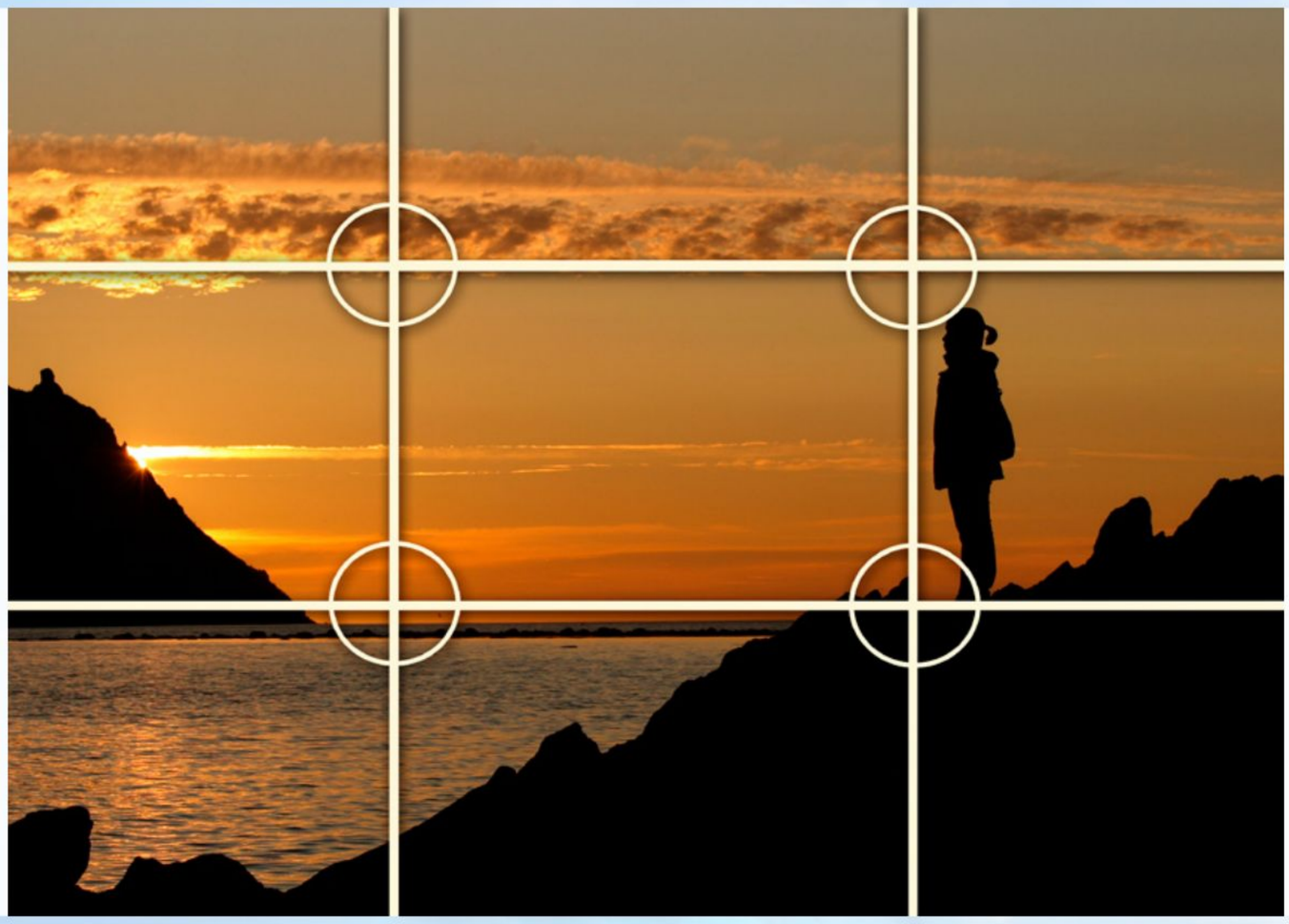
TOP TIPS

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## Framing & composition

Composition is a very subjective thing. What looks good to your eye may look odd to someone else. If nothing else, keep the 'rule of thirds' as your main compositional tool. Imagine that your frame is split by lines into thirds, both vertically and horizontally. Placing an object of interest at one of the points where these lines would intersect means you are adhering to the rule and this will help bring balance to your shot. Rules can be broken though, so it's up to you.



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## Stay sharp

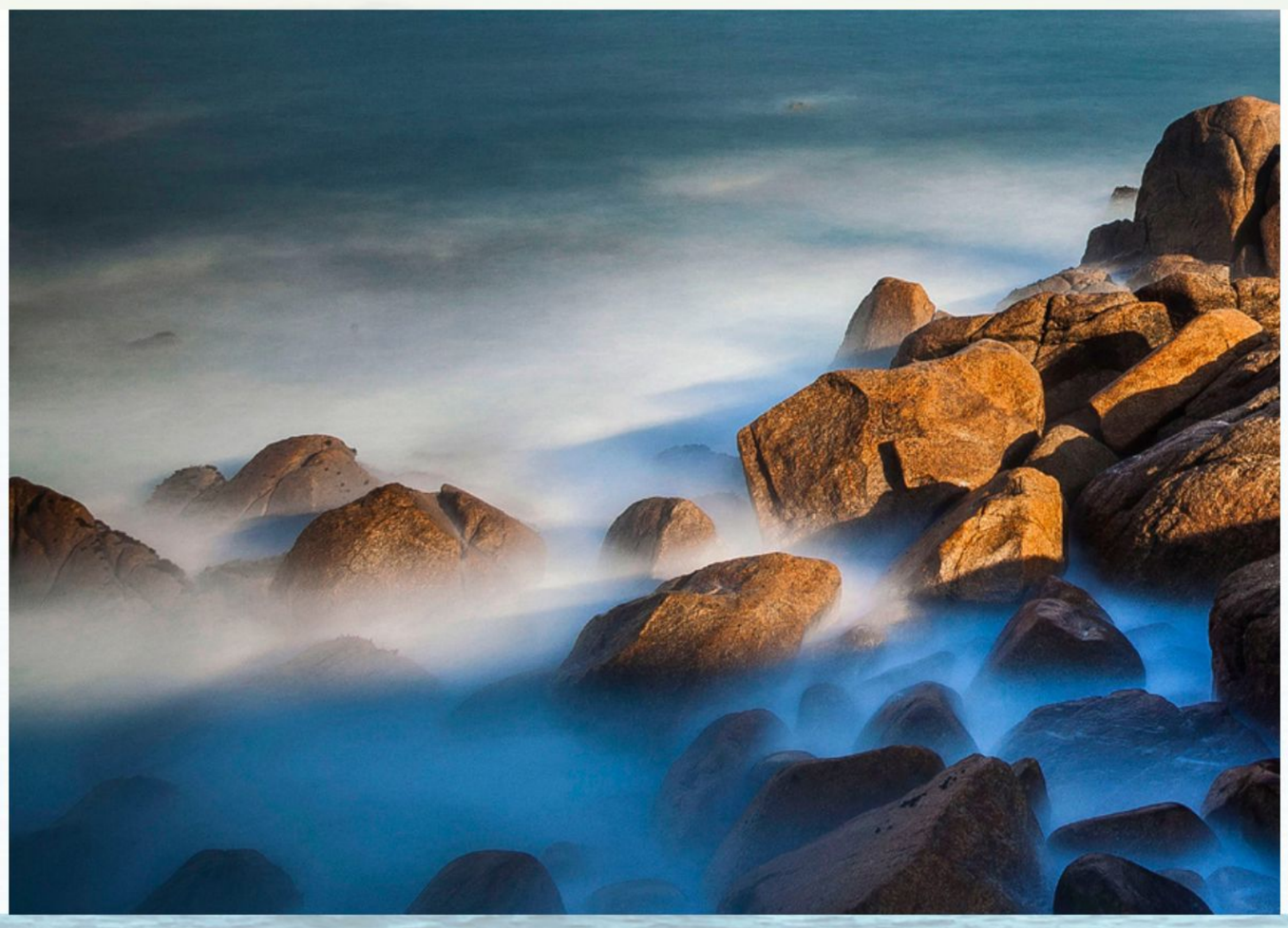
Photographers will want their scene to be as sharp as possible from front to back. This is where depth of field comes into play. At large apertures such as f/2.8, the area of sharp focus in front and behind the point of focus will be relatively small. Using a much smaller aperture such as f/11 that 'zone' of sharp focus is much greater. As a rough guide, focus on a point about one third of the distance into your scene to give yourself the best chance of maximising the depth of field available.




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## Maximum exposure

Consider using longer exposures in your landscape shots. Photographers often employ exposures that last seconds or even tens of seconds, to show clouds streaking across the sky rather than looking static and puffy. Scenes shot with a much longer exposure will turn the water to a misty, milky fog. It is safe to say that your tripod is the key to the success of these shots.



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## Take control

If you are relatively new to DSLR photography, you may still be using your camera's auto or semi-auto functions where it will decide on the best settings to use in either Shutter Priority or Aperture Priority. As long as it is in auto, it will keep making decisions for you and you will end up with shots that don't match your expectations. In manual mode you can decide on how the scene is exposed. Make the creative decisions; don't leave it to your camera.




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## Testing, testing

Don't be afraid to shoot a number of test shots handheld. Turning up at a location, sticking your camera straight onto the tripod and shooting at head height may not be the most ideal viewing angle. Try shooting a number of frames where you experiment with different angles and high viewpoints, low to the ground, portrait and landscape orientations. Move to different spots and try out various approaches before you decide to settle and take the final shot.



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## Lock it up

For extra tripod stability, a lot of photographers hang their camera bags underneath the head of the tripod to act as a counterweight, helping to immobilise the tripod. In addition, even the movement of your camera's mirror flipping up and down with each shot can create vibrations that affect a shot's sharpness. If you set your camera for mirror lock-up, it will flip the mirror out of the way long before the shutter opens to take the shot, giving time for any vibrations to cease.





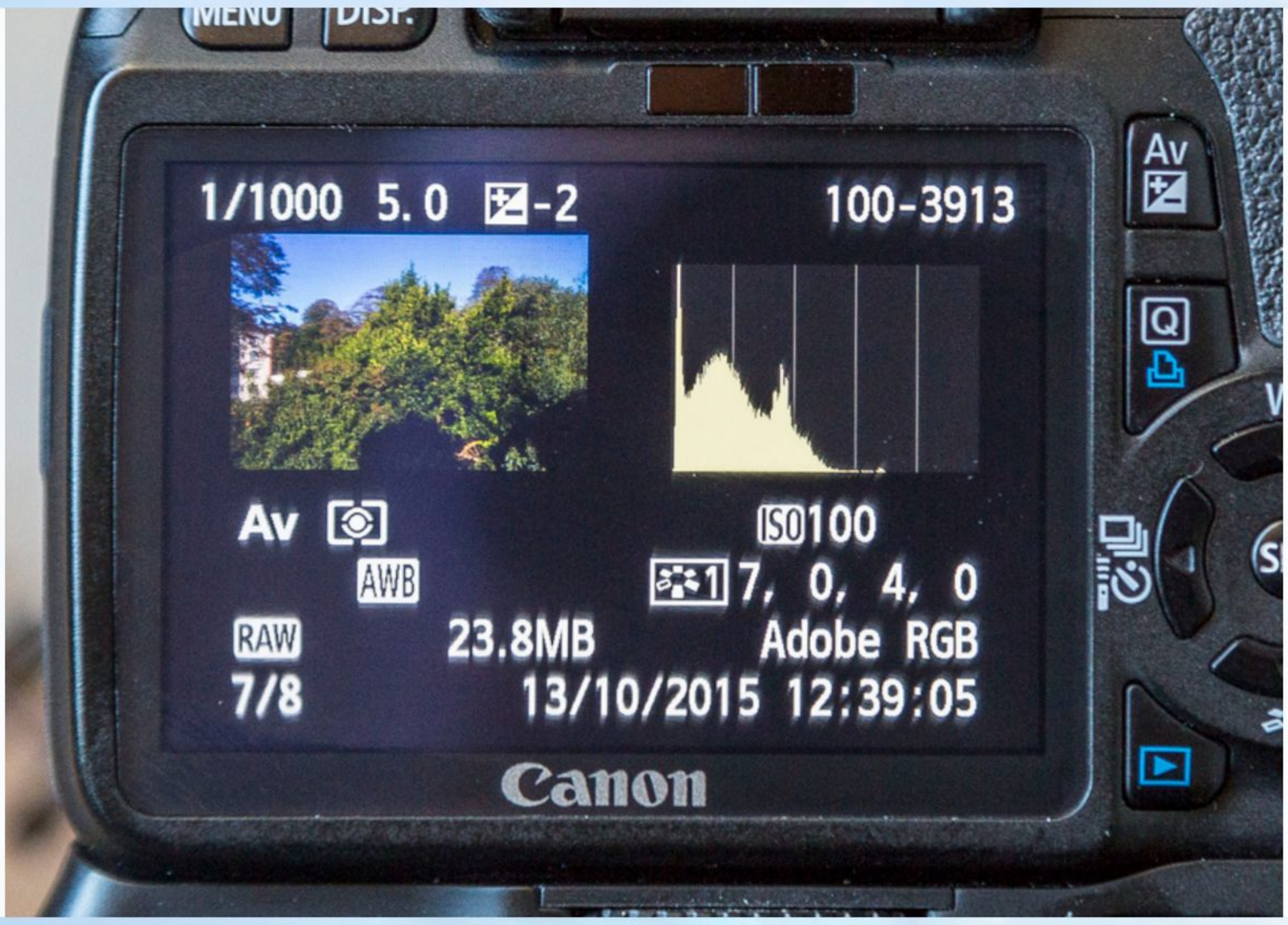
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## Don’t fear the histogram

A histogram is a graphic representation of the tonal values in your shot and how they are distributed. If the graph is bunched at the far left, then your shot is very underexposed and you risk the loss of a lot of detail to shadow areas. If it is sliding off the right hand side, then it will be overexposed and detail will be lost in the highlight areas. A good exposure will have all the major tones in the middle of the histogram.




## 20

## Leave only footprints

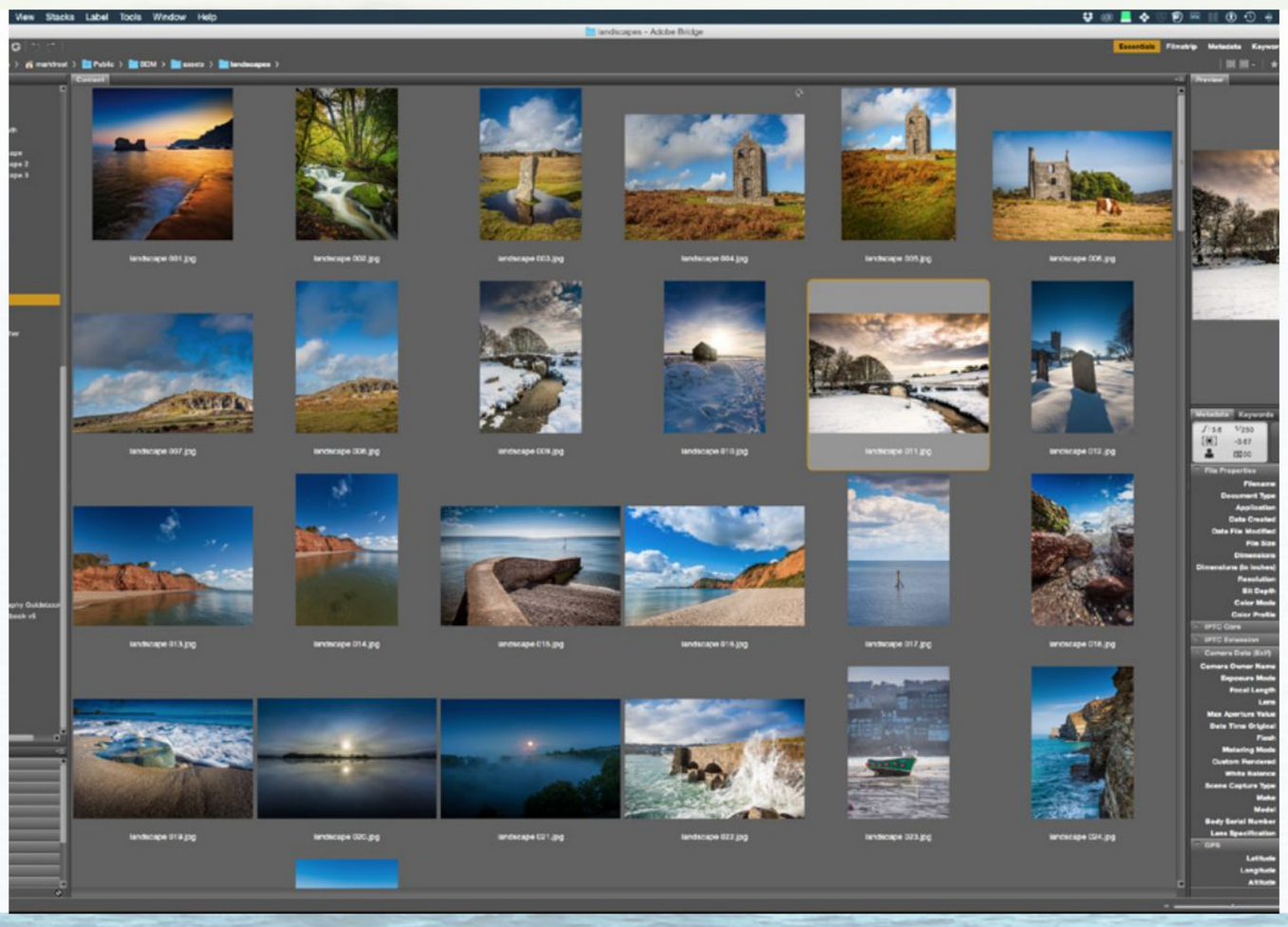
While the great outdoors is mostly free for you to explore and photograph to your heart’s content, do remember to respect other people’s property and privacy. Don’t trespass on private property, don’t damage fences or crops, always close farm gates behind you and don’t leave litter lying about. The rule here is “leave only footprints, take only photographs”. You want the natural world to look beautiful for your photos, so do your bit to make sure it stays that way.



## 21

## Organise your photos

If you’re a keen photographer you’ll very rapidly build up an extensive collection of images stored on the hard drive of your computer; possibly numbering tens of thousands after a few years. To help keep them organised you can tag them in various ways. The best way is to assign keywords based on the subject and location of the shot. Most photo gallery and organiser software can help with this, including Google Picasa and Adobe Bridge.



## 22

## Out of the shadows

While a bright summer day may seem like the perfect time to take photos, at midday every scene will appear flat and featureless with shadows sitting directly beneath every object. The perfect weather for outdoor photography is a bright day with a few white clouds to help diffuse the light and take the edge off the shadows. The perfect time is around sunrise and sunset with long shadows defining the contours of the land.



## 23

## Review your images

Always review your shots after you take them. It can be very disheartening to take what you think is a wonderful shot, only to get home, process the shot and see that it is out of focus or badly framed. Use your cameras LCD screen to zoom into your shots and check them for sharpness and detail and confirm the composition is looking how you imagined. Bear in mind that not all cameras show you 100% of the frame in the optical or electronic viewfinder, so reviewing images on the LCD is important.



## 24

## Hot weather

Hot weather can also cause some problems, with condensation and high humidity being at the top of the list. Keep a couple of bags of silica gel in your camera bag to absorb any stray moisture and wipe off any surface condensation as soon as it forms, to avoid it seeping inside your camera and messing up the electronics. Keep you lens clean too, to avoid the problem of fungal blooms growing inside the lens barrel.





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## Cold weather

Cold weather can cause a few problems for your digital camera, the main one being its effect on batteries. You'll find that in wintery conditions your battery will only last half as long, so keep a spare in a warm inside pocket and swap them out when the first runs out. When you take your camera back indoors, keep it in a sealed plastic bag until it's warmed up, to avoid condensation problems.



## 26

## Wet weather

If you're taking your camera out in wet weather make sure it's properly protected. Keep your camera in a rain proof bag or case until you need to use it. If rain gets on the lens, wipe it off with a soft lens cloth. If your camera does get wet, take the battery out, dry it thoroughly using paper towels for the body and soft cloth for the lens; then leave it somewhere warm and dry for 24 hours before trying it again.




## 27

## Time of day & time of year

Photography is all about light and how you make the most of the light that is available to you. Shooting your landscape at the right time of day is important but so is the time of year. Morning and evening light, during the summer months is deemed more colourful, as well as being softer with longer shadows giving definition and depth to your landscapes.



28

## Persistence pays off

The great outdoors is unpredictable to say the least. The weather has a habit of doing exactly the opposite of what you want, when you least want it to. This can be a big turn off for many new to photography. Don't let below par weather put you off. Sometimes you have to be brave and get out there and be prepared to sit and wait. You could be rewarded by a break in the weather that reveals some sublime lighting that makes it all worthwhile.



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## Depth cueing

A photograph only has two dimensions and any indication of depth in a photograph is purely optical. One of the simplest ways to add depth is to use leading lines like the curve of sand on a beach image or railway lines converging towards the horizon. Another method is atmospheric perspective where mist and fog shroud distant objects making them lighter and with less tonal contrast compared to darker foreground objects.



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## Less can be more

Simple compositions are often the best. Sometimes it can be difficult to train your eye and your brain to look for the simplest part of a shot because you might assume you should be including details and interesting objects to populate the scene. Now and again, it's worth having a go at the principle of the 'unforeground'. The unforeground refers to the part of the scene, closest in proximity to the camera that contains no detail so it is not a distraction to the viewer. An unusual but often striking landscape trick.



## Very long exposure

The use of a neutral density filter at dusk can result in some amazing images. Instead of shutter durations of fractions of seconds, you can achieve exposures that are minutes long. This scene was shot with a 4-stop ND, the lowest ISO the camera was capable of and an aperture of f/22. The shutter was open for 120s which gave the clouds plenty of time to pass through the frame of the composition to make what would have been dense fluffy clouds more wispy and conveying a sense of movement.



## Long exposure sunrise

With the aid of a 10-stop neutral density filter, you can slow down your shutter speeds to soften moving elements in your shots such as water and clouds. On a crisp morning, down at the seafront, screwing a 'big stopper' to the front of the lens meant that a normal exposure of about 1/30s could be extended up to about 30s. The sea became flat and mirror-like and the clouds soft and less well defined. The flags, flapping on their poles were reduced to ghostly shadows.





# Landscape projects, tips and techniques


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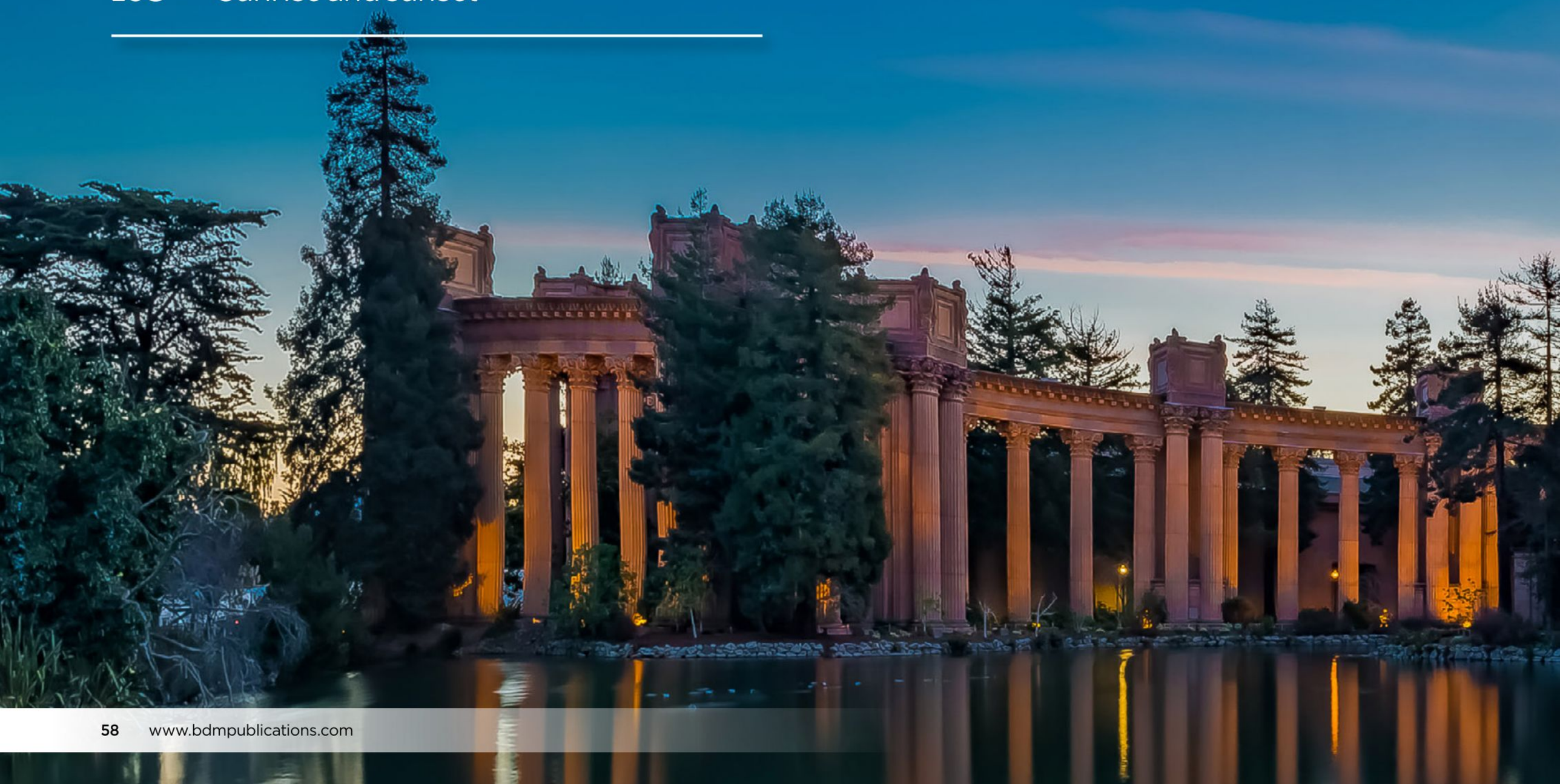
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**Landscape photography is like playing a musical instrument. It takes an afternoon to learn the rudiments but it can take the rest of your life to really master it. It is a vast and rewarding field, as well as a lifelong hobby.**

Landscape art is not restricted to photography. People have been drawing and painting the world around them since prehistoric times. A walk around any art gallery or a quick search on Google will demonstrate that the landscape has always been a major source of inspiration to the world's greatest artists and even a brief study of their work will show that there are as many different approaches to landscape art as there are artists. Studying how different painters have chosen to represent the landscape will also teach you valuable lessons about theme, composition and lighting that will improve your photography.

Photography is a relatively new art by comparison but there are many photographers from the past century whose work is worthy of study. Among landscape photographers, few names are better known than that of Ansel Adams (1902-84). His large format photographs of Yosemite National Park and other American landscapes from the 1920s and 1930s are world famous and his work remains popular to this day. Contemporary master landscape photographers such as Steve Mulligan, George Schaub and the late Peter Jarver are also inspirational.

There comes a point though, when you need to get out there yourself and experience the pleasure of being outdoors and taking great landscapes. There is an old saying in photography that you must shoot the kinds of images that you want to see, not someone else. That is quite a true statement but if a landscape image is well thought out, with care given to adhere to the main creative aspects of composition, framing, lighting and colour, you will find that everyone else will love it as much as you.

Over the coming pages we have a number of different landscape shoots where we impart additional guidance that expands upon the information we presented in the first part of this bookazine. From shooting landscapes at night, to sunrises and sunsets, we cover a number of photographic projects, some conventional, others not quite so conventional; hopefully they will will fire up your imagination and get you inspired. ■



# HDR landscapes

## We shed light on this multiple exposure technique

High Dynamic Range or HDR photography is the technique by which a much greater dynamic range of luminosity can be captured by a digital camera that more closely resembles what the human eye can perceive. Rather than taking one shot, a sequence of shots at different exposure values are captured instead. Later they are processed using software to extract the best tone and detail from each shot and combined into a final image that is converted into a low dynamic range image (LDR) that can be viewed on standard monitors or reproduced by inkjet printers.

Brig upon the Water. Taken by Gustave Le Gray in 1856. An early example of high dynamic range techniques to capture as much tonal range in an image as possible.



### Use of HDR

HDR has been with us for some time. It may be a surprise to learn that HDR imaging was being used as far back as the 1850s. Early pioneer Gustave Le Gray used to photograph seascapes where the tonal difference between sea and sky was too extreme. He would achieve the final image by exposing two separate negatives. One exposure would be balanced for the sky on one negative and a longer exposure for the sea. The two negatives were then combined to create a final print. Although those images were captured more than 160 years ago, the basic photographic techniques have not changed.

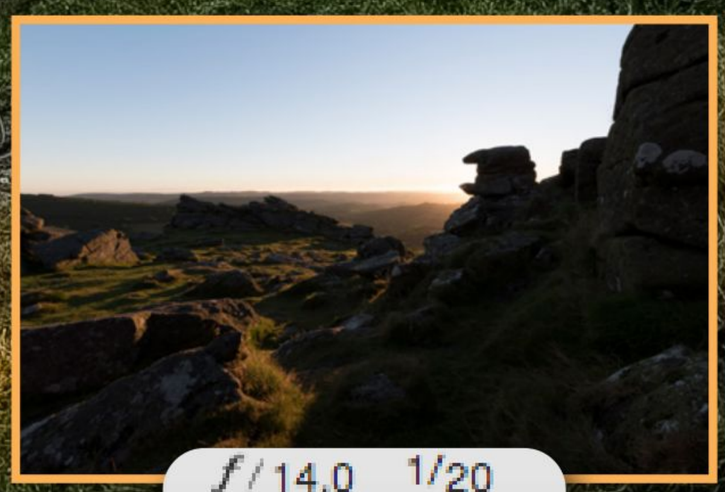
## Technical limitations

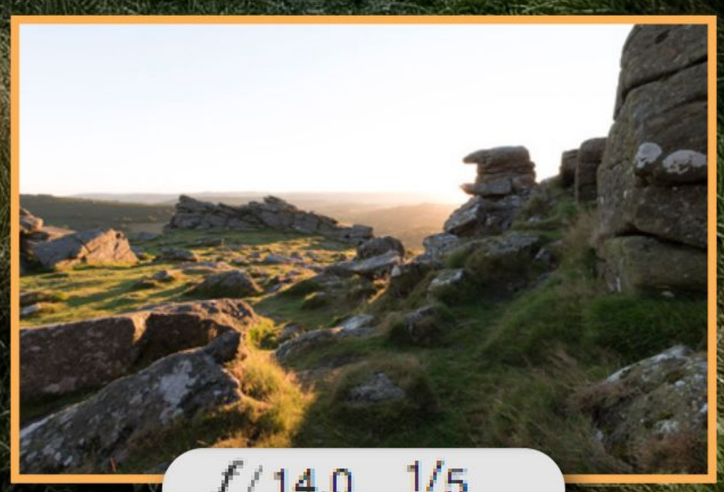
Even the most modern cameras can only capture a certain range of tones between pure white and pure black present in a given high contrast scene. Dynamic range is measured in stops and digital camera manufacturers may quote the maximum dynamic range that their cameras can resolve using that unit of measurement. A stop is essentially a doubling or halving of the amount of the light level recorded in a scene by a camera.

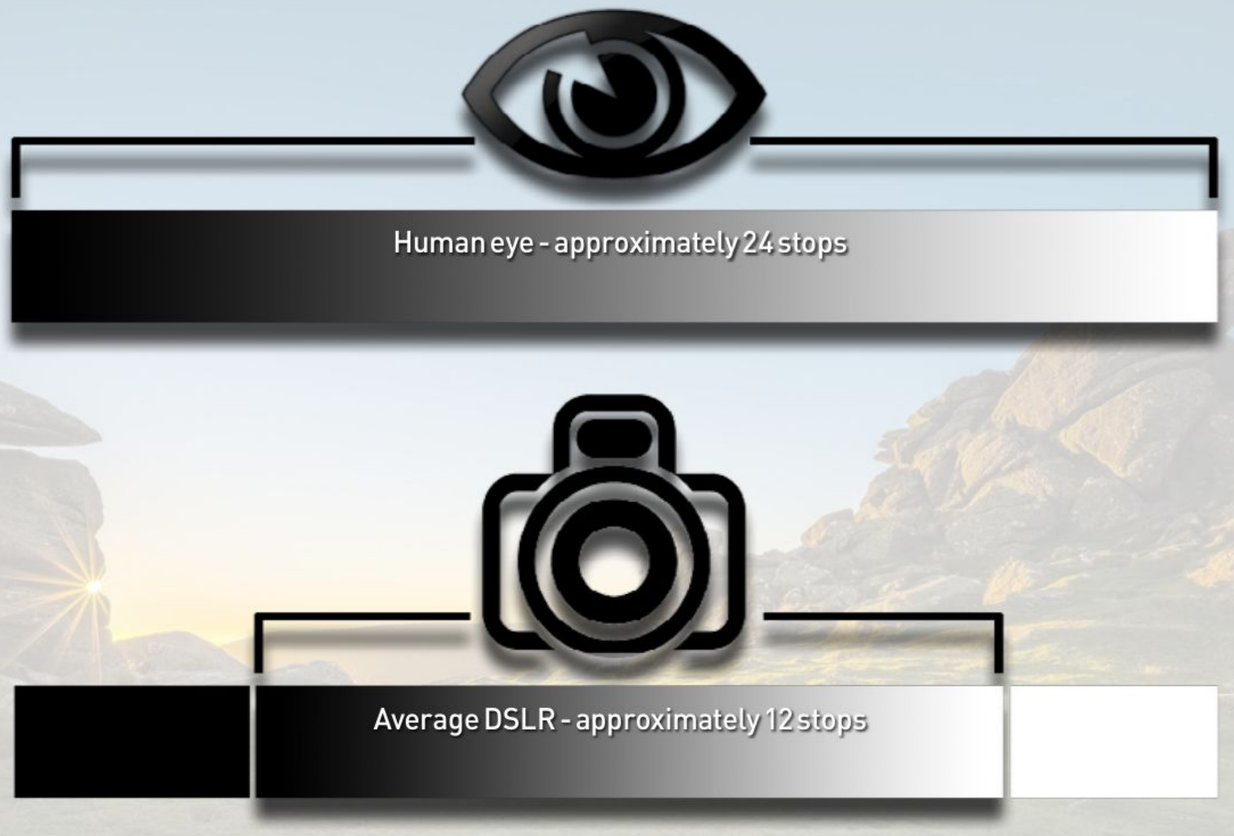
**"The human eye can perceive around 24 stops of light from darkest black to brightest white. Most digital cameras can only capture approximately 12-14 stops."**

A standard 3 shot sequence, 2 stops apart, was used to create the final image you see on this spread. The only setting that was altered during the sequence was the shutter speed.






This image shows you a simple comparison between the dynamic range that can be seen by the human eye, versus the average DSLR camera.

## See what the eye sees

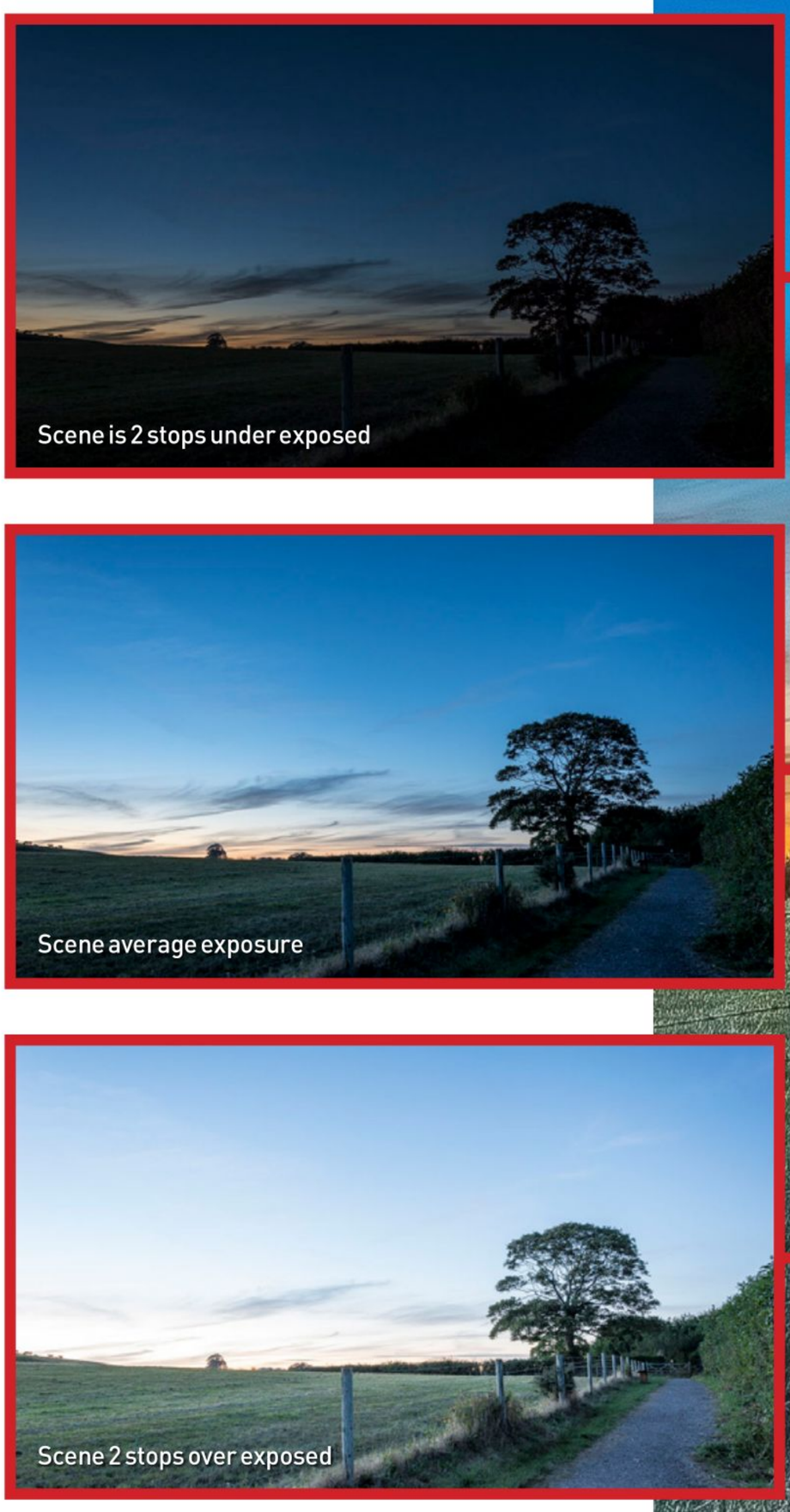
The human eye can perceive around 24 stops of light from darkest black to brightest white. Most digital cameras can only capture approximately 12-14 stops. Currently, cameras like the Nikon D810 and D800E have some of the best dynamic range around. Even this is not enough to fully capture all the light available in the scene like the human eye does. The trade off will be that you have to take a shot that retains the brightest areas of the shot at the expense of losing details to solid shadow; or you retain detail in the darkest areas and face the prospect of the brightest areas blowing out to pure white and losing detail that way.

## An example

A lovely sunrise or sunset image with a silhouetted foreground object is a typical example of how much light goes unseen by a camera. Although the sky may look beautiful and well exposed, the foreground object is in silhouette, purely because the contrast between them is far too great for the camera to accurately record. Set your exposure to reveal detail in the foreground object and the result will be a sky that blows out to pure white with complete loss of detail that no amount of processing would recover.

## Bracketing exposures

To capture the scene in all its glory, you will need to take several shots of the same scene but with different exposures. This is referred to as Auto Exposure Bracketing (AEB).






The Nikon D810 has impressive dynamic range but even it can't compare to nature's greatest camera, the human eye.

A good sturdy tripod is essential for HDR photography. You want your shots as rock solid as possible with no movement between exposures. Hand held images are possible but even slight movement between shots can lead to ghosting in the final processed image.






You'll need one exposure sufficiently underexposed to capture the brightest parts of the scene, such as the sky, correctly. Next is an average exposure of the scene and finally, an overexposed shot that records the darkest areas of the shot in sufficient detail. The set up to do this is fairly simple. There are just a couple of things to be aware of before you start shooting.

## Things to bear in mind

You will be shooting multiple exposures of the same scene and will need to set your camera up on a tripod, so that it is held securely with no chance of camera movement. If you try to shoot hand held, even the slightest movement between each shot could ruin your final HDR image because of image mismatches.




Wide angle lenses such as the Sigma 10-20mm f/3.5 for crop sensor cameras or the Canon 16-35mm f/2.8 are great choices for HDR photography where you want to capture large environments that are the staple of photographs taken with this technique.

Remember also that certain scenes are not suitable for HDR. Any shot that contains a lot of movement, such as trees swaying in the wind, will result in final images having many ghosted areas, as things have moved between each of the exposures. Nice static scenes work best, although things such as flowing water can sometimes work quite well if you have long enough exposure times to render it soft and fog-like.

It is also generally held that HDR images work to their best effect, if you shoot using an aperture as small as possible for maximum depth of field and acceptable sharpness throughout the scene. Shots with very shallow depth of field can sometimes come out with banding and image artefacts once processed into a final HDR.

The choice of lens to use is very subjective but generally speaking the main subjects for HDR images are landscapes or cityscapes that require a large field of view to take in the scale of the scene. Any lenses that fall within the 16mm - 35mm zoom range for full frame sensors or 10mm - 20mm for APS-C sensors will do the trick but it is entirely up to you.

## Getting set up for HDR

Make sure your camera is set up to shoot Raw. We say it time and again but it rings true with techniques like this where you want to squeeze every last pixel of usable data from your images. The technique will still work with JPEG files but if you can, use Raw. Shooting Raw also means you don't have to worry about making sure you set things like White Balance to manual rather than auto in order to keep the white balance consistent across the exposures you take.

Make sure your ISO sensitivity is set as low as possible so that there is as little image noise as possible. Remember that higher ISO values result in more image noise. Most cameras will let you set ISO 100. Some let you go down to ISO 50, although there has been debate as to whether this results in a small loss of dynamic range at this lower ISO setting. Set your metering mode to Matrix (Nikon) or Evaluative (Canon). This measures brightness and contrast in the scene and determines what the exposure should be to give a good overall average. Then make sure your camera is in Aperture Priority mode. This means you can select which f/stop you use and the camera will work out the other settings. F/11 is a good starting point. Locking down the aperture for each exposure is important to keep the sharpness consistent in each capture.

Next, you will need to select Manual Focus. As a very rough guide, you can focus one third of the way into the scene to get as much front to back sharpness as possible. Manual Focus also means you are able to determine the point of focus rather than the camera deciding for itself. You can use your camera's live view function if it has one, to determine whether the area you want is in sharp focus. If you have a particular object that you want to be the absolute point of focus, then use your camera live view to get that in sharp focus.

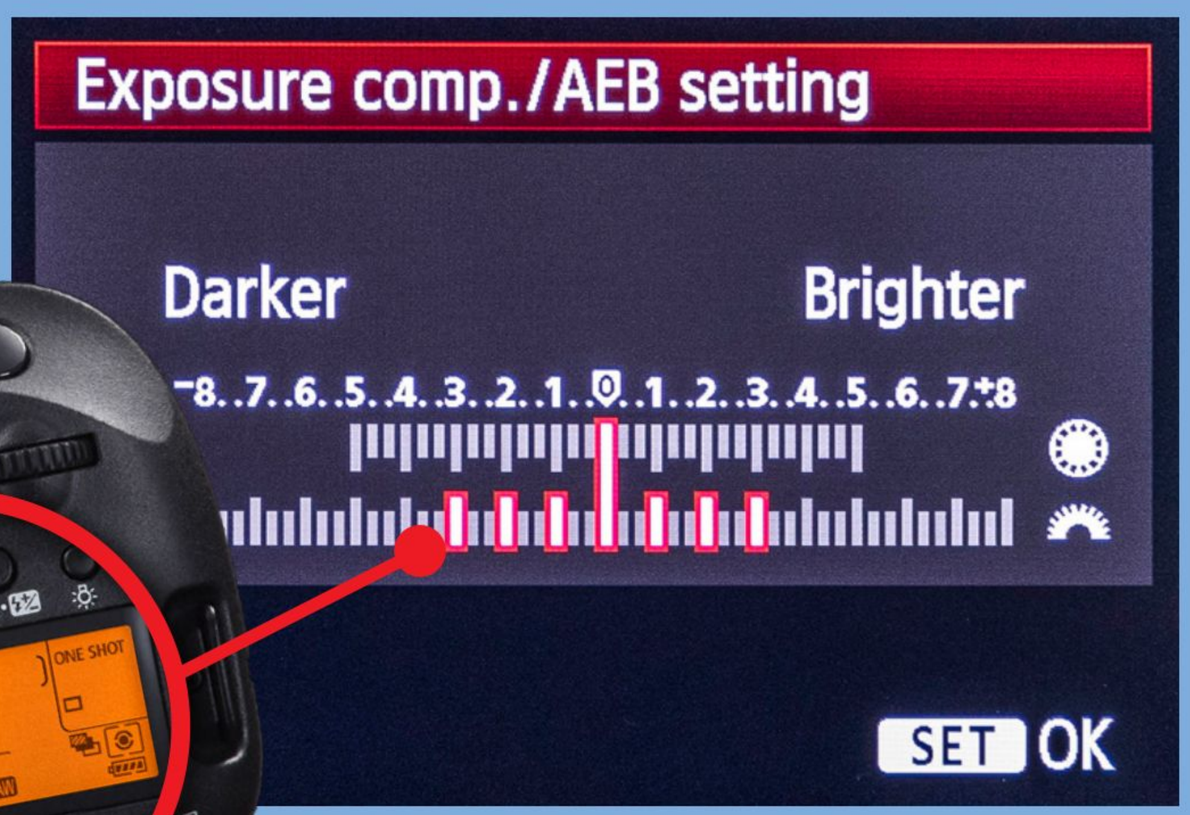
## Almost there

Then comes the key to getting the exposure range required. You will need to turn on your camera's Auto Exposure Bracketing function. You may need to dip into your camera's manual if you haven't used it before and locate the AE Bracketing function. Here you can specify the sequence of shots your camera takes and just how much underexposure and overexposure will be applied to the shots. Depending on your camera model, you can shoot a 3 shot sequence. Other models allow you to shoot 5, 7 or more shots as part of your capture sequence. You can also specify how many stops of exposure separate each shot. For instance, a 3 shot sequence 2 stops apart will result in a bracketed sequence that runs: -2 (2 stops underexposure), 0 (averaged exposure), +2 (2 stops overexposure). A 7 shot sequence 1 stop apart would run: —3, 2, -1, 0, +1, +2, +3. Generally, the more you can capture the better.



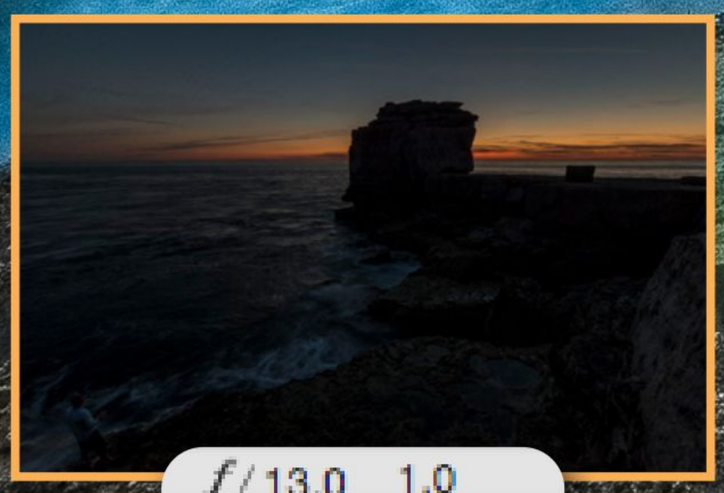

Here are a couple of bracketing sequence examples. One is a 7 shot sequence where the exposures are 1 stop apart. The other is a 3 shot sequence where the exposures are 2 stops apart.

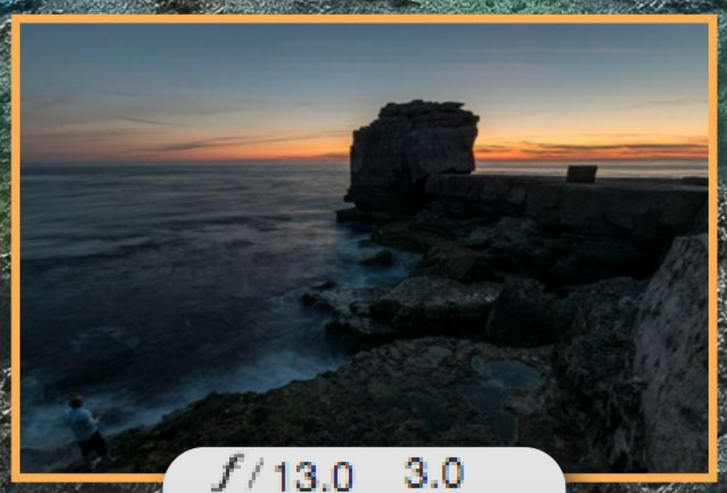
Nikon D5500 screens

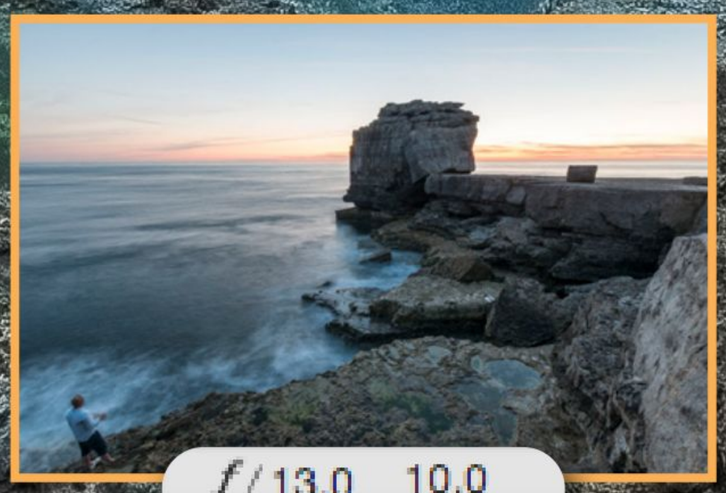



Canon 5DMK3 screens

It is worth remembering that shooting a multi image HDR sequence calls for static subjects. Having people, cars or trees moving between each shot will only create ghosting artefacts in your final image when you come to process the HDR image. An exception to the static image rule, is where your exposures are so long, it renders things like clouds or water silky smooth. These blend together reasonably well when you combine your images.



## Capture the sequence

When you're ready to take the shot, you have to press the button three, five or more times to get your sequence. This can introduce unwanted movement into the equation. Most cameras can be controlled with a cable release. Better still, have a built in timer or continuous shot function that allows you to just press the shutter release button to make the camera count down for a few seconds, and then fire off the sequence with no intervention required by you. Again, for individual camera models, you may need to find this self-timer function in your manual.

## No AEB?

If your camera doesn't have an auto bracketing function, you can still shoot an HDR sequence. You will be shooting in Manual Mode and physically touching your camera to alter the shutter speed but as long as you have a sturdy tripod, it's worth giving it a go. As an example, if you are set up and ready to shoot a three shot sequence that is 2 stops apart in Manual Mode, your average exposure for the scene results in settings of: aperture f/11, shutter speed 1/100 and ISO 100. You can take that shot, then alter your shutter speed to 1/25 for a 2 stops overexposed shot and then alter the shutter speed again to 1/400 for a 2 stops underexposed shot. It's a little more involved and hands on but it will produce your image sequence.




## Make or break time

So you have captured your sequence. What next? You have a number of options. You will need to process your sequence of images in your favourite program. If you have Photoshop, you will also have Adobe Camera Raw (ACR). ACR is not as advanced as Lightroom but it still has a great feature set that is perfect for getting the most out of your images. You can save them as high quality 8 bit JPEG files or 16 bit TIFF files and use a third party program like Photomatix Pro or HDR Efex Pro 2 from the Nik collection. You can also use Photoshop's own Merge to HDR Pro function.

Whether using Photoshop's own HDR toning methods or the third party apps, this is where you make or break your image. HDR has something of a bad reputation because a lot of the HDR examples you see online are awful in the extreme. Many images are so badly over-processed that they look like a bad psychedelic nightmare with over-saturated colours and a very heavy-handed approach to micro contrast. The key to a good HDR image, is that it should look natural with a good range of tones. HDR images should be beautiful, not capable of giving you a migraine.

**It is images that have been processed like this that give HDR a bad name. One can only imagine why people would want their images to look this way. The colours are super saturated, there is too much micro contrast and it is full of noise and image artefacts.**

Now you can enjoy capturing and processing your HDR images and start producing photos capable of restoring the good name of this amazing technique. ■

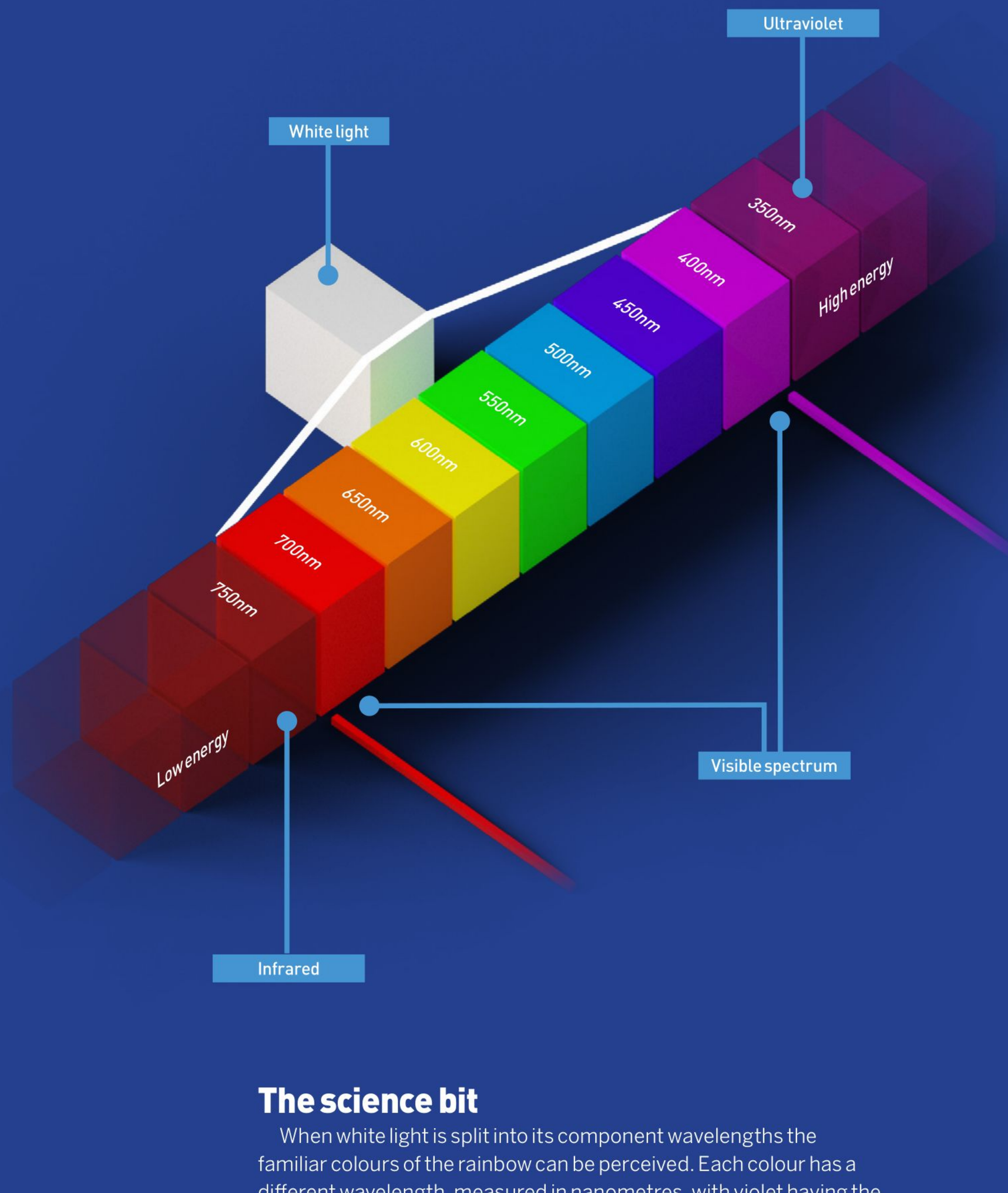
# Infrared photography

## See the world in a new light

**In normal practice our eyes see the world around us and we accept it for what it is. The sky is blue, grass is green, and so on. This is because our eyes can only see certain wavelengths of light. We are only sensitive to the so called 'visible spectrum'. Every time you see a rainbow, you are witnessing this spectrum, broken down into the range of colours we are familiar with, red, orange, yellow, green, blue, indigo and violet. Red sits at the 700 nanometer (nm) wavelength, whilst violet is at the 390nm wavelength. We are going to show you how to capture the invisible world of the near-infrared, which can be found at the 720nm wavelength. The diagram opposite goes into a little more detail about the visible, and invisible, spectrum.**

This light is invisible to our eyes, but our digital cameras are capable of recording infrared, with a little help. The images you can capture can be both surreal and beautiful. All objects reflect and absorb infrared light to varying degrees. Plants, leaves, grass and even human skin reflect the largest amount of infrared, which will appear as the lightest parts of your image, whilst the sky, rocks and water will absorb more of it and will appear as the darker objects in the shot.



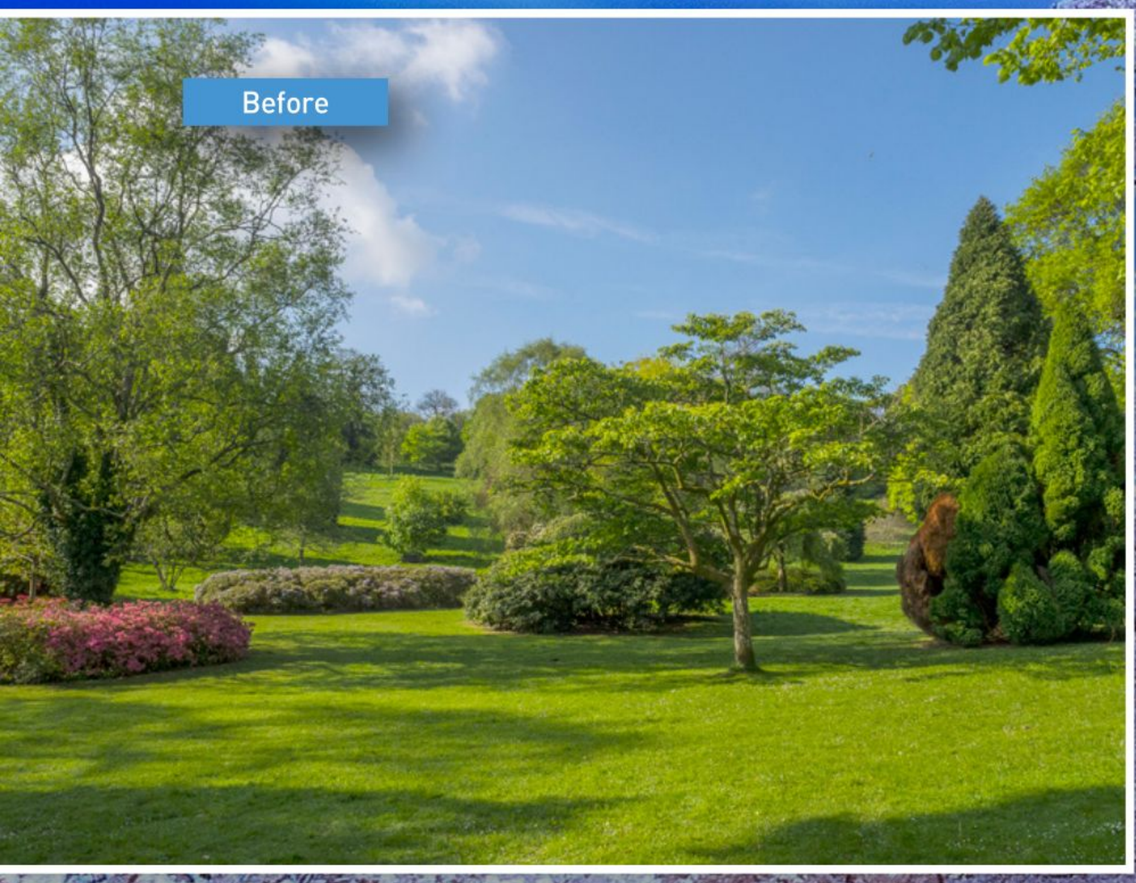


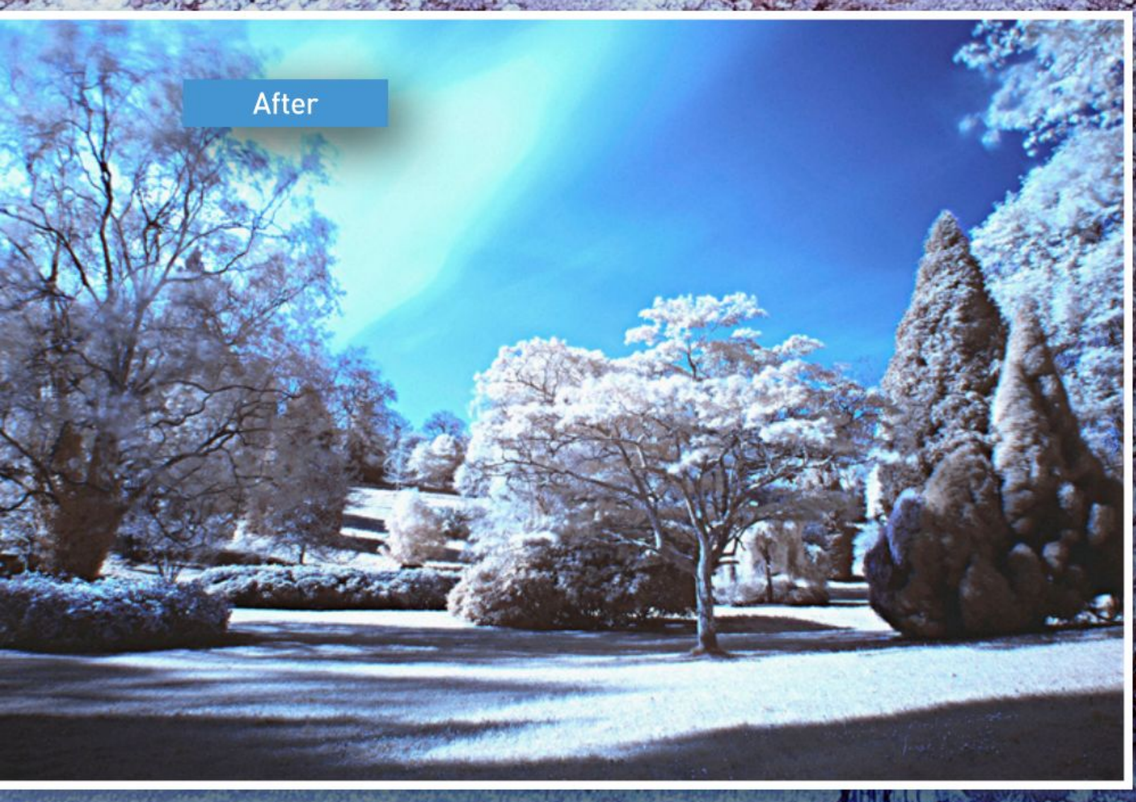

## The science bit

When white light is split into its component wavelengths the familiar colours of the rainbow can be perceived. Each colour has a different wavelength, measured in nanometres, with violet having the shortest wavelength and red the longest. Although a typical human eye can see colours from about 390nm to 700nm, there is also a great deal going on in the electromagnetic spectrum that we just cannot see. In infrared photography, we use a filter that can block all wavelengths below about 720nm, allowing us to capture light that our eyes and brain simply cannot.

Ok, that's enough physics. Let's get into a practical real-world project and hunt down some of this invisible light.

Infrared (IR) images are actually regarded as fine art in some quarters, with some amazing landscape images created in this fashion. The final photos are either presented in black and white, or can be processed in a particular way to create the examples you see here. Capturing infrared photos used to be a complex task, but with the advent of digital technology, it is within the grasp of us all. We are going to take you through the steps to explore this new world of invisible light.

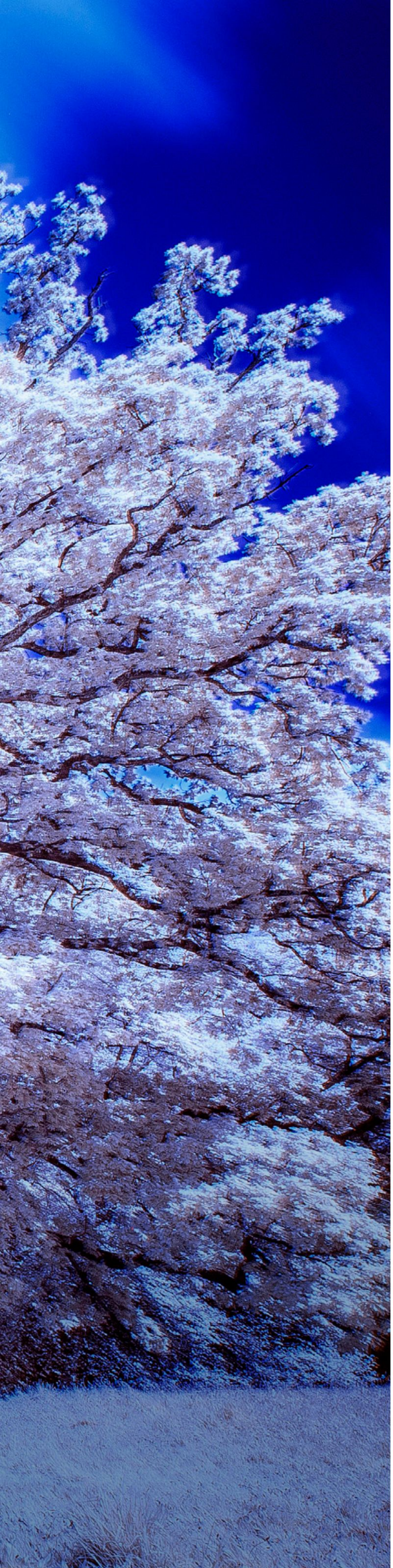






A 720nm filter produces a strange colour effect that is often altered in post process to return the sky to a familiar blue colour. It also renders plants ghostly pale.



## What you will need

You will need your digital camera and preferably a wide-angle lens. A tripod will also be critical, as we will demonstrate shortly. The simplest, and cheapest route into infrared photography, is to buy an infrared filter for your camera, but first you will need to check if your camera is actually sensitive enough to infrared light. Digital cameras usually have an IR-blocking filter placed over the image sensor to protect against the image defects that too much infrared light can cause. It's just how much infrared this filter blocks is what we need to test.

## Test the camera

Testing your camera's IR sensitivity is a simple process. Set up your camera in a dim room, and place your TV remote control in front of it, with the little bulb at the front of the remote pointing at the camera. TV remotes usually transmit an IR signal to your TV. If your camera has Live View, switch it on. Press a button on the remote to activate it, and if you see the bulb light up, then your camera is capable of seeing IR light. Generally speaking, the brighter the bulb lights up, the more sensitive your camera is to IR.

## Infrared filters

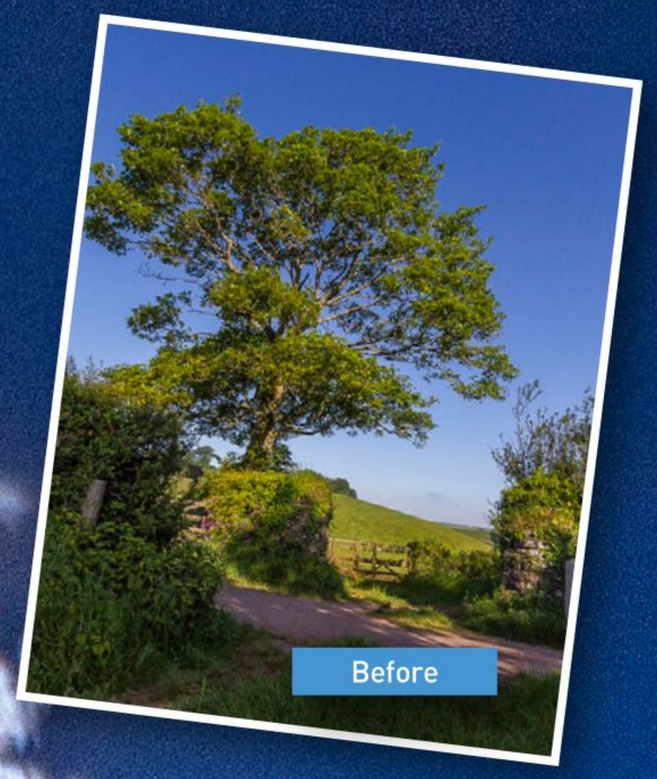
Now you know your camera can see infrared light, you'll need an IR filter. They block out all visible light and allow only infrared to pass. Typically, the 720 nm filter is a good all-round choice. There are any number of cheap third party filters available, but if you want to be certain of good optical quality, then you can't go wrong with the Hoya R72. We were using a Canon 5DMK3 with a 24-105mm f/4 lens that required a 77mm filter thread size. You'll need to check what thread size your lens is and purchase the one you need.





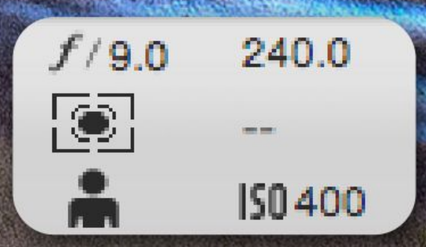


**TOP TIP!**
Because of the longer wavelengths being captured, the focus point in IR is different than in regular visible light. Many lenses have IR focus marks to help you shift the focus correctly. Other than that, you may need to do some focus testing. Also be aware that a lot of lenses create 'hotspots' on the image, this is a common issue encountered when shooting infrared light.




After

“Set up your shot and get everything composed how you want it. Set your autofocus to manual and focus about a third of the way into the scene.”




Although cheaper than modifying a camera to full time IR, the 720nm filter will drive up your exposure times. Even this well lit shot needed 4 minutes!

## Modify a camera

If you find you are wanting to shoot IR more and more, you might consider actually modifying a DSLR and turning it into an IR only camera. There are firms who will take your camera and remove the built-in IR filter that sits atop your camera sensor. It is moderately expensive to do, and your camera will only be able to shoot infrared images, which is why a lot of people who have just upgraded to another camera, will modify their old camera. Cost aside, the major benefit of modifying your camera to full time IR is that your exposure times will be just like shooting with a standard camera. Unlike the screw on IR filter option that drives your exposure times up into many seconds or even minutes.

## Set the scene

Now you can get outdoors and find a suitable subject. Anything with foliage is a good place to begin. Our shots were taken at a local park, where there were all manner of different trees and bushes. For the best effect, a bright sunny day is recommended. The more your leafy subject matter is directly lit by sunlight, the better.

## Compose the shot

Set up your shot and get everything composed how you want it. Set your autofocus to manual and focus about a third of the way into the scene. This is a rough guide to maximising your depth of field which you can tweak as necessary. Don't worry about the exposure just yet. Screw on the IR filter and you will see it has a dramatic impact. If you look through your








viewfinder now, the image will be black. Your Live View may not fare much better, in fact, it will probably show an image that looks very dark and extremely red. Not to worry, this is the filter doing it's job. An IR filter is about as dark as a 10-stop ND filter, so you will be shooting some long exposure images.

## Camera settings

So, you have your camera and lens set up on a tripod with the filter in place and the shot composed with manual focus. Be aware that your camera's meter is no good to you any more as it cannot measure normal white light. You may find that a series of test shots are needed to find the best exposure. We set the camera to Bulb mode and connected a cable release. Focusing with IR using wide apertures can be a bit hit and miss, so we had an aperture of f/9 to capture a reasonable depth of field and ISO 400. We also made sure we were shooting in Raw format. After a couple of tests, our settings required an exposure time that ranged between 150 and 240 seconds! We decided that the movement of the clouds and the subtle shifting of the leaves would make for a great surreal shot. With exposures this long, look out for light leaks from your viewfinder eyepiece. Cover it over to stop light getting in that way and ruining your shots. With long exposures like this, a cable release or plug in intervalometer would be of great use to control the exposure.

## Strange pictures

Take a shot and review it. All you will see is a sea of pink and red hues. This is how they should look so don't panic. Check your histogram, and as long as the image seems well exposed with little or no clipping of highlights, then you got the shot. For infrared shots to stand out, it is a great idea to try and capture images that have a mixture of light and dark, texture and form.




For exposures longer than 30 seconds, you will need to set your camera in Bulb mode, which allows you to keep the shutter open for much longer periods of time.




During the course of very long exposures, it is wise to cover your viewfinder's eyepiece, as light can leak in here and potentially ruin your shot.




An intervalometer is a useful purchase. You can specify the duration of exposure you need. All you do is press the button and it will control the camera for you.




When you review your shots, the images are bright red and pink. This is how they are meant to look. It just requires some post processing to get the most out of them.





Here we have an IR image with the red hue removed after a white balance alteration. Many favour this look and will present this as a final image. There are also many other processing options. It is all down to your creative vision.

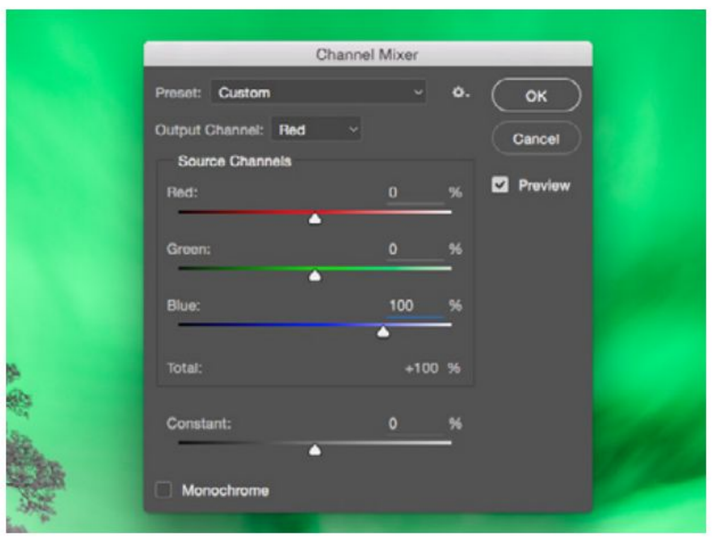
Safe to say that trees and grass below a blue sky and clouds are the staple of IR photography, but now you can explore this newly discovered world of the invisible.

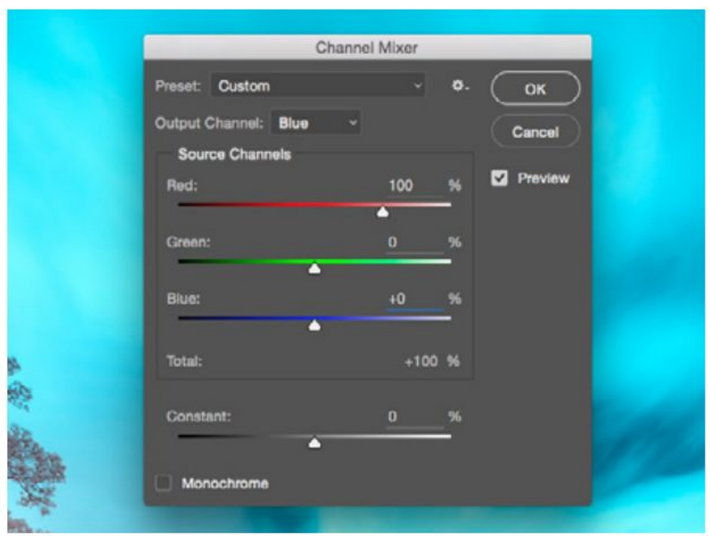
## Post processing

This is where you can get creative. Typically, the images require their colour temperature to be reduced way below 2000° Kelvin to eliminate the red hue. An IR image with the correct white balance will reveal a sky that looks almost bronze in colour when you process the Raw image in your favourite Raw processing application. Green leaves and plants take on a very pale blue white tinge.

You can enhance your images just as you would with a normal colour photo. In fact, IR pictures can look quite low in contrast, so it's worth spending a little time to get your shot looking nice and punchy. You can then open this in Photoshop and convert it to mono if you want.

A popular conversion method is to actually return the colour of the sky to blue. You can use the Channel Mixer to swap the red and blue channels. You can then add Hue/Saturation and Levels Adjustments as you see fit. You could also continue to false colour your images in any variety of ways to arrive at a beautiful and totally surreal image. ■









# Black and white images

## See the world in black and white as we introduce you to this timeless medium

**At the dawn of photography as we know it, when everything was fresh and new, your only choice back then was to shoot in black and white. Exposing images onto glass or metal plates gave way to the film and chemical process. It wasn't until 1936 that Kodak gave the world colour photography. However, black and white didn't die off like the black and white TV, in fact it flourished.**

Which ever way you look at it, colour distracts you from the heart of what should make a great photo. Things like texture, composition, form, lighting and good old storytelling can be swamped and made inconsequential by colour. It's not to say colour is an invalid medium. Black and white photography can be seen as your interpretation of what is real, whereas colour can feel more like a record of reality. That may all sound a bit mystical, but in essence, many photographers would argue that black and white is probably the purest form of photography.

We could fill an entire book on its own with the intricacies of the black and white art, but there are some simple tips that can help you on your way to discovering why black and white photography is such a prized, creative, medium.

> "Black and white photography can be seen as your interpretation of what is real..."

AFTER

Black and white photography is particularly effective at breathing life into long exposure shots. The original, shot in colour, is perfectly acceptable. In black and white though, it seems to take on extra drama not present in the original capture.




You would imagine that the starting point would be to grab your camera, set its functions to black and white mode and start shooting. Many photographers always shoot in colour, just so you maintain as much tonal variation in your Raw image as possible. It just gives you more data to play with when it comes to the conversion process. A key word in the last sentence was 'Raw'. Always shoot in Raw format. You want to record as much scene data as you can without your camera trying to process the image for you.

Although it might sound odd, you need to develop the ability to 'see' in black and white. A great visual aid is to shoot Raw, as we've said, but also set your camera's picture style to black and white. It displays a black and image on your LCD screen, but all the colour data is still there.

In its most basic form, a photo in black and white is made up of several components. Texture is a key ingredient, black and white loves texture. Harsh midday sun knocks everything flat, but the light glancing across a scene at sunrise or sunset makes texture 'pop' out of the image.

Tonal contrast is another important consideration. A flat image with very little contrast will not necessarily convert into a great black and white shot without some serious post-processing, although in some cases, low contrast images can be very visually appealing if done well.

Shape defines how an object looks in its simplest form, as an outline or silhouette only. Images based on shape alone can be graphically intense. Form in a shot, shows how something has depth and dimension. How an object is lit and casts shadows within its environment is the key to showing its form.

As mentioned before, we could go on, but hopefully, this is a useful introduction to the black and white world. ■






AFTER

An homage to the great Ansel Adams with this shot of the Grand Canyon taken down by the Colorado River on a day trip from Las Vegas. It was shot with an old Canon 5D and a 20mm prime lens. The original was decent enough, but in black and white it comes alive.




# How it's done

## The right lens for the job

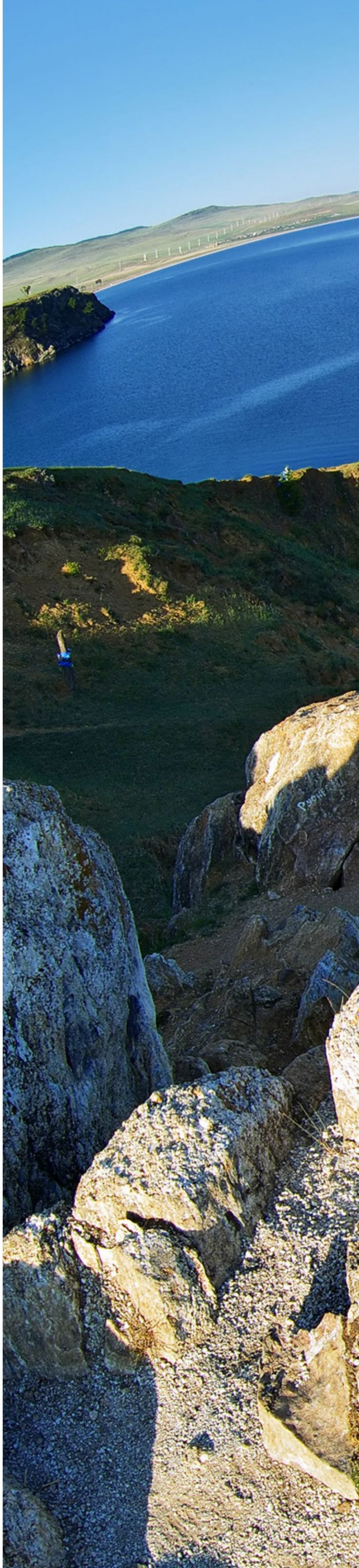
**Digital SLR systems offer the greatest versatility of any photographic system, and represent the best compromise between quality and portability. The best CSC systems are still some way behind, but are catching up fast.**

There are lenses and other accessories available to suit every type of photography, both amateur and professional. It's important to choose the right lens for the job, but top quality DSLR lenses are very expensive.

This photographer is using a very specialist lens to get this distorted effect of a rock coastal scene and the curved horizon in the distance.

The kind of lens that can do this is called a fisheye. Whereas most lenses are trying hard to eliminate distortion, the fisheye uses it to its advantage to give you an unparalleled angle of view that can encompass 180°.

In the case of the example lens shown here, the Canon 8-15mm fisheye can actually create a fully circular 360° image at the 8mm end of the zoom range up to a 180° corner to corner image when zoomed to 15mm. Just be prepared to shell out well over £800 for the privilege. ■



"It's important to choose the right lens for the job, but top quality DSLR lenses are very expensive."

Although a very specialist lens, the fisheye can create some memorable images. Landscapes, particularly from an elevated position, can produce some extreme and dramatic results.

# Night photography

## Some tips for quality night shots




A good quality, stable tripod, is essential for long exposure photography.

**Whether it's the lure of bright city lights, barren moorland bathed in moonlight or a tumbledown barn in the country under a starry sky, night-time photography is a big draw for many photographers. It can be challenging, it can be very frustrating and time-consuming, but once you get the bug for it and get those first few 'wow!' images under your belt, it's a hard habit to break. There are a lot of photographers who find the whole process very relaxing.**

As you are normally dealing with much longer exposures than usual and having to carefully compose and focus your shots, it forces you to slow it all down and take a much more considered approach. After all, if you set up a ten-minute exposure and the end result is disappointing, you could angrily pack up your gear, set off home, and miss out on a very rewarding aspect of photography. To make sure you get the most out of your photos, here are a few tips that should see you well on your way to capturing amazing night shots.

## Use a tripod

This may sound a bit obvious, but if you want to take photographs where exposure times can sometimes be in the tens of minutes, you're going to need something sturdy to put your camera

on. You can of course set your camera to its highest ISO setting, open the aperture as wide as it will go and shoot handheld, but to really do the image justice you're going to need a solid tripod. One thing is worth mentioning; pay particular attention to the surface on which you're setting your tripod. shooting at the water's edge on a beach is a good example. The tripod may be pushed firmly into the sand and your long exposure is under way. One larger-than-usual wave and the feet of your tripod are swamped. Not a big deal, but the water can soak into the sand, which becomes soft, and the tripod can start to list over to one side ruining the shot. An attempt higher up the shoreline away from the waves might be in order.

## Keep the ISO low

Because you have your tripod keeping things steady for the camera, you can use the lowest ISO setting your camera will allow. This is a big advantage from the point of view of image quality. High ISO settings create a lot of image noise, and can affect the sharpness of the shot, detracting from the overall quality of the image. Many modern cameras can produce fairly clean shots at high ISO, and it may well be that you can work in the 800-1000 ISO range if the situation demands it, but generally the lower the ISO setting, the better the result will be.

A lot of cameras also offer Long Exposure Noise Reduction (LENR). This works by taking a second exposure of just the sensor noise which is then used to subtract the noise from your original shot. What this means is that if you take a five-minute exposure, it will then take another five-minute LENR exposure. For any exposure longer than a couple of minutes, the sensor may start to heat up and this introduces noise artefacts. This is what LENR is trying to remove. It's just a personal preference but many don't use LENR. Like a lot of recent DSLRs most cameras use a CMOS sensor which isn't as prone to overheating, and you could take ten-minute exposures without any noise issues. If you want to try very long night-time images like star trails, consider taking multiple exposures of 30 seconds each and stacking them in Photoshop. For example, 30 exposures of 30 seconds each is equivalent to one 15 minute exposure.

## Shoot raw

Shooting in raw mode is a method that allows you to extract the absolute last pixel of quality from your image and process it any number of creative ways non-destructively. You can happily alter white balance settings, cross-process, split raw and any number of effects without losing your original image. Like using low ISO, it's another way of keeping the image quality as high as possible.

## Lenses: zoom or prime?

When you're shooting at night there are any number of light sources, such as street lights, headlights, the moon, bright windows, neon signs, all of which are capable of introducing unwanted lens-flare that can ruin an otherwise excellent shot. Lens flare is caused by unwanted light scattered by the optical elements inside your lens. Zoom lenses particularly suffer from flare as they contain many more optical elements. Your best chance of reducing lens flare is to use a prime lens. A prime is a lens that only has one set focal distance and therefore uses fewer internal optical elements. Whether you use a zoom or a prime, a lens hood is recommended for both. Also, wherever possible, use a lens with as wide a maximum aperture as possible, such as f/2.8. You may well be shooting at smaller apertures than this but the image in the viewfinder will be brighter with a faster lens, helping you to see and set up your composition.

## Bulb mode

With most current DSLRs the longest shutter speed you can use in normal operation is 30 seconds. However if you switch to Bulb mode ("B") on your camera, you can keep the shutter open for much longer periods. "Bulb" in this case is a reference to the old squeeze-bulb, pneumatically activated shutter release systems from the earliest days of photography. What you don't want to be doing though is standing there with your finger on the shutter release button for five minutes. Your finger is going to ache and you are going to move the camera and spoil the shot. Attaching a cable release instead is the answer.




A good quality lens, whether prime or zoom, is expensive, but it is expensive for a reason.

The cable release makes the process of shooting long exposures much easier.





This means you can activate the shutter and lock it open for as long as you need. These vary from the simplest 'press to activate' types to fully programmable interval timers that can take multiple shots with durations and intervals between shots set by the user.

## Take test shots at high ISO

Since most modern cameras offer very high ISO settings, it makes sense, before committing to a long exposure or a sequence of long exposures, to ramp up the ISO to the max, take a shot and have a look at the composition, framing and exposure. However if you've just done your test shot at 2000 ISO and it looks great, how does that translate to shooting the same scene but at a lower ISO setting to get the quality?

There is some maths involved but it's not complicated, especially if you have your mobile phone with you.

## The mathematical bit

At 2000 ISO your camera meter tells you that for the aperture you have set, a shutter speed of five seconds gives you a good exposure. Now you need to know how that exposure will change when you dial your ISO down to 100. Divide your high ISO number by the target low ISO number (2000/100 = 20), take your answer (20) and multiply it by the high ISO exposure value five seconds - this gets you a final answer of 100 seconds (1.6 minutes). Still with us? If you prefer, there are apps for iOS and Android that can do the heavy lifting for you. A popular one

called Expositor, has a nice user-interface that can quickly calculate any combination of EV, ISO, F-stop and exposure time you care to dial in. It's great for quickly and accurately working out the arithmetic without the need to do the sums in your head.

## Earth, sky and water

Use this to your advantage. It may have been done to death, but a coastline shot taken with a long exposure reduces the sea to that wonderful misty blanket. If there are patches of clouds in the shot, they appear to streak across the sky when your exposures get up beyond 30 seconds or more. Of course, who can forget traffic trails? They are the staple of long exposure photography. The key word here is experimentation.

## Light painting

Seen in the photograph at the top of this page, this refers to the technique of illuminating parts of your scene with additional light sources other than those in the shot. Light painting has become very popular and ranges from simply using a flashlight to illuminate a dark foreground subject, to using all manner of light sources, such as strobes, sparklers, coloured LED lights and even steel wool set alight to create huge showers of sparks, all of which create bizarre and abstract "light art". It's worth looking into if you're thinking of taking night photography to a whole new place.

It's dark out there. Go take some photographs. What are you waiting for? ■



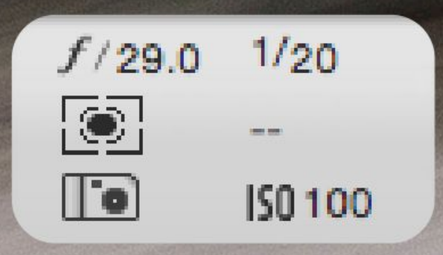

Expositor is a great app for helping you calculate those tricky exposure times.

# Abstract and surreal landscapes

## Turn the concept of a typical landscape on its head

**Your typical landscape image is normally recognisable for what it is. There are an infinite number of beautiful images to be captured out in the world, and that is absolutely fine by all landscape photographers. Now and again though, it is refreshing to see beyond the grand vista, to capture something more than what mother nature has placed in front of us. There is much debate as to whether a photograph can be classed as art. Digital photography does at least enable us to express ourselves and set our imagination free. With that in mind, let's put the landscape photography rulebook away for a spell and uncover some interesting techniques to elevate your landscape photos to a whole new level of artistry.**

Why not try the long exposure panning technique to literally 'paint' an abstract landscape. Firstly you will need a scene that has a strong, well defined horizon. If the colours and above and below the horizon are strong and contrast well with each other, then all the better. You will need a tripod to set your camera on. Level it up and place the horizon in the centre of your viewfinder. The




Taken with a Canon 550D and a 10-22mm wide angle lens, the main image you see on this spread was an experiment in seeing if the impressionist look could be achieved without an ND filter. At f/29, the shutter speed of 1/20 th did require the camera to be moved quite quickly during the brief exposure to ensure a painterly result.






idea is to take the shot whilst panning the camera across the scene until the shutter closes again. For the best effect, you will need to switch to Manual Mode and use a shutter speed somewhere in the range of 1/10 second to about 4 seconds, dialing in the other settings to get a balanced exposure.

The speed at which you pan the camera will also affect the final look of your abstract. If you are shooting in bright conditions, stopping the camera down to about f/16 and




This is the scene taken with the same camera and lens at a more reasonable 1/250th of a second. When the longer exposure was made, it was done both on a tripod and hand held. A completely level panning action creates a very linear effect, whilst a more random movement produces a more painterly effect.



More experiments with the canon 550D. This time the camera was rotated as the shot was taken. It took a few tries, and each result was always quite different, but it produces a very dramatic result. The key is to introduce enough movement to 'smear' the image and maintain enough detail to give a clue as to its origins.



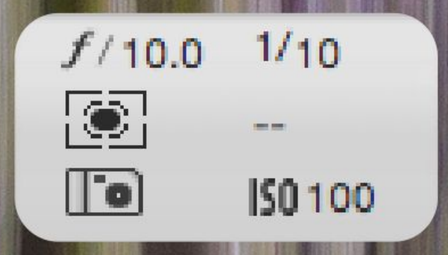

setting your lowest ISO will be required.

If you can't get down to the slower shutter speeds mentioned, then you will need an ND filter to reduce the amount of light being captured. As an experiment, some shots were taken with a Canon EOS 550D and a 10-22mm wide angle with a maximum aperture of f/29 on a cloudy but bright day without the aid of an ND filter. This got the shutter speed down to about 1/20th of a second. Although this might be the upper limit to create a truly abstract-looking image, taking the camera off the tripod and swinging the camera quite fast at arm's length during the exposure meant we could still capture some interesting and arty-looking images. The downside is that to any onlookers you might look like a bit of an oddball, randomly swinging your camera around!

There is no reason you have to pan the camera along the horizontal. If you find yourself in a forest, why not try panning vertically to compliment the tree trunks? Like all new techniques, it can take a bit of practise, but when you get the combination of shutter speed and camera panning working, your shots will have a truly abstract and painterly feel. You can also try the old classic of zooming your lens quickly during the exposure for a more radial blur effect.

There is a great technique that mimics the works of the impressionist painters. This too requires intentional camera movement. Like the panning technique above, you will need to get your exposure time down to about 1/4 of a second and your ISO as low as possible.






Shooting in portrait orientation and panning the camera vertically accentuates the shapes of the trees in this wooded area. On an overcast day, 1/10th of a second gave good results with a moderate panning action. Remember, in bright conditions, you may struggle to get slow shutter speeds and an ND filter may be needed.

The Sony RX10 MK2 has a 3-stop ND filter actually buil into the camera. This is a handy feature when you need to be able to slow your shutter speed down to for long exposure effects such as these abstract landscape images.



If you don't have the luxury of built-in ND filters like the Sony on the right, you will need to use either screw on type filters or square/rectangular filters in a filter system holder . This example is a 2-stop filter made by Cokin.




Again, if you can't get down to the shutter speeds mentioned, the ND filter option is the way to go. If you are lucky enough to have a modern camera that has an ND filter actually built-in like the Sony DSCRX10 II, then you are set. With a balanced exposure dialed in and your focus point set to manual, all you have to do is shake the camera and take the shot whilst you do so. It may sound absurd, after all our talk of sharp images, tripods and image stabilisation, but yes, shake that camera! There is no real right or wrong how you do it, but generally, very short up and down or circular movements can give great results. Part of the joy of this kind of photography is that you just don't know what you'll get until the shot is taken, and it is different every time.

The silhouette is a beautiful and classic way to add abstraction to your landscape image. It is an image distilled down to pure form and shape; light and dark. Whether it is a simple countryside scene, a distant range of mountains or even a more complex urban landscape, the main concept here is to set your camera to meter for the lightest part of the image, be it the first light of pre-dawn creeping above a hill on the moors, or a sunny day down by the coast. For once, having the detail of the darkest parts of your image lost to underexposure is actually what you want.

## A word about filters

ND filters limit the amount of light that is able to fall on the sensor and therefore require much longer shutter durations. They are made from darkened materials that are designed to be optically neutral so as not create a colour cast. The darker the filter, the longer your exposures can be. ND filters can range from a 2-stop filter to 10-stops of light reduction. They are excellent for use in daytime to create motion blur in water and clouds.

## Filter density ratings

| | | |
|---|---|---|
| ND2 | (ND 0.3) = | 1 f-stop reduction |
| ND4 | (ND 0.6) = | 2 f-stop reduction |
| ND8 | (ND 0.9) = | 3 f-stop reduction |
| ND16 | (ND 1.2) = | 4 f-stop reduction |
| ND32 | (ND 1.5) = | 5 f-stop reduction |
| ND64 | (ND 1.8) = | 6 f-stop reduction |
| ND128 | (ND 2.1) = | 7 f-stop reduction |
| ND256 | (ND 2.4) = | 8 f-stop reduction |
| ND512 | (ND 2.7) = | 9 f-stop reduction |
| ND1024 | (ND 3.0) = | 10 f-stop reduction |



The movement of water is a particularly good subject to capture with slower shutter speeds. Both these images of the waters edge down by Meadfoot Beach in Torquay, Devon, were shot with a shutter speed of 1/2 a second. Bright highlights create unique light trails that enhance the quality of the abstract that feel like brushstrokes.




From left to right. The Canon EF 24-105mm f/4 L IS, the Nikon AF-S 24-120mm f/4 ED VR and the Sigma 18-250 mm f/3.5-6.3 DC Macro OS HSM. These are all great 'walking around' lenses. They are the kind of lenses that offer reasonable wide angle capability as well as a good telephoto range too. Their range gives you creative scope when framing and composing shots.

As we've discussed before, the convention when shooting a landscape is to go for the all-encompassing wide view. For a new angle on things, consider that the natural world is fractal and what you see on the grand scale can be repeated on a small scale too. A mountain range can bear a striking resemblance to the jagged outlines of a rocky outcrop down at the waters edge. You are looking for shapes and patterns directly in front of you that emulate the shapes and patterns seen in the world around you. A rock in a pool can be a small scale equivalent to a mountain by a lake. A good tip to bear in mind is to try shooting on overcast days so there is no direct sunlight to create too much deep shadow and high contrast definition in your shots.

It's all about detail too, so shoot at narrow apertures to maintain a good depth of field. Keep a tripod with you if the shutter speeds drop below 1/100 or so. If shooting water, have a circular polariser handy to reduce the possibility of distracting reflections. Lens choice is down to your creative preference, but it would be a good idea to use a zoom lens that can cover a wide angle field of view to medium telephoto. Lenses like the Canon EF 24-105 f/4 L IS, the Nikon AF-S 24-120mm f/4G ED VR and the Sigma 18-250 mm f/3.5-6.3 DC Macro OS HSM.

Landscape images should try to evoke a response in the viewer. If it's just conveying the power of the sea or the lushness of a forest canopy. With the surreal and abstract, you can take that idea and whittle it down to its very essence. It is a chance to turn a photograph into art. Yes, you could take any old shot and Photoshop it to within an inch of its life, but where's the fun in that? Grab a camera and turn it into a paintbrush. ■

# Crystal ball landscapes

## A unique way to capture the world

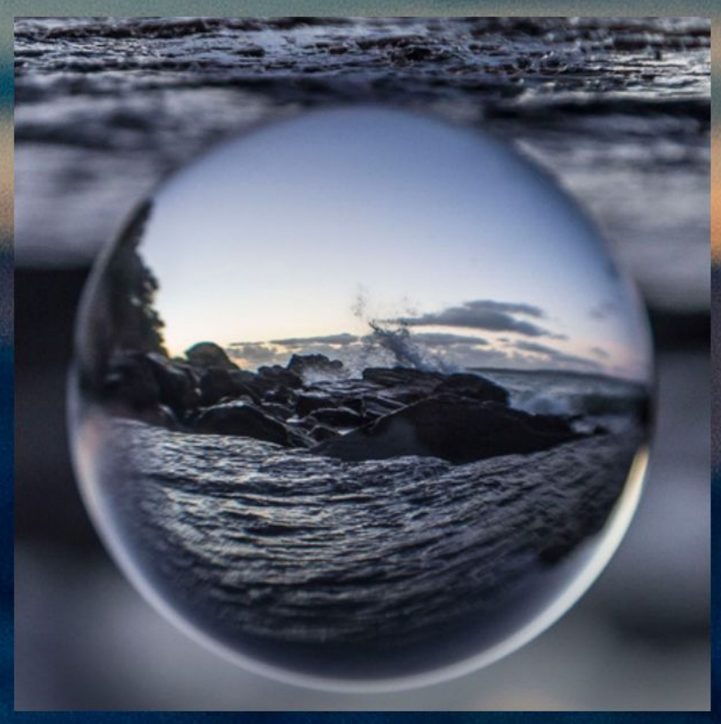
**Finding a new way to capture a landscape or any scene in general is always exciting and quite invigorating. It can be helpful in getting you out of a creative rut and sparking new ideas and thoughts on how to see the world in a fresh way. One such way is crystal ball photography. In case you were wondering, it's nothing to do with fortune telling but rather the use of a crystal ball as an additional lens in your shots. How you use it in those shots dictates its effect on the final image. Using it very close to the camera so it fills the frame means it almost acts like a fisheye lens, whilst having it further away, it becomes a small globe containing the landscape it is in. Let's go into a bit more detail.**

Of course our first item on the list is the crystal ball itself. Unless you happen to be a certain wizard named Harry with access to Hogwarts School of Witchcraft and Wizardry, you will need to get on-line and purchase a ball. One important note straight away is that the ball must be a solid sphere of glass or quartz, a hollow ball will not work as intended. It will need to be as flawless as possible, 100% clear and have no bubbles in it. Sizes tend to range from about 30mm up to 100mm. Bear in mind that this is a solid ball of glass so the bigger it is, the heavier it is. Many offer the ball with a small stand, usually made out of glass too and they are quite cheap to buy.

Another thing to note at the outset is to be cautious when shooting with the globe in bright sunlight. There are many anecdotes from other photographers who forgot that they were holding what is essentially a big magnifying glass, and when the light was concentrated on the glass for too long and got very hot, they ended up dropping their crystal ball in surprise. So if you are thinking about shooting the ball hand held, remember it is wise to keep it out of direct sunlight. In many cases it is actually preferable to find a suitable spot and set it down so you have both hands free to set up a shot.

Also remember that you are shooting through what is basically a big fisheye lens. It will invert and distort the scene that is visible behind it. However, it is those qualities that give it such a unique look. A lot of people will flip the image 180° in their editing software when they get back home, so it can be viewed the right way up. The distance the ball is to the subject will have a bearing on the kind of image you see in the sphere, so you'll need to experiment with a combination of lens to crystal ball distances, as well as the distance of the ball to the subject matter.





A good quality glass or lead crystal ball will ensure you get good results when shooting through it. Beware of flawed spheres or hollow ones, they simply won't work. The sphere used in this project was 80mm wide.




Gear choice for shooting outdoors is quite simple. Just make sure your shutter speeds are high enough to eliminate camera shake. The images on this page were shot with a Canon 5DMK2 and an old 100mm macro lens so we could fill the frame with the image.

The big creative choice to ponder is if you show the image with the crystal ball the correct way up, as it was shot, or do you present your image upside down to show the image captured in the sphere the correct way up.





## Equipment choices

Camera equipment required is not too specialised. Most compact cameras and DSLRs will produce great images. If you are shooting the ball to fill the frame, a good macro lens that enables you to use a very short minimum focusing distance would be ideal. Failing that there's no reason why you couldn't shoot from further away and zoom in on it. If you are intending to incorporate the ball into a wider landscape shot, then a medium to wide angle zoom lens would do the trick. If you are intending to shoot the crystal ball whilst it is in your hand, then you need to make sure you have a fast shutter speed set on your camera to eliminate any camera shake or movement of the ball in your hand. If you want your background as out of focus as possible, then an aperture of f/4 - f/5.6 will work ok if the ball is closer to you than it is to its background. Generally though, an aperture of around f/8 -

> "Remember that you are shooting through what is basically a big fisheye lens."

f/11 will work for most scenarios. Remember to keep the image in the crystal ball as your main point of focus. The images tend to work better when the background is more out of focus, so you have the contrast between your subject and the background.

## Watch those reflections

As you are shooting, be aware of unwanted reflections in the glass surface of the ball. If you are shooting very close to the ball, your own reflection may appear in it. Some reflections are inevitable of course, but if you can see certain unwanted reflections in the glass surface, then so can your camera. Keep the ball as clean as possible.

Experiment with the angles at which you photograph the crystal ball. If you shoot it from above, more of the ground will be visible in the globe. Shoot it from below and you will see more of the sky. If you place the camera level with the ball, then you can place the horizon in the middle of the ball.

There are numerous situations where it would be fun to shoot a crystal ball image. Just exercise care if you are shooting hand held (camera and crystal ball) and what ever you do, don't drop it. ■

# Super wide panoramas

Capture extreme panoramic landscapes

**"The process is pretty straightforward and just requires a little bit of thought regarding the approach to the sequence."**

Both images you see here were shot with a Canon 16-35mm wide angle lens in portrait orientation. Each pan is composed of 8 images stitched together in Photoshop. They cover almost a 180° field of view.



**There will come a time when your widest lens just won't be wide enough to capture the scale and grandeur of a particular landscape. This is where the ability to capture a panoramic sequence of shots and combine them into a much wider or higher resolution image comes in very handy.**

**The process is pretty straightforward and just requires a little bit of thought regarding the approach to the sequence you are about to capture.**

Essentially you are going to take a number of stills, rotating the camera a few degrees left to right with each shot taken, while allowing enough overlap from image to image so that they can be stitched together. This can be achieved with programs like Photoshop, PT GUI or Hugin, that rely on features in each shot being matched together to create accurate stitching points.

As a general rule, shoot with a wide angle lens and always try to overlap your images by 25% or more. For example, look for features that are right-most in your current shot like a car or building (something that isn't moving). For the next shot you rotate yourself on the spot so that those features are now left-most in the frame. These matching features will help your software to stitch the shots together more accurately and avoid odd tearing and mismatches that can spoil the image.

Another consideration is to try and avoid a scene where a lot of objects are very close to the camera. Unless you are using




Lenses like this Canon EF 8-15mm fisheye can shoot a 180° image in one go, but it is a hugely expensive lens and will produce a circular image when shot at 8mm.

**DID YOU KNOW?**

Parallax shift describes how objects close to you seem to move a greater distance relative to those that are further away when you move your head or camera.

specialist panoramic photographic equipment and lenses, you will find that even slight unwanted movement and rotation of the camera (which is unavoidable if you shoot hand-held) will result in big parallax shift errors in very near objects that even the best software will not be able to put right.

To capture a basic panorama from left to right you can set up your camera in the following way. Firstly set your camera to focus manually. Select a point of focus roughly a third of the way into your scene. This is an utterly basic rule of thumb to quickly set yourself up to record as much sharp focus in your scene as possible. Working out the exact point into the scene that gives the best overall focus based on your aperture, referred to as the Hyperfocal Distance, is not to be approached lightly. For our purposes the most basic approach will do for now.

Your camera settings need to be set such as to give as little noise as possible but keep a fast enough shutter speed to avoid camera shake or motion blur. Camera shake is a main concern if you are going to choose to shoot hand-held. For shot-to-shot consistency, it is always a good idea to shoot in manual mode and use a pre-set White Balance setting rather than Auto White Balance. With trial and error you can arrive at settings that yield enough detail on the ground and the sky without either losing detail in shadows or blown out highlights.

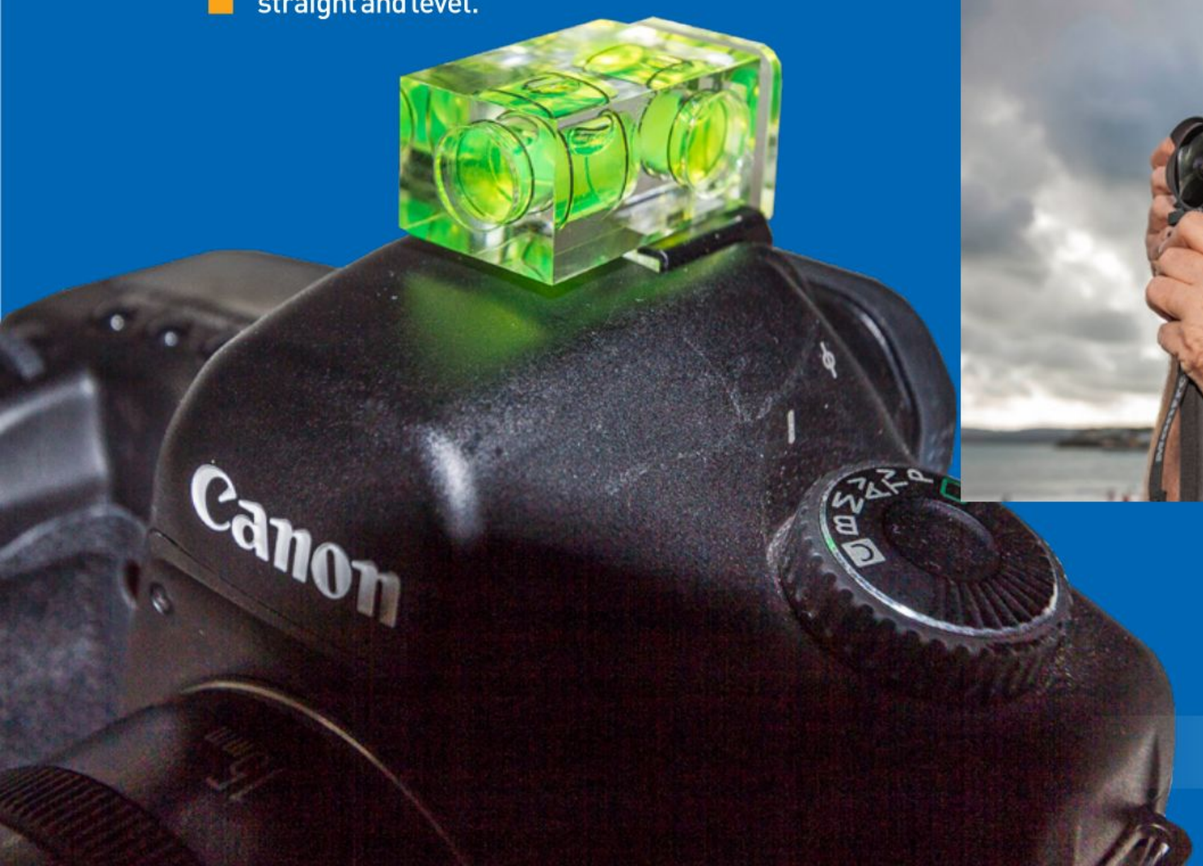
It goes without saying (but we'll say it anyway) that a tripod is the first requirement for good results. Images will be shake-free and the camera will rotate around a fixed point that won't move. It also gives you the option to have your camera set to shoot in landscape or portrait orientation. As long as your tripod and camera is as level as possible the results will be good. Most good tripods come with a spirit level built in to check. You can even





The sequence of images above show the amount of overlap you need to have when shooting a multi-image panorama. Shots with lots of detail and plenty of overlap will result in more accurate stitching later.

The spirit level cube. Fits on your hot shoe mount and will keep you on the straight and level.




Right is the hi-tech method for shooting accurate panoramas. This device is called a Nodal Ninja. It is made from metal and is very robust with the optional levelling plate to provide a very quick way of getting things on an even keel.




Below is the low-tech method of shooting a panorama on, or near, the nodal point of your lens. The monopod I'm resting the lens on is the centre of rotation and the front of the lens sits on this rotation point.









buy a little spirit level cube that sits in your camera's hot shoe to help with levelling. Some newer cameras now come with a digital leveller built in.

For even greater stitching accuracy, you can attempt to rotate the camera around its Nodal Point. The nodal point is the point around which the lens must rotate in order to completely eliminate parallax shift. Without specialist equipment it can be very difficult to achieve. On wide angle lenses this nodal point is generally at or near the front lens group. There is a very low tech way you can do it yourself, whereby you rest the camera lens barrel on a pole or stick (even a sawn-off broom handle) so the front lens is as near the pole's centre of rotation as possible. It will be up to you to keep the camera as level as possible but it does help avoid those nasty parallax shifts. Oh, and people will wonder why you are rotating around a pole stuck in the ground!

Once you have your sequence, you can process the shots, taking care to make sure they are as level as possible. If you have a strong horizon line, this makes the process easier. Or if you have any strong verticals like the side of a building, it all helps.

With a little practice, super-wide panoramas are yours for the shooting. ■

# Astrophotography and skyscapes

## Some handy information about shooting the night sky

Shooting the night sky is not just the reserve of astronomers and large telescopes. Although you are not going to be imaging deep-sky nebulae and planets in extreme close-up, there is still plenty of scope for any photographer to create memorable and creative images of the night sky. It is a fascinating subject and with care, you can produce some stunning images of the heavens with just a digital camera, a tripod, and perhaps a useful app on your phone. Your options include twilight images, and photos of the sky long after the sun has set. Not only that, you also have some options to capture the stars in creative ways too. Have you ever wondered how you can capture the movement of the stars and turn the night sky into something that looks like the stargate sequence from the end of 2001: A Space Odyssey? Well, we have information that can help you on your way to capturing the majesty of the cosmos in work that looks really cool as well. With some basic equipment, and some easy to understand techniques, you too can explore the wonders of the universe and capture the moon, stars, and our own Milky Way galaxy this very night, if you wish. Let's get started and talk about cameras first.

"It is a fascinating subject and with care, you can produce some stunning images of the heavens with just a digital camera, a tripod, and perhaps a useful app on your phone."










## Which camera?

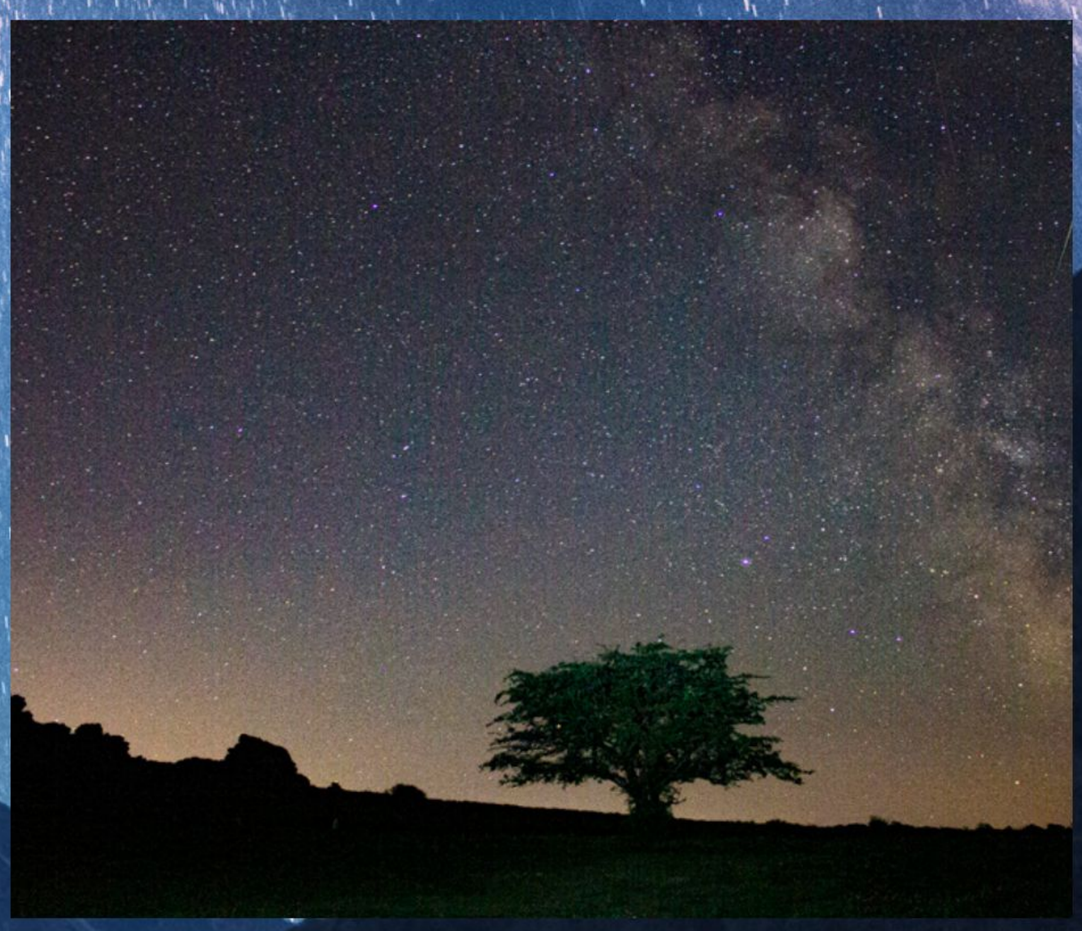
The gear you need is relatively simple. Your camera can be anything from a DSLR or bridge camera, down to a compact camera. You may find you need to be able to use manual settings, purely for the sake of image consistency, and it also helps to be able to shoot in Raw format although it's not a deal breaker if it can't. We mention Raw with annoying regularity but it is with good reason. Raw images, as the name suggests, is the data captured from the sensor with no compression or processing of any kind applied to it. It is literally raw and untouched sensor data. This gives you the absolute best original image quality to be working with as you get into the post-process stage of editing your photos, whether you are eking out as much detail as you can from a landscape photo or, in this case, making the night sky look its absolute best. If your camera also supports mirror lockup, then use it. Mirror lockup moves the mirror out of the path of the sensor before the exposure starts to reduce the chance of vibration causing a loss of sharpness. People do argue that it really has little to no impact on the resulting sharpness and if you are using a big, heavy tripod, that is more than likely. If however your tripod is not so sturdy, then it may still be worth using this function.

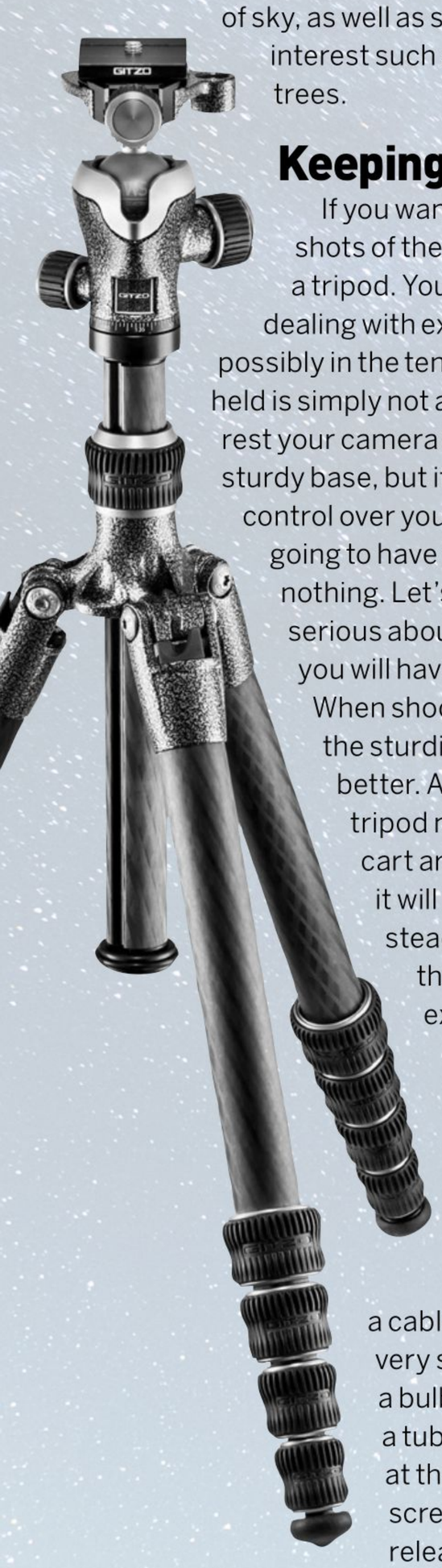
## What lens?

The night sky is a big place. It encompasses from one horizon to the other and to do it justice, a wide-angle is normally the lens of choice. Wide-angle lenses in the 14mm - 28mm range are considered wide angle enough for the task. If you have a camera that has a lens with a focal length in this area, you should be good to go. Don't discount your choices if you have a compact camera with a built-in lens that has a longer focal length than this.

You could still get some great shots with an equivalent 28mm lens or longer, but your field of view would be much narrower than with its wide-angle brethren.








Sky shots generally need that wide field of view so you can capture a large amount of sky, as well as some foreground interest such as mountains or trees.

## Keeping it steady

If you want great, steady, shots of the sky, you will need a tripod. You are going to be dealing with exposure times possibly in the tens of seconds. Hand-held is simply not an option. You could rest your camera on a rock, or other sturdy base, but if you want proper control over your composition, it's going to have to be a tripod or nothing. Let's face it, if you are serious about your photography, you will have a tripod anyway.

When shooting long exposures, the sturdier the tripod the better. A bigger, heavier tripod may be a pain to cart around with you, but it will keep your camera steady as a rock through those all-important exposures.

## Cable release

Another useful item is a cable release. Back in the day, a cable release was a very simple affair. It was a bulb connected to a tube with a plunger at the end that you screwed into the shutter release button of older cameras. Squeezing the bulb pushed the plunger into the shutter button, firing the camera. That is where the term 'Bulb Mode' comes from when talking about using long exposures that range from 30 seconds to minutes, or even hours. These days, cable releases are much more complex beasts. They are programmable in various ways that allow you to literally 'fire and forget'. You program what length of exposure you want, how many shots you want to be taken, and the amount of time the camera pauses in between each shot. This is much better than standing there in the dark with your finger on the shutter button, holding it down while a 2 minute exposure counts down and possibly shaking the camera in the process.

## Noise reduction

Since we are talking about long exposures, a lot or current cameras offer what is called Long Exposure Noise Reduction (LENR). Exposures that last many minutes can cause the camera sensor to heat up. This heat can generate additional noise that can degrade the quality of the image. When you take a shot with LENR active, the first normal exposure is recorded, and then it shoots a so-called 'dark frame' that is the same exposure duration as the first. It records the amount of noise caused by the heat of the sensor and it uses this frame to cancel out noise in the first normal exposure. In practice, people argue that it is not worth the effort of having to wait 10 minutes for your first exposure, for example, and then wait another ten for the LENR frame to be recorded. You could literally be there all night! You may be better off keeping LENR disabled and using more effective noise reduction options at the post process stage.

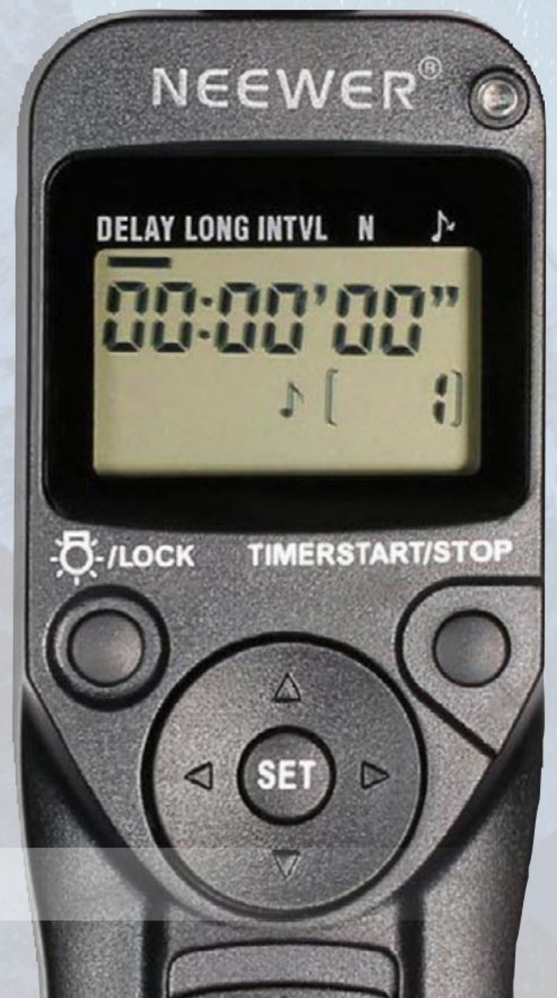
## Long or short exposures?

As you prepare for your shoot, one thing to consider at the outset is what kind of pictures you are hoping to capture. If you are looking to shoot the sky and keep all the stars as well-defined points of light, then you will need to shoot relatively short exposure durations so the movement of the earth does not transform the stars into smeared light trails. Of course, if the reverse is true and you do want to capture long star trails, then you are not as constrained by your exposure time. Later in this article, we have two examples of night sky images. One is a typical star trail photo and the other is a capture of the Milky Way. We will cover each one in a bit more detail shortly.

## Composition

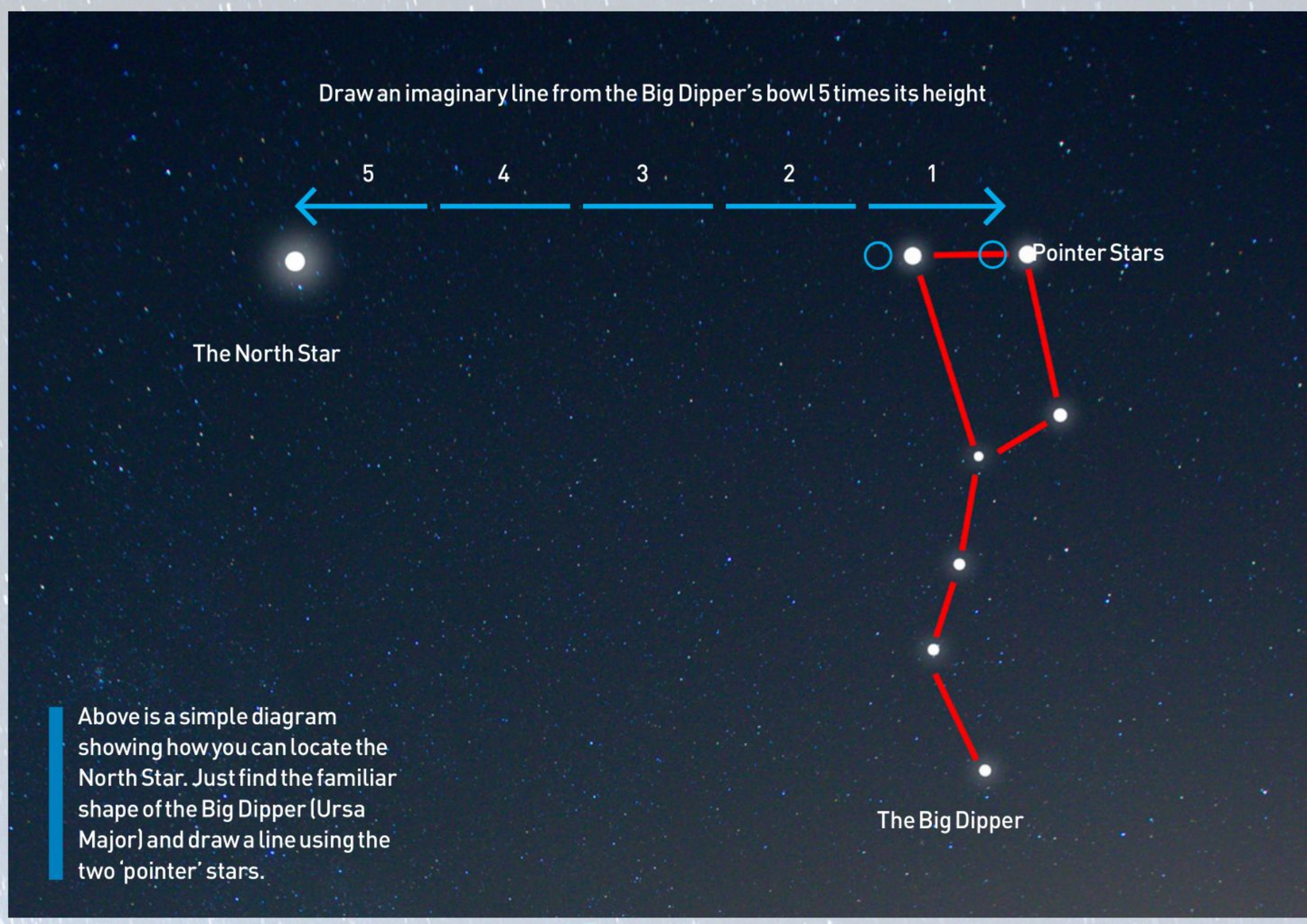
This is once again down to personal preference. Portrait and landscape orientation works equally well. Obviously,

**The humble cable release has evolved over time. Now, it is a small programmable device often referred to as an intervalometer. It can control your camera's exposures so you can adopt a hands-off approach.**






portrait orientation means you can see more of the sky vertically up from the horizon but the broad sweep of a landscape shot is just as good. The only time portrait orientation is preferred, is when trying to capture the polar star Polaris. Also called the North Star, this is the star that doesn't move through the night sky as the earth turns. Shooting a star trail with the North Star in the frame means you will capture an image that looks like a giant pinwheel, with all the other stars rotating around the one point. The North Star can be found at the end of the handle of the 'Little Dipper' (Ursa Minor). You can also use the two stars on the farthest side of the bowl of the 'Big Dipper' (Ursa Major) as pointer stars. Draw an imaginary line that connects the bottom of the bowl to the top of the bowl, and then extend that line outwards about 5 times the height of the bowl until you see a much brighter star. That is Polaris.




Above is a simple diagram showing how you can locate the North Star. Just find the familiar shape of the Big Dipper (Ursa Major) and draw a line using the two 'pointer' stars.

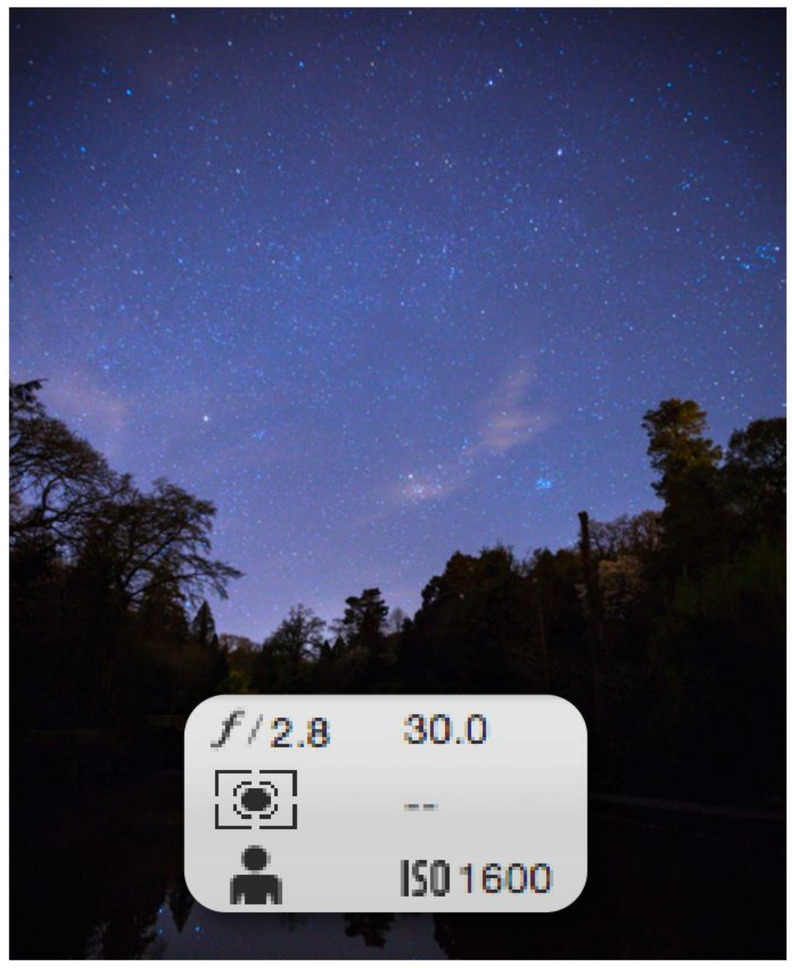
## Star trails first

There are two methods that can be used to capture star trails. The first is to shoot one long exposure. This can range from 10 minutes up to 30 minutes, and in some cases even longer. Prevailing weather, light pollution, and the phase of the moon will have an impact on the exposure time. If the moon is bright, you'll need to be careful; it will put a limit on your exposure times as its ambient glow will start to overpower the stars. A black, moonless night will let you shoot very long exposures to capture the movement of the stars with enough starlight to illuminate your environment. Obviously, you don't want to do an hour long test shot only to find you are using the wrong settings. A great method to get a test shot, taken in a reasonable amount of time, is to bump the camera ISO up to its maximum and shoot wide open, with your lens' maximum aperture. Once you have a balanced exposure, you can use those settings to calculate how the settings should alter to keep the same balanced exposure if you take the ISO down to 100. Luckily, there are plenty of apps available for your phone that can do those calculations for you. One tried and tested app is Expositor. It has been around for a while now but it does a great job.

The alternative to shooting one exposure over a long enough period of time to register movement, is to shoot much shorter exposures with settings that capture the brightness of the stars, without showing movement, and stack these images together. You can use Photoshop to do exposure stacking or you can use software such as Image Stacker, DeepSkyStacker, and StarStaX to automate the process for you. Alternatively, the short exposure approach is different, but for many, it is the preferred way of doing things. This time you need to get some settings that give you a much shorter




A clear night on Dartmoor, with the craggy rocks of Hound Tor in the foreground, provide the elements needed for another star trail image sequence. Shot with a Nikon D810 and Tamron SP 15-30mm f/2.8 lens.




Here's an example of another single frame from a star trail sequence looking across a small lake. The reflection of the stars in the water gave us an extra visual bonus. Shot with a Canon 5DMK3 and 16-35mm f/2.8 lens.




exposure time, but shows the stars clear and bright with as little visible movement as possible. This usually means an exposure time of 30 seconds or less. This is where the large maximum aperture of f/2.8 mentioned before comes in handy. It means you can get shorter exposures at f/2.8, with lower ISO settings than if you had a lens that had a max aperture of f/4 or f/5.6. With the camera settings ready, you need to shoot a sequence of images over a period of time that replicates a single exposure of, say, 30 minutes to an hour.

One clear evening, with no moon in view, we set out to capture some star trails. We were armed with a Canon 5DMK3 and a good EF 16-35mm f/2.8 wide-angle lens. We had a robust Manfrotto tripod and an intervalometer to automate the shooting process for us. In addition, as we were going to be trudging around at night, we had stout shoes and warm clothing including hats and gloves. Clear nights can get cold in the UK and we knew we would be sitting around for many minutes



The inset image shows a basic exposure taken without the aid of any light painting to illuminate the rock. The main image below shows how the shot transforms with some simple torchlight from the right of frame.

at a time waiting for the exposures to finish. Last, but not least, was a powerful head torch so we could navigate the dark environment easily. We found a spot that we knew faced due north. We found Ursa Major and used it to pinpoint the North Star. Our composition was set up to include the North Star in the shot. A few test shots revealed the best settings of aperture f/2.8, bulb duration of 30 seconds, and ISO 1000. The intervalometer was set to fire the camera and take 30 shots using those settings. The lens was manually focussed at infinity, and the button was pressed. 15 minutes later, the sequence was done. We then moved location to the side of a small lake, and set up a composition that would show the stars reflected in the lake waters. The settings were almost the same as before, apart from boosting the ISO to 1600, as it was nearly pitch black. Another 30-shot sequence was captured.

## The Milky Way

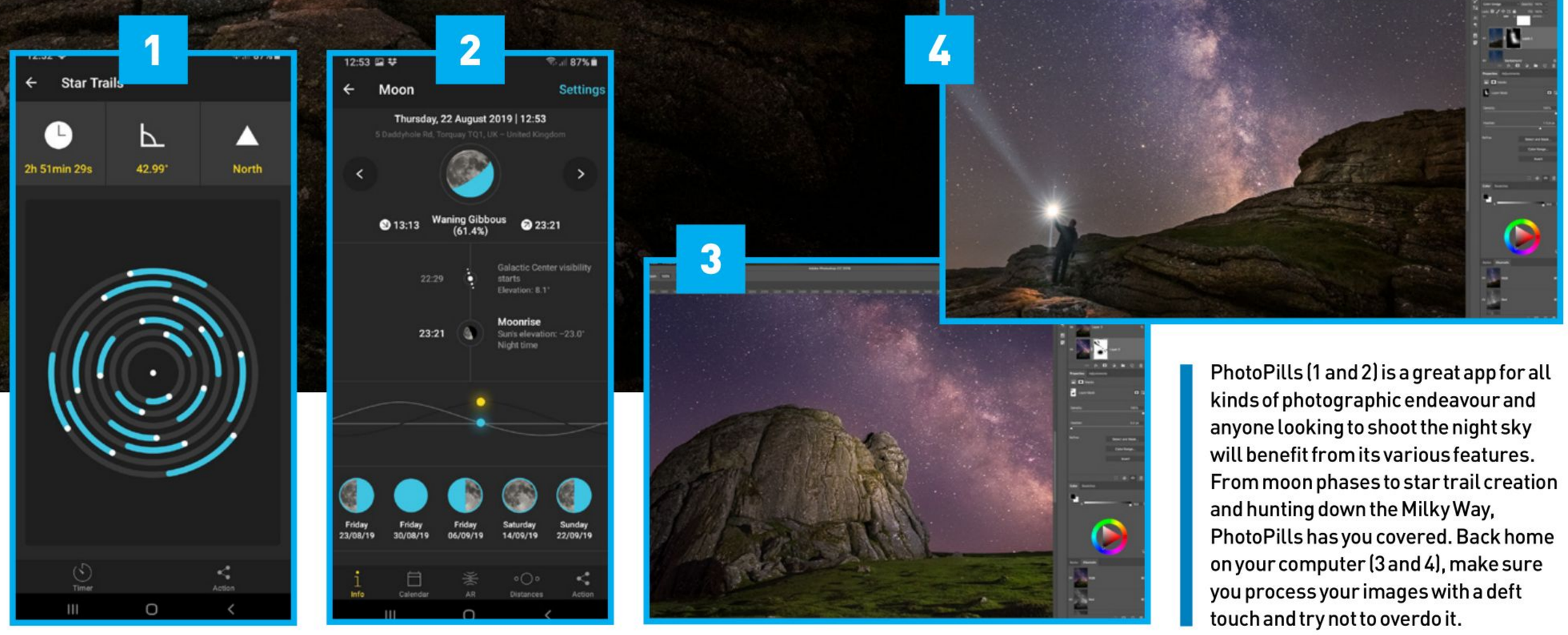
Having captured some stunning star trails, it was time to try something that we had not attempted before, but had always wanted to. Getting shots of the Milky Way is not difficult, but it does require a bit of planning and forethought to get some nice examples. You need to know where the Milky Way is going to be in the sky, what elevations you are dealing with, and also what times it will be visible. Luckily, there are plenty of apps that can tell you. A personal favourite of ours is PhotoPills. It is a very feature rich app that's capable of everything from calculating hyperfocal distances and planning sunrise and sunset shoots, to exposure guides and, in this case, Night AR. This feature allows you to view a scene on your mobile device in real time, and overlay the positions of stars, the sun and moon and most usefully for us; the Milky Way. This meant we could see in advance, where the Milky Way would be during the best hours of darkness, later that night. Therefore, we knew where and when we needed to be ready. Midnight saw us arrive at Haytor Rock in Devon with our camera kit. This time we were armed with a Nikon D810 and a Tamron

set up, didn't change. A few test shots showed that this was working well, and on the Nikon D810, even the ISO value of 2000 still gave good, clean, results. What was not working so well was our foreground interest. The rock looked dark and uninteresting. Since we had torches, we decided to try some of the exposures with torchlight being shone on the rock face from camera right. Suddenly the images transformed, and the granite tor looked far more interesting when lit from one side. We were able to come away that evening with some great images of the Milky Way, ready for processing back on the computer.

## Post processing

So you have your sequence of images for your star trails and Milky Way shots, the next stage is to process them in your favourite Raw editing program. Adobe Camera Raw (ACR) and Lightroom (LR) are perfect for the job, but you may also have software provided by your camera manufacturer. The main thing to be aware of is to process your entire sequence all at the same time, so that you have consistency. Try not to be too heavy handed but make sure your stars are bright and clear. You can then save the sequence as a series of good quality jpegs or tiffs, ready to be stacked. The stacking sequence in Photoshop is relatively easy. You just need to load all the images as a series of layers into one document. Then make sure they are all selected and set the blend mode to Lighten. All the brightest detail will be merged and you will be able to see the path taken by the stars in one beautiful star trail.

The single Milky Way images can be processed to reveal maximum detail and then brought into Photoshop for any final finessing that you may require. With that, you now have two very different approaches to capturing the night sky. ■




PhotoPills (1 and 2) is a great app for all kinds of photographic endeavour and anyone looking to shoot the night sky will benefit from its various features. From moon phases to star trail creation and hunting down the Milky Way, PhotoPills has you covered. Back home on your computer (3 and 4), make sure you process your images with a deft touch and try not to overdo it.

15-30mm f/2.8 ultra-wide angle lens, as well as some torches, in case we wanted to try some lighting painting too. We set ourselves up with the granite tor as our prominent foreground item and, since the sky was clear and there was no light pollution, we could easily make out the Milky Way splashed across the sky. This allowed us to set up our compositions accordingly to combine the rocky tor and the starry sky to best effect. Once the composition was set up, we needed to figure out settings to capture the stars without motion blurring them. There are a couple of equations that photographers can call upon.

## The 500 and NPF rule

The 500 rule was originally developed for a full frame film camera and requires you to set your camera to ISO 3200, Aperture to f/2.8, and shutter speed to 500 divided by the focal length of your lens. For example, if you were shooting with a 50mm lens, your shutter speed would be 10 seconds (500 / 50 = 10). Many would advocate the use of the newer NPF rule which is a much more complex equation, but takes into account the better quality imaging technology on offer today. Apps are available that calculate the maths for you based on the camera you are using.

We decided to go with the easier 500 rule to begin with, and since we were using a 15mm lens, this would mean a shutter speed of roughly 30 seconds with the aperture at f/2.8 and the ISO set at 2000 for a decent exposure. Your focus for images of this nature require you to set focus manually at infinity, or to lock focus on a distant object and then set it to manual so the focus, once

# Sunrise and sunset

## Capturing images during the golden hour

**As the sun arcs across the sky in daytime, the light is harsh and creates hard, deep shadows, which is why landscape photographers tend not to shoot during the main part of the day. When the sun starts to approach the horizon however, that is a different matter. The closer the sun is to the horizon, the more atmosphere it has to shine through. This has a softening effect on the quality of the light and reduces overall contrast in the scene. Shadows are long but softer and colours are enriched. The light of a sunrise has quite a cool bluish colour temperature, whilst the light of a sunset, particularly if there is a lot of dust in the atmosphere, can be very warm orange and reds.**

## Sounds like a plan

We've mentioned it before, but we will say it again. Plan ahead. Research the location you will be visiting. A pre-shoot scouting expedition is always a good idea. Use apps that tell you what time sunset or sunrise is and how much golden hour light is available for the location and time of year.

## Using filters

When shooting the golden hour, lighting can be a little tricky and it is recommended that you use a tripod as a matter of course. The problem is that if you expose for the foreground the sky will be overexposed, if you expose for the bright sky, then your foreground will be too dark by comparison. You have the option to shoot with a graduated ND filter (a 2 or 3-stop grad will work well) positioned to reduce the brightness of the sky in order to balance the exposure with the foreground.

## Bracketing your shots

As an alternative, if you don't have filters, take a bracketed sequence of 3 shots where you shoot one average exposure, then set the camera to overexpose the shot by 1 to 2 stops and a third one to underexpose the scene by the same amount. This way you can blend the best ones in Photoshop to arrive at a balanced final image.



A three shot bracketed sequence gives you more tonal range to play with during the post-process stage.



Grad filters can help you get more balanced exposures at the shooting stage, rather than post-process.

## Think thirds

Although in terms of composition, you don't have to strictly adhere to the rule of thirds for your shots, it's always a good place to start. Just placing your horizon one third of the way from the bottom or top of frame and a point of interest one third from the left or right of frame creates a dynamic balance that is hard to beat. Rules can be broken of course, so see this as a jumping off point for creative choices.

## Starburst and lens flare

If the sun is in your shot, stopping your lens down to about f/16 will produce a very cool starburst effect. You could also consider putting the bright disc of the sun behind a tree or a rock in your composition to reduce the overall intensity of light and create a halo. It is also good for reducing the chances of lens flare.

## Interesting features

If you're shooting by water, it can be a great creative device for creating reflections. If the water is calm enough, you put the horizon dead centre in a horizontal 50/50 split and flip the image to have the reflection as the main element of the shot. Look for cloud formations, put your horizon low in the frame and make the sky the point of interest, if there is some interesting natural geological feature, don't be afraid to zoom in on that and fill the frame with it.



The camera was positioned to place the sun just behind this rocky outcrop on Hound Tor, Dartmoor. The intensity of the sun is easier to manage and you get a great halo effect in the bargain too.



## Turn around

As the sun rises away from the horizon, the light will become more intense and shooting directly into the sun will present all manner of exposure issues. That is a good time to do an about face and shoot in the opposite direction so your landscape is front lit. Be aware of the very long shadows. You may find you have to adapt your framing and position to make sure your own shadow remains out of the shot.

Once you have experienced the magic of landscapes in the golden hour, it becomes easy to see why, for many, this is the only time to shoot. The time you have to experience this atmospheric drama is quite fleeting each day; happily of course, there is always tomorrow. ■

# Filters for landscape photography

## Using filters in your landscape shots

**You are out and about happily taking photographs, with gorgeous sunshine to brighten the experience. It's your last day before venturing off home and you happen upon a scene that you want to capture. The sun is directly in your eyes but the sun's position is creating a dramatic lighting effect. What can you do to get the most from the opportunity?**

The problem is that the dynamic range of the scene before you is very extreme because the sun itself is part of the shot. You have options of course. If you had the time you could wait until the next day when the sun is in a different part of the sky but then you wouldn't have the drama of the sun low to the horizon. You could bracket your exposures if you had a tripod. You could expose the shot so the sun and sky isn't blown out, but then the rest of your shot will be very underexposed if not totally in silhouette. Conversely you could exposure your foreground correctly and hope the sky doesn't blow out too much that you can't recover any detail when you come to process your shots.

All these methods will work to varying degrees but many photographers also try to get a balanced exposure first time 'in camera'. This is where the use of filters can be essential.

The example image here was shot using a 2-stop graduated Neutral Density filter [1]. The filter is reducing the amount of incoming light where it is darkest and letting more light in as it fades to clear. There are various filter manufacturers who all make specialist holders able to be mounted to the front of your camera that can allow you to use up to 3 filters in one go. You slot it in and adjust it so the darkest part is at the top and the point it goes clear is roughly level with the horizon as you look through the viewfinder [2]. You can compose your shot, take an average meter reading of the entire scene using your camera's evaluative metering setting and capture your image knowing that the filter has balanced the tonal value of the scene and lets you keep detail in the sky and not underexpose your foreground [3].

1




2
3

Soft grad for uneven horizons.

Hard grad for even horizons.

## A word about filters

ND grad filters come in various types. The two main ones are hard and soft grads. This means that a hard grad filter is quite abrupt in the way it transitions from its darkest portion of the grad to lightest. The distance between the dark and light section of the grad is very short. A soft step grad is much more subtle and transitions much more smoothly over a larger distance on the filter.

## Filter density ratings

| | |
|---|---|
| ND2 | (ND 0.3) = 1 f-stop reduction |
| ND4 | (ND 0.6) = 2 f-stop reduction |
| ND8 | (ND 0.9) = 3 f-stop reduction |
| ND16 | (ND 1.2) = 4 f-stop reduction |
| ND32 | (ND 1.5) = 5 f-stop reduction |
| ND64 | (ND 1.8) = 6 f-stop reduction |
| ND128 | (ND 2.1) = 7 f-stop reduction |
| ND256 | (ND 2.4) = 8 f-stop reduction |
| ND512 | (ND 2.7) = 9 f-stop reduction |
| ND1024 | (ND 3.0) = 10 f-stop reduction |

## Flat horizons

A hard grad is used mainly on landscape images where the horizon of your scene is very flat with very little variation caused by rocks, cliffs, or other structures. It is easier to position a hard grad along a flat horizon line and it not be obvious that a filter is being used. A soft grad is better to use on compositions where there is much more uneven horizon line. Uneven horizons are more of a challenge when it comes to placing the soft grad as there are certain issues that come into play.

## Uneven horizons

A landscape scene that has a prominent feature jutting out of the horizon line such as trees or rock formations will be affected by the graduated filter and look oddly dark compared to the rest of the scene below where the filter's effect is reduced. You could move the grad upwards but then the light at the horizon level will become more overexposed again and lose the benefit of having the grad there in the first place. The main rule of thumb here is to take test shots with different placements of the grad to see what looks best to your eye. Bear in mind that as you stop your camera down to achieve greater depth of field, the grad's transition will also become more obvious.
If a shot starts to look that there is all too obvious filter usage occurring, then a different approach may be in order. For most general scenes though, an ND grad is a worthwhile purchase if you can afford it. Nothing is more worthwhile than creating a well balanced image that you got right in-camera without having to resort to post work alternatives. ■

# Daytime long exposure

## Overcome the limitations of fast shutter speeds in daylight

**It may sound counterintuitive. Why would you want long exposures during the day? Daytime shooting means you have no shortage of light, shutter speeds are high and there is little chance of either motion blur or camera shake. Why would you deliberately want to choose slow shutter speeds? It is down to artistic choice. We are very used to seeing images taken in the daytime that are sharp, free from camera shake or motion blur where everything is frozen in place. With landscapes in particular, there is often the desire to be able to impart a sense of movement in the composition. Whether it is to show clouds moving across the sky or to create the popular misty water effect in rivers or larger bodies of water.**

So how do you overcome daylight itself to achieve the shutter speeds required? You will need a couple of pieces of the right equipment. It goes without saying that first up is your camera and your favourite lens for shooting landscapes. Because we are dealing with deliberately long exposures there is no question we are going to need a good, sturdy tripod. The shutter speeds you may encounter would benefit form the use a remote shutter release. Last, and certainly not least, is a neutral density filter. Without this bit of kit the long exposures just can't happen.

A neutral density filter (usually shortened to ND filter) is almost like sunglasses for your camera lens. It filters out a certain amount of light so you "see" the world darker than it really is. It is reducing the amount of light that is actually passing through the lens to your cameras sensor. It has also been likened to the glass in a welder's mask. In fact, in some cases, enterprising photographers have actually used welder's mask glass as an ND filter.

There are many types of ND filters. There are the versions that are flat rectangular pieces of plastic that slide into place in a holder which screws to the front of your lens via an adaptor ring. There are also the circular screw-on types of various sizes for different lenses, which you can fit directly to the front of your lens as if it were a UV filter.

Crucially, they also come in a range of optical densities. A filter rated as an ND2 will only let 50% of available light through (equivalent to a 1-stop reduction), whereas an ND4 will only let in 25% (2-stops reduction), an ND8 lets in 12.5% (3-stops reduction), ND16 blocks (4-stops reduction) and so on.

Cloud formations are reduced to soft blurs as they drift by the rocks at Hound Tor on Dartmoor. The exposure ran to nearly 3 minutes.

Canon 5DMK2 - EF 16-35mm f/2.8
f/22 - 154 secs - ISO 50

Golitha Falls in Liskeard shot on an overcast day meant the shutter speeds could get up to about 2 seconds without the need for an ND filter.

Canon 5DMK2 - EF 16-35mm f/2.8
f/14 - 2 secs - ISO 50

The water around Babbacombe Harbour is rendered flat as a millpond with a 10-stop filter and 20 second exposure.

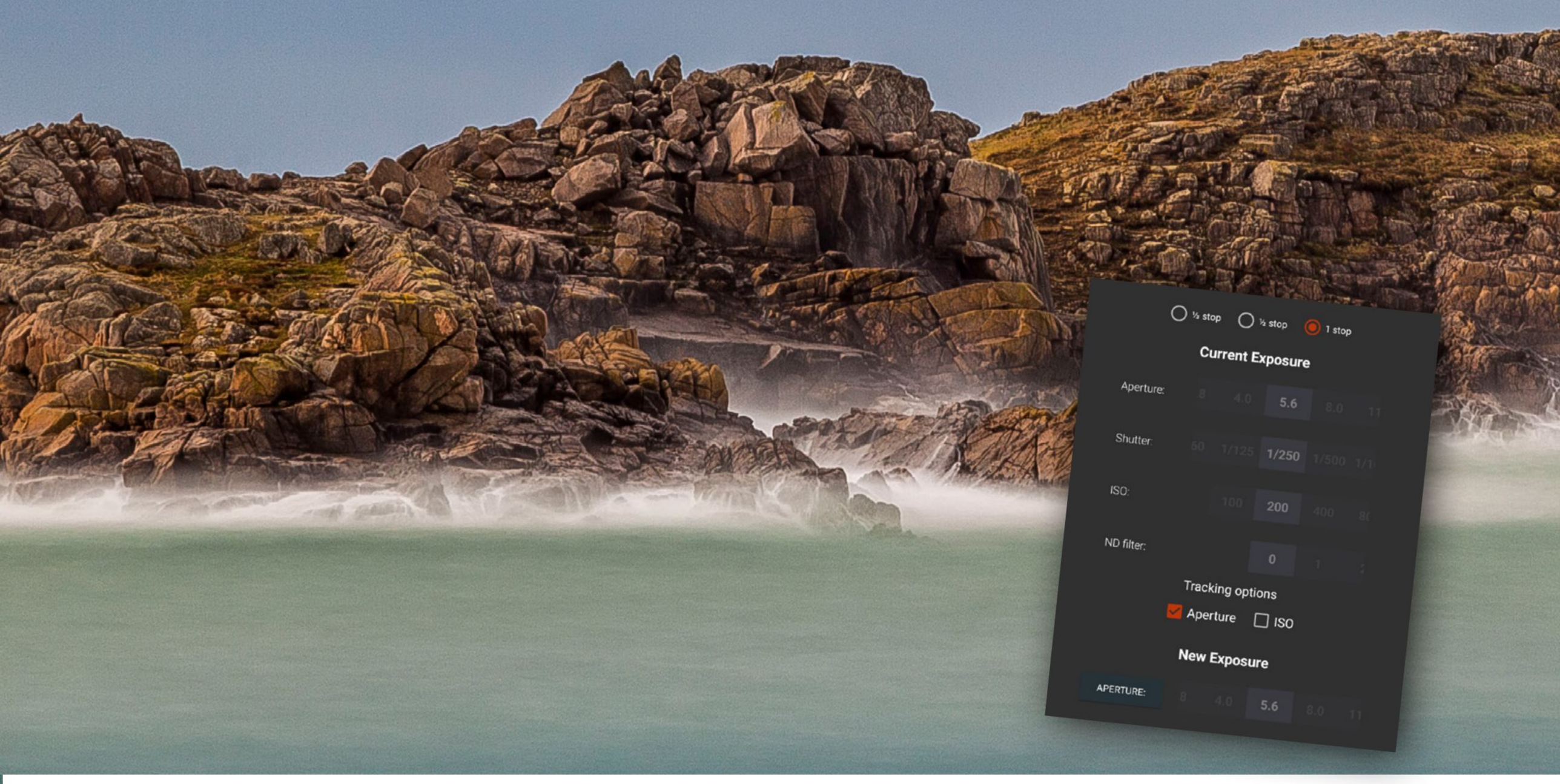
Canon 1DSMK3 - EF 16-35mm f/2.8
f/5.6 - 20 secs - ISO 200

The choppy sea around the rocks in Tresco turns to mist after a 2 minute exposure.

Canon 5DMK2 - EF 24-105mm f/4
f/18- 120 secs - ISO 50

Rocks on the island of Bryher, Isles of Scilly are bathed in a sea turned to mist. The clouds, which were moving quite fast are also reduced to soft streaks.

Canon 5DMK2 - EF 24-105mm f/4
f/14 - 60 secs - ISO 50




## Compose yourself

For long exposures in daylight, you need to be working around the ND1024 area, which is a 10-stop reduction allowing only 0.098% of available light to enter the camera. So you screw on your filter and point your camera at the scene you want to capture and off you go. Well, not exactly. For starters if you look through your viewfinder, you're not going to see much. The ten-stop filter has taken care of that. You will pretty much be staring at a black image. Metering a scene with such a dense filter as this can cause problems too. Your camera is probably going to struggle to find a useable meter reading. If you stop your lens aperture down to f/11 or even f/16, you will have an exposure that is in the Bulb long exposure range anyway. The best method is to take off the filter for a moment and compose the scene how you want it, with the ISO and aperture settings dialled in as required for the final shot and just see what shutter speed you get. Take some test shots to make sure you're happy with the composition. At this point you need to make a note of the shutter speed you're getting without the ten-stop filter on your lens.

## The mathematical bit

OK, there is some maths involved but it's not too scary. Before you added the ten-stop filter, your camera was telling you that for a setting of ISO 50 with an aperture of f/16 your normal meter reading required a shutter speed of 1/100th of a second. You now have to slow your shutter speed down by ten stops. In this case if you double the shutter duration value ten times you will arrive at the final shutter speed that you need to use with the filter in place (we are using shutter speed values which get rounded up and down in places for easier numeric values to remember).

So for our example, a scene that originally metered for a shutter speed of 1/100th of a second has to be altered to 8 seconds. Your shot should now be correctly exposed allowing for the filter you've used.

If like many, you're not so hot on the mental arithmetic, there are apps for your iOS or Android phone, which can calculate the correct exposure settings for you for example Exposure Calculator (above) or Expositor.

One thing to be aware of when using such dense filters is the issue of colour cast. Even the most optically perfect and neutral filter can suffer from some form of colour shift when using six-stop filters or higher. The most common issue is a magenta cast caused by Infrared light still getting through even though the visible light spectrum has been reduced. For the best possible result, always shoot in Raw mode at your camera's lowest ISO setting.

As ever experimentation is the key. Just keep your eyes open for some familiar daytime moving object that could look pretty surreal if captured with a long shutter speed.

The technique has been employed to flatten rough seas to mill pond flatness and magically empty city streets of bustling people and cars by using very strong ND filters. It's up to you and your imagination now that you know daylight can be modified to give you more creative control. ■

# Rural and natural landscapes

## Capture the countryside in all its rugged beauty

There is often a misconception among budding photographers that landscape photography is something of an easy option when deciding on a subject to capture. Sometimes it only takes a twenty minute drive to transport you from your local town and put you among the marvels and beauty of the natural world. While it is certainly true that the natural world is very accessible, it can be another thing altogether to create memorable landscape images. It isn't just a case of arriving at a destination, firing up your DSLR and snapping away like a mad thing. The skills you may have that enable you to operate your camera are quite distinct from those that allow you to envision a beautifully composed image within the landscape you currently find yourself. Both are dependent on each other to deliver great landscape images.



> "While it is certainly true that the natural world is very accessible, it can be another thing altogether to create memorable landscape images."

## A sense of scale

When you step out into the environment, the first thing worth considering is the scale of the scene you want to capture. Although we have mentioned the wide-angle lens as the primary lens to consider for landscape work, you don't have to stick with accepted rules and it's up to you to challenge yourself and the rulebook. Knowing what to leave out of a shot, is just as important as what to include.

## The broad canvas

The wide view is the first order of the day for most. Covering a huge expanse in your shot can make for immersive images but be aware that a wide-angle lens will capture a very large field of view that has the effect of making any points of interest look very small in the frame. Also consider that if you have included some foreground interest close to your camera and shoot it at a wide focal length such as 14mm -16mm, it will appear distorted. Wider views are often best captured at either end of the day during the golden hours when the sun is low to the horizon.

## A picture in a picture

Next comes the more intimate landscape. It can actually be an effort of will sometimes to force yourself away from the wider view and consider shooting a more intimate landscape. This is where you zoom in or move closer, to isolate a particular aspect or detail from the whole landscape and show it as if it were a scene within a scene. It may seem counterintuitive but there is a good case to be made for using a telephoto lens in cases like this to pull a particular feature towards the viewer. Although not a rigid rule, diffused or indirect light is often used to capture greater detail because of the lower contrast that diffused light brings.

## Up close and personal

At the other end of the scale comes the macro landscape. This is where you deliberately focus very closely on one tiny element of a scene. Often you are drawing attention to something that is too small to be seen by a casual viewer. It can be an interesting challenge to find a tiny detail that in some way echoes the grand vista from which it is derived. Back-lighting or side-lighting can help accentuate objects for a more 3D feel but watch out for strong light coming down at a high angle, creating deep pockets of dense shadow and destroying detail.

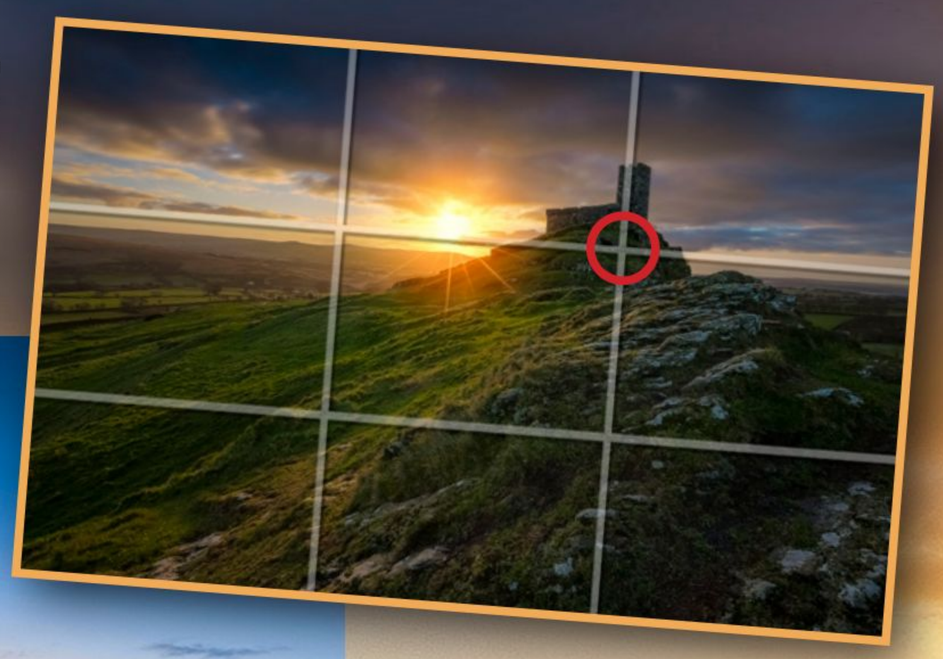

16mm wide-angle


50mm medium-telephoto


100mm macro

You don't always need to capture the widest view possible, even if it seems the likely thing to do. Sometimes a closer, more intimate shot can be effective, even down to the macro level if you should so wish.

Rule of Thirds composition technique places a point of interest on one of the lines or intersection points of the grid.





(Above) this image of Brentor, near Tavistock, was taken about 15 minutes before sunrise. Compare it to the main image (left) taken a few minutes after sunrise. The tones have transitioned from cool blue and pale yellow/orange hues to much stronger warm orange and yellow tones. The shadows, initially soft in the pre-sunrise image, have given way to much more defined shadows which will continue to become more harsh and deepen as the sun rises higher in the sky.

## Rules? What rules?

It has become a bit of an overused cliche but the rule about there being no rules, still rings true. Rules can aid you in arriving at a pleasing landscape image but you should always have an idea in your mind about what works for you. The view through your camera's viewfinder should move you in some way, it should speak to you. Even if what it is saying is that you should try another view somewhere else that has more visual impact. At the risk of introducing even more cliché into the mix, here are some inspirational quotes that make a lot of sense.

**Edward Weston**
**"To consult the rules of composition before making a picture is a little like consulting the law of gravitation before going for a walk."**

**Ansel Adams**
**"There are no rules for good photographs, there are only good photographs."**

## The raw materials

Any landscape image is a collection of visual elements, captured on film or via a sensor and framed accordingly by your choice of lens or cropped during post-work. Take a moment to distil the scene in front of you into its component parts before you take a single shot. Slowing yourself down and taking a more considered approach to your landscape photography will yield results.

## Light it up

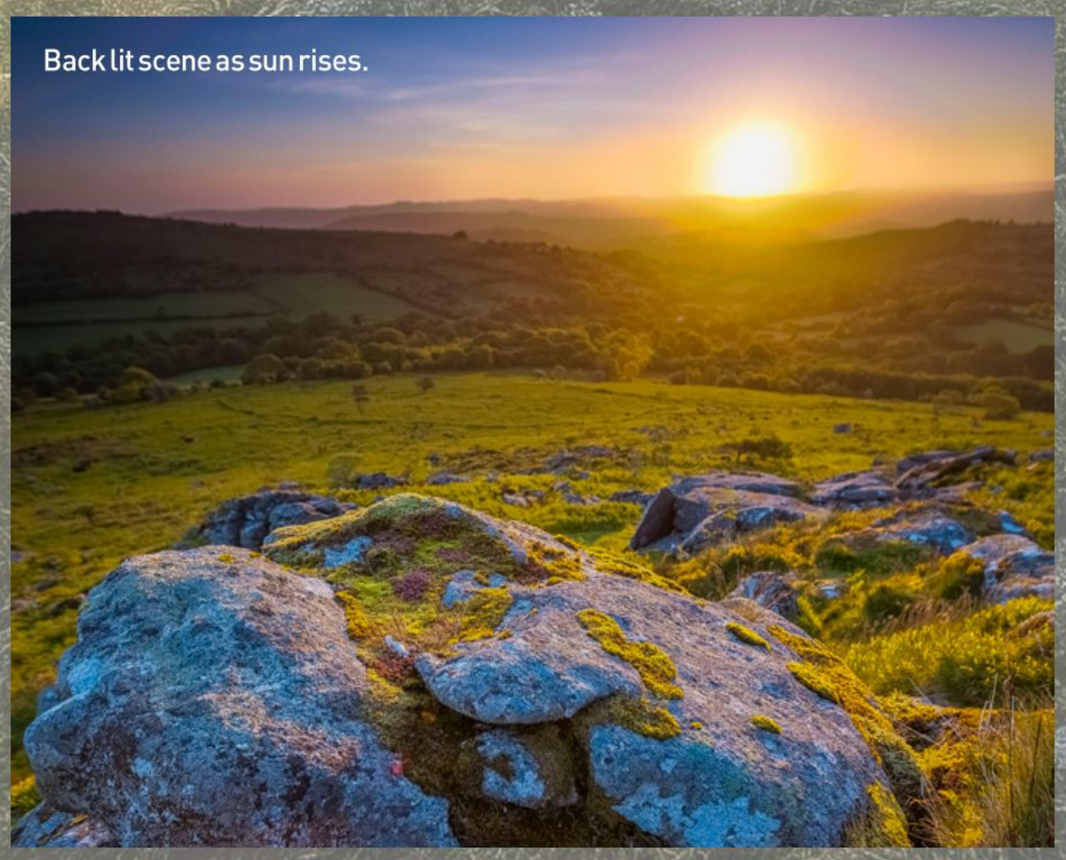
For a landscape photographer, light is the first and best raw material you have available to you. It will shape and colour the image, so you need to look out for the quality of the light. Knowing where and when the sun sets and rises in a location is a key first step before you embark on a journey into the great outdoors. As we've said before, the golden hours are some of the best times to shoot landscapes, but you need to be aware of how the light changes from a soft, cool, indirect glow when the sun is still below the horizon, to the warm tones and long shadows created as the sun finally appears.

## Shapes and form

The light in your scene will naturally have an effect on the shapes and form of objects within it. Surface textures and patterns will be revealed, as well as colour and tonal values. Consider if you want to shoot your scene back-lit, with the sun in front of you, casting shadows in your direction or whether you turn the camera to shoot the scene front-lit with the sun at your back or off to the side.

This image of Brentor was shot shortly after sunrise. The image was framed to adhere roughly to the rule of thirds.

Canon 1DSMK3 - EF 16-35mm f/2.8
f/11 - 1/20 secs - ISO 50



Back lit scene as sun rises.



Side lit scene after sunrise.

If you're shooting directly into a sunrise there will come a point, as the sun gets above the horizon, when it will be just too bright to shoot successfully and you run the risk of lens flare and damage to your own eyes by looking at the rising sun for too long. That is a good time to simply rotate your camera by 90° or more away from the sun and shoot your scenes either side lit or front lit.

## Framing the shot

Look out for a focal point and apply the Rule of Thirds framing technique. Objects such as a hill, church, tree or animal can be placed over one of the intersecting gridlines. Use this as your starting point in composing your shot. Don't be afraid to shoot in portrait orientation if a particular feature demands it; so you don't have too much dead space either side. Any strong curves or diagonal lines running up into your shot from either corner will enhance the image by leading the viewer's eye into, and around the scene.

## Keep your balance

Are you finding that you cannot get a balanced exposure between the land and the sky? If the sky is overexposed, you could always crop it out and create another composition that is a tighter framed version of what you had. If your sky is an important part of the original shot, then consider an ND grad to make a more balanced overall exposure. If you are shooting during the day with blue skies and white clouds, try using a polarising filter. It will boost the contrast between the blue of the sky and the white of the clouds.



The pathway that leads up from the corner of the shot is a great device to draw the eye of the viewer into the shot.



A 2-stop ND grad filter is a useful item to have in your kit bag. It can help restore balance to overexposed skies.





The circular polariser is one of those 'must have' items in your camera bag. Once you have yourself positioned correctly in relation to the sun (between 90° and 180° away from the sun), turning the filter will darken skies and whiten clouds.

> “Any strong curves or diagonal lines running up into your shot from either corner will enhance the image by leading the viewer’s eye into, and around the scene.”

## Cut it out

The final framing of your shot will determine if your photograph will stand or fall. Take your time with the final composition. Landscape painters will often use a piece of card with an aperture cut in it to use as a framing and compositional aid when viewing the landscape. There is no reason you can’t do this too. Just match the aperture you cut in the piece of card to the proportions of your camera’s sensor. Hold the card up to your eye at different distances and you can see the effect the different framing has on the composition of your shot.

## Practice makes perfect

Here comes another cliché but one that is the basis of any learning experience. You can learn to ‘see’ with practice. As you photograph more, you learn more of what makes a good shot. The more you explore the more capable you are of making a good landscape photo, a great landscape photo. ■

# Coastal and seaside landscapes

## A popular and dramatic subject

**Coastal and seaside landscapes have always been an extremely popular subject for both artists and photographers. There is a certain something that lures us to the sea. It is both benign and unpredictable, powerful and awe inspiring. Coastal areas have a wealth of interesting features, from large flat expanses of sand, rocky pools and coves, as well as soaring cliffs and sand dunes.**

**There are also the man made influences, ports and towns that spring up around key coastal areas. The photographic potential is vast. The coast and the sea have some of the best image capture potential that you could ever hope for.**

### A unique environment

If you are lucky enough to live near the sea, or are within a reasonable distance of it, you will probably be aware that it is an ever changing and unique environment. With the ebb and flow of the tides, the coast is constantly being washed clean, ready for a new cycle to begin. No matter how many times you visit the same beach for instance, the patterns, pools and gullies will always be different after each high tide. The sea state is in constant turmoil too. One day mirror flat, the next it is a roiling cauldron of white water and spray.



> "There is a certain something that lures us to the sea. It is both benign and unpredictable, powerful and awe inspiring."



## Plan ahead

With all this in mind, when you are deciding on a trip to the coast, it pays to plan ahead. Tide tables are invaluable to plan what time of day the high and low water is, as well as the height of the tide. The tide heights will vary throughout each lunar month from Spring tides (greatest height difference between high and low tide) to Neap tides (smallest difference between high and low tide). It is this that will govern what you have access too, as well as what may be visible as the water rises and falls. Any local knowledge regarding rip tides and fast flooding of beaches will also help to keep you safe.

## Avoid the crowds

When deciding to visit a particular coastal venue, it is worth remembering that during the summer months, it is likely to be busy. That said, if you want the best light, then you are going to have to be there before dawn to have time to set up, so hopefully the only people you're likely to encounter are other motivated photographers such as yourself. During the winter months, beaches are going to be much quieter too.









## Keep it clean

We have previously mentioned how you need to keep yourself safe when venturing out. The same is true of your gear. Salt water spray and sand is a potential camera killer and the build-up of moisture on your lens is going to ruin your shots. Always closely monitor how clean your camera is and if necessary, keep sand and sea away from it with a good quality weather proof plastic sleeve that covers your gear, keeping it dry. A good lens cloth will also be needed to keep the front element of your lens free from contamination.

## Cliffs or beach?

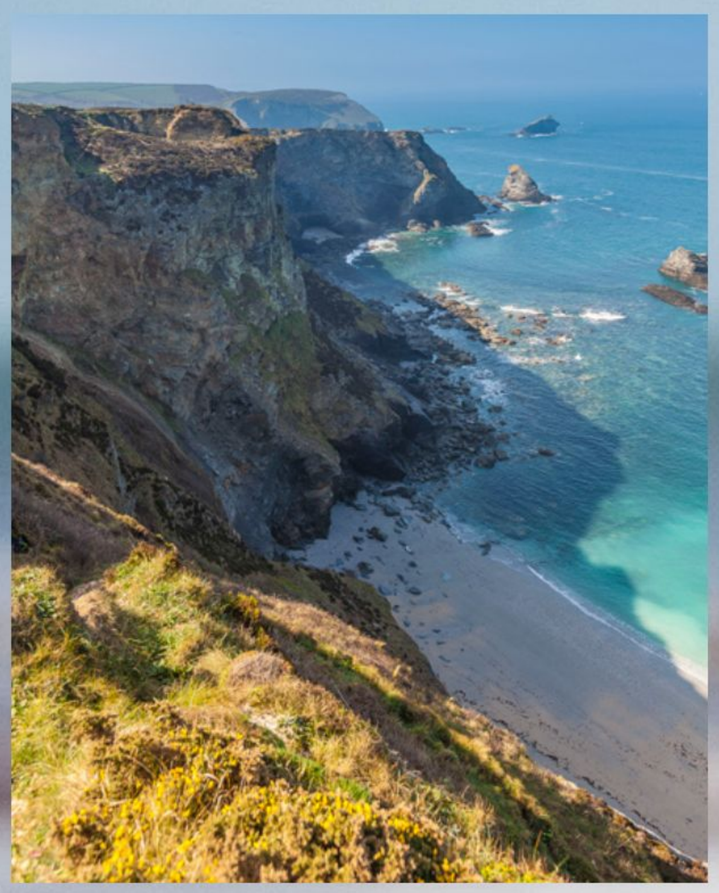
It can be tempting to stay close to the waters edge when shooting coastal landscapes, especially if there are a lot of interesting rocks, pools and sand patterns; it is worth considering the wider view from an elevated position too. If there are prominent cliffs, it may be worth the walk to the top and look back down onto the scene from up there. Depending on the time of year, the cliffs may be full of flowers or tall grasses and bushes that you can use as foreground interest. Plus you have the added bonus of a much wider far reaching view of the coast as it extends away from you in both directions than you did from the beach.

## How slow do you go?

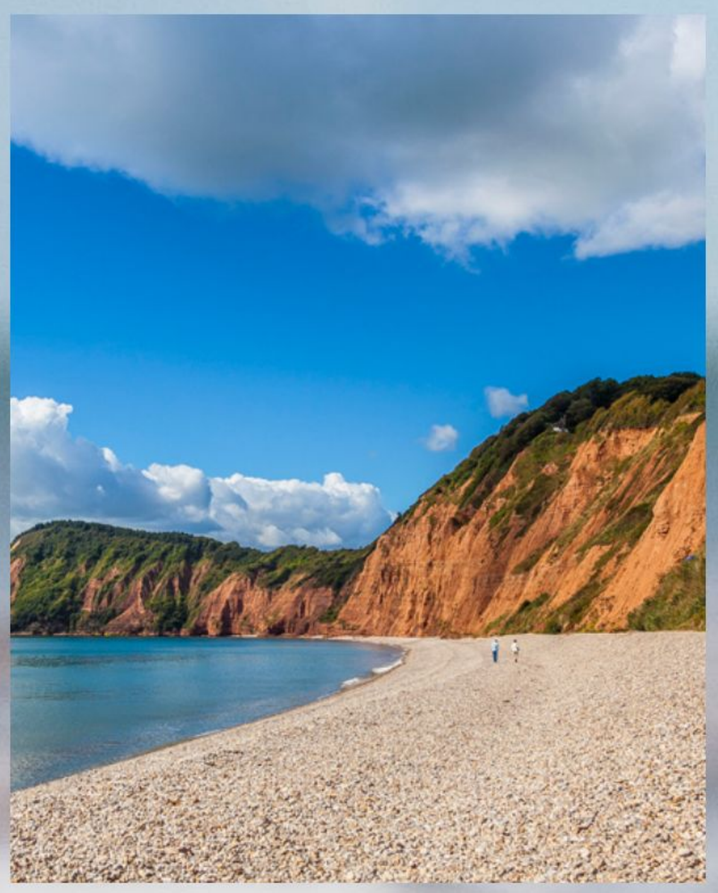
When shooting a coastal scene where the sea plays a large part in the composition, you are faced with choices when it comes to how you portray the water. It is a popular, if overused, technique to place a solid ND filter over your lens to extend the exposure time to several seconds or longer to soften the water and render it more like mist. If you want to retain all the shape and texture of the water, then you'll want to keep the shutter speed up around the 1/60 of a second area. For freezing crashing waves completely, you'll need to push it to 1/500 of a second or more. Alternatively, try and shoot the sea at around 1/2 a second. This allows some softening of the water but it captures a sense of motion and the flowing of the water in and around rocks without becoming an amorphous fog.

**Three rocks create a simple coastal composition. The water was shot with a long exposure to help the detail of the rocks stand out.**

**Canon 5DMK3 - EF 24-105mm f/4**
**f/22 - 8 secs - ISO 50**



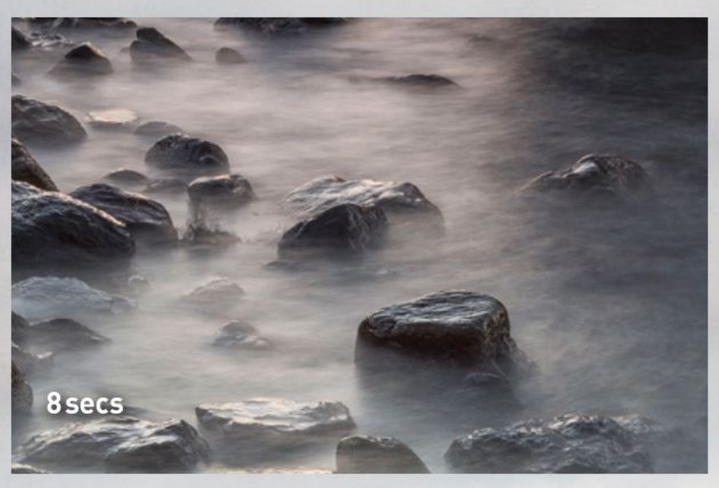
The view from North Cliff near St Ives.



The pebbled beach at Seaton.

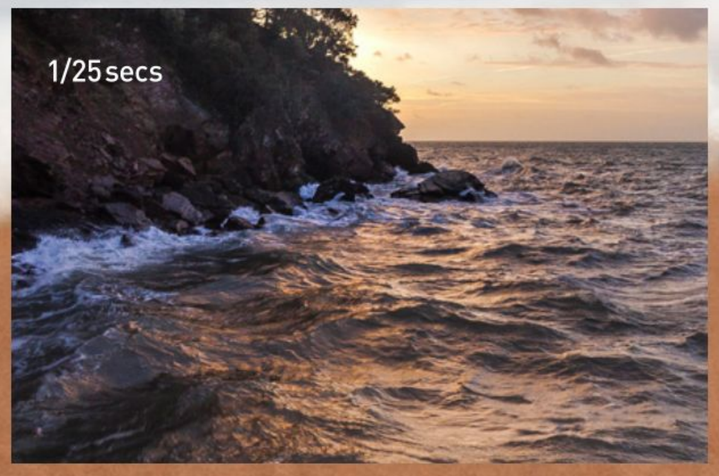
Although it may be tempting to stay down by the water's edge for your coastal shots, views from the cliffs above overlooking the sea, can be stunning. Many popular coast paths are your gateway to some spectacular views.

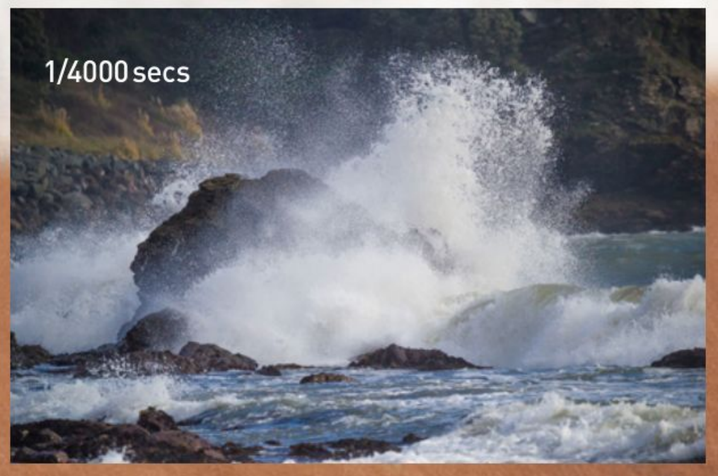
Below are four examples of how moving water can look with the use of different shutter speeds. Longer exposures render the water foggy, shorter exposures can stop the movement in its tracks.










Paignton beach. A deliberately simple composition using a low angle that focuses attention on the lone shell.

Canon 5DMK2 - EF 24-105mm f/4
f/4 - 1/500 secs - ISO 50

An extreme close up of rocks at Meadfoot beach was shot at 16mm with very shallow depth of field and a fast shutter speed to freeze the water.

Canon 5DMK2 - EF 16-35mm f/2.8
f/2.8 - 1/1250 secs - ISO 50

Sometimes a closer, more intimate shot can reveal interesting detail or perhaps just be a more abstract composition.

Canon 550D - EF-s 10-22mm f/3.5 - f/4.5
f/5.6 - 1/40 secs - ISO 100





## Beware of the glare

If you are photographing on a wet beach or on rocks still wet from the high tide, consider using a polarising filter to help reduce unwanted reflections and enable you to see the detail. Rock pools, wet seaweed etc. will all benefit from the use of the polariser to reduce glare if you are shooting in bright conditions. It will help bring colour back into your subjects and it will also enhance the contrast and saturation of the shot.

## Wide-angle and telephoto

Lens choices can be governed by the kind of shots you want to capture. Generally, a wide-angle lens, when used close to an isolated foreground element and with a short focal length around 16mm-20mm, can create a distorted perspective that is actually quite pleasing to the eye. It works well when your point of interest is fairly isolated and there isn't too much going on the scene to create unwanted distractions. Conversely, you can swap your wide lens for a standard zoom lens in the 70mm-200mm range to shoot very intimate miniature landscapes. This is where you capture very isolated elements of rock, water, sand and any interesting flotsam and jetsam washed up on the shore. Rule of Thirds composition is worth keeping in the forefront of your mind as you set up your shot. The low contrast lighting of an overcast day is also great for these types of images, making the shot just about texture and form.

Enjoy your visits to the coast. Take great pictures. Just make sure you stay safe to return another day. ■

# The urban landscape

## See the city in a new light



**Trying to pin down what an urban landscape actually is, might depend on who you ask. There are those that don't actually count the urban environment as valid landscape material in the first place, opting for landscapes that are untouched by people and the modern world. Fair enough, it's not for everyone but there are many who find the city full of photographic potential.**

**From dark alleys to towering city skylines, the city has much to offer. It isn't necessarily a thing of beauty, it isn't always that clean but it can't be denied that it has character by the bucket load. It's this character that many photographers try to capture. Humans are incidental in urban landscapes, the city is the star.**

## What lenses?

Budget is always a factor but with regard to lens choice, when it comes to shooting in a city or town, there is no real right or wrong. As a general rule two lenses that cover the wide-angle field of view up to the medium telephoto range should be all you need. In fact a lot of DSLR camera kits come with a zoom lens that can cover 18mm-200mm. Manufacturers such as Canon, Nikon, Tamron, Sony and Sigma all produce lenses in this range. Roughly equivalent to a 28mm-320mm full-frame lens, it is a good all rounder. If you want to shoot wider than 28mm, then you will need to consider lenses in the 14mm-20mm area for those much wider shots.

## Preparation is key

Because you are likely to be doing a lot of walking, it makes sense to travel as light

> "Budget is always a factor but with regard to lens choice, when it comes to shooting in a city or town, there is no real right or wrong."

as you can. One camera, a couple of lenses and a small lightweight tripod, if you are considering potentially longer exposures, teamed with a small over-the-shoulder camera bag should be ample. A recurring mantra that we often mention is about planning ahead. If you are exploring a new town, take the time beforehand to explore it using Google Earth and its street view capability.

## Think about light

Take the time of day and the sun's position into account. Morning and evening light can be great but in a city with tall buildings you need to be aware of the shadows they are likely to cast. These can be useful compositional tools if you have some foreknowledge of their placement during the day. Overcast days can often be great for capturing images that focus on shape, form and detail. Abstract architectural images and gritty, dirty images are perfect for black and white conversion for a more documentary style of photography.

## A story to tell

It is often a good idea to approach urban photography as if you have a story to tell. Perhaps you want to document your own home town but cover some of its less well known aspects. It doesn't have to be a single image but rather a body of work that sums up the subject. People are not the subject matter, it is the environment that people have constructed that is the prime focus. Whether it's in the small details or the wider view, it is down to you to document this artificial landscape.

Lens choice whilst shooting in the urban environment does come down to personal shooting style but in the main you can capture most anything with a wide-angle lens and a decent telephoto. Many lenses are available today that can cover a useful focal length range and give you a 'one lens does it all' approach.




The Tamron 18-200mm zoom lens covers a large enough range from wide-angle to telephoto to be considered a great 'walking around lens' where you aren't so likely to need to change it out for another.




If you find you want to shoot much wider scenes then lenses like the Sigma 10-20mm f/3.5 wide angle zoom lens comes in both Canon and Nikon fit. This lens is equivalent to a 16-32mm full frame lens.

Most cities have their less salubrious sides. It can be an intriguing contrast to display the more tattered underbelly of large metropolitan areas against the newer, well-developed areas of the city.

A whole genre of urban photography has developed over the years. Urbex (urban exploration) photographers actively seek out the most run-down and abandoned areas they can find and record them in detail.

## Diversity

In many cases a town or city has many diverse areas ranging from industrial estates to bustling shopping centres, from abandoned warehouses to tower blocks and leafy suburbs. It can be quite an eye opening contrast to see examples of each area presented together. What mood you intend the images to convey may be a reflection of your own feelings about what you have seen. If something is depressing and grey, don't be afraid to show it. Conversely if there are areas of beauty or sophistication, show that too. Contrast is how we differentiate one thing from another.

## Night in the city

Just because the sun goes down doesn't mean you have to stop shooting. In fact, the city at dusk, going into night has a totally new atmosphere. Something benign can now appear threatening or even dangerous when the city is shrouded in darkness. The weather you choose to shoot in will also contribute greatly to the feel of the shot. A park can feel romantic during the day but at night, in misty conditions, the mood is altogether more ominous. So keep a tripod with you and shoot on into the night.

## Go with the flow

Just like traditional landscape photography, bear the main compositional tools in mind when composing your shots. Always try to frame your shots with leading lines and curves to draw the eye into the scene. Foreground interest played off against middle ground and background structure can really bring a shot to life.

## Who was here?

Although you may take the approach of shooting scenes that do not contain people, consider one aspect of the urban environment; the evidence of people. This refers to the fact that there may not be anyone in the shot but there is something left behind to betray the fact that humans were there just a short while ago. The world is what we make it and it can be a strong and sometimes uncomfortable reminder about how we treat the world around us. It could be as simple as a recently dropped can of Coke, to the rotting, rusted carcass of an automobile, abandoned years before.

In any city or town, there are stories within the urban landscape waiting to be uncovered. It just needs you and your camera to bring it into the light. ■

**Converting certain images to black and white can make them even more interesting when the distraction of colour has been removed.**

**Canon 1DSMK2 - EF 25-105mm f/4**
**f/7.1 - 1/100 secs - ISO 200**

# Whatever the weather

## Brave the elements and shoot in bad weather

**Don't let yourself be put off by a poor weather forecast. If there are storm force winds, lightning and hail stones the size of medicine balls outside then yes, discretion is the better part of valour and staying put is the best choice. At other times though, the unsettled conditions that either precede or follow a storm can yield some amazing lighting and cloud formations. Even a simple grey day that has lots of heavy, grey clouds can be the basis of some superb black and white conversions. Saying that the weather wasn't good enough and keeping yourself stuck inside can limit your landscape photography options. If you live in the UK, you'll know that sunshine is a rare commodity, so a little meteorological creativity wouldn't go amiss.**

### Safety first

Straight away we are going to say that when shooting in less than ideal weather conditions, the primary concern is not the shot, it's your own safety. Do not put yourself in harm's way for the sake of a photograph. Part of being a good photographer is being a wise one too. As an example, the weather on Dartmoor in the South West of England can get ugly very quickly. There's an old saying that if you don't have the weather you were hoping for, wait five minutes and some more will come along.

### Dress sense

Make sure you dress for the occasion. Dress in layers with a waterproof top layer and sensible shoes that are made for hiking with good ankle support. Photographers gloves are a good idea. They are warm, but the fingers can peel back so you can still operate your camera. Keep your phone with you armed with a good weather app that can give you regular updates. If there's even a hint that the weather is turning for the worse, then get under cover.

### Hot and cold

Now you can worry about your gear. If transitioning from a warm car to a cold environment, beware of condensation build-up. It is a good idea to keep your camera in the bag for at least ten minutes to let the cold slowly seep into the bag, bringing the gear down to the ambient temperature. The reverse applies when coming back inside. Make sure you have waterproof coverings for your kit bag and your camera. There are some very affordable waterproof sleeves, some actually designed to be submersible, for various types of camera to keep them dry. At the very least, a plastic bag and some rubber bands will help keep unwanted moisture out of your precious camera.

### Don't go changing

Only change lenses if you absolutely have to. If you are in windy conditions, you run the risk of the wind blowing dust and moisture onto the sensor. Always keep a couple of dry cloths in your bag, the front of your lens is always going to risk dust and water drops getting on it and spoiling shots if you don't keep the lens clear. Extreme cold can drain batteries very quickly, so keep any spares in your pockets so they stay warm.







To combat the chances of camera shake with a long lens and to freeze the action, a shutter speeds in excess of 1/1000 should be used.

"An overcast sky can range from a flat, featureless expanse to heavy rolling cloud formations with many shades and tones."

The north coast of the island of Tresco about to be hit by a large rainstorm. The sun was still shining at this point and lit the foreground rocks nicely.

Canon 5DMK2 - EF 24-105mm f/4
f/4 - 1 secs - ISO 200

Overcast days don't mean you should pack your gear away. Some amazing landscapes can still be had on days like this. The softer lighting is great for revealing detail in the landscape that might be lost on harsher sunlit days.

## Grey is great

An overcast sky can range from a flat, featureless expanse to heavy rolling cloud formations with many shades and tones. Bear in mind that even if you can't see the sun, it is still up there illuminating the world. Some actually refer to a grey sky as a though it were a vast softbox. It is behaving in the same way by diffusing light and reducing contrast. With the reduced lighting levels a grey day brings, it's an ideal time to experiment with shooting with longer exposure times. Tripods are a must for this of course and exposures of two seconds or more can be achieved even without the need for ND filters by keeping your ISO as low as possible and choosing very narrow apertures around the f/16 mark.

The classic images of misty water tumbling over rocks or water receding from a shoreline are a great creative choice for days like this. If your sky is utterly featureless, don't be afraid to compose your shot to crop it out entirely if needs be or shoot under the canopy of a wooded area, concentrating on tones and details, rather than shadows and highlights. Concentrate on reflections in water or shoot directly downwards onto an interesting feature within the scene.

## Stormy weather

The dark roiling clouds that indicate an imminent storm can create a very dark and brooding feel to a shot. A simple composition with just one small element to provide scale can make for very graphic and memorable images. If the wind is whipping the sea into a frenzy, then coastal shots in bad weather can produce some memorable shots. The violent energy of waves crashing against the shore are dramatic to say the least. These are times when a long lens like a 70-300mm zoom will come in handy to keep you as far from the sundering waves as possible. Shooting at long focal lengths will compress the scene and draw you in closer to the action.

## Something to reflect on

After heavy rainfall, there are some great opportunities to capture reflections in standing water that is acting as a mirrored surface, capturing unique reflections of the world. You can frame shots creatively to frame a subject's reflection, rather than the subject itself. There are some amazing images of this type where the image has been flipped, the original subject cropped out, and the main focus of the image placed on the reflection. This is one time when using a polarising filter is not recommended because you actually do want to see the reflections in the water.

## Time of day

As mentioned earlier, even though the sky may be just grey clouds, the sun is still up there. Consider shooting at sunrise or sunset and you may be treated to the sight of the clouds bursting with red and orange hues whilst the sun is near the horizon. The same also goes for foggy and misty mornings, where light can be seen slanting through the shroud of water vapour, creating an ethereal landscape. Fog can trick a camera's meter and produce underexposed images when it tries to read the overly pale scene as mid-grey; dialling in at least 1 stop of positive exposure compensation will counteract it.

There is no doubt there are many creative possibilities to be had when the weather is inclement. It's just down to us to overcome the natural urge to consider bad weather a bad photographic opportunity. If you're prepared to be brave, the rewards can be absolutely outstanding. ■

For a modest £125 you can get yourself a 75-300mm zoom lens like this Canon EF lens. It doesn't have image stabilisation but is cheap and quite a lot of lens for the money, keeping you far enough away from dangerously rough seas but still able to nab some great shots. You could expect to pay three times as much for newer stabilised lenses.




Even on murky, cloudy days the sun is still shining up there. You can never be sure when it might decide to light up the land with a few good rays.

Canon 5DMK3 - EF 24-105mm f/4
f/5.6 - 1/800 secs - ISO 100

# Aerial landscapes

## Radically changing your point of view

For many years, if you wanted to indulge in aerial photography, you had no choice but to hire an aircraft of some description to get you, and your expensive camera gear, aloft. Helicopters or fixed-wing aircraft are hideously expensive to hire. Basically aerial photography was strictly off-limits to your average casual photographer. This was a shame, as aerial work provides such a rare view of the landscape. For the rest of us would be aerial photographers, the ability to shoot from this unique perspective presents some obvious problems. However there are some alternatives to hiring a helicopter or aircraft that are well within the ability and price range, of the enthusiastic amateur. Some methods allow you to lift your current camera aloft. Some require additional new equipment. At this point let's be very clear about one thing - only elevate your camera as high as you are prepared to see it fall!

### Time to take stand

Many companies manufacture telescopic stands that can support larger DSLR cameras and extend to over 25 feet in height. They stand on a robust tripod base and are relatively easy to set up. Some stands can cost as much as £400 or more but they are well built and completely suited to the task. You could also add a wireless DSLR controller. This is a device that plugs directly into your compatible camera and sends a wireless picture signal down to your smartphone or tablet that is running the appropriate app. Here you can actually see what the camera sees, focus the camera manually and also change camera settings such as aperture, shutter speed and ISO. With a tap of the screen, you can capture your shot and preview the result.

### Go fly a kite

One of the oldest methods for getting low level aerial shots is by attaching your camera to a kite. Kite based photography started around 1887 as a method of meteorological research. Over the years, with the advent of smaller, lighter digital cameras, kite aerial photography (KAP) has become a popular amateur alternative to other methods. After kites another lifting system is the balloon. It follows that a heavy camera will need more lifting force. However, something like a GoPro action camera only weighs a few hundred grams, so your balloon doesn't need to be the size of a Zeppelin. Be aware, we are not talking about party balloons here. For a quality balloon lifting system that could carry a GoPro, you would need a latex balloon up to 6 feet in diameter filled with helium and secured with a strong tether to keep your rig from heading for the stratosphere and becoming a menace to aircraft. A fishing reel with very strong monofilament is a good way to keep your balloon under control. Roughly speaking a 3ft balloon filled with helium can lift approximately 300g, whereas a 6ft balloon can lift around 2000g. One thing to note: you must always check if you require special permission or licences to operate aerial craft of this kind.

The DJI Inspire Pro is an advanced quadcopter capable of lifting a micro four thirds camera with interchangeable lenses. It does come with an impressive price tag as well.



The Parrot AR Drone can be controlled by your smartphone and record 720p video.



The little Hubsan X4. Not much more than a toy but still boasting gyro stabilised flight and a tiny video camera.

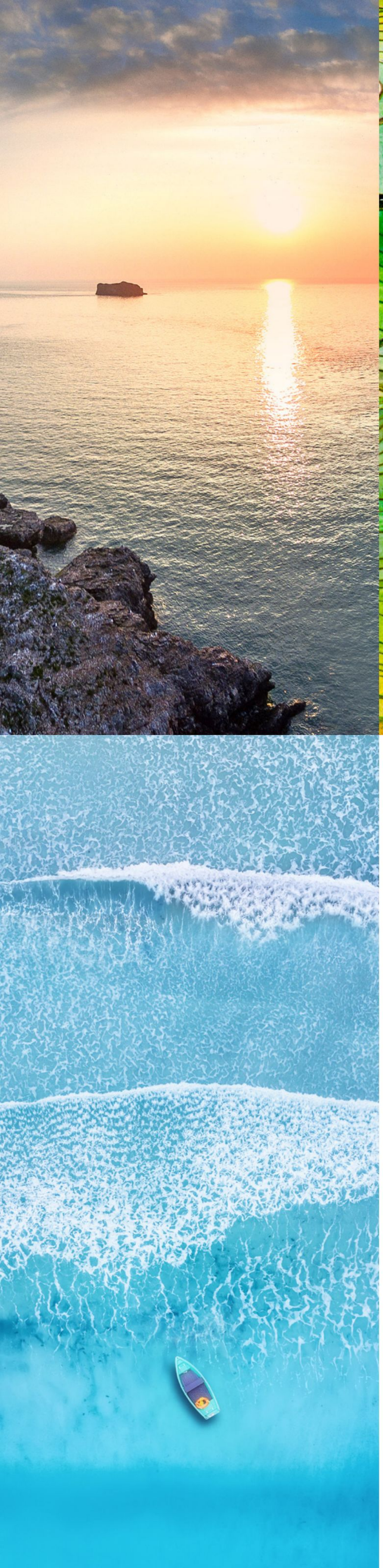
## Going up

Next up are the radio controlled quadcopters. They are so named because they have a four propeller setup that makes them very stable in flight. There are many types that range in price from a few pounds to several thousand. For instance, £40 buys you the tiny Hubsan X4 with a built-in 2.0MP video camera that is small enough to sit in the palm of your hand. It is very easy to fly due to its gyro stabilised flight controller. To be honest, this is little more than a toy, but it is a very cheap entry into the world of aerial imaging. The video output, captured to an SD card, is not the greatest quality and you'd be limited to doing screen-grabs from the video if you wanted stills. You won't be able to preview your quad's video framing, and with a flight time of about 5 -7 minutes, you are limited to how far you can fly, and the size of the craft means that if you fly too far you will easily lose orientation if you're not careful. A level up from the Hubsan is the Parrot AR Drone which can record at 720p directly to your tablet or smartphone, which is also the device used to control it via a wireless connection. It is a very stable craft and is certainly an option if you want to explore aerial work with a limited budget. The AR drone can be purchased for around £275.

DJI Innovations has a mid-level quadcopter called the Phantom. This is a current popular choice as it is 'relatively' affordable at £600 - £1400 and comes with the option of a 4K built-in 3-axis stabilised video/stills camera, or a cheaper version that is ready to be paired with the latest range of GoPro action cameras. It boasts many technological marvels such as GPS auto pilot, auto return home if there is a loss of signal, precision flight system and a flight time of about 25 minutes. It has been used in many professional projects by videographers and photographers alike. The Phantom's big brother is the Inspire 1 with a 3-axis stabilised 4K video camera, 12MP stills capability and wireless video transmission, weighing in at £2,300 or the Inspire Pro with a micro four thirds camera on board. They allow you to wirelessly pair a ground station monitor or smartphone to the vehicle's video output signal broadcast over 2.4ghz, so you can view what the camera sees in real time and control the camera remotely. What makes this range of aircraft so popular is that they are pretty much ready to fly right out of the box. Their advanced flight controls make them very stable and easy to fly. They are certainly easier to fly than regular model helicopters or radio controlled fixed wing models. For the budding aerial photographer, the fact that you can lift off vertically and then hover in place to take your shots is a huge advantage. Although the small action cams or built-in video/stills devices these quadcopters use are not quite DSLR quality, they do offer the best mix of image quality and cost.

Taken from the sea looking across Thatcher Rock towards Torquay. This is a stitched panorama comprising three shots.

FC300X - 20.7mm (equiv) f/2 lens
f/2.8 - 1/400 secs - ISO 100





## Image quality

The latest iteration of the Phantom lets you capture images in a raw DNG format for better image quality and processing options. Even if the on-board camera can't shoot Raw, with some careful processing of the captured images, you will still get some great results.

## Going large

If you are desperate to get a full-sized DSLR airborne, you will need to dig deep into your pockets for a larger six-propellor hexacopter, or even an eight-propellor octocopter. These craft are monsters in terms of their size, complexity and cost. You could well expect to pay upwards of £20,000 for a top end rig and that doesn't include the camera. They are for the serious professional, with proper certification. If you want to fly and shoot for commercial gain, then you need special permissions from the Civil Aviation Authority. Other countries have their own regulations regarding this too, so it is prudent to check before embarking on such an endeavour.

If you are flying for fun, then CAA permission isn't required but you are expected to adhere to some basic regulations, chief among which is that you are actually able to demonstrate proper control of your aircraft. You do not fly over or within 150 metres of people, property and congested areas. You must stay away from restricted airspace such as airports and military installations and never fly the craft out of direct line of sight beyond 500 metres horizontally or 400 feet vertically.

To be honest if you are shooting aerial landscapes, you are generally flying within a reasonable distance of your subject anyway. Cameras such as the GoPro have such a wide field of view that flying too far away and too high puts your subject very small in the frame. The motto 'fly low, fly slow' is a good piece of advice. All the compositional rules and use of light still apply and aerial landscapes do benefit from being shot at sunrise or sunset when long shadows are cast across the land. An additional benefit of shooting at these times is that the wind will often be more still and not buffet your aircraft so much. So there you have it - you can have fun, learn a new skill and capture some amazing views into the bargain. ■

# Deconstructed landscapes

## Distilling a landscape into its component elements

**Landscapes are great, they are often the one thing new photographers will go and shoot first. Landscapes are just so accessible, you usually don't need to go too far before you find a local beauty spot, there is plenty of ambient light so you don't need additional lighting, and they are great places to explore camera craft at your leisure. You will normally arrive at your destination and try and shoot the widest angle possible, feeling the need to get everything in shot. Not a bad idea, wide panoramic landscapes are beautiful. How about putting that wide-angle lens away, and for your next journey out, try something a little different. How about trying a deconstructed landscape?**




**The beauty of shooting a deconstructed landscape is all about keeping your gear choice simple. Just you, your camera and one lens. Don't burden yourself.**

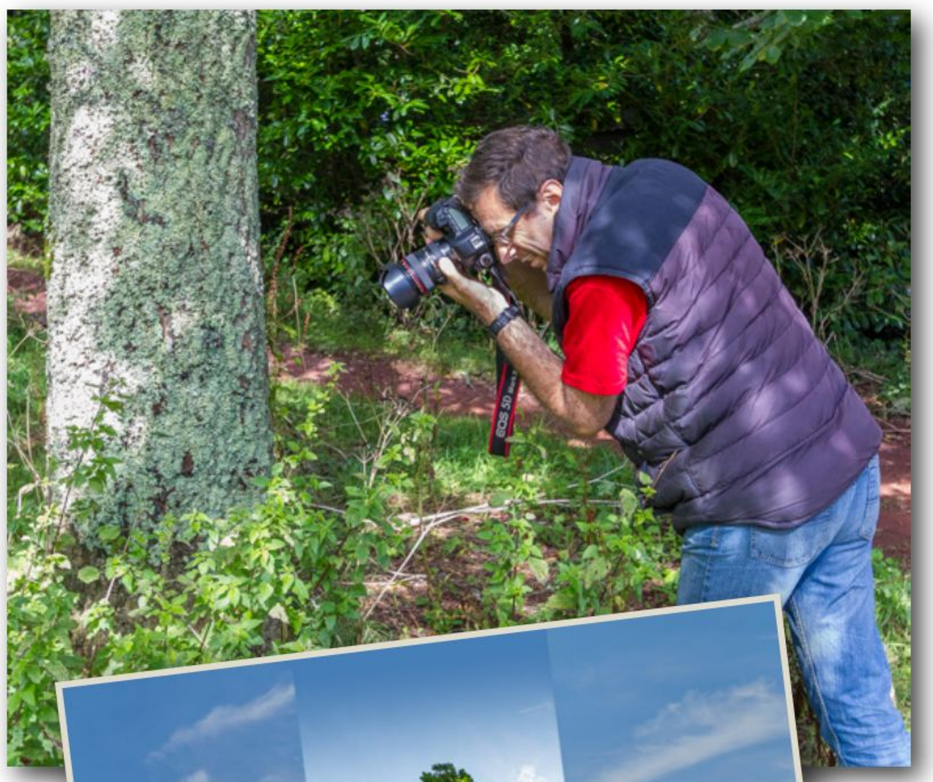


"...think about what actually comprises the landscape you are in..."

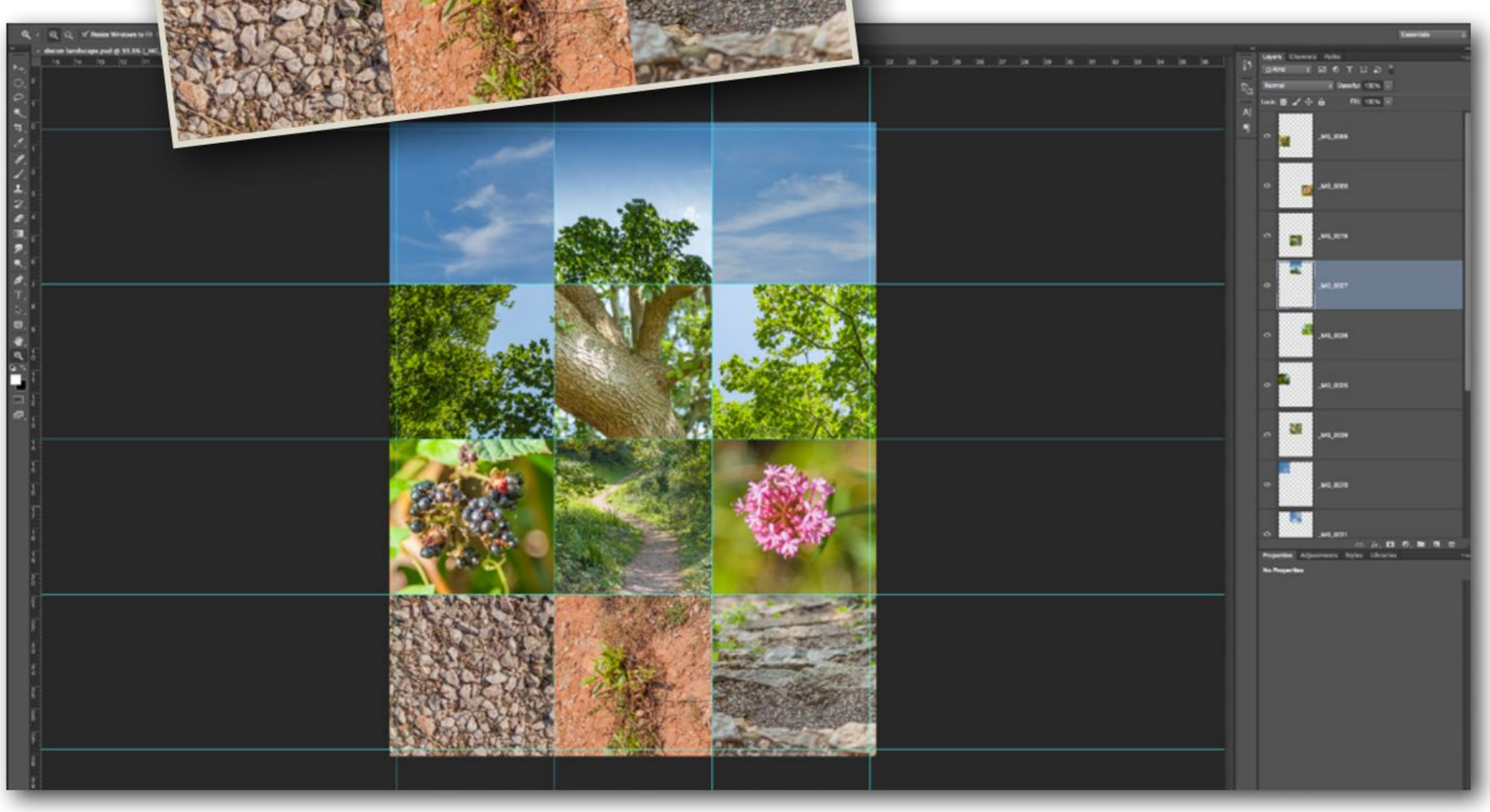



A 50mm f/1.8 prime lens can let you achieve some very shallow depth of field. This Canon version is extremely cheap at just £80 and is very good for the price.












First things first. What is a deconstructed landscape? Rather than just shooting the entire scene before you, a deconstructed landscape requires you to stop and think about what actually comprises the landscape you are in. You don't shoot the scene in its entirety; you shoot fragments, pieces, the things that make up the landscape around you.

You need to look down at the ground, all around you, and above you. Record the scene in a number of detailed parts. Then when you get back home, you can pick out your favourite elements and create a composite or collage of multiple images, that reflects how you see the landscape you were in.

## Your landscape

If you were on a woodland walk, you could show the trail you were walking on, the bushes around you, that dead tree off to the side, the moss on a stone by a stream, the canopy of trees above you, or where the sky pokes through in the gaps in between the leaves. It's up to you. It becomes a personal insight into what makes a landscape work for you.

The beauty of this kind of project is that you don't need masses of equipment. Keep it simple, just you, your camera, and one lens. Don't worry about additional lighting, like a flash. Just use what you have. Don't fret too much about using higher ISO settings if you are in a shaded part of a forest. Concentrate on keeping your shutter speeds high enough to avoid camera shake. There is a shutter speed vs. focal length rule that is worth thinking about, which is: Minimum Shutter Speed (sec) = 1/Focal Length (mm).

So for example, if you are shooting with a 100mm prime lens, then your shutter speed would need to be 1/100 of a second to avoid any camera shake. A 50mm lens would require a shutter speed of 1/50 of a second and so on. In practice though consider that a minimum - always use faster shutter speeds if you can, to ensure you keep your shots as sharp as possible.

## Pick your prime

Lens choices are up to your personal preference. For a wider range of compositional choice you could perhaps go with something like a 24-105mm zoom or you could even discipline yourself to use a fixed focal length lens like a 35mm or 50mm prime.

The benefit of a prime is that you can achieve some very shallow depth of field effects that aren't necessarily possible with the majority of zooms; you can get an 50mm f/1.8 prime very cheaply these days. Either way go and have fun, there are no rules; shoot what interests you but try to avoid the obvious wide angle 'show it all in one go' approach.

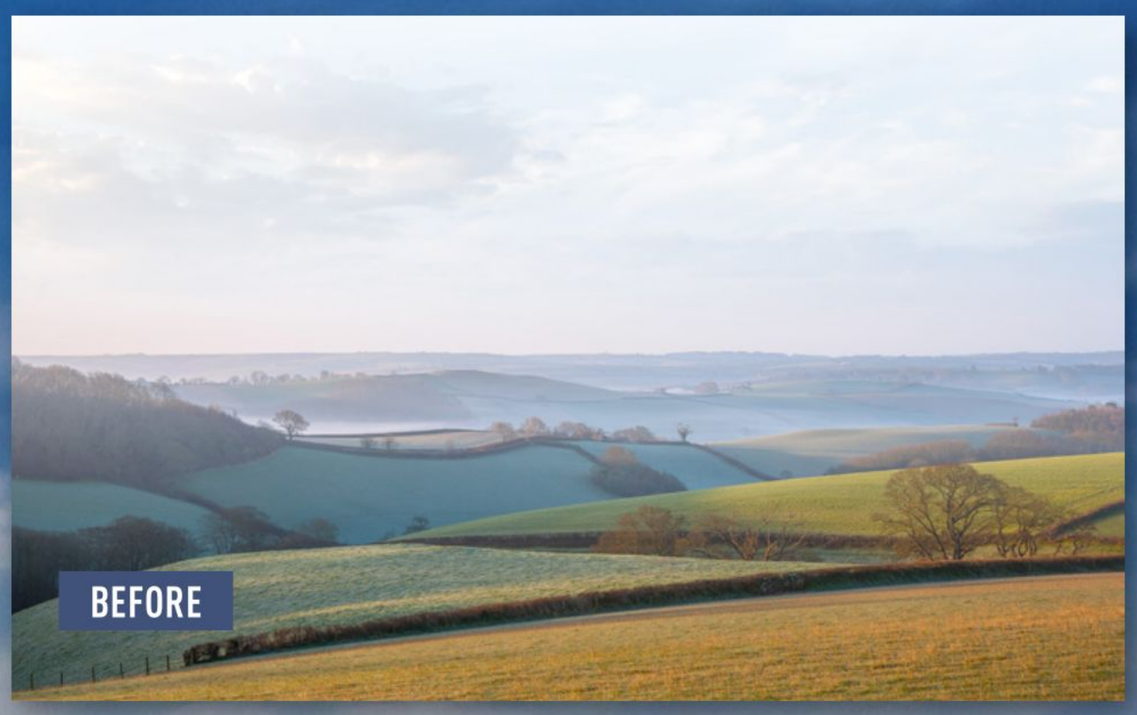
All that remains is to process your shots in your favourite Raw processing application and pick out the best candidates for your composite image. Then you can load them up into a layered document in an image manipulation program such as Photoshop, Elements or Gimp and combine them in a creative fashion that gives the viewer a set of multiple snapshots of your landscape, without once showing it in its entirety, and there is your landscape, deconstructed. ■

# Magic cloth technique

## A low tech alternative to filter systems

If you have ever shot landscapes to any great degree, you have no doubt encountered the particular exposure challenges that go with them. Scenes with your beautiful foreground interest and far off mountains and dramatic skies are perfect landscape subjects. When you take your shots, you realise that certain factors come into play. The main one being that your camera, no matter how new and expensive, cannot see all the subtle tones and variations in light and dark that the human eye can. A typical daytime landscape of foreground and bright sky has such a large dynamic range from the brightest highlights to the deepest shadows and is far beyond the scope of your camera. You can expose your shot for the sky and have your foreground very underexposed or the reverse where your foreground is correctly exposed but the sky blows out to white and all detail is lost. Given that in pretty much every daytime landscape your sky is always much brighter than the rest of the scene, this issue is ever present.

At this point you might be considering reaching for a graduated neutral density filter. They are darker at the top and fade to transparent at the bottom blocking more




AFTER

This scene is a great example of how the magic cloth can recover a picture. A standard exposure results in the sky being blown out to white with no detail visible in the highlights but by just adding a screw-on ND filter and using a piece of card to cover the sky area, we can underexpose the sky and bring detail back into the clouds. Read on to find out how.

light at the top of the shot where your sky is and leaving the remainder of the scene unaffected, giving you a much better overall exposure that retains highlight detail.

The choice of filters is pretty vast though. Do you use a hard grad, soft grad? What density of filter do you get? A two-stop grad filter? A four-stop grad filter? Where do you stop? Let's also consider the fact that, as is the way in photography, these items will not be cheap. A good range of quality filters and filter holders could possibly set you back almost as much as you paid for your DSLR camera in the first place. That could be a serious restriction for a fledgling landscape photographer who wants to get as much of his image right 'in-camera' as possible.

It was this issue that prompted landscape photographer Tony Brackley-Prower to pioneer the technique that is widely known as 'the magic cloth technique'. Whilst there is not necessarily any cloth or magic involved, the technique only requires that you use an object that can completely block light entering the lens of your camera. Anything from a beer mat to the sleeve of your jumper can be employed. If you're staring at these words wondering just what on earth that means then read on.



A screw-on ND filter in the 8-stop range for your favourite landscape lens is the main component to using the magic cloth technique. Find yourself a piece of card and you are all set.

First and foremost, this technique has to be employed with longer exposures of 2 seconds or more. Put simply, you are using an opaque object (let's say a piece of card) to cover the camera lens blocking out the light. Then using your camera's timer or a cable release you open the shutter and whilst the exposure is happening you raise the card up, uncovering the lens from the bottom upwards. A fast shutter speed would make it impossible to use this technique, so be aware of this particular issue.

As an example, a 10 second exposure would give you plenty of time to slowly raise the covering up. At the end of the exposure the foreground has been exposed longer to the light in the scene than the sky, resulting in an underexposed sky. That is a bit of an oversimplification, as the amount of time you block the sensor will result in a lighter or darker image. The covering must be kept moving at all times. Reduced movement of the card will result in a hard grad effect and increased movement will give you a similar effect to a soft grad.

Originally this technique was developed for low light situations where the longer exposures were welcomed, giving you more time to move your lens covering. However, with the addition of one screw-on ND filter, preferably an 8-stop filter or more, you can take this technique out into the daylight.

## How it works

The procedure is pretty simple. Set up your camera on a tripod and compose your shot **[1]**, making sure you have your autofocus set to manual and pick your point of focus in the scene. You can also take this opportunity to figure out if you'll need to cover all or only some of the scene to balance the exposure. At this point you can estimate roughly where your card needs to be in its start position **[2]**. Using live view gives a good idea of where to place your card at the start of the exposure. Once the composition and focus are set, screw on your ND filter **[3]**. The camera will attempt to meter the scene, but it is worth switching to manual mode and trying a few test exposures.

With your test exposures you are looking to get your foreground as well exposed as possible. In fact, slight overexposure by 1 stop is recommended as a starting point **[4]**. After a couple of test shots, my exposure for the scene was aperture f/5.6, shutter speed 10

1




2




3




4

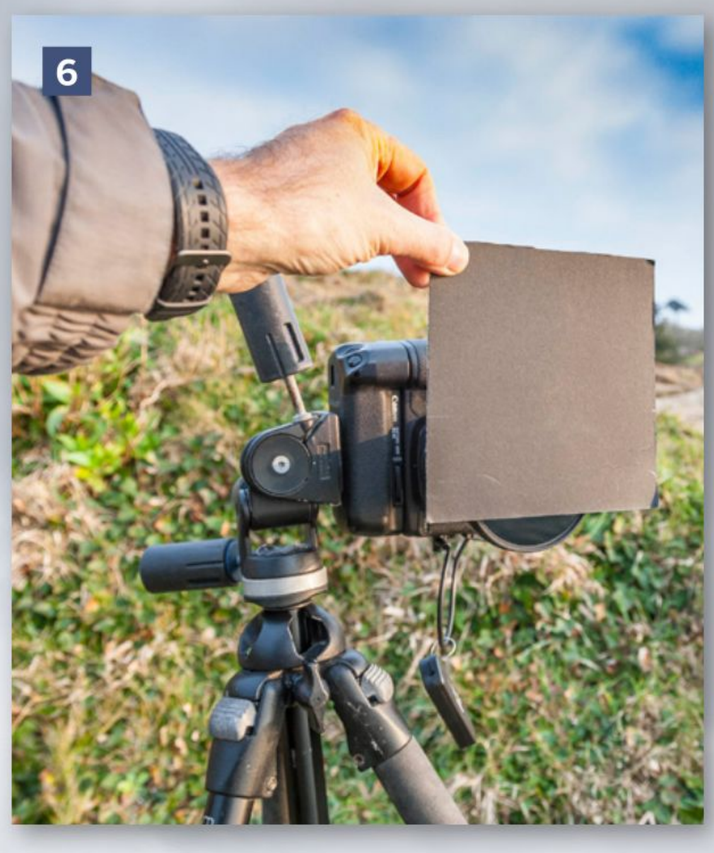


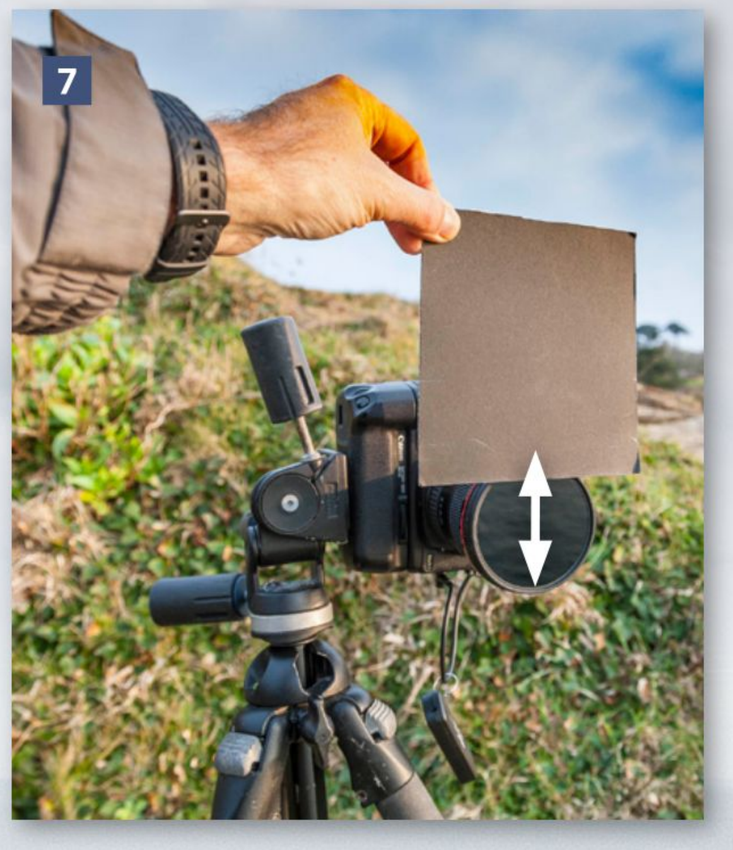
Scene slightly overexposed by 1 stop

### Keep settings on manual




5


6


7

seconds at ISO 50. You could have reduced the aperture still further to f/16 or more for even longer exposure times, but 10 seconds was a good starting point **[5]**.

Next you have to cover the lens with your 'cloth'; in this case it is a piece of card **[6]**. Press the shutter button and the exposure begins. As it starts, slowly raise the card **[7]** revealing more of the lens, move the card to the top of the lens and then out of shot **[8]**. You need to try and time the raising of the cloth to coincide with the duration of the exposure. Keep the card covering the lens for too long or still having it in shot when the exposure has finished will result in some very bad underexposure **[9]**.


9

Card left too long at the top of the lens

## Keep it moving

A key factor is that you always keep the card moving. Never hold it still and always make sure it is as close to the lens as possible otherwise light may leak in around the sides altering the exposure. Once the shot is taken, you can review it and see if you need to modify the length of time the card is blocking the lens. You may find that the card has to spend more time covering the top half of the shot to block more light for longer and therefore reducing the exposure in the sky.

Unlike using a filter system, the magic cloth technique does require some trial and error. It is surprising how quickly it becomes quite natural and intuitive. Yes the technique has to alter for every shooting situation but generally for most landscape shooting situations it does beat having to carry around a plethora of filters and holders. One screw-on ND filter that you can get for about £40 on eBay for your favourite landscape lens and a piece of card and you are set.

Not only that, it is a great way to visualise the effect you are having on your exposures, and a certain satisfaction can be gleaned from knowing you did it all in-camera. ■


8

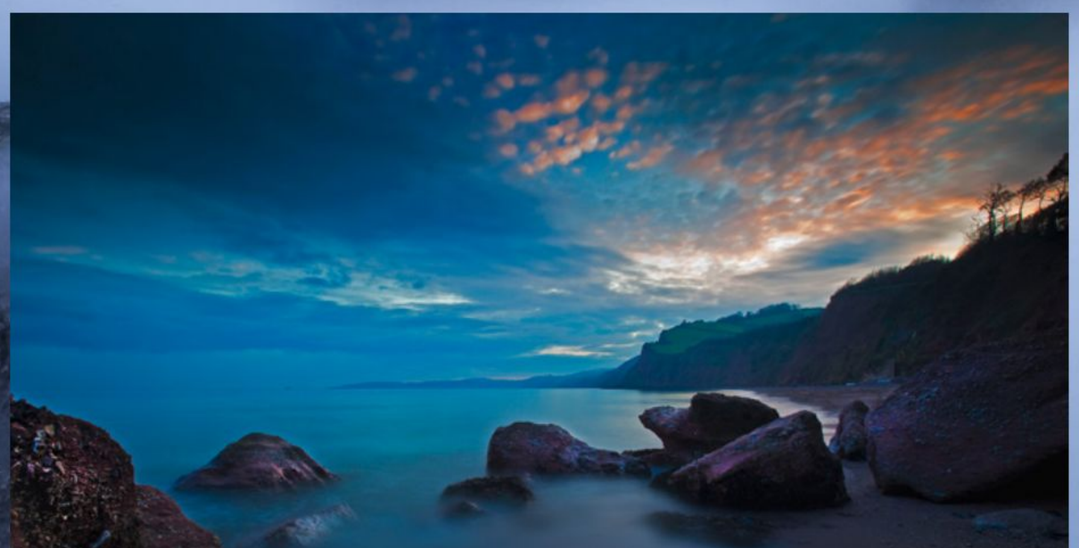












# Image editing projects




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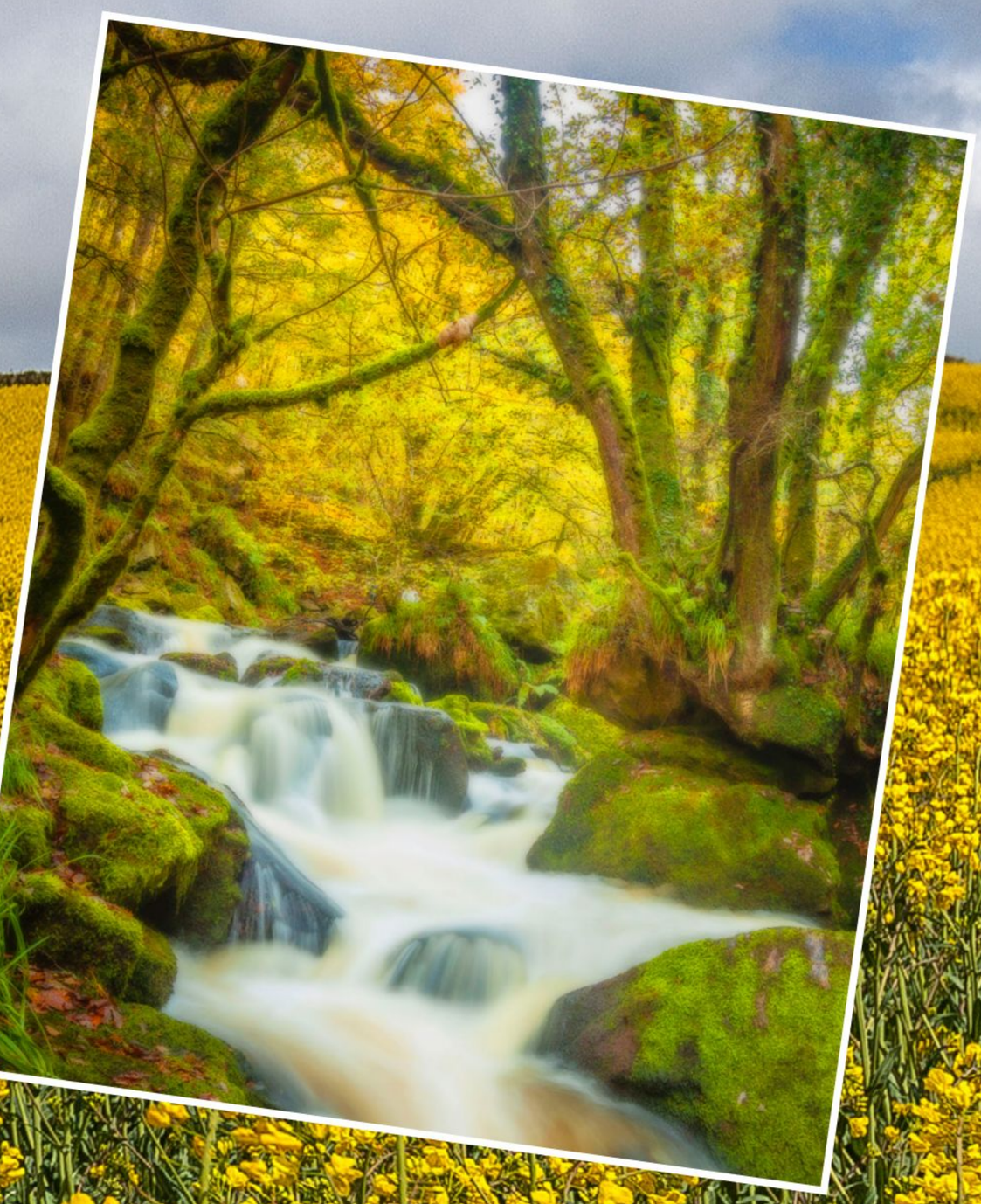

**There was a time not that long ago, when image editing meant producing a print in a darkroom under an enlarger; when the image was processed and fixed, breaking out the brush and ink and physically painting on the print to 'retouch' it to enhance it or remove blemishes. Things have changed quite a lot since then.**

One of the great things about digital images is that it's very easy to improve or alter them using the right computer software. There are dozens of image editing packages available, ranging from simple, easy-to-use programs costing under £20, all the way up to the professional standard Adobe Photoshop.

It can be easy to rely too much on image editing to save a badly executed photograph. It is always good practice to get as much right 'in camera' so you have much more to work with when it comes to the post process stage. That said, there are many things you can do in an image editing program or with Raw processing software to elevate an already great shot and make it an awesome shot.

On the following pages you'll find a selection of tips and techniques for enhancing your landscape images. Of course we've barely scratched the surface when it comes to creative image editing but hopefully you can combine and adapt these techniques to produce the results you're looking for.





# Sky replacement

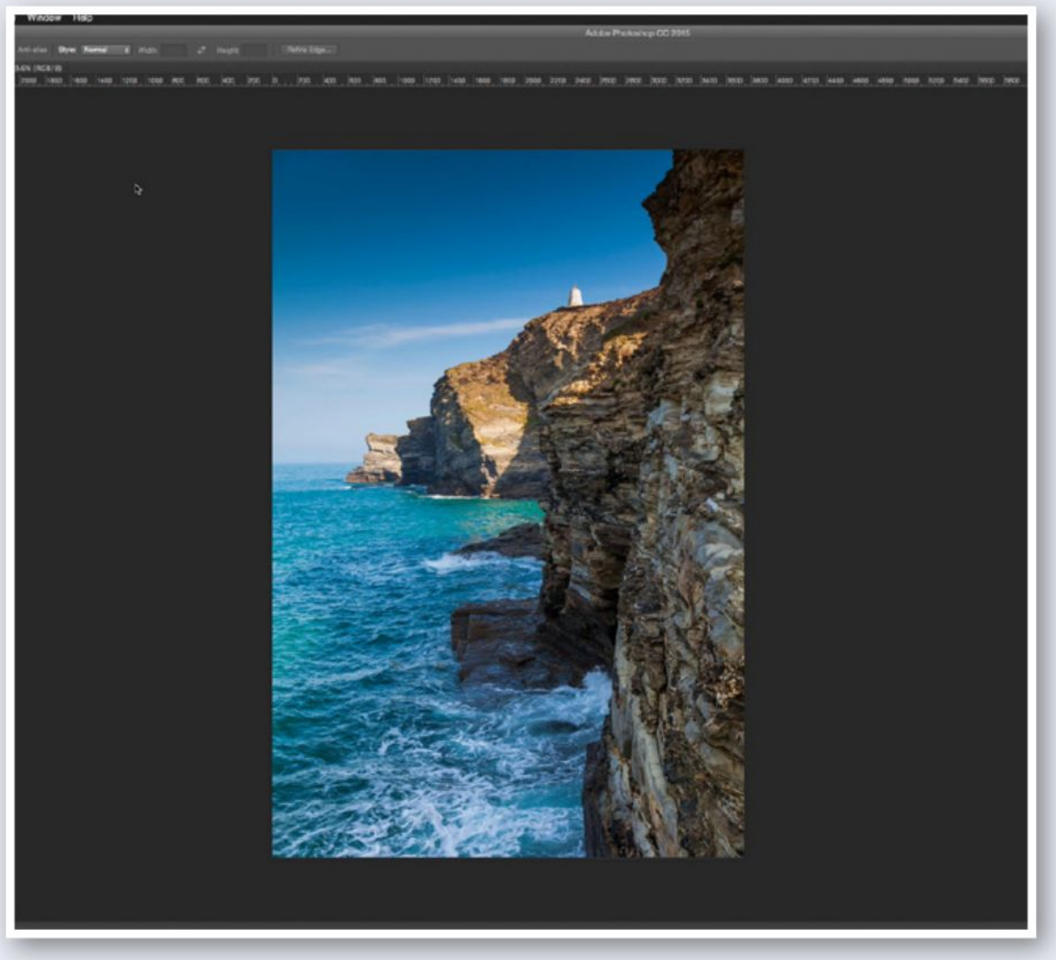
## Add drama to a dull sky

**In the UK, the weather is neither the most predictable nor the sunniest and let's be fair, it is the butt of many jokes. However the law of averages says that sometimes, just sometimes, it must work in our favour. Suddenly you have a gorgeous clear day and out you go, shooting away without a care in the world. When you get home and review your shots, you realise that the cloudless sky looks too bland.**

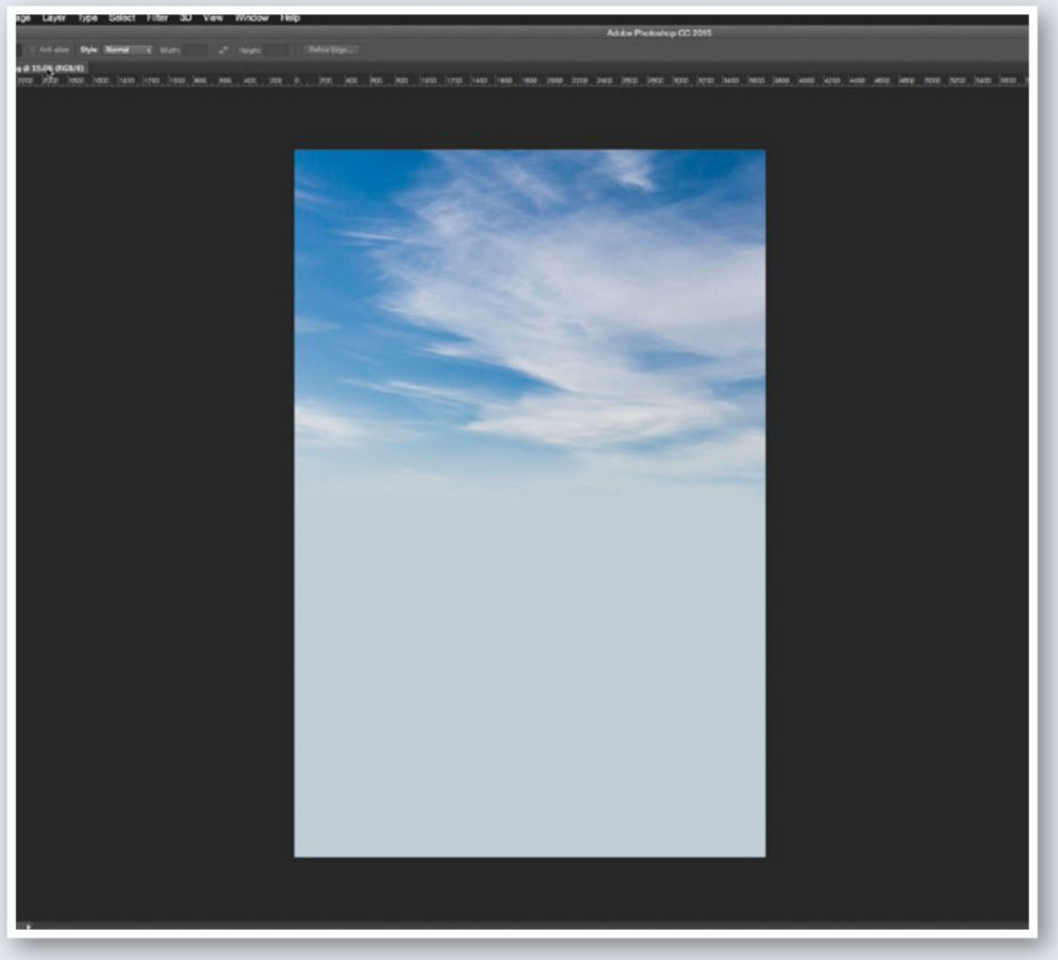
A sky without clouds just isn't as exciting to look at. It is ironic though, that the lovely blue sky is very helpful in adding a totally new one! We could go straight for the Refine Edge tool but as is the way in Photoshop, there's more than one way to approach this technique. Here's a nice quick and easy method that works well with blue sky replacement.



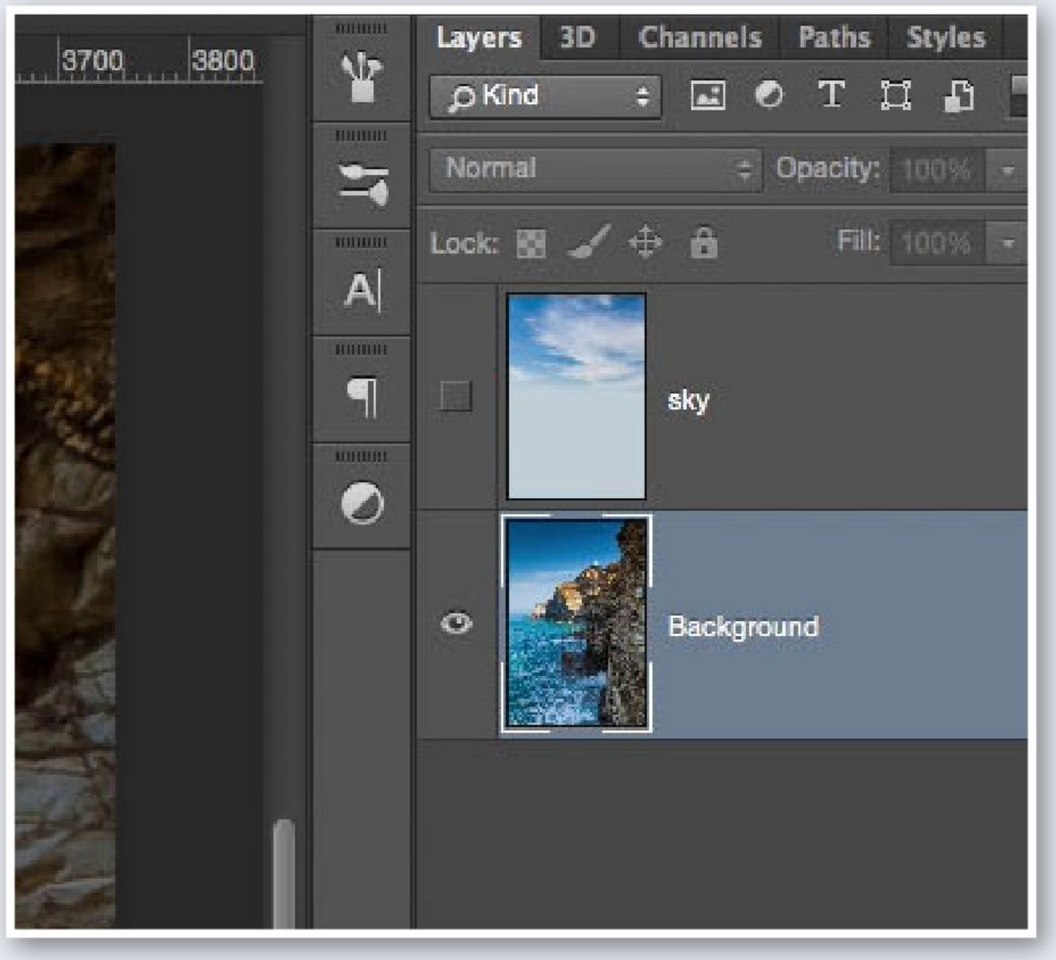
PHOTOSHOP



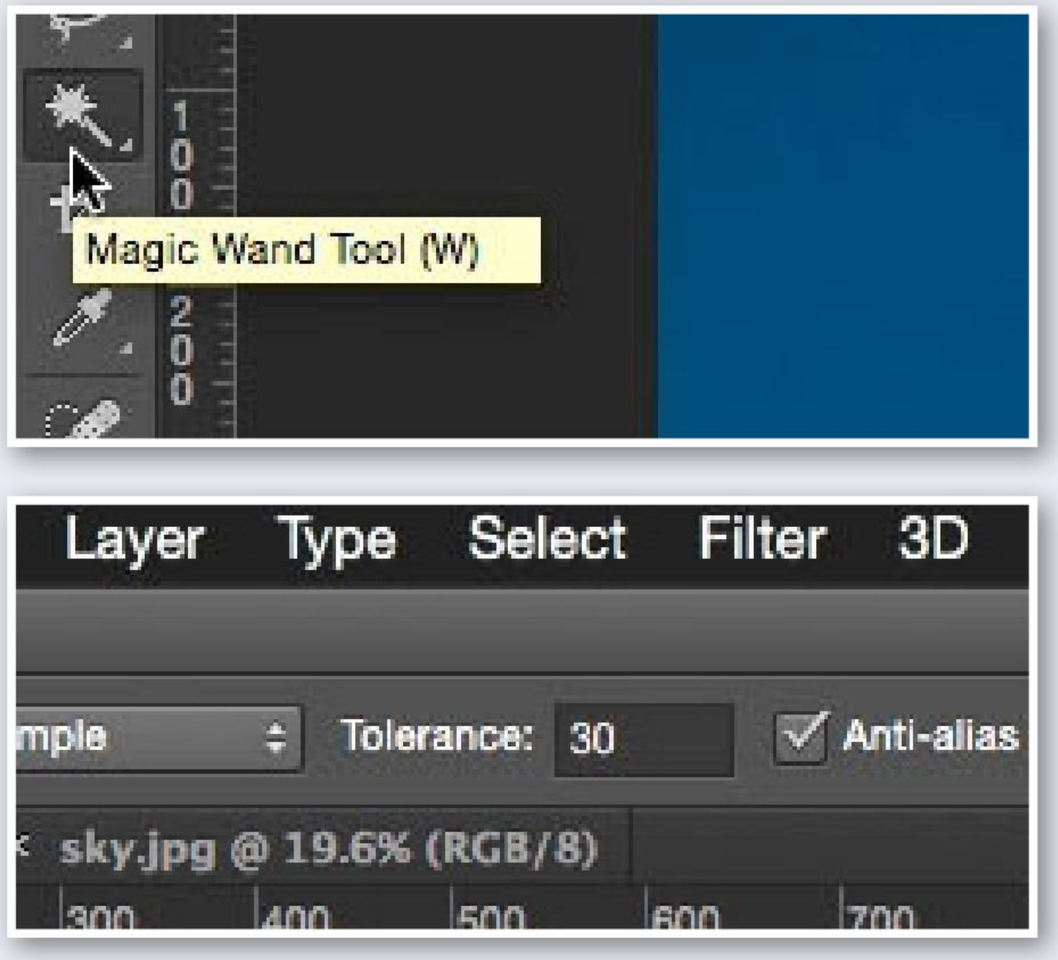
01 We have our original image which was taken on a lovely day but the sky is a little boring, so we can use the blue sky to help us select this area to fill with a new, more interesting sky.



02 You need to choose something that won't look out of place or just plain odd when you drop it into your original image. Try to pick a sky with similar lighting conditions and shot from a similar perspective.




03 Now copy your sky image and paste it into your original scene. You should now have two layers, the base layer and a new layer above it covering the area we want to replace, which we shall name 'sky'. For the moment, make this layer invisible.




04 Make sure the 'Background' layer is active and go to the toolbar and select the Magic Wand Tool (W). Set the Tolerance to about 30 and check both the Anti-alias and Contiguous boxes.

PHOTOSHOP

# Sky replacement



**05** Click the cursor in the sky area and a selection will be made. Press the Shift key and a small plus symbol appears by the cursor and you can continue to click and add more areas of the sky to the selection.



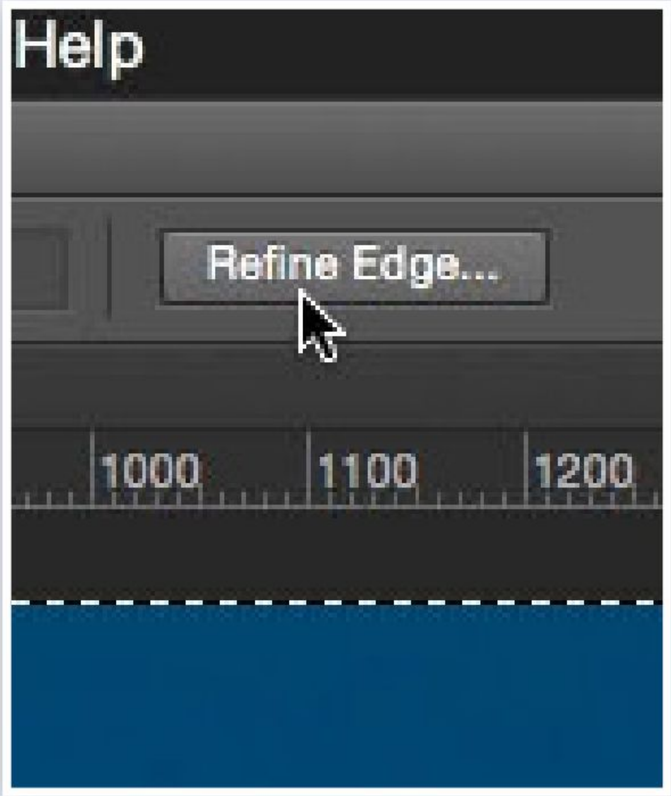
**06** Because the neighbouring cliff edge is tonally different, the Magic Wand will only pick up areas of the blue sky. As you get down to the sea, it will have more trouble telling the difference between sky and sea. That's not a problem.



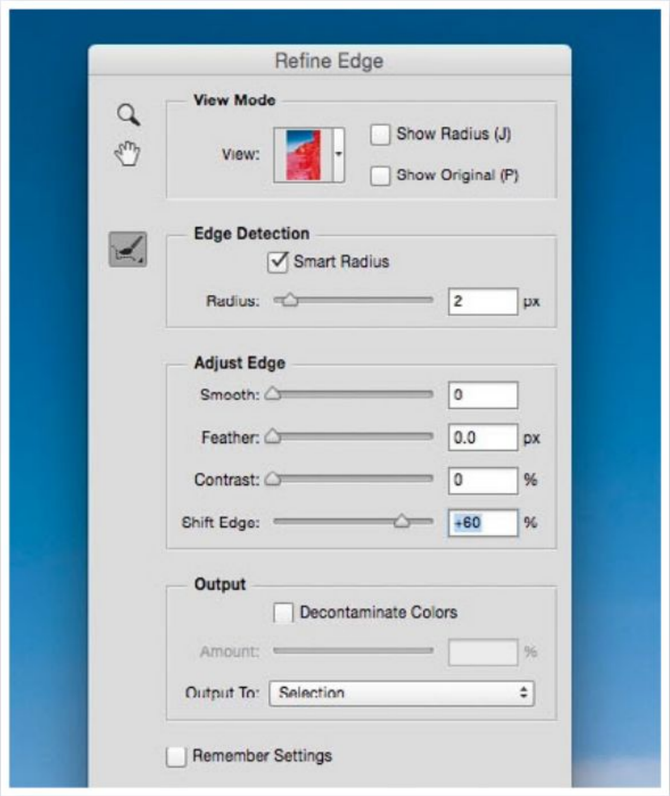
**07** Go to the toolbar and select the Rectangular Marquee Tool (M). Press the Alt key and a small minus symbol will appear next to the cursor. Drag a rectangular selection that runs along the horizon and also encompasses any stray selection areas in the sea.



**08** When you let the mouse button go, the marquee you just drew will clip the selection and you will have a nice sharp line on the horizon. You now have your basic selection of the sky area, outlined by the 'marching ants'.



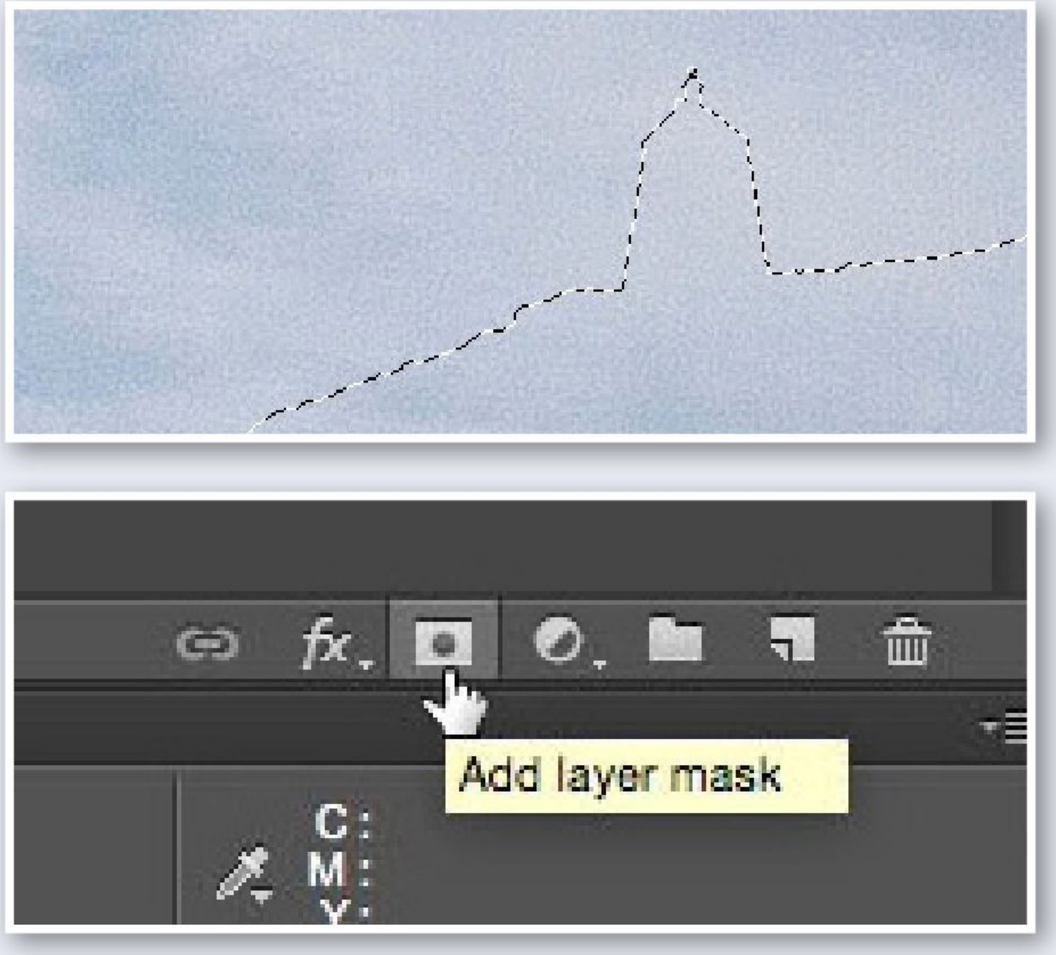

**09** With the selection still active, click on the Refine Edge button at the top of the screen. This will open the Refine Edge dialog box.




**10** Make sure the Smart Radius box is checked and make the Radius about 2px. Make the Shift Edge value about +60% and click OK.



**11** A much more accurate selection will be made, more closely following the edge of the cliff edge to give a cleaner line.




**12** Click back on the 'sky' layer and make it visible again. You will be able to see your selection outlined against the new sky. Keep the 'sky' layer active and click the Add Layer Mask button at the bottom of the layers palette.






**13** The new 'sky' layer will have a mask added to it in the shape of the selection you created. Anything white in the mask allows the new sky to be seen, any part of the mask in black allows the Background layer to show through instead.



**14** Your new sky is in place, making the overall picture more interesting. You need never have to worry about a featureless blue sky again.

# The Orton technique

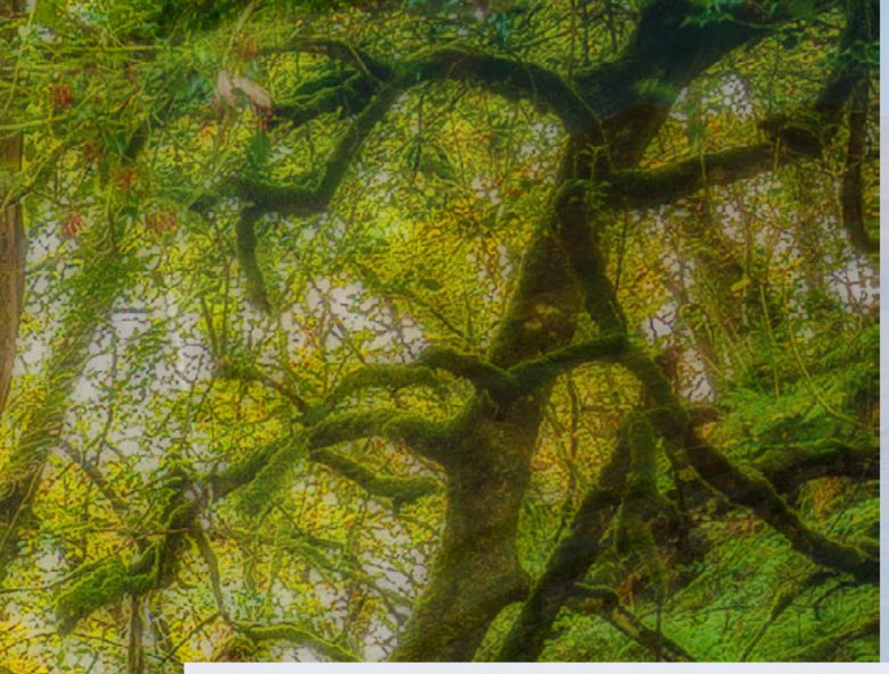
Add dreamlike watercolour effects to your images

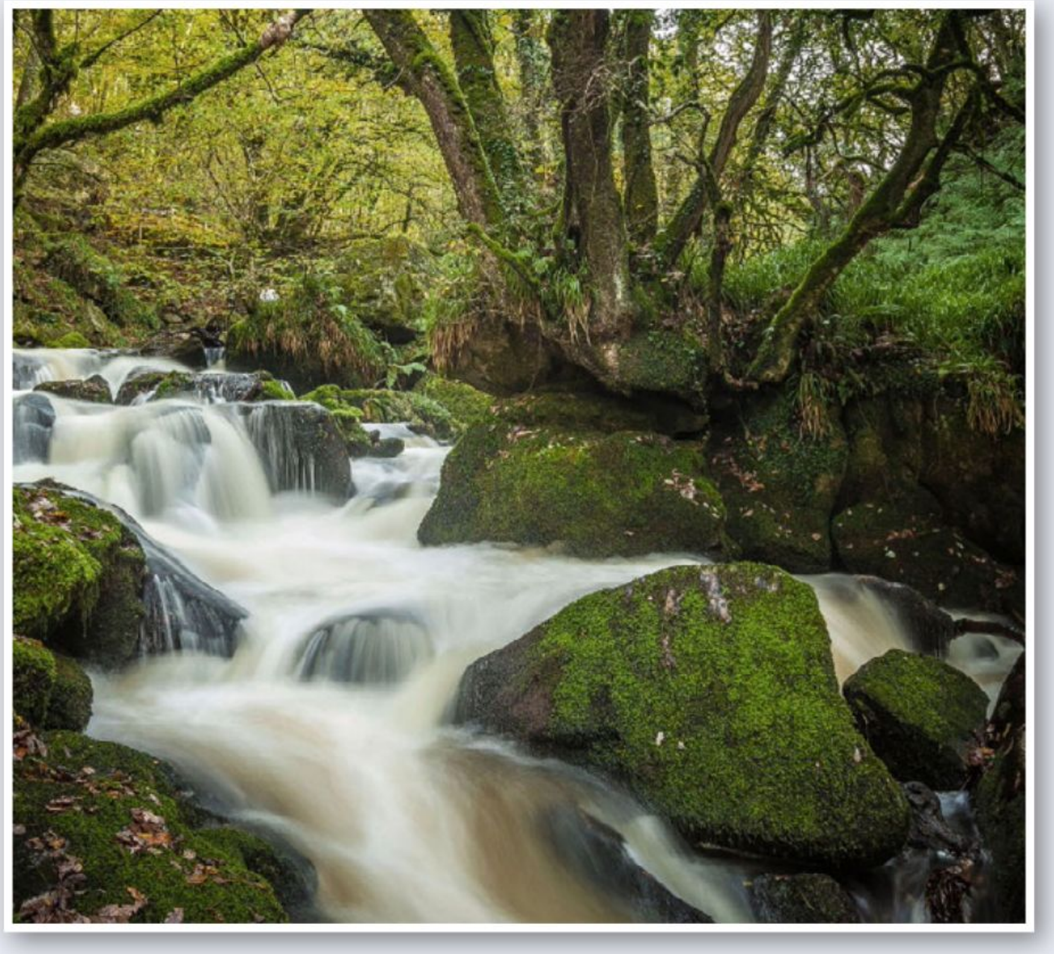
AFTER

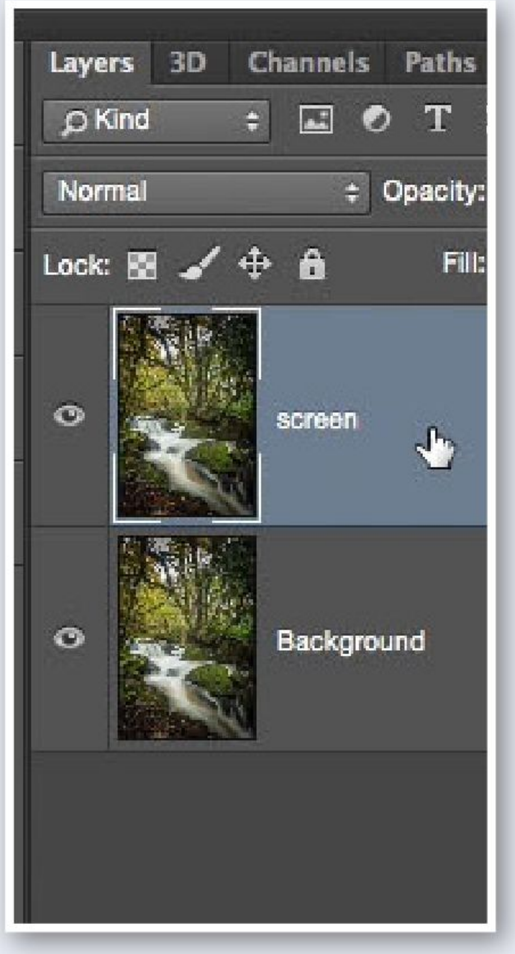


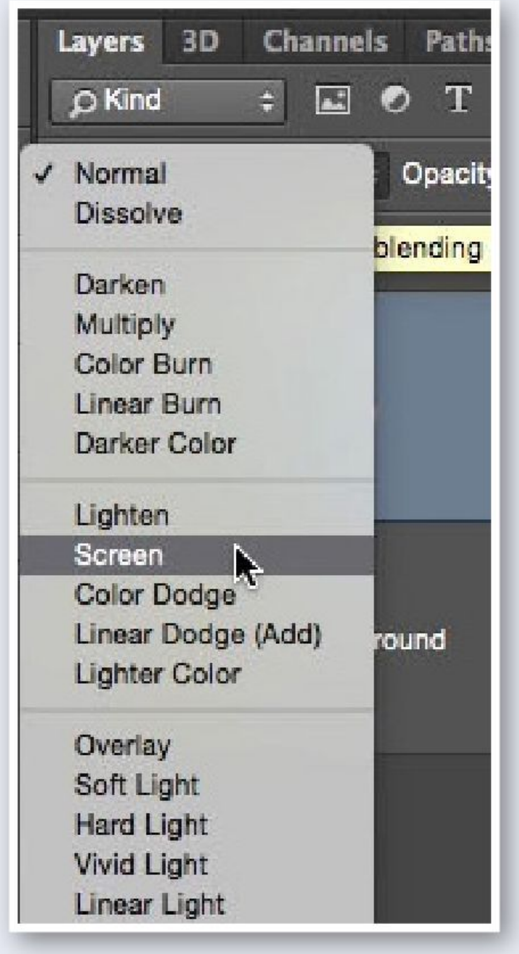

The Orton technique is named after its creator Michael Orton. He developed the technique back in the 80's with slide film, sometimes referred to as an Orton slide sandwich. The original method was to lock off the camera when you had composed your scene and take two shots. One is in perfect sharp focus and the other is completely out of focus to register only light, dark and colour. It was also common to try different exposures of both images. Then back in the darkroom, when the slides had been processed, the idea was to sandwich one sharp image and one out of focus image, align them, and print both of these at the same time. Of course these days, this can be done much more quickly and efficiently with digital files but the basic idea remains the same. Some professional landscape photographers use this technique in their work today, albeit in a much more refined and subtle way. In our example we want to go for the full on dreamy effect.

PHOTOSHOP



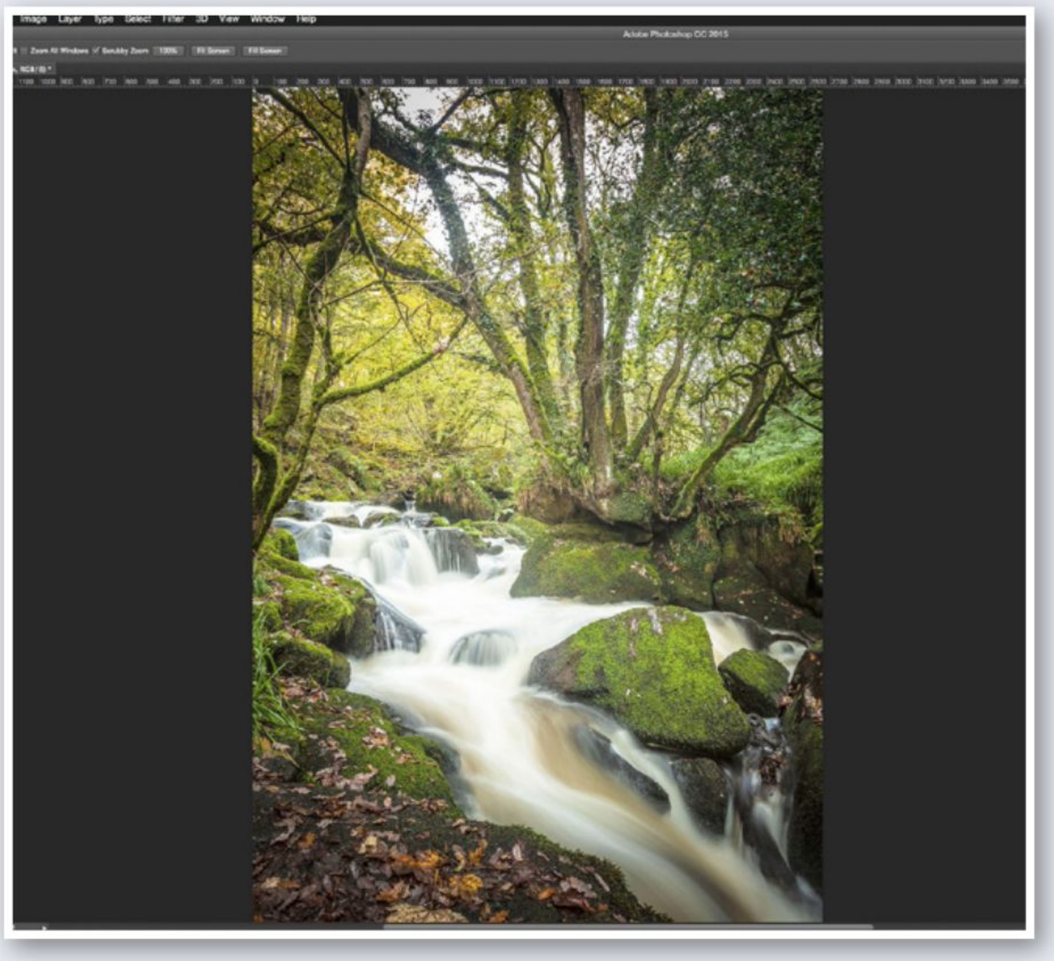


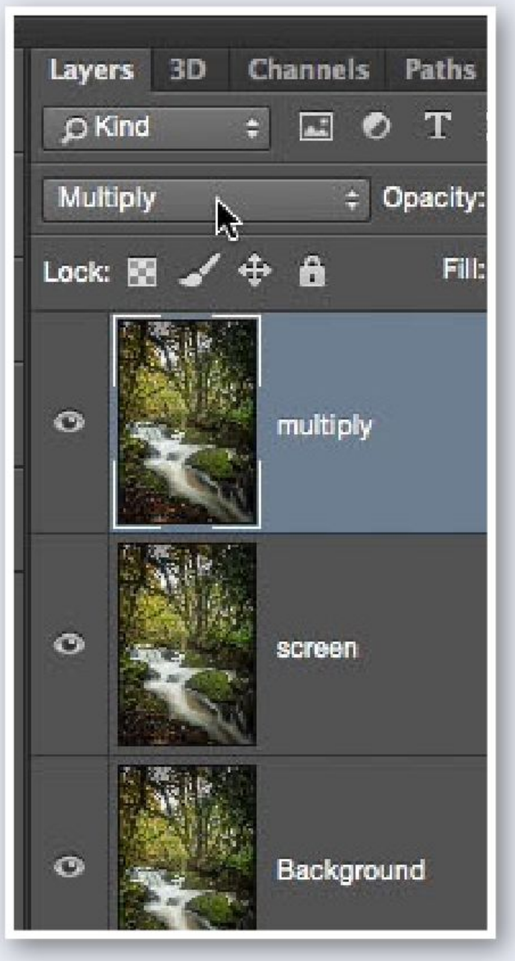


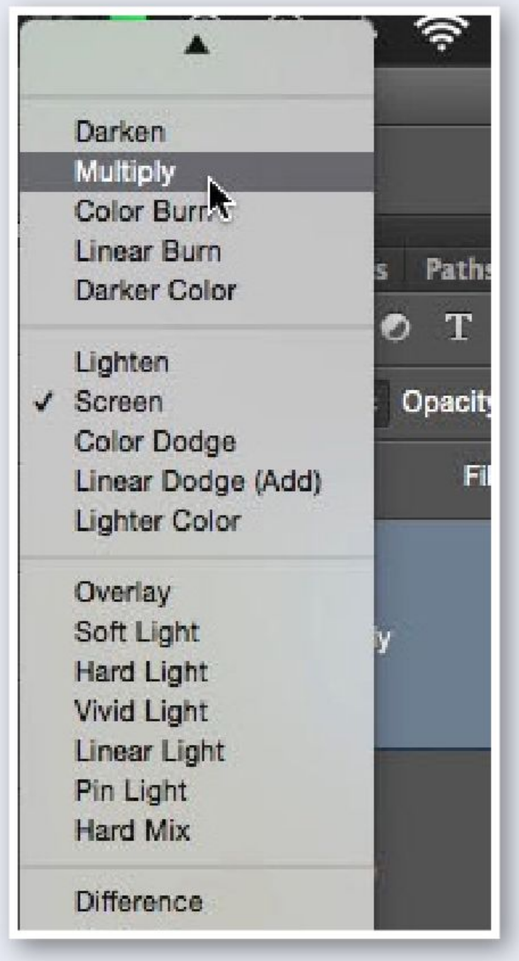




**01** The first step is to choose a relevant image that will work well with the Orton effect applied. Leafy, verdant scenes work particularly well and have a very soft ethereal and romantic feel to them. For our example we have a lovely autumnal forest and waterfall scene.

**02** With your background image loaded, click on its layer thumbnail and press Cmd+J to create a duplicate. Rename this layer 'screen'. Make sure the screen layer is active and click on the Layer Blend Mode button at the top of the Layer Palette menu. Select Screen as your blend mode.





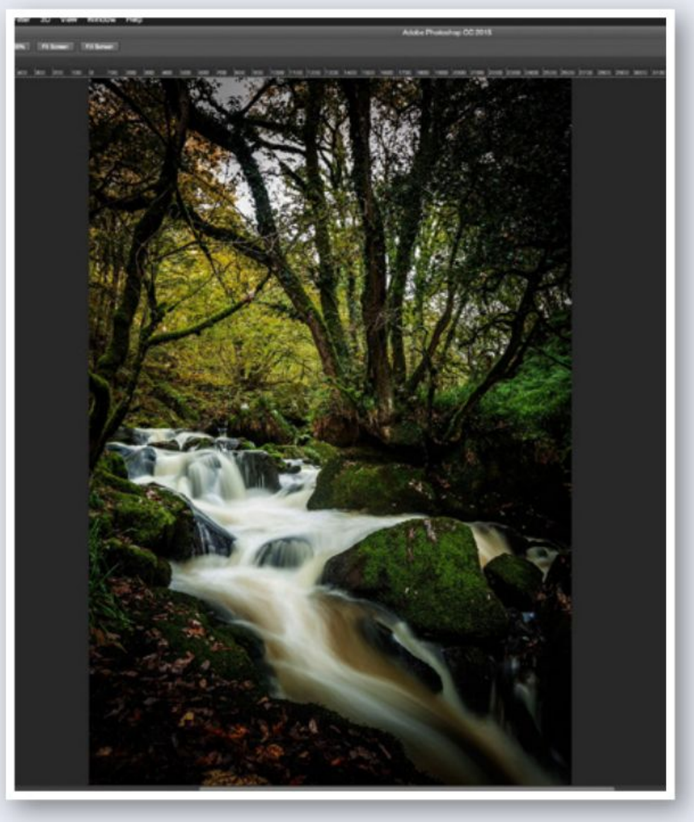




**03** The brightness of the screen layer is added to the background layer and now appears very bright. Not to worry as the next steps will take care of this.

**04** With the screen layer active press Cmd+J once again to create another duplicate. Name this layer 'multiply'. Again go to the Layer Blend Mode button, click and select Multiply as your blend mode for this layer.

PHOTOSHOP

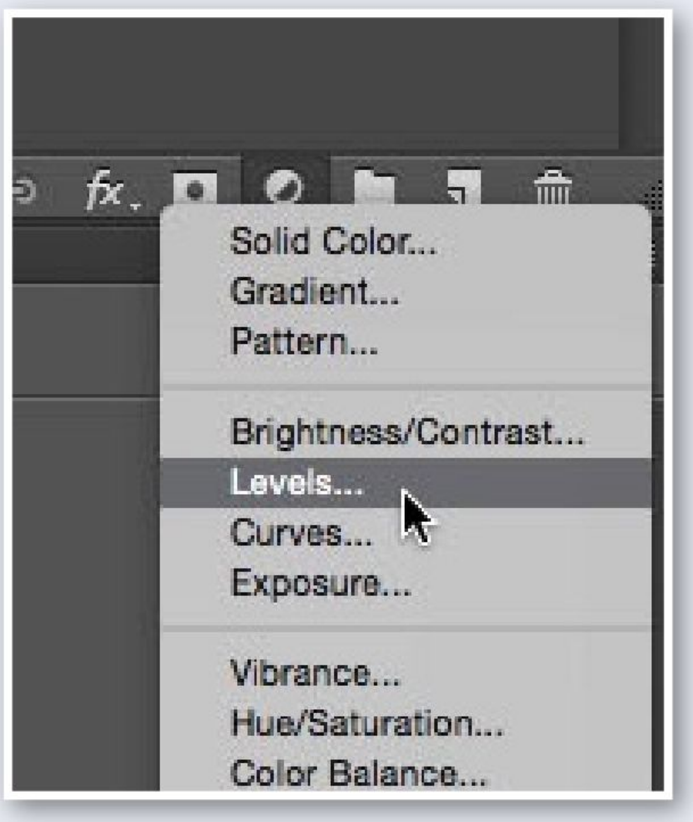
# The Orton technique



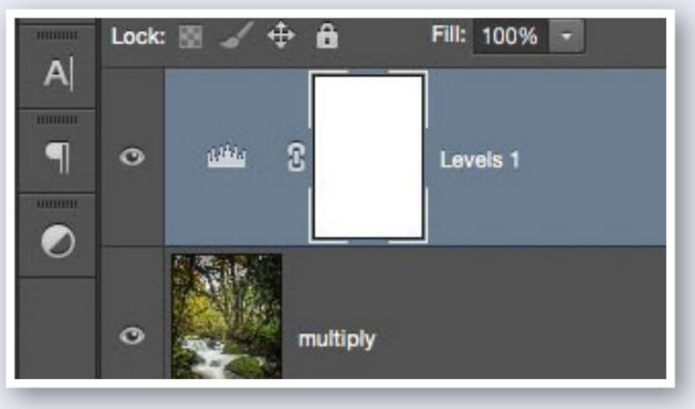
**05** Now the image should appear to be very dark. That's ok though, at this point we can adjust the overall image brightness.



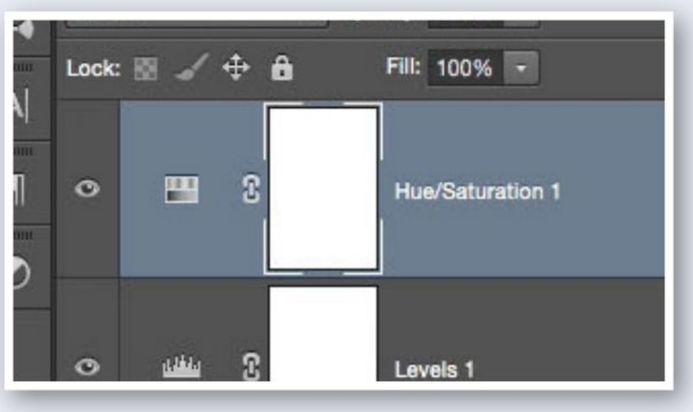
**06** We will need to add an adjustment layer to modify the image brightness. Navigate to the Adjustments button at the bottom of the Layers Palette.



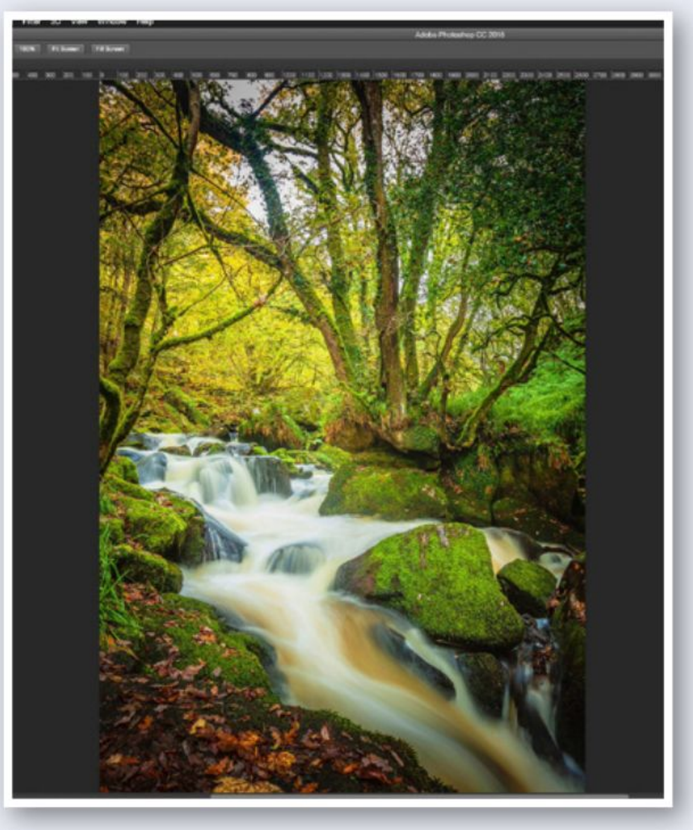

**07** Click the button to open the Adjustments menu and select Levels.



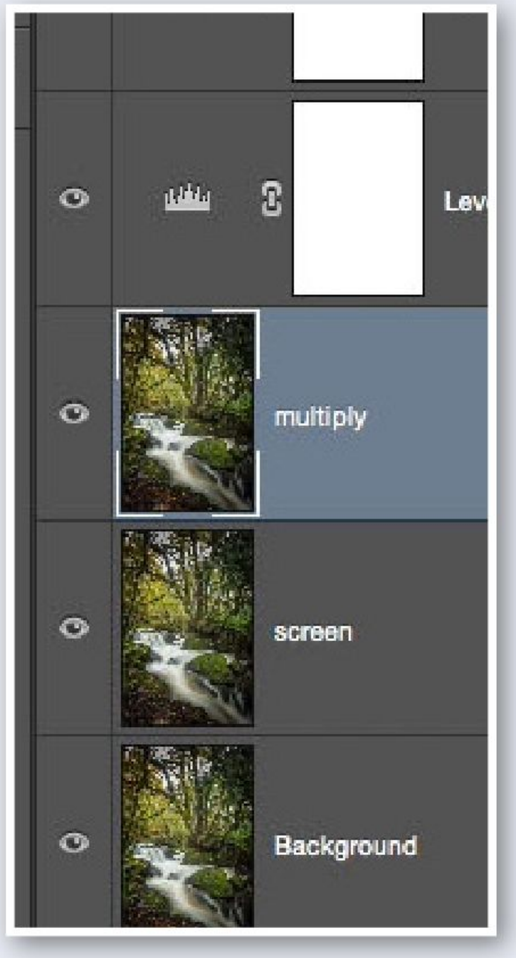

**08** An Adjustment layer appears above your three current layers. With the Levels Adjustment active, its Properties tab will open and the mid-tone areas were lightened by pulling the middle slider to the left.




**09** Click on your Adjustments button again and this time select Hue/Saturation. A Hue/Saturation adjustment layer will appear above your previous Levels adjustment. Increase Saturation until the image is as vivid as you prefer.

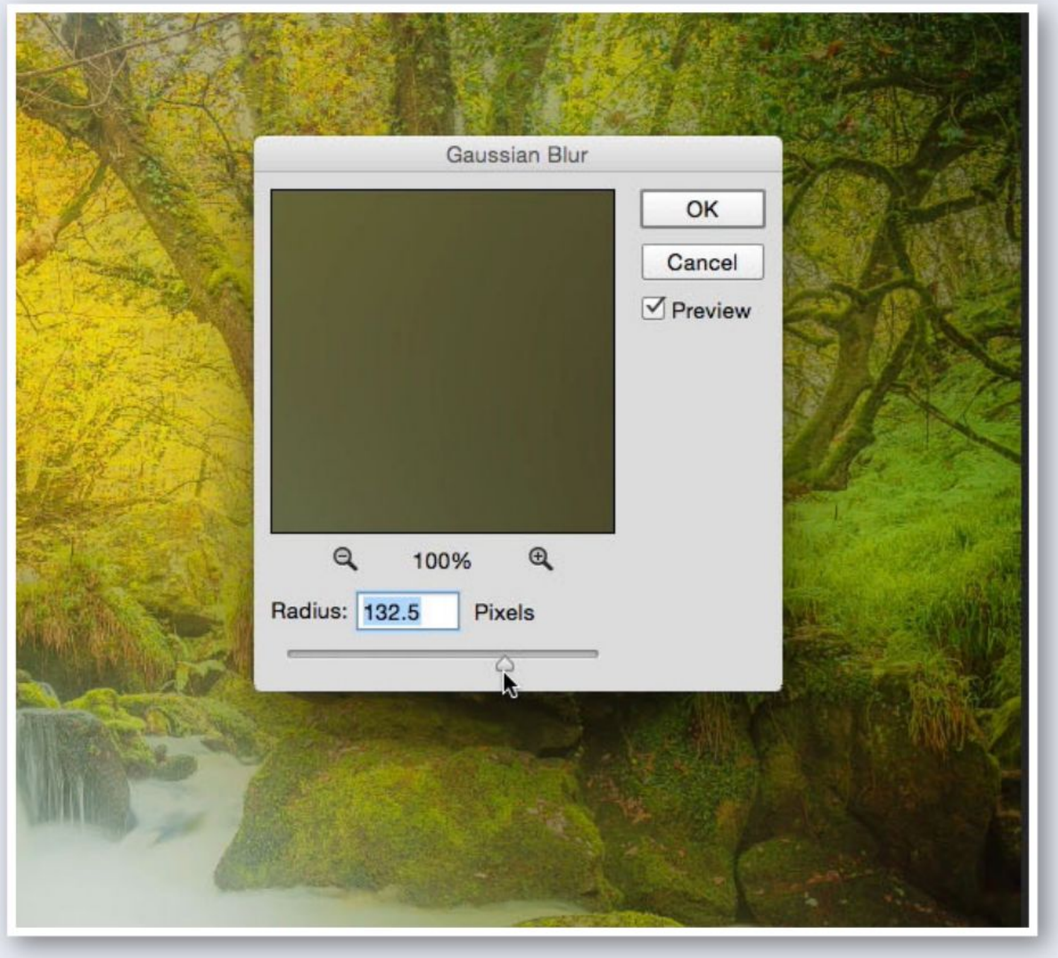


**10** As mentioned in the introduction to this piece, the effect is created by one sharp image and one out of focus image. At this point all the layers contain sharp images, so we need to remedy that now.



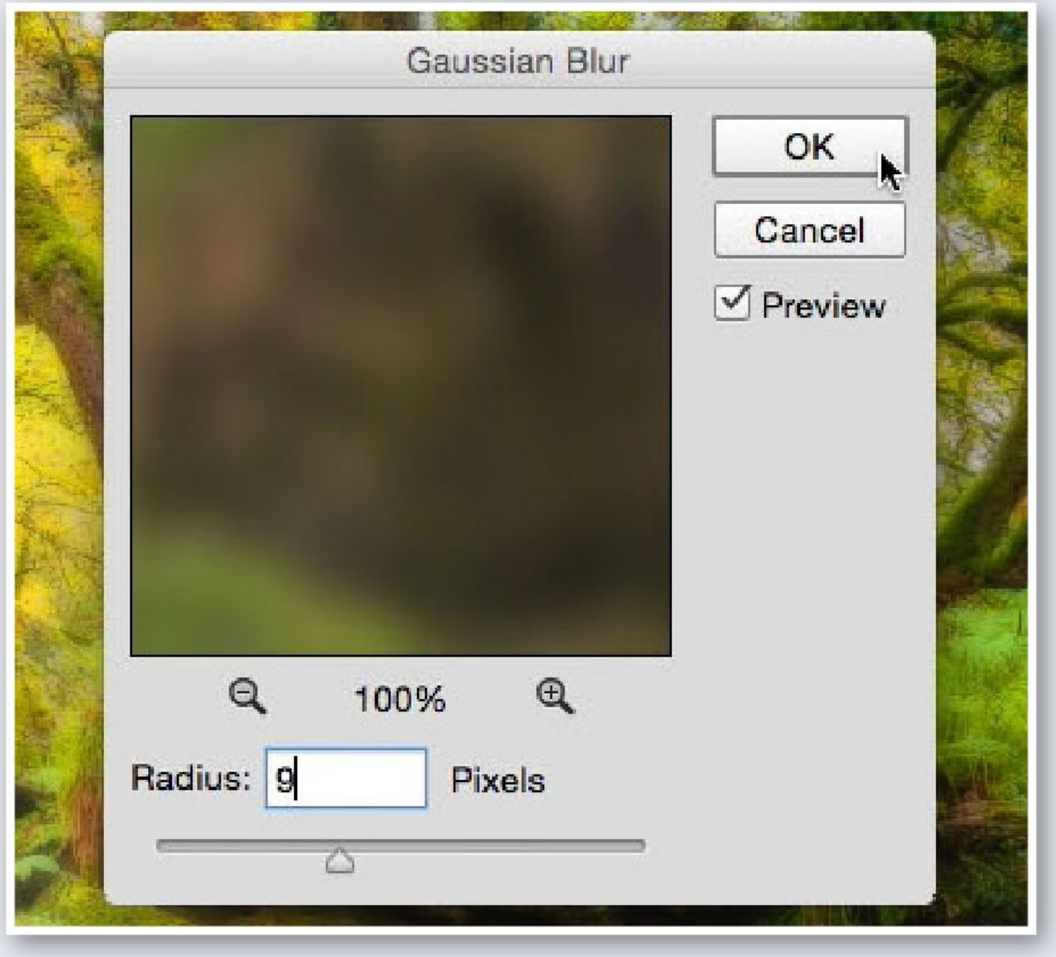


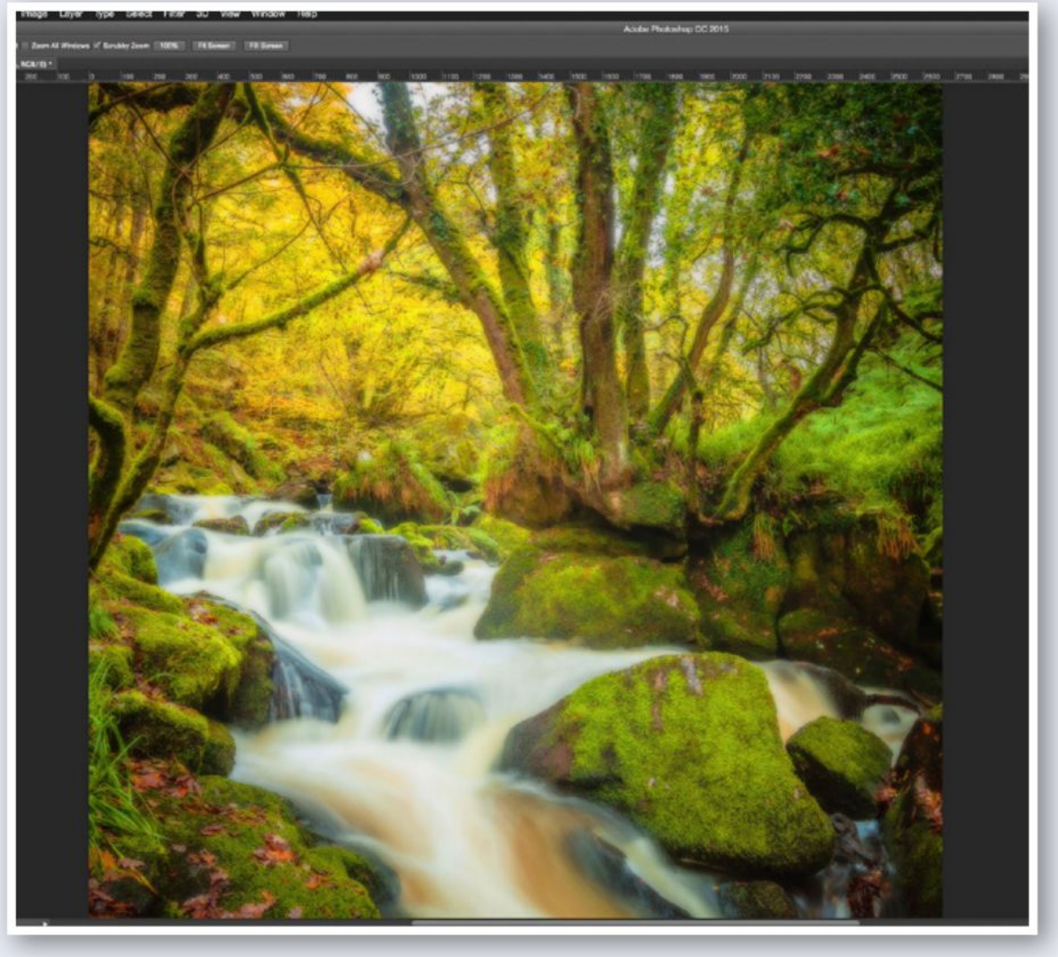





**11** Click on your multiply layer to activate it. Go to the top menu bar and select Filer > Blur > Gaussian Blur.

**12** The Gaussian Blur dialog box will open and here you can set your blur value. This value is determined by the resolution of your image. Our example is 2660 x 4000 pixels.



**13** Very large values do not work very well at all for this effect. In fact even for an image the size of our example, only 9 pixels was enough to generate the effect we were after.

**14** You have your completed image. Now you can experiment with different strengths and application of this effect and turn you landscapes in watercolour masterpieces.

# Curves and levels

## Adjusting shadows, mid-tones and highlights

You'll find the Curves function in the Image > Adjustments menu, or use the keyboard shortcut Cmd+M. The Curves dialogue looks a bit daunting at first; a graph with a diagonal line running up the middle of it, like a difficult piece of maths homework. It's nothing to be scared of though and is in fact the most useful and versatile tool for making adjustments to the exposure and tonal balance of your images. As a starting image we'll use this landscape image.

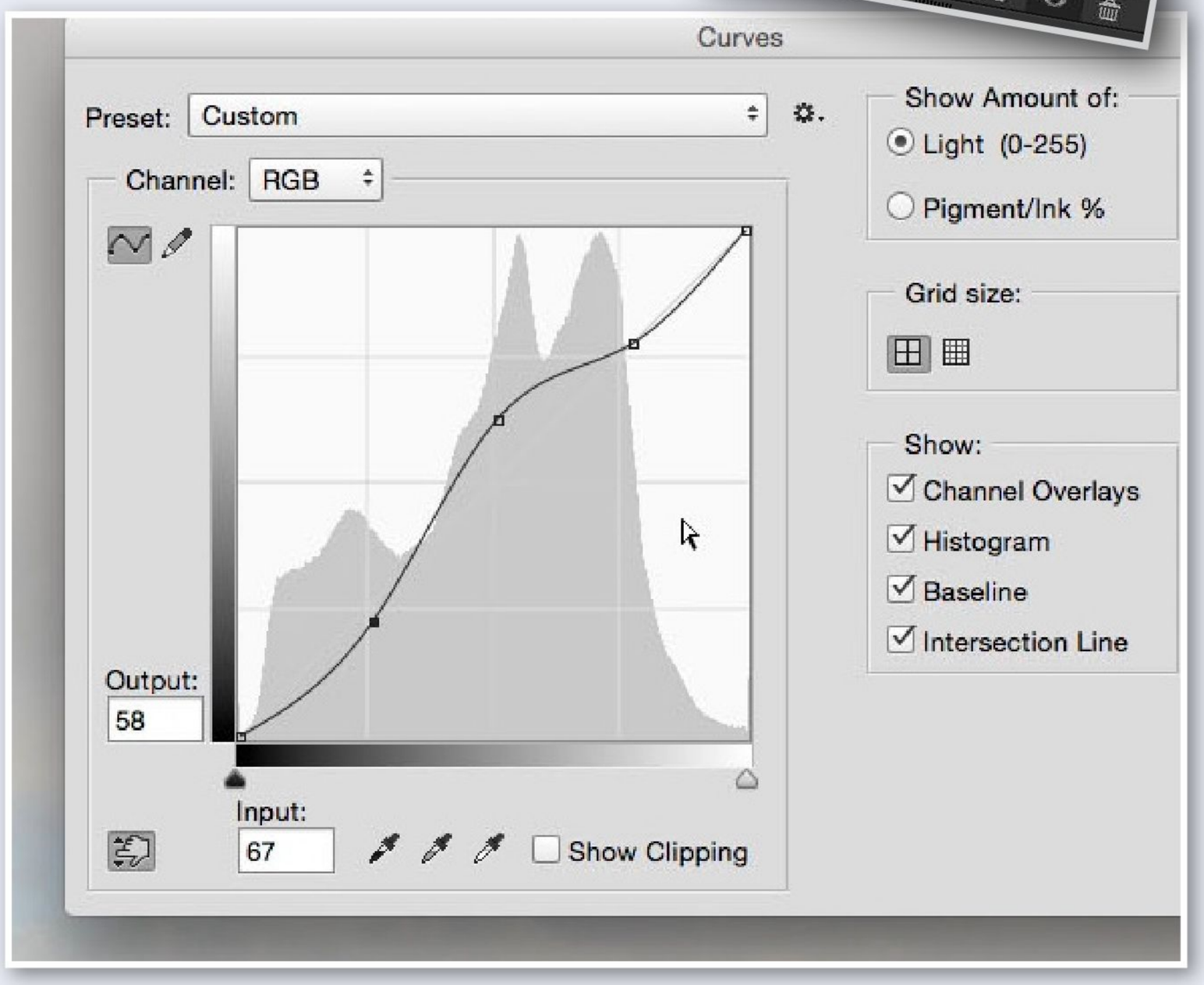


PHOTOSHOP

**01** The Curves graph shows the input distribution along the bottom of the graph, and the output up the vertical axis. The straight diagonal line from corner to corner indicates that there is a 1:1 ratio between input and output at all tones; the output is exactly the same as the input, as you'd expect. It is by adjusting the line and altering the ratio of input tones to output tones, that we can achieve a number of effects. The left-hand end of the horizontal axis represents the darker tones, while the right-hand end represents the highlights.



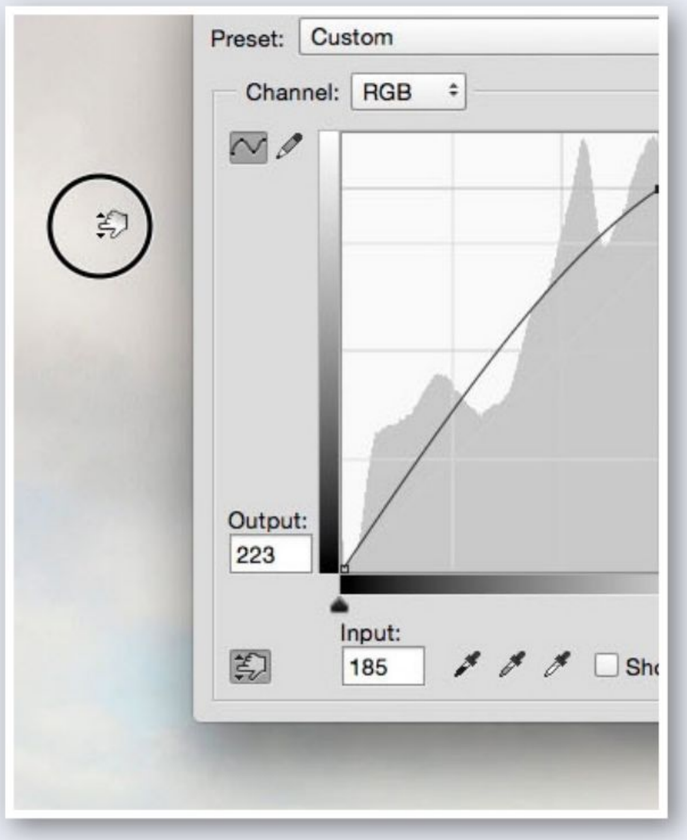

**02** The Curves graph can be manipulated in several ways. You can move the line directly, by clicking on it to place new anchor points and then dragging these points into new positions. You can also use the arrow keys to nudge a selected point up, down, left or right. There's no limit to where the line can start or finish or where it goes in between, which can lead to some extraordinary results.



PHOTOSHOP

# Curves and levels

**03** In later versions of Photoshop there's an even more useful way to use Curves. Just to the lower left of the histogram you'll see a button with a hand and two arrows on it. If you click this button and then move the cursor over the image you'll notice a point on the line move up and down as the cursor passes over lighter and darker areas. Pick a spot that you want to lighten, click on it and drag upward and you'll see the tone curve move to match. Using this awesome feature you can selectively lighten or darken pretty much every tone in the image.



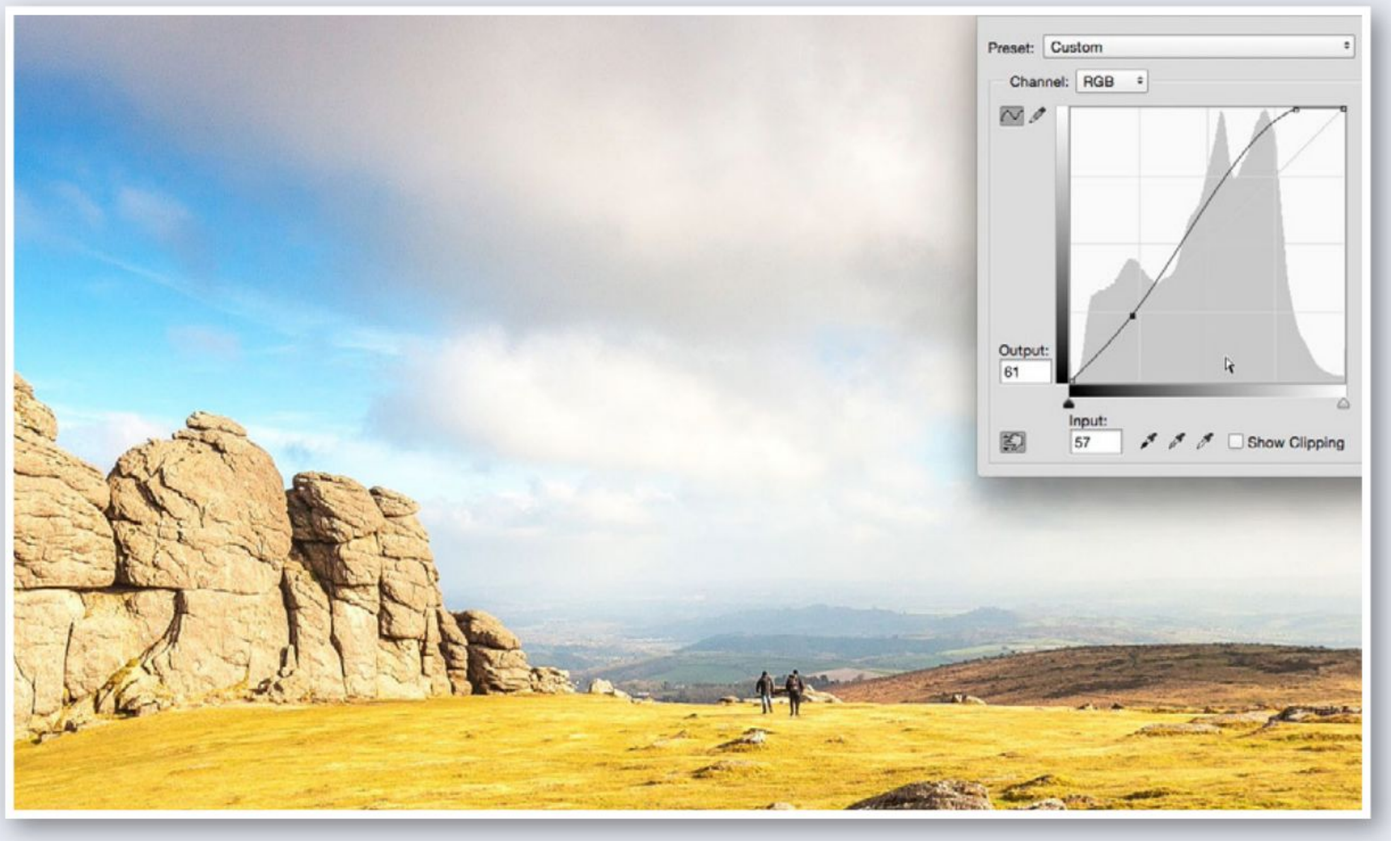

**04** **Boosting contrast**

Add two anchor points to the tone curve roughly one third of the way from either end. Drag the shape of the line into a narrow S-shaped curve, slightly raising the upper half of the curve and lowering the lower half of it, leaving the mid-point and both ends in the same positions. This will brighten the lighter areas of the image, while darkening the darker areas, increasing the contrast while maintaining the same overall exposure. It's an excellent way to make very precise adjustments to contrast. Mid-tone lightness can be adjusted by moving the mid-point on the curve up or down.



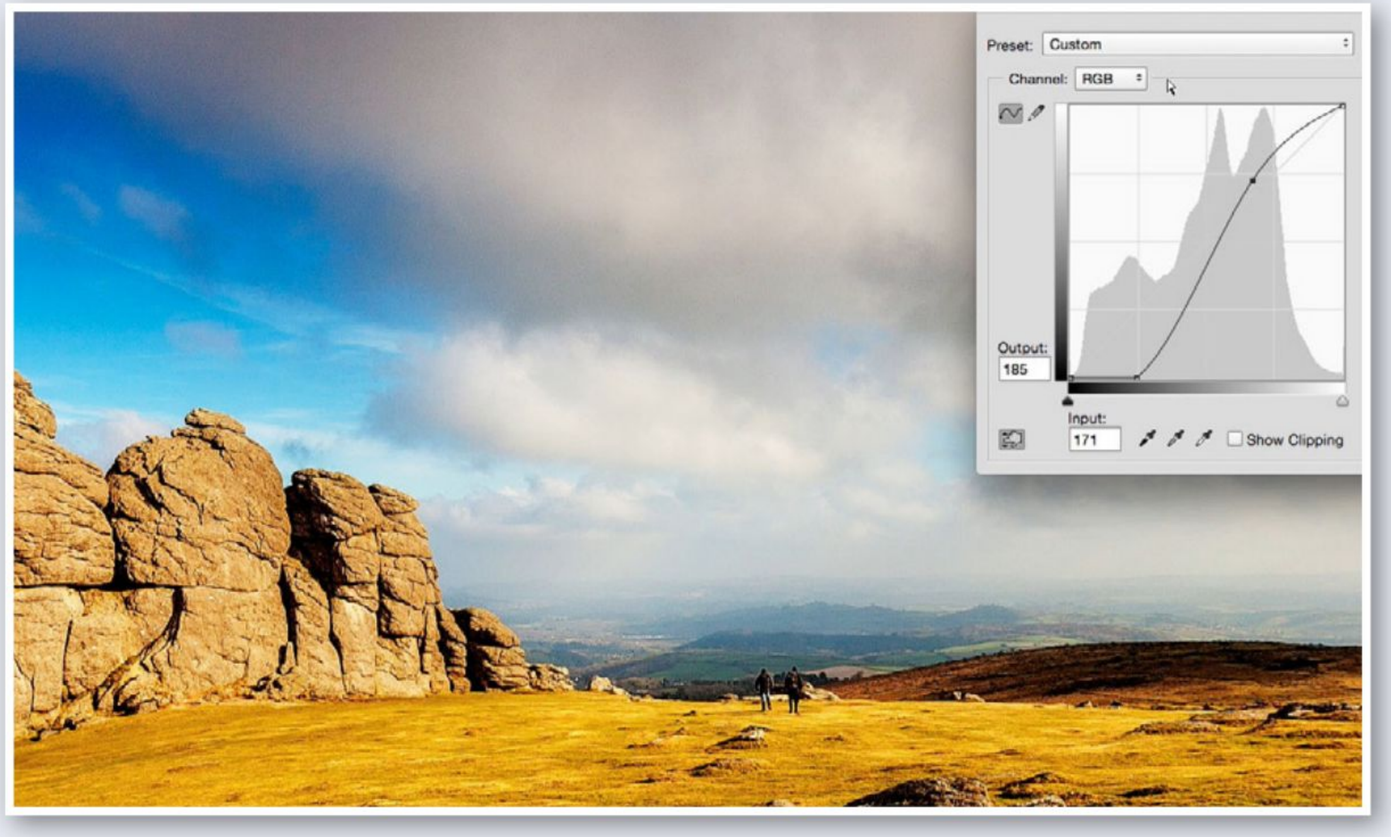

**05** **Emphasising highlights**

To boost the highlights of an image move the highest point leftwards along the top horizontal axis. This increases the brightness of the lighter pixels and may cause the brighter highlights to be burned out; the result can be quite pleasing for the right kind of image. This technique works well in monochrome, producing an ethereal high-key image.



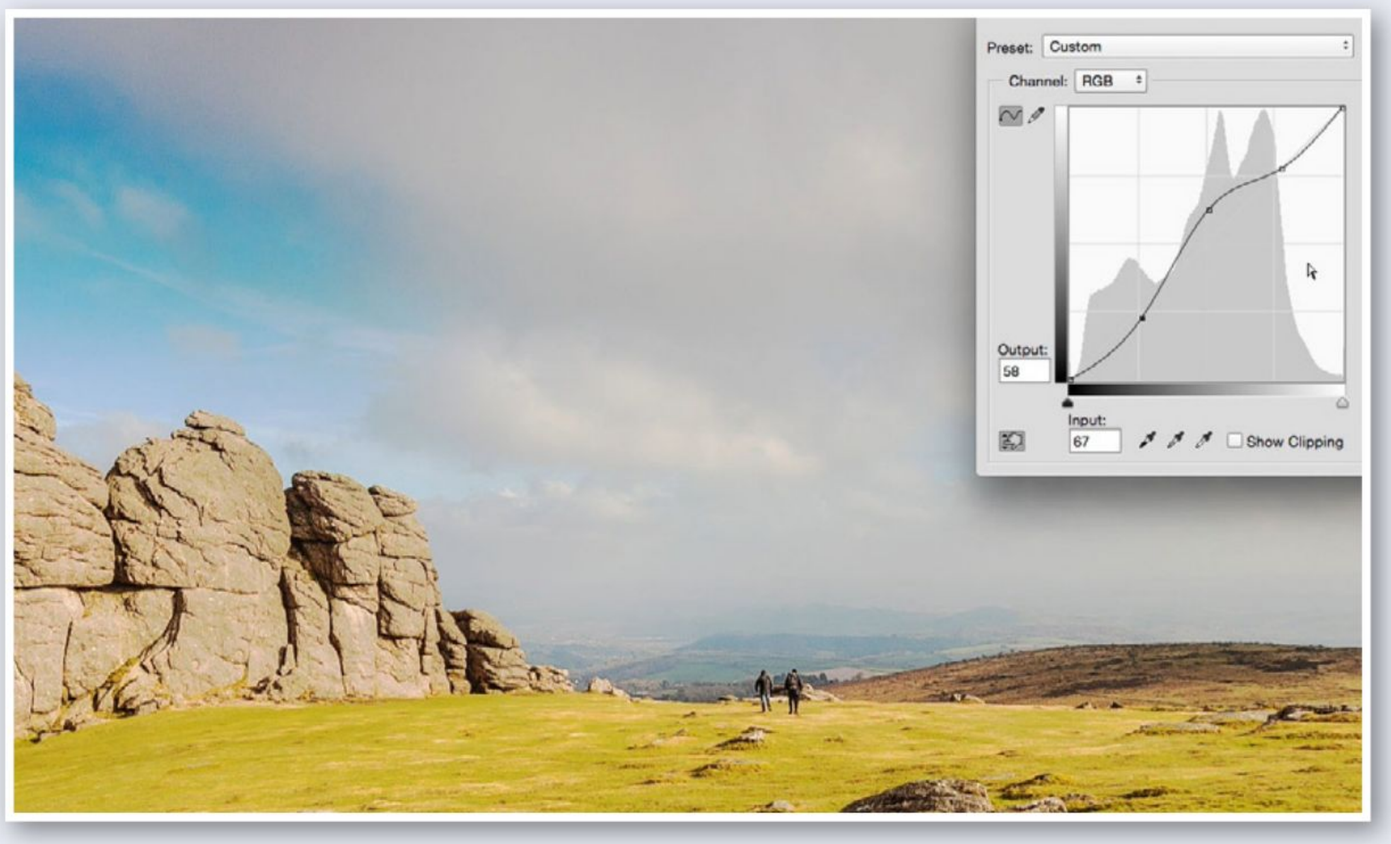
**06** **Emphasising shadows**

Moving the lowest point on the curve to the right will darken the shadows but this will lose both shadow and mid-tone detail. This can be alleviated by moving the mid-point of the curve upwards slightly, flattening the upper part of the curve and brightening the mid-tones.



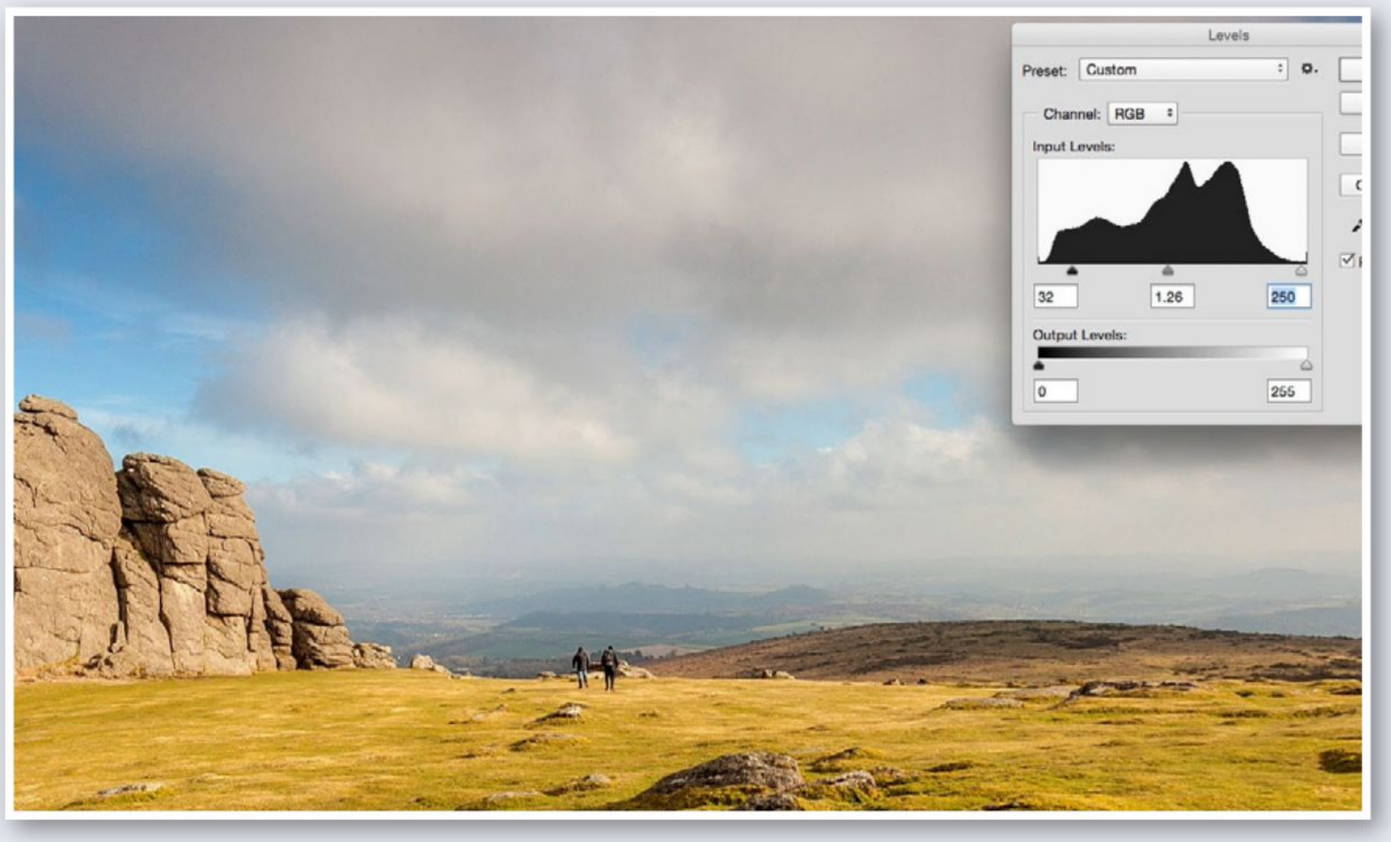

**07** **Brightening mid-tones**

For images with very high contrast sometimes it is necessary to boost the mid-tones to balance the image. To do this set three points on the tone curve at roughly equal positions along the curve and then move the middle one upwards to achieve the effect. The other two points act as anchors, keeping the shadows and highlights unchanged. Moving the mid-point downwards has the opposite effect.




**08** **Levels**

Also in the Image > Adjustments menu you'll find Levels, keyboard shortcut Cmd+L. The Levels function is easier to use than Curves and lets you quickly adjust the black and white points and overall brightness of your image. It's particularly useful for images that contain a lot of light or dark areas, such as dark objects on a light background, because it provides a method for fixing the lightest and darkest areas of the image, while leaving the mid-tones free to be adjusted upward or downward.



18+

# WHAT IS AVAXHOME?

# AVAXHOME-

the biggest Internet portal, providing you various content: brand new books, trending movies, fresh magazines, hot games, recent software, latest music releases.

Unlimited satisfaction one low price
Cheap constant access to piping hot media
Protect your downloadings from Big brother
Safer, than torrent-trackers

18 years of seamless operation and our users' satisfaction

All languages
Brand new content
One site



# AVXLIVE.ICU

AvaxHome - Your End Place

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




# Contrast and saturation

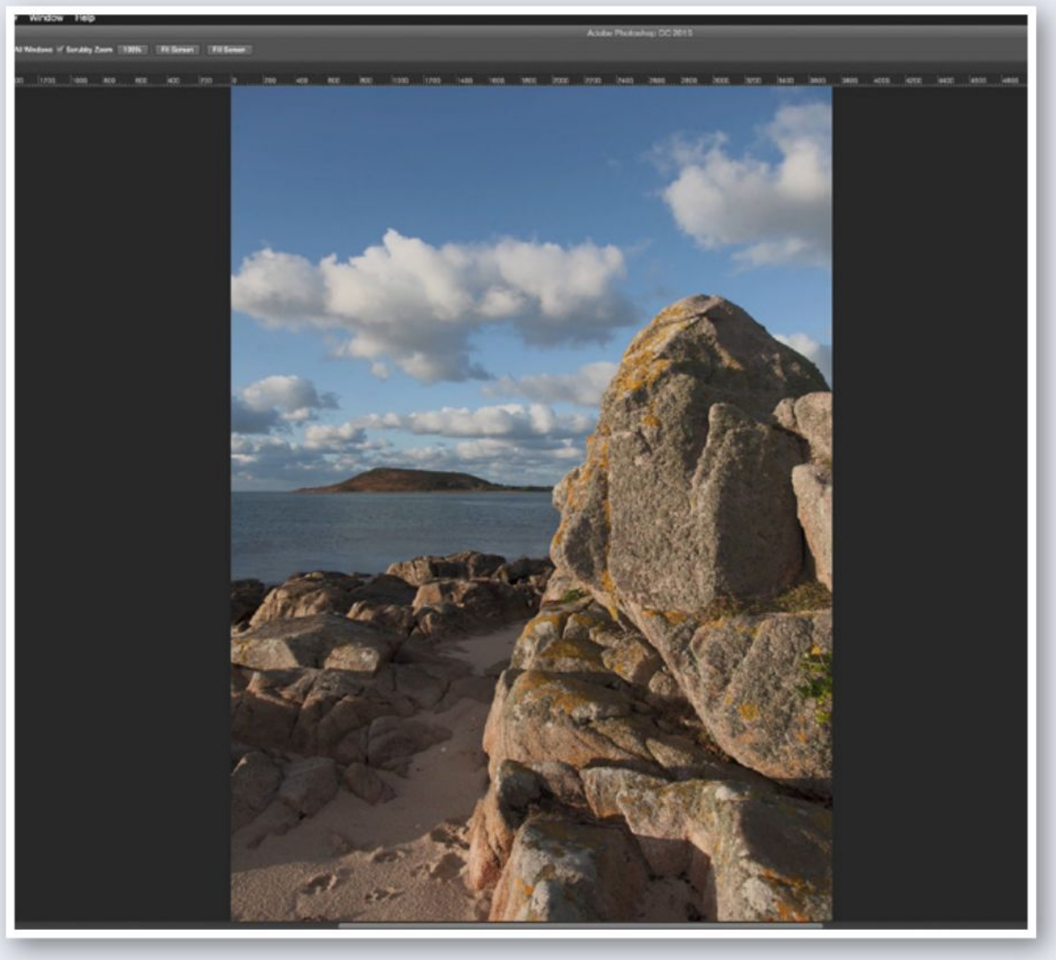
## Give your images more punch

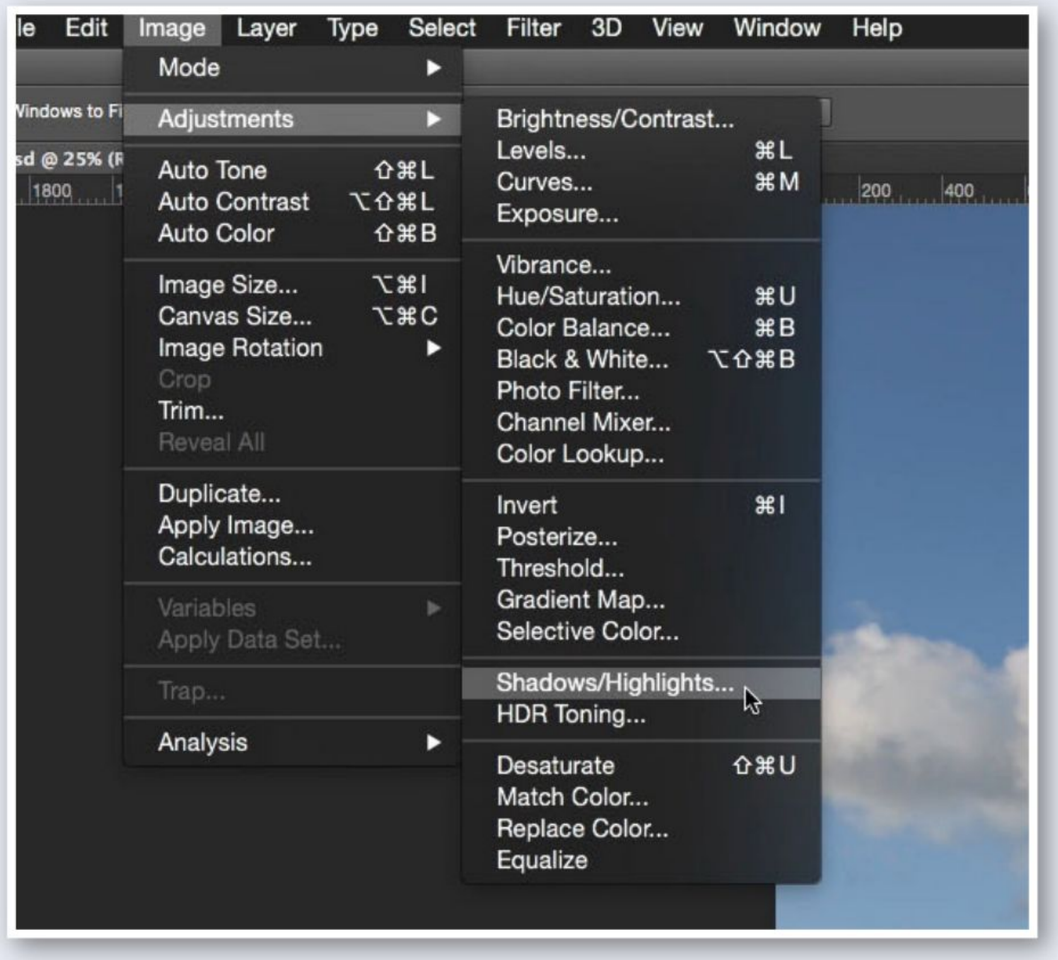
AFTER

**When you come to process our landscape images. The first and simplest thing you can normally do to a shot is to adjust its Saturation, Brightness and Contrast. These things can have the greatest initial impact on your work. At the risk of sounding like a broken record, we would always advocate the practice of shooting in Raw format and adjusting your shots in your favourite Raw processing program before moving on to enhance the images further. Sometimes this is not possible though.**

If you have older images shot in jpeg format or if your current camera doesn't support Raw, then Photoshop and its photo editing counterparts has the answer. Here, we show you a quick guide to enhancing your images non-destructively in Photoshop and adding a little punch by using some simple adjustment layers.

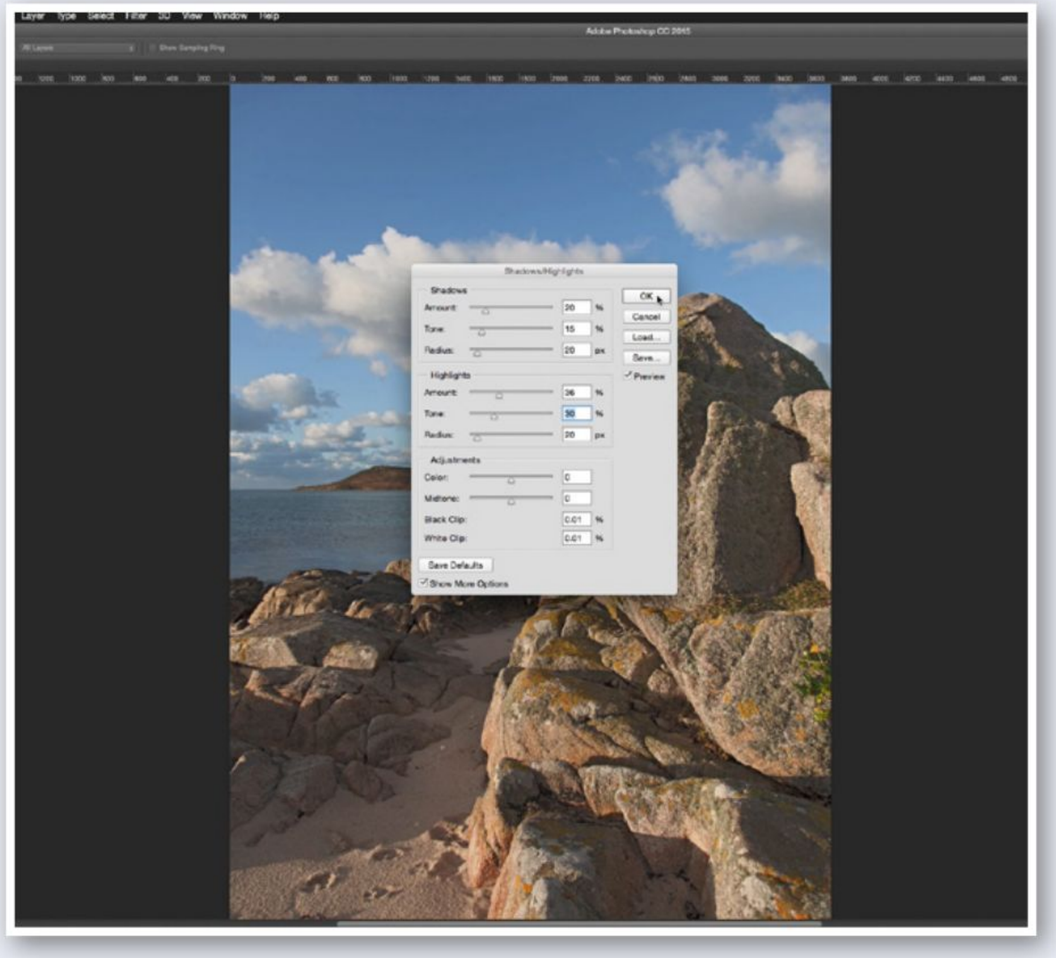
PHOTOSHOP

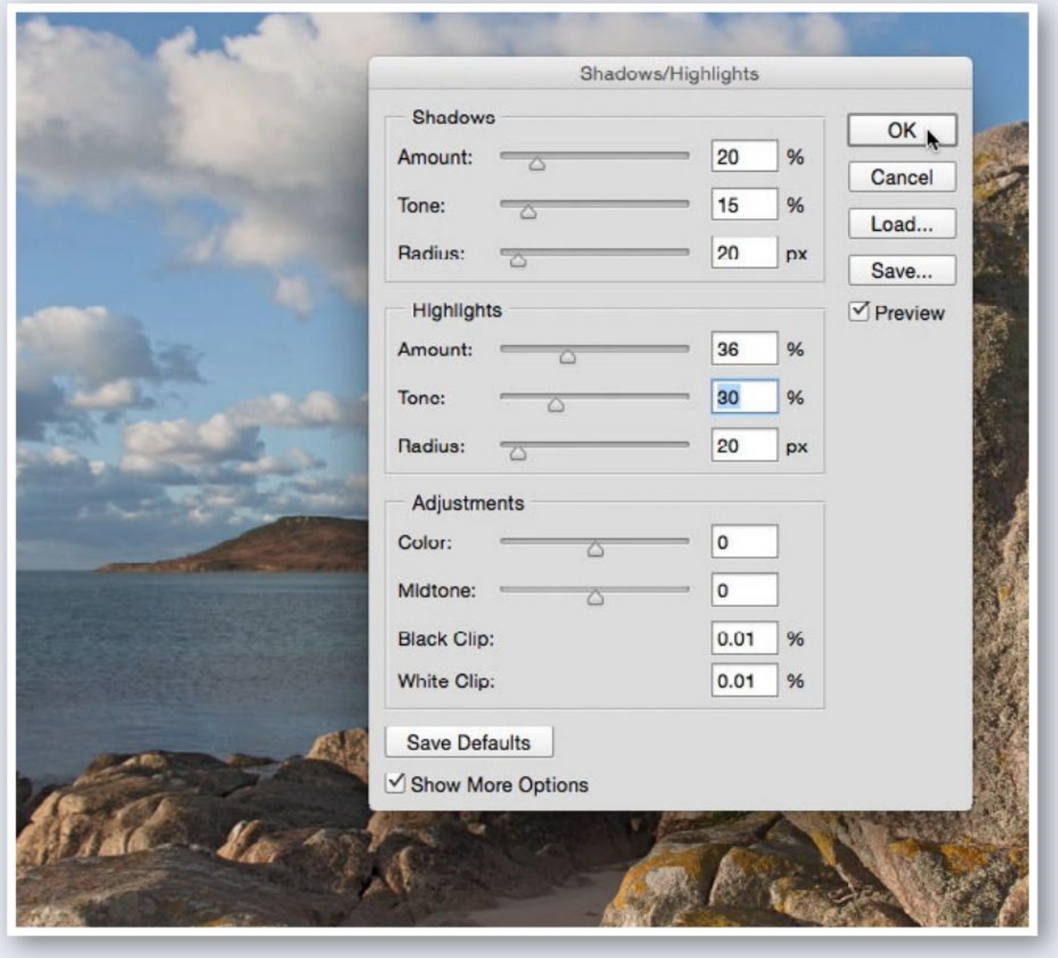





**01** We have a landscape image taken on the coast in the Isles of Scilly, Cornwall. The overall exposure and tone needs a little work to perk it up a little.

**02** This first step is optional but before you add too many adjustments, it is a good idea to recover the images' shadow and highlight areas to stop too much loss of detail. A quick and useful way to do this is via the Shadows/ Highlights function.



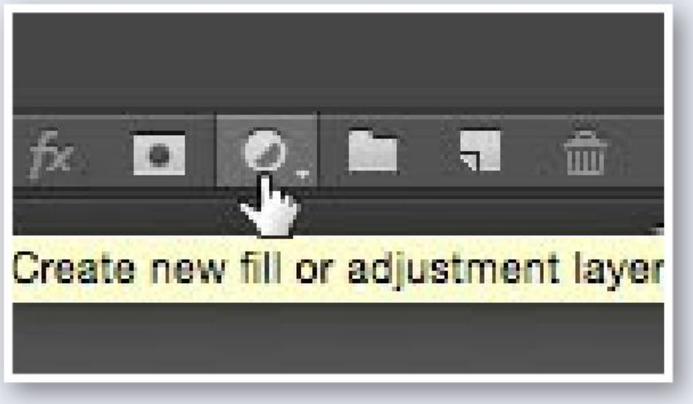


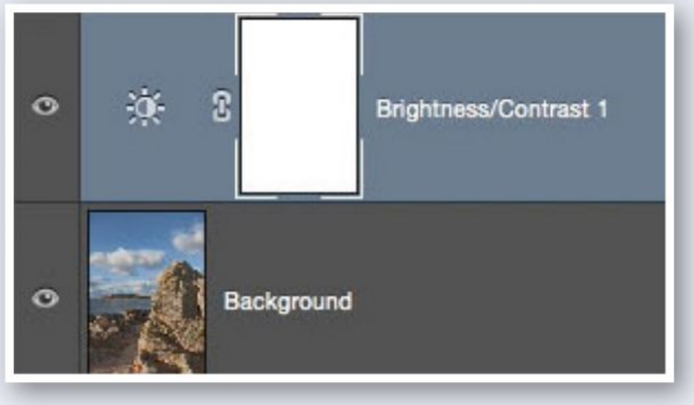

**03** Go to Image > Adjustments > Shadows/Highlights. A dialog box will appear where you can lighten the deepest shadow areas and darken the lightest areas of the shot slightly. This all helps maintain detail before the main adjustments start.

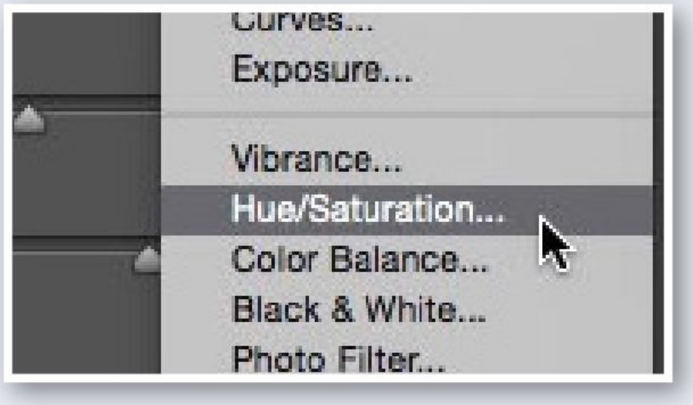
**04** Under the Shadows panel altering the Amount, Tone and Radius settings will allow you to lighten the shadows. The same goes for the Highlights panel. The values here allow you to recover highlight detail. In both cases try not to overdo it.

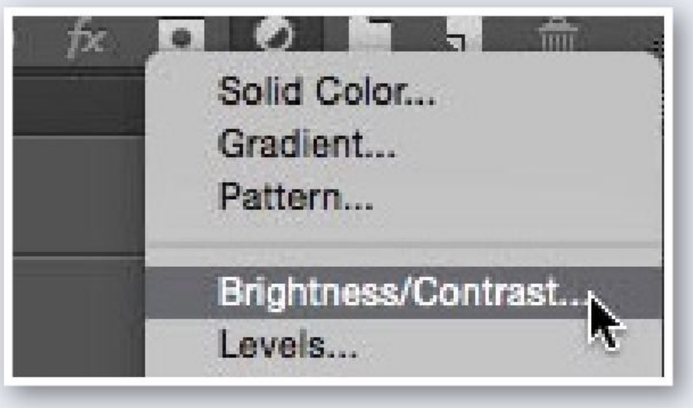
PHOTOSHOP

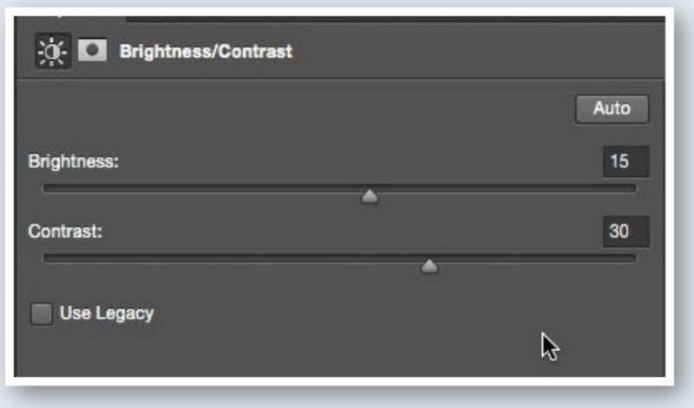
# Contrast and saturation

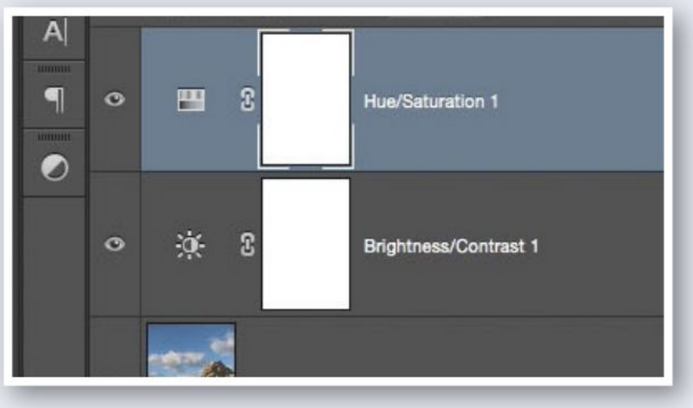


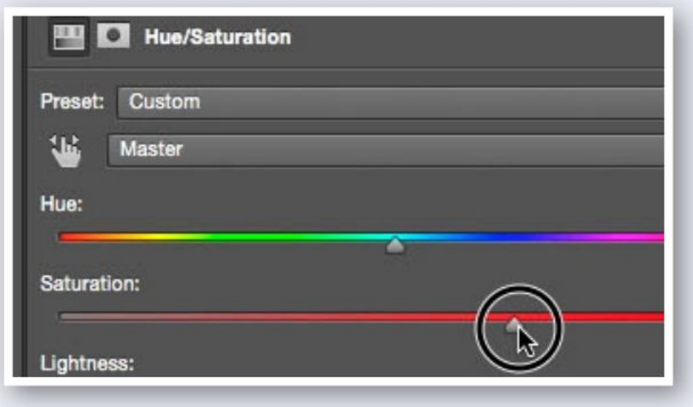



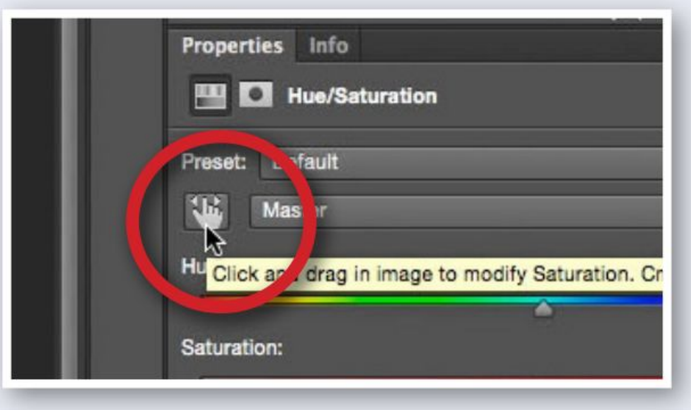



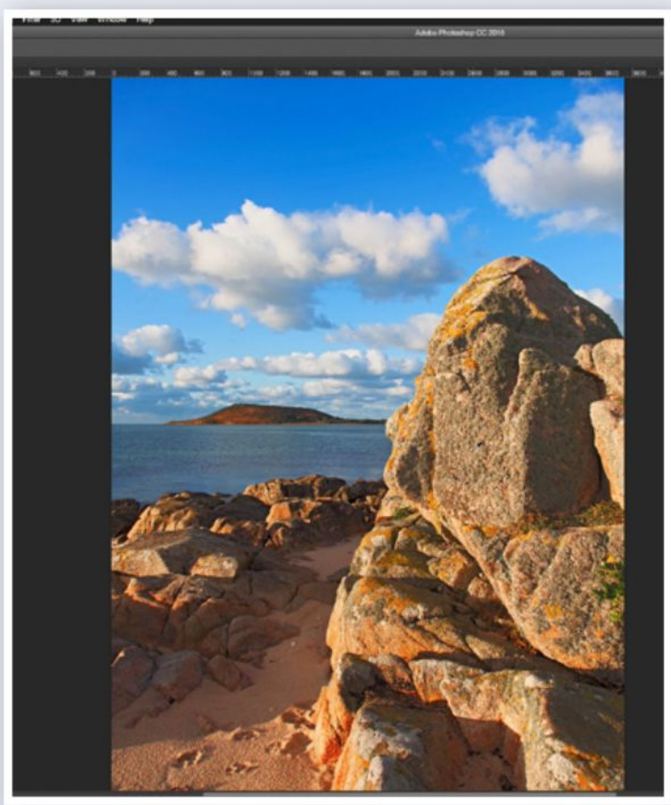

**05** Add a new Adjustment Layer by clicking on the Add Adjustment Layer button at the bottom of your layers palette. Choose Brightness/Contrast from the dropdown list that appears. A new Adjustment Layer will be added above your image.

**06** The Properties panel will allow you to change the brightness and contrast values. We've set values of Brightness 15 and Contrast 30 that brighten the image and add a little more contrast without losing detail.

**07** Next click on the Add Adjustment Layer button again and select Hue/Saturation. A Hue/Saturation adjustment layer will be added to the layer stack.







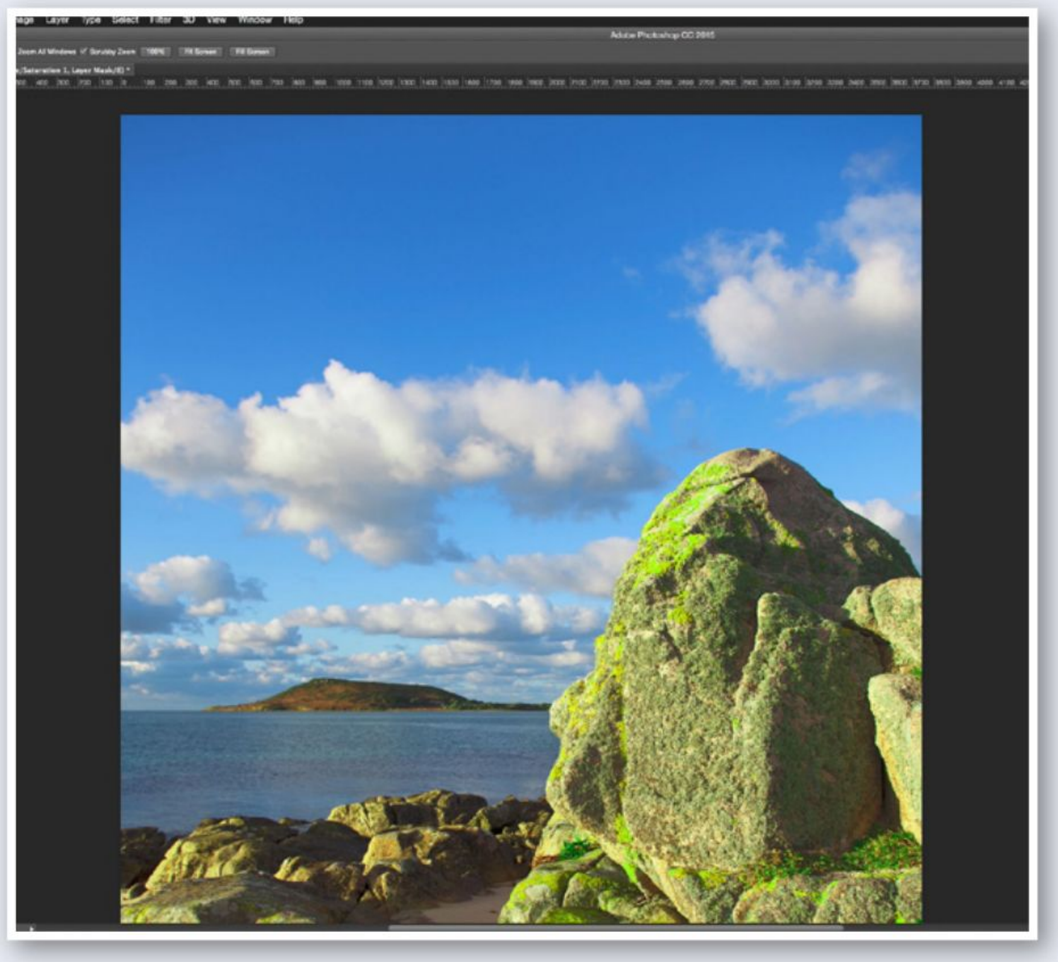
**08** If you adjust the Saturation slider, you will see that your image becomes more vivid as the colours become more deeply saturated. Watch out for over saturation, as this can completely ruin an image.

**09** You can selectively alter the saturation of the image by clicking on the Colour Range button and then clicking and dragging on an area of the image. Here we have clicked and dragged on the sky and only altered the blues in the sky.

**10** You can also adjust the Hue of the colours in the scene, either globally by moving the Hue slider left or right or using the Colour Range feature from the previous step but by holding the Cmd key while you drag.



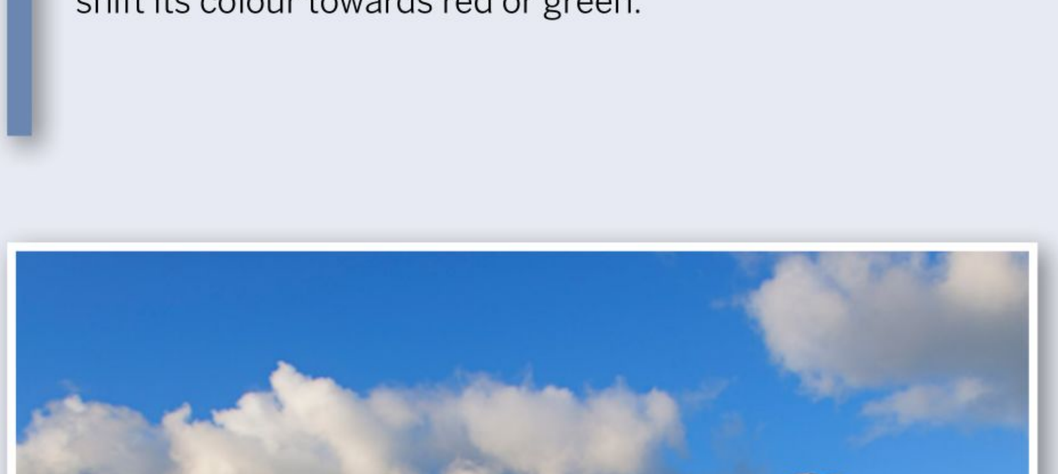
**11** Now the blue sky will shift colour towards purple/red or green/yellow depending on which direction you move the slider.



**12** By Cmd + clicking on the yellow rock in the foreground you can use the same technique from the last step to shift its colour towards red or green.




**13** Two simple adjustment layers have been applied to the image, and in a short space of time; it now looks more vibrant and has more punch than when we started and because the adjustments were done on layers, it is all non-destructive.



**14** Now you see how easy it is to breathe new life into a dull image. Five minutes is all it takes to get your photos sparkling.

BEFORE

AFTER

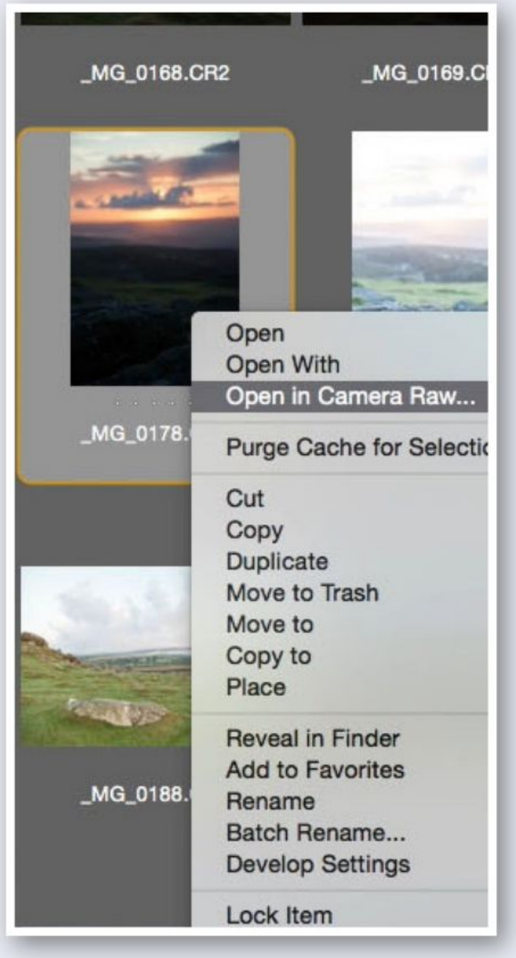
# Adjusting exposure

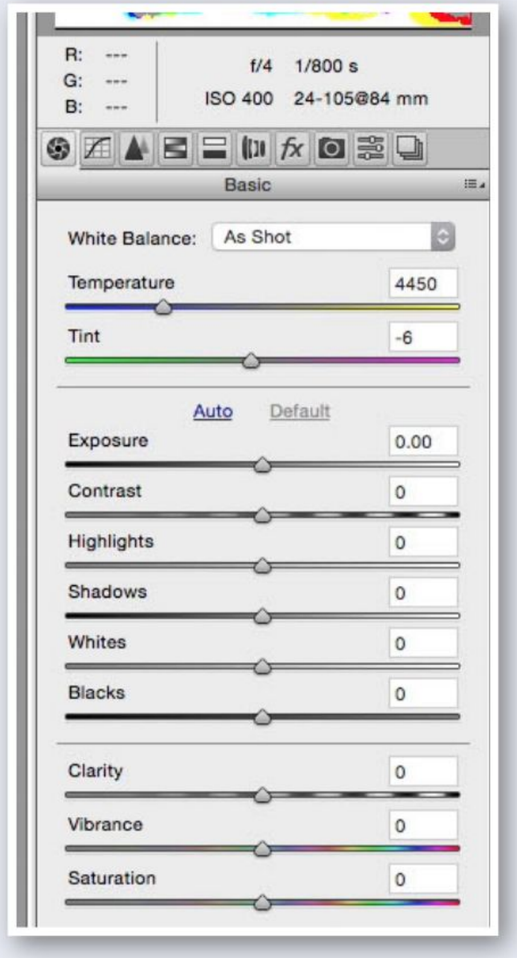
## Recover under-exposed images

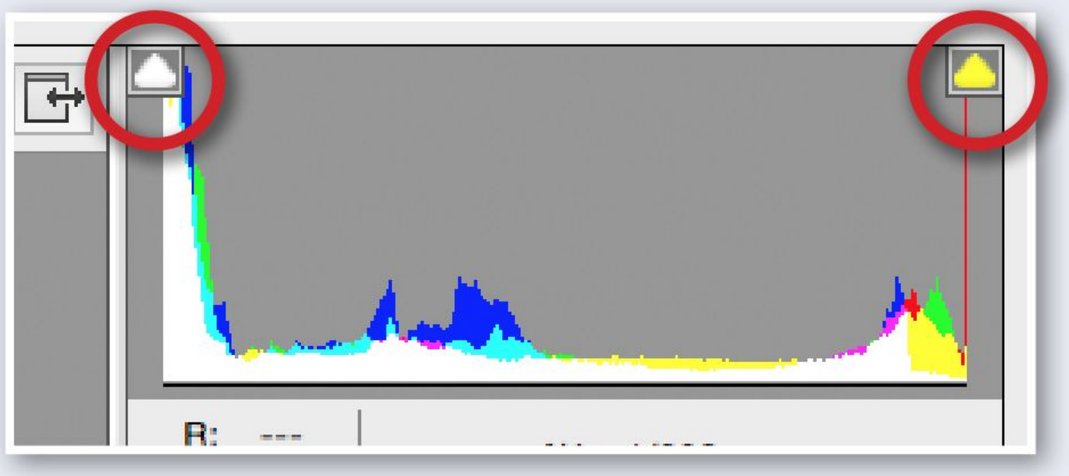
**Even with the sophisticated technology in the light metering systems of modern digital cameras, they are not infallible. Some lighting conditions can confuse them, resulting in pictures that are over or under-exposed.**

Severe over-exposure where large areas are burned out white or under-exposure resulting in areas of featureless black, are generally impossible to correct; between those two extremes though it is often possible to rescue a badly exposed photo.

If you shot your images in Raw format, then the first and probably best method to adjust your exposure, is in a Raw processing program. Alternatively you can adjust it in Photoshop. We will show you both methods.



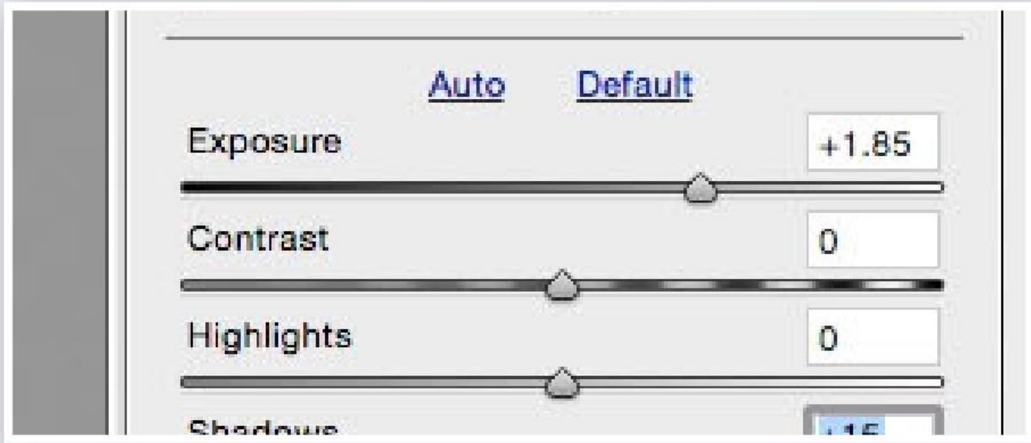





**01** Our example is a very under-exposed moorland image shot as a Raw file. When opened in Adobe Camera Raw (ACR) you will be presented with the main exposure adjustment sliders on the right of the screen. These are the main sliders that deal with the tonal range of the image

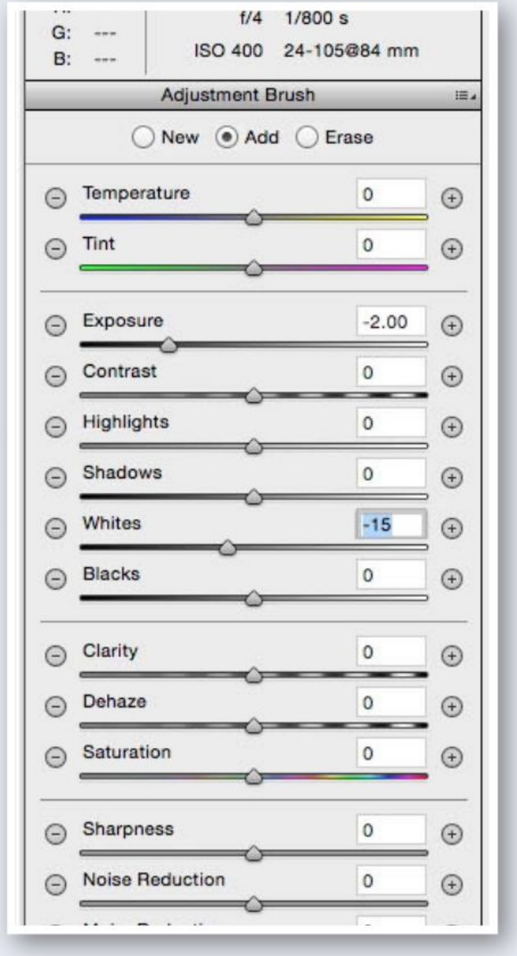
**02** If you turn on the highlight and shadow warning buttons, this will show you if the image is losing detail in the lightest or darkest parts of the shot. You can see the red areas that denote areas where the image is too light and blue areas where the image is too dark.

PHOTOSHOP






**03** Slide the Exposure slider to the right to lighten the ground. The sky may become over-exposed but we can address that. Adjust the Shadows and Blacks sliders until the darkest areas are recovered. Adjusting Whites and Highlights can help recover detail in the brightest areas.

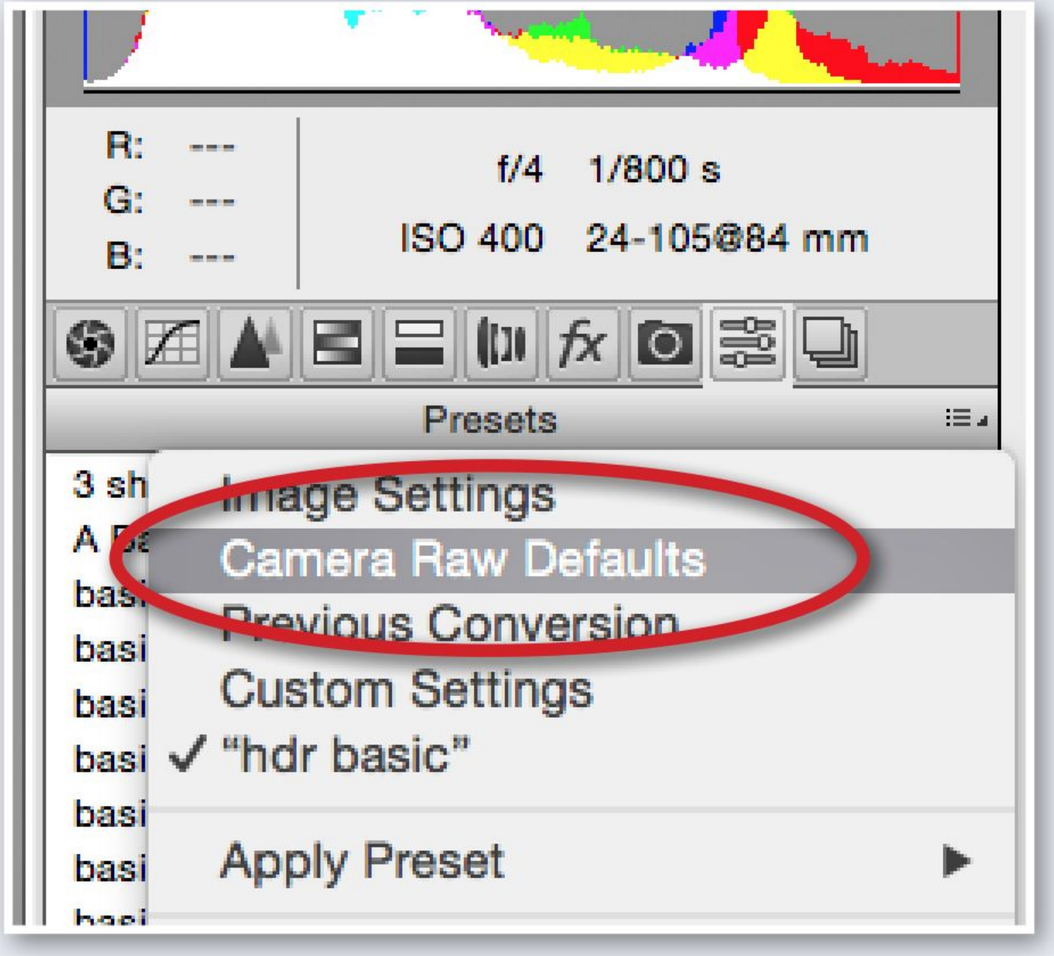




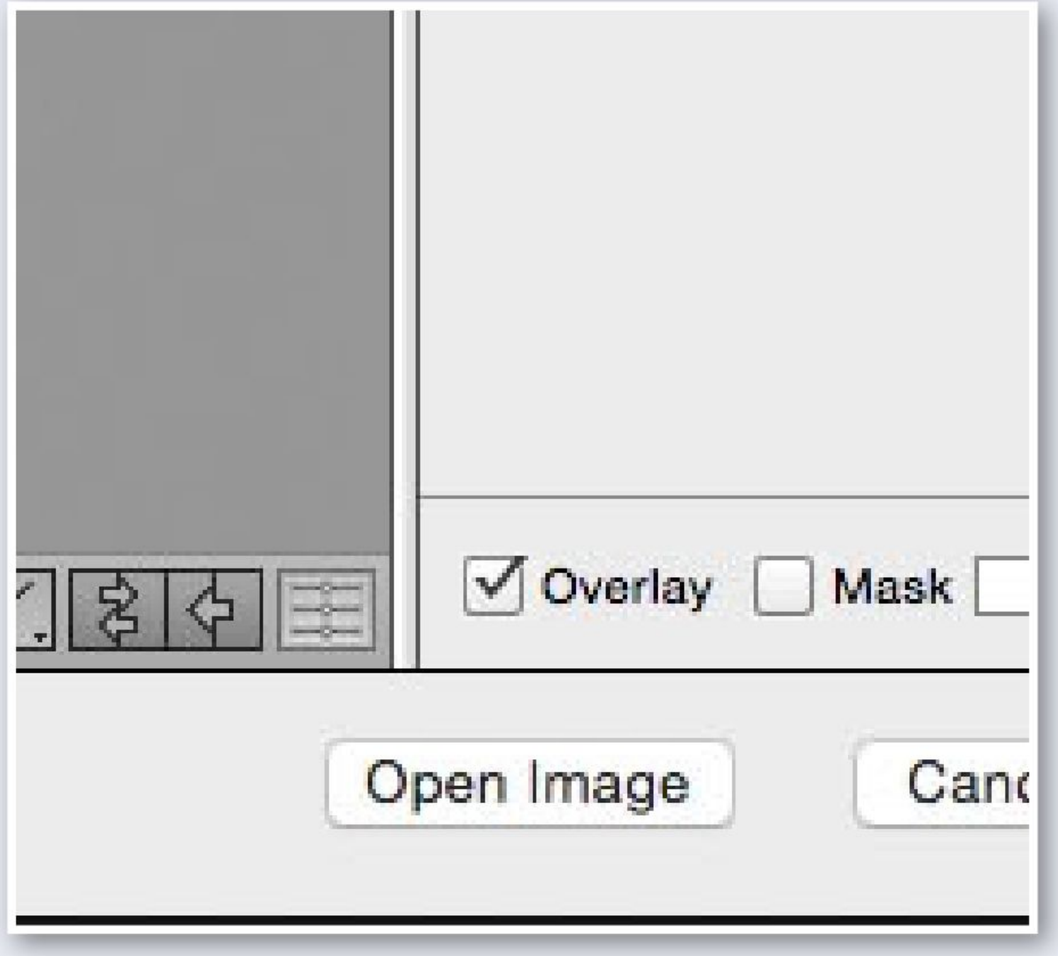





**04** Next we need to address the over-exposed sky. Press K and you will access the adjustment brush panel. Set the Exposure value to approx. -2.00 and Whites to around -15 and paint across the sky. As you do you will see it darken, based on the values you set for the brush.



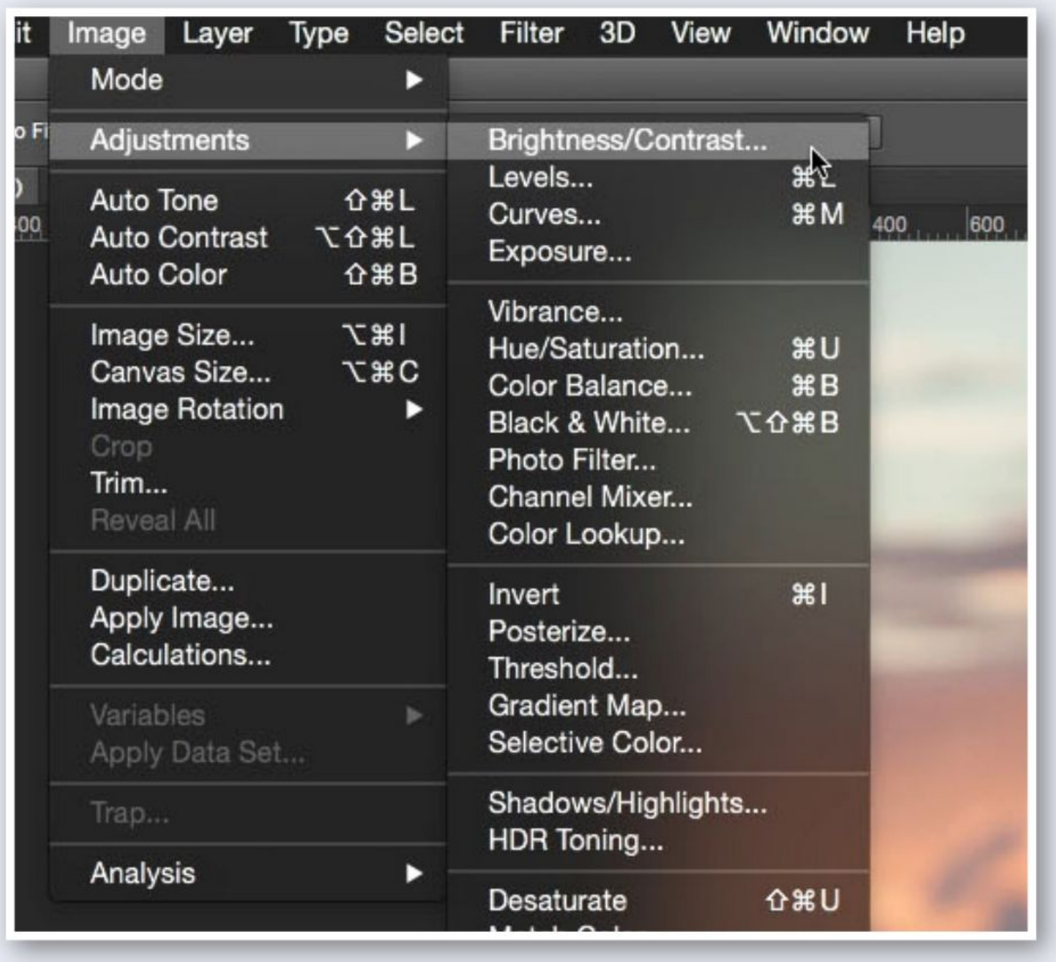

**05** Because this is a Raw file, all the adjustments you make are non-destructive. You can clear these setting any time you wish and start again from scratch if needs be. The original image data is not affected.

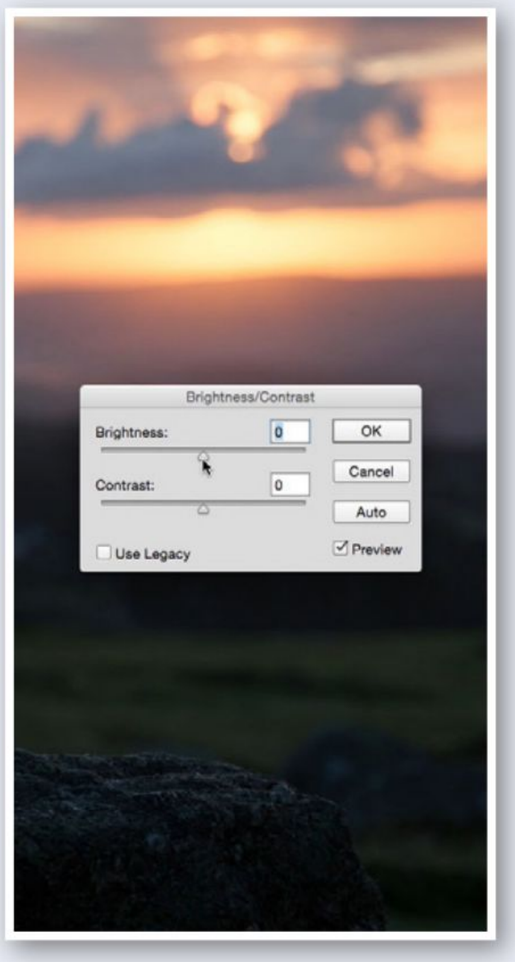



**06** You can continue to make adjustments until you have it how you want. Beware of extreme adjustments as it generates a noisy image. At this point you can click on the Open Image button at the bottom right of the screen and continue working on it in Photoshop.

PHOTOSHOP

# Adjusting exposure



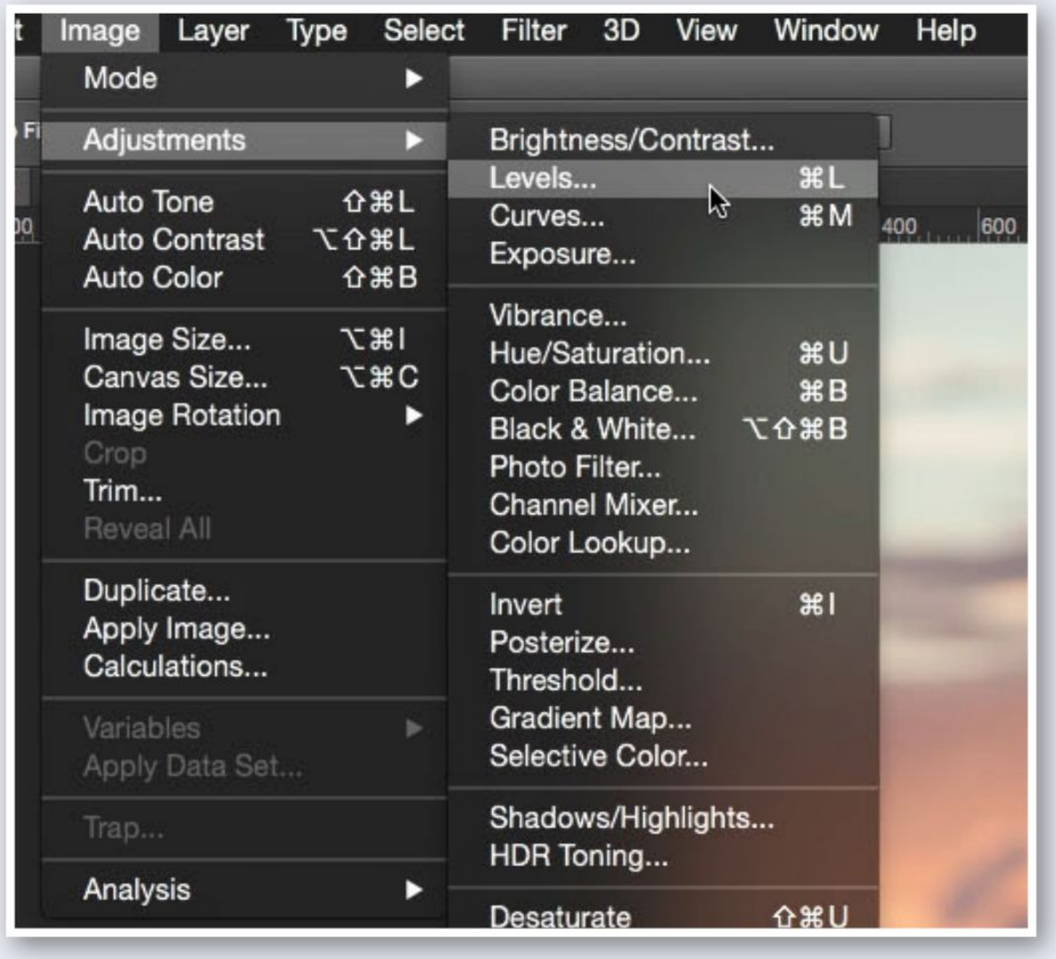



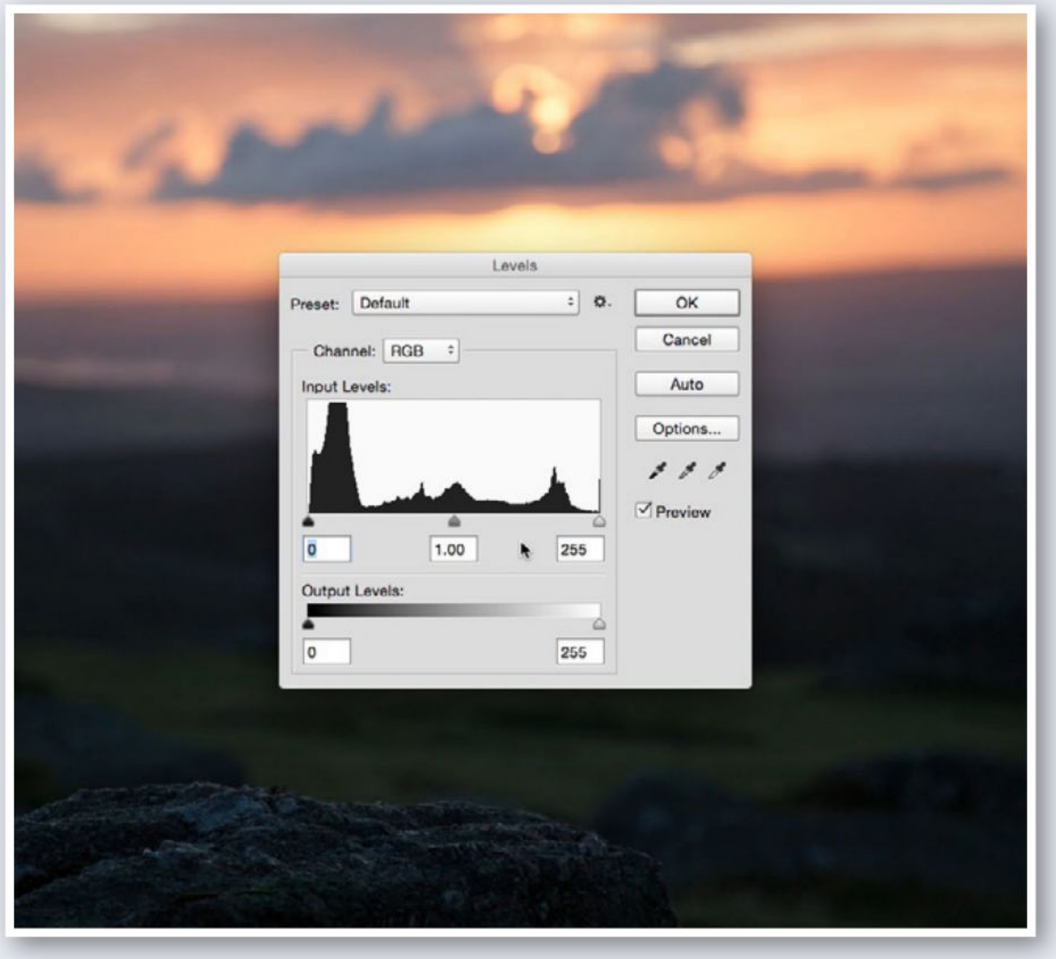




**07** In Photoshop, the easiest way to brighten the photo is to simply turn up the brightness. This will work in any editing program but as we will see it isn't always the best option. In Photoshop it is under Image > Adjustments > Brightness/Contrast.

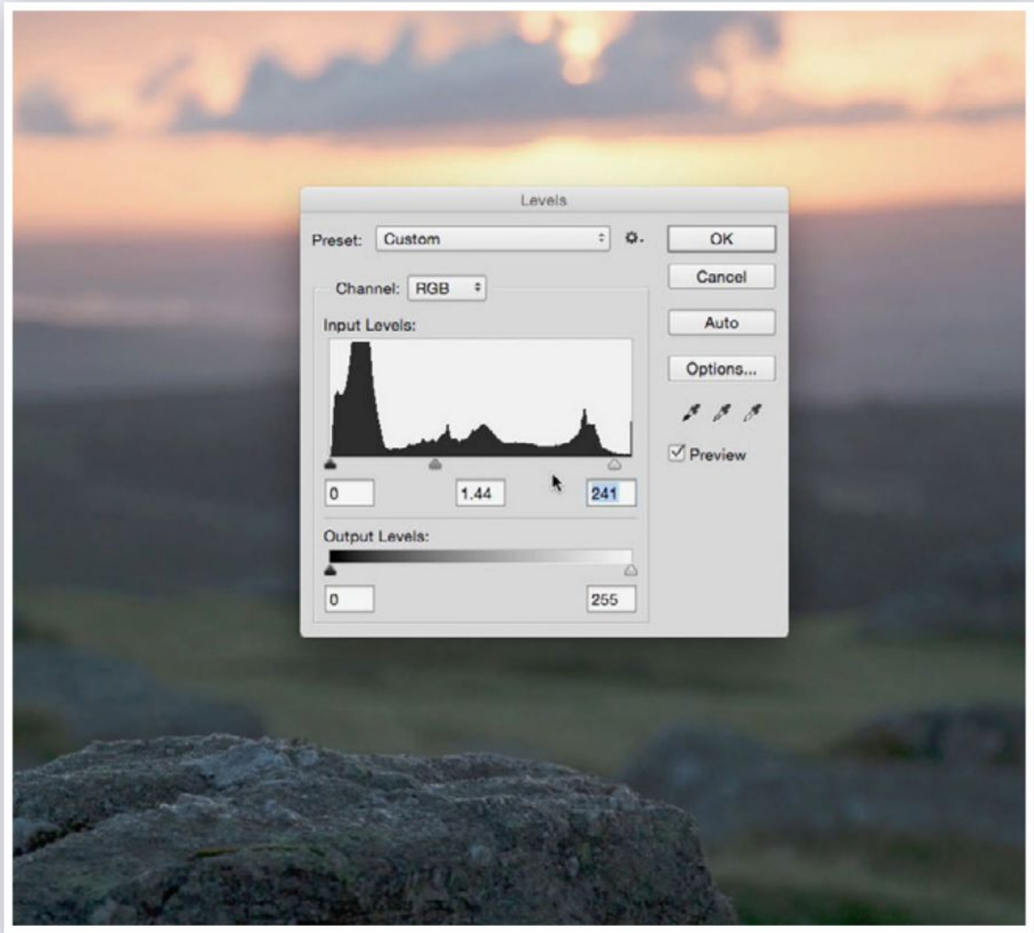
**08** Moving the Brightness slider to the right brightens the whole photo, which makes the shadows far too light, so we have to adjust the contrast slider to the right. This produces an approximation of the correct exposure, but the lighter areas have been brightened too much.

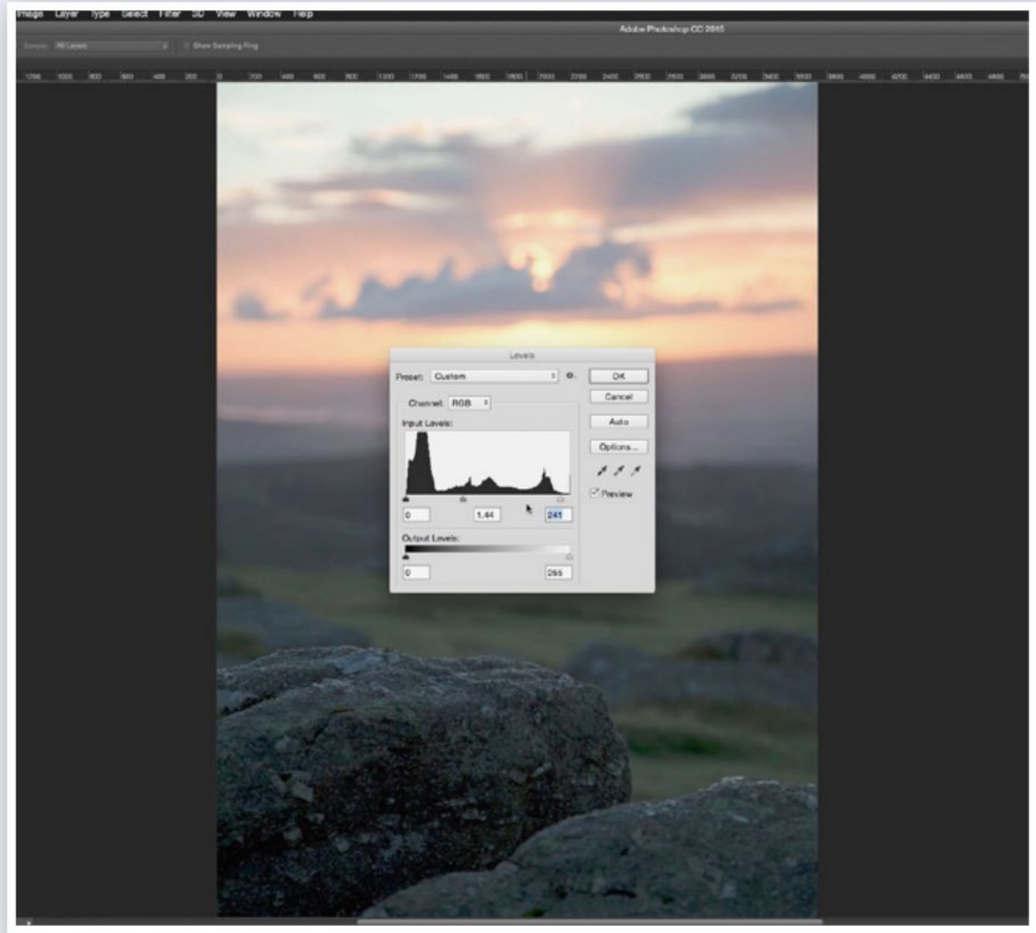



**09** There is an alternative method of altering brightness and contrast but this time with more subtlety and control, by adjusting the levels histogram. You will find this under Image > Adjustments > Levels.

**10** The levels histogram is a graph showing the proportion of pixels in the image at each colour intensity. The far left-hand end of the graph represents black and the right-hand end is white, with every tone in between.

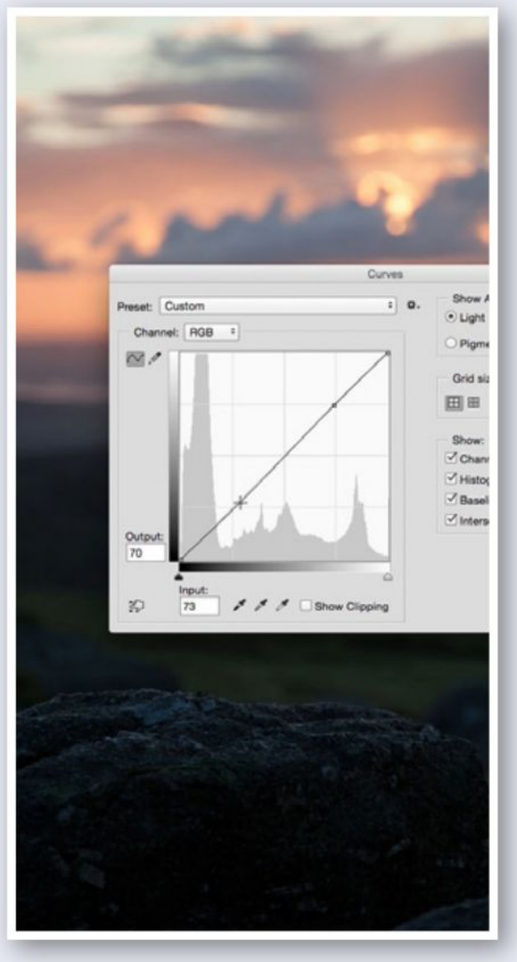


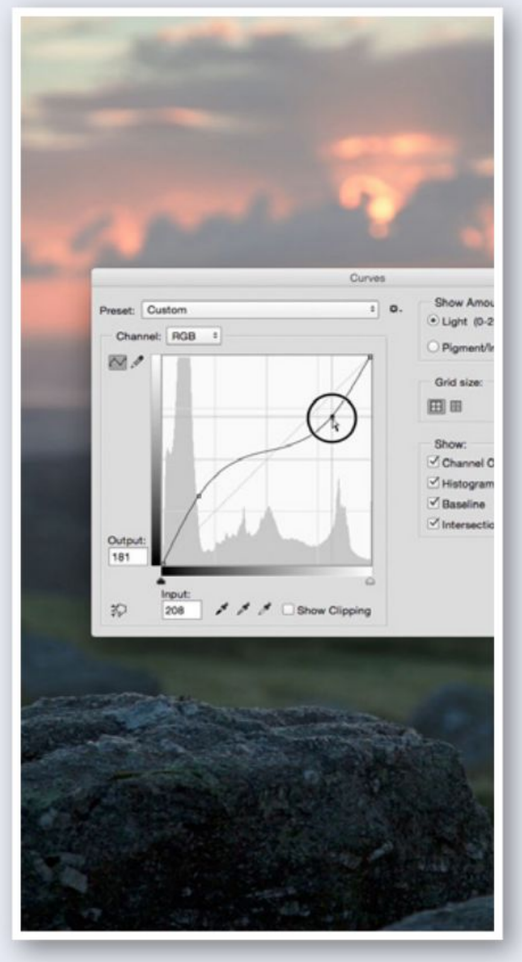



**11** Our image is all shadow and some highlights, with an even spread in the mid tone range, so we need to brighten some of those shadows into mid-tones. Move the mid-tone point left towards the shadows. This brings out a lot of the detail from the shadow and preserves highlights.

**12** It also leaves the deeper shadow areas intact. It is a far better way of adjusting the exposure of a photograph than simply altering the Brightness/Contrast; however, it isn't quite the best way. Adjusting the Levels mid point is still strictly linear in its adjustment.




**13** Curves adjustment, found in the Image > Adjustment menu, is a method of changing the relative brightness of specific tones and ranges of tones within an image. You can drag the Curves output line around by clicking at any point, then moving the handle that appears.

**14** We need to brighten the shadows and mid-tones while simultaneously darkening the highlights by manipulating control point on the curve. Push the curve too far and you'll ruin the picture but get it just right and you can rescue even quite badly under-exposed pictures.

# Rotating, levelling and cropping

Get your landscapes on the level

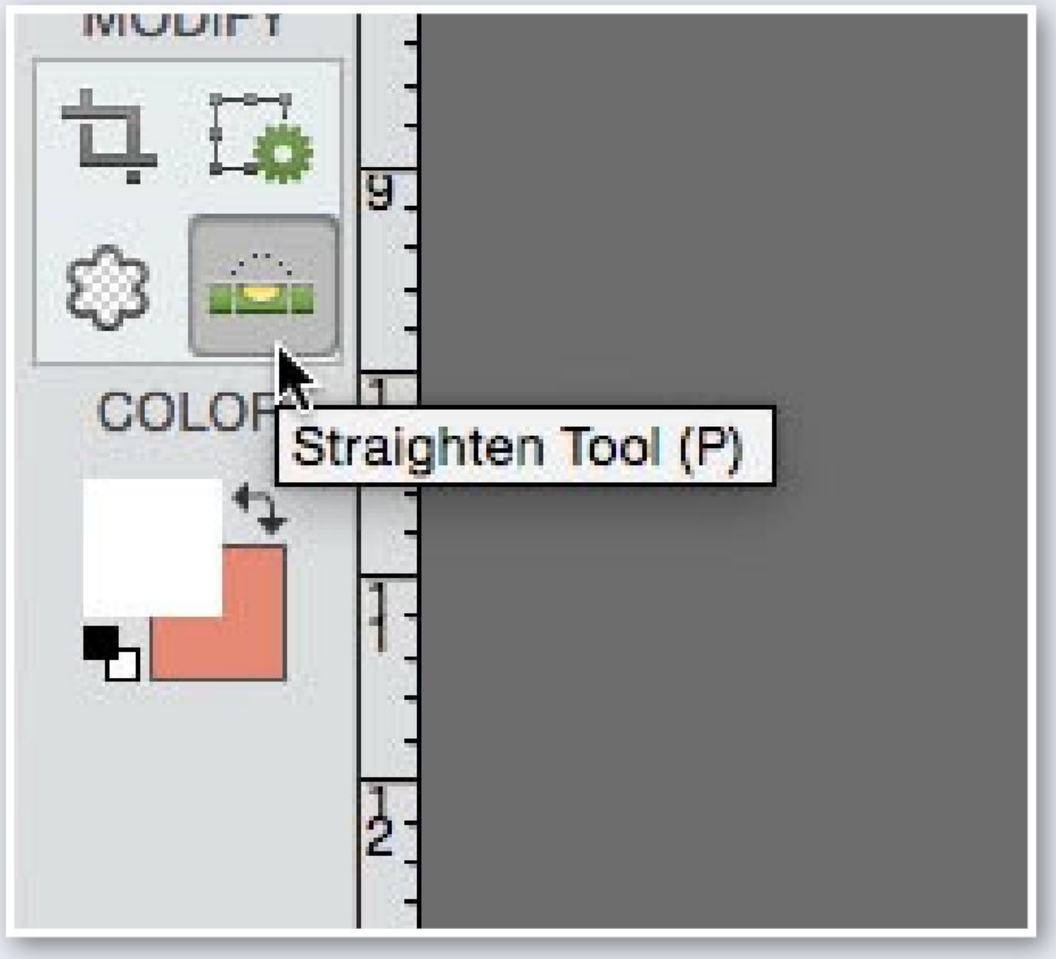
**When you're shooting landscapes or architecture, if you don't keep your camera level you're going to end up with a sloping horizon or buildings that look like they're leaning over. Unless you're holidaying in Pisa this is something you want to avoid, but accidents will happen.**

Fortunately it's possible to correct tilted shots using Photoshop Elements by rotating and cropping the image. It's very easy to rotate an image in Photoshop Elements, to bring the horizon back to the straight and level and to stop buildings looking like they're about to topple over. In fact it's such a common operation that the program provides several different ways to perform it. Which method you choose depends on the particular photo you want to straighten.




AFTER

ELEMENTS



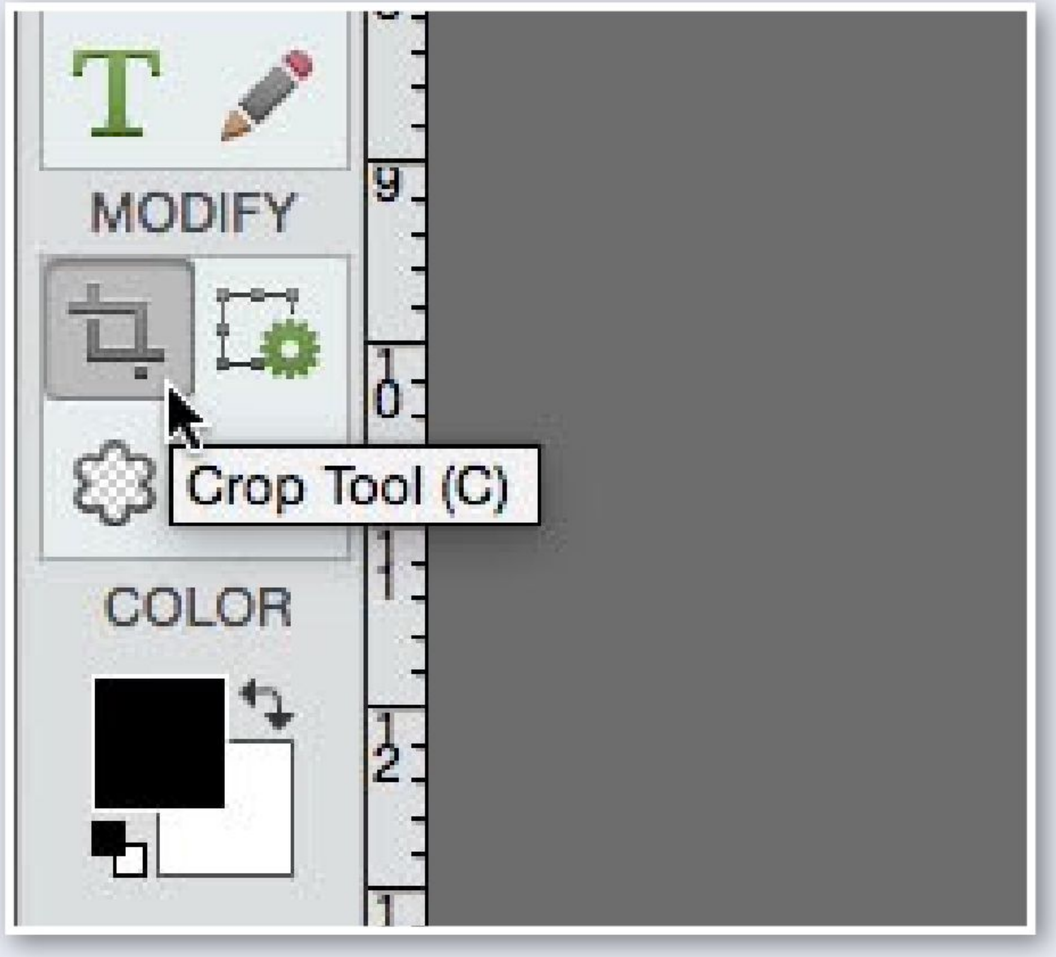

**01** Elements includes a Straighten tool specifically designed for correcting horizontal and vertical lines. You'll find it about halfway down in the Modify tool palette; its icon looks like a little spirit level. The keyboard shortcut for this tool is P.



**02** Select the Straighten tool from the tool palette, and your cursor will turn into a small cross hairs. Position it at one end of the horizon, then click and drag a line along the horizon.




**03** Although the horizon is now level, you'll see that there are now triangular white areas around the image that will need to be removed. The usual way to do this is to crop the image so that they are no longer visible. This means losing some of the image around the edges.



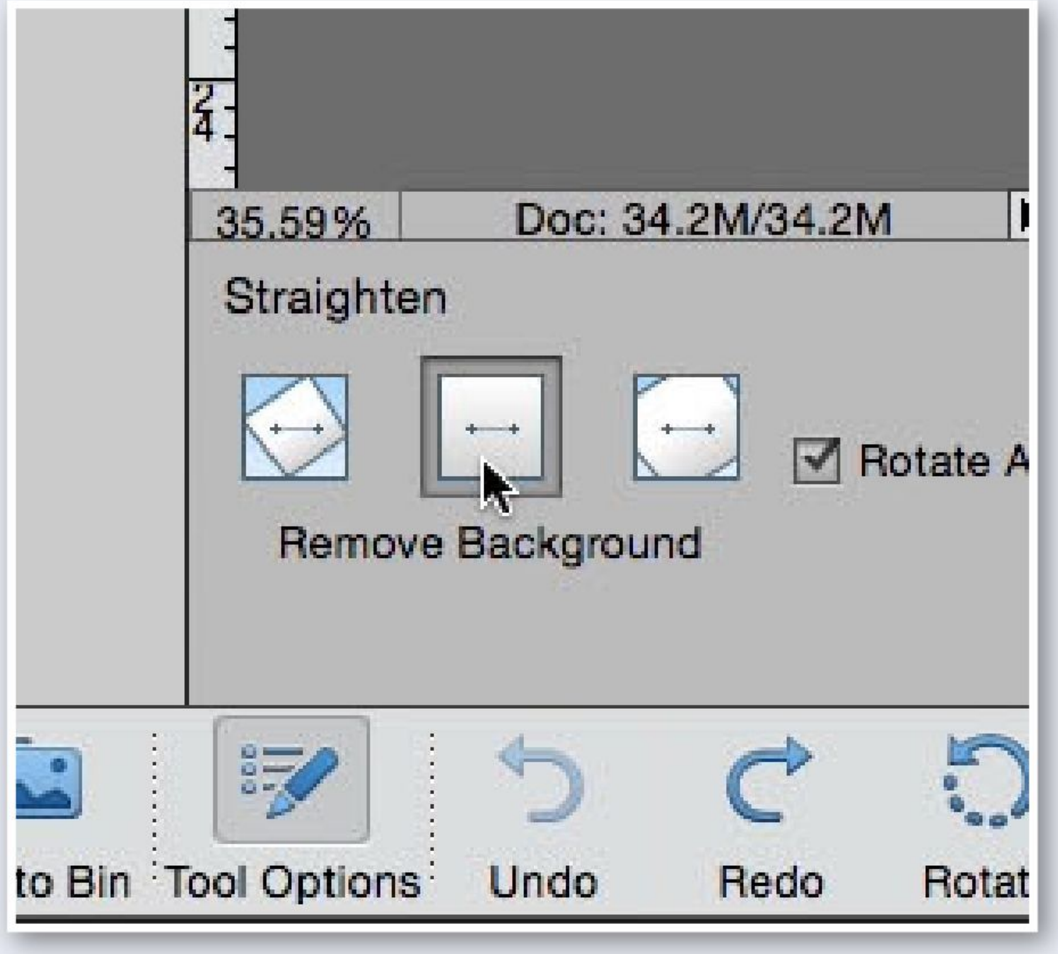

**04** To crop the image, you'll be astonished to learn that we'll use the Crop tool. You'll find this in the Modify palette, the same as the Straighten tool. The Crop tool is very simple. Starting near any corner, click and drag a box towards the opposite corner.

ELEMENTS

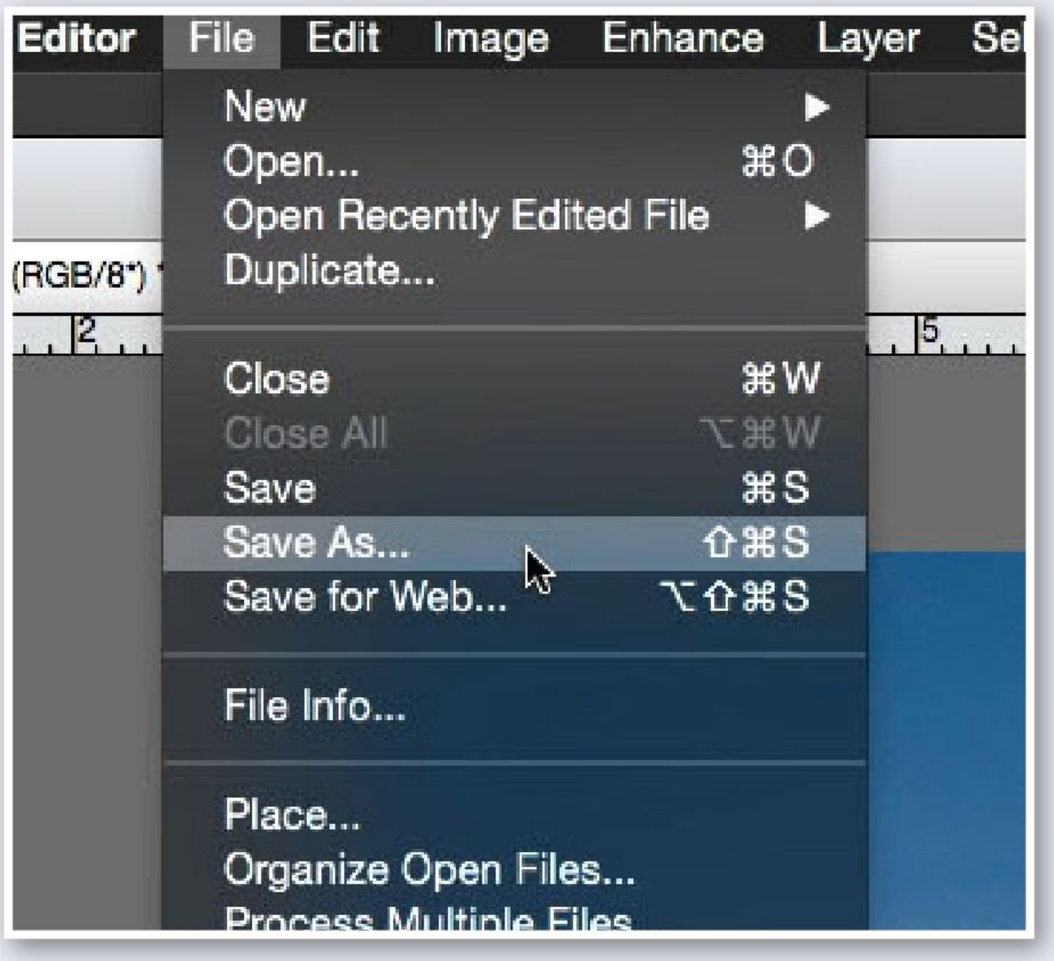
# Rotating, levelling and cropping



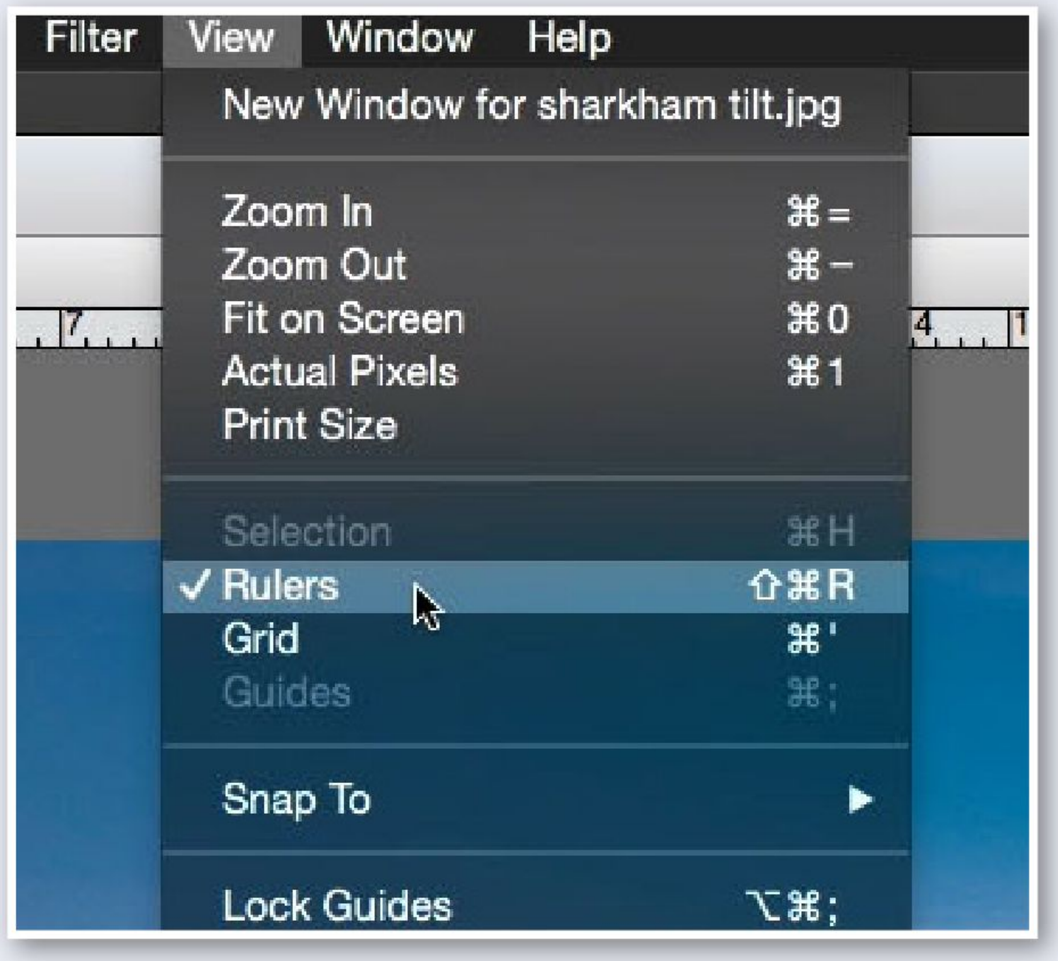
**05** You can use the grab handles in the middle of each side to resize the box and zoom in to get it as close as possible to the edges of the image, so that you're wasting as few pixels as possible. When you're happy with the position of the box, hit Enter to perform the crop.



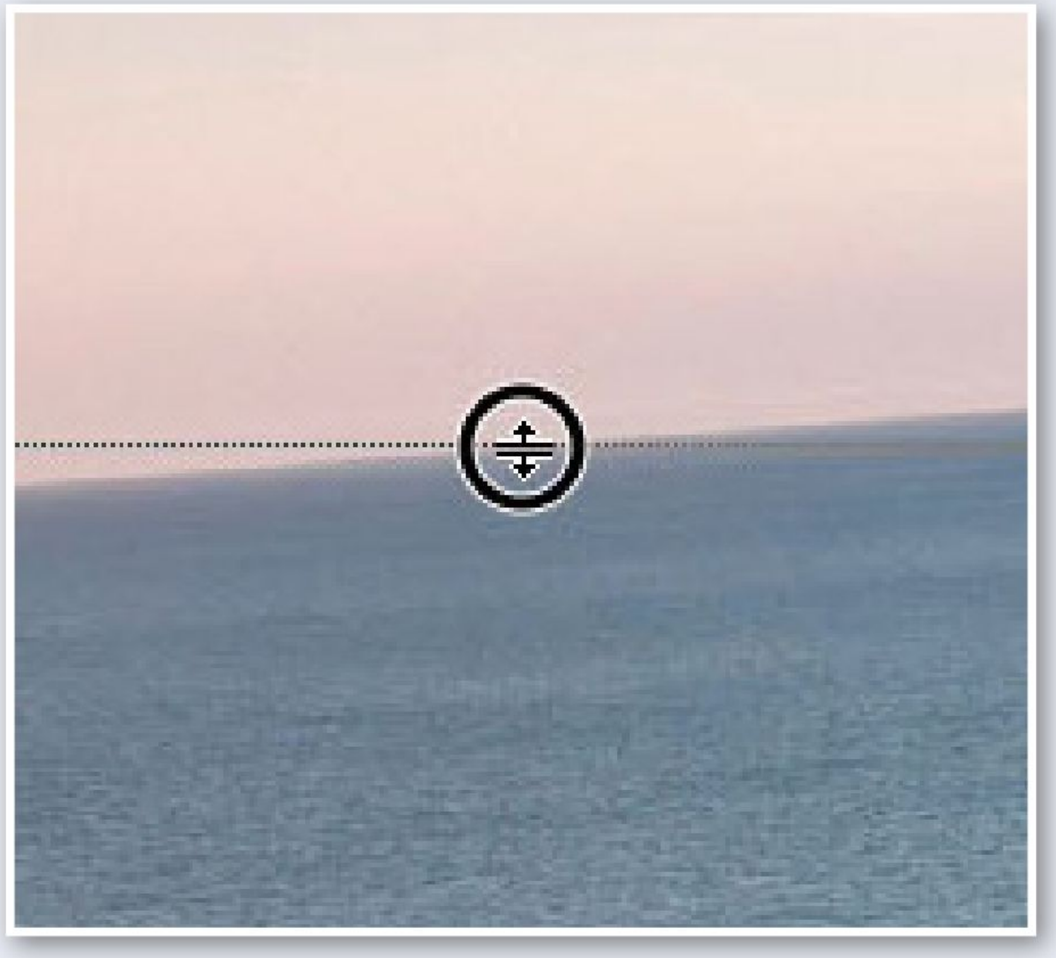

**06** Optionally you can have Elements do this step automatically, by selecting Crop to Remove Background from the menu in the tool options in the bottom left of the workspace.

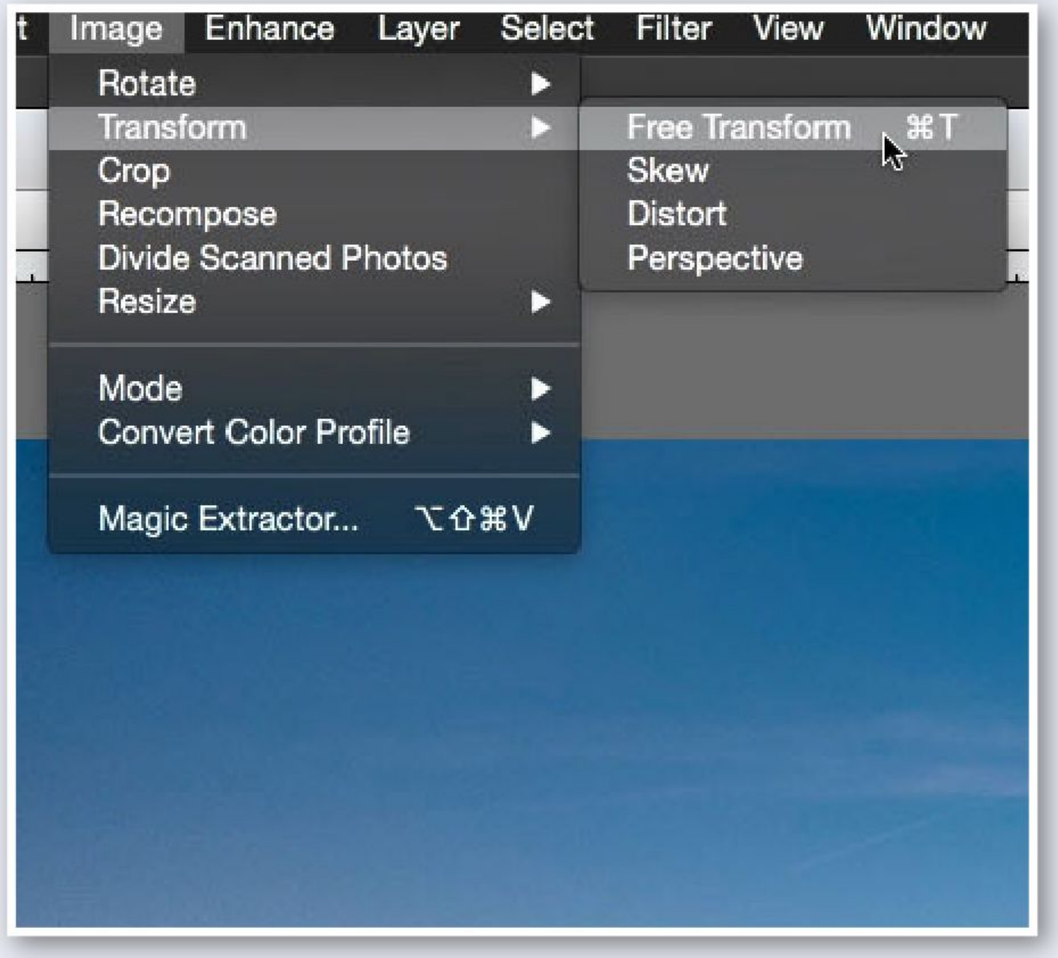



**07** Once you've done this, save the corrected version of your picture under a new name or number using the Save As... option so that you still have the original file.



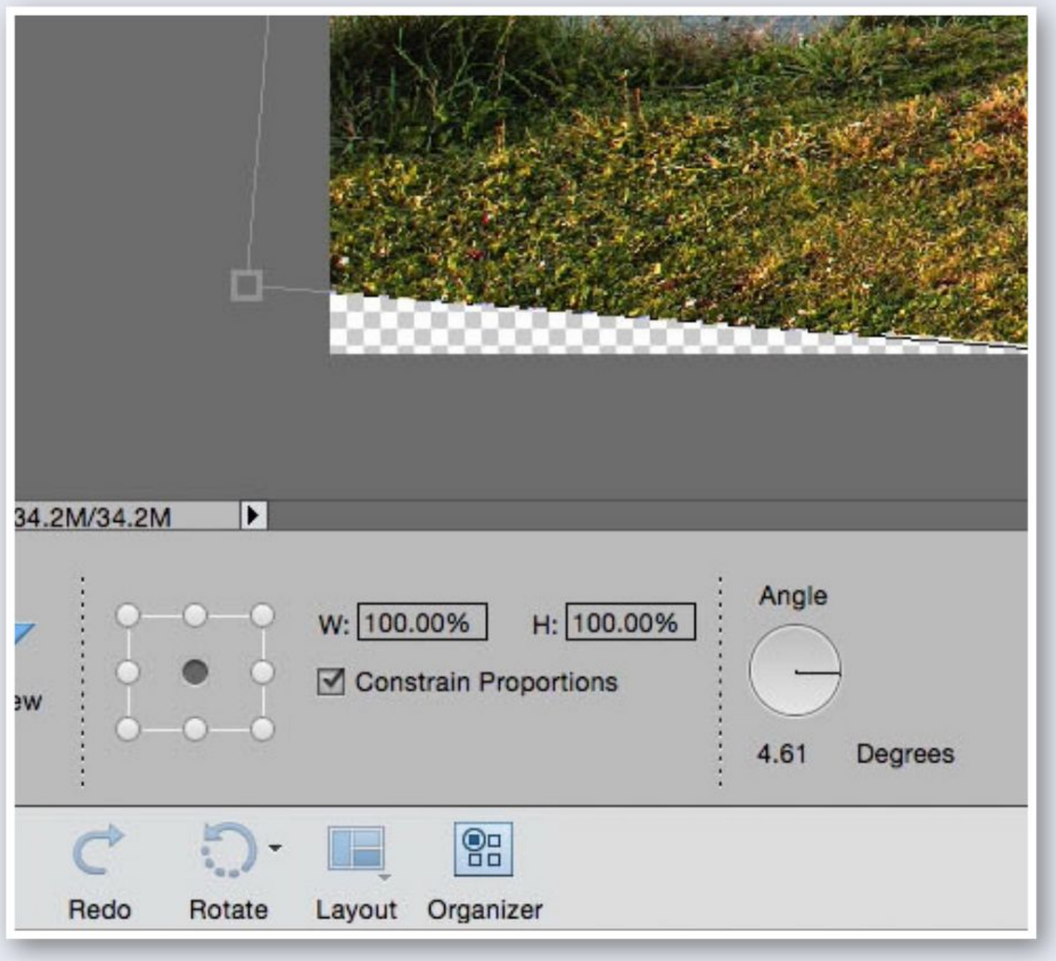

**08** Another way to rotate an image is by using the Transform function. This is useful if you want to rotate an image freely by hand or rotate just one layer in a multi-layer composition. You need to have Rulers visible. You'll find this option in the View menu.






**09** Next click on the horizontal ruler and drag downward. This will place a guideline on your picture. Position this line so it is close to the horizon. Don't worry, it won't show up on the finished image.

**10** You'll find the Free Transform option in the Image menu, under Transform.






**11** A line appears around your image, with grab handles at the corners; at the bottom of the screen are three input boxes, two for width and height and the third for rotation. Input an angle of rotation directly in this box or click and drag near one of the corner handles to rotate the image manually.

**12** Drag it until the horizon lines up with your horizontal guide, then press Enter to confirm the transformation. Crop off the white edges and save the image under a new name and you are done.

# Adding a graduated filter

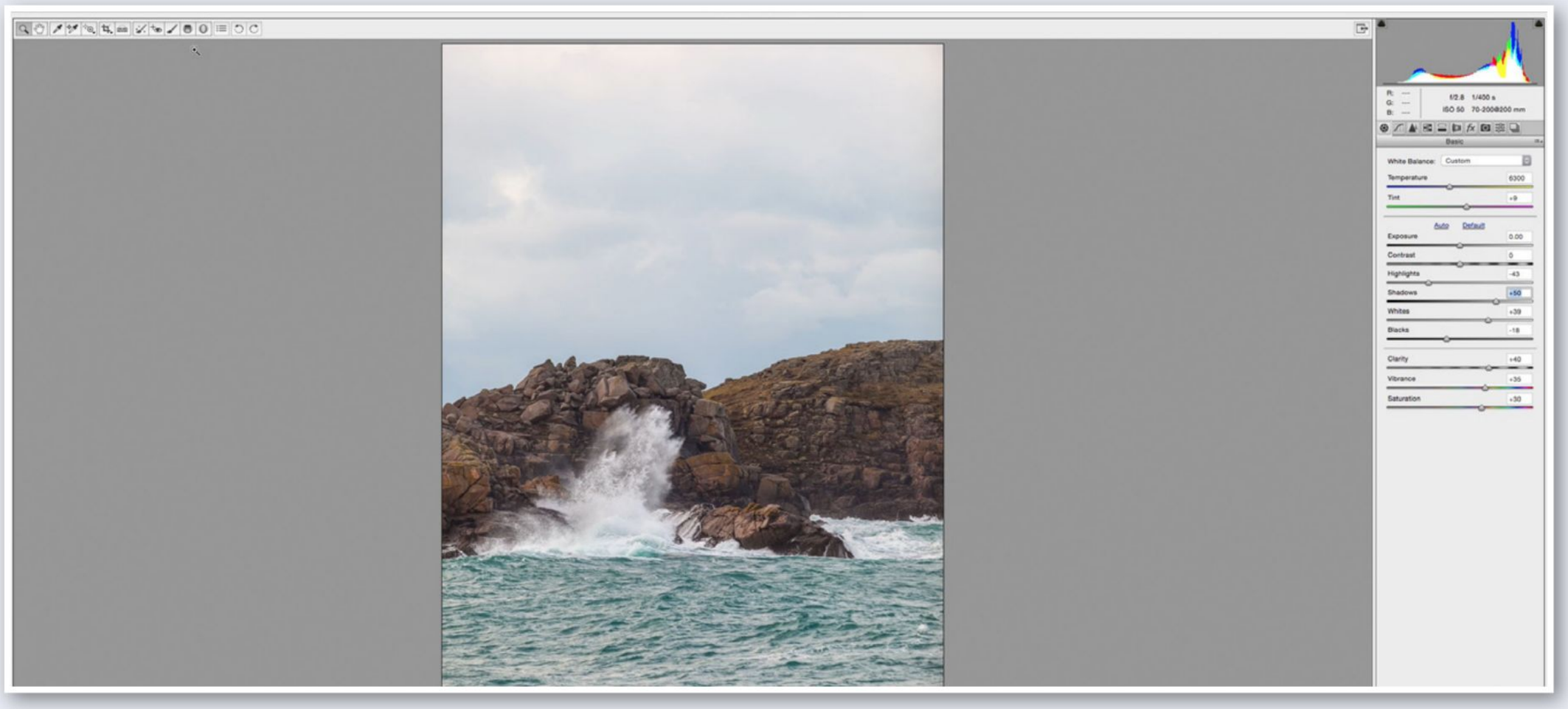
## Digitally balance exposure in your skies

As with most photographic techniques, it's possible to duplicate the effect of graduated filters using Adobe Photoshop and as usual there are several ways to accomplish this. For this example we'll use an image of a rocky coastline in the Isles of Scilly in Cornwall, taken on an overcast but bright day with a washed out sky.

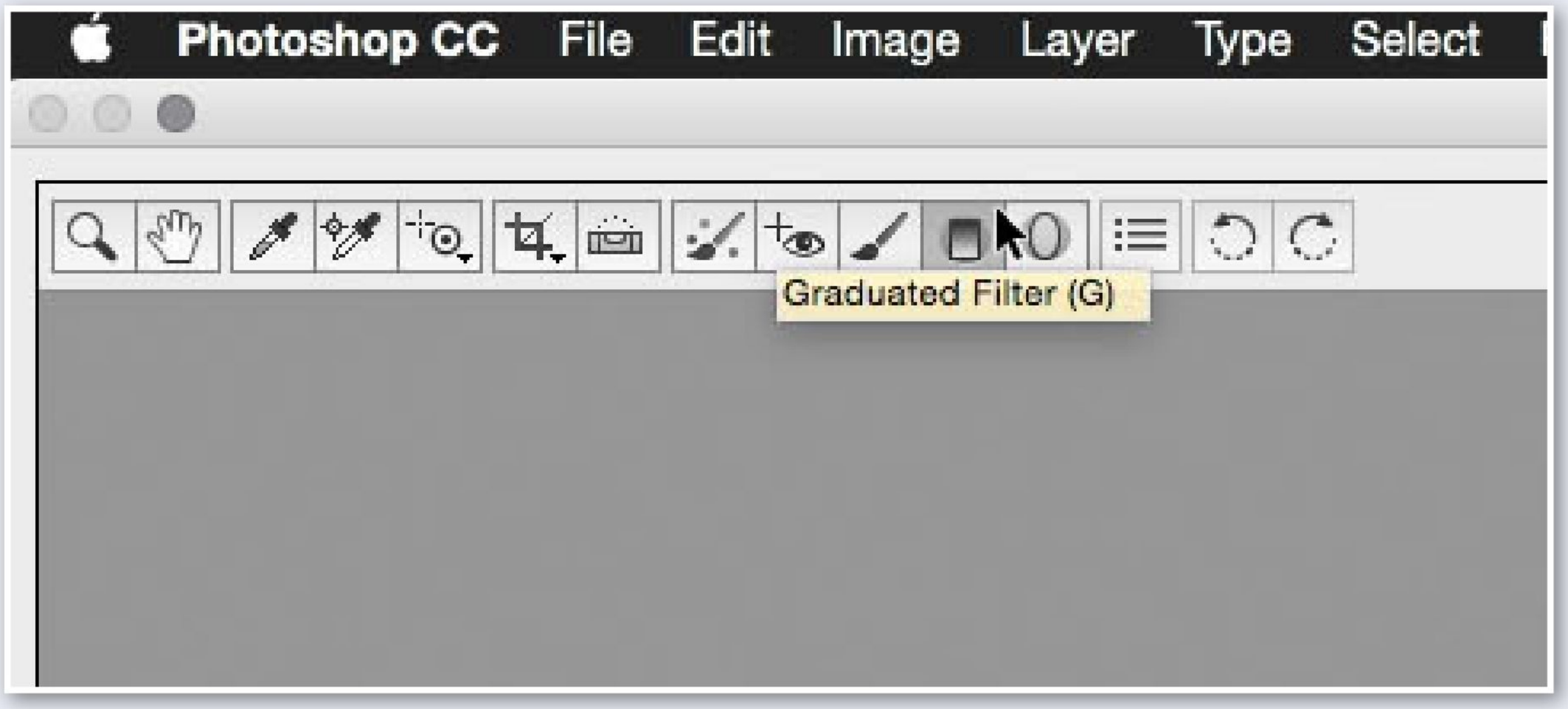
AFTER

BEFORE

PHOTOSHOP



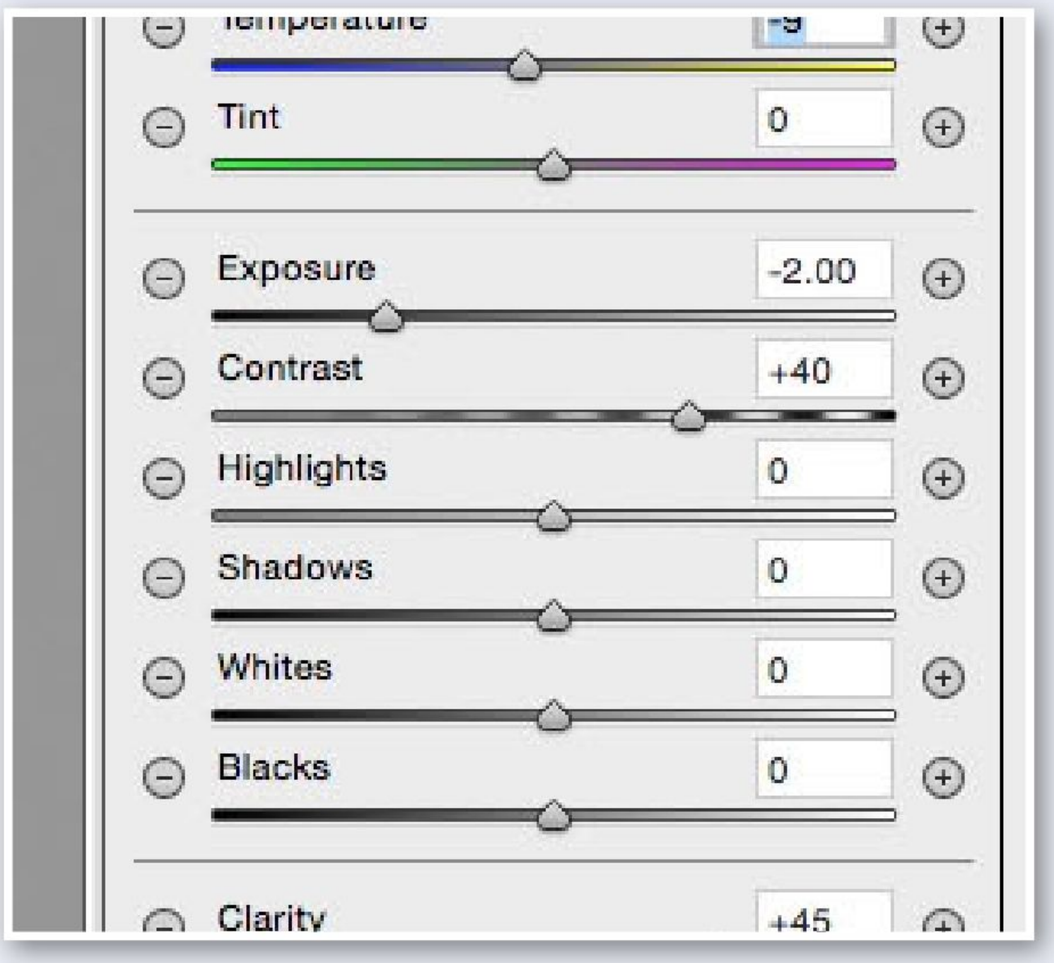

**01** Since this photo was taken using Raw mode, we can use the Graduated Filter tool in Adobe Camera Raw to add the effect during processing. This is by far the best way to do it, since it preserves the maximum amount of detail in the photograph.

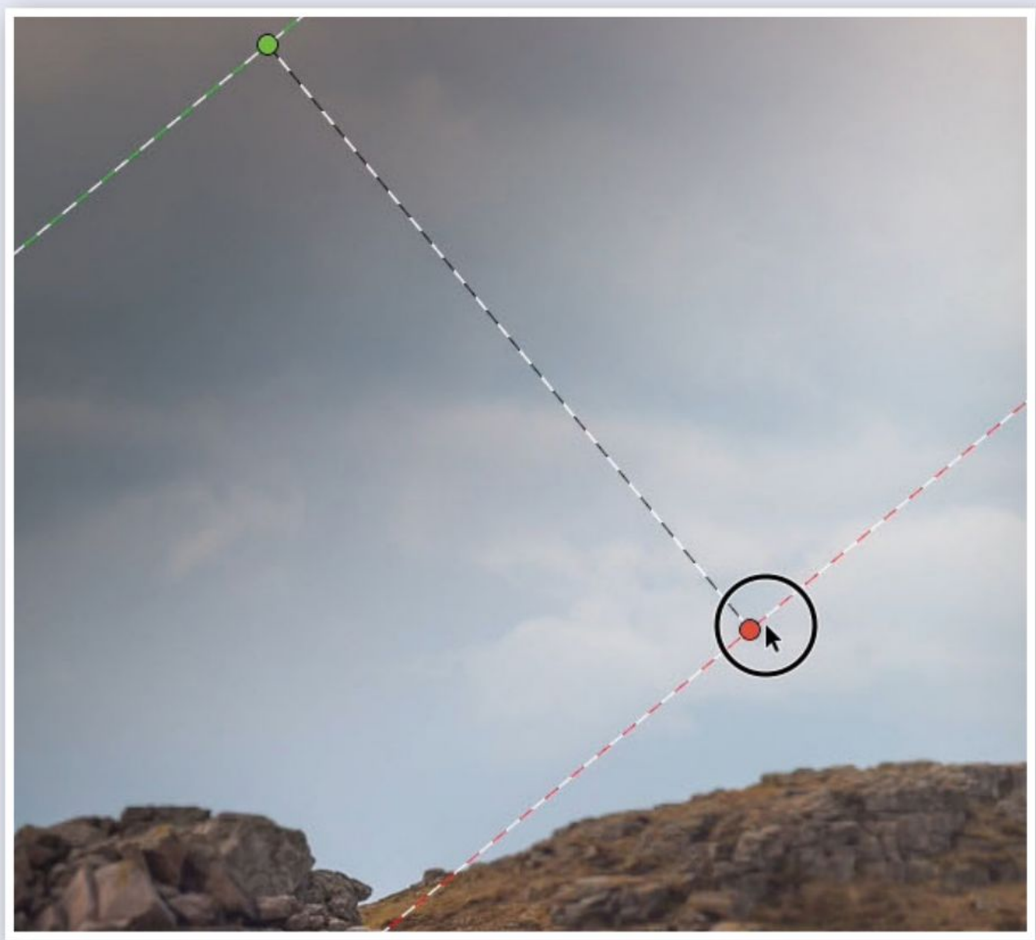



**02** When you open the image in Adobe Camera Raw, you'll see a row of tool icons across the top of the main image window. The Graduated Filter icon is to the right.

PHOTOSHOP

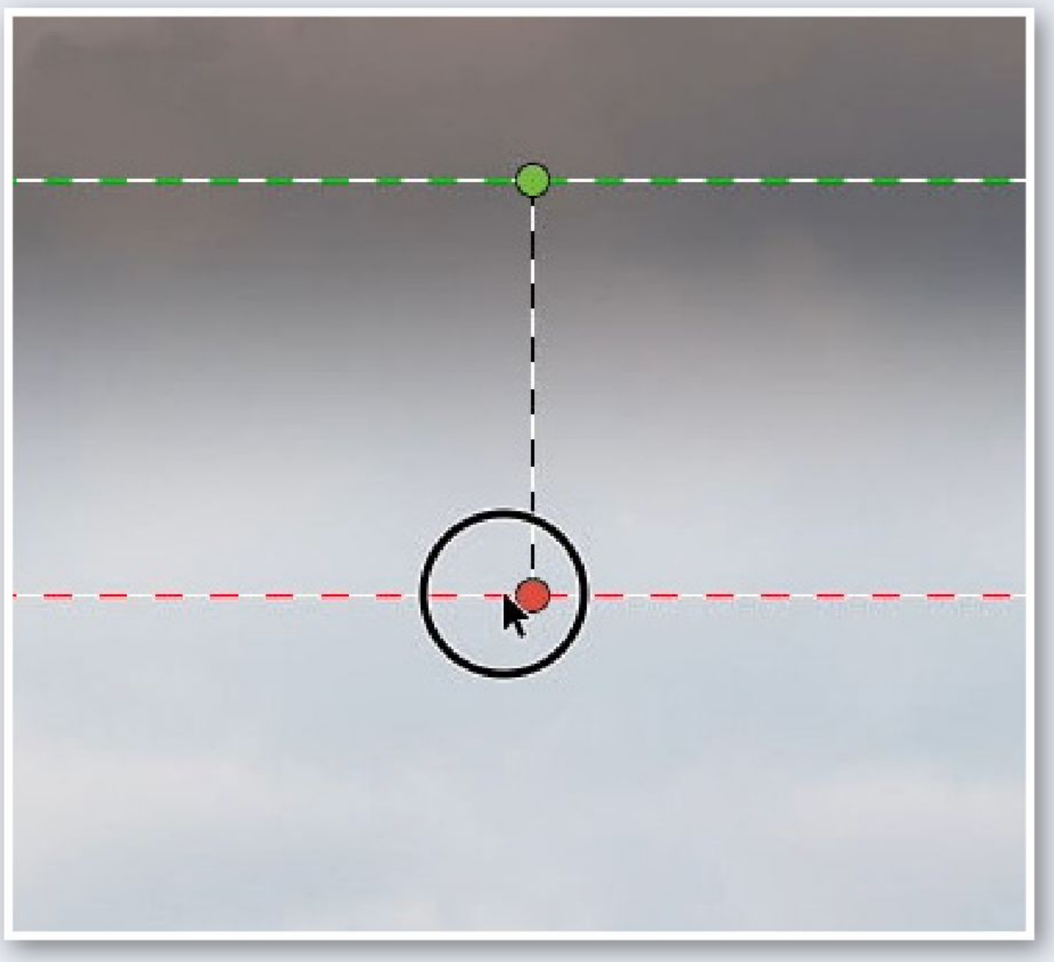
# Adding a graduated filter

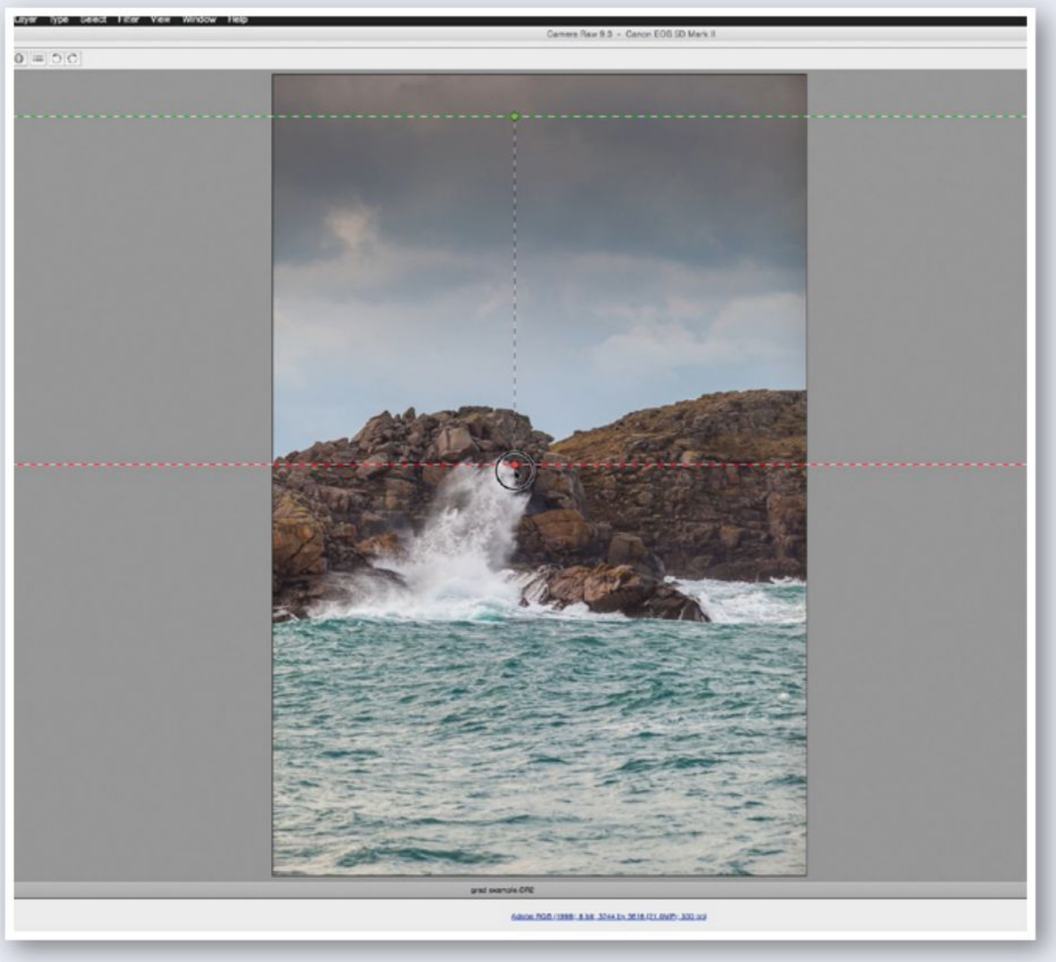


**03** Click on the Graduated Filter icon. You'll see the control panel on the right of the screen change. Set Exposure to -2.00, Contrast to +40, and Clarity to +45. This should help bring out detail in the sky.

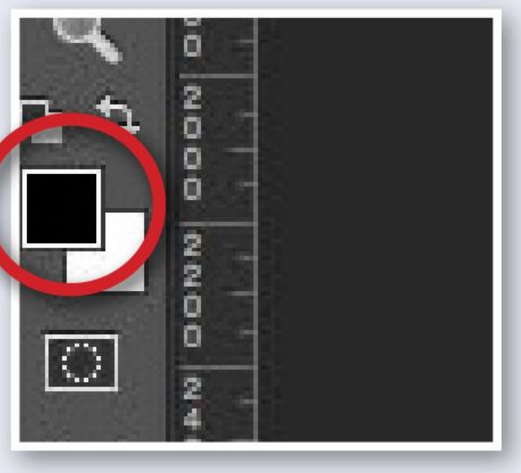
**04** Drag a line down from the top of the screen to the horizon line. You'll see a horizontal and vertical dotted line like an inverted T. You can change the angle of the line by moving the cursor left and right or you can hold the Shift key to constrain the line to the vertical.

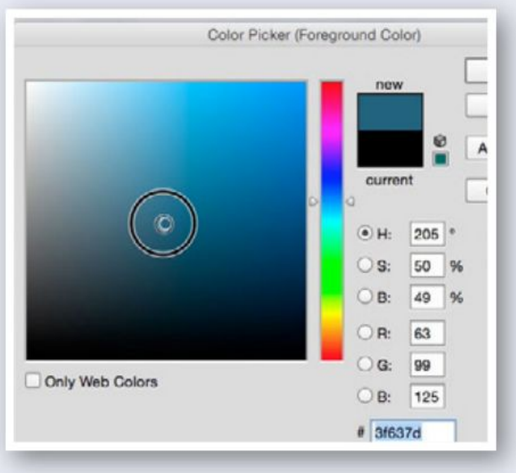


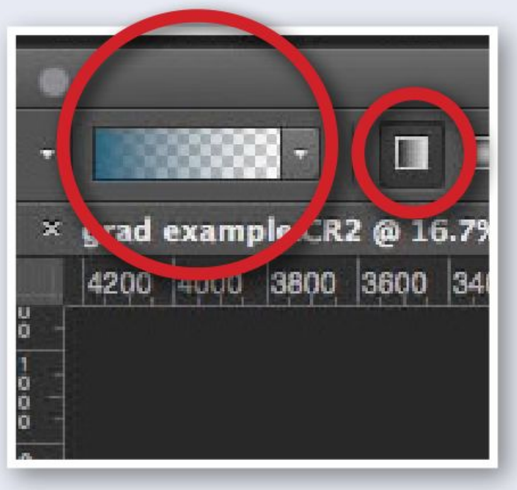


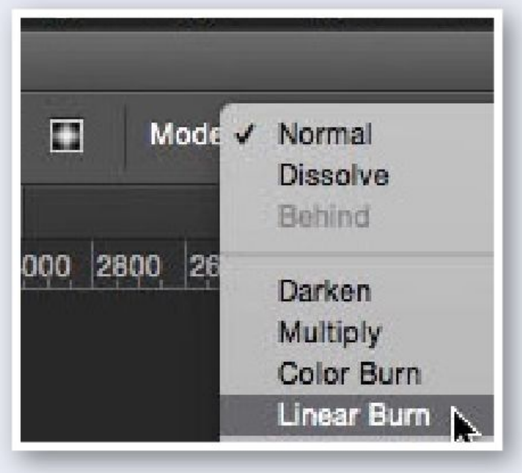
**05** The red dotted line marks the lower area of the gradient effect and a green line marks the top or darkest area of the effect, with a smooth gradient between the two lines. If you drag this green line down more of the image will be at maximum effect and the gradient will be shorter.

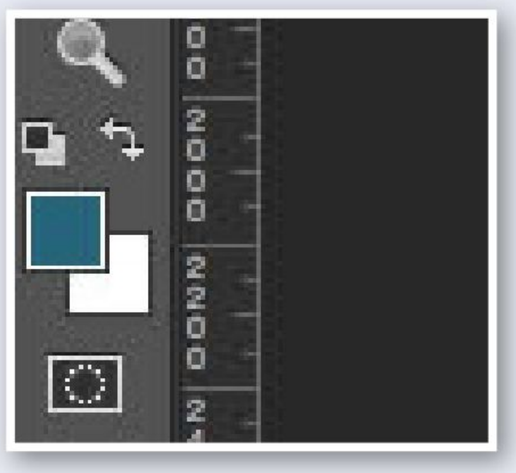
**06** At this point you could click Open Image and work on it further in Photoshop or just save it using the options available in Adobe Camera Raw. If you don't have a Raw file, you can always open a jpeg in Photoshop and add a grad there.

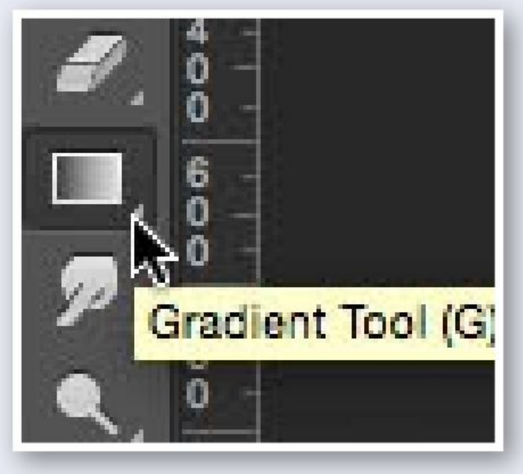


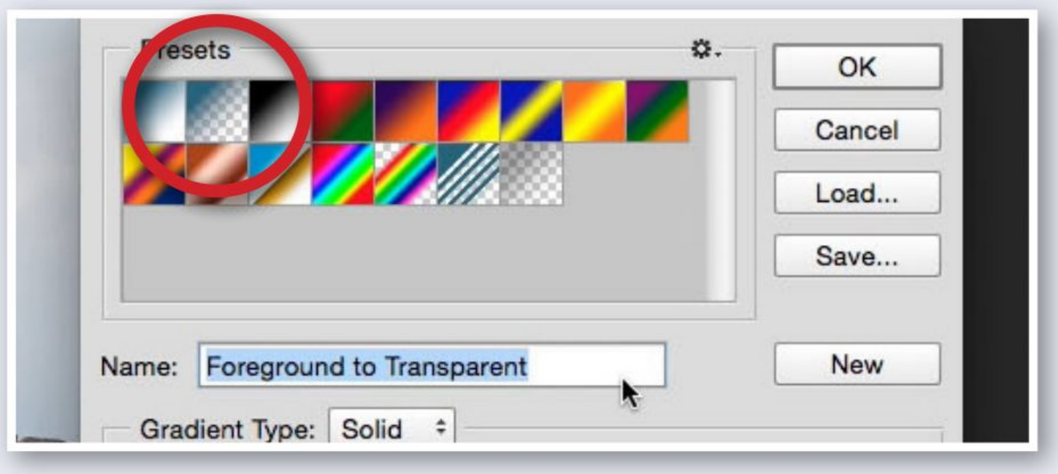


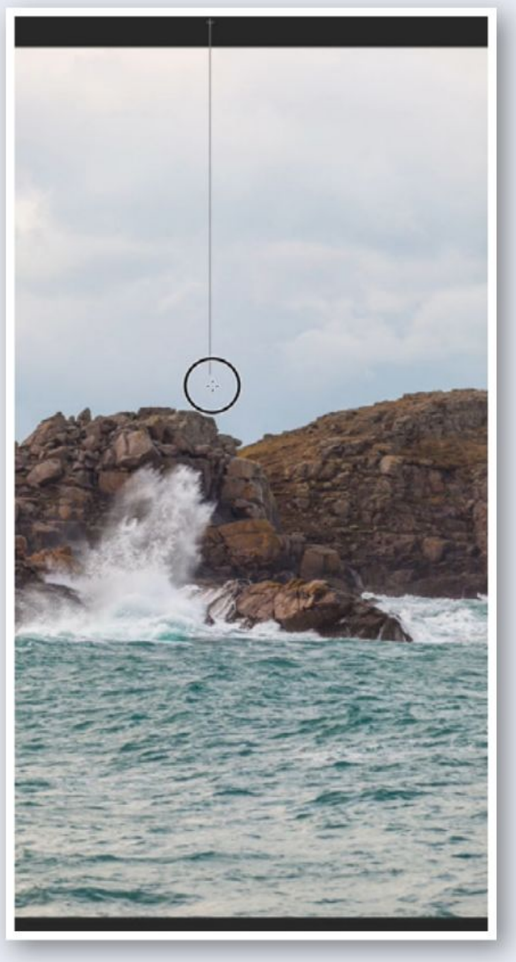



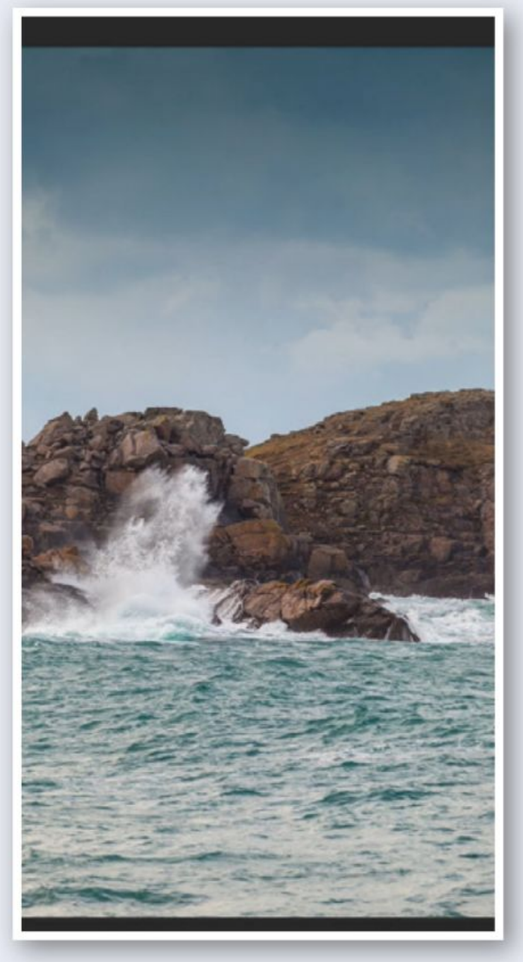



**07** If you prefer to work on your image in Photoshop, you can apply a graduated filter using the Gradient Tool. Set the foreground colour to blue by clicking on the foreground square and then using the colour picker to choose a colour. Then select the Gradient Tool.

**08** In the tool options bar, click on the gradient editor and select Foreground to Transparent; click on the button for Linear Gradient, set the Blending mode to Linear Burn and keep the Opacity to 100%. Make sure the boxes for Dither and Transparency are checked.







**09** Start at the top of the frame, click and drag down to the horizon line. If you hold down the shift key it will constrain the line to the vertical. A blue grad is blended into the sky, adding some detail back into the sky.

**10** Your image is much more balanced now that the sky has had the graduated filter applied. You will find many of your images that have overexposed skies, can benefit from this technique.

# Panorama stitching

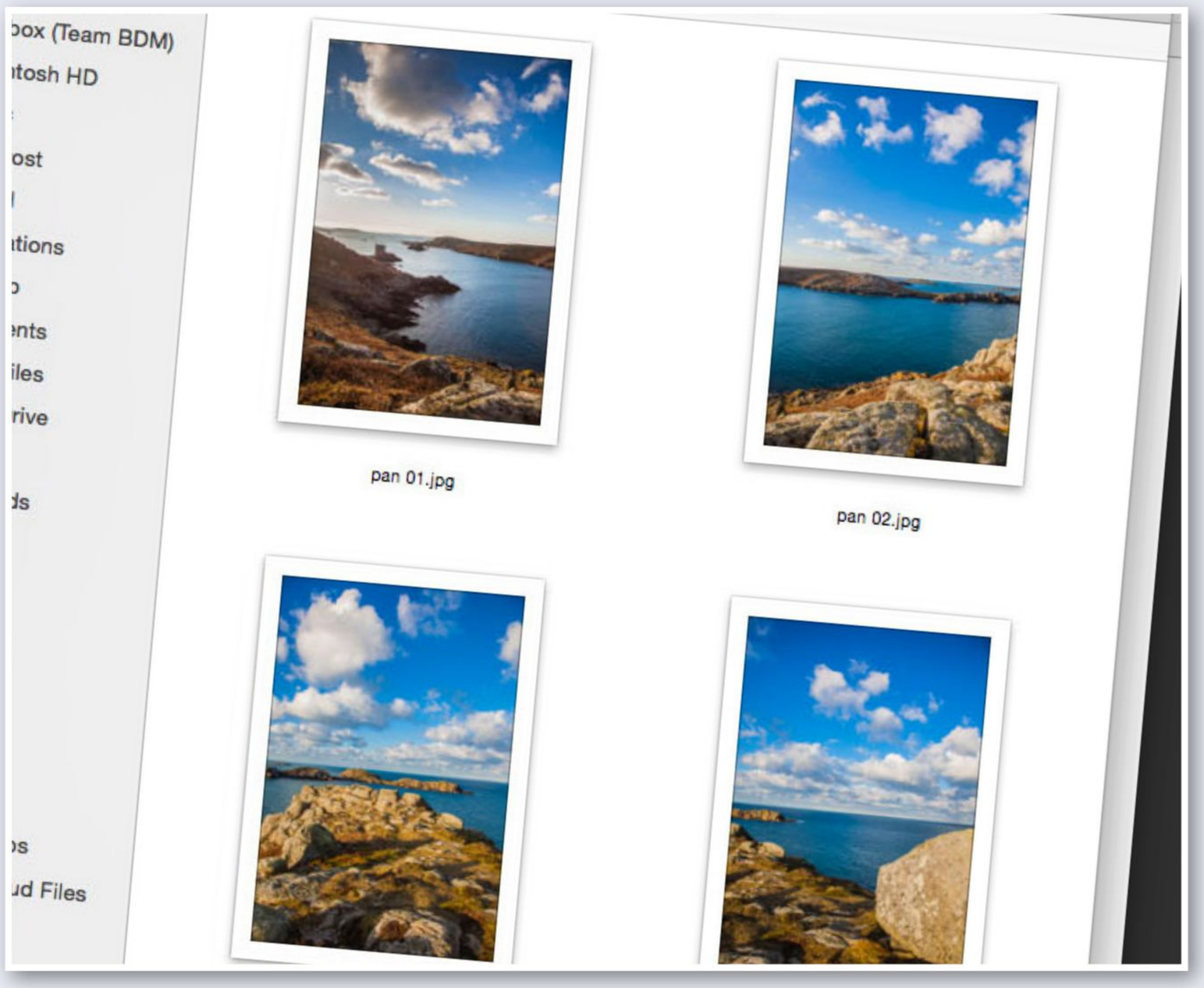
See the bigger picture with stitched panoramas



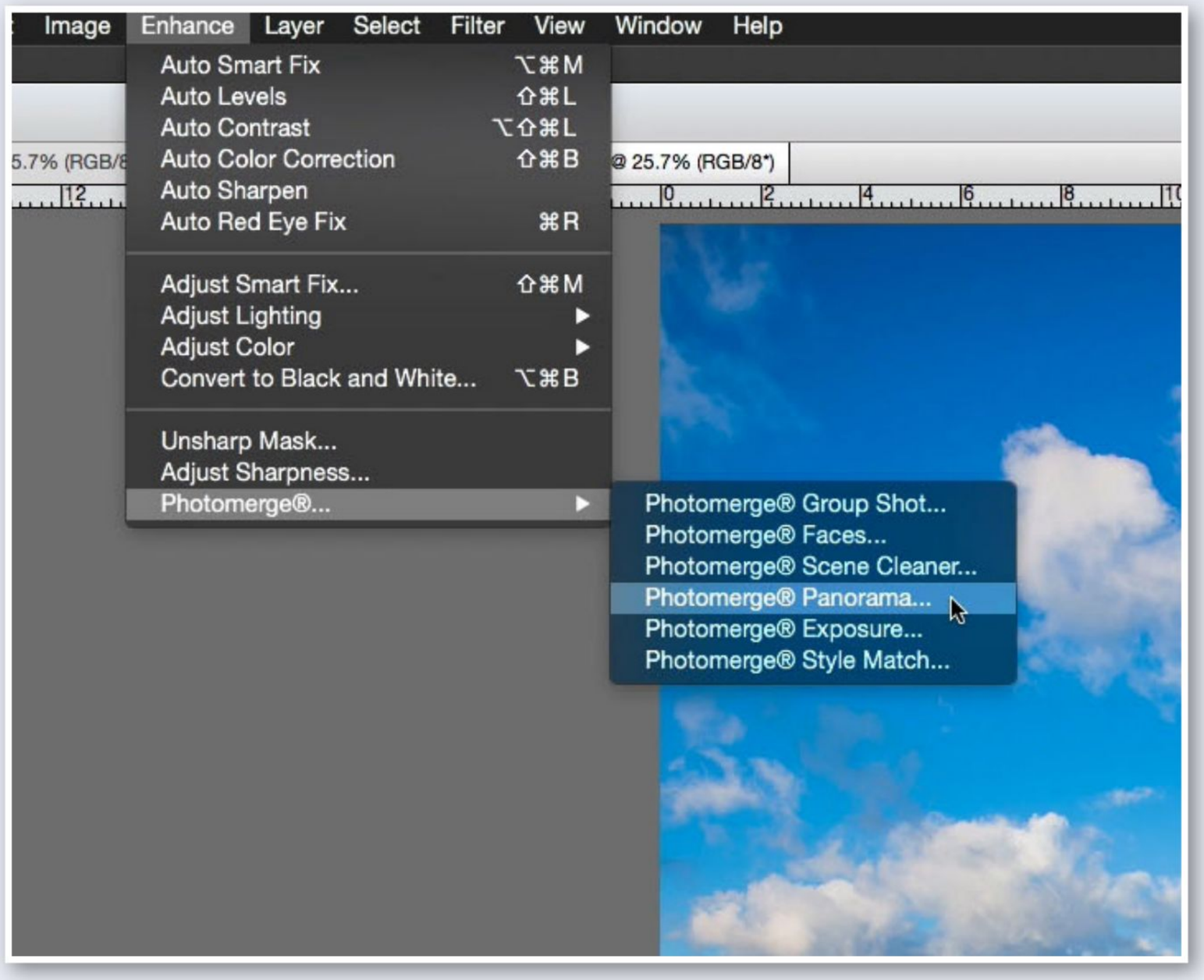

Earlier in this bookazine, we covered the procedures for shooting ultra-wide panoramas. This is a sequence of overlapping shots that cover a much wider field of view. They are a great method of capturing much bigger vistas than you could hope to manage with one shot and a wide-angle lens. The resulting images can be very large and contain a huge amount of detail. Some multi-shot panoramic images are known to have been captured that actually ran into file sizes that were measured in many gigabytes! Our panorama is a little more modest. We have a four shot sequence of the coast of Tresco in the Isles Of Scilly.

ELEMENTS

**01** Now that you have carefully shot your raw elements for the panorama, it's time to stitch them together. For the purposes of this tutorial we'll use our shots taken in Tresco. A portrait orientation set of four images will be what we use to create our panorama.



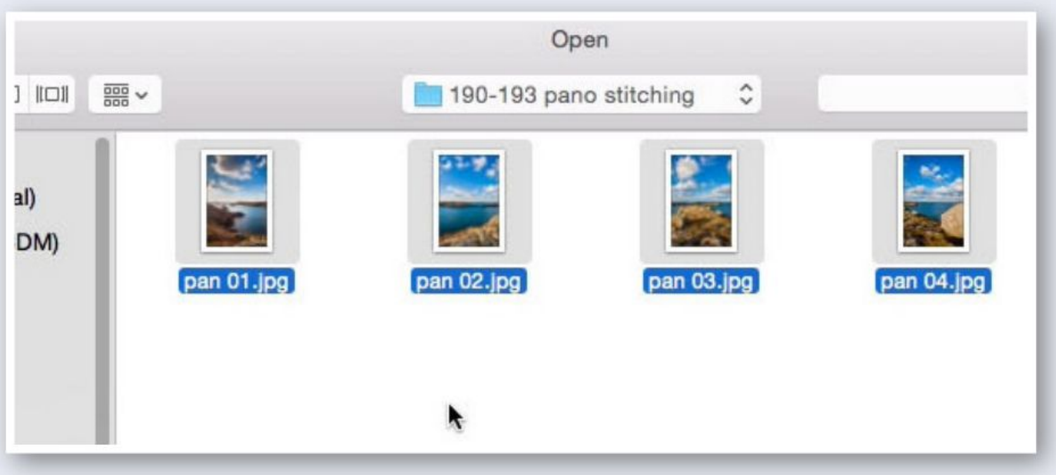

**02** In Elements you'll find Photomerge Panorama in the menu under "Enhance", along with several other automatic processes. In other programs it may be in the Edit menu.



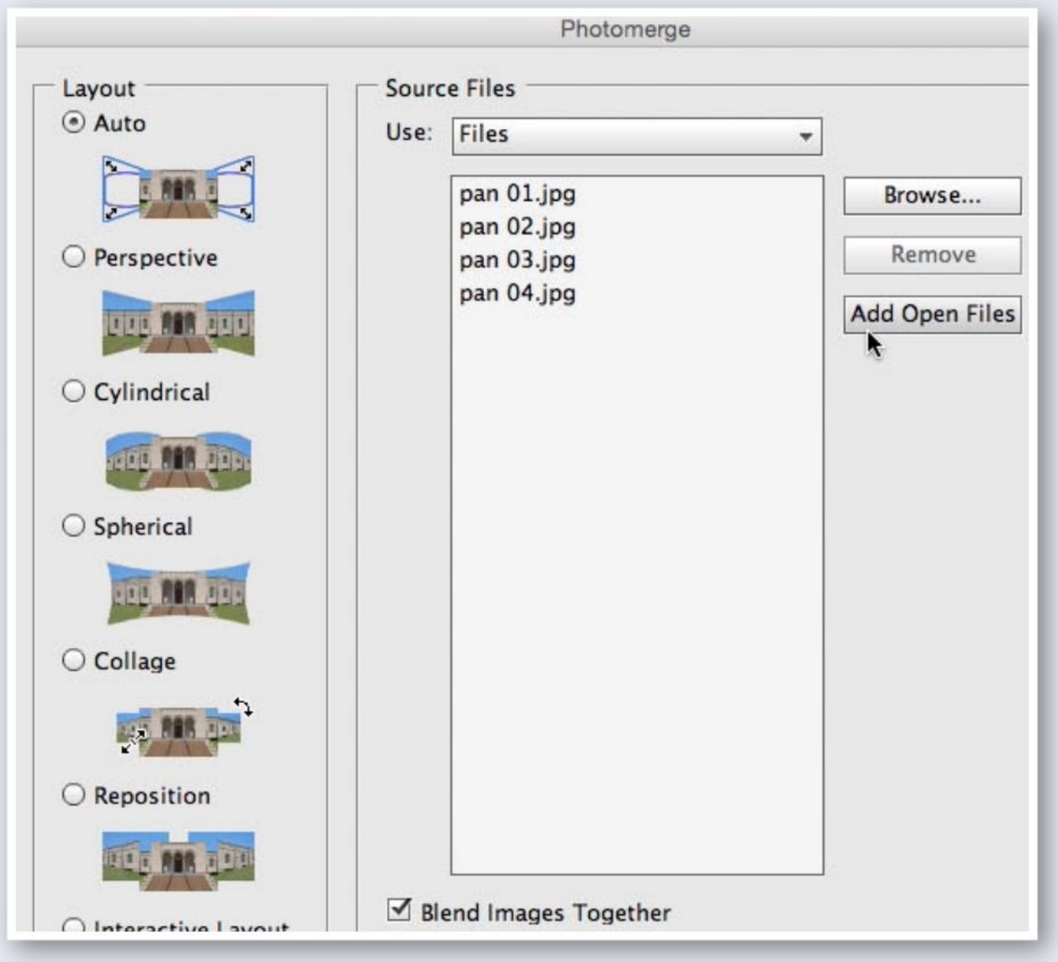
ELEMENTS

# Panorama stitching

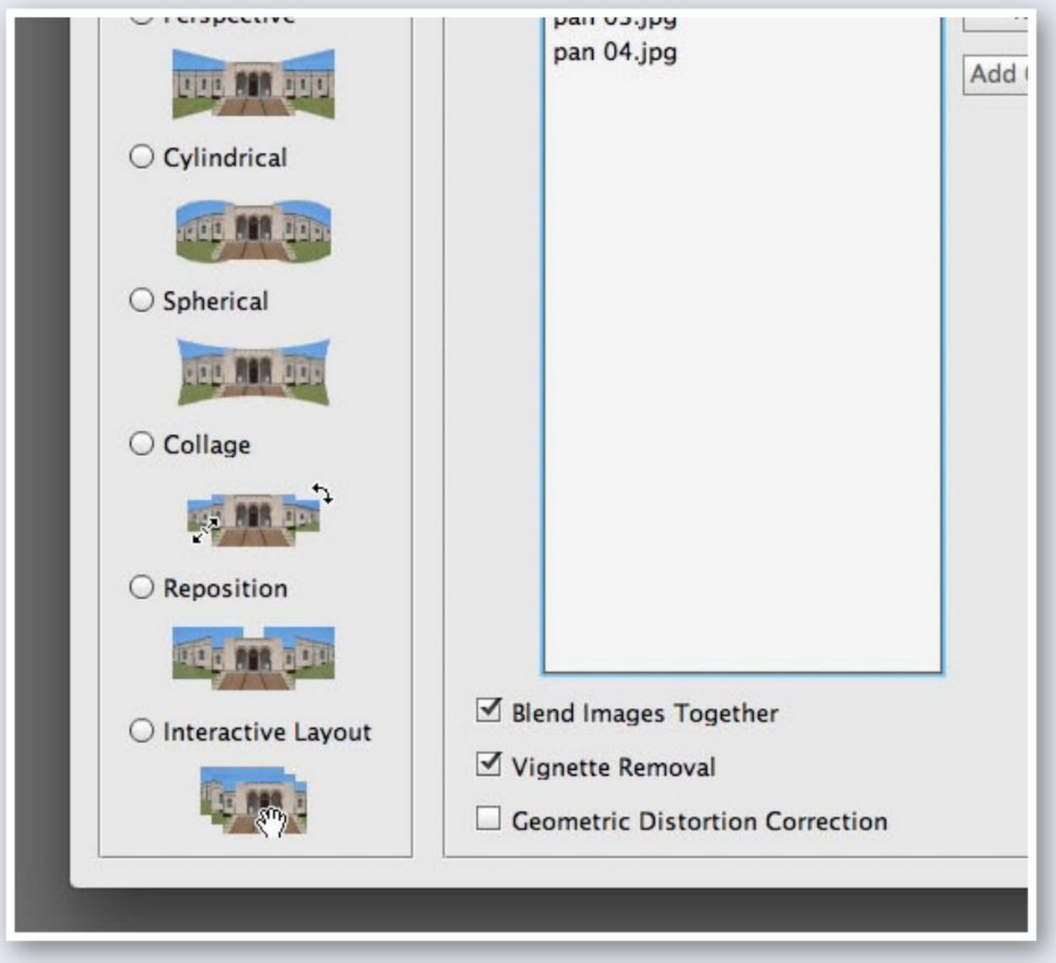


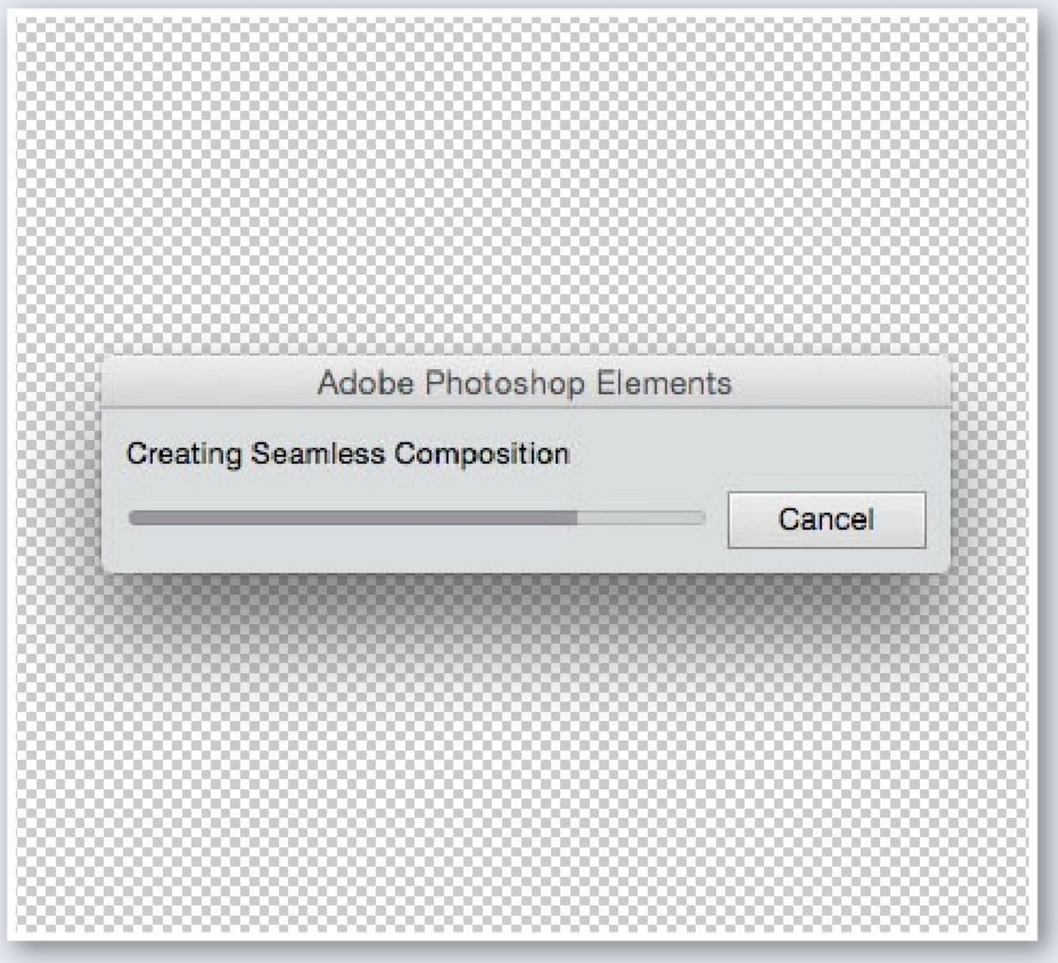

**03** If you click on this you'll see a simple dialog window with an option to browse to the location of the folder containing your panorama shots. Go there, highlight all the shots you want to include in your merged panorama and click OK.




**04** Note that if you have the shots already open in your editor, they can be selected automatically; since having photos open in the editing program uses up memory, the merging process will go faster if you leave them closed and use the dialog browser instead.



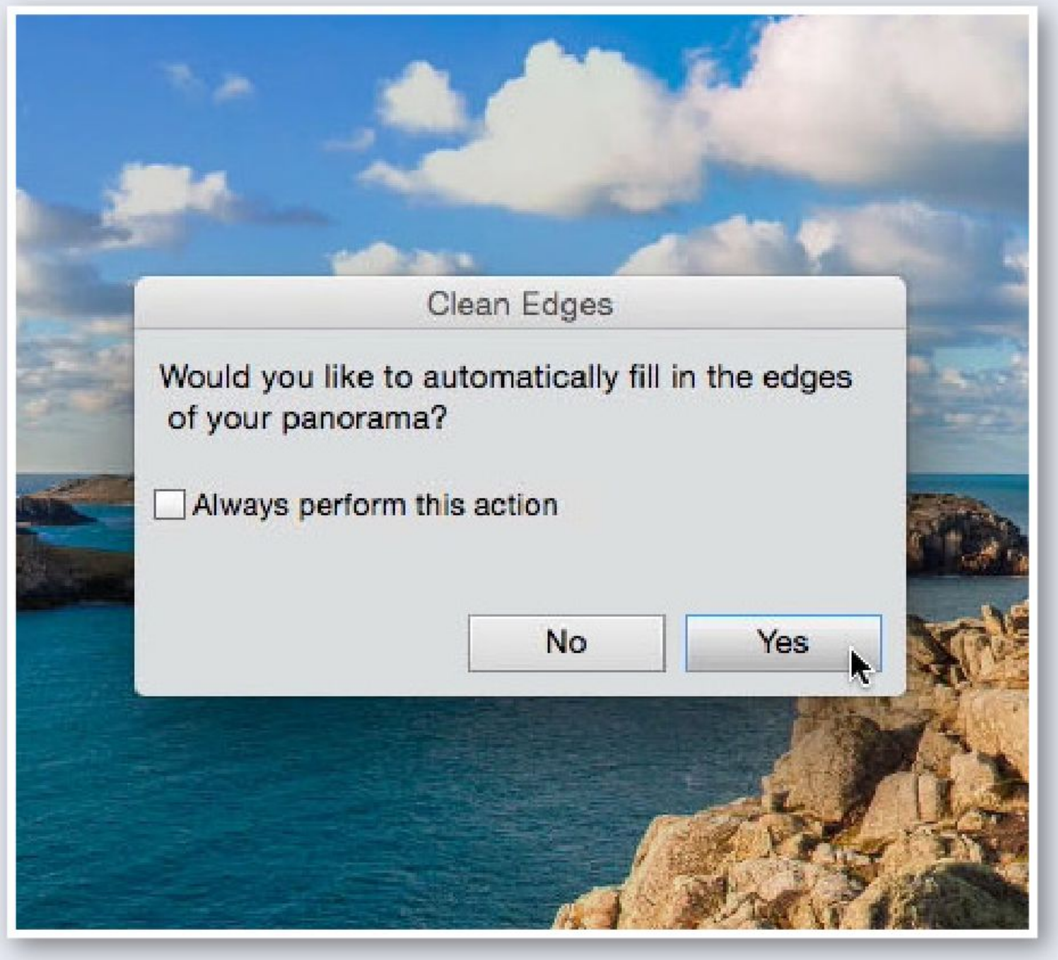

**05** Make sure you have the Blend Images Together button checked as well as the the Vignette Removal button. This will ensure a smooth blend between each shot in the panorama.




**06** Once you click OK the merging process starts and it is completely automatic. It will take a while to complete, possibly quite a long while if you have a slow computer and/or very large image files.



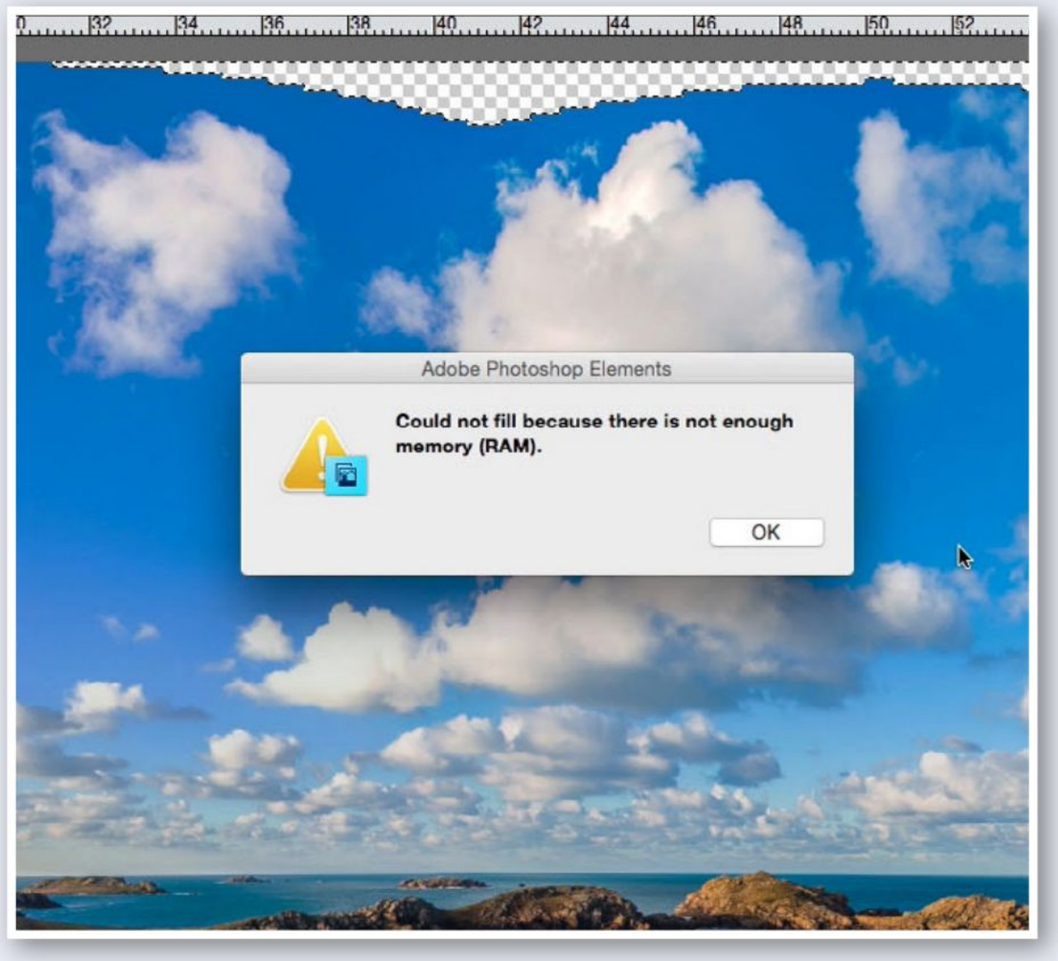

**07** When the stitch is complete, the first thing you will notice is that there are a lot of rough edges to your panorama. You could decide to crop your image manually but there is another option.




**08** The Photomerge Panorama function in Elements includes the option to automatically fill in any edges in your panorama using Adobe's content aware fill technology. Click Yes on this option.




**09** The Content Aware process will automatically try to fill in any gaps around the edge of your panorama. The newly filled image will be created as a new layer above your four original images and your panorama is complete.




**10** Be aware, if you choose the content aware fill function to clean up the edges of your shot, the size of your panorama will dictate how long the process takes. If you have a very large image, it can take some time. You may even experience an out of memory error.

# Digital exposure blending

## Convert one Raw file multiple times

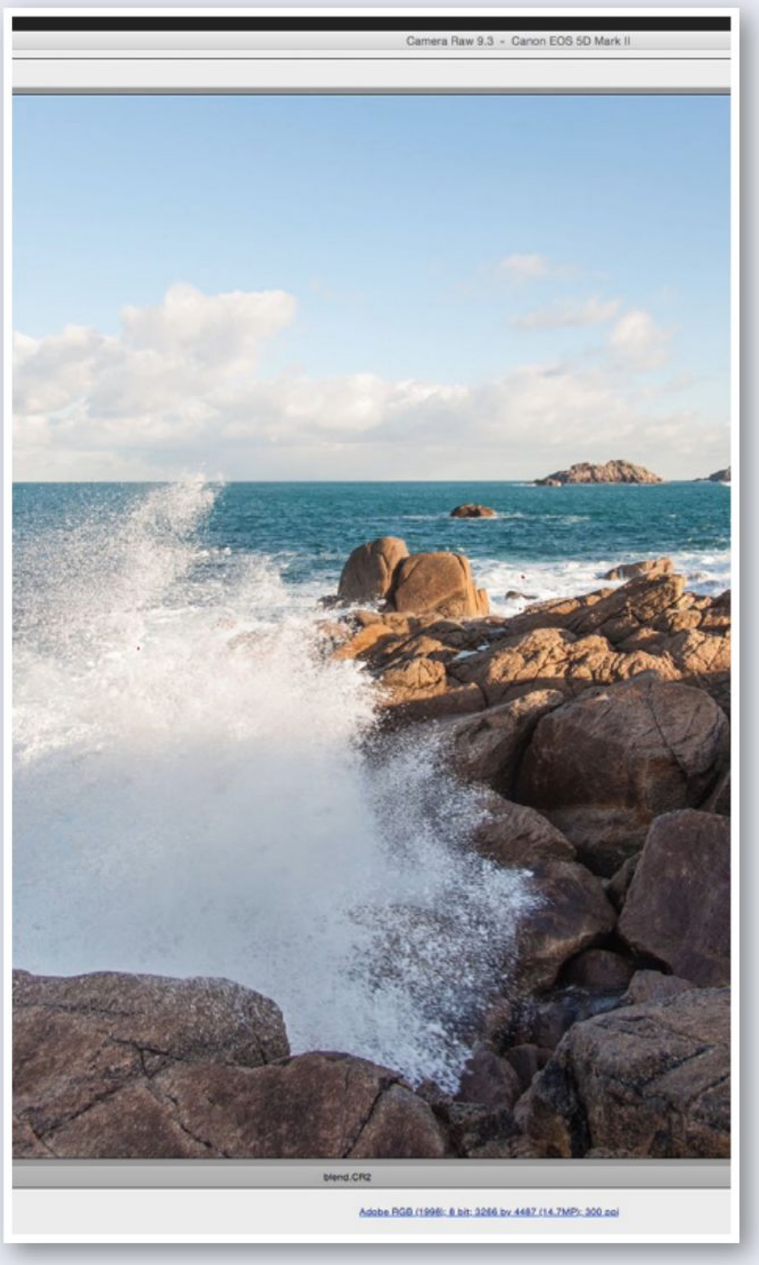
We have mentioned HDR images in this bookazine, where you shoot bracketed exposures and combine them using automated software. What happens if you only have one Raw file and no HDR software? Well there is an often used technique where you process a single Raw file a number of times with different exposure settings to get the most out of the various elements in the image, and then layer them in Photoshop and you selectively mask each one to only reveal the best of each exposure for each layer. It is a simple but effective way of producing a final image where all the elements blend together in a much more balanced final image. We take you through the process with a sample image shot on the North coast of Tresco in the Isles of Scilly, Cornwall.

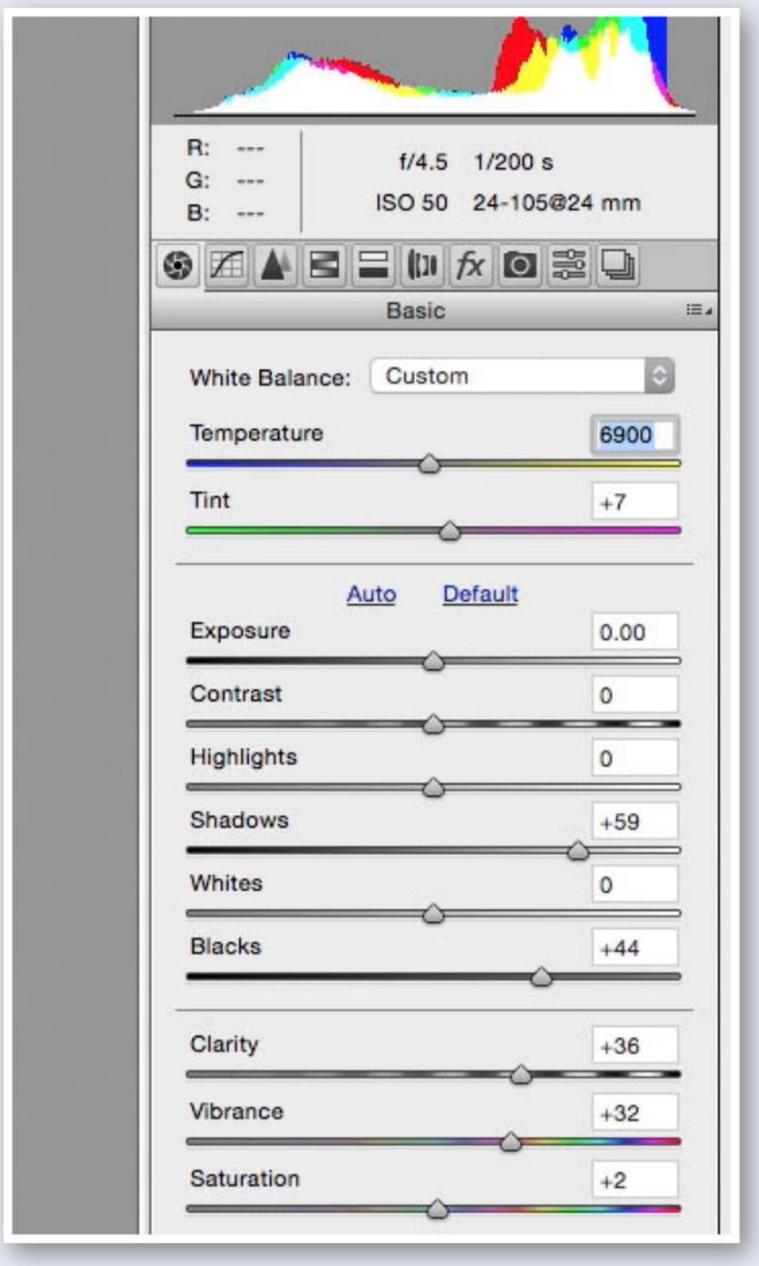


PHOTOSHOP

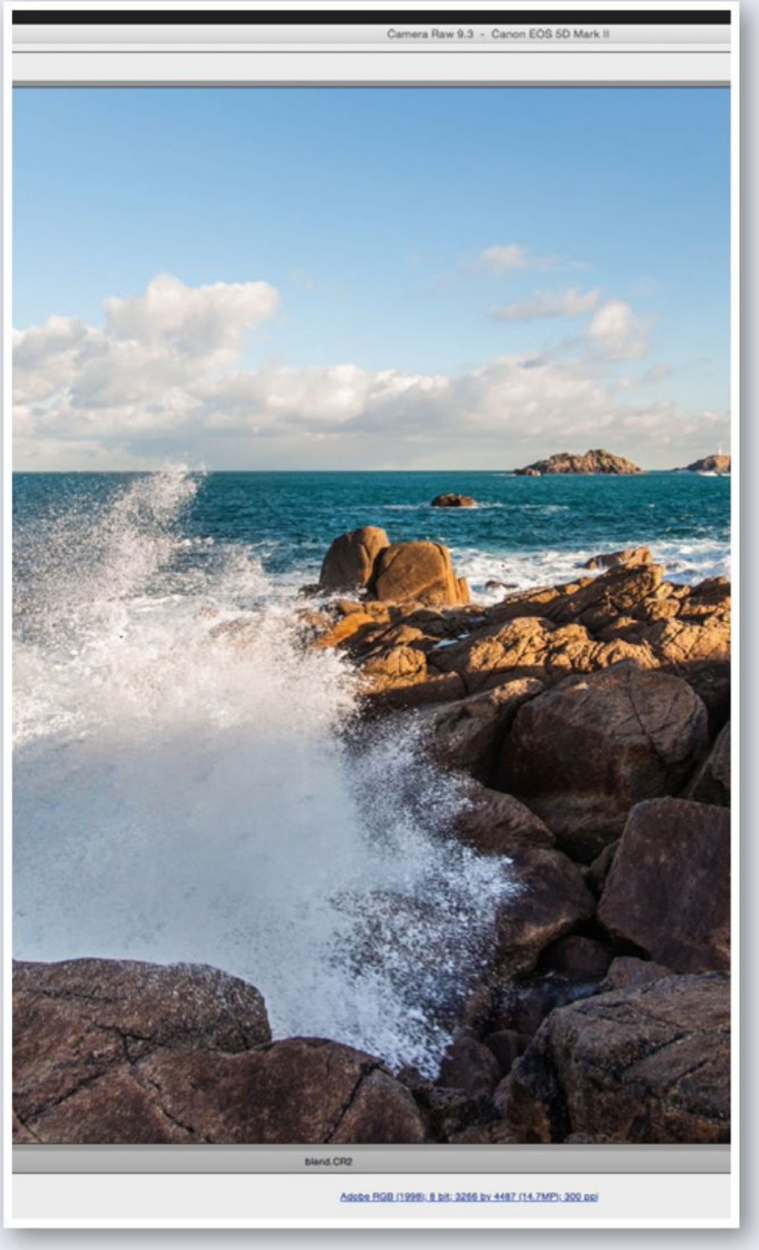


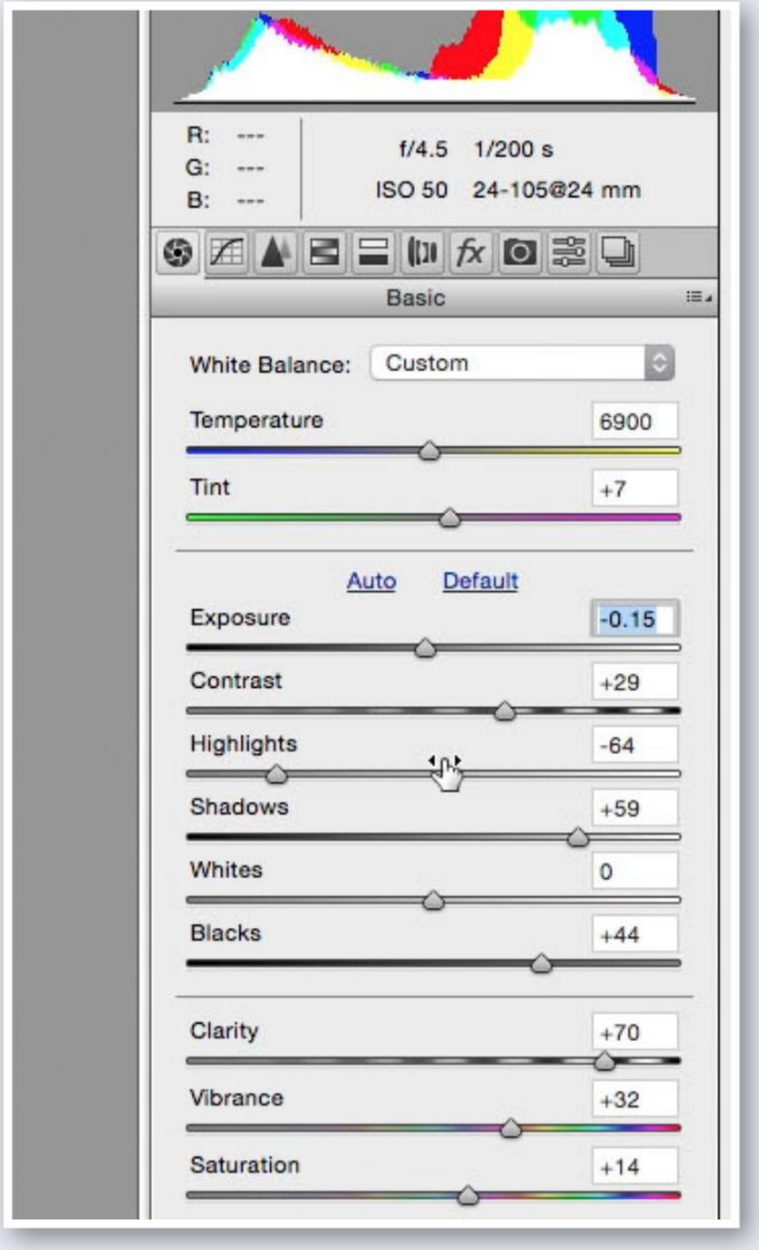
**01** The original single Raw file was opened in Adobe camera Raw. The image's settings were adjusted so the foreground rocks looked their best, revealing as much detail as possible. This image was saved as a jpeg called 'rocks'.




**02** The Raw file was then adjusted so that the sea and the white water spray were as well exposed as possible. In particular the Highlights settings were adjusted to recover detail in the brightest areas. This was saved again but called 'sea' this time.



PHOTOSHOP

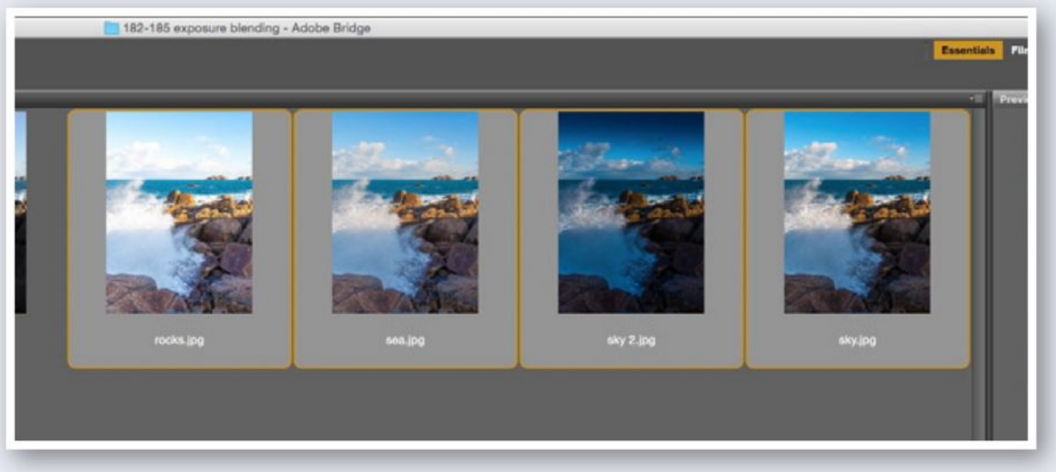
# Digital exposure blending




**03** Once again the Raw file was adjusted. The exposure was decreased so the sky was darker but with enough contrast in the clouds. This version was saved as a jpeg named 'sky'.



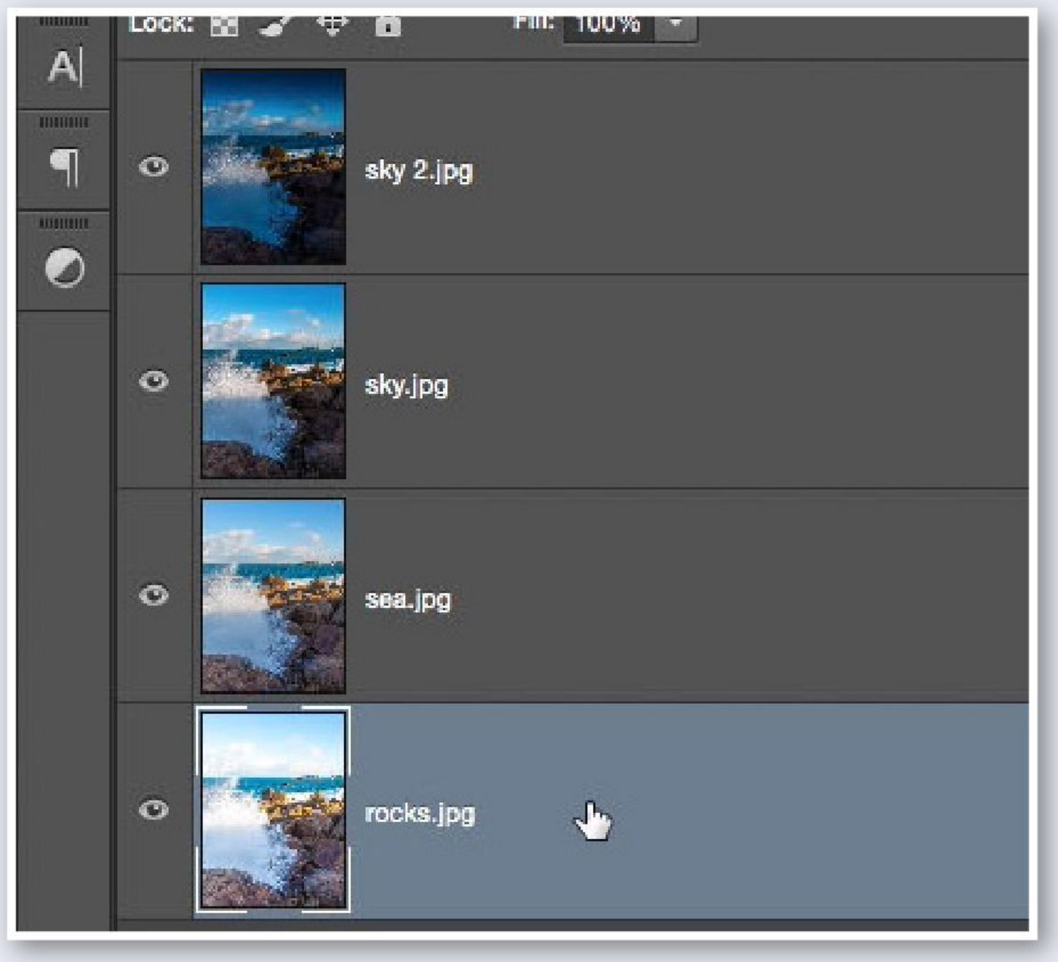

**04** Finally it was decided to create one last jpeg called 'sky 2' which was darker still than the previous version. This meant there was a deeper blue sky at the top of the image. Note that the other details are too dark but will not be seen in the final image.



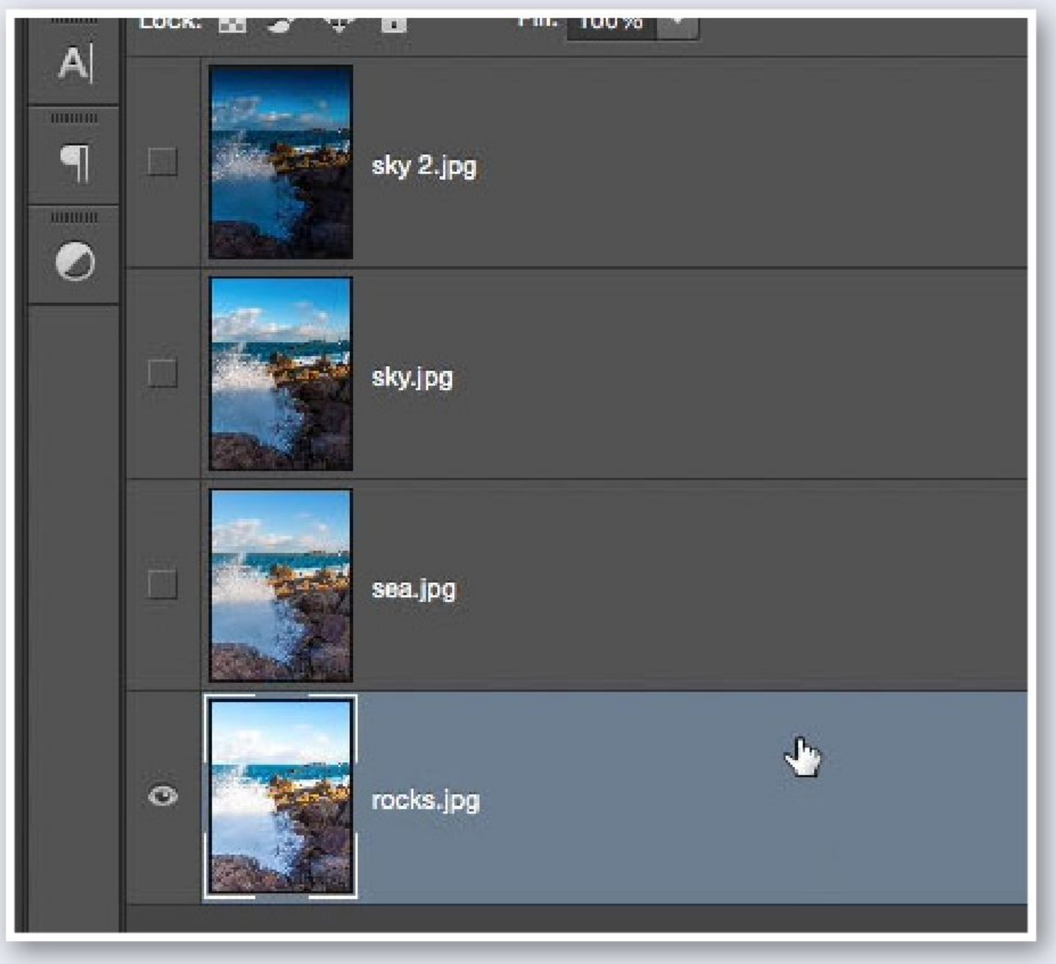




**05** In Adobe Bridge select the four jpegs and then go to Tools > Photoshop > Load Files into Photoshop Layers. The four images will be loaded into Photoshop in one document and stacked in individual layers.

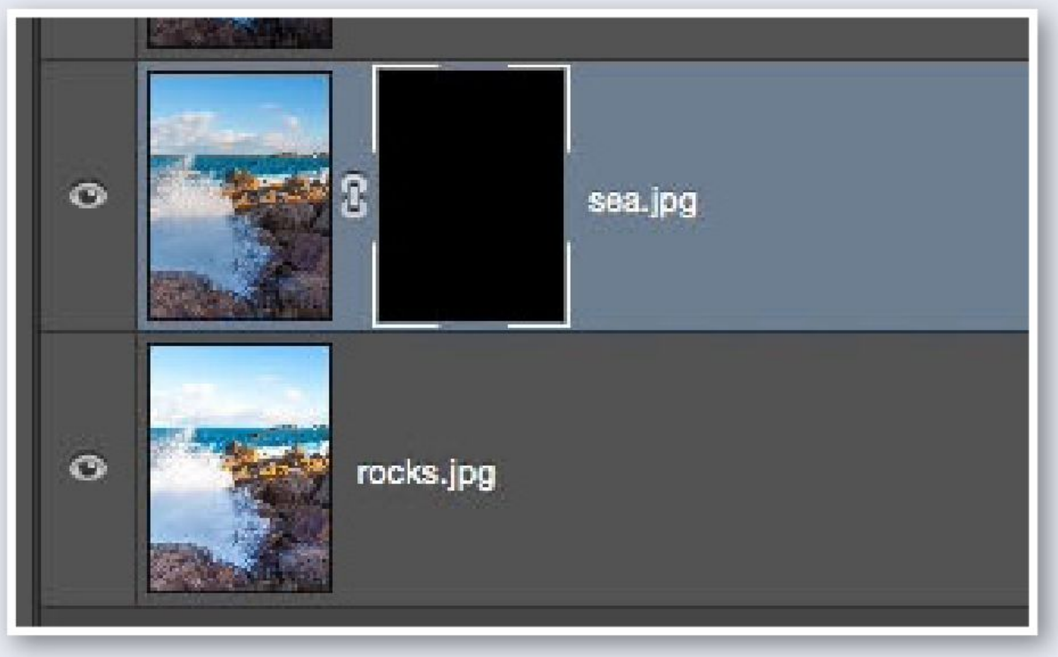



**06** In our example, we have ordered the images with the 'rocks' layer first, then 'sea', next is 'sky' with 'sky 2' at the top of the stack.





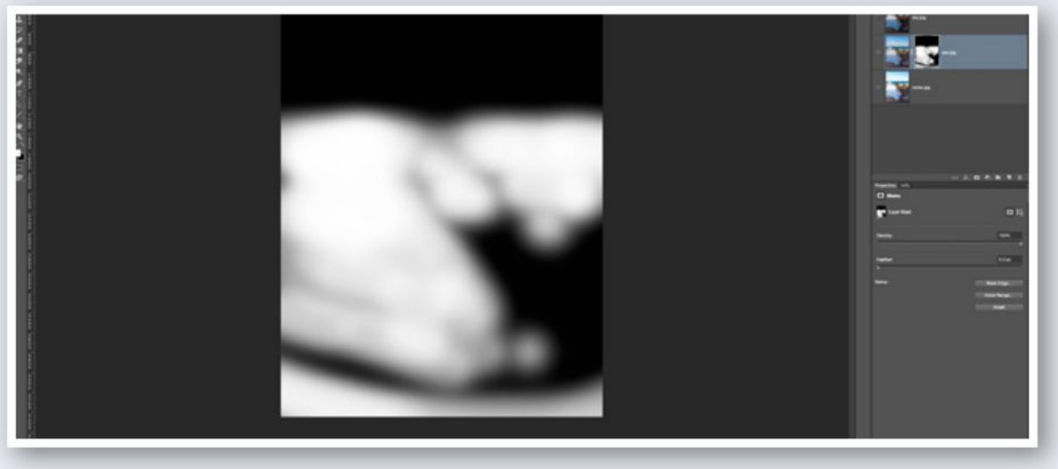




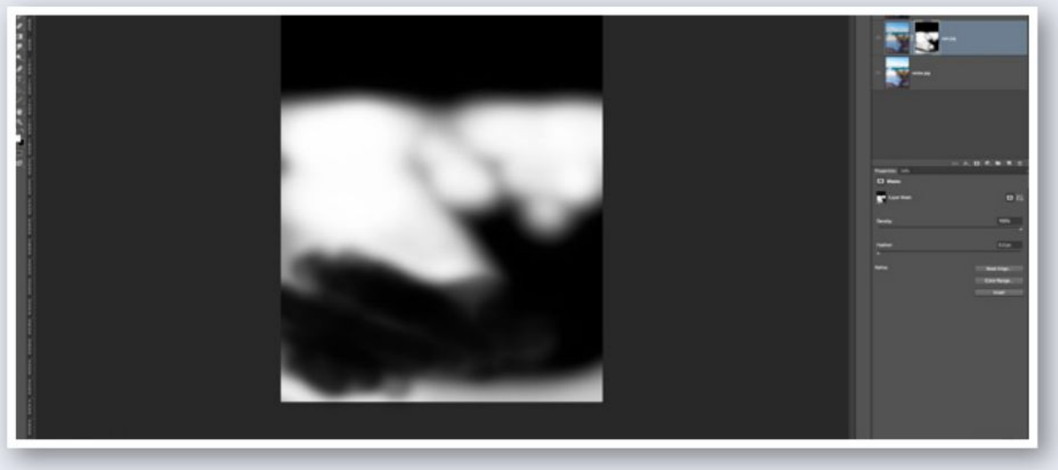

**07** For the moment turn off the visibility of all the layers except the 'rocks' layer. This is our base image. Each subsequent layer will be masked to let a specific portion of each layer to show through and blend with the base 'rocks' layer.

**08** Make the 'sea' layer visible. Whilst pressing the Alt key click on the Add Layer Mask icon to add a black mask to the 'sea' layer. The 'sea' layer will become blocked by the mask but we can start to reveal areas of this image in the next step.







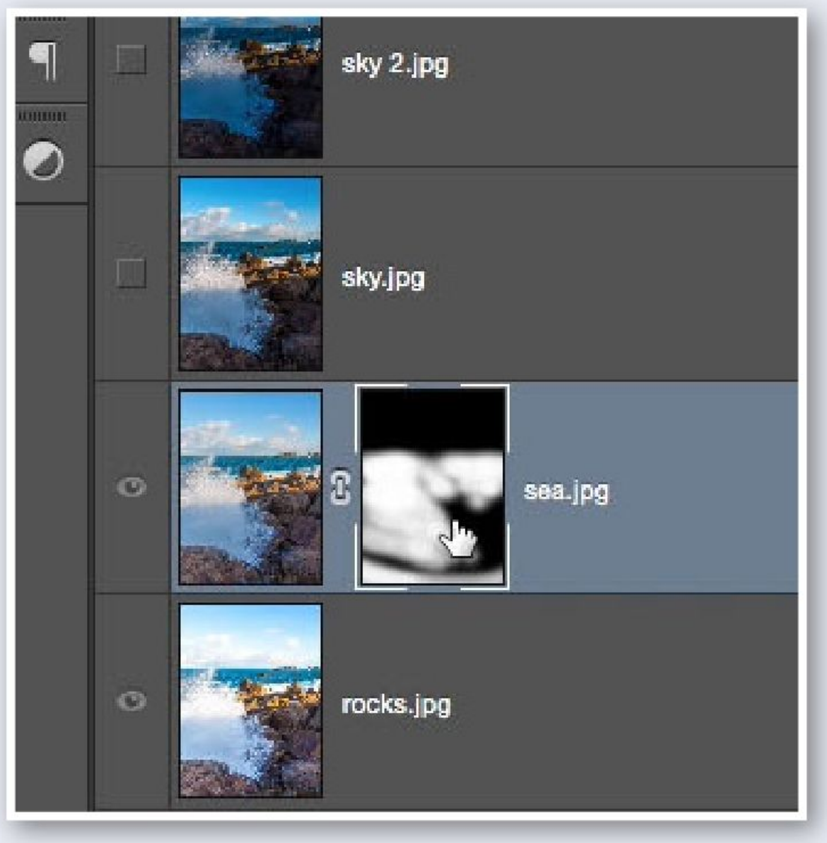
**09** Click on the 'sea' mask thumbnail to activate it. Choose a large soft brush and start to paint white in the areas of this layer you want to be visible. As you paint on the mask, more of the well exposed sea and spray will be allowed to show through.

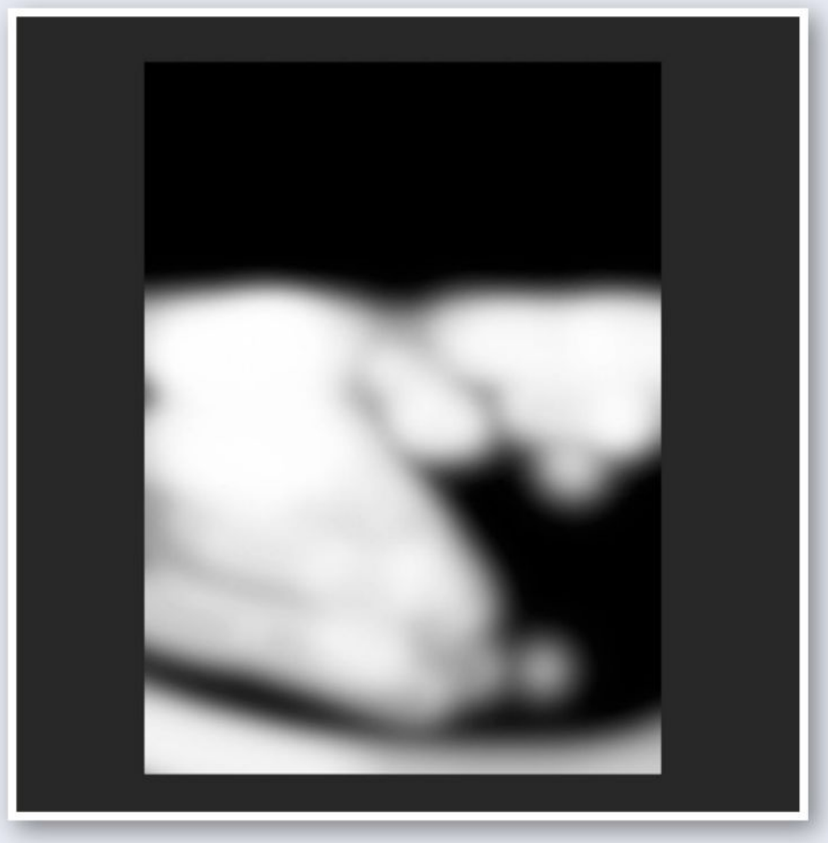
**10** If at any time you want to remove any areas you've just painted white, you can hit X on your keyboard to toggle from white to black as your foreground colour and paint black over any white areas as you wish. Press X again to go back to white.

PHOTOSHOP

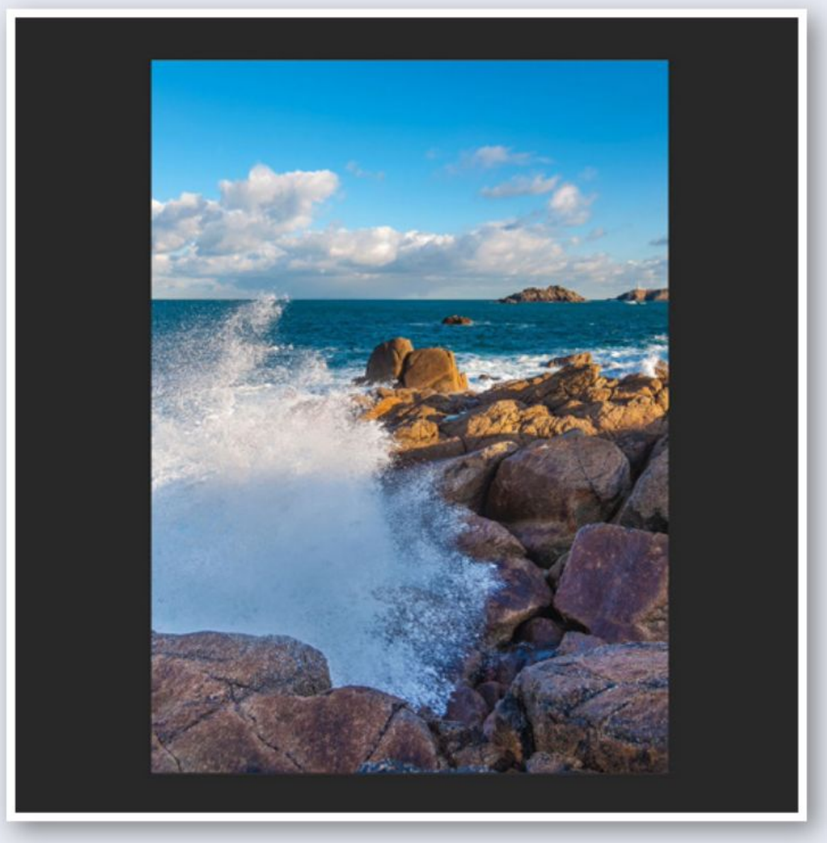
# Digital exposure blending

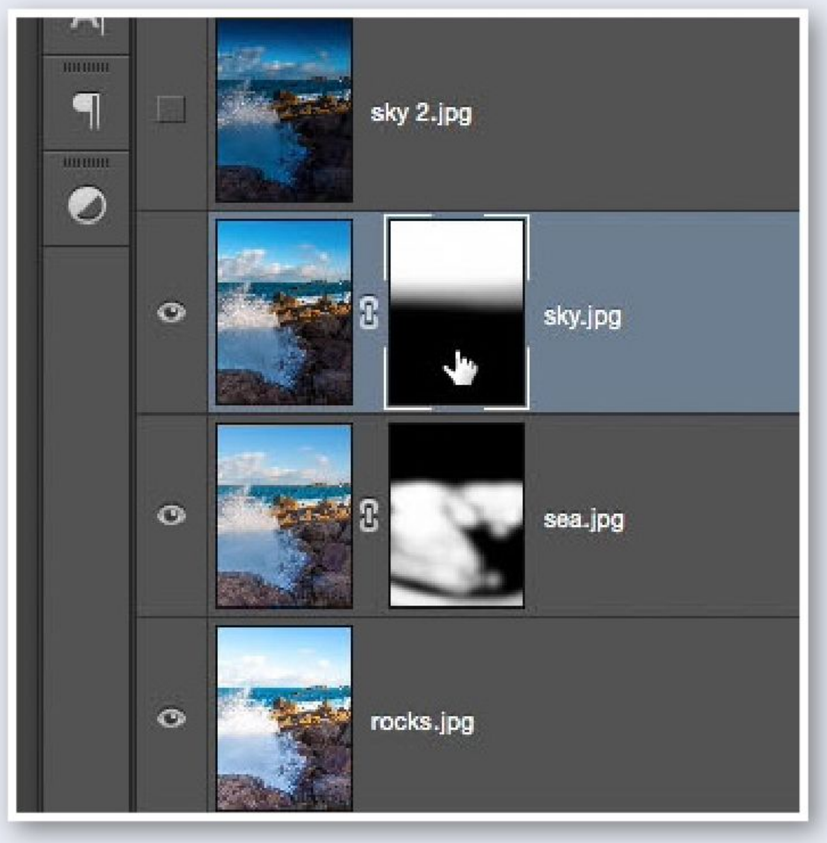
**11** If you press the Alt key and click on the mask thumbnail for the 'sea' layer, you will be able to examine the mask on its own more clearly and see the areas you have painted in white. Press Alt and click the thumbnail again to revert to the normal view.



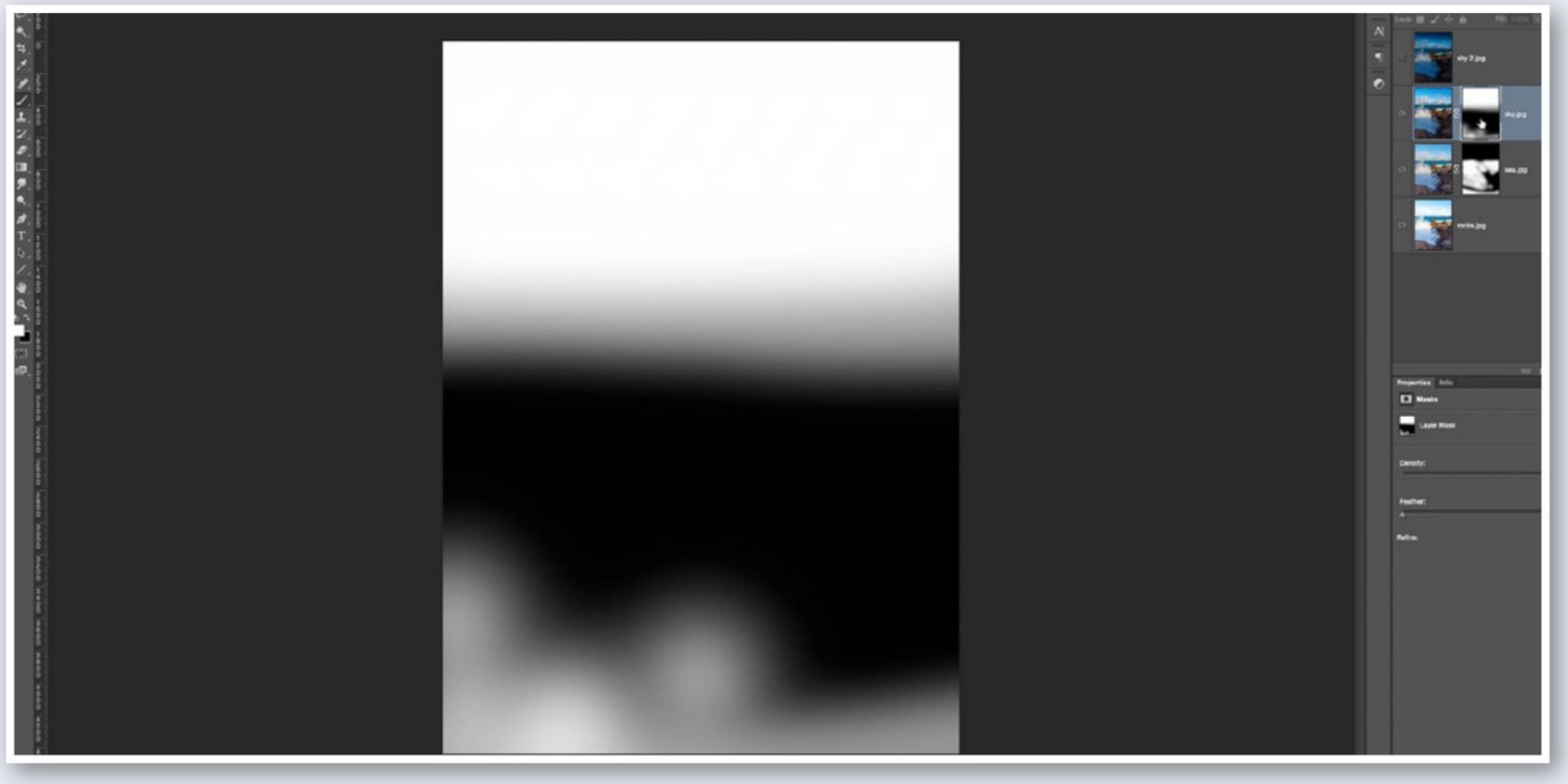



**12** Make the 'sky' layer visible and using the same approach as the previous step, add a mask and paint on the mask where you want the better exposed sky to show through.



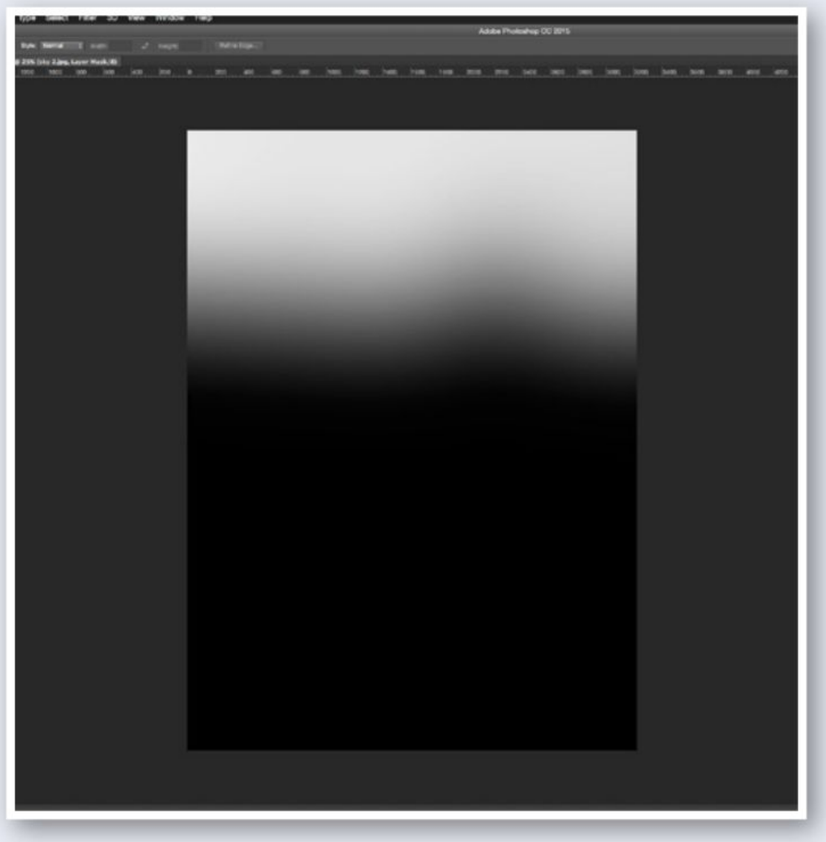



**13** If you view the mask on its own, you can see the areas in white that are allowing portions of the sky and the rocks of the 'sky' layer to be visible. Anything in black is effectively blocking the image.

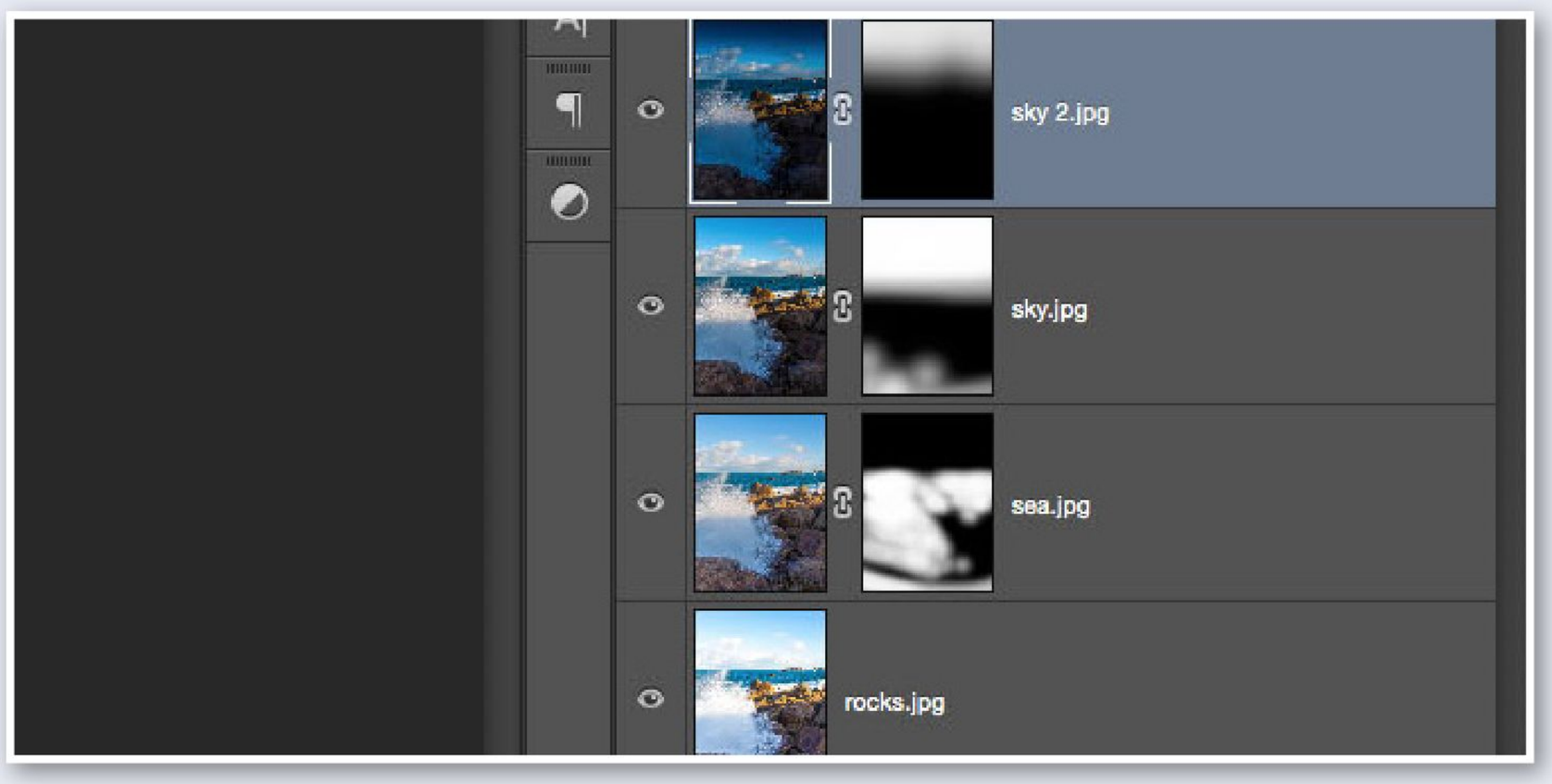


**14** Finally we come to the ‘sky 2’ layer. As in the previous steps, add your mask to this layer and paint on the mask with your soft, white brush to reveal more of the darker blue sky at the top of the image.



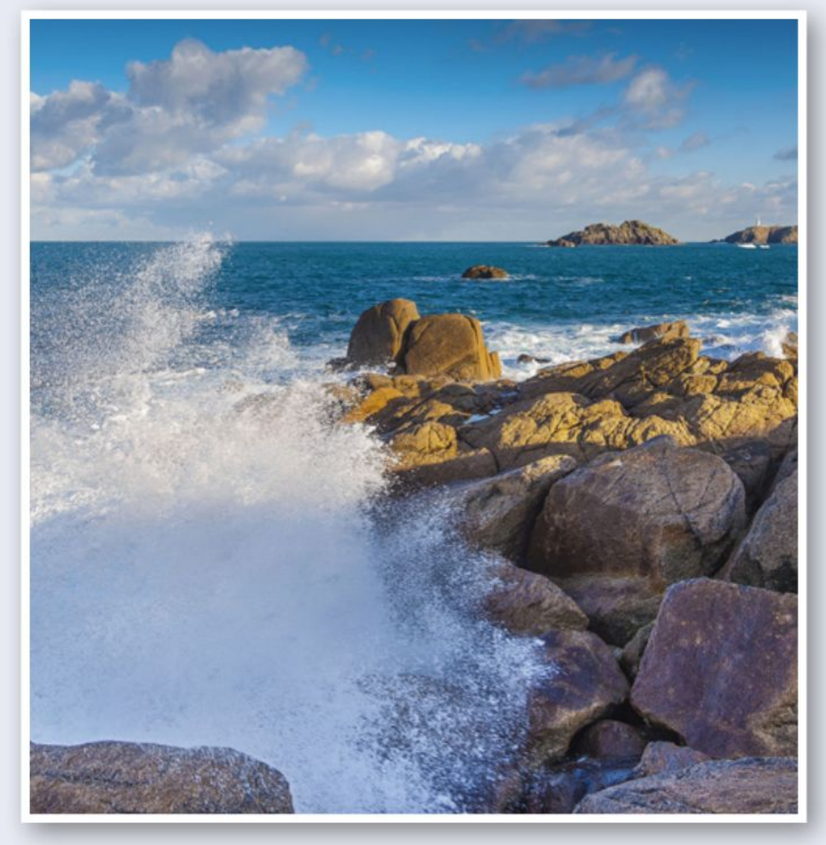


**15** Your document will now comprise of four layers. Each different exposure has been masked to allow the best of each to show through and what you see is a composite of all four layers.




**16** If you compare this to the original Raw file, you’ll see that with a few different exposure adjustments at the processing stage, you can create a blend of images that give you a well balanced final result with great dynamic range, good colour saturation and plenty of contrast.





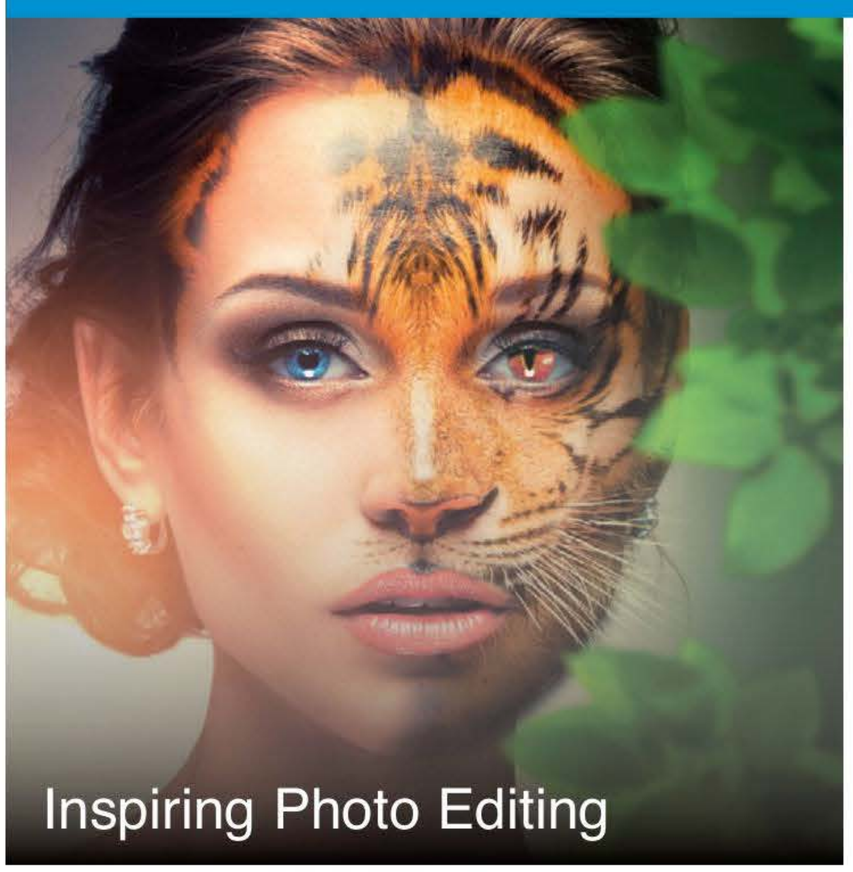
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