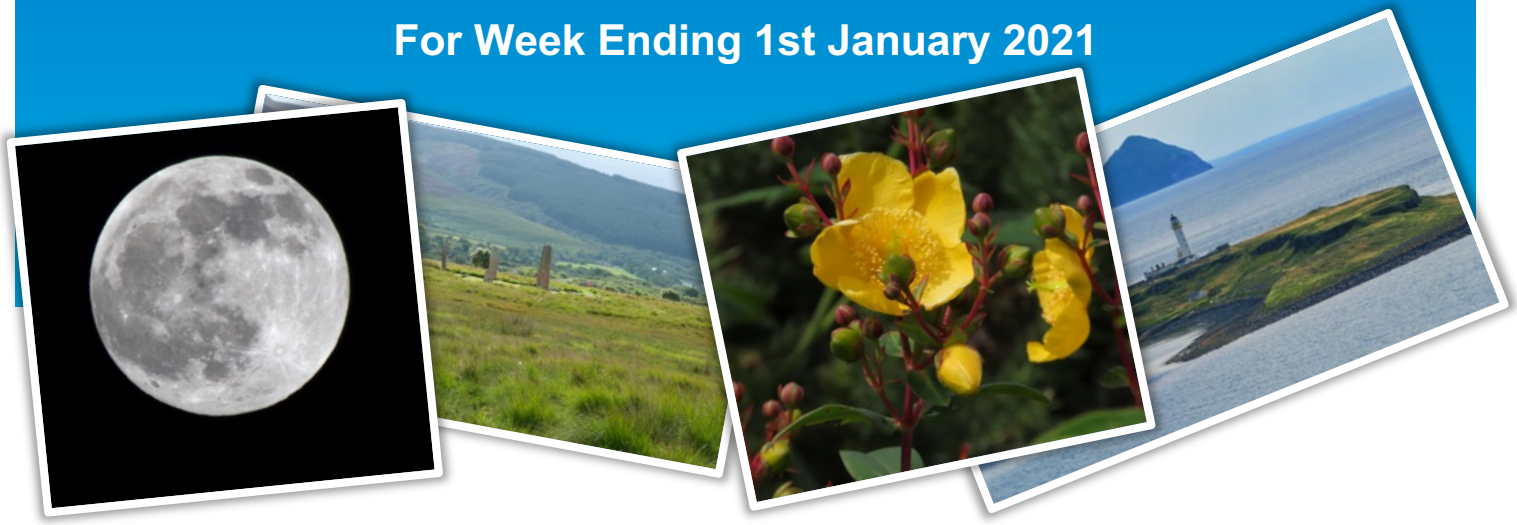
Graham's Photoblog Newsletter

For Week Ending 1st January 2021



Goodbye to 2020!

Well it's now January 2021 and I'm hoping that this year will be a more productive year than last year!

As we now have a Covid-19 vaccine roll out program here in the UK and it looks like a February slot for us over 70's. It maybe that we will be beginning to see the end of this dreadful virus as spring turns into summer. I must admit that the past 9 months have had quite an impact on me personally and at times I've not been feeling like doing anything and struggling to make myself actually produce any creative content material. With some of the restrictions placed upon hospitality venues and cafes etc., a lot of the places that I could use for convenience breaks were closed and that meant that my outdoor activity was severely limited. Sometimes by the time that I had set up to film a tutorial I had to pack it all away and make my way home without any filming at all. We take our health for granted however when we do get older things begin to happen that we have little to no control of and it can become a limiting factor in what we are able to do. The colder winter months exacerbate the situation and severely impact my outings and it can become very depressing at times.

Snow on December 28th, just a light dusting! (iPhone 11pro x3.3 zoom)

We did manage a very restricted family Christmas meal together as the rules imposed a maximum of three families meeting for just one day.

My granddaughter made sure that she kept the children isolated for the week prior to Christmas day so that we weren't overly anxious about them coming into the house for the first time in 9 months! It was a real treat to see how they have progressed in this period of time.

I look back at some of the images taken in 2020, particularly those that I shot during my 4 day trip to Arran in late May and realise that our climate is certainly changing. For the last 5 years my trips have been spoiled by heavy rain (and the failure of my one month old FZ10002 during one trip in 2019) and high winds which have prevented me from flying my drone, safely.

Previously, the first weeks in June were dry and relatively warm with lots of sunshine but this has now become a very unsettled time of year.

I used to make two trips Late May/early June (to avoid the Scottish midge), and then again in late September/early October but I notice fewer and fewer images that were captured with any amount of sunshine and even fewer images taken on the mountain walks that become quite dangerous when wet.

I'm not sure about this year. I imagine that there will still be some restrictions in place which makes any advanced bookings a little more difficult as the ferries only block release spaces a few weeks before sailing dates. Last year I had to temporarily book my campsite Pod and then confirm it once I had a guaranteed ferry booking.

My Spectacular Audio Project.

Getting clear, good quality audio is a must for tutorial videos.

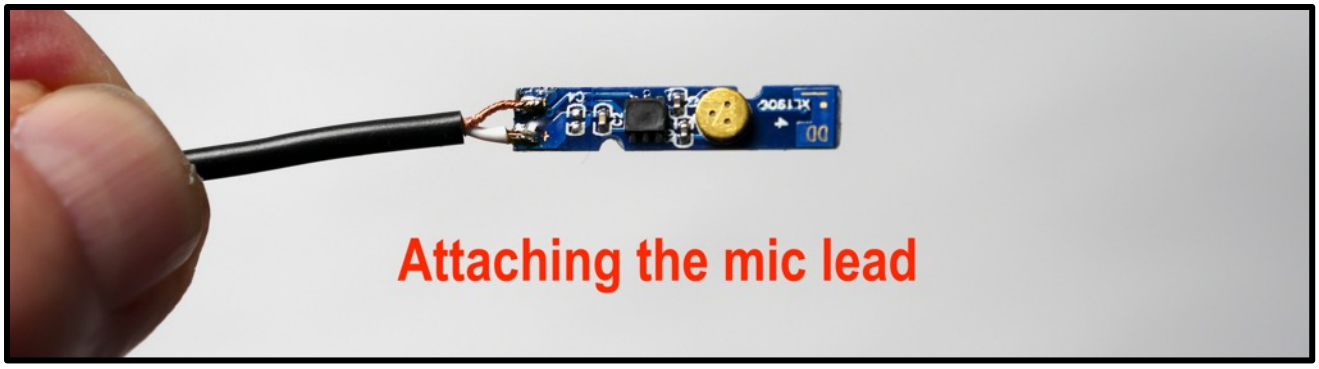
For most of my video capture I tend to use a lavalier microphone connected to a wireless transmitter/receiver. This allows for some flexibility in movement without changes in audio levels.

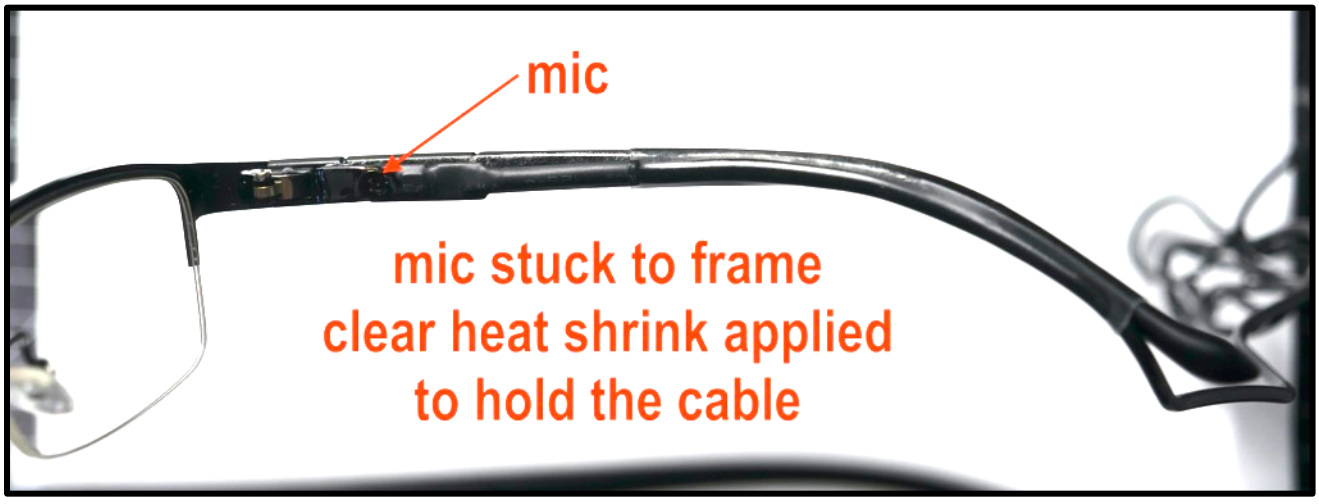
I previously used wired lavalier mics but had a few accidents when I forgot to unclip the mic!

I found that even when using a lavalier mic some head movement did produce changes in volume of the recorded audio. I wanted to find a way to record audio without the mic being visible and able to capture without changing levels.

The solution came to me whilst watching a “zoom” interview on television where the person was using the wired earpiece connected to a smartphone. The inline microphone was ideally placed to capture audio and I concluded that if this microphone was placed on the arm of a pair of spectacles it would solve my audio issues.

The mic pcb was taken from this cheap pair of earbuds and then a TRS lead attached so that it could be used directly with the radio transmitter





The cable was attached to the arms using clear heat shrinkable tubing. The glasses that I used were from Amazon and were 0 dioptre blue light reduction but you could use any prescription if you needed them (like I do for close up work).

I was very pleased with the audio captured using these glasses and created a couple of pairs with a TRRS and TRRS plug to enable them to be used by smartphone or the wireless mic system.

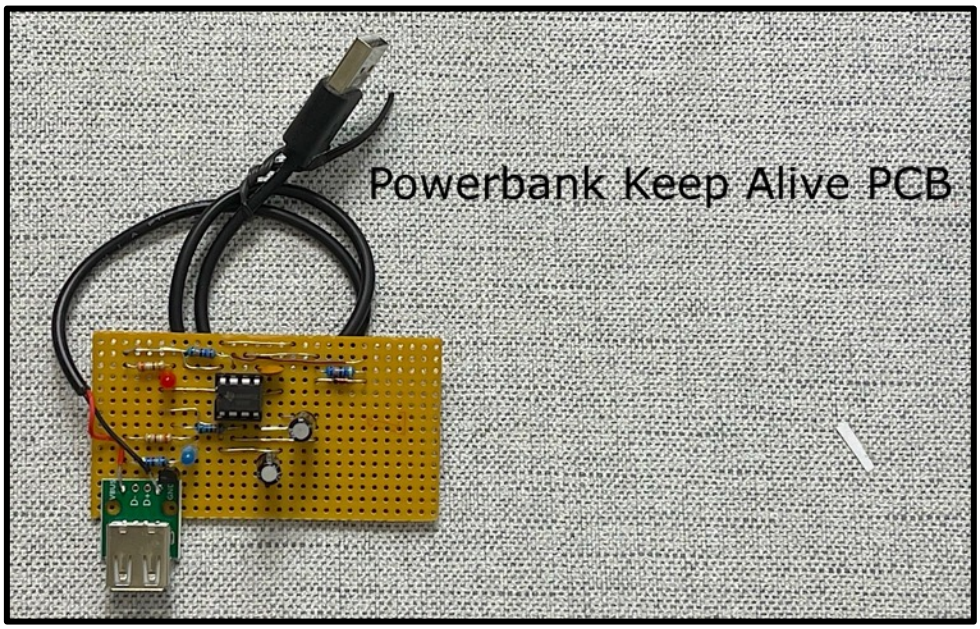
The YouTube video showing how this was made, plus the audio results is here:
https://www.youtube.com/watch?v=KJ2a68ZOOxM&t=7s

Keeping a USB Power Bank Alive When Using Small Current Drain Accessories

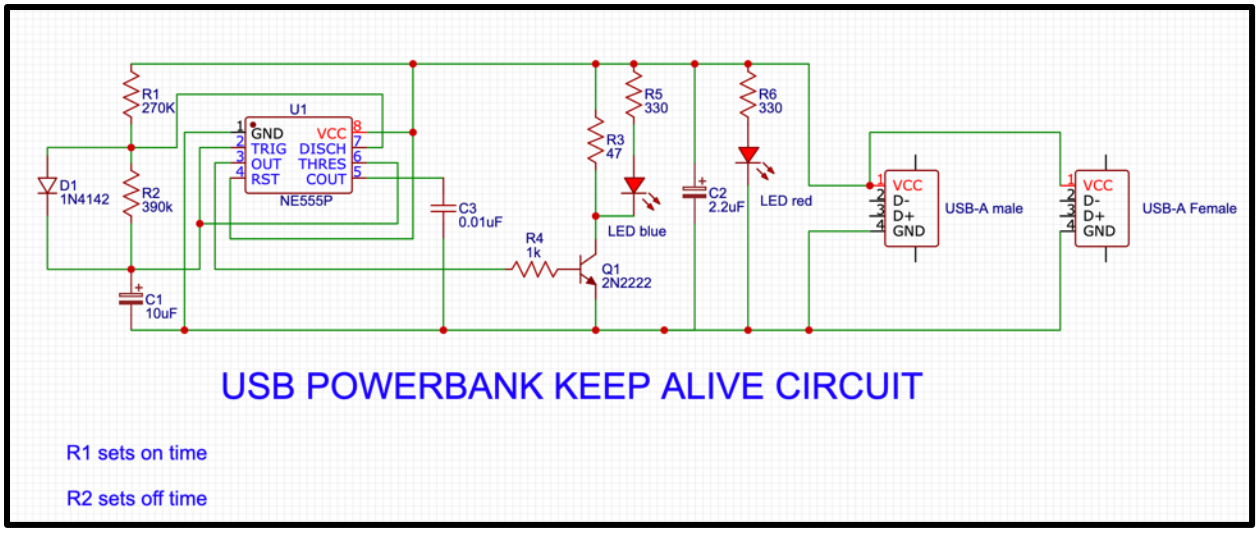
With most of the power banks with high capacity lithium ion cells there is a power saving circuit built into the unit which powers down the power bank when no current is sensed from the output sockets.

In many cases this current threshold can be quite high (over 50mA) and many small accessories that use 5v cannot be powered from them as the power bank doesn't "see" this small current and shuts down.

I wanted to design a small circuit which would "fool" the power bank into thinking that it was powering a much higher capacity load but actually it was only being pulsed every now and then. This provides the necessary current drain to keep it from powering down but didn't add a significant overall capacity drain to the power bank.



The completed project



The circuit schematic

I designed the circuit using the NE555 timer chip which can be used for many timing circuits.

It basically provides a pulse of current, determined by the 47 ohm resistor R3, for about 2.5 seconds every 8 seconds which is set by the R1 & C1 values. The “off” time is set by the discharge resistor R2.

The actual timing values will be determined by your power bank shut down times. I tested several of mine and they varied from 10 seconds to 32 seconds so I ended up using the shortest time as the value for the circuit.

The circuit has a power on indicator (the red LED) which draws 10mA which adds little drain to the power bank but if you wanted to reduce the total current consumption it could be omitted. The IC could be changed for the CMOS version and again this would reduce the “off current” and marginally increase the power bank run time. In my case the 20,000mAh power bank was capable of powering my projects for several days so the additional small current was not really a consideration in the design. I used a USB lead and cut it to provide the input power and I used a USB type A socket for the output so that this could be used in series with my projects. If you have a multiple port power bank then this unit could be plugged into one of the ports and this would provide the necessary current to prevent it from powering down.

A YouTube video of the project is here: https://www.youtube.com/watch?v=fHCnblxkbwI

Oh No Not The Moon Again!

During the winter months it is a great time for night sky photography (not that I am interested in astrophotography) as there is generally less heat turbulence in the atmosphere which tends to destroy image sharpness.

When you look up at the night sky and see a very bright moon it is so tempting to get out the camera again and capture that image.

Now I have done several tutorials and write ups on how to achieve great images of the moon. The longer the focal length of the lens the greater the image size is on the camera sensor. When you look at the 1-2/3 inch sensor cameras like the FZ80/82 with a 1200mm EFL zoom it does make for a good candidate for capturing a large enough image for getting a reasonable quality print.

The choice of moon phase also affects the perceived quality with partial crescents offering the best views as more of the craters are thrown into shadow and accentuating their edges.

Conversely, a full moon has a totally flat light making the craters less distinct and makes the image all that more difficult to process in order to achieve a decent result.

On the night of the 29th December, here in the north of England, we had clear skies and subzero temperatures and a very bright full moon.

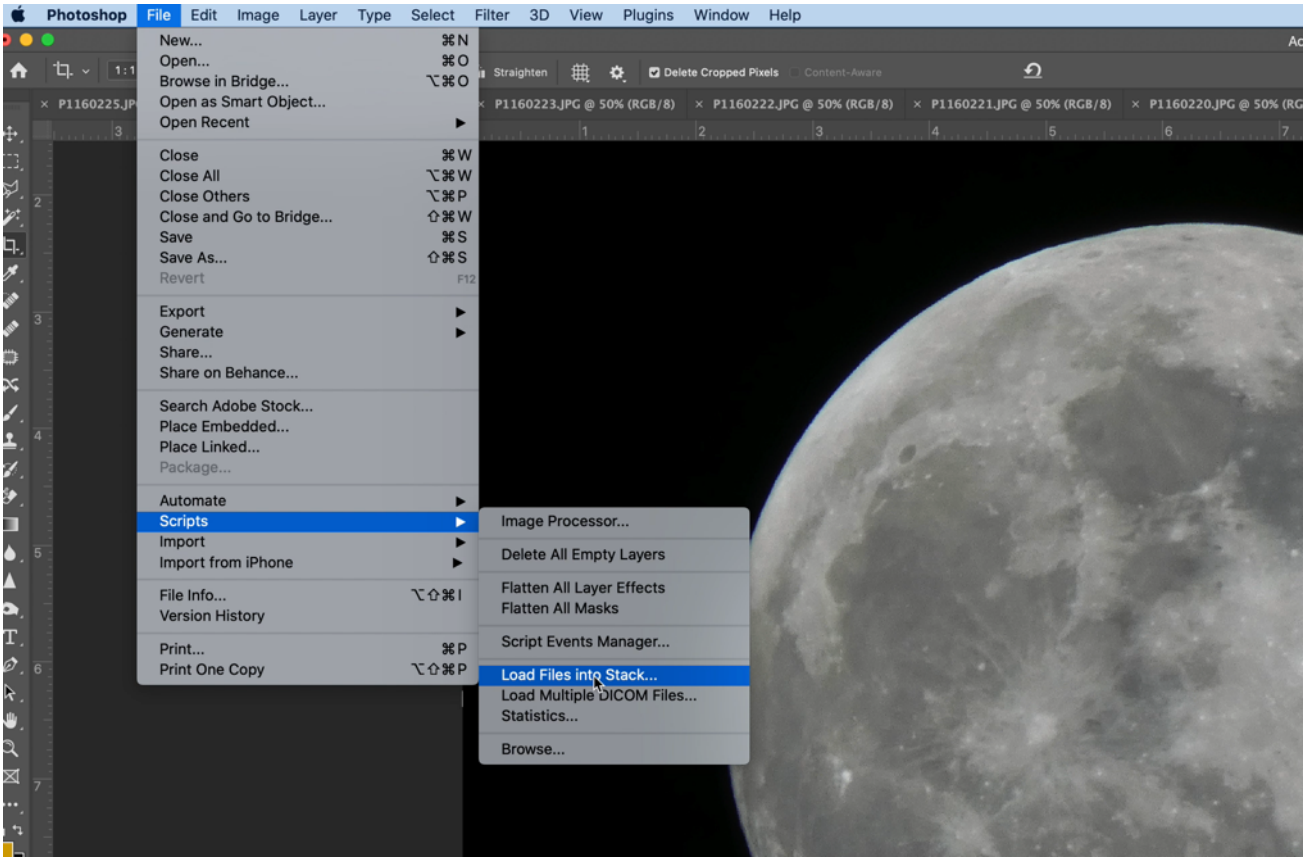
I just had to capture the moon again to try my median stacked JPEG image processing technique which averages out the jpeg noise.

To do this I used the FZ80/82 at ISO 80 in the P mode. The exposure was a very nice 1/500 sec at f6.2 which meant that the capture was easily hand held. To improve the situation I did lean against the house wall to add extra stabilization. I set the camera to high speed burst which uses the first image for focus and exposure so that the remaining images were all of the same exposure and focus.

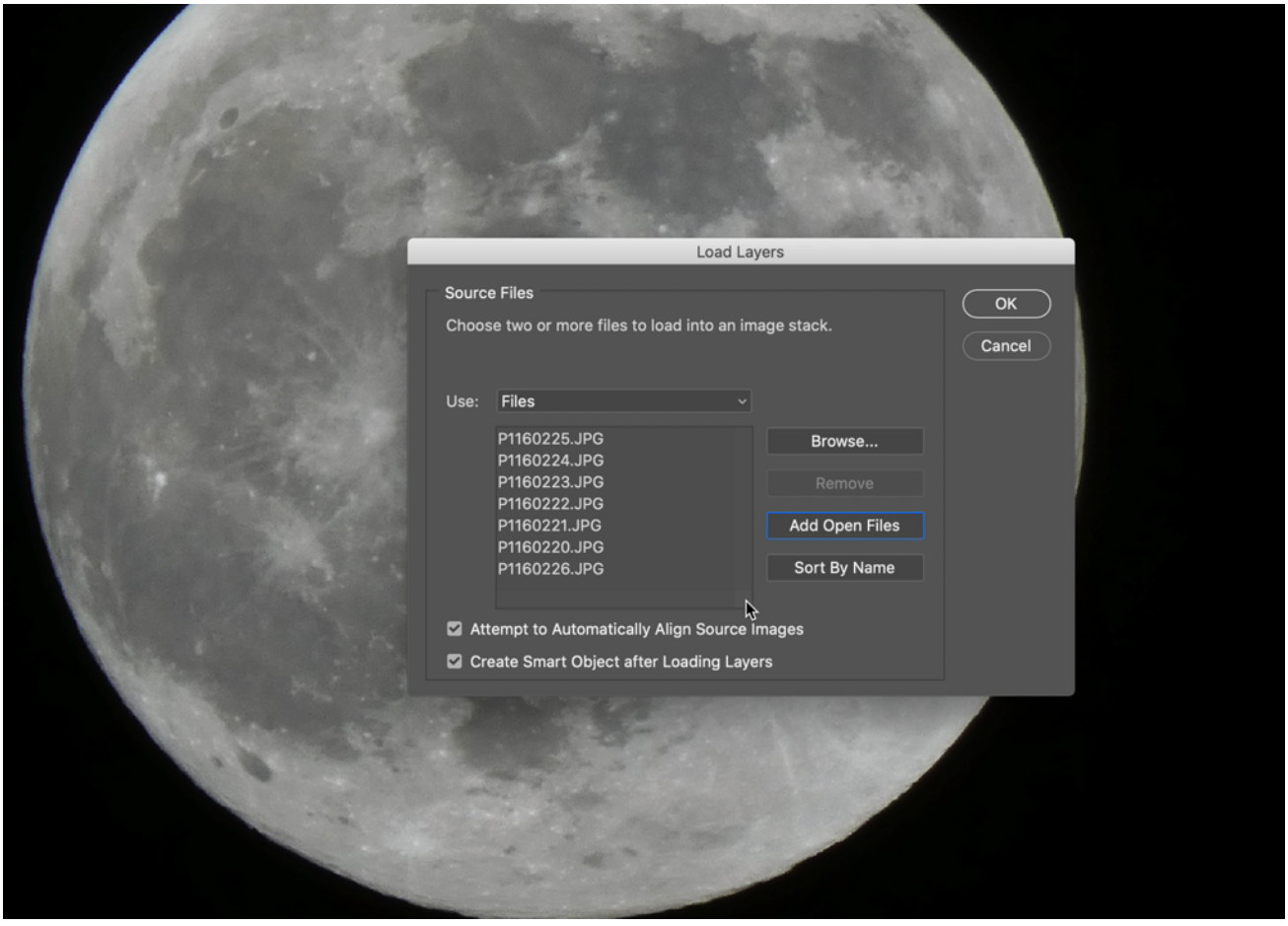
I shot JPEG + RAW and I initially thought that I could process the RAW file to reduce the noise and end up with an acceptable result.

When I did process the file in both Photoshop and Luminar 4 the results were OK but not the best that I have captured.

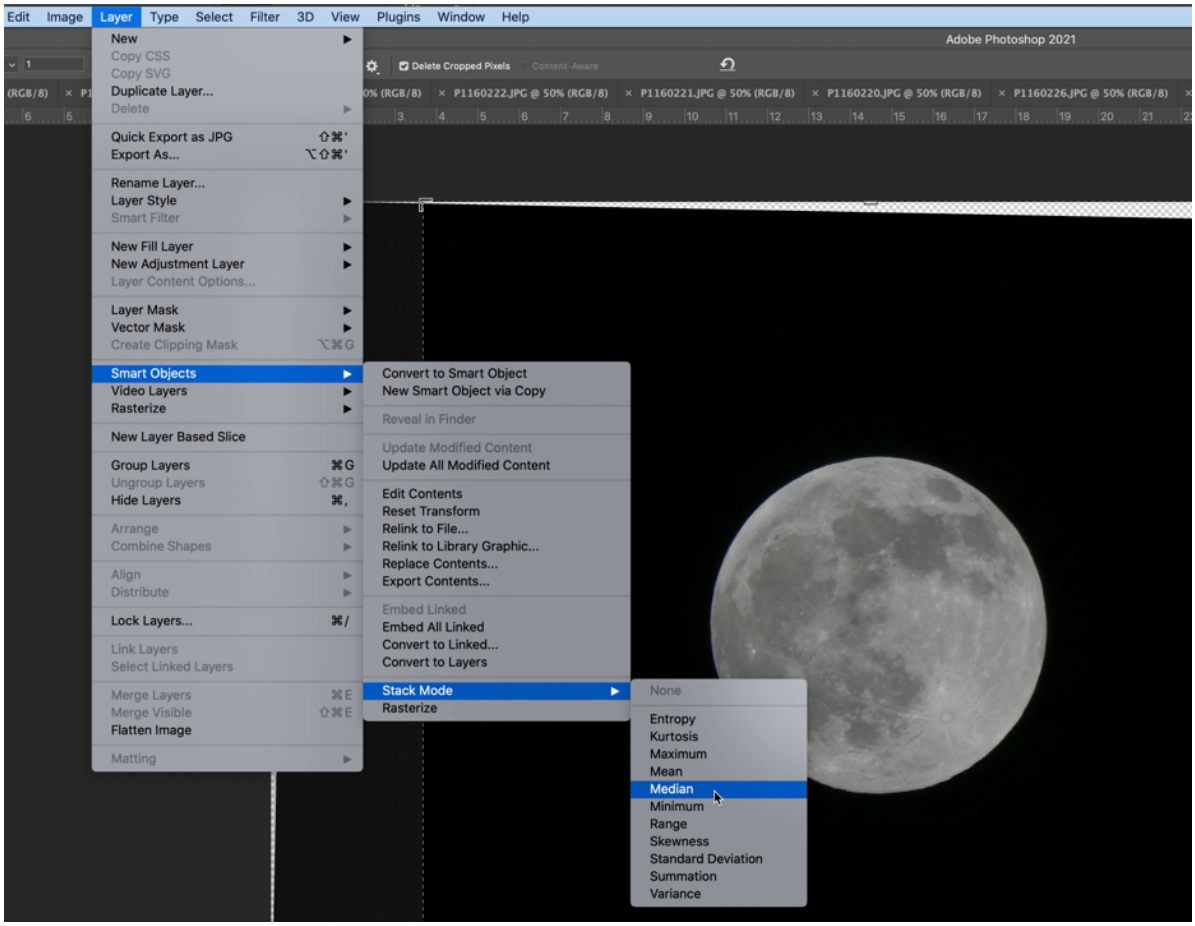
I took 8 of the burst mode images and opened them in Photoshop, loaded them into a stack with “attempt to align images” selected. Create a smart object so changes could be made if needed.



Ist stage after importing the JPEGS is to load the files into Stack.



Then add the open files and tick the boxes to align the images and create a smart object.



Once the smart object has been created use the smart object stack mode set to Median to perform the noise cancellation. Once this is done you can adjust the image for brightness/contrast as required.

You can also use this technique to clean up higher ISO JPEG images for still life, product or landscape images.

This image is from the 7 JPEG image burst sequence 1/20 sec, F6.3 ISO 80

This image is the result of the 7 JPEG images median stacked

The following 2 images are cropped sections from each of the above images.

The one on the right is the median stacked image and you can clearly see the effect of the noise reduction in the image. It works with all images provided that there is no movement taking place in the image as this will result in ghosted images.

Snow photography!

iPhone 12 pro Max

Winter snowfalls can actually transform ordinary landscapes into stunning scenic views. However, to capture these scene requires a little extra camera craft.

The skill lies in preserving the whiteness and at the same time capturing the glistening crystalline structure.

Getting the right exposure is crucial in this type of photography. You will be challenging the cameras metering decision as its natural aim is to set everything to look mid grey and consequently your images will be underexposed.

You are going to have to use exposure compensation in you are shooting in the semi-automatic modes, or at the very least use exposure bracketing to ensure at least one good exposure.

It may be best to meter from the snow at a point where it is not quite intense white and to reveal the sparkling texture you are wanting to be looking for cross or side lighting.

Being highly reflective snow shows its surrounding colours such as the intense blue of high altitude skies very easily and shadows in particular are likely to show this first.

Accurate white balance setting is also the key to getting shots that don’t appear over blue.

If you want to exaggerate the blue of the sky the use of a circular polarising filter will do the trick, be careful though as the edges of the image may look overly dark, especially those shot with a wide angle lens.

Shadows often turn blue at high altitude.

In snow conditions lighting becomes much flatter, reducing contrast

What we need to do, as photographers, is to look for a small “accent” of colour to introduce a pulse of energy into the image.

Even the smallest of accents is enough to make all the difference. Quite a few photographers and cinematographers have used this to great effect (remember the opening sequence in “Schindler’s List” where the little girl in a red coat is the only colour accent in the whole dramatic scene).

The vibrant colours accented in almost monochromatic conditions

The image on the previous page was created shooting naturally however, the popular practice of “colour popping” where just one colour is captured by the camera and the rest of the scene is rendered as monochrome (spot colour in Panasonic creative filters) and can be created in camera or by post processing.

The colours that work best for this tend to be the warmer ones, the reds, oranges and yellows. The cooler colours, such as blues and greens, tend not to work as well unless they are very bright or luminous to accent a predominantly grey image.

Dealing with the colours of light more effectively

Colours in are image are inseparable from nature of the light that illuminates them. Midday sun and electronic flash may share the same colour temperature in degree Kelvin (around 5500k) terms however the colour spectrum of these light sources integrates in such a way that the light appears white. Most other natural or artificial light sources usually have some colour bias.

You may even perceive some high intensity street lighting to be blue. Objects that are illuminated by these tinted light sources take on a totally different appearance. If you consider, for example, a portrait taken by the light of a setting sun then the skin tones will be a much richer, warmer colour. Take then the same portrait by ordinary fluorescent light (not the daylight rated ones) then the skin tone might look slightly greenish. The direction, intensity and distance the light source is to the subject will determine the amount of contrast in the image. Intense light may make colours look paler whilst overcast light may make colours more vibrant.

Side lighting used for higher apparent contrast

A light source which is far away will cast stronger shadows without detail whilst one closer will provide more of a “wrap around” light and soften these shadows. Thus the time of day of your shoot may affect the way in which the ambient light is rendered in your image. By learning and understand how the very nature of light can change in this way can equip you with more knowledge of how to harness and utilise these effects in your photographic images in the future. Sunny days are perhaps, not surprisingly, the days on which people take the most photographs as sunlight promotes the feeling of well-being and people generally will respond positively on these days compared to drab and overcast days. I love this feeling!

Bright sunlight allowing faster shutter speeds to freeze motion

Sunlight can have the advantage of adding simplification to your image, the extra intensity can allow you to use smaller apertures for more depth of field or faster shutter speeds to freeze action or reduce subject motion blur.

It also has the advantage that it allows you to use your camera at its base ISO sensitivity setting thus giving superior noise free images.

This white light also promotes the correct rendering of colours in the scene and they will be seen in equal intensity.

There is however a danger lurking here that strong vibrant colours can affect your captured image in two ways.

The first, probably less obvious, is the fact that the camera metering circuit may react differently to different intensities of coloured subjects and may cause under or over exposure depending upon the placement of this strong colour in relation to the rest of the frame.

Secondly there is a slight chance that this predominant vibrant colour could cause the AWB (auto white balance) to falsely set the white reference operating point – resulting in a colour shift towards the complimentary colour of the dominant one.

In this situation it is preferable to select a pre-set white balance corresponding to the ambient light such as sunny ✷

In bright sun, reflections from objects such as water, foliage and metal might also prevent colours from reaching their correct contrast.

It might be useful in these situations to control these reflections by the use of a circular polarising filter (CPL). These filters can also be used to increase the contrast in a sky, thus emphasising clouds for example.

A correctly sized and fitted lens hood is also essential to prevent loss of contrast through internal reflections caused by light reflecting from areas outside the main optical cone of light into the lens and subsequently onto the sensor.

Overhead midday sun is perhaps the most unflattering light source, as it causes virtually no shadows that cause us to see depth in our images.

For portraits it gives a very unflattering light distribution on the face and should be avoided – especially the case for female portraits.

When the sun is much lower in the sky it causes shadows which do add the correct illusion of depth and subject contrast in our images.

As the sun approaches the horizon only the longer wavelengths of light make it through the Earth's atmosphere resulting in our fiery reds and oranges we see at this particular time of day.

Although sunrise and sunset have the same resulting light quality, sunsets are more readily accepted than sunrises (although it's almost impossible to tell them apart in an image) – maybe because sunsets are normally at the end of a warm day whereas sunrises take place after a long cold night.

Sunset produces the rich reds and oranges

The classic time to shoot scenic images is during the golden hour. This is the hour after sunrise and before sunset when the sun is low in the sky, giving strong side lighting on the landscape to reveal texture and shape. When the sun is low in the sky you will find that the colour temperature is lower, giving your shots a warmer look.

This lower angle of sun also provides us with the directionality that helps to define structure and apparent visual sharpness in our image. In overhead sun fine details in the subject may be completely masked out. This low angle of light, which rakes across our scene, might be better captured from a high viewpoint to exaggerate the length of these shadows.

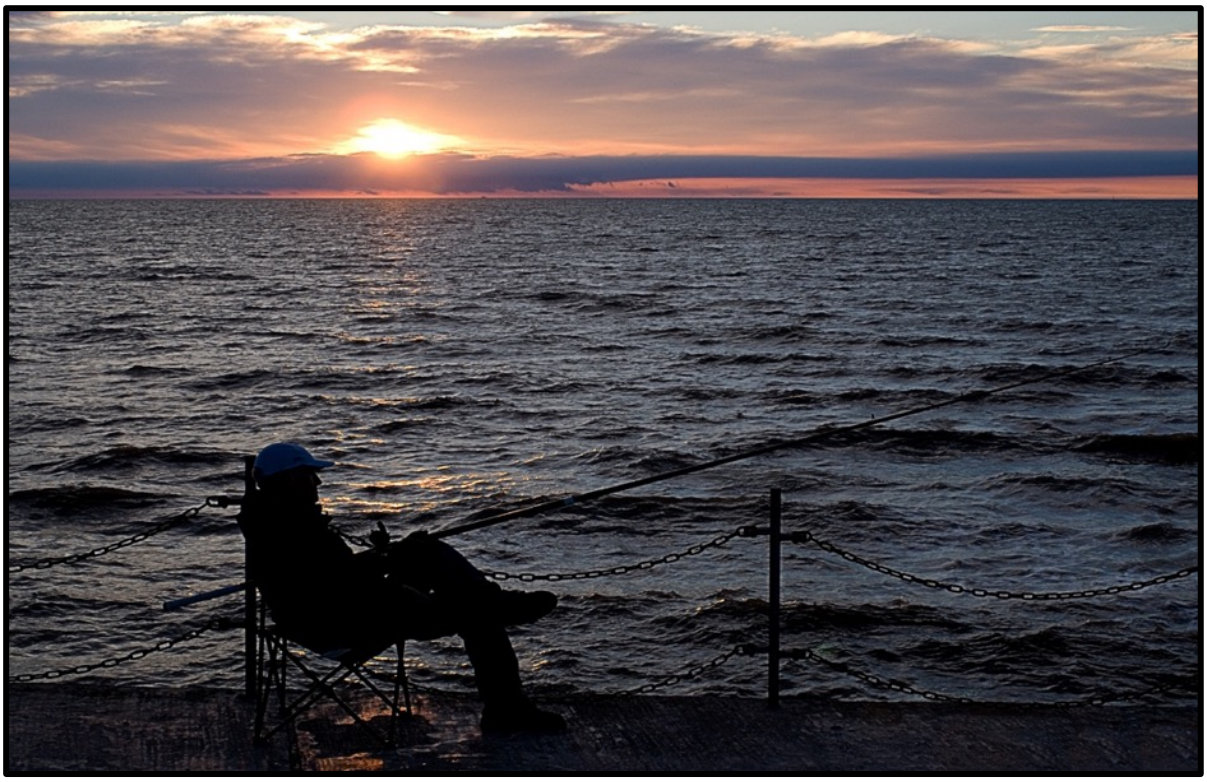
If, when capturing a portrait by setting sun, the skin tones look too warm you can reduce the effective warmth by selecting a colder white balance with the Kelvin slider – moving towards the 10,000k point on the scale adds more blue to the image.

Alternatively, you could use the older film method off adding a wratten 82 series filter (A to D depending upon strength of correction required) in front of the lens however these are now becoming harder to acquire as digital cameras have the auto white balance facility or can use pre-set values and there is less of a need for them.

When you orientate yourself so that the principal subject in your image is backlight the image takes on a much more dramatic appearance.

This technique, also known as shooting contra jour, works especially well if you shoot in monochrome, or if you later tone your colour image into a monochrome one, because it produces high contrast images usually sharply defining the outline of the subject and reducing all surface texture and detail and quite often the colour detail itself.

This effect can be used to advantage by deliberately underexposing the image to increase the visual contrast turning the subject into a silhouetted shape. Because these types of scenes depend upon the colour of the light they are better reserved for early morning or late afternoon shots.



Sunset Silhouette

Additionally, if the light is slightly higher and to one side you can get some interesting “rim” lighting effects. It’s important here to ensure that you correctly meter from the shadow side of the subject so that you have shadow detail as opposed to the silhouette effect when you measure from the sunlight side.

There is one exception to this and it is in translucent subjects that allow some light to pass through them. It’s the colour of the object then that adds the interest to your image.

Translucent subjects with strong backlight may need fill light

One effective way to produce this type of lighting effect in still life photography is to have a white background and strongly illuminate this either by using a couple of flash units or desk lamps depending upon your needs. Ensure the light source evenly illuminates the background to give the best results. The white background acts as a suitable contrast and highlights the colour of your translucent subject. You can add a sheet of glass under your subject to add some great reflections to give the image an additional boost.

Glass is an ideal subject for backlighting

As I discussed earlier it is very important that to record the subtle tones, particularly subjects like flowers, in bright sunlight it is essential to have the camera meter the subject accurately.

The slightest overexposure here will lead to pure white “blown out” highlights that cannot be recovered in any post processing.

Soft diffuse light is ideal to record very subtle tones

The use of diffuse light is one very useful method of being able to control the amount of contrast in the subject. When the sky has a few white clouds in it light is reflected from these causing the resulting light falling onto the subject to be originating from a wider area. This has the effect of softening the resulting shadows cast by the subject.

If the cloud cover is light, then the resulting colour temperature will not change and the colour tones will remain neutral and retain their intensities. Also in the absence of harsh shadows and reflected glare the apparent intensities of the colours may increase. In outdoor portraits skin tones captured with diffuse light are more flattering and faces are less likely to have “blown out” hot spots from shiny skin types.

One the most diffuse light situations occur when we have atmospheric haze, mist or fog. Atmospheric haze is made up of particles suspended in the air often after long, hot dry spells particularly in city areas.

Mist and fog tend to occur at higher altitudes, along river valleys and wetlands. The mist can be quite transient in nature. Often breezes sweep it away or leave streaks of the mist hanging around trees and water or it can hang like a white veil over valleys between hills.

All of these elements act as a kind of continuous filter and have the effect of reducing the tonality of the colours we see. Colours become muted or less vibrant taking on an almost monochromatic look.

These elements also have the effect of reducing the amount of fine detail we see in an image and this is more pronounced as the distance increases. Often in landscapes we see planes of colour recession.

Again selection of a higher viewpoint may help in creating the illusion of depth.

Early morning fog lingering along the river bank

Our cities provide a riotous colour opportunity after the sun begins to descent into the golden hour.

From the city skylines silhouetted against a sky with just a hint of the golden sunlight remaining to bright neon advertising signage to colourful window displays we, as photographers, have lots of opportunity to photograph colour in many different ways.

A city nightscape just before the sky turned black

Some people make the mistake of trying to photograph the city scenes long after the sun has set. This means the skies are usually inky black or tinged with the yellow from sodium streetlights.

It is far better to capture these scenes whilst there is still some light remaining in the sky. This dark blue, often merging into the oranges and reds of the sunset, provide a more engaging background than the usual inky black one.

The tungsten and fluorescent lights in the buildings adding that contrasting colour tone.

If you find that the fluorescent lights in the office blocks appear to be casting a green colour cast you can try selecting the fluorescent pre-set white balance control or you can use a “magenta rose” filter (FLD) to neutralise this.

It also adds warmer tones to the remaining sunlight. Most fluorescent lights nowadays have better spectral characteristics as the mercury is being replaced in them and most appear as a white or warm white colour now.

If you are including a lot of the setting suns colour in your image it may be worth using the “cloudy” white balance pre-set for if you leave the camera set to AWB (auto white balance) you may find the camera tries to neutralise this effect leaving you with a pretty much unsaturated image.

You could of course use one of the camera scene type pre-sets of “sunset” if your camera has one. These effects have the effects of increasing red and yellow saturation in the image.

Composing with colour

Colour does not only bring reality into images but often is the element that provokes strong emotion, tension or excitement. Conversely it can also establish a calming effect in the viewer. Red and yellow are seen as warm and dynamic colours whilst blue and greens are seen as cooler and more passive colours.

These reactions may be totally independent to the principal subject of the image as we react to colour emotionally!

Controlling the strength and placement of colours may allow to compose better images. In only a few cases will you be able to alter the colours in the image (in portraiture for example where you could ask the subject to wear a colour suited to the photo shoot location).

However, in most cases as I mentioned in previous pages, you will be able to select a different viewpoint to change the relative positions, or mask them totally if they are too obtrusive.

Your choice of lens focal length, its point of focus and depth of field created by the aperture setting may also help you to vary the way in which colours interact with each other.

You can thus use colours to create the right mood for your image if you use them in a controlled way to produce either the impact or subtlety that you require in your image.

Certain colours invoke different psychological responses within us. For example, consider the colour yellow, it generally strikes us as being a lively colour partly because the cells in the retina of our eye are more green/yellow sensitive to this wavelength of light.

Some colour combinations cause us to have to constantly switch between looking at different wavelengths of light i.e. the different colours of the image and this becomes “uneasy” whereas an image where the colour spectrum is far less separated becomes “restful”

Colours competing for our eye’s attention

It could be likened to sound combinations where we can have note harmony and discord.

It might also be argued that certain bright or vivid colours can appear closer in an image than say muted tones and also as human beings we take on a “preference” to one particular colour or hue and this is often reflected in the choice of colour that we chose to wear or in our home furnishings.

It’s important then, as photographers, that we look beyond our personal preferences and instead look for colours that are more generally considered as “warm” like reds and oranges.

These are normally associated with sunrise/sunsets and fires etc., and those “cool” colours which are associated with things like the water, grass, sky and shade.

Pastel colours or hues should also be considered as they often appeal because of their delicate, gentle or pure nature. These are often termed “soft” colours as opposed to colours which by their nature are more vibrant, dramatic or dominant such as reds and yellows.

Softer and cooler colours

By understanding some “general” reactions to colour can influence the way that you begin to craft your photographic images for more universal appeal.

We have seen that strong colours have more of a visual impact than the more muted ones.

We’ve also seen that muted colours can provide an image with calmness or tranquillity however when we want to create an image which conveys drama or accent then we need to consider how to capture this “richness”.

You may have heard the term that a colour is fully saturated, as I understand from my experience in the fabric knitting industry that this is a term that echoes back to the fabric dying industry and relates to the intensity of colour that is achieved in the dying process.

However, in photo science, that is the science of photography, the term is misused.

Soft overcast light increases vibrancy

A saturated colour in photography is any colour hue which is derived from just one or two out of the three primary colours of Red, Green or Blue but not the three.

Two colours give us the complimentary colour and by introducing a third primary colour we are adding "greyness" to the colour and thus reducing its overall vividness.

As an example if you have equal amounts of red, green and blue light reflecting from an object then this object will appear to be a shade of grey.

The higher the intensities of these colours the lighter will be the shade of grey. White would therefore have a colour component where all three primary colours are at their maximum intensity. A saturated colour is thus an undiluted colour.

Well that's all for the first edition of the newsletter for 2021.

As usual thanks to all who use my Amazon affiliate links as they do provide a welcome income to offset the cost of hosting my website and running the blog.

Stay safe, stay well and I'll hopefully see you soon on YouTube with some more tutorials.

Graham