

**Newsletter for Week Ending
7th April 2023**



Collage produced using Pixlr Smartphone App

Battle of the Smartphones



iPhone 14 Pro, Samsung Galaxy S23 Ultra and Pixel 7 Pro

With the increased interest in smartphone photography I thought that I would test the three flagship smartphones from Apple, Samsung and Google.

I have heard that Samsung have been, once again, caught cheating with their image rendering on their latest phones!

It would appear that the AI processing uses real images blended into your shot to produce images with far more detail!

Samsung had to defend their “processing” by issuing a statement.

Samsung's press release mentions a "detail enhancement engine" for the moon, but it doesn't go into much detail about how it works. The article includes a few unhelpful diagrams about moon mode and AI that all basically boil down to "an image goes in, some AI stuff happens, and an image comes out."

If you don't like your improved moon photos, you can just turn the feature off—it's called "Scene Optimiser" in the camera settings.

That aside I have found the images from the S23 Ultra to be very good – especially with the x10 optical lens.

The google Pixel 7 is a bit of an “elephant in the room” as a certain amount of “processing” takes place even on RAW files – something I don’t like and my initial tests on the iPhone 14 pro suggest to me that the image quality is poorer than the iPhone 13 pro.



Above are 3, A4 sized prints from each smartphone showing that, at normal enlargement sizes, there is probably little to choose from either camera but no room for any cropping/resizing I would suggest. Out of camera the Samsung was slightly overexposed.



69mm EFL of the Samsung Galaxy S23 Ultra



48mm EFL of the Apple iPhone 14 pro

The two images here showing the different focal lengths of the iPhone 14 Pro and the Samsung Galaxy S23 Ultra x2 cameras.

This makes comparison even more difficult.

As testing is progressing it is becoming obvious that each phone has at least one lens/sensor combination that is better than the rest.

The iPhone x2 lens seems to be the worst of all of them, this is a pity as it is a really useful "normal" focal length.

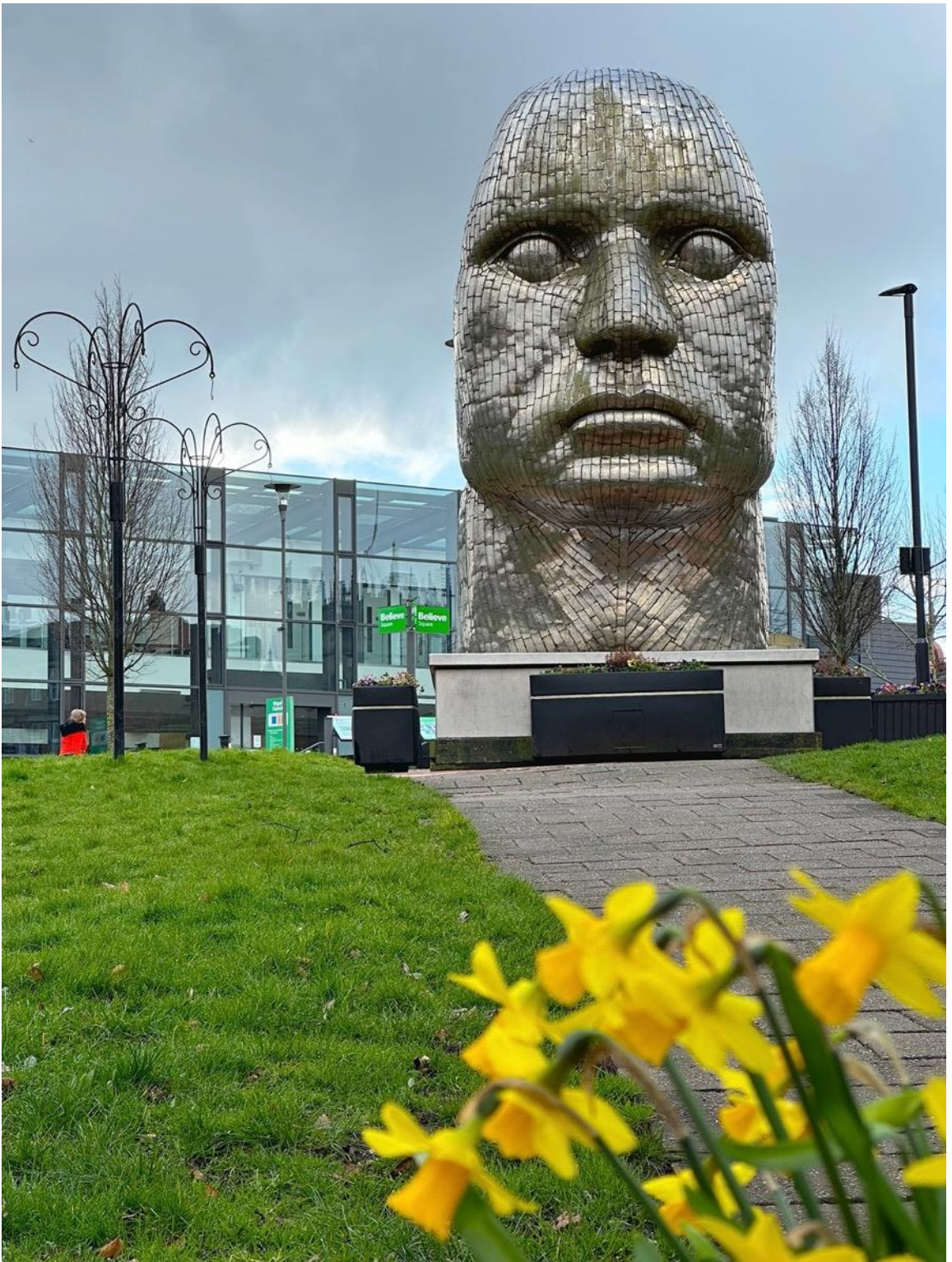
With the Samsung stray just slightly into the digital zoom beyond the x10 optical lens and the images become pretty unusable.



Samsung Galaxy at x30 zoom (270mm EFL)



A side by side comparison of the iPhone 14 pro and the same focal length using the type 1 inch sensor of the Canon G7x Mk3 which is a fairly small compact travel zoom camera matching the x3 optical zoom of the iPhone camera system.



By “playing to its strengths” the iPhone 14 Pro x3 lens delivers some good results as seen here in this image showing the nice out of focus foreground of this image of the Wigan Life sculpture.



The x1 lens, by comparison, doesn't have the same degree of sharpness. On close inspection the image is also quite "painterly"
To overcome the heavy JPEG processing made by Apple I decided to use



The Lytham Windmill on the Fylde Coast in Lancashire- iPhone 14 Pro x2 setting



The Lytham Windmill on the Fylde Coast in Lancashire- iPhone 14 Pro x1 setting



The Lytham Windmill on the Fylde Coast in Lancashire- iPhone 14 Pro x3 setting

DPreview Is Closing

From their website:

Dear readers,

After nearly 25 years of operation, DPreview will be closing in the near future. This difficult decision is part of the annual operating plan review that our parent company shared earlier this year.

The site will remain active until April 10, and the editorial team is still working on reviews and looking forward to delivering some of our best-ever content.

Everyone on our staff was a reader and fan of DPreview before working here, and we're grateful for the communities that formed around the site.

Thank you for your support over the years, and we hope you'll join us in the coming weeks as we celebrate this journey.

Sincerely,

Scott Everett

General Manager - DPreview.com

There has been lots of backlash to this announcement by Amazon and quite a few people have suggested that they will now boycott Amazon for any future purchases. Many of the staff will probably find alternative employment with the ever popular Chris and Jordan joining PetaPixel.

Review of the Kimafun KM G-50-5 Wireless Microphone for IOS or Android Devices.



This device is part of the KM-G-50 range of wireless microphones and is specifically targeted at users who want to have a simple way of recording decent audio on their smartphones.

It is almost “plug and play” as there are few controls on this device for the user to be concerned with.

The transmitter: (shown above)

The system operates on the 2.4GHz frequency band within 2.4 to 2.48385GHz.

It has a “line-of sight” operating distance of around 50 metres outdoors. However I found that 20 metres was the maximum range without dropout.

This consists of a clip-on device similar to the G50-1 and G50-2 except that this transmitter does not have the option to plug in an external lavalier mic. Instead that 3.5mm port is used as a headphone monitoring port. This means that you can locally monitor the audio output right at the transmitter. There is a +/- key to adjust the volume level. At each end of the adjustment range you will hear a beep.



The microphone transmitter in use outdoors.

On this unit you will find the 5v USB type-C charging port.

Charging will take around 1.5hrs and fully charged will provide a run time of around 5hrs.

Charging status is indicated by a small LED light adjacent to the pairing indicator. It will illuminate red when the battery voltage has fallen to the charge limit and will remain on until the unit is fully charged when it will turn green.

The internal 3.7v lithium-ion battery has a nominal capacity of 400mA.

To turn on or off the unit press the small round power button for about 3 seconds.

The blue pairing light will start to flash until the receiver is plugged into the smartphone.

Once pairing has taken place the light will remain a solid blue. This same button, if briefly pressed whilst the unit is on, will also act as the mute button. To unmute the device again, a brief depress of the button is all that is needed.

Sound input is achieved through a small electret condenser microphone giving an omnidirectional pick-up pattern.

Additionally, to reduce wind noise outdoors, a fur windshield is provided which clips into holes adjacent to the microphone port.

The clip on the rear of the transmitter allows the unit to be conveniently attached to shirt/coat collars at a suitable distance from the user's mouth.

Additional feature of the + button puts the unit into "reverb" mode which introduces a small echo delay into the recorded audio. A long press on this button turns on/off this feature.

Similarly, with the – button this engages "noise reduction". However noise reduction mode causes a considerable amount of clipping to occur.

The receiver:



The receiver, which can be either an IOS or Android (USB-type-C) device. Both units are identical in operation. This unit simply plugs into the smartphone to receive its power. It does not have its own internal battery. To indicate the pairing status there is a small blue LED light on the front of the unit.

The only user controls on this unit are the +/- volume keys for adjusting the headphone monitoring volume. Headphones can be plugged into the 3.5mm port to monitor the received audio from the transmitter.

The audio quality is probably good enough for its intended purposes and is ideal for those who want better audio quality for their "Zoom" or "Microsoft Teams" meetings, TikTok or YouTube videos etc., but do not want the hassle of having to set volume levels etc.

Lithium Ion Battery Discharging in Cameras Left in Storage

Earlier this month I had a query from a reader regarding the fact that if he left the lithium ion battery inside his camera (in this case a FZ80/82 but it doesn't matter which model) whilst the camera was not in use for a while that when he came to use it the battery had depleted.

Was there a reason for this, a camera fault or a battery fault?

Well the answer is that the camera is always being powered, in a standby state, from the battery. The switch on the camera is not a true "switch" in the sense that it totally "breaks" the power from the battery to the rest of the camera circuits. This standby circuit also provides power for the real time clock used for Time and Date functions. If you remove the battery a small capacitor will continue to power this circuit for a short while. During this standby period the real time clock is periodically charged and it is this small current which eventually drains the battery.

An additional problem will occur if you decide to remove the battery if you put the camera away, say during the winter months when you might not use it as often.

After it is depleted then when you do install the battery you will be asked to set Time and Date and Home city again.

In addition all batteries have a self-discharge current, which tends to be higher on non-Panasonic batteries, and this will discharge the battery even if it not installed in a camera.

Lithium-ion batteries self-discharge at a rate of around 0.5-3% per month.

They discharge very fast while they are still fully charged. For a fully charged lithium battery or lithium cell, it will lose 5-10% of its charge over the next month until it reaches 80% state of charge. Under SOC of 30%-80%, the battery has most steady performance, around 0.5% or even less self-discharging rate.



What I do is to occasionally plug the FZ80/82 into a USB charger to “top-up” the battery.

This is only available on those cameras which support USB charging such as the FZ80/82.

Expectations versus Realisation with Digital Cameras

Every now and then I get images sent to me for examination because the user was not happy with the results. Sometimes it is just technique that needs improving but sometimes it is user expectation that is far more than the camera can actually deliver. A typical example would be wildlife photography where the user has taken images of birds in trees, birds in flight or other similar situations.

The question usually asks why are the images so poor.

Maybe they are poor because of too low a shutter speed causing subject motion blur to ruin the image.

Maybe it was too dark and the ISO has gone over 1600 with 1 inch sensors or ISO 800 with 1-2/3 inch sensors. This leads to image softening and image noise which can also mar the image.

But increasingly are the number of images captured at long zooms with the FZ300/330 or the FZ80/82 and then the user asks why the images look so poor when enlarged, or cropped.

My biggest challenge is explaining why these images don't match the expectation that the images should be sharp, full of detail and would make great prints etc.



Photo by TheOther Kev: <https://www.pexels.com/photo/photo-of-birds-flying-7930737/>

Images like the one show are taken with professional cameras and lenses which can cost upward of many thousands of \$/£.

These cameras, usually APS-C sized sensors, can utilise ISO's as high as 3200 without any significant introduction of image noise.

This allows faster shutter speeds to stop any subject motion and the lenses are normally prime lenses which are optically superb.

The resulting images are so much more vibrant and sharp, and are the ones that you will most likely see showcased.

When comparing the images from bridge cameras, especially the smaller 1-2/3 inch sensor ones, the image quality will be nowhere near this level of perfection.

The poorer the light the more the images will look unsharp, dull and lifeless.

Crop these images to make the subject look bigger, the worse the situation becomes.

Of course not everyone's expectation of the image quality is the most paramount reason for taking the image in the first instance.

I know a lot of photographers use these cameras to capture a record of the sighting of a particular bird and, as such, final image quality isn't that important. Quite often the camera is used just as a long focal length telescope!



If it was the case that the FZ80/82 with its 1200mm effective focal length lens could capture images that are magazine worthy then there would be no need for lenses costing £20,000 like this one from Canon RF 800mm f5.6 L IS USM Lens.

Also important is the actual use of the image captured and how it is subsequently processed.

If the image is for printing and especially at large print sizes then undoubtedly the image needs capturing with RAW format and processed for sharpness and noise reduction as well as the usual highlight, shadow and contrast adjustments.

Relying on out of the camera JPEG images at high ISO settings is likely to give images which at best will print at 4 x 6 inch or be suitable for illustrations on web pages or social media.

There has to be a level of expectation that is realistic as I am currently finding out when trying to explore the use of smartphones as a means to capturing images fit for my needs!

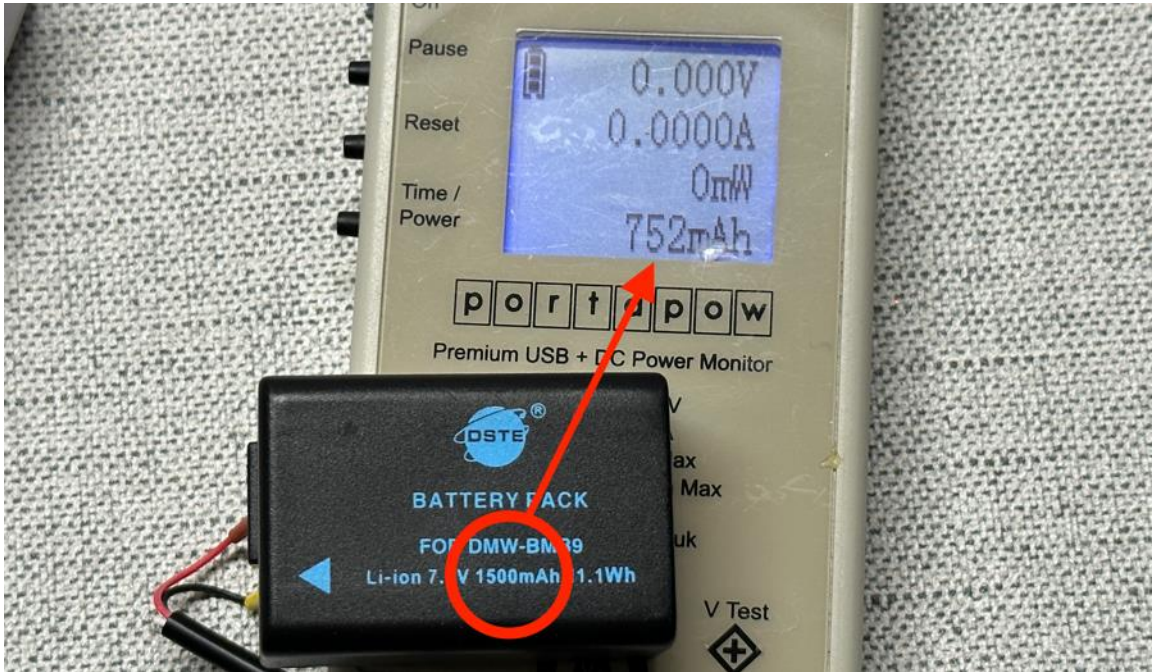
Easter!



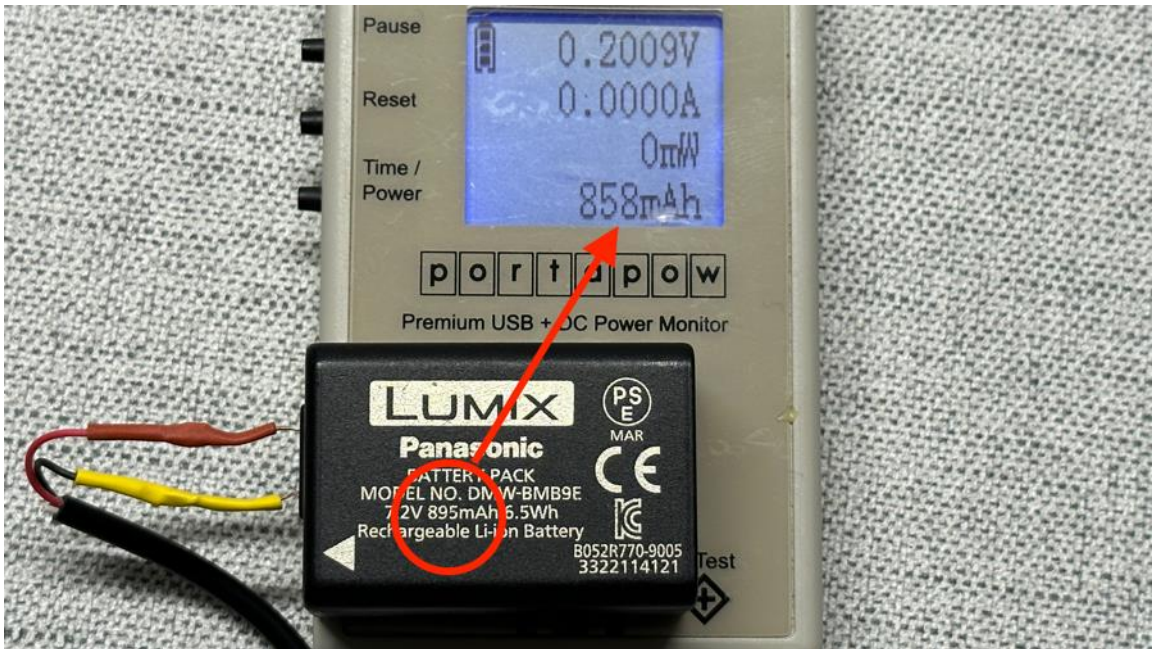
I found these in our local Poundland and thought they would be welcomed by our grandchildren – After a photoshoot.

Are 3rd Party Batteries False Economy?

Comparing the charge capacity after 2 years of use of the DSTE equivalent of the Panasonic BMB9 Battery and the Original Panasonic Battery.



DSTE Battery claims to be 1500mAh yet has a capacity of just 750mAh



Panasonic OEM battery after 2 years is still giving 858mAh capacity

After fully charging the two batteries I ran a discharge test on each battery at a load current of 400mA until the internal cell protection circuit within each cell turned on to disconnect the load thus preventing over discharge of the cells.

As you can see from these tests the DSTE battery claims to have a capacity of 1500mAh or 11.1Wh whereas the Panasonic battery would be 895mAh and 6.5Wh.

The weight of the batteries would be roughly 2x for the capacity of 1500mAh as capacity is directly proportional to the amount of lithium ion chemistry.

The actual weights were:

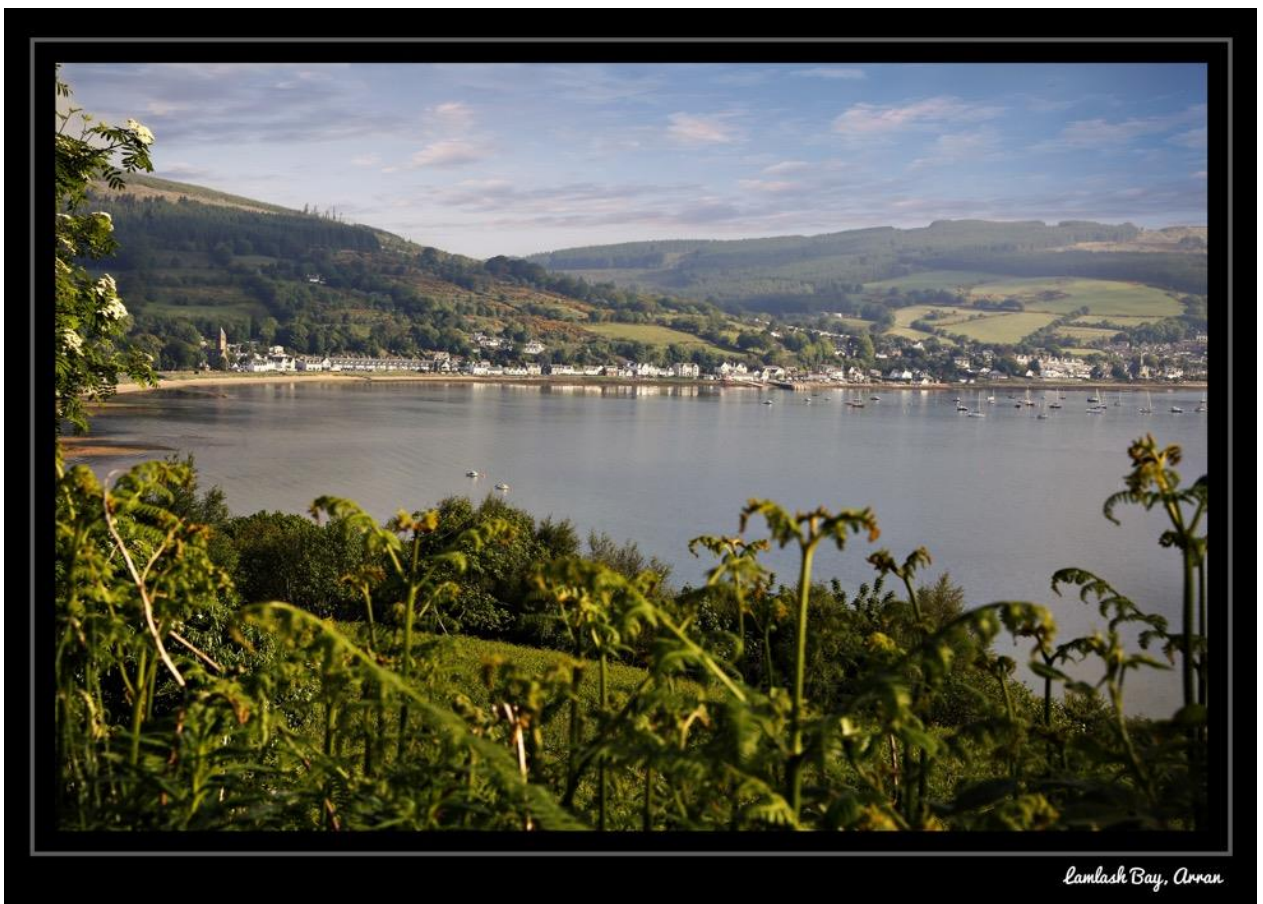
DSTE: 41grams Panasonic: 42grams

Clearly this is not going to give the x2 apparent charge capacity that should be taking place. This was borne out by the actual discharge test.

I used to be an advocate of DSTE batteries some years ago but latterly I have disassembled batteries and found all manner of circuits in the cells to give an apparent increase in total capacity but at the expense of service life.

Based upon my findings and testing **I would not recommend the purchase of these cells** now. Panasonic cells may be expensive but they are graded higher and have less impurity and this means self-discharge is less and lifetime is extended.

What is the Lure in Landscape Photography?



Lamlash Bay, Arran

Landscape photography is a genre of photography that focuses on capturing the beauty of natural landscapes.

It can include mountains, forests, deserts, beaches, and other natural wonders. We use a variety of techniques to capture the beauty of these landscapes, including composition, lighting, and some post-processing techniques.

Composition is one of the most important aspects of landscape photography. The way you compose your image will determine how the viewer sees the landscape. You can use leading lines, foreground interest, and symmetry to create a more interesting composition.

Lighting is also important in landscape photography. The best time to take landscape photos is during the golden hour, which is the hour after sunrise and the hour before sunset. The light during these times is softer and more flattering than the light during the middle of the day.

Post-processing is another important aspect of landscape photography. You can use post-processing to adjust the colour, contrast, and brightness of your images. You can also use post-processing to remove unwanted elements from your image, such as people or cars. You can also replace dull skies with more dramatic ones – providing that you do not overdo this!

If you're interested in landscape photography, there are a few things you can do to improve your skills.

- First, practice taking photos of different landscapes. The more you practice, the better you'll become at composing your images and capturing the beauty of the landscape.
- Second, read books and articles about landscape photography. There are many resources available that can teach you about the different techniques used in landscape photography and the internet is a rich source of practical advice here.
- Third, search YouTube for tutorials on this subject, find someone who you can relate too and subscribe to their channel.

Landscape photography is a great way to capture the beauty of the natural world. By following the tips above, you can improve your landscape photography skills and take stunning photos of the landscapes that you love.

Here are some of my additional tips for this genre of photography:

- Use a tripod to keep your camera steady. This is especially important if you're using a long exposure or if you're shooting in low light.
- Experiment with different lenses. A wide-angle lens is great for capturing sweeping landscapes, while a telephoto lens is better for zooming in on details.
- Be patient. The best landscape photos often take time and patience to capture. Don't be afraid to wait for the perfect light or the perfect composition.

- Have fun! Landscape photography is a great way to connect with nature and to capture the beauty of the world around us.

Using Simple Compositional Rules to Improve Your Images



Composition is the arrangement of visual elements in a photograph. It is one of the most important aspects of photography, as it can make or break an image. There are many different composition rules that photographers can use to improve their images.

Some of the most common composition rules include:

The rule of thirds: This rule states that the image should be divided into thirds, both horizontally and vertically. The main subject of the image should be placed at one of the intersections of the lines.

My image of the Cornish Tin Mine is an example where the main element of this image is placed on the 1/3 axis from the right hand side.

Leading lines: Leading lines are lines that draw the viewer's eye into the image. They can be created by natural elements, such as roads or rivers, or by man-made elements, such as fences or buildings.

In the above image I took a slightly higher viewpoint to capture the footpath which also leads your eyes into the image.

Framing: Framing is when you use elements in the foreground to frame your subject. This can help to create a sense of depth and perspective in your image. You can also use overhanging tree branches to add framing to your images if they are present.

Symmetry and asymmetry: Symmetry and asymmetry can be used to create a sense of balance or tension in your image. Reflections in water can provide perfect symmetry when the water is absolutely still.

Patterns and textures: Patterns and textures can add interest and visual depth to your image. Look for patterns in buildings – modern buildings with lots of glass are a great example of where you can find repeating patterns

Composition rules are just that: rules. They are not meant to be followed rigidly, but rather used as guidelines to help you create more interesting and engaging images. It's best to experiment with different composition techniques to see what works best for you.

Here are some of my additional tips for improving your composition skills:

- Look for interesting patterns and textures in your surroundings.
- Experiment with different viewpoints. Try shooting from high up, low down, or from an unusual angle.
- Use leading lines to draw the viewer's eye into your image.
- Pay attention to the background of your image. Make sure that it is not distracting from your subject.
- Edit your images after you take them. This is a great way to improve your composition and to remove any unwanted elements from your image.

The Age Old Debate About Sensor Size and Image Quality

Fact: Sensor size is one of the most important factors in determining the image quality of a digital camera.

A larger sensor will capture more light and produce images with more detail, less noise, and a wider dynamic range.

Here are some of the ways that I believe sensor size affects image quality:

- **Light gathering:** A larger sensor can gather more light than a smaller sensor. This is because of the bigger surface area of a larger sensor, so it can collect more photons from the scene being photographed. More photons means that the image will be brighter and less noisy.

- **Detail:** A larger sensor can also capture more detail than a smaller sensor given that it can have more pixels to the sensor total area. Pixel counts of 50M are common on larger sensors, each being bigger than 20M pixels on smaller sensors and so are able to capture not only more detail but more photons as well.
- **Noise:** Noise is a random variation in the brightness of pixels in an image. It is caused by the inherent randomness of light and by the limitations of the camera's sensor and electronics. A larger sensor will produce images with less noise than a smaller sensor. This is because each pixel on a larger sensor is larger, so it can capture more light.
- **Dynamic range:** Dynamic range is the range of brightness values that can be captured in an image without clipping the highlights or shadows. A larger sensor will produce images with a wider dynamic range than a smaller sensor. This is because a larger sensor can capture more light, so it can record more detail in the highlights and shadows.

In general, a larger sensor will produce better image quality than a smaller sensor. However, there are other factors that also affect image quality, such as the quality of the lens, the camera's processing power, and the photographer's skill.

Why is Bird-in-Flight Photography So Difficult?

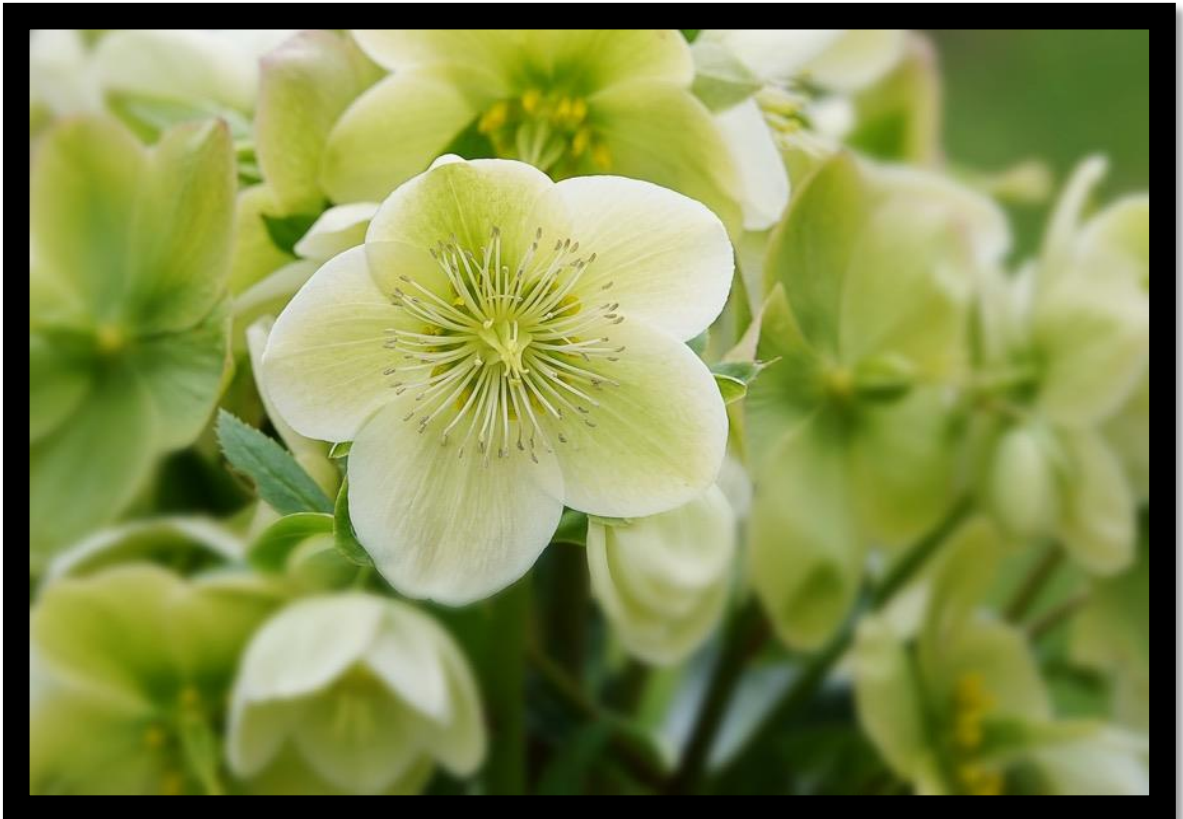
Bird in flight photography is a challenging but rewarding genre of photography. It requires a good understanding of camera settings, as well as patience and practice. Here are some of my tips for taking great bird in flight photos:

- Use a fast shutter speed. This is essential for freezing the motion of the bird. A shutter speed of at least 1/1000 second is recommended, but faster is better.
- Use a telephoto setting on your camera lens. This will allow you to get closer to the bird and fill the frame with your subject. A lens with a focal length of 300mm (or effective focal length) or longer is ideal.
- Use autofocus particularly AFF (autofocus flexible). This will make it easier to keep the bird in focus as it moves through the frame.
- Follow the bird with your camera. This will help to ensure that the bird is in focus and that the image is well-composed.
- Experiment with different shooting positions. Try shooting from different angles and heights to see what works best.
- Be patient. It takes time and practice to take great bird in flight photos. Don't get discouraged if you don't get the perfect shot right away. Just keep practicing and you will eventually get the hang of it.
- Look for birds in flight against a plain background. This will help to make the bird stand out in your image and help the autofocus.

- Use a burst mode to capture multiple images of the bird in flight. This will give you a better chance of getting a sharp image.
- Edit your images after you take them. This is a great way to improve your composition and to remove any unwanted elements from your image.

With practice, you will develop your own unique style of bird in flight photography.

Why I like Close-Up Photography.



Being able to capture micro level detail in subjects requires the use of close-up photography.

It can be done simply with smartphones with close up facility or with cameras with close focus ability. However for the best results here are a few tips:

- Use a macro lens. A macro lens is a special type of lens that is designed to focus on objects that are very close to the camera.
- Use a tripod. A tripod will help to keep the camera steady and prevent blur from camera shake. This is especially important when you are using a macro lens, as the depth of field is very shallow. Focus stacking may be needed for greater DOF

- Use a remote shutter release. A remote shutter release will allow you to take pictures without touching the camera. This will help to prevent camera shake. If you don't have a remote release use the camera self-timer mode.
- Use natural light. Natural light is often the best light for close up photography. It is soft and flattering, and it will help to create a more natural look.
- Use a reflector. A reflector can help to bounce light onto your subject and fill in any shadows. This will help to create a more evenly lit image.
- Use a diffuser. A diffuser can help to soften the light and create a more even lighting.
- Experiment with different angles. Don't be afraid to get creative with your angles. Try shooting from above, below, or from the side. This will help to create more interesting and dynamic images.
- Pay attention to the background. The background in a close up photo can be just as important as the subject. Choose a background that is simple and uncluttered.
- Edit your photos. Once you have taken your photos, be sure to edit them. This will help to improve the colour, contrast, and sharpness of your images.

As usual with a little practice, you will be able to take stunning close up photos.

Well that's it for this newsletter. The next one will be mid-May, all being well.

Just a final thanks to all who have purchased products through my Amazon UK and USA affiliate links – it really does help support this channel and newsletter.

Have a peaceful Easter and enjoy capturing those precious family moments.

All the best

Graham