2023 image collage created using PIXLR app

Hello and welcome to the last newsletter of 2023.

For me this has been a difficult year in many ways and I want to thank those who have regularly emailed me to keep in touch and ask how I was doing.

The year has ended with yet another medical episode with another attack of BPPV.

Benign Paroxysmal Positional Vertigo (BPPV) causes short episodes of vertigo or dizziness when moving your head in certain directions. Getting out of bed and rolling over in bed are two common "problem" motions. Feeling dizzy and unsteady when you tip your heads back to look up also causes problems. Small crystals within the inner ear break loose from their correct position in the balance organ and collect as debris within another part. With head movements, these crystals move, sending false signals to the brain about how you are moving.

I had to attend the local hospital to rule out other causes which can also cause similar symptoms. ECG and blood test confirmed that the problem was heart related.

The only treatment for this is a series of position manoeuvres to try and get the crystals back where they belong.

These motions cause extreme dizziness but eventually the brain begins to adapt and they become less severe.

It took well over two weeks for these symptoms to disappear but I still have difficulty with scrolling screens on my PC – these send me dizzy still. I have learned to scroll slowly!

I have had two more clinics and a high resolution CT scan to try and identify the causes of my continuing breathlessness. Results are due in January.

Feedback on Image Manipulation.

In the previous newsletter I posted an image which had been altered to remove branches and foliage which, in my opinion, detracted from the scene and I asked what your thoughts were on this as a general image editing technique.

I did get a few responses and they were as follows:

- *I have no problem with image altering, especially for non-professional snapshot photography. If I snap a picture with my iPhone while traveling, I likely have just a few seconds to frame and capture the image. If it's a site that's crowded with tourists, maybe I don't want their heads cluttering the horizon line. I consider this to be part of "cleaning up the picture", not much different from cropping or adjusting the white balance.*
  On the other hand, I don't care for the work of digital artists who transform photographs from realistic into something that's super-chromatic & fantastically enhanced beyond credibility. Perhaps this style has fallen out of favor? It became popular in the early days of Photoshop.

- *When I was getting started with photography I was frustrated at why I couldn't take such colorful photos as I was seeing on the Internet, or why I couldn't find such colorful scenes to shoot in the first place. At some point I stumbled across an article where the photographer explained what he did with his pictures in post processing. I remember one photo that cleared it all up for me. He showed the original picture and then his edited version. The edited version looked nothing like the original photo.*
  Now when I see photos that look too colorful or too amazing, I know that they are 'created' images based on an original photo. I'm OK with that, but I think they should be marked somehow to indicate they are heavily processed images. Art, not a photograph.
  I process my photos to try and make them look like how I saw them when I took the photo. Brighten under exposed, darken over exposed, etc., and I don't have a problem removing the odd trash can.

- *I love photoshopping.*

  First easy treatment is cropping your subject. A scene out there is so easy on the eye, but when you get home, the real subject catches your eye, and by cropping on that subject, Boom! You might have a winner.
  I often use the clone tool too when some unwanted object spoils the photo.
  Changing the tone or temperature can make wonderful differences to a photo.
  I don't have lightroom. I see so many photos where friends have spent much time tweaking up their Raw images.
  Maybe I should shoot Raw, but without Lightroom I make use of the Raw feature in Adobe.

- *On altering images - my view, i am happy for people to change a photograph in any way that suits them / their need.*
  With photoshop today you can necessarily believe any photograph! On the whole I tend to favour a true representation which would allow for rubbish to be cloned out or an annoying overlapping twig to be removed (electronically).

- *In my opinion. I've always preferred the originals.*
  Concerning your example, the original turns out quite artificial, without the tree branches the egret seems an embalmed egret.
  As you have taught us several opportunities, we can improve the brightness, the contrast, and we can also reduce the noise in photos, but when you modify the original photo the new one is a totally different one.
  Sometimes I visualize a photographer as if he was a painter. In that case, I can 't imagine a natural scene painter erasing some part of that scene.

- *I am fairly new at image altering but I find that it makes a much more interesting photo. I recently joined an art group where I live and they like to display our photos in a special display in the main hallway in our lodge.*
  So many photos that I have are not really that pleasing to look at because of what you indicated as articles or background that cannot be controlled when taking the photo.
  These are a long way from perfect but I am working toward being better at it.
  I sure enjoy your newsletters! Thank you so much for them.
  My camera is a Lumix FZ300 and I have your book, Panasonic Lumix DMC-FZ300 DMC-FZ330, to help me use it - Great book..

- *Your opinion on this is spot on! I've always thought of photography as art, so what is wrong with a little enhancement or correction.*
  I enjoy your newsletter and admire your seemingly endless skill levels and endeavours.

- *On altering images: When it's for things such as removing extraneous branches which distract from the primary subject, absolutely YES its ok and even preferable. And even if one is using a software program to create art it's OK.*
  Where I get frustrated is with people who do composites and represent them as single shots - That is NOT ok. Art is fine, lying about what's been created in not.
  * I've only in the last few months gotten into ACR/LrC/PS and learning their capabilities. In this, it's clear where they can bring the photo to what you saw and not be limited by the camera and I love that!*

Many thanks to all of you who joined in the discussion on image manipulation.
May be we should now consider how AI is having an impact on the way we see art and photography.

I asked an AI image generation program to make an image of a photographer capturing a landscape – if you look closely this photographer is using the camera the wrong way round!!!

 Still some way to go!

A little Back Projection Exercise

A little toy suspended on a fine nylon line over the laptop screen captured with my FZ1000 mk2
In Photoshop the nylon line was cloned out and the image cropped.
I have done this previously and it does bring out your creativity

Graham Houghton

The two previous pictures were created using the good old fashioned way of back projection to create the background to the image.

Unlike in photoshop where you have to carefully select and cut out the foreground and paste in onto your background this method does away with that complication.

By varying the sharpness of the image on the HD monitor (laptop/tablet etc) behind the subject and by selecting the distance from the subject to the background you can get the desired out of focus effect for the shot. Just match the lighting angle of the subject to that in the background for best illusion.

For the polar bear I used artificial snow, polystyrene sheet and two small plastic models.

By setting the camera on a tripod it is easy to get your final composition correct.

If you don't have a laptop or tablet that you can use as the background then you could try printing out a suitable image and use this as the background as shown below.

Paper printed background, iPhone 15 Pro Max x2 lens capture

**Designing a Tripod Mounting Plate (FZ80/82, FZ200/300330/1000)**

I, several years ago, designed a tripod mounting plate for the FZ200/300/330 to allow access to the battery and memory card when a quick release plate was attached to the camera.
It also centred the tripod mounting position in line with the lens axis. This design was copied by a company and marketed as the "Alzo liberator plate."

I thought that I would re-engineer a new plate that featured an anti-rotation device which was missing on the original design.
The design is as follows and I have also made the templates available if you wanted to make your own plate. Very little materials and skills are needed to make this – Just a small saw and a drill.

So we start with the template for the base of the camera. Cut this out and use it to mark the wood used for the base plate
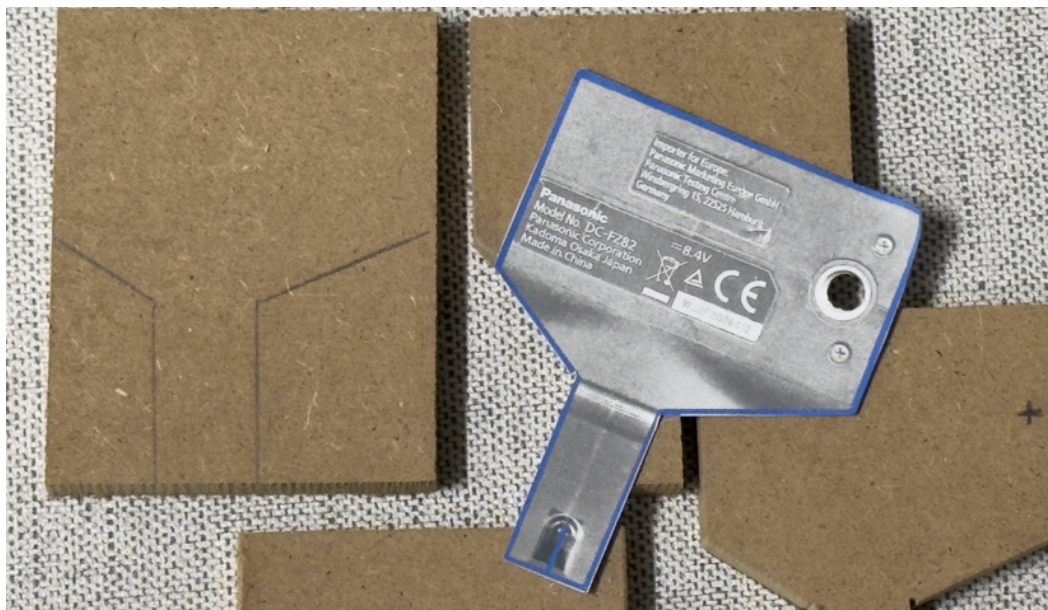
Using the template mark out the baseplate. 9mm MDF or plywood is most suitable.
I got some offcuts from a local timber merchant which was ideal for this project.

Once the wood is marked out it can be cut. Depending on your tools available a small tenon saw, jigsaw or a hacksaw could be used to cut it out.
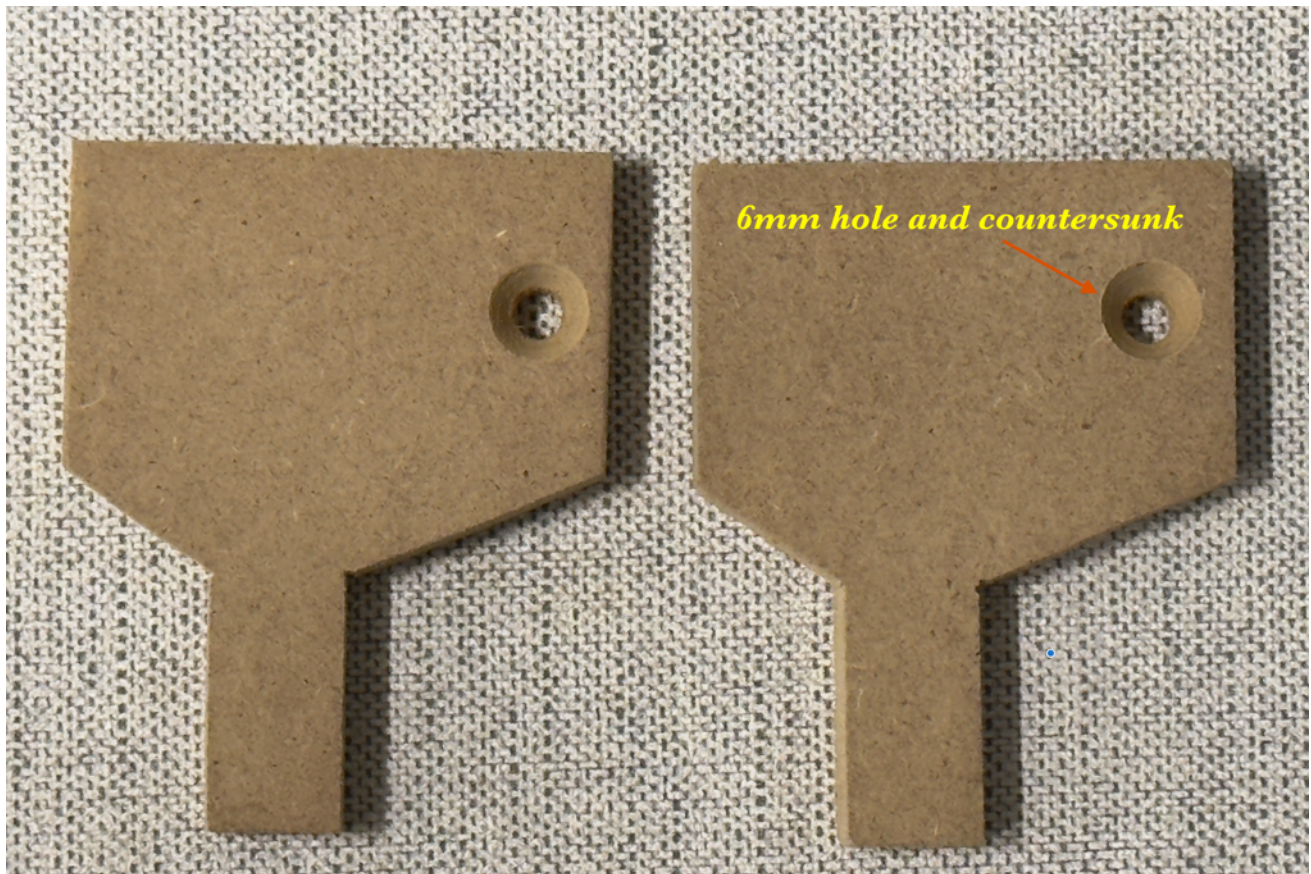

Drill a 6mm hole and countersink it on the top surface (as shown). Countersink deep enough to suit your countersunk screw (see parts list) Use the centre of the template hole after carefully aligning the template if you did not mark the hole position previously.

The 3/8 x ¼ -20 insert is glued using epoxy resin into a 9mm hole. If you have a 3/8 x16 tap then this could used in a 8mm hole without glue. Note the insert is screwed into the plate from the underside.

Next cut out the anti-rotation tab from 3mm thick material.
I used the mdf insert from an old photo frame for this. You could use plastic sheet if you wish.

anti-rotation tab
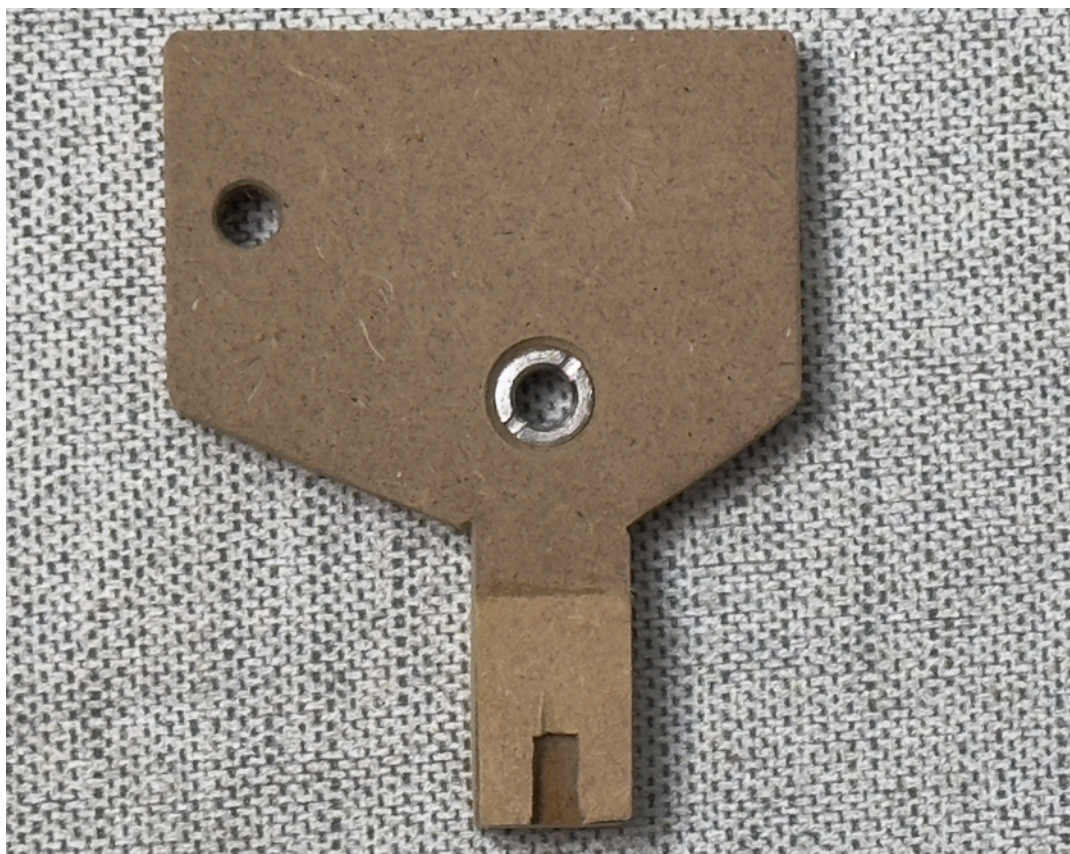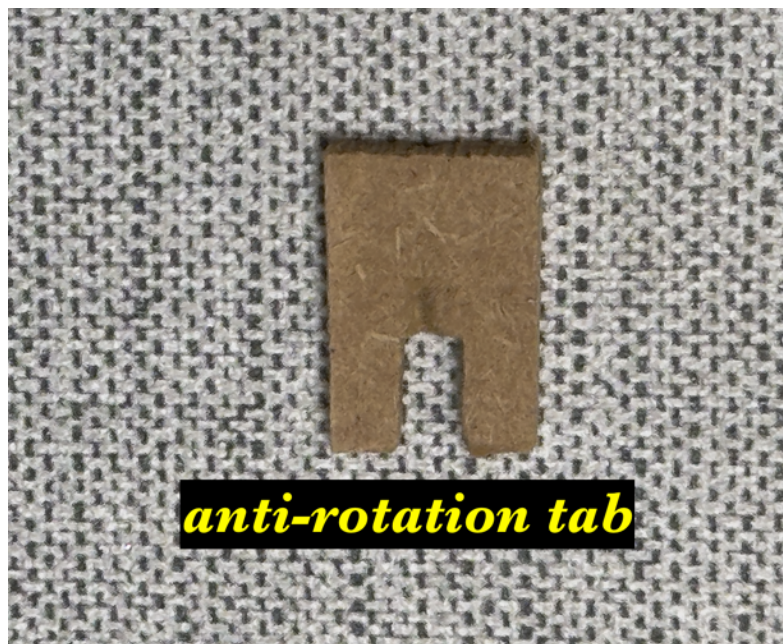
This tab is now glued onto the top surface of the base plate using a wood glue or epoxy resin.
The slot should be central to the tab.

The plate can be finished with paint or clear lacquer and then a thin piece of rubber (self-adhesive type or use contact adhesive with ordinary rubber sheet)

The rubber sheet attached on the upper surface.

The plate attached to the camera with ¼-20 countersunk screw.

The final plate with a Arca style quick release plate attached allowing access to the battery and SD card compartment. The camera pivots now on the lens axis!

Parts list:
¼ to 3/8 adaptor https://amzn.to/47pIoEp
¼ x 20 x ¾ countersunk screws https://amzn.to/49MYIAy

You will find the templates for the FZ80/82, FZ200, FZ300/330 and FZ1000 in the download section of my photo blog. They are saved as 300dpi images and will print full size (don't change printer setting like fill to page etc). There's a ruler on the image so you can check the print size is correct.
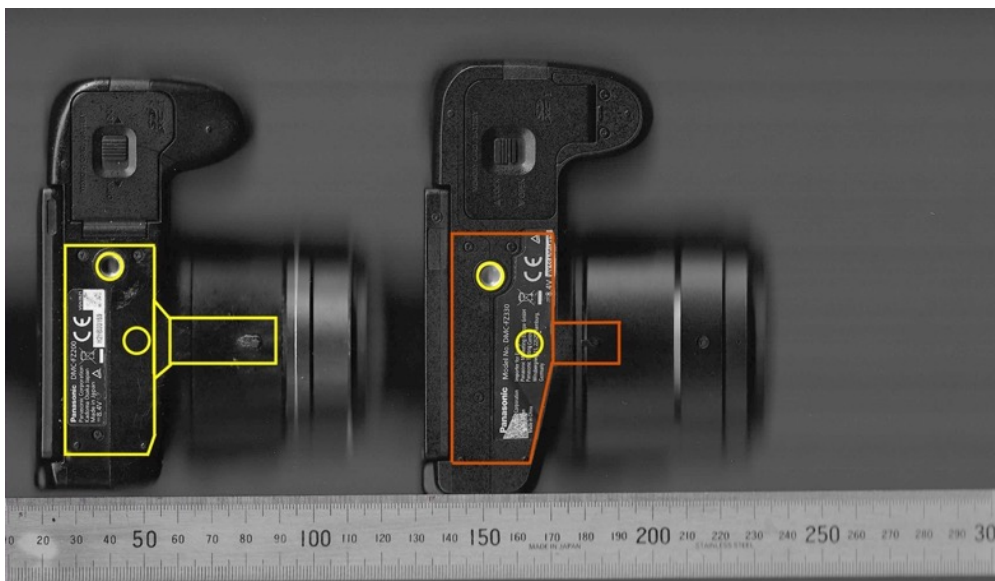
The template are individual images but shown here as a double.

As far back as iOS 8, Apple added a new feature to the built-in Camera app: Time-lapse.
Apple claim that in time-lapse mode, "iOS does all the work, capturing images at dynamically selected intervals."
So what does Apple mean by "dynamically selected intervals"?
Well it simply means that they are doubling the speed of the time-lapse and taking half as many pictures per second as the recording duration doubles.
Sounds fairly complex, but it's actually quite simple.

Here's a table of what this actually translates to in the real world!

Recording Time	Captured Frame Rate	Relative Speed
under 10 minutes	2 frames every second	15x
10 minutes to 20 minutes	1 frame every second	30x
20 minutes to 40 minutes	1 frame every 2 seconds	60x
40 minutes to 80 minutes	1 frame every 4 seconds	120x
80 minutes to 160 minutes	1 frame every 8 seconds	240x

Taking the first line of my table for every 15 seconds of recording time the resulting time lapse clip will be 1 second long! After 10 minutes of recording on stopping the recording the app then removes every other frame from the recorded clip. After 20 minutes every other 2 frames are removed and so on.

As the video is fixed at 30fps and the resolution is 1920 x 1080 and set your camera capture from High Efficiency (H.265) to Most Compatible (H.264) for easier editing.
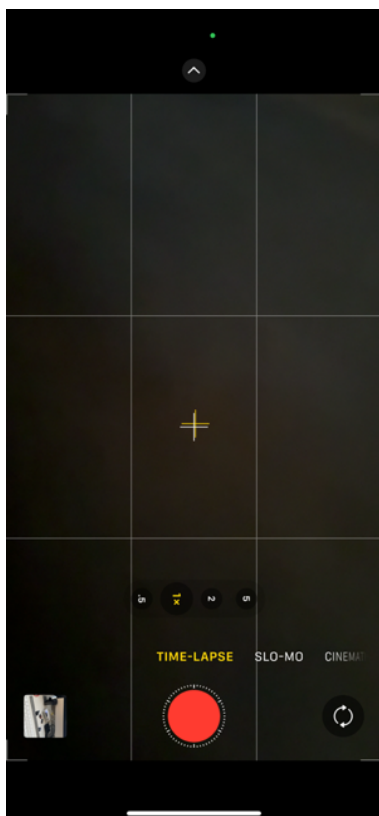
| Time Lapse Selection | Focus and Exposure Lock | Recording in Progress |

So for all time lapse videos the running time can be calculated by dividing the real time by the relative speed. So for example a 20 minute recording would result in a 40 second clip. ((20 x 60)/30))
After the clip is processed you can use the edit feature to perform:
Trimming of the clip, the usual set of exposure correction, highlights, shadows, contrast, brightness, black point, saturation, vibrancy, warmth, tint, sharpness, definition, noise reduction, and vignette.
So although you don't have the refined selection of "traditional" timelapse apps where frame rate, interval and exposure time might be available it is nevertheless a very useful addition to the camera app on the iPhone models.

Still Severe Internal Reflection from the New iPhone Camera Lenses

One of the new updates to the camera lenses of the iPhone 15 models was the introduction of new surface coating which was supposed to reduce the bright "orbs" from light sources that appear in the image. On a recent trip to the Manchester Christmas markets every video clip and image was "ruined" by multiple reflections appearing in the frame.

Reflections from the bright light sources (still from 4K video)

I guess that this is due to the very close spacing of the lens elements and probably very difficult to "design out".
On my next trip I will try the Samsung Galaxy S23 Ultra and the Google Pixel 7 Pro as a comparison test.

Experimental Microscope Camera Adaptor

I've had this microscope in my cupboard for about 3 years now and never really got around to installing a camera on it to capture images.

I had a bit of free time so I decided to try and make an adaptor to hold my miniature Pentax Q7 camera body.

By using bits of lens tubes and rings I was able to machine something that would hold the camera for "proof of concept" just to see what the image quality and magnification was like.

As this microscope uses 160mm fixed focus distance lenses with x4 x10 and x40 objectives then as long as the distance from the sensor plane to the microscope objective is 160mm then it will focus.

With the lowest power objective, the x4 lens, small test samples like this flea filled the 1/1.7 inch sensor of the camera. I am going to try this on the EOS M and micro four thirds systems to see what size the imaging circle is using these objective lenses.

I've ordered a x1 objective to give wider field of view for bigger objects. I also have a couple of 4K video sensors from old Web Cams so I'm going to try these as well for video of live samples such as water bugs etc.

The microscope updated with a Canon EF adaptor and then the Canon EF to EOS M adaptor coupled with my Canon EOS M body attached

The x1 adaptor that I had ordered turned out to have very poor optical results using this microscope set up. I'm not sure why yet.

Image of small fly with x4 objective and adapted Canon EOS M body

Calculation of (or Verifying) Macro Magnification

It might be useful to carry out a test to see what the maximum image size is at any particular magnification.
This can be useful not only for macro lenses but also close up dioptre lenses fitted to your cameras lens.
I photographed a 150mm steel rule at 1:1 and 1:2 magnification using the 7 Artisans 60mm macro lens on a Canon EOS M camera.

The 1:1 image

The 1:2 image

The formula for magnification is as follows.

Width of camera sensor / visible mm in the image.
Both measurements must be expressed in the same units.

The APS-C digital sensor featured in the Canon EOS M is 22.5 mm wide. The image shows 2.25 mm of the ruler is visible in the image. So from the formula the image magnification is exactly 1:1

With the 1:2 setting the magnification is:
43.0/22.5 = 1.91

It could be the scale on the lens is out or because of the fact that manual focus has to be done by moving the camera and it wasn't exactly in the centre of the DOF.

However it does give you the confirmation of image magnification and the size of objects that can be photographed which will fill the screen.

I checked using both RAW and JPEG images and with Lightroom the CR2 is cropped by the same amount as the JPEG and what you see on the LCD is exactly what is produced as a final image.

Other RAW processors do not crop the RAW file and you may see more of the image however it will have vignette.
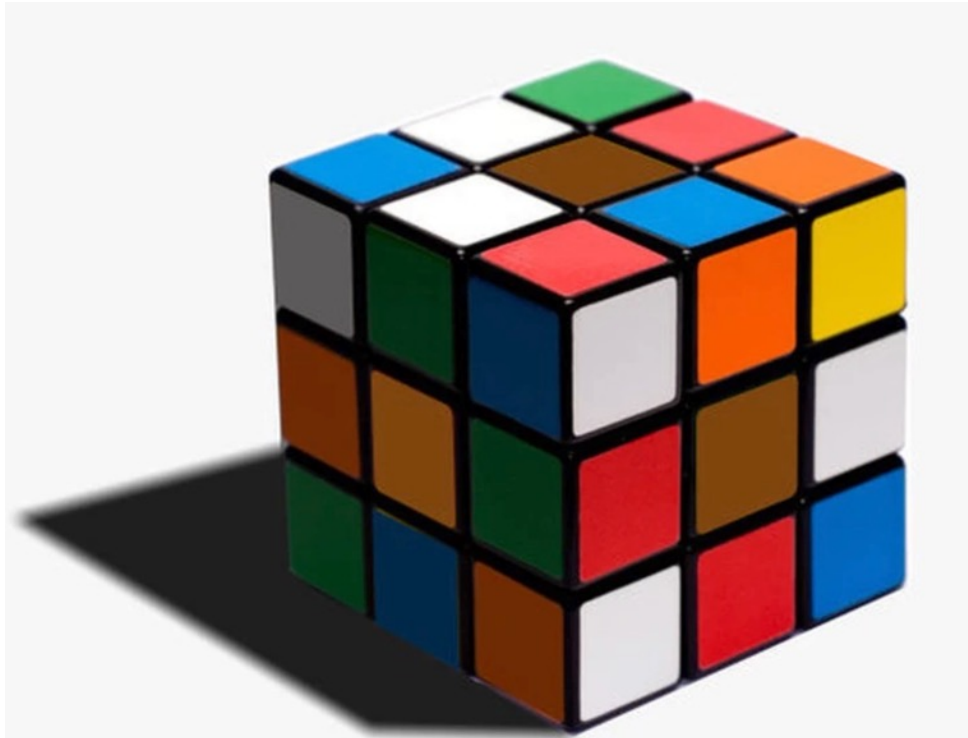
Take a look at this "Rubik's Cube strongly illuminated with white light.
Now take a look at the central square on each of the three surfaces that are visible.

If I call the top face "a", the shadow face "b" the front face "c" and you will, if all this reproduce well, see that the "b" face square is lighter in colour.
However it is actually the same shade of brown! I extracted a section from each square and you can see they are all the same Hue and Saturation.
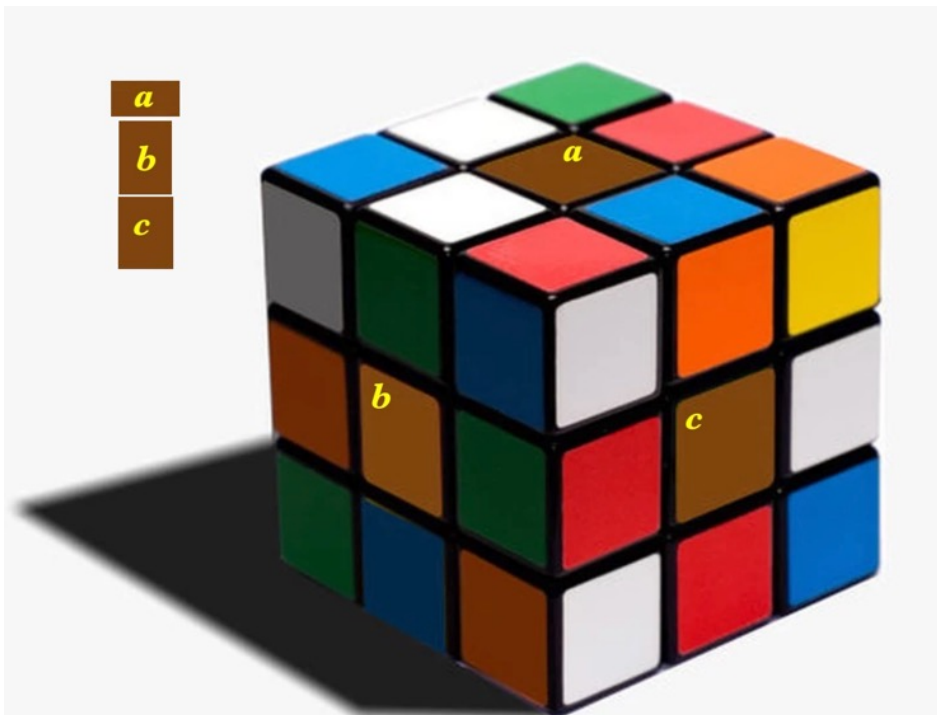
The reason for this is an optical illusion created by our eyes and brain. The reason that the shadow face square appears lighter is due to the fact that as light becomes more intense, the perception of wavelength hues also changes. This effect is called the *Bezold-Brücke Effect* after the two 19th century German scientists who described it.
The reason I'm describing this effect is part of a colour presentation that I am doing for Datacolor and their Spyder Colour Checkr Video tool. The reason for using such a tool overcomes the fact that colour

perception depends on too many variables such as the viewing monitor brightness and its calibration, the ambient light of viewing conditions and our eyes spectral response and colour and the spatial geometry of light itself.
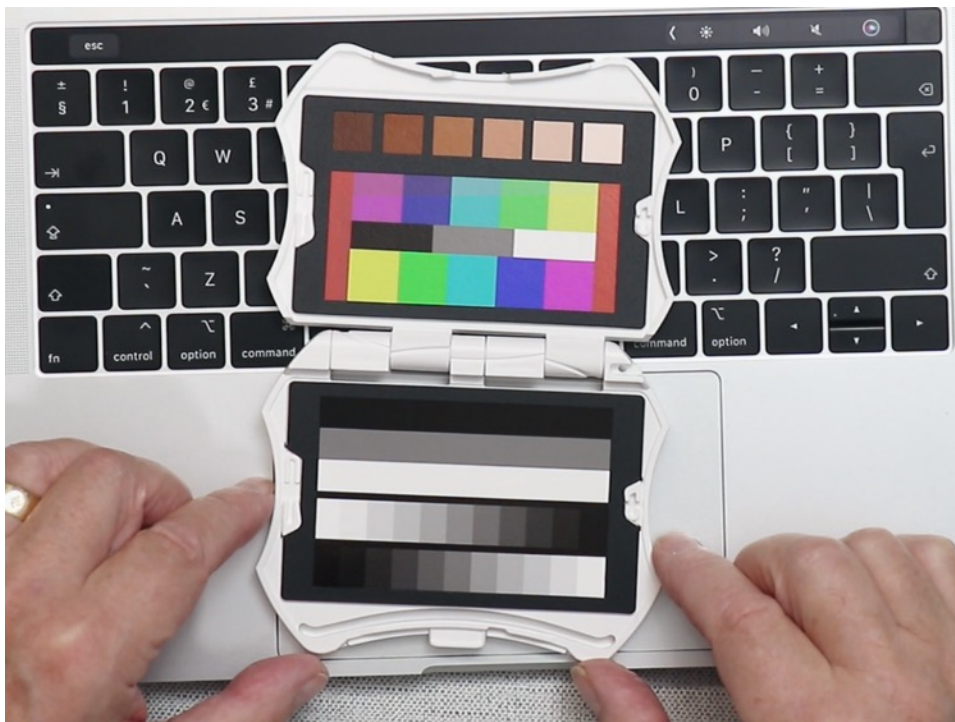
So this is the tool and it has accurately printed primary, secondary and grey scale chips of colour.
The colour chips represent 100% and 75% colour saturation as described by the REC709 Display video standard.
With this tool the video editing program with associated video scopes are used to set the brightness, contrast, hue and saturation.
As this is done without any display reference (that is we do not look at the screen during the process) the final colours achieved are reproduced perfectly.

The End of 2023

I had planned to issue my free issue of my book on photography as a thank you for your continued subscription however recent health issues have prevented me from writing the final chapter.
I will finish it and get it out to you as soon as I am able.

As I conclude this edition of the newsletter I am once again fighting with vertigo and simple tasks like staring at the computer screen and scrolling images send me crazily dizzy.
I am regularly performing the Brandtt Darof manoeuvre to try and restore normal balance and vision but as yet it hasn't prevented to motion sickness.
My wife is having to do the driving around to family festivities etc as I am not confident when things are moving passed the car and bright street and car headlights become triggers for dizziness.

I will close with a very big thank you for your continued support and let me wish you all a very merry Christmas and a happy New Year.

Let's hope 2024 is going to be a better year!

Graham