# Camera Club News

## Letter From The Vice President

It was great to see some really interesting photos in the Black & White competition this month, well done to all those that entered. I want to remind everyone that the rules for competition entry are displayed on the club website and it is important that you submit your prints and digital files in the correct format and with the correct names.

I have been reading a really fantastic book "The Art Of Photography" by Bruce Barnbaum and can thoroughly recommend it to you all.

After the Flash Photography workshop some members enquired about where I purchased my accessories like stands and umbrellas, most of it came from John Chalmers on TradeMe he stocks a large of gear at good prices.

In July and August we will be running workshops based on your requests so get those thinking caps on and let me know what you want to see covered on those days.

My monthly photo this week is the original photo of Mollie & Alfie before I processed it for the B&W competition.

Regards Nik

**Editors Monthly Photo**

## Club Information

To learn more about photography, to share your skills and experience or simply to enjoy photographic time with like-minded people, come to a meeting or contact us at

info@wairarapacameraclub.org

Meetings start at 7:30 pm on the first Tuesday of every month from February to November, at the Education Centre next to Parkview Motors in Dixon Street, Masterton.

WCC, PO BOX 502, Masterton

www.wairarapacameraclub.org

All questions, submissions and general information regarding this newsletter should be made to the Editor, Nik Player.

nikplayer@me.com

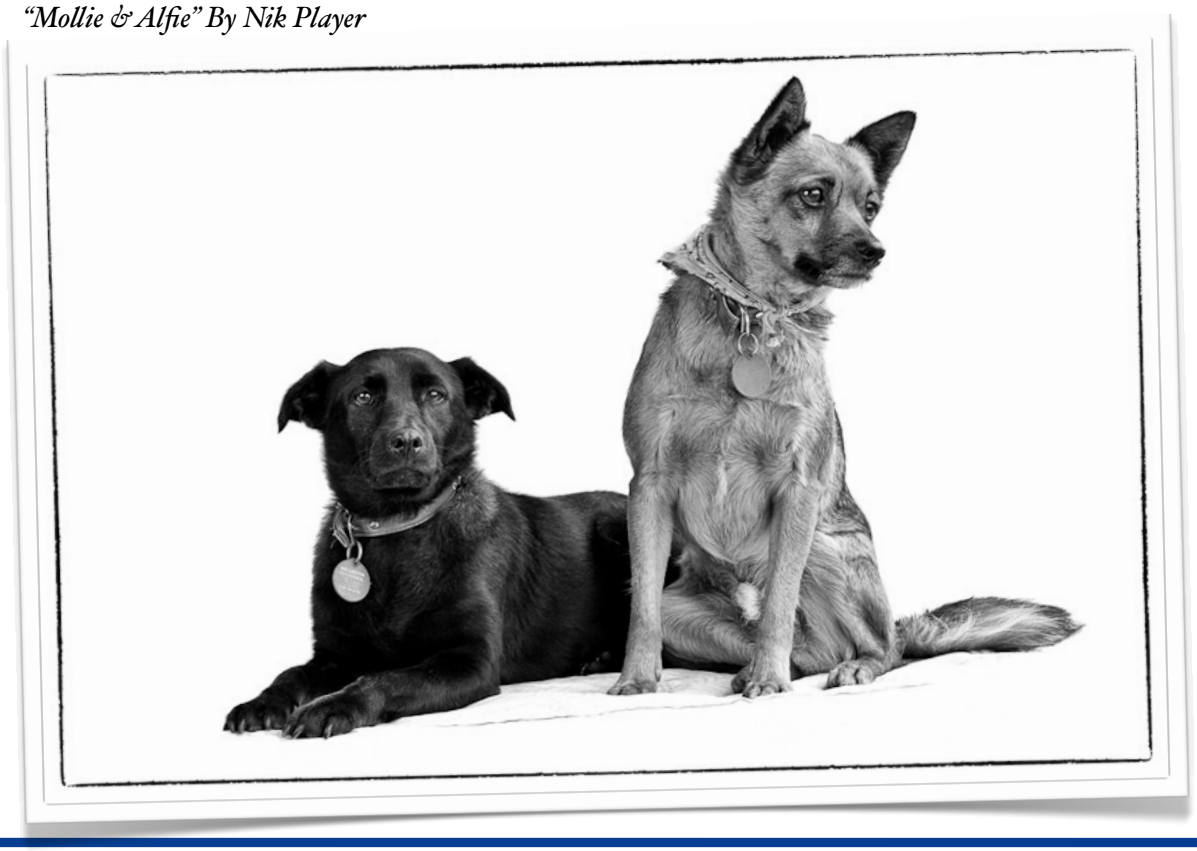
## Competition: Black & White

***WINNING PRINT***

*"What do you reckon lads ?" By Alan Portman*

***WINNING PROJECTED IMAGE***

*"Mollie & Alfie" By Nik Player*



# Competition Results

**Prints**

| | | | |
|---|---|---|---|
| Tim McMahon | Sunlight Streak - Central Plateau | M | |
| Tim McMahon | Morning Mist Lake Wahapo | H | |
| Les Wong | Pebble Beach | C | |
| Les Wong | Moon - Light | C | |
| Martin Connelly | 'Just Checking' | C | |
| Martin Connelly | Last Day At Work | HC | |
| Alan Portman | Once Was | C | |
| Alan Portman | What Do You Reckon Lad's? | H | Winner |
| Richard Lambert | Going For It | M | |
| Richard Lambert | Morning Calm | C | |
| Kay Halligan | Shapes | M | |
| Barry Baxter | Lava Bombs | M | |
| Barry Baxter | Mountain Man | C | |
| Karen McCosh | Birthday Caked | C | |
| Carolyn Smith | Monument To Life | A | |
| Carolyn Smith | Friends | A | |
| Sid Hayes | Claire | M | |
| Sid Hayes | The Good Old Days | HC | |
| Nik Player | Heavy Metal | HC | |
| Nik Player | Internal Reflections | HC | |

A Accepted 1 Point | C Commended 2 Points | M Merit 3 Points | HC Highly Commended 4 Points | H Honours 5 Points

# Competition Results

**Projected Images**

| | | | |
|---|---|---|---|
| Martin Connelly | Morning Rose | M | |
| Martin Connelly | Black Eyed Swan | M | |
| Barry Baxter | Cloud Forms, Mangatepopo | C | |
| Barry Baxter | Rock Stratum | M | |
| Charmaine Reay | Campfire | A | |
| Charmaine Reay | Tumble Wire | C | |
| Tim McMahon | Looming Weather Change | HC | |
| Tim McMahon | Myra - Contemplation | H | |
| Karen McCosh | Misty Morning | C | |
| Karen McCosh | Susanna | C | |
| Bruce Levy | TXT ing | M | |
| Bruce Levy | The Strong Link | M | |
| Nik Player | Molly & Alfie | H | Winner |
| Nik Player | Tekapo | HC | |
| Carolyn Smith | The Lighthouse | C | |
| Carolyn Smith | Best Mates | C | |
| Alan Portman | Going Up | HC | |
| Alan Portman | Bridging The Water | C | |
| Kay Halligan | Patterns | M | |
| Kay Halligan | Jenny And Jimmy | HC | |
| Miles Reay | Scotney Castle | C | |
| Miles Reay | Boat Trailer Ngawi | M | |
| Glenys Robertson | Wild Water | M | |
| Glenys Robertson | The Singer | HC | |

A Accepted 1 Point | C Commended 2 Points | M Merit 3 Points | HC Highly Commended 4 Points | H Honours 5 Points

# Have You Ever Wondered About ?

A series of articles by Tim McMahon that go a little behind some of the ideas and rules we learn as photographers, to explain why or how those rules came to be.

If there is anything about making digital photographs that you've wondered about, email me at tim.mcmahon@me.com and if I can find the explanation I'll try to include it in a future newsletter.

## Have you ever wondered about...

### ....all this stuff about sRGB and Adobe RGB?

Most dSLRs enable to you to choose whether to record photo files in sRGB or Adobe RGB. When you send a digital file for the club's projected image competition it has to be "in the sRGB colour space". You'll hear some people say "Just do everything in sRGB - you'll have no problems." Others say "Always work in Adobe RGB, you get more colours."

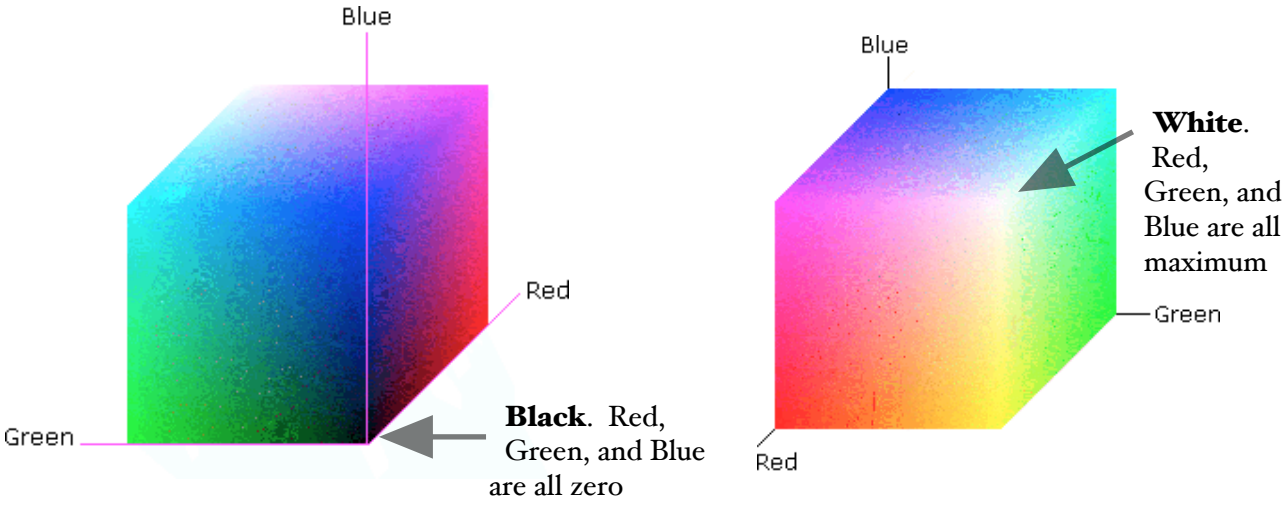
*What on earth are they talking about?? And why should you care?*

### RGB colour model

Humans can see literally millions and millions of different colours in the real world. Every one of those colours can be made up by mixing differing proportions of 'pure' primary colours: red, green, and blue. For example a purplish colour is composed of a lot of red and a lot of blue but little or no green.

However, communicating unambiguously about colour is problematic. What is 'red'? People describe quite a large range of different colours as 'red'. Most leaves are 'green' but few different plants have leaves which people would agree are the same shade of 'green'.

Around 1920 an organisation called the C.I.E. came up with the notion of representing all the colours that humans can see by means of an RGB colour model. Experts agreed on what was 'pure' red, 'pure' green, and 'pure' blue, then the colour model was represented in a 3-dimensional graph as in the picture:




In the RGB colour model, the components of colour are represented on the axes of the graph which go from zero (no colour), out to maximum saturation for each of the 3 primary colours. Where the colour intensity is zero on all three axes: no red, no green, no blue, we have no colour: i.e. black. Where the colour intensity is maximum on all three axes, the combined colour is white.

Every other colour can be described by referencing the amount of red, green or blue that makes it up. Colour (a,b,c) has 'a' amount of red, 'b' amount of green, and 'c' amount of blue.

We can't represent the whole C.I.E colour in this newsletter because it is impossible to represent *all* of the visible colours in printer ink or on a computer monitor.

It's because real-world physical devices cannot represent *all* colours, that the idea of colour spaces, which contain only colours that devices can deal with, was born.

**sRGB**

The first colour space, sRGB, was defined by Microsoft. sRGB is a colour space that limits the colours it tries to represent to only those that could be printed on every known monitor and inexpensive printer at the time. It's a 'safe' space to use because if you send someone an image containing only the colours in sRGB it's a good bet they will be able to see all the same colours you sent.

But in doing so, you may have had to sacrifice colours from your image.

**ProPhoto RGB**

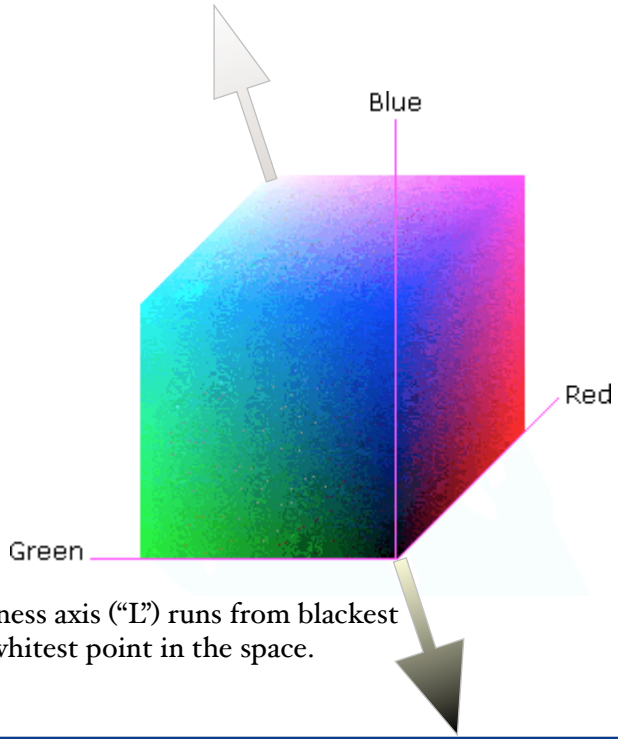
At the other end of the scale is ProPhotoRGB, designed by Kodak. They took the opposite approach. ProPhotoRGB contains every colour that any physical device could ever hope to be able to display. As far as I know, there is no real device that can reproduce all of the colours in the ProPhotoRGB space. You would never have to trim colours if you sent someone an image represented in ProPhotoRGB. But….. there is a but! See later.

**Adobe RGB**

In between sRGB and ProPhotoRGB is Adobe RGB. Adobe realised that cameras, many modern printers, and good monitors can display more colours than Microsoft imagined. At the same time they saw no point in wasting computer space with colour values that few or no devices could display. Adobe RGB contains more colours than sRGB, but fewer than ProPhoto RGB, and all contain fewer that the human eye can see!

**L*a*b plot**

For the purpose of comparing the different colours encompassed by different colour spaces a graph called a L*a*b plot is often used – you'll see why on the next page!



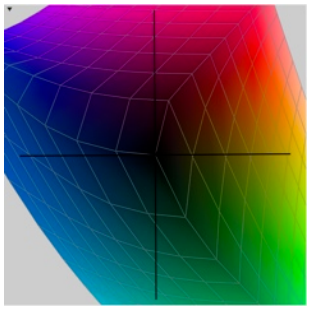
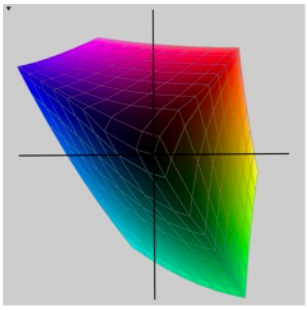
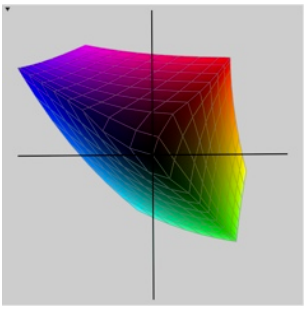
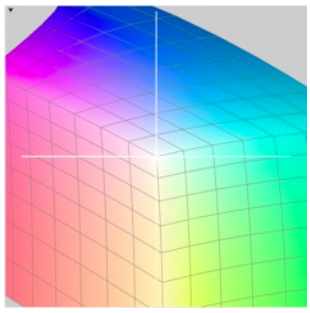
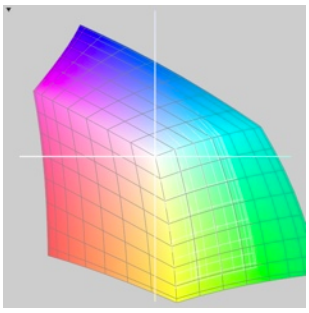
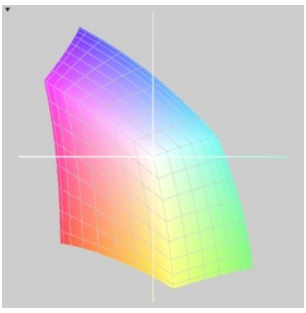

The lightness axis ("L") runs from blackest point to whitest point in the space.

A L*a*b plot is essentially the same RGB 3-d graph except it is viewed by looking up, or down the "lightness" axis which is a line running from black (0,0,0) to white (maximum red, max. green, max. blue)

Diagrams drawn this way enable you to compare at a glance the range of colours a space or device can represent.

Looking at the next picture you can see that AdobeRGB contains more colours than sRGB, and that the ProPhotoRGB space contains more colours than both of them.

The most highly saturated colours are those sacrificed in the smaller spaces.

| | ProPhotoRGB | Adobe RGB | sRGB |
|---|---|---|---|
| Looking up the lightness axis from black towards white |  |  |  |
| Looking down the lightness axis from white towards black |  |  |  |

**What does this have to do with your photography?**

If you are recording your photos as JPEG files, most dSLR cameras allow you to choose whether you wish to save your photos in sRGB or AdobeRGB. Camera makers sometimes recommend sRGB because it is 'safe'.

However, modern digital cameras can record a lot of colours – typically more than either the sRGB or AdobeRGB colour spaces contain. By choosing either sRGB or Adobe RGB you potentially throw away colour information that might enhance your photograph as you make final adjustments before printing. Of the two, you risk throwing away most colour information by choosing sRGB.

If you are capturing your photos in JPEG, and if you have the choice, choose AdobeRGB.

Better yet, record the camera's RAW digital file, which contains *all* of the colour information the camera can capture, and let your computer software handle the conversion from camera data into your chosen colour space. Internally, *Lightroom* uses a colour space called "Melissa RGB" (which contains the same colours as ProPhotoRGB) so, in loading a RAW file into *Lightroom,* no colour information is lost or compromised *until* you display the colours on your monitor, or print to paper. This gives you maximum flexibility.

Other software, such as *Photoshop* (actually part of it called *Adobe Camera Raw*) asks you what colour space you wish to convert your RAW camera file into.

If you record your photo as sRGB or Adobe RGB in camera, the software can make use of only the smaller amount of image data you send it. This may compromise adjustments you might make, or limit your output options.

My printer, for example, can print a range of greens and reds that are not contained in the sRGB colour space. If I were to use sRGB to capture a scene that had those colours in it, I would not be able to print them because that data would have been thrown away when the sRGB conversion was made.

**You want to share your masterpiece**

When you send images you've captured to someone else, it is important that the receiver 'knows' what colour space you photo file is recorded in, or colour chaos may result! Why?

**The numbers**

Most cameras record their colours using an "8-bit" device. What this means in practice, is that they can represent 256 levels of red in numbers 0, 1, 2, 3, … 255. 0 means no red, and 255 means the most saturated red the camera can record. Similarly, it can represent 256 levels of green, and 256 levels of blue,. So a purplish point might be represented by (200, 10, 185) – a lot of red, not much green, and quite a lot of blue.

Colour spaces are recorded in the same fashion. (255, 0, 0) represents the maximum red in the space; (0, 255, 0) the maximum green, and (0, 0, 255) the maximum blue. (200, 10, 185) would represent a purplish colour.

But, as we've seen, the maximum red in sRGB is *not* as saturated as the maximum red in AdobeRGB, which is *not* as saturated as the maximum red in ProPhoto.

Yet sRGB uses 0–255 to represent each of its colours. AdobeRGB also uses 0–255 to represent each of its colours, and ProPhoto also uses 0–255 to represent each of its colours, and the camera uses 0–255 to represent each of its colours. Each colour space uses its own scale: it's like pounds and kilograms – maximum red in sRGB is 255 pounds, but in Adobe RGB maximum red is 255 kilograms! Same number, different weight!

So (255, 0, 0) is a *different* red depending whether you interpret the number in sRGB, AdobeRGB, ProPhotoRGB, or camera RAW. (200, 10, 185) would *not* represent the same purple colour in each space.

**The lesson**

You need to be really careful when you send someone a digital photograph. The receiver needs to know what colour space that the image was saved in, to be able to interpret it the same way. Otherwise your masterpiece will be misinterpreted, and your reputation as a photographer may well be diminished!

If you are sending the file to someone who is using 'colour managed' software, such as *Lightroom* or *Photoshop,* this mightn't be a problem because the software can read colour space information in the file and interpret the numbers correctly. But a lot of software cannot. Web browsers like *Internet Explorer*, and programs like *Picasa* assume that all photo data is to be interpreted as sRGB.

I once made the dreadful error of sending to some friends, a collection of what I thought were quite good photographs of their wedding. I carefully saved these files in the ProPhotoRGB colour space so that no subtle colours would be lost. The digital photos needed to be interpreted in ProPhotoRGB to make sense of all the colours. Sadly, their equipment and software couldn't read or display anything other than sRGB. All of my colour information was reinterpreted as less saturated colours and the photos looked like washed out junk! I couldn't understand why they did not want me to print the really good ones for them! If I had made a conversion from ProPhoto to sRGB before sending them the files, I'd have sacrificed some saturation and I wouldn't have sent the pictures in all the subtle glory I'd captured. But at least I'd have been sure they were looking at what I'd sent. I would have been 'safe', if not as accurate as I'd wished.

On the other hand, if you are sending a digital file to a reputable printer, you should be able to assume they have colour-managed software. Save and send your file in the biggest colour space you can, and make sure the printer knows what you have done.