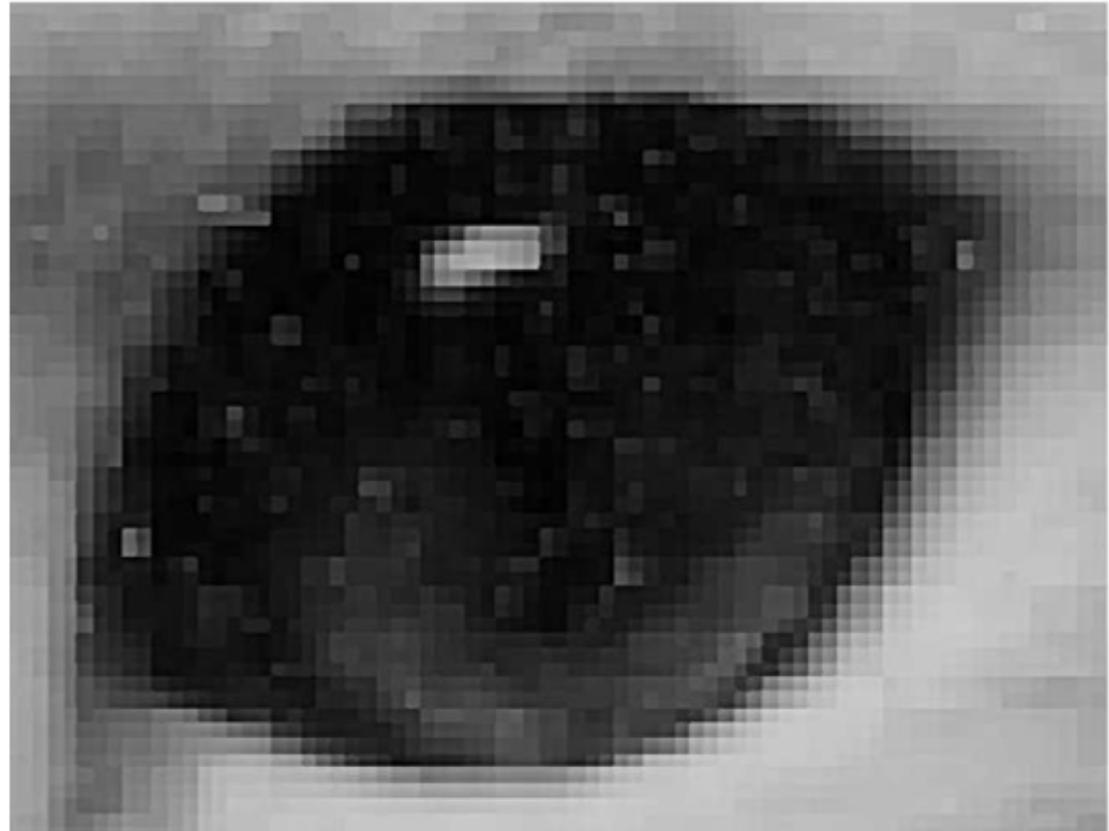
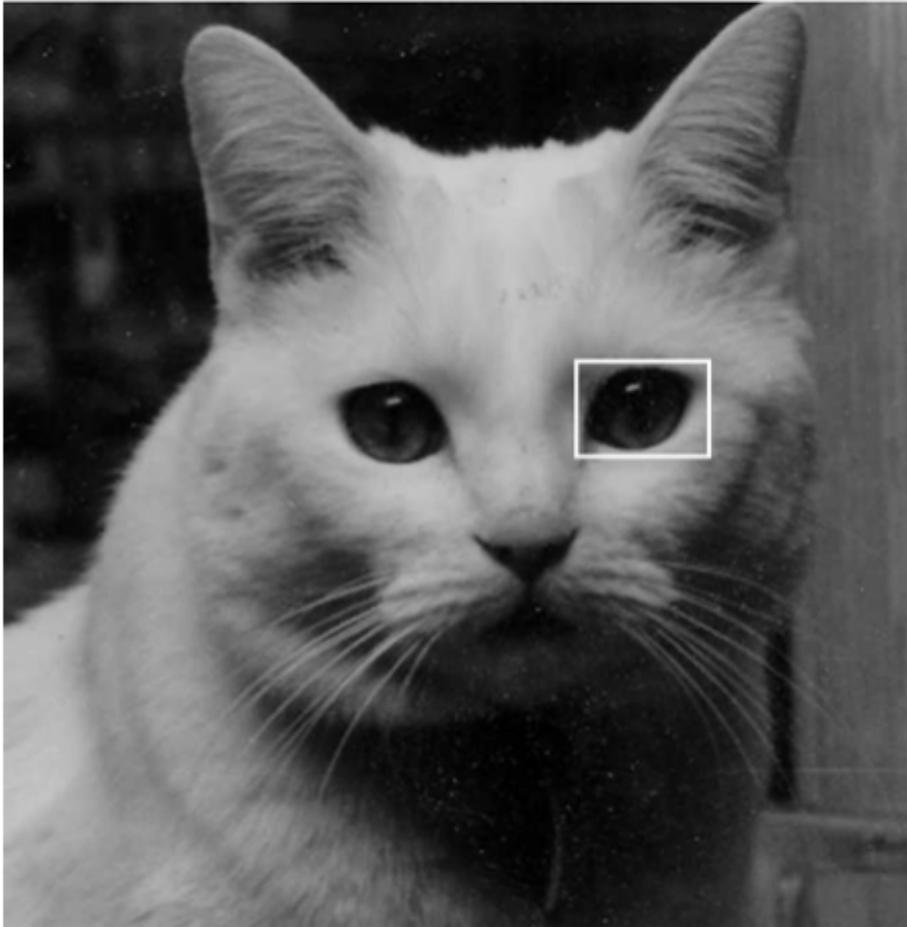


Raster Devices and Images

Raster Image



A **raster image** is 2D array storing pixel values at each pixel

virtually all graphics system are raster based

scanner

linear array of pixels swept across page to create grid of pixels



printer

image is made by depositing ink at points on a grid



display

shows images as a rectangular array of pixels

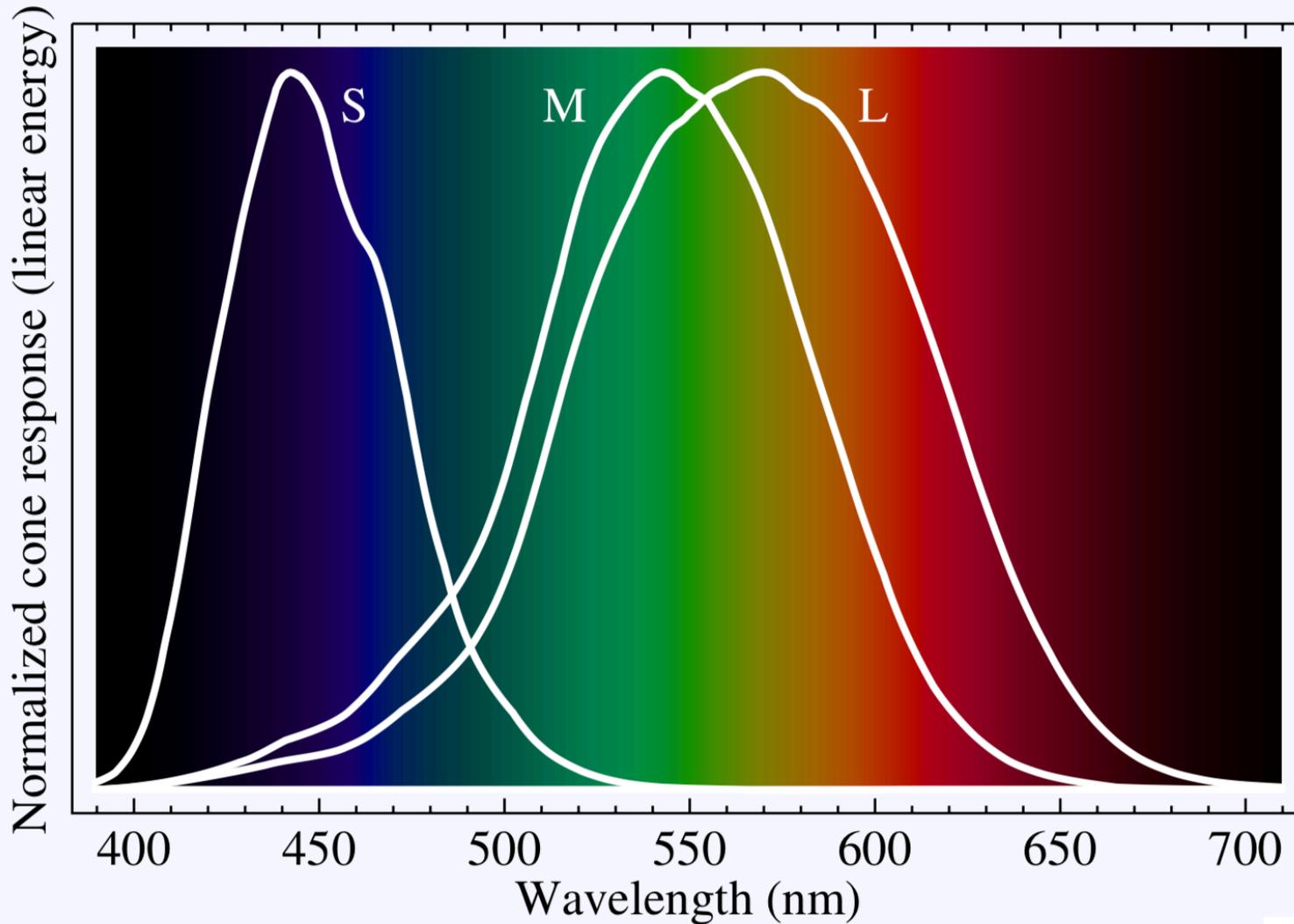


digital camera

image sensors made of grid of light-sensitive pixels

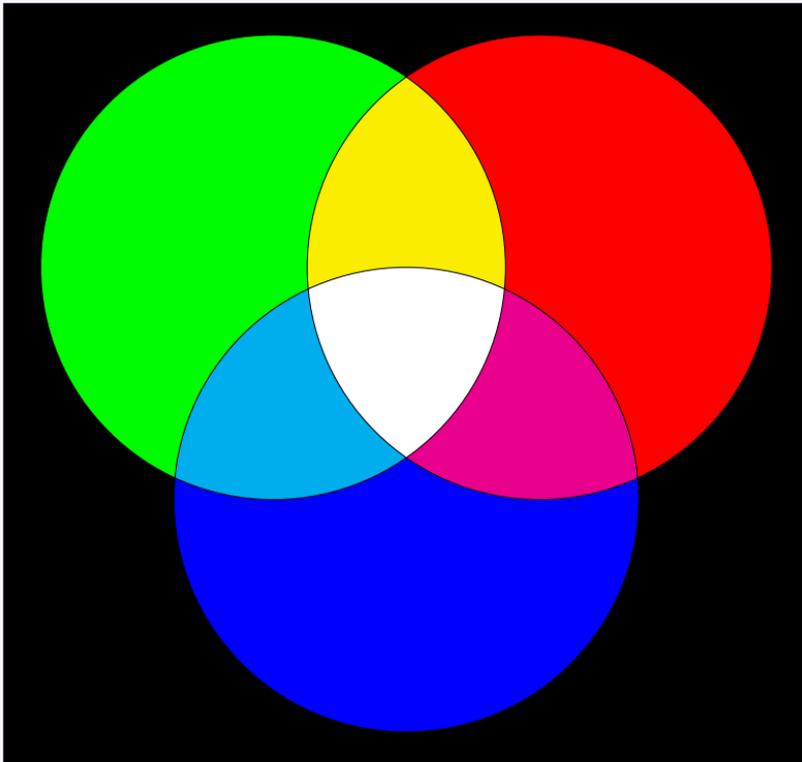


Human color vision (Trichromacy)

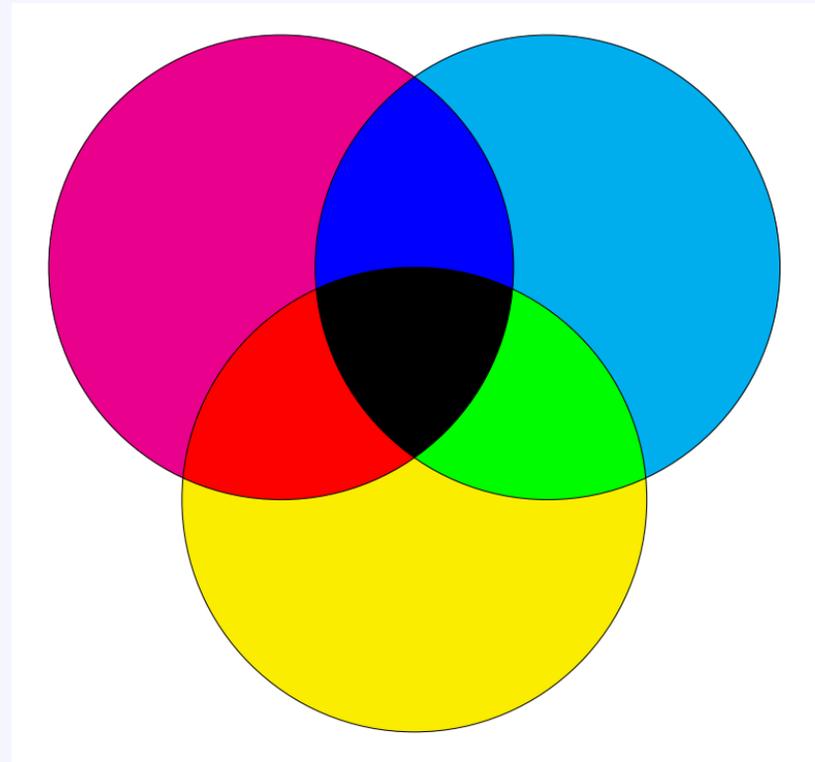


[Wikimedia]

Color Representation

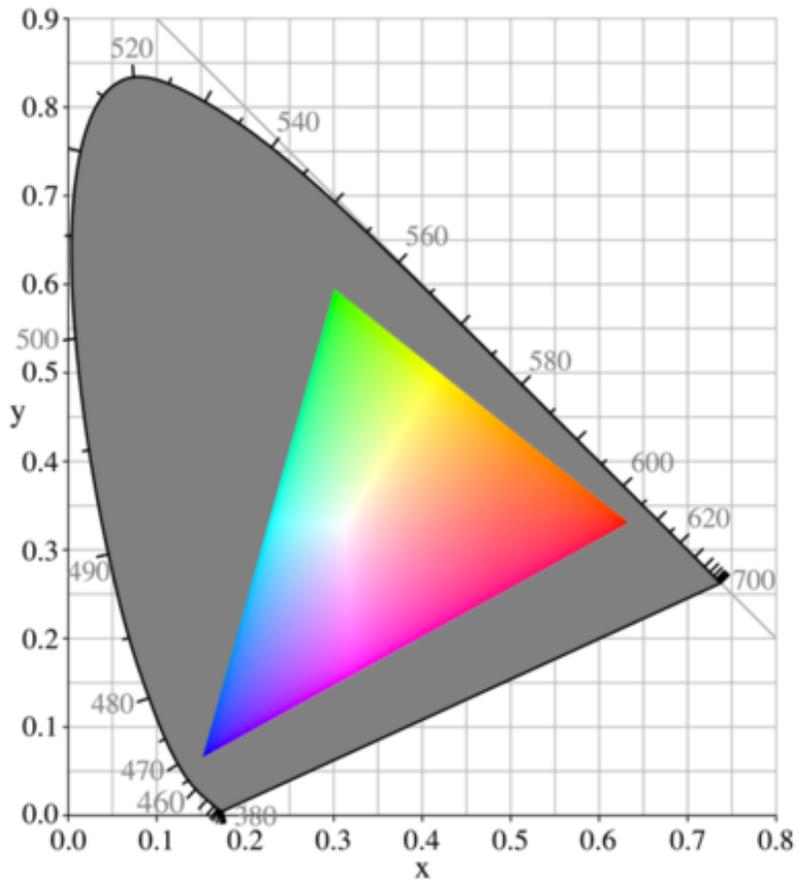


Additive
RGB

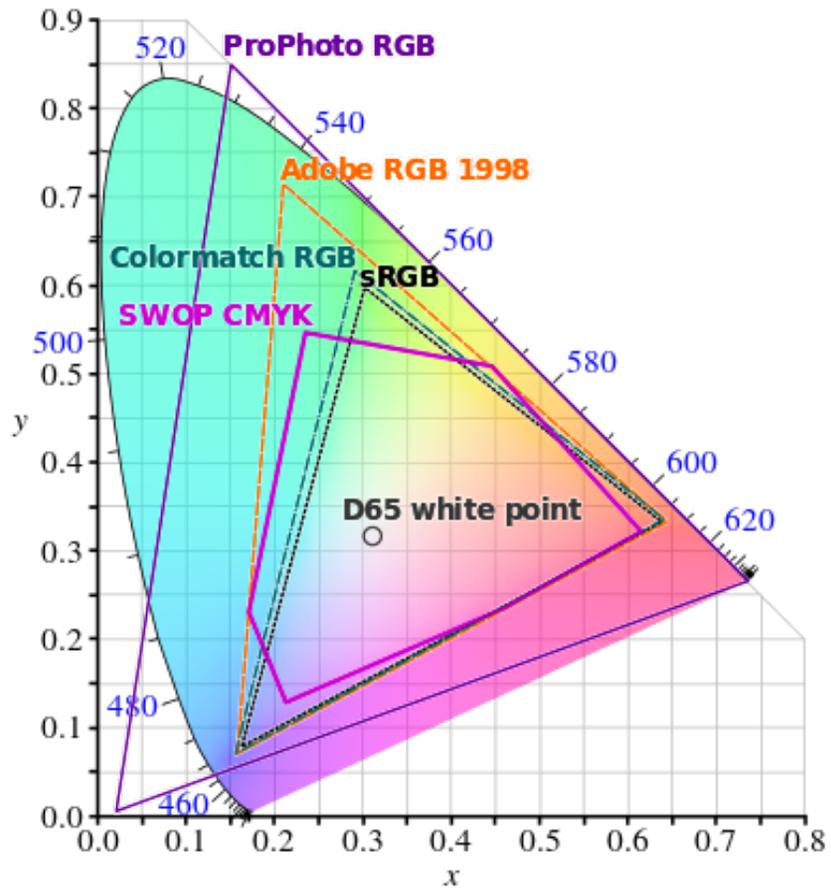


Subtractive
CMYK

Human color vision vs. RGB

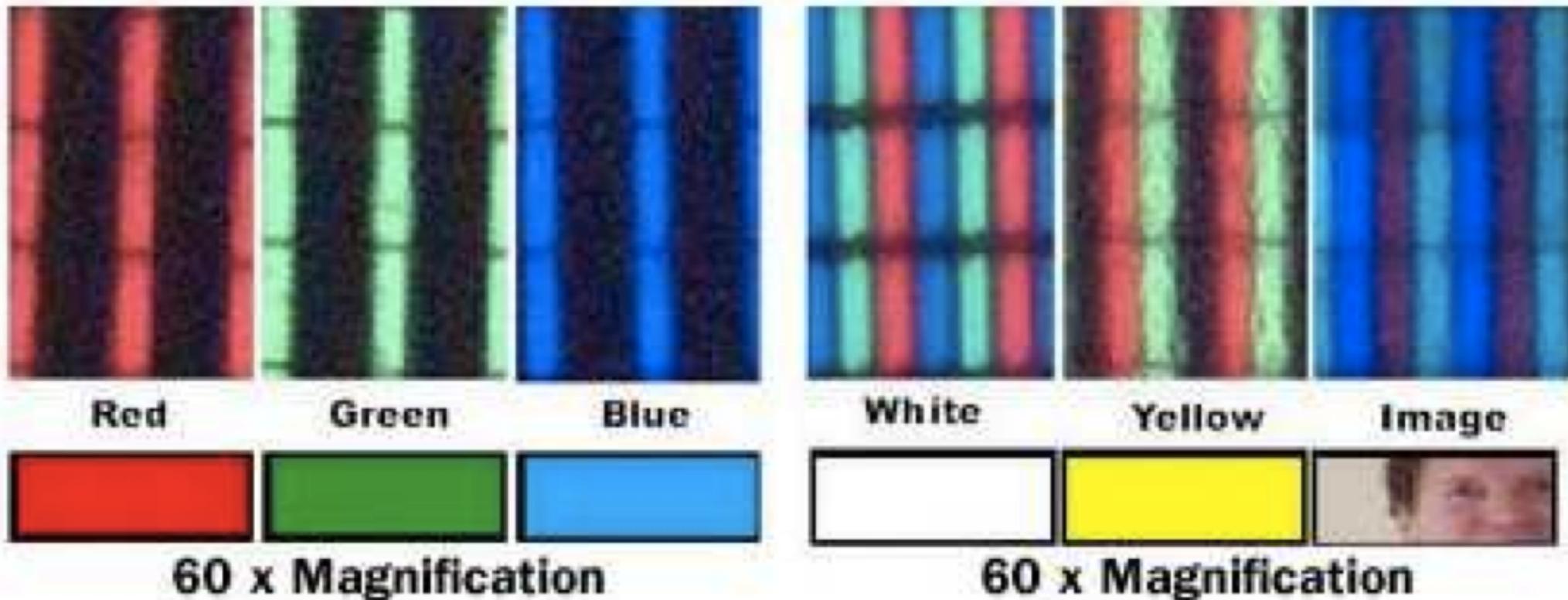


sRGB color triangle



comparison of color gamuts

Raster Display



get different colors by combining **red, green, and blue subpixels**

Color Raster Image

- **R,G,B values stored at each pixel location**
- **each pixel value represents average color of the image over that pixel's area**

