IMGS- 351

Project 2 report

Team # 4

Max Shooster, Malcolm Zale

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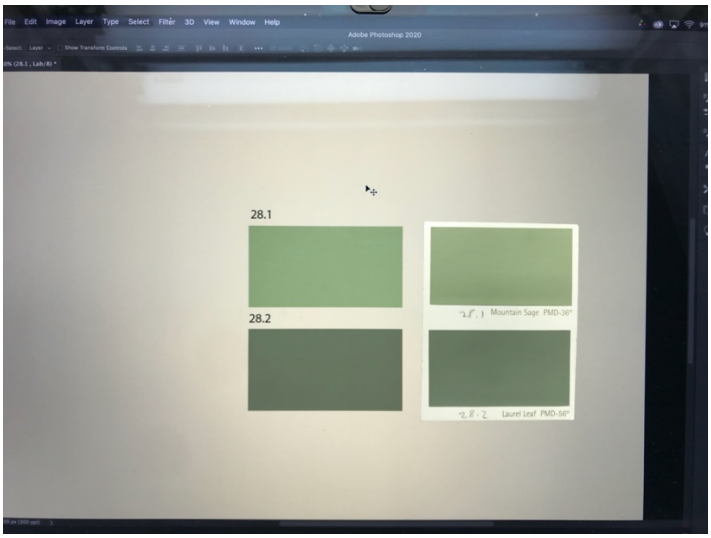
1.) Real/imaged color patches from Lab 1 step 4

2.) Real/matched color patches in light booth from Project 2, step 6

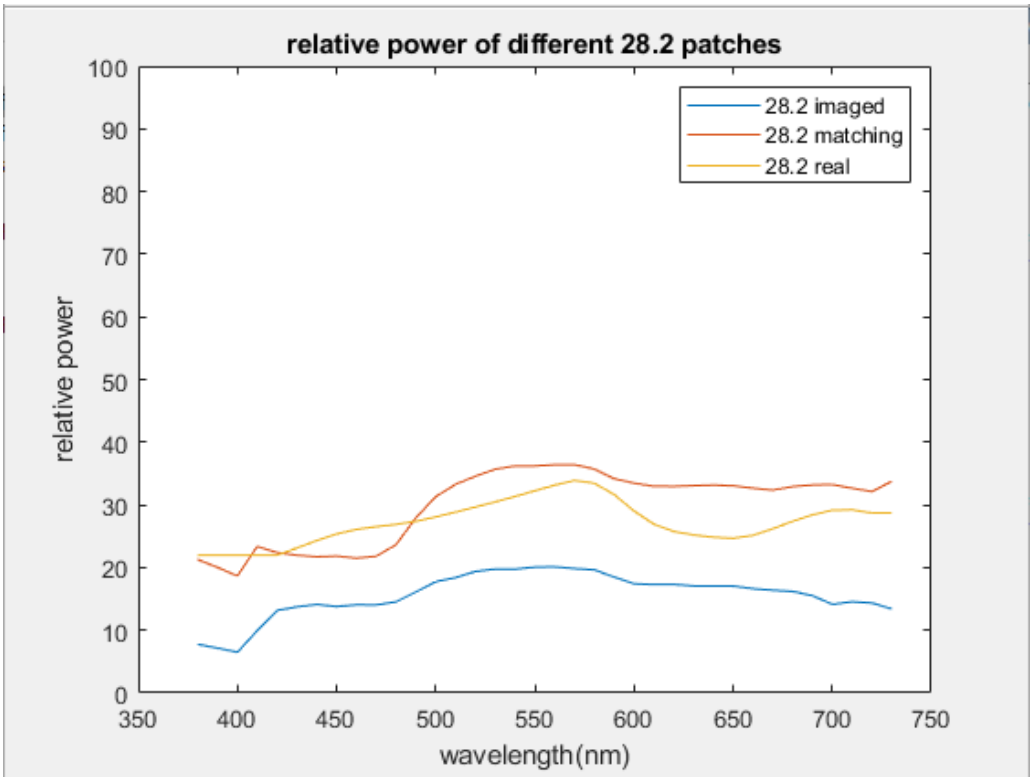


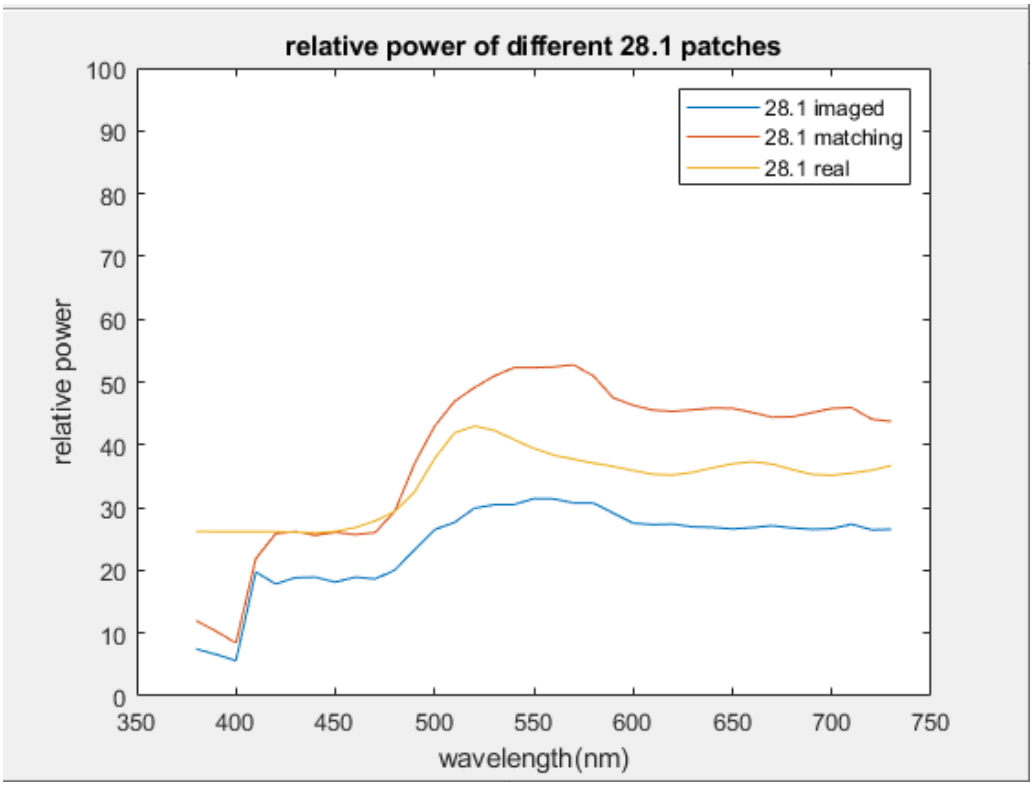
3) MATLAB code used to generate table for step 9 and the accompanying table

```
%print formatted tables of measured XYZs and Labs for the color patches
fprintf("Measured XYZ and Lab values \n");
fprintf("\n")
fprintf("\t\t\t       patch 28.1\n");
fprintf("\t     X\t        Y\t  Z\t     L\t        a\t  b\t     \n");
Real_28pt1= Real(1:2:end);
% Real 28.1 Data
fprintf("    real %f  %f  %f  %f  %f  %f  %f  %f  %f", Real_28pt1(2:end))
fprintf("\n")

Imaged_28pt1 = (Imaged(1:2:end));
% Imaged 28.1 Data
fprintf("  imaged %f  %f  %f  %f  %f  %f  %f  %f  %f", Imaged_28pt1(2:end))
fprintf("\n")

Matching_28pt1 = (Matching(1:2:end));
% Matching 28.1 Data
fprintf("matching %f  %f  %f  %f  %f  %f  %f  %f  %f", Matching_28pt1(2:end))
fprintf("\n")

fprintf("\n\n")
fprintf("\t\t\t       patch 28.2\n");
fprintf("\t     X\t        Y\t  Z\t     L\t        a\t  b\t     \n");
Real_28pt2= Real(2:2:end);
% Real 28.2 Data
fprintf("    real %f  %f  %f  %f  %f  %f  %f  %f  %f", Real_28pt2(2:end))
fprintf("\n")

Imaged_28pt2 = (Imaged(2:2:end));
% Imaged 28.2 Data
fprintf("  imaged %f  %f  %f  %f  %f  %f  %f  %f  %f", Imaged_28pt2(2:end))
fprintf("\n")

Matching_28pt2 = (Matching(2:2:end));
% Matching 28.2 Data
fprintf("matching %f  %f  %f  %f  %f  %f  %f  %f  %f", Matching_28pt2(2:end))
fprintf("\n")
```

```
Measured XYZ and Lab values

                        patch 28.1
            X         Y         Z         L         a         b
    real 34.213207  38.210821  23.096516  68.175708  -8.846546  14.289456
  imaged 26.402367  29.166966  16.124004  60.928703  -6.904791  16.565803
matching 43.517236  48.654233  23.067332  75.235712  -9.725947  26.517009


                        patch 28.2
            X         Y         Z         L         a         b
    real 27.822804  30.467375  21.064402  62.055409  -6.040054  7.692889
  imaged 17.065465  18.826895  11.789639  50.484064  -5.840698  10.060502
matching 31.461865  34.425328  18.971788  65.298778  -6.201079  17.634024
```

4) graphs of the spectral power of the different patches, step 11





5.)

a.)

Real/imaged 28.1 pair (ΔL, Δa, Δb): 7.2460, -1.9418, -2.2764

Real/imaged 28.2 pair (ΔL, Δa, Δb): 11.5714, -0.1994, -2.3677

Real/matched 28.1 pair (ΔL, Δa, Δb): -7.0610, 0.8794, -12.2276

Real/matched 28.2 pair (ΔL, Δa, Δb): -3.2433, 0.1610, -9.9412

b.)

The difference of the LAB values in the real/imaged pair of 28.1 indicate that the imaged patch is darker, greener, and bluer than the real patch. I would say that definitely agrees with what we observed visually.

The difference of the LAB values in the real/imaged pair of 28.2 indicate that, just as with 28.1, the imaged patch was darker, greener, and bluer than the real patch. Again, I would agree with this as the 28.2 patch most notably appears bluer to me when it is displayed on the monitor than it does in real life.

The difference of the LAB values in the real/matched pair of 28.1 indicate that the matched patch is brighter than the real one as well as slightly redder and bluer. I would agree that visually the matched patch seems brighter, but I believe that the matched patches also appear to be a more saturated green than the real ones.

The difference of the LAB values in the real/matched pair of 28.2 indicate that the matched patch is brighter than the real one, as well as slightly redder and bluer; similar to the 28.1 matched patch. Again, I do not think that the matched patch appears redder than the real one, however I will concede it looks brighter than the real patch.

c.)

Some issues had with this project were interfacing with the color munki, but aside from that the process was relatively smooth. I thought it was incredibly valuable to examine the differences in the LAB values of the patches to see how different the colors actually are on a physical level, I also very much enjoyed looking at the SPD of the patches. I cannot personally think of any areas this lab could improve.