

Was ist eigentlich Farbe?

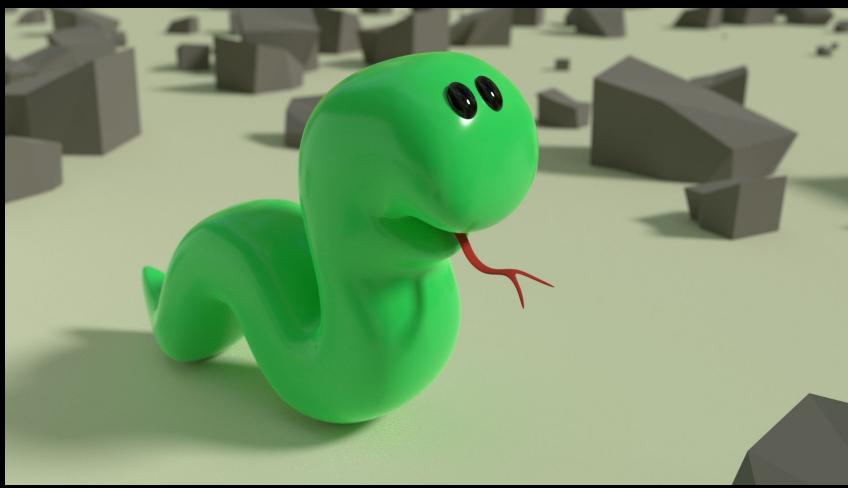
blinry

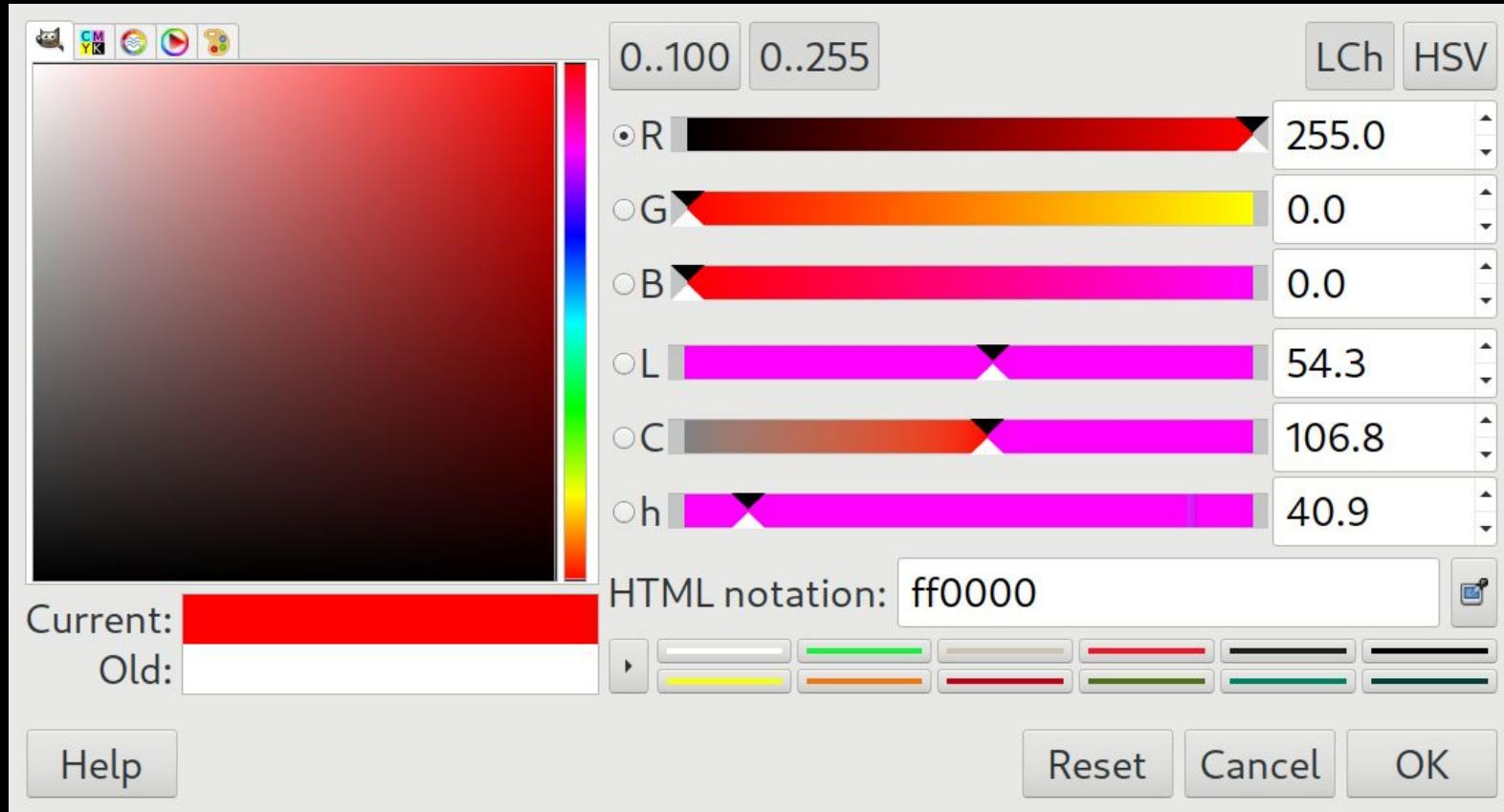
Gulaschprogrammiernacht 2022

blinry

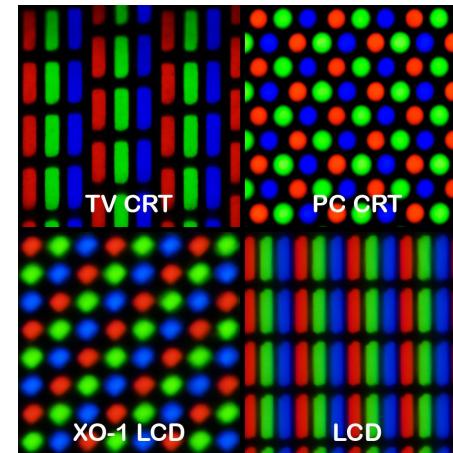
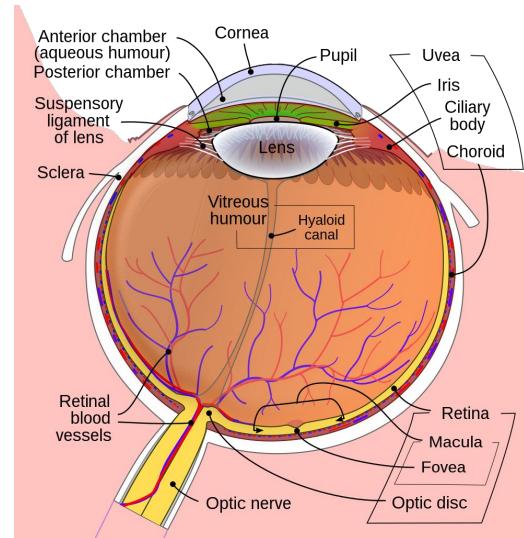
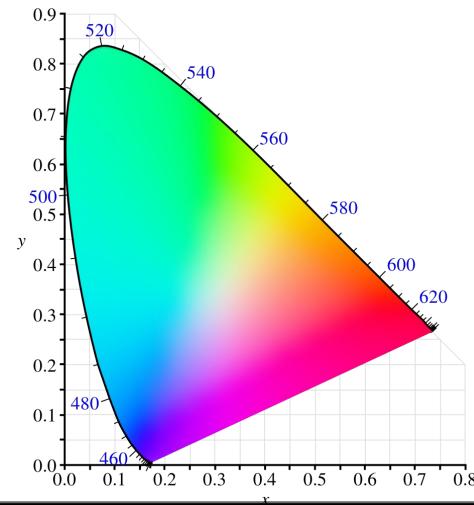
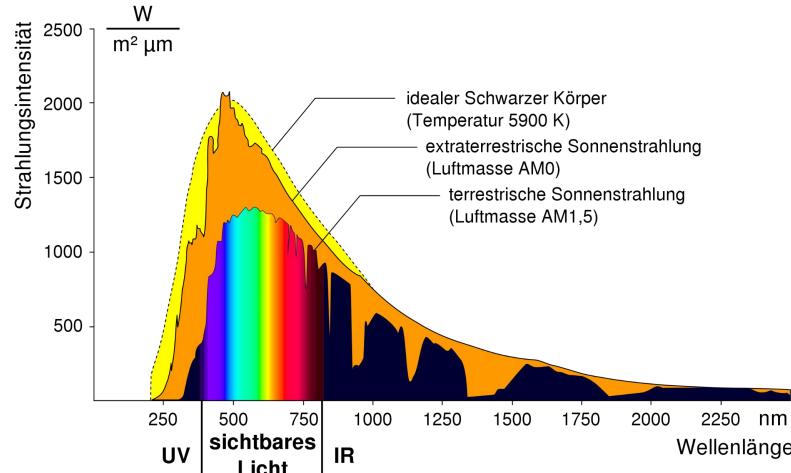
es/they





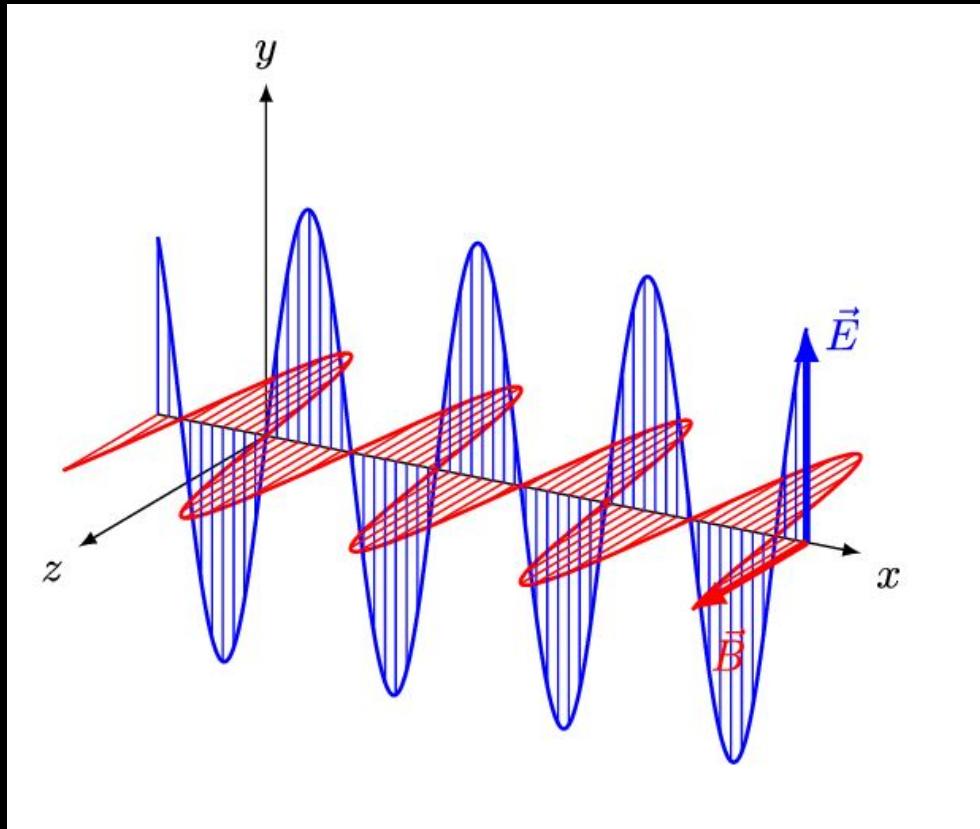


#FF0000



Was ist
eigentlich
Licht?

Elektromagnetische Strahlung



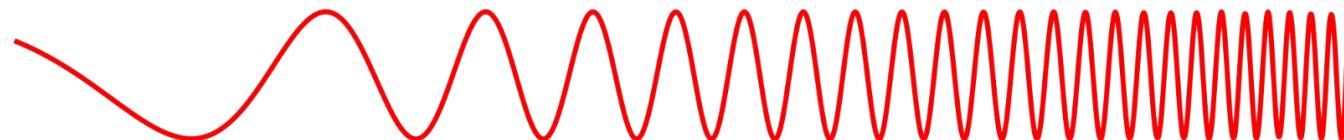




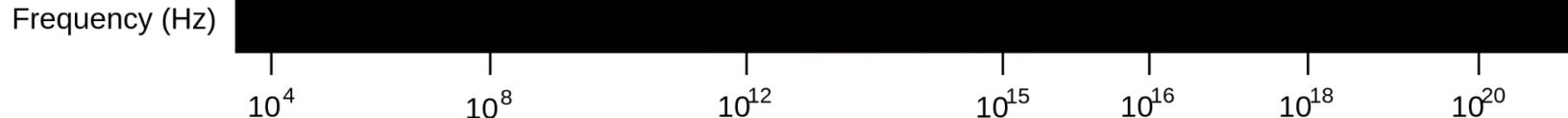
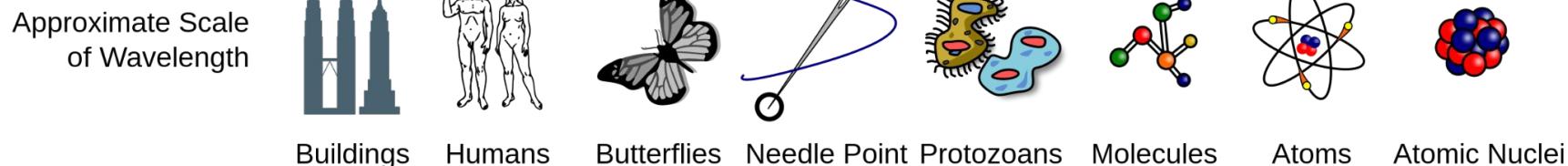
R



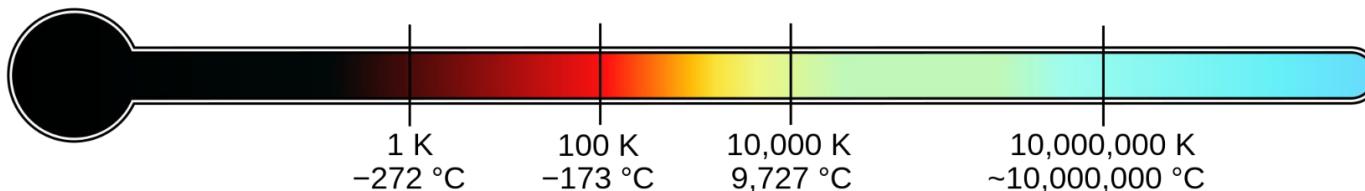
Penetrates Earth's Atmosphere?



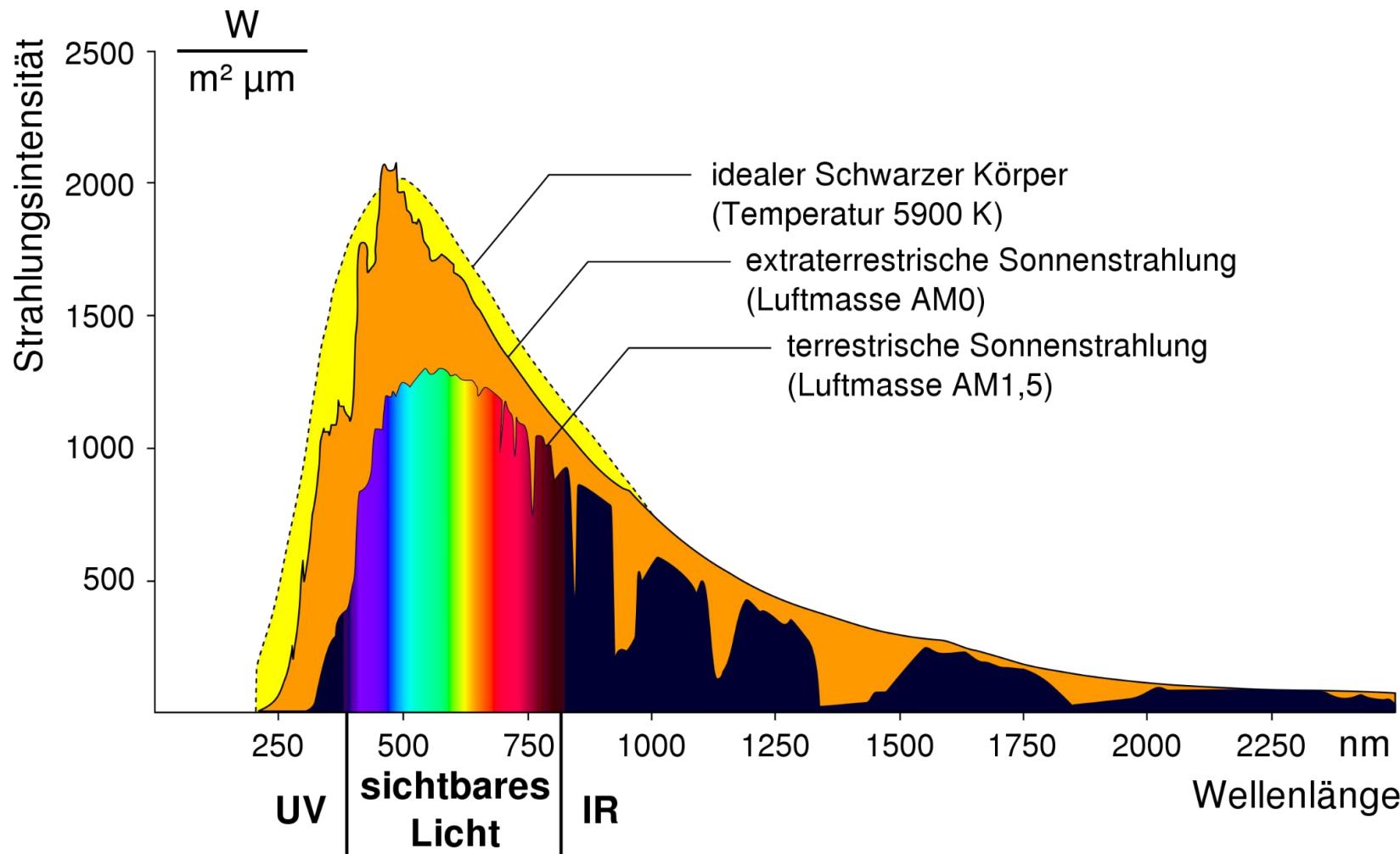
Radiation Type	Radio	Microwave	Infrared	Visible	Ultraviolet	X-ray	Gamma ray
Wavelength (m)	10^3	10^{-2}	10^{-5}	0.5×10^{-6}	10^{-8}	10^{-10}	10^{-12}

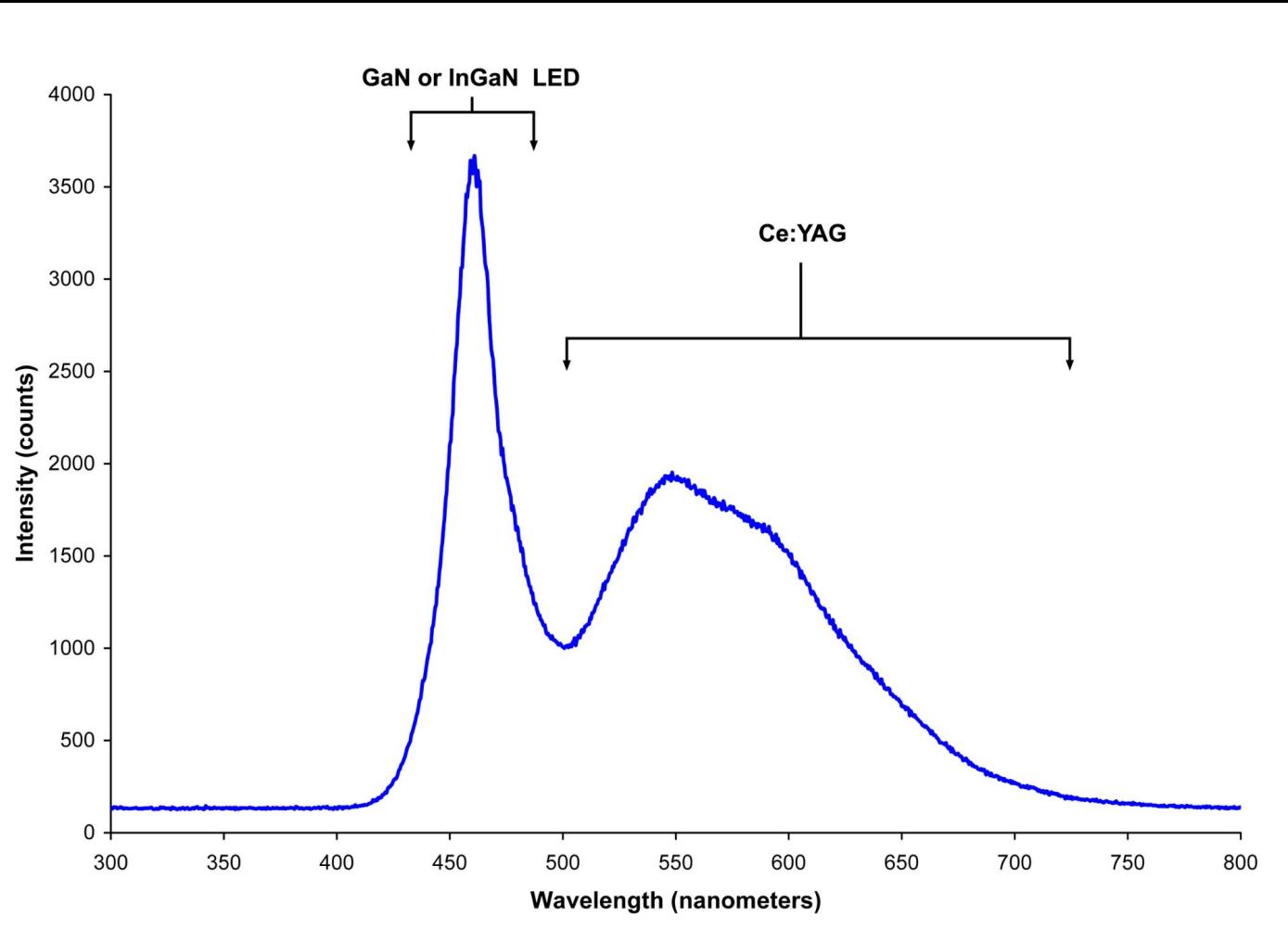


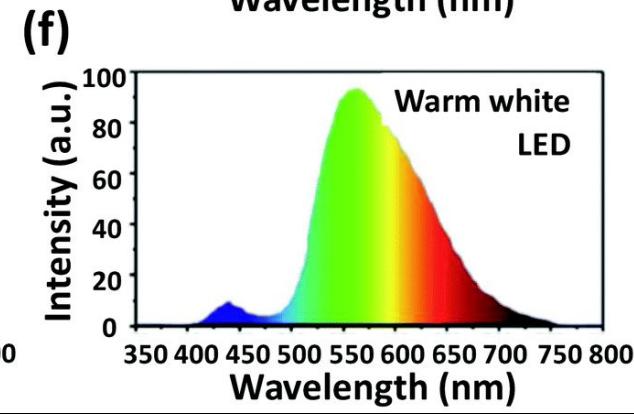
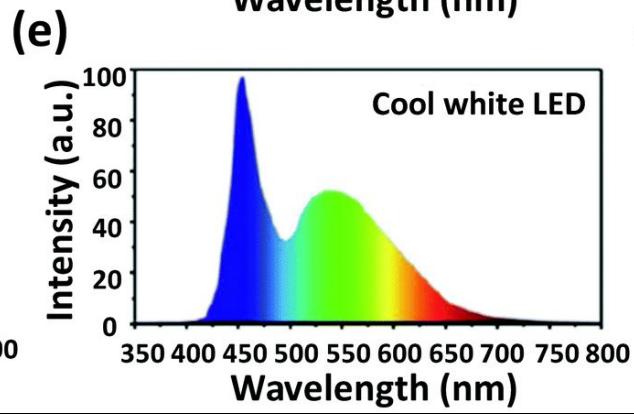
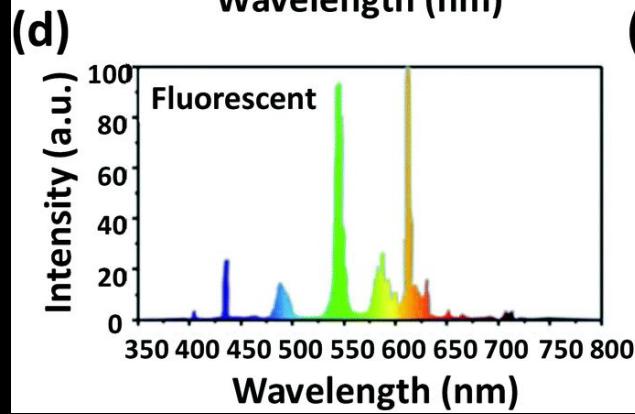
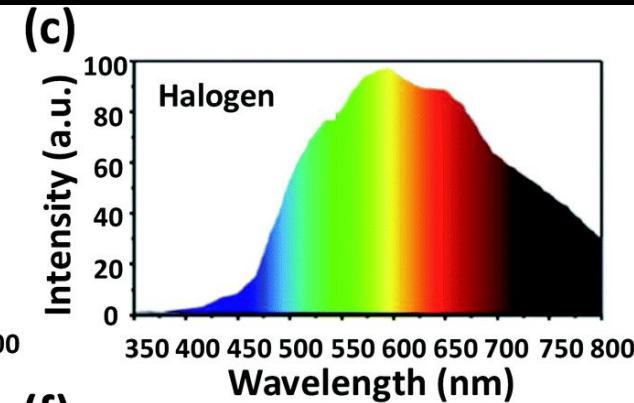
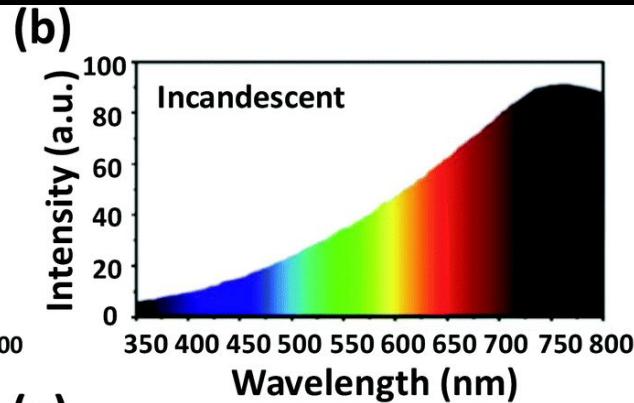
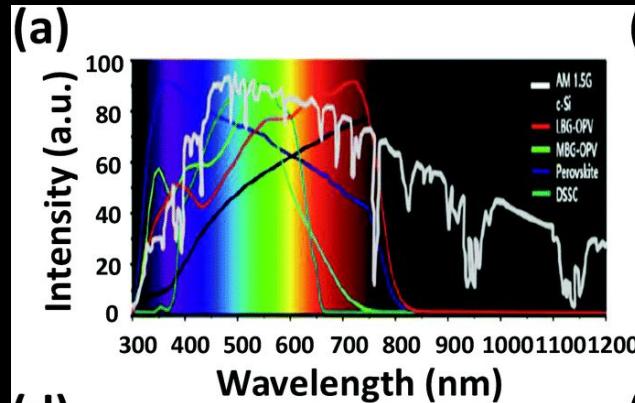
Temperature of objects at which this radiation is the most intense wavelength emitted





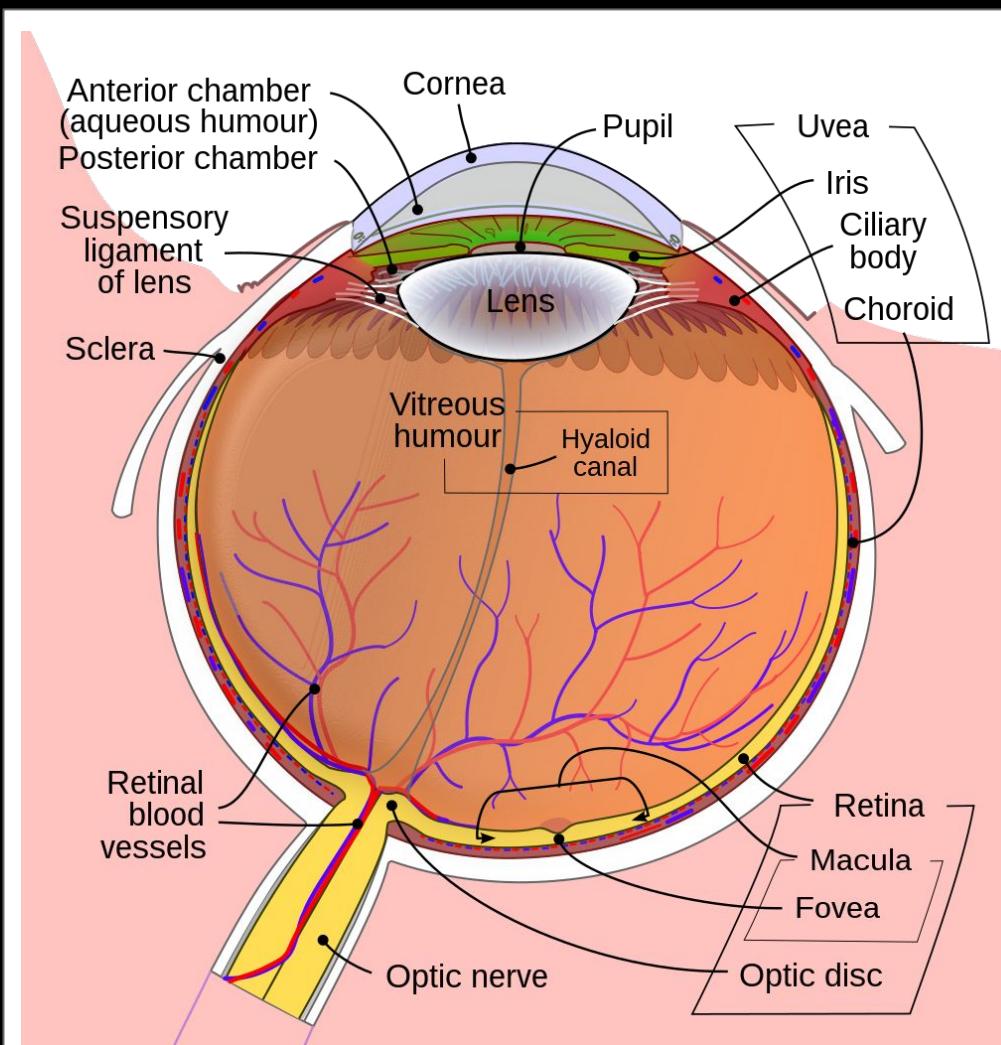


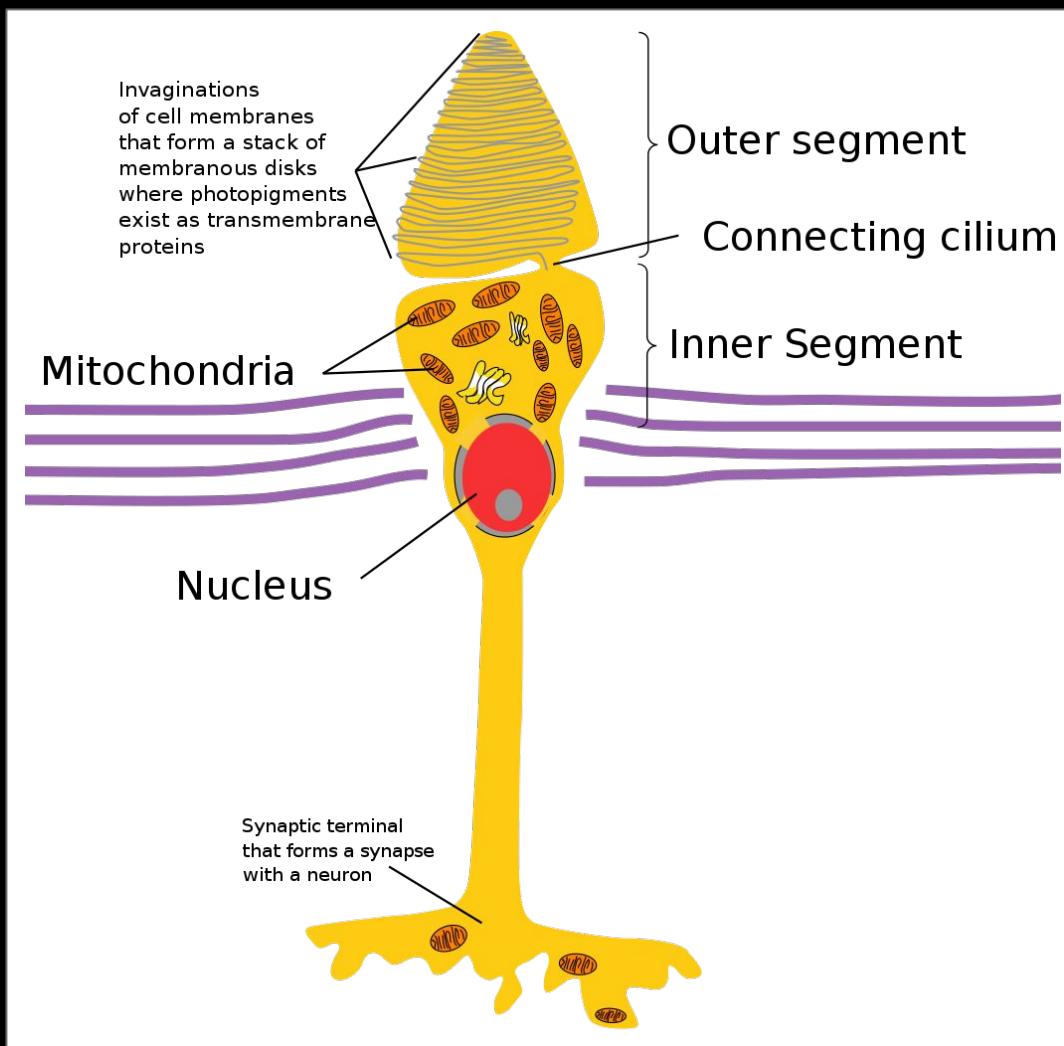




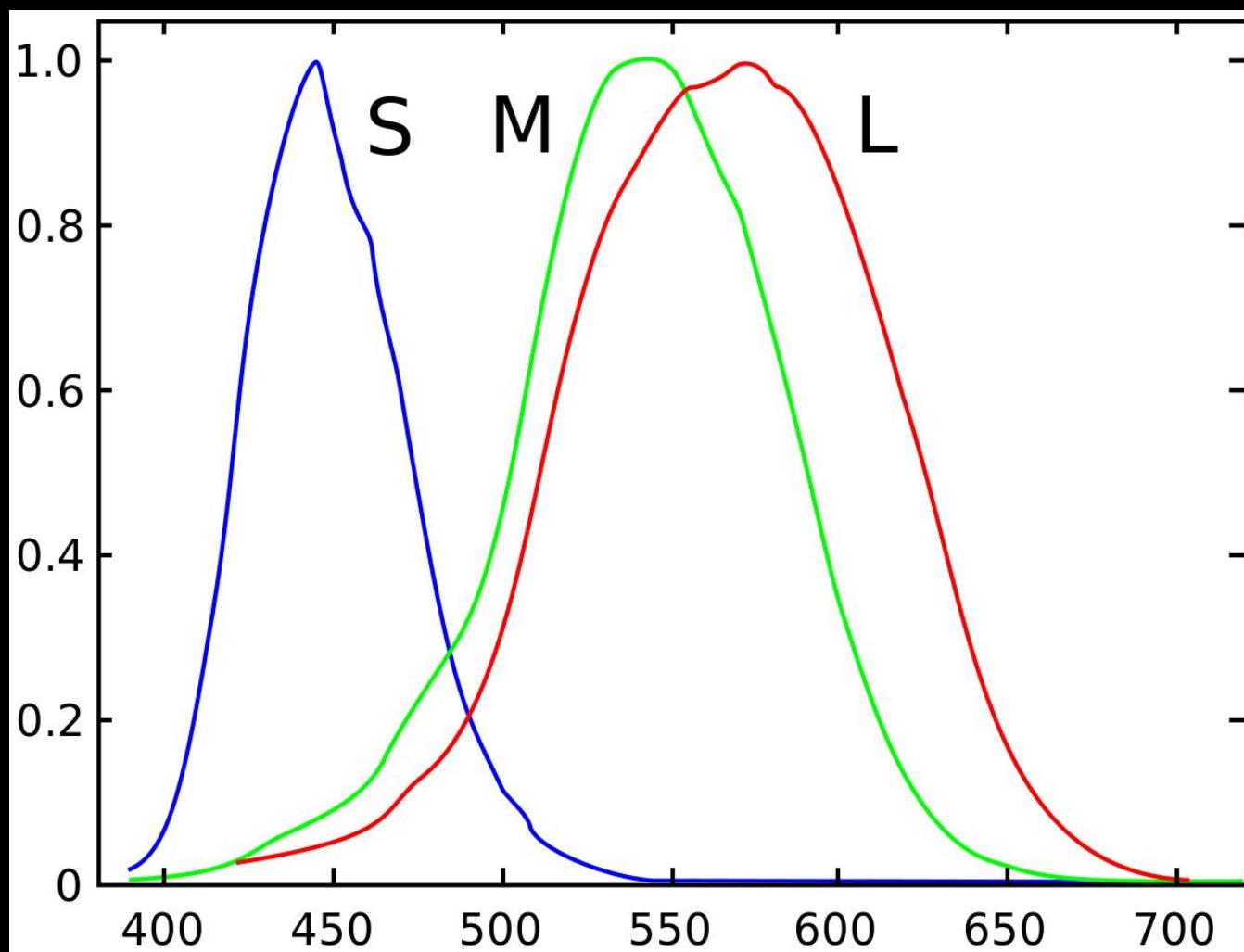
(Demo)

wie nehmen
Augen Farbe
wahr?





(Demo)





1

2

3

4

5

Anzahl Zapfentypen

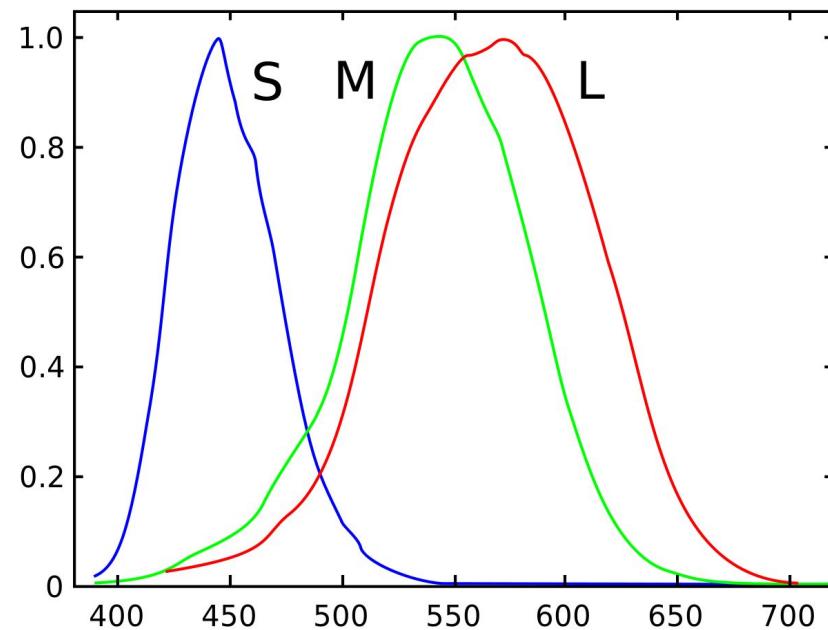
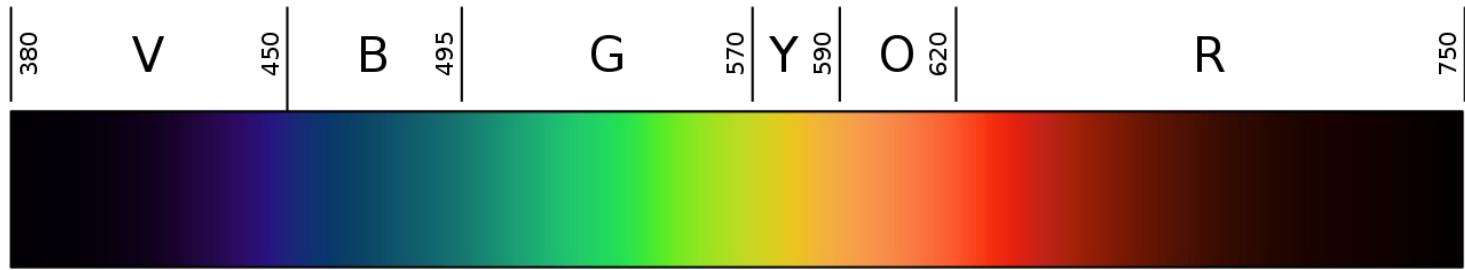
(Fangschreckenkrebse)

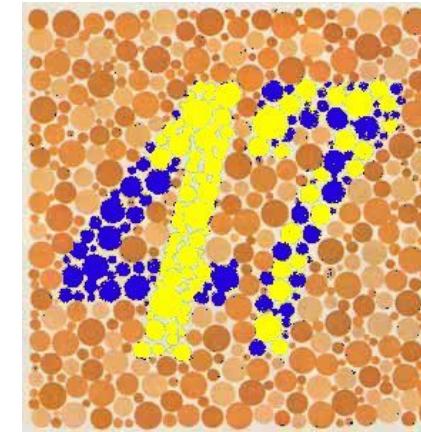
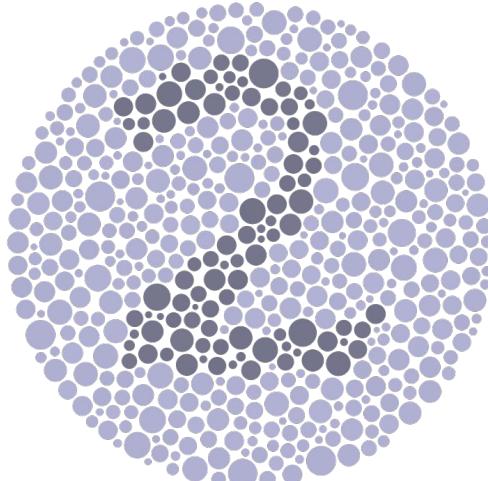
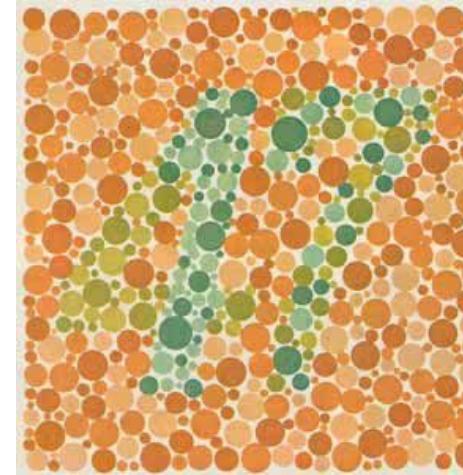
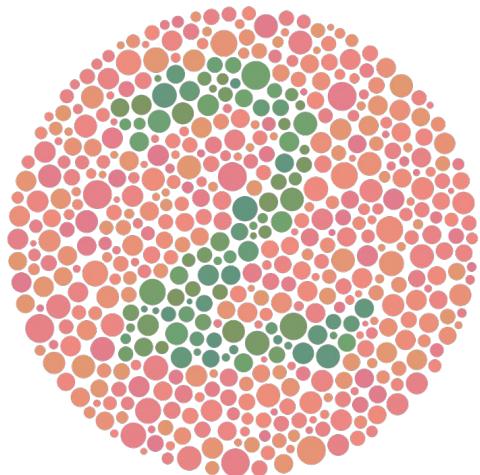
16!!

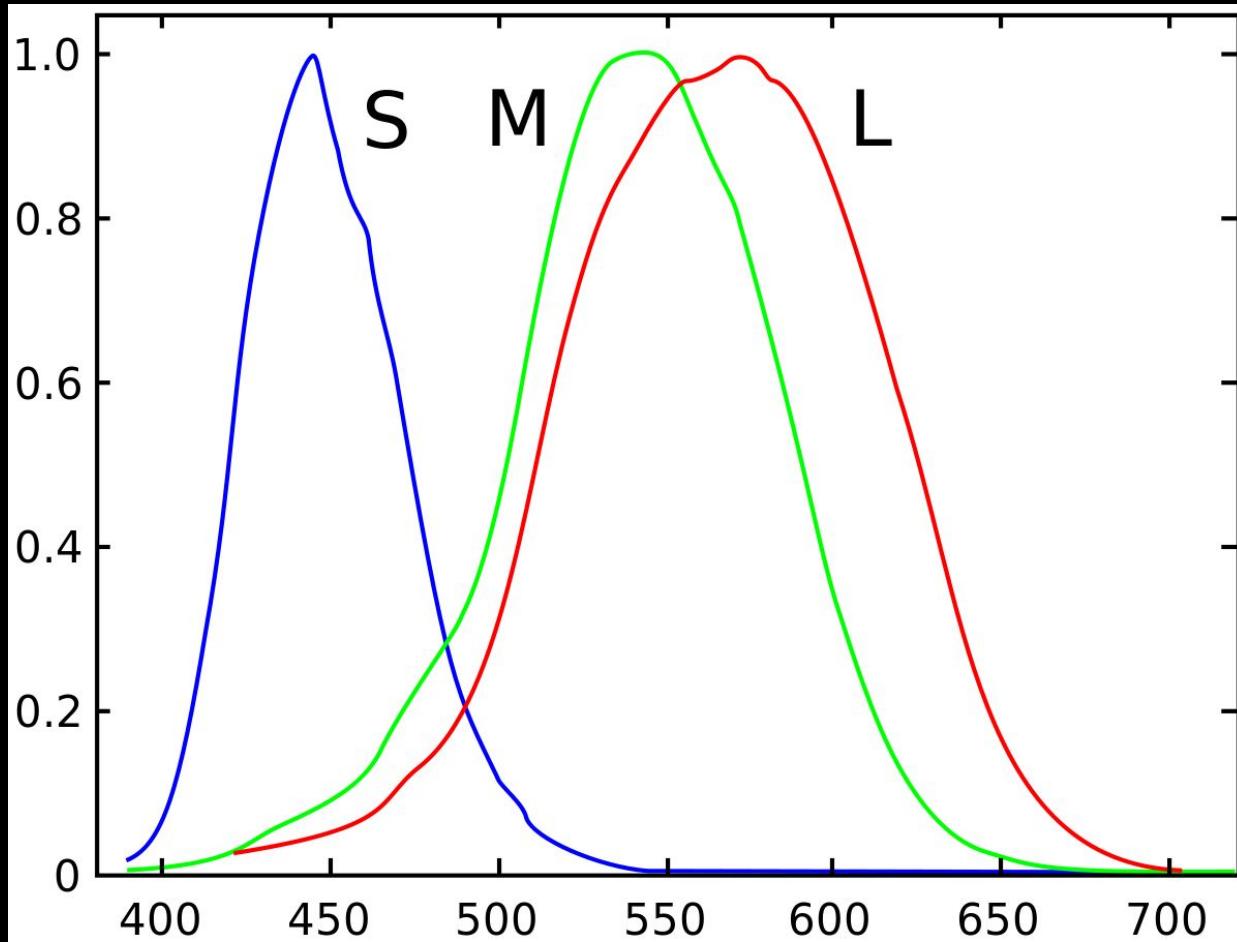


Why the
Mantis Shrimp
is my new favorite animal.

Written and drawn by The Oatmeal

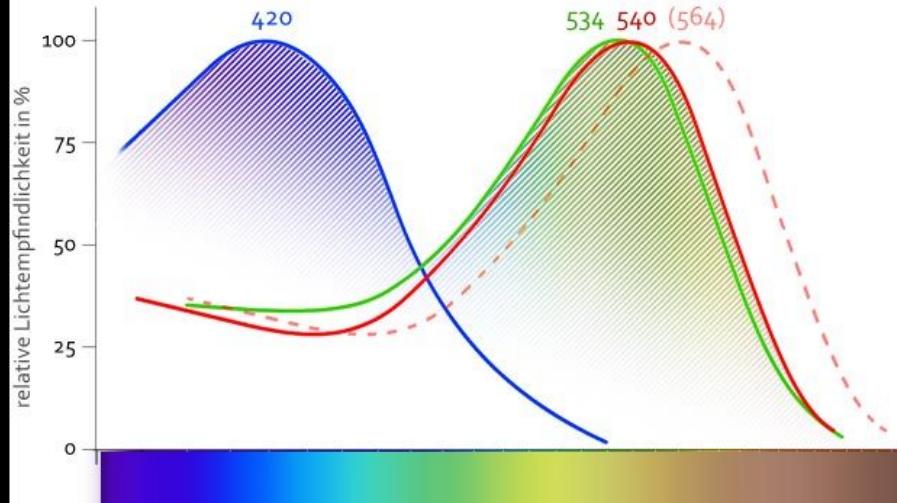




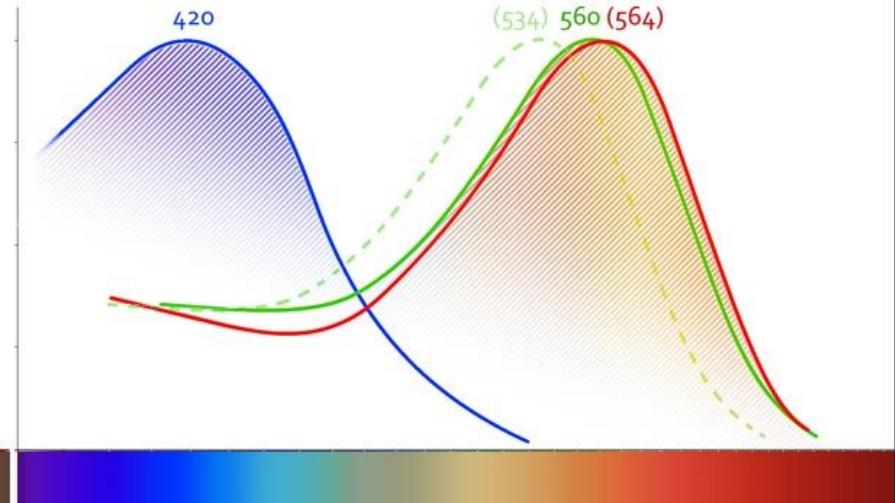


Unterschied Protanomalie - Deuter anomalie

Protanomalie (Rotsehschwäche)



Deuteranomalie (Grünsehschwäche)

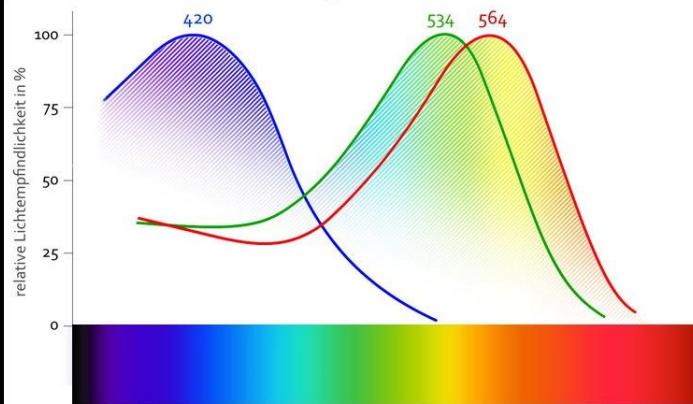


Grafik: Brillen-Sehhilfen.de

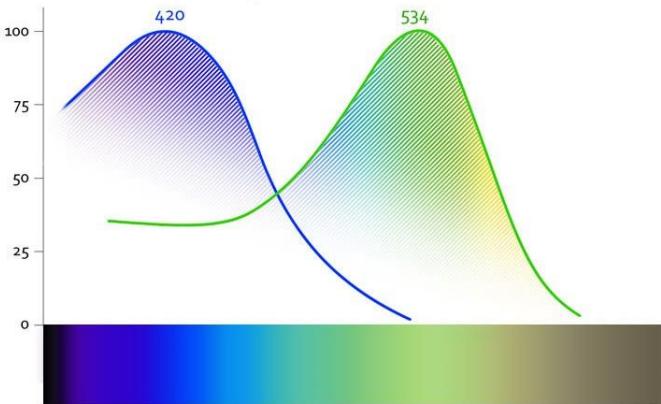
Protanopie / Deutanopie / Tritanopie

Grafik: Brillen-Sehhilfen.de

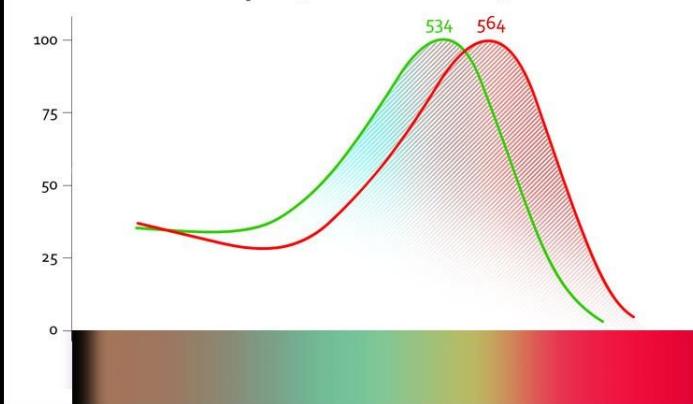
Normalsichtig



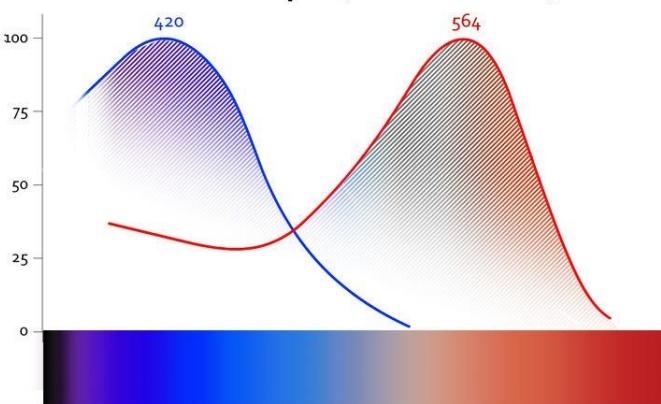
Protanopie (Rotblindheit)

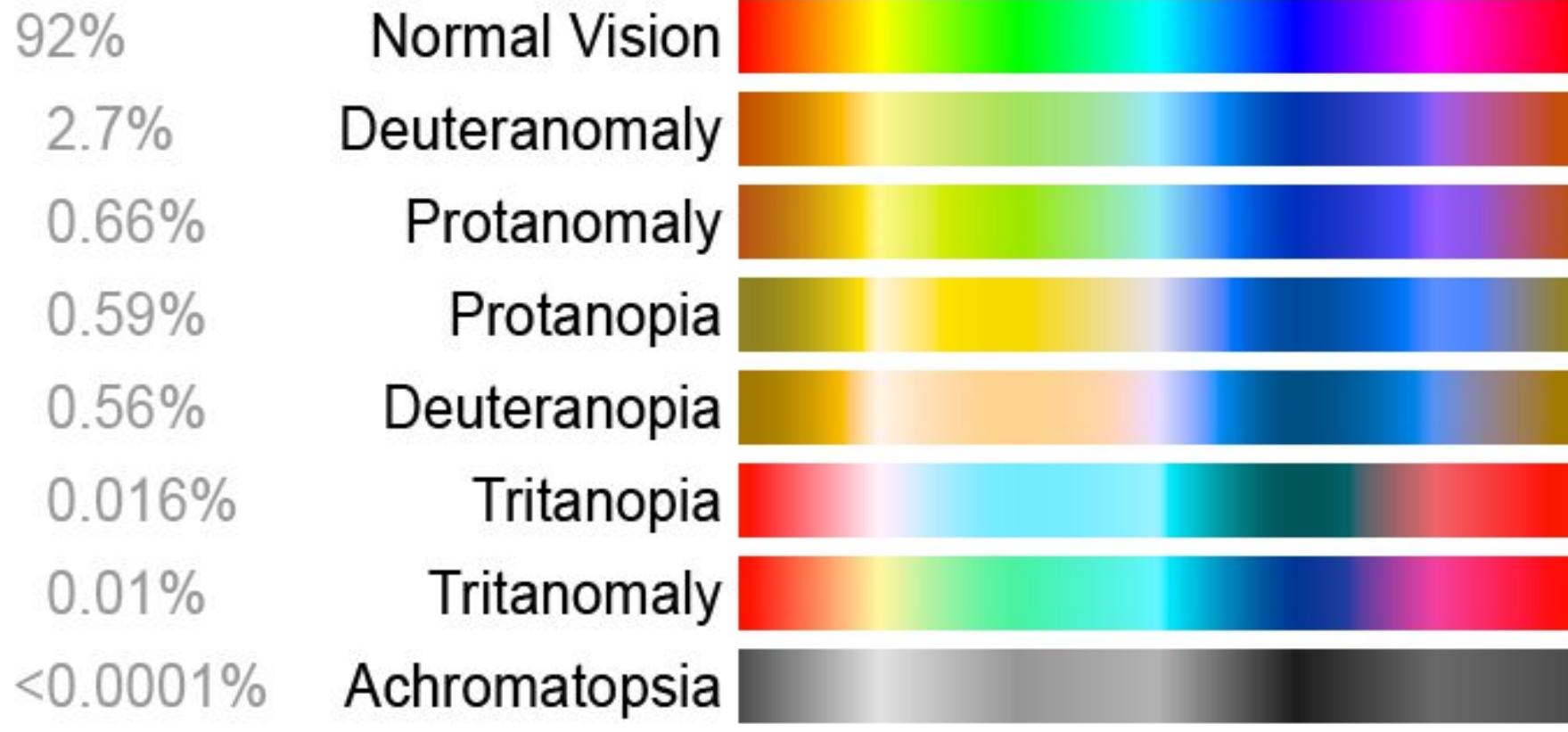


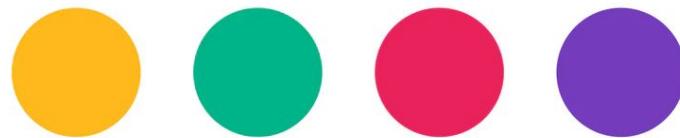
Tritanopie (Blaublindheit)



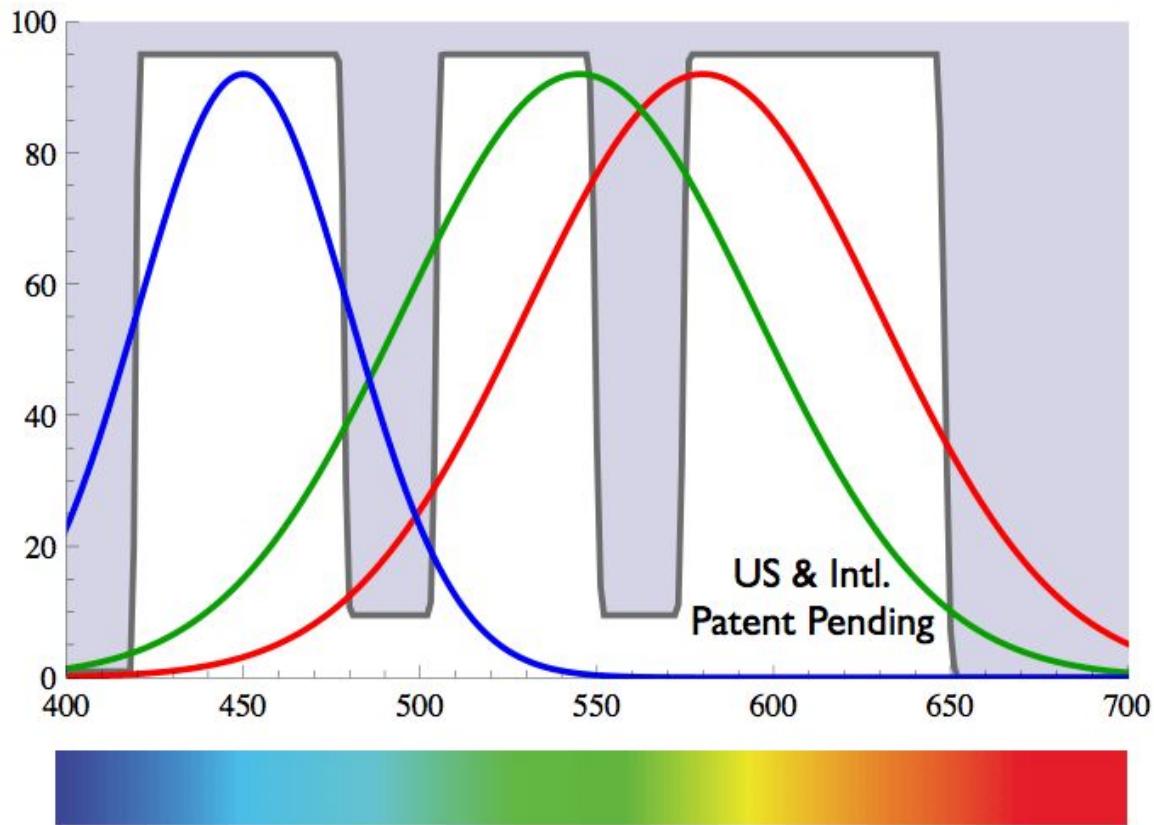
Deutanopie (Grünblindheit)







enchroma[®]



EnChroma Cx

Die Standardisierung der Farben



International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission

TRANSACTIONS OF THE OPTICAL SOCIETY

VOL. XXXIII.

1931-32

No. 3.

THE C.I.E. COLORIMETRIC STANDARDS AND THEIR USE

By T. SMITH, M.A., F.INST.P.

(Chairman, C.I.E. Secretariat Committee on Colorimetry for 1928-31)

AND

J. GUILD, A.R.C.S., F.INST.P., F.R.A.S.

(N.P.L. Representative, C.I.E. Secretariat Committee on Colorimetry for 1928-31)

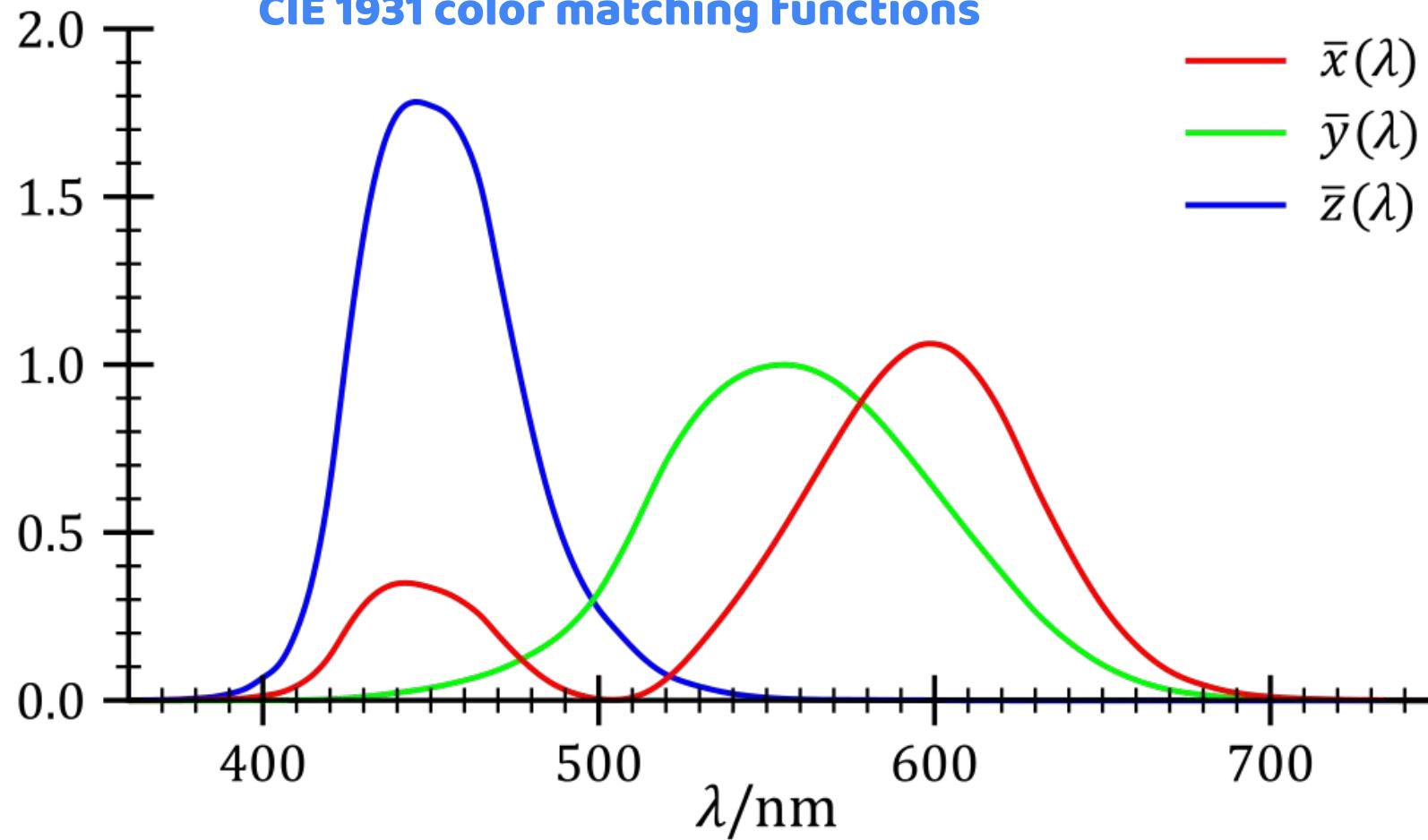
MS. received, 4th March, 1932. Read, 14th April, 1932.

Table III. The 1931

C.I.E. standard observer

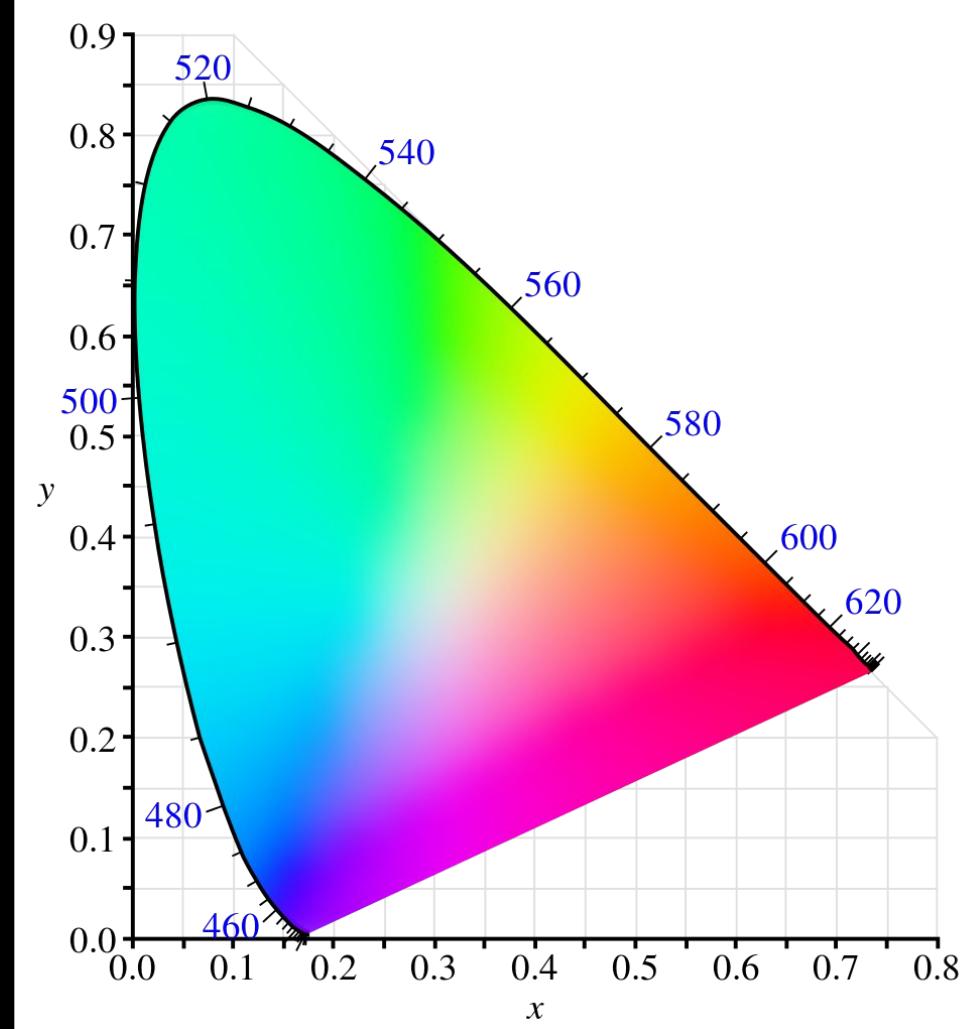
Trichromatic coefficients			Wave-length in m μ	Distribution coefficients for equal energy stimulus			Trichromatic coefficients			Wave-length in m μ	Distribution coefficients for equal energy stimulus		
x	y	z		\bar{x}	\bar{y}	\bar{z}	x	y	z		\bar{x}	\bar{y}	\bar{z}
0.1741	0.0050	0.8209	380	0.0014	0.0000	0.0065	0.5125	0.4866	0.0009	580	0.9163	0.8700	0.0017
0.1740	0.0050	0.8210	385	0.0022	0.0001	0.0105	0.5448	0.4544	0.0008	585	0.9786	0.8163	0.0014
0.1738	0.0049	0.8213	390	0.0042	0.0001	0.0201	0.5752	0.4242	0.0006	590	1.0263	0.7570	0.0011
0.1736	0.0049	0.8215	395	0.0076	0.0002	0.0302	0.6029	0.3965	0.0006	595	1.0567	0.6949	0.0010
0.1733	0.0048	0.8219	400	0.0143	0.0004	0.0679	0.6270	0.3725	0.0005	600	1.0622	0.6310	0.0008
0.1730	0.0048	0.8222	405	0.0232	0.0006	0.1102	0.6482	0.3514	0.0004	605	1.0456	0.5668	0.0006
0.1726	0.0048	0.8226	410	0.0435	0.0012	0.2074	0.6658	0.3340	0.0002	610	1.0026	0.5030	0.0003
0.1721	0.0048	0.8231	415	0.0776	0.0022	0.3713	0.6801	0.3197	0.0002	615	0.9384	0.4412	0.0002
0.1714	0.0051	0.8235	420	0.1344	0.0040	0.6456	0.6915	0.3083	0.0002	620	0.8544	0.3810	0.0002
0.1703	0.0058	0.8239	425	0.2148	0.0073	1.0391	0.7006	0.2993	0.0001	625	0.7514	0.3210	0.0001
0.1689	0.0069	0.8242	430	0.2839	0.0116	1.3856	0.7079	0.2920	0.0001	630	0.6424	0.2650	0.0000
0.1669	0.0086	0.8245	435	0.3285	0.0168	1.6230	0.7140	0.2859	0.0001	635	0.5419	0.2170	0.0000
0.1644	0.0109	0.8247	440	0.3483	0.0230	1.7471	0.7190	0.2809	0.0001	640	0.4479	0.1750	0.0000
0.1611	0.0138	0.8251	445	0.3481	0.0298	1.7826	0.7230	0.2770	0.0000	645	0.3608	0.1382	0.0000
0.1566	0.0177	0.8257	450	0.3362	0.0380	1.7721	0.7260	0.2740	0.0000	650	0.2835	0.1070	0.0000
0.1510	0.0227	0.8263	455	0.3187	0.0480	1.7441	0.7283	0.2717	0.0000	655	0.2187	0.0816	0.0000
0.1440	0.0297	0.8263	460	0.2908	0.0600	1.6602	0.7300	0.2700	0.0000	660	0.1649	0.0610	0.0000
0.1355	0.0399	0.8246	465	0.2511	0.0739	1.5281	0.7311	0.2689	0.0000	665	0.1212	0.0446	0.0000
0.1241	0.0578	0.8181	470	0.1954	0.0910	1.2876	0.7320	0.2680	0.0000	670	0.0874	0.0320	0.0000
0.1096	0.0868	0.8036	475	0.1421	0.1126	1.0419	0.7327	0.2673	0.0000	675	0.0636	0.0212	0.0000
0.0913	0.1327	0.7760	480	0.0956	0.1390	0.8130	0.7334	0.2666	0.0000	680	0.0468	0.0170	0.0000
0.0687	0.2007	0.7306	485	0.0580	0.1693	0.6162	0.7340	0.2660	0.0000	685	0.0329	0.0119	0.0000
0.0454	0.2950	0.6596	490	0.0320	0.2080	0.4652	0.7344	0.2656	0.0000	690	0.0227	0.0082	0.0000
0.0235	0.4127	0.5638	495	0.0147	0.2586	0.3533	0.7346	0.2654	0.0000	695	0.0158	0.0057	0.0000
0.0082	0.5384	0.4534	500	0.0049	0.3230	0.2720	0.7347	0.2653	0.0000	700	0.0114	0.0041	0.0000
0.0039	0.6548	0.3413	505	0.0024	0.4073	0.2123	0.7347	0.2653	0.0000	705	0.0081	0.0029	0.0000
0.0139	0.7502	0.2359	510	0.0093	0.5030	0.1582	0.7347	0.2653	0.0000	710	0.0058	0.0021	0.0000
0.0389	0.8120	0.1491	515	0.0291	0.6082	0.1117	0.7347	0.2653	0.0000	715	0.0041	0.0015	0.0000
0.0743	0.8338	0.0919	520	0.0633	0.7100	0.0782	0.7347	0.2653	0.0000	720	0.0029	0.0010	0.0000
0.1142	0.8262	0.0596	525	0.1096	0.7932	0.0573	0.7347	0.2653	0.0000	725	0.0020	0.0007	0.0000
0.1547	0.8059	0.0394	530	0.1655	0.8620	0.0422	0.7347	0.2653	0.0000	730	0.0014	0.0005	0.0000
0.1929	0.7816	0.0255	535	0.2257	0.9149	0.0298	0.7347	0.2653	0.0000	735	0.0010	0.0004	0.0000
0.2296	0.7543	0.0161	540	0.2904	0.9540	0.0203	0.7347	0.2653	0.0000	740	0.0007	0.0003	0.0000
0.2658	0.7243	0.0099	545	0.3597	0.9803	0.0134	0.7347	0.2653	0.0000	745	0.0005	0.0002	0.0000
0.3016	0.6923	0.0061	550	0.4334	0.9950	0.0087	0.7347	0.2653	0.0000	750	0.0003	0.0001	0.0000
0.3373	0.6589	0.0038	555	0.5121	1.0002	0.0057	0.7347	0.2653	0.0000	755	0.0002	0.0001	0.0000
0.3731	0.6245	0.0024	560	0.5945	0.9950	0.0039	0.7347	0.2653	0.0000	760	0.0002	0.0001	0.0000
0.4087	0.5896	0.0017	565	0.6784	0.9786	0.0027	0.7347	0.2653	0.0000	765	0.0001	0.0000	0.0000
0.4441	0.5547	0.0012	570	0.7621	0.9520	0.0021	0.7347	0.2653	0.0000	770	0.0001	0.0000	0.0000
0.4788	0.5202	0.0010	575	0.8425	0.9154	0.0018	0.7347	0.2653	0.0000	775	0.0000	0.0000	0.0000
0.5125	0.4866	0.0009	580	0.9163	0.8700	0.0017	0.7347	0.2653	0.0000	780	0.0000	0.0000	0.0000
Column 1	2	3	4	5	6	7				Totals	21.3713	21.3714	21.3715

CIE 1931 color matching Functions

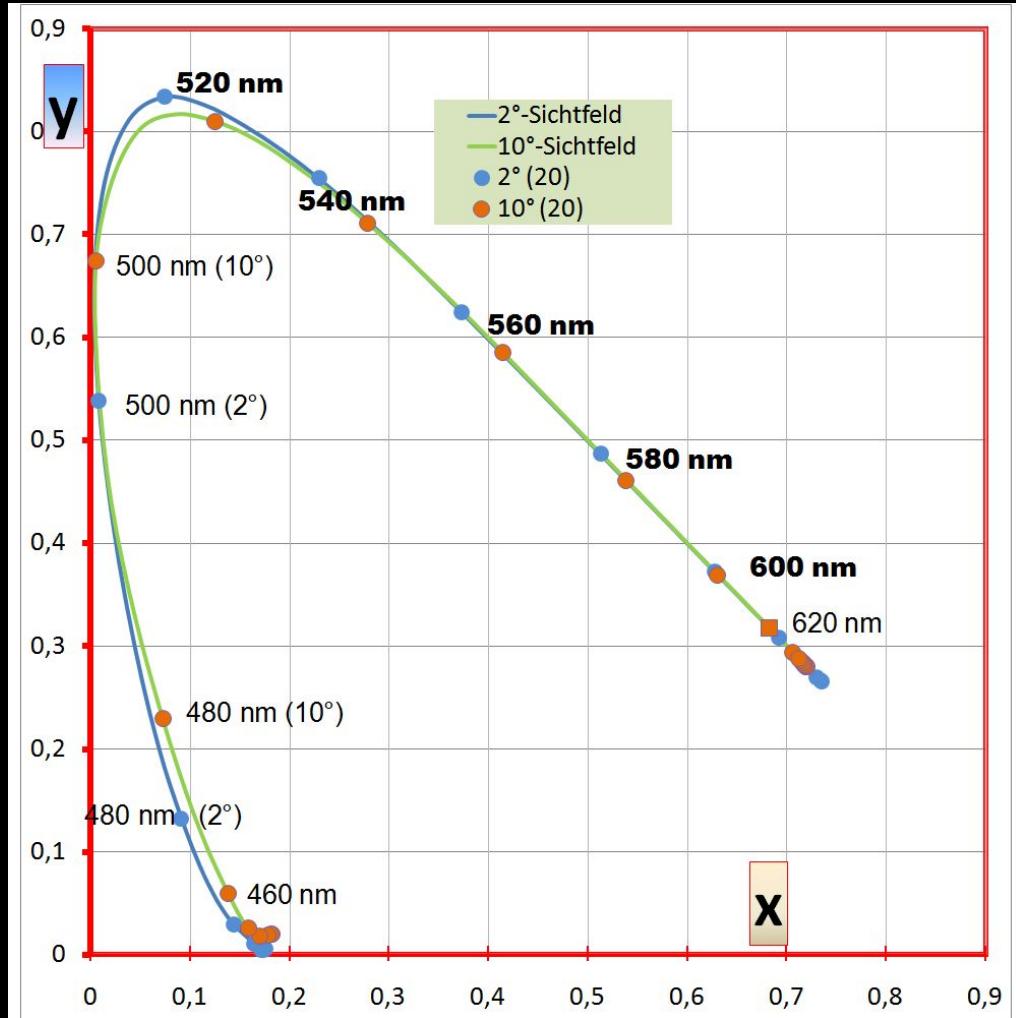


(Demo)

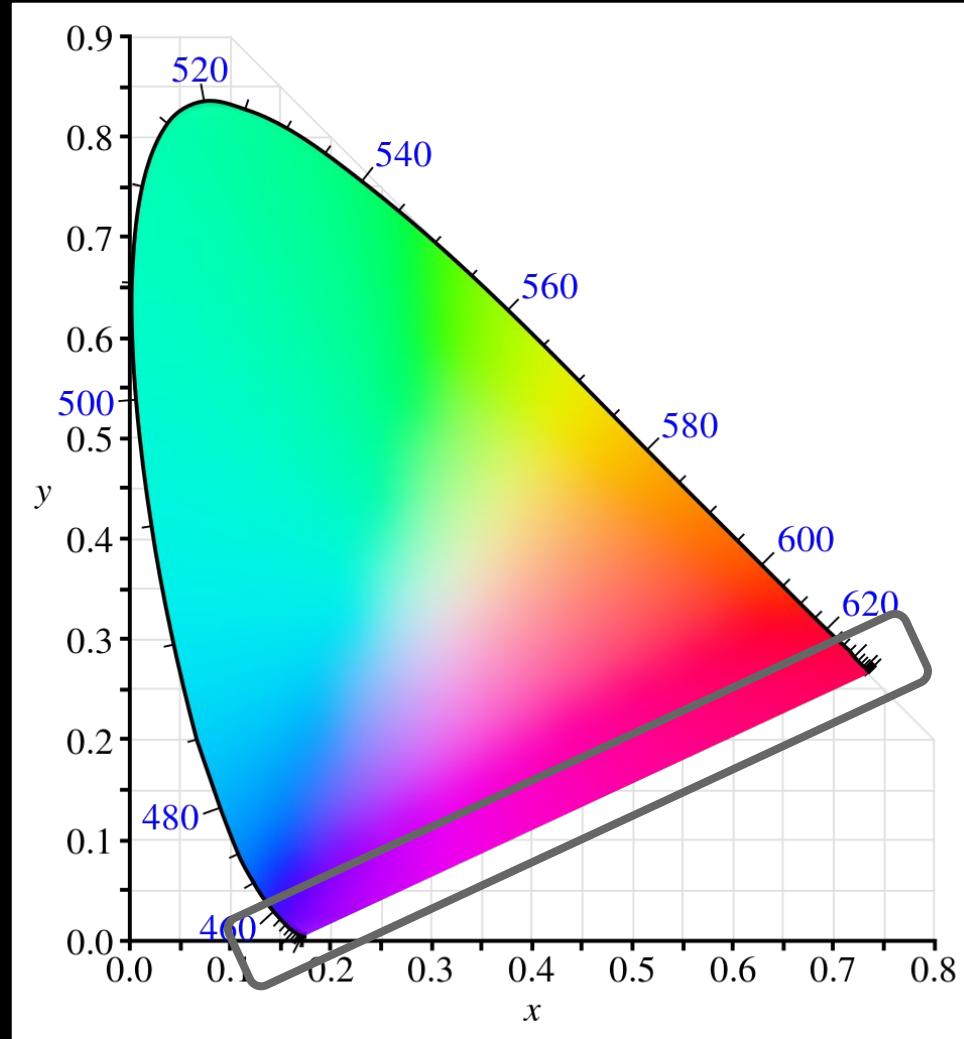
CIE xy- Diagramm



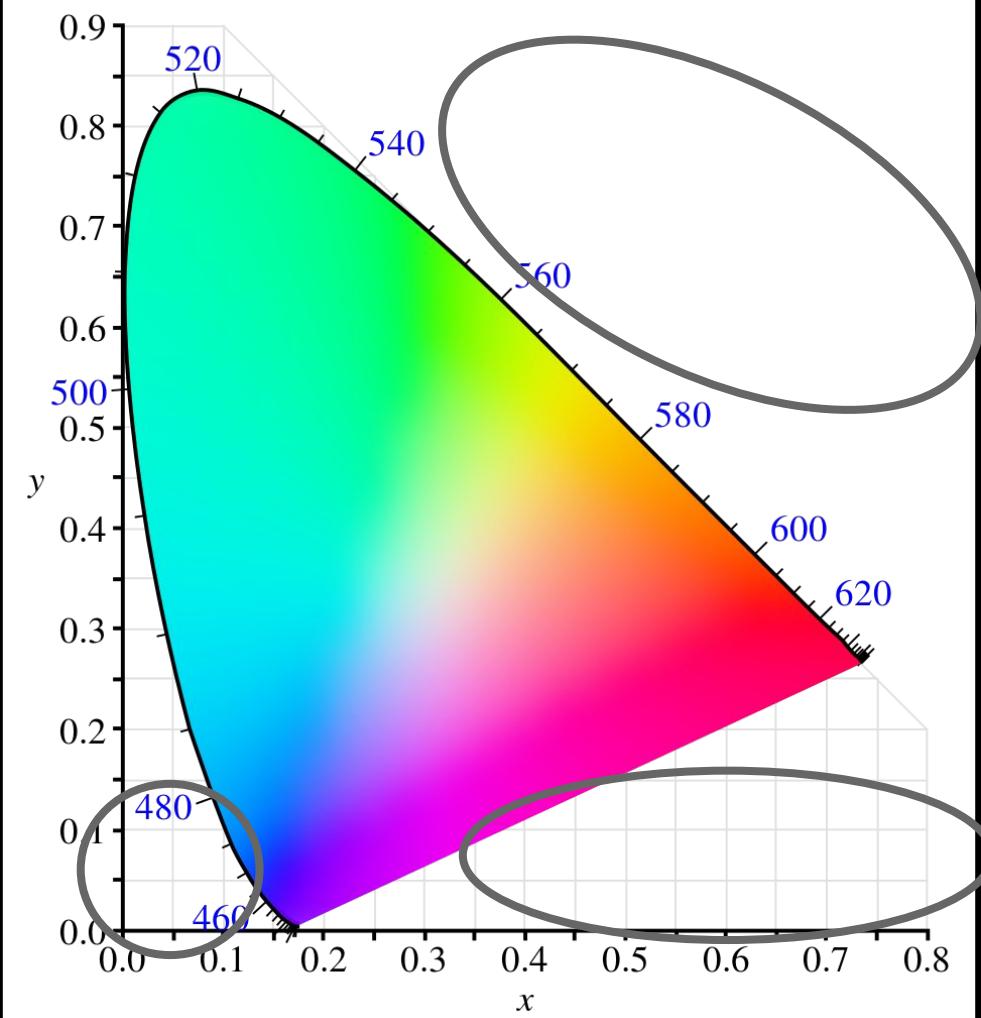
Spektral-Farblinie



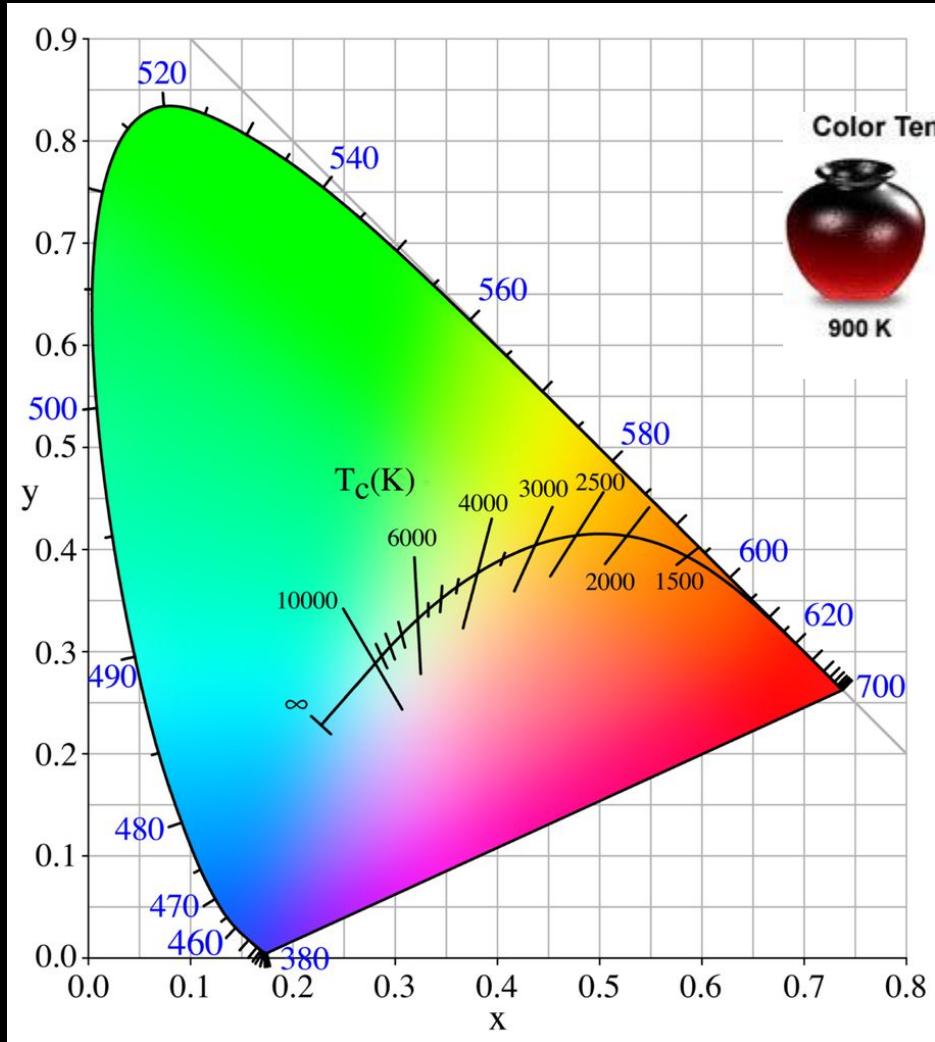
Purpur- linie



Theoretische Farben



Black body locus



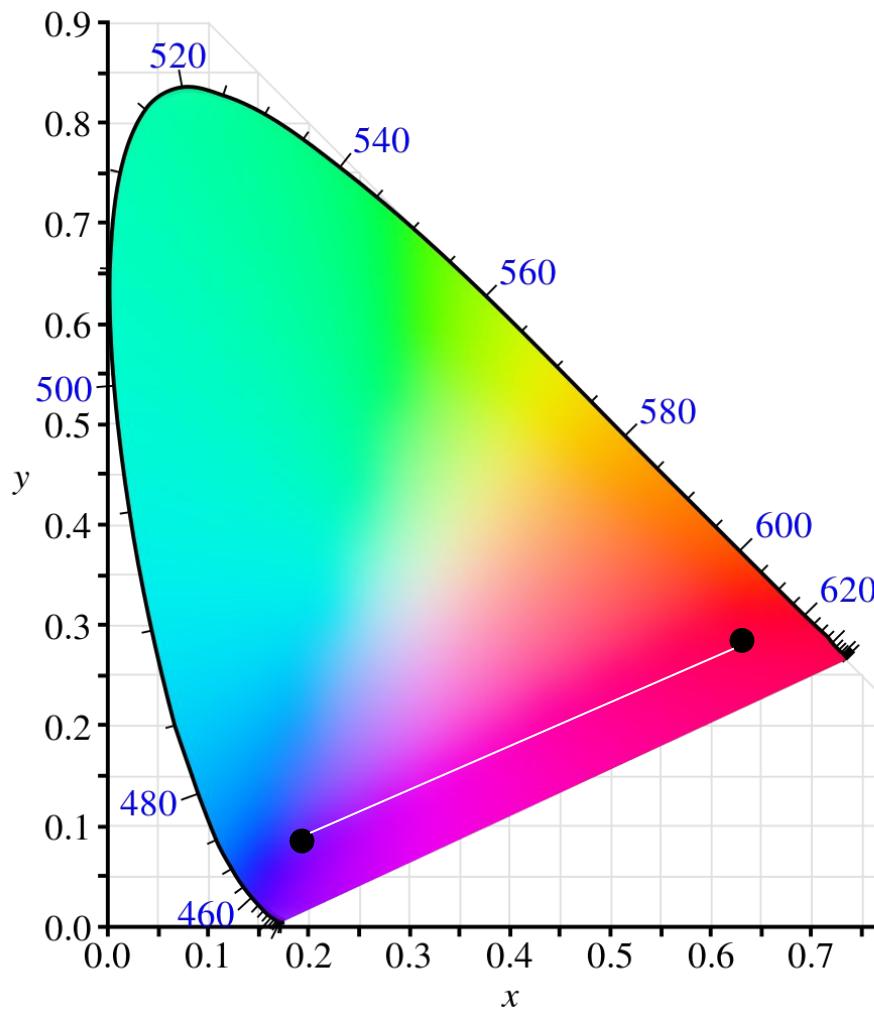
Color Temperature of a Black-Body Radiator

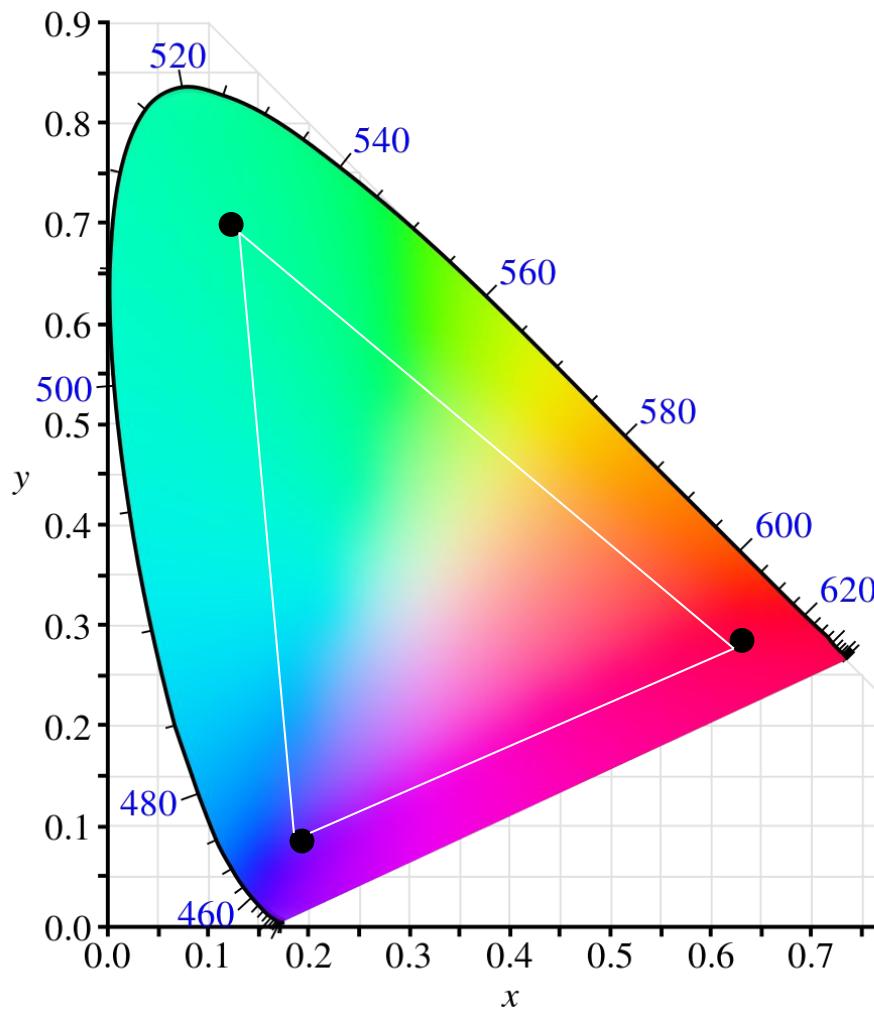


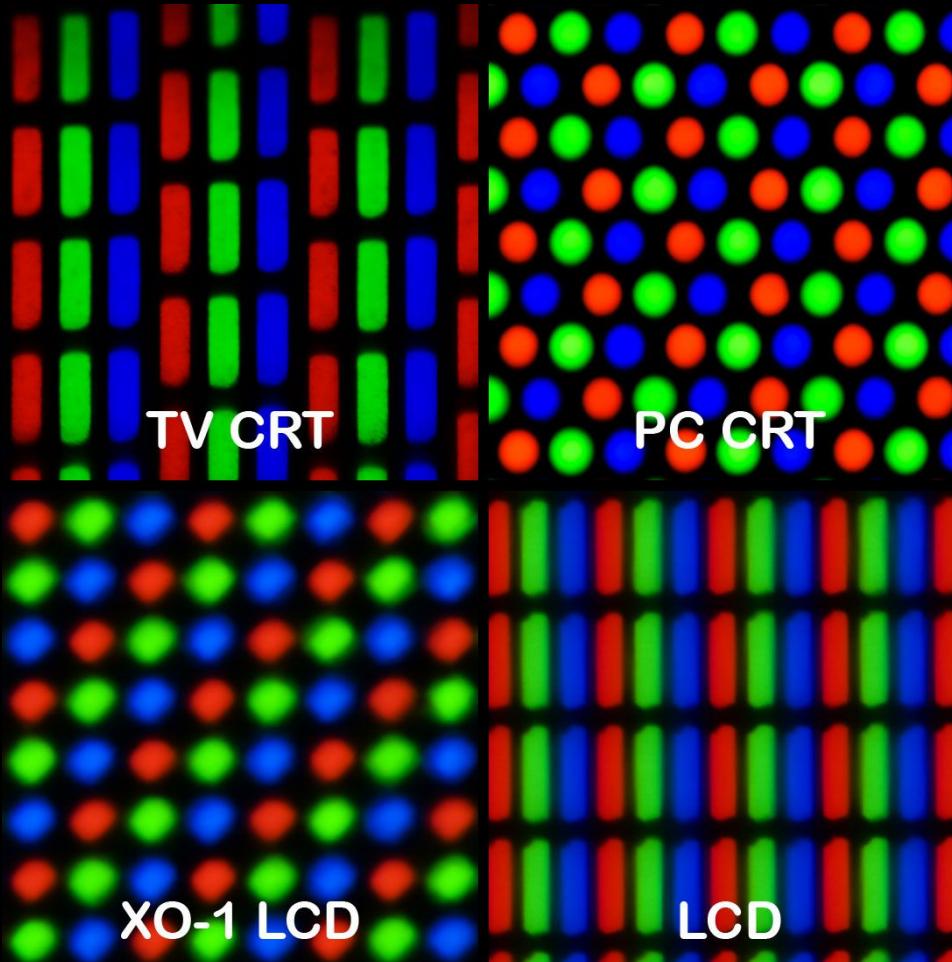
Figure 1

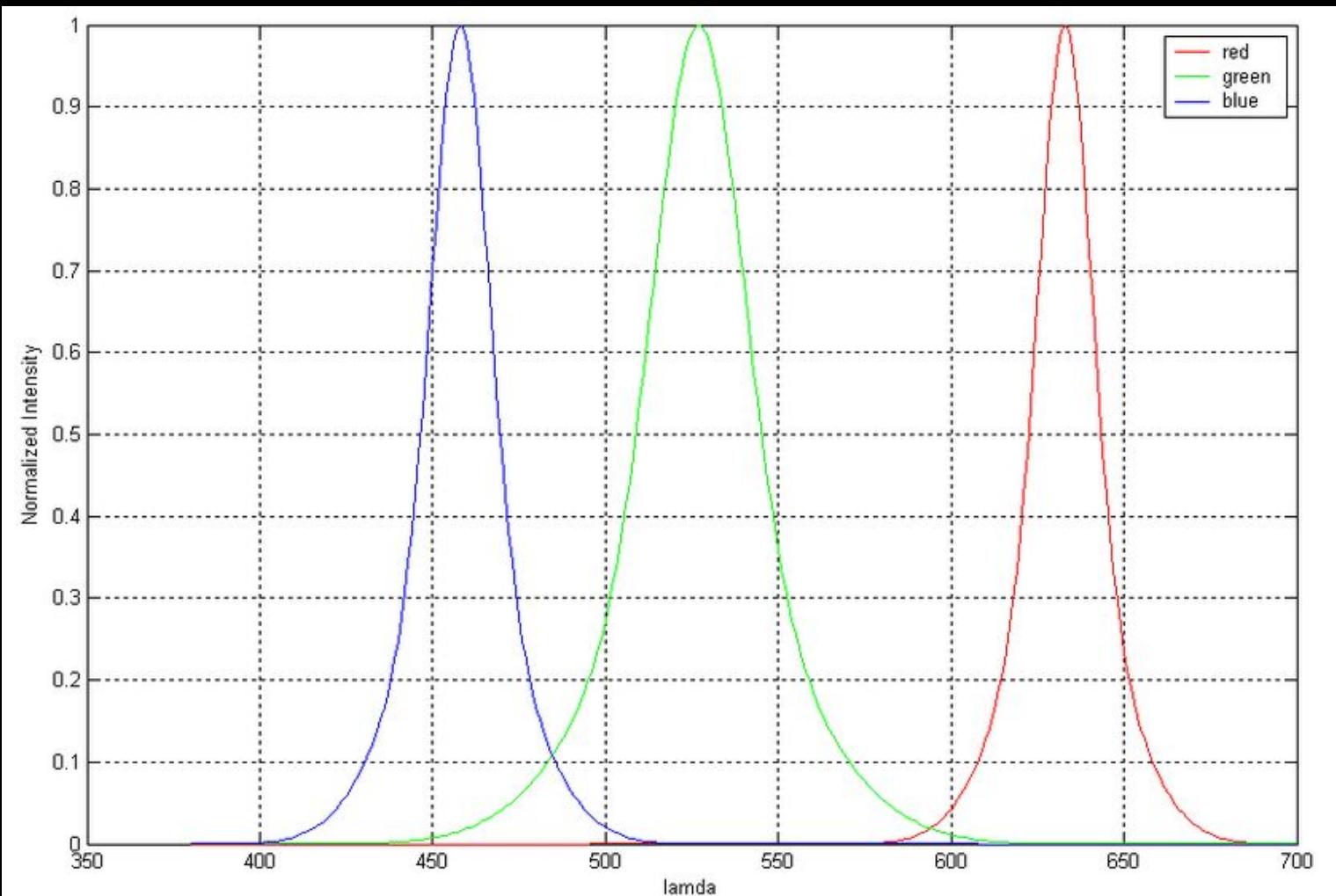


wie erzeugen
Bildschirme
Farbe?









(Demo)

<https://www.w3.org/Graphics/Color/sRGB.html>

A Standard Default Color Space for the Internet - sRGB

Michael Stokes (Hewlett-Packard), Matthew Anderson (Microsoft),

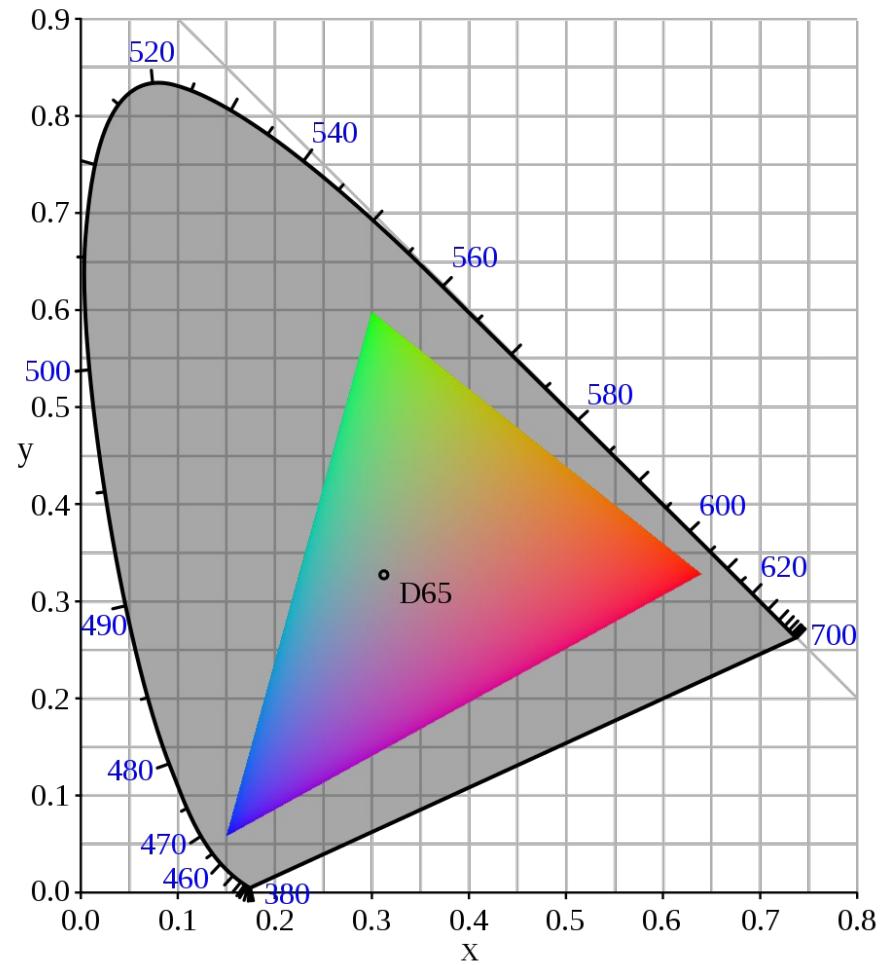
Srinivasan Chandrasekar (Microsoft), Ricardo Motta (Hewlett-Packard)

Version 1.10, November 5, 1996

TABLE 0.2 CIE chromaticities for ITU-R BT.709 reference primaries and CIE standard illuminant

	Red	Green	Blue	D65
x	0.6400	0.3000	0.1500	0.3127
y	0.3300	0.6000	0.0600	0.3290
z	0.0300	0.1000	0.7900	0.3583

[The primary colors were] established in 1970 after a thorough examination of the colorimetric characteristics of phosphors available at that time and after discussions with the manufacturers on likely technical developments.

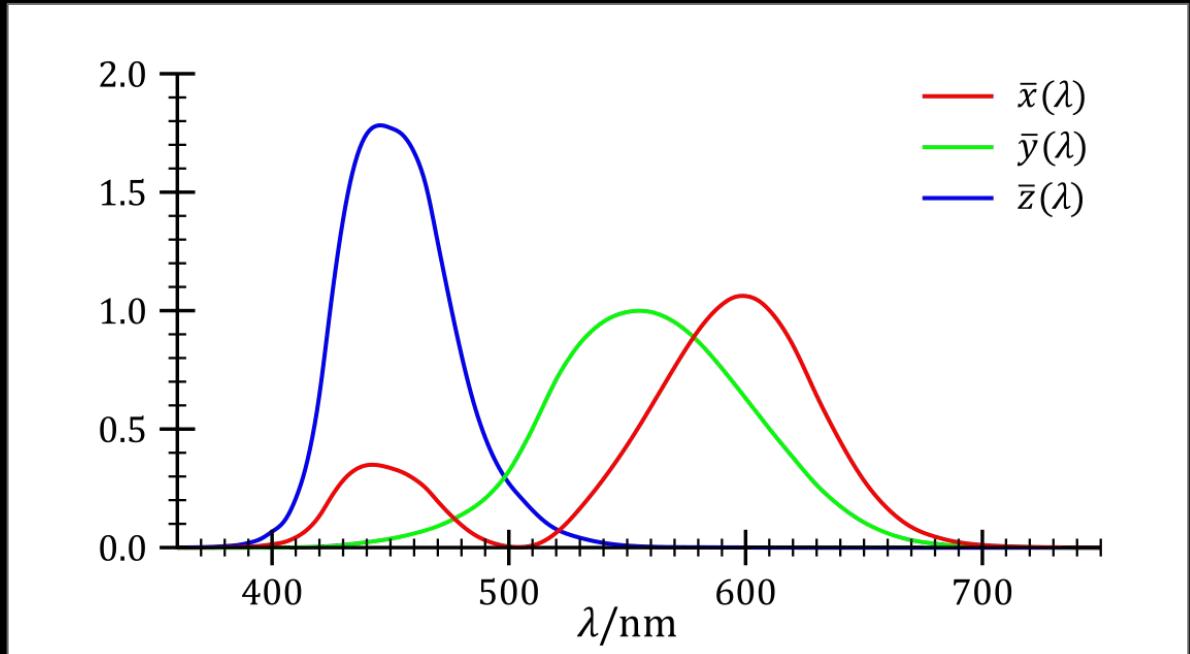


#FF0000

x = 64%

y = 33%

z = 3%



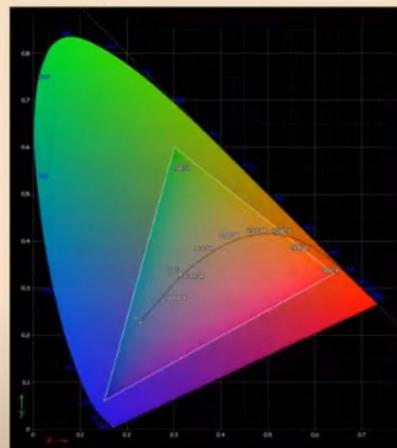
youtube.com/watch?v=EkbcI3KgUuY&t=1647s



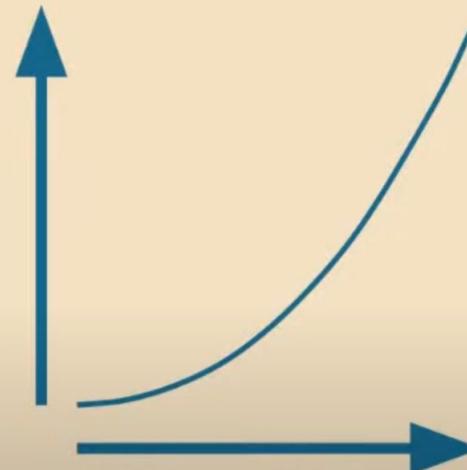
{EnthusiastiCon}



sRGB

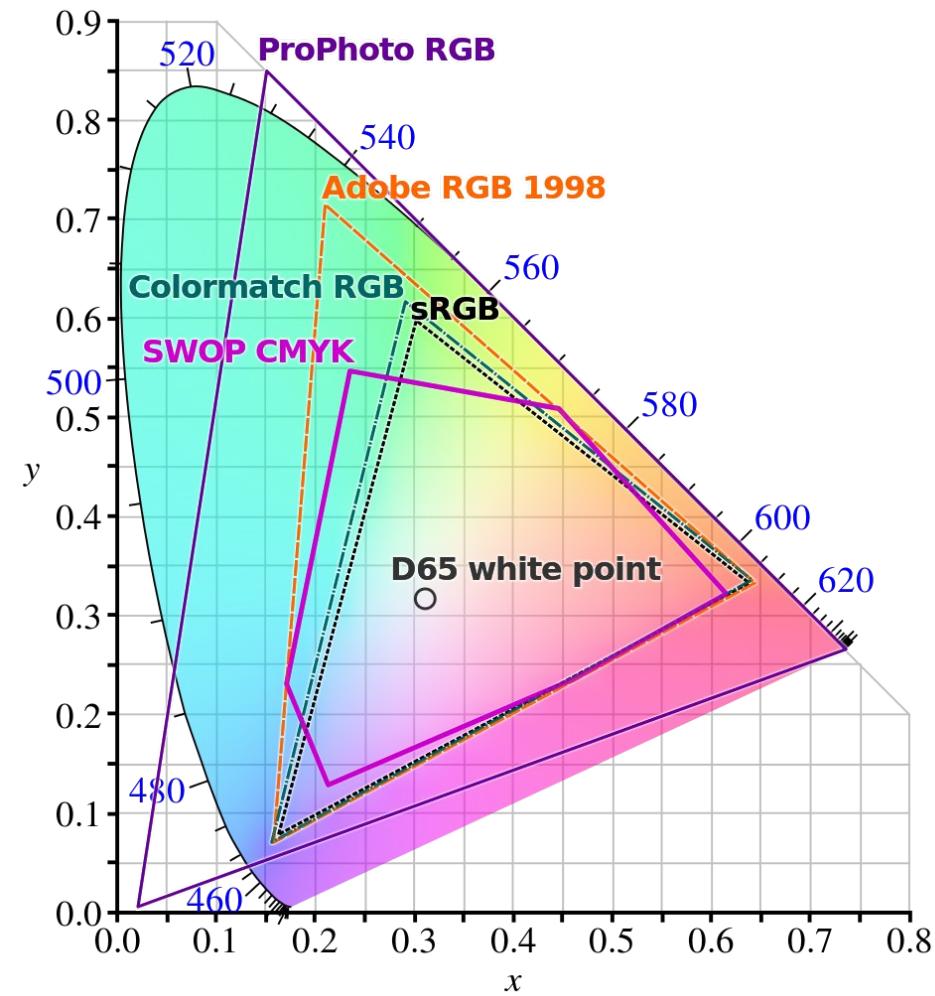


color

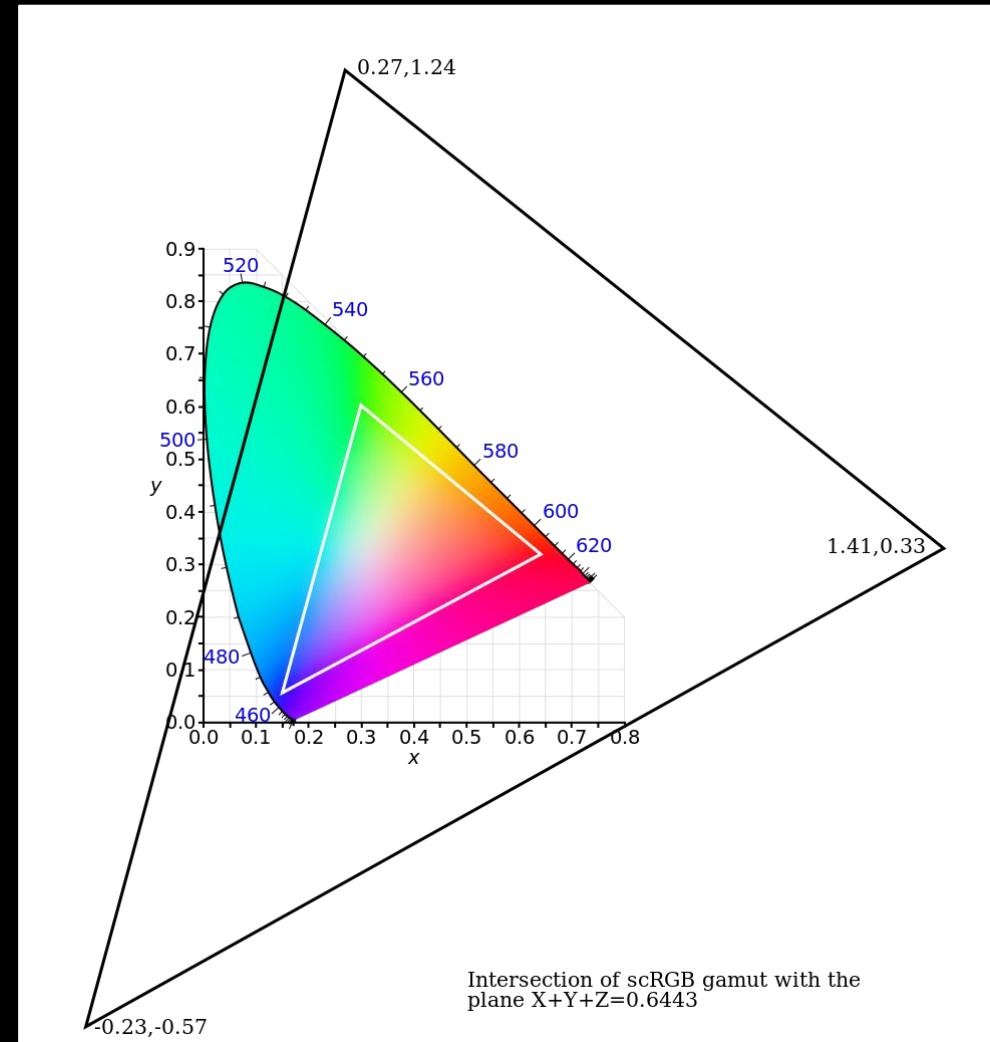


brightness

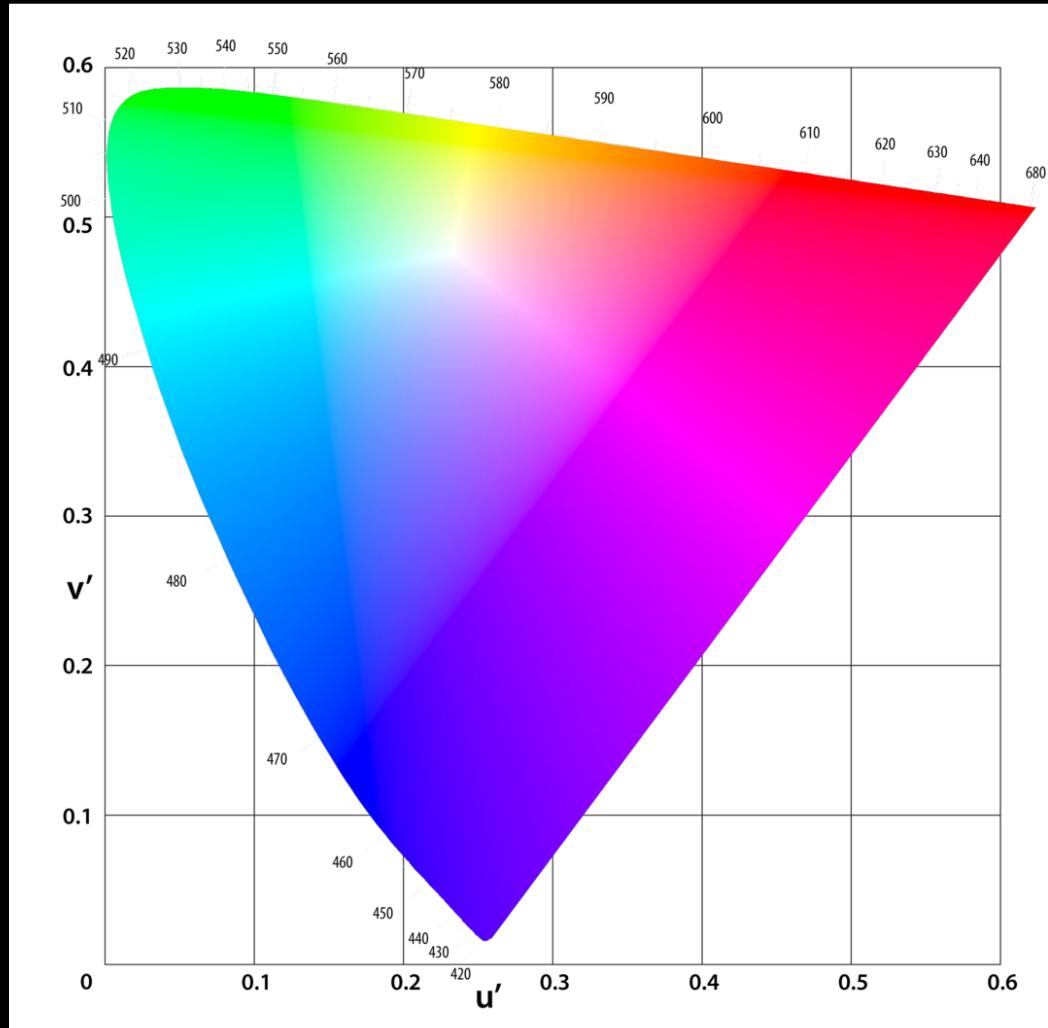
Deeper into
the rabbit
hole...



scRGB



CIELUV



Hue Saturation Lightness

a

Current Color:

Stored Color:

Hue: 0.000

Saturation: 0.000

Value: 1.000

b

Select background color:

H: 0 °
S: 75 %
B: 100 %

R: 255
G: 64
B: 64

c

Undo Values > Help Solid color

RGB: 127 Red 0 Green 63 Blue

HSB: 0° 100% 100%

d

Choose a highlight color:

Original:

New:

Hue Angle: 240 °

Saturation: 99.99 %

Lightness: 90.00 %

e

H: 160 Sat: 5 Lum: 152

S: 0 Green: 160 Blue: 164

U: 0X V: 0X

f

ColorSolid

Hue: 160 Sat: 5 Lum: 152

Red: 160 Green: 160 Blue: 164

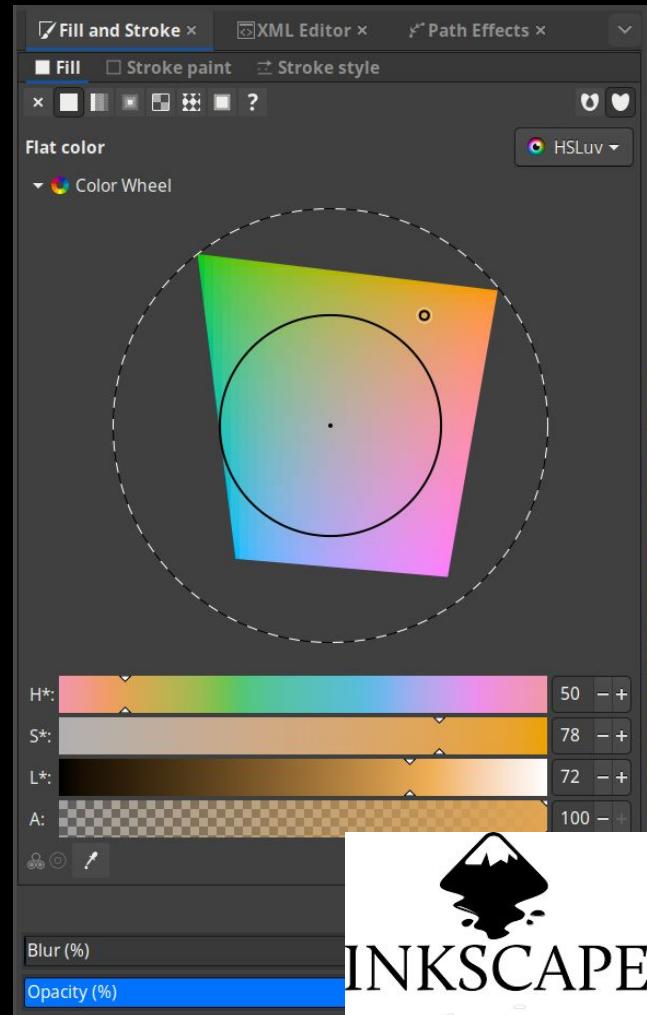
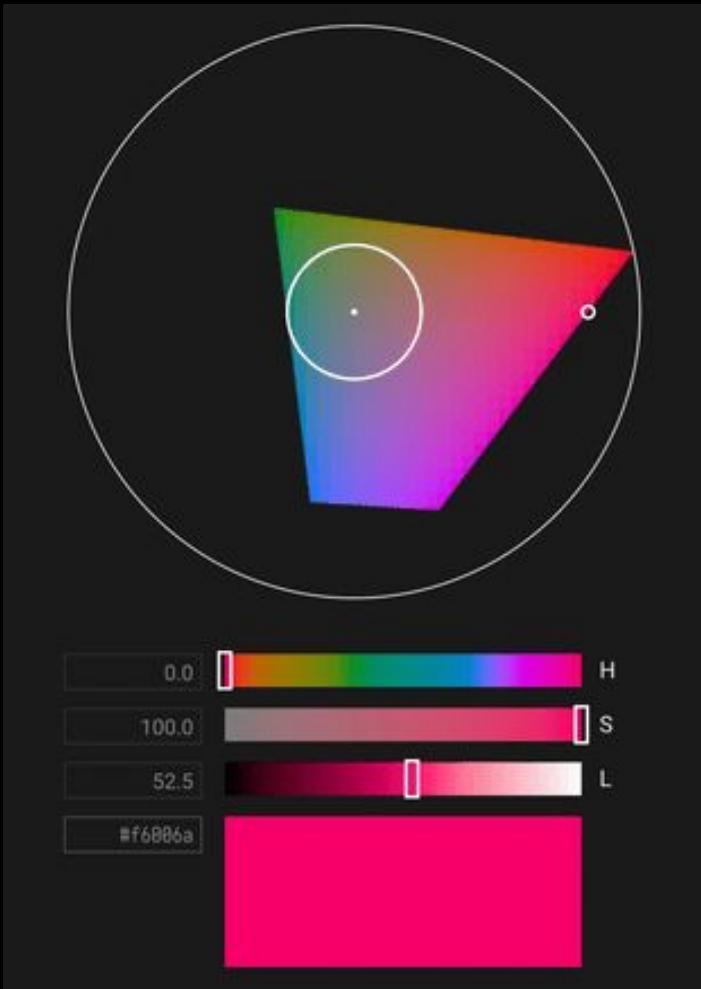
g

H: 160 Sat: 5 Lum: 152

S: 0 Green: 160 Blue: 164

U: 0X V: 0X

HSLuv



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