

The 1976 CIE Chromaticity Diagram

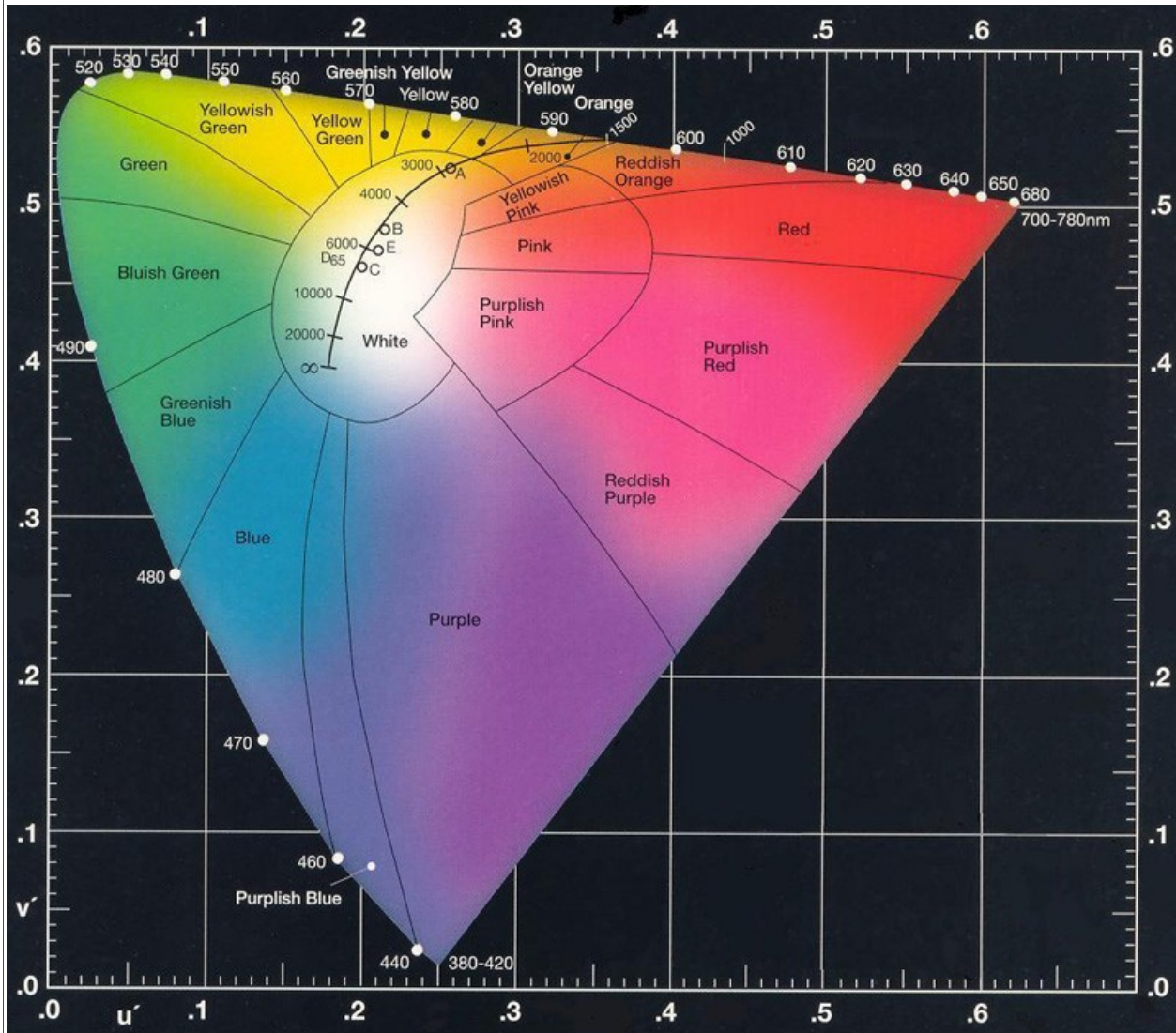


Image courtesy of Photo Research, Inc.

When the description "[CIE Chromaticity Diagram](#)" is used, it typically refers to the standard diagram established in 1931. Two revisions have been made since then - one in 1960 and one in 1976. All three contain the same information, just scaled differently. Conceptually, the big advantage attributed to the 1976 diagram is that the distance between points on the diagram is approximately proportional to the perceived color difference.

The CIE system characterizes [colors](#) by a [luminance](#) parameter Y and two [color coordinates](#) x and y which specify the point on the [chromaticity diagram](#).

[Blackbody curve on the CIE Diagram](#)

References:

The [Color Phenomena](#) site gives the conversion relationships between the 1976 CIE standard and the previous CIE-1931 and CIE-1960 standards, which are still in use.

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Blackbody Curve on CIE Diagram

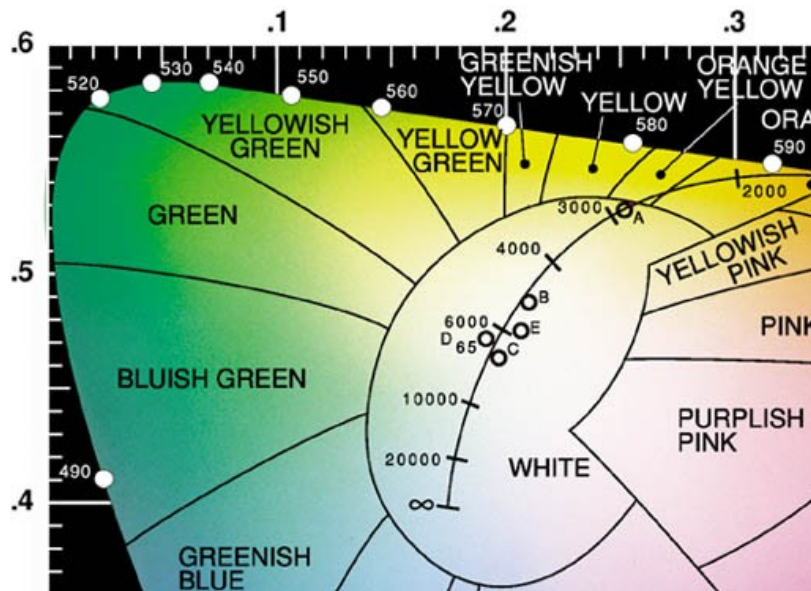


Image courtesy of Photo Research, Inc.

Shown above is an enlarged section of the [1976 CIE Chromaticity Diagram](#) to show the path of a [blackbody radiator](#) that is caused to increase in temperature. As a heated object becomes incandescent, it first glows red, then yellow, white, and finally blue. This occurs because the wavelength associated with the peak radiation of the blackbody radiator becomes progressively shorter with increased temperature, as described in the [Wien Displacement Law](#). As you might know by looking at the [colors of stars](#), these colors are highly [unsaturated](#). That is, within a certain temperature range, say 4000 to 20000 K, they are very close to white. Much effort has gone into producing white light, and several standard illuminants have been used as a standard for white light for specific purposes like photography. Some of the standard illuminants have been given letter designations like A, B, C, D. As you can see on the diagram, they fall close to the line traced out by a blackbody radiator with changing temperature. One of the parameters used to characterize these light sources is their "[color temperature](#)", the temperature associated with the nearest point on the blackbody curve.

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