



Figure 1.6 The CIE 1931 Chromaticity Diagram showing the spectrum locus, the Planckian locus and the equal energy point)

The CIE 1931 chromaticity diagram is perceptually non-uniform. Green colours cover a large area while red colours are compressed in the bottom right corner. This perceptual non-uniformity makes any attempt to quantify large colour differences using the CIE 1931 chromaticity diagram futile. In an attempt to improve this situation, the CIE first introduced the CIE 1960 Uniform Chromaticity Scale (UCS) diagram and then, in 1976, recommended the use of the CIE 1976 UCS diagram. Both diagrams are simply linear transformations of the CIE 1931 chromaticity diagram. The axes for the CIE 1976 UCS diagram are

$$u' = 4x / (-2x + 12y + 3) \quad v' = 9y / (-2x + 12y + 3)$$

where x and y are the CIE 1931 chromaticity coordinates. Figure 1.7 shows the CIE 1976 UCS diagram.