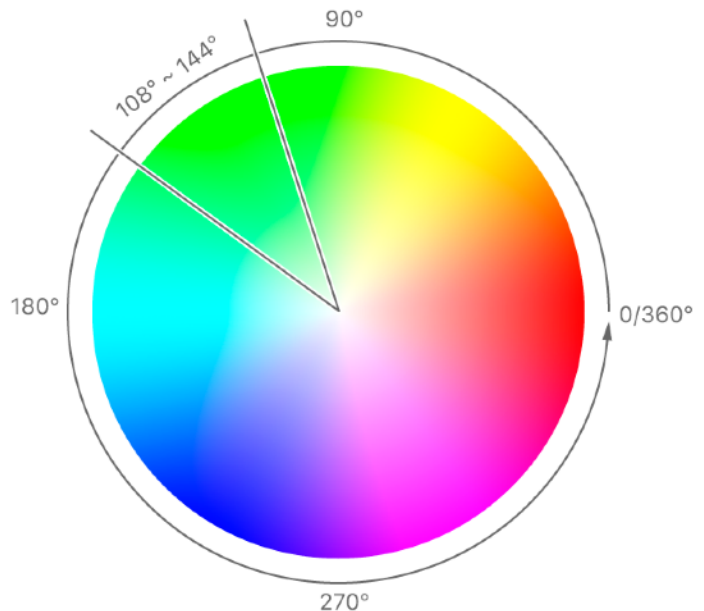# Creating and Using a Cube Map

A color cube is a 3D color-lookup table that assigns a transparency value to RGB colors. For example, to filter out green from the input image, create a custom color cube with the green portion of its values set to 0.

To specify a range of colors to exclude, model colors with an HSV (hue-saturation-brightness) representation. HSV represents hue as an angle around the central axis, as in a color wheel. In order to make a chroma key color from the source image transparent, set its lookup table value to 0 when its hue is in the screen color's range.

**Color Wheel
to Filter Green Range**
The color wheel at right shows the hue values to filter out of a source image with green background. Using the formula below the HSV range specified to filter out a green screen is 0.3 to 0.4. To filter out a white background, use a range of 0.0 to 0.0 to make all white areas in the image transparent. For black use 1.0 and 1.0.

The value for green in the source image falls within the slice beginning at 108° ($108/360 = 0.3$) and ending at 144° ($144/360 = 0.4$). You will set transparency to 0 for this range in the color cube.

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To create the color cube, iterate across all values of red, green, and blue, entering a value of 0 for combinations that the filter should make transparent.

More information at:

https://developer.apple.com/documentation/coreimage/applying_a_chroma_key_effect?language=objc