

11.9 Compositing - Matte nodes

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Matte Nodes

These nodes give you the essential tools for working with blue-screen or green-screen footage, where live action is shot in front of a blue or green backdrop for replacement by a matte painting or virtual background.

In general, hook up these nodes to a viewer, set your UV/Image Editor to show the viewer node, and play with the sliders in real-time using a sample image from the footage, to get the settings right. In some cases, small adjustments can eliminate artifacts or foreground image degradation. For example, taking out too much green can result in foreground actors looking ‘flat’ or blueish/purplish.

You can and should chain these nodes together, refining your color correction in successive refinements, using each node’s strengths to operate on the previous node’s output. There is no “one stop shopping” or one “does-it-all” node; they work best in combination.

Usually, green screen is shot in a stage with consistent lighting from shot to shot, so the same settings will work across multiple shots of raw footage. Footage shot outside under varying lighting conditions (and wind blowing the background) will complicate matters and mandate lower falloff values.

Note

Garbage Matte

Garbage matte is not a node, but a technique where the foreground is outlined using a closed curve (bezier or nurbs). Only the area within the curve is processed using these matte nodes; everything else is garbage and thus discarded.

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- Color Key Node
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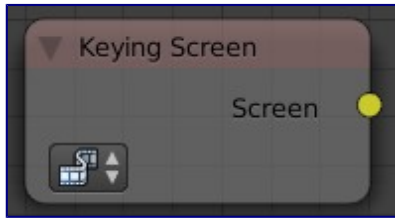
Keying Node



Keying Node

TODO - see: <https://developer.blender.org/T43469>

Keying Screen Node



Keying Screen Node

TODO - see: <https://developer.blender.org/T43469>

Channel Key Node



Channel Key Node

The *Channel Key* node determines background objects from foreground objects by the difference in the selected channel's levels. For example in YUV color space, this is useful when compositing stock footage of explosions (very bright) which are normally shot against a solid, dark background.

There is one input to this node, the *Image* that is to be keyed.

Control this node using:

Color Space

buttons selects what color space the channels will represent.

Channel

buttons selects the channel to use to determine the matte.

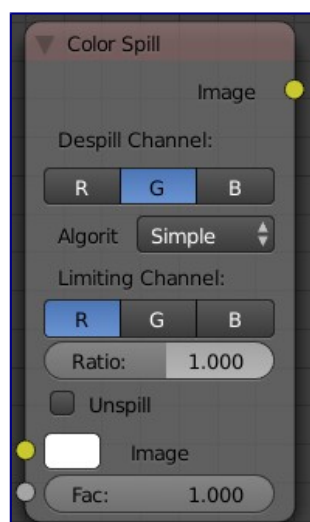
High
value selector determines the lowest values that are considered foreground. (which is supposed to be - relatively - height values: from this value to 1.0).

Low
value selector determines the highest values that are considered to be background objects. (which is supposed to be - relatively - low values: from 0.0 to this value).

It is possible to have a separation between the two values to allow for a gradient of transparency between foreground and background objects.

The outputs of this node are the *Image* with an alpha channel adjusted for the keyed selection and a black and white *Matte* (i.e the alpha mask).

Color Spill Node



Color Spill Node

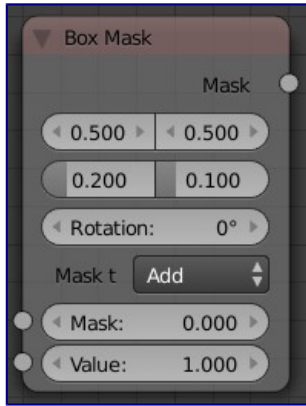
The *Color Spill* node reduces one of the RGB channels so that it is not greater than any of the others. This is common when compositing images that were shot in front of a green or blue screen. In some cases, if the foreground object is reflective, it will show the green or blue color; that color has “spilled” onto the foreground object. If there is light from the side or back, and the foreground actor is wearing white, it is possible to get “spill” green (or blue) light from the background onto the foreground objects, coloring them with a tinge of green or blue. To remove the green (or blue) light, you use this fancy node.

There is one input to this node, the *Image* to be processed.

The *Enhance* slider allows you to reduce the selected channel’s input to the image greater than the color spill algorithm normally allows. This is useful for exceptionally high amounts of color spill.

The outputs of this node are the image with the corrected channels.

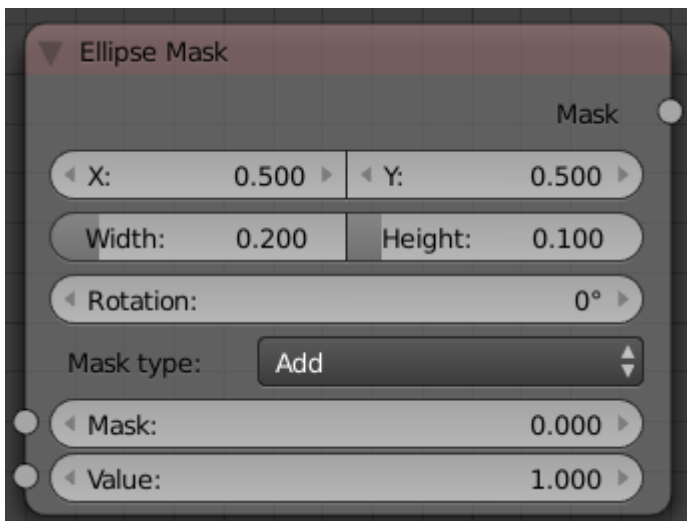
Box Mask Node



Box Mask Node

TODO - see: <https://developer.blender.org/T43469>

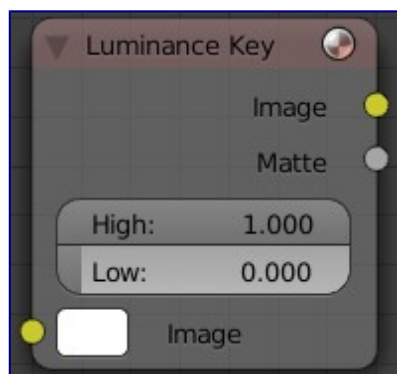
Ellipse Mask Node



Ellipse Mask Node

TODO - see: <https://developer.blender.org/T43469>

Luminance Key Node



Luminance Key Node

The *Luminance Key* node determines background objects from foreground objects by the difference in the luminance (brightness) levels. For example, this is useful when compositing stock footage of explosions (very bright) which are normally shot against a solid, dark background.

There is one input to this node, the *Image* that is to be keyed.

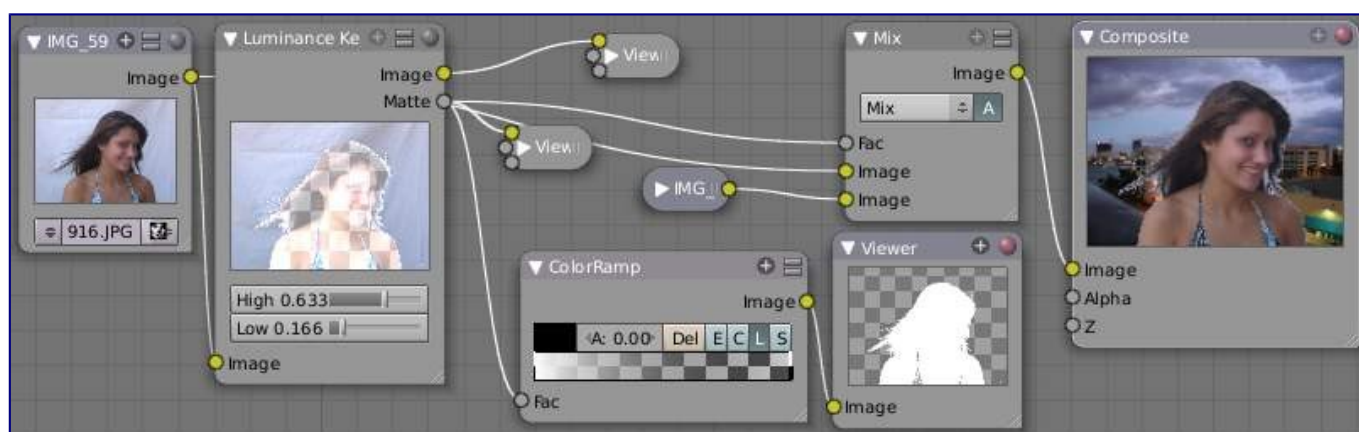
Control this node using:

- The *High* value selector determines the lowest values that are considered foreground. (which is supposed to be - relatively - light: from this value to 1.0).
- The *Low* value selector determines the highest values that are considered to be background objects. (which is supposed to be - relatively - dark: from 0.0 to this value).

It is possible to have a separation between the two values to allow for a gradient of transparency between foreground and background objects.

The outputs of this node are the *Image* with an alpha channel adjusted for the keyed selection and a black and white *Matte* (i.e the alpha mask).

Example



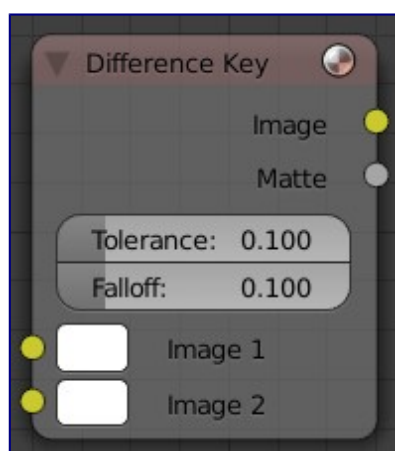
Using Luma Key...with a twist

For this example, let's throw you a ringer. Here, the model was shot against a *white* background. Using the Luminance Key node, we get a matte out where the background is white, and the model is black; the opposite of what we want. If we wanted to use the matte, we have to switch the white and the black. How to do this? ColorRamp to the rescue - we set the left color White Alpha 1.0, and the right color to be Black Alpha 0.0.

Thus, when the Colorramp gets in black, it spits out white, and vice versa. The reversed mask is shown; her white outline is useable as an alpha mask now.

Now to mix, we don't really need the AlphaOver node; we can just use the mask as our Factor input. In this kinda weird case, we can use the matte directly; we just switch the input nodes. As you can see, since the matte is white (1.0) where we don't want to use the model picture, we feed the background photo to the bottom socket (recall the mix node uses the top socket where the factor is 0.0, and the bottom socket where the factor is 1.0). Feeding our original photo into the top socket means it will be used where the Luminance Key node has spit out Black. Voila, our model is teleported from Atlanta to aboard a cruise ship docked in Miami.

Difference Key Node



Difference Key Node

This node produces a matte that isolates foreground content by comparing it with a reference background image.

There are two inputs:

Image 1

contains foreground content against the background that is to be removed

Image 2

is the reference background image

Where pixels match the reference background to within the specified **Tolerance**, the matte is made transparent.

Increase **Falloff** to make nearby pixels partially transparent producing a smoother blend along the edges.

Outputs are:

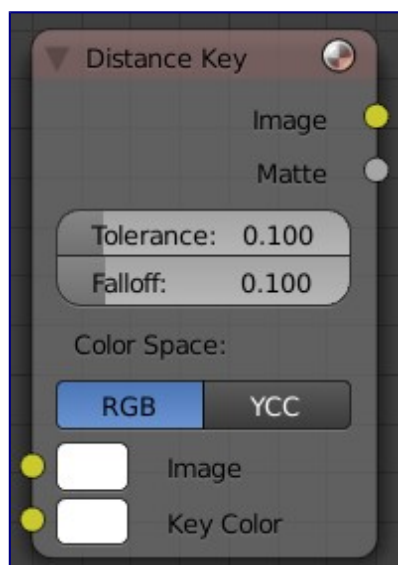
Image

with its alpha channel adjusted for the keyed selection

Matte

a monochrome representation of the mask

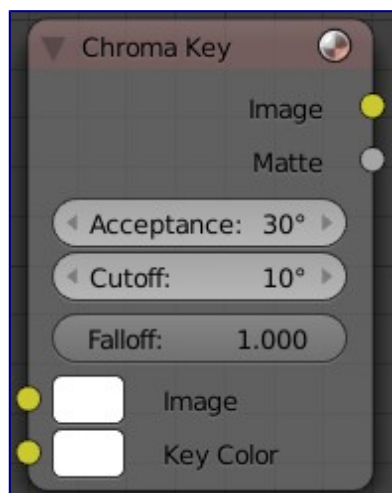
Distance Key Node



Distance Key Node

TODO - see: <https://developer.blender.org/T43469>

Chroma Key Node



Chroma Key Node

The *Chroma Key* node determines if a pixel is foreground or background (and thereby should be transparent) based on its chroma values. Use this, for example, to composite images that have been shot in front of a green or blue screen.

Inputs:

Image

that is to be keyed.

Key Color

the background color usually selected using the color picker and the original image.

Control this node using:

Acceptance

An angle on the color wheel that represents how tolerant the keying color is. Larger angles allow for larger variation in the keying color to be considered background pixels.

Cutoff

controls the level that is considered pure background. Higher cutoff levels means more pixels will be 100% transparent if they are within the angle tolerance.

Falloff

Increase to make nearby pixels partially transparent producing a smoother blend along the edges.

Outputs are:

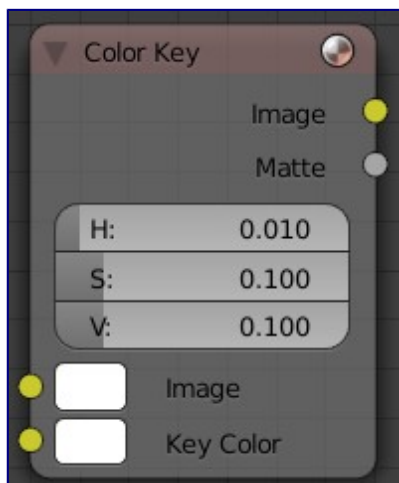
Image

with its alpha channel adjusted for the keyed selection

Matte

a monochrome representation of the mask

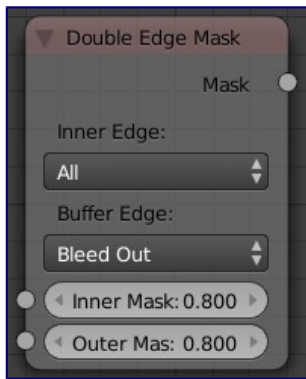
Color Key Node



Color Key Node

The color key node creates a matte based on a specified color of the input image. The sliders represent threshold values for *Hue*, *Saturation*, and *Value*. Higher values in this node's context mean a wider range of colors from the specified will be added to the matte.

Double Edge Mask Node



Double Edge Mask Node

TODO - see: <https://developer.blender.org/T43469>