Black (and White) Magic

Close your eyes, take a deep breath, and imagine a future where you no longer shoot both color and black and white images. Instead, you capture only color. Then, following the shoot, you nestle down in post-processing paradise and transform that brilliant color image into an eye-popping, tonally rich, black and white work of art. But don't stop there. Take your imagination one step further and predictably morph that black and white masterpiece into a stunning black and white infrared image. At last, open your eyes, exhale, and feel the grin spread across your face as you realize that the future has arrived. Photoshop CS2 is the cauldron where you will conjure all of this black (and white) magic.

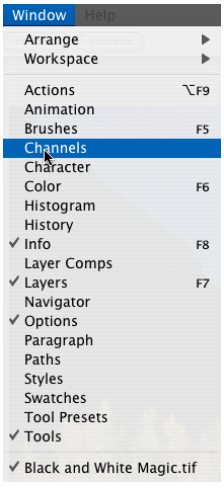
Color to Black and White Sorcery

Step 1: Open an Image

Open the image of the Maroon Bells titled "Black and White Magic.jpg" located in the Sample Images folder or select an image of your own — preferably one with a wide tonal range.

Step 2: Make the Channels Palette Visible

Make the Channels palette visible by choosing Window>Channels.

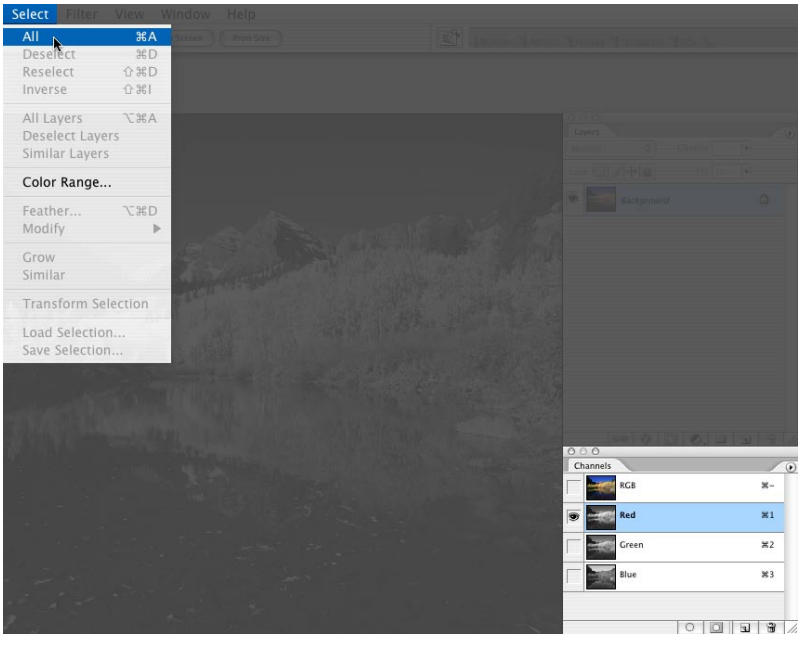


Step 3: View the Red, Green, and Blue Channels Individually

Single-click on each of the three Red, Green, and Blue channel names to view each one individually and determine if you would like to use tonal information from one, two, or all of the channels. Note where the detail exists in each channel, and prepare in the next several steps to combine the best elements from each.

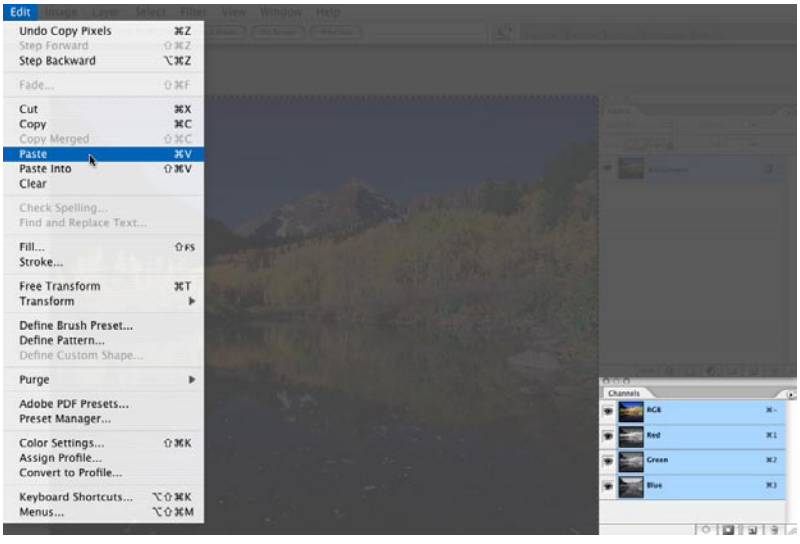
Step 4: Create a Layer from Each Channel

For the sake of this lesson, let's assume that you plan to use information from each of the three channels. Start by single-clicking on the Red channel, and choose Select>All.

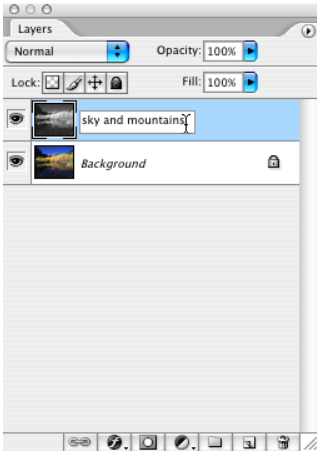


Next choose Edit>Copy.

Now, click on the RGB composite channel name, and make the Layers palette visible. Choose Edit>Paste.

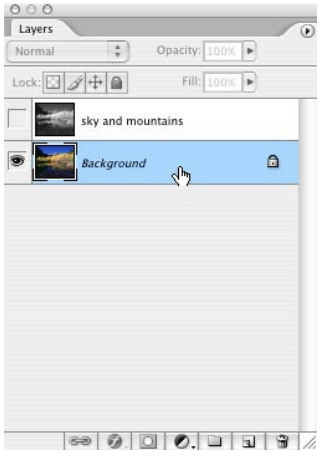


Double-click on the pasted layer name, and title the layer using a name that describes the useful elements from that layer (i.e. if, say, the sky and mountains on that layer have nice detail, name the layer "sky and mountains").



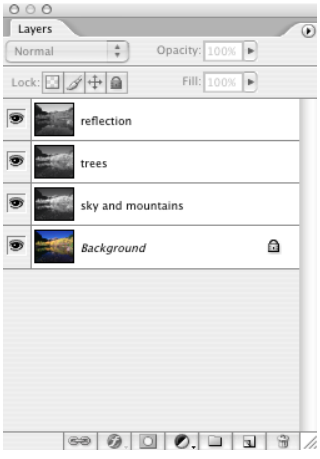
Now, Option-click (PC: Alt-click) on the Layer Visibility (eyeball) icon next to the Background layer to hide the "sky and mountain" layer, single-click on the Background layer name, and return to the Channels palette.

Repeat the above steps for the Green ("trees") and Blue ("reflection") channels, pasting each new layer on top of the previous one and titling it with a name that describes the useful elements from that layer.



Remember, before returning to the Channels palette for the copying process, always Option-click (PC: Alt-click) on the eyeball icon next to the Background layer to hide the other layers. Then, click on the Background layer name. If you forget to do this, you will not be able to extract the individual channels. Also remember that when exiting the Channels palette, you must first click on the composite RGB channel name. Forgetting this step may prevent you from pasting into the Layers palette.

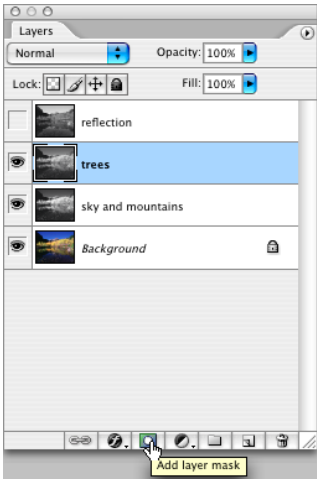
Once you have completed this process with each of the three channels, you should have four layers (from bottom to top: a Background layer, a "sky and mountains" layer, a "trees" layer, and a "reflection" layer). Each of the four layers should look different. If each of the layers looks different, but the layer order is incorrect, simply restack the layers in the Layers palette by clicking on a layer name and dragging it above or below another layer name.

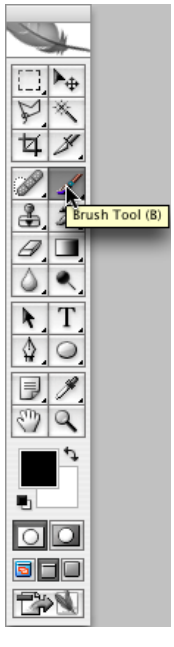


Step 5: Combine the Best Elements of Each Grayscale Layer Using Masks

Now it's time to combine the best elements of each grayscale layer. To do this, we'll be employing layer masks.

Start by turning the eyeball icon for the "reflection" layer off. Prepare to knock a hole through the "trees" layer to reveal the superior sky and mountains from the layer below. Do this by single-clicking on the "trees" layer name, and then clicking on the Add layer mask icon at the bottom of the Layers palette.

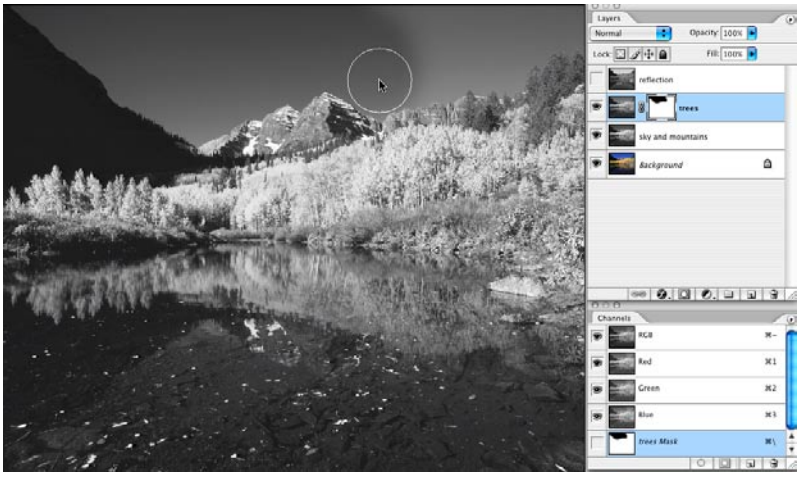




Now, choose the Brush tool (the "b" key). In the Options Bar at the top of the screen, make sure that the Brush Opacity and Flow are set to 100% and the Mode is Normal. Press the "d" key on the keyboard to set the Default Foreground and Background colors, and hit the "x" key to swap black to the foreground color.

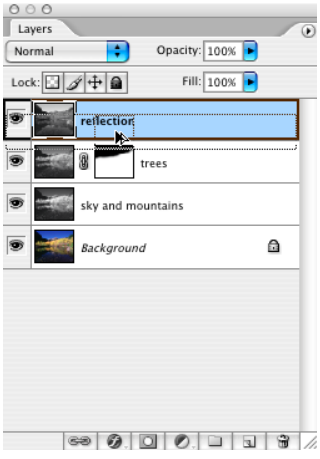
Choose a soft large brush and begin to paint a hole through the "trees" layer to reveal the superior sky and mountains from the layer below. If you paint away too much of the "trees" layer you can restore hidden areas

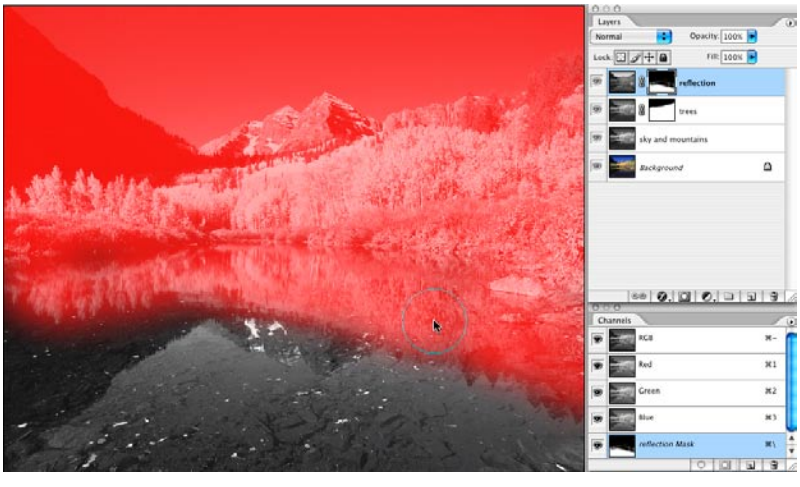
by pressing the "x" key again to switch the foreground color to white. Painting with white on a layer mask acts as a restore brush. Refine the painting until you have completely revealed the sky and mountains. If necessary, press the "\" (backslash) key to cover the masked area with a pink overlay. This may help you to see how well you have blended the two layers. When finished, press the "\" key again to hide the pink overlay.



Now, click on the "reflection" layer name. We'll begin work on this layer by stealing the mask from the "trees" layer. This will serve to punch the same sky and mountains revealing hole as we have on the "trees" layer through the "reflection" layer .

With the "reflection" layer active, press the Option (PC: Alt) key and click-and-drag the "trees" layer mask up to the "reflection" layer. Let go of the mouse while hovering over the word "reflection" to copy the mask to the "reflection" layer. To expand the "reflection" mask to reveal the superior trees on the layer below, choose the Brush tool ("b") and paint with black. Paint away all remaining areas of the "reflection" layer except for the reflection itself. Remember that painting with white restores areas where you did not intend to punch a hole.





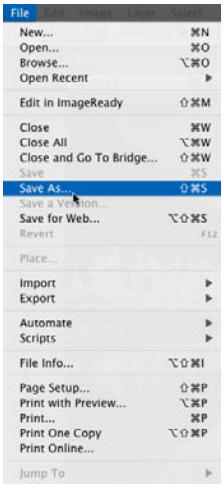
Step 6: If Necessary, Further Refine the Image Using Curves

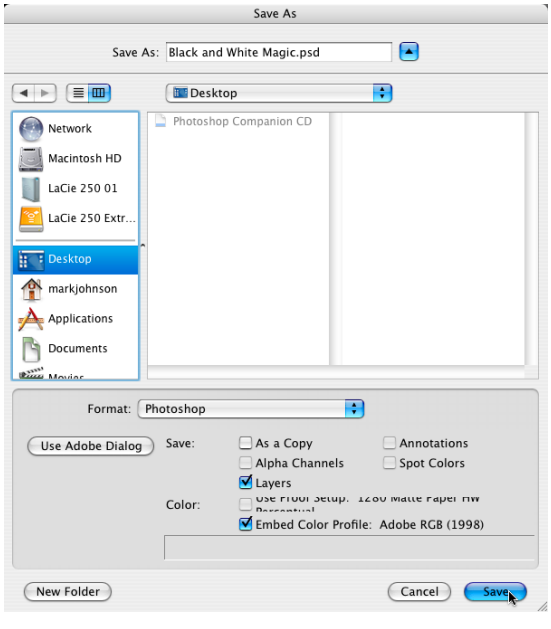
At this point, there should be great tonal range throughout the grayscale image. If certain areas need subtle tweaking, you can further refine the detail by stacking a Curves adjustment layer on top of all of the other layers. Remember that all adjustment layers come with a built-in mask ready for hole punching using the black Brush tool.

Step 7: Save the File as a Photoshop Document and Close

Choose File>Save As. In the Save As dialogue, name the file "Black and White Magic.psd". Set the Format to Photoshop and press Save.

Close the image.





Infrared Enchantment

This technique works best if you are editing an image that contains foliage such as trees and a blue sky. If the image does not contain foliage or a blue sky, Step 4 modifications should focus primarily on colors within the image that are destined to glow. The darkening portion of Step 4 pertains primarily to blue skies. Also, if the image does not contain a blue sky, skip Steps 13 through 15.

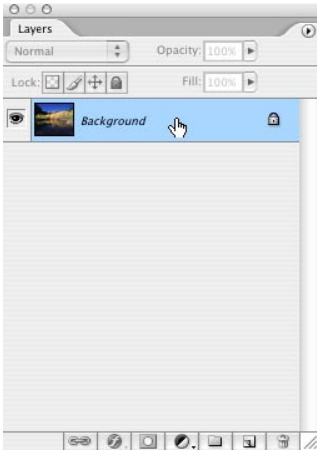
Step 1: Open an Image

If you are starting over with a color image, open the image titled "Black and White Magic.jpg" located in the Sample Images folder or select an image of your own — preferably one with a nice tonal range.

If you are beginning with a grayscale image (preferably the "Black and White Magic.psd" file that was created using the techniques detailed in the previous "Color to Black and White Sorcery" section), open that image, choose Layer>Flatten Image, and skip ahead to Step 6.

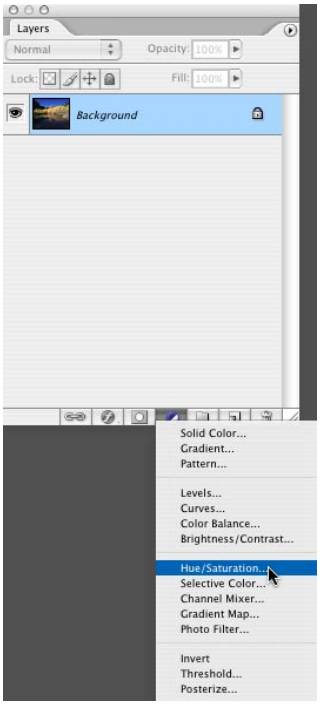
Step 2: Select the Topmost Layer

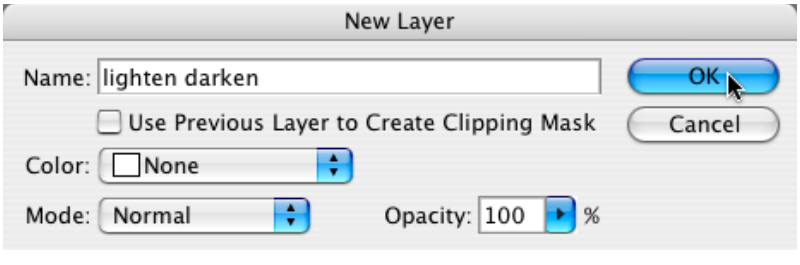
Click on the topmost layer in the document.



Step 3: Create a Hue/Saturation Layer

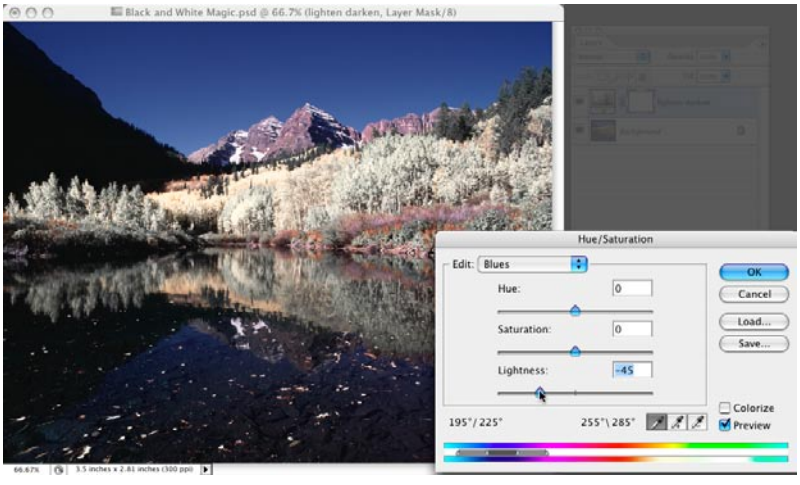
Hold down the Option (PC: Alt) key and click on the Create new fill or adjustment layer icon at the base of the Layers palette. From the pop-up menu, choose Hue/ Saturation. In the New Layer dialogue, name the layer "lighten darken" and change the Mode to Luminosity. Click OK.





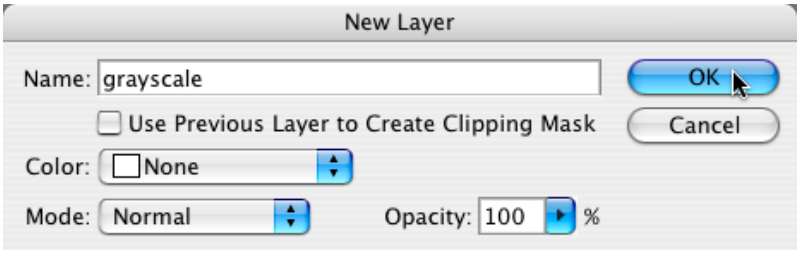
Step 4: Edit the Colors That Should be Lightened and Darkened

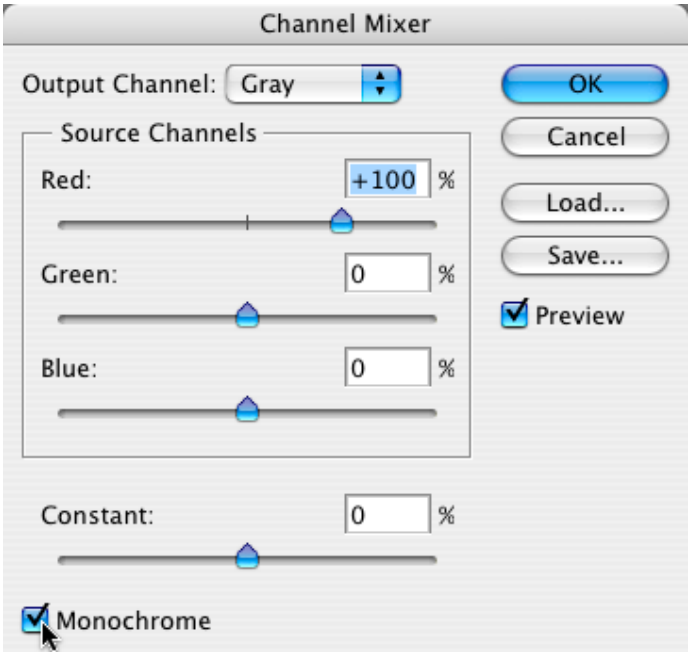
Within the Hue/Saturation dialogue, under Edit, choose the first color that should glow (often times yellows and greens) and move the Lightness slider to the right until the chosen color lightens, but does not turn entirely white. If there are other colors that should glow, choose them from the Edit menu and move the Lightness sliders to the right. Now, select colors that should darken (typically blues), and move those Lightness sliders to the left until the chosen color is dark, but not completely black. Click OK.



Step 5: Create a Grayscale Channel Mixer Layer

Hold down the Option (PC: Alt) key and click on the Create new fill or adjustment layer icon at the base of the Layers palette. From the pop-up menu, choose Channel Mixer. In the New Layer dialogue box, name the layer "grayscale". Click OK. Within the Channel Mixer dialogue, check the Monochrome box, and, if desired, adjust the balance between the Red, Green, and Blue Channels until the image has a high contrast appearance. Click OK. This step gives you a nice grayscale image, but not one as tonally rich as an image that was transformed using the techniques detailed in the "Color to Black and White Sorcery" section.





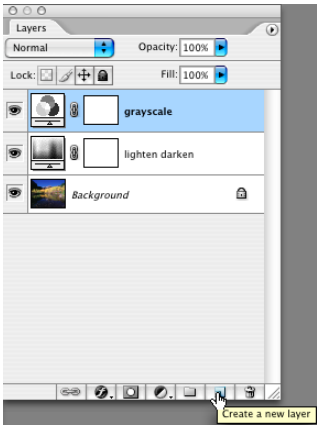
Step 6: Select the Brightest Tones in the Image

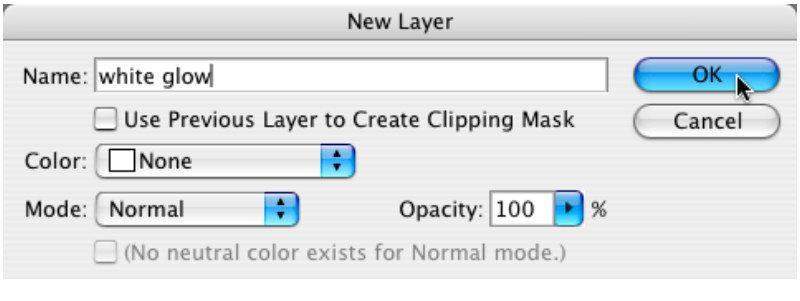
Press Command-Option-~ (PC: Control-Alt-~). The resulting marching ants selection automatically includes all tones in the image that are brighter than 50%.

Note: For those using Photoshop CS2 and Mac OS 10.4, this keyboard shortcut will not work until you change a System Preference. From the blue Apple menu, select System Preferences. Click on Keyboard & Mouse. In the Keyboard Shortcuts area, disable the shortcut "Move focus to the window drawer." Exit the System Preferences dialogue.

Step 7: Create a New Layer

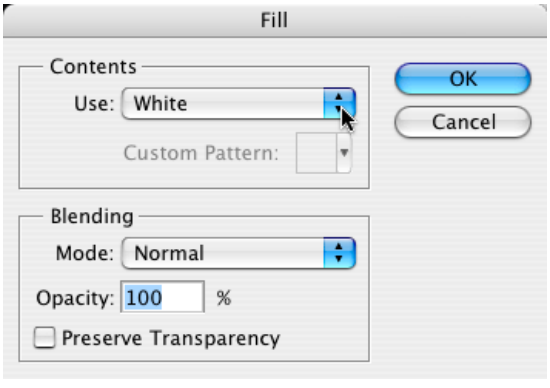
Hold down the Option (PC: Alt) key and click on the Create a new layer icon at the bottom of the Layers palette. In the New Layer dialogue box, name the layer "white glow". Click OK.





Step 8: Fill the New Layer with White

Choose Edit>Fill, and use White as the Contents. Click OK.

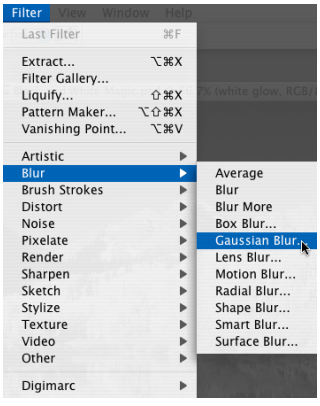


Step 9: Deselect the White Contents

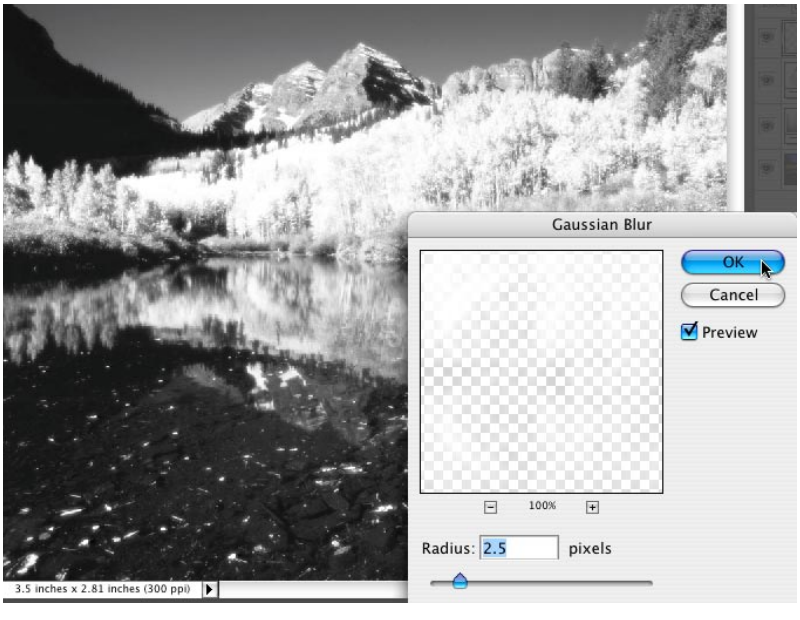
Choose Select>Deselect.

Step 10: Apply the Gaussian Blur Filter

Choose Filter>Blur>Gaussian Blur, and set a Radius that creates a nice glow. Click OK.



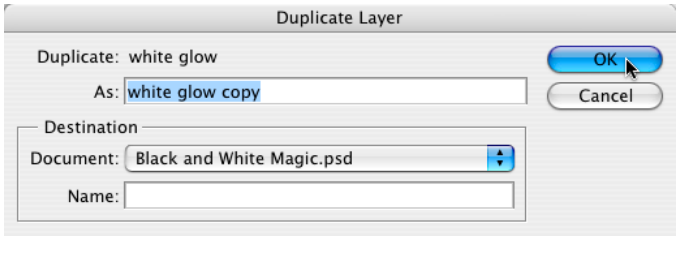
If the bright portion of the image looks good, you are only a few steps away from completion. If the highlights still need work, and believe me, they often do, below are a few things to try. We'll start with the easiest.



Step 11: (Optional) Change the Intensity of the Glow

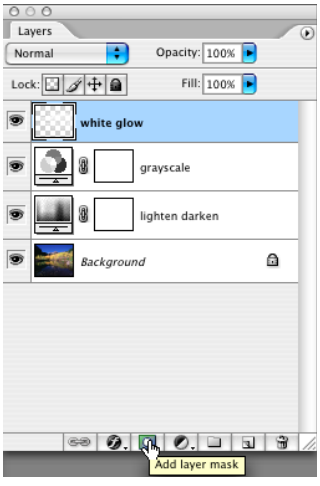
If the white glow is too intense, try reducing the opacity by pulling the layer opacity slider to the left.

If the glow is too faint, try duplicating the white glow layer by choosing Layer>Duplicate Layer. In the Duplicate Layer dialogue, leave the name "white glow copy", and click OK.



Step 12: (Optional) Create a Layer Mask to Hide the Glow in Unwanted Areas

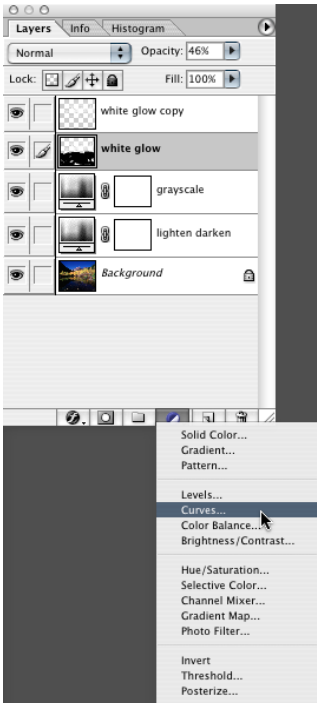
If the white glow is showing on areas of the image that should not have a glow, try applying a layer mask to the white glow layer and painting with the black Brush tool to eliminate the glow from those areas. To create a layer mask, click on the Add layer mask icon at the base of the Layers palette.

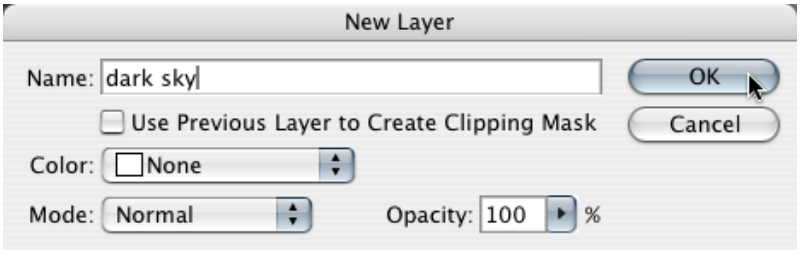


Step 13: Create a Curves Layer to Darken the Sky

Now that the white glow is perfected, let's move on to the darkening part of the lesson.

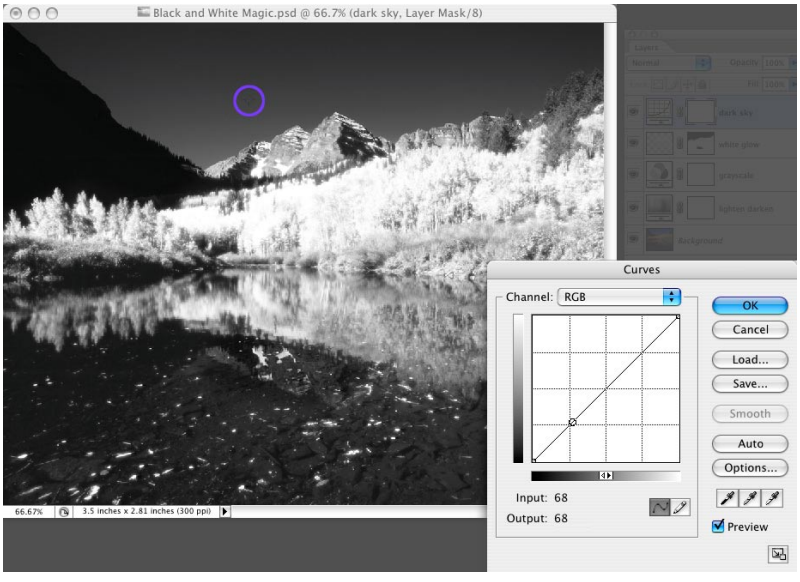
In order to achieve a dark sky as is often seen in black and white infrared images, begin by holding down the Option (PC: Alt) key and clicking on the Create new fill or adjustment layer icon at the base of the Layers palette. From the pop-up menu, choose Curves. In the New Layer dialogue box, name the layer "dark sky". Click OK.

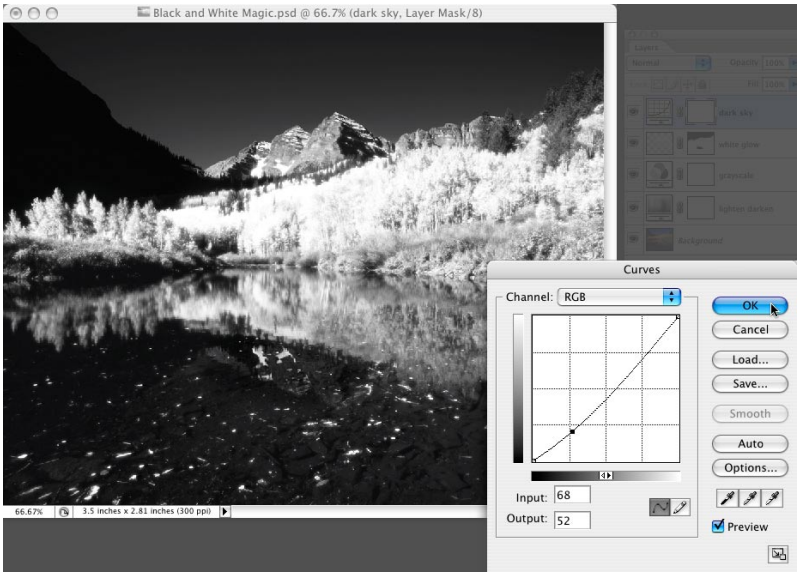




Step 14: Darken a Medium Tone in the Sky

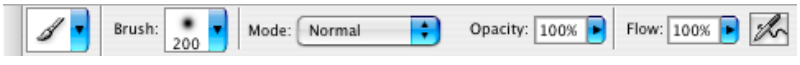
Hold down the Command (PC: Control) key and click on a medium-toned patch of sky. This will place a point on the curve. Use the down arrow key on the keyboard to move the point downward, thus darkening the selected tone throughout the image. Darken to your liking, and click OK. Don't worry that the image is darkening globally.





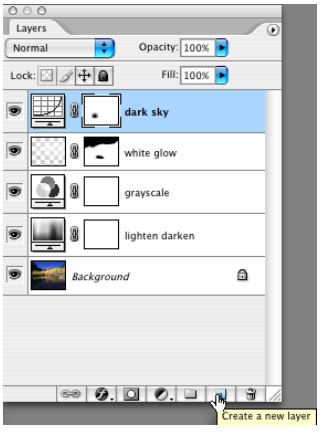
Step 15: Eliminate Areas that Don't Benefit from Darkening

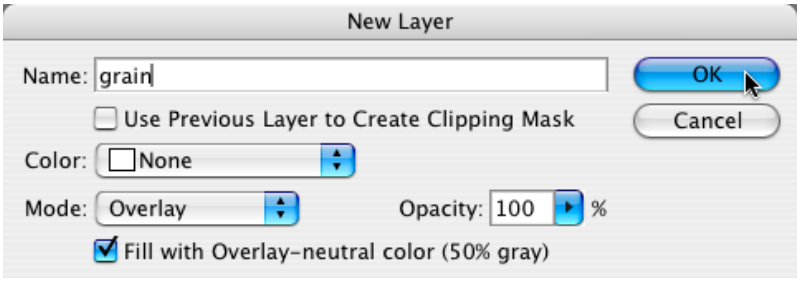
Choose the Brush tool ("b"). In the Options Bar, make sure that the Brush Opacity and Flow are set to 100% and the Mode is Normal. Press the "d" key to set the Default Foreground and Background colors. Hit the "x" key to swap black to the foreground color, and begin to paint on areas of the image that you don't want darkened. Remember, painting with black is only a metaphor for punching a hole through the Curves adjustment layer to reveal the image in its unaffected state. If you accidentally brighten areas that you prefer darkened, correct those areas by pressing the "x" key to switch white to the foreground color. Painting with white restores the full effect of the Curves adjustment layer.



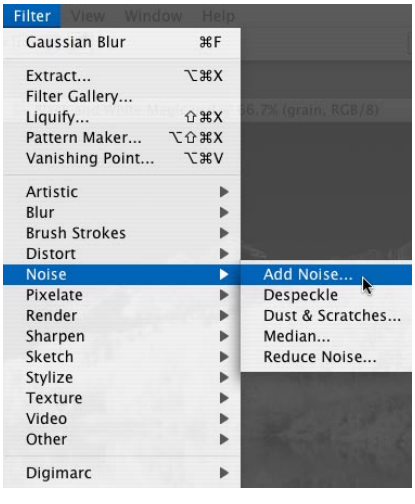
Step 16: Add "Film" Grain Using the Noise Filter

To complete the black and white infrared effect, Option-click (PC: Alt-click) on the Create a new layer icon at the base of the Layers palette. In the New Layer dialogue, name the layer "grain", set the Mode to Overlay, and check the Fill with Overlay-neutral color box. Click OK.

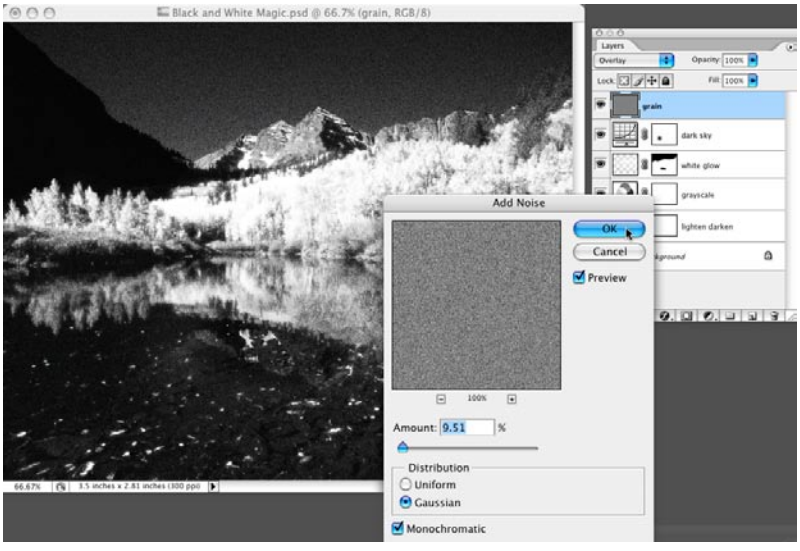




Choose Filter>Noise>Add Noise.



In the Noise dialogue, choose a Distribution type, check Monochromatic, and crank up the amount until you have a satisfactory level of noise. Click OK.



By using the techniques covered in this article that make use of adjustment layers and layer masks, the image maintains creative flexibility long after it's closed. Take a look at each of the layers individually, beginning with the Background layer, and notice how the original color image is still intact. Above the original color image, you'll find adjustment layers that affect how the underlying image is perceived (similar to the way wearing a pair of sunglasses alters how your eyes perceive the brightness of the outdoors). These adjustment layers, and subsequently the image tonal data, are easily altered by double-clicking on the adjustment layer thumbnails.

Paving an avenue to even further creative flexibility, each adjustment layer is born with a mask that can be used to impermanently trim away parts of the layer. Although traditional pixel bearing layers aren't born with layer masks, adding a mask to a pixel bearing layer is as simple as clicking on the Add layer mask icon. In the case of all masks, black paint is the key to hiding the layer contents, and white is the key to restoring the contents. As you paint on a mask, it's reassuring to know that none of the actual pixel data is ever destroyed as it would be if you used the Eraser tool. So when it comes to choosing between a mask and the Eraser tool, the answer really couldn't be any more black and white.