

## Relighting Footage

by Chris & Trish Meyer, CyberMotion

### Using 3D lights to change the focus in 2D footage.

We all know that stock footage is incredibly convenient to use. However, some may worry whether a stock shot is unique enough to use in their particular application. Therefore, we're big on finding ways to modify existing footage to make it more appropriate – or at least, visually different – for each job.

One of our favorite techniques is to use 3D lights in programs such as Adobe After Effects (version 5 or later), Apple Motion 3, and Autodesk Combustion to “re-light” already-shot footage. This technique does not require deep knowledge of 3D space; you won't be flying a camera or footage around your scene. Instead, think of it as a simple but versatile effect you can apply to any footage item or layer.

#### Vignettes

To set up these lighting effects, add a footage item to a project or composition as you normally would. Then place the footage in 3D space. In After Effects, you do this by enabling the 3D Layer switch for the item; in Motion 3 (which now supports 3D space), toggle the 2D/3D layer switch for the group the footage is in. In both cases, the footage won't change appearance; the default settings leaves it centered in the frame at 100% normal size.

*Figure 1: To receive the effects of 3D lighting, the footage item must be placed in 3D space. In After Effects (a), enable the 3D Layer switch in the Timeline panel; in Motion (b), toggle the group's 2D/3D layer switch in the Layers panel.*



figure 2a



figure 2b

*Figure 2: Most Artbeats footage contains nice, even, overall lighting. If you wish to alter the lighting – such as creating a vignette effect where the corners are darkened – place the layer in 3D, add a Point light, and move it around to alter the illumination (b).*

Next, add a 3D light to the scene (Layer > New > Light in After Effects; Object > New Light in Motion). Start with a Point light, as it is easiest to control. Set the light's color to white; if you like, you can change it later to a pale orange to warm up a clip or a pale blue to cool it down.

The light's position will determine how it illuminates the layer. To change the center of illumination, move it in the X (left/right) or Y (up/down) dimensions. The Z dimension determines how the light falls off: further away from the layer results in more even lighting; placing the light close to the layer exaggerates the vignette (darkened areas around the edges). Note that moving a light (or any 3D layer) in Z may result in it appearing to drift in X and Y; this is just a side effect of 3D perspective – merely re-tweak the X and Y positions as needed. If you are not comfortable directly grabbing and moving lights in 3D, scrub the light's Position values in the After Effects Timeline panel (select the layer and press P to reveal); in Motion, scrub the icons in the light's HUD (Heads Up Display). Then adjust the light's Intensity value to set the

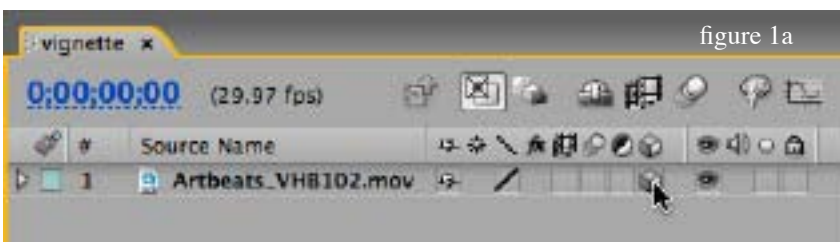


figure 1a

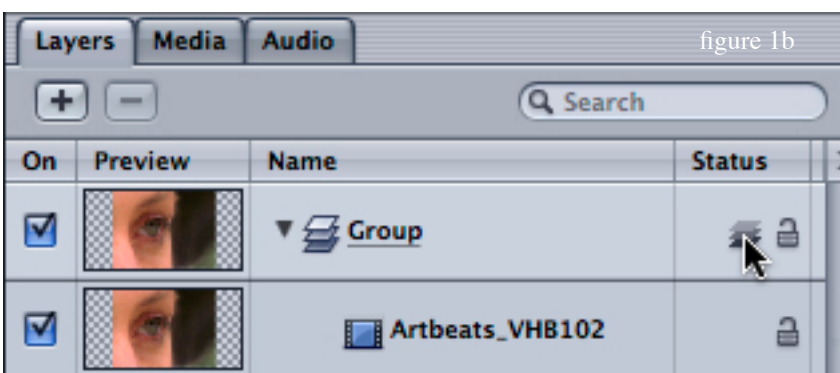


figure 1b

overall lighting level in the scene (the shortcut to reveal Intensity in After Effects is T).

## Highlights and Hot Spots

The secret to creating sexy lighting effects is not just the lights; it's how a layer reacts to the lights in the scene.

In After Effects, select your 3D layer and type AA (two As in quick succession) to reveal the layer's Material Options. The Diffuse parameter controls the overall illumination of a layer; the Specular parameter controls the brightness of the specular highlight (the "hot spot"). To emphasize the hot spot, increase the Specular parameter.

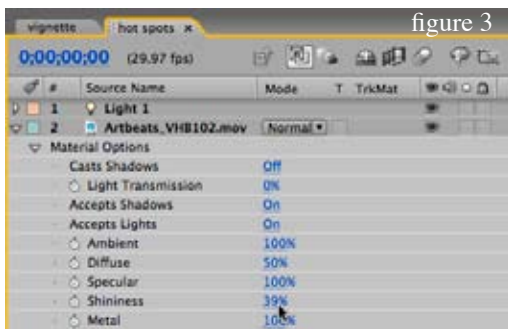


Figure 3: To alter how a layer reacts to a light in After Effects, reveal its Material Options by selecting it and typing AA.

The Shininess parameter controls how broad the hot spot is; increase it to "tighten up" the hot spot (make it smaller and more intense). Finally, the Metal parameter controls the color of the hot spot: higher values result in highlights based on the layer's underlying color (which we prefer most of the time); lower values mix the light's color into the hot spot (useful if the underlying layer is very dark).

Say that we wanted to add a strong highlight in the corner of the eye in the clip we've been working with so far. In this case, we would position the light over the corner, then increase the Specular and Shininess values to add our lighting "kick." Finally, we would increase the light's Intensity to strengthen the highlight, then work



Figure 4: By working with the layer's Material Options, you can focus and emphasize your lighting effects, such as the glowing highlight we've created in the corner of this person's eye. Imagine how difficult (and uncomfortable!) this would have been to create on the set...

with the layer's Diffuse parameter to control how the rest of the shot was illuminated. Note that altering the light's Z position also affects its apparent intensity and diffusion.

Material options in Apple Motion 3 are currently not as sophisticated as in After Effects. To reveal them, select the layer, and look under Property Inspector > Properties > Lighting. You will find a Shininess parameter, but you only get a checkbox for Highlights rather than individual control over specular and diffuse amounts. This means you will need to work with the light's Z Position and Intensity to balance off the strength of the highlight with the overall illumination.

## Zooming Out

As you become more comfortable working with 3D lights, you can move up to using Spot lights instead of Point lights. Spots will give you the additional ability to control how large of a cone of light is projected, and how that "falls off" (is feathered) at the edges.

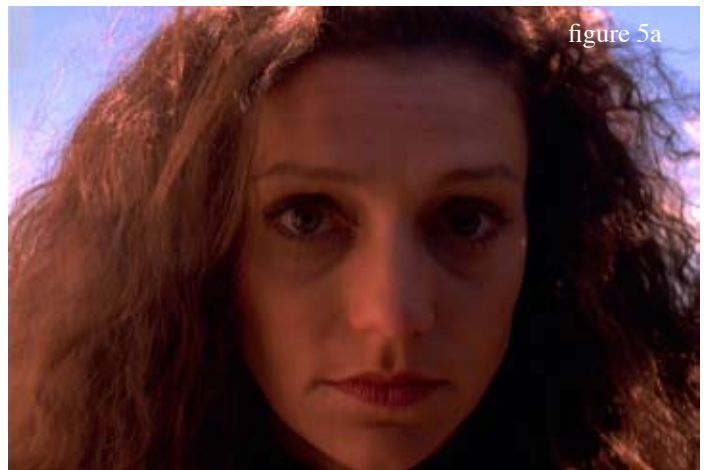


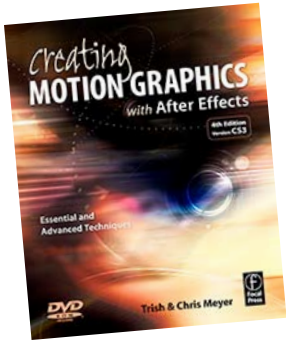
Figure 5: In this example, we used a single spot light in software to completely change the lighting in this clip from the original strong back light with the woman's face in light shadow (a), to a strong front light with the appearance of the background being in deep shadow (b). Clip LM117 from the Artbeats Lifestyles -Mixed Cuts 1 collection.

## Tips N Tricks

More available at [artbeats.com](http://artbeats.com)

**ARTBEATS**  
FOOTAGE YOU CAN USE

In general, we think you'll be pleasantly surprised to see how easy it is to alter and customize already-shot footage by using a feature you may have thought was reserved only for creating virtual worlds.



For even more tips and tricks, Chris and Trish Meyer have just released the fourth edition of their book *Creating Motion Graphics with After Effects*. Most of the examples use Artbeats footage at full D1 size. To learn more, visit <http://books.cybmotion.com>.

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*Chris and Trish Meyer are the founders and owners of CyberMotion ([www.cybmotion.com](http://www.cybmotion.com)), an award-winning motion graphics studio in Los Angeles that has created a wide variety of work for film, broadcast, corporate events, and special venues. They were one of the original development sites for After Effects, wrote the highly-acclaimed books *Creating Motion Graphics* and *After Effects Apprentice* (2007), and are long-time Artbeats users.*