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## Copyright

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## Feature Overview

- **16 bpc support**

All plug-ins.

- **32 bpc support**

Cross Blur, Color Neutralizer, Kernel, Toner, Power Pin, Threads, Environment, Rainfall, Snowfall, Block Load, Threshold, Threshold RGB, Jaws, Line Sweep, Overbrights.

- **AE Camera support**

Particle World, Ball Action, Cylinder, Environment.

- **AE Lights support**

Blobblyze, Drizzle, Glass, Glue Gun, Mr. Mercury, Plastic.

- **Native Motion Blur support**

Bubbles, Environment, Force MB, Image Wipe, Kaleida, Light Rays, Line Sweep, Particle Systems II, Particle World, PowerPin, Rain, Rainfall, Scatterize, Snow, Snowfall, Wide Time.

# CC CROSS BLUR

Cross Blur creates separate horizontal and vertical blurs that are composited together, using the selected transfer mode. This allows you to, in a single step, create interesting and different looking blur effects that previously required multiple layers, effects and transfer modes.

## **Controls**

### **Radius X and Radius Y**

Use these sliders to control the amount of horizontal and vertical blurring. For example, setting Radius X only, will produce horizontal blur only.

### **Transfer Mode**

Use this pop-up menu to select which composite method to use between the effect and the source layer. Each offers a different result. Choose one of the following options, Blend, Add, Screen, Multiply, Lighten, Darken.

### **Repeat Edge Pixels**

With this option unchecked, Cross Blur will expand the layer boundaries and blur also outside of the source layers border. To blur only within the source layer boundaries, check this option. Blur will then be clamped to edges.

# CC RADIAL BLUR

Radial blur creates blurs around a user positioned center point. This allows you to create effects that simulate the zooming or rotation of a camera.

## Controls

### Type

Select the type of zoom or rotation on which to base the blur. Choose one of the following options from the pop-up menu.

#### **Straight Zoom**

Blurred pixels radiates out from the center point with constant length.

#### **Fading Zoom**

Blurred pixels radiate out from the center point and fade out towards the edges

#### **Centered Zoom**

Blurred pixels radiates in and out equally from the center point. This gives the effect of "zooming in" without actually moving the layer.

#### **Rotate**

Blurs pixels in circles around the center point, rotating in one direction. Positive values rotate the blur CW and negative values CCW.

#### **Scratch**

Blurs pixels in circles, back and forth (like scratching a record), around the center point evenly in both directions.

#### **Rotate Fading**

Blurs pixels in fading circles around the center point. Blur is rotating in one direction. Positive values rotate the blur CW and negative values CCW.

### Amount

Use the Amount slider to control the amount of blurring. Depending on the choice for Type, the Amount value controls the degree of rotation and direction, or the amount of zooming.

## Blur & Sharpen Menu - CC Radial Blur

### Quality

Use this control to determine the quality, or smoothness, of the radial blur. Lower values render faster but with less quality, steps will become visible as the quality decreases. Higher values render slower but with higher quality, steps will disappear as the quality increases.

### Center

Use this control to position the center of the zoom/rotation effect on the source layer, based on X, Y coordinates.

# CC RADIAL FAST BLUR

Radial Fast Bur blurs around a user positioned center point. This allows you to create effects that simulate the zooming of a camera.

## **Controls**

### **Center**

Use this control to position the center of the zoom effect on the source layer, based on X, Y coordinates.

### **Amount**

Use this control to determine the amount of blurring/zooming.

### **Zoom**

Use this control to select the zoom type for the blur. Choose one of the following options from the pop-up menu.

#### **Standard**

Blurred pixels radiates out from the center point.

#### **Brightest**

Blurred pixels radiates out from the center point, targeting the pixels with the brightest values.

#### **Darkest**

Blurred pixels radiates out from the center point, targeting the pixels with the Darkest values.



# CC VECTOR BLUR

Vector blur uses maps to define a vector field along which the blur will take place. There are various ways to define the vector field. Vector Blur can blur in multiple directions, based on the values of another layer.

## **Controls**

### **Type**

Use this control to select how the vector field will be defined from the values in the chosen Vector Map. Choose one of the following options from the pop-up menu.

#### **Natural**

Vector field is formed from slopes in the Vector Map from which values define height. Ridge Smoothness and steepness in the Vector Map affect vector length and thereby also blur length.

#### **Constant Length**

Same as Natural, but with straight blur strength, i.e. not fading

#### **Perpendicular**

Same as Natural, but with perpendicular vectors. Vectors don't point up and down the slopes, instead they point along the slopes, around hills.

#### **Direction Center**

Vector field assumes directions from the values of the Vector Map. High and low values point in different directions. Vector lengths do not vary. Blurs in both directions from the center of the vectors.

#### **Direction Fading**

Same as Direction Center except this only blurs in the (one) direction of the vectors.

### **Amount**

Use this control to determine how far along the vector field blur is applied. In some Types, the vectors have individual length. This affects the actual blur length.

### **Angle Offset**

Use this control to offset (rotate) the angle of the vector field.

### **Ridge Smoothness/Revolutions (Supervised)**

For non-directional blur types, use this control to adjust the smoothness of the ridges, or how steep the slopes appear, in the vector field. For directional blur types, use this control to determine how many revolutions the vector field will twist.

### **Vector Map**

Use this pop-up to define a Vector Map from which the vector field will be defined. For example, selecting a layer containing animated Fractal Noise can produce very interesting effects.

### **Property**

Use this pop-up menu to select the channel information on which to base the vector field on. Choose one of the following options: Red, Green, Blue, Alpha, Luminance, Lightness, Hue or Saturation.

### **Map Softness**

Use this control to determine the softness (or blurring) of the vector field. Higher Map Softness values will remove small details and make the blur appear smoother.

## CC COMPOSITE

Composite is meant to be used in conjunction with other effects applied before Composite. To use Composite, apply an effect/effects to the layer, apply Composite and select composite method.

### **Controls**

#### **Opacity**

Use this control to determine the transparency of the original source layer in the composite.

#### **Composite Original**

Use this pop-up menu to select which composite method to use between the effect/effects and the source layer. Each offers a different result. In addition to Copy, Behind and In Front, Composite supports all the standard AE Transfer Modes, except for Dissolve.

#### **RGB Only (Supervised)**

Use this check box to determine if the source layers alpha channel will be included in the composite. This control is disabled if selected transfer mode involves the alpha channel. The default setting is RGB only, meaning that the alpha channel is ignored.

# CC COLOR NEUTRALIZER

Color Neutralizer is a color balance effect. Three references of lightness can be controlled separately: Shadows, Midtones and Highlights. Anything in-between will be interpolated accordingly. There are two ways to control the color correction for each reference, a color picker and sliders. Both of these are relative but in opposite directions, the color picker will remove the selected color and the sliders will add the values set. They are connected so that selecting a color using the color picker will automatically adjust the sliders to the appropriate values. The intended use for the color pickers in this effect is to neutralize tinted footage by adjusting hue and saturation while maintaining as much of the original lightness values as possible.

Recommended steps to neutralize footage using color pickers,

- Apply CC Color Neutralizer
- Disable the effect, preferably in the Effects Controls Panel.
- Click Shadows Unbalance color picker and pick what should be a neutral colored shadow in the footage.
- Repeat above step for Midtones and Highlights Unbalance color controls.
- Enable the effect again.

When using the color picker, it is recommended to use the averaging color picker (Mac: press-Cmd, Win: press-Ctrl).

## **Controls**

### **Shadows, Midtones and Highlights Unbalance**

Use these controls to specify the colors to be neutralized (or removed).

### **Shadows, Midtones and Highlights (Control Groups)**

Use these RGB sliders to add colors. This is useful to fine tune the correction.

### **Pinning**

Use this slider to pin black and white values, the amount controls how wide the pinning should stretch. A higher value leaves more of the highlights and shadows unchanged. This is useful to control clipping. At default this value is set to 0. (For options on viewing the correction use the Special control).

### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.

### Special (Control Group)

#### View

Use this pop-up to select how to view the correction. These are the options:

#### Final Result

This option shows the rendered color balance effect.

#### View Correction B to W

Using this option the RGB curves in the lower half of the Comp Viewer shows how the values have been shifted, going from black to white, horizontally. Clipping can be seen where curves go outside the top and bottom of the graph. In the upper part of the Comp Viewer shifted values, and where they have been shifted, are rendered against both a black and white ramp and a strip of neutral grey. At the very top there is also a black and white ramp that serves as a reference.

#### View Correction Stair

Same as above but viewed as a traditional stair (Black, lower left corner. White, upper right corner).

#### Black and White Point

Use these sliders to (re)define Black and White points. This will affect what is defined as shadows and highlights.

# CC COLOR OFFSET

Color Offset allows you to rotate the value of each color channel. The rotation starting point is the original value for that color channel.

## **Controls**

### **Red Phase, Green Phase, Blue Phase**

Use these controls to set the rotation value for each color channel individually. Measurements are in degrees. Two revolutions, in either direction, return the original values of the source layer.

## **Overflow**

Use this control to select the method used to remap color values that falls outside the legal 0-255/0-32768 range. Choose one of the following options from the pop-up menu:

### **Wrap**

Forces overflow values back into the valid range.

### **Solarize**

Reflects color overflow back to lower values.

### **Polarize**

The reflection is smoother than that created by Solarize, using polar coordinates Instead of a triangular wave.

# CC KERNEL

Kernel is a 3 x 3 convolution filter. This is a way to perform basic color calculations on pixels and can be used to create effects such as gaussian blur, sharpen, emboss and find edges, the possibilities are almost endless. The grid consists of 9 values in a matrix. The center value corresponds to the pixel being processed and the surrounding values to their relative position in the matrix. A number of Animation Presets are included to illustrate some of the effects that can be performed and will provide you with a starting point to experiment with your own ideas.

## **Controls**

### **Line 1, Line 2 and Line 3 (Control Groups)**

These Lines (groups) and their sub-controls, together, form the matrix. There are three controls per Line that each represent a pixel, 3 (rows) x 3 (columns), laid out like this:

Line 1 -> [1 - L1] [2 - L1] [3 - L1]

Line 2 -> [1 - L2] [2 - L2] [3 - L2]

Line 3 -> [1 - L3] [2 - L3] [3 - L3]

The processed pixel (center value) is at: Line 2 -> [2 - L2]. If you have used convolution matrices before and know what's going on, start setting your pixel values, if you feel like you need a "kick start", load one of the included presets and start from there. No matter how you get started, Kernel leaves lots of room for experimentation to create unique custom pixel based effects. Don't forget to save them as your Animation Presets.

## **Divider**

Use this control to scale all values in the matrix, e.g if you would rather enter whole numbers in the matrix instead of fractions. It can also be used to make the effect appear stronger or weaker.

## **Absolute Values**

Check this option to use absolute values for pixel color calculations, meaning that negative results are interpreted as positive. When this is not checked, relative values are used, i.e negative results are allowed in 32 bpc (float) and are interpreted as black in 8 bpc and 16 bpc. At default this control is unchecked.

### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.



# CC TONER

Toner is a color-mapping effect based on the luminance of the source layer. You can chose to use two (duotone), three (tritone) or five (pentone) colors from the source layer that can be mapped to any color using standard color pickers or by sampling an on-screen color.

## **Controls**

### **Tones**

Use this pop-up to select the number of tones to color-map. Choose one of the following options from the pop-up menu: Duotone, Tritone, Pentone.

### **Highlights, Brights, Midtones, Darktones and Shadows**

Use these controls to specify the colors to be mapped to the corresponding luminance values.

Supervised: These controls are enabled/disabled depending on the selection in the Tones control.

### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.

## CC BEND IT

Bend It bends the source layer, like a circus strong man bends a steel bar. You can use it to make a flag wave in the breeze. This is a real bend, not a 'slant'. This makes it possible to bend the source layer until the opposite sides meet.

### **Controls**

#### **Bend**

Use this control to determine the amount of bending. Positive values bend one way, negatives bend the other.

#### **Start and End**

Use these controls to position the two reference points on the source layer, that serves as 'handles' for the bend effect, based on X, Y coordinates. The Start point marks the start of the area on the source layer that will be bent, and also functions as the pivot point for the bend. The End point marks the end of the area on the source layer that will be bent.

#### **Render Prestart**

Use this control to determine how to render the region before the Start point. Choose one of the following options from the pop-up menu.

##### **None**

Does not render source layer before the Start point.

##### **Static**

Renders the source layer before the Start point without bending.

##### **Bend**

Continues to bend source layer before the Start point.

##### **Mirror**

Bent mirrors the source layer between the Start and End point across the Start point.

## Distort Menu - CC Bend It

### **Distort**

Use this control to determine how to render the region beyond the End point. Choose one of the following options from the pop-up menu.

### **Legal**

Does not render the source layer beyond the End point.

### **Extended**

Renders to the extent of the source layer.

## CC BENDER

The Bender plug-in creates a distortion between two user definable points on the source layer, creating the illusion of bending. This effect can be used to create realistic waving or swaying effects (such as a flag in the wind or a building during an earthquake), or to create humorous or just plain bizarre effects (such as dancing bottles or weird facial distortions). To animate these distortions you will (obviously) need to set at least two keyframes, using different Bend values or different control points (Point A and B) for each keyframe.

### **Controls**

#### **Amount**

The Amount slider controls the amount of bending. Positive values bend one way, negatives bend the other.

#### **Style**

Select the style on which to base the bending effect on. Choose one of the following options from the pop-up menu.

#### **Bend**

Creates a smooth bend from the Base point, by only bending at the Top point. When the bend Amount increases it forces the affected area sideways from the Top point. Moving the points towards each other increases the sideways force at the top.

#### **Marilyn**

Creates a smooth curvaceous bend between the Base and Top points. Moving the points towards each other decreases the affected area.

#### **Sharp**

Creates a sharp triangular bend between the Base to Top points. Moving the points towards each other decreases the affected area.

#### **Boxer**

Creates a smooth bend between the Base to Top points. When the bend Amount increases it forces the affected area sideways at the Top point, reminiscent of a boxer ducking or weaving to avoid a thrown punch.

### **Adjust To Distance**

Check this option to use relative values, to the distance between the Base and Top points, in the Amount slider. When this is not checked, absolute values are used (default setting).

## CC BLOBBYLIZE

Blobblyize can create a blobby, glossy cutout on any source layer based on a channel property of another layer. The blob layer can be virtually anything, from simple text to complex particle animations. You can also control the amount of blobbiness.

### Controls

#### **Blobbiness (Control Group)**

##### **Blob Layer**

Use this pop-up menu to select which layer within the composite you want to use as a 'stencil' to create your blobby cutout.

##### **Property**

Select the channel information from the selected Blob Layer on which to base the blobbiness. Choose one of the following options: Red, Green, Blue, Alpha, Luminance, Lightness.

##### **Softness**

Use this control to determine the softness (or blurring) of the selected Blob Layer. Higher Softness values will remove small details and increase the blobbiness and depth appearance.

##### **Cut Away**

Use this control to determine where blobs should be cut off. A value of 0 cuts nothing away, original values are kept. A value of 100 cuts everything away, resulting in an empty frame.

#### **Light (Control Group)**

##### **Using**

Use this pop-up to select whether to use the Effect Light source or AE Lights. If AE Lights is selected, none of the controls in this group are used. Please refer to the After Effects manual on how to use lights in a composition.

##### **Light Intensity (Supervised)**

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

## **Light Color (Supervised)**

Use this control to select a color for the light.

## **Light Type (Supervised)**

Use this control to select which type of light you want to use. Choose one of the two options from the pop-up menu.

### **Distant Light**

This type simulates sunlight shining on the source layer from a user-definable angle. All light rays strike the layer from this same angle.

### **Point Light**

This type simulates a light bulb hanging in front of, the layer at a user-definable distance and position. Light rays strike the layer from this defined light position.

## **Light Height (Supervised)**

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

## **Light Position (Supervised)**

Use this control to position the point light on the source layer, based on X, Y coordinates. Not used if Effect Light and Distant Light are selected.

## **Light Direction (Supervised)**

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer. Not used if Effect Light and Point Light are selected.

## **Shading (Control Group)**

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

### **Ambient**

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon). When using Effect Light, a 100% white ambient light source is always active. When using AE Lights, only ambient lights in the composition are used.

### **Diffuse**

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

### **Specular**

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

### **Roughness**

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

### **Metal**

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.



## CC FLO MOTION

Flo Motion produces a vortex distortion, something like a black hole pulling in or ejecting an object. Flo Motion is especially useful for producing flowing effects in backgrounds, but can also be applied to foreground objects.

### **Controls**

#### **Finer Controls**

Use this check box to increase the sensitivity by a factor of twenty for the two Amount controls. When this option is turned on, a setting of 20 is equivalent to a setting of 1 when turned off. At default settings Finer Controls is turned off.

#### **Knots 1 & 2**

Use these controls to position the two reference points on the source layer, based on X, Y coordinates. This is where the distortion will start or end when adjusting their respective Amount controls.

#### **Amount 1 & 2**

Use the Amount sliders to control the amount of distortion applied at their respective Knots. Positive values appear to pull, or suck, the source layer into the Knot. Negative values appear to push, or blow, the source layer out from the Knot.

#### **Tile Edges**

Use this check box to determine if the source layer will be tiled at the edges when distorted by the effect. Each tile is mirrored to produce seamless tiling. At default settings Tile Edges is turned on.

#### **Antialiasing**

Use this pop-up menu to set the antialiasing of the distorted source layer. The layer needs to be set to best quality for antialiasing to be applied. Choose one of the following options: Low, Medium, High (Set to Low at default). Use the setting that is most sufficient for the distortion you create, higher antialiasing settings increase rendering times.

#### **Falloff**

Use this control to fine tune the intensity of distortion effect without changing any of the other settings. The lower the Falloff value, the more concentrated the vortex effect, and the larger the number of tile iterations. A Falloff value of 0 produces the highest concentration. A value of 10 produces nearly no Falloff.

## CC GRIDDLER

The Griddler plug-in can be used to cut and animate a layer into squares. Grid-dler creates a tiled version of the source layer, while scaling and rotating the tiles. The smaller the size setting, the more tiles there are. Larger size settings produce fewer tiles.

### **Controls**

#### **Horizontal and Vertical Scale**

Use these controls to scale the source layer content of the tiles (actual tile size is set in the Tile Size control). If the horizontal and vertical scales are both at 100, the tiles are completely filled with the visible parts (if alpha channel not fully opaque) of the original source layer at the time they begin to rotate. If the horizontal and vertical scale are both at 50, the visible parts of the source layer is scaled down by half in the center of each tile, leaving the rest of each tile transparent (See Cut Tiles below for an exception to this). Using negative values inverts and scales the source layer. Setting scale to -100 is the mirrored equivalent of the source layer at 100.

#### **Tile Size**

Use this control to determine the actual size of the tiles (use the Scale controls to scale the source layer content on tiles).

#### **Rotation**

Use this control to rotate the tiles in place, based on degrees.

#### **Cut Tiles**

When checked, tiles will only render their normal size, leaving transparent gaps in-between when rotated or scaled down. At default Cut Tiles is turned on.

## CC LENS

Use Lens to create a lens distortion effect. The distortion can be outward or inward from the center.

### **Controls**

#### **Center**

Use this control to position the center point of the virtual lens on the source layer, based on X, Y coordinates.

#### **Size**

Use this control to determine the size of the virtual lens.

#### **Convergence**

Use this control to determine the amount of distortion applied.

## CC PAGE TURN

Page Turn peels back the layer to reveal the background. The effect is like turning the page of a book to show the next page. You will want to make sure you choose settings that peel the page completely off the screen. This may mean setting a Fold Position that is off the screen. For example, to fold a page from the lower right to the upper left, leave Page Turn at the default setting of -60 degrees. Then move the Fold Position to the lower right corner, providing you selected the lower right corner of the source layer for the starting point in Fold Edge Position.

### Controls

#### Controls

Use this pop-up menu to select the UI option to be used for the Fold Position control point in the Comp Viewer. When Classic UI is selected, behavior is the same as in previous versions, the control point is tied to the fold. Using the Corner options, the control point is tied to the selected corner, offering a more realistic feeling of turning a page. In some cases the Classic UI can provide more control. Choose one of the following options, Classic UI, Top Left Corner, Top Right Corner, Bottom Left Corner, Bottom Right Corner.

#### Fold Position

This control determines the completion percentage of the page turn, based on X, Y coordinates (you must keyframe this control to animate a page turn transition).

#### Fold Direction (Supervised)

Use this control to determine the direction in which the page will fold. Measurements are in degrees. This control is only enabled if Classic UI is selected in Controls.

#### Fold Radius

Use this control to determine the radius, or sharpness, of the fold edge. A lower setting creates a sharp folding. A higher Fold Radius setting creates a more rounded folding.

#### Light Direction

Use this control to determine the direction from which light strikes the backside of the page curl. Measurements are in degrees.

### **Render**

Use this pop-up menu to select which page sides you want to render. Mainly useful if you wish to split the page turn and composite another layer in-between, in this case you must duplicate the effect to appear in front and behind the middle layer. Choose one of the following options, Full, Frontside, Backside.

### **Back Page (Supervised)**

Use this pop-up menu to select which layer you want to use for the back of the peeled page. The same layer can be selected for the backside of the page as for the front side. Select None to instead specify a color for the backside of the page. This control is disabled when Back Page is selected in Render.

### **Back Opacity (Supervised)**

Use this control to determine the transparency level of the Back Page. At 100%, the selected back page is completely opaque. At 0%, the selected back page is completely are completely transparent. This control is disabled when Back Page is selected in Render.

### **Paper Color (Supervised)**

Use this to select a color for the back of the page. Paper Color is only used if None is selected in the Back Page control and is disabled when Front Page is selected in Render.

## CC POWER PIN

Power Pin lets you slant, scale and apply perspective to a layer. Power Pin is easy to use. It lets you treat the layer as if it was on a sheet of rubber. You can stretch any corner and 'pin it in place'.

### **Controls**

#### **Composition View UI**

Guides for pinning plane vanishing points and horizon hint. Guides can be dragged to proportionally modify pinpoints of the corresponding side. Also features a “center guide” that can be toggled on/off in the top left corner of the Composition View. If possible, a 3D camera zoom estimation (view angle) will be shown in the Info panel. Vanishing points horizon and camera hints are not drawn if perspective is set to 0 (Off).

### **Scrubbers**

The Scrubbers are indirect manipulation tools. You drag them to change the settings of one or more of the controls.

#### **Move**

Drag to move all the control points.

#### **Grid**

Click to toggle the Perspective control between zero and 100%.

#### **Scale**

Drag up/down or left/right to scale the control points.

### **Top Left, Top Right, Bottom Left, Bottom Right**

These four reference points determines the corners of the distortion effect, based on X, Y coordinates. By moving these points the layer can be slanted or scaled differently at each corner. Twisting the points can cause unexpected results.

### **Perspective**

Use this control to modify the perspective applied when pinning. When using normal Perspective value, moving points closer to each other does not only compress the layer source, it also stretches it towards the most distorted area. The more distorted areas are, the more distant they appear. Set to 100% to achieve natural perspective. At 0%, Power Pin attempts to reduce the impact of perspective distortion as much as possible.

### **Unstretch**

Use this check box to reverse the function of the pins. Instead of distorting the layer to the pin positions, Unstretch distorts from the pin positions to the layer boundaries.

### **Expansion (%)**

These four controls, Top, Left, Right, Bottom, let you expand, or shrink, the pinning target area. Positive values expand the area by that percentage. This is useful if your tracked points reside within the target pin area. Then you don't need to modify the trackpoints, instead you assign the trackpoints to the pin points and adjust the Expansion to match the target area.

## CC RIPPLE PULSE

The Ripple Pulse plug-in creates a ripple wave (to create effects like dropping a pebble into a pool, or forcing a cork underwater and let it go) from a user-defined center point. This effect is especially effective when synced with sound (Using expression or similar tool). The wave form of the ripple is defined by animating the Pulse Level control. To animate this effect you will need to set at least two keyframes to the Pulse Level control. To create a good ripple, the first keyframe should have a lower Pulse Level value, while the second keyframe's Pulse value should be relatively high.

### **Controls**

#### **Center**

Use this control to position the ripple wave on the source layer, based on X, Y coordinates.

#### **Pulse Level (Animate)**

Use this control to determine the strength of the pulse creating the ripple. This control must be keyframed. Using positive values, the direction of the pulse force is outward from the center point. Using negative values, the direction of the pulse force is inward at the center point.

#### **Time Span (sec)**

This control determines the speed of the ripple wave. Time Span decides how far back in time the ripple spans. The Pulse Level values within this range will be rendered.

#### **Amplitude**

This control determines the height of the ripple crest. Higher values increase the height of the ripple wave/distortion. Lower values create a smoother ripple.

#### **Render Bump Map (RGBA)**

Use this check box to specify that the animated ripple is to be rendered as a bump map, which can then be used by any other plug-in that works with bump maps (such as Glass). At default settings Render Bump Map is turned off.



## CC SLANT

Slant tilts a layer, or a matte color of the layer content, horizontally. The vertical scale of the source layer can be controlled, as well as the baseline "floor" of the tilt. This is useful for creating general distortions, as well as shadows behind text and other layers if the matte color option is checked.

### **Controls**

#### **Slant**

Use this control to determine direction and amount of slant (or tilt). Using positive values slants the source layer to the right. Using negative values slants the source layer to the left. With Stretching un-checked, using values outside the -100 and 100 range, continues the slant (or tilt) of the source layer in the chosen direction, making it appear to rotate around the baseline set in the Floor control.

#### **Stretching**

Use this check box to allow the layer to stretch when slanted. When disabled, slanting will cause layer to scale in height to prevent stretching of the layer. This results in a flip of the layer if Slant goes beyond 100 in any direction.

#### **Height**

Use this control to determine the vertical scale of the slanted (or tilted) source layer. Moving the slider toward 0 scales the source layer down vertically. Moving the slider toward 100 gradually restores the source layer to full height. Using negative values mirrors and scales the source layer in the opposite direction. Setting scale to -100 is the mirrored equivalent of the source layer at 100.

#### **Floor**

Use this control to determine the position of the floor (or baseline) for the slant effect, based on X, Y coordinates (only Y is used).

#### **Set Color**

Use this check box to replace the source layer with a color selected in the Color control (see below). Alpha channel is untouched.

#### **Color (Supervised)**

Use this to select a color for the layer. Color can only be used if Set Color is checked.

## CC SMEAR

The Smear plug-in allows you to create animatable warping distortion effects. Smear warps a radial area on the source layer, based around a starting point, towards an end point. You can apply multiple Smear effects to your source layer and put the From and To points of each effect instance in different positions to create great warping effects.

### **Controls**

#### **From and To**

Use these controls to position the start and end points of the warp effect on the source layer, based on X, Y coordinates. Smear affects a radial area around the From point and warps it toward the To point.

#### **Reach**

Use this control to determine the amount of warping towards the To point. The higher the value, the more the distortion. Useful if the destination point doesn't correspond to the actual destination of the smear effect, e.g. when using tracking points. This can also be set below zero which will smear in the opposite direction.

#### **Radius**

Use this control to determine the size of the radial area, around the From point, to be warped.

## CC SPLIT

The Split plug-in creates a split or crack in the source layer between two user-definable points. Animating the amount of splitting can create effects similar to a mouth or zipper opening and closing.

### **Controls**

#### **Point A and Point B**

Use these controls to position the start and end points of the splitting effect on the source layer, based on X, Y coordinates.

#### **Split**

Use this control to determine the amount of splitting between the A and B points.

## CC SPLIT 2

The Split plug-in creates a split or crack in the source layer between two user-definable points, just as Split does. The difference is that Split 2 allows controlling the amount of splitting on each side of the two points individually. Animating the amount of splitting can create effects similar to a mouth or zipper opening and closing.

### **Controls**

#### **Point A and Point B**

Use these controls to position the start and end points of the splitting effect on the source layer, based on X, Y coordinates.

#### **Split 1 and Split 2**

Use these controls to determine the amount of splitting on each side between the A and B points.

#### **Profile (Options)**

Opens a dialog in which a custom profile of the split can be defined or selected from a preset menu.

## CC TILER

Tiler scales down and tiles the source layer to fill the screen. In addition to defining the amount of scaling, you can also use Tiler to determine the center point around which to scale the source layer. This is useful for animation because it allows you to scale the source from a set point.

### **Controls**

#### **Scale**

Use this control to scale and tile the source layer content. A Scale setting of 100 retains the original size of the source layer. When reducing the scale, the source layer is scaled down and tiled to fill the screen.

#### **Center**

Use this controls to position the center point, or anchor point, from which the source layer will be scaled, based on X, Y coordinates.

#### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.

## CC GLUE GUN

The Glue Gun plug-in is a painting effect that uses blobby particles to create the illusion (when animated) of writing or drawing with a glue gun or tube of toothpaste. A more liquid, nozzle-based effect can also be created. The 'paint' can be highly reflective, mirroring the source layer, if desired. Painting or writing can be accomplished by manually setting keyframes and moving the brush position. After effect users with the Production bundle can use the Motion Sketch keyframe assistant to 'brush' their lines onto the source layer.

### **Controls**

#### **Brush Position**

Use this control to position the brush on the source layer, based on X, Y coordinates. Combining changes in brush position with proper use of keyframes can create a very convincing illusion of brushing or writing.

#### **Stroke Width**

Use this control to determine the width of the brush stroke.

#### **Density**

Use this control to determine the density at which blobs (or particles) are generated along the brushstroke's path (similar to birth rate in particle systems). At lower values individual blobs are visible along the brushstroke's path, while higher values can produce a complete dense and even brush stroke. The density is also affected by the time interval between keyframes set for Brush Position.

#### **Time Span (sec)**

Use this control to determine the life span (in seconds) of the brush stroke. Setting this parameter to 0 makes the brushstrokes permanent.

#### **Reflection**

Use this control to determine how much the source layer is reflected in the brush stroke. The higher the setting, the more the brush stroke reflects its environment (source layer).

#### **Strength**

Use this control to determine the blobbiness of the brush stroke. It affects how strong the blobs of the brush stroke will blend together.

## Style (Control Group)

### Paint Style

Use this pop-up menu to select which 'paint' style to use for the brush stroke. Choose one of the following options:

#### Plain

Static, 'toothpaste' type stroke.

#### Wobbly

Very liquid, constantly changing stroke.

### Wobble Width and Wobble Height (Supervised)

Use these controls to determine how far the 'paint' blobs will move, horizontally and vertically, from their original positions while wobbling along the brush stroke. These controls are only used if Wobbly is selected for Paint Style.

### Wobble Speed

Use this control to determine the speed of the wobbling. The higher the value, the faster the 'paint' blobs wobble within the range determined in the Wobble Width and Height controls. This control is only used if Wobbly is selected for Paint Style.

## Light (Control Group)

### Using

Use this pop-up to select whether to use the Effect Light source or AE Lights. If AE Lights is selected, none of the controls in this group are used. Please refer to the After Effects manual on how to use lights in a composition.

### Light Intensity

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

### Light Color

Use this control to select a color for the light.

## Light Type

Use this control to select which type of light you want to use. Choose one of the two options from the pop-up menu.

### Distant Light

This type simulates sunlight shining on the source layer from a user-definable distance and angle. All light rays strike the layer from the same angle.

### Point Light

This type simulates a light bulb hanging in front of, the layer at a user-definable distance and position. Light rays strike the layer from the defined light position.

## Light Height

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

## Light Position (Supervised)

Use this control to position the point light on the source layer, based on X, Y coordinates. Not used if Effect Light and Distant Light are selected.

## Light Direction (Supervised)

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer. Not used if Effect Light and Point Light are selected.

## Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

### Ambient

Use this control to determine how much ambient (nondirectional) light is reUse this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon). When using Effect Light, a 100% white ambient light source is always active. When using AE Lights, only ambient lights in the composition are used.

### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

## **Specular**

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

## **Roughness**

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

## **Metal**

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.



## CC LIGHT BURST 2.5

Light Burst 2.5 is a type of radial blur that creates an effect that looks like the source layer is exploding with light. Light Burst 2.5 works best on a layer with an alpha channel.

### **Controls**

#### **Center**

Use this control to position the center point of the light source on the source layer, based on X, Y coordinates.

#### **Intensity**

Use the Intensity slider to control the power (or strength) of the light.

#### **Ray Length**

Use this slider to control the length of the light rays (amount of blurring).

#### **Burst**

Select the type of burst (blur) method to use for light ray behaviors. Choose one of the following options from the pop-up menu.

##### **Straight**

Blurred pixels radiates out from the center point with constant strength.

##### **Fade**

Blurred pixels radiate out from the center point and fades out.

##### **Center**

Blurred pixels radiates in and out equally from the center point. This gives the effect of "zooming in".

#### **Halo Alpha**

Use this check box to let the light rays cast through the silhouette of the alpha channel. If the source layer is completely opaque (or transparent) nothing will show up when this control is enabled. With this feature disabled, the source layer uses the alpha channel to act as a light gel. At default settings this feature is turned off.

### **Replace Colors**

Use this check box to give the light rays the color you select in the Color control. This function is useful on source material containing alpha variance. If this is disabled the colors from the source layer will be used. At default settings this feature is turned off.

### **Color (Supervised)**

Use this control to select a color for the light.

## CC LIGHT RAYS

Light Rays creates wonderful, radiating streaks of light. A typical use of this effect is to overlay light rays on a background.

### **Controls**

#### **Intensity**

Use the Intensity slider to control the power (or strength) of the light. Higher values produce brighter results. (This control has extended range)

#### **Center**

Use this control to position the center point of the light source on the source layer, based on X, Y coordinates

#### **Radius**

Use this control to determine the radius (size) of the light source. This affects how far the light rays reach. Higher values produce brighter results. (This control has extended range)

#### **Warp Softness**

Use this control to determine the softness, or warping, of light rays. The effect is similar to light rays shining through haze or fog. This also affects how intense, or sharp, the selected shape of the light source appears on the source layer. Lower values increase sharpness, making individual rays appear more distinct, while higher values softens (warps) light rays together into larger, more subtle, rays. (This control has extended range)

#### **Shape**

Use this pop-up menu to select the shape for the light source. Choose one of the following options: Round, Square

#### **Direction (Supervised)**

Use this to control to determine the rotation of the light source. Not in use if Round is selected for Shape.

Tip: Center a Rectangular shaped light on some variegated source layer content. Set key frames for the Direction control to rotate the light. You'll get moving/ flashing light rays.

### **Color from Source**

Using this check box, the color of the light is sampled from the source layer. If this is disabled, the color selected in the Color control (see below) will be used. At default settings this feature is turned on.

### **Allow Brightening**

Using this check box will give brightness a boost at higher Intensity values, 100 or greater. Lower values have less impact. At default settings this feature is turned on.

### **Color (Supervised)**

Use this control to select a color for the light. Click the color swatch to use the Color Picker, or select a color using the eyedropper.

### **Transfer Mode**

Use this pop-up menu to select which composite method to use between the effect and the source layer. Each offers a different result. Choose one of the following options, None, Add, Lighten, Screen.

## CC LIGHT SWEEP

Light Sweep creates a streak of light, like light reflected on a highly anisotropic surface. If the source layer contains alpha channel information, opaque areas can be given an embossed appearance.

### **Controls**

#### **Center**

Use this control to position the center point of the light beam on the source layer, based on X, Y coordinates. It also serves as the anchor point for the Direction control.

#### **Direction**

Use this control to determine the direction of the light beam. The Center point serves as the anchor for rotation.

#### **Shape**

Use this control to determine how the light beam fades towards its edges. Choose one of the following options from the pop-up menu, Linear, Smooth, Sharp.

#### **Width**

Use this control to determine the width of the light beam. (This control has extended range)

#### **Sweep Intensity**

Use the Sweep Intensity slider to control the power (or strength) of the light beam. Higher values produce brighter results. (This control has extended range)

#### **Edge Intensity**

Use this control to determine the amount of embossing introduced at the edges of where light strikes edges to opaque areas the alpha channel. The edges are highlighted from the angle set in the Direction control. Higher values produce sharper and brighter edges, increasing the feeling of depth. Use this control in conjunction with Edge Thickness (below) to fully control the edge behavior. A slight speed Increase can be achieved by setting this control to zero. (This control has extended range)

## Edge Thickness

Use this control to determine the thickness of the edge that is affected by the embossing, determined in the Edge Intensity control. Using higher thickness values, combined with lower Edge Intensity values, also increases the feeling of depth and produces a smoother highlighted edge. (This control has extended range)

## Light Color

Use this control to select a color for the light beam.

## Light Reception

Use this pop-up menu to select which composite method to use between the effect and the source layer. Each offers a different result. Choose one of the following options, Add, Composite, Cutout.

## CC THREADS

This effect generates a pattern of interleaved threads on the source layer. Apart from being able to set Width, Height and Direction of threads, there are also several controls available to adjust the visual appearance, Overlap, Center, Coverage, Shadowing and Texture give you full control of the look and feel of threads. This allows you to, in a single step, create unique and interesting patterns that can for example be used as an animated, or a static, background.

### **Controls**

#### **Width and Height**

Use these controls to determine the width and height of threads in the pattern.

#### **Overlaps**

Use this control to set the number of threads each thread overlaps. This generates different weave types. Overlaps can not be animated.

#### **Direction**

Use this control to determine the orientation of threads. Measurements are in degrees.

#### **Center**

Controls the center of the pattern. Use this to offset the pattern and to define the rotation point for the Direction control.

#### **Coverage**

Use this control to adjust how much area a thread covers. Setting this value to 100, each thread covers almost 100% of it's designated area, leaving only minimal gaps to it's closest neighboring threads. Setting this value to 50, each thread covers 50% of it's designated area, leaving a 50% gap to it's closest neighboring threads (25% on each side).

#### **Shadowing**

Use this control to set the amount of shadow threads are casting on underlying threads. The light model can be seen as a kind of ambient illumination.

#### **Texture**

Use this control to add a textured feeling to the threads. This will enhance the contrast between perpendicular threads.

# CC SIMPLE WIRE REMOVAL

Simple Wire Removal is a handy effect for taking out the wires used in special effects photography, like go-motion. Wire Removal uses advanced algorithms to replace the wire with background layers. In go-motion photography, a model or puppet that is animated by manipulating a set of rods or wires. In post-production, the wires are removed so the subject looks like it's moving autonomously. Wire Removal cleans up a single wire. If the layer has several wires, you can apply the effect multiple times.

## **Controls**

### **Point A and Point B**

Use these controls to position the start and end points of the wire removal path on the source layer, based on X, Y coordinates.

### **Removal Style**

Use this pop-up menu to select which method to use for removing the wire. Choose one of the following options:

#### **Fade**

Clears a path through the layer. The background appears through the faded area.

#### **Frame Offset**

Brings in pixel data from a previous or subsequent frame set with the Frame Offset slider.

#### **Displace**

Brings in pixel data from outside the remover. This interpolated pixel data replaces the wire.

#### **Displace Horizontal**

Uses the Displace technique, but constrains its sampling to the horizontal.

### **Thickness**

Use this control to determine the width of the removal path. For best results, the Thickness should be only as wide as necessary to completely remove the wire.



### **Slope**

Use this control to determine the softness of the removal path edge. Using lower slope values, the transition into the removal path is gradual. Using higher slope values the edge becomes abrupt.

### **Mirror Blend (Supervised)**

Use this control to adjust the pixel-replacement method used by the two Displace options (Removal Style). The default of 25 is good in most cases. If the removal leaves artifacts try shifting Mirror Blending one way or the other. This control is not in use when Fade and Frame Offset is selected in the Removal Style control.

### **Frame Offset (Supervised)**

Use this control to specify a frame to be used by the Frame Offset pixel-replacement method (Removal Style). This control is not in use when Fade, Displace and Displace Horizontal are selected in the Removal Style control.

## CC CYLINDER

Cylinder wraps the source layer onto a 3D cylinder. It supports AE's comp camera, which lets you move the camera around the cylinder in virtual space to view it from any angle. You can also use a built in light source lighting to change its 3D appearance.

### **Controls**

#### **Scrubbers**

The Scrubbers are indirect manipulation tools. You drag them to change the settings in one or more of the controls. To reset a single Scrubber control to its default value, Command-click (Ctrl-Shift-Click) on it. Standard Shift key constraints are also available. The Control/Ctrl key toggles available control options.

#### **Position**

Drag on this control to change the position of the cylinder. Values are in world space. Use the '+' symbol to move along the X and Y axes, and the 'Z' to move along the Z axis

#### **Rotation**

Drag the Rotation trackball to change the rotation of the cylinder.

#### **Radius (%)**

Use this control to determine the radius of the cylinder.

### **Position (Control Group)**

#### **Position X, Y and Z**

These sliders determine the position of the cylinder within the source layer, based on X, Y, Z coordinates respectively. Positive Z values move the producer farther away, while negative Z values move it closer. (The Position Scrubbers can also be used to adjust the position of the cylinder)

#### **Rotation (Control Group)**

#### **Rotation X, Y and Z**

Use these controls to rotate the cylinder within the source layer, in X, Y, Z space. Measurements are in degrees. (The Rotation Scrubber can also be used to rotate the cylinder)

### Render

Use this pop-up menu to select which sides of the cylinder you want to render. Mainly useful if you wish to split the cylinder and composite another layer in-between, in this case you must duplicate the effect to appear in front and behind the middle layer. Choose one of the following options, Full, Outside, Inside.

### Light (Control Group)

By default an ambient light source at 100% is always present.

#### Light Intensity

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

#### Light Color

Use this control to select a color for the light.

#### Light Height

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

#### Light Direction

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer.

### Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

#### Ambient

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon).

#### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

### **Specular**

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

### **Roughness**

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

### **Metal**

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.

## CC ENVIRONMENT

Environment is a filter that enables the use of Spherical Map (Latitude-Longitude), Light Probe (Angular Map) and Vertical Cross images as environments in compositions, similar to 3D programs, where an AE comp camera is present and active. HDR images are supported for all three formats. When a camera's transform parameters have been animated, you'll appear to be looking around in the environment. Includes controls for horizontal panning and texture filtering. This effect would typically be applied to a solid layer the same size as the composition.

Note. Environment is not intended to use masks or pre-effects. To mix two or more maps using masks or to add effects, do that to your source(s) not the layer Environment is applied to.

### **Controls**

#### **Environment**

Use this pop-up menu to select the layer you want to use as environment in the composition.

#### **Mapping**

Use this pop-up menu to determine the mapping type of the source footage. Choose one of the following options:

##### **Spherical**

Select this if the source footage is a Spherical Map.

##### **Probe**

Select this if the source footage is a Light Probe.

##### **Vertical Cross**

Select this if the source footage is a Vertical Cross.

#### **Horizontal Pan**

Use this control to set the horizontal position of the environment.

#### **Filter Environment (Supervised)**

When this check box is enabled the environment is filtered for increased image quality. This control is only used if Spherical is selected in the Mapping control.

## CC SPHERE

Sphere wraps the layer onto a sphere. You can rotate the sphere, control lighting, and other surface properties.

### **Controls**

#### **Rotation (Control Group)**

##### **Rotation X, Y and Z**

Use these controls to rotate the sphere within the source layer, in X, Y, Z space. Measurements are in degrees.

##### **Radius**

Use this control to determine the radius (or size) of the sphere.

##### **Offset**

Use this control to position (or offset) the center point of the sphere within the source layer, based on X, Y coordinates.

##### **Render**

Use this pop-up menu to select which sides of the sphere you want to render. Mainly useful if you wish to split the sphere and composite another layer in-between, in this case you must duplicate the effect to appear in front and behind the middle layer. Choose one of the following options, Full, Outside, Inside.

#### **Light (Control Group)**

By default an ambient light source at 100% is always present.

##### **Light Intensity**

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

##### **Light Color**

Use this control to select a color for the light.

##### **Light Height**

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

### **Light Direction**

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer.

### **Shading (Control Group)**

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

#### **Ambient**

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon).

#### **Diffuse**

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

#### **Specular**

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

#### **Roughness**

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

#### **Metal**

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.

#### **Reflective**

Use this control to determine the spheres tendency to reflect its environment, selected in the Reflection Map control (see below).

### **Reflection Map**

Use the Reflection Map pop-up to select a layer, to be reflected onto the sphere. For example, you may want to have a sphere reflect a sunset that is happening behind the viewer's shoulder.

### **Internal Shadows**

Use this check box to let opaque pixels cast shadows on the interior of the sphere. When this feature is disabled, no shadows are rendered in the sphere's interior. At default settings this feature is turned off.

### **Transparency Falloff**

Use this check box to let the edges of the sphere become more opaque. When this feature is disabled, the sphere has a uniform transparency. At default settings this feature is turned off.



## CC SPOTLIGHT

The Spotlight plug-in creates the illusion of a spotlight shining down on your source layer. This virtual spotlight has all of the parameters of a real spotlight, including size, angle, color, etc.

### **Controls**

#### **From and To**

Use these controls to position the starting (From) location of the light source and the target (To) on the source layer, based on X, Y coordinates.

#### **Height**

Use this control to determine the distance between the virtual spotlight and the target on the source layer in Z space.

#### **Cone Angle**

Use this control to determine the opening angle or focus of the virtual spotlight. This is similar to an aperture control.

#### **Edge Softness**

Use this control to determine the softness or sharpness of the spotlighted area's edges. Lower values result in sharper edges, while higher values result in softer, blurred edges.

#### **Color**

Use this control to select a color for the light.

#### **Intensity**

Use the Intensity slider to control the power (or strength) of the spotlight. Higher values produce brighter results.

### **Render**

Use this pop-up menu to choose how to render the spotlighted area on the source layer. Choose one of the following options:

#### **Light Only**

Clears the source layer and renders just the spotlight.

#### **Light Add**

Renders the spotlight added on top of the source layer.

#### **Light Add+**

Renders the spotlight added on top of the source layer. Light is added also to transparent areas of the source layer.

#### **Light Shadow**

Renders a shadow, in areas not illuminated by the spotlight, on top of the source layer.

#### **Gel Only**

Clears the source layer and renders just the spotlight, but uses the selected layer (see Gel Layer, below) as a gel, creating a 'slide projector' effect.

#### **Gel Add**

Renders the selected Gel Layer projected onto the source layer.

#### **Gel Add+**

Renders the selected Gel Layer projected onto the source layer. Light is added also to transparent areas of the source layer.

#### **Gel Shadow**

Renders a shadow but lets light through the projected Gel Layer.

### **Gel Layer (Supervised)**

Use this pop-up menu to select a layer within the composition that will be used as a 'gel' for the spotlight. Assigning a Gel Layer, the spotlight can be used as a slide projector of sorts, projecting the source layer onto another. This control is only used if you have selected one of the Gel options from the Render menu, above.

## CC BALL ACTION

Use the Ball Action plug-in to transform the source layer into an array of balls. You can rotate and twist the array around a specified axis and scatter the array in all directions. It supports AE's comp camera, which lets you move the camera around the array. Only completely opaque pixels in the source layer transform into balls.

### **Controls**

#### **Scatter**

Use this control to determine the amount of the scattering. The higher the value, the further the balls scatter away, in all directions, from their original positions. (This control has extended range)

#### **Rotation Axis**

Use this control to select a single rotation axis or axis combination. This selection will be used to rotate the array of balls around, when using the Rotation and Twist Angle controls (see below). Choose one of the following options from the pop-up menu:

##### **X, Y, or Z**

The array rotate around the selected axis.

##### **XY, XZ, or YZ**

The array rotate on the two selected axis simultaneously.

##### **XYZ Axis**

The array rotate on all three axes simultaneously.

##### **X15Z Axis**

The array rotate 15 times around the Z axis for every one rotation around the X axis. The effect is like a whirl, or a rotating galaxy. The settings for this are very sensitive.

##### **XY15Z Axis**

The array rotate 15 times around the Z axis for every rotation around both the X and Y axis. The settings for this are very sensitive.

#### **Rotation**

Use this control to rotate the array of balls around the axis selected in the Rotation Axis control (see above). The array can be rotated any number of degrees and revolutions, using positive or negative direction.

### **Twist Property**

Use this control to select a Twist Property. Twisting is a rotation offset which is applied to the array of balls using a specified rule, the Twist Property. This selection will determine how the array is twisted when using the Twist Angle control (see below). Choose one of the following options from the pop-up menu:

#### **X Axis and Y Axis**

The array is twisted around the selected axis

#### **Center-X and Center-Y**

The array is twisted around the center point of the selected axis.

#### **Radius**

The array is twisted around the center of the source layer. The twisting effect diminishes toward the periphery.

#### **Random**

The array is twisted around randomly to create a chaotic effect.

#### **Red, Green, Blue**

The array is twisted based on the intensity of the color you select. The least intense areas twist the most.

#### **Brightness**

The array is twisted based on the brightness of the source layer, with the darkest portion twist the most.

#### **Diamond**

The array is twisted in a diamond shape.

#### **Rectangle**

The array is twisted in a rectangular shape.

#### **Fast Top**

The array is twisted around the X and Y axis, with faster twisting around the Y axis.

### **Twist Angle**

Use this control to apply twist to the array, based on the property selected in the Twist Property control (see above). The array of balls can be twisted any number of degrees and revolutions, using positive or negative direction.

### **Grid Spacing**

Use this to control the dimension of the array into which the layer will be transformed. A higher value creates less and larger cells, which produces fewer balls. A lower value creates more and smaller cells, which produces more balls. (This control has extended range)

### **Ball Size**

Use this control to determine the size of the balls. The ball size is relative to the Grid Spacing (see above). This means that you can adjust the size of the balls to be smaller or larger than the cells they reside in. When balls are smaller, empty cell areas are transparent. When balls are larger, cells will be completely filled to the extent that they start overlapping each other. (This control has extended range)

### **Instability State**

Use this control to rotate scattered balls around their individual array positions. Scatter must be non zero for this to have any effect. For animated instability, this control must be animated. Instability State can be any number of degrees and revolutions, using positive or negative direction.

## CC BUBBLES

Bubbles create a 'bubble' effect in the selected layer.

### Controls

#### **Bubble Amount**

Use this control to determine the number of bubbles. The number of bubbles selected may not correspond to the number that actually appears in the source layer. (This control has extended range)

#### **Bubble Speed**

Use this control to determine the speed at which bubbles move. A positive speed value makes the bubbles rise. A negative speed value makes the bubbles fall. (This control has extended range)

#### **Wobble Amplitude**

Use this control to determine the amount of wobbling added to bubbles motion. The wobbling causes bubbles to move from side-to-side, while rising or falling. The higher the value, the more bubbles move sideways from their original path, at the frequency determined by the Wobble Frequency control (see below). (This control has extended range)

#### **Wobble Frequency**

Use this control to determine the frequency at which bubbles wobble. The higher the value, the faster bubbles move from side-to-side, at the amplitude determined by the Wobble Amplitude control (see above). (This control has extended range)

#### **Bubble Size**

Use this control to determine the overall size of the bubbles. (This control has extended range)

#### **Reflection Type**

Use this control to select reflection type for the bubbles. Choose one of the following options from the pop-up menu:

##### **Inverse Reflection**

Gives the bubbles 'self-contained' reflections, like refraction.

##### **World Reflection**

Makes the bubbles reflect the source layer.

### Shading Type

Use the Shading Type pop-up to select a shading style for the bubbles.

#### None

Fully opaque bubbles, no fading or transparency is applied.

#### Lighten

Fades the bubble color to white at the bubble's periphery.

#### Darken

Fades the bubble color to black at the bubble's periphery.

#### Fade Inwards

Makes the centers of the bubbles appear transparent, something like soap bubbles.

#### Fade Outwards

Makes the peripheries of the bubbles appear transparent.

Tip: For a smoky effect, try using Fade Outward with a very high number of bubbles.

# CC DRIZZLE

Drizzle creates circular ripple distortions that look like raindrops disturbing the reflection in a pond. Drizzle is a particle generator. The ringlets appear and spread over time.

## **Controls**

### **Drip Rate**

Use this control to determine the number of drops that are born. Lower values produce fewer drops, while higher values increase the number of drops. (This control has extended range)

### **Longevity (sec)**

Use this control to determine the ripple duration. From its birth, the ripple expands to its full radius over the course of the Longevity setting. The radius is determined by the Spreading control (see below). The higher the Longevity setting, the slower ripples expand to their full radius. Longevity cannot be animated. (This control has extended range)

### **Rippling**

Use this control to determine the number of rings in each ripple. Each rotation around the dial adds another ring.

### **Displacement**

Use this control to determine the amount of displacement. Higher values produce greater distortion. (This control has extended range)

### **Ripple Height**

Use this control to determine the appearance of height in the ripple. The height affects the displacement as well as the shaded appearance.

### **Spreading**

Use this control to determine the size (or radius) the ripples expand to. (This control has extended range)



## Light (Control Group)

### Using

Use this pop-up to select whether to use the Effect Light source or AE Lights. If AE Lights is selected, none of the controls in this group are used. Please refer to the After Effects manual on how to use lights in a composition.

### Light Intensity (Supervised)

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

### Light Color (Supervised)

Use this control to select a color for the light.

### Light Type (Supervised)

Use this control to select which type of light you want to use. Choose one of the two options from the pop-up menu.

#### Distant Light

This type simulates sunlight shining on the source layer from a user-definable distance and angle. All light rays strike the layer from the same angle.

#### Point Light

This type simulates a light bulb hanging in front of, the layer at a user-definable distance and position. Light rays strike the layer from the defined light position.

### Light Height (Supervised)

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

### Light Position (Supervised)

Use this control to position the point light on the source layer, based on X, Y coordinates. Not used if Effect Light and Distant Light are selected.

### Light Direction (Supervised)

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer. Not used if Effect Light and Point Light are selected.

## Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

### Ambient

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon). When using Effect Light, a 100% white ambient light source is always active. When using AE Lights, only ambient lights in the composition are used.

### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

### Specular

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

### Roughness

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

### Metal

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.

# CC HAIR

Hair creates particles that stretch into filaments, like hair. You can grow hair of any color on anyone or anything. Hair uses a specified property from another layer to determine where hair should grow. With no mask, hair grows everywhere. Before using Hair, you should mask the layer to describe the region that generates hair. This 'hair layer' will be above the layer containing the creature wearing the hair.

## **Controls**

### **Length**

Use this control to determine the length of the hair. Hair length together with thickness also affects the relative weight. To grow hair without changing its weight check Constant Mass below.

### **Thickness**

Use this control to determine the thickness (radius) of each hair. Hair thickness, together with length, also affects the relative weight. When using values below 1, aliasing artifacts can show. To use values less than one we recommend increasing Density and decreasing Opacity.

### **Weight**

Use this control to determine the relative weight of the hair. A higher Weight setting increases the hair's tendency to droop, like if it's wet. The weight is also affected by the length and thickness of the hair. You can animate this control to add 'bounce' to the hair.

### **Constant Mass**

Use this check box to override the calculation of each hair's mass, which normally depend on Length and Thickness. When animating the Length control, the weight should naturally increase, causing the hair to bend down as it extends. Set this control to avoid that and have the hair grow out along a static path. When this is disabled, the weight slider treats hairs mass individually.

### **Density**

Use this control to determine the density of hair follicles, from which hair grows, over the selected Map Layer. Using lower values create fewer follicle's, resulting in sparse hair growth. Using higher values create more follicles, resulting in dense hair growth.

## Hairfall Map (Control Group)

### Map Strength

Use this control to determine how strong the Map Layer's simulated z-depth should influence the hair direction. Using higher values increase the appearance of depth in the hair.

### Map Layer

Use this pop-up menu to select a layer to control how the hair falls. A height map is created from this layer, using the values defined by Map property below. A height map has ridges and crests. An up or downwards slope would give a direction away from the viewer. A flat surface will give a direction straight towards the viewer (out from the layer). E.g. a radial ramp from bright center to dark rim would be seen as a cone, seen from the top, with hairs pointing straight out from the cones surface. Experimenting with maps and using masks improves the hair's appearance.

### Map Property

Use this pop-up menu to select the channel information on which to base the height map on. Choose one of the following options: Red, Green, Blue, Alpha, Luminance, Lightness, Hue or Saturation.

### Map Softness

Use this control to determine the softness (or blurring) of the Map Layer. Higher Map Softness values will remove small details, which makes the hair fall more uniformly.

### Add Noise

Use this control to add noise to the Map Layer, after Map Softness, to make the hair fall more random. Being able to add noise after Map Softness is very useful. You can first soften a map for more uniform hair fall, and then slightly increase randomness again by adding noise. Balancing the values of these two controls adds more control over the hair fall.

## Hair Color (Control Group)

### Color

Use this control to select a hair color. To get variety in the hair color, see Color Inheritance, below.

### Color Inheritance

Essentially, the layer pixel where a hair starts to grow determines its color. When Color Inheritance is 100%, color originates entirely from the layer pixels. Lower settings mix the hair's set Color with the inherited color from the source layer.

### Opacity

Determine the opacity of the hair strands. Lowering Opacity is useful at high Density and low Thickness values.

## Light (Control Group)

By default an ambient light source at 100% is always present.

### Light Height

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

### Light Direction

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer.

## Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

### Ambient

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon).

### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

### **Specular**

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

### **Roughness**

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

Note. The Light and Shading controls work together to create the sense of depth and texture in the hair.

# CC MR. MERCURY

Mr. Mercury is a particle system that creates ever-changing blobs, rather than stable shapes. Mr. Mercury's numerous controls, especially the Influence Map and Particle Animation option, can be combined to create an almost infinite number of different animations. Mr. Mercury is especially adept at creating convincing mercurial effects for cascading water, molten metal, dissolving plastic, etc. The blobs that are created by Mr. Mercury behave realistically, splitting up and rejoining just like real-world liquid particles. The source layer is used as a reflection map for the particles. Almost all controls can be animated dynamically. Longevity is the sole parameter that really should remain static. Mr. Mercury fully supports time remapping. As with all particle systems, you may need to move ahead a little bit in the timeline before you really see the blobs.

## **Controls**

### **Radius X and Radius Y**

Use these controls to determine the size of the blob producer, based on X, Y coordinates. For example, if Radius X has twice the value of Radius Y, the result is an oblong area whose width is twice that of its height.

### **Producer**

Use this control to position the center point of the blob producer on the layer where blobs are emitting, based on X, Y coordinates. It also serves as the anchor point for the Direction control.

### **Direction**

Use this control to determine the direction of the blob flow.

### **Velocity**

Velocity sets the speed of blobs at birth. The higher the setting, the faster the blobs move. Once ejected from the producer, the speed and direction of the blobs are determined largely by gravity and other 'natural' forces. Negative settings reverse the direction of the blobs.

### **Birth Rate**

Use this control to determine the number of blobs born at any given point in time. The higher the Birth Rate, the greater the density of blobs. Using very high values can increase rendering times.

## **Longevity (sec)**

Use this control to determine how long blobs exist. The higher the Longevity setting, the longer the blobs exist. Longevity cannot be animated.

## **Resistance**

Use this control to slow down the blobs initial velocity. It simulates how blobs are influenced by resistance, coming from kinetic friction or a substance's viscosity, as they move. This feature can be used to give blobs very convincing natural behaviors, like meeting air or moving through water. The higher the value, the more resistance blobs meet, slowing them down more quickly.

## **Gravity**

Use this control to determine the gravity which influences particles. Higher Gravity will cause blobs to fall more quickly. Negative Gravity makes them rise.

## **Extra**

This control determines the amount of randomness added to particles motion. The higher the Extra setting, the greater the randomness of the particles motion. Extra affects each animation type in a different way (see the Animation type section). Some Animation types, such as 'Explosive,' do not use Extra.

## **Animation**

Use this pop-up menu to select which animation type you want. The animation type determines the movement behavior of the blobs after birth. Choose one of the following options:

### **Explosive**

The blobs are spread evenly in all directions with random speed.

### **Fractal Explosive**

The blobs are spread in a pattern according to a fractal model. This is useful for creating an uneven look, like a natural explosion. Alter the fractal model by changing the Direction control. Fractals are not interpolated. This means there will be sharp transitions if Direction is animated.

### **Twirl**

Creates a whirlpool effect. The Twirl goes in one direction, with blobs that spread evenly. Twirl is controlled by the Direction control. The Extra control determines the rotation deceleration.

### **Twirly**

Creates a random rotation Twirl, with blobs that spread evenly. The Twirl is controlled by the Direction control. The Extra control determines the rotation deceleration.



## **Vortex**

Creates a whirling, funnel-like effect. The blobs rotate upwards. Gravity controls the width of the vortex. Direction phase wheel controls rotation speed. Extra controls rotation speed deceleration.

## **Fire**

Animates the blobs to oscillate while rising. Extra controls the amplitude of oscillation. Since fire burns upward, a positive Gravity setting makes the blobs rise rather than fall.

## **Direction**

Blobs spread evenly in the direction set using the Direction control. The Extra control determines the angle of the 'blob nozzle' from which the blobs emanate. To better understand how the 'blob nozzle' works do the following, set Gravity to 0, Extra to 0 and Direction to 180°, then adjust the Extra slider using both positive and negative values.

## **Direction Normalized**

This option is like Direction, except that all blobs move at the same speed.

## **Bi-Directional**

Blobs spread evenly in both the direction set using the Direction control and in the exact opposite direction. The Extra control determines the angle of the 'blob nozzle' from which the blobs emanate. To better understand how the 'blob nozzle' works do the following, set Gravity to 0, Extra to 0 and Direction to 180°, then adjust the Extra slider using both positive and negative values.

## **Bi-Directional Normalized**

This option is like Bi-Directional, except that all blobs move at the same speed.

## **Jet**

The blobs inherit motion from the producer's movement. The Extra control adds random motion to the blobs. You must animate the Producer to create this effect.

## **Jet Sideways**

The blobs inherit motion from the producer's movement, and directs it sideways. The Extra control adds random motion to the blobs. You must animate the Producer to create this effect.

## **Blob Influence**

Blob Influence is the 'attraction' force generated by the blobs. This determines the amount and speed at which smaller blobs moves into larger blobs.

## Influence Map

Use this pop-up menu to select the behavior of the blobs as they appear and disappear. Choose one of the following option:

### **Blob out**

Blobs shrink smoothly into nothing at the moment of death.

### **Blob in**

Blobs grow smoothly out of nothing at birth.

### **Blob in & out**

Blobs grow smoothly out of nothing at birth and shrink smoothly into nothing at death.

### **Blob out sharp**

Blobs maintain a fairly consistent size during life, but shrink sharply into nothing at death.

### **Constant Blobs**

Blobs maintain a fairly constant size throughout their lives.

## Blob Birth Size

Use this control to determine the size of the blobs when they first appear.

## Blob Death Size

Use this control to determine the size of the blobs before they disappear.

## Light (Control Group)

### **Using**

Use this pop-up to select whether to use the Effect Light source or AE Lights. If AE Lights is selected, none of the controls in this group are used. Please refer to the After Effects manual on how to use lights in a composition.

### **Light Intensity (Supervised)**

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

### **Light Color (Supervised)**

Use this control to select a color for the light.

## Light Type (Supervised)

Use this control to select which type of light you want to use. Choose one of the two options from the pop-up menu.

### Distant Light

This type simulates sunlight shining on the source layer from a user-definable angle. All light rays strike the layer from this same angle.

### Point Light

This type simulates a light bulb hanging in front of, the layer at a user-definable distance and position. Light rays strike the layer from this defined light position.

## Light Height (Supervised)

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

## Light Position (Supervised)

Use this control to position the point light on the source layer, based on X, Y coordinates. Not used if Effect Light and Distant Light are selected.

## Light Direction (Supervised)

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer. Not used if Effect Light and Point Light are selected.

## Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

### Ambient

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon). When using Effect Light, a 100% white ambient light source is always active. When using AE Lights, only ambient lights in the composition are used.

### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

## **Specular**

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

## **Roughness**

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

## **Metal**

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.

## CC PARTICLE SYSTEMS II

A particle system is defined by a collection of particles that evolves over time and can be controlled to create a virtually infinite number of different animations. These animations might range from simple explosions to sparkling fountains and massive smoke screens. You can also twirl polygons in different directions, or create oscillating convex lenses. Particle Systems II is especially useful when you want to animate the position and size of the particle generator. You can also control particle generation from a logo or other source with an alpha channel. This plug-in can use the colors from the source layer, where the producer is positioned, as birth and death colors for the particles and some particle types can use the source layer as texture. Almost all controls can be dynamically animated. Longevity can not animate, it controls the life length of all particles. The control values, only affect the particle at the time of birth. Each particle will follow the effect settings as they were set at the time of birth. Eg. Animating Velocity will not affect particles born at an earlier stage.

### **Controls**

#### **Birth Rate**

Use this control to determine the number of particles born at any given point in time. The higher the Birth Rate, the greater the density of particles. Using very high values can increase rendering times.

#### **Longevity (sec)**

Use this control to determine how long particles exist. The higher the Longevity setting, the longer the particles exist. Longevity cannot be animated

#### **Producer (Control Group)**

##### **Position**

Use this control to position the center point of the particle producer on the layer where particles are emitting, based on X, Y coordinates. It also serves as the anchor point for the Direction control.

##### **Radius X and Radius Y**

Use these controls to determine the size of the particle producer, based on X, Y coordinates. For example, if Radius X has twice the value of Radius Y, the result is an oblong area whose width is twice that of its height.

## Physics (Control Group)

### Animation

Use the Animation pop-up to select a type of motion for the particles. These are the available options:

#### Explosive

The particles spread evenly in all directions with random speed. This effect is useful for creating fireworks, which you can simulate by pulsing the Birth Rate between zero and a high value.

#### Fractal Explosive

Particles are spread in a pattern according to a fractal model. Alter the model by changing the setting on the Direction control. This effect is useful for creating an uneven look, for example a natural explosion. Direction controls the fractal model. Fractals are not interpolated. This means there will be sharp transitions if Direction is animated.

#### Twirl

Creates a whirlpool effect. The Twirl goes in one direction, and the particles spread evenly. Twirl is controlled by the Direction phase wheel. Air Resistance controls rotation speed deceleration.

#### Twirly

Creates a random rotation Twirl, with particles that spread evenly. The Twirl is controlled by the Direction phase wheel. Air Resistance controls rotation speed deceleration.

#### Vortex

Creates a whirling, funnel-like effect. The particles rotate upwards. Gravity controls the width of the vortex. Direction phase wheel controls rotation speed. Air Resistance controls rotation speed deceleration.

#### Fire

Animates the particles to oscillate while rising. Extra controls the amplitude of oscillation. Since fire burns upward, a positive Gravity setting makes the particles rise rather than fall.

#### Direction

Particles spread evenly in the direction set in the Direction control. Extra defines the area covered by the effect. Turbulence defines the area covered by the effect.

### **Direction Normalized**

Particles spread evenly in the direction set in the Direction control. All particles have the same speed. Extra defines the area covered by the effect.

### **Jet Sideways**

Particles inherit motion from the Producer's movement, and direct it sideways. Extra adds randomness to particles motion. You must animate the Producer to create this effect.

### **Velocity**

Velocity sets the speed of particles at birth. The higher the setting, the faster the particles move. Once ejected from the producer, the speed and direction of the particles are determined largely by gravity and other 'natural' forces. Negative settings reverse the direction of the particles.

### **Inherit Velocity %**

Use this control to determine how much velocity the particles will inherit from the emitter's motion when its position has been animated, i.e. the producer position has to be animated for this to have any effect. A negative inheritance, would cause particles to emit in the opposite direction, like a rocket flame.

### **Gravity**

Use this control to determine the influence of gravity. Higher Gravity causes particles to fall faster. A negative Gravity setting makes particles rise. The Animation System "Fire" is an exception, where gravity is reversed.

### **Resistance**

Use this control to continuously slow down the particles velocity. It simulates how particles are influenced by resistance, coming from kinetic friction or a substance's viscosity, as they move. This feature can be used to give particles very convincing natural behaviors, like meeting air or moving through water. The higher the value, the more resistance particles meet, slowing them down more quickly.

### **Direction**

Use this control to determine the direction in which the particles will be emitted. Mainly used with corresponding directional animation systems.

### **Extra**

This control determines the amount of randomness added to particles motion. The higher the Extra setting, the greater the randomness of the particles motion. Extra affects each animation type in a different way (see the Animation type section). Some Animation types, such as 'Explosive,' do not use Extra.

## Particle (Control Group)

### Particle Type

Use this control to select the type of particle you want to use. Choose one of the following options from the pop-up menu:

#### Line

Particles are antialiased lines.

#### Star

Particles are shaped as four-pointed stars.

#### Shaded Sphere

Particles are shaped as spheres, darkened at the edges.

#### Faded Sphere

Particles are shaped as spheres, faded at the edges.

#### Shaded & Faded Sphere

Particles are shaped as spheres, which are both darkened and faded at the edges.

#### Bubble

Particles are shaped as spheres, faded toward their centers, which gives them a 'bubbly' look.

#### Motion Polygon

Particles are three sided polygons. The particle velocity affects the size of the polygons.

#### TriPolygon

Particles are three sided polygons, shaded as if the light source were the viewer's eye. Rotation speed can be controlled by the Direction phase wheel.

#### QuadPolygon

Particles are four sided polygons, shaded as if the light source were the viewer's eye. Rotation speed can be controlled by the Direction phase wheel.

#### Cube

Particles are shaped as cubes, shaded as if the light source were the viewer's eye. Rotation speed can be controlled by the Direction phase wheel.



### **TetraHedron**

Particles are shaped as tetrahedrons, shaded as if the light source were the viewer's eye. Rotation speed can be controlled by the Direction phase wheel.

### **Textured TriPolygon**

Particles are three sided polygons, shaded as if the light source were the viewer's eye. They also take on the texture of the source layer. Rotation speed can be controlled by the Direction phase wheel.

### **Textured QuadPolygon**

Particles are four sided polygons, shaded as if the light source were the viewer's eye. They also take on the texture of the source layer. Rotation speed can be controlled by the Direction phase wheel.

### **Lens Convex**

Particles are shaped as convex lenses.

### **Lens Concave**

Particles are shaped as concave lenses

### **Lens Fade**

Particles are shaped as concave lenses fading toward the edges.

### **Lens Darken Fade**

Particles are shaped as concave lenses, darkening and fading toward edges.

### **Lens Bubble**

Particles are shaped as bubbly lenses, fading inward.

### **Birth Size**

Use this control to determine the relative size of the particles when they first appear.

### **Death Size**

Use this control to determine the relative size of the particles before they disappear.

### **Size Variation**

Use this control to determine how much particle size will differ individually in a random manner. This means that a particle will get a different size at birth and interpolate over its lifetime to the Death size that have been set in the control, or the opposite, it will interpolate from the size set in the control to a different size at death than what have been set in the control.

### Opacity Map

Use this control to select an opacity map for the particles. The selected map, in conjunction with the Max Opacity control, determines the opacity changes for the particles over their lifetime. Choose one of the following options from the pop-up menu:

#### Constant

The particles remain at Max Opacity from birth to death

#### Fade Out Sharp

The particles remain at Max Opacity until just before the end of their lifetime. They fade out fast, like sparks going out.

#### Fade Out

The particles start at Max Opacity, and then fade out.

#### Fade In

The particles start out being completely transparent and fade to Max Opacity.

#### Fade In and Out

The particles start out being completely transparent, fade in to Max Opacity, then fade back out to complete transparency.

#### Oscillate

Each particle oscillates continually between Max Opacity and complete transparency.

### Max Opacity

Use this control to determine the max opacity for particles during their lifetime. Particles opacity changes over their lifetime according to the currently selected opacity map.

### Source Alpha Inheritance

When this control is enabled particles within the producer area will only be emitted where the source layer alpha is non transparent.

### Color Map

Use this control to define how particle colors are interpolated from Birth to Death. Choose one of the following options from the pop-up menu:

#### Birth to Death

Uses the Birth and Death colors (see below) chosen for color transition.

### **Origin to Death**

The birth color and alpha is taken from the position in the original source layer where the particle originated. It changes over its lifetime into the defined Death Color.

### **Birth to Origin**

The particle starts at the defined birth color. The death color is taken from the original source layer, including alpha, where the particle originated.

### **Origin Constant**

The particle takes its color from the original source layer and retains that color throughout its lifetime. Source Alpha Inheritance has no effect when this option is selected.

### **Birth Color (Supervised)**

Use this control to select a color for the particles at birth. Not used if Original to Death or Origin Constant is selected for Color Map.

### **Death Color (Supervised)**

Use this control to select a color for the particles at death. Not used if Birth to Original or Origin Constant is selected for Color Map.

### **Transfer mode**

Use this control to define the transfer mode used when particles overlap each other. The selected mode is applied only to the parts of particles that overlap. Choose one of the following options, Composite, Screen, Add or Black Matte. Black Matte forces all particles to render black, including Lens and Polygon particle types. This can be used on a duplicated effect, or a duplicated layer including the effect, to produce particle shadows or just a plain matte.

# CC PARTICLE WORLD

A particle system is defined by a collection of particles that evolves over time and can be controlled to create a virtually infinite number of different animations. Particle World provides a three-dimensional environment for particle generation and animation. Particle World contains controls for particle behavior in the third dimension and supports AE's comp camera, it automatically selects an AE comp camera if present and enabled. It also allows, as an alternative to AE's comp camera, for the placement and movement of a virtual camera, and provides visual guides to help you navigate through this three-dimensional environment. Realistic 3D behavior enables you to create animations that fly directly through a fiery explosion, sparkling fountain, or stream of glowing, golden coins. Almost all controls can be animated. Longevity, however, is one parameter that should remain static. Particle World fully supports time remapping. The control values, only affect the particle at the time of birth. Each particle will follow the effect settings as they were set at the time of birth. Eg. Animating Velocity will not affect particles born at an earlier stage. (Particle World does not composite with other 3D layers. As an effect, it's limited to its own source layer)

## **Controls**

### **Scrubbers**

The Scrubbers are indirect manipulation tools. You drag them to change the settings in one or more of the controls. Clicking on the labels ('Screen,' 'World'....) within the Scrubber Palette will bring up a numeric input dialog. To reset a single Scrubber control to its default value, Command-click (Ctrl-Shift-Click) on it. Standard Shift key constraints are also available. The Control key toggles available control options.

### **Screen**

Drag on this control to change the location of the producer relative to the current camera view. Use the '+' symbol to move along the X and Y axes, and the 'Z' to move along the Z axis.

### **World**

Drag on this control to change the location of the producer based on absolute Particle World environment coordinates. Use the '+' symbol to move along the X and Y axes, and the 'Z' to move along the Z axis.

### **Radius**

Drag to change the producer radius interactively.

### Camera

Drag on the globe to rotate the effect camera around the X or Y axes interactively. Drag on the 'Z' to change Camera Distance. If the Effects Control Window is sized to narrow, this area may not be visible. The Camera scrubber area is hidden when an AE camera is in use. The effect control window may need to be refreshed if you recently enabled or disabled a Comp camera.

### Grid

Use this pop-up menu to enable and select grid alignment as a visual guidance. Grid settings can be customized in the Options dialog (see below in the Options section). In most cases this control should be set to Off before rendering to output.

### Floor (Supervised)

Use this slider (or click on the current value) to set the relative height of the floor (i.e., the distance from the floor to the center of the Particle World environment). This can be useful for matching particle animations in a scene, especially when using some of the available render options like bounce, ice and glue (See below in the Options section). This control is disabled when not in use.

### Birth Rate

Use this control to determine the number of particles born at any given point in time. The higher the Birth Rate, the greater the density of particles. Using very high values can increase rendering times.

### Longevity (sec)

Use this control to determine how long particles exist. The higher the Longevity setting, the longer the particles exist. Longevity cannot be animated.

### Producer (Control Group)

#### Producer X, Y and Z

Use these sliders to determine the world position of the particle producer, based on X, Y, Z coordinates respectively. Coordinates within Particle World are normalized by the source layer width and center.

#### Radius X, Y and Z

Use these controls to determine the dimensions of the particle producer sphere, based on X, Y, Z coordinates. For example, setting only Radius Z and Radius X, the producer sphere will be flat like a pancake.

## Physics (Control Group)

### Animation

Use the Animation pop-up to select a type of motion for the particles. These are the available options:

#### Explosive

The particles spread evenly in all directions with random speed. Useful for creating particle bursts (i.e., fireworks) by pulsing the Birth Rate between zero and a high value.

#### Direction Axis

Particles spread evenly in a direction controlled by Extra Angle. Extra Angle rotates the producer around the axis specified in the Direction dialog (accessed via the Options dialog). The Extra control adds randomness to the direction of the particles, resulting in a cone-shaped effect.

#### Cone Axis

Particles spread evenly in a cone shape whose width is determined by the Extra Angle control. The cone shape is best described as an umbrella where Extra Angle folds the umbrella along the axis specified in the Direction dialog (accessed via the Options dialog). The Extra control adds randomness to the direction of the particles.

#### Viscouse

Particles spread evenly in all directions, but the initial speed of the particles is reduced by the Extra setting. This Animation is now obsolete. Note: This option may not be supported in future versions, instead use the Resistance control in conjunction with any Animation.

#### Twirl

Creates a whirlpool-like, single-direction, rotating twirl, with the particles spreading evenly with the initial rotation. The Extra control determines the rotation deceleration.

#### Twirly

Creates a single-direction rotating Twirl. Particles spread evenly with initial rotation. Extra adds rotation around the producer when Velocity is set very low. Extra Angle controls the rotation speed of the Twirl.

#### Vortex

Creates an upward rotating, whirling, funnel-like effect with accelerating width and decelerating rotation speed. Extra Angle controls the rotation speed. Extra controls rotation speed deceleration.

### **Fire**

Animates the particles to oscillate while rising. Extra controls the amplitude of oscillation. Since fire burns upward, a positive Gravity setting makes the particles rise rather than fall.

### **Jet Sideways**

Creates particles that inherit the producer's velocity, but channels it into sideways motion. The Extra control adds random motion to the particles. You must animate the Producer to create this effect.

### **Fractal Omni**

Particles are spread with speed and direction determined by a fractal model. Changes in the fractal model are smoothly interpolated if the Extra Angle control is keyframed. This type of particle animation is useful for creating any effect where an uneven look is desired (e.g., natural explosions). The Extra control determines the frequency of the fractal noise used in the animation. The Extra Angle control determines the fractal model used.

### **Fractal Uni**

Particles erupt from the producer volcanically, with speed and direction determined by a fractal model. Changes in the fractal model are smoothly interpolated if the Extra Angle control is keyframed. This type of particle animation is useful for creating any effect where an uneven look is desired (e.g., natural explosions). The Extra control determines the frequency of the fractal noise used in the animation. The Extra Angle control determines the fractal model used.

### **Velocity**

Velocity sets the speed of particles at birth. The higher the setting, the faster the particles move. Once ejected from the producer, the speed and direction of the particles are determined largely by gravity and other 'natural' forces. Negative settings reverse the direction of the particles.

### **Inherit Velocity %**

Use this control to determine how much velocity the particles will inherit from the emitter's motion when its position has been animated, i.e. the producer position has to be animated for this to have any effect. A negative inheritance, would case particles to emit in a rocket flame like manner.

### **Gravity**

Use this control to determine the influence of gravity. Higher Gravity causes particles to fall faster. A negative Gravity setting makes particles rise.

### Resistance

Use this control to continuously slow down the particles velocity. It simulates how particles are influenced by resistance, coming from kinetic friction or a substance's viscosity, as they move. This feature can be used to give particles very convincing natural behaviors, like meeting air or moving through water. The higher the value, the more resistance particles meet, slowing them down more quickly.

### Extra

This control determines the amount of randomness added to particles motion. The higher the Extra setting, the greater the randomness of the particles motion. Extra affects each animation type in a different way (see above in Animation). Some Animation types, such as 'Explosive,' do not use Extra.

### Extra Angle

This control is used to set an 'extra angle' factor. The effect varies depending on the particle animation system being used (see above in Animation).

## Particle (Control Group)

### Particle Type

Use this control to select the type of particle you want to use. Choose one of the following options from the pop-up menu:

#### Line

Particles are antialiased lines.

#### Star

Particles are shaped as four-pointed stars.

#### Shaded Sphere

Particles are shaped as spheres, darkened at the edges.

#### Faded Sphere

Particles are shaped as spheres, faded at the edges.

#### Darkened & Faded Sphere

Particles are shaped as spheres, which are both darkened and faded at the edges.

#### Bubble

Particles are shaped as spheres, faded toward their centers, which gives them a 'bubbly' look.



### **Motion Polygon**

Particles are three sided polygons. The particle velocity affects the size of the polygons.

### **Motion Square**

Particles are four sided polygons. The particle velocity affects the size of the polygons.

### **TriPolygon**

Particles are three sided polygons. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog (see below in the Options section).

### **QuadPolygon**

Particles are four sided polygons. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

### **Textured TriPolygon**

Particles are three sided polygons. Particle texture is selected in the Texture Layer pop-up. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

### **Textured QuadPolygon**

Particles are four sided polygons. Particle texture is selected in the Texture Layer pop-up. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

### **Tetrahedron**

Particles are shaped as tetrahedrons. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

### **Cube**

Particles are shaped as cubes. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

### **Lens Convex**

Particles are shaped as convex lenses.

### **Lens Concave**

Particles are shaped as concave lenses

### **Lens Fade**

Particles are shaped as concave lenses, fading toward the edges.

### **Lens Darken Fade**

Particles are shaped as concave lenses, darkening and fading toward edges.

### **Lens Bubble**

Particles are shaped as bubbly lenses, fading inward.

### **Textured Square**

Particles are shaped as squares. Particle texture is selected in the Texture Layer pop-up. The particle texture is colorized by multiplying the standard particle color to it. To use original texture colors, set Birth and Death colors to white. This type has no rotation.

### **Textured Disc**

Particles are shaped as discs. Particle texture is selected in the Texture Layer pop-up and the size, in this case the diameter, is set to the minimum of width and height of the texture layer. A texture layer with dimensions 120 x 60 will result in a diameter of 60, centered on the texture layer. Note: The cut off portions of the layer will be used when the Scatter value is increased. The particle texture is colorized by multiplying the standard particle color to it. To use original texture colors, set Birth and Death colors to white. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

### **Textured Faded Disc**

Particles are shaped as discs, fading toward the edges. Particle texture is selected in the Texture Layer pop-up (see Textured Disc for particle texture size). The particle texture is colorized by multiplying the standard particle color to it. To use original texture colors, set Birth and Death colors to white. Rotation speed is determined by the Rotation Speed control. Initial Rotation adds randomness to particles' initial rotation angle at birth. Rotation axis can be set in the Options dialog.

## **Texture (Sub-control Group)**

### **Texture Layer**

Use this pop-up menu to select the layer you want to use as particle texture.

### **Scatter**

This control crops random parts of the source texture for use as particle texture. The particle texture used will be smaller than the source layer when Scatter is increased. With Scatter set to 75, each particle texture will be a random square of one quarter the size cropped out of the source texture.

### **Texture Time**

Use this control to determine what frame(s) to use over the life span of particles. When the selected Texture Layer isn't a movie or a composition that contains animation, this control should be set to "Current" (default setting). If it contains a movie/animation choose one of the three options from the pop-up menu.

#### **Birth**

Particles use the frame from the Texture Layer movie/animation at the time when they were born as a static texture over their life span.

#### **Current**

The current frame of the Texture Layer is used for all particles.

#### **From Start**

The age of each particle determines which frame will be used. This option makes it possible to customize the lifespan shape, color and opacity of the particles. Note the birth/start frame is the in-time of the effect layer, not the texture layer. Set the in-time of the texture layer to the same as the effect layer to start from the first texture frame.

### **Align to direction**

Two particle types, Textured Disc and Faded Disc, can be aligned to the particle's motion path.

Hint: Set Rotation Speed and Initial Rotation to zero if you want all particles to align in a similar manner. Eg. Drop shaped particles that follow the trajectory.

### **Rotation Speed (Supervised)**

Use this control to determine the speed of particles' rotation. Used by particle types that has individual rotation.

### **Initial Rotation (Supervised)**

Use this control to add randomness to particles' initial rotation angle at birth. Used by particle types that has individual rotation.

### **Birth Size**

Use this control to determine the relative size of the particles when they first appear.

### **Death Size**

Use this control to determine the relative size of the particles before they disappear.

### **Size Variation**

Use this control to determine how much individual particles can deviate from the set Birth to Death size.

### **Max Opacity**

Use this control to determine the max opacity for particles during their lifetime. Particles opacity changes over their lifetime according to the currently selected opacity map. Custom opacity maps can be created using the Options dialog (see below in the Options section).

### **Color Map**

Use this control to define how particle colors are interpolated from Birth to Death. Choose one of the following options from the pop-up menu:

#### **Custom**

This option allows for the use of custom color maps, created in Options -> Color Map, where up to five different colors can be selected. The particles will shift between the specified colors during their lifetime.

#### **Birth to Death**

Particles appear with the specified Birth Color and shift toward the specified Death Color, changing completely just before they disappear.

#### **Origin to Death**

Particles appear with a color sampled from the original source layer and shift toward the specified Death Color.

#### **Birth to Origin**

Particles appear with the specified Birth Color and shift toward a color sampled from the underlying source layer.

#### **Origin Constant**

Particles maintain a color sampled from the underlying source layer for their entire life span.

### **Birth Color (Supervised)**

Use this control to select a color for the particles at birth. Not used if Custom, Original-Death or Original-Origin is selected for Color Map.

### **Death Color (Supervised)**

Use this control to select a color for the particles at death. Not used if Custom, Birth-Original or Original-Original is selected for Color Map.

### **Volume Shade (approx.) (Supervised)**

Use this control to apply approximated volume shading to particles for an increased sense of 3D depth. Not used by all animation systems and particles.

### **Transfer Mode**

Use this control to define the transfer mode used when particles overlap each other. The selected mode is applied only to the parts of particles that overlap. Choose one of the following options, Composite, Screen, Add or Black Matte. Black Matte forces all particles to render black, including Lens and Polygon particle types. This can be used on a duplicated effect, or a duplicated layer including the effect, to produce particle shadows or just a plain matte.

### **Camera (Control Group)**

These settings are used only when no AE camera is present. If an AE camera is present, the Camera scrubber area will not be visible and the following controls will be ignored.

#### **Distance**

Use this control to determine the distance from the camera to the center of the Particle World environment.

#### **Rotation X, Y and Z**

Use these controls rotate the camera on its own X, Y and Z axes. Changing the cameras X rotation turns it left and right, changing its Y rotation points it up or down, and changing its Z rotation banks the camera left or right.

#### **FOV**

The FOV describes the type of 'virtual lens' used for rendering, similar to the AE Camera Setting Angle of View. Lowering this value zooms in on the producer (or whatever the camera is facing). Increasing this value produce a 'wide angle' view. The camera automatically adjusts its distance to the FOV value. This may cause a 'vertigo' effect when FOV is animated. If this is not suitable for your animation we recommend using an AE camera instead.

### Options

Clicking on Options brings up the Options dialog, which allows access to eight secondary dialog boxes for specifying a wide variety of Particle World parameters. These parameters can be saved and loaded, which makes it easy to create and use custom particle settings for specific type of animations. Saving an AE Animation Preset of Particle World will also save the Options settings.

Note: All of the parameters within the Options dialogs are static. They cannot be animated with key frames.

### Opacity Map

This dialog allows you to modify the opacity levels of your particles at various stages during their lifetime.

#### Canvas

The area directly beneath the Opacity Map label graphically depicts the opacity map currently in use. The left side of the canvas represents the opacity level at birth. The right side represents the opacity level at death. You can drag within this area to customize the opacity map.

#### Soften

Click the dynamic Soften button to subtly soften (or average) the current opacity levels. Press and hold on the Soften button for gradually increasing levels of softness. Pressing Soften will automatically apply Normalize (see below) when released.

#### Normalize

Click on the Normalize button to spread the current minimum and maximum values across the entire range of legal values.

#### Presets

Use the Presets pop-up to choose from a list of available Opacity Map presets.

### Color Map

The Color Map dialog consists of a gradient bar representing the changing colors of your particles over their life span. Clicking on each of the five small arrows over the gradient bar will bring up a standard color picker. By selecting different colors from these color pickers, you can create a gradient of up to five colors for your particles to shift through on their way from birth to death. To use this option select Custom in the Color Map pop-up.

### **Grid**

The Grid Settings dialog gives you control over the reference grid and other visual guides.

#### **Horizon**

The Horizon option displays a line at the horizon. This can be useful when tilting or rolling the camera. Click the color chip to change the Horizon color.

#### **Position**

The Position option displays a marker for the producer. The producer is at the 'x' atop the line perpendicular to the grid. Click the color chip to change the Position marker color.

#### **Motionpath**

The Motionpath option displays a line that shows the producer's positions throughout the animation. Click the color chip to change the Motionpath color.  
Note: The Motionpath won't be visible until you've set key frames to animate the producer position.

#### **Grid**

The Grid option displays the floor (or wall) grid. Click the color chip to change the Grid color.

#### **Draw**

Draw determines the number of sample points for the producer motionpath. Higher values increase detail in the motionpath.

#### **View Axis**

View Axis determines which plane (as seen from X, Y or Z) the grid appears on. This determines the location of the drawn floor plane (but not its physical position).

#### **Divisions**

Divisions set the total number of squares in the grid.

#### **Gridsize**

Gridsize controls the scale of the grid.

#### **Axis Box**

The Axis Box option displays a small, reference box in the upper left corner of the source layer. This box shows the World Axis in the current view.

### Rendering

Use this dialog to select from the following rendering options:

#### Render Particles

Click on the desired radio button to specify which of the following particles you want rendered:

##### Full Render

Renders all particles. This is the default option.

##### Above Floor

Renders only the particles that exist above the floor.

##### On/Under Floor

Renders only the particles that exist on or below the floor.

#### Render Animation

Click on the desired radio button to specify which of the following animation options you want to use:

##### Standard

Renders the particles normally. This is the default setting.

##### Reflected on Floor

Renders the particles as a reflection on the floor. Ideal for mirrored surface effects.

##### Projected on Floor

Renders the particles as a projection on the floor. The projection is calculated from the direction set in the options Light dialog. Perfect for shadow effects.

#### Depth Cue and Distance

Click on a radio button to select from these three choices:

##### Disabled

No depth cueing. This is the default setting.

##### Fade

The particles fade away as they move further from the camera.

##### Fog

The particles change to the fog color as they move further from the camera. Click on the color swatch to pick a new fog color.



### **Distance**

This control sets the rate at which depth cuing increases. Higher settings increase the Depth Cue effect. Distance is measured in Particle World coordinates (1.0 = source layer width).

### **Floor is**

Click on a radio button to select how the particles will react when they strike the floor. Note. Glue and Bounce is not available for all Animation types.

### **Ignored**

Particles pass through the floor as if it wasn't there. This is the default setting.

### **Ice**

Particles stop falling and slide out along the floor.

### **Glue**

Particles stop moving altogether when they hit the floor.

### **Bounce**

Particles bounce back up when they hit the floor.

The Amount parameter determines the maximum height of the bounce, the Random parameter determines the amount of variety in the bouncing particle's height, and the Spread parameter determines the amount of variety in the bouncing particle's direction. Bounce is ignored if Resistance is not zero, this applies to all animation systems. The Viscous, Twirl, Twirly, Vortex and Fire animation systems ignore Bounce and Glue.

## **Other Settings**

### **Delay Particle Release**

This feature controls how long (relative to its life span) a particle will cling to its birth place, before beginning its assigned motion (based on the Animation System selected).

### **Composite with Original (2D)**

When selected, the source layer will be composited within the particle world.

### **Force Motion Blur (Best quality only)**

When selected, particles will always render with motion blur, ignoring Composition and Layer settings.

### Gravity

Use the Gravity dialog to specify the direction axis along which gravity pull the particles. The specified direction is used by the Gravity slider. By default the direction is set to pull particles downwards along the Y axis, which simulates real world gravitational force

### Direction

Use the Direction dialog to set the main axis on which several Animation Systems are based, e.g. Direction Axis and Cone Axis. By default the main axis point upwards. This can be tilted in any direction so that for example Cone Axis can spray sideways instead.

### Light

Use the Light dialog to set the position of the directional light source. Light will illuminate particles from this angle. This direction is also used when using Render Option Project on Floor.

### Rotation

Use the Rotation dialog to set the rotation axis for polygon particles. Default rotation axis is equal X, Y and Z rotation. Setting this to Y only would rotate polygon particles only around the Y axis.

### Open/Save Settings

Clicking either of these buttons opens a standard Open/Save dialog box for loading or saving Option settings (but not Effect Control settings). Saving an Animation Preset of Particle World will also save the Options settings.

### Default, Cancel and OK

Clicking the Default button resets all parameters to their default settings.

Clicking the Cancel button ignores changes and exits the dialog box.

Clicking the OK button accepts changes and exits the dialog box.

# CC PIXEL POLLY

Pixel Polly breaks the source layer into polygons, with or without texture. The effect is something like a pane of glass shattering and flying apart. You can control the Gravity and Rotation Speed of the shards, as well as the amount of Randomness in Direction and Speed. You can also set the position for the shatter center force, i.e. the focal point of the explosion. All speed settings take effect from the first frame of the animation.

## **Controls**

### **Force**

Use Force to control the speed at which the shards fly. A negative setting causes the shards to implode before flying outward.

### **Gravity**

Use this control to determine the influence of gravity. Higher Gravity causes shards to fall faster. A negative Gravity setting makes shards rise.

### **Spinning**

Spinning controls how fast the shards spin. A setting of zero degrees means the shards do not rotate.

### **Force Center**

Use this control to determine the position of the explosion that sends the shards flying, based on X, Y coordinates.

### **Direction Randomness**

Use this control to add randomness to the direction in which the shards fly. A lower setting causes the shards to fly off in a more or less uniform pattern, i.e. straight outward from the point of origin. A higher setting gives the explosion greater turbulence, causing the shards to fly off in random directions.

### **Speed Randomness**

Use this control to add randomness to the speed at which shards fly. A lower setting causes all the shards to fly apart at more or less the same speed. A higher setting causes more variation in the speed of different shards, creating a more chaotic effect.

### **Grid Spacing**

Use this control to determine the size of the grid that shatters the layer. A larger grid size produces larger shards. A smaller grid size produces smaller shards. Grid Spacing is an initial setting for how you want to split the source layer. It should not be animated.

### **Object**

Use the Object pop-up to select the type of shard you want. These are the available options:

#### **Polygon**

The original source layer is converted to polygon shapes, using the source source layer's color as a color map.

#### **Textured Polygon**

The shards are shaped like polygons which retain the texture of the source source layer.

#### **Square**

The original source layer is converted to squares, using the source source layer's color as a color map.

#### **Textured Square**

The shards are shaped like squares which retain the texture of the source layer.

### **Enable Depth Sort (Best Quality Only)**

Use this check box to enable more accurate 3D rendering. Far away shards will not appear in front of closer shards.

## CC RAIN

Rain creates angled streaks like falling rain.

### **Controls**

#### **Amount**

Use this control to determine the number of rain drops. The number of rain drops selected may not correspond to the number that actually appears in the source layer. (This control has extended range)

#### **Speed**

Use this control to determine the speed at which rain drops fall.

#### **Angle**

Use this control to determine at which angle rain drops fall.

#### **Angle Variation**

Use this control to determine how much the angle at which the rain fall should vary.

#### **Drop Size**

Use this control to determine the size of the rain drops.

#### **Source Depth**

Use this to control the layering of the rain with the source layer. You can give the rain the appearance of being in front, or behind, the source layer. Most useful if the source layer has an alpha channel containing some transparent areas.

#### **Opacity**

Use this control to determine the transparency level of the rain drops. At 100%, rain drops are completely opaque. At 0%, rain drops are completely transparent.

# CC RAINFALL

Rainfall generates a volume of drops (particles) to simulate falling rain. Reflection (or refraction) can be matched or controlled by the footage applied to. The rain can also be embedded with footage that contain transparency. Speed, Wind and Spread controls the motion of falling drops. Wind has a separate Variation control to determine how much that value may deviate for individual drops.

## **Controls**

### **Drops**

Use this control to determine the number of drops.

### **Size**

Use this control to determine the size of drops.

### **Scene Depth**

Drops will be generated to fill the scene up to this depth. This is measured in pixels.

### **Speed**

Use this control to determine the speed at which drops fall.

### **Wind**

Use this control to add wind and to control its force in a scene. This affects all drops causing them to drift sideways.

### **Variation % (Wind)**

Use this control to set a specific range of randomness of the previous controls value. This affects how much that value may deviate for individual drops.

### **Spread**

Use this control to add an amount of random direction to individual drops.

### **Color**

Use this control to select the color of drops. When using Background Reflection, this color will blend with the reflected color.

### **Opacity**

Use this control to determine the transparency of drops

### Background Reflection (Group)

Instead of rendering all drops with the same reflection (or refraction), this group of controls make it possible for drops to reflect (or refract) the source layer.

#### Influence %

Use this control to determine how much the source layer is refracted in drops. The higher the setting, the more the drops refracts its environment (source layer).

#### Spread Width

Use this control to determine how far sideways drops may reflect the background.

#### Spread Height

Use this control to determine how far vertically drops may reflect the background.

### Transfer Mode

Use this pop-up menu to select which composite method to use between the effect and the source layer. Each offers a different result. Choose one of the following options: Composite, Lighten.

### Composite With Original

Check this option to composite drops with the source layer.

### Extras (Group)

A collection of controls which may be considered “expert settings”.

#### Appearance

Use this pop-up menu to select the appearance of drops. The Refracting option renders raindrops in a physically more correct way, the drop will appear more “transparent” at the center since light refracts more from the side. The Soft Solid option is a faster approximation where the whole drop will reflect light. The difference between these two options is more visible on larger raindrops, it can be very subtle at default size. Choose one of the following options: Refracting, Soft Solid.

#### Offset

Use this control to offset the entire volume of drops. When used on footage with a panning camera, this control can be used to pan drops to match the motion of the footage.

### **Ground Level %**

Use this control to set a virtual ground where drops will disappear. The ground level can be raised (up to the horizon) and can be used to match the ground level of the source layer.

### **Embed Depth %**

Use this control to draw drops with the source footage embedded at a certain depth within the scene. From immediately in front of the camera (0%) to the furthest distance from the camera (100%).

Supervised: This control is only used if Composite With Original is checked.

### **Random Seed**

Use this control to set a unique random seed value that affects all controls that use random values. This makes it easy to use multiple layers, using the same Rainfall animation, and only change the Random Seed value to give each layer a completely unique look. This control was not designed to be animated.



## CC SCATTERIZE

Scatterize creates an exploding or dispersing effect by scattering every pixel of the source layer. For example, you might make your logo scatter into a cloud of dust. Conversely, you could have a cloud of dust collect into your logo.

### **Controls**

#### **Amount**

Use this control to determine the amount of the scattering. The higher the value, the further the pixels scatter away, in all directions, from their original positions. A negative setting scatters pixels in the opposite direction from a positive setting.

#### **Right Twist, Left Twist**

Use these controls to twist the pixels. The pixels can be twisted any number of degrees and revolutions, using positive or negative direction.

#### **Transfer Mode**

Use this pop-up menu to select composite method for scattered pixels. Each offers a different result. Choose one of the following options from the pop-up menu: Composite, Screen, Add, Alpha Add.

# CC SNOW

Snow creates gently falling snow flakes. You can set the wobbling amplitude and frequency of the snow to produce flurries.

## **Controls**

### **Amount**

Use this control to determine the number of snow flakes. The number of snow flakes selected may not correspond to the number that actually appears in the source layer. (This control has extended range)

### **Speed**

Use this control to determine the speed at which snow flakes fall.

### **Amplitude**

Use this control to determine the amount of wobbling added to snow flakes motion. The wobbling causes snow flakes to move from side-to-side, while falling. The higher the value, the more snow flakes move sideways from their original path, at the frequency determined by the Frequency control (see below). (This control has extended range)

### **Frequency**

Use this control to determine the frequency at which snow flakes wobble. The higher the value, the faster snow flakes move from side-to-side, at the amplitude determined by the Amplitude control (see above). (This control has extended range)

### **Flake Size**

Use this control to determine the size of the snow flakes.

### **Source Depth**

Use this to control the layering of the snow with the source layer. You can give the snow the appearance of being in front, or behind, the source layer. Most useful if the source layer has an alpha channel containing some transparent areas.

### **Opacity**

Use this control to determine the transparency level of the snow flakes. At 100%, snow flakes are completely opaque. At 0%, snow flakes are completely transparent.

# CC SNOWFALL

Snowfall generates a volume of flakes (particles) to simulate falling snow. Lighting can be matched or controlled by the footage applied to. The snow can also be embedded with footage that contain transparency. Many aspect of the motion of flakes can be controlled. Apart from speed and wind, there are a number of controls to design turbulence which causes snowflakes to wiggle and turn. Most of the major controls have a separate control to decide how much that setting may deviate for individual flakes.

## **Controls**

### **Flakes**

Use this control to determine the number of flakes.

### **Size**

Use this control to determine the size of flakes.

### **Variation % (Size)**

Use this control to set a specific range of randomness of the previous controls value. This affects how much that value may deviate for individual flakes.

### **Scene Depth**

Flakes will be generated to fill the scene up to this depth. This is measured in pixels.

### **Speed**

Use this control to determine the speed at which flakes fall.

### **Variation % (Speed)**

Use this control to set a specific range of randomness of the previous controls value. This affects how much that value may deviate for individual flakes.

### **Wind**

Use this control to add wind and to control its force in a scene. This affect all flakes causing them to drift sideways.

### **Variation % (Wind)**

Use this control to set a specific range of randomness of the previous controls value. This affects how much that value may deviate for individual flakes.

### **Spread**

Use this control to add an amount of random direction to individual drops.

### **Wiggle (Group)**

These controls add the ability to wiggle, or adding turbulence to flakes as they fall. Speed, frequency and type of wiggling can be controlled.

#### **Amount**

Use this control to determine the maximum distance (in pixels) that a flake can deviate from its path when wiggling.

#### **Variation % (Amount)**

Use this control to set a specific range of randomness of the previous controls value. This affects how much that value may deviate for individual flakes.

#### **Frequency**

Use this control to determine how quickly flakes will wiggle or change direction.

#### **Variation % (Frequency)**

Use this control to set a specific range of randomness of the previous controls value. This affects how much that value may deviate for individual flakes.

#### **Stochastic Wiggle**

Use this control to enable a more complex fractal motion. ?This motion adds a sense of realism?. Disabled, flakes wiggle as a regular wave.

#### **Flake Flatness %**

Use this control to flatten flakes. This is visible as flakes will turn while falling, facing front, side or back towards the camera.

### **Color**

Use this control to select the color of flakes. When using Background Illumination, this color will blend with the background lighting color.

### **Opacity**

Use this control to determine the transparency of flakes.

### Background Illumination (Group)

Instead of rendering all flakes with the same lighting, this group of controls make it possible to use the source footage to affect/influence the lighting.

#### Influence %

Use this control to determine how much the background should influence flake lighting.

#### Spread Width

Use this control to determine how far sideways light can spread from the background.

#### Spread Height

Use this control to determine how far vertically light can spread from the background.

### Transfer Mode

Use this pop-up menu to select which composite method to use between the effect and the source layer. Each offers a different result. Choose one of the following options: Composite, Lighten.

### Composite With Original

Check this option to composite flakes with the source layer.

### Extras (Group)

A collection of controls which may be considered “expert settings”.

#### Offset

Use this control to offset the entire volume of flakes. When used on footage with a panning camera, this control can be used to pan flakes to match the motion of the footage.

#### Ground Level %

Use this control to set a virtual ground where flakes will disappear. The ground level can be raised (up to the horizon) and can be used to match the ground level of the source layer.

#### Embed Depth %

Use this control to draw flakes with the source footage embedded at a certain depth within the scene. From immediately in front of the camera (0%) to the furthest distance from the camera (100%).

Supervised: This control is only used if Composite With Original is checked.

### **Random Seed**

Use this control to set a unique random seed value that affects all controls that use random values. This makes it easy to use multiple layers, using the same Snowfall animation, and only change the Random Seed value to give each layer a completely unique look. This control was not designed to be animated.

# CC STAR BURST

Use Star Burst to break the source layer into stars and spread them through space. This effect automatically animates to make it appear as if the viewer is flying through a 'star field'.

## **Controls**

### **Scatter**

Use this control to determine the amount of the scattering. The higher the value, the further the stars scatter away, in all directions, from their original positions. A negative setting scatters stars in the opposite direction from a positive setting. At zero, all objects assume their assigned position within the source layer.

### **Speed**

Use this control to determine the speed at which stars travel towards the viewer, like traveling through a star field. A negative value creates the illusion of traveling backwards.

### **Phase**

Use Phase to align the effect to the original position of the layer.

### **Grid Spacing**

Use this control to determine how tightly packed the stars should be. This will also affect the size of the stars.

### **Size**

Use this control to determine the size of the stars.

### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.

## CC BLOCK LOAD

Block Load is an effect that simulates a progressive loading of the source layer, similar to how some gif and jpeg images were loaded on older websites. Completion refers to number of bytes, or pixels, loaded. Number of Scans affects how many times the layer will be refined before it has been fully loaded, i.e when Completion reaches 100%.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Keyframe this control to animate your wipe.

#### **Scans**

Use this control to set the number of vertical scans that will be performed over the transition, i.e going from 0 -100.

#### **Start Cleared**

With this option checked, Block Load will start with its source layer invisible. Uncheck this option if you want to start with the first scan completed.

#### **Bilinear**

Check this option to use bilinear filtering during pixel scans. This will give transitions a softer, less blocky, look.



## CC BURN FILM

The Burn Film plug-in creates the illusion of film burning or melting when it gets stuck in a projector. The amount, central location, and randomness of the burning/melting effect can be set. To animate this effect you must set at least two keyframes to the Burnt control with different settings.

### **Controls**

#### **Burn**

Use this control to determine the amount of burning.

#### **Center**

This control determines the position, based on X, Y coordinates, where the burning first appears on the source layer, when the Burn slider is adjusted.

#### **Random Seed**

Use this control to set a unique random value from which to generate the burn seeds.

## CC GLASS

The Glass plug-in can be used to give a convincing glass-like appearance to the source layer by using a user-specified bump map, displacement, light and shading properties to create a glossy, three-dimensional look. By using values from a different layer, you can create the illusion of that layer rising up through the source layer.

### **Controls**

#### **Surface (Control Group)**

##### **Bump Map**

Use this pop-up menu to select the layer you want to use as bump map for the glassy distortion. Based on the selected layer's Property values a height map will be defined, where brighter areas are 'high', and darker areas are 'low'. At default settings the Bump Map is the current layer.

##### **Property**

Use this pop-up menu to select the channel information on which to base the bump map on. Choose one of the following options: Red, Green, Blue, Alpha, Luminance, Lightness, Hue or Saturation.

##### **Softness**

Use this control to determine the softness (or blurring) of the selected Bump Map. Higher Softness values will remove small details as well as decrease the depth appearance, giving a smoother overall result.

##### **Height**

This control determines the relative height of the bump map. This will affect Displacement and how the surface is shaded.

##### **Displacement**

Use this control to determine the amount of displacement. This amount is relative to the Bump Height. Higher values produce greater distortion.

## Light (Control Group)

### Using

Use this pop-up to select whether to use the Effect Light source or AE Lights. If AE Lights is selected, none of the controls in this group are used. Please refer to the After Effects manual on how to use lights in a composition.

### Light Intensity

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

### Light Color

Use this control to select a color for the light.

### Light Type

Use this control to select which type of light you want to use. Choose one of the two options from the pop-up menu.

#### Distant Light

This type simulates sunlight shining on the source layer from a user-definable distance and angle. All light rays strike the layer from the same angle.

#### Point Light

This type simulates a light bulb hanging in front of, the layer at a user-definable distance and position. Light rays strike the layer from the defined light position.

### Light Height

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

### Light Position (Supervised)

Use this control to position the point light on the source layer, based on X, Y coordinates. Not used if Effect Light and Distant Light are selected.

### Light Direction (Supervised)

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer. Not used if Effect Light and Point Light are selected.

## Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

### Ambient

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon). When using Effect Light, a 100% white ambient light source is always active. When using AE Lights, only ambient lights in the composition are used.

### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

### Specular

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

### Roughness

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

### Metal

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.

## CC KALEIDA

Kaleida creates a kaleidoscope effect. A tile is created from the source layer and repeated into a kaleidoscopic image.

### **Controls**

#### **Center**

Use this control to position the point of origin of the tiling on the source layer, based on X, Y coordinates.

#### **Size**

Use this control to determine the size of the tiles. Using higher values, the tiles contain a greater portion of the source layer.

#### **Mirroring**

Use this control to select the type of kaleidoscopic effect you want. Choose from Unfold, Wheel, Fish Head, Can Meas, Flip Flop, Flower, Dia Cross, Flipper and Starlish.

#### **Rotation**

Use this control to rotate the source tile, i.e. the area defining the tile which will be mirrored.

#### **Floating Center**

Use this check box to center the kaleidoscopic effect to the position of the Center control. When this is turned off, the effect is always centered to the layer. At default settings this is turned off.

## CC Mr. SMOOTHIE

Mr. Smoothie transforms the source layer into flowing, psychedelic patterns. You can use it to create background textures or wild special effects.

### **Controls**

#### **Flow Layer**

Use this pop-up menu to select which layer that will be used to describe the pattern onto which the gradient will be mapped. At default settings the Flow Layer is the current layer.

#### **Property**

Use this control to specify the channel information, from the selected Flow Layer, on which to base the pattern on. Choose one of the following options from the pop-up menu, Red, Green, Blue, Alpha, Luminance, Lightness, Hue and Saturation. At default set to Luminance.

#### **Smoothness**

Use this control to determine the softness (or blurring) of the Flow Layer. Higher Smoothness values will remove small details and make the color patterns appear smoother.

#### **Sample A and Sample B**

Use these controls to position the two reference points on the source layer, from which colors are sampled, based on X, Y coordinates. A gradient is created by sampling the colors between these two points (in the source layer).

#### **Phase**

Use this control to change the gradient phase. Measurements are in degrees. As you change the Phase the gradient is rotated starting and ending with values offset from those originally sampled.

#### **Color Loop**

Use this pop-up menu to determine the direction of the gradient. Choose one of the following options, AB, BA, ABA and BAB. (A and B are the sample points)

## CC PLASTIC

Plastic is a surface filter that texturizes the layer using a bump map. Light and shading parameters, similar to 3D programs, enable extensive control over surface appearance from basic matte emboss effects to shiny plastic wrap effects. Includes controls to cutout parts of the effect, for example to create DVD or UI buttons or to simply isolate the effect.

### Controls

#### Surface Bump (Control Group)

##### **Bump layer**

Use this pop-up menu to select the layer you want to use as bump map. Based on the selected layer's Property values a height map will be defined, where brighter areas are 'high', and darker areas are 'low'. At default settings the Bump Map is the current layer.

##### **Property**

Use this pop-up menu to select the channel information on which to base the bump map on. Choose one of the following options: Red, Green, Blue, Alpha, Luminance or Lightness.

##### **Softness**

Use this control to determine the softness (or blurring) of the selected Bump Map. Higher Softness values will remove small details as well as decrease the depth appearance, giving a smoother overall result in floating point accuracy.

##### **Height**

This control determines the relative height of the bump map. This will affect how the surface is shaded.

##### **Cut Min and Cut Max**

Use these controls to cutout parts of the effect by compressing the range of brightness values from the source layer. Min are dark values and Max are bright values. A Min value higher than Max will invert the bump values

## Light (Control Group)

### Using

Use this pop-up to select whether to use the Effect Light source or AE Lights. If AE Lights is selected, none of the controls in this group are used. Please refer to the After Effects manual on how to use lights in a composition.

### Light Intensity

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

### Light Color

Use this control to select a color for the light.

### Light Type

Use this control to select which type of light you want to use. Choose one of the two options from the pop-up menu.

#### Distant Light

This type simulates sunlight shining on the source layer from a user-definable distance and angle. All light rays strike the layer from the same angle.

#### Point Light

This type simulates a light bulb hanging in front of, the layer at a user-definable distance and position. Light rays strike the layer from the defined light position.

### Light Height

Use this control to determine the distance from the source layer to light source, based on Z coordinates. When using negative values, the light source is moved behind the source layer, with the result that light rays strike the layer from behind, or from below.

### Light Position (Supervised)

Use this control to position the point light on the source layer, based on X, Y coordinates. Not used if Effect Light and Distant Light are selected.

### Light Direction (Supervised)

Use this control to set the direction to the light source. Light Direction in conjunction with Light Height determine the angle at which light rays strikes the source layer. Not used if Effect Light and Point Light are selected.

### Ambient Light Color

Use this control to select a color for the ambient light.



### Shading (Control Group)

Controls in this group are similar to corresponding controls in the AE Material Options, with one exception. Roughness is the actual opposite of (AE) Shininess.

#### Ambient

Use this control to determine how much ambient (nondirectional) light is reflected. Ambient light is everywhere and affects all visible surfaces, even if not directly illuminated by light (like the dark side of the moon).

#### Diffuse

Use this control to determine how much diffuse (omni directional) light is reflected. Diffuse light affects all visible surfaces directly illuminated by light.

#### Dust

Use this control to determine how much dust will reflect light. Dust is a simulated appearance of very small particles covering the surface. Dust reflects light in a different manner and more subtle than Diffuse.

#### Specular

Use this control to determine the highlight intensity of the reflected light. Shiny materials, like chrome, have strong highlights while matte materials, like rubber, have weak or none. As you increase the Specular value, you see a specular highlight appear in the center of the diffuse areas where the light reflects directly on the viewer.

#### Roughness

Sets how rough the material appears. Roughness affects the spread of the specular highlight. Higher Roughness values make the highlight larger and less shiny.

#### Metal

Use this control to determine the color of the specular highlight. Setting the value to 100 reflects the color of the layer in the specular highlight, like metal. Setting the value to 0 reflects the color of the light source in the specular highlight, like plastic.

## CC REPETILE

RepeTile uses the source layer as a tile, which it can repeat horizontally and vertically in any of several patterns. Tiling is often done with seamless patterns to create a textured background. RepeTile is useful because it has a blending function that can make almost any tile appear seamless.

### **Controls**

#### **Expand Right, Left, Down, Up**

These controls set the extents of the effect in terms of layer pixels. For example, if the source layer is 150x150 pixels, setting the Expand Right to 600 and Expand Up to 300 repeats the tile 4 times to the right and 2 times up.

#### **Tiling**

Use this control to select a method for how the source layer should be repeated. Repeat maintains the orientation. The other tile options use different orientations on subsequent tiles. Choose one of the following options from the pop-up menu: Repeat, Checker Flip H, Checker Flip V, Unfold, Checker 180°, Checker Flip 45°, Checker 90° CW, Checker 90° CCW, Rosette, Random, None, Turn CW, Turn CCW, Twist, Slide, Brick.

#### **Blend Borders (Supervised)**

Use this control to determine the size of the border at the tile's edges, where pixels are blended together. Using higher values increases the borders where pixels are mixed. If Unfold, None or Slide is selected in Tiling this control is disabled. These tiling options don't blend borders.

## CC THRESHOLD

Threshold allows setting a threshold level, where all pixels that are higher than this value are converted to white and all lower pixels to black.

### **Controls**

#### **Threshold**

Use this control to determine the Threshold level, at which pixels will be converted to either black or white. At its lowest setting, the result will be completely white and at its highest, all will be black. (The range of this control will adjust to your current pixel value view in the AE info window.)

#### **Channel**

Select the channel information on which to apply the threshold to. Choose one of the following options from the pop-up menu.

##### **Luminance**

The threshold operates on the luminance channel of the source layer. The result is limited to black and white. Alpha channel is not affected.

##### **RGB**

The threshold operates on the individual RGB channels of the source layer. Alpha channel is not affected.

##### **Saturation**

Pixels with saturation higher or equal to Threshold turn white, lower saturation turn black. Alpha channel is not affected.

##### **Alpha**

The threshold operates on the Alpha channel of the source layer. RGB channels are not affected

#### **Invert**

Use this check box to invert the values of the channel currently operating on. At default settings this is turned off.

#### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.

## CC THRESHOLD RGB

Threshold RGB allows setting threshold levels, based on individual red, green, or blue channels, where all pixels that are brighter than this value are converted to maximum red, green or blue and all pixels that are darker to black.

### **Controls**

#### **Red Threshold, Green Threshold, Blue Threshold**

Use these controls to determine the Threshold level, at which pixels will be either converted to the minimum or to the maximum of that channel (The range of this control will adjust to your current pixel value view in the AE info window.)

#### **Invert Red, Green, Blue Channels**

Use these check boxes to invert the values of their respective channels. At default settings these are turned off.

#### **Blend w. Original**

Use this control to determine the level to blend the effect with the original source layer. A value of 100% gives you only the original source layer. A value of 50% produces an even blend between the effect and the original.

# CC FORCE MOTION BLUR

Force Motion Blur has the ability to add motion blur to effects which lack motion blur capability by blending multiple intermediate frames. Force Motion Blur should always be applied to either an Adjustment layer or a composition containing pre-composed effects. Pre-composing effects is a required step because it uses data from previous and subsequent frames. If an Adjustment layer is used, the pre-compositioning step is not needed, all temporal changes below the Adjustment layer can be accessed by Force Motion Blur. The process of generating motion blur in this way is time consuming. Render time can in worst case be multiplied by the number of Motion Blur Levels.

## Controls

### **Motion Blur Samples**

Use this control to determine the number of sampled levels to use for the blur effect. Using higher levels increase the detail and quality of the blur, by reducing visual 'steps' that appears when using lower levels. Using higher levels also increase rendering time.

### **Override Native Shutter**

Use this check box to override the AE shutter angle and instead use the effect Shutter Angle. The AE shutter angle is only valid when the 'Enable Motion Blur' option is enabled for comp, layer and sub comps. Force Motion Blur ignores the Shutter Phase option which AE provide.

### **Shutter Angle (Supervised)**

Use this control to determine the length of the motion blur. Shutter Angle simulates the exposure allowed by the rotating shutter in a camera and is based on degrees. Higher values increase the appearance of motion blur.

### **Native Motion Blur**

Use this pop-up to control the behavior of AE's Motion Blur, where motion blur is enabled.

#### **On**

Adjusts the motion blur in nested compositions (where enabled). Motion blur must be enabled for all compositions and layers that this should apply to.

#### **Off**

Disables motion blur for all nested compositions.

## CC TIME BLEND

Caution! The principle of this effect contradict the After Effects design and several types of problems can occur when using it. Read the instructions carefully to prevent the most common troubles.

Time Blend is an echo effect which accumulates each rendered frame in a buffer. The source layer including any effect applied before Time Blend will leave a fading trail in the output. The source layer should have some kind of animation set, for example pre-composed scale, position or rotation. The source layer can also be a movie or an effect animated on the source layer, for example a particle system. You can control how much to accumulate as well as whether the trail should be blended or composited. You have several compositing options to chose from.

Notes: Since Time Blend accumulates each rendered frame it's not possible to step around in the time line to preview the result at that time. Rendering must take place in a sequential manner. Since AE caches frames to save rendering time, it is possible that Time Blend doesn't get all the required input even when rendering sequential. To make sure caching doesn't scramble the input sequence you must always manually clear all cache before rendering previews or final output. The accumulation buffer can not resize without clearing its contents. To avoid loosing the accumulated trail it is necessary to restrain from using effects that dynamically resize the source layer, e.g. Fast Blur, or in that case apply Time Blend to an Adjustment layer instead.

### **Controls**

#### **Clear**

There is no Options dialog box for Time Blend. Instead, clicking here will simply clear the Time Blend accumulation buffer. There are two options for clearing in the Clear To pop-up.

#### **Transfer**

Use this pop-up menu to select how the accumulation buffer is composited with the current frame. These are the available options:

##### **Blend**

This frame is blended with the accumulation buffer.

##### **Composite Over**

This frame is composited over the accumulation buffer.

### **Composite Under**

This frame is composited under the accumulation buffer

In addition to these three options the following standard transfer modes are available, Screen, Add, Soft Light, Hard Light, Lighten, Darken, Multiply, Difference, Color, Overlay and Luminosity. There are also options available to use the old composite behavior of Blend, Composite Over and Composite Under. These options are only slightly different to the first three but are provided for backwards compatibility and have “Classic” added to their names.

### **Accumulation**

Use this control to determine how much the accumulation buffer should retain each frame. Higher values create longer trails.

### **Clear To (Supervised)**

This control only takes effect when Blend is selected in the Transfer control.

### **Transparent**

Clears the accumulation buffer to transparent.

### **Current Frame**

Loads the accumulation buffer with the current frame.

## CC TIME BLEND FX

Caution! The principle of this effect contradict the After Effects design and several types of problems can occur when using it. Read the instructions carefully to prevent the most common troubles.

Time Blend FX is a copy/paste filter. You need two Time Blend FX applied to see the effect, one set to Paste and the other one set to Copy, and something between those two that will be repeated (or echoed). When using only one instance with Paste selected, this will create a similar effect to Time Blend (for usage see Time Blend), but will not use the full strength of Time Blend FX. Basically what happens is that the one set to Copy, copies the data buffer and the one set to Paste, pastes what is in the data buffer in the next frame. You need to combine Time Blend FX with some other effect or animation. Something needs to be processed, copied and then pasted back to be processed again. This can be another effects parameter. For example, apply Offset to the source layer and move it between the two Time Blend FX effect instances. Set Shift Center To offset 5 pixels for X and Y and press Preview. As you'll see, the 5 pixel offset will be repeated and a trail is created without setting any key frames. You can control the opacity of the trail, as well as if the trail should be blended or composited. You have several compositing options to choose from.

Notes: Since Time Blend FX accumulates each rendered frame it's not possible to step around in the time line to preview the result at that time. Rendering must take place in a sequential manner. Since AE caches frames to save rendering time, it is possible that Time Blend FX doesn't get all the required input even when rendering sequential. To make sure caching doesn't scramble the input sequence you must always manually clear all cache before rendering previews or final output. The accumulation buffer can not resize without clearing its contents. To avoid losing the accumulated trail it is necessary to restrain from using effects that dynamically resize the source layer, e.g. Fast Blur, or in that case apply Time Blend to an Adjustment layer instead.

### **Controls**

#### **Clear**

There is no Options dialog box for Time Blend FX. Instead, clicking here will simply clear the accumulation buffer. There are two options for clearing in the Clear To pop-up.

#### **Instance**

Use this pop-up menu to select whether you want the Time Blend FX plug-in to Copy data from the buffer or Paste data to the buffer.



### **Transfer**

Use this pop-up menu to select how the accumulation buffer is composited with the current frame. These are the available options:

#### **Blend**

This frame is blended with the accumulation buffer.

#### **Composite Over**

This frame is composited over the accumulation buffer.

#### **Composite Under**

This frame is composited under the accumulation buffer

In addition to these three options the following standard transfer modes are available, Screen, Add, Soft Light, Hard Light, Lighten, Darken, Multiply, Difference, Color, Overlay and Luminosity. There are also options available to use the old composite behavior of Blend, Composite Over and Composite Under. These options are only slightly different to the first three but are provided for backwards compatibility and have "Classic" added to their names.

### **Accumulation**

Use this control to determine how much the accumulation buffer should retain each frame. Higher values create longer trails.

### **Clear To (Supervised)**

This control only takes effect when Blend is selected in the Transfer control.

#### **Transparent**

Clears the accumulation buffer to transparent.

#### **Current Frame**

Loads the accumulation buffer with the current frame.

## CC WIDE TIME

Wide Time is a temporal blur that is designed to enhance the motion appearance of any object that is against a stationary background. It uses data from previous and subsequent frames. Layers with effects applied must be pre-composed before applying Wide Time.

### **Controls**

#### **Forward Steps and Backward Steps**

Use these controls to set the range of frames from which to create the temporal blur. Backward Steps blurs behind the current frame and Forward Steps blurs ahead of it.

#### **Native Motion Blur**

Use this pop-up to control the behavior of AE's Motion Blur, where motion blur is enabled.

##### **On**

Adjusts the motion blur in nested compositions (where enabled). Motion blur must be enabled for all Compositions and layers that this should apply to.

##### **Off**

Disables motion blur for all nested compositions.

# CC GLASS WIPE

The Glass Wipe effect creates a glassy looking transition based on values of another layer. The end result is that of a glassy looking layer melting away to reveal another layer.

## **Controls**

### **Completion**

Use this control to determine the completion percentage of the transition. Keyframe this control to animate your wipe.

### **Layer to Reveal**

Use this pop-up menu to select the layer to reveal.

### **Gradient Layer**

Use this pop-up menu to select a layer to use as a displacement and reveal map. The selected layer's luminance values will be used.

### **Softness**

Use this control to determine the softness (or blurring) of the selected Gradient Layer. Higher Softness values will remove small details as well as decrease the depth appearance, giving a smoother overall result.

### **Displacement Amount**

Use this control to determine the amount of displacement for the transition. Higher values produce greater distortion.

## CC GRID WIPE

The Grid Wipe effect creates a transition that cuts the source layer into squares and wipes them off the screen. The wipe starts from a user-definable center point and moves evenly out towards the edge of the source layer. The squares can be wiped off using three different shapes.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Key-frame this control to animate your wipe.

#### **Center**

Use this control to position the point of origin for the wipe on the source layer, based on X, Y coordinates.

#### **Rotation**

Use this control to determine the rotation of the grid wipe, based on degrees. Note that the entire grid rotates, not individual squares.

#### **Border**

Use this control to determine the size of the transition border.

#### **Tiles**

Use this control to determine the total number of tiles in the grid.

#### **Shape**

Use this pop-up menu to select the shape of the transition. Note that the shape affects the entire transition. Choose one of the following options.

##### **Doors**

Splits the source layer into two parts.

##### **Radial**

Gives the wipe a radial shape.

##### **Rectangle**

Gives the wipe a rectangular shape.

#### **Reverse Transition**

Use this check box to reverse the transition.

## CC IMAGE WIPE

Image Wipe uses a layer to control the gradient of the transition.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Key-frame this control to animate your wipe.

#### **Border Softness**

Use this control to determine the amount of softness (or blurring) applied to the edges of the transition. Higher values increase rendering time.

#### **Auto Softness**

Use this check box to automatically adjust the border softness to the Completion speed by using adaptive motion blur. This option is only useful when Completion has been animated and most noticeable in fast transitions.

### **Gradient (Control Group)**

#### **Layer**

Use this pop-up menu to select a layer to use as a gradient for the wipe. The channel information to be used is specified in the Property control.

#### **Property**

Use this control to specify the channel information, from the selected Layer, on which to base the gradient on. Choose one of the following options from the pop-up menu, Red, Green, Blue, Alpha, Luminance, Lightness, Hue and Saturation.

#### **Blur**

Use this control to determine the amount of blur applied to the selected gradient.

#### **Inverse Gradient**

Use this check box to invert the gradient.

## CC JAWS

The Jaws plug-in creates a transition which splits the source layer into two parts, with each part having a tooth-shaped border along the splitting edge. Three different tooth shapes are available.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Keyframe this control to animate your wipe.

#### **Center**

Use this control to position the point of origin for the wipe on the source layer, based on X, Y coordinates. This also serves as the pivot point for the angle (rotation) set in the Direction control.

#### **Direction**

Use this control to determine the angle (rotation) of the break/cut between the two parts of the source layer.

#### **Height and Width**

Use these controls to determine the height and width of the teeth.

#### **Shape**

Use this pop-up menu to determine the shape of the teeth. Choose one of the following options:

##### **Spikes**

Creates triangular teeth for a shark-like bite.

##### **Robo Jaw**

Creates trapezoidal teeth for a mechanical bite, perfect for 'Death Star' doorways.

##### **Block**

Creates rectangular teeth for a blocky bite.

##### **Waves**

Creates wave formed teeth for a smooth round bite.

## CC LIGHT WIPE

The Light Wipe plug-in creates a transition which uses a light source to wipe away the source layer. This light can either be a solid color or can be sampled from the source layer as it is being wiped. The shape of the light, as well as the source and rotation, is fully user-definable.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Key-frame this control to animate your wipe.

#### **Center**

Use this control to position the point of origin for the wipe on the source layer, based on X, Y coordinates.

#### **Intensity**

Use the Light Intensity slider to control the power (or strength) of the light. Higher values produce brighter results.

#### **Shape**

Use this pop-up menu to specify the shape for your light source. Choose one of the following options:

##### **Doors**

Splits the source layer in two parts with a wall of light wiping each part away.

##### **Radial**

Creates a circle of light which wipe away the source layer.

##### **Rectangular**

Creates a rectangle of light which wipe the source layer away.

#### **Direction (Supervised)**

Use this control to determine the direction, at which light rays strikes the source layer during the transition, based on degrees. Not in use if Round is selected for Shape.

## Transition Menu - CC Light Wipe

### **Color from Source**

Using this check box, the color of the light is sampled from the source layer. If this is disabled, the color selected in the Color control (see below) will be used. At default settings this feature is turned off.

### **Color (Supervised)**

Use this control to select a color for the light. Not in use if Color from Source is checked.

### **Reverse Transition**

Use this check box to reverse the transition.



## CC LINE SWEEP

Line Sweep is a transition effect that will wipe the source layer line by line where thickness, overlap and angle can be controlled.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Key-frame this control to animate your wipe.

#### **Direction**

Use this control to determine the angle in which the source layer is wiped. Measurements are in degrees. Direction can not be animated.

#### **Thickness**

Use this control to set the line thickness. Thickness can not be animated.

#### **Slant**

Use this slider to control the overlap of lines during the transition. Lower values decrease overlapping and higher values increase overlapping. Setting a value of 0, new lines are not produced until the previous line has finished wiping. Setting a value of 99, all lines start at the same time:

#### **Flip Direction**

Check this option to flip the direction of the transition. For example, if lines move from left to right with this option unchecked, lines will instead move from right to left.

## CC RADIAL SCALE WIPE

Radial Scale Wipe is radial wipe where edge folds.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Key-frame this control to animate your wipe.

#### **Center**

Use this control to position the point of origin for the wipe on the source layer, based on X, Y coordinates.

#### **Reverse Transition**

Use this check box to reverse the transition.

## CC SCALE WIPE

Scale Wipe stretches a layer off the screen (or onto it) by moving the scale center

### **Controls**

#### **Scale**

Use this control to set the scale factor.

#### **Center**

Use this control to position the point of origin for the wipe on the source layer, based on X, Y coordinates.

#### **Direction**

Use this control to determine the direction (angle) in which the source layer is scaled.

## CC TWISTER

Twister twists away the source layer to reveal another layer.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Key-frame this control to animate your wipe.

#### **Backside**

Use this pop-up menu to select the layer you want to reveal. If you select the same layer as the one you're twisting, the source layer appears to twist into itself and then back out again. If you select none, the source layer appears to twist into nothingness. If the source and Background layer sizes are different, the Backside layer is always revealed centered on the source layer position.

#### **Shading**

Use this check box to add a sense of depth to the twisting effect, by shading the layers with light and shadow.

#### **Center**

Use this control to position the point of origin for the wipe on the source layer, based on X, Y coordinates.

#### **Axis**

Use this control to specify the direction of the twisting effect, based on degrees.

## CC WARPOMATIC

WarpoMatic is a filter for creating warped transitions between two layers based on the selected channel, or "Reactor". It can also be used to just add the warping effect to the effects' source layer, by selecting that layer in the "Layer To Reveal" control. Includes controls for determining the Warp Amount, Direction, Smoothness and Blend Span.

### **Controls**

#### **Completion**

Use this control to determine the completion percentage of the transition. Keyframe this control to animate your transition.

#### **Layer to Reveal**

Use this pop-up menu to select the layer to reveal.

#### **Reactor**

Use this control to specify the information in the two layers, to be used to control the warp. Choose one of the following options from the pop-up menu, Brightness, Contrast Differences, Brightness Differences or Local Differences.

#### **Smoothness**

Use this control to determine the smoothness (or blurring) of the specified Reactor. Higher Smoothness values will remove small details, giving a smoother overall result.

#### **Warp Amount**

Use this control to determine the amount of distortion. Higher values produce greater distortion. Use negative values to reverse the warp direction.

#### **Warp Direction**

Use this pop-up menu to specify the direction of the warp effect. Choose one of the following options:

##### **Joint**

Warp the layers in the same direction. Both the effects' source layer and the layer to reveal appear to be pulled and distorted in the same direction.

### **Opposing**

Warps the layers in opposite directions. The effects' source layer and the layer to reveal appear to be pulled and distorted in opposite directions.

### **Twisting**

Warps the layers by twisting them in the same direction. While one layer twists out of place, the other twists into place.

### **Blend Span**

Use this control to determine the percentage of the transition during which the two layers blend. Shortening the Blend Span will keep each layer sharp for a longer period of time, but the transition will also become more abrupt.

## CC OVERBRIGHTS (32 bpc only)

Overbrights is a utility to quickly identify areas of overbright colors in 32 bpc projects (float). You have a choice of three channels, RGB, Lightness or Luminance. Each channel selection offers two view options, clipped or solid, where clipped options display overbright values in the selected Clip Color and solid options extract and display overbright values only, colorized in red, green and blue to easily identify in which RGB channel they were found. Overbrights is the perfect companion to effects such as Levels and Exposure, where every adjustment of overbright values can be viewed instantly and controlled with high accuracy. This effect will not find any overbright colors in 8 bpc and 16 bpc projects due to their fixed color range.

Note. When using Lightness or Luminance options, pixels not marked as overbright may still contain overbright values in individual RGB channels.

### Controls

#### Channels

Use this pop-up menu to select the channel in which to identify overbright values and how the result will be displayed. The options are the following: RGB Solid, Lightness Solid, Luminance Solid, RGB Clip, Lightness Clip, Luminance Clip. When using the Clip options, clipped overbright values will be displayed on the source layer using the color set in the Clip Color control. When using the Solid options, overbright values will be extracted and displayed against black in the color of the RGB channel they were identified.

#### Clip Color (Supervised)

Use this to set a display color for overbright values. Clip Color can only be used when a Clip option is selected in the Channels control.

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