



**Tinder
for
Avid DS**

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Tinder User Guide

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INTRODUCTION

Welcome to Tinder for Avid DS. Tinder is a comprehensive collection of image processing tools and effects. Our plug-ins have been developed for the most demanding professionals in the post production industry. We hope you enjoy using them.

Installation

You should install Tinder on your Avid DS Workstations and any Avid DS RP Stations that are required to render Tinder effects.

You can download the distribution from our web site (www.genarts.com). You will find installation and licensing instructions there as well.

Licensing

If you don't have a valid license key, a warning will be displayed and the finished render will have a watermark over it.

You will be sent licensing information when you purchase a license from GenArts or a qualified reseller.

About Tinder Plug-ins

All Tinder plug-ins integrate seamlessly into Avid-DS. They are applied to your clips as you would any other process and they can all be animated using the standard Avid-DS animation tools.

APPLYING TINDER EFFECTS

This chapter describes how to apply Tinder effects to a clip and then edit those effects. Background Generators, Multi-Input effects, Transition effects, Paint effects, Colour Correction effects and Keyers are also covered in this chapter.

Clip Effects

Most Tinder effects are clip effects. These include BadTV, Bandlimit, Beam, Blob, Blur, BlurChannels, BlurMasked, BumpShade, Caustic, Chromatic, CircBlur, Clouds, ColBalance, Condensation, Contour, Contrast, Crop, Deband, Defield, Deflicker, Degrain, Diffuse, Dilate, DirBlur, Distorto, DoubleVision, EdgeBlock, EdgeDetect, Elements, Etch, Glass, Glow, Grad, GradientBlur, Grain, HeatHaze, Kaleid, Laser, LensBlur, LensFlare, Levels, Lightning, Median, MinMax, Mosaic, MotionDetect, Newsprint, NightSky, Noise, OldFilm, Paint, Plasma, PseudoColour, Qube, RadialBlur, Rays, Rewire, RomanMosaic, Starburst, Starfield, Strobe, Stutter, Tile, Tint, Trail, Turner, TVdots, Warp, and Wobble.

Applying Effects

Avid-DS provides you with tools for applying a variety of image effects. You will typically use the following steps to apply them:

1. Select an area on which to apply the effect. Usually a clip or track.
2. Edit the effect.
3. Process the effect.

The Effects Library

Avid-DS includes many different types of effects. Tinder effects can be found in the Tinder sub-folder.



Figure 1. Effects library with Tinder presets shown.

Applying a Tinder Clip Effect

When you apply a clip effect to a clip, an effect bar is attached to the top of the clip. You can apply an unlimited number of effects to a clip. To apply a Tinder effect to an entire clip:

1. On the timeline, click a clip to select it.
2. On the Effects panel, click Clip Effect.
3. Select the Tinder folder.
4. Select an effect.

The effect is applied to the clip and an effect bar appears above the clip you selected. The Tinder property editor is displayed for you to make adjustments. See the chapter on Applying Effects in the Avid-DS User Guide.

Editing Tinder Effects

Below is an example of a property page for T_Blur. The left most tab page contains the main controls for this process. Four other standard tab pages (Cropping, Help, Masking and Options) are also included in this plug-in.

We use the standard controls that you will find in Avid-DS - slider, popup menus, toggle buttons and so on. If you have any problems using these, please refer to your Avid-DS documentation.

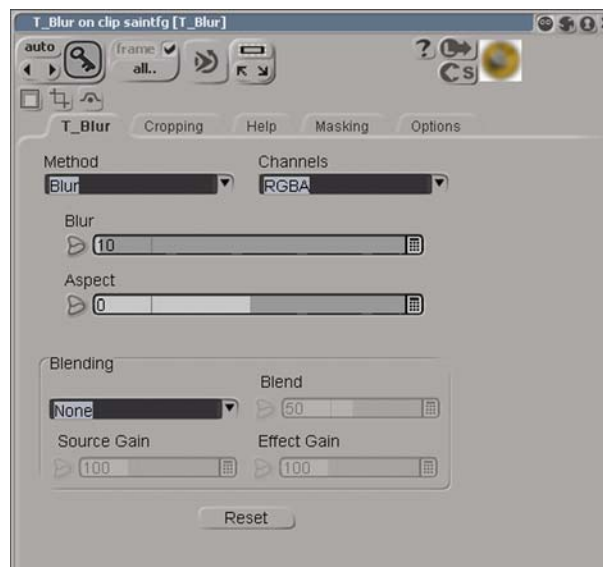


Figure 2. T_Blur

Slider Ranges

All parameters that are controlled through sliders have upper and lower bounds on the values accessed through the sliders. While this is sufficient for most animations it may occasionally be necessary to

specify a value outside the normal range. This is possible through the animation channels in Avid-DS.

To increase and decrease parameters in larger or smaller increments use the control and shift keys as modifiers.

Background Generators

Some Tinder effects do not require any input clip. They can be used to create new material. Background- generators T_Bars, T_Beam, T_Blob, T_Caustic, T_Clouds, T_Elements, T_Grad, T_Laser, T_LensFlare, T_Lightning, T_NightSky, T_Plasma, T_Sky and T_StarField.

Creating a Clip using a Background Generator

1. On a track, drag to select a region. The selected region will be highlighted.
2. From the Control panel, click the Effects icon.
3. From the Effects panel, click Generate Clip.
4. Select an effect (T_Bars) from the Tinder sub-folder of the Effects Library.
5. Modify the parameters on the property page of the effect.

Multi-Input Effects

Some Tinder effects require an image and a matte to create the effect. T_Glass uses a matte as a source for the glass distortion that is applied to an image. T_Mix takes several image inputs which can be blended together in a variety of way. Plug-in multi-input effects in Avid-DS are loaded in a different way to single input effects. Fourteen Tinder plug-ins are multi-input effects. These are T_BlurMasked, T_BumpShade, T_Copyflicker, T_Distorto, T_Glass, T_GradientBlur, T_LensBlur, T_LensFlare, T_Lightning, T_MeltTime, T_Mix, T_Qube, T_Rewire, T_Strobe.

Creating a clip using a Multi-Input Effect

1. Put the first input on the timeline.
2. Create a compositing container.
3. Right-click on the Effects Tree and select Add Effect. Load one of our multi-input effect's presets from the Tinder sub-folder.
4. Drag another clip into the Effects Tree and connect the inputs and output. Repeat until you have all the inputs set.
5. Open the effect's property pages and set up the parameters.

Note: All the multi-input effects (except T_Mix) can be used as clip effects. If so, the clip that has the effect applied to it will be used as all other reference inputs. For example, if T_Glass is used as a clip effect the mask will be the same as the input clip. If it is used as a multi-input effect the mask is set explicitly and can be different to the input clip.

Transition Effects

Some Tinder effects can be used as transition effects. As one clip dissolves into the other the effect will be ramped in as well. This can quickly give some very interesting transition effects. To load a transition effect overlap two clips on the timeline and load a standard dissolve. Then swap out the standard dissolve for a Tinder transition from the effects library. Eighteen Tinder plug-ins are transition effects. These are T_Blur, T_BlurChannels, T_Chromatic, T_CircBlur, T_Diffuse, T_DirBlur, T_Glass, T_HeatHaze, T_LensBlur, T_Mix, T_Mosaic, T_Noise, T_RadialBlur, T_Starburst, T_Tile, T_Tint, T_Turner, T_Warp.

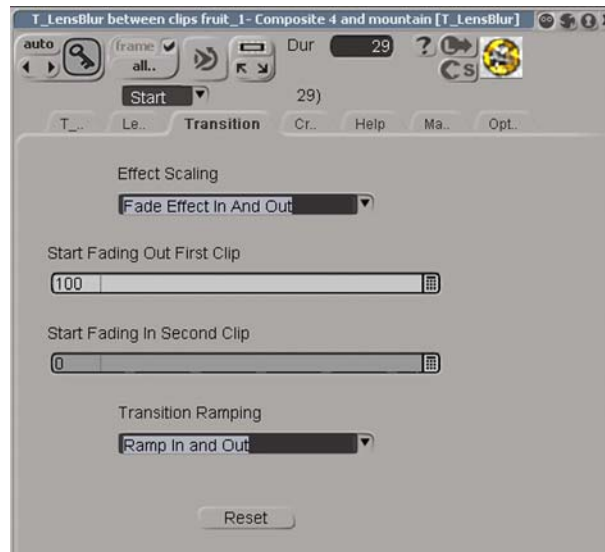


Figure 3. Transition Property Page.

Property Page

The parameters on each of the property pages are described below.

Transition

Effect Scaling

- Don't Scale Effect - set this for no effect animation.
- Fade Effect In And Out - this performs a cross fade between the two clips and then applies the effect. See graphs below.
- Cross Fade Effect - this applies the effect to each clip and then performs a cross fade on the result.

Finishing Fading Out First Clip -

Start Fading In Second Clip -

Transition Ramping - this is the interpolation attached to both the fade and effect transitions.

- Linear - see graph below.
- Ramp In -
- Ramp Out -
- Ramp In and Out - see graph below

The two graphs below show the differences between Linear Transition Ramping and Ramp In and Out Transition Ramping.

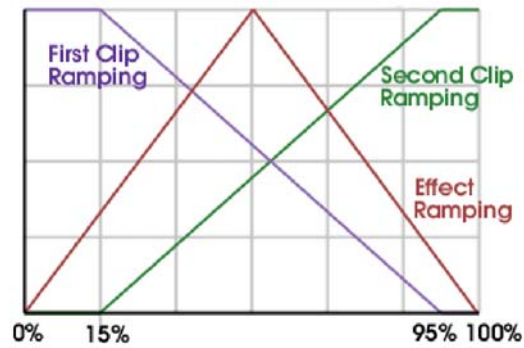


Figure 4. Linear Transition Ramping.

Transition Ramping set to Linear. Start Fading in Second Clip is 15%. Finish Fading Out First Clip is 95%.

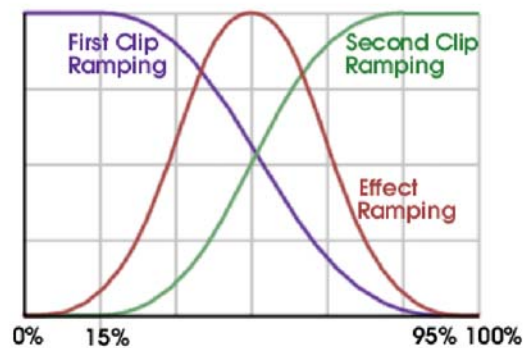


Figure 5. Ramp in and out transition ramping.

Transition Ramping set to Ramp In & Out Start Fading in Second Clip is 15%. Finish Fading Out First Clip is 95%.

Paint Effects

Some Tinder effects can be used as paint effects. These are T_BadTV, T_Blur, T_BlurChannels, T_BumpShade, T_Caustic, T_Chromatic, T_ColBalance, T_Condensation, T_Contrast, T_Degrain, T_Diffuse, T_DirBlur, T_DoubleVision, T_EdgeBlock, T_EdgeDetect, T_Elements, T_Glass, T_Glow, T_Grad, T_GradientBlur, T_Grain, T_LensBlur, T_Levels, T_Median, T_MinMax, T_Mosaic, T_Newsprint, T_Noise, T_OldFilm, T_Plasma, T_PseudoColour, T_Qube, T_RadialBlur, T_Starburst, T_Tile, T_TVdots, and T_Warp.

Colour Corrector Effects

There are six Tinder effects that can be loaded as colour correction effects from the compositing menu. These are T_ColBalance, T_Contrast, T_Deband, T_Dilate, T_Levels, and T_Tint.

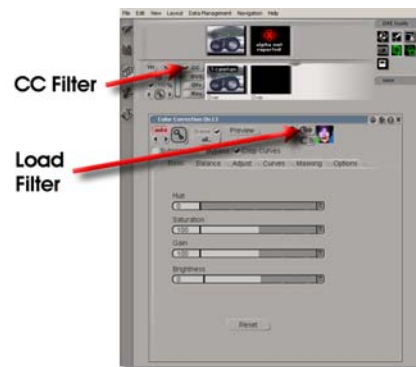


Figure 6. Snapshot of Avid DS User Interface showing buttons to activate and change the Colour Corrector Filters.

Keyer Effects

There are fourteen Tinder effects that can be loaded as keyer effects from the compositing menu. These are T_BlurMasked, T_BumpShade, T_Copyflicker, T_Distorto, T_Glass, T_GradientBlur, T_LensBlur, T_LensFlare, T_Lightning, T_MeltTime, T_Mix, T_Qube, T_Rewire, T_Strobe.

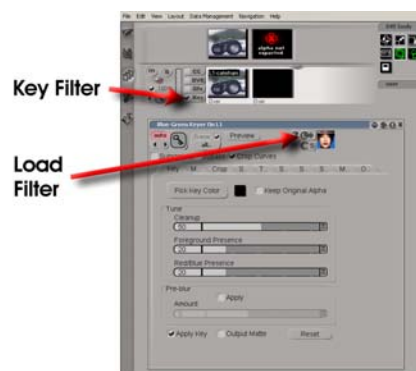


Figure 7. Snapshot of the Avid DS User Interface showing the buttons to Activate and Change the Keyer Filters.

COMMON PROPERTY PAGES

There are several property pages that are common to most Tinder plug-ins. This chapter describes the parameters on those pages.

- **Cropping.** This page controls how the Tinder effect behaves at the edges of your image.
- **Masking.** This page controls which components of the image are processed.
- **Help.** The Tinder User Guide and the display of on-screen tools can be accessed from this property page.
- **Options.** This page is used to select frame or field rendering.
- **Reference.** This page is used to load extra clips that are used, usually as mattes, in the effect.

Cropping Property Page

Many Tinder plug-ins require access to source pixels that lie off the edge of the source image. For example, T_DirBlur needs to blend in pixels off the sides when blurring near the edges of the image. The Cropping property page gives access to all the controls required for specifying how pixels are treated at these edges and where they appear. The built in cropping controls are also useful for removing

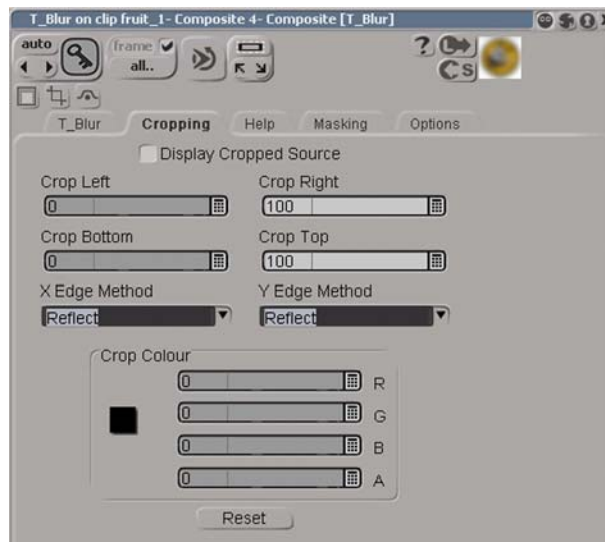


Figure 8. Cropping Property Page

unwanted black pixels at the edges of video footage.

Cropping **Display Cropped Source** - switch this on to show the cropped source image with the effect bypassed. This can be useful if precise

positioning of the crop lines is required when the Tinder effect is getting in the way.

Crop Left - controls the position of the horizontal crop line.

Crop Right - controls the position of the horizontal crop line.

Crop Bottom - controls the position of the horizontal crop line.

Crop Top - controls the position of the horizontal crop line.

Note *The position of the crop lines can be changed by clicking and dragging them directly on the screen. The image below shows the crop lines.*



Figure 9. Crop Lines reflecting left and repeating top

X Edge Method - determines the behaviour of the image at the left and right crop boundaries. Four edge methods are supplied.

- **Colour** - fills the area between the crop line and the edge with the Crop Colour.
- **Repeat** - copies pixels on the crop boundary to the screen edge.
- **Wrap** - copies pixels from the area between the opposite crop line and its screen edge into the area between the current crop line and its screen edge.

- **Reflect** - reflects pixels about the current crop line. In other words it copies pixels from the other side of the current crop line into the area between the current crop line and the screen edge.



Figure 10. Colour



Figure 11. Reflect



Figure 12. Repeat



Figure 13. Wrap

Note: *Horizontal and vertical crop boundaries can have different edge methods. Cropping is often used to remove unwanted pixels at the edge of an image. If a video clip is digitised badly you may get black edges left and right. These can easily be removed by moving in the vertical crops and setting the edge method to Reflect.*

Y Edge Method - determines the behaviour of the image at the top and bottom crop boundaries. See X Edge Method on page 9.

Crop Colour - sets the fill colour used when the edge method is set to Colour. If you are keying blue screen you can garbage mask unwanted rigs using the crop control and set the Crop Colour to blue.

Masking Property Page

This controls which colour channels are processed. Most commonly this will be all three. It also controls how the alpha channel will

affect the result. See your Avid-DS User Guide for more information.



Figure 14. Masking Property Page

Options Property Page

For general information about the options property page, see your Avid-DS User Guide.

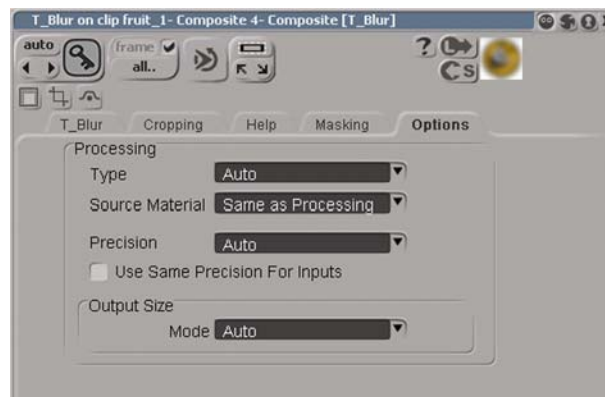


Figure 15. Options Property Page

Tinder plug-ins will be rendered either as fields or frames depending on a decision process that Avid-DS carries out. Some effects do not need to be rendered in fields, provided that there is no animation. Such effects include T_Contrast, T_ColBal, T_Crop and several others.

For the best result, some Tinder plug-ins should always be rendered in fields when used with video footage. These effects typically need to process a region of pixels to compute a single output pixel. Such effects include T_Bandlimit, T_Starburst, T_RadialBlur and T_Rays.

The effect will be rendered on fields ONLY when you are 'processing all' and you have the 'Granularity' parameter set to 'fields' AND there is animation on any parameter OR the 'options' property page is present and 'source material' is set to 'same as processing'.

The effects that should be rendered in fields to get the best results will have the 'options' page present.

Help Property Page

The Help property page gives a brief description of the plug-in and access to this Tinder User Guide by pressing the Online Help button. It is also used to show or hide Tinder's on-screen interface tools.



Figure 16. Help Property Page

COMMON TOOLS

There are several types of parameters that are common to most Tinder plug-ins (Filtering, Colour Gradients, Tone Curves, Blending, Channels). These are all described in this chapter.

Filtering

Filtering is used to control the quality of your processed images by reducing the jagged lines characteristic of pixel devices. For high quality images you should switch filtering on, although this will increase the time it takes to process an image. With all image processing you have a trade off between quality and time.

Some of our plug-ins have a popup menu with choices of filtering quality. Others have an "on" or "off" toggle control that provides filtering appropriate for that effect. Remember that filtering does slow the image processing down, so use it only when doing the final render and not when interacting with the effect.

For some of our blur plug-ins the filtering options are:

- **Low** - nearest neighbour no oversampling.
- **Medium** - bilinear, low oversampling.
- **High** - bilinear, high oversampling.

Most of our other plug-ins have the following filtering option:

- **None** - Poor quality. Highly distorted images may show jaggies. This is the fastest option.
- **Bilinear** - Medium quality. Useful when zooming in but can still result in boiling if zoomed out too much.
- **MIP Bilinear** - High quality but slower than the others. Very useful when zooming in or out.

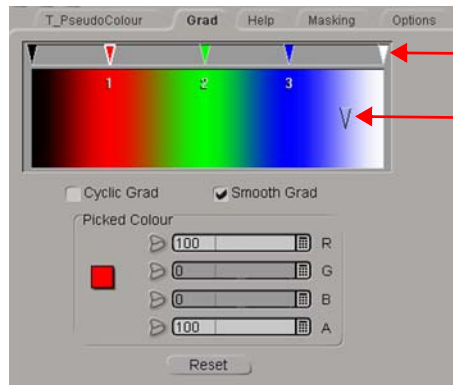
Depending on the effect being filtered, MIP Bilinear filtering may over-soften the image, in which case the MIP Sharpness control can be used to compensate.

MIP Sharpness - compensates for the softening of the image when MIP Bilinear filtering is on. The default value of 100% is "normal" sharpness, increasing it will sharpen up the result, decreasing it will soften further.

Colour Gradient Controls

Several of the Tinder plug-ins require the colours in a colour gradient or ramp. These plug-ins will have a colour grad control (shown below). The coloured area at the top is used to create, destroy and position the individual colours in the gradient by manipulating the small triangular colour tags. The colour picker below allows you to change the colour of the currently selected tag. *The tags on the extreme left and extreme right cannot be moved or deleted but their colours can be modified.*

Note



Tag Bar

Click here to add a colour

Figure 17. Colour Gradient Tool

Using the gradient controls

- Selecting a tag is done simply by clicking on it. It will highlight and its colour will appear in the colour picker below.
- Changing a colour is done by first selecting a tag and then modifying its colour with the colour picker.
- Moving a tag is done by clicking on it and dragging the tag left and right. The selected tag will highlight.
- Deleting a tag is done by clicking on it and dragging it into the colour ramp. On mouse up the tag will disappear.
- Creating a tag is done by moving the cursor into the lower part of the colour ramp until a tag appears. Click the mouse and drag that tag up onto the tag bar so that it snaps into place.

Other controls

- **Smooth Grad** - switch this on to generate a smooth ramp by using cubic interpolation between adjacent colours. When switch off, linear interpolation will be used and this can lead to colour banding.
- **Cyclic Grad** - switch this on to force the grad to wrap back around upon itself. The two end colours will be the same and changing one will automatically change the other.
- **Repeats** - number of times to repeat the colour ramp in a given effect.
- **Cyclic Shift** - used to shift the position of the colour ramp in the effect, but it only works in cyclic mode.

Blending Methods

Many plug-ins include a collection of four tools to allow blending of an effect with the original image. Fourteen blending methods are available with the amount of blending and an ability to increase or decrease the effect and source gains independently. Four blending methods between a swan and London traffic are shown below. The original images are also shown for comparison.



Figure 18. Swan



Figure 19. Cars



Figure 20. Blending set to Mix



Figure 21. Blending set to Subtract

Blending Method

- **None** - no blending takes place.
- **Mix** - dissolves the two images using the blend value.
- **Luminance** - takes the luminance from the source image and the chroma from the other.
- **Chroma** - takes the colour of the source image and the luminance from the other.
- **Hue** - takes the hue from the source image and the saturation and value from the other.
- **Saturation** - takes the saturation from the source image and the hue and value from the other.
- **Value** - takes the value from the source image and the hue and saturation from the other.
- **Colour** - takes the hue and saturation from the source image and the value from the other.
- **Darken** - takes the darker of either the source image or the other image.

- **Lighten** - takes the brighter of either the source image or the other image.
- **Screen** - adds the two images together but rather than clipping out of range values it ramps them in.
- **Multiply** - multiplies the two images together.
- **Add** - adds the two images together ($a + b$)
- **Add Over** - adds one image over the other ($a + a*b$)
- **Add Under** - adds one image under the other ($b + a*b$)
- **Subtract** - subtracts the other image from the source image.
- **Difference** - finds the difference between the two images by subtracting bright colours from dark colours. Dark colours produce a more subtle effect than bright colours.
- **Overlay** - Mixes colours while preserving highlights and shadows.
- **HardLight** - Lightens highlights and darkens shadows. If the pixel value in the original image is lighter than 50% grey, the result lightens as if it were screened. If the pixel value in the original image is darker than 50% grey, the result is darkened as if it were multiplied.

Blend - mixes the original image and the processed image. The Blending Method should be set to something other than None for this effect to be seen. A value of 50 is the default and will fully show the result of the blending. Increase this value to mix more of the effect into the blended result. Decrease this value to mix more of the original image into the blended result.

Source Gain - when blending, the original image is scaled by this value.

Effect Gain - when blending, the processed image is scaled by this value.

Channels

The colour of each pixel in the image is constructed from three colour components - red, green and blue. Some Tinder effects can be applied just to the individual colour channels or combinations of these. These channel combinations are:

- **RGB** - the red, green and blue channels are processed.
- **Grey** - the red, green and blue channels are processed, added together and divided by three.
- **Red** - just the red channel is processed.
- **Green** - just the green channel is processed.
- **Blue** - just the blue channel is processed.
- **Luminance** - a weighted average of the red, green and blue components, commonly used to describe the brightness of the image, is processed.
- **U** - the u video signal (colour difference signal) will be processed.
- **V** - the v video signal (colour difference signal) will be processed.
- **Chroma** - the hue and saturation of the image will be processed.

Lighting

Many plug-ins include lighting effects and the common parameters are described here.

Light Active - switch this on to activate the lighting.

Light Style - sets the type of lighting model used.

- **None** - the light is switched off.
- **Infinite** - assumes the light source is infinitely far from the xy plane and will produce parallel light rays.
- **Local** - assumes the light source is a finite distance from the xy image plane as defined by the Light Distance parameter.

Light Brightness - controls the strength of the light. The higher the value the brighter the light.

Light Elevation - sets the angle between the light source and the xy plane. A value of zero will direct the light rays parallel to the xy plane. A value of 90 will shine the light directly at the xy plane.

Light Direction - sets the direction of the light rays in the xy plane.

Light Distance - sets the height of the local light above the image plane.

Light Fall-off - controls how quickly the light fades away with distance from the light source. The higher the value, the tighter the highlights.

Light Colour - sets the colour of the light.

ON SCREEN TOOLS

Many of the Tinder plug-ins let you interact directly with objects on the screen. This chapter describes some of the common controls that are used in such effects.

Tinder's on-screen interface tools are used to quickly position an effect's parameters by eye rather than fiddling with sliders and rendering to see the result. The on-screen tools are displayed using a toggle on the Help property page.

1. Crop controls
2. Move, Scale and Rotate controls
3. Lighting controls
4. Gradient controls
5. Radius controls
6. Kaleidoscope controls
7. RGB channel controls
8. Vector controls
9. Beam controls

Crop Controls

Some effects allow you to crop the four edges of the image. The behaviour of the cropped portions are determined by the current edge methods. The four crops are expressed in percentages and snap to the nearest pixel.

In any effect that has crop controls, you have four crop boundaries to drag around the screen. The image below shows the four crop boundaries.

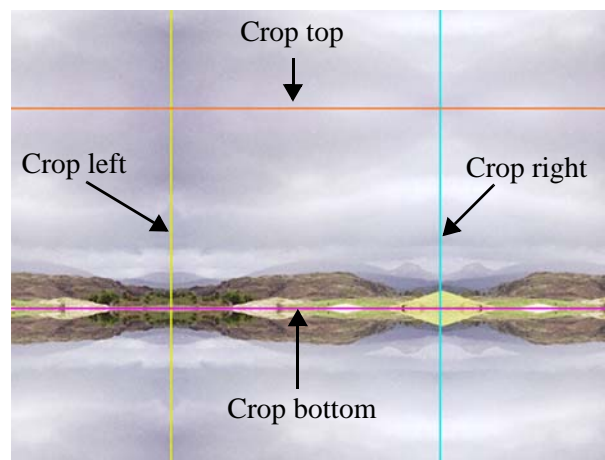


Figure 22. Crop Lines

An example of a cropped image, with the crop lines showing. The Y Edge Method is set to Wrap and the X Edge Method is set to Repeat.

Move, Scale and Rotate Controls

Many of the plug-ins use a 2D move icon to translate, rotate or scale some aspect of the effect.

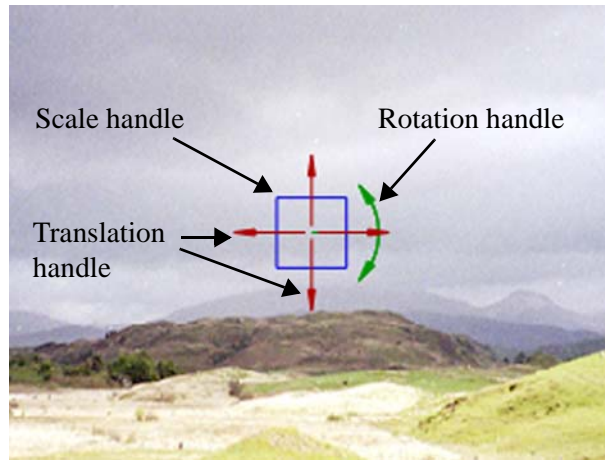


Figure 23. Translation, Scale and Rotation Tools

The icon is composed of 3 different elements, the red translation (move) cross hairs, the green rotation ring and the blue scale box.

Some effects only have one or two of the elements from the complete icon. For example, the T_Warp plug-in uses only the translation cross hairs to position the centre of the fish eye lens effect. Such isolated elements work in the same manner as described here.

To translate in X and Y simultaneously, pick the centre of the red cross and drag. Both the translation arms will highlight as a dotted line. To translate in only one direction, pick either the horizontal or the vertical bar away from the centre. That bar will highlight and you can then drag the element in one direction only.

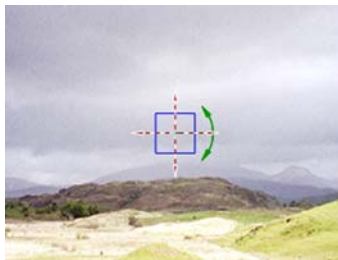


Figure 24. Translation in both directions

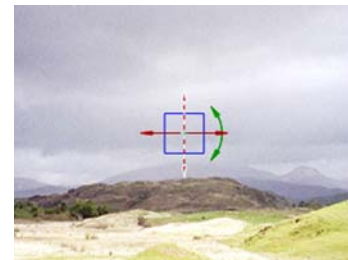


Figure 25. Translation vertically

Picking the rotation ring and dragging it around in circles will rotate the effect.

The scale box is composed of 3 parts, the overall scale factor, the X scale factor and the Y scale factor. You select and drag the overall scale using the corners of the scale box. To scale in X or Y only, you should select and drag one side of the scale box.

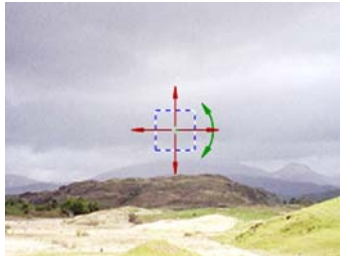


Figure 26. Scaling in x and y

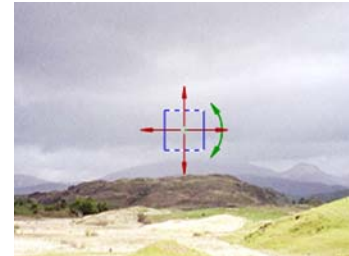


Figure 27. Scaling in x

Lighting Controls

Some plug-ins include controls for adding lighting effects. These allow the selection of a light colour, position and brightness. In addition, a fall-off factor can be specified - a higher fall-off tightens up the highlights.

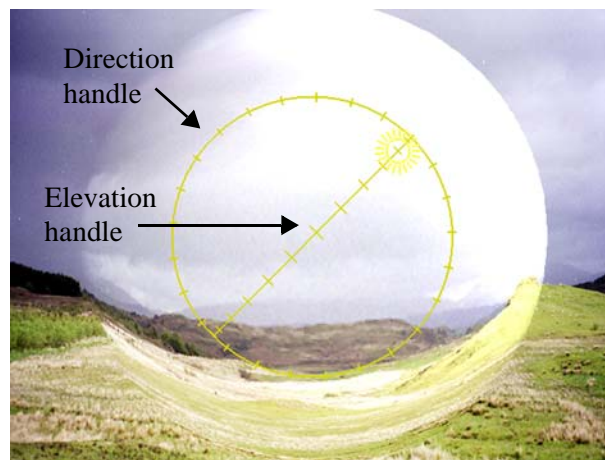


Figure 28. Lighting Controls

The direction and elevation of the light can be manipulated using the on-screen handles shown above.

Gradient Controls

The gradient on-screen tool allows for the positioning of the start and end points of the colour gradient. The central point of the cross hairs can be selected and the point moved in x and y simultaneously, or the horizontal or vertical bars can be selected individually and moved only in that direction.

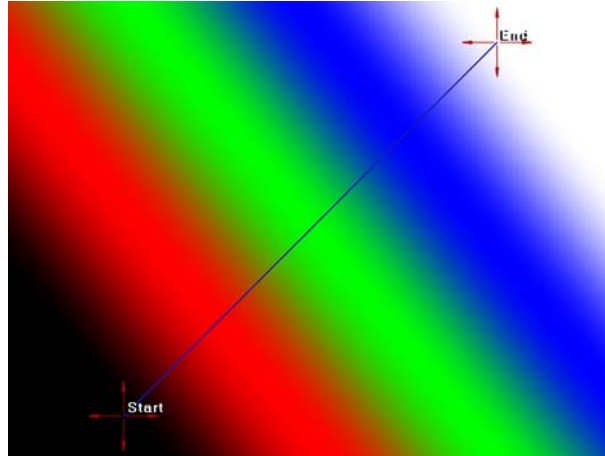


Figure 29. Gradient Controls

Radius Controls

The radius on-screen tool enables the user to change the size of the effect by clicking and dragging on the circumference of the yellow circle.

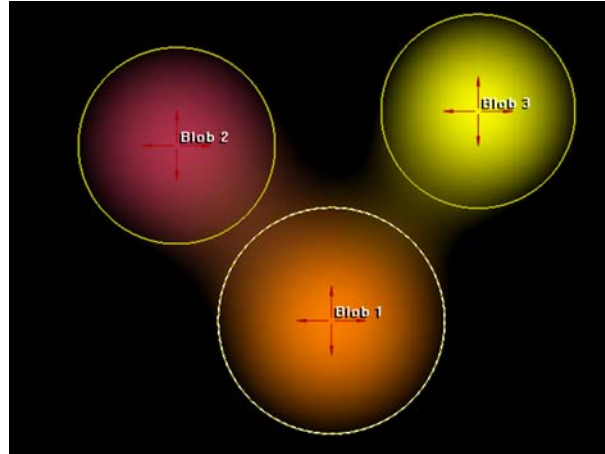


Figure 30. Radius Controls

Kaleidoscope Controls

The prism controls on T_Kaleid enable the user to move, rotate and scale the effect.

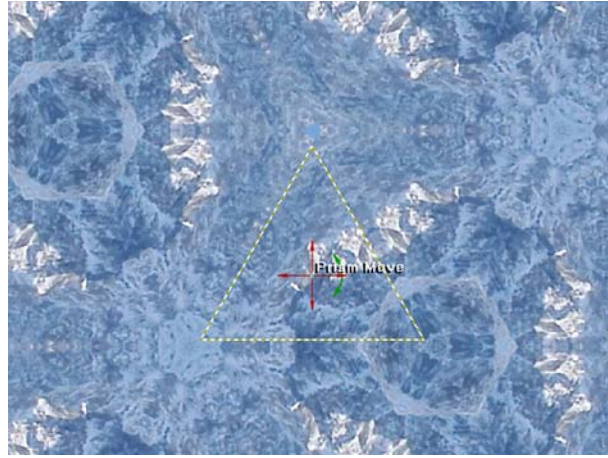


Figure 31. Kaleidoscope Tools

RGB Channel Controls

Three colour channel radius controls are supplied in T_BlurChannels. Clicking and dragging on the circle circumference will change the radius and blur amount.



Figure 32. RGB Channel Controls

Vector Controls

This on-screen tool enables the user to increase the amount of the effect with the length of the vector, and change its direction by rotating the green ring.



Figure 33. Vector Controls

Beam Controls

The rotation in 3D space of the spotlight in T_Beam can be controlled by the on-screen tool shown below. Click and drag on the yellow circles to rotate the beam. The origin of the beam is controlled by the standard red cross hairs, also shown.

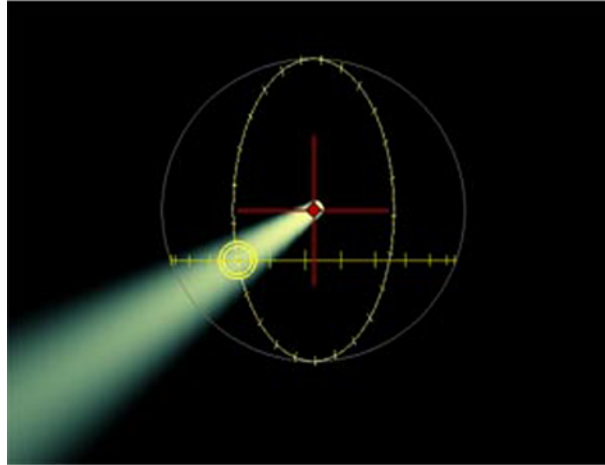


Figure 34. Beam Controls

BLURS

T_Blur

Description

T_Blur is a time constant sub-pixel gaussian blur. It is very fast at large and small blurs and being sub-pixel accurate can be smoothly animated over time. T_Blur can operate on the whole image,



Figure 35. Original Image



Figure 36. Blurred

individual colour components or the chroma. Also included are 15 blending methods between the original image and the blurred image. It can also be used to sharpen an image.



Figure 37. Blur with Blending set to Add



Figure 38. Blur used to sharpen the image

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

- T_Blur Method** - selects whether to blur or sharpen the image.
- Blur - defocuses the image.
 - Sharpen - brings blurred images more into focus.

Channels - selects the colour channels that will be affected by the blur. (See “Channels” on page 17.)

Blur - the amount of blur. Increase this value to make the image more defocused. The value represents the radius in pixels of the blur circle.

Aspect - controls the weighting of horizontal and vertical pixels used in the blur. Increase this value to blur horizontally. Decrease this value to blur vertically.

Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_Blur does a lot more than just defocus images quickly. Using the blending methods interesting effects can be achieved and it can also be used to sharpen images.

To blur in a particular direction see “T_DirBlur” on page 37, or for radial blurs (crash zooms) see “T_RadialBlur” on page 46. For circular blurs see “T_CircularBlur” on page 35 and for a blur that models the defocusing characteristics of a camera lens see “T_LensBlur” on page 42.

T_BlurChannels

Description

T_BlurChannels blurs the individual colour channels of an image by different amounts. T_BlurChannels uses a time constant sub-pixel gaussian blur. It is very fast at large and small blurs and being sub-pixel accurate can be smoothly animated over time. See also T_Blur and T_BlurMasked.



Figure 39. Blue channel only blurred

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_BlurChannels

Method - selects whether to blur or sharpen the image.

- Blur - dofocusses the image.
- Sharpen - brings blurred images more into focus.

Blur

- Red - amount of blur on the red channel.
- Green - amount of blur on the green channel.
- Blue - amount of blur on the blue channel.
- Alpha - amount of blur on the alpha (mask) channel.

Aspect

- Red - controls the weighting of horizontal and vertical pixels used in the blur on the red channel.

- Green - controls the weighting of horizontal and vertical pixels used in the blur on the green channel.
- Blue - controls the weighting of horizontal and vertical pixels used in the blur on the blue channel.
- Alpha - controls the weighting of horizontal and vertical pixels used in the blur on the alpha channel.

Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_BlurChannels can be used to soften the red channel of a digitally created image and blend the result back into the original. This is useful for simulating certain filmstocks that have layered red, green and blue emulsions where the focusing of the image captured on the film is subtly different for each layer (or channel).

T_BlurMasked

Description

T_BlurMasked takes a source image and a mask and blurs the image based on values in the mask. It does not blur the whole image and then composite the foreground through the mask. In some circumstances it can be used to simulate depth of field. Where the mask is black no blurring will take place. Where the mask is white the blur parameter value is used. Mask values in between black and white scale the blur value accordingly.



Figure 40. Blurred Masks using a circular attenuation mask (black in the middle fading out to white).

T_BlurMasked uses a Gaussian blur and being sub-pixel accurate can be smoothly animated over time. If it is used as a clip effect the luminance or the alpha of the image can be used as the attenuating mask.

Effect Type

Clip Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

- T_BlurMasked**
- Method - selects whether to blur or sharpen the image.
 - Blur - dofocusses the image.
 - Sharpen - brings blurred images more into focus.

Channels - selects the colour channels that will be affected by the blur. (See “Channels” on page 17.)

Blur - the amount of blur. Increase this value to make the image more defocussed. The value represents the radius of the blur circle.

Aspect - controls the horizontal and vertical weighting of the blur. Increase this value to blur horizontally. Decrease this value to blur vertically.

Mask With - select how to selectively defocus the image.

- **Alpha** - uses the embedded alpha channel of the image to attenuate the blur.
- **Luminance** - uses the luminance of the image to attenuate the blur.

Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Reference When used as a multi-input effect, the reference clip used will define the mask used to attenuate the blur on the clip.

Hints & Tips

If you are not using an attenuation mask and simply want to blur an image, you should use T_Blur which is much faster for large blurs. See “T_Blur” on page 28.

If you need to add depth of field to a composition, you will need a filter that can use a graduated mask to selectively defocus objects that are in the distance. In some circumstances T_BlurMasked can be used to do this. In the images below, a linear ramp is used on

some computer generated planets to simulate depth of field. The



Figure 41. CGI Planets

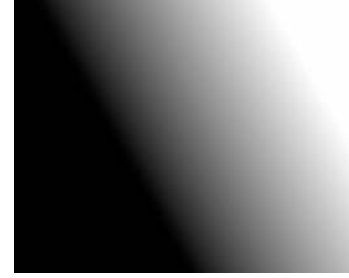


Figure 42. T_Grad Linear Ramp

final effect using T_BlurMasked is shown below.



Figure 43. CGI planets with simulated depth of field.

T_BlurMasked can also be used to great effect when the source image is also used as the mask input. This can soften highlights and is a common technique in model photography to improve the image.

T_CircularBlur

Description

T_CircularBlur smears an image around a point giving the appearance of motion blur on a rotating object.



Figure 44. Lotus Elise



Figure 45. Wheel spin with T_CircularBlur

Effect Type

Clip Effect and Transition Effect.

Property Pages

The parameters on each of the property pages are described below.

T_CircularBlur

Amount - controls the amount of blur. Increase this value for a more blurry image.

Hold Out - defines a region around the centre of the effect where no blurring will take place.

Aspect - controls the horizontal and vertical weighting of the blur. Increase this value to blur horizontally. Decrease this value to blur vertically.

Bias - controls the weighting of the blur along the direction of blurring. A bias of zero will smear pixels equally forwards and backwards.

X Centre - the horizontal position of the centre of the blur.

Y Centre - the vertical position of the centre of the blur.

Filtering - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)

Blur Profile - defines the weighting of the pixels that are blended together in each blur arc.

- **Box** - weights each pixel equally. Faster than Gaussian.
- **Gaussian** - weighs each pixel using a gaussian distribution. Pixels at the end of the arc have less effect than pixels in the middle of the arc. Slower than Box.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips For radial blurs see “T_RadialBlur” on page 46.

T_DirBlur

Description

T_DirBlur streaks an image in a given direction. It can be useful in



Figure 46. Stationary Catherham



Figure 47. With direction blur on the background and circular blur on the wheels

giving the appearance of motion captured on film.

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_DirBlur

Blur Method

- Direction/Length - in this mode the direction of the blur is explicitly set by the Direction slider of the property page.
- Track - in this mode the direction of the blur is taken from the track data. Set up the track data as follows:
 1. Switch autokey on.
 2. Select Track mode.
 3. Move the timeslider to the start of the clip.
 4. Move the tracking cross hairs to a point on the image you wish to identify.
 5. Move the timeslider to the end of the clip.
 6. Move the tracking cross hairs to the same point on the image.
 7. Select the amount of blur you wish to apply with Track Scale.
 8. The X and Y points of the track will interpolate across the clip and the directional blur will be applied.

Note *Keyframes on the tracking position MUST be set by setting 'autokey' on NOT by manually setting keyframes of the track position.*

Blur Profile - defines the weighting of the pixels that are blended together in each blur line.

- **Box** - weights each pixel equally. Faster than Gaussian.
- **Gaussian** - weighs each pixel using a gaussian distribution. Pixels at the end of the line have less effect than pixels in the middle of the line. Slower than Box.

Filtering - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)

Direction - controls the direction of the blur.

Length - controls the amount of blur. Increase this value for bigger blurs.

Bias - controls the weighting of the blur along the direction of blurring. A bias of zero will smear pixels equally forwards and backwards.

Track X - horizontal position of the track point.

Track Y - vertical position of the track point.

Track Scale - the amount of directional blur applied.

Blending Sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

For circular blurs see “T_CircularBlur” on page 35 and for radial blurs see “T_RadialBlur” on page 46.

T_GradientBlur

Description

T_GradientBlur finds the gradients in an image and uses these to produce directional vectors that selectively blur the image either along or perpendicular to the vectors. Blurring does not take place in areas that have no gradient. In the images above the mask has no



Figure 48. Source Image

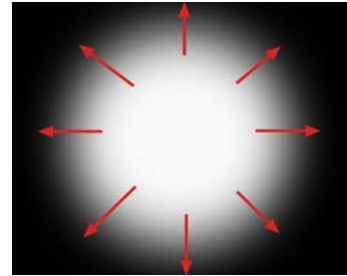


Figure 49. Mask

gradient in the centre where it is pure white and at the edges where it is pure black. The gradient direction vectors are shown by the red arrows. In the images directly above the blurring only takes place in



Figure 50. Blurring along the gradient



Figure 51. Blurring across the gradient

the grey areas where there is a gradient. The left image has a direction set to zero and the blurring is radial. The right image has a direction set to ninety degrees and the blurring is across the gradient vector direction. If T_GradientBlur is used as a clip effect the vectors are computed from the image clip, but if T_GradientBlur is used as a multi-input effect another clip can be used as the vector reference clip.

Effect Type

Clip Effect, Paint Effect, Multi-input Effect and Keyer Effect.

Property Pages

Blur Mode - controls the amount of blurring.

- **Uniform** - uses the Length parameter to set the amount of blurring.

- **Scaled By Gradient** - the amount of blurring set in the Length parameter is continuously scaled by the gradient.

Blur Profile - defines the weighting of the pixels that are blended together in each blur line.

- **Box** - weights each pixel equally. Faster than Gaussian.
- **Gaussian** - weighs each pixel using a gaussian distribution. Pixels at the end of the line have less effect than pixels in the middle of the line. Slower than Box.

Size - controls the amount of blurring along the gradient vector.

Blur Direction - controls the direction of blur along the gradient vectors. A value of 0 blurs along the vectors. A value of 90 blurs across the vectors.

PreBlur - controls the amount of blurring applied to the gradient before the vectors are calculated.

Bias - controls the weighting of the blur along the direction of blurring. A bias of zero will smear pixels equally forwards and backwards.

Filtering - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)

Gradient Channel - which channel to use to calculate the gradient.

- **Luminance**
- **Alpha**

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Reference When used as a multi-input effect, the reference clip used will define the blur vectors that are used on the clip.

Hints & Tips

For circular blurs see “T_CircularBlur” on page 35 and for radial blurs see “T_RadialBlur” on page 46.

T_LensBlur

Description

T_LensBlur is a defocus effect which models the physics of a real lens. It includes controls to allow the blur to follow the shape of the camera diaphragm and to 'bloom' highlights above a certain threshold. It even includes a catadiatropic lens type and the ability to



Figure 52. Cars at night



Figure 53. With LensBlur

scissor the diaphragm.

Effect Type

Clip Effect, Transition Effect, Paint Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_LensBlur

Radius - controls the amount of blur. Increase this for a more defocussed result.

Aspect - controls the horizontal and vertical weighting of the blur. Increase this value to blur horizontally. Decrease this value to blur vertically.

Gain - controls the overall brightness of the image.

Softness - controls the amount of blurring applied to the highlights to soften them.

Aberration - controls the defects in the lens surface that cause the image to display colour fringing.

Blooming - switches blooming on and off. Blooming simulates the over exposure of the effect.

Bloom Masking - controls the mask that is used to control the blooming. The mask attenuates the bloom threshold. If the mask is

white the threshold is set at the current bloom threshold value. If the mask is black the threshold is set to 100.

- **Off**
- **Luminance** - available only for multi-input effect.
- **Inverted Luminance** - available only for multi-input effect.
- **Alpha**
- **Inverted Alpha**

Bloom Threshold - the luminance level above which pixels will bloom.

Bloom Gain - controls the brightness of the blooming.

- Lens Type
- Shutter Shape - controls the shape of the highlights.
- **Circular** - bloomed highlights will appear round.
 - **Polygonal** - bloomed highlights will appear as regular polygons.

Lens Type - sets the type of lens simulated.

- **Normal** - standard glass lens assembly.
- **Catadiatropic** - combines glass elements and mirrors to focus the light. This is done to achieve a more compact lens assembly but gives a characteristic dark spot on unfocussed images due to the light being blocked by the mirrored spot in the centre of the glass element.

Rotation - controls the rotation of the highlights about the centre of each highlight.

Catadiatropic Size - controls the size of the central dark spot when the lens is set to Catadiatropic.

Num Sides - controls the number of sides of the bloomed highlights when the shutter is set to polygonal.

Scissored Shutter - switch this on to activate the diaphragm clipping.



Figure 54. Christmas lights in London

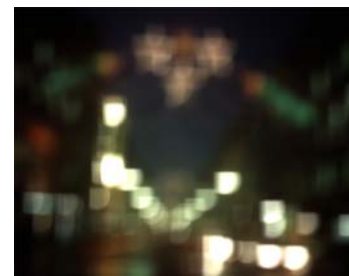


Figure 55. With scissored highlights

Scissored Position - controls the extent to which the left and top clip planes intersect the bloomed highlights. At 50 the lines will intersect the centre of the highlights.

Scissored Angle - controls the rotation of the top clipping plane around the centre of the highlight.

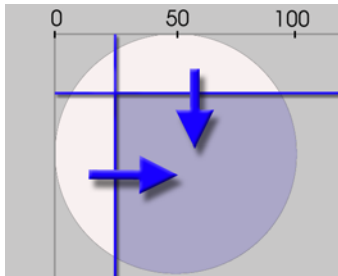


Figure 56. Scissored Position showing left and top clip lines with blue shading the resulting highlight shape

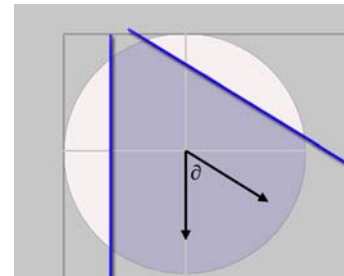


Figure 57. Scissored Angle showing the rotation of the top clip line about the centre of the highlight

Blending Sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Reference When used as a multi-input effect, the reference clip used will define the mask used to attenuate the level at which blooming takes place.

Hints & Tips

Digital Gaussian blurs are commonly used to simulate out-of-focus elements. This can be perfectly acceptable in many situations, but if a true camera defocus is required a filter that will bloom highlights

ought to be used. The picture below shows a well-focused scene.



Figure 58. A well-focused scene

Now look at the two images below. On the left we have changed the focus of the lens so that the image is no longer sharp. Note what happens to the candle flames and the sparkles from the candle holders. They exhibit noticeable blooming rather than just a softening and take on the characteristic shape of the camera's aperture. Note also that the edges are well defined. You can often see these polygonal shapes in lens flares. The image on the right shows a digital Gaussian blur. Note the difference.



Figure 59. T_LensBlur



Figure 60. Gaussian blur using T_Blur

A common cinematic technique to get the viewer to shift their attention between objects in the scene, is to change the focus between a foreground element and a background element. This is known as a rack focus.

You should be aware that changing the focus of a lens causes a slight change in the focal length of the lens. This produces a scale change in the image during defocusing and is dependent on the type of lens used.

T_RadialBlur

Description

T_RadialBlur smears pixels in all directions from a point in the image. This is also known as a crash zoom.

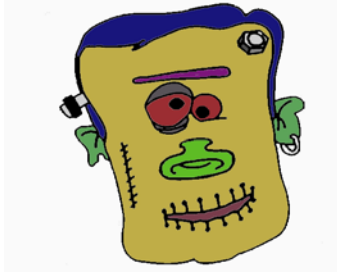


Figure 61. Monster



Figure 62. With radial blur

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_RadialBlur

Amount - controls the amount of blur. Increase for a more extreme blur.

Blur Profile - defines the weighting of the pixels that are blended together in each blur line.

- **Box** - weights each pixel equally. Faster than Gaussian.
- **Gaussian** - weighs each pixel using a gaussian distribution. Pixels at the end of the line have less effect than pixels in the middle of the line. Slower than Box.

Aspect - controls the horizontal and vertical weighting of the blur. Increase this value to blur horizontally. Decrease this value to blur vertically.

Bias - controls the weighting of the blur along the direction of blurring. A bias of zero will smear pixels equally forwards and backwards.

X Centre - horizontal position of the centre of the blur.

Y Centre - vertical position of the centre of the blur.

Filtering - sets the quality of the filter used when processing the effect. (See "Filtering" on page 13.)

Hold Out - controls the size of the unblurred area at the centre of the effect.

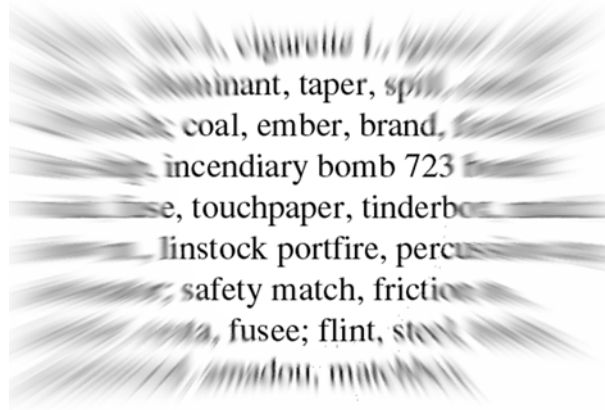


Figure 63. T_RadialBlur with Hold Out

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_RadialBlur can take a long time to render. While setting up the effect you should set the Blur Profile to Box and the Filtering to Low, then switch to Gaussian and High for the final render.

If you want to boost the apparent length of the blur, try altering the Bias control.

T_RadialBlur can be used as an effective transition between clips or to simulate crash zooms.

It can also provide an effective simulation of light rays. Make sure you set the blending method to Add to composite the original image

and the rays.



Figure 64. Stained Glass



Figure 65. Simulated rays using
RadialBlur

EFFECTS

T_BadTV

Description

This plug-in processes a clip to make it look as though it was being broadcast on a television suffering from poor reception. There is a master control to alter the signal quality to get vertical rolls, edge distortions, colour loss, ghosting, creeping lines, picture breakup and other interference patterns associated with poor signals.



Figure 66. Preset: Colour TV Figure 67. Preset: Security Camera

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_BadTV Presets...

- **Good TV** -
- **Bad Colour TV** - colour with distortions.
- **Bad B&W TV** - black and white with distortions.
- **Offset Guns** - CRT gun misalignment.
- **Security Camera** - reduced resolution and colour with visible scan lines and lens distortion.
- **Aerial SpyCam** - covert camera image.
- **NightVision** - green tinted image.
- **Cable Out** - complete picture loss. Only static rendered.

TV Type - sets the base television type.

- **Colour** - Colour pictures.
- **B & W** - Black & White pictures.
- **Tint** - colour tinted pictures.

TV Contrast - controls the ratio of the brightest tones to the darkest tones. Increase this value to make the shadows darker and the highlights brighter.

TV Brightness - controls the picture luminance.

TV Colour - controls the colour saturation of the picture.

Master Breakup - controls the overall degradation of the TV signal. This parameter is modified by the Breakup Variation parameter. A Master Breakup value of zero will give the input picture regardless of the settings of any other parameter. Use this parameter to ramp in the picture breakup.

Breakup Variation - controls the variation of the Master Breakup.

Breakup Speed - the deterioration of the signal oscillates from poor to good. This parameter controls the rate of this fluctuation. A value of 100 will give one cycle per second.

Seed - this number generates a number sequence that is used to randomly vary the distortions.

Guns The red, green and blue guns in a cathode ray tube fire streams of electrons at the phosphur coating on the television screen to produce a picture. The electron streams are bent using magnets through the shadow mask. If the shadow mask is misaligned a colour shift in the image will be produced. The controls on this property page are used to simulate CRT problems.

TV Brightness Red - controls the strength of the red gun.

TV Brightness Green - controls the strength of the green gun.

TV Brightness Blue - controls the strength of the blue gun.

Gun Align Red X - causes the horizontal displacement of the red gun.

Gun Align Red Y - causes the vertical displacement of the red gun.

Gun Align Green X - causes the horizontal displacement of the green gun.

Gun Align Green Y - causes the vertical displacement of the green gun.

Gun Align Blue X - causes the horizontal displacement of the blue gun.

Gun Align Blue Y - causes the vertical displacement of the blue gun.

Breakup 1 This property page sets colour loss, snow and ghosting on the picture.



Figure 68. Snow



Figure 69. Ghosting

Colour Degrade Max - controls the amount of colour loss when Master Breakup is at a maximum.

Colour Threshold - controls the Master Breakup level above which colour begins to degrade.

Snow Max - controls the amount of snow added when Master Breakup is at a maximum. Snow refers to the noise that appears on the picture due to a poor signal.

Snow Threshold - controls the Master Breakup level above which snow begins to appear.

Snow Softness - controls the blur on the snow.

Snow Sparseness - controls the density of the snow. Increase this value to thin out the snow.

Num Ghosts - sets the number of repeated images.

Ghosting Threshold - controls the Master Breakup level above which ghosting starts to appear.

Ghosting Distance Max - controls the maximum image displacement when Master Breakup is at a maximum.

Ghosting Strength - controls the brightness of the ghosted images.

Ghosting Speed - the ghosting oscillates from poor to good as the signal is lost and found. This parameter controls the rate of this fluctuation. A value of 100 will give one cycle per second.

Breakup 2 This property page controls the breakup of the picture at the edges, the creeping angled lines on VHS and vertical roll when the signal is very poor. You can set the vert offset and roll parameters to displace the picture vertically a fixed amount then as the master breakup is increased, and the signal deteriorates, the picture will begin to roll.



Figure 70. Edge Distortion

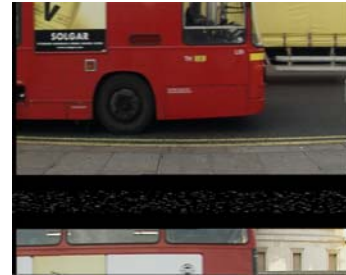


Figure 71. Vertical Roll

Edge Distortion Max - controls the amount of edge distortion when Master Breakup is at a maximum.

Edge Threshold - controls the Master Breakup level above which the edge begins to degrade.

Edge Jaggedness - controls the sharpness of the edge distortion.

Edge Speed - the edge distortion oscillates from poor to good as the signal is lost and found. This parameter controls the rate of this fluctuation. A value of 100 will give one cycle per second.

Line Speed Max - controls the speed of creeping lines when Master Breakup is at a maximum.

Line Threshold - controls the Master Breakup level above which the creeping lines begin to appear.

Line Spacing - controls the separation of the creeping lines.

Line Angle - controls the angle of the lines to the horizontal.

Vert Offset Max - controls the amount of vertical displacement when Master Breakup is at a maximum.

Vert Offset Threshold - controls the Master Breakup level above which the picture begins to be offset.

Vert Roll Speed Max - controls the maximum vertical roll speed when Master Breakup is at a maximum.

Vert Roll Threshold - controls the Master Breakup level above which the picture begins to roll.

Shash This property page has controls for multiple types of electronic noise.

Shash Type - sets the type of noise produced.

- **Type 1**
- **Type 2**
- **Type 3**
- **Type 4**
- **Type 5**
- **Random** - randomly selects one of the above formats for a duration set by the Shash Period.

Shash Period - sets the number of seconds each type of shash is rendered when the Shash Type is Random.

Shash Amount Max - controls the maximum amount of electronic noise when Master Breakup is at a maximum.

Shash Threshold - controls the Master Breakup level above which the picture begins to show this noise.

Effects This property page has a number of parameters affecting picture breakup.



Figure 72. Fast forward video



Figure 73. EM Interference

Blur - defocuses the image.

Resolution - controls the number of pixels in the image. 100 is full resolution. 50 halves the resolution by skipping every other pixel.

Scanline Width - controls the emphasis of the horizontal scan lines. You can get very convincing simulated picture lines using this parameter.

White Dot - controls the scaling and distortion of the image to simulate power loss to the monitor.

Repeat Frames - control frame repetition to give a jerky feel to the playback. Useful for simulating poor VHS.

Border Alpha - controls how to process the alpha beyond the edges of the image. This is only visible if pixels are being dragged into frame from outside the normal picture area.

- **None** - no additional processing is done.
- **Full** - where pixels are being dragged in from outside the image due to edge distortions, these are fully opaque.
- **Banded** - where pixels are being dragged in from outside the image due to edge distortions, these are partially transparent.

Play Mode - sets how to simulate fast forward and rewind image distortions.

- **Video** - horizontal tape head image distortions are applied when altering the play speed. This value is best quickly ramped in rather than flicked on and off.
- **DVD** - no distortion to the image is applied during vary-speed.

Play Speed - controls the speed of the clip. 0 is paused, 100 is play at normal speed, greater than 100 is fast forward and less than zero is rewind.

EM Interference - controls dark horizontal bands on the picture to simulate electromagnetic interference on the cables.

Fish Eye - switch this on to warp the picture to simulate camera lens distortions from security cameras that have very wide angle lenses.

Filter - switch this on to reduce aliasing.

Fish Eye Radius - control the size of the warping.

Fish Eye Power - controls the amount of light distortion through the lens.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips See also “T_OldFilm” on page 95.

T_Bandlimit

Description

This plug-in converts an image into fourier space, removes or keeps user specified frequencies, then converts it back into an image. High, low or intermediate frequencies can be removed or retained.

It may help to say a little about frequency space. For example, a black to white ramp would be a low frequency image (large features), whereas a frame of video noise is a good example of a high frequency image (small features). Noise over a ramp would have both high and low frequencies. T_Bandlimit can be used to remove or show specified frequencies.



Figure 74. Low frequency ramp



Figure 75. High & low frequency noisy ramp

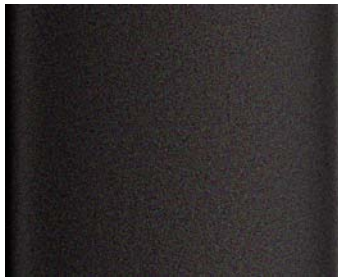


Figure 76. Showing the high frequency noise but not the ramp

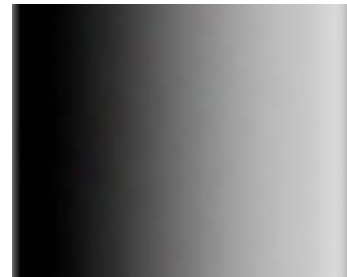


Figure 77. Showing the low frequency noise

Ringling (banding) is a by-product of this technique and can lead to some interesting visual effects. On the images below, T_Bandlimit

has been applied to colour bars.

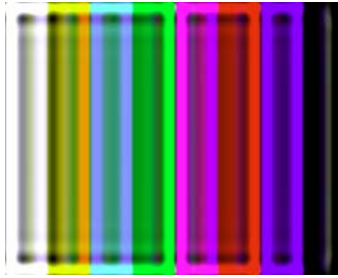


Figure 78. Detail Size set to 15

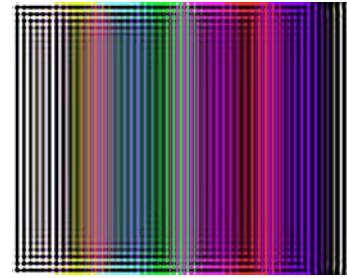


Figure 79. Detail Size set to 50

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Bandlimit

Detail Size - the size of the detail you want to extract. A value of zero will have no effect.

Detail Spread - this controls the actual range of detail extracted. This parameter has a log scale giving greater sensitivity in the lower ranges.

Gain - scales up the image luminance. A value of 50 will half the luminance. A value of 200 will double the luminance.

Maintain Luminance - switch this on to ensure that the overall luminance of the output picture is the same as the input picture, before the gain is applied.

Invert Effect - switch this on to remove the selected detail from the output rather than retaining it.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping

See “Cropping Property Page” on page 8.

Help

See “Help Property Page” on page 12.

Masking

See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_Bandlimit can give interesting ripple effects on text. Switch Invert Effect on.



Figure 80. Original



Figure 81. T_Bandlimit ripples

In some images, T_Bandlimit can be used to give a soft painterly effect by setting the Detail Size and Spread to low values with Invert Effect switched off.



Figure 82. Original



Figure 83. T_Bandlimit painterly effect

T_BumpShade

Description

T_BumpShade gives a 3D look to images by indenting the source image using information in the bump and outline mattes and lighting the result. Cartoons can benefit from this technique. The bump can

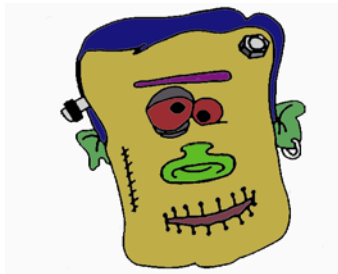


Figure 84. Original cartoon artwork



Figure 85. Outline matte

be indented or out dented. There are three components to the lighting, ambient, diffuse and specular. T_BumpShade works



Figure 86. T_BumpShade with solid matte



Figure 87. T_BumpShade with outline matte

particularly well on text in Graphics module.

Effect Type

Clip Effect, Paint Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_BumpShade

Outline with Alpha - controls the use of the alpha channel.

- **Off** - switches off the alpha bump shade.
- **On** - uses the alpha channel to form a bump and then masks the result over the background.

- **Inverted** - inverts the alpha channel then bumps it and masks the result over the background.

Outline Scale - controls the apparent depth of the bump formed from the alpha channel.

Outline Softness - controls the pre-blur of the alpha channel prior to bumping. Increasing this parameter will smooth the edges of the bump.

Outline Aspect - controls the horizontal and vertical weighting of the blur.

Outline Min - pixels at or below this luminance value are set to black.

Outline Max - pixels at or above this luminance value are set to white.

Background - when the outline is switched on, the background to the bumps can be lit using the models below.

- **Source** - no lighting is used. The background is taken directly from the source input.
- **Diff + Amb** - both diffuse and ambient lighting is applied to the background.
- **Diffuse** - diffuse lighting is applied to the background.
- **Ambient** - ambient lighting is applied to the background.
- **Transparent** - renders on black for compositing over another layer.

Bump with Luminance - switch this on to bump the background with the luminance of the input clip. The bumping is restricted to white areas of the alpha channel when the outline is switched on.

Bump Scale - controls the apparent depth of the indentations.

Bump Softness - controls the pre-blur of the mask before being used as the bump source. Increasing this parameter will smooth the edges of the bump.

Bump Aspect - controls the horizontal and vertical weighting of the bump softness.

Bump Clip Min - pixels at or below this luminance value are set to black.

Bump Clip Max - pixels at or above this luminance value are set to white.

Lighting See “Lighting” on page 18.

Ambient Shading Ambient light produces a constant illumination on all surfaces regardless of their orientation

Ambient Lighting - controls how to apply the ambient lighting.

- **None** - switches off ambient lighting.
- **Colour** - switches on ambient lighting and uses the ambient colour in the ambient colour calculations.
- **Source** - switches on ambient lighting and uses the source image in the ambient colour calculations.
- **Source & Colour** - switches on ambient lighting and uses the source image and ambient colour in the ambient colour calculations.

Ambient Strength - controls the amount of ambient light.

Ambient Colour - sets the colour used in the ambient light calculations.

Diffuse Shading Dull surfaces scatter light equally in all directions so that the surfaces appear to have the same brightness from all viewing angles. These surfaces exhibit diffuse reflection.

Diffuse Lighting - controls how to apply the diffuse lighting.

- **None** - switches off diffuse lighting.
- **Colour** - switches on diffuse lighting and uses the diffuse colour in the diffuse colour calculations.
- **Source** - switches on diffuse lighting and uses the source image in the diffuse colour calculations.
- **Source & Colour** - switches on diffuse lighting and uses the source image and diffuse colour in the diffuse colour calculations.

Diffuse Strength - controls the amount of reflected diffuse light.

Diffuse Colour - sets the colour used in the diffuse light calculations.

Specular Shading Specular or highlight reflection is observed on any shiny surface. Illuminate a shiny metal sphere and the highlight is caused by specular reflection while the light reflected from the rest of the sphere is caused by diffuse reflection.

Specular Lighting - controls how to apply the specular lighting.

- **None** - switches off specular lighting.
- **Colour** - switches on specular lighting and uses the specular colour in the specular colour calculations.
- **Source** - switches on specular lighting and uses the source image in the specular colour calculations.
- **Source & Colour** - switches on specular lighting and uses the source image and specular colour in the specular colour calculations.

Specular Strength - controls the amount of reflected specular light.

Specular Fall-off - controls the shininess of the surface.

Specular Colour - sets the colour of the specular highlights.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

Try using T_BumpShade as a graphics (FaceFX) effect directly on text.

T_Chromatic

Description

T_Chromatic blurs an image through a colour gradient to give a chromatically challenged image. Each colour component is blurred according to that component's intensity in the gradient.

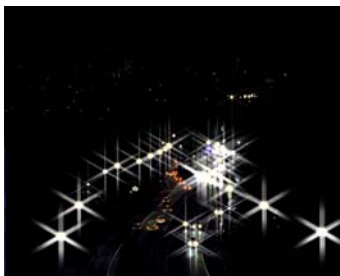


Figure 88. T_Starburst on car head lamps

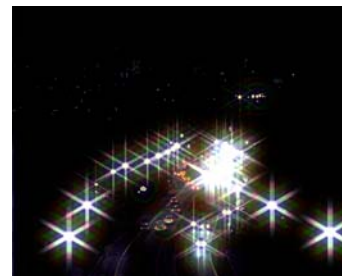


Figure 89. With T_Chromatic applied

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Chromatic

Presets... - sets the colour gradient to give different chromatic effects.

Radius - controls the blur and separation of the colour components.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this value to blur horizontally. Decrease this value to blur vertically.

Luminance Correct - switch this on to maintain the luminance level of the original image.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Grad See “Colour Gradient Controls” on page 14.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Condensation

Description

Renders thousands of water particles that clump together into water droplets. The droplets are used to distort the source image giving the appearance of water condensation on glass. There are lighting controls and the effect auto-animates the droplets dripping down the glass.

Effect Type

Clip Effect and Paint Effect.

Property Pages

Particle Size - controls the size of the particles that make up a single water droplet.

Num Particles - sets the maximum number of particles that will clump together to form a single water droplet. The actual number will be random. Increasing this value will cause the water droplets to have different sizes.

Total Drops - controls the number of water droplets rendered.

Bump - controls the amount of image distortion through the water droplets by bulging the water droplet surface.

Drop Transparency - sets the transparency of the drops. Increase this to make the colour of the drops more see-through. The water drops will still distort the image even with the transparency set to 100.

Aspect - controls the horizontal and vertical weighting of the effect. Alter this value to generate oval shaped particles.

Seed - this number generates a number sequence that is used to randomly vary the drops. Different seed values will produce completely different random drop patterns.

Filtering - sets the quality of the filter used when processing the effect. (See "Filtering" on page 13.)

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Drop Colour - sets the colour of the water drops.

Movement Movers - sets the percentage of drops that will animate.

Speed - controls the maximum distance in pixels that a water droplet moves per frame. The actual speed of a single droplet will vary. Increase this value to speed up the movement.

Direction - sets the direction of motion of the water droplets. The default, minus 90 degrees, is down the screen.

Wander - controls how far the drops are allowed to be displaced from their path.

Lighting See “Lighting” on page 18.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Contour

Description

T_Contour draws lines along pixels with similar luminance. The Blending functions can be used to add the lines back into the original picture.



Figure 90. T_Contour on a church

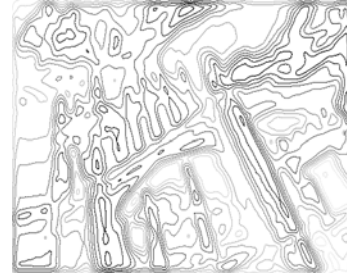


Figure 91. T_Contour with increased Quantise Level and Softness

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Contour

Quantise Level - controls the number of contours. Increase this to reduce the number of contours.

Quantise Offset - shifts the contour position up or down.

Grow Contour - controls the thickness of the contour lines

Softness - controls the smoothness of the lines. Increase this value for smooth sweeping contour lines.

Amplify - controls the shade of the contour lines. Increase this for darker lines.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Colours

Background - controls the colour behind the contour lines.

Foreground - controls the colour of the contour lines.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Diffuse

Description

T_Diffuse scatters pixels in an image.



Figure 92. Nelson's Column



Figure 93. With T_Diffuse

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Diffuse Diffusion Radius - controls the amount of pixel scattering. Increase this value to scatter the pixels further.

Diffusion Aspect - controls the weighting of the effect between horizontal and vertical pixels. A value of 100 will scatter the pixels horizontally and not vertically.

Freeze Diffusion - switch this on to keep the same diffusion pattern from frame to frame, so that the clip appears as though viewed through frosted glass. Switching it off will produce a pixel boiling effect over time.

Blending - sets how to mix between the image effect and its original source. (See "Blending Methods" on page 15.)

Cropping See "Cropping Property Page" on page 8.

Help See "Help Property Page" on page 12.

Masking See "Masking Property Page" on page 10.

Options See "Options Property Page" on page 11.

T_DoubleVision

Description

T_DoubleVision blends multiple copies of the input image with offsets to give a double vision look.



Figure 94. T_DoubleVision

Effect Type

Clip Effect and Paint Effect.

Property Pages

Presets...

Repeats - sets the number of times the source image is repeated.

Master Gain - controls the overall brightness of the result.

Speed - controls how fast the image offsets animate.

Detail - sets the amount of fractal detail to add to the motion paths. Increase this value for a more erratic animation.

Seed - this number generates a number sequence that is used to randomly vary the motion paths. Different seed values will produce completely different random movements.

Filtering - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

-
- Layers**
- Max X Offset** - sets the maximum horizontal displacement of a layer.
 - Max Y Offset** - sets the maximum vertical displacement of a layer.
 - Min Gain** - sets the minimum brightness for a layer.
 - Max Gain** - sets the maximum brightness for a layer.
 - Min Scale** - sets the minimum size for a layer.
 - Max Scale** - sets the maximum size of a layer.
 - Min Aspect** - sets the minimum value of aspect for a layer. The aspect controls the weighting of the horizontal and vertical scales.
 - Max Aspect** - sets the maximum value of aspect for a layer. The aspect controls the weighting of the horizontal and vertical scales.
 - Max Rotation** - sets the maximum rotation of a layer.
- Blending** Sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)
- Cropping** See “Cropping Property Page” on page 8.
- Help** See “Help Property Page” on page 12.
- Masking** See “Masking Property Page” on page 10.
- Options** See “Options Property Page” on page 11.

T_EdgeBlock

Description

T_EdgeBlock posterises an image localised to detected edges within the image.



Figure 95. Original Image



Figure 96. T_EdgeBlock

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

Radius - controls how far the posterisation extends from the edges.

Aspect - controls the horizontal and vertical weighting of the effect.

Shape - sets the filter shape.

- **Circle** - gives a smoother look to the effect.
- **Square** - gives a blocky look to the effect.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Help See “Help Property Page” on page 12.

Cropping See “Cropping Property Page” on page 8.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_EdgeDetect

Description

This plug-in finds edges in images. The result can then be blended



Figure 97. Fruit

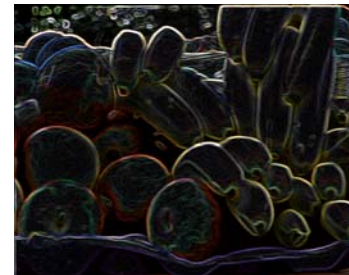


Figure 98. T_EdgeDetect,
Mode:RGB

back into the original using the built-in blending methods. Quick glows and back-lit effects are possible using this technique.

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

Colour Mode - sets the edge detection algorithm.

- **Single Colour** - takes the line colour from the Edge Colour parameter.
- **RGB** - produces coloured lines.

Gain - controls the brightness of the lines.

Softness - controls the amount of blurring applied to the image.

Edge Colour - sets the colour used when the Colour Mode is set to Single Colour.

Blending Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Note *Screen and Add modes can give interesting back-lit effects.*

Help See “Help Property Page” on page 12.

Cropping See “Cropping Property Page” on page 8.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Etch

Description

T_Etch simulates a hand drawn picture using charcoal. Lines are drawn along edges and cross hatching is used to fill in regions.

Kenyan elephant with outlines and shading.

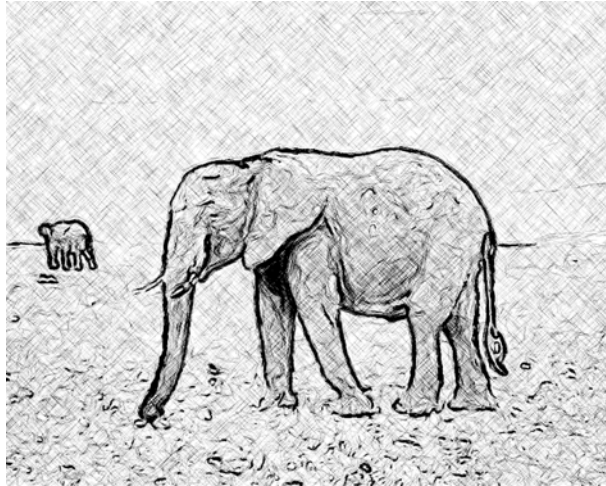


Figure 99. T_Etch using Outline and Shade

Effect Type

Clip Effect only.

Description

The parameters on each of the property pages are described below.

- T_Etch** Mode - selects the etch method.
- Outline and Shade - draws outlines and shades
 - Outline - just draws outlines.
 - Shade - just shades.

Etch Threshold - controls whether a line is drawn.

Etch Length - controls the length in pixels of the straight lines that form the outlines.

Etch Separation - controls the gap between the outlines.

Etch Softness - controls the outline softness.

Etch Density - controls the definition of the outlines. In other words whether it is faintly drawn or not.

Seed Method - determines how the seed number varies.

- **Frame** - the randomness depends on both the frame number and the seed value and thus changes on each frame of the clip.
- **Fixed** - the randomness is purely dependent on the seed value. If this value is not animated the randomness will not change on any frame.
- **Pixel** - the randomness is based on the colour of each pixel only and the seed value is ignored. In some circumstances this may result in no brush strokes being applied to the canvas. If this is the case the Boost Pixel Seed parameter can help.

Seed - this number generates a number sequence that is used to randomly vary the shading pattern. Change this number for a different pattern.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Shading Shade Threshold - controls whether shading is applied.

Shade Length - controls the length of the lines that form the shading.

Shade Separation - controls the gap between the lines used in the shading.

Shade Softness - controls the softness of the shading.

Shade Density - controls the definition of the shading. In other words whether it is faintly shaded or not.

Colour Background - controls the colour against which the shading is drawn.

Pen - controls the colour of the outlines and shading.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

See also “T_Contour” on page 67.



Figure 100. Nelson's column in Trafalgar Square in London



Figure 101. T_Etch with Blending set to Colour



Figure 102. Cars in Piccadilly Circus



Figure 103. T_Etch with Blending set to Add

T_Glass

Description

T_Glass gives the effect of placing a layer of deforming glass over an image. It also includes lighting effects.

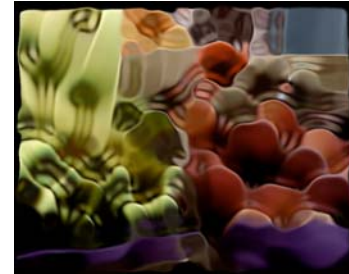


Figure 104. Text used as the glass source Figure 105. Fruit used as the image and glass

Effect Type

Clip Effect, Transition Effect, Paint Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Glass Glass with - sets whether to use the luminance of the image as the glass mask or the embedded alpha channel.

- **Luminance**
- **Alpha**

Mask with Glass - when set, the glass is only softened under non-black areas of the glass bump image.

Bump Amount - controls the amount the glass matte appears to deform the image. Positive values push out from the screen. negative values indent.

Distortion Scale - controls the amount light rays are bent when entering the glass. This is also known as the refractive index of the glass. Changing this parameter alters the amount of distortion of the source image in the glass.

Aberration - controls the defects in the glass surface that cause the image to display colour fringing.

Glass Softness - controls the amount of blurring applied to the glass matte before the image deformation is calculated.

Glass Softness Aspect - controls the horizontal and vertical weighting of the glass softness.

Glass ClipMin - pixels at or below this luminance value are set to black

Glass ClipMax - pixels at or above this luminance value are set to white.

Image Softness - controls the amount of blurring applied to the image. This gives the effect of pulling the glass into focus and the background, seen through the glass, out of focus.

Image Softness Aspect - controls the horizontal and vertical weighting of the image softness.

Blending/Filtering Filtering - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Lighting See “Lighting” on page 18.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Glow

Description

T_Glow is an animatable glow effect with size, burnout, spread and break-up controls. It takes the basic shape of the glow from either the luminance of the image or its alpha. This glow can be softened or a halo extracted to make a glow that is the outline of the shape. If you want a glowing outline, the input should be fairly hard edged to work well.



Figure 106. Neon effect

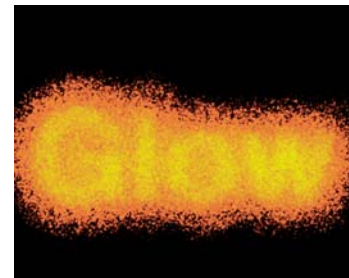


Figure 107. With breakup

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Glow Presets...

Glow Source - sets whether to use the luminance or alpha channel as the source of the glow.

- **Luminance** - uses the luminance of the clip for the glow.
- **Alpha** - uses the alpha of the image for the glow source.

Alpha Masking - controls how to use the mask input.

- **None** - disables the mask input.
- **Before Glow** - applies the mathematical operator AND to the glass and mask inputs and uses the result as the glow source.
- **After Glow** - cuts out the glow using the mask input. Only the parts of the glow mask that overlap with peak white in the mask are displayed.
- **Before & After** - performs the "Before Glow" operation followed by the "After Glow".

Spread - controls the softening and expansion of the glow.

Aspect - controls the horizontal and vertical weighting of the effect.

Burnout - controls the amount of core colour in the glow.

Edge Softness - controls the amount of blur applied to the edge.
Increasing this softens and erodes the edges.

Breakup - controls the amount of fractal perturbation added to the glow shape.

Breakup Aspect - controls the horizontal and vertical weighting of the effect.

Haloed - switch this on to produce a glow outline.

Freeze Breakup - switch this on to freeze the scatter pattern on each frame.

ClipMin - pixels at or below this luminance value are set to black in the mask.

ClipMax - pixels at or above this luminance value are set to white. in the mask.

Grad See “Colour Gradient Controls” on page 14.

Blending Sets how to mix between the image effect and its original source.
(See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips



Figure 108. Glow with Blending set to Add



Figure 109. Glow

T_HeatHaze

Description T_HeatHaze simulates the rippling of an image that is characteristic of viewing it through hot air.

Effect Type Clip Effect and Transition Effect.

Property Pages The parameters on each of the property pages are described below.

- T_HeatHaze Displacement** - controls the amount of image warping.
- Franticness** - controls the rate at which the heat haze will boil.
- Wavelength** - distance between wave peaks.
- Aspect** - controls the horizontal and vertical weighting of the effect.
- Wave Count** - number of waves used to simulate the haze.
- Layers** - number of layers of heat haze that are blended together.
- Filtering Masking** - controls the use of the attenuation mask.
- **Unmasked** - the mask is not used to vary the displacement.
 - **Alpha** - the mask is used to attenuate the displacement. Areas of the mask that are black are undistorted and areas that are white are fully distorted.
 - **Distorted Alpha** - the mask is first distorted using the heat haze parameters and the result is then used to attenuate the displacement.
- Direction** - controls the direction of the heat haze.
- Speed** - controls the rate at which the heat haze moves in the direction of travel.
- Filtering** - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)
- MIP Sharpness** - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

To gradually merge the heat haze effect into the scene you should use a graduated mask to attenuate the distortions. (See “T_Grad” on page 149.)

T_Kaleid

Description

T_Kaleid simulates images seen through a traditional triangular prism kaleidoscope.



Figure 110. Fruit

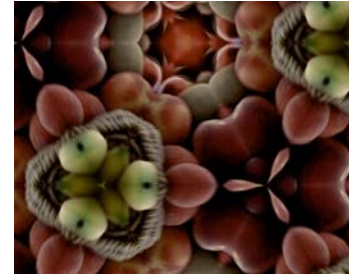


Figure 111. T_Kaleid

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Kaleid Filter - switch this on to reduce aliasing.

Prism Size - the size of the kaleidoscope's prism.

Prism X - the horizontal position of the centre of the prism.

Prism Y - the vertical position of the centre of the prism.

Prism Rotation - controls the prism rotation.

View Source Image - switch this on to display the original image before the kaleidoscope effect is applied. This is useful for accurately setting the position of the prism.

Image Move **Image X** - controls the horizontal position of the image under the prism.

Image Y - controls the vertical position of the image under the prism.

Image Scale - controls the size of the image under the prism.

Image Rotation - controls the rotation of the image under the prism.

View Src Image - switch this on to display the original image before the kaleidoscope effect is applied. This is useful for setting the position of the prism.

Note *The on-screen tools allow you to control three elements - the crops, the prism and source image translation. However, it can be difficult to place the prism on the source image when all you can see is the result of the effect. Use the View Src Image toggle to display the image with only the move on it. You can then turn the prism controls on and place the kaleidoscope over the section you want.*

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_MeltTime

Description

T_MeltTime applies a temporal distortion of the image based on values in a mask.

Pixels for the output image will be sampled from a range of frames between that set by "Frame Offset for White" and "Frame Offset for Black". Specifically, where the mask is white, pixels will be taken from the frame offset value set by the parameter "Frame Offset for White". Similarly for black with grey mask values ramped accordingly. If the clip length is such that no frame is available for



Figure 112. Time Mask



Figure 113. T_MeltTime used to produce a temporal shear on the bus which is moving left to right

sampling, the last (or first) frame is used. In the example above, the bus is moving from left to right across the screen. Pixels at the top of the frame, where the mask is black, have been sampled from early frames in the clip when the bus was on the left of the screen. Pixels near the bottom of the frame have been sampled from frames later in the clip when the bus has moved.

Effect Type

Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_MeltTime **Frame Offset for White** - sets the number of frames ahead or behind the current frame from which pixels are taken for white values in the mask.

Frame Offset for Black - sets the number of frames ahead or behind the current frame from which pixels are taken for black values in the mask.

Note *Grey values in the mask scale the pixel interpolation between the values specified in Frame Offset for White and Black parameters.*

ClipMin - pixels at or below this luminance value are set to black

ClipMax - pixels at or above this luminance value are set to white.

Softness - controls the amount of blur applied to smooth the bands.

Mask Channel - sets which channels of the time mask are used to distort the image.

- **Luminance**
- **Alpha**

Filter - switch this on to reduce aliasing. See “Filtering” on page 13.

Show Clipped Mask - switch this on to show the mask after it has been processed with Softness, Clip Min and Max.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Mosaic

Description

T_Mosaic creates a block pattern (posterisation) effect using a variety of shapes including the standard square mosaic.



Figure 114. T_Mosaic with a PreBlur

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Mosaic Patterns - selects the mosaic pattern.

- Squares
- Circles
- Triangles
- Octagons
- The Other One

Filter - switch this on to reduce aliasing.

PreBlur - controls the amount of blurring applied to the image before the mosaic effect is applied. This smooths out the image while retaining the pattern size.

Pattern X Offset - controls the horizontal position of the pattern.

Pattern Y Offset - controls the vertical position of the pattern.

Pattern Rotation - controls the rotation of the pattern about the centre of the image.

Pattern Scale - controls the overall size of the pattern about the centre of the image.

Pattern X Scale - controls the horizontal stretching of the pattern about the centre of the image.

Pattern Y Scale - controls the vertical stretching of the pattern about the centre of the image.

Image Move **Image X Offset** - controls the horizontal position of the underlying image.

Image Y Offset - controls the vertical position of the underlying image.

Image Rotation - controls the rotation of the underlying image about the centre of the image.

Image Scale - controls the overall size of the underlying image about the centre of the image.

Image X Scale - controls the horizontal stretching of the image about the centre of the image.

Image Y Scale - controls the vertical stretching of the image about the centre of the image.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_MotionDetect

Description

This plug-in compares the current frame with another frame in the same clip and generates a matte showing where the frames differ.



Figure 115. Bus moving left to right Figure 116. Motion detected image

Property Pages

The parameters on each of the property pages are described below.

T_MotionDetect

Frame Offset - sets the frame against which the current frame is compared.

Do What - determines what to render.

- **Put Matte into Luminance** - renders the motion matte into the RGB channels.
- **Put Matte into Alpha** - renders the motion matte into the alpha channel. Don't forget to switch alpha rendering on in the Masking PPG.

Gain - controls the brightness of the matte.

Softness - controls the blur on the matte.

ClipMin - pixels at or below this luminance value are set to black.

ClipMax - pixels at or above this luminance value are set to white..

Processing - controls how to manipulate the matte. See "T_MatteTool" on page 214.

- Shrink/Grow
- Halo In/Out
- Halo

Size - controls how much to grow or erode the matte.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Newsprint

Description

T_Newsprint converts images into their constituent dot patterns that can be characteristic of printed matter. There are three different print colour methods. Two Tone produces black and white dot patterns,

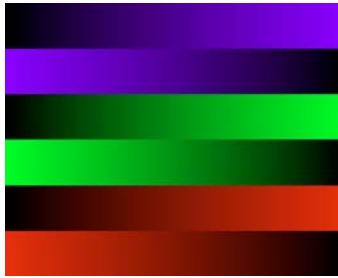


Figure 117. RGB Crossed Ramps

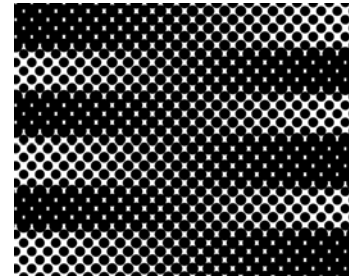


Figure 118. Two Tone

CMY reproduces the standard colour printing method using cyan, magenta and yellow dots, and RGB that uses red, green and blue dots to re-create the image.

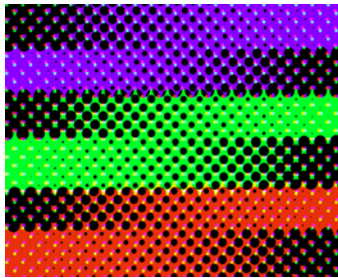


Figure 119. CMY

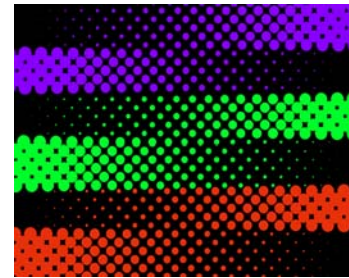


Figure 120. RGB

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Newsprint

Print Colour - controls the colour of the newsprint dots.

- **Two Tone** - produces a black and white image composed of dots. The size of the dots correspond to the brightness of the image.
- **CMY** - produces a colour image based on the superposition of three complimentary coloured dots, cyan, magenta and yellow. This method is used in print.
- **RGB** - produces a colour image based on the superposition of three primary coloured dots.

Print Style - sets the method by which the dots are constructed.

- **Standard** - the circles are preserved across luma boundaries.

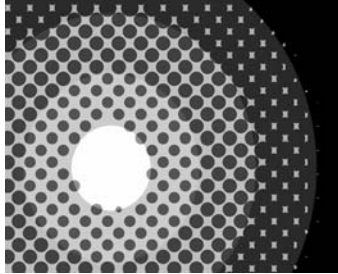


Figure 121. Standard

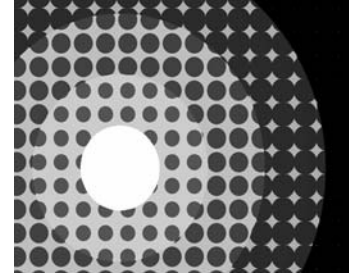


Figure 122. Coarse

- **Coarse** - the circles are clipped at luma boundaries.

The images above show a circular luminance pattern to which the Standard and Course print styles have been applied. (The dot patterns have been mixed back with the original image for clarity)

Size - controls the size of the newsprint dots. Increase this to get bigger dots.

Aspect - controls the weighting of the size of horizontal and vertical dots. Increase this value to squash the height. Decrease this value to squash the width.

Bleed - controls the overlap of the dots.

Note *This only takes effect when the Print Style is set to Standard.*

Rotation - controls the rotation of each dot.

PreBlur - controls the amount of blurring applied to the image before the dots are computed.

Filter - switch this on to reduce aliasing.

Colours **Ink Colour** - colour of the dots.

Paper Colour - colour of the background behind the dots.

Sundries **Pattern Shift in X** - controls the horizontal offset of the dots

Pattern Shift in Y - controls the vertical offset of the dots.

X Sample Point - controls the horizontal position of the sampling point within the region of interest. This is usually in the centre of the

square bounding a news dot.

Y Sample Point - controls the vertical position of the sampling point within the region of interest. This is usually in the centre of the square bounding a news dot.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_OldFilm

Description

T_OldFilm converts contemporary video footage into images that look as though they have been shot on film and left to degrade over time. Scratches, hair and dirt have been statistically modelled. There are controls to colour the image, add grain, remove fields and apply camera/sprocket shake.

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_OldFilm Presets... - several presets ship with T_OldFilm including black &



Figure 123. Original Image

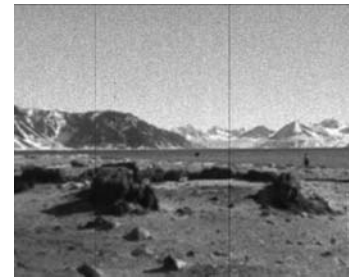


Figure 124. Preset: Black & White
3

white, sepia, forties and technicolour. A few are shown here with the original image for comparison.

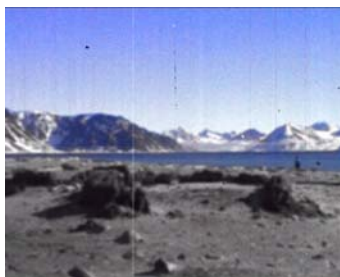


Figure 125. Preset: Forties



Figure 126. Preset: Techno Colour

Film Type - sets the base colour type before defects are added.

- **Colour** - colour information is retained in the image.
- **B & W** - the image is converted to black and white.

- **Tinted** - the image is washed with the tint colour.

Seed - this number generates a number sequence that is used to randomly vary other parameters. For example, the number and positions of the scratches.

Contrast - controls the ratio of the brightest to darkest tones in the image. Increase this value for more contrast.

Brightness - controls the luminance of the image.

Saturation - controls colour purity. Decrease this value to wash out the colours.

Tint Amount - controls the amount of the tint colour washed into the source image.

Tint Colour - sets the colour used when tinting the image.

Scratches This property page has controls to add those long vertical scratches that occur on old film that has run through the projector too many times.



Figure 127. Before



Figure 128. After, with print scratches

Scratch Type - vertical scratches can occur when the film (negative or print) passes through the cutter or projector.

- **None** - no scratches are drawn.
- **Print** - bright scratches due to wear on the print after it has been passed through the projector multiple times.
- **Negative** - dark scratches on the film negative. These are much less common than print scratches as the negative is handled infrequently.
- **Print and Negative** - both types but weighted towards bright scratches.

Scratches - controls the number of scratches.

Scratch Width - controls the maximum horizontal width of a scratch. The actual width will vary.

Scratch Opacity - controls the maximum opacity of the scratches. Increase this value to make them less transparent.

Scratch Movement - controls the maximum horizontal movement of a scratch as a proportion of the screen width.

Scratch Speed - controls the oscillations per second.

Scratch Lifetime - controls the maximum lifetime of a scratch. the actual lifetime will vary.

Random Scratches - controls the maximum number random scratches per second. Random scratches are both transient and shorter than normal scratches.

Defects Adds organic dirt, flickering hair, stains and defects.

Dirt Type - controls the organic dirt added to the image.

- **None** - no dirt is drawn.
- **Print** - bright dirt marks on the print.
- **Negative** - dark dirt marks on the film negative.
- **Print and Negative** - both types.

Dirt - controls the maximum amount of dirt added.

Dirt Size - controls the maximum size of the dirt. The actual size will vary.

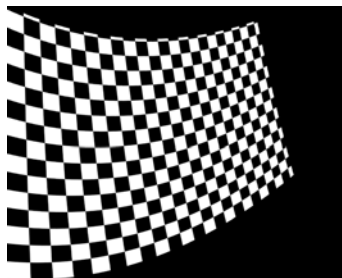


Figure 129. Before



Figure 130. After, with dirt

Hair Type - these parameters control the small number of hairs that are stuck to the negative or print as a result of handling.

- **None** - no hairs are drawn.
- **Print** - bright hairs on the print.
- **Negative** - dark hairs on the film negative.
- **Print and Negative** - both types.

Hair - the average number of hairs per second.

Hair Size - controls the maximum size (length) of the hairs.



Figure 131. Before



Figure 132. After, with hair

Stains - controls the number of splotches of colour added to the image. Stains simulate the mildew and colour damage from storing film poorly in damp conditions.

Stain Size - controls the size of the stains.

Stain Opacity - controls the maximum opacity of the stains. The actual opacity will vary.

Large Defects - controls the number of horizontal lines and pitting that represent large film defects on badly stored film.

Large Defect Scale - controls the size of the defects.



Figure 133. Before

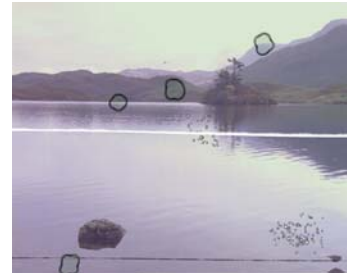


Figure 134. After, with large defects

Effects 1 Old film that has undergone uneven development in the film lab will exhibit brightness variations. These are simulated with the flicker parameters.

Flicker - switch this on to add luminance flicker to the clip.

Flicker Amount - controls how much the brightness could vary.

Flicker Speed - controls how fast the brightness varies.

Vignette - switch this on to apply the fading at the screen edges.

Radius - controls the size of the circular vignette.

Fall-off Width - controls the softness of the circular vignette.

X Centre - controls the horizontal position of the middle of the circular vignette.

Y Centre - controls the vertical position of the middle of the circular vignette.



Figure 135. Before



Figure 136. After, with sepia preset & vignette

Jerkiness - controls the temporal jerkiness of the clip. Old films tend to have a very staccato movement.

- **None** - no frame duplication.
- **Double Frames** - if we represent an input clip as frames 1,2,3,4,5,6,7,8 then the output clip will be 1,1,3,3,5,5,7,7.
- **Triple Frames** - if we represent an input clip as frames 1,2,3,4,5,6,7,8 then the output clip will be 1,1,1,4,4,4,7,7

Streakiness - controls the amount of vertical streaks on the image.

Effects 2 This property page simulates the random defocusing of the image that occurs when the film is loaded badly in the camera or projector. The shake parameters simulate the frame vibrations and horizontal jumping from missing sprockets as the film is drawn through the projector.

Camera Shake - switch this on to apply simulated camera shake to the image. The shake algorithm is XY Translational, see “T_Wobble” on page 231.

Shake Speed - controls how fast the camera shakes.

Shake X - controls the maximum horizontal movement of the image. The actual amount will vary.

Shake Y - controls the maximum vertical movement of the image. The actual amount will vary.

Defocus - controls the gaussian blur applied to the image. The actual blur will vary if the Defocus Variation parameter is greater than zero.

Defocus Variation - controls the percentage of variation of the blur. A value of 100 means that the blur could vary between zero and double the defocus amount.

Defocus Speed - the blur will increase and decrease in cyclic waves over time. The speed controls the number of oscillations per second of this defocus. The actual oscillations are random (fractal).

Highlight Diffusion - switch this on to apply a diffusion filter to the image highlights.

Clip Min - pixels at or below this luma value will not be diffused.

Clip Max - pixels at or above this value will be diffused to white.

Amount - controls the strength of the diffusion applied.

Softness - controls the softness of the diffusion filter.

Grain The particles of silver halide in film are known as grain. These particles are sensitive to light and are visible when the film is projected. Different film stocks have different grain characteristics. Film stocks that rely on the camera lens focussing the image differently for each layer of coloured emulsion, due to the finite depth of the layered emulsions, will exhibit a slight defocusing on the red, green and blue grain. This is simulated with the softness parameters.

Grain - switch this on to apply grain to the image.

Grain Max - controls the overall size of the grain particles.

Grain Softness - controls the overall defocusing of the grain.

Red Grain - controls the size of the red grain particles.

Red Grain Softness - controls the defocusing of the red grain particles exhibited on some colour film stock.

Green Grain - controls the size of the green grain particles

Green Grain Softness - controls the defocusing of the green grain particles exhibited on some colour film stock.

Blue Grain - controls the size of the blue grain particles

Blue Grain Softness - controls the defocusing of the blue grain particles exhibited on some colour film stock.

Colour Corrections

Red Contrast - controls the ratio of the brightest to darkest red tones in the image.

Red Brightness - controls the luminance of the red channel in the image.

Red Saturation - controls the purity of the red channel in the image.

Green Contrast - controls the ratio of the brightest to darkest green tones in the image.

Green Brightness - controls the luminance of the green channel in the image.

Green Saturation - controls the purity of the green channel in the image.

Blue Contrast - controls the ratio of the brightest to darkest blue tones in the image.

Blue Brightness - controls the luminance of the blue channel in the image.

Blue Saturation - controls the purity of the blue channel in the image.

Colour Ageing - controls the degradation of colour information in aged film.

CMY Process - controls a complex multi-faceted colouring algorithm. Best used with a bit of trial and error.

Burn Through **Burn Through** - switch this on to simulate the film sticking in the gate and burning.



Figure 137. Before

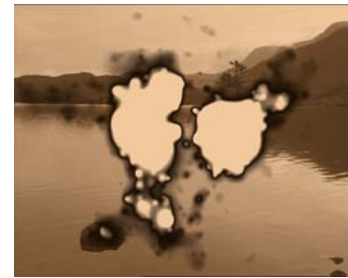


Figure 138. After, with film burn through

Burn Frame - sets the frame on which the frame starts to burn.

Burn Length - controls the number of frames it takes to burn the film.

Hold Frames - sets the number of frames that are repeated, when the film is stuck in the gate, before the burn starts.

Burn Colour - sets the colour under the film. You can burn through to another image by applying this on an overlay track. Remember to turn process alpha on in the Masking PPG and set the Burn Colour alpha channel to zero.

Defield **Defield Image** - switch this on to convert field images to frames.

Replace Field By - sets the algorithm that is used to generate the missing field. For more information on the differences between these algorithms see “T_Defield” on page 197.

- Duplication
- Interpolation
- Wide Interpolation
- Slope Adaptive Interpolation

Field To Strip - sets the field that is removed.

- Odd Field - the odd field is thrown away.
- Even Field - the even field is thrown away.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Paint

Description

T_Paint converts images into ones that look as though they had been painted with acrylics. An example is shown below.



Figure 139. Swan with T_Paint

Effect Type

Clip Effect and Transition Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Paint Presets...

Stroke Length Max - the maximum length of a brush stroke. See Note.

Stroke Length Min - the minimum length of a brush stroke.

Brush Width Max - the maximum width of a brush stroke.

Brush Width Min - the minimum width of a brush stroke.

Rotate - controls how closely the brush strokes follow lines in the image.

Stroke Separation - the distance on the canvas between successive applications of paint.

Softness - controls the amount of blurring added to the image before the paint strokes are added. Increase this for smoother flowing brush strokes.

Mixing **Bleed** - controls the amount of paint that is allowed to run.

Edge Tolerance - controls the amount the paint is allowed to deviate from the image contours.

Smear - controls the amount of smearing as a percentage of the stroke width.

Drag - controls the amount of paint drag in earlier strokes as a percentage of the stroke width.

Luminance Variation - controls the luminance variation of the paint applied between each brush stroke.

Seed Method - controls the randomness of the paint brushes.

- **Frame** - the randomness depends on both the frame number and the seed value and thus changes on each frame of the clip.
- **Fixed** - the randomness is purely dependent on the seed value. If this value is not animated the randomness will not change on any frame.
- **Pixel** - the randomness is based on the colour of each pixel only and the seed value is ignored. In some circumstances this may result in no brush strokes being applied to the canvas. If this is the case the Boost Pixel Seed parameter can help.

Pre Copy Source - when switched on the paint is applied over the original image. When off only the paint strokes on a black background are visible.

Seed - this number generates a number sequence that is used to randomly vary the paint strokes. Different seed values will produce completely different stroke patterns.

Boost Pixel Seed - use this to increase the number of brush strokes applied if Seed Method is set to pixel.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_Paint does not take into account movement over time when applying paint strokes, making it more suitable to producing single images. Some feature films, like *The Thomas Crown Affair*, require pictures of art for some of the shots and these are sometimes specially commissioned works used as physical props. In some circumstances, T_Paint could be used instead to quickly produce impressionist works which can then be corner pinned into a black picture frame hung on the wall.



Figure 140. Digitally painted swan composited into a scene

See also “T_Turner” on page 131 and “T_EdgeBlock” on page 72.

T_PseudoColour

Description

T_PseudoColour maps the luminance of an image to a colour to give a false colour effect.



Figure 141. Before



Figure 142. After shampooing with T_PseudoColour

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_PseudoColour

Clip Min - the luminance level which will pick up the colour at the bottom (left) of the colour map.

Clip Max - the luminance level which will pick up the colour at the top (right) of the colour map.

Cyclic Shift - controls the phase shift of the colours through the image.

Copies - number of times the colour gradient is repeated.

Dither - switch this on to apply subtle noise to the image to reduce the appearance of colour bands on smoothly shaded areas.

Filter - switch this on to reduce aliasing. (See “Filtering” on page 13.)

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Grad See “Colour Gradient Controls” on page 14.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints and Tips

With the careful selection of colour, a thermal camera effect can be simulated.



Figure 143. Original image



Figure 144. Thermal camera effect

T_Qube

Description

Generates patterns of tiles within tiles. The mask input can be used to attenuate the number of repeated squares.

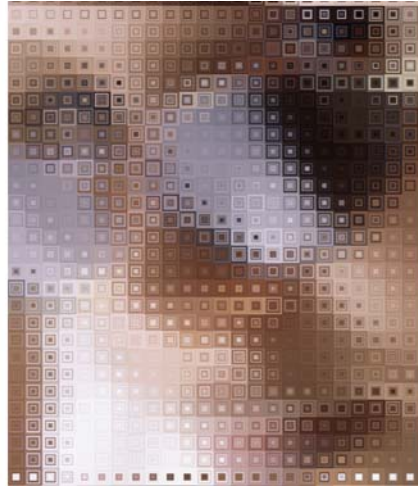


Figure 145. Qube

Effect Type

Clip Effect, Paint Effect, Multi-input Effect and Keyer Effect.

Property Pages

Size - controls the tile size. The higher the value the larger the tile.

Aspect - controls the horizontal and vertical weighting of the effect.

Rotation - controls the amount of tile rotation. This does not rotate the picture underneath.

Inner Size - sets the size of the inner squares.

Depth - sets the number of inner squares drawn. This parameter can be attenuated by the mask.

X Shear - controls the amount of horizontal skew.

Y Shear - controls the amount of vertical skew.

X Position - controls the horizontal position of the tiles.

Y Position - controls the vertical position of the tiles.

Filtering - sets the quality of the filter used when processing the

effect. (See “Filtering” on page 13.)

Masking - controls how to attenuate the depth parameter with the mask.

- **Off** - the mask is not used.
- **Luminance** - the luma is used to attenuate the depth parameter. Where the luma is black the depth value is set to zero.
- **Inverted Luminance** - inverts the luma before using it to attenuate the depth parameter. Black pixels become white and white pixels become black.
- **Alpha** - the mask is used to attenuate the depth parameter. Where the mask is black the depth value is set to zero.
- **Inverted Alpha** - inverts the mask before using it to attenuate the depth parameter. Black pixels become white and white pixels become black.

Effects **PreBlur** - controls the amount of blurring before the effect is applied.

PostBlur - controls the amount of blurring after the effect is applied.

X Sample - sets the horizontal point within the base tile for the sample colour.

Y Sample - sets the vertical point within the base tile for the sample colour.

Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_Qube can look very effective when combined with other plug-ins. A tiled mosaic look can be achieved with T_Qube and

T_BumpShade. (See “T_BumpShade” on page 59.)

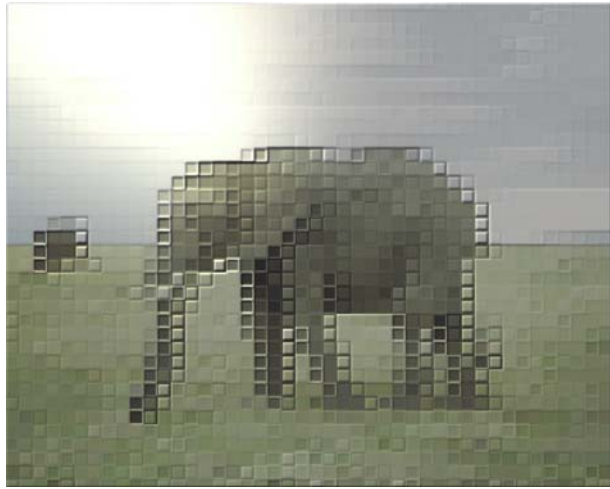


Figure 146. T_Qube and T_BumpShade

T_Rays

Description

T_Rays creates a backlit ray effect. The rays are sourced from selected areas of the image's luminance, or the alpha of the source image. The colour of the rays can come from the source image or a fixed colour. The image below shows this effect applied to the night time street scene.



Figure 147. Soho at night



Figure 148. Enhanced with T_Rays

First you need to define where the rays will appear. Select the Ray Source property page and switch on Show Matte. This will display a black and white image. Rays will emanate from the white areas only. The ray source can be taken from the image alpha, the luminance of the image or the luminance of the image masked by the alpha. There are several controls that allow you to manipulate the matte from within the T_Rays plug-in. Once the matte has been set up switch off Show Matte and manipulate the controls on the T_Rays and Colours property pages to get the ray effect you want. To boost the rays increase the Blend Rays control or process the matte to give more white areas.

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Rays

Ray Type - controls the type of rays added.

- **Point Source** - the rays fan out in all directions from some single point.
- **Directional** - the rays all point in a single direction.

Filtering - sets the quality of the filter used when processing the effect. (See "Filtering" on page 13.)

Point Rays

Factor - controls the length of the rays.

X Centre - controls the horizontal position of the centre of the rays.

Y Centre - controls the vertical position of the centre of the rays.

Directional Rays

Direction - controls the direction of the rays. a value of zero will draw the rays horizontally.

Length - controls the length of the rays. Negative values will draw the rays in the opposite direction.

Bias - shifts the start point of the rays.

Ray Fall-off - sets the method used to reduce the intensity of the light rays as they get further from the source.

- **Box** - weights each pixel equally. Faster than Gaussian.
- **Gaussian** - weighs each pixel using a gaussian distribution. Pixels at the end of the rays have less effect than pixels at the source. Slower than Box.

Colours **Blending Method** - controls how the background image and rays are mixed together when using T_Rays as a clip effect. (See “Blending Methods” on page 15.)

Use Colour - switch this on to use the Ray Colour for the colour of the rays. Switch this off to take the ray colours from the image.

Ray Colour - the colour of the rays if the Use Colour toggle is switched on.

Ray Source **Ray Source Matte** - selects matte used to generate the rays.

- **Luminance** - the ray source will be generated from the luminance of the image.
- **Alpha** - the ray source will be generated from the alpha of the image.
- **Luma (alpha masked)** - the ray source will be generated from the luminance of the image, but will be masked with the alpha.

Show Matte - switch this on to display the matte that will be used as

the source of the light rays. You should do this when setting up the effect so that you can see more clearly where the rays will emanate from.

Matte Processing - controls how the matte will be processed before being used as the ray source. To get more rays you should grow the matte. See “T_Grain” on page 205.

- **Don't Process** - the matte controls on this page will not affect the ray source.
- **Grow** - the ray source area will get thicker.
- **Shrink** - the ray source areas will get thinner.
- **Halo** - the ray source area will have a halo extracted from it.
- **Halo Inner** - the ray source area will have an inner halo.
- **Halo Outer** - the ray source area will have an outer halo.

Size - controls the amount of matte dilation.

Softness - controls the amount of blurring applied to the matte after processing.

Clip Min - luma values below the level set by Clip Min are set to black.

Clip Max - luma values above the level set by Clip Max are set to white.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

To boost the light rays if they are a little faint, increase the Effect Gain on the Colours PPG or grow the ray source matte.



Figure 149. Simulated light through stained glass

T_RomanMosaic

Description

T_RomanMosaic breaks an image up into irregular tiles.

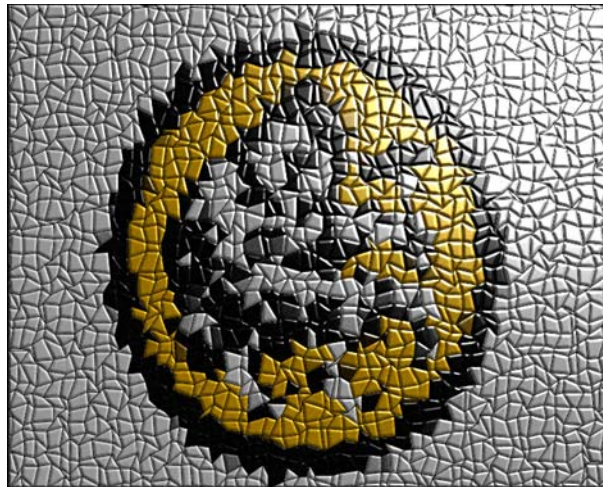


Figure 150. T_RomanMosaic

Effect Type

Clip Effect.

Property Pages

Max Size - controls the size of the tiles. Increase this parameter for bigger tiles.

Aspect - controls the horizontal and vertical weighting of the effect.

Dirt - controls the amount of noise added to the tiles. A value of 0 gives a very clean look. Increase this value to add more dirt texture. If **Tile Depth** is switched to Diverse the dirt will react to the lighting to give a pitted effect.

Tile Depth - controls the thickness of the tiles.

- **Uniform** - each tile has the same thickness.
- **Diverse** - the thickness of a tile is a function of the pixel luminance. The brighter the pixel the thicker the tile. Where the image is black the tile thickness is zero and will not be drawn. As a by product of this, any dirt on the tile will react with the light to give the appearance of a pitted surface.

Seed Method - controls the randomness of the tiles.

- **Fixed** - the randomness is purely dependent on the seed value. If this value is not animated the randomness will not change on any frame.
- **Frame** - the randomness depends on both the frame number and the seed value and thus changes on each frame of the clip.

Seed - this number generates a number sequence that is used to randomly vary the tiles. Different seed values will produce completely different tile patterns.

- Edges**
- Edge** - sets the method by which the tiles are positioned.
- **Random Edges** - tiles are drawn randomly over the image.
 - **Seek Edges** - tiles try to line up with edges within the source image.

Edge Softness - controls the smoothness of the edge of the tile.

Groove Depth - controls the apparent depth of the groove between the tiles.

Grout Width - the size of the gap between the tiles.

Border Size - the size of the border around the image.

Grouting Colour - the colour of the grout between the tile edges.

Lighting See “Lighting” on page 18.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

See also “T_Qube” on page 108 and “T_Mosaic” on page 88.

T_Starburst

Description

T_Starburst adds sparkle rays to highlights. Chromatic fringing can

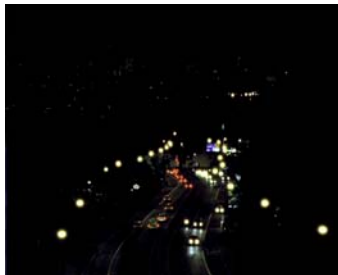


Figure 151. Car head lamps



Figure 152. T_Starburst

be added to the sparkles using the aberration parameter. The mask is used to attenuate the gain on the sparkles.

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Starburst **Radius** - the size of the starburst.

Gap - controls the distance between the centre of the starburst and the point at which rays are drawn. Increase this to get a gap around the starburst centre.

Spokes - sets the number of spokes on the sparkle.

Aspect - controls the horizontal and vertical weighting of the effect.

Rotation - controls the rotation of the sparkles. Increase to rotate anti-clockwise.

Gain - controls the brightness of the starburst.

Threshold - pixels over this luminance level will add to the sparkle effect.

Chromatic Aberration - controls the defects in the lens surface that cause the image to display colour fringing.

Presets... - a number of presets are supplied.

Mask Through Alpha - switch this on to attenuate the gain parameter of the sparkles with the alpha channel. The sparkles will be visible where the mask is white.

Keep Spoke Brightness - switch this on to preserve the luminance of the spokes.

Blending Sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

Here’s an example showing how the gain on the starburst can be attenuated using a mask.



Figure 153. Test Pattern



Figure 154. With T_Starburst using a ramp mask to attenuate the Gain

T_Starburst samples the image and draws sparkles on high luminance areas. This may not give you the effect you want. There may not be enough sparkles or too many. If you want some general sparkles composited over your image try applying T_Starburst to T_Starfield and compositing that over your image. You’ll need to

thin the stars out and boost the saturation to get coloured sparkles. If you animate the starfield you will move through 3D sparkles!

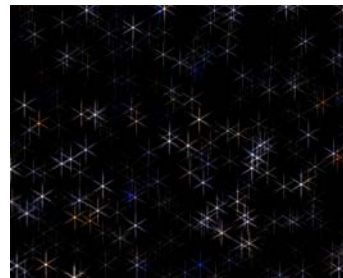


Figure 155. Random sparkles on
T_Starfield

T_Strobe

Description

T_Strobe flickers an image using a regular pulse or by random flicker amounts.

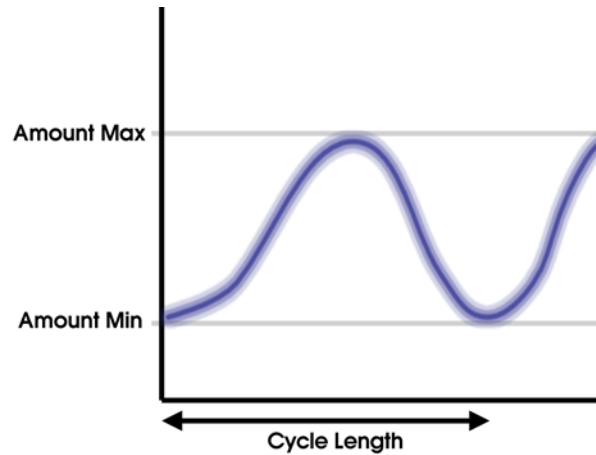


Figure 156. Graph showing regular pulse

Effect Type

Clip Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Strobe **Amount Min** - defines the minimum brightness of the image during the flicker.

Amount Max - defines the maximum brightness of the image during the flicker.

Cycle Length - defines the length in frames between luma peaks (or troughs) when Flicker Style Cyclic is switched on.

Variation - controls the extent to which fractal flickers can vary between successive frames. The higher the value the more wildly the clip will flicker. Low values produce a slow gradual but random flicker. The fractal flicker is always constrained between Amount Min and Amount Max.

Seed - this number generates a number sequence that is used to randomly vary the luminance when the Flicker Style is set to Fractal.

Masking - restricts the flicker to white areas defined by the mask.

- Off
- Luminance
- Inverted Luminance
- Alpha
- Inverted Alpha

Flicker Style - selects the method used to flicker the source image.

- **Cyclic** - applies a smooth oscillating luma variation between the Amount Min and Max values.
- **Fractal** - applies a random flicker to the source input.

Clamping Method - controls how pixel values are clipped when very bright.

- **By Value** - each colour channel is clipped at the max.
- **By Luminance** - the colour channels are combined and clipped at the max.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips See also “T_Copyflicker” on page 193.

T_Stutter

Description

T_Stutter randomly jumbles up sequences of frames of a clip.

The new frame order is chosen by first picking a random frame and then preserving the original frame order at that point for a specified duration. The random frame is chosen from a specified range of frames around the current frame using the Range parameter, then the original frame order is preserved for a duration defined by Frame Hold. This process is repeated until the number of frames in the output clip matches the input clip.

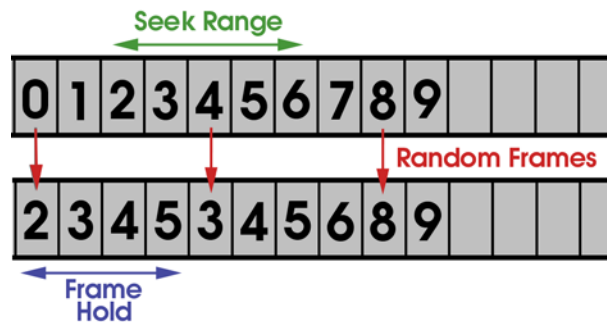


Figure 157. Numbered frames before and after T_Stutter is applied

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below. Stutter works as follows. A random frame is selected (as set by Range) then the original sequence order is preserved for a few frames (as set by Frame Hold) then a new random frame is selected and the process repeated.

T_Stutter **Range** - number of frames around the current frame from which to pick a new frame. A value of zero will ensure that the output clip matches the input clip. A value of one will pick either the previous frame, current frame or next frame at any particular point in the sequence.

Frame Hold - controls the preservation of the original order of frames at various (random) points in the sequence. The value represents the length in frames of original sequence that is preserved.

Hold Variance - controls the randomness of the length of the Frame Hold. This value represents the maximum number of frames that will be added or subtracted from the length of the Frame Hold. For example, if the Frame Hold is 10 and the Hold Variance is 2, the actual frame hold used will be between 8 and 12.

Seed - this number generates a number sequence that is used to randomly vary the picked frames. Different seed values will produce completely different frame patterns.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Tile

Description

T_Tile translates, rotates, scales and shears the source image. There are controls to crop the source input, and blend and filter the output.



Figure 158. T_Tile showing interface tools

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Tile X Centre - controls the horizontal position of the centre of the tile. Increase this value to move the image to the right.

Y Centre - controls the vertical position of the centre of the tile. Increase this value to move the image up.

Note *The X and Y Centre can be positioned using the on-screen tool. Switch the Display Tools to Full Image Widget to show the tool.*

Rotation - controls the rotation of the image tile.

Note *The Rotation can be manipulated using the on-screen tool.*

Scale - controls the overall size of the tile.

X Scale - controls the horizontal size of the tile.

Y Scale - controls the vertical size of the tile.

Note *All the scale parameters can be manipulated using the on-screen tools.*

X Shear - controls the amount of horizontal shear.

Y Shear - controls the amount of vertical shear.

Filtering - sets the quality of the filter used when processing the effect. (See “Filtering” on page 13.)

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Blending Sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_Tile is often used to remove unwanted black pixels at the edge of



Figure 159. Original image



Figure 160. Quick fix to the edge

images.

T_TimeBlend

Description	T_TimeBlend compares different frames in a single clip so that motion artifacts can be highlighted.
Effect Type	Clip Effect only.
Property Pages	The parameters on each of the property pages are described below.
T_TimeBlend	<p>Frame Offset - controls which frame is compared with the current frame. Frame forwards and backwards in time can be used. This parameter cannot be animated.</p> <p>Compare Method - sets the blending method used to process the two images. See “Blending Methods” on page 15.</p> <p>Compare Blend - controls the mix between the current and offset frames.</p> <p>Current Gain - controls the brightness on the current frame.</p> <p>Offset Gain - controls the brightness on the offset frame.</p> <p>ClipMin - pixels at or below this luminance value are set to black.</p> <p>ClipMax - pixels at or above this luminance value are set to white.</p> <p>Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.</p>
Help	See “Help Property Page” on page 12.
Masking	See “Masking Property Page” on page 10.
Options	See “Options Property Page” on page 11.

T_Tint

Description

T_Tint applies a colour wash to an image. Tints are applied to the low, mid and high luma points.



Figure 161. Original image



Figure 162. T_Tint

Effect Type

Clip Effect, Transition Effect and Colour Corrector.

Property Pages

Mid Point - sets the halfway location between the minimum and maximum luminance.

Softness - controls the amount of blurring applied to the image before tinting.

Blending - controls the mix between the final tinted image (0%) and the original untinted image (100%).

Tint - sets the tint colour at the luma mid point.

Colours **Black Colour** - sets the tint colour of the pixels with the lowest luma value.

White Colour - sets the tint colour of the pixels with the highest luma value.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_Tint can also be used to invert colours and soften the blending of the tint into the result.



Figure 163. Original image



Figure 164. T_Tint inverting colours and softening

See also “T_OldFilm” on page 95.

T_Trail

Description

T_Trail blends in previous frames to form a motion blurred trail. T_Trail can also be used on a single frame which can be repeated, scaled, rotated and translated to form a motion blur trail.



Figure 165. Trail

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Trail Presets...

Filter - switch this on to reduce aliasing. See “Filtering” on page 13.

Frames - controls the duration of the trail. Increase this value for a bigger fainter trail.

Repeats - controls the number of times the frame will be repeated between the original frame and the transformed frame.

Fall-off - controls the extent to which the trail fades away as the distance from the source increases.

Method

- **Average** - blends whole frames together.
- **Composite Unpremultiplied Src** - blends frames through the alpha channel.

- **Composite Premultiplied Src** - blends frames through the alpha channel.
- **Lighten** - blends frames using the brighter of the pixels.

X Position - controls the horizontal position of the transformed frame.

Y Position - controls the vertical position of the transformed frame.

Rotation - controls the rotation of the transformed frame.

Scale - controls the size of the transformed frame.

Effect - controls which effect to apply to the frames in the trail.

- **Scatter** - randomly scatters pixels
- **Blur** - defocuses pixels

Effect Amount - controls the strength of the effect. Increase this value for more blurring/scattering.

Gain - controls the luminance gain on the image. Increase this for a brighter result.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Turner

Description

T_Turner generates noise artifacts in your images, giving the look of a faded, mottled painting.



Figure 166. Lake



Figure 167. With T_Tint and T_Turner

Effect Type

Clip Effect and Transition Effect.

Property Pages

The parameters on each of the property pages are described below.

- T_Turner**
- Cleanness** - high values give a rich colour to images and boost the contrast - almost a technicolour look. Values below 100 produce a more mottled painterly effect.
 - Colour** - values above 100 amplify the colour contrast in the image.
 - Lowlights** - values above or below 100 raise or lower the intensity of the darker parts of the image.
 - Highlights** - values above or below 100 raise or lower the intensity of the brighter parts of the image.
 - Blending** - See “Blending Methods” on page 15.
- Cropping** See “Cropping Property Page” on page 8.
- Help** See “Help Property Page” on page 12.
- Masking** See “Masking Property Page” on page 10.
- Options** See “Options Property Page” on page 11.

T_TVDots

Description

T_TVDots simulates a television picture by breaking up the image into the pattern of phosphor dots that form the surface of the cathode ray tube. Different dot patterns are provided for triple dot and striped tubes.

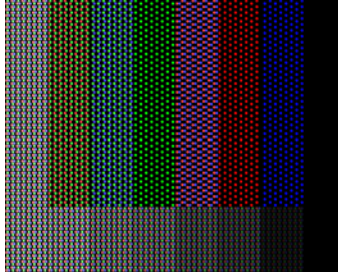


Figure 168. Dot Triad

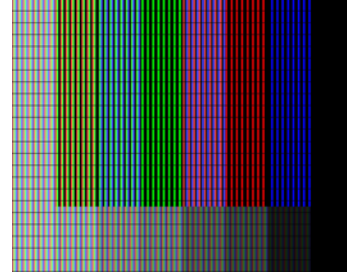


Figure 169. Vertical Lines

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_TVDots

Shape - controls the shape of the pattern drawn.

- **Squares**
- **Circles**
- **Bars (Vertical)**
- **Bars (Horizontal)**
- **Aperture Grille** - Aperture Grille CRTs deliver superior vertical definition as a result of the striped phosphor alignment.
- **Dot Triad** - Dot Triad CRTs deliver excellent vertical, horizontal and diagonal definition due to the triangular arrangement of the phosphor dots.
- **Square Triad**

Formation

- **Luminance** - draws dots of equal size but varying luminance.
- **Size** - draws dots of varying size but constant luminance.

Size - controls the pattern size. Increase this for bigger dots. The value is the number of pixels across the shape.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this value to draw vertically squashed dots.

Bleed - controls the overlap of the dots.

Desaturate - removes colour from the dots.

PreBlur - defocusses the image before applying the dot pattern.

Filter - switch this on to reduce aliasing. See “Filtering” on page 13.

Sundries **Pattern Shift in X** - controls the horizontal position of the dots.

Pattern Shift in Y - controls the vertical position of the dots.

X Sample Point - controls the horizontal position of the sampling point within the region of interest. This is usually in the centre of the square bounding a TV dot.

Y Sample Point - controls the vertical position of the sampling point within the region of interest. This is usually in the centre of the square bounding a TV dot.

Scan Line Gap - sets the distance between the horizontal rows of dots.

Element Gap - sets the distance between the vertical columns of dots.

Background **Background Colour** - the colour behind the dots.

Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

See also “T_Newsprint” on page 92. See also “T_BadTV” on page 49.

GENERATORS

Tinder generators are used to create entirely new images, as opposed to adjusting the pixels of an existing image.

Generators are often used to create mattes which will then be used to control other plug-ins and effects. In this instance, the luminance of the RGB can often be used as the matte input to other effects.

T_Bars

Description

T_Bars generates colour bars and colour ramps.



Figure 170. SMPTE Bars

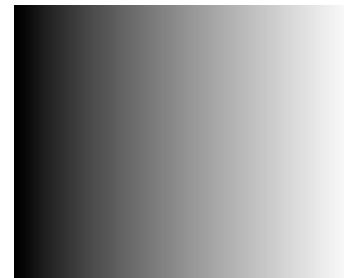


Figure 171. Grey Ramp

Effect Type

Background Generator only.

Property Pages

The parameters on each of the property pages are described below.

T_Bars **Pattern** - selects the pattern to generate.

- EBU Bars
- 75% Colour Bars
- 100% Colour Bars
- EIA Colour Bars
- SMPTE Colour Bars
- RGB Ramp
- Grey Ramp
- RGB Crossed Ramp
- Grey Crossed Ramp

Ramp Direction - specifies whether the pattern should be drawn horizontally or vertically.

- Horizontal
- Vertical

Help See “Help Property Page” on page 12.

T_Beam

Description

T_Beam draws a spotlight in 3D space. The position of the light source can be animated and the beam can be rotated in all directions. The beam can be blended with the source image or used to generate a new image.



Figure 172. Narrow beam



Figure 173. Wide beam

Effect Type

Clip Effect and Background Generator.

Property Pages

The parameters on each of the property pages are described below.

T_Beam **X Centre** - controls the horizontal position of the light emitting disc.

Y Centre - controls the vertical position of the light emitting disc.

Cone Angle - controls the spread of light from the emitting disc. Small values produce narrow focussed beams. Large values produce wide spread out beams.

Radius - controls the size of the light emitting disc producing the beam.

Rotation - controls the direction of the beam. With a value of 0 the beam points right. With a value of 180 the beam points left. With a value of 90 the beam points towards the camera. With a value of 270 the beam points away from the camera. This parameter is calibrated in degrees.

Elevation - controls the vertical pitch of the beam. With a value of 0 the beam will be horizontal. This parameter is calibrated in degrees.

Note *The position, rotation and elevation of the beam can be controlled with the on-screen tools.*

- Colour **Core Colour** - sets the colour of the center of the beam.
- Shaft Control**
- Core Control**
- Corona Colour** - sets the colour of the outer part of the beam.
- Style **Intensity** - controls the brightness of the beam. Large values produce brighter beams.
- Filtering - sets the quality of the filter used when processing the effect.
- Remove Light Source** - removes the disc of light used to generate the beam. Removing this is most noticeable when the beam is pointing directly towards the camera.
- Background Colour** - sets the background colour which will be used when the beam is not being composited over a background layer.
- Blending Sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)
- Help See “Help Property Page” on page 12.
- Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.
- Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

Hints & Tips

In the example below, the beam is applied to a lighthouse.



Figure 174. Lighthouse



Figure 175. T_Beam

T_Blob

Description

T_Blob renders smoothly shaded blobs that gloop together when they get close to one another.

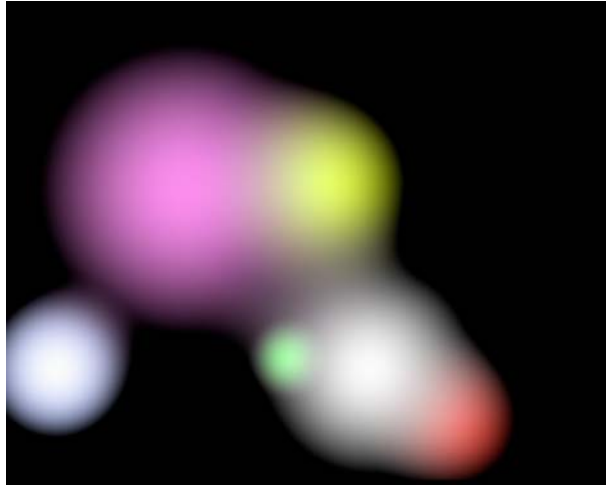


Figure 176. T_Blob

Effect Type

Clip Effect and Background Generator.

Property Pages

The parameters on each of the property pages are described below.

T_Blob **Colouring** - sets the colour of the blobs

- **Grey** - all blobs are shades of black and white.
- **Colour per Blob** - each blob has its own colour.
- **Colour Gradient** - each blob takes its colours from the Colour Gradient.

Num Blobs - sets the number of blobs drawn.

Filter - switch this on to reduce aliasing. (See “Filtering” on page 13.)

Hard Edged - switch this on to render the blobs with sharply defined edges.

Dither - switch this on to add noise to the gradient to reduce the effect of undesirable colour banding between smoothly shaded colours.

Softness - controls the extent to which adjacent blobs gloop together.

Blending - Sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Grad See “Colour Gradient Controls” on page 14.

Blobs Edit

- **Edit Blob N** - sets which blob (1 - 10) to edit.

X Centre - controls the horizontal position of the centre of this blob.

Y Centre - controls the horizontal position of the centre of this blob.

Radius - controls the size of this blob.

Colour - sets the colour of this blob.

Help See “Help Property Page” on page 12.

Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.

Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

Hints & Tips

T_Blobs can be used to produce interesting distortion effects when combined with T_Glass (See “T_Glass” on page 77.) or T_Distorto (See “T_Distorto” on page 234.).



Figure 177. Blobs and Glass

T_Caustic

Description

T_Caustic simulates the patterns created when light rays are reflected or refracted by a curved surface. Caustics can often be seen at the bottom of a swimming pool in bright sunlight.

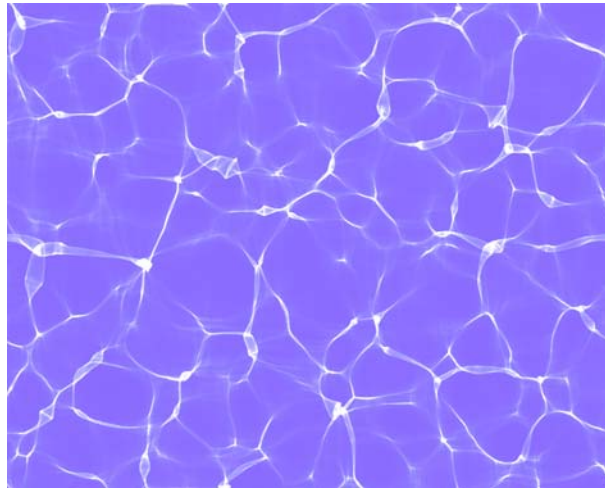


Figure 178. T_Caustic

Effect Type

Clip Effect, Background Generator and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Caustic **Size** - controls the scale of the image. Increase this to move closer to the surface.

Note *Increasing the size may de focus the image. Increase the focus parameter to compensate.*

Brightness - controls the luminance of the lines. Increase this for brighter lines.

Focus - controls the focussing of the lines used in the algorithm. Values close to zero will be out of focus or blurred. Increase this parameter to make the lines sharper.

Speed - controls the rate at which the caustics move.

Detail - controls the number of fractals used to generate the lines.

Seed - sets the random number used to generate the caustic pattern.

Samples - controls the quality of the lines. Increase this parameter for smoother lines.

Colours **Background** - sets the colour behind the lines.

Foreground - sets the colour of the caustic lines.

Blending Sets how to mix between the image effect and its original source. This property page is only available when used as a clip effect. See “Blending Methods” on page 15.

Help See “Help Property Page” on page 12.

Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.

Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

Hints & Tips

To composite the lines over a background use in overlay track and set Background alpha to zero and the Foreground and Background colours to be the same.

T_Clouds

Description

T_Clouds produces fluffy cloud images. It can also be used to generate smoke.



Figure 179. Clouds

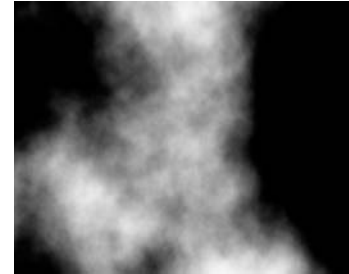


Figure 180. Smoke

Effect Type

Clip Effect and Background Generator.

Property Pages

Size - controls the overall size of the clouds.

Rotation - controls the rotation of the clouds around an axis perpendicular to the screen. This parameter is calibrated in degrees.

Aspect - controls the horizontal and vertical weighting of the effect.

X Centre - controls the horizontal position of the clouds.

Y Centre - controls the vertical position of the clouds.

Blending - Sets how to mix between the image effect and its original source. This property page is only available when used as a clip effect. See “Blending Methods” on page 15.

Form **Density** - controls the cloud thickness.

Gain - controls the brightness of the clouds.

Turbulence - controls the changes to the cloud shape over time. Positive values will animate the cloud. A zero value will make the clouds rigid when panned.

Fluffiness - controls the fluffiness of the clouds. Increase this for fluffy clouds.

Seed - sets the random number used to generate the cloud pattern.

Evolve - toggle this on to enable the clouds to change over time.

Evolve Amount - controls the rate of change of the cloud evolution.

Grad See “Colour Gradient Controls” on page 14.

Cropping This property page is only available when used as a clip effect. See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.

Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

T_Elements

Description

T_Elements is an organic evolving shape generator constructed from thousands of particles and can be used to simulate fire, smoke and water. The fundamental shape of the cloud particles is a cone as shown in the diagram. However, the parameters can be altered to give a very wide variety of particle looks. A number of presets are supplied.

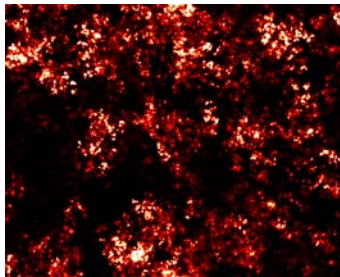


Figure 181. Boil

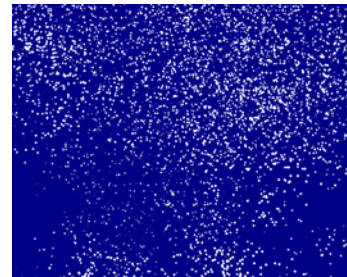


Figure 182. Snow



Figure 183. Fog

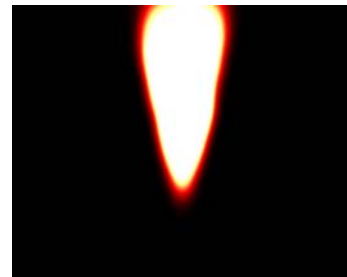


Figure 184. Candle



Figure 185. Ring of Fire



Figure 186. Fire

Effect Type

Clip Effect, Background Generator and Paint Effect.

Property Pages

The underlying form of all these particle textures is a cone. By setting the following parameters you can see the cone. It may help in

your understanding of the parameters described here if you think of this conical structure. Direction Variance 90, Smoothing to Manual,

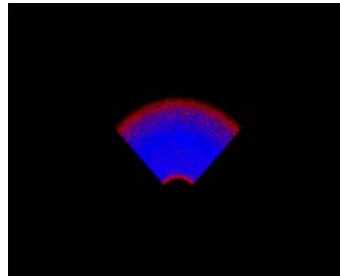


Figure 187. Underlying cone structure

Bunching 1, Centre Radius 45, Y Centre -200, Total Dots 100000, Core Colour 0, 0, 255.

Preset - loads a set of parameters that control the look of the particles.

- Fire
- Cloud
- Ring Of Fire
- Smoke
- Candle
- Fog
- Water
- Snow
- Boil

Gain - controls the brightness of the particles.

X Centre - sets the horizontal position of the cone centre.

Y Centre - sets the vertical position of the cone centre.

Radius - controls the cone length. In general terms this controls the overall size of the particles.

Aspect - controls the horizontal and vertical weighting of the effect.

Total Dots - sets the total number of particles that are used in the cone.

Centre Radius - sets the inner cone radius (holdout radius). Particles are not generated in this inner cone.

Seed - sets the random number sequence from which the particles are generated. Different seed values will produce completely different random particle patterns.

Bunching - controls the fractal detail of the particles. Increase this for a more random effect.

Movement **Evaporation** - controls the rate at which particles are emitted from the cone centre.

Direction - sets the direction of the cone. A value of zero will point right and a value of ninety will point up. In general this defines the direction of particle motion.

Direction Variation - sets the cone angle.

Spin - controls the rotation of the individual particles within the cone about the cone centre (X,Y) to give a swirling effect.

Wrap - switch this on to ensure that particles that disappear off one side of the image will reappear on the opposite side.

Filter - switch this on to reduce aliasing. (See “Filtering” on page 13.)

Particles **Smoothing** - controls how the particle blurring is computed.

- **Auto** - blurring is automatic.
- **Manual** - the blurring is set by the Smooth value.

Smooth - controls the amount of blurring applied to the cloud particles.

Core Colour - sets the colour of the particles in the cone body.

Edge Colour - sets the colour of the particles at the cone edges.

Background/Blending **Background Colour**- sets the background colour.

Blending - sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Help See “Help Property Page” on page 12.

- Cropping See “Cropping Property Page” on page 8.
- Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.
- Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

T_Grad

Description

T_Grad generates colour gradients. Four ramps are possible - directional, circular, radial and polygonal. These are shown here

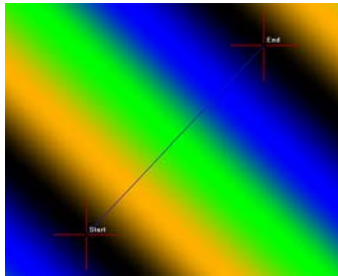


Figure 188. Directional Grad

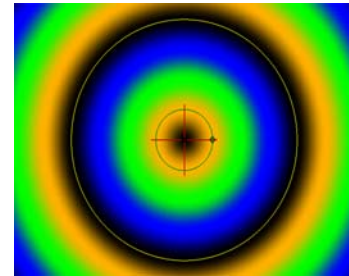


Figure 189. Circular Grad

with Cyclic Shift on and the on-screen tools displayed.

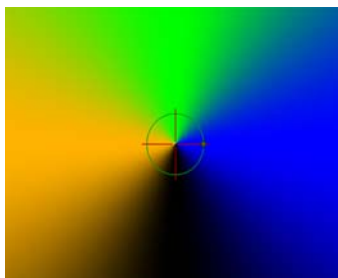


Figure 190. Radial Grad

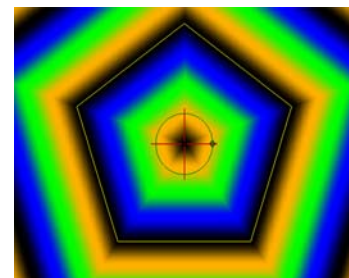


Figure 191. Polygonal Grad

Effect Type

Clip Effect, Background Generator and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Grad **Gradient Type** - selects the gradient pattern to render.

- **Directional Grad** - see image above.
- **Circular Grad** - see image above.
- **Radial Grad** - see image above.
- **Polygonal Grad** - see image above.

X Start - horizontal position of the start of the directional gradient.

Y Start - vertical position of the start of the directional gradient.

X End - horizontal position of the end of the directional gradient.

Y End - vertical position of the end of the directional gradient.

X Centre - horizontal position of the centre of the gradient.
(Circular, Radial and Polygonal only)

Y Centre - vertical position of the centre of the gradient. (Circular, Radial and Polygonal only)

Radius - controls how far the gradient extends. The size of the gradient. (Circular and Polygonal only)

Aspect - allows you to squash the shape. (Circular, Radial and Polygonal only)

Rotation - rotation of the gradient. (Radial and Polygonal only)

Num Sides - the number of sides of the regular polygon. (Polygonal only)

Cyclic Shift - moves the colours along a directional gradient or radially out from the centre of the other gradients.

Copies - the number of repeats of the colours in the gradient.

Dither - adds noise to the gradient to reduce the effect of undesirable colour banding between smoothly shaded similar colours.

Filter - switch this on to reduce aliasing. See “Filtering” on page 13.

Grad See “Colour Gradient Controls” on page 14.

Help See “Help Property Page” on page 12.

Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.

Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

T_Laser

Description

T_Laser generates animating laser bolts between two points.



Figure 192. Meteor

Note *To see the effect you should advance forward of the first frame in the clip.*

Effect Type

Clip Effect and Background Generator.

Property Pages

The parameters on each of the property pages are described below.

Note *By default, the laser is animated over the duration of the clip.*

T_Laser **X Start** - controls the horizontal position of the start of the laser bolt.

Y Start - controls the vertical position of the start of the laser bolt.

X Stop - controls the horizontal position of the end of the laser bolt.

Y Stop - controls the vertical position of the end of the laser bolt.

Length - length of the laser.

Width - width of the laser.

Shape - controls the shape of the laser bolt.

- Rounded
- Spear
- Spike From

- Spike To

Perspective - this will simulate the laser bolt going into and out of the screen. Negative values will make it look as if the laser bolt is travelling towards the viewer, positive values will make it look like the bolt is travelling away.

Blur - controls the amount of blurring applied to the whole laser bolt. This has the affect of blurring together pixels within the laser bolt and softening the edges.

Breakup - controls the scattering of the edges of the laser.

Samples - controls motion blur. Increase this for more motion blur. A value of 1 will have no motion blur.

Shutter - controls the duration the shutter is held open during motion blurring.

Colours **Balance** - controls the amount of core colour in the laser bolt. A value of zero will have no core colour, a value of 100 will have no edge colour.

Softness - controls the softness of the alpha channel used to composite the laser bolt over an image when applied as a clip effect. This results in the edges of the laser bolt softening without blurring together pixels within the laser bolt.

Brightness - controls the brightness of the laser.

Core Colour - the colour of the centre of the laser.

Edge Colour - the colour at the edges of the laser.

Blending Sets how to mix between the image effect and its original source. This property page is only available when used as a clip effect. See “Blending Methods” on page 15.

Help See “Help Property Page” on page 12.

Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.

Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.



Figure 193. Smoke Trail



Figure 194. Laser Bolt

T_LensFlare

Description

Camera lenses are designed to focus light onto a photo-sensitive surface. The lens housing often contains many individual glass lenses through which the light is refracted. However, a small percentage of light is reflected from the surface of the lenses and this reflected light forms the lens flare patterns we see on the photographed image. Lens flares are most noticeable when the lens is pointed towards a very bright light like the sun.



Figure 195. T_LensFlare on a background generated by T_Sky

T_LensFlare generates realistic and highly customized lens flares. It can be used over a background image or to generate an image from scratch. All lens flares have a bright spot (highlight) and a trail of brightly coloured shapes drawn between the highlight and the centre of the image (polygons). Tinder lens flares are made up from thirteen components which are combined together to form the highlight and polygons.

1. Light Shard
2. Glow
3. Halo Ring
4. Arc
5. Chromatic Ring
6. Chromatic Radial
7. Chromatic Ripple
8. Rays
9. Spikes
10. Uniform Spikes
11. Diced Spikes
12. Normal Polygons

13. Chromatic Polygons

The image below shows the lens flare characteristic of those viewed through an anamorphic lens. Note the long horizontal light shard and trail of polys.

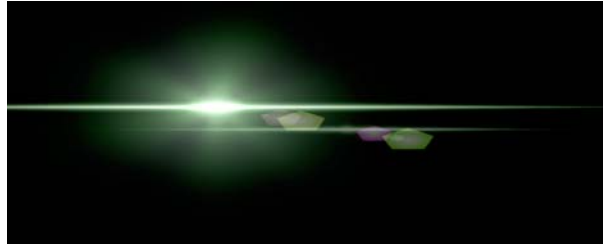


Figure 196. Light shards characteristic of a lens flare through an anamorphic lens.

Effect Type

Clip Effect, Background Generator, Multi-input Effect and Keyer Effect.

T_LensFlare

Presets... - a number of built in lens flares are supplied. Use these presets as a starting point.

Master Gain - controls the overall brightness of all elements in the lens flare.

Highlight X - controls the horizontal position of the highlight.

Highlight Y - controls the vertical position of the highlight.

Pivot X - controls the horizontal position of the pivot point.

Pivot Y - controls the vertical position of the pivot point.

Note *The polygons are drawn in a line from the highlight position through the pivot point. The pivot point is usually in the centre of the screen.*

Seed - this number generates a number sequence that is used to randomly vary the position of the polygons in that component.

Unpremultiply - switch this on to render unpremultiplied output.

Obscure - controls how to use the mask to obscure the lens flare. The mask attenuates the master gain.

Note *Not available when used as a generator.*

- **Don't Obscure** - don't use the mask to obscure the lens flare.
- **Obscure on Black Luminance** - select this to obscure the lens flare in the black areas of the mask and show in white areas.

- **Obscure on White Luminance** - select this to obscure the lens flare in the white areas of the mask and show in black areas.
- **Obscure on Black Alpha** - see above.
- **Obscure on White Alpha** - see above.

Obscuration Size - controls the extent to which the matte will have an affect on the brightness of the lens flare. Small values will flick the lens flare on or off quickly as it passes over a matte boundary. Large values will produce a gradual change in the brightness (Master Gain).

Components This property page is used to edit the components that make up a lens flare. Select the edit number you wish to alter and then select its component type. Thirteen component types are selectable.

None

No component is rendered and the Edit component is set to "Unused"

Light Shard

Renders a soft horizontal line that is characteristic of lens flares seen through anamorphic lenses.



Figure 197. Shard

Radius - controls the length of the shard.

Aspect - controls the horizontal and vertical weighting of the effect.

Offset - shifts the position of the light shard along the line between the highlight and pivot positions.

Rotation - controls the rotation of the shard about its centre.

Inner Radius - controls the size of the central bulge of the shard.

Width - controls the thickness of the shard.

Glow

Renders a soft sphere.



Figure 198. Glow

Radius - controls the size of the glow.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the glow vertically.

Offset - shifts the position of the glow along the line between the highlight and pivot positions. A value of zero draws the circle at the highlight centre.

Inner Radius - controls the extent to which the inner colour dominates the outer colour.

Halo Ring

Renders a two colour ring.



Figure 199. Halo Ring

Radius - controls the size of the ring.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the ring vertically.

Offset - shifts the position of the ring along the line between the highlight and pivot positions. A value of zero draws the

ring at the highlight centre.

Width - controls the thickness of the ring.

Arc

Renders a two colour arc about the highlight.



Figure 200. Arc

Radius - controls the size of the ring.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the ring vertically.

Offset - shifts the position of the ring along the line between the highlight and pivot positions. A value of zero draws the ring at the highlight centre.

Rotation - controls the rotation of the arc about its centre.

Width - controls the thickness of the ring.

Chromatic Ring

Renders a rainbow coloured ring intersected with dark rays drawn from the centre of the ring regardless of the offset value.

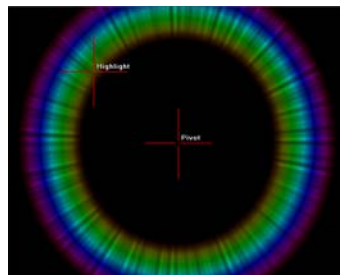


Figure 201. Chromatic Ring

Radius - controls the radius of the ring.

Aspect - controls the horizontal and vertical weighting of the

effect. Increase this to squash the ring vertically.

Offset - controls the shift in position of the centre of the ring from the highlight position to the pivot position.

Rotation - controls the rotation of the ring about its centre.

Detail - essentially controls the amount of detail in the chromatic rings. The nature of these gaps forms the difference between the types of chromatic ring. If the detail is set to 0, a smooth rainbow coloured ring is drawn. As the detail is increased soft gaps appear in the ring. As the detail increases further the gaps become more numerous and are thinner.

Width - controls the distance between the inner and outer radius of the ring. Increasing the width makes the ring thicker.

Chromatic Radial

Renders a rainbow coloured ring intersected with dark rays drawn from the highlight position.

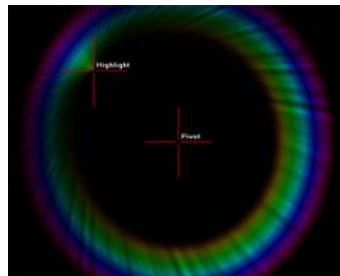


Figure 202. Chromatic Radial

Note *The difference between Chromatic Ring and Chromatic Radial only really becomes apparent when the Offset is non-zero.*

Radius - controls the radius of the ring.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the ring vertically.

Offset - controls the shift in position of the centre of the ring from the highlight position to the pivot position.

Rotation - controls the rotation of the ring about its centre.

Detail - essentially controls the amount of detail in the chromatic rings. The nature of these gaps forms the difference between the types of chromatic ring. If the detail is set to 0, a smooth rainbow coloured ring is drawn. As the detail is

increased soft gaps appear in the ring. As the detail increases further the gaps become more numerous and are thinner.

Width - controls the distance between the inner and outer radius of the ring. Increasing the width makes the ring thicker.

Chromatic Ripple

Renders a rainbow coloured ring intersected with evenly spaced dark rays drawn from the centre of the ring.

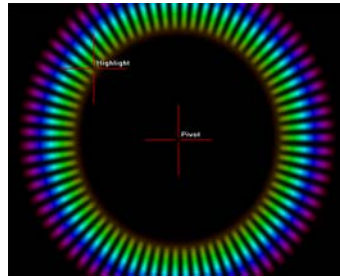


Figure 203. Chromatic Ripple

Radius - controls the radius of the ring.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the ring vertically.

Offset - controls the shift in position of the centre of the ring from the highlight position to the pivot position.

Rotation - controls the rotation of the ring about its centre.

Detail - essentially controls the amount of detail in the chromatic rings. The nature of these gaps forms the difference between the types of chromatic ring. If the detail is set to 0, a smooth rainbow coloured ring is drawn. As the detail is increased soft gaps appear in the ring. As the detail increases further the gaps become more numerous and are thinner.

Width - controls the distance between the inner and outer radius of the ring. Increasing the width makes the ring thicker.

Rays

Renders light rays of equal length and unequal spacing around the centre of the highlight.



Figure 204. Rays

Radius - controls the length of the rays.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the rays vertically.

Offset - controls the shift in position of the spikes from the highlight position to the pivot position.

Rotation - sets the rotation of the rays around the spike centre.

Inner Radius - controls the size of the bright glow at the centre of the highlight.

Detail - controls the number of rays drawn.

Fractal Depth - essentially controls the amount of fractal detail within the rays.

Spoke Width - sets the width of the rays. Low values will render visible single rays. High values render a glow.

Spikes

Renders light rays of unequal length and unequal spacing around the centre of the highlight.

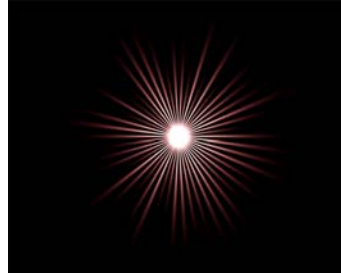


Figure 205. Spikes

Radius - controls the length of the spikes.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the spikes vertically.

Offset - controls the shift in position of the spikes from the highlight position to the pivot position.

Rotation - sets the rotation of the spikes around the spike centre.

Inner Radius - controls the size of the bright glow at the centre of the highlight.

Detail - controls the number of spikes drawn.

Fractal Depth - essentially controls the amount of fractal detail within the spikes.

Spoke Width - sets the width of the spikes. Low values will render visible single spikes. High values render a glow.

Uniform Spikes

Renders light rays of equal length and spacing around the centre of the highlight.



Figure 206. Uniform Spikes

Radius - controls the length of the spikes.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the spikes vertically.

Offset - controls the shift in position of the spikes from the highlight position to the pivot position.

Rotation - sets the rotation of the spikes around the spike centre.

Inner Radius - controls the size of the bright glow at the centre of the highlight.

Detail - controls the number of spikes drawn.

Fractal Depth - essentially controls the amount of fractal detail within the spikes.

Spoke Width - sets the width of the spikes. Low values will render visible single spikes. High values render a glow.

Diced Spikes

Same as Spikes but with luminance variations along each light ray. These luma variations are controlled by the Dice Size.

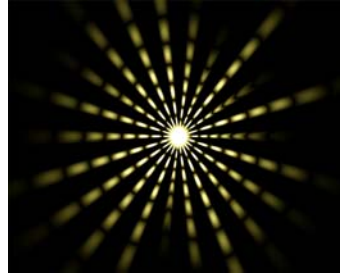


Figure 207. Diced Spikes

Radius - controls the length of the spikes.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the spikes vertically.

Offset - controls the shift in position of the spikes from the highlight position to the pivot position.

Rotation - sets the rotation of the spikes around the spike centre.

Inner Radius - controls the size of the bright glow at the centre of the highlight.

Dice Size - controls the width and number of the dark concentric bands forming the dicing.

Detail - controls the number of spikes drawn.

Fractal Depth - essentially controls the amount of fractal detail within the spikes.

Spoke Width - sets the width of the spikes. Low values will render visible single spikes. High values render a glow.

Normal Polygons

Renders multiple coloured polygons. The shape of the polygons are defined by the shape of the iris that forms the camera aperture. The iris is built from a series of interconnected metal blades. If the

aperture is opened wide the blades form a circle and when stopped down they form a polygon.

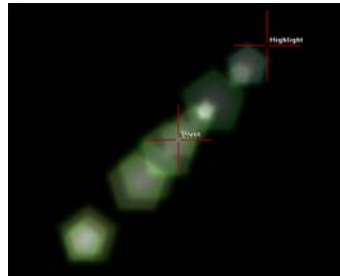


Figure 208. Normal Polygons

Radius - controls the size of the polygons.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the polys vertically.

Offset - controls the shift in position of the polygons from the highlight position towards the pivot position.

Rotation - sets the rotation of the polygons around their centres.

Curvature - controls the bending of the lines drawn between the polygon vertices. Increase this value to bow out the poly sides. High values will render circles.

Softness - controls the edge softness of the polygons.

Inner Radius - controls the size of the inner polygon.

Spacing - controls the distance between polygons.

Radius Variance - controls the extent to which the size of the polygons will vary from the size specified by the radius.

Colour Variance - controls the extent to which the colour of the polygons will vary from that specified by the colours property page.

Number - sets the number of polygons rendered.

Sides - sets the number of sides of the polygon. For example, a value of 4 will draw a square.

Chromatic Polygons

Renders multiple coloured polygons. The shape of the polygons are defined by the shape of the iris that forms the camera aperture. The iris is built from a series of interconnected metal blades. If the aperture is opened wide the blades form a circle and when stopped down they form a polygon.

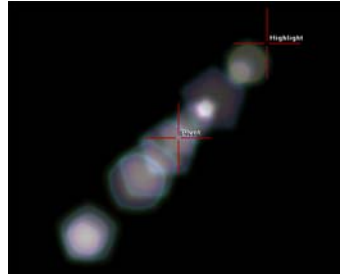


Figure 209. Chromatic Polygons

Radius - controls the size of the polygons.

Aspect - controls the horizontal and vertical weighting of the effect. Increase this to squash the polygons vertically.

Offset - controls the shift in position of the polygons from the highlight position towards the pivot position.

Rotation - sets the rotation of the polygons around their centre.

Curvature - controls the bending of the lines drawn between the polygon vertices. Increase this value to bow out the polygon sides. High values will render circles.

Softness - controls the edge softness of the polygons.

Inner Radius - controls the size of the inner polygon.

Spacing - controls the distance between polygons.

Radius Variance - controls the extent to which the size of the polygons will vary from the size specified by the radius.

Colour Variance - controls the extent to which the colour of the polygons will vary from that specified by the colours property page.

Number - sets the number of polygons rendered.

Sides - sets the number of sides of the polygon. For example,

a value of 4 will draw a square.

Colours This property sets the colours used in the components and sets how they interact with the underlying component layers.

Layer - controls how this component is blended with the previous component in the list.

- **Add** - the current component is added to the underlying component then clipped. (a+b)
- **Screen** - the colour components of the current and underlying layers are added together then the sum of the layers is subtracted. This ramps in overexposure better than Add.
- **Add Over** - the current component is multiplied by the brightness of the underlying component layer and then added to the underlying component layer. This is particularly effective when a thick chromatic ring is added to rays. See below.

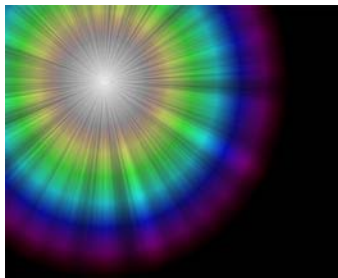


Figure 210. Add



Figure 211. Add Over

Gain - controls the brightness of the component. The gain is randomly modified within the limits set by Gain Variance.

Gain Variance - controls variations in the brightness.

Inner Colour - sets the core colour of the glow, rays or polygons.

Outer Colour - sets the edge colour of the glow, rays or polygons.

Blending Sets how to mix between the image effect and its original source. See “Blending Methods” on page 15.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

The introduction of a lens flare when creating a scene with a bright light source is quite common. It can play an important part in making the scene look right.

Real lens flares can be shot against a black background and composited into your scene. However, it can be tricky and expensive to match the camera moves of the two sequences so that the lens flare appears correct. Digital lens flares are fast and can easily be animated to track the movement of the light source in your scene.

Lens flares occur when a bright light is shone directly into the camera lens. Each lens flare has a bright highlight caused by the overexposure of the light on the film and a trail of polygons caused by the multiple reflections of the light rays in the lenses that form the focussing assembly of a camera. The shape of the iris that forms the camera’s aperture is responsible for the shape of the polygons formed in the lens flare. Since lens flares are constructed inside the camera, when you come to digitally creating them they should always be composited over everything else in your scene.

The precise form of the lens flare comes from the lens properties and not the light source. This is particularly apparent for anamorphic lenses which produce horizontal lens flares. These can be recreated using the Light Shard element of T_LensFlare.

You should also be aware that the polygons will move at different speeds relative to each other whenever the light source or camera is moving. This is caused by the different position of the lenses within the lens assembly. When animating T_LensFlare you should keep the pivot position static in the centre of the image and animate the highlight position. The relative positions of the rings and polygons will automatically animate in relation to these two coordinates.

It is worth spending time looking at real lens flares to get a feel for the shapes, colours and movement. Just spending an evening in watching television will doubtless prove fruitful in this quest. You should note that lens flares have very subtle imperfections and tend to flicker over time.

You can use T_LensFlare to create rainbows. Switch everything off

apart from one chromatic ring.



Figure 212. Simulated rainbow using T_LensFlare

T_Lightning

Description

This plug-in generates both realistic lightning bolts and electric plasma discharge effects.



Figure 213. Lightning

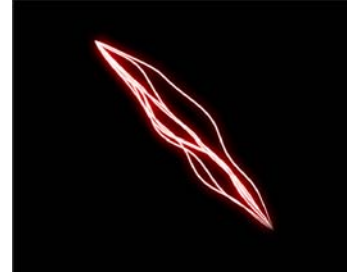


Figure 214. Plasma

Effect Type

Clip Effect, Generator, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Lightning

Start X - sets the horizontal position of the start of the lightning bolt.

Start Y - sets the vertical position of the start of the lightning bolt.

End X - sets the horizontal position of the end of the lightning bolt.

End Y - sets the vertical position of the end of the lightning bolt.

Start Radius - defines the size of the circle, centered on the Start X/Y position, in which the position of the start of the lightning bolt can be found. The actual position is random and based on the Seed value.

End Radius - defines the size of the circle, centered on the End X/Y position, in which the position of the end of the lightning bolt can be found. The actual position is random and based on the Seed value.

Max Width - sets the maximum thickness of the lightning bolt. The actual thickness will vary along the length of the bolt if Taper is greater than zero.

Width Variation - controls the amount of width changes along the lightning bolt. This parameter is usually set to zero.

Vary Size - controls the length of the width variations along the length of the bolt.

Note *Only visible if the Width Variation is greater than zero.*

Vary Speed - controls the rate of change of width variations.

Taper - controls how to reduce the width of the bolt towards the end position.

Tapered Length - controls the percentage of the bolt length that is tapered. If zero, no tapering is performed. If 100 the bolt is tapered from start to end.

Seed - this number generates a number sequence that is used to randomly vary the bolts.

Number of Bolts - sets the number of bolts drawn between the start and end positions.

Presets...

- Forked Lightning
- Sheet Lightning
- Plasma Strike
- Plasma Ball

Type **Lightning Type** - sets the type of line drawn.

- **Lightning** - renders lightning bolts.
- **Plasma** - renders plasma/electric discharge bolts.

Plasma Range - controls the tautness of the plasma lines. Increase this value to allow the bolts to deviate from the straight line connecting the start and end positions.

Jaggedness - controls the amount of sharp projecting notches along the bolt.

Jaggedness (Plasma) Detail - controls the amount of fractal detail in the bolt.

Min Split Distance - sets the distance between the start position and the beginning of the jaggedness.

Plasma Freq - controls the frequency (wavelength) of the waves in the bolts.

Max Split Distance - sets the distance between the end position and the end of the jaggedness.

Plasma Bias - shifts the plasma bulge from the start (-100) to the end (100) of the bolt.

Plasma Twist - adds twist to the movement of the bolt.

Speed - how fast the bolt animates.

Percent Complete - controls the animation of the bolt. A value of 100 will be complete. A value of 50 will be half finished.

Grow - controls how the bolt and forks animate.

- **By Order** - the main bolt is first animated and then the forks are added.
- **By Length** - the bolt and forks are animated according to the length of the bolt.

Forking **Main Forks** - controls the number of "branches" off the main lightning bolt.

Smaller Forks - controls the number of "twigs" off the branches.

Min Fork Size - sets the minimum size of the forks.

Max Fork Size - sets the maximum size of the forks.

Min Fork Angle - sets the minimum angle between the fork and the bolt.

Max Fork Angle - sets the maximum angle between the fork and the bolt.

Start Range - controls the distance between the start position and the first branch.

End Range - controls the distance between the end position and the last branch.

Max Fork Depth - the number of levels to which the bolt can fork.

Fineness - controls the branch fall-off.

Fork Seed - this number generates a number sequence that is used to randomly vary the forks.

Colour **Intensity** - the strength of the light emitted from the bolt.

Bolt Colour - the colour of the bolt core.

Glow Intensity - the strength of the glow around the bolt.

Glow Radius - the size of the glow around the bolt.

Glow Colour - the colour of the glow around the bolt.

Avoidance This property page is not available when used as a generator and has many more controls when used as a Multi-input effect. These avoidance parameters define and manipulate a region that is impenetrable to lightning or plasma bolts. Only pure black regions may contain lightning bolts. If either the start or end points lie on non-black pixels, the avoidance matte is ignored.

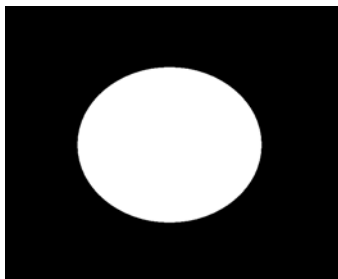


Figure 215. Avoidance Matte



Figure 216. Plasma Avoidance

Note *Avoidance takes a long time to compute and may produce incorrect results for some mattes.*

Start Mask - select how to process the start mask.

- **None** - select this to ignore the mask input and take the start position from the parameters in the T_Lightning property page.
- **Luminance** - select this to take the start position of the lightning bolt from the luminance of the start mask input.
- **Haloed Luminance** - this creates a halo (outline) from the luminance of the start mask input which is then used to determine the start position of the bolts.
- **Alpha** - select this to take the start position of the lightning bolt from the alpha of the start mask input.
- **Haloed Alpha** - this creates a halo (outline) from the alpha channel of the start mask input which is then used to determine the start position of the bolts.

Start ClipMin - pixels at or below this luminance value are set to black

Start ClipMax - pixels at or above this luminance value are set to white.

Start Halo Width - controls the thickness of the halo when the Start Mask is set to Haloed Luma/Alpha.

End Mask - select how to process the end mask.

- **None** - select this to ignore the mask input and take the end position from the parameters in the T_Lightning property page.
- **Luminance** - select this to take the start position of the lightning bolt from the luminance of the start mask input.
- **Haloed Luminance** - this creates a halo (outline) from the luminance of the end mask input which is then used to determine the end position of the bolts.
- **Alpha** - select this to take the end position of the lightning bolt from the alpha of the end mask input.
- **Haloed Alpha** - this creates a halo (outline) from the alpha channel of the end mask input which is then used to determine the end position of the bolts.

End ClipMin - pixels at or below this luminance value are set to black.

End ClipMax - pixels at or above this luminance value are set to white..

End Halo Width - controls the thickness of the halo when the End Mask is set to Haloed Luma/Alpha.

Avoid With - defines a region that is avoided by lightning bolts. Any pixels that are non-black are avoided.

- **None** - avoidance is not used.
- **Luminance** - the luminance is used to define areas that are avoided.
- **Alpha** - the alpha channel is used to define areas that are avoided.

Avoid ClipMin - pixels at or below this luminance value are set to black.

Avoid ClipMax - pixels at or above this luminance value are set to white.

Show Mask - shows the processed mask.

- **Start Mask** - shows the processed start mask.
- **End Mask** - shows the processed end mask.
- **Avoidance Mask** - shows the processed avoidance mask.

Mask Seed - this number generates a number sequence that is used to randomly vary the start/end position if several possible positions are found in the mask.

Show Avoidance Region - switch this on to show the avoidance matte.

Blending Sets how to mix between the image effect and its original source.
See “Blending Methods” on page 15.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_NightSky

Description

T_NightSky renders the brightest 9000 stars. You get to see real constellations and stars in their correct positions. The stars are rendered over the background by additive mixing.



Figure 217. T_NightSky showing The Plough

Effect Type

Clip Effect and Background Generator.

Property Pages

The parameters on each of the property pages are described below.

T_NightSky **Presets...** - for the common constellations.

Altitude - controls the elevation of your telescope.

Azimuth - the horizontal direction of your telescope.

Twist - the rotation of your telescope.

F.O.V. - the field of view of your telescope. Increase this value to see more stars.

Background Colour - the colour behind the stars.

Note *This is only available as a generator.*

Stars **Star Shape** - sets the shape of the star.

Max Size - limits the maximum size of a star.

Size Spread - controls the range of star sizes in the image. A value of zero will force every star to be the same size. Increasing this value will result in an increase in the size difference of the largest and smallest stars.

Brightness - controls the overall brightness of the stars.

Brightness Spread - controls the range of star brightnesses in the image.

Saturation - controls the colour saturation of the stars.

Flicker Rate - controls the speed of luminance variation of the stars.

Flicker Amount - controls the amount of luminance variation during flickering.

Jitter - controls the small random variations in position of the stars. Increasing this value increases the amount the stars move from their default position.

Help See "Help Property Page" on page 22.

Masking This property page is only available when used as a clip effect. See "Masking Property Page" on page 10.

Options This property page is only available when used as a clip effect. See "Options Property Page" on page 11.

Hints & Tips

You can simulate camera flashes in a crowd by setting the star size to large and getting the flicker to switch them on and off.

The camera is centered on the sun in our solar system.

T_Plasma

Description

T_Plasma generates animating organic fractal patterns.

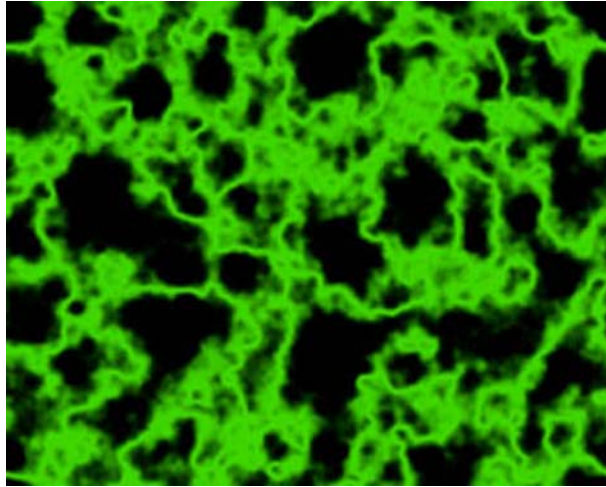


Figure 218. T_Plasma

Effect Type

Clip Effect, Background Generator and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Plasma Presets...

Size - controls the overall size of the plasma.

Sharpness - controls the positions of the colours in the plasma shapes. This gives the effect of sharpening the fractal lines by bunching the gradient colours together.

Detail - controls the plasma fractal detail.

Impulses - controls the number of plasma shapes.

Speed - controls how quickly the plasma moves.

Seed - controls the random position of each of the plasma shapes.

Accelerate High Freq - switch this on to make the plasma boil more by having the smaller details move faster.

- Grad** See “Colour Gradient Controls” on page 14.
- Blending** This property page is only available when used as a clip effect. See “Blending Methods” on page 15.
- Help** See “Help Property Page” on page 12.
- Masking** This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.
- Options** This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

T_Sky

Description

T_Sky generates realistic evolving sky backgrounds. This plug-in has a great number of parameters which can give very different looking skies.



Figure 219. Armageddon



Figure 220. Cirrus



Figure 221. Dawn



Figure 222. Midnight Sun

Effect Type

Background Generator only.

Property Pages

The parameters on each of the property pages are described below.

Camera **Presets...**

From X - controls the camera horizontal position.

Direction - controls the direction the camera is pointing. Essentially North, South, East or West.

From Y - controls the camera vertical position.

Elevation - set to zero the camera will lie flat along the ground with the clouds overhead. Set to 90 the camera will be pointing vertically upwards looking directly at the clouds.

From Z - controls the camera depth position.

Field of View - controls how much of the sky is visible through the camera. Sensible values lie in the range 28-90 degrees.

Exposure - controls the amount of ambient light entering the camera.

Noise - controls the amount of noise added to the image.

Filter - switch this on to improve the quality of the rendered image. See “Filtering” on page 13.

Sun There are three components of the sun. The sun itself, the bright glow around the sun (corona) and the radial light streaks that simulate the internal reflections and refractions of bright light within the camera lens (lens flares).

Sun Brightness - controls the intensity of the light emitted from the sun.

Sun Fall-off - controls the extent to which the brightness of the light fades away with distance.

Sun Direction - location of the sun in the sky. If the camera direction and sun direction are the same, the sun will appear in the centre of the screen (horizontally).

Corona Brightness - controls the intensity of the light glow around the sun.

Sun Elevation - height of the sun in the sky.

Corona Fall-off - controls the extent to which the brightness of the corona light fades away with distance.

Flare Brightness - controls the intensity of the light flares.

Flare Fall-off - controls the extent to which the brightness of the flares fade away with distance.

Flare Sharpness - controls the smoothness of the flares.

Flare Rotation - controls the rotation of the flares around the sun.

Flare Spokes - controls the number of flares around the sun.

Sun Colour - controls the colour of the sun.

Atmosphere There are two components of the Atmosphere. The atmosphere itself and the fog layer.

Atmosphere Brightness - controls the amount of light in the atmosphere.

Red Shift - controls the amount of red light in the atmosphere. Useful for sky simulations at dawn or sunset.

Fog Brightness - controls the brightness of the fog layer.

Fog Distance - controls the distance between the fog layer and camera.

Fog Fall-off - controls the extent to which the brightness of the fog fades away with distance.

Fog Colour Source - controls the colour of the fog.

- **from Colour Grad** - selects a colour gradient for the fog layer.
- **from Colour Box** - selects a single colour for the fog layer.

Corona Haze - switch this on to enable the corona glow to illuminate the haze in the atmosphere. This will result in the corona lighting the foreground objects rather than being in the background.

Fog Colour - controls the colour of the fog layer.

Cloud Geometry **Cloud Size** - controls the size of the clouds.

Cloud Direction - controls the direction of the cloud drift.

Cloud Speed - controls how fast the clouds move.

Cloud Height - controls the height of the clouds.

Speed Variance - controls the variation in speed of different clouds.

Tile Scale - controls the size of each tile repeated across the sky.

Cloud Count - controls the number of clouds in each tile.

Cloud Look **Cloud Brightness** - controls the intensity of the clouds.

Bump Scale - controls the apparent depth of the clouds. Increase this for cumulus clouds.

Cloud Sharp - controls the cloud definition.

Bump Soft - controls the cloud softness which affects the reflected light.

Density - controls the thickness of the clouds. A value of zero removes all clouds.

Under Lighting - controls the amount of light reflected from the underside of the clouds.

Edge Detail - controls the complexity of the cloud edges.

Streaky - switch this on to generate cirrus clouds.

Light Edges - switch this on for under cloud lighting.

Cloud Colour - controls the colour of the clouds.

Grad See “Colour Gradient Controls” on page 14.

Help See “Help Property Page” on page 12.

T_Starfield

Description

T_Starfield renders an infinite three dimensional field of stars. You can move around the star field in any direction looking at a particular point or in a particular direction. The auto modes will randomly tumble you through space.

There are two types of stars. Those in the foreground that you can fly through in 3D space and those in the background that cannot be reached. These infinite band of stars simulates galaxies.



Figure 223. T_Starfield

Effect Type

Clip Effect and Background Generator.

Property Pages

The parameters on each of the property pages are described below.

- T_Starfield
- Auto** - controls whether to auto-animate the movement of the camera
- **Off** - the camera does not move by default. Keyframes must be set.
 - **Position** - the position of the camera is animated without keyframes being explicitly set.
 - **Rotation** - the rotation of the camera is animated without keyframes being explicitly set.
 - **Pos. & Rot.** - both the position and the rotation of the camera is animated.

Camera - controls which direction to point the camera.

- **Target** - locks the camera to look at a position in 3D space.
- **Free** - the direction of the camera is set by rotation parameters around the 3 axes.

Position X/Y/Z - sets the position in 3D space where the camera is looking.

Rotation X/Y/Z - sets the rotation of the camera around the 3 axes so that it can be pointed in any direction.

F.O.V. - sets the field of view of the camera. Increase this value for a wide angle lens.

Roll - controls the twist of the camera about the axis between the camera and look at point.

Fade Range - sets the distance in front of the far clip value that stars begin to fade.

Far Clip - sets the distance between the camera and the furthest star that is drawn. Stars beyond the far clip are not drawn.

Samples - controls the motion blur of moving stars. Increase this parameter for higher quality rendering of the blur.

Shutter - controls how long the camera shutter is open when exposing the scene. Increase this value for more motion blur.

Stars **Density** - controls the number of stars drawn. Decrease this value to thin the stars out.

Brightness - controls the overall brightness of the stars.

Size - limits the maximum size of a star.

Saturation - controls the colour saturation of the stars.

Infinite Number - controls the number of stars drawn in the galaxy.

Infinite Brightness - controls the luminance of the galaxy stars.

Infinite Size - controls the size of the stars in the galaxy.

Infinite Galactic Squash - controls the height of the galactic band

of stars. High values are good.



Figure 224. Starfield showing diagonal galaxy

Seed - this number generates a number sequence that is used to randomly vary the stars.

Blending This property page is only available when used as a clip effect. (See “Blending Methods” on page 15.)

Cropping See “Help Property Page” on page 12.

Help See “Help Property Page” on page 12.

Masking This property page is only available when used as a clip effect. See “Masking Property Page” on page 10.

Options This property page is only available when used as a clip effect. See “Options Property Page” on page 11.

Hints & Tips

See also “T_NightSky” on page 176.

TOOLS

T_ColBalance

Description

T_ColBalance lets you apply colour tones to an image, but gives great control over exactly where the effect should take place. The Tone Curves divide the image into lowlights, midtones and highlights. T_ColBalance can then be used to affect the colour and saturation in any of those areas or all together. The image shows T_ColBalance being used to affect the colour of the white swan but not the colour of the water. An example at the end shows the tone



Figure 225. T_ColBalance affecting only the highlights.

curves and hue controls used to get this effect.

Effect Type

Clip Effect, Paint Effect and Colour Corrector.

Property Pages

The parameters on each of the property pages are described below.

- T_ColBalance
- Tonal Range - select the range of luminance values that will be affected by the colour balancing.
- Overall - all luma values will be affected.
 - Lowlights - only shadows will be affected. In other words only the pixels whose luma value is below the lowlight curve.

- Midtones - only midtones will be affected. In other words only the pixels whose luma value is below the midtone curve.
- Highlights - only bright areas will be affected. In other words only the pixels whose luma value is below the highlight curve.

Preserve Luminance - forces a colour change in the image without affecting the luminance. If turned off the colours can blow out.

Colour Wheel - selects the hue and saturation.

Master Hue - sets the colour applied to the image.

Master Saturation - controls the purity of the colour. 0% is fully desaturated. 100% is fully saturated.

Master Luminance - controls the brightness of the image. Negative values will make the image darker.

Tone Curves Lowlights - sets the highest luminance value to be considered a pure lowlight.

Highlights - sets the lowest luminance value to be considered a pure highlight.

Lowlights Ease - defines the curvature of the lowlight graph so that the colour balancing can be gradually ramping down into the midtones. Values below the lowlight graph are affected by colour balancing in the lowlights. This parameter can be manipulated directly on the graph.

Highlights Ease - defines the curvature of the highlight graph so that the colour balancing can be gradually ramped down into the midtones. Values below the highlight graph are affected by colour balancing in the highlights. This parameter can be manipulated directly on the graph.

Render Tone - enables the lowlights, midtones and highlights to be shown as mattes.

- **None** - the image with colour balancing is shown.
- **Lowlights** - the shadows are displayed as a matte. The darkest tones are shown in white.
- **Midtones** - the midtones are displayed as a matte.
- **Highlights** - the highlights are displayed as a matte. The brightest tones are shown in white.

Tone Curves - the white histogram shows the range of luminance values in the image. Values on the left represent low luma values

(shadows). Values on the right represent high luma values (highlights). The height of the histogram reflects the number of pixels with that luminance. The dark grey curve represents the lowlight graphs. The dotted line is the midtone curve. The light grey line is the highlight curve.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Example

See also “T_Contrast” on page 190. See also “T_Levels” on page 207.

This example shows colour balancing on just the highlights of the swan image.

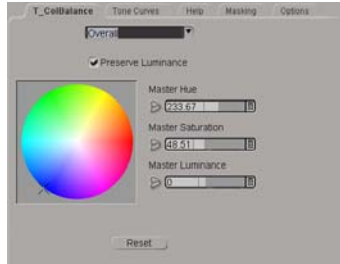


Figure 226. T_ColBalance Property Page

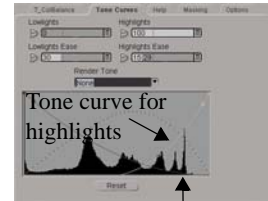


Figure 227. Tone Curves Property Page

The white histogram shows the large amount of white in the image (labeled Swan highlights) with most of the rest of the image being midtones and lowlights. Note that there is no black in the image. The highlights curve has been adjusted to clip the highlights and not affect any midtones.

T_Contrast

Description

T_Contrast changes the contrast and brightness of an image. You can individually adjust the contrast and brightness settings of all colour components, or just the Red, Green or Blue, and you can also choose which tonal ranges to correct.



Figure 228. Green channel increased. Blue and Red reduced.



Figure 229. Midtones have been expanded.

Effect Type

Clip Effect, Paint Effect and Colour Corrector.

Property Pages

The parameters on each of the property pages are described below.

- T_Contrast
- Colour Channel - select the colour channel to be affected.
- RGB - will affect all colours of the image.
 - Red - will affect just the red component of the image.
 - Green - will affect just the green component of the image.
 - Blue - will affect just the blue component of the image.
 - Alpha - will affect just the alpha channel (mask) of the image.

Tonal Range - selects the range of luminance values that will be affected by the brightness and contrast changes.

- Overall - all luma values will be affected.
- Lowlights - only shadows will be affected. In other words only the pixels whose luma value is below the lowlight curve.
- Midtones - only midtones will be affected. In other words only the pixels whose luma value is below the midtone curve.
- Highlights - only bright areas will be affected. In other words only the pixels whose luma value is below the highlight curve.

Brightness - controls the luminance of the image. Increase this

parameter to make the image brighter.

Contrast - controls the ratio of the brightest tones to the darkest tones. Increase this value to make the shadows darker and the highlights brighter.

Tone Curves Graph

Render Tone - enables the lowlights, midtones and highlights to be shown as mattes.

- **None** - the image with colour balancing is shown.
- **Lowlights** - the shadows are displayed as a matte. The darkest tones are shown in white.
- **Midtones** - the midtones are displayed as a matte.
- **Highlights** - the highlights are displayed as a matte. The brightest tones are shown in white.

Lowlights - sets the highest luminance value to be considered a pure lowlight.

Highlights - sets the lowest luminance value to be considered a pure highlight.

Lowlights Ease - defines the curvature of the lowlight graph so that the colour balancing can be gradually ramping down into the midtones. Values below the lowlight graph are affected by colour balancing in the lowlights.

Highlights Ease - defines the curvature of the highlight graph so that the colour balancing can be gradually ramped down into the midtones. Values below the highlight graph are affected by colour balancing in the highlights.

Histogram Type - controls which histogram to draw in the graph.

- **Linear Hist** - all luminance values are given equal prominence in the graph.
- **Log Hist** - shadows are given special prominence in the graph so that detail here is more visible.

Curve Type - controls which curve to display on the graph.

- **Response** - shown as red, green and blue lines. These represent the changes to the colour channels by the brightness and contrast parameters.
- **Tone Levels** - shown in grey. These define the range of luma values in the image which are considered lowlights, midtones or highlights.
- **Response and Tone Levels** - all curves are displayed.

Note *If the red, green and blue response curves have the same shape, only the red will be visible as this is the last one drawn on the screen.*

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Hints & Tips

See also “T_ColBalance” on page 187. See also “T_Levels” on page 207.

T_Copyflicker

Description The copyflicker plug-in should be applied to the clip that exhibits the flicker. The flickering is then copied to the reference clip.

Effect Type Multi-input Effect and Keyer Effect.

Property Pages The parameters on each of the property pages are described below. When positioning the reference box it helps to be able to see the source clip and not the target (reference) clip. This can be done by pressing the bypass toggle.

T_Copyflicker **Mode** - sets the algorithm used to remove the flicker. Histogram is the most sophisticated and should be tried first.

- Colour Gamma
- Greyscale Gamma
- Colour Gain
- Greyscale Gain
- Colour Offset
- Greyscale Offset
- Histogram - this is a more sophisticated algorithm than the others and is the default. This computes a luminance histogram of the source image and changes the target to match.

Reference Frame - sets the frame against which the flickering is measured.

Box Left - controls the position of the left edge of the rectangular subregion that restricts the analysis of the source clip.

Box Right - controls the position of the right edge of the rectangular subregion that restricts the analysis of the source clip.

Box Bottom - controls the position of the bottom edge of the rectangular subregion that restricts the analysis of the source clip.

Box Top - controls the position of the top edge of the rectangular subregion that restricts the analysis of the source clip.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

A certain amount of trial and error is required to eliminate the flicker unless the exact nature of the flicker is known. Use the Histogram first, as this uses the most sophisticated algorithm to measure and remove flicker.

T_Crop

Description

T_Crop is generally used to reduce the size of images, although it can also be used for some quick edge effects. The edge controls determine how the image behaves at the crop boundaries. This process can be used to remove unwanted video junk at the edges of images.

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

Cropping The cropping parameters are the standard ones you'll see on most Tinder plug-ins. See "Cropping Property Page" on page 8.

Help See "Help Property Page" on page 12.

Masking See "Masking Property Page" on page 10.

Options See "Options Property Page" on page 11.

T_Deband

Description

Digitally generated images, particularly 8 bit images, that have gradual colour changes can appear to have colour bands where there should be a smooth colour gradient. T_Deband will smooth out these bands.



Figure 230. Banded image



Figure 231. Smooth after processing with T_Deband

Effect Type

Clip Effect and Colour Corrector.

Property Pages

The parameters on each of the property pages are described below.

T_Deband Blur - controls the amount of defocusing added to smooth the bands.

Noise - controls the amount of noise added to smooth the bands.
Note Only use the smallest amount of blur and noise to reduce the banding otherwise the overall quality of the image will deteriorate.

Quantise Level - sets the level at which debanding will occur.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Defield

Description

T_Defield generates a frame from a field. A number of sophisticated algorithms are supplied to interpolate the missing field.

For each interlaced frame in the input clip, a single output frame is generated using either the odd or even field. A motion matte can also be generated and then used to limit the defielding to those parts of the image that are moving. The motion matte can be thresholded, softened, eroded and grown.

Background

It might help to give a little background information on fields before describing the parameters in T_Defield.

A frame of video is made up of a number of scan lines. For NTSC, the US standard, there are 525 lines although only 486 lines contain image information. To display a single frame of video, every other scan line is first displayed, followed by the scan lines that have been missed out. Both passes create an image with the correct height but half the number of scan lines. These half-frames are known as fields and are displayed twice as quickly as the frame rate. So for NTSC video which has a frame rate of 30 frames per second, each field is displayed for 1/60th of a second. This rather complicated arrangement has the advantage of producing no perceptible flicker to the viewer.

Images that are composed of two fields are commonly known as interlaced frames. Interlaced frames have greater temporal resolution. Objects that quickly move horizontally across the screen will display less strobing than the same animation displayed as progressive scans.

When working on interlaced clips it is sometimes necessary to convert the images to frames before continuing. For example, if you were given an interlaced clip of a fast moving object, it would be impossible to accurately draw along its edges to isolate it as a matte. You would first have to deinterlace the fields producing a clip of twice the length of the original, then rotoscope this new clip and finally re-interlace.

Defielding is also necessary when taking elements shot on video and compositing them into a shot for a film.

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Defield **Field to Strip** - sets the field that is removed.

- **Even Field** - the even field is removed.
- **Odd Field** - the odd field is removed.

Replace Field By - sets the algorithm that is used to generate the missing field. Only the duplicate method generates a missing line by copying from the previous line. All the other methods interpolate the missing line.

- **Duplication** - the missing line is simply copied from the previous line. This is very quick but of lower quality than the interpolation methods.

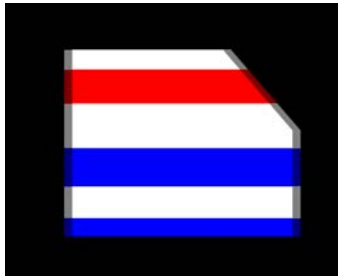


Figure 232. Original Fielded Image



Figure 233. Close up of fields



Figure 234. Duplicate - the fields are simply doubled up.



Figure 235. Slope Adaptive - complex interpolation of lines giving good results on slopes.



Figure 236. Interpolate. Simple interpolation between previous and next lines.



Figure 237. Wide Interpolation. Weighted interpolation over several lines.

- **Simple Interpolation** - linear interpolation from the previous and next lines.
- **Wide Interpolation** - weighted interpolation using a wider range of lines than just the previous and next. This gives very subtle differences to the Simple Interpolation method.
- **Slope Adaptive Interpolation** - complex interpolation of the missing lines. This method gives a particularly good result on slopes. It produces the same result on vertical lines as Interpolate, and a slightly better result on horizontal lines.

Motion Adaption - controls whether to use a motion matte to restrict the interpolation.

- **Off** - switches off the motion matte so that the interpolation is on the whole frame and not restricted by the motion matte.
- **On** - uses the matte to restrict the interpolation. Areas that are white are interpolated, areas that are black are not.
- **Show Motion** - displays the matte of moving parts of the image.

Clip Min - pixels at or below this luminance value are set to black.

Clip Max - pixels at or above this luminance value are set to white.

Grow - controls the amount the edges are grown or shrunk. Negative value erode the matte edges. Positive values grow the edges.

Softness - controls the amount of blurring applied to the matte.

Note *Clip Min, Clip Max Grow and Softness are only available when Motion is On.*

Hard Motion Mask - switch this on to force the motion matte to have no grey values before it is treated with the threshold, grow and softness parameters.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Deflicker

Description

T_Deflicker is designed to remove colour or luma flicker in a clip. The flicker may be as a result of lighting variations during stop motion photography, or it could have been introduced in some transfer process prior to its arrival on your system.

A reference frame is nominated as a base line from which the luma variations are measured and removed. A rectangular analysis area restricts the pixels considered in the calculations. The box should be positioned over an area of the image that shows the flicker but is not obscured by moving objects. It may be necessary to animate this box to achieve this goal.

Effect Type

Clip Effect only.

Property Pages

Mode - sets the method used to analyse the source clip.

- Colour Gamma
- Greyscale Gamma
- Colour Gain
- Greyscale Gain
- Colour Offset
- Greyscale Offset
- Histogram - this is a more sophisticated algorithm than the others and is the default. This computes a luminance histogram of the source image and changes the target to match.

Reference Frame - sets the reference frame of the source clip.

Box Left - controls the position of the left edge of the rectangular subregion that restricts the analysis of the source clip.

Box Right - controls the position of the right edge of the rectangular subregion that restricts the analysis of the source clip.

Box Bottom - controls the position of the bottom edge of the rectangular subregion that restricts the analysis of the source clip.

Box Top - controls the position of the top edge of the rectangular subregion that restricts the analysis of the source clip.

Help See "Help Property Page" on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Degrain

Description

T_Degrain removes grain from an image. Degraining tools are often used to reduce the colour variation in blue screens before keying. T_Degrain is based on a hybrid median filter which analyses a neighbourhood of pixels and sets the centre pixel to the median value of that region. This removes any pixels which show a sudden change in intensity which is typical of grain.



Figure 238. Original grainy image on the left and T_Degrain applied to the right.

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

- T_Degrain
- Channels - chooses the degrain method.
 - Luminance - degrains the image based on the luminance and preserves chroma information.
 - RGB - degrains each channel individually.

Effect - controls the amount of degraining. Increase this value to remove more grain. Note: you should keep this value as low as possible to reduce the defocusing of the image.

Number of Passes - controls how many times the operation is repeated.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Grain

Description

The particles of silver halide in film are known as grain. These particles are sensitive to light and are visible when the film is projected. Different film stocks have different grain characteristics. T_Grain simulates film grain by organically generating tiny clumps of particles. With a grain size of 100% they are approximately three pixels across. The visibility of the grain is controlled using the blend parameter.

There are controls the alter the size, density and gain on each of the colour channels independently.

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

Samples Per Grain - controls how accurately the grains are rendered. Increase this to improve grain quality.

Grain Size - controls the overall size of the grain particles. The overall size is not allowed to exceed 100%.

Density - controls the spacing between grain particles. Reduce this value to thin out the particles. The density is not allowed to exceed 100%.

Gain - controls the brightness of the grain.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Densities **Red (Green & Blue) Grain Size** - controls the size of the red (green and blue) grain particles.

Red (Green & Blue) Gain - controls the brightness of the red (green and blue) particles.

Red (Green & Blue) Density - controls the spacing of the red (green and blue) particles.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

When blending 3D objects into images shot on film, grain should be added so that the CG element does not appear too "clean". Matching the simulated grain to the captured grain on film is very much an art, but the density, gain and size controls for all colour channels will help.

You should note that grain is a function of the film stock used and not of the images shot. So very blurry images will have the same amount of grain as sharp images. In addition, the amount of grain in any particular stock will vary if abnormal exposures are used in the development of the film. Finally, you should always view your results on moving images and not still frames.

Some processes, like keyers, will boost the amount of grain in an image, so reducing it prior to that process is necessary to compensate. See “T_Degrain” on page 203 and “T_MatteTool” on page 214.

T_Levels

Description

T_Levels is used to adjust the black point, white point and gamma of an image. You can do this on all the input channels simultaneously, or individually. You can also restrict the correction to just the highlights, shadows or midtones.

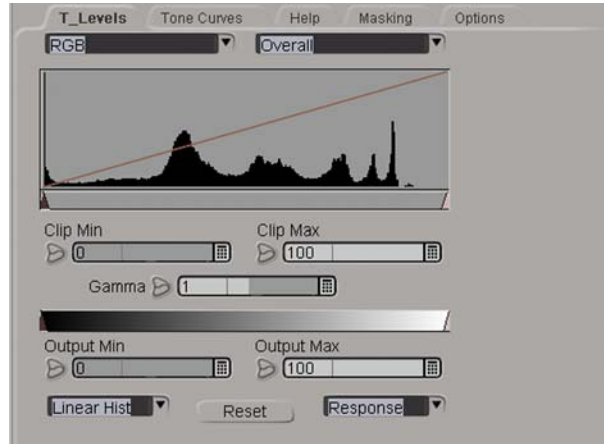


Figure 239. T_Levels Property Page

Effect Type

Clip Effect, Paint Effect and Colour Corrector.

Property Pages

The parameters on each of the property pages are described below.

- T_Levels
- Channels** - selects the colour channels that will be affected by the luma balancing.
 - Range** - sets the luma range that will be affected by the gamma and clip adjustments.
 - **Overall** - all luma values will be affected.
 - **Lowlights** - only shadows will be affected. In other words only the pixels whose luma value is below the lowlight curve.
 - **Midtones** - only midtones will be affected. In other words only the pixels whose luma value is below the midtone curve.
 - **Highlights** - only bright areas will be affected. In other words only the pixels whose luma value is below the highlight curve.
 - Graph** - the black histogram shows the range of luminance values in the image. Values on the left represent low luma values (shadows). Values on the right represent high luma values (highlights). The

height of the histogram reflects the number of pixels with that luminance. With Response and Tone Curves selected, the dark grey curve represents the lowlight graphs. The dotted line is the midtone curve. The light grey line is the highlight curve.

ClipMin - pixels at or below this luminance value are set to black (or the Output Min)

ClipMax - pixels at or above this luminance value are set to white. (or the Output Max)

Gamma - controls the non-linearity of the output luma levels. See example below.

Output Min - sets the minimum output luminance. See example below.

Output Max - sets the maximum output luminance. See example below.

Histogram Type - controls which histogram to draw in the graph.

- **Linear Hist** - all luminance values are given equal prominence in the graph.
- **Log Hist** - shadows are given special prominence in the graph so that detail here is more visible.

Curve Type - controls which curve to display on the graph.

- **Response** - shown as red, green and blue lines. These represent the changes to the colour channels by the brightness and contrast parameters.
- **Tone Levels** - shown in grey. These define the range of luma values in the image which are considered lowlights, midtones or highlights.
- **Response and Tone Levels** - all curves are displayed.

Tone Curves **Render Tone** - enables the lowlights, midtones and highlights to be shown as mattes.

- **None** - the image with colour balancing is shown.
- **Lowlights** - the shadows are displayed as a matte. The darkest tones are shown in white.
- **Midtones** - the midtones are displayed as a matte.
- **Highlights** - the highlights are displayed as a matte. The brightest tones are shown in white.

Lowlights - sets the highest luminance value to be considered a pure lowlight.

Highlights - sets the lowest luminance value to be considered a pure highlight.

Lowlights Ease - defines the curvature of the lowlight graph so that the luma balancing can be gradually ramping down into the midtones. Values below the lowlight graph are affected by luma balancing in the lowlights.

Highlights Ease - defines the curvature of the highlight graph so that the luma balancing can be gradually ramped down into the midtones. Values below the highlight graph are affected by luma balancing in the highlights.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Examples

In the following examples we will look at the effect of changing various parameters on a stepped luma ramp as shown in the picture below.



Figure 240. Stepped Luma Ramp

We will set the Clip Min value to be 21.74% and the Clip Max value to be 87.25%. This can be done with the positioning triangles below the graph or the sliders.

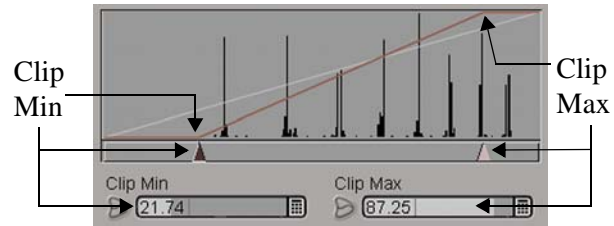


Figure 241. Tone curves showing Clip Min and Max positions

The regularly stepped luma ramp will change to the picture shown below.



Figure 242. With Clip Min=21.74 and Clip Max=87.25 the three bottom bands have been clipped to black and the two brightest bands and been clipped to white.

Now we will increase the Output Min and Max levels.

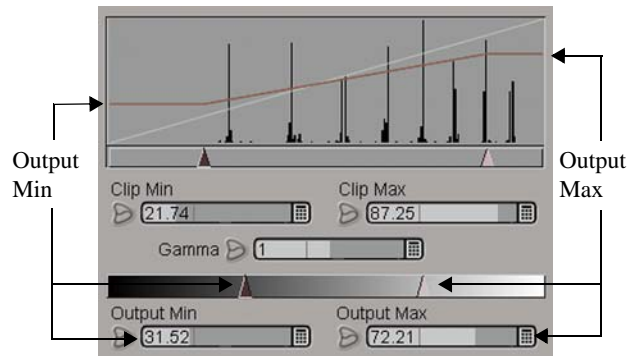


Figure 243. User interface showing Output Min and Output Max

The result of increasing the Output Min and decreasing the Output Max is shown below. Blacks have become dark grey and whites are light grey.

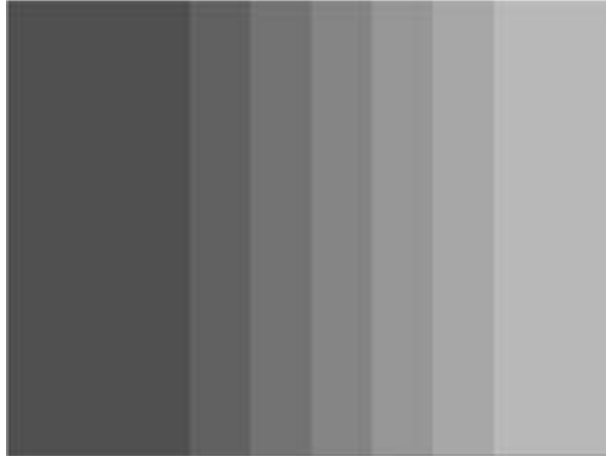


Figure 244. The black level has been raised and the white level dropped by altering Output Min and Max.

Now we'll change the gamma curve, shown in red below.

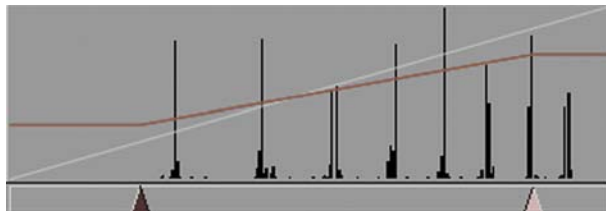


Figure 245. T_Levels showing gamma curve

The two pictures below show the effect of increasing the gamma from 1 to 2.

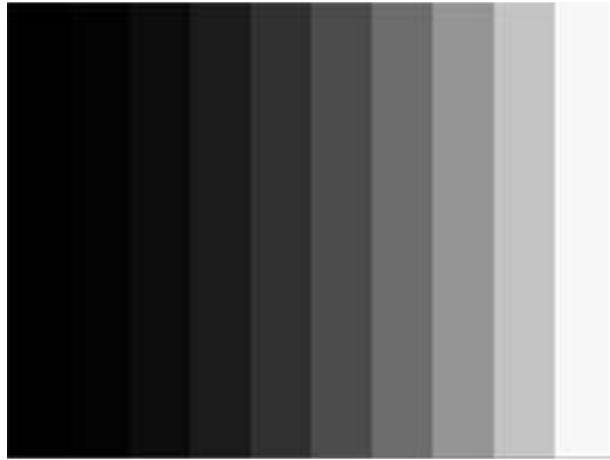


Figure 246. With gamma = 2

T_MatteTool

Description

T_MatteTool provides a suite of tools to manipulate mattes, in particular, the growing and eroding of edges. However, it excels at providing a comprehensive set of tools for manipulating mattes pulled from blue and green screen keyers. Tools include matte clean-up while preserving edge detail and spill removal in the post process composite. T_MatteTool is sub-pixel giving precise control over



Figure 247. Matte Input



Figure 248. Grow



Figure 249. Shrink



Figure 250. Halo

matte edges.

Note *T_MatteTool* was called *T_Dilate* in older versions of *Tinder*.

Effect Type

Clip Effect and Colour Corrector.

Property Pages

The parameters on each of the property pages are described below.

T_MatteTool The parameters on this property page enable you to grow or shrink mattes and improve "impurities" in the white or black parts of the matte while preserving matte edges.

Process - sets the channel to process.

- **Process Luminance** - the luminance matte is processed.

- **Process Alpha** - the alpha channel is processed.

Mode - controls how to manipulate the matte.

- **Shrink/Grow** - positive values grow the matte edges. Negative values erode the matte edges.
- **Halo In/Out** - creates a line on the inside (or Outside) edge of the matte.
- **Halo** - creates a line centered on the edge of the matte.



Figure 251. Split Screen showing Halo Out in orange and Halo In in white.

Shape - sets the profile of the filter used to erode/grow the matte edges.

- Circle
- Square

Invert - switch this on to invert the matte.

Quantise - switch this on to render the matte as 3 levels of grey so that white, black and any grey areas are distinct.

Radius - controls the amount of eroding or growing of the matte edges. Negative values erode the matte. Positive values grow the matte.

Softness - controls the amount of blurring applied to the matte.

Aspect - controls the horizontal and vertical weighting of the blur.

Spot Cleanup - controls how much to simplify the matte. It coagulates similar regions so that, for example, black specks in the white matte can be absorbed by the surrounding white areas. Positive values remove white dots in black areas, negative values

remove black dots in white areas.

ClipMin - pixels at or below this luminance value are set to black. When compositing, this parameter can be used to improve the background image if parts of the foreground are showing through.

Roll Back Min - controls the amount of erosion of the edges of the black threshold matte when Clip Min is used to remove dust in the background.

ClipMax - pixels at or above this luminance value are set to white.. When compositing, this parameter can be used to firm up the centre of the matte making it less transparent to the background. Increasing this value too much will affect the edges of your matte. Roll Back Max should be used to compensate.

Roll Back Max - controls the amount of erosion of the edges of the white threshold matte when Clip Max is used. Roll Back Max preserves edges if Clip Max has been used to produce a more opaque foreground.

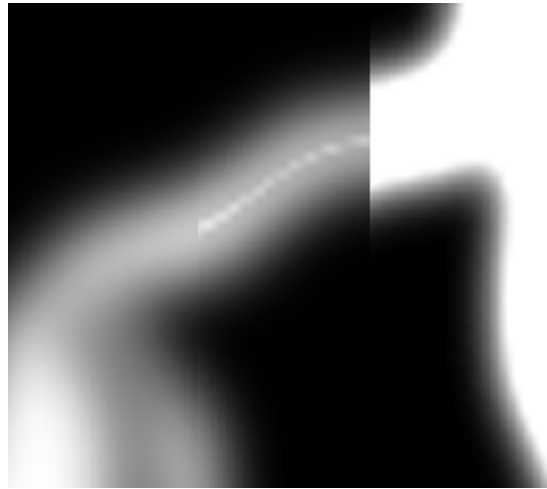


Figure 252. 3-way vertical split screen showing the original matte on the left, the modified Matte using Clip Max on the right and the Rolled Backed Matte in the middle. Note that the Rolled Back Matte recovers the original edges while firming up the foreground matte. For additional clarity a horizontal split screen of the same images is shown below.



Figure 253. 3-way horizontal split screen showing top to bottom the ClipMax, Roll Back and Original Matte.

Restrict Softened Halos - switch this on to soften only one side of the matte when Halo In/Out is selected and softness is greater than zero.



Figure 254. 3 way vertical split screen showing the original halo on the left with the softened halo in the middle and the restricted softened halo on the right. Note one edge of the restricted halo is soft and the other is the unsoftened original edge.

Defringe If you have pulled a matte from a blue or green screen with a keyer, T_MatteTool can be used as a post process to adjust the matte before compositing the images together again. This is most easily achieved

using a tree. The foreground green screen should be combined with

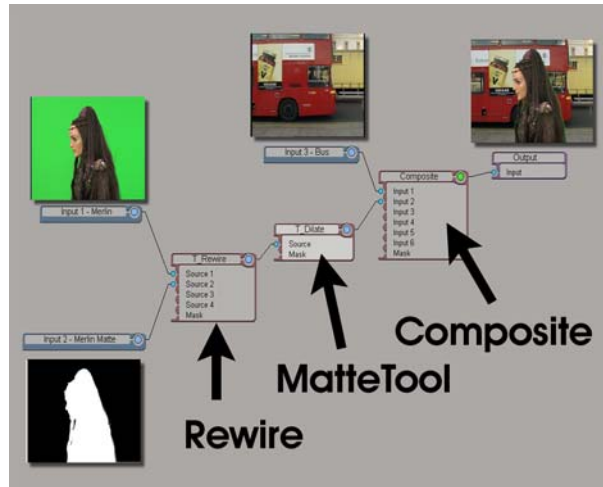


Figure 255. DS tree showing MatteTool removing spill in a composite

the extracted matte into an RGBA clip using T_Rewire (See “T_Rewire” on page 229.) and piped into T_MatteTool for spill removal. The output of T_MatteTool and the background clip are composited in a Composite node.

The Defringe property page is used to remove the unwanted blue or green spill around the edges of the composite.



Figure 256. Output of a composite of woman over bus using matte. Note the green spill on the edges



Figure 257. Composite showing a reduction in the green spill after treatment with T_MatteTool

You must ensure that the Composite node sets the T_MatteTool

input to Pre-Multiplied to remove the line around the edge.



Figure 258. The image on the left shows the composite if the T_MatteTool input to the Composite node is incorrectly set to Not Pre-Multiplied. Note the black edge round the nose.

Defringe Modifies Matte - the defringing process can also be allowed to shrink the matte, based on how much of the screen colour has been removed.

Defringe Radius - when compositing, pixels up to this distance from the edge of the matte have colour fringing from the screen colour removed from them. The screen colour is estimated from the pixels where the matte is completely black.

Defringe Amount - controls how much of the screen colour is removed during defringing.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

See also “T_MinMax” on page 222. Note that T_MatteTool was called T_Dilate in older versions of Tinder.

T_Median

Description

T_Median applies a median filter to an image. For each pixel in an image, the hybrid median filter takes its neighbouring pixels and sorts them by brightness. The median (centre value) of this sorted array replaces the original pixel. Thus median filters do an excellent job of removing single pixel noise or scratches from an image while only causing a slight reduction in the sharpness. See image below.



Figure 259. Specks and Scratches

Figure 260. Cleaned up with
T_Median

Effect Type

Clip Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

Radius - controls how many pixels are considered in the median calculation. Increase this to smooth out more noise.

Subpixel Accurate - switch this on to render with subpixel accuracy so that fractional radius values will work. Switching this on will increase render times.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_MinMax

Description

T_MinMax is used to grow or shrink mattes. For each pixel in an image the MinMax filter takes a surrounding region of pixels and picks the brightest or darkest pixel and blends that with the original image. Positive radius values will grow white areas of the image over dark areas. Negative values grow dark areas over bright areas.



Figure 261. Growing white over black



Figure 262. Growing black over white

Effect Type

Clip Effect and Paint Effect.

Property Pages

Radius - controls how much to grow or shrink a matte. Positive values grow the matte edges. Negative values erode the matte edges.

Aspect - controls the horizontal and vertical weighting of the blur.

Shape - controls the shape of the neighbourhood of pixels used in the calculations.

- **Square** - tends to preserve angular edges of a matte.
- **Circle** - tends to bevel off angular edges of a matte.

Blending - sets how to mix between the image effect and its original source. (See “Blending Methods” on page 15.)

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

T_MinMax can give some interesting painterly effects on images as well as mattes.



Figure 263. Positive radius using circle



Figure 264. Negative radius using square

See also “T_MatteTool” on page 214.

T_Mix

Description

T_Mix blends two clips together. You can choose from a variety of blending methods from a simple dissolve to more complex colour and component algorithms. The gain on each of the images can also



Figure 265. Blending set to Mix



Figure 266. Blending set to Subtract

be adjusted.

Effect Type

Transition Effect, Multi-Input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Mix **Mix Method** - controls how the original image and blurred image are mixed together into a blended image. See “Blending Methods” on page 15.

Blend - use this slider to mix in more of the original image or more of the destination image into the blended image. A value of 50 is the default and will evenly mix the two clips. Increase this value to mix more of the destination image (Mix To) into the blended result. Decrease this value to mix more of the original image (Mix From) into the blended result.

Mix From Gain - when blending, the original image is scaled by this value.

Mix To Gain - when blending, the destination image is scaled by this value.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Noise

Description

T_Noise adds video noise to an image. This is sometimes applied to computer generated images to make them more natural looking and less "computer generated". See also "T_Grain" on page 205. Noise and grain are different. Noise is single pixel whereas grain is formed from clumps of pixels.

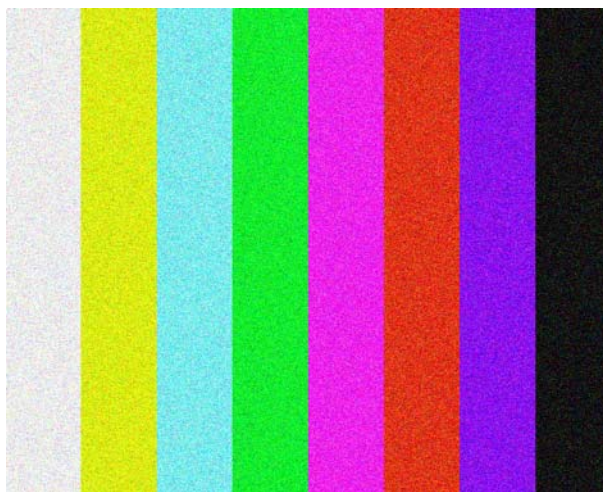


Figure 267. T_Noise applied to bars

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

- T_Noise
- Method** - controls which noise algorithm to apply.
- **Grey Noise** - randomly perturbs the luminance of each pixel.
 - **RGBA Noise** - randomly perturbs the luminance and chrominance of each pixel.
 - **Coloured Noise** - randomly adds and subtracts small amounts of the Noise Colour to each pixel.

Time Constant - switch this on to apply the same noise to each frame. As video noise is usually different on each frame this should not normally be switched on.

Noise - controls the amount of noise added. Increase this value for more noise.

Bias - controls the balance between luma (or chroma) variations that are added and those that are subtracted. If the bias is zero approximately equal amounts of random adding and subtraction will occur. If the bias is increased more noise will be added than subtracted giving a brighter image.

Sparseness - controls how much to thin the noise. Increase this for less noise.

Softness - controls the amount of overall blurring on the noise.

Noise Colour - the colour used when the Method is set to Coloured Noise.

Response **Use Response** - activates the response curve to selectively add noise to parts of the image as defined by the pixel luminance. Thus noise can be added just to the shadows or to the highlights.

Luminance - controls which luminance values will have noise added. The activate range is between 0 (blacks) to 100 (whites).

Spread - controls the range of luma values that will have noise added. A low value will pinpoint the noise to a particular luminance. Increasing this value will increase the number of pixels that are affected by the noise.

Background Noise - defines the background level of noise added to all pixels regardless of their luma value.

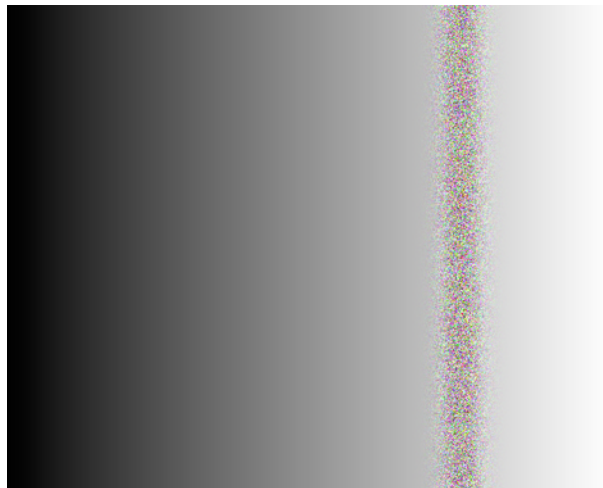


Figure 268. Ramp with noise added using the response curve. The Noise Peak is set to 75 and Noise Spread set to 5 with no Noise Minimum applied

Noise - the graph shows the noise applied to the image (vertical

axis) against the luminance values of pixels in the image. The area under the curve represents the spread of luma values that will have noise added.

Channels This property page allows for the adjustment of noise and softness in the individual colour channels when RGBA Noise is selected on the first property page.

Noise Red (Green/Blue/Alpha) - controls the amount of noise in the red channel.

Soft Red (Green/Blue/Alpha) - controls the blur on the noise on the red channel.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Rewire

Description

T_Rewire allows you to map individual colour components of an input clip into any component of the output clip. For example, you can extract the alpha from one input clip and put it into the luminance of the output clip. Four input clips are available when used as a multi-input effect. It's very useful for extracting the



Figure 269. The original London red bus



Figure 270. With red and green components swapped

luminance of a clip and putting that into the alpha channel for use with effects that require RGBA images.

Effect Type

Clip Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Rewire

Colour Space - tells the effect how to interpret the components.

- **RGB** - 1st component is red, 2nd component is green, 3rd component is blue.
- **YUV** - 1st component is luminance, 2nd component is U colour difference, 3rd component is V colour difference.
- **HSV** - 1st component is hue, 2nd component is saturation, 3rd component is value.

1st (2nd/3rd/Alpha) Source - only available when used as a multi-input effect. This allows for different clips to have an effect upon the components of the output clip. This sets the clip used in the first component. Clip 1 is the clip on which T_Rewire has been applied. Clips 2, 3 and 4 are set through the reference box.

1st (2nd/3rd/Alpha) Component - Which component to extract and put in the 1st component of the output clip.

- **Red** - the red value of the input clip.

- **Green** - the green value of the input clip.
- **Blue** - the blue value of the input clip.
- **Alpha** - the alpha value of the input clip.
- **Grey** - the averaged RGB value of the input clip.
- **Y** - the Y value of the input clip.
- **U** - the U value of the input clip.
- **V** - the V value of the input clip.
- **Hue** - the colour of the input clip.
- **Saturation** - the saturation of the input clip. Saturation equates to colour purity in HSV colour space.
- **Value** - the HSV 'value' of the input clip. Value equates to brightness in HSV colour space.
- **Empty** - use black.

Clipping Nth Clip Min - pixels at or below this value are set to zero.

Nth Clip Max - pixels at or above this value are set to 1.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

Hints & Tips

To add an alpha channel to an RGB clip simply set the Alpha Component to Y. This extracts the luminance levels of a clip and creates a matte.

T_Wobble

Description

T_Wobble simulates camera shake on a clip or random vibrations on an object. Frames can be translated, rotated and scaled randomly and motion blur can be applied.

A random motion path is generated from the seed value. This path is constrained within the area defined by wobbleX and wobbleY. Small fractal perturbations (X Detail X and Y Detail) are added to the path to make the movement more interesting. There is a choice of 2 motion paths - Independent and Orbit. In the Independent method

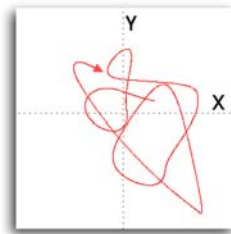


Figure 271. Independent

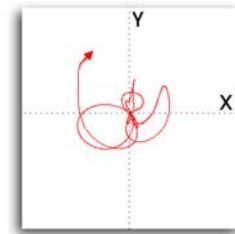


Figure 272. Orbit

the x and y coordinates will move around independently of one another to give a random motion path about a central position. In the Orbit method the x and y coordinates are linked so that the position moves in and out of the center in arcs.

Effect Type

Clip Effect only.

Property Pages

The parameters on each of the property pages are described below.

T_Wobble **Wobble Method** - controls the way in which the x and y positions are displaced. See picture above.

- XY Independent
- XY Orbit

Speed - controls the rate at which the image is shaken.

X Shake - controls the amount of horizontal shake. This value represents the maximum amount of movement. The actual value is random.

Y Shake - controls the amount of vertical shake. This value

represents the maximum amount of movement. The actual value is random.

X Speed - controls the rate at which the image shakes horizontally.

Y Speed - controls the rate at which the image shakes vertically.

X Detail - controls the amount of smaller horizontal perturbations that can be added to the random shaking.

Y Detail - controls the amount of smaller vertical perturbations that can be added to the random shaking.

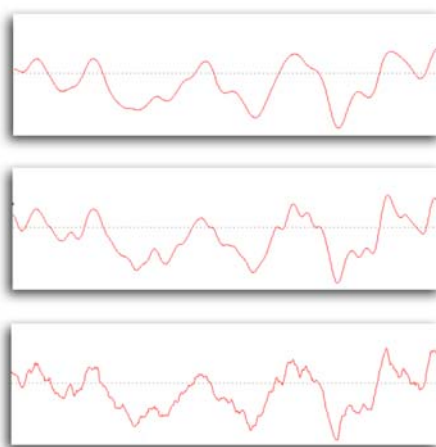


Figure 273. The image shows three paths with increasing amounts of fractal detail added from the parameters Detail X and Detail Y. Note that the basic shape of the path remains the same.

Seed - this number generates a number sequence that is used to randomly vary the shake.

Filter - switch this on to improve the quality of the rendering.

Motion Blur - switch this on for motion blur.

Shutter - represents how long the camera shutter is open during the exposure of the image on the film. Increase this value for more motion blur.

Samples - number of subsamples to render per frame. Increase this for more realistic motion blur.

Advanced **Advanced Wobble** - switch this on to use the advanced parameters on this property page in addition to the basic ones on the T_Wobble

page. These allow for rotations and scales but is slower to motion blur and filter.

Zoom - controls the overall size of the image.

Note *You can use the Zoom parameter to scale the image during shaking to remove unwanted information at the edges as the picture moves off screen.*

Rotation - controls the amount of rotation. This value represents the maximum amount of rotation. the actual value is random.

Speed Rotation - controls the rate of change of rotation.

Detail Rotation - controls the amount of fractal perturbations applied to the rotation.

Scale - controls the amount of scaling. This value represents the maximum amount of scaling. The actual value is random.

X Scale - controls the amount of horizontal scaling. This value represents the maximum amount of scaling. The actual value is random.

Y Scale - controls the amount of vertical scaling. This value represents the maximum amount of scaling. The actual value is random.

Detail Scale - controls the amount of fractal perturbations applied to the scaling.

Speed Scale - controls the rate of change of scaling.

Filtering - sets the quality of the filter used when processing the effect.

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

WARPERS

T_Distorto

Description

T_Distorto distorts an image using a mask. The amount of distortion corresponds to the brightness of the mask, and the distortion takes the form of a scale, translate or rotation of the image. Where the mask is black there is no distortion. Where the mask is white the full distortion is applied. A mask with smooth changes in luminance will gently ramp in the distortion to give fluid like effects. The mask can

lighter, fire-l., cigarette l., igniter, light, pilot l., illuminant, taper, spill, candle, 420 torch; coal, ember, brand, firebrand, fire ship, incendiary bomb 723 bomb; wick, fuse, touchpaper, tinderbox, match, slow m., linstock portfire, percussion cap, detonator; safety match, friction m., lucifer, vesta, fusee; flint, steel, tinder, touchwood, amadou, matchbox.

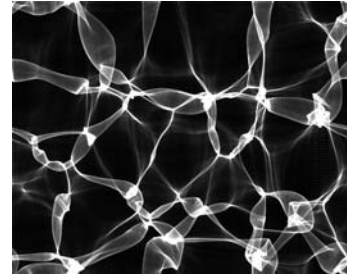


Figure 274. Block of text

Figure 275. Water caustics

be smoothed within the plug-in using the Softness parameter. If T_Distorto is used as a clip effect the mask is taken from either the luminance of the image or the alpha channel. If used as a multi-input effect a separate clip will provide the mask.

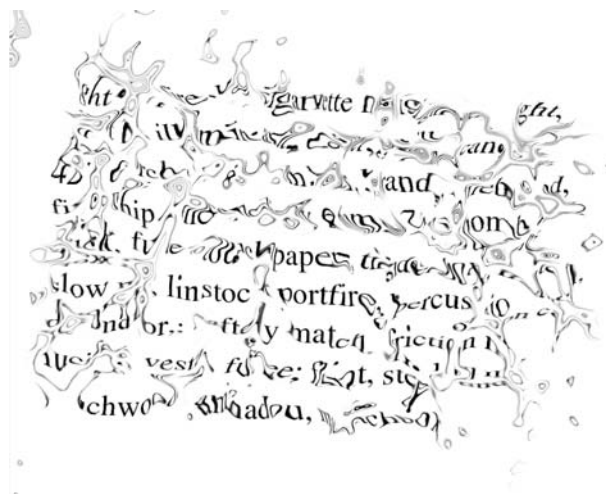


Figure 276. T_Distorto applied to text using the caustics

Effect Type

Clip Effect, Multi-input Effect and Keyer Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Distorto Amount - controls the amount of distortion applied.

Distort with

- Luminance - takes the luminance of the image as the distorting mask.
- **Alpha** - uses the alpha channel as the distorting mask.

Softness - controls the blurring of the mask before applying the distortion. Use this to smoothly ramp in the distortion.

Softness Aspect - controls the weighting of horizontal and vertical pixels used in the blur. Increase this value to blur horizontally. Decrease this value to blur vertically.

Distort X Offset - controls the amount of horizontal translation of the clip used in the distortion.

Distort Y Offset - controls the amount of vertical translation used in the distortion.

Distort Rotation - controls the amount of rotational distortion. In areas of the mask that are pure white, the full rotation will be applied.

Distort Scale - controls the overall size distortion. Numbers greater than 100 will enlarge the image in the distortion.

Distort X Scale - controls the horizontal size distortion.

Distort Y Scale - controls the vertical size distortion.

Filtering - sets the quality of the filter used when processing the effect.

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Mask Move These parameters control the translation, rotation and scale of the reference (mask) image used to distort the source image.

Mask X Offset - controls the horizontal movement of the reference

image.

Mask Y Offset - controls the vertical movement of the reference image.

Mask Rotation - controls the rotation of the reference image.

Mask Scale - controls the scaling of the reference image.

Mask X Scale - controls the horizontal scaling of the reference image.

Mask Y Scale - controls the vertical scaling of the reference image.

Source Move These parameters control the translation, rotation and scale of the source image. This property page is not visible when T_Distorto is used as a clip effect.

Source X Offset - controls the horizontal movement of the background image.

Source Y Offset - controls the vertical movement of the background image.

Source Rotation - controls the rotation of the background image.

Source Scale - controls the scaling of the background image.

Source X Scale - controls the horizontal scaling of the background image.

Source Y Scale - controls the vertical scaling of the background image.

Cropping See “Cropping Property Page” on page 8.

Help See “Help Property Page” on page 12.

Masking See “Masking Property Page” on page 10.

Options See “Options Property Page” on page 11.

T_Warp

Description

T_Warp deforms an image with one of seven image warping techniques.

Effect Type

Clip Effect, Transition Effect and Paint Effect.

Property Pages

The parameters on each of the property pages are described below.

T_Warp **Warp** - lists the types of warping. The other tools shown on this property page change as you modify this popup. These parameters are described more fully in the following sections.

- **Fisheye Lens**
- **Swirl**
- **Vortex**
- **Ripples**
- **Pond Ripples**
- **Droplet Ripples**
- **Circular Warp**

Fisheye Lens

A pseudo-fisheye lens effect. This can bulge out images like a



Figure 277. Fisheye Power set to 80

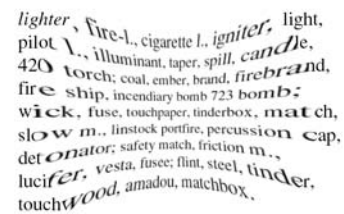


Figure 278. Fisheye Power set to 40

magnifying glass or bulge in giving a wide-angle look to images.

X Centre - horizontal position of the centre of the fisheye lens.

Y Centre - vertical position of the centre of the fisheye lens.

Radius - controls the size of the lens.

Aspect - allows the circular lens to be squashed into an ellipse.

Rotation - controls the rotation of the lens. This is only apparent when Aspect is not zero.

Fisheye Power - strength of the warping effect of the lens. Negative values contract the image giving a wide-angle look on landscapes.

Swirl

A pixel swirling/spiral effect.

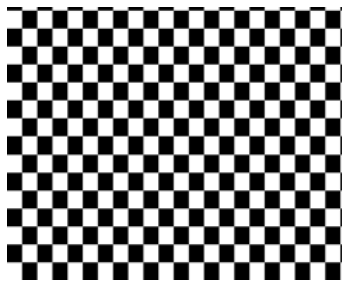


Figure 279. Checker Board

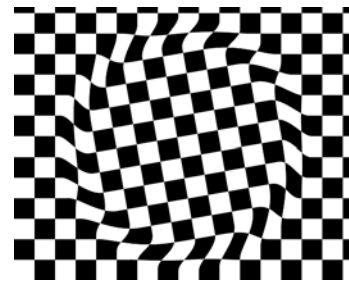


Figure 280. Swirl

X Centre - horizontal position of the centre of the swirl.

Y Centre - vertical position of the centre of the swirl.

Radius - controls the size of the swirl.

Aspect - controls the weighting of horizontal and vertical pixels used in the swirl. Increase this value to swirl horizontally. Decrease this value to swirl vertically.

Rotation - controls the rotation of the swirl. This is only apparent when the Aspect is not zero.

Swirl Amount - controls the amount of swirling. Increase this value to twist the pixels into a tighter spiral.

Swirl Holdout - this parameter is used to prevent the swirl from affecting an area at the centre of the effect so that the swirl is only visible at the radius boundary. The Swirl Holdout is the radius of a circle at the centre of the effect that masks the effect.

Vortex

A pixel swirling/spiral effect. It differs from swirl in that the distortions are greatest at the centre of the effect and reduce as the radius increases.

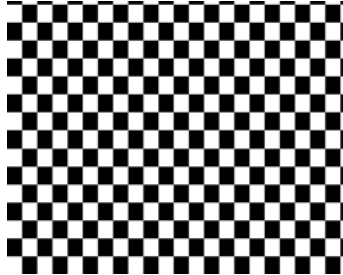


Figure 281. Checker Board

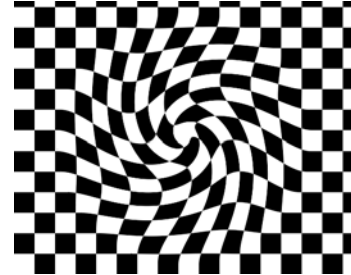


Figure 282. Vortex

X Centre - horizontal position of the centre of the vortex.

Y Centre - vertical position of the centre of the vortex.

Radius - controls the size of the vortex.

Aspect - controls the weighting of horizontal and vertical pixels used in the vortex. Increase this value to swirl horizontally. Decrease this value to swirl vertically.

Rotation - controls the rotation of the vortex. This is only apparent when the Aspect is not zero.

Swirl Amount - controls the amount of swirling. Increase this value to twist the pixels into a tighter spiral.

Ripples

Distorts the image into a series of parallel waves travelling in the same direction.



Figure 283. Compression Waves

Wave Direction - controls the direction of the waves. With a value of zero the waves travel from left to right.

Wave Amount - controls the wave height or distortion.

Wavelength - controls the distance between wave peaks.

Wave Type

- **Compression Waves** - will squeeze and expand the image in the direction of travel.
- **Displacement Waves** - will shift the image perpendicularly to the direction of travel.

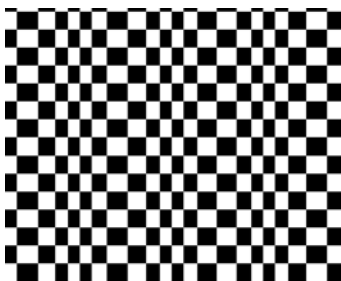


Figure 284. Compression Waves

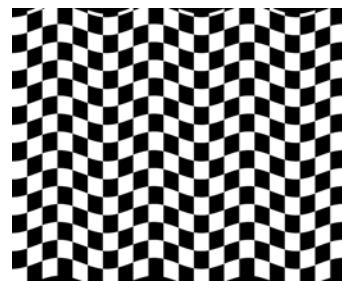


Figure 285. Displacement Waves

Wave Phase - controls the motion of the wave at the start point. i.e. whether it's moving up or down. Increasing this value over time will animate the wave (or move the wave in the direction of motion)

Speed - controls how fast the waves move.

Pond Ripples

Continuous circular ripples emanating from a single point.



Figure 286. Still Lake



Figure 287. Pond Ripples

X Centre - horizontal position of the centre of the pond.

Y Centre - vertical position of the centre of the pond.

Radius - controls the size of the pond ripples.

Aspect - allows the pond to be thicker in one direction than the other.

Rotation - controls the rotation of the ripples. This is only apparent when the Aspect is not zero.

Wave Amount - controls the wave height or distortion.

Wavelength - controls the distance between wave peaks.

Wave Type

- **Compression Waves** - squeezing and expand the image in the direction of travel.
- **Displacement Waves** - shifting the image in the direction of travel.

Wave Phase - controls the motion of the wave at the start point. i.e. whether it's moving up or down. Increasing this value over time will animate the wave (or move the wave in the direction of motion)

Wave Fall-off - controls the fall-off of wave amplitudes as they approach the outer/leading edge of the ripples. Increase this value to smoothly blend them into the surrounding water.

Speed - controls the speed of wave movement.

Droplet Ripples

These are rings of ripples traveling out from a central point, as would waves after a droplet splashes into water.



Figure 288. Droplet Ripples

X Centre - horizontal position of the centre of the ripples.

Y Centre - vertical position of the centre of the ripples.

Radius - controls the size of the pond ripples.

Aspect - controls the horizontal and vertical weighting of the effect.

Rotation - controls the rotation of the ripples. This is only apparent when Aspect is not zero.

Wave Amount - controls the wave height or distortion.

Wavelength - controls the distance between wave peaks.

Wave Type

- **Compression Waves** - squeezing and expand the image in the direction of travel.
- **Displacement Waves** - shifting the image in the direction of travel.

Wave Number - sets the number of waves generated.

Wave Fall-off - controls the fall-off of wave amplitudes as they approach the outer/leading edge of the ripples. Increase this value to smoothly blend them into the surrounding water.

Speed - controls how fast the waves move.

Circular Warp

Distorts an image by wrapping it around a circle.

X Centre - horizontal position of the centre of the circle.

Y Centre - vertical position of the centre of the circle.

Radius - size of the circle.

Aspect - allows the circle to be thicker in one direction than the other.

Rotation - controls the rotation of the distortion. This is only apparent when the Aspect is not zero.

Number - the number of times to repeat the image as it is wrapped around the circle.

Radial Offset - shifts the image in and out from the centre of the effect.

Lighting/Filtering See "Lighting" on page 18.

Filtering - sets the quality of the filter used when processing the effect.

MIP Sharpness - used to compensate any over softening of the image when MIP Bilinear filtering is applied.

Cropping See "Cropping Property Page" on page 8.

Help See "Help Property Page" on page 12.

Masking See "Masking Property Page" on page 10.

Options See "Options Property Page" on page 11.

Appendix A

GENARTS TINDER PLUG-INS

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X Edge Method 9

Y

Y Edge Method 10