EXPOSURE®2

The closest thing to film since film.™

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Thanks!

Exposure has grown immensely from the strength of the community of photographers that have gathered around it. In our online forum, through e-mail, and in person many photographers have generously shared their expertise and photo archives to help make Exposure 2.

Some of the most valiant defenders of their favorite films are Tom Corbitt (Polaroid), Marc Durant (Polaroid), Andrew Durazo, Markus Haugg (Portra), Steffen Jahn (Polapan, Polachrome), Larry Ketchum (Kodak EES), Taran Morgan, Greg Myhra (GAF 500), Jing Quek, Michael Riedel, Jeff Simons, David Singer, Ellen Small (Scala), Geoff Smith, Scott Stulberg, Ken Weingart (EPP Cross Processing), Jim White, and Gregory Wiggs.

I hope I didn't leave anyone out! I'm sure this list will continue to grow as more photographers gather round the campfire to share their memories of legendary films.

Jeff Butterworth

Table of Contents

Chapter 1: Introduction

Welcome

Exposure is a Photoshop plug-in that makes digital images look like they were shot on film. With Exposure, you can imitate the look of a film stock, such as Velvia, apply special effects like selenium/sepia toning, or do some basic image enhancement.

Exposure takes the form of two entries in the Photoshop Filter menu, one for color film and one for black and white film. The **Color Film** filter works on RGB images. The **Black and White Film** filter can be used on RGB images or Grayscale images. Both filters work with 8 or 16 bits/channel images.

Exposure can be used in Photoshop actions, making it easy to modify multiple images in a single operation.

Either filter will function as a Smart Filter, which means that it can be applied non-destructively on Smart Object Layers in Photoshop CS3. Read the description of Smart Filters in your Photoshop documentation for more information.

How to Use This Manual

The **Getting Started** chapter covers installation and running Exposure for the first time.

The **User Interface** chapter explains how to preview effects, apply them, and work with settings. To get the most out of Exposure, be sure to read this chapter. We have a lot of cool features that may not be obvious.

The **Factory Settings** chapter gives advice on when to use the zillions of settings that come with Exposure. Background on how the settings were created is in the **Settings Discussion** chapter.

The remaining chapters are devoted to tabs in the user interface. The **Color** tabs of the **Color Film** and **Black and White Film** filters are different, so there are two **Color** chapters.

Chapter 2: Getting Started

Installing Exposure is pretty quick and painless, but to be safe, follow these instructions.

Host Requirements

Exposure is a plug-in. That means that you must already have installed one of the following host programs. It is possible that Exposure will work with other image editors, but we have only tested with and support the ones below.

- Adobe Photoshop CS2 or later
- Adobe Photoshop Elements 4 or later
- Macromedia Fireworks CS3 or later
- Corel Paint Shop Pro Photo XI or later

Installing Exposure is quick and painless, but follow these instructions to be safe.

Macintosh Installation

1. Shut down your graphics host program (usually Photoshop).

2. Insert the Exposure CD into your computer. Or, if you purchased an electronic version of Exposure, locate the installation program that you downloaded from the online store.

3. Double-click the Install Exposure 2 icon in the Finder.

4. An authentication dialog will appear. Enter the user name and password of an account with administrator privileges on your computer. For information on configuring your user account for administrator privileges, talk to your IT guy or consult your Mac OS X user manual.

5. The welcome screen will appear. Click **Continue**.

6. The License Agreement screen will appear.

7. After reading the License Agreement, click **Continue**. Click **Agree**.

8. The registration information screen will appear. Enter your name, company name (optional) and your registration code.

Note: *The registration code is a 12-letter sequence inside the front cover of your manual. If you purchased an electronic version of Exposure, you will find the 12-letter code in the e-mail invoice sent with your downloaded software. Store this code in a safe place for future installations.*

9. Click **Register**. The installer will search for all compatible graphics programs on your computer and display them in a list.

10. Highlight one program in the list and click **OK**. You can only install into one graphics program at a time. Rerun the installer if you wish to install into another graphics program.

Windows Installation

1. Shut down your graphics host program (usually Photoshop).

Note: To install Exposure, your Windows user account must have administrator privileges. For information on configuring your user account for administrator privileges, talk to your IT gal or consult your Windows user manual.

2. Insert the Exposure CD into your computer. Or, if you purchased an electronic version of Exposure, locate the installation program that you downloaded from the online store.

3. Double-click the **setup.exe** icon.

4. The welcome screen will appear. Click **Next**.

5. The License Agreement screen will appear.

6. After reading the License Agreement, click **Accept**.

7. The registration information screen will appear. Enter your name, company name (optional) and your registration code.

Note: The registration code is a 12-letter sequence inside the front cover of your manual. If you purchased an electronic version of Exposure, you will find the 12-letter code in the e-mail invoice sent with your downloaded software. Store this code in a safe place for future installations.

8. Click **Next**. Our installer will search for all compatible graphics programs on your computer and display them in a list.

9. Highlight one program and click **OK**. You can only install into one graphics program at a time. Rerun the installer if you wish to install into another graphics program.

Running Exposure

To run Exposure, first start up your graphics host program (usually Photoshop). In the Filter menu you should see a sub-menu named **Alien Skin Exposure 2**. Within that menu, choose either **Color Film** or **Black and White Film**. Then Exposure's window will appear. Select one of the factory settings on the left side of the window and then read the next section if you need some guidance.

Registration

You must register your software to receive technical support and critical product updates. Registration also qualifies you for upgrade pricing on future versions of Exposure. Register online at **www.alienskin.com/register**.

If you purchased Exposure directly from Alien Skin Software, you are automatically registered with us and do not need to register! You need to register only if you purchased Exposure elsewhere.

Chapter 3: User Interface

This section outlines the menus, buttons, settings, and other items in the Exposure user interface.

Navigation

MENUS

Command menus are accessible when you launch any filter. Macintosh users will see the menus in place of their usual menu bar. Windows users will see the menus at the top of the filter preview window.

Edit Menu

The **Edit** menu provides an unlimited number of undoes and redoes. If you experiment with the sliders and find that you prefer a previous group of settings, select the **Undo** command from the **Edit** menu, or click ⌘**+Z** (Ctrl+Z on Windows machines) to back up as many times as necessary.

The **Edit** menu also lets you copy, cut, paste and delete values from parameter fields

Filter Menu

The **Filter** menu lets you switch between Exposure filters without leaving the user interface. Photoshop users should note that switching filters will make the **Actions**, **History**, and **Last Filter Used** functions behave oddly. These will record the filter initially selected, not the filter applied.

View Menu

The View menu lets you zoom the preview in and out. To display the entire image in the preview window, select **Fit On Screen**. To display the preview at 100% magnification, select **Actual Pixels**. See **Keyboard Shortcuts** for some nifty zooming shortcuts.

Help Menu

The **Help** menu leads to local documentation and online Web pages. Clicking **Help>Filter Help** accesses filter-specific documentation. The same assistance can be reached by pressing **F1** (Windows) or **Help** (Macintosh).

To access a Table of Contents for the online Help file, click **Help>Contents**.

COLOR SELECTION TOOLS

Color Picker

Using the Color Picker, you can select colors based on several color models (RGB, CMYK, etc.). You can also specify colors by hexadecimal values or use Web safe colors. To launch the Color Picker, click the color swatch next to any color control.

If you don't know how to use a color picker, consult your host program's documentation.

Color Selector

To the right of the color swatch, you'll notice a color selection tool, which offers the following options.

Eyedropper: Select the eyedropper to sample a color from anywhere in the preview window.

Foreground or Background Color: Choose either of the two.

Black or White: Choose either of these timeless colors.

Six Previous Colors: You can choose any of the six most recently chosen colors.
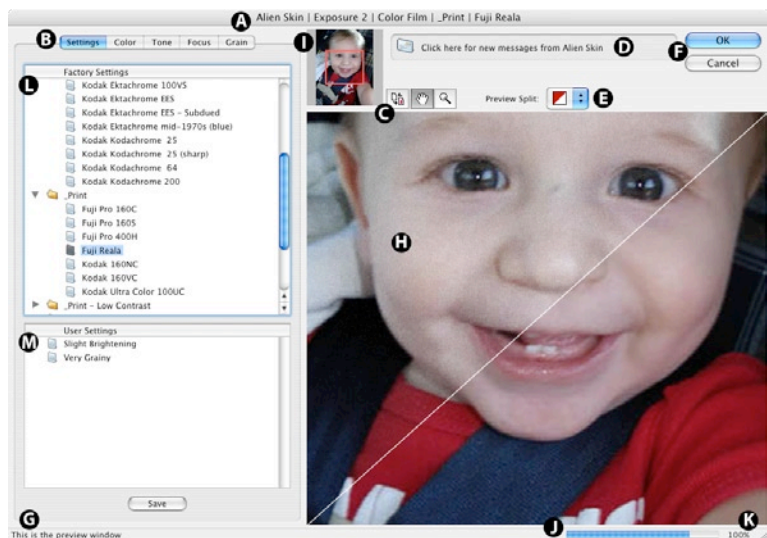
The Filter Window

Title Bar (A): The title bar displays the currently selected filter, in addition to the currently selected setting (see Maintaining Settings, below).

Tabs (B): You can access the advanced controls for each filter by selecting one of the tabs above the settings area. Refer to the filter chapters for detailed control descriptions. You can click the Settings tab to return to the setting lists.

Show Original, Split, Move and Zoom (C): The **Show Original**, **Move** (hand), and **Zoom** (magnifying glass) buttons are found above the preview window.

The **Show Original** button toggles the preview between filtered and unfiltered versions of your image. Click and hold the button to view the unaffected image. Release the button to preview the effect. The original image is also displayed while the spacebar key is depressed.

Click the hand to enable the **Move** tool, then click and drag to move around the preview image.

Click the magnifying glass to enable the **Zoom** tool. Click in the preview window to zoom into your image. Option+click to zoom out (Alt+click for Windows users). Double-clicking the magnifying glass at any time resets the preview window to 100% magnification.

While in zoom mode, holding down the spacebar temporarily switches to the move cursor.

UpToDate Message Indicator (D): When you see this visual cue, you have a new message from Alien Skin Software. See the UpToDate Messages section for more details.

Split Screen Preview (E): Above the preview area is a menu of options for split screen previewing. When enabled, this feature shows the original image in half of the preview. The entries in the Split Screen menu specify the orientation of the split line or simply turn it off.

OK and Cancel Buttons (F): Clicking the OK button applies the filter with the current settings. Clicking Cancel closes the filter window without applying the effect.

Mouseover Help (G): Whenever you move your cursor over a user interface element, a short description appears in the bottom left corner of the window.

Preview Area (H): Preview the effect on your image here. Resize the filter window to make the preview area larger or smaller.

Navigation Thumbnail (I): Click and drag the movable red box to move the preview to any spot in the selected layer.

Progress Bar (J): The rectangle to the left of the magnification indicator displays the percentage of rendering completed.

Magnification Indicator (K): The current level of magnification is shown to the right of the render status bar at the lower right corner of the filter window.

Factory Settings (L): The settings that are included with the product are displayed in the factory settings list. Click on any of these settings to try them on your image.

User Settings (M): The user settings list contains settings that you create. See Maintaining Settings, below.

Maintaining Settings

A setting is a snapshot of all of a filter's controls. When you apply a setting, all of the controls on the filter are reset to their remembered values.

The **Settings** tab in each filter window lets you create, manage, and share your favorite settings.
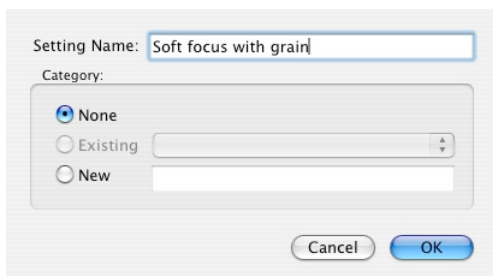
There are two lists on the **Settings** tab. The top list contains factory settings. Factory settings are supplied with the product and can't be changed. The bottom list contains user settings, which are settings you can create yourself.

Each settings list contains two types of item. A folder icon ( ) identifies a category. A category contains one or more settings. To open a category, click the disclosure indicator next to the folder icon. This will reveal all of the settings in that category. A setting item ( ) indicates a setting.

To apply a setting, simply click the desired setting.

SAVING SETTINGS

To save a setting, first adjust the sliders and other filter controls to your satisfaction. Then, click the save button at the bottom of the Settings tab. You can also save a setting by pressing ⌘**+S** (Macintosh) or **Ctrl+S** (Windows). The **Save Setting** dialog box will appear.

In the **Setting Name** box, type a name for your new setting.

The **Category** radio button allows you to specify a category for your new setting. If you don't want a category, choose the **None** button. If you want to use an existing category, choose the **Existing** button and then select the category in the list to the right. If you want to create a new category, choose the **New** button and type the name of the new category in the box to the right.

Settings are always saved in the **User Settings** list.

RENAMING USER SETTINGS

To rename a setting:

1. Right click (Ctrl+Click for Mac users) the setting you want to rename.
2. Choose **Rename** or **Change Category**
3. Type a new name for the setting in the Setting Name box.
4. Press **OK**.

CHANGING THE CATEGORY OF A USER SETTING

To move a setting to another category, or to remove its category completely:

1. Right click (Ctrl+Click for Mac users) the setting whose category you want to change.
2. Choose **Rename** or **Change Category**
3. Choose the appropriate category option.
4. Press **OK**.

DELETING A USER SETTING

To delete a setting:

1. Right click (Ctrl+Click for Mac users) the setting whose category you want to change.

2. Choose **Delete**.

3. Click **Yes** to confirm the deletion.

E-MAILING A USER SETTING

When you e-mail a setting, Exposure packages the recipe in a tiny file and attaches it to an e-mail message that you can send to a friend. The E-Mail function only works with Microsoft Outlook on the Windows platform and with Apple Mail on the Macintosh platform.

To e-mail a setting:

1. Right click (Ctrl+Click for Mac users) the setting you want to e-mail.

2. Choose **Send By E-Mail**

3. Type the recipient in the mail window which appears.

4. Press **Send**.

EXPORTING A USER SETTING

When you export a setting, Exposure saves the setting to a folder you specify. You can use the export feature to back up settings that you cannot live without or to share settings with a friend.

To export a setting:

1. Right click (Ctrl+Click for Mac users) the setting you want to export.

2. Choose **Export**

3. Navigate to the location where you want to store the settings file.

4. Click **OK**.

IMPORTING SETTINGS

Importing a setting into Exposure is as easy as locating it in your OS file view and double clicking it. You can also download settings directly from the web. We occasionally post new settings on our forum at **www.alienskin.com/forum**.

Create Output in a New Layer above Current

Applying a filter with this option enabled renders your image in a new layer above the working layer (in Photoshop and Elements only). This checkbox is located on the **Color** tab for both the **Color Film** and **Black and White Film** filters. Note that switching filters within Exposure disables the output in new layer feature. If you want to apply a filter in a new layer, make sure you start with the filter you plan to apply.

Also, **Create Output In New Layer Above Current** is not compatible with Photoshop actions. Please clear this checkbox when recording an action.

In addition, the new layer feature is not compatible with Photoshop CS3's Smart Filters feature. Please clear this checkbox when using Exposure as a Smart Filter.

Overall Intensity

This slider appears below the New Layer checkbox. Any value less than 100 reduces the effect of the filter. This feature essentially mixes the filtered image with the original image. **Overall Intensity** provides an easy way to tone down an effect without having to touch a bunch of sliders. Be warned, however, that if **Overall Intensity** is left at a low value, you may wonder why Exposure isn't doing much to your images. We recommend you leave this slider at 100% most of the time.

UpToDate System

The UpToDate messaging system informs you about the latest Alien Skin Software products, special offers, software updates and other news. When messages are waiting, an unobtrusive visual cue announces, **Click here for new messages from Alien Skin**. Click this link to read your new messages.

Receiving messages is optional. See the **Preferences** section for information on disabling UpToDate.

Resetting Settings to Factory Default

Every filter has a **Neutral** setting. Clicking this setting resets the current filter parameters. You can also press the **F5** key (Windows) or ⌘**+R** (Macintosh) to reset the filter.

Preferences

Certain global preferences can be set in the preferences dialog. You can invoke this dialog by pressing **Ctrl+K** (Windows) or ⌘**+K** (Macintosh).
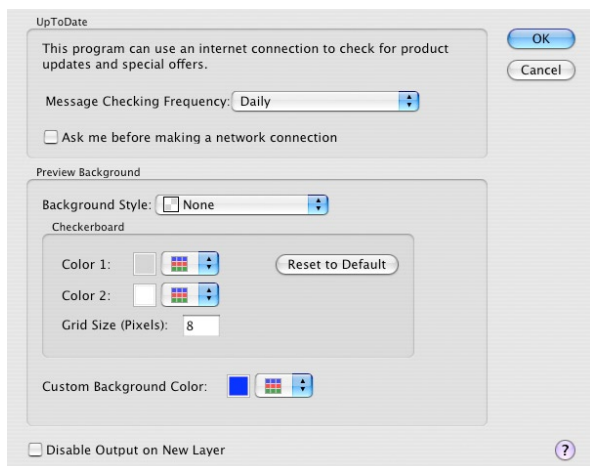
Preferences dialog

UPTODATE SYSTEM

You can set the interval at which UpToDate checks for messages. Select your desired frequency using the **Message Checking Frequency** list. If you prefer not to receive UpToDate messages, set the frequency to **Never**.

Windows users: If you have a dial-up Internet connection, you should select the **Ask me before making a network connection** option. If not, your computer will make unexpected phone calls.

Macintosh users: If you have a dial-up Internet connection, deselect the **Ask me before making a network connection** option. You must establish an Internet connection before receiving UpToDate messages.

PREVIEW BACKGROUND

You can specify the appearance of transparent pixels in the filter preview window by choosing one of the options from the **Background Style** list. The options are **None**, which displays a checkerboard background or a solid matte, either **Black**, **Gray**, **White**, or **Custom**.

You can choose the checkerboard colors using the two color swatches in the Checkerboard group. The size of the checkerboard grid can be adjusted using the **Grid Size** box.

The custom background color is specified using the **Custom Background Color** swatch.

DISABLE OUTPUT ON NEW LAYER

If you want to globally disable the Output on New Layer checkbox, select the **Disable Output on New Layer** checkbox. This can be convenient if you frequently use Exposure in actions.

Keyboard Shortcuts

SHORTCUT FUNCTION	MACINTOSH	WINDOWS
Next Editable Text Field	Tab	Tab
Previous Editable Text Field	Shift+Tab	Shift+Tab
OK	Return	Enter
Cancel	Escape	Escape
Undo	⌘+Z	Ctrl+Z
Redo	⌘+Y	Ctrl+Y
Cut	⌘+X	Ctrl+X
Copy	⌘+C	Ctrl+C
Paste	⌘+V	Ctrl+V
Next Filter	⌘+]	Ctrl+]
Previous Filter	⌘+[	Ctrl+[
Zoom In	⌘++	Ctrl++
Zoom Out	⌘+-	Ctrl+ -
Actual Pixels	Option+⌘+Zero	Alt+Ctrl+Zero
Fit on Screen	⌘+Zero	Ctrl+Zero
Load Neutral Setting	⌘+R	F5
Load Last Used Setting	⌘+L	Ctrl+L
Save Setting	⌘+S	Ctrl+S
Switch to Move Tool (hand)	H	H
Switch to Zoom Tool	Z	Z
Preview Move (with zoom enabled)	Space Bar+Drag	Space Bar+Drag
Zoom In (with zoom enabled)	Mouse Click	Left Mouse Click
Zoom In (with move enabled)	⌘+Click	Ctrl+Click
Zoom Out	Option + Mouse Click	Alt + Mouse Click
Drag preview (with zoom enabled) – also displays original image	Hold spacebar while dragging	Hold spacebar while dragging
Zoom to Actual Pixels	Double-click Zoom Tool	Double-click Zoom Tool
Increase/Decrease Slider by 1	Up/Down Arrow	Up/Down Arrow
Increase/Decrease Slider by 10	Shift+Up/Down Arrow	Shift+Up/Down Arrow
Access Online Help	⌘+/ or Help	F1
Open Preferences Dialog	⌘+K	Ctrl+K

Chapter 4: Settings Discussion

How We Did It

To imitate film stocks that were available during creation of Exposure, we did test shoots with the film and with a Canon EOS-1Ds Mark II digital camera. We shot a special chart, as well as scenes including flesh tones and colorful natural objects under controlled lighting. The digital photos were processed through the Adobe Camera Raw plug-in with default settings. We then measured differences between the film and digital images using custom software we created. This enabled us to create settings that mimic the look of these film stocks.

Most of the film settings control warming/cooling (or sometimes filter color), saturation (for color films), RGB sensitivity (for black and white films), a curve in the Tone tab, and grain parameters. We chose to leave black and white colorization and focus controls alone in the basic film settings. Those controls are more for special effects or for you manipulate yourself.

For film stocks that were discontinued years go, like GAF 500 and Kodak EES, we obtained archival photos and experimented until our settings closely matched the images.

Tone Curves

Compared to digital sensors, film has a less linear response to light. Below is a characteristic curve for a film stock.

If this curve were a straight line, the response would be perfectly linear, and the film would reproduce a perfectly realistic image within that brightness range. Whenever the curve is shallower than 45°, contrast is lowered. Areas steeper than 45° designate increased contrast. This S-shaped curve would increase contrast in midtones, block up shadows, and blow out highlights. Expect to see varying amounts of these effects from all of the settings based on real film stocks. If these effects bother you, simply reset the curve in the Tone tab after loading the settings.

Characteristic Curve
E100G Film

LUMINOSITY

Exposure: Daylight 1/100 second
Process: E-6
Densitometry: Status A

LOG EXPOSURE (lux-seconds)
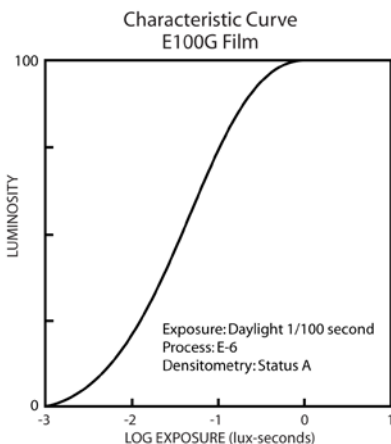
Grain

The Grain tab is the most unique part of Exposure. We put film grain under a microscope, literally. There we found that real grain can be larger than one pixel, has subtle color characteristics, and often appears with different strengths in the highlights, midtones, and shadows. Below are some examples of our microscope photos. As you might expect, the higher speed film has larger grains.
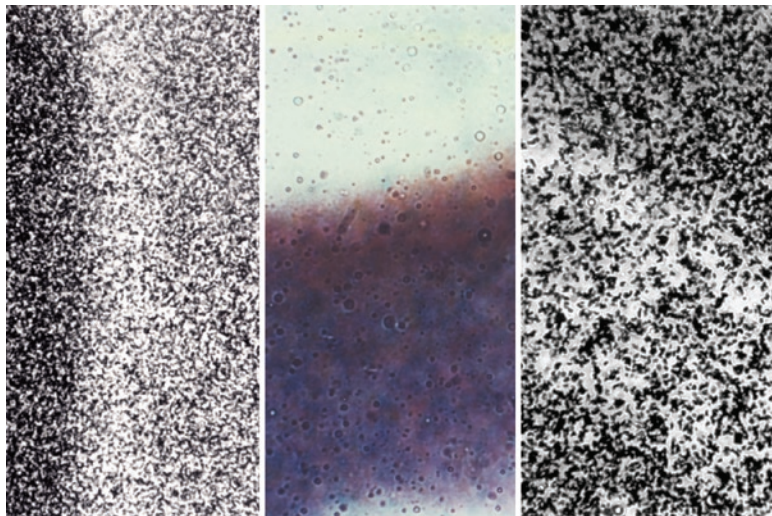
Above are photomicrographs that we took while studying film grain. From left to right they are Kodak TRI-X 400, Fuji Velvia 100, and Ilford Delta 3200.

Getting Ready – Adobe Camera Raw

Our film settings were developed using Raw images processed through Adobe Camera Raw using its default setting. If you use the ACR automatic setting your results will come out higher contrast. If you set all the ACR sliders to zero, your results will come out lower contrast.

Generally you will get more predictable and attractive results if you always treat your input images the same way. Moderately low contrast before entering Exposure is recommended.

Chapter 5: Factory Settings

Factory settings can be found in the far left tab in the user interface at the top. Factory settings are broken into groups. This chapter gives some guidance on the most commonly used settings groups and describes a few of the more interesting specific settings. This is not a comprehensive list.

Color Film

SLIDE FILMS

Slide films tend to be high contrast and many of them are high color saturation too. Slide settings are most often used to punch up dull low contrast photos. Some slides also have a slight color cast, Kodak generally being warmer and Fuji being cooler.

Here are a few of the most commonly used slide settings.

Fuji Velvia
All the Velvia's are high saturation and contrast. 100F is the mildest and 50 is the most over the top. These are primarily used in nature scenes with colorful plant life. Human skin tones can become quite unnatural with these films. Velvia 50 is no longer commercially available.

Kodak Ektachrome EES
This long extinct film has slightly muted colors and noticeable grain. Some photographers preferred EES for portraits. Kodachrome 200 is another grainy film sometimes used for portraits.

GAF 500
This extremely grainy film was discontinued in 1977. It can give your photo a retro gritty look.

PRINT FILMS

Print films tend to have lower color saturation than slide films and many of them have lower contrast too. These films are most often used for scenes containing people, such as weddings, portraits, and fashion.

Kodak Portra 160NC and Fuji Pro 160S
These films are the lowest contrast and color saturation of the slide films. In portraits they produce the most subdued natural skin tones. They provide the most detail in shadows.

GRAIN

All the settings in this group just add grain without doing any other manipulations. Results range from subtle to ridiculous.

Add detail
These settings add subtle amounts of grain to shadows, highlights, or both. In a photo with completely flat shadows or highlights, this is a way to add a little detail so the picture doesn't seem so artificial.

FOCUS

These settings perform a variety of blurring and sharpening operations.

Glamour Shot
These settings perform the "Vaseline on the lens" effect seen in so many mall glamour shot photos. If you use a subtle version, this is a way to make wrinkles and blemishes a little less obvious.

TONALITY

These settings mostly consist of curves in the Tone tab. The effects are generally manipulations of brightness and contrast.

Shadow Recovery
When you've lost almost all the detail in your shadows, try these settings. Try the Narrow flavor first and progress toward Broad.

CROSS PROCESSING

Cross processing is development of slide film in print film chemicals or vice versa. This usually increases contrast and creates bizarre color shifts. The results are pretty unpredictable, so we supplied many variations of these settings.

Print Film (generic), Agfa Optima, Kodak Royal Gold
These settings tend to have cyan or bluish casts.

Slide Film (generic), Fuji Provia
These settings are very high contrast and have sharpening turned on.

Black and White Film

See the Color Film section above for information on the Focus, Grain, and Tonality settings.

BLACK AND WHITE FILMS

All black and white films except Agfa Scala are print films. The process of creating a black and white print offers a huge amount of flexibility in manipulating everything from contrast to grain to sharpness. As a result, the black and white film settings we provide are just a starting point. Don't be afraid to crank up the grain on TRI-X 400 so it looks like you remember and save your own version. Here are a few of the more interesting films.

Agfa Scala
This recently discontinued film was the only black and white slide film. It provides more detail throughout the tonal range, especially shadows, than most of the other black and white films.

Kodak TRI-X 400
This medium speed film has noticeable grain that many photographers love. Try using the Push slider in the Grain tab to get the look of a photographer dealing with low light conditions.

Kodak T-MAX P3200
This is the grainiest film in the list. If you want an artistic gritty look, try this one.

COLOR SENSITIVITY
These settings show off Exposure's ability to adjust the way a color image is converted to black and white. Fiddle with the Red, Green, Blue sliders in the Color tab to see the wide range of results you can get. These settings show some common channel weights.

Mostly Red
This is the most common channel weighting throughout the factory settings in Black and White Film. It makes human skin brighter. Other weightings sometimes make people look dull.

COLOR TONING
These are simulations of the difficult color toning processes done in dark rooms. These settings are a good introduction to the controls at the bottom of the Color tab.

Selenium - Warm/Cool
This is a popular setting for showing multiple toning colors. Shadows are warm (brown) and highlights are slightly cool (blue).

INFRARED
Exposure 2 has vastly improved infrared film simulation that can look spectacular. These settings are mostly using sliders in the IR tab and Tone tab.

These settings can be finicky because they require a very high quality input image (from Raw format is best) that has a lot of blues and greens. If you use a JPEG image, you may end up with blocky artifacts. It's worth the effort though, because the results can be ethereal and beautiful.

Kodak HIE
This is the infrared film that everyone remembers. HIE is the one that most intensely brightens plants (greens), darkens skies (blues), and has a glow around bright areas (halation).

Fog
If you just want the glow around bright areas, but don't want to simulate the "wood effect" of brightened plants, try these settings. They are similar to the Focus/Glamour Shots effects, but only have a glow around bright objects.

Chapter 6: Color Film – Color Tab

This chapter describes the **Color** tab of the **Color Film** filter. This tab controls color casts and saturation. The **Color** tab of the **Black and White Film** filter is very different. Therefore, we cover it in the next chapter.

The Color tab for the Color Film filter.

Filter Color and Filter Density

Use these controls to simulate adding a colored filter to the lens of the camera. This alters the hue of the scene. The farther the Filter Color is from white the stronger the effect will be. Increasing Filter Density also increases the filtering effect. Use these controls for odd color casts. If you simply want to warm or cool the scene then use the slider below.

Warming/Cooling

Changing the light temperature of a scene is the most commonly needed type of color filtering. Warm scenes appear more yellow, cool scenes more blue. Move this slider to the right to warm the photo or to the left to cool it.

The top third of this photo has been cooled. The bottom third has been warmed.

Preserve Luminosity

Enable this option to ensure sure that the filtering operations do not darken your photo. When this option is off, color filtering is more physically accurate. **Preserve Luminosity** affects both the **Filter Color** and **Warming/Cooling** features.

Saturation Controls

The **Master Saturation** slider simply increases or decreases the intensity of all colors in the photo. The **Red**, **Green**, and **Blue** sliders modify subsets of color.

The most common use of these controls is increasing saturation in nature scenes. However, you can also desaturate two colors to make an object of the third color stand out.

In the right half of this photo, blue and green were reduced, making the red car stand out.

Chapter 7: Black and White Film – Color Tab

This chapter describes the **Color** tab of the **Black and White Film** filter. This tab controls the conversion of color images to black and white, as well as colorization. The **Color** tab of the **Color Film** filter is described in the previous chapter.

The Color tab for the Black and White Film filter.

Color Conversion – Red, Green, Blue

The **Red**, **Green**, and **Blue** sliders control how much each color channel affects the final black and white photo. In a portrait, the blue channel can be downplayed to de-emphasize wrinkles and blemishes. You can use these sliders to simulate a color filter over the lens of the camera. For instance, a deep red filter will make skies darker, as in the example. If your photo is in Grayscale mode then these controls will be disabled.

Here setting the RGB values to 100/0/0 simulates a red filter. Note the darkened sky and brightened car body.

These sliders also go down to -100%. While this is not physically realistic, it can be used to increase contrast. When simulating infrared film, a negative value for **Blue** will make the sky very dark.

Equalize Channels

When this option is enabled, the **Red**, **Green**, and **Blue** sliders add up to 100%. This is useful for ensuring that your photo is roughly the same brightness as your original.

Colorization –Ink Color, Strength, Position

The ink controls at the bottom of this tab are for creative effects like sepia or selenium toning. For each ink, you can set its color, how much the ink shows up, and where it appears in the brightness range of your photo. Think of the **Ink Position** slider as a gradient from shadows on the left to highlights on the right. Ink colors appear much stronger when placed in the shadows versus the highlights.


The left photo simulates selenium toning, the right sepia toning.

Chapter 8: Black and White Film – Infrared Tab

The IR tab is only available in the **Black and White Film** filter. This tab controls special effects that simulate infrared film. It is of course impossible to exactly simulate infrared film since your input image does not have infrared information recorded in it. However, you can get pretty close with these sliders.

Images containing blue skies, blue water, and green plants will give the most dramatic results.

Warning: You should start with a high quality image, preferably from Raw format. The Color Contrast feature will enhance noise and compression artifacts in JPEG images. Saving a JPEG image in another format will not get around the fact that it contains compression artifacts.
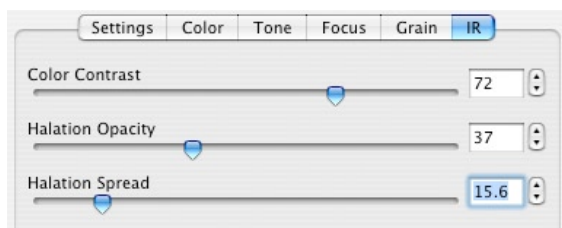
The IR tab for the Black and White filter.

Color Contrast

Increasing this slider darkens blues and brightens greens. Skies and water are usually dark in infrared images, while plants are usually bright. This is sometimes called the "wood effect". If this slider makes noise or compression artifacts (blocks) visible in your image, decrease the slider or start with an image saved in a lossless format, like Raw.

Halation Opacity

Halation is a glow around bright objects. It comes from light passing through the film and bouncing off the camera back. Most film has an anti-halation backing, but the most well known infrared film, Kodak HIE, does not. This slider controls how solid the glow appears.

Halation Spread

Increasing this slider makes the halation glow appear around more parts of your image. It also makes the glow spread farther.

Chapter 9: Tone Tab

Both the **Color Film** and **Black and White Film** filters have a **Tone** tab. The **Tone** tab includes a curve editor along with some sliders we added to make common tasks quick and easy. Use the **Tone** tab to address issues like contrast, brightness, shadows, and highlights.
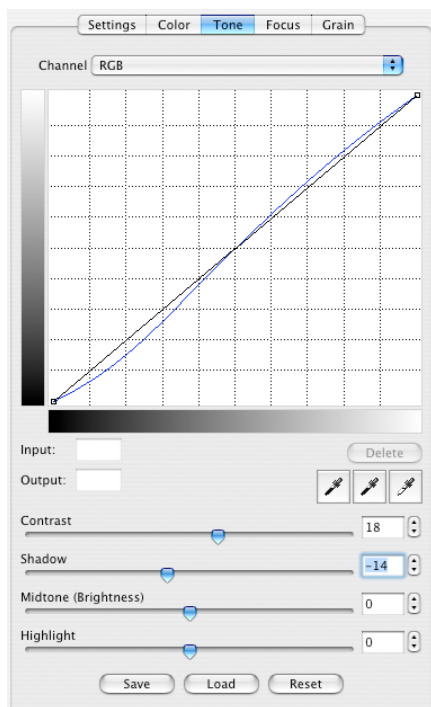
The Tone tab for the Color Film filter.

Curve Editor

The curve editor displays how input brightness is converted to output brightness. The horizontal axis represents input brightness, and the vertical axis represents output brightness. By default, black is in the bottom left corner and white in the upper right corner. If you prefer to think in terms of density rather than brightness, you may want to flip the curve. To do that, click anywhere in the gradients on the left or bottom of the curve.

CHANNEL POP-UP MENU

The **Color Film** curve editor has separate curves for the red, green, blue, and RGB channels. Changes made to the curve editor or the sliders below it affect only the selected channel.

The RGB curve affects all channels and is applied after the individual channel curves. Switch between these curves using the **Channel** pop-up menu at the top of the **Tone** tab.

The **Black and White Film** curve editor has just a single gray curve and does not include a pop-up menu.

EDITING CONTROL POINTS

Changing contrast, brightness, shadows, and highlights involves adding, moving, and removing control points in the curve editor. To add a control point to the curve, click anywhere there isn't already a point. To move a control point, simply click on it and drag it while the mouse button is down. To be more precise, select a control point by clicking on it and then edit the numbers in the **Input** and **Output** text boxes. To delete a control point, drag it out of the curve area. You can also select it and then click on the **Delete** button.

Black/White/Gray Points

Use the three eyedropper buttons to easily set the black, white, and gray points of your photo. These can quickly expand the dynamic range of your photo or remove a color cast. After you click one of these buttons, the cursor becomes an eyedropper. Click anywhere in the preview to select a color. Note that the color selected will come from the original photo, not from the filtered version.

BLACK POINT

To select the black point, click on the leftmost of the three eyedropper buttons and then click on the blackest part of your image in the preview. This will set the leftmost control point in the individual Red, Green, and Blue curves. The point you selected will become pure black after filtering.

WHITE POINT

To select the white point, click on the rightmost of the three eyedropper buttons and then click on the whitest part of your image in the preview. This will set the rightmost control point in the individual Red, Green, and Blue curves. The point you selected will become pure white after filtering.

GRAY POINT

The gray point eyedropper tool is designed to help remove a color cast and is only enabled in the **Color Film** filter. To select a gray point, click on the middle eyedropper button and then click on a pixel of your image that should be any shade of neutral gray. This will set a middle control point in the individual Red, Green, and Blue curves. The point you selected will become neutral gray and any color cast it had will be removed. All other non-white and non-black pixels in the image are adjusted accordingly.

In the top of this photo, a color cast was removed using the gray point tool.

The Sliders

Many people are scared of the curve editor found in Photoshop. Therefore, we provide four sliders that perform the most commonly needed curve transformations. When you move one of these sliders, a blue transformed copy of the curve is displayed in the curve editor. This blue curve is the one that affects your photo.

CONTRAST

Increasing this slider brightens highlights and darkens shadows. Increasing contrast will usually make a photo more dramatic at the expense of detail in highlights and shadows. In some cases, you may be able to recover detail in photos that have harsh shadows or highlights by decreasing contrast.

SHADOW

This slider brightens or darkens only the shadows. If your shadows are blocked up, you might be able to recover some detail by increasing this slider.

MIDTONE

This slider brightens or darkens the image, having its strongest effect in the midtones. The result is similar to gamma correction, but is not quite as harsh.

HIGHLIGHT

This slider brightens or darkens only the highlights. If your highlights are blown out, you might be able to recover some detail by decreasing this slider.

The Buttons

Editing curves can be a lot of work, and a complicated curve is tedious to reproduce. So we thought you might want an easy way to save and load curves. In addition, we have provided a way to reset the parameters of the **Tone** tab.

SAVE

The **Save** button brings up a standard file saving window that lets you save your curve to a file. For the **Color Film** filter, the curves for all of the channels are saved together in one file.

LOAD

The **Load** button brings up a standard file loading window that lets you replace your curve with one from a file. For the **Color Film** filter, the curves for all of the channels are loaded together.

RESET

To reset all the controls in the **Tone** tab to their default positions, press the **Reset** button. This will result in a curve that does not alter the photo. Note that in the **Color Film** filter, the **Reset** button resets the curves for all of the channels.

Chapter 10: Focus Tab

The **Focus** tab contains controls for sharpening and blurring.
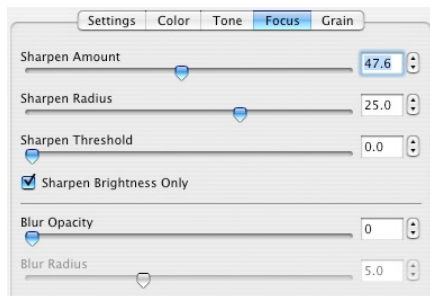
The Focus tab for the Color Film filter. The Sharpen Brightness Only checkbox is only present in the Color Film filter.

Sharpening

First a word of warning about sharpening. Oversharpening quickly makes a photo look arti-ficial. As a general rule, we suggest that you reduce sharpening until it is not immediately apparent that the photo was sharpened. When your photo will be printed by a process that causes blurring, you may need to sharpen to a point that looks strong on the screen but will look appropriate in print.

SHARPEN AMOUNT

This slider controls the overall strength of the sharpening. Typical usage is a value less than 30. Generally a larger **Sharpen Radius** will require an even lower value for **Sharpen Amount**.

SHARPEN RADIUS

This value determines the size of features that are most affected by sharpening. You should generally use as small of a radius as you can. Try a value of 20 and keep increasing the radius until you start to see sharpening.

This slider is not measured in pixels. The sharpening radius is proportional to image size, so the same slider value should look the same on a 6 Megapixel image as it does on a 22 Megapixel image.

SHARPEN THRESHOLD

This control restricts the sharpening to areas with strong edges. Increasing this slider leaves smoother areas unaffected. Most people find this control a little esoteric. If you like your tools simple, then just leave this at zero, and you'll be fine.

SHARPEN BRIGHTNESS ONLY

When this option is enabled, only the brightness of a color photo is sharpened. The hue is unaffected. This reduces obvious color halos and other artifacts. To be honest, we haven't found a situation where we would turn this off. This feature is present only in the **Color Film** filter.

Blurring

Why would anyone want a blurry photo? A very slight blur can reduce the harshness of a digital photo or reduce the effects of oversharpening. Most of the time, however, a simple Gaussian Blur adds little to a photo. If that blur is very transparent, the result is that familiar, hazy glow found in glamour portraits. This effect is great for making wrinkles and blemishes less obvious.

The left half of this image was blurred to reduce the appearance of wrinkles.

BLUR OPACITY

For a very subtle effect, try values less than 20%. Your subject may not realize that you softened the photo. For an obvious effect, like the photos made at the mall, crank **Blur Opacity** up to 70%.

*A more subtle blur gives the right half of this image an artistic look.*

BLUR RADIUS

Like **Blur Opacity**, increasing the reach of the blur will make your effect more obvious. A very high radius will make a photo hazy and lower contrast.

This slider is not measured in pixels. The blur radius is proportional to image size, so the same slider value should look the same on a 6 Megapixel image as it does on a 22 Megapixel image.

Chapter 11: Grain Tab

The **Grain** tab adds realistic grain to selected tonal ranges of your photo.
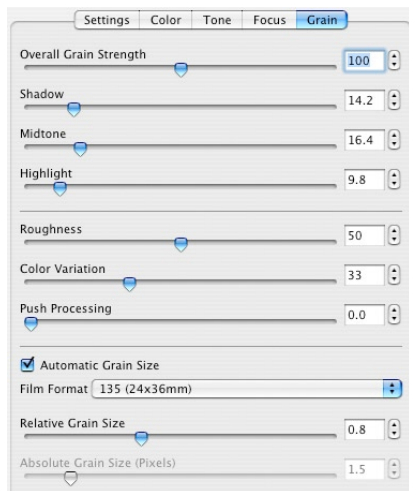
The Grain tab for the Color Film filter. The Color Variation slider is only present in the Color Film filter.

Background

Real film grain is nothing like the noise feature in today's image editors. Real grain appears selectively in different tonal ranges, is not square like a pixel, and has subtle color variation. We studied grain in archival photos, did test shoots, and used microscopes to examine the structure of film grain. With that knowledge we created a grain generator that is sophisticated and very realistic.

Below are some photomicrographs of some of the films we examined. Notice the irregular shape and random spacing of the grains. You would never blow up an image enough to see this level of detail, but these variations cause the effect we call grain.
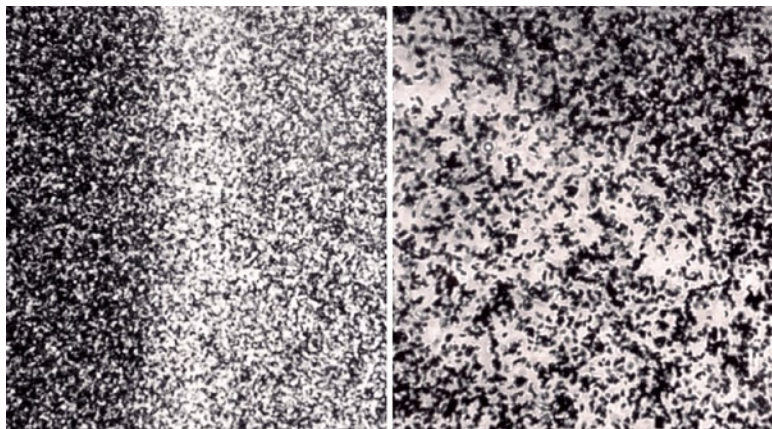
Kodak TRI-X is on the left. Ilford Delta 3200 is on the right. The graininess of the high-speed film is very apparent.

Below, a photomicrograph of Fuji Velvia 100 shows why modern color slide films have very little grain. Ignore the bubbles. Those are part of a protective layer above the pigment. During development the silver grains were replaced by clouds of pigment. These clouds do not have a sharp edge like the grains in the black and white examples. The result is much less noticeable grain.

In Fuji Velvia 100, the edges of the grain are barely apparent. This is why modern slide films have very little grain.

Overall Grain Strength

This slider gives you an easy way to turn grain completely off, weaken it, or strengthen it. When Overall Grain Strength is zero, most of the other grain controls are disabled.

Tonal Ranges – Shadow, Midtone, Highlight

The **Shadow**, **Midtone**, and **Highlight** sliders add grain selectively to the tonal ranges of a photo. Film tends to have more grain in midtones than in shadows and highlights.

Grain appears only in the midtones of the left half of this image, but in all the tonal ranges of the right.

Roughness

This slider controls how sharp grain edges appear. Low values make grains soft and provide smooth tonal changes throughout the grain. High values give grains sharp edges and make entire areas appear completely bright or completely dark.

Color Variation

This slider controls the amount of color variation the grain causes. We found that real grain is quite colorful, but you may want to tone it down for aesthetic reasons. This slider is only present in the **Color Film** filter.

Push Processing

Push processing is a film lab technique that compensates for underexposed film. Side effects are increased grain, increased contrast, and some loss of detail. You can use this slider for a grungy look.

Grain Size

If you turn off Automatic Grain Size, you can directly control grain size in terms of pixels. That is how Exposure 1 worked and it is easy to understand grain size this way. However, in this approach your grain size does not increase when you go from working on 6 Megapixel images to 22 Megapixel images. The result is that the same grain applied to both images and both printed out at the same physical size results in the 22 Megapixel print having much smaller grain.

So, that's why all our factory settings have Automatic Grain Size turned on. In this mode, you specify the film format you are simulating and a relative grain size. Smaller format film produces larger grain, with 135 format giving the largest grain. A Relative Grain Size of 1.0 with a 3000 pixel high image (shortest side) simulating 135 format film gives grain of size 2.5 pixels. If the length of the image changes, the pixel size changes proportionally. That means that your 6 MP and 22 MP photos will have the same grain when printed at the same physical size.

There is one caveat to the automatic grain size system. Grain size will never get below 1.5 pixels. Below that size, grain becomes digital noise with no clumpy natural quality and that's just ugly. This means that images below about 3 Megapixels will usually be stuck at 1.5 pixel grain. Unless of course you grab the grain size slider and increase it. Feel free to take over!

Chapter 12: For More Information...

The more we learn about photography, the more we realize that there is more to learn! The following books helped us immensely in the creation of this software. If you are a photography geek, these books should go on your wish list.

The Manual of Photography, Ninth Edition (2003), by Ralph Jacobson, Sidney Ray, Geoffrey Attridge, and Norman Axford, Focal Press, first published 1890

If you really want to learn the science of photography, it doesn't get better than this book. The discussion of characteristic curves was valuable in understanding what to expect from our measurements of real film. Be forewarned, this book is full of math and chemistry and has nothing to do with creative topics.

The Photographer's Toning Book, Tim Rudman, Amphoto Books, 2002

This book inspired us to enhance our colorization feature. When we saw that we couldn't do some of the beautiful effects in this book, we beefed it up. The test strips in this book really helped a lot in developing this feature.

Light and Film, Life Library of Photography, Time Life Books, 1970

Yeah, we thought that Time Life books were lame, too, until we saw this one. The gem in this book is Chapter 2, The Evolution of Film. There you can learn about the laborious early methods of photography. You even get to see a modern (well, 1970) guy use these methods and see what kind of results he gets.