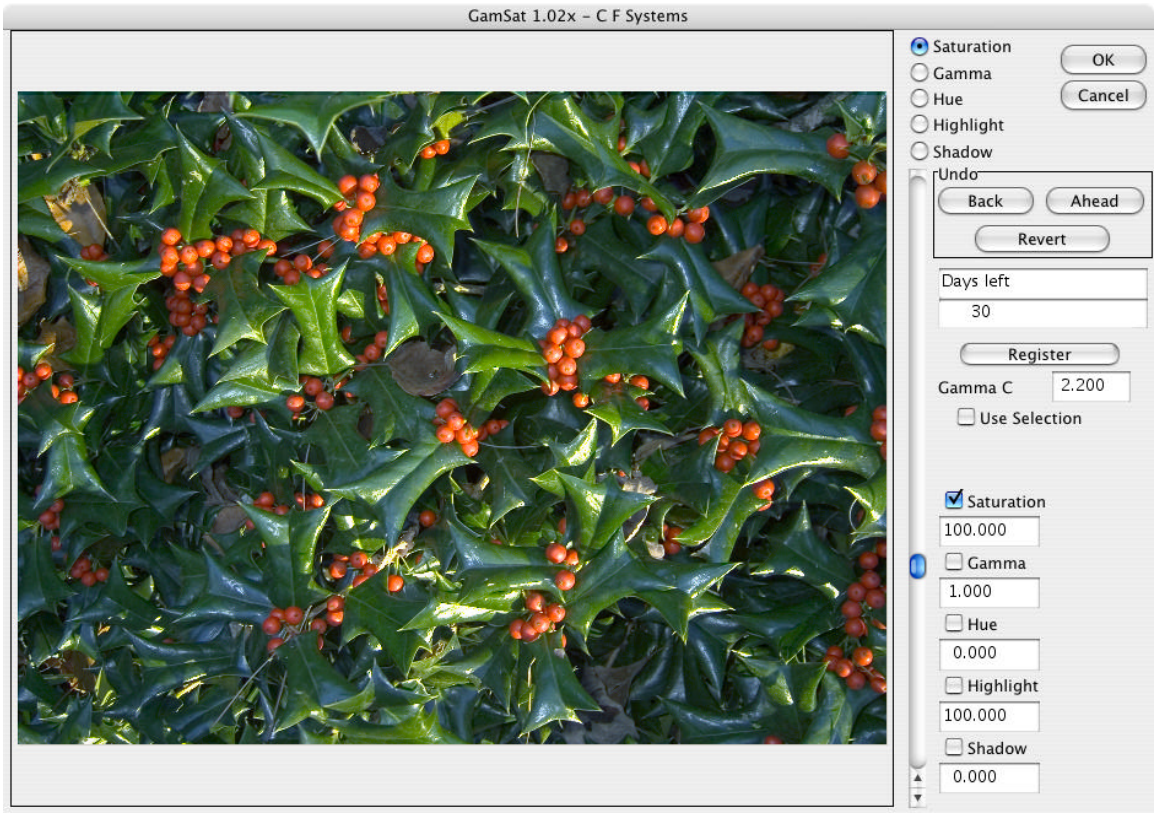
GamSat
Adobe Photoshop* Mac Plug-In
User's Manual
Release 1.02
November, 2007

David Dunthorn
www.c-f-systems.com

Fast Track

First, install the correct GamSat.plugin file in the Photoshop filters folder (for more detail see Installation). **GamSat** is intended for use with unaltered images and is generally much less effective on an image that has already been "corrected" in Photoshop.



We recommend using our **ColorPos** or **ColorNeg** plug-ins to get a good starting image that has color integrity before using **GamSat**. Images from those sources will already be in 16-Bit/Channel RGB color format, which **GamSat** requires. If you start with an 8-Bit/Channel image, it will have to be converted (Image Mode 16-Bits/Channel)

before **GamSat** can be used (more about the best way to do that below). Then start the C F Systems Filter **GamSat** (for more detail see Using GamSat). You should see something similar to the large dialog box shown above.

At this point you can try the controls. The scrollbar individually adjusts saturation, gamma, hue, highlight, and shadow. Which control the scrollbar adjusts is set by the radio buttons above the scrollbar or by clicking in the appropriate value box. The checkbox above each value box controls whether the corresponding adjustment is actually used, so its primary function is to allow seeing the preview image with and without the change. When you check a value on, it will also change scrollbar control to that value.

Although these adjustments all represent departures from true color integrity, the adjustments will be made while preserving color integrity insofar as that is possible, resulting in enhanced images that have a more natural look than if the adjustments were done by typical methods. For an idea of what this means, see how the image has changed with the adjustments shown in the dialog box below.

The action of **GamSat** is slow compared with our other plug-ins, but we have managed to speed up version 1.02 to that it typically takes less than $1/5^{th}$ the time of version 1.00. You still may have to wait a little to see a change reflected in the preview image, and large image files still take longer than **ColorPos** or **ColorNeg** to do the final conversion when you click OK to return to Photoshop.

The demonstration version of **GamSat**, which can be converted to a paid version, expires in 30 days after first use. (See below and ReadMe.txt for details.) To obtain the paid version of **GamSat**, purchase a key for the **ColorNeg** group for PC or the **ColorNeg** group for Mac. The key that you receive will also work with two other plug-ins, **ColorNeg** and **ColorPos**. If you already have a key purchased for use with any of those plug-ins, that key will work with **GamSat**. PC and Mac versions do require a separate key, however.

*As used in this manual, Adobe and Photoshop are registered trademarks of Adobe Systems, Inc.

Introduction

C F Systems **GamSat** is a Photoshop filter plug-in that is intended to operate on positive images output from our **ColorNeg** and **ColorPos** plug-ins. It is used to make adjustments to the saturation, gamma, hue, highlight, and/or shadow of a color image to enhance its appearance without unnecessarily damaging its color integrity. The importance of color integrity and how it is easily lost while doing commonly recommended Photoshop adjustments is explained in
http://www.c-f-systems.com/ColorIntegrity.html
and in mathematical terms in *Color Integrity CFS-243* available at
http://www.c-f-systems.com/PhotoMathDocs.html.
These adjustments are typically done incorrectly in Photoshop.

Version 1.02 of **GamSat** is available for both PC and Mac.

Legal Notice

Installation

We have not provided an installation program, but have taken the same approach as Adobe has in distributing "RAW" conversion plug-in revisions. You have downloaded a zip archive file. Put the zip file on your desktop and double-click to expand it as a folder with the same name. This folder will contain this PDF manual, addendum manual (if any), a ReadMe.txt file, GamSatKey.txt, and the plug-ins, GamSat.plugin XXX.zip. All that really has to happen is the correct GamSat.plugin file needs to be placed in the Photoshop filters folder. Locate the proper plug-in file archive for your Mac/Photoshop combination:

Photoshop 7, CS, or CS2: GamSat.plugin CW.zip
Photoshop CS2 or CS3 PowerPC: GamSat.plugin XC PPC.zip
Photoshop CS3 (and higher), PowerPC or Intel: GamSat.plugin XC UNI.zip

Note that with some Mac/Photoshop combinations you have a choice.

Put the proper GamSat plugin archive (zip) file in the Photoshop filters folder, which typically can be found by bringing up Applications in Finder, double-clicking Adobe Photoshop x (where "Photoshop x" specifies the version of Photoshop), then double-clicking Plug-Ins and finally double-clicking Filters. Once the GamSat.plugin archive (zip) file has been placed in the Filters folder, double-click it to extract the GamSat.plugin. At this point you may remove the archive file (zip). Photoshop will automatically configure for **GamSat** the next time it is started. If your installation is not the default, you probably already know how to find the corresponding filters folder on your system. This completes installation. The Registration section describes the possible use of the GamSatKey.txt file.

Using GamSat

GamSat is intended to operate on positive images output from our **ColorNeg** and **ColorPos** plug-ins. The output from those plug-ins is already in the correct form. When not using those plug-ins, the requirement is that the working file *must* be in 16-Bits/Channel RGB mode (scanners which scan at 12-Bits/Channel and produce a 16-Bits/Channel file are fine). Most scanners deliver positive scans as "gamma-corrected" images by default. **GamSat** is intended to operate on gamma-corrected images. This correction gamma ("Gamma C") is nearly always 2.20. If this is not the case, you will be aware of it and you should set Gamma C in **GamSat** appropriately. Most users should studiously avoid changing Gamma C.

If the image cannot be obtained in 16-Bits/Channel mode, it is permissible to convert an 8-Bit/Channel image to 16-Bits/Channel using Image Mode 16-Bits/Channel. If you must convert an 8-bit image, there are several rules which will lead to better results if they are followed. If you plan to use Image Image Size to *increase* the number of pixels in the image, do so *after* converting to 16 Bits/Channel and *before* using **GamSat**. Also, if you plan to use sharpening filter treatments and you do *not* plan to increase the

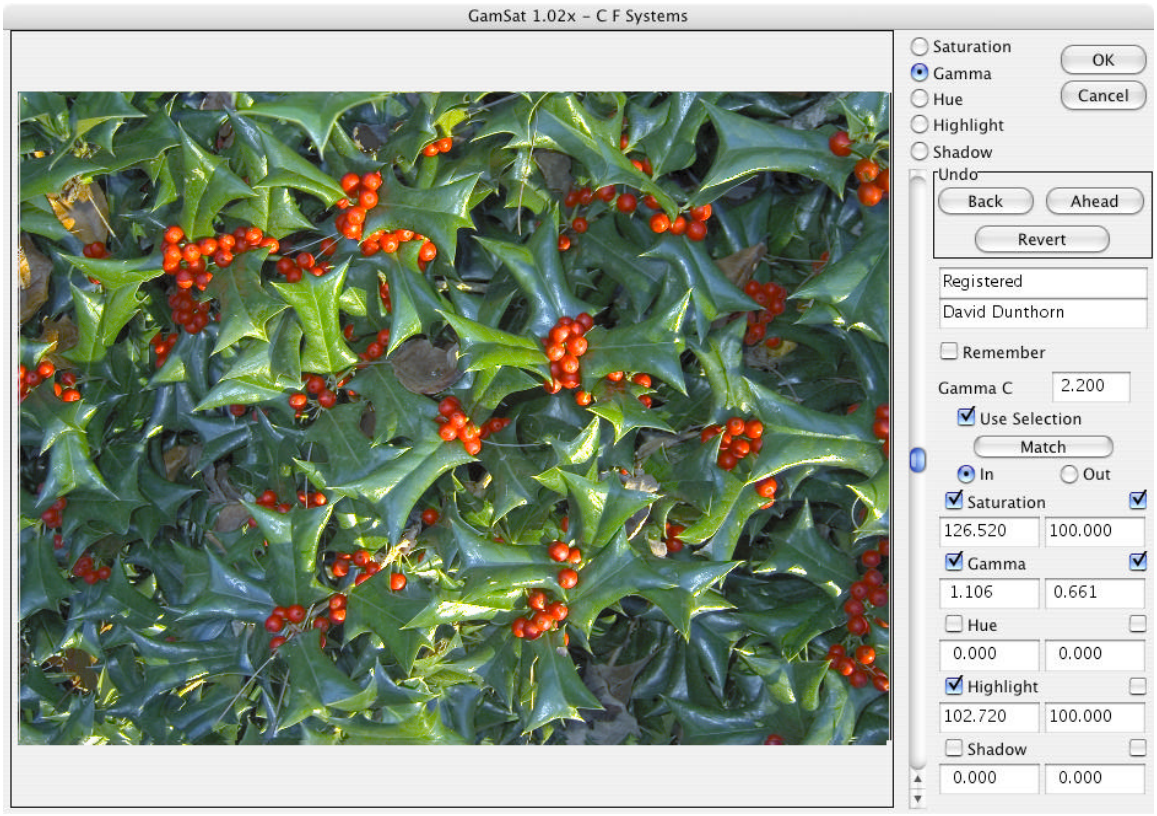
pixel count, do some or all of the sharpening *after* converting to 16 Bits/Channel and *before* using **GamSat**.

With the window with the working image active, use the Photoshop Filter menu: Filter→C F Systems→GamSat. The C F Systems entry should be near the bottom of the Filter menu. A window will appear that looks like the one shown above in **Fast Track**, where the first try at your positive image will replace the holly image in the above. At this point you can try the controls. The scrollbar will adjust saturation, gamma, hue, highlight, and shadow individually. The radio buttons above the scrollbar show which property the scrollbar controls. This can be changed either using the radio buttons or by clicking in the appropriate value box.

Values can also be directly entered into the appropriate box. Saturation can vary from 0 to 400, with 100 being normal; unchanged. Gamma can vary from 0.1 to 9.9 with 1.0 being normal (unchanged). Hue can vary from -89.9 to 89.9 with 0.0 being normal. Highlight can vary from 50 to 150 with 100 being normal. Shadow can vary from -25 to 25 with 0 being normal. The checkboxes above each of the value boxes indicates whether the value is to be used in forming the image, and affect both the preview and final images. The primary intent of these checkboxes is to allow easy comparison of a proposed change with the original image.

Adjusted Image

The dialog box below shows an adjusted version of the same image shown in the initial dialog box, above. The initial image of holly leaves and berries was taken under normal outdoor conditions and while the lighting was natural, it was also somewhat harsh. In the adjusted image the colors still retain their natural appearance but the harshness of the lighting has been reduced and the resulting image is more suitable for many applications. Note the other differences between the two dialogs. The second dialog has been registered, showing the Remember checkbox in place of the Register button, as explained later. The second dialog also shows the use of selections:



Selections

Version 1.02 introduces the use of feathered selections in **GamSat**. The Use Selection checkbox regulates whether selections will be used or ignored. If no selection has been made before calling **GamSat**, it will not be possible to check this box. When the box is checked the existing value boxes apply to the areas inside the selection and a new set of value boxes appear for the areas outside the selection. Radio buttons also appear, showing whether In or Out of selection is currently controlled by the scrollbar. Initially, both inside and outside take the same values, but now they can be individually adjusted. The Match button adds the capability of matching the settings for the inside and outside areas at any time. When Match is pressed, if In has been selected then Out will take on the values of In, and vice versa.

In the example shown above the red holly berries were selected using a lightly feathered selection prior to calling **GamSat**. The green leaves (outside the selection) have been set to a reduced gamma (0.661) to even out the light and shadow. The berries (inside the selection) have been given both an increased gamma and increased saturation to make them stand out a bit more. The effect of this is make the image more decorative while retaining the feeling of naturalness. Please understand that this is an illustration. Any such adjustments are a matter of individual taste - they may appeal to one person but not to another.

Undo

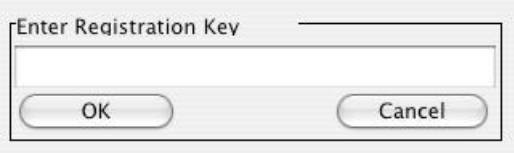
Version 1.02 also introduces Undo to **GamSat**. The undo feature operates in a fairly straightforward manner, and up to 50 steps are retained for undo (Back) and redo (Ahead). Note that scrollbar settings are saved for Undo only the scrollbar button is released. Revert takes you back to the setting when **GamSat** was initially called, but if no settings are changed after pressing Revert, it is possible to use Ahead or Back to return to the active sequence.

Speed

Version 1.02 of **GamSat** is much faster than previous version, but is still slower than our other plug-ins, **ColorNeg** and **ColorPos**. You may have to wait a bit to see a scrollbar change reflected in the preview image, and the final conversion will take longer than **ColorNeg** or **ColorPos** do when you click OK to return to Photoshop.

Registration

Pressing the Register button brings up a dialog box:



After typing in the key code (or see paragraph below for an alternate method) and pressing OK, ***you must also*** OK or Cancel out of **GamSat** to complete the registration. The ***next time*** you call up **GamSat**, your registration information will appear on the main dialog box.

We were unable to get copy-paste to work for the registration key code on the Mac,but there is a workaround for those who find hand-entering the long key too tedious and error-prone. If you are already a **ColorNeg** user and have your ColorNegPath.txt and ColorNegKey.txt files set up as required for registering , simply OK the registration box without entering anything for the key. Otherwise we have provided a GamSatKey.txt file which should be placed in the proper folder as explained just below. Then text edit

GamSatKey.txt so that it contains the key as a single line (you can copy and paste text to do this) and save the file. Then, when **GamSat** puts up its dialog box asking for the registration key, simply press the OK button. It is not necessary to leave the GamSatKey.txt file in place after this has been done, and we recommend that you do not. Remember that you will need to Cancel or OK out of **GamSat** and your registration will show the next time you use **GamSat.**

Registration File Location

Photoshop Mac apparently wants to find files in a specific place and that place varies, being different for Photoshop 7, CS, CS2, and CS3 which were used in developing the software.

Photoshop 7 and Photoshop CS

The location for the registration file (GamSatKey.txt) for Photoshop 7 and Photoshop CS is very odd and very nearly the same. To get there, double-click Applications in Finder, then double-click Adobe Photoshop x, where x is either 7 or CS. Now locate the Adobe Photoshop x icon you might normally double-click to start Photoshop, but do *not* double-click. This icon may or may not have .App after the Adobe Photoshop x. Although it does not appear so, this icon is really a folder. Single click with the right mouse button (or control-click on a single button mouse) to bring up a menu of options. Click on the option Show Package Contents. This will open a new Finder window with a folder Contents (and possibly other items). Double-click Contents. That will disclose several other folders. For Photoshop 7 The folder you want is MacOS, while for Photoshop CS, the folder you want is MacOsClassic. Put GamSatKey.txt in this folder and then text edit it so that it contains your registration key alone as the first line.

Photoshop CS2 and Photoshop CS3

These versions of Photoshop pick the root folder instead of the hidden folders described for Photoshop 7 and CS. The root folder is the one with a path that is a single slash, "/" often shown in Finder as Macintosh HD. Put the file GamSatKey.txt in the root folder, and then text edit it so that it contains your registration key alone as the first line.

The Remember Checkbox

Ordinarily it makes sense to start **GamSat** fresh each time, using default values (i. e. unchanged) for each of the parameters. However, it is sometimes necessary to apply the same or nearly the same changes to each of a series of similar images. The Remember checkbox provides for this. Check Remember before you OK out of **GamSat** and the next time **GamSat** comes up it will have retained the settings from the previous image as a starting point. When you uncheck Remember before OKing out of **GamSat**, next time up it will use the default values.