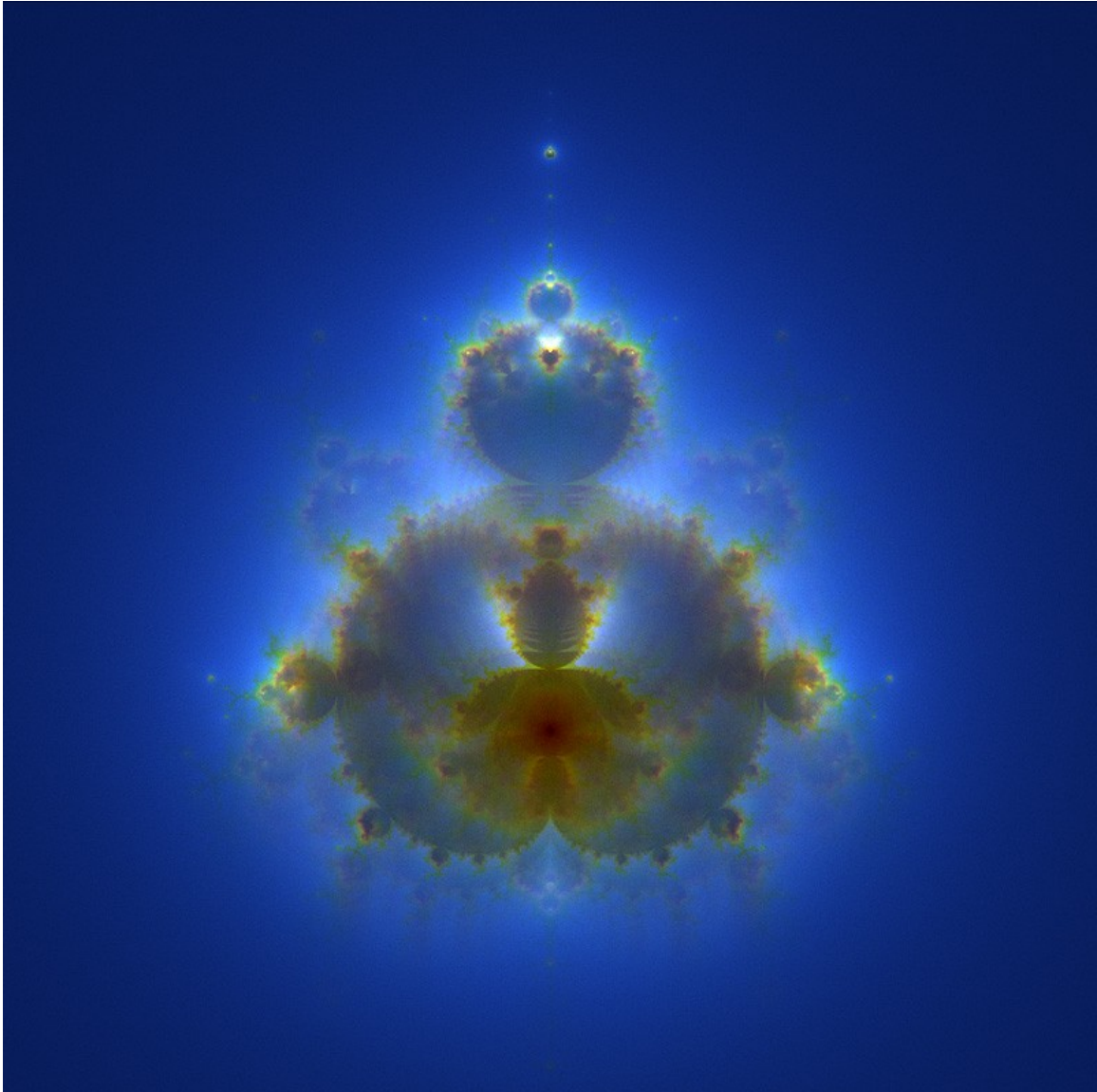


Buddhabrot Version 1.0 User Manual



Buddhabrot v1.0, © 2010 Richard Rosenman Advertising & Design.

Initial Release Date: 07/26/2010

Latest Update: --/--/----

INSTALLATION

Simply unzip buddhabrot.zip" and copy "buddhabrot.8bf" to your "\Photoshop\Plug-Ins\" folder, or whichever plugin folder your host program uses. Load your program, open an image, go to the filter menu and under "Richard Rosenman" select "Buddhabrot."

COMPATIBILITY

For program and OS compatibility information regarding Buddhabrot, please visit <http://www.richardrosenman.com/media/software/files/compatibility.pdf>

MINIMUM SYSTEM REQUIREMENTS

Buddhabrot will run on any PC capable of running Adobe Photoshop v4.0 or higher, or any applications compatible with Adobe's plugin specifications.

Buddhabrot will NOT run on Macintosh systems. This is unfortunately a compiler limitation, not a developer decision.

Buddhabrot has been specifically developed for use with high-resolution displays. Therefore a minimum display resolution of 1024x768 is required although a minimum display resolution of 1280 x 1024 x 24 bit color is recommended.

Buddhabrot works exclusively on 24 bit (8 bits per channel) and 48 bit (16 bits per channel) images. If you see the plugin greyed out in your plugins menu, you are most likely not in a compatible color mode.

Buddhabrot is 100% multithreaded and fully capable of using an unlimited number of rendering cores. In addition, Buddhabrot can use up to 3GB of RAM under 32bit Windows (2000, XP, Vista) and up to 4GB of RAM under 64bit Windows. A minimum processor speed of 800 MHz is recommended and a minimum memory capacity of 512 MB is required for using Buddhabrot.

KNOWN BUGS

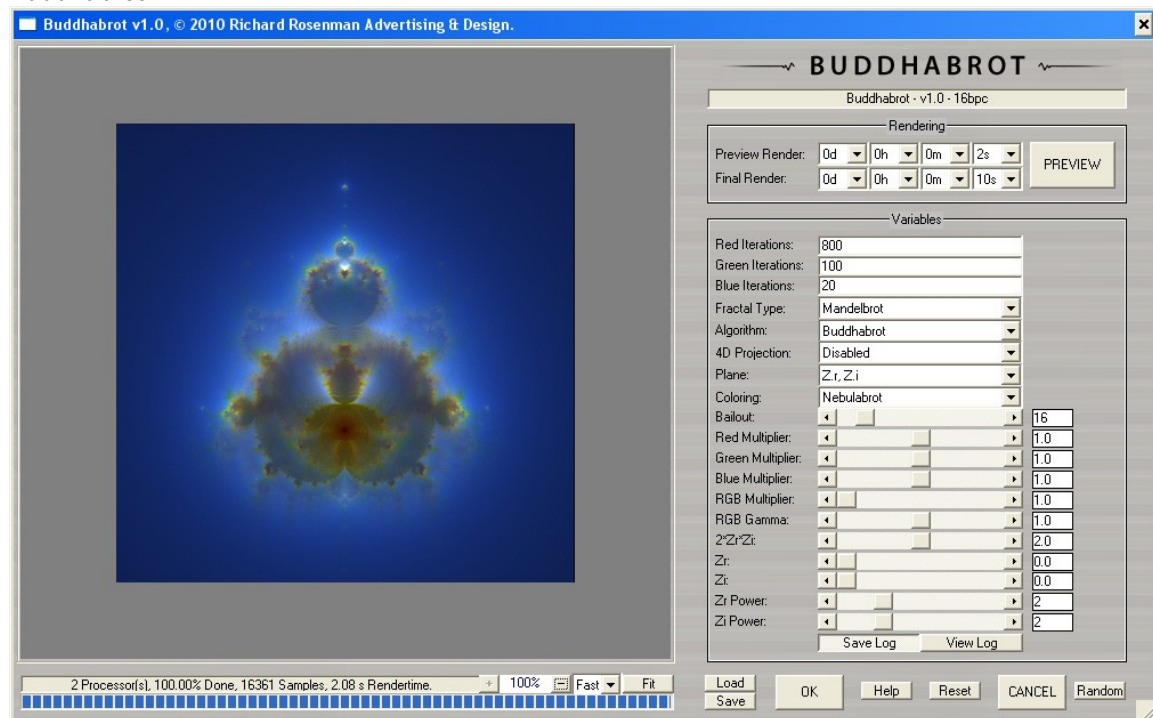
v1.0 – When reaching extremely large sample counts, the samples counter may experience overflow errors resulting in incorrect results. This, however, does not affect fractal generation.

BUDDHABROT HOMEPAGE

<http://www.richardrosenman.com>

OVERVIEW

Buddhabrot – v1.0 User Interface



Buddhabrot is a powerful fractal exploration filter for Adobe Photoshop® based on the unique Mandelbrot set rendering technique developed by Melinda Green. Instead of plotting pixels based on the number of iterations used, they are colored according to density counts. In addition, if each color channel is iterated differently, the rendered image appears to have a multi-colored, nebula-like effect much like modern NASA galaxy renders. The single color channel rendering technique has been termed the Buddhabrot by Lori Gardi due to its similarity to the Hindu God 'Ganesha', while the multi-channel rendering technique has been termed the Nebulabrot due to its similarity to colorful Nebulas.

This filter is capable of plotting various Buddhabrot / Nebulabrot fractals along with their inverse counterparts, negative equivalents, and alternate 4D projection planes. Buddhabrot's coloring algorithms generate vibrant fractal images using traditional Buddhabrot and Nebulabrot rendering techniques. The filter is 100% multi-threaded for multi-core workstations and offers native 48 bit color capabilities. Buddhabrot supports numerous unique features including time-based fractal generation, combined multiple fractal rendering, independent color-channel brightness / gamma control, and numerous variable mutation options. Finally, Buddhabrot is capable of generating extremely high resolution fractals, in excess of 900 megapixels.

USAGE

Control Groups

The Graphical User Interface (GUI) is structured into groups of controls which belong to a logical unit. Individual controls or entire control groups may be enabled or disabled, depending on the settings of other controls.

Rendering

This section contains all the controls related to the fractal's time-based rendering system. Buddhabrot works on a rendertime system meaning that the filter will continue to sample points as long as you allow it. This can be days, hours, minutes or seconds.

Preview Render: This dropdown specifies how long to render the preview window for using days, hours, minutes and seconds.

Final Render: This dropdown specifies how long to render the final image for using days, hours, minutes and seconds.

Preview: This button will generate a new fractal based on the current settings.

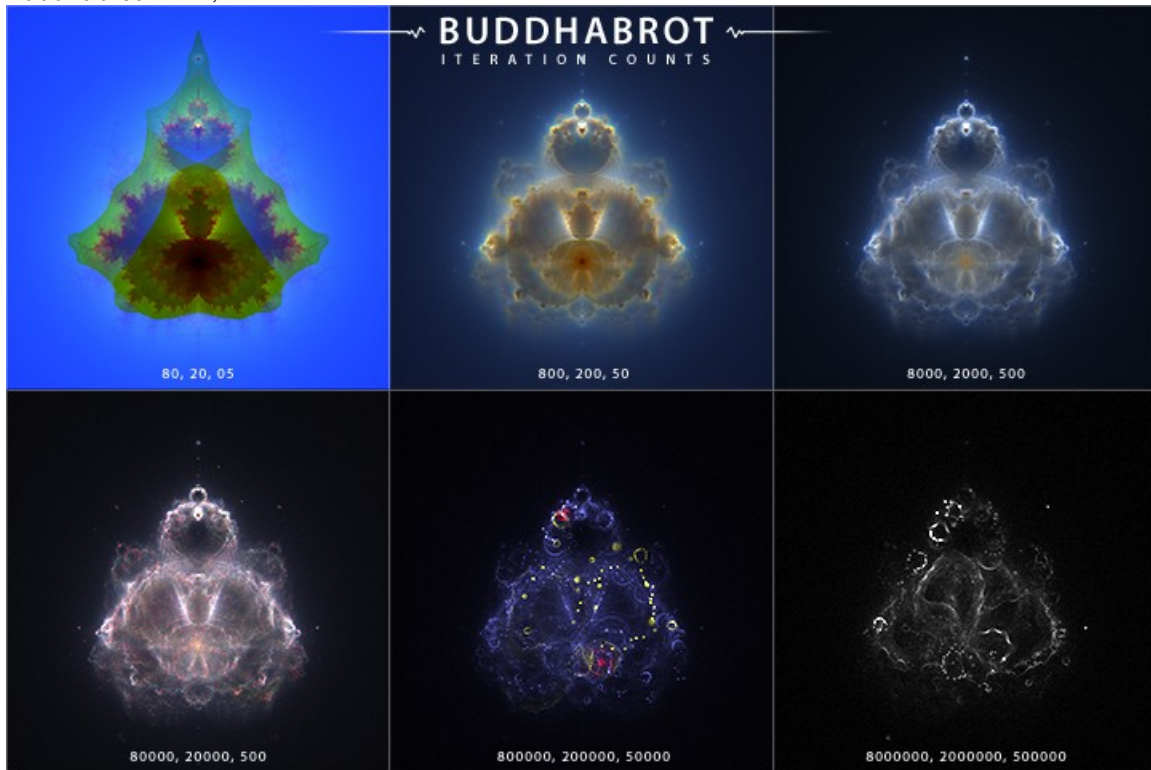
Variables

This section contains all the controls related to the fractal's iterative count, type, algorithm, 4D projection, plane, coloring system and variable mutation options.

Red, Green, Blue Iterations: These entry boxes specify how many iterations each color channel will compute when in Nebulabrot mode. This produces varying luminance values computed by each color channel that, when combined, create colorful and unique images. Higher iterations produce more richly-detailed images that require longer rendertimes while lower iterations produce more colorful images that contain less detail. Combinations of higher and lower iterations often produce the most striking images.

BUDDHABROT

Buddhabrot – Red, Green & Blue Iteration Values



Fractal Type: This dropdown specifies which fractal to generate. Buddhabrot supports eight unique fractals (variants of the Mandelbrot set), and three multi-combinations of these. When properly combined with the mutation variables, millions of variations are possible. Because each fractal has its own unique properties and will render differently from one another, Buddhabrot provides advanced color control features for tweaking. The inverse fractals, for instance, will render dramatically darker than their normal counterparts so the RGB Multiplier and RGB Gamma can help increase visibility.

— BUDDHABROT —

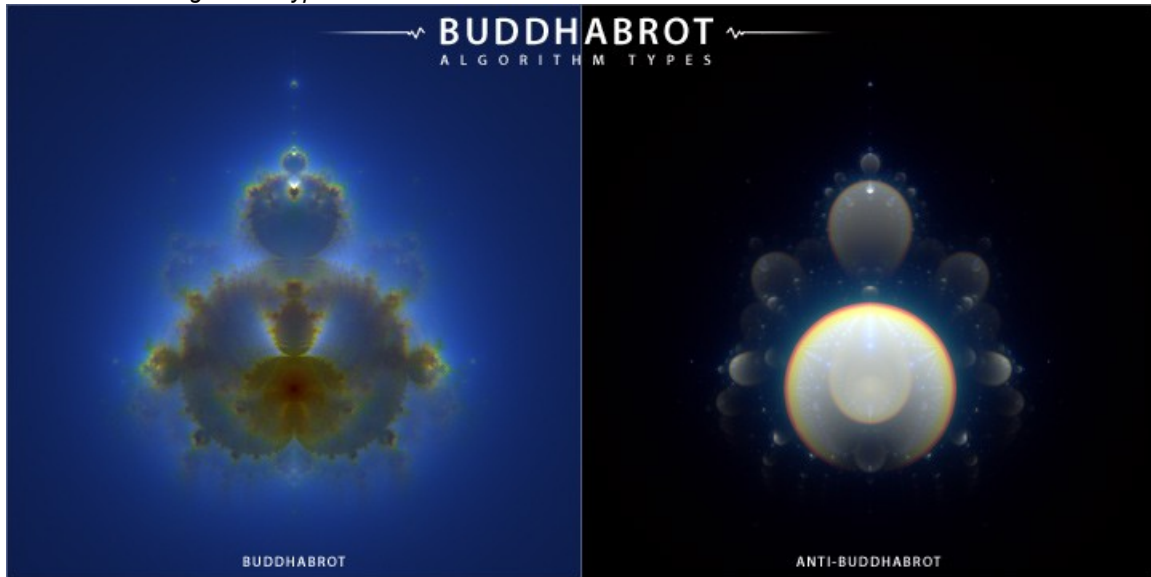
Buddhabrot – Fractal Types



—~ BUDDHABROT ~—

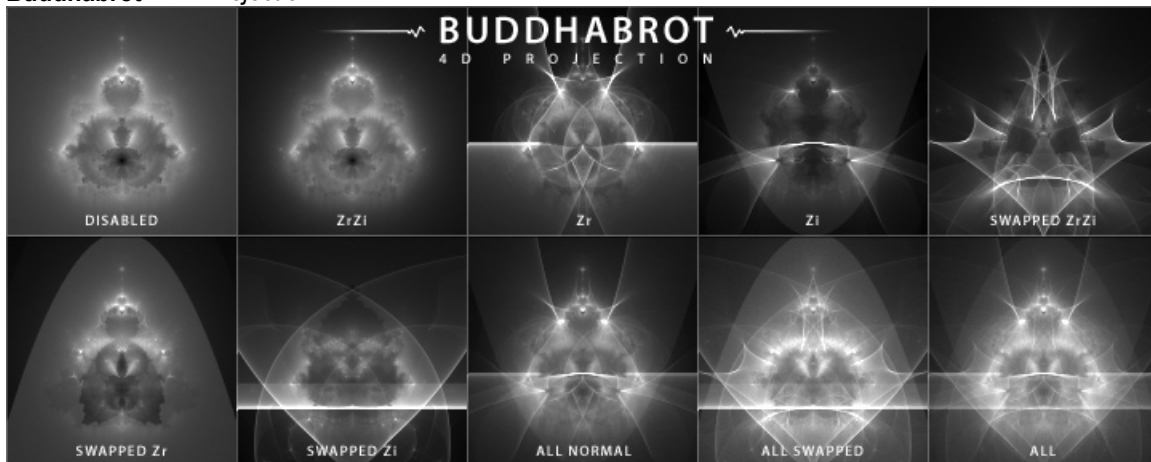
Algorithm: The traditional Buddhabrot algorithm traces points that escape but if points that *do not* escape are traced instead, the 'Anti-Buddhabrot' is produced. Once again, combining this algorithm with many of the other features produces fascinating images.

Buddhabrot – Algorithm Types



4D Projection: This dropdown specifies the real and imaginary projection. The Buddhabrot does not have to be limited to points sampled from the Z trajectory. By engaging 4D projection, points from the entire 4D domain can be sampled resulting in much higher levels of detail, especially when dealing with inverse fractals.

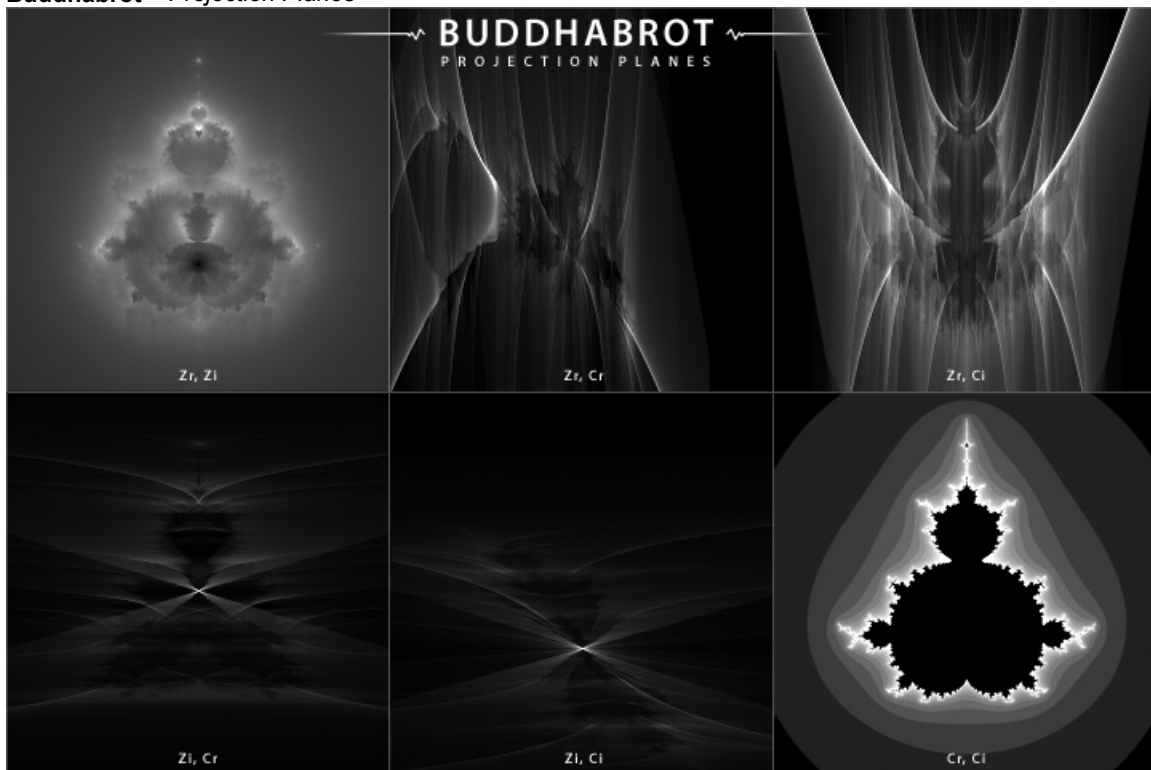
Buddhabrot – 4D Projection



Plane: This dropdown specifies the real and imaginary plane. Once again, points need not be limited to just the $Z=0$ plane and Buddhabrot provides the option to plot onto alternate planes. Rendering with 4D Projection on alternate planes can result in much higher levels of detail.

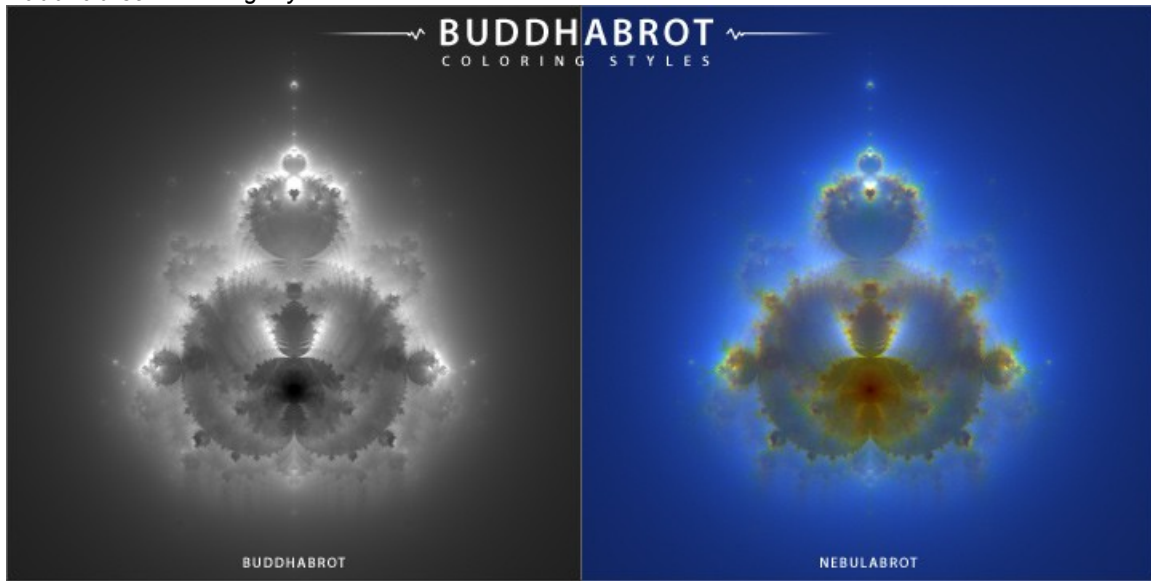
BUDDHABROT

Buddhabrot – Projection Planes



Coloring: This dropdown specifies what coloring system to use. The traditional Buddhabrot coloring system iterates all three color channels together, while the Nebulabrot allows each color channel to be iterated separately thus producing beautifully colored images. The result is a grayscale vs. multi-color image.

Buddhabrot – Coloring Styles



Bailout: This slider specifies the fractal bailout (escape radius).

Red, Green, Blue Multiplier: These sliders control the respective color channel intensities.

RGB Multiplier: This slider controls the global pixel intensity.

RGB Gamma: This slider controls the pixel mid-tone luminance.

2*ZiZr: This slider mutates the '2' in this listed variable.

Zr: This slider mutates this listed variable.

Zi: This slider mutates this listed variable.

Zr Power: This slider mutates this listed variable.

Zi Power: This slider mutates this listed variable.

Save Log: This button will save a log file on final render completion.

View Log: This button will display the current log file contents

Progress Bar: This bar displays a visual representation of the fractal generation progress.

Zoom: This button allows you to adjust the resolution of the preview window.

Fit: This button will fit the largest possible resolution in the preview window.

Statistics: This box will display the number of system cores, samples and time used for processing.

Load/Save: These buttons allow you to load and save all currently specified settings.

Ok: This button generates the fractal.

Help: This button displays this help information.

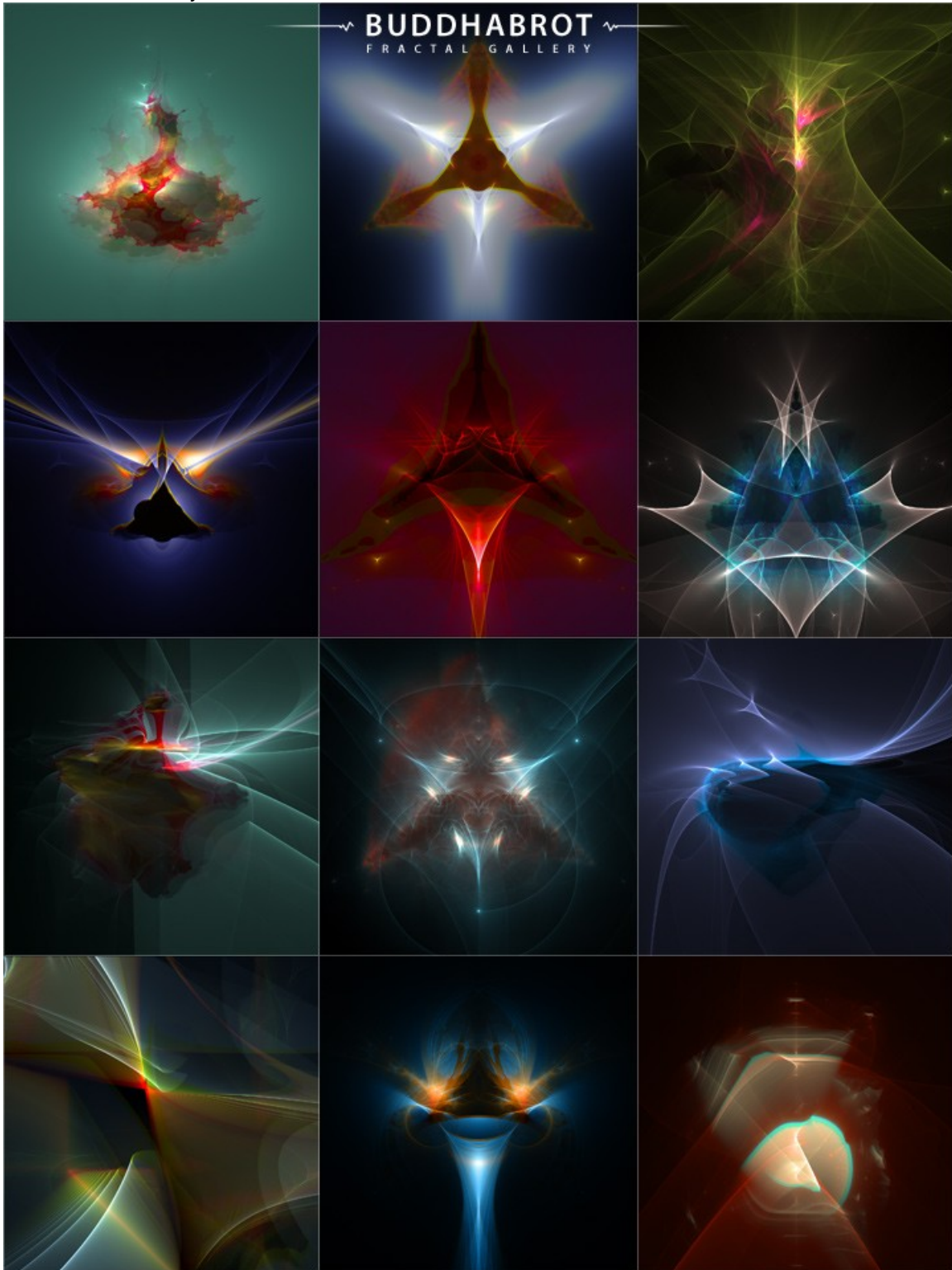
Reset: This button will reset all values to default.

Cancel: This button exits the filter.

Random: This button will set all controls to random values for unique fractals.

—~ BUDDHABROT ~—

Buddhabrot – Gallery



FEEDBACK

If you have any feedback regarding Buddhabrot, please feel free to let me know at richard@richardrosenman.com.

PRODUCT GALLERY

<http://www.richardrosenman.com/project/?cid=224>

SPECIAL THANKS

Martin Vicanek
Paul Bourke
Melinda Green
Lori Gardi
Alex Boswell
Aaron Davidson
Jared Tarbell
Wikipedia

CONCLUSION

This concludes the Buddhabrot v1.0 user manual.