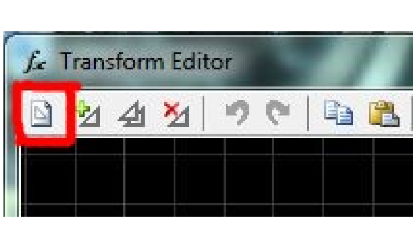
Apophysis Tutorial – Gnarls

by ~Drummerboy08

For Any version of Apophysis
Made Using Apophysis 7x

Gnarls are, to my knowledge, one of the more popular forms of fractal art, yet I have not seen any tutorials on how to create a Gnarl. The purpose of this tutorial is to help you create your own Gnarl, as well as understanding how it is made so you can can branch out and experiment with them for yourself. However, it is worth nothing that gnarls are a fairly difficult technique to master, as they are quite sensitive to those not careful, and being such, this is quite a long tutorial, please take your time to understand it fully, and have fun! Let's begin by opening the Transform Editor and creating a new blank flame.

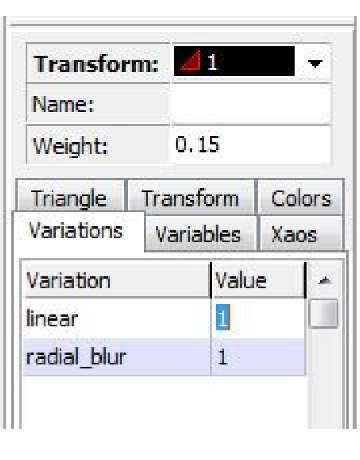


Step 1: Change the transform's **weight to 0.15**. In transform 1, switch to the Variations tab. Clear out linear3D and input the following values:

Linear = 1
Radial_Blur = 1

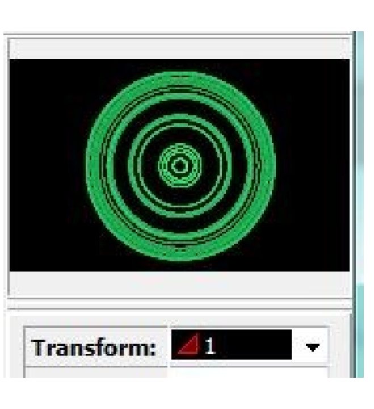
In the Variables Tab, input
radial_blur_angle = 1

Your result should match the one at the right.



Transform: 1
Name:
Weight: 0.15

Variation	Value
linear	1
radial_blur	1

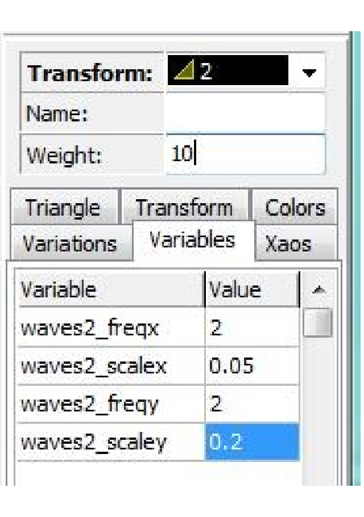


Transform: 1

Step 2: Create a new transform 2. Clear out linear3D input the following values:

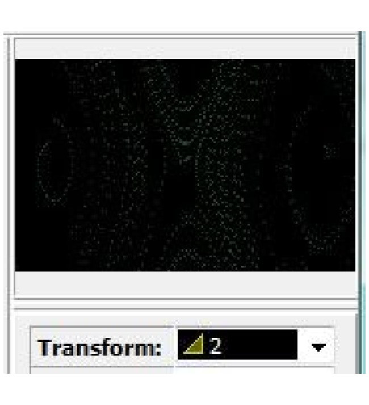
Waves2 = 1
waves2_freqx = 2
waves2_scalex = 0.05
waves2_freqy = 2
waves2_scaley = 0.2
Transform weight = 10

Its not looking like a whole lot right now, just a few points across the frame. That will change shortly.



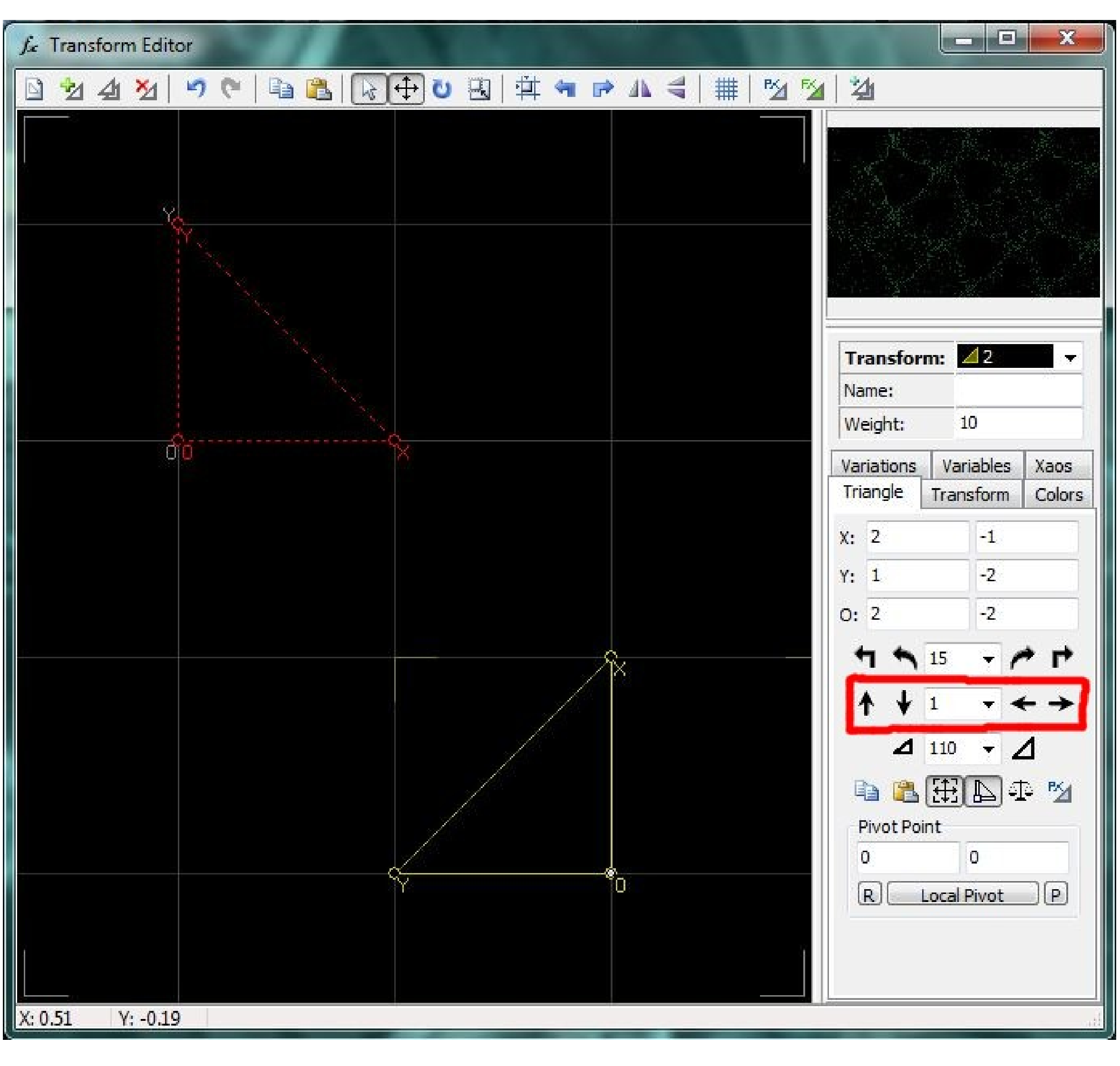
Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	2
waves2_scalex	0.05
waves2_freqy	2
waves2_scaley	0.2



Transform: 2

Step 3: Set the **zoom to -1.5** or similar value. This will aid in seeing the gnarls as they form. Select Transform 2. In the Triangle tab, **rotate the triangle 90 degrees counterclockwise**. Move the triangle **down and to the right by 2 units**(not 0.2, you will have to change the movement value.)

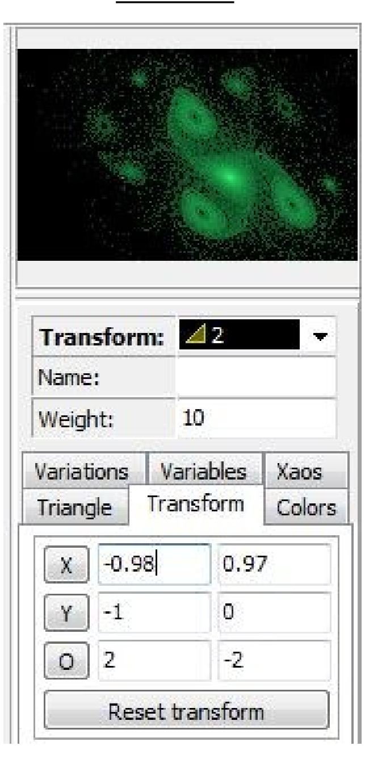


Transform: 2
Name:
Weight: 10
X: 2 -1
Y: 1 -2
O: 2 -2
15
1
110
Pivot Point 0 0
X: 0.51 Y: -0.19

Now for the tricky part. Grab the X corner of the triangle and move it very slowly. Keep the point close tho the corners of the grid, too far away and you will lose the gnarl effect, and any higher than 1 unit box above the O coordinate will phase out the fractal altogether. Keep the point nearest the corner of the grid 1 unit above the O point.

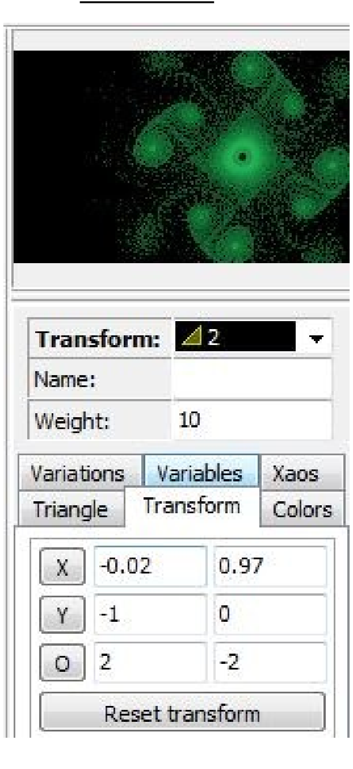
These are the coordinate points in the Transform Tab of several gnarls that can be made, all from the same starting position as stated above.

3 Gnarls



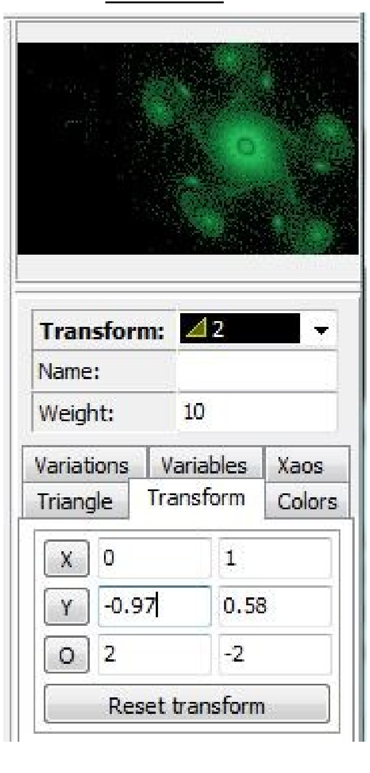
Transform: 2
Name:
Weight: 10
X: -0.98 0.97
Y: -1 0
O: 2 -2

4 Gnarls*



Transform: 2
Name:
Weight: 10
X: -0.02 0.97
Y: -1 0
O: 2 -2

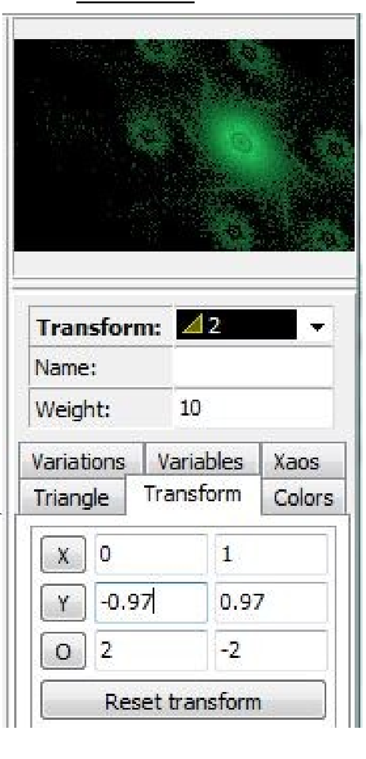
5 Gnarls



Transform: 2
Name:
Weight: 10
X: 0 1
Y: -0.97 0.58
O: 2 -2

It is worth noting here that gnarls are very touchy. Very small changes in the numeric values dramatically alter the appearance of the whole fractal. When experimenting with changing the values, I recommend first dragging the X or Y points around the grid, but ALWAYS move them independently. To move them both just gives a result that can be attained otherwise, except that the values for it are more difficult to work with. Once you find your shape that you like, in the transform tab, manually change the values by units of 0.01 or 0.001 at a time, until you find a result that suits you.

6 Gnarls



Transform: 2
Name:
Weight: 10
X: 0 1
Y: -0.97 0.97
O: 2 -2

*After you have spent some time getting to know the limits of the Waves2 variation, as well as its many surprises, input the values for 4 Gnarls, as in the image above. This is the one I will be using for the rest of the tutorial.

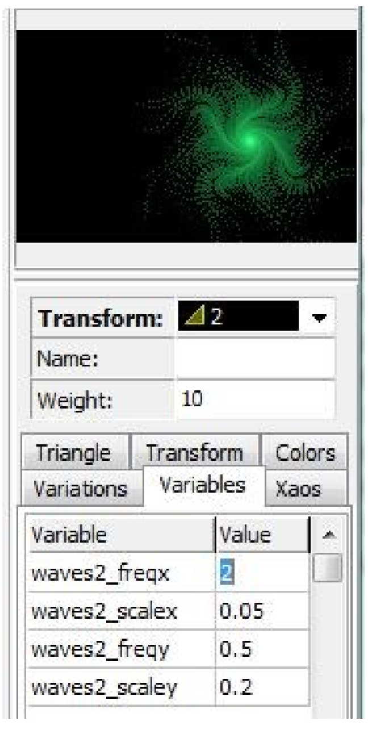
Step 4: Now we are going to see what happens when you change the variables with a set triangle positioning. With the 4 Gnarl triangle position, select Transform 2 and switch to the variable tab.

Input the following value. Leave the rest as they were:
waves2_freqy = 0.5

Now drag the value of **waves2_freqx** to both high numbers, as well as low numbers, well into negative values. Watch what happens to the fractal as you change it; it increases the number of total gnarls in the whole fractal, while still retaining the base of 4 from the absolute center.

The following are examples of several different values of the above.

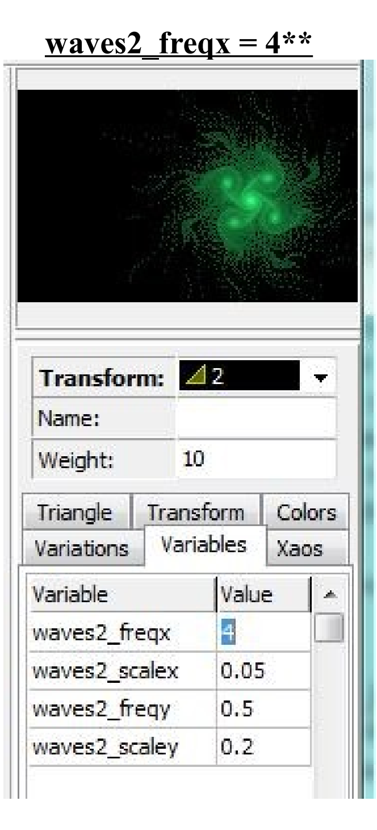
waves2_freqx = 2



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	2
waves2_scalex	0.05
waves2_freqy	0.5
waves2_scaley	0.2

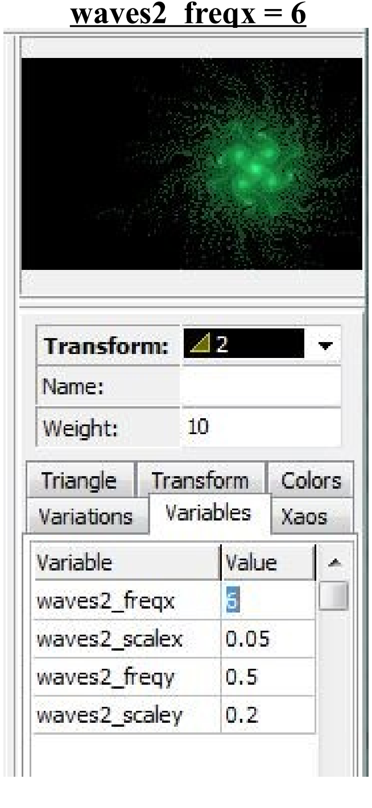
waves2_freqx = 4**



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	4
waves2_scalex	0.05
waves2_freqy	0.5
waves2_scaley	0.2

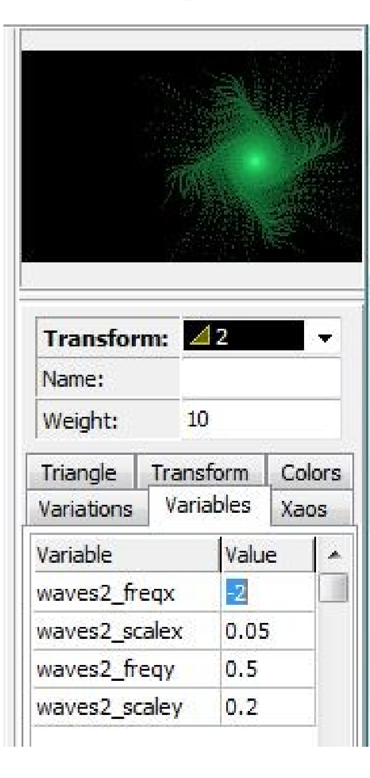
waves2_freqx = 6



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	6
waves2_scalex	0.05
waves2_freqy	0.5
waves2_scaley	0.2

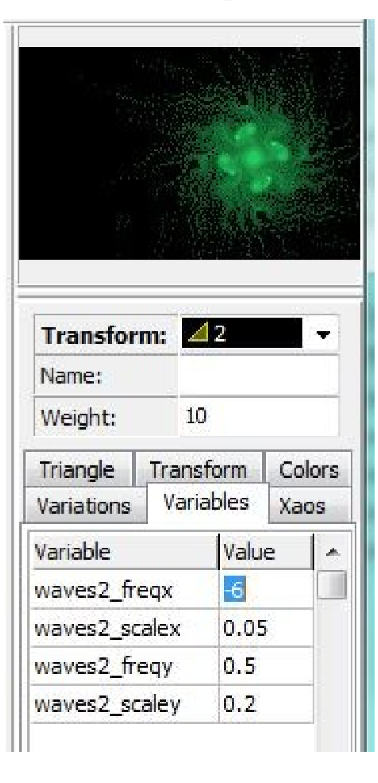
waves2_freqx = -2



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	-2
waves2_scalex	0.05
waves2_freqy	0.5
waves2_scaley	0.2

waves2_freqx = -6

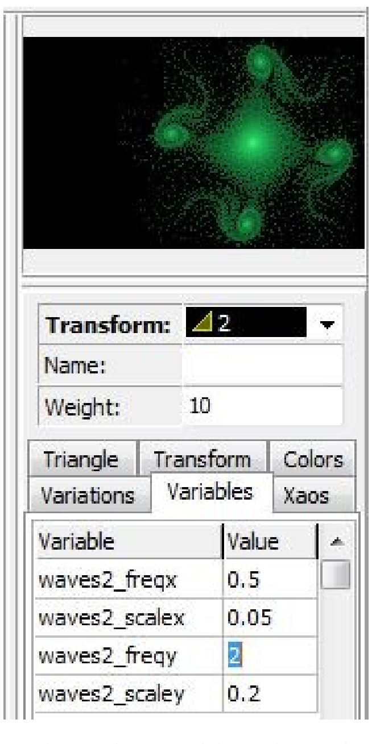


Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	-6
waves2_scalex	0.05
waves2_freqy	0.5
waves2_scaley	0.2

And now to swap the values of the two variables:

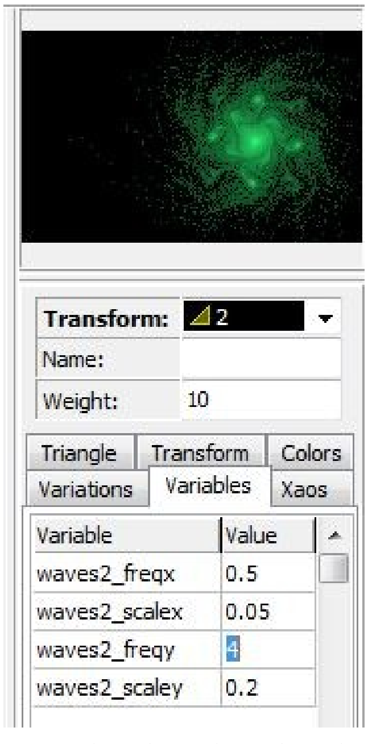
waves2_freqy = 2



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	0.5
waves2_scalex	0.05
waves2_freqy	2
waves2_scaley	0.2

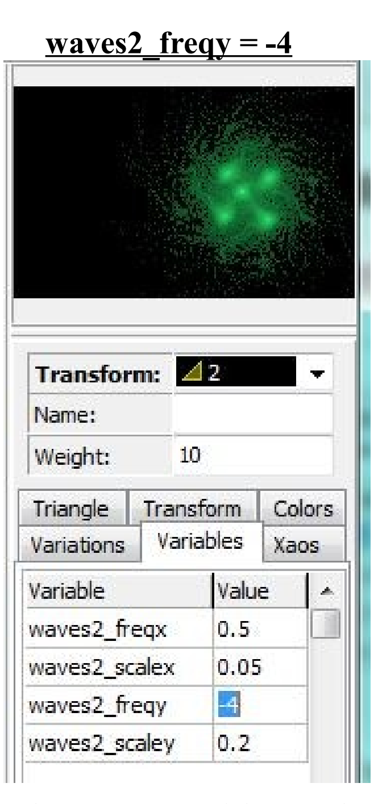
waves2_freqy = 4



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	0.5
waves2_scalex	0.05
waves2_freqy	4
waves2_scaley	0.2

waves2_freqy = -4



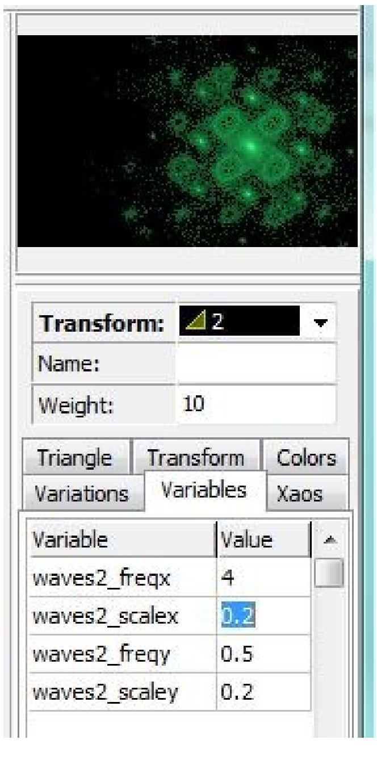
Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	0.5
waves2_scalex	0.05
waves2_freqy	-4
waves2_scaley	0.2

Notice what making the value to negative does: it makes the gnarls appear to swirl towards the middle, making the gnarls much tighter, rather than the looser positives, where they seem to come *from* the middle.

Now, for the last set of variables, the scale, use the variables marked **.

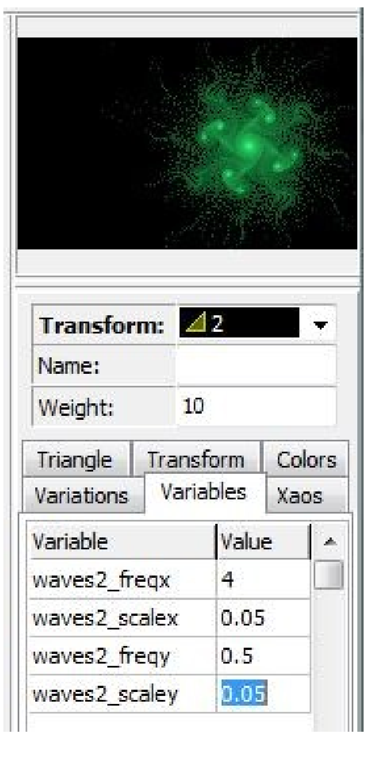
waves2_scalex = 0.2
waves2_scaley = 0.2



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	4
waves2_scalex	0.2
waves2_freqy	0.5
waves2_scaley	0.2

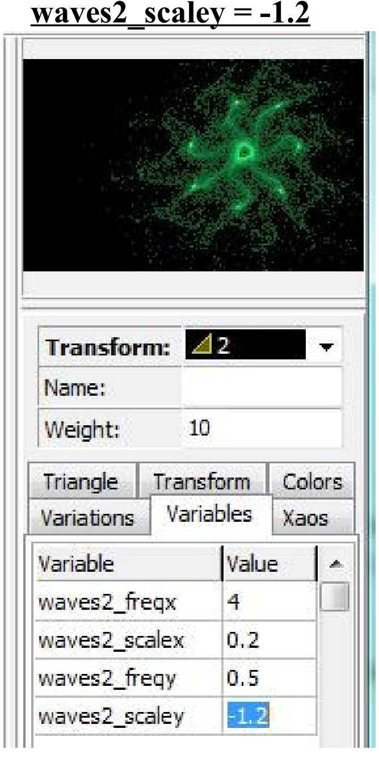
waves2_scaley = 0.05
waves2_scaley = 0.05



Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	4
waves2_scalex	0.05
waves2_freqy	0.5
waves2_scaley	0.05

waves2_scaley = 0.2
waves2_scaley = -1.2



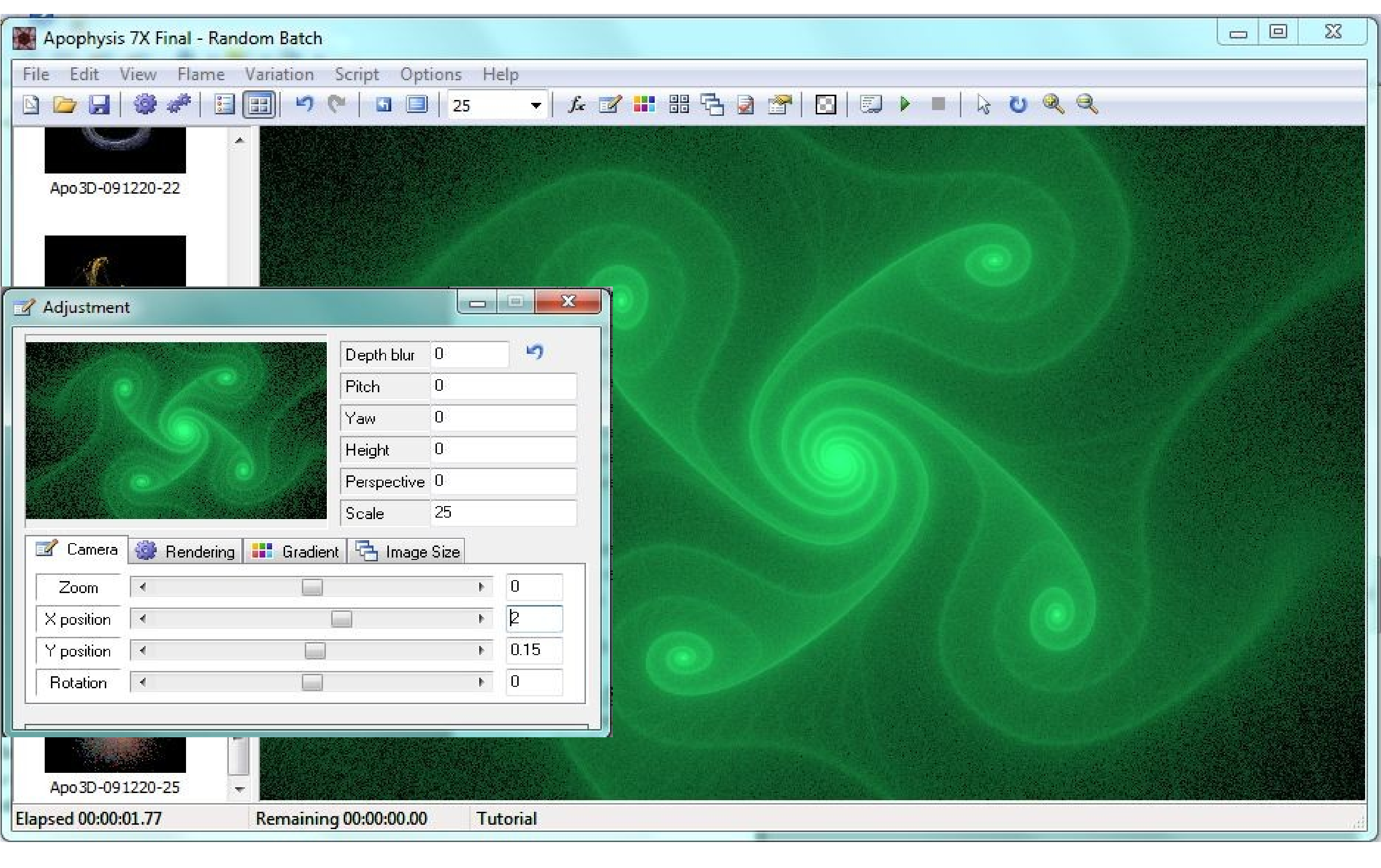
Transform: 2
Name:
Weight: 10

Variable	Value
waves2_freqx	4
waves2_scalex	0.2
waves2_freqy	0.5
waves2_scaley	-1.2

Notice how altering the variables independently tend to just change the number of additional gnarls from each gnarl, while combining them both gives you some really strange effects with gnarls from the main.

**We will use these values to continue on.

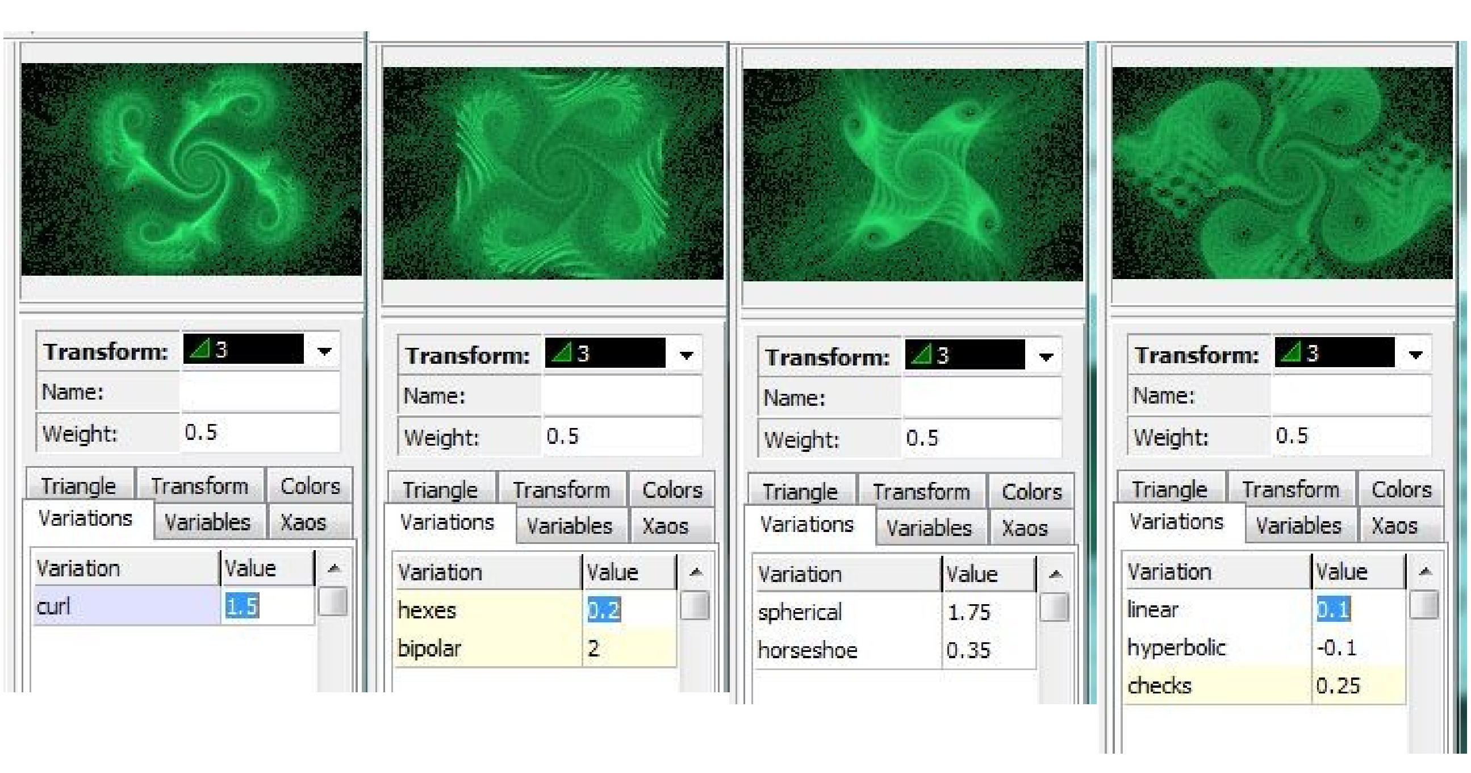
Step 5: Ok, you should now have a working understanding of how the triangle must be set up to create the gnarl, as well as knowledge of the various numbers and shapes of gnarls that can be produced. To start, we want to get the gnarl into a better view, larger and more centered. **Return the Zoom to 0 and position the fractal so it is centered in the frame.** The positioning doesn't have to be perfect, just get it so that you can see the whole gnarl in the preview window.



25
Depth blur 0
Pitch 0
Yaw 0
Height 0
Perspective 0
Scale 25
Zoom 0
X position 2
Y position 0.15
Rotation 0
Elapsed 00:00:01.77
Remaining 00:00:00.00
Tutorial

Now, for the fun part. We are going to experiment with texturing the gnarl. Create a new Transform 3, and clear out Linear3D. This part is where I turn you loose, as it is more or less all personal preference at this point. Choose just about any variations you want, and click and drag the value and watch what happens as you do so. Play around with it, try variations you don't use often, the results for each one are all very different than in other flames, where you see that form appear. Use multiple variations in the same transform. Add more transforms, you can even go and change the variations used in Transform 1. The possibilities are limited only to how much you want to play with it.

Here are just a few examples of what can come out of changes only in the 3rd transform.



Transform: 3
Name:
Weight: 0.5

Variation	Value
curl	1.5

Transform: 3
Name:
Weight: 0.5

Variation	Value
hexes	0.2
bipolar	2

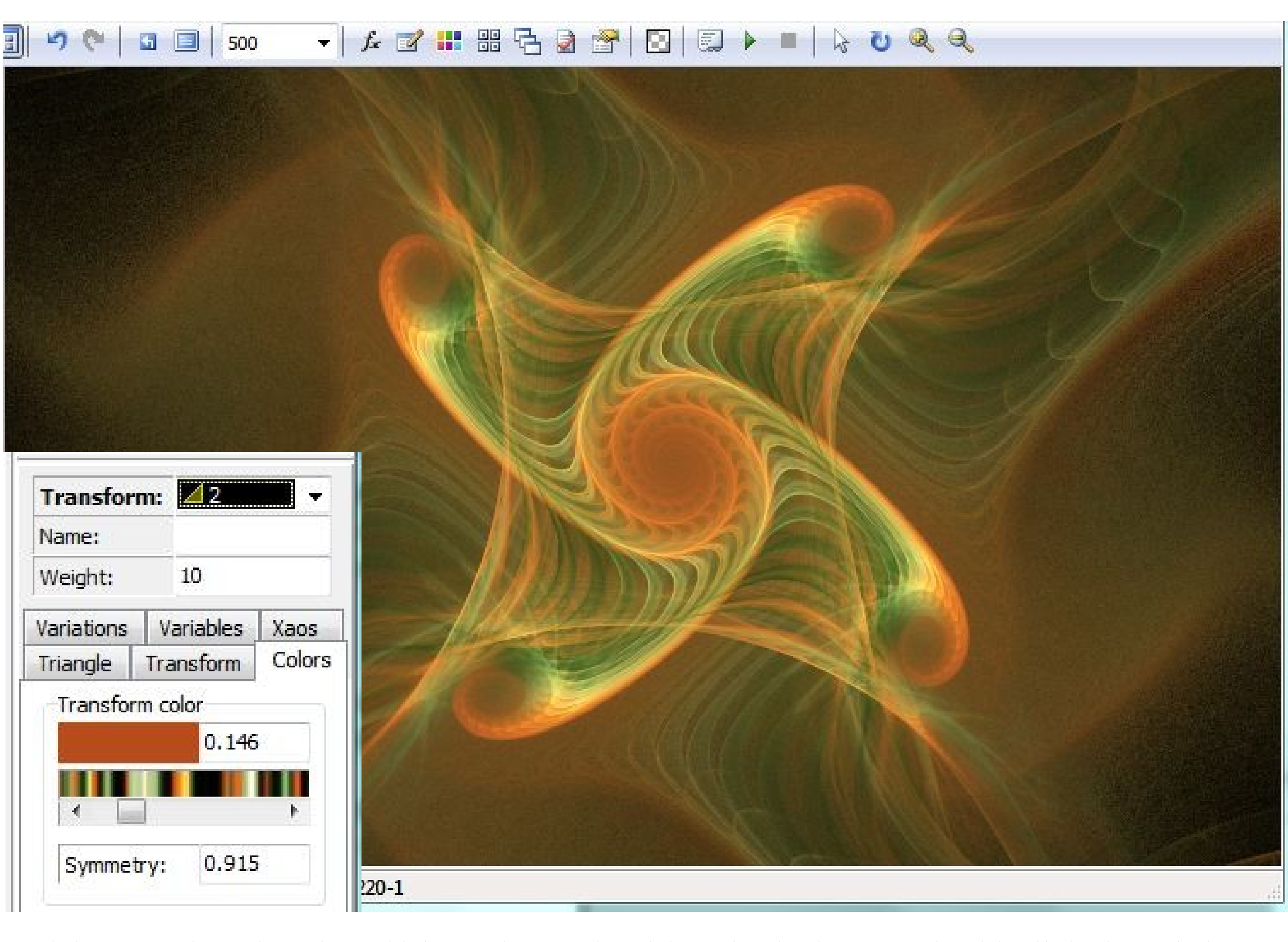
Transform: 3
Name:
Weight: 0.5

Variation	Value
spherical	1.75
horseshoe	0.35

Transform: 3
Name:
Weight: 0.5

Variation	Value
linear	0.1
hyperbolic	-0.1
checks	0.25

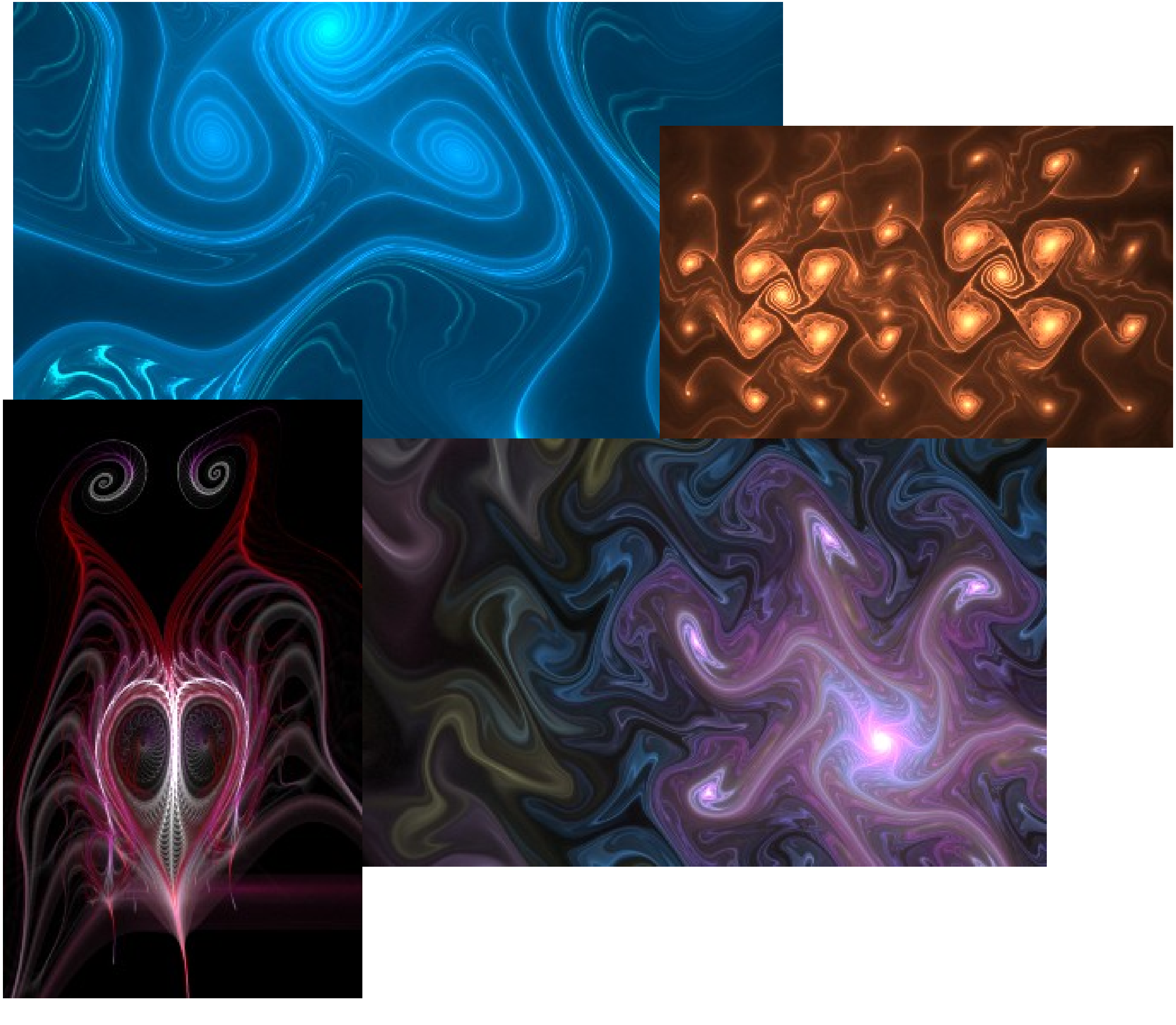
Step 6: Now for the last part, coloring the fractal. Start by choosing a gradient that you like, then select transform 2. input the following value:
Symmetry = 0.915
Leave the symmetry of all other transforms at 0 for now. Take the color bar, and drag it slowly, and watch how it changes the color of the fractal.



500
Transform: 2
Name:
Weight: 10
0.146
Symmetry: 0.915
220-1

And there you have it! A beautiful Gnarl, completed from beginning to end, with all the knowledge to be able to experiment and create your own very unique masterpieces. Please, if you use this tutorial, on your deviation page, send a link to this tutorial, to spread the word and let everyone else use this tutorial as well. Also, if you could comment me a link to your beautiful Gnarls, either on this page, my profile, or by note, I would love to see what you can come up with! Also, don't hesitate to ask questions, maybe I was a bit unclear on one of the steps or left something out, I'll be able to help.

My Gnarls



Credits

First, I have to thank Fiery-Fire for her parameters on Gnarlomania at
http://fiery-fire.deviantart.com/art/Gnarlomalia-101245239
Without these parameters to study, I would have never been able to make a gnarl in the first place, let alone know enough to make a tutorial.

Also, for this tutorial I have made use of Xyrus02's Apophysis 7x which can be downloaded at
http://xyrus02.deviantart.com/art/Apophysis-7X-134116371
While this tutorial works with any version capable of using plugins, Apo 7x has several cosmetic changes that may make less experienced users confused, if they don't know what to look for.

Finally, this tutorial makes use of the plugin Waves2 which can be downloaded at
http://phoenixkeyblack.deviantart.com/art/The-Aposhack-Plugin-Pack-98807426
I also have used other plugins, but those are not critical for this tutorial, as Waves2 is.