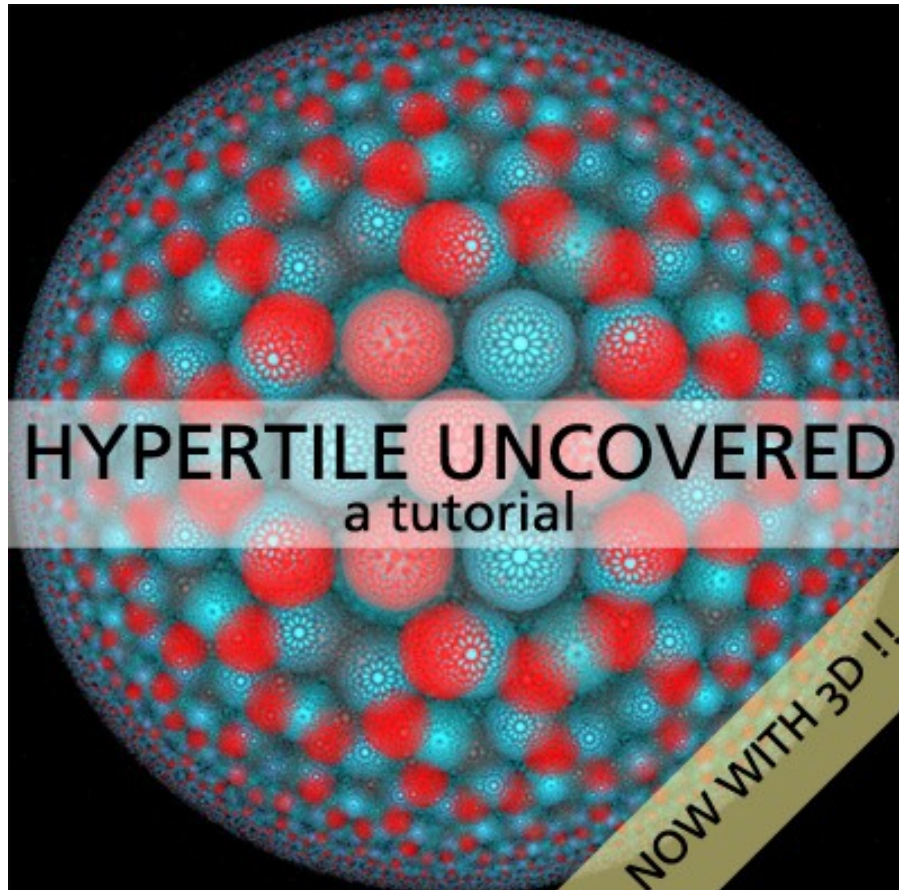


HYPERTILE UNCOVERED

(Now With 3D...!!)



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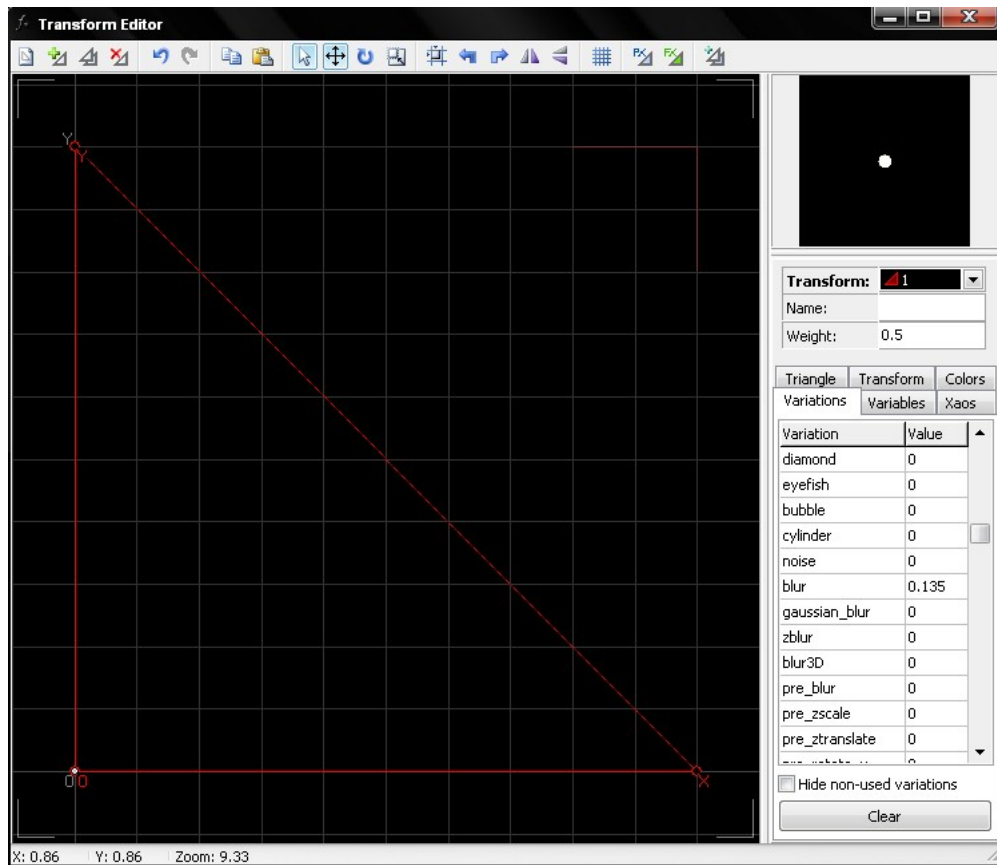
Okay, I can't contain my excitement about this: Zueuk is releasing "new" plugin called "Hypertile". It is basically a poincare disk plugin with simplified variables. Now I'm gonna teach you how to use this cool plugin. What you need is the latest version of Apophysis (I use Apophysis7x for this tutorial), Hypertile Plugin wich you can download from zueuk's Gallery, and some additional plugin if you want (here I'm gonna use Ngon).

Okay. Lets get started with the basic form of poincare

Start with new blank flame. On Tx-1:

Linear 3D = 0

Blur = 0.135

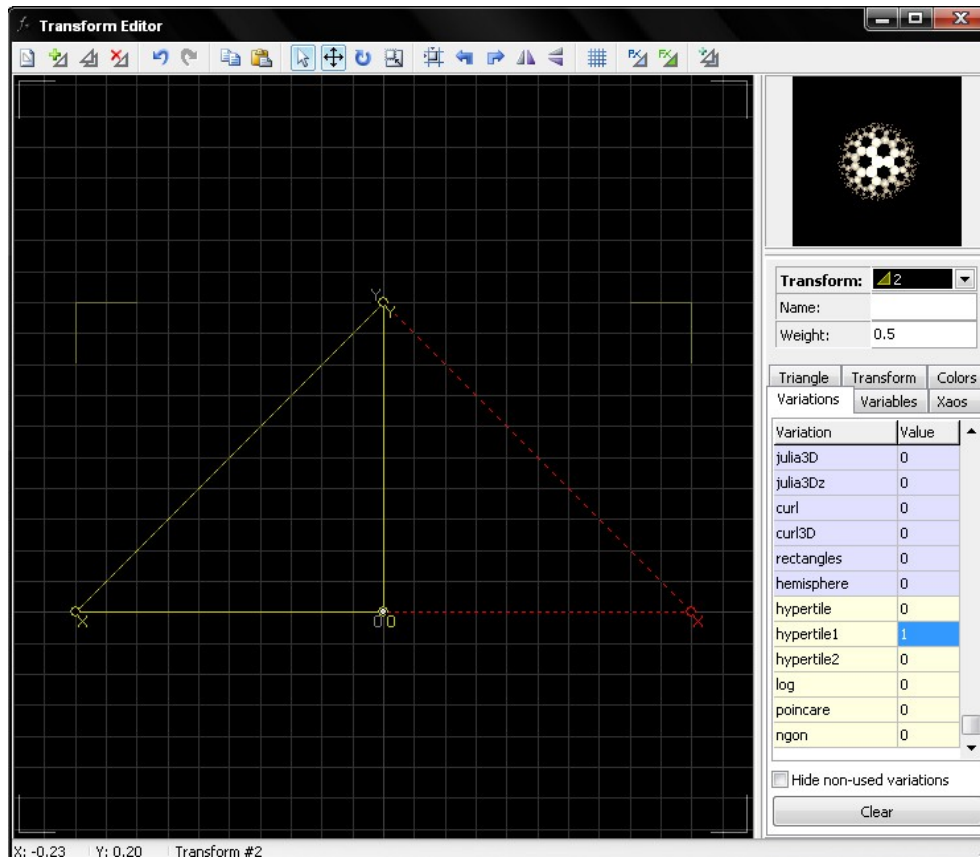


Now Add new transform. On Tx-2:

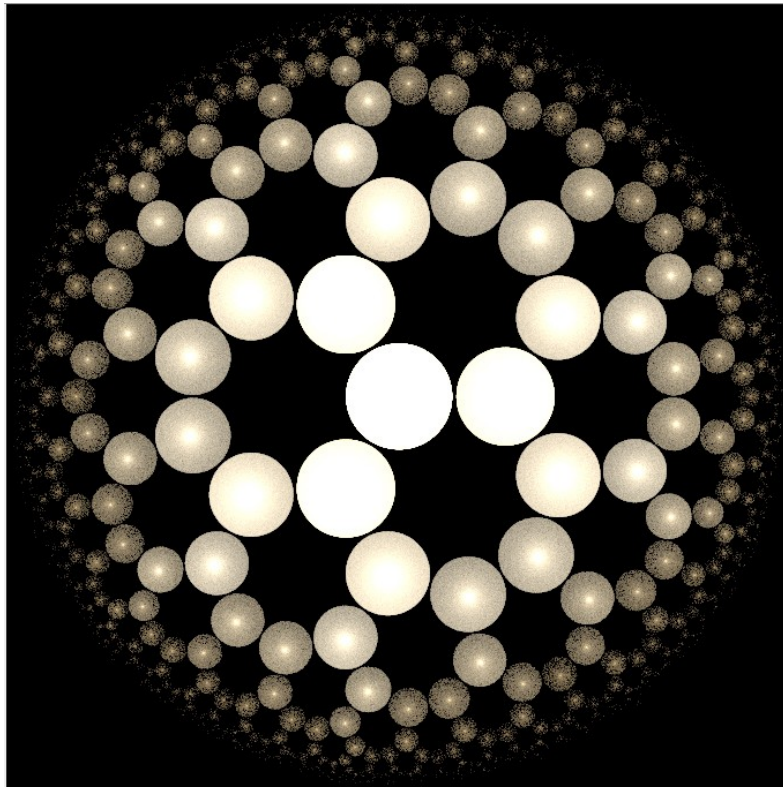
Linear 3D = 0

Hypertile1 = 1

Flip Tx-2 Horizontally so that the transforms look like this image:



Now maybe you want to increase the master scale to 50 to see the detail clearer.. your image should be something like this:




Now add another transform. On Tx-3:
Linear 3D (or Linear) = 1
Weight = 0.05

Tx-3 is to make the outer ring of the disk.. but oh noes. Nothing happen.. :noes:
no worry my friend. Xaos is the key to clear out this problem. So, lets hit the xaos tab




On Tx-1, don't change anything
On Tx-2, change to something like this:

Transform: 2	
Name:	
Weight:	0.5
Triangle	Transform
Variations	Variables
Colors	
Xaos	
Path	Weight modifier
to 1	0
to 2	1
to 3	1

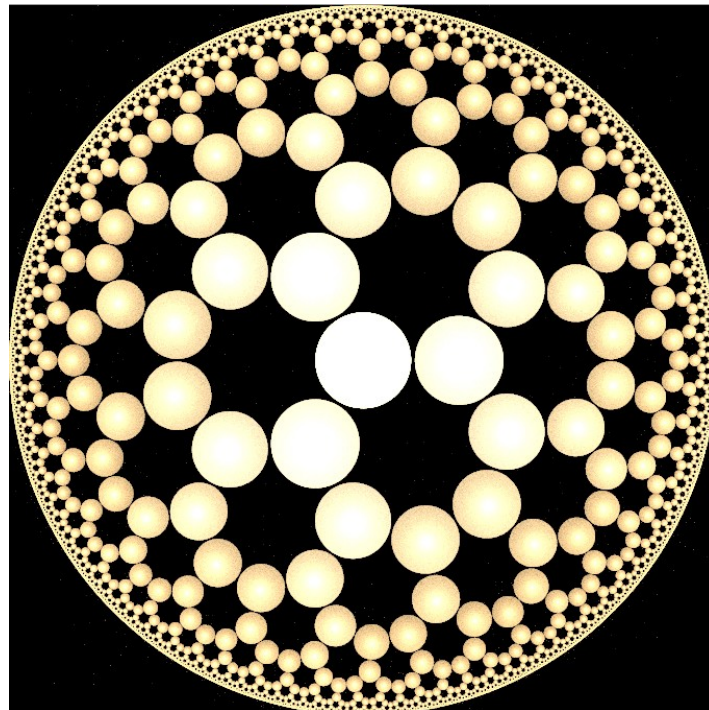
On Tx-3, change to something like this:

Transform:	 3
Name:	
Weight:	0.05

Triangle	Transform	Colors
Variations	Variables	Xaos

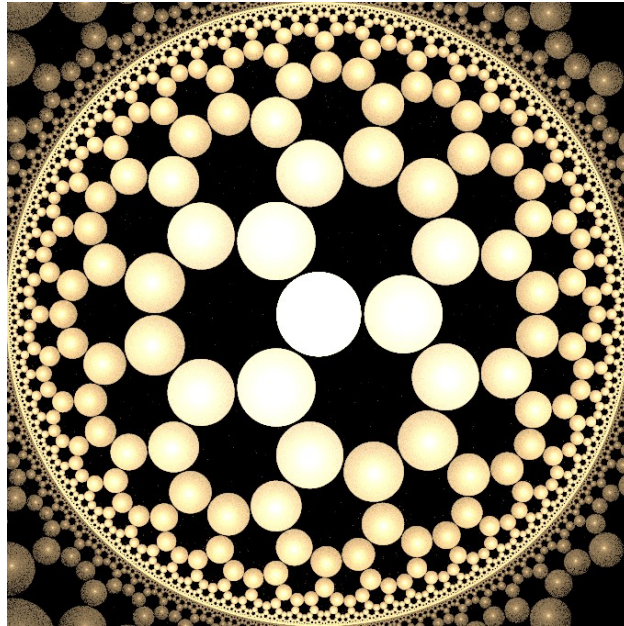
Path		Weight modifier
to 1		1
to 2		0
to 3		0

If you get it correct, you can see something like this:



That is the basic of poincare disk with hypertile plugin..

You can also make the outside of the ring has more shape. To make it, just change the variation on Tx-3 from linear to spherical = -1.
Here's the result:



Now, some advance tweak. If you consider yourself as a pure artist, you might want to skip this part. but, if you consider yourself as a geek. Here's for you: Mathematically, hypertile plugin based on poincare tessellation. So, you can make a mathematical picture with this plugin. All you need is hypertile and Non plugin. Ngon plugin is the most suitable plugin to use with hypertile.

"..On poincare disk, there are an annotation $\{n,k\}$ called Schläfli symbol. This symbol means in n regular polygons the same number of k polygons meet at each vertex. You can determine whether $\{n,k\}$ will be a tessellation of the Euclidean plane, the hyperbolic plane, or the elliptic plane by looking at the sum $1/n + 1/k$. If the sum equals $1/2$, as it does for the three tessellations mentioned above, then $\{n,k\}$ is a Euclidean tessellation. If the sum is less than $1/2$, then the tessellation is hyperbolic; if greater than $1/2$ the tessellation is elliptic.

For a tessellation $\{n,k\}$, there are k regular polygons at each vertex. So the angle at each vertex is $360^\circ/k$. Since a regular n -gon has n equal angles, each being $360^\circ/k$, therefore the angle sum is $n360^\circ/k$. By breaking a polygon into triangles you can determine that the angle sum of an n -gon is exactly $(n-2)180^\circ$ in the Euclidean plane; less in hyperbolic; more in elliptic. Therefore, if $n360^\circ/k$ equals $(n-2)180^\circ$, then $\{n,k\}$ can only be Euclidean; if less, hyperbolic; and if more, elliptic.

There are some popular combination for this poincare: $\{5,4\}$, $\{4,5\}$, $\{8,4\}$, $\{4,8\}$, and $\{3,7\}$..." (taken From internet article. Sorry I forget the address)

To make this kind of constellation, all you need is to set up the variables in Ngon and Hypertile plugin. Here's some example:

First you need to remove the blur on Tx-1 and add $\text{Ngon} = 0.025$

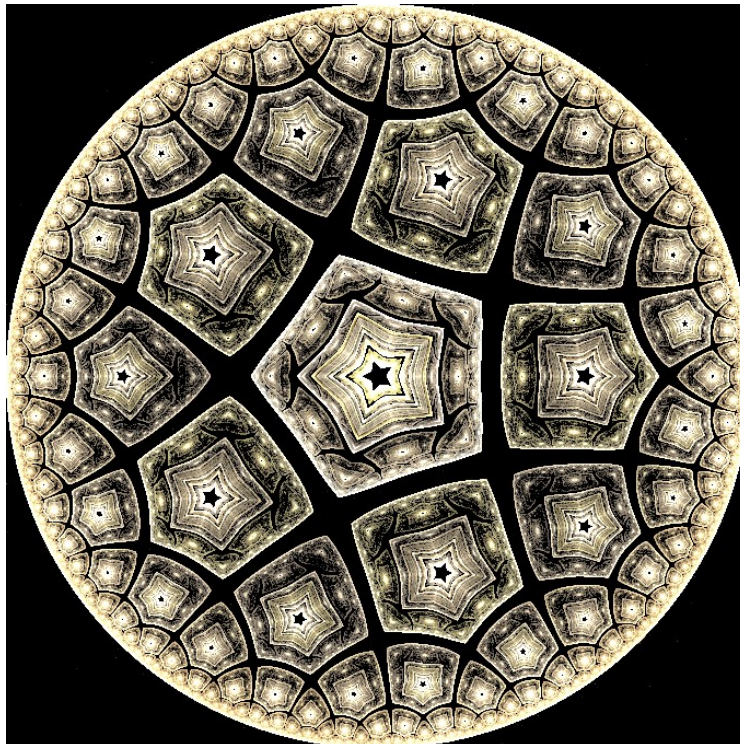
To create a $\{5,4\}$ constellation:

Set The variation on Tx-1 and Tx-2 to something like this:


Transform: 1		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
ngon_sides	5	
ngon_power	1.65	
ngon_circle	1	
ngon_corners	3.667	


Transform: 2		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
hypertile1_p	5	
hypertile1_q	4	

Here's the result:

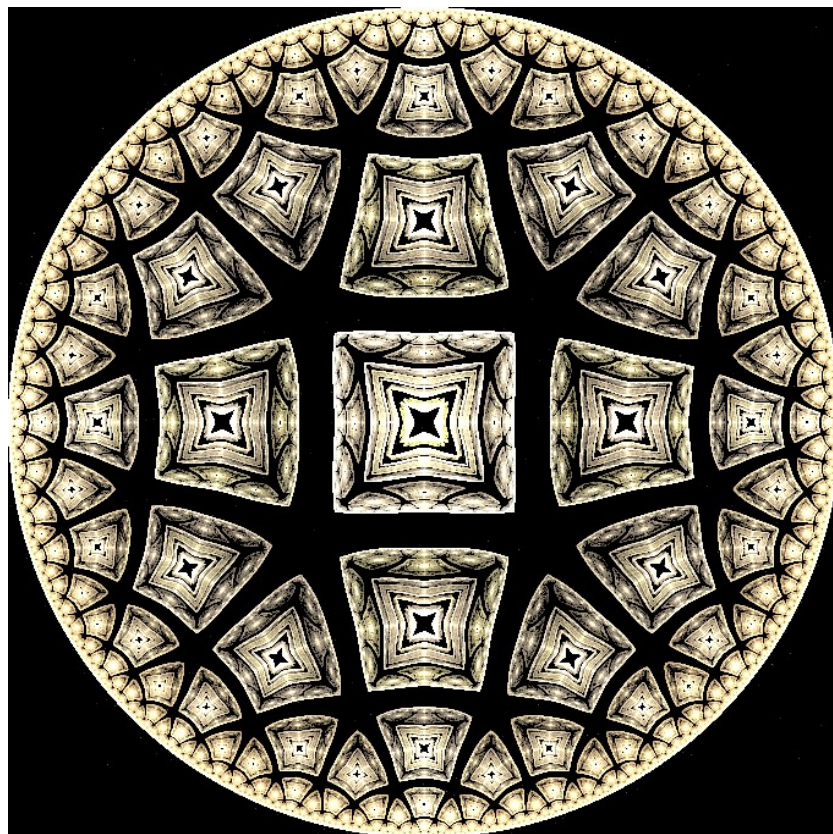


To create a $\{4,5\}$ constellation:
Set The variation on Tx-1 and Tx-2 to something like this:


Transform:  1		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
ngon_sides	4	
ngon_power	1.583	
ngon_circle	1	
ngon_corners	3.14	


Transform:  2		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
hypertile1_p	4	
hypertile1_q	5	

Here's the result:



To create a $\{8,4\}$ constellation:
Set The variation on Tx-1 and Tx-2 to something like this:

Transform:  1		
Name:		
Weight: 0.5		
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
ngon_sides	8	
ngon_power	1.815	
ngon_circle	1	
ngon_corners	15	

Transform:  2		
Name:		
Weight: 0.5		
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
hypertile1_p	8	
hypertile1_q	4	

Here's the result:

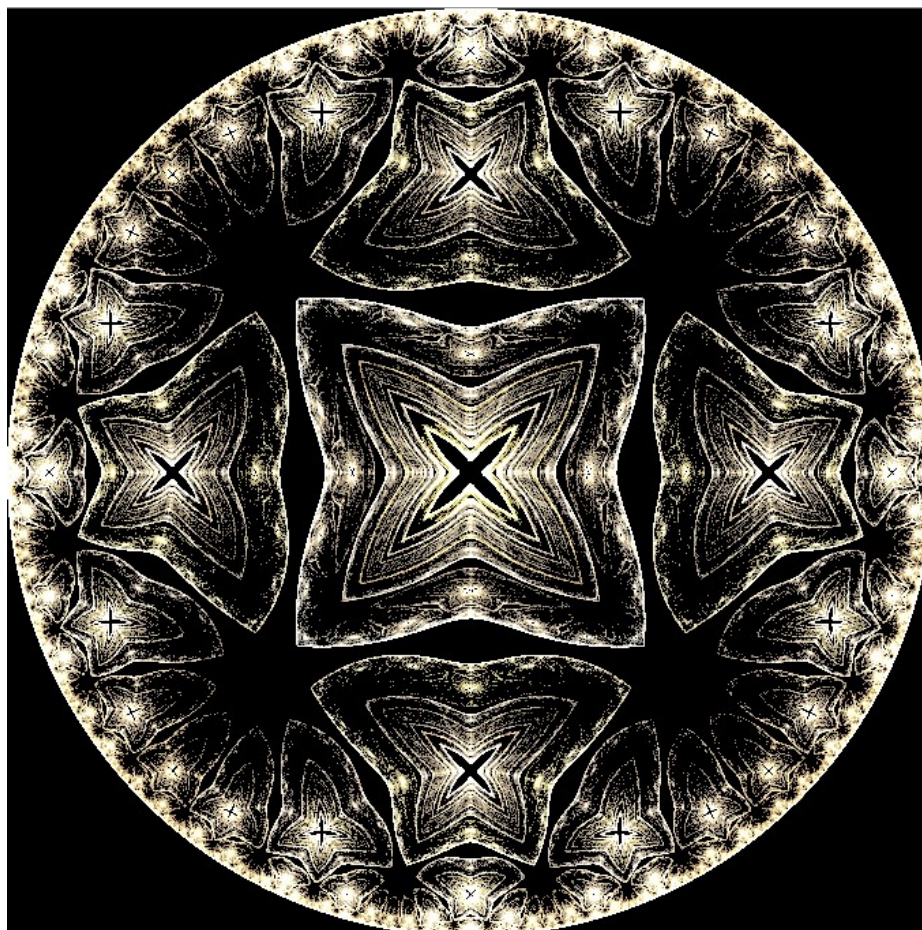


To create a $\{4,8\}$ constellation:
Set The variation on Tx-1 and Tx-2 to something like this:


Transform: ▲ 1		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
ngon_sides	4	
ngon_power	1.686	
ngon_circle	1	
ngon_corners	10.326	


Transform: ▲ 2		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
hypertile1_p	4	
hypertile1_q	3	

Here's the result:

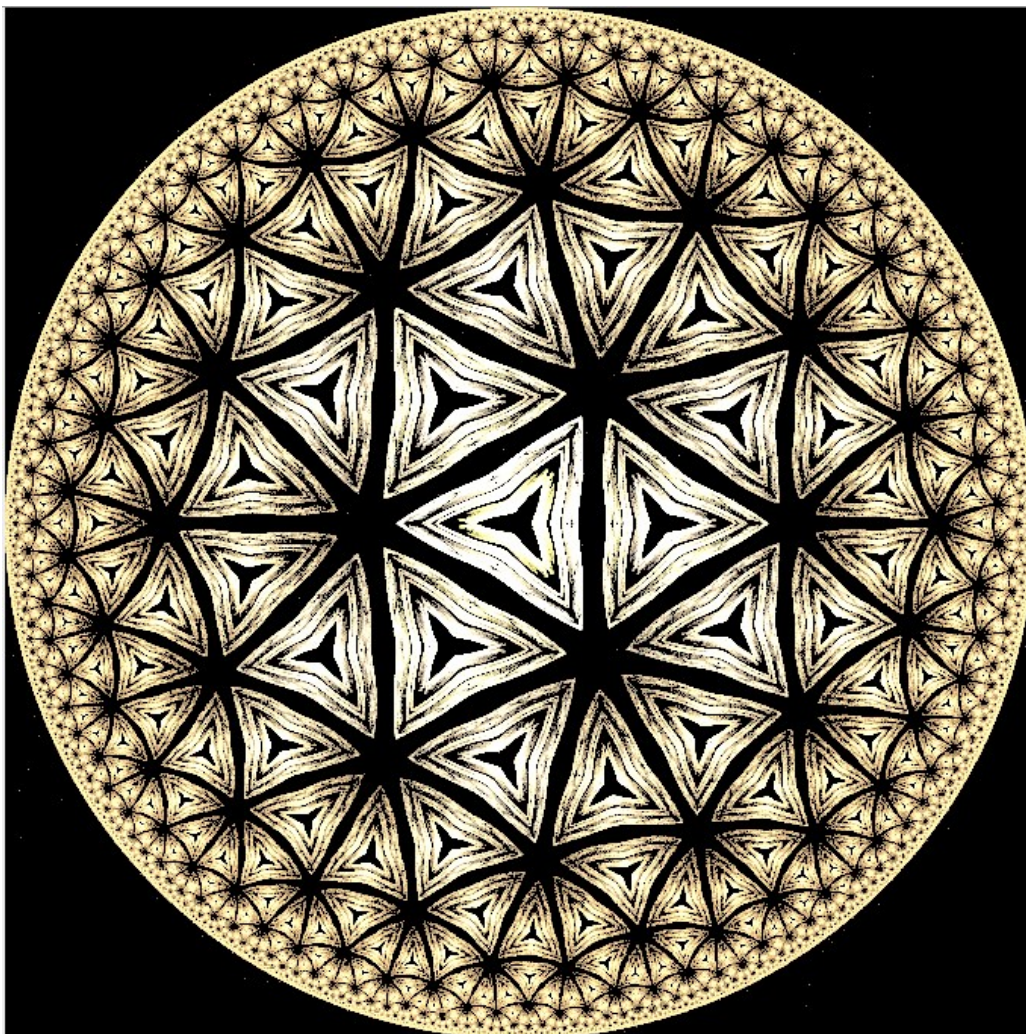


To create a $\{3,7\}$ constellation:
Set The variation on Tx-1 and Tx-2 to something like this:

Transform:  1		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
ngon_sides	3	
ngon_power	1.406	
ngon_circle	1	
ngon_corners	2.613	

Transform:  2		
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Variable	Value	
hypertile1_p	3	
hypertile1_q	7	

Here's the result:



Summary:

1. Use the Hypertile1 and Ngon Plugin
2. Make sure you use the same value for ngon_sides and hypertile1_p

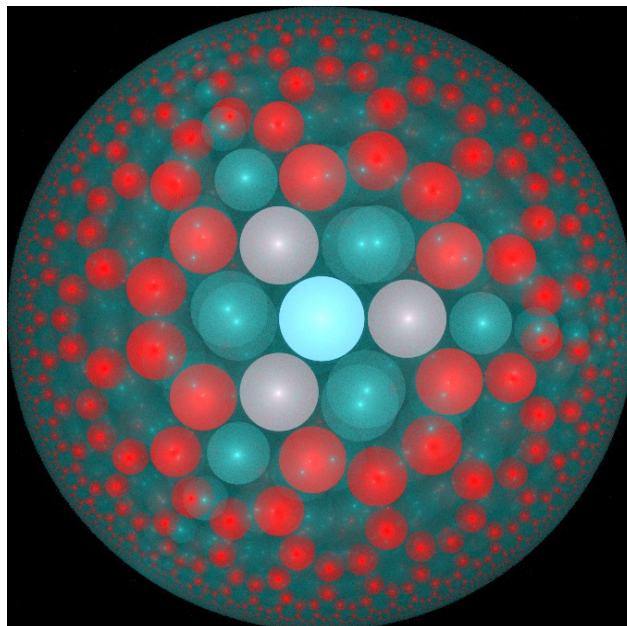
Moar Advance Tweak. After know how to create the poincare constellation, you might want to make some art using it. Well, ofcourse you can. here I'll show you how to make it. Let's get back to the basic constellation. What do you think about the image? Yup. It is no fill and still has empty space. So, to fill that emptiness, add new transform so that the flame has 4 transform.

On Tx-4:

1. hypertile2 = -1
2. Set the weight around 0.2
3. Rotate counter clock-wise from 90 – 180 degree until you get the shape you want.
4. on xaos tab, make it something like this:

Transform:  4		
Name:		
Weight:	0.2	
Triangle	Transform	Colors
Variations	Variables	Xaos
Path	Weight modifier	
to 1	 1	
to 2	 0	
to 3	 0	
to 4	 1	

Some change on the gradients and color, and than your flame should be something like this:



I might not rotate it well so that the bubble has ghosting part, but you get the point, right?

Okay. That is how to fill the empty space. Now you might want to change the detail other than just blur variations. You can change the detail of this flame by change the variations on Tx-1.

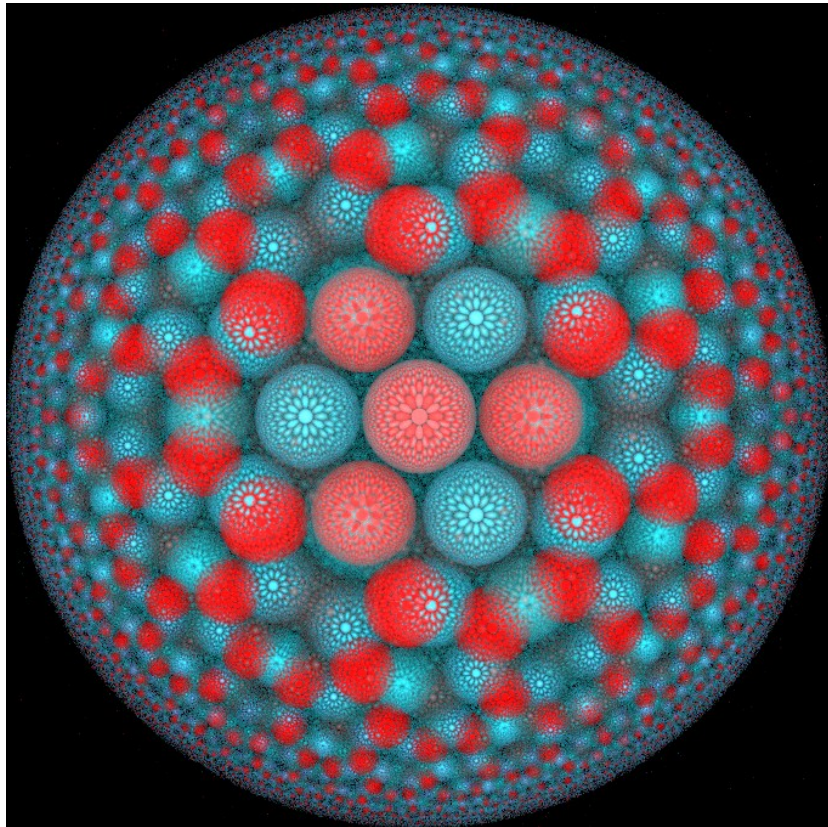
I'm gonna change the Tx-1. On Tx-1:

Julian = 0.13 – 0.15

Julian_power = 2

Julian_dist = 2

Now your image should be something like this:



Kewl isn't it? ;)

The key is to keep tweak and try with any variations you like. For me, bubble and Ngon is the most suitable to use with hypertile.

Now With Moar Awesomeness: 3D.. So, I heard you liek 3D..? well, you'll have it here.. after I finished this tutorial, i try to create something from hypertile,, so I made 3D tile.. and I will show you how to do 3D hypertile.. all you need is apophysis with 3D feature (wether it is apo7x or apo2.083D hack).. without any more talking, lets get to the flame..

Start with new blank flame. On Tx-1, clear all default variation's value:

Bubble = 0.25

Pre-blur = 0.2

Weight = 0.05

On Tx-2, clear all default variation's value:

Hypertile1 = 1

Weight = 1

Then rotate the triangle 90 degree counter-clockwise two times.

On Tx-3, clear all default variation's value:

Spherical = 1

Weight = 0.1

Now, go to the xaos tab and make it to something like this:

Transform: 1	
Name:	
Weight:	0.5
Triangle	Transform
Variations	Variables
Xaos	
Path	Weight modifier
to 1	1
to 2	1
to 3	1

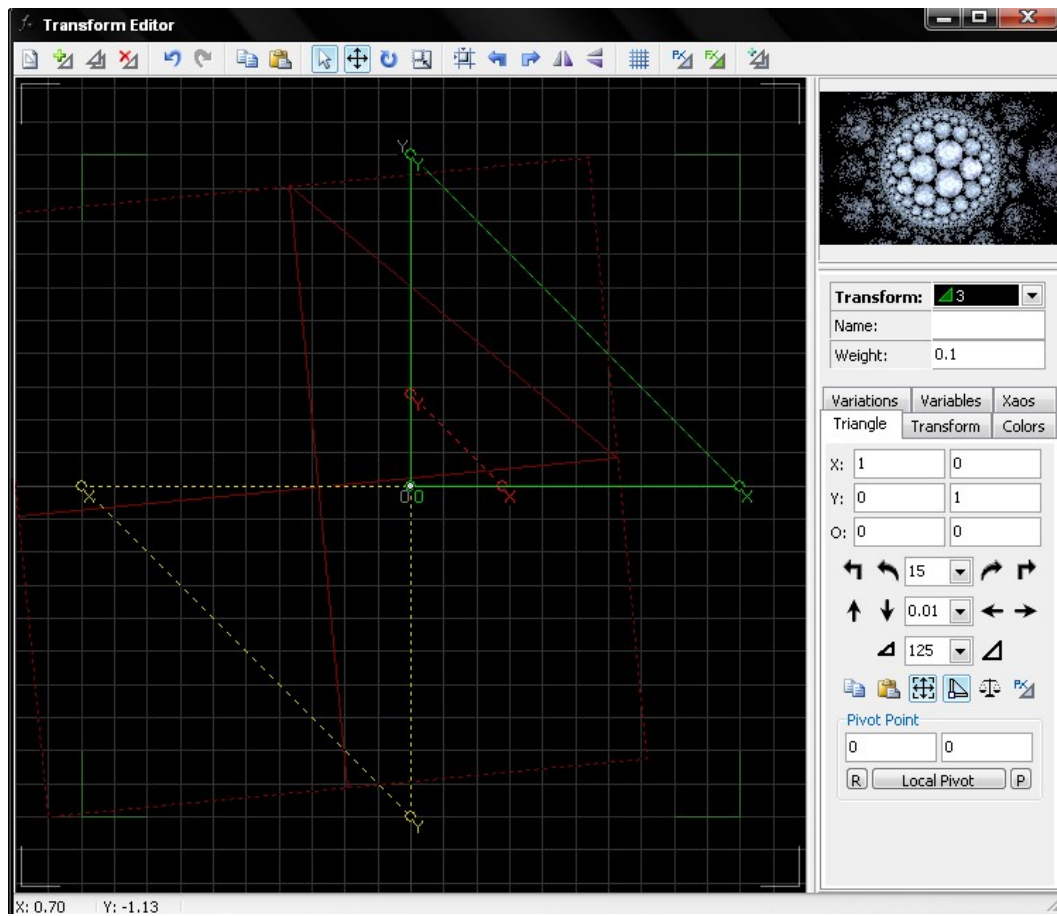
Transform: 2	
Name:	
Weight:	0.5
Triangle	Transform
Variations	Variables
Xaos	
Path	Weight modifier
to 1	0
to 2	1
to 3	1

Transform: 3	
Name:	
Weight:	0.1
Triangle	Transform
Variations	Variables
Xaos	
Path	Weight modifier
to 1	1
to 2	0
to 3	0

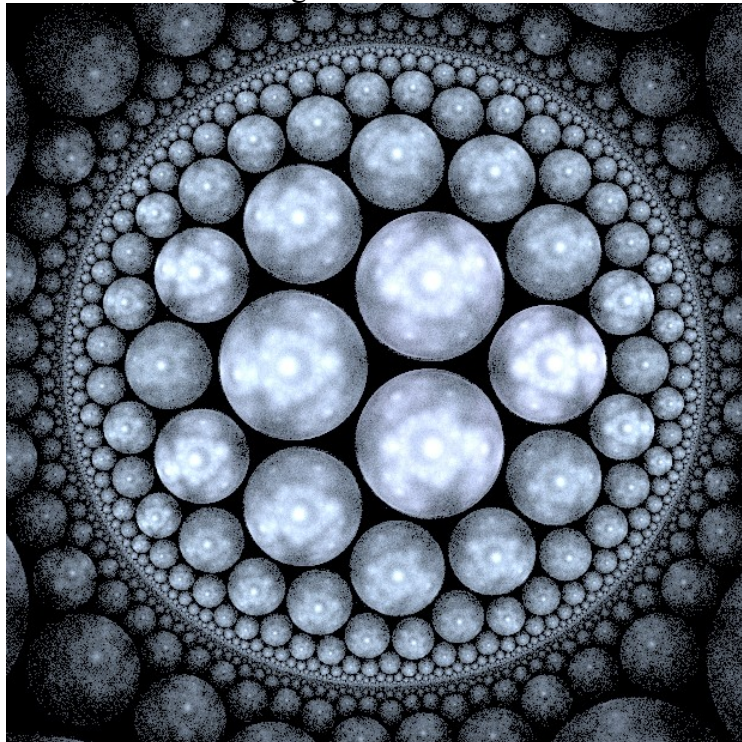
Now, go to triangle tab.

1. Turn on the post-transform of Tx-1.
2. move it three times to the left 0.1 unit, and two times 0.01 unit.
3. Turn off the post-transform, and scale down the real triangle 5times 125 unit

Your transform now should be something like this:



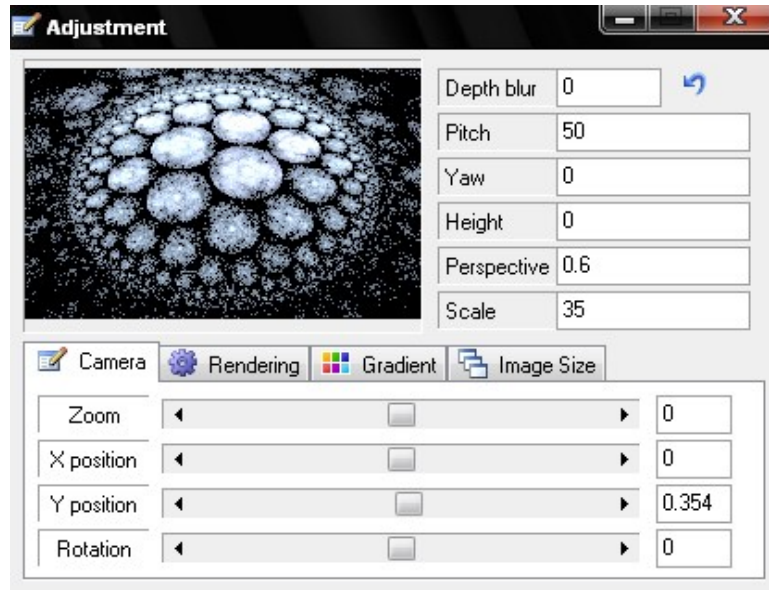
And your preview should be something like this:



If you can't get a clear shape, you just have to adjust Tx-1 by moving and scaling it a little..

Now for the 3D-ness:

On adjustment windows (press F5), make it to something like this:



Not so 3D huh..? don't worry, we'll make it 3D now..

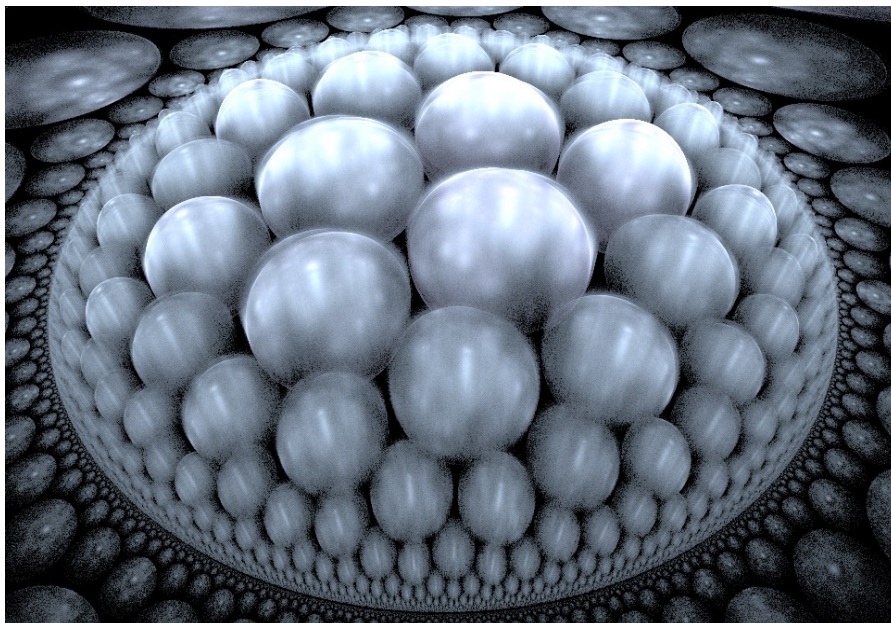
Go to the Tx-2 and add this following variations:

ZScale = 0.8

Ztranslate = 0.04

ZCone = - 0.038

Now your image should be 3D enough like this:



You can also make another type other than bubble by adding another variation on Tx-1. my favourite would be wedge_sph.. with wedge_sph on Tx-1, I can make something like this:



You can try to use your favourite plugins.. my suggestion is that you using wedge_sph, crackle or any other you like..

That's it for nao.. If you have any question or suggestion to make this tutorial better, don't hesitate to note me. I'll be so happy if you do so.. M'kay.. have fun ☺

guagapunyaimel©2010