



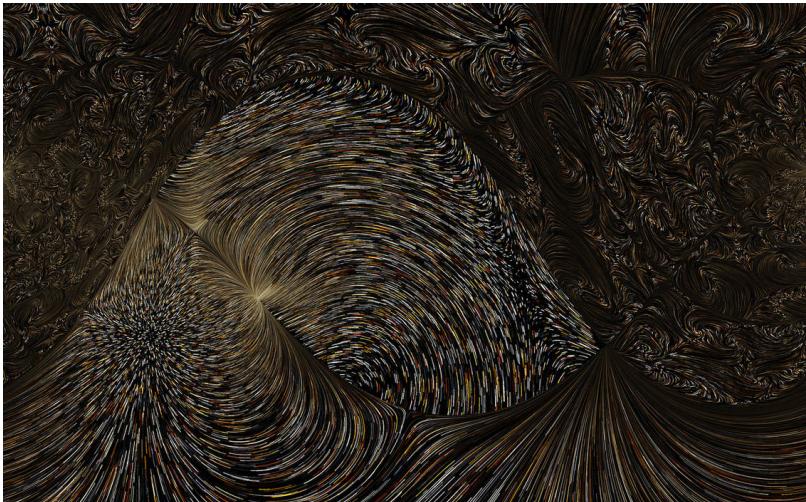
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MULTIPLE LOOPS FRACTALS

THU MAY 28, 2015, 2:56 PM

Lets talk a bit more about the multiple loops fractals mentioned in [Xaos Basics Tutorial](#).

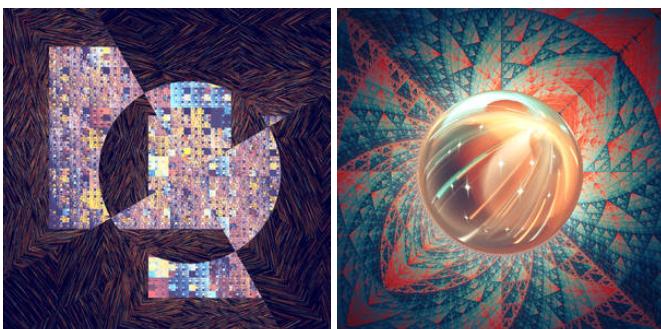
I learned this technique from [FarDareisMai](#), as she described it somewhere in comments or in [#aposhack](#). Unfortunately, the technique is extremely underused.



As the name suggest, multiple loop fractals feature multiple independant xaos loops, and are basically several different fractals put together without interacting. This technique is useful when you cannot use just one loop: for example, when you have a tile and something blurry, using a xaos loop for the tile and a xaos loop for the blurry part would allow to keep the tile clean.

So, your fractal have elements A and B. You want them both visible, and also you don't want element A appear in B, and element B appear in A. Also, at least one of the elements has no blurry or messy transforms, so you cannot use those to hide the other element. This is when you use multiple loops

Below, from left to right, a glitch + linear tile and blurry bubble + linear tile (both 2nd and 3rd fractals):



Details

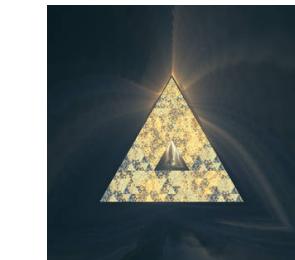
Uploaded on May 28, 2015
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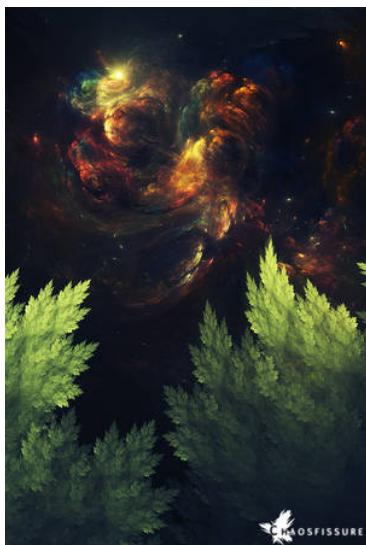
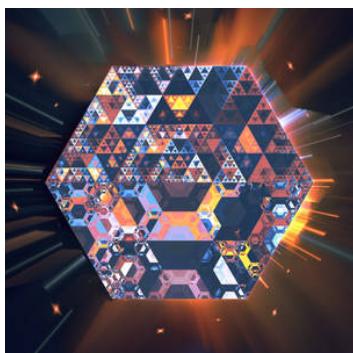


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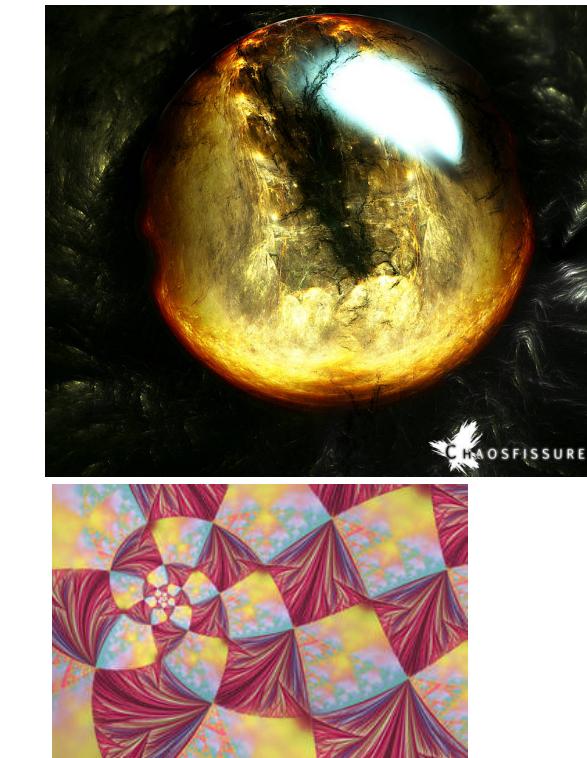
For example, in the blurry bubble + linear tile structure, with single loop, the bubble would show in the tile, even if as something small/subtle/just dots. Now, if the tile had a blurry part, the multiple loops would not be needed. One could just link everything together like this: bubble -> (blurry part of the tile) and tile -> bubble.

And, just an update, a few more examples:



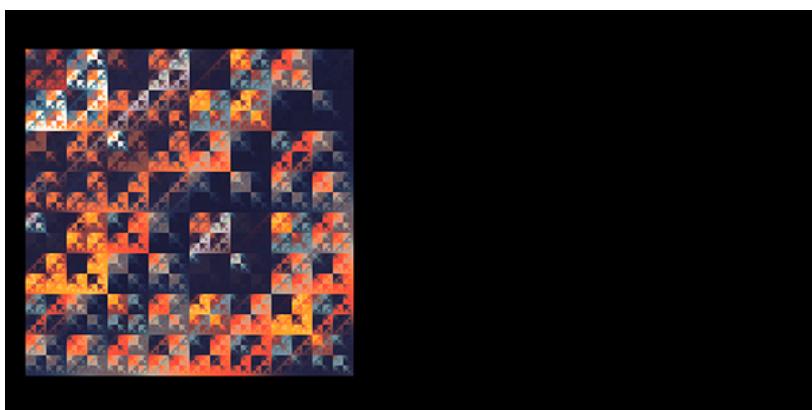


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BASIC EXAMPLE

Start with a simple square linear tile (like this [Linear base](#)):



Now, add a new transform. On the xoas tab, set all weight modifiers (both to and from) for this transform to 0:



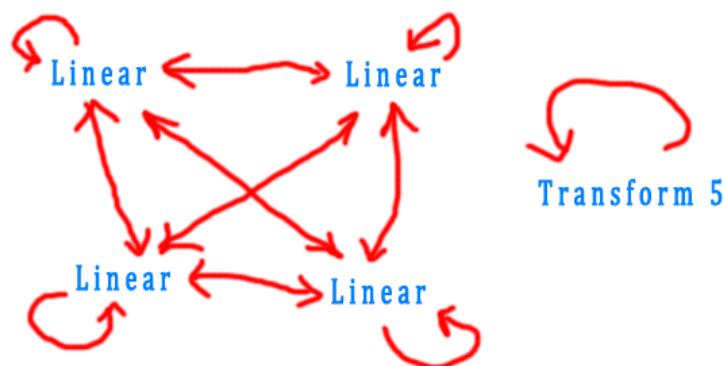
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Transform:	5	
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Path	Weight modifier	
to 1		0
to 2		0
to 3		0
to 4		0
to 5		1

Transform:	5	
Name:		
Weight:	0.5	
Triangle	Transform	Colors
Variations	Variables	Xaos
Path	Weight modifier	
from 1		0
from 2		0
from 3		0
from 4		0
from 5		1

If you done everything correctly, your image should remain identical to what you had before adding transform 5. If your image is blank or got messed up, check out if you set the xaos values correctly.

Lets see what it looks like on the fluxogram: 2 loops 😊

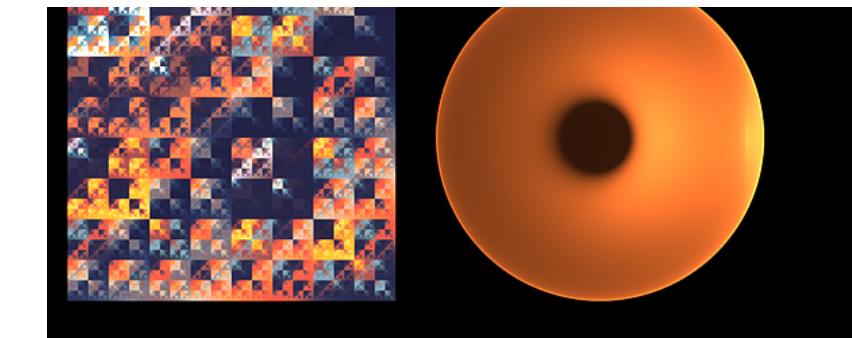


Now, remove linear from transform 5, and add bubble = 1 and pre_blur = 10. Move its post transform 2.25 to right: **simple 2 loops**

In Apophysis, you still should see only a square, but if you paste your parameters into Chaotica, you shall see something like:



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We have both a linear tile and a blurry bubble, and there is no sign of the bubble in the linear tile.

ADVANCED EXAMPLE

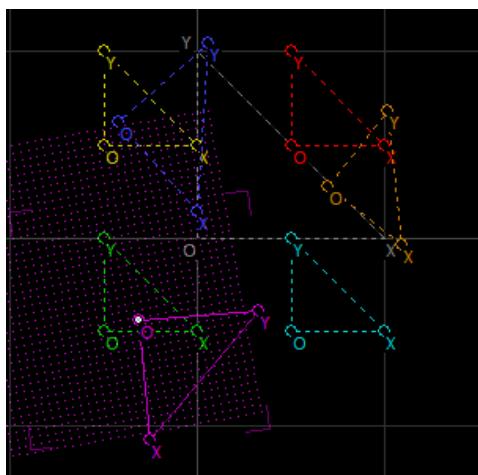
As each loop is basically a single fractal, you may have troubles when adding cool blurs to the bubble, as it is the same as trying to add cool blur effects to a fractal that has ONLY the bubble. So the trick is to make some simple design - for example a few randomly placed linears - then put it into a bubble.

Go back to the linear tile, add a new transform and set the xaos as described in the example above: [multiple loops 1](#)

Now, duplicate transform 5 twice (so you have 5 transforms). Now, we have 2 closed loops, one with 4 linears making the square, and the other with 3 linears. For transforms 5, 6 and 7, do the following:

- Scale down by 125% 1-3 times
- Rotate randomly
- Shift randomly

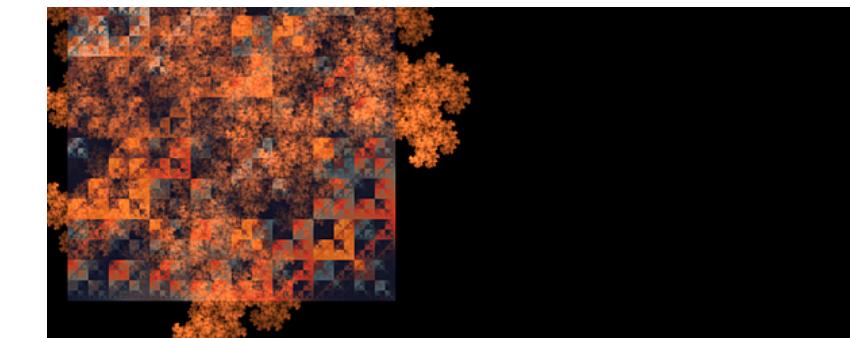
Something like this: [multiple loops 2](#)



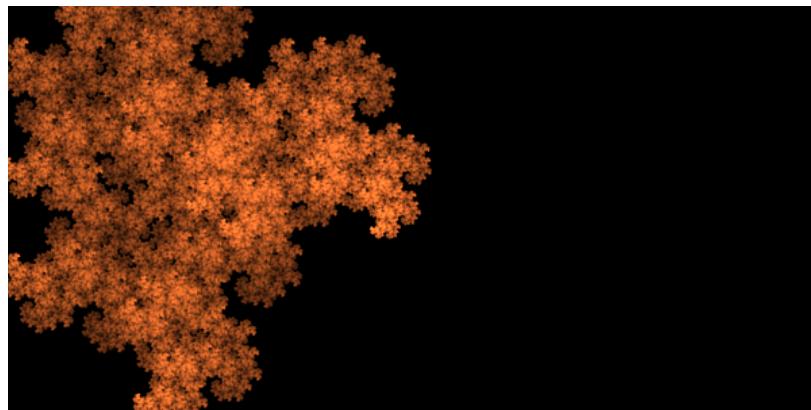
In Apo, you should see the square unchanged. In Chaotica, you should see something like this:



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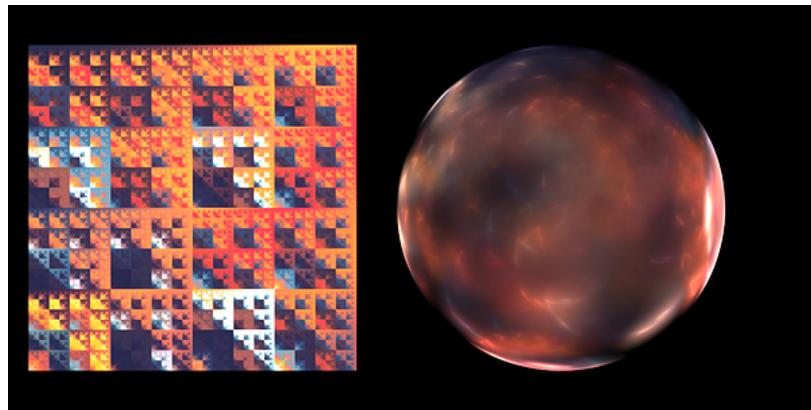
Or, if you set opacity = 0 for transforms 1 to 4, this:



Now, duplicate transform 5 once more, and, on transform tab, reset the transform. On this transform, transform 8, replace linear with bubble = 1 and pre.blur = 0.2. Move its post transform 2.25 to right. On transforms 5, 6 and 7, set opacity to 0.

I also hit randomize color for some extra color effects and changed the color speeds on transforms 5-8 for the same purpose.

Your result should look like this (in Chaotica): [multiple loops 3](#)



With a bit more shapes to be blurred, cooler blur and lighting effects can be achieved.

A FEW TIPS

Adding a linked ngon with appropriate number of sides and power = 2 will transform the bubble into an inverted n-gon (ngon with power = 2 works similarly to spherical), so you can use the technique explained in [Xaos Basics](#) to fill the area outside linear tiles.

When adding glitches to multiple loop fractals, be careful: as glitches require a low stopping SL, the other loops must also look good at low stopping SL. For example, a glitch works well combined with a linear (as both render really fast and look good at SL 2 or so), but would most likely fail with a blurry bubble, because either the



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brightness, as it can get really tricky to make both look good if one is too bright, and the other, too dark.

5 COMMENTS



Multiple loops fractals

by tatasz

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PJKfractals **CORE** Sep 6, 2017 | Hobbyist Digital Artist

is there any chance to see the second loop in apo? If I had a cool abstract fractal which I want use as background and then compose something else on that I won't see that on apo?

Reply



tatasz Sep 7, 2017 Hobbyist Digital Artist

Well, you can do it... But i dont really like the solution and prefer chaotica
- on transform 1, remove all variations and set very low weight (like 0.00001)
- it MUST be transform 1, else it will not work
- use it to connect loops, all loops receive points from transform 1 (but dont send points to it)

For example, below you have 2 closed loops, a hemisphere and a square:

```

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gamma_threshold="0.01" estimator_radius="9" estimator_minimum="0"
estimator_curve="0.4" enable_de="0" plugins="" new_linear="1"
curves="0 0 1 0 0 1 1 1 1 1 1 0 0 1 0 0 1 1 1 1 1 1 0 0 1 0 0 1 1 1 1
1 1 1 0 0 1 0 0 1 1 1 1 1 1 1 >
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coefs="1 0 1 0 0" post="1 0 0 1 -1 0" chaos="0 1 0" opacity="1" />
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  25143612113010F0E300D0E2COD10310C0E3513113613173C
  191D42132458142E6B143071082664131F5B0D0F3F0C0C32
  0D092A180B2530092457131E8B2F32BD4930C4603ED7774F
  B7AE8DB9592B5B49F98A0A3758B9668848F66819252859A
  52849D4C7E975B72844E6078414C6A2D31561F25491B1B41
  151436222141343A5E354E6D4E6285668EA77B9CA195A9C4
  A8BBB5C5FCF4E3D7B1FADEAFFDDACF7E8A7FFCCBF7FFECF
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  322E4F2F2E4D24294F2A3960253B6A44546E6B82908AA6A7
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  5C8CA23061892B4170303B5B2E150392B4C583B4F603D41
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  E3844AF7C772ECD39AE6D5A1D3CC9ECAC395CFCAACD6CFA5
  D9C69BE0AAA8C993A95D6C6E4A56472B371E10270E082A
  08092800829130C2B1D0D285729347F41429C513AC85E2E
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  BFD6CCC5D1C3E5E4C5E1E0B4ECDDA4F6B7FFC825BD44E43
  B4483EA933279F34248F2529943229863F3B66454C413549
  322948262243231D3F231D412B28453936555C515F7D6C7C
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  424D6D424D69624C4F8C5958AF5658B3734F4B866E8E8C
  838D977886936D8686D8F87916E879B87919A9F8E7EA8825D
  965C4888484960374545182F45041C34071E2806211A081E

```

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```
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</palette>
</flame>
```



PJKfractals CORE Sep 9, 2017 | Hobbyist Digital Artist

Thank you very much! For me this works just fine because I basically try to connect two abstract fractals. Here's my first attempt.

```
<flame name="Two loops rehearsal" version="Apophysis 7x Version
15D" size="900 600" center="-0.691683807943843
-0.695840268673316" scale="193.5792" oversample="1"
filter="0.2" quality="1" background="0 0 0" brightness="4"
gamma="4" gamma_threshold="0.01" estimator_radius="9"
estimator_minimum="0" estimator_curve="0.4" enable_de="0"
plugins="" new_linear="1" curves="0 0 1 0 0 1 1 1 1 1 0 0 1 0
0 1 1 1 1 1 1 0 0 1 0 0 1 1 1 1 1 1 0 0 1 >
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opacity="1" />
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coefs="-0.085891 0.404616 0.827891 0.175037 -0.093742
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<xform weight="0.5" color="0" linear="0.754" coefs="-0.731272
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1 0 0 0" opacity="1" />
<xform weight="0.5" color="0.009" linear="1" coefs="0.286497
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coefs="-0.160885 -0.40157 0.284228 -0.568227 0.524958
-0.206234" post="1 0 0 1 -0.187485 -0.944925" chaos="1 0 0 "
opacity="1" />
<xform weight="0.5" color="0.821" symmetry="1"
spherical="0.46" coefs="-0.561094 0.827752 -0.827752 -0.561094
-0.464963 0.779938" chaos="1 0 0" opacity="1" />
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5C8CA23061892B4170303B5B2E3150392B4C583B4F603D41
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B4483EA933279F34248F2529943229863F3B66454C413549
322948262243231D3F231D412B28453936555C515F7D6C7C
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424D6D424D69624C4F8C5958AF5658B3734FB4866E8E8E8C
838D977886936D868D6F87916E879B87919A9F8E7EA8825D
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170C2C161032171338181B3C2E192A49192F5C2B2E6F2E28
</palette>
</flame>
```

[Reply](#)

LukasFractalizer Aug 19, 2016 | Hobbyist Digital Artist

Looks kinda complex but I'll give it a try 😊

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shanblue Mar 5, 2016 | Hobbyist Digital Artist

OMG I love you! Thank you. I'm posting my first one using this method in just a few minutes (3-5-2016). Eeeeek! It looks so cool! **Ia in love**

Reply

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