MANUAL

METTLE FLUX
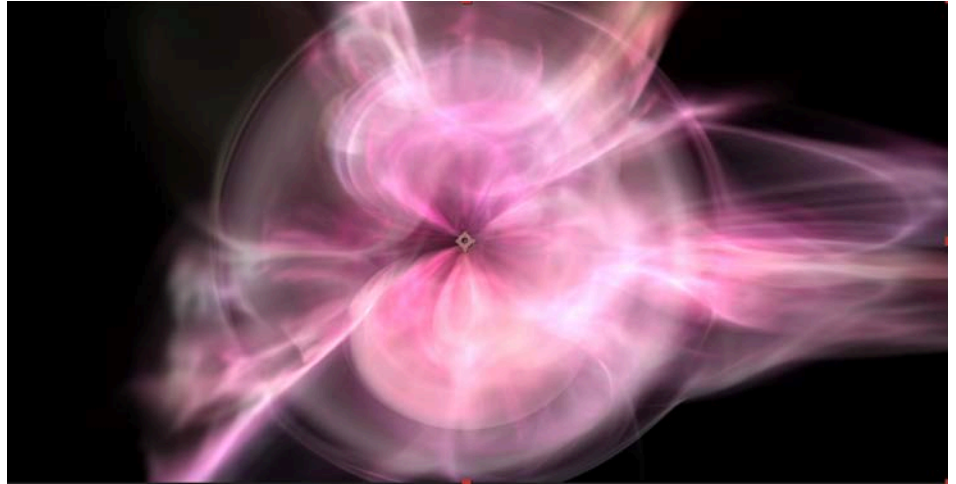
3D Volumetric Fractal Flames
Plugin For After Effects and Premiere Pro

FLUX

3D Volumetric Fractal Flames
for After Effects and Premiere Pro.

Features

Supported Formats: Flat (Rectilinear), 360° Monoscopic, Stereoscopic O/U and SBS.

FLUX Preset Panel for one click application of animations

Additional presets in FLUX Effects Control Panel

Mettle Globe Preview Panel lets you work and view results in 360°

Fully customize with: Force Field, Mutations, Iterations, Evolutions, Lights, and Symmetry

GPU Accelerated, with Volumetric Rendering

Supports native After Effects 3D camera

Built-in camera for After Effects and Premiere Pro

www.mettle.com

FLUX MANUAL

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METTLE FLUX

Supported hosts: * After Effects and Premiere Pro CC and Later.

One purchase of FLUX allows 2 activations.

FLUX effects can be applied directly on equirectangular footage, flat footage, or on a Solid on a Layer. We support Mono, Stereo Over Under, Stereo Side-By-Side and Rectilinear (traditional Flat video).

Installation

Use the Mettle Product installer to install FLUX plugin. Please make sure that you have not renamed or moved your Adobe product folders from their default install locations. This will cause installer errors.

How To Register

In After Effects, apply the FLUX effect to your Solid or footage on your comp layer. In the FLUX Effect Controls panel, click on "Register**".**

In the Register Window, enter your Mettle account email address and password.
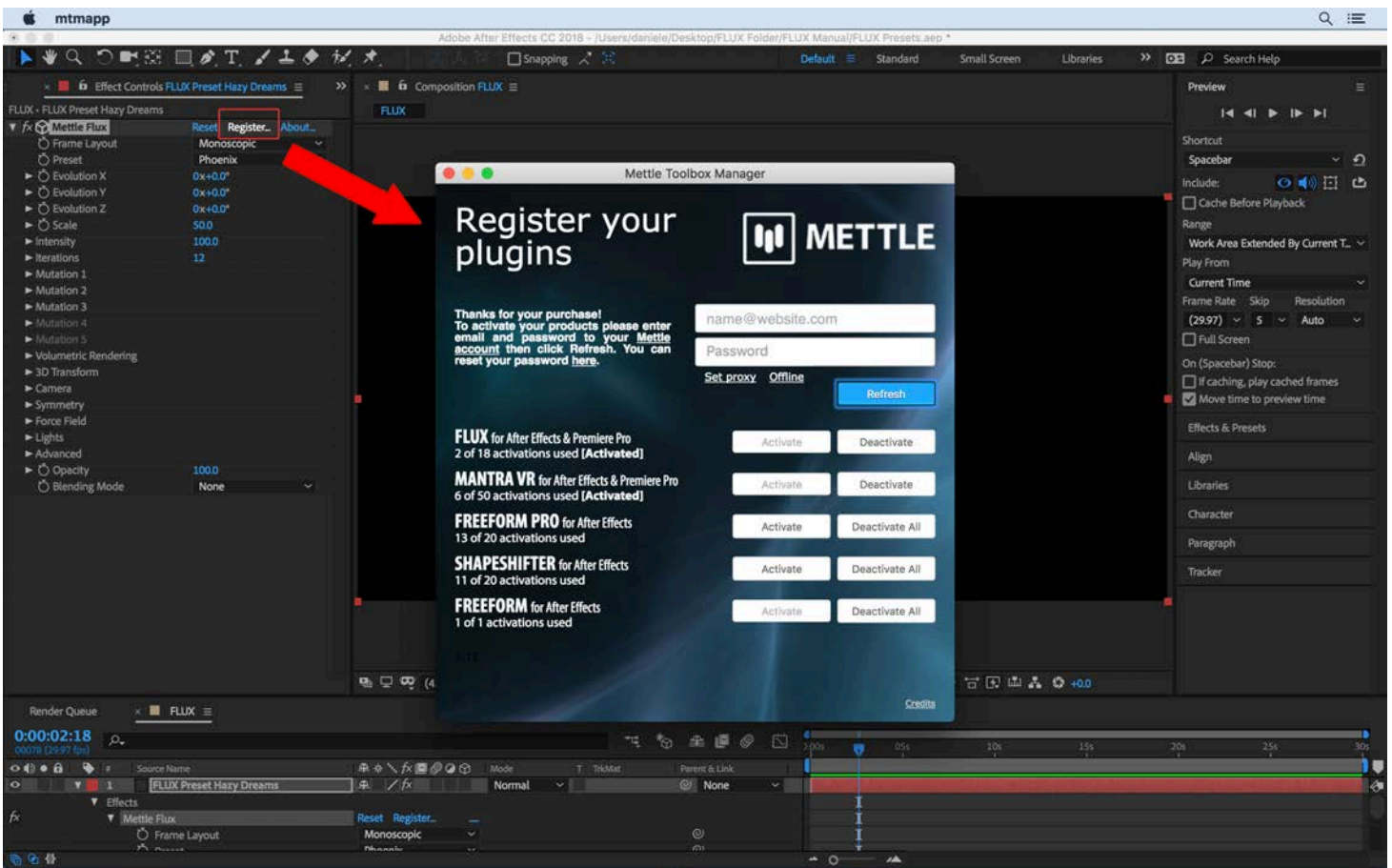
Click on "Refresh" and "Activate" to remove watermark from purchased plugin.

### How To Deactivate Your license Key On One Computer And Activate On Another

Simply click on "Deactivate All" in the Register Window on one computer, then enter your info on the other computer in the Register Window and then click on Activate.
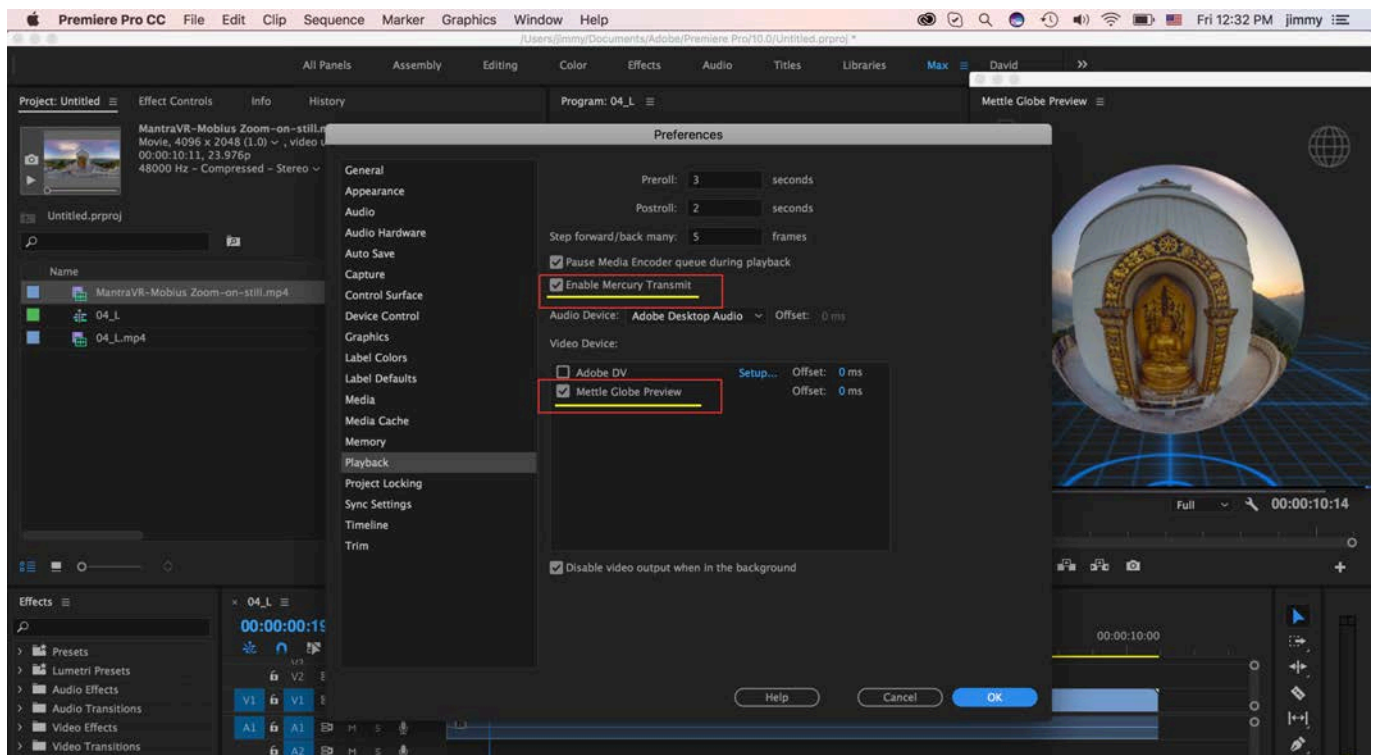
Mettle Globe Preview

Mettle includes a Globe Preview Panel (in After Effects only), which displays your 360° comp in close to real time on a Sphere and HMD preview.

You can rotate globe with mouse acceleration - it will make it continuously rotate, useful to observe effects as they are applied to your comp.

After Effects: Enable Globe Preview. Preferences > Video Preview > Enable Mercury Transmit + Mettle Globe Preview.
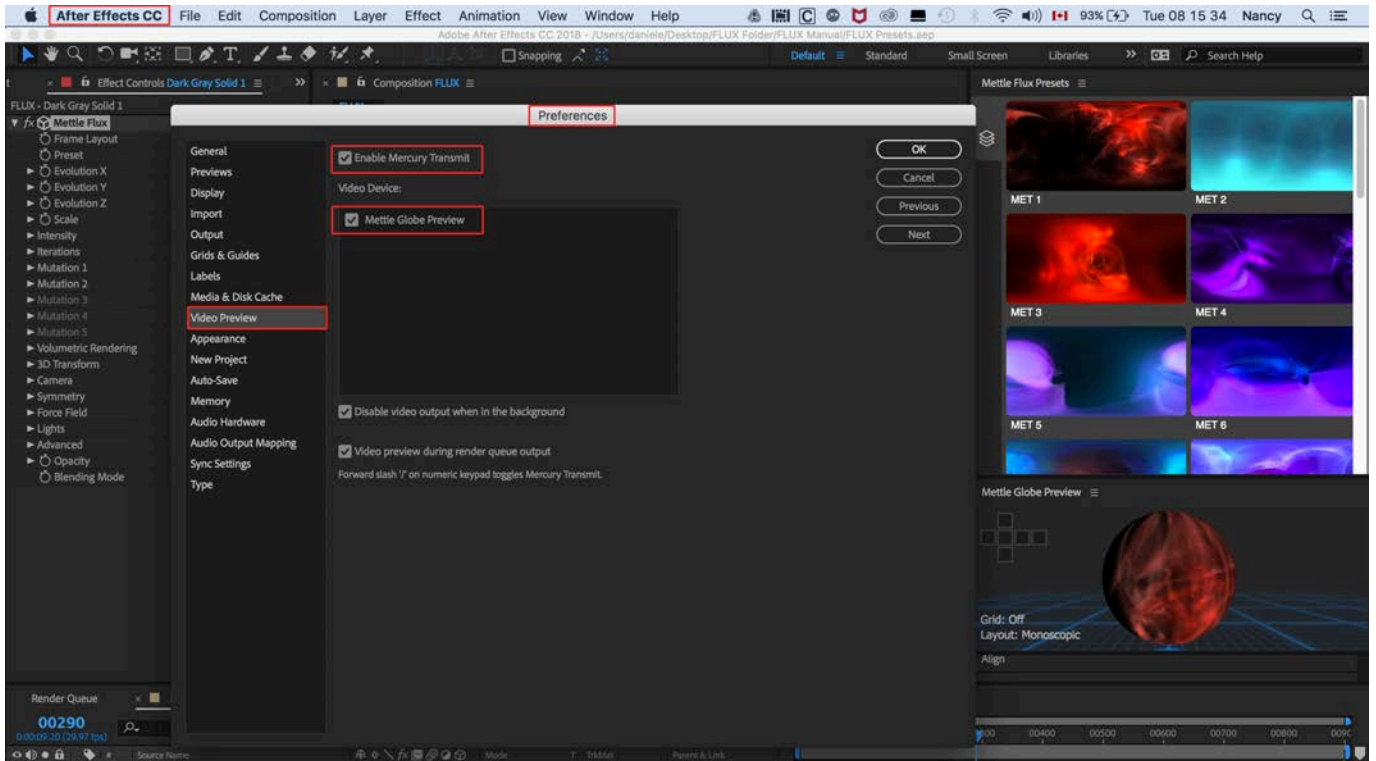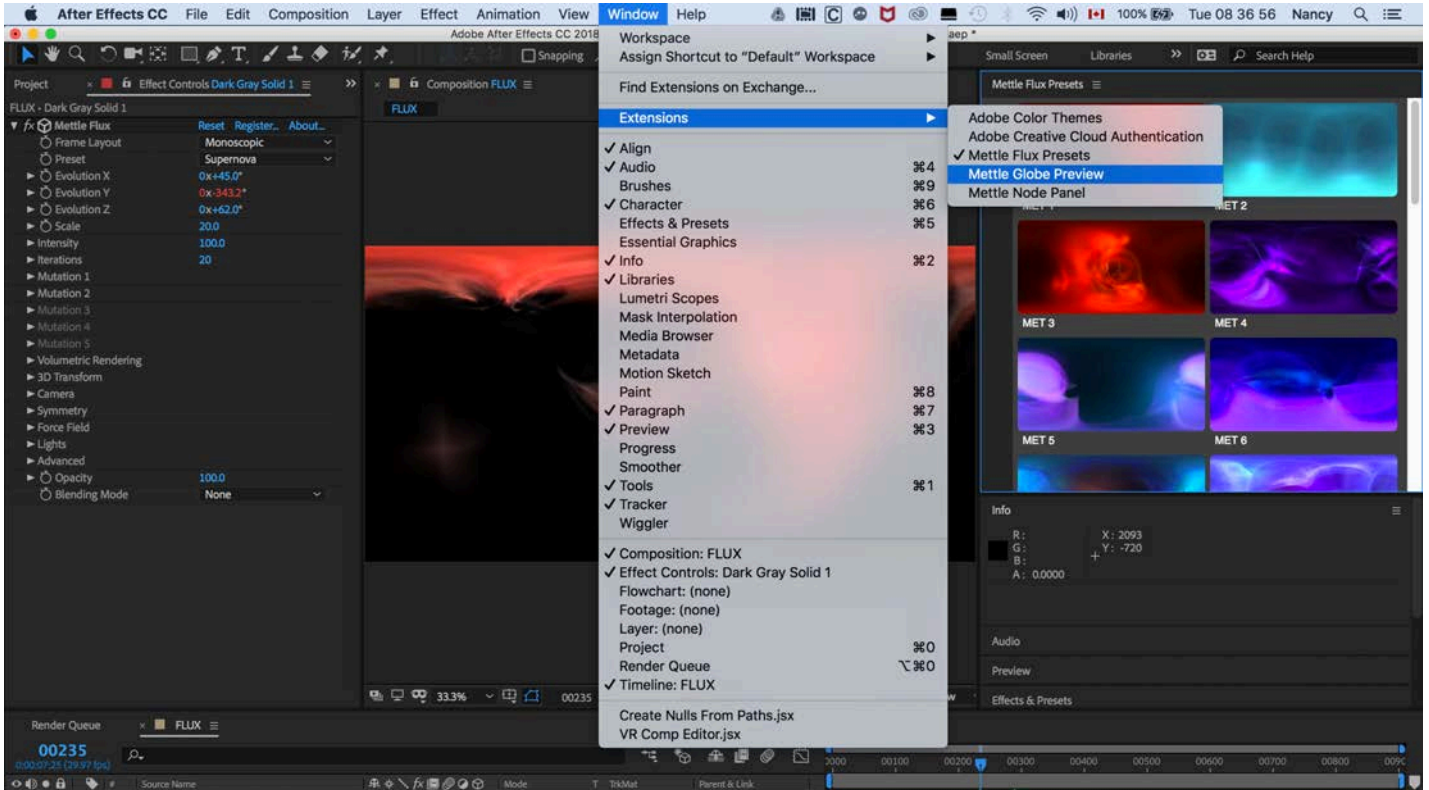

Enable Globe Preview: Premiere Pro. Preferences - Enable Mercury Transmit + Mettle Globe Preview.

Mettle Globe Preview cont'
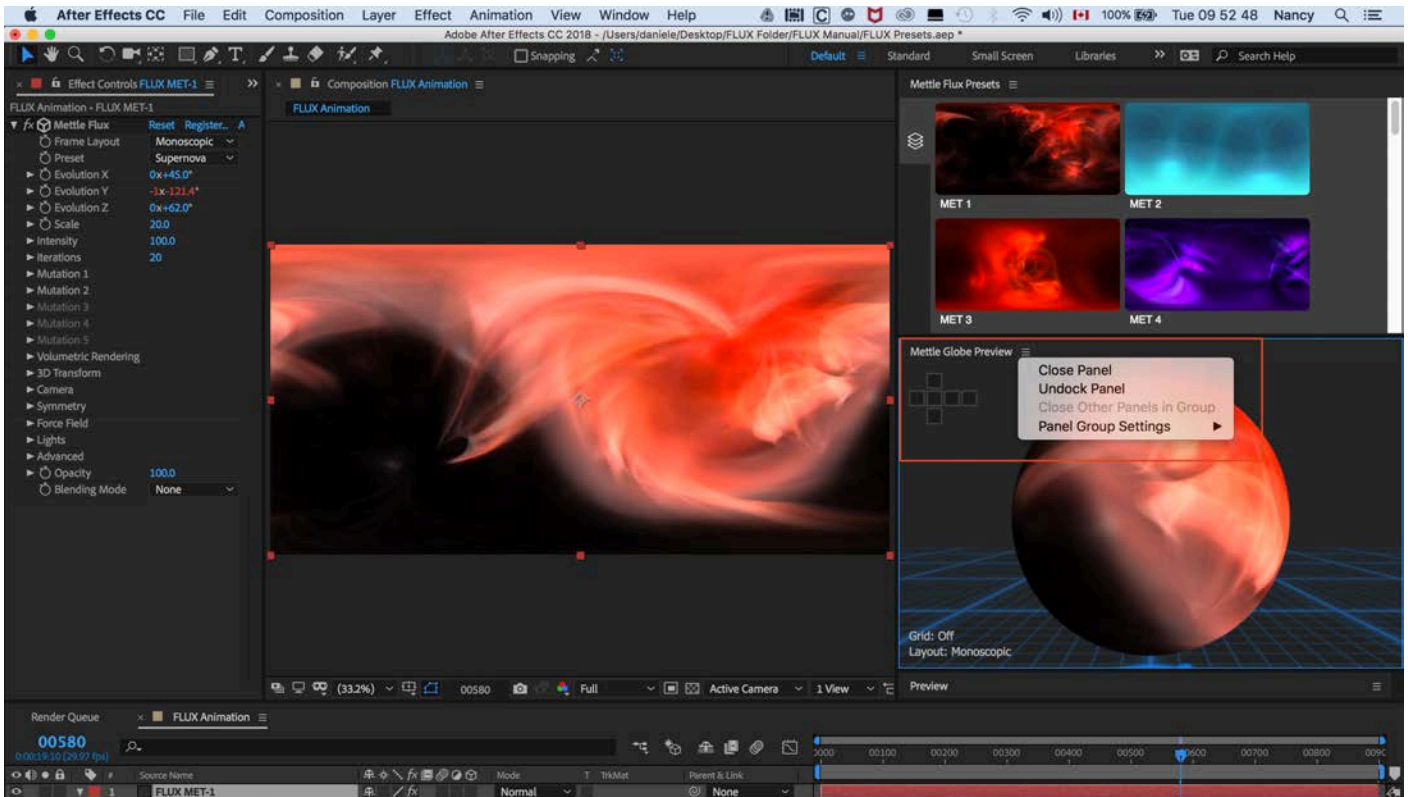
Window > Extensions > Mettle Globe Preview

Mettle Globe Preview Panel Appears (with default image). Click on timeline to refresh view.
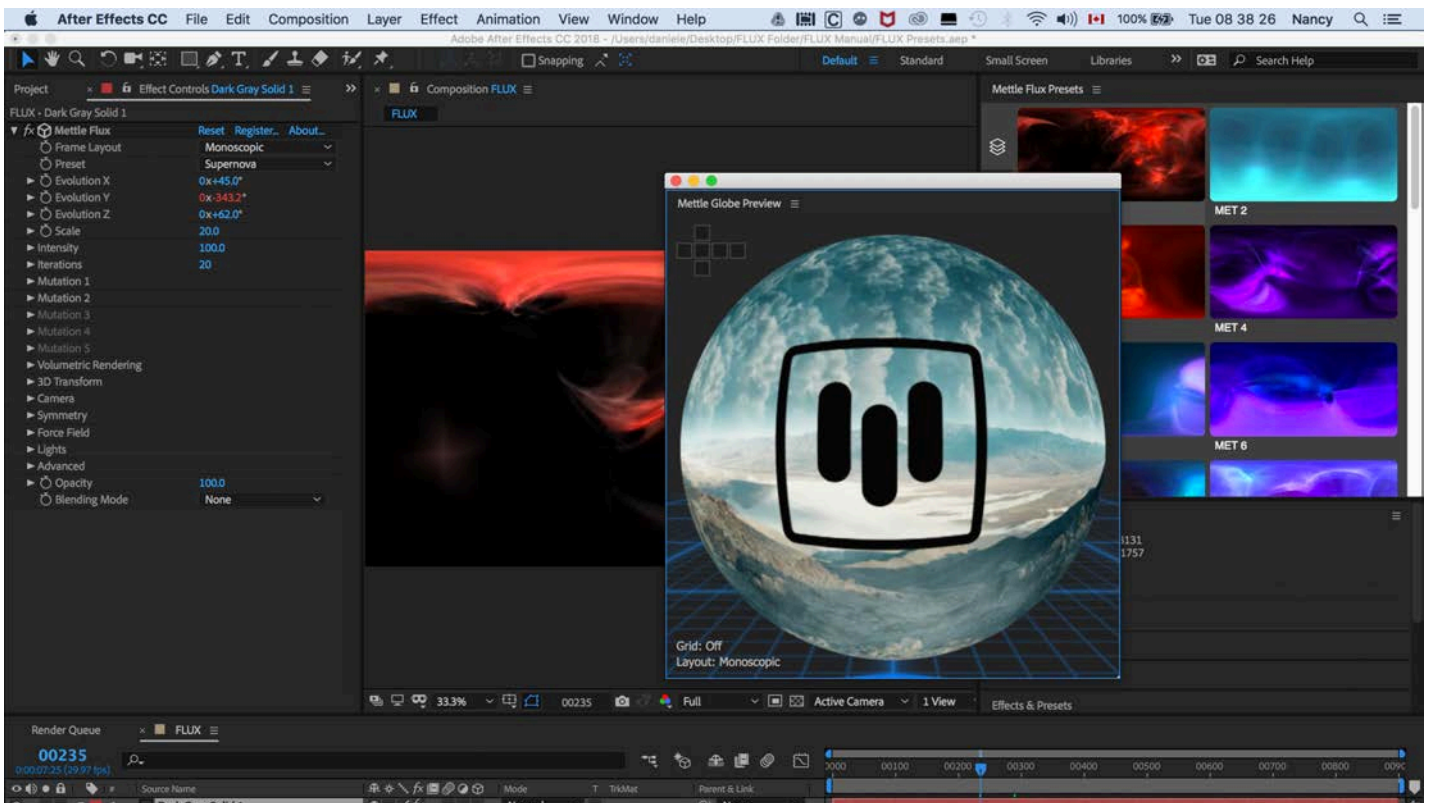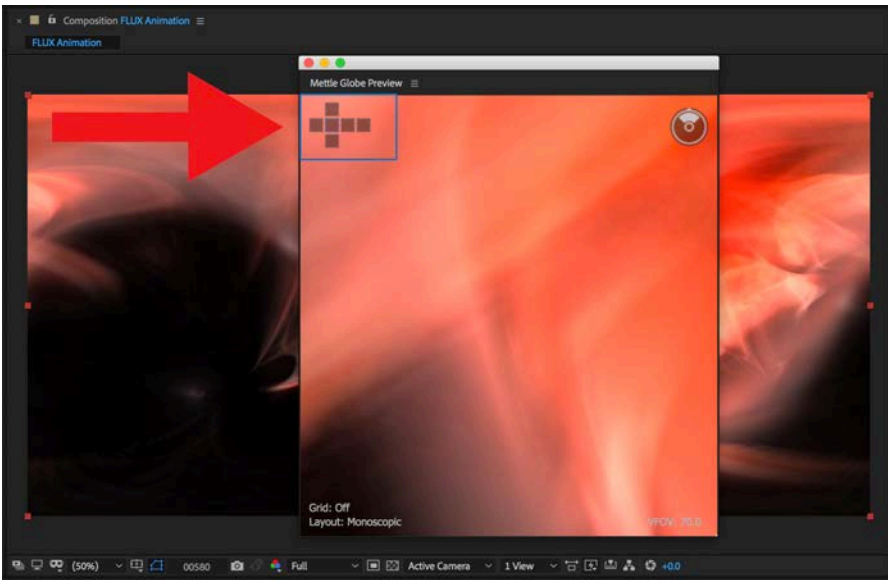
Mettle Globe Preview cont'

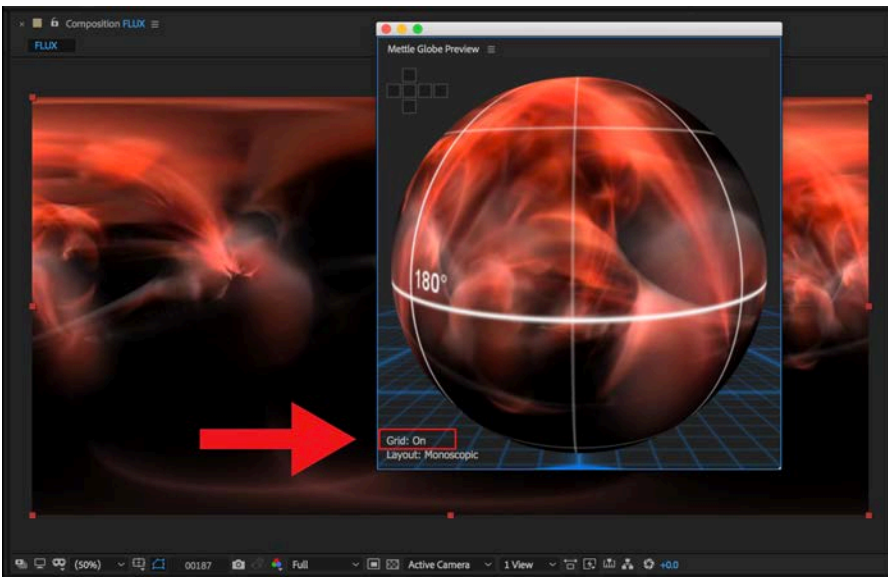**Panel is Dockable. Effects are displayed on the Globe Preview.**
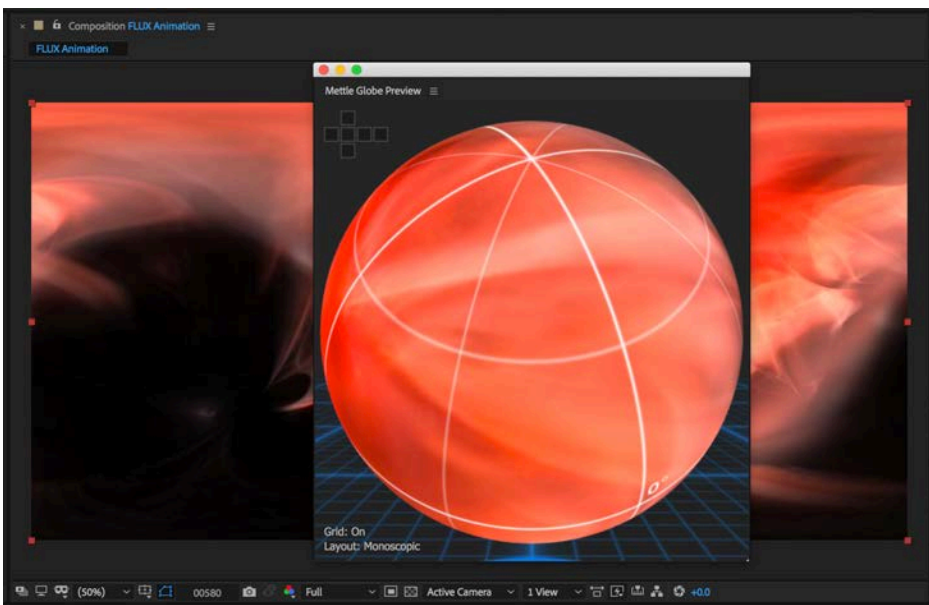
Rotate the Sphere by clicking and dragging with your mouse to see every view.
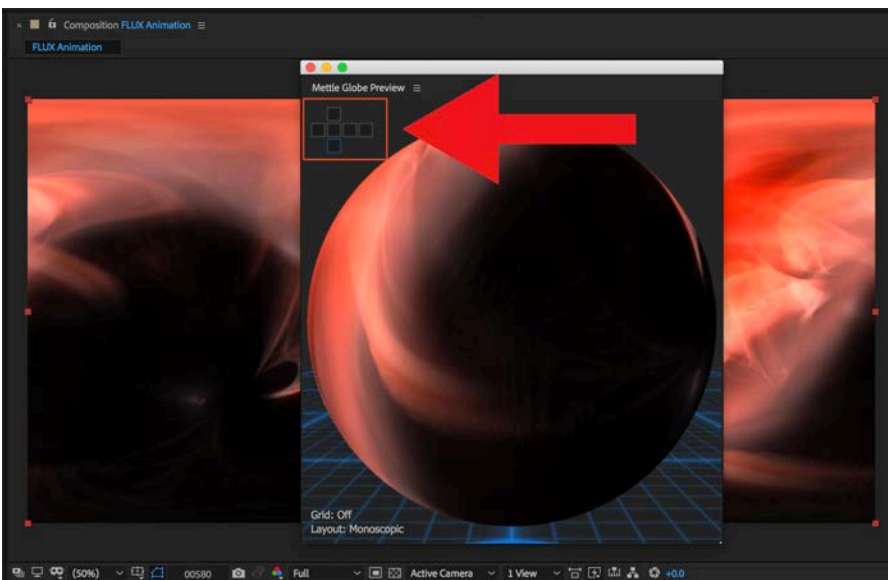
Mettle Globe Preview cont'

Double click on Globe to enter Sphere. Clicking on squares in the Cubic Cross, or swipe with your mouse to navigate through all views.

Click on wireframe Globe icon to apply wireframe guide.

Select Layout: Click on > Monoscopic > Sterescopic Over Under > Stereoscopic Side by Side.

Navigate on the Sphere by clicking on the different regions of the Cubic Cross.
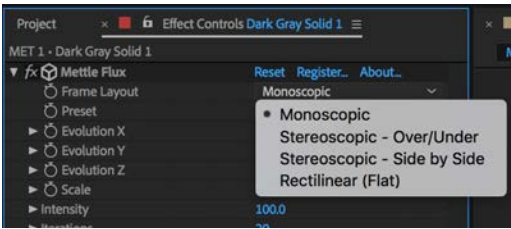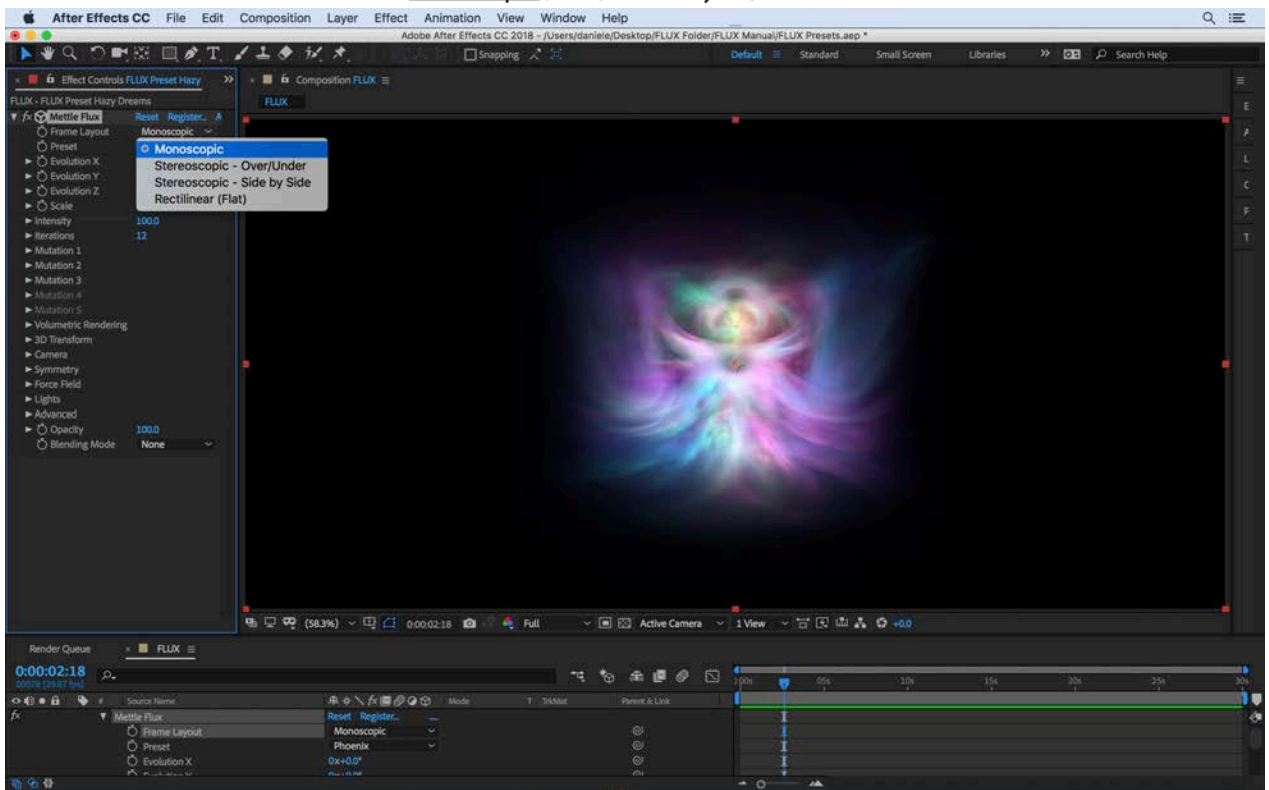
FLUX PARAMETERS: FRAME LAYOUT

FLUX supports traditional flat video (Rectilinear), 360° Monoscopic and Stereoscopic Over Under and Stereoscopic Side By Side.

Select a format from the drop-down menu.
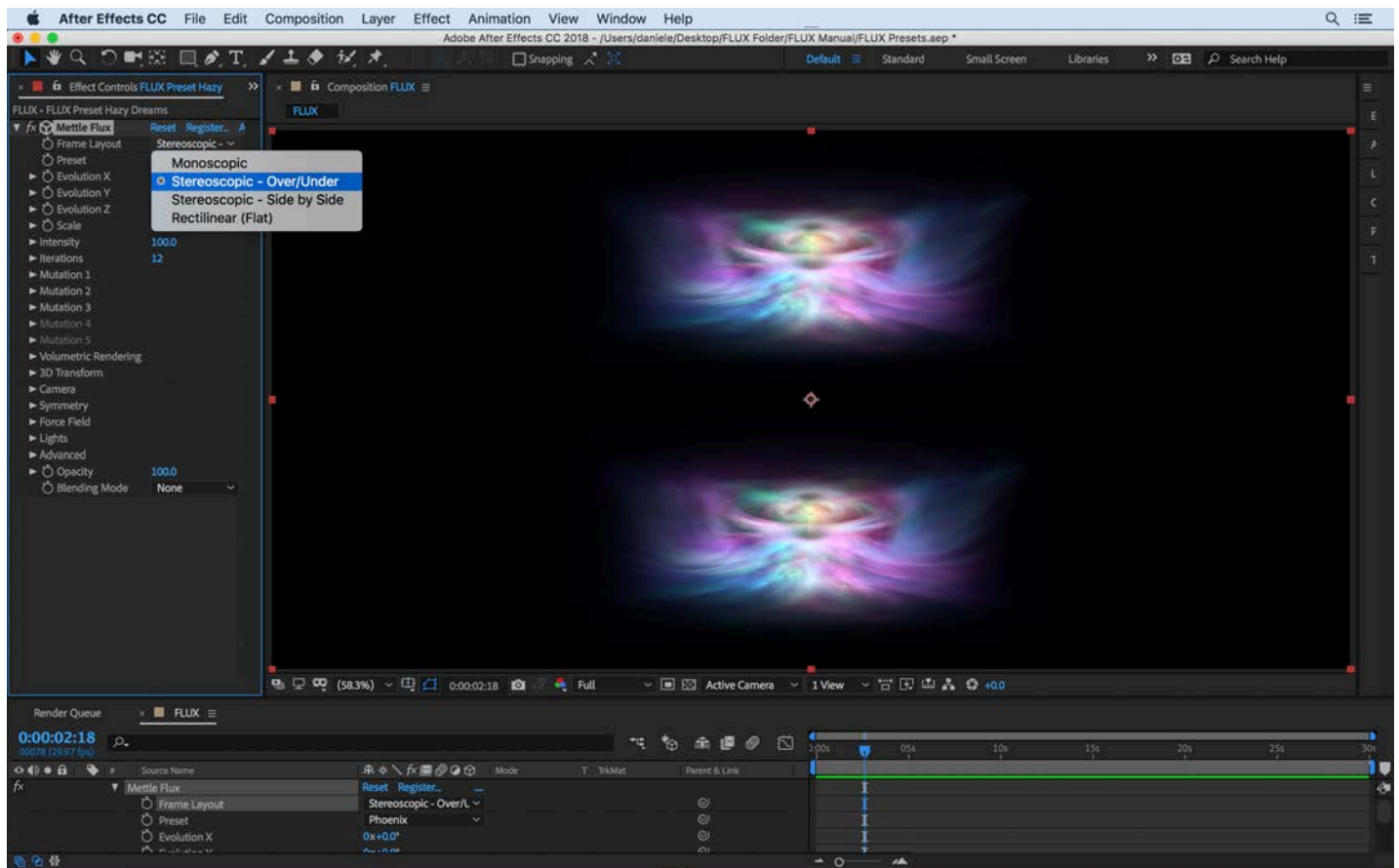
Monoscopic (360°) Frame layout, Phoenix Preset
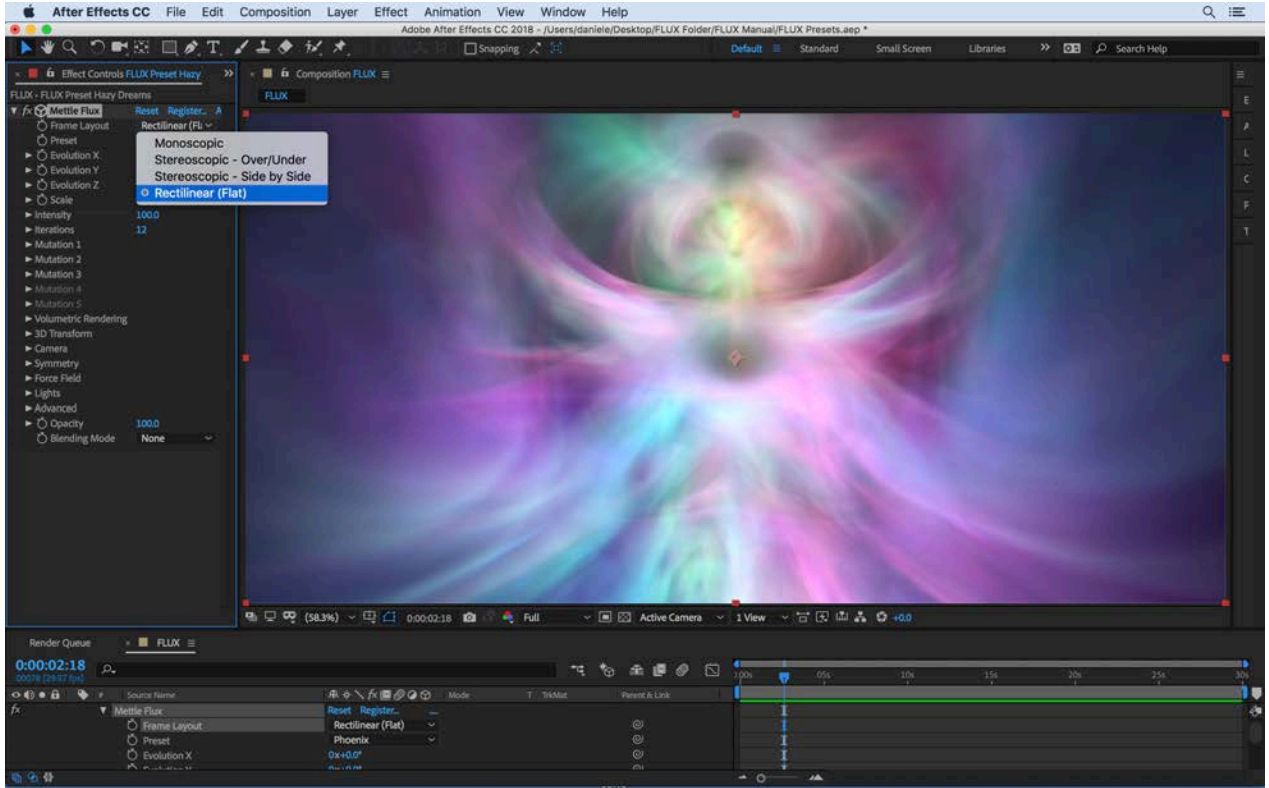
Monoscopic (360°) Frame layout, Phoenix Preset

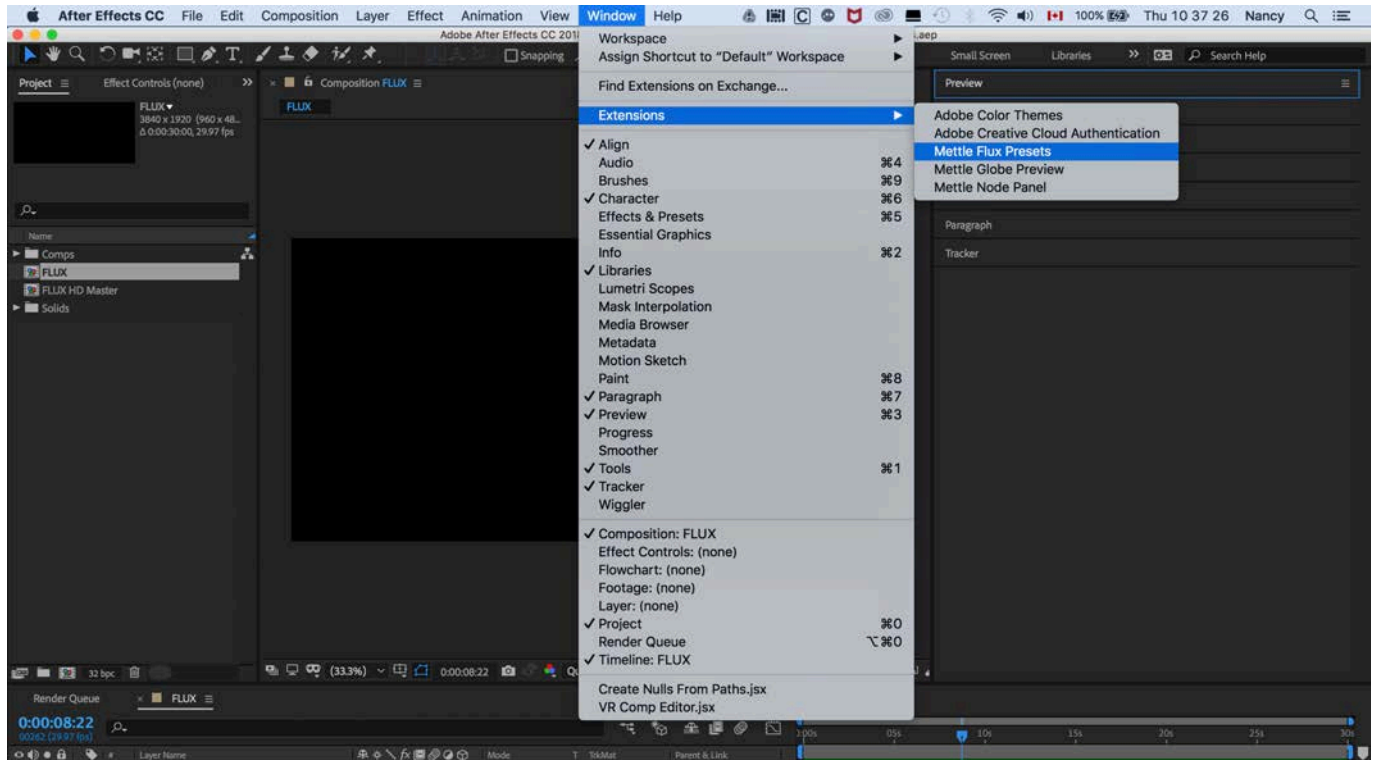## Stereoscopic - Side By Side (360°) Frame layout, Phoenix Preset
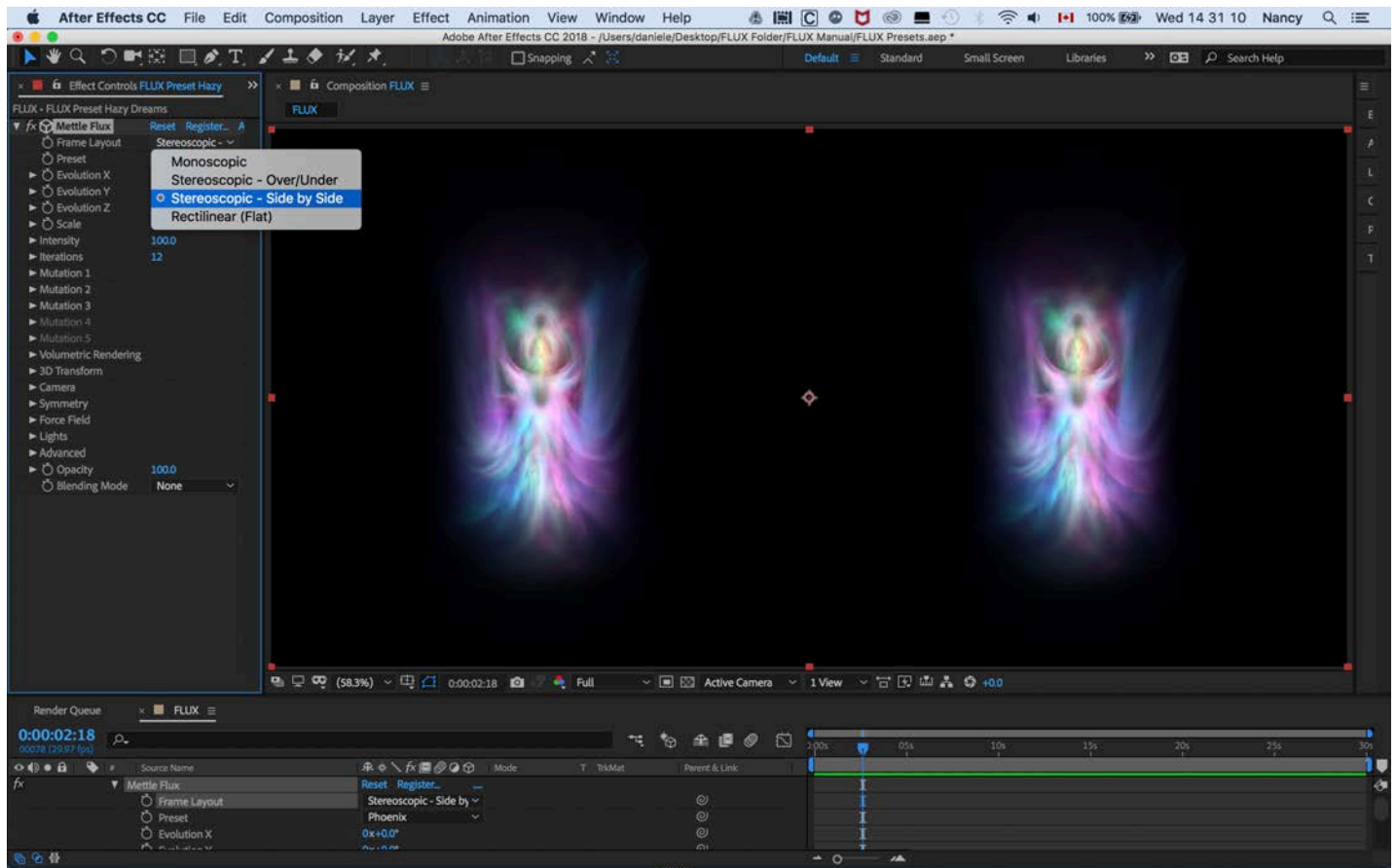
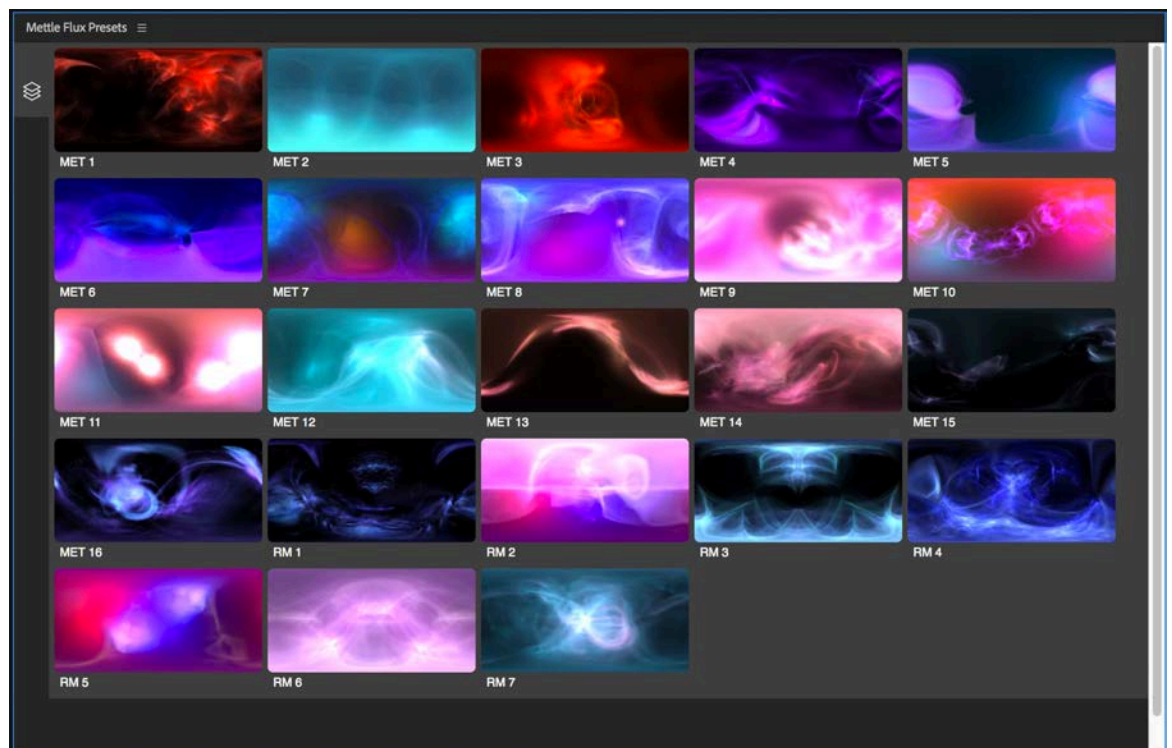## Stereoscopic - Over/Under (360°) Frame layout, Phoenix Preset

FLUX Preset Panel

FLUX includes a Preset Panel, with animations ready to go at the click of a mouse.

After Effects: Open FLUX Preset Panel. Window > Extensions > Mettle Flux Presets
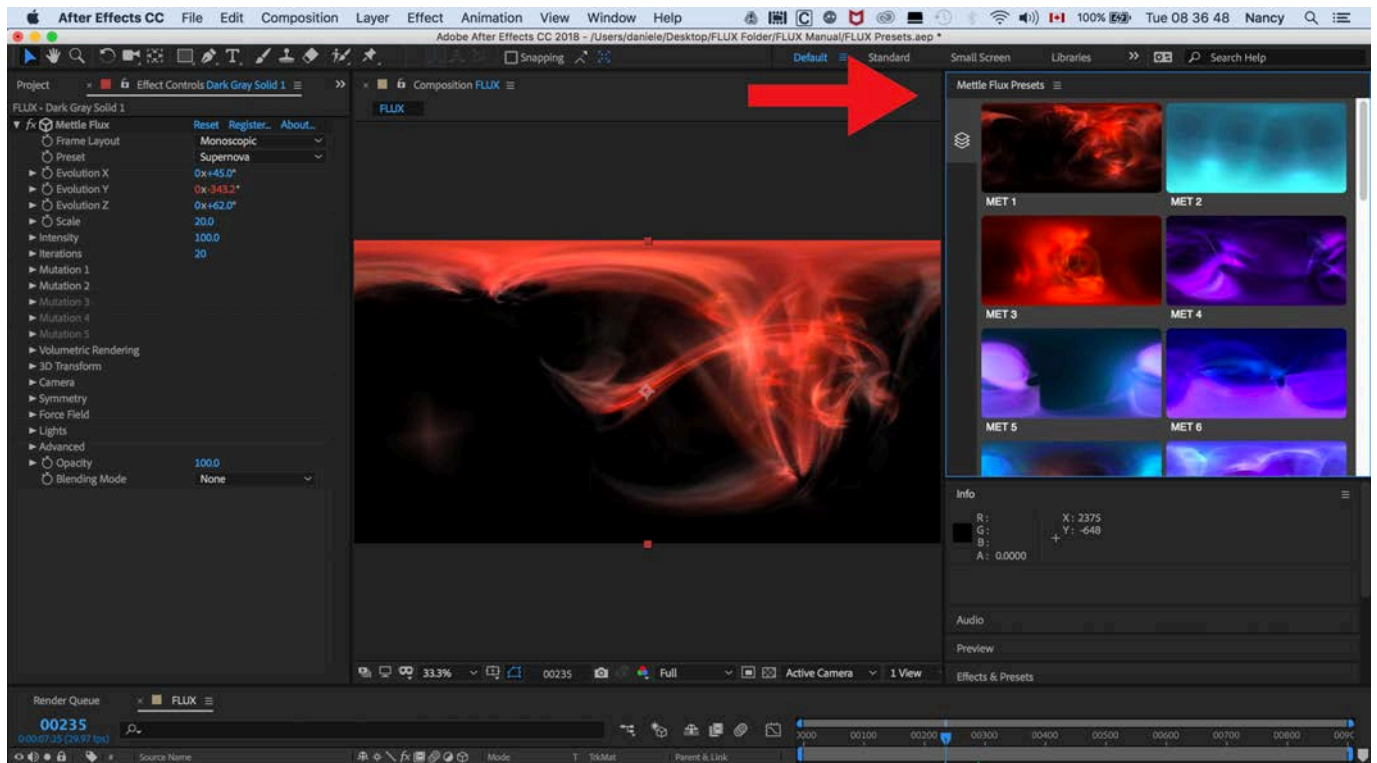

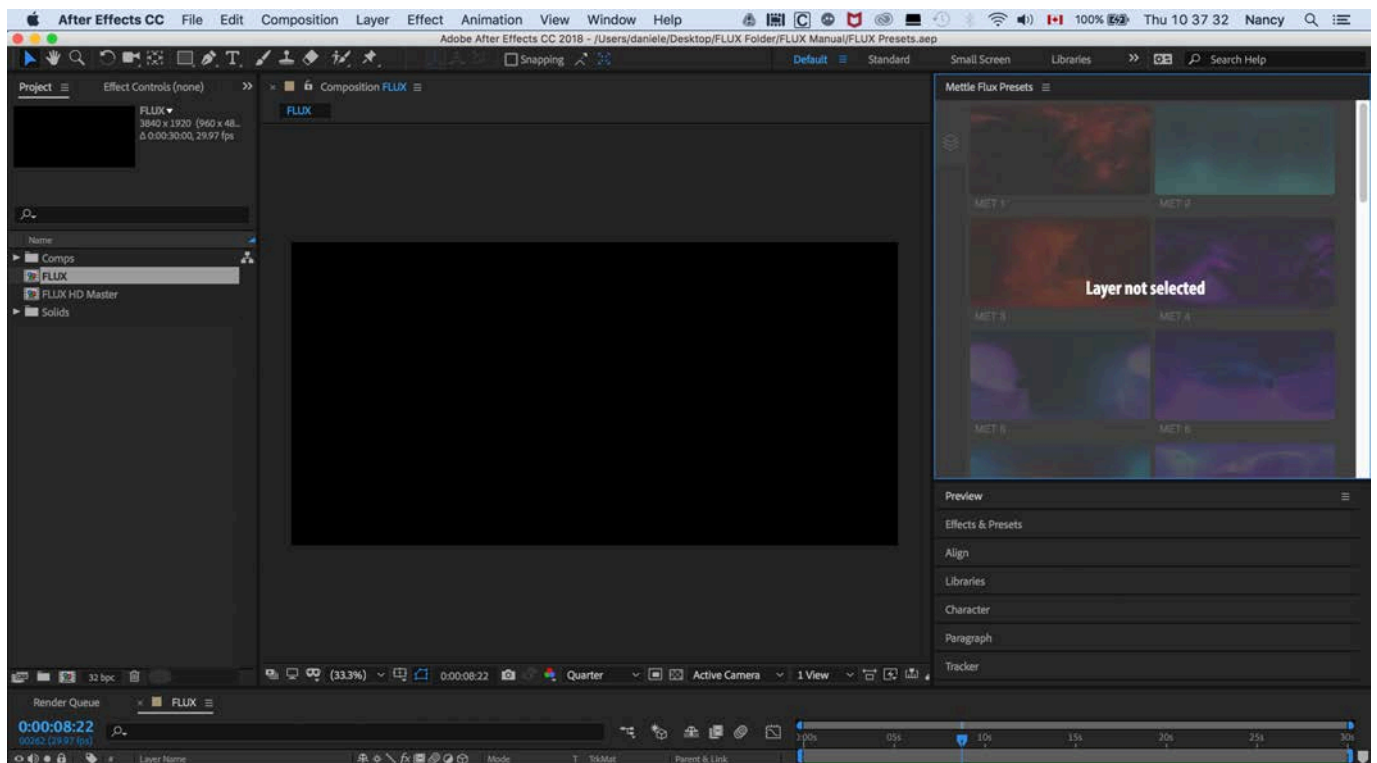**FLUX Preset Panel has 23 FLUX animation Presets .**

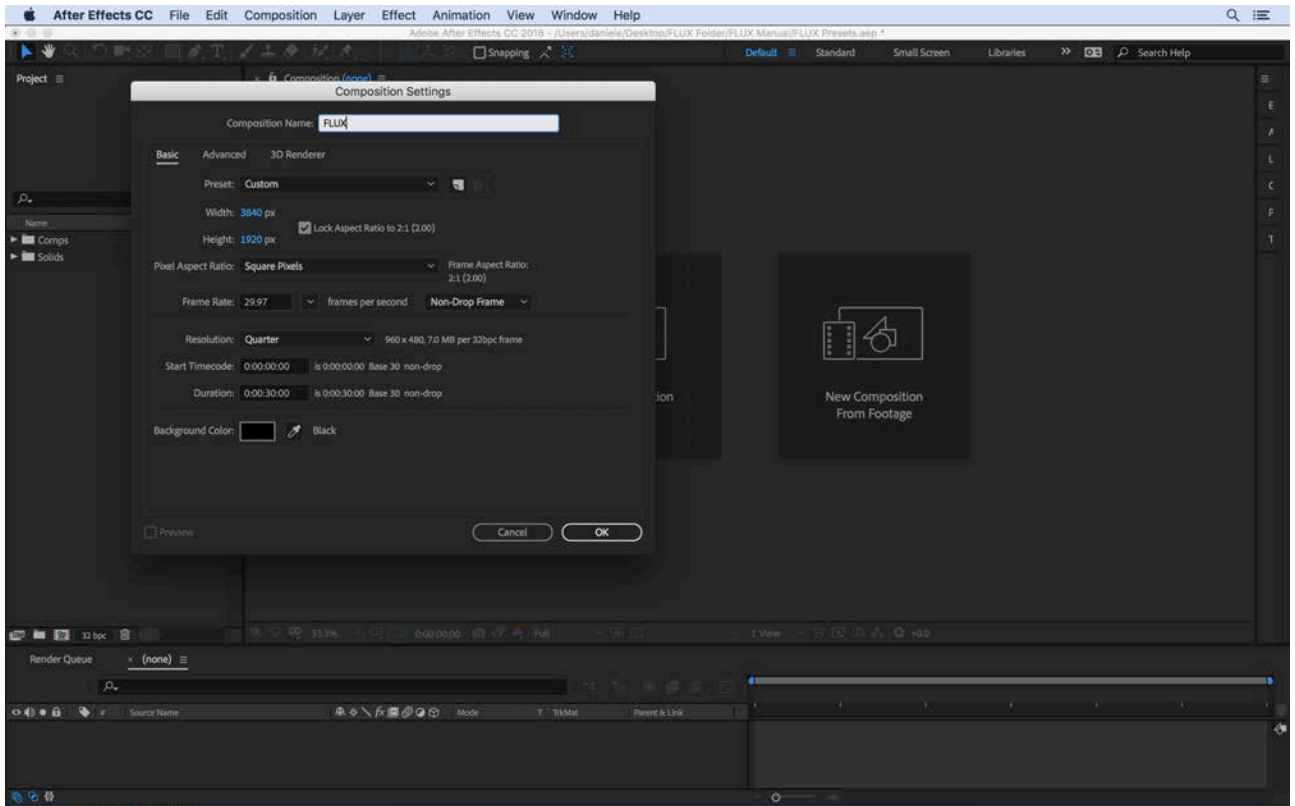# FLUX Preset Panel - Cont'

FLUX Preset Panel is dockable.

**"Layer Not Selected" indicates that a solid has not been selected**

FLUX: Getting Started

After Effects - Create a Comp. If you are working in 360°, your comp needs to be a 2:1 ratio, minimum (3840 x 1920) or (4096x2048) for 4K resolution.
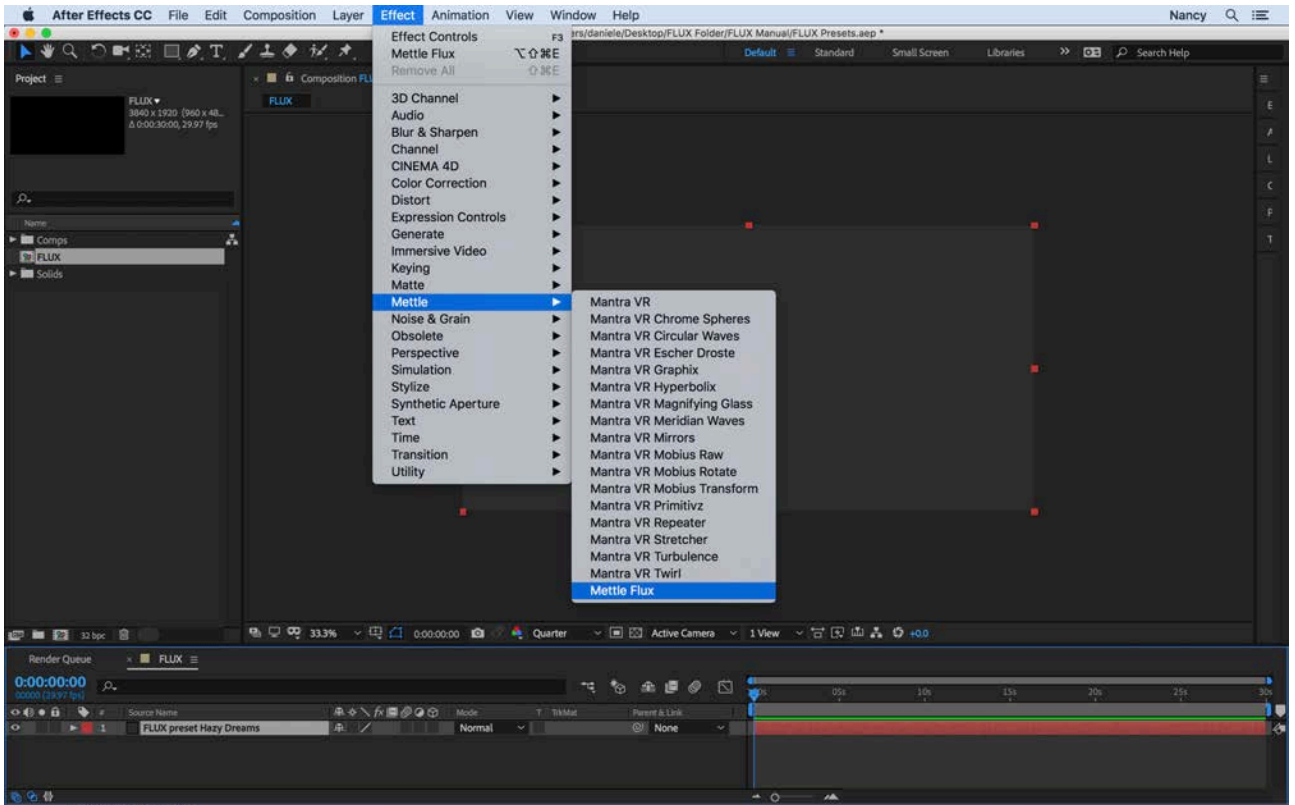FLUX works with different sized comps, such as HD (1920 x 1080).

Create a Solid the same size as your comp. It can be the same length as your time-line, or shorter. It should be the length of your desired FLUX animation.
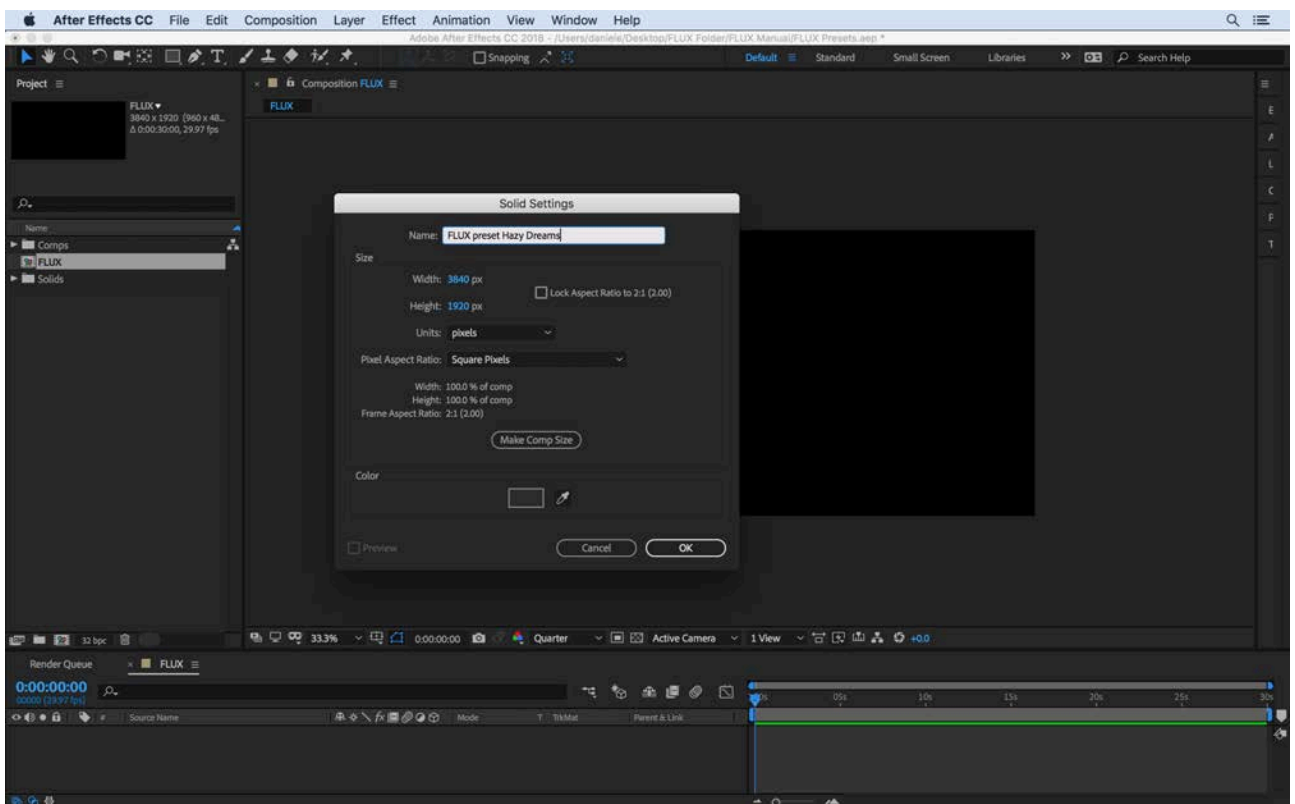
FLUX: Effect Controls Panel> Presets

Select your Solid, and then select **Effect > Mettle > Mettle FLUX**

By default, there is no Effect applied, so your comp appears black.

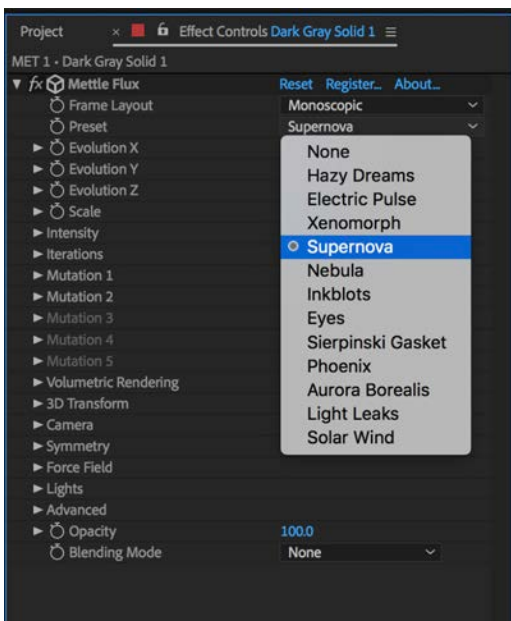*NOTE: Flux Presets in the Effect Controls Panel are different than those found in the FLUX Preset Panel.*
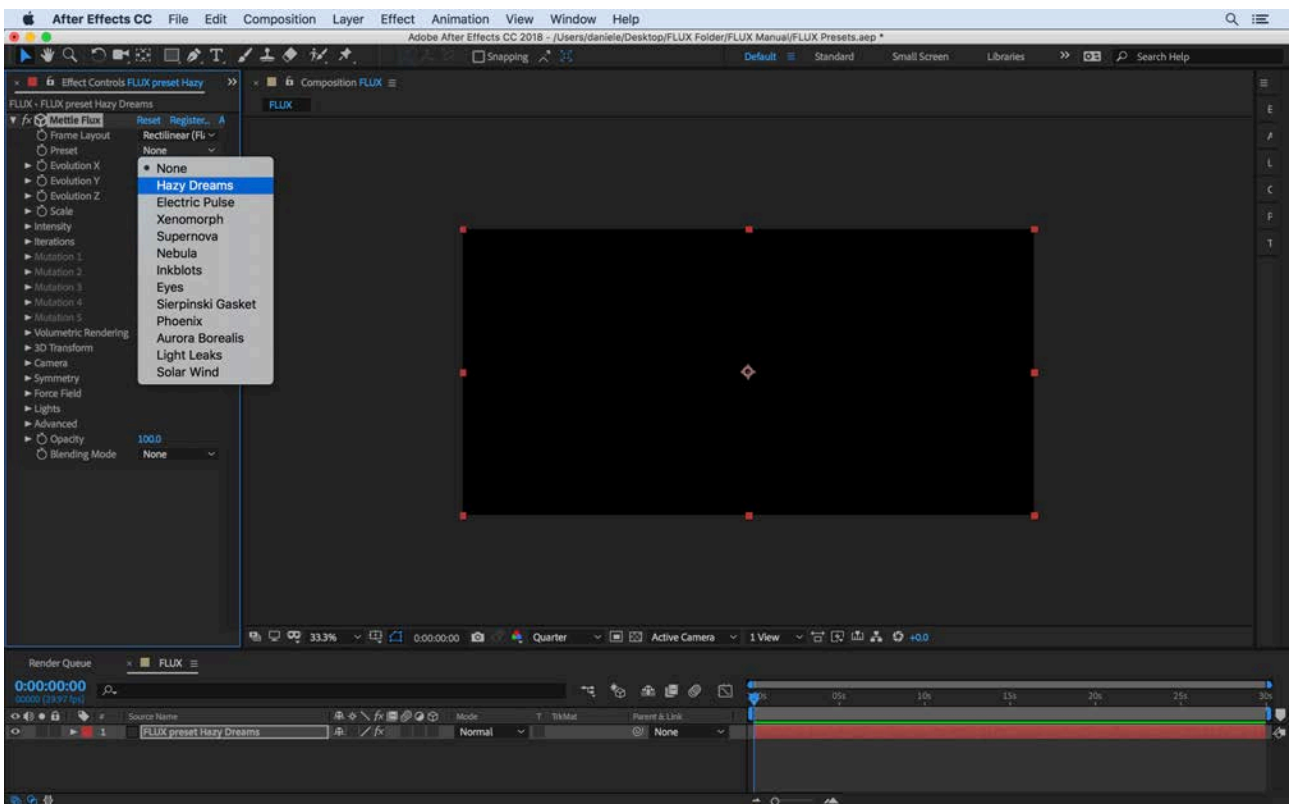
FLUX: Effect Controls Panel> Presets

A great way to start your FLUX Volume is to Select a Preset.
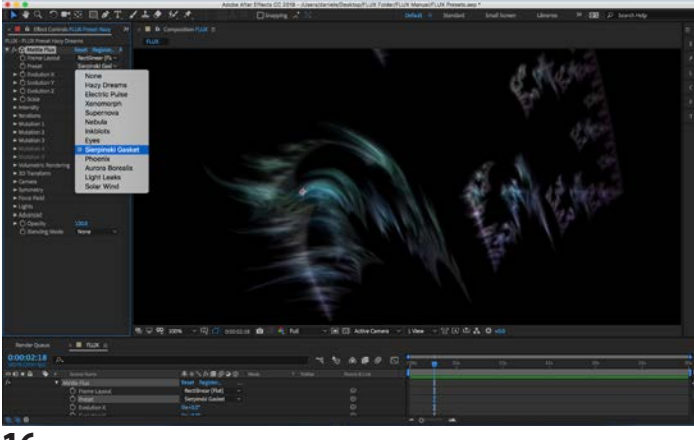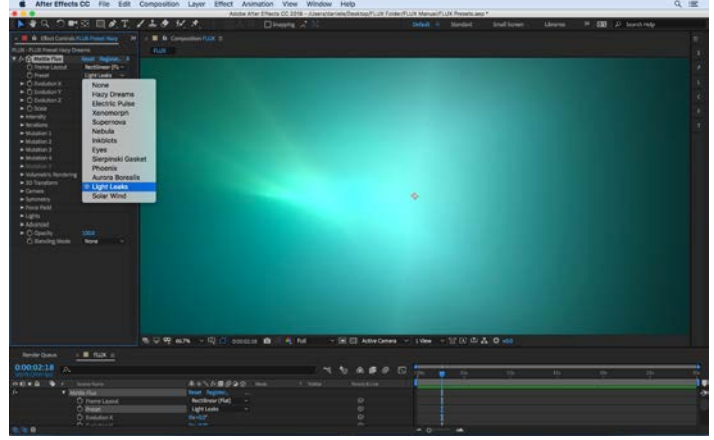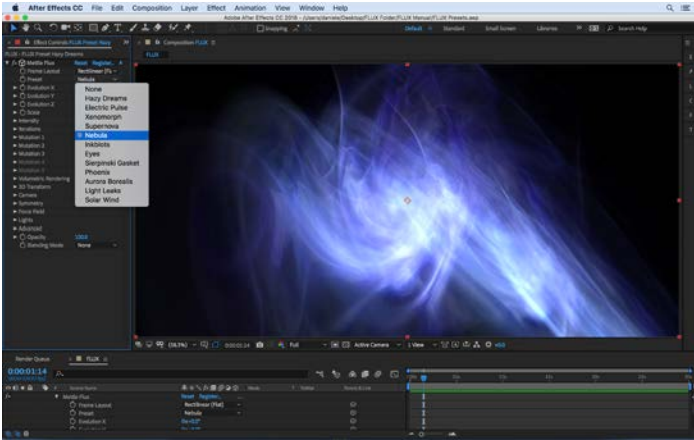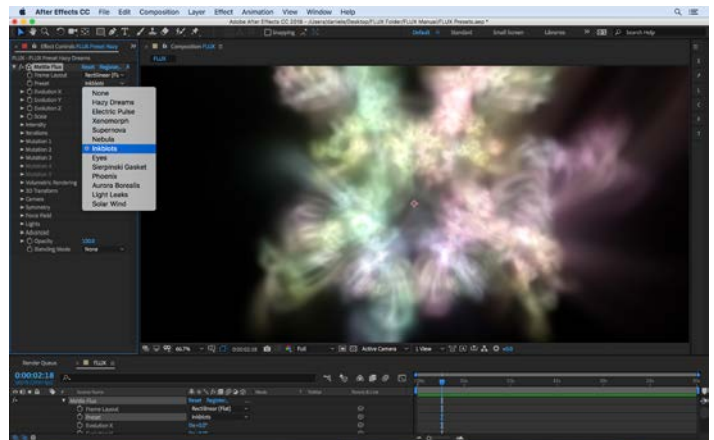FLUX Effect Controls Panel > Presets > Solar Wind

There are a variety of presets that can be used as starting points
Example: Preset > Supernova

FLUX: Effect Controls Panel> Presets

Explore the Presets as a first step in further customisation. Apply more FLUX parameters, mentioned further in this Manual, to get the look you want.
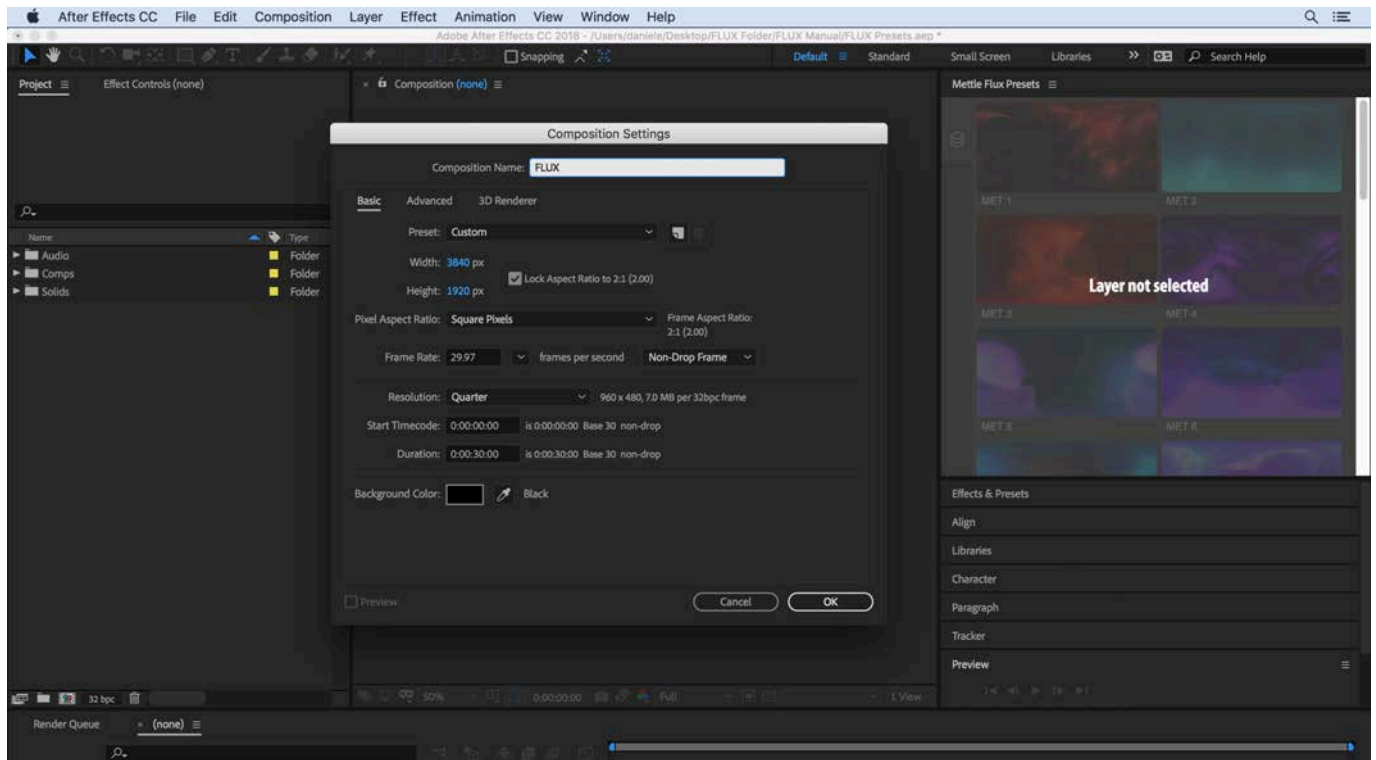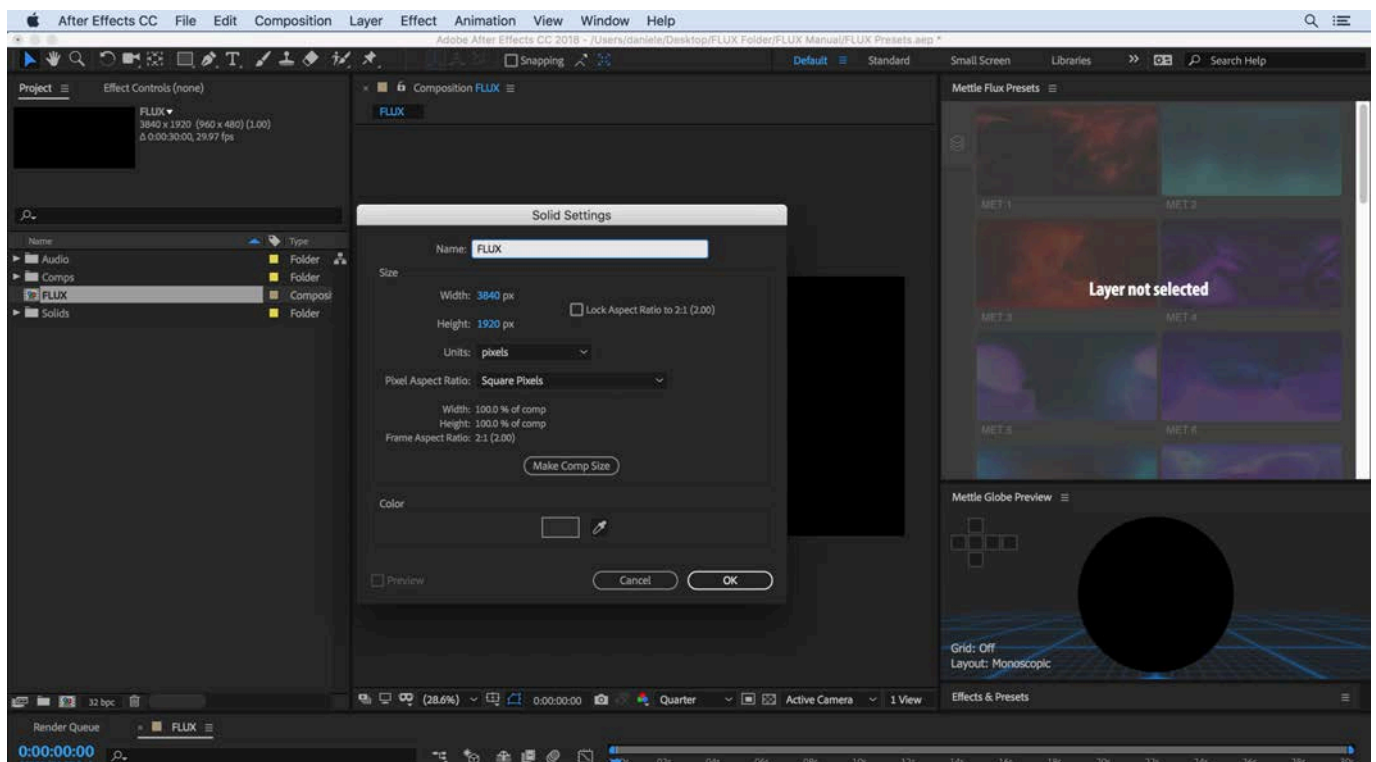
FLUX Preset Panel > Applying the presets

The FLUX Preset Panel is a separate set of animated effects that can be applied with the click of a mouse. (See how to access Panel on P. 11)

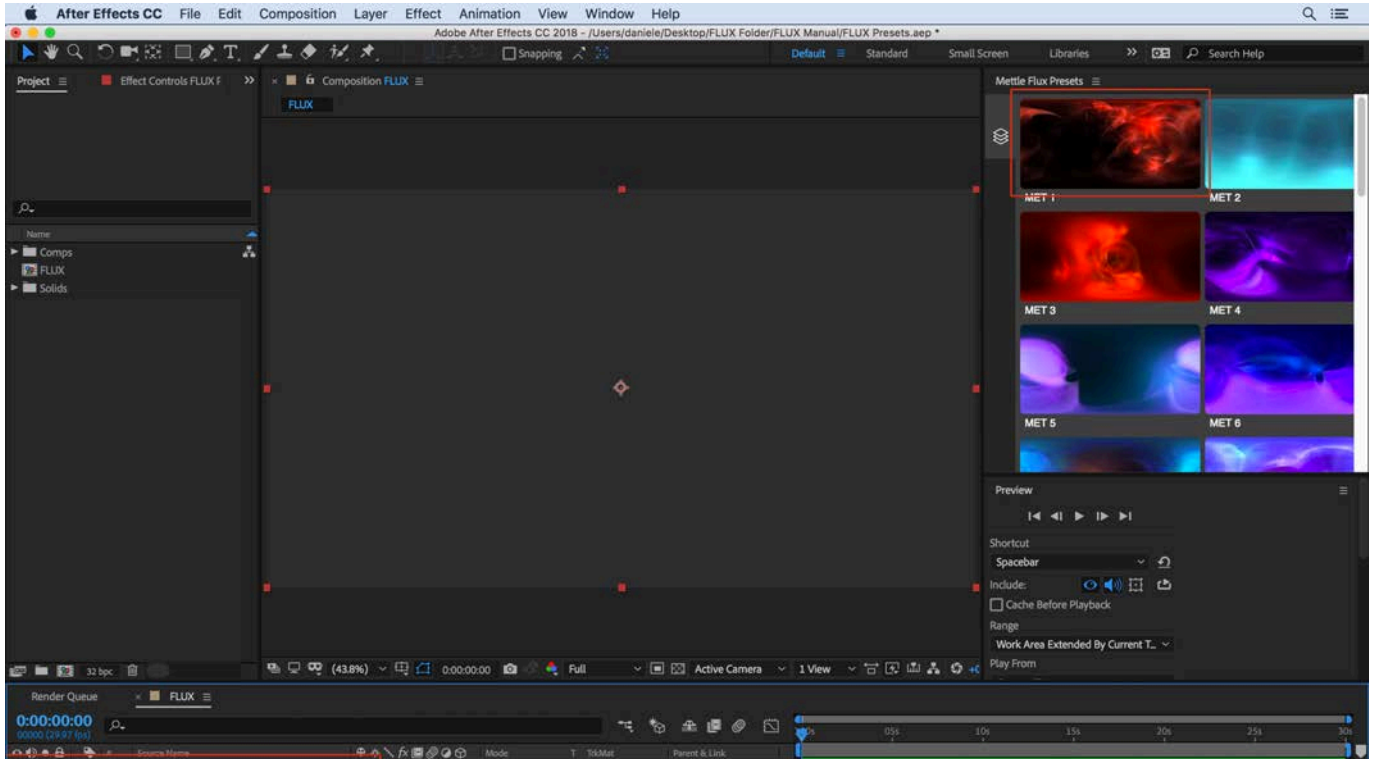**Create a comp that is the length of your desired animation.**

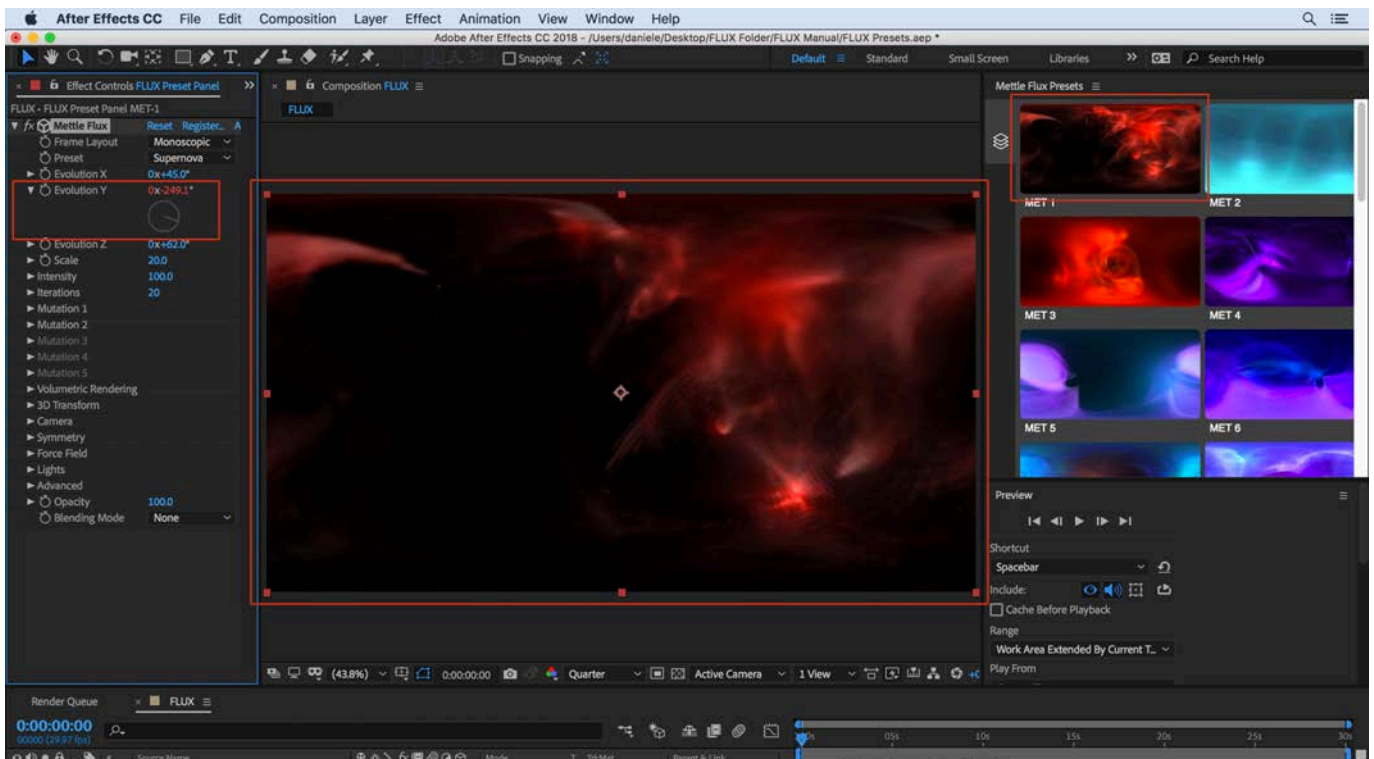**Create a Solid the same size and length as your comp.**

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FLUX Preset Panel > Applying the presets

FLUX includes a separate Preset Panel (See how to access Panel on Page. 11).

Select your Solid and click on one of the Preset images in the FLUX Preset Panel.

The FLUX Volumetric animation is automatically generated for the length of the Solid on the timeline.
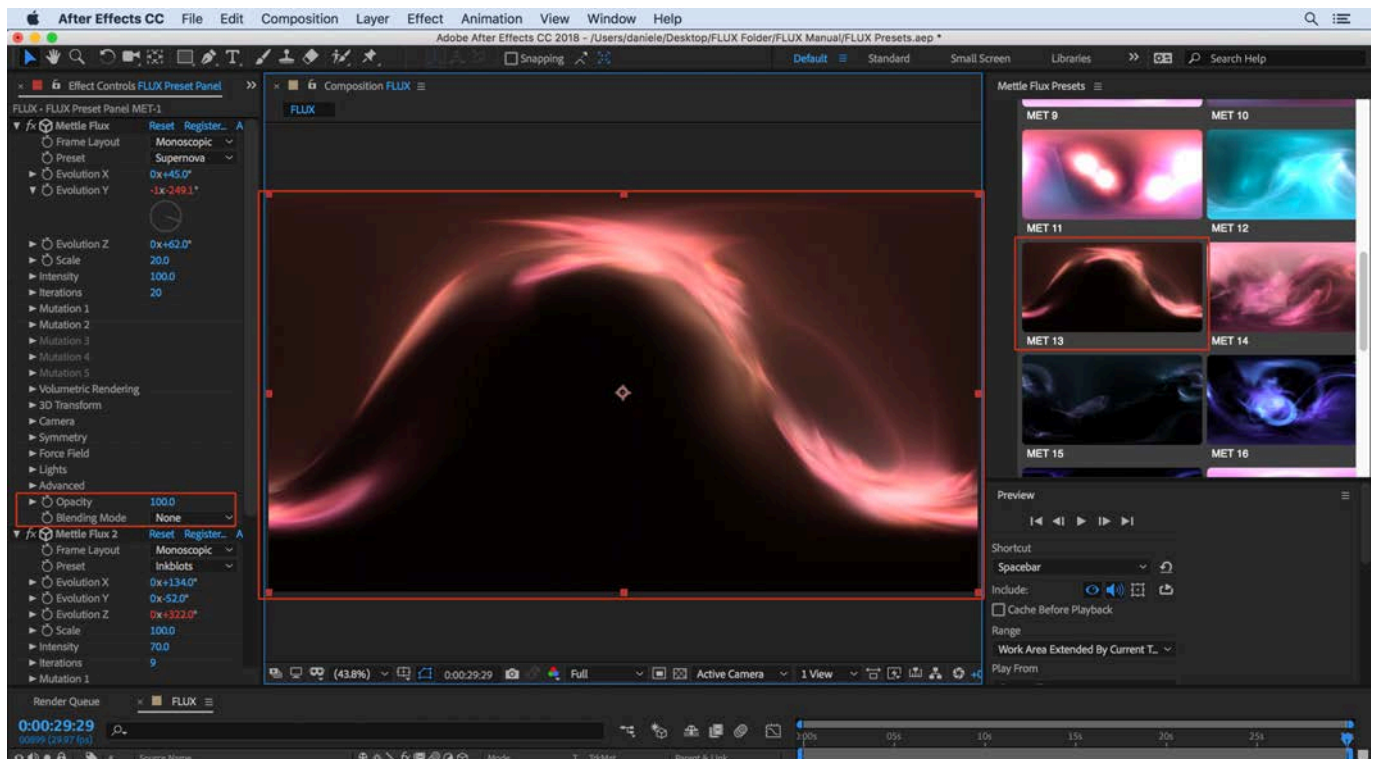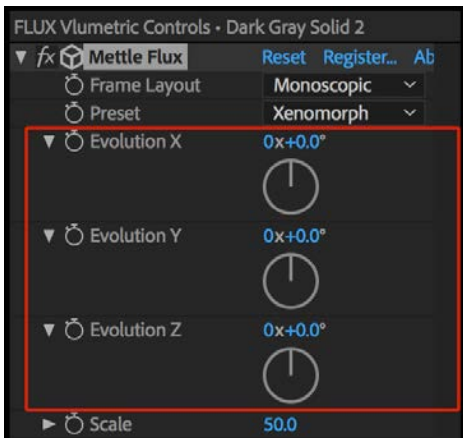
FLUX Preset Panel > Applying the presets

To apply another FLUX Preset, Select your solid and click on another Image in the Panel.
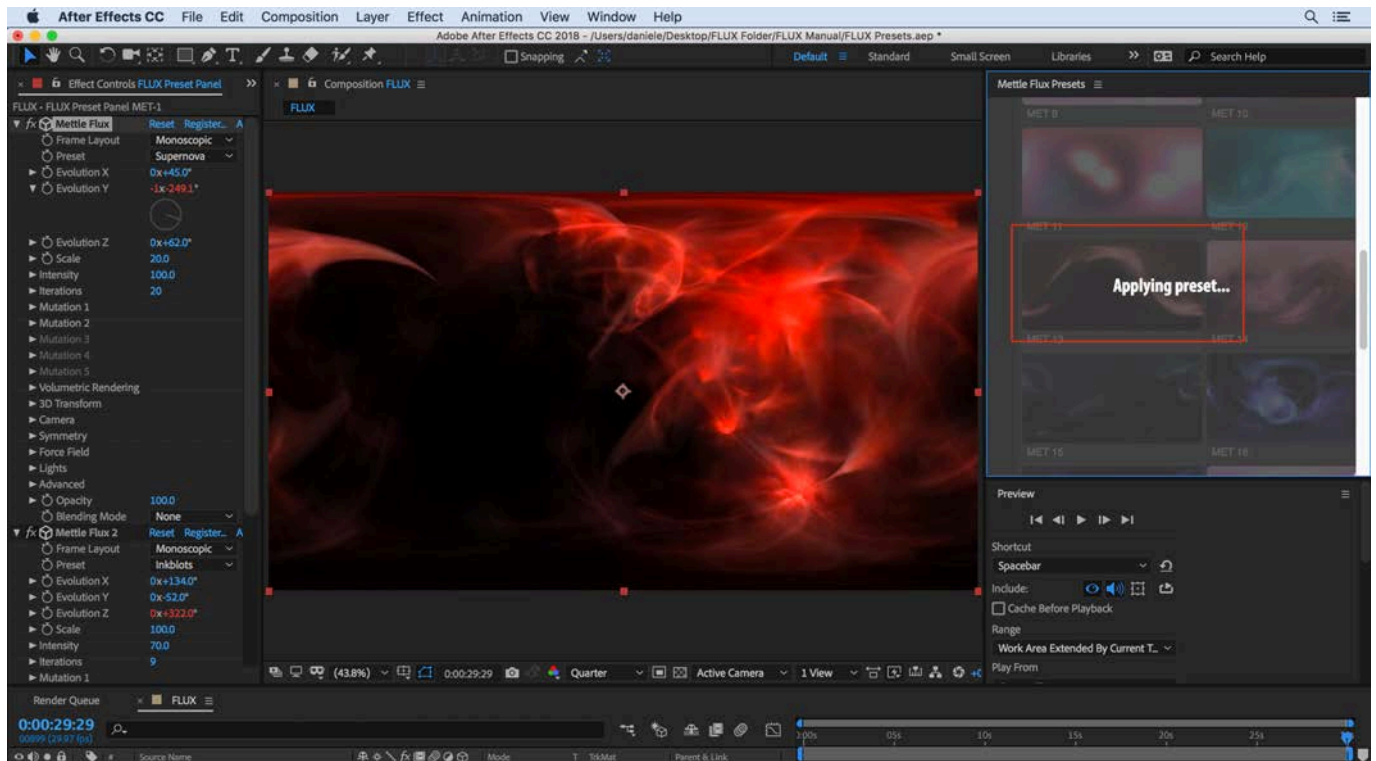
The FLUX Volumetric animation is automatically generated as a second effect that can be adjusted with blending mode.
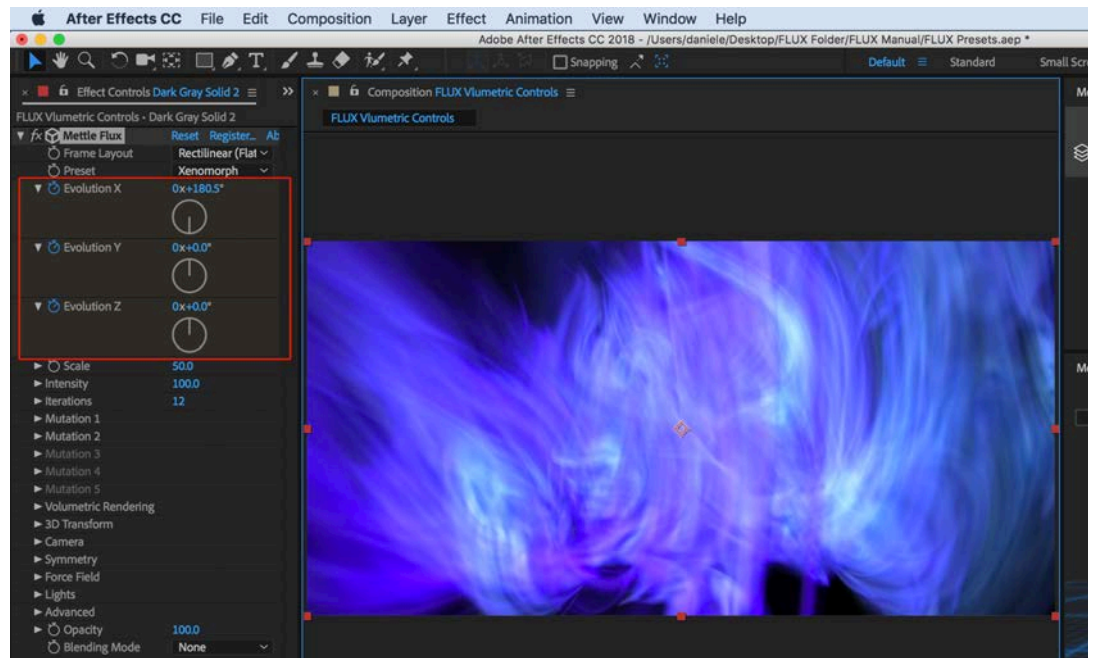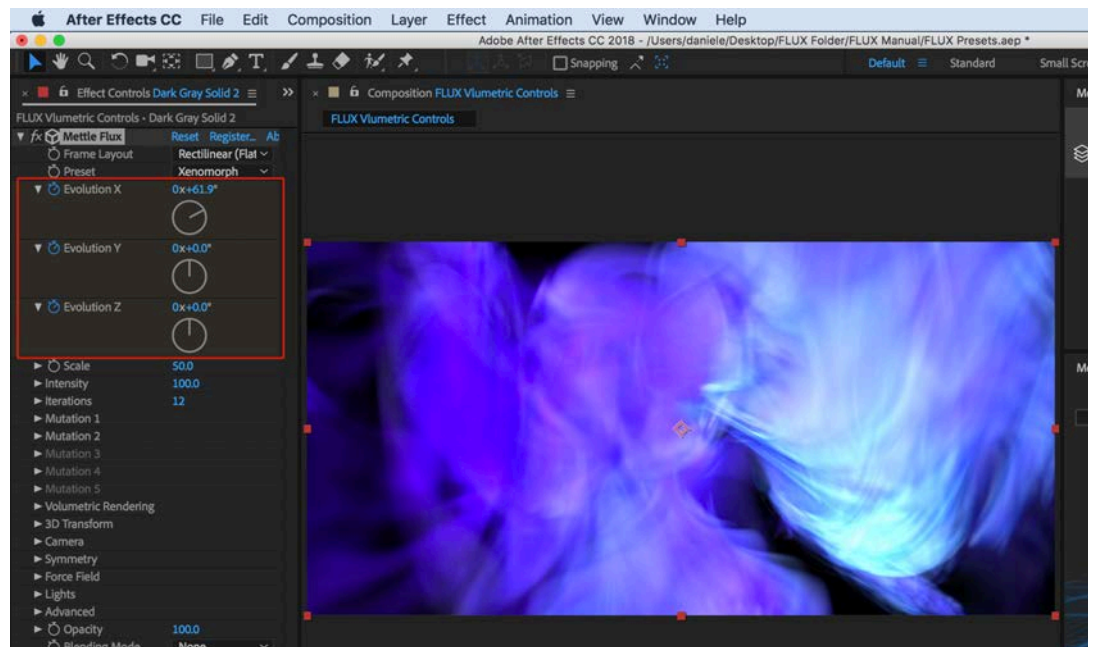
FLUX PARAMETERS: Evolution X, Y, Z

Smoothly evolve current FLUX combination in three different ways. This is an easy way to keep the look and Volume of your fractal, and animate it. Select "Evolution X, Y, Z", and keyframe with varying rotation values to get the desired speed and look of your animation.

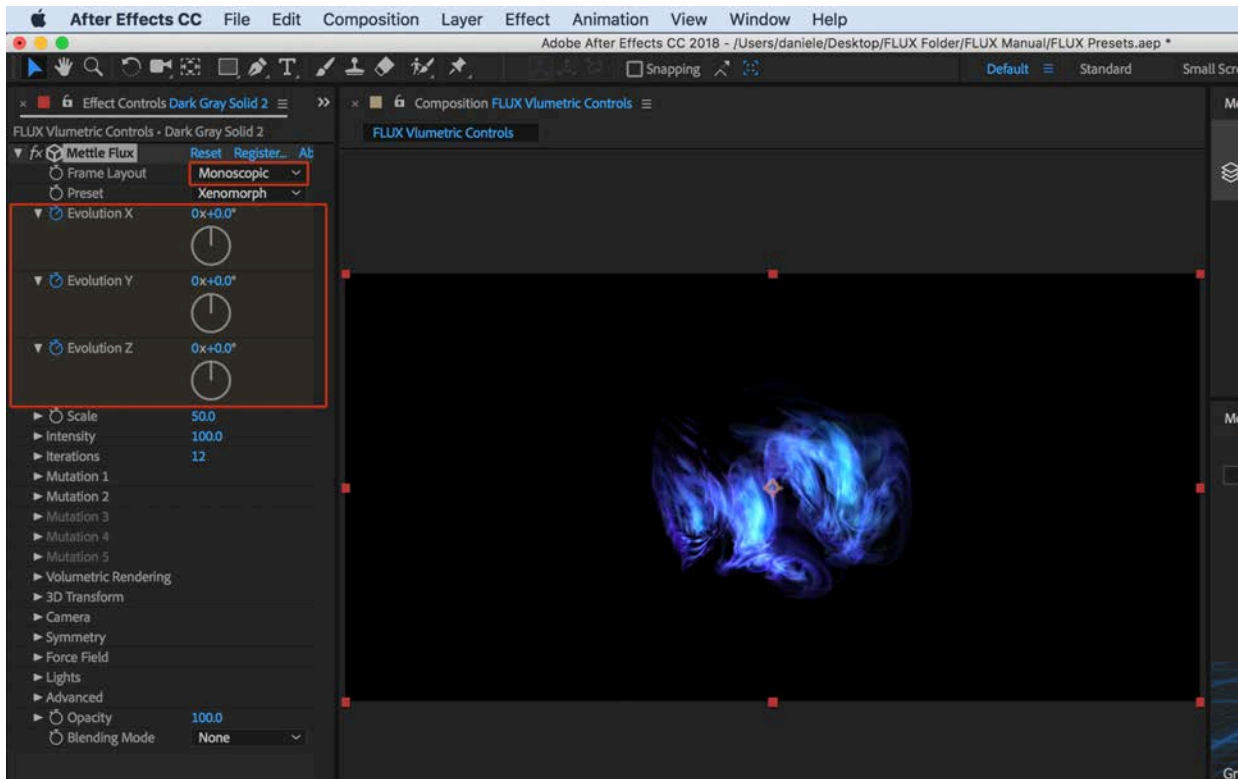*"Evolution X" 180° setting, Rectilinear Xenomorph Preset:*

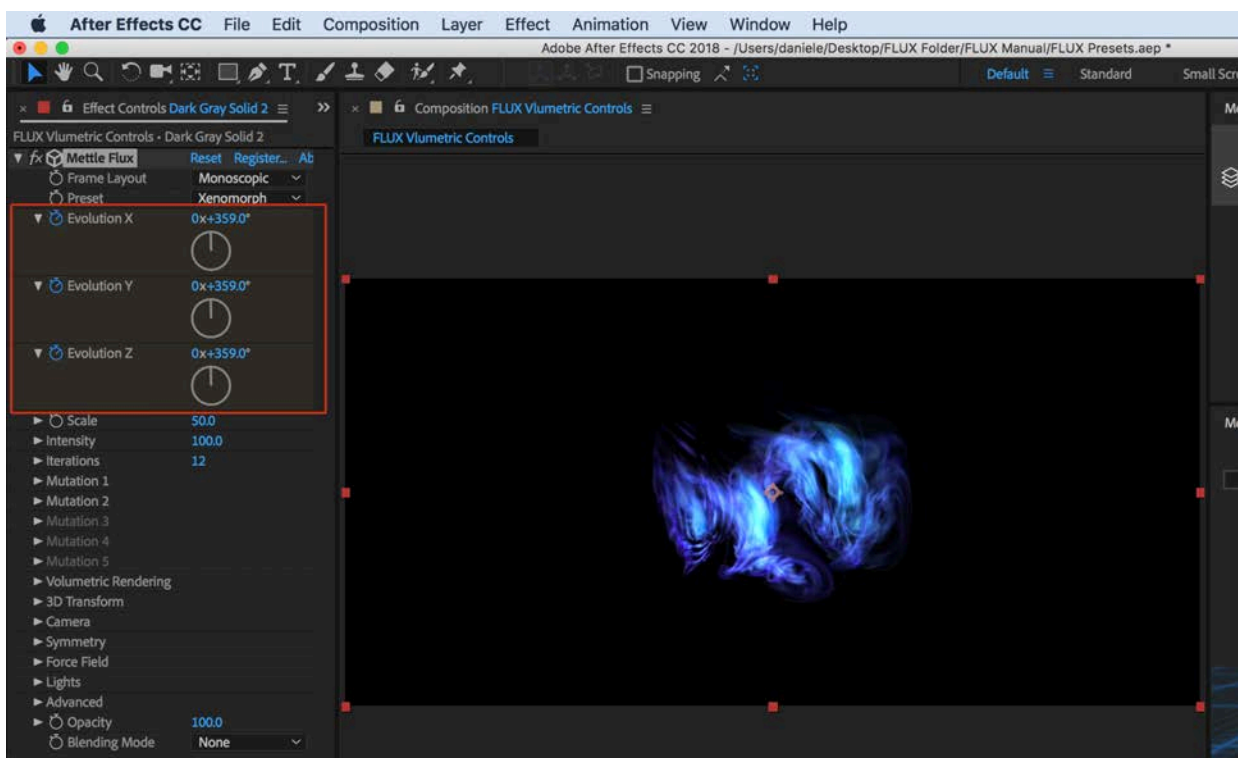*"Evolution X" 62° setting, Rectilinear Xenomorph Preset:*
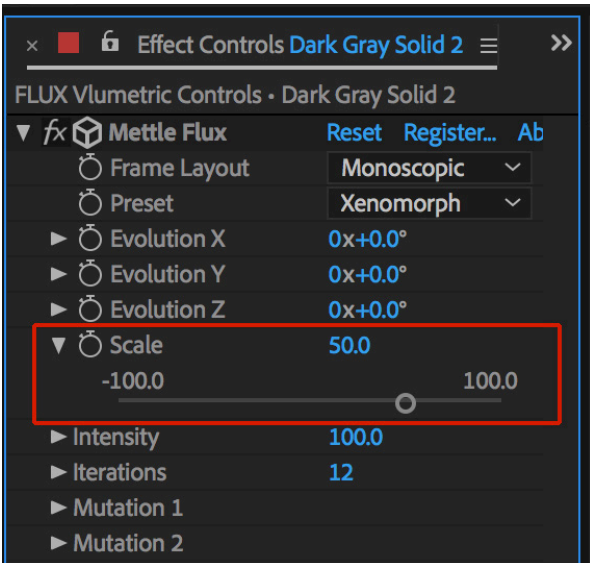
FLUX PARAMETERS: Evolution X, Y, Z Cont'

QUICK TIP: An easy way to create a seamless loop is to keyframe 0° at the beginning of your timeline, and 359° at the end of your timeline. Example with Xenomorph Monoscopic Preset.

Seamless loop: 0° at beginning of timeline
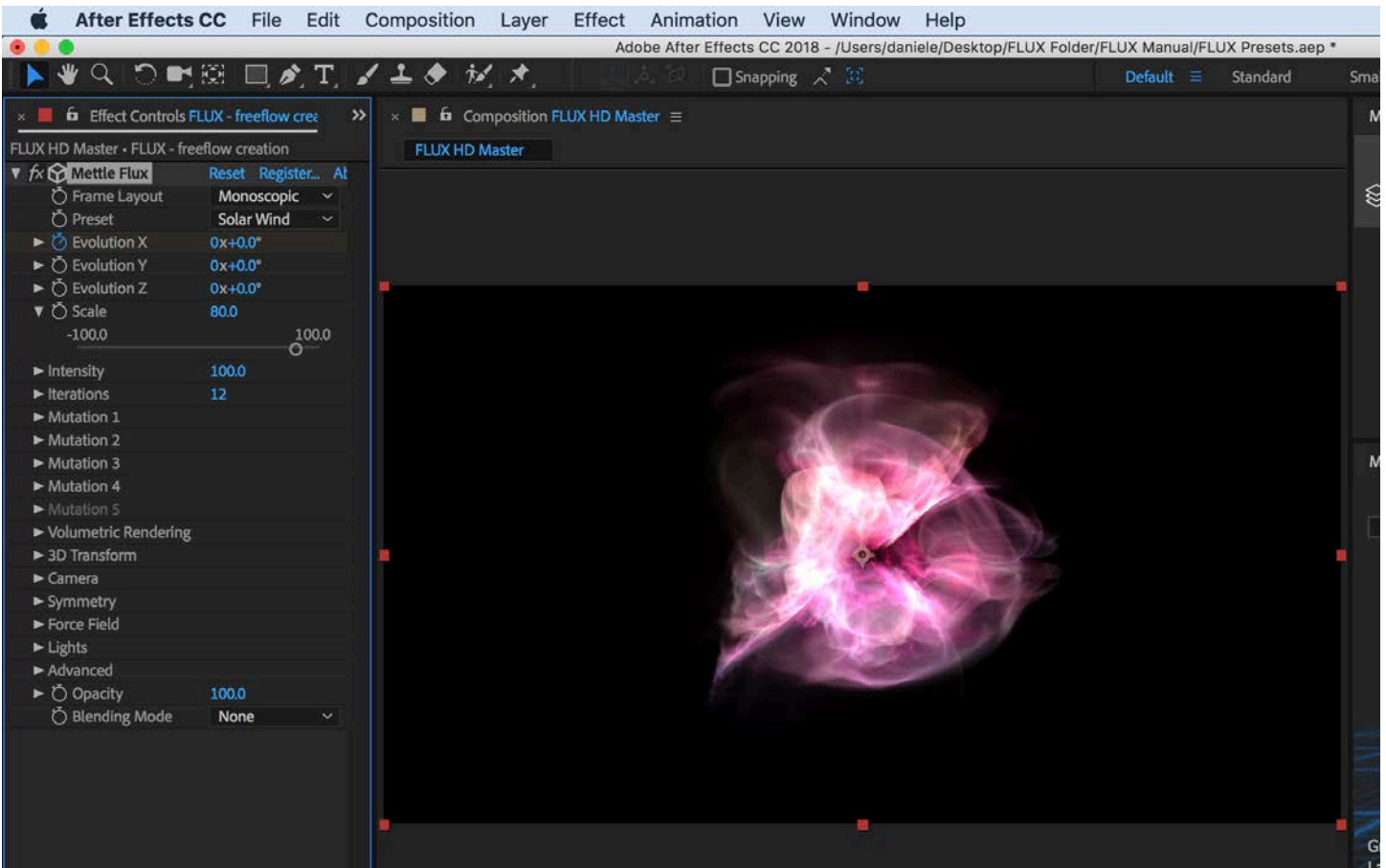

Seamless loop: 359° at end of timeline

FLUX PARAMETERS: Scale

Adjusts the global scale of current FLUX Volume.

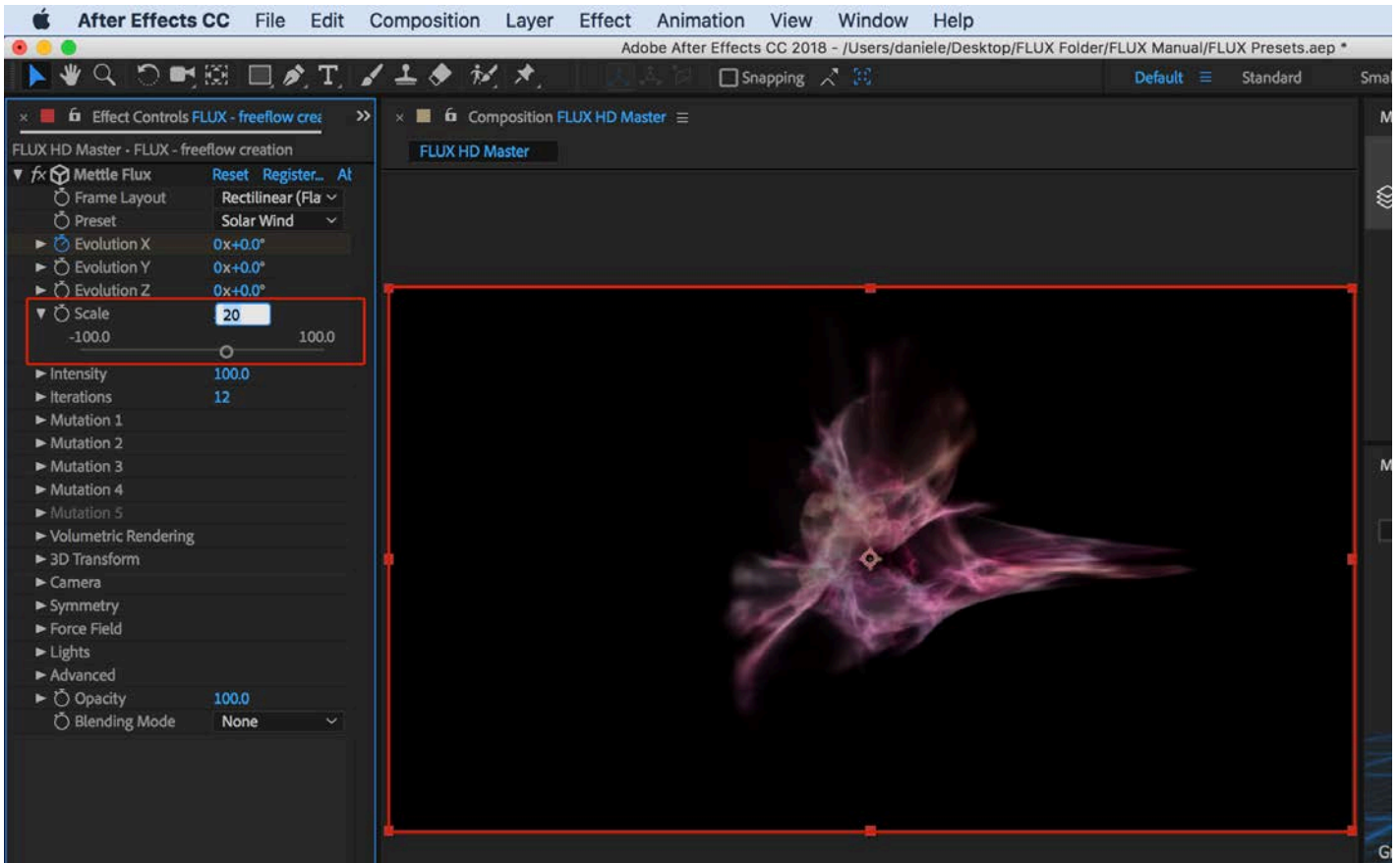Note: This parameter is not linear so different values might highlight different combinations of FLUX Volumetric features.

Default <u>Scale 50</u> for FLUX Preset "Solar Wind" Rectilinear in Effect Controls Panel:
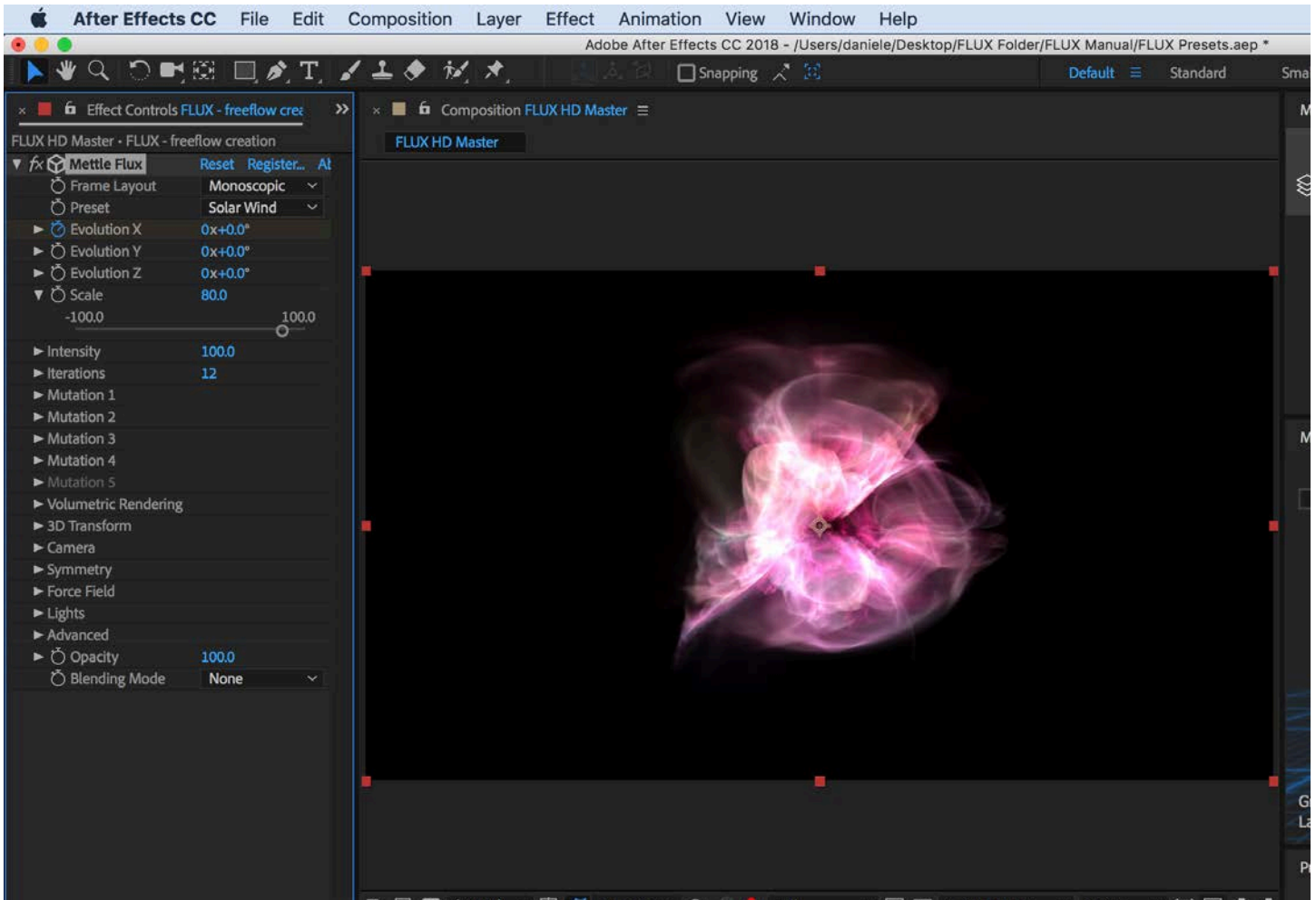
Default Scale 20 for FLUX Preset "Solar Wind" Rectilinear:
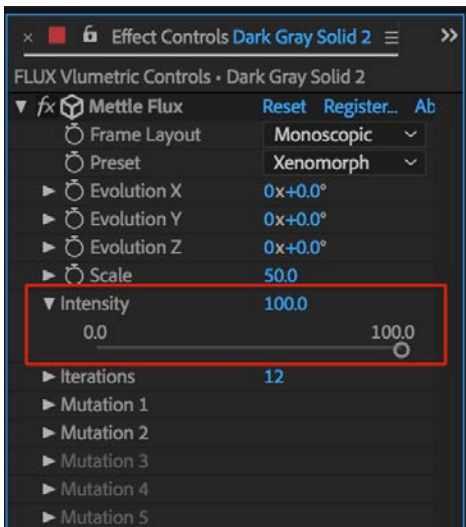

Scale 80 for FLUX Preset "Solar Wind" Rectilinear:
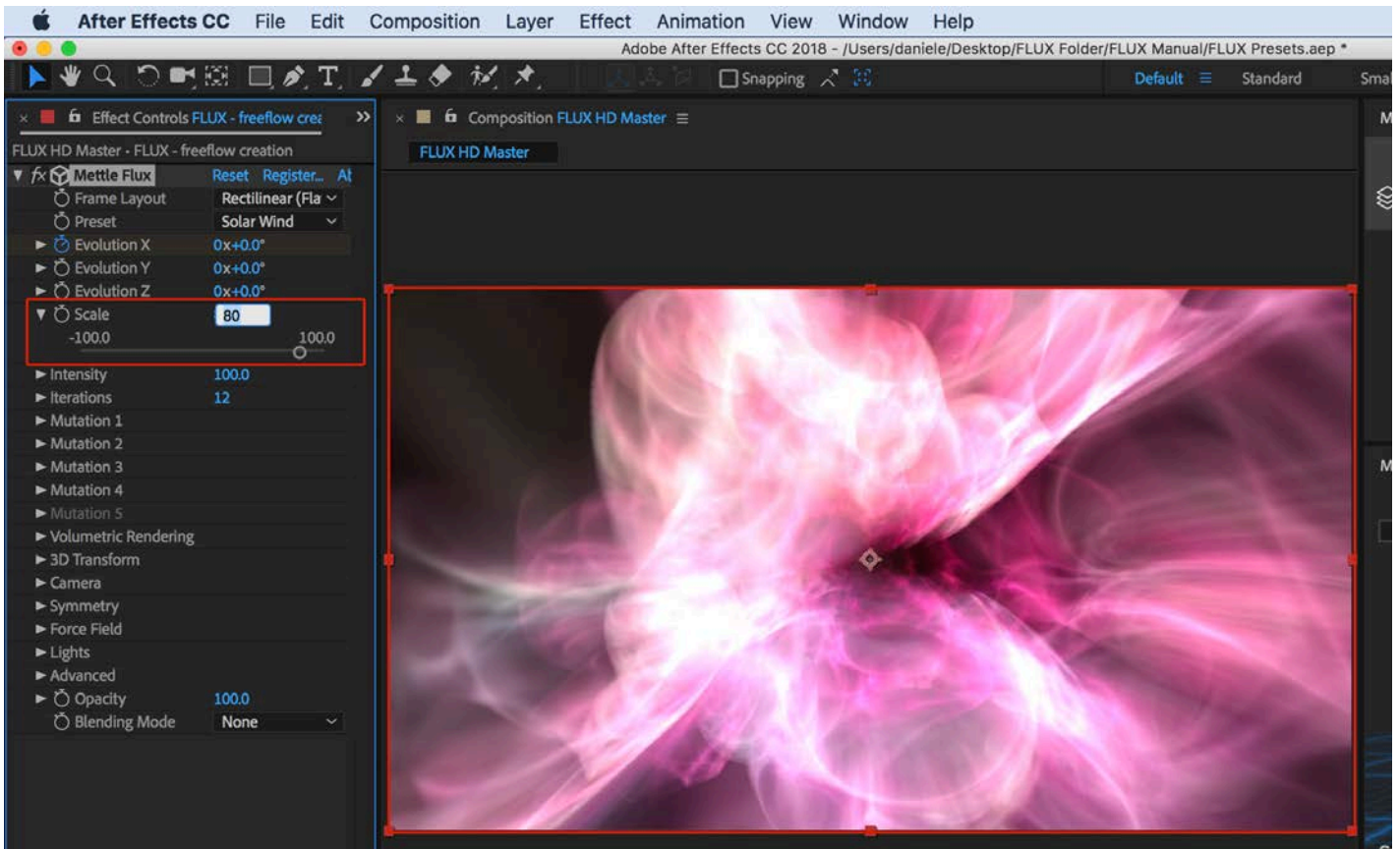
Notice the difference when <u>Monoscopic</u> is selected: <u>Scale 80</u> for FLUX Preset "Solar Wind" :
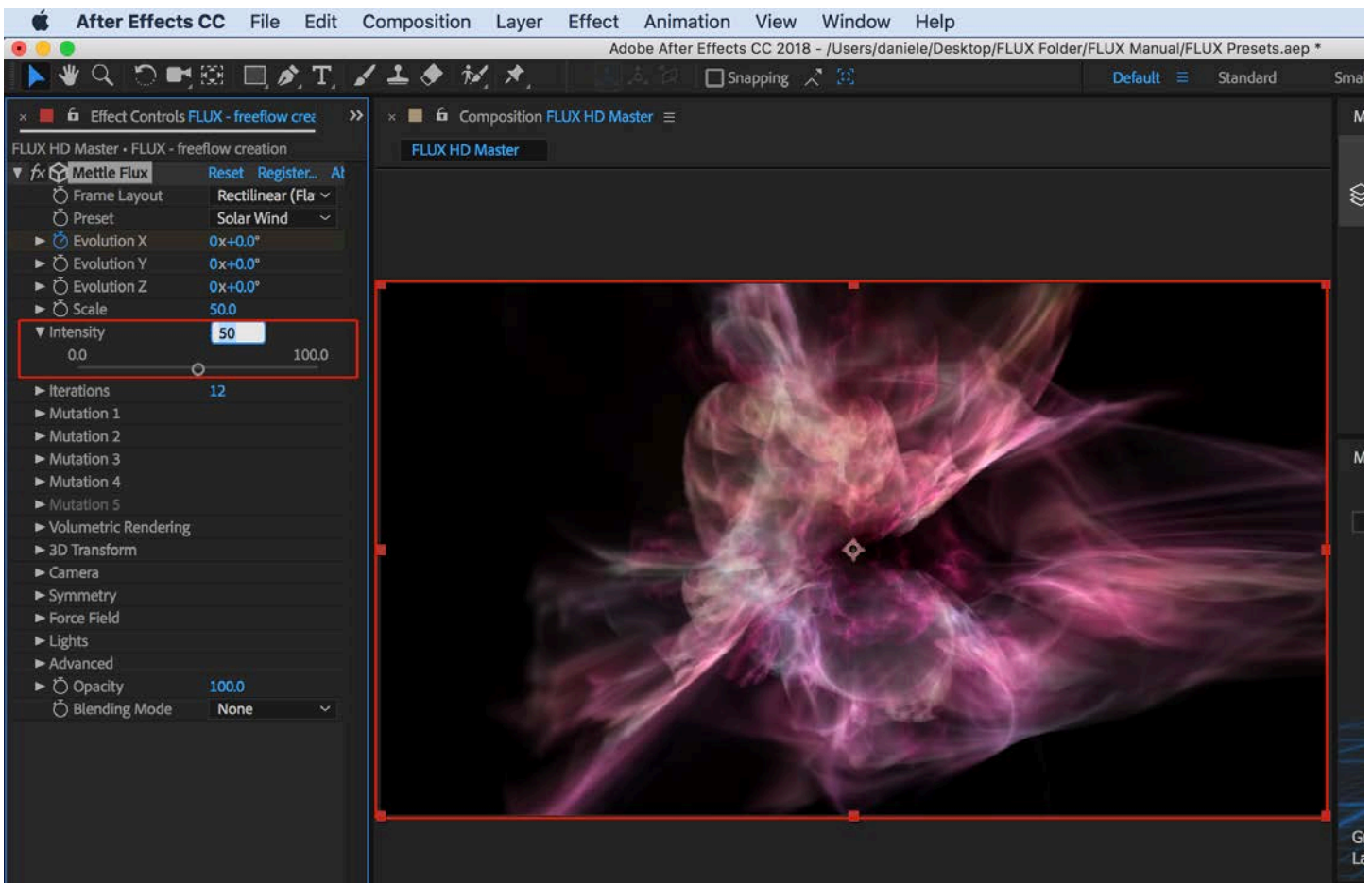
FLUX PARAMETERS: Intensity

Adjusts the color intensity of the FLUX Volumetric combination.

Note: This parameter is not linear, different values might highlight different combination features. If you want to linearly control brightness, use Brightness parameter inside Volumetric Rendering group.

For example: "0.0 Intensity" still may be visible.

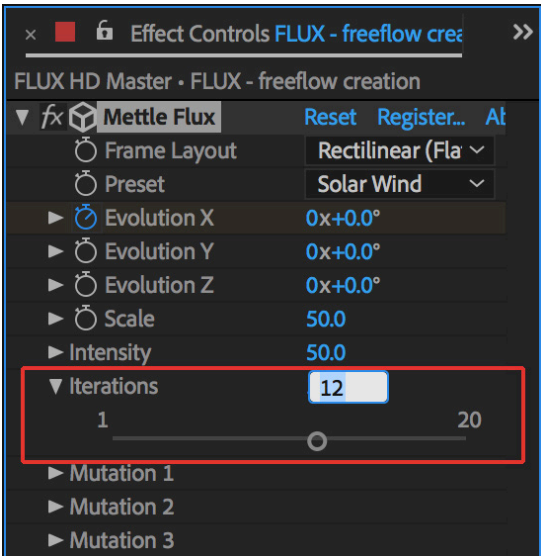*Intensity 50; Default setting for Solar Winds Preset:*
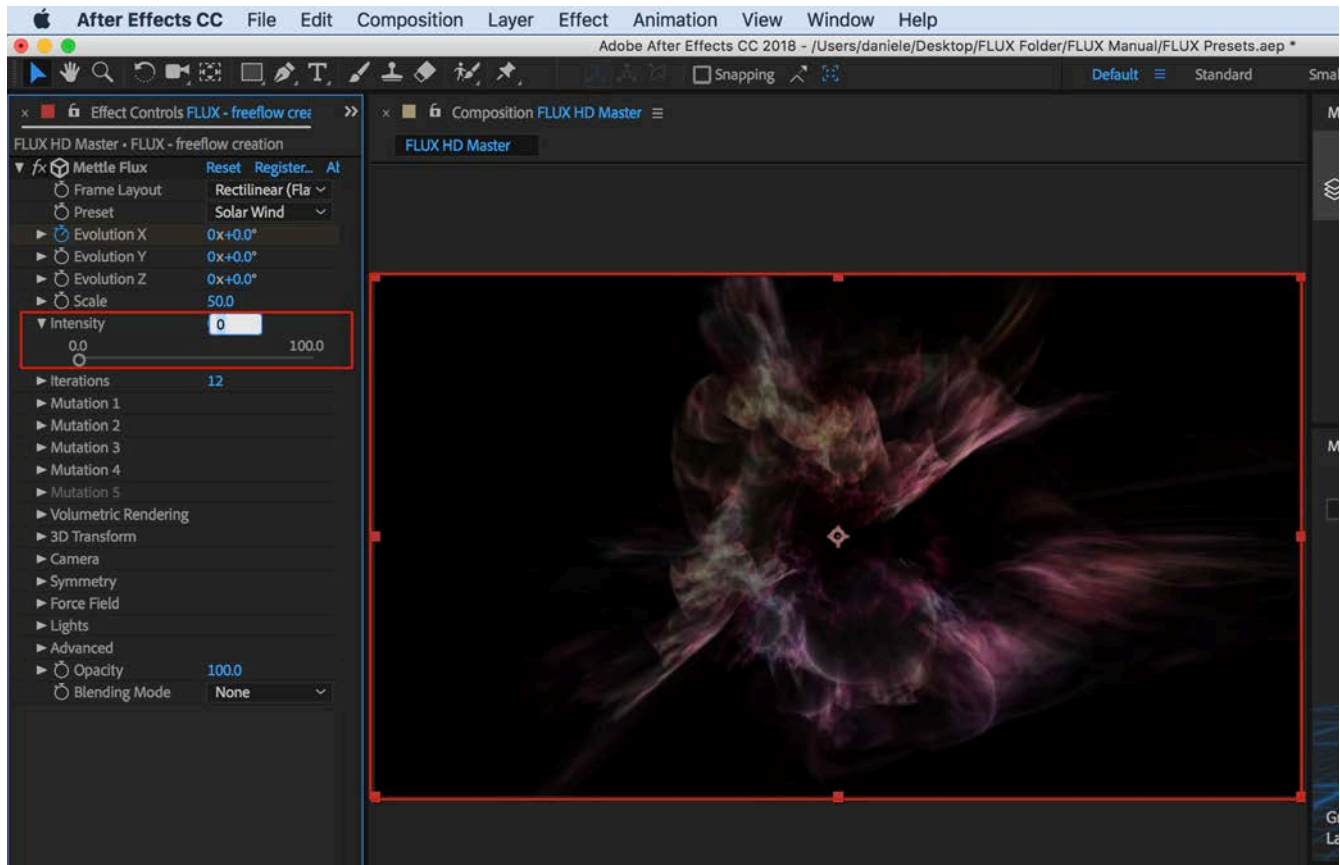
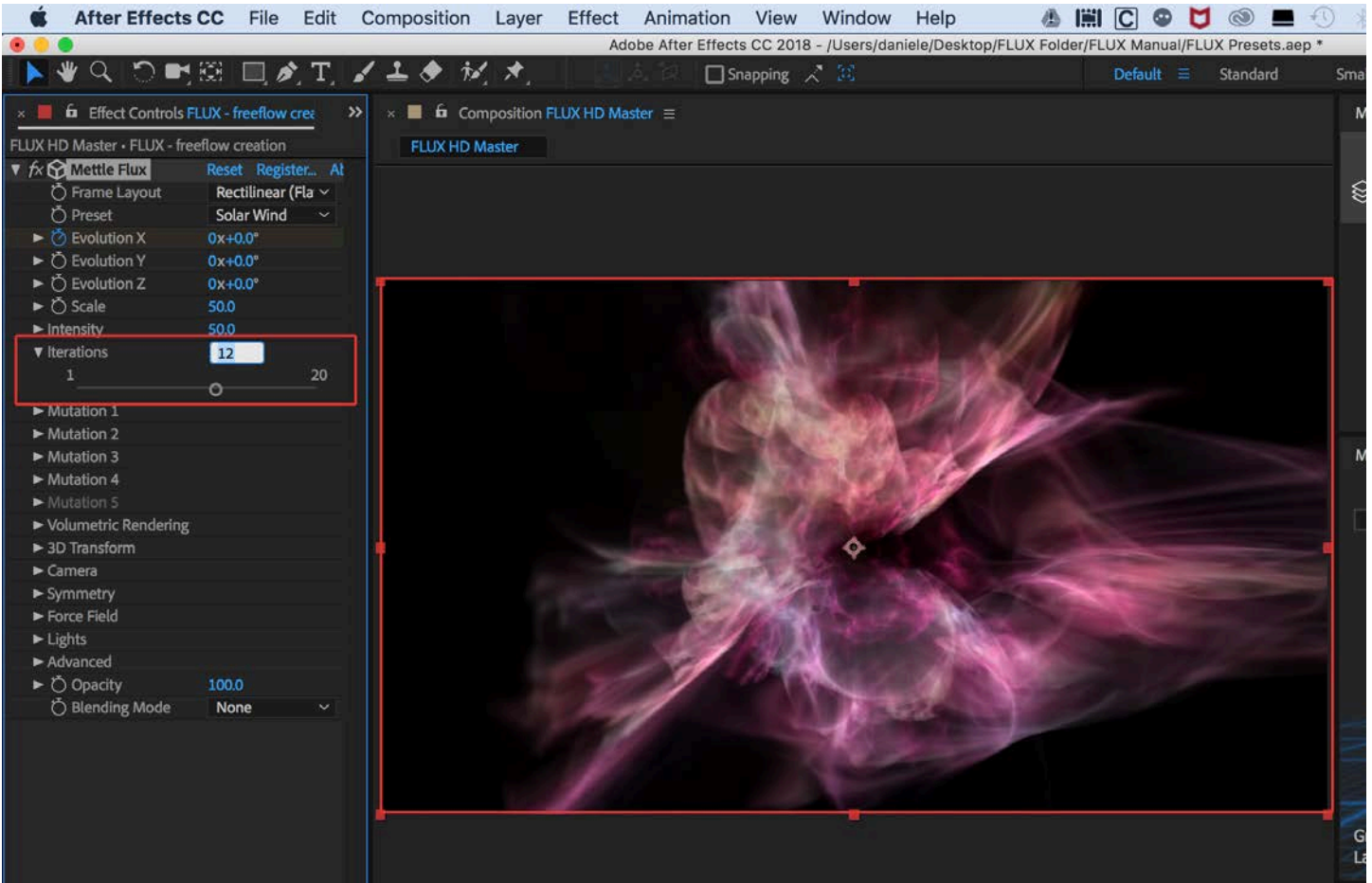Intensity 0:

Intensity 100:
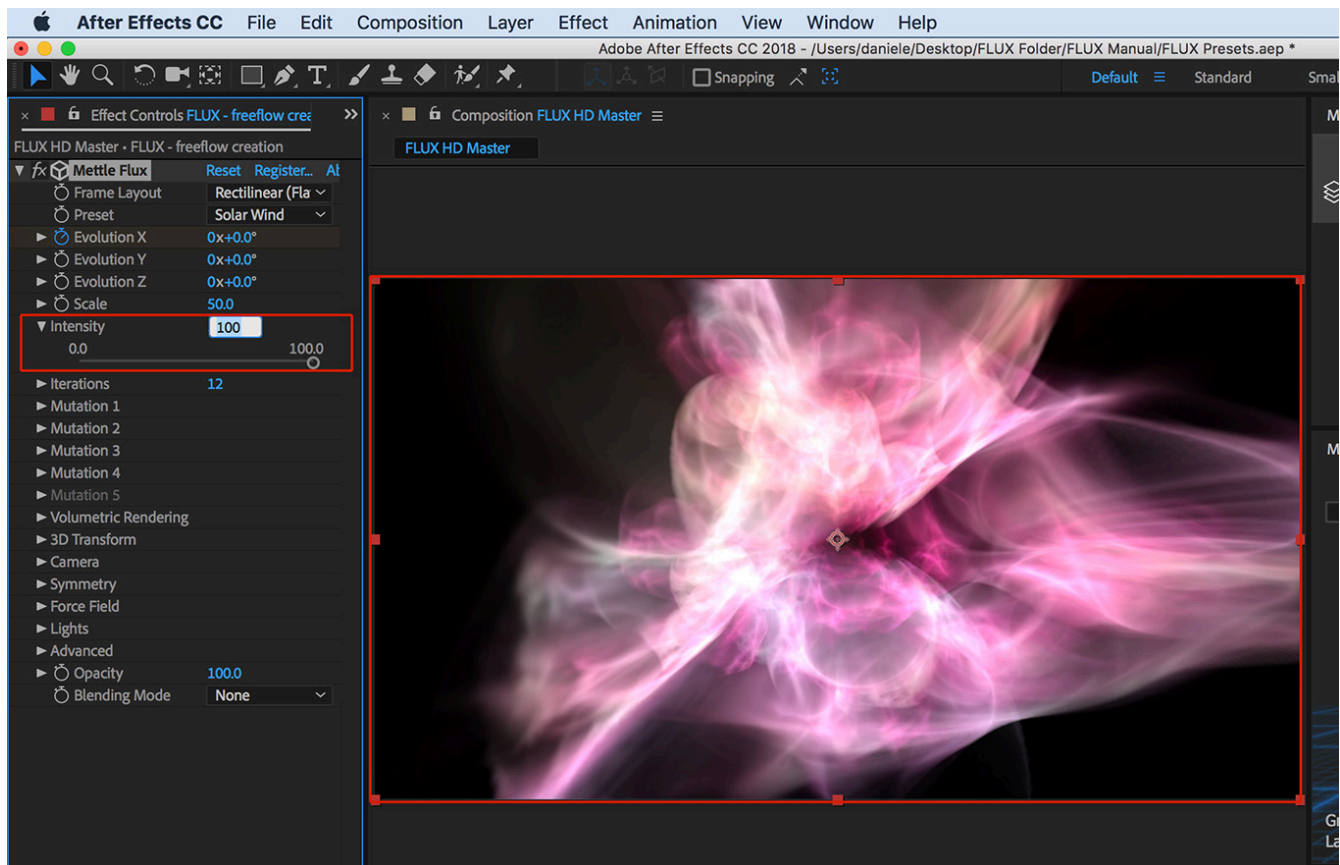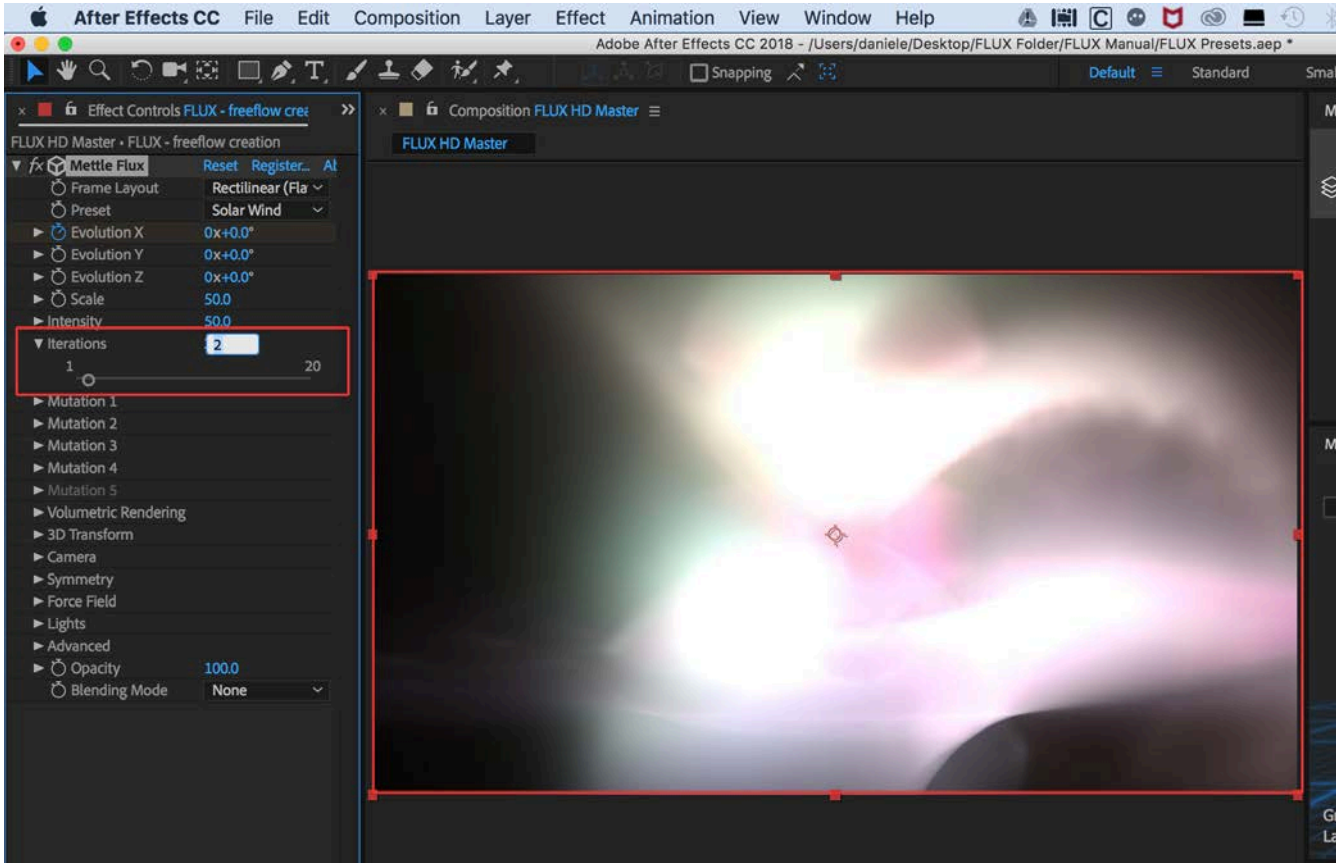
FLUX PARAMETERS: Iterations

You can adjust the total number of iterations (replications) for current combination. Usually more iterations add more detail and sharpness, but it also might make combination darker or even make it vanish (degenerate).

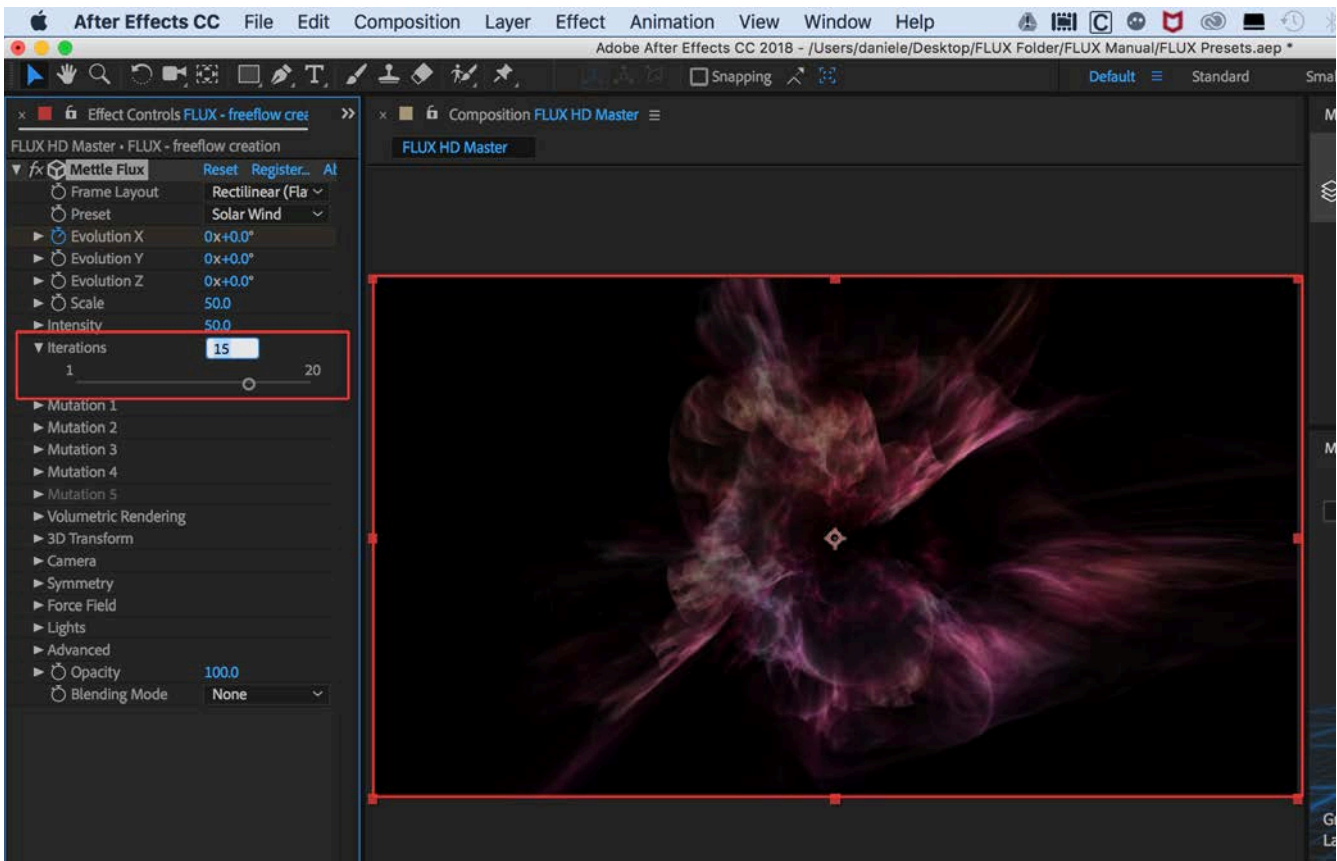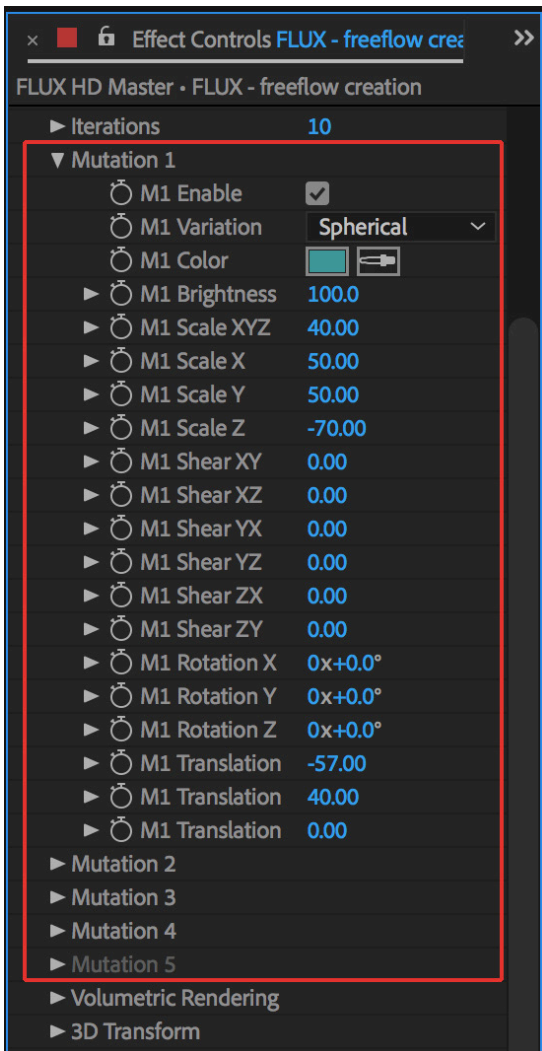*Iterations 12; Default setting for Solar Winds Preset:*

Intensity 2:

Intensity 15:

FLUX PARAMETERS: Mutations 1, 2, 3, 4, 5

Mutations are the the main FLUX workhorse. It's where all the mathematical transformations of the FLUX 3D Volume takes place. There can be up to 5 Mutations enabled (in any combination). Usually it's necessary to have a combination of at least 2 Mutations to get interesting results. Tweaking the Mutation parameters is the key to get unique shapes.

Note: When you select one of the FLUX presets, the Mutation parameters are automatically modified to give that result.

FLUX PARAMETERS: Mutations Cont'

Enable

Each Mutation has a checkbox to "Enable". When you have created a FLUX Volume with a combinations of Mutations, they interact with each other. By clicking the checkbox on and off, you can see the effect.

Mutation 1 > M1 "Enable" selected
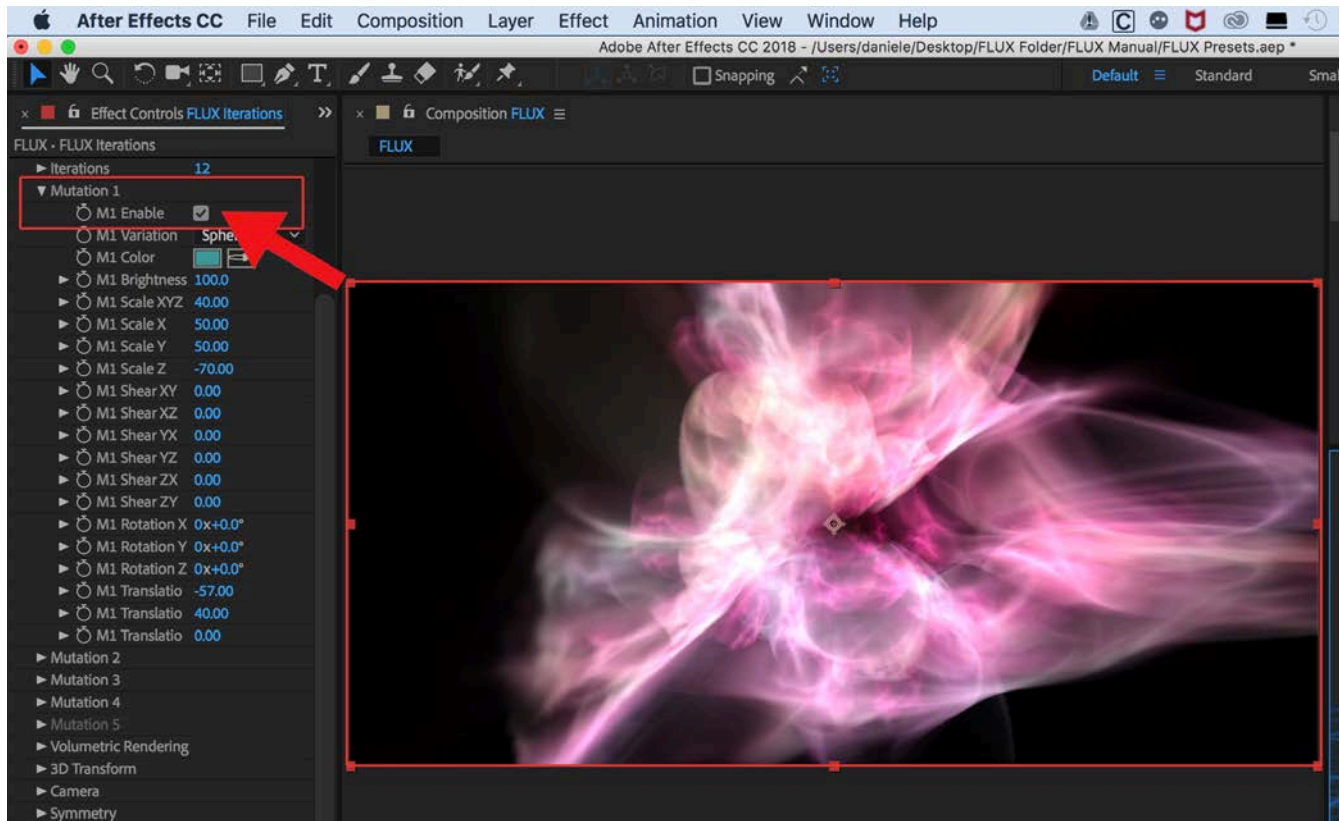
**Mutation 1 > M1 "Enable" not selected**
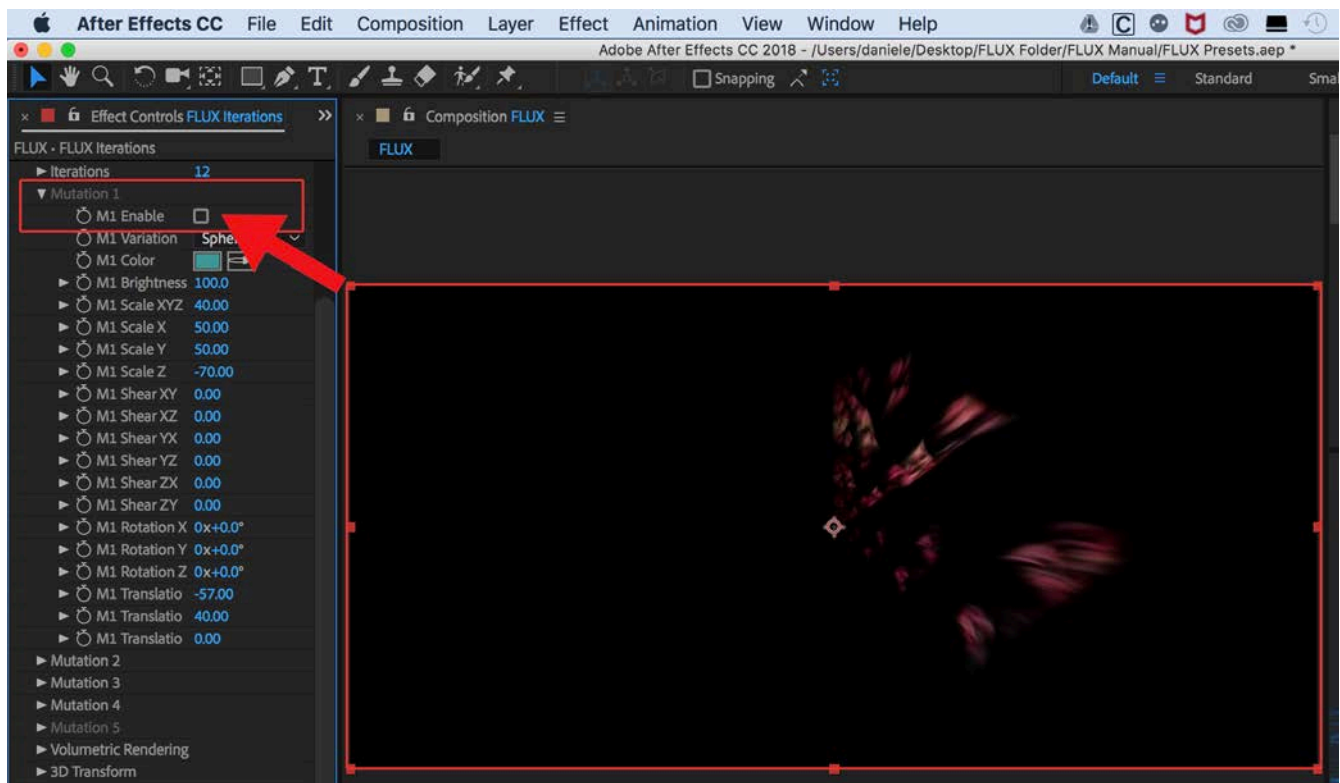
FLUX PARAMETERS: Mutations Cont'

Variation

Select the type of Math Variation for your Mutation. Each variation has unique visual properties and may look different on its own than when combined with other Mutations.

Quick Tip: Due to the recursive non-linear nature of Flux, when you change the Mutation Variation setting, the results will vary quite a bit.

If you want to see how each Mutation parameter affects the original shape, set the Iterations to 1 and then adjust the parameters. This will show what's happening on the very first iteration. The more iterations, the more complex the FLUX Volume becomes.

Mutation 1 > Variation > Spherical
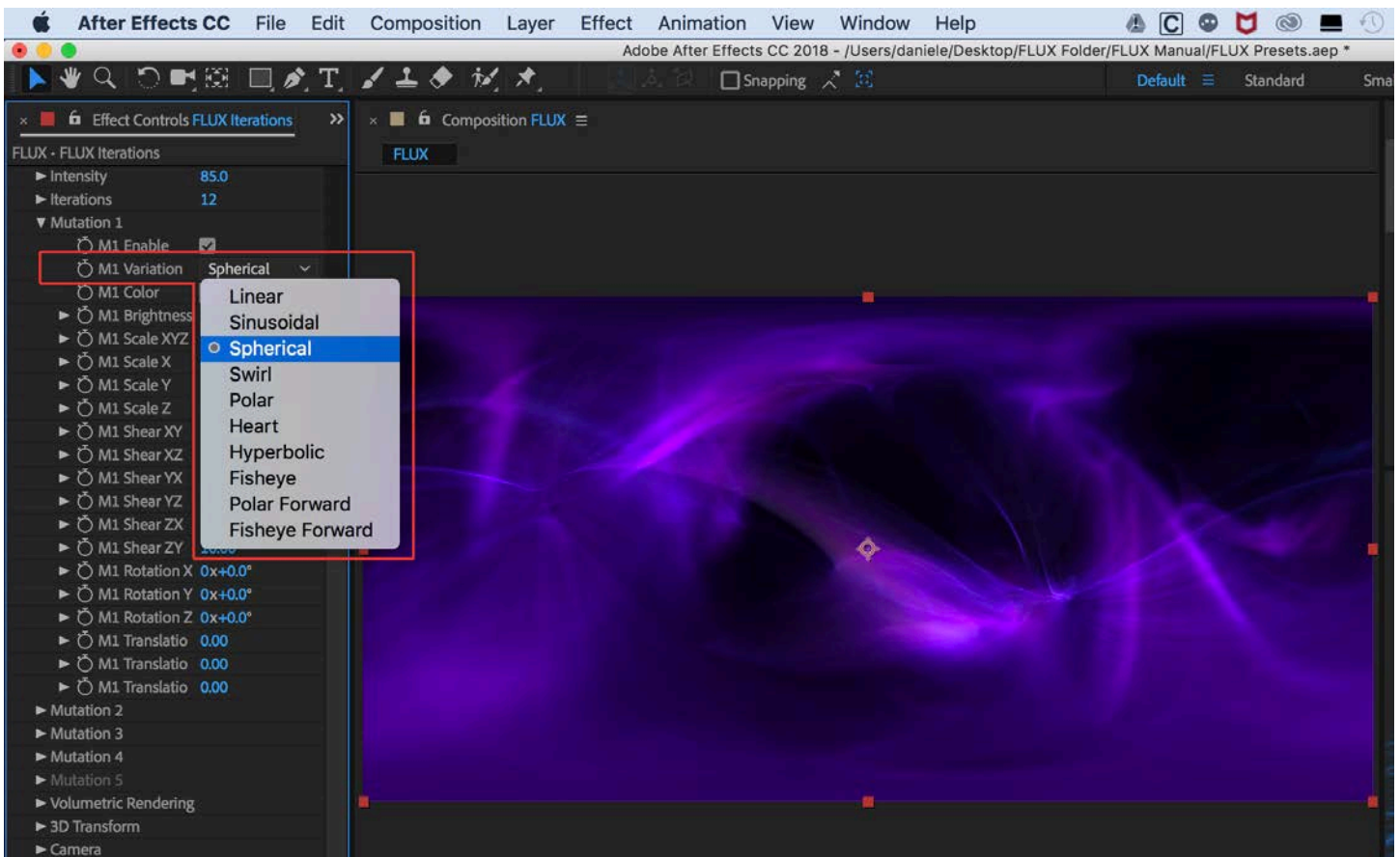
FLUX PARAMETERS: Mutations Cont'

Variation

Examples of different variations applied to the same FLUX Volume:

Mutation 1 > Variation > Linear
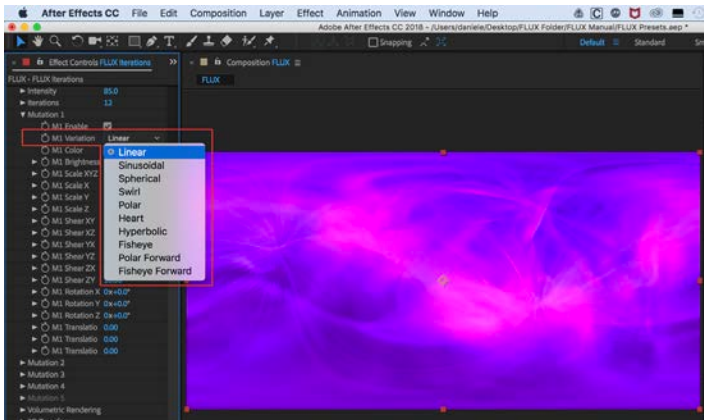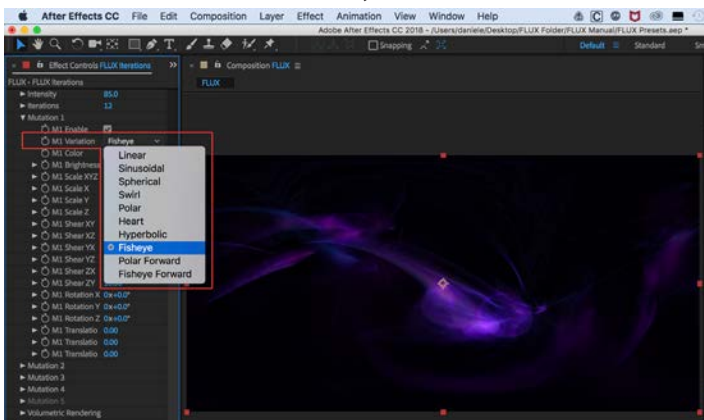

Mutation 1 > Variation > Sinusoidal
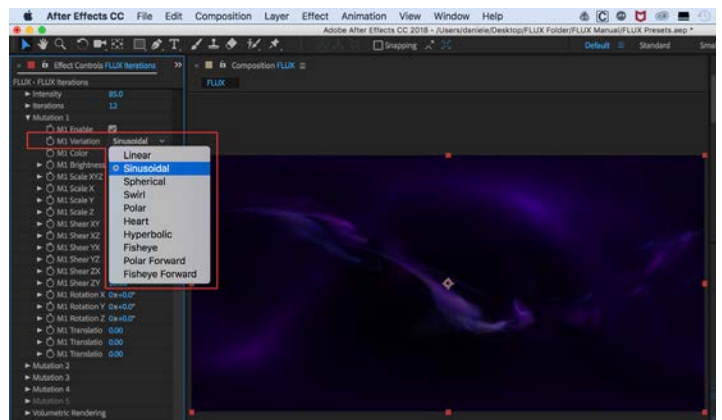
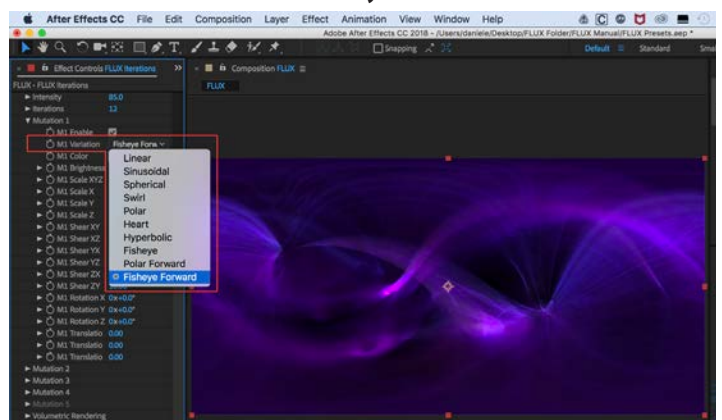

Mutation 1 > Variation > Swirl
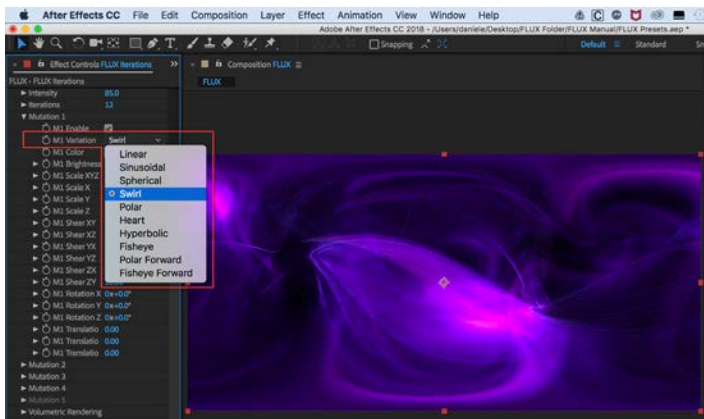
Mutation 1 > Variation > Heart
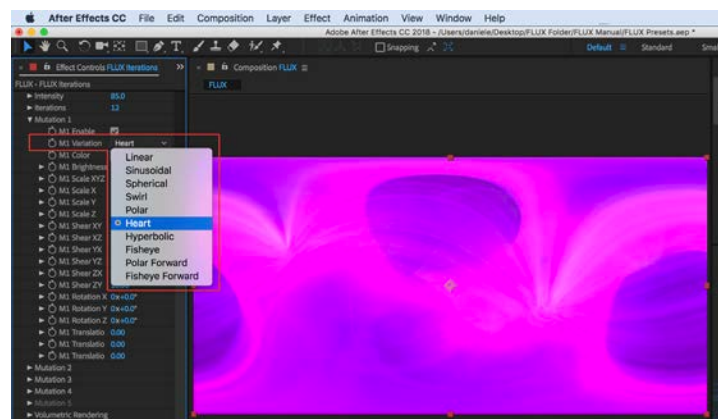
Mutation 1 > Variation > Fisheye
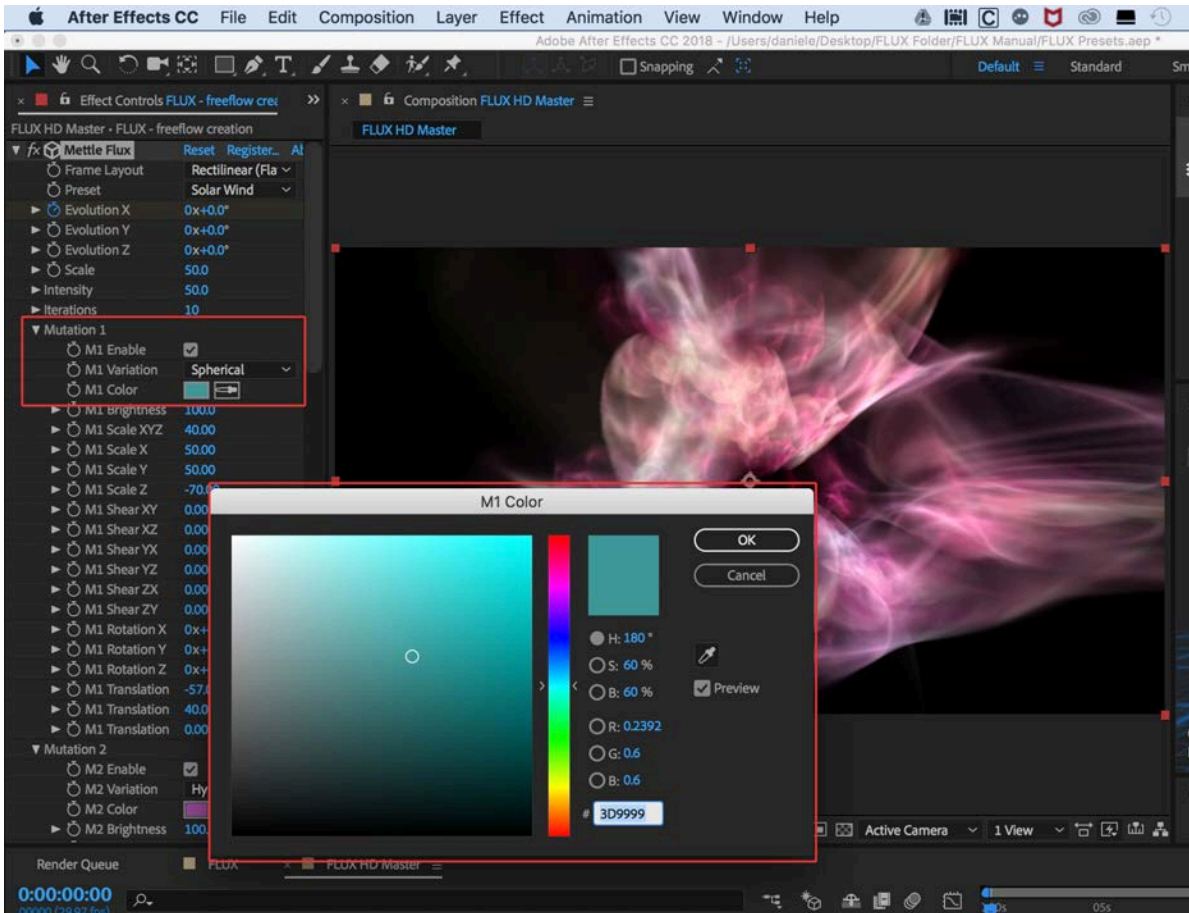

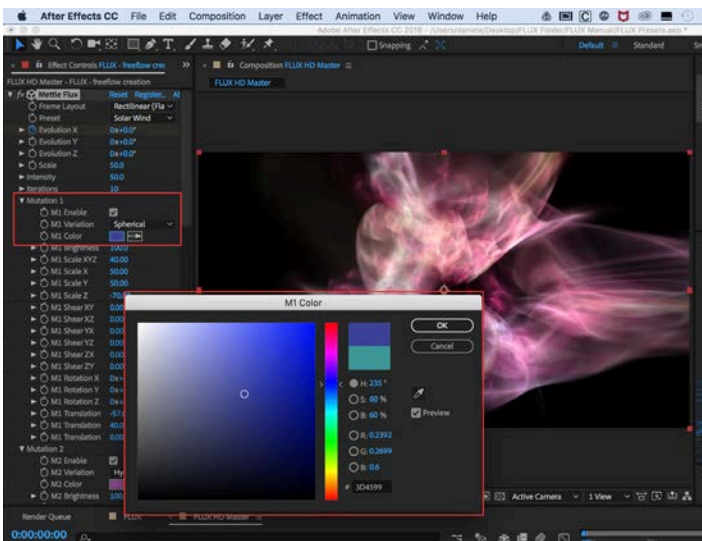**Mutation 1 > Variation > Fisheye Forward**

FLUX PARAMETERS: Mutations Cont'

Color

Select the primary color for the mutation. It might be useful to control hue, saturation, brightness independently and see how it affects the Mutation.

Mutation 1 > Color > H (Hue) 180, (S) Saturation: 60%, (B) Brightness 60%

Mutation 1 > Color > Select H: 235, S: 60, B: 60

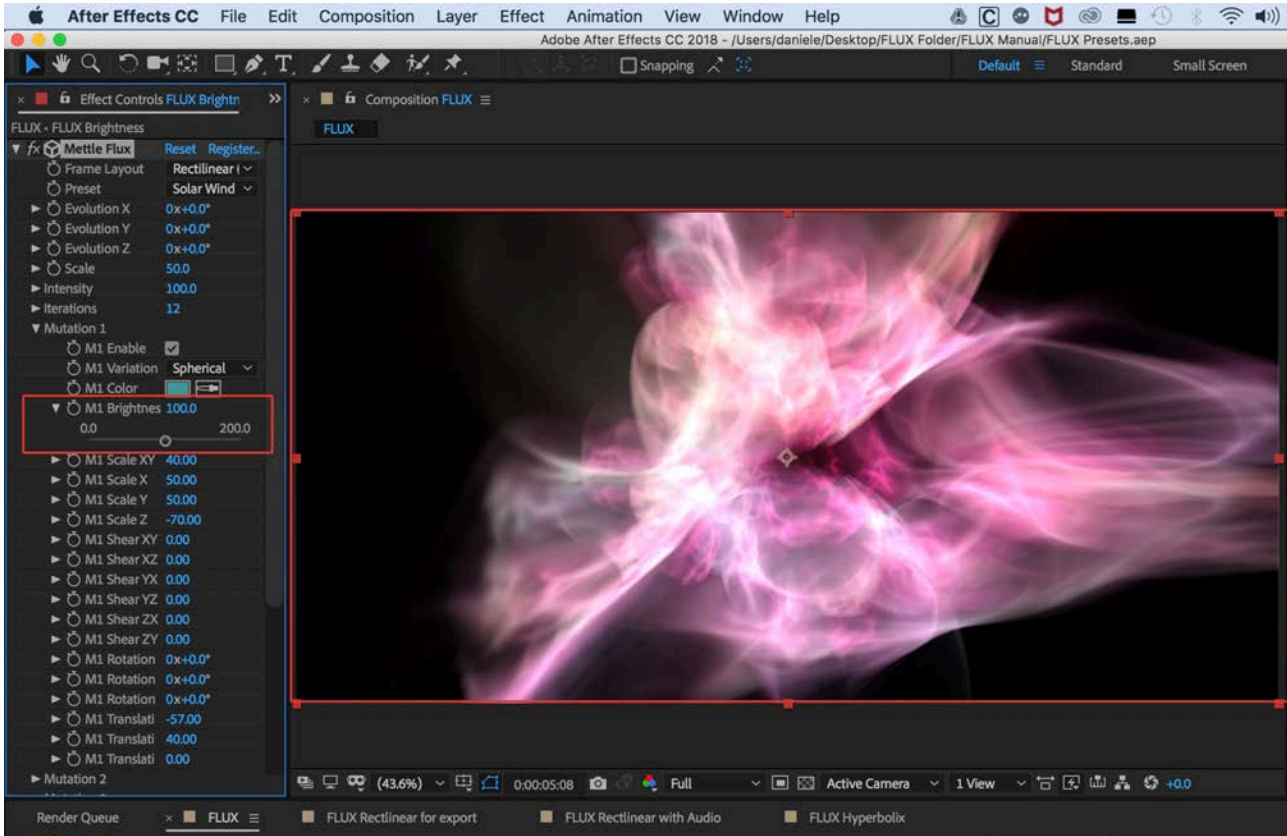**Mutation 1 > Color > H: 235, S: 60, B: 60**
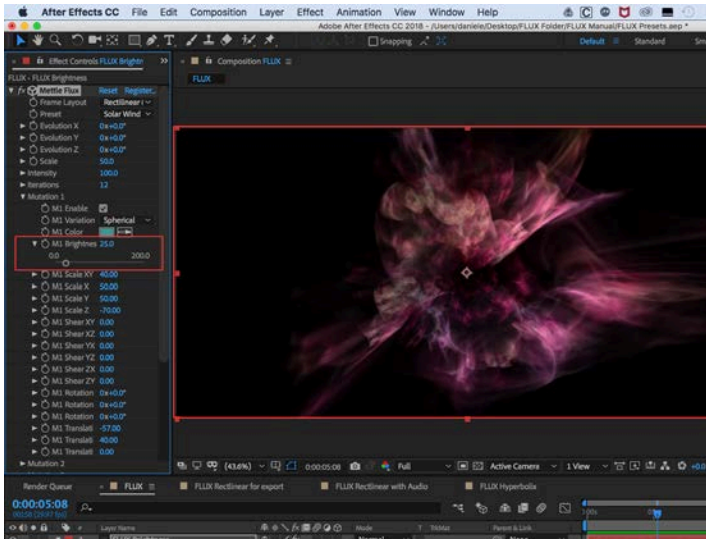

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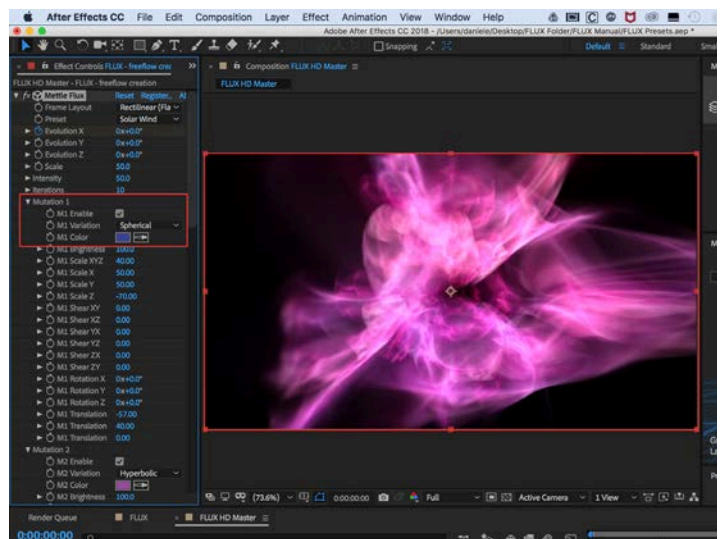
FLUX PARAMETERS: Mutations Cont'
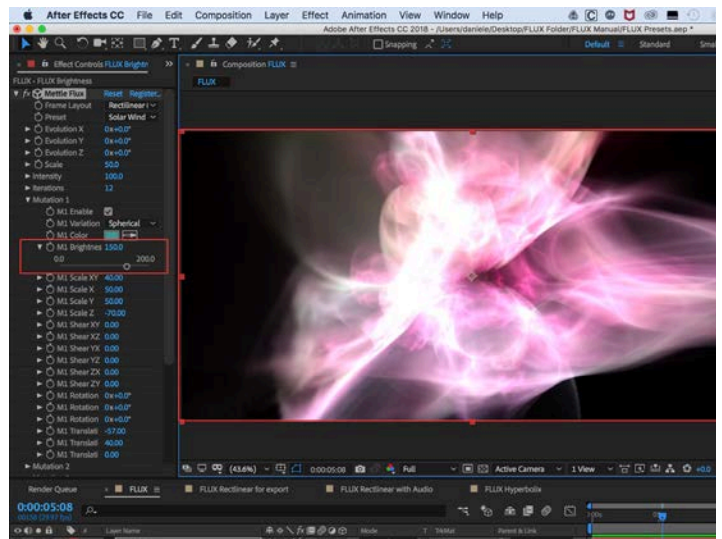
Brightness

You can adjust the brightness of the Mutation.

Mutation 1 > Brightness 100

Mutation 1 > Brightness 25

Mutation 1 > Brightness 150

FLUX PARAMETERS: Mutations Cont'
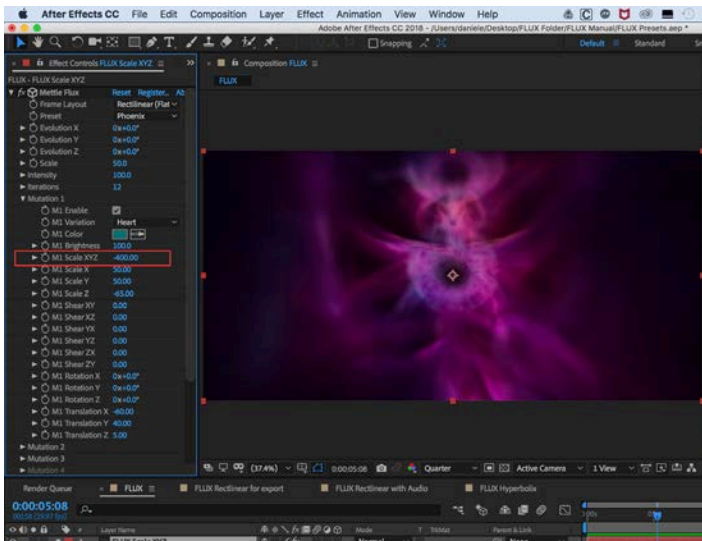
Scale XYZ, and Scale X, Scale Y, Scale Z

Scale XYZ adjusts the global scale of the Mutation (on all axes).

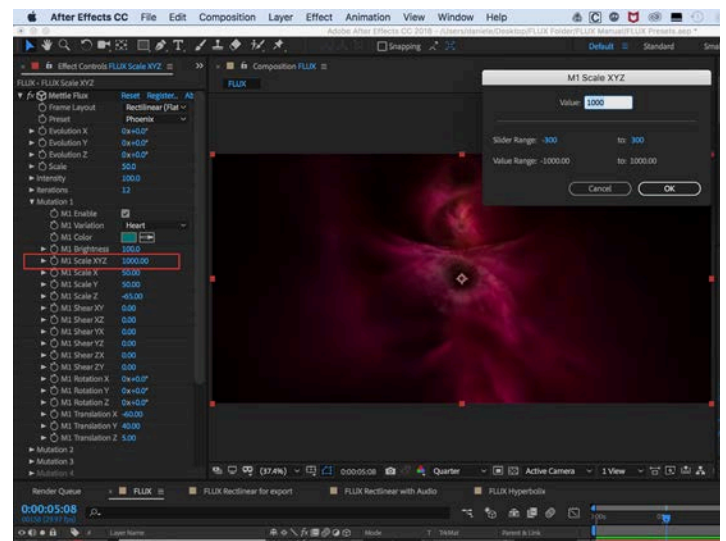Scale X, Y, Z adjusts the scale of the Mutation on each axis.

Mutation > Scale XYZ > 310. *This is Default setting for Phoenix, Rectilinear (Flat)*
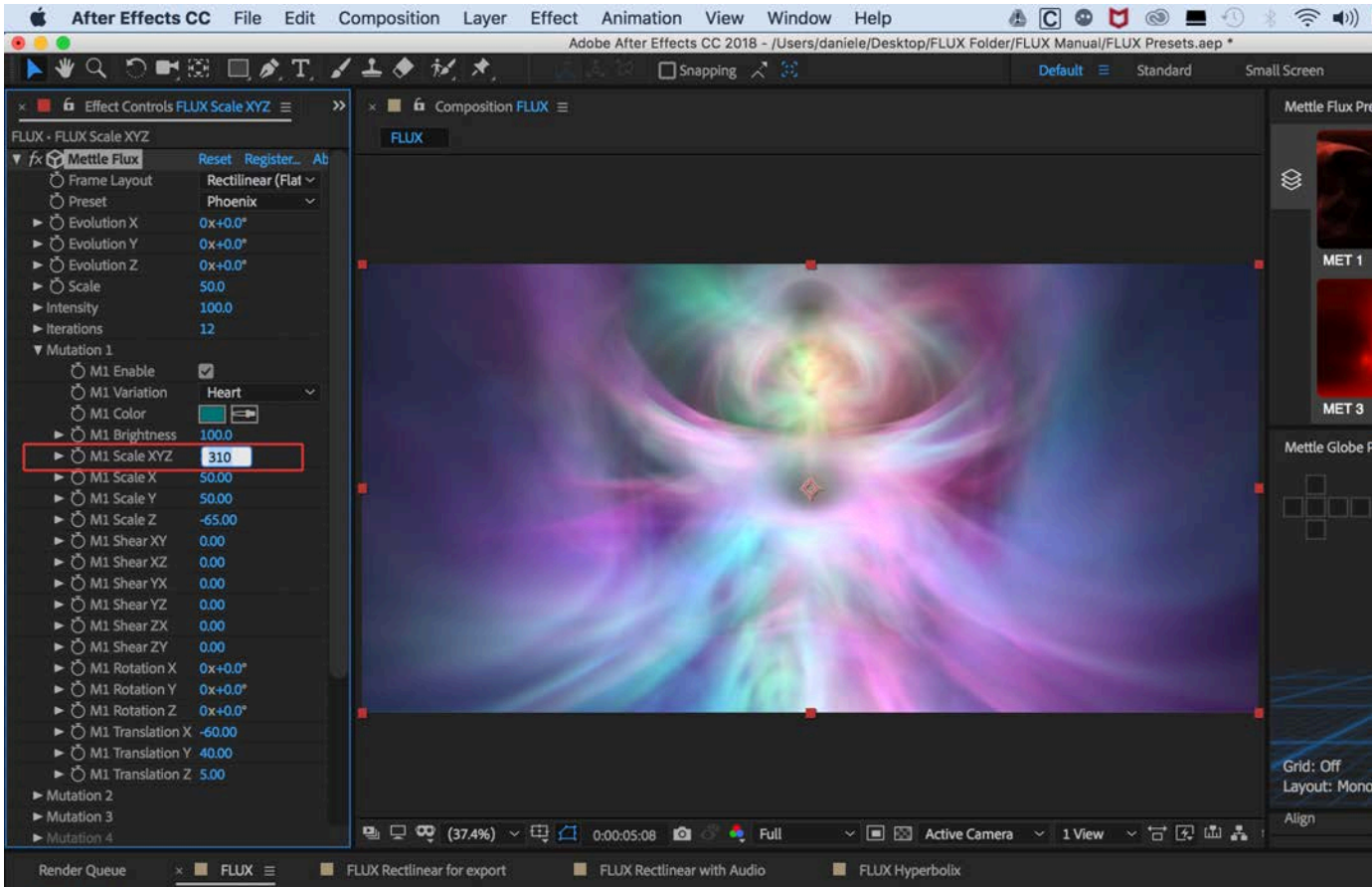
Mutation > Scale XYZ > -400

Mutation > Scale XYZ > 1000

Note: The slider range setting shows -300 to 300. But the values can be set from -1000 to 1000.

FLUX PARAMETERS: Mutations Cont'

Scale X, Scale Y, Scale Z

Scale X, Y, Z adjusts the scale of the mutation on each axis independently. The example below shows the Scale X axis. Scale Y and Scale Z function the same way.
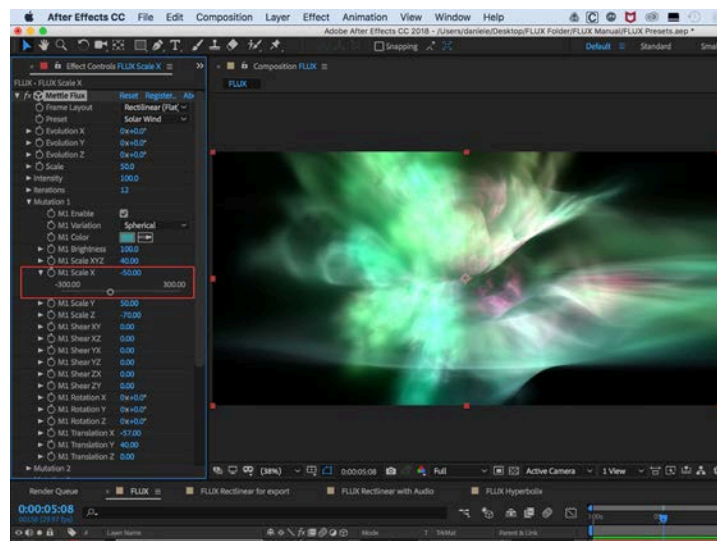
Mutation > Scale X > 50. *This is Default setting for Preset Solar Wind, Rectilinear (Flat)*
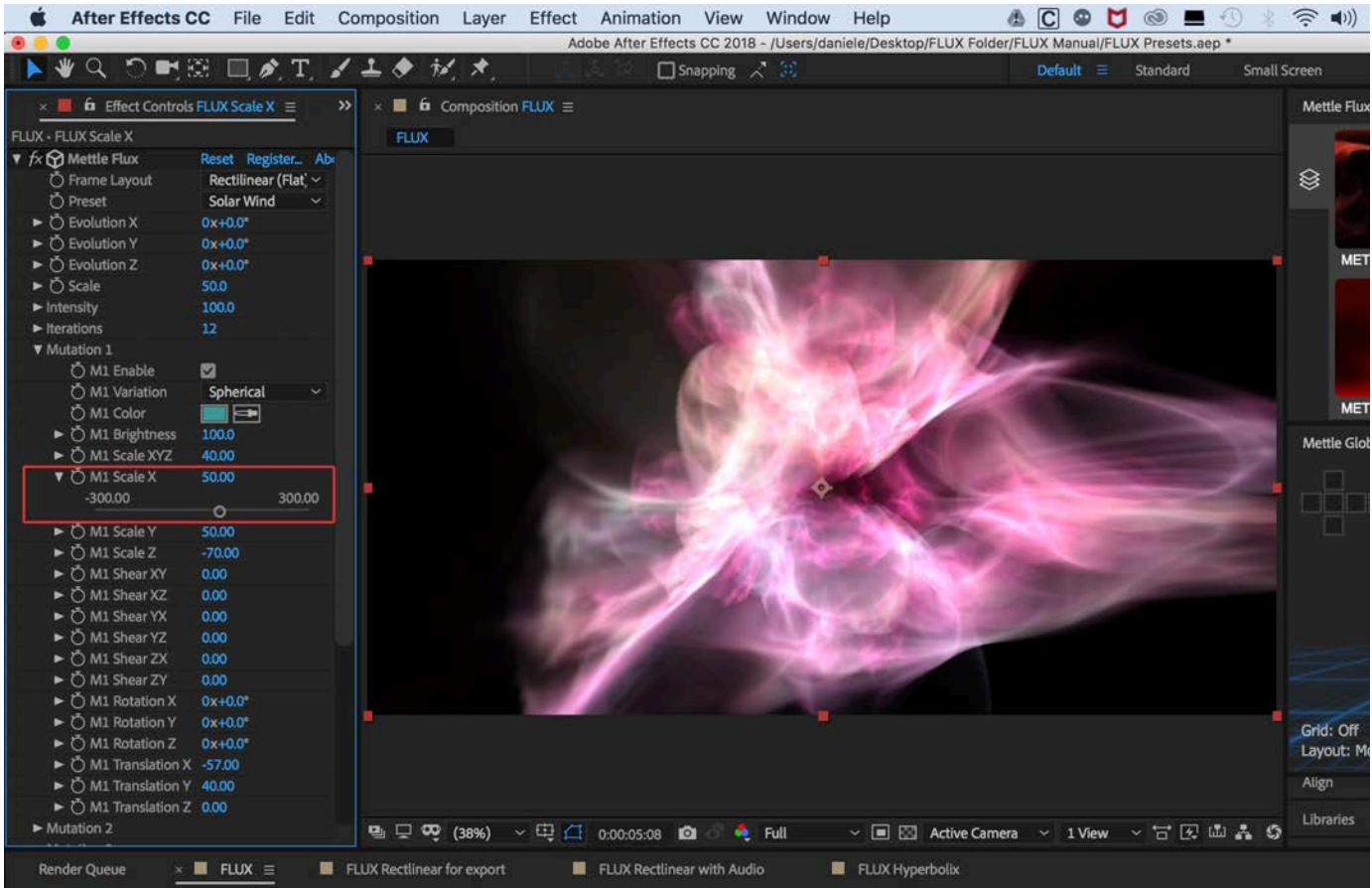
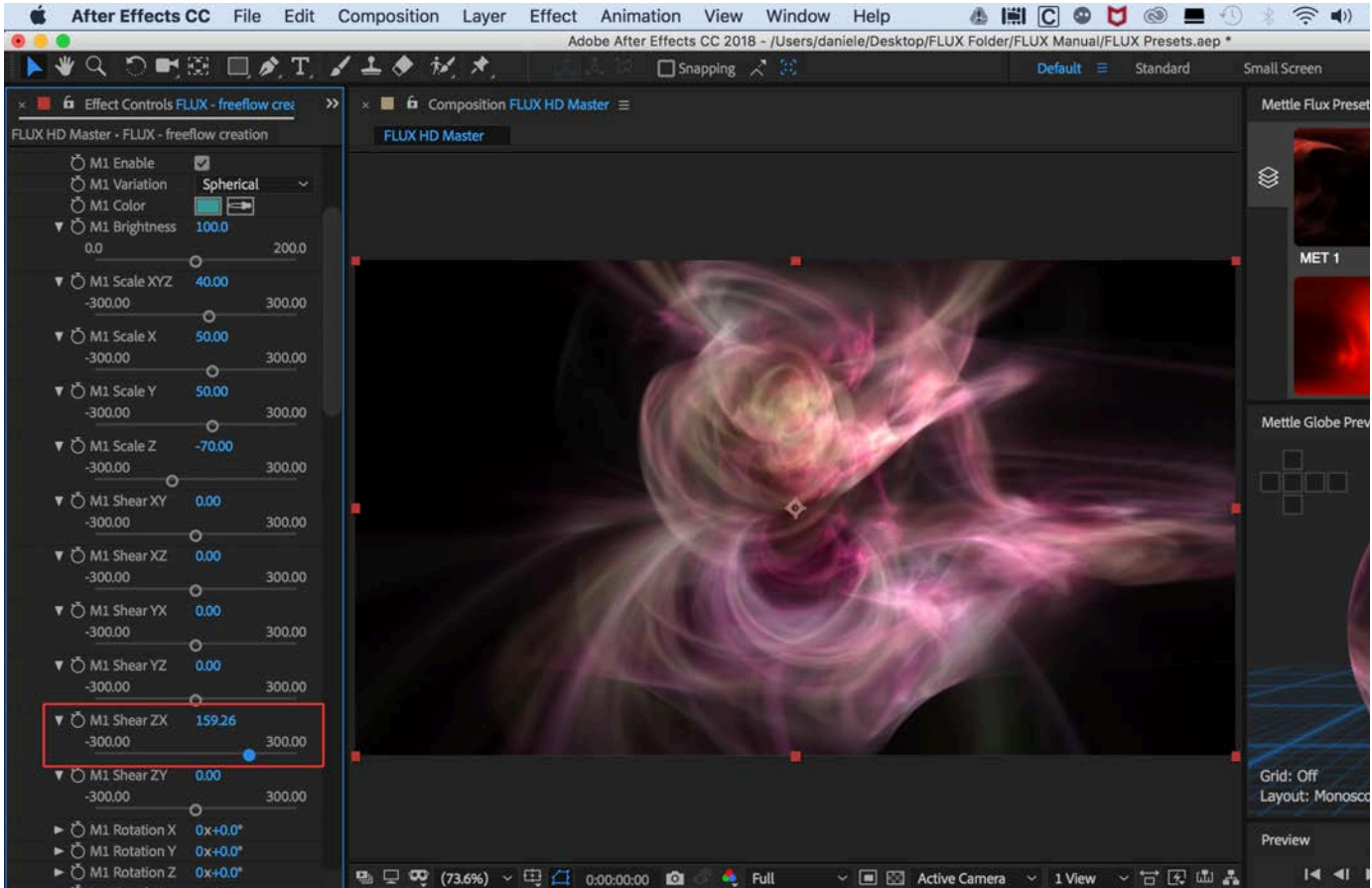**Mutation > Scale XYZ > 100**
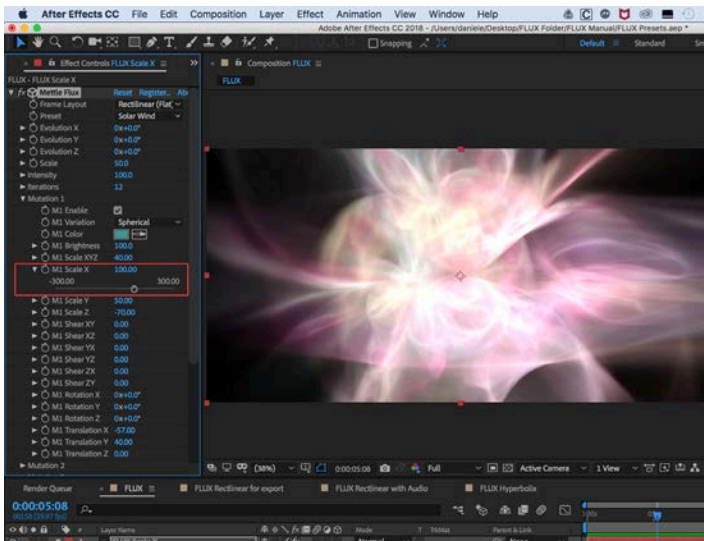
Mutation > Scale X > -50
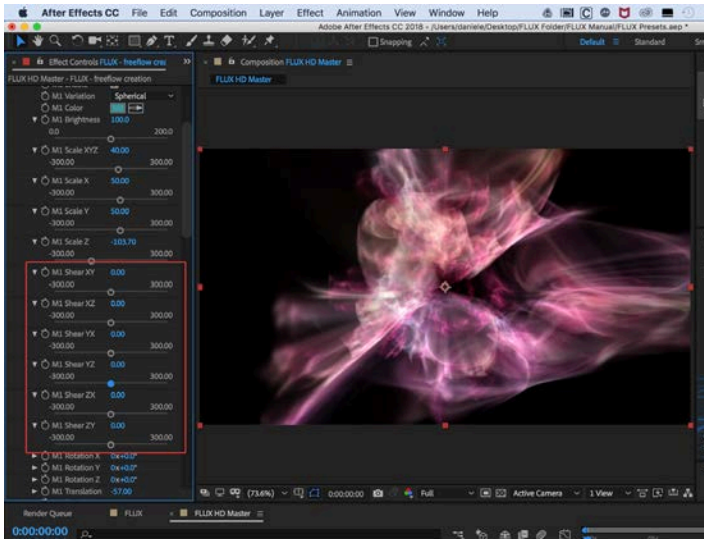
FLUX PARAMETERS: Mutations Cont'

Shear XY, XZ, YX, YZ, ZX, ZY

Mutation Shear adjusts shearing transformation of the mutation on different axes. A Shear is similar to a Skew. Each Shear produces a different effect.

Mutation > Shear ZX 159.26

**Mutation > Shear 0**

Mutation > Shear XY 155.56
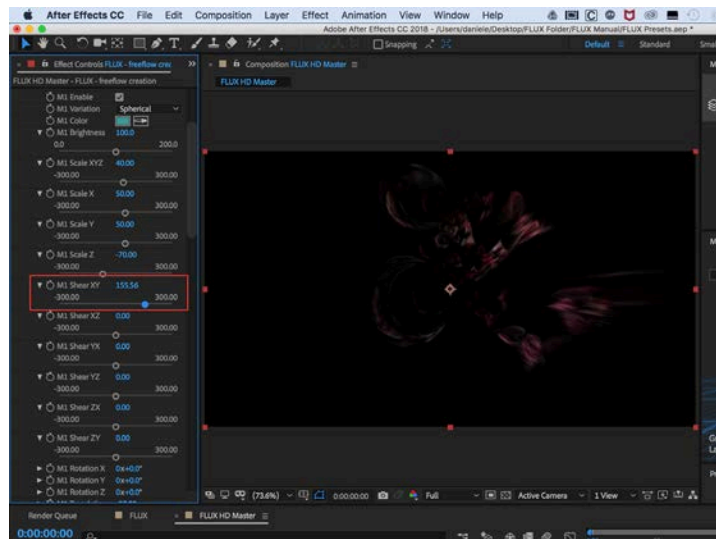
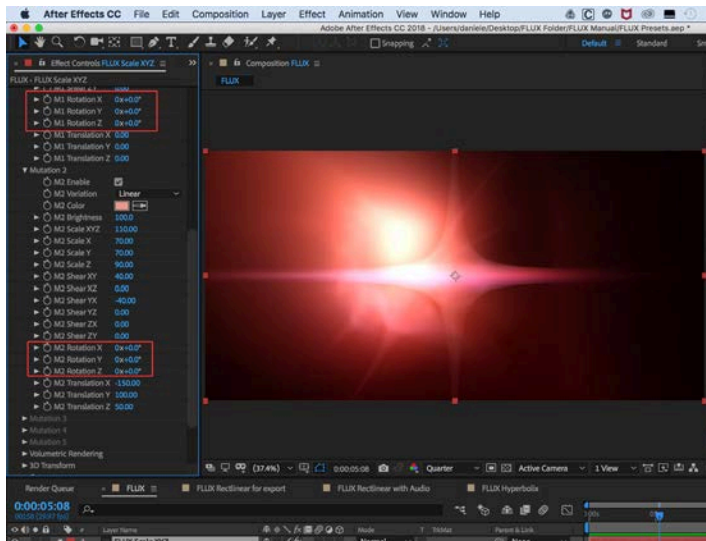# FLUX PARAMETERS: Mutations Cont'

Rotation

Lets you Rotate the FLUX Volume on the X, Y, Z axes by adjusting the Euler angles rotation of the current mutation.

Note: The Euler angles are three angles introduced by Leonhard Euler to describe the orientation of a rigid body with respect to a fixed coordinate system. They can also represent the orientation of a mobile frame of reference in physics or the orientation of a general basis in 3-dimensional linear algebra.
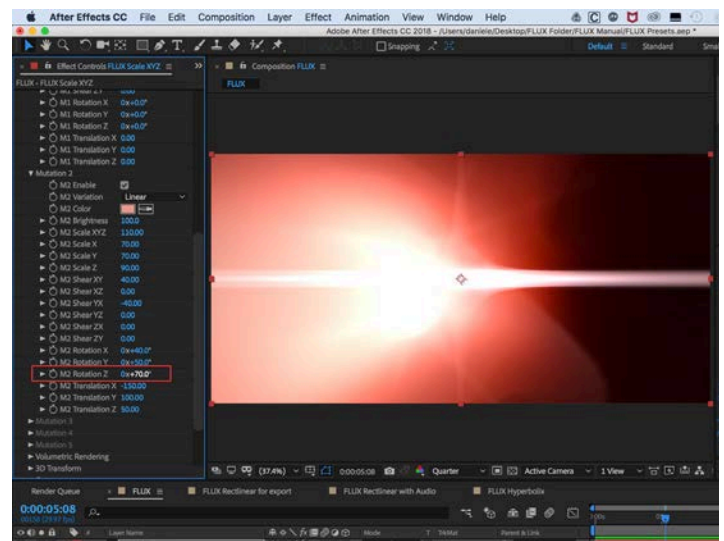
Mutation 2 > RM2 Rotation X 40°, Y 50°, Z 0°. *(Applied to FLUX Preset SuperNova)*
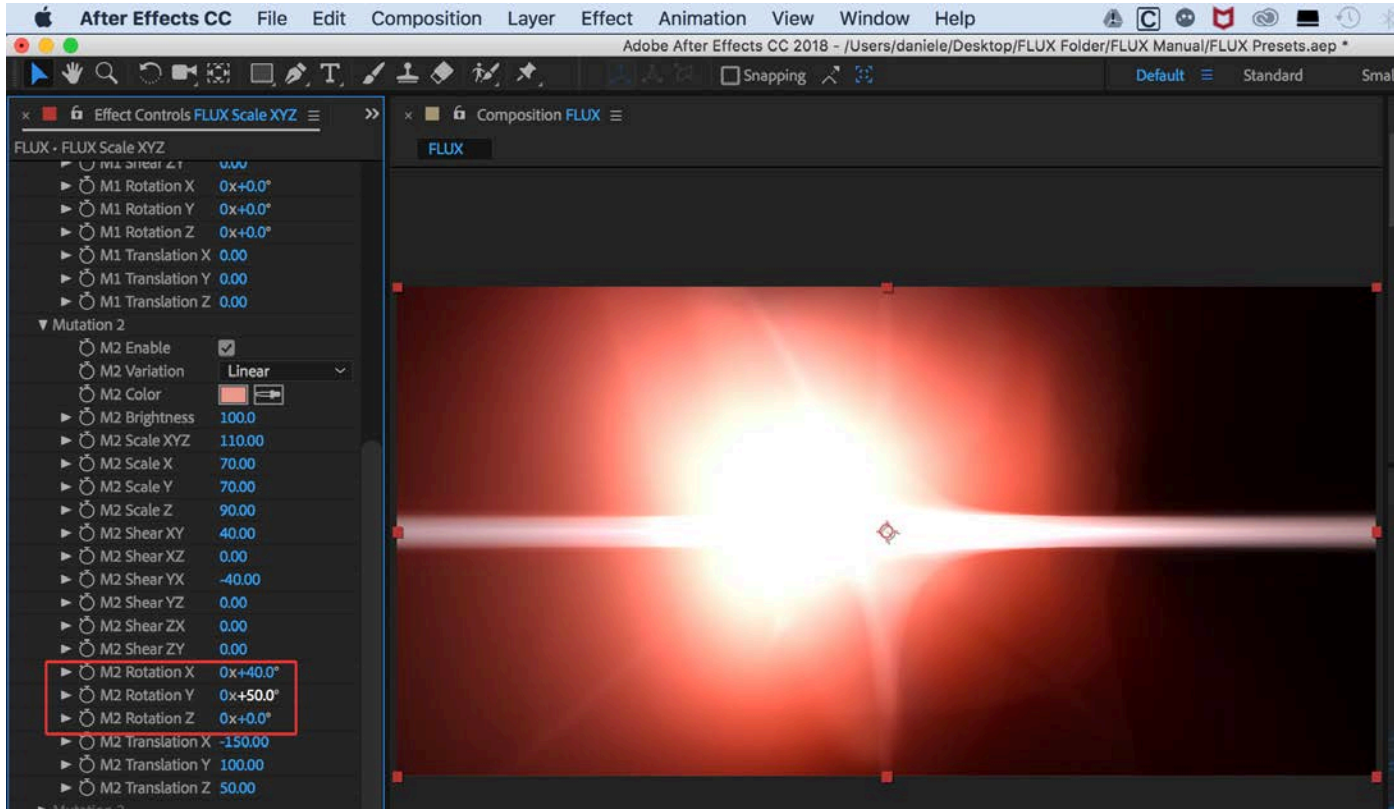
Mutation 2 > RM2 Rotation X 0°, Y 0°, Z 0°.

Mutation 2 > RM2 Rotation X 40°, Y 50°, Z 70°.

FLUX PARAMETERS: Mutations Cont'

Translation X, Y, Z

This adjusts the translation of the current mutation on different axes.
This will affect the overall look of the FLUX Volume, since the Mutations interact with each other so changing the position of one relative to the other one(s) gives a very different result. Generally speaking, a small change in values will produce significant change.
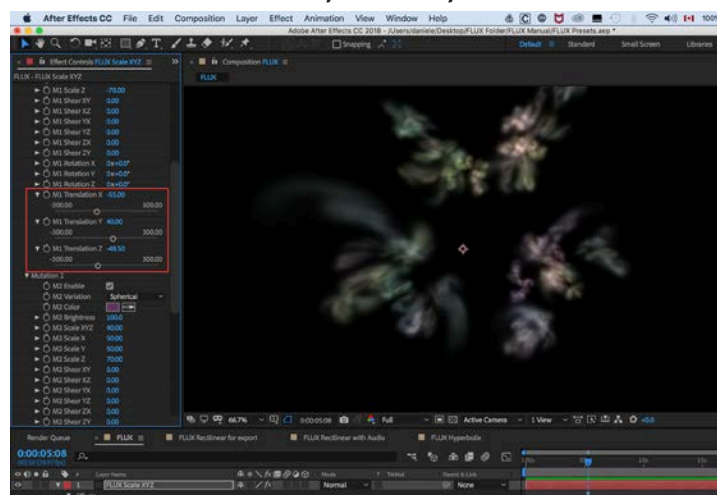
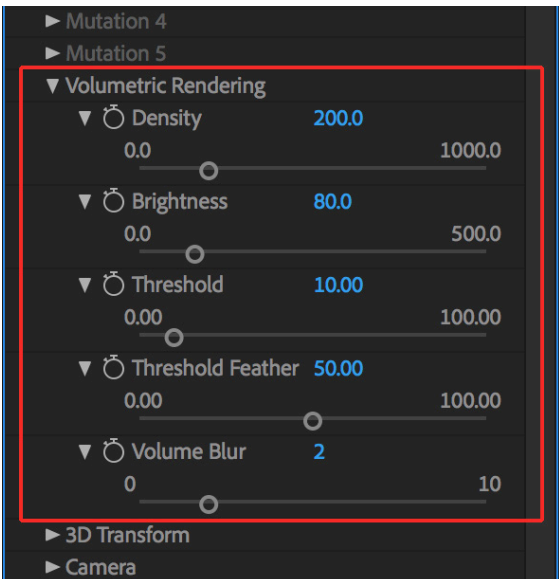**Mutation 1 > M1 Translation X: -77.25°, Y: 12.57°, Z: 5.00°.** *(Applied to FLUX Preset Inkblots)*
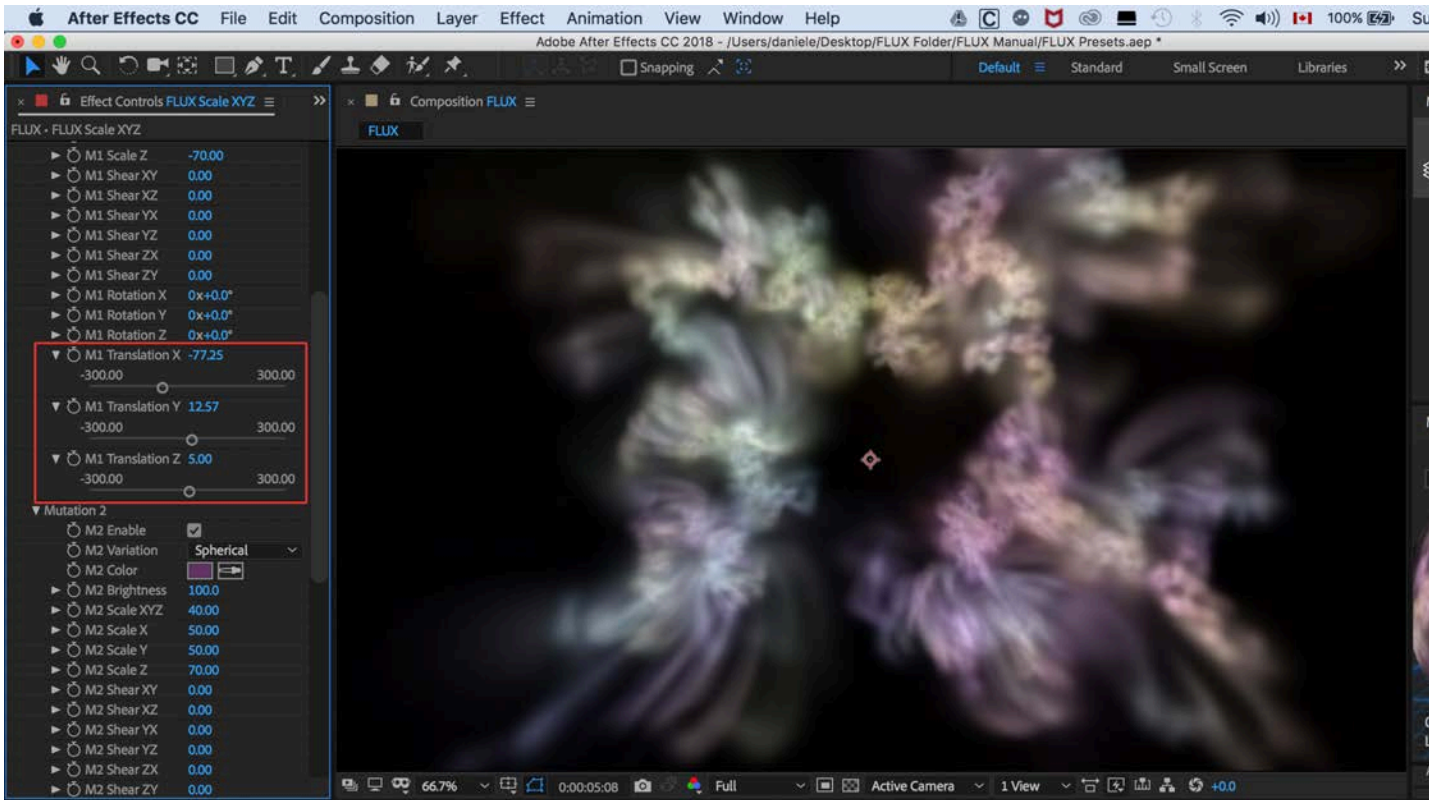
M1 Translation X: -55.00°, Y: 40.00°, Z: 5.00°
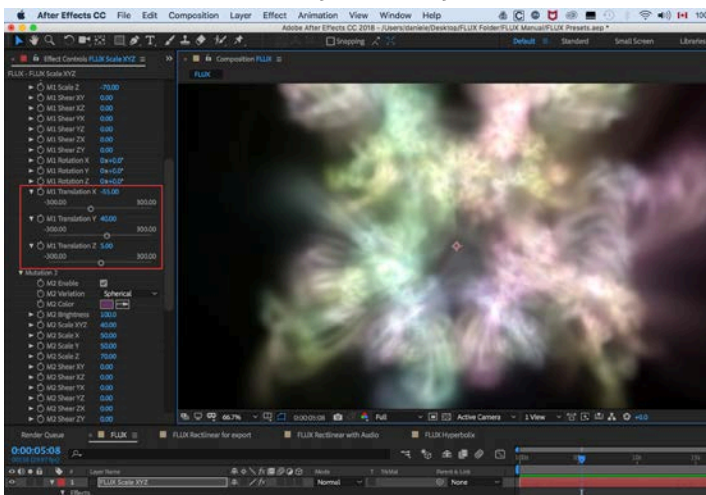
M1 Translation X: -55.00°, Y: 40.00°, Z: -48.50°

FLUX PARAMETERS: Volumetric Rendering

After a Flux Volume (Mutation combination) is generated, it's time to render it using a volumetric renderer. Here we adjust its parameters.

Density:

Adjust volume density, i.e. How easy it is for lights to travel through the volume.

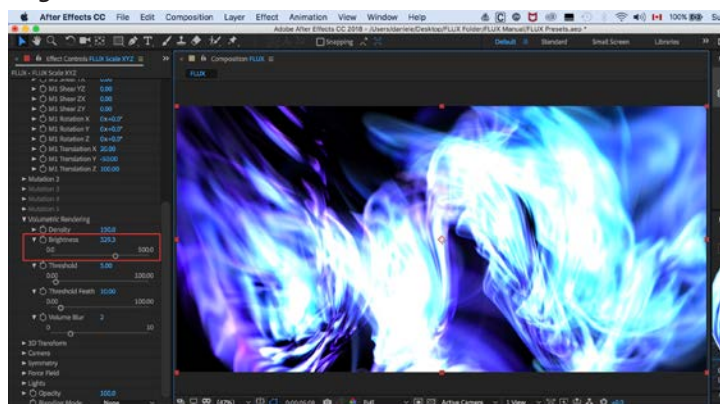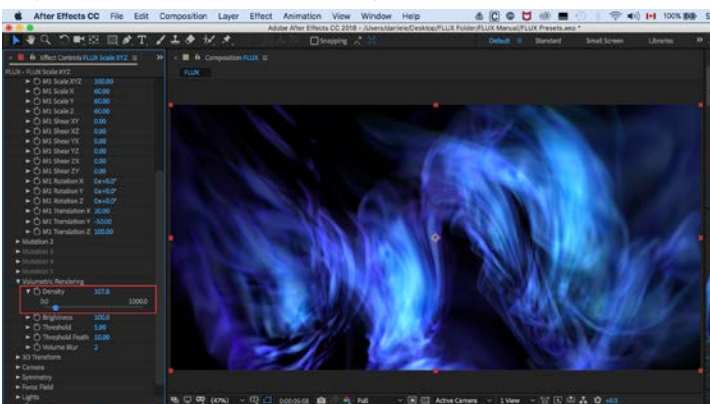Density: 107.8 (Default setting for Preset Xenomorph)

Density: 640
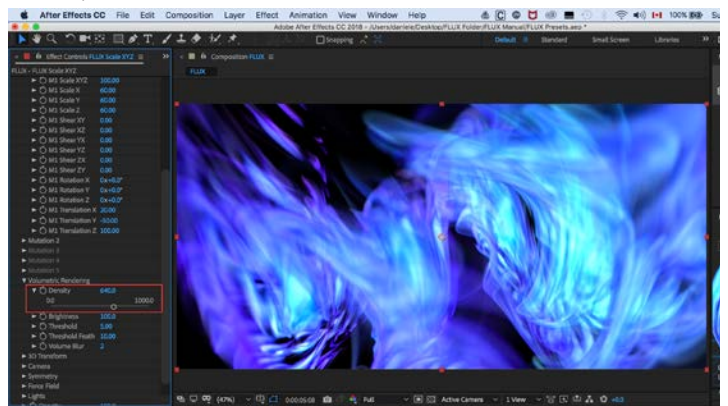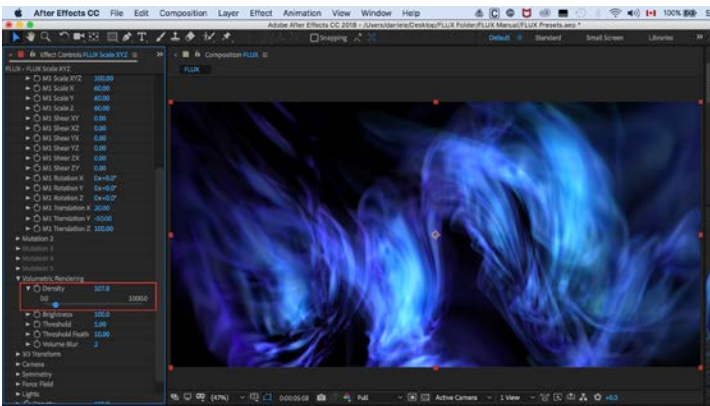
Brightness
This Adjusts the FLUX volume brightness.

Brightness: 107.8 (Default setting for Preset Xenomorph)

Brightness: 329.3

Threshold

Luma threshold to cull volume below this value. It helps to control and reduce large regions of solid dim colors produced by some mutation combinations.

Threshold: 5.00 (Default setting for Preset Xenomorph)   *Threshold: 52.69*
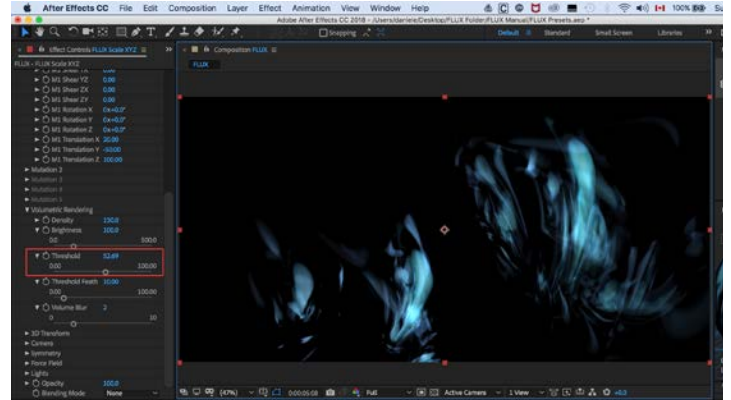
Threshold Feather

This smoothens the threshold region.

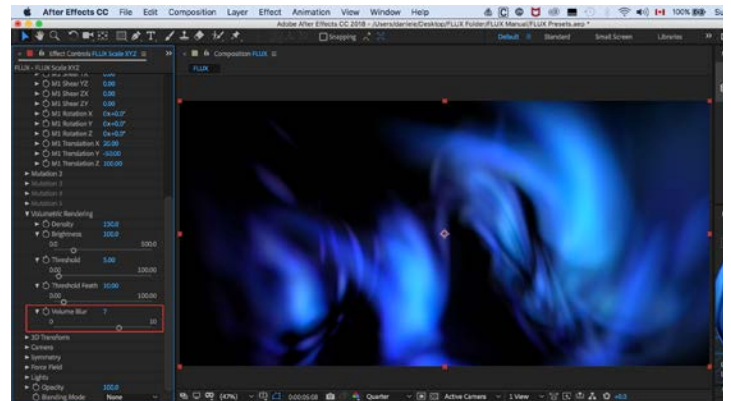*Threshold Feather: 10.00*   *Threshold Feather: 51.50*
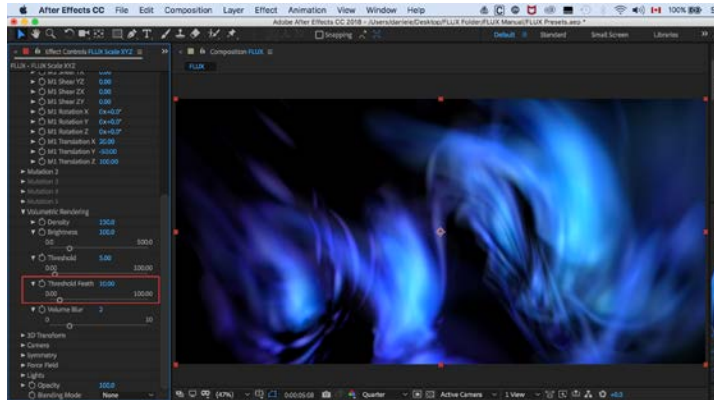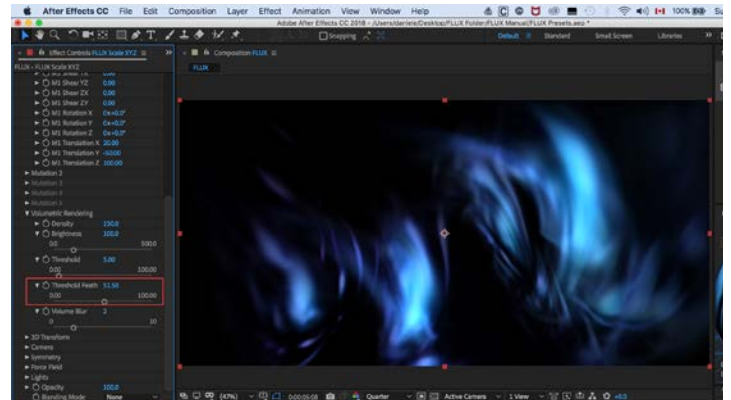
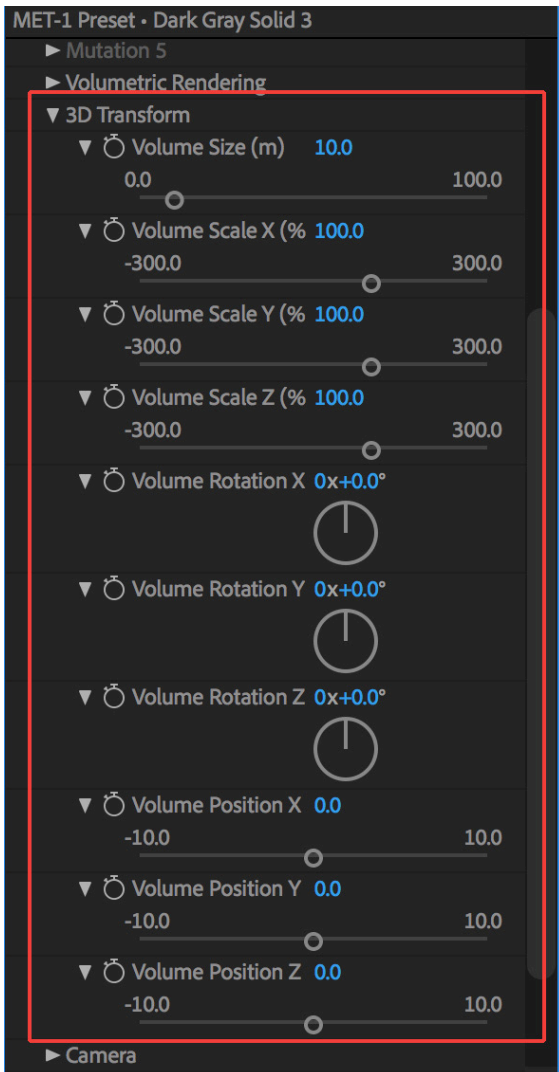## Volume Blur

This blurs the region.

Volume Blur: 2   *Volume Blur: 7*

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FLUX PARAMETERS: 3D Transform

3D Transform

Once you have created your FLUX Volume, these parameters let you control the 3D properties. This is great for adjusting the exact size and position, while maintaining the overall look.

Volume Size (m)

Adjust global size of the volume in meters. It is especially valuable when working in stereo mode. This will make the volume appear at a desired scale when viewed in HMD.

Volume 10.00 (Default setting for Preset Aurora Borealis)
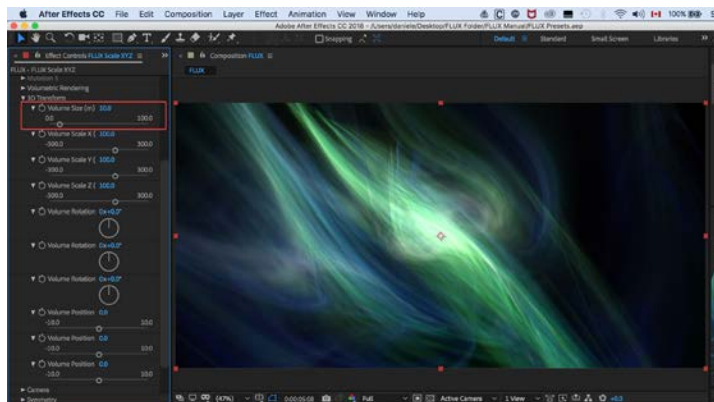
Volume: 56.0
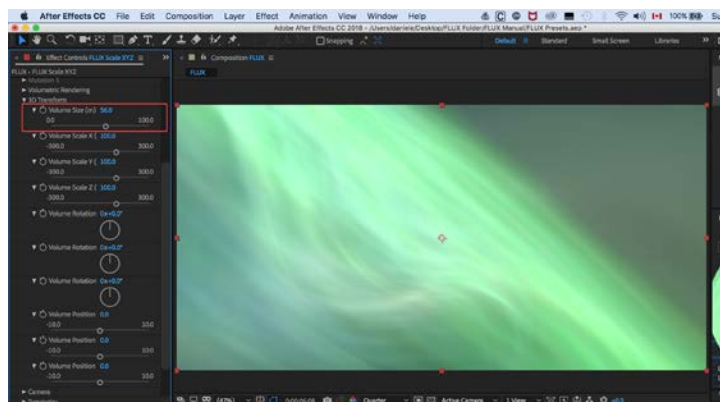
FLUX PARAMETERS: 3D Transform Cont'

Volume Scale X, Y, Z (%)
Adjust the scale per axis.

Volume Scale X: 100

Volume Scale X: 50
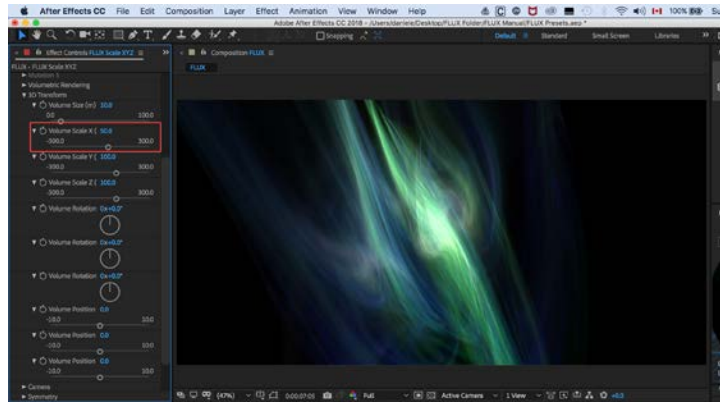
Volume Scale Y: 100
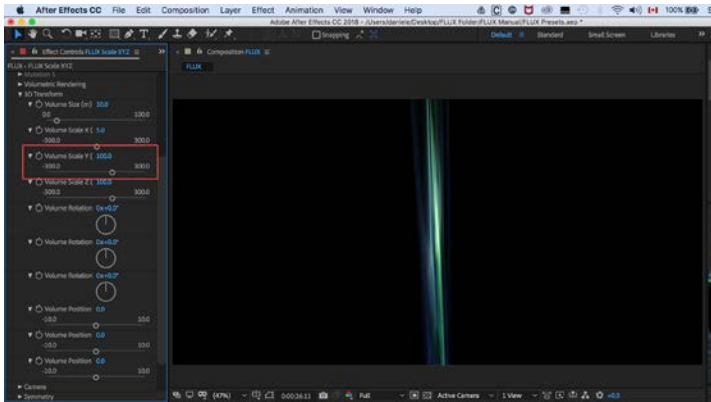
Volume Scale Y: 1000
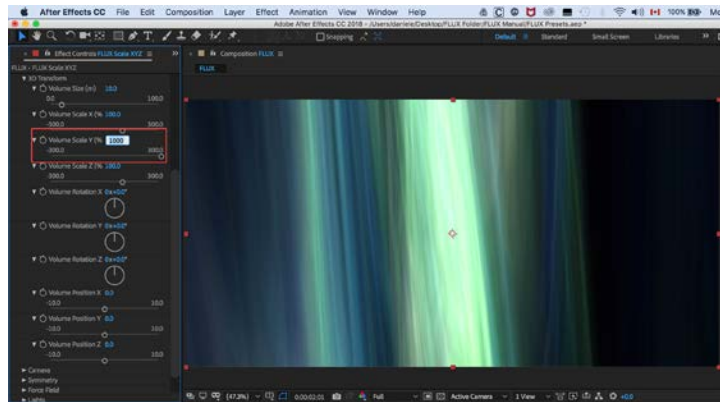
Volume Scale Z: 300
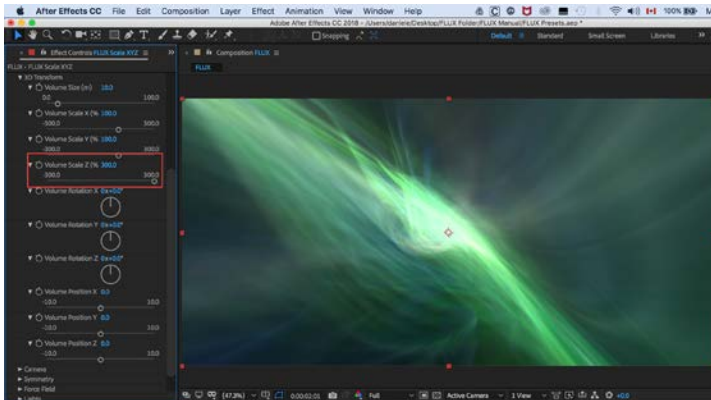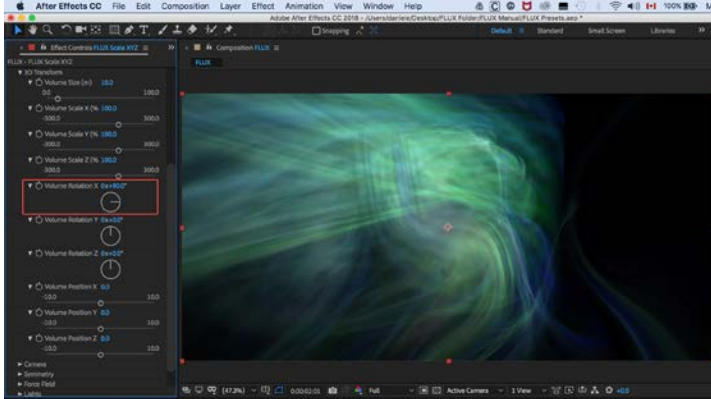

Volume Scale Z: -200
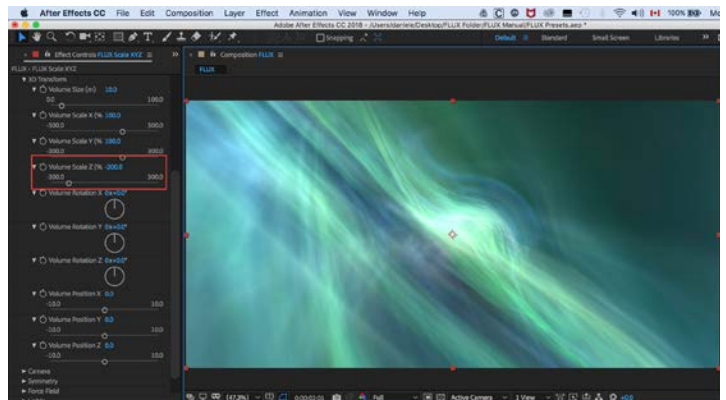
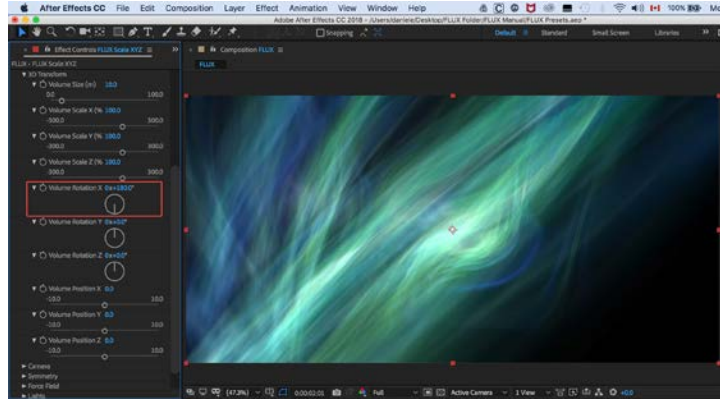# FLUX PARAMETERS: 3D Transform Cont'

Volume Rotation X, Y, Z

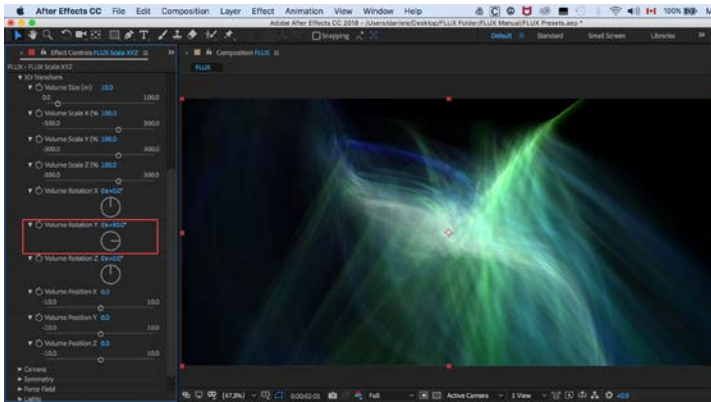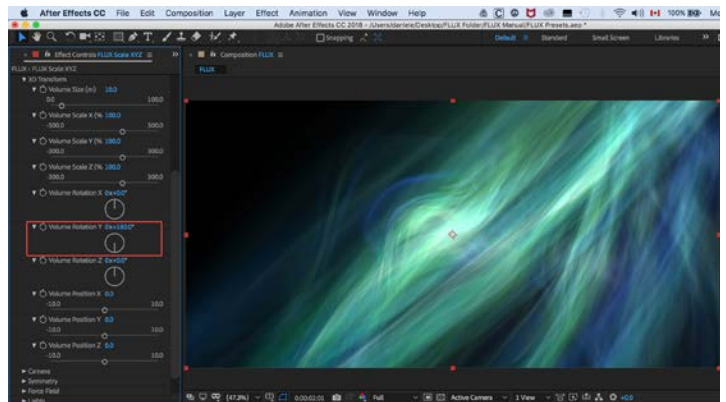Lets you adjust the Euler angles for rotation of the volume.
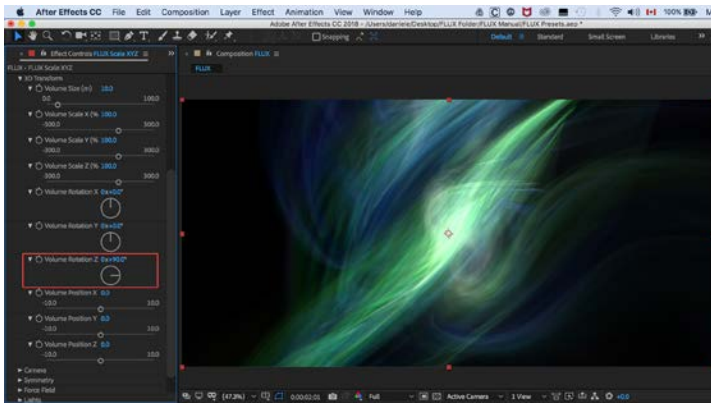
Volume Rotation X: 90

Volume Rotation X: 180
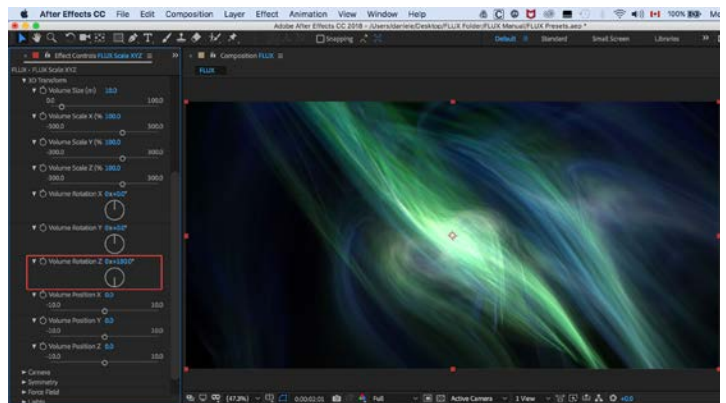

Volume Rotation Y: 90

Volume Rotation Y: 180

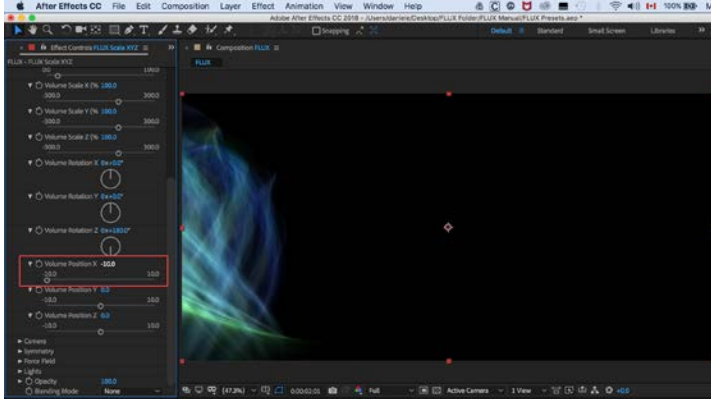*Volume Rotation Z: 90*

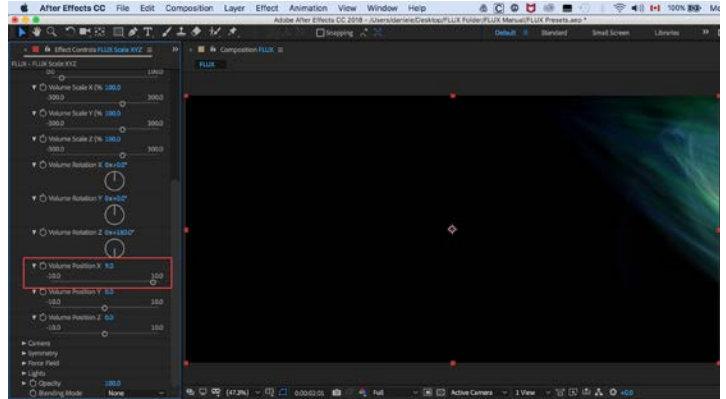*Volume Rotation Z: 180*

FLUX PARAMETERS: Volume Position

Volume Position X, Y, Z (m)
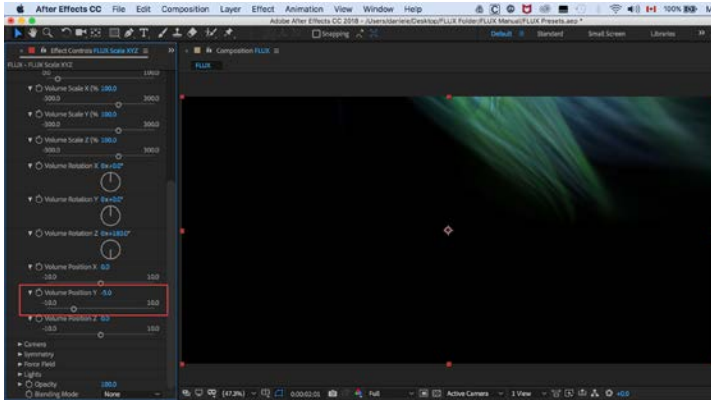Adjust position of the volume in meters.

Volume Position X: -10.0

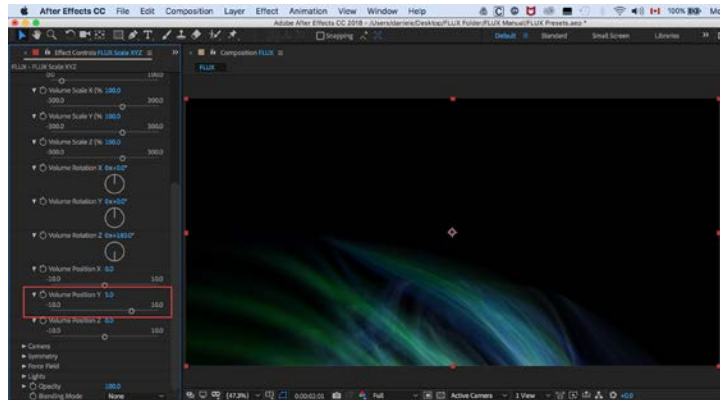*Volume Position X: 9.0*

Volume Position Y: -5.0
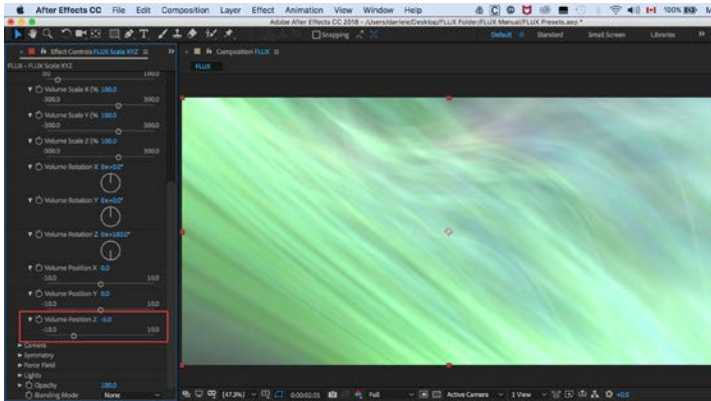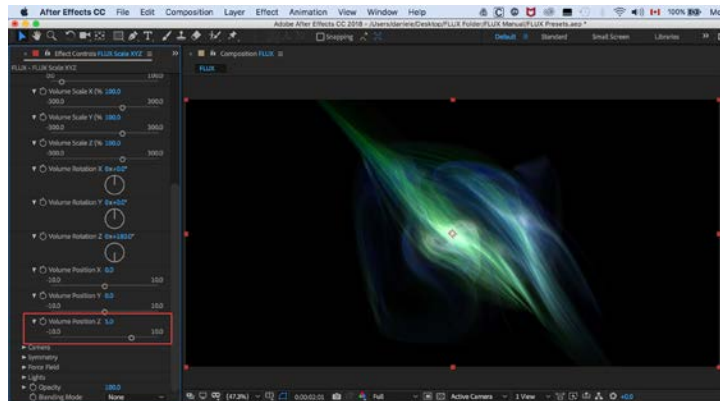

Volume Position Y: 5.0
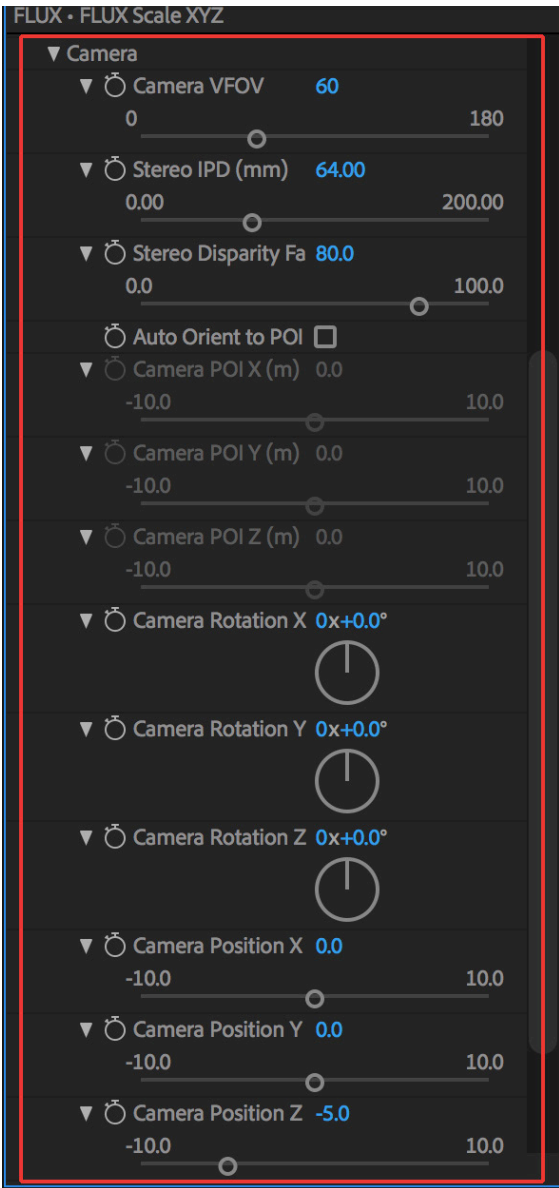

Volume Position Z: -5.0

Volume Position: 5.0

▼ Camera
   ▼ ○ Camera VFOV   60
      0   180
   ▼ ○ Stereo IPD (mm)   64.00
      0.00   200.00
   ▼ ○ Stereo Disparity Fa 80.0
      0.0   100.0
     ○ Auto Orient to POI ☐
   ▼ ○ Camera POI X (m) 0.0
      -10.0   10.0
   ▼ ○ Camera POI Y (m) 0.0
      -10.0   10.0
   ▼ ○ Camera POI Z (m) 0.0
      -10.0   10.0
   ▼ ○ Camera Rotation X 0x+0.0°
   ▼ ○ Camera Rotation Y 0x+0.0°
   ▼ ○ Camera Rotation Z 0x+0.0°
   ▼ ○ Camera Position X 0.0
      -10.0   10.0
   ▼ ○ Camera Position Y 0.0
      -10.0   10.0
   ▼ ○ Camera Position Z -5.0
      -10.0   10.0

FLUX PARAMETERS: Camera

Camera

Full set of 3D camera parameters. These parameters are overridden by AE camera if it's detected. One of the reasons we included a camera is so you will have access to one in Premiere Pro.
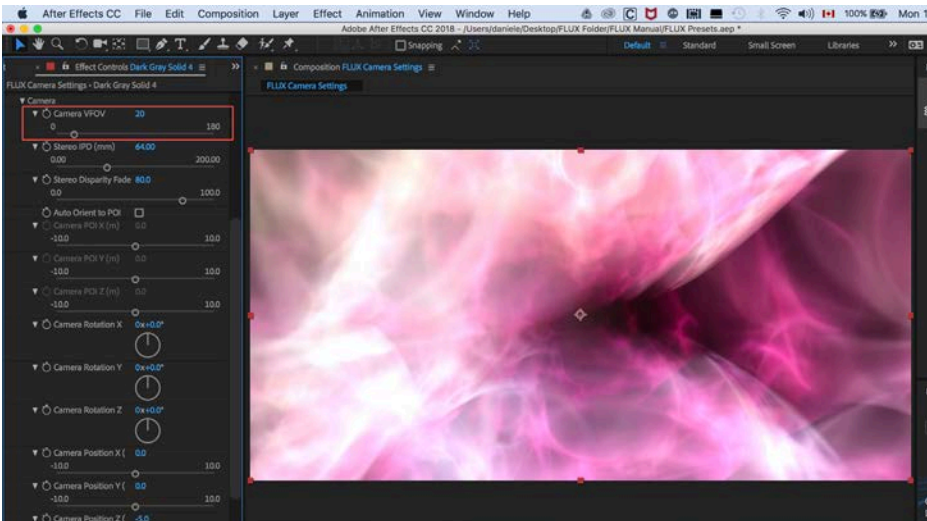
FLUX PARAMETERS: Camera Cont'

VFOV

Vertical Field Of View of the camera (in degrees). Horizontal FOV is set according to the frame aspect ratio.
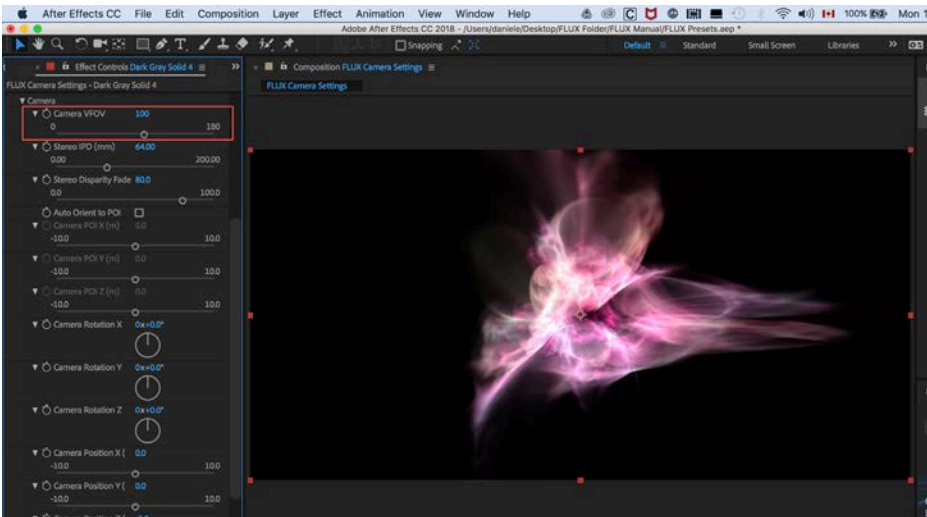
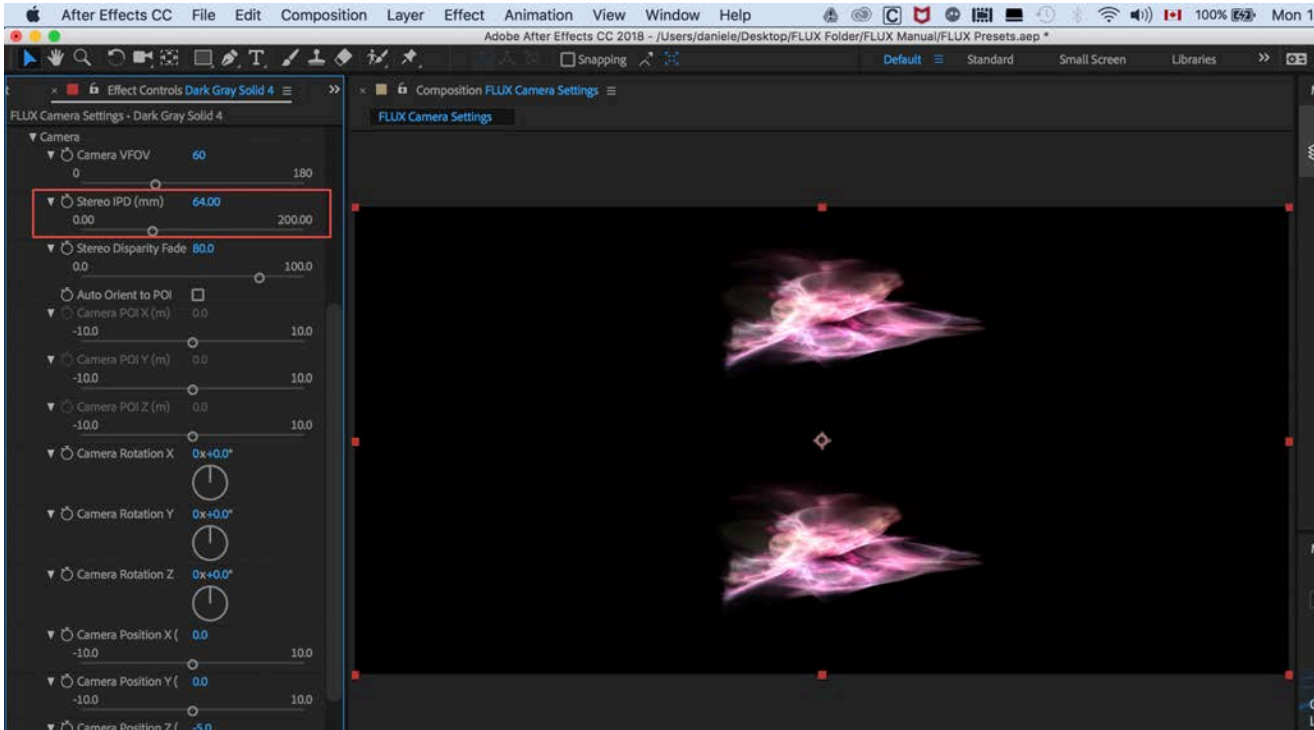*VFOV: 60 (Default setting Solar Wind Preset)*
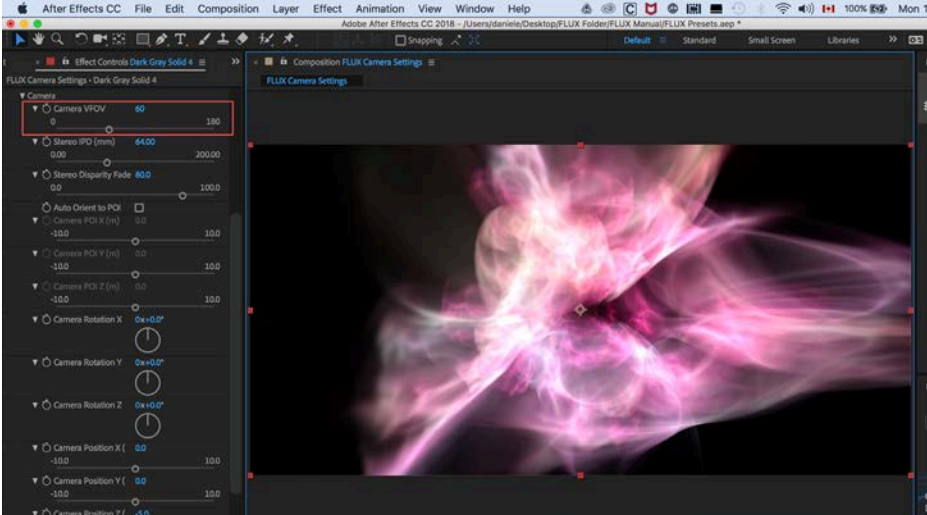
VFOV: 20

VFOV: 100
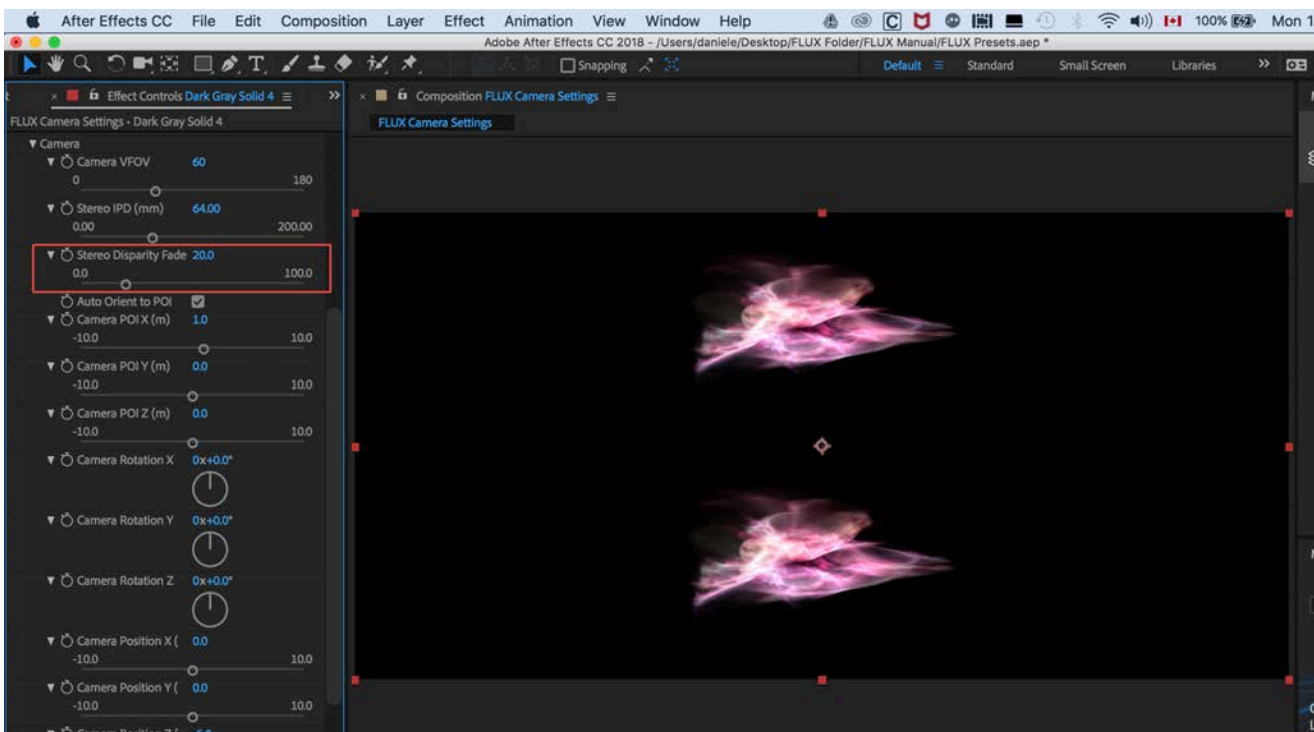
FLUX PARAMETERS: Camera Cont'

Stereo IPD (mm)

Interpupillary distance of the eyes. This affects stereoscopic projection disparity. The default setting is the right one for most Stereo productions. Change only if you know what you are doing.

Stereo IPD: Default setting is 64

Stereo Disparity Fade

Lets you adjust the amount of fade for objects that are too close to the camera (to avoid bad disparity). This effect works in stereo mode only.

FLUX PARAMETERS: Camera Cont'

Auto Orient to POI: Camera POI X, Y, Z (m)

Set camera Point Of Interest in meters (works only when Auto Orient to POI is enabled).

Auto Orient to POI > Camera POI X:10
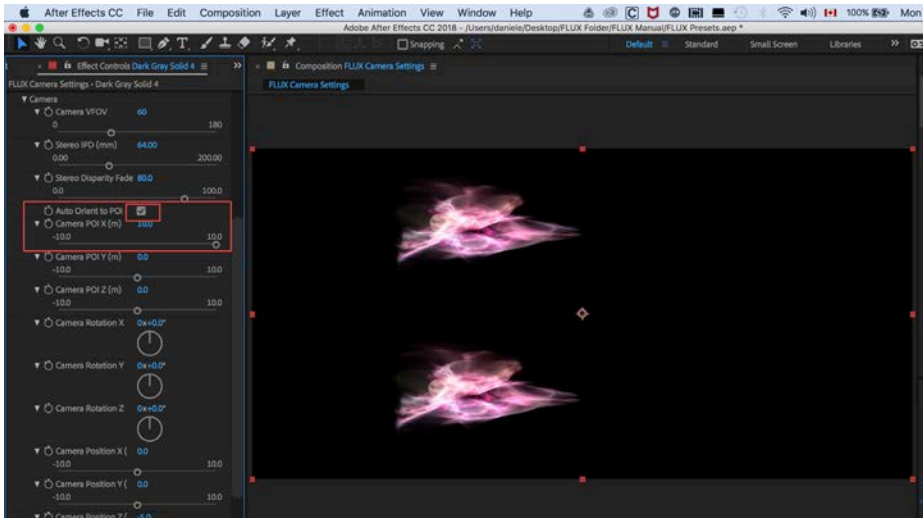
Click on Checkbox to enable auto orientation of the camera to Point Of Interest
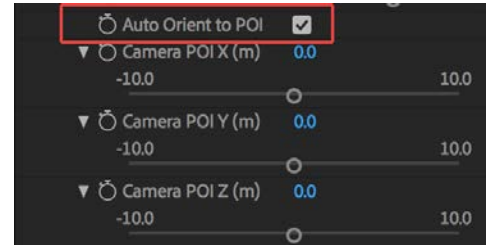
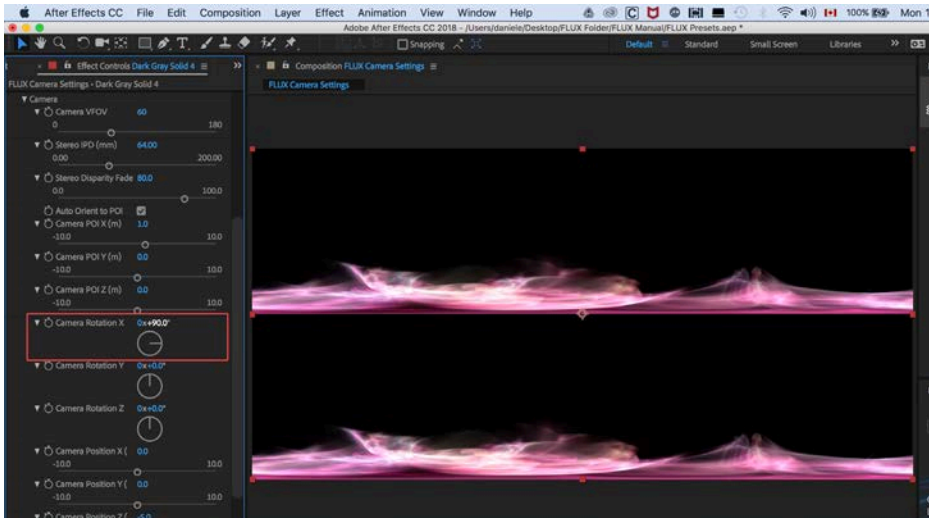*Auto Orient to POI > Y: 10*
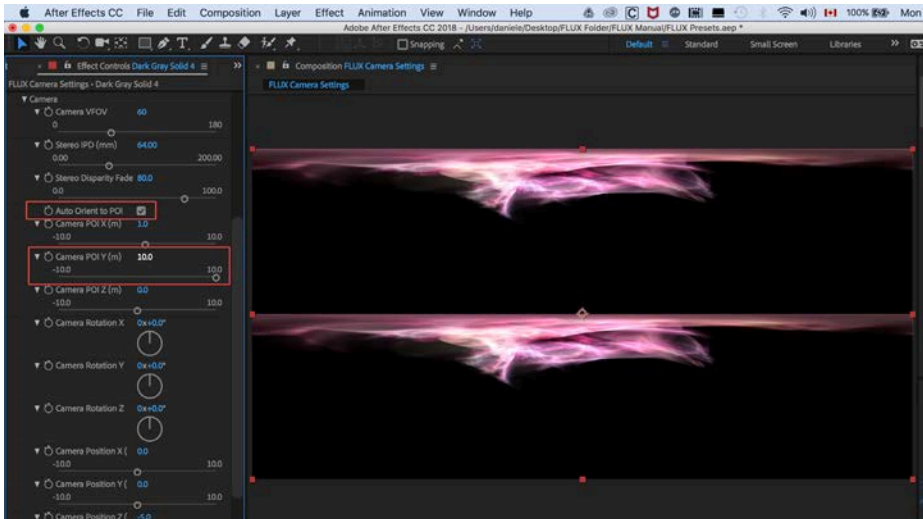
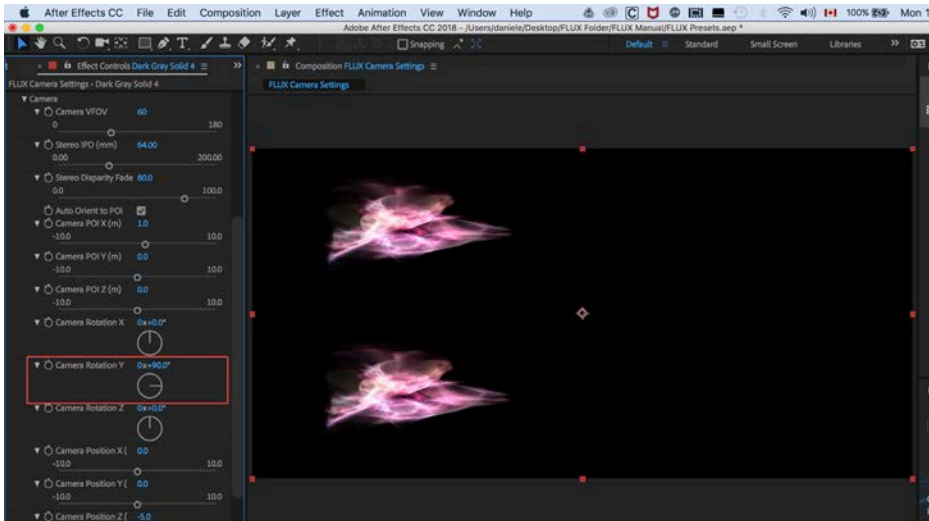*Auto Orient to POI > Z: 10*
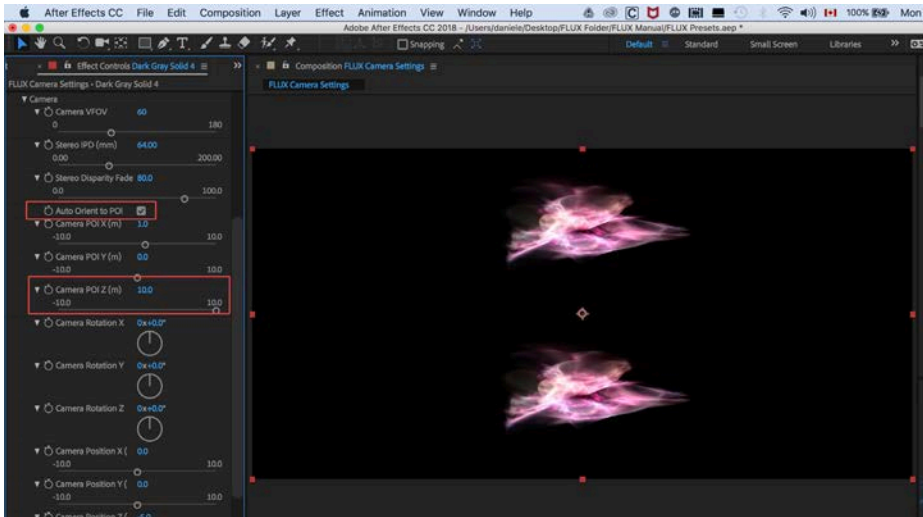
FLUX PARAMETERS: Camera Cont'

Camera Rotation X, Y, Z
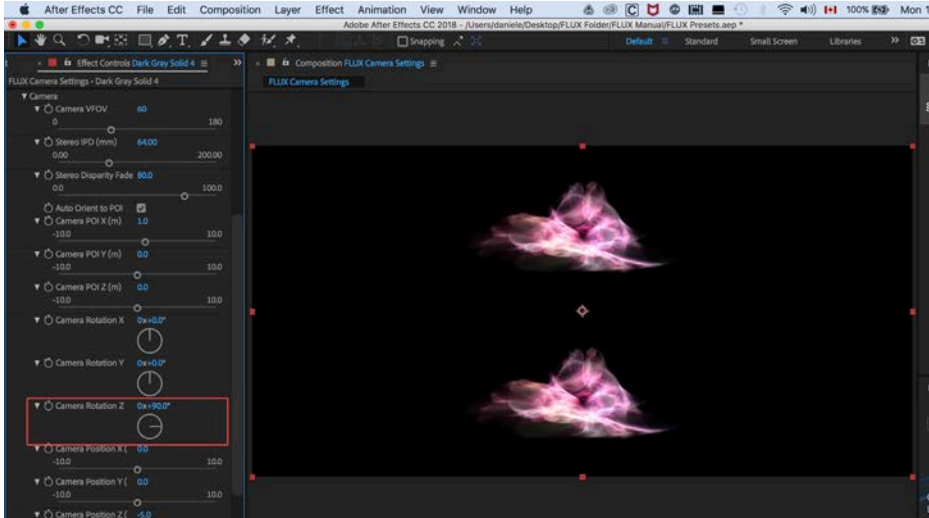
Lets you adjust Euler angles rotation of the camera.

Camera Rotation X > 90

Camera Rotation Y > 90

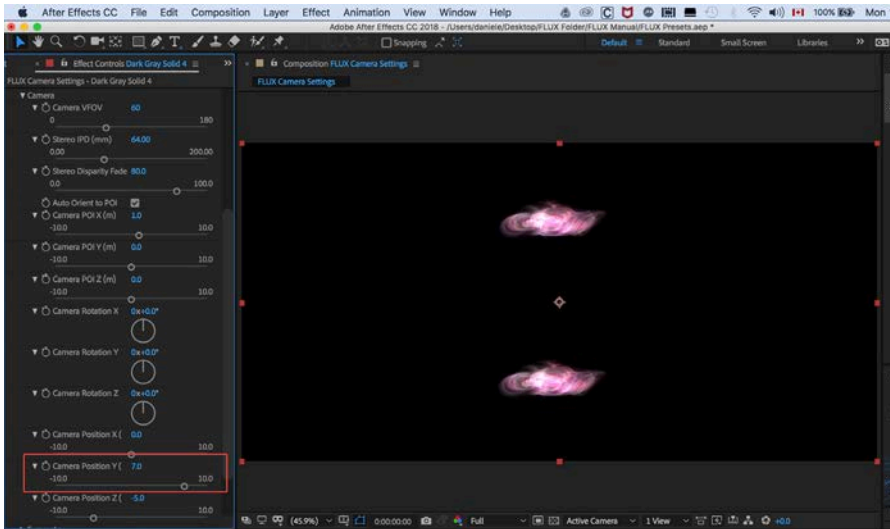*Camera Rotation Z > 90*

FLUX PARAMETERS: Camera Cont'

Camera Position X, Y, Z (m)
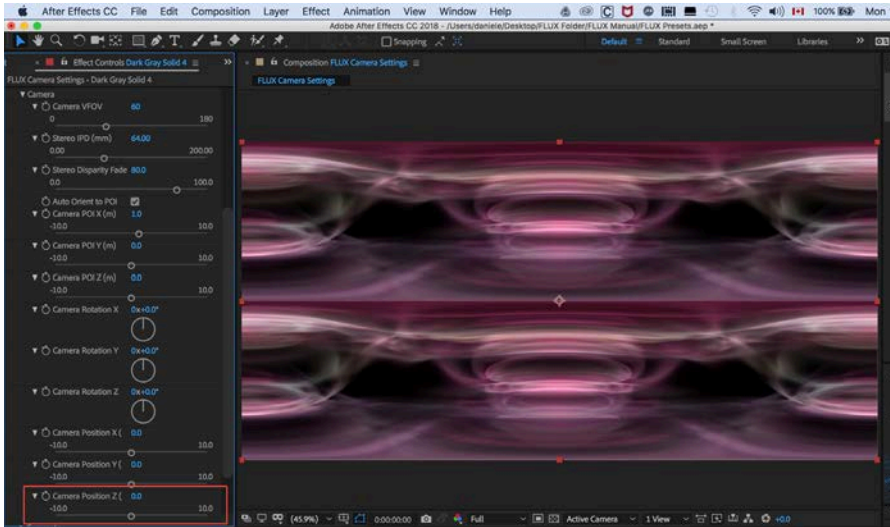
Lets you adjust the camera position in meters.

Camera Position X > 6
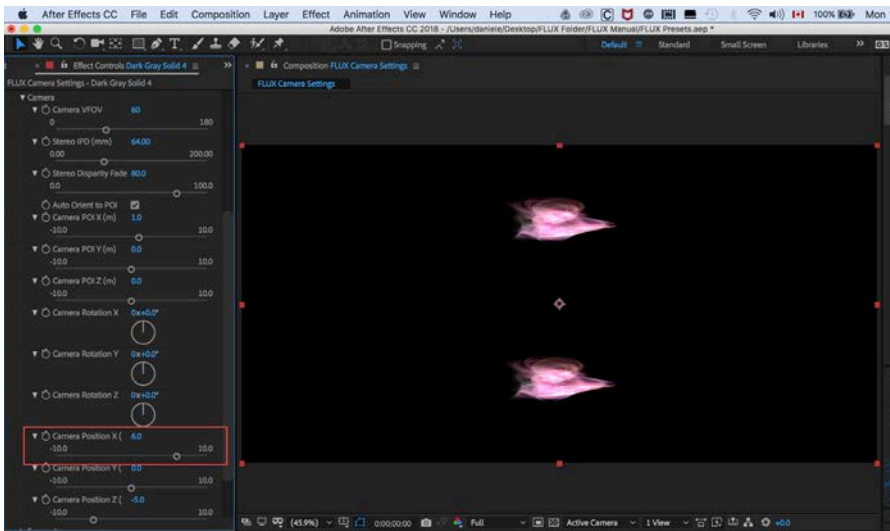
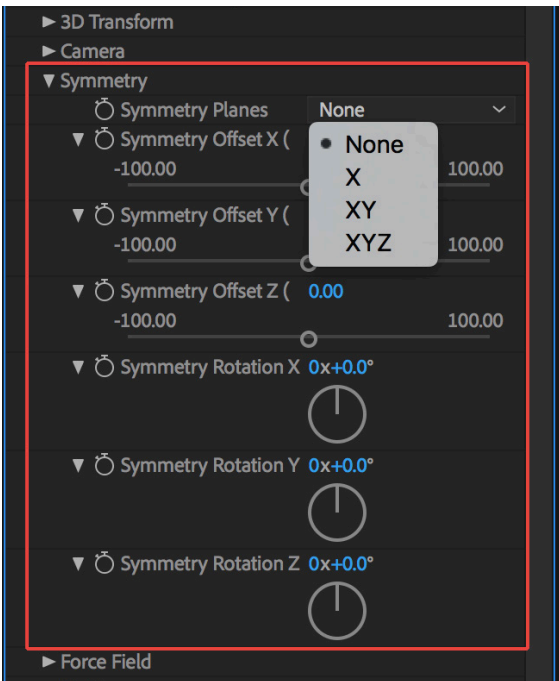*Camera Position Y > 7*

Camera Position Z > 0

FLUX PARAMETERS: Symmetry

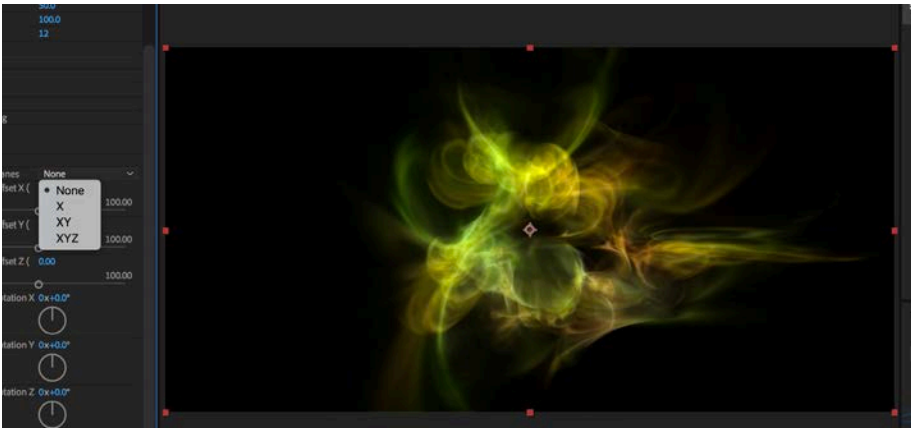This feature lets you add symmetry to generated volume on all axes.

Symmetry Planes:

None - no symmetry.
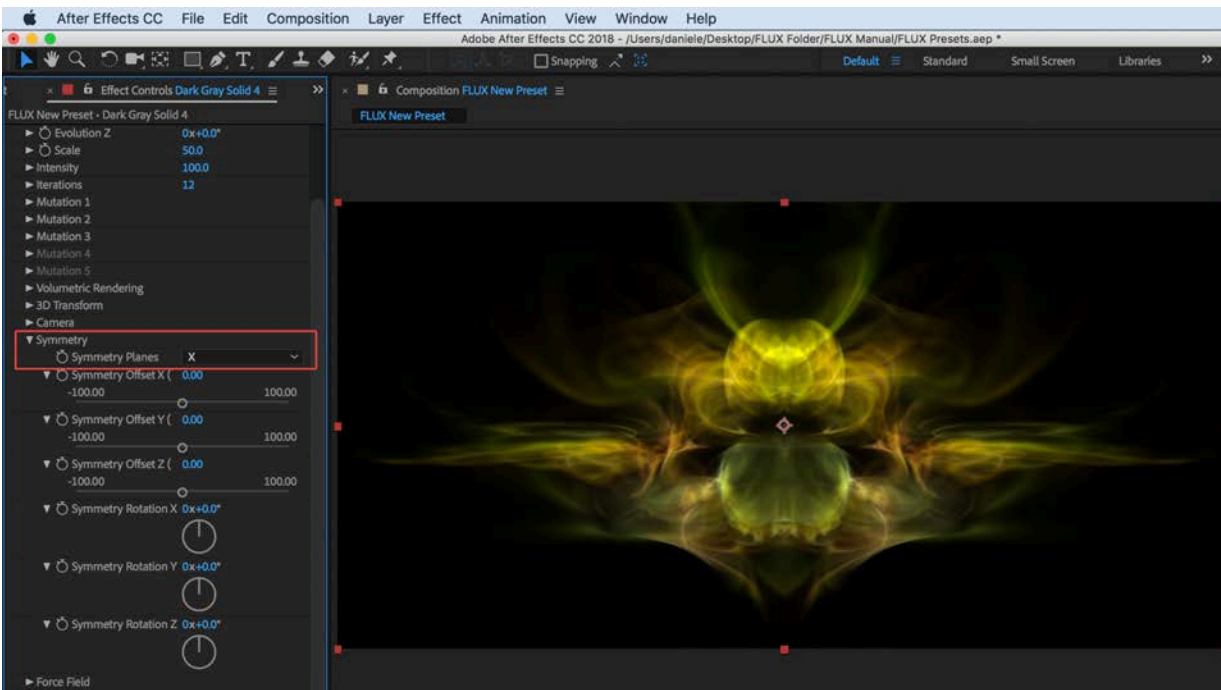
X - symmetrize only around vertical YZ plane (X=0).

XY - symmetrize around vertical YZ plane (X=0) and horizontal XZ plane (Y=0)

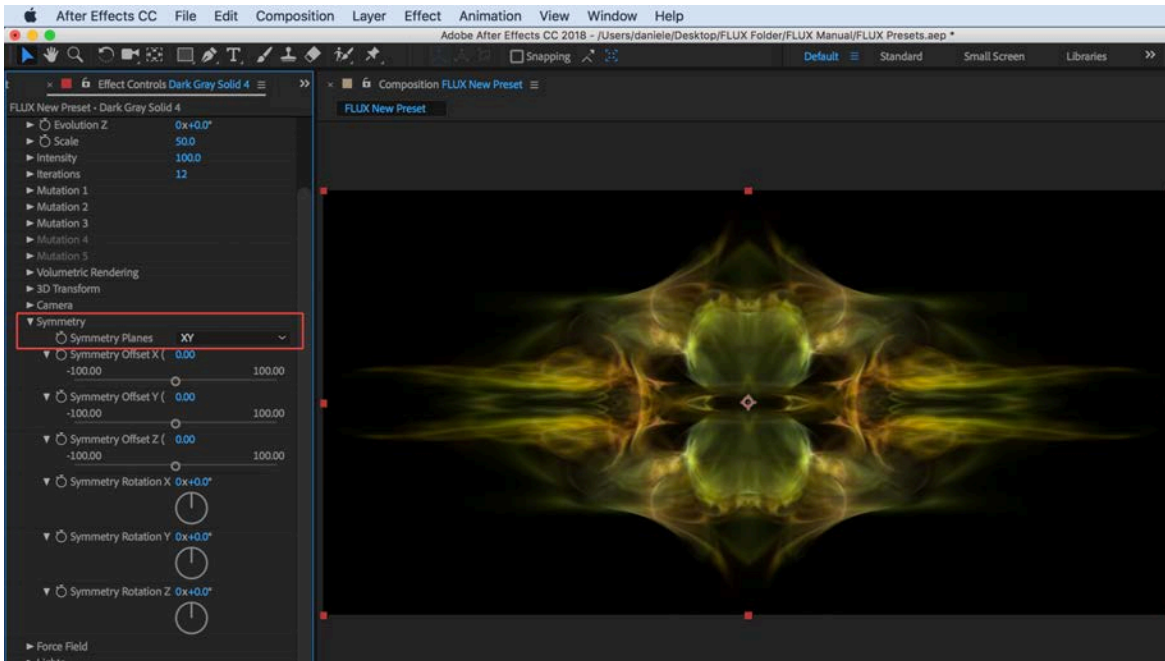XYZ - symmetrize around all three orthogonal planes.
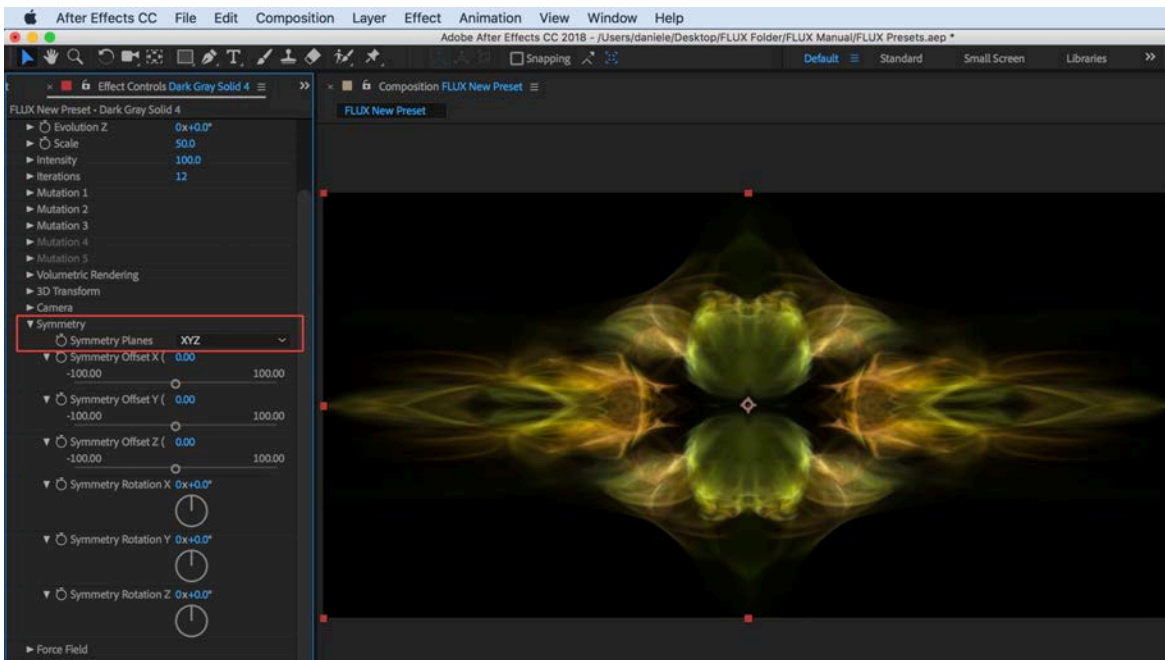
Symmetry Planes > None

Symmetry Planes > X
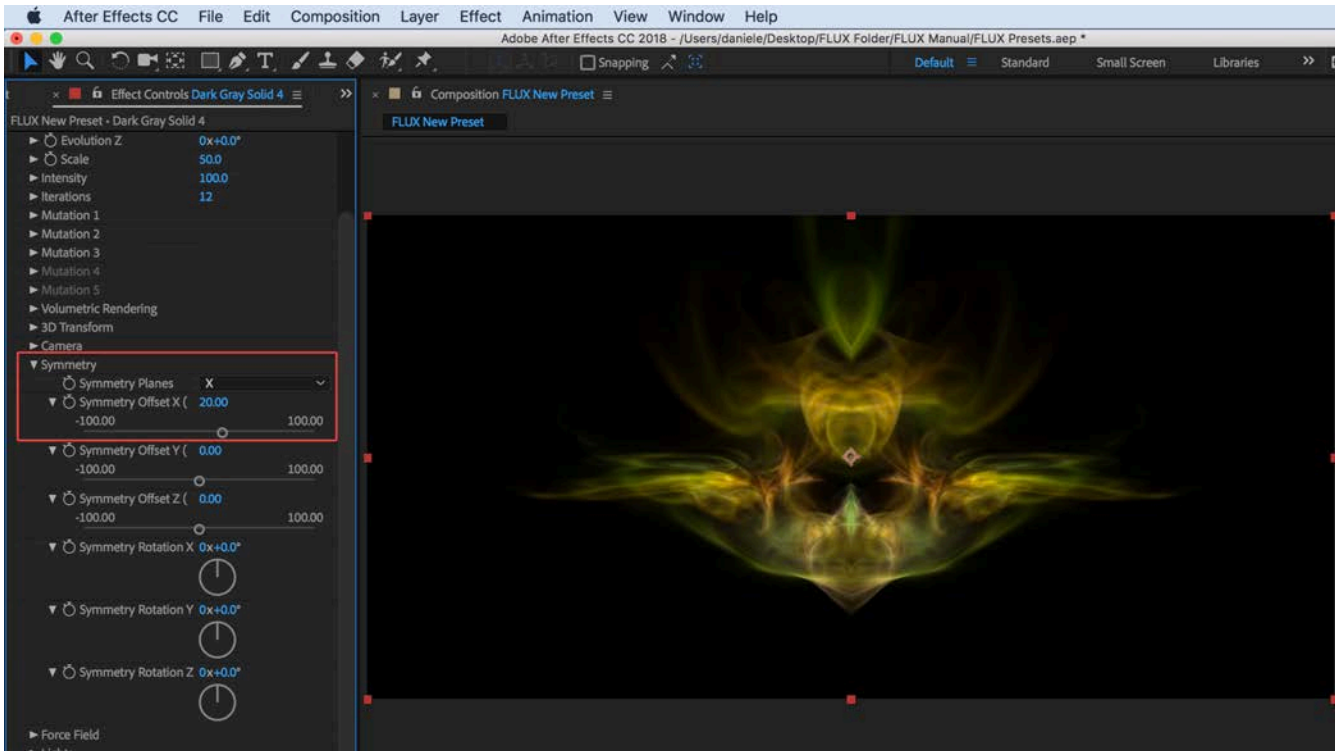
Symmetry Planes > XY

Symmetry Planes > XYZ

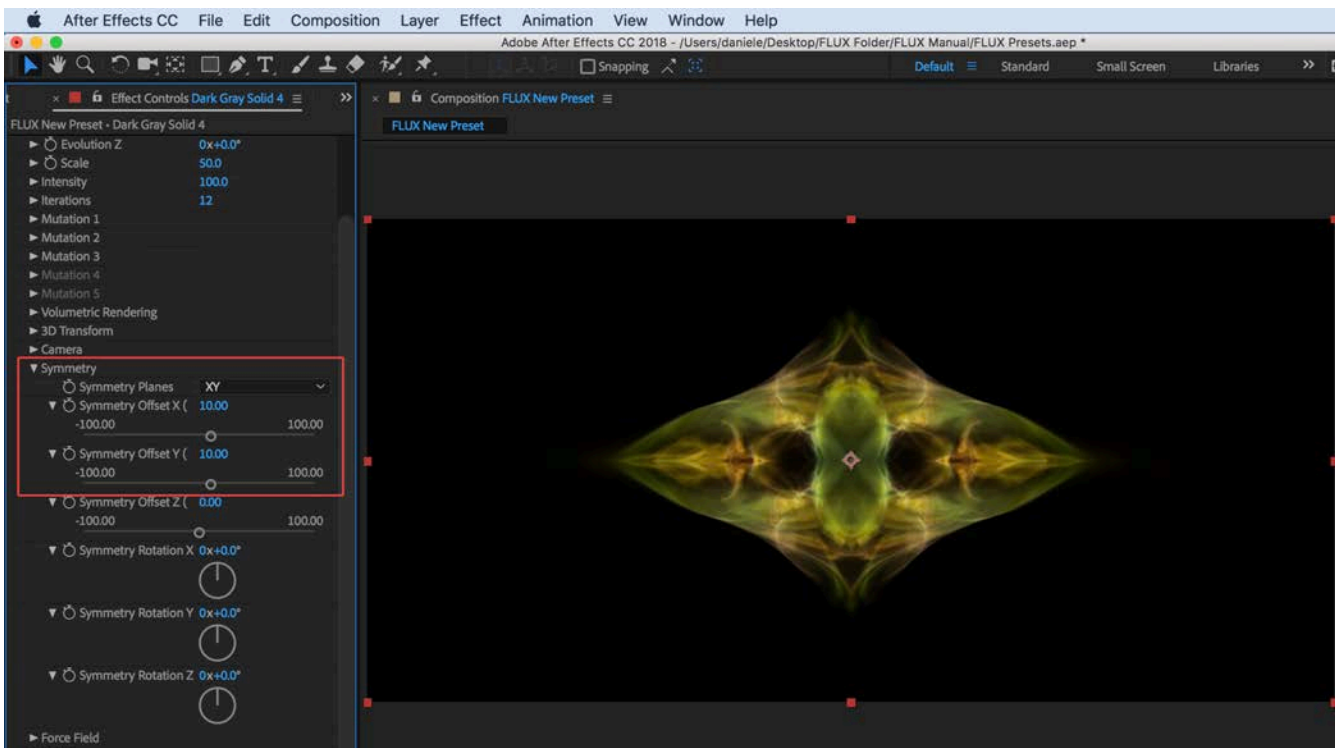# FLUX PARAMETERS: Symmetry Cont'

Symmetry Offset X, Y, Z (%)

Shift the center of symmetry on any axis.

Note: This doesn't shift the volume itself. It shifts the center of symmetry in the original volume, allowing us to symmetrize different regions.

Symmetry Planes > X; Offset X > 20; Offset Y > 0; Offset Z > 0

Symmetry Planes > XY; Offset X > 10; Offset Y > 10; Offset Z > 0
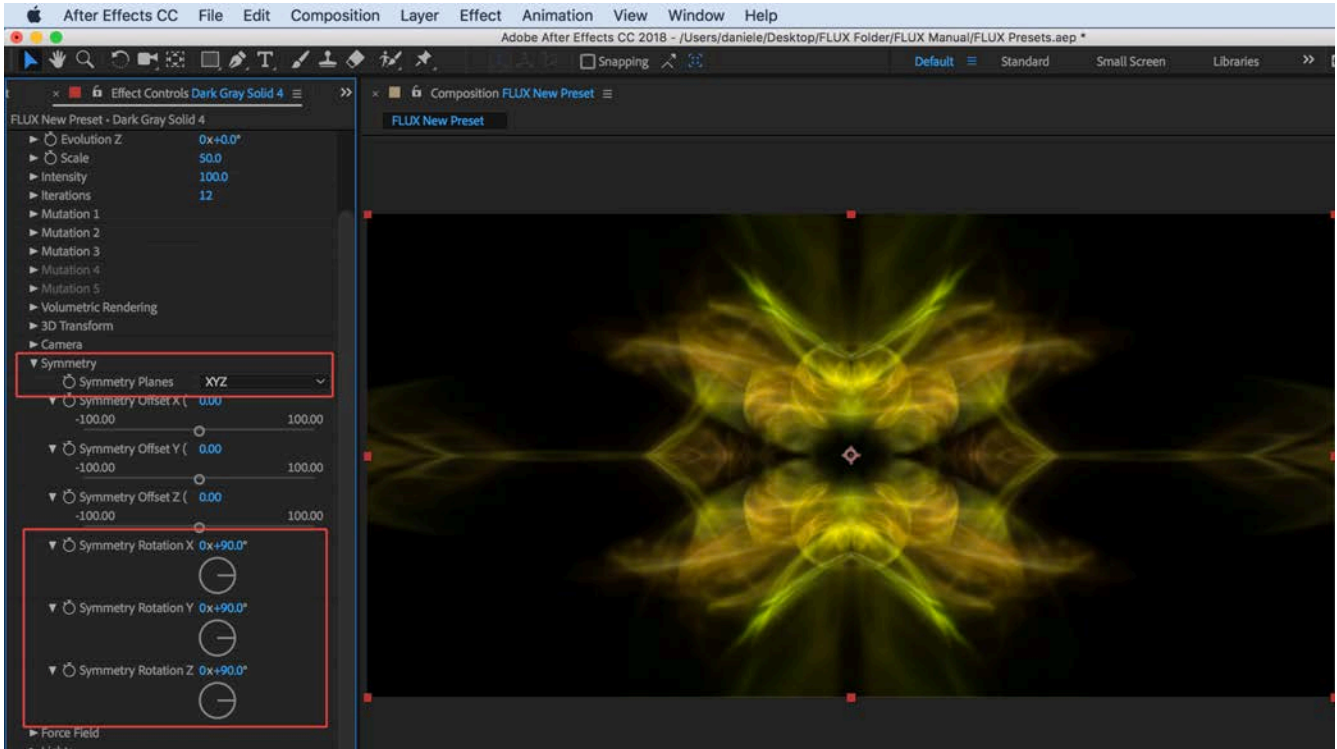
FLUX PARAMETERS: Symmetry Cont'
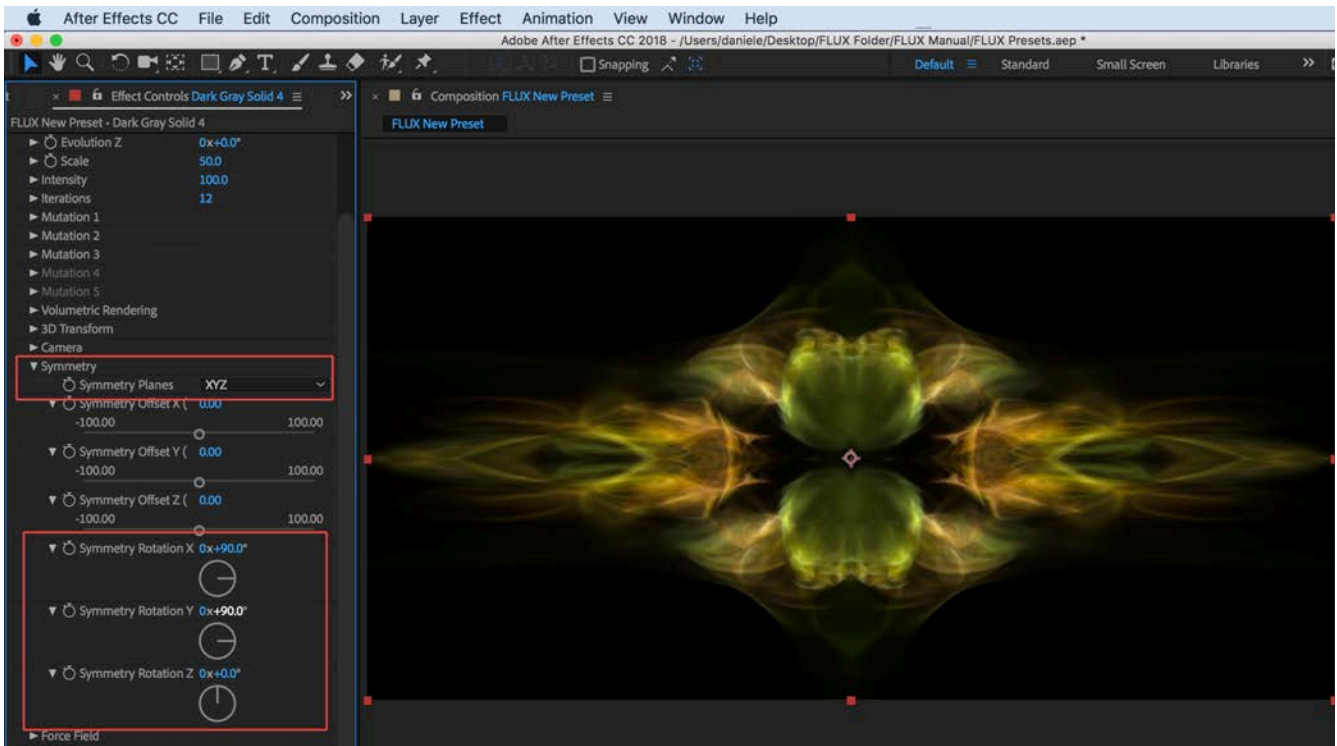
Symmetry Rotation X, Y, Z

Adjust Euler angles to rotate symmetry plane.

Note: This doesn't rotate the volume itself, it rotates the plane of symmetry allowing you to symmetrize different orientations of original volume.

Symmetry Planes > X Y Z ; Symmetry Rotation: X > 90°; Y > 90°; Z > 90°

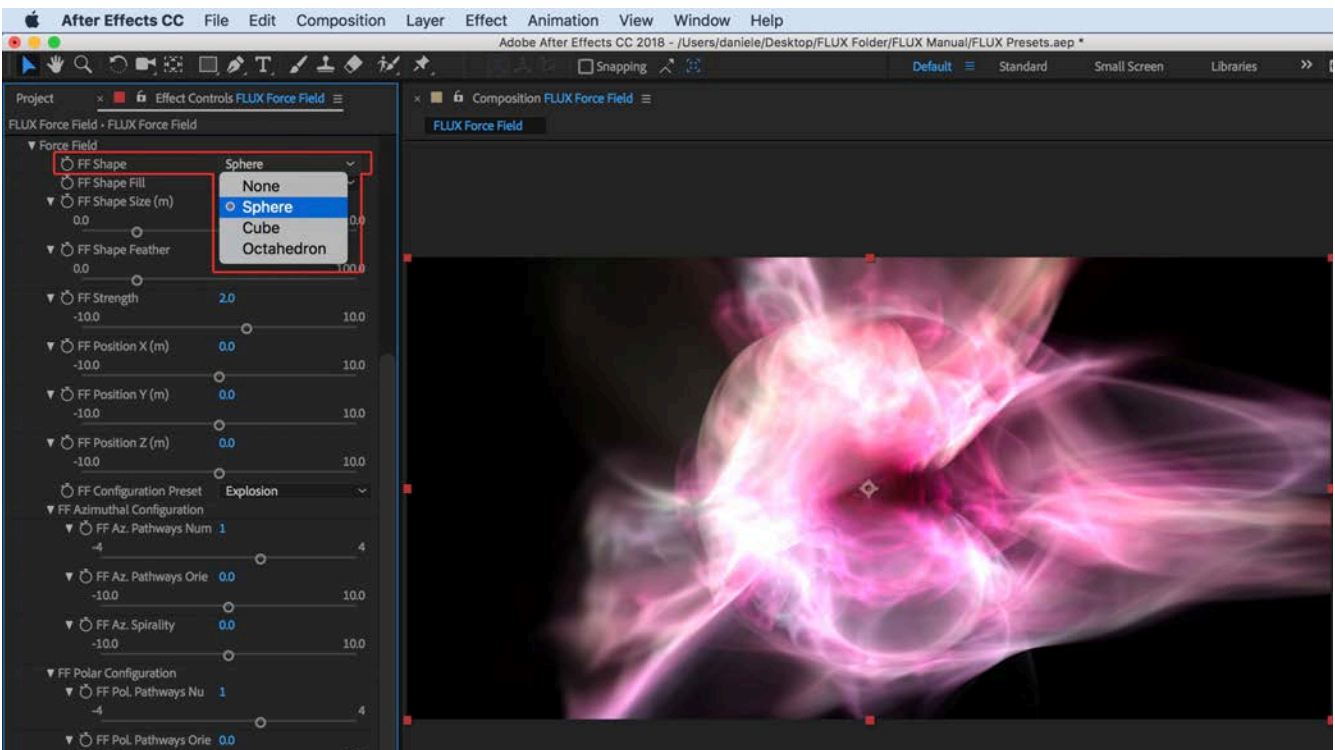*Symmetry Planes > X Y Z ; Symmetry Rotation: X > 90°; Y > 90°; Z > 0°*

FLUX PARAMETERS: Force Field

This feature simulates a displacement (force) field inside the FLUX volume.

FF Shape

Select the bounding shape of the force field: None, Sphere, Cube, Octahedron.

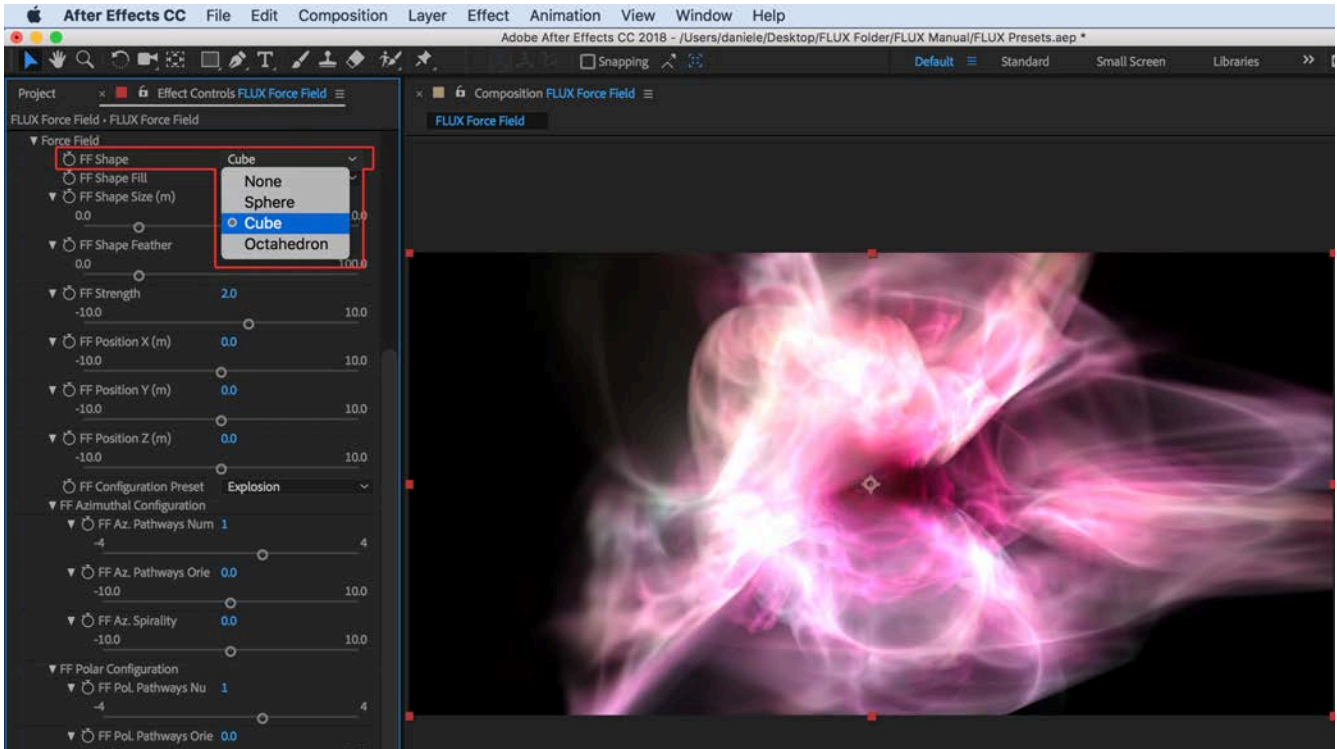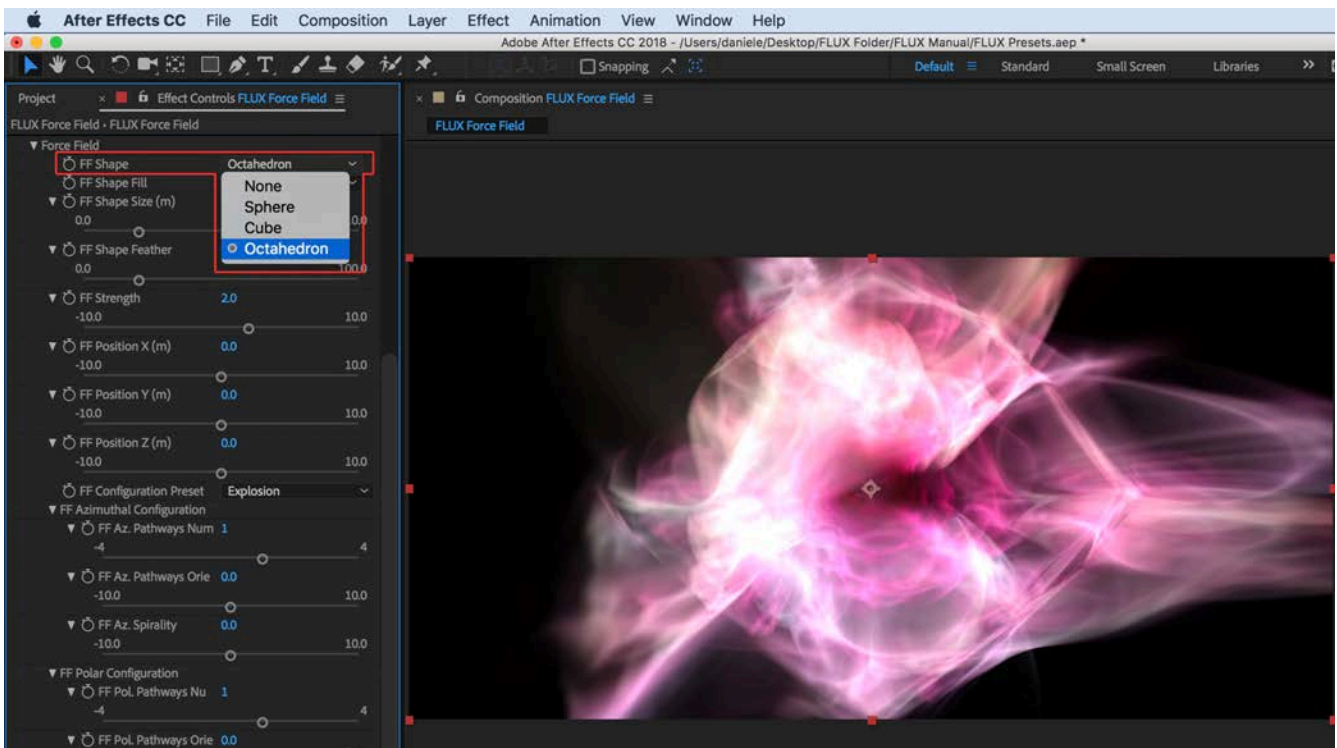*FF Shape > Sphere (Applied to Solar Winds Preset from Effect Controls Panel)*

FF Shape Cont'

FF Shape > Cube

FF Shape > Octahedron

FF Shape Fill
Select whether the force field affects all of the volume inside the bounding shape or only its shell: Solid, Shell.
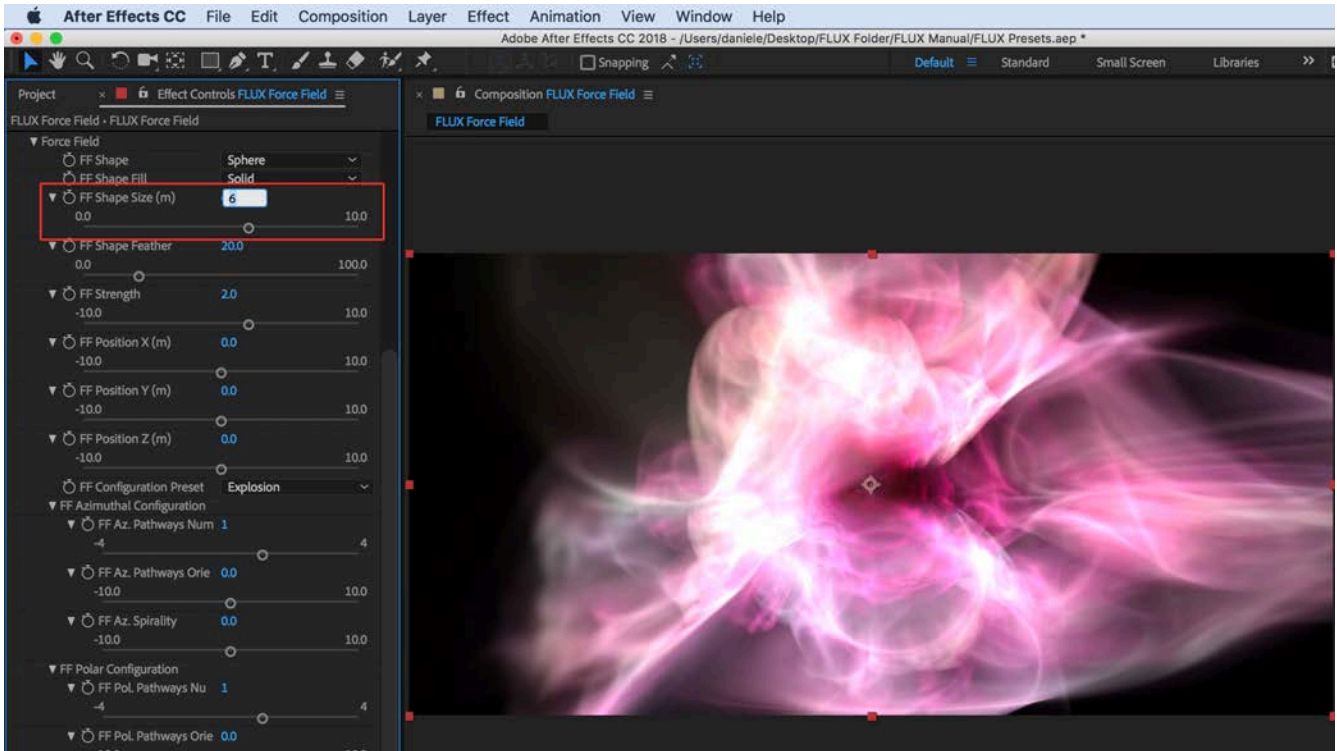
FF Shape Fill > Shell
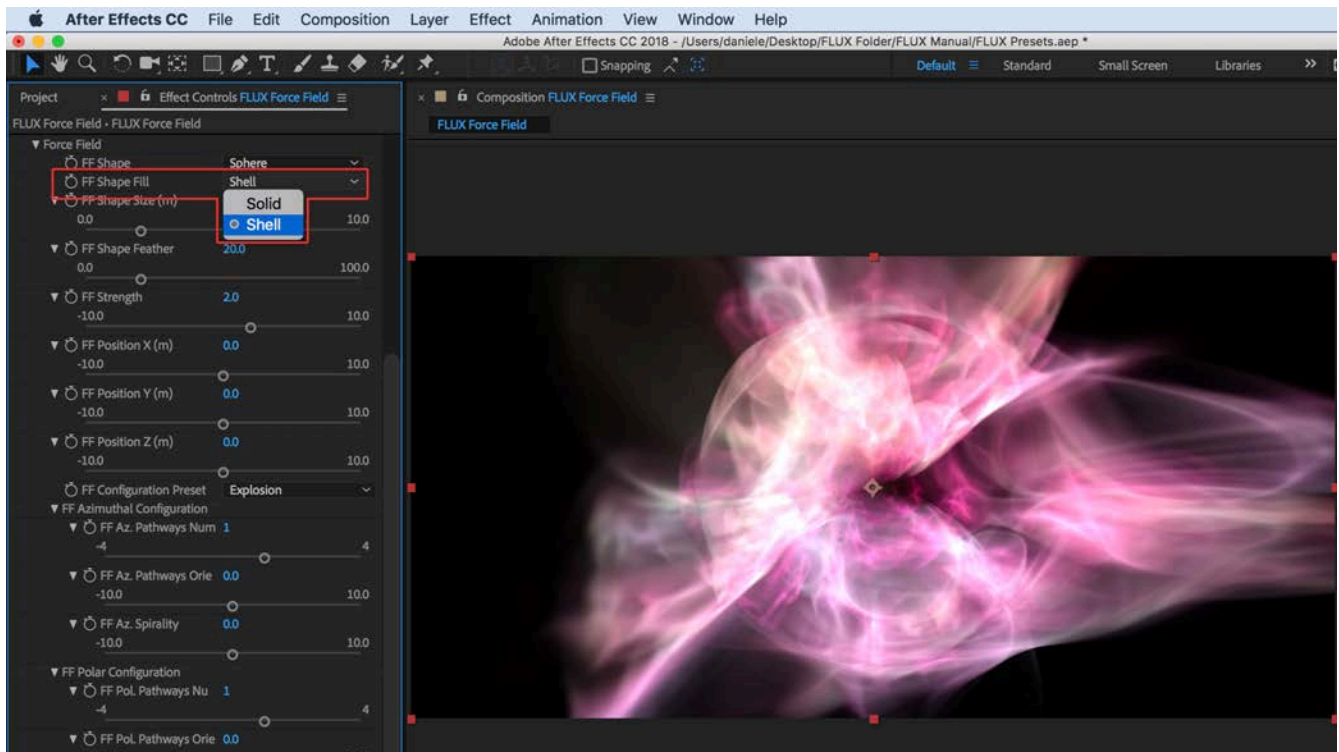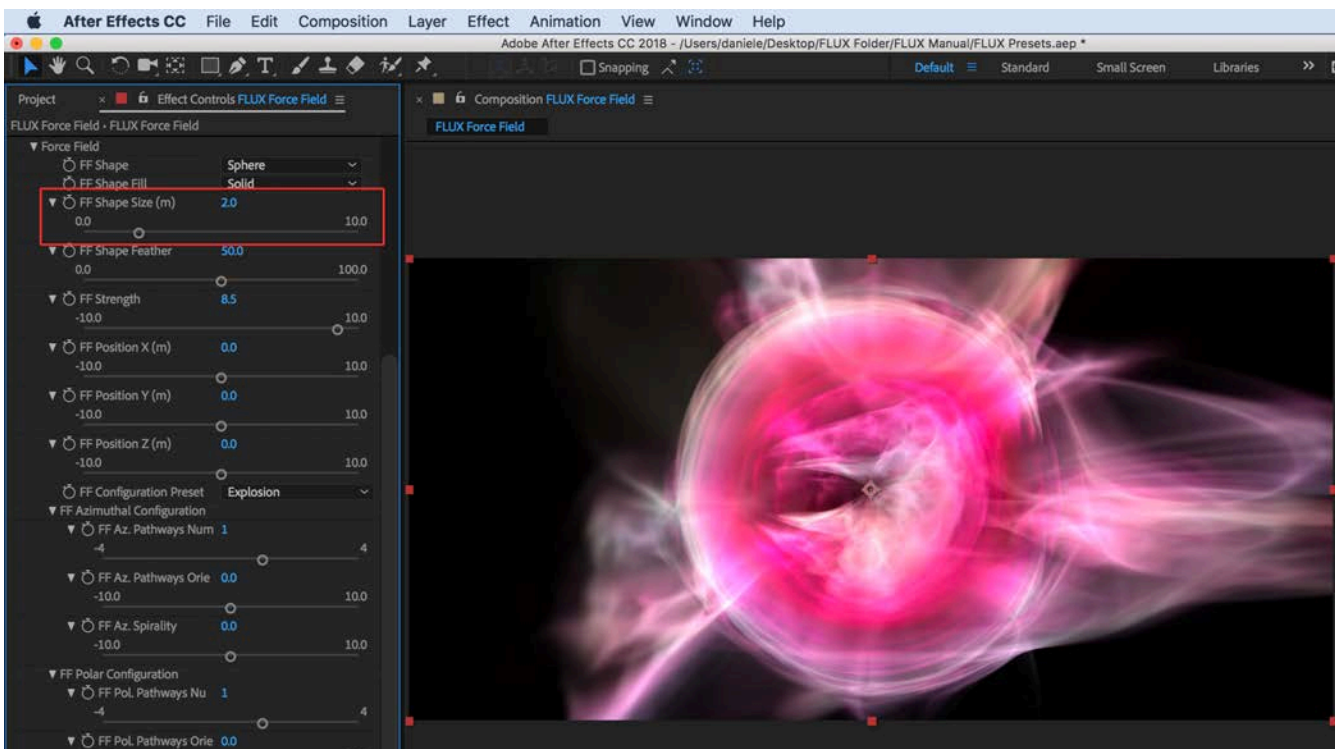
FF Shape Size (m)
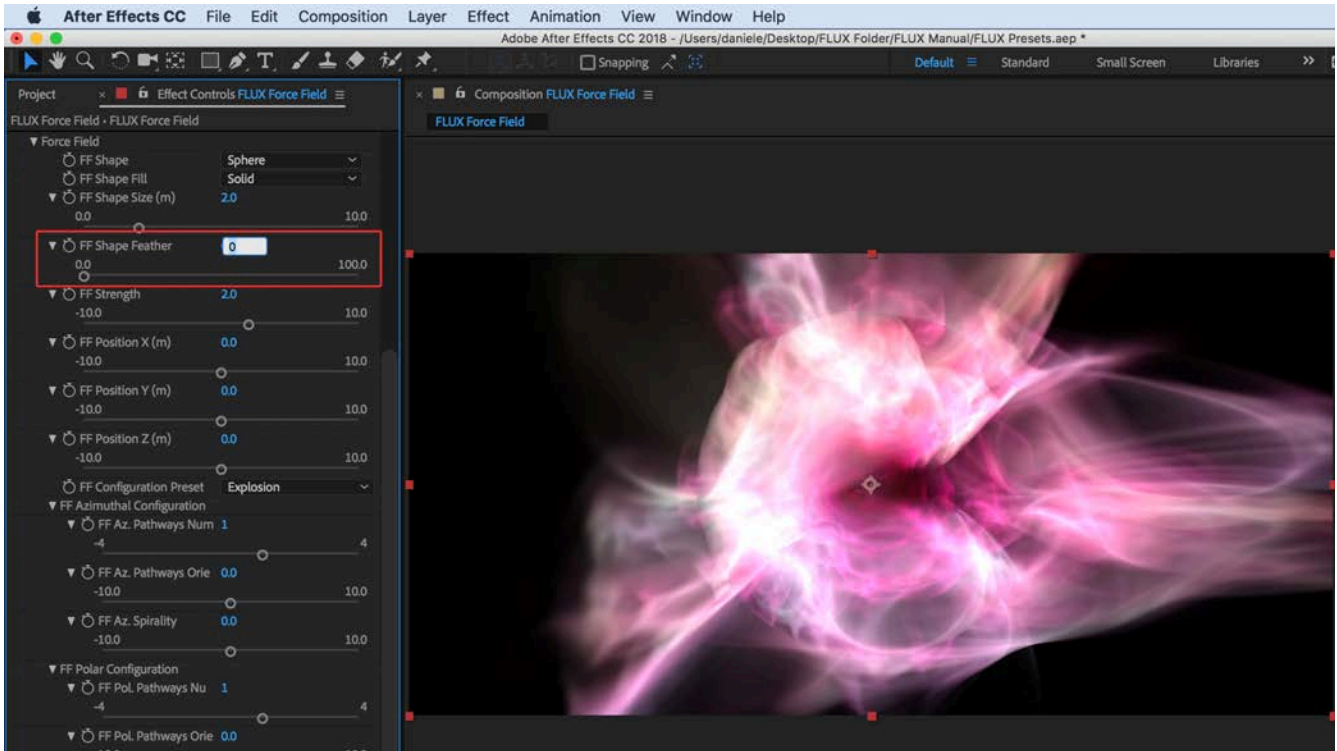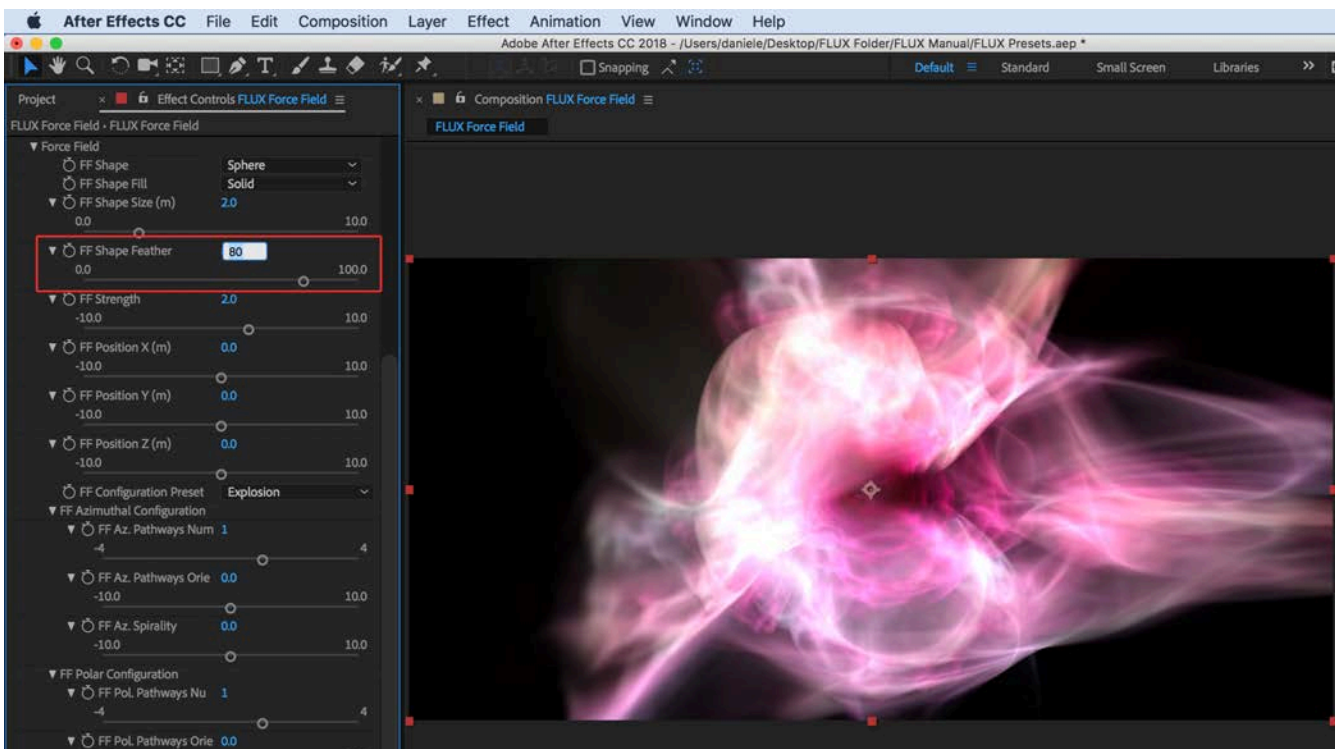Adjust force field size in meters.

FF Shape Size > 6

FFvShape Size > 2.0

FF Shape Feather
Adjust feather to smoothen bounding shape region.

FF Shape Feather > 0

FF Shape Feather > 80

FF Strength
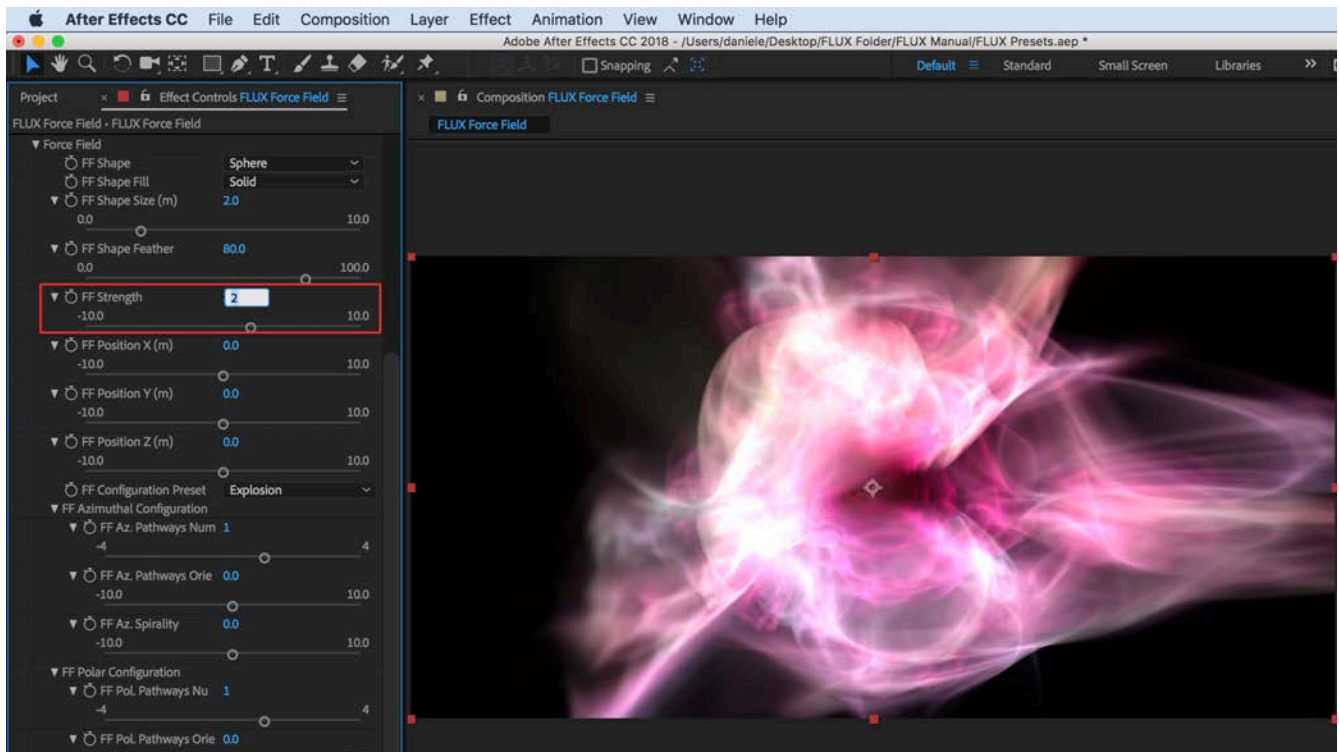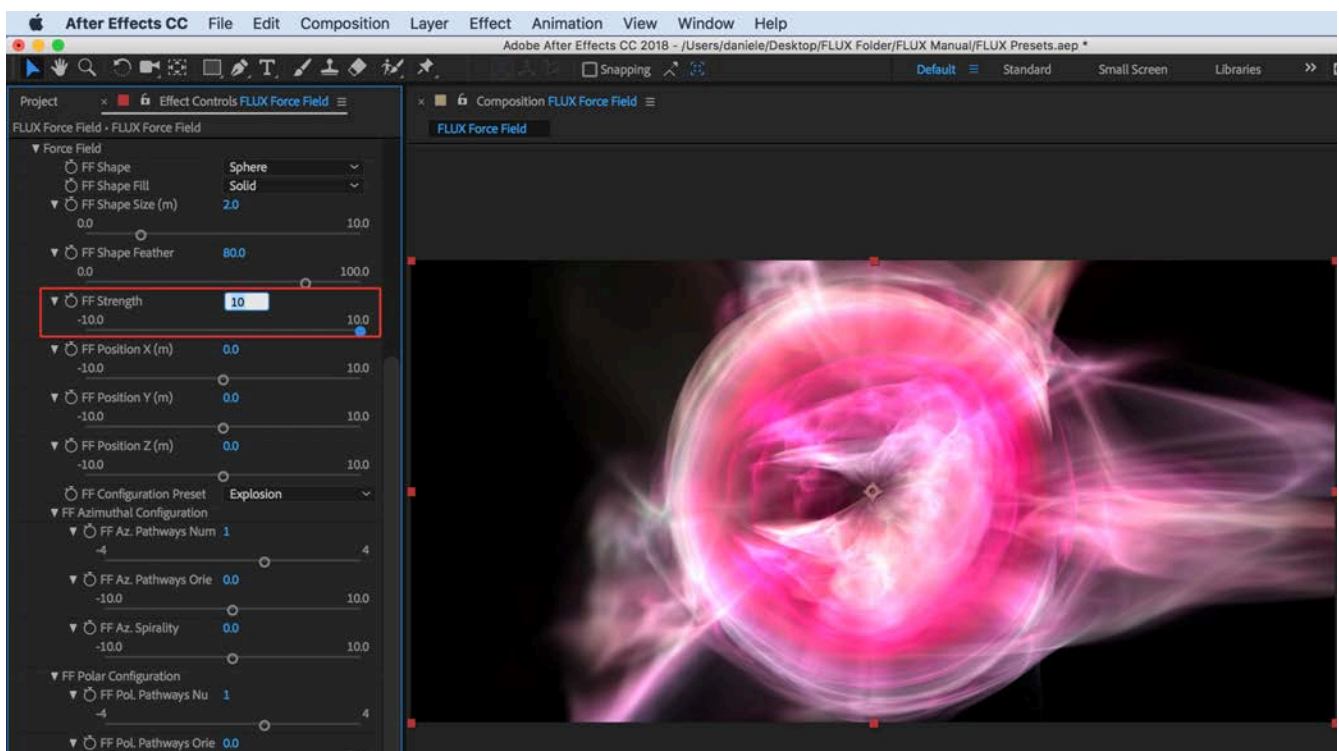Lets you adjust the strength of the force field.

FF Strength > 2
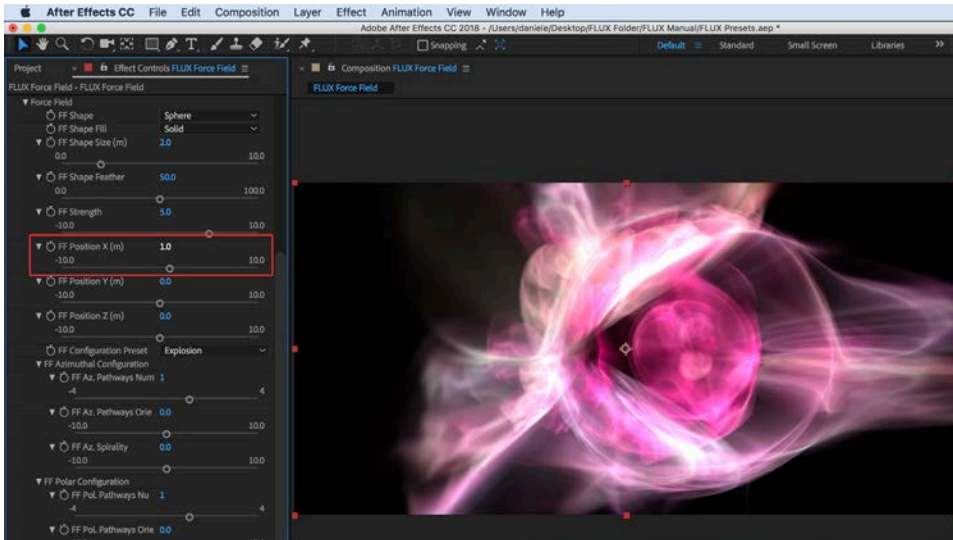

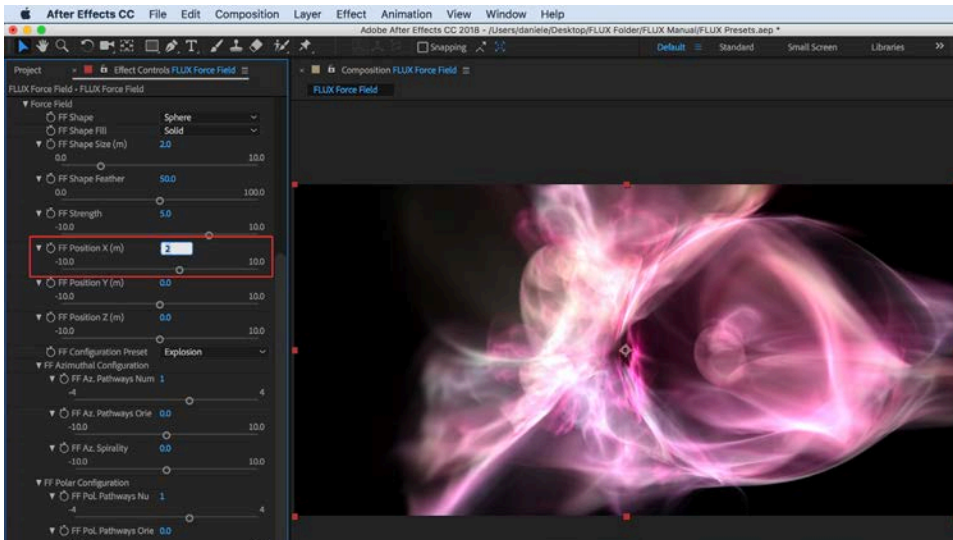*FF Strength > 10*

FLUX PARAMETERS: Force Field Cont'

FF Position X, Y, Z (m)
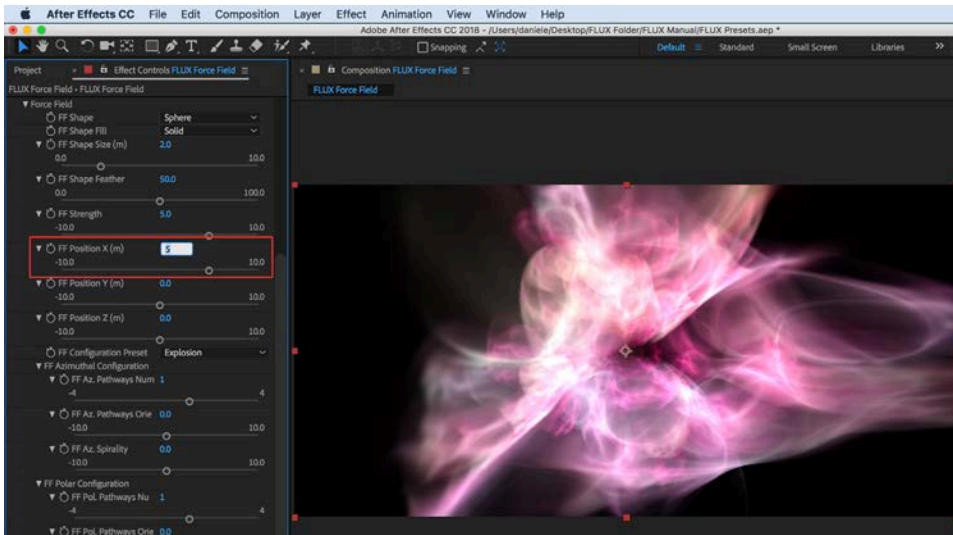Lets you adjust the force field position in meters.
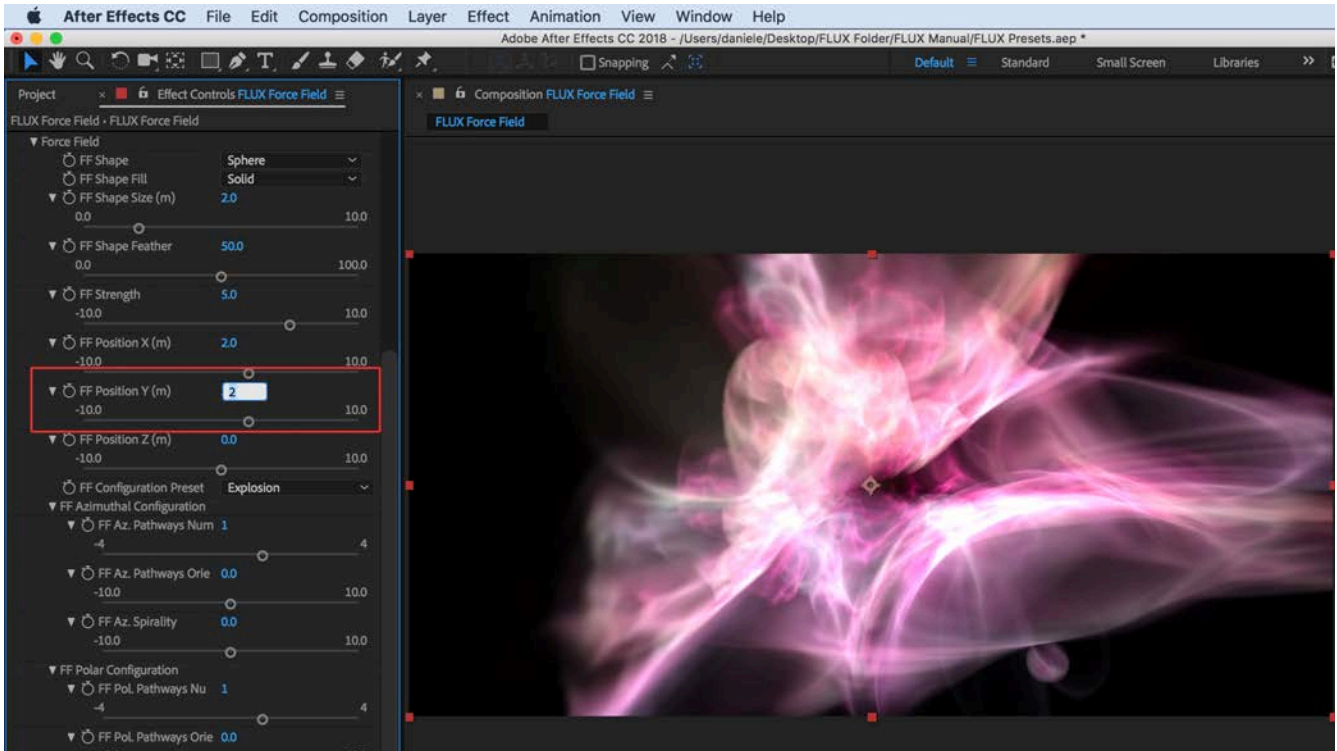
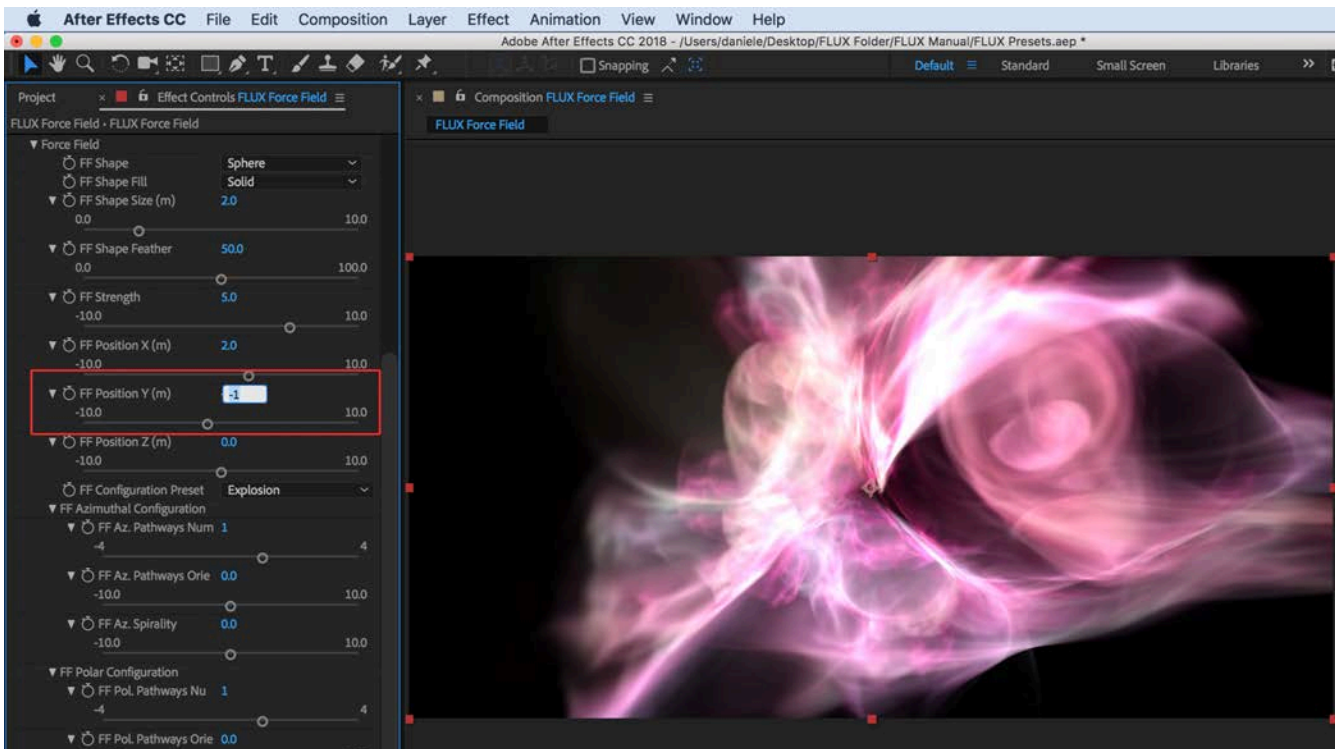*FF Position X > 1*

FF Position X > 2

FF Position X > 5

FF Position Y > 2

FF Position Y > -1

FF Position X, Y, Z (m) Cont'
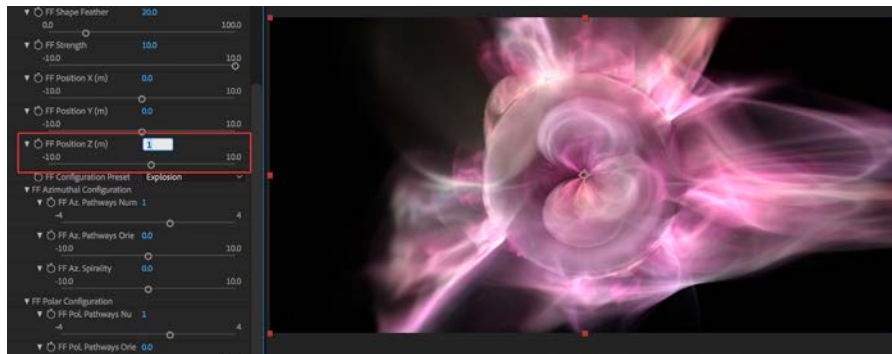
FF Position Z > -1
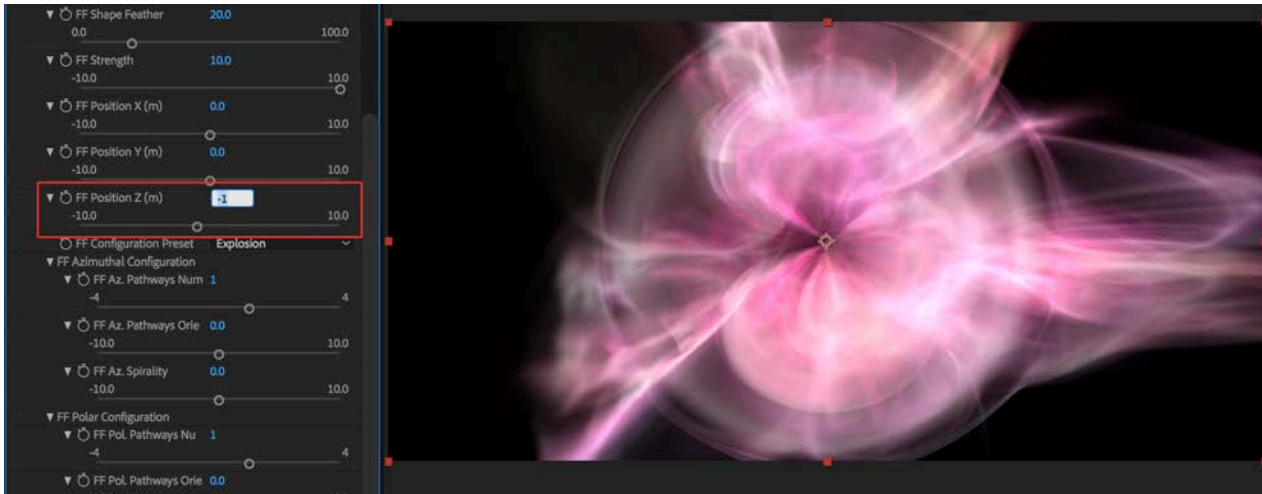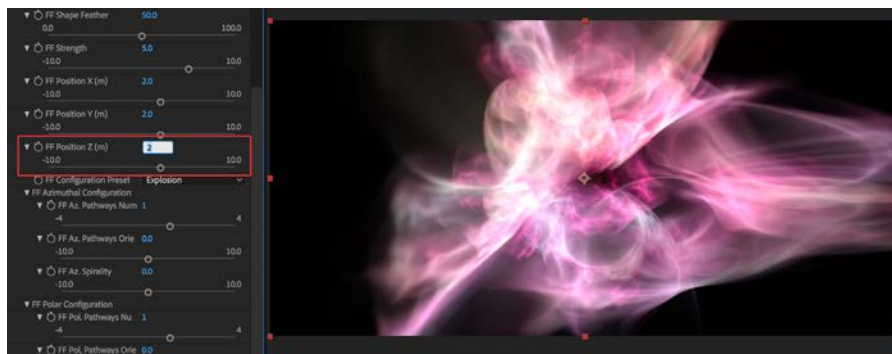

FF Position Z > 0.1
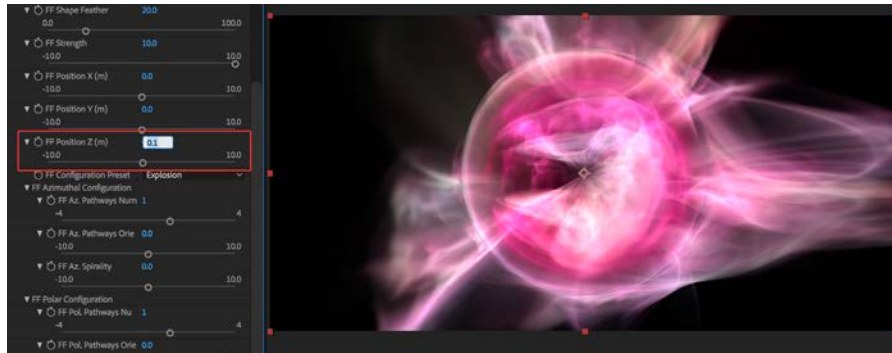
Quick Tip:
Want your Force Field to really show as a defined moving shape? Animate along the Position Z value, relatively close to 0, to create a large disturbance going front to back, through the FLUX Volume, in Rectilinear (Flat) format.

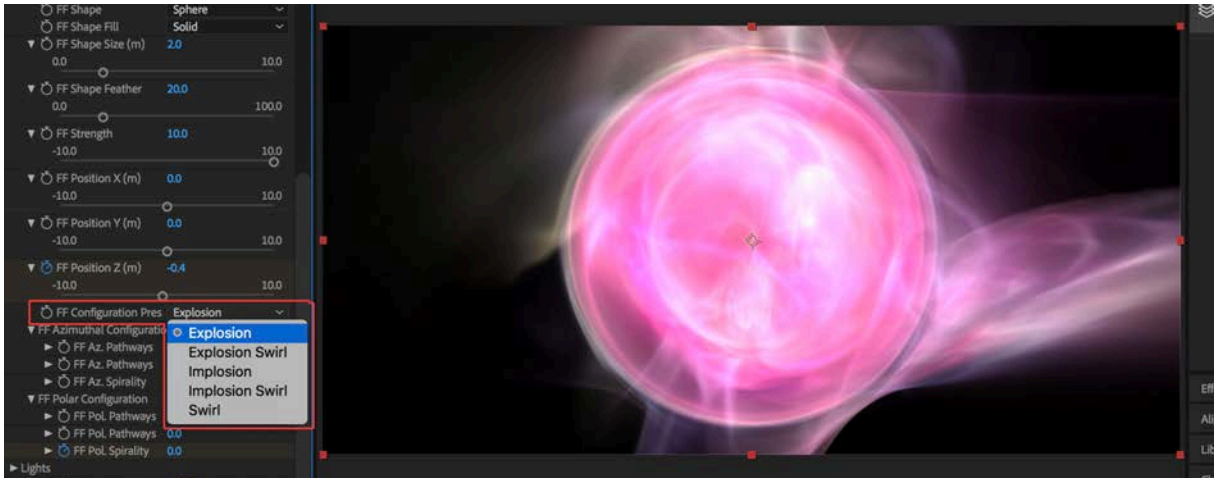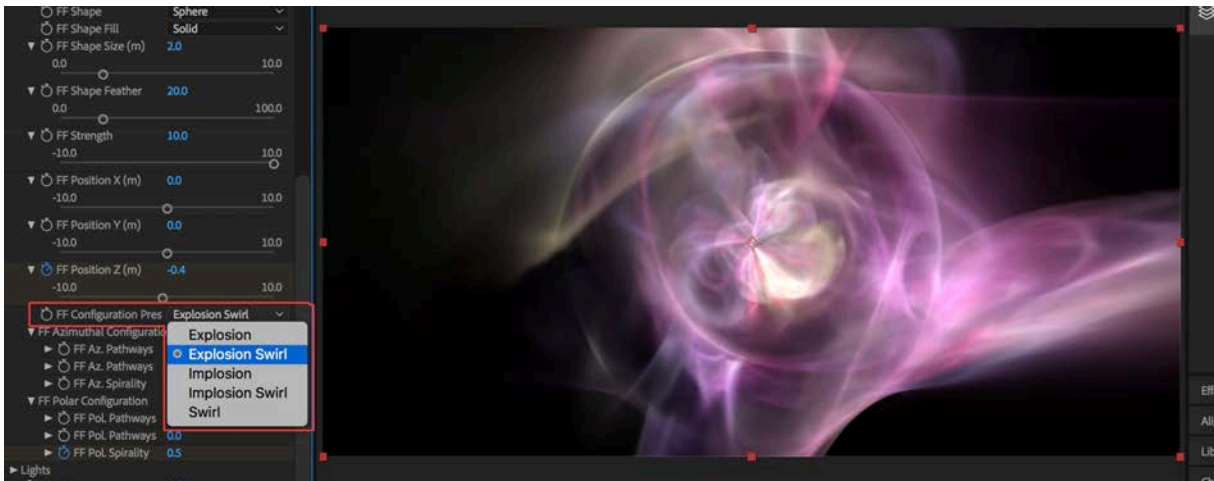*FF Position Z > 1*

FF Position Z > 2

FF Configuration Preset
Presets define various force field configurations that model different behavior:
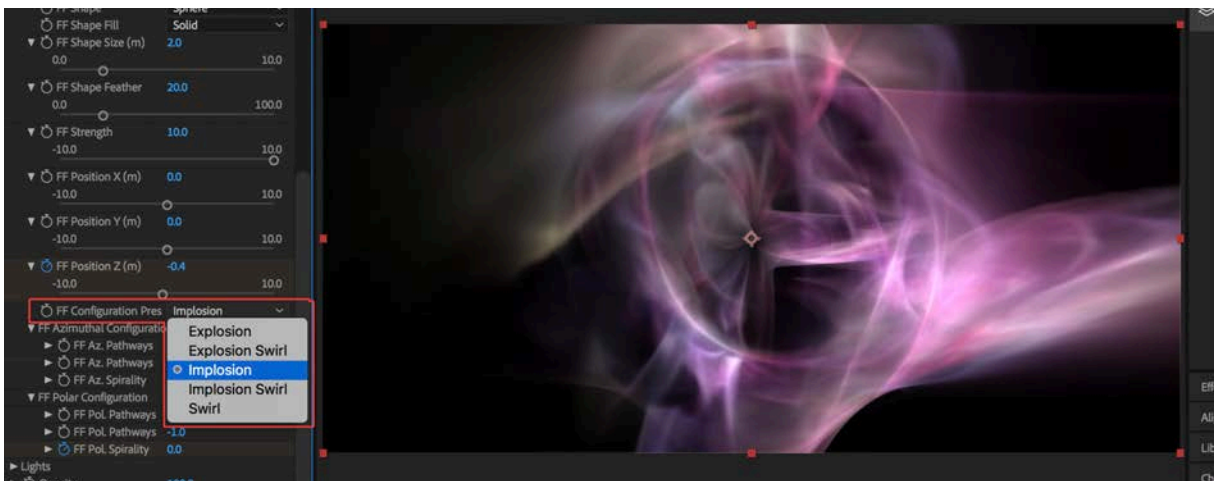Explosion, Explosion Swirl, Implosion, Implosion Swirl, Swirl.

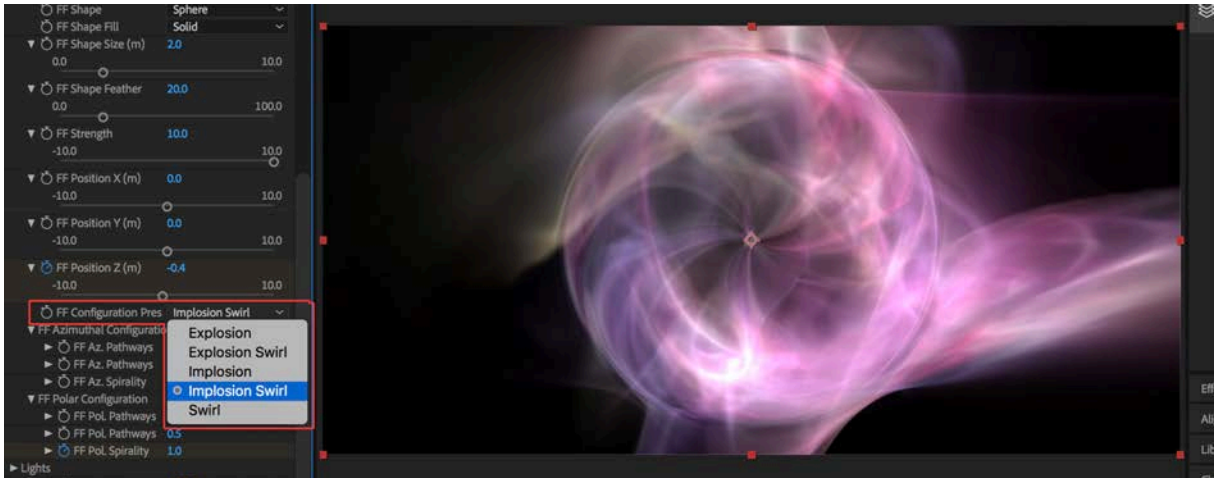*FF Configuration > Explosion*

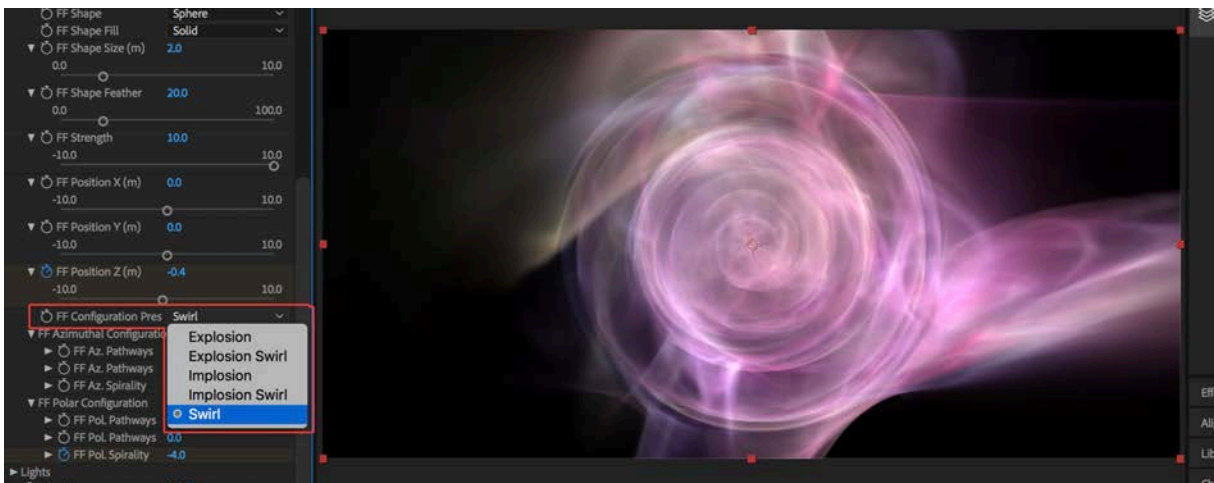*FF Configuration > Explosion Swirl*

FF Configuration > Implosion

FF Configuration > Implosion Swirl

FF Configuration > Swirl

FLUX PARAMETERS: Force Field Cont'

FF Azimuthal Configuration
Lets you adjust the force field configuration in the azimuthal plane.
Note: These values are automatically modified when you select a preset.

FF Az. Pathways Number
Adjust the number of pathways i.e. the number of distinctly visible streams.

FF Az. Pathways Orientation
Rotate pathways around its axis.

FF Az. Spirality
Adjust pathways spirality.

FF Polar Configuration
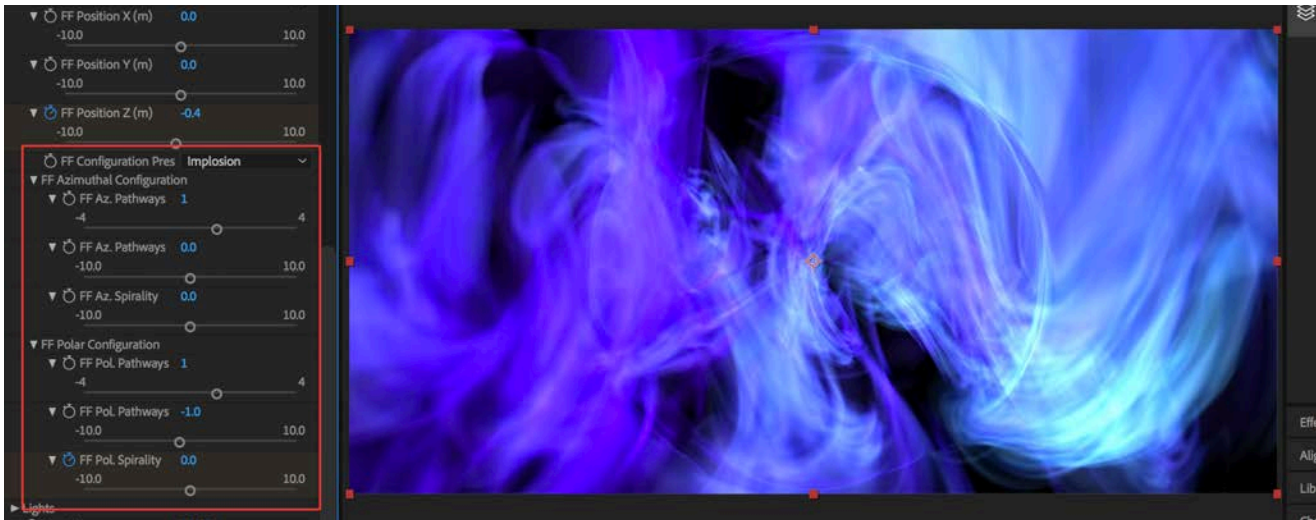Adjust force field configuration in the polar plane.

FF Configuration > Explosion

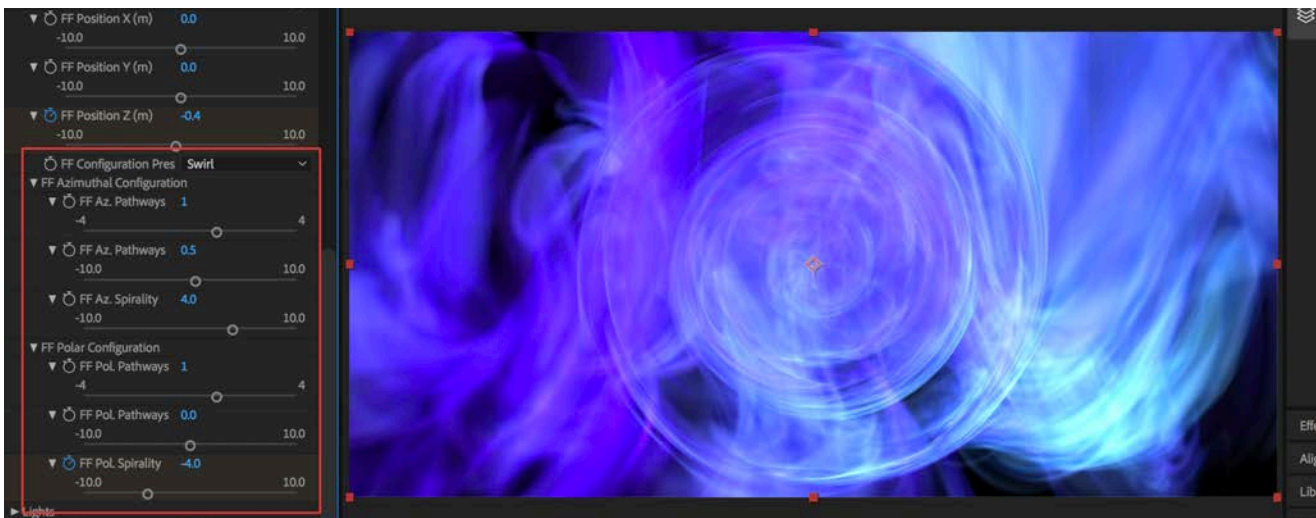*FF Configuration > Explosion Swirl*

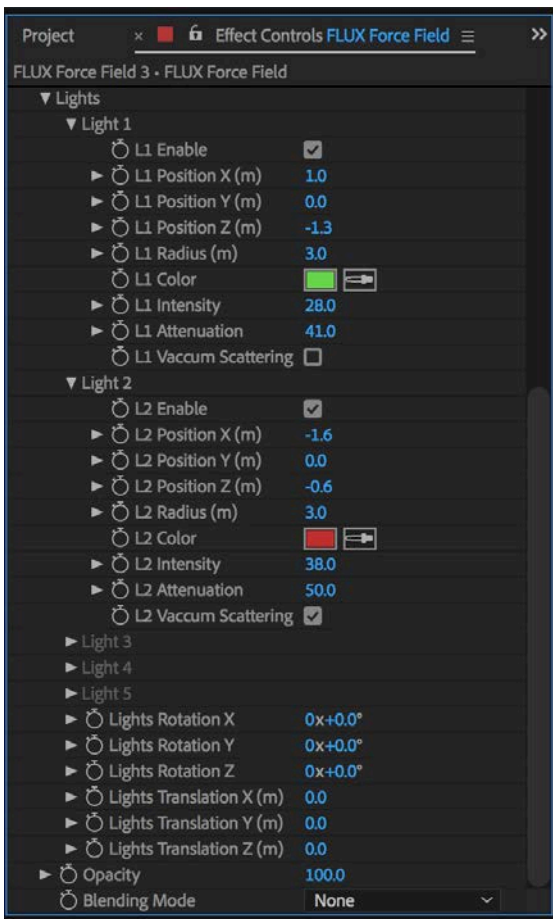*FF Configuration > Implosion*

FF Configuration > Implosion Swirl

FF Configuration > Swirl

FLUX PARAMETERS: Lights

Lights
Add up to 5 point lights to highlight specific regions of the volume.

Light Enable
Switch the light on/off.

Light Position X, Y, Z (m)
Adjust light position in meters.

Light Radius (m)
Adjust light radius in meters.

Light Color
Select light color.

Light Intensity
Adjust light intensity.

Light Attenuation
Adjust light attenuation (falloff)

Light Vacuum Scattering
Can be enabled "On/Off" with a checkbox.
Lets you add organic gradients to the volume when it is Enabled.
Choose whether the light should highlight empty regions inside the volume or only the shape itself.
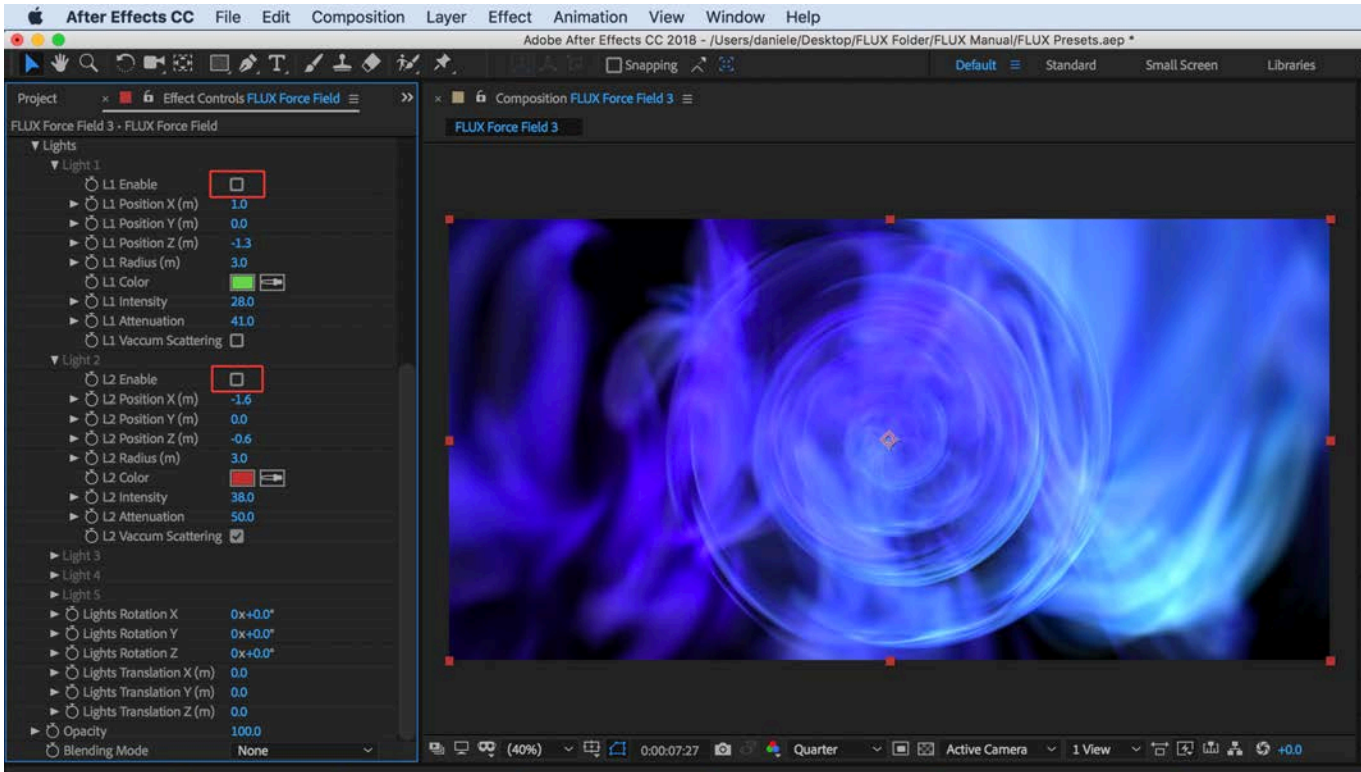
Lights Rotation X, Y, Z
Adjust Euler angles rotation of all light. This will rotate the whole light system.
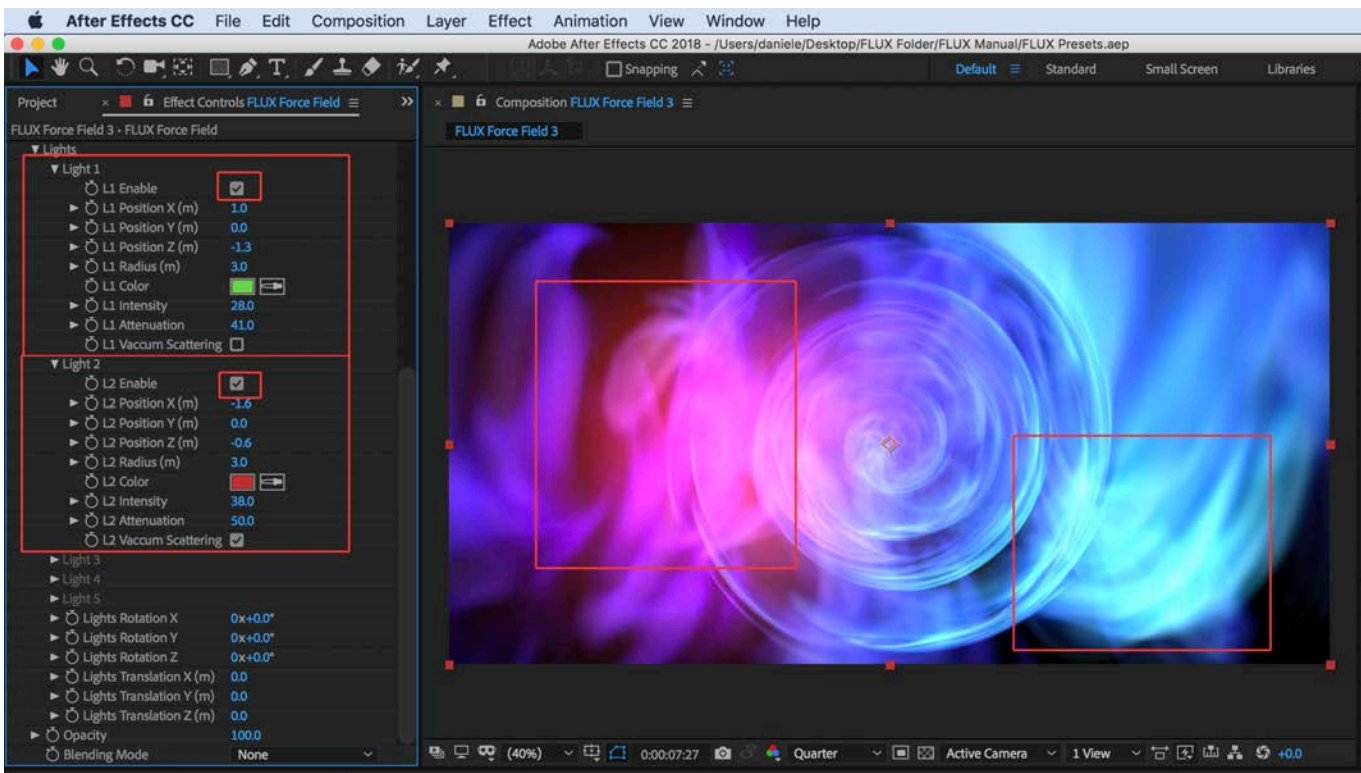
Lights Translation X, Y, Z (m)
Adjust the position of all lights. This will translate the whole light system.
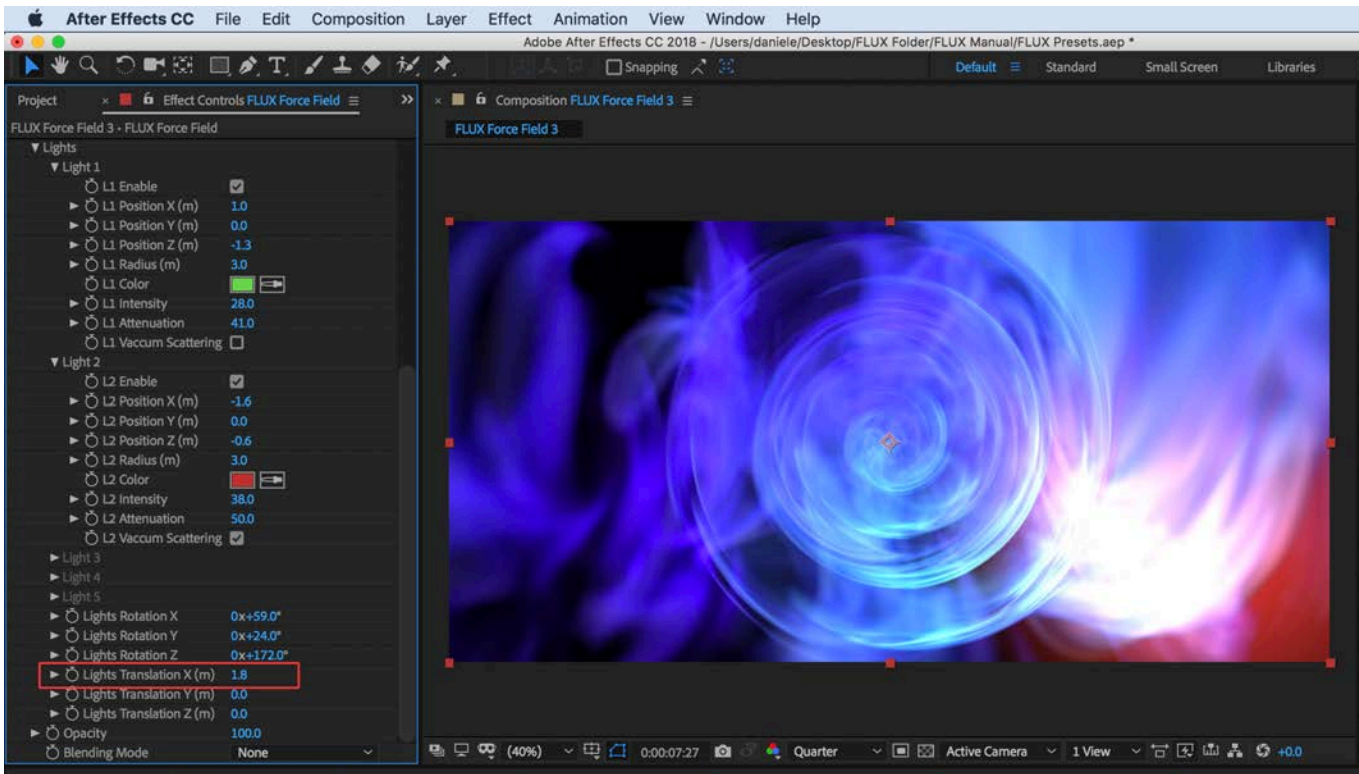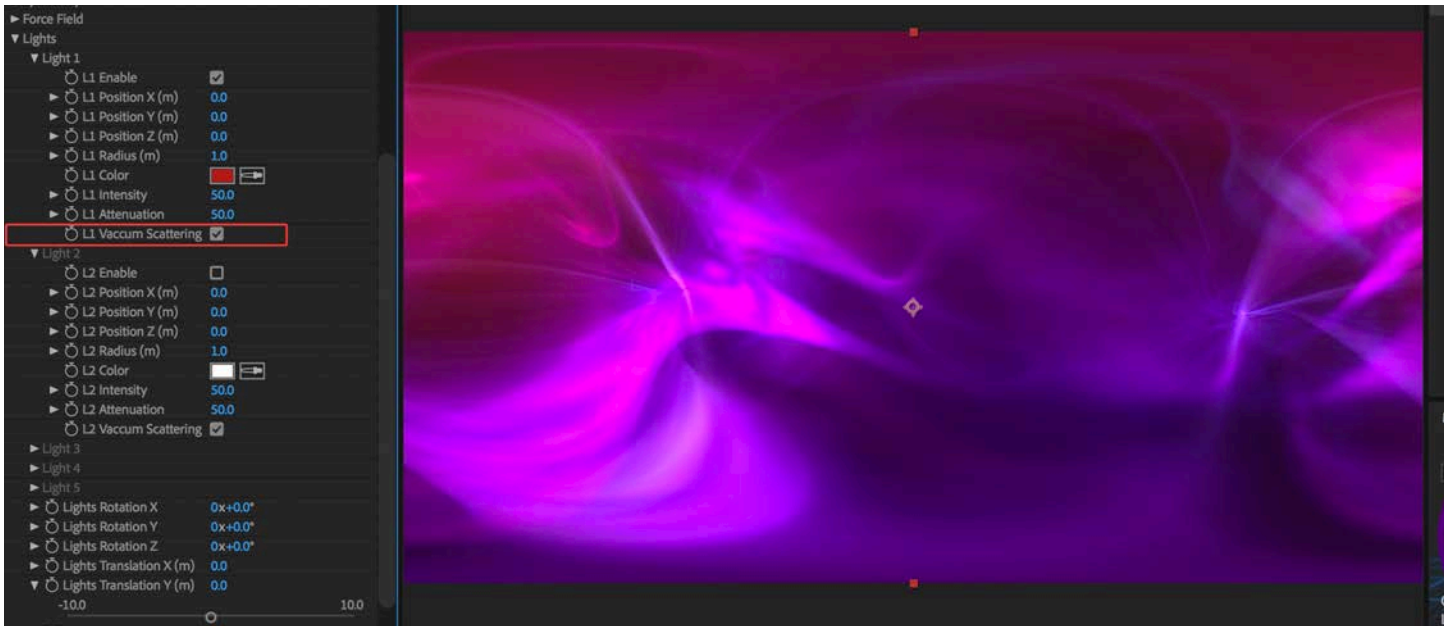
Lights > Not Enabled
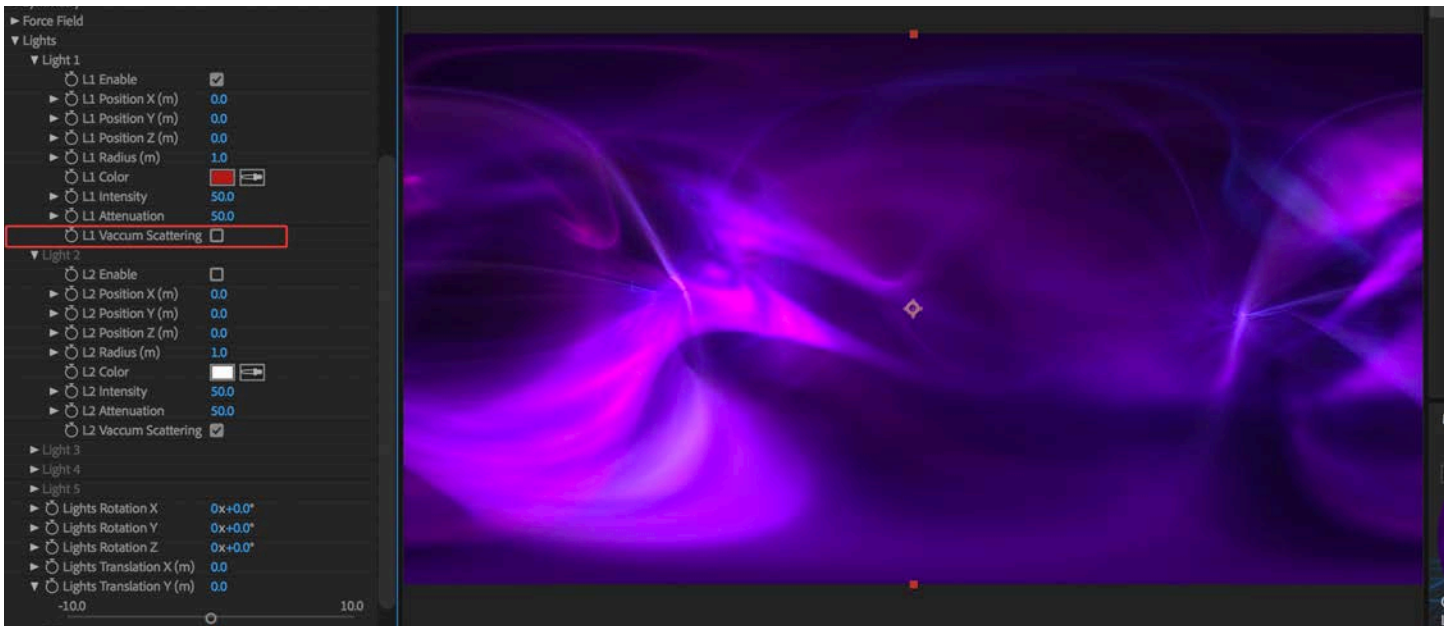

Lights > Enabled

Lights Translation X > 1.8

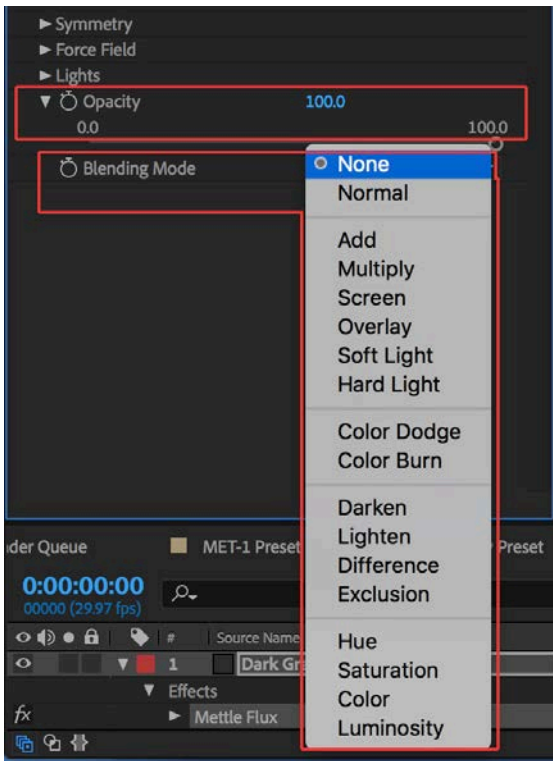*Lights Translation X > 6*
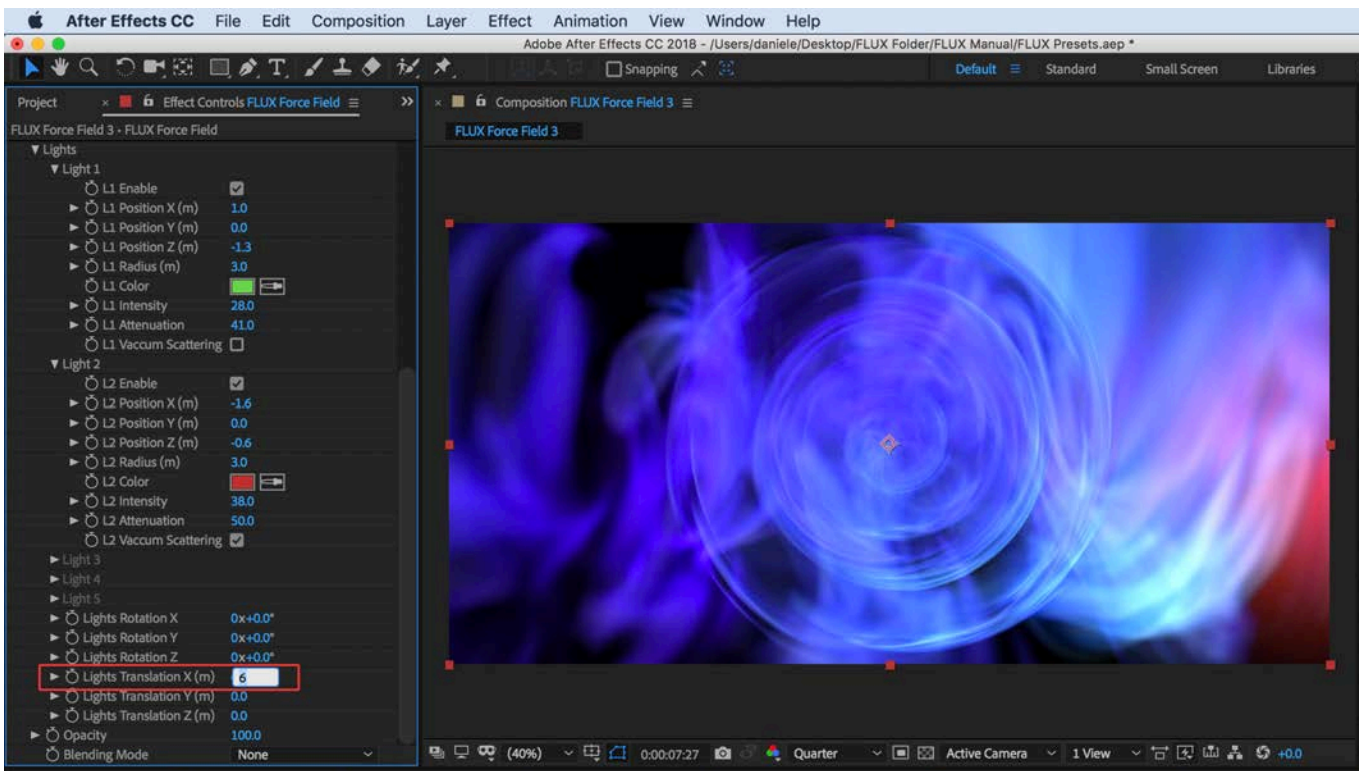
L1 Vacuum Scattering "Enabled"

L1 Vacuum Scattering "Not Enabled"

FLUX PARAMETERS: Opacity and Blending Mode

Opacity
Designate how opaque a given layer should be.

Blending Mode
Blending modes for layers control how each layer blends with or interacts with layers beneath it. Blending modes for layers in After Effects (formerly referred to as layer modes and sometimes called transfer modes) are identical to blending modes in Adobe Photoshop.