

V1.20



**METTLE**

# MANTRA VR

## User Manual

360/VR Cover Artwork by Matt Nefdt, Africard.



**“Mantra VR is an incredible new tool from Mettle which unlocks a world of possibilities for manipulating 360° video. The first time I used it, I was in awe of what it allowed me to do. There are so many parameters to play with and it’s genuinely fun to experiment with each new effect — so much so, that it’s easy to get sucked down the rabbit hole. It opens up new ways to create unique transitions and video effects within a spherical environment. Suddenly, 360° footage becomes a fluid, almost liquid-like substance, that you can pull, shape and mould, like an alchemist, to create surreal worlds, dreamscapes and alternate realities.”**

*- Dan White, Director of Technology, Rapid VR*



**“Like Skybox, Mettle Mantra VR is essential for 360 degree video post production. Mobius Zoom allows for simulated camera zooms and movements which add production value to static shots. The creative applications of Mantra range from practical to psychedelic, and they empower storytellers to enhance 360 degree videos in creative ways that were not possible until now.”**

*- Daniel Bury, Chasing the World VR*

V1.20

**Mantra VR is a comprehensive set of practical and stylization effects that work in both 360/VR and 2D, for After Effects and Premiere Pro.**

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# METTLE MANTRA VR

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

One purchase of Mantra VR allows 2 activations.

Mantra VR plugin can be applied directly on equirectangular footage, flat footage, or on an Adjustment layer. We support mono, stereo and rectilinear (flat).

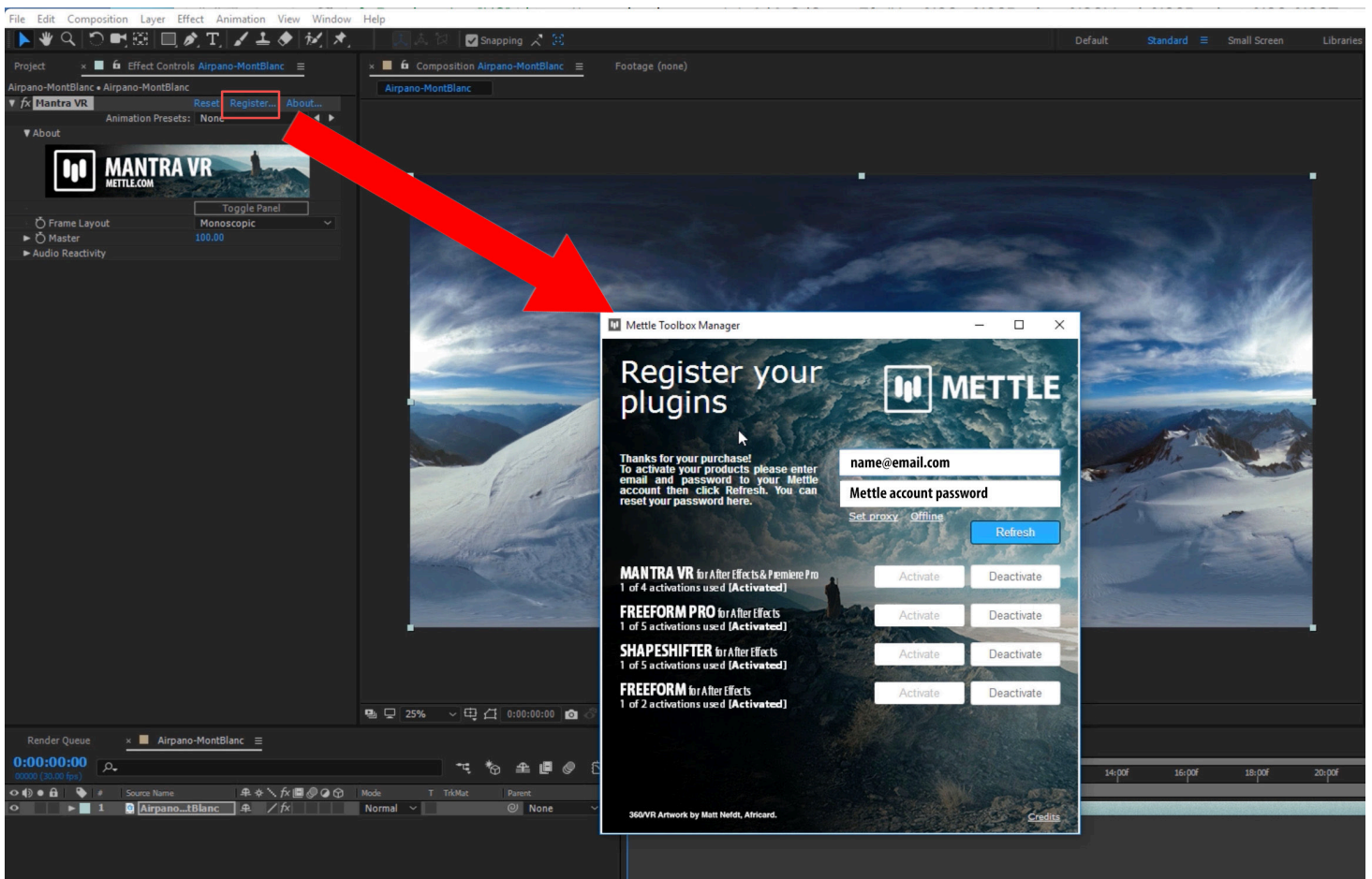
## Installation

Use the Mettle Product installer to install Mantra VR 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 Mantra VR effect to your layer. In the Mantra VR Effect Control panel, click on "Register"

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



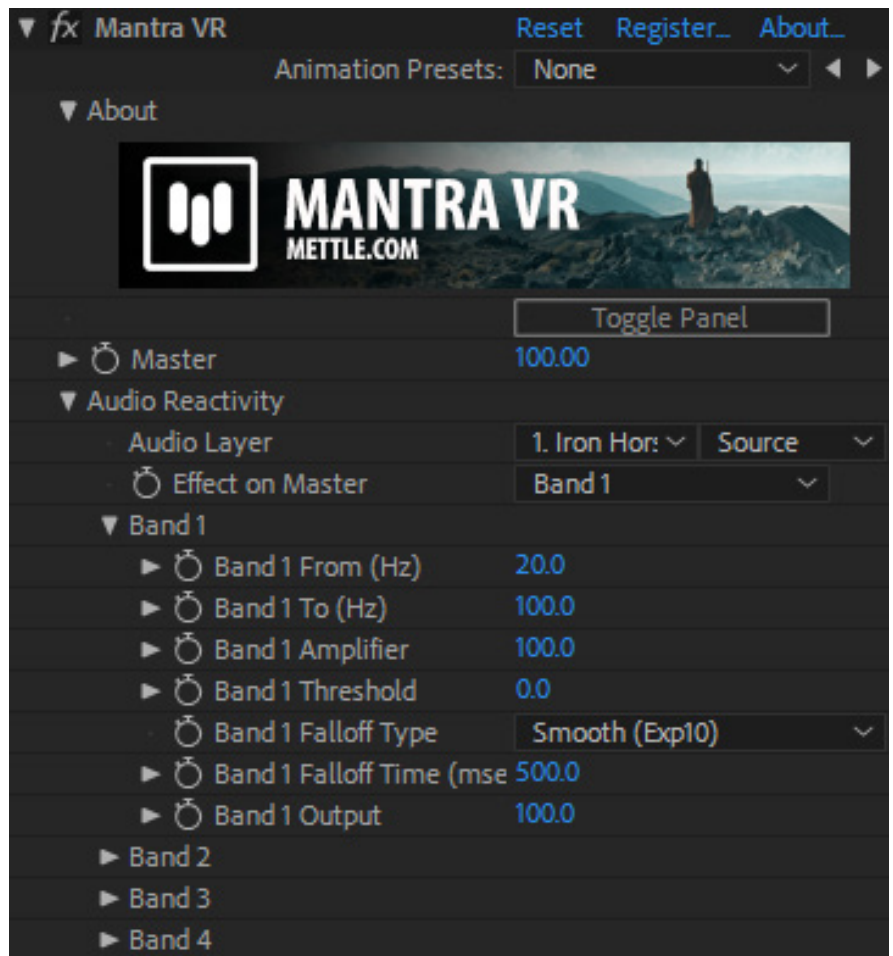
## How To Deactivate Your license Key On One Computer And Activate On Another

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.



## Mantra VR

*Allows for complex 360/VR effect creation using a node based system which consist of Mantra VR effects, controllers and presets.*



### Toggle Panel:

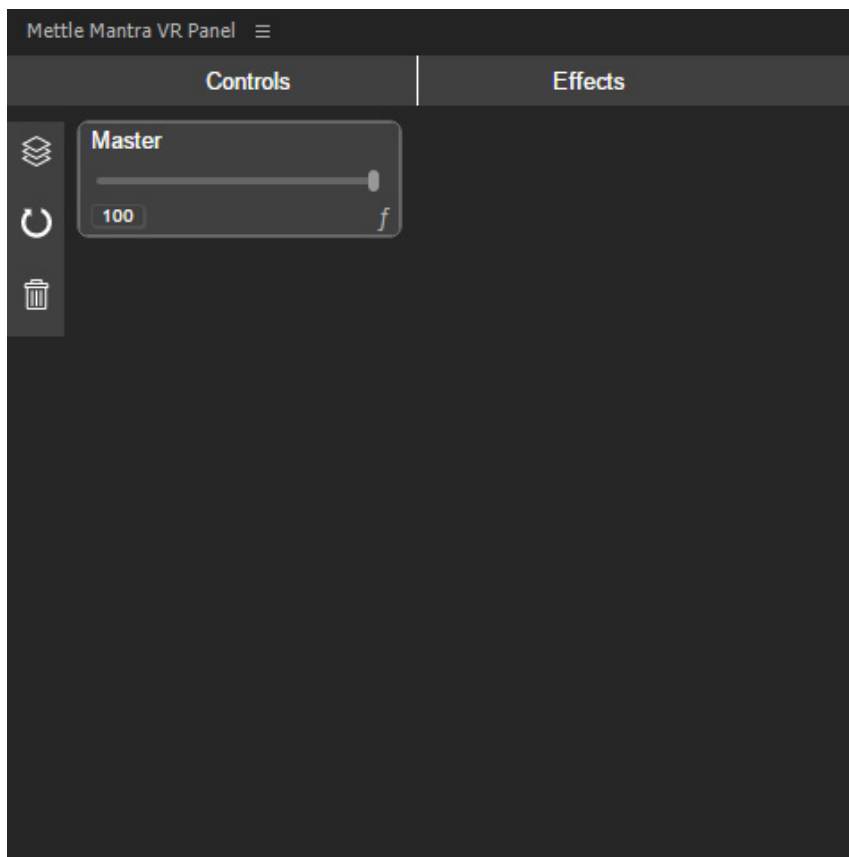
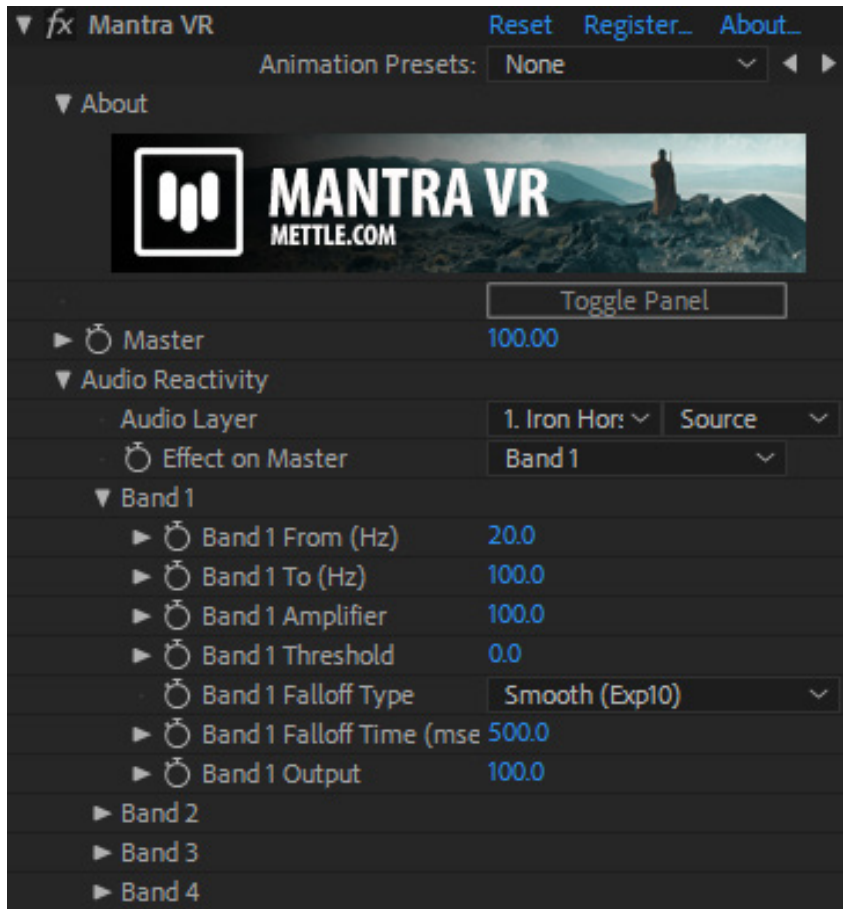
This button will toggle the Mantra VR Panel. (See more information about the Mantra VR Panel below.)

### Master:

Master controller for all Mantra VR effects applied below the Mantra VR effect or in the Mantra VR Panel. 100 is the default value and will show all of the Mantra VR effects at their set levels. At a Master value of 0, the 360 footage will appear in its original state, with no effects visible. (You can keyframe the Master Controller to also animate it.)

## Mantra VR > Using the Node Panel

Click the Toggle Panel button to launch the Mantra VR Panel.

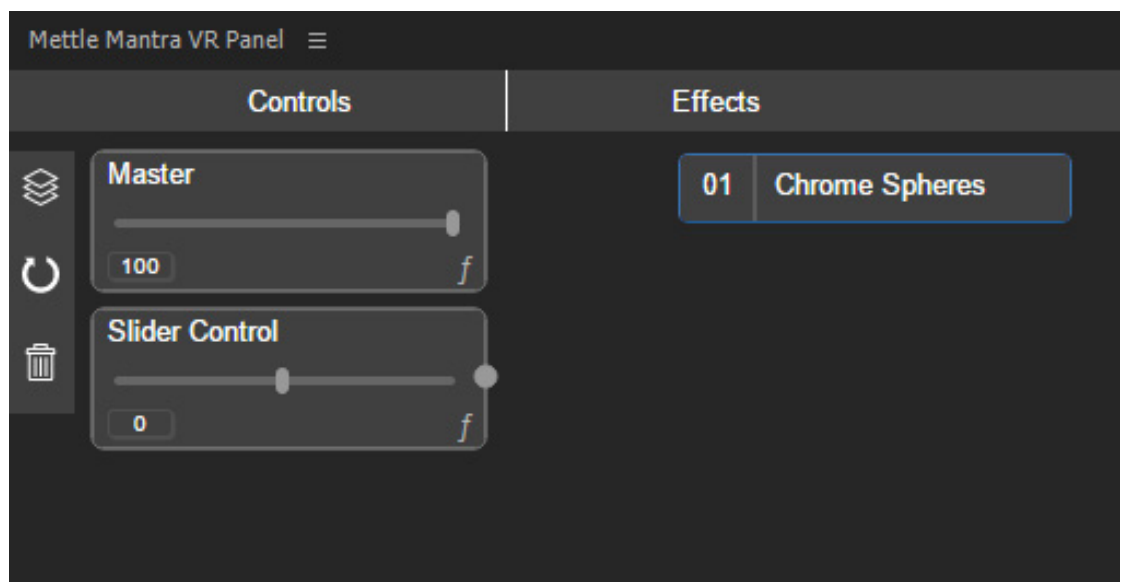




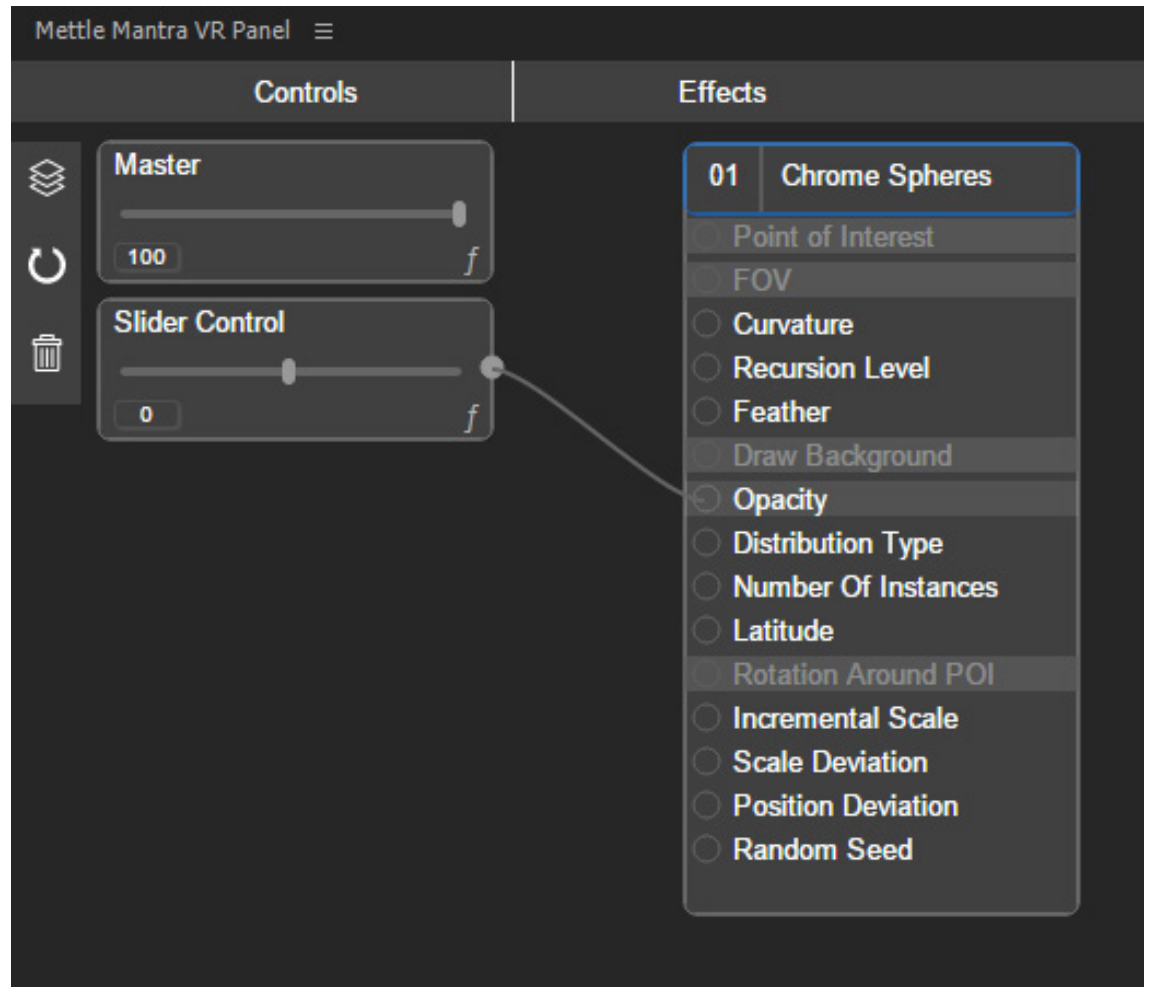
The Controls nodes and Effect nodes are located on the top bar.

Controls	Effects
Slider Control	Chrome Spheres
Angle Control	Circular Waves
Point Control	Escher Droste
Audio Bass Output	Graphix
Audio Low Output	Hyperbolix
Audio Mid Output	Magnifying Glass
Audio High Output	Meridian Waves
	Mirrors
	Mobius Raw
	Mobius Rotate
	Mobius Transform
	Primitivz
	Repeater
	Stretcher
	Turbulence
	Twirl

Click on nodes to apply them to the Mantra VR Panel. (Ex. See the applied Slider Control and Chrome Spheres node.)



Link Control nodes to Effect nodes by clicking on the grey circle (located on the right side). Click and drag to the effect setting you want to link to. (Ex. See the linked Slider Control and Chrome Spheres node.) Effect settings that controllers can link to will be displayed in white, under the effect. If they are greyed out, that controller is not compatible with that effect setting.

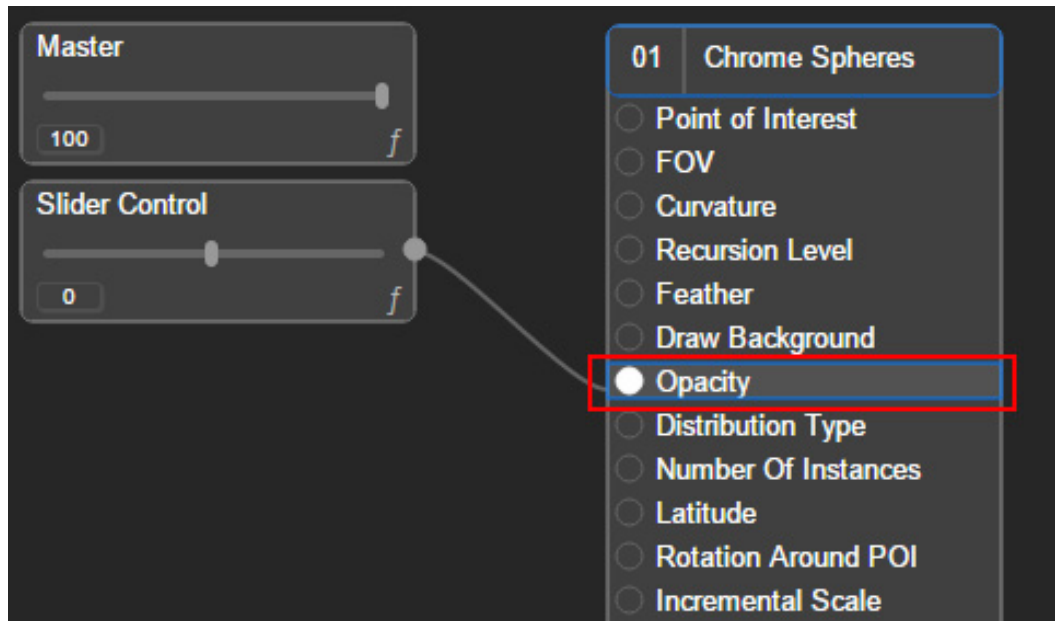


(You can now see the nodes are linked, indicated by the chain that connects them.)

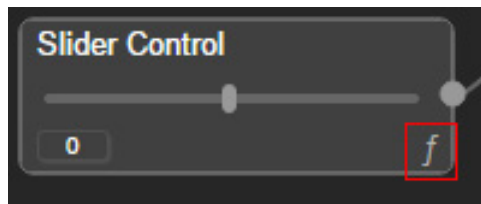




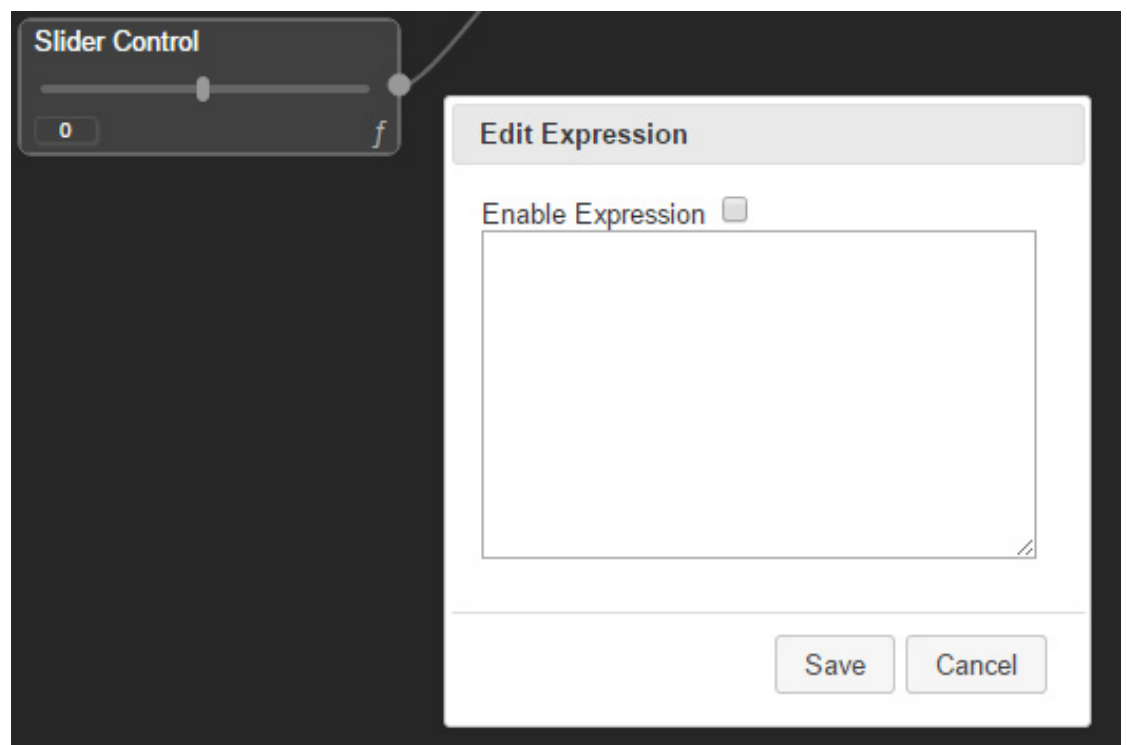
To disconnect two nodes, highlight the setting you want to disconnect, move your mouse over the white circle next to the effect setting name and right click to break the link connection.



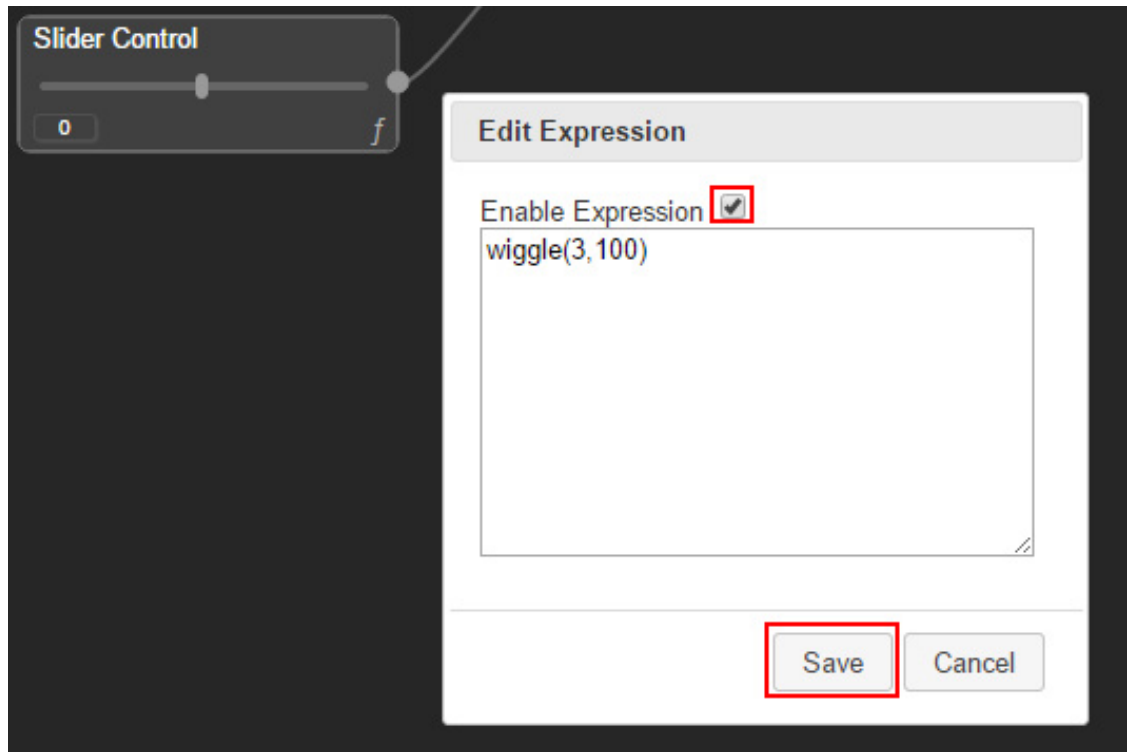
To apply expressions to Controller nodes, click the expression icon at the bottom right corner of the node.



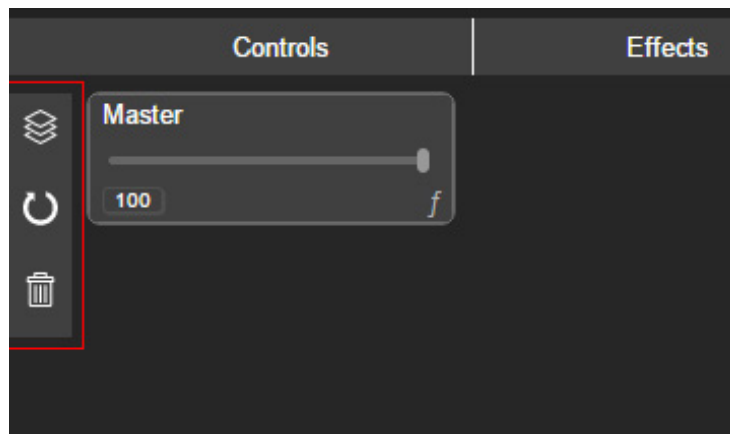
This will launch the Edit Expression options for that node.



You can then type in your expression (Ex. A 'wiggle' expression is show in this screen shot.) You will also need to check on "Enable Expression" if you want the expression to be applied. (This helps to quickly enable and disable expressions, without having to delete and retype.) Finally, click the 'Save' button to apply.

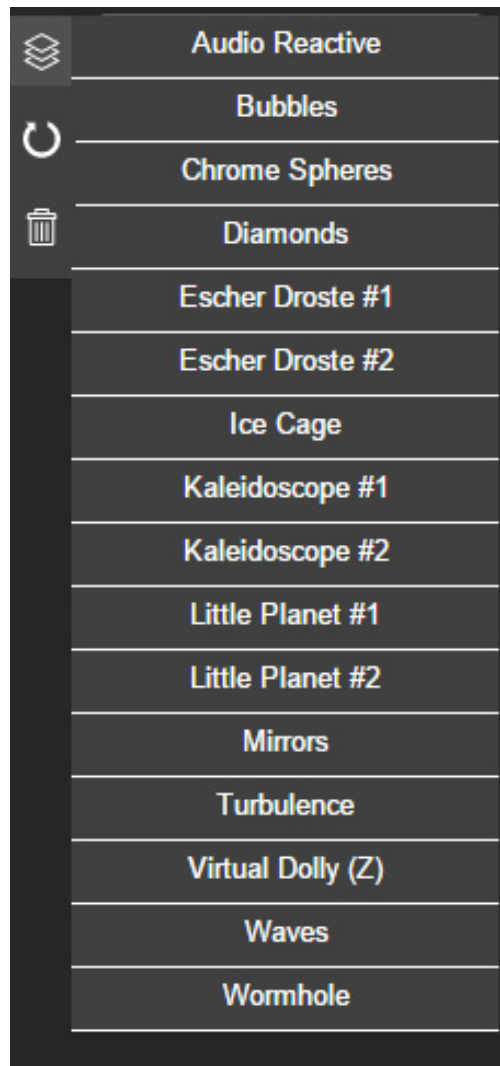


The Presets, Reset Button and Delete All buttons are located on the left side of the panel.

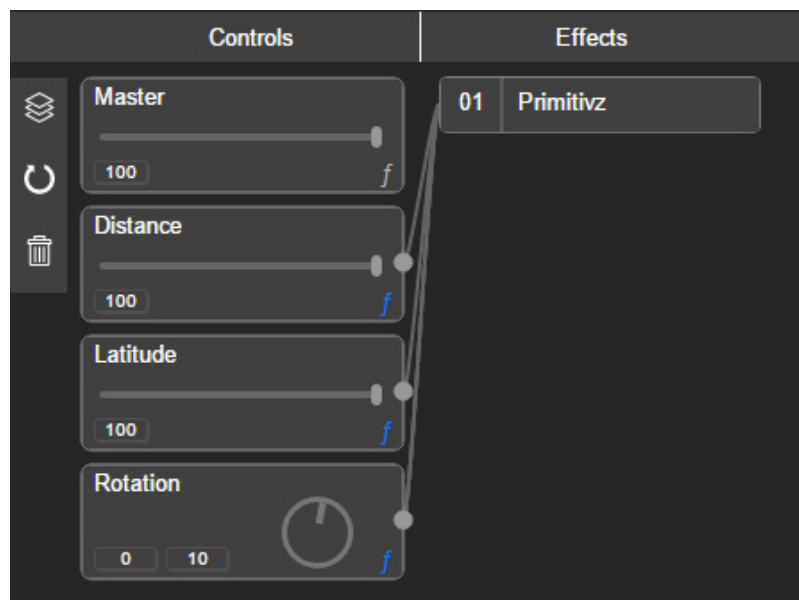




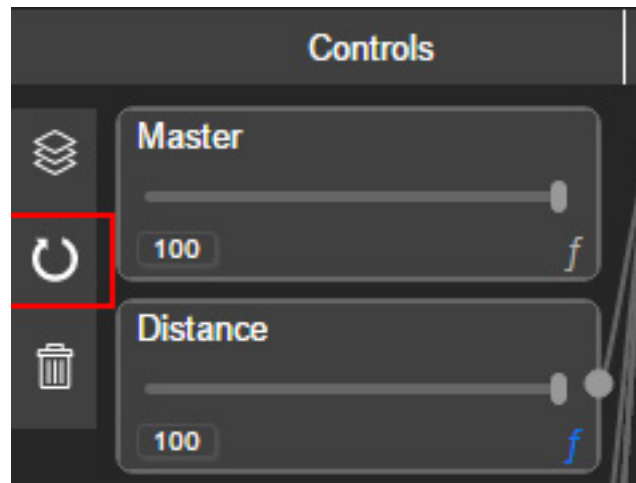
Highlight the Presets with your mouse to see all of the Mantra VR presets available. Click on a preset to apply it.



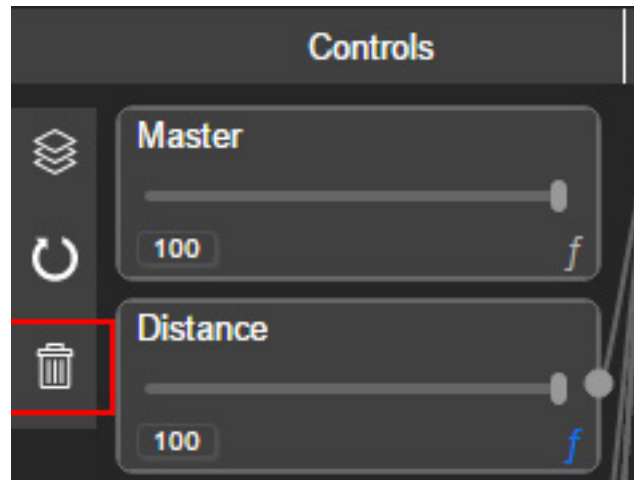
Once a preset is applied you can see all of the Controller and Effect nodes that make up that preset. Experiment with the settings to create your own unique looks. (Note: Audio Presets require an audio layer to be set under the Audio Reactivity setting on the Mantra VR effect in the After Effects effect panel.)



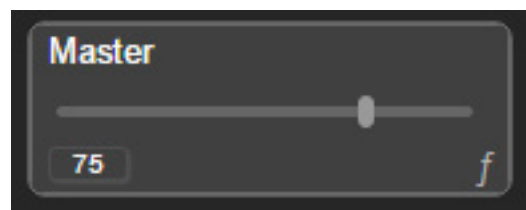
To reset all of the node values back to their defaults, click the reset icon on the left panel.



To delete every node currently in the Mantra VR Panel (and to clear presets applied), select the trash bin icon on the left panel.



Finally, you can also adjust the Master controller inside the Mantra VR panel. It is automatically linked to all effects applied in the panel.





## Sample Preset > Bubbles. Effects display in the Node Panel and in the Effect Control Panels.



### Helpful Hints:

You can rename any node (besides Master) by double clicking it's name and entering new name;

To remove a connection between controller and param - right-click on the param slot connection;

To modify controller expression, click on the 'f' icon on the controller node;

There is an audio reactive preset - but in order for it to work, user has to select Audio layer first on the Mantra VR effect controls.

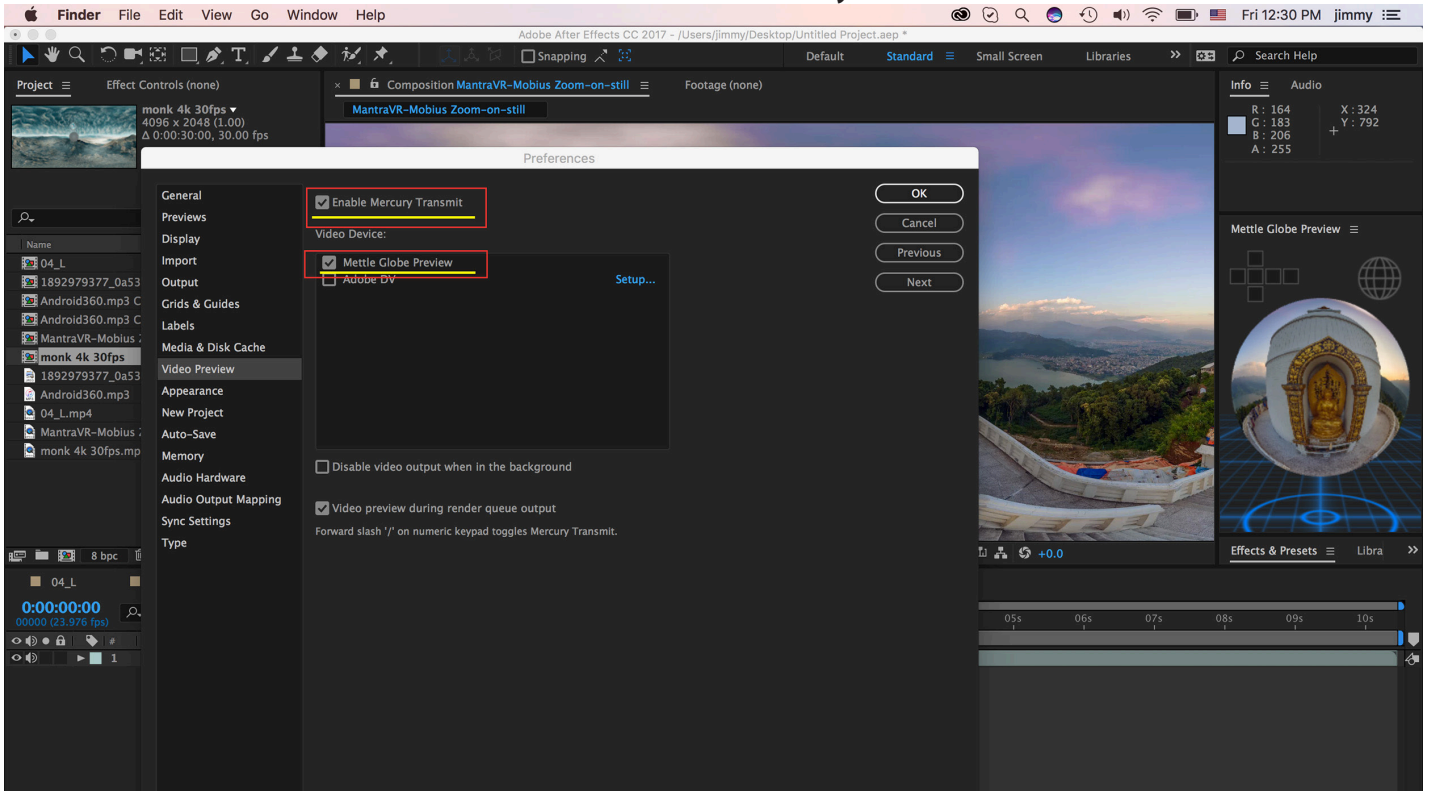
## Mettle Globe Preview

*New for V1.20  
Enhanced Resolution.*

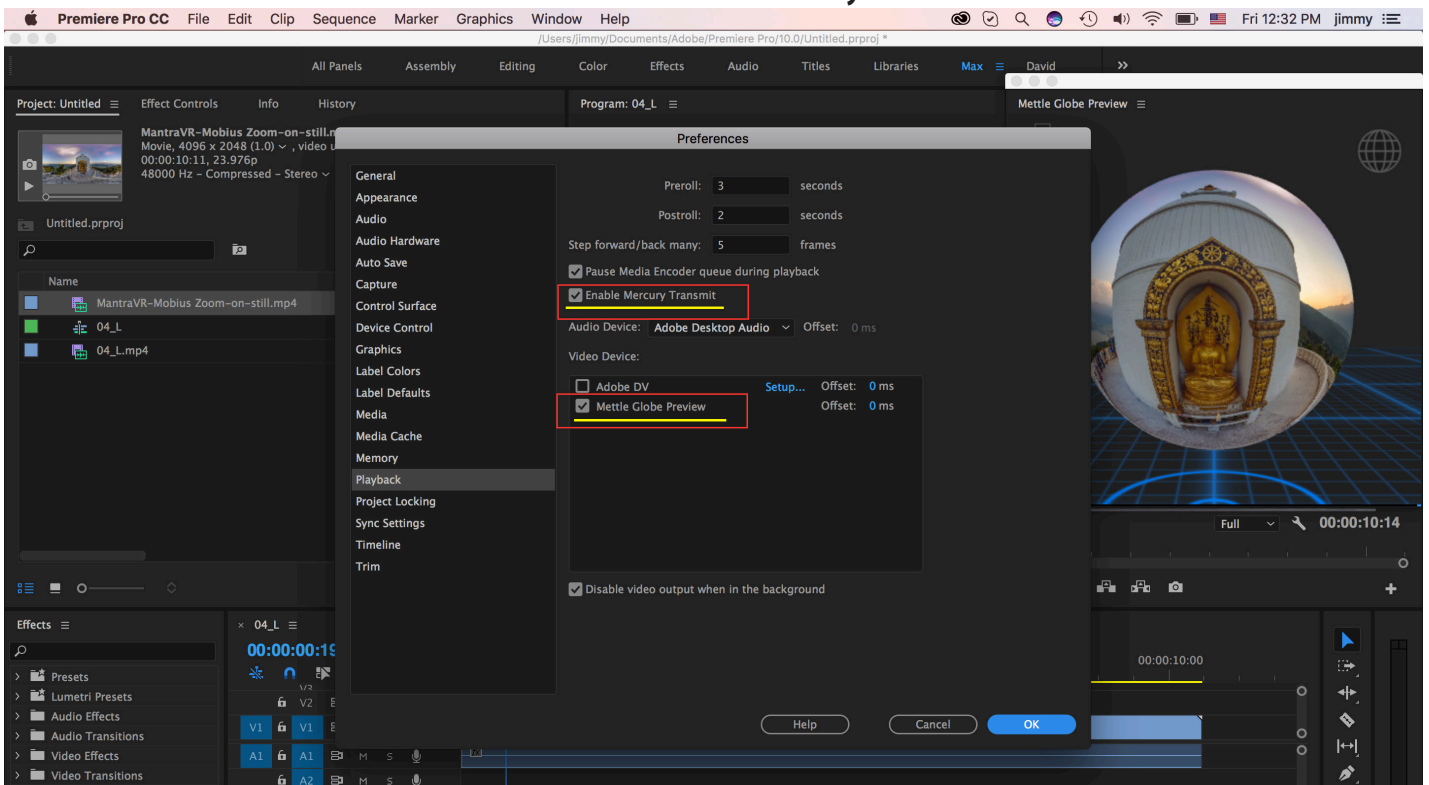
*New for 360 production, Mettle introduces a Globe Preview Panel, which displays your 360 comp in close to real time on a Sphere.*

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 - Enable Mercury Transmit + Mettle Globe Preview.

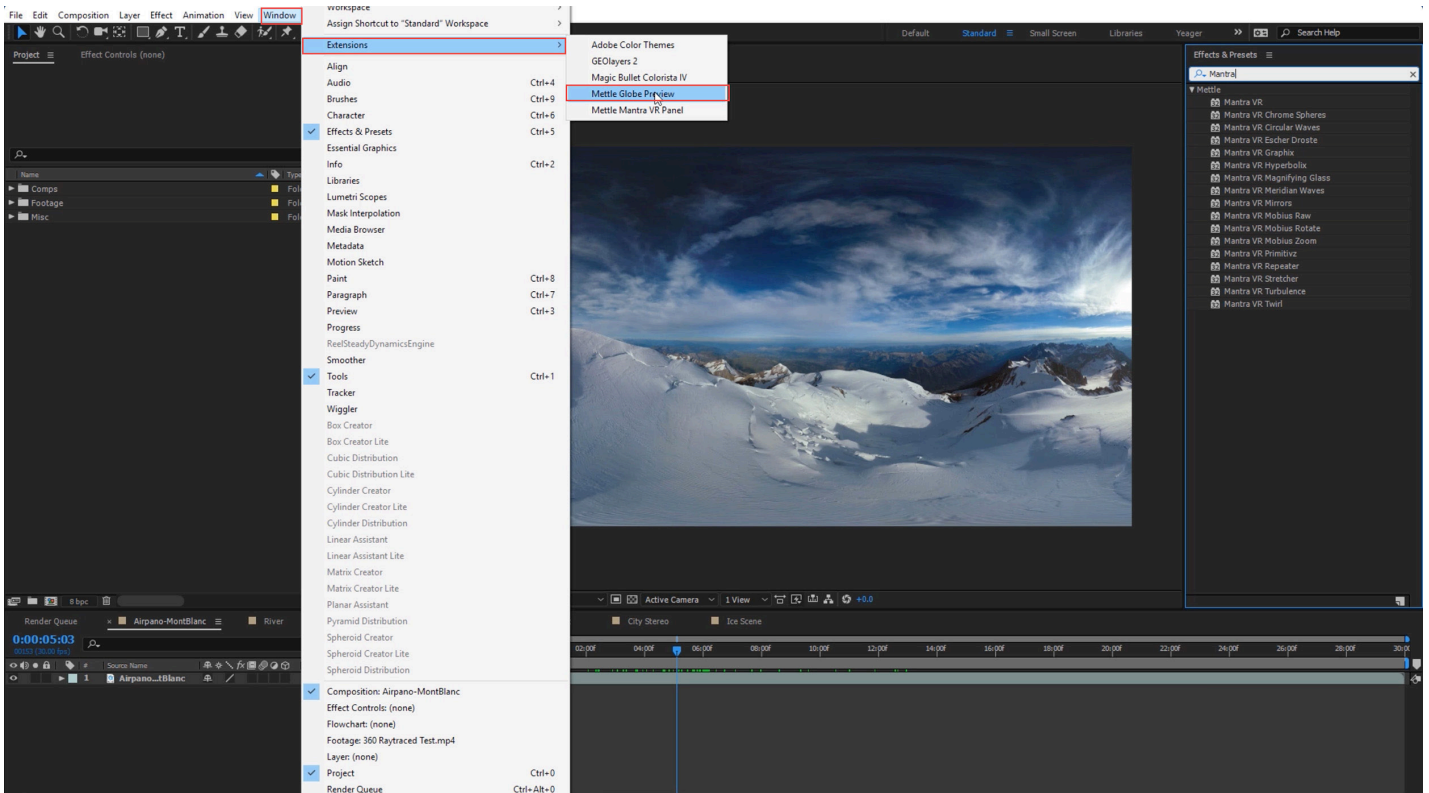


### Enable Globe Preview: Premiere Pro. Preferences - Enable Mercury Transmit + Mettle Globe Preview.

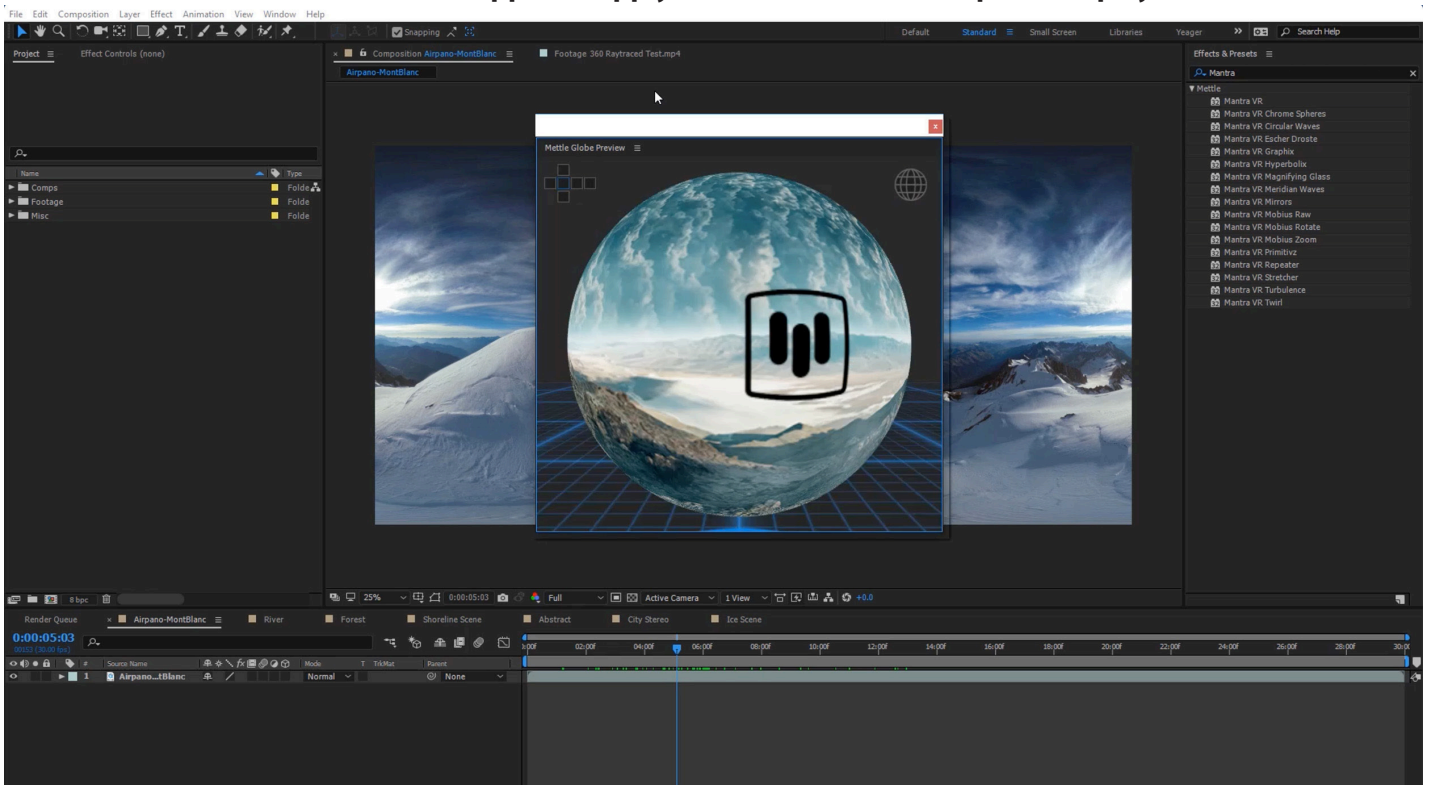


## Mettle Globe Preview cont'

### Window > Extensions > Mettle Globe Preview



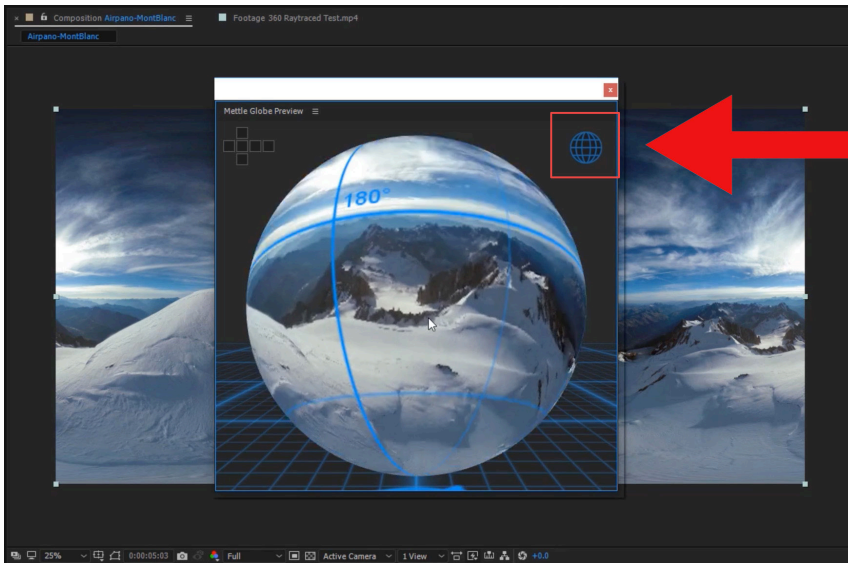
### Mettle Default Globe Preview Panel Appears. Apply Mantra Effect and the sphere displays it.



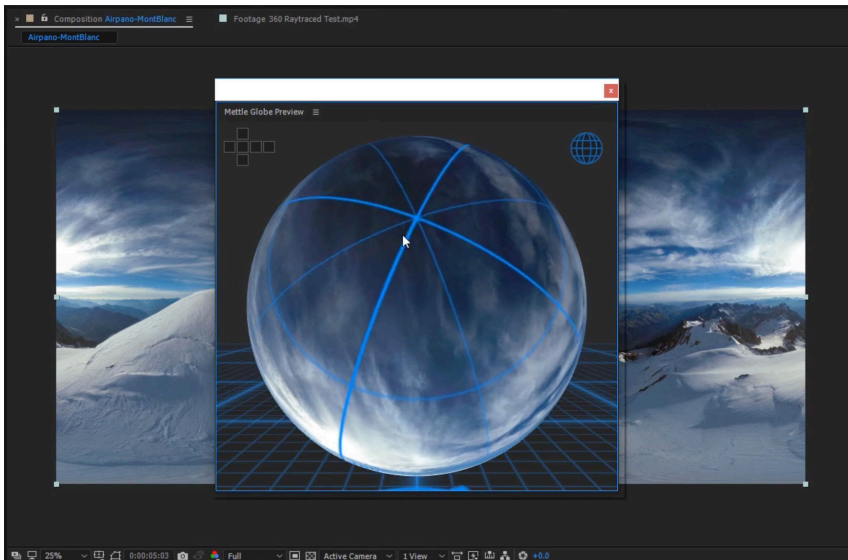


## Mettle Globe Preview cont'

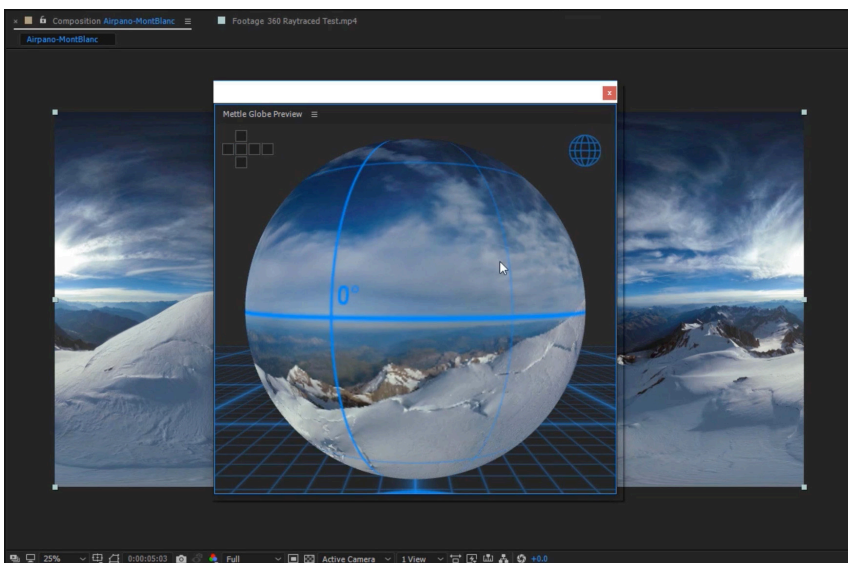
Click on wireframe Globe icon to apply wireframe guide.



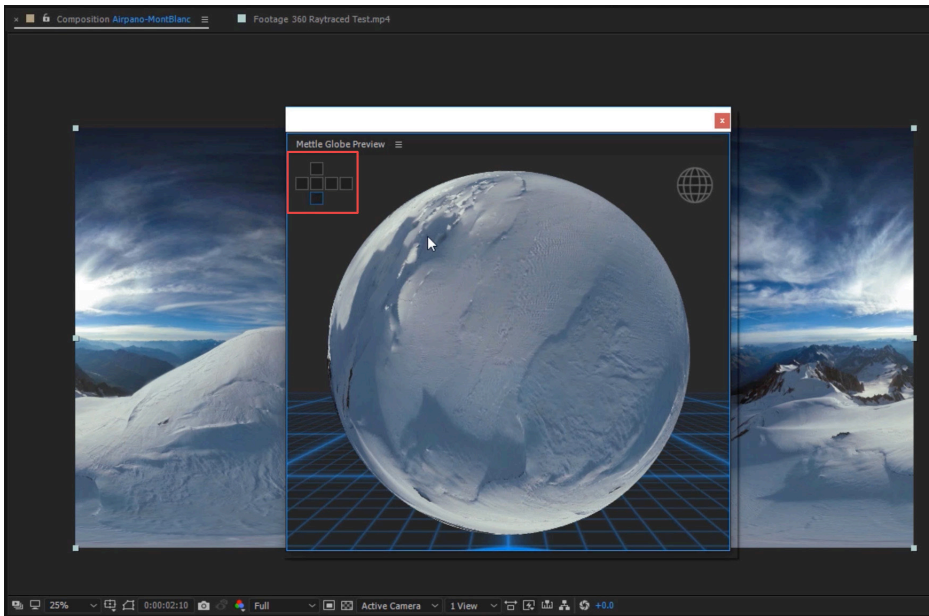
Rotate the sphere to see the poles.



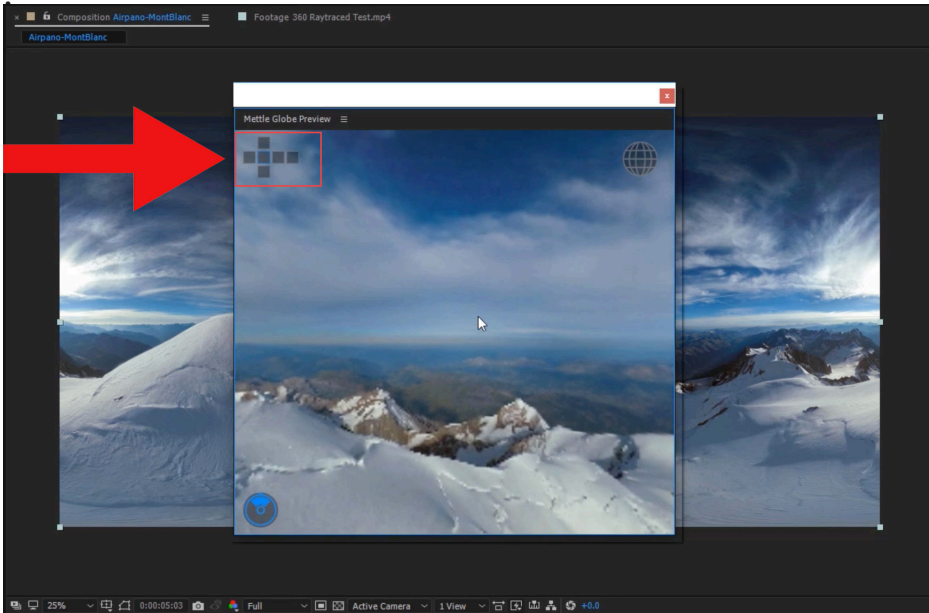
Rotate sphere for 0° View.



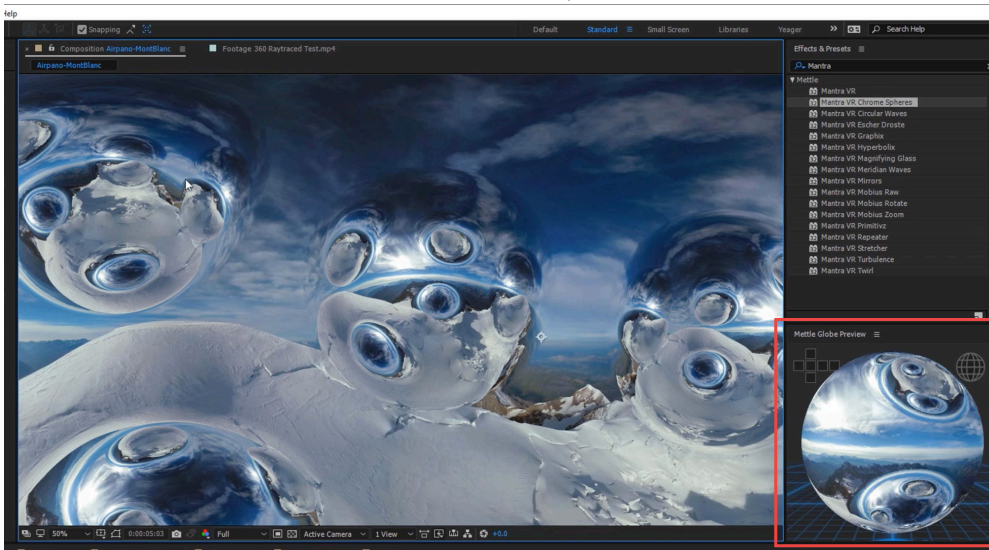
**Navigate on the Sphere by clicking on the different regions of the Cubic Cross.**



**Double click on Globe to enter Sphere. Navigate to different views by clicking on squares in the Cubic Cross**



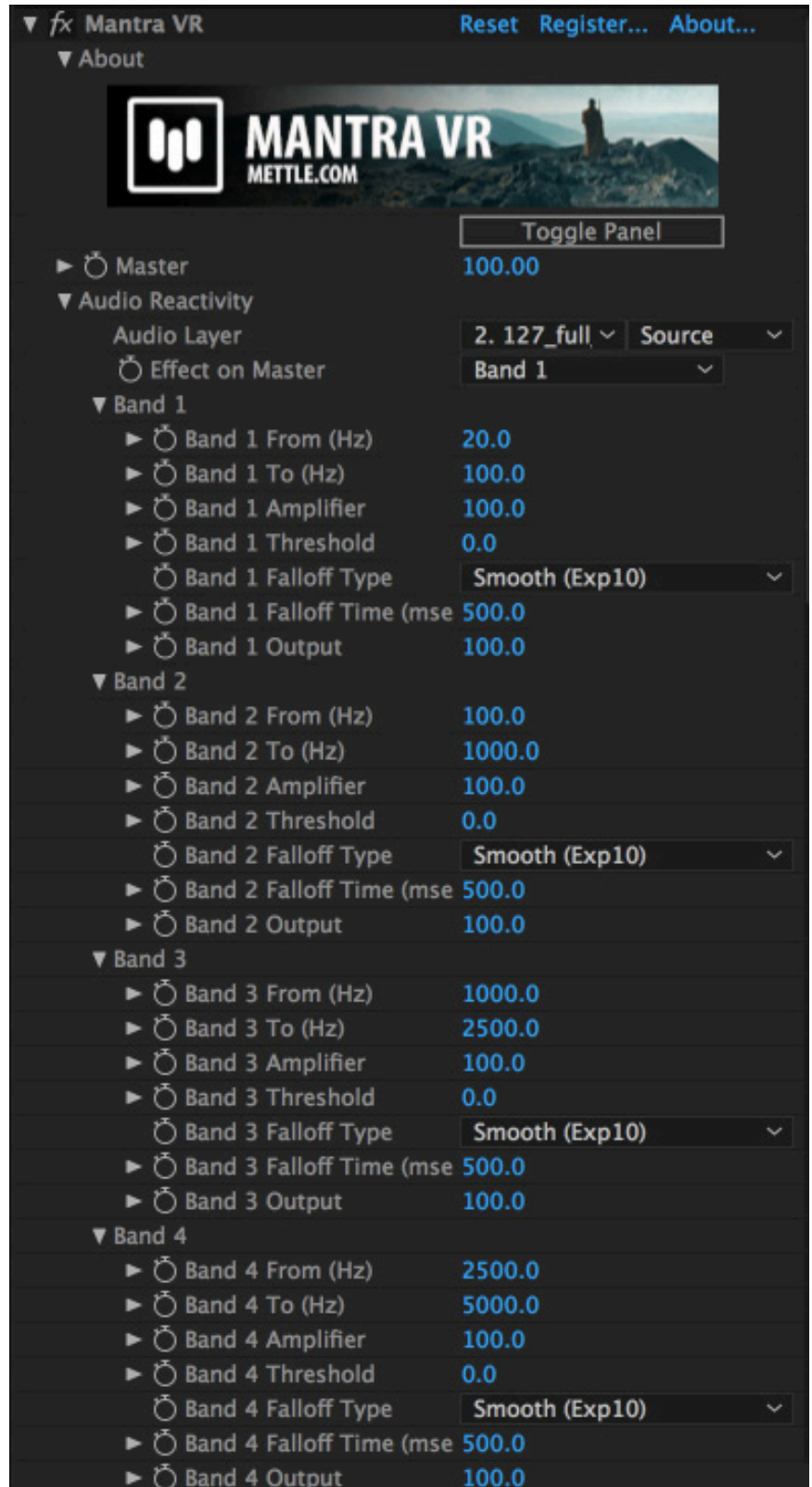
**Panel is Dockable. Mantra Effects are displayed in close to real time on the Globe Preview.**



## Mantra VR > Audio Reactivity

The Audio reactivity option will allow you to control your effects based on the audio that you have in your composition. You can control how different bands of sound will impact the effects that you've added in your composition.

*New for V1.20  
Enhanced Audioreactive  
controls.*





**Audio Layer:**

Select the layer in your composition that has music.

**Effect on Master:**

Set what effect the music will have on the Master controller. Select from: Band 1,2,3, or 4.

**Band Settings-****Band From(Hz):**

Set the bottom value of the audio range in hertz.

**Band To(Hz):**

Set the top value of the audio range in hertz.

**Band Amplifier:**

Set the amount of amplification (loudness) that will be applied to the music. (This is only amplified to the Mantra VR effect; the music track will audibly sound the same.)

**Band Threshold:**

Set the amount of threshold (loudness) that Mantra VR will use from the music. (This is only amplified to the Mantra VR effect; the music track will audibly sound the same.)

**Band Falloff Type:**

Select the falloff type that will be applied to the effects. Select from: None, Linear, Smooth (ExpE), Smooth (Exp10), or Accumulate. (Each falloff type will yield different visual results. The falloff refers to how quickly the effects return to their default state. Different falloffs change how quick/smooth this occurs. Accumulate builds overtime, so effect results will increase as the music continues.)

**Band Falloff Time (msec):**

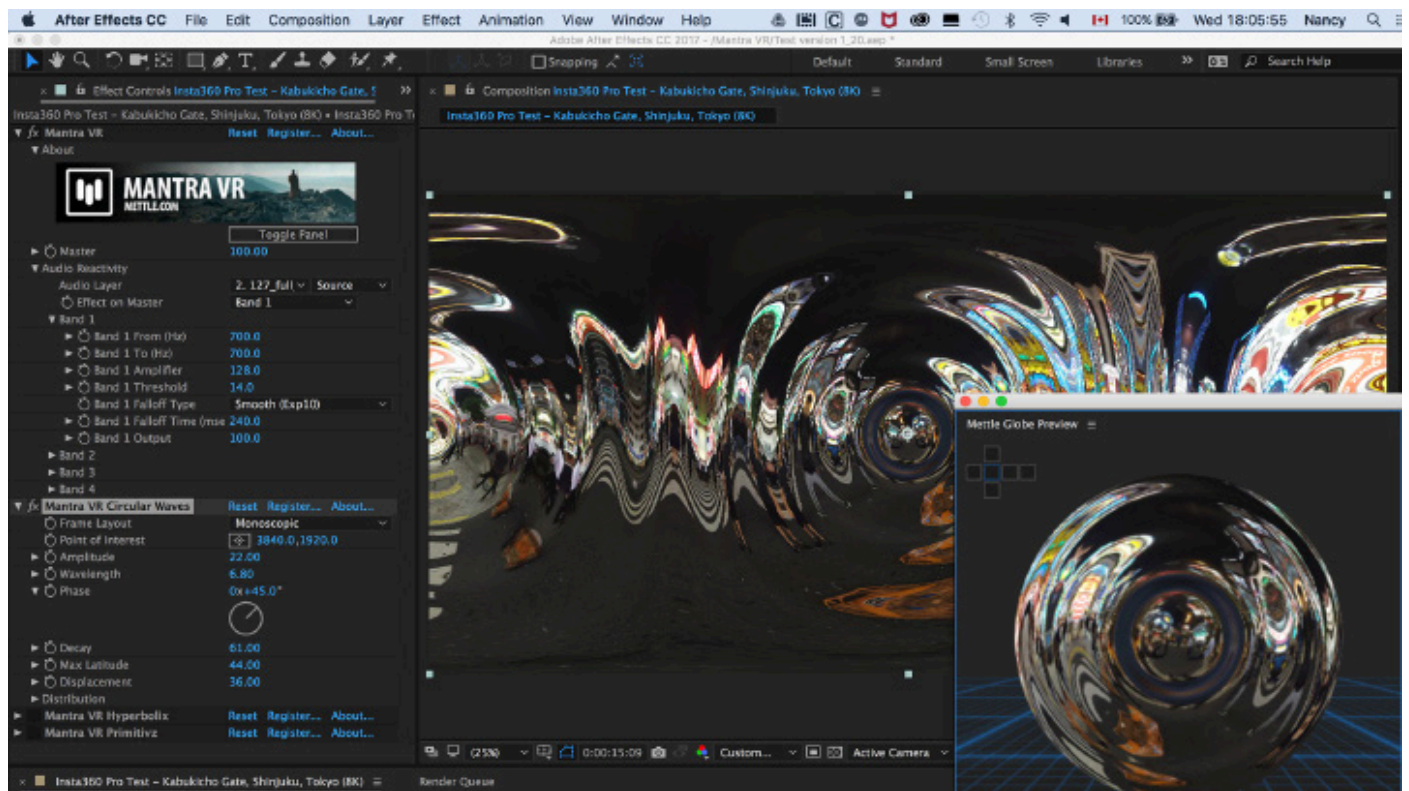
Set the falloff time in milliseconds. Range is from 0 to 1000.

**Band Output:**

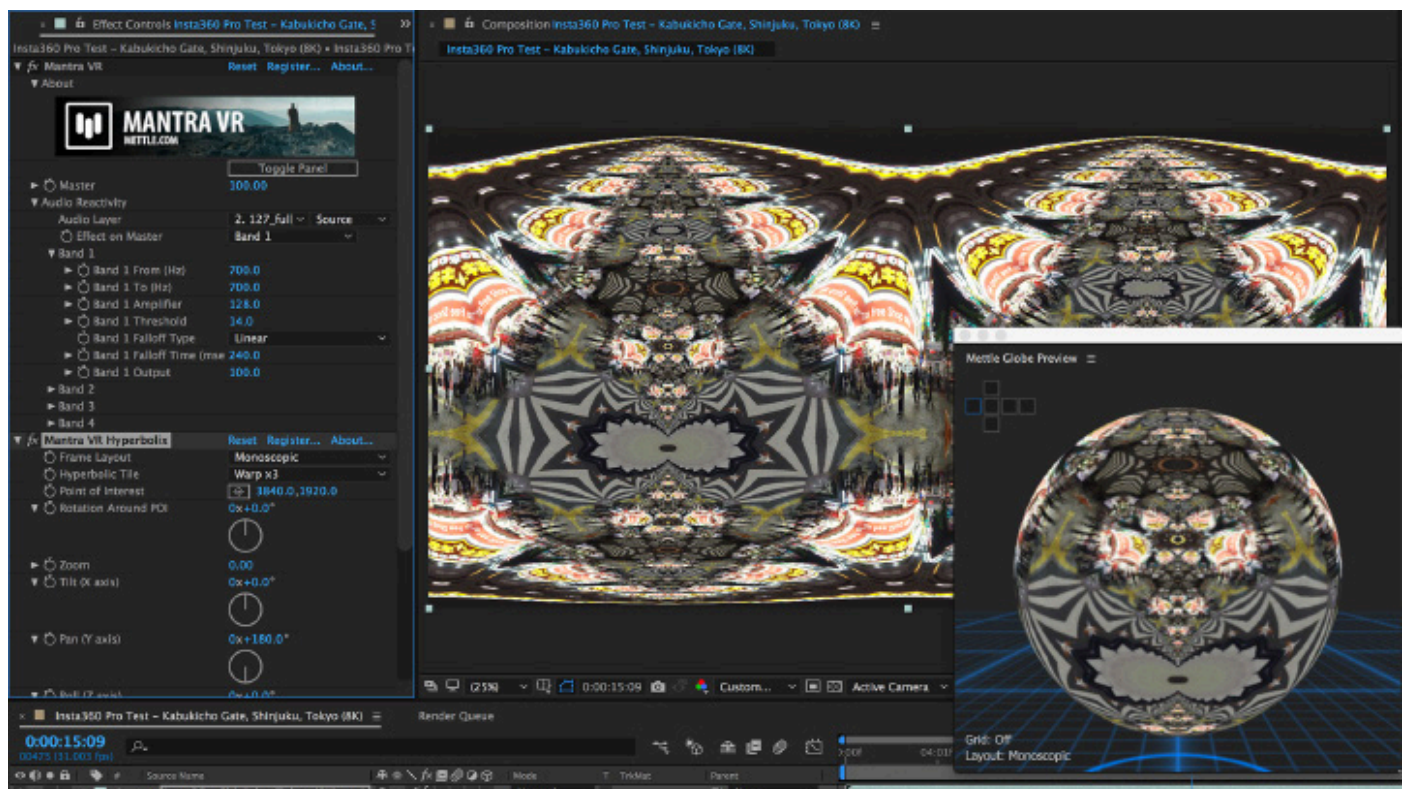
Control how much of the output is applied to the effect from a specific band.



## Mantra VR Audio Reactivity + Circular Waves

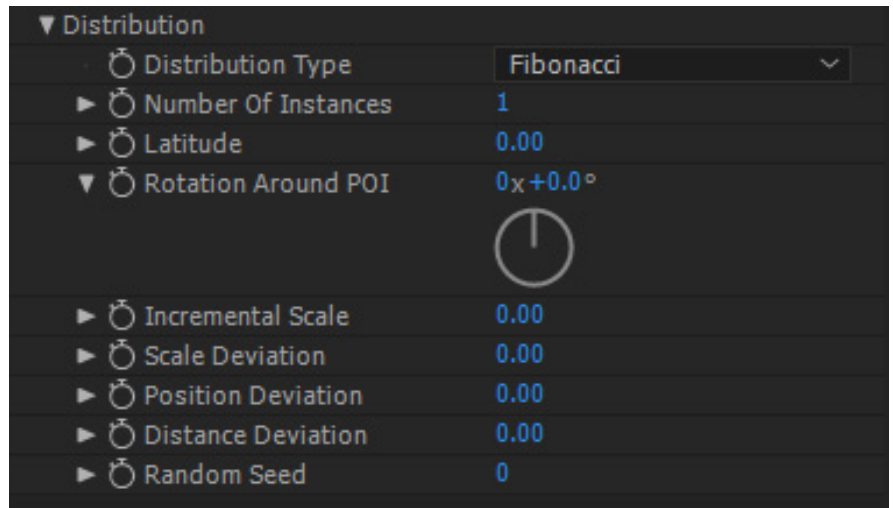


## Mantra VR Audio Reactivity + Hyperbolix



# Distribution Controls

Numerous Mantra VR effects feature Distribution controls located at the bottom of the effect settings. The Distribution controls allow you to increase the number of instances of an effect, as well as adjust settings like Distribution Type and Latitude. The Distribution settings are the same for any Mantra VR effect that features a Distribution tab at the bottom of the effect settings. The Distribution settings options are as follows-



## Distribution Type:

Distribution Type refers to how the various effect Instances will be distributed on the 360 footage. (The types refer to various mathematical patterns.) Different Distribution Types give different visual results. The Distribution Types are as follows: Fibonacci, Circle, Tetrahedron, Cube, Octahedron, Dodecahedron, Icosahedron.

## Number of Instances:

How many types the effect gets applied to your footage. (Ex. On the Chrome Spheres effect, if Number of Instances is set to 1, you will have 1 Chrome Sphere on screen. If the Number of Instances is set to 3, there will be 3 Chrome Sphere on screen.)

## Latitude:

Where the Instances are located on your 360 footage relative to the Point of Interest. At a value of 100, all of the instances move directly to the Point of Interest. At a value of -100, all of the instances move directly to the polar-opposite of the Point of Interest. The default value is 0.

## Rotation Around POI (Point of Interest):

Control the rotation of the Instances around the Point of Interest.

## Incremental Scale:

Controls the scale of the Instances relative to the Point of Interest. At a value of 100, all of the instances close to the Point of Interest get smaller in scale. At a value of -100, all of the instances close to the Polar-opposite of the Point of Interest get smaller in scale. The default value is 0.

## Scale Deviation:

Allows you to set the amount of Random Scaling on the Instances for the effect.

**Position Deviation:**

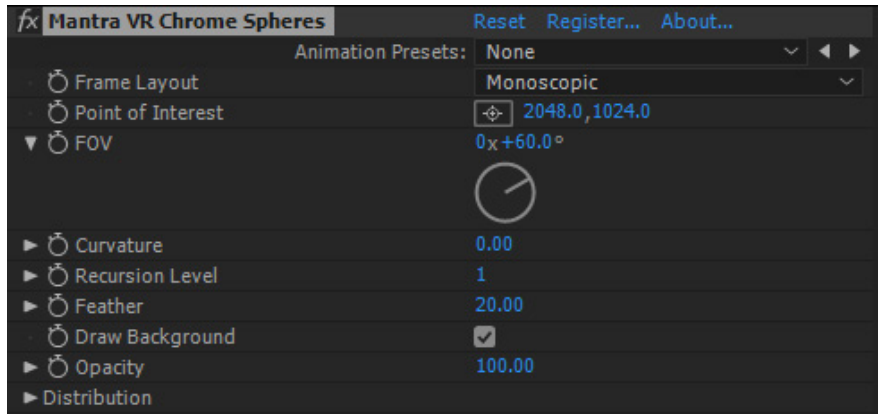
Allows you to set the amount of Random Positioning on the Instances for the effect.

**Random Seed:**

Used to select a pseudorandom application of the Distribution with the same current settings set by the user. (i.e. you will see another version of the effect, with the same Distribution input settings, but with a different appearance on the footage.)

# 1. Chrome Spheres

*Simulates one or more curved mirrors of arbitrary size and distribution. Curvature is set to simulate hemisphere by default.*



*New for V1.20  
Rectilinear support.*

## Frame Layout:

Select Monoscopic or Stereoscopic

## Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

## Point of Interest:

Control the center-point position of the effect.

## FOV (Field of View):

Control the field of view (the size) of the sphere. (Bigger value = bigger sphere.)

## Curvature:

Adjust this setting to change the curvature reflection on the sphere. 0 is the default value. (Negative values give the spheres a 'warp' appearance, high positive values give the spheres a 'liquid' appearance.)

## Recursion Level:

The number of times the chrome spheres reflections occur on each other. The inter-reflections can be set from 1-3. (Think of this like two mirrors facing each other, the reflection recursion continues back and forth. The max value is 3, because beyond that the reflections wouldn't be visible because they are so small on screen.)

## Feather Control:

Adjust the feathering (edge softness) for the spheres. (This can help with compositing.)

## Draw background:

Unclick to apply alpha channel around chrome spheres effect and only render the chrome spheres on the layer with the effect.

## Opacity:

Adjust the overall opacity of the effect on your footage. At 100% the effect is completely opaque. At 0% the effect is completely transparent.

**Distribution: – See Distribution Controls section in the Manual.**



Recursion Level > 1



Recursion Level > 3

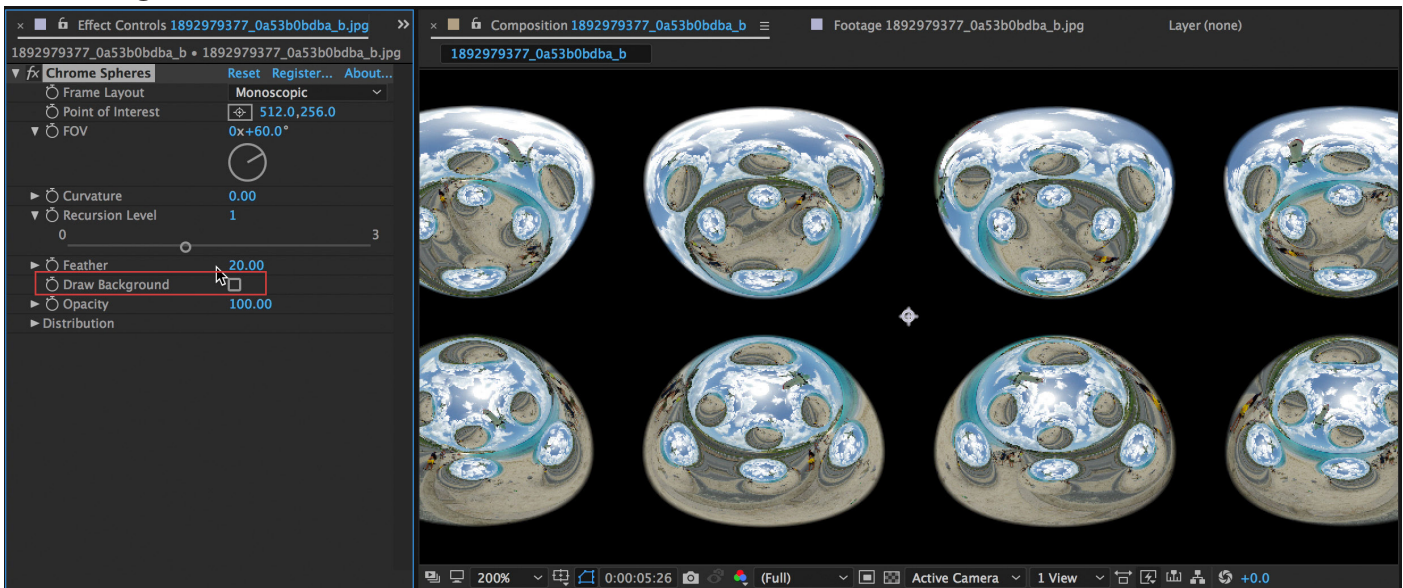




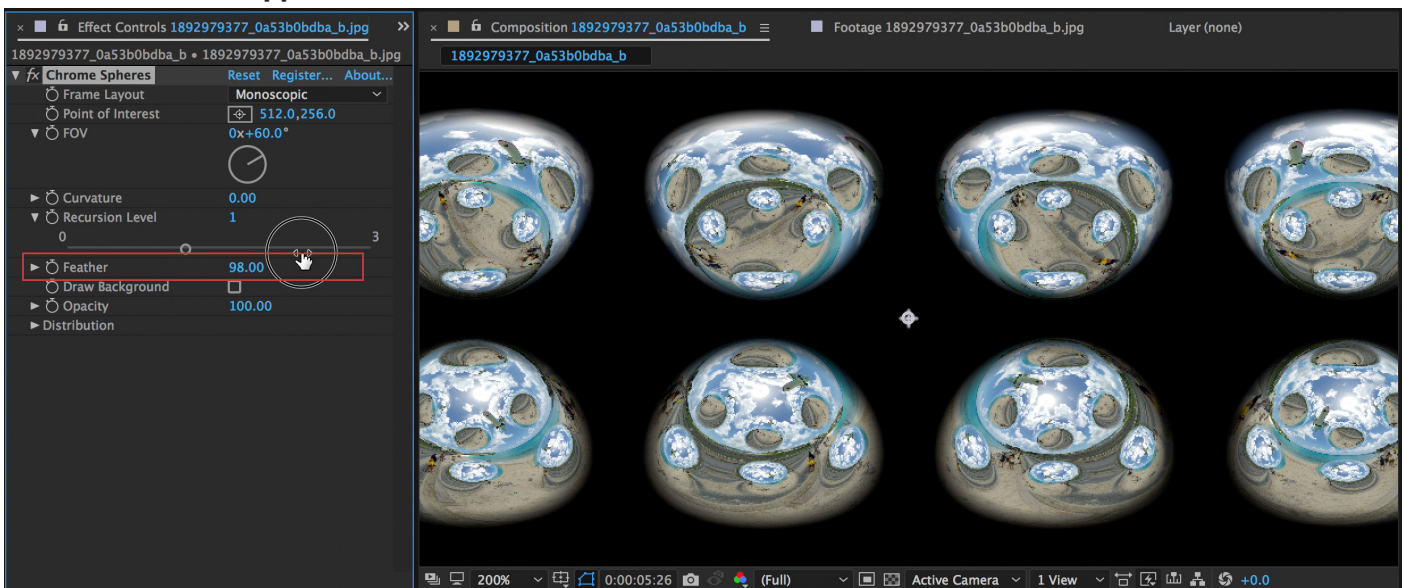
## Draw Background Selected



## Draw Background Not Selected

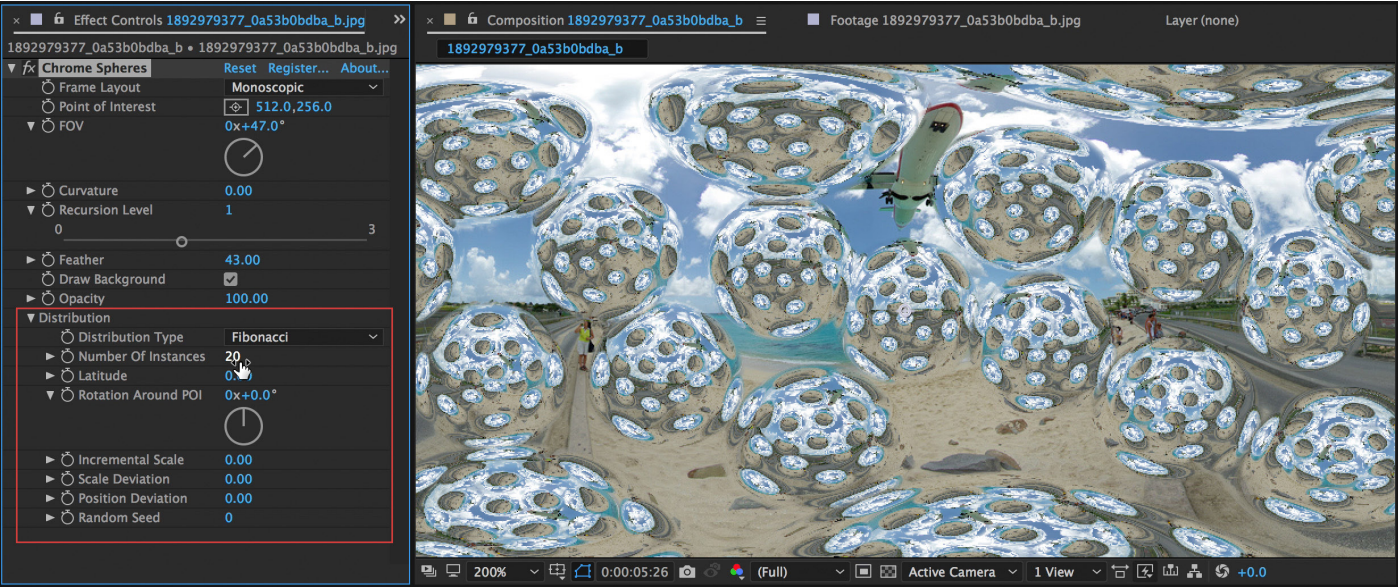


## Feather Parameter Applied

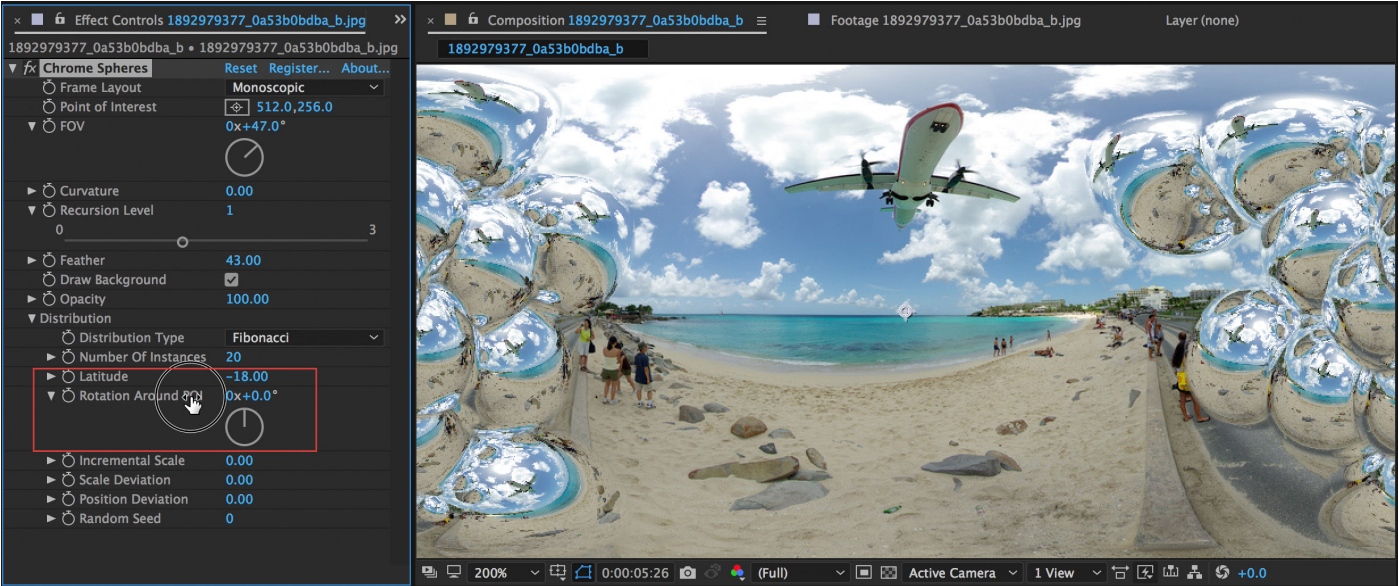




Multiple Distribution options available, with different control parameters



Latitude: -18.00

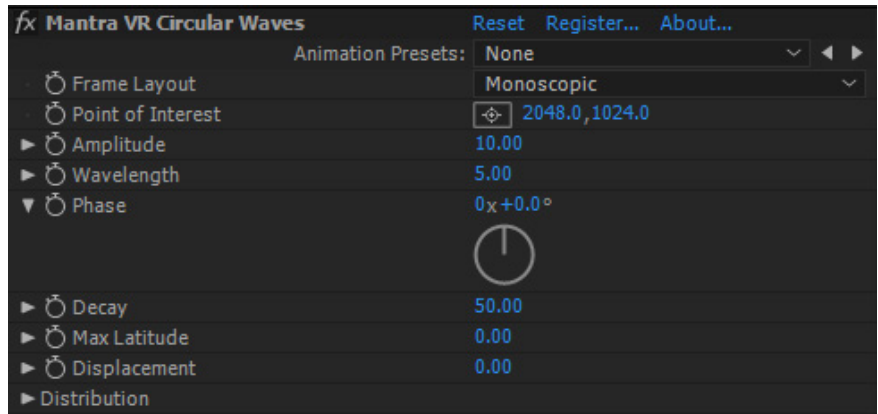


Latitude: 89.00



## 2. Circular Waves

*Simulates capillary waves e.g. water ripples. Allows to control wave length, wave amplitude, frequency, decay, etc.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Point of Interest:

Control the center-point position of the effect.

### Amplitude:

Control the amplitude (height) of the waves.

### Wavelength:

Control the length of the waves.

### Phase:

Allow you to animate the wave movement.

### Decay:

Controls the decay rate of the effect applied. (Ex. A lower decay value will make the effect visible only on a portion of the 360 footage, relative to the Point of Interest.)

### Max Latitude:

In conjunction with the Decay setting, the Max Latitude adjusts where the effect is visible (most intense) relative to the Point of Interest.

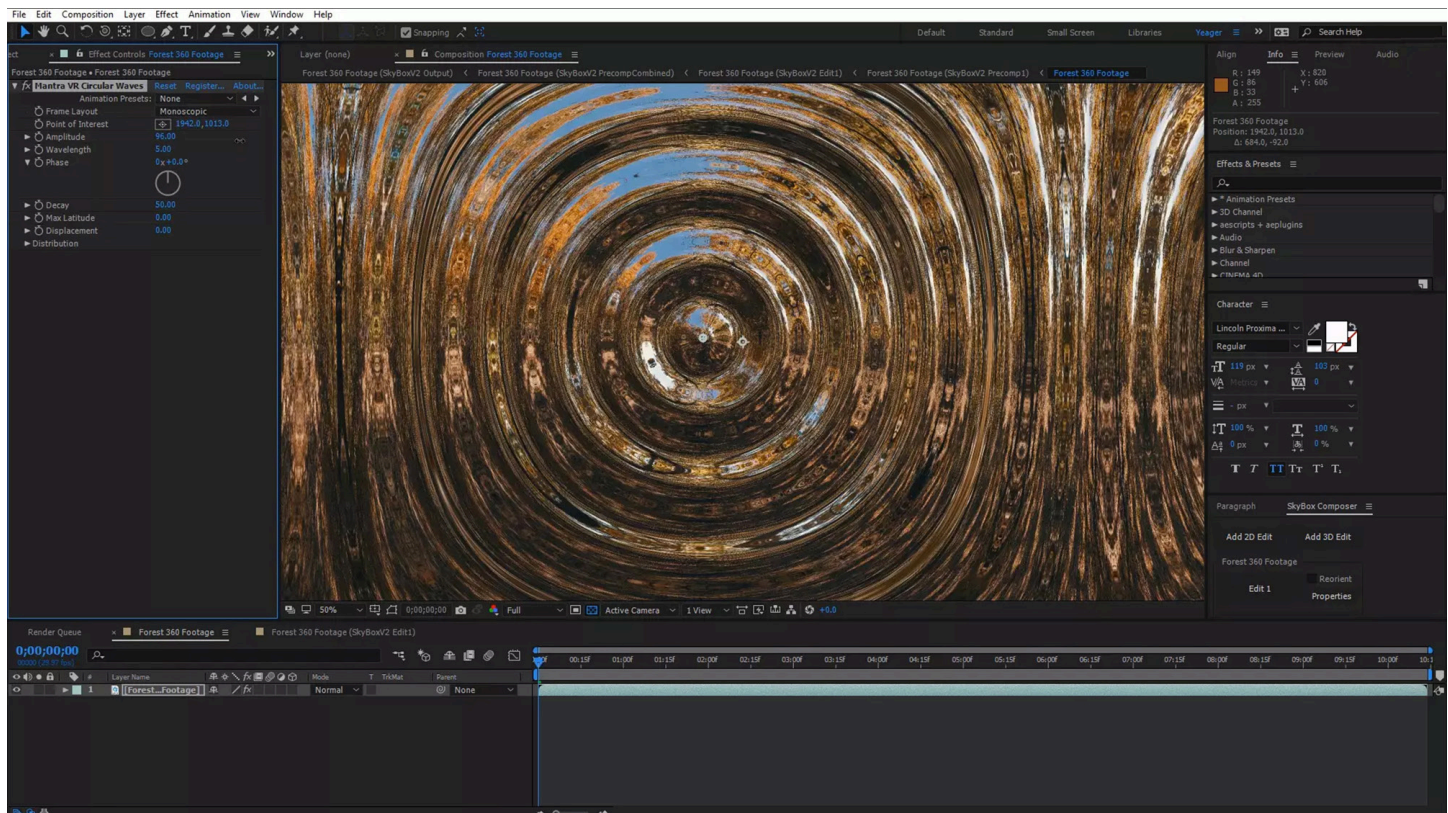
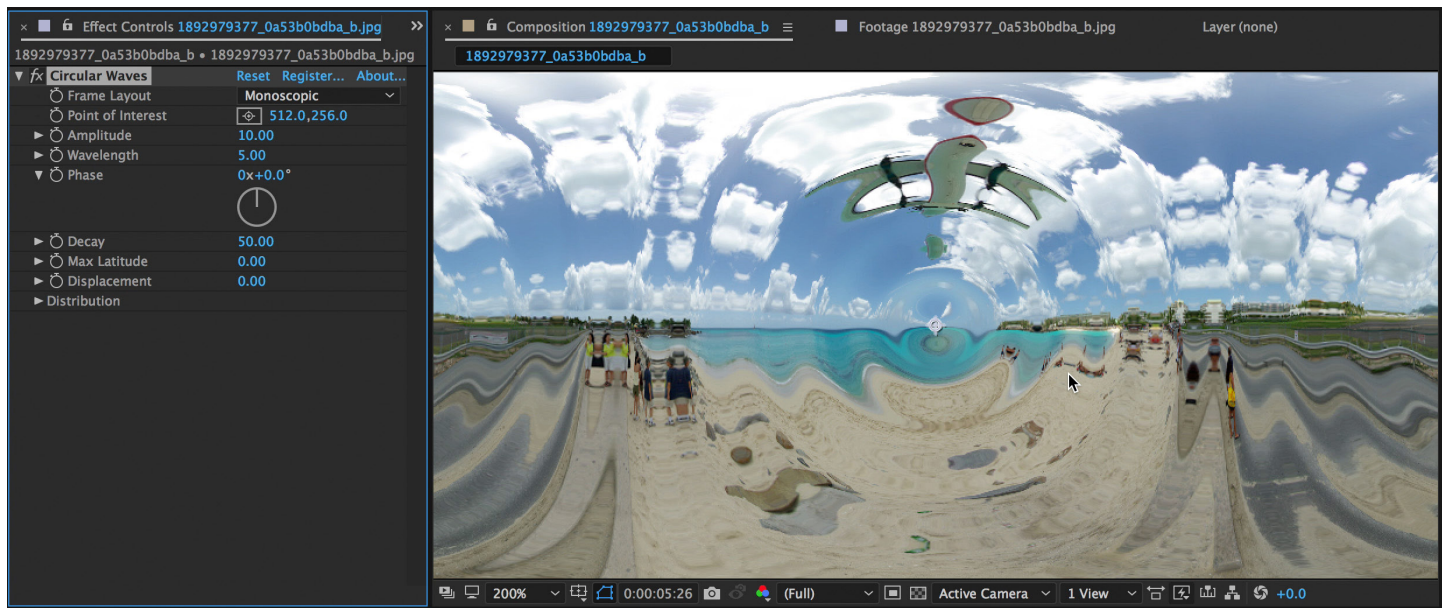
### Displacement:

Adds another level of displacement to the effect. (Add more visible displacement.)

**Distribution: – See Distribution Controls section in the Manual.**

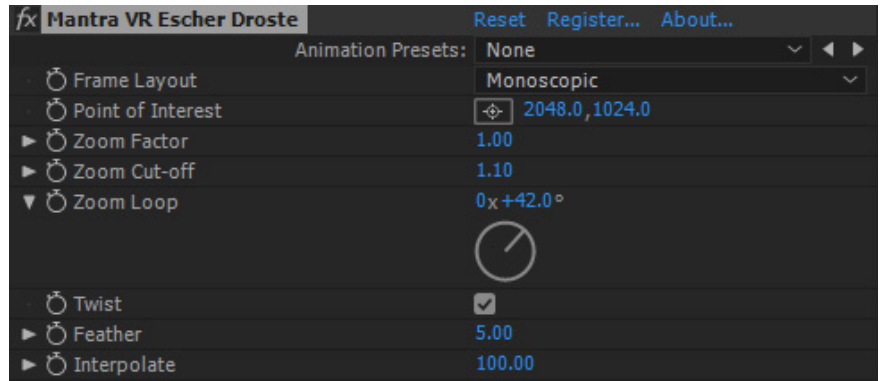


## Circular Waves Effect.



### 3. Escher Droste

*Implements Escher & Droste effects, separately or combined. Droste effect allows infinite recursive repetitions of the original frame. Escher effect allows to twist repetitions recursively into the spiral.*



*New for V1.20  
Rectilinear support.*

#### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

#### Point of Interest:

Control the center-point position of the effect.

#### Zoom Factor:

Control the zoom factor of the Escher Droste spiral scale.

#### Zoom Cut-off:

Control the zoom cut-off of the Escher Droste spiral scale.

#### Zoom Loop:

Allows you to animate a seamless loop of the Escher Droste effect.

#### Twist:

When this is checked on, you will see a “twist” on your 360 footage with the Escher Droste effect. When it is checked off, you will see a “circle” loop, much like a tunnel, on your 360 footage.

#### Feather:

Adjust the feathering (edge softness) for the Escher Droste spirals. (This can help with blending.)

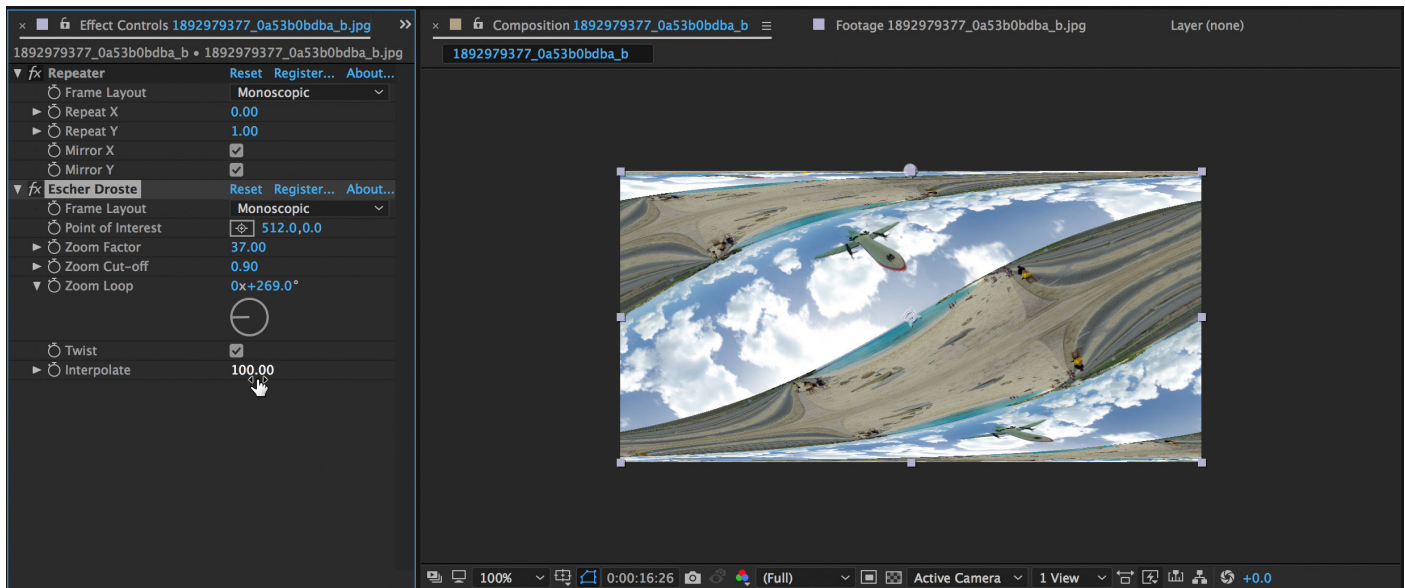
#### Interpolate:

Interpolate between the effect and the original footage. When the Interpolate is set to 100, you will see the full effect on your footage. When the Interpolate value is set to 0, the effect will no longer be visible. You can easily transition to an effect by key-framing the Interpolate setting.

## Escher Droste Effect.



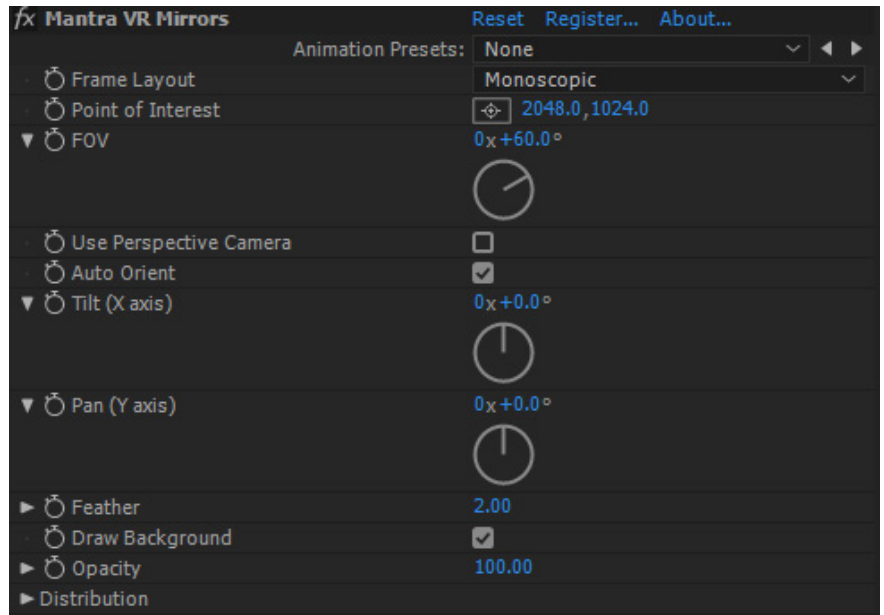
## Combine Escher with Repeater Effect for interesting results.





## 4. Mirrors

*Simulates one or more flat mirrors of arbitrary size and distribution. It reflects the opposite side of the enclosing sphere.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Point of Interest:

Control the center-point position of the effect.

### FOV (Field of View):

Control the field of view (the size) of the mirror. (Bigger value = bigger mirror.)

### User Perspective Camera:

Turning this setting on will make the mirrors orthographic, which will show more realistic distortions to the mirror as if they were 3D object in the scene.

### Auto Orient:

Turn this off if you do not want the mirror to auto orient towards the center when the position changes.

### Tilt (X axis):

Control the rotation of the effect on the X-axis in 3D space.

### Pan (Y axis):

Control the rotation of the effect on the Y-axis in 3D space.

### Feather:

Adjust the feathering (edge softness) for the mirrors. (This can help with compositing.)

### Draw background:

Unclick to apply alpha channel around mirrors effect and only render the mirrors on the layer with the effect.



## Opacity:

Adjust the overall opacity of the effect on your footage. At 100% the effect is completely opaque. At 0% the effect is completely transparent.

**Distribution:** – See **Distribution Controls** section in the Manual.

## Mirror > Latitude 80



## Fibonacci Distribution with 20 instances, FOV 95

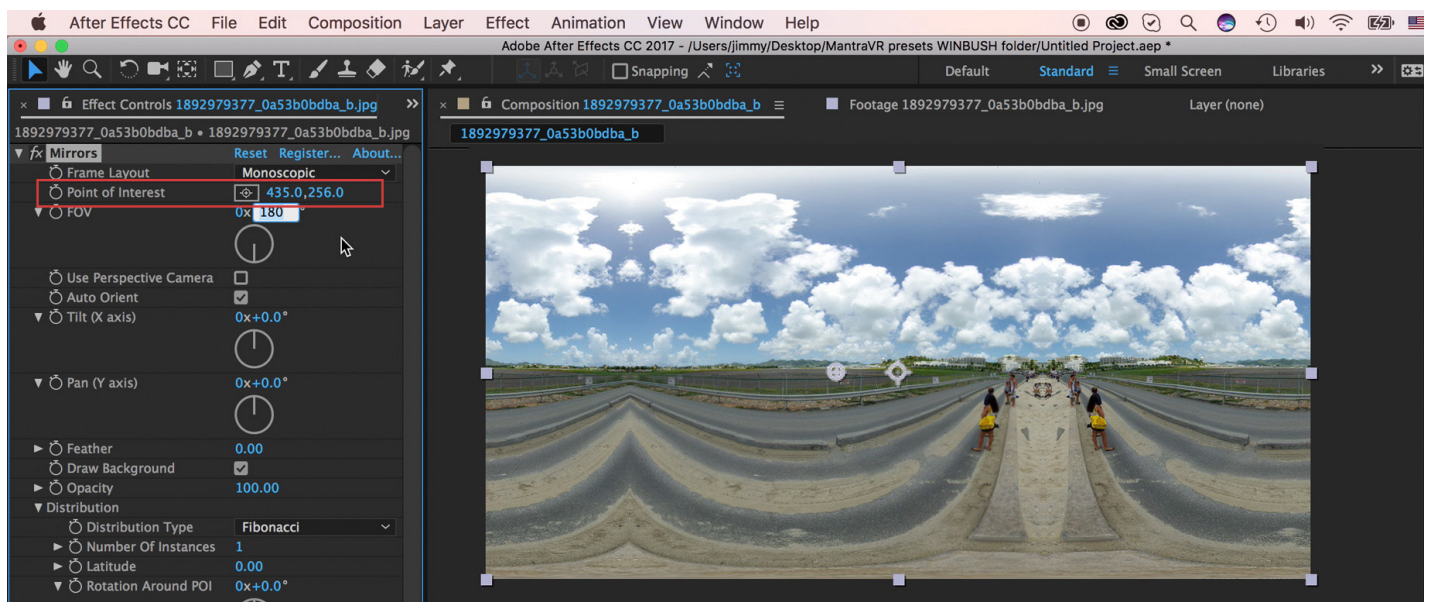




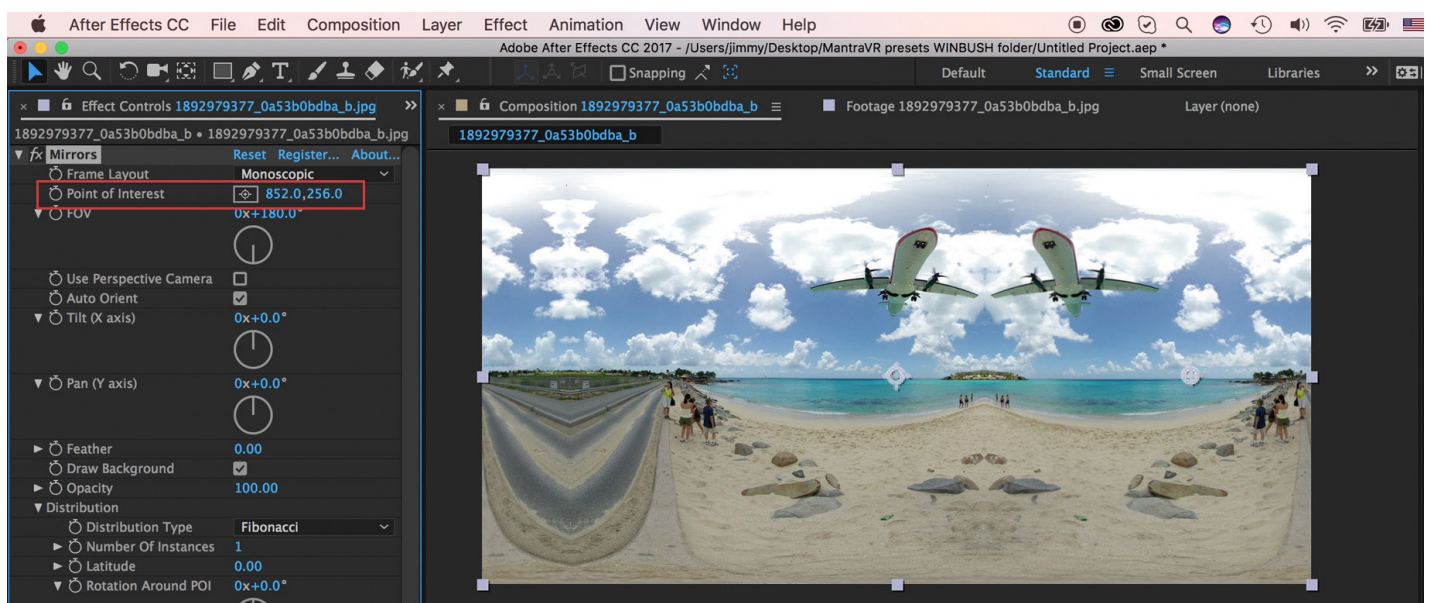
**FOV 180, 1 Instance. Point of Interest 512. This reflects one half of the sphere perfectly.**



**Point of Interest 435, changes reflection in sphere**

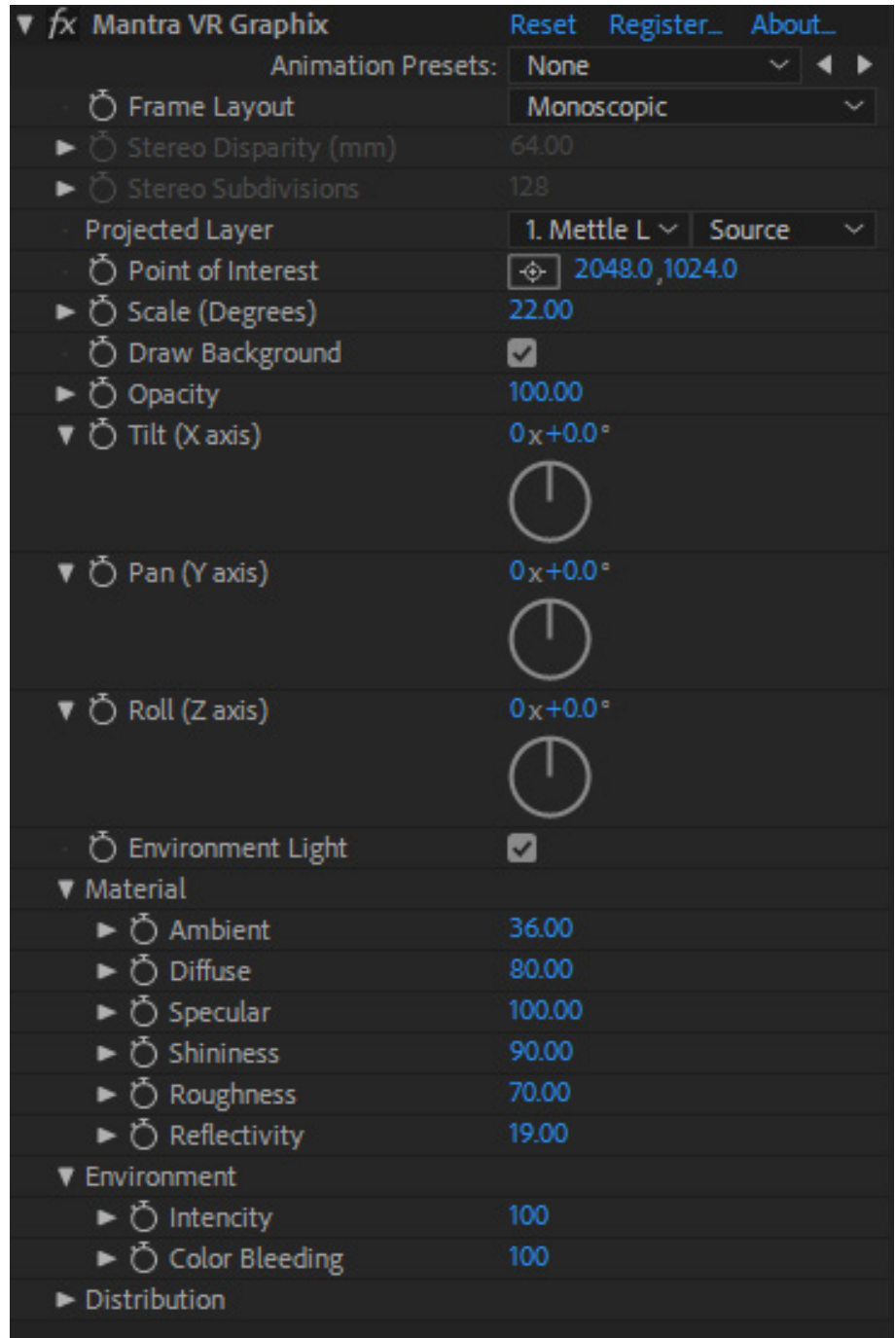


**Point of Interest 852, changes reflection in sphere**



## 5. Graphix

*Allows to place and distribute flat 2D graphics or text across the sphere.*



*New for V1.20  
Rectilinear support.*

### **Frame Layout:**

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### **Stereo Disparity (mm):**

On stereoscopic footage, adjust the disparity between the Over/Under footage. (Ex. A higher value gives the illusion that the projected layers are closer to the viewer.)

### **Stereo Subdivisions:**

Adjust the amount of subdivisions on the projected layer on stereoscopic footage. A high value insures more accuracy with Stereo Disparity. Higher values can produce visible alignment artifacts on large layers.

**Point of Interest:** Control the center-point position of the effect.

### **FOV (Field of View):**

Control the field of view (the size) of the projected layer. (Bigger value = bigger layer.)

Draw background:

Unclick to apply alpha channel around mirrors effect and only render the mirrors on the layer with the effect.

### **Opacity:**

Adjust the overall opacity of the effect on your footage. At 100% the effect is completely opaque. At 0% the effect is completely transparent.

### **Tilt (X axis):**

Control the rotation of the effect on the X-axis in 3D space.

### **Pan (Y axis):**

Control the rotation of the effect on the Y-axis in 3D space.

### **Roll (Z axis):**

Control the rotation of the effect on the Z-axis in 3D space.

## *New for V1.20 Environment Controls.*

### **Environment Light:**

Allows for more organic integration of 2D logos and footage, for quick compositing.

### **Material- (Option available when Environment Light is enabled.)**

#### **Ambient:**

Control the ambient lighting on the primitive objects.

#### **Diffuse:**

Control the amount of diffusion lighting on the primitive objects.

#### **Specular:**

Control the specular lighting on the primitive objects.

#### **Shininess:**

Control the amount of shine (from lighting) you can see on the primitive objects.

#### **Roughness:**

Control the amount of "roughness" on the primitive objects. This gives the objects more of a matte texture.

#### **Reflectivity:**

Control the amount of reflection on the primitive objects.

Environment- (Option available when Environment Light is enabled.)



## Environment Map:

Set a layer in the composition to act as the environment map (which will reflect) for the primitive objects.

## Intensity:

Control the Luminosity of the environment map.

## Color Bleeding:

Control the color bleed of the environment map on the primitive objects. Similar to saturation level.

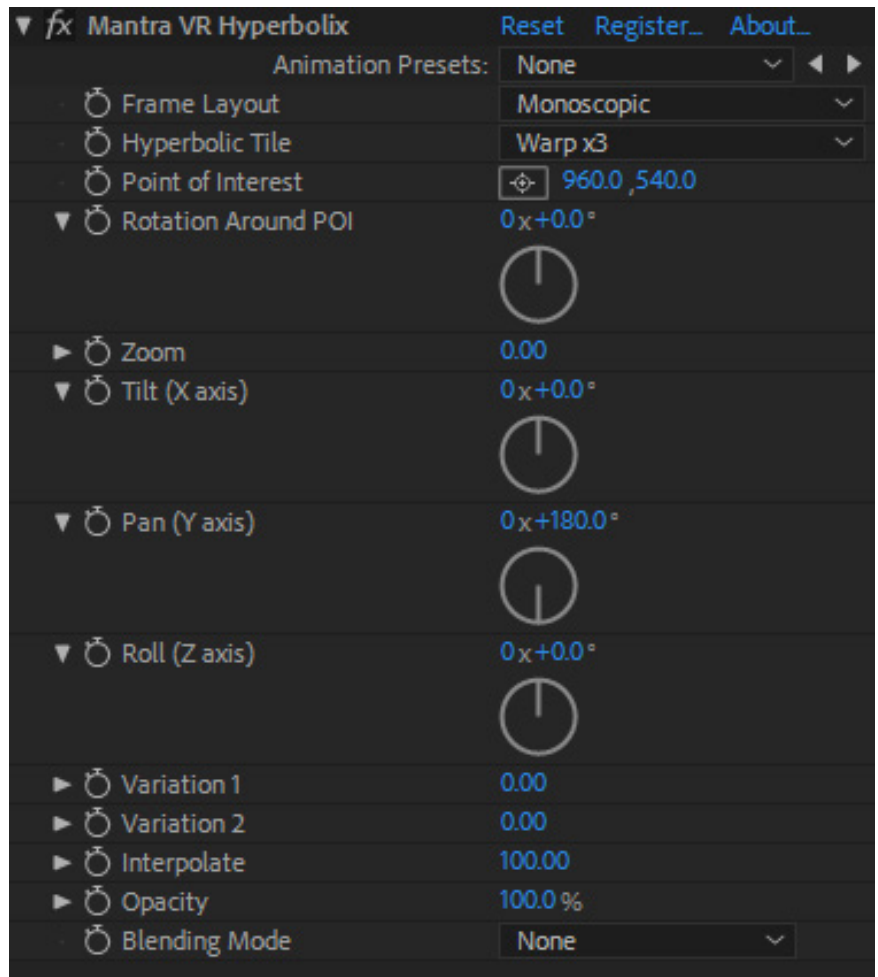
**Distribution:** – See Distribution Controls section in the Manual.

**Graphix VR - New Environment controls make compositing more realistic.**



## 6. Hyperbolix

*Implements hyperbolic tiling algorithm for 360. Rich set of parameters allows to achieve different kaleidoscope like warps of original frame.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Hyperbolic Tile:

Select between various hyperbolic tile patterns: Warp x3, x4, x5, and Kaleidoscope x2, x3, x4, x5, x6, x7.

### Point of Interest:

Control the center-point position of the effect.

### Rotation Around POI (Point of Interest):

Control the hyperbolic rotation around the Point of Interest.

### Zoom:

Control the zoom level of the hyperbolic tile.

### Evolution 1:

Control evolution cycle one.

## Evolution 2:

Control evolution cycle two. (Typically as a secondary animation to Evolution 1.)

## Tilt (X axis):

Control the rotation of the effect on the X-axis in 3D space.

## Pan (Y axis):

Control the rotation of the effect on the Y-axis in 3D space.

## Roll (Z axis):

Control the rotation of the effect on the Z-axis in 3D space.

## Interpolate:

Interpolate between the effect and the original footage. When the Interpolate is set to 100, you will see the full effect on your footage. When the Interpolate value is set to 0, the effect will no longer be visible. You can easily transition to an effect by key-framing the Interpolate setting.

## Opacity:

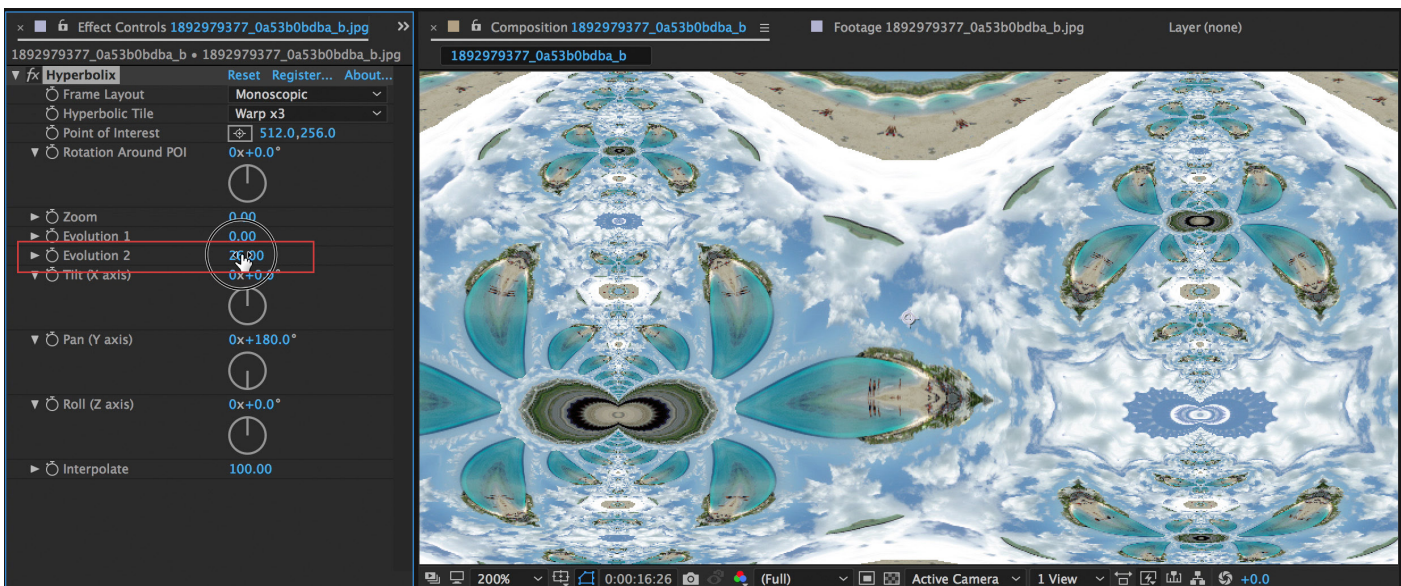
Use this setting to adjust the overall opacity of the Hyperbolix effect on your footage. At 100% the effect is completely opaque. At 0% the effect is completely transparent. The default is 100%.

## Blending Mode:

Select from various color blending modes for the effect on top of your original footage. The default is Normal. (Screen, Add and Overlay blending modes are popular choices for this effect.)

*New for V1.20  
Opacity and Blending Mode.*

## Evolution Cycles.



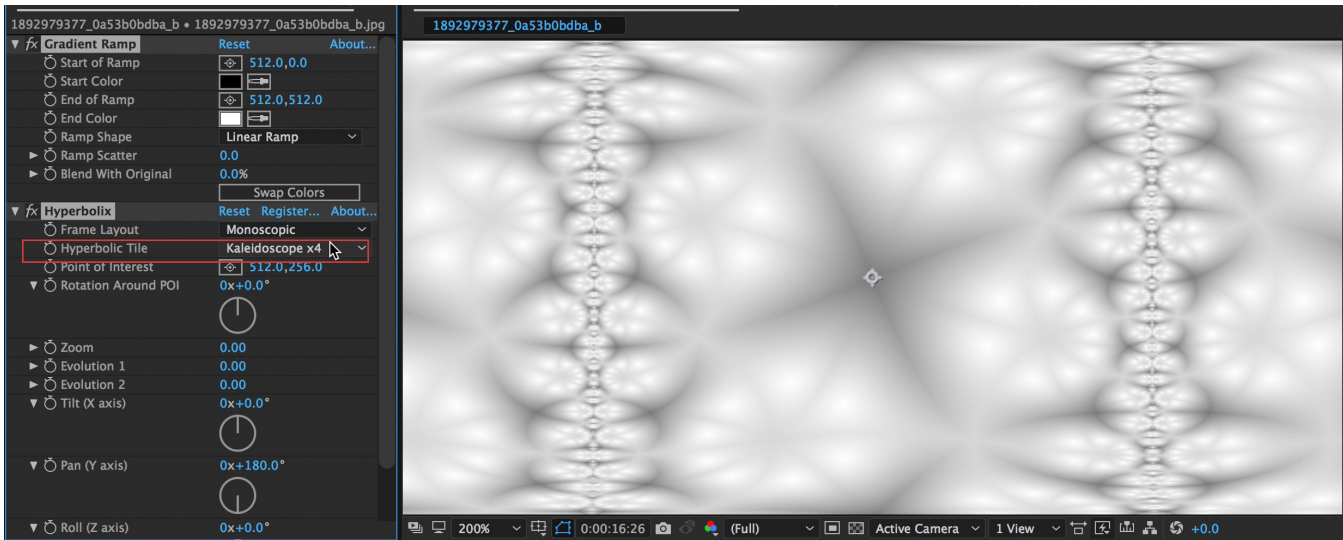


## 6. Hyperbolix cont'

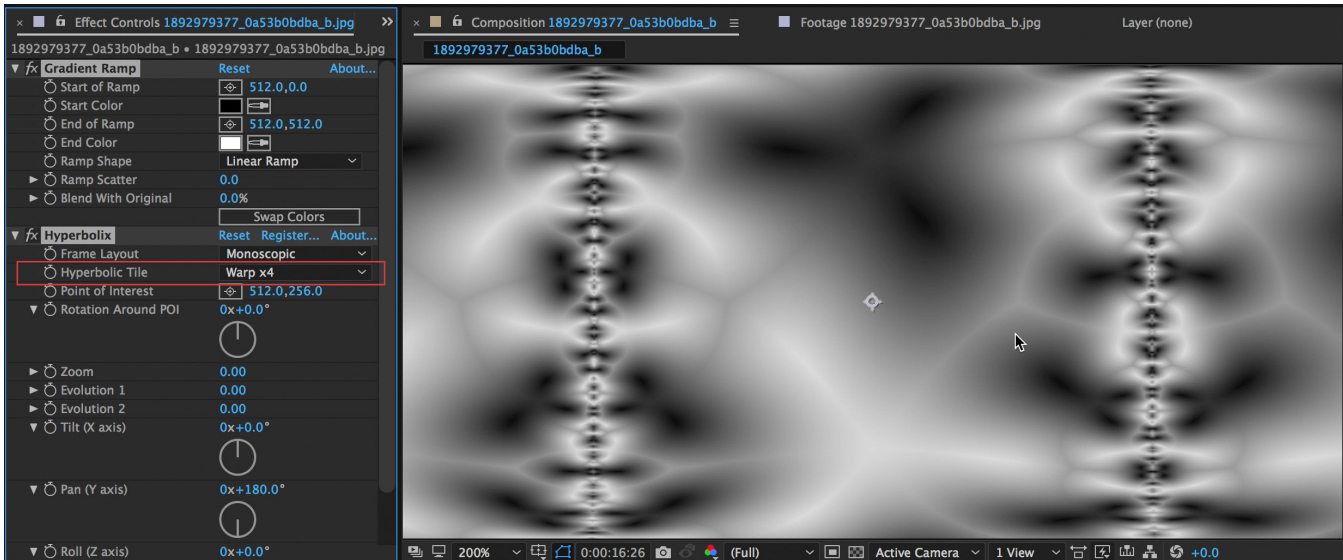
Pan, Tilt, Roll can be used to create evolutions, or animations.



### Hyperbolix > Hyperbolic Tile > Kaleidoscope x4



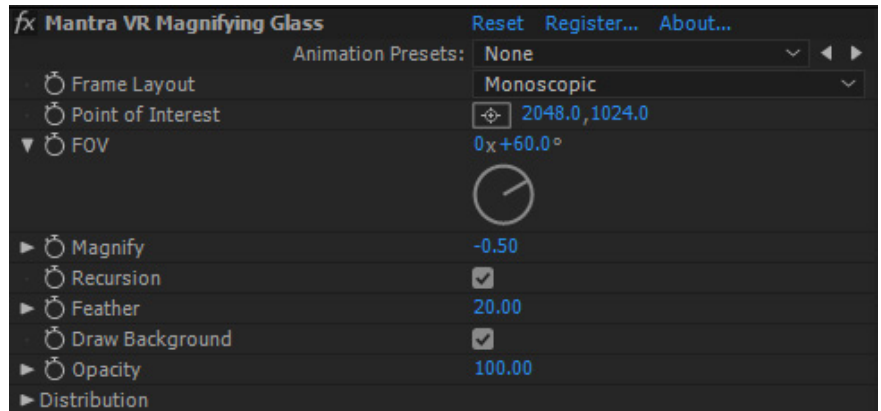
### Hyperbolix > Hyperbolic Tile > Warp x4





## 7. Magnifying Glass

*Simulates one or more magnifying glasses of arbitrary size and distribution. Magnifying power can be adjusted.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Point of Interest:

Control the center-point position of the effect.

### FOV (Field of View):

Control the field of view (the size) of the magnified circle. (Bigger value = bigger area.)

### Magnify:

Control the level of magnification. Adjust between a value of -100 and 100.

### Recursion:

Turn on or off the magnification recursion when multiple magnified instances cross over each other.

### Feather Control:

Adjust the feathering (edge softness) for the spheres. (This can help with compositing.)

### Draw background:

Unclick to apply alpha channel around magnified effect and only render the magnified area on the layer with the effect.

### Opacity:

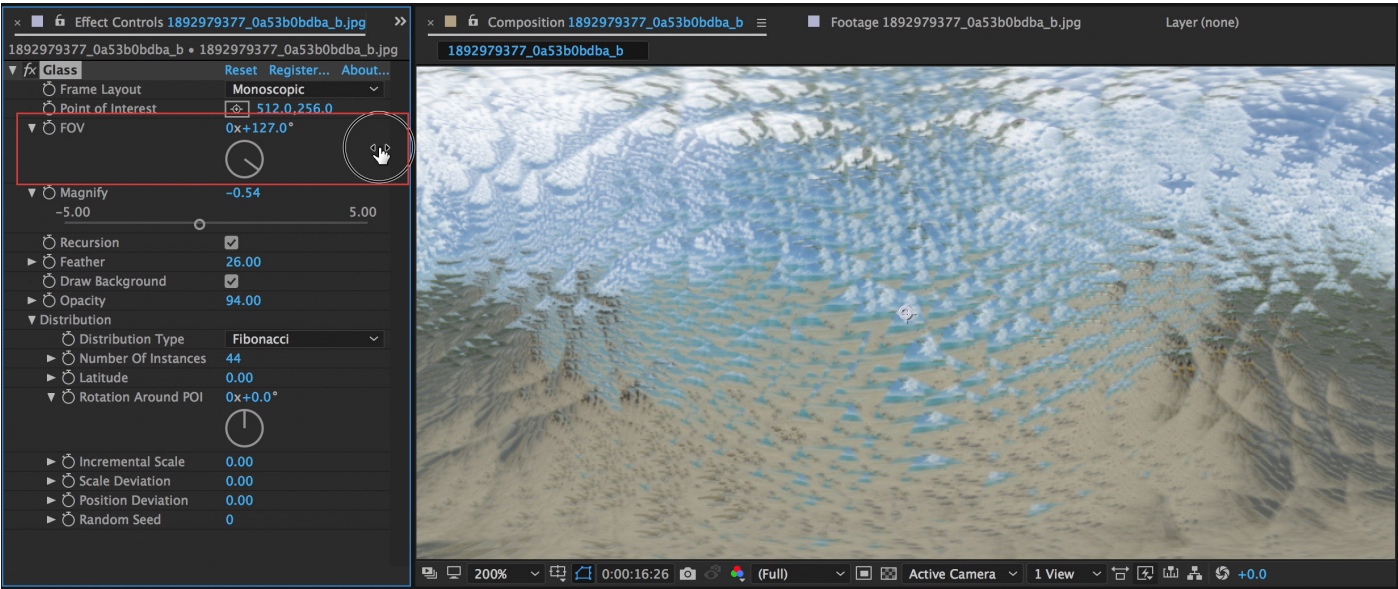
Adjust the overall opacity of the effect on your footage. At 100% the effect is completely opaque. At 0% the effect is completely transparent.

**Distribution: – See Distribution Controls section in the Manual.**

Default Setting

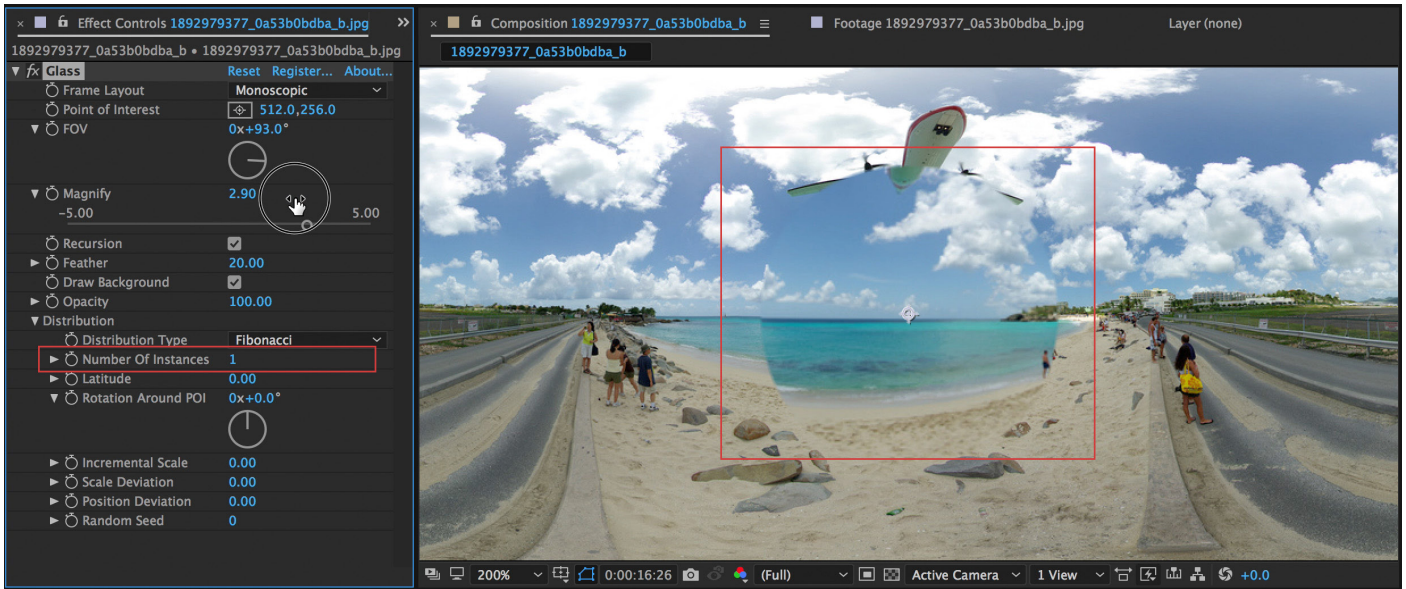


FOV with Rotation



## 7. Magnifying Glass cont'

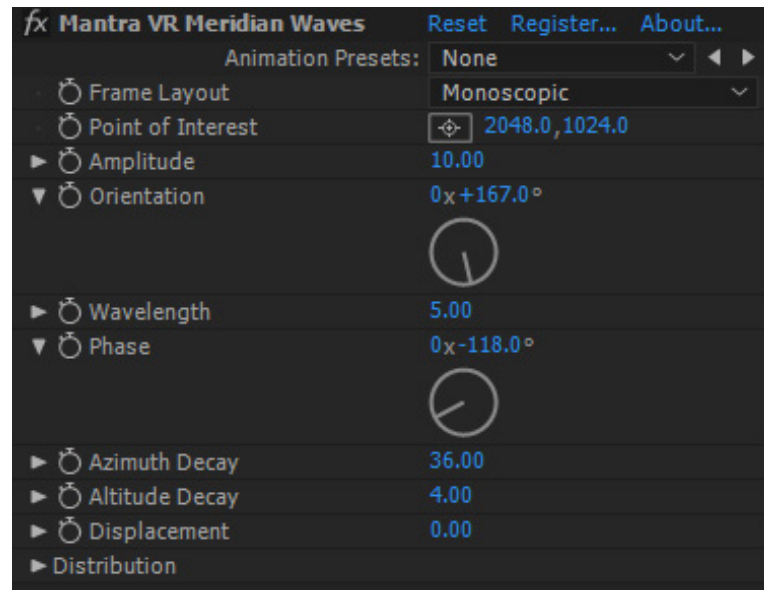
Number of Instances: 1. Creates a Magnifying Glass Effect.





## 8. Meridian Waves

*Simulates sinusoidal waves across the lines of longitude (meridians) on the sphere. Allows to control wave length, amplitude, frequency, decay, etc.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Point of Interest:

Control the center-point position of the effect.

### Amplitude:

Control the amplitude (height) of the waves.

### Orientation:

Allow you to animate the wave movement.

### Wavelength:

Control the length of the waves.

### Phase:

Allow you to animate secondary wave movement.

### Azimuth Decay:

Controls the decay rate of the effect applied. (Ex. A lower decay value will make the effect visible only on a portion of the 360 footage, relative to the Point of Interest.)

### Altitude Decay:

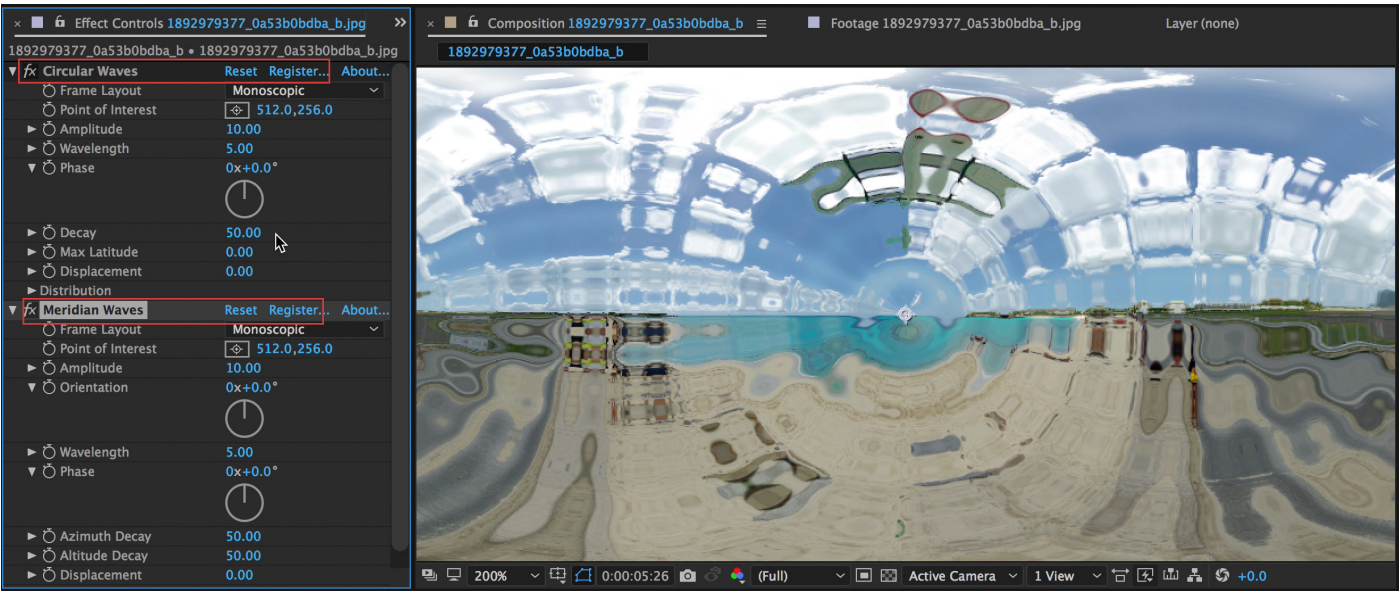
In conjunction with the Decay setting, the Max Latitude adjusts where the effect is visible (most intense) relative to the Point of Interest.

### Displacement:

Adds another level of displacement to the effect. (Add more visible displacement.)

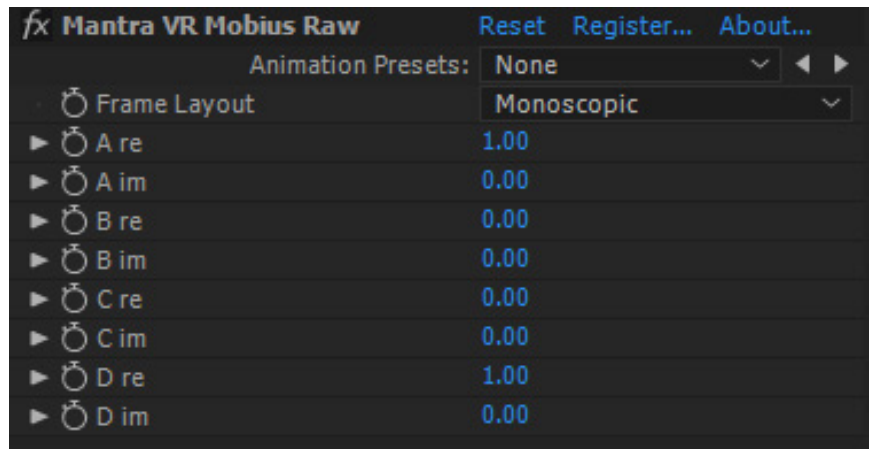
**Distribution: – See Distribution Controls section in the Manual.**

Similar settings as Circular Waves. Both effects work well combined together.



## 9. Mobius Raw

*Allows all you to create your own effects using Math. Based on values of a complex matrix, with 4 values, each being a complex number. You can apply specific complex values - if you know your math! Otherwise, just play around with the controls to spontaneously create effects.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

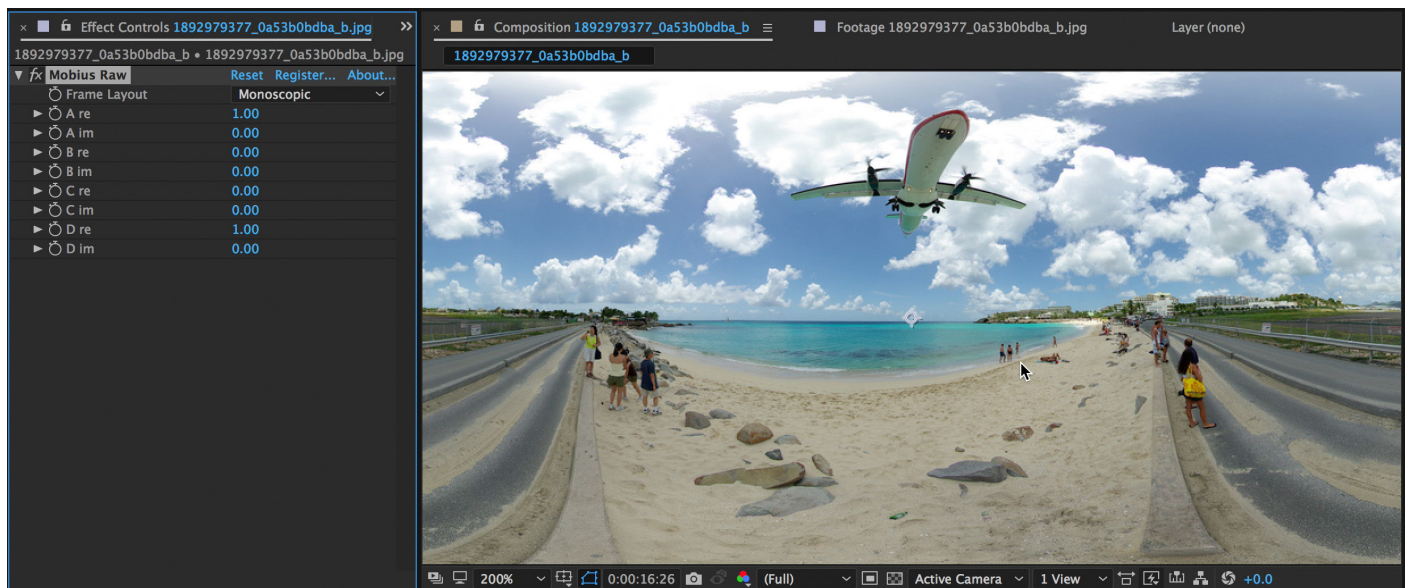
### A re, B re, C re, D re:

These are the four real value inputs in the complex number.

### A im, B im, C im, D im:

These are the four imaginary value inputs in the complex number.

### Mobius Raw- Default Setting

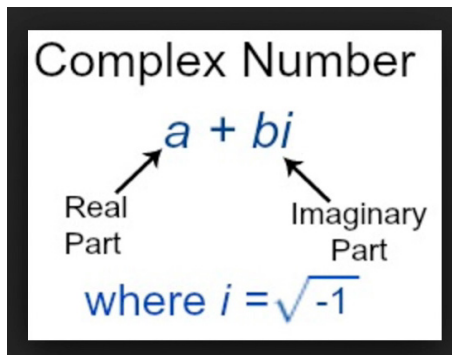




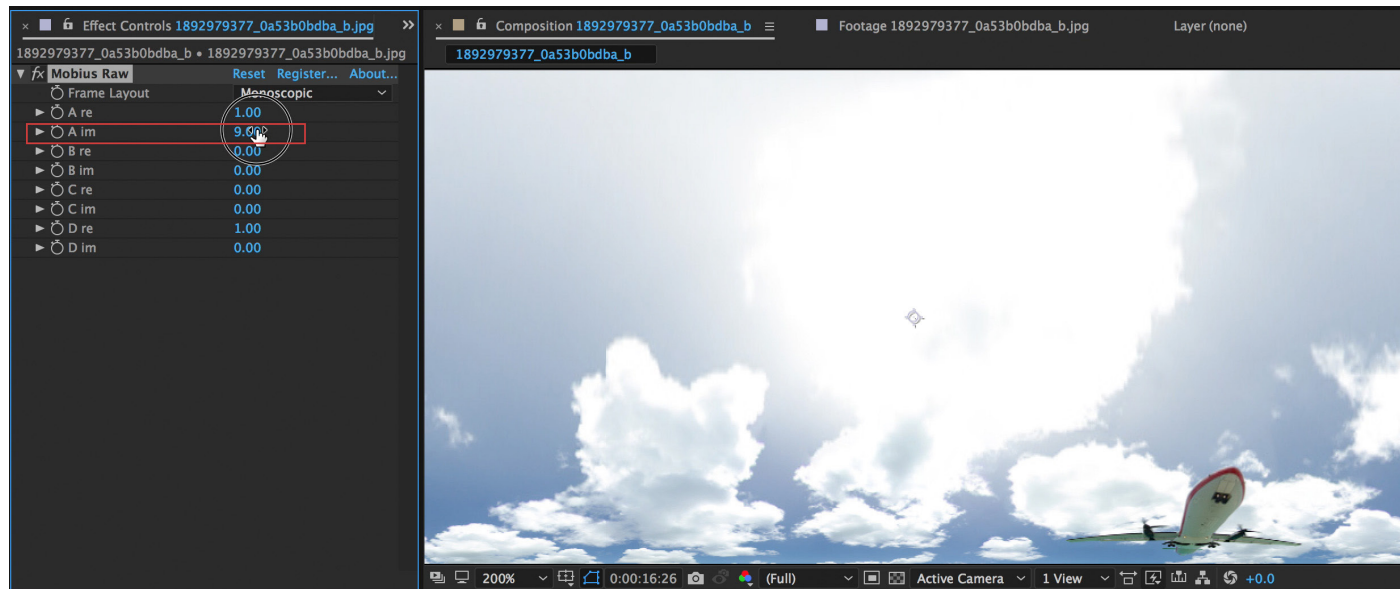
### Four-value Matrix:

1	-3	← row 1
5	7	← row 2
↑ column 1	↑ column 2	

### Made up of a Real Part and an Imaginary Part:



### Manually set values.

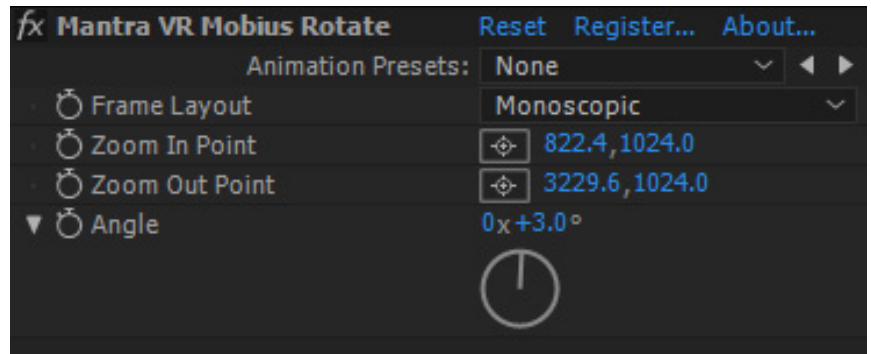


### Manually set values.



## 10. Mobius Rotate - Little Planet/Wormhole Effect

*Allows to rotate original sphere around two arbitrary points selected on the sphere.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Zoom In Point:

Control the center-point position of the Zoom In Point of the Mobius Rotate. (Ex. The 360 footage will rotate around the Zoom In Point and the Zoom Out Point in relation to the Angle control.)

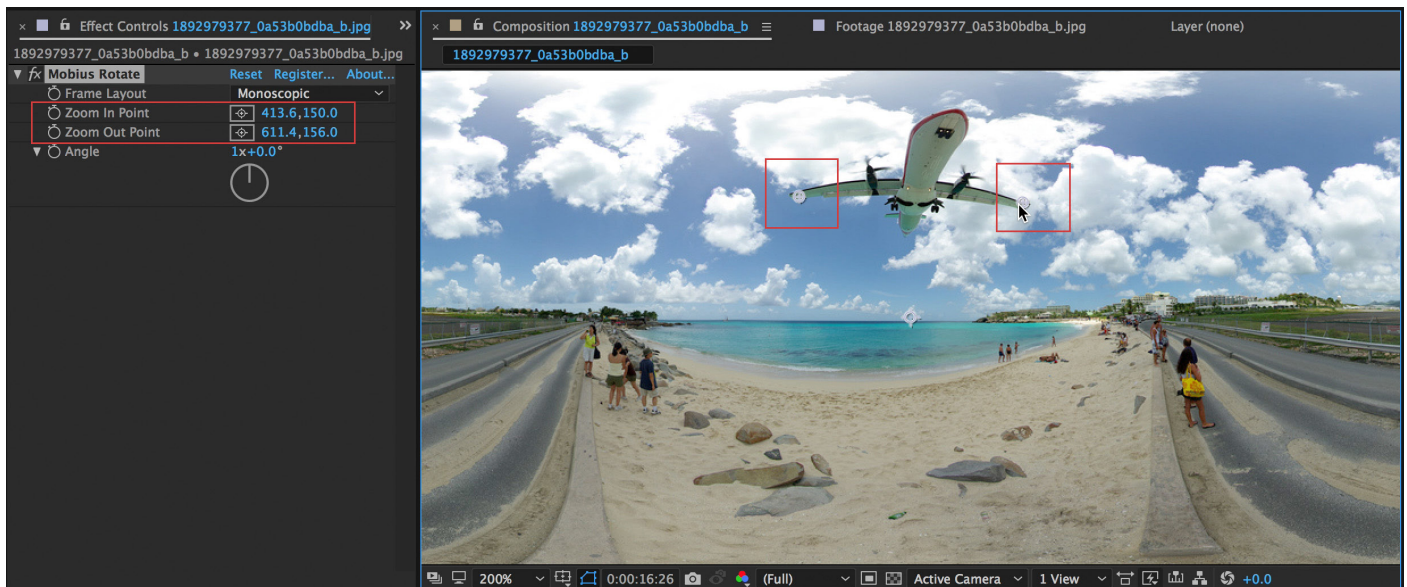
### Zoom Out Point:

Control the center-point position of the Zoom Out Point of the Mobius Rotate.

### Angle:

Allow you to rotate your 360 footage around the Zoom In Point and the Zoom Out Point. (The default angle is +90, which results in the "tiny planet" 360 effect. If you set the angle to 0, your 360 footage will return to its original state.)

### Select two points (wingtips of airplane)

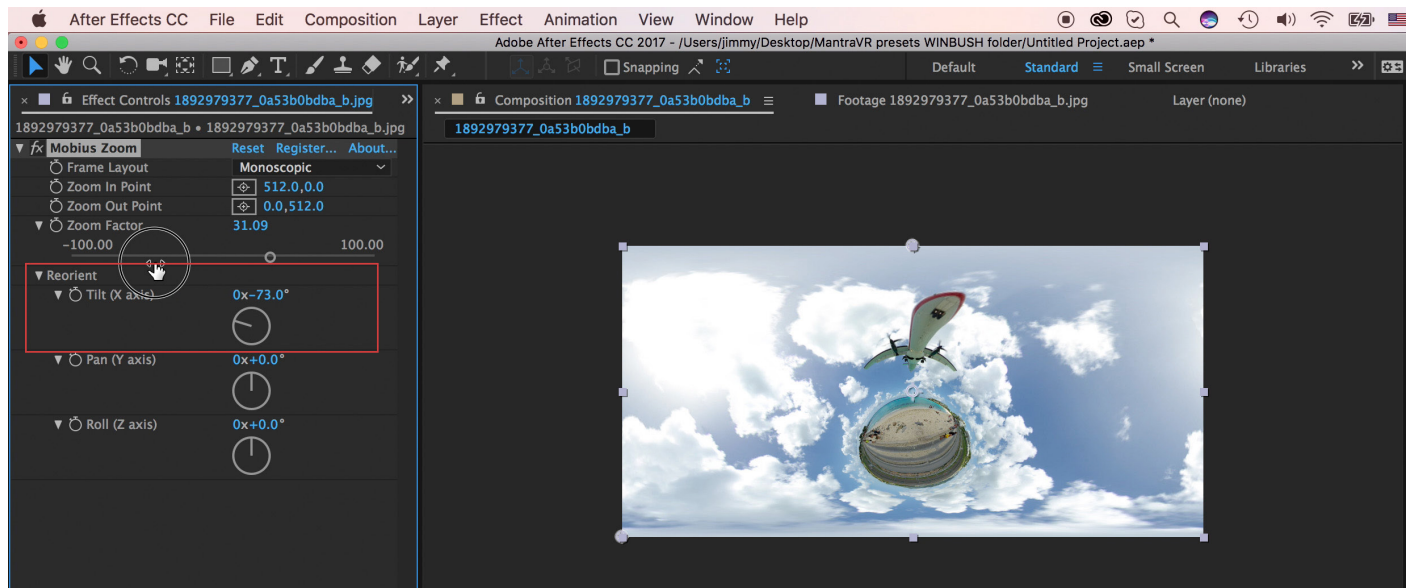




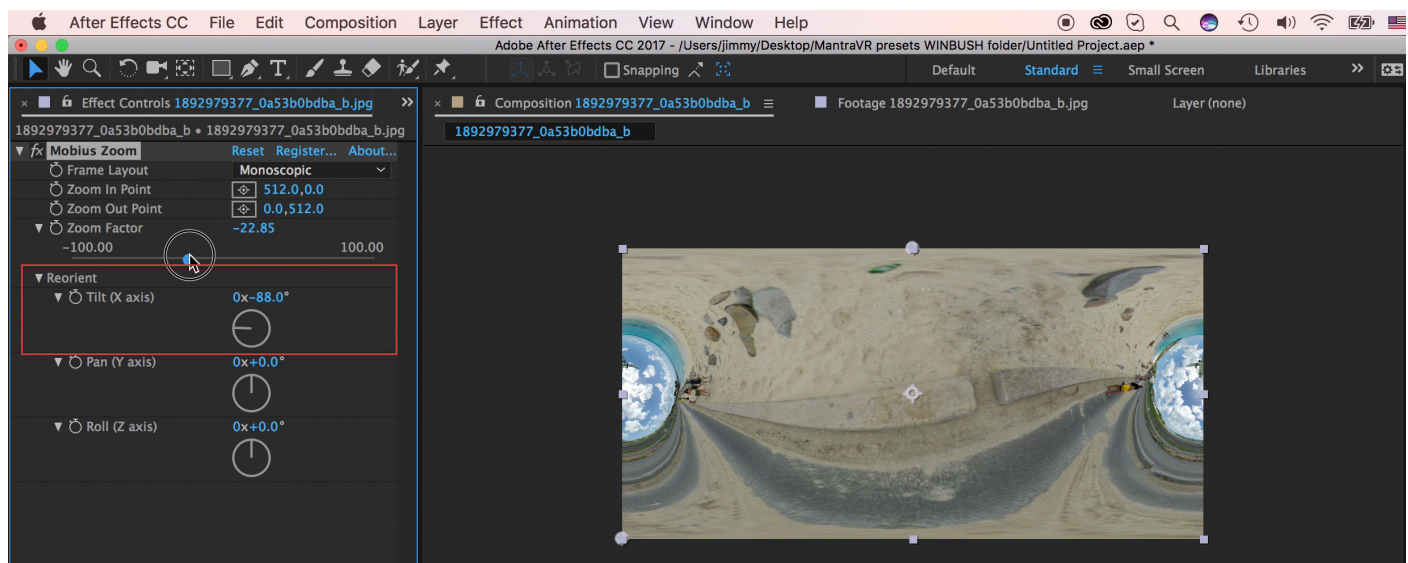
**Change values of zoom in Point, and Zoom Out Point. Rotate sphere around those 2 points to create little planet in equirectangular format.**



**Create a Little Planet effect with Reorient Sphere + Zoom in and Zoom Out Factor.**



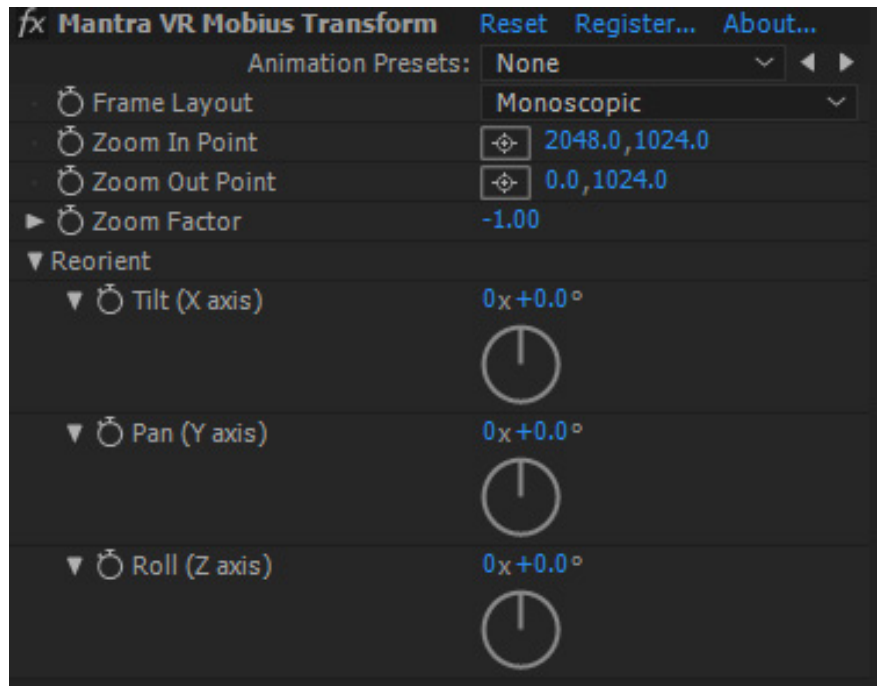
**Create a Wormhole effect with Reorient Sphere + Zoom in and Zoom Out Factor.**





## 11. Mobius Transform - Virtual Dolly In

*Allows to zoom original sphere to arbitrary point selected on the sphere. Zoom out point can be also selected arbitrarily.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Zoom In Point:

Control the center-point position of the Zoom In Point of the Mobius Transform. (Ex. The 360 footage will dolly in or out of the Zoom In Point and the Zoom Out Point in relation to the Zoom Factor control.)

### Zoom Out Point:

Control the center-point position of the Zoom Out Point of the Mobius Transform.

### Zoom Factor:

Control the zoom in relation to the Zoom In Point and Zoom Out Point. (Use this effect to create a “virtual dolly” movement.)

### Reorient-

#### Tilt (X axis):

Rotate the 360 footage on the X axis.

#### Pan (Y axis):

Rotate the 360 footage on the Y axis.

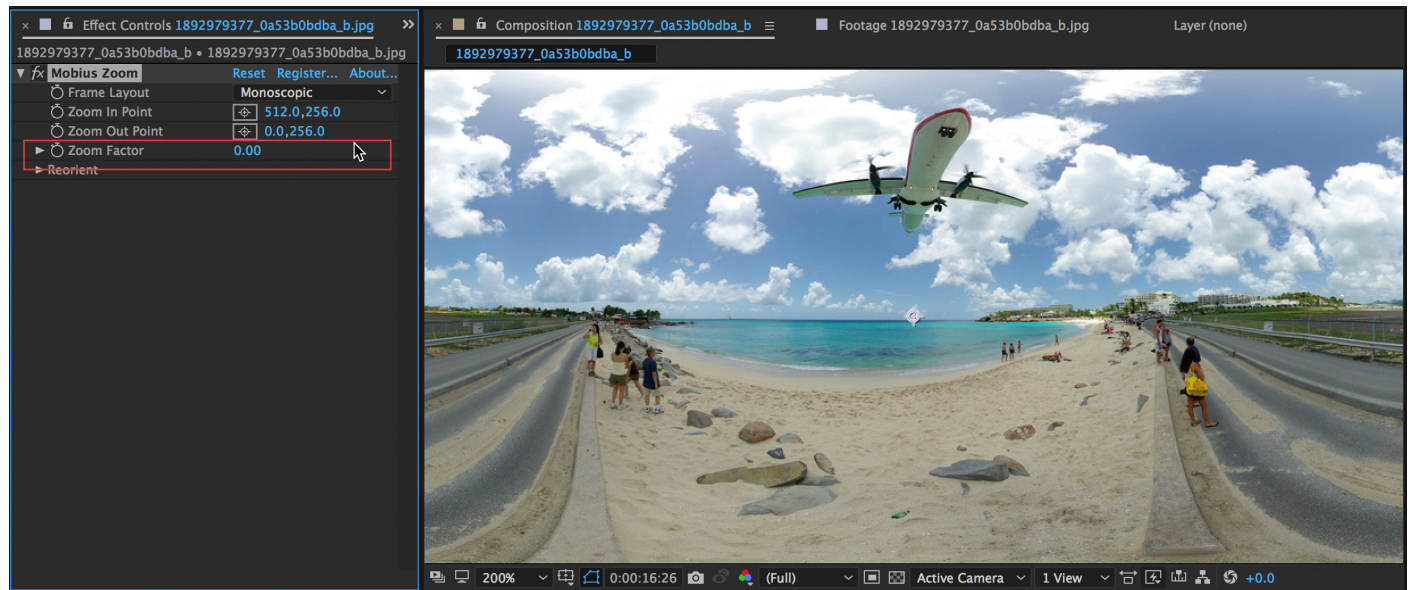
#### Roll (Z axis):

Rotate the 360 footage on the Z axis.

## Create a Virtual Dolly: Camera Movement in Post. Zoom factor -.412

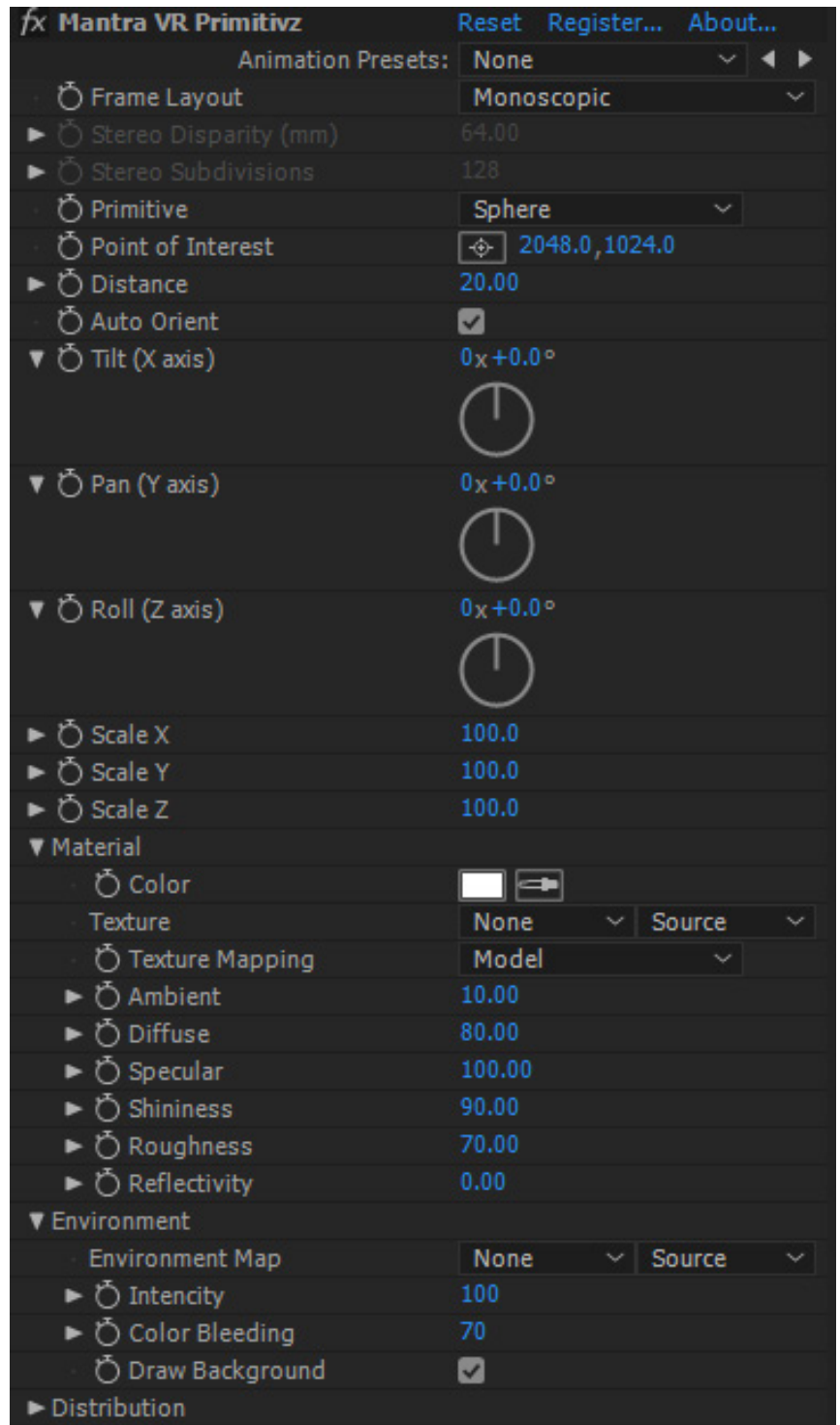


## Zoom factor 0.00



## 12. Primitivz

*Allows for primitives to be added too the scene. Uses image based lighting - reacts to the environment.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Stereo Disparity (mm):

On stereoscopic footage, adjust the disparity between the Over/Under footage. (Ex. A higher value gives the illusion that the primitives are closer to the viewer.)



**Stereo Subdivisions:**

Adjust the amount of subdivisions on the primitives on stereoscopic footage. A high value insures more accuracy with Stereo Disparity. Higher values can produce visible alignment artifacts on large layers.

**Primitive:**

Select between seven different primitive objects to use. The primitives are: Sphere, cube, tetrahedron, octahedron, icosahedron, rod, and plane.

**Point of Interest:**

Control the center-point position of the effect.

**Distance:**

Control the distance of the primitive objects from the “virtual center camera”. (Bigger value = farther away from the virtual camera.)

**Auto Orient:**

Turn this off if you do not want the primitive to auto orient towards the center when the position changes.

**Tilt (X axis):**

Control the rotation of the effect on the X-axis in 3D space.

**Pan (Y axis):**

Control the rotation of the effect on the Y-axis in 3D space.

**Roll (Z axis):**

Control the rotation of the effect on the Z-axis in 3D space.

**Scale X:**

Control the scale of the primitive on the X-axis.

**Scale Y:**

Control the scale of the primitive on the Y-axis.

**Scale Z:**

**Control the scale of the primitive on the Z-axis.**

**Material-****Color:**

Select a color with the color-picker to apply to the primitive objects.

**Texture:**

Select a texture layer in your composition to apply to the primitives.

**Texture Mapping:**

Select how you would like the texture to be applied to the primitives. There are three texture mapping methods: Model, Local Equi, and Global Equi. Model applies the texture to your primitive in relation to the primitive model's surface. Local Equi applies the texture to each individual primitive based on equirectangular projection. Global Equi applies the texture to all of the primitives based on equirectangular projection.

### Ambient:

Control the ambient lighting on the primitive objects.

### Diffuse:

Control the amount of diffusion lighting on the primitive objects.

### Specular:

Control the specular lighting on the primitive objects.

### Shininess:

Control the amount of shine (from lighting) you can see on the primitive objects.

### Roughness:

Control the amount of “roughness” on the primitive objects. This gives the objects more of a matte texture.

### Reflectivity:

Control the amount of reflection on the primitive objects.

### Environment-

#### Environment Map:

Set a layer in the composition to act as the environment map (which will reflect) for the primitive objects.

#### Intensity:

Control the Luminosity of the environment map.

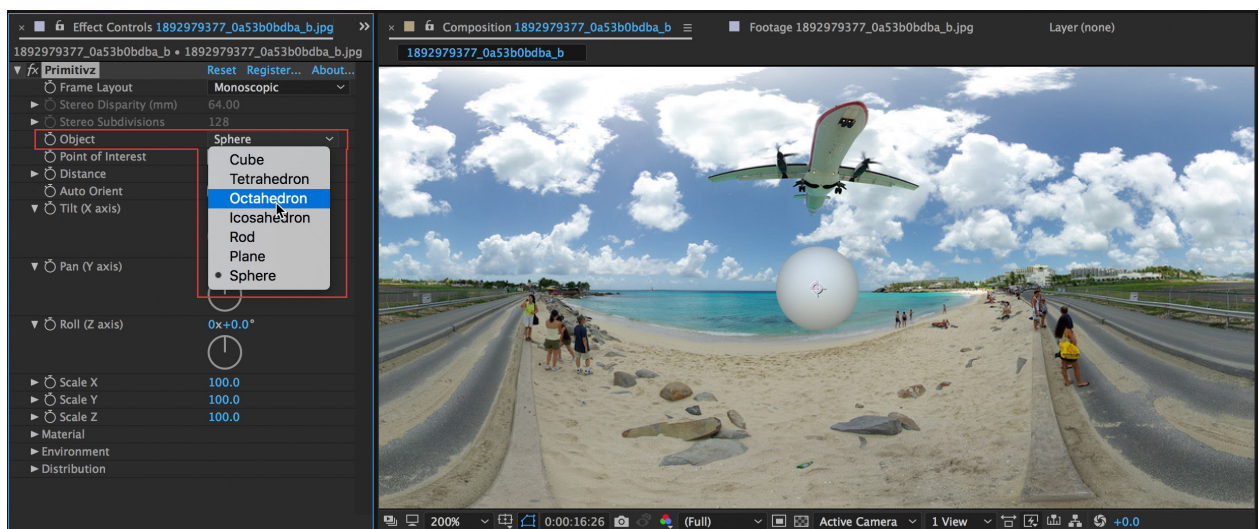
#### Color Bleeding:

Control the color bleed of the environment map on the primitive objects. Similar to saturation level.

#### Draw background:

Unclick to apply alpha channel around primitive objects and only render the objects on the layer with the effect.

**Distribution: – See Distribution Controls section in the Manual.**

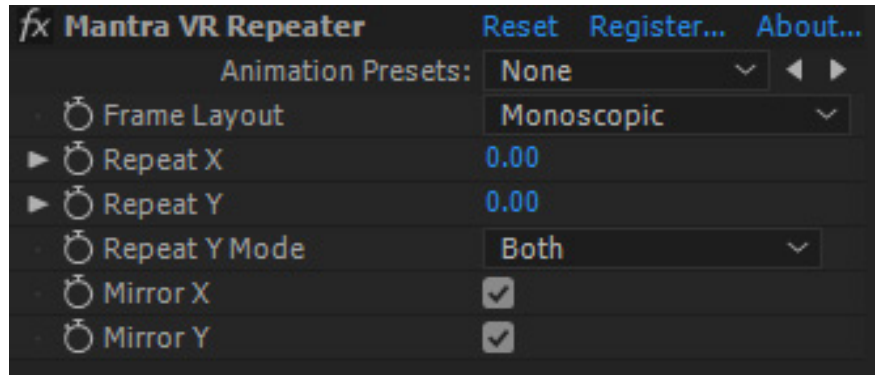






## 13. Repeater

*Replicates original frame horizontally, vertically or in both directions at the same time.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Repeat X:

Seamlessly repeat the 360 footage on the X-axis.

### Repeat Y:

Seamlessly repeat the 360 footage on the Y-axis.

### Repeat Y Mode:

Select to repeat the Y-axis from the Top, Bottom, or Both. Both is the default.

### Mirror X:

Select to have the 360 footage mirror on the X-axis when it is repeated.

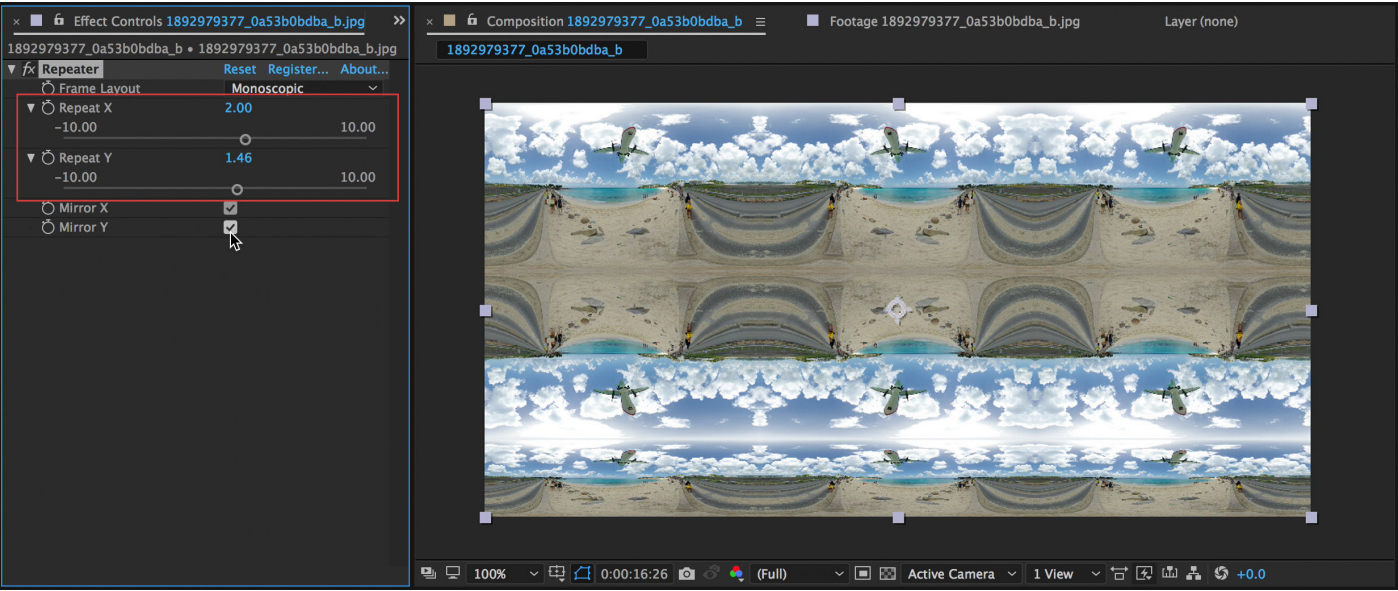
### Mirror Y:

Select to have the 360 footage mirror on the Y-axis when it is repeated.

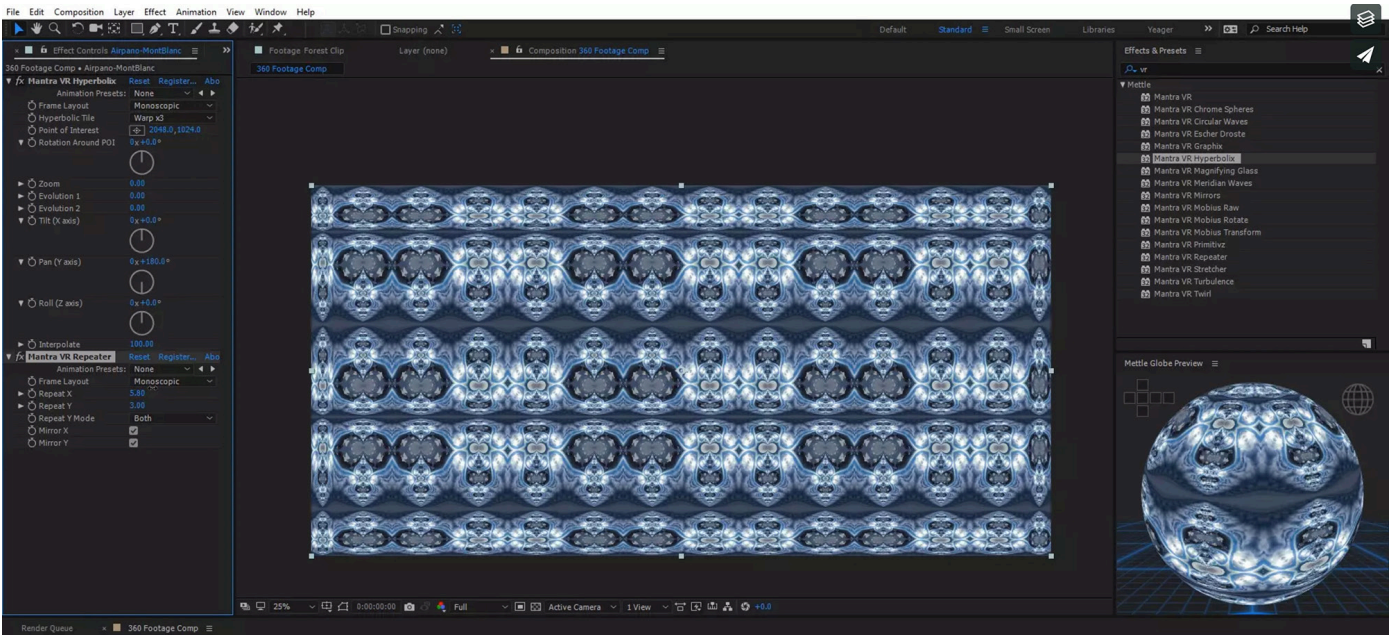
### Repeat X: 2.00



Repeat X: 2.00, Y: 1.46

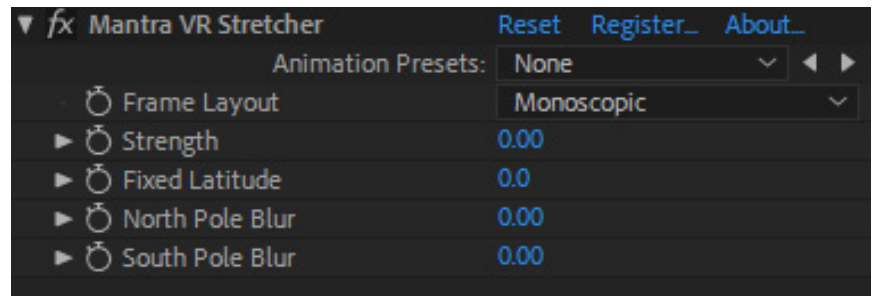


Repeat X: 5.80, Y: 3.00



## 14. Stretcher

*Allows to stretch or shrink the sphere around arbitrary latitude.*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Strength:

The amount of strength (stretch) placed on the 360 footage. (The footage will stretch to or from the Fixed Latitude.)

### Fixed Latitude:

The latitude on the 360 footage where the strength (stretch effect) will be applied.

*New for V1.20  
North Pole and South Pole Blur.*

### North Pole Blur:

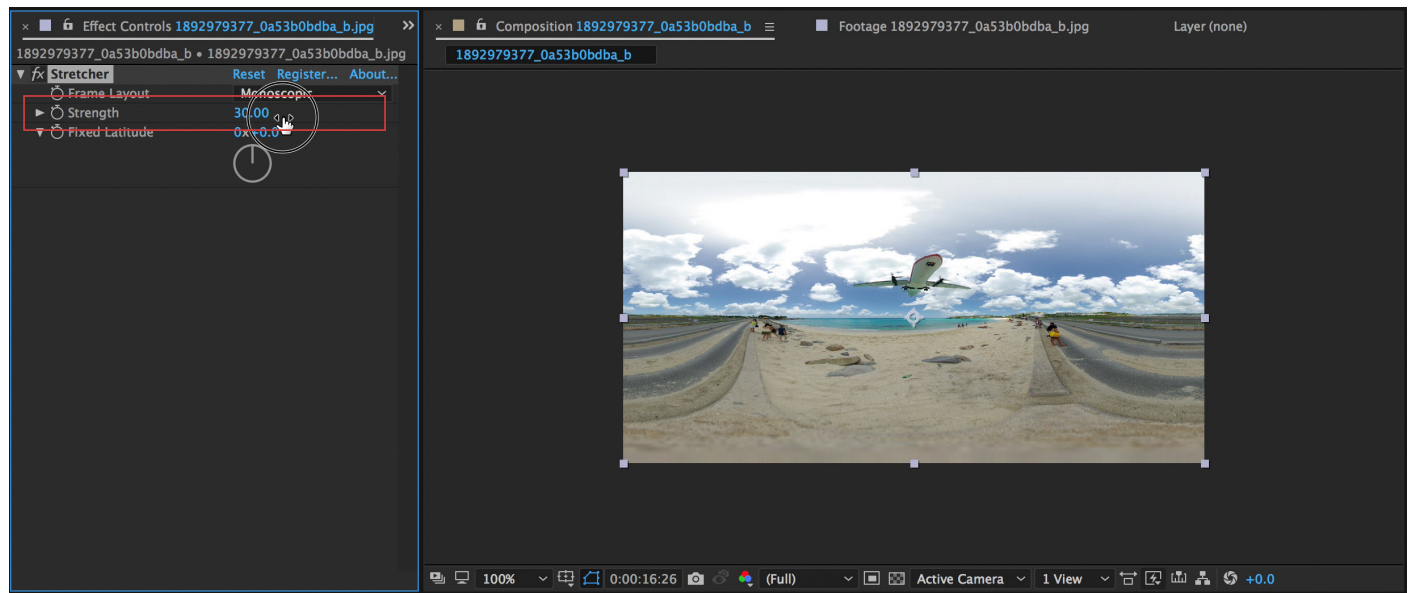
Apply a subtle blur at the North (Top) pole of your 360 footage. (This can help hide pixels that get overstretched.)

### South Pole Blur:

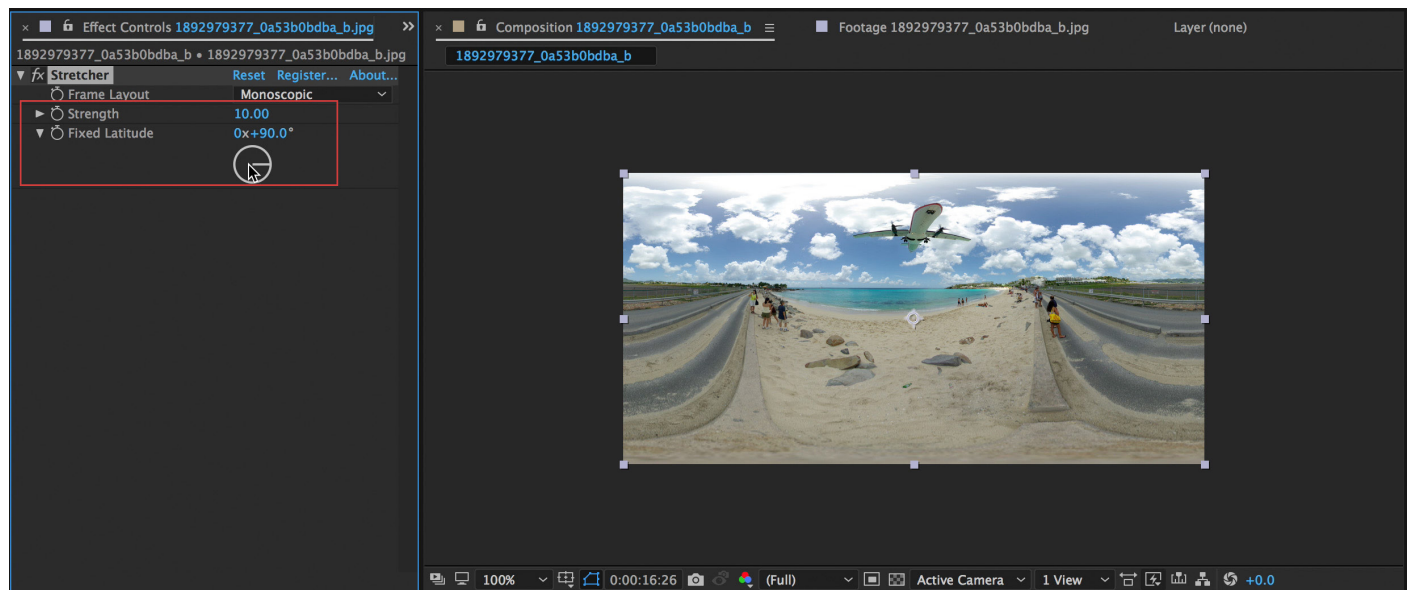
Apply a subtle blur at the South (Bottom) pole of your 360 footage. (This can help hide pixels that get overstretched.)



## Strength > 30.00

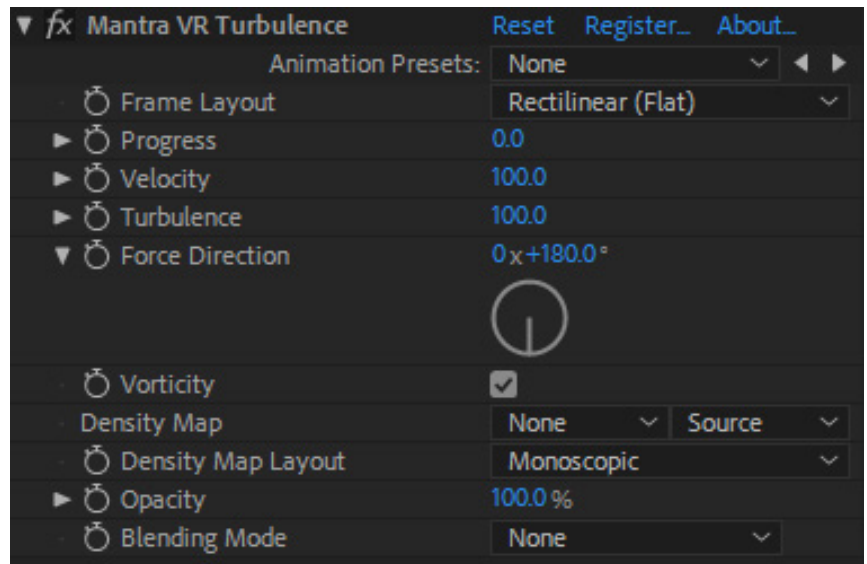


## Strength > 30.00, Fixed Latitude > 90°



## 15. Turbulence

*Allows original frame to transform into a painterly Van Gogh “Starry Night” look, based on physical turbulent flow simulation. Requires a static image, not video. You animate the progress of the effect. Works on 2D and spherical image .*



*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Progress:

Use to animate the progress of the turbulence simulation from 0 to 100.

### Velocity:

Use to adjust the velocity of the liquid simulation. A lower velocity results in a slower turbulence animation.

### Turbulence:

How complex the turbulence looks visually on the footage. A higher value results in more detailed turbulence.

### Force Direction:

Adjust the direction of the progress (flow). Think of this like the gravity for the liquid simulation. Default is 180, which causes the progress to animate to the bottom pole of the 360 footage.

### Vorticity:

Turn the vorticity on or off. It is on by default. When it is turned off, the turbulence will result in a “smoother” appearance.

### Density Map:

Select a layer in your composition to use as a Density map. (This will be an image made up of black, white, or grey. The Turbulence animation will start from the white or lighter colored areas of the density image.)

*New for V1.20*  
*Rectilinear density map*  
*Opacity and Blending options..*

### Density Map Layout:

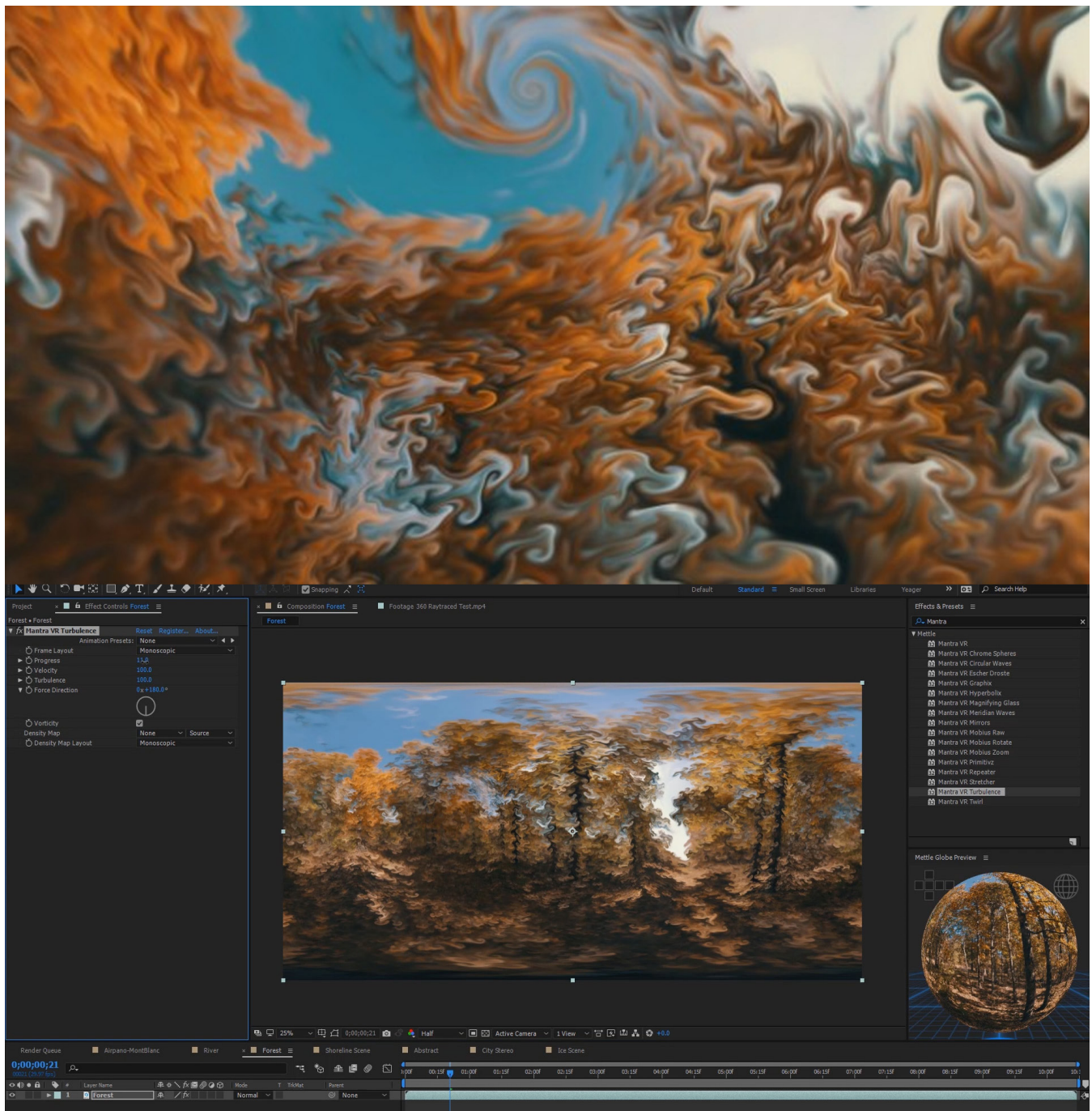
Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat) for the density map.

### Opacity:

Use this setting to adjust the overall opacity of the Turbulence effect on your footage. At 100% the effect is completely opaque. At 0% the effect is completely transparent. The default is 100%.

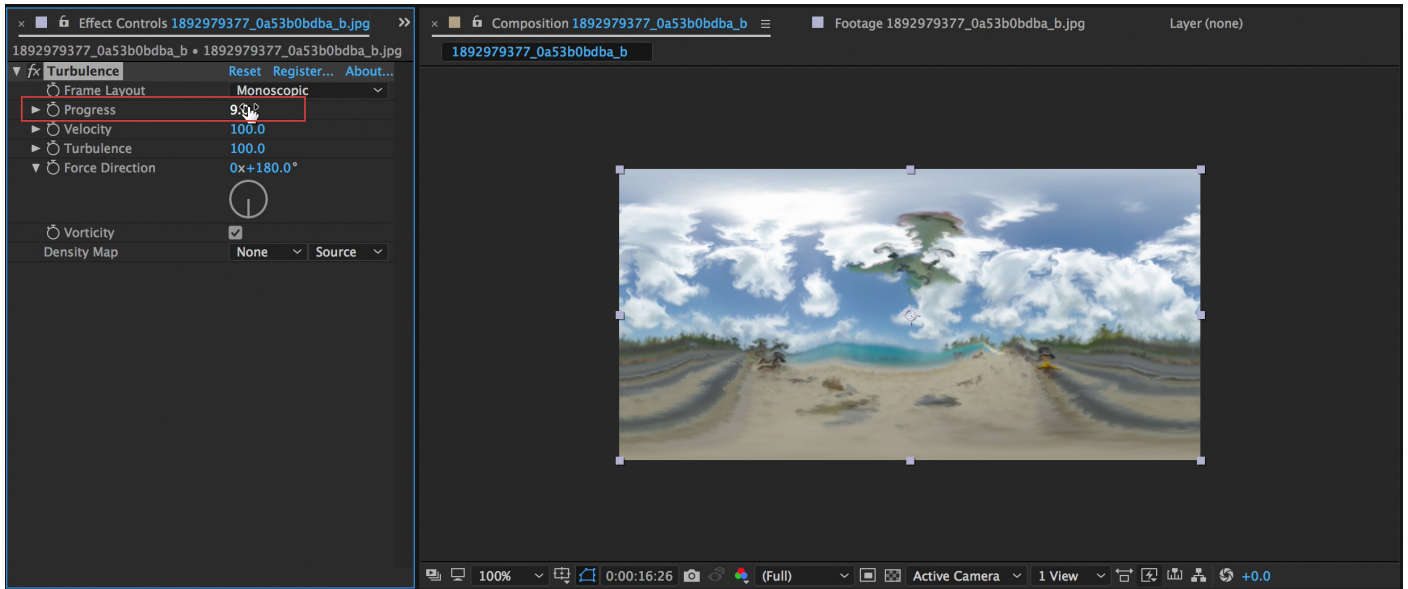
### Blending Mode:

Select from various color blending modes for the effect on top of your original footage. The default is Normal. (Screen, Add and Overlay blending modes are popular choices for this effect.)

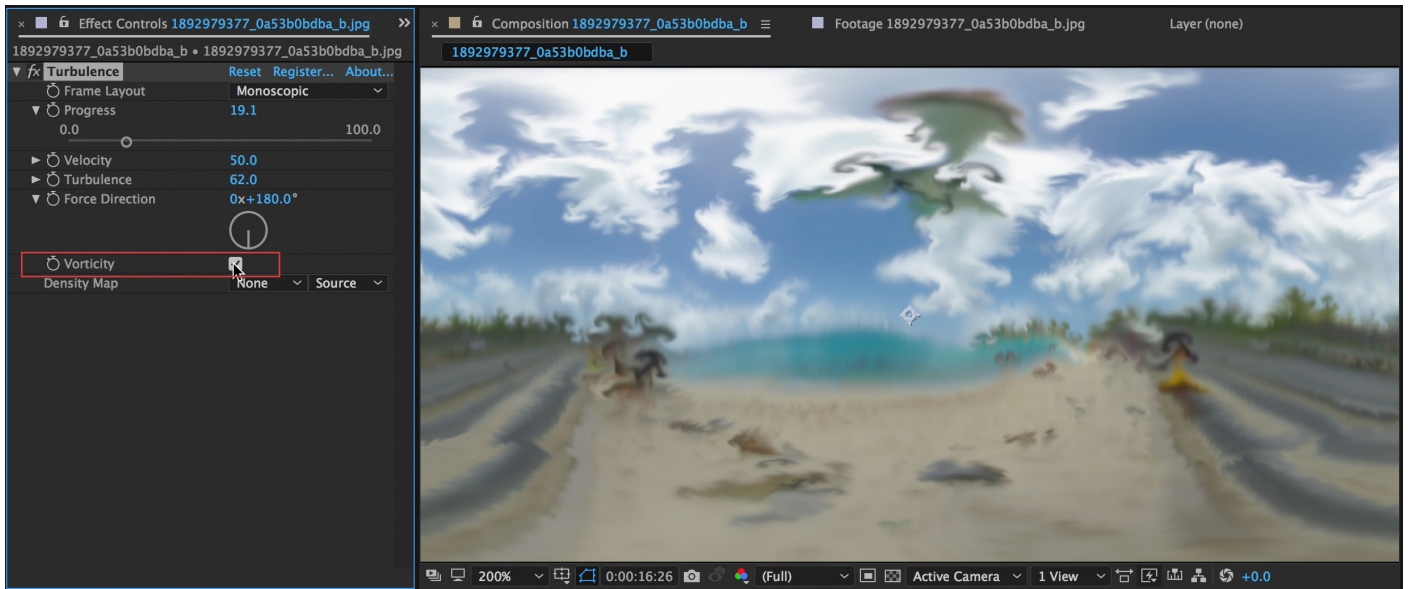




## Progress > 9.00



## Vorticity strengthens the effect of the turbulence.



## 16. Twirl

*Allows original frame to transform into a spiral, or twirl.*

*New for V1.20  
Rectilinear support.*

### Frame Layout:

Select between Monoscopic, Stereoscopic (Over/Under footage), or Rectilinear (Flat). (Use Rectilinear when you are applying the effect to non-360 footage, such as traditional flat footage.)

### Point of Interest:

Control the center-point position of the effect.

### Strength:

The amount of strength (twirl) placed on the 360 footage. (The footage will twirl to or from the Fixed Latitude.)

### Fixed Latitude:

The latitude on the 360 footage where the strength (twirl effect) will be applied.

### Strength: 3.70

