StarCluster Pack for UE4

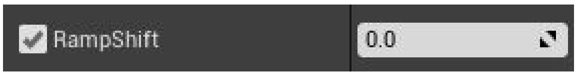
This model pack contains different star cluster models. This little guide will help you to understand how to use it. In this pack you can find 8 different types of star clusters:

- Crab
- Field
- Geometry
- Groups
- Partitions
- Regular
- Spherical
- Wires
- Twist **(new!)**

Each of these types has its own variations.
All these models should be used with StarCluster shader which ships with this pack.

StarCluster shader parameters

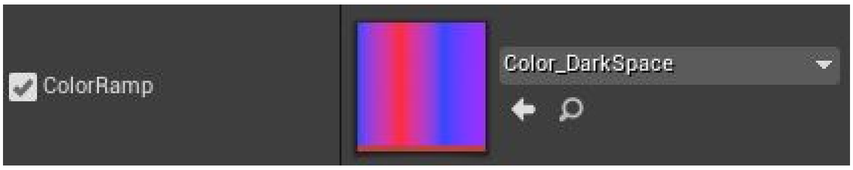
RampShift



☑ RampShift 0.0

This parameter allows you to shift “ColorRamp” and “SizeRamp” textures in UV U direction. This allows you to make more variations with these assets.

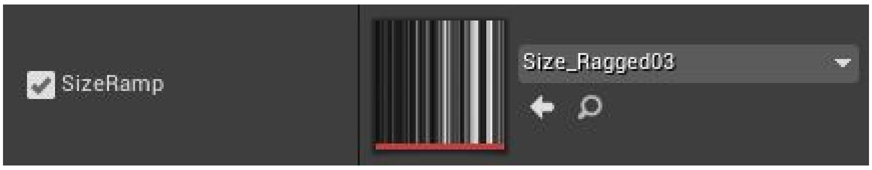
ColorRamp texture



☑ ColorRamp Color_DarkSpace

This texture controls the color distribution across the sprites.
You can use any texture from “StarClusterPack/Textures/Color”.
You can create your own textures if you want.

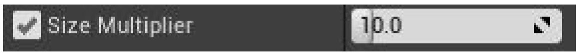
SizeRamp texture



☑ SizeRamp Size_Ragged03

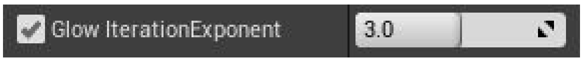
This texture controls the sprites scale distribution across the model.
You can use any texture from “StarClusterPack/Textures/Size”
You can create your own textures if you want.

Size_Multiplier

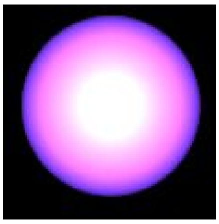
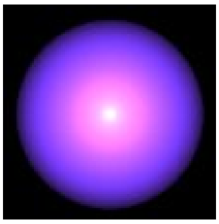
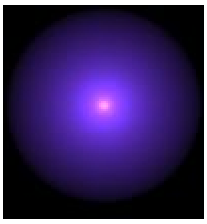
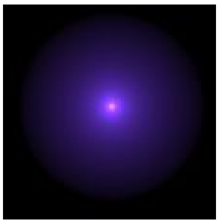
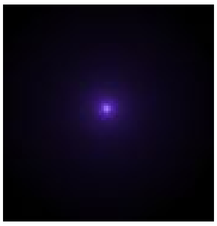

☑ Size Multiplier 10.0

Size of all sprites will be multiplied by this value.

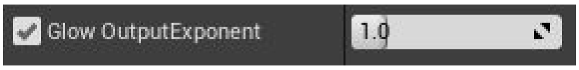
Glow_IterationExponent


☑ Glow IterationExponent 3.0

This parameter helps to calculate glow at each iteration.

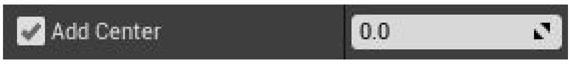
1	1.25	1.7	2	3
				

Glow_OutputExponent

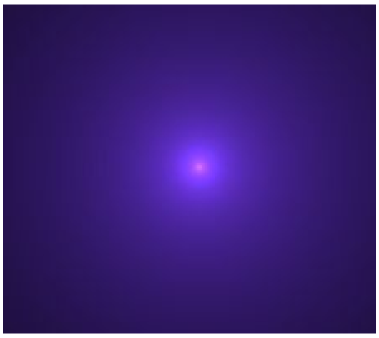
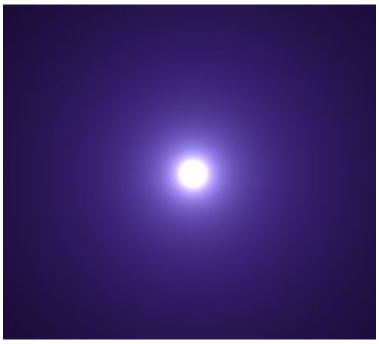
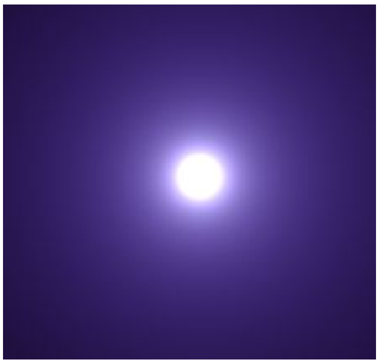

☑ Glow OutputExponent 1.0

This parameter helps to calculate glow after all iterations.

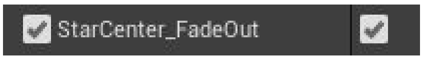
Add Center


☑ Add Center 0.0

If your glow dont have bright center part you can add it using parameters from “3_Center” parameter group. This parameter controls the overlay strength of this center section.

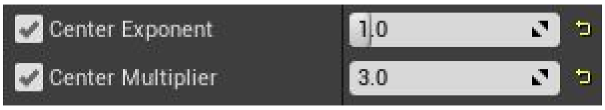
0	0.5	1
		

StarCenter_FadeOut


☑ StarCenter_FadeOut ☑

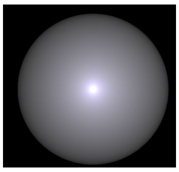
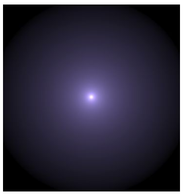
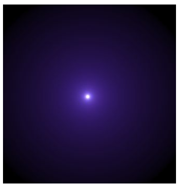
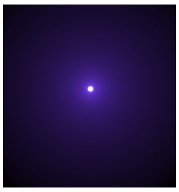
This parameter enables distance based attenuation for this bright center part.

Center Exponent and **Center Multiplier**

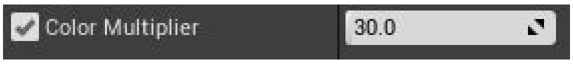

☑ Center Exponent 1.0

☑ Center Multiplier 3.0

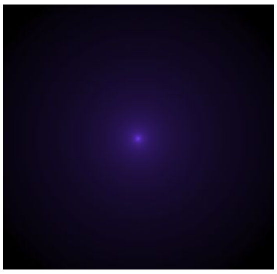
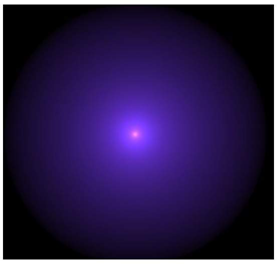
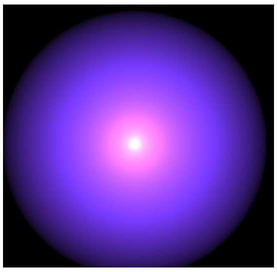
These two parameters controls the exponent and brightness of this center section.

Exponent	.5	1	3	10
Multiplier	5	3	6	500
Result				

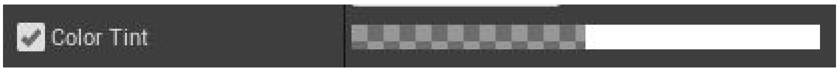
Color Multiplier


☑ Color Multiplier 30.0

Color of glow will be multiplied by this value. Brightness of center section will be controlled separately from “Center Multiplier” parameter

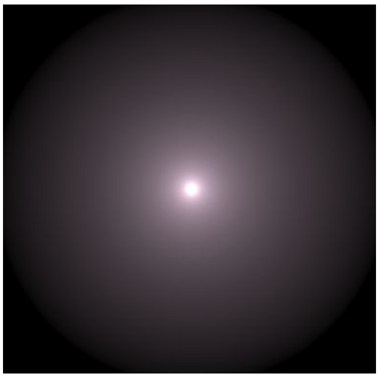
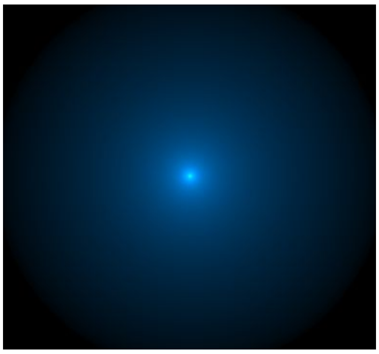
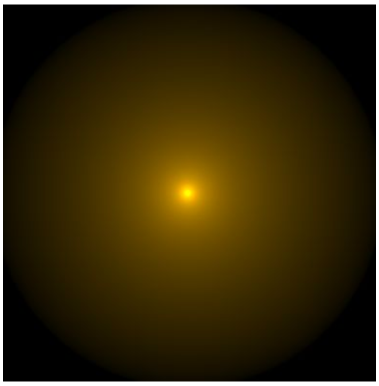
10	100	1000
		

Color Tint

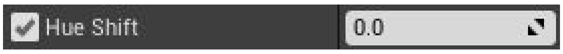


☑ Color Tint

Color of glow will be multiplied by this color.

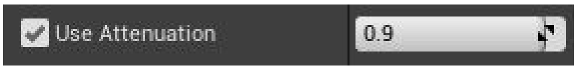
Hue Shift



☑ Hue Shift 0.0

Allows you to change the hue of the glow.

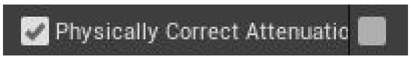
Use Attenuation



☑ Use Attenuation 0.9

This parameter allows you to multiply star color by it`s attenuation factor.

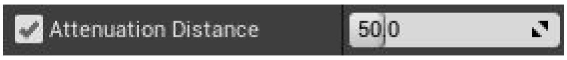
Physically Correct Attenuation



☑ Physically Correct Attenuatio □

If enabled - attenuation will be calculated by the formula (1 / distance to the star)
if disabled - attenuation will be calculated based on distance threshold defined by "Attenuation Distance" parameter.

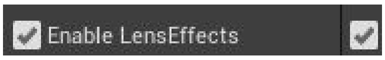
Attenuation Distance



☑ Attenuation Distance 50.0

The color of all stars that are farther than this distance will be multiplied by (1-Use Attenuation).

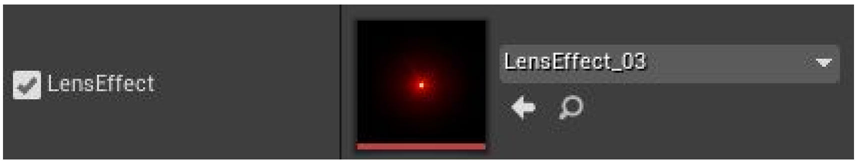
Enable LensEffects



☑ Enable LensEffects ☑

Enables Lens Effects appearance when approaching the star.

LensEffect

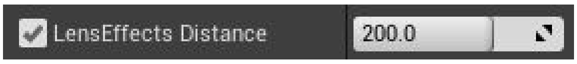


☑ LensEffect

LensEffect_03

This texture controls the shape of the lens effect.
You can use any texture from “StarClusterPack/Textures/LensEffects”.
You can create your own textures if you want.

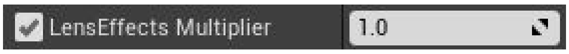
LensEffects Distance



☑ LensEffects Distance 200.0

Lens effect appears on the star if camera approaches closer than this distance.

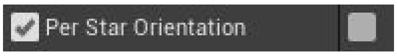
LensEffects Multiplier



☑ LensEffects Multiplier 1.0

Lens effect will be multiplied by this value.

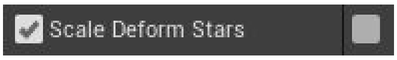
Per Star Orientation



☑ Per Star Orientation □

If enabled - each sprite will calculate it`s own direction vector to the camera.
if disabled - all sprites will use camera direction vector.

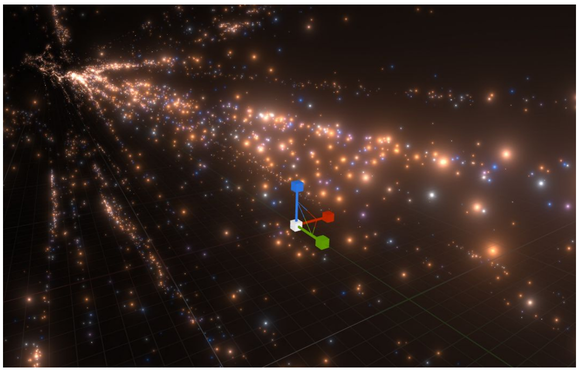
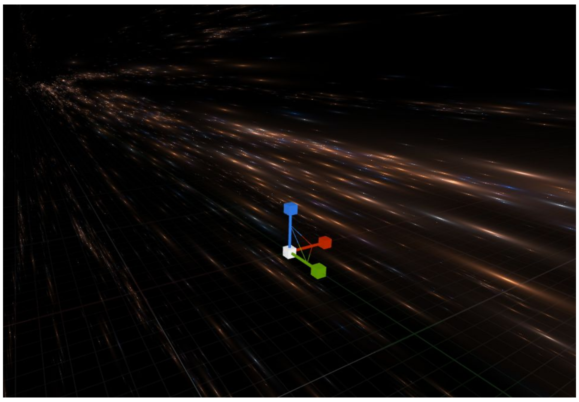
Scale Deform Stars



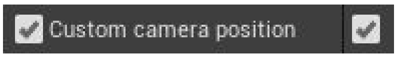
☑ Scale Deform Stars □

This parameter determines how to transform sprites if you scale starcluster object.

in this example starcluster scaled 25 times by Y axis.

disabled	enabled
	

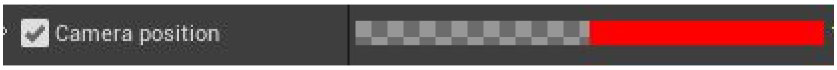
Custom camera position



☑ Custom camera position ☑

By default all sprites looks at players camera. But if you want them to look on some specific point you need to activate this mode.

Camera position



☑ Camera position 🟥

All sprites will look at this point in space if "*Custom camera position*" parameter is set to enabled.

Using StarCluster Pack with VR

For proper 3d effect you should enable "*Custom camera position" and* "*Per Star Orientation"* parameters and in *Camera position* parameter you need to input the positions of left and right cameras (for left and right eye respectively)