FRAGMENTUM

Version 1.2.1

Shader pack for Unity 4
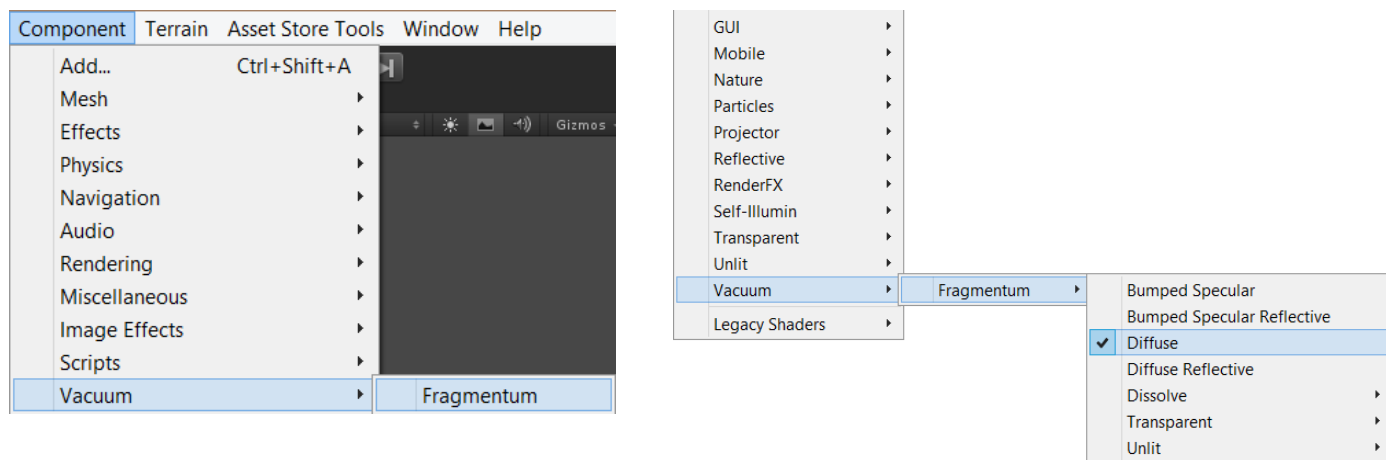
By Davit Naskidashvili

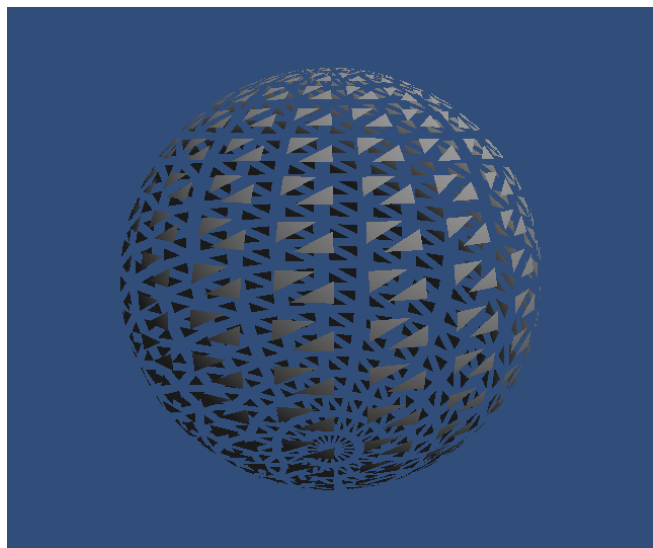2013

Quick Start

Set Unity to use **Direct3D 11** in PlayerSettings.

To view Fragmentum in action, assign Fragmentum script and Fragmentum shader to the object.
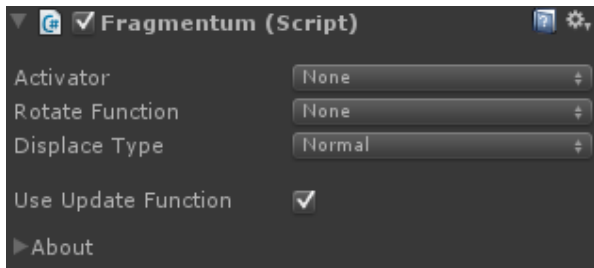

And hit play.

Note: Fragmentum script and Fragmentum shader should be used together, otherwise there will not be effect.

Fragmentum script overview

Fragmentum script is required to supply shader with necessary data and controls it complexity.

Activator

- None – Fragmentum requires no activator
- Plane – Objects fragments are "awakening" with plane object. Plane's position and normal's direction determines how fragments are effected by shader.
- Sphere – Object's fragments are "awakening" with sphere type activator. If sphere radius is more then 0, then fragments inside sphere are affected. If radius is less than zero – fragments outside of sphere are affected.

Note: Sphere activators radius should not be equal to zero.
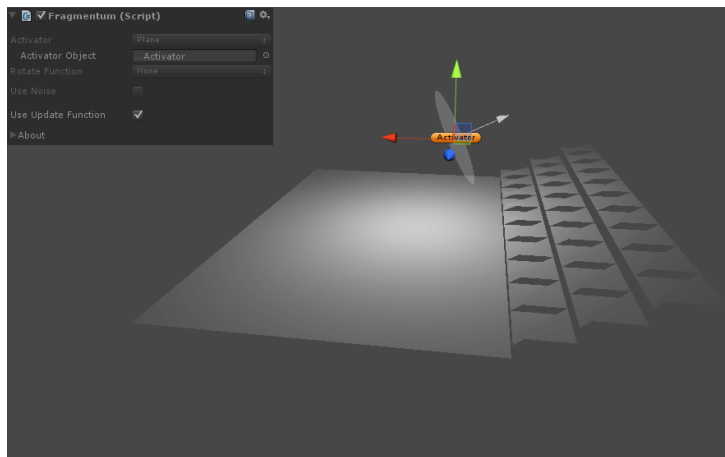

(Plane activator)
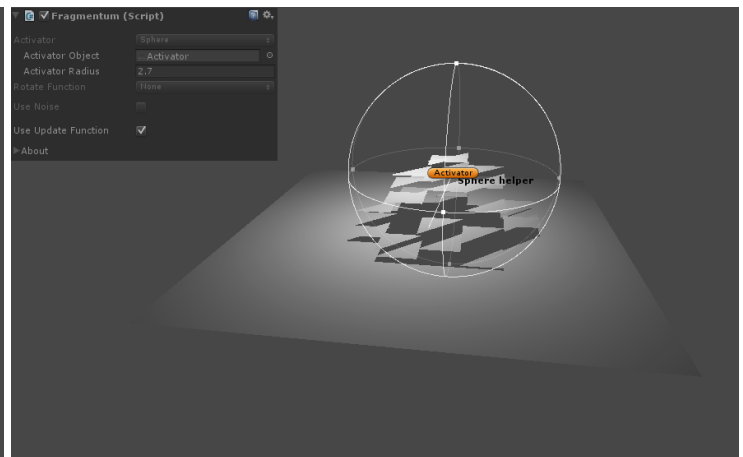
(Sphere activator)

Rotate function

- None – No rotation is applied to the fragments
- AroundFragmentCenter – Object fragments rotate around their center points
- AroundObjectCenter – Object fragments rotate around their parent objects pivot point

Note: Rotation function is not available for SkinnedMesh Renderers.

Note: For proper rotation effect object's scale should be the same for all three axis.
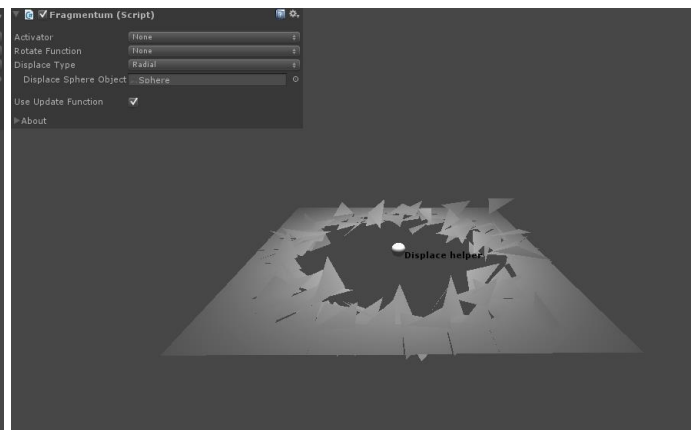
Displace Type – Type of displace direction
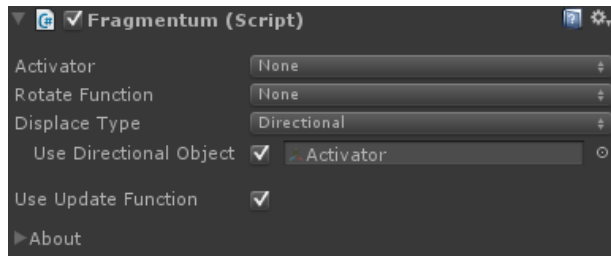
- Normal – Object is displaced along fragment's normal
- Directional – Object is displaced along vector controlled from the shader.
  Use Directional Object allows assigning and controling displace direction from
  . scene/editor instead of shader.
- Radial – Displace direction has radial direction.
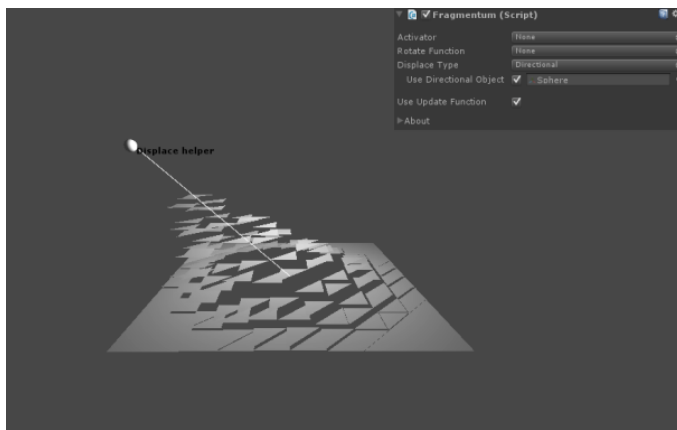
(Directional Displace)   (Radial Displace)

**Use Update Function** – Use built-in update function to update

- Plane activator position and rotation
- Sphere activator position and radius
- Directional and Radial displace helper objects position

  And send these data to the shader. If there is additional script component on the object
  which updates Fragmentum shader parameters, this parameter should be unchecked.

Note: You cannot change Fragmentum script parameters while in game mode.

Fragmentum shader overview

Fragmentum shader parameters are divided into two parts:
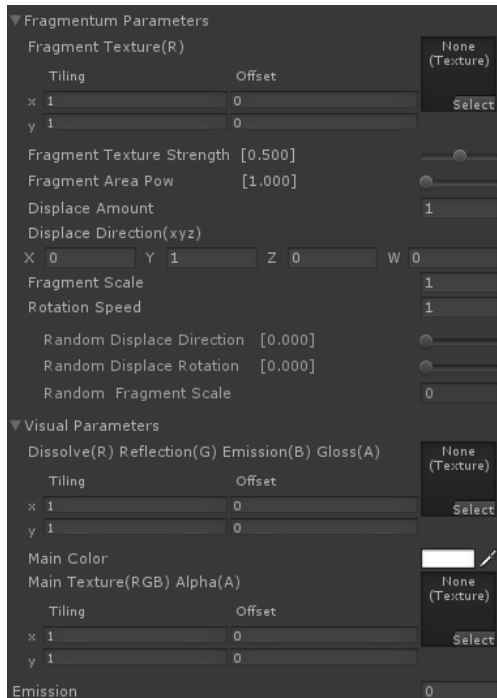
- Fragmentum parametrs – controls fragments behavior
- Visual parameters – common unity material parameters with: Color, Diffuse, Bump, Specular, etc.

Fragmentum Texture – Texture (red channel) which controls area, where fragments are active. If activators are used, only fragments within this area are affected.

Fragment Texture Strength – Controls Fragmentum texture strength [0, 1]

Fragment Texture Pow – Math power of the texture [1, 10]

Displace Amount – Fragments displace amount

Displace Direction – Available if displace type is set as directional inside Fragmentum script

Fragment Scale – Displaced fragments scale (Does not work with SkinnedMesh Renderers)

(If rotate functions are used)

Rotate speed – Fragments rotation speed.

(If activators are used)

Lock Displace – Locks displace, so activators strength (distance or radius) max value never

      surpasses – **Displace Amount**

Distance To Activator – Distance to activator from the fragment

Random Displace/Rotation/Scale – Randomizes fragments displace strength, rotation and scale.