**PxrProjector**

This node is meant to work in conjunction with PxrProjectionLayer but can be used as a general projection manifold. This manifold supports camera, spherical and cylindrical mapping. It encapsulates 2D parameterization for pattern generators and allows transformations and selection of arbitrary variables bound to primitives.

### Input Parameters

#### Projection

Select a projection:

- 0: Camera
- 1: Spherical
- 2: Cylindrical

#### Coordinate System

Name of coordinate system transform (e.g. place3dTexture node in Maya).

- **You must** set a coordinate system. This field cannot be left empty.

#### Use

Selects the positions you are going to project on.

- 0: P - NP is the current position and N the current normal
- 1: Pref - Nref Use this if your object is deforming and you want the projected texture to ‘stick’. This relies on two primvars: __Pref and __Nref that should be present on the deforming geometry. In Maya, use the RenderMan > Primvars > Freeze menu to add them to the selected geometry.
- 2: WPref - WNref This will allow your projected texture to stick if the object is deforming AND transformed. It relies on __WPref and __WNref primvars. In Maya, use the RenderMan > Primvars > Freeze menu to add them to the selected geometry.

#### Occlusion frontOnly

Restricts the projection to the points facing the projection direction.

#### Front Falloff

Introduces a smooth transition when using frontOnly. Useful to blend transitions between different projections. The default, 0.0, means no falloff.

#### Trace Occlusion

Shoots rays to avoid projecting on areas that are occluded by geometry, from the projections point of view.

#### Trace Max Distance

When traceOcclusion is on, you can limit the ray length. This number is expressed in scene units, whatever it may be in your authoring package.

#### Trace Set

The name of a trace set to restrict ray hits to a specific group of objects. The default is to consider all objects in the scene.

#### Camera

**Horizontal Resolution**

The horizontal image resolution. This is used to specify your image's original resolution, prior to txmake-ing.

**Vertical resolution**

The vertical image resolution. This is used to specify your image's original resolution, prior to txmake-ing.

**Focal Length**

The focal length of the camera in degrees.
**Horizontal Aperture**
The width of your camera’s film back in inches.

**Vertical Aperture**
The height of your camera’s film back in inches.

**Near Clip Plane**
Positions closer than this distance from the coordinate system will be masked. This number is expressed in scene units, whatever it may be in your authoring package.

**Far Clip Plane**
Positions farther than this distance from the coordinate system will be masked. This number is expressed in scene units, whatever it may be in your authoring package.

**Film Fit**
The way your image is fitted to the film back if they have different aspect ratios. This is mimicking Maya’s camera settings.
- 0: Fill
- 1: Horizontal
- 2: Vertical
- 3: overscan

**Clamp To**
Activates the mask output. You can mask different areas but this is mostly useful with camera projection.
- 0: Off
- 1: Frustum
- 2: Texture

**2D Parameters**

**Angle**
Rotation angle around the origin.

**Scale S**
Frequency of feature in the S direction.

**Scale T**
Frequency of feature in the T direction.

**Offset S**
Offset from the origin in the S direction.

**Offset T**
Offset from the origin in the T direction.

**Invert T**
Flip the manifold in the T direction.

**Advanced**

**Verbose**
Outputs various infos to help you debug your scenes.

**Output Parameters**
result
The 2D manifold.

resultS
A float representation of the S component of the manifold.

resultT
A float representation of the T component of the manifold.

resultMask
A binary mask defining a restricted projection area. Should be plugged into the mask input of PxrProjectionLayer.