

Kaleidoscope 3D by Marshian— A tutorial

The idea for this product came to me very early in the morning, when everything was quiet.

The surface materials were challenging to get just right, that's really the main achievement here. Once I had them perfected it was one discovery after another. The functionality of the prop and ease of creating amazing renders just kept on expanding, it was glorious. Many times I had no idea what I would see when I hit render.

With just a few pointers you'll find this set is easy to work with, renders quickly, and is tons of fun.

All of the props have the same surfaces applied so the details are mainly in how each Kaleidoscope prop is scaled and positioned with other objects, environments, and figures. There are tips about cameras, the shaders, lighting, creating seamless tiles, and how to troubleshoot.

The screen caps relate to the promo images. These working views will be the most helpful in explaining how this set works and how to duplicate the compositions.

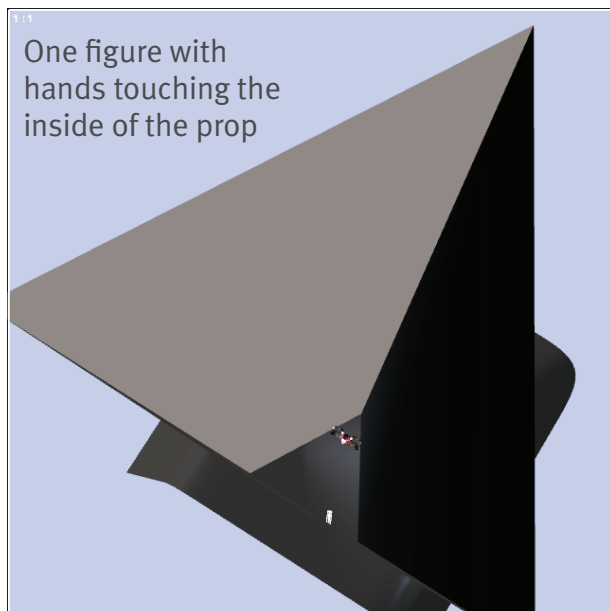
The figure scaled props:

These work like traditional Kaleidoscopes in that you want to put your main subject at the end or just inside the end of the prop. Some sky and ground will reflect inside so it's best to use a skysphere or 360 environment.

To make sure your camera and the prop stay squared it's best not to unparent the prop, instead use camera focal length to make your subject (and the facets) bigger or smaller. When going very small with your subject, it's best to use the maximum depth render setting. This will make sure your whole render is filled with reflections.

Tip: The further your subject is from the edges of the inside of the Kaleidoscope prop the more distance there will be between reflections. This can make for some really close quarters to have everything you need inside the prop, mainly the camera. You'll need to use wide angles in this small space but the expanse you'll create will feel huge! (See renders below)

The four sided figure prop can create seamless tiled images. If creating textures/maps for a product please respect the copyright of any props or textures/photos used.



The room, building, and city scaled props:

Now that you have a lot more room to work with (using these larger props) you can really play with camera angles here. For these larger scenes I used the four and three sided props the most. These gave the best results as in some places a seam or angle can cut architecture off and make the object look like it's floating. If you are going for surrealism, you may like this. Also these very thin seams may show in your renders, here's how to get rid of them:

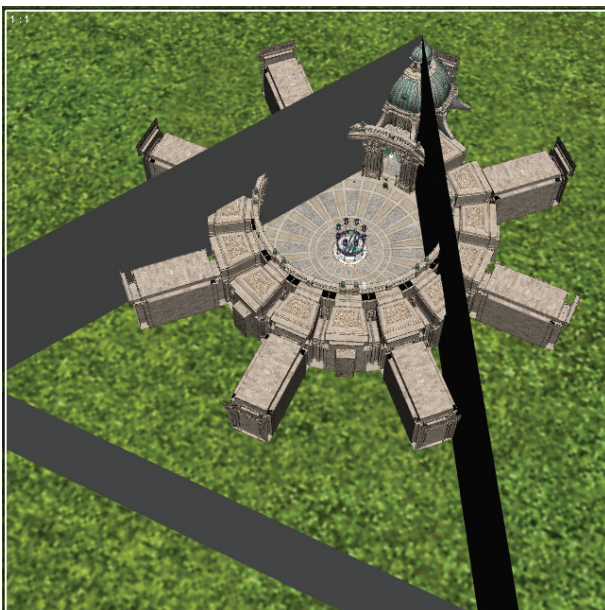
- Extend the effect of your fog camera
- Lower shading rate
- Retouch in post
- Put an object in front of the seam
- Rotate the prop until the seam does not show

Tip: I suggest using a fog or haze camera to really bring some depth to your renders, otherwise you'll have a couple dozen reflections all stacked up on top of each other with only the diminishing size to give dimension.

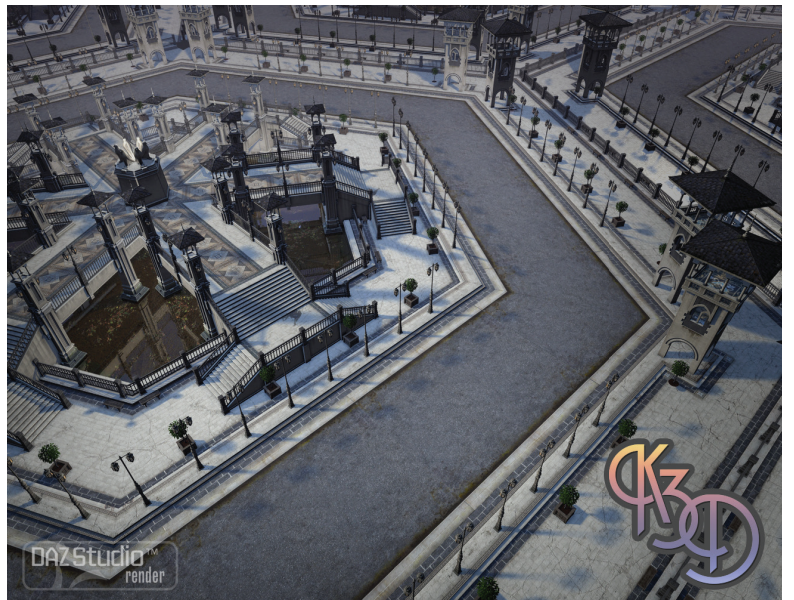
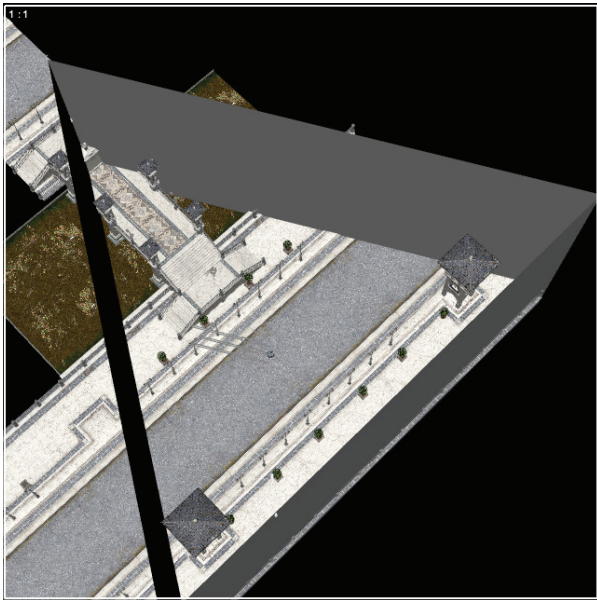
Lighting? High noon or very ambient light seems to work the best to produce a realistic set of objects.

Skies? The main solution is in the "Y" scale of the prop. If the prop is not tall enough and your camera is close to the ground, reflections will be cut off and your skydome may create faceted reflections. If your camera is higher up, near the top of the prop, you may find there is a horizon line where your reflections stop. You can use any skydome you'd like because you're looking over the edge of the Kaleidoscope prop (the dome is not reflecting). This is hard to describe but you'll see.

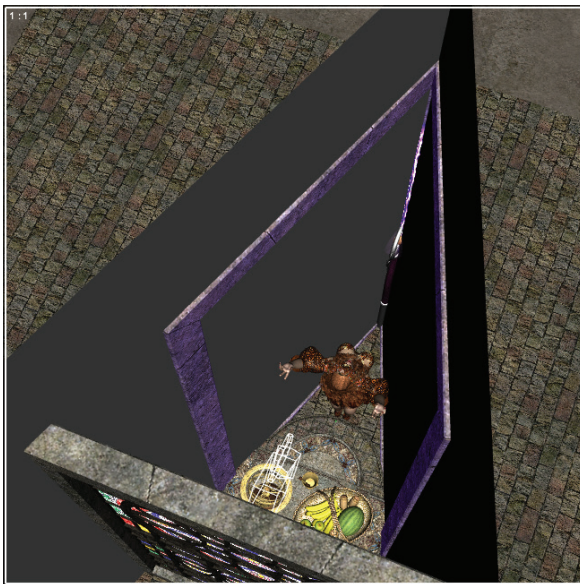
One way to work with a faceted sky is to use a stardome or some other busy texture that hides the facets. The solutions I used most of the time were either to extend the Y scale up so high that nothing could reflect in from the top, crop the sky out, or use a haze camera that would fill the sky with one solid color.



The camera is placed near the top of the prop, allowing the horizon and sky to be seen



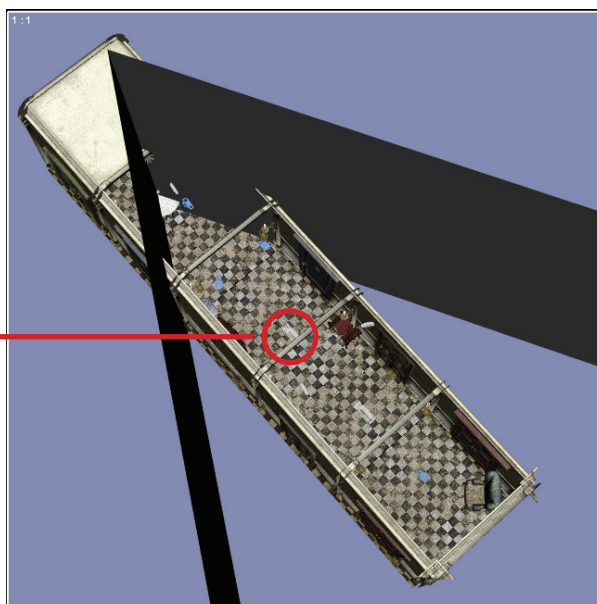
Notice the point of the three-sided prop creates a full hub in the center.

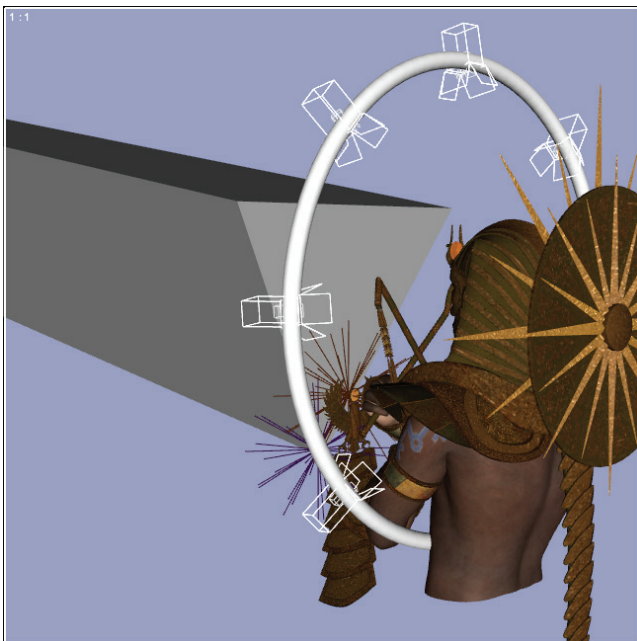
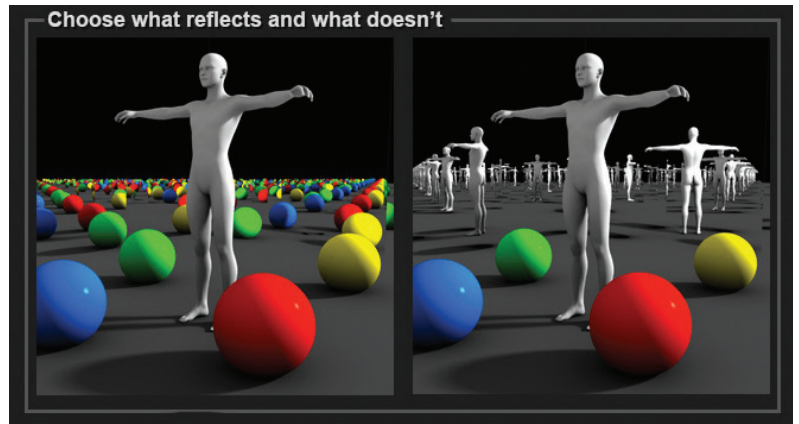
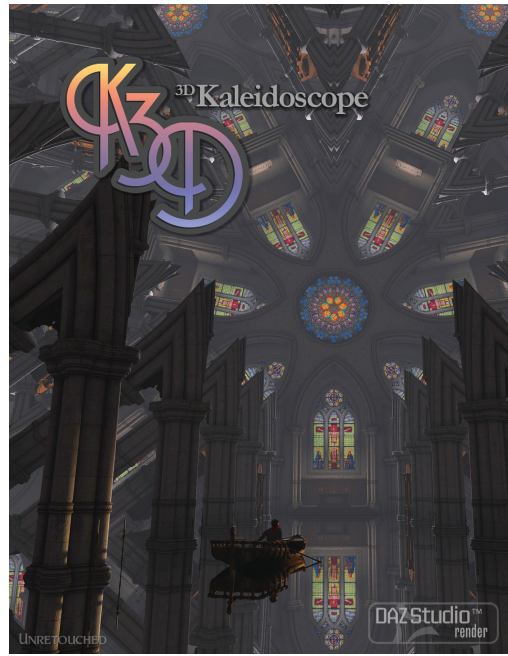
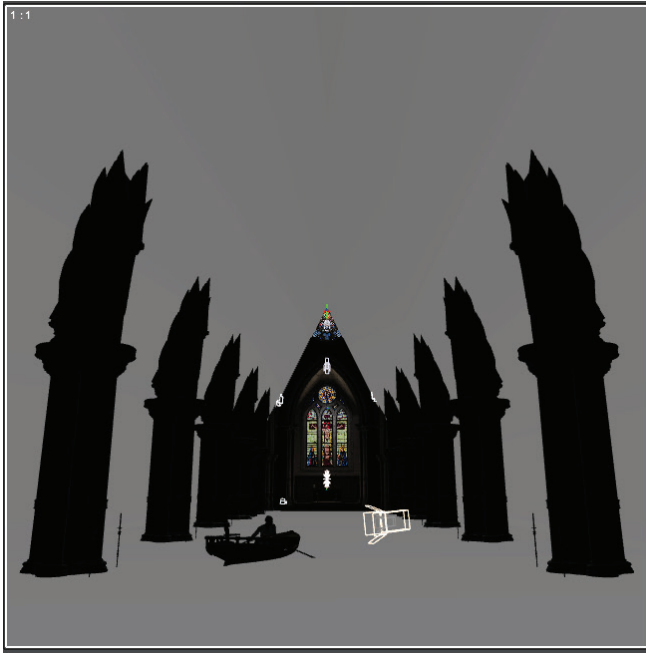


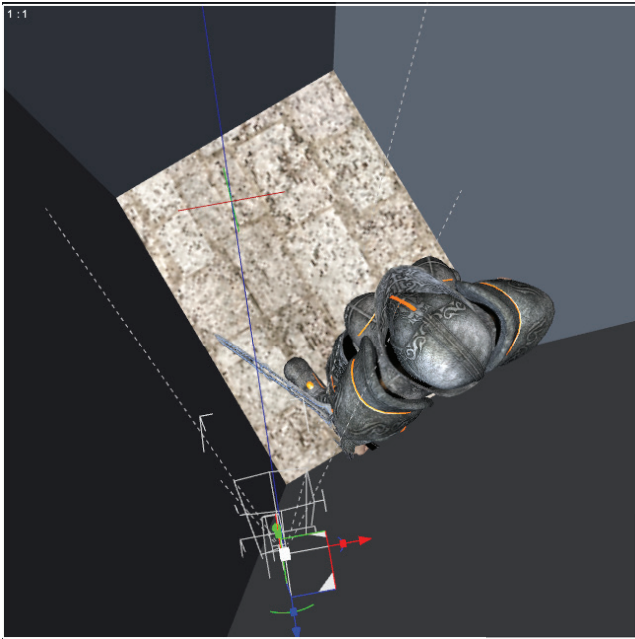
Notice the position of the camera. Most of the objects in this render are behind it

Showing a slice of the table creates the full prop once rendered

camera





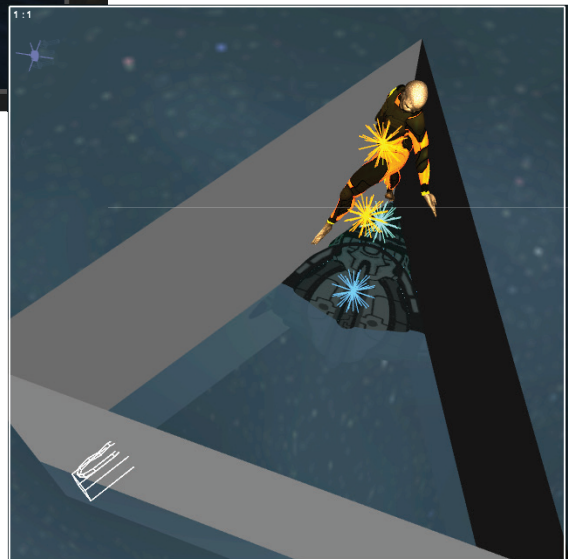


The camera is just over the shoulder



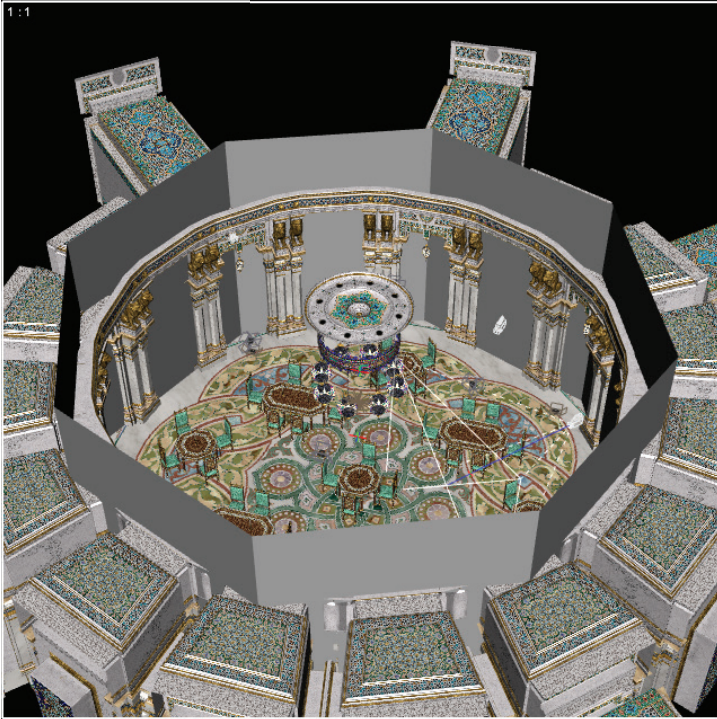
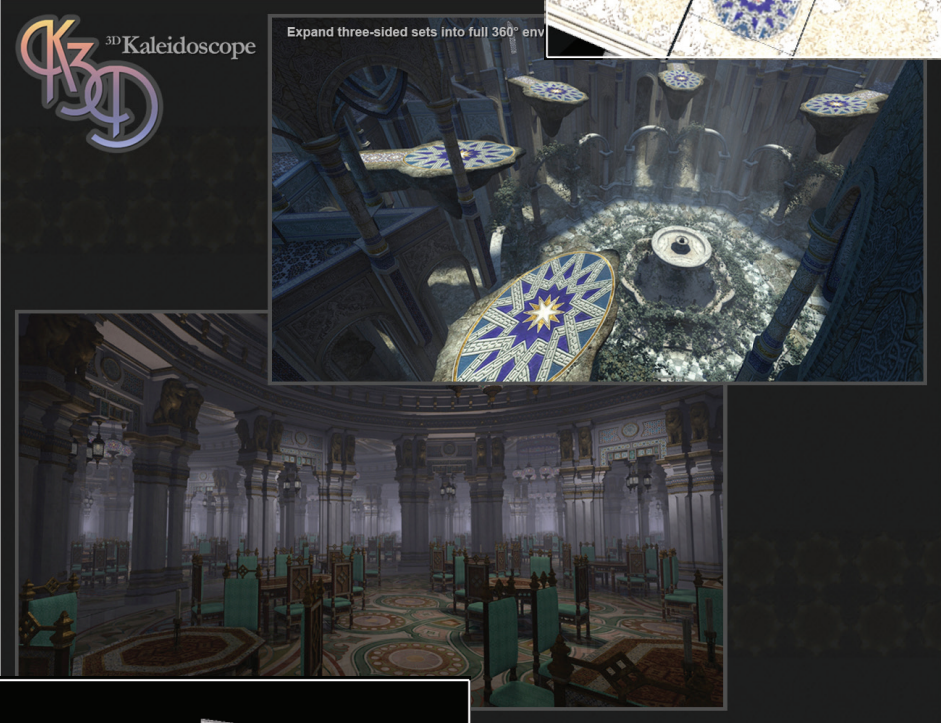
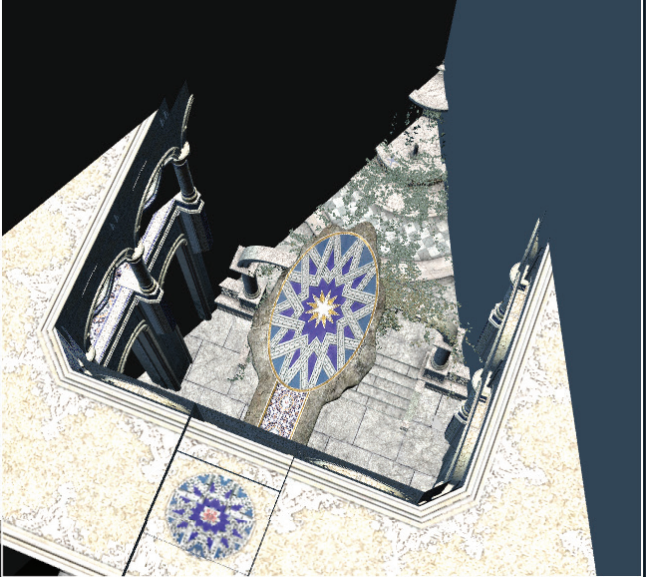
A stardome helps hide a faceted sky

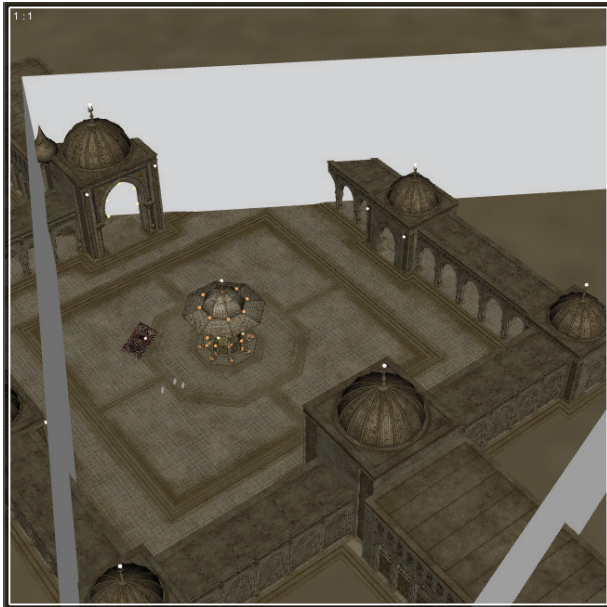
Wide camera angles really help



Al-Khimia is a triptych set in a way- The Kaleidoscope prop duplicates several of the them to create a full environment.

The fountain is made whole by its reflections. The vines are duplicated also, but the pattern is so random that it's not really noticeable.





This render really blew me away. I discovered I could multiply and change the configuration of props so easily. Also this Kingdom of Marrakesh set is huge, I would never have been able to load so many props into one scene and still move objects around- to find the best camera angles.

Shaders included:

Reflections off: This converts your prop or figure to Ubersurface and turns ray-tracing off so that it doesn't reflect. Some maps and settings may need to be adjusted. I created over 30 promo images and did a great deal of experimenting to find this conversion did not need much fine tuning.

You may find that even though reflections of your objects are gone, the shadows remain. Solutions for this are post-work, Parameters/Shadows Off, using a low camera angle, or having a dark and/or busy floor in your scene. Of all the renders I have created with Kaleidoscope this was a very minor issue, it's in the promo images if you look for it.

Reflections on: This was included to go backwards and make an object reflect again but it would be best to just reassign the materials made for the prop or figure.

Render settings:

These control the depth or amount of reflections based on ray-tracing in render settings. These presets give you a wide variety but you could certainly adjust these settings to get specific. The maximum setting was needed for the infinite drop and hallway renders.

It's very late, my feet are cold, and I need to wrap this up. If you have specific questions or concerns post them to the Kaleidoscope Commercial Release thread.

Thanks! Enjoy!

This one is really magical.

— Marshian

