Subject: Re: semi-transparent IDLgrPolygon? alpha blending no good...
Posted by Rick Towler on Tue, 23 Apr 2002 17:06:57 GMT
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As David pointed out, you need to be aware of the order in which atoms are added to your model when rendering scenes with alpha blending.

To put it simply, when IDL renders a transparent atom it calculates the color of the atom's surface as a function of it's own color, your alpha value, and the color of objects behind it. Much to my disappointment, atoms in a scene aren't rendered magically all at once but are rendered in the order that they are added to your model hierarchy. So in your case, if a transparent atom is rendered before anything else in the scene it appears "transparent to ITSELF". Adding the transparent cylinder after all of the other atoms as David did corrects the problem by rendering the atoms that appear behind the transparent cylinder first.

Of further note, the order that the transparent atom is meshed will affect what you see as well. In your example program (with the correct ordering of atoms in the model) the initial orientation of the model results in the expected image. You see the back surface of the cylinder thru the front. If you rotate the object 180 degrees about the Y axis, you will note that you no longer see the back surface thru the front. This is due to the fact that your cylinder is meshed from -Z to +Z and with the initial view when the front of the cylinder is drawn, the back surface exists and the color of the front surface reflects this. But, when you view your cylinder from behind, the front surface is drawn before the back and you no longer see the back thru the front.

This may not be an issue for you, but the solution is to break up your transparent atom into a -Z to 0 and 0 to +Z pair and then manage their order in your model (use mesh_clip and IDLgrModel's Move method). As long as you know where the viewer's eye is, you can make sure the back is drawn before the front.

-Rick

"Sean Dettrick" <dettrick@uci.edu> wrote in message
news:3CC5191F.F0951184@uci.edu...
>
> (apologies for the attachment)
>
> Hi,
>

> Does anyone have a way to make semi-transparent polygon
> objects with IDLgrPolygon?
>
> I would like to use IDL's fancy object graphics, but in my
> attempts so far, alpha blending using a monochrome image only
> makes a polygon object transparent to ITSELF, not to other
> objects. This is pretty useless.
>
> Here is my example code, where I have rearranged
> David Fanning's object_shade_surface.pro (thanks DF)
> to instead plot up four cyclindrical IDLgrPolygon objects.
> You can run it with:
> IDL> .r cylinder3
>
> I would like the red cylinder to be semi-transparent, so
> that I can see the black cylinder through it.
>
> I am away of Struan Gray's direct graphics tutorial,
> and guess one could do something similar with defining
> a z-buffer in the view object, but it is way above my head.
>
> Any assistance/pointers greatly appreciated.
>
> Thanks v much,
>
> Sean Dettrick,
> Physics Dept,
> University of California, Irvine
