Subject: 3d graphics
Posted by Dan Madeira on Sun, 23 Feb 2003 23:34:03 GMT
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Hi all,

I'm doing a undergrad group project where we have to use IDL to code a sterographic representation of the solar system. However we have no prior knowledge of this language, and so we are a little bit stuck....

We have drawn four globes representing the Earth, moon, mars and the sun using the `orb` procedure, and then used a for loop to translate the globes according to a specified orbit, redrawing the view in both the right view and left view widgets each time. However this results in a large lag between each update, which ruins the steroscopic effect. Has anyone got any ideas of a faster technique?

Also, we would like to have a globe, which is internally lit, representing the sun. However when we placed a light source inside the orb, its surface remained unlit though the other objects were properly lit. Is there any simple way of solving this?

Cheers,

Dan Madeira

Subject: Re: 3d graphics
Posted by daann on Thu, 06 Mar 2003 18:03:03 GMT
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Thanks for the advice, however we have some other issues...

We tried positioning a spotlight in front of the sun, however it lights the sun unevenly and lights everything behind the sun as well. Also, when we placed a light inside the sun, each planet is lit but they don't cast shadows. Does anyone have any ideas on how to sort this out?

Cheers,

Dan Madeira

Subject: Re: 3d graphics
Posted by Rick Towler on Thu, 06 Mar 2003 21:09:14 GMT
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"Dan Madeira" wrote in message

Welcome to the world of OpenGL lighting...

> We tried positioning a spotlight in front of the sun, however it
> lights the sun unevenly and lights everything behind the sun as well.

Constructing a realistic 3d scene can be very difficult. As you are coming to realize, lighting only goes so far. If you have played any 3d games lately you can appreciate the work of the texture artists.

Yes, the spotlight will cast right thru the sun and onto anything beyond it. That should be O.K. though since the sun does cast light in all directions, right?

If the lighting is uneven, then place more lights around it. You can either place a number of fixed lights around the sun or place 2 lights maybe +-15 deg off your view axis.

You will only get so far with lights alone. I would probably brightly light the scene with an ambient light and use textures for your planets and sun. The trick will be to create your planet textures so that they have a "dark side". You'll have much more flexibility with this approach.

Either way has its limits.

> Also, when we placed a light inside the sun, each planet is lit but
> they don't cast shadows. Does anyone have any ideas on how to sort
> this out?

Lighting in OpenGL will not cast shadows. If you want shadows you need to calculate them yourself and apply them as textures. This is not a trivial exercise. For a constrained set of conditions you could probably work something up though.

-Rick