Subject: Re: 3d graphics
Posted by Rick Towler on Mon, 24 Feb 2003 18:14:13 GMT
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"Dan Madeira" wrote in message ...

> 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?

Your biggest problem may be with the orb object (which IMO it was written poorly). The orb object recalculates it's vertices for every SetProperty call. If you are moving your orbs directly you are paying this price. You have two options, you can place your orbs in another model and manipulate that model or you can "fix" the orb (you may want/need to copy orb__define to a local directory before you fix it and you will want to make sure that the fixed orb__define get's called and not the old one). Here is the simple fix:

```
PRO orb::SetProperty, POS=pos, RADIUS=radius, DENSITY=density, _EXTRA=e

   rebuild = 0B

   ; Pass along extraneous keywords to the superclass and/or to the
   ; polygon used to represent the orb.
   self->IDLgrModel::SetProperty, _EXTRA=e
   self.oPoly->SetProperty, _EXTRA=e

   IF (N_ELEMENTS(pos) EQ 3) THEN BEGIN
      self.pos = pos
      rebuild = 1B
   ENDIF

   IF (N_ELEMENTS(radius) EQ 1) THEN BEGIN
      self.radius = radius
      rebuild = 1B
   ENDIF

   IF (N_ELEMENTS(density) EQ 1) THEN BEGIN
```

```
      self.density = density
      rebuild = 1B
   ENDIF

   ; Rebuild the polygon according to keyword settings.
   IF (rebuild) THEN self->BuildPoly
END
```

If this isn't your problem other possibilities could be bad code or bad hardware. Make sure you aren't doing more than you need to when it comes to drawing your scene. Object graphics requires a decent graphics adapter to render all but the simplest of scenes quickly so if you are stuck on an slow machine reduce the complexity of your models as much as possible (use the orb's DENSITY keyword).

You may also want to take a look at my camera object. Spice up that project by moving the viewer thru the solar system. It probably would simplify the creation of the stereographic views too. I have been wanting to try this with a couple of LCD projectors with polarized glasses and lenses for a long time but haven't gotten around to it. Maybe you can put your classmates to shame by presenting your project in this way. Just get back to me and let me know how it went :)

http://www.acoustics.washington.edu/~towler/

> 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?

Lights don't illuminate the back sides of polygons which is why your sun is dark whilst your planets are illuminated. Just position another light so that it illuminates your sun. David's suggestion of a directional light oriented towards the sun is good. If you use my camera object you can query it for the viewing vector and use that to orient your light. Easy, if you can get away with a "headlight" setup where the light is positioned the same place as the viewer. If a planet passes between the viewer and the sun you won't be able to do this because the headlight will shine on the dark side of the planet so you'll need to do some extra math to place the light on the view vector inside the smallest orbit.

Do keep your lights to a minimum. Depending on your hardware they can be costly additions.

-Rick