
Subject: Re: 3d graphics

Posted by [landers](#) on Tue, 27 Sep 1994 13:59:50 GMT

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In article <366rt8\$701@hammer.msfc.nasa.gov>, mallozzi@ssl.msfc.nasa.gov writes:

|> I am trying to make a sphere by drawing a number of great circles.

 [snip]

|> t3d, rotate=[90, 0, 0]

It does work, but not as you're expecting. T3D doesn't rotate the transform matrix in your data coordinates - it's in device coordinates or something like that. You can check this by creating your 3-D box with SURFACE, then printing !P.T. Then, change [XYZ]Range, re-do the SURFACE, and note that !P.T doesn't change.

If you want to use !P.T to do data transforms, you'll have to use

 T3D, Translate

 T3D, Scale ;(maybe)

; then

 T3D, Rotate

 T3D, Scale ; put it back

 T3D, Translate

Note that I haven't given any details. That's `cause it's been a while since I've done this.

If you have PV-WAVE, check the CENTER_VIEW procedure (and it's friends).

If all you're trying to do is plot great circles or things like that - you might try putting the 'transform' in your equations rather than in the plot space. Something like this would work for the example you posted:

```
surface, fltarr(2,2), /NoData, xrange=[-1,1], yrange=[-1,1], zrange=[-1,1]
```

```
theta = findgen( 360 )
```

```
for psi = 0, 135, 45 do begin
```

```
  x = sin(theta * !dtor)
```

```
  y = cos(theta * !dtor)*cos(psi *!dtor)
```

```
  z = cos(theta * !dtor)*sin(psi *!dtor)
```

```
  plots, x, y, z, /t3d
```

```
endfor
```

... Your mileage may vary....

Later,

;Dave
