
Subject: Re: Coordinates and SHADE_VOLUME
Posted by [Terje Fredvik](#) on Mon, 29 Jun 1998 07:00:00 GMT
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David Fanning wrote:

>
> Terje Fredvik (tfredvik@astro.uio.no) writes:
>

>> The error occurs when I try to create the 3D image by using
>> polyshade(v,p,/t3d). Why? When I'm in x-mode the resulting
>> array is 450 by 650, so why does IDL want to make an array
>> too big to handle when writing to file?

>
> The PolyShade command actually creates an image. While
> this image is 450 by 650 on your display it can be at
> least a factor of 25 or so bigger than that in the PostScript
> device, since the pixel size is a least 25 times smaller.

Ok, now I see why IDL is grumpy.

> Simply execute the PolyShade command before you Set_Plot
> to PostScript and scale the image with the usual XSize
> and YSize keywords to the TV command.

I'm not sure how to do that, and still keep the coordinate
system. The way I'm doing it now is like this:

-----<IDL code>-----

```
                ; Produce a list of vertices and
                ; polygons describing the contour
                ; surface.
shade_volume,a,fac,v,p,/low

                ; Set up transformation and scaling
                ; parameters for 3D viewing
s=size(a)
scale3,xr=[0,s(1)],yr=[0,s(2)],zr=[0,s(3)], ax=ax, az=az

                ; Plot a coordinate system, save the 3D
                ; transformation
dum = fltarr(60,71)
surface,dum,xr=[0,59],yr=[0,70],zr=[0,3],/xst,/yst,/zst,/nod ata,$
/noerase, ax=ax,az=az,charsize=cs,/save,zticks=1, $
```

```
xticks=5, yticks=5, ztickname=[' ', ' ', ' ']
```

```
        ; Create a shaded volume, use the 3D  
        ; transformation obtained when SURFACEing.  
im3D = polyshade(v,p,/t3d)
```

```
        ; Display the image on the screen. (This  
        ; erases the coordinate  
system)  
tvsc1, im3D,/t3d,ysize=15, xsize=15
```

```
        ; Overplot the coordinate system, using the  
        ; 3D transformation obtained when SURFACEing  
        ; the first time.  
surface,dum,xr=[0,59],yr=[0,70],zr=[0,3],zticks=1,$  
ztickname=[' ', ' ', ' '],/xst,/yst,/zst,/nodata,$  
/noerase, ax=ax, az=az, charsize=cs,/t3d,xtitle='Arcsec',$  
ytitle='Arcsec'
```

```
-----</IDL code>-----
```

I put this in after `im = polyshade(v,p,/t3d)` but before `tvsc1, im3D,/t3d,ysize=15, xsize=15`:

```
IF KEYWORD_SET(ps) THEN BEGIN  
  set_plot,'ps'  
  device, bits=8,/color,ysize=15, xsize=15  
ENDIF
```

This is not very useful: the only thing that pops up on the ps file is the coordinate system, no 3D image.

If I remove `ysize=15, xsize=15` from the `tvsc1` command the result is different, but still not good at all. The ps file shows the 3D figure on black background, with the coordinate system totally out of scale.

I have also tried to do another `SCALE3` right after I `set_plot,'ps'`, but that doesn't help either.

What am I doing wrong?

--

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