
Subject: Re: !p.multi and tv

Posted by [davidf](#) on Wed, 27 May 1998 07:00:00 GMT

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Cathy (csaute3@alumni.umbc.edu) writes in response to some code I hacked up for her:

```
> This works well. In addition to the image, I would like to add axes, etc.
> so I did this loop:
>
> FOR j=0, multi[1]*multi[2]-1 DO BEGIN
>   ; establish the size of the plot window
>   Plot, Findgen(11), Color=!P.Background
>   x1 = !X.Region[0] + 0.05
>   x2 = !X.Region[1] - 0.05
>   y1 = !Y.Region[0] + 0.05
>   y2 = !Y.Region[1] - 0.05
>   TVImage, image, Position=[x1, y1, x2, y2]
>   Plot, Findgen(11), position=[x1, y1, x2, y2], xticklen=-0.02, $
>     yticklen=-0.02, xtitle='latitude', ytitle='longitude', /nodata, $
>     /noerase
> ENDFOR
>
> However the xtitle is "cut off" for image(s) along the bottom of the window,
> and ytitle is "cut off" for image(s) along the left of the window.
> Is there a way to "make them visible"?
```

The problem is that by positioning the axes in the plot "window" I didn't leave enough room for the titles. Hence, they got clipped. I prefer to work with the plot POSITION, rather than the plot REGION (which includes the space allocated for titles and other plot annotation), because it makes it much easier to do things like puts axes around images, etc.

This code could probably be fixed just by making the "margin" around each plot larger. Say 0.1 rather than 0.05. Or, alternatively, I could set the "outside" margins of the plot larger with the !X.OMargin and !Y.OMargin keywords, which is what I choose to do in the modified code below.

```
> Also, if I left the position keyword out of the second plot command,
> the plot appeared in the quadrant next to the tvimage (not overlay).
> Why?
```

The PLOT command is what "advances" the !P.MULTI system variable to the next plot. My original code had a single PLOT command that drew each plot in the background color before each TVImage call. The purpose of this is to set

the system variables manipulated by !P.MULTI to the next plot. I had to do this because TV commands don't "advance" anything, just like they don't erase the display before they draw into it.

Normally, the second PLOT command in your code would advance the plot. Using the POSITION keyword obviously causes !P.MULTI to think seriously about what it is doing. I'm frankly surprised it made such a smart decision in this case. I would have expected all kinds of bad things to happen with the code above. But then again, that's why I love IDL! :-)

Here is the modified code, which shows plot titles clearly on my display. (Remember that outside margins are specified in character units, so your mileage may vary. Adjust as necessary.)

```
*****
PRO MultImages, multi
IF N_Params() NE 1 THEN multi = [0, 2, 2]
imageFile = Filepath(SubDir=['examples','data'], 'worldelv.dat')
print, imageFile
image = BytArr(360, 360)
OpenR, lun, imageFile, /Get_LUN
ReadU, lun, image
Free_Lun, lun
Window, XSize=500, YSize=400
!P.Multi = multi
!X.OMargin = [2, 2]
!Y.OMargin = [2, 2]
FOR j=0, multi[1]*multi[2]-1 DO BEGIN
    Plot, Findgen(11), Color=!P.Background
    x1 = !X.Region[0] + 0.05
    x2 = !X.Region[1] - 0.05
    y1 = !Y.Region[0] + 0.05
    y2 = !Y.Region[1] - 0.05
    TVImage, image, Position=[x1, y1, x2, y2]
    Plot, Findgen(11), position=[x1, y1, x2, y2], xticklen=-0.02, $
        yticklen=-0.02, xtitle='latitude', ytitle='longitude', $
        /nodata, /noerase
ENDFOR
END
*****
```

Cheers,

David

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