Subject: Re: setting up axes in IDL
Posted by davidf on Sun, 14 Jun 1998 07:00:00 GMT
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Tony Casey (caseyta@mail.auburn.edu) writes:

> OK, I'm ust learning, here's my problem:
> I have an output file in "TVSCL" type, and some lines drawn with "PlotS" I
> need to set up an axis system with ticks and such centered in the middle of
> the output. Please help.

Well, what you want to do is not at all simple when you don't know too much about IDL. You could continue to build your own axes with the PlotS command, but that is a bit complicated. It would be better to use the Axis command to create the axes, but you need a data coordinate system for that and the TVScl command doesn't provide one.

Then you have the problem of how to put the image in the display window, and that is complicated by the size of the display window and the size of the image, etc. and before you know it you have a complicated piece of code lying around to do something that should be simple.

So here is what I would do. Go to my web page and get the TVImage program. This will help you position your image in the window without worrying about the size of the image or the window. (TVImage is more closely related to TV than to TVScl, however, so be sure you scale the image data before you pass it to TVImage. You can do this with BytScl and you should probably get in the habit of doing it anyway, since using TVScl sooner or later ends up a bad idea.)

Then use this little example program to put axes through the center of the image. The XRange and YRange keywords can be used to set the endpoints of the axes. Notice that the Plot command doesn't put anything at all on the display. I use it only to set up the proper data coordinate space for the Axis commands later on. You use the program with your image like this:

```
Example, myimage, XRange=[-1,1], YRange=[0,100]
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You can find a lot of programming tips on my web page and more in my book, if you are interested.

Best Regards,

David

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*****************************************************
PRO Example, image, XRange=xrange, YRange=yrange

 ; Open an image file if necessary.

IF N_Params() EQ 0 THEN BEGIN
   file = Filepath(SubDirectory=['examples','data'], $
      'worldelv.dat')
   OpenR, lun, file, /Get_Lun
   image = BytArr(360, 360)
   ReadU, lun, image
   Free_Lun, lun
ENDIF

 ; Check keyword parameters.

IF N_Elements(xrange) EQ 0 THEN xrange = [0,100]
IF N_Elements(yrange) EQ 0 THEN yrange = [0,100]

   ; Make vectors for plot.

x = Findgen(100)*xrange[1]/99.0 + xrange[0]
y = Findgen(100)*yrange[1]/99.0 + yrange[0]

   ; Create a data coordinate space.

thisPosition = [0.15, 0.15, 0.85, 0.85]
Plot, y, x, Position=thisPosition, /NoData, $
   XStyle=4, YStyle=4, XRange=xrange, YRange=yrange

   ; Display the image.

TVImage, image, Position=position

   ; Add axes.

Axis, /XAxis, 0.5, 0.5, /Normal, XRange=xrange
Axis, /YAxis, 0.5, 0.5, /Normal, XRange=yrange

END
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