
Subject: Re: Map_set limits

Posted by [Stephane Erard](#) on Tue, 02 Dec 1997 08:00:00 GMT

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David Fanning wrote:

> =

> I have to admit that I am confused about recent postings
> from Stephane Erard and Martin Schultz, who complain about
> having to fiddle with the Position parameters to get a
> Map_Set command to fit the proper Limits around an image.

>

> [...]

> =

> What I am unsure about is if the grid is going *exactly*
> where it is suppose to go. How would I know? You folks
> presumably have some kind of ground point or something
> that you know the exact latitude and longitude coordinate
> of. If I do the same thing with a data set I am more
> familiar with (say, the worldelv.dat data set in IDL), then
> it still appears to do the right thing.

> =

> In any case, I am all ears. :-)

> =

Ok, I'll try to make this problem a little clearer. I answer in the
Newsgroup since this issue probably interests other people.

Included is a small piece of source code that plots a map. The map is a
subset of the USGS shaded relief map of Mars, available for instance at
<http://www-pdsimage.jpl.nasa.gov/PDS/>. The subset is saved as
ptcarte.idl (it can be found at <ftp://ftp.ias.fr/ias/erard>), but any
image of this size will do to figure out the problem. You can see a gif
version of the (almost) final figure at
<http://www.ias.fr/cdp/ISM/speccomp.html>

If you run the following code in two versions, you'll see a difference:

- as is, makes a correction to the map dimension, and the output is just
fine: the final product has the same number of pixel that the original
map file and the image fills the coordinates grid.

- If now you comment out the 6 lines beginning with del=3D... (ie use
map_set to plot the map without precautions) the output is different (at
least in versions 4 and 3.6). The frame now has the dimension of the
image (720 pixels in this case), so the image fits in the frame rather


```
; Reads the PDS map, enlarged, of the selected area
; (complete map is 1440 x 720). Sinusoidal projection
restore, 'ptcarte.idl' =
```

```
nbc0l=3D211. ; first 201 values for the map
d=3Dbytscl(d,top=3Dnbc0l)
```

```
sz=3Dsize(d)
px0 =3D20. ;shift a little
py0 =3D20.
print, sz, coefPS, !D.x_vsize,!D.y_vsize
qx=3D[px0,px0+sz(1)+0.5]/!D.x_vsize*coefPS ; Back to normal coord for
Map_set
qy=3D[py0,py0+sz(2)+0.5]/!D.y_vsize*coefPS
print, qx, qy
```

```
; these lines must be commented out to see what map_set does by
itself
```

```
del=3D(qx(1)-qx(0))*0.01 ;Compensate limits transform in
qx(0)=3Dqx(0)-del ; MAP_SET by a similar enlargement
qx(1)=3Dqx(1)+del ; of the plot.
del=3D(qy(1)-qy(0))*0.01
qy(0)=3Dqy(0)-del
qy(1)=3Dqy(1)+del
print, qx, qy, del
```

```
la=3D[-20,20]
lo=3D[-70, 20] ;At the equator
lax=3D(la(0)+la(1))/2.
lo1=3Dlo/cos(lax*!dtr) ;limits in long on top (latmax)
print, lo1, la
c0=3D[lax,lo1(0)] ; coord on the border centre =
```

```
c1=3D[la(1),(lo(0)+lo(1))/2.]
c2=3D[lax,lo1(1)]
c3=3D[la(0),(lo(0)+lo(1))/2.]
;print, lo1
tv, d, px0*coefPS,py0*coefPS,xsize=3Dsz(1)*coefPS, ysize=3Dsz(2)*coefPS
map_set, /sinu,/grid, limit=3D[c0,c1,c2,c3],/noerase, /label,title=3D$
'IRS-ISM overlapping observations of Mars!C',latlab=3D-72,lonlab=3D-22,$
londel=3D10.,latdel=3D10.,position=3D[qx(0),qy(0),qx(1),qy(1)],$
glinethick=3D2.,glinestyle=3D0
```

```
maxi=3D0.5
mini=3D0.
```

;superpose another data set, no matter.

```
xyouts, 0,0, '!4'  
colors=3Dreverse(findgen(15)+213) ; Couleurs albedo  
citems=3Dstrarr(15)  
citems(0)=3Dstring(format=3D'(F5.2)',maxi/32537./2.)  
citems(7)=3Dstring(format=3D'(F5.2)',(maxi+mini)/32537./4.)  
citems(14)=3Dstring(format=3D'(F5.2)',mini/32537./2.)  
; use a routine from ASTRON  
legend, citems,/fill,psym=3D8+intarr(15),colors=3Dcolors,char=3D1.,$  
pos=3D[qx(1)+0.01,qy(1)],/normal  
xyouts, qx(1)-0.015,qy(1)+0.02,/normal, 'ISM reflectance',charsize=3D0.8
```

```
!P.font=3D-1  
if keyword_set(ps) then begin  
device,/close  
set_plot, 'x'  
endif =
```

end

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