Subject: Re: How to display single orbits of satellite data in function graphics?
Posted by Paul Van Delst[1] on Tue, 30 Apr 2013 16:50:03 GMT
View Forum Message <> Reply to Message

Hello,

On 04/30/13 12:34, David Fanning wrote:
> Paul van Delst writes:
>
>> Just an update: left my brain-dead function graphics translation of the
>> direct graphics program running overnight.... the plot was probably only
>> 10% complete when I hit ^C. That's quite funny.
>
> So, the "couple orders of magnitude" improvement you are seeking will
> bring that down to under 10 hours, at least. That's certainly doable, it
> seems to me. But, I would wait for 8.2.3 before upgrading. :-)
>
> I'm curious to see some code. Function graphics have been slow, but they
> are not totally brain dead, usually. I wonder if something else is going
> on here?

Here's the DG code plotting the data "var"

```
-----%<-----
lat=reform(meta.cenlat)
lon=reform(meta.cenlon)

  map_set,limit=[latmin,lonmin,latmax,lonmax],$
          title=title1
  map_continents

  colour=bytscl(var,min=minval,max=maxval)

  for i=0L,nobs-1 do begin
    plots,lon(i),lat(i),color=colour(i),$
          psym=8,symsize=symsize
  endfor
-----%<-----
```

And here is my practically line-by-line translation of the above using
FG. note that I am using "PLOT()" to approximate PLOTS by simply
overplotting the same point.

```
-----%<-----
   map = MAP('Mercator', $
             LIMIT=[minlat,minlon,maxlat,maxlon], $
             RGB_TABLE=3, $
```

```
          CURRENT=w)

  ; Change some grid properties.
  grid = map.MAPGRID
  grid.LINESTYLE = "dotted"
  grid.LABEL_POSITION = 0
  grid.BOX_AXES = 1

  ; Display continetnal outlines
  m1 = MAPCONTINENTS()


  lat = REFORM(metadata.cenlat)
  lon = REFORM(metadata.cenlon)

  colour = BYTSCL(variable,MIN=minval,MAX=maxval)

  map.Refresh, /Disable
  FOR i = 0L, N_ELEMENTS(variable)-1L DO BEGIN
    p = PLOT([lon[i],lon[i]],[lat[i],lat[i]],$
          SYMBOL='circle',SYM_COLOR=colour[i],$
          /SYM_FILLED,SYM_FILL_COLOR=colour[i],$
          VERT_COLORS=[colour[i],colour[i]], $
          LINESTYLE=6, $
          /OVERPLOT)
  ENDFOR
  map.Refresh
-----%<-----
```

I realise the symbol colouring is completely wrong but the above FG code was written as the initial test case. First plot the data points, then colour them accordingly.

The data vectors (variable, lat, lon) contains 131085 data points. Not that big.

I also realise my use of PLOT() above is completely wrong/bad/stupid (creating millions of FG objects no doubt) - hence my request about how to plot individual points, in this case satellite FOV measurements, on a map. The actual data is thinned, cloud-cleared, and quality controlled so creating a regular image is not an option.

There's obviously a much smarter way of doing this - before I started data mining the IDL documentation (which, with regards to examples of using the FG mapping commands that *don't* involve an image, is quite poor), I figured I'd ask the newsgroup.

cheers,

paulv

>
> Unfortunately, I don't have the faintest idea how to even get started
> replicating the problem. Can you suggest a test case?
>
> Cheers,
>
> David
>
>
>