Subject: Re: map_set, !map, !x, !p.position (and behind this curtain, !x.*)
Posted by savoie on Thu, 23 Mar 2006 15:21:51 GMT
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"Ed Hyer" <ejhyer@gmail.com> writes:

> Hi IDL Genii,
>
> Everything would be dandy if I could just call
>
> MAP_SET,<PROJECTION INFO>,POSITION=<POSITION>,LIMIT=<LIMIT>
>
> Searching the newsgroup for help with this, I heard someone call for
> putting a keyword into MAP_SET to take output from MAP_PROJ_INIT. Hear
> hear!!!

I don't know if it was me or not. But I speak up for wanting this
functionality.

>
> I'm sure there's a 20-line kluge to get around this, and hey-- my teams
> are all out of the tournament, what was I gonna do this weekend anyway?
>

When you get this finished, would you mind posting the answer. I've always
just done without.

Thanks
Matt

--
Matthew Savoie - Scientific Programmer
National Snow and Ice Data Center
(303) 735-0785 http://nsidc.org

Subject: Re: map_set, !map, !x, !p.position (and behind this curtain, !x.*)
Posted by MarioIncandenza on Fri, 24 Mar 2006 00:38:09 GMT
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Matt,

It's done, at least a good throw at it:

ftp://ftp.nrlmry.navy.mil/pub/receive/hyer/map_set_hack/

NOTE1: All of you waiting to do direct graphics with the ISIN projection, keep waiting. This implementation doesn't do GCTP projections. At least I expect it doesn't, I haven't tested it-- honestly, it just might.

NOTE2: You can set the LIMITs in MAP_PROJ_INIT or in MAP_SET_HACK. If you set it in both, the LIMITs given to MAP_SET_HACK will be used.

I did test it with a few different projections, and also tested the SCALE and ISO keywords, verifying that the visual map produced is identical to the results from MAP_SET. This means that laying data out on the map will work, I can't say what else will and won't work. I call it a hack because line-by-line mostly I just deleted about 100 lines from MAP_SET.PRO. The principal complication relates to this:

```
IDL> lam=map_proj_init('Lambert Azimuthal',$
IDL>  center_longitude=-100,center_latitude=40,limit=[30,-140,60,- 80])
IDL> print,lam.uv_box,lam.a,lam.e2
      -3708024.9      -1110538.0       1913671.3       2763653.9
       6370997.0      0.00000000
IDL> map_set,40,-100,/lambert,limit=[30,-140,60,-80]
IDL> print,!map.uv_box,!map.a,!map.e2
     -0.58201641     -0.17431149      0.30037236      0.43378672
       1.0000000      0.00000000
```

What's happening here is that MAP_PROJ_INIT and MAP_SET work differently. MAP_PROJ_INIT always uses an ellipsoid with dimensions in meters, and MAP_SET normalizes all dimensions to the radius of the standard sphere, unless forced. Of the non-GCTP projections, only UTM and Lambert Conic can use a specified ellipsoid, those projections work the same with MAP_SET and MAP_PROJ_INIT.

This hack does what I needed it to do, and I learned a lot about IDL's map geometry doing it. If it cracks for your application, post to the group, the only thing I think cannot be fixed is support for GCTP projections.

I will never use object graphics-- NEVER!

--Edward H.

Subject: Re: map_set, !map, !x, !p.position (and behind this curtain, !x.*)
Posted by K. Bowman on Fri, 24 Mar 2006 15:48:43 GMT
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In article <1143160689.240554.60510@g10g2000cwb.googlegroups.com>,
 "Ed Hyer" <ejhyer@gmail.com> wrote:

> I will never use object graphics-- NEVER!

Well, until you need to do interactive 3-D graphics, in which case object graphics are really the only solution.

I have not been a fan of the iTools, in particular, but they are improving (although the documentation is still rather opaque).

This is pretty slick:

```
n   = 10000
b   = 1.0
eps = 0.5
x   = RANDOMN(seed, n)
y   = b*x + eps*RANDOMN(seed, n)
z   = b*x + eps*RANDOMN(seed, n)
iPlot, x, y, z, /SCATTER, /NO_SAVEPROMPT
```

Real, 3-D, interactive scatterplots (among other things).

Plus, you can save the visualization as a .isv file. Anyone with IDL can open it and view the visualization interactively.

Printing remains a real problem, though. I can capture a bitmap of the screen, but I have never been able to create a usable Postscript file from an iTool. (I can send it to the printer, but that is not much use for creating publications.)

Ken Bowman

Subject: Re: map_set, !map, !x, !p.position (and behind this curtain, !x.*)
Posted by Jan Kristian Jensen on Tue, 28 Mar 2006 13:29:46 GMT
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Ed Hyer wrote:

> It's done, at least a good throw at it:
>
> ftp://ftp.nrlmry.navy.mil/pub/receive/hyer/map_set_hack/

Sorry, I missed your post (been away for a few days), and your code seems to have gone from the ftp-server. Would you mind posting it again?

[...]

> I will never use object graphics-- NEVER!
>
> --Edward H.

I started a thread some time ago about using map_set to merge my IDL geo-referenced data with background images from WMS servers (WMS=Web Mapping Service) around the web. This consistently failed to work (or rather _*almost*_ worked in the center of the image, with errors increasing progressively towards the edges). My conclusion was to give it a try with object graphics, but other pressing affairs came to attention and I never really got around to dig into it.

If you post your code, I will have a second try with direct graphics. If I get it to work, I will post the recipie here.

Cheers, Jan
--
Jan Kristian Jensen

Remove the obvious from the email adress to email me.

Subject: Re: map_set, !map, !x, !p.position (and behind this curtain, !x.*)
Posted by MarioIncandenza on Wed, 29 Mar 2006 20:05:13 GMT
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Jan,

It's back up. I don't want to post to group because it's ~350 lines long. The file on the FTP site has all of the MAP_SET auxiliary routines, which are unmodified, as well as the MAP_SET_HACK routine, which is a substitute for MAP_SET. You could put just this routine into a file, but then you have to compile MAP_SET explicitly to use MAP_SET_HACK.

--Edward H.
