Subject: Why Map Ojbects Was: Cannot see anything in the postscript file. Any help?
Posted by David Fanning on Tue, 27 Mar 2012 17:26:07 GMT
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Yemmy writes:

> Now I am going through the write up to try and understand
> what all the CGS routines do, but just one quick question:
> I am already using the cgContour and it is working well,
> but I dont know how to use the Map_object keyword. Do I
> need to have an image of the map already in my computer?

When I work with map projections, I prefer (almost always) to work in projected meter space. This is a rectangular grid in which things "make sense" to me, as opposed to lat/lon space which, well, doesn't.

To this end, I set my map projections up using Map_Proj_Init, rather than Map_Set. I do this because the Map_Proj_Init software, although old, is not as old as the Map_Set software and gives more professional results.

But, problems arise with this decision. Until recently, the Map_Proj_Init software had problems producing a reliable map structure, the UTM projection (widely used) produced incorrect results, and the MAP_GRID and MAP_CONTINENTS routines, which are used to write on top of map projections don't work very well with projected meter grids (a problem function graphics devotees will learn about soon enough). The problems are well documented:

http://www.idlcoyote.com/map_tips/map_tips.php

So, I developed my own map projection routines that fix most of these problems.

http://www.idlcoyote.com/idldoc/maps/index.html

One of these routines, cgMap, is a "map object" that I use as a wrapper to Map_Proj_Init (as well as Map_Proj_Forward and Map_Proj_Inverse). One of the primary advantages of this map object is that is can guarantee me a valid map structure when I need it. The other big advantage is that it can set up a map data coordinate system in projected meter space.

This latter functionality is incredibly useful

if I want to draw on a map-projected image or
create a contour plot of map data. Because I
am often creating contour plots of map data,
I added the Map_Object keyword (I'm finally
getting around to your question!) to cgContour
to allow cgContour to use the map object to
do all this set up for it. It sets up the
plot area, assigns projected map data coordinates
to the data area, forward projects the latitude
and longitude values I want to contour into
projected meter space, etc, etc. Very, very
handy and slick, if I do say so myself. :-)

The map object can even overlay grids and
boundary outlines on the map, if I want those.
It takes a LOT of the grunt work out of producing
map projected images and contour plots.

Now, the bad news. I make a living, such as it is,
giving things away. I decided I was NOT going to
give map projection software away. (Coyote says
I'm finally growing some cojones.) But, (possibly
good news), I'm selling it for a very, very small
amount of money. :-)

You can find it here. It's on sale at the moment, too!

   http://www.idlcoyote.com/store

Look for it under the Software tab.

Cheers,

David

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David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")