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Subject: Re: Box Axes with Map Function

Posted by [David Fanning](#) on Tue, 04 Dec 2012 18:10:52 GMT

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Fab writes:

- > That's just a personal opinion (I am working in the atmospheric
- > sciences) but if I had to make a list on how to make a georeferenced
- > plot look like the way I want it, I would check (in this order):
- > - cg\* routines (if I have an IDL licence)
- > - NCL <http://www.ncl.ucar.edu/>
- > - Python's basemap kit <http://matplotlib.org/basemap/users/examples.html>
- >
- > (it's just that GradS plots look a bit ... old ;-))

Oddly, I am trying to learn how to work with Function Graphics map projections because Map\_Grid (and, by extension, cgMap\_Grid) is driving me CRAZY!!

Map\_Grid is designed to work with Map\_Set. It is extremely inadequate when you use it with Map\_Proj\_Init, at least for map projections that don't cover the entire earth.

Since I never use Map\_Set, unless under extreme duress, I have had to modify Map\_Grid to make it work more adequately with Map\_Proj\_Init, which I always use to define my map projection space. As long as my map projection does not cover the entire globe, cgMap\_Grid works great. As soon as I use it on a global map projection, it screws up. If I fix it to work with global projections, it screws up non-global projections. I'm always poking at the darn thing.

I was hoping that function graphics map commands, because they use Map\_Proj\_Init (at least I assume they do, since bugs have been fixed in this routine lately), would probably get the grids working correctly. For the most part, this seems to be true.

But, if you total up all the time it has taken me to get a simple map created in what I think of as the "correct" way in function graphics, then I could have probably rewritten Map\_Grid 10 times over! And, debugged it, too!

I guess, I might have done this, except that I have a sneaking suspicion that the problem is not in Map\_Grid, but in Map\_Proj\_Init. If you make a map projection in

which the longitudes run from -180 to 180 degrees, centered at 0 degrees longitude, then in projected XY meters, you should have negative values to the left and positive values to the right. Map\_Proj\_Init will do this correctly, until you get to the right edge of the projected XY space, when the last value will go negative on you to match the value at the left edge.

You could argue that this is the same point, and so the sign of the value doesn't matter. Except that it DOES matter if you are trying to draw a line (think "grid") from one part of the map to the other. That, in essence is the problem I've been trying to solve.

I guess map makers have had this problem for eons, but I still haven't figured out how to solve it correctly in IDL. I'm open to ideas. :-)

Cheers,

David

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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Sepore ma de ni thue. ("Perhaps thou speakest truth.")

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