
Subject: Map Projection Doom and Gloom

Posted by [David Fanning](#) on Sat, 30 May 2009 16:22:44 GMT

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Folks,

I have spent nearly three days this week (not to mention a beautiful weekend morning when I expected to be out listening to Meadow Larks and learning native plant species) entombed in map projection chaos and despair.

I have written about this before:

http://www.dfanning.com/map_tips/ephemeral.html

but it bears repeating. Especially so when it is so damn easy to ignore good advice and proceed as if the world were a friendly and reasonable place. I assure you, it is not. :-(

Here is the crux of my advice: If you are going to use a map structure for **ANYTHING** (and I really do mean **ANYTHING*!!*), then be absolutely sure you execute the MAP_PROJ_INIT command **IMMEDIATELY** prior to using the friggin' thing!

If anyone wants the details, I would be happy to provide them, but I have been advised by my doctor to wait until my blood pressure gets back under 200 before I do so. :-(

Cheers,

David

P.S. Let's just say what with all the wailing and gnashing of teeth this week, I have a much better understanding of what some people mean by the expression "hell on Earth".

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

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

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

Subject: Re: Map Projection Doom and Gloom

Posted by [David Fanning](#) on Fri, 05 Jun 2009 15:40:54 GMT

David Fanning writes:

> Here is the crux of my advice: If you are going to use
> a map structure for **ANYTHING** (and I really do mean
> **ANYTHING*!!*), then be absolutely sure you execute
> the MAP_PROJ_INIT command **IMMEDIATELY** prior to using
> the friggin' thing!

Just to follow up on this. I've heard from someone who understands exactly what is going on here. It seems that the underlying GCTP software that IDL relies on for its map projections uses static variables (explained to me as "equivalent to evil common blocks") to hold various parameters. (If you look in the MAP_PROJ_INIT source code, you will see that the ITTVIS programmer puts a helpful note in the code that the user is calling the GCTP software "at your peril". Not the kind of thing you really like to see in software comments.)

So, while the **structure** returned from MAP_PROJ_INIT doesn't actually change when another MAP_PROJ_INIT call is made, the underlying data stored in these static variables **does** change. This is what causes the Great Disconnect as you compare an unchanged map structure with wacky output.

It is unclear if this is an IDL problem or a GCTP problem. ENVI, I note, has given up on GCTP completely and is going (really **unfortunately**, IMHO) to an ESRI map projection engine. It would have been SO much better if they just moved all this map projection stuff to a proj.4 Open Software project. (The ESRI engine uses **some** of the proj.4 stuff, but not all of it for some reason.)

There is no indication at all that IDL's map projection software will change any time soon, no matter what ENVI does. So I wouldn't hold my breath that this will be fixed in our life times. :-)

Cheers,

David
