Subject: Re: Full-Disk Orthographic to Cylindrical Projection
Posted by David Fanning on Mon, 11 Mar 2013 18:07:08 GMT
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Tyler Behm writes:

>
> I have full-disk ground-based solar images. They can be thought of as satellite-projection maps of the Sun. I am trying to work my way up to projecting these images to cylindrical by starting with the easier case of full-disk Earth orthographic projections.
>
> I have been using IDL's map_set to produce orthographic images of the Earth. When I use map_proj_init or poly_warp to transform this orthographic Earth image into a cylindrical projection, it is definitely not correct. I think that IDL is also warping the corners of the orthographic image which are outside the mapping. How can I transform only the circular disk of the Earth (or Sun)?
>
> window, 0, xsize=600, ysize=600
> map_set, /orthographic, /grid, /conti, /hori, xmar=0, ymar=0, /iso
> ortho=tvrd()
> omap=!map
> cmap=map_proj('Cylindrical')
> cylin=map_proj_image(ortho, omap.uv_box, image_str=omap, map_str=cmap)
> tvscl, cylin
>
> Thank you in advance.

Humm. Well, you are doing this all wrong. :-)

There are two ways to do map projections in IDL. With the ancient Map_Set routines, or with the newer (but still old) Map_Proj_*** routines. You can't mix and match them the way you are doing here, unfortunately.

In particular, the map structures produced by Map_Set and Map_Proj_Init are completely different and can't be interchanged.

I don't have time to go into it all today, but I would say its probably crazy to convert an orthographic projection to a cylindrical projection, but if you REALLY have to do it, I would stick to doing it in the Map_Proj_*** routines. You will have better luck, probably. Here is an article that describes the process using Map_Proj_Image:

http://www.idlcoyote.com/map_tips/warpimage.html

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 thue. ("Perhaps thou speakest truth.")