Subject: Re: Map pixel areas
Posted by David Fanning on Fri, 09 May 2014 16:44:12 GMT
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kjwh writes:

> I was hoping someone could help me figure out how to calculate the size of a pixel from a given map projection. For example, I use the following MAP_SET command to create a global 4096x2048 equidistant map. In theory (if I understand it correctly), the pixel sizes should all be the same since it is an equidistant map.
> MAP_SET, /CYLINDRICAL, 0, 0, ISOTROPIC = 1, POSITION=[0.0, 0.0, 1.0, 1.0],/NOBORDER
>
> Conversely, this map should have pixel areas of varying sizes.
> MAP_SET, /MOLLWEIDE, 0, 0, ISOTROPIC = 1, POSITION=[0.0, 0.0, 1.0, 1.0],/NOBORDER
>
> So, what I would like to do is determine the area of each pixel based on the given map projection. I have tried MAP_2POINTS, but I think this gives me the actual distance from point A to point B based on the coordinates on a globe and not the projected pixel, which has been distorted because of the map projection.
>
> I apologize if I am not explaining my question very well, but hopefully someone understands mapping well enough to help me figure this out.

I understand map projections well enough to understand that if you want a projected XY grid of known resolution (which is what I *think* you want), Map_Set is about the *last* IDL routine you want to be fooling around with. :-)

I would seriously investigate Map_Proj_Init. (Or, if you want something easier to use, the cgMap object from the Coyote Library.)

Do you have a map projected image you are trying to establish a map projection for? I think it is odd (and probably not that useful) to want to know the area of a pixel.

Cheers,

David

--
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Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")