Subject: Re: MAP_SET vs MAP_PROJ_*
Posted by JD Smith on Mon, 15 Nov 2004 19:01:41 GMT

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On Wed, 10 Nov 2004 23:04:11 -0500, James Kuyper wrote:

> Liam Gumley wrote:
>> James Kuyper wrote:
>>
>>> Liam Gumley wrote:
>>> ...
>>>
>>>> For example, how do do you define a Lambert Azimuthal Equal Area
>>>> Projection in direct graphics centered at a given lat/lon with a
>>>> specified resolution, such as 1000 meters per pixel?
>>>
>>>
>>>
>>> Since the pixels per centimeter can be different for the x and y axis,
>>> you'll have to decide which axis it is that you want to be at 1000
>>> meters per pixel. Assuming that it's the Y-axis, this should do it:
>>>
>>> lat = 22
>>> lon = 90
>>> resolution = 1000.0
>>> MAP_SET,lat,lon,/LAMBERT,scale=resolution*100*!D.Y_PX_CM,/hi res,/grid,/label
>>>
>>>
>>> You didn't ask for the coastlines, the grid, or the labels, but I
>>> thought it would be good to have something to tell whether the MAP_SET
>>> was correct.
>>
>>
>> Thanks James, I am quite familiar with using MAP_SET in this fashion. I
>> am interested in learning how to achieve the same result with the
>> MAP_PROJ commands.
>
> Sorry - I'm not familiar with MAP_PROJ, since it's not available in the
> version of IDL installed on our machines. What does MAP_PROJ do that
> makes it unacceptable to use MAP_SET instead?

I think MAP_PROJ just gives you access to the MAP_SET projection stuff at
a deeper level. Useful for creating your own map transformations for
interpolating images of arbitrary size, etc. Basically, if you ever
have a generic need for the algorithms (as opposed to the output) embodied
in forward and reverse map projections, then the MAP_PROJ_* routines are
for you. See an explanation of the technique in this post:

http://groups.google.com/groups?selm=pan.2004.04.09.18.32.37 .106707%40as.arizona.edu

The key here is that you have to understand the relation between your
MAP structure and the input/output coordinate units (whereas with
MAP_SET much of this is done for you).

Good luck,

JD