Subject: Re: trouble with map projections
Posted by chris.orphanides on Thu, 20 Jun 2013 20:50:54 GMT
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On Thursday, June 20, 2013 3:25:20 PM UTC-4, David Fanning wrote:

>
>
>
>> I am trying to take a satellite image of sea surface temperature
>
> (SST), subset it, and then project it, and I can't seem to get it right.
>
> I am able to read the image and subset the area I am interested in
>
> without a problem. Getting it projected and having things line up is
>
> another story.
>
>>
>
>> What makes sense to me is first using the map_proj_init function to create the map projection I want to put the image into (Lambert Conformal Conic), then use the map_proj_image function to warp the image to the proper projection. However, when I do this, the resulting array has lost its SST values and is all 0.0s. Can anyone tell me what I am doing wrong? I have experimented with many of the mapping capabilities in IDL, but I just can't get it right. The code I
>
> described is below Thanks in advance for your help.
>
>>
>
>> range = [-78.1900, 34.0300, -61.8100, 45.4900]
>
>>
>
>> nec_prj = MAP_PROJ_INIT('Lambert Conformal Conic', /GCTP, $
>
>> ELLIPSOID='WGS 84', $
>
>> LIMIT=range, $
>
>> CENTER_LATITUDE=40.00, $
>
>> CENTER_LONGITUDE=-70.00, $
>
>> STANDARD_PAR1 = 36.1667, $
>
>> STANDARD_PAR2 = 43.8333)

>
>>
>
>> necprj_sst = MAP_PROJ_IMAGE(nec_region, range, MAP_STRUCTURE = nec_prj)
>
>> ; nec_region is the SST data for the region I am interested in,
>
>> ; subset to fit the range in the lines above
>
>>
>
>> A little additional information: The main input image before I subset it is described as being in a Cylindrical Lat-Lon projection with a regular 0.01 degree grid and a WGS 84 Ellipsoid. Since Cylindrical is the default IDL projection I didn't set a map projection for this image. I would prefer to set the ellipsoid to WGS 84 for the Cylindrical projection, though it doesn't appear possible in IDL (I would love it if I was wrong about this). Also, I am working with the
>
> type of images described here: (
http://podaac.jpl.nasa.gov/dataset/JPL_OUROCEAN-L4UHfnd-GLOB -G1SST)
>
>
>
> As the Stooges would say, "No, no, no. You're doing it all wrong!"
>
>
>
> You need to create a map projection that describes your image as you
>
> downloaded it. I'm not sure why you think IDL can't do a Cylindrical map
>
> projection with a WGS-84 ellipsoid, but this is a VERY common projection
>
> for satellite images and IDL handles it perfectly. Then, you create a
>
> map projection for what you want the image to end up as. Finally, you
>
> use Map_Image to warp the image from one map projection to the other.
>
> Here is an article that describes the process:
>
>
>
> 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.")

David, thank you for your quick response. I didn't think that I could do a Cylindrical map projection with a WGS 84 Ellipsoid because in the map_proj_init() help page it lists Sphere as the only available ellipsoid when using IDL's own map projections. In the GCTP map projections it says that Equirectangular only takes a sphere as well and doesn't say you can specify the semimajor or semiminor axes. What am I missing here? Does the below work even though it doesn't seem like it should?

g1_prj = MAP_PROJ_INIT('Equirectangular', ELLIPSOID='WGS 84', /GCTP, LIMIT=[-80, -180, 80, 180])

It runs successfully, and when peeking at the result some of it looks right, but I am hesitant.