Subject: Projection Parameters in ENVI
Posted by envi35 on Thu, 14 Oct 2004 22:35:11 GMT
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Hi,
Could anyone tell me about the meaning of the parameters in the ENVI map projections table? In the online help of ENVI, there is a table including all the map projections in ENVI, such as projection name and description and ENVI projection number. For example, for the Polar Stereographic projection (31), a,b,lat0,lon0,x0,y0,[datum],name, are the requred parameters. I've searched hard to try to find the explanations for these parameters, but failed. I know the a and b are semi-major and semi-minor axis. But how can I know if the lat0/lon0 are for the center or for the origin of the map? Do those parameters always have the same meanings for all the projections in the table?

My image data is centered on the north pole, the reference lon/lat is (-45,70), and I know the lon/lat pairs for all pixels. I tried to set the params for ENVI_MAP_INFO_CREATE differently, but when I opened the image in envi, it is never right.

Any hints are welcome & appreciated,
Jenny

Subject: Re: Projection Parameters in ENVI
Posted by savoie on Tue, 19 Oct 2004 19:05:36 GMT
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I'm posting this for a colleague.

Jenny:

I think the definition of the map parameters will make better sense if you enter them through the Map Info dialogs rather than simply editting the header. Open the image file (for which no corresponding .hdr file exists) from the ENVI main menu by selecting File->Open Image File. Select the image file. You should get a Header Info dialog. Enter the number of samples (columns), lines (rows), bands (typically 1), Offset (typically 0 if there is no header in the file), xstart and ystart (typically 1), Data Type, and Byte Order (Little Endian = Host (Intel) or Big Endian = Network (IEEE)). Then before you click Ok, click Edit Attributes, and select Map Info....For Image Coord X and Image Coord Y, enter 1.0, 1.0 if you know the lat/lon or meters from the projection center for the upper left corner of the upper left pixel, or 1.5, 1.5 for the center of the upper left pixel. Enter the Pixel Size in meters for X and Y. Map Rotation is typically 0.0 since it refers to rotation around the center of the map not the center of the projection. Click Change

Proj...and then click Select New Projection New....From the Customized Map Projection Definition, Enter a name for your projection (e.g. Polar Stereographic North), and select Polar Stereographic from the list of Projection Types. Then select your Datum from the Projection Datum list, or toggle Projection Datum to specify a Projection Ellipsoid which, if you select User Defined, will allow you to enter your own A and B (the semi-major and semi-minor axes). Enter False easting and northing (typically 0), click Toggle DMS <-> DD and enter 70 for Latitude of true scale and -45 for Longitude down below pole (which should read Longitude up above pole if Latitude of true scale is negative). Then click Ok. You'll be given an option to save the parameters in your existing map_proj.txt (for which you may not have write access) or you can specify a new map_proj.txt. If you do the latter, you should eventually edit your Preferences (from the ENVI main menu, select File->Preferences->User Defined Files and enter the new path for Map Projection File; you should then save the configuration file to a location from which you will start ENVI). Then click OK in the Projection Selection Dialog. You should see the your new projection name in the Proj : field. If you have meters for your upper left corner, enter them as the X value (negative if left of projection center) in the E box and the Y value (negative if below the projection center) in the N box. If you have lat-lon for the upper left corner, click the toggle button next to the Proj : name. Click Ok in the Edit Map Information dialog, and Ok in the Header Info dialog. You should see a Map Info icon in the Available Bands List, and a .hdr file should have been created. You can then verify that the geolocation looks good by selecting Tools->Cursor Location/Value. You can also now look at the values in the header file.

For more information on map projections, see "Map Projections -- A Working Manual", John P. Snyder, US Geological Survey Professional Paper 1935, United States Government Printing Office, Washington,: 1987.

Hope this helps.
--Terry

envi35@yahoo.ca (Jenny) writes:

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> map projections table? In the online help of ENVI, there is a table
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> (-45,70), and I know the lon/lat pairs for all pixels. I tried to set
> the params for ENVI_MAP_INFO_CREATE differently, but when I opened the
> image in envi, it is never right.
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> Any hints are welcome & appreciated,
> Jenny

--
Matthew Savoie - Scientific Programmer
National Snow and Ice Data Center
(303) 735-0785 http://nsidc.org

Subject: Re: Projection Parameters in ENVI
Posted by envi35 on Thu, 21 Oct 2004 17:36:57 GMT
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Hi,Thank you both very much. Is there a way I can convert this process
in an ENVI Or IDL program? e.g.use ENVI_MAP_INFO_CREATE routine?

Regards,Jenny

savoie@nsidc.org wrote in message news:<ywkuvfd68r5r.fsf@snowblower.colorado.edu>...
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