Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by mattie on Fri, 28 Apr 2006 19:55:29 GMT
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David Fanning <davidf@dfanning.com> writes:

> But I wonder if anyone has an image data set to share that
> has associated lat/lon values for each pixel? Or, at least,
> a pointer to a location where I might download such a data
> set.

Here's two data sets for you.:

AMSR-E/Aqua L2B Surface Soil Moisture, Ancillary Parms, & QC EASE-Grids
http://nsidc.org/data/docs/daac/ae_land_l2b_soil_moisture.gd .html

AMSR-E/Aqua Daily L3 Surface Soil Moisture, Interpretive Parms, & QC EASE-Grids
http://nsidc.org/data/docs/daac/ae_land3_l3_soil_moisture.gd .html

The data are in HDF-EOS format, so IDL supports that, it should be easy to work with.

Of course I jest! The gctp projection hasn't been added to the gctp library that IDL uses (or more likely, the projection hasn't been updated into the map_* routines) , so it might be a little harder to use:

gctp proj code:
GCTP_CEA (97) Cylindrical Equal-Area (for EASE grid with corners in meters)**

But if you're just looking for a lat, lon, and a data grid with projection information we can do that for a different gctp projection:

The Northern Hemisphere EASE-Grid Weekly Snow Cover and Sea Ice Extent Version 3 is Available here: *under the "Access Data" link*

http://nsidc.org/data/nsidc-0046.html

After the link the data is in the directory 'data'. And under 'Tools' there are files of the lat and lons of the grid cell centers. (LSB is least significant byte)

File: NLLATLSB.GZ
File: NLLATMSB.GZ
File: NLLONLSB.GZ
File: NLLONMSB.GZ

And there's a page about the projection/grid EASE: All About EASE.

http://nsidc.org/data/ease/ease_grid.html

Have fun.

Matt

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

Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by David Fanning on Fri, 28 Apr 2006 20:12:08 GMT
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Matt Savoie writes:

> Here's two data sets for you.:

You are trying to ruin my weekend, aren't you. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by savoie on Fri, 28 Apr 2006 20:59:29 GMT
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David Fanning <davidf@dfanning.com> writes:

> Matt Savoie writes:
>
>> Here's two data sets for you.:
>
> You are trying to ruin my weekend, aren't you. :-)

Maybe just a little. But I'll tell you, we've been trying to expose that gctp transform for a couple of years now.

Matt

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

Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by George N. White III on Fri, 28 Apr 2006 21:03:07 GMT
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On Fri, 28 Apr 2006, David Fanning wrote:

> Wow. I've, uh, learned some things in the past couple of days
> that I have been concentrating on map projections. (I'll be
> sharing some of it in new articles that will be on my web
> page soon.)
>
> But I wonder if anyone has an image data set to share that
> has associated lat/lon values for each pixel? Or, at least,
> a pointer to a location where I might download such a data
> set.
>
> I'm beginning to understand just how powerful those MAP_PROJ_*
> routines are! :-)

Take a look at the NASA Ocean Color site: http://oceancolor.gsfc.nasa.gov/ You can download all sorts of data in .hdf format as well as the SeaDAS software, which is an IDL GUI which runs Fortran and C code to do the heavy lifting. SeaDAS hdf files are sort an prototype for HDF-EOS, but they reference IDL projections while HDF-EOS uses the GTCP library of projections. Processing ocean remote sensing data is very different from most applications of remote sensing because water is "darker" than land, so what the satellite senses is mostly from the atmosphere. This makes it hard for a commercial developer to justify the cost of developing software for ocean data, so we end up with a free open source application developed by NASA.

Also on the Ocean Color site you will find links to data from commercial
(Orbimage SeaWiFS) and non-commercial sensors (NASA MODIS), both on polor
orbiting platforms so you get global coverage every few days. Chlorophyll
is interesting because there are all sorts of spatial patterns in a scalar
that varies from 10-2 to 10^2 (mg/m^3)!

--
George N. White III <aa056@chebucto.ns.ca>

Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by liamgumley on Fri, 28 Apr 2006 21:07:45 GMT
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David,

Do you want images in sensor projection (i.e. as the sensor acquired
the data), or images which have been resampled to a map grid?

Liam.

Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by David Fanning on Fri, 28 Apr 2006 21:28:42 GMT
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Liam writes:

> Do you want images in sensor projection (i.e. as the sensor acquired
> the data), or images which have been resampled to a map grid?

What I am curious to try is to convert pixels that have already
been placed in a projection to another projection by means of
sending them through the UV coordinate system. This is probably
what your ImageMap already does, but I'm teaching this material
next week and I don't understand it fully until I actually do it myself.

I can imagine there are some projection combinations where
this is nearly impossible to do. But I can imagine others that
are easy. I just wanted to play with this a bit to see what
the issues are.

So, I guess I am looking for images already resampled to a map
grid. I'll leave the sensor projections for the advanced class. :-)

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: Map Projection Knowledge Growing Exponentially
Posted by kBob on Sat, 29 Apr 2006 17:07:23 GMT
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Landsat imagery can be found at:

http://glcf.umiacs.umd.edu/data/

Save it as GeoTIFF. The IDL READ_TIFF will provide an offset and scale information to
be used to create a lat/lon grid.

Looking for high resolution stuff? Visit DigitalGLobe. They have a sample dataset
from Qiuckbird as a GeoTIFF.

http://www.digitalglobe.com/product/product_sample.shtml

Kelly Dean
Fort Collins, CO
