Subject: Map projections
Posted by James Kuyper on Mon, 12 Nov 2001 15:55:26 GMT
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Is there any way to get at the coordinate conversion function for the currently active map projection? I'm talking about a function that takes a physical position in latitude and longitude coordinates, and converts it into an image position using either data, device, or normal coordinates. It doesn't matter which; once the position is in any one of those forms, I can get the others by using CONVERT_COORD. Such functions have to exist in order for IDL to perform mapping, but they don't seem to be publically exposed. I'd also like to have access to the inverse function, to get a lat/lon corresponding to an image position.

--
James Kuyper
MODIS Level 1 Lead
Science Data Support Team
(301) 352-2150

Subject: Re: map projections
Posted by jeffnettles4870 on Wed, 13 Feb 2008 22:04:33 GMT
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On Feb 13, 3:53 pm, kishore1...@gmail.com wrote:
> Hi,
>
> Now, I am learning IDL programming.
> I have a model minimum temperature fraction values with longitude
> latitudinally, I am planning to plot on globe map with longitude and
> latitudinally.
> The data sets are like this
> longitude=float(65)
> latitude=float(32)
> temp_fra=float(65,32)
> These temp_frac values are in between 0.01 to 0.9.
> How to plot these values global map.it might be same as image on
> global map.
>
> If anybody knows how to plot longitude/latitude values on global map
> and try to suggest me.
>
> I am awaiting for your reply,
>
> Kishore

This might get you started...

Subject: Re: Map Projections
Posted by David Fanning on Fri, 15 Jan 2010 20:52:58 GMT
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Bennett writes:

> I currently have data with an associated latitude and longitude
> frame. I've seen David Fanning's "Navigating GOES Images" example but
> the process does not seem to work for my data.
> When I say it does not work the resulting projection results in
> showing much less of the data than it should based on the lat/lon
> limits.

How are you choosing the "limits"? These are not necessarily
the corners of your image.

> Does the data inherently have to be North up and east/west going right/
> left? My data is presented in an orientation where North is at an
> angle as are the other directions where the bottom of the image is not
> lowest latitude etc... Is there a special way to handle the
> projection for these types of datasets?

No, pick the upper-left corner of the rectangular image as your
starting point, and you should be good to go. What kind of map
projection is this, what is the lat/lon in the upper left corner,
what size is your image in pixels, and what is the resolution of
a pixel in meters? (You *can* determine the later number from
the lat/lon corners of your image.)

> The end result I'm looking for is a GeoTiff. I would think that with
> all this information at my fingertips IDL would make this easy but
> alas it is not.

You have been reading WAY too many marketing materials. :-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.

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

Subject: Re: Map Projections
Posted by David Fanning on Fri, 15 Jan 2010 21:12:39 GMT
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Bennett writes:

> I currently have data with an associated latitude and longitude
> frame. I've seen David Fanning's "Navigating GOES Images" example but
> the process does not seem to work for my data.

Humm. I just re-read that article. That's the way I would
have done it two years ago when I knew next to nothing
about map projections. :-)

If you want to tell me where I can find the image you
are working with, I'll see if I can write a better
article, knowing what I know today. I *think* I am off
on Monday, but I better check the calendar! :-)

Cheers,

David

--
David Fanning, Ph.D.
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Subject: Re: Map Projections
Posted by Juggernaut on Mon, 18 Jan 2010 13:16:16 GMT
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On Jan 15, 4:12 pm, David Fanning <n...@dfanning.com> wrote:
> Bennett writes:
>> I currently have data with an associated latitude and longitude
>> frame. I've seen David Fanning's "Navigating GOES Images" example but
>> the process does not seem to work for my data.
>
> Humm. I just re-read that article. That's the way I would

> have done it two years ago when I knew next to nothing
> about map projections. :-)
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> If you want to tell me where I can find the image you
> are working with, I'll see if I can write a better
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> on Monday, but I better check the calendar! :-)
>
> Cheers,
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> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Sadly I don't have the ability to get the data to the group here. I would essentially be equivalent to taking the GOES data and rotating it by some 30-60 degrees cropping out the garbage areas and then attempting to get the same answer...which I haven't done yet but will try if I get a chance. Here's what would be a nice sequence and what I would like to get to.

success = createGeoTiff(data, lats, lons, /MERCATOR)

One day...with IDL (or PythonXY) I will achieve this and the world will be an easier place to project one's data. It's the kind of world I'd like to live in.

Subject: Re: Map Projections
Posted by Juggernaut on Mon, 18 Jan 2010 17:28:11 GMT
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On Jan 15, 3:52 pm, David Fanning <n...@dfanning.com> wrote:
> Bennett writes:
>> I currently have data with an associated latitude and longitude
>> frame. I've seen David Fanning's "Navigating GOES Images" example but
>> the process does not seem to work for my data.
>> When I say it does not work the resulting projection results in
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>
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>

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> a pixel in meters? (You *can* determine the later number from
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>
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>> alas it is not.
>
> You have been reading WAY too many marketing materials. :-)
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> Cheers,
>
> David
>
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

I am currently simply following your example and selecting the middle
left, top, right and bottom as my limits. I should probably be doing
a different calculation to retrieve these points since I don't have
the nicely oriented data. Poor map projection knowledge = rough road.

Subject: Re: Map Projections
Posted by David Fanning on Mon, 18 Jan 2010 17:41:34 GMT
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Bennett writes:

> I am currently simply following your example and selecting the middle
> left, top, right and bottom as my limits. I should probably be doing
> a different calculation to retrieve these points since I don't have
> the nicely oriented data. Poor map projection knowledge = rough road.

It has been a rough road for me, too. About two years
of it. And every time I am *sure* I know what I am doing,

it is proven otherwise. My map projection articles
reflect this start and stop progress. (The only way
I know to make certain progress is to write an
article about what I *think* I know!) But, you might
want to read this article:

  http://www.dfanning.com/map_tips/iceshelf.html

That will probably get you closer to where you want to
go then the article you are reading now.

Of course, eventually I am going to put all this together
into a book that will secure my financial future. But in the
meantime, you will have to piece it together. If you look
at it in a certain way, it's actually fun. ;-)

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Map Projections
Posted by Juggernaut on Mon, 18 Jan 2010 19:00:47 GMT
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On Jan 18, 12:41 pm, David Fanning <n...@dfanning.com> wrote:
> Bennett writes:
>> I am currently simply following your example and selecting the middle
>> left, top, right and bottom as my limits. I should probably be doing
>> a different calculation to retrieve these points since I don't have
>> the nicely oriented data. Poor map projection knowledge = rough road.
>
> It has been a rough road for me, too. About two years
> of it. And every time I am *sure* I know what I am doing,
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> http://www.dfanning.com/map_tips/iceshelf.html
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> That will probably get you closer to where you want to
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> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.dfanning.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

I appreciate the link and the freeness of it. In my experience, documented = fun and undocument = unfun. Thank you for piecing together a few nuggets for us so that we have some useful documentation.
