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Subject: read lambert projected image

Posted by [audrey.schaufelberger](#) on Fri, 20 Jun 2014 17:56:19 GMT

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I have somewhat a tricky problem: I would like to read a jpeg file which shows a lambert projection of a map. What I would like is to have an rgb value associated with coordinates, so that I can plot the map in a different projection. Does anyone have an idea how I could accomplish this?

best,  
as

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Subject: Re: read lambert projected image

Posted by [David Fanning](#) on Fri, 20 Jun 2014 21:09:54 GMT

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as@gmail.com writes:

> I have somewhat a tricky problem: I would like to read a jpeg file which shows a lambert projection of a map. What I would like is to have an rgb value associated with coordinates, so that I can plot the map in a different projection. Does anyone have an idea how I could accomplish this?

Prayer would be my suggestion, unless you know something you are not telling us about the map projection details and the projected meter extent of the image.

Cheers,

David

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David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Seppure ma de ni thue. ("Perhaps thos speakest truth.")

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Subject: Re: read lambert projected image

Posted by [audrey.schaufelberger](#) on Sat, 21 Jun 2014 16:56:04 GMT

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I am afraid I don't quite understand what you mean... I have an image showing the farside of the moon. The complete farside, so I know that the map ranges from 90...270 deg in longitude and from -90...90 deg in latitude. I also know that the projection used is a lambert equal area projection. In addition, the map fills the image, i.e., (90/0) deg touches the left center, (180/90) deg the top center, (270/0) deg the right center and (180/-90) deg the bottom center of the image. So in theory I guess, since everything seems well defined, I should be able to determine the lon/lat

pair corresponding to a x/y image coordinate. I was hoping there was a procedure where I can tell what projection a map is plotted with, and the procedure would read the .jpg while assigning each x/y image coordinate the right lon/lat coordinate.  
but that might be a bit much I ask for...

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Subject: Re: read lambert projected image

Posted by [David Fanning](#) on Sat, 21 Jun 2014 18:30:38 GMT

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audrey.schaufelberger@gmail.com writes:

> I am afraid I don't quite understand what you mean... I have an image showing the farside of the moon. The complete farside, so I know that the map ranges from 90...270 deg in longitude and from -90...90 deg in latitude. I also know that the projection used is a lambert equal area projection. In addition, the map fills the image, i.e., (90/0) deg touches the left center, (180/90) deg the top center, (270/0) deg the right center and (180/-90) deg the bottom center of the image. So in theory I guess, since everything seems well defined, I should be able to determine the lon/lat pair corresponding to a x/y image coordinate. I was hoping there was a procedure where I can tell what projection a map is plotted with, and the procedure would read the .jpg while assigning each x/y image coordinate the right lon/lat coordinate.  
> but that might be a bit much I ask for..

With a JPEG image, you are asking for too much. Can you find the same image in a GeoTiff image format? That will have the map projection information you need built into it. Failing that, NASA (or whoever created the original image) usually have information about the map projection used, etc. Since this is the moon, you will need to know its radius, and what kind of Geoid (sphere, ellipsoid, etc) was used to determine the latitude and longitude points. It wouldn't surprise me if the organization that captured the image has already created latitude and longitude arrays for every image pixel. Have you looked for these?

Cheers,

David

--

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Seppure ma de ni thue. ("Perhaps thos speakest truth.")

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Subject: Re: read lambert projected image

Posted by [audrey.schaufelberger](#) on Sat, 21 Jun 2014 22:15:18 GMT

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I see...

Whereas the data used to produce the image is readily available from NASA, the image published is highly processed (cleaned, altitude-corrected, fitted, etc.). I only found one version of the image available (<http://www.lpl.arizona.edu/~nic/Moon/LPMAG.html>) and unfortunately I can't seem to locate the person who created this image to ask for the raw data. If I am not mistaken, the author neither mentions in this publication nor previous publications the information you mention I need to know. All the author mentions is that an equal-area lambert projection was used... Lets say I would assume that she used a standard radius and a sphere as a Geoid, it would still be an immense task to transform the (x,y) coordinates to (lon, lat) coordinate, right? I am wondering if it is even worth a try writing such a program from scratch...

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Subject: Re: read lambert projected image

Posted by [David Fanning](#) on Sun, 22 Jun 2014 03:56:56 GMT

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audrey.schaufelberger@gmail.com writes:

> I see...

> Whereas the data used to produce the image is readily available from NASA, the image published is highly processed (cleaned, altitude-corrected, fitted, etc.). I only found one version of the image available (<http://www.lpl.arizona.edu/~nic/Moon/LPMAG.html>) and unfortunately I can't seem to locate the person who created this image to ask for the raw data. If I am not mistaken, the author neither mentions in this publication nor previous publications the information you mention I need to know. All the author mentions is that an equal-area lambert projection was used... Lets say I would assume that she used a standard radius and a sphere as a Geoid, it would still be an immense task to transform the (x,y) coordinates to (lon, lat) coordinate, right? I am wondering if it is even worth a try writing such a program from scratch...

No I don't think it will be an "immense" task. It might take 10-15 minutes if you understand map projections well enough to know what you are doing. Learning about map projections might be an "immense" task, depending on your definition. It took me 2-3 years, and I'm not always 100% sure I know what I'm doing now. In the scheme of things, that was only 10% of the time I'm been working with IDL, so a short time. :-)

I've been moderately successful when "guessing" about map projections. Knowing how to recompile and run IDL programs after making random changes to the code helps. But, sometimes guessing doesn't work well at all. Then, it is a lot of work for a null result.

Cheers,

David

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David Fanning, Ph.D.

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Sepore ma de ni thue. ("Perhaps thos speakest truth.")

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