Subject: Re: Significant Update of cgImage
Posted by Fabzou on Mon, 05 Dec 2011 08:36:22 GMT
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Hi David,

Nice updates. I think that most of the features (scaling, missing) have been allready implemented upstream by people (like me!) who needed this for long, but I may change some of my code

The same applies for the automatic window XY ratio. In my case the most interesting feature would be do be able to produce a display automatically that takes in account the XY ratio of the "image + color bar + colorbar tags" which are almost allways present when you display any kind of data.

Thanks a lot,

Fab

On 12/04/2011 06:58 PM, David Fanning wrote:
> Folks,
>
> I wanted to alert you to a couple of significant feature
> updates to cgImage.
>
> As I work on my map projection book, I have been using
> a lot of GeoTiff images. These images are easy to
> navigate and georegister, and I have developed software
> that can read a GeoTiff file and display the image with
> map annotations, etc. All of that works nicely.
>
> The problem is that many of these Tiff images are low
> contrast, have missing data values in them, etc. This
> is the problem that is addressed in this update of
> cgImage.
>
> I have modified cgImage so that if you are displaying
> a 2D image array (this does NOT apply to 24-bit color
> images!) you now have the ability to scale or stretch
> these images eight different ways. Basically, you now
> have the stretching capability of XStretch directly
> in cgImage. What this means is that not only can you
> do a straight linear scaling of the data before display
> (the purpose of the old SCALE keyword), but you can
> also do Log, Gamma, and Gaussian scaling, do

> histogram clipping in various ways, etc.
>
> For example, many of these images look best when a
> two percent histogram clipping is used (e.g. ClipScl).
> This is the same default clipping that ENVI uses.
> You can affect such a clip like this:
>
>   IDL> cgImage, image2d, Stretch="CLIP"
>
> Possible values for the STRETCH keyword are: LINEAR,
> CLIP, GAMMA, LOG, ASINH, SQUAREROOT, EQUALIZATION,
> GAUSSIAN, and MODIS. Alternatively, you can use index
> numbers in place of these names. In other words, the
> command above can also be written like this:
>
>   IDL> cgImage, image2d, Stretch=2
>
> The old SCALE keyword simple chooses a LINEAR stretch.
> Additional keywords are added that will set the parameters
> for the different stretches available.
>
> Another problem with many GeoTiff images is that they
> have missing data in them. So cgImage has also been modified
> with three additional keywords to allow you to handle this
> missing data appropriately. These keywords are:
>
>   Missing_Value - Used to specify the missing data value in the image.
>   Missing_Index - Specify the missing index in the output image.
>   Missing_Color - Specify color of the missing data in output image.
>
> Suppose, for example, missing data is indicated by the value
> -32767 and you would like to display this missing data in a
> white color using color index 255 (the default missing color
> index). Then you could set up and display your image like this:
>
>   IDL> cgLoadct, 33, NColors=254
>   IDL> cgImage, image2d, Missing_Value=-32767, Missing_Color='white', $
>   Stretch="LINEAR"
>
> The missing data values are now set to !Values.F_NAN before the
> scaling is done. The scaling is done into the values 0 to 254.
> Then the missing data indices are set equal to 255, the
> missing value index. The resulting image shows the missing
> values in the color you specify.
>
> I want to mention one other change. I often want to display
> these images in graphics windows having the same aspect ratio
> as the image itself. A new DISPLAY keyword to cgImage will

> create such a graphics window for me and display the image in
> that graphics window. If the DISPLAY keyword is used with
> the WINDOW keyword, and new cgWindow will be created. Otherwise
> the graphics window will be created with cgDisplay.
>
>   IDL> cgImage, image2d, Missing_Value=-32767, Missing_Color='white', $
>   Stretch="LINEAR", /Display, /Window
>
> If a cgWindow is opened in this way, the aspect ratio of the
> window is confined to the aspect ratio of the image as the
> window is resized.
>
> A number of other routines were slightly modified to work
> smoothly with new functionality in cgImage. This would
> be a good time to update your Coyote Library:
>
>   http://www.idlcoyote.com/programs/zip_files/coyoteprograms.z ip
>
> You can read about the new keywords in the updated cgImage
> documentation:
>
>   http://www.idlcoyote.com/idldoc/cg/cgimage.html
>
> Cheers,
>
> David
>
