Subject: Re: Coyote Graphics Updates
Posted by MariLiza on Tue, 13 Dec 2011 14:16:16 GMT
View Forum Message <> Reply to Message

Thanks David!!! :) Your hard work is truly appreciated!!!! All around
the World!!!
:-)
-MariLiza

On Dec 8, 5:16 pm, David Fanning <n...@dfanning.com> wrote:
> Folks,
>
> I'm not sure what accounts for the burst in activity
> in the past week (fears of having to get a real job
> again, probably!), but I have changed 28 of the 41
> Coyote Graphics routines in the past week!
>
> Most of the changes have been documentation changes,
> as I am switching to the IDLDOC rst method for all
> new programs, and I wanted to retrofit all of my
> Coyote Graphics programs so I could have a good
> set of on-line documentation. There are still
> niggling typos, etc., but you can find the on-line
> documentation here:
>
> http://www.idlcoyote.com/idldoc/cg/index.html
>
> There have also been changes to some well-used programs.
>
> cgColor -- I have modified this grandfather of all
> Coyote Graphics programs to be a bit more useful.
> It will now accept a three-element array (a color
> triple) as input, so you can specify *exactly* what
> color your want in a device and color model independent
> way. It will also accept byte and integer values, and it
> will treat such values as indices into the current
> color table. Previously, you had to make a string of
> these values first (i.e., '215', rather than just 215).
> It will also complain vociferously now if you pass
> it the ambiguous long integer.
>
> Eventually, this will make specifying colors for all
> Coyote Graphics routines more robust, but we see the
> effects immediately in changes to cgColorbar.
>
> cgColorBar -- The biggest change to cgColorBar is
> the ability now to include "out-of-bounds" colors
> as triangles on either end of the color bar. The

> keyword OOB_Low and OOB_High allow you to specify the
> colors you want to use and take advantage of cgColor's
> new functionality so there are LOTS of options on
> how you specify the colors you want to use. The shape
> of the triangle can be adjusted with the OOB_Factor
> keyword, for those of you who are anal about such
> things.
>
> I find I use cgColorBar very often with a handful
> of colors, and I would like the colors to look like
> distinct rectangles, in the manner of cgDCBar. This
> involves some manipulation of keywords, that I think
> a lot of people don't know how to use. So, I have added
> a Discrete keyword, that just sets this up for me.
>
>   cgLoadCT, 33, NColors=10
>   cgColorbar, NColors=10, /Discrete
>
> To add out-of-bounds colors, you do this. Note
> that the OOB colors are independent of each
> other. You can use one without the other.
>
>   cgErase
>   cgColorbar, NColors=10, /Discrete, $
>   OOB_Low='white', OOB_High='Black'
>
> One motivation for the color bar changes was a desire
> to make a color bar that more accurately reflects the
> reality of a filled contour plot.
>
> Often, we create a filled contour plot with a color bar
> like this:
>
>   data = cgDemoData(2)
>   cgLoadCT, 33, NColors=10, Bottom=1
>   step = (Max(data) - Min(data)) / 10
>   levels = Indgen(10)*step + Min(data)
>   cgContour, data, Levels=levels, /Fill, $
>   Position=[0.1, 0.1, 0.9, 0.825], C_Colors=Indgen(10)+1
>   cgContour, data, Levels=levels, /Overplot
>   cgColorbar, NColors=10, Bottom=1, $
>   Range=[Min(data), Max(data)], Discrete
>
> But, this gives us fairly arbitrary contour levels. We often
> want the levels of our choosing, but when we do so, the last
> level usually means something like "this color represents all
> values above this level". In other words, we want something
> that looks like this:

>
>   data = cgDemoData(2)
>   cgLoadCT, 33, NColors=10, Bottom=1
>   levels = Indgen(10)*150
>   cgContour, data, Levels=levels, /Fill, $
>   Position=[0.1, 0.1, 0.9, 0.825], C_Colors=Indgen(10)+1
>   cgContour, data, Levels=levels, /Overplot
>   cgColorbar, NColors=9, Bottom=1, OOB_High=10, $
>   Range=[Min(levels), Max(levels)], /Discrete
>
> To make this even easier to do, I have added a new OLEVELS
> keyword to cgContour, so that you can, if you need to, fetch
> the contour levels that the program actually uses. So now,
> you can do the same thing, but using NLevels in the
> cgContour call in the usual way:
>
>   data = cgDemoData(2)
>   cgLoadCT, 33, NColors=10, Bottom=1
>   cgContour, data, NLevels=10, /Fill, OLevels=levels, $
>   Position=[0.1, 0.1, 0.9, 0.825], C_Colors=Indgen(10)+1
>   cgContour, data, Levels=levels, /Overplot
>   cgColorbar, NColors=9, Bottom=1, OOB_High=10, $
>   Range=[Min(levels), Max(levels)], /Discrete
>
> cgPS2PDF -- The functionality that caused the biggest change
> to Coyote Graphics programs was the addition of the
> cgPS2PDF program that allows me to create PDF files
> in a machine-independent way from PostScript intermediary
> files.
>
> I know people use a lot of different routines to do this,
> and I have tried to retain that kind of flexibility in this
> program. I'm not out to reinvent the wheel, I just really
> want the ability to make PDF files from within cgWindow! :-)
>
> This program will use Ghostscript on Windows and UNIX machines,
> and pstopdf on Macs. If you don't want to use the "gs"
> command on UNIX machines, you can choose the command you
> do want to use. For example, the "epstopdf" command probably
> works better with encapsulated PostScript files than does
> the "gs" command. You can make that substitution in the
> program.
>
> A number of Coyote Graphics programs changed to accommodate
> this new functionality. Among them are cgWindow, cgControl,
> cgWindow_SetDefs, cgWindow_GetDefs, and PS_End. I wouldn't be
> surprised if there were others as well.
>

> You can find all of these changes in the latest Coyote Library
> distribution:
>
> http://www.idlcoyote.com/programs/zip_files/coyoteprograms.z ip
>
> Or, using Subversion at:
>
> http://idl-coyote.googlecode.com/svn/tags/coyote/coyote_libr ary_1.4
>
> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.
> Coyote's Guide to IDL Programming:http://www.idlcoyote.com/
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")
