
Subject: Re: cgGallery with function graphics
Posted by [Matthew Argall](#) on Thu, 27 Feb 2014 19:59:56 GMT
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Filled Contour Plot

http://www.idlcoyote.com/gallery/filled_contour_plot_1.png

Several things that are not intuitive and are not explained in the documentation are happening in this one. I cannot precisely reproduce the Coyote version.

PRO Filled_Contour_Plot_FG, WINDOW=window

```
;Set up variables for the contour plot. Normally, these values  
;would be passed into the program as positional and keyword parameters.
```

```
minValue = Floor(Min(data))
```

```
maxValue = Ceil(Max(data))
```

```
nLevels = 10
```

```
xtitle = 'X Axis'
```

```
ytitle = 'Y Axis'
```

```
position = [0.125, 0.125, 0.9, 0.800]
```

```
cbposition = [0.125, 0.865, 0.9, 0.895]
```

```
cbTitle = 'Data Value'
```

```
;Contour Levels
```

```
contourLevels = cgConLevels(data, NLevels=10, MinValue=minValue)
```

```
;Set up colors for contour plot.
```

```
cgLoadCT, 33, NColors=nlevels, Bottom=1, CLIP=[30,255]
```

```
TVLCT, palette, /GET
```

```
; Open a window and return its reference to the user.
```

```
aWindow = Window(WINDOW_TITLE="Filled Contour Plot")
```

```
;Draw the filled contour plot.
```

```
; - RGB_Table=33 works and creates a discretely filled contour plot. However,  
;   the TAPER keyword in Colorbar seems to need a non-continuous color pallete  
;   to not be ignored. Attempt to use a reduced color palette failed.
```

```
fgC_Fill = Contour(data, /Current, /FILL, C_Value=contourLevels, RGB_Table=palette, $  
                  XTitle=xtitle, YTitle=ytitle, Position=position)
```

```
;Must overplot another contour to get the lines.
```

```
; - Orientation of the labels is rotated 180 degrees.
```

```
; - Must supply own Text() or Symbol() object and use the
```

```
;   C_Use_Label_Orientation and C_Label_Objects keywords to get proper orientation.
```

```
fgC_Lines = Contour(data, C_Value=contourLevels, OverPlot=fgC_Fill, C_Label_Show=1)
```

```
;Add the right and top axes
```

```

; In IDL 8.2.3+ set Location='Right' or 'Top' and skip finding [xy]range.
IF Float(!Version.Release) GE 8.3 THEN BEGIN
  xrange = (fgC_Fill.Axes)[0].Range
  yrange = (fgC_Fill.Axes)[1].Range
  xAxis = Axis('X', Target=fgC_Fill, Location=[xrange[1], $
    yrange[1], 0], TickFormat='(A1)', TickDir=1)
  yAxis = Axis('Y', Target=fgC_Fill, Location=[xrange[1], $
    yrange[0], 0], TickFormat='(A1)', TickDir=1)
ENDIF ELSE BEGIN
  xAxis = Axis('X', Target=fgC_Fill, Location='Right', $
    TickFormat='(A1)', TickDir=1)
  yAxis = Axis('Y', Target=fgC_Fill, Location='Top', $
    TickFormat='(A1)', TickDir=1)
ENDELSE

;Add the colorbar
; - The title and ticklabels are always on the same side. Try to use an Axis() instead
; - The Taper keyword is ignored: It is suppose to be ignored if the color table
;   is continuous, but here, "palette" is reduced... Perhaps data is out of range? Do not see
how...
; - TickFormat is ignored
fgCB = Colorbar(Target=fgC_Fill, Position=cbPosition, Title='Data Value', Taper=0, $
  Border=1, TextPos=1, TickFormat='(A1)')

;Create an axis for the colorbar to try and put the ticklabels on the bottom.
; - It seems as though axes cannot have colorbars as targets...
; - cbAxis is undefined after attempt
; - No information is given as to what happened...
cbAxis = Axis('X', Target=fgCB, Location=[cbPosition[0:1], 0], Axis_Range=[minValue,
maxValue])

END ;*****

; This main program shows how to call the program and produce
; various types of output.

; Display the plot in a resizeable graphics window.
Filled_Contour_Plot_FG, Window=window

; Create a PostScript file. Linestyles are not preserved in IDL 8.2.3 due
; to a bug. Only encapsulated PostScript files can be created.
window.save, 'filled_contour_plot_fg.eps'

; Create a PNG file with a width of 600 pixels. Resolution of this
; PNG file is not very good.
window.save, 'filled_contour_plot_fg.png', WIDTH=600

; For better resolution PNG files, make the PNG full-size, then resize it

```

```
; with ImageMagick. Requires ImageMagick to be installed.  
window.save, 'filled_contour_plot_fg_fullsize.png'  
Spawn, 'convert filled_contour_plot_fg_fullsize.png -resize 600  
filled_contour_plot_fg_resized.png'
```

END
