Subject: Re: !p.multi and tv
Posted by pit on Mon, 18 May 1998 07:00:00 GMT
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In article <6ji0he$n3v$1@nnrp1.dejanews.com>,
 csaute3@alumni.umbc.edu writes:
> davidf@dfanning.com (David Fanning) wrote:
>
>> You might want to try TVImage on my webpage.
>
>
> I would like to use !P.MULTI and TV to position images like you
> would plots. For plots I can do the following to get a column of
> 4 plots. I have not specified any positioning coordinates. !p.multi
> "handles" that for me.

I have one that respects the setting of !p.multi - maybe try it out.

Peter

```
PRO Tvimg, image, xax, yax, position=pos, box=box, noerase=noerase, $
        nolabels=nolabels, noscale=noscale, ASPECT=aspect, _EXTRA=extra

;+
; NAME:
;       TVIMG
; PURPOSE:
;       Display an image in an window with border and axis
; CALLING SEQUENCE:
;       TVIMG, IMAGE [, XAX [, YAX] [, KEYWORDS]]
; INPUTS:
;       IMAGE : Image to display
; OPTIONAL INPUT PARAMETER:
;       XAX   : (input) Xaxis values
;       YAX   : (input) Yaxis values
; KEYWORDS:
;       POSITION: Position of Plot area corners in norm coordinates.
;               Standard graphics keywords
;       BOX     : (input) Draw the koordinate axes with linethick
;               BOX. Makes the plot look a bit Displa-Style.
;       ASPECT  : (Flag) Keep aspect ratio of the image
;       NOERASE : (Flag) Don't clear plot window before drawing
;       NOLABELS: (Flag) Don't draw axis annotations
;       NOSCALE : (Flag) By default, TVSCL is used to display the
;               image. Set this keyword to use TV instead. Remember
;               to do bytescaling yourself!
;       Additionally, all valid keywords for the plot routine are
```

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;       allowed.
; RESTRICTIONS:
;
; PROCEDURE:
;       Eventualy rescale the image to fit the display, then oplot an
;       empty co-ordinate system. Draw thick bounding box if required.
; MODIFICATION HISTORY:
;       24-Sep-1994  P.Suetterlin, KIS
;       23-Feb-1995  Correct handling of multiple-plot styles (!P.style<>0)
;       25-Jul-1996  Use Keyword _EXTRA to pass keywords to plot
;                    routine.
;       29-Oct-1997  Add keyword ASPECT to preserve the aspect ratio of
;                    the image
;-

on_error, 2

IF n_params() LT 1 THEN $
  message, 'Syntax: TVIMG, Image [, xax, yax]'

s = size(image)
sx = s(1) & sy = s(2)

IF n_params() LT 3 THEN $
  yax = indgen(sy)

IF n_params() LT 2 THEN $
  xax = indgen(sx)

;;;
;;; We do an empty plot to
;;;  1) clear the screen (except NOERASE is set)
;;;  2) Set !x.window and !y.window if it is a multiple plot
;;;

plot, [0, 1], /nodata, xsty = 4, ysty = 4, xtit = '', ytit = '', $
 subtit = '', tit = '', noerase=noerase

IF NOT keyword_set(pos) THEN BEGIN
  IF (!X.window(1)-!X.window(0)) EQ 0 THEN $
    pos = [0.1, 0.1, 0.95, 0.95] $
  ELSE $
    pos = [!X.window(0), !Y.window(0), !X.window(1), !Y.window(1)]
ENDIF

IF keyword_set(aspect) THEN BEGIN
     ;;; current aspect ratio
    asp = float(sx)/sy
```

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    ;;; aspect ratio of the plot area
   asp1 = (pos(2)-pos(0))*!d.x_size/((pos(3)-pos(1))*!d.y_size)
   IF asp LT asp1 THEN BEGIN
       ;;; area is broader than pic -> shrink area horizontaly
      nw = asp/asp1*(pos(2)-pos(0))
      pos(0) = pos(0)+((pos(2)-pos(0))-nw)/2
      pos(2) = pos(0)+nw
   ENDIF ELSE BEGIN
       ;;; area is higher than pic -> shrink area vertically
      nw = asp1/asp*(pos(3)-pos(1))
      pos(1) = pos(1)+((pos(3)-pos(1))-nw)/2
      pos(3) = pos(1)+nw
   ENDELSE
ENDIF

IF !D.name NE 'PS' THEN GOTO, x

IF keyword_set(noscale) THEN BEGIN
   tv, image, pos(0), pos(1), xsize=pos(2)-pos(0), $
     ysize=pos(3)-pos(1), /norm
ENDIF ELSE BEGIN
   tvscl, image, pos(0), pos(1), xsize=pos(2)-pos(0), $
     ysize=pos(3)-pos(1), /norm
ENDELSE

plot, xax([0, sx-1]), yax([0, sy-1]), /nodata, /noerase, pos=pos, $
 /xsty, /ysty, xtickname=replicate(' ', 15), ytickname=replicate(' ', 15), $
 _EXTRA=extra

IF NOT keyword_set(nolabels) THEN BEGIN
   axis, xax=0, /xsty
   axis, yax=0, /ysty
ENDIF

IF keyword_set(box) THEN BEGIN
   lu = [!X.crange(0), !Y.crange(0)]
   ro = [!X.crange(1), !Y.crange(1)]
   plots, [lu(0), ro(0), ro(0), lu(0), lu(0)], $
     [lu(1), lu(1), ro(1), ro(1), lu(1)], thick = box
ENDIF


return

X:
nx = fix((pos(2)-pos(0))*!D.x_size+0.5)+1
ny = fix((pos(3)-pos(1))*!D.y_size+0.5)+1
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IF keyword_set(noscale) THEN $
  tv, rescale(image, nx, ny), pos(0), pos(1), /norm $
ELSE $
  tvscl, rescale(image, nx, ny), pos(0), pos(1), /norm

plot, xax([0, sx-1]), yax([0, sy-1]), /nodata, /noerase, pos=pos, $
  /xsty, /ysty, xtickname=replicate(' ', 15), ytickname=replicate(' ', 15), $
  _EXTRA=extra

IF NOT keyword_set(nolabels) THEN BEGIN
    axis, xax=0, /xsty
    axis, yax=0, /ysty
ENDIF

IF keyword_set(box) THEN BEGIN
    lu = [!X.crange(0), !Y.crange(0)]
    ro = [!X.crange(1), !Y.crange(1)]
    plots, [lu(0), ro(0), ro(0), lu(0), lu(0)], $
      [lu(1), lu(1), ro(1), ro(1), lu(1)], thick = box
ENDIF

END
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