Subject: Plot symbols and symbol tables
Posted by uuvince on Mon, 27 Apr 1992 22:13:00 GMT
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I have recently started making multiple x-y curve plots with WAVE. I sometimes
have a need to plot up to 10 curves on a single plot. I was disappointed to
find that WAVE only has 7 built-in symbols and some of those are not very
pleasing aesthetically. Also, the LEGEND command which is provided for creating
symbol tables produces a double set of symbols if you specify the symbol type
as a positive number. I am interested in knowing if anyone has created a better
and/or more extensive set of symbols, and a better procedure for building a
symbol table.
On another subject, I would like to talk to anyone who has some experience with
using WAVE in a real-time application. We are evaluating methods for displaying
experimental data on both local and remote workstations in real time.
    Replies on either subject would be appreciated.
                                Vince


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| Vince Scullin                | Never attribute to malice that    |
| Scientific Data Applications Branch | which can be adequately explained |
| NASA Lewis Research Center        | by ignorance.                |
| Cleveland, Ohio 44135      uuvince@ariel.lerc.nasa.gov (Vince Scullin) |
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Subject: Re: Plot symbols
Posted by brian.jackel on Thu, 06 Feb 1997 08:00:00 GMT
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In article <32F9F9E9.41C6@osf1.mpae.gwdg.de> Kevin Ivory <kivory2@osf1.mpae.gwdg.de>
writes:

> * Has anyone defined a bunch of plotting symbols for use with
>   graphics keyword psym=8 and usersym procedure? And are you
>   willing to supply them to this group or to me?

Sure, why not. I've attached a little routine called UserSymbol which has
about a dozen symbols in it. I'd be interested in seeing what other people
have done.

> * Is it possible to get any character from the pre-defined IDL
>   vector fonts (especially 'Simplex Roman' or 'Math and Special')
>   and use it as a user defined plotting symbol with usersym?

Not that I know of. Overplotting with XYOUTS would work, but
that might not be what you're looking for.

```
;Brian Jackel   University of Western Ontario
;Bug reports welcome, use at own risk
;brian.jackel@uwo.ca
;+
; NAME:        UserSymbol
;
; PURPOSE:     Make neat little user defined symbols
;
; CATEGORY:    Plotting/Graphics
;
; CALLING SEQUENCE:    UserSymbol,symbol_name
;
; INPUTS:
;     Symbol_name     a string containing the name of the desired symbol.
;                 Some possible options are Square, Triangle, Circle,
;                 Hexagon, BigX, Clover, Spiral, Star...
;
; KEYWORD PARAMETERS:
;     SIZE   Symbol size     (default=1)
;     LIST   if set, puts the list of available symbol names
;           in the input parameter Symbol_Name
;     HELP   if set, returns this documentation header
;
; and also the keywords which apply to USERSYM
;     THICK   Line thickness   (default=1)
;     FILL    Fill symbol?    (default=0=no)
;     COLOR   Symbol color
;
;
; SIDE EFFECTS:        Calls  USERSYM to load the new symbol
;
; MODIFICATION HISTORY:    Brian Jackel   August 10 1992
;                   University of Western Ontario
;
; Bjj June 2 1994     Fixed up the handling of no clear match.
;-
pro  USERSYMBOL,symbol_name,SIZE=size,LIST=list,HELP=help,_EXTRA= _extra

  ON_ERROR,2

  IF KEYWORD_SET(HELP) THEN BEGIN
    DOC_LIBRARY,'USERSYMBOL'
    RETURN
  ENDIF
```

```
symbol_list= ['DIAMOND','PENTAGON','CLOVER','PACMAN','SPIRAL','BIGX']
symbol_list= [symbol_list,'CIRCLE','SQUARE','TRIANGLE','STAR','HEXAGON']

IF KEYWORD_SET(LIST) THEN BEGIN
   symbol_name= symbol_list
   return              ;return a list of the available symbols
ENDIF

IF not KEYWORD_SET(SIZE) THEN size=1.0

symbol= STRUPCASE( STRCOMPRESS(symbol_name,/REMOVE_ALL) )

CASE symbol OF
'DIAMOND': BEGIN
        x= size* [0.0,0.8,0.0,-0.8,0.0]
        y= size* [1.2,0.0,-1.2,0.0,1.2]
        END
'PENTAGON':BEGIN
        theta= findgen(6)/5 * 360.0 * !dtor
        x= 1.0 *size* sin(theta)
        y= 1.0 *size* cos(theta)
        END
'CLOVER':  BEGIN
        theta= findgen(41)/40.0 * 360.0 * !dtor
        r= ABS(1.0 *size* sin(2.0*theta))
        x= r * sin(theta)
        y= r * cos(theta)
        END
'PACMAN':  BEGIN
        theta= (- findgen(41)/50.0*360.0 + 35.0 )*!dtor
        x= [0.0, 1.0 *size* sin(theta), 0.0]
        y= [0.0, 1.0 *size* cos(theta) ,0.0]
        END
'SPIRAL':  BEGIN
        theta= findgen(41)/40.0 * 720.0 * !dtor
        r= 1.0 *size* theta / MAX(theta)
        x= r * sin(theta)
        y= r * cos(theta)
        END
'BIGX':    BEGIN
        x= 0.34 *size* [0,2,3,3,1, 3, 3, 2, 0,-2,-3,-3,-1,-3,-3,-2,0]
        y= 0.34 *size* [1,3,3,2,0,-2,-3,-3,-1,-3,-3,-2, 0, 2, 3, 3,1]
        END
'CIRCLE':  BEGIN
        n= 17.0
        theta= findgen(n)/(n-1.0) * 360.0 * !dtor
        x= 1.0 *size* sin(theta)
        y= 1.0 *size* cos(theta)
```

```
         END
  'SQUARE':  BEGIN
         theta= (findgen(5)/4.0 * 360.0 + 45.0 )*!dtor
         x= 1.0 *size* sin(theta)
         y= 1.0 *size* cos(theta)
         END
  'TRIANGLE':BEGIN
         theta= [0,120,240,360]*!dtor
         x= 1.0 *size* sin(theta)
         y= 1.0 *size* cos(theta)
         END
  'STAR':    BEGIN
         theta= [0,36, 72,108, 144,180, 216,252, 288,324,0]*!dtor
         r= [1.0,0.5, 1.0,0.5, 1.0,0.5, 1.0,0.5, 1.0,0.5,1.0]
         x= r *size* sin(theta)
         y= r *size* cos(theta)
         END
  'HEXAGON': BEGIN
         theta= [0,60,120,180,240,300,360]*!dtor
         x= 1.0 *size* sin(theta)
         y= 1.0 *size* cos(theta)
         END
  ELSE: BEGIN
      MESSAGE,'Unrecognized symbol name, searching for match',/INFORMATIONAL
      hits= STRPOS( symbol_list, symbol )
      w= WHERE(hits NE -1)
      IF (w(0) NE -1) THEN BEGIN ;at least one substring match, use
        hit_names= symbol_list(w(0))
        FOR i=1,n_elements(w)-1 DO hit_names= hit_names +   $
                            ' ' + symbol_list(w(i))
        MESSAGE,'...possible matches: '+hit_names,/INFORMATIONAL
        MESSAGE,'...will use the first (or only) one',/INFORMATIONAL
        symbol_name= symbol_list(w(0))  ;recursion to help us out
        USERSYMBOL,symbol_name,_EXTRA=_extra
      ENDIF ELSE BEGIN
        MESSAGE,'...no quick match.  Try USERSYMBOL,list,/LIST',/INFORMATIONAL
      ENDELSE
      return   ;either with a guessed symbol, or a list of them
      END
  ENDCASE

;User the library routine USERSYM to set up the symbol.
;
  USERSYM,x,y,_EXTRA=_extra

  RETURN
END
```