
Subject: Re: plot, xtickname

Posted by [Michael Werger](#) on Wed, 21 Oct 1998 07:00:00 GMT

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I attach a routine which plots an array (flux vs. wavelength == spectrum) in an coordinate system with flux vs. normalized radial velocity (where the doppler formulae $v/c = (\lambda - \lambda_0) / \lambda_0$ is used.

This shows how to set the xticklabels as you want to have them.

a typical call would be (dummy example now!)

```
IDL> x=findgen(1000)*2+5000
```

```
IDL> y=sin(x) ; just to produce any data
```

```
IDL> lambda0 = 6563.0 ; the famous rest wavelength of hydrogen-alpha
```

```
IDL> lxtitle = 'Wavelength (A)'
```

```
IDL> uxtitle = 'Radial velocity in 1000 km/s'
```

```
IDL> ytitle = 'Flux'
```

```
IDL> title = 'Spectrum of Dummy'
```

```
IDL> labels = [lxtitle,uxtitle,ytitle,title]
```

```
IDL> vplot,x,y,xrange=[6100.0,6900.0],lambda0=lambda0,label=label s
```

Hope this helps,

campo9729@my-dejanews.com wrote:

>

> Harald,

>

> Your suggestion assumes that I know ahead of time what my xaxis labels will

> be. I do not know this. Get_Label.pro is not a general routine. I've tried

> creating an x or y array with the values that I want and using nodata=1,

> but this creates no labels at all. This is very frustrating. I would

> appreciate any further help.

> Regards,

> Cathy

>

```
;  
;+
```

```
;  
; NAME:
```

```
;  
; vplot
```

```
;  
;
```

```
;  
; PURPOSE:
```

```
;  
; provide a simple wavelength/velocity vs. intensity plot interface
```

```
;  
;
```

```
;  
; CATEGORY:
```

```
;  
; graphics, plotting
```

```
;  
;
```

```
;  
; CALLING SEQUENCE:
```

```
;  
;   vplot,x,y,xrange=xrange,lambda0=lambda0,label=label,test=test,nodata=nodata
```

```
;  
;
```

```

; INPUTS:
;   x independent wavelength axis
; y dependent flux axis
;
; KEYWORDS:
; xrange data window (optional)
; lambda0 central wavelength of velocity scale (must be specified)
; label string array: [lower x label, upper x label, y label, title]
; nodata show no data
;
; OUTPUTS:
;   a plot
;
; EXAMPLE:
;
; NOTES:
; xrange overrides !x.range
; but if xrange is not specified, !x.range is required
;
; MODIFICATION HISTORY:
; 970127 Michael Werger
;
;-
pro vplot,x,y,xrange=xrange,lambda0=lambda0,label=label,test=test,nodata=nodata

; parameter check

case n_params() of
2: ;
else: message,'booo'
endcase

if not keyword_set(xrange) then xrange=!x.range

sx_range= !x.range
!x.range=0

; get limits

index = where(x ge xrange(0) and x le xrange(1))
xreduz = x(index)
yreduz = y(index)
x0reduz = xreduz - lambda0
v0reduz = 3e5*(x0reduz/lambda0)
if keyword_set(test) then print,min(xreduz),max(xreduz)
if keyword_set(test) then print,min(v0reduz),max(v0reduz)

; plot

```

```
if keyword_set(nodata) then nodaten = 1 else nodaten = 0
```

```
if not keyword_set(label) then begin
  plot,xreduz,yreduz,xstyle=9,ystyle=1,$
  nodata=nodaten,$
  xtitle='Wavelength ( $\lambda$ )',
  ytitle='norm. Flux'
  plot,v0reduz/1000.,yreduz,xstyle=5,ystyle=1,$
  nodata=nodaten,$
  /noerase,xtick_get=xtickget
  if keyword_set(test) then print,xtickget
  axis,xaxis=1,$
  xstyle=1,$
  xtickv=xtickget,$
  xtickname=string(xtickget,Format='(D4.0)'),$
  xtitle='Radial velocity (10!E3!N km s!E-1!N)'
  plot,xreduz,yreduz,xstyle=9,ystyle=1,$
  /nodata,/noerase
endif else begin
  plot,xreduz,yreduz,xstyle=9,ystyle=1,$
  nodata=nodaten,$
  xtitle=label(0),$
  ytitle=label(2)
  plot,v0reduz/1000.,yreduz,xstyle=5,ystyle=1,$
  nodata=nodaten,$
  /noerase,xtick_get=xtickget
  if keyword_set(test) then print,xtickget
  axis,xaxis=1,$
  xstyle=1,$
  xtickv=xtickget,$
  xtickname=string(xtickget,Format='(D4.0)'),$
  xtitle=label(1)
  plot,xreduz,yreduz,xstyle=9,ystyle=1,$
  /nodata,/noerase
endelse
!x.range=sx_range
end
```

--

```
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```
