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 - lambda0) / lambda0 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=tes t,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=tes t,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 (ï¿½)',$
   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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