Subject: Re: histogram and binsize problems
Posted by David Fanning on Thu, 27 Feb 2003 17:11:59 GMT
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Chad Bender (cbender@mail.astro.sunysb.edu) writes:

> I'm encountering some confusion using the histogram function when
> specifying the min, max, and binsize keywords.

Oh, right. I'm glad I'm not the only one this drives
crazy.

I spend several chapters in a book talking about this oddity
in Histogram, but I have never gotten around to writing a
wrapper for the command. (Which seems really odd to me.)

In any case, he is the relevant code from the program in
the book:

```
   ; Calculate the histogram.

histdata = Histogram(image, Binsize=binsize, Max=Max(image), $
   Min=Min(image))

   ; Have to fudge the bins and histdata variables to get the
   ; histogram plot to make sense.

npts = N_Elements(histdata)
halfbinsize = binsize / 2.0
bins = Findgen(N_Elements(histdata)) * binsize + Min(image)
binsToPlot = [bins[0], bins + halfbinsize, bins[npts-1] + binsize]
histdataToPlot = [histdata[0], histdata, histdata[npts-1]]
xrange = [Min(binsToPlot), Max(binsToPlot)]

  ; Plot the histogram of the display image. Axes first.

Plot, binsToPlot, histdataToPlot, $  ; Fudged histogram and bin data.
   Background=backcolor, $           ; Background color of the display.
   Charsize=thisCharsize, $          ; Character size.
   Color=axiscolor, $                ; The color of the axes.
   Max_Value=max_value, $            ; The maximum value of the plot.
   NoData=1, $                       ; Draw the axes only. No data.
   Position=histoPos, $              ; Position of the plot.
   Title='Image Histogram', $        ; The title of the plot.
   XRange=xrange, $                  ; The X data range.
   XStyle=1, $                       ; Exact axis scaling.
   XTickformat='(I6)', $             ; Format of the X axis annotations.
   XTitle='Image Value', $           ; The title of the X axis.
```

```
   YMinor=1, $                    ; One minor tick mark on X axis.
   YRange=[0,max_value], $        ; The Y data range.
   YStyle=1, $                    ; Exact axis scaling.
   YTickformat='(I6)', $          ; Format of the Y axis annotations.
   YTitle='Pixel Density', $      ; The title of the Y axis.
   _Extra=extra                   ; Pass any extra PLOT keywords.

   ; Overplot the histogram data in the data color.

OPlot, binsToPlot, histdataToPlot, PSym=10, Color=dataColor

   ; Make histogram boxes by drawing lines in data color.

FOR j=1L,N_Elements(bins)-2 DO BEGIN
   PlotS, [bins[j], bins[j]], [!Y.CRange[0], histdata[j] < max_value], $
         Color=dataColor
ENDFOR
```

Cheers,

David

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