Subject: Interesting results when using IMAGE function
Posted by Steve Super on Fri, 15 Jan 2016 22:11:09 GMT

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I apologize ahead of time for the long post, but I think some background helps give some perspective. I am attempting to plot some lidar data using the IMAGE function and am running into some problems. Initially I tried to use the X and Y arguments, however this failed during the automatic gridding process. I then sought another efficient way to approach this problem and get the desired results.

I have a data array of dimensions 1830x545 along with an X array with 1830 elements and Y array with 545 elements, which represent ground location and altitude, respectively. My way around using the auto gridding was to create 2D "images" out of the X and Y arrays using REBIN. This gives me 3 arrays of the same size which I then try to display using the IMAGE function with the 'image_dimensions' and 'image_location' arguments to plot all three, in hopes of hiding the X and Y images, while still using them to create the correct axes for my data.

So my point in all of this is after displaying the X and Y arrays, the range of values is no longer the same as the max/min of the initial array. For example, when working with the altitude array, the data range gets messed up.

First I display the image and draw the y-axis the using:
  alt = IMAGE(vfm_alt, image_dim=[1830,545], image_loc=low_left, axis_style=4)
  y_ax = AXIS('Y', target=alt, location='left')

At this point I noticed the range of the axis was still in device(pixel) coordinates instead of the actual altitude values. So I type in the following commands to double check:

  print, alt.min, alt.max
which prints the (correct) values:
  -0.45618850
   29.975952

However when I type the following:
  print, alt.yrange
I get '-0.45618850   544.54381'

So for some reason it is using the correct lower bound for the data range, but incorrectly using the array dimensions (or close to it) for the upper bound. Anyone have an idea as to what could be going on here?

-Steve

P.S. I understand this may not be the best way to do this, however after trying a few other things and not succeeding with them either I decided to think outside the box a bit.