Subject: How to label a time axes on an image?
Posted by steven.abel on Mon, 16 May 2016 11:26:44 GMT

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Hi

I am having trouble labeling a time axis on an image. Here is some test code

```
;create a randomn image for testing
data = RANDOMU(seed,1800,401)
img = BYTSCL(data)

;data values that I would like to use for labeling the axes
xval = FINDGEN(1800)/(60.*60.*24.) + JULDAY(11,24,2014,11,15,00)
yval = FINDGEN(401)-200.

;plot the image and label the axes
im = IMAGE(img, RGB_TABLE=0,MARGIN=0.2)
yax = AXIS('Y', LOCATION=[0,0], TICKDIR=1, MINOR=0, COORD_TRANSFORM=[yval[0],1])
xax = AXIS('X', LOCATION=[0,0], TICKDIR=1, MINOR=0, TICKFORMAT='(C(CHI2.2, ":",
CMI2.2))', COORD_TRANSFORM=[xval[0],1.])
```

I am using COORD_TRANSFORM in the call to AXIS to try and convert the pixel number of the image to what I would like to display. In the example above this works for the yaxis which simply changes the axis data values. For the xaxis I am also trying to display it in a time format as HH:MM but all of the axes labels display as 00:00.

Any idea how I can label the xaxis correctly?

Thanks

Steve

Subject: Re: How to label a time axes on an image?
Posted by steven.abel on Mon, 16 May 2016 12:07:10 GMT

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On Monday, 16 May 2016 12:26:47 UTC+1, Steve wrote:
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> Any idea how I can label the xaxis correctly?
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> Thanks
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> Steve

Just spotted an error in my test code. The xaxis should be

xax = AXIS('X', LOCATION=[0,0], TICKDIR=1, MINOR=0, TICKFORMAT='(C(CHI2.2, ":",
CMI2.2))', COORD_TRANSFORM=[xval[0],1./(60.*60.*24.)])

This does put what look to be about the correct times but they all overlay each other on the axis.
Something is not quite right!

Steve

Subject: Re: How to label a time axes on an image?
Posted by steven.abel on Mon, 16 May 2016 12:30:53 GMT
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On Monday, 16 May 2016 13:07:13 UTC+1, steve...@metoffice.gov.uk wrote:
> On Monday, 16 May 2016 12:26:47 UTC+1, Steve wrote:
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OK so a little more playing around with this and I guess the problem may be due to
COORD_TRANSFORM not using double precision, such that when it displays the time values on
the xaxis they end up overlaying each other. Perhaps someone can confirm.

So a big fudge to get this to work is to change

xval = FINDGEN(1800)/(60.*60.*24.) + JULDAY(11,24,-4712,11,15,00)

such that the data values put into COORD_TRANSFORM are not as large. Clearly I wouldn't be
able to display the time axis with the year labeled in this case.

If anyone has a better solution to the above that would be great.

Steve

Subject: Re: How to label a time axes on an image?
Posted by lecacheux.alain on Mon, 16 May 2016 15:29:51 GMT
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Le lundi 16 mai 2016 14:30:56 UTC+2, steve...@metoffice.gov.uk a écrit :
> On Monday, 16 May 2016 13:07:13 UTC+1, steve...@metoffice.gov.uk wrote:
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> Steve

Don't use your axis trick.
Simply use the IMAGE function with AXIS_STYLE=2 and ASPECT_RATIO=0. The
IMAGE_DIMENSIONS and IMAGE_LOCATION keywords will directly set the correct axes.
alx.

Subject: Re: How to label a time axes on an image?
Posted by steven.abel on Tue, 17 May 2016 08:17:12 GMT
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On Monday, 16 May 2016 16:29:52 UTC+1, alx wrote:
> Le lundi 16 mai 2016 14:30:56 UTC+2, steve...@metoffice.gov.uk a écrit :
>> On Monday, 16 May 2016 13:07:13 UTC+1, steve...@metoffice.gov.uk wrote:
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> alx.

Thanks alx. That works!

Subject: Re: How to label a time axes on an image?
Posted by steven.abel on Tue, 17 May 2016 09:07:21 GMT
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On Tuesday, 17 May 2016 09:17:16 UTC+1, steve...@metoffice.gov.uk wrote:
> On Monday, 16 May 2016 16:29:52 UTC+1, alx wrote:
>> Le lundi 16 mai 2016 14:30:56 UTC+2, steve...@metoffice.gov.uk a écrit :
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> Thanks alx. That works!

For completeness the working test case is

```
;create a randomn image
data = RANDOMU(seed,1800,401)
img = BYTSCL(data)

;values I would like to use for labeling the axes
xval = FINDGEN(1800)/(60.*60.*24.) + JULDAY(11,24,2014,11,15,00)
yval = FINDGEN(401)-200.

im = IMAGE(img, RGB_TABLE=0, MARGIN=0.2, AXIS_STYLE=2, ASPECT_RATIO=0, $
      IMAGE_LOCATION = [xval[0],yval[0]], $
      IMAGE_DIMENSIONS = [MAX(xval)-MIN(xval),MAX(yval)-MIN(yval)],$
      XTICKFORMAT='(C(CHI2.2, ":", CMI2.2))', XTICKDIR=1, YTICKDIR=1)
ax = im.AXES
ax[2].ticklen=0.
ax[3].ticklen=0.
```

Steve