Subject: Advice on using julian day with the image function?
Posted by sally.benson2 on Thu, 09 Jul 2015 21:08:47 GMT
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Hi,
I have always used direct graphics but now I am converting over to the idl function graphics. I am trying to create a time by height plot of radar reflectivity. Here is the code I am using:

refd is radar reflectivity [time,height]
julidan_day is the time array in idl's julian day
height is the height array in meters

```
p3=image(refd,julian_day,height,position=reform(pos[0,*]),$
   /buffer,rgb_table=my_table,image_dimensions=[400,400])
```

The error I am getting is

```
   % QHULL:
         qhull precision error: 101 attempts to construct a convex hull
               with joggled input.  Increase joggle above 'QJ0.12'
          or modify qh_JOGGLE... parameters in user.h
```

The image function is trying to put my data on a regular grid using qhull but it is failing because the julian_day numbers are too big? How can I get the image function to use julian day? I like julian day for my time axis because it is easy to format it using xtickformat and xtickunits. I also tried seconds since 1970 but I got a similar error.

```
  p3=image(refd,seconds_1970,height,position=reform(pos[0,*]), $
    /buffer,rgb_table=my_table,image_dimensions=[400,400])

% QHULL:
         qhull precision error: 101 attempts to construct a convex hull
               with joggled input.  Increase joggle above 'QJ5.1'
          or modify qh_JOGGLE... parameters in user.h
```

Has anyone been successful in using julian day with the idl image function? Any help is greatly appreciated.
Thanks!
Sally

Subject: Re: Advice on using julian day with the image function?
Posted by Helder Marchetto on Fri, 10 Jul 2015 13:04:15 GMT
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On Thursday, July 9, 2015 at 11:08:50 PM UTC+2, sally....@gmail.com wrote:
> Hi,
> I have always used direct graphics but now I am converting over to the idl function graphics. I

am trying to create a time by height plot of radar reflectivity. Here is the code I am using:
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>   or modify qh_JOGGLE... parameters in user.h
>
> Has anyone been successful in using julian day with the idl image function? Any help is greatly appreciated.
> Thanks!
> Sally

Hi,
this stuff is not my bread an butter, but I tried out of curiosity if by subtracting an offset to the dates, one would be able to overcome the qhull error.

I generated random data like this:
refd = randomu(s, 400,400, /double)
jd = dblarr(400)
for i=0,399 do begin & jd[i]=systime(1) & wait, 0.02 & endfor
height = dindgen(400)
p3 = image(refd, jd, height, image_dimensions=[400,400])

And I got the same error as you did. Then I subtracted an offset from jd (julian dates):

jd_min = min(jd)

jd -= jd_min
p3 = image(refd, jd, height, image_dimensions=[400,400])

This went a bit further, but got stuck with this error:
% GRAPHIC_GRIDDATA: Automatic gridding failed.

I then had a look at the image documentation. It says, quote:

Depending upon the dataset, the automatic gridding may fail or may produce displeasing results. In this case you should do the gridding yourself, perhaps using a different gridding method to GRIDDATA.

I guess that you should try gridding yourself :-)

Cheers,
Helder

Subject: Re: Advice on using julian day with the image function?
Posted by sally.benson2 on Mon, 13 Jul 2015 15:46:55 GMT
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Thanks for your advice alx.

Subject: Re: Advice on using julian day with the image function?
Posted by sally.benson2 on Mon, 13 Jul 2015 15:47:41 GMT
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Thanks for your advice Helder.
