Subject: Distance between coordinates
Posted by khyde on Thu, 14 May 2015 20:57:18 GMT
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Hello,

Is there an IDL function that can calculate the distance between two longitude/latitude coordinates (no map projection)? If not, does anyone have code that does this? I don't want to duplicate effort if there is already something out there.

Thanks,
KH

Subject: Re: Distance between coordinates
Posted by Michael Galloy on Thu, 14 May 2015 23:16:36 GMT
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On 5/14/15 2:57 PM, kimberly.hyde@noaa.gov wrote:
> Hello,
>
> Is there an IDL function that can calculate the distance between two
> longitude/latitude coordinates (no map projection)? If not, does
> anyone have code that does this? I don't want to duplicate effort if
> there is already something out there.
>
> Thanks, KH
>

Yes, checkout MAP_2POINTS in the IDL distribution.

Mike
--
Michael Galloy
www.michaelgalloy.com
Modern IDL: A Guide to IDL Programming (http://modernidl.idldev.com)

Subject: Re: Distance between coordinates
Posted by khyde on Fri, 15 May 2015 13:02:30 GMT
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On Thursday, May 14, 2015 at 7:15:46 PM UTC-4, Mike Galloy wrote:

>> Hello,
>>
>> Is there an IDL function that can calculate the distance between two

>> longitude/latitude coordinates (no map projection)? If not, does
>> anyone have code that does this? I don't want to duplicate effort if
>> there is already something out there.
>>
>> Thanks, KH
>>
>
> Yes, checkout MAP_2POINTS in the IDL distribution.
>
> Mike
> --
> Michael Galloy
> www.michaelgalloy.com
> Modern IDL: A Guide to IDL Programming (http://modernidl.idldev.com)

This is exactly what I needed. Thank you!

Subject: Re: Distance between coordinates
Posted by astr74323 on Sun, 17 May 2015 00:23:47 GMT
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Hello Michael I have a problem in Code regard to gcirc.pro, It gave me incorrect of argument through IDL programme, How can I solve that?

Subject: Re: Distance between coordinates
Posted by wlandsman on Mon, 18 May 2015 03:28:44 GMT
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On Saturday, May 16, 2015 at 8:23:49 PM UTC-4, astr...@gmail.com wrote:
> Hello Michael I have a problem in Code regard to gcirc.pro, It gave me incorrect of argument through IDL programme, How can I solve that?

We can't tell you what you are doing wrong if we don't know what you are doing. You need to show us how you are calling gcirc.pro (not a standard IDL procedure but in the IDL Astronomy library http://idlastro.gsfc.nasa.gov/ftp/pro/astro/gcirc.pro)

But here is how to get the same result as the example in the MAP_2POINTS documentation, the angular distance between Boulder and London.

```
B = [ -105.19, 40.02] ;Boulder Longitude, latitude in degrees.
L = [ -0.07,   51.30]         ;London Longitude, latitude in degrees.

IDL> gcirc,2,b[0],b[1],l[0],l[1],dis
```

where we set the units (first) parameter to 2 (RAx and DCx in degrees, DIS in arc seconds)

so the angular distance between Boulder and London in arc seconds and degrees is
IDL> print,dis,dis/3600.
       244275.60   67.854333

Subject: Re: Distance between coordinates
Posted by astr74323 on Mon, 18 May 2015 18:49:39 GMT
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> On Saturday, May 16, 2015 at 8:23:49 PM UTC-4, astr...@gmail.com wrote:
>> Hello Michael I have a problem in Code regard to gcirc.pro, It gave me incorrect of argument through IDL programme, How can I solve that?
>
> We can't tell you what you are doing wrong if we don't know what you are doing. You need to show us how you are calling gcirc.pro (not a standard IDL procedure but in the IDL Astronomy library http://idlastro.gsfc.nasa.gov/ftp/pro/astro/gcirc.pro)
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>
> so the angular distance between Boulder and London in arc seconds and degrees is
> IDL> print,dis,dis/3600.
>   244275.60   67.854333

Hello Wlandsman,

Colud you give me your email or Skype?

Beacuse I've many quetions

I look forward to hearing from you

Subject: Re: Distance between coordinates
Posted by wlandsman on Mon, 18 May 2015 19:51:15 GMT

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On Monday, May 18, 2015 at 2:49:42 PM UTC-4, astr...@gmail.com wrote:

> Hello Wlandsman,
>
> Colud you give me your email or Skype?
>
> Beacuse I've many quetions
>
> I look forward to hearing from you

Sorry, I can't help you, except to point you to a document on how to ask questions on Usenet

http://www.catb.org/esr/faqs/smart-questions.html

Subject: Re: Distance between coordinates
Posted by astr74323 on Mon, 18 May 2015 21:42:49 GMT
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> On Monday, May 18, 2015 at 2:49:42 PM UTC-4, astr...@gmail.com wrote:
>
>> Hello Wlandsman,
>>
>> Colud you give me your email or Skype?
>>
>> Beacuse I've many quetions
>>
>> I look forward to hearing from you
>
> Sorry, I can't help you, except to point you to a document on how to ask questions on Usenet
>
> http://www.catb.org/esr/faqs/smart-questions.html

Ok, I have some terms

Subject: Re: Distance between coordinates
Posted by astr74323 on Mon, 18 May 2015 21:48:13 GMT
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> On Monday, May 18, 2015 at 2:49:42 PM UTC-4, astr...@gmail.com wrote:
>

>> Hello Wlandsman,
>>
>> Colud you give me your email or Skype?
>>
>> Beacuse I've many quetions
>>
>> I look forward to hearing from you
>
> Sorry, I can't help you, except to point you to a document on how to ask questions on Usenet
>
> http://www.catb.org/esr/faqs/smart-questions.html

Ok, I have questions with regard to terms in gcirc.pro, Could you write comment at each command line if you can

```
On_error,2                              ;Return to caller

 npar = N_params()
 IF (npar ne 6) and (npar ne 5) THEN BEGIN
   print,'Calling sequence:  GCIRC,U,RA1,DC1,RA2,DC2[,DIS]'
   print,'   U = 0  ==> Everything in radians'
   print, $
   '   U = 1  ==> RAx decimal hours, DCx decimal degrees, DIS arc sec'
   print,'   U = 2  ==> RAx, DCx decimal degrees, DIS arc sec'
   RETURN
 ENDIF


 d2r    = !DPI/180.0d0
 as2r   = !DPI/648000.0d0
 h2r    = !DPI/12.0d0

; Convert input to double precision radians
 CASE u OF
   0:  BEGIN
         rarad1 = double(ra1)
         rarad2 = double(ra2)
         dcrad1 = double(dc1)
         dcrad2 = double(dc2)
       END
   1:  BEGIN
         rarad1 = ra1*h2r
         rarad2 = ra2*h2r
         dcrad1 = dc1*d2r
         dcrad2 = dc2*d2r
       END
```

```
  2:  BEGIN
        rarad1 = ra1*d2r
        rarad2 = ra2*d2r
        dcrad1 = dc1*d2r
        dcrad2 = dc2*d2r
      END
  ELSE:  MESSAGE, $
           'U must be 0 (radians), 1 ( hours, degrees) or 2 (degrees)'
ENDCASE

deldec2 = (dcrad2-dcrad1)/2.0d
delra2 =  (rarad2-rarad1)/2.0d
sindis = sqrt( sin(deldec2)*sin(deldec2) + $
  cos(dcrad1)*cos(dcrad2)*sin(delra2)*sin(delra2) )
dis = 2.0d*asin(sindis)

IF (u ne 0) THEN dis = dis/as2r

IF (npar eq 5) && (N_elements(dis) EQ 1) THEN BEGIN
   IF (u ne 0) && (dis ge 0.1) && (dis le 1000)  $
      THEN fmt = '(F10.4)' $
      ELSE fmt = '(E15.8)'
   IF (u ne 0) THEN units = ' arcsec' ELSE units = ' radians'
   print,'Angular separation is ' + string(dis,format=fmt) + units
ENDIF

RETURN
END
```

Regards

Subject: Re: Distance between coordinates
Posted by David Fanning on Mon, 18 May 2015 23:39:48 GMT
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astr74323@gmail.com writes:

> Ok, I have questions with regard to terms in gcirc.pro, Could you write comment at each command line if you can

P.S. I'll buy you dinner and a beer for all your effort! ;-)

Cheers,

David
--
David Fanning, Ph.D.

Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Distance between coordinates
Posted by wlandsman on Tue, 19 May 2015 00:08:01 GMT
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On Monday, May 18, 2015 at 5:48:14 PM UTC-4, astr...@gmail.com wrote:

>
>
> Ok, I have questions with regard to terms in gcirc.pro, Could you write comment at each command line if you can

OK, I'll continue for one more post.

What are you trying to accomplish? Why do you think that gcirc.pro will help you accomplish this?

Did you understand the example of finding the angular distance between Boulder and London?

Are there parts of gcirc.pro which you *do* understand?

Have you read articles on computing angular distance? such as
http://en.wikipedia.org/wiki/Great-circle_distance
