
Subject: Re: Why is my code truncating my image dimensions?
Posted by [Helder Marchetto](#) on Mon, 13 Aug 2012 16:03:46 GMT
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On Monday, August 13, 2012 5:33:51 PM UTC+2, adh...@gmail.com wrote:

> Hi!

>

>

>

> I am trying to read in two datasets (Landsat and NLDAS) using a .ctl file but my code seems to be truncating the last digit of the Landsat image. I have run through various trials to see why this is happening, with not luck. If someone could take a look below and see if a glaring error pops out I would greatly appreciate it!

>

>

>

> NOTE*** The Landsat image has dimensions 7931 x 7001. The NLDAS file has dimensions of 224 x 464. The NLDAS data dimensions read in correctly, but the Landsat image prints 793 and 700. In the code below 'nmx' and 'nmy' represent the Landsat input while 'nx' and 'ny' represent the NDLAS input. My original thought was that the data type was set wrong, but I no longer think this to be the case after several test. Also, the truncation occurs when it is first read in not after the FIX operation (if that matters).

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>

> Any suggestions would be appreciated! Thank you!!

>

>

>

> Here is the code:

>

>

>

> OPENR, 1, fname_ctl

>

>

>

> nmx = 0L & nmy = 0L & nx = 0L & ny = 0L & rad_fname = " & \$

>

> fname0 = " & fname1 = " & fname2 = " & fname3 = " & fname4 = " & fname5 = " & \$
fname6 = " & fname7 = " & fname8 = " & fname9 = " & fname10 = " & \$

>

> fname11 = " & fname12 = " & fname13 = " & fname14 = " & fname15 = " & \$

>

> fname16 = " & fname17 = " & fname18 = " & fname19 = " & fname20 = " & \$

>

> fname21 = " & fname22 = " & fname23 = " & fname50 = "

>

```

>
>
> ; Read in each line
>
>
>
> WHILE (~ EOF(1)) DO BEGIN
>
>
>
> READF,1,$
>
> FORMAT = '(I3,3(/,I3),25(/,A100),/,A100)',nmx,nmy,nx,ny,rad_fname, fname0, $
>
> fname1,fname2,fname3,fname4,fname5,fname6,fname7,fname8,fname9,fname10,$
>
> fname11,fname12,fname13,fname14,fname15,fname16,fname17,fname18,fname19,fname20,$ fname21,fname22,fname23,fname50
>
>
>
> PRINT,$
>
> FORMAT = '(I3,3(/,I3),25(/,A100),/,A100)',nmx,nmy,nx,ny,rad_fname, fname0, $
>
> fname1,fname2,fname3,fname4,fname5,fname6,fname7,fname8,fname9,fname10,$
>
> fname11,fname12,fname13,fname14,fname15,fname16,fname17,fname18,fname19,fname20,$ fname21,fname22,fname23,fname50
>
>
>
>
> ENDWHILE
>
>
>
> ; Convert the read in values to proper type
>
>
>
> nx = FIX(nx, TYPE = 3)      ; nx and ny are the dimensions of the NLDAS data.
>
> ny = FIX(ny, TYPE = 3)
>
>
>

```

```
> nmx = FIX(nmx, TYPE = 3) ; nmx and nmy are the dimensions of the LANDSAT
>
> nmy = FIX(nmy, TYPE = 3) ; image taken from the header information.
>
>
>
> ****THIS IS WHAT PRINTS OUT-
>
> 793
>
> 700
>
> 224
>
> 464
```

Hi,
although I have no experience with such images, my first guess is that you need to change the
FORMAT in the READF command.
Using '(I3)' will read 3 digits of integer numbers. I would put a I4. Can you check what comes up
by doing that?
Therefore try with: FORMAT = '(I4,/,I4,2(/,I4),25(/,A100),/,A100)'
(I have not tested this...!!!)
Cheers,
Helder

Subject: Re: Why is my code truncating my image dimensions?

Posted by [adhdunn](#) on Mon, 13 Aug 2012 16:27:58 GMT

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Hi Helder,

Thank you for your response! I have inserted your suggested change, however this particular
program works off of several separate programs. Another section of code follows. This one will
also need to be changed as well and simply replacing the 3 with a 4 is not working. Do you have a
suggestion as to how this line should be altered to accommodate the new text you suggested?

```
FORMAT = '(I3,3(/,I3),/,F6.3,/,F8.3,/,A100,4(/,F5.1))',nmx,nmy,nx,ny, lat1,lon1,fname1,$
TM_lat_ul,TM_lat_ll,TM_lon_ul,TM_lon_ll
```

Thank you!

```
>
> Hi,
>
> although I have no experience with such images, my first guess is that you need to change the
FORMAT in the READF command.
```

>
> Using '(I3)' will read 3 digits of integer numbers. I would put a I4. Can you check what comes up
by doing that?
>
> Therefore try with: FORMAT = '(I4,/,I4,2(/,I4),25(/,A100),/,A100)'
>
> (I have not tested this...!!!)
>
> Cheers,
>
> Helder

Subject: Re: Why is my code truncating my image dimensions?
Posted by [Helder Marchetto](#) on Mon, 13 Aug 2012 18:19:48 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Monday, August 13, 2012 6:27:58 PM UTC+2, adh...@gmail.com wrote:

> Hi Helder,
>
>
>
>
> Thank you for your response! I have inserted your suggested change, however this particular
program works off of several separate programs. Another section of code follows. This one will
also need to be changed as well and simply replacing the 3 with a 4 is not working. Do you have a
suggestion as to how this line should be altered to accommodate the new text you suggested?
>
>
>
> FORMAT = '(I3,3(/,I3),/,F6.3,/,F8.3,/,A100,4(/,F5.1))',nmx,nmy,nx,ny, lat1,lon1,fname1,\$
>
> TM_lat_ul, TM_lat_ll, TM_lon_ul, TM_lon_ll
>
>
>
> Thank you!
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>
>>
>
>> Hi,
>
>>
>
>> although I have no experience with such images, my first guess is that you need to change
the FORMAT in the READF command.
>

```
>>
>
>> Using '(I3)' will read 3 digits of integer numbers. I would put a I4. Can you check what comes
up by doing that?
>
>>
>
>> Therefore try with: FORMAT = '(I4,/,I4,2(/,I4),25(/,A100),/,A100)'
>
>>
>
>> (I have not tested this...!!!)
>
>>
>
>> Cheers,
>
>>
>
>> Helder
```

Sorry, I don't because I don't know how the file header actually looks like.
But I do think that you're having a problem with truncation in the format line.

If you send me the first four or five header lines I can have a go at it. I'm not into satellite images, therefore I can't find such information quickly.

Cheers,
Helder

Subject: Re: Why is my code truncating my image dimensions?

Posted by [adhdunn](#) on Mon, 13 Aug 2012 18:52:00 GMT

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Yes, I agree it is the format line. After I changed the text to read as you suggested, the first program worked great :) I am simply not accustomed to working with the format command and therefore I am having a hard time figuring out the context of all the values. I understand that 'F' is used for float, 'I' for integer, 'A' for characters. I also understand that if you have 'A100' then your file name (or whatever) can not exceed 100 characters.
However I am struggling with other inputs like:

'/'-- does this mean a new line or return?

','-- does this mean the next command?

'()'-- why would you have some values in additional parenthesis while others not

'F6.3'-- what is the relevance of the 6.3. I see (below) that there are 6 values for the number, but why the .3?

'A100,5'-- what is the relevance of ,5?

Anyways this is the header information for the .ctl file that you requested:

```
7931
7001
224
464
25.063
-124.938
E:\ET_code\workassignment\NEWwork\workassignment\final_simple_meth
od_code\latlon_grid.dat
33.0
30.0
-86.5
-83.0
```

right now the format line is written as:

```
(I5,/,I5(,I5),/,F6.3,/,F8.3,/,A100,5(,F5.1))',nmx,nmy,nx,n y,lat1,lon1,fname1,$
TM_lat_ul,TM_lat_ll,TM_lon_ul,TM_lon_ll
```

Does that help you?

:) A

On Monday, August 13, 2012 2:19:48 PM UTC-4, Helder wrote:

> On Monday, August 13, 2012 6:27:58 PM UTC+2, adh...@gmail.com wrote:

>

>> Hi Helder,

>

>>

>

>>

>

>>

>

>> Thank you for your response! I have inserted your suggested change, however this particular program works off of several separate programs. Another section of code follows. This one will also need to be changed as well and simply replacing the 3 with a 4 is not working. Do you have a suggestion as to how this line should be altered to accommodate the new text you suggested?

>

>>

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>

>> FORMAT = '(I3,3(,I3),/,F6.3,/,F8.3,/,A100,4(,F5.1))',nmx,nmy,nx,ny, lat1,lon1,fname1,\$

```
>
>>
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>> TM_lat_ul, TM_lat_ll, TM_lon_ul, TM_lon_ll
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>> Thank you!
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>>
>
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>>> Hi,
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the FORMAT in the READF command.
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>>> Using '(I3)' will read 3 digits of integer numbers. I would put a I4. Can you check what comes
up by doing that?
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```

```
>
>>> Therefore try with: FORMAT = '(I4,/,I4,2(/,I4),25(/,A100),/,A100)'
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>
>>> (I have not tested this...!!!)
>
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>>>
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>
>>> Cheers,
>
>>
>
>>>
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>>> Helder
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>
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images, therefore I can't find such information quickly.
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>
>
> Cheers,
>
> Helder
```

Subject: Re: Why is my code truncating my image dimensions?
Posted by [Helder Marchetto](#) on Mon, 13 Aug 2012 20:56:18 GMT

On Monday, August 13, 2012 8:52:00 PM UTC+2, adh...@gmail.com wrote:

> Yes, I agree it is the format line. After I changed the text to read as you suggested, the first program worked great :) I am simply not accustomed to working with the format command and therefore I am having a hard time figuring out the context of all the values. I understand that 'F' is used for float, 'I' for integer, 'A' for characters. I also understand that if you have 'A100' then your file name (or whatever) can not exceed 100 characters.

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>

>

>

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>

> ','-- does this mean the next command?

>

> '()'-- why would you have some values in additional parenthesis while others not

>

> 'F6.3'-- what is the relevance of the 6.3. I see (below) that there are 6 values for the number, but why the .3?

>

> 'A100,5'-- what is the relevance of ,5?

>

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> Anyways this is the header information for the .ctl file that you requested:

>

> 7931

>

> 7001

>

> 224

>

> 464

>

> 25.063

>

> -124.938

>

> E:\ET code\workassignment\NEWwork\workassignment\final_simple_method_code\latlon_grid.dat

>

> 33.0

>

> 30.0

>

> -86.5

>

```

> -83.0
>
>
>
> right now the format line is written as:
>
> (I5,/,I5(/,I5),/,F6.3,/,F8.3,/,A100,5(/,F5.1))',nmx,nmy,nx,n y,lat1,lon1,fname1,$
>
> TM_lat_ul,TM_lat_ll,TM_lon_ul,TM_lon_ll
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> Does that help you?
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> :) A
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>>> FORMAT = '(I3,3(/,I3),/,F6.3,/,F8.3,/,A100,4(/,F5.1))',nmx,nmy,nx,ny, lat1,lon1,fname1,$
>
>>
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>>>
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>>> TM_lat_ul, TM_lat_ll, TM_lon_ul, TM_lon_ll
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>>> Thank you!
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```

```

>>
>
>>>> Using 'I3' will read 3 digits of integer numbers. I would put a I4. Can you check what
comes up by doing that?
>
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>
>>>> Therefore try with: FORMAT = '(I4,/,I4,2(/,I4),25(/,A100),/,A100)'
>
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>>>> (I have not tested this...!!!)
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>>>> Cheers,
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>>>> Helder
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images, therefore I can't find such information quickly.
>
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>>
>
```

```
>> Cheers,  
>  
>>  
>  
>> Helder
```

Hi,
well, I'm not that good with formats and I personally don't like the way your code is written down because it is for people like me with a limited experience difficult to read.
A few tips to make the code "understandable":
1) using a & is the same as writing two lines. When debugging, the & make your life hell
2) read one line at a time. This way you can look at what is in it and debugging will be a lot easier.

That said, I would rewrite the code necessary for the image size this way:

```
LandSatFileName = 'C:\YourDirectory\YourFile.txt'  
GET_LUN, LandSatUnit  
OPENR, LandSatUnit, LandSatFileName  
nmx = 0L  
nmy = 0L  
nx = 0L  
ny = 0L
```

```
READF, LandSatUnit, MyString  
nmx = FIX(MyString, TYPE=3)  
READF, LandSatUnit, MyString  
nmy = FIX(MyString, TYPE=3)  
READF, LandSatUnit, MyString  
nx = FIX(MyString, TYPE=3)  
READF, LandSatUnit, MyString  
ny = FIX(MyString, TYPE=3)  
PRINT, 'nmx=', nmx  
PRINT, 'nmy=', nmy  
PRINT, 'nx=', nx  
PRINT, 'ny=', ny  
CLOSE, LandSatUnit
```

If and when you have time you might look at the `FORMAT` keyword and you can learn a lot about it... however, the above code works fine. It occupies more lines, but it won't be dramatic in terms of CPU as compared to reading an image file of 7931x7001 pixel.

Some quick answers to your format questions (only the things I know).

- f6.3 represents a floating point number made out of 6 digits (dot included) of which 3 after the dot.
- if the () have a number in front that represents the number of repetitions of what is in the parenthesis
- the comma separates commands
- I *think* that the / is indeed a new line

> Does that help you?

Well, I hope it helps you! ;-)

For more info, look in the IDL help for "Format Codes" or follow:
IDL Programming -> Concepts -> Format Codes

It can get pretty complicated, but it is also very powerful.

Cheers,
h
