
Subject: Calculate median of stacks of images using IDL

Posted by [oatty3931](#) on Fri, 06 Jun 2014 20:46:37 GMT

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Hi,

I am trying to compute a median of a stack of images in TIF format for my research. From another source I found out a way to compute this from stack of images present in a GDF format, using

```
IDL> buf=read_gdf('demo.gdf')
IDL> help, buf
BUF          FLOAT    = Array[640, 480, 100]
IDL>b=median(buf,/double,dimension=3)
```

However, I am having difficulty converting my TIF images into GDF, but still need to normalize my images somehow. Any suggestions on how to do so?

Thank you in advance. Any help will be highly appreciated!

Nitsorn Wongsajjathiti

Subject: Re: Calculate median of stacks of images using IDL

Posted by [dg86](#) on Sat, 07 Jun 2014 22:42:04 GMT

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On Friday, June 6, 2014 4:46:37 PM UTC-4, Nitsorn Wongsajjathiti wrote:

> Hi,

>

> I am trying to compute a median of a stack of images in TIF format for my research. From another source I found out a way to compute this from stack of images present in a GDF format, using

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> IDL> help, buf

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> BUF FLOAT = Array[640, 480, 100]

>

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>

> However, I am having difficulty converting my TIF images into GDF, but still need to normalize my images somehow. Any suggestions on how to do so?

>

> Thank you in advance. Any help will be highly appreciated!

>

> Nitsorn Wongsajjathiti

Hi Again,

You can use READ_IMAGE to read in your images, then stack them up, and take the median.

```
filenames = file_search("my_filename_regex*.tif")
buf = []
for f in filenames do $
  buf = [[[buf]], [[read_image(f)]]]

b = median(buf, /double, dimension=3)
```

TTFN,

David

Subject: Re: Calculate median of stacks of images using IDL
Posted by [Phillip Bitzer](#) on Sun, 08 Jun 2014 19:06:47 GMT
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On Friday, June 6, 2014 3:46:37 PM UTC-5, Nitsorn Wongsajjathiti wrote:

```
> Hi,
>
> I am trying to compute a median of a stack of images in TIF format for my research. From
another source I found out a way to compute this from stack of images present in a GDF format,
using
>
>
> IDL> buf=read_gdf('demo.gdf')
>
```

So, I suppose READ_GDF is from another library, yes? Do you need things in GDF?

If you have TIFFs, you can just use READ_TIFF, and create a 3d array like David suggests.

Depending on how many TIFFs you have, you may find this modification to David's snippet to be slightly more efficient:

```
filenames = file_search("my_filename_regex*.tif", COUNT=fileCount) ;get the filenames, and how
many

isGood = QUERY_TIFF(filenames[0], tiffInfo) ;get information about the first TIFF file

;assuming the TIFFs are 8 bit...if 16bit you can change to UINTARR
buf = BYTARR([tiffInfo.resolution, fileCount]) ;assuming all TIFFs are the same size, preallocate
the array
```

```
FOREACH f in filenames DO $
  buf[0, 0, i] = READ_TIFF(f) ;read each TIFF into the buf array
```

```
b = median(buf, /double, dimension=3)
```

Subject: Re: Calculate median of stacks of images using IDL

Posted by [dg86](#) on Mon, 09 Jun 2014 11:18:58 GMT

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On Saturday, June 7, 2014 6:42:04 PM UTC-4, David Grier wrote:

> On Friday, June 6, 2014 4:46:37 PM UTC-4, Nitsorn Wongsajjathiti wrote:

>

>> Hi,

>

>>

>

>> I am trying to compute a median of a stack of images in TIF format for my research. From another source I found out a way to compute this from stack of images present in a GDF format, using

>

>>

>

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>

>>

>

>> IDL> buf=read_gdf('demo.gdf')

>

>>

>

>> IDL> help, buf

>

>>

>

>> BUF FLOAT = Array[640, 480, 100]

>

>>

>

>> IDL>b=median(buf,/double,dimension=3)

>

>>

>

>>

>

>>

>

```

>> However, I am having difficulty converting my TIF images into GDF, but still need to
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>
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>
>> Thank you in advance. Any help will be highly appreciated!
>
>>
>
>> Nitsorn Wongsajjathiti
>
>
>
> Hi Again,
>
>
>
> You can use READ_IMAGE to read in your images, then stack them up, and take the median.
>
>
>
> filenames = file_search("my_filename_regex*.tif")
>
> buf = []
>
> for f in filenames do $
>
>   buf = [[[buf]], [[read_image(f)]]]
>
>
>
> b = median(buf, /double, dimension=3)
>
>
>
> TTFN,
>
>
>
> David

```

I was trying to avoid having to figure out the dimensions of the images. Here's a more general version:

```

buf = list()
for f in file_search("mynames*.tif") do $
  buf.add, read_image(f)
b = median(buf.toArray(), /double, dimension=1)

```

This works for grayscale and color images, regardless of the pixel ordering.

TTFN,

David

Subject: Re: Calculate median of stacks of images using IDL

Posted by [oatty3931](#) on Mon, 09 Jun 2014 19:01:35 GMT

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Thank you Prof. David and Phillip for your replies.

@Prof. David, I tried using both of your codes, and received an error. I completely understand how it works but due to my inefficiency in IDL, I am receiving a syntax error at:

```
IDL> buf=list()
IDL> for f in file_search("mynames*.tif") do $
> buf.add read_image(f)
```

```
for f in file_search("mynames*.tif") do $
  ^
% Syntax error.
```

Any help with this error? I apologize once again if this is a stupid function. I will be more careful with my questions next time.

Thank you in advance,
Nitsorn

Subject: Re: Calculate median of stacks of images using IDL

Posted by [oatty3931](#) on Mon, 09 Jun 2014 19:16:02 GMT

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Thank you Prof. David and Phillip for your replies.

@Prof. David, I tried using both of your codes, and received an error. I completely understand how it works but due to my inefficiency in IDL, I am receiving a syntax error at:

```
IDL> buf=list()
IDL> for f in file_search("frame-*.tif") do $ ;my tif files in the working directory are labelled
"frame-1.tif", "frame-2.tif" etc..
> buf.add read_image(f)
```

```
for f in file_search("mynames*.tif") do $
  ^
% Syntax error.
```

Any help with this error? I apologize once again if this is a stupid function. I will be more careful with my questions next time.

Thank you in advance,
Nitsorn

Subject: Re: Calculate median of stacks of images using IDL
Posted by [Michael Galloy](#) on Tue, 10 Jun 2014 15:12:05 GMT
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On 6/9/14, 1:01 PM, oatty3931@gmail.com wrote:

> Thank you Prof. David and Phillip for your replies.
> @Prof. David, I tried using both of your codes, and received an error. I completely understand how it works but due to my inefficiency in IDL, I am receiving a syntax error at:

```
>  
> IDL> buf=list()  
> IDL> for f in file_search("mynames*.tif") do $  
>> buf.add read_image(f)
```

```
>  
> for f in file_search("mynames*.tif") do $  
>     ^  
> % Syntax error.
```

>
> Any help with this error? I apologize once again if this is a stupid function. I will be more careful with my questions next time.

> Thank you in advance,
> Nitsorn

>

Too much Python. Should be:

```
for f, file_search('mynames*.tif') do $
```

Mike

--

Michael Galloy
www.michaelgalloy.com
Modern IDL: A Guide to IDL Programming (<http://modernidl.idldev.com>)
Research Mathematician
Tech-X Corporation

Subject: Re: Calculate median of stacks of images using IDL
Posted by [oatty3931](#) on Tue, 10 Jun 2014 16:18:48 GMT
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Hi Mike,

Thank you for your reply. Unfortunately, I still received an error after:

```
IDL> buf=list()
IDL> for f, file_search("mynames*.tif") do $
> buf.add,read_image(f)
```

```
for f, file_search("mynames*.tif") do $
  ^
% Syntax error.
```

I am using IDL 8.2.3, if that helps
Thank you once again,
Nitsorn

Subject: Re: Calculate median of stacks of images using IDL
Posted by [Michael Galloy](#) on Tue, 10 Jun 2014 16:36:55 GMT
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On 6/10/14, 10:18 AM, oatty3931@gmail.com wrote:

```
> Hi Mike,
> Thank you for your reply. Unfortunately, I still received an error after:
>
> IDL> buf=list()
> IDL> for f, file_search("mynames*.tif") do $
>> buf.add,read_image(f)
>
> for f, file_search("mynames*.tif") do $
>   ^
> % Syntax error.
>
> I am using IDL 8.2.3, if that helps
> Thank you once again,
> Nitsorn
>
```

Sorry, still too much Python:

```
foreach f, file_search('mynames*.tif') do $
```

Mike

--

Michael Galloy
www.michaelgalloy.com
Modern IDL: A Guide to IDL Programming (<http://modernidl.idldev.com>)
Research Mathematician
Tech-X Corporation

Subject: Re: Calculate median of stacks of images using IDL
Posted by [oatty3931](#) on Tue, 10 Jun 2014 16:51:38 GMT
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Thank you! That works perfectly :)

Subject: Re: Calculate median of stacks of images using IDL
Posted by [dg86](#) on Wed, 11 Jun 2014 18:21:50 GMT
[View Forum Message](#) <> [Reply to Message](#)

On Tuesday, June 10, 2014 12:51:38 PM UTC-4, oatt...@gmail.com wrote:
> Thank you! That works perfectly :)

Egads! As Mike points out, I've been doing too much python programming recently.
I'm very sorry for the crumpled code example!

Sigh,

David
