Subject: Re: Reading Raw Image

Posted by Maarten[1] on Thu, 20 Sep 2007 15:14:05 GMT

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On Sep 20, 2:47 pm, "rpert...@gmail.com" <rpert...@gmail.com> wrote:

- > Hello,
- > I have a .raw image file from a lumenera camera that I am trying to
- > open. It is a 10-bit image (1280x1024). The total bytes is 7864320
- > (1280x1024x6) (not sure why that is).
- > I tried using read_binary with data_dims =[1280,1024] but the image is
- > just snowy...not what I expect to see.
- > Can anyone help me with this?

RAW is not a format, it is whatever the camera manufacturer chooses it to be (today). Dave Coffin has a tool that may help you [1], but converting the image to 16 bit tiff (in Photoshop, Adobe Camera RAW, or a similar tool) seems to be your best bet. Many cameras apply some sort of lossless compression on the RAW images.

Maarten

[1] http://cybercom.net/~dcoffin/dcraw/

Subject: Re: Reading Raw Image
Posted by weitkamp on Thu, 20 Sep 2007 16:05:25 GMT
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rpertaub@gmail.com wrote:

- > I have a .raw image file from a lumenera camera that I am trying to
- > open. It is a 10-bit image (1280x1024). The total bytes is 7864320
- > (1280x1024x6) (not sure why that is).

If this is a color image, then it is probably because you have 3 color channels (most likely red, green, and blue). For each channel, you need 2 bytes to store 10-bit data. Makes 6 bytes per pixel. Now the remaining question is how the channels / pixels are ordered in your image. You need to find this out by trying.

- > I tried using read_binary with data_dims =[1280,1024] but the image is
- > just snowy...not what I expect to see.

The easiest to read the file into IDL is probably to use an unsigned integer array of dimensions [1280, 1024, 3] or a permutation of these. Something like this (I didn't test):

imgdata = uintarr(1280, 1024, 3)

openr, 1, 'yourfile.raw' readu, 1, imgdata close, 1

You can then try to display an individual channel, for example imgdata[*, *, 0] or. If you only get snow as you describe, there may be essentially two reasons (or a combination of the two):

(a) The byte order of the long integers is wrong. You can reverse this with the "byteorder" command:

byteorder, imgdata

and then try again. (This is, however, not likely to be the reason if the images were both written on computers of the same architecture, for example on an IBM-PC compatible architecture.)

(b) Or the dimensions are not ordered correctly in the data (i.e., you chose the wrong permutation of your three dimensions). In that case, try something like

imgdata = reform(imgdata, 1280, 3, 1024)

or any other permutation of the dimensions, and then try displaying a channel again.

Good luck Timm

Subject: Re: Reading Raw Image
Posted by weitkamp on Thu 20 Sep

Posted by weitkamp on Thu, 20 Sep 2007 16:12:36 GMT

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weitk...@esrf.fr wrote:

> if the images were both written on computers of the same architecture,

Did I have too much coffee today or not enough? Anyhow: what I wanted to say here was, "... if the image was written on a computer of the same architecture as the one you run IDL on."

Sorry about that Timm

Subject: Re: Reading Raw Image

Posted by JD Smith on Thu, 20 Sep 2007 18:49:55 GMT

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On Thu, 20 Sep 2007 14:47:11 +0000, rpertaub@gmail.com wrote:

- > Hello,
- > I have a .raw image file from a lumenera camera that I am trying to
- > open. It is a 10-bit image (1280x1024). The total bytes is 7864320
- > (1280x1024x6) (not sure why that is).
- > I tried using read_binary with data_dims =[1280,1024] but the image is
- > just snowy...not what I expect to see.
- > Can anyone help me with this?
- > thanks,

Definitely try out DCRAW. I used it to convert some Nikon .NEF raw files to linear 16bit TIFFs, and then analyzed the linearity of the CCD detectors (really impressively good!).

http://turtle.as.arizona.edu/im/mdr16/linearity.html

I even wrote a 16bit dynamic range extender tool in IDL, which you can find here:

http://turtle.as.arizona.edu/im/mdr16/

JD