

[quote="mocatsma, post:10, topic:31703"]

Now to figure out a process flow for false colorizing the filtered JWDT images that are becoming available.

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Now that I can get some frames into SiriL I was able to work on a set of images and produce a false color image for NGC 7320 using 4.44um, 3.56um, and 2.77um filter datasets.

The JWST datasets used are all Stage 3 products and are ImageModels, (_i2d at the end of the filename). These can be filtered in the MAST search by selecting prodlevel as 3 and datamodel as ImageModel.

The workflow went something like this:

1. Download the .i2d files for the filters of interest. The filter name will be embedded in the filename, something like f277w. Be aware that the image size may be different for different groups of filters. I am new to SiriL so if there is a way to rescale the image, I am not familiar with it. So, I picked filter groups that have the almost same image size. You should be aware that there can be slight difference in image size between files, for example one may be 7091x6057 and another 7092x6057 or 7091x6056.
2. Rename the file extension on each file from .FITS to .FIT. This allows SiriL to read the file without an error.
3. Create single frame FIT files for each color. The i2d files typically have more than 1 frame in them. The first frame is the image data of interest. The process for doing this is using the conversion tab in SiriL is:
 - a. Select the Conversion tab
 - b. Add the downloaded file (use the +)
 - c. Set the sequence name, leave the start index at 00001 and output as FITS images
 - d. Click convert.Do this for each file. When you are done, keep the 00001 index files and delete the others. You can also delete the .seq files by the same name.
4. Process the 00001 FIT file for each color and crop image to a fixed size (all images must be the same size to create the composite (don't worry about exact registration from file to file).
 - a. Open a file
 - b. Stretch image as desired (suggest trying the autostretch in the Histogram Toolbox dialog). Remember to click apply if you are happy with the stretch.
 - c. Image Processing -> Background extraction. Check 'add dither', click generate, then click 'compute background'. Click apply.
 - d. Draw a selection box, adjust the size to be a specific size you will use for all colors. You may need to zoom the image to finely adjust the selection box to get the correct size. Once you have the correct size you can pan the selection box around to be close for each color. Doesn't have to be exact. Only the size of the selection box must be the same. When done, right click and select crop.
 - e. Save with new name, keep 32 bit float and embedded data checked.
5. Create RGB composite
 - a. Close and reopen SiriL.

- b. Pick RGB Compositing from the Image Processing menu.
- c. Select the color file for each color. Do not use the illuminance file.
- d. Select Green channel (if RGB is selected for display then you won't be able to draw a selection box).
- e. Select an area in the image, change alignment method to Image pattern alignment, select 'align'. This may take a little bit depending on how large a selection box you made and how large the images are.
- f. Adjust layers brightness
- g. Finalize color balance
 - i. Select a background area
 - ii. In Background reference click 'use current selection'
 - iii. Click 'background Neutralization'
 - iv. Select a white area in image
 - v. In White reference click 'use current selection'
 - vi. Click apply
6. Mirror and/or rotation of the image may be needed to provide orientation that people are used to for your image.
7. Save as new FIT file.

You now have a false color composite FIT file and can make whatever other adjustments to the image.

I then saved it in a 16-bit TIF file. I finished the processing in Lightroom to make a pretty picture and turned it into a JPG that is 23MB instead 470MB TIF or FIT file.

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