DuoBand Integration with RGB Process in APP

This approach calibrates and extracts each channel first then uses the Multi-Channel/Filter option to analyze, register, normalize and integrate all five channels at the same time.

Data: 10 frames each of Lights with UVIR and DuoBand (HaOIII) filters
Calibration: MasterDark and MasterBias

All APP settings are defaults except where noted

Channel Extraction

1. Restart APP (return to defaults)
2. Tab 0 algorithm set to Adaptive Airy Disc (default)
3. Tab 2 check split channels
4. Load UVIR lights and MasterDark and MasterBias
5. Tab 2 run “save calibrated frames”
6. Move each channel to separate folders “Rcal, Gcal, Bcal”
7. Clear Lights
8. Tab 0 algorithm set to Ha-OIII extract Ha
9. Tab 2 uncheck split channels
10. Load DuoBand Lights (Masters are still loaded)
11. Tab 2 run “save calibrated frames”
12. Move to “Hacal” folder
13. Rename files (replace filter-2 with filter-Ha)
14. Tab 0 algorithm set to Ha-OIII extract OIII
15. Tab 2 run “save calibrated frames”
16. Move to “OIIIcal” folder
17. Rename files (replace filter-2 with filter-OIII

Note:
- colorspace for all frames is 16-bit gray
- CFA for Duoband frames is RGGB
- CFA for RGB frames is no

Final Processing of each Channel

1. Tab 1 run “clear”
2. Tab 0 algorithm set to Adaptive Airy Disc
3. Tab 1 check Multi-Channel/Filter processing
4. Load calibrated Lights and assign to appropriate channel (no calibration Masters)

5. Tab 3 run “analyze stars”
    1. 504 stars analyzed
    2. Reference frame quality score = 746.98
    3. All frames designated INTEGRATE
6. Tab 4 run “start registration”
    1. RMS for DuoBand frames is 0.23-0.24 and #stars is 380-390
    2. RMS for RGB frames is 0.09-0.17 and #stars is 399-485
7. Tab 5 run “normalize lights”

At this point I get a Java error message as soon as it starts normalizing frame 1

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5) NORMALIZE: regular normalization mode: normalizing to reference frame

09:52:08 - 5) NORMALIZE: starting...
09:52:08 - 5) NORMALIZE: reference frame found: /Users/markfirary/!Astro Processing/
09:52:08 - 5) NORMALIZE: regular normalization mode: analyse reference
09:52:08 - 5) NORMALIZE: entering regular normalization mode... /Users/markfirary/!/
09:52:08 - 5) NORMALIZE: loading the reference frame : /Users/markfirary/!Astro Proc
09:52:08 - 5) NORMALIZE: converting the reference frame to 32bits normalized floats
09:52:09 - 5) NORMALIZE: analysing the reference frame...
09:52:10 - 5) NORMALIZE: file: Light_IC342_120s_filter-1_frame0004_bin1_2020-02-02-
09:52:10 - 5) NORMALIZE: file: Light_IC342_120s_filter-1_frame0004_bin1_2020-02-02-
09:52:10 - 5) NORMALIZE: file: Light_IC342_120s_filter-1_frame0004_bin1_2020-02-02-
09:52:10 - 5) NORMALIZE: file: Light_IC342_120s_filter-1_frame0004_bin1_2020-02-02-
09:52:10 -
09:52:10 - 5) NORMALIZE: regular normalization mode: normalizing to reference frame
09:52:13 - 5) NORMALIZE: converting frame 1 of 49 to 32bits normalized floats...
09:52:14 - 5) NORMALIZE: analyzing frame 1 of 49
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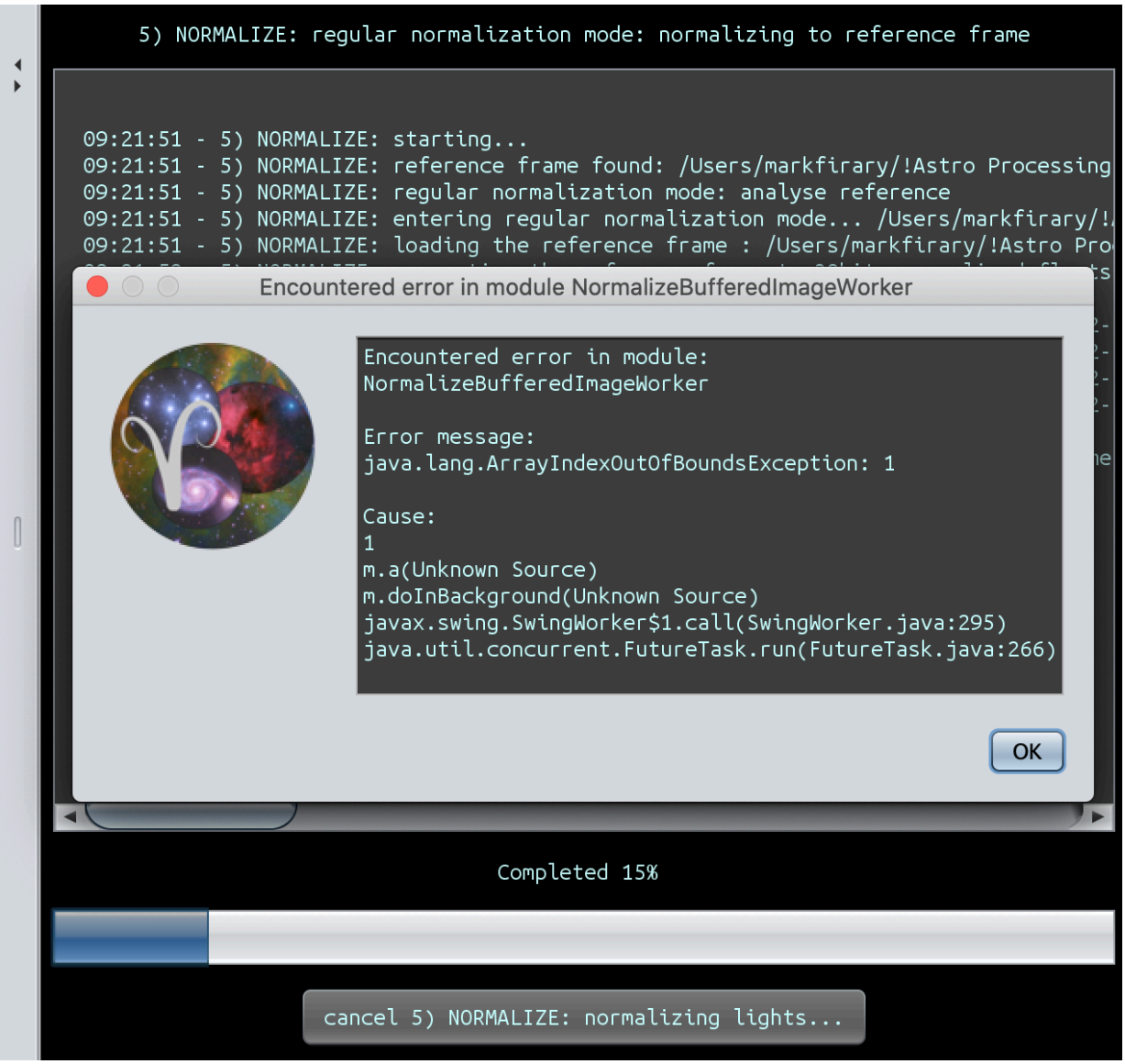

I repeated the Final Processing but with just the RGB channels and it processed through integration

I repeated the Final Processing but with just the Ha and OIII channels and it processed through integration but the integration files were in color

At this point, I am thinking the format of the Ha OIII calibration files is the issue. I tried re-extracting the Ha channel but this time with the Tab 0 force Bayer CFA checked but the CFA of the calibration files were still RGGB

Instrument	color space	dimensions	CFA	type	size(MB)
ZWO ASI294MC Pro	16b GRAY	4144x2822	RGGB	FITS image	22
ZWO ASI294MC Pro	16b GRAY	4144x2822	RGGB	FITS image	22
ZWO ASI294MC Pro	16b GRAY	4144x2822	RGGB	FITS image	22
ZWO ASI294MC Pro	16b GRAY	4144x2822	RGGB	FITS image	22
ZWO ASI294MC Pro	16b GRAY	4144x2822	RGGB	FITS image	22

I saved the Calibration, Normalization and integration files and can upload them if it would be helpful