

## Process 4 Panel Mosaic

### Introduction

This document describes how to construct mosaics using narrowband data captured using a dual band filter and OSC camera. Hardware used for this data capture was an Altair 183MC Pro camera and Optolong L-eNhanse dual band pass filter for Ha & OIII. The processing software is Astro Pixel Processor 2.0.0-beta29. This version includes fixes and improvements to LNC and MBB functions resulting in more accurate and faster mosaic construction. Each of the 4 panels comprises 90x10s, 60x30s, 45x60s and 30x120s light frames. The image is a 4-panel mosaic of NGC 3372, Carina Nebula, captured by Leandro in Argentina – captured over 16 sessions in March/April 2024.

This document is based on the information given in the video tutorial at [Astro Pixel Processor Aries Productions - latest release APP 2.0.0-beta29 - Mosaic Tutorial – Milky Way to Rho Ophiuchi by Mabula](#)

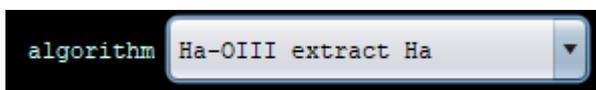
### Overview

1. Repeat the following steps to extract and process Ha and OIII data for all 4 panels.
2. On tab 0), set 'algorithm' to extract Ha data.
3. Load 10s, 30s, 60s, 120s for first panel using multi-session.
4. Calibrate and integrate individual panels. Use MBB and LNC to prevent artefacts at edges of panels.
5. Repeat above to extract OIII data.
6. Repeat above for 3 more Ha and 3 more OIII panels.
7. Create Ha mosaic from 4 panels. Create OIII mosaic from 4 panels. Use MBB and LNC.
8. Register & normalise the 2 mosaics.
9. Use combine RGB to create HOO-1 or HOO-2 palette.
10. Crop and process to taste.

### Detail

Panel1 = P1\_Ha

1. Disable *Multi-Channel/Filter processing*.
2. On tab 0) RAW/FITS



3. Load all 10s, 30s, 60s ,120s lights plus flats, bias, darks.
4. *Calibrate*: use defaults.
5. *Analyse Stars*: use default 500.
6. *Register*: enable Distortion Correction.
7. *Normalise*: use defaults.
8. *Integrate*: LNC = 1<sup>st</sup> degree 3 iterations, MBB=5%.
9. Create P1\_Ha panel.
10. Repeat for P2\_Ha ... P4\_Ha and P1\_OIII ... P4\_OIII.
11. Now have 4 x Ha panels and 4 x OIII panels.

Create the mosaics.

1. Disable *Multi-Channel/Filter processing*.
2. Clear all frames.
3. Load P1\_Ha, P2\_Ha, P3\_Ha, P4\_Ha as lights.
4. *Analyse stars*: set to 1000.
5. *Registration*: Descriptors = rectangles (try pentagons if this fails), Scale start = 5, Scale stop = 10, enable dynamic distortion correction, disable same camera and optics, mode mosaic, model projective.
6. *Normalise*: Defaults.
7. *Integrate*: LNC = 2<sup>nd</sup> degree, 10 iterations. MBB=10%.
8. Create mosaic\_Ha.
9. Clear frames and repeat with OIII panels to create mosaic\_OIII.

*Register* and *normalise* the 2 mosaics. If not done, then *combine RGB* will complain that the frames are not the same size.

1. Disable *Multi-Channel/Filter processing*.
2. Load mosaic\_Ha and mosaic\_OIII as lights.
3. Register.
4. Normalise.
5. Save Normalised frames as mosaic\_Ha-reg-norm and mosaic\_OIII-reg-norm.

Combine the 2 mosaics.

1. In *combine RGB*, add *channel* mosaic\_Ha-reg-norm and assign to Ha filter.
2. Add *channel* mosaic\_OIII-reg-norm and assign to OIII filter.
3. Choose HOO-1 or HOO-2 and *calculate*.
4. Save the result. It will look something like this:



Final processing.

1. Load the result from *combine RGB*.
2. Crop.
3. Remove light pollution.
4. Adjust Sharpness, Contrast, Saturation to taste.
5. Save result.

