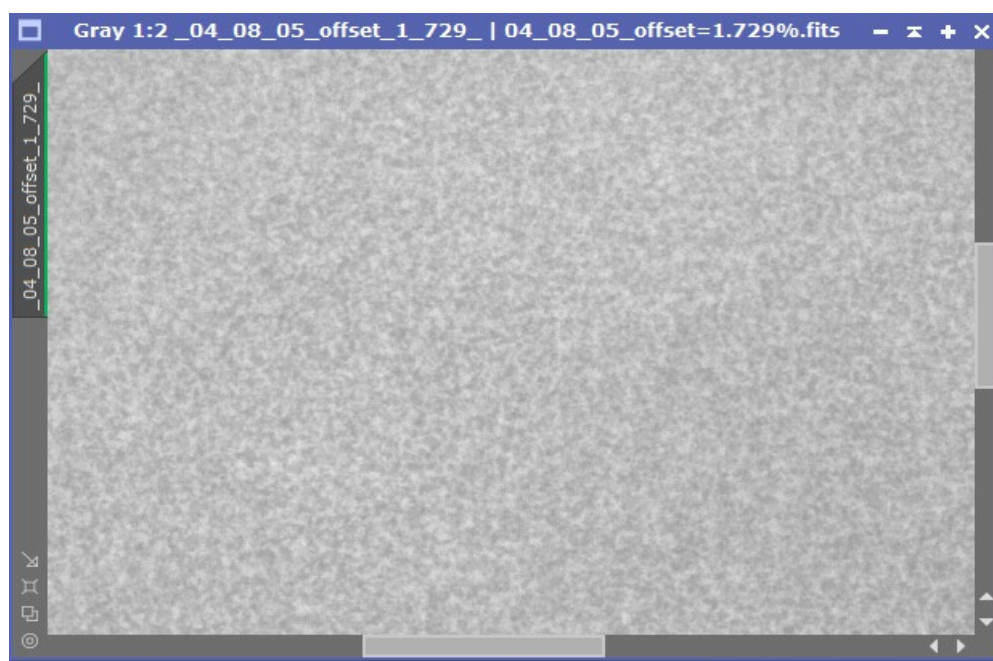With the ZWO ASI294 camera, the master flat created in SharpCap with the monochrome check box option and bias adjusted showed lots of mottling that induced mottling in the calibrated lights.


This can be smoothed with MutliscaleMedianTransform (MMT) but it will be applied to the bayered lights so that won't quite work out too well. The solution is to split into the bayered layers using the SplitCFA (split color filter array) tool in PixInsight and then apply MMT to each layer and then recombine with MergeCFA.

To split the flat into the CFA layers open the SplitCFA tool and drag the triangle icon to the flat and four new images will be created ending with __CFA and a layer number
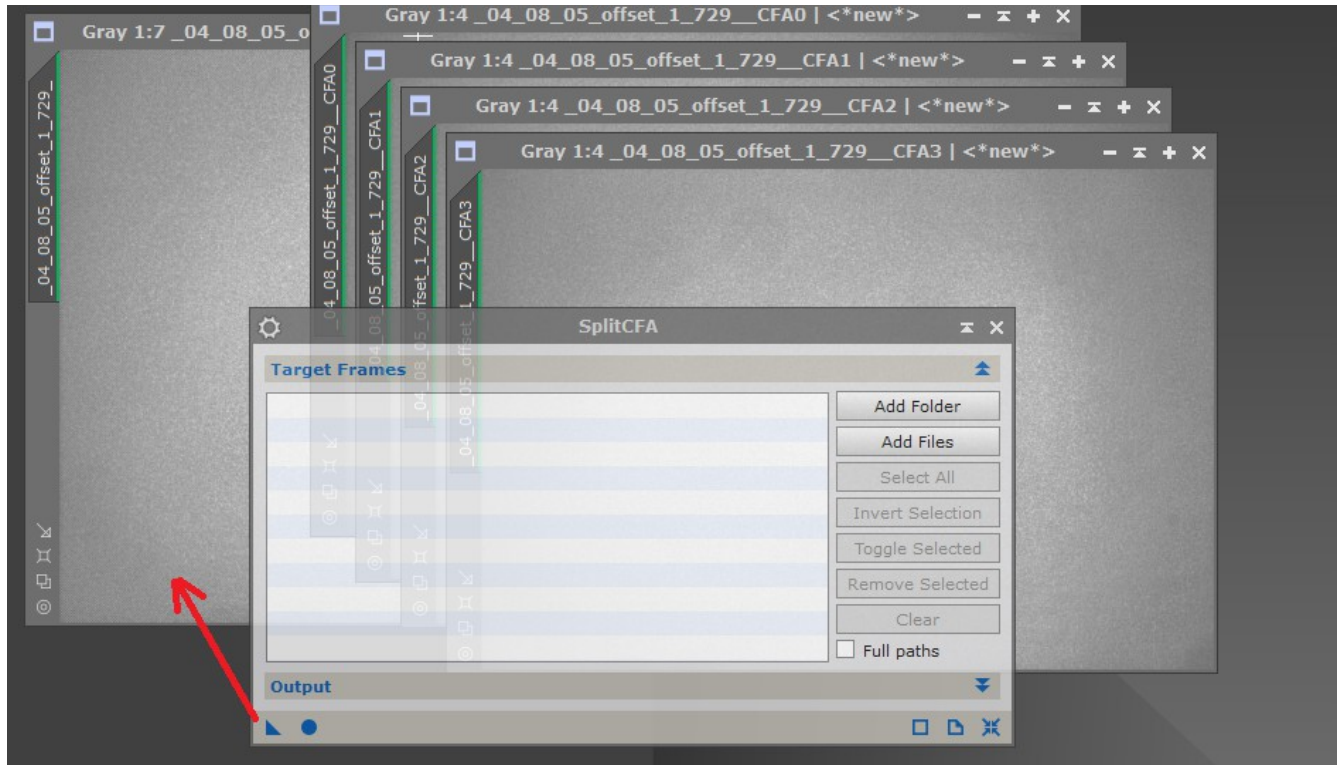
Then open MMT. I usually choose 8 layers and uncheck the first 6 however this may vary. You just need to look at the result and if you don't like it undo it, change the layer and try again.
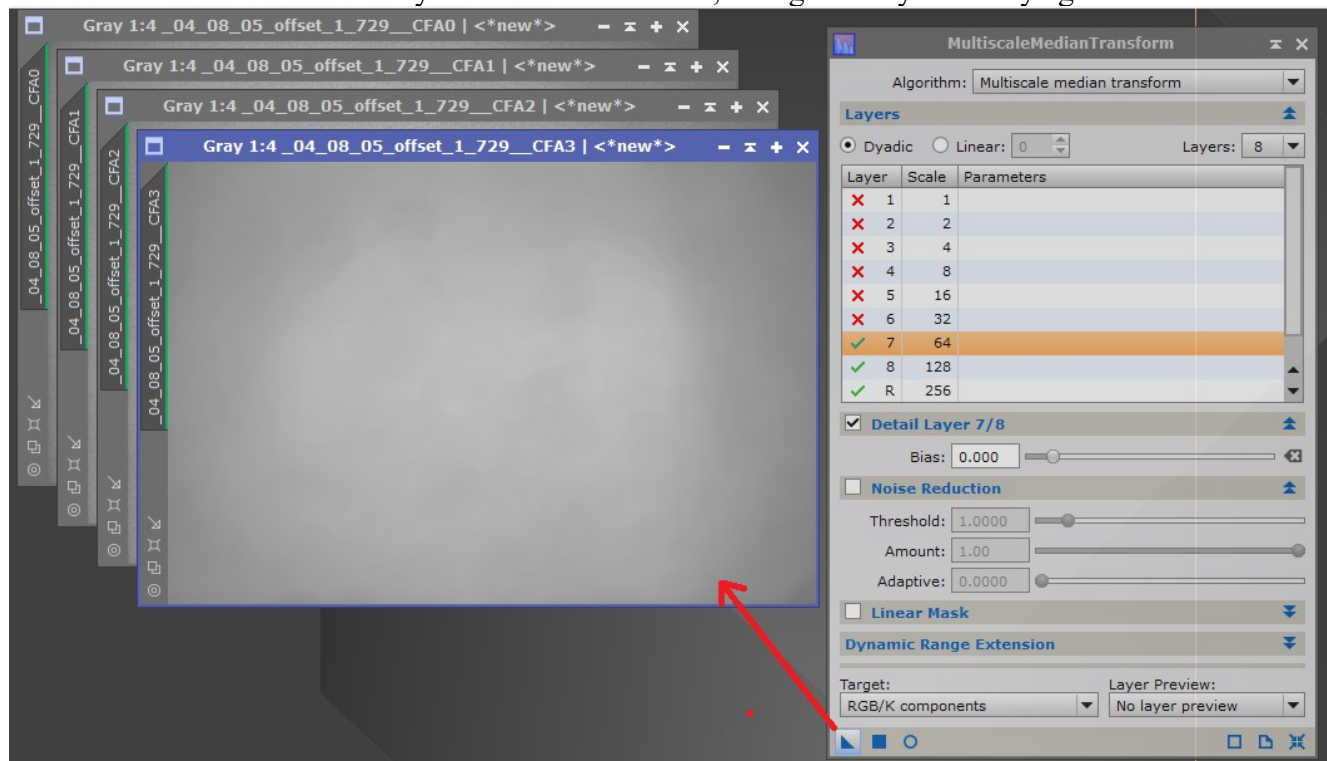
I then combine the layers using MergeCFA. I select the files that match the CFA layer number and then click on the circle icon of the tool. This then creates a recombined image.
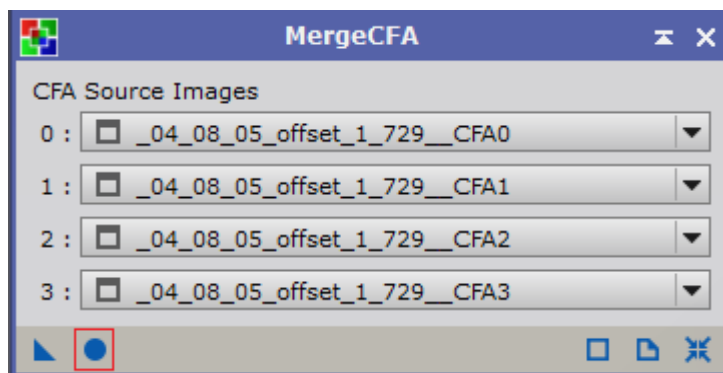
The resulting image can then be saved as the new master flat. I will be using SharpCap to test the flat so I choose 16 bit FIT as the file type.

To test the master flat, I use SharpCap with Camera Folder option and Live Stack, subtracting a Master Dark and the Master Flat I just created. The flat correction is now much better and could be cleaned up further in PixInsight.