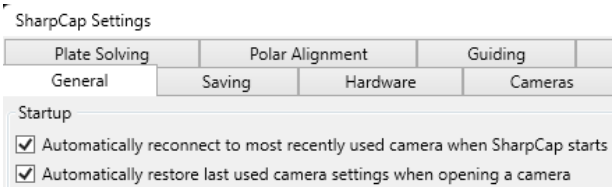
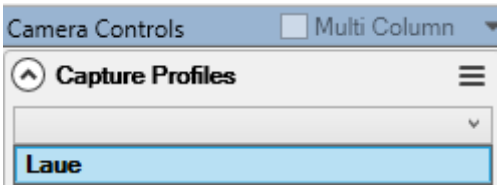
ImageJ for SharpCap – Automating Laue Imaging and Background Filtering

If you purchase the SharpCap Pro licence for £14 from **https://store.astrosharp.co.uk/Store**, you can use its scripting capability to control image acquisition, filtering and display, directly from imageJ. This also simplifies the GUI interface.

1) Open File/SharpCap Settings and choose to automatically reconnect to the last used camera, and use its settings. (These options will also be set by the SharpCap imageJ macro tool).



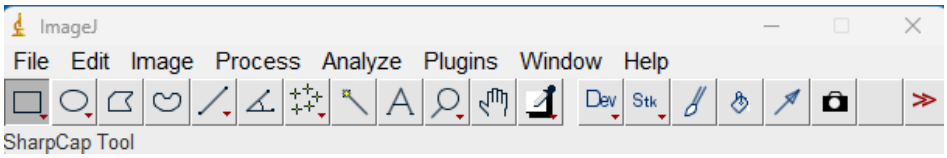
2) Download the Laue imaging Profile (it is also installed by the SharpCap imageJ macro tool) to **C:\Users\<yourName>\AppData\Roaming\SharpCap\CaptureProfiles**
Run SharpCap and select this Laue profile from the Capture Profiles menu on the top right. This loads recommended settings for Laue imaging with the NeutronOptics CMOS camera.

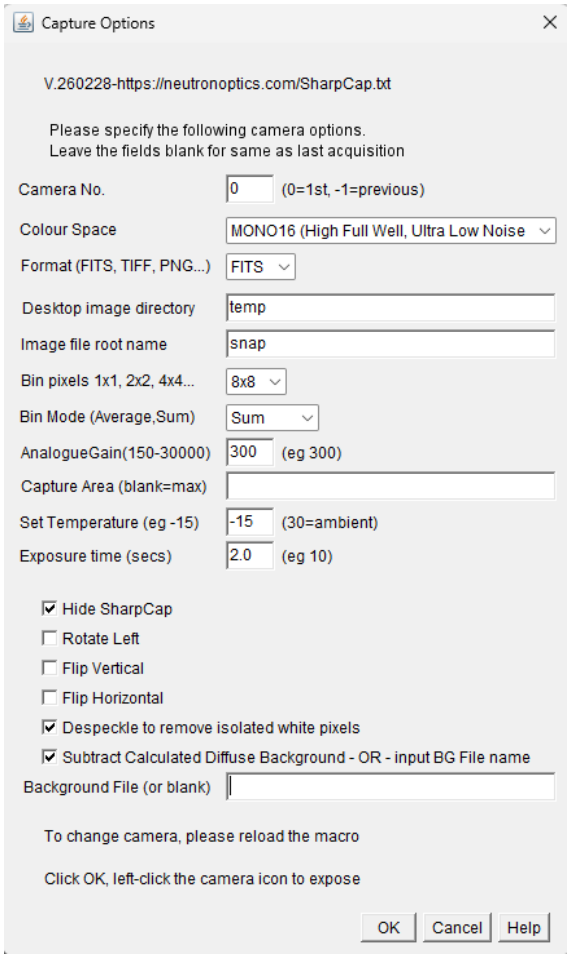


You can now click on the SharpCap's "**Snapshot**" icon to acquire a raw image. But below we will see how to do that from imageJ.

3) Install ImageJ and download the SharpCap imageJ macro tool to place it in Windows folder **"C:\ ImageJ\macros\toolsets\"** or wherever you have installed imageJ.

4) Open imageJ, click the red arrow >> at the top right, and select the **"SharpCap" macro tool**. A new camera icon appears on the right of the menu. **Right-click this new imageJ camera icon**.





You will obtain a simplified SharpCap capture menu. **Click "OK"** after eventually changing the exposure time or other settings. The "**Help**" button on the bottom left displays these instructions.

Left-click the camera icon to collect an image which will be displayed directly in imageJ, after eventually subtracting the Calculated Diffuse Background (recommended). You can even hide the SharpCap interface if you wish.

The **Calculated Diffuse Background** is simply the intensity averaged over a radius of 10 pixels, and 95% of this calculated diffuse background is subtracted from the original image to emphasise the sharp Laue spots.

Alternatively you can enter any BG file to be subtracted.

A new image under the same conditions will be collected every time you left-click the camera icon.

Right-click the camera icon to change parameters.

This imageJ tool has been designed for Laue imaging with the **Touptek ATR2600M camera**, but will also work with other cameras. If particular settings are not available, the nearest available settings will be used.

.