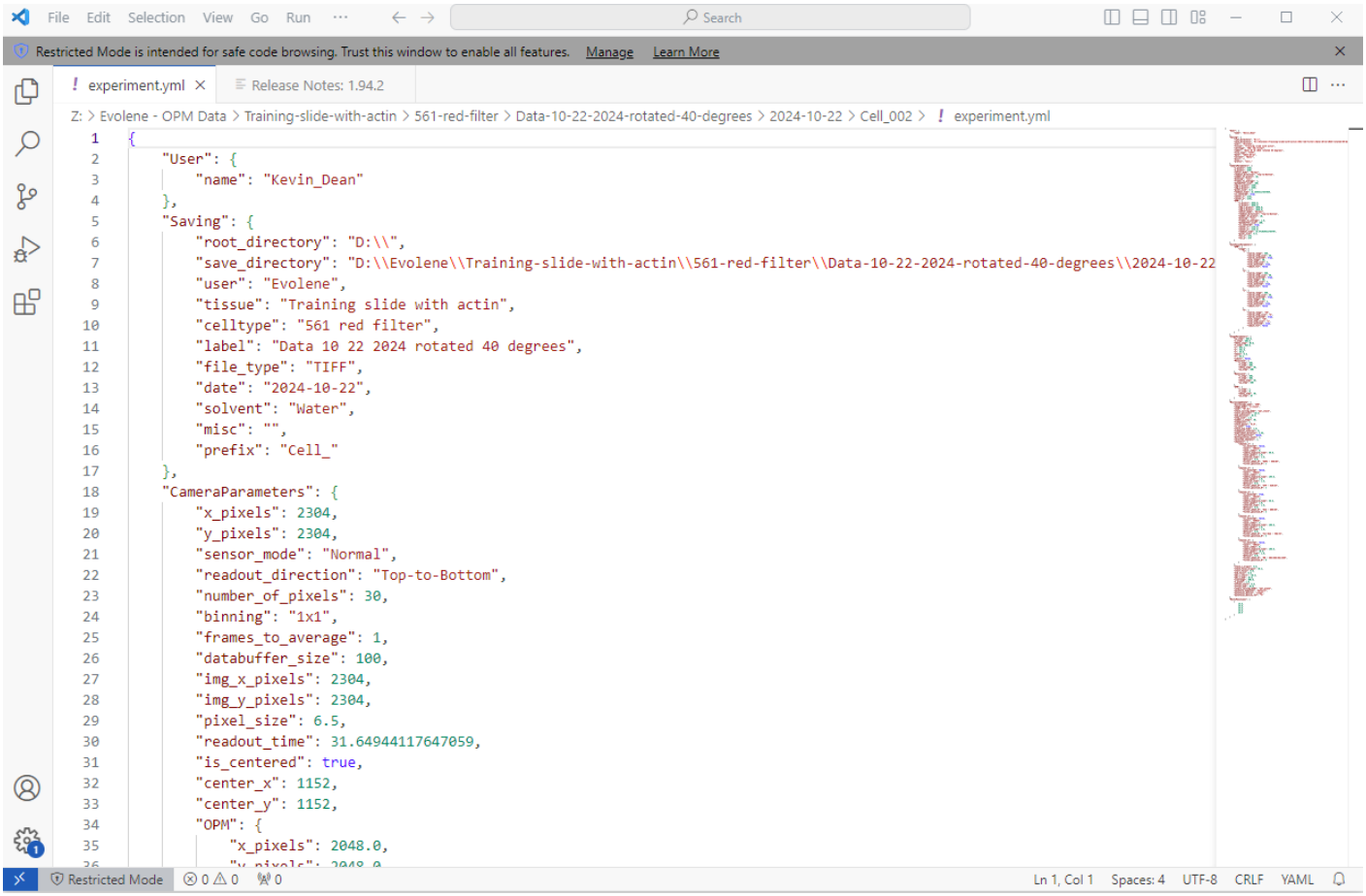
OPM Data processing in Fiji

OPM Data

The data generated by the OPM is in TIFF format. Whether you acquire a single image or a z-stack, you will get a single TIFF file containing all the images.

The software also saves an "experiment" file in Yaml format that contains all the experiment settings as well as a "waveform_constants" file in Yaml format that contains the waveform settings. These files can be opened by different applications such as notepad, etc. If you have Visual Studio on your computer, it is a great application to open the file in a structured way. See example below.



Data processing with Fiji/ImageJ

Of course, you are welcome to use any software/method you like to process and render your data. The TIFF file format should make it easy to open by most sofware.

However, until further development of the instrument, the acquired data is skewed due to the beam scanning to capture the z-stack. Before visualizing it, you will need to perform a shearing operation to "de-skew" the data.

This section introduces a way to do this using Fiji/ImageJ. It requires a **GPU** and **CLIJ** installed on ImageJ.

- How to install CLIJ on ImageJ:
  - Follow the steps indicated on this github page. A Wiki page about CLIJ will be available soon as well.
- Shearing the data:
  - Drag and drop the Fiji macros code Fiji_GPU_sheared_batch_v3 provided to you by Beckman Center staff in Fiji.
  - Go in your experiment folder and copy the TIFF file of your z-stack into a separate folder (call it "Raw Data" to avoid confusion)
  - On the code, update the angle values if different than 40 degrees, and the z step size. The xy pixel size should not change for this microscope.
  - Click Run and when prompted, select the TIFF file of your z-stack.
- Some tips to visualize the data:
  - Reslice from the Left
  - Z-project max intensity
  - Re-scale
- Rotation to top-view:

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