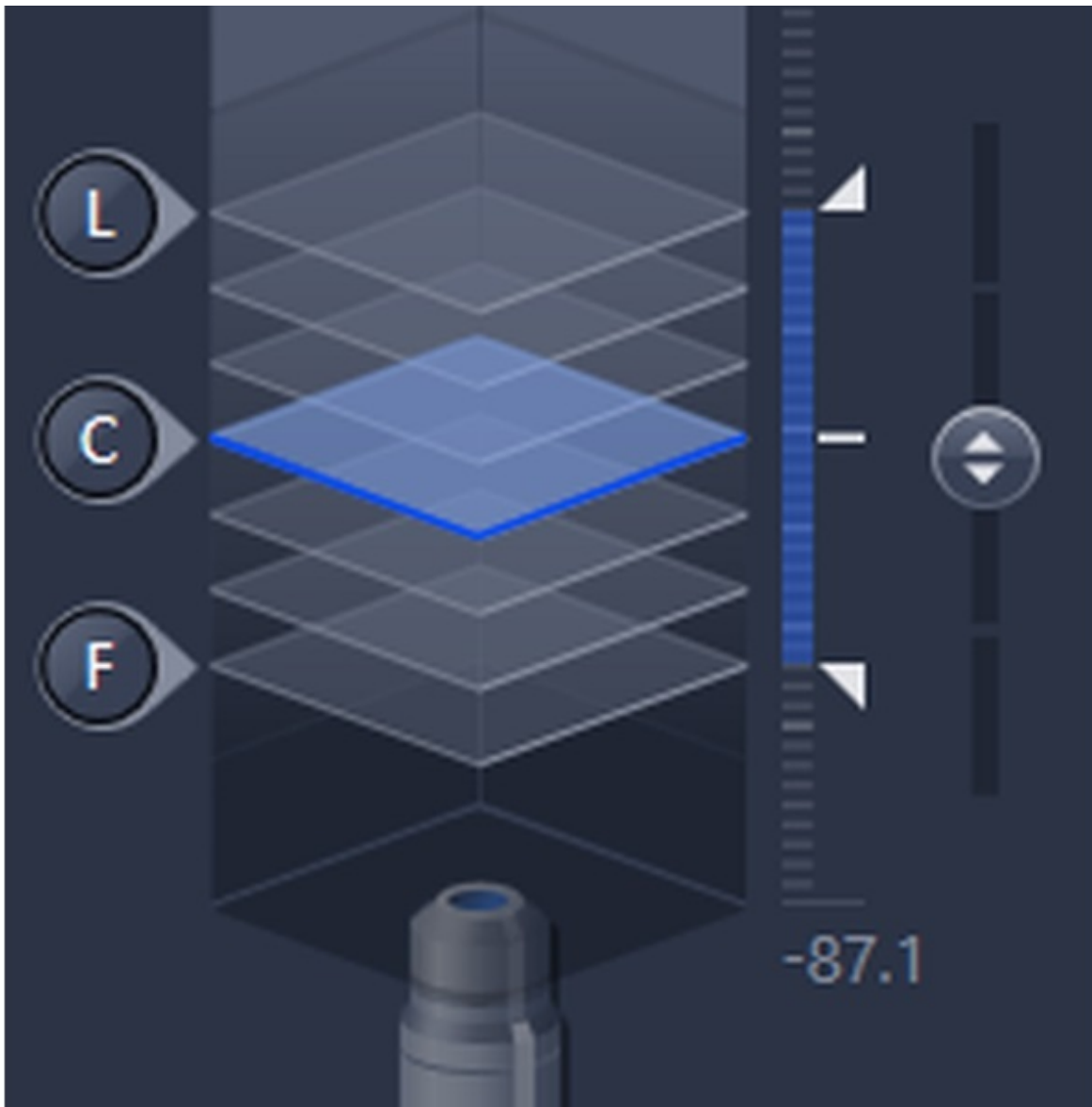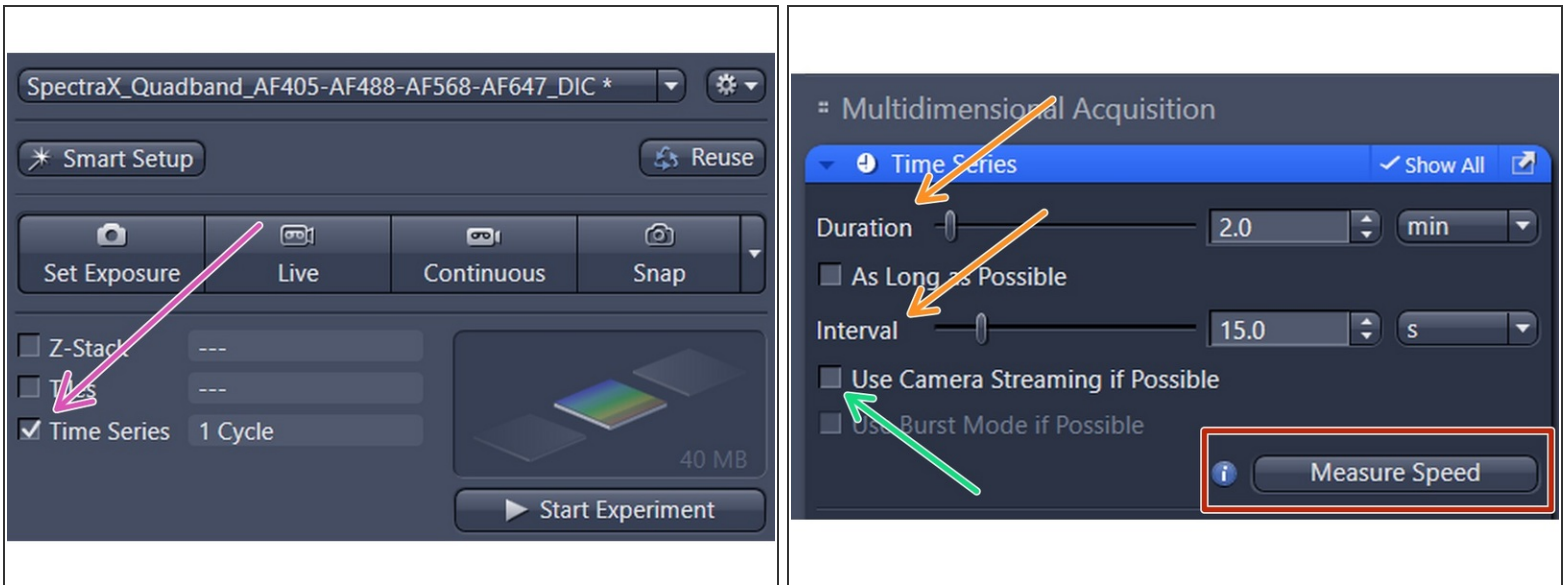# Zeiss Axio Observer (Schlieren) - Part 3: Time lapse and z-stacks recordings

Quick overview how to set up Time lapse and z-stack recordings.

Written By: Philipp Schätzle

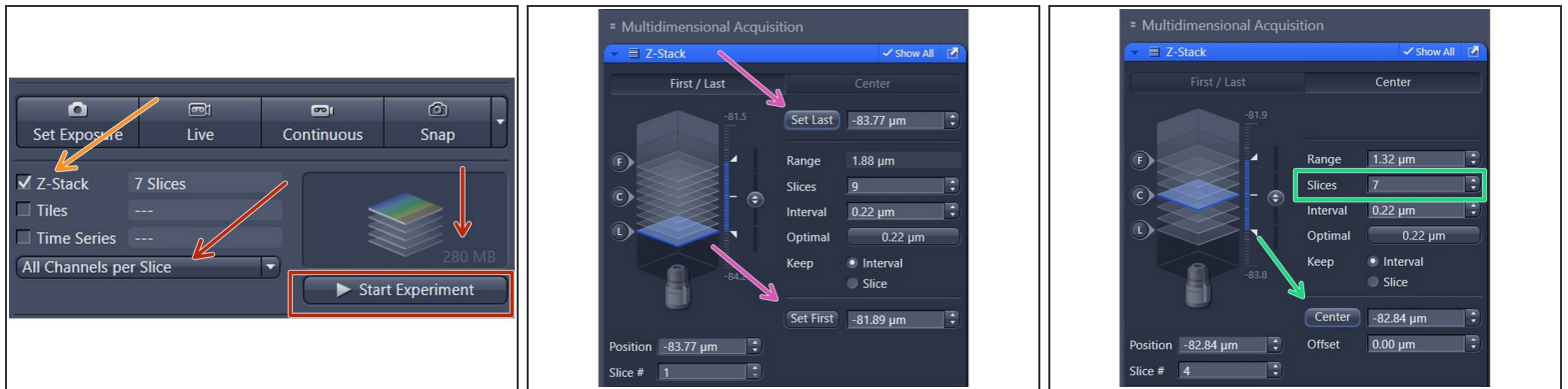## Step 1 — Time lapse recordings

- Activate the **Time Series** option in the "Experiment Manager"

- Enter **Duration** and **Interval**, which will define the total number of images being taken.

- For high speed time lapse imaging it is possible to stream the data and increase the recording speed. Tick the" **Use Camera Streaming if Possible**" checkbox.

⚠️ Note that "Time Series" is automatically combined with "Z-Stack" and "Tiles" recordings when activated.

  - The "Measure Speed" button allows to test if the defined "Interval" is sufficient to record all chosen parameters for each time point.

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Step 2 — Recording of z-stacks

- Activate the **Z-Stack** option in the Experiment Manager

- *Option 1:* Define top and bottom of your sample by moving focus to the positions and clicking on **Set Last** / **Set First**

- *Option 2:* Define the number of **Slices** (z-positions) of the complete stack. By clicking on **Center** you can set the current z-position as the center position of the stack.

⚠ Selecting the best step size (**Interval**) depends mainly on your experimental readout. Clicking the "Optimal" button selects the optically best setting for the current objective. This may or may not be the optimal setting for your experiment! (for instance you may want to reduce the number of z-positions in an live imaging experiment)

- The full z-stack will be recorded after clicking on the **Start Experiment** button. By default the microscope records all channels per z-position before moving to the next section. This prevents artifacts induced by errors in the z-movement but may take longer especially when using the "Singleband" recording mode.