

Installing the Microscope Measurement Tools plugin:

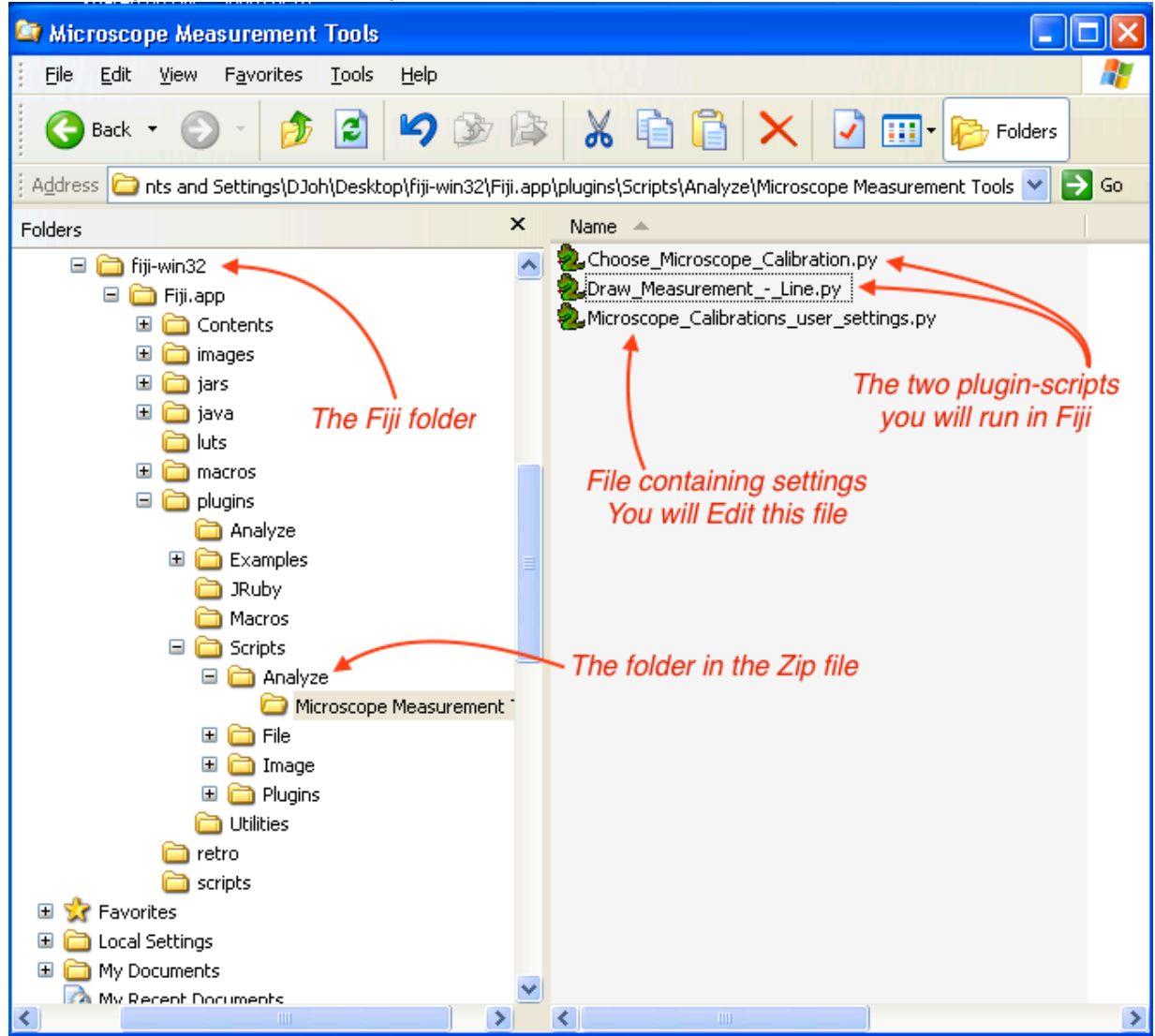
Unzip the file “**Analyze - Microscope Measurement Tools v1.zip**”

Place the resulting “Analyze” folder into:

Fiji.app / plugins / Scripts

(You’ll have to figure out where your Fiji folder is downloaded/extracted to)

For example, the file hierarchy looks like this:



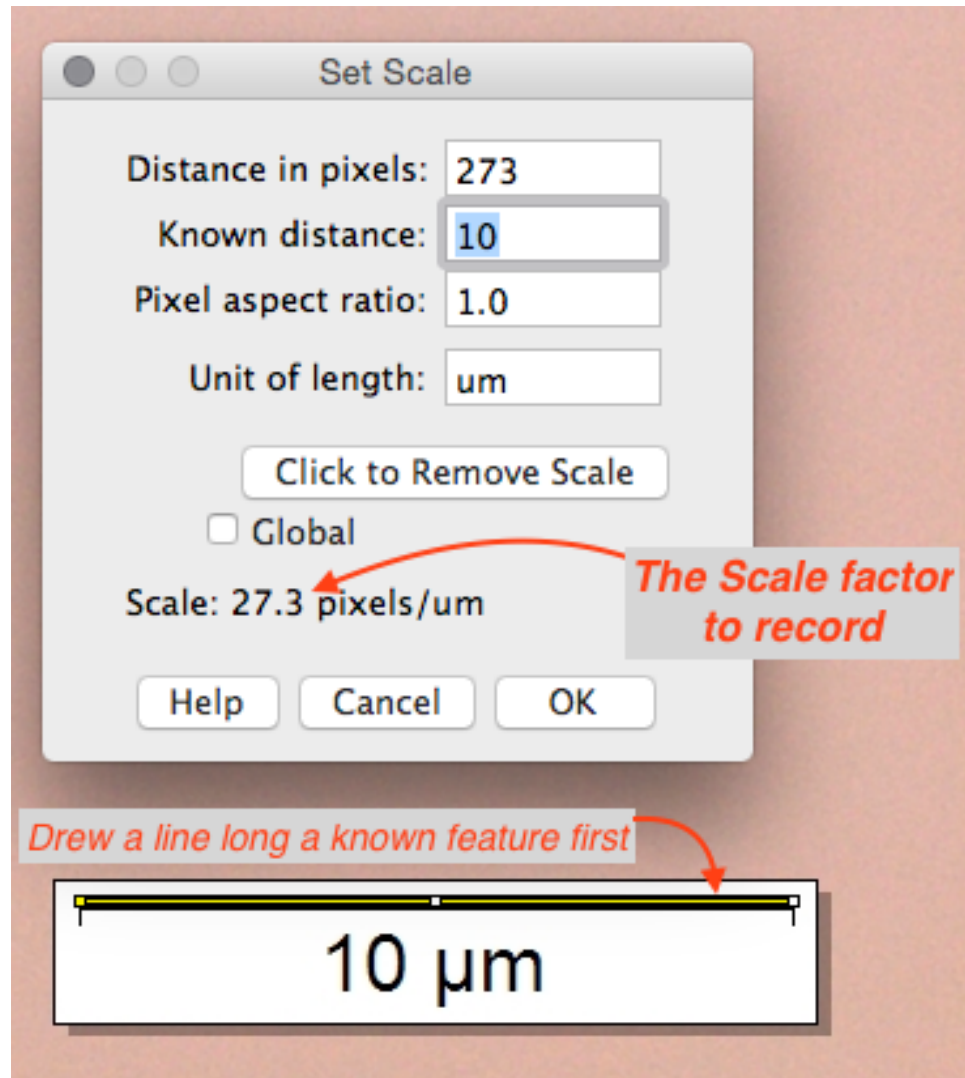
To calibrate your microscope:

- 1st, take photos of a known measurement sample with your microscope, at each magnification that you want to calibrate.
- open **Fiji** (The file **ImageJ-win32.exe** on Windows)
- open an image file taken at the desired magnification/scope with measurement

marker sample.

- Zoom in on the measurement to calibrate to
- Draw a Line ROI (region of interest) along the calibration measurement feature
- Choose Analyze > Set Scale...

- The “Distance in Pixels” will already be set by your Line ROI.
- Type in the “Known Distance” (from your measured feature)



– Record the resulting “Scale” value, eg. *9.1667 pixels/unit*, where unit is cm, mm, um etc.

– This “Scale” value will be used in the settings file, so record both a name for the scale and the scale value, e.g.:

Nikon DSLR 10x	9.1667 pixel/um
Nikon DSLR 50x	1.8333 pixel/um
Nikon DSLR 100x	0.9167 pixel/um

(I think I got the order correct here - these are just dummy values)

– Then open the file

*/Applications / Fiji.app / plugins / Scripts / Analyze / Microscope Measurement Tools / **Microscope_Calibrations_user_settings.py***

– Edit the ``names`` list to reflect the name of each calibration,

eg. [`'Nikon DSLR 10x'`, `'Nikon DSLR 50x'`, `'Nikon DSLR 100x'`] etc.

– Edit the ``cals`` list to reflect the corresponding ``pixel-per-unit`` calibration for each setting, from your previously taken records,

eg. [`9.1667`, `1.8333`, `0.9167`]

Unfortunately, the changes to the settings file may not be automatically picked up by Fiji.

The workaround is to do the following

1) Quit Fiji.

2) Delete the `'py.class'` file in the plugin's folder (and edit your user-settings file as needed)

*Fiji.app / plugins / Scripts / Analyze / Microscope Measurement Tools / **Microscope_Calibrations_user_settings\$py.class***

3) Open Fiji. It should have picked up the new settings now.

Run **Analyze > Microscope Measurement Tools > Choose Microscope Calibration**, and see if the pop-up window shows the new names and calibration values you set in your *user-settings* file..

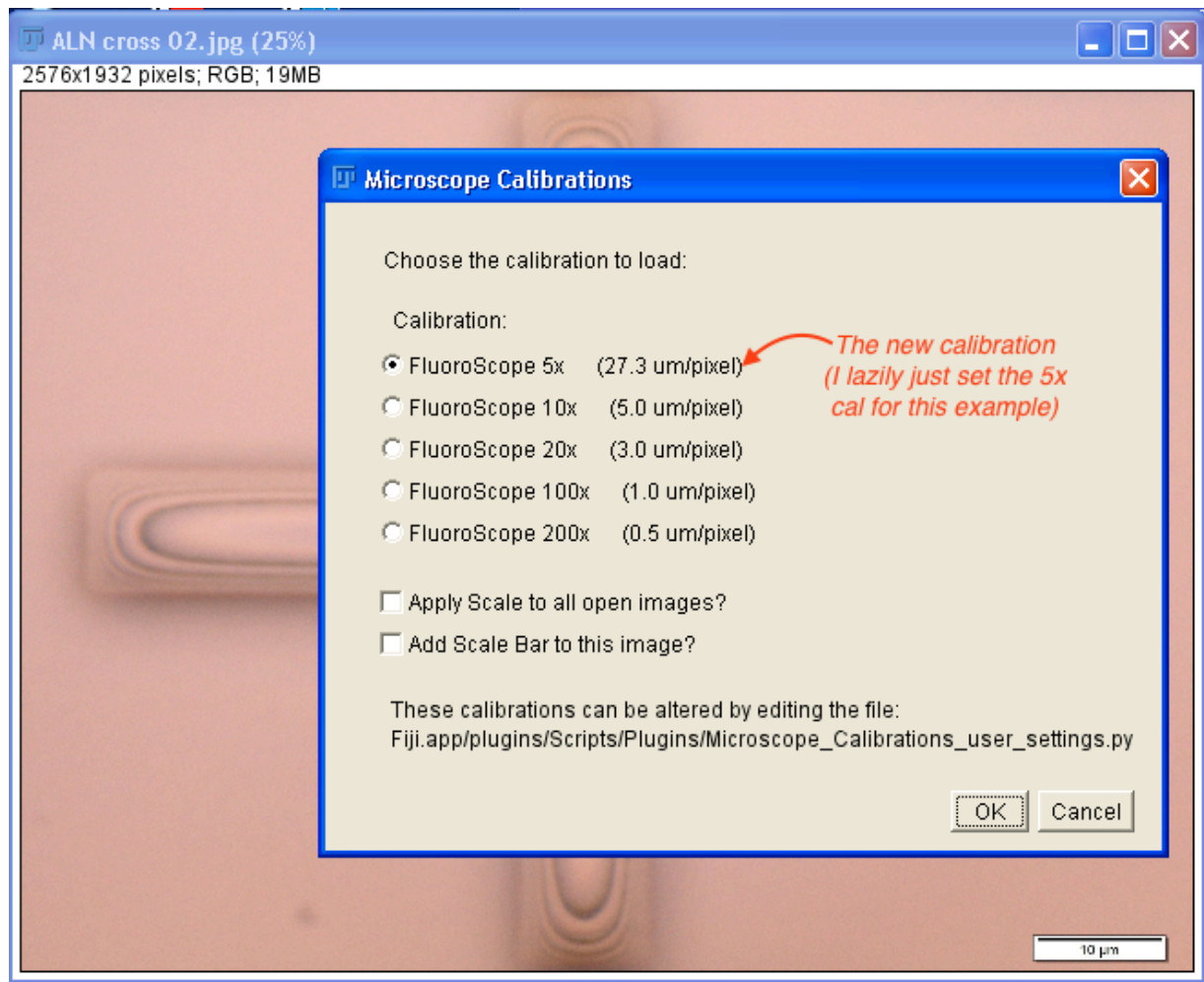
Luckily, you should only have to do this once, when you do your initial calibration/setup.

Performing a measurement:

Now you can open any image file and run

Analyze > Microscope Measurement Tools > Choose Microscope Calibration (at the very bottom of the *Analyze* menu)

And set the scale to the appropriate calibrated measurement scale.



Then the correct scale will be used for commands like:

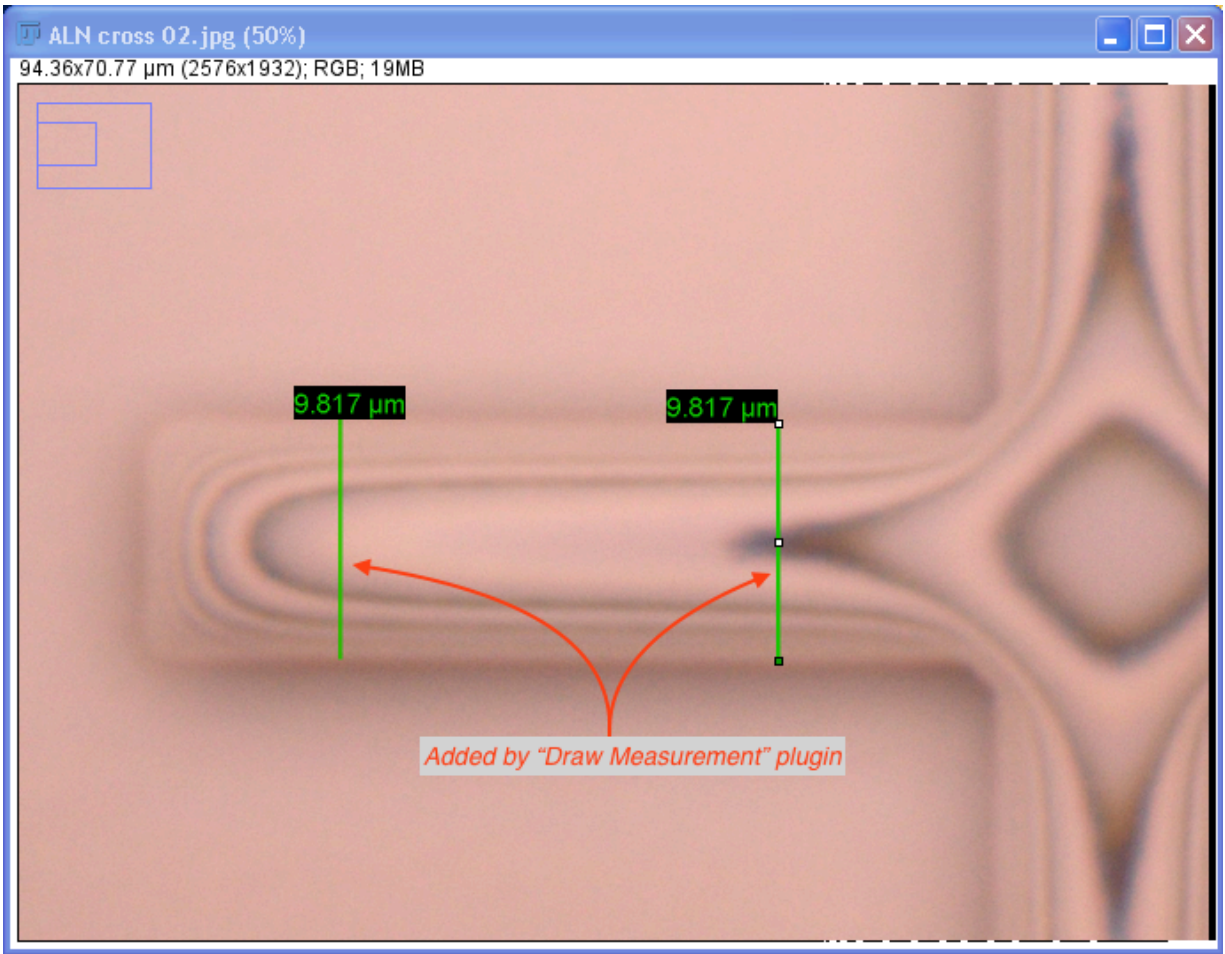
Analyze > Tools > Scale Bar...

—> *add a scale bar to the image*

and

Analyze > Microscope Measurement Tools > Draw Measurement - Line

—> *draw a line first, and then annotate it with the measured length. The text will be placed at the last point of the line.*



Also, drawing lines/rectangles etc. will show the correct “Length” and units in the Fiji main window/status bar. However, these don’t annotate the image itself - use the “Draw Measurement” script I provided for that.

Note that you should probably not over-write the original photograph when you annotate it, so use “**Save As...**”

-- Demis
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