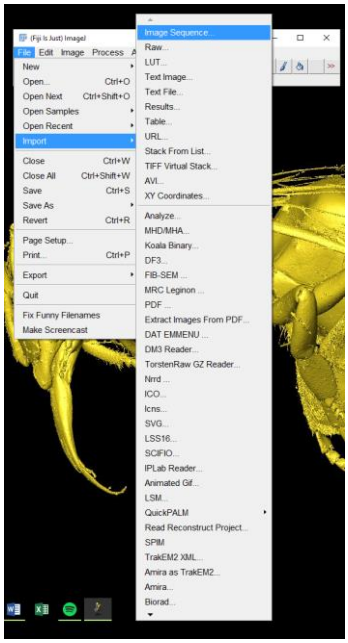
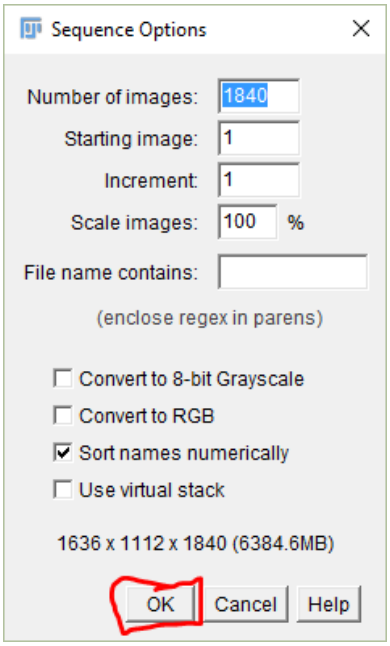
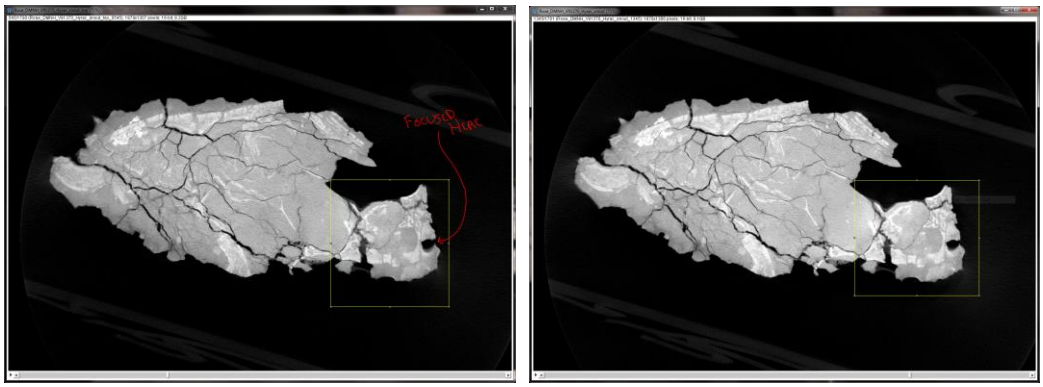
Stitching multi-part scans in ImageJ/Fiji

1) "File > Import > Image Sequence" and load in both Z-stacks that need to be stitched together. Highlight a single tiff within the Z-stack to open, and then press OK to have ImageJ open the full sequence.





2) Once both Z-stacks are loaded side by side, find the same frame in both. Image sequences must have enough overlapping data in order to stitch (take note during CT scan setup).
   a. If image looks dark you may need "Image > Adjust > Brightness/Contrast > Auto" somewhere in the middleof the tiff stack.
   b. Finding the same frame can be done most accurately by finiding a feature that appears/disappears between consecutive tiffs in a sequence (e.g., a bubble or crack or connection between parts).



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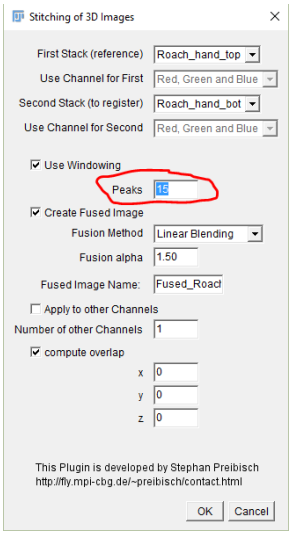
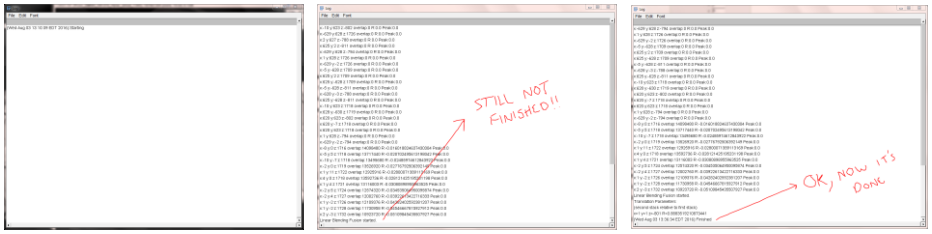
3) Draw a rectangular section around a portion of the image. This works best when surrounding areas of the sample with unique feautres, and when the rectangular is around roughly the same (small) area.

4) “Plugins > Stitching > Deprecated > 3D Stitching” – change the “Peaks” setting from 5 to 15 and press “OK”.



5) A log screen will pop up with the status of your stitching. Do not alter the files at all until you see “Finished” written in the last line of the log file – this can take several minutes. At this point there should be a final tiff stack that opens in addition to your original 2 parts. Scroll through to assure that everything has been stitched appropriately.



6) “File > Save As > Image Sequence” to save your newly fused/stitched Z-stacks. The default file name will be a combination of the two original file names so you will likely want to shorten it. Don’t close down until status bar under ImageJ/Fiji menu stops recording saved images.

7) For 3+ part stitches first stitch “1”+ ”2” – save – then stitch “1+2” + “3”, etc.

Enjoy your freshly stitched Z-stack!

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