How to open the 3DEM series “VYLNH_20181017.ser”

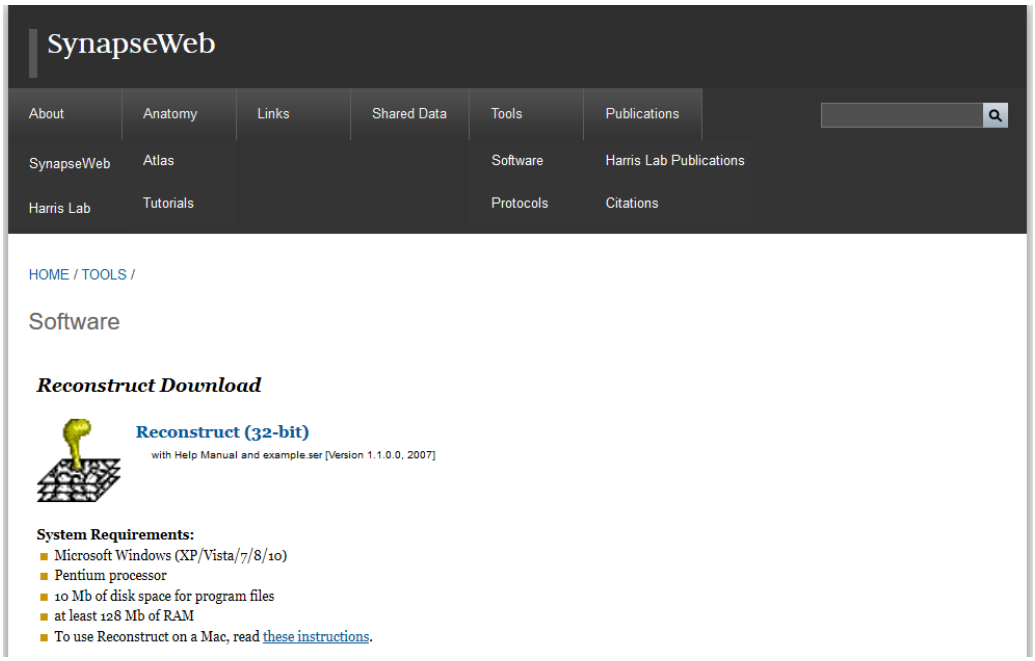
About this series:

This series consists of 72 serial tSEM images of the hippocampal area CA1 (*stratum radiatum*). The CA1 tissue was collected from an acute slice prepared from a mouse injected with rAAV to express ChR2-GFP and mAPEX2. How this dataset was prepared is described in the manuscript entitled: “Ultrastructure of light-activated axons following optogenetic stimulation to produce L-LTP”.

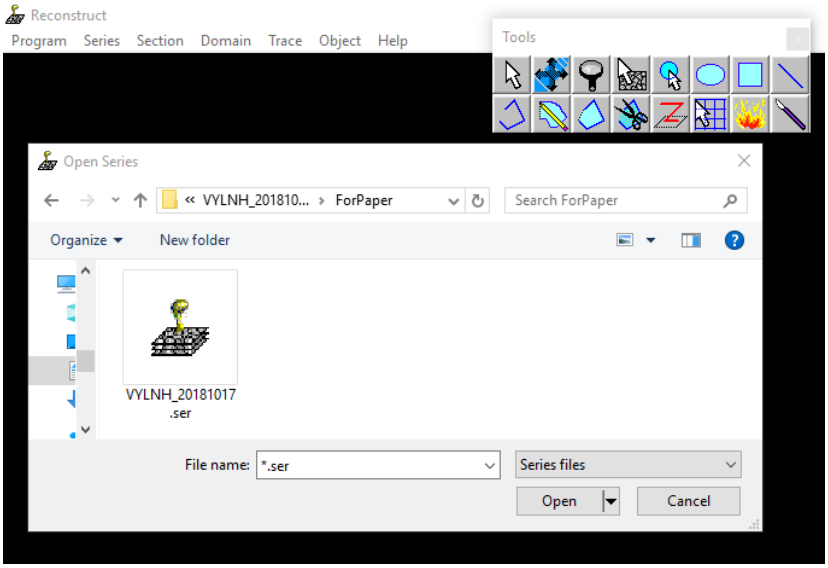
In addition to the serial tSEM images, the series consists of 2 other image files (calibration grid and gold particles), trace files for each section (“VYLNH_20181017.*integer*”, with *integer* representing the section number), and the Reconstruct series file “VYLNH_20181017.ser”.

How to open the series using Reconstruct:

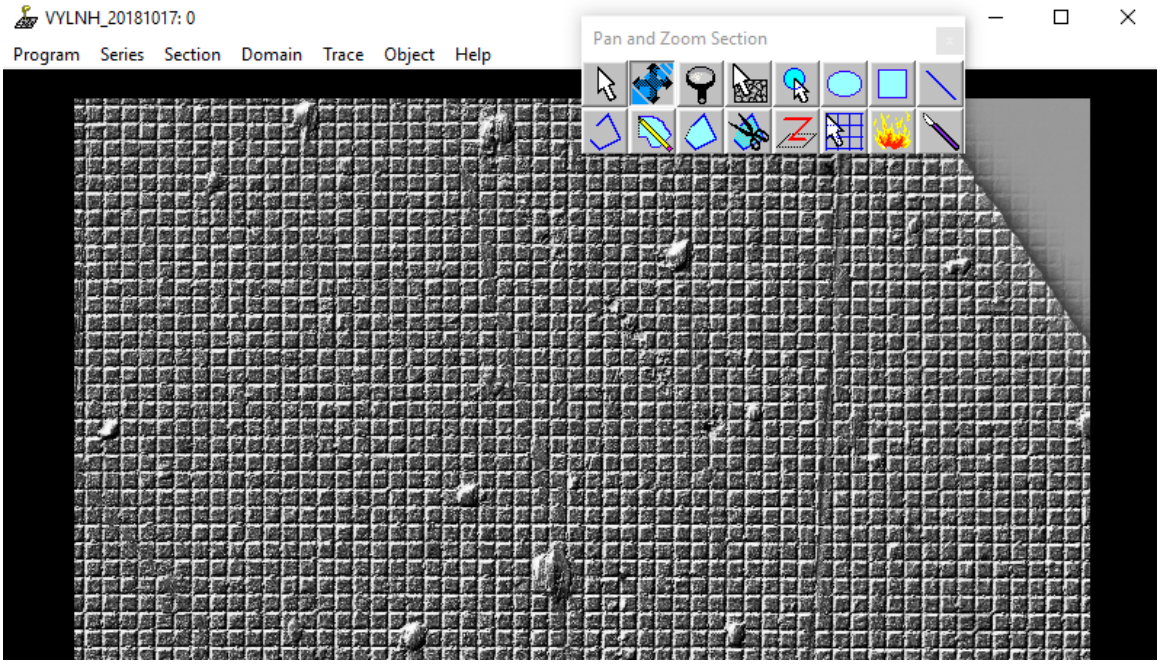
1. Download and unzip the file “VYLNH_20181017.zip” on a Windows computer. Keep all files within a single folder.
2. Go to http://synapseweb.clm.utexas.edu/software-0. Download and install Reconstruct.



3. Launch Reconstruct. Go to Series > Open, then select “VYLNH_20181017.ser”. Click “Open”.



4. You should see something like this:



This (section 0) is an image of the calibration grid that was used to calibrate pixel size.

5. Use mouse wheel or “PgUp” and “PgDn” keys to scroll through serial EM images.
6. Use “Pan and Zoom Section” tool  to navigate within an image.
   - Hold left mouse button and move the mouse to pan.
   - Hold right mouse button and move the mouse toward/away from you to zoom in and out, respectively.
7. Quantitative data can be accessed in objects list (Object > List objects…).
8. Traced objects can be visualized in 3D scene by double-clicking on the object of interest, or by selecting it and pressing “Enter” key. You can select more than one by holding “Ctrl” while clicking on objects.
9. For more information, please refer to the user manual available on: http://synapseweb.clm.utexas.edu/software-0