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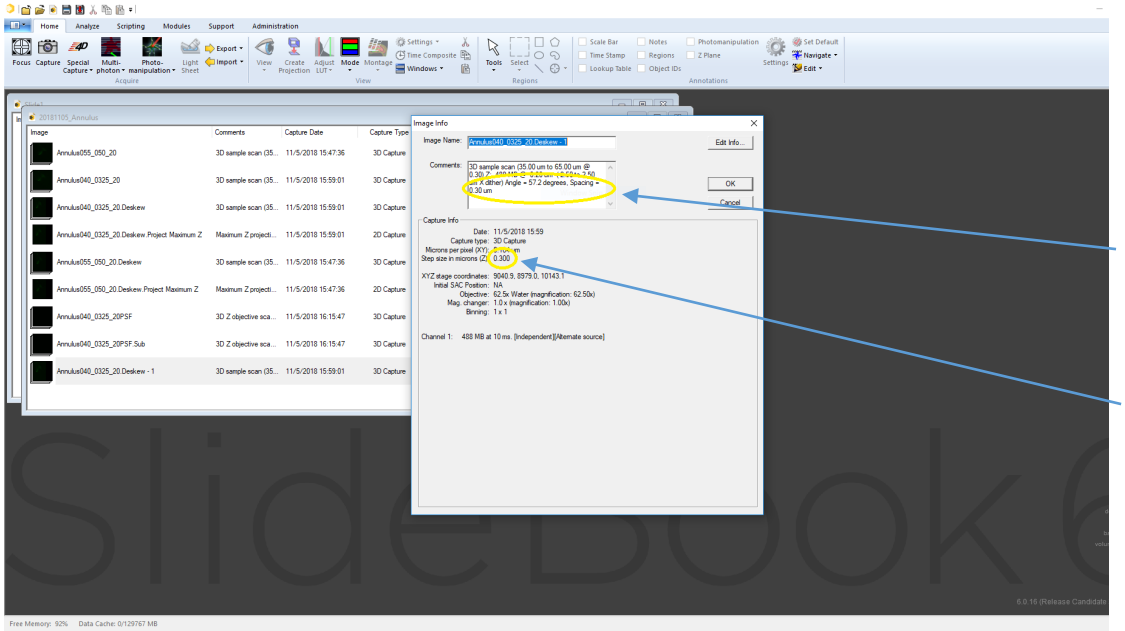
4D rendering of Lattice Light Sheet data

Slidebook and Imaris

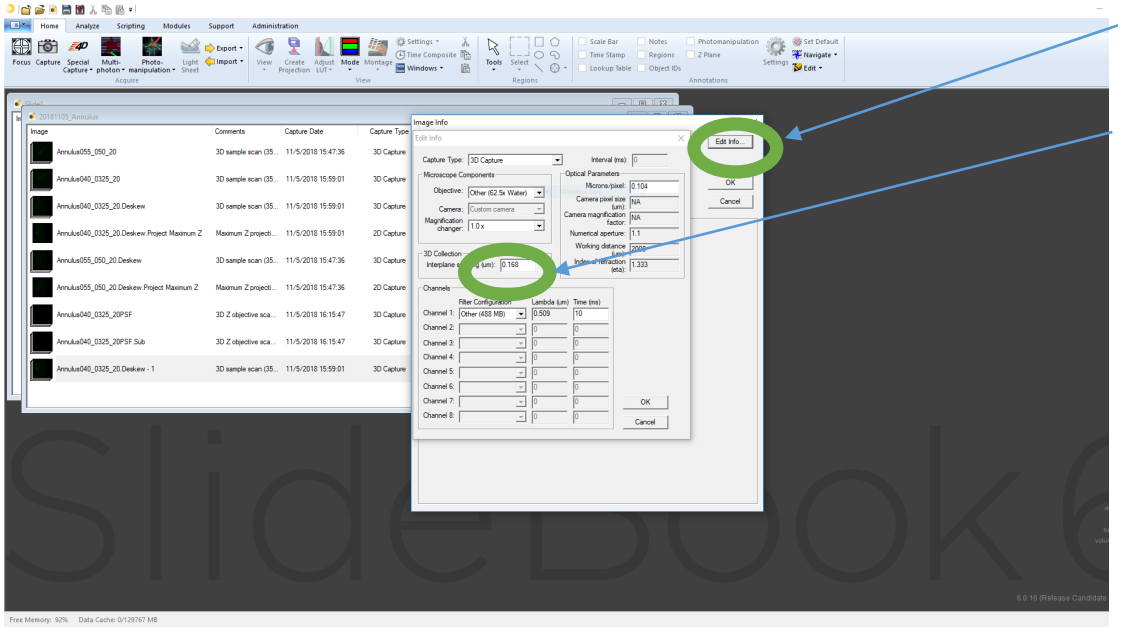
V2 18th February 2019 / CAMDU @ WMS / Helena Coker

Slidebook; Deskewing Data



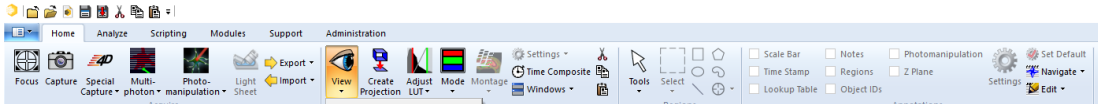
- It is important to ensure that the z spacing is correct for each image.
- Right click on image > Properties
- Spacing is what you input into the lattice software when you collected the images.
- Step size (Z) for **deskewed images** should be Spacing*cos(57.2) and is shown on the acquisition programme in brackets next to the spacing you input

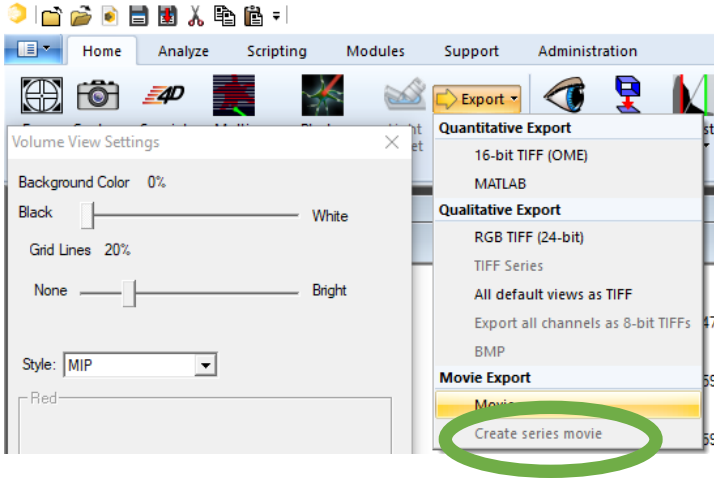
Slidebook; Deskewing Data



- If the spacing is incorrect, click Edit info
- Correct the spacing here and click okay

Slidebook; Maximum projections and compressed movies

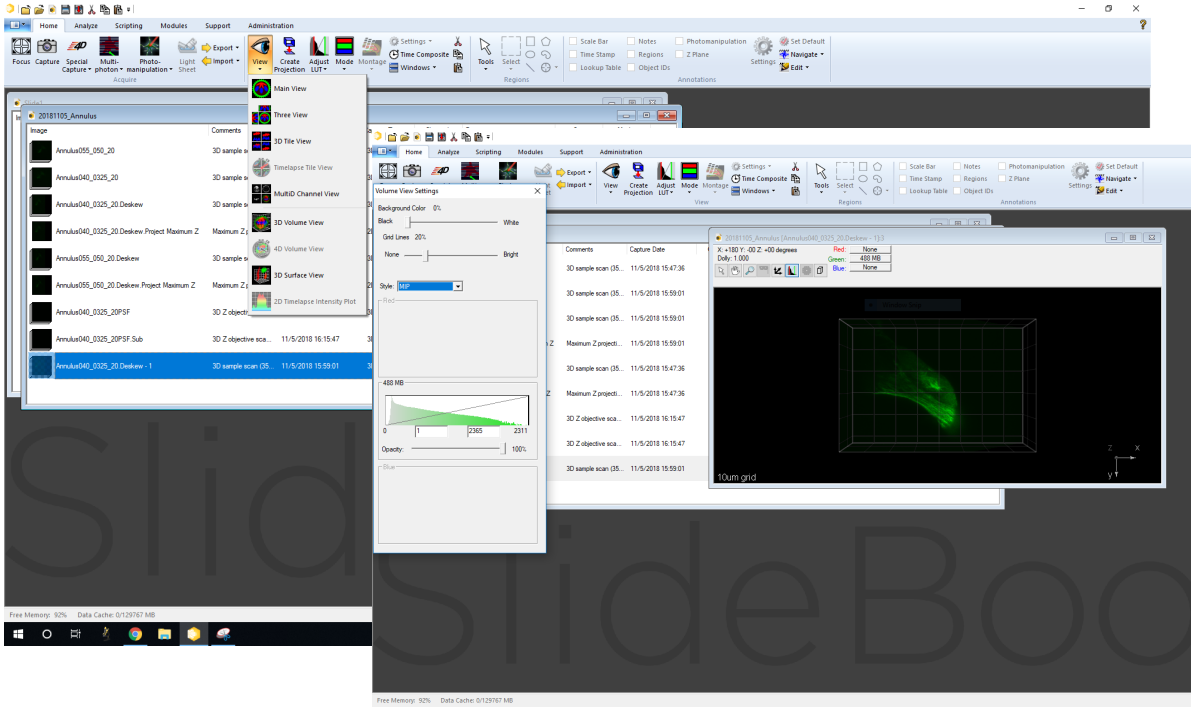




- For quick reference, smaller 2D timelapses can be created by maximum projection of your 4D volume.
- Home > Create Projection

- These can be saved as massively compressed ‘series movies’ which can be emailed easily
- Home > Export > Create Series Movie

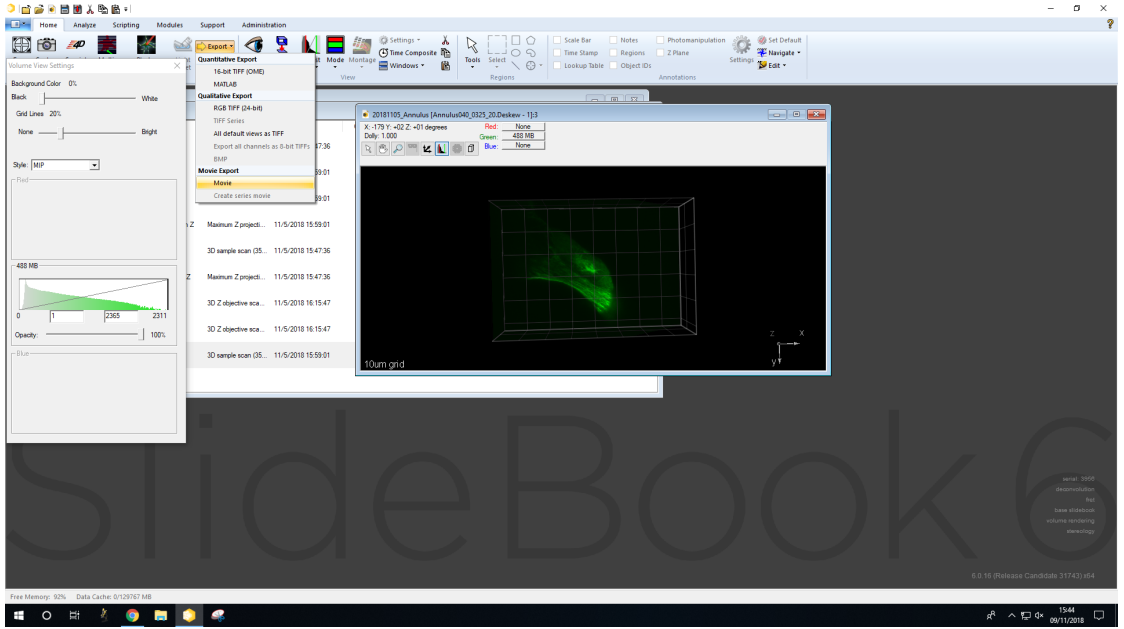
Slidebook; 4D viewer



- For full volumetric view use the 3D or 4D Viewer depending on your data set
- Home > View > 3D/4D viewer
- Adjust look up table as necessary

Note Nov2020: SlideBook 6.0.21 and .22RC deskew by default when opening volumes so only open raw data

Slidebook; Saving 4D Volumes



- Movies of the volume can be exported
- A limited number of rotations and movements are available.
- Home > Export > Movie

- Home > Export > OME Tif 16 bit can be used to export a tif to open in Fiji. Note: best opened with Bioformats Importer, do not open as virtual stack which compresses to 8 bit.

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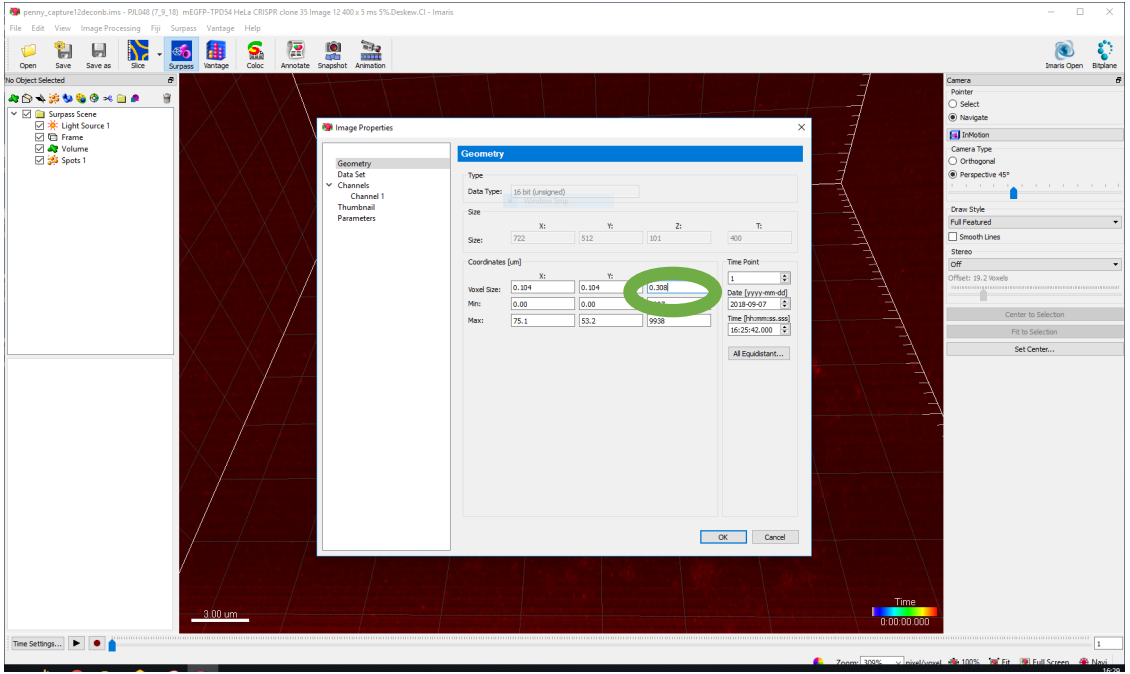
Slidebook; Getting ready for Imaris

- Open a new slide and save it.
- Copy the deskewed file of interest into the new slide.
- Resave

- Open Imaris File Converter (downloaded from http://www.bitplane.com/download#fileconverter)
- Drag and drop the Slide into IFC and click 'start all'

Imaris; Check image dimensions



- Open the .ims file saved by the converter in Imaris
- Check the z step size is correct
  Edit > Image Properties
- The value should be the **deskewed step size** as discussed earlier and NOT the spacing

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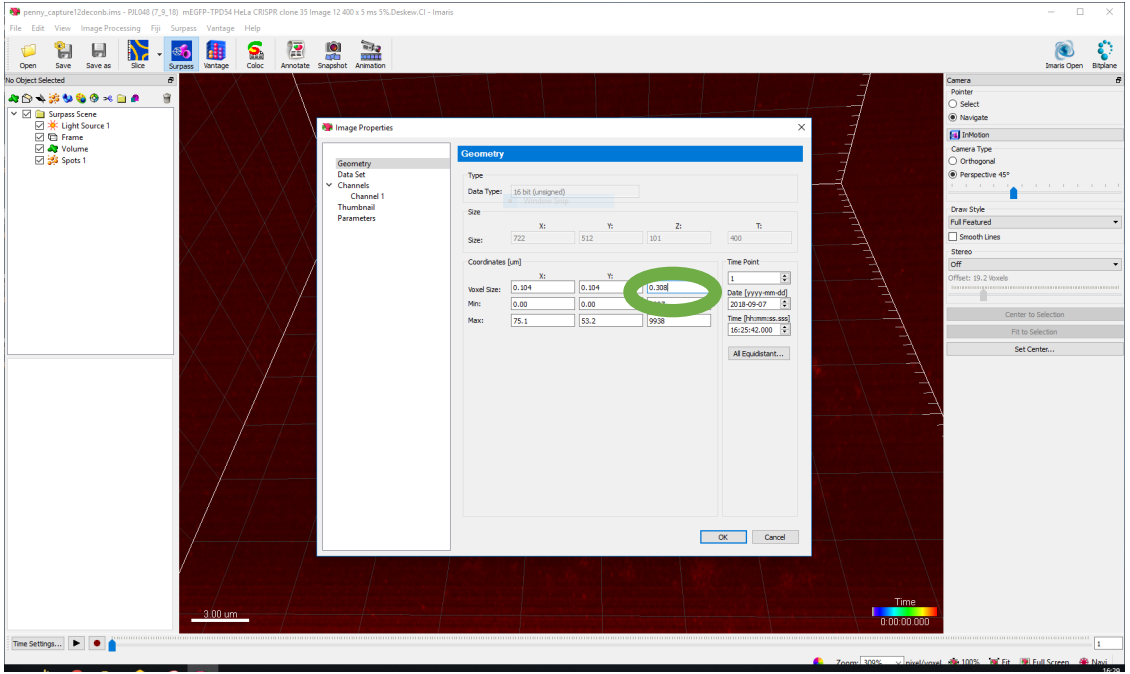
Imaris; if the step size is wrong

- Imaris may crash if you change the step size and then try to save the file. To get around this…
- Reopen the file
- Click Save As and give the file a new name. Wait for it to save
- Go back into properties and edit the step size
- Click save
- Delete the older file

Imaris; Visualisation



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  Edit > Image Properties
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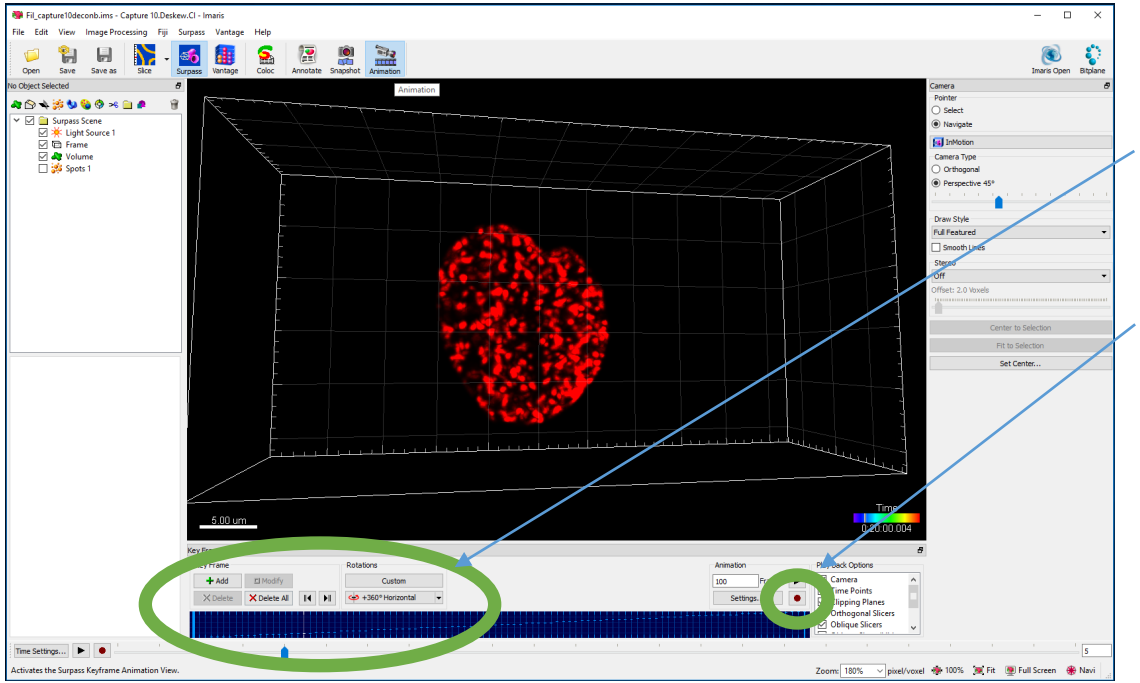
Imaris; 4D movies



- Use the Animation tab to set up movies.
- Add transition and rotations here and adjust them on the slide bar
- When you have the rotations your want click the record button, and save the file.

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Notes

- Please make use of the many resources on the internet available from other sources
- Although not for the exact release we have licensed, the Imaris 9 manual has some relevant information
- Slidebook is being continuously developed so if you have any suggestion for 3i let me (Helena) know and I'll pass them on

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Any questions? Find me in *in silico or drop me a line at* helena.coker@warwick.ac.uk

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