

Imaris Standard Operation Protocol Visualization

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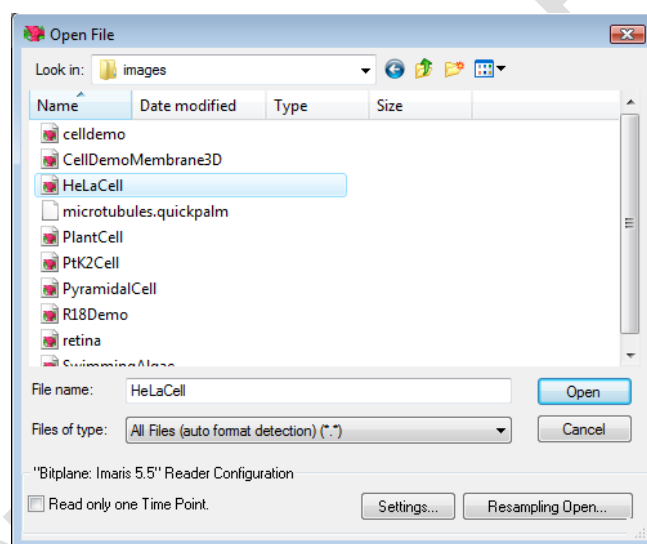
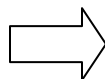
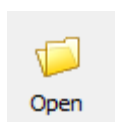
Launch Imaris

- Log in Imaris computer with account of “**user**”.
- Download your data in DATA(G:)/Your folder. **No data is allowed to save in C drive or Desktop.**
- Double click “**Imaris x64 7.5.2**” icon on desktop to launch **Imaris** .

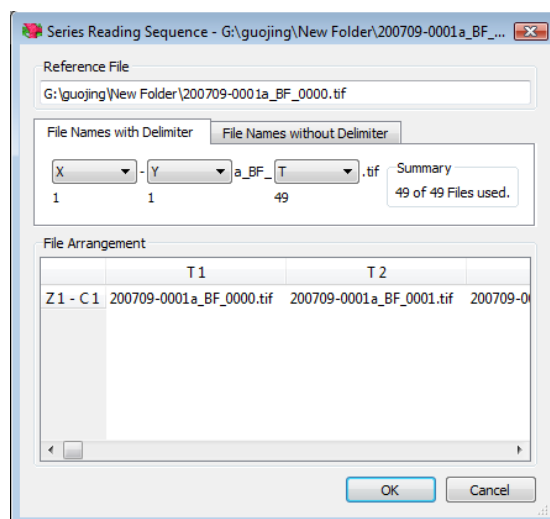


Loading Images in Imaris

- To open images by pressing **Open** in the main tool bar of Imaris. Select the image file then click "**Open**".

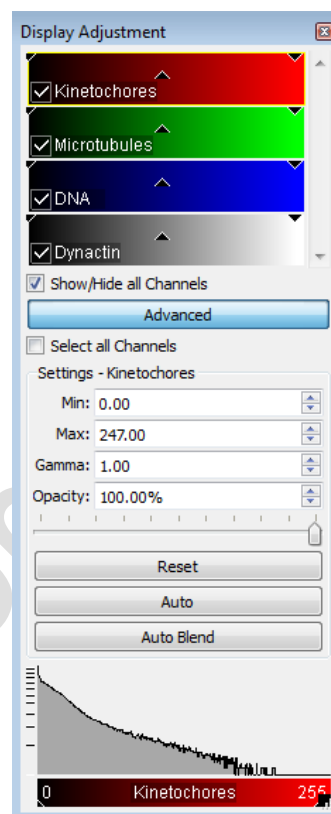
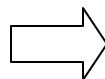
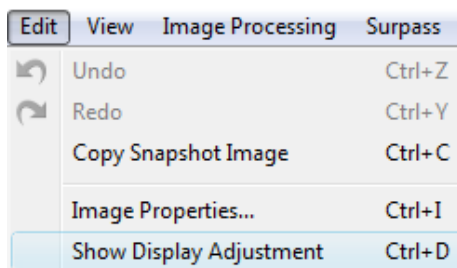


- When working with a 2d tiff image series, select the first file, and Click ‘**Settings**’ in the dialog box. Choose the order of dimension for reading the series.



Display Adjustment

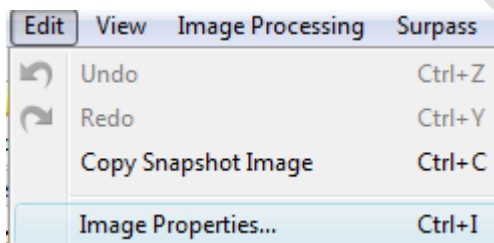
- Open "Display Adjustment" window by selecting "Edit> Show Display Adjustment".



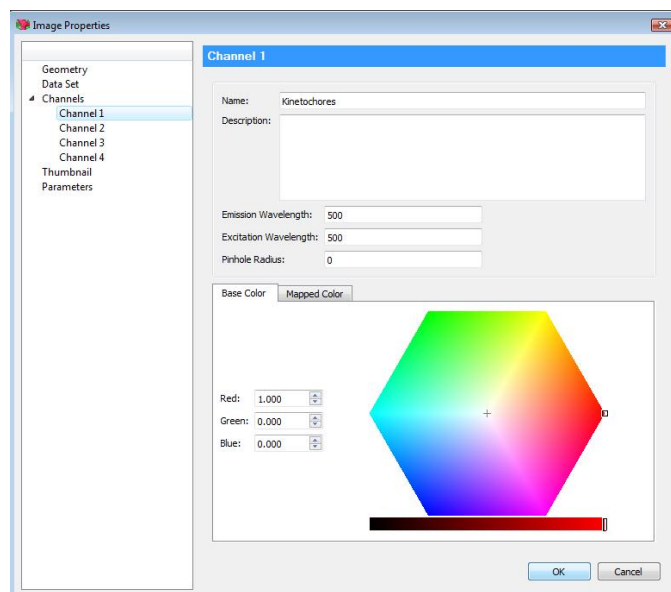
- Changing display properties for brightness/contrast/opacity if needed.

Edit Image Color & Scale

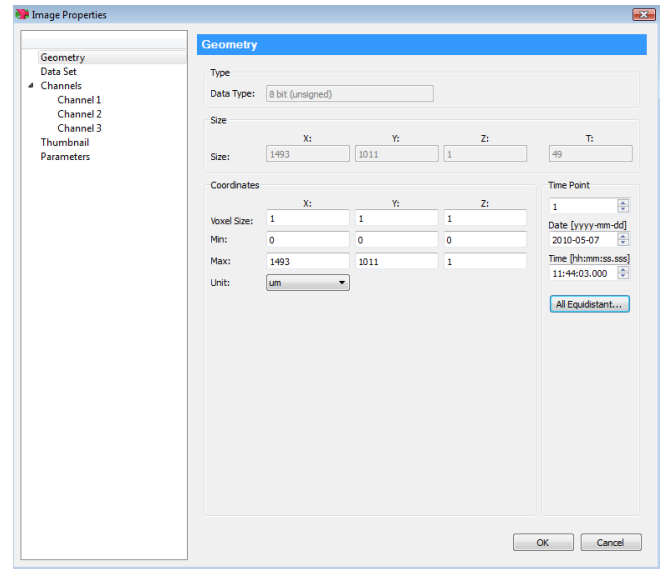
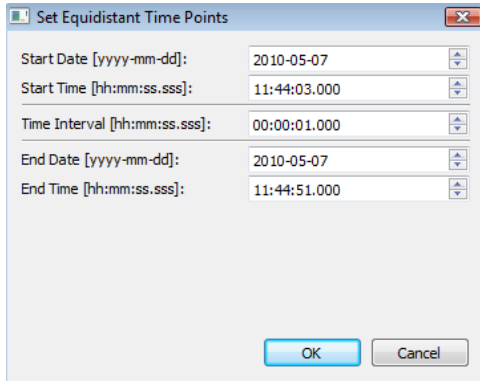
- Open "Image Properties" window by pressing "Edit> Image Properties...".



- Edit image color by pressing the specific channel and select the color in palette, then click **OK**.

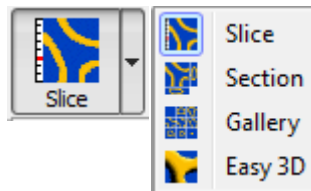


- Edit image scale by selecting "**Geometry**" and input scale in the box of "X:", "Y:" and "Z:". Voxel size is the actual length of one pixel in XY or Z dimension.
- Time interval could also be edited in "**Time Point**" column by pressing "**All Equidistant...**". Edit time duration or interval in "**Set Equidistant Time Points**".



Basic Visualization Features

- Basic visualization features include "**Surpass**" mode, "**Slice**" mode, "**Section**" mode, "**Gallery**" mode and "**Easy 3D**" mode.



Slice mode: shows a 2D view from the top in the z-axis.

Section mode: front view, top view, and side view at any given point in the data set or as a portion of the dataset

Gallery mode: display of all available slices or a user defined selection of the slices

Easy 3D mode: fixed view with standardized parameters

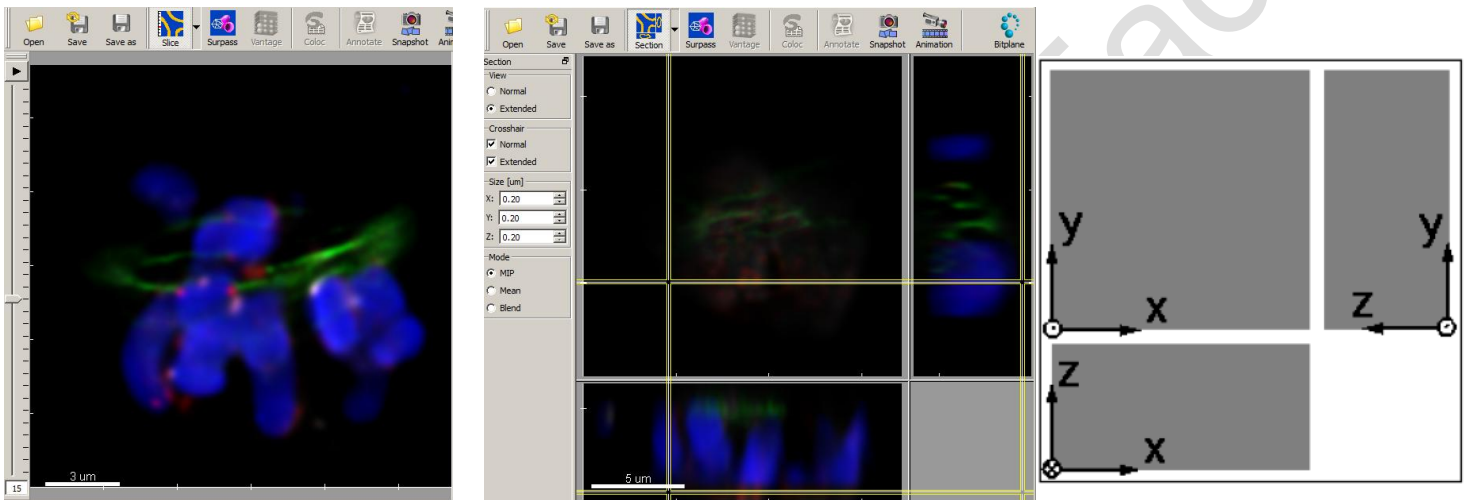
Surpass mode: provides numerous tools for data presentation

- The example of each mode is shown below.

- **Slice** mode: Dragging the slider handle in the left control bar up and down to view image
- **Section** mode: Checking View – Normal selects a single cut through the data set. Checking View – Extended allows you to select a portion of the data set in the x-, y-, and z-direction to be displayed.
 - ✧ **MIP** Calculated maximum over all slices in the range
 - ✧ **Mean** Calculated mean value over all slices in the range
 - ✧ **Blend** Calculated upon the transparency of the slices

Slide Mode

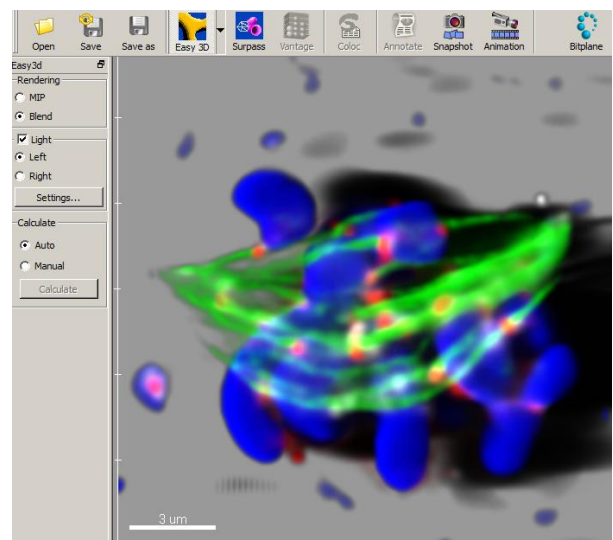
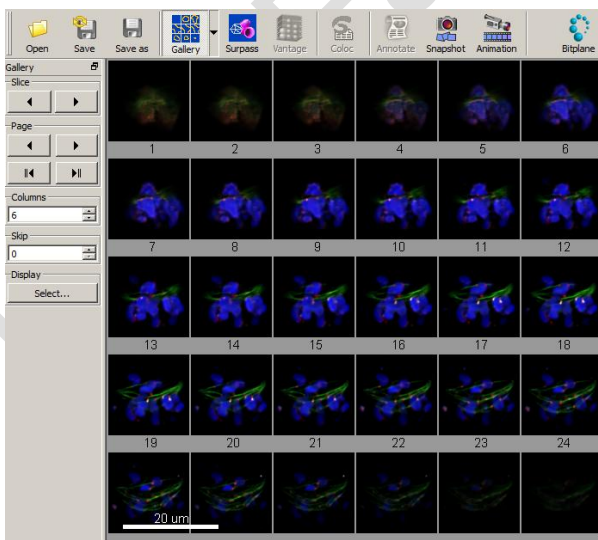
Section Mode



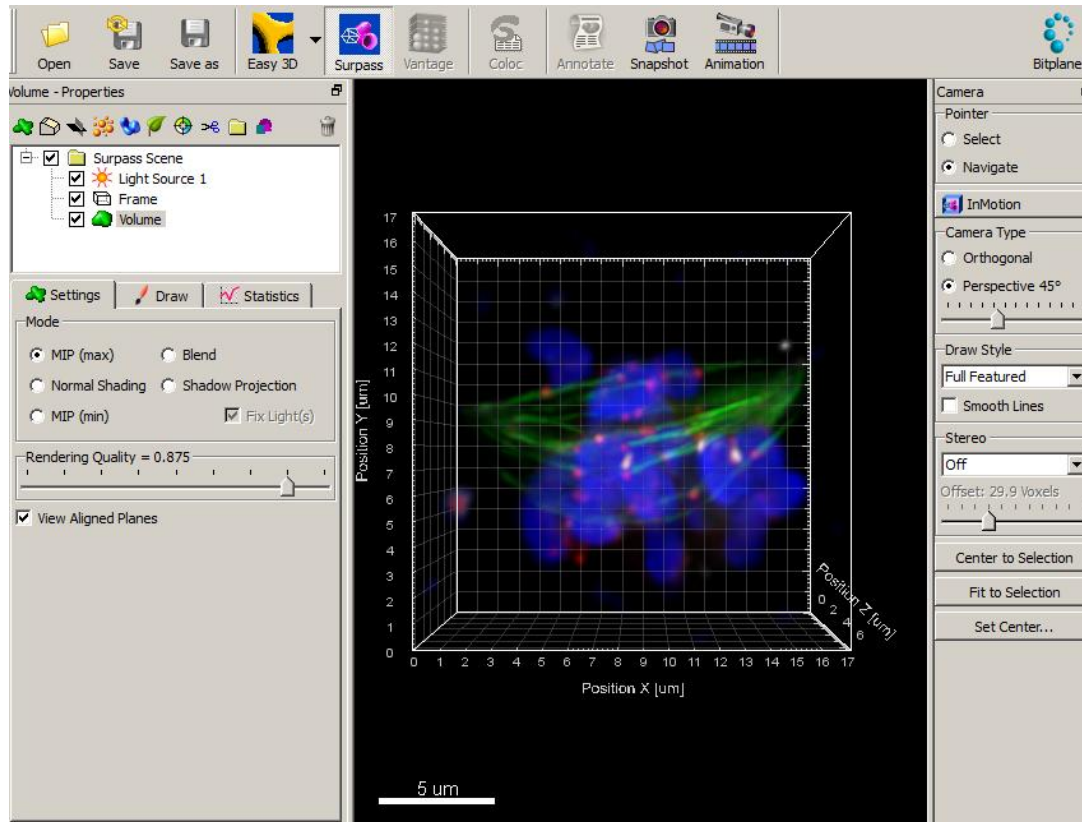
- **Gallery** mode: Holding the Shift button lets you select a continuous series of images. Hold Ctrl button to select various images spread over the gallery.
- **Easy 3D: MIP (Maximum Intensity Projection)** shows the maximum intensity of all layers along the viewing direction. **Blend** shows the color obtained by blending all values along the viewing direction and including their transparency.

Gallery Mode

Easy 3D Mode

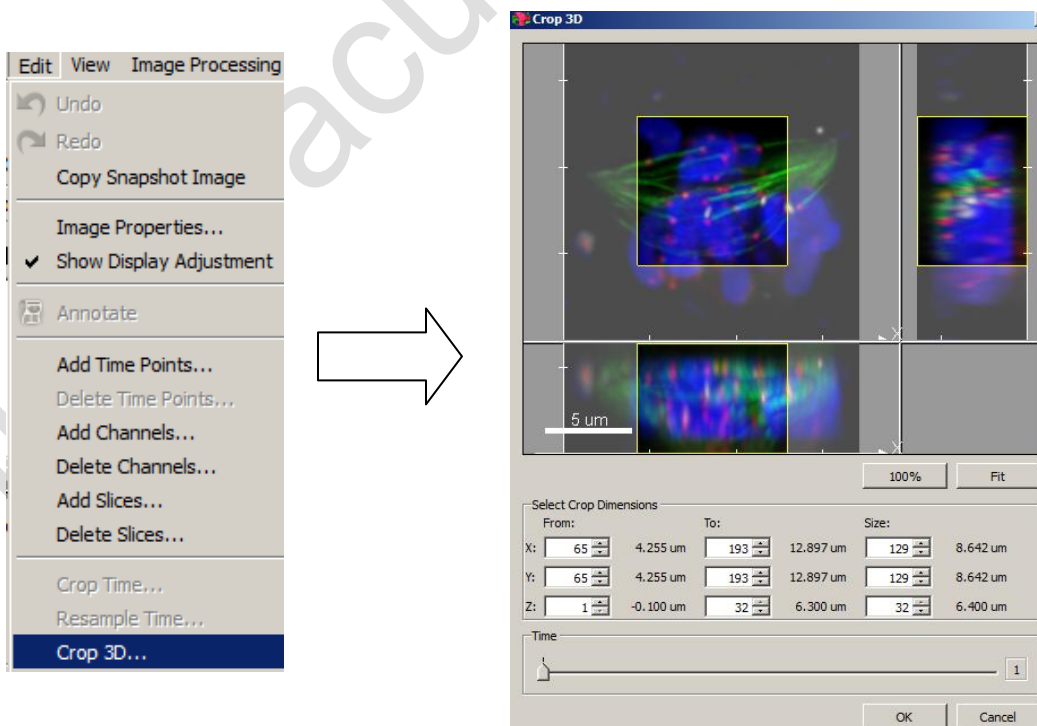


- **Surpass** mode: provides numerous tools for data presentation




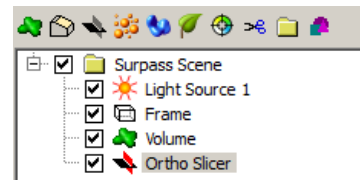
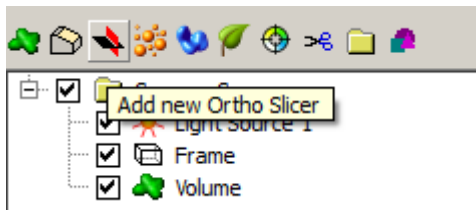
Crop an Image

- In the menu bar select **Edit – Crop 3D**. The Crop selection box is displayed, showing a sectional view of the actual image. A rectangle, representing the region of interest (ROI), is overlaid on all three views. Modify the size and the position of the region of interest. Click **OK** when finished.

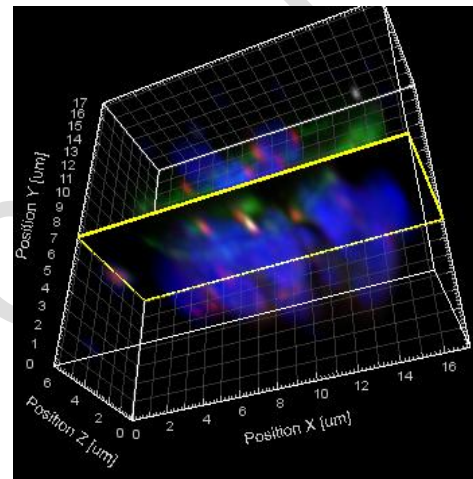
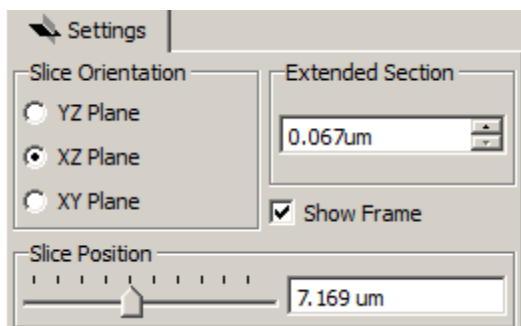


Ortho Slicer

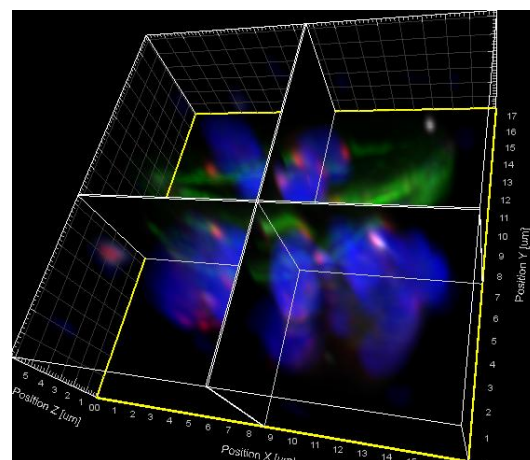
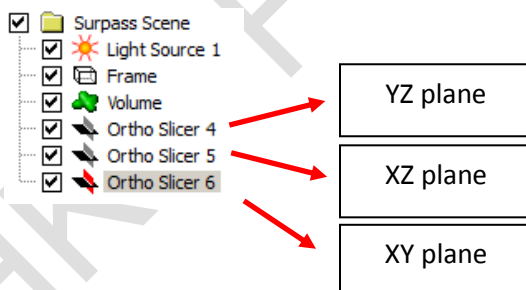
- Select  to add new Ortho Slicer




- Select the slicer dimension in Orientation (YZ plane; XZ plane and XY plane). Select Slice position with Slider.

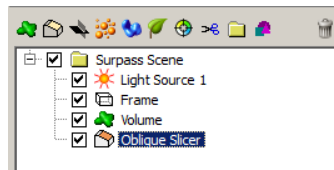
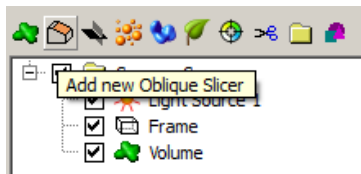


- Adjust slides thickness in Extended section
- Multi Ortho Slicer could be added into the dataset

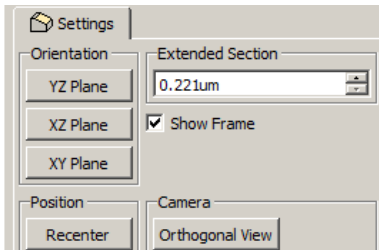


Oblique Slicer

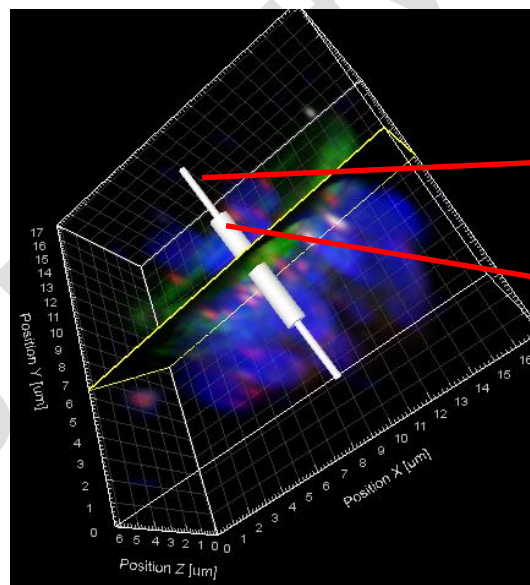
- Select  to add new Oblique Slicer



- Select the slicer dimension in Orientation (YZ plane; XZ plane and XY plane)



- The slicer can be freely moved and rotated within the dataset




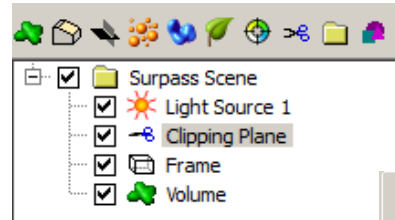
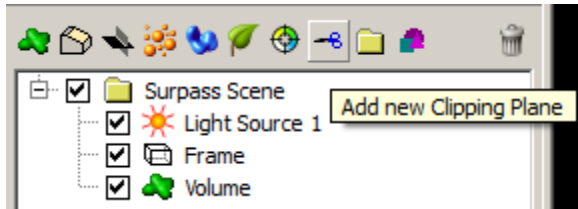
Use this rod to freely rotate the plane

Use this rod to change the position of the plane

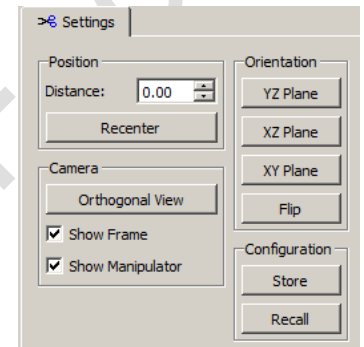
- Adjust slides thickness in Extended section

Clipping Plane

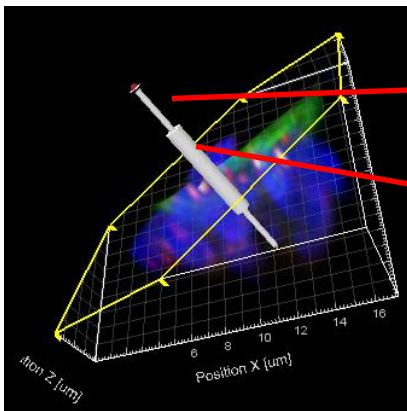
- **Select**  to add new Clipping Plane. Clipping Plane is used to cut away objects on one side of the plane. It allows you to look inside the object



- Select the plane dimension in Orientation
(YZ plane; XZ plane; XY plane and Flip)



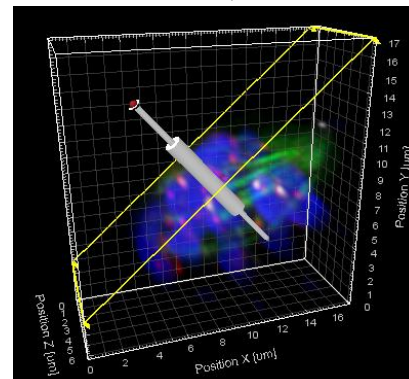
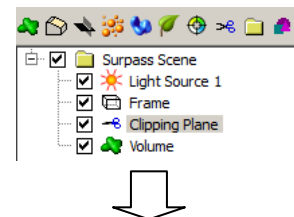
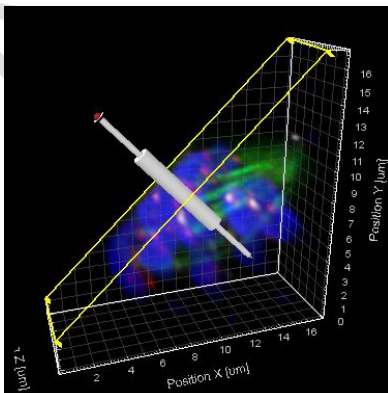
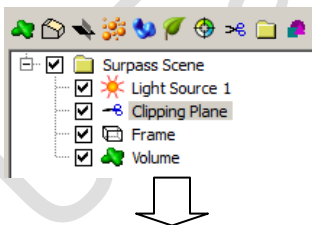
- The plane can be freely moved and rotated by manipulator rod.




Use this rod to freely rotate the plane

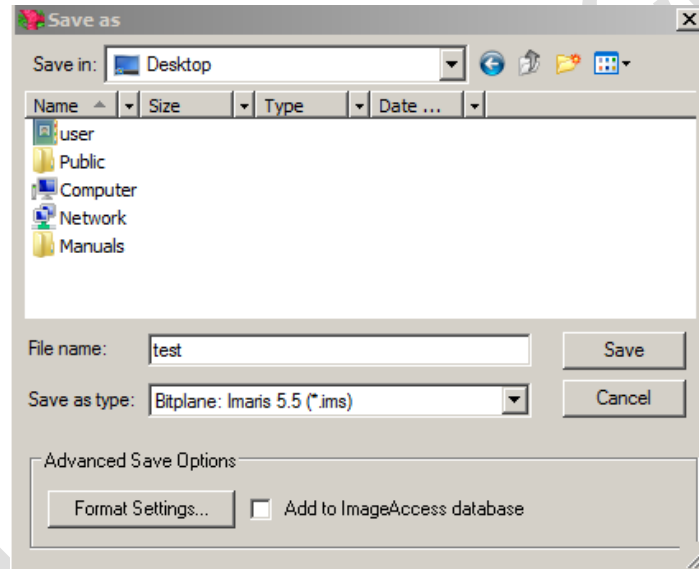
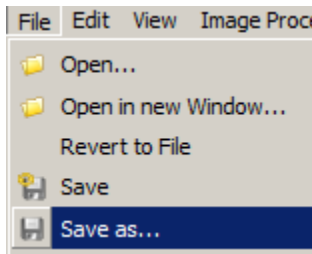
Use this rod to change the position of the plane

- Clipping Plane only cuts objects lower in Imapis tree.



Save Scene File

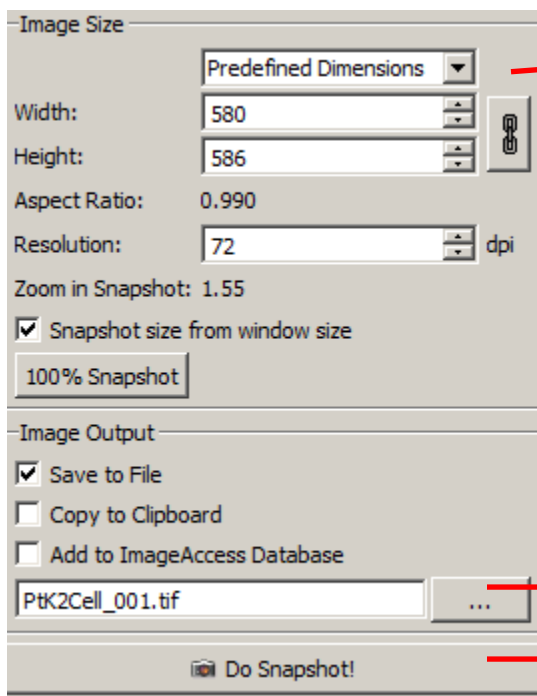
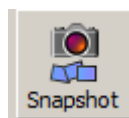
- A Scene File stores a configuration of Imaris and Surpass and allows the user to restore the work at any time by loading the Scene File.
- Select  in the main tool bar.



- Select the directory and enter the file name and click Save. The tree objects are saved as Imaris Scene file.

Creating Screenshots and Figures

- Click the **Snapshot** button on the main toolbar.
- The **Snapshot** box is displayed.



Select size of your
snapshot

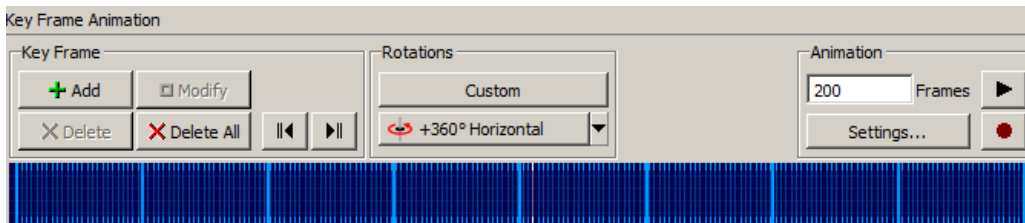
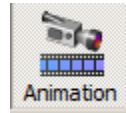
Select directory to save
the file



To do snapshot. A screen shot of your
image in the display area is saved.

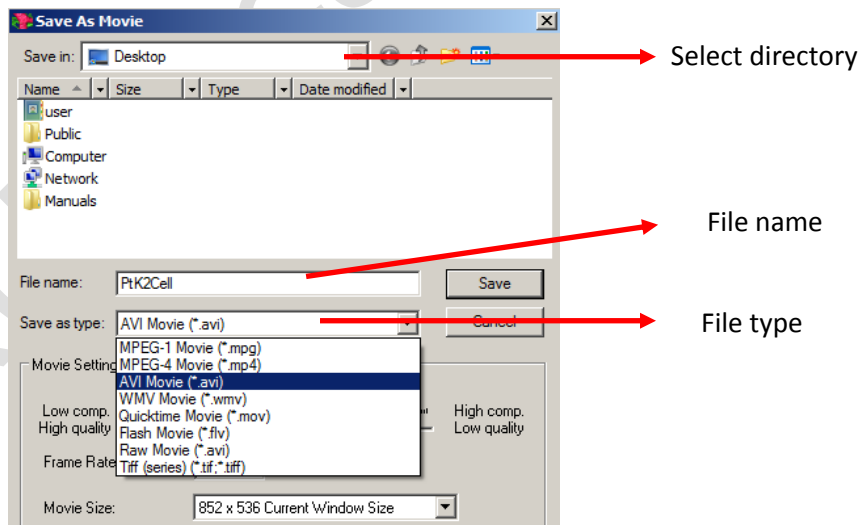
- Select the image size and directory.
- Click **Do Snapshot!**

Creating Movies

- Click the **Animation** button on the main toolbar.
- The keyframe window displays on the bottom of the screen.



- In the animation field enter the number of frames to be included in the movie.
- Position the image to the desired view. Click the + Add button to add the keyframe. Then repeat as desired.
- Thick blue lines represent user-defined keyframes and thin blue lines represent interpolated keyframes. White lines represent the active keyframe.
- User-defined keyframes can be deleted by clicking the **X Del** button, and moved by dragging the keyframe line while holding down the left mouse button. The first and last keyframes cannot be moved.
- To preview the movie, click the arrow  in the animation field.
- When you are satisfied with the movie, click the red dot  in the animation field to record.



- Click **"Save"** to save movie in selected directory.