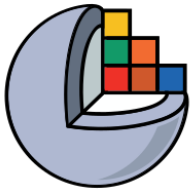


3D Slicer

3D Slicer

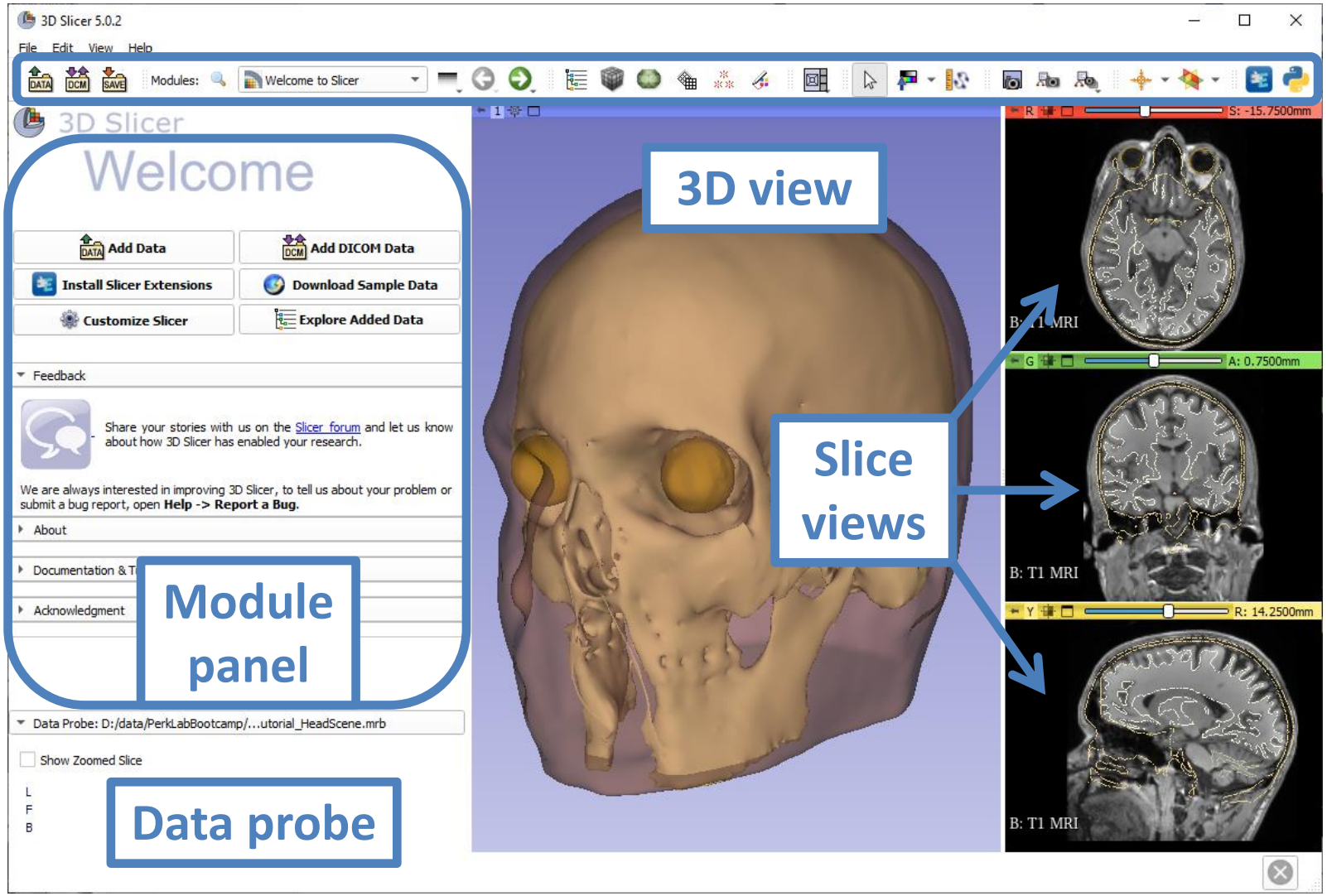
Data Loading and Visualization Tutorial

Tutorial dataset

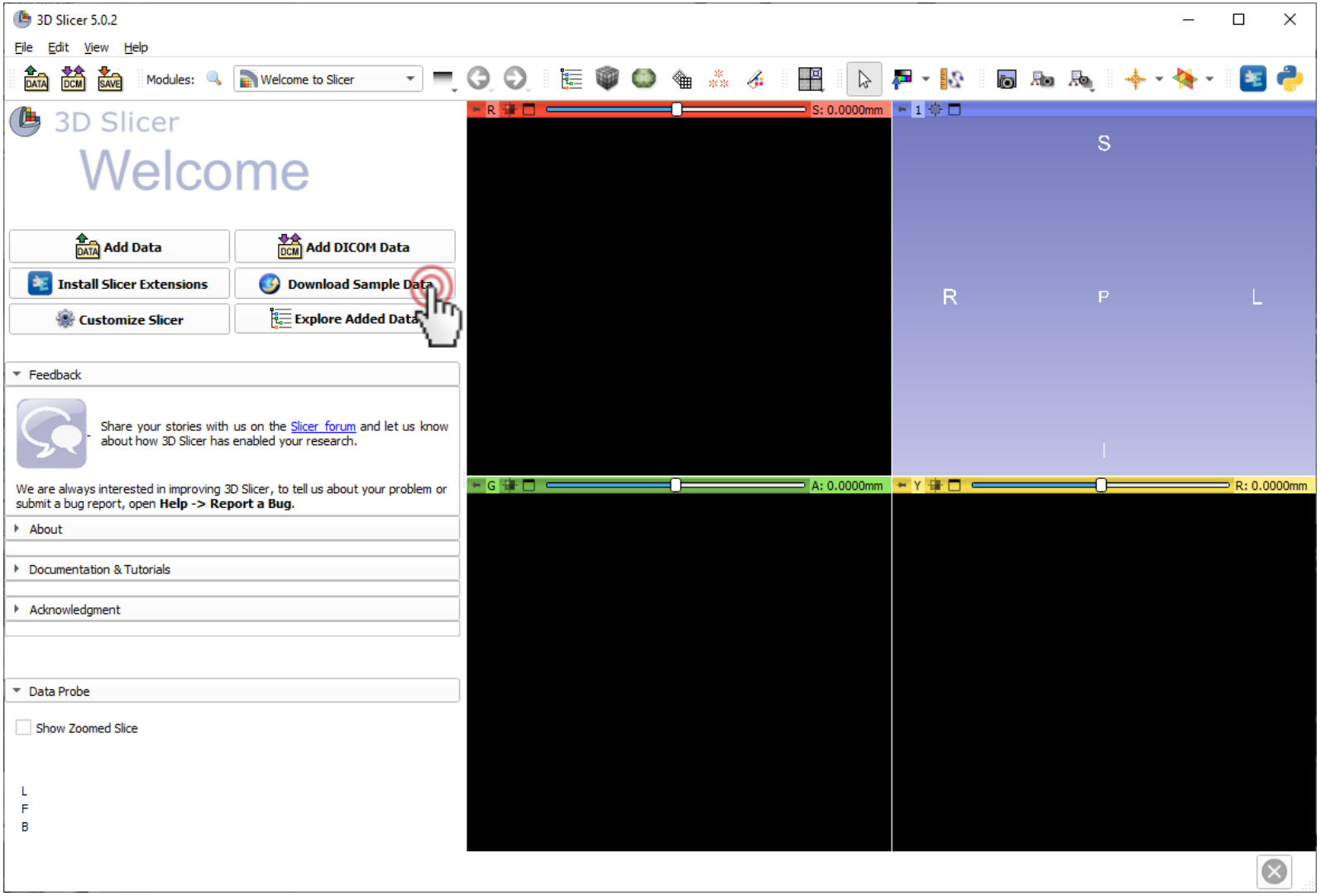
Please download the following two datasets:

https://github.com/Slicer/SlicerDataLoadingAndVisualizationTutorial/raw/main/VisualizationTutorial_HeadScene.mrb

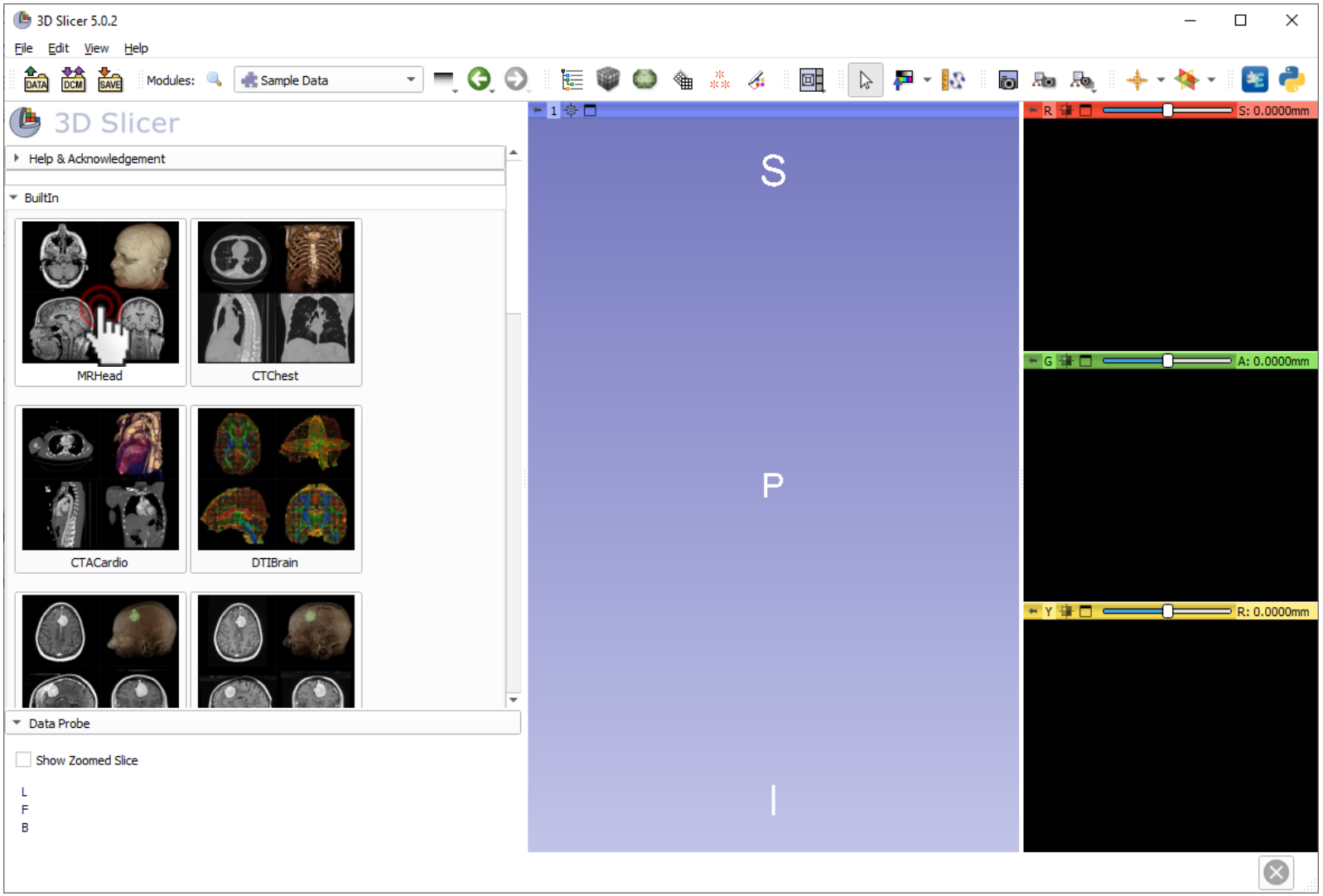
Main user interface



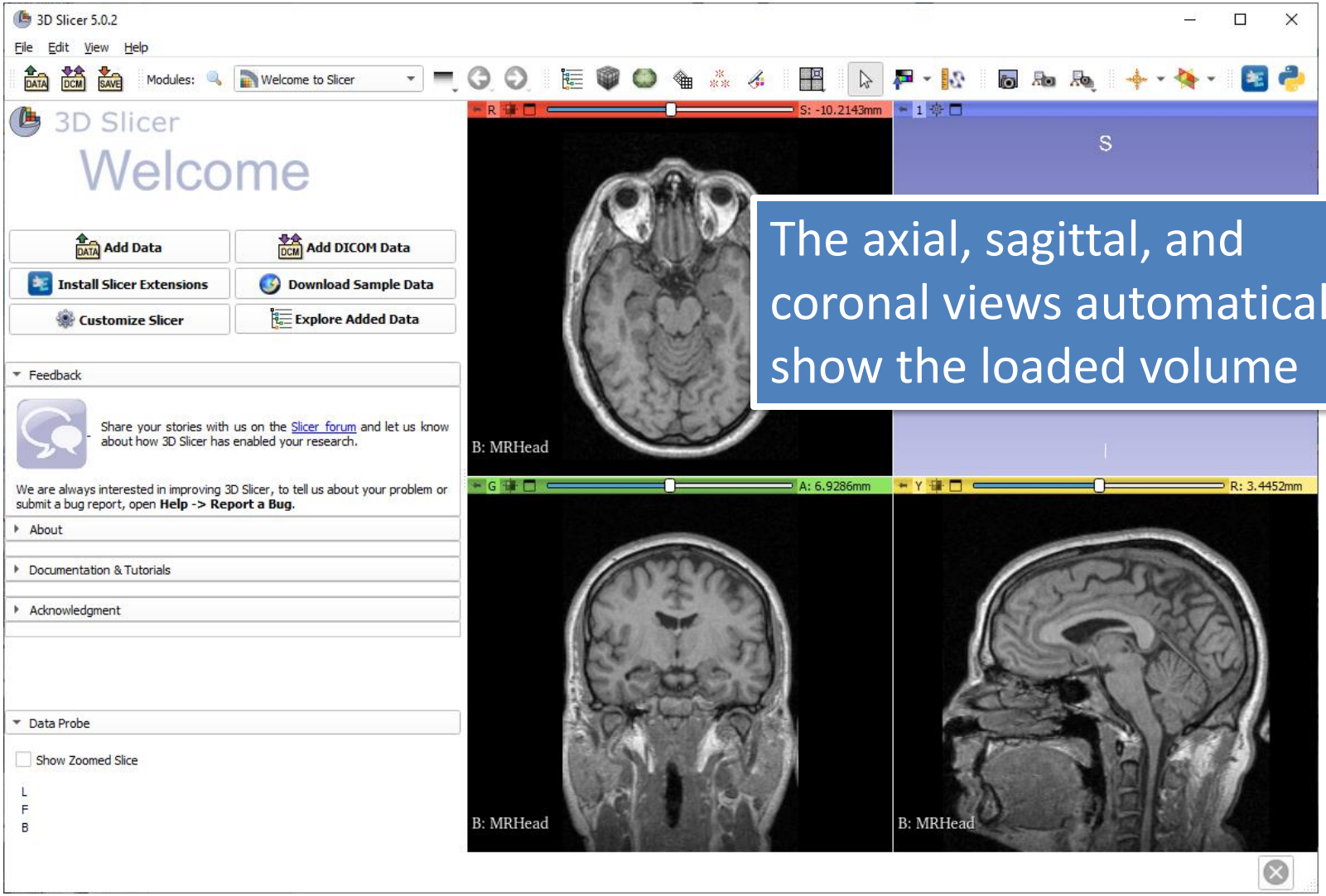
Load sample MRI data



Load sample MRI data

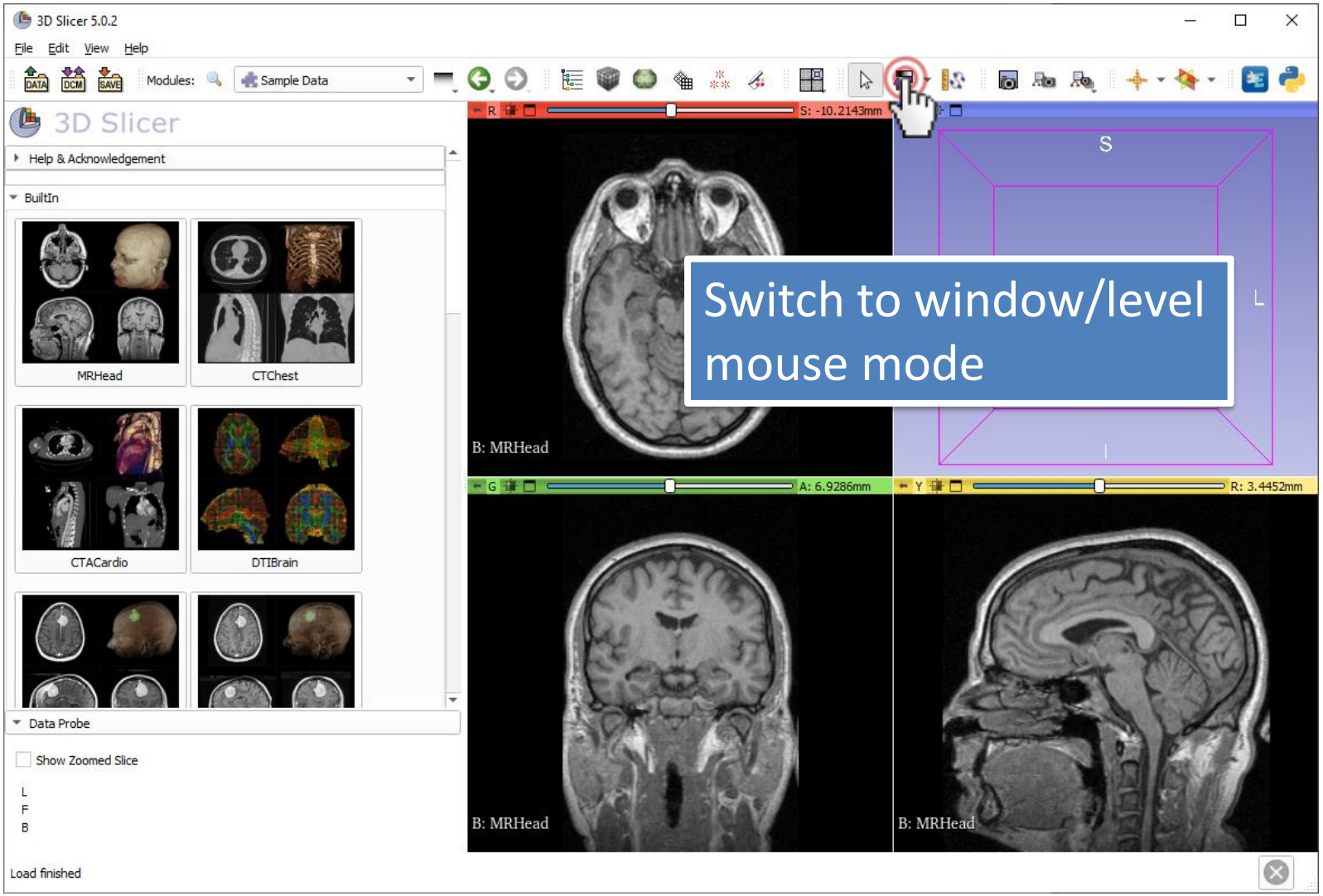


Load sample MRI data

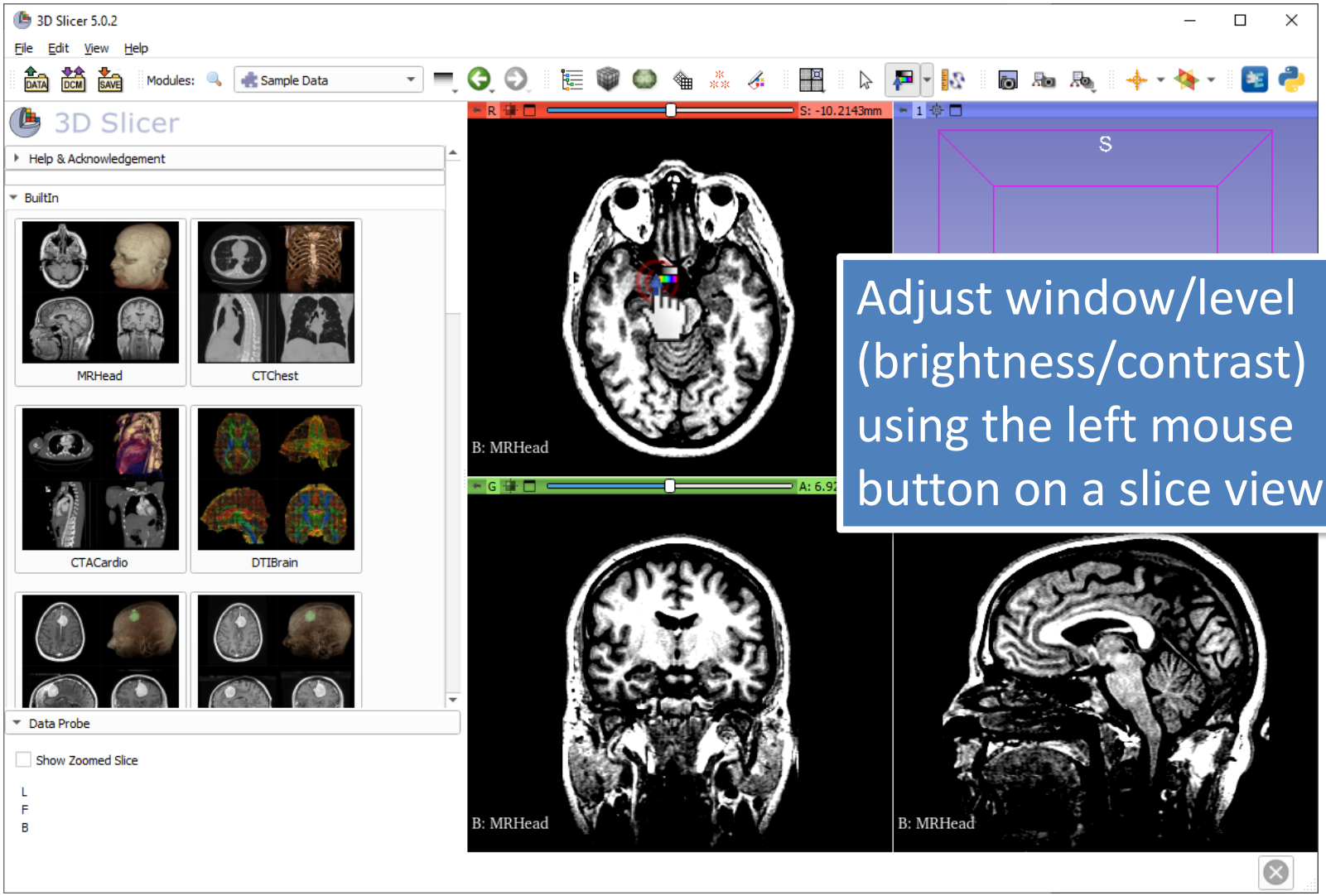


The axial, sagittal, and coronal views automatically show the loaded volume

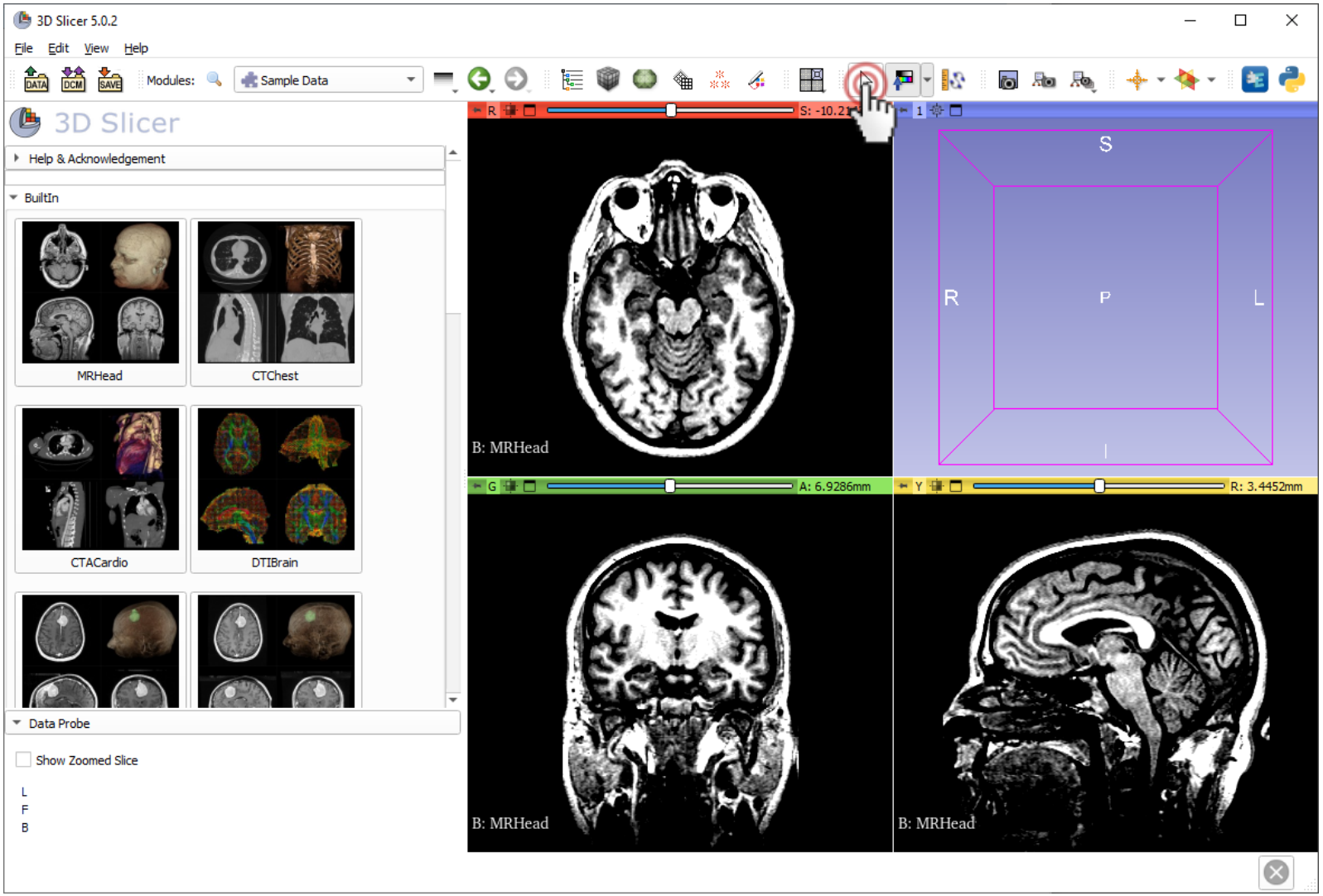
Adjust window/level



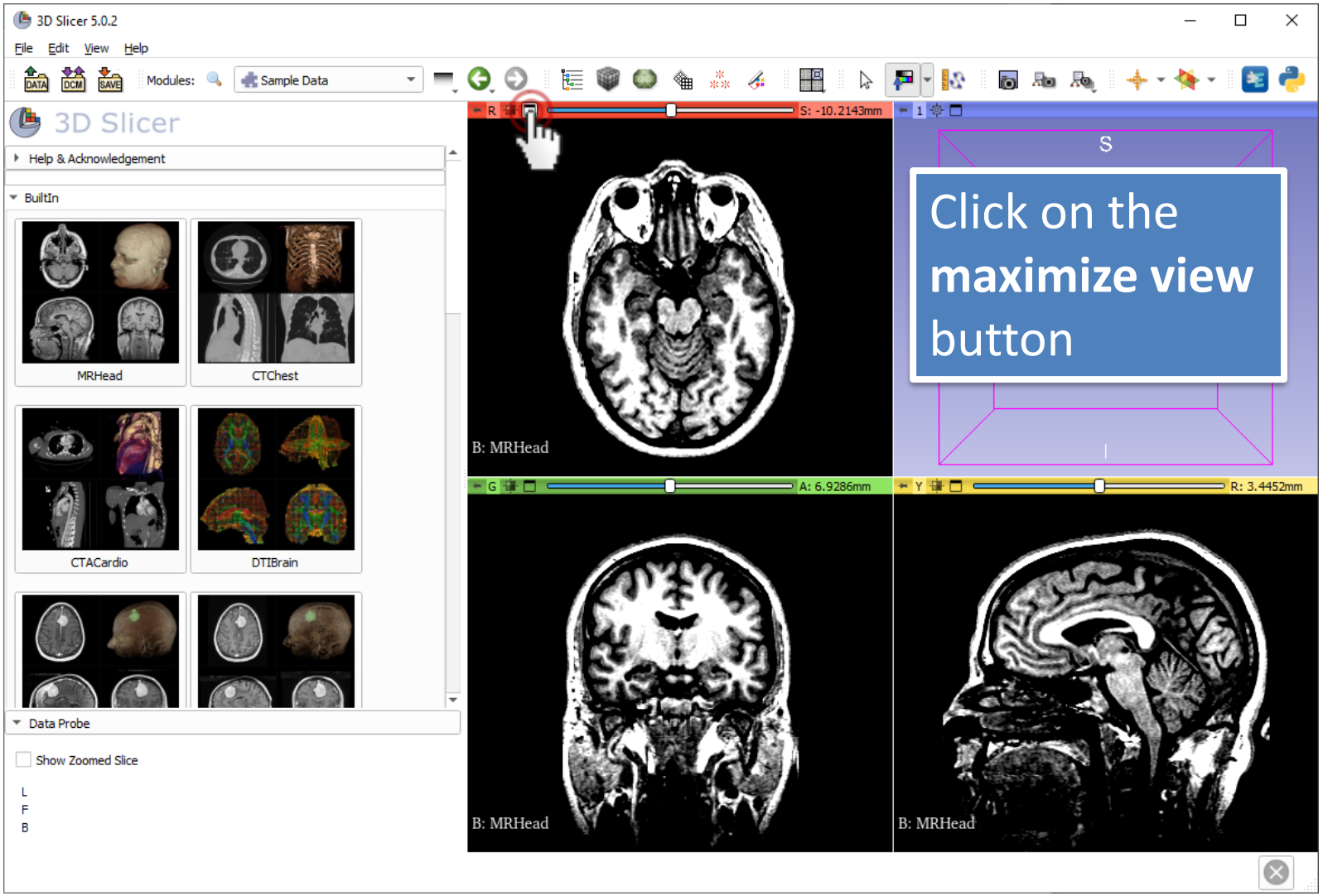
Adjust window/level



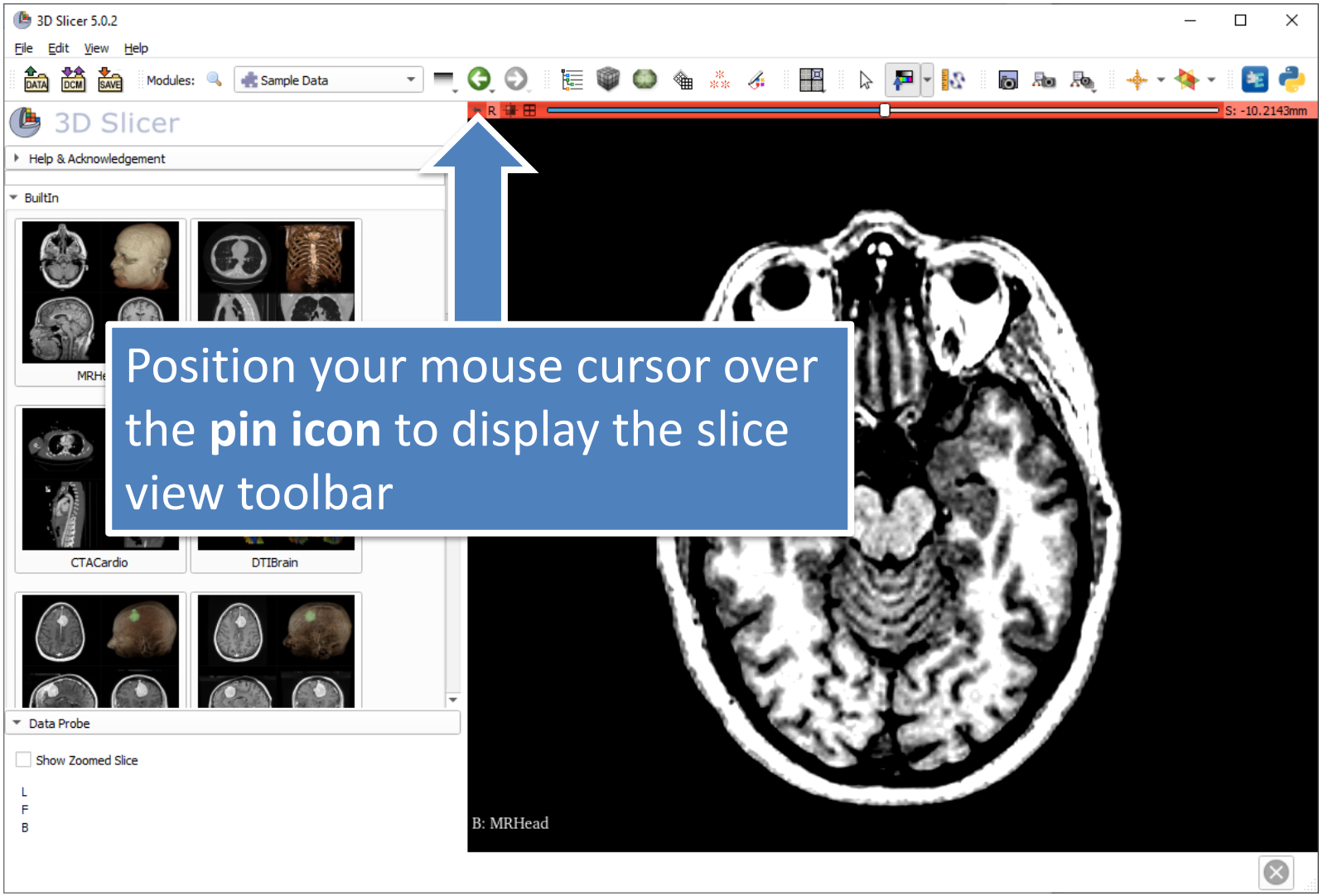
Switch back to view/transform mode



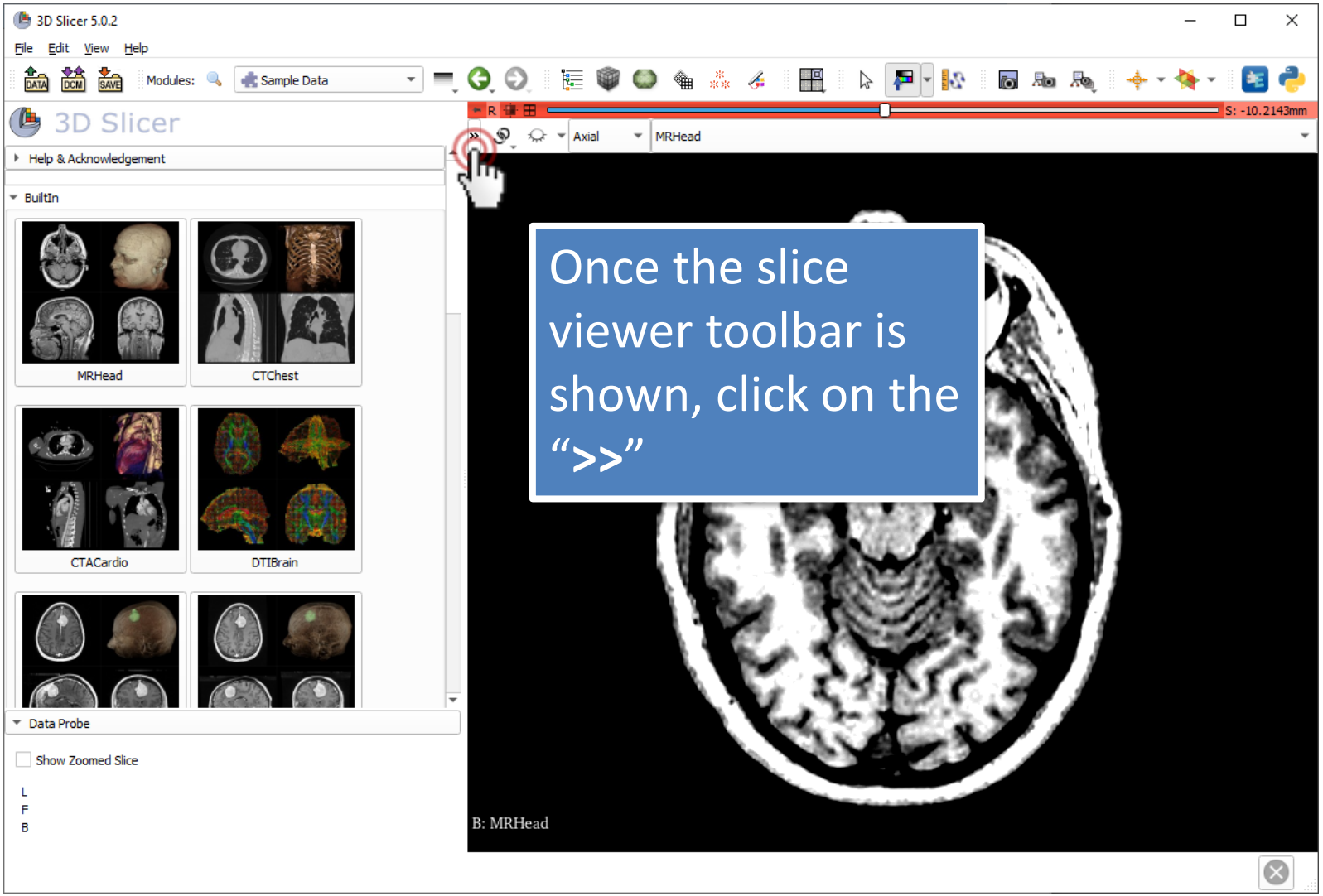
Maximize view



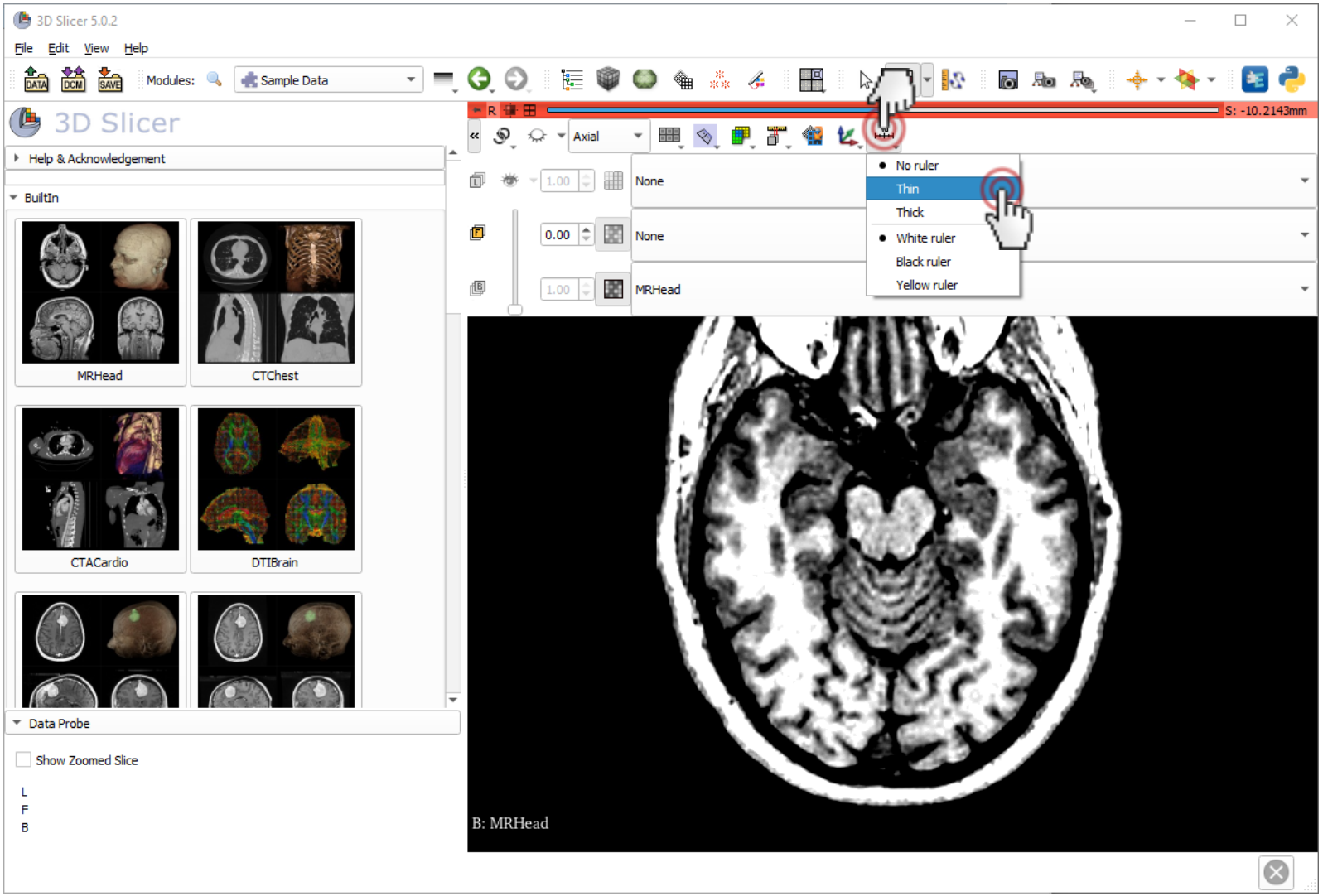
Slice view options



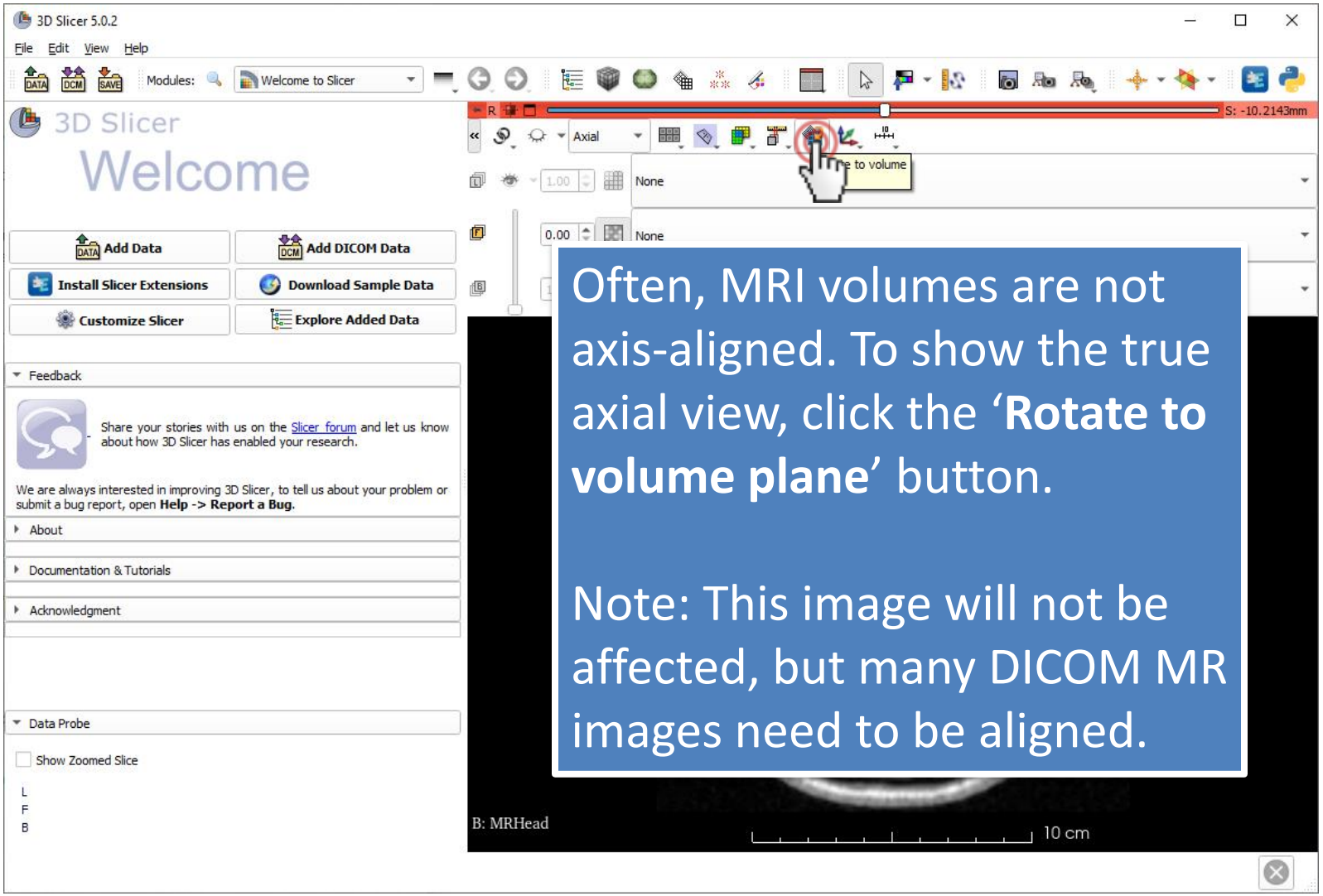
Slice view options



Show ruler


3D Slicer 5.0.2
File Edit View Help
Modules:
Sample Data
3D Slicer
Help & Acknowledgement
BuiltIn
MRHead
CTChest
CTACardio
DTIBrain
Data Probe
Show Zoomed Slice
L
F
B
Axial
S: -10.2143mm
No ruler
Thin
Thick
White ruler
Black ruler
Yellow ruler
None
None
MRHead
B: MRHead

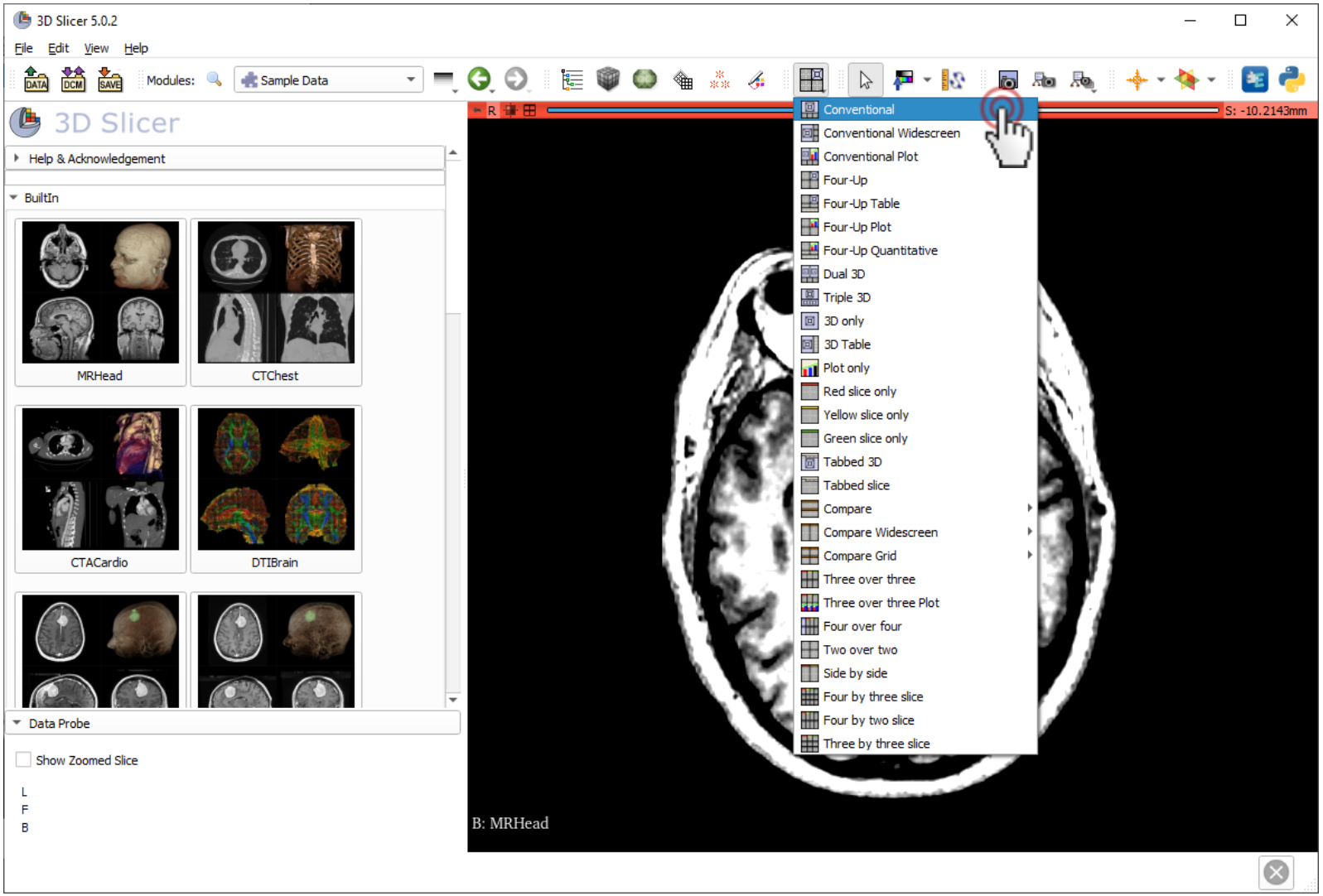
Rotate to volume plane



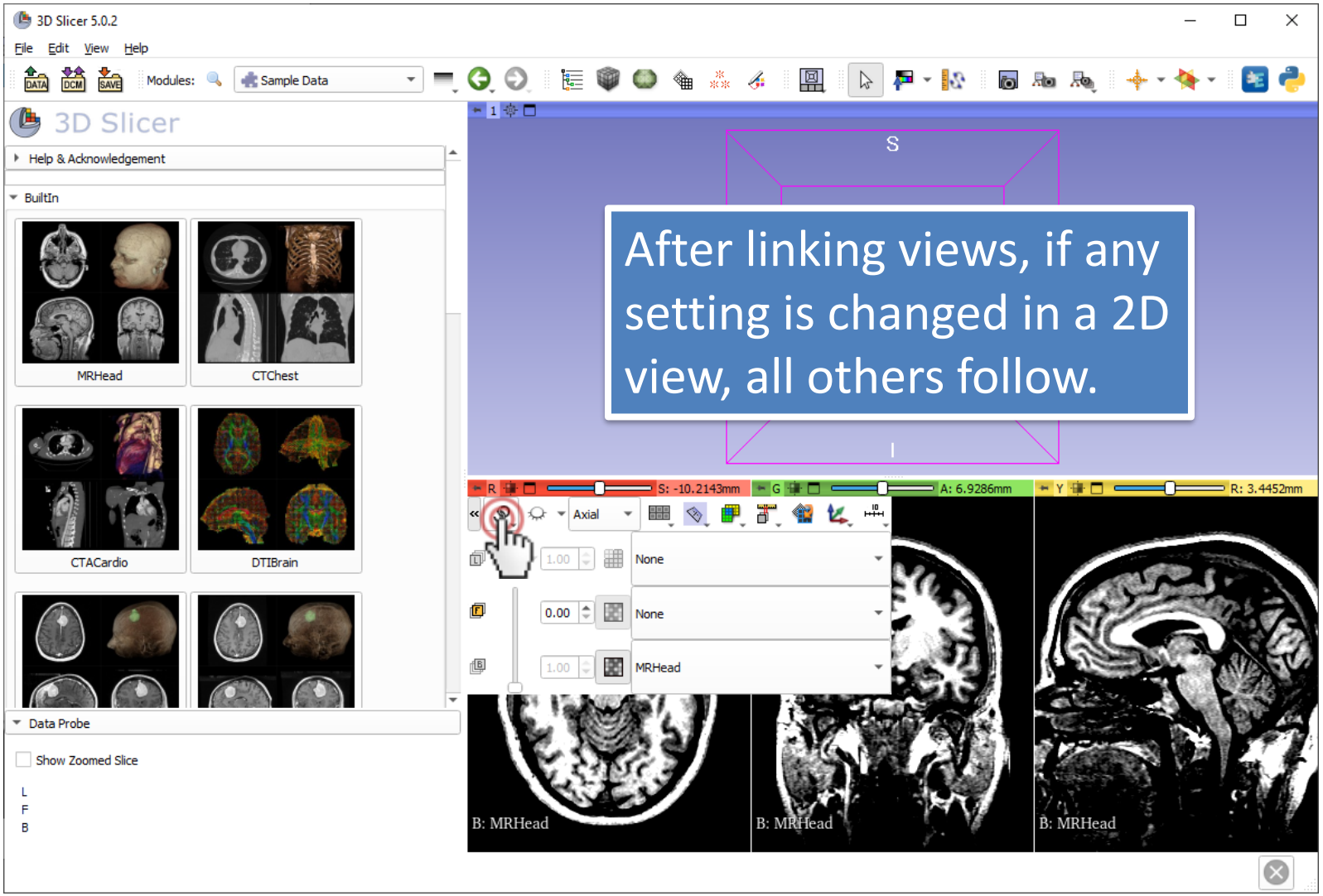
Often, MRI volumes are not axis-aligned. To show the true axial view, click the '**Rotate to volume plane**' button.

Note: This image will not be affected, but many DICOM MR images need to be aligned.

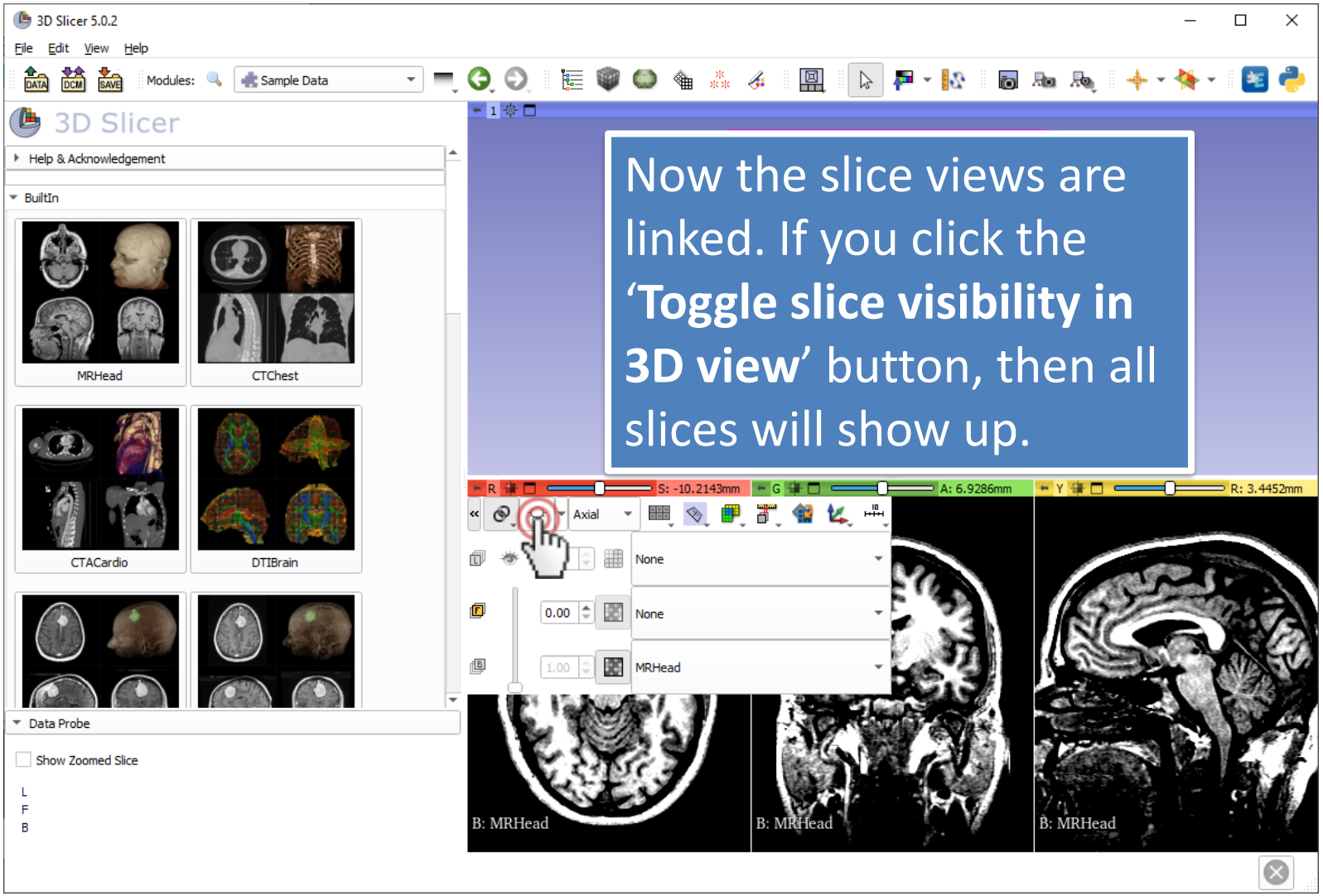
Switch to conventional layout



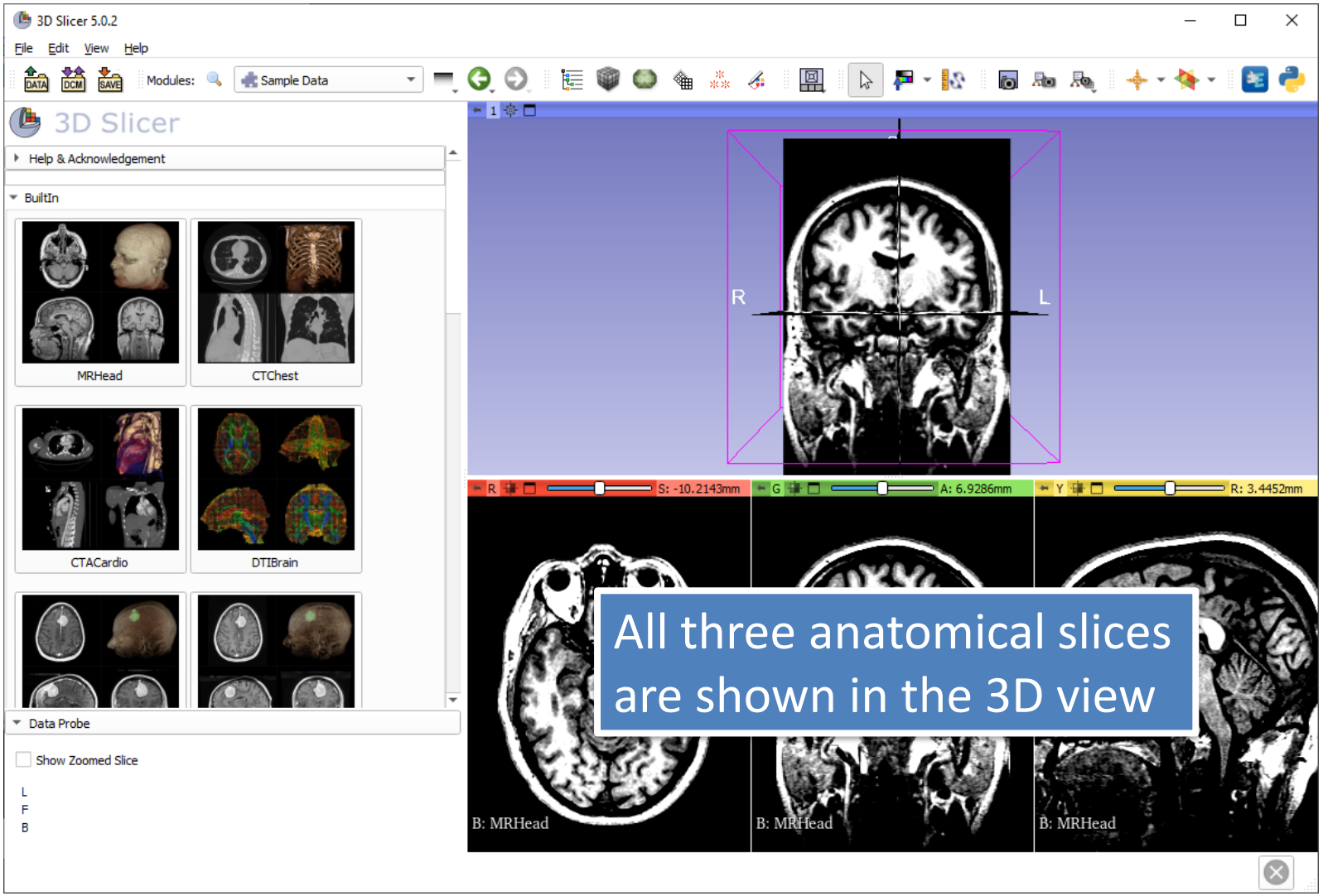
Link views


3D Slicer 5.0.2
File Edit View Help
Modules:
Sample Data
3D Slicer
Help & Acknowledgement
BuiltIn
MRHead
CTChest
CTACardio
DTIBrain
Data Probe
Show Zoomed Slice
L
F
B
After linking views, if any setting is changed in a 2D view, all others follow.
S
I
S: -10.2143mm
A: 6.9286mm
R: 3.4452mm
Axial
None
None
MRHead
B: MRHead
B: MRHead
B: MRHead

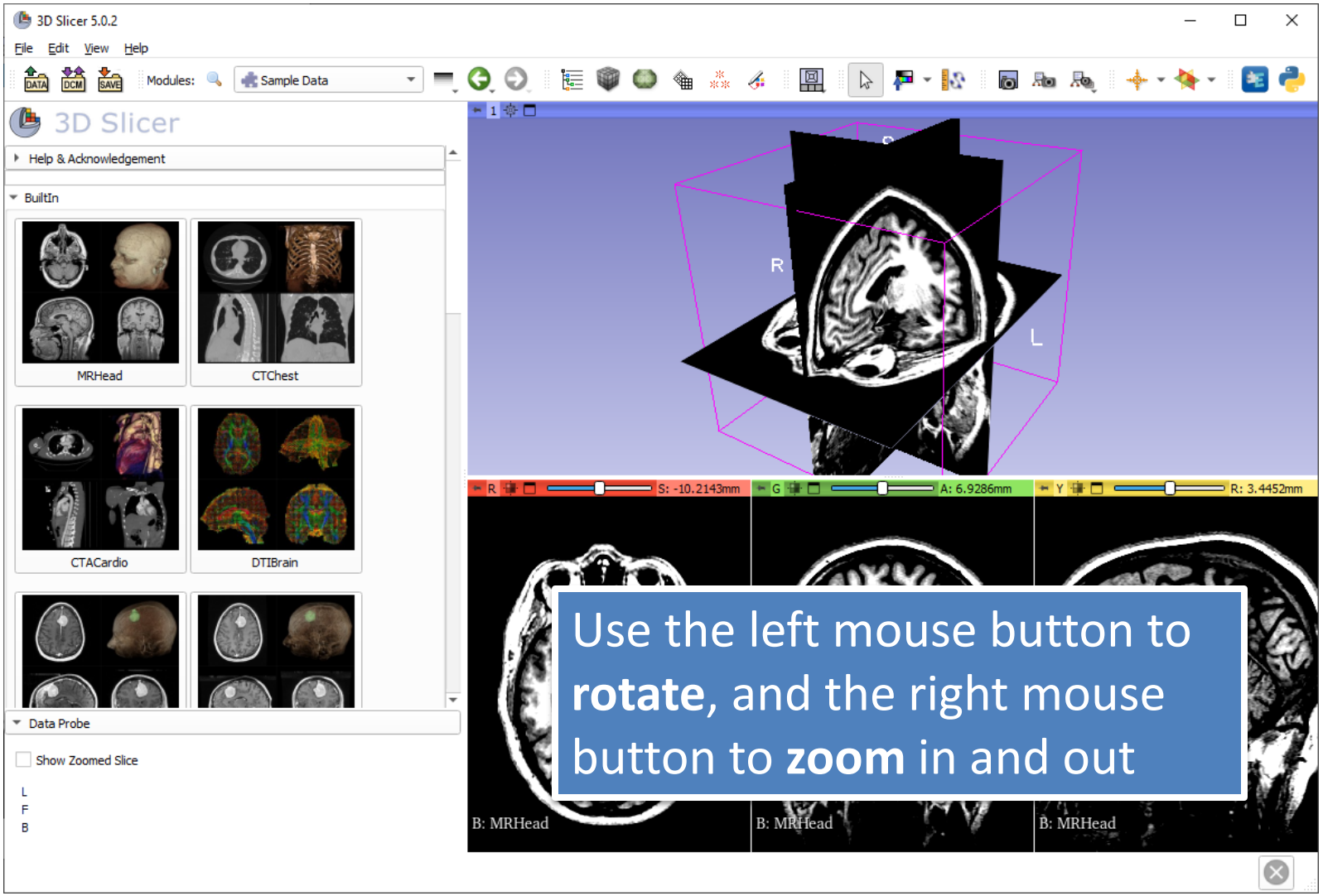
Show slices in 3D



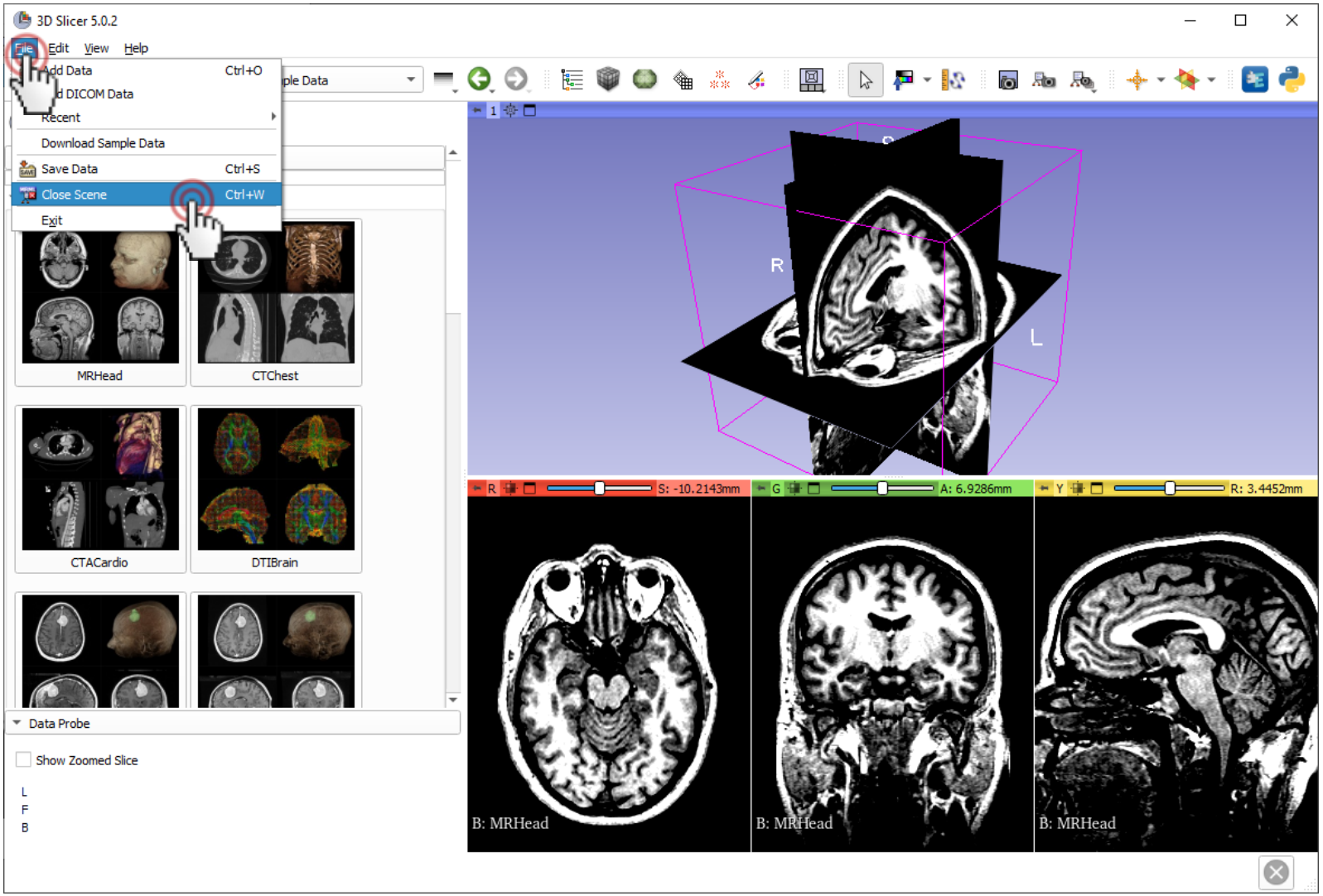
Show slices in 3D



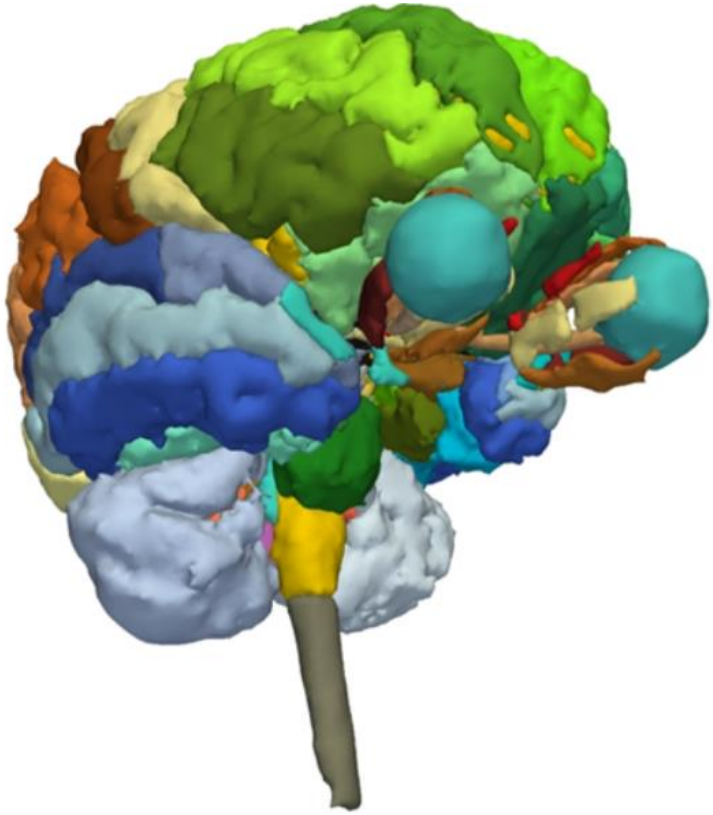
Navigating the 3D view



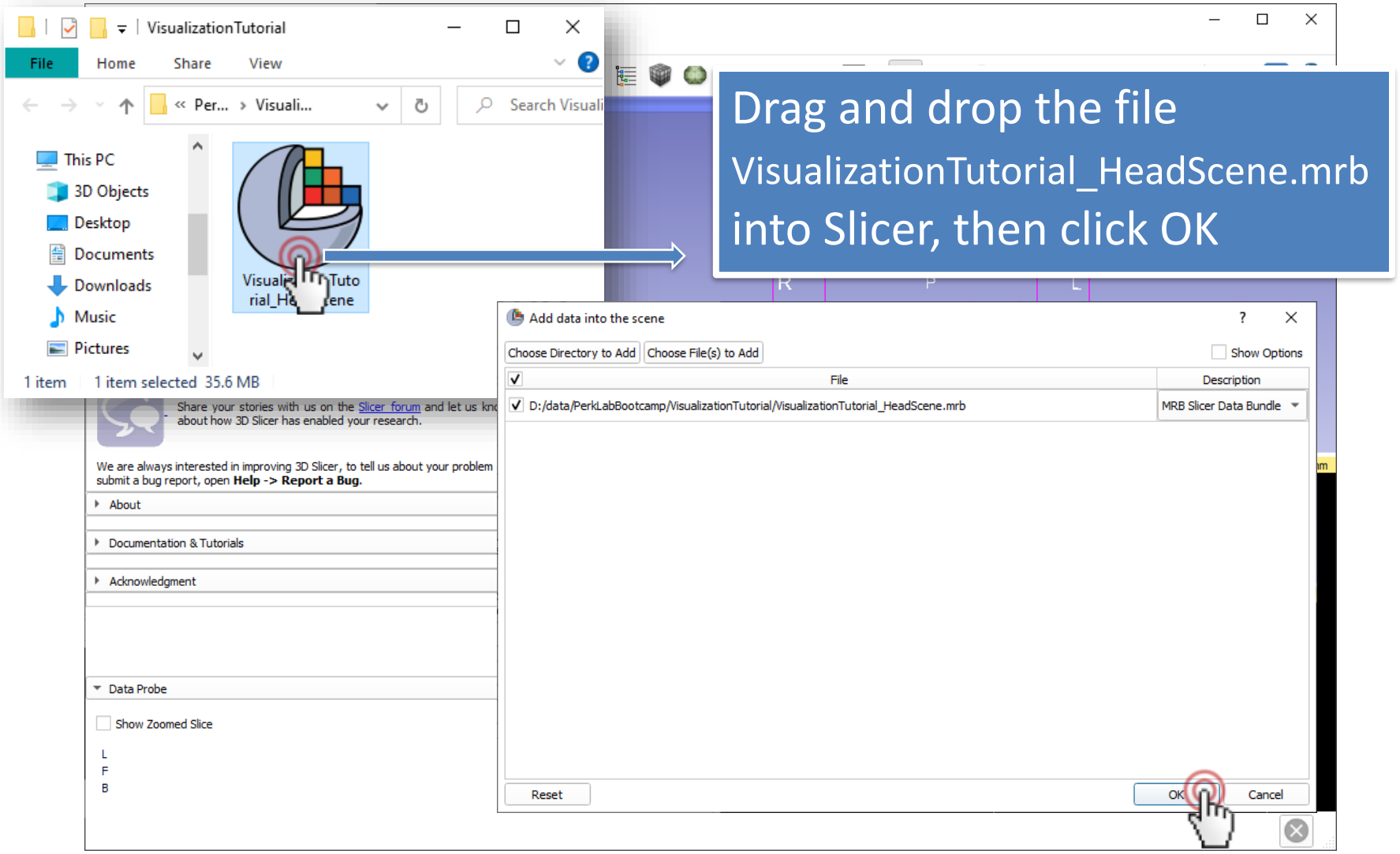
Close the scene



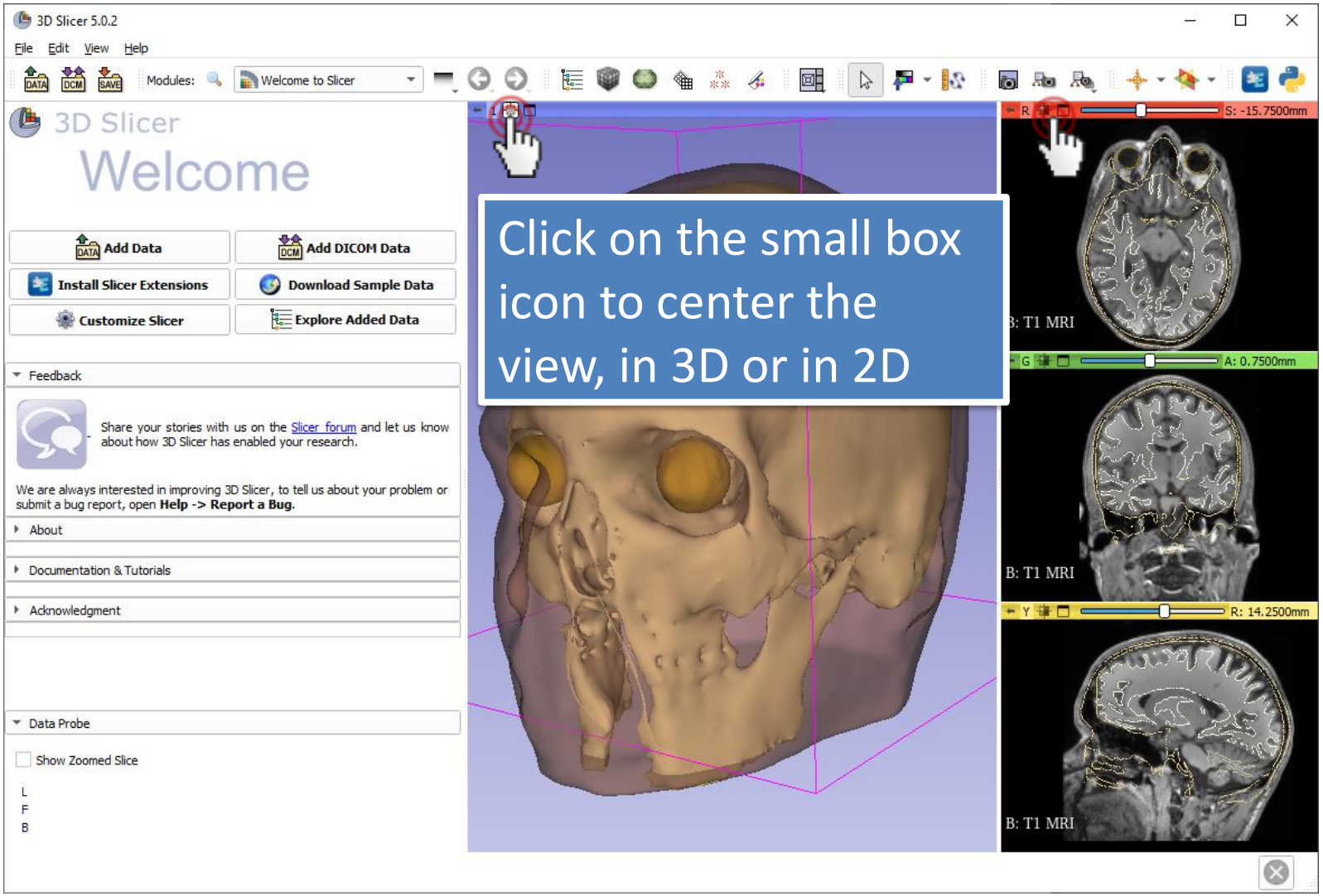
Part 2:
3D visualization of surface models of the brain



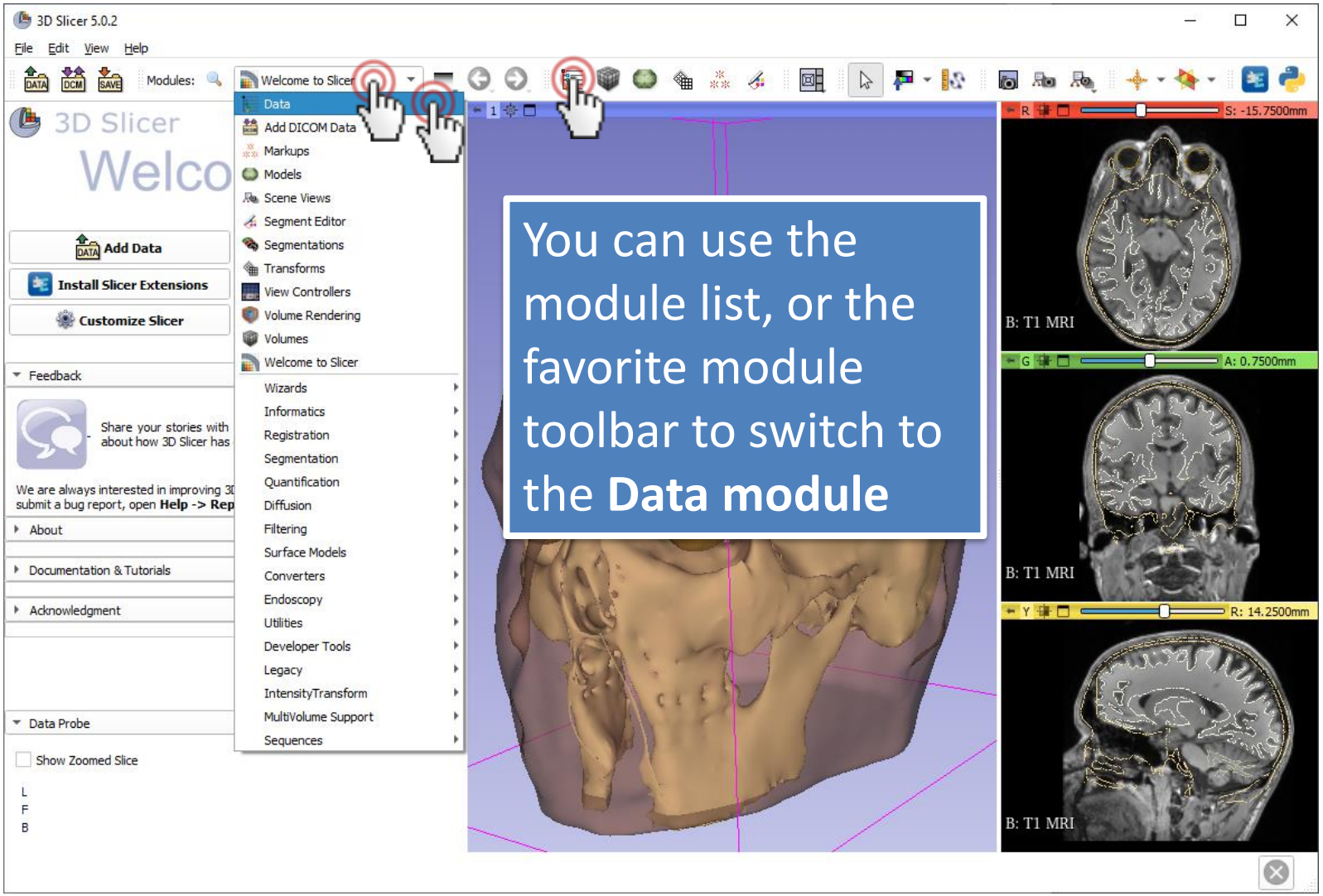
Load tutorial scene



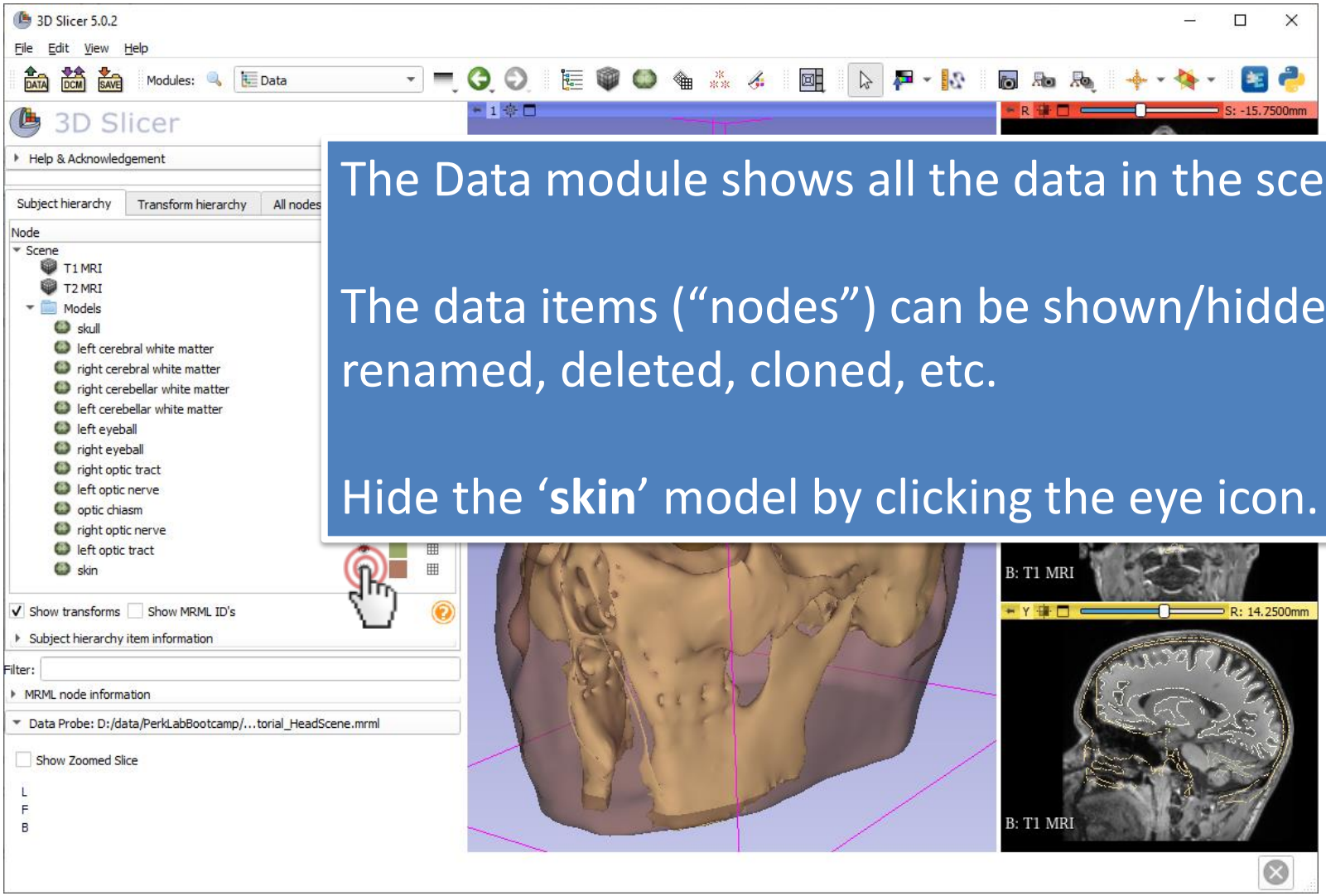
Center view


3D Slicer 5.0.2
File Edit View Help
Modules:
Welcome to Slicer
3D Slicer
Welcome
Add Data
Add DICOM Data
Install Slicer Extensions
Download Sample Data
Customize Slicer
Explore Added Data
Feedback
Share your stories with us on the Slicer forum and let us know about how 3D Slicer has enabled your research.
We are always interested in improving 3D Slicer, to tell us about your problem or submit a bug report, open Help -> Report a Bug.
About
Documentation & Tutorials
Acknowledgment
Data Probe
Show Zoomed Slice
L
F
B
Click on the small box icon to center the view, in 3D or in 2D
S: -15.7500mm
B: T1 MRI
A: 0.7500mm
B: T1 MRI
R: 14.2500mm
B: T1 MRI

Explore loaded data



Explore loaded data

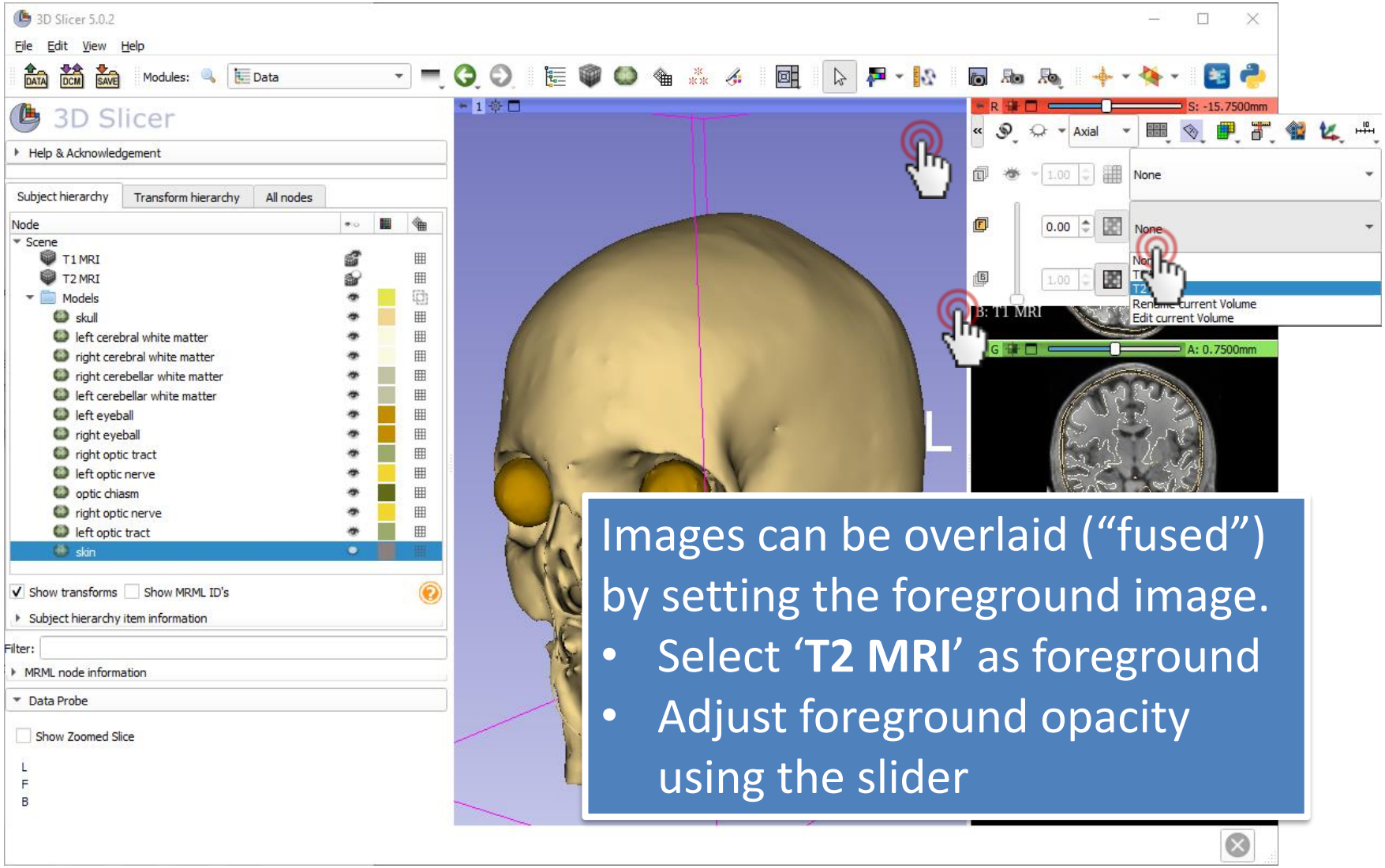


The Data module shows all the data in the scene.

The data items ("nodes") can be shown/hidden, renamed, deleted, cloned, etc.

Hide the '**skin**' model by clicking the eye icon.

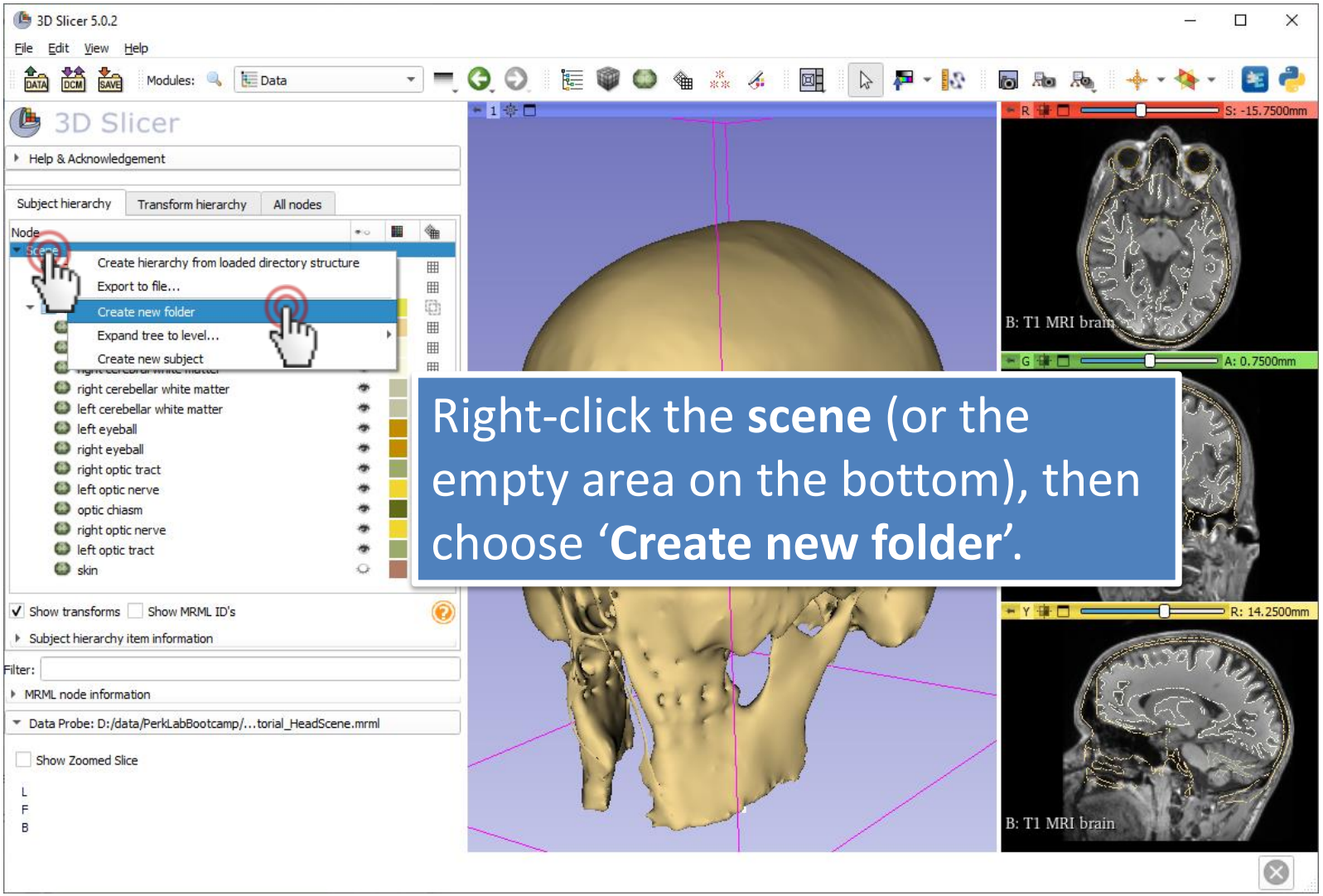
Foreground image



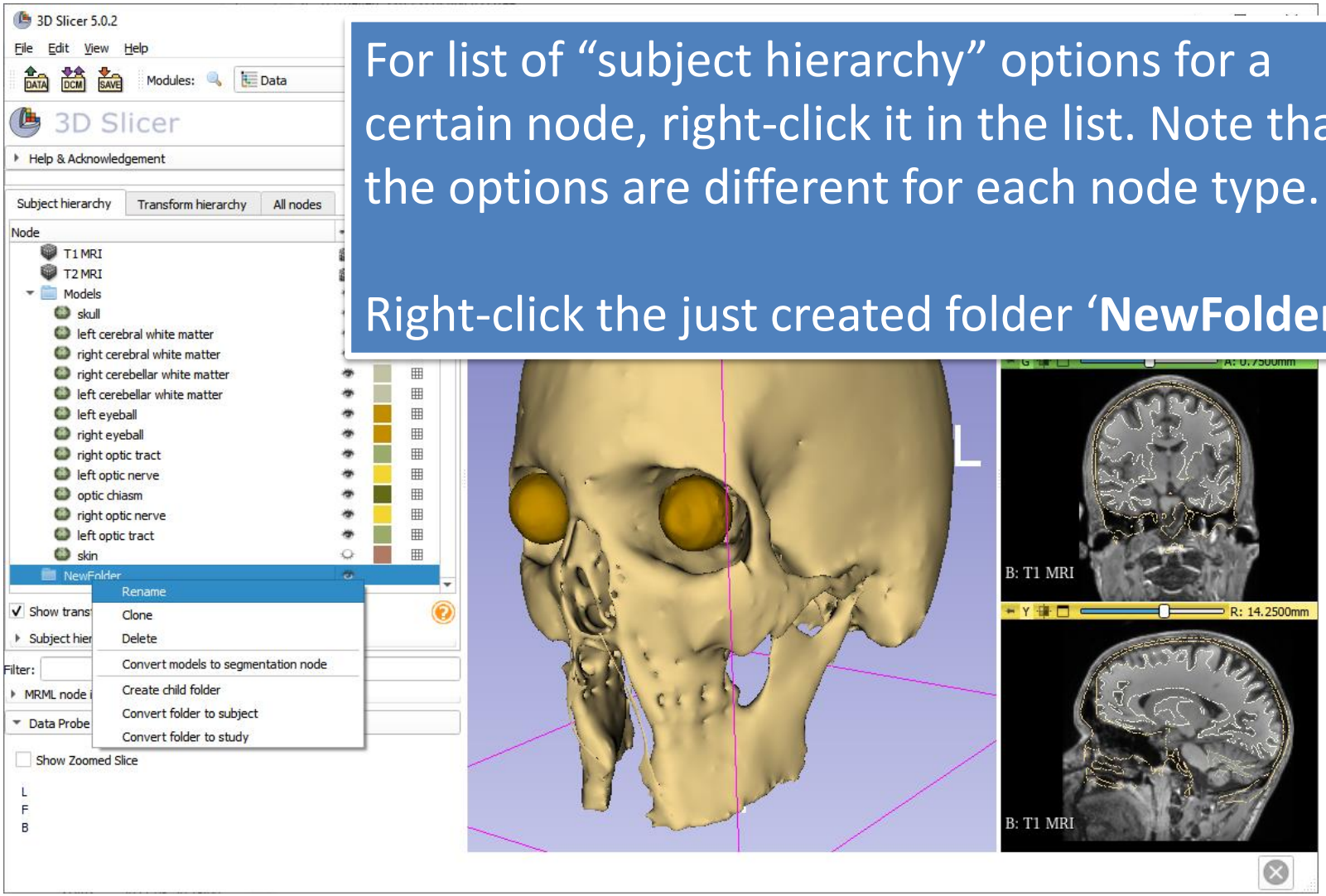
Images can be overlaid ("fused") by setting the foreground image.

- Select '**T2 MRI**' as foreground
- Adjust foreground opacity using the slider

Create folder



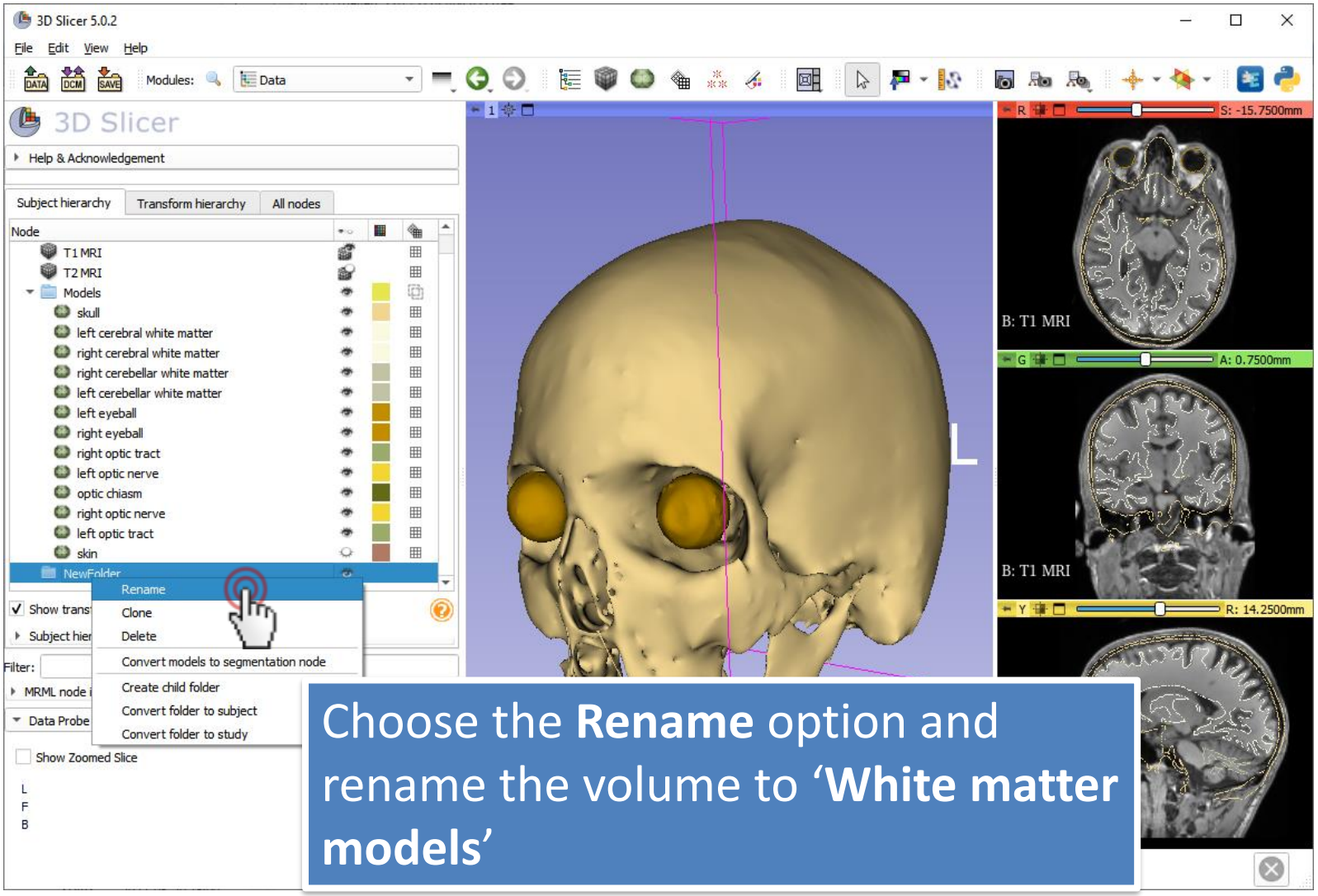
Context menu actions



For list of “subject hierarchy” options for a certain node, right-click it in the list. Note that the options are different for each node type.

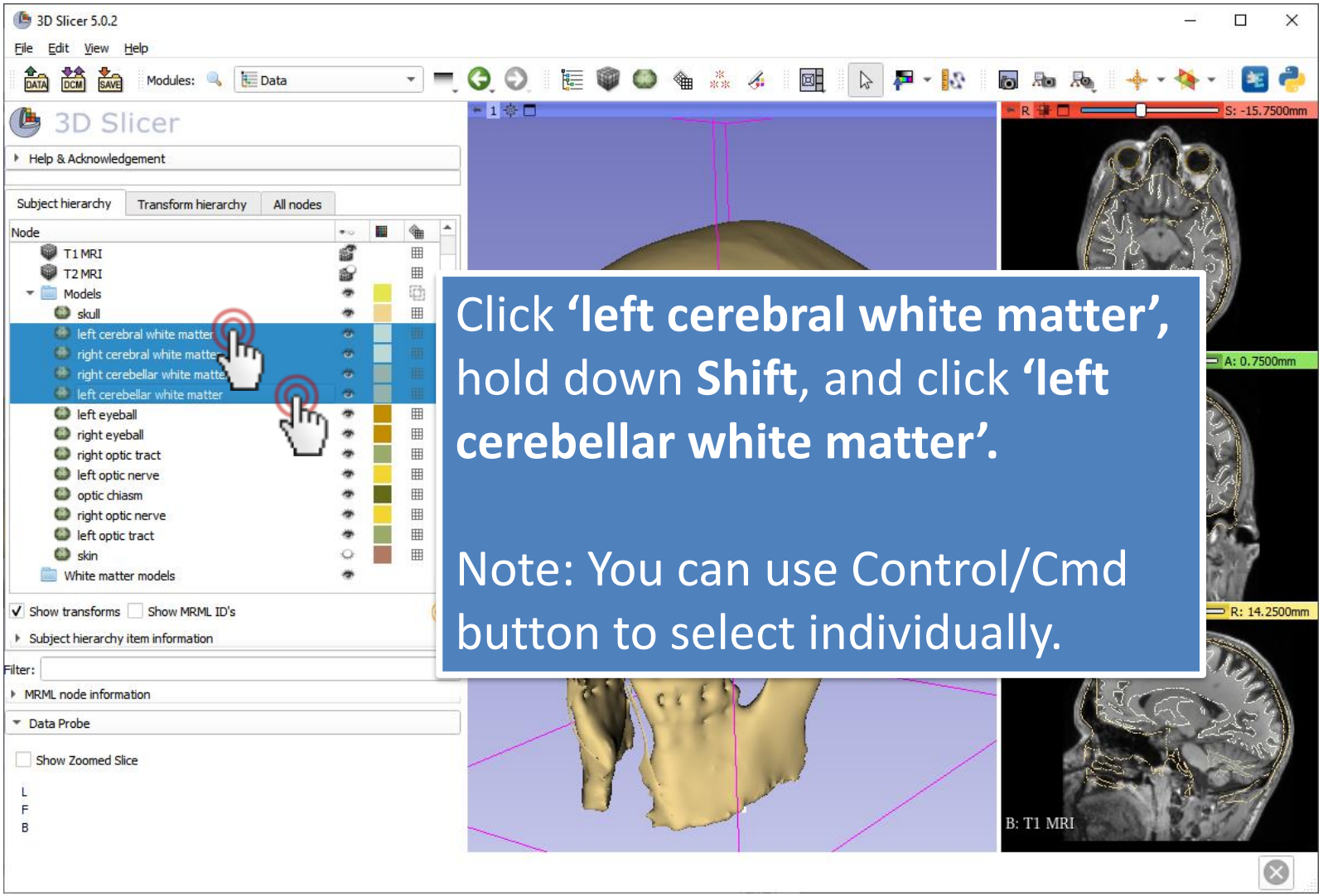
Right-click the just created folder ‘**NewFolder**’.

Rename folder



Choose the **Rename** option and rename the volume to '**White matter models**'

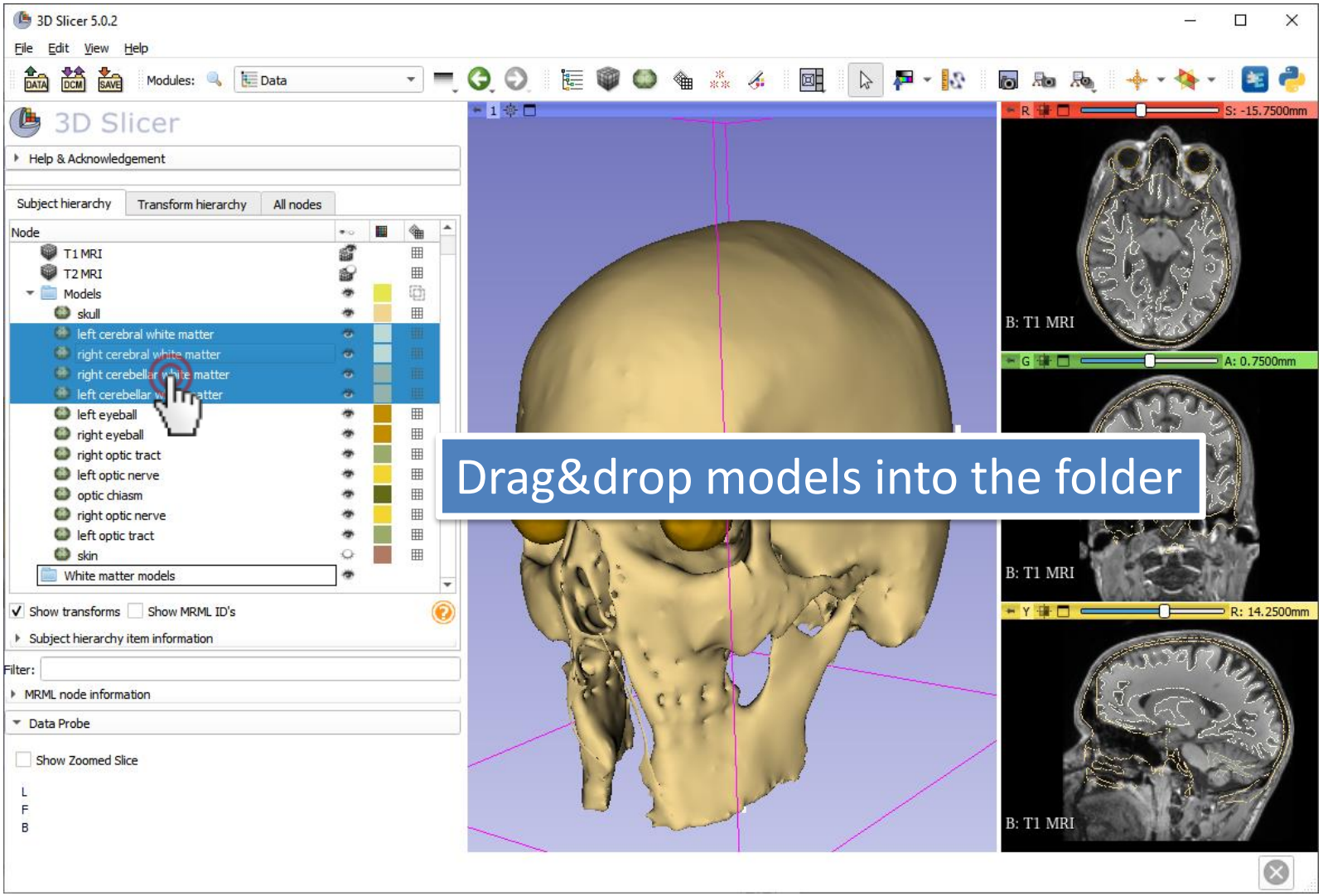
Select multiple nodes



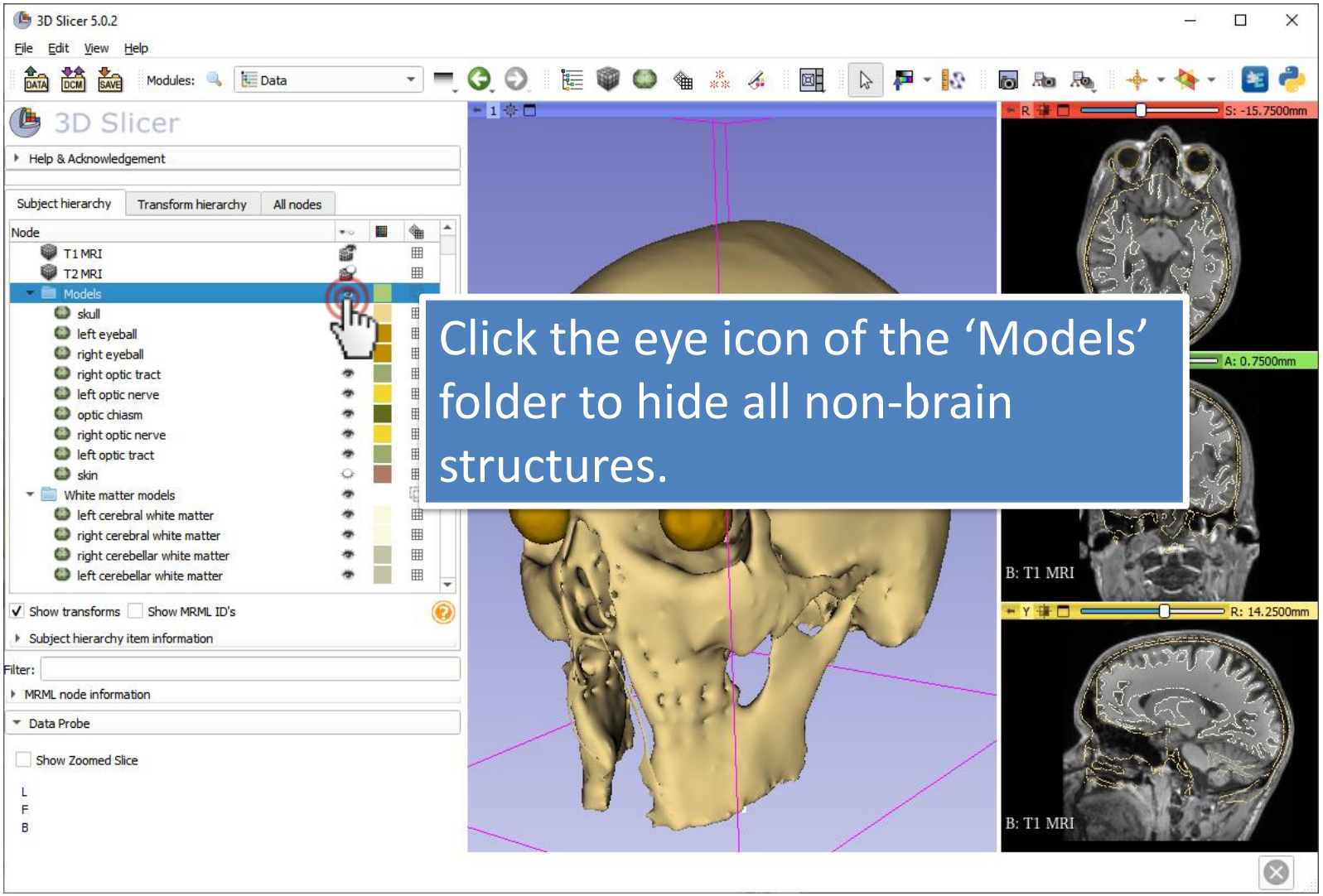
Click **'left cerebral white matter'**, hold down **Shift**, and click **'left cerebellar white matter'.**

Note: You can use Control/Cmd button to select individually.

Move nodes to folder

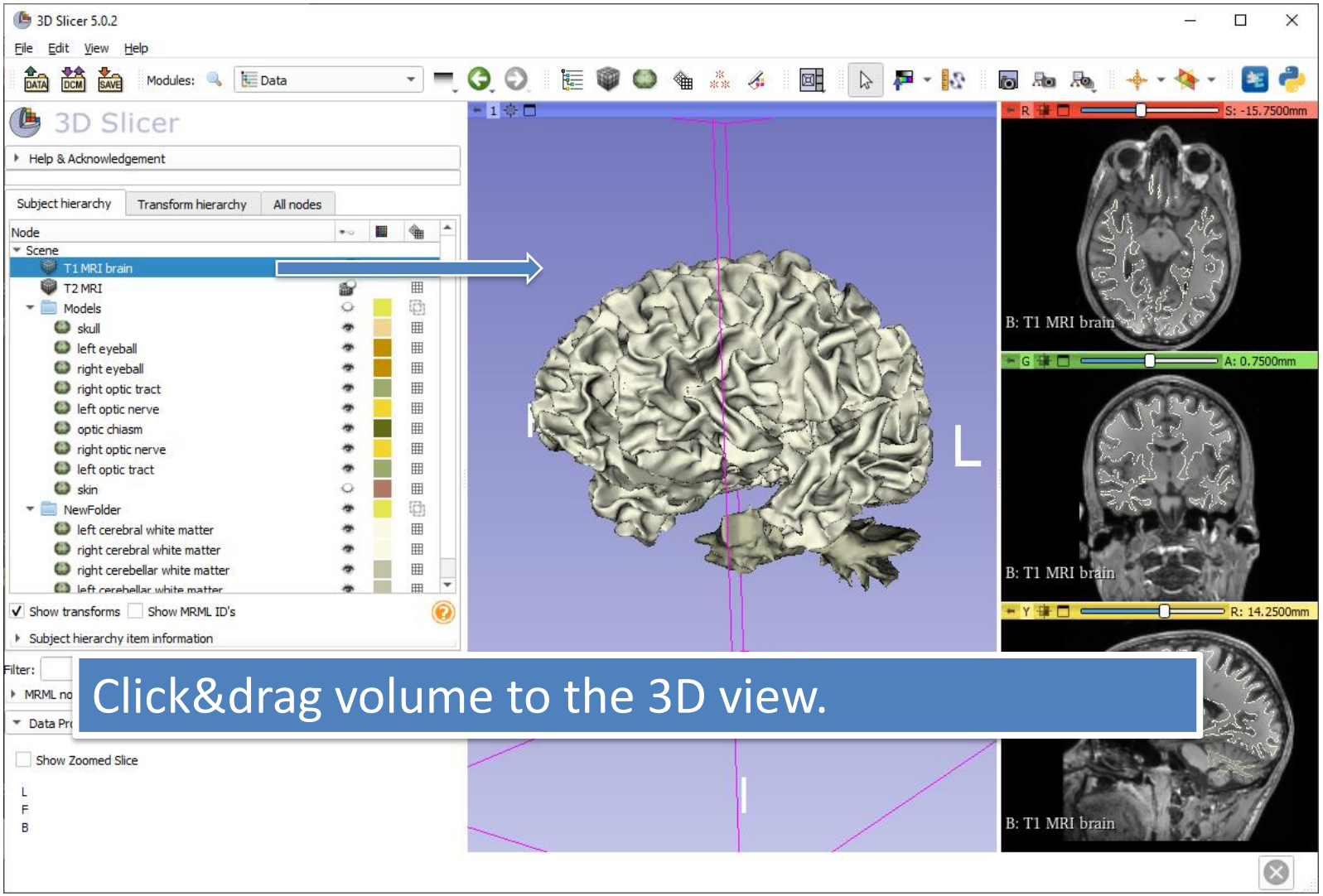


Hide all nodes in folder

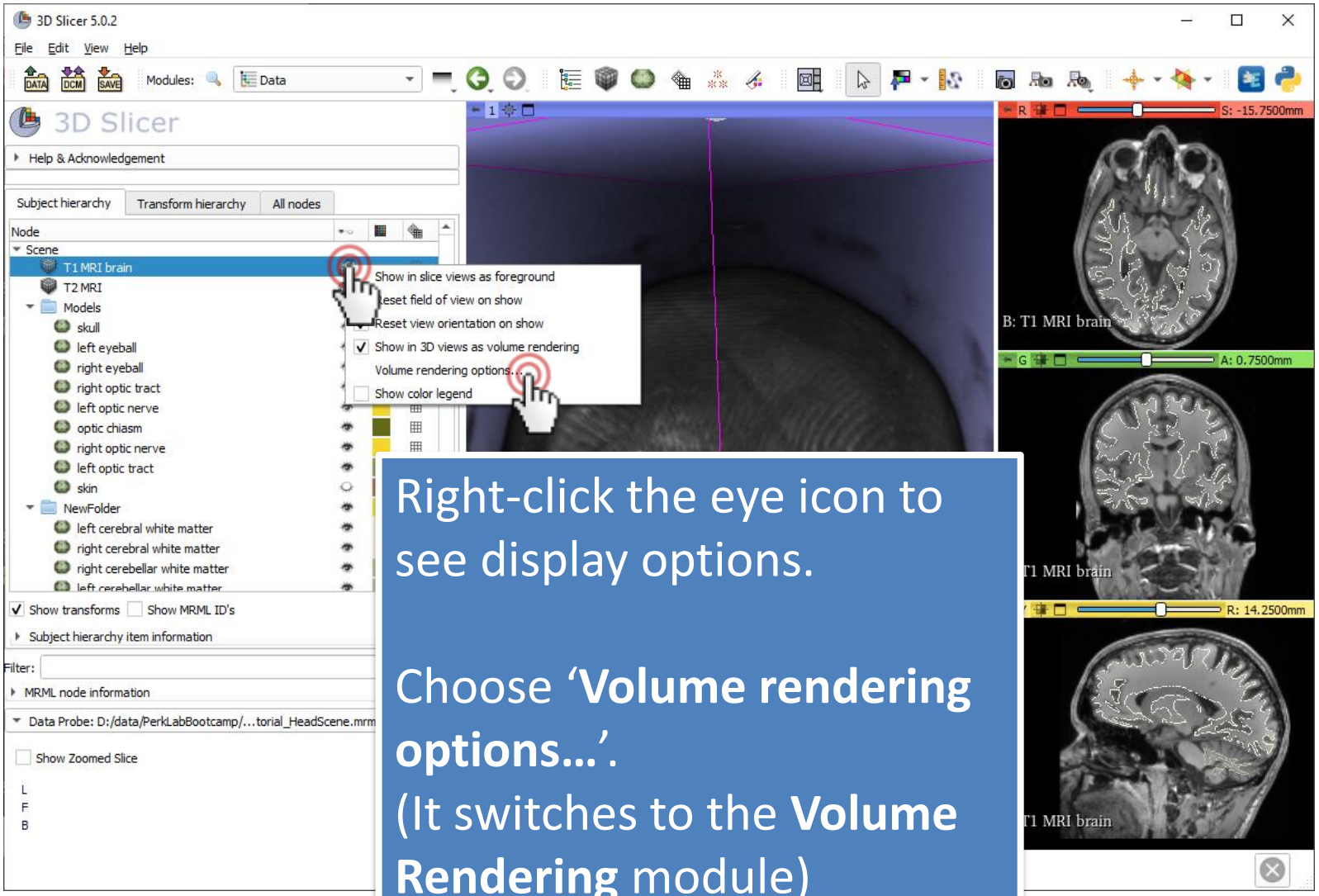


Click the eye icon of the 'Models' folder to hide all non-brain structures.

Volume rendering



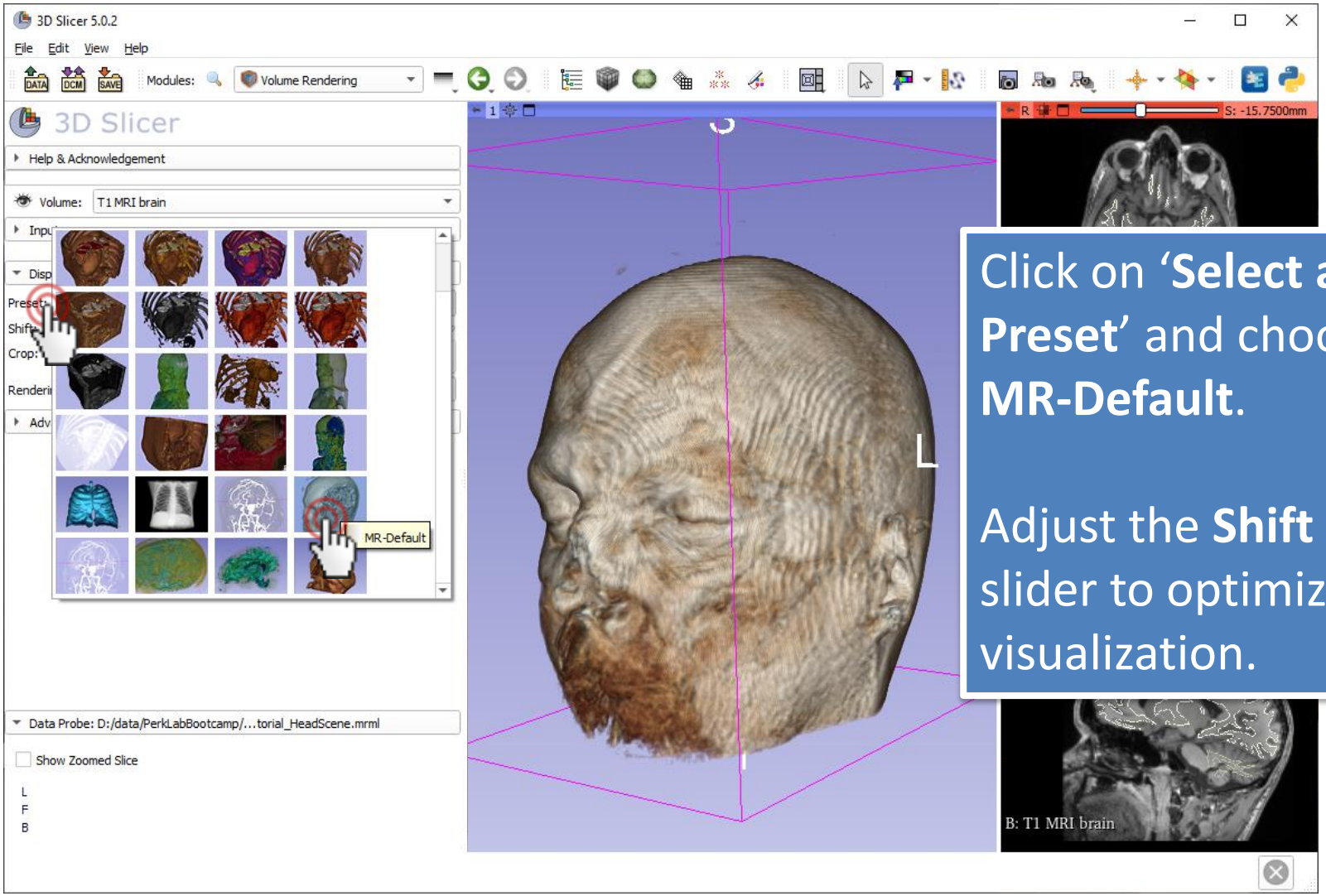
Display options



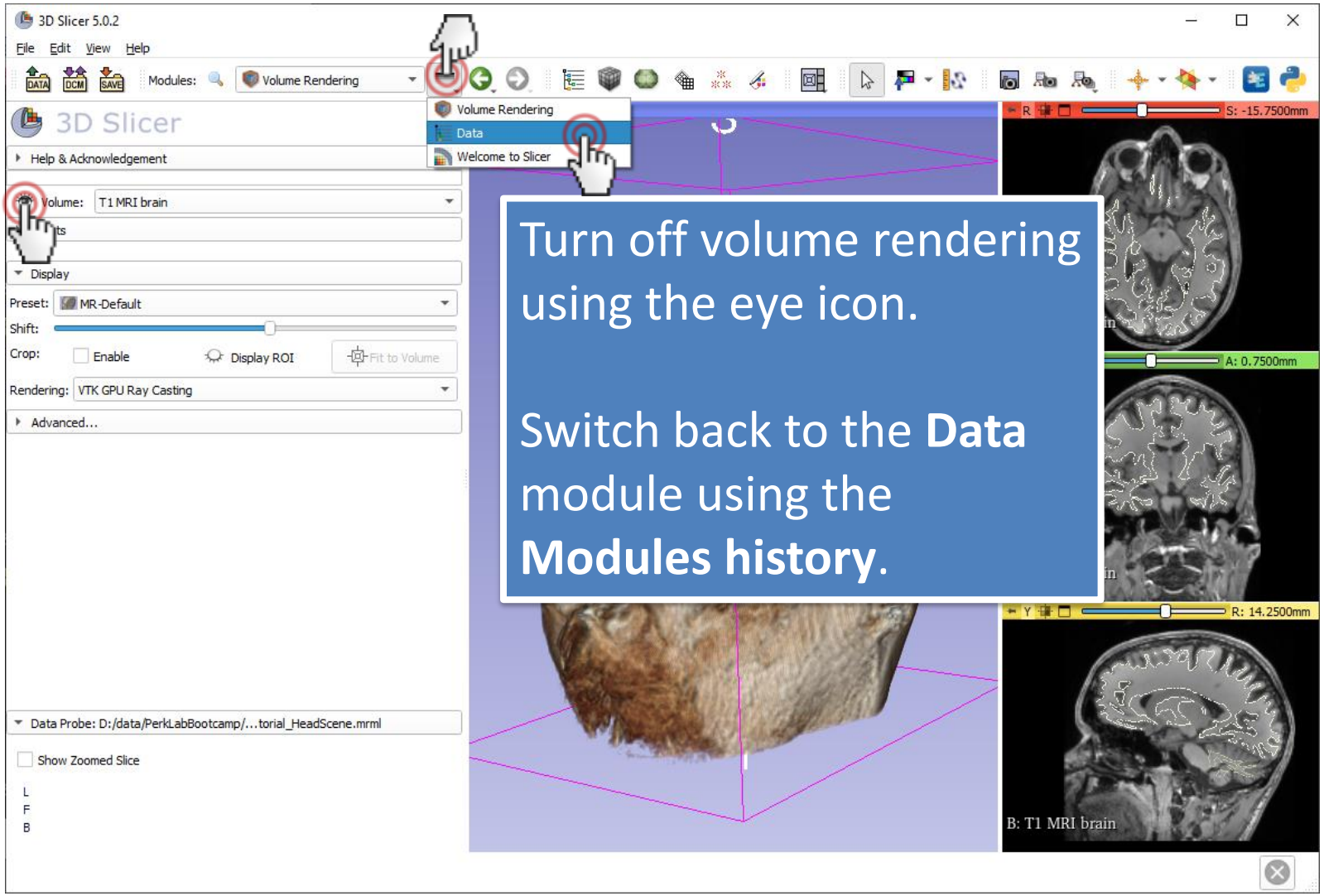
Right-click the eye icon to see display options.

Choose '**Volume rendering options…**'.
(It switches to the **Volume Rendering** module)

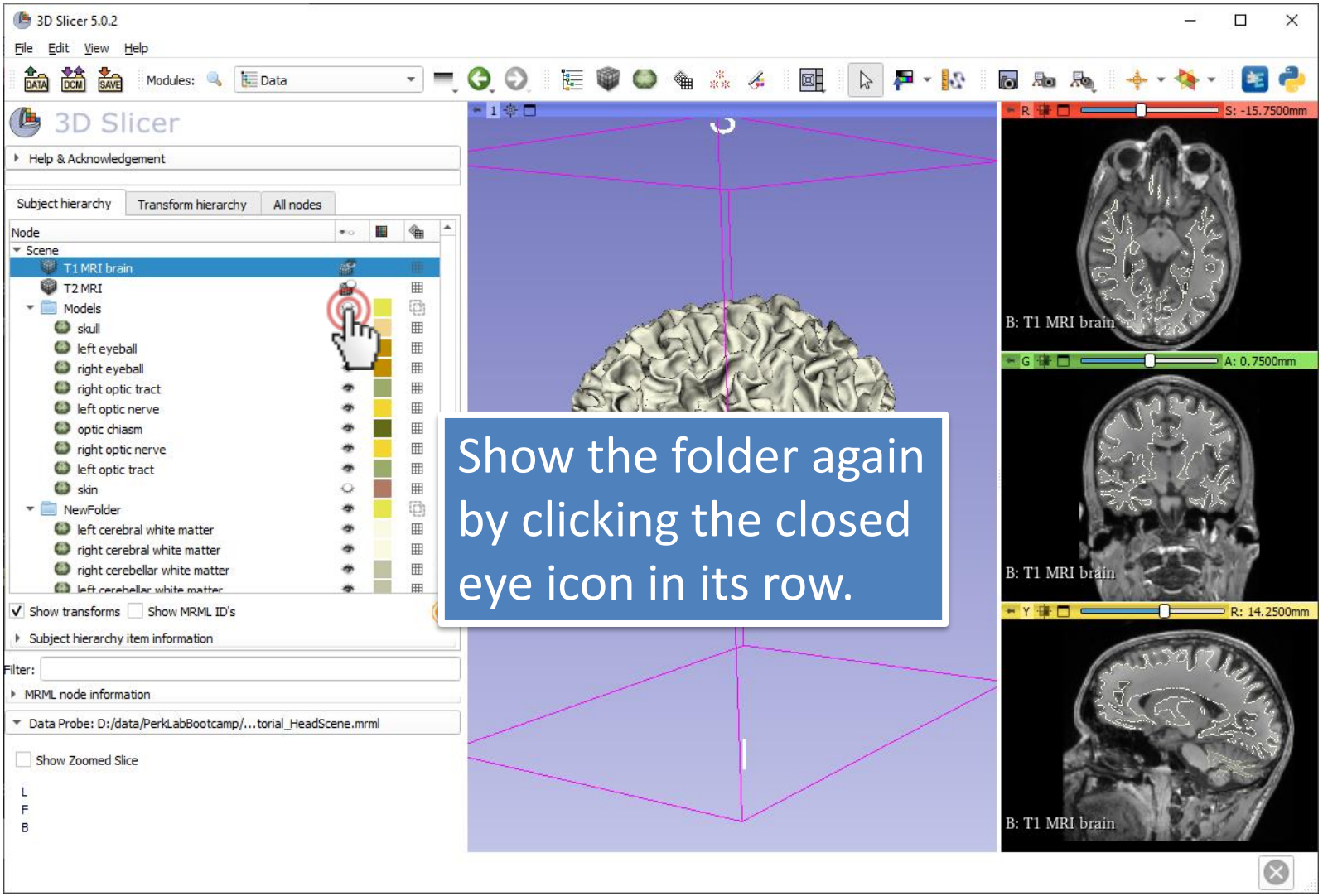
Adjust volume rendering



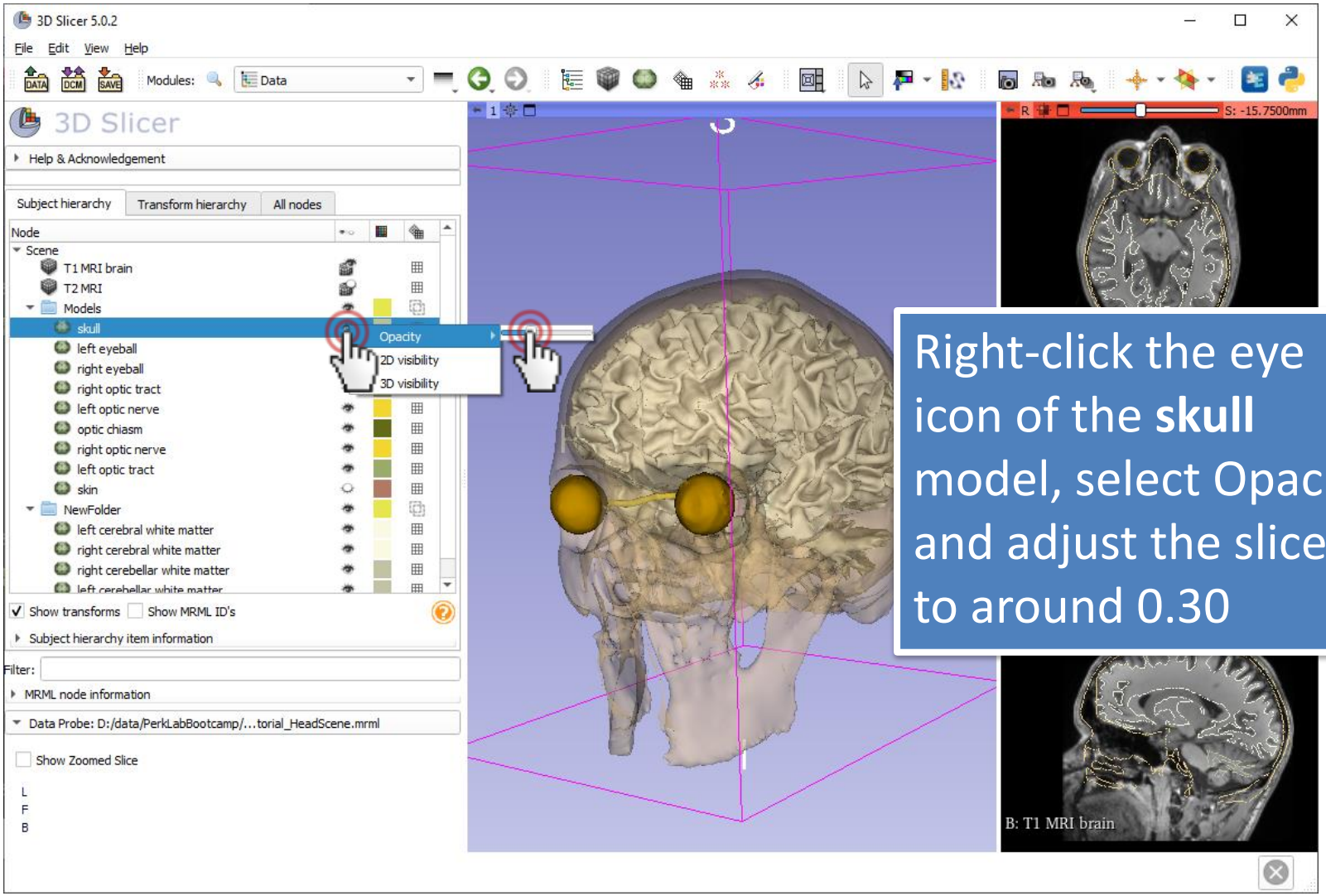
Show models again



Show models again

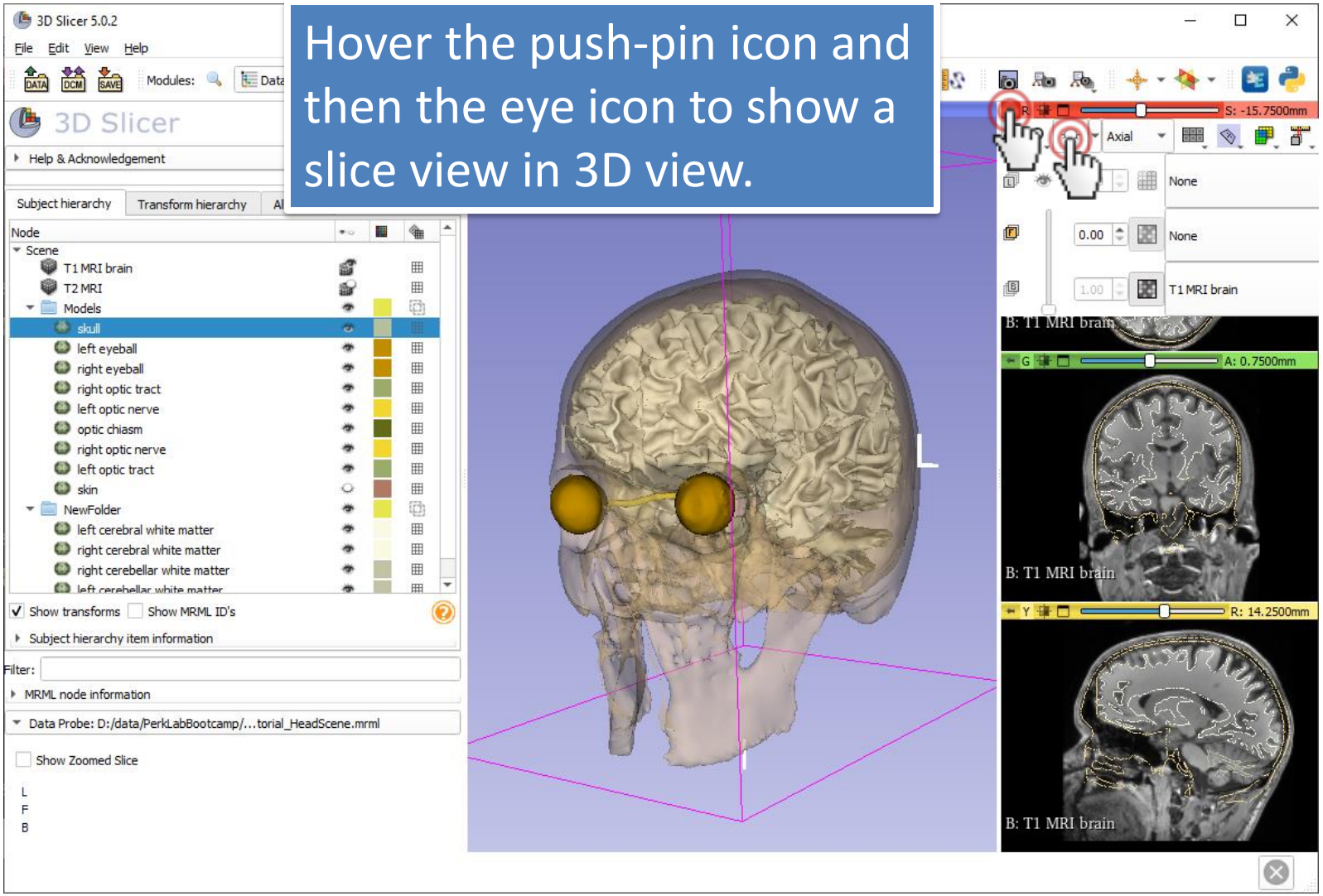


Change skull model opacity

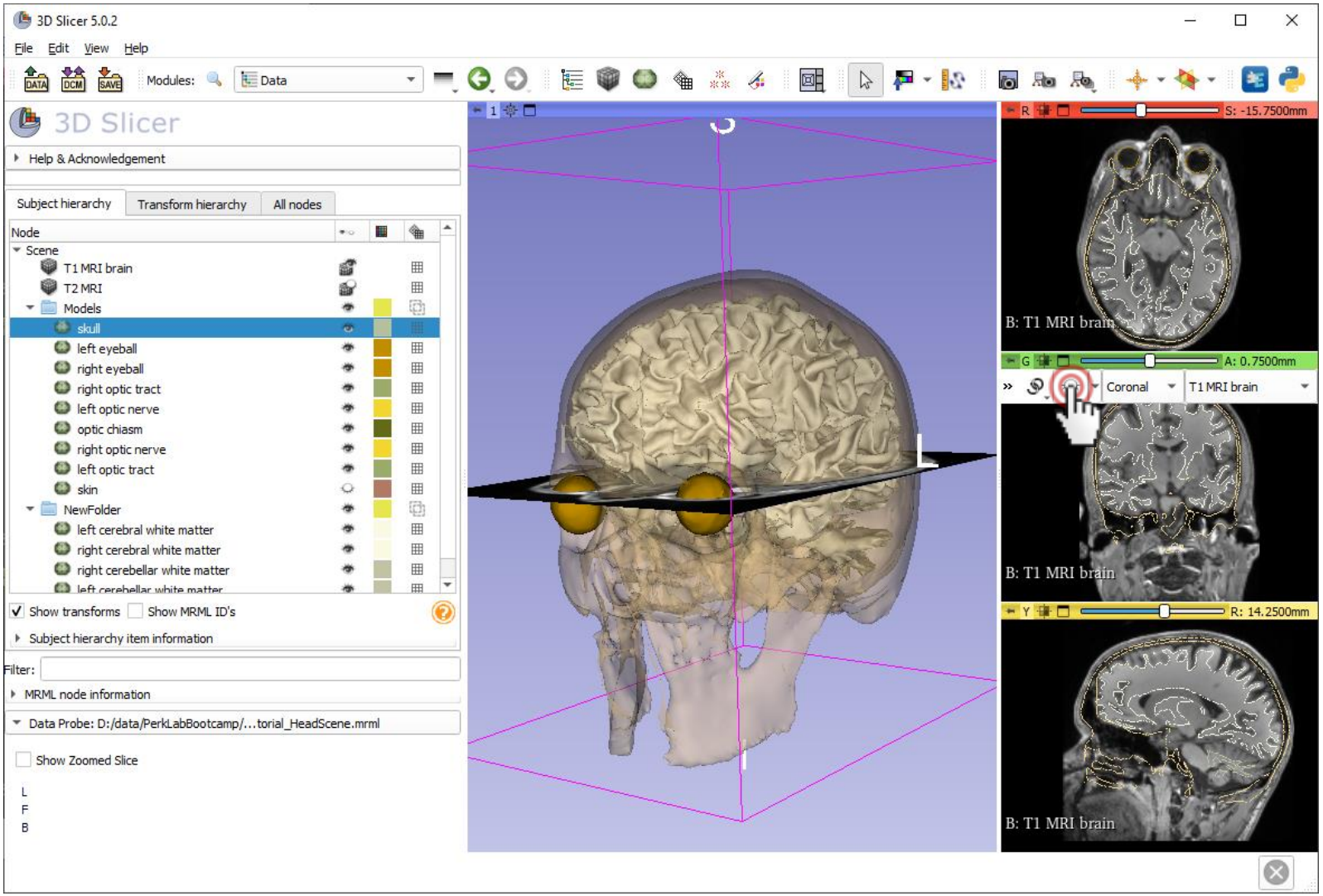


Right-click the eye icon of the **skull** model, select Opacity, and adjust the slicer to around 0.30

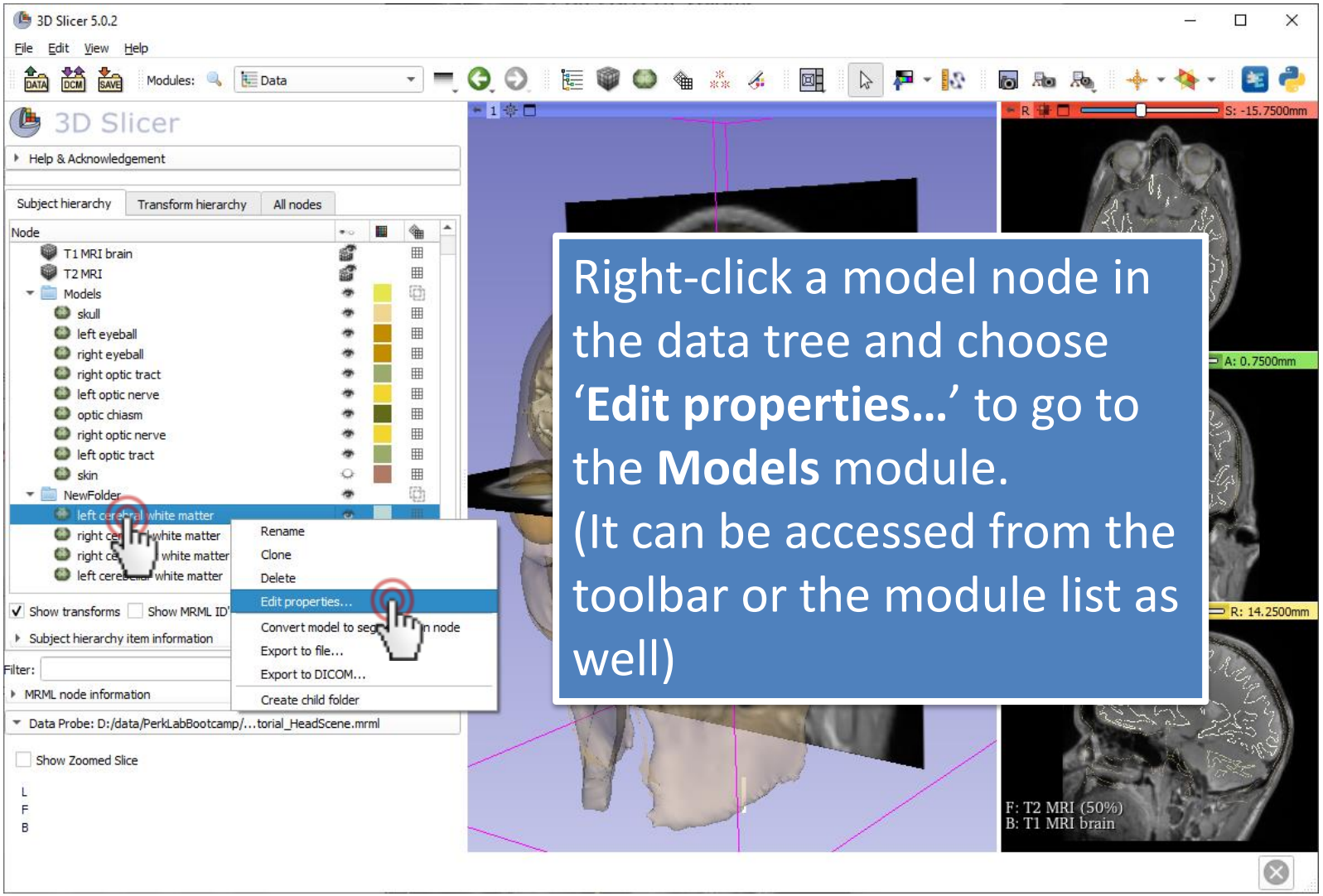
Show axial slice in 3D



Show coronal slice in 3D

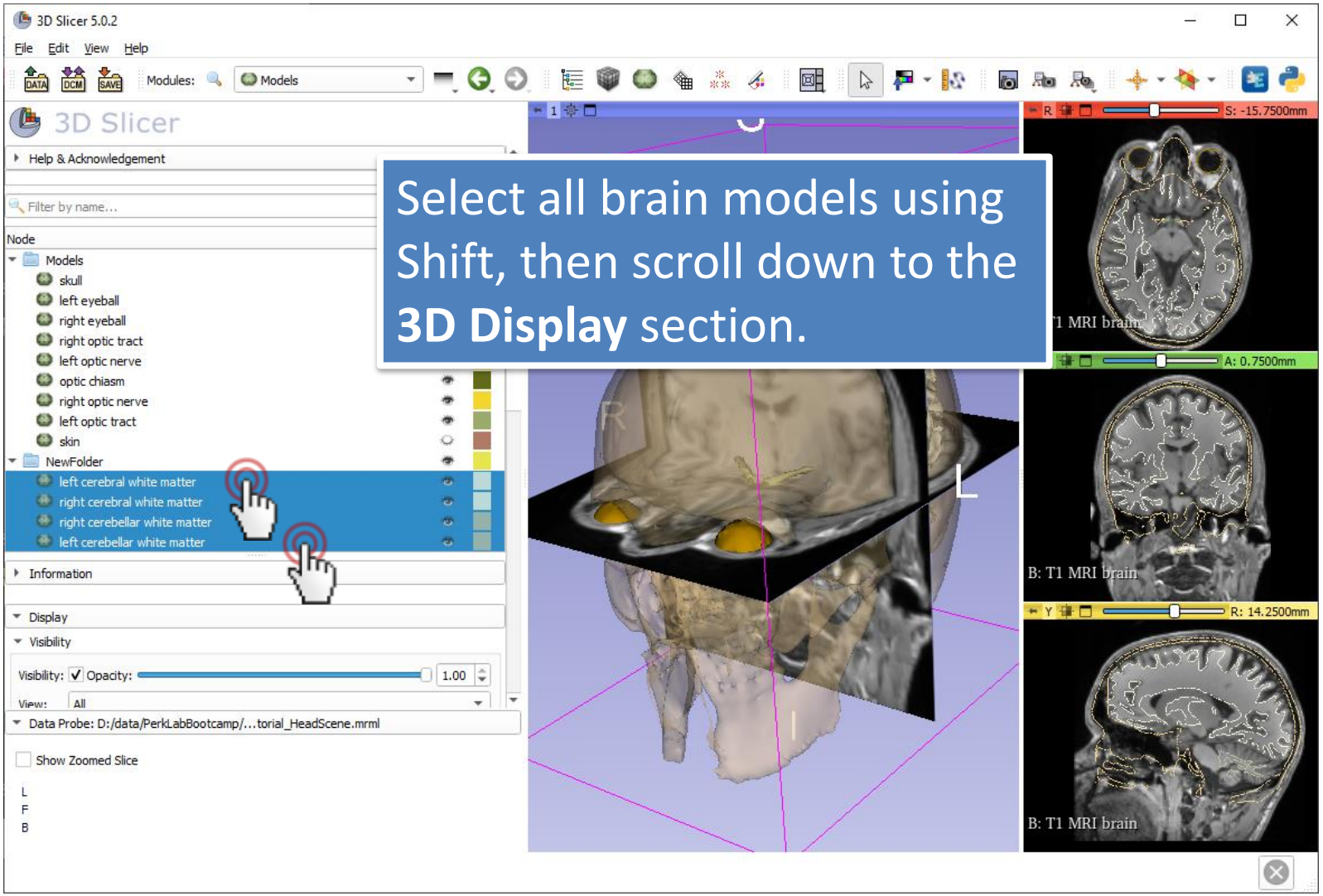


Model clipping

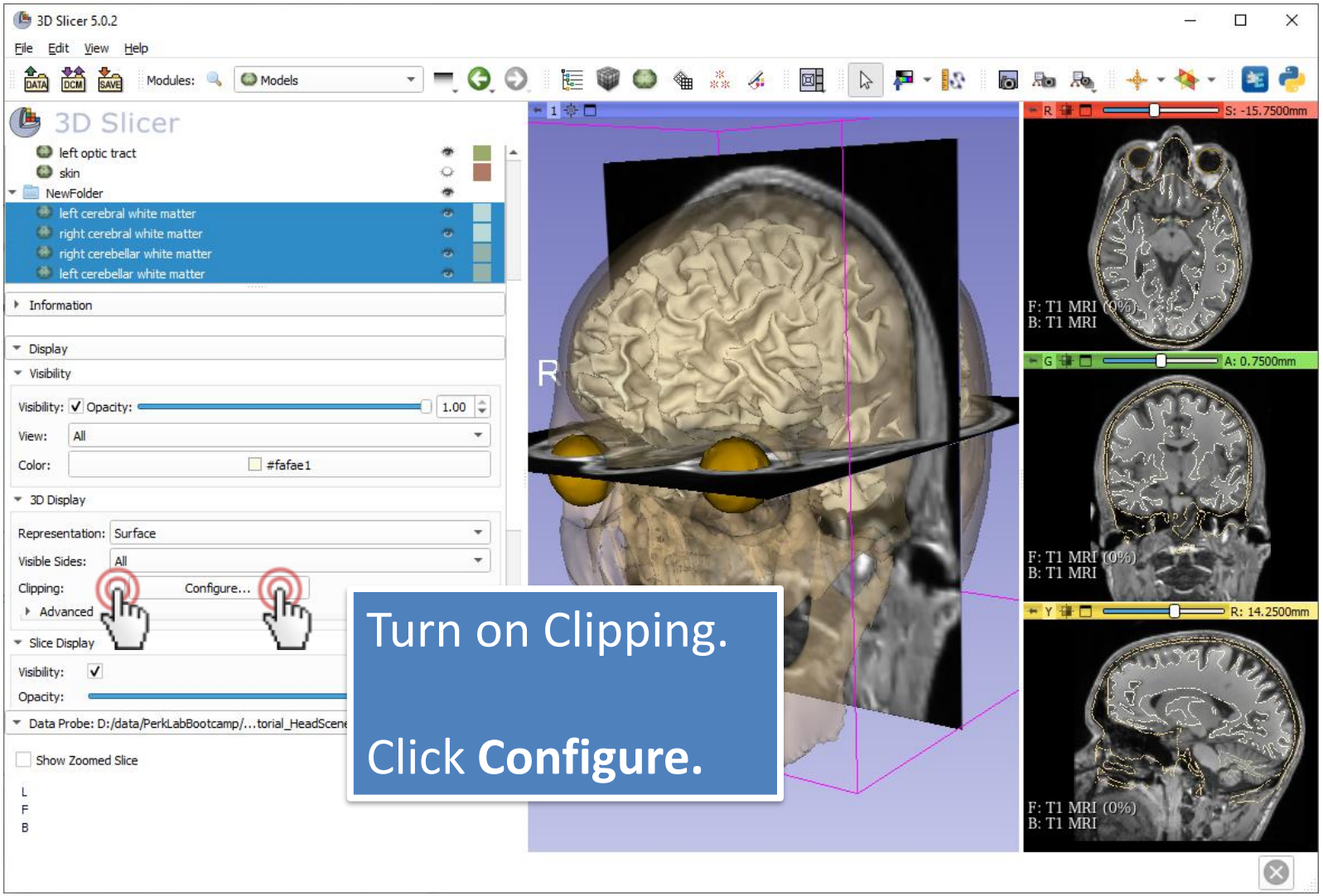


Right-click a model node in the data tree and choose '**Edit properties…**' to go to the **Models** module.
(It can be accessed from the toolbar or the module list as well)

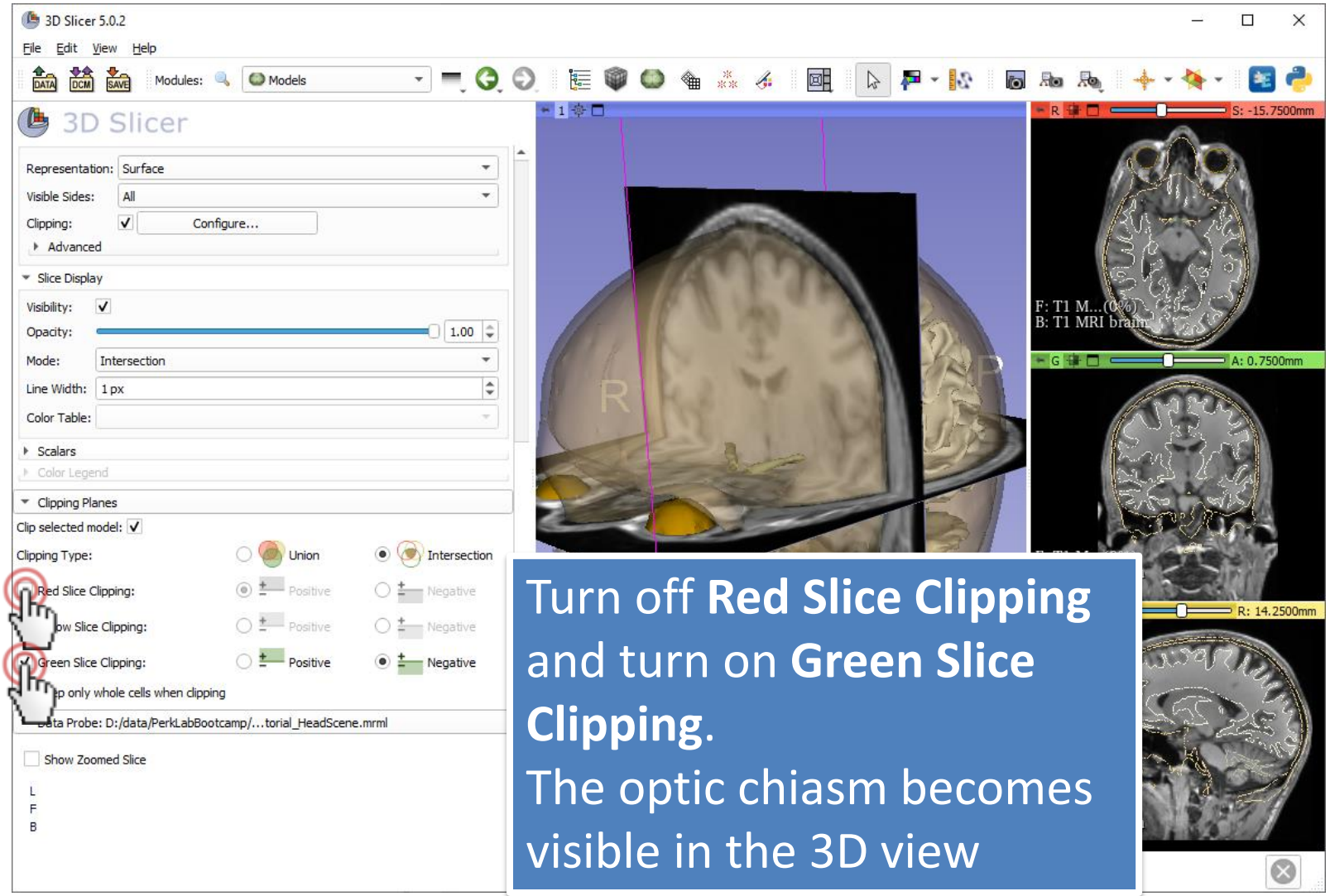
Model clipping



Model clipping

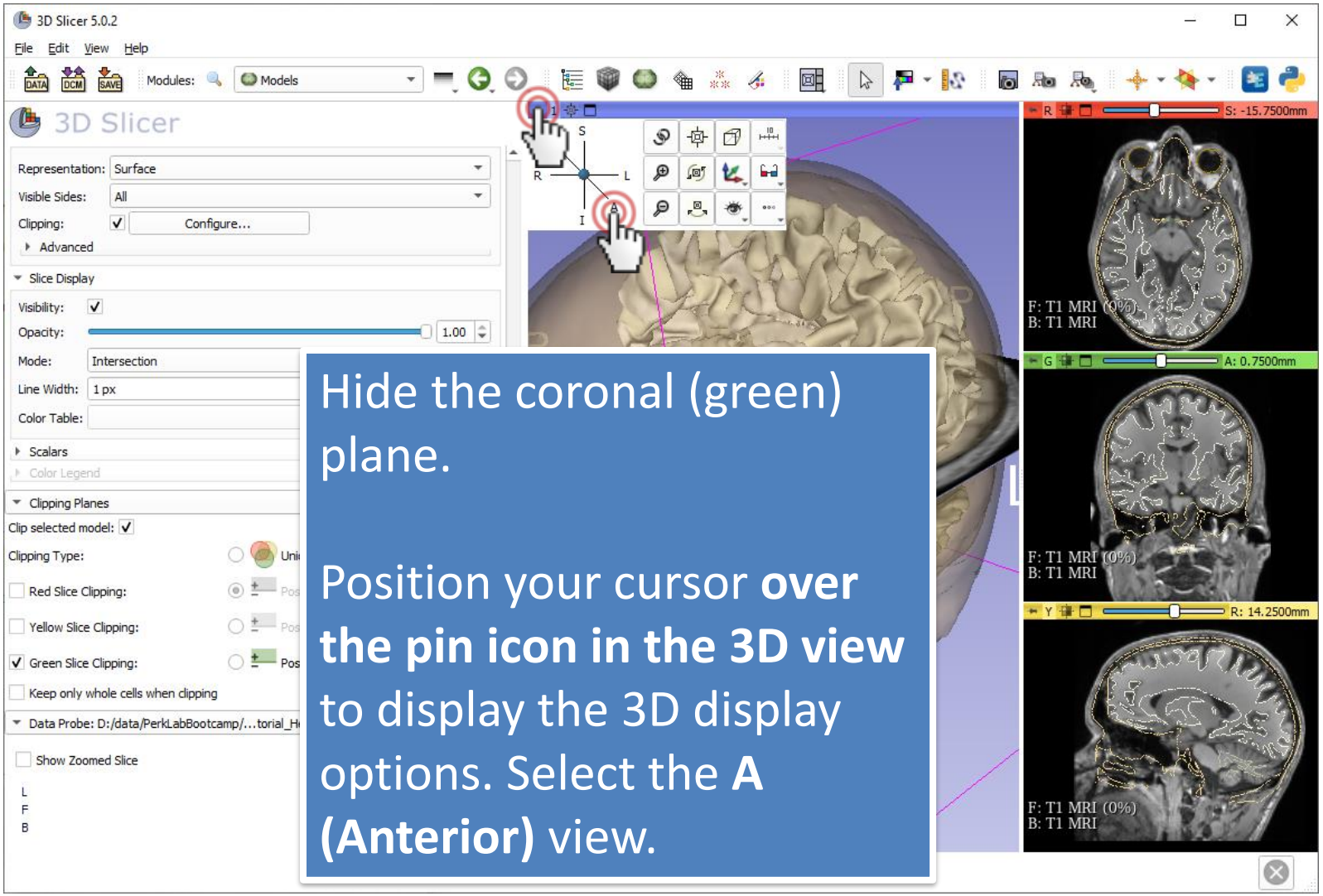


Model clipping



Turn off **Red Slice Clipping** and turn on **Green Slice Clipping**.
The optic chiasm becomes visible in the 3D view

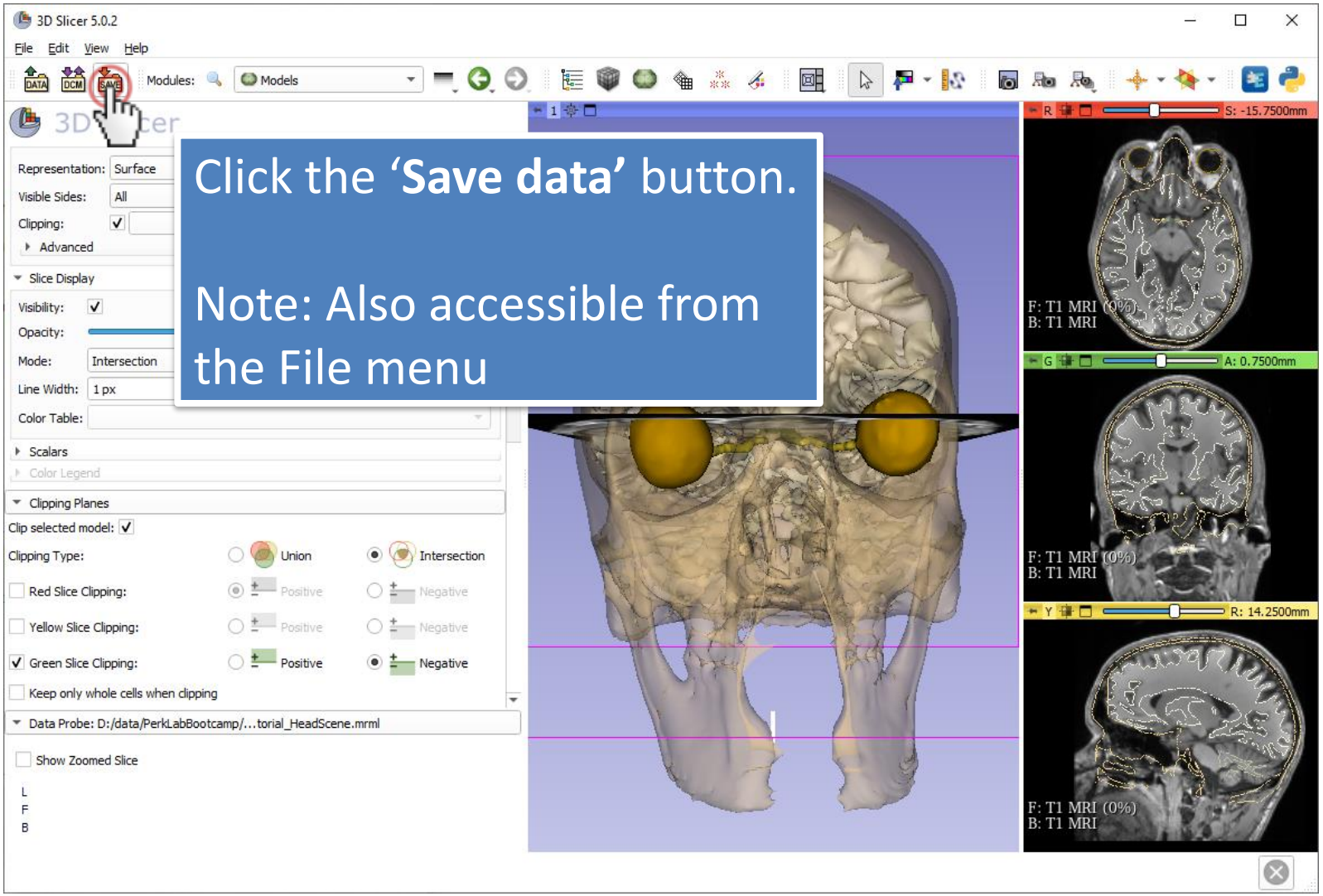
3D display options



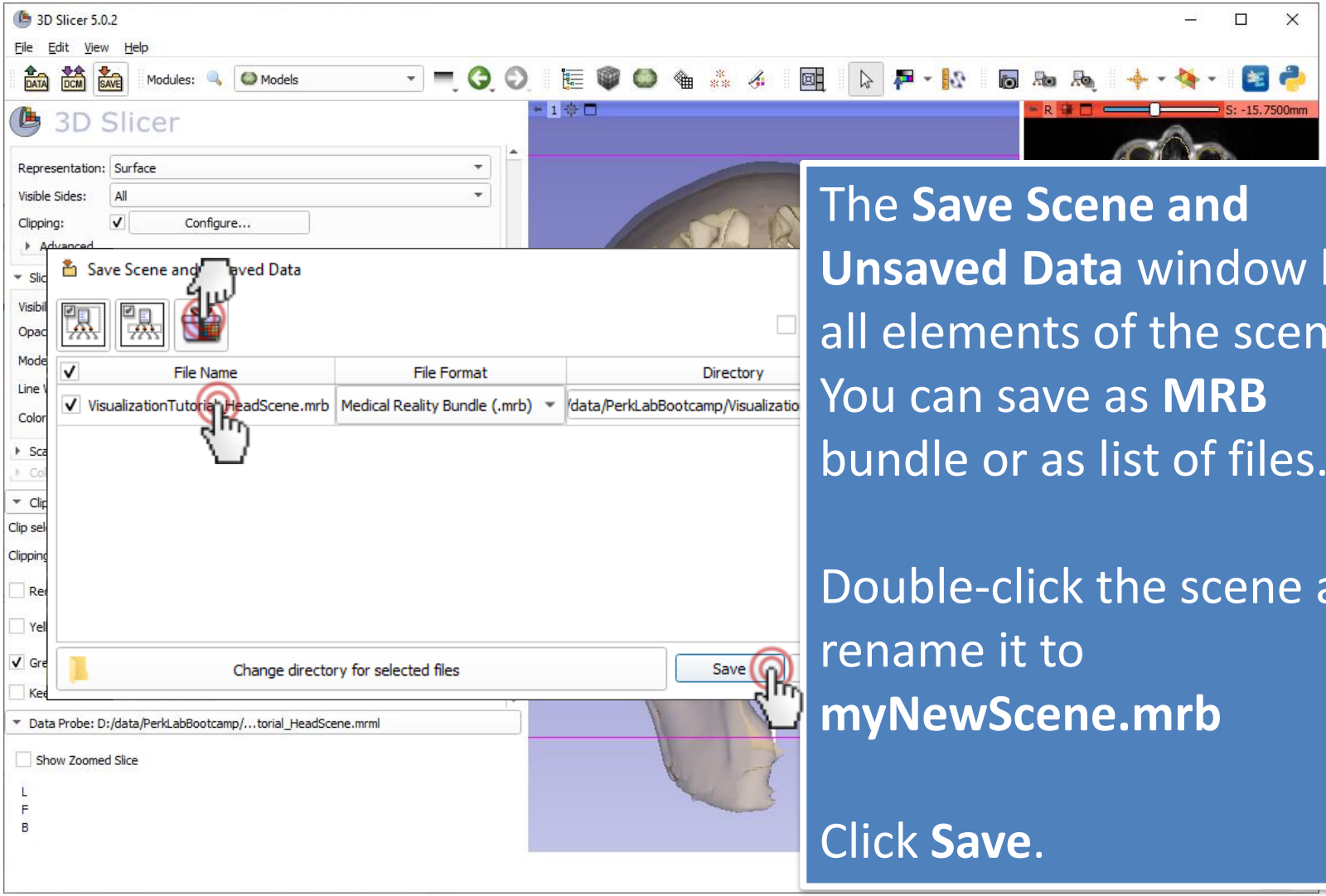
Hide the coronal (green) plane.

Position your cursor **over the pin icon in the 3D view** to display the 3D display options. Select the **A (Anterior)** view.

Save the scene



Save the scene

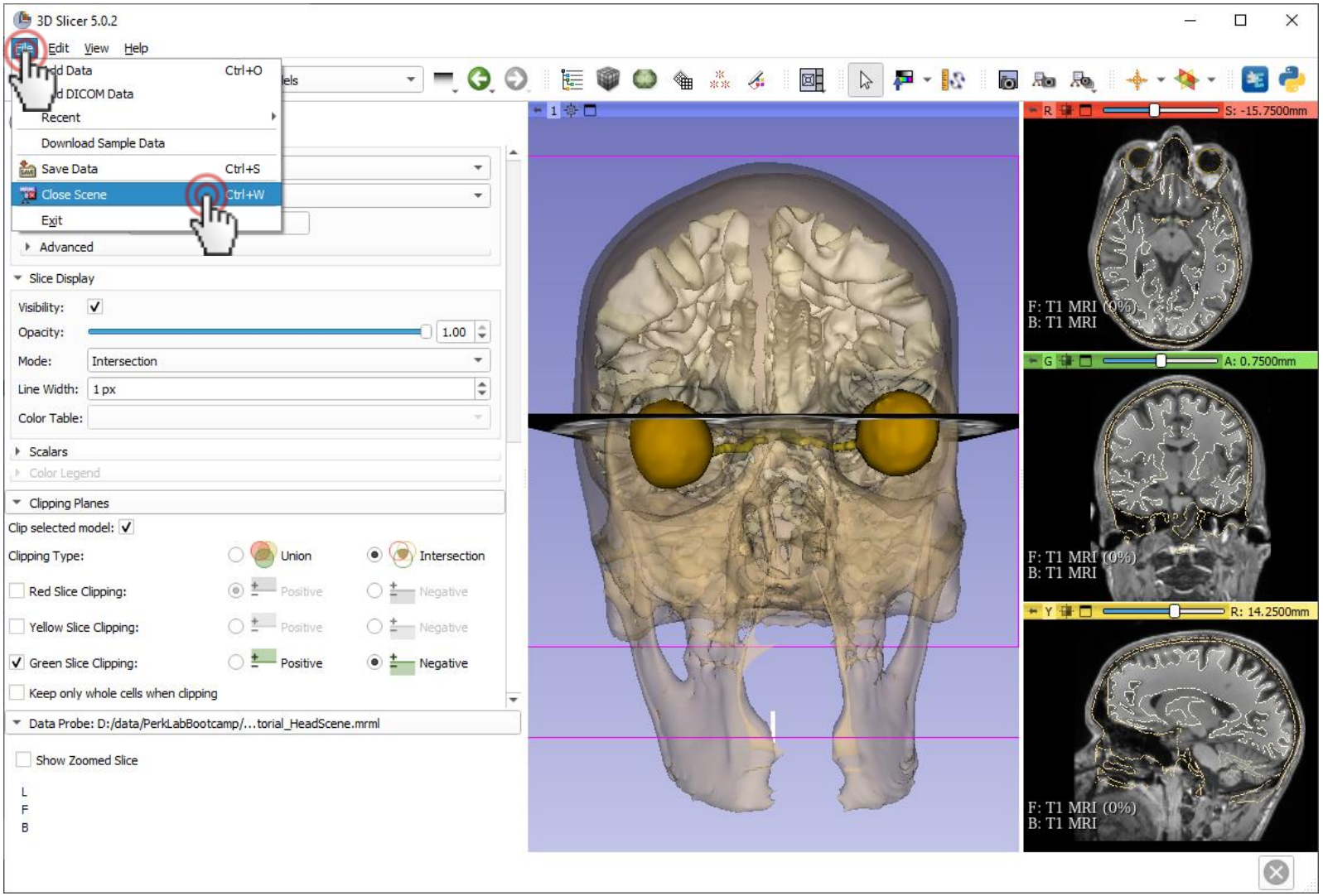


The **Save Scene and Unsaved Data** window lists all elements of the scene. You can save as **MRB** bundle or as list of files.

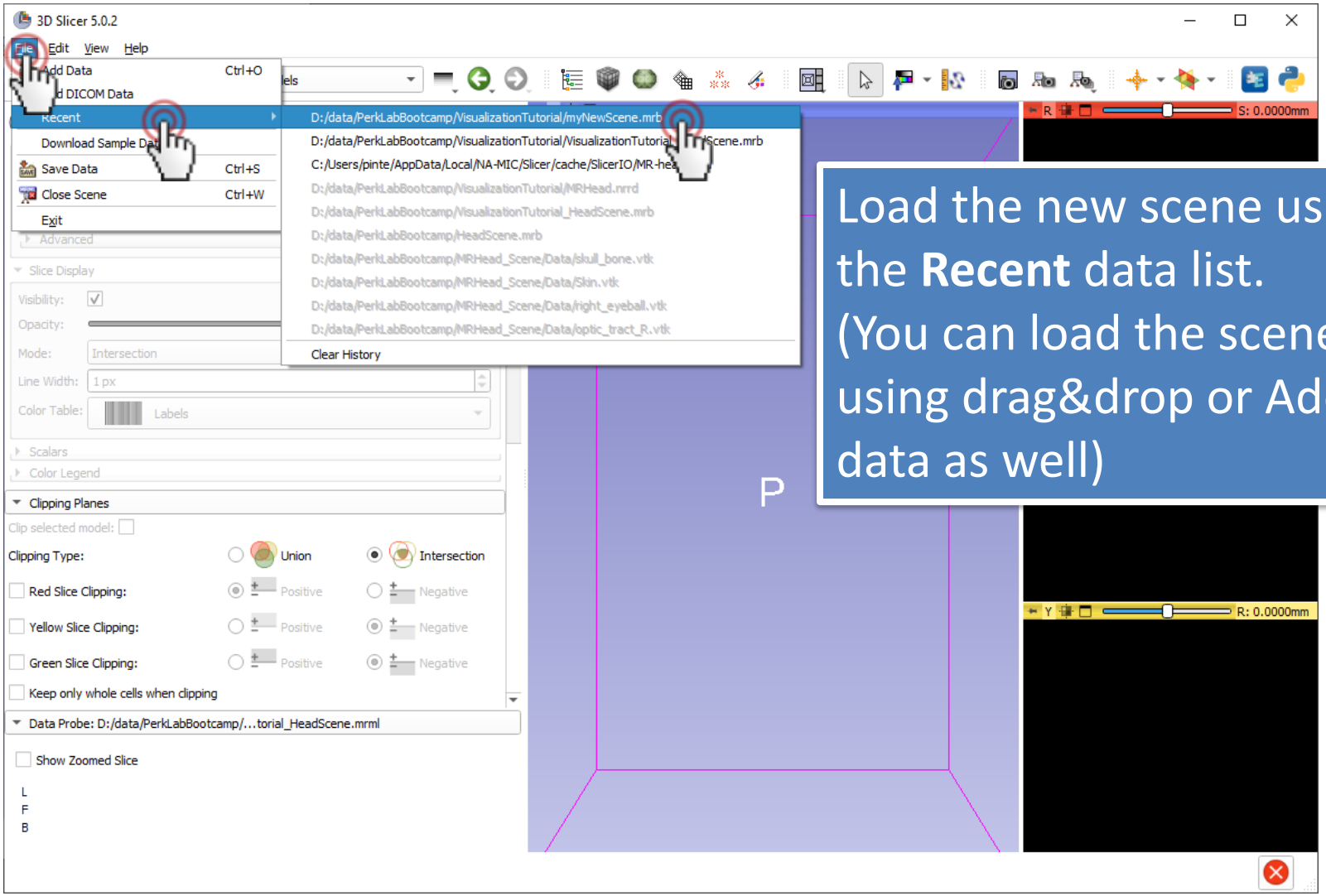
Double-click the scene and rename it to **myNewScene.mrb**

Click **Save**.

Close the scene



Load your recently saved scene



Load the new scene using the **Recent** data list.
(You can load the scene using drag&drop or Add data as well)

Thanks for participating!