

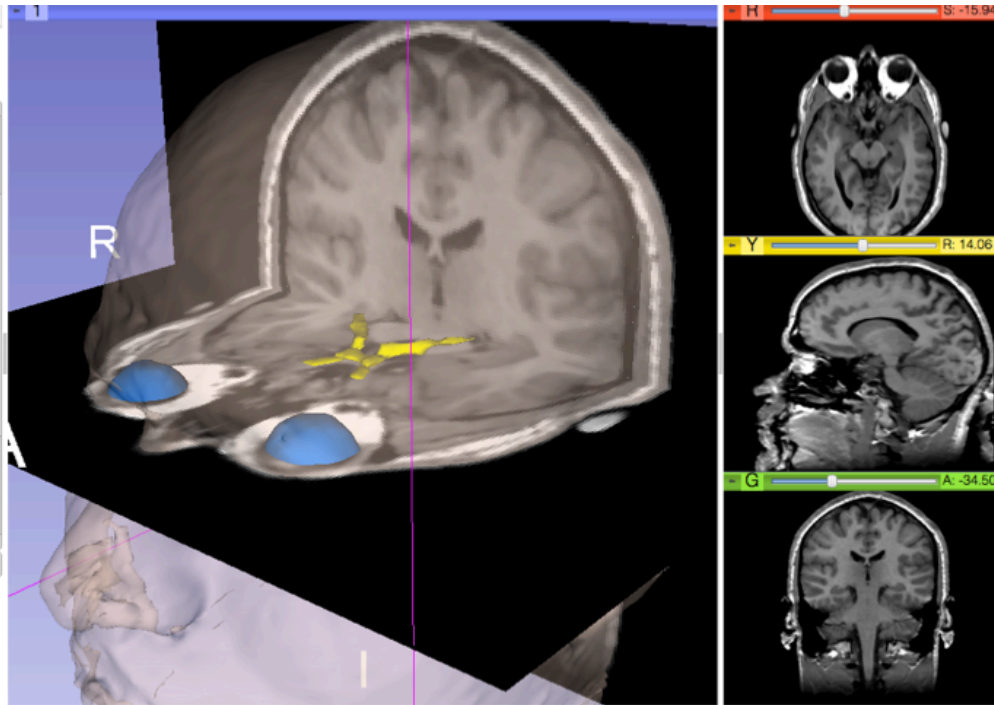
Slicer4Minute Tutorial

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Slicer4 minute tutorial



This tutorial is a 4-minute introduction to the 3D visualization capabilities of the Slicer3 software for medical image analysis.

Slicer4 software

- Download the Slicer4 software available at

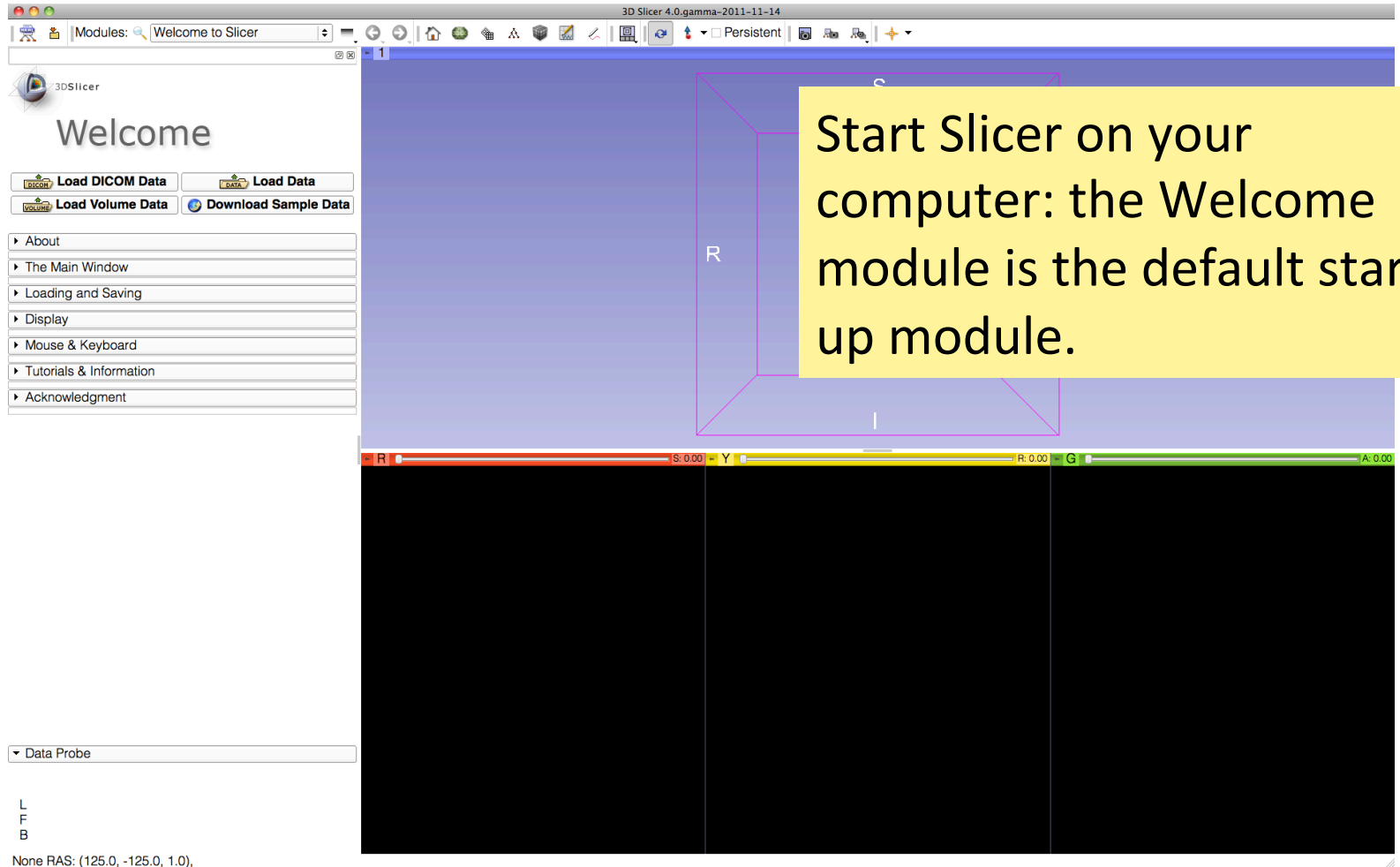
[http://www.slicer.org/pages/
Special:SlicerDownloads](http://www.slicer.org/pages/Special:SlicerDownloads)

Slicer4 minute dataset

Download the training dataset slicer4minute-data.zip, available at:

[http://wiki.slicer.org/slicerWiki/index.php/Training/4.0#Slicer4Minute Tutorial](http://wiki.slicer.org/slicerWiki/index.php/Training/4.0#Slicer4Minute_Tutorial)

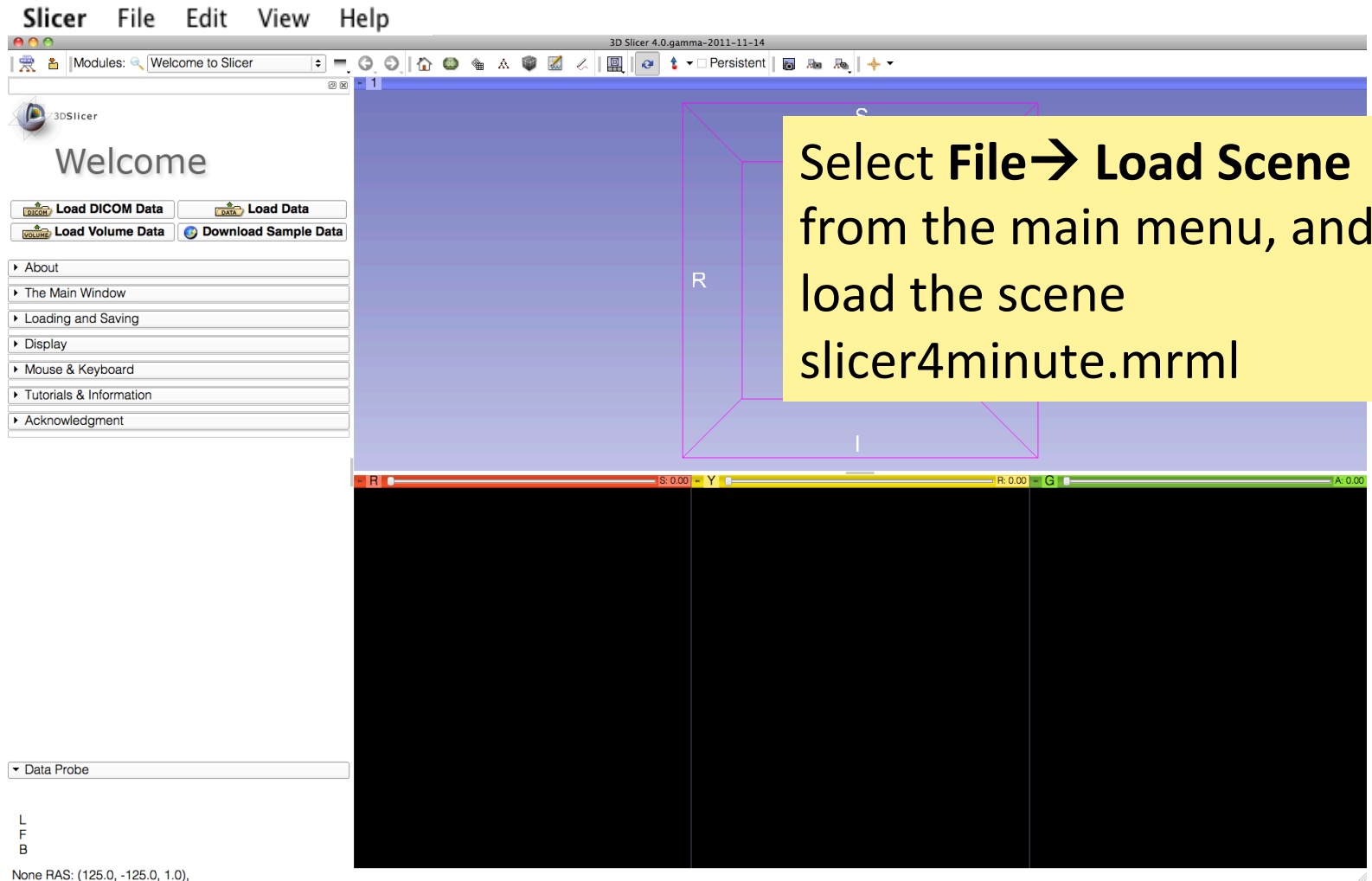
3DSlicer version 4.0



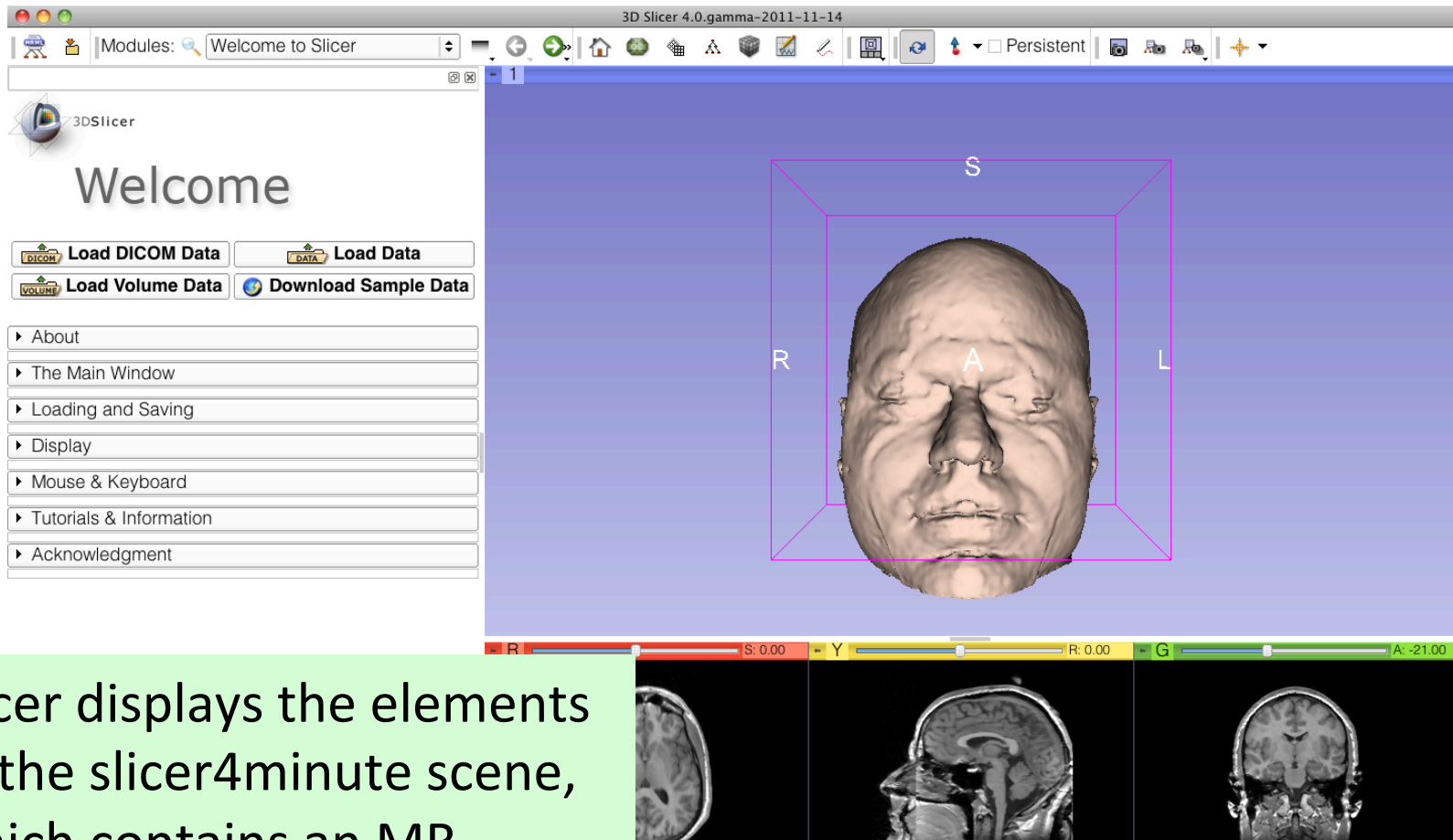
3D Slicer Scene

- A Slicer scene is a MRML file which contains the list of elements loaded into Slicer (volumes, models, fiducials...)
- The following example uses a 3D Scene which contains images and 3D surface models of the head.

3DSlicer version 4.0

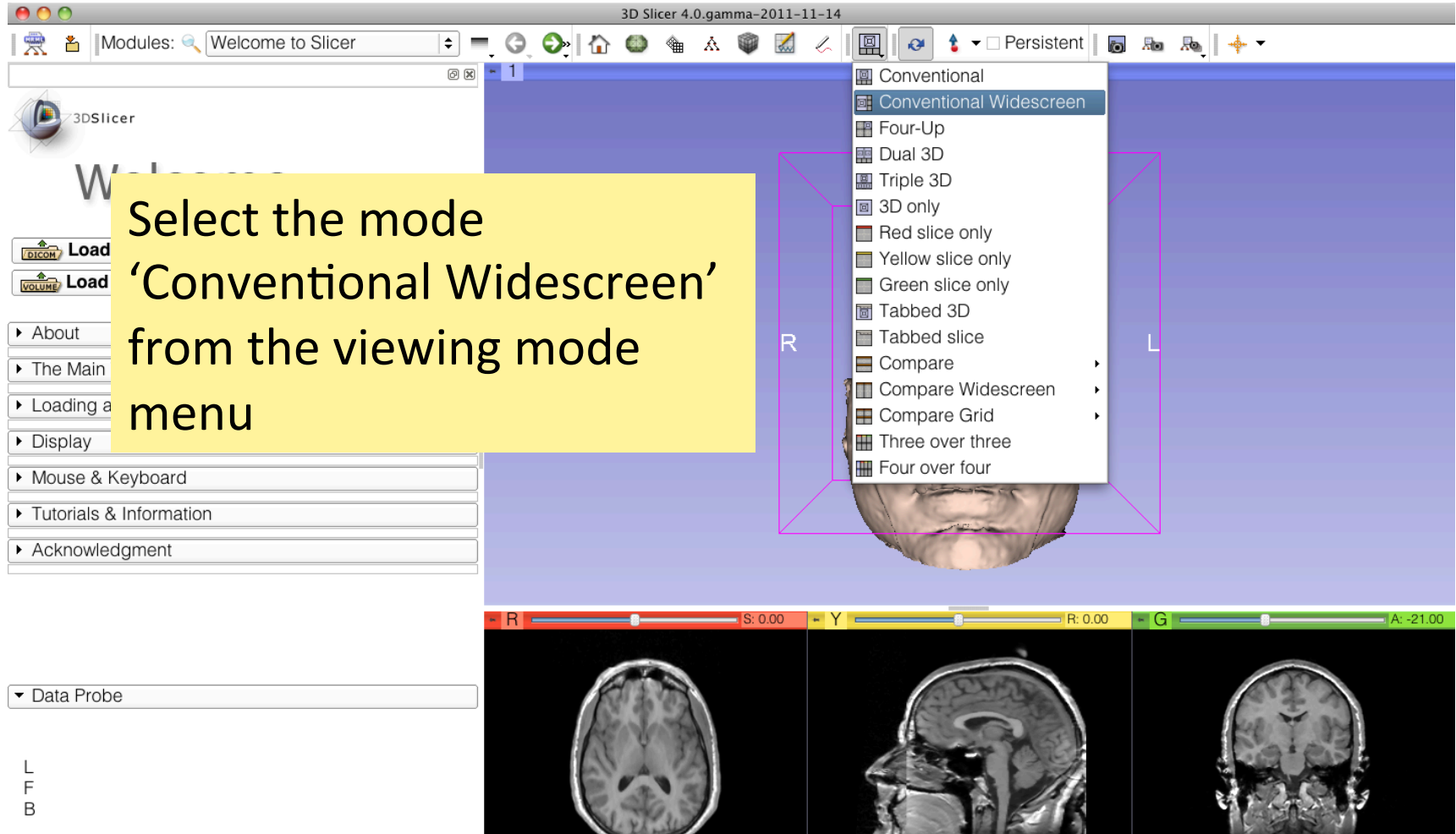


Slicer4 minute Scene

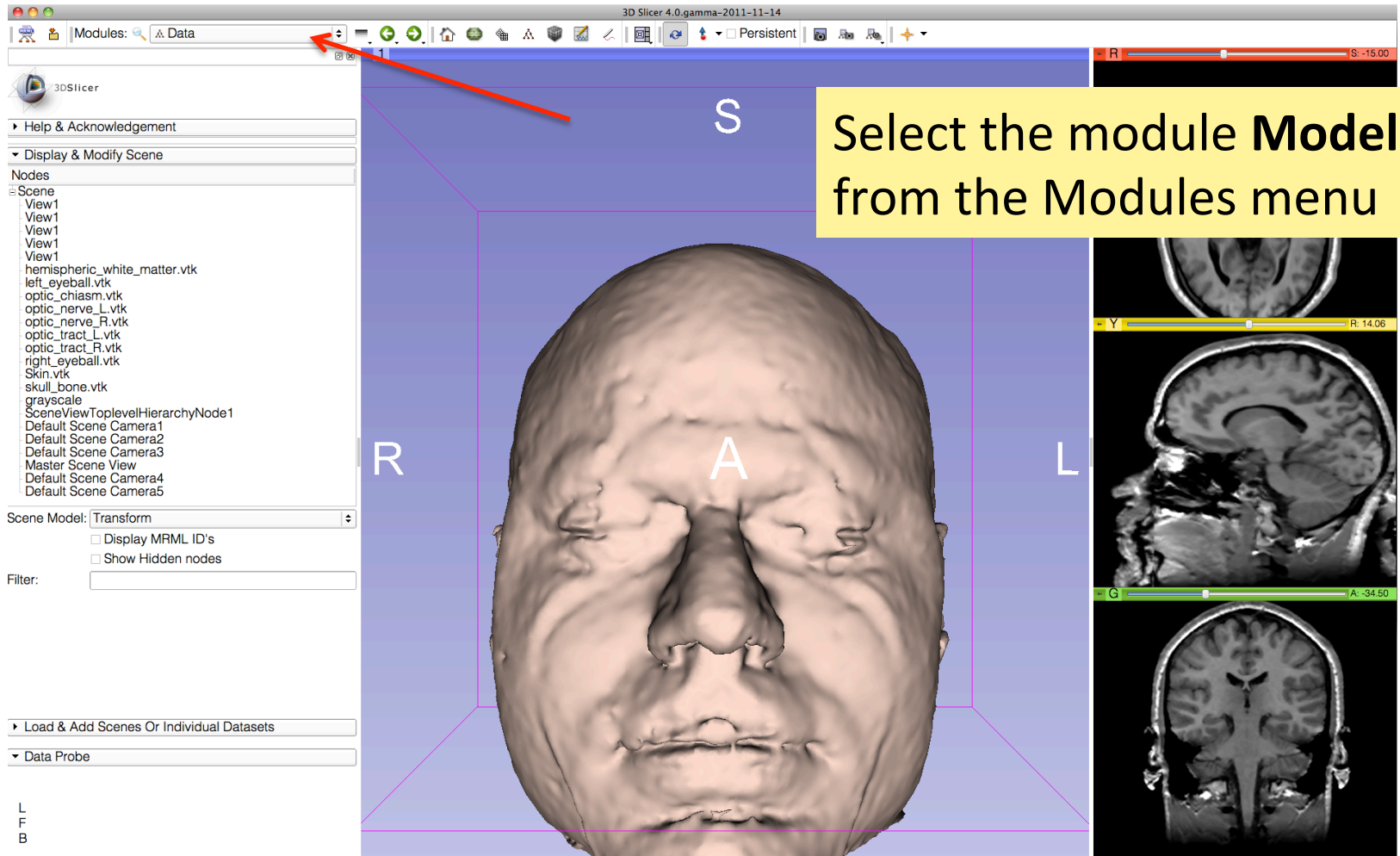


Slicer displays the elements of the slicer4minute scene, which contains an MR volume of the brain and a series of 3D surface models.

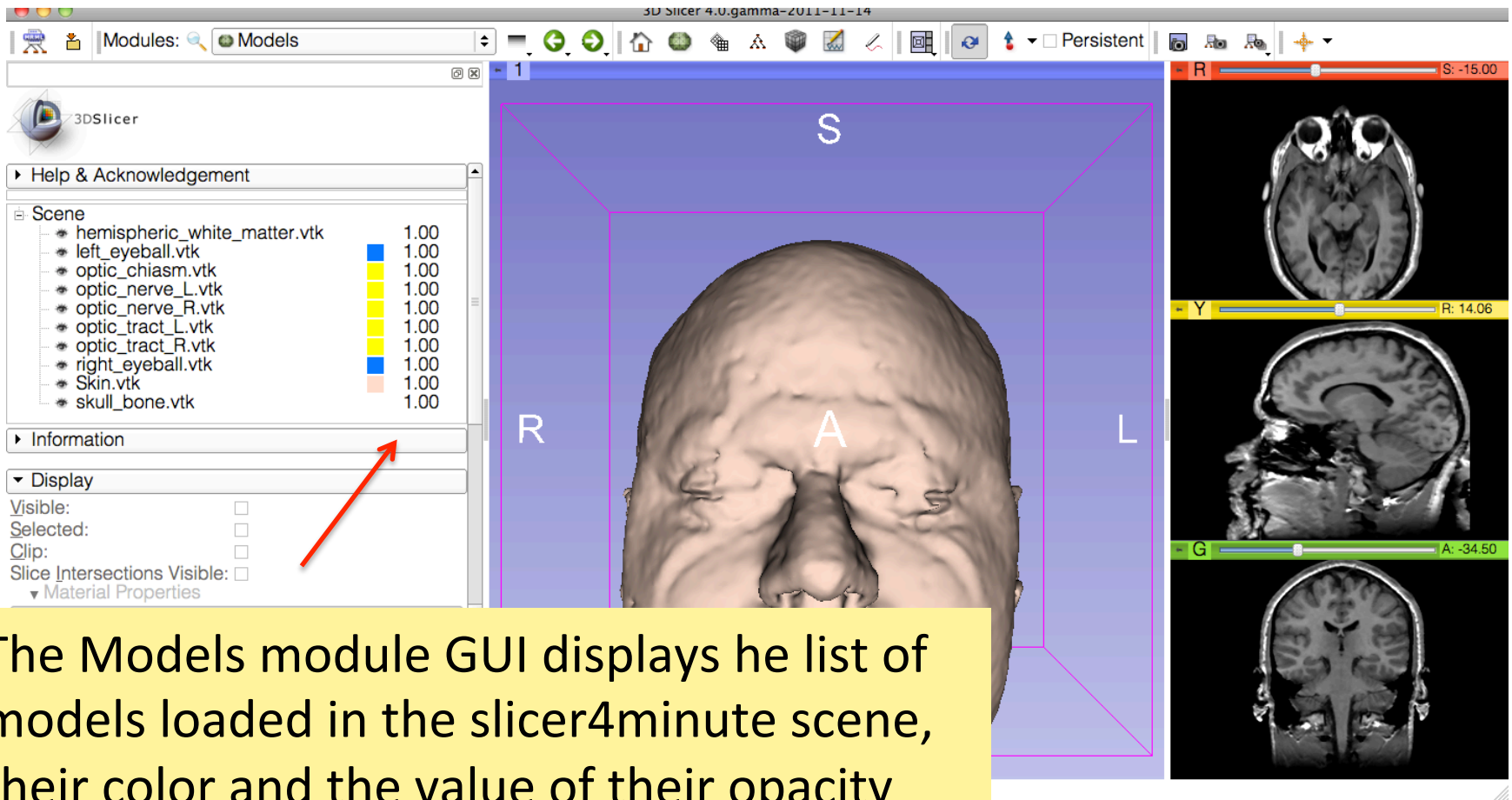
Slice4 minute scene



Slicer4minute Scene

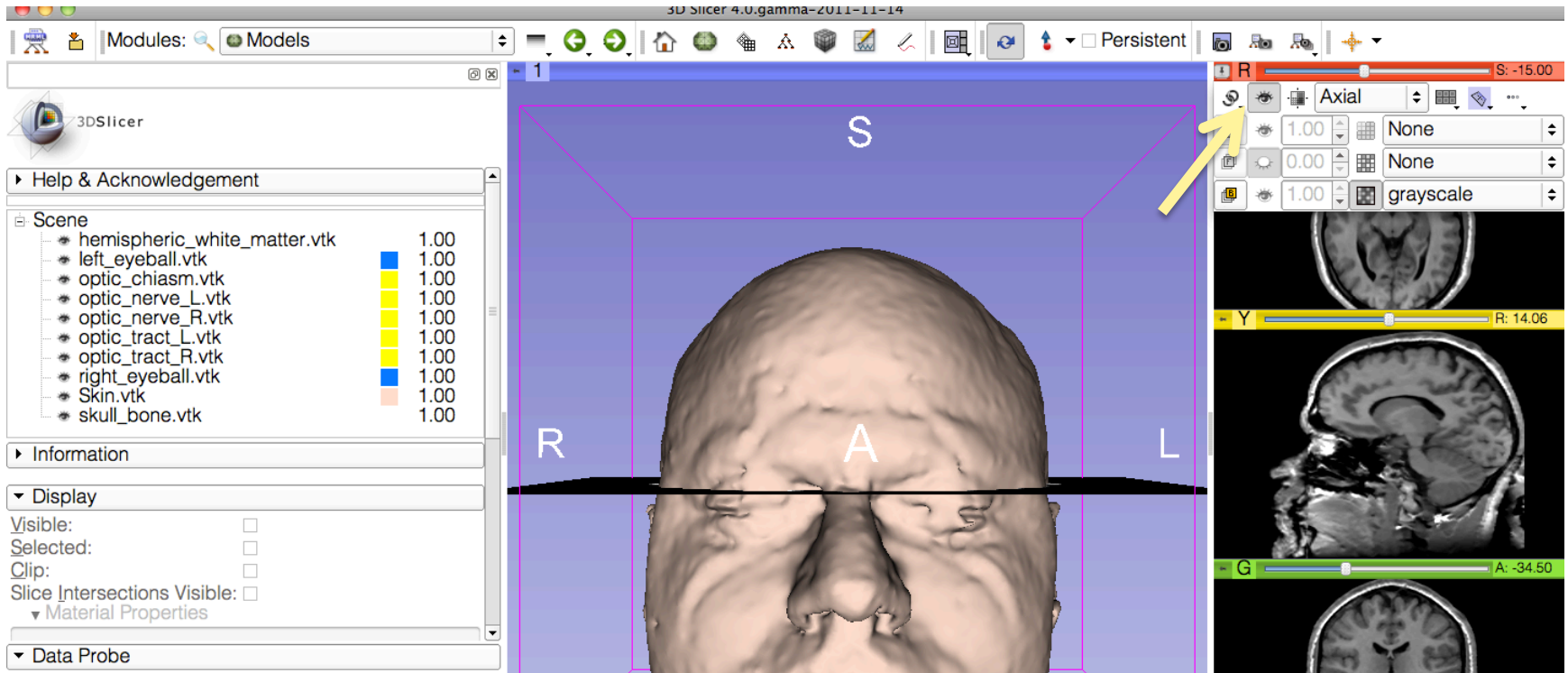


3D Visualization



The Models module GUI displays the list of models loaded in the slicer4minute scene, their color and the value of their opacity (between 0.0 and 1.0)

3D Visualization



Click on the pin icon on the top left corner of the red slice to display the slice viewer menu.

Click on the eye icon to display the axial slice in the 3D Viewer

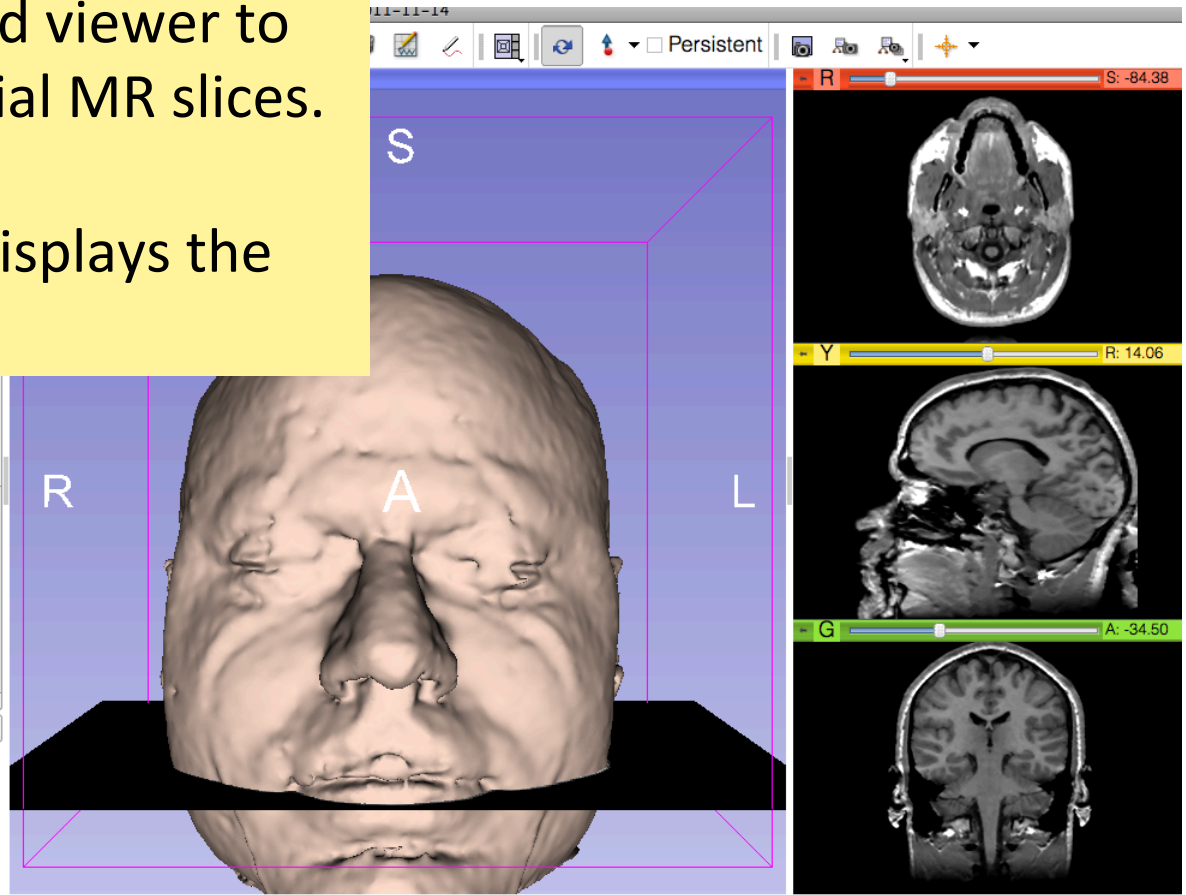
L
F
B

3D Visualization

Use the slider of the red viewer to browse through the axial MR slices.

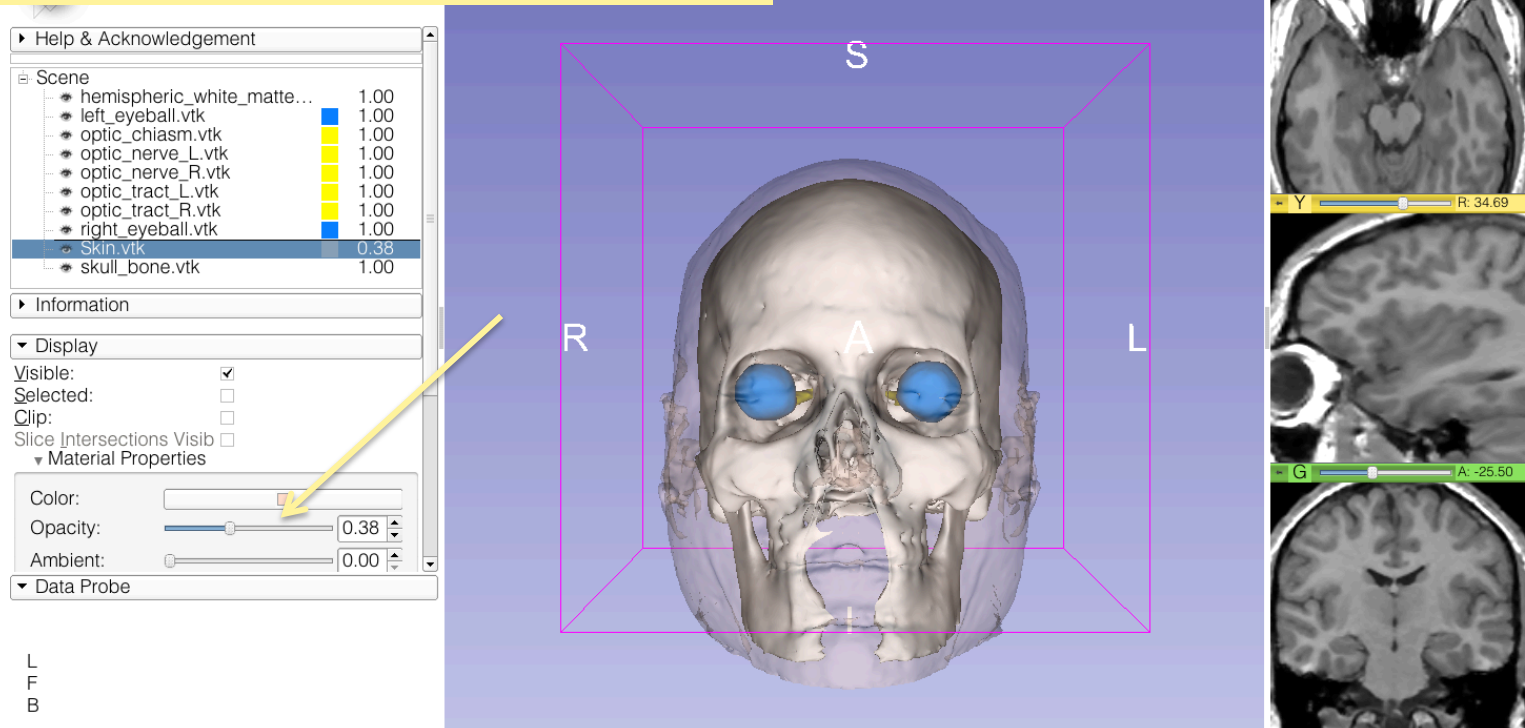
Slicer simultaneously displays the slices in the 3D viewer

The screenshot shows the Slicer software interface. On the left, there is a list of loaded volumes: optic_tract_L.vtk, optic_tract_R.vtk, right_eyeball.vtk, Skin.vtk, and skull_bone.vtk. Below this is the 'Information' panel, followed by the 'Display' panel with checkboxes for 'Visible', 'Selected', 'Clip', and 'Slice Intersections Visible'. The 'Data Probe' panel shows the current slice position: Red RAS: (136.6, 100.0, -84.4) Axial Sp: 0.9. Below that, it shows 'L None ()', 'F None ()', and 'B grayscale (-18, 37, 146) Out of Frame'.



3D Visualization

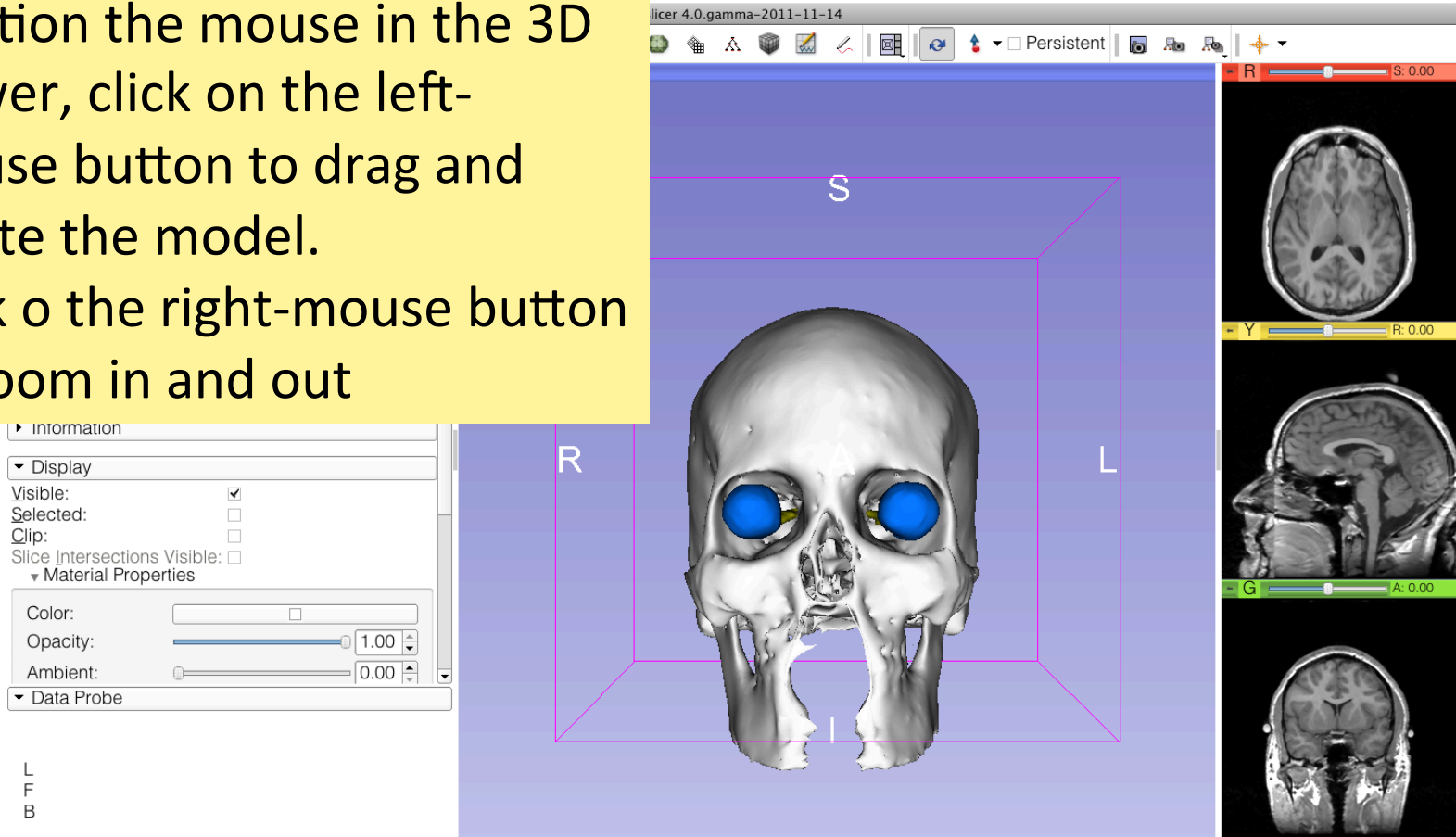
Lower the opacity of the Skin.vtk model in the Display tab



The skull_bone.vtk model appears through the skin.

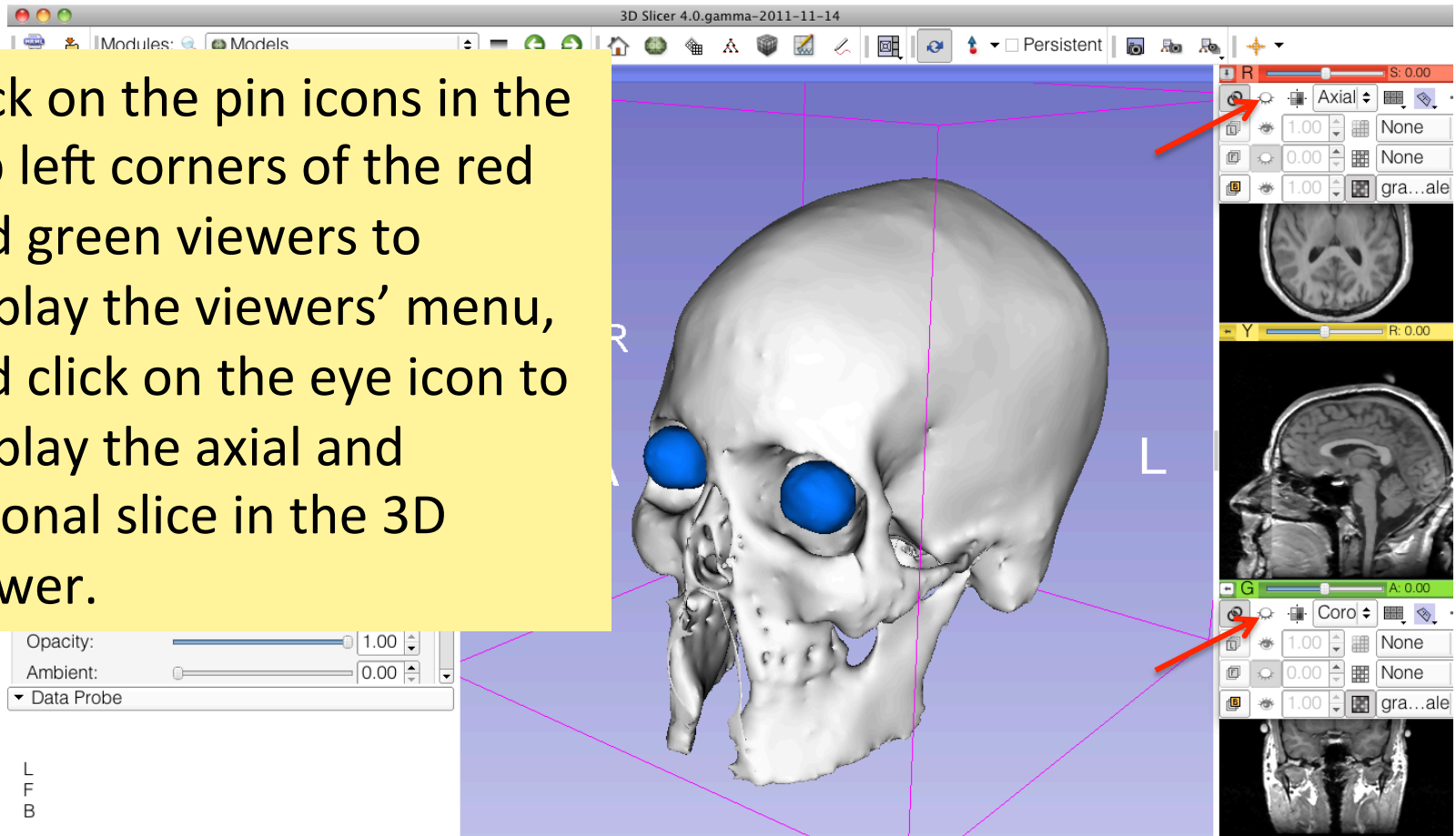
3D Visualization

Position the mouse in the 3D viewer, click on the left-mouse button to drag and rotate the model.
Click on the right-mouse button to zoom in and out



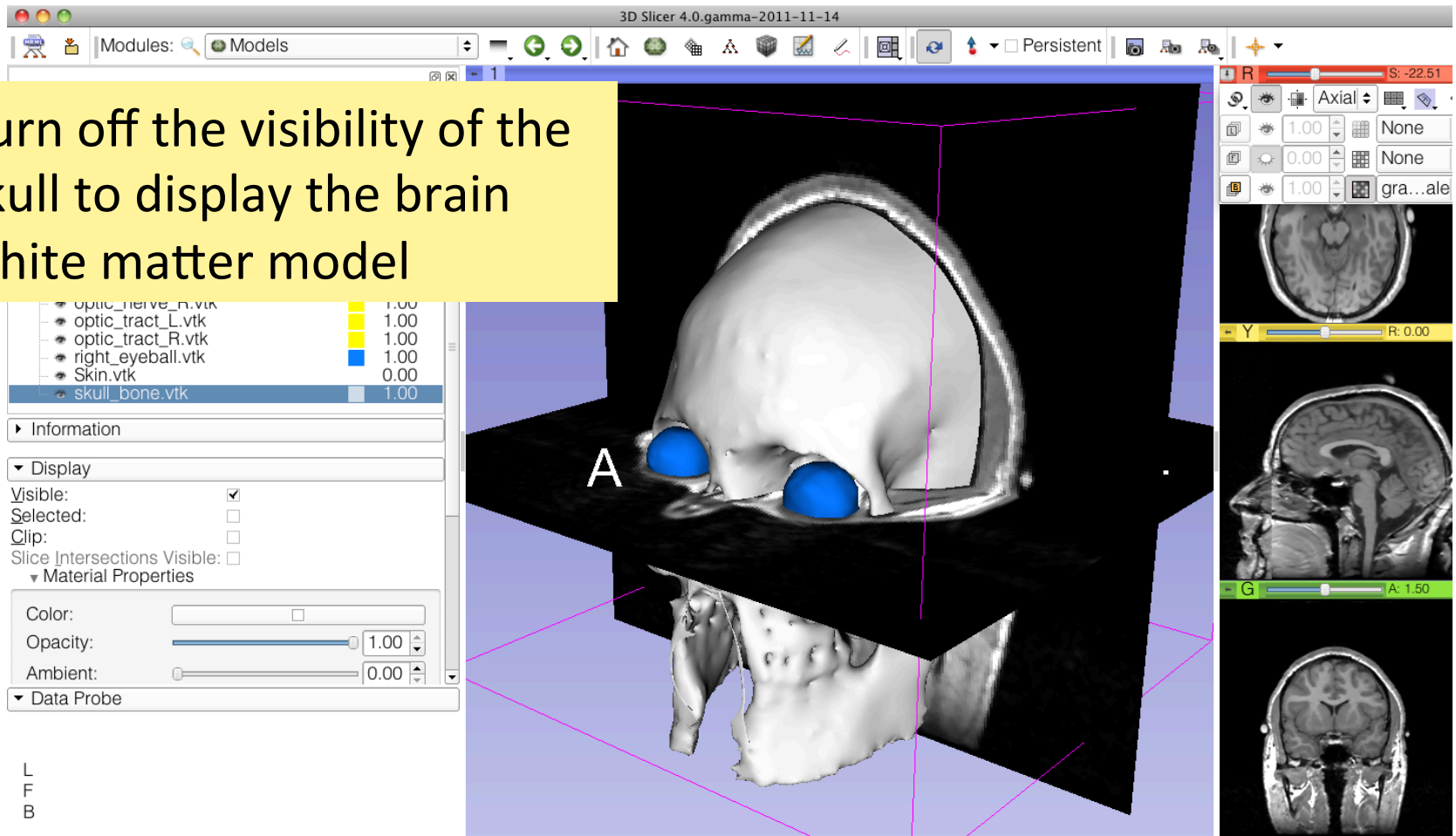
Anatomical Views

Click on the pin icons in the top left corners of the red and green viewers to display the viewers' menu, and click on the eye icon to display the axial and coronal slice in the 3D viewer.



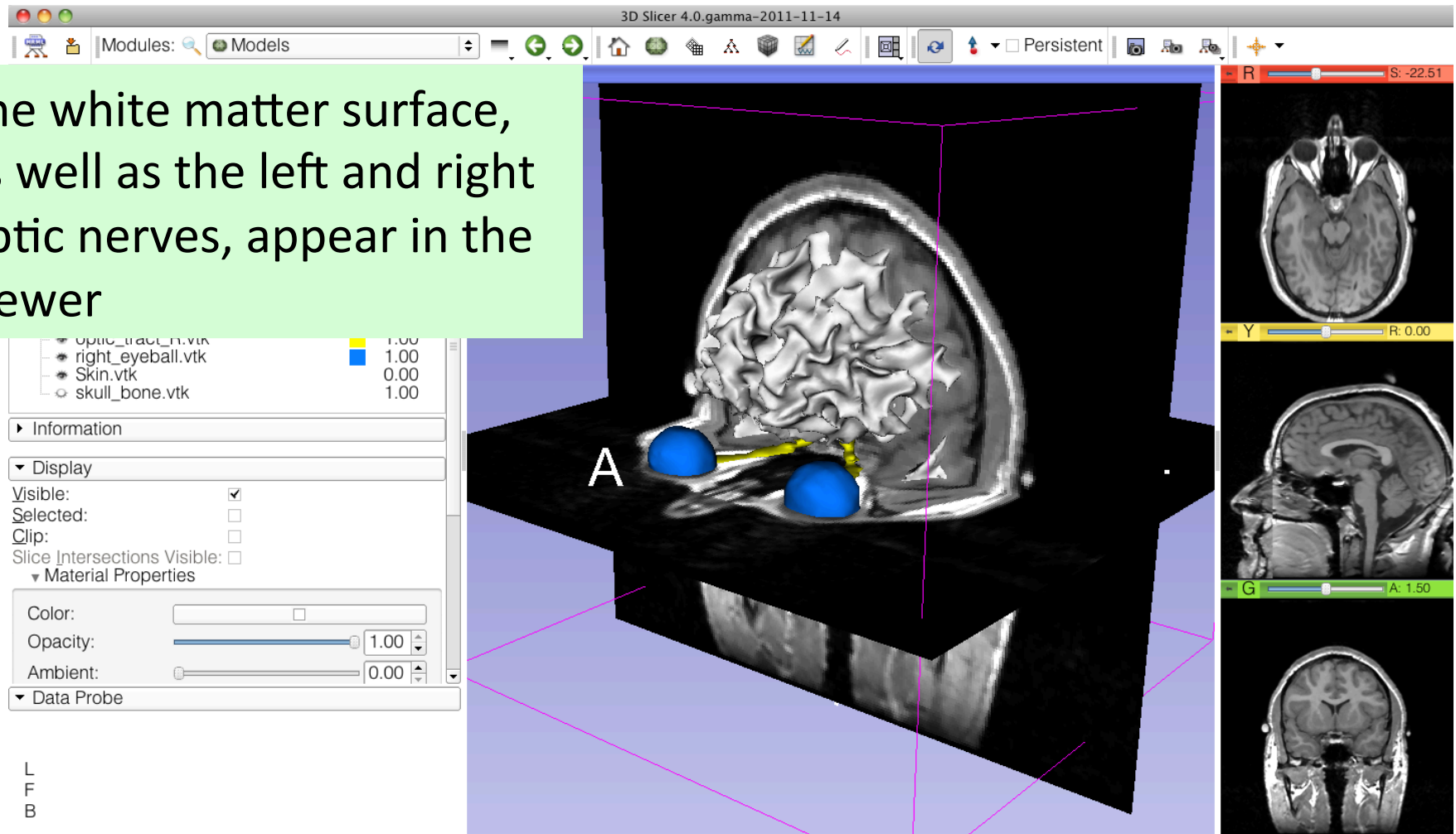
3D Visualization

Turn off the visibility of the skull to display the brain white matter model



3D Visualization

The white matter surface, as well as the left and right optic nerves, appear in the viewer



3D Visualization

Select the **hemispheric_white_matter.vtk** model, and check **Clip** in the Display options tab.

3DSlicer

Scene

- hemispheric_white_matter.vtk 1.00
- left_eyeball.vtk 1.00
- optic_chiasm.vtk 1.00
- optic_nerve_L.vtk 1.00
- optic_nerve_R.vtk 1.00
- optic_tract_L.vtk 1.00
- optic_tract_R.vtk 1.00
- right_eyeball.vtk 1.00
- Skin.vtk 0.00
- skull_bone.vtk 1.00

Information

Display

Visible:

Selected:

Clip:

Slice Intersections Visible:

Material Properties

Color:

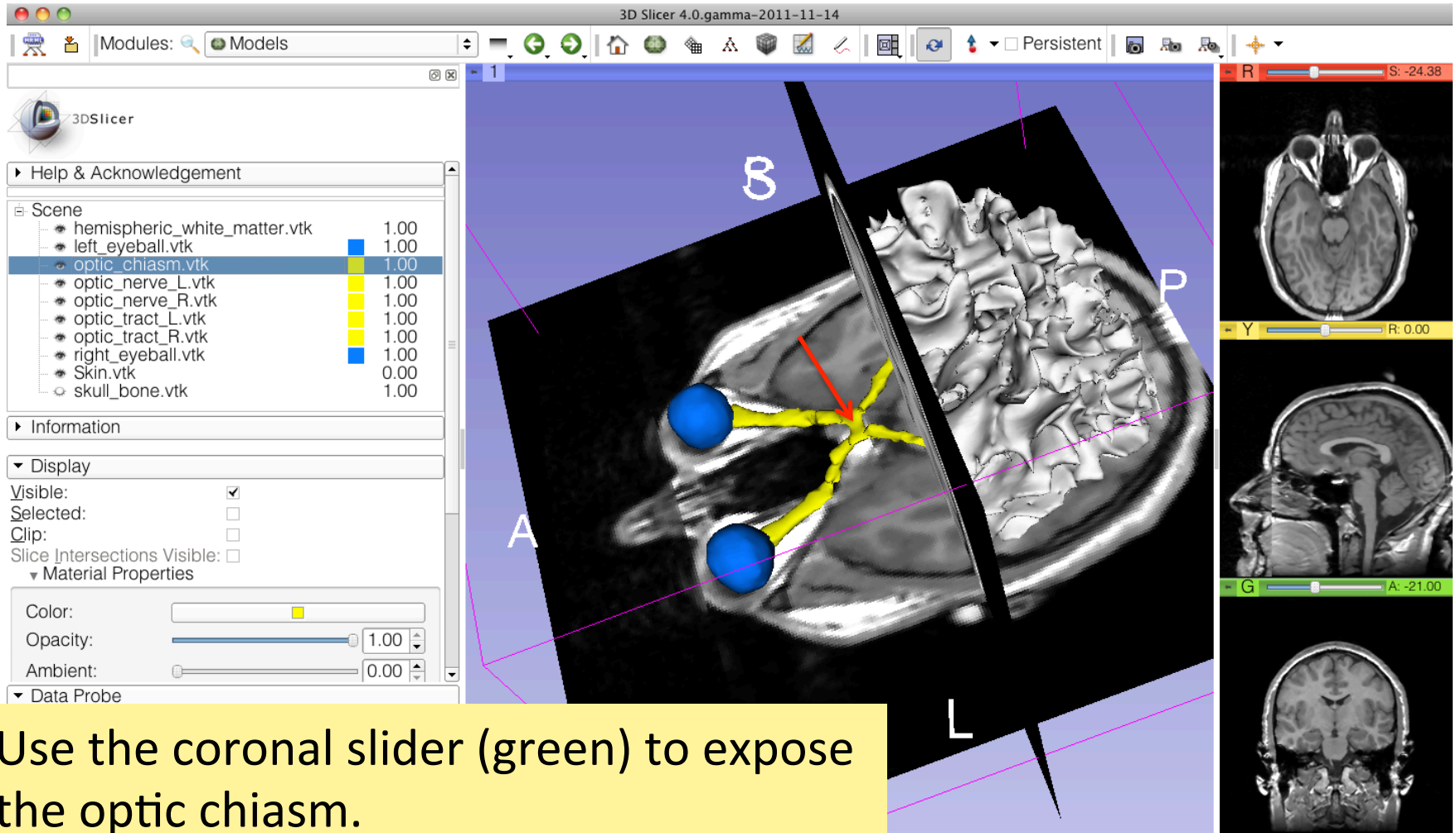
Opacity:

Ambient:

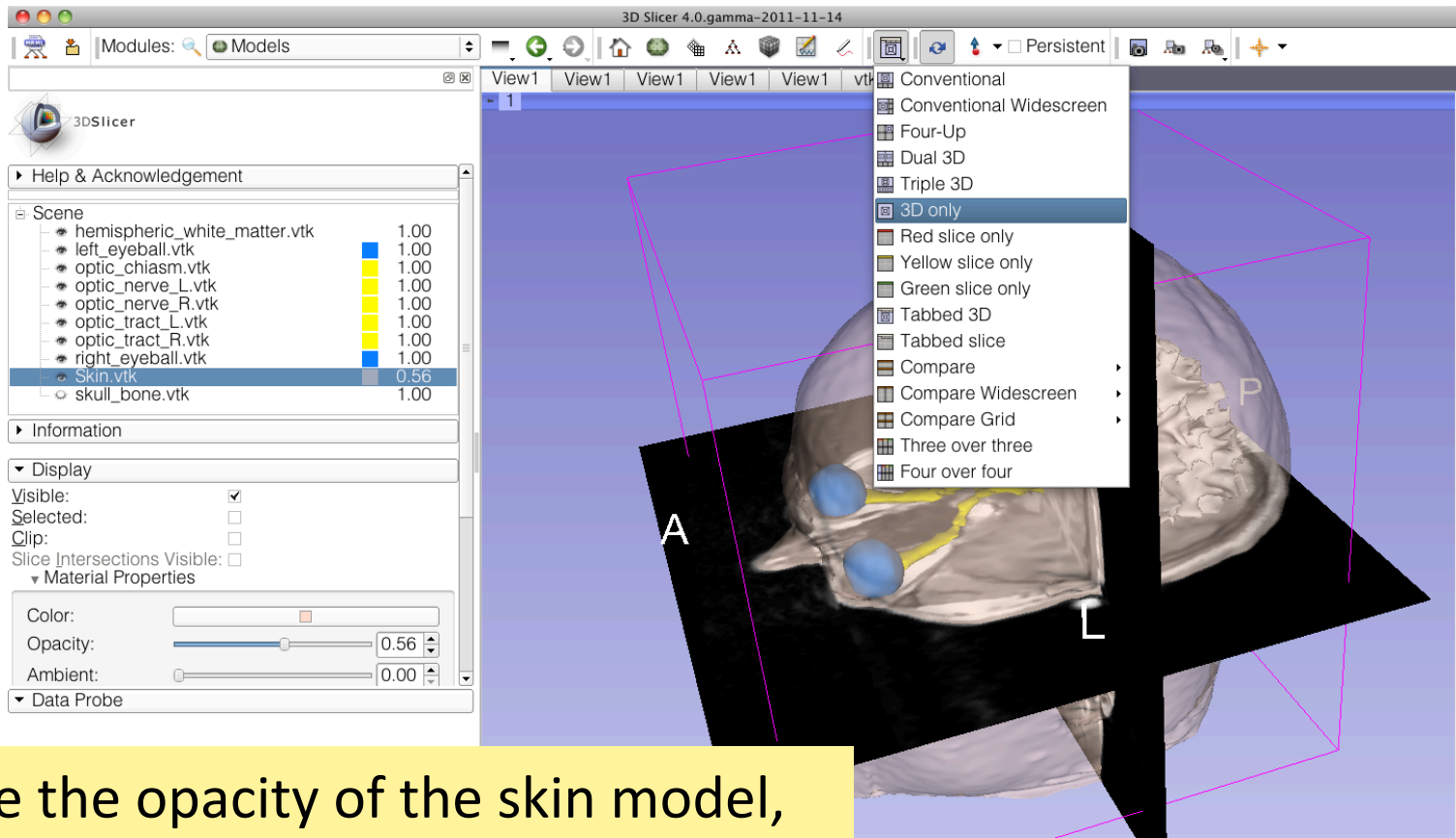
Data Probe

L
F
B

3D Visualization

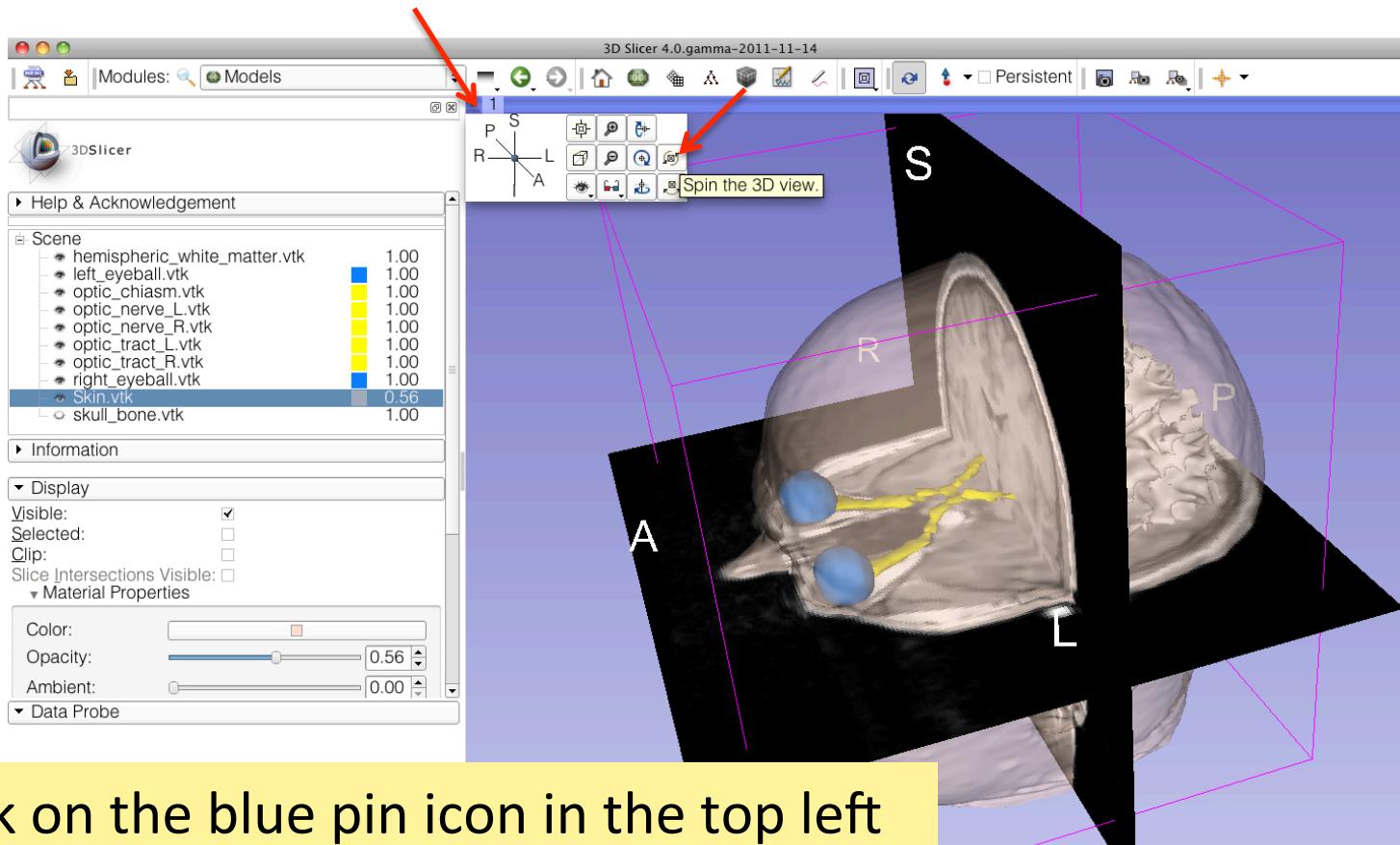


3D Visualization



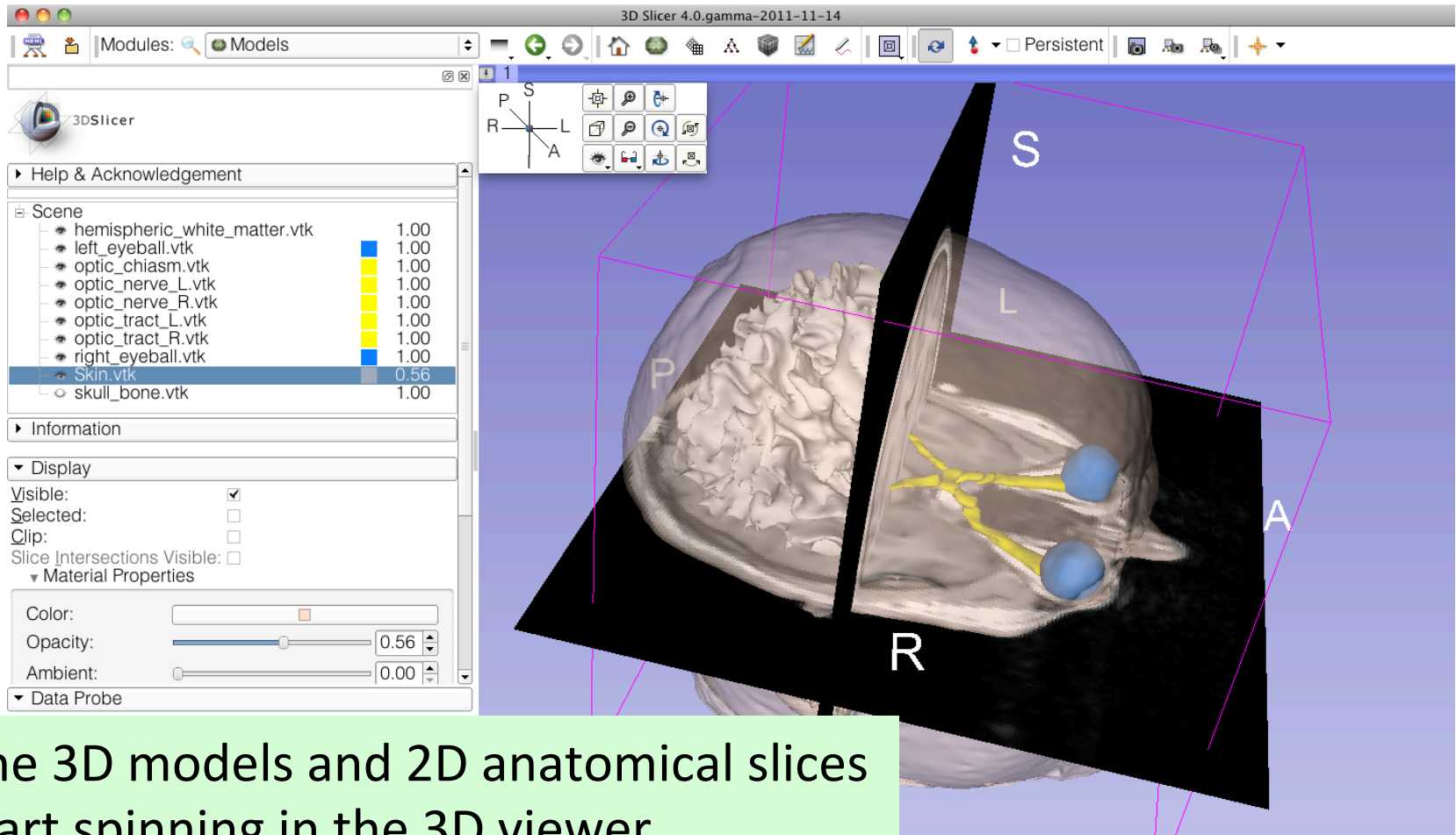
Increase the opacity of the skin model, and select the viewing mode '3D only'

3D Visualization



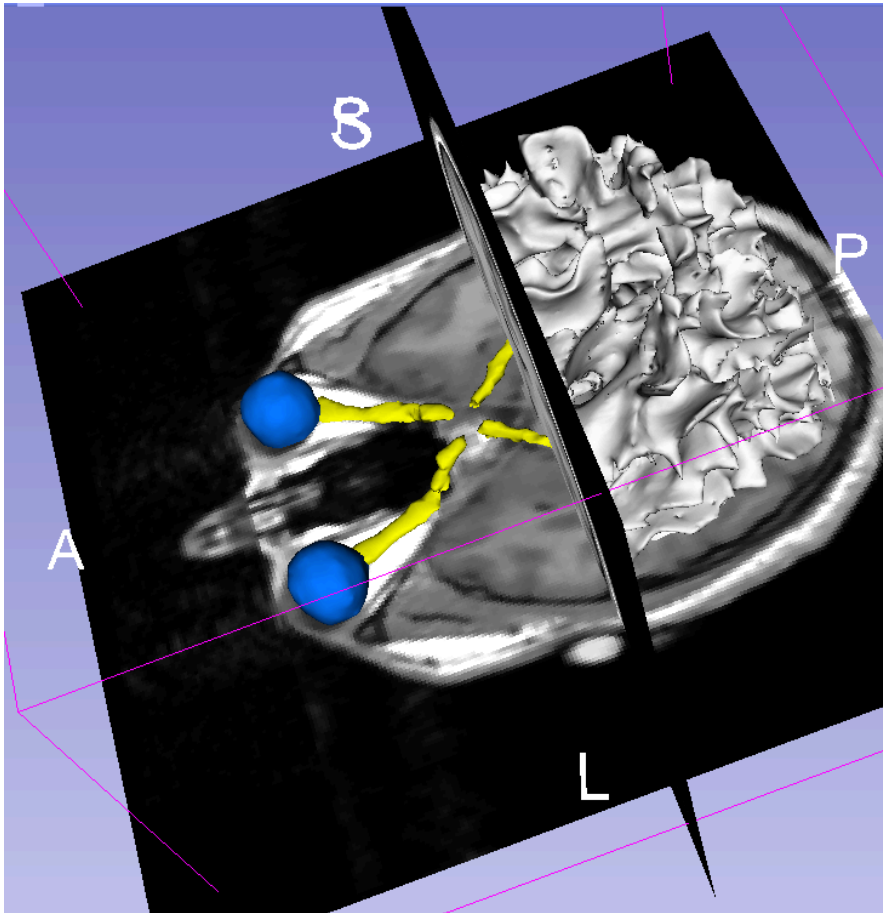
Click on the blue pin icon in the top left corner of the 3D viewer, and click on the Spin icon.

3D Visualization



The 3D models and 2D anatomical slices start spinning in the 3D viewer. Click a second time on the spin icon to stop the models from spinning.

Slicer4 minute tutorial



This tutorial was a short introduction to the 3D visualization capabilities of Slicer.

Please visit the Slicer4 training compendium for more information on the software.

<http://www.slicer.org/slicerWiki/index.php/Documentation/4.0/Training>

Acknowledgments



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Neuroimage Analysis Center

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