



*Leonardo da Vinci (1452-1519), Virgin and Child
Alte Pinakothek, München*

Data Loading & 3D Visualization

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Harvard Medical School

- An **end-user application** for image analysis
- An **open-source environment** for software development
- A software platform that is both **easy to use** for clinical researchers and **easy to extend** for programmers





Slicer3

- Slicer3 is a **multi-platform** software that is developed and maintained on:
 - Windows XP
 - Linux x86_64
 - Linux x86
 - Mac OSX – Darwin x86-Intel
 - Mac OSX – Darwin Power PC



Download Slicer3.4

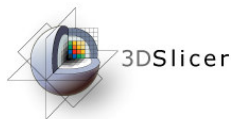
- Download and install the Slicer3.4 software from the Slicer web site

<http://www.slicer.org/pages/Special:SlicerDownloads>



Disclaimer

It is the responsibility of the user of 3DSlicer to comply with both the terms of the license and with the applicable laws, regulations and rules.



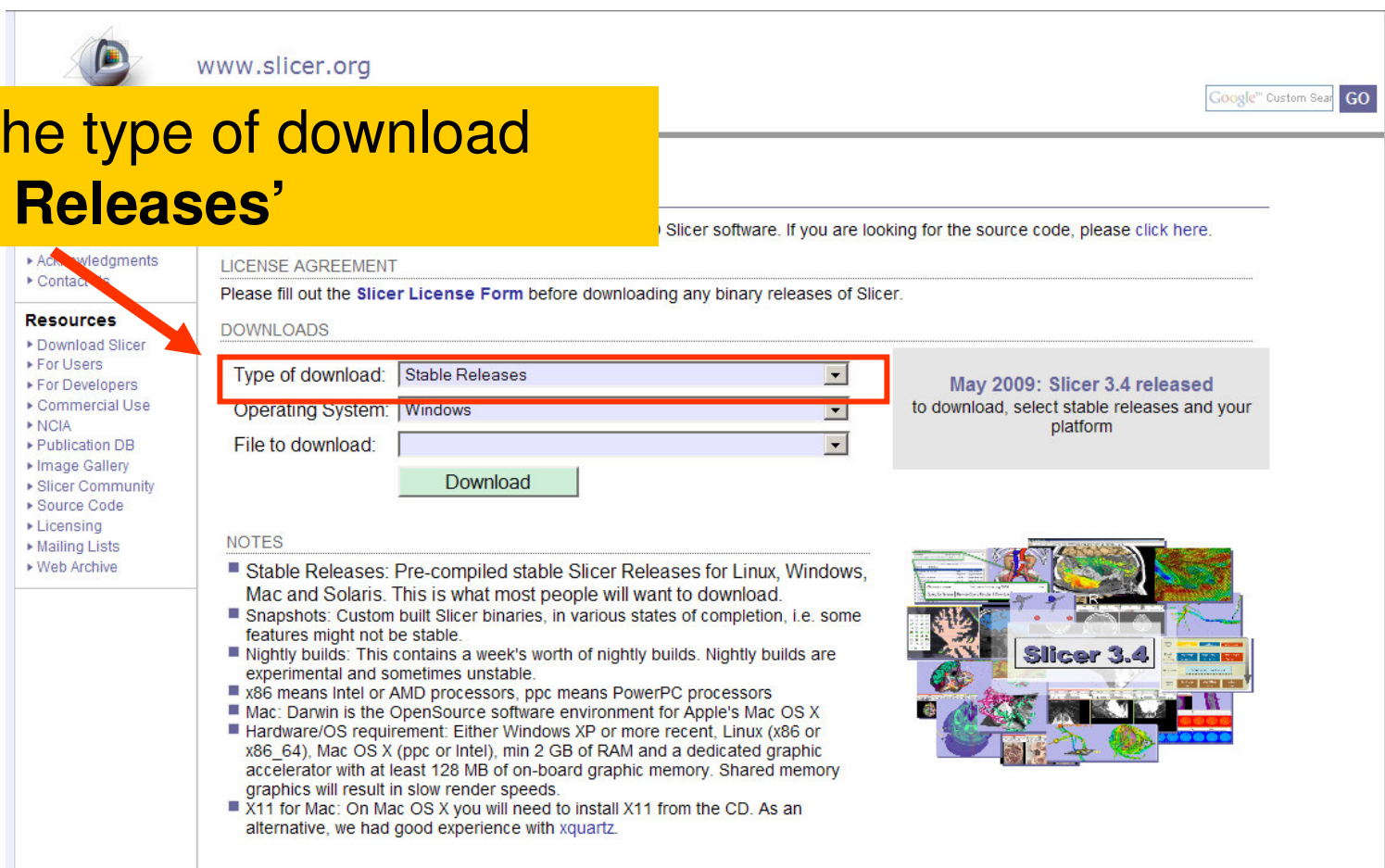
Download Slicer3.4

The screenshot shows the Slicer Downloads page on www.slicer.org. The page features a navigation menu on the left with sections for 'About Slicer' and 'Resources'. The main content area is titled 'Slicer Downloads' and includes a 'LICENSE AGREEMENT' section, a 'DOWNLOADS' section with dropdown menus for 'Type of download' (set to 'Stable Releases'), 'Operating System' (set to 'Windows'), and 'File to download', followed by a 'Download' button. A grey box on the right contains the text: 'May 2009: Slicer 3.4 released to download, select stable releases and your platform'. Below the download options is a 'NOTES' section with two bullet points: 'Stable Releases: Pre-compiled stable Slicer Releases for Linux, Windows, Mac and Solaris. This is what most people will want to download.' and 'Snapshots: Custom built Slicer binaries, in various states of completion, i.e. some features might not be stable.' A collage of medical image analysis screenshots is visible at the bottom right of the page.

Slicer3 is under active development by the medical research community. Frequent releases incorporating cutting-edge medical image analysis capabilities. This tutorial uses the current stable **Slicer3.4 release version.**

Download Slicer3.4

Select the type of download
'Stable Releases'



The screenshot shows the website www.slicer.org with a search bar and a navigation menu. A yellow callout box highlights the instruction to select 'Stable Releases' from the 'Type of download' dropdown menu. The dropdown menu is currently set to 'Stable Releases'. Below the dropdown menu, there are fields for 'Operating System' (set to 'Windows') and 'File to download'. A green 'Download' button is visible. A grey box on the right side of the page contains the text: 'May 2009: Slicer 3.4 released to download, select stable releases and your platform'. Below this box is a collage of images showing various 3D medical models and software interfaces, with 'Slicer 3.4' prominently displayed in the center.

www.slicer.org

Google Custom Search GO

Slicer software. If you are looking for the source code, please [click here](#).

Resources

- ▶ Acknowledgments
- ▶ Contact Us
- ▶ Download Slicer
- ▶ For Users
- ▶ For Developers
- ▶ Commercial Use
- ▶ NCIA
- ▶ Publication DB
- ▶ Image Gallery
- ▶ Slicer Community
- ▶ Source Code
- ▶ Licensing
- ▶ Mailing Lists
- ▶ Web Archive

LICENSE AGREEMENT

Please fill out the [Slicer License Form](#) before downloading any binary releases of Slicer.

DOWNLOADS

Type of download: Stable Releases

Operating System: Windows

File to download:

Download

NOTES

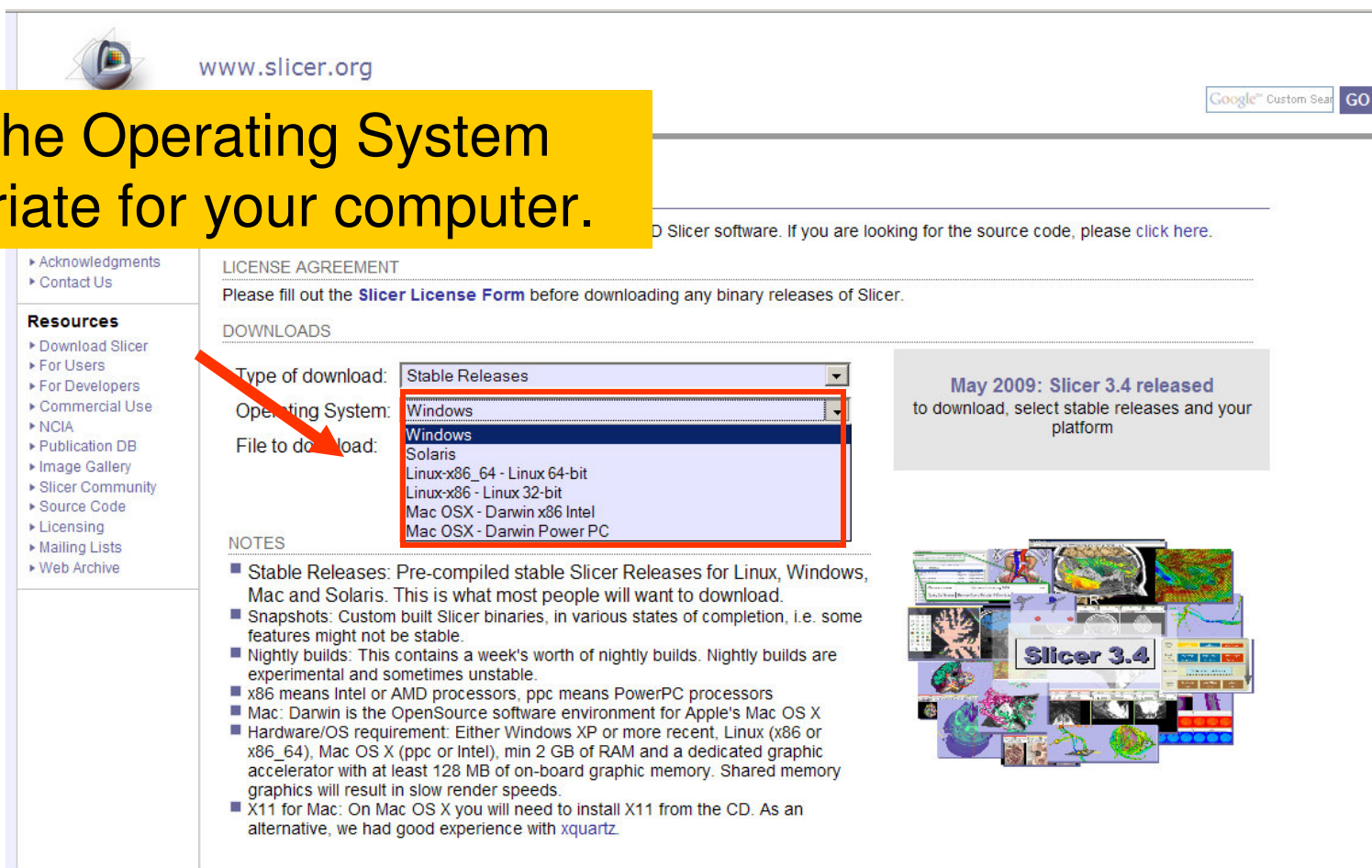
- **Stable Releases:** Pre-compiled stable Slicer Releases for Linux, Windows, Mac and Solaris. This is what most people will want to download.
- **Snapshots:** Custom built Slicer binaries, in various states of completion, i.e. some features might not be stable.
- **Nightly builds:** This contains a week's worth of nightly builds. Nightly builds are experimental and sometimes unstable.
- **x86** means Intel or AMD processors, **ppc** means PowerPC processors
- **Mac:** Darwin is the OpenSource software environment for Apple's Mac OS X
- **Hardware/OS requirement:** Either Windows XP or more recent, Linux (x86 or x86_64), Mac OS X (ppc or Intel), min 2 GB of RAM and a dedicated graphic accelerator with at least 128 MB of on-board graphic memory. Shared memory graphics will result in slow render speeds.
- **X11 for Mac:** On Mac OS X you will need to install X11 from the CD. As an alternative, we had good experience with [xquartz](#).

May 2009: Slicer 3.4 released
to download, select stable releases and your platform

Slicer 3.4

Download Slicer3.4

Select the Operating System appropriate for your computer.



The screenshot shows the website www.slicer.org with a navigation menu on the left and a main content area. A yellow callout box highlights the instruction: "Select the Operating System appropriate for your computer." The "Downloads" section features a form with the following fields:

- Type of download: Stable Releases
- Operating System: Windows (selected)
- File to download: (dropdown menu open)

The dropdown menu for "File to download" lists the following options:

- Windows
- Solaris
- Linux-x86_64 - Linux 64-bit
- Linux-x86 - Linux 32-bit
- Mac OSX - Darwin x86 Intel
- Mac OSX - Darwin Power PC

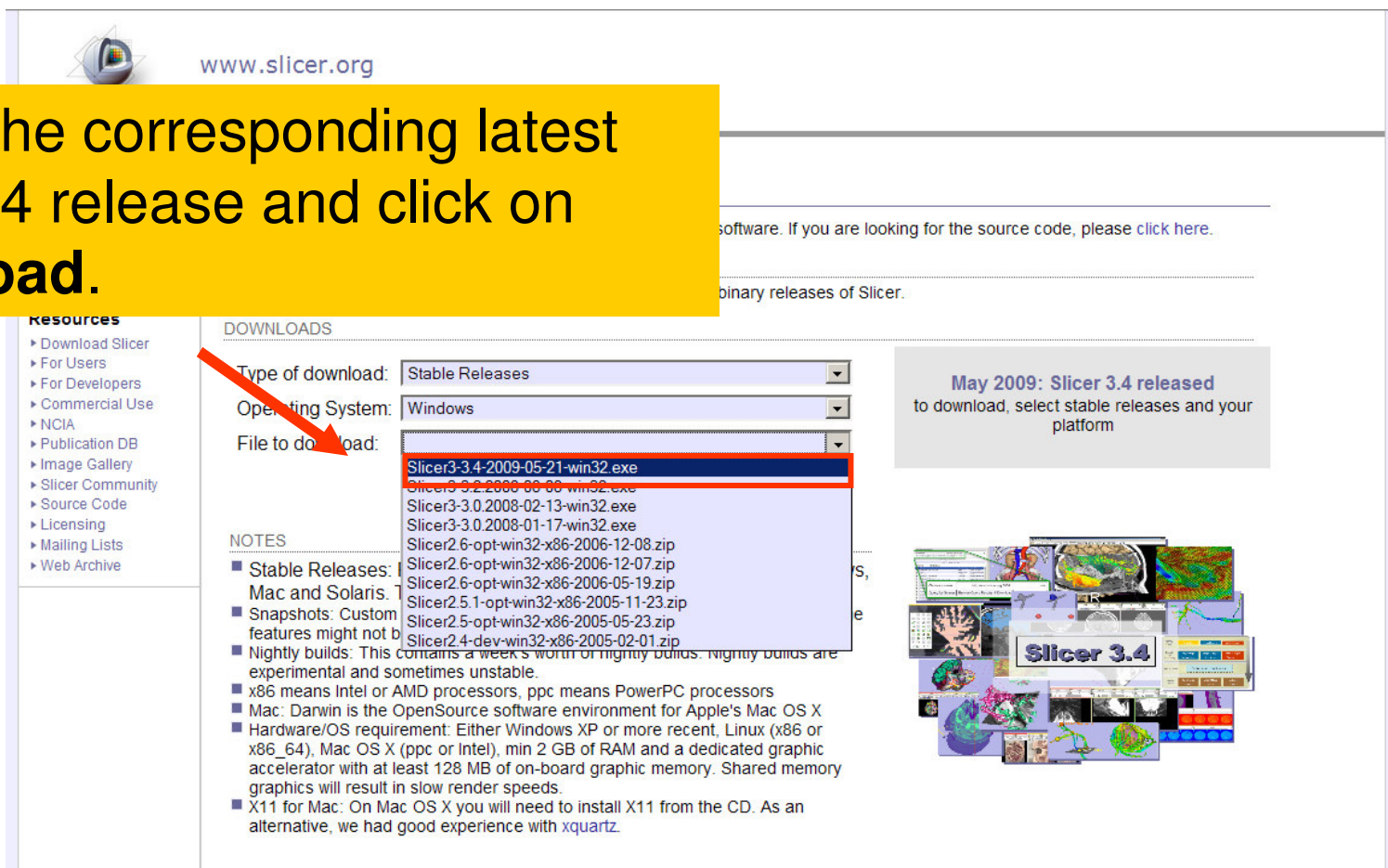
The "Notes" section contains the following information:

- Stable Releases:** Pre-compiled stable Slicer Releases for Linux, Windows, Mac and Solaris. This is what most people will want to download.
- Snapshots:** Custom built Slicer binaries, in various states of completion, i.e. some features might not be stable.
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- X11 for Mac:** On Mac OS X you will need to install X11 from the CD. As an alternative, we had good experience with `xquartz`.

A grey box on the right side of the page states: "May 2009: Slicer 3.4 released to download, select stable releases and your platform". Below this box is a collage of images showing various 3D medical models and software interfaces, with "Slicer 3.4" prominently displayed in the center.

Download Slicer3.4

Select the corresponding latest Slicer3.4 release and click on **Download.**



The screenshot shows the website www.slicer.org with a navigation menu on the left and a 'DOWNLOADS' section. The 'Type of download' is set to 'Stable Releases' and the 'Operating System' is set to 'Windows'. The 'File to download' dropdown menu is open, showing a list of files. The file 'Slicer3-3.4-2009-05-21-win32.exe' is highlighted with a red box and a red arrow pointing to it. Below the dropdown menu, there is a 'NOTES' section with several bullet points. To the right of the dropdown menu, there is a grey box with the text 'May 2009: Slicer 3.4 released to download, select stable releases and your platform'. Below this box is a collage of images related to Slicer 3.4, including a 3D model of a hand, a 3D model of a brain, and a 3D model of a heart.

Resources

- ▶ Download Slicer
- ▶ For Users
- ▶ For Developers
- ▶ Commercial Use
- ▶ NCIA
- ▶ Publication DB
- ▶ Image Gallery
- ▶ Slicer Community
- ▶ Source Code
- ▶ Licensing
- ▶ Mailing Lists
- ▶ Web Archive

DOWNLOADS

Type of download: Stable Releases

Operating System: Windows


File to download:

- Slicer3-3.4-2009-05-21-win32.exe
- Slicer3-3.2-2008-08-08-win32.exe
- Slicer3-3.0-2008-02-13-win32.exe
- Slicer3-3.0-2008-01-17-win32.exe
- Slicer2.6-opt-win32-x86-2006-12-08.zip
- Slicer2.6-opt-win32-x86-2006-12-07.zip
- Slicer2.6-opt-win32-x86-2006-05-19.zip
- Slicer2.5.1-opt-win32-x86-2005-11-23.zip
- Slicer2.5-opt-win32-x86-2005-05-23.zip
- Slicer2.4-dev-win32-x86-2005-02-01.zip

NOTES

- Stable Releases: Mac and Solaris.
- Snapshots: Custom features might not be available.
- Nightly builds: This contains a week's worth of nightly builds. Nightly builds are experimental and sometimes unstable.
- x86 means Intel or AMD processors, ppc means PowerPC processors
- Mac: Darwin is the OpenSource software environment for Apple's Mac OS X
- Hardware/OS requirement: Either Windows XP or more recent, Linux (x86 or x86_64), Mac OS X (ppc or Intel), min 2 GB of RAM and a dedicated graphic accelerator with at least 128 MB of on-board graphic memory. Shared memory graphics will result in slow render speeds.
- X11 for Mac: On Mac OS X you will need to install X11 from the CD. As an alternative, we had good experience with [xquartz](#).

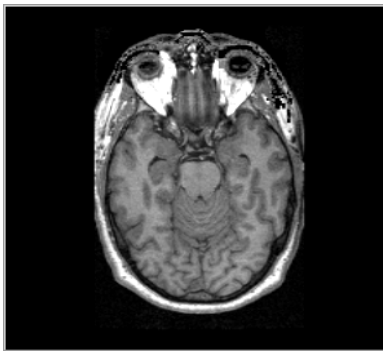
May 2009: Slicer 3.4 released to download, select stable releases and your platform



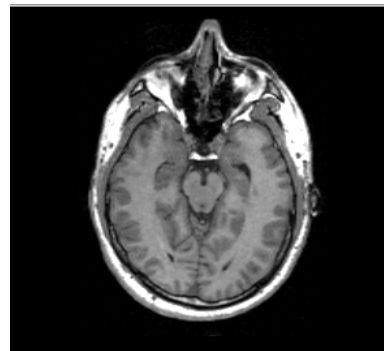


Download the training dataset

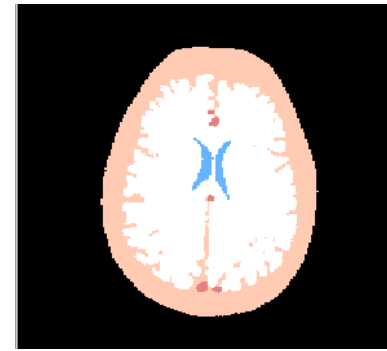
- This course is built upon three datasets of a single healthy subject brain:



MR DICOM
GRASS



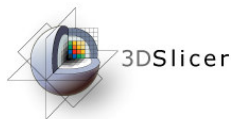
MR Nrrd
SPGR



Pre-computed
Label Map

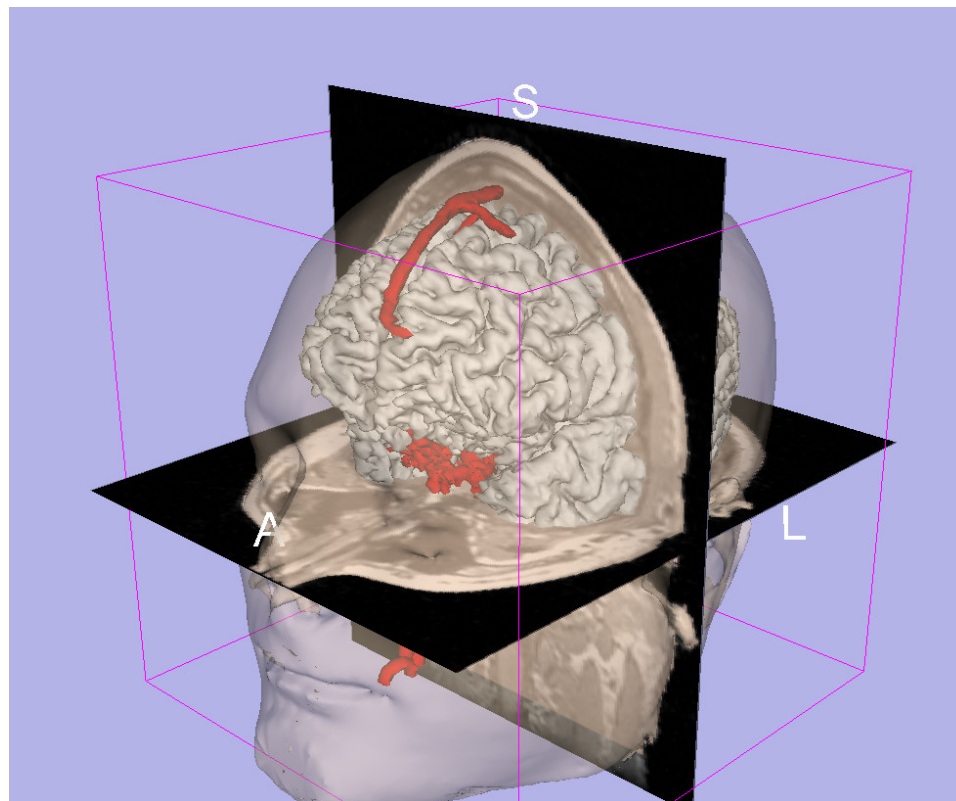
- Download and unzip the training dataset
Slicer3VisualizationDataset.zip

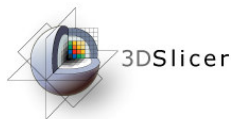
<http://www.slicer.org/slicerWiki/index.php/Slicer3.4:Training>



Learning objective

Following this tutorial, you'll be able to **load and visualize volumes** within Slicer3, and to **interact in 3D** with structural images and models.

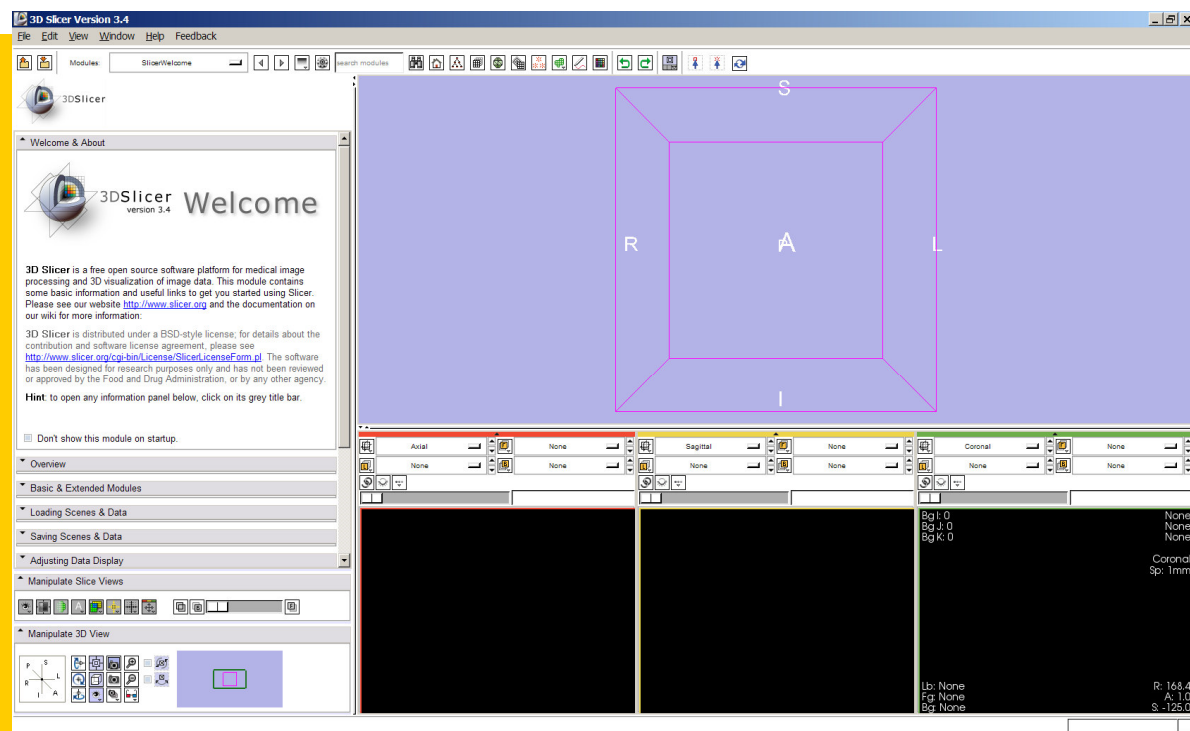


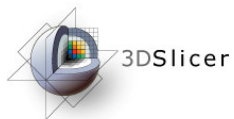


Start Slicer3

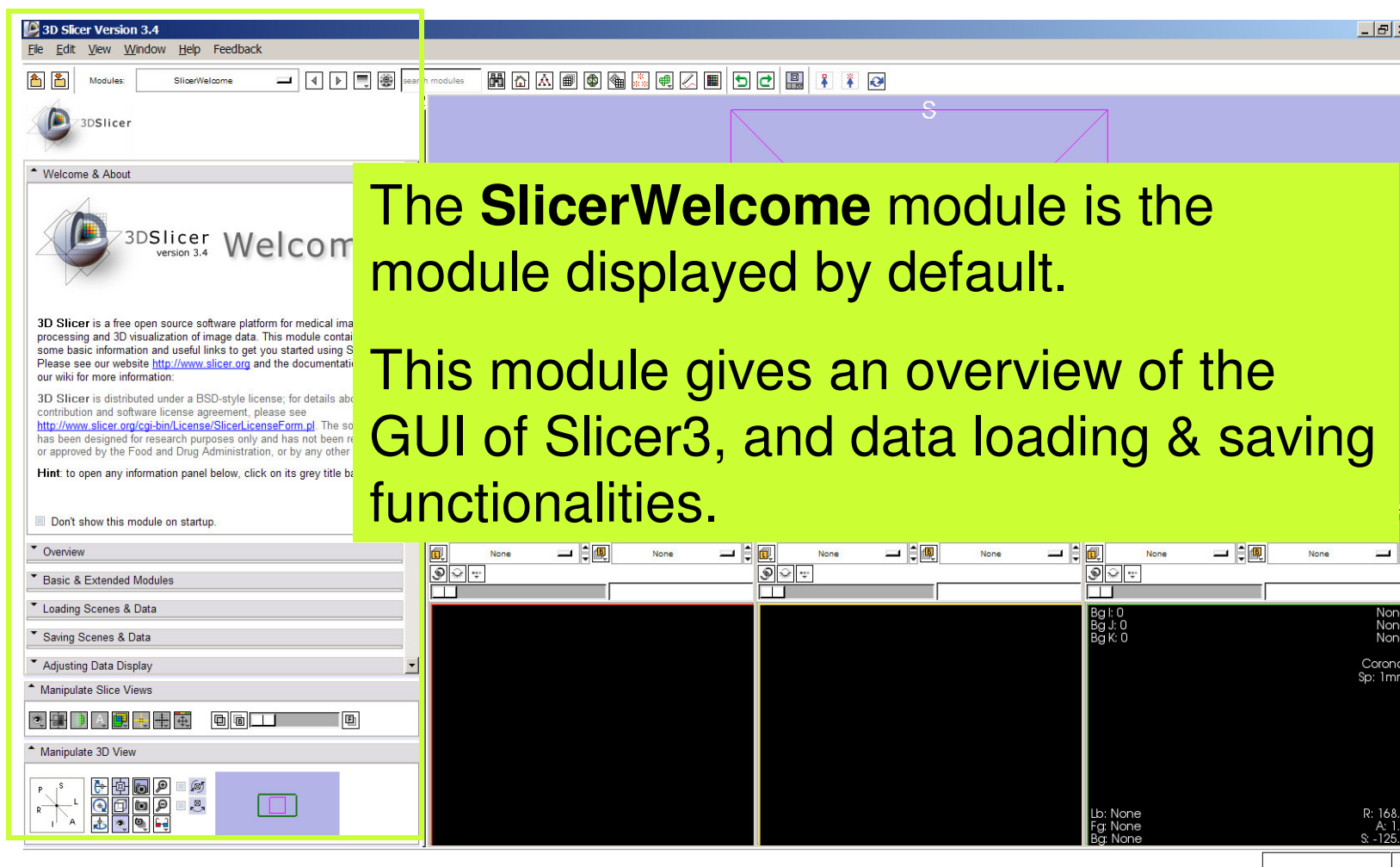
Linux/Mac users
Launch the Slicer3
executable located in
the Slicer3.4 directory

Windows users
Select
Start → All Programs
→ Slicer3 3.4 2009-05-21 → Slicer3





Slicer Welcome

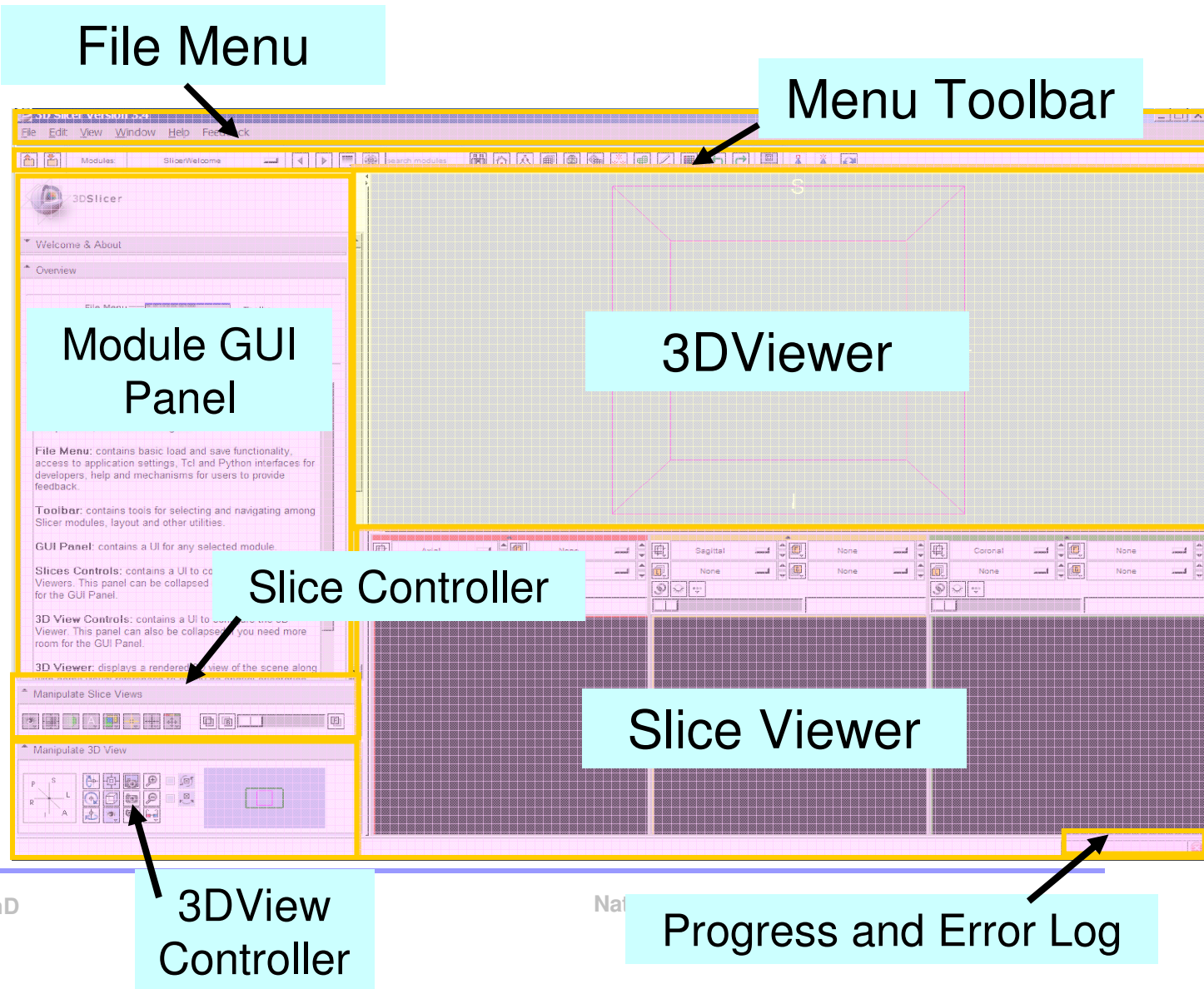




Slicer3 GUI

The Graphical User Interface (GUI) of Slicer3.4 integrates 8 main components:

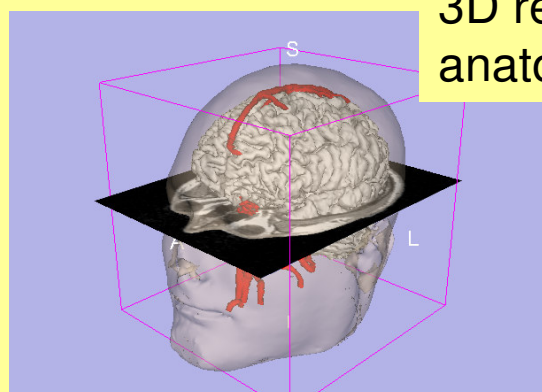
- the File Menu
- the Menu Toolbar
- the Module GUI Panel
- the 3D Viewer
- the Slice Viewer
- the Slice Controller
- the 3D View Controller



Part 1. Loading and visualizing multiple volumes simultaneously



Part 3. Visualizing 3D reconstructions of anatomical surfaces



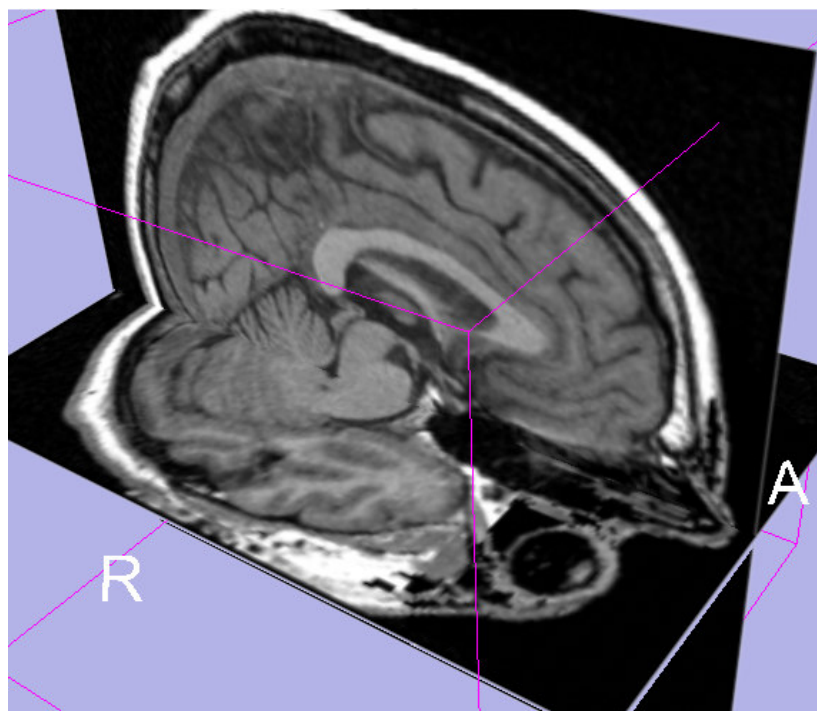
Part 2. Loading and visualizing segmented structures overlaid on grayscale images



Part 4. The lightbox viewer



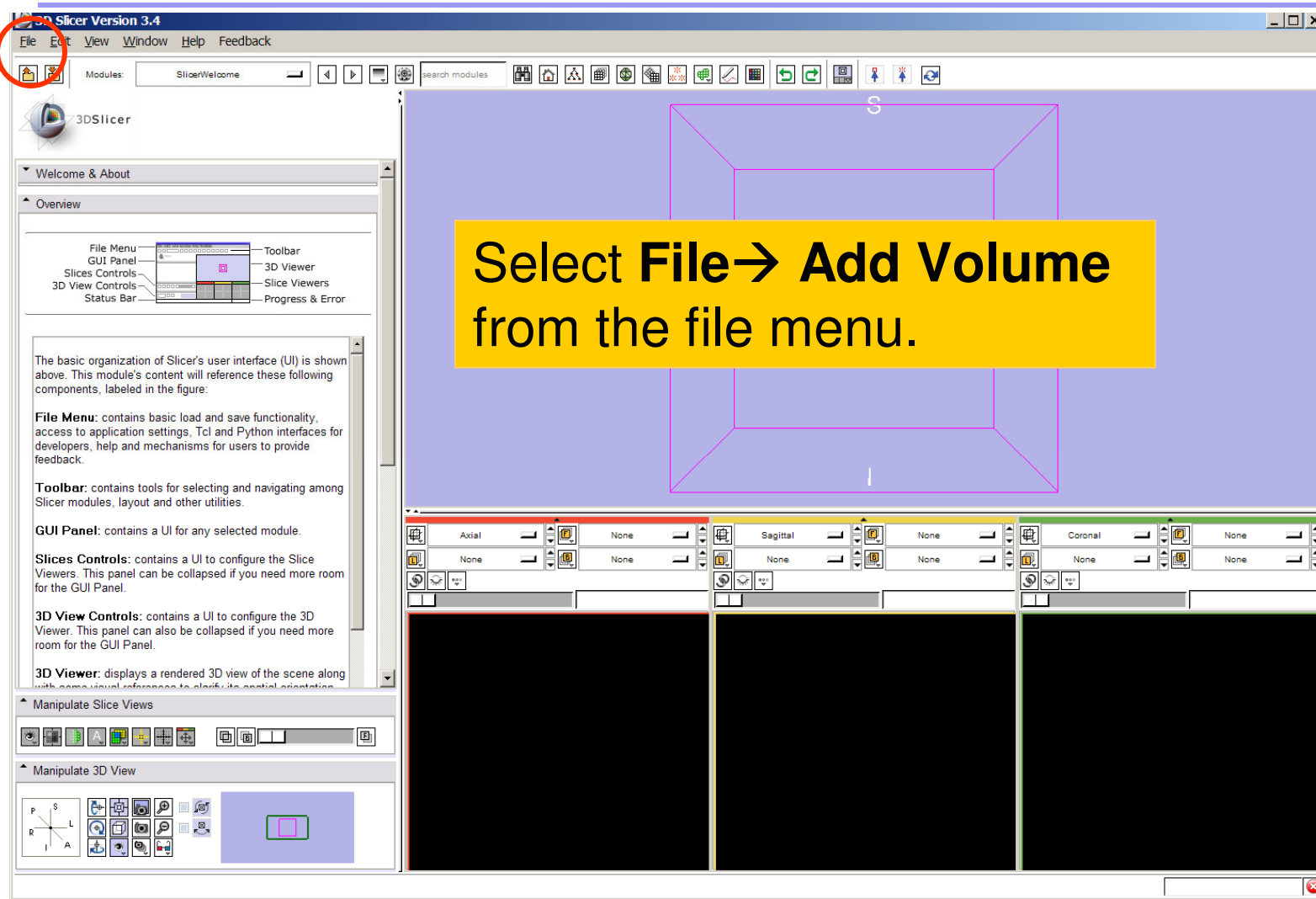
Part 5. Saving data



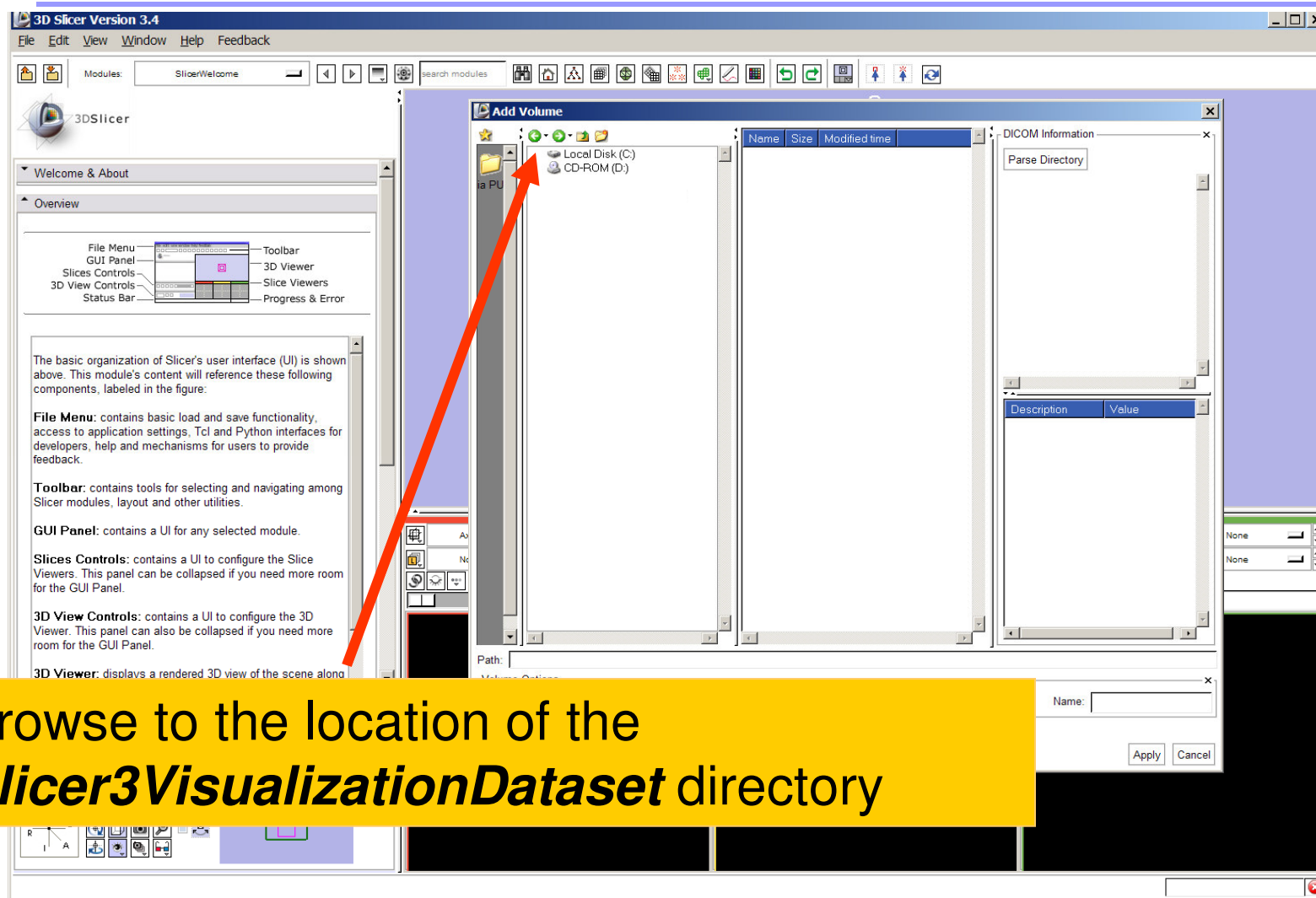
Part 1: Loading and visualizing multiple volumes simultaneously



Loading Volumes

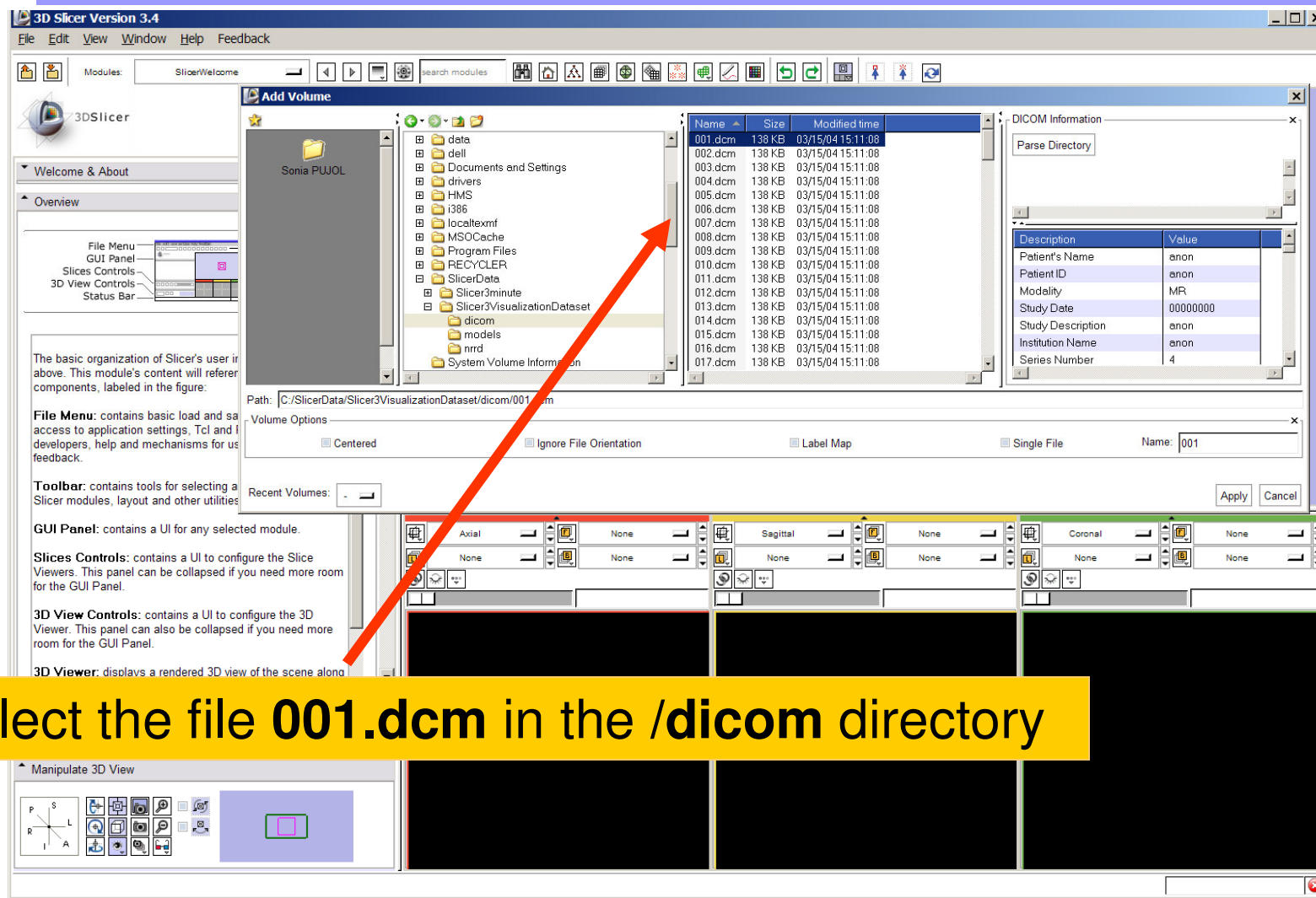


Loading Volumes



Browse to the location of the *Slicer3VisualizationDataset* directory

Loading Volumes



3D Slicer Version 3.4

File Edit View Window Help Feedback

Modules: SlicerWelcome

3DSlicer

Welcome & About

Overview

File Menu
GUI Panel
Slices Controls
3D View Controls
Status Bar

The basic organization of Slicer's user interface is shown above. This module's content will refer to components, labeled in the figure:

File Menu: contains basic load and save, access to application settings, Tcl and Python console, help and mechanisms for user feedback.

Toolbar: contains tools for selecting a module, layout and other utilities.

GUI Panel: contains a UI for any selected module.

Slices Controls: contains a UI to configure the Slice Viewers. This panel can be collapsed if you need more room for the GUI Panel.

3D View Controls: contains a UI to configure the 3D Viewer. This panel can also be collapsed if you need more room for the GUI Panel.

3D Viewer: displays a rendered 3D view of the scene along with the slice views.

Path: C:/SlicerData/Slicer3VisualizationDataset/dicom/001.dcm

Name	Size	Modified time
001.dcm	138 KB	03/15/04 15:11:08
002.dcm	138 KB	03/15/04 15:11:08
003.dcm	138 KB	03/15/04 15:11:08
004.dcm	138 KB	03/15/04 15:11:08
005.dcm	138 KB	03/15/04 15:11:08
006.dcm	138 KB	03/15/04 15:11:08
007.dcm	138 KB	03/15/04 15:11:08
008.dcm	138 KB	03/15/04 15:11:08
009.dcm	138 KB	03/15/04 15:11:08
010.dcm	138 KB	03/15/04 15:11:08
011.dcm	138 KB	03/15/04 15:11:08
012.dcm	138 KB	03/15/04 15:11:08
013.dcm	138 KB	03/15/04 15:11:08
014.dcm	138 KB	03/15/04 15:11:08
015.dcm	138 KB	03/15/04 15:11:08
016.dcm	138 KB	03/15/04 15:11:08
017.dcm	138 KB	03/15/04 15:11:08

DICOM Information

Parse Directory

Description	Value
Patient's Name	anon
Patient ID	anon
Modality	MR
Study Date	00000000
Study Description	anon
Institution Name	anon
Series Number	4

Volume Options

Centered Ignore File Orientation Label Map Single File Name: 001

Recent Volumes: -

Apply Cancel

Axial Sagittal Coronal

None None None

None None None

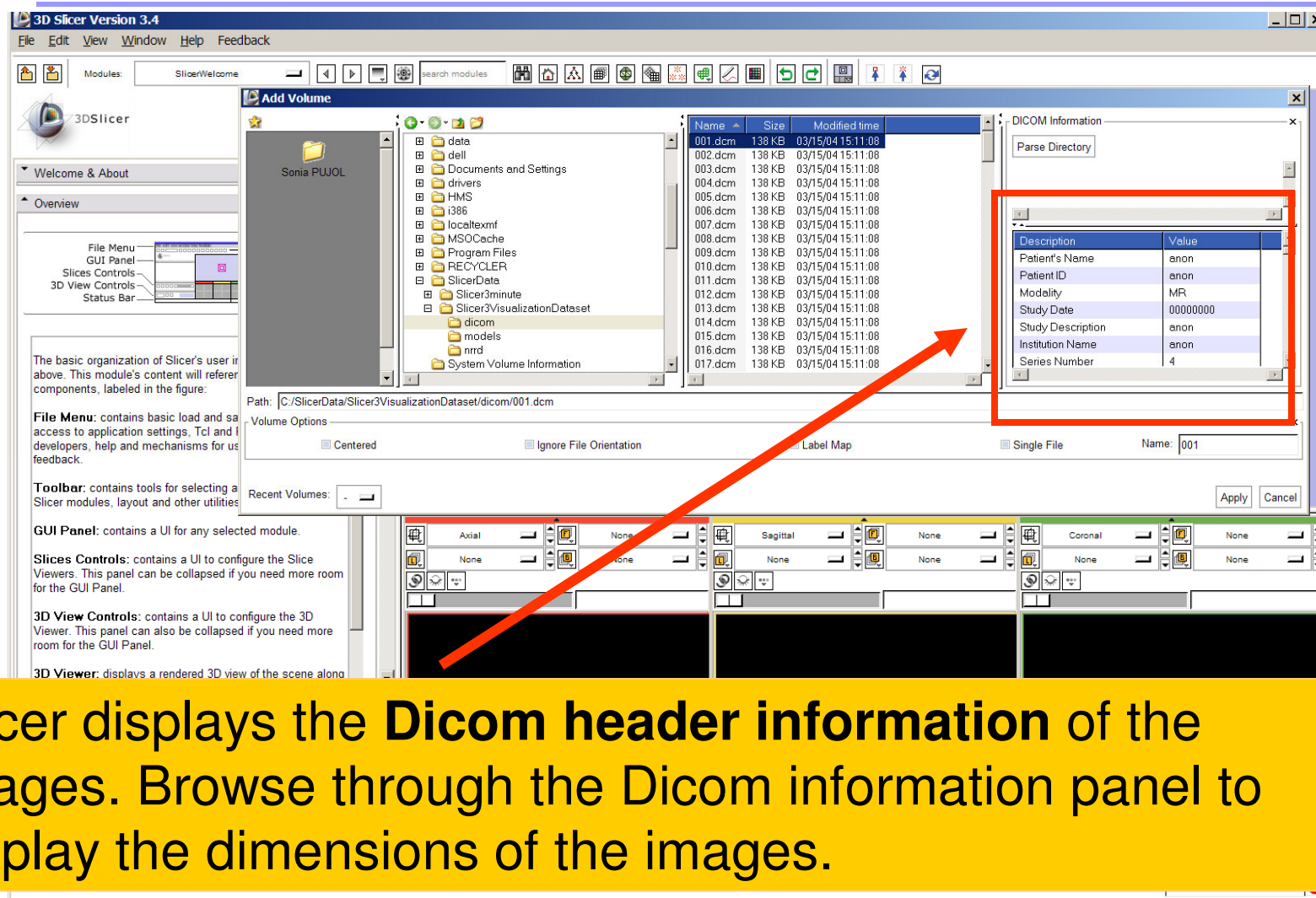
None None None

None None None

Manipulate 3D View

P S L R I A

Loading Volumes



3D Slicer Version 3.4

File Edit View Window Help Feedback

Modules: SlicerWelcome

3DSlicer

Welcome & About

Overview

File Menu
GUI Panel
Slices Controls
3D View Controls
Status Bar

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3D View Controls: contains a UI to configure the 3D Viewer. This panel can also be collapsed if you need more room for the GUI Panel.

3D Viewer: displays a rendered 3D view of the scene along with the slice views.

Add Volume

Name	Size	Modified time
001.dcm	138 KB	03/15/04 15:11:08
002.dcm	138 KB	03/15/04 15:11:08
003.dcm	138 KB	03/15/04 15:11:08
004.dcm	138 KB	03/15/04 15:11:08
005.dcm	138 KB	03/15/04 15:11:08
006.dcm	138 KB	03/15/04 15:11:08
007.dcm	138 KB	03/15/04 15:11:08
008.dcm	138 KB	03/15/04 15:11:08
009.dcm	138 KB	03/15/04 15:11:08
010.dcm	138 KB	03/15/04 15:11:08
011.dcm	138 KB	03/15/04 15:11:08
012.dcm	138 KB	03/15/04 15:11:08
013.dcm	138 KB	03/15/04 15:11:08
014.dcm	138 KB	03/15/04 15:11:08
015.dcm	138 KB	03/15/04 15:11:08
016.dcm	138 KB	03/15/04 15:11:08
017.dcm	138 KB	03/15/04 15:11:08

Path: C:/SlicerData/Slicer3VisualizationDataset/dicom/001.dcm

Volume Options

Centered Ignore File Orientation Label Map Single File Name: 001

Recent Volumes: -

Apply Cancel

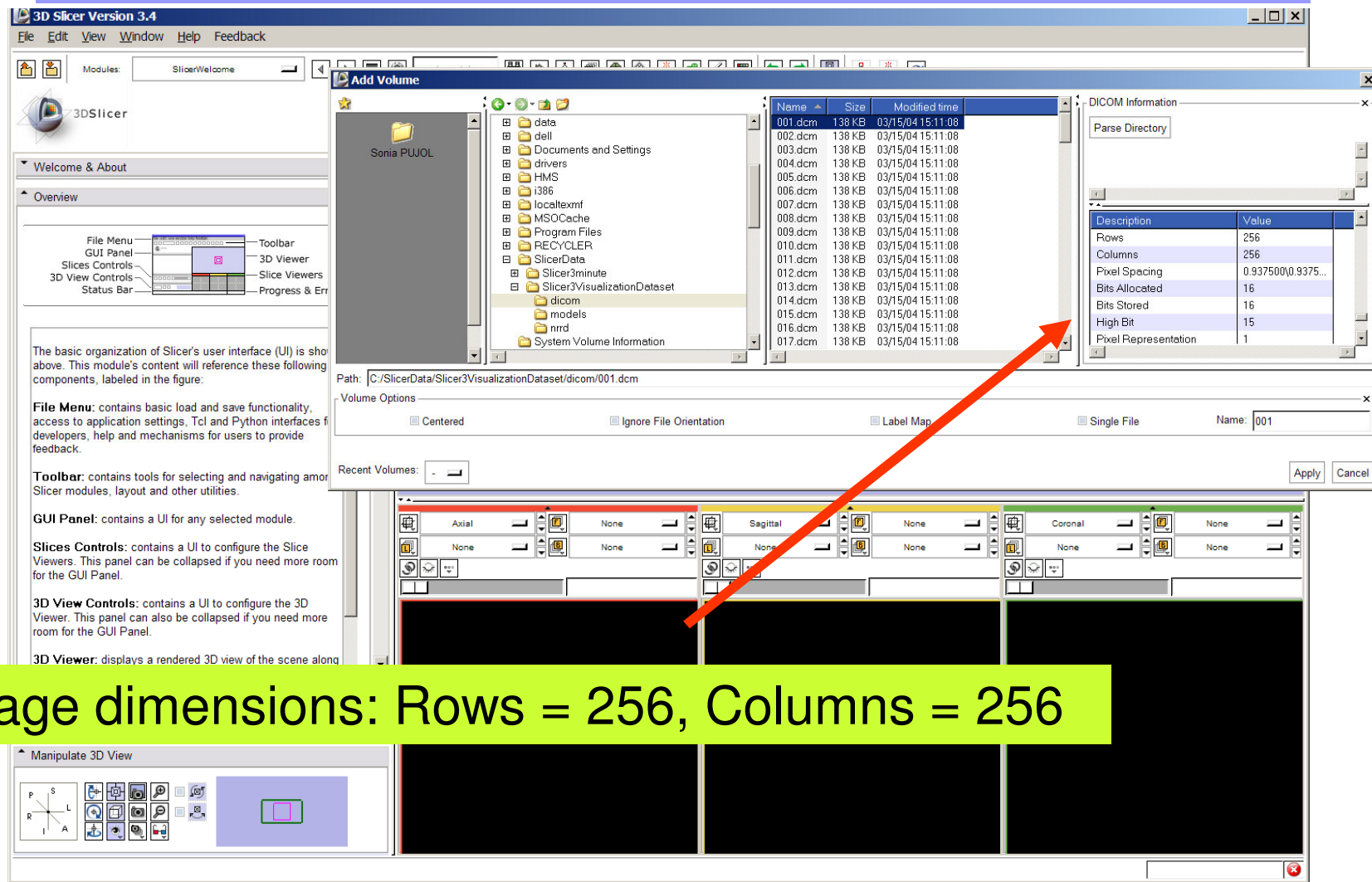
DICOM Information

Parse Directory

Description	Value
Patient's Name	anon
Patient ID	anon
Modality	MR
Study Date	00000000
Study Description	anon
Institution Name	anon
Series Number	4

Slicer displays the **Dicom header information of the images. Browse through the Dicom information panel to display the dimensions of the images.**

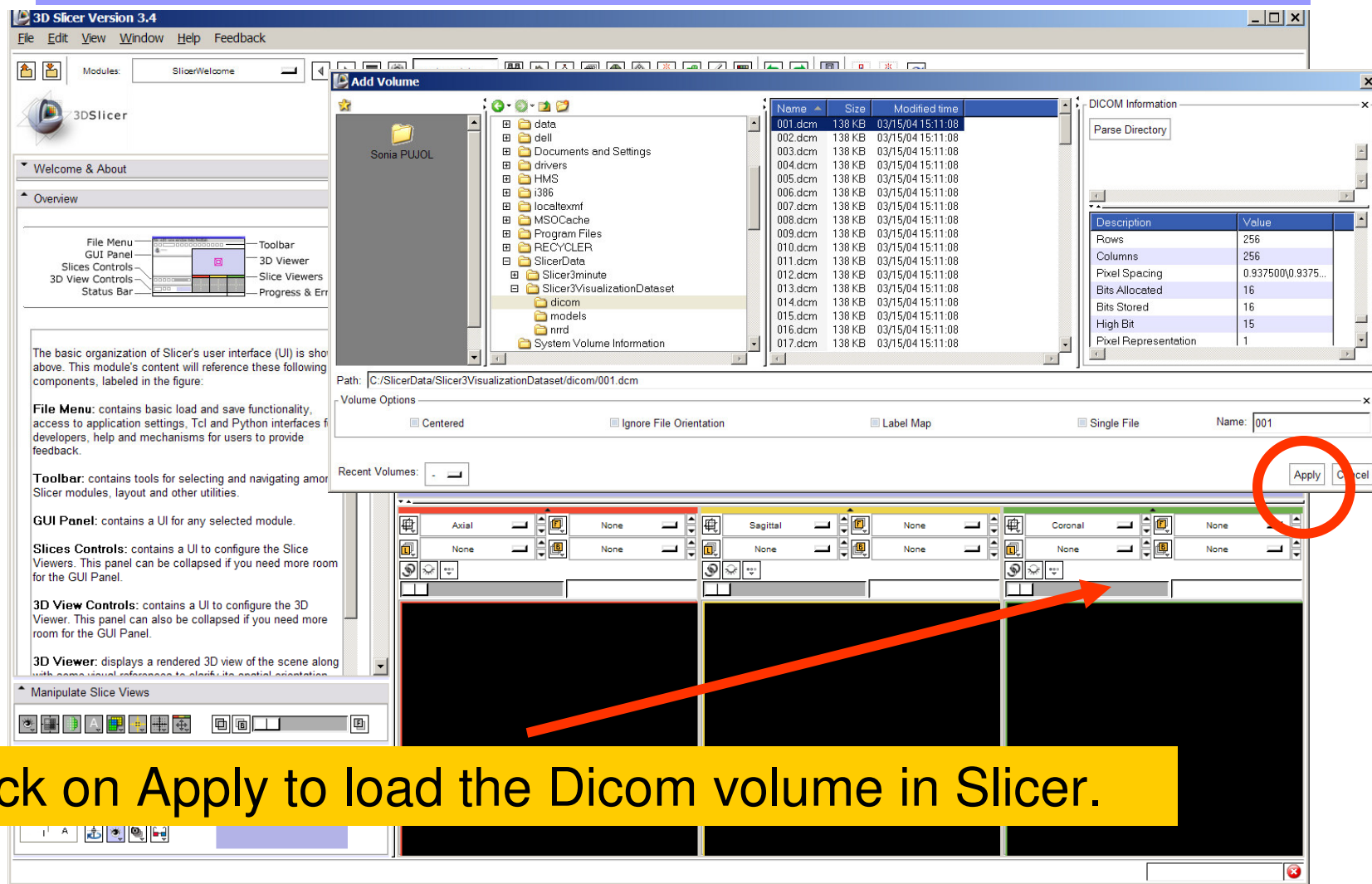
Loading Volumes



The screenshot shows the 3D Slicer 3.4 interface with the 'Add Volume' dialog box open. The dialog displays a file list with columns for Name, Size, and Modified time. The file '001.dcm' is selected. A red arrow points from this file to a yellow callout box. The callout box contains the text: 'Image dimensions: Rows = 256, Columns = 256'. The 'DICOM Information' panel on the right shows the following details:

Description	Value
Rows	256
Columns	256
Pixel Spacing	0.937500 0.9375...
Bits Allocated	16
Bits Stored	16
High Bit	15
Pixel Representation	1

Loading Volumes



The screenshot shows the 3D Slicer 3.4 interface with the 'Add Volume' dialog box open. The dialog displays a file list with columns for Name, Size, and Modified time. The file '001.dcm' is selected. The 'DICOM Information' panel on the right shows details for the selected file, including Rows (256), Columns (256), Pixel Spacing, Bits Allocated (16), Bits Stored (16), High Bit (15), and Pixel Representation (1). The 'Volume Options' section shows 'Single File' selected and 'Name: 001'. The 'Apply' button is circled in red, and a red arrow points to it from a yellow text box at the bottom.

File Menu: contains basic load and save functionality, access to application settings, Tcl and Python interfaces for developers, help and mechanisms for users to provide feedback.

Toolbar: contains tools for selecting and navigating among Slicer modules, layout and other utilities.

GUI Panel: contains a UI for any selected module.

Slices Controls: contains a UI to configure the Slice Viewers. This panel can be collapsed if you need more room for the GUI Panel.

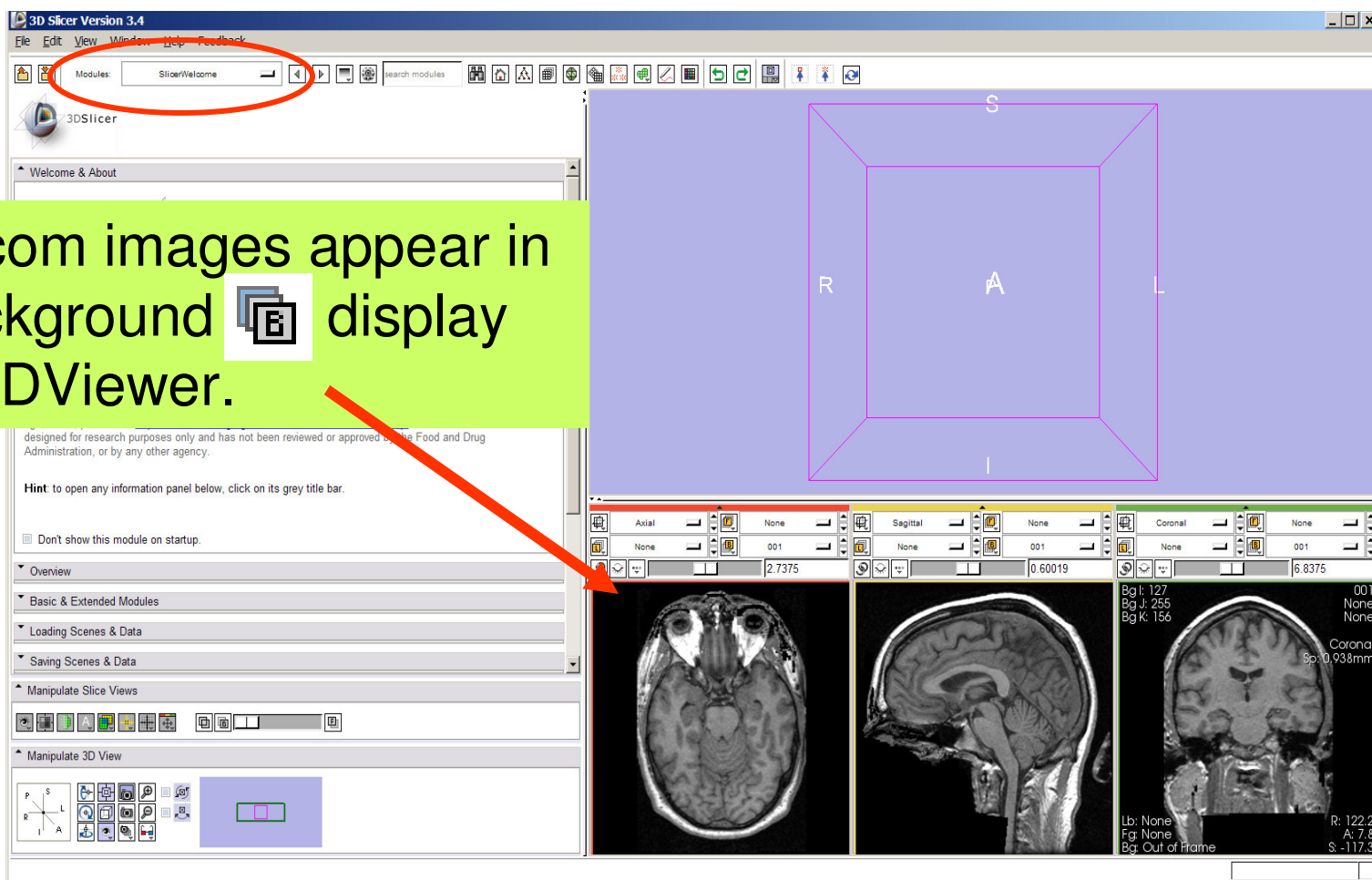
3D View Controls: contains a UI to configure the 3D Viewer. This panel can also be collapsed if you need more room for the GUI Panel.

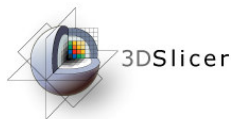
3D Viewer: displays a rendered 3D view of the scene along with some visual references to clarify its spatial orientation.

Click on Apply to load the Dicom volume in Slicer.

Loading Volumes

The Dicom images appear in the Background  display of the 2DViewer.





Loading Volumes

3D Slicer Version 3.4

File Edit View Window Help Feedback

Modules: SlicerWelcome

3DSlicer

Welcome & About

3DSlicer version 3.4 Welco

3D Slicer is a free open source software platform for medical image processing data. This module contains some basic information and useful links to get you started. For more information, see our website <http://www.slicer.org> and the documentation on our wiki for more information <http://www.slicer.org/slicerWiki/index.php/Documentation-3.4>.

3D Slicer is distributed under a BSD-style license; for details about the contribution agreement, please see <http://www.slicer.org/cgi-bin/license/SlicerLicenseForm>. This software is designed for research purposes only and has not been reviewed or approved by the FDA, the Administration, or by any other agency.

Hint: to open any information panel below, click on its grey title bar.

Don't show this module on startup.

Overview

Basic & Extended Modules

Loading Scenes & Data

Saving Scenes & Data

Manipulate Slice Views

Manipulate 3D View

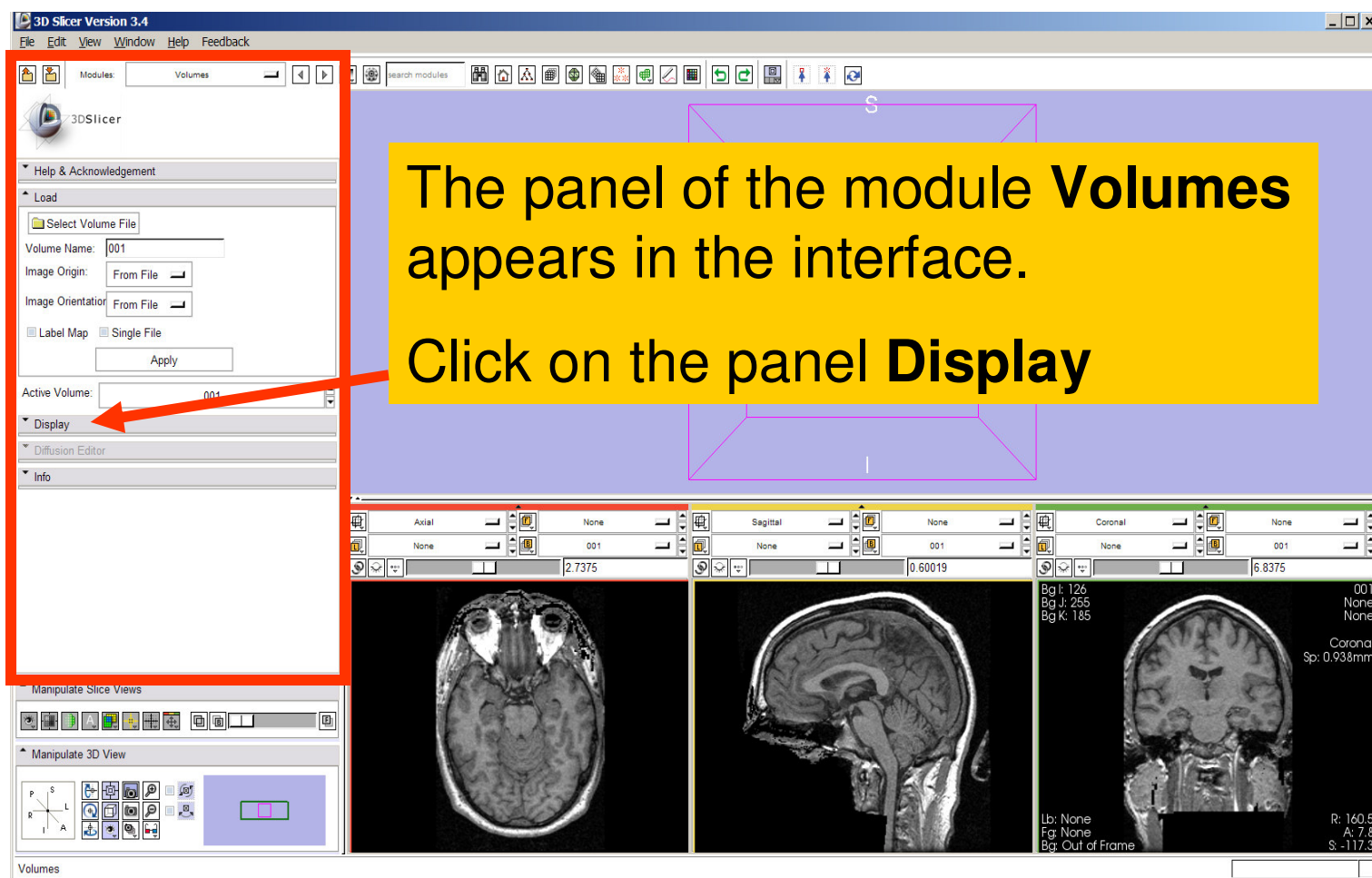
Coronal Sp: 0.938mm

Lb: None R: 122.2
Fg: None A: 7.8
Bg: Out of frame S: -117.3

Left click on the menu **Modules** and select **All Modules** to display the list of **95 modules** available for image analysis and 3D visualization.

Select the module **Volumes**

Loading Volumes



The panel of the module **Volumes** appears in the interface.

Click on the panel **Display**

3D Slicer Version 3.4

File Edit View Window Help Feedback

Modules: Volumes

3DSlicer

Help & Acknowledgement

Load

Select Volume File

Volume Name: 001

Image Origin: From File

Image Orientation: From File

Label Map Single File

Apply

Active Volume: 001

Display

Diffusion Editor

Info

Manipulate Slice Views

Manipulate 3D View

Volumes

Actual None Sagittal None Coronal None

None 001 None 001 None 001

2.7375 0.60019 6.8375

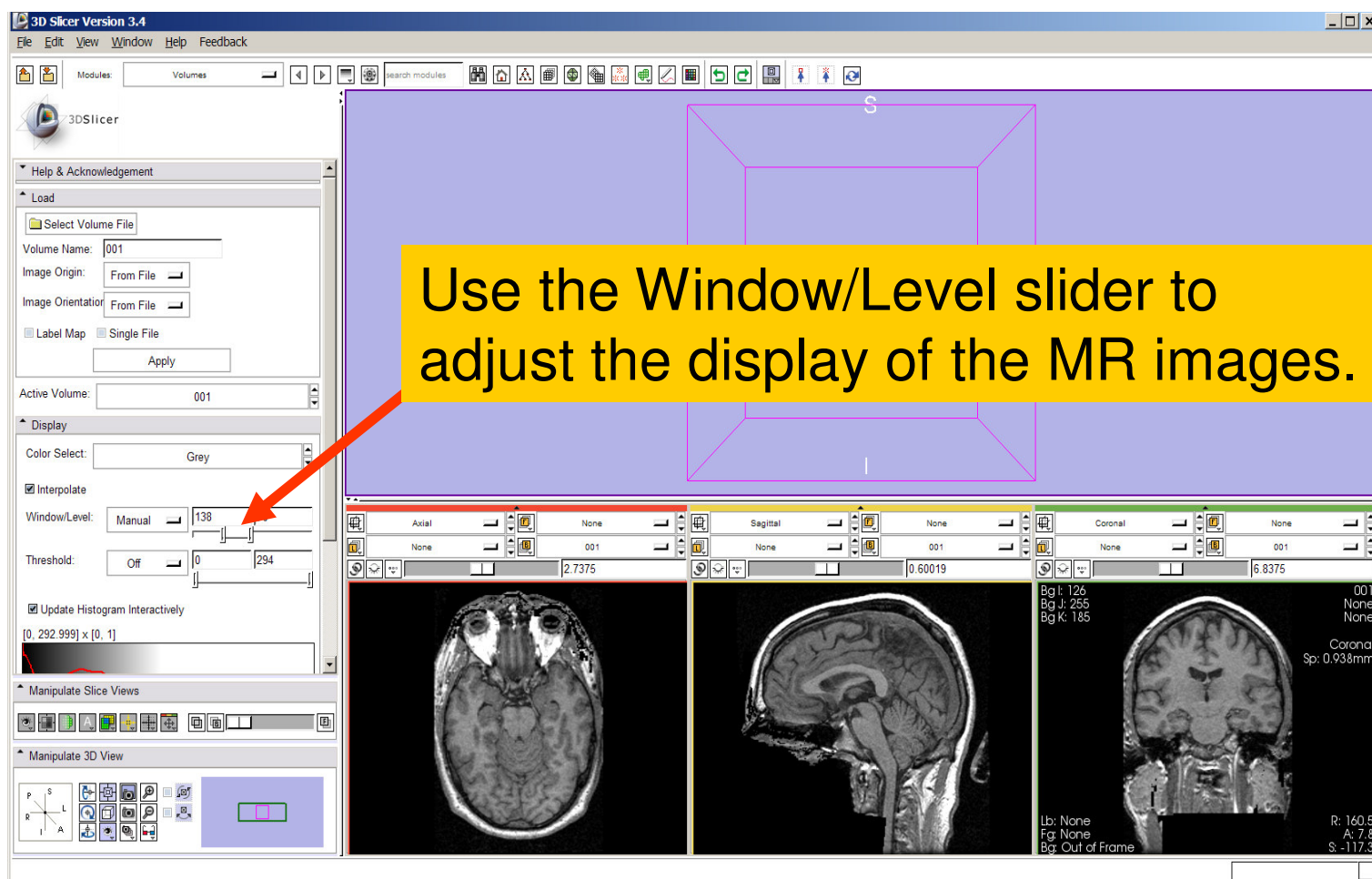
Bg I: 126
Bg J: 255
Bg K: 185

001
None
None
Coronal
Sp: 0.938mm

Lb: None
Fg: None
Bg: Out of Frame

R: 160.5
A: 7.8
S: -117.3

Loading Volumes

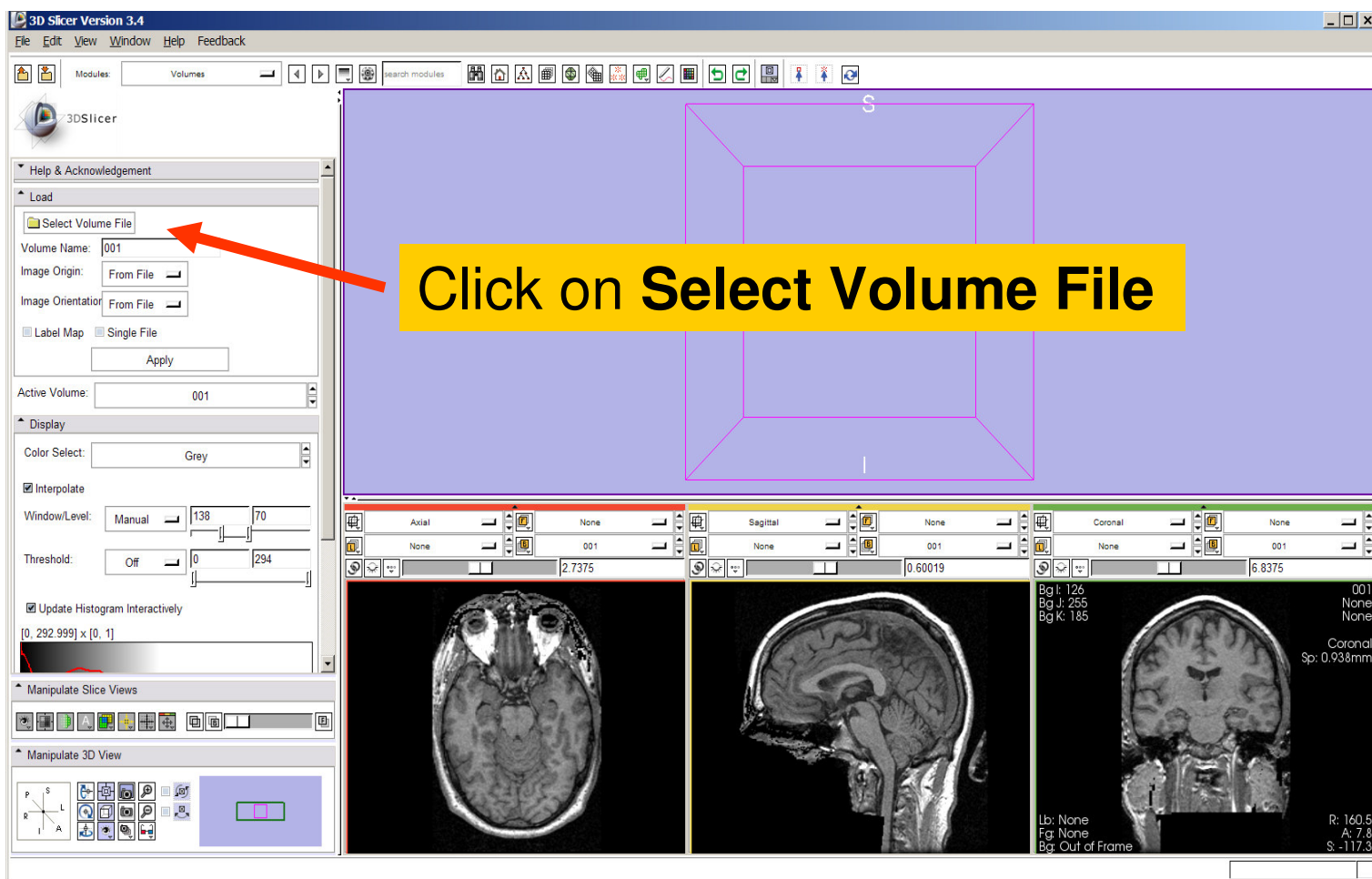


Use the Window/Level slider to adjust the display of the MR images.

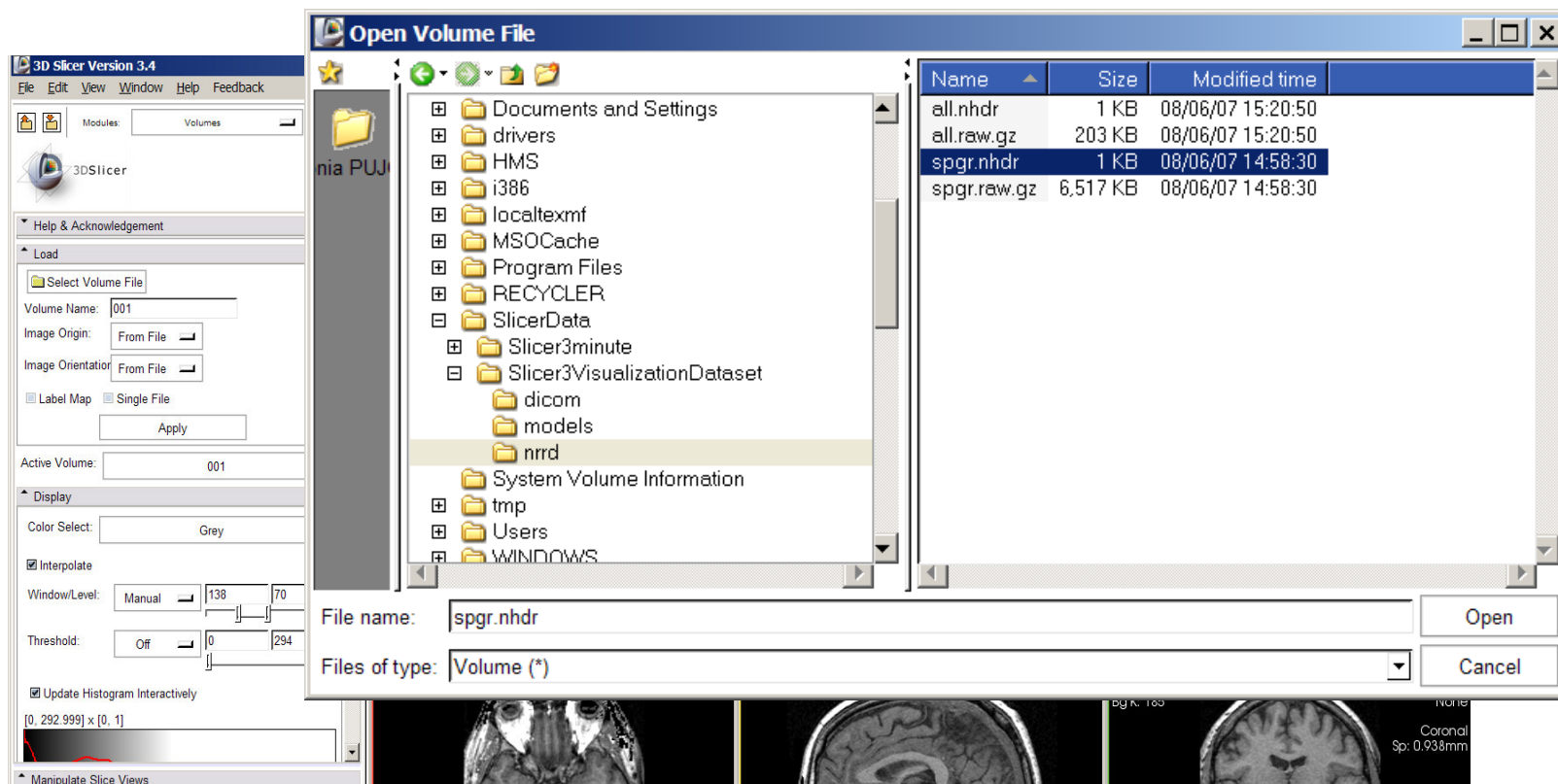
The screenshot shows the 3D Slicer 3.4 interface. The 'Load' panel on the left includes a 'Select Volume File' button, 'Volume Name' (001), 'Image Origin' (From File), and 'Image Orientation' (From File). The 'Display' panel shows 'Color Select' (Grey), 'Interpolate' (checked), 'Window/Level' (Manual, 138), and 'Threshold' (Off, 0-294). The 'Manipulate Slice Views' panel shows three views: Axial, Sagittal, and Coronal. The 'Manipulate 3D View' panel shows a 3D view of the volume. A yellow callout box with a red arrow points to the 'Window/Level' slider in the 'Display' panel.



Loading Volumes



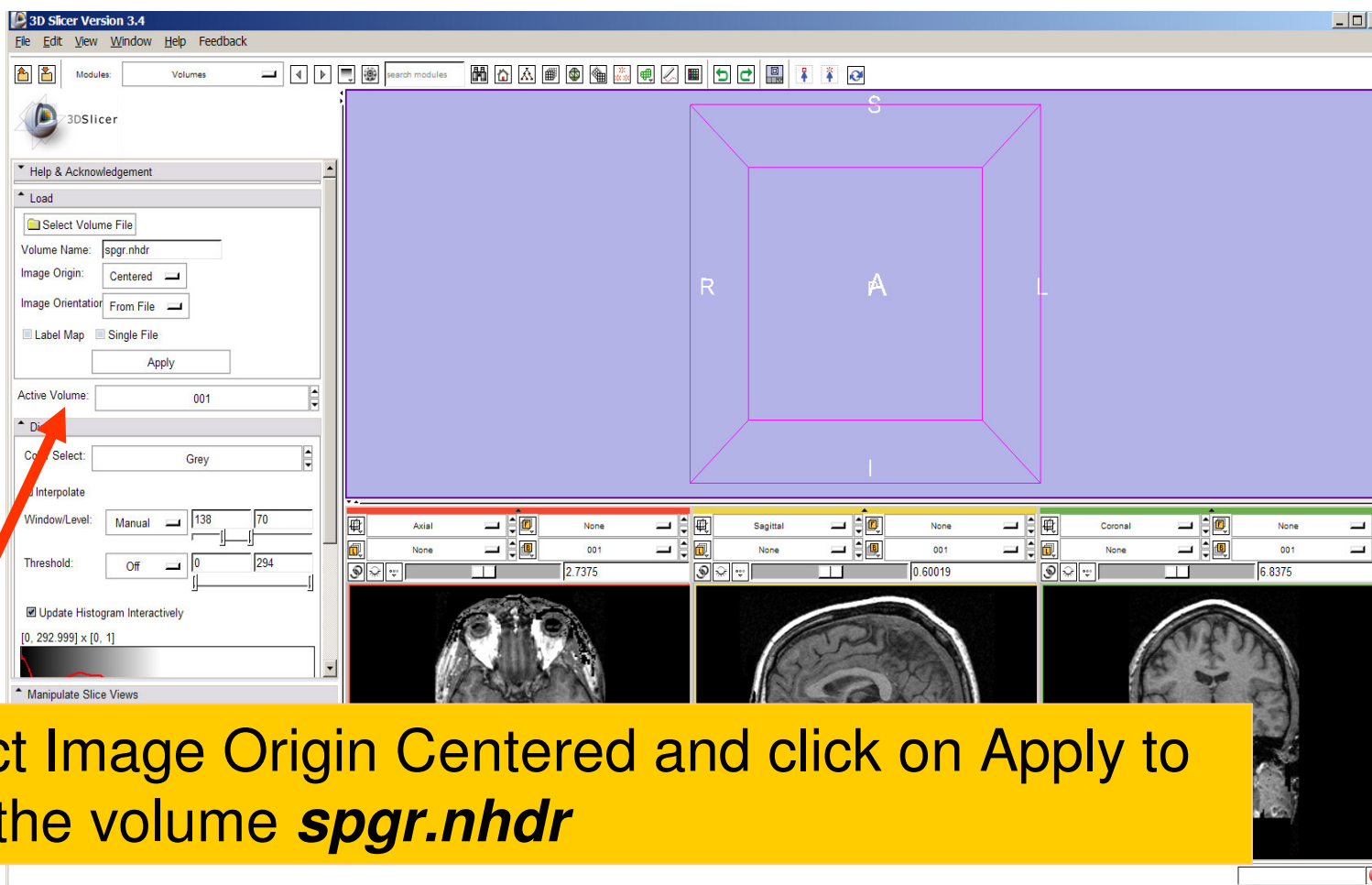
Loading Volumes



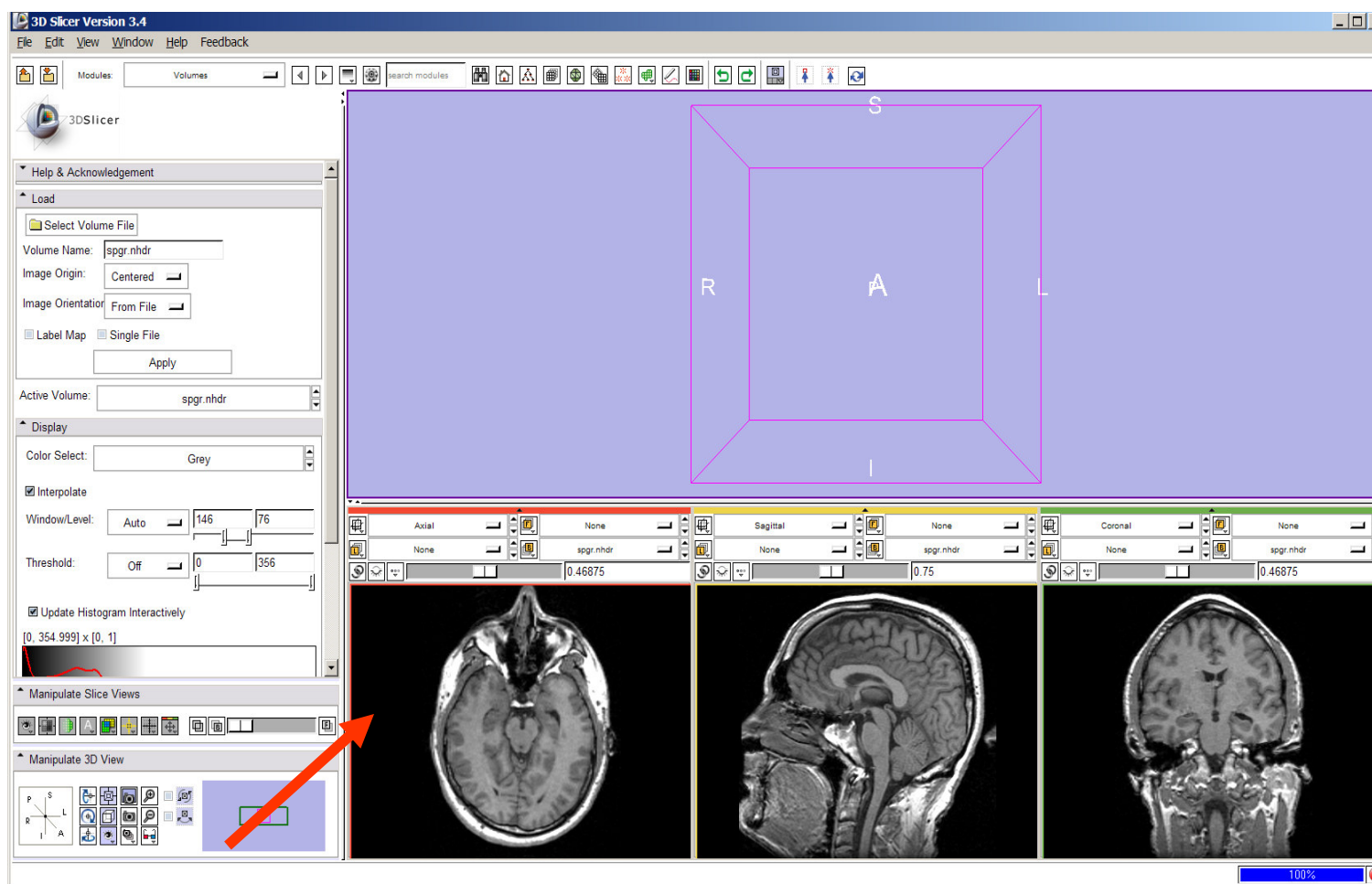
Browse to find the header file of the spgr volume ***spgr.nhdr*** located in the directory ***Slicer3VisualizationDataset/nrrd*** and click on **Open**.



Loading Volumes



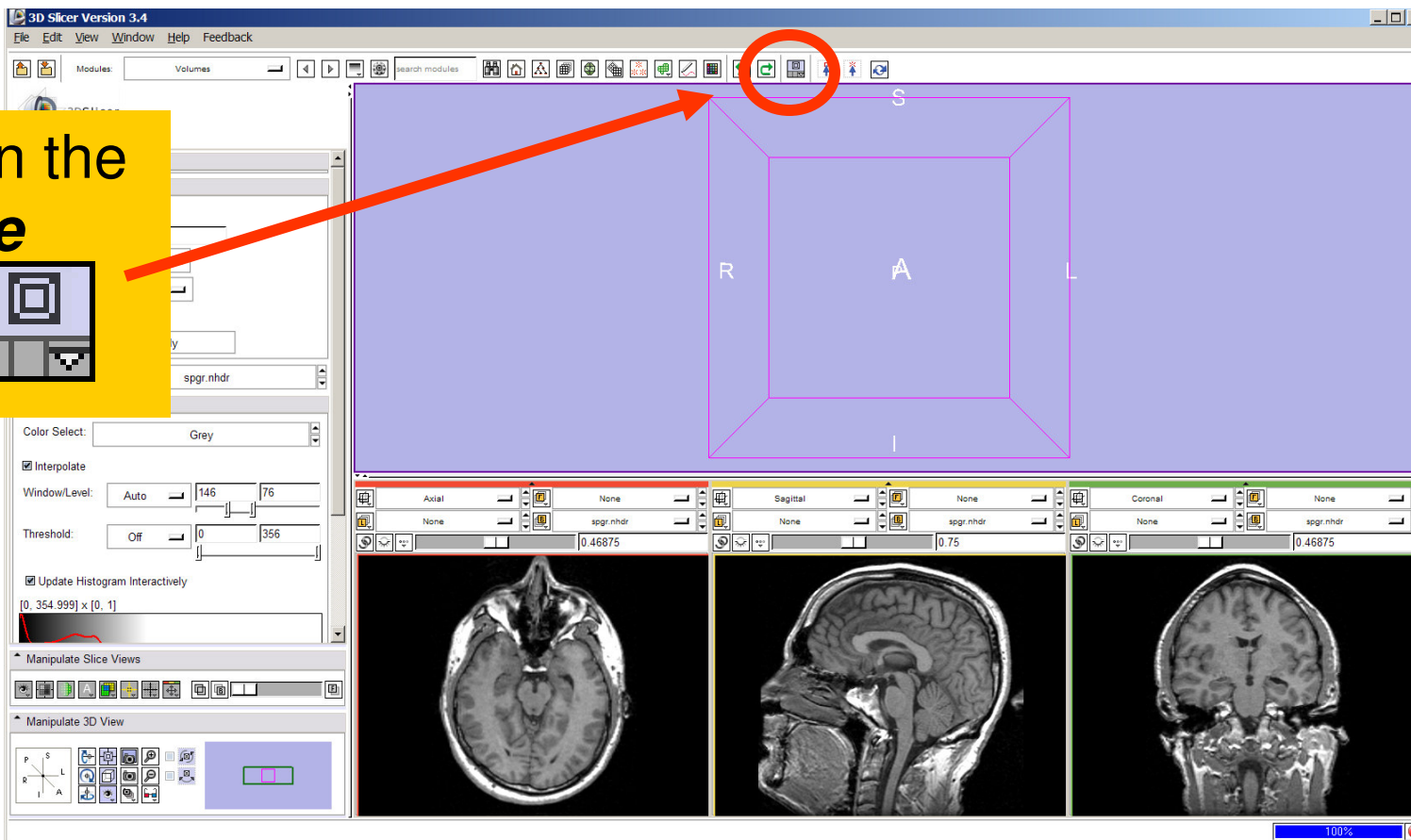
Loading Volumes



Source: The spgr volume appears in the Background display of the 2D Viewer.

Exploring the data

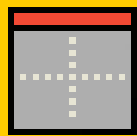
Click on the **choose view icon**



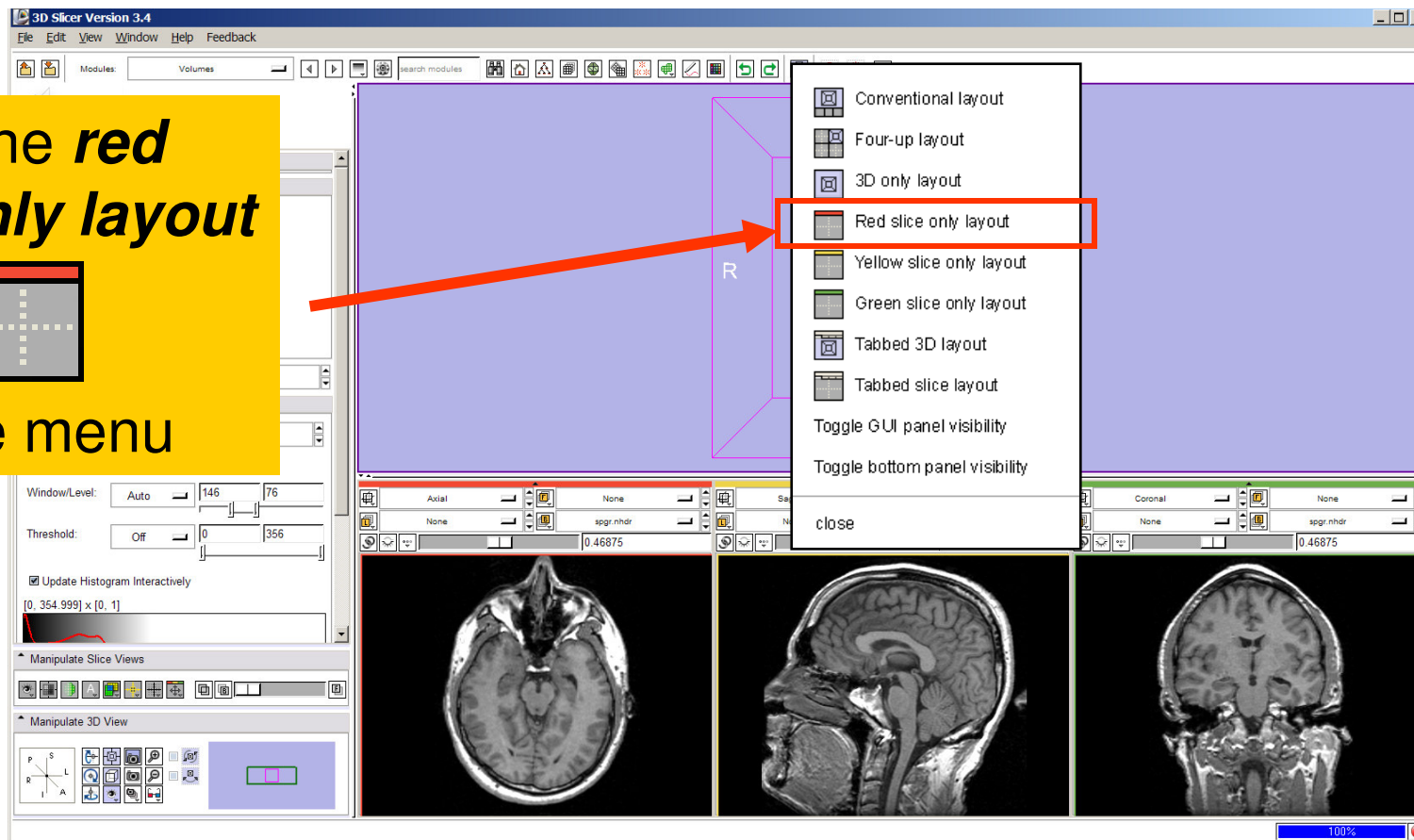
The screenshot displays the 3D Slicer 3.4 interface. The main window shows a 3D view of a brain slice with axes labeled R (Right), A (Anterior), S (Superior), and I (Inferior). Below the 3D view are three 2D slice views: Axial, Sagittal, and Coronal. The top toolbar contains various icons, with the 'Choose View' icon (a square with a smaller square inside) circled in red. A red arrow points from a yellow callout box on the left to this icon. The callout box contains the text 'Click on the **choose view icon**'. The interface also shows a 'Color Select' panel on the left with 'Grey' selected, and a 'Manipulate Slice Views' panel below it.

Exploring the data

Select the **red slice only layout**

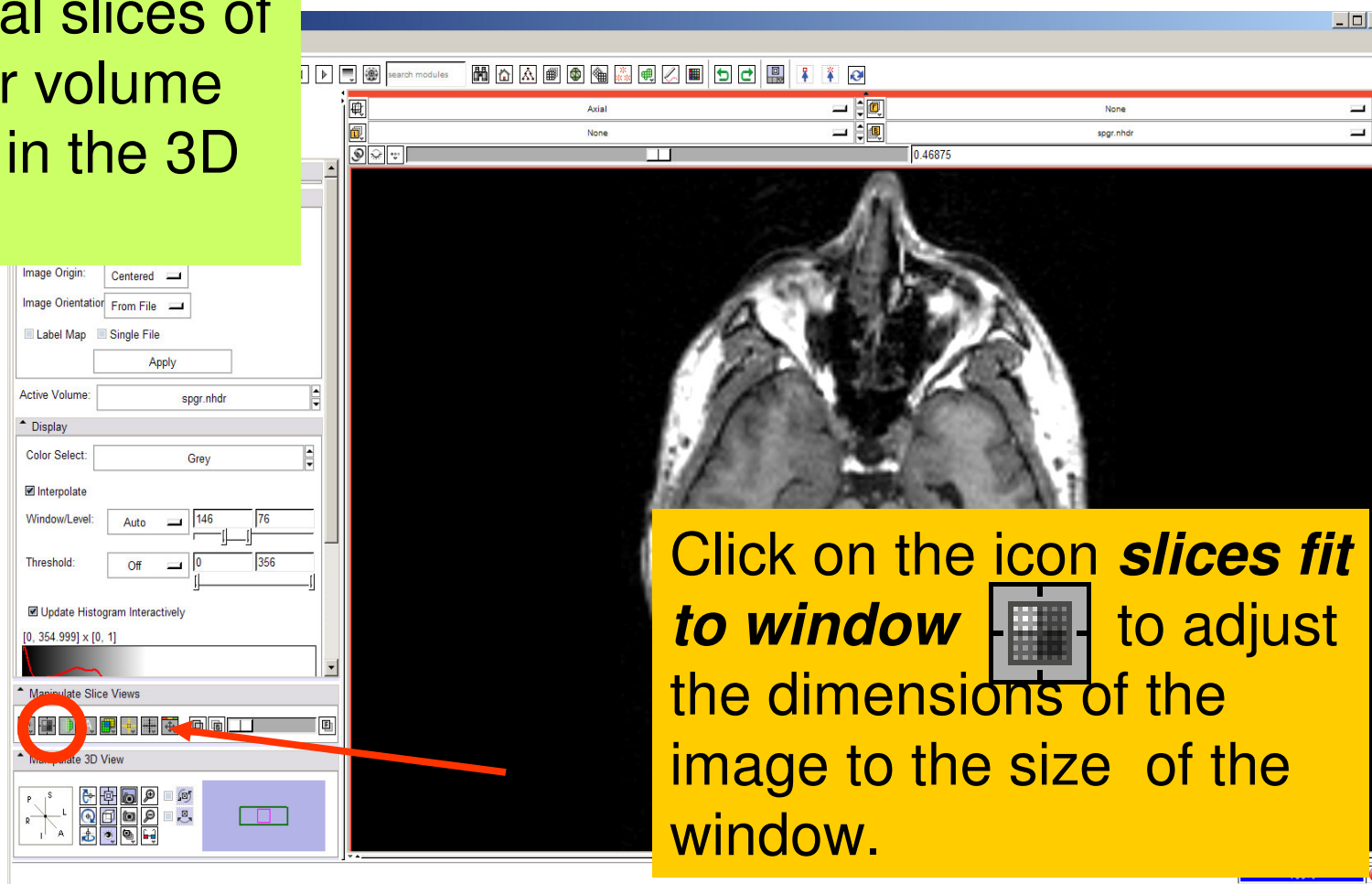


from the menu




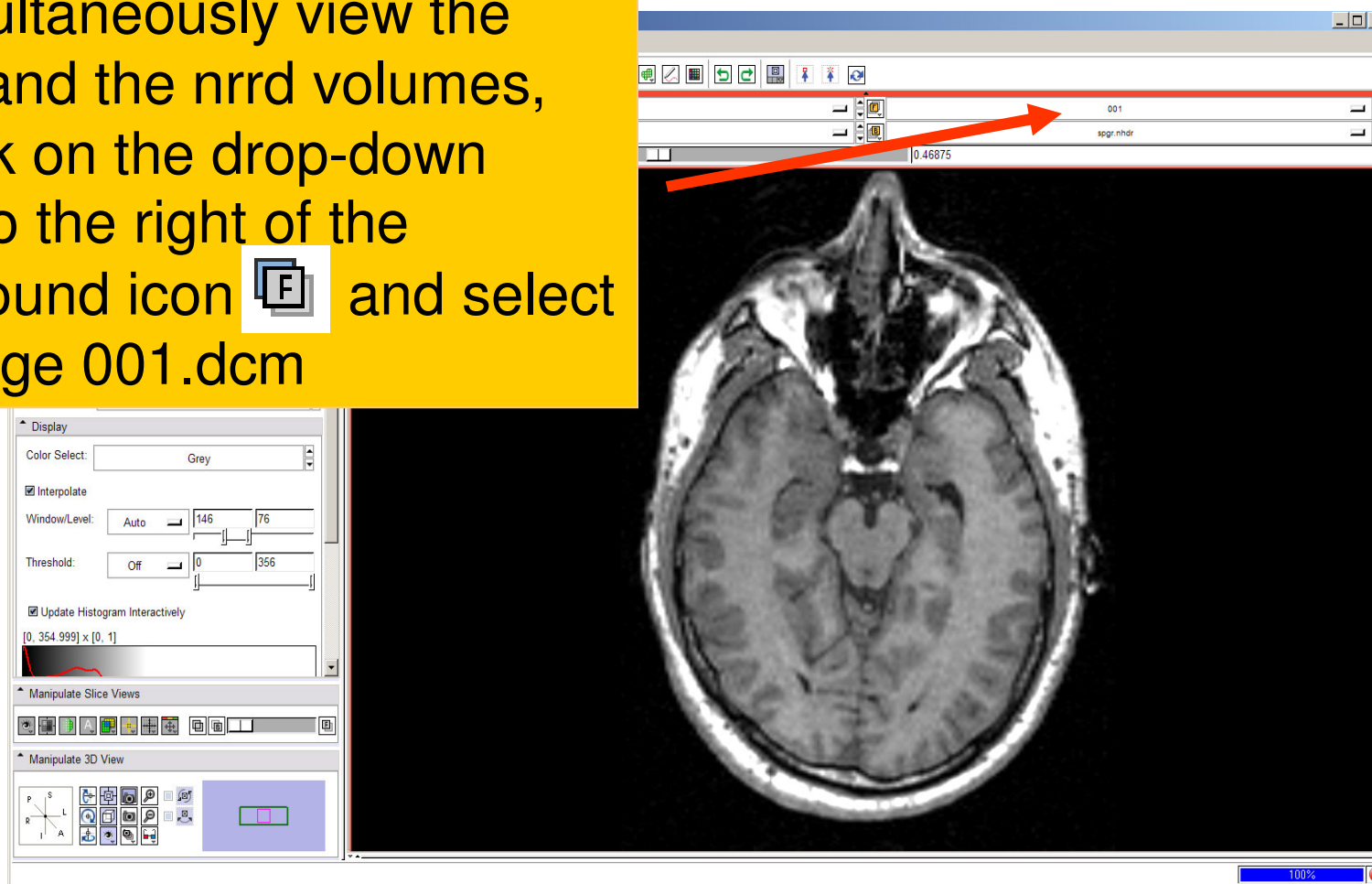
Exploring the data

The axial slices of the spgr volume appear in the 3D viewer.





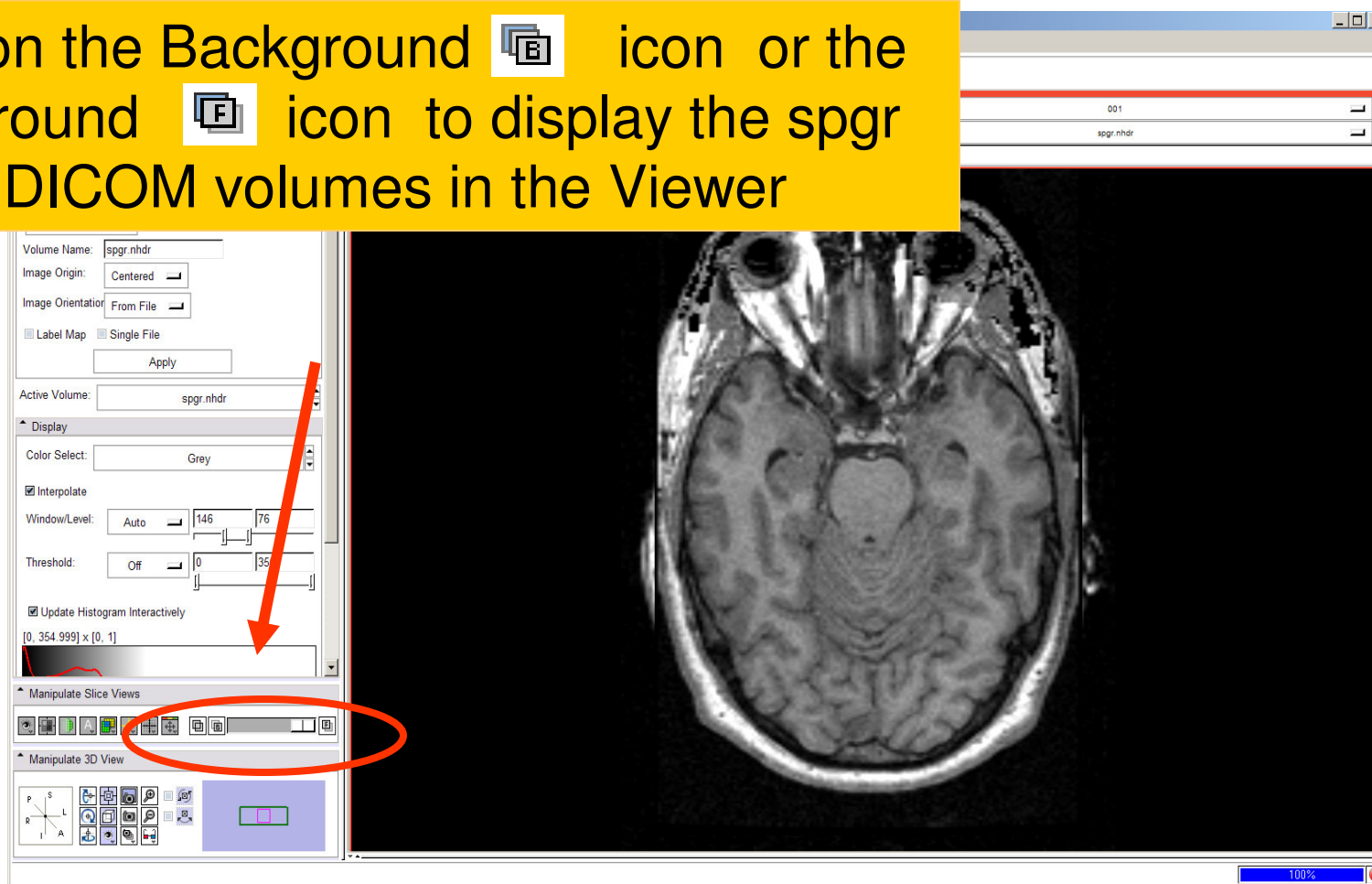
Exploring the data

To simultaneously view the dicom and the nrrd volumes, left click on the drop-down menu to the right of the Foreground icon  and select the image 001.dcm



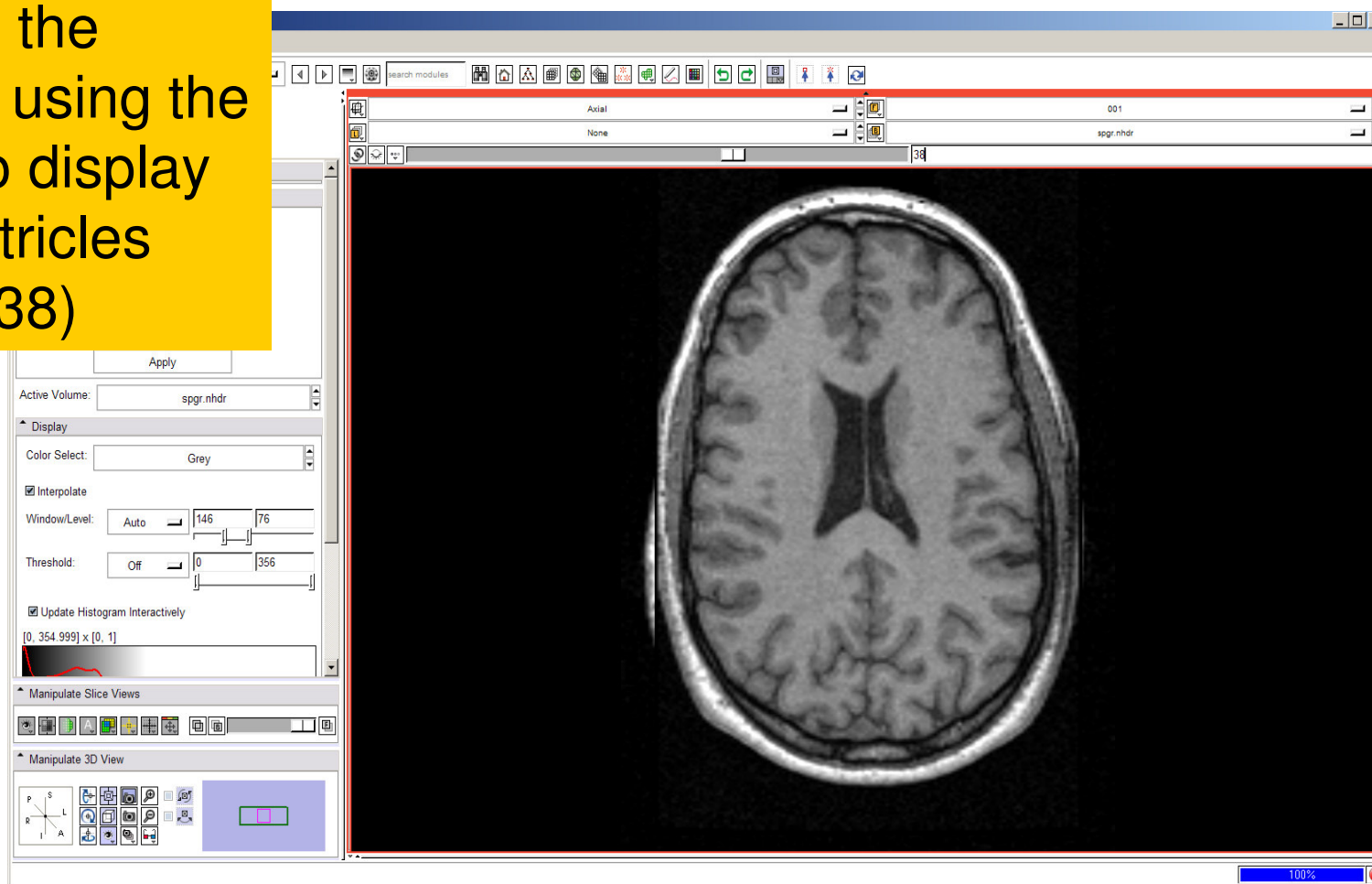
Exploring the data

Click on the Background  icon or the Foreground  icon to display the spgr or the DICOM volumes in the Viewer



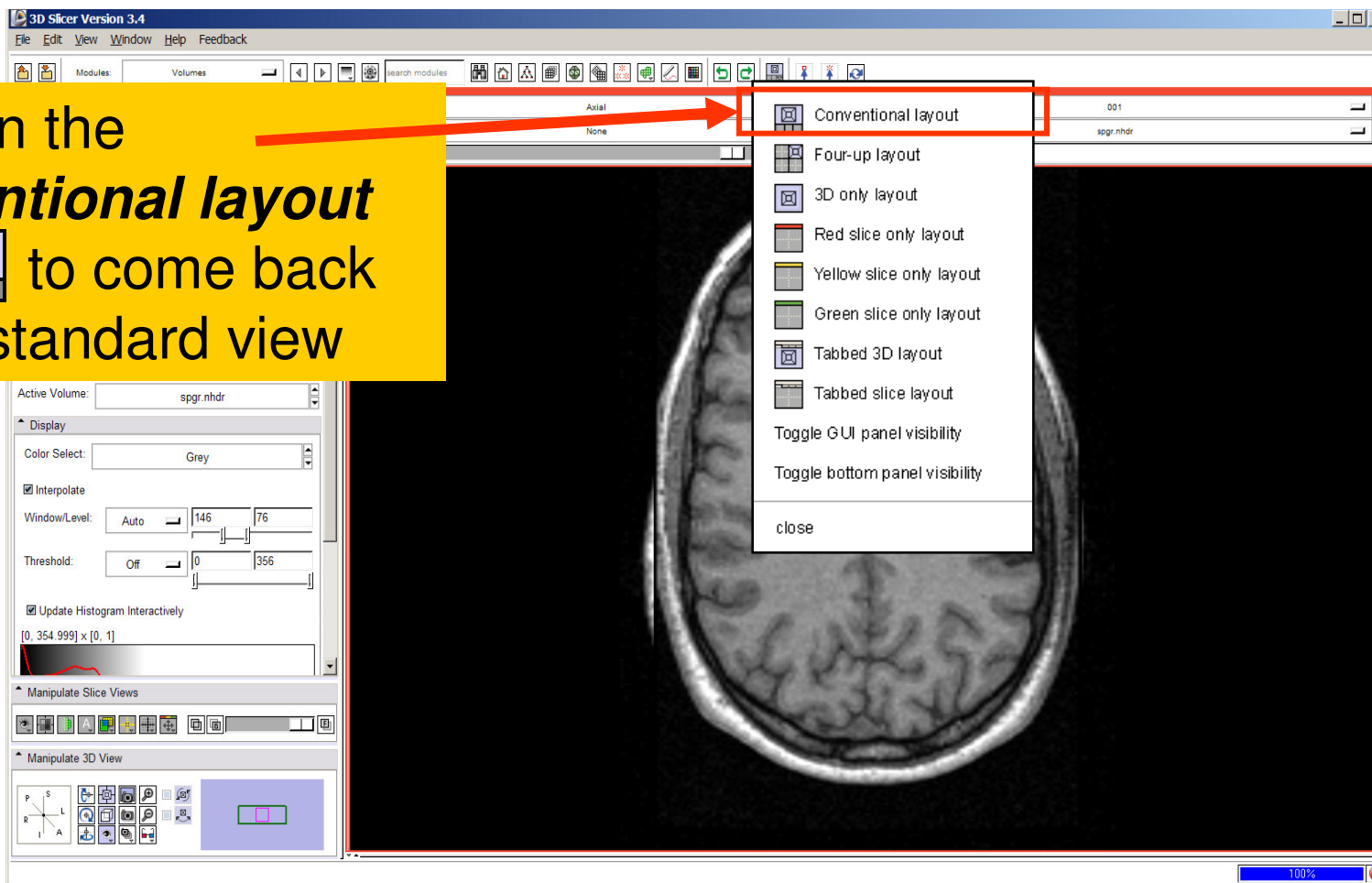
Exploring the data

Browse the images using the slider to display the ventricles (~slice 38)




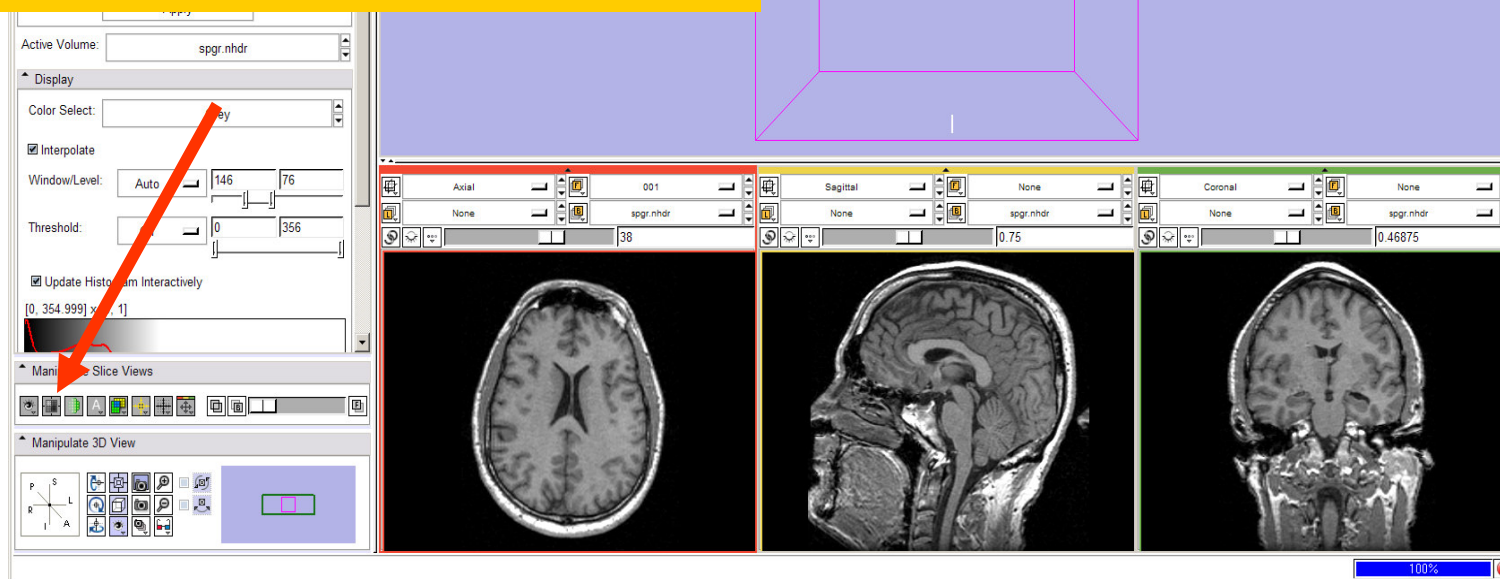
Exploring the data

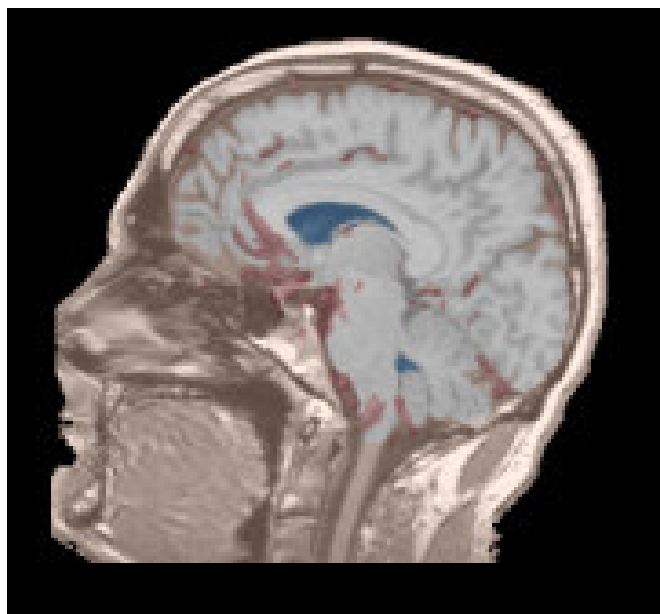
Click on the **conventional layout icon** to come back to the standard view



Loading Volumes

Click on the icon **slices fit to window**  to adjust the dimensions of the image to the size of the window.



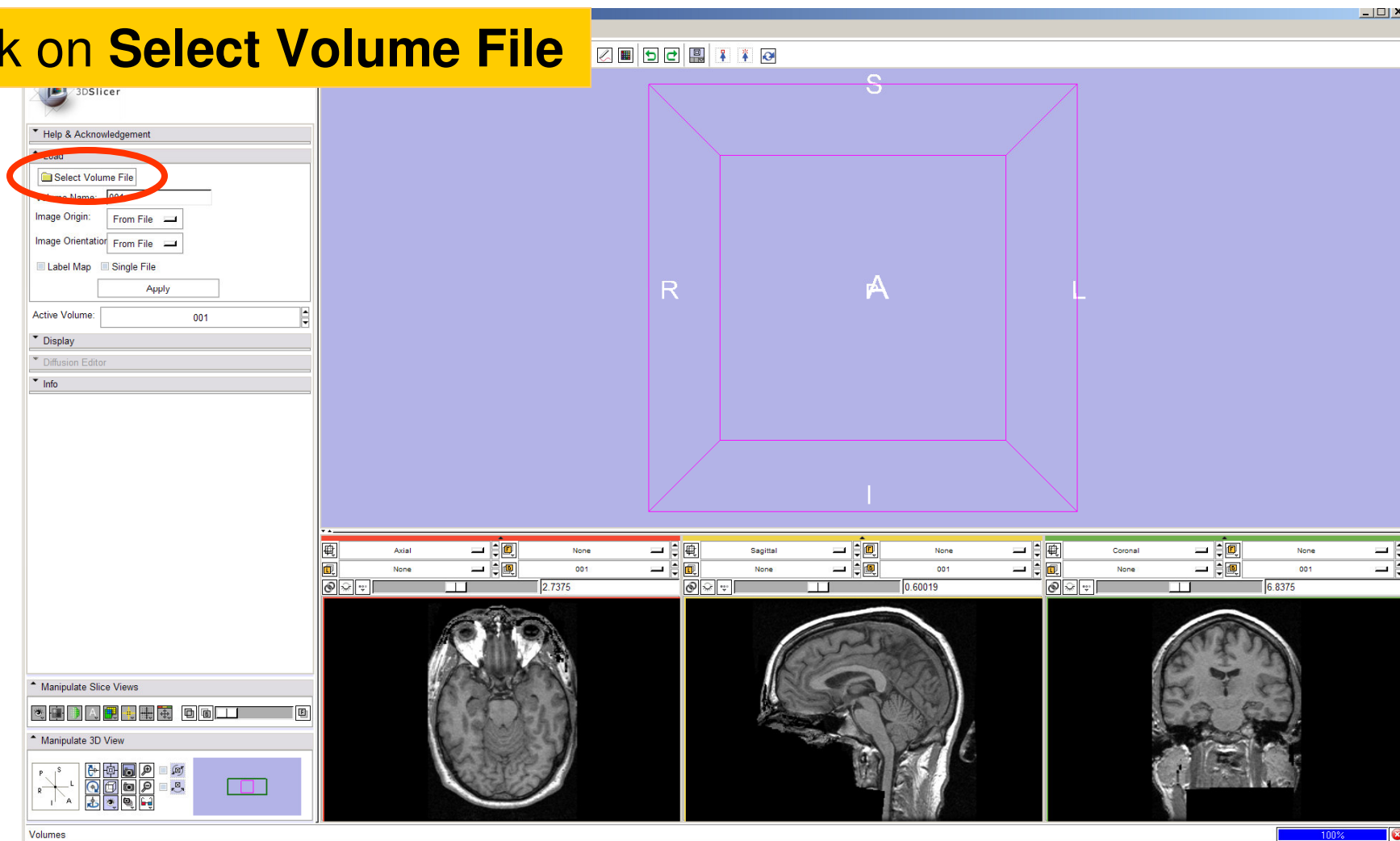


Part 2: Loading and visualizing segmented structures overlaid on grayscale images



Loading a label map

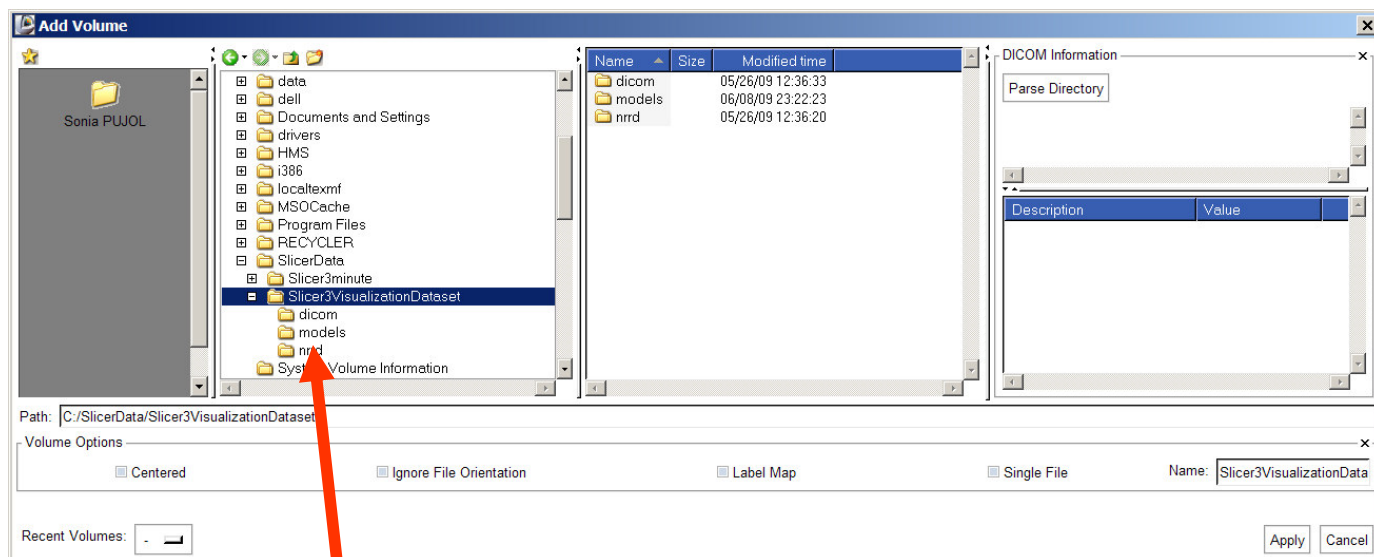
Click on **Select Volume File**



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National Alliance for Medical Image Computing
Neuroimage Analysis Center

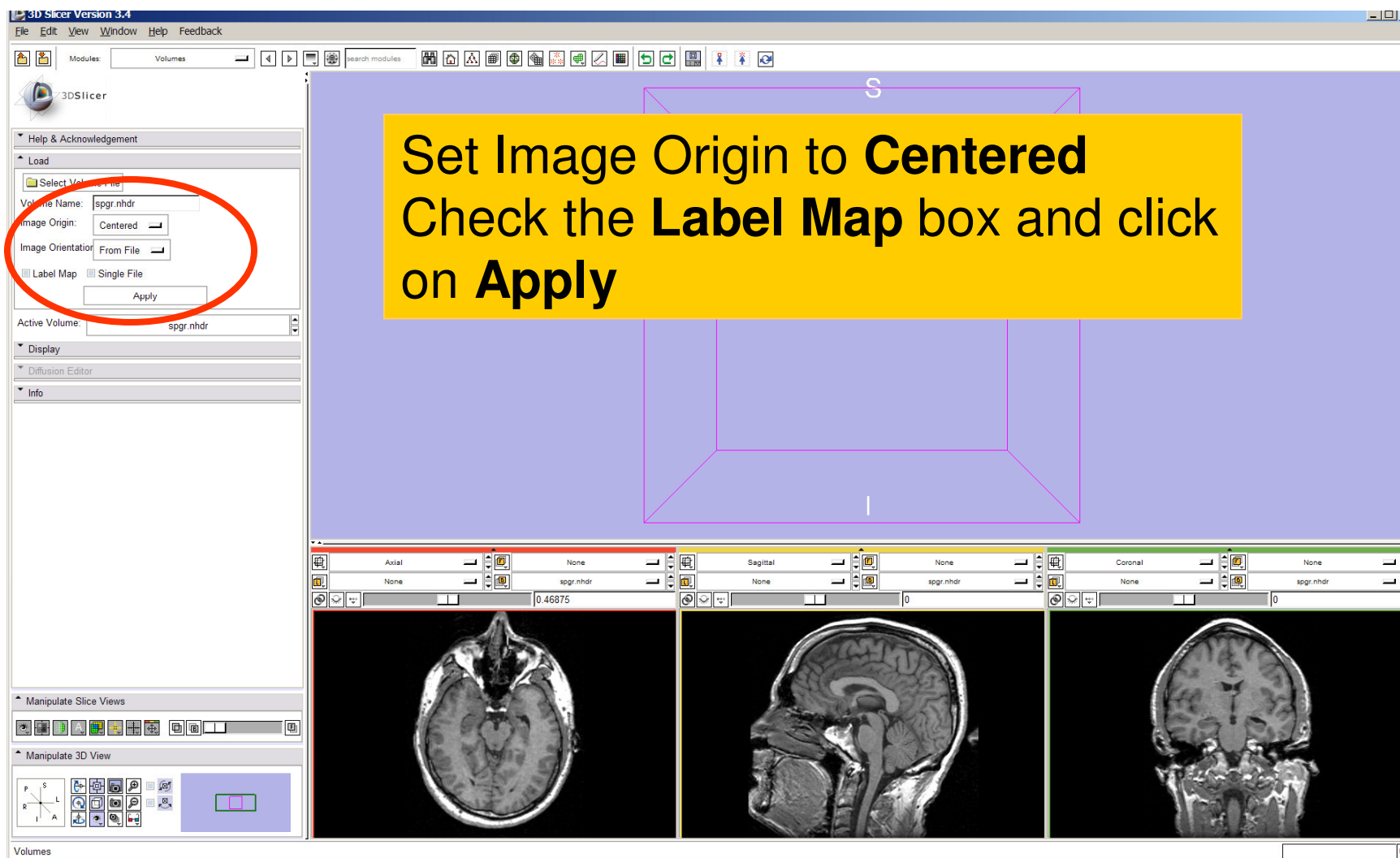
Loading a label map




Browse to find the header file ***all.nhdr*** of the label map dataset located in the directory ***Slicer3VisualizationDataset/nrrd*** and click on **Open**



Visualizing a label map



Visualizing a label map

Slicer displays the label map *all* in the **Label** layer 

Click on the *links* icon. 

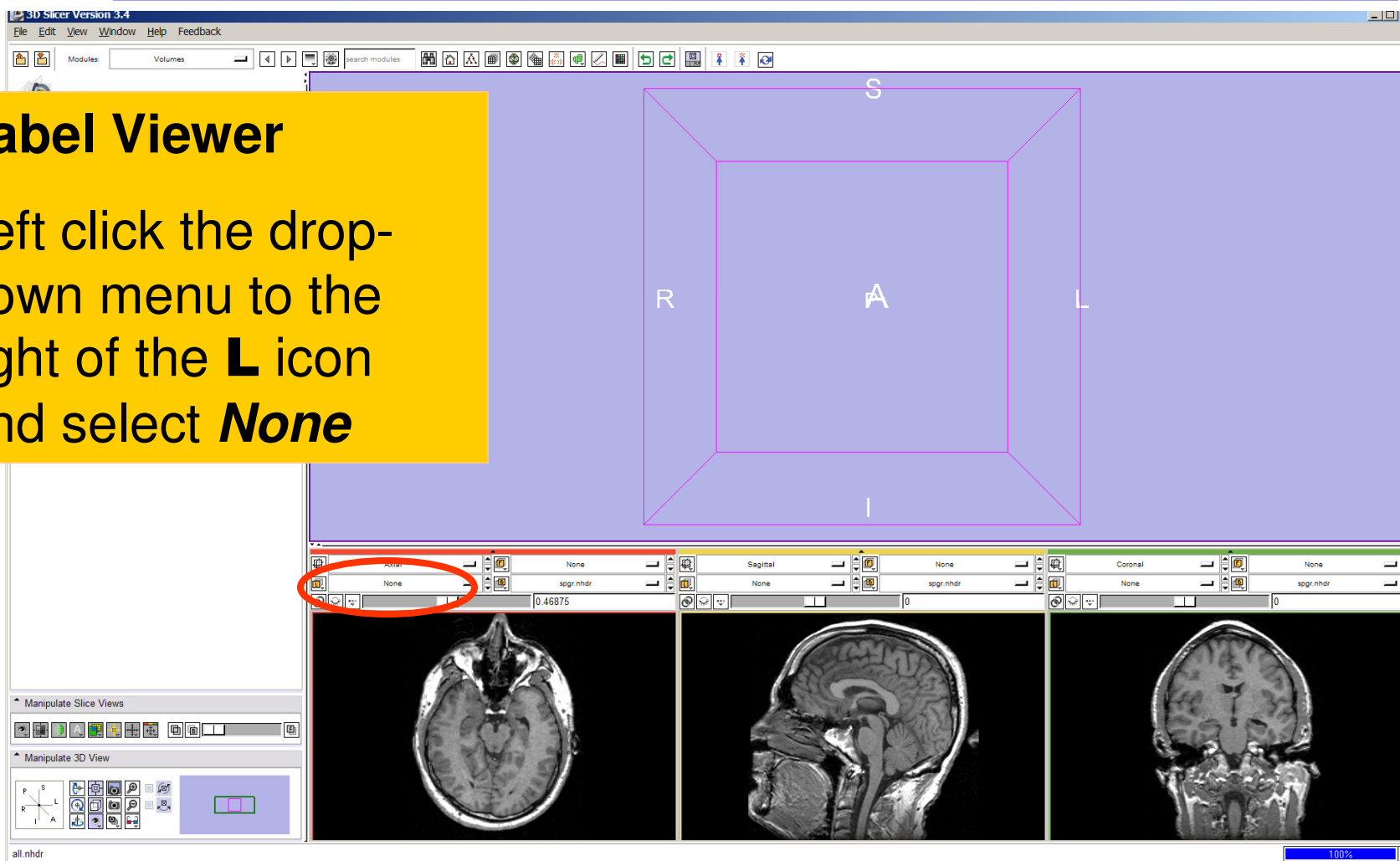




Visualizing Multiple Volumes

Label Viewer

Left click the drop-down menu to the right of the **L** icon and select **None**





Visualizing Multiple Volumes

Foreground Viewer

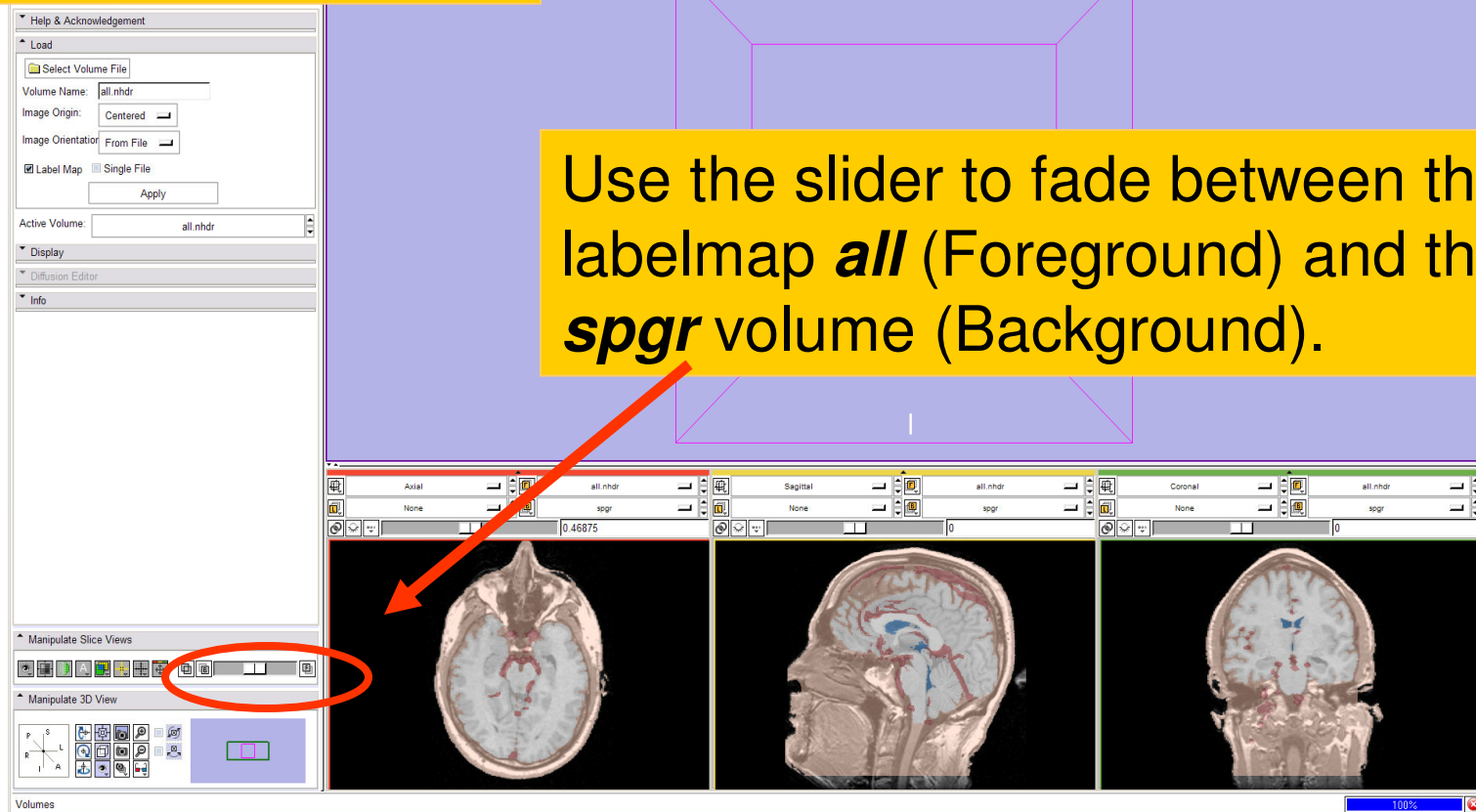
Left click on the drop-down menu to the right of the **F** icon and select the volume *all*

The screenshot shows the 3D Slicer interface. The top left has a yellow text box with instructions. Below it, a red arrow points to a red circle around the 'None' dropdown menu in the foreground viewer. The foreground viewer shows three slice views: Axial, Sagittal, and Coronal. The background viewer shows a 3D perspective view of the brain volume with axes S (Superior), I (Inferior), R (Right), and L (Left).

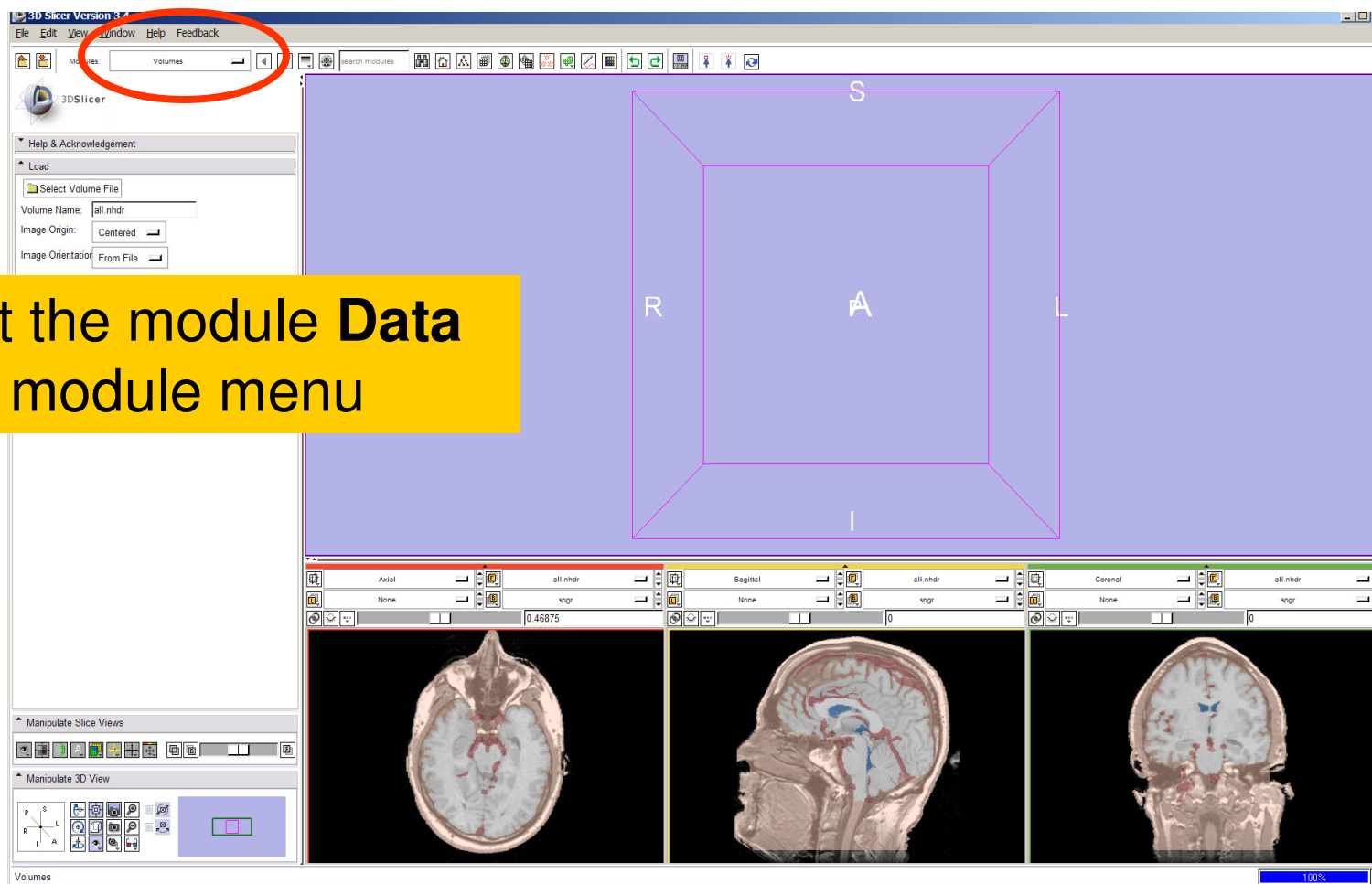


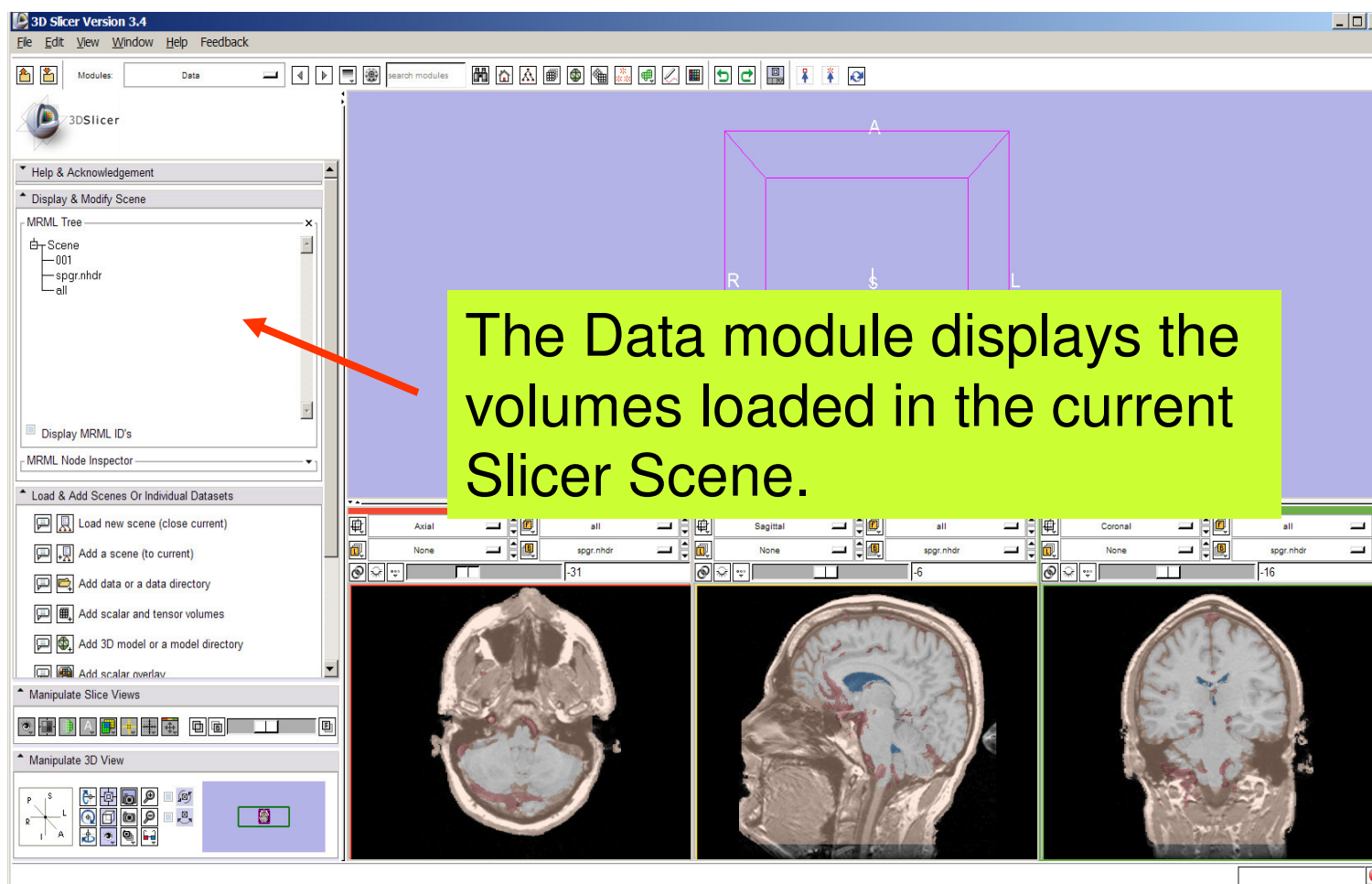
Visualizing Multiple Volumes

Select Manipulate
Slice Views

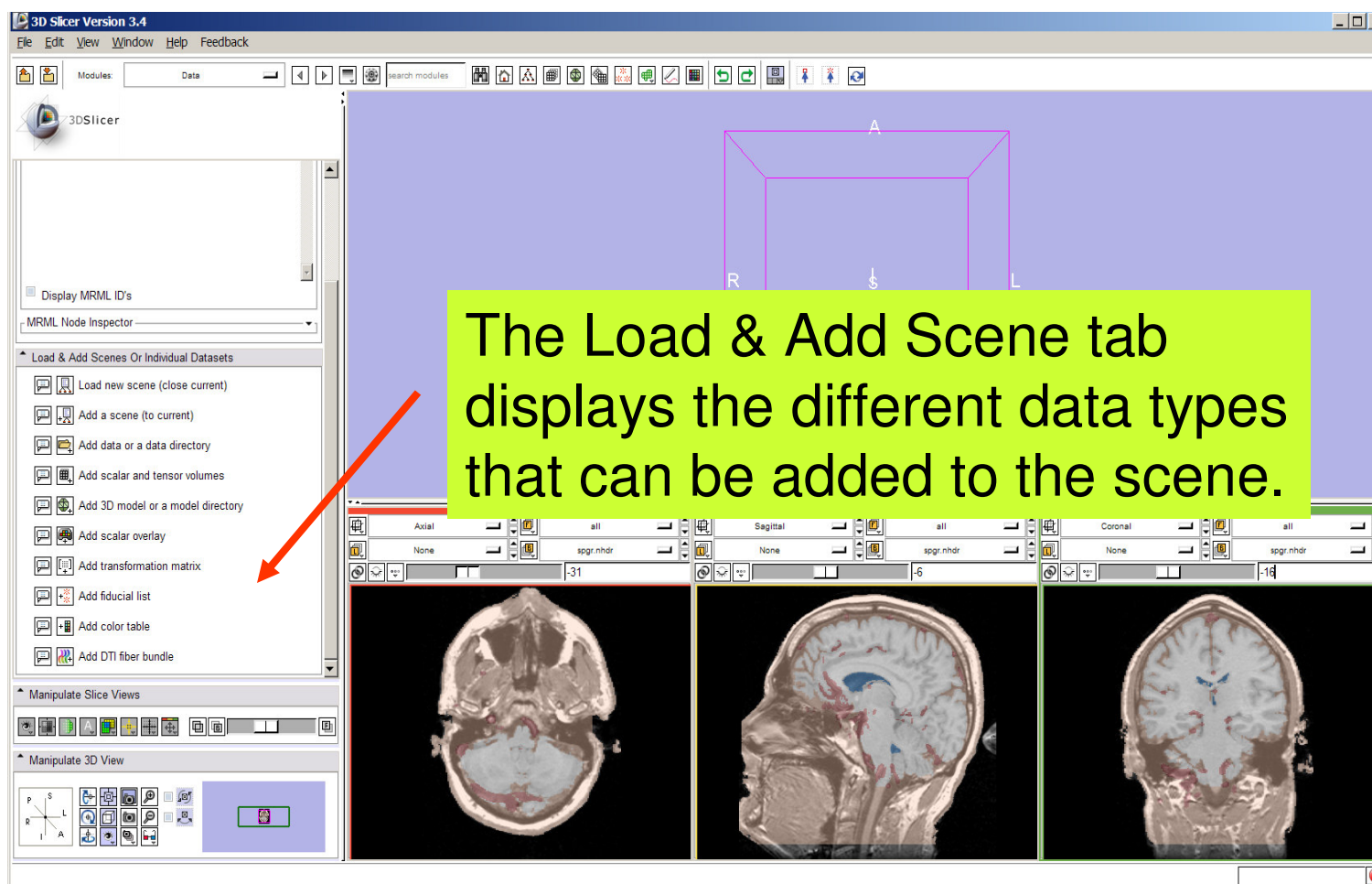


3D Visualization

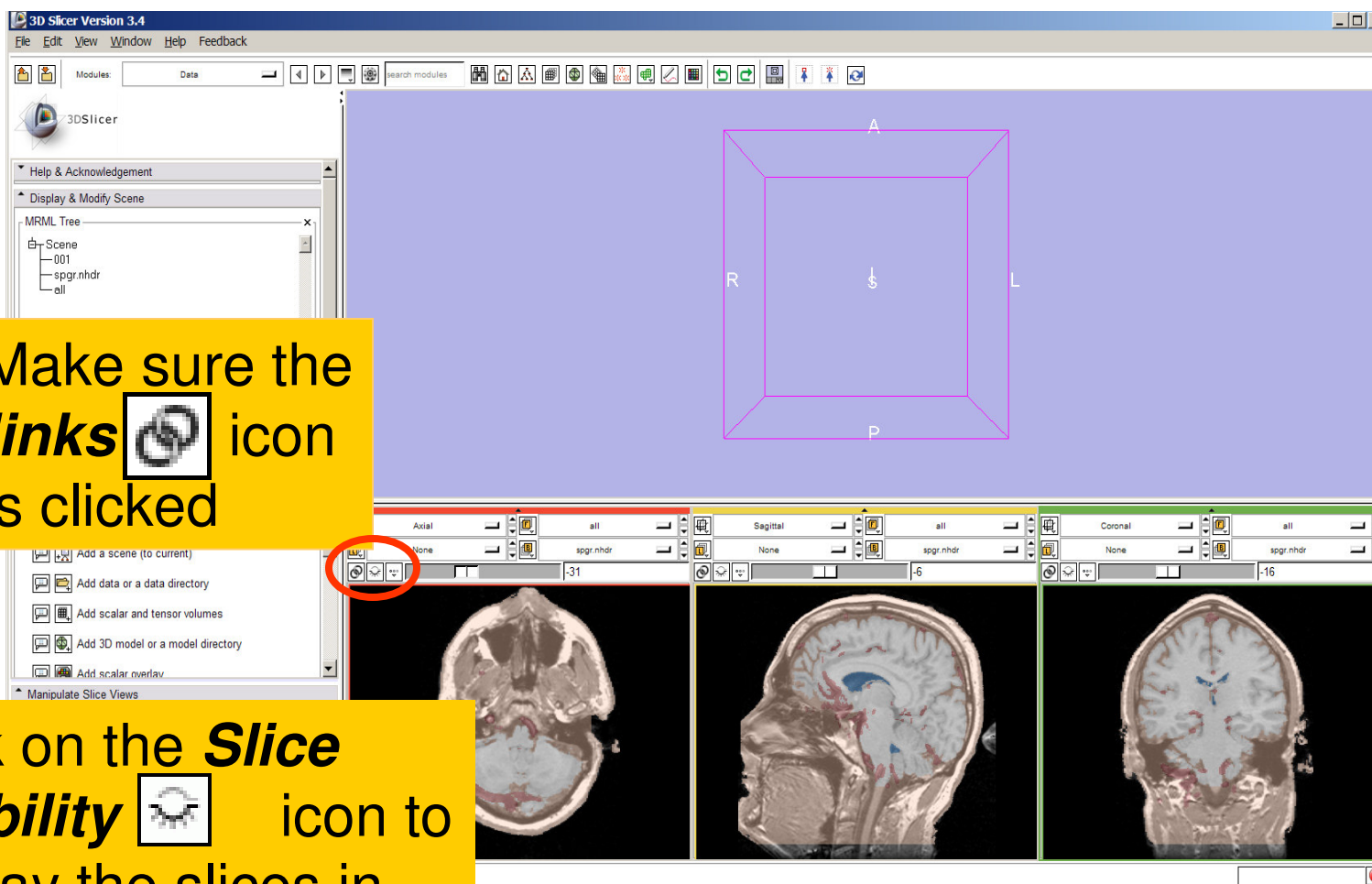




3D Visualization



3D Visualization

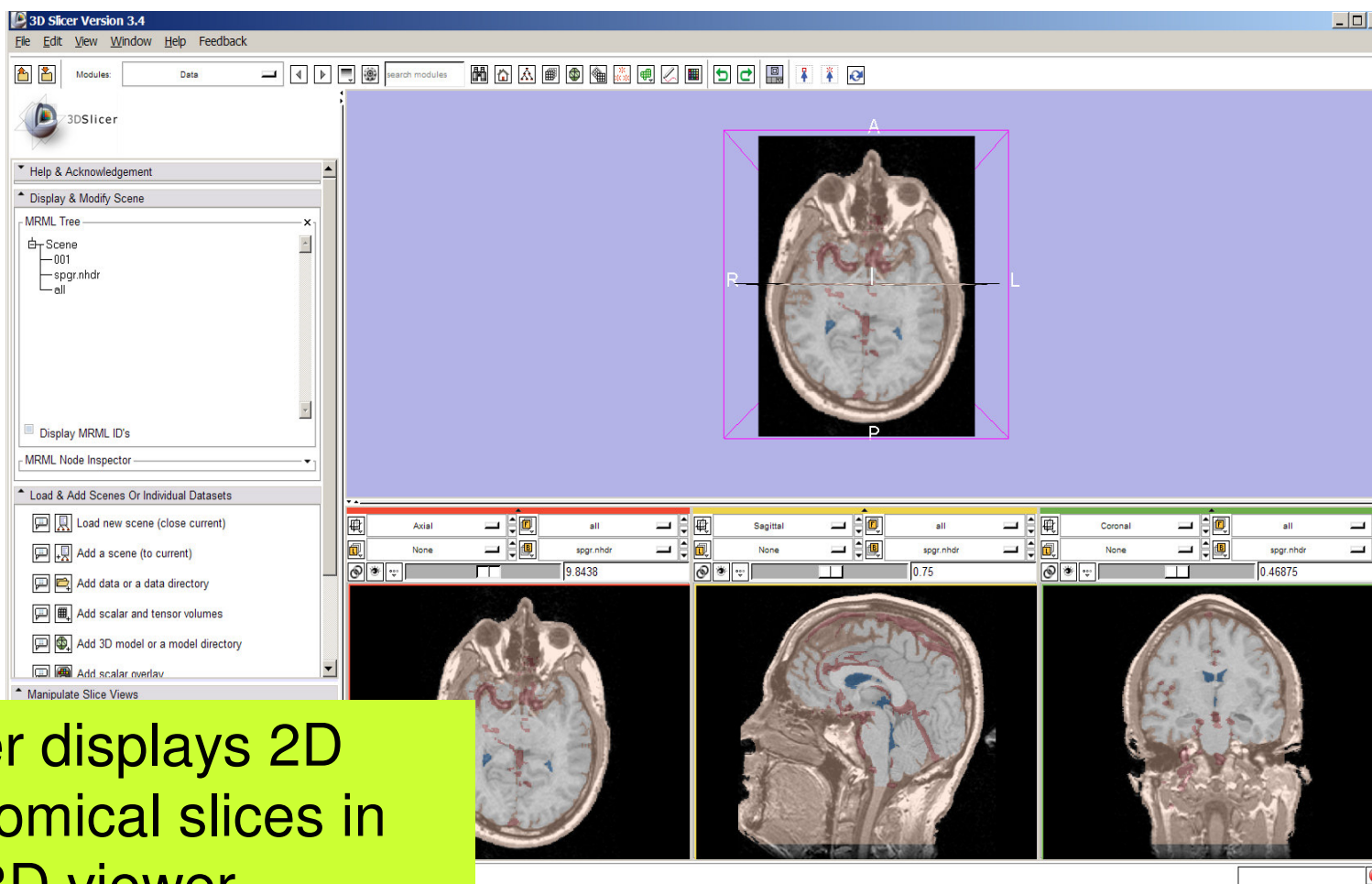


Make sure the **links**  icon is clicked

Click on the **Slice Visibility**  icon to display the slices in the 3D Viewer



3D Visualization



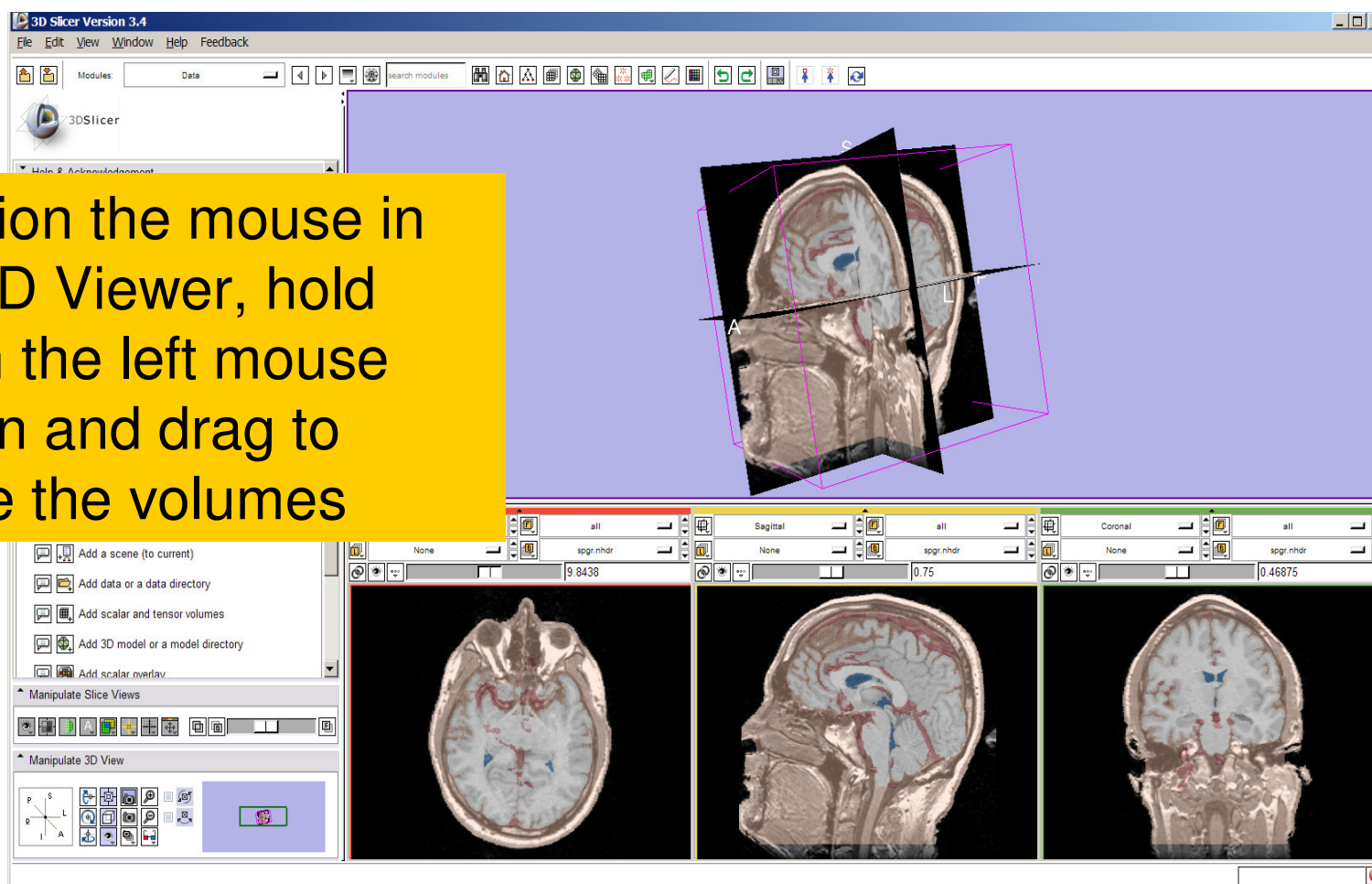
Slicer displays 2D anatomical slices in the 3D viewer

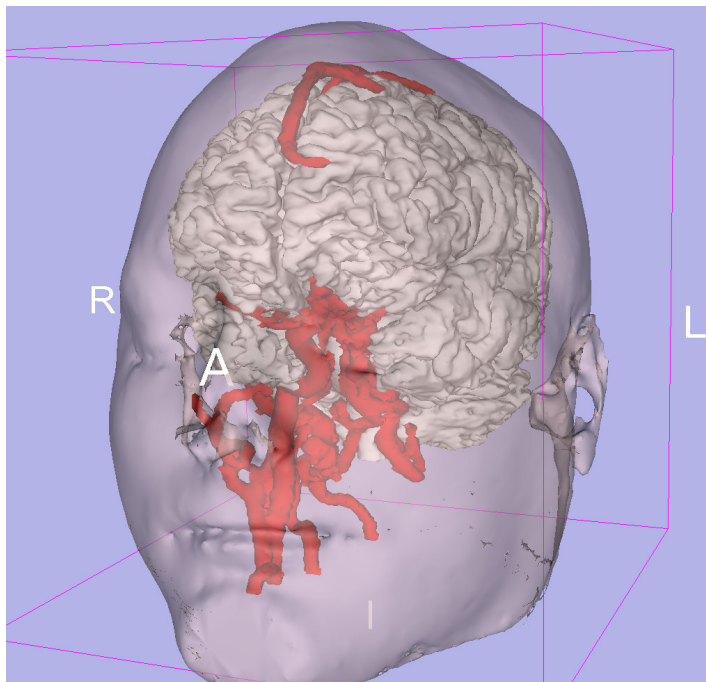
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National Alliance for Medical Image Computing
Neuroimage Analysis Center

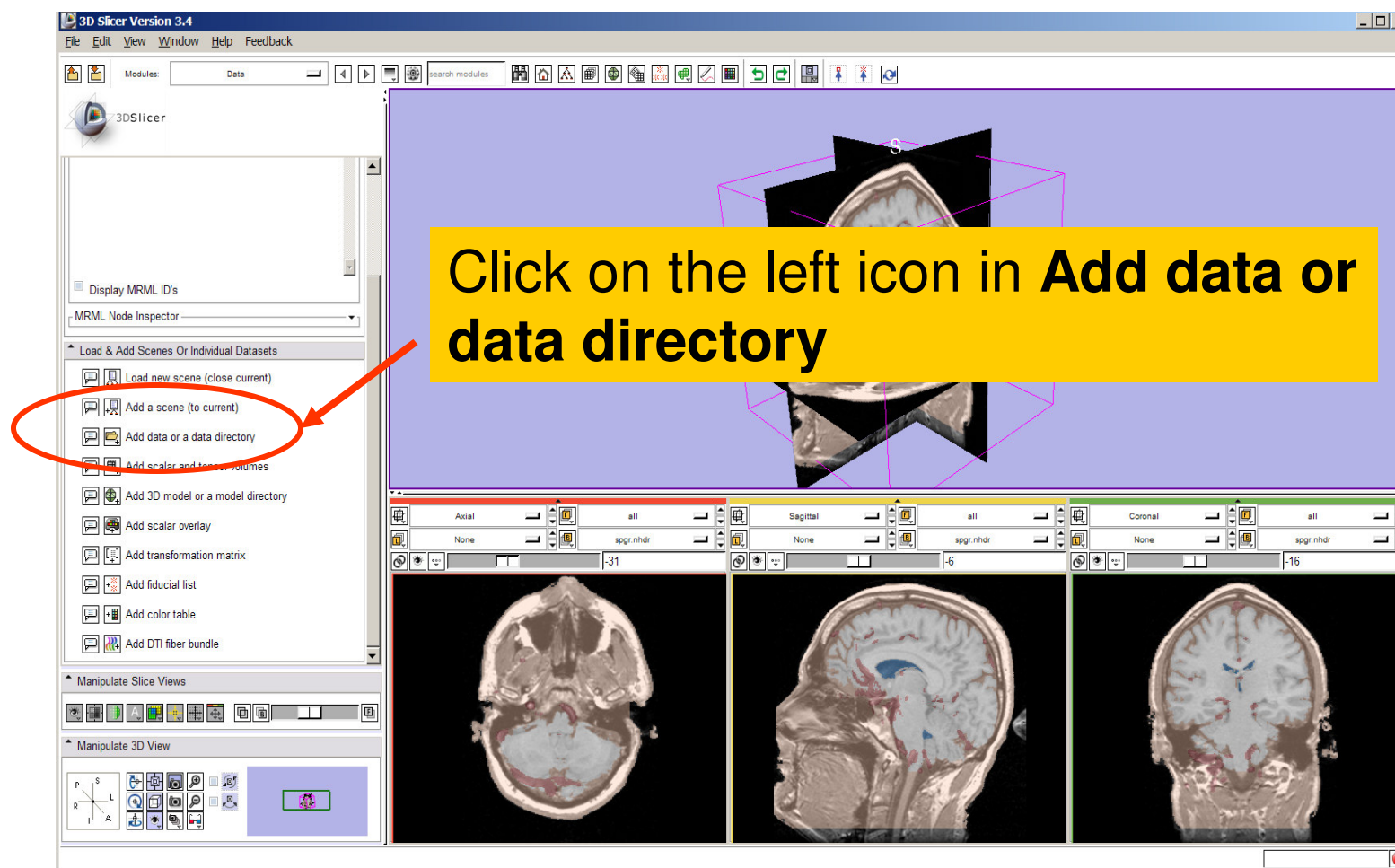
3D Visualization

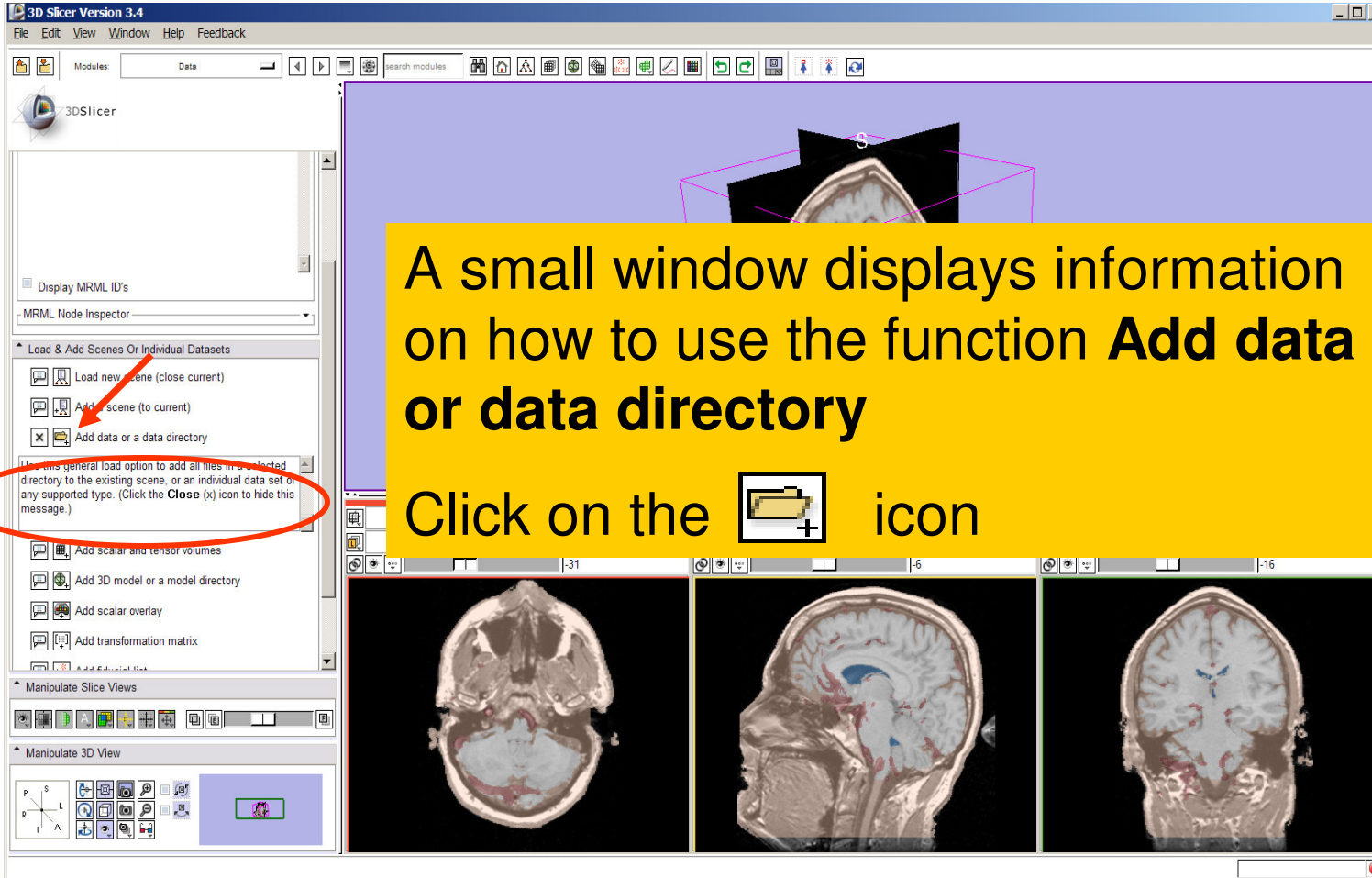
Position the mouse in the 3D Viewer, hold down the left mouse button and drag to rotate the volumes






Part 3: Loading and visualizing 3D models of the anatomy

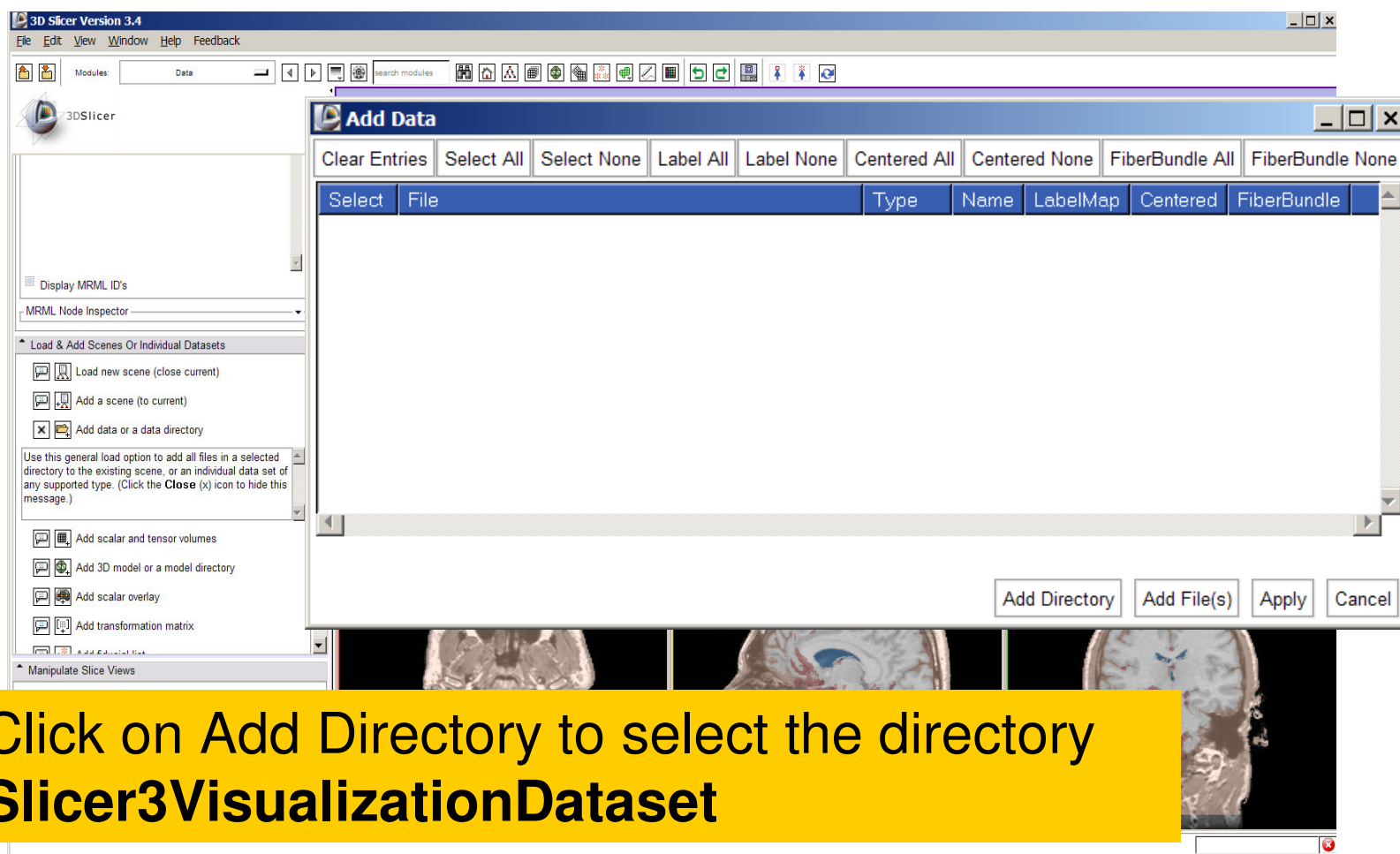




A small window displays information on how to use the function **Add data or data directory**

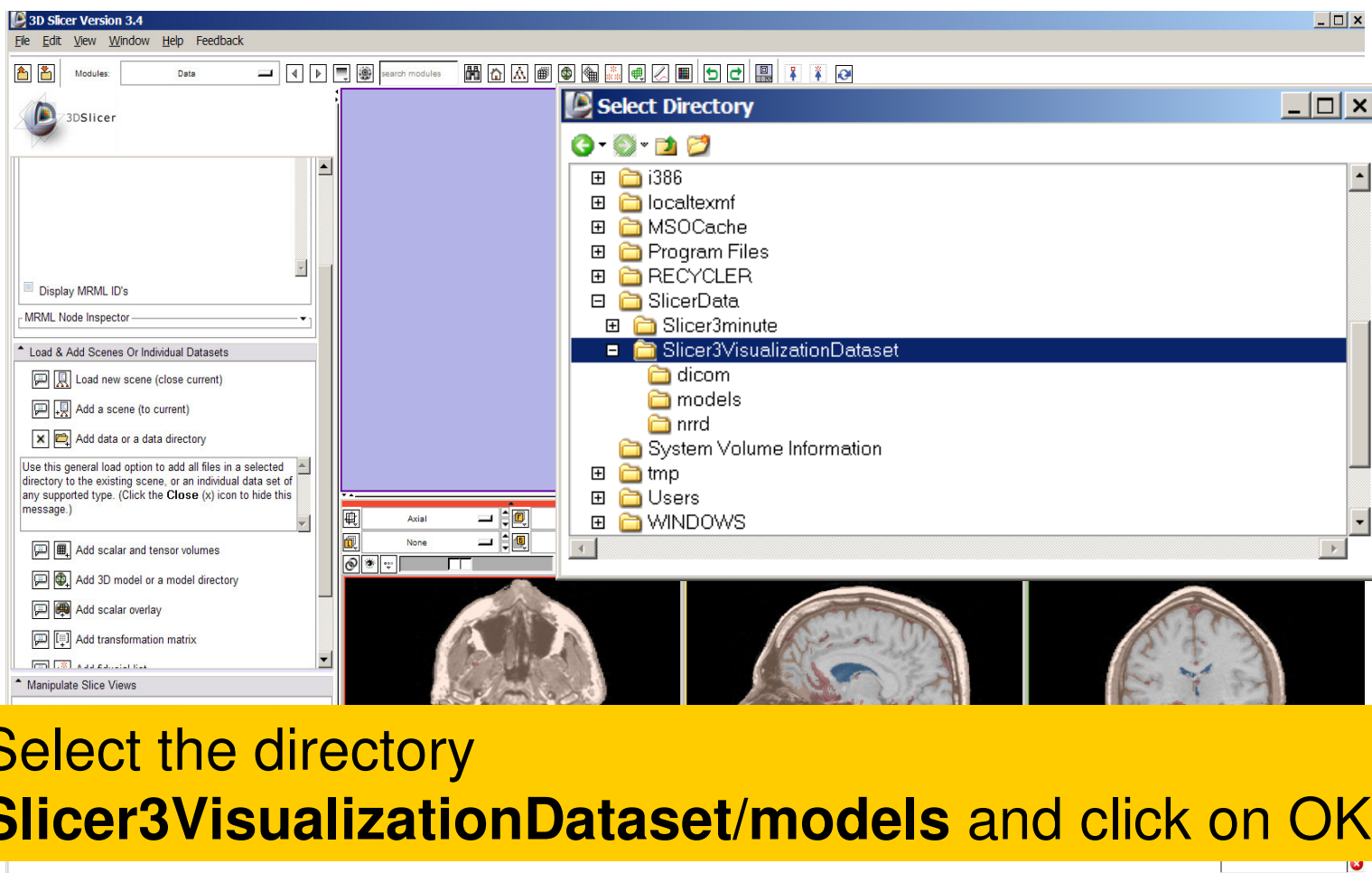
Click on the  icon

The screenshot shows the 3D Slicer Version 3.4 interface. The 'Load & Add Scenes Or Individual Datasets' panel is visible on the left, with the 'Add data or a data directory' option circled in red. A red arrow points to this option. The main 3D view shows a brain slice with a yellow box highlighting the 'Add data or a data directory' function. Below the main view are three smaller windows showing different views of the brain slice: axial, sagittal, and coronal.

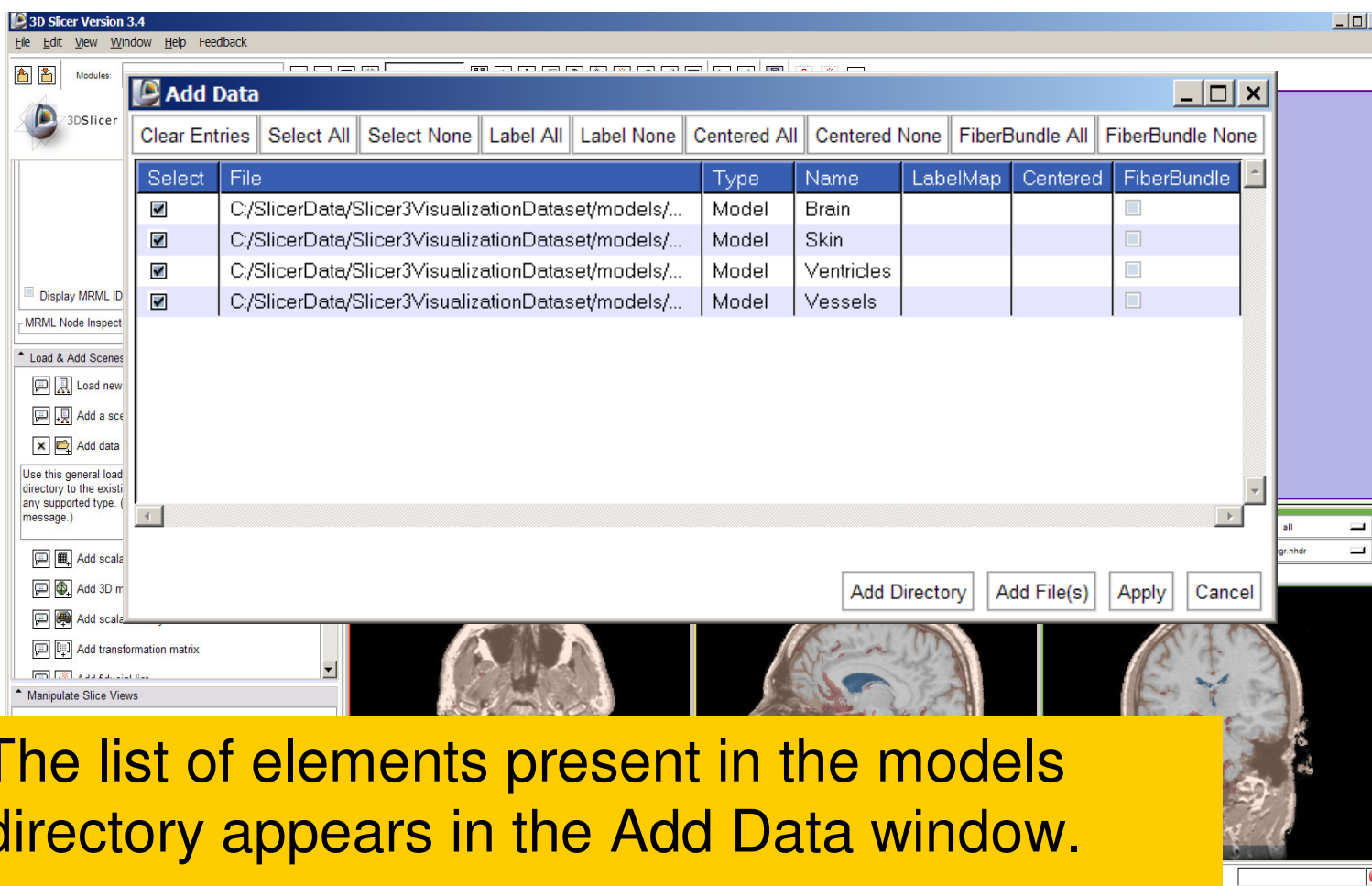




Loading 3D models



Loading 3D models

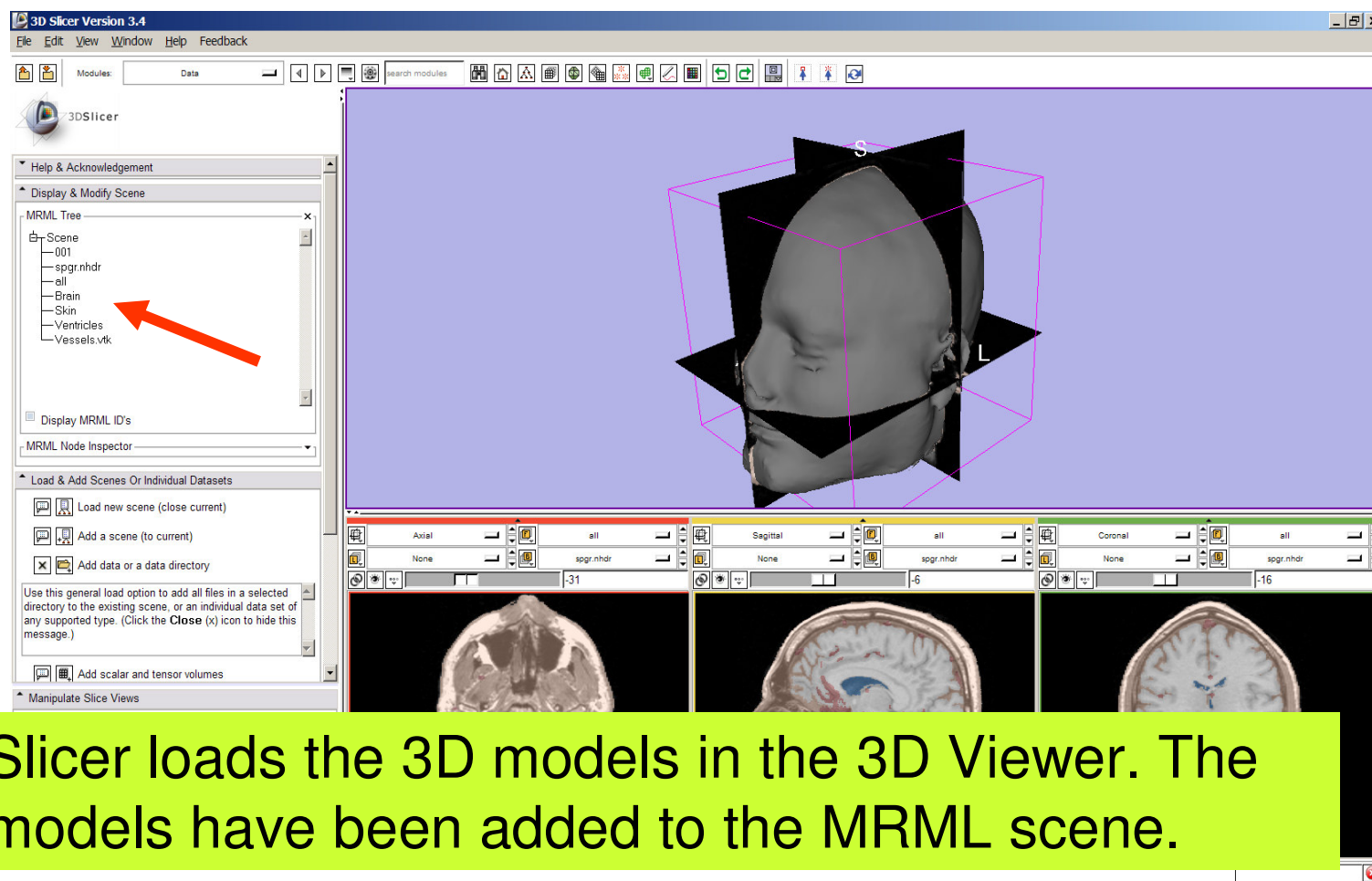


The list of elements present in the models directory appears in the Add Data window.

Click on **Apply** to load all the **3D models**.



Loading 3D models





Loading a 3D model

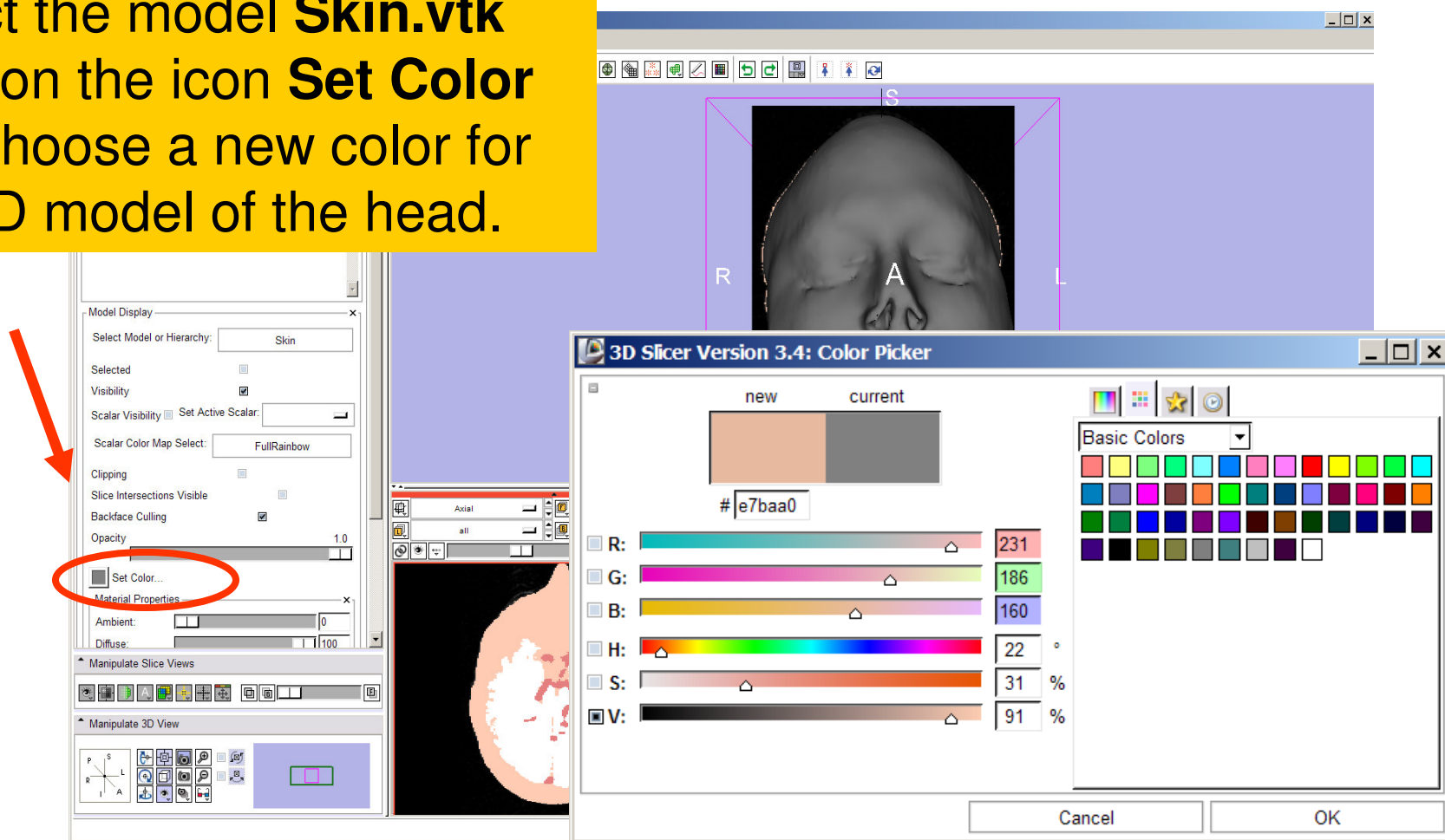
Select the module **Models**

Click on the panel **Hierarchy & Display** to access the module's display components

The screenshot shows the 3D Slicer 3.4 interface. The 'Models' module is selected in the top toolbar. The 'Hierarchy & Display' panel is active, showing a tree view with 'Skin' selected. A 3D model of a head is displayed in the center, with anatomical labels 'R' (Right), 'A' (Anterior), and 'L' (Left). Below the 3D view, there are three slice views: Axial, Sagittal, and Coronal. The Coronal slice view shows a brain slice with a red and blue overlay. The interface also includes a 'Manipulate Slice Views' and 'Manipulate 3D View' section at the bottom.

Visualizing a 3D model

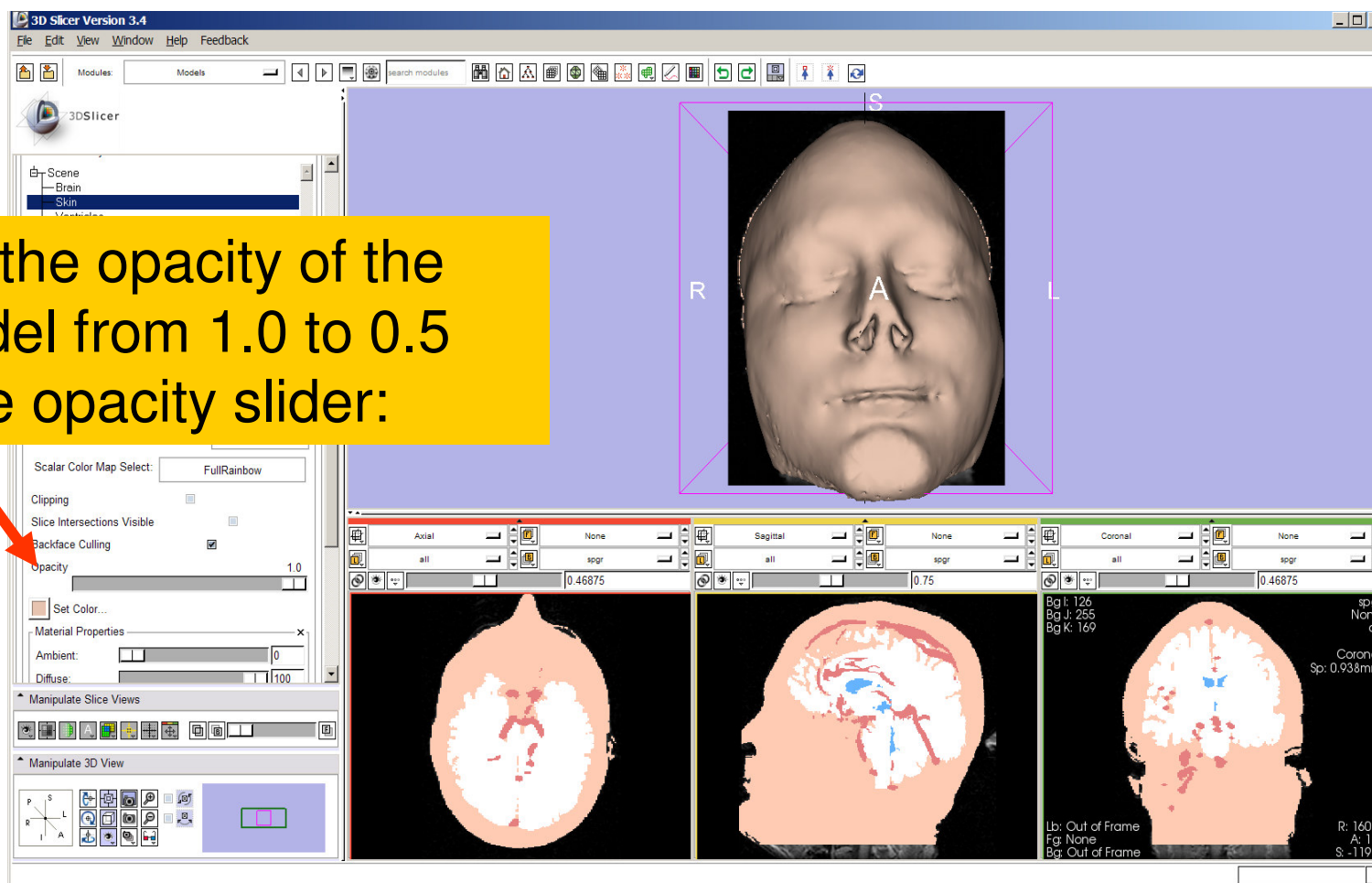
Select the model **Skin.vtk**
Click on the icon **Set Color**
and choose a new color for
the 3D model of the head.





Visualizing a 3D model

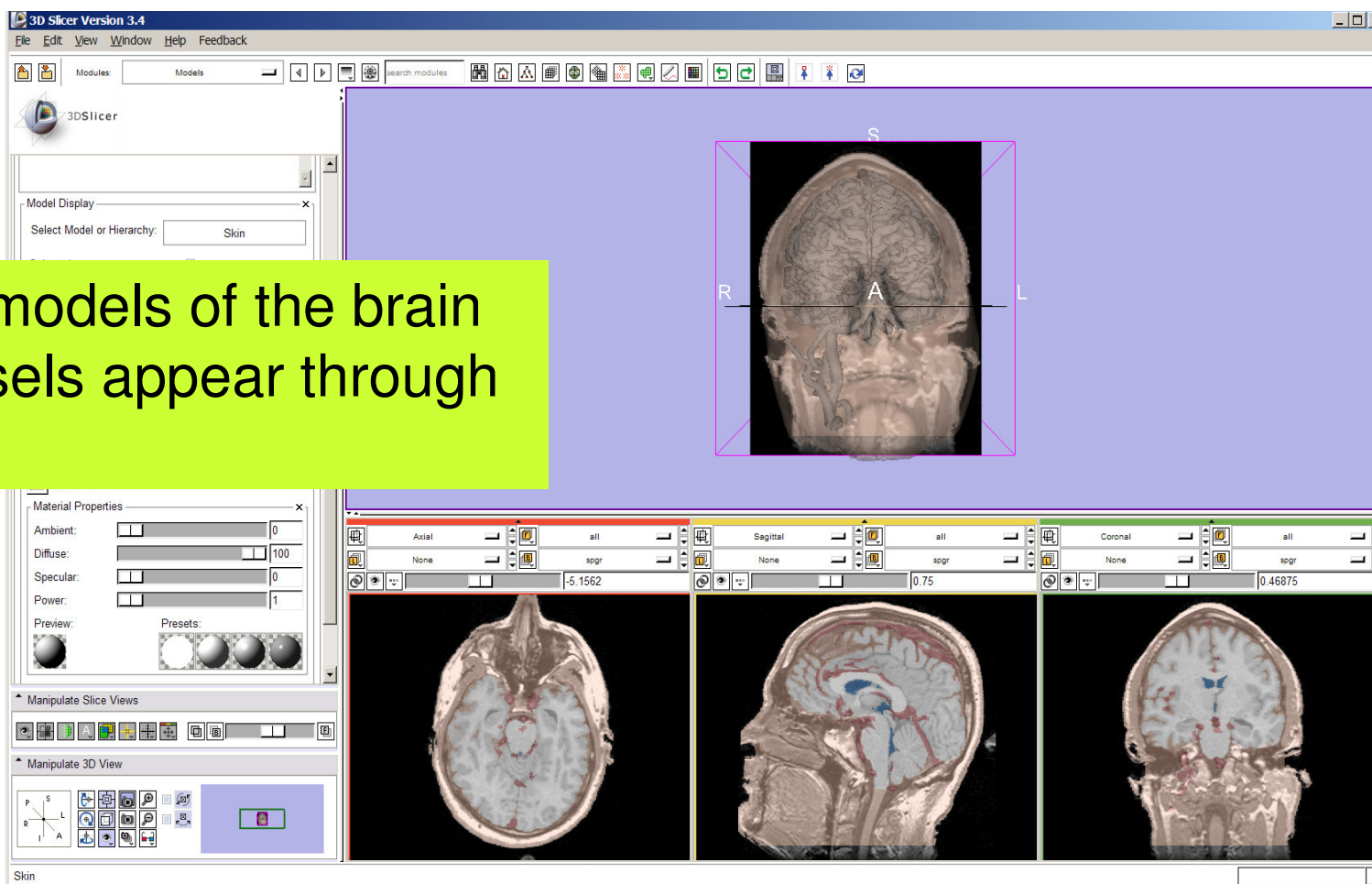
Change the opacity of the skin model from 1.0 to 0.5 using the opacity slider:





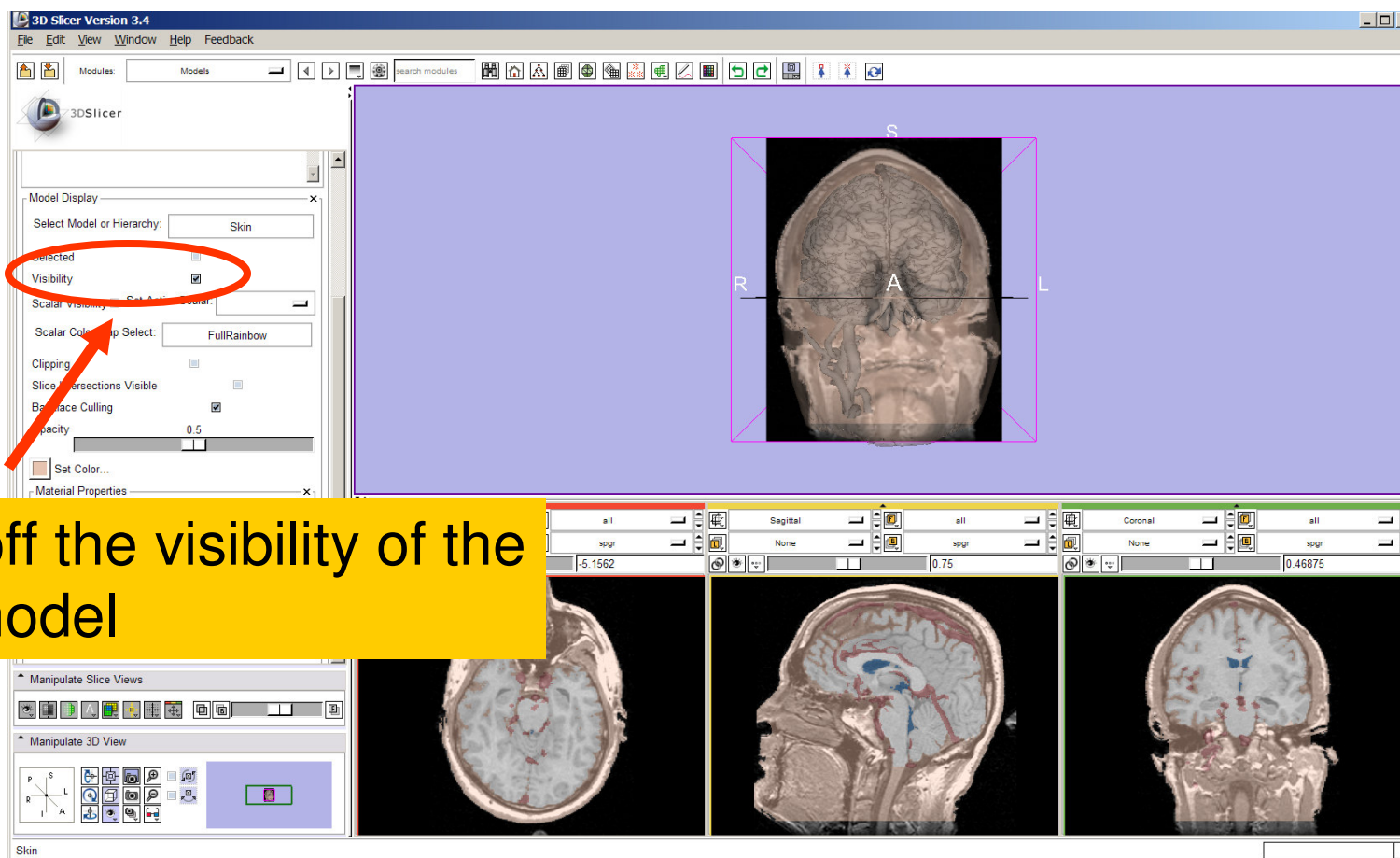
Visualizing a 3D model

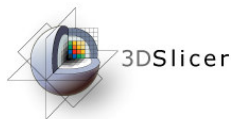
The 3D models of the brain and vessels appear through the skin



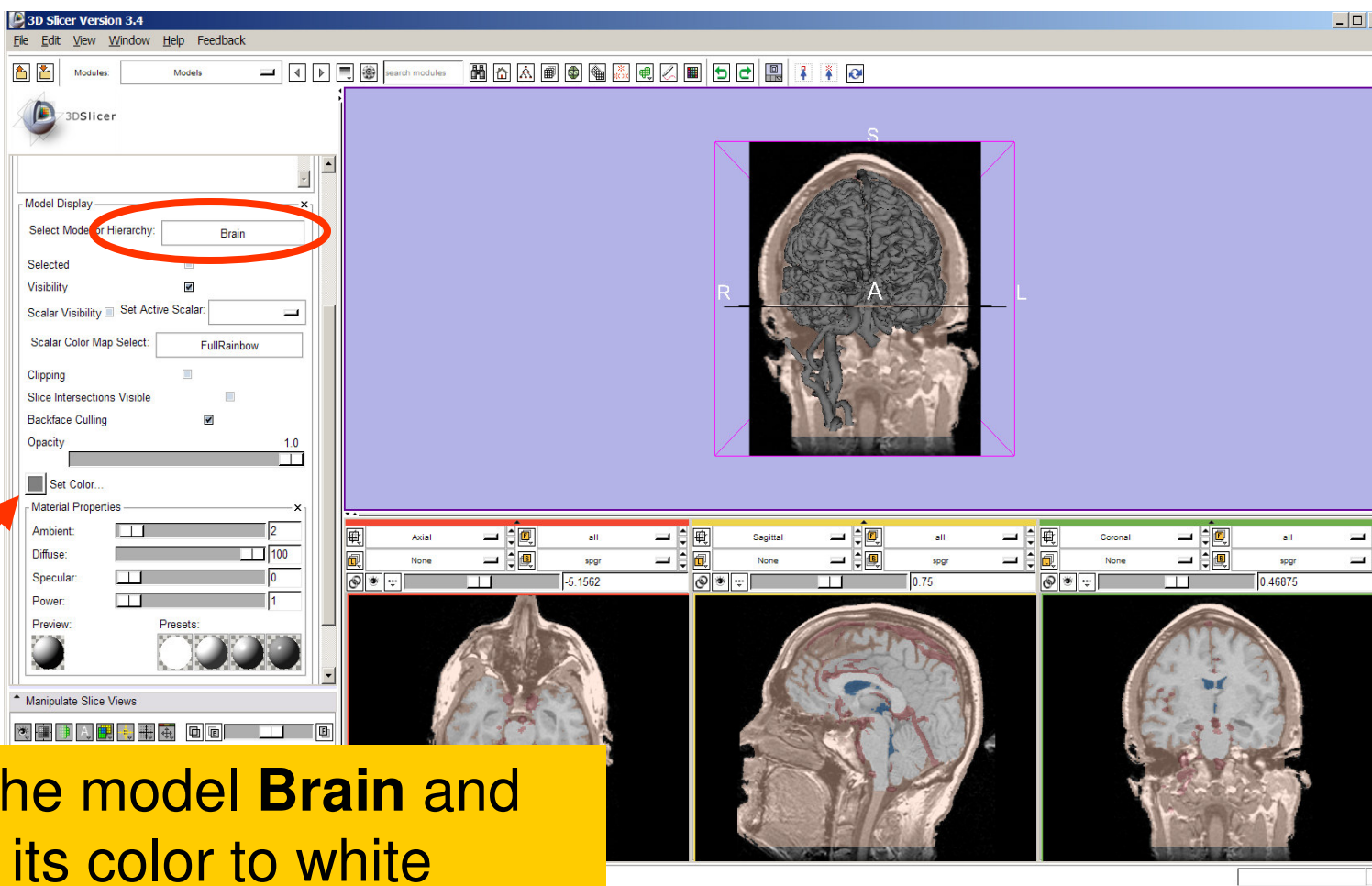


Visualizing a 3D model

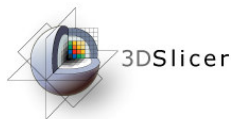




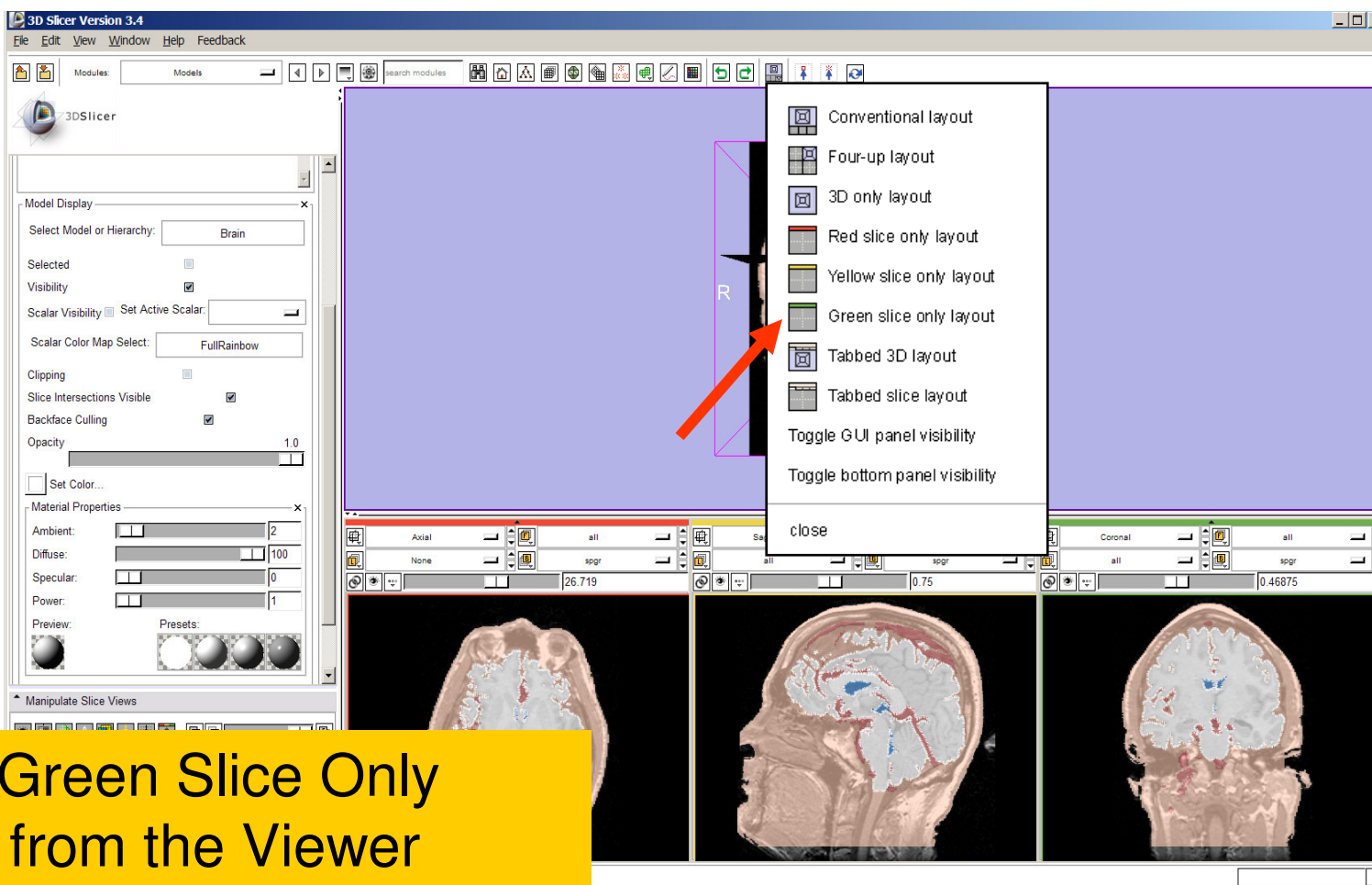
Visualizing a 3D model



Select the model **Brain** and change its color to white



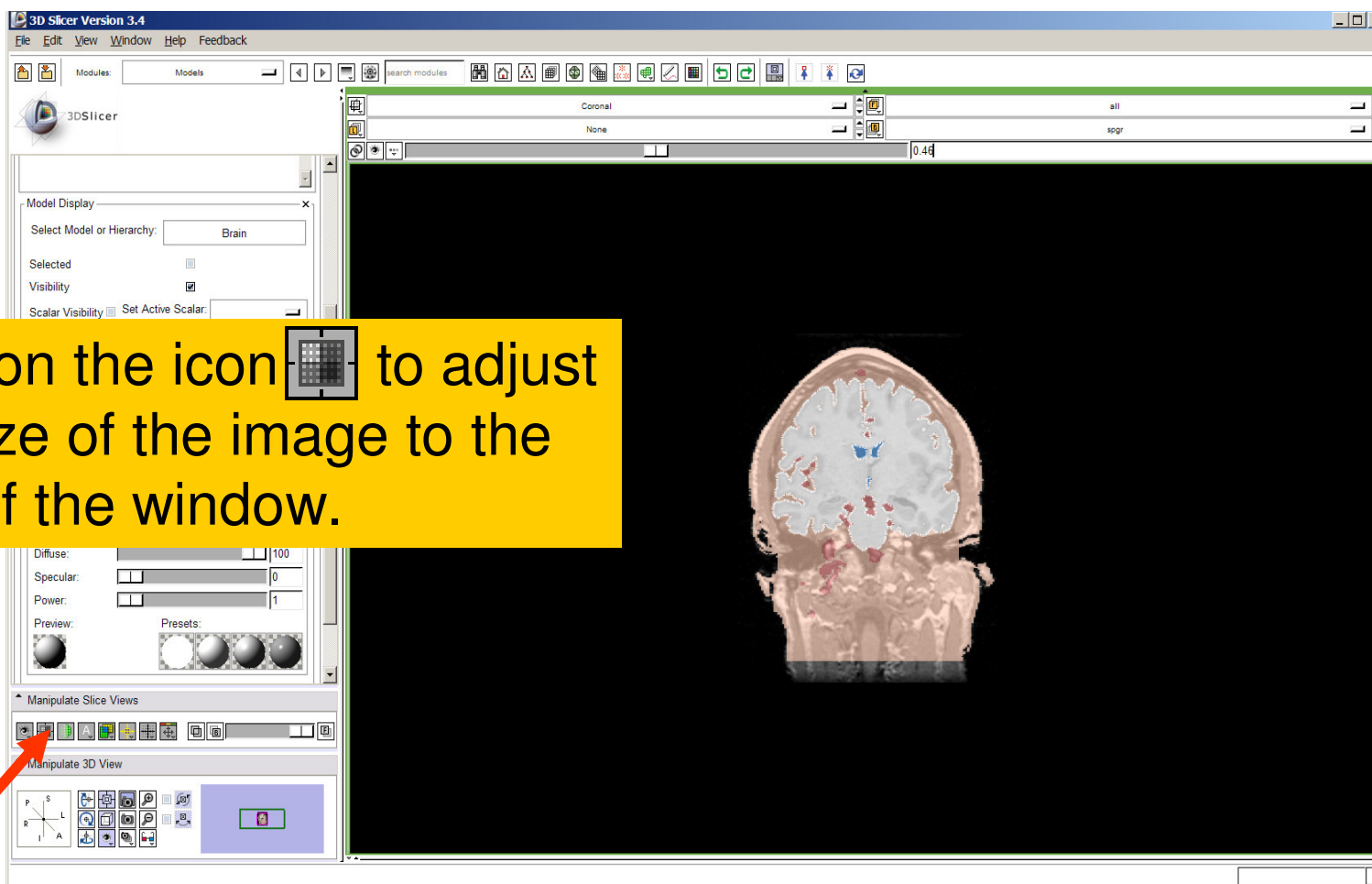
Visualizing a 3D model



Select Green Slice Only Layout from the Viewer menu

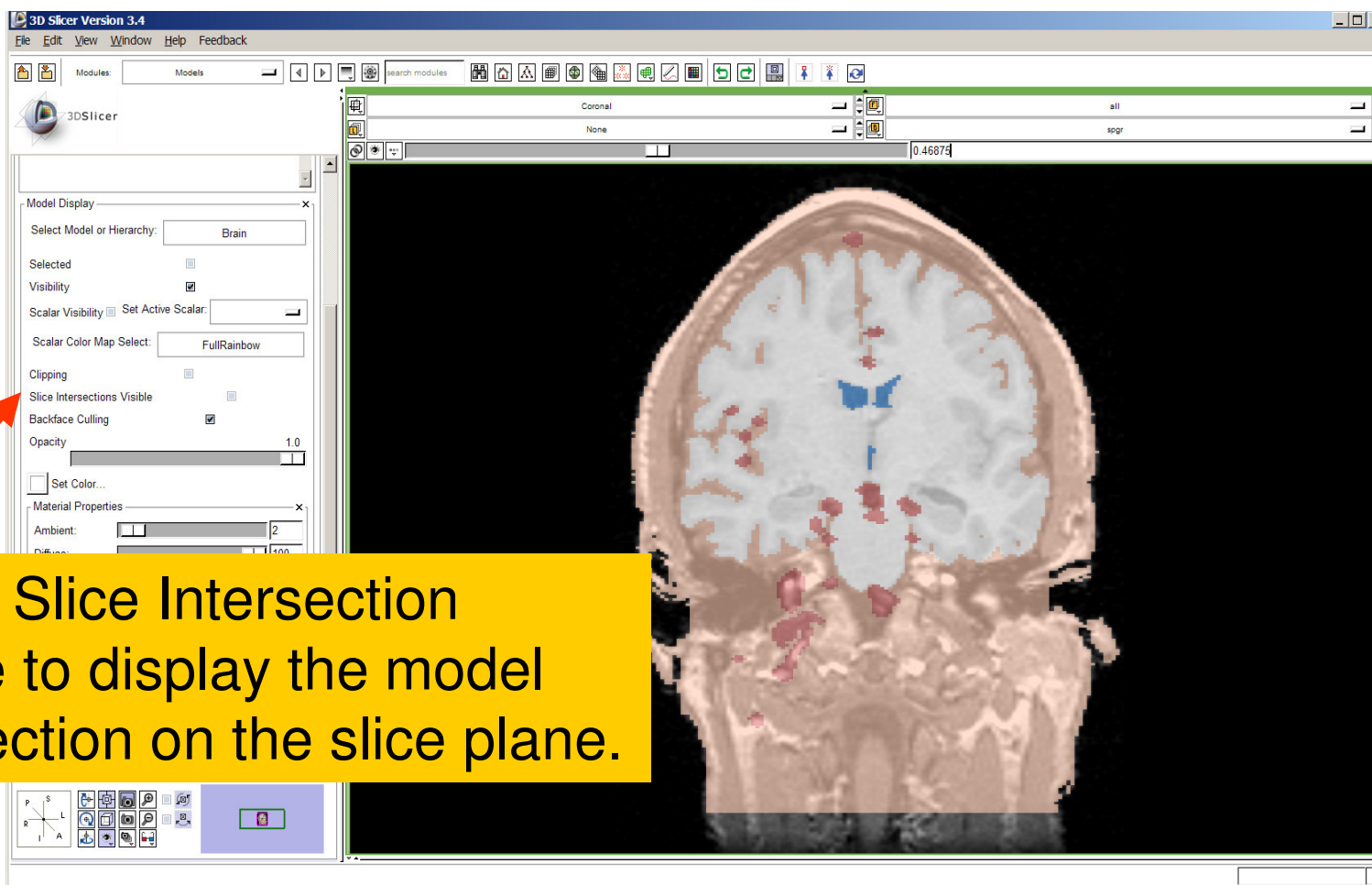


Visualizing a 3D model





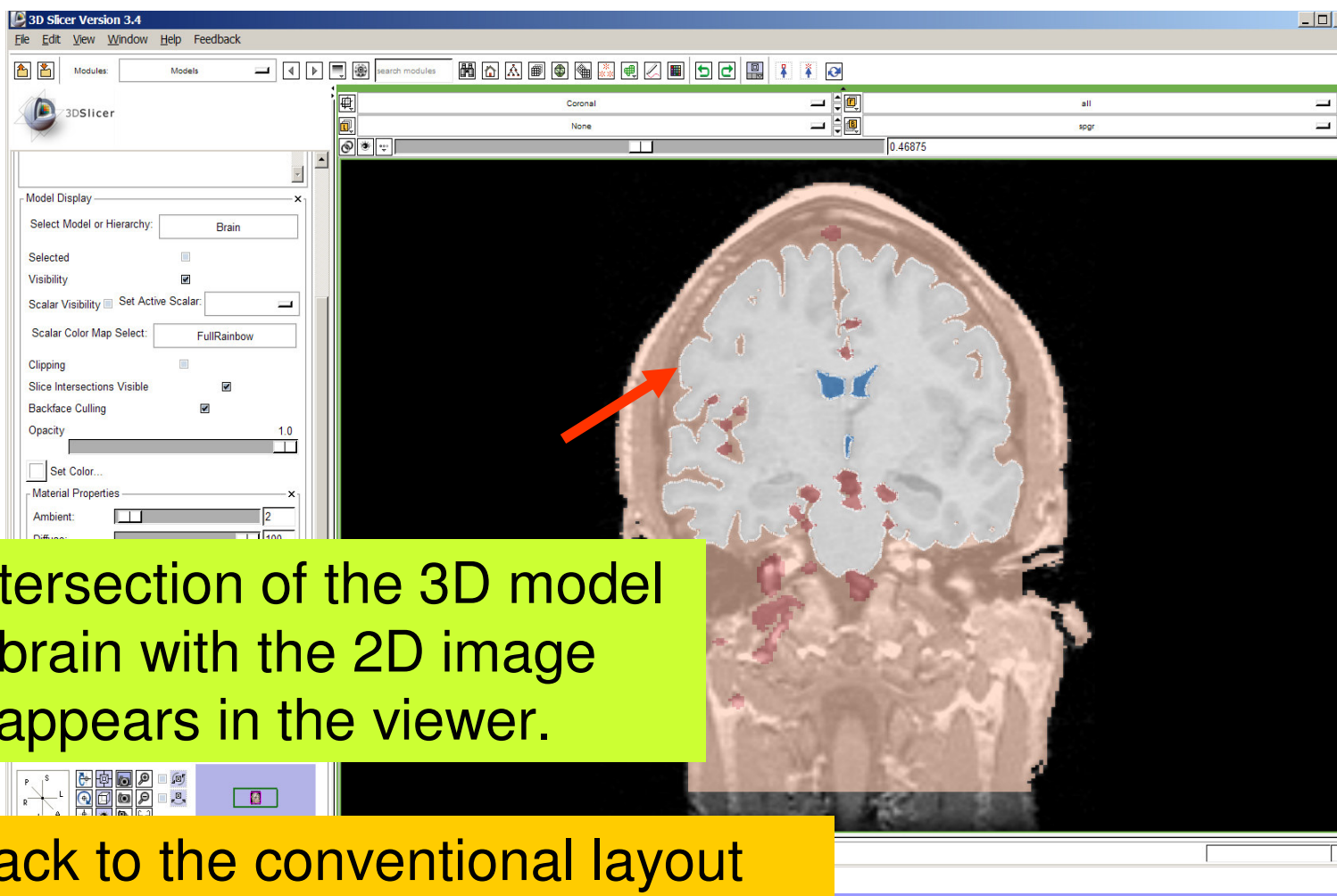
Visualizing a 3D model



Select Slice Intersection Visible to display the model intersection on the slice plane.

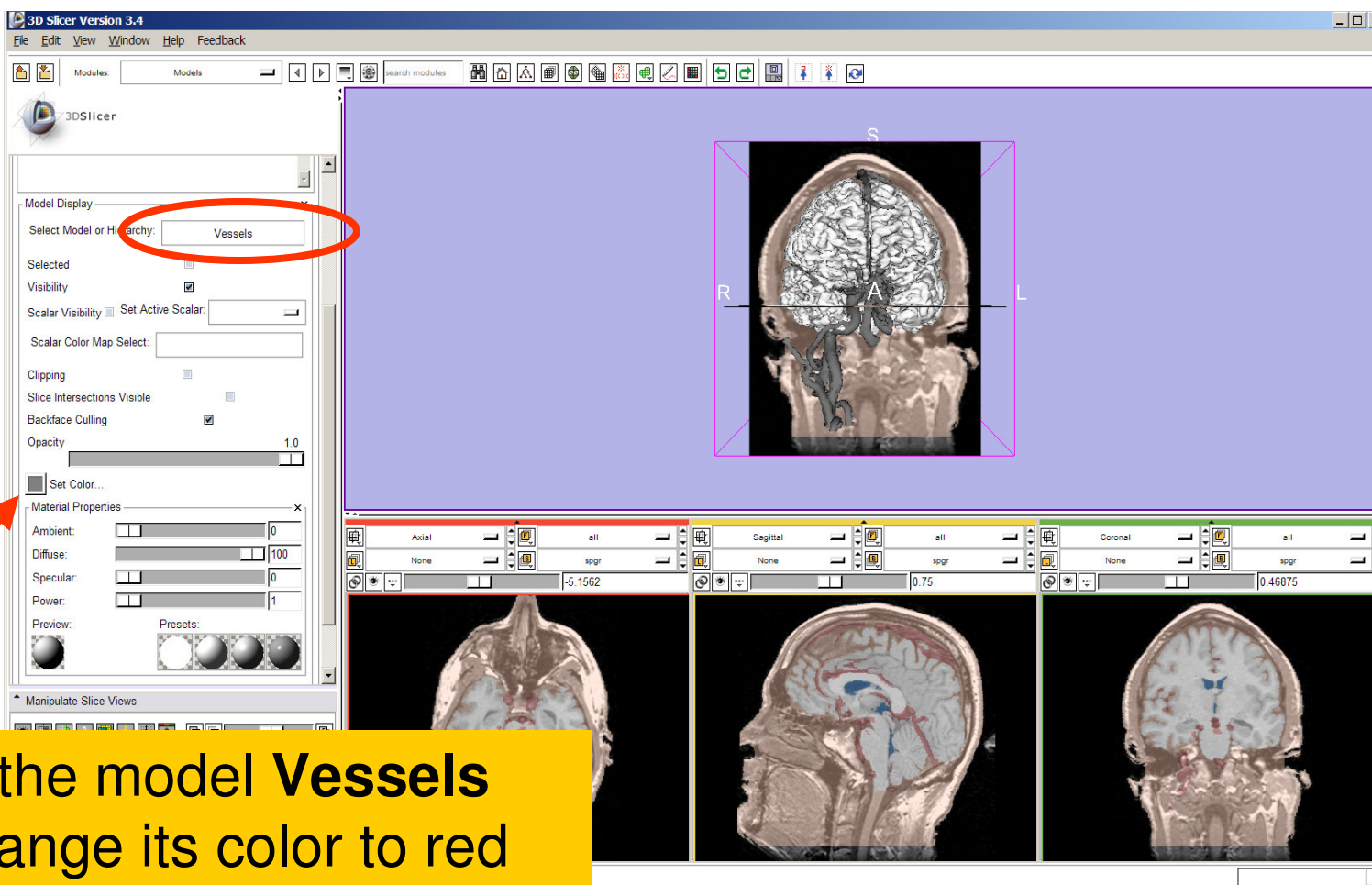


Visualizing a 3D model



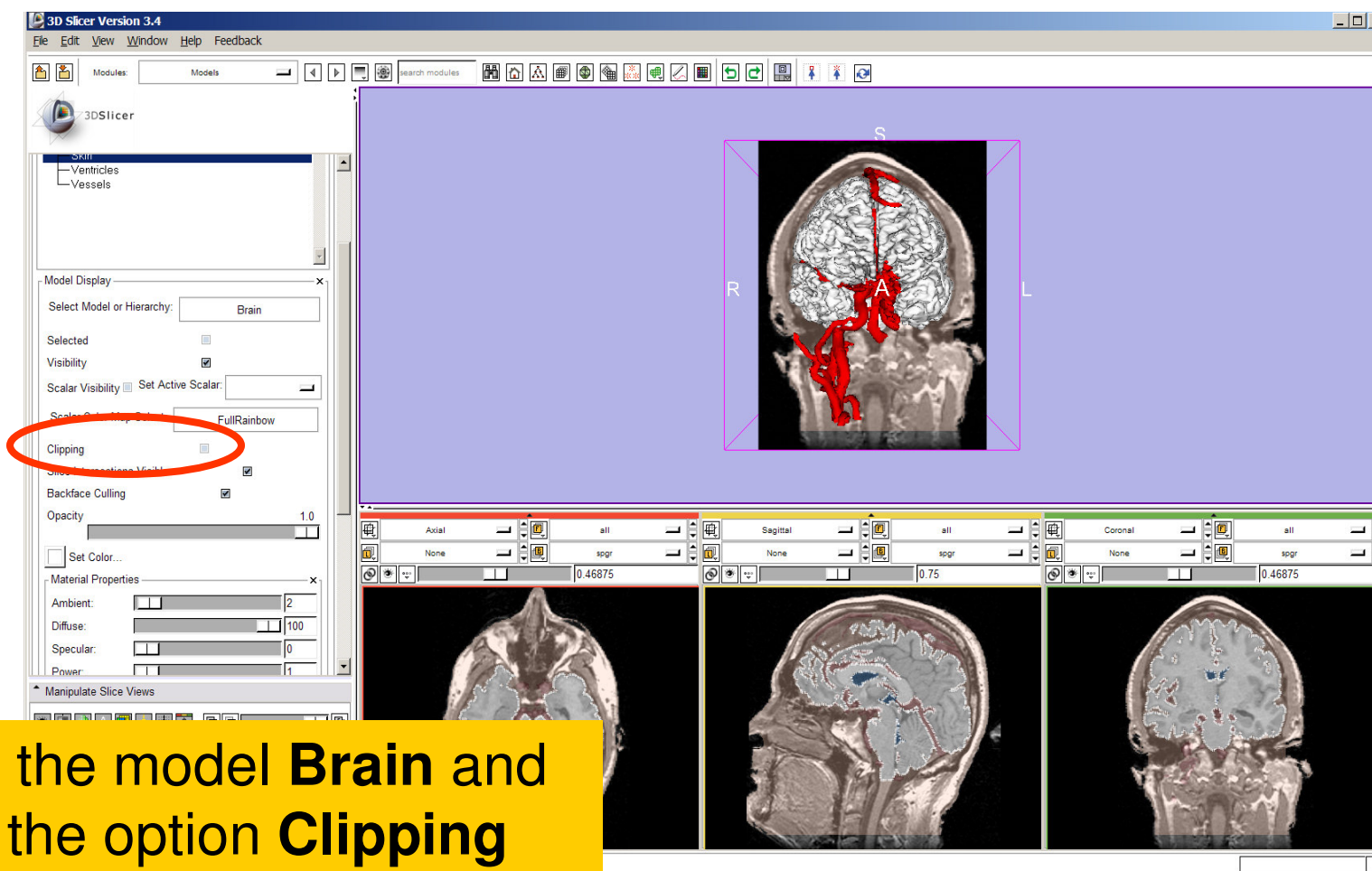


Visualizing a 3D model





Visualizing a 3D model





Visualizing a 3D model

3D Slicer Version 3.4

File Edit View Window Help Feedback

Modules: Models

3DSlicer

Clipping

Slice Intersections Visible

Backface Culling

Opacity 1.0

Set Color...

Material Properties

Ambient: 0

Diffuse: 100

Specular: 0

Power: 1

Preview: Presets:

Clipping

Presence Clipping: Off

Yellow Slice Clipping: Positive Space

Green Slice Clipping: Off

Clip by: Intersection

Info

Manipulate Slice Views

Axial all 0.46875

Sagittal all spgr 0.75

Coronal all spgr 0.46875

Bg I: 126
Bg J: 255
Bg K: 169

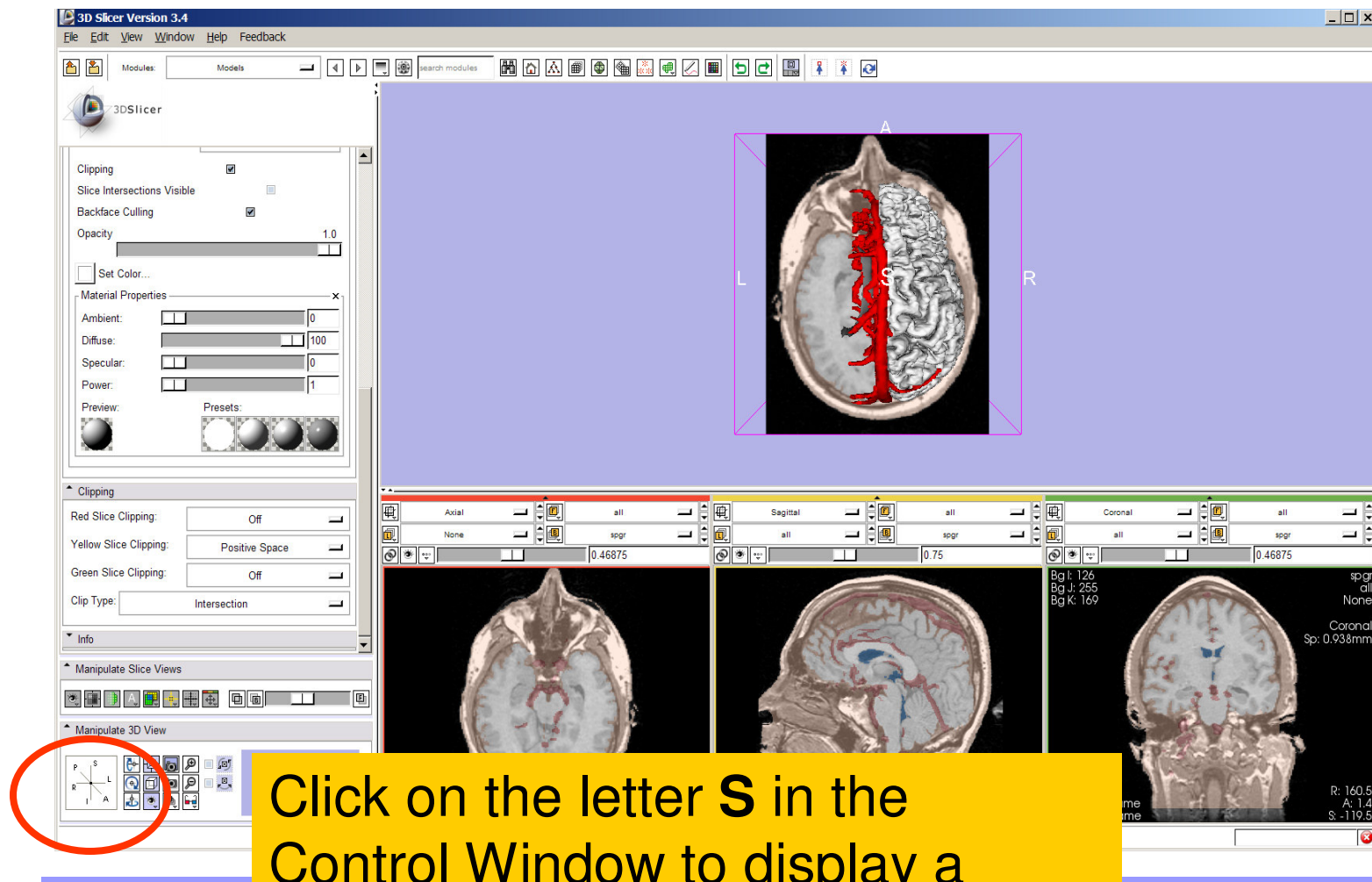
Coronal Sp: 0.938mm

Lb: None
R: 160.5
A: 1.4
S: -119.5

Set Yellow Slice Clipping to Positive Space



Visualizing a 3D model



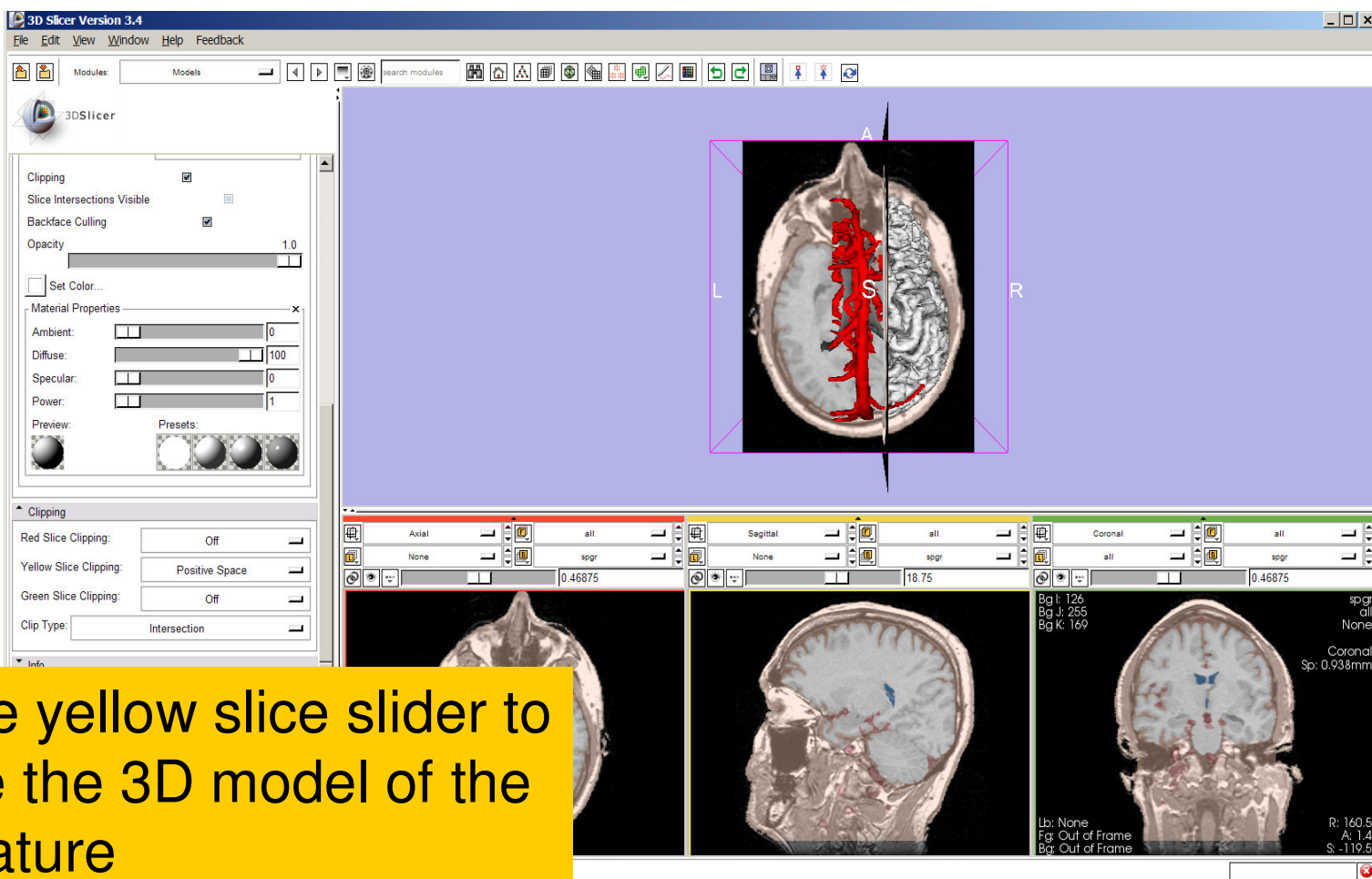
Click on the letter **S** in the Control Window to display a superior view of the 3D models

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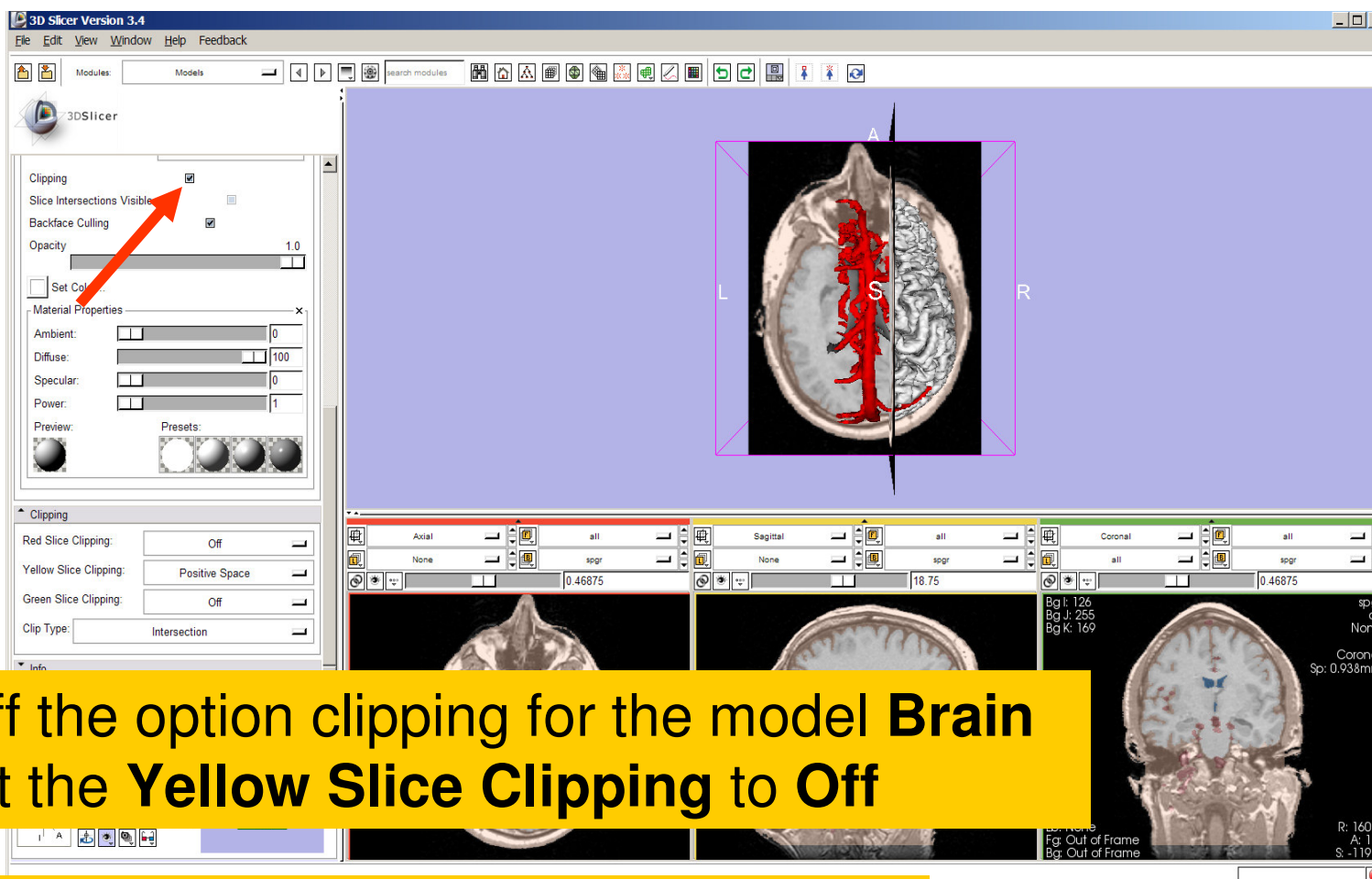


Visualizing a 3D model





Visualizing a 3D model

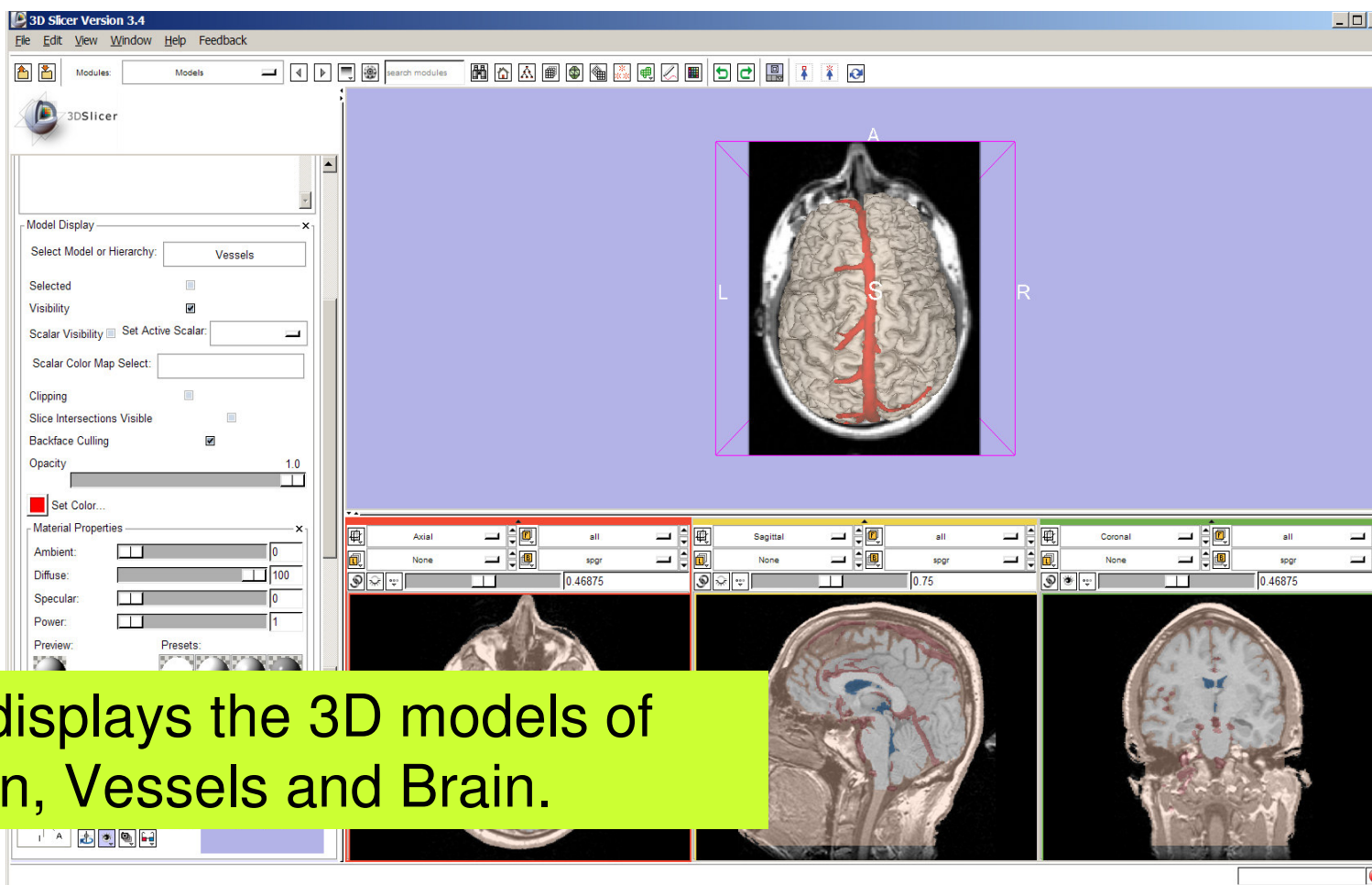


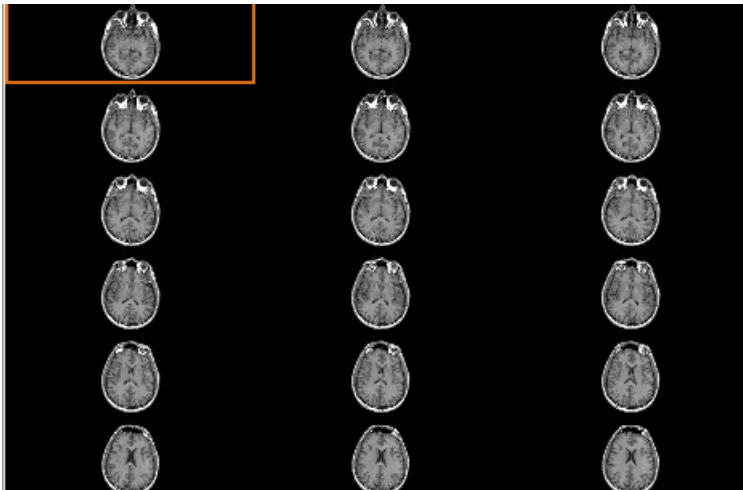
Turn off the option clipping for the model **Brain** and set the **Yellow Slice Clipping** to **Off**

Turn on the visibility of the model **Skin**

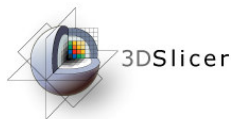


Visualizing a 3D model

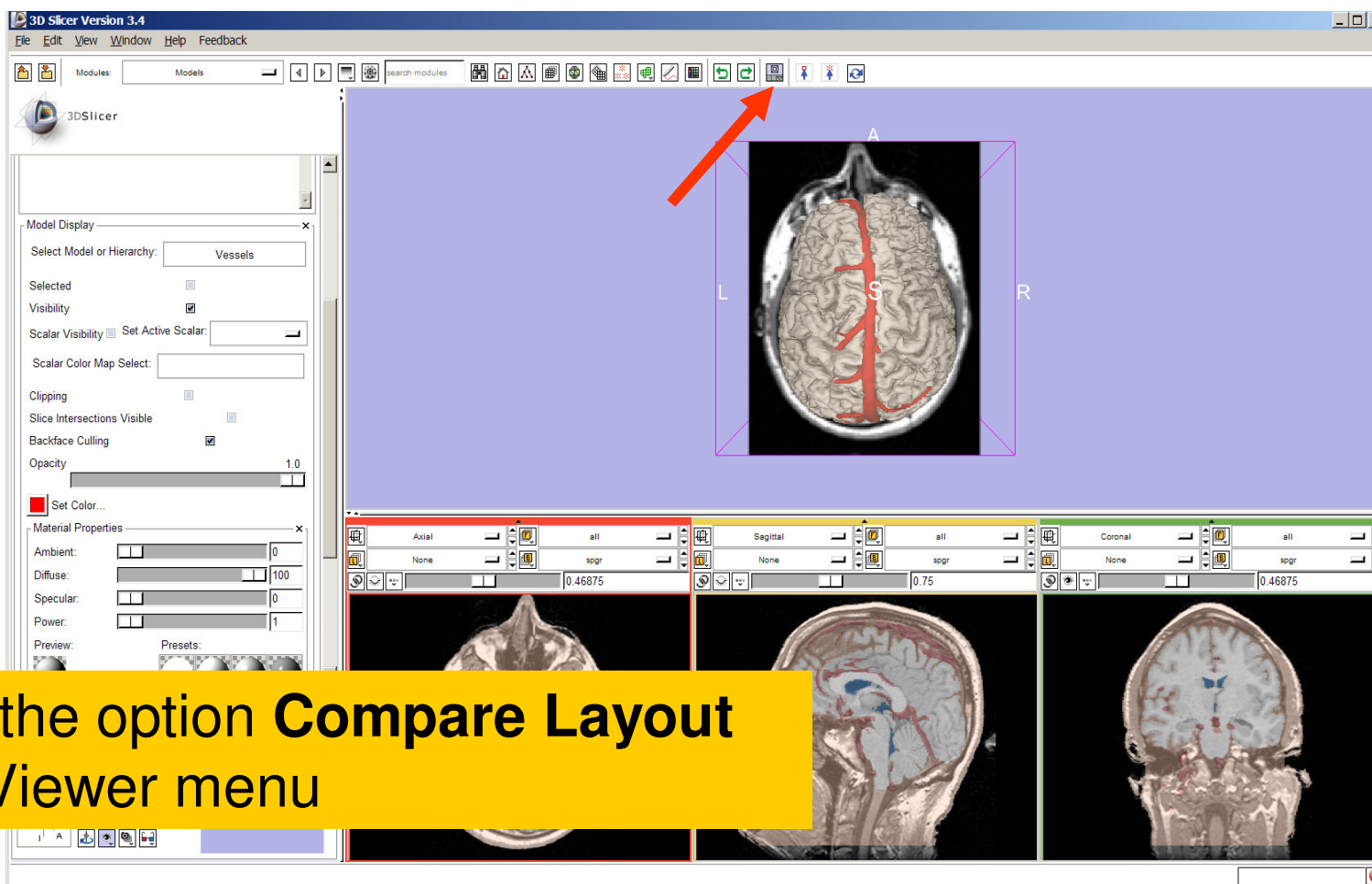


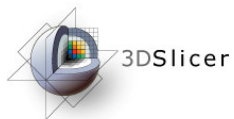


Part 4: Lightbox viewer

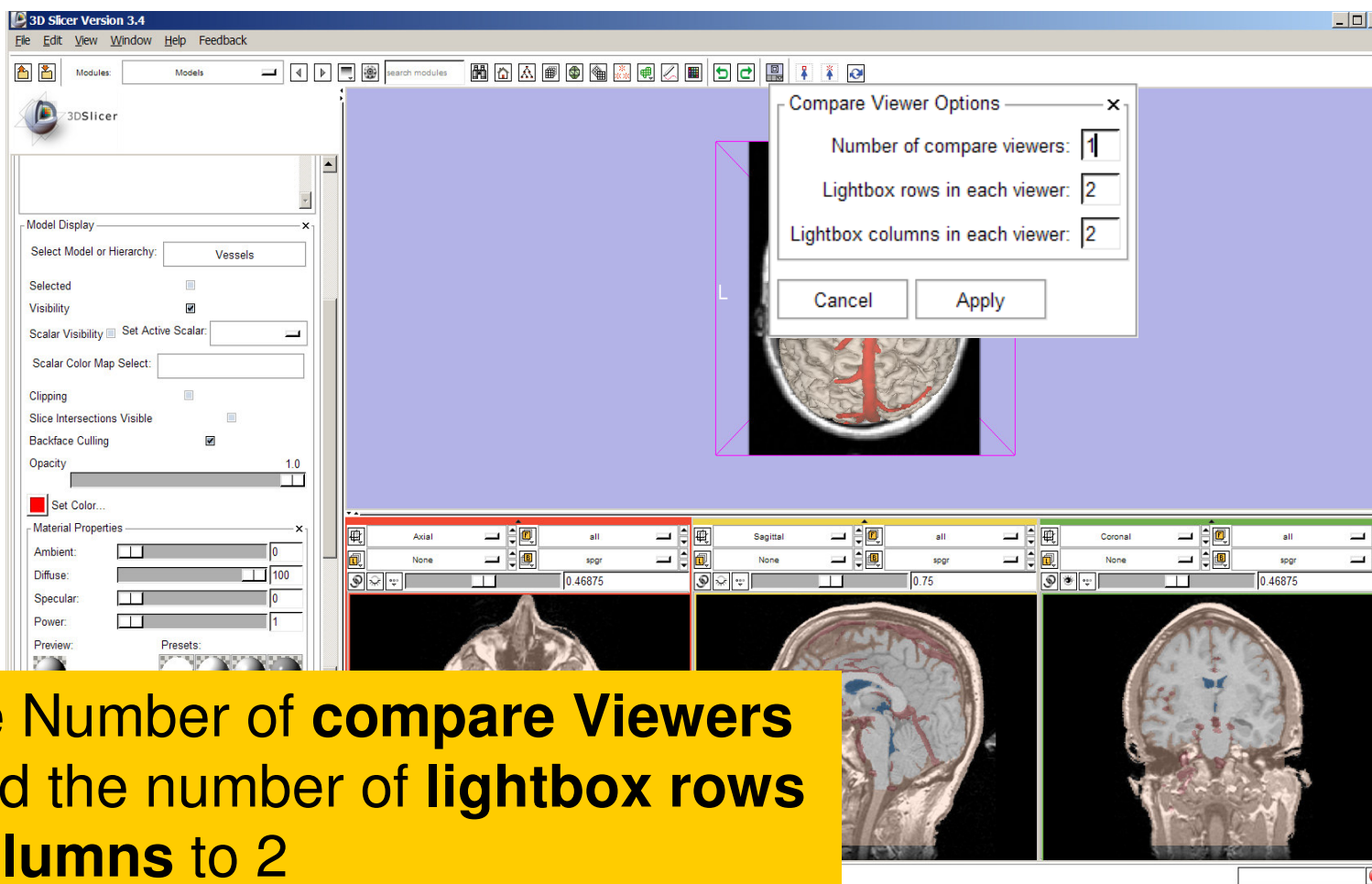


Visualizing a 3D model





Visualizing a 3D model

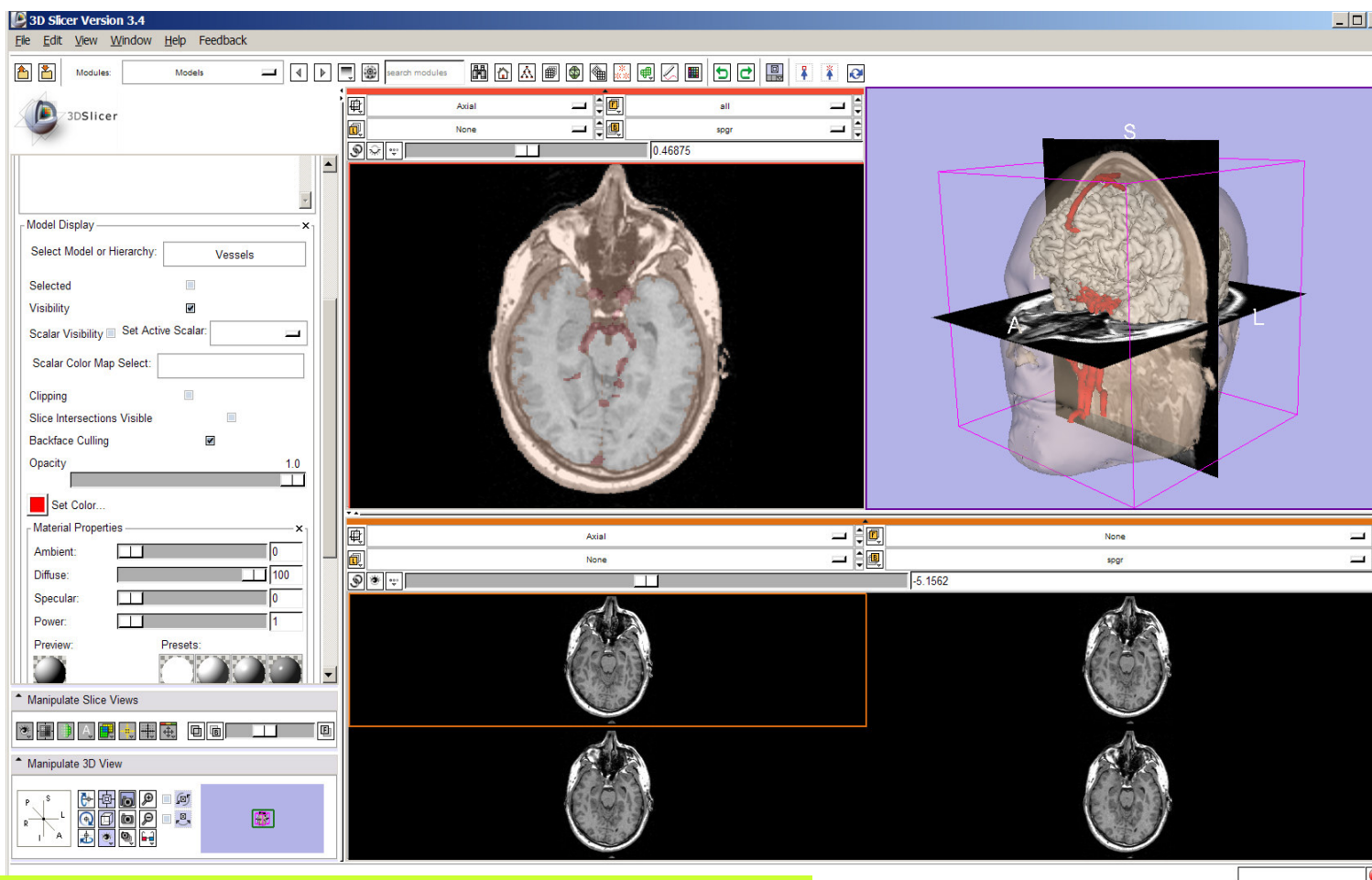


Set the Number of **compare Viewers** to 1 and the number of **lightbox rows** and **columns** to 2

Click on **Apply**



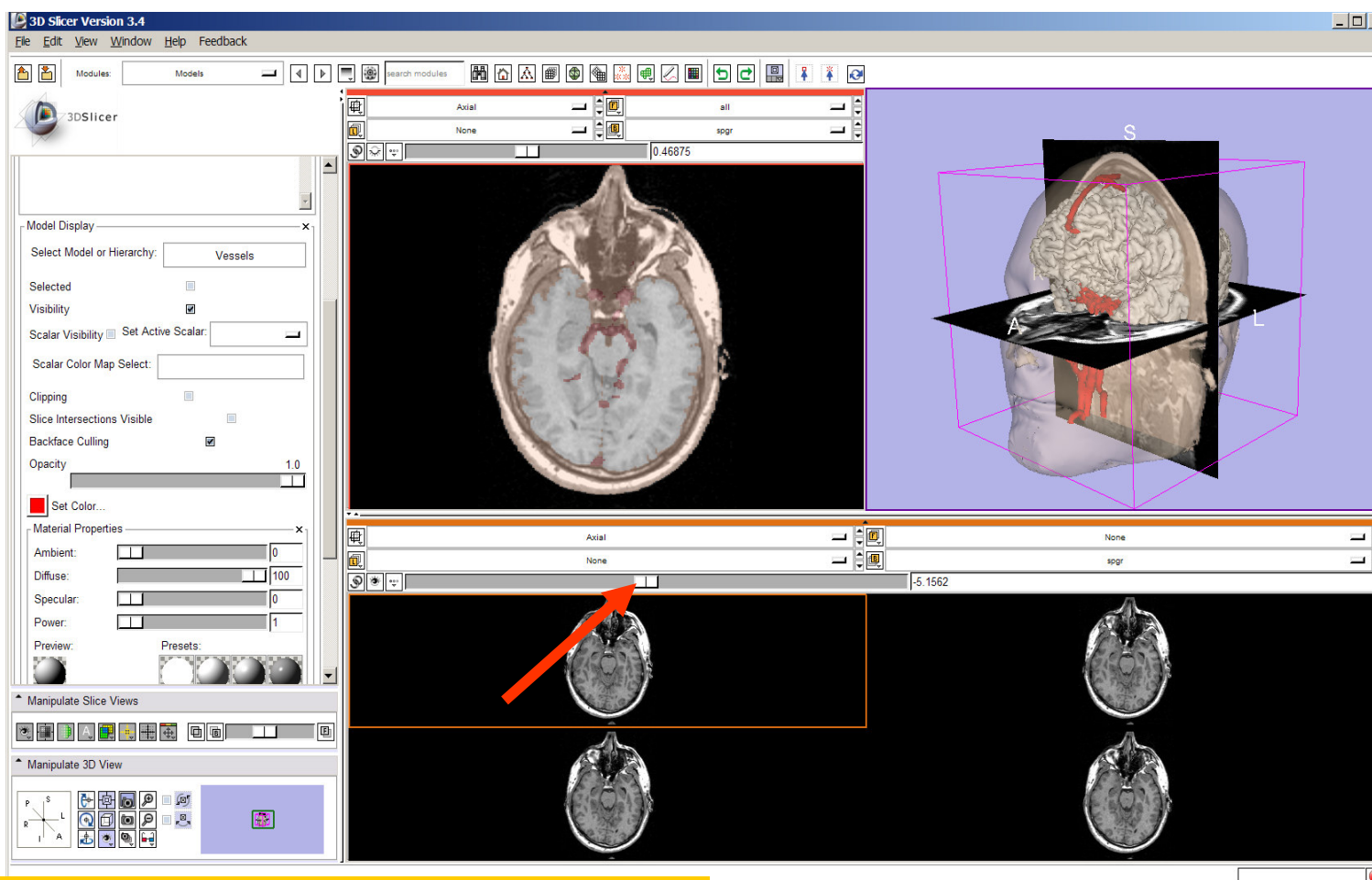
Lightbox viewer



Slicer displays a lightbox view of the Background dataset.



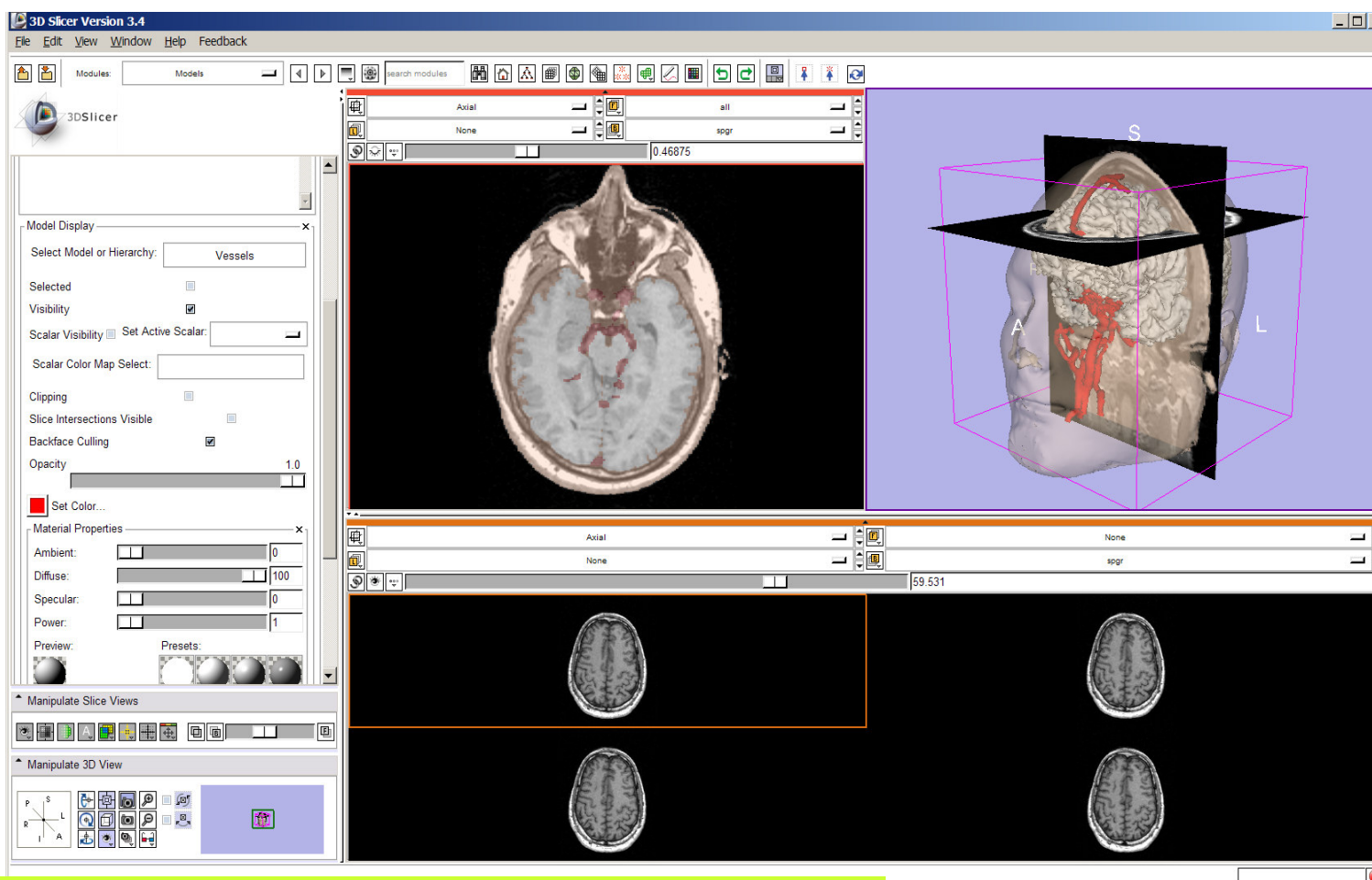
Lightbox viewer



Browse through the spgr volume using the lightbox slider



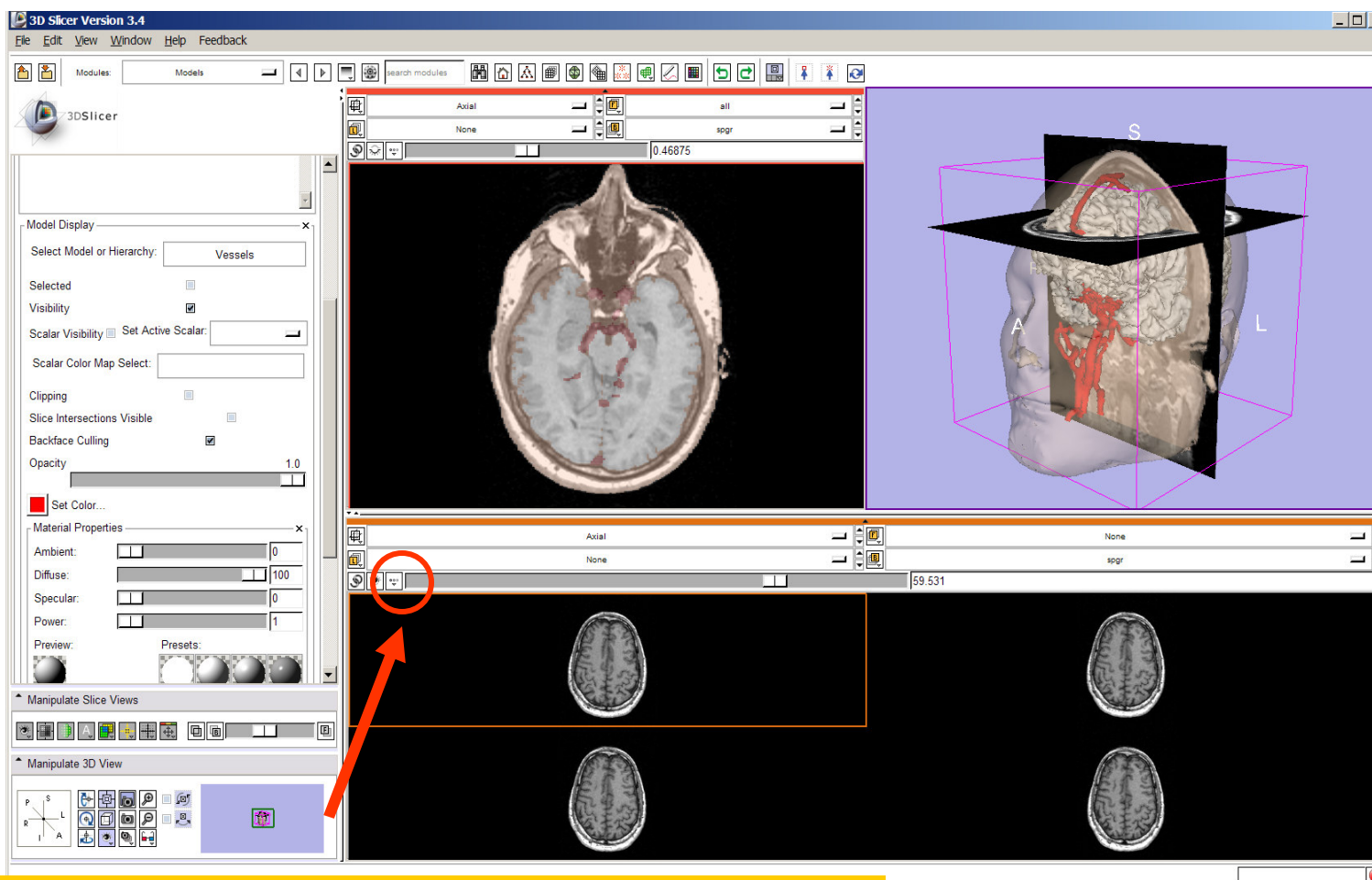
Lightbox viewer



Slicer displays 4 adjacent axial slices of the spgr volume simultaneously



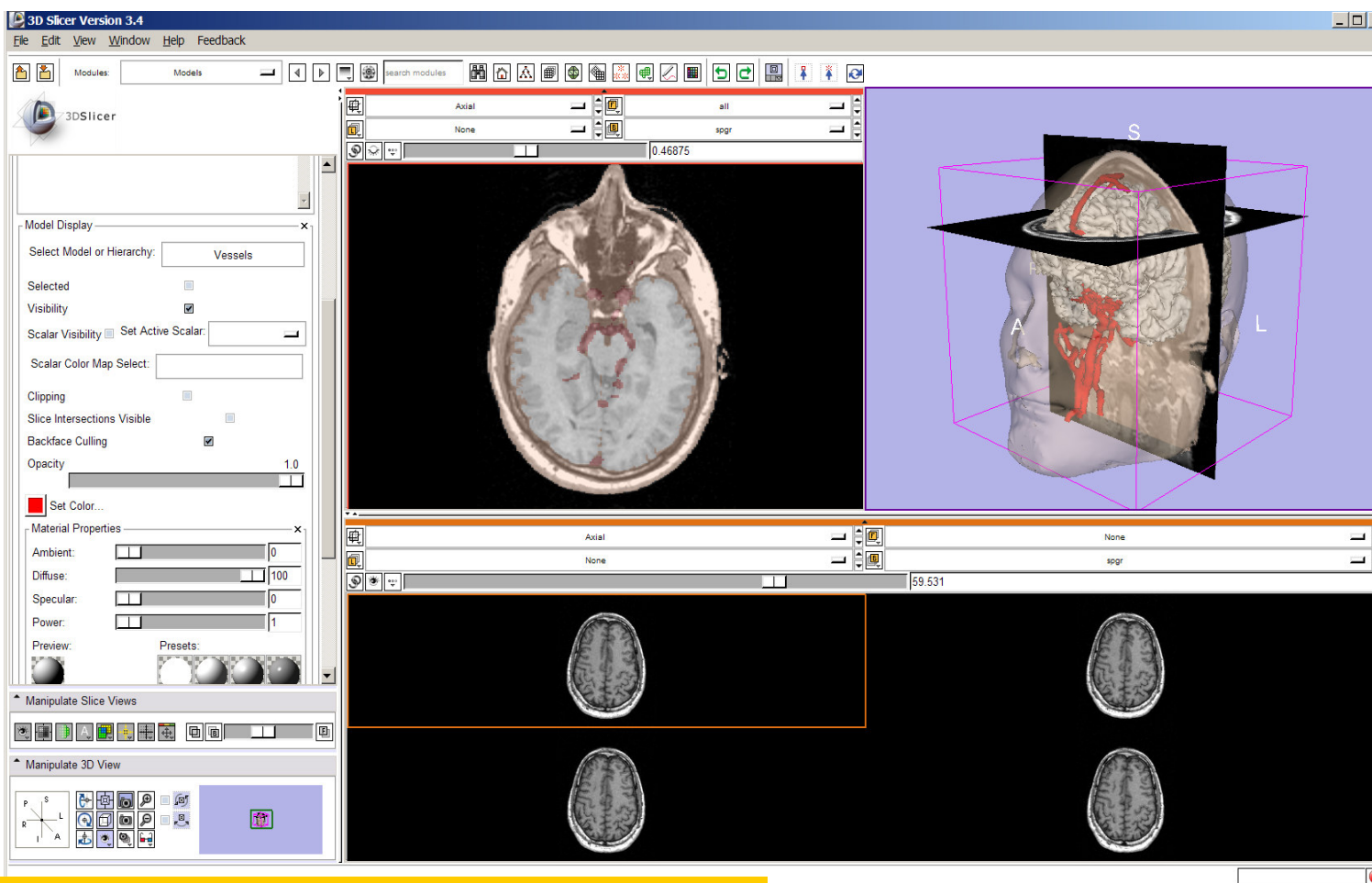
Lightbox viewer



Left click on the Slice Viewer menu of the Compare Layout viewer

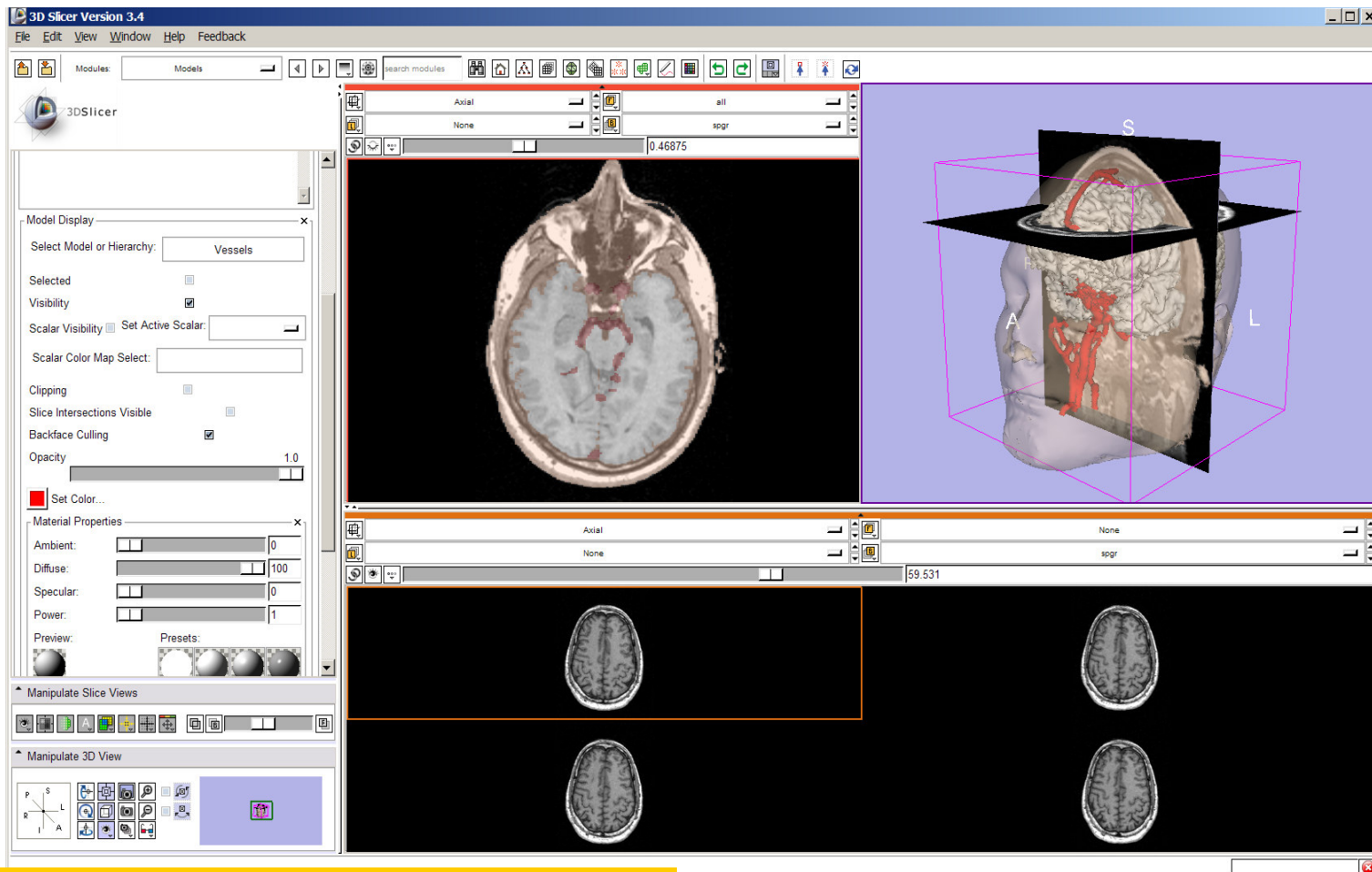


Lightbox viewer



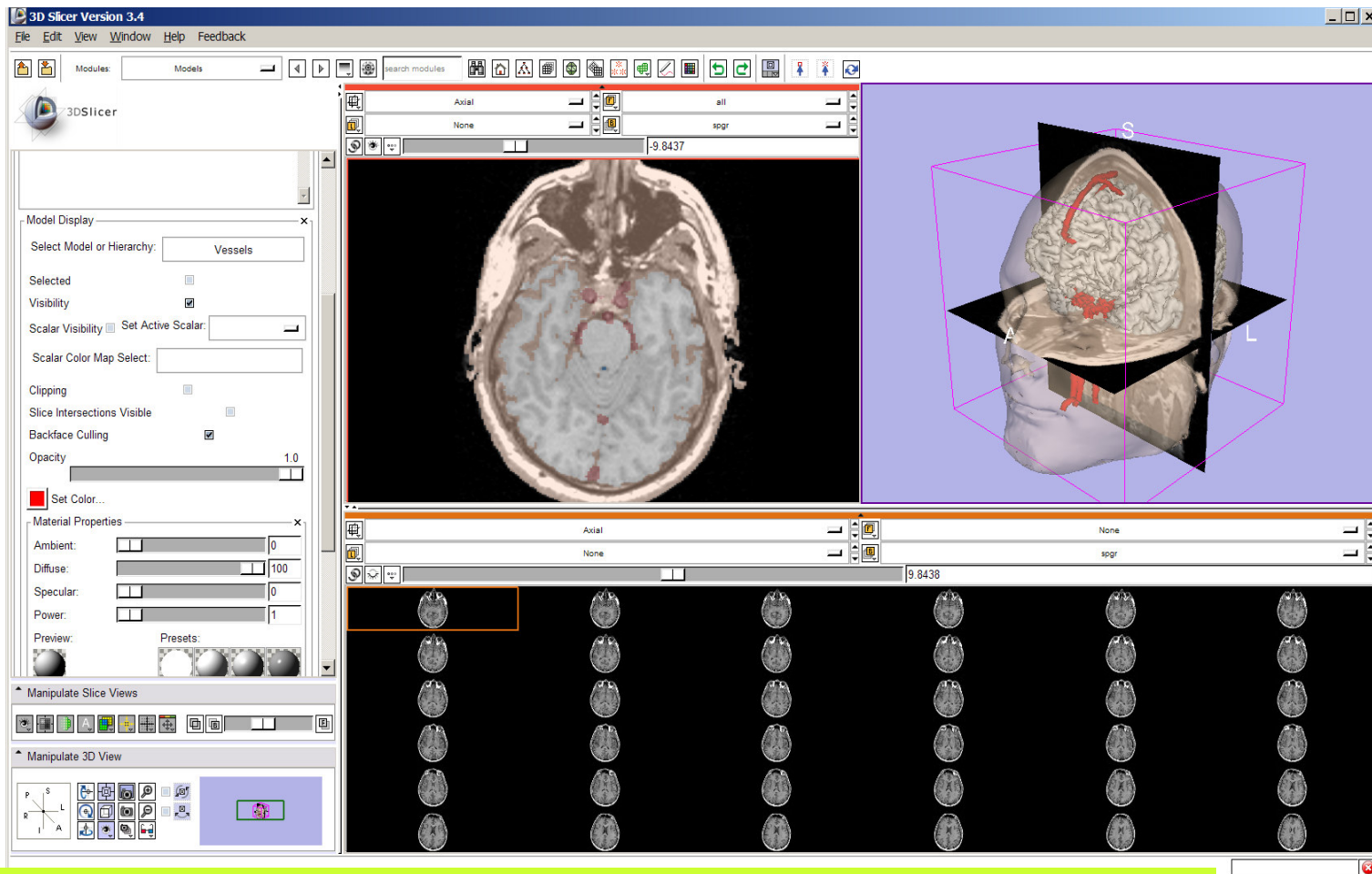
Select the **lightbox** view option 

Lightbox viewer



Set the configuration of the light box view to **6x6**

Lightbox viewer

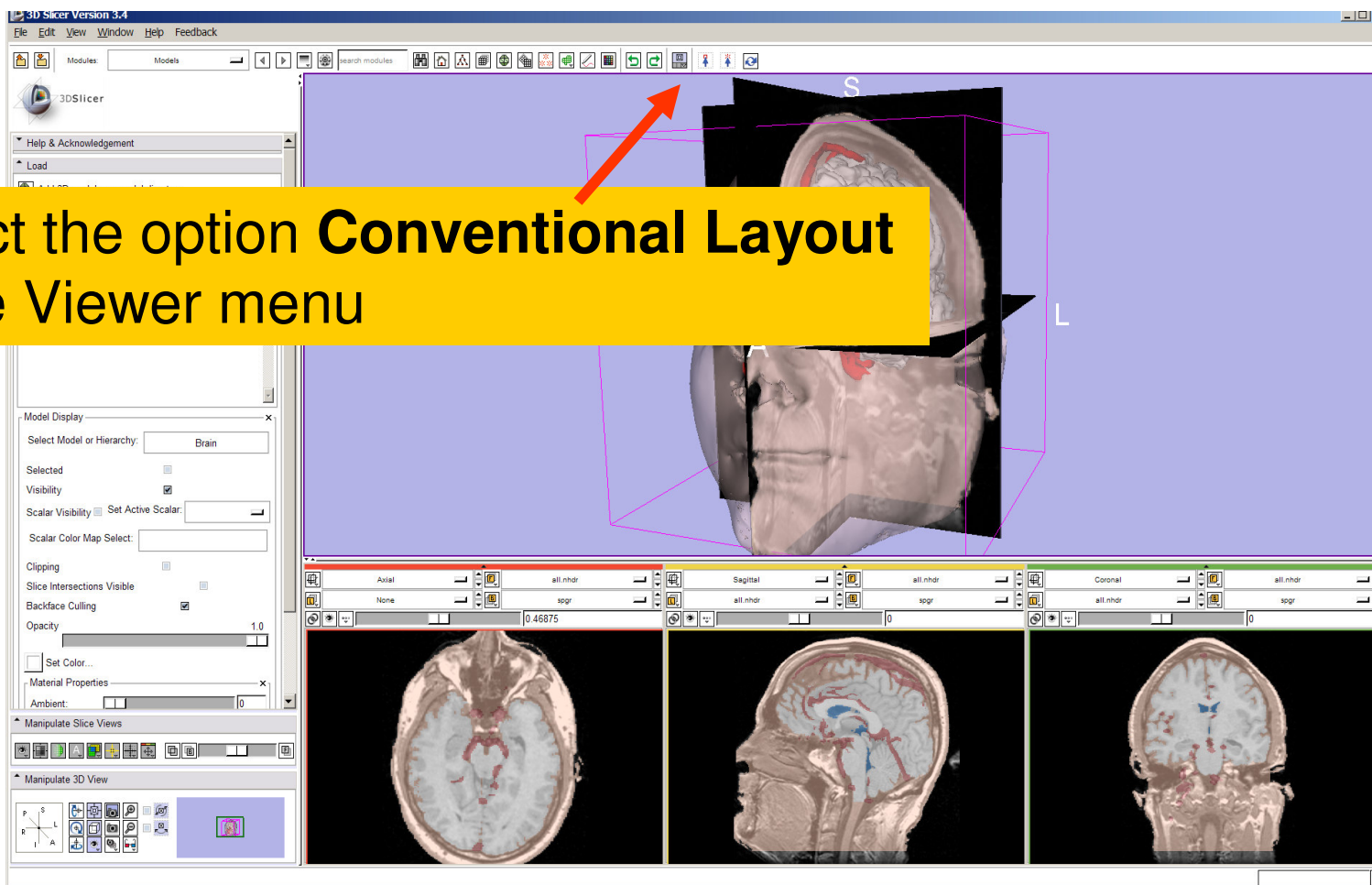


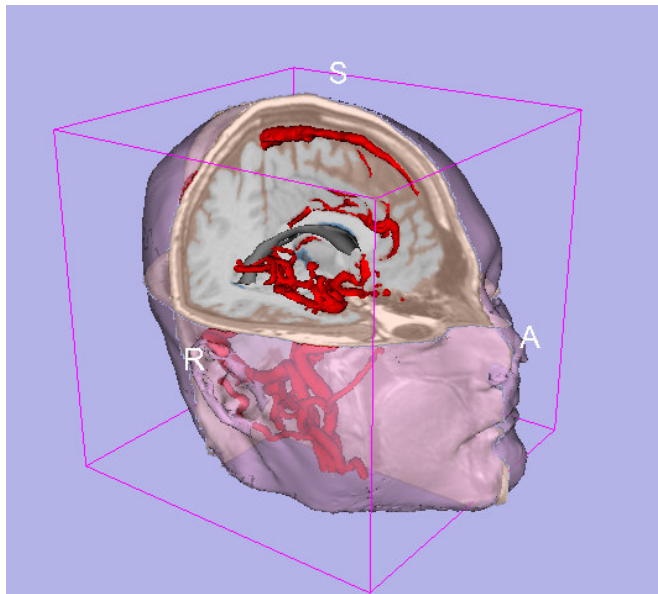
Slicer displays a matrix of 36 adjacent axial slices of the spgr volume.



Lightbox viewer

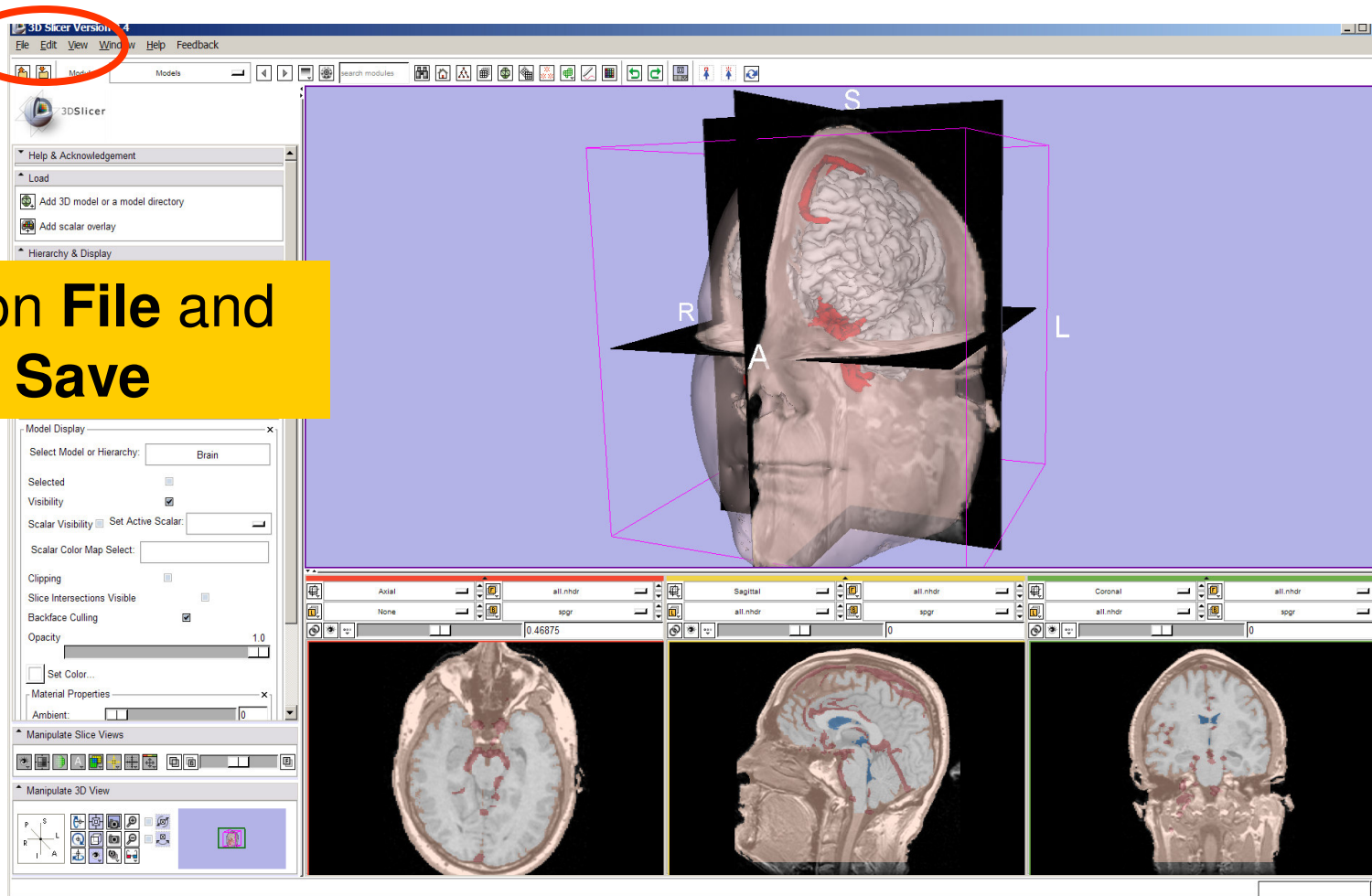
Select the option **Conventional Layout** in the Viewer menu





Part 5: Loading and saving a Scene

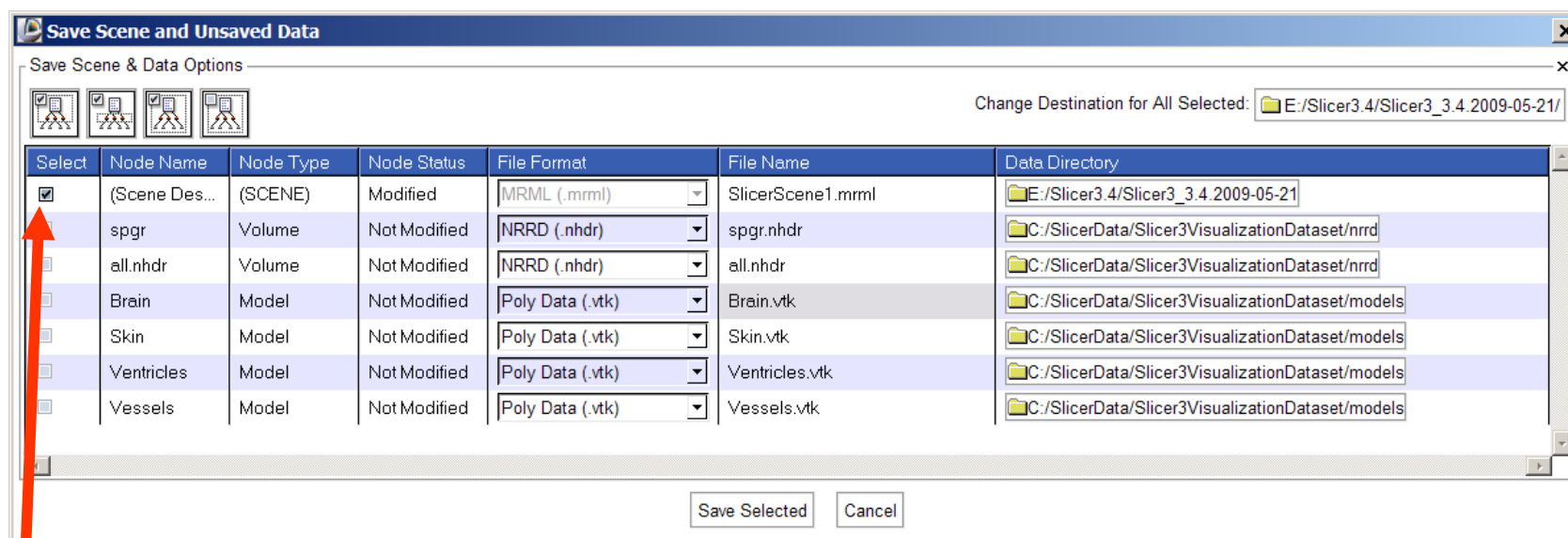
Saving Data



Click on **File** and
Select **Save**

Saving Data

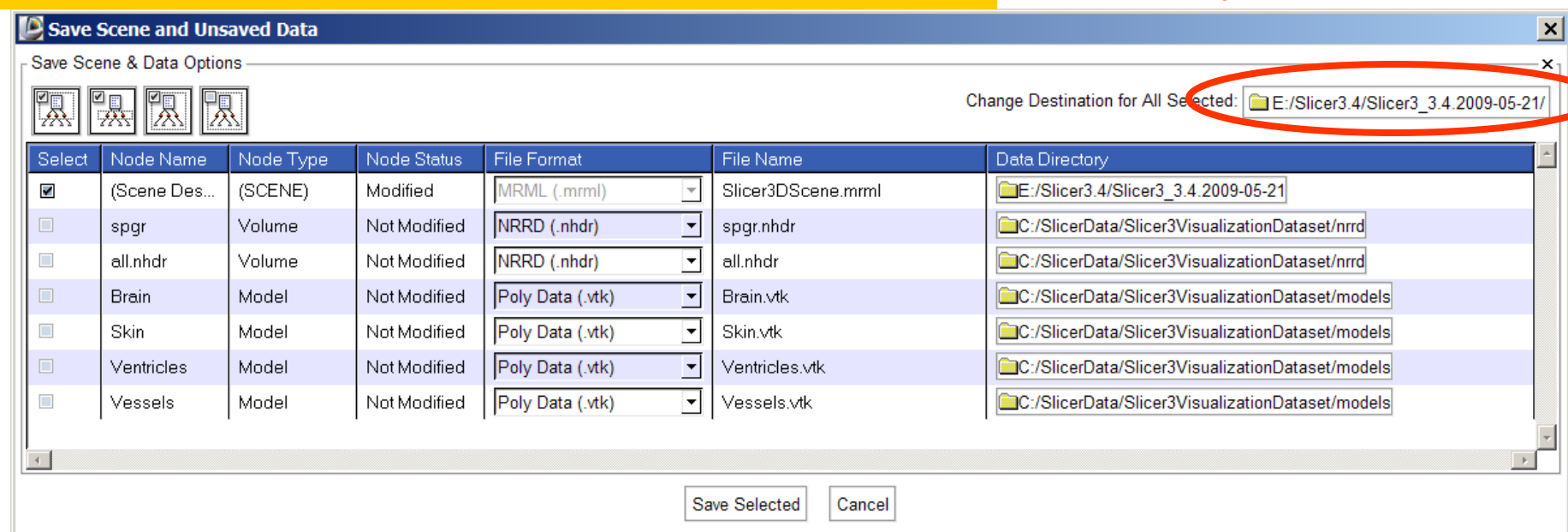
The list of elements currently loaded into Slicer3 appears.



Make sure only the first check box is selected

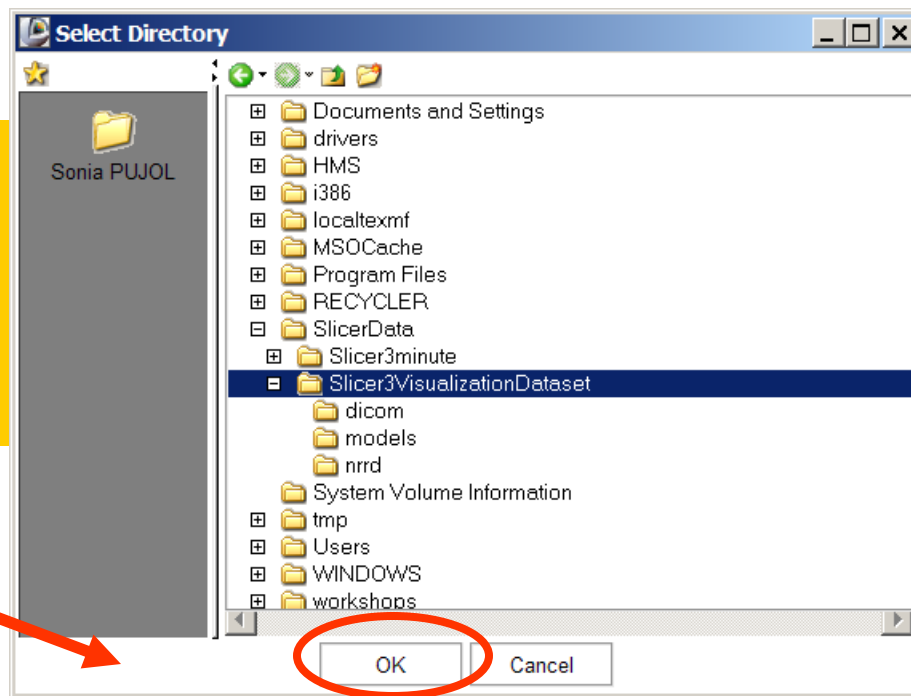
Saving Data

Click on **Change Destination for All Selected** and browse to the location where the scene will be saved



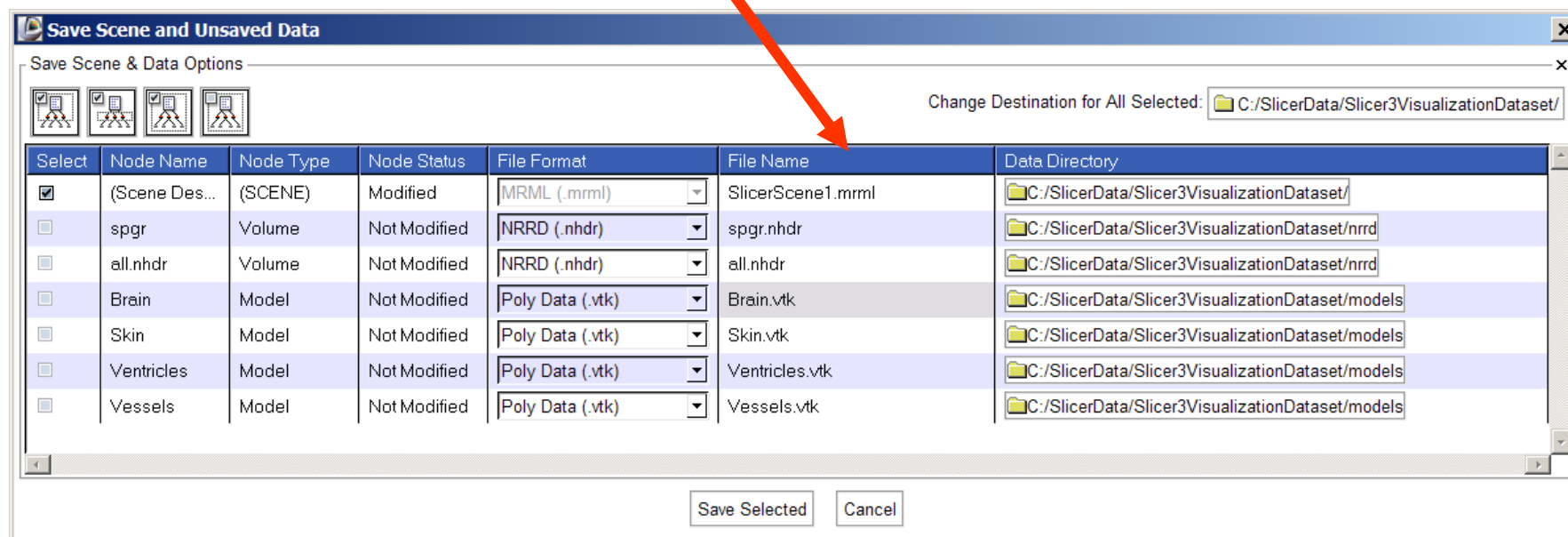
Saving Data

Browse to the directory where you would like to save your scene and click OK



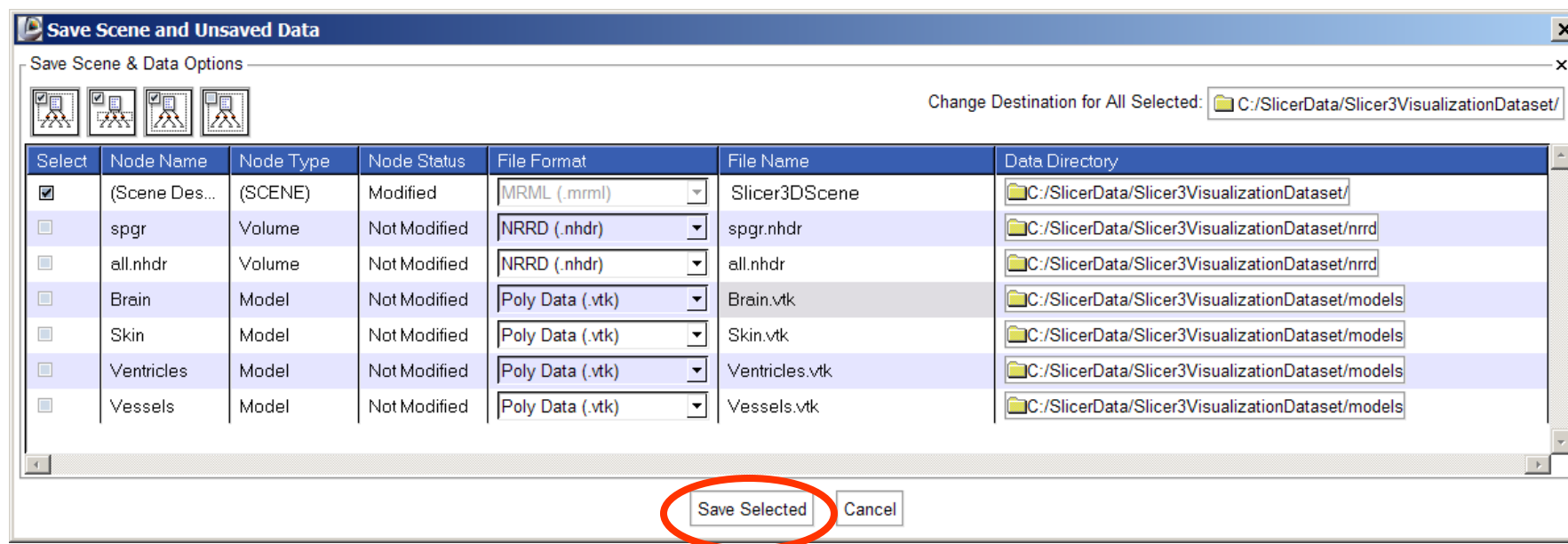
Saving Data

Double click on the file name **SlicerScene1** and change it to **Slicer3DScene**



Saving Data

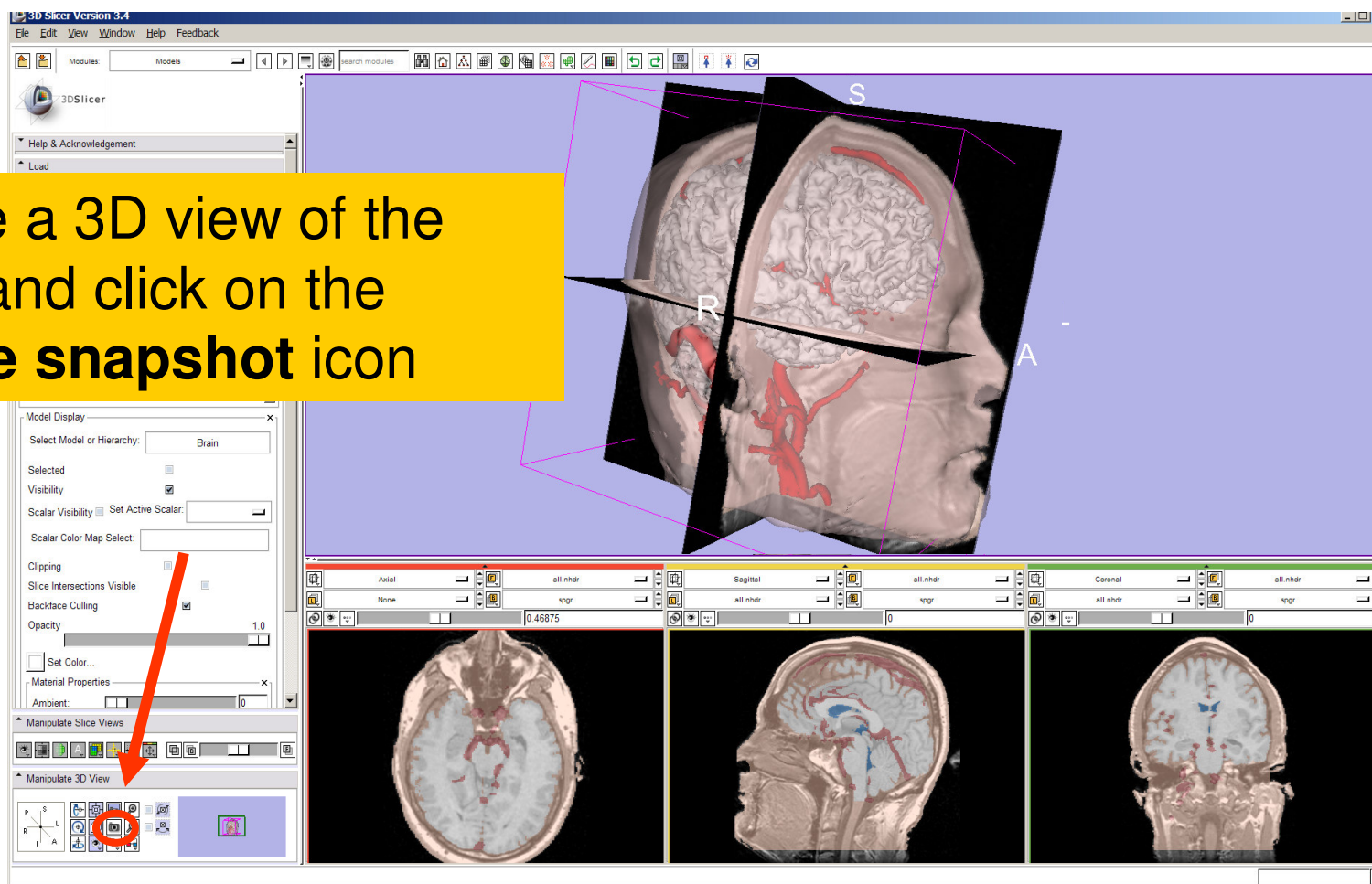
Click on **Save Selected**

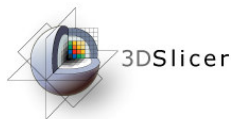




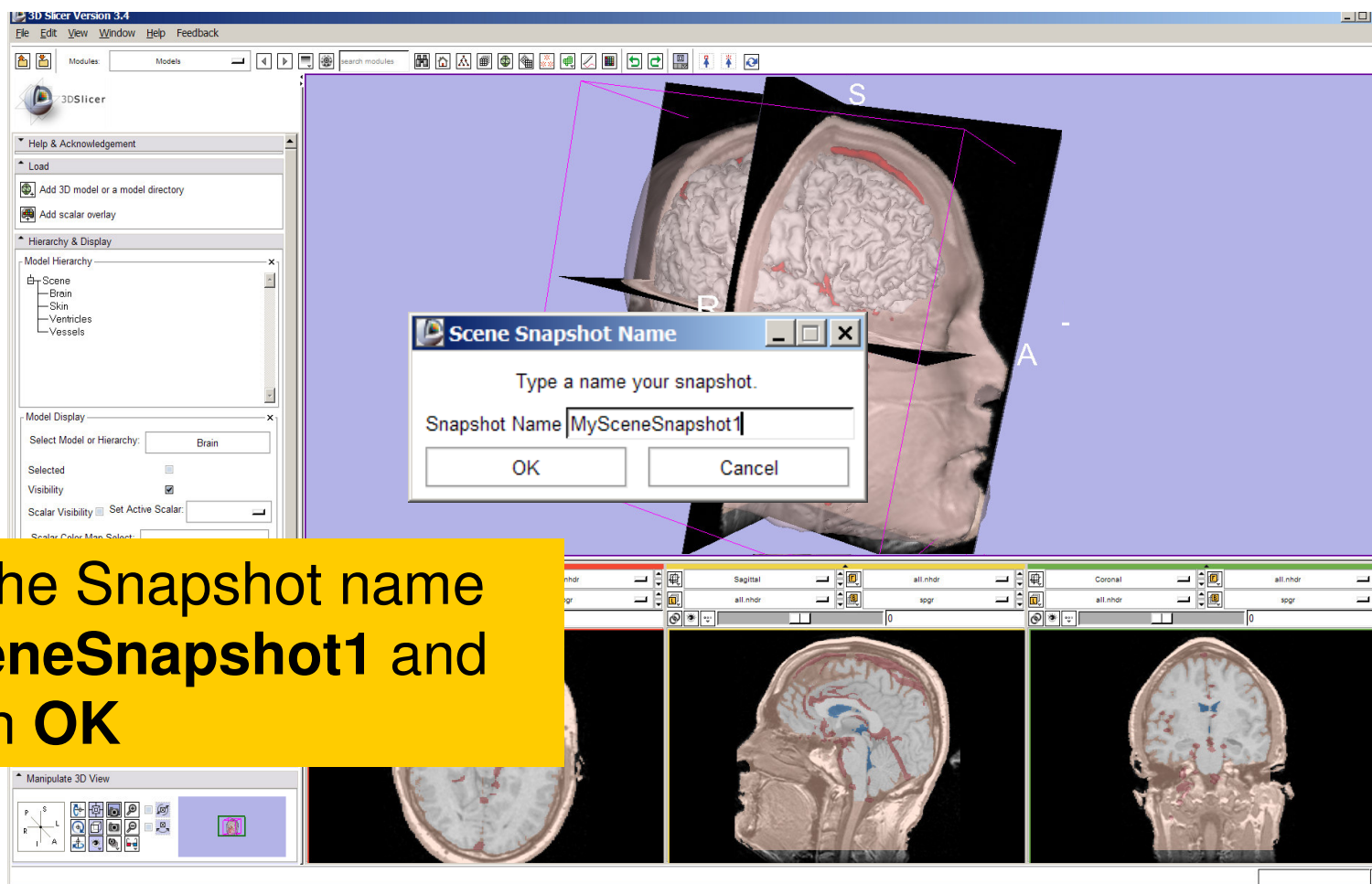
Creating Scene Snapshots

Choose a 3D view of the scene and click on the **capture snapshot icon**





Creating Scene Snapshots

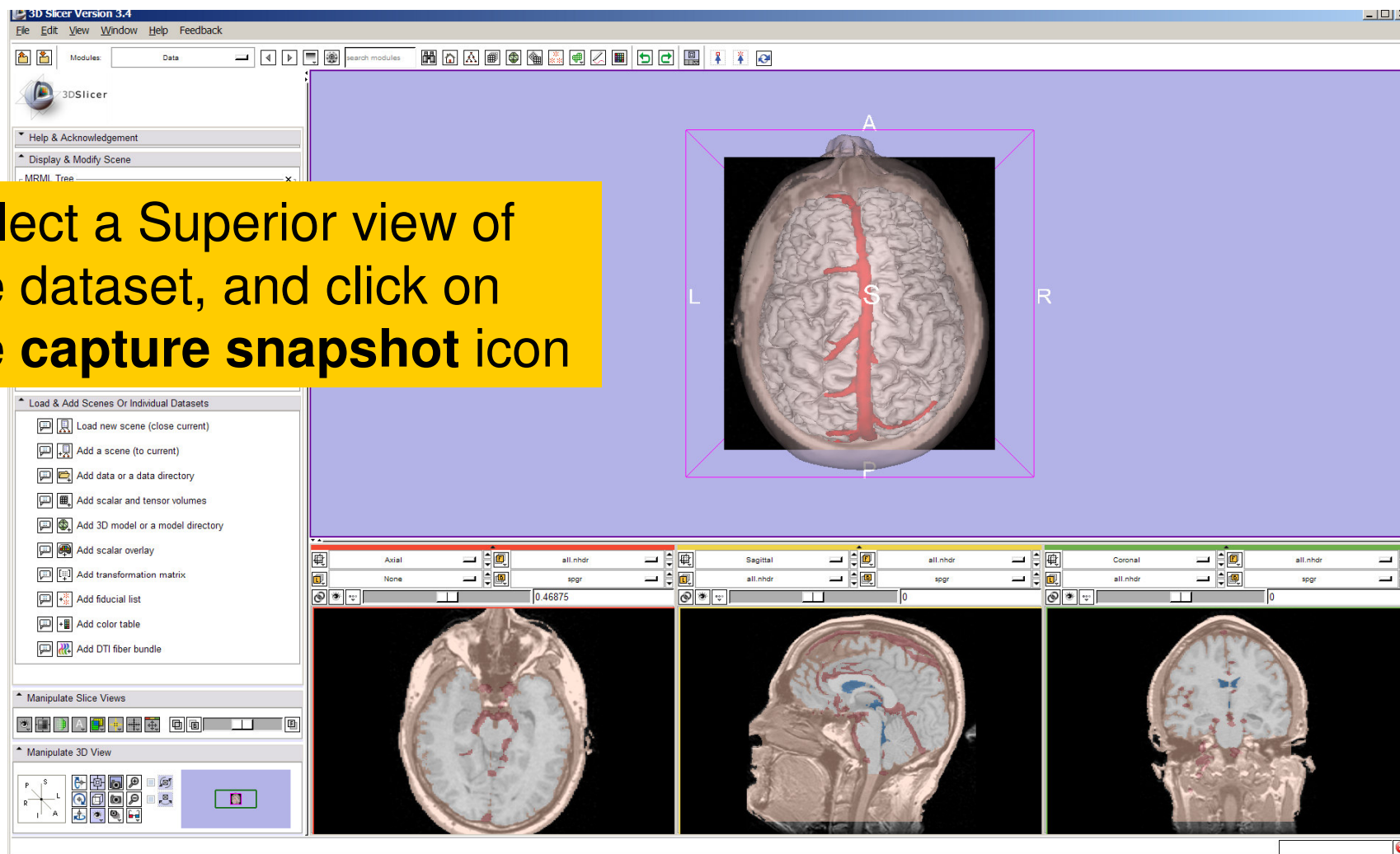


Enter the Snapshot name
MySceneSnapshot1 and
click on **OK**



Creating Scene Snapshots

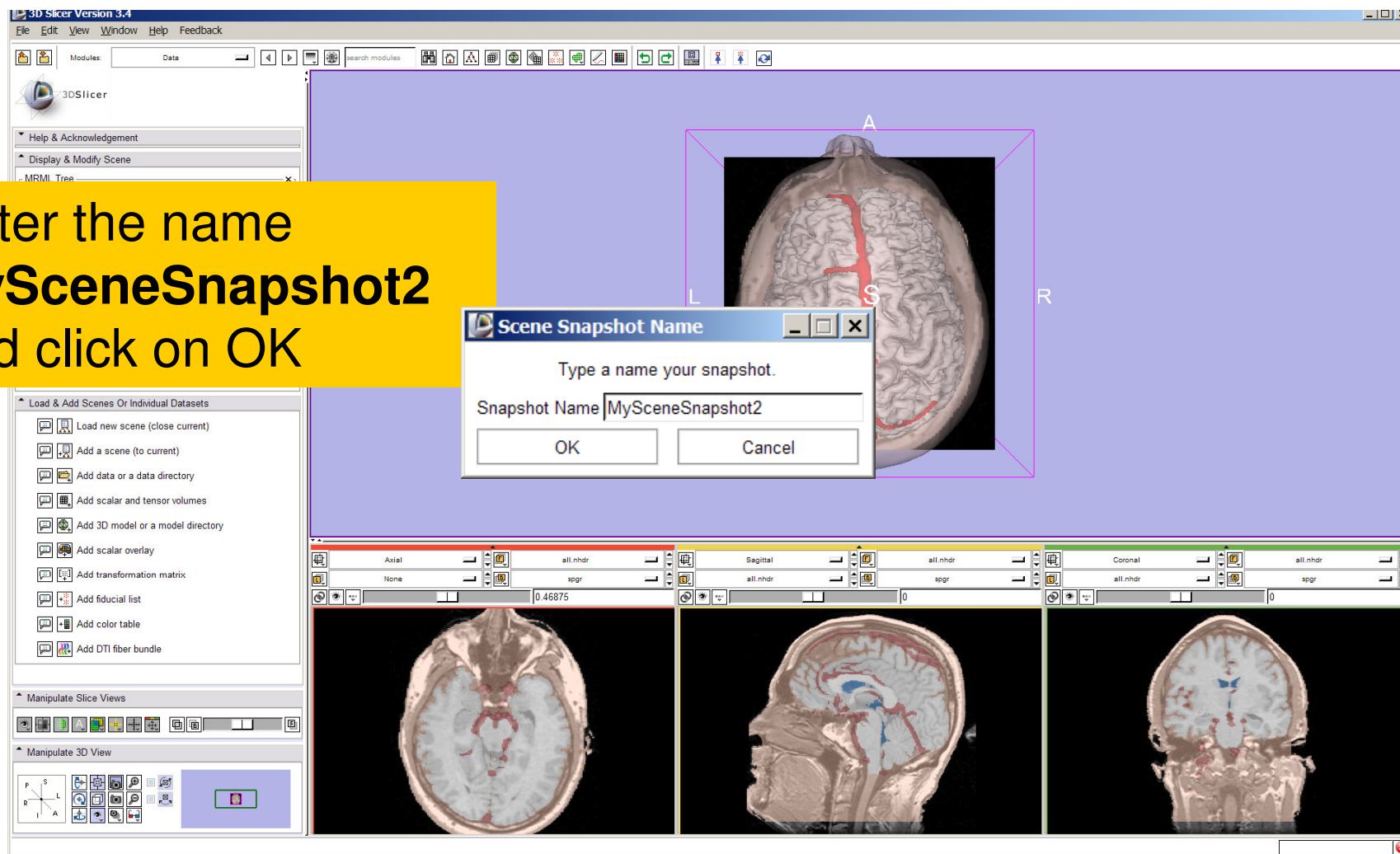
Select a Superior view of the dataset, and click on the **capture snapshot icon**





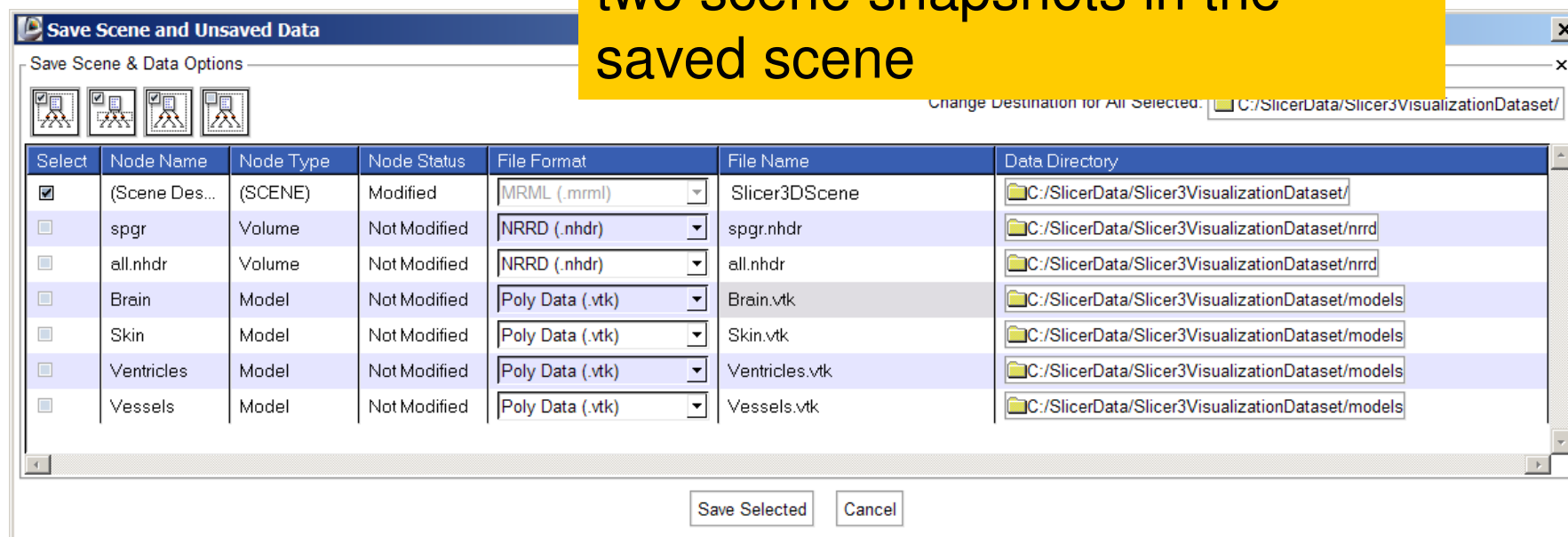
Creating Scene Snapshots

Enter the name
MySceneSnapshot2
and click on OK

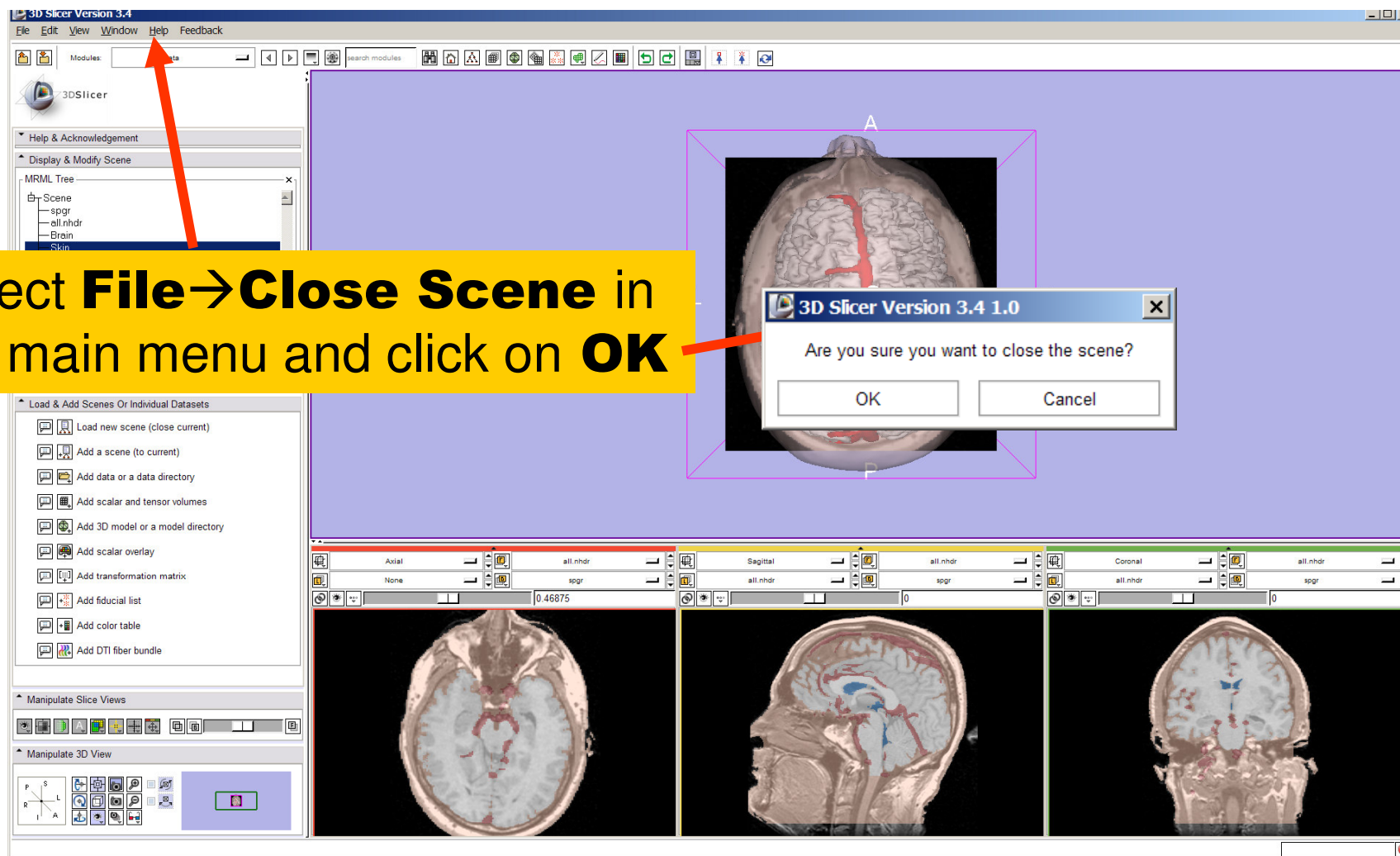


Creating Scene Snapshots

Select **File** → **Save** and click on **Save Selected** to include the two scene snapshots in the saved scene

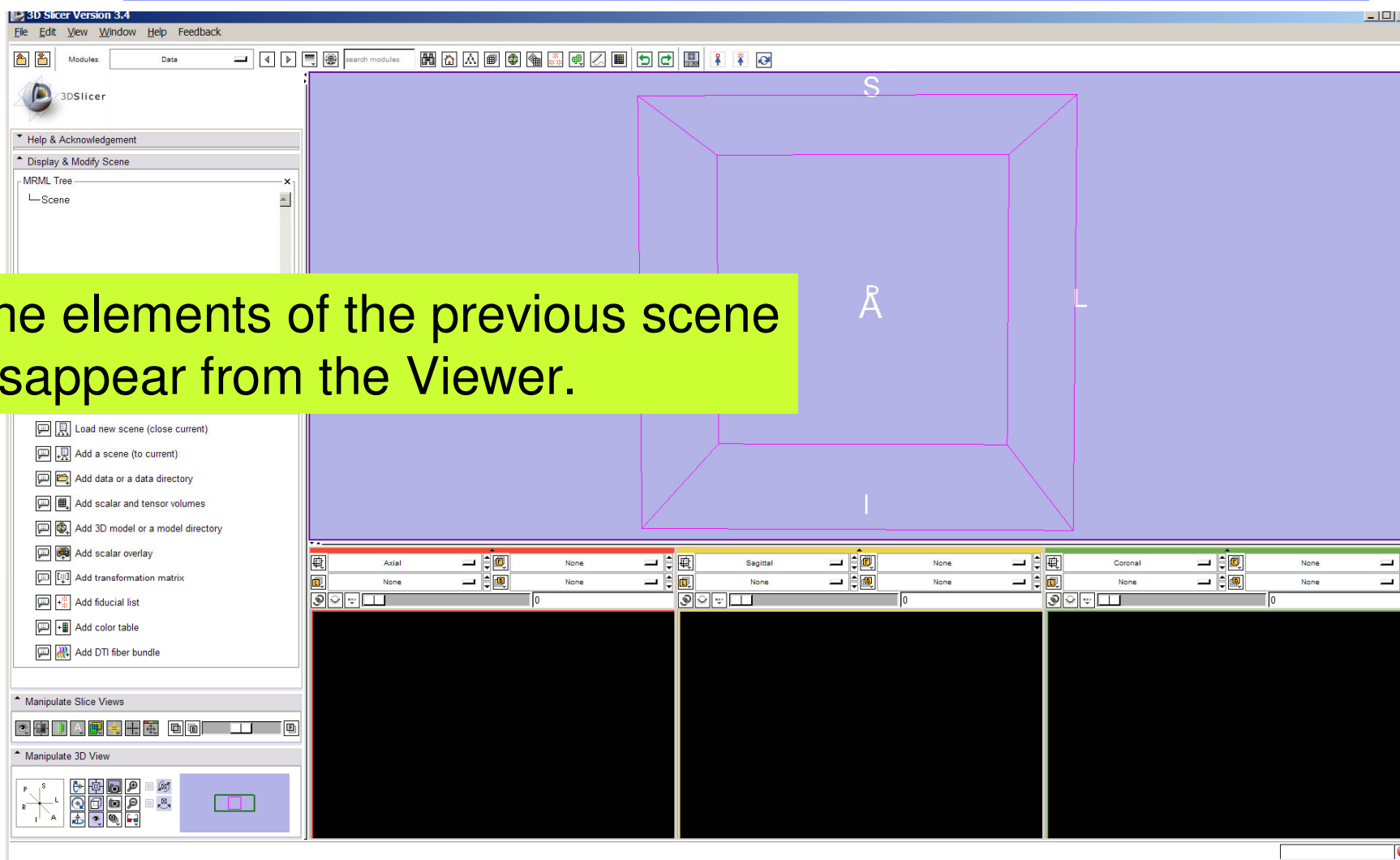


Saving Data



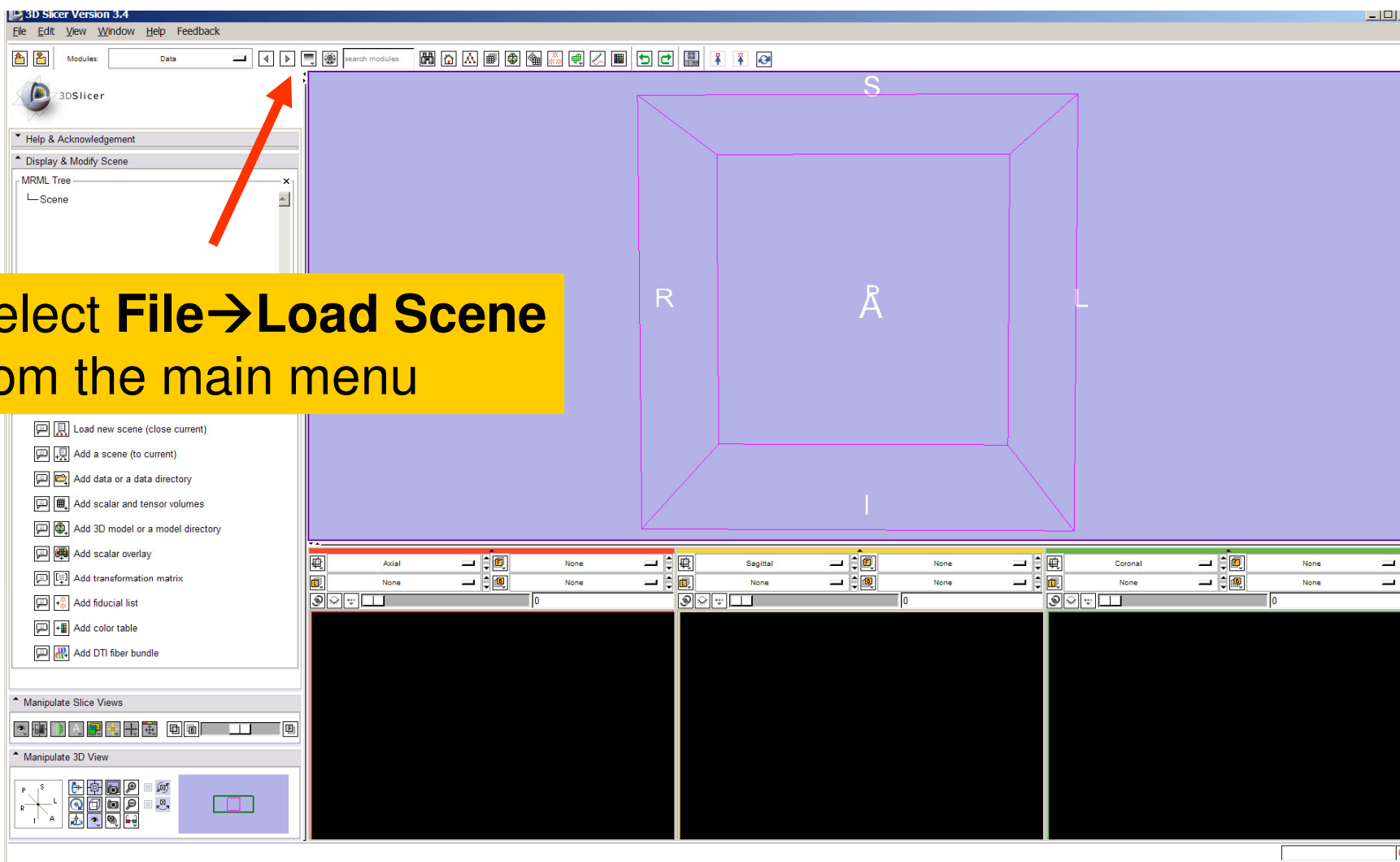
Saving Data

The elements of the previous scene disappear from the Viewer.





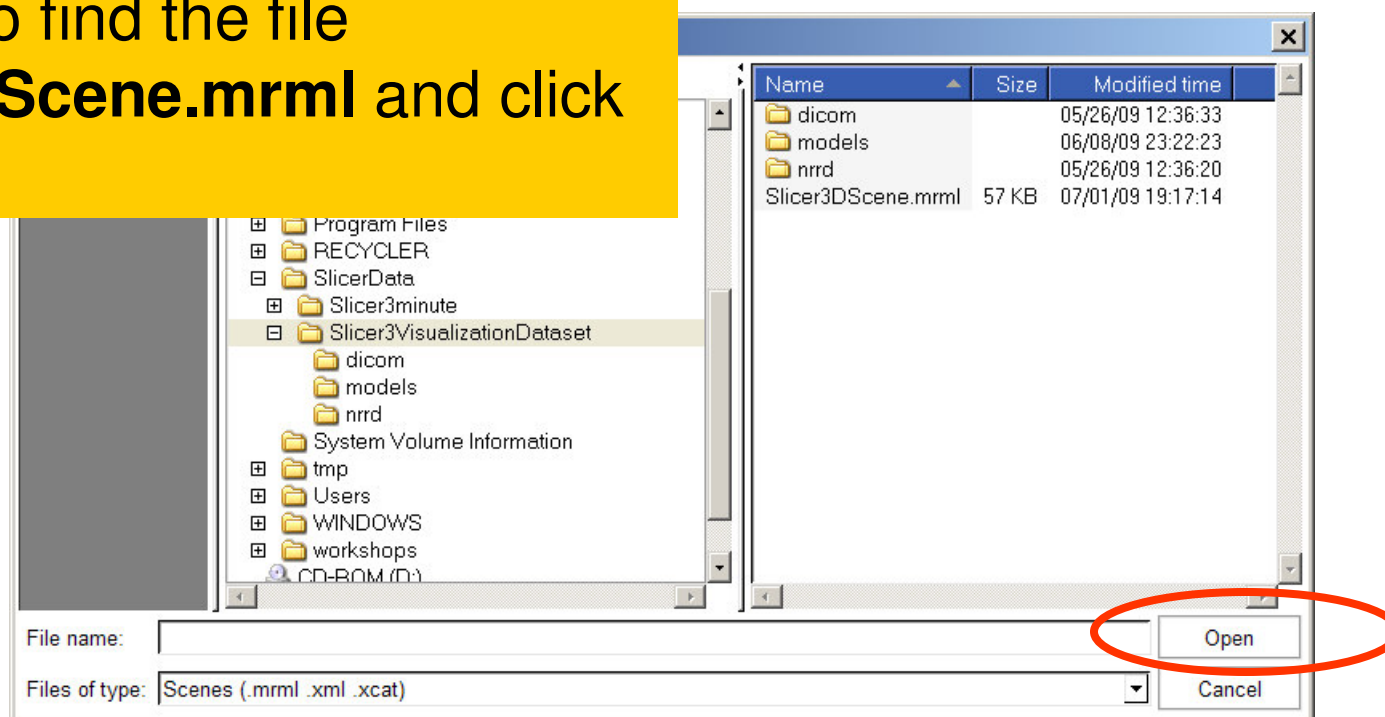
Saving Data



Select **File**→**Load Scene**
from the main menu

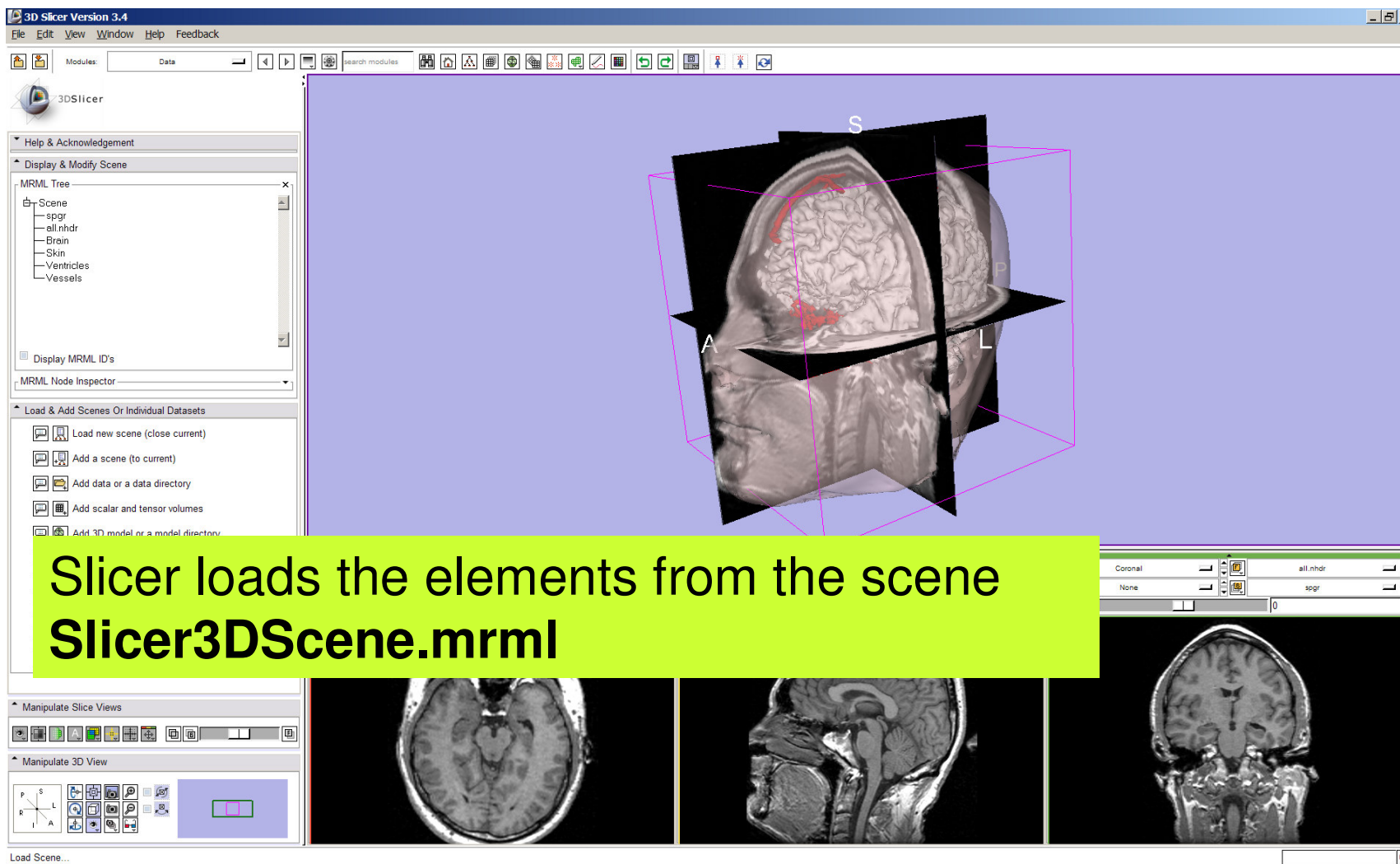
Saving Data

Browse to find the file
Slicer3DScene.mrml and click
on **Open**

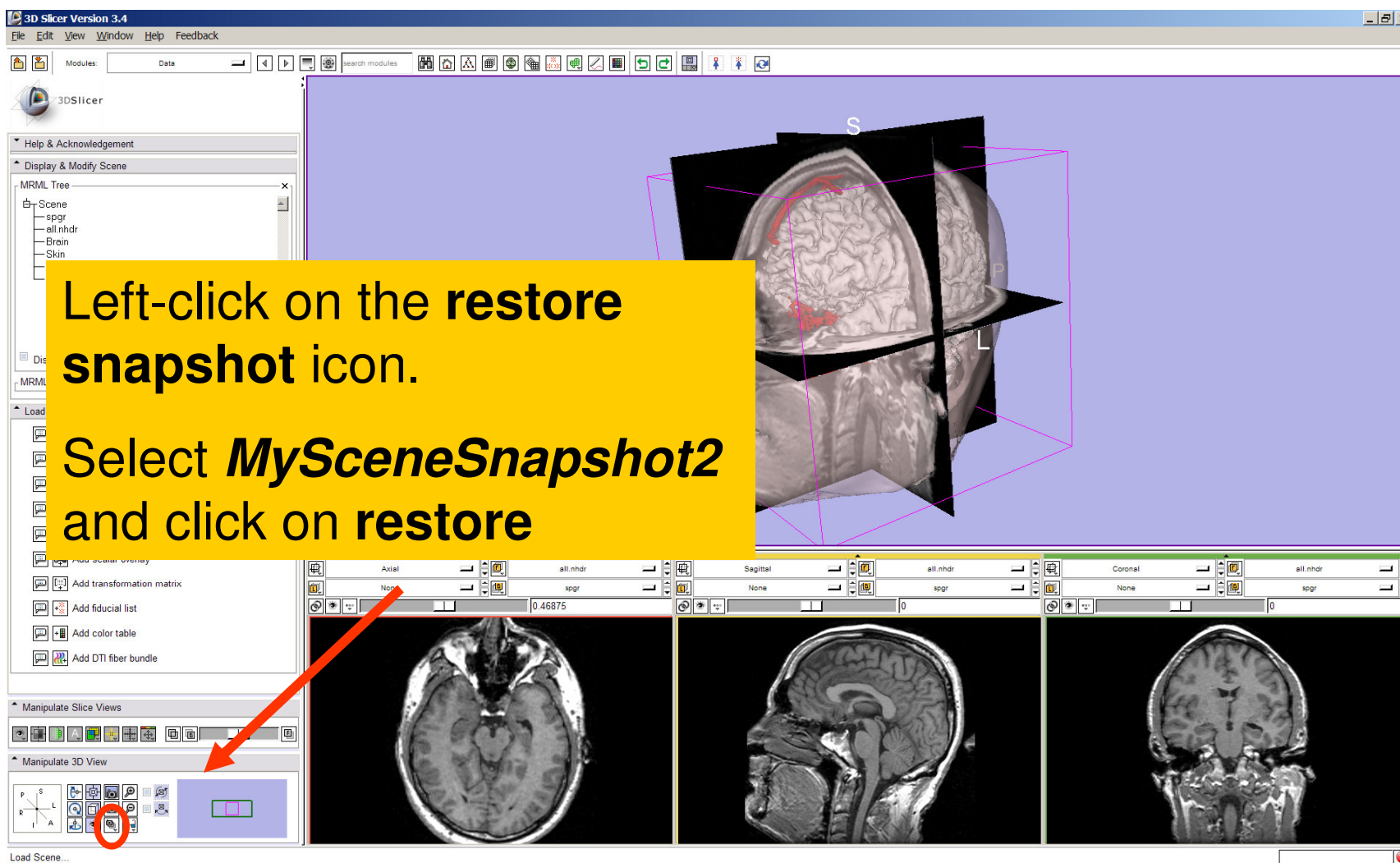




Loading a Scene

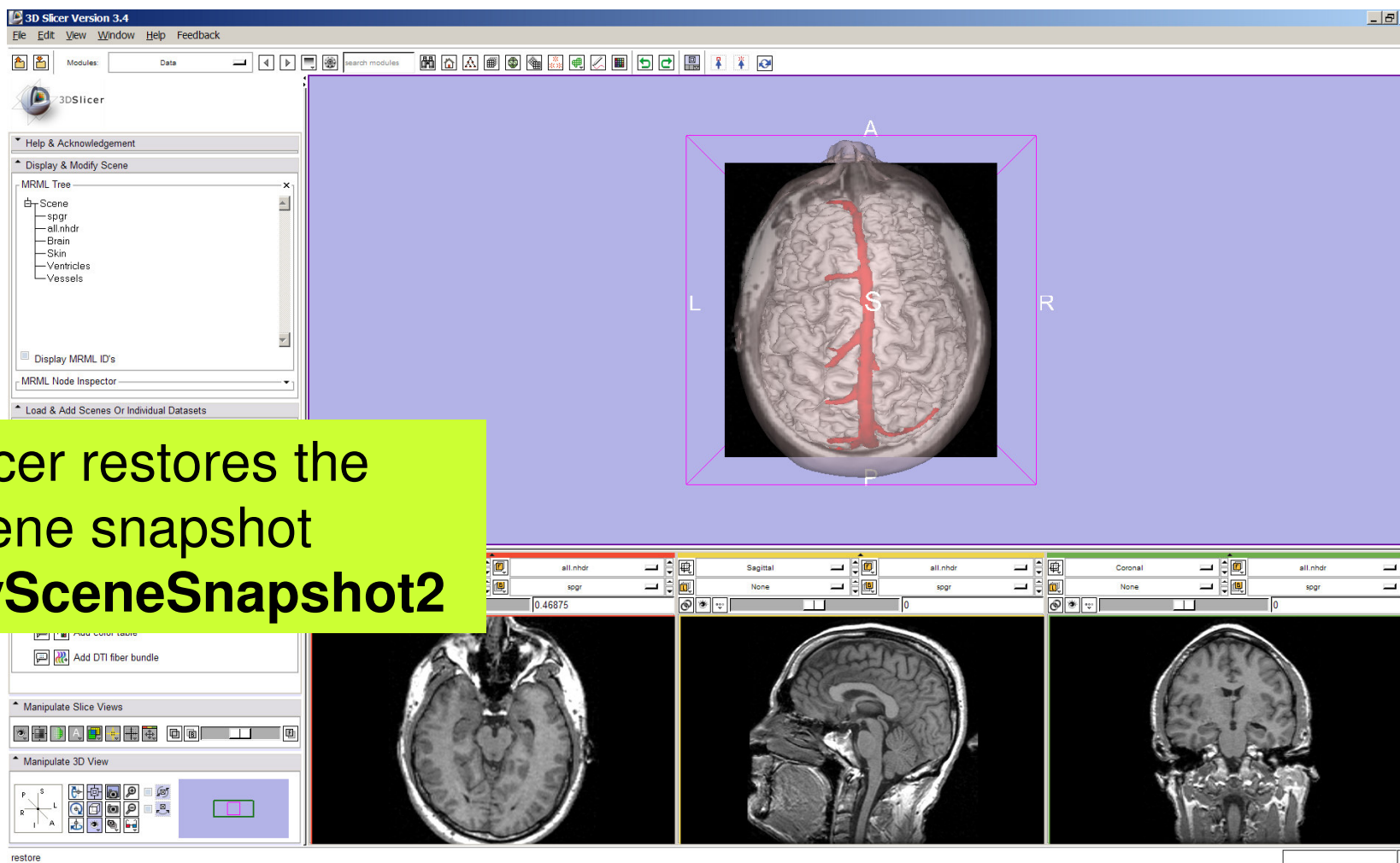


Loading a Scene



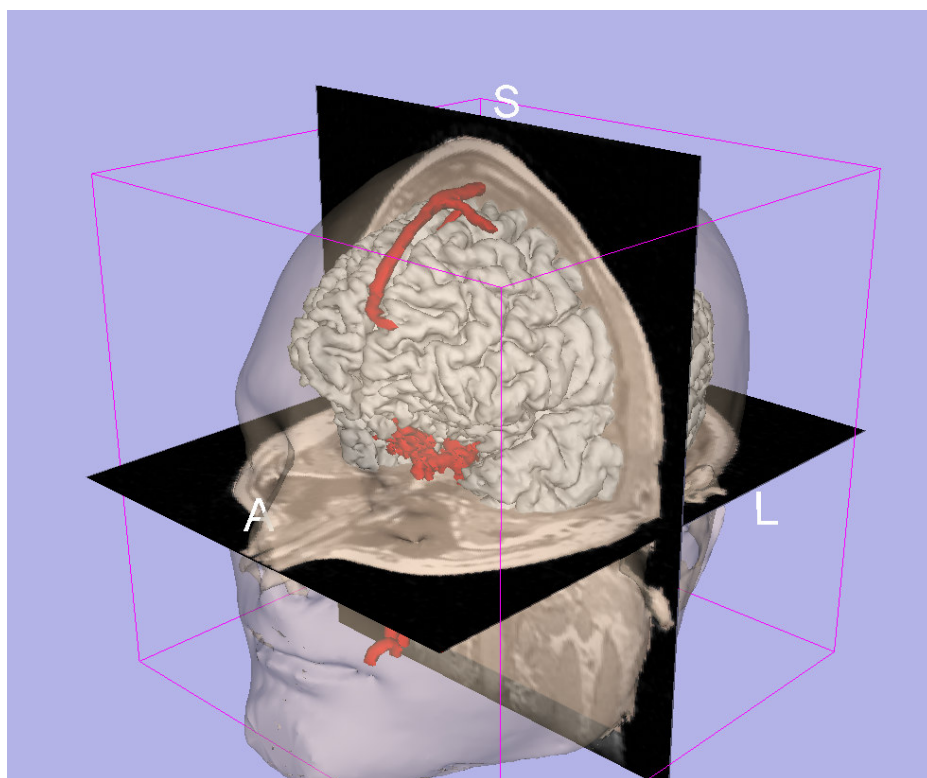


Loading a Scene

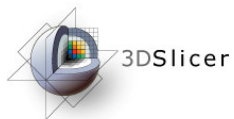


Slicer restores the scene snapshot
MySceneSnapshot2

Conclusion



- 3D visualization of anatomical surface reconstructions
- 3D interaction with volumes and models
- Open-source platform



Acknowledgments



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