



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

# Data Loading & 3D Visualization

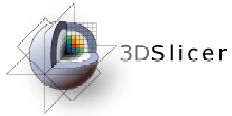
Sonia Pujol, Ph.D.

Surgical Planning Laboratory  
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

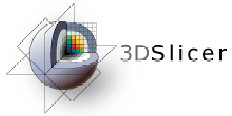




# *Slicer3*

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- 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*

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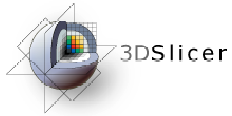
- Download and install the Slicer3.4 software from the Slicer web site

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



## **Disclaimer**

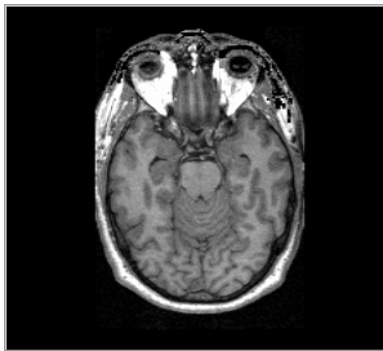
*It is the responsibility of the user of 3DSlicer to comply with both the terms of the license and with the applicable laws, regulations and rules.*



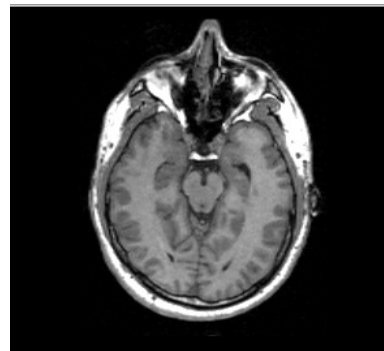
# *Download the training dataset*

---

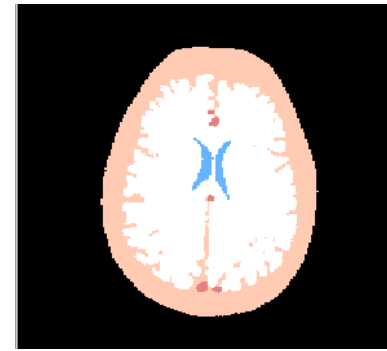
- This course is built upon three datasets of a single healthy subject brain:



MR DICOM  
GRASS



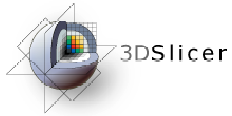
MR Nrrd  
SPGR



Pre-computed  
Label Map

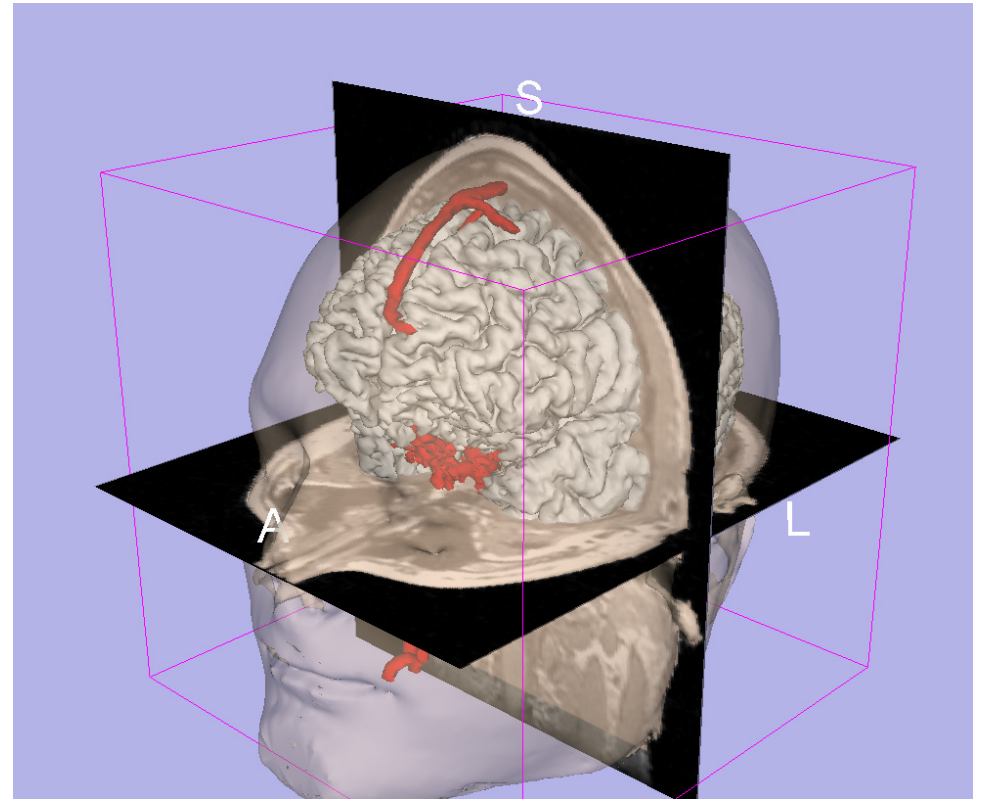
- Download and unzip the training dataset  
Slicer3VisualizationDataset.zip

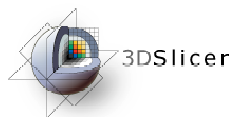
<http://www.slicer.org/slicerWiki/index.php/Slicer3.4:Training>



# *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.

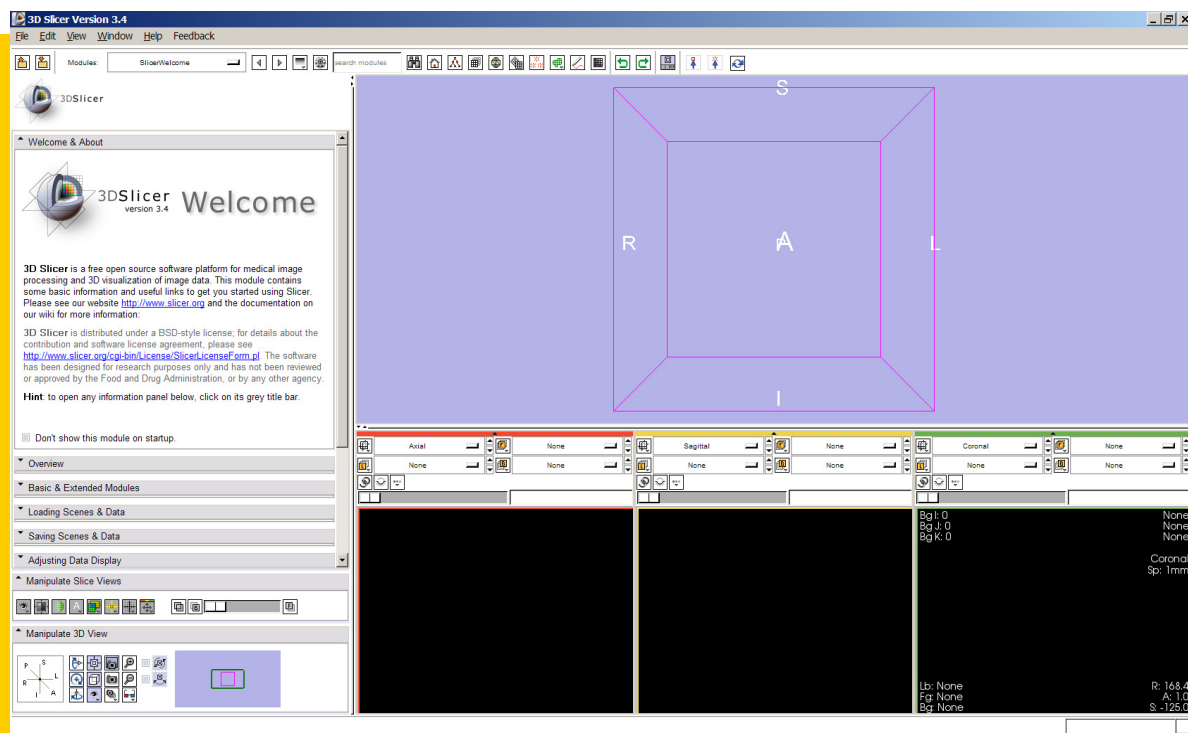


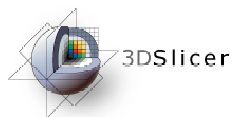


# Start Slicer3

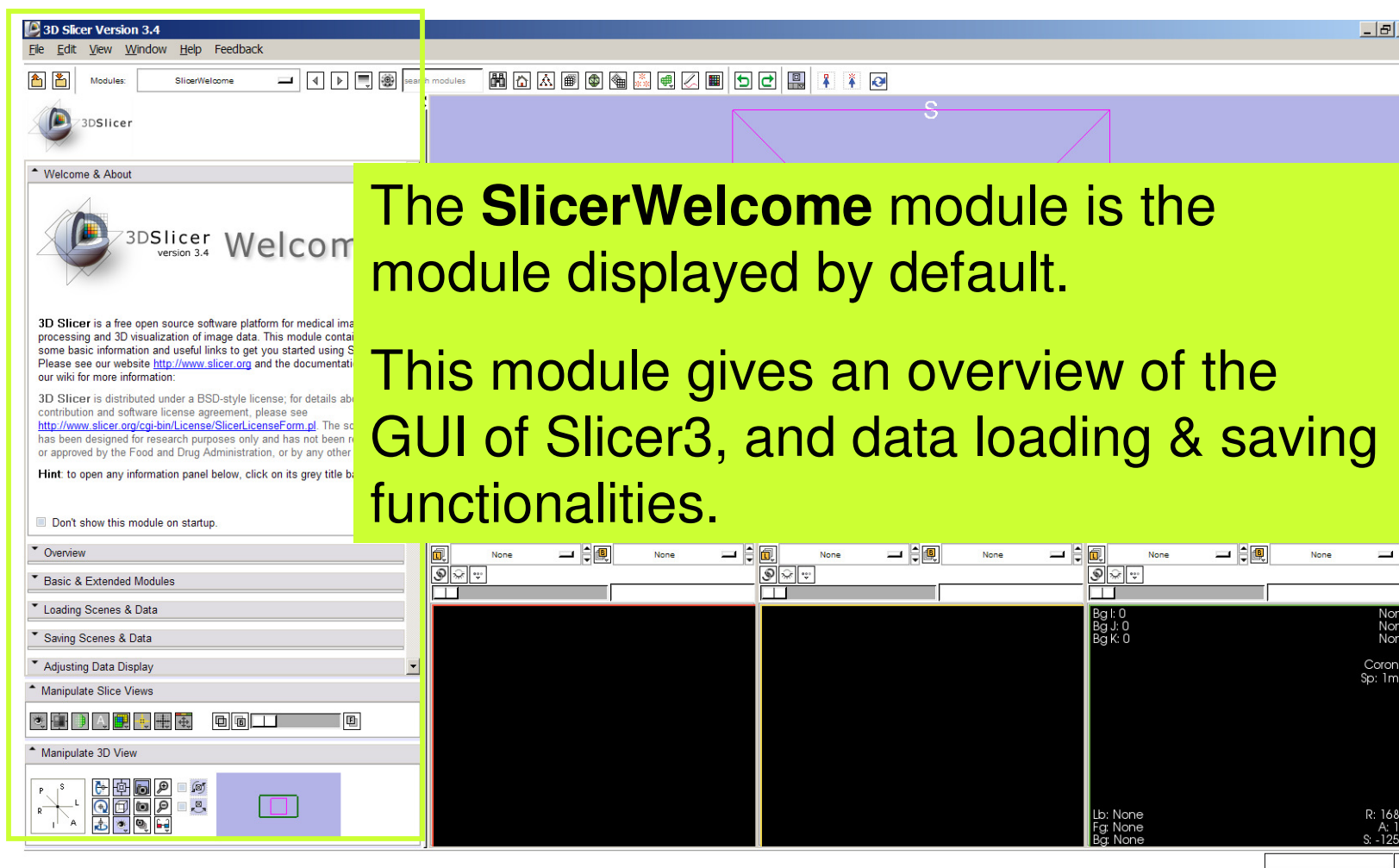
**Linux/Mac users**  
Launch the Slicer3  
executable located in  
the Slicer3.4 directory

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

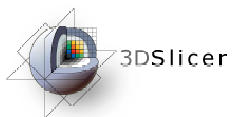




# Slicer Welcome



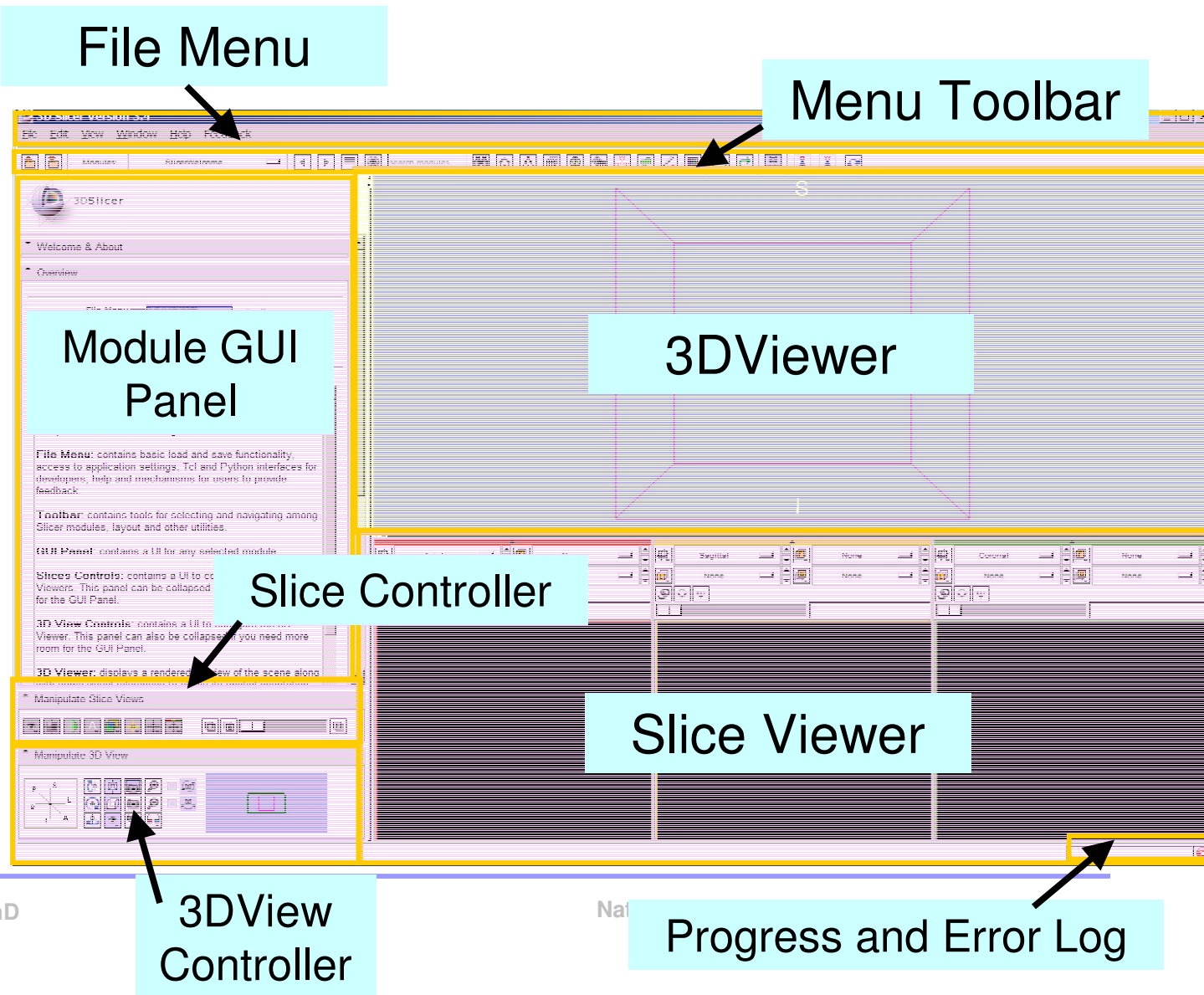




# Slicer3 GUI

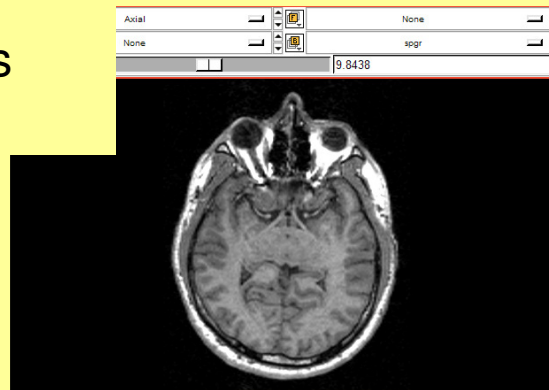
The Graphical User Interface (GUI) of Slicer3.4 integrates 8 main components:

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

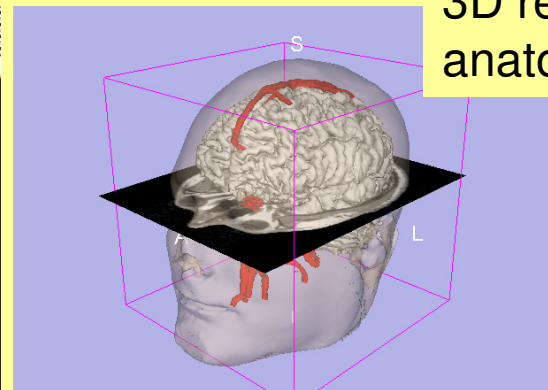


# Overview

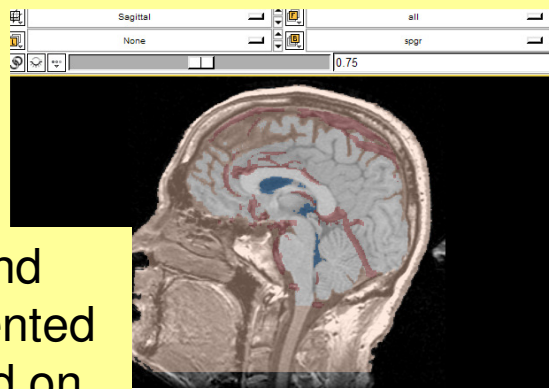
Part 1. Loading and visualizing multiple volumes simultaneously



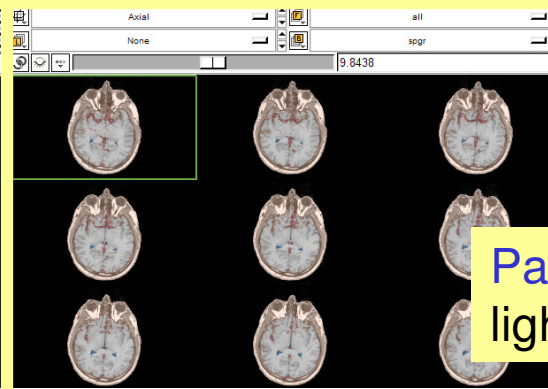
Part 3. Visualizing 3D reconstructions of anatomical surfaces



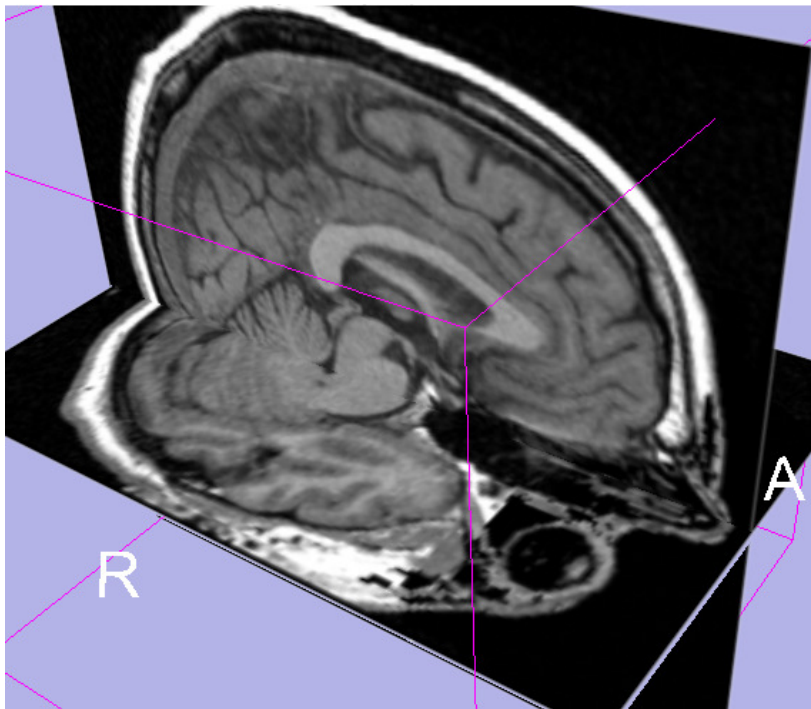
Part 2. Loading and visualizing segmented structures overlaid on grayscale images



Part 4. The lightbox viewer

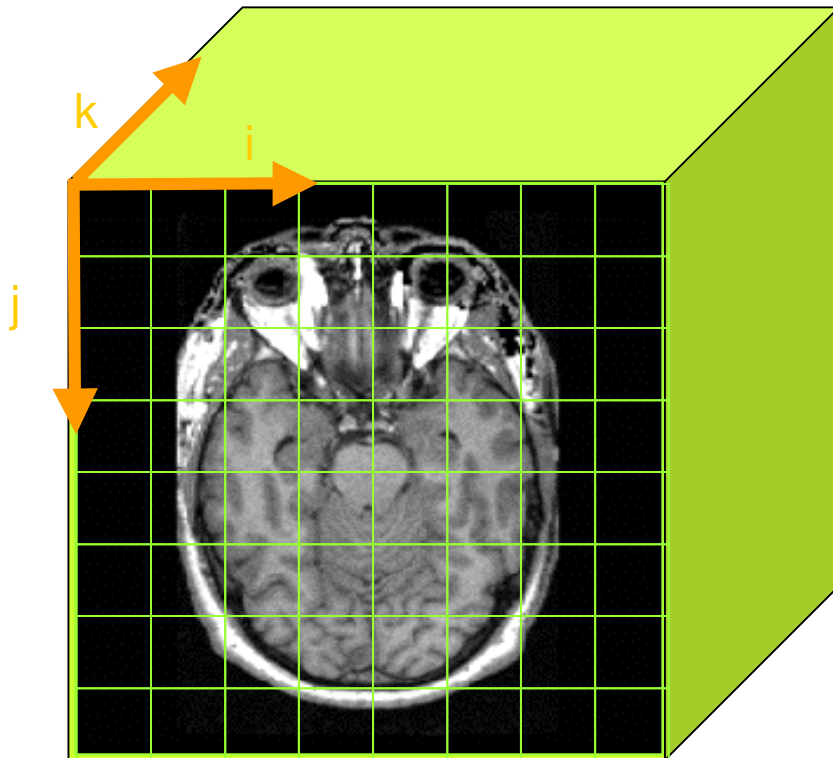


Part 5. Saving data

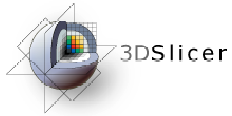


## Part 1: Loading and visualizing multiple volumes simultaneously

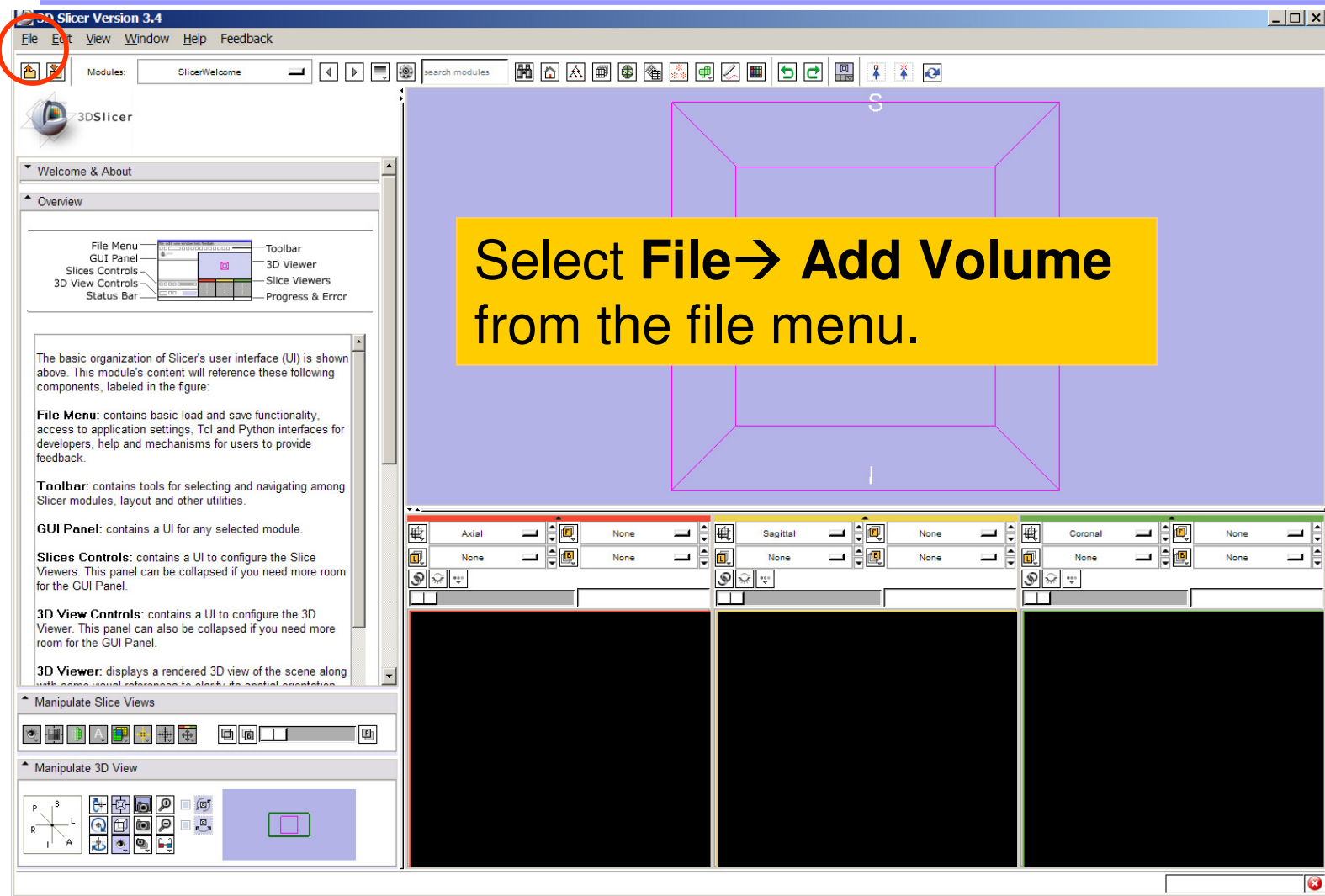
# Data Representation



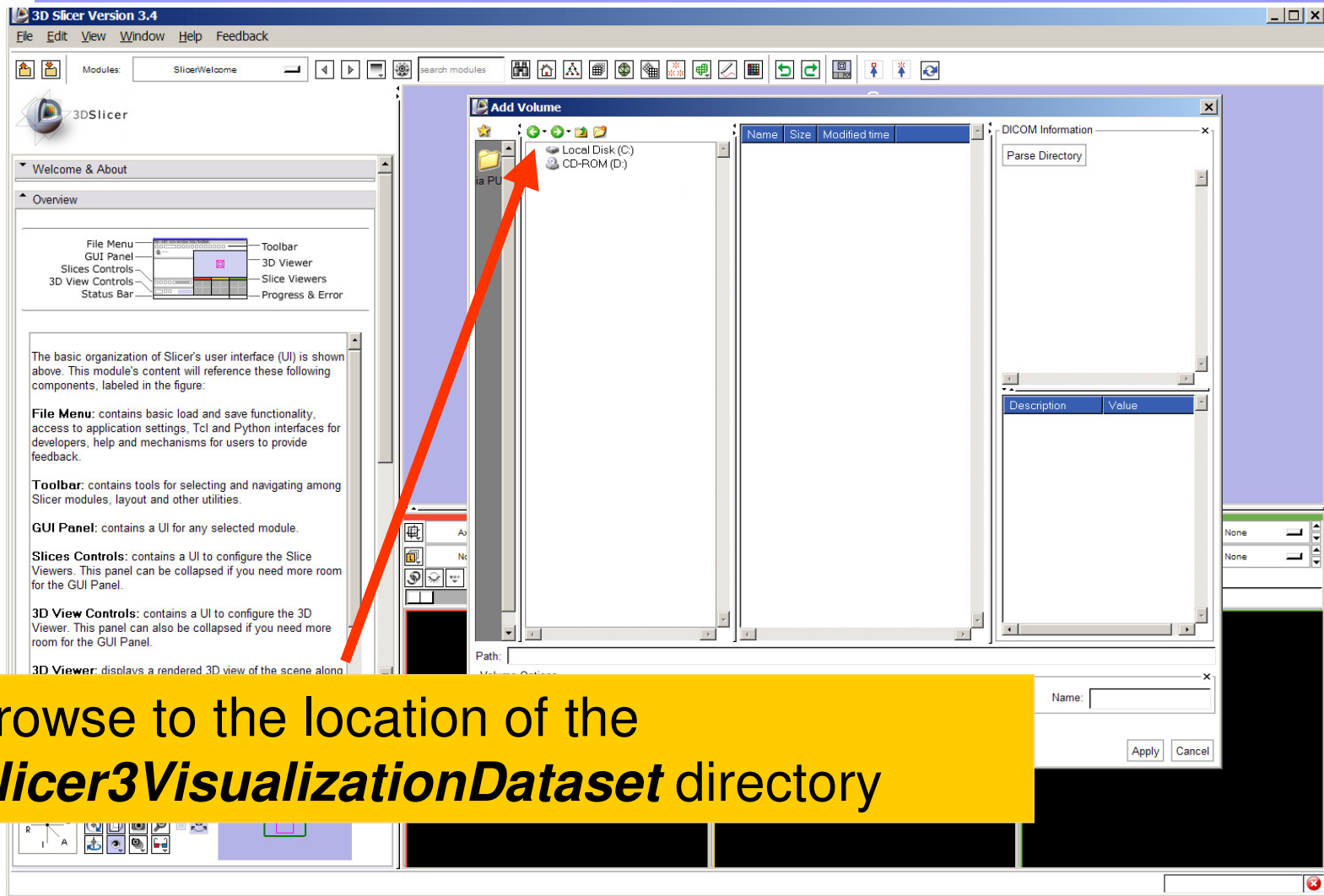
- The result of a volumetric acquisition is a **3D volume of data** related to the patient.
- The 3D raster dataset is sampled on a discrete grid with elements called **voxels** which contain the **signal intensity**.



# Loading Volumes



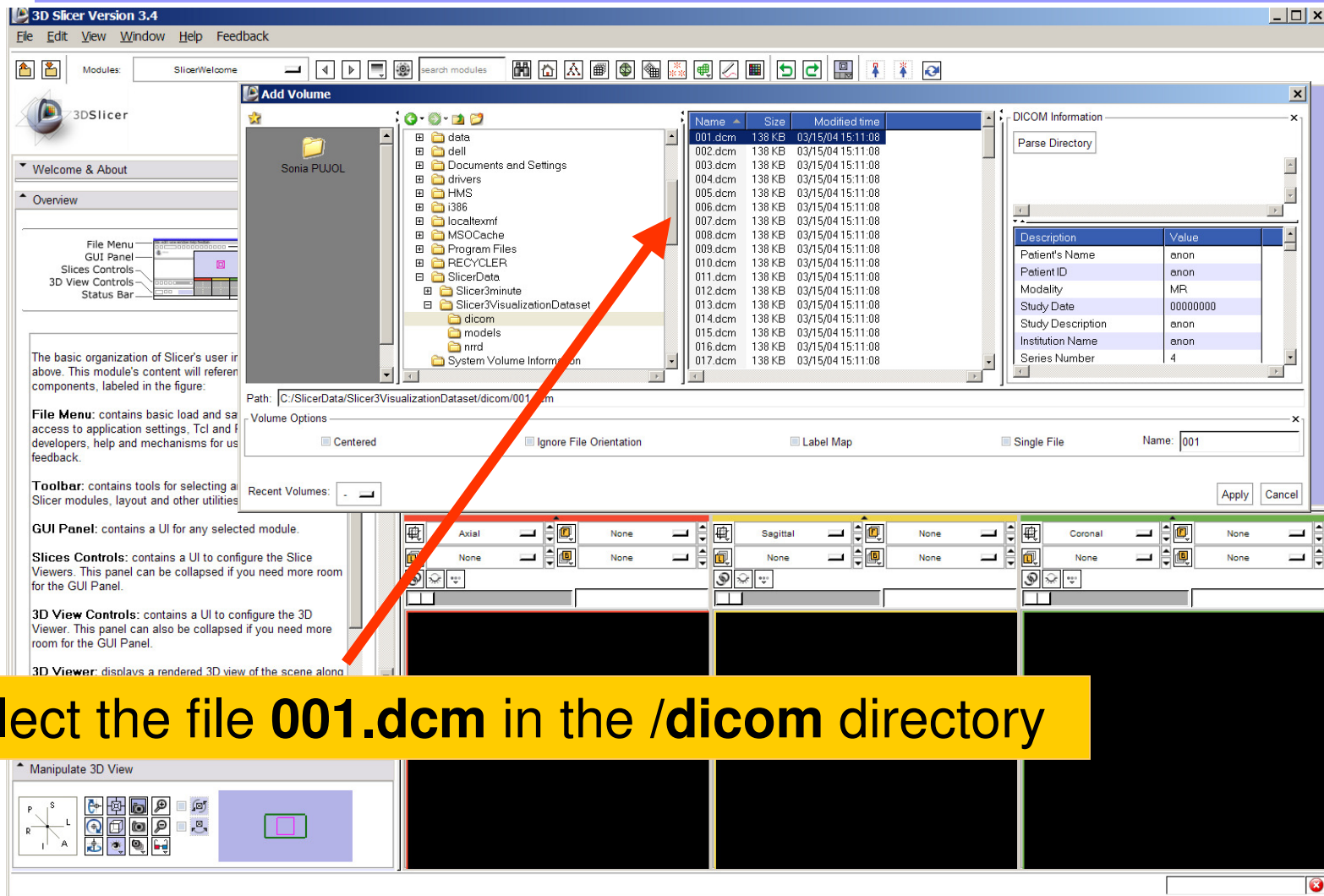
# Loading Volumes



The screenshot shows the 3D Slicer 3.4 interface. The 'Add Volume' dialog box is open, displaying a file browser with 'Local Disk (C:)' and 'CD-ROM (D:)' selected. A red arrow points to the 'Local Disk (C:)' directory. The dialog box also includes a table for 'DICOM Information' and a 'Parse Directory' button. A yellow text box at the bottom of the screenshot contains the following text:

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 operations, access to application settings, Tcl and Python console, and feedback mechanisms for users and developers.

**Toolbar:** contains tools for selecting and configuring 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 the slice views.

Manipulate 3D View

**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

DICOM Information

Parse Directory

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

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

Volume Options

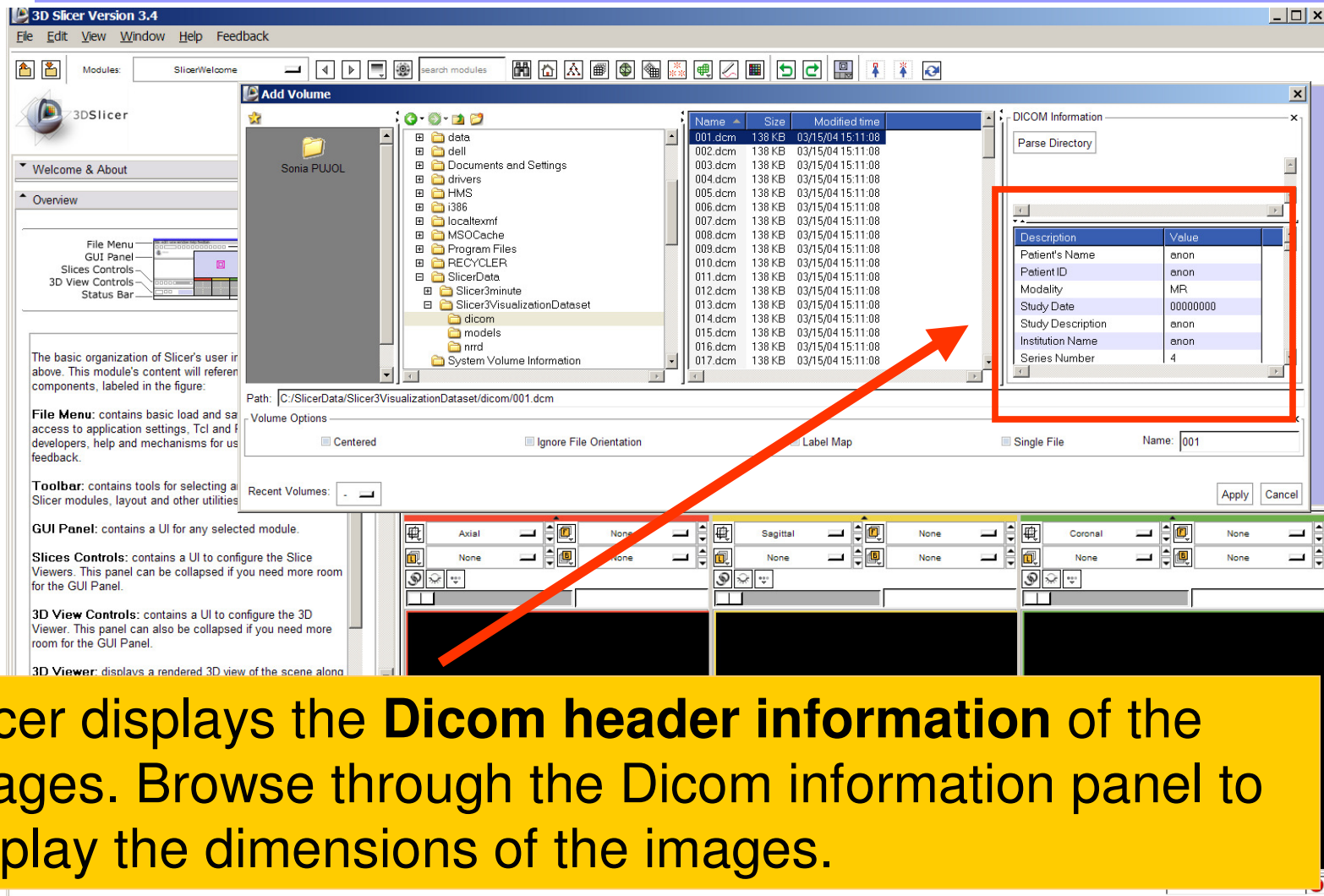
Centered  Ignore File Orientation  Label Map  Single File Name: 001

Recent Volumes: -

Apply Cancel

**Select the file 001.dcm in the /dicom directory**

# Loading Volumes



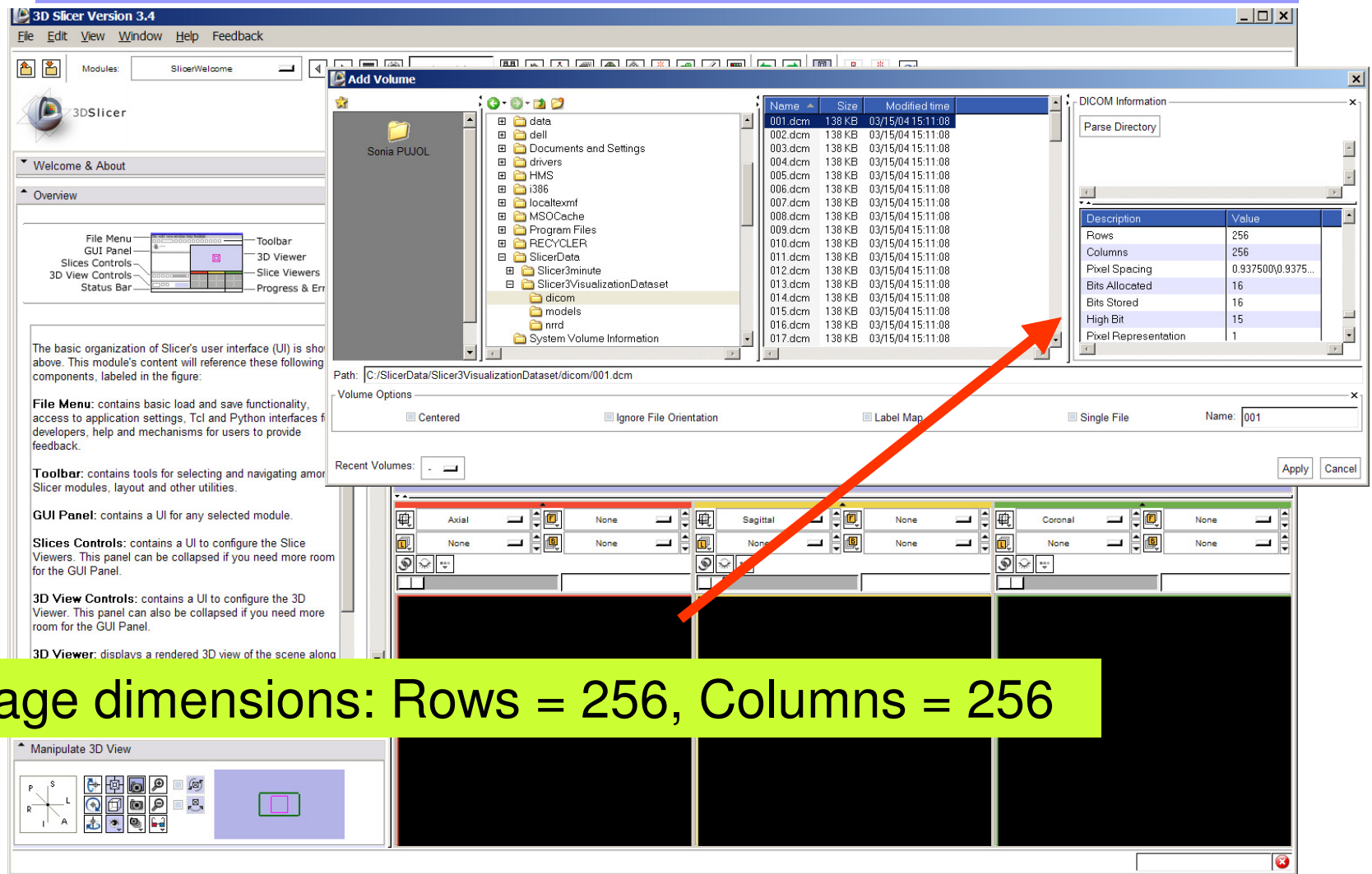
The screenshot shows the 3D Slicer 3.4 interface with the 'Add Volume' dialog box open. The dialog displays a file list of DICOM files (001.dcm to 017.dcm) and a 'DICOM Information' panel. A red box highlights the 'DICOM Information' panel, and a red arrow points from the text box below to it. The 'DICOM Information' panel shows fields for Patient's Name, Patient ID, Modality, Study Date, Study Description, Institution Name, and Series Number.

Description	Value
Patient's Name	anon
PatientID	anon
Modality	MFR
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



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

Toolbar 3D Viewer Slice Viewers Progress & Err

The basic organization of Slicer's user interface (UI) is shown above. This module's content will reference these following components, labeled in the figure:

**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.

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**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

DICOM Information

Parse Directory

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

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

Volume Options

Centered  Ignore File Orientation  Label Map  Single File Name: 001

Recent Volumes: -

Apply Cancel

Axial Sagittal Coronal

None None None

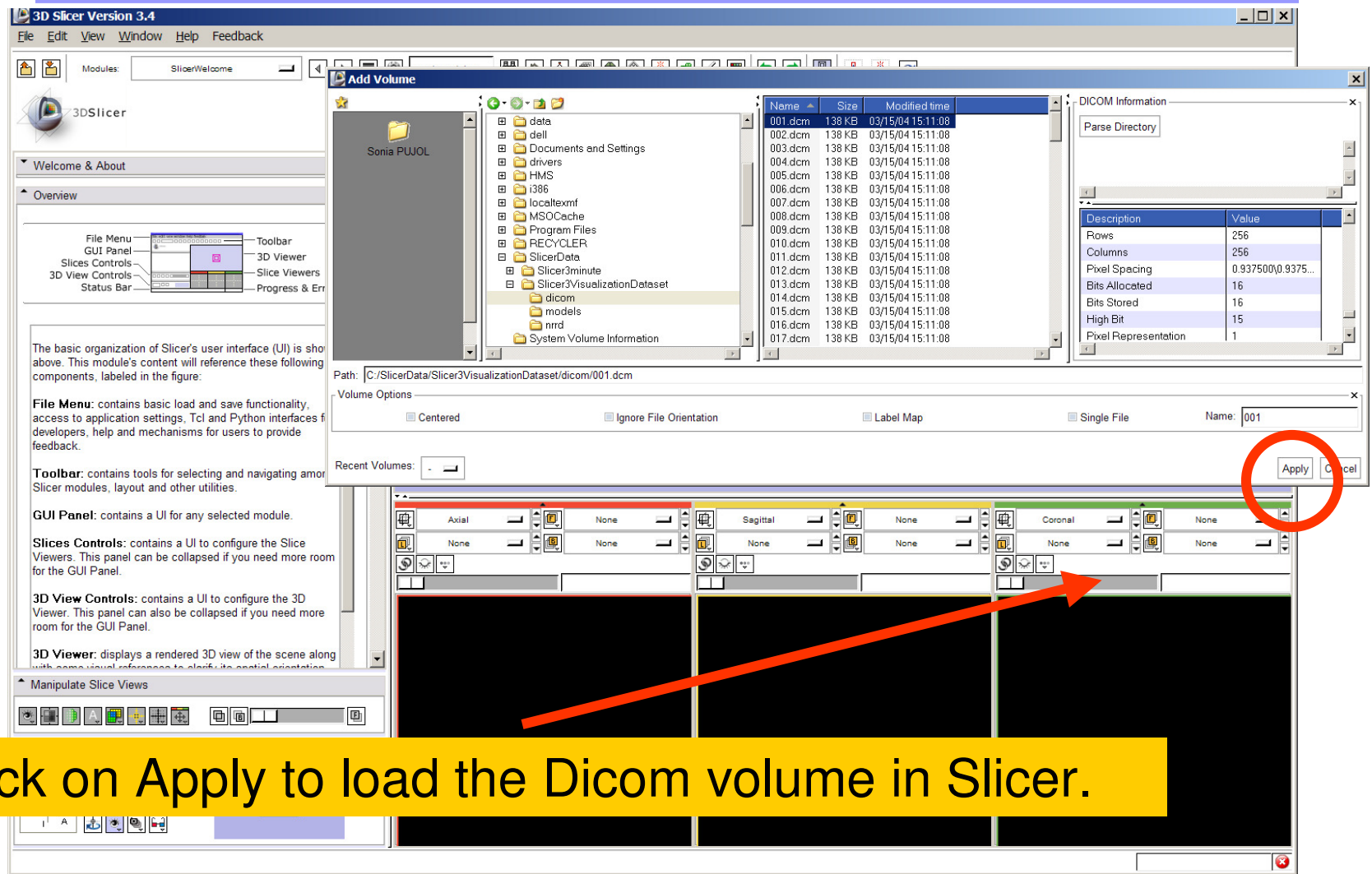
None None None

None None None

Manipulate 3D View

P S L R I A

# 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 'Volume Options' section shows 'Name: 001' and 'Single File' checked. The 'Apply' button is circled in red, and a red arrow points to it from a yellow text box at the bottom.

**File List:**

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:**

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

**Volume Options:**

- Centered
- Ignore File Orientation
- Label Map
- Single File

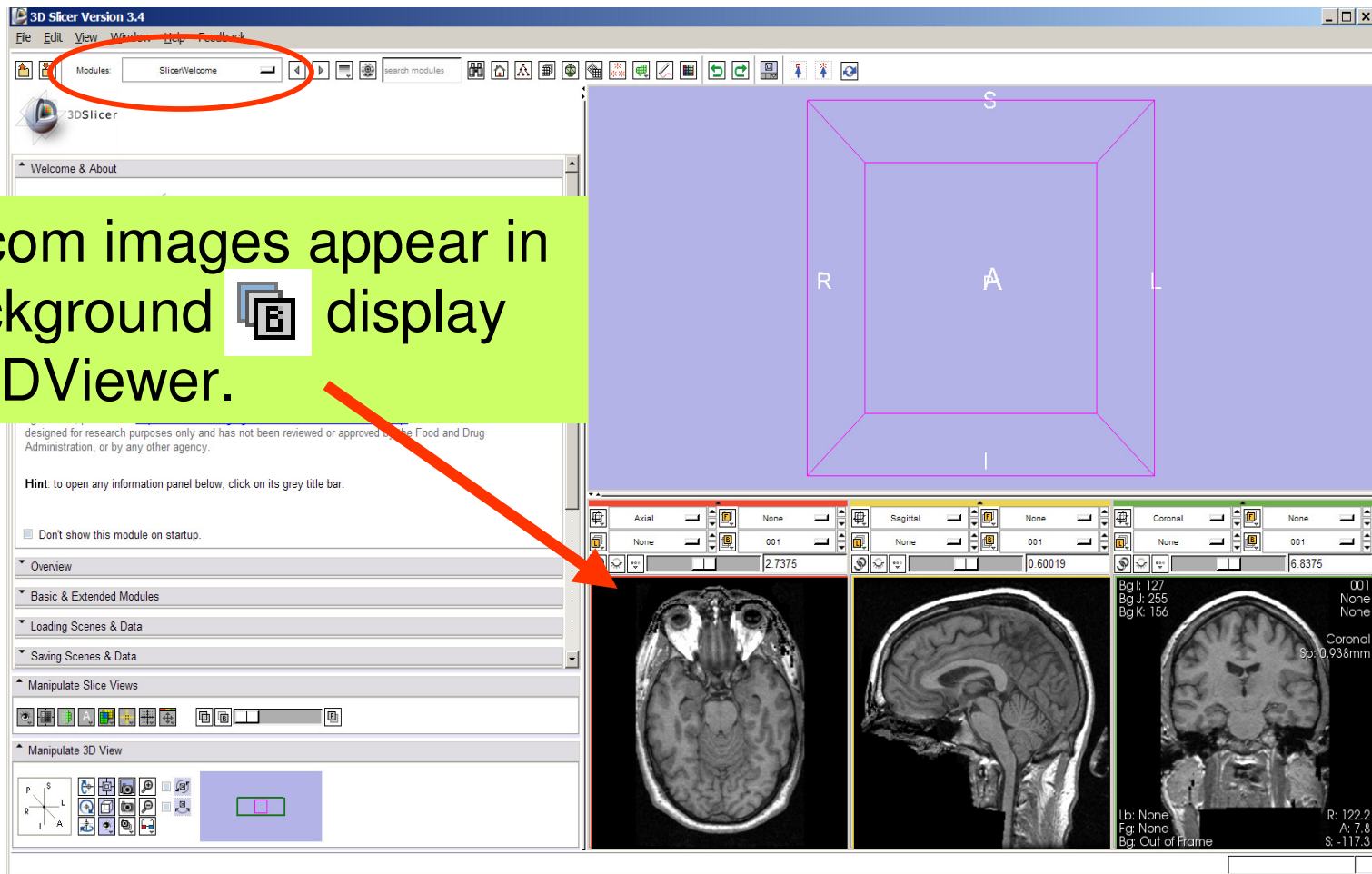
**Recent Volumes:** [Dropdown]

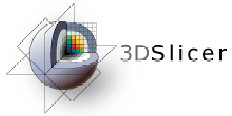
**Buttons:** Apply (circled in red), Cancel

**Yellow Text Box:** 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, please see our website <http://www.slicer.org> and the documentation on our wiki for more information <http://www.slicer.org/slicer/wiki/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

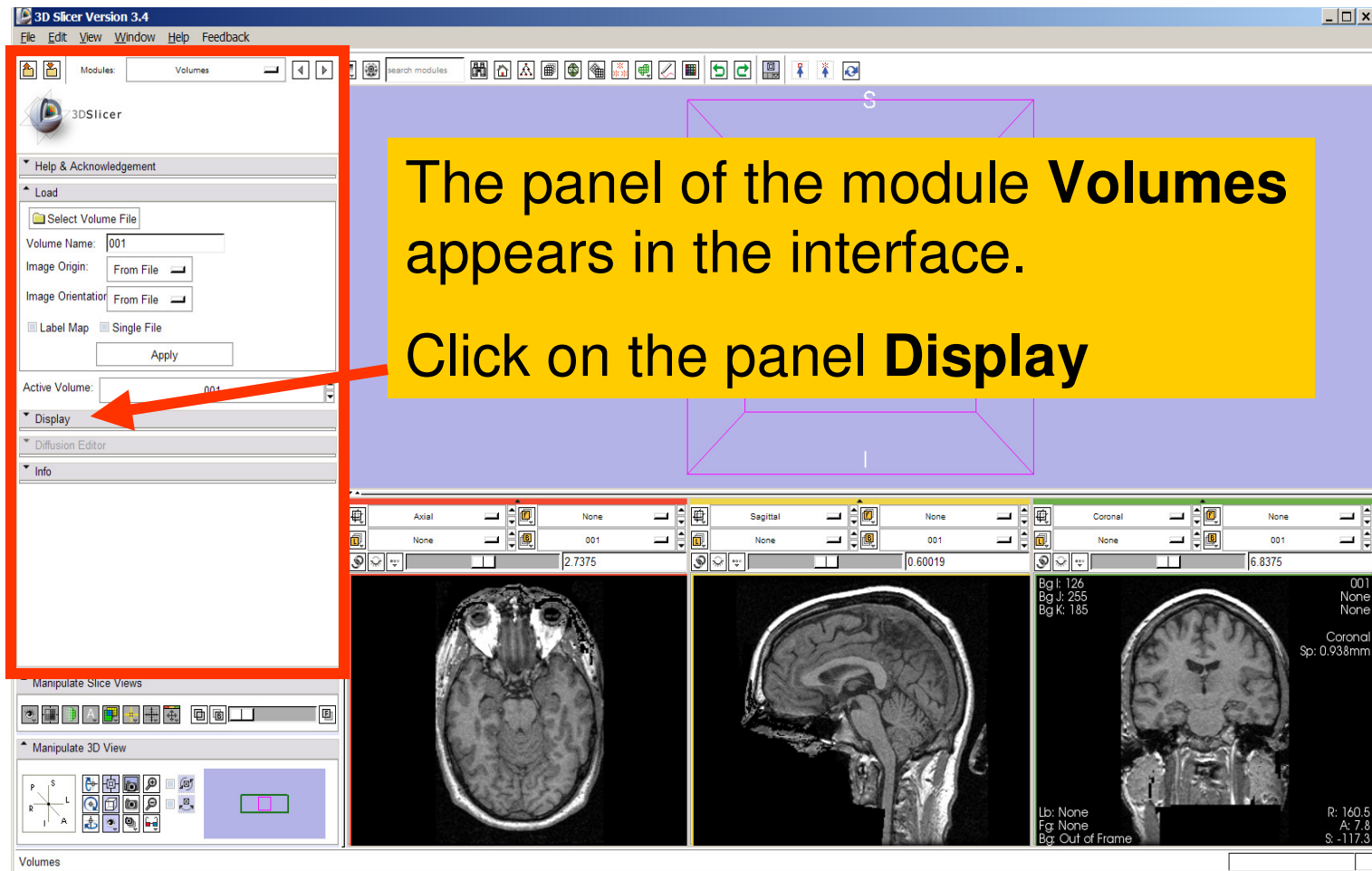
Left click on the menu **Modules** and select **All Modules** to display the list of **95 modules** available for image analysis and 3D visualization.

Select the module **Volumes**

Coronal Sp: 0.938mm

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

# 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

Axial None 2.7375

Sagittal None 0.60019

Coronal None 6.8375

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

001  
None  
None

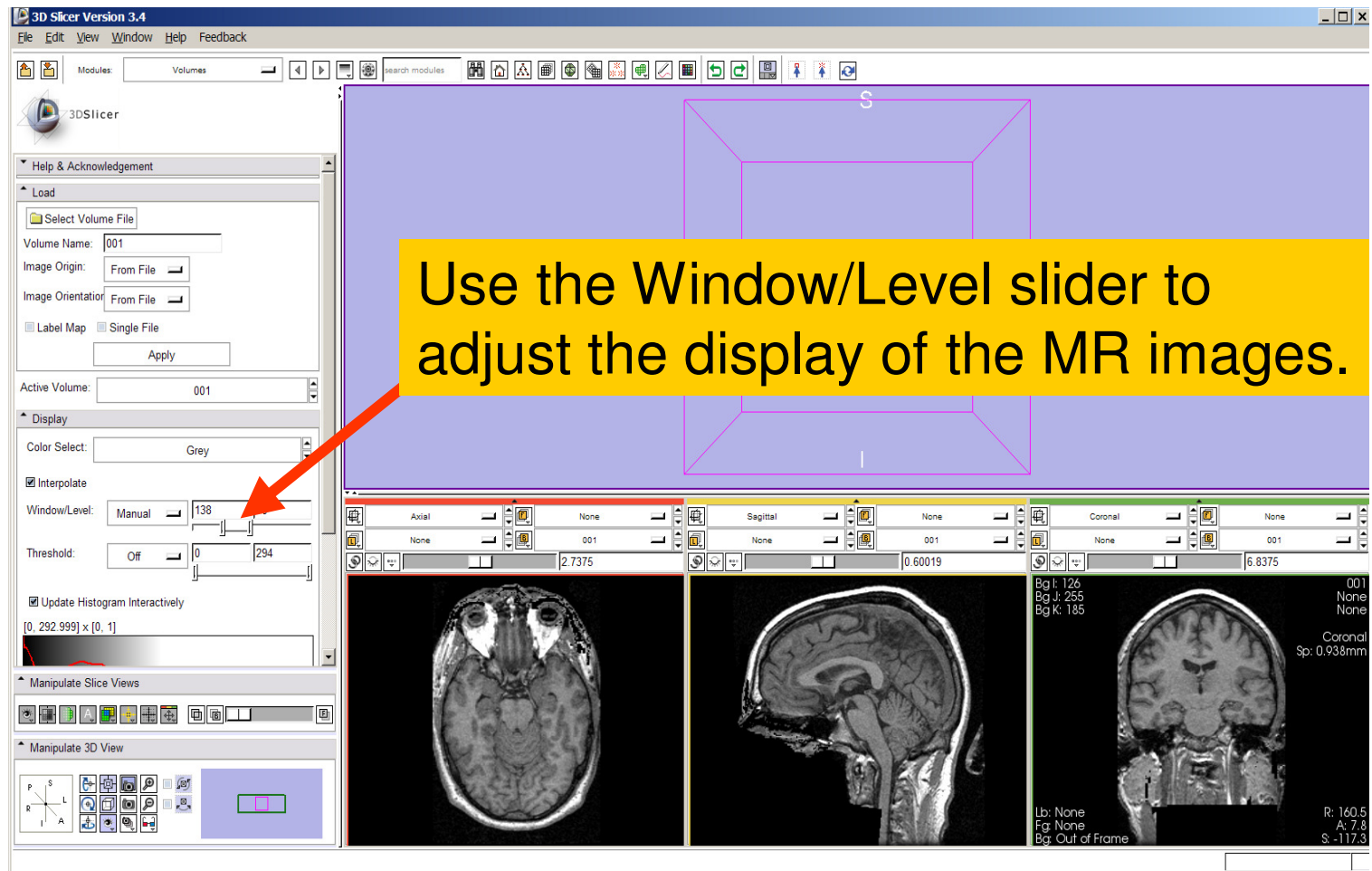
Coronal  
Sp: 0.938mm

Lb: None  
Fg: None  
Bg: Out of Frame

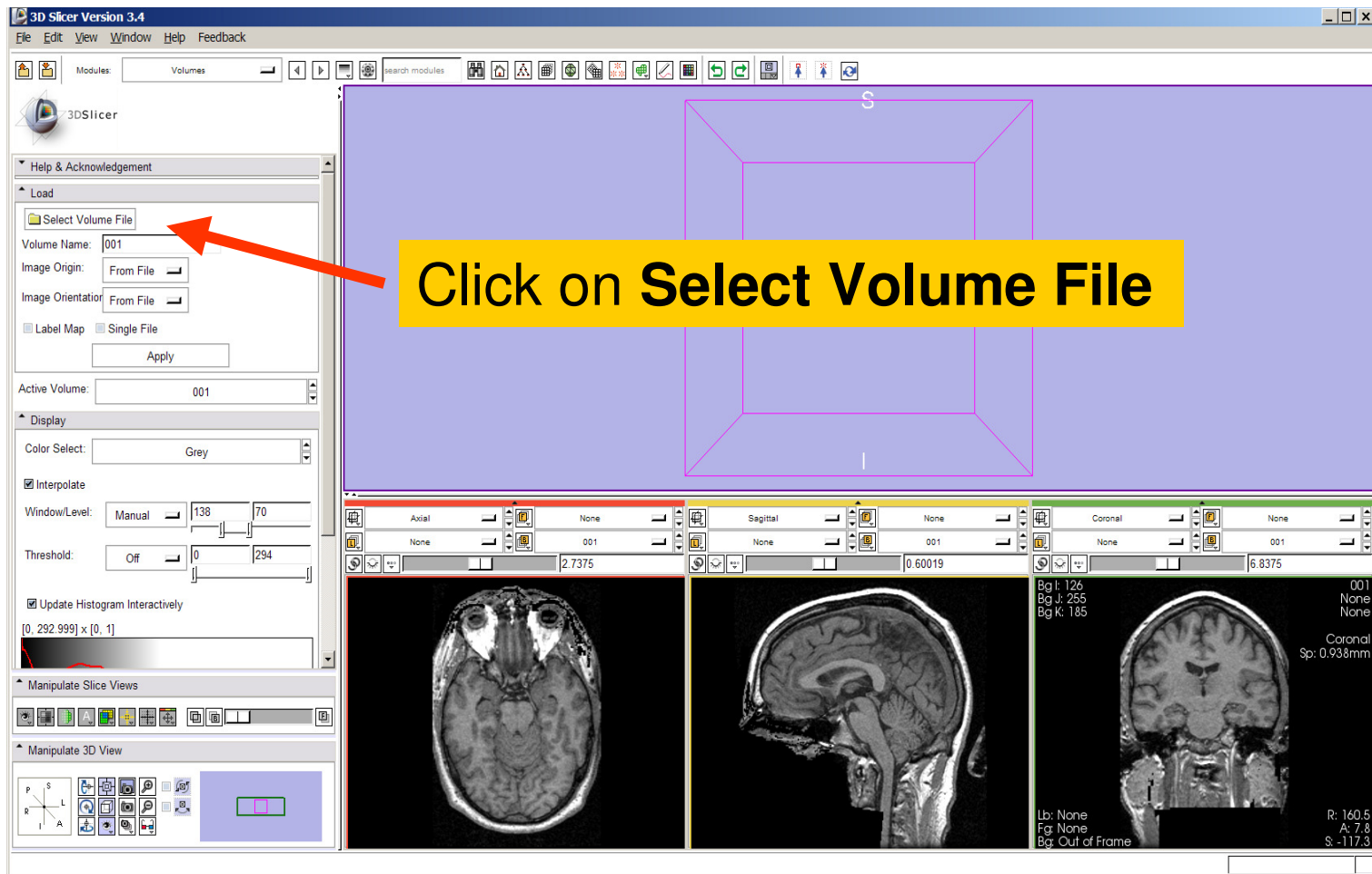
R: 160.5  
A: 7.8  
S: -117.3

Volumes

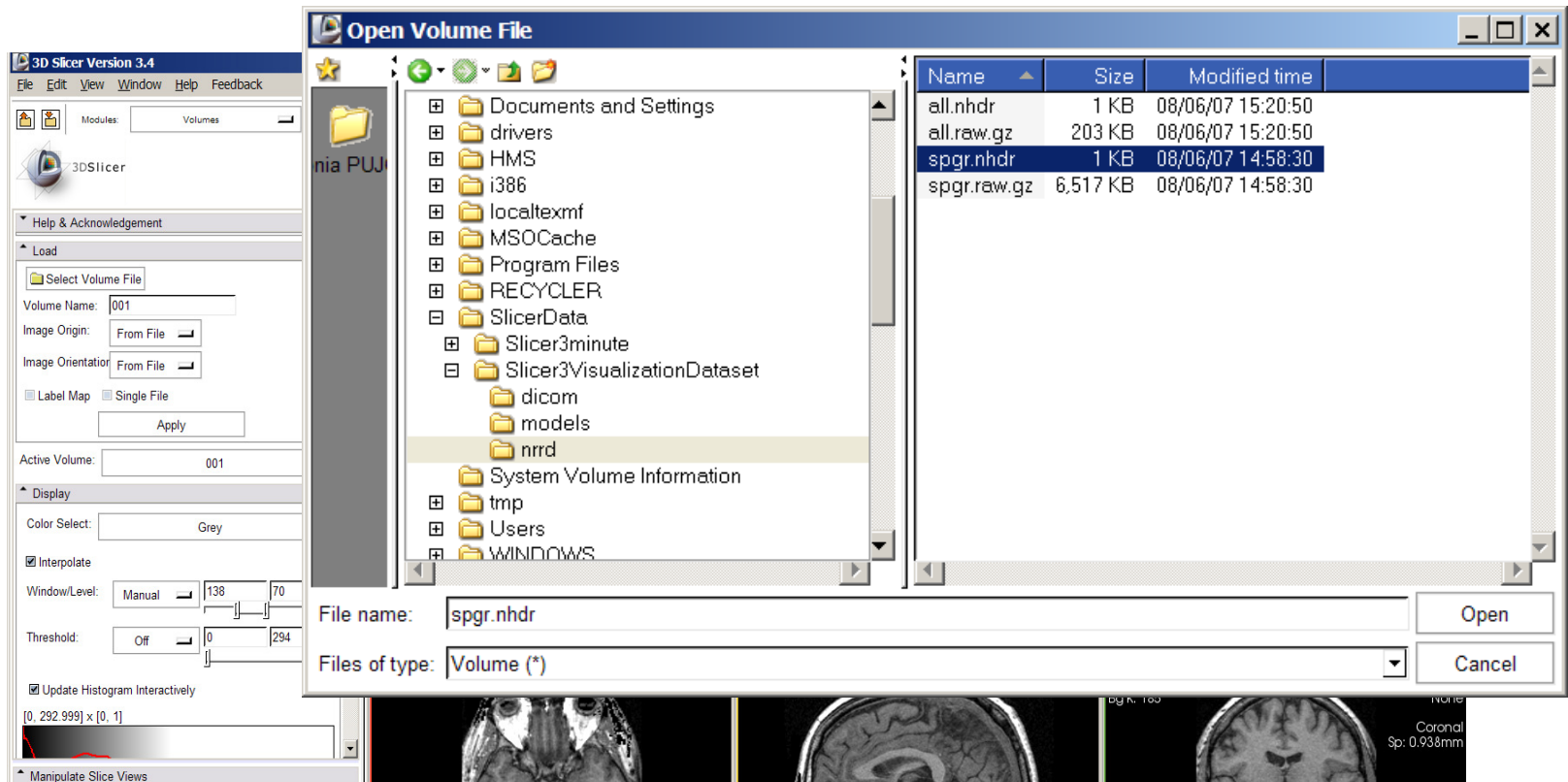
# Loading Volumes



# Loading Volumes



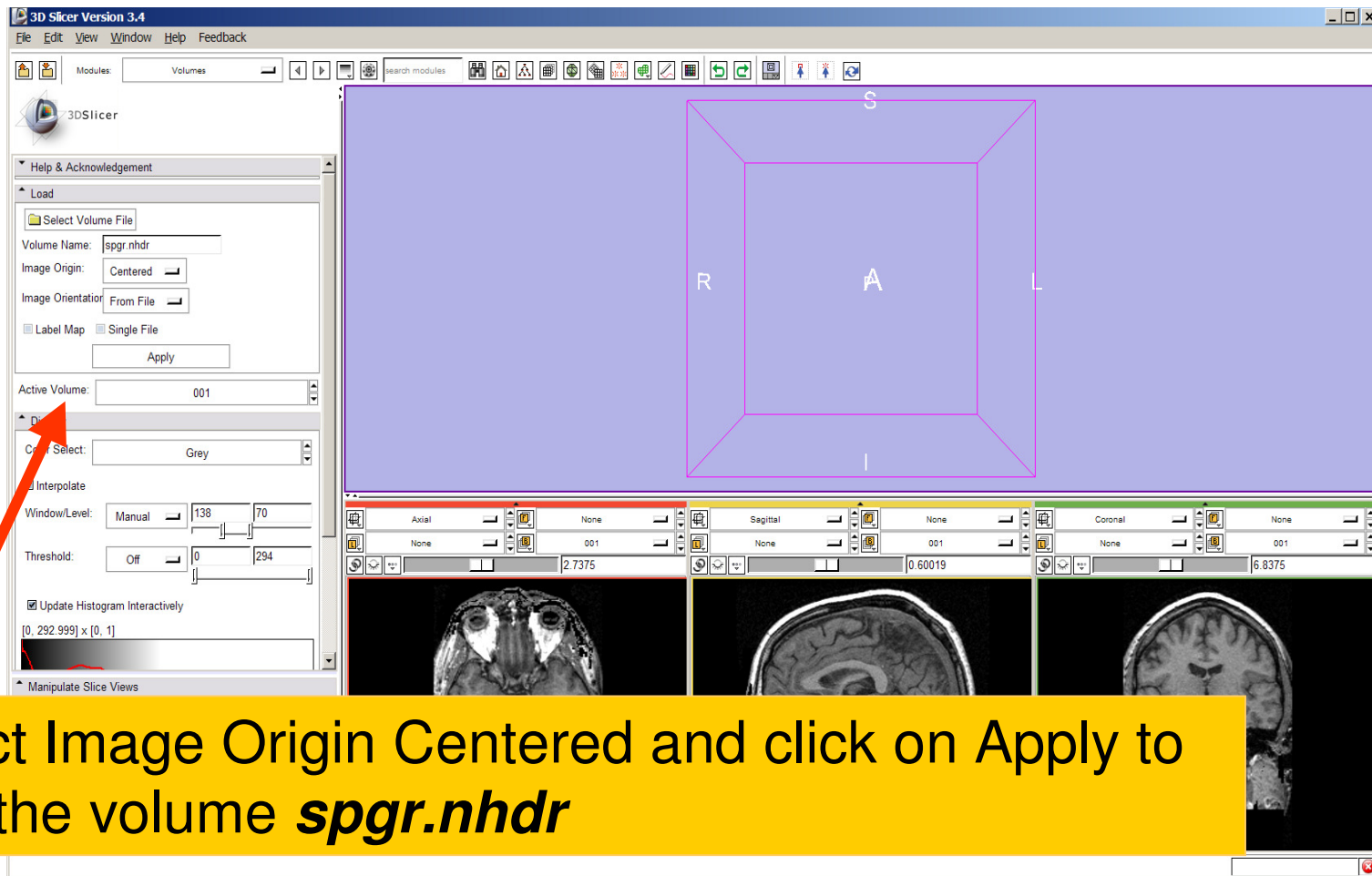
# Loading Volumes



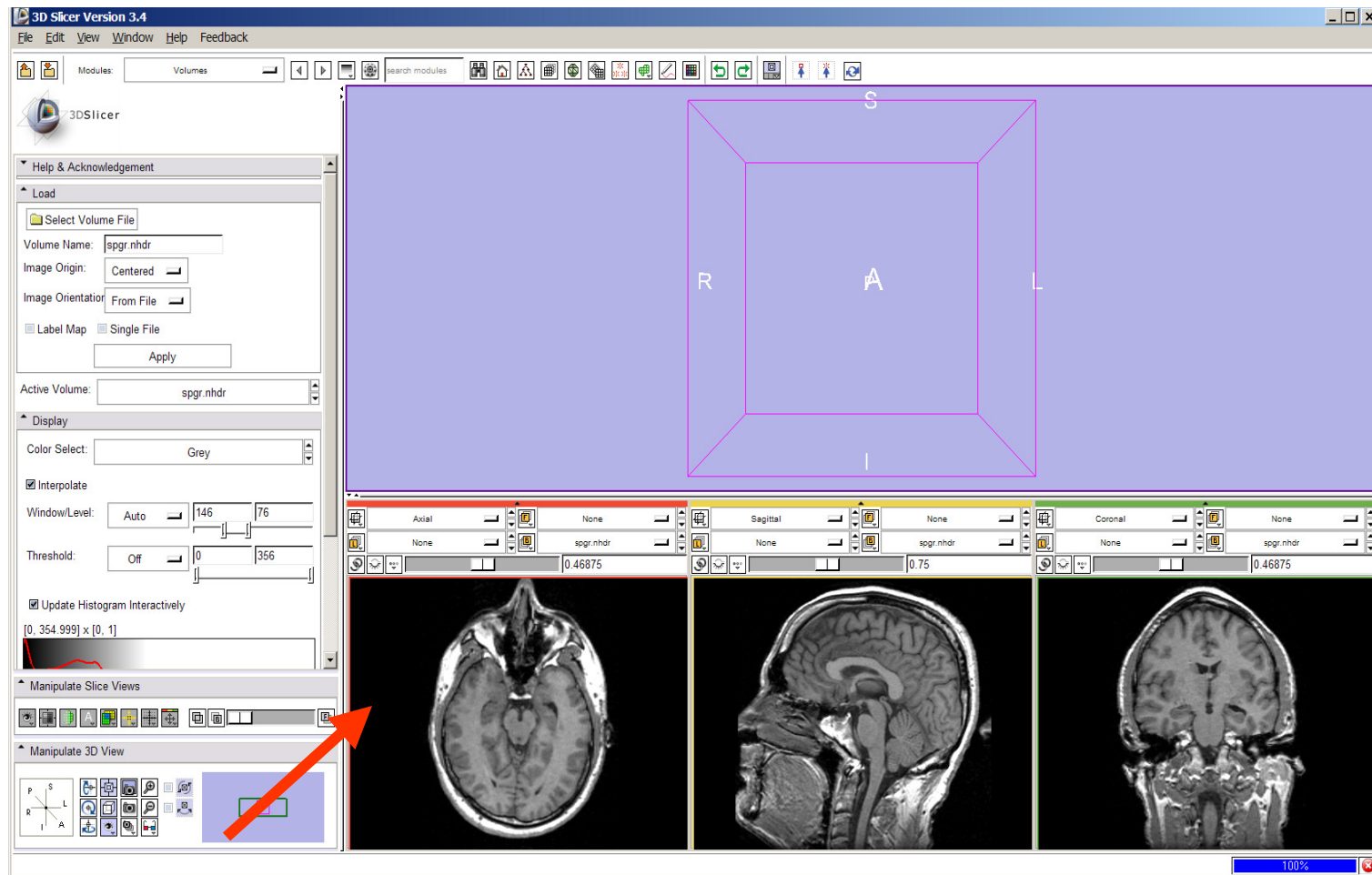
Browse to find the header file of the spgr volume ***spgr.nhdr*** located in the directory ***Slicer3VisualizationDataset/nrrd*** and click on **Open**.



# Loading Volumes



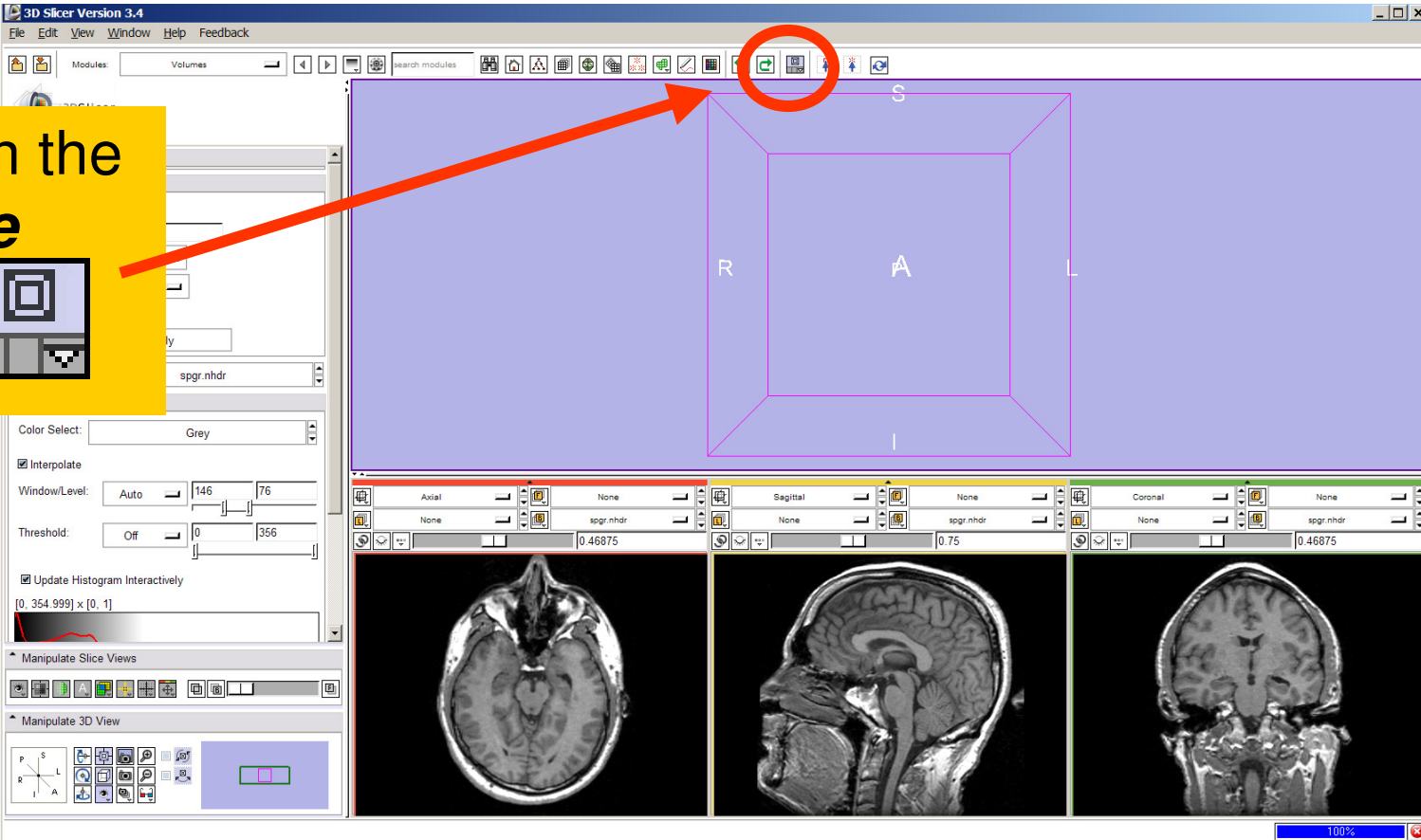
# Loading Volumes



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

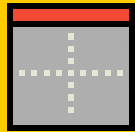
# Exploring the data

Click on the **choose view icon**

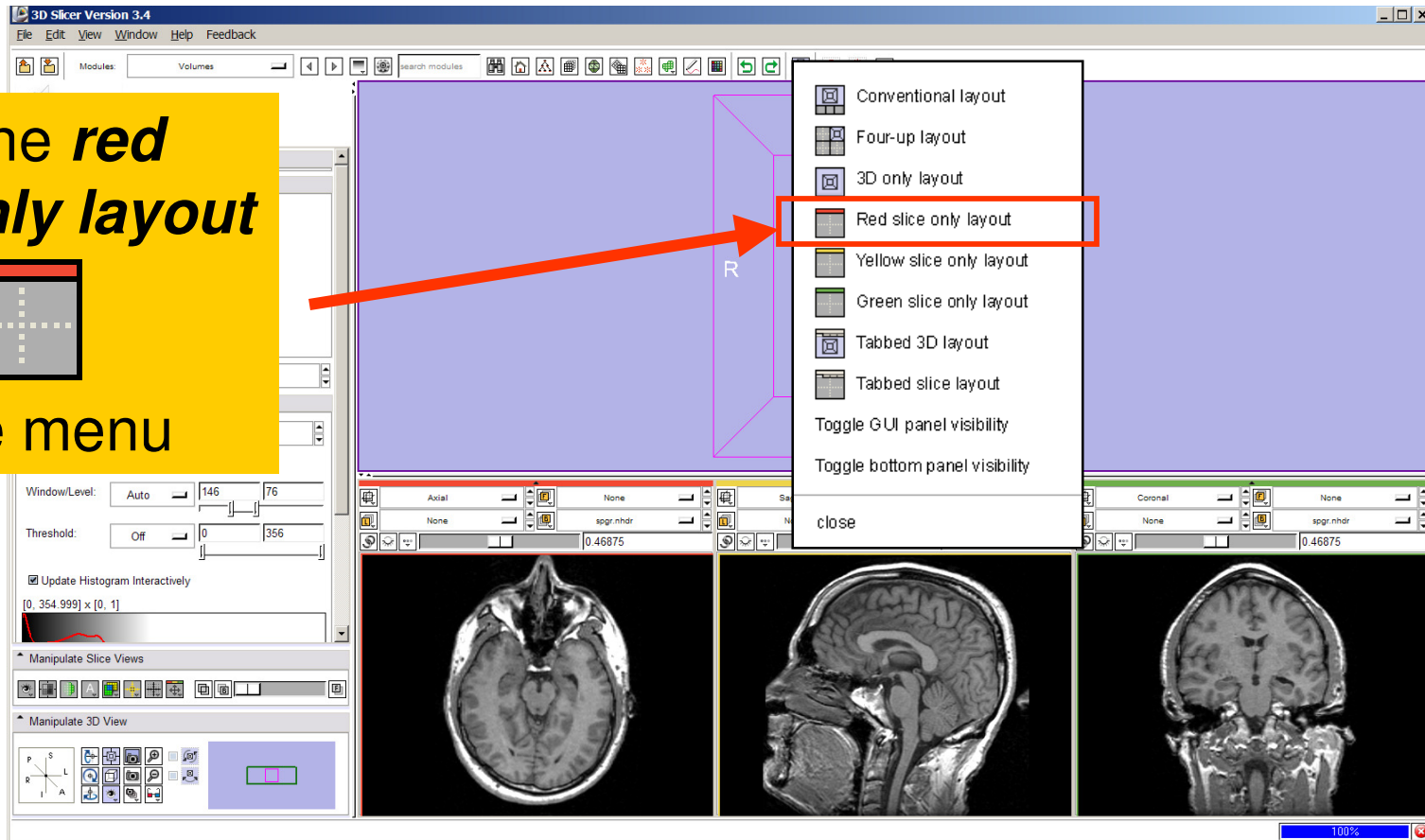


# Exploring the data

Select the *red slice only layout*

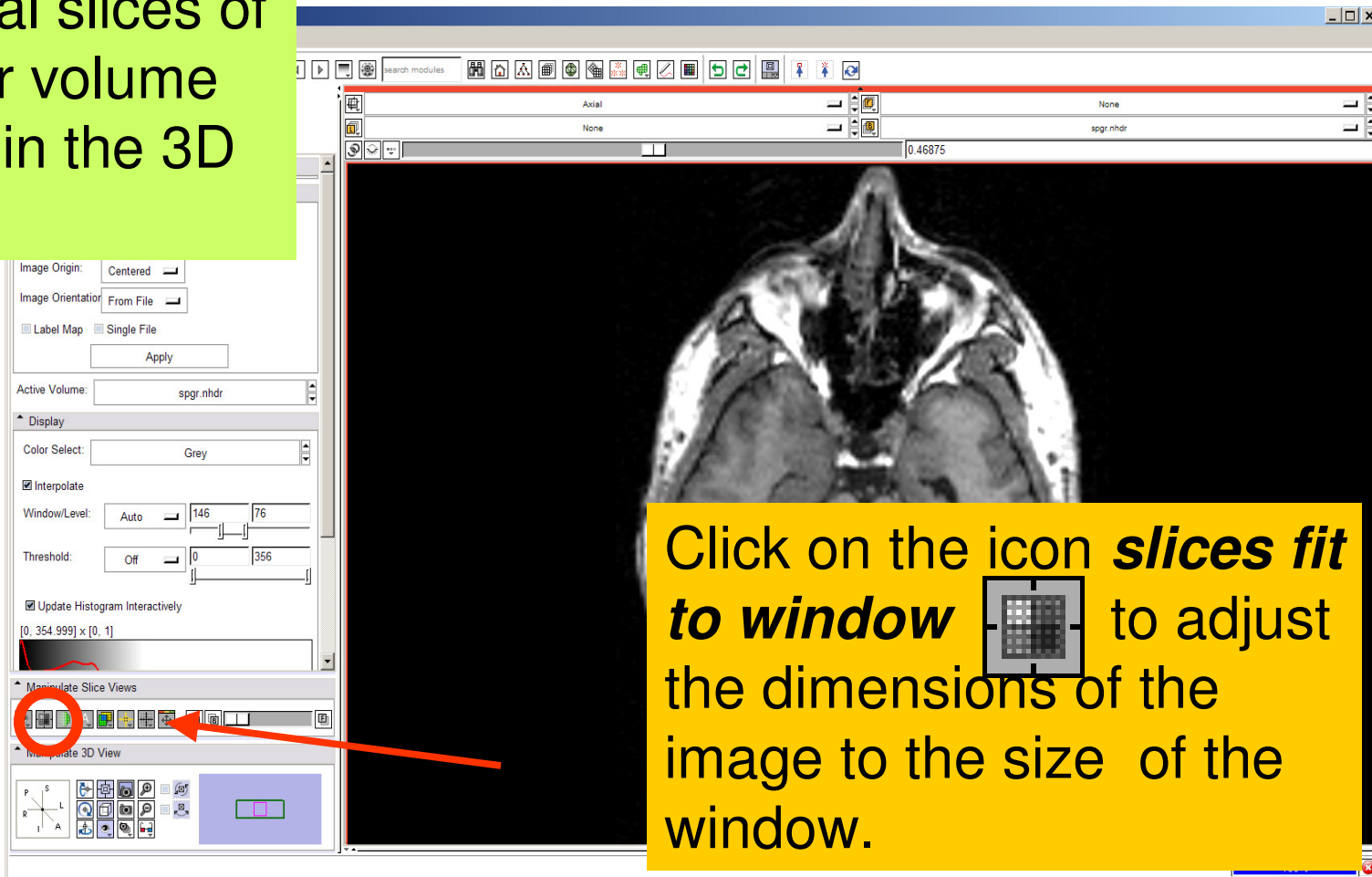


from the menu




# Exploring the data

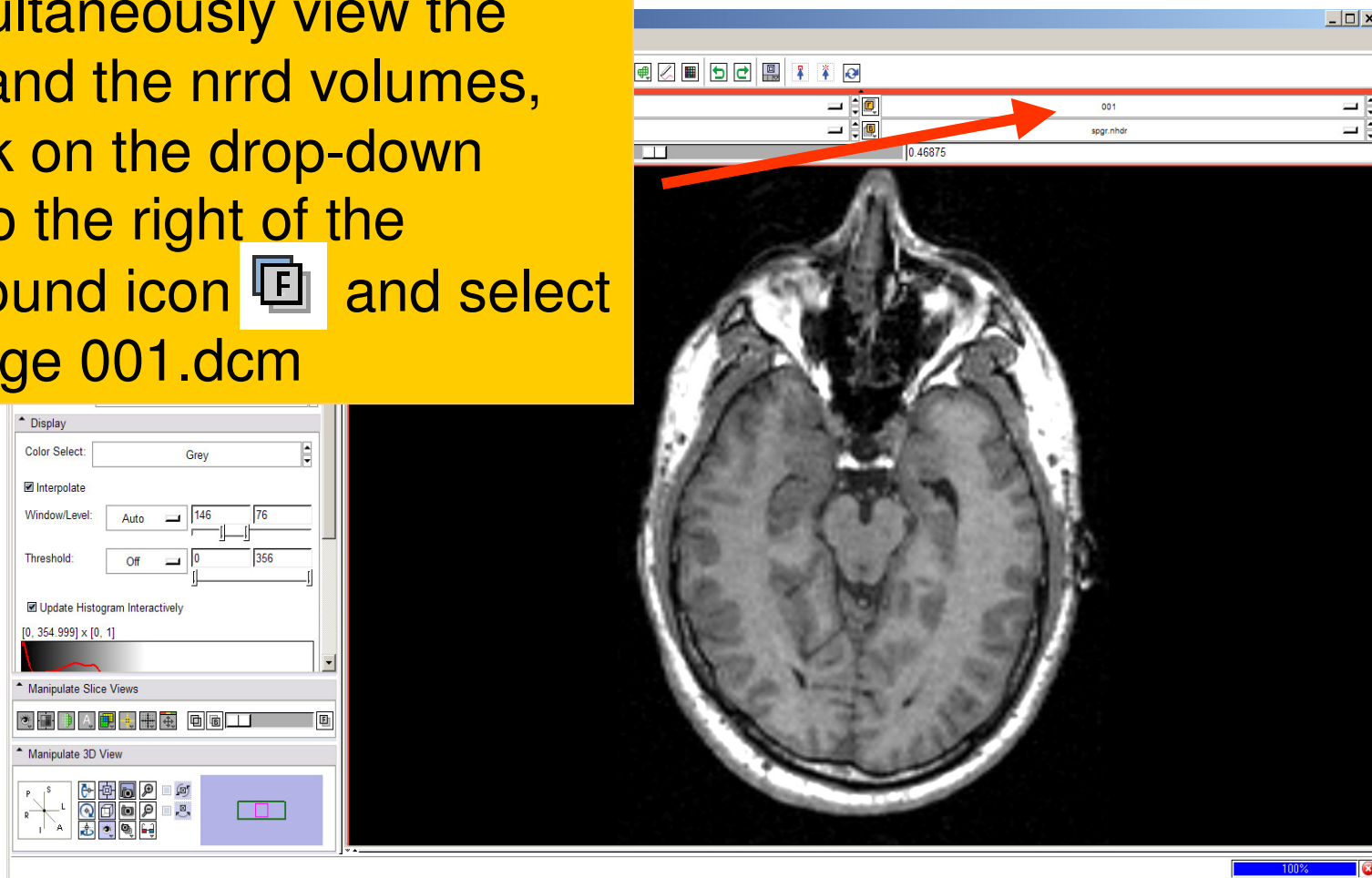
The axial slices of the spgr volume appear in the 3D viewer.





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

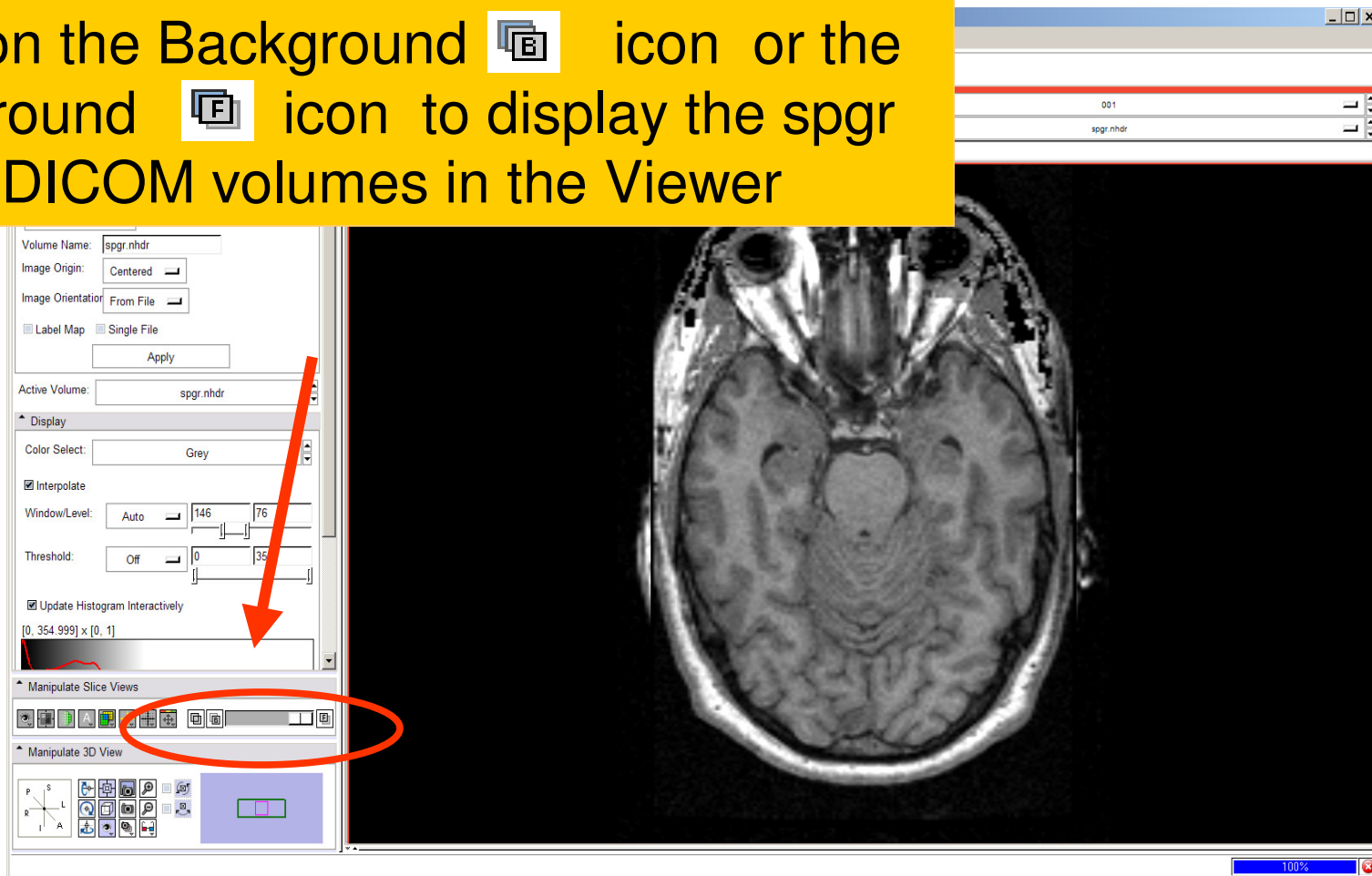
# Exploring the data

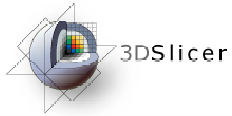
To simultaneously view the dicom and the nrrd volumes, left click on the drop-down menu to the right of the Foreground icon  and select the image 001.dcm



# Exploring the data

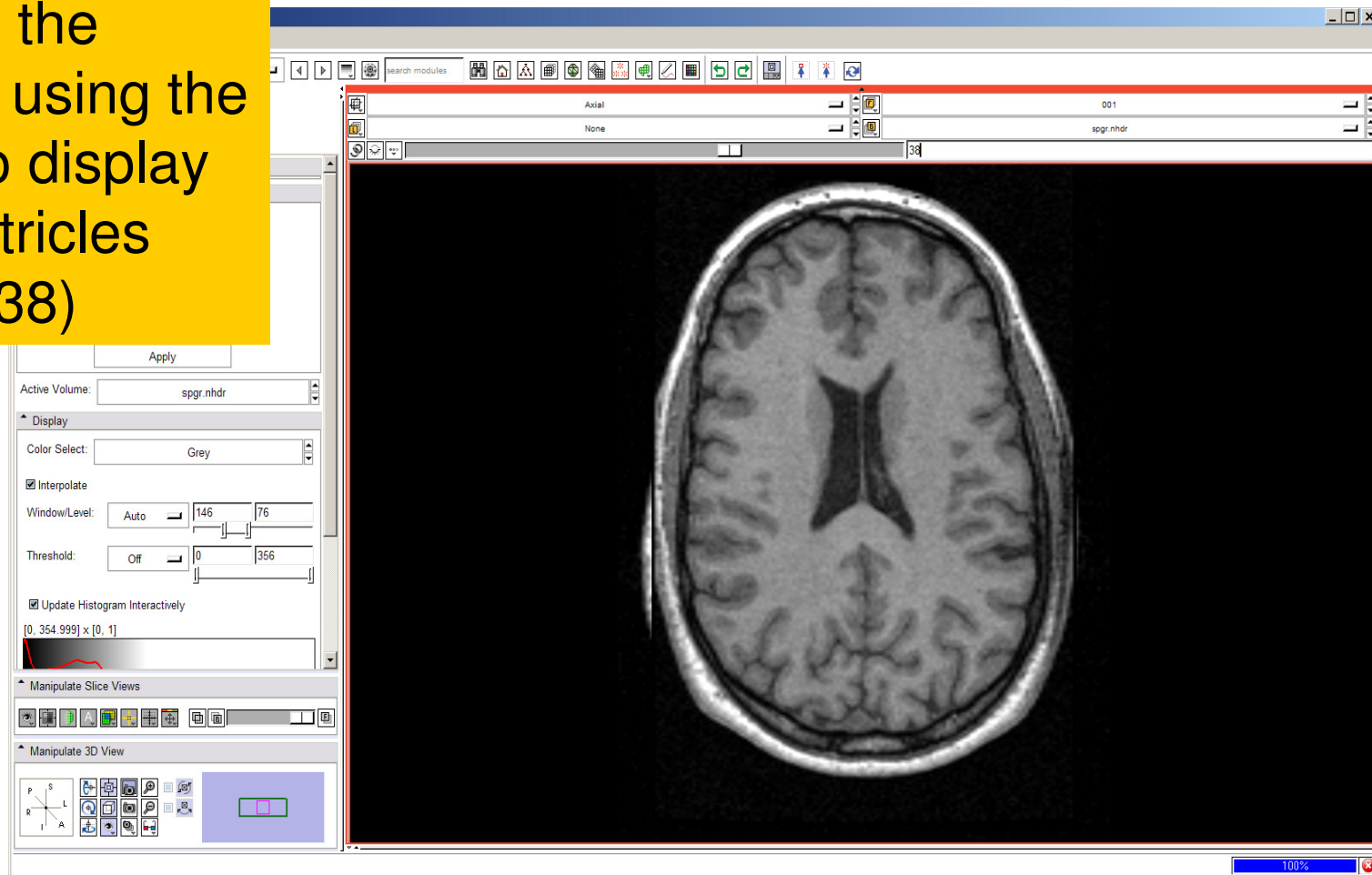
Click on the Background  icon or the Foreground  icon to display the spgr or the DICOM volumes in the Viewer






# Exploring the data

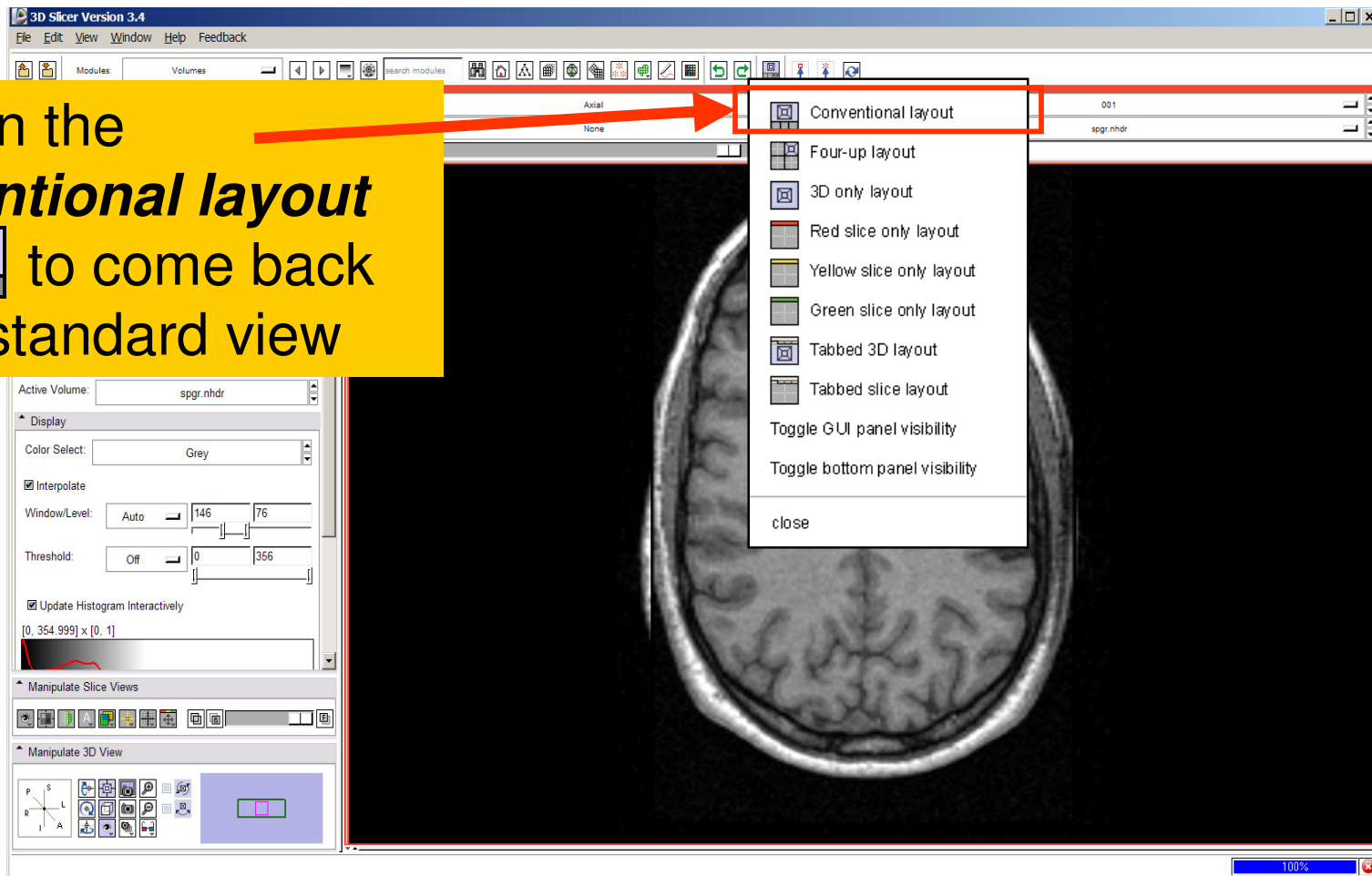
Browse the images using the slider to display the ventricles (~slice 38)






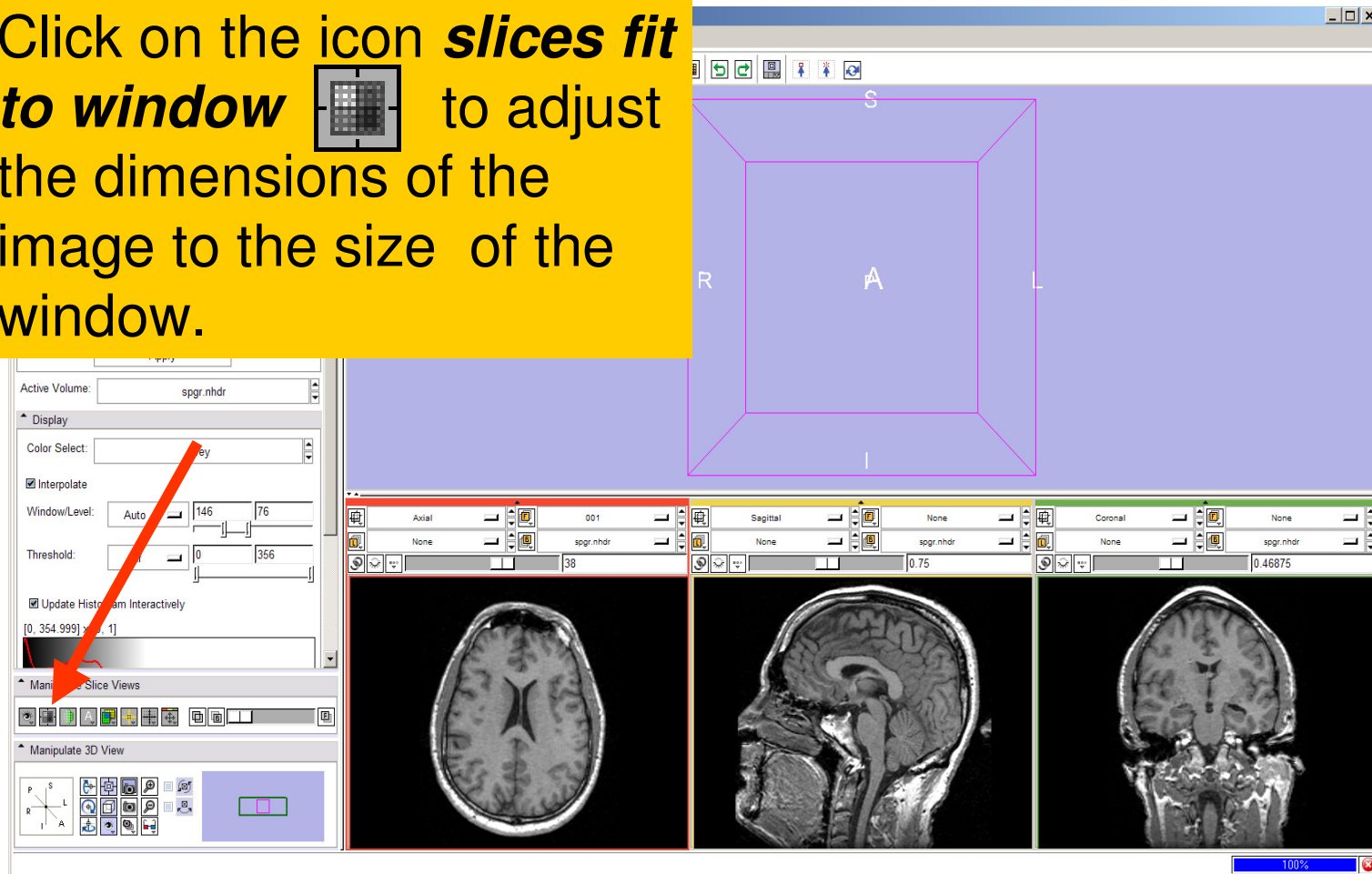
# Exploring the data

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

# *Label map*

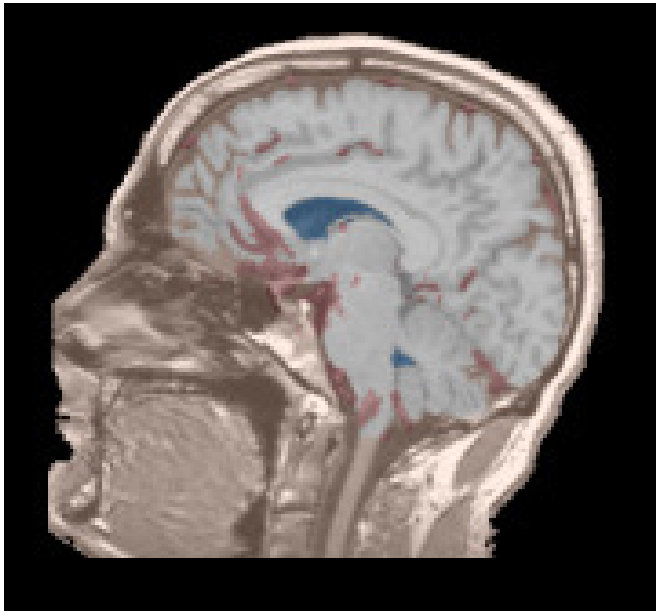
---

- **Image segmentation** is the extraction of structural information of particular interest from surrounding image.



# *Label map*

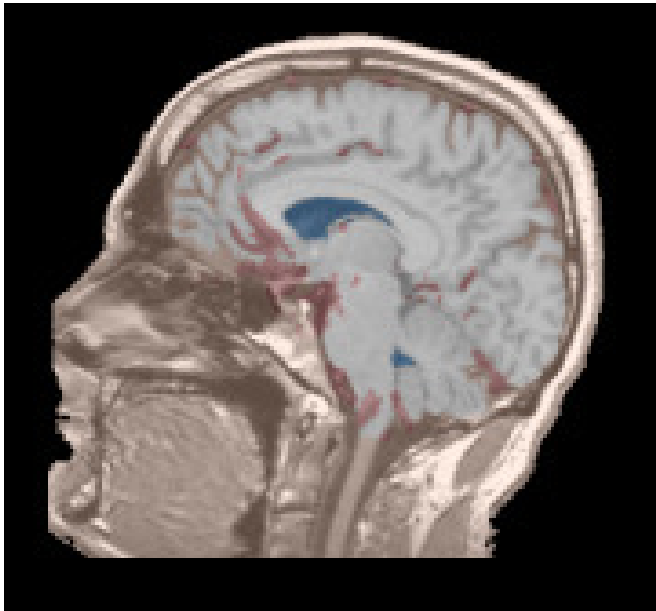
---



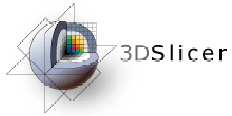
- **Image segmentation** is the extraction of structural information of particular interest from surrounding image.
- Each pixel is assigned a specific **label value** which corresponds to the anatomical structure that it belongs to.

# *Label map*

---

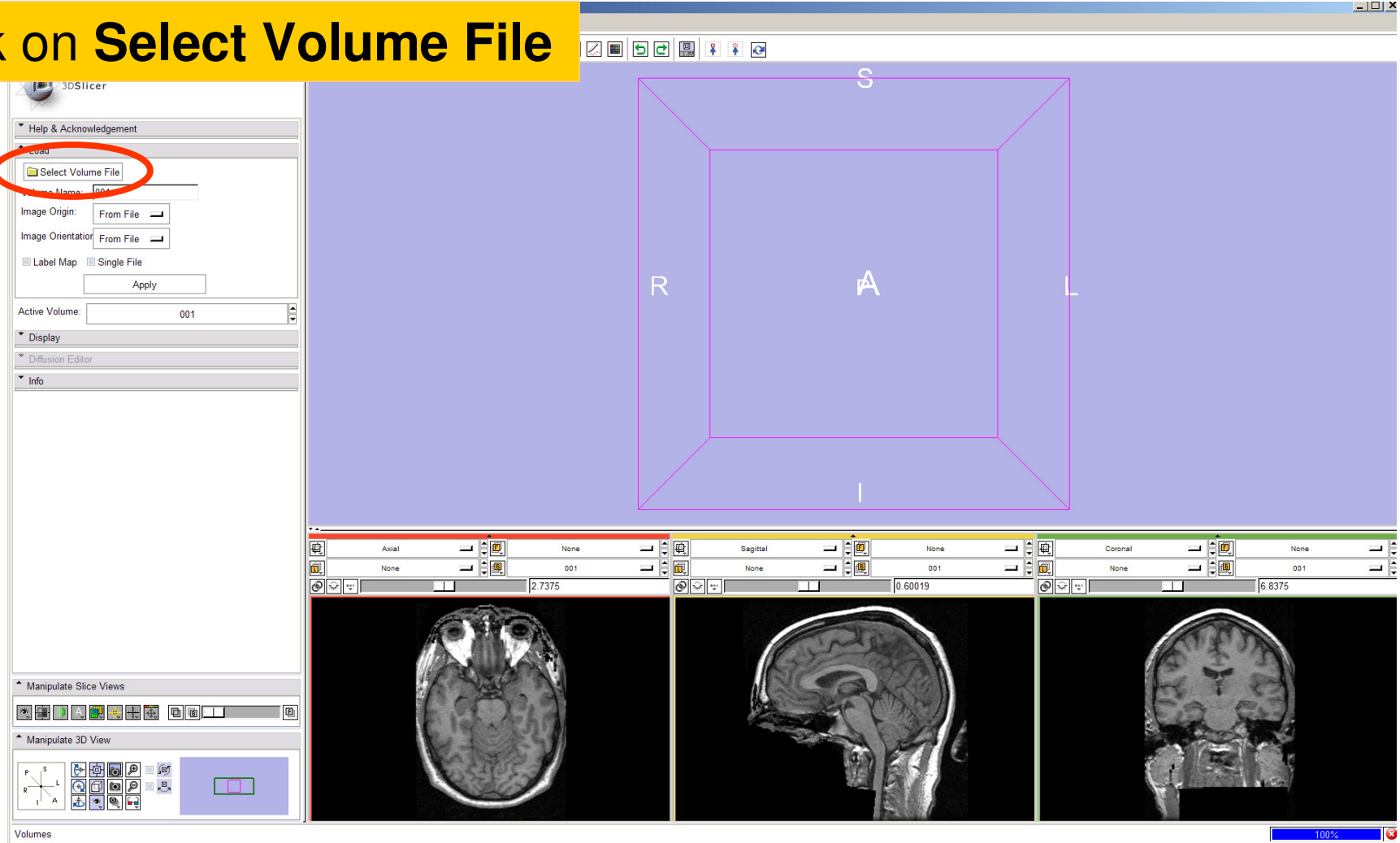


- **Image segmentation** is the extraction of structural information of particular interest from surrounding image.
- Each pixel is assigned a specific **label value** which corresponds to the anatomical structure that it belongs to.
- The three-dimensional result of the segmentation is a binary array called a **label map**.



# Loading a label map

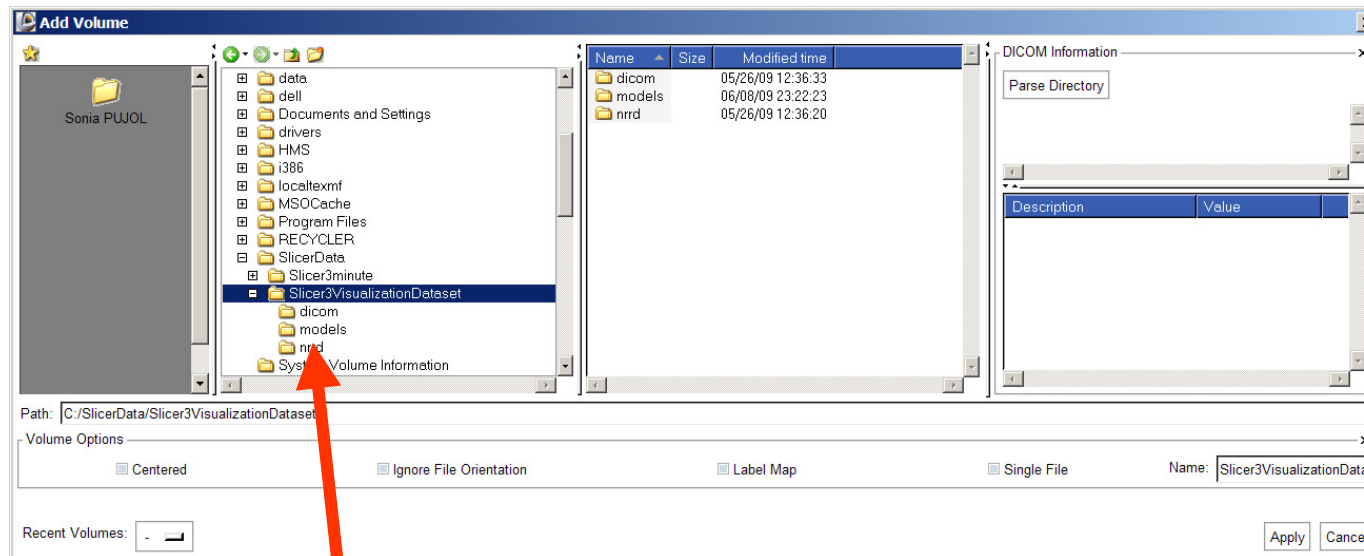
Click on **Select Volume File**



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Neuroimage Analysis Center

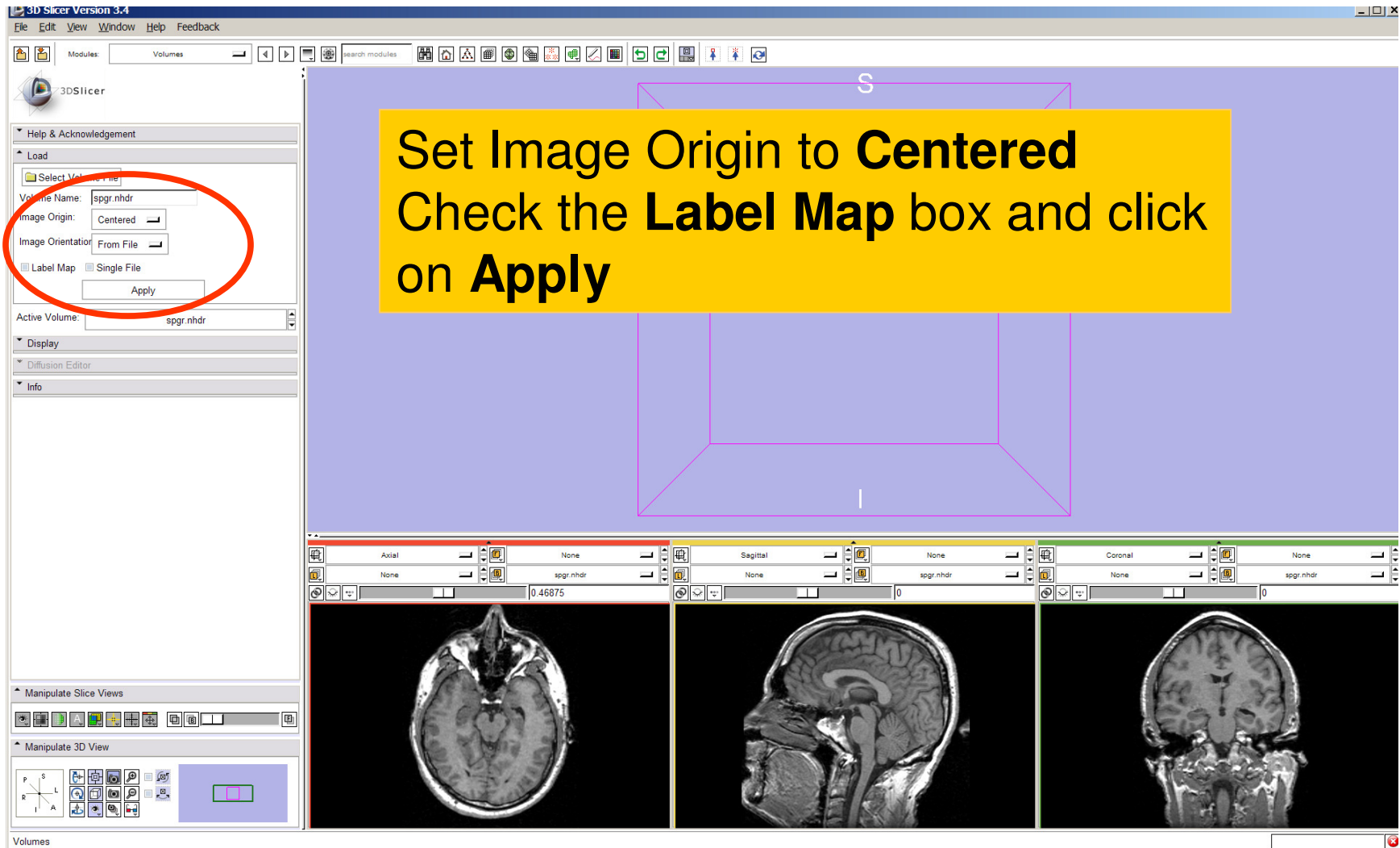
# Loading a label map



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



3D Slicer Version 3.4

File Edit View Window Help Feedback

Modules: Volumes

3DSlicer

Help & Acknowledgement

Load

Select Volume From File

Volume Name: spgr.nhdr

Image Origin: Centered

Image Orientation: From File

Label Map  Single File

Apply

Active Volume: spgr.nhdr

Display

Diffusion Editor

Info

Axial None Sagittal None Coronal None

None spgr.nhdr None spgr.nhdr None spgr.nhdr

0.46875 0 0

Manipulate Slice Views

Manipulate 3D View

Volumes

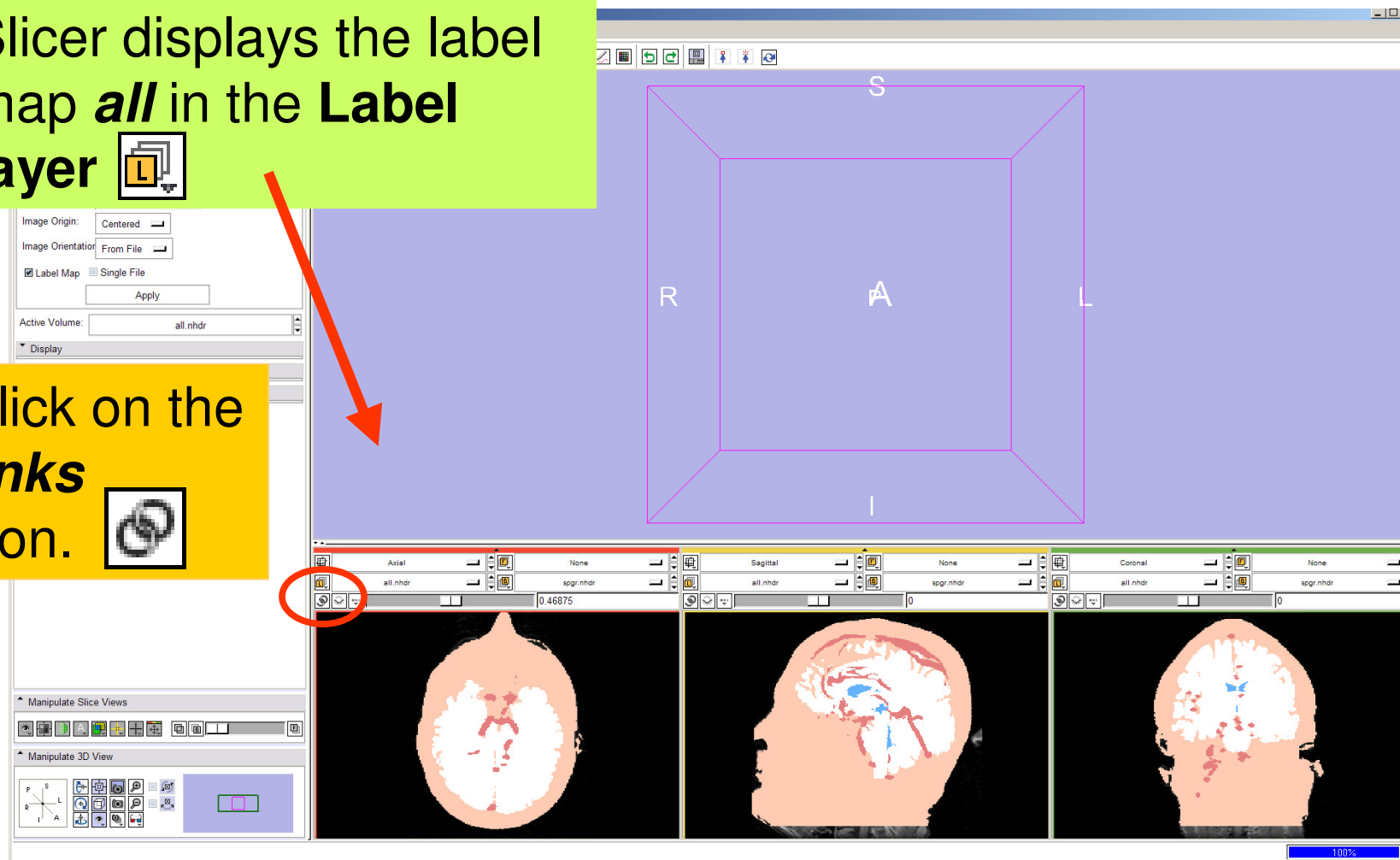
Set Image Origin to **Centered**  
Check the **Label Map** box and click  
on **Apply**

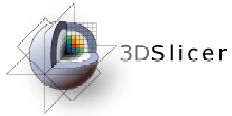
# Visualizing a label map

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



Click on the *links* icon.

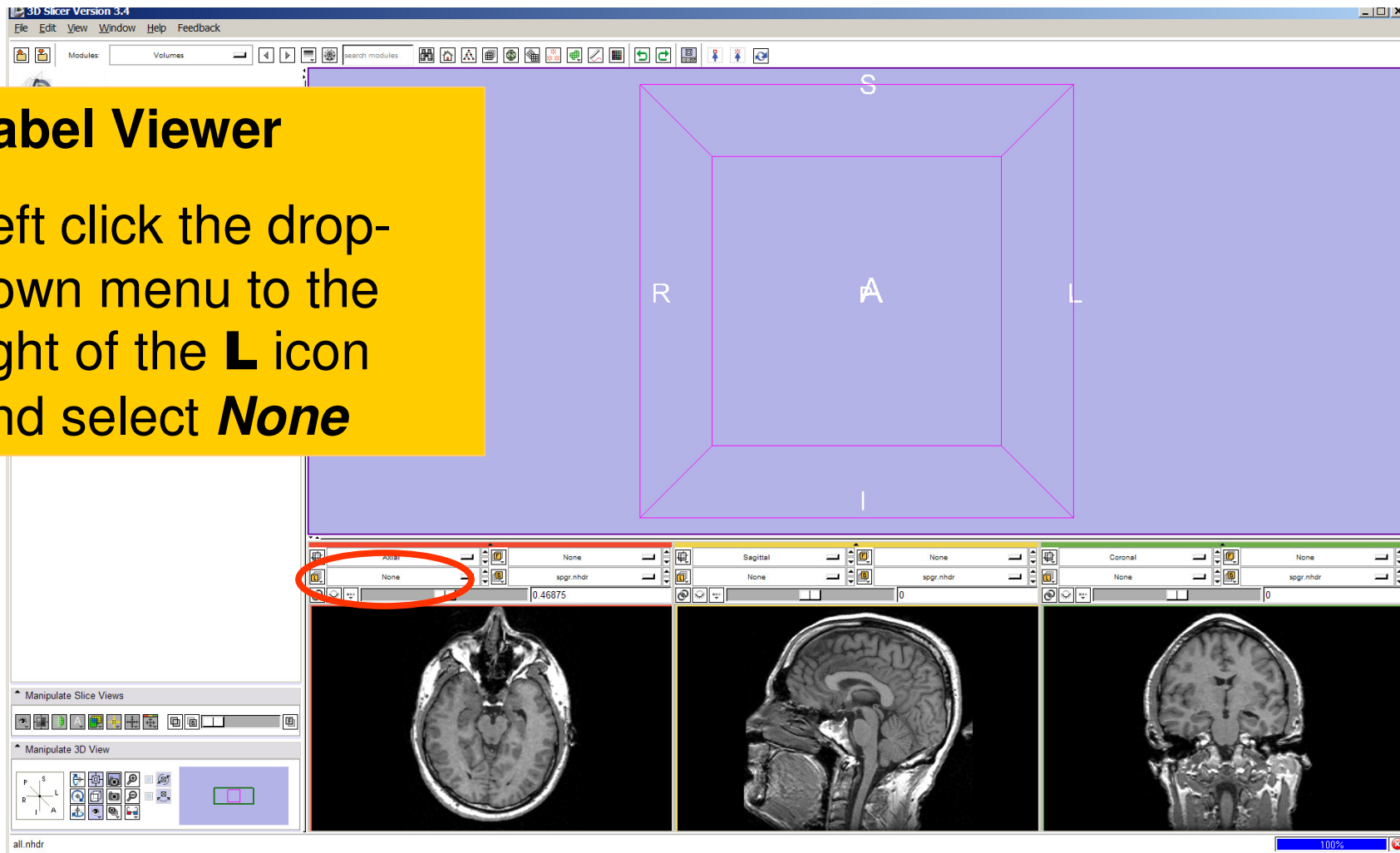


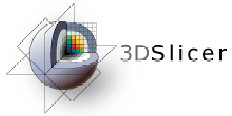


# Visualizing Multiple Volumes

## Label Viewer

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





# Visualizing Multiple Volumes

**Foreground Viewer**

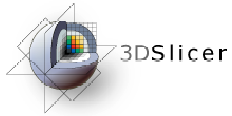
Left click on the drop-down menu to the right of the **F** icon and select the volume *all*

Axial | None | Sagittal | None | Coronal | None

all.nhdr | all.nhdr | spgr.nhdr | all.nhdr | spgr.nhdr

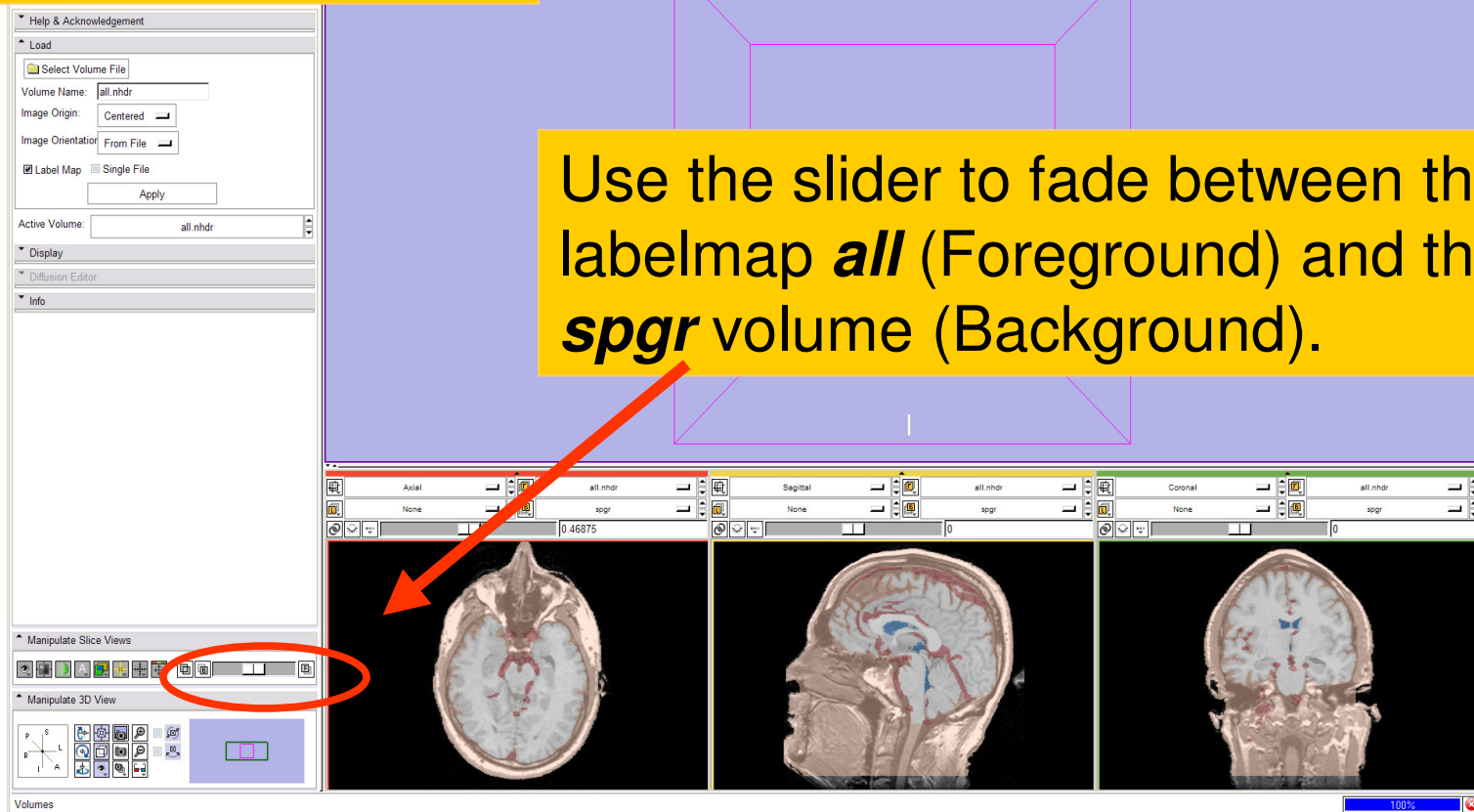
0.46875 | 0 | 0

100%



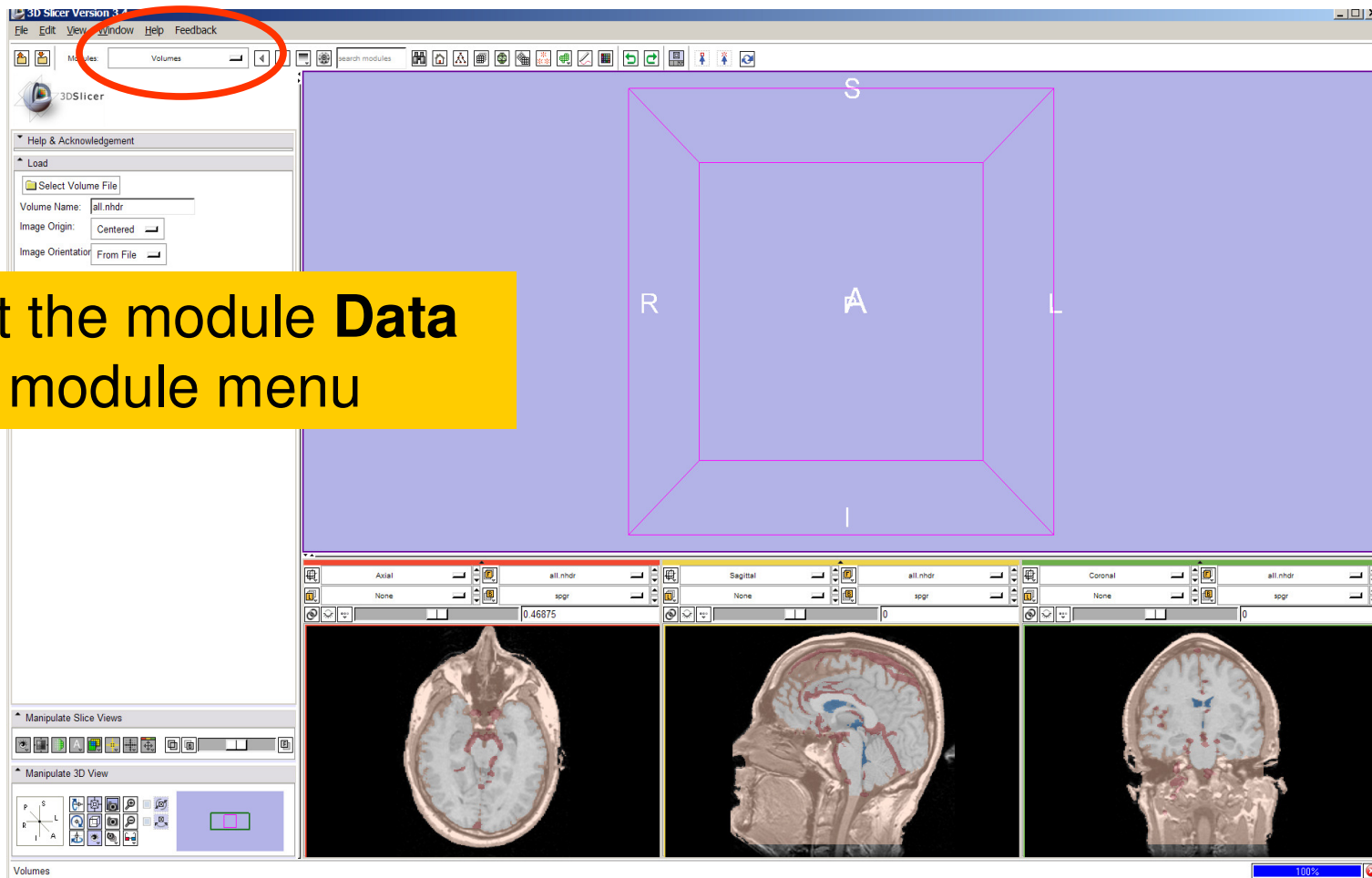
# Visualizing Multiple Volumes

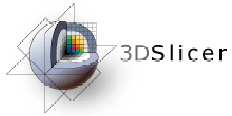
Select Manipulate  
Slice Views



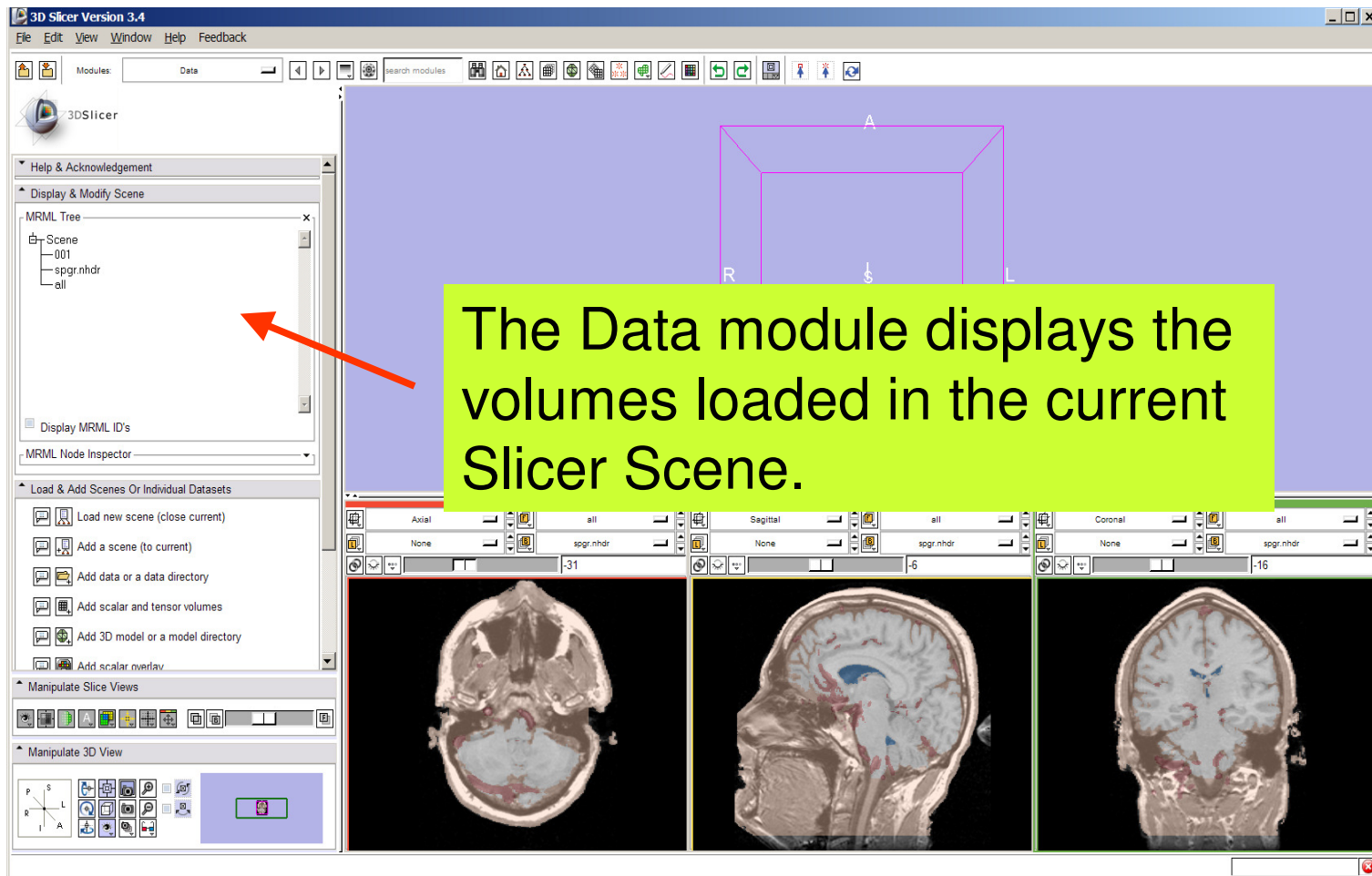
Use the slider to fade between the labelmap *all* (Foreground) and the *spgr* volume (Background).

# 3D Visualization

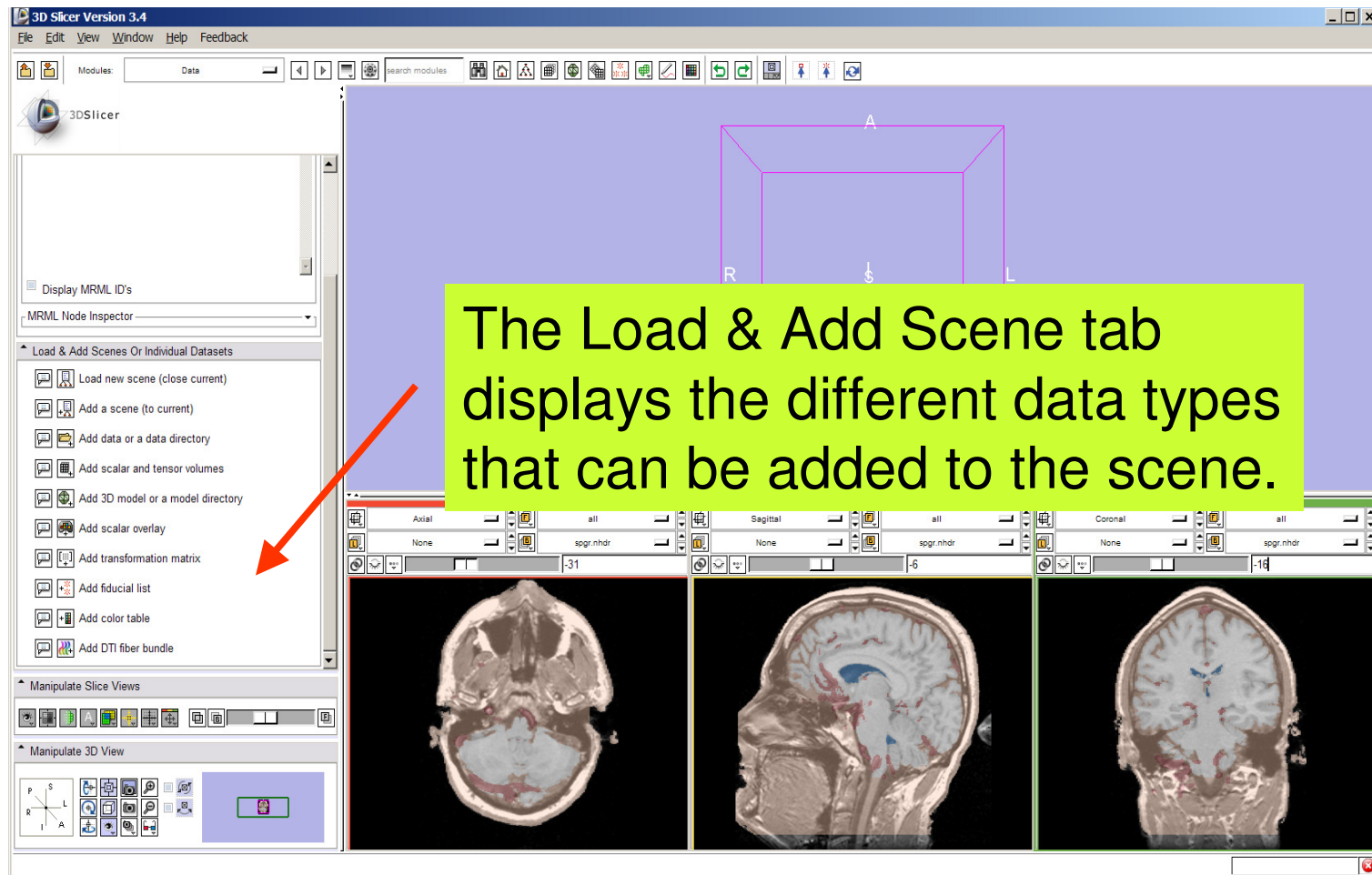




# 3D Visualization

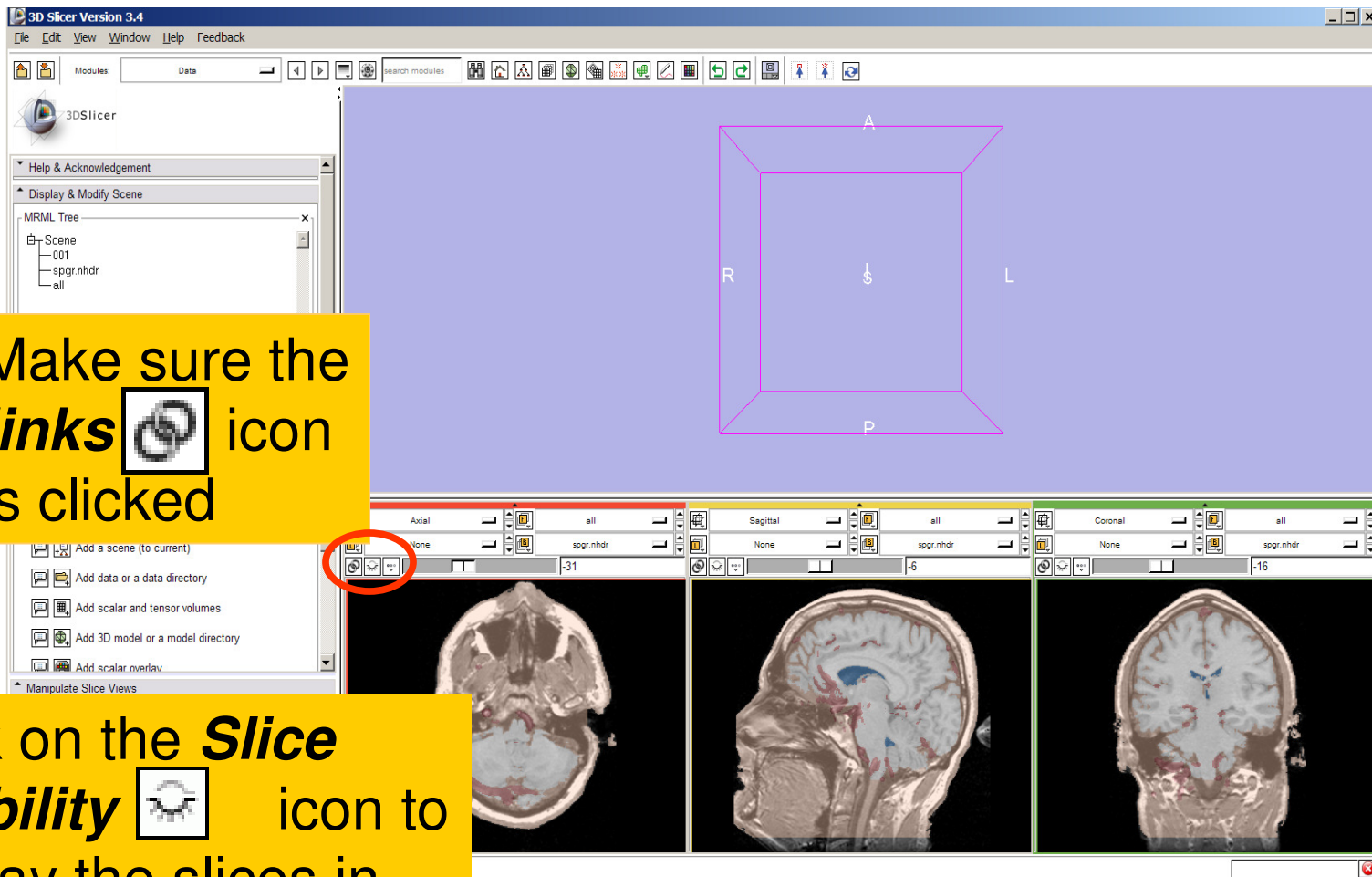



# 3D Visualization





# 3D Visualization

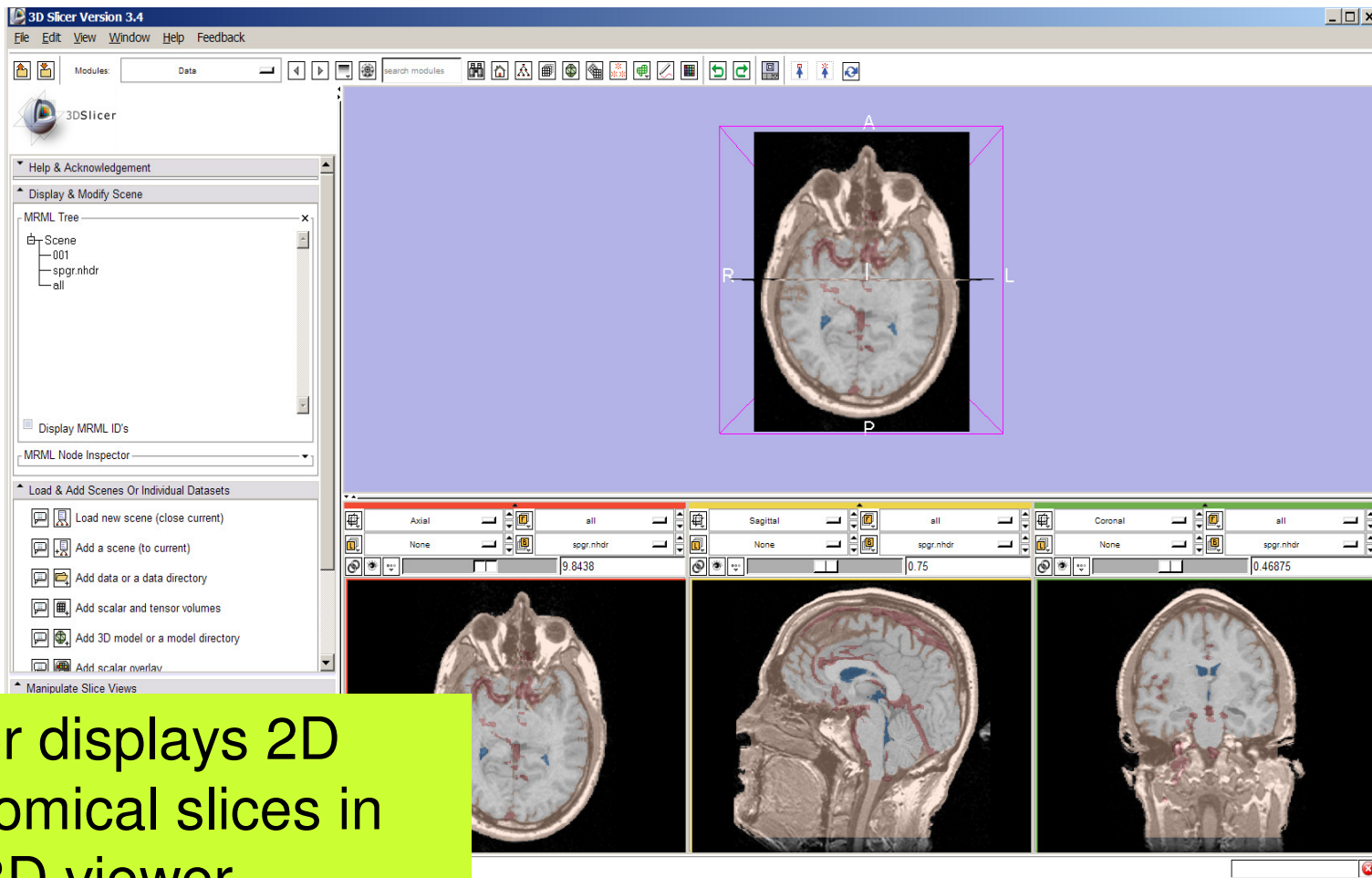


Make sure the **links**  icon is clicked

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



# 3D Visualization



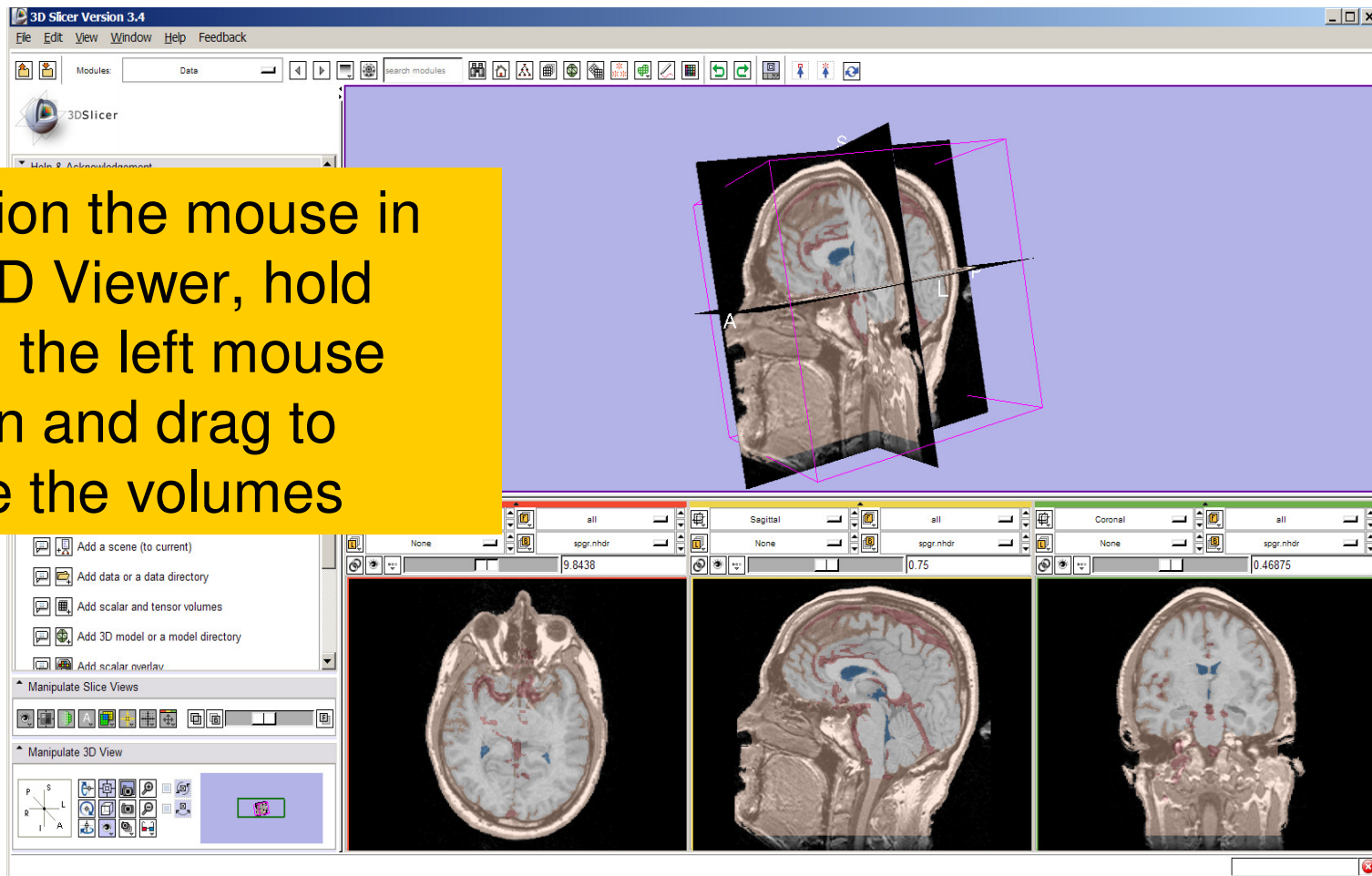
Slicer displays 2D anatomical slices in the 3D viewer

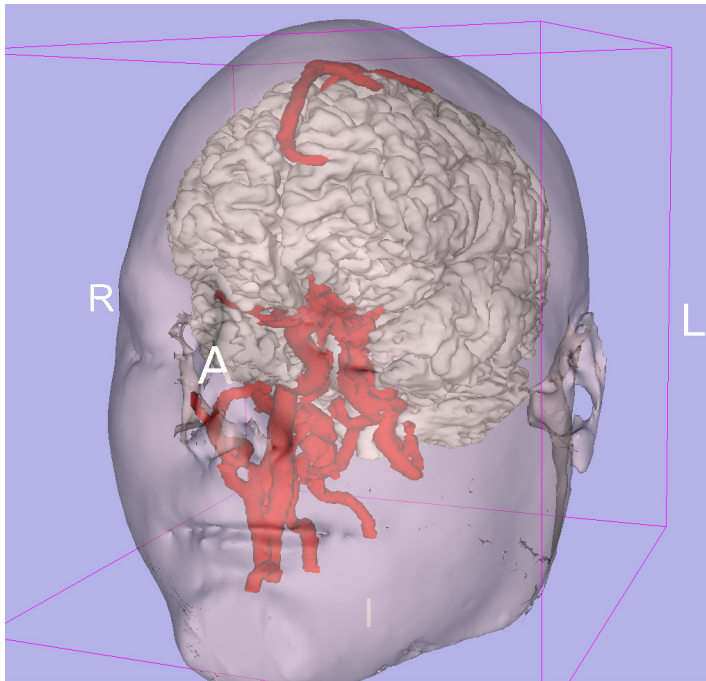
Sonia Pujol, PhD

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

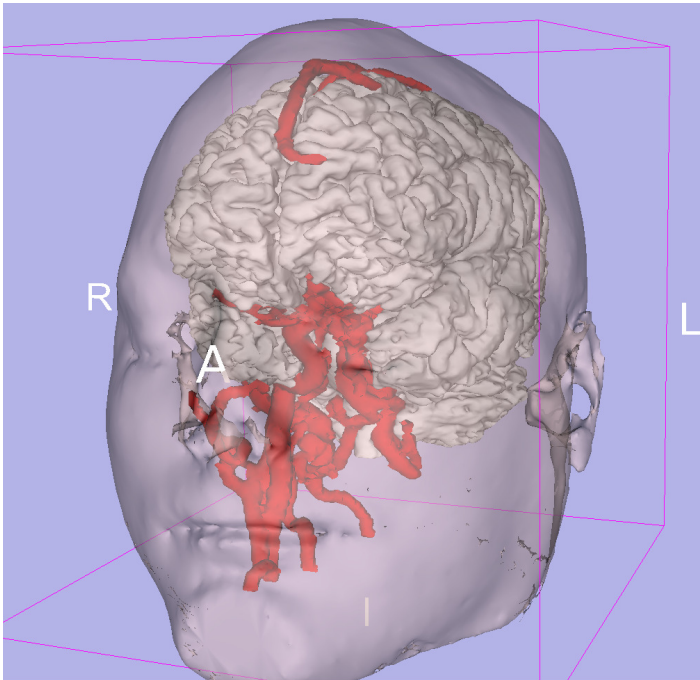




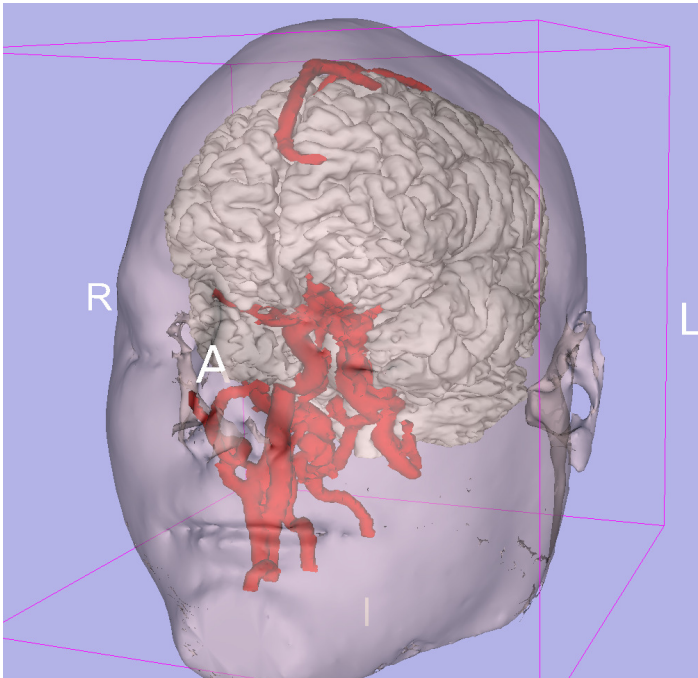
## Part 3: Loading and visualizing 3D models of the anatomy

# 3D models

- A **3D model** is a surface reconstruction of an anatomical structure.

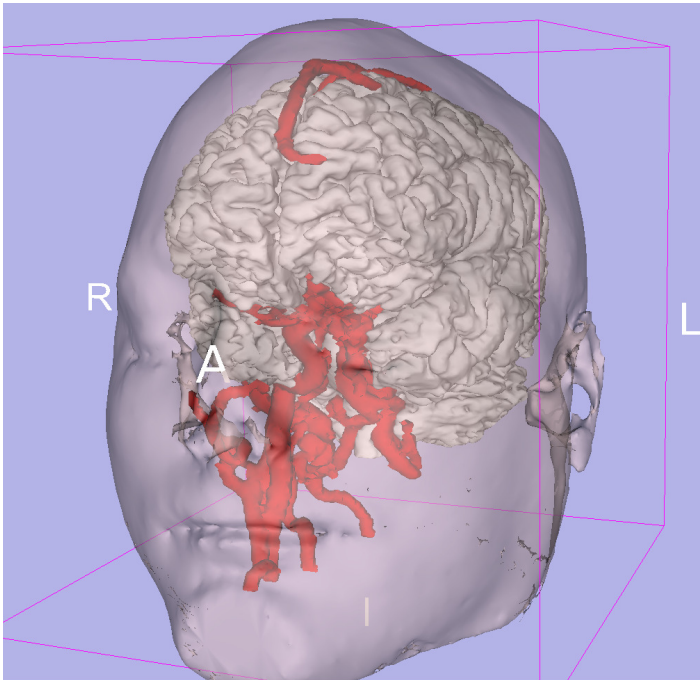


# 3D models



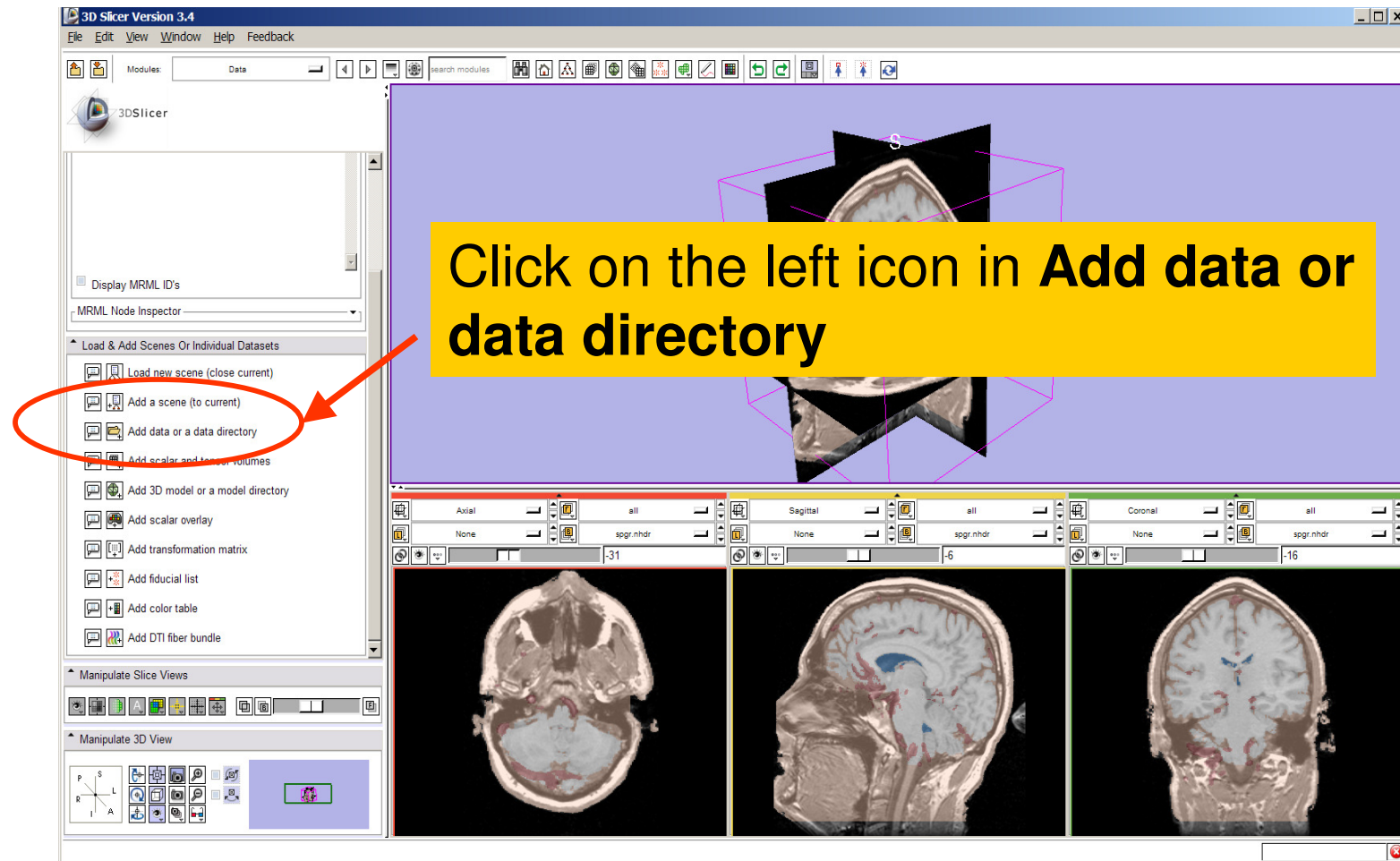
- A **3D model** is a surface reconstruction of an anatomical structure.
- The model is a **triangular mesh** that approximates a surface from a 3D label map.

# 3D models



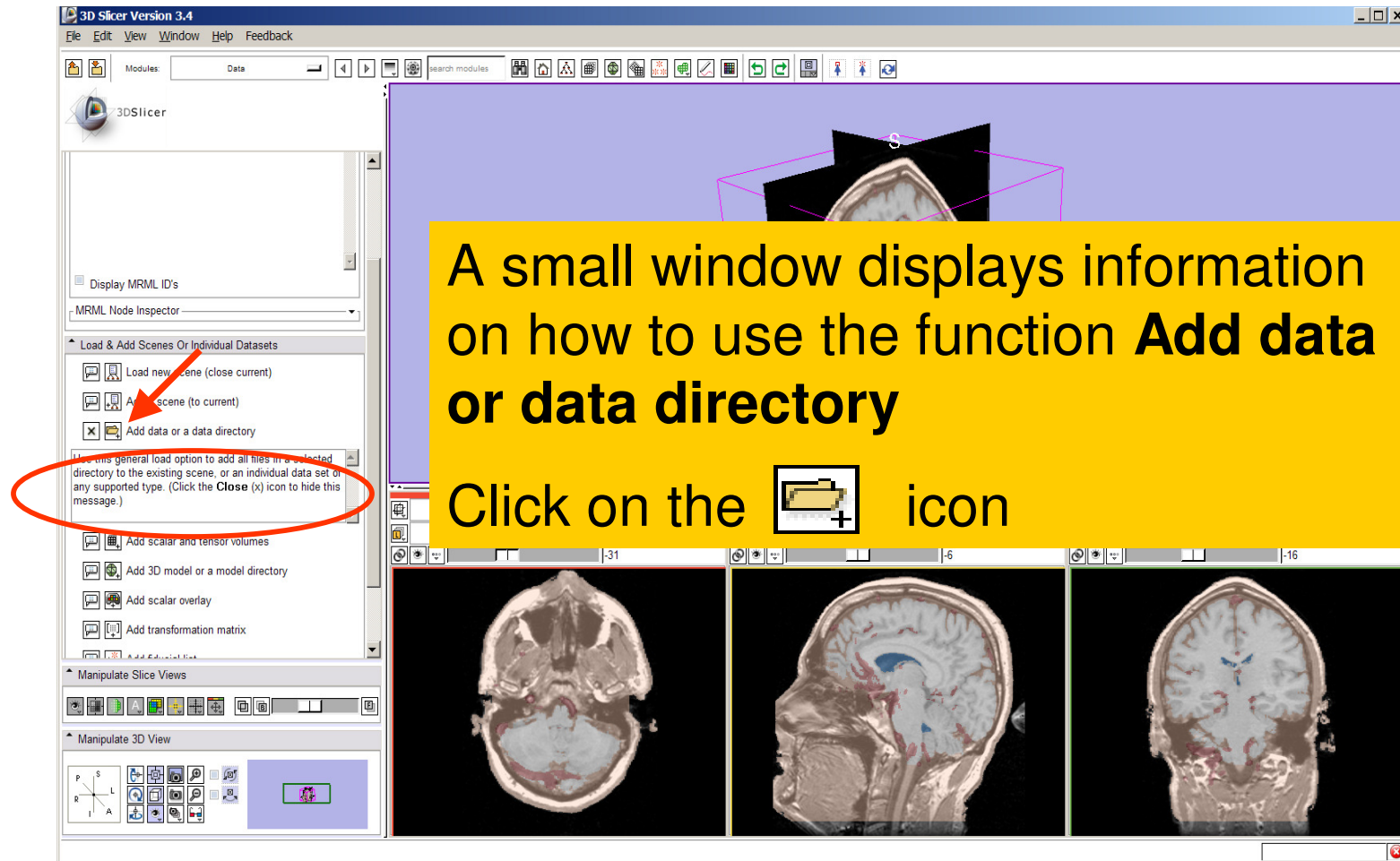
- A **3D model** is a surface reconstruction of an anatomical structure.
- The model is a **triangular mesh** that approximates a surface from a 3D label map.
- The scalar values for surface models are integers which correspond to the **label** that had been assigned in the segmentation process.

# 3D Visualization






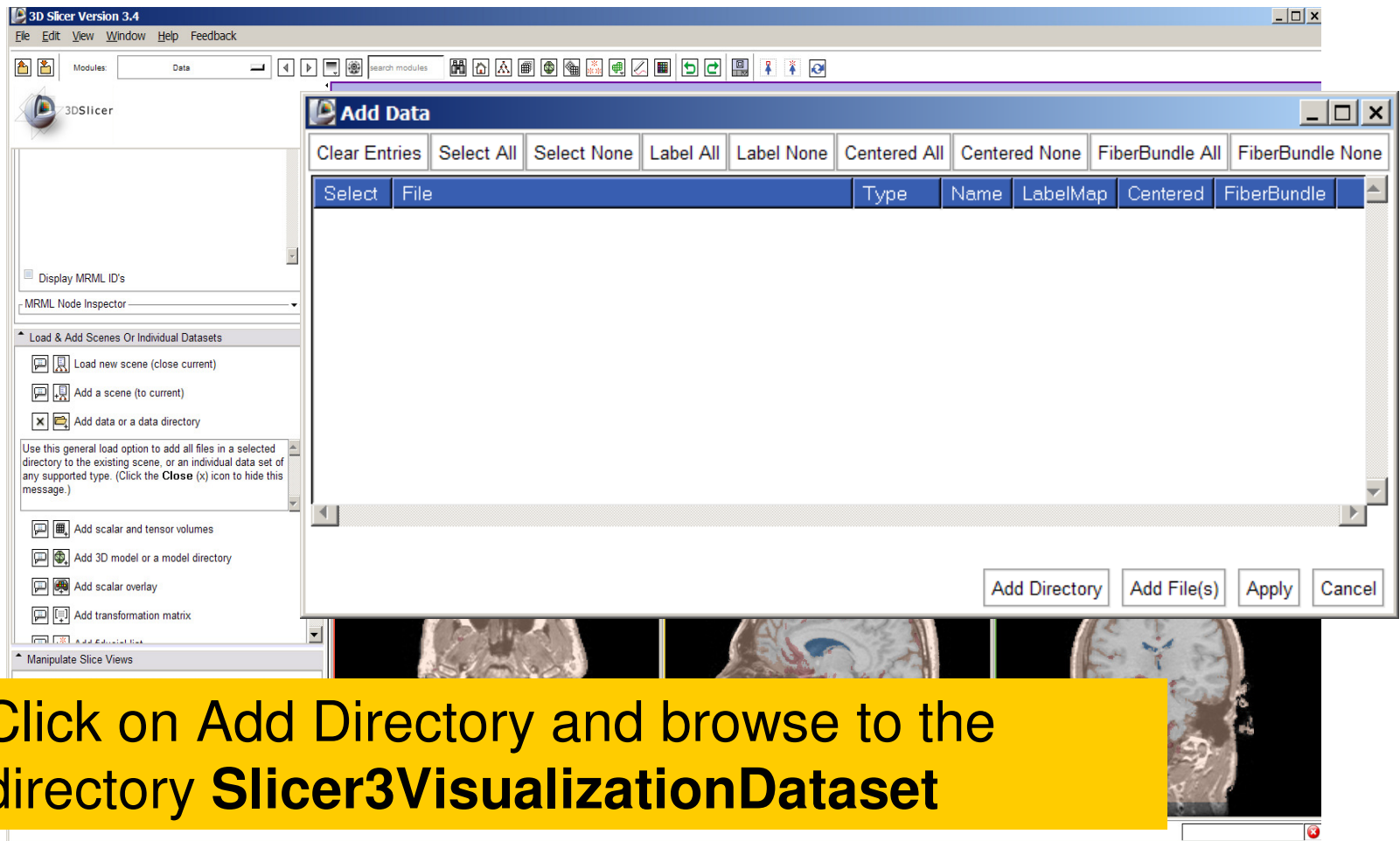
# 3D Visualization



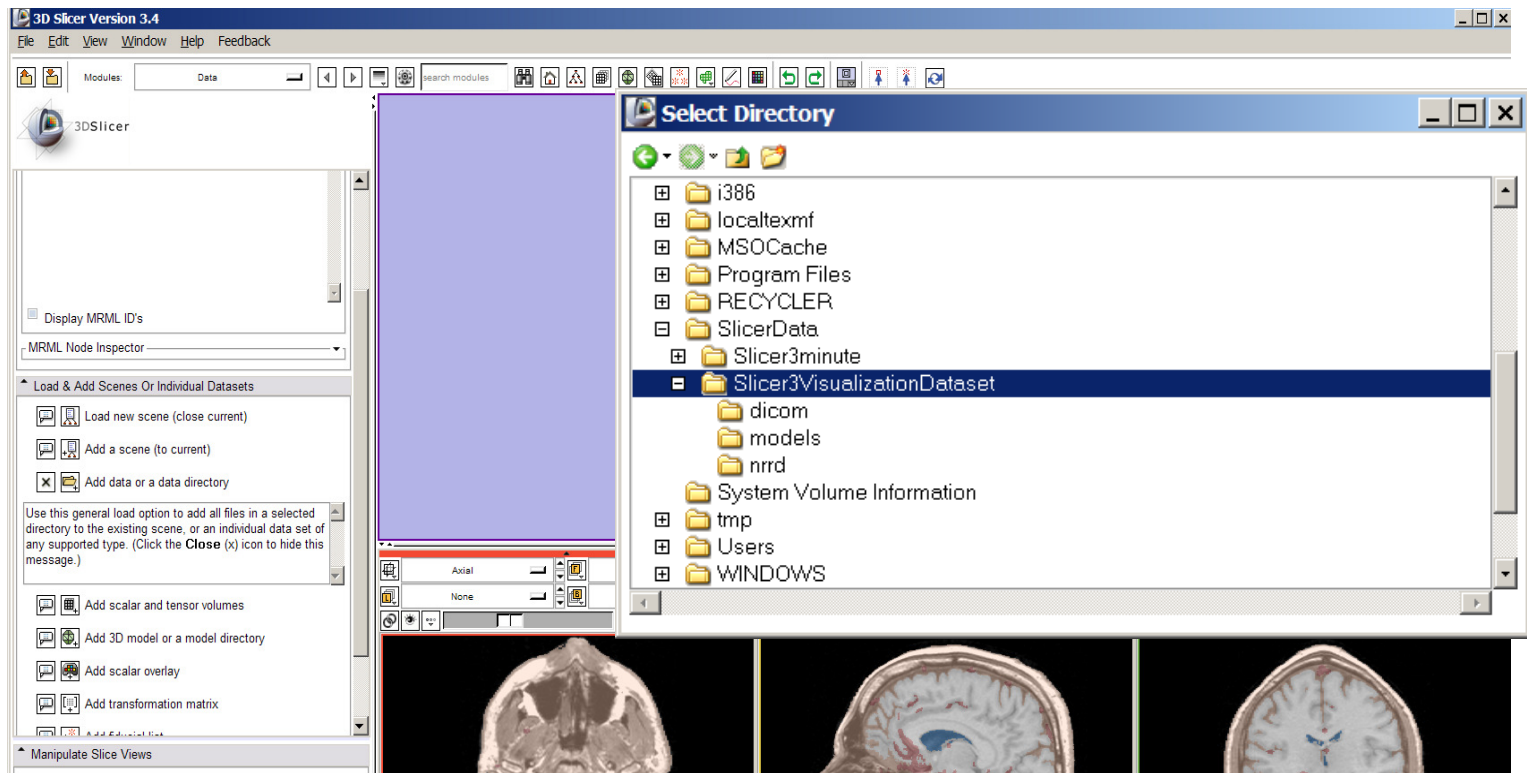
A small window displays information on how to use the function **Add data or data directory**

Click on the  icon

# 3D Visualization

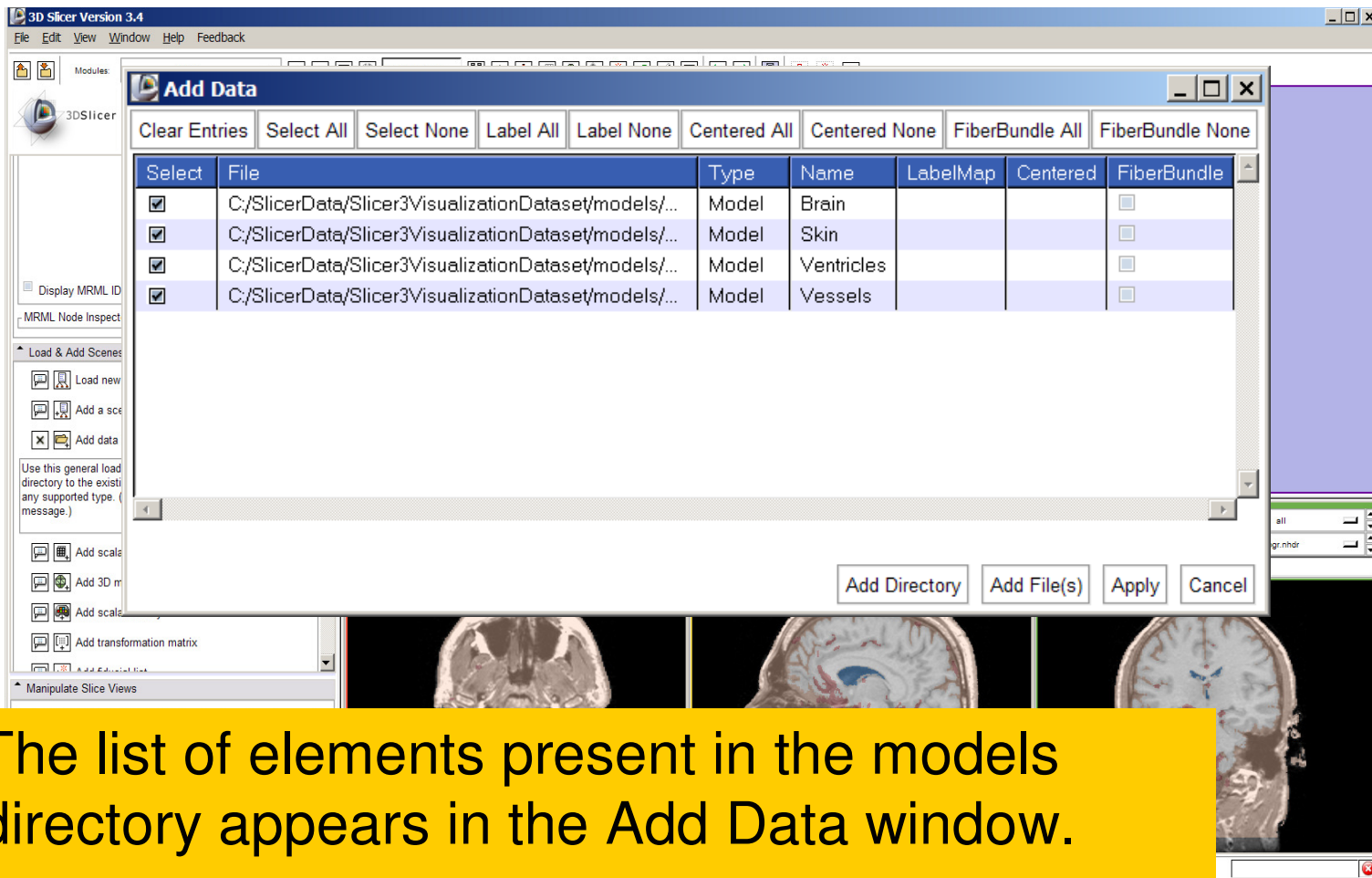


# Loading 3D models



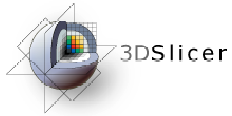
Select the directory  
**Slicer3VisualizationDataset/models** and click on OK

# Loading 3D models

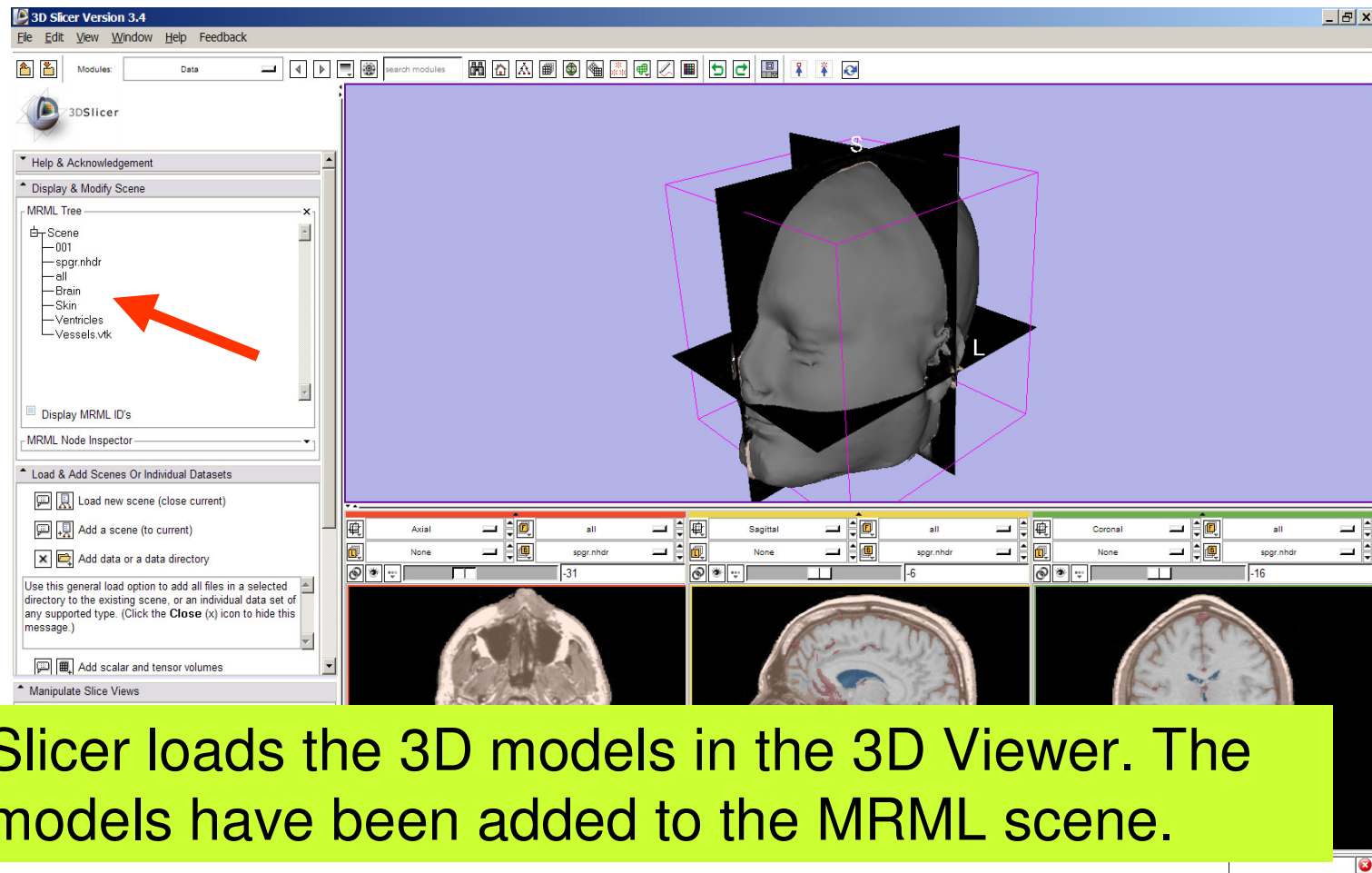


The list of elements present in the models directory appears in the Add Data window.

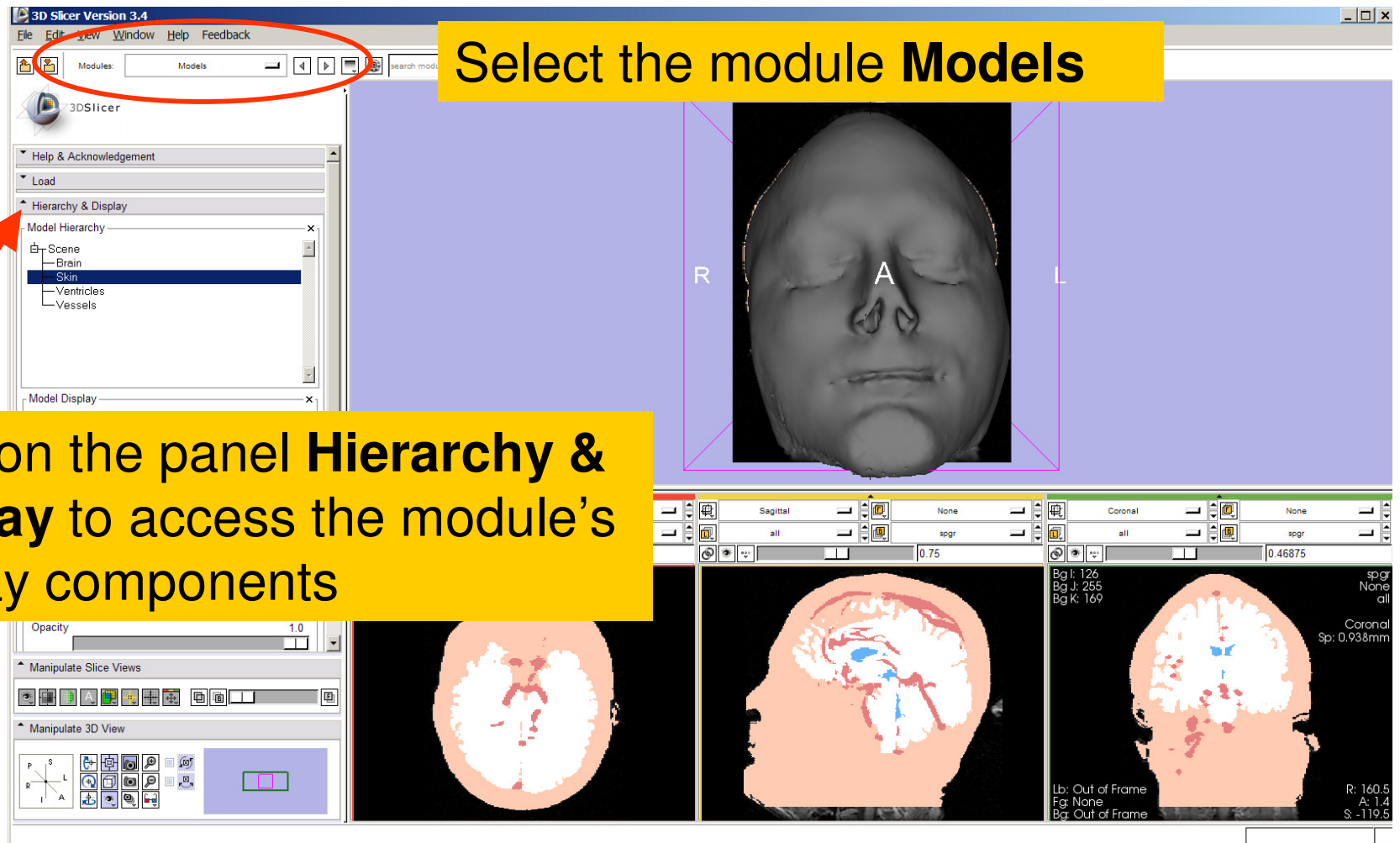
Click on **Apply** to load all the **3D models**.



# Loading 3D models



# Loading a 3D model



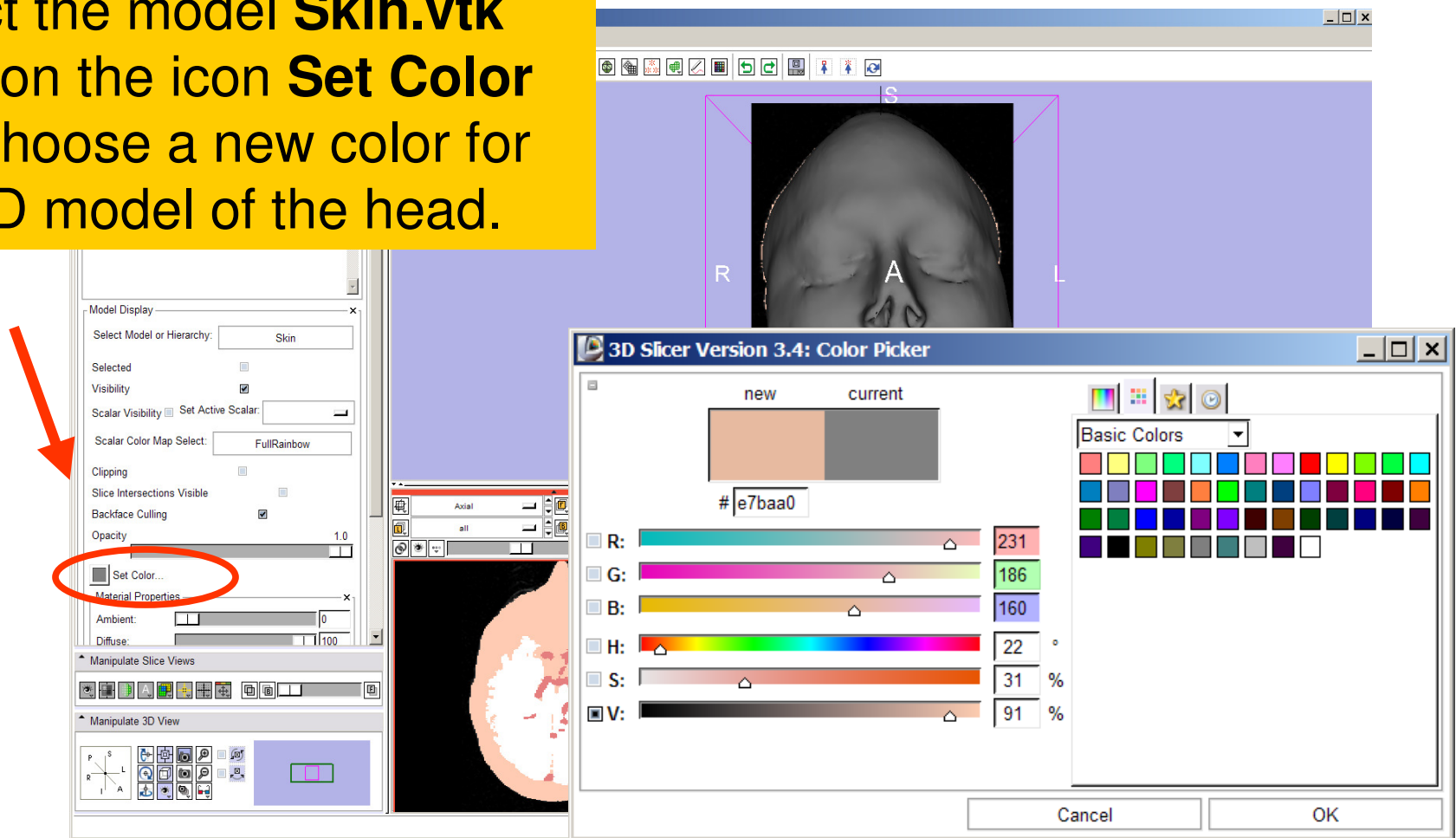
**Select the module Models**

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

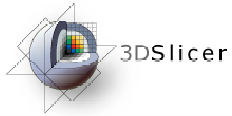
The screenshot shows the 3D Slicer 3.4 interface. The 'Models' module is selected in the top toolbar. The 'Hierarchy & Display' panel is active, showing a tree view with 'Skin' selected. The main 3D view displays a grayscale model of a human head with anatomical labels 'R' (Right), 'A' (Anterior), and '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' panel at the bottom left.

# 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.

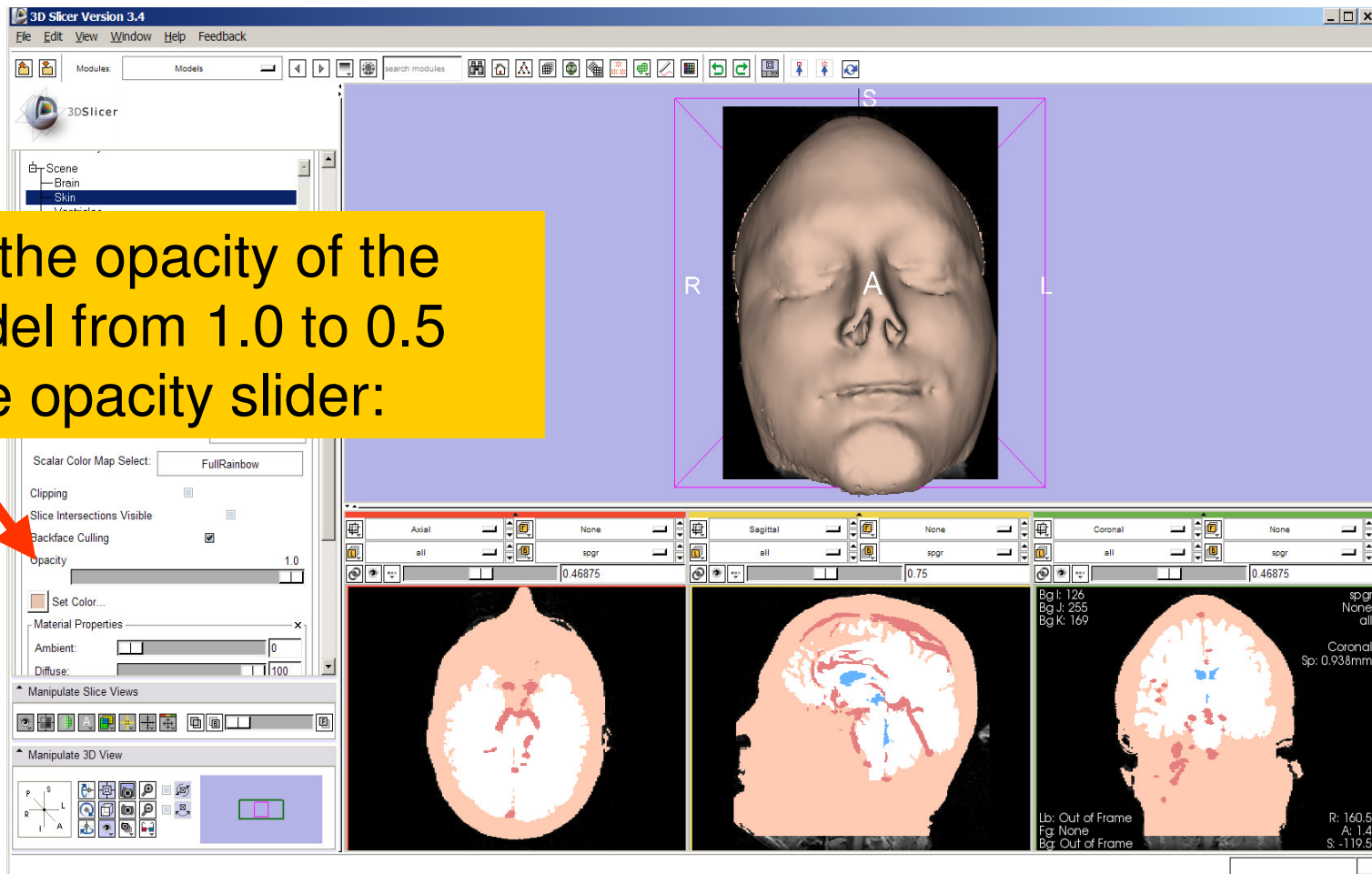


The screenshot shows the 3D Slicer interface with a 3D model of a head. The 'Model Display' panel is open, and the 'Set Color...' button is circled in red. A 'Color Picker' dialog box is open, showing the current color as #e7baa0 and the new color as #e7baa0. The dialog also shows RGB values (R: 231, G: 186, B: 160) and HSB values (H: 22, S: 31, V: 91).

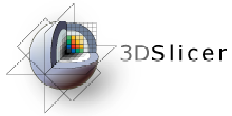


# Visualizing a 3D model

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

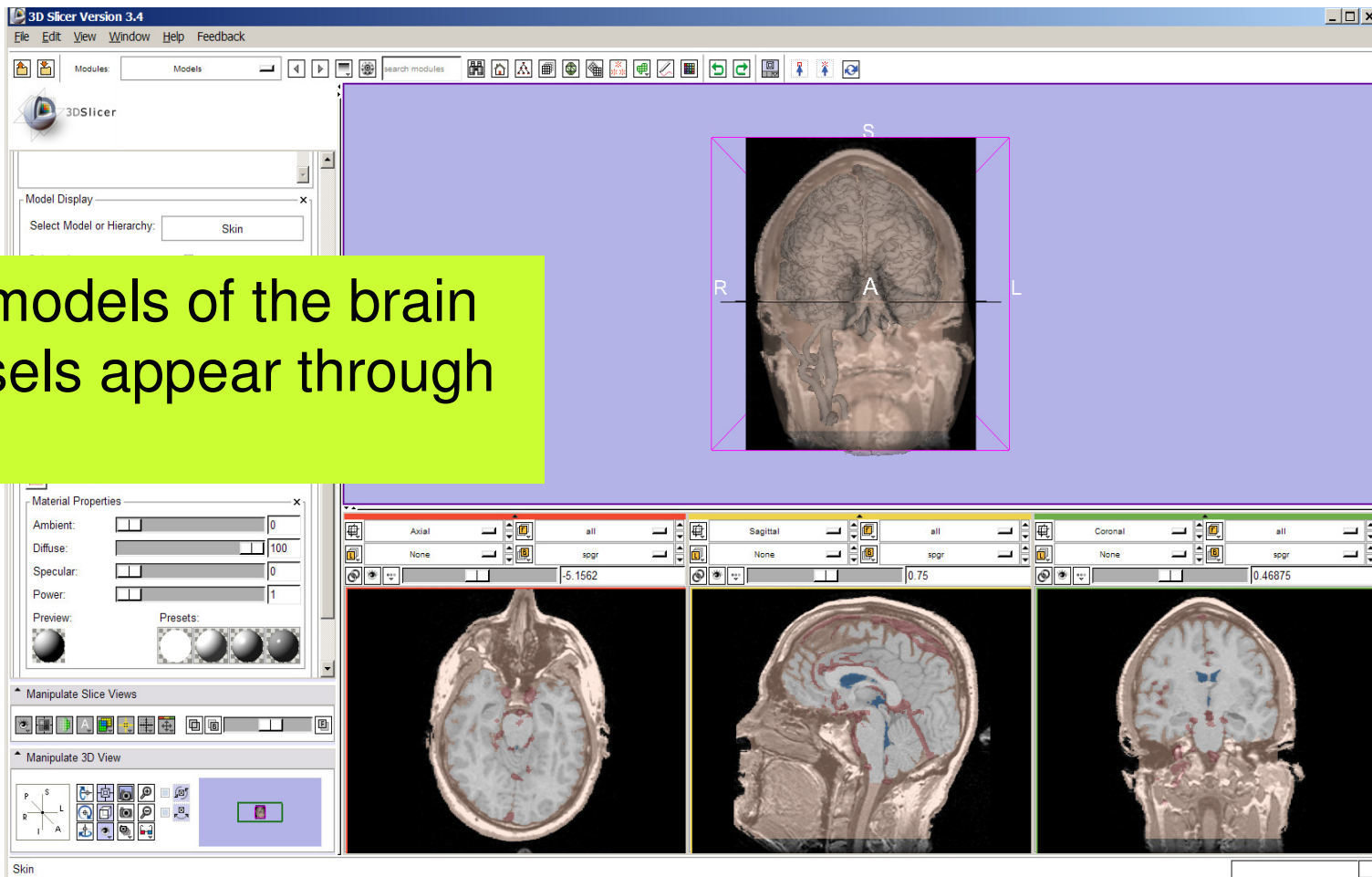






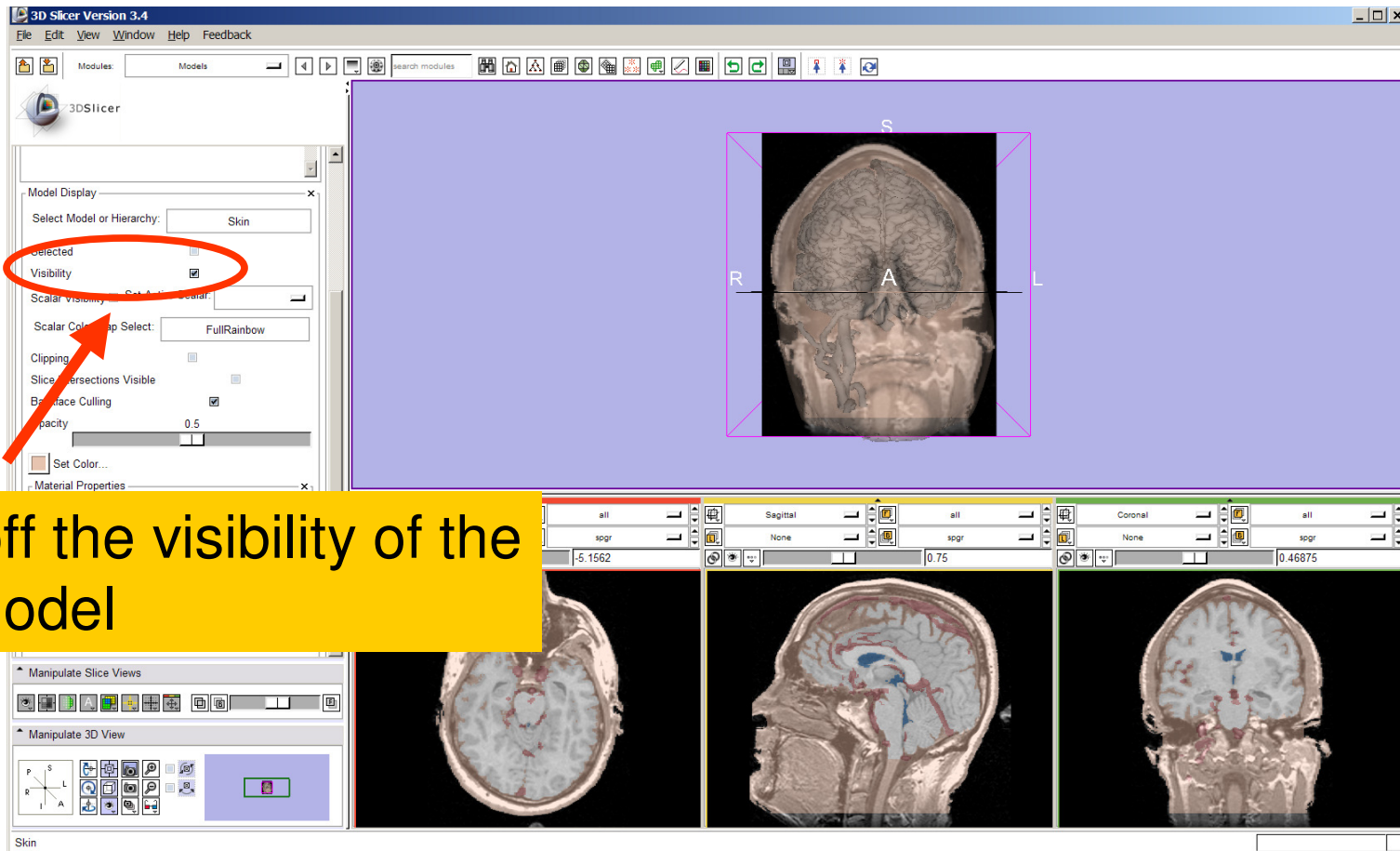
# Visualizing a 3D model

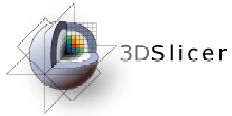
The 3D models of the brain and vessels appear through the skin



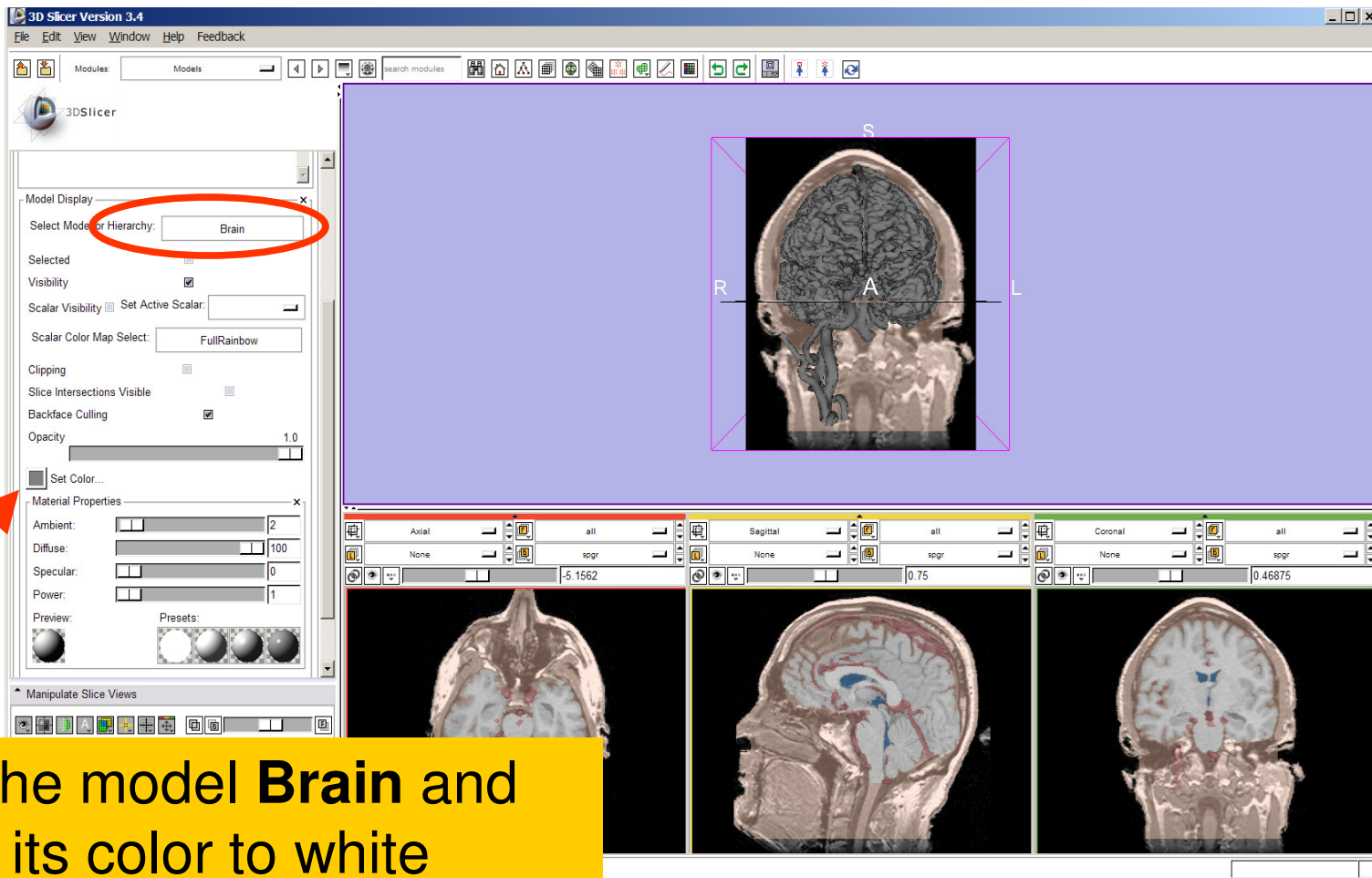


# Visualizing a 3D model

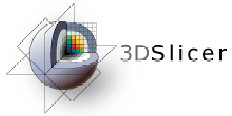




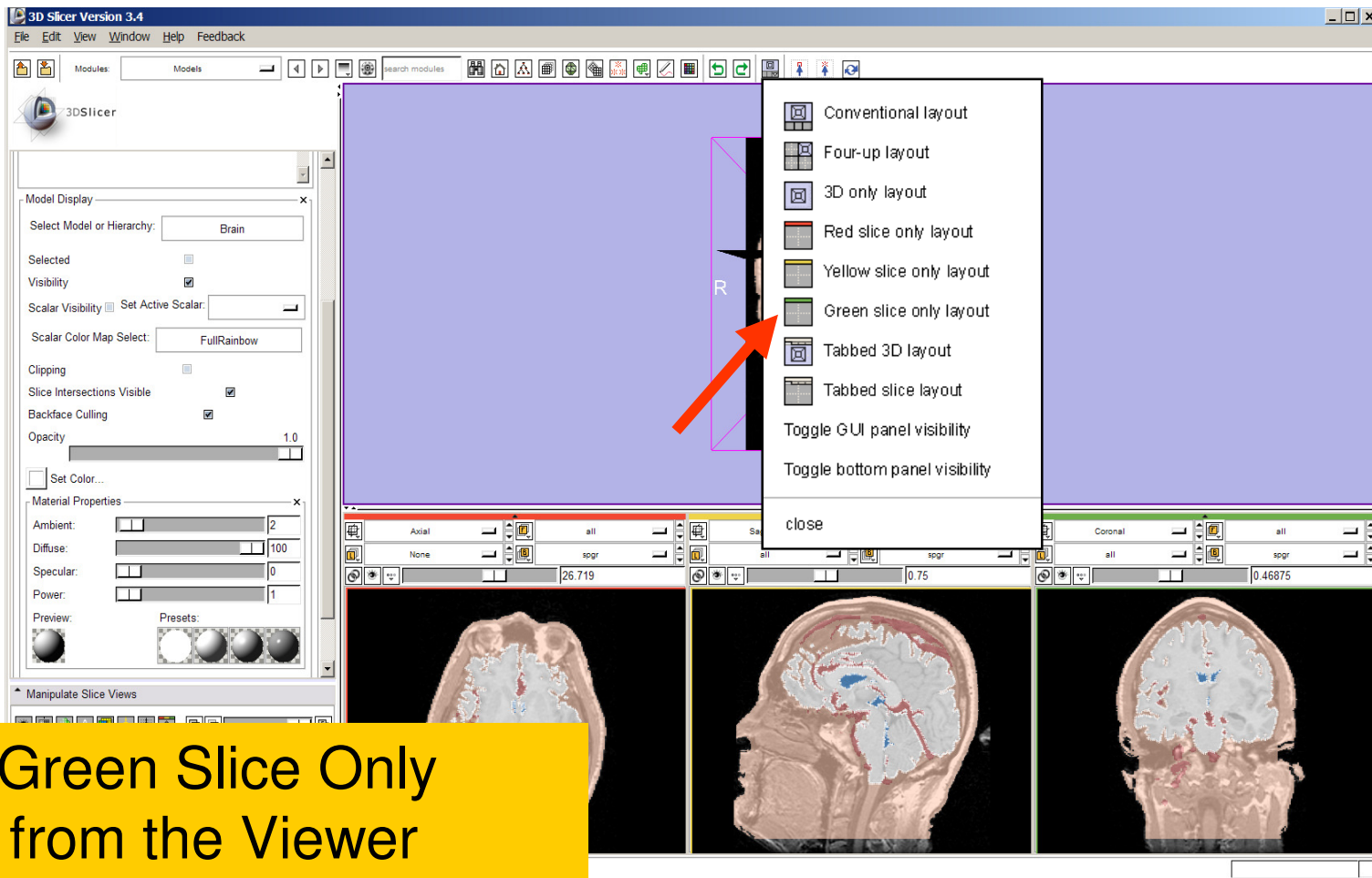
# Visualizing a 3D model



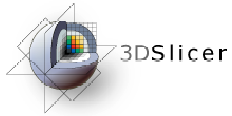
Select the model **Brain** and change its color to white



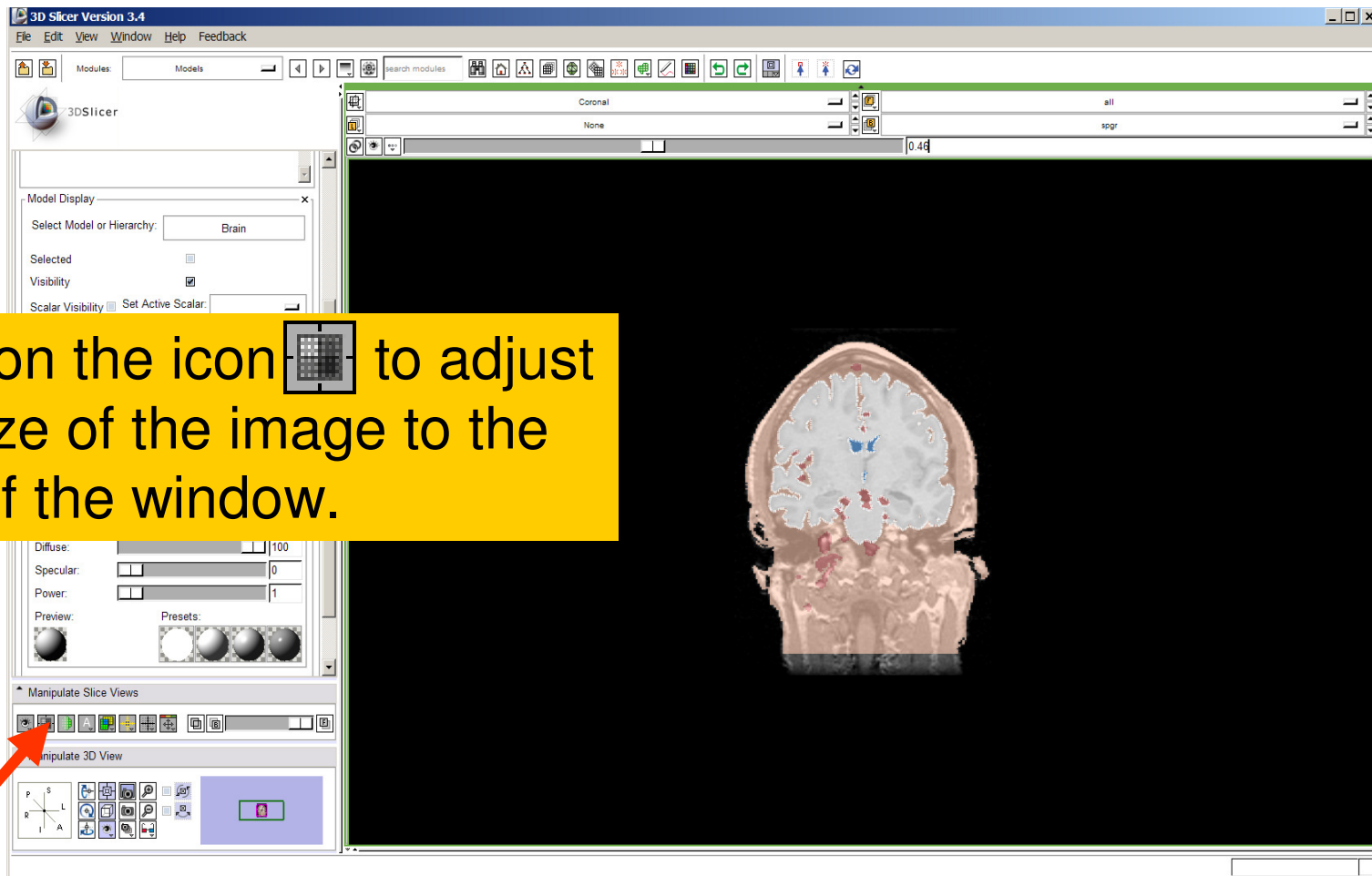
# Visualizing a 3D model

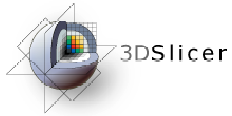


Select Green Slice Only Layout from the Viewer menu

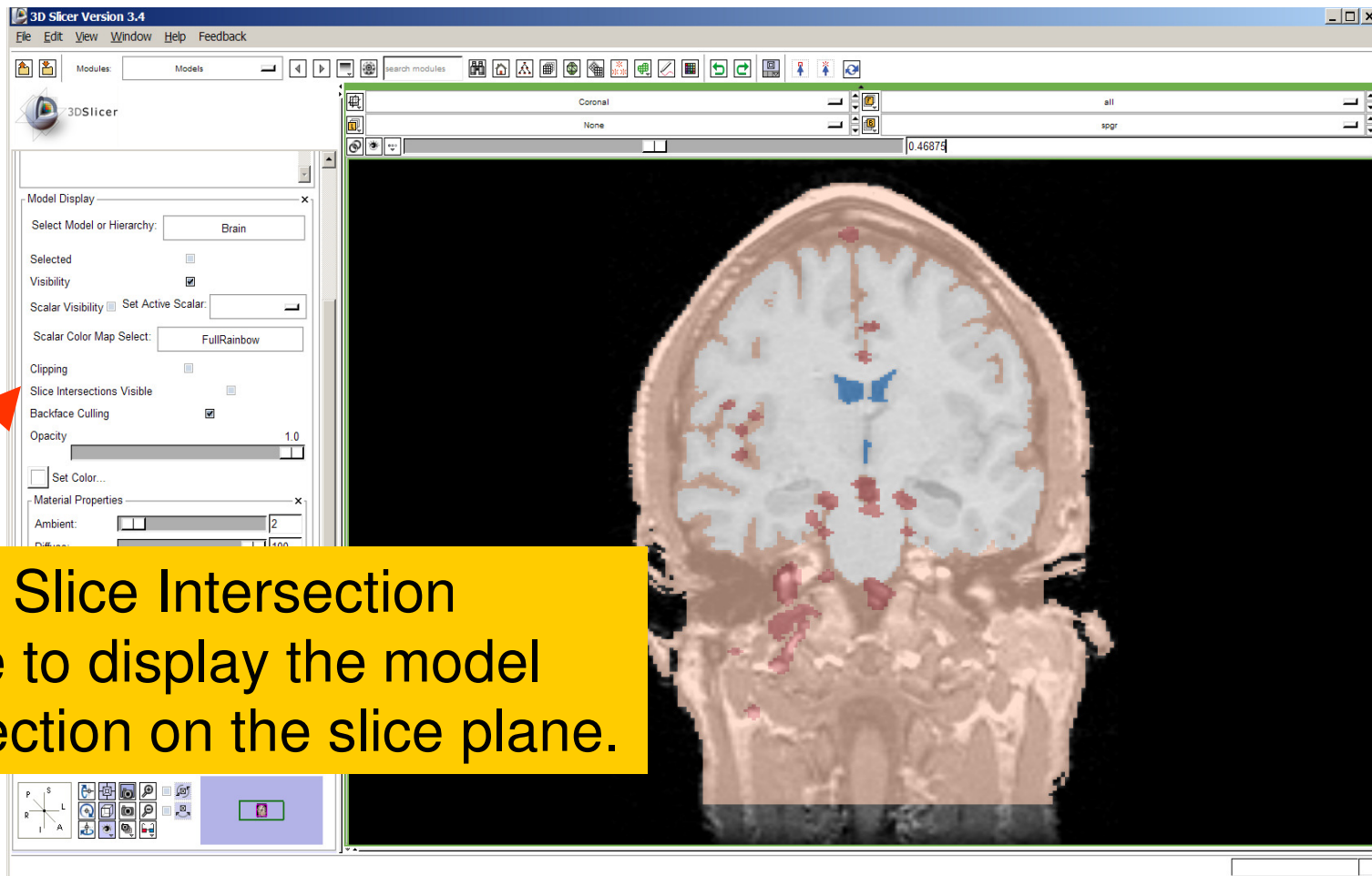


# Visualizing a 3D model

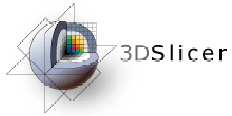




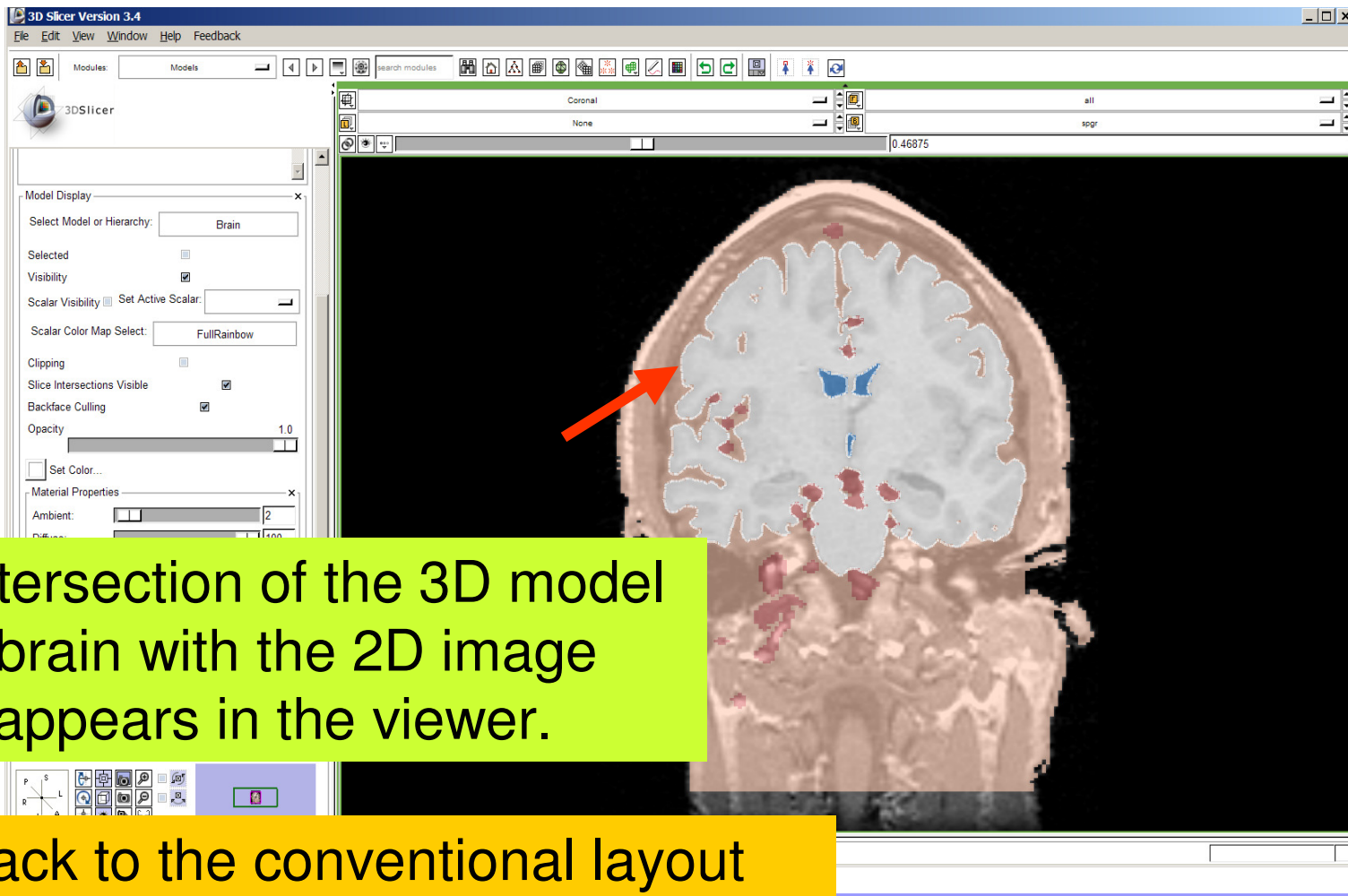
# Visualizing a 3D model



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

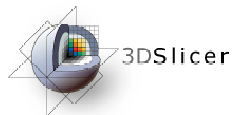


# Visualizing a 3D model



The intersection of the 3D model of the brain with the 2D image plane appears in the viewer.

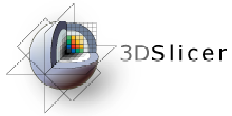
Go back to the conventional layout



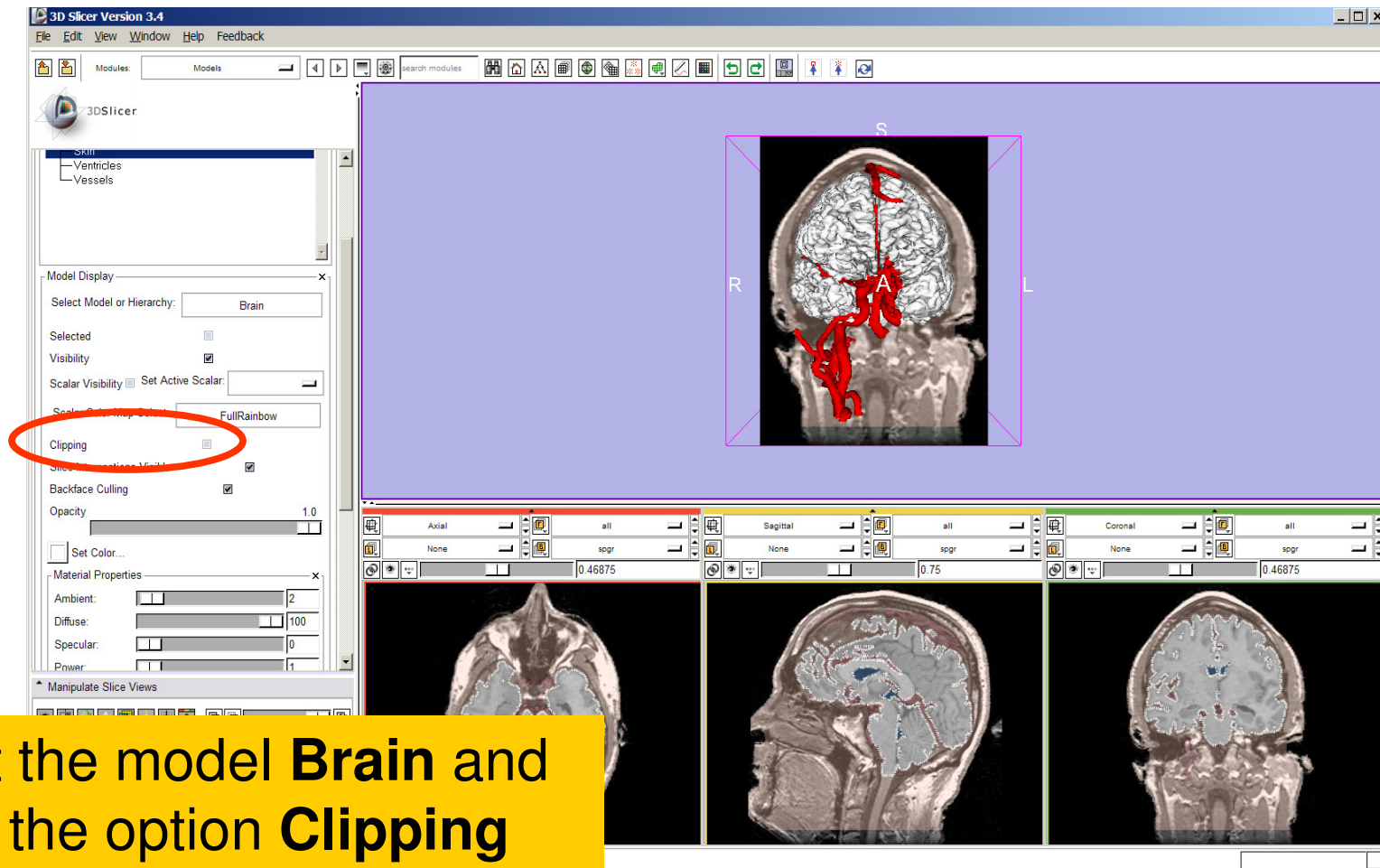
# Visualizing a 3D model

**Select the model **Vessels** and change its color to red**



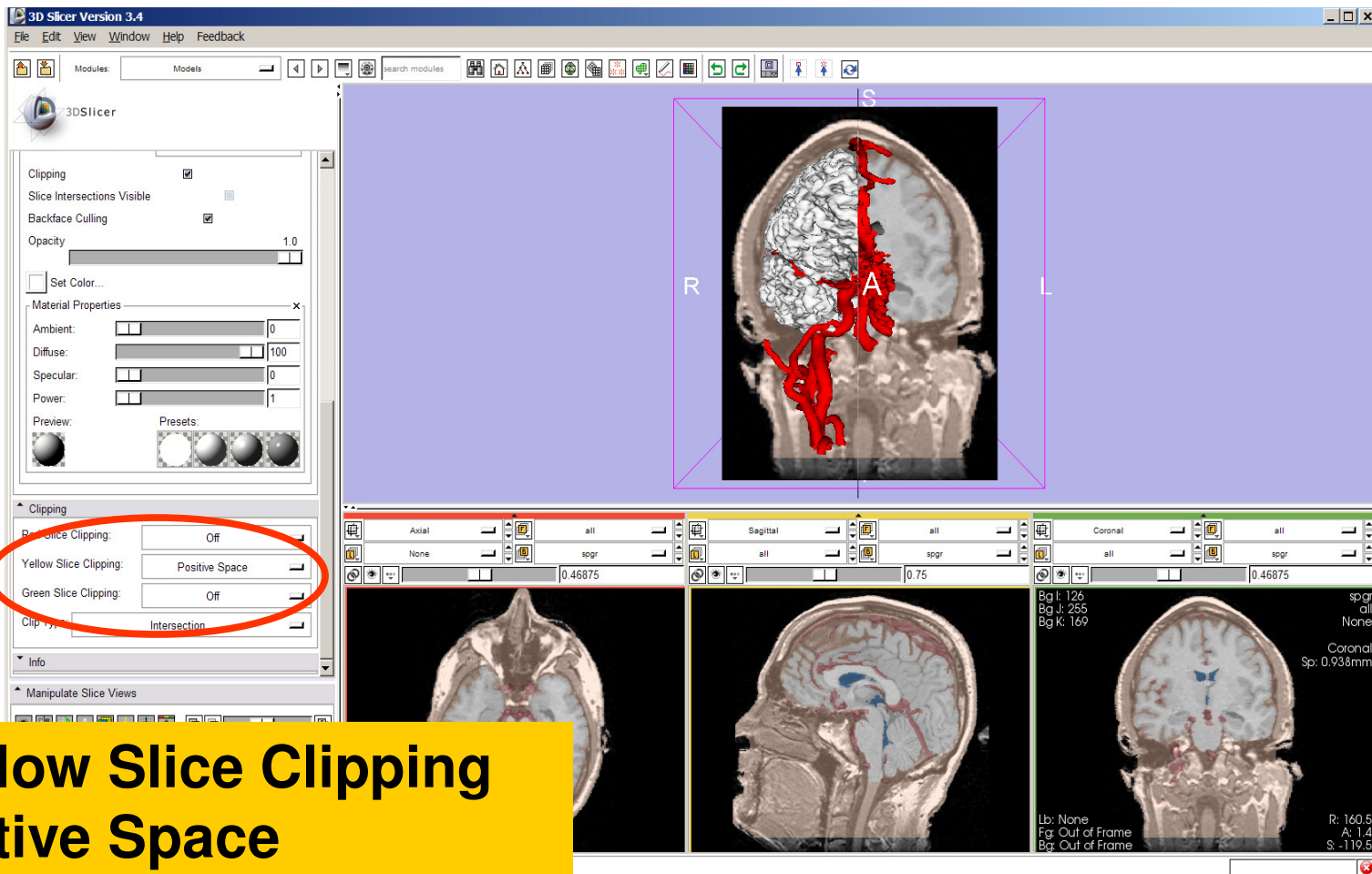


# Visualizing a 3D model

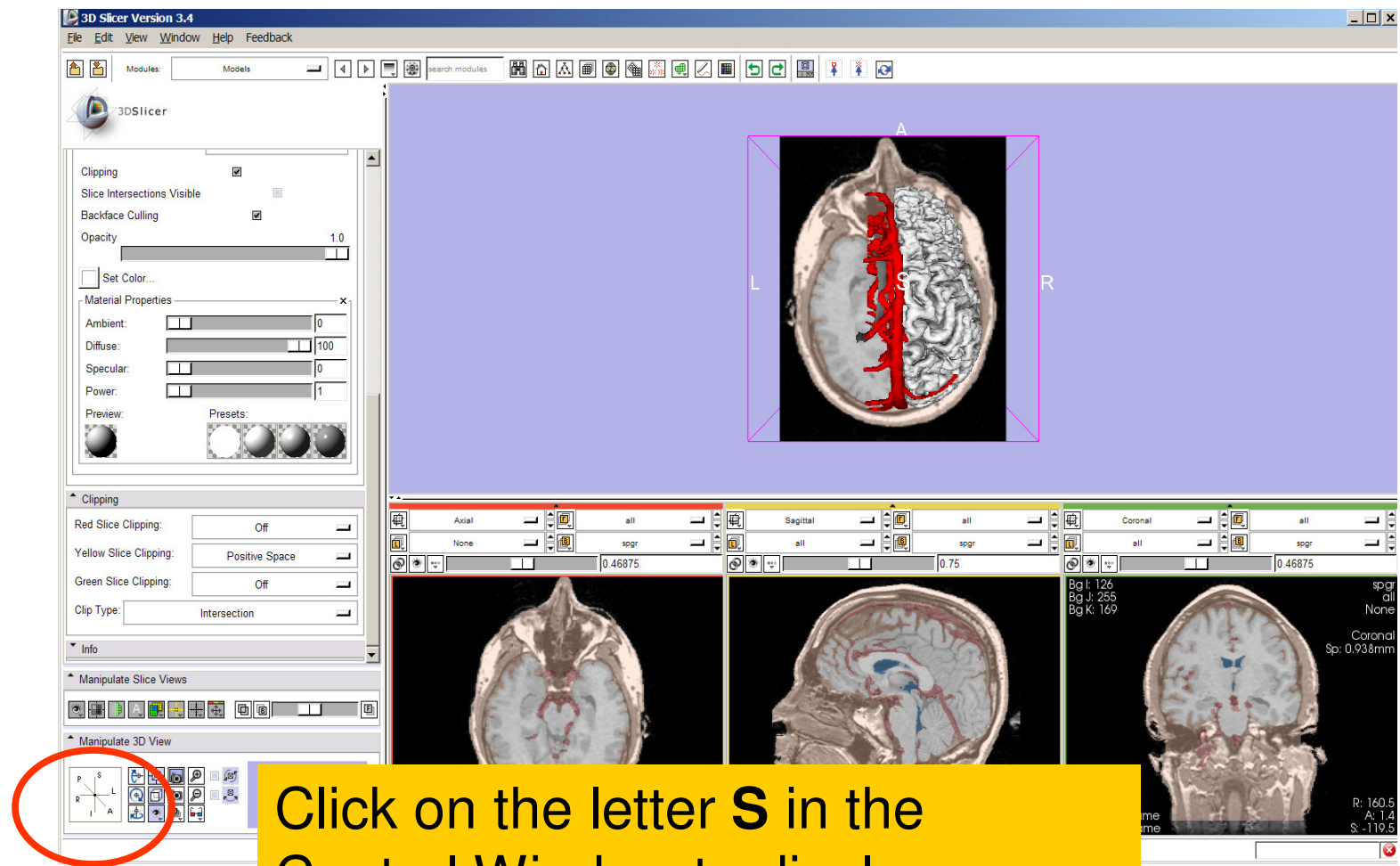




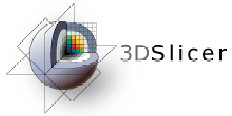
# Visualizing a 3D model



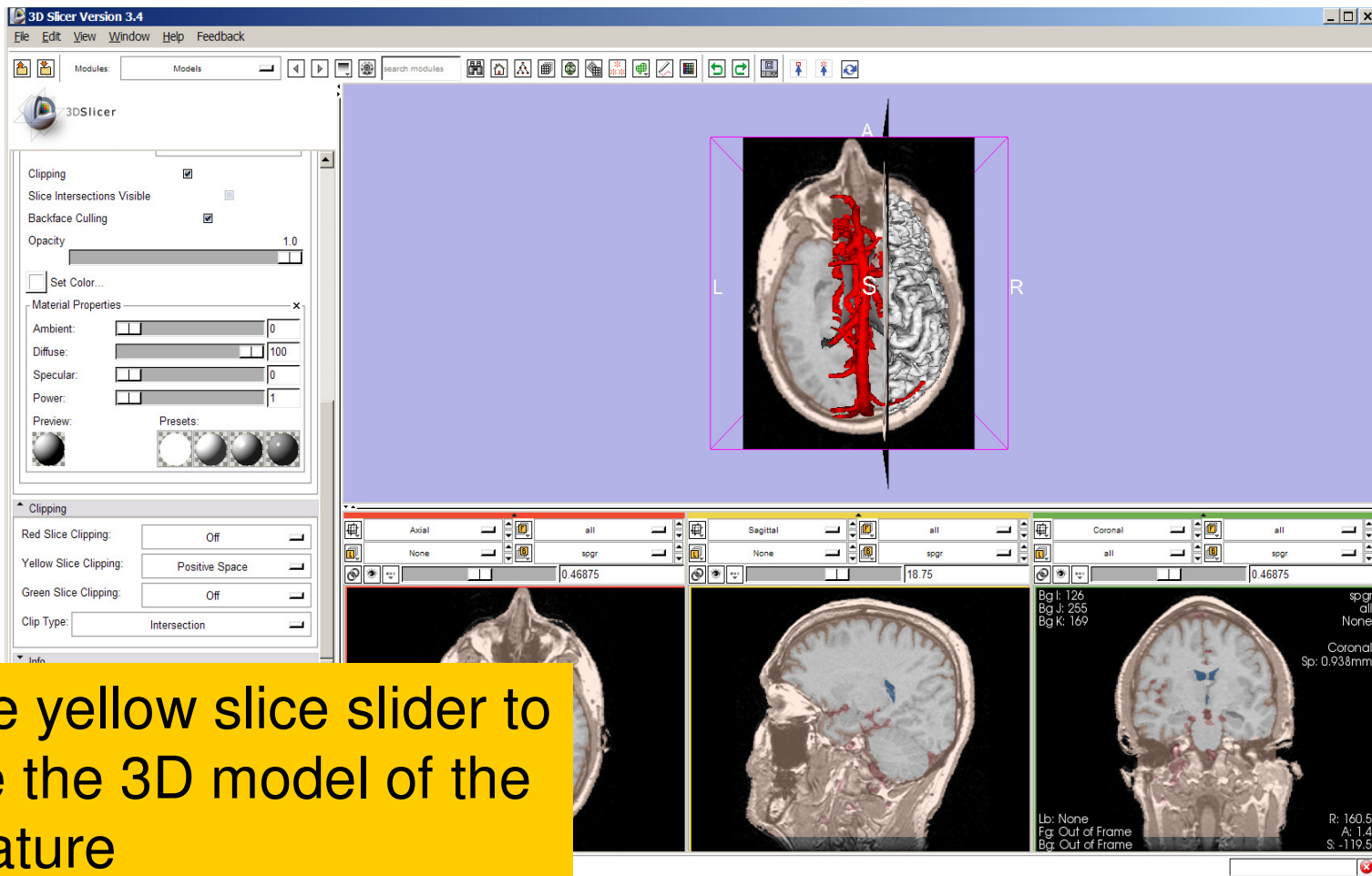
# Visualizing a 3D model

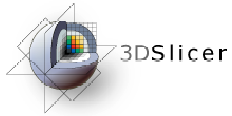


Click on the letter **S** in the Control Window to display a superior view of the 3D models

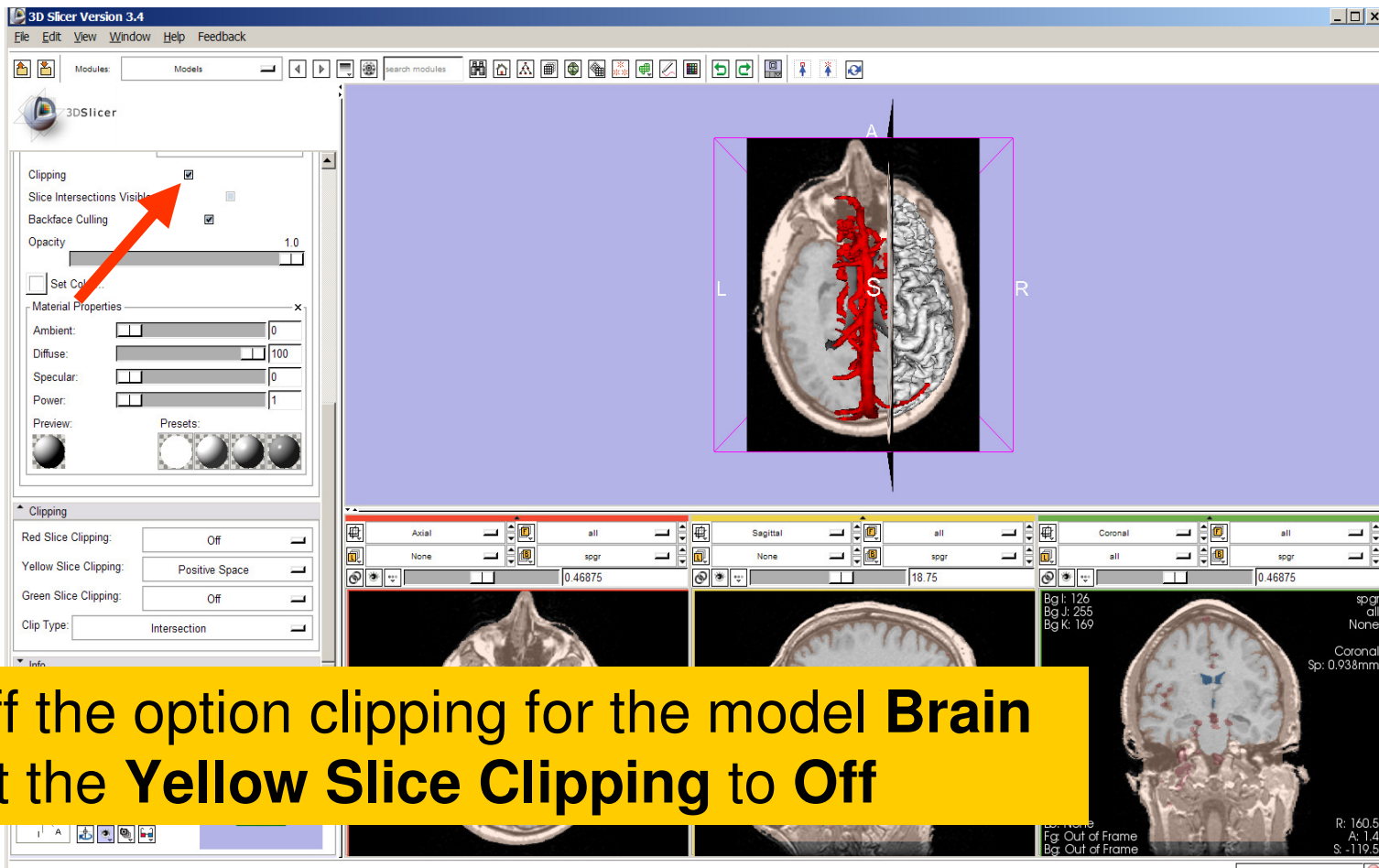


# Visualizing a 3D model



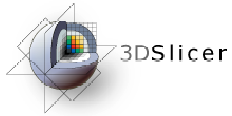


# Visualizing a 3D model

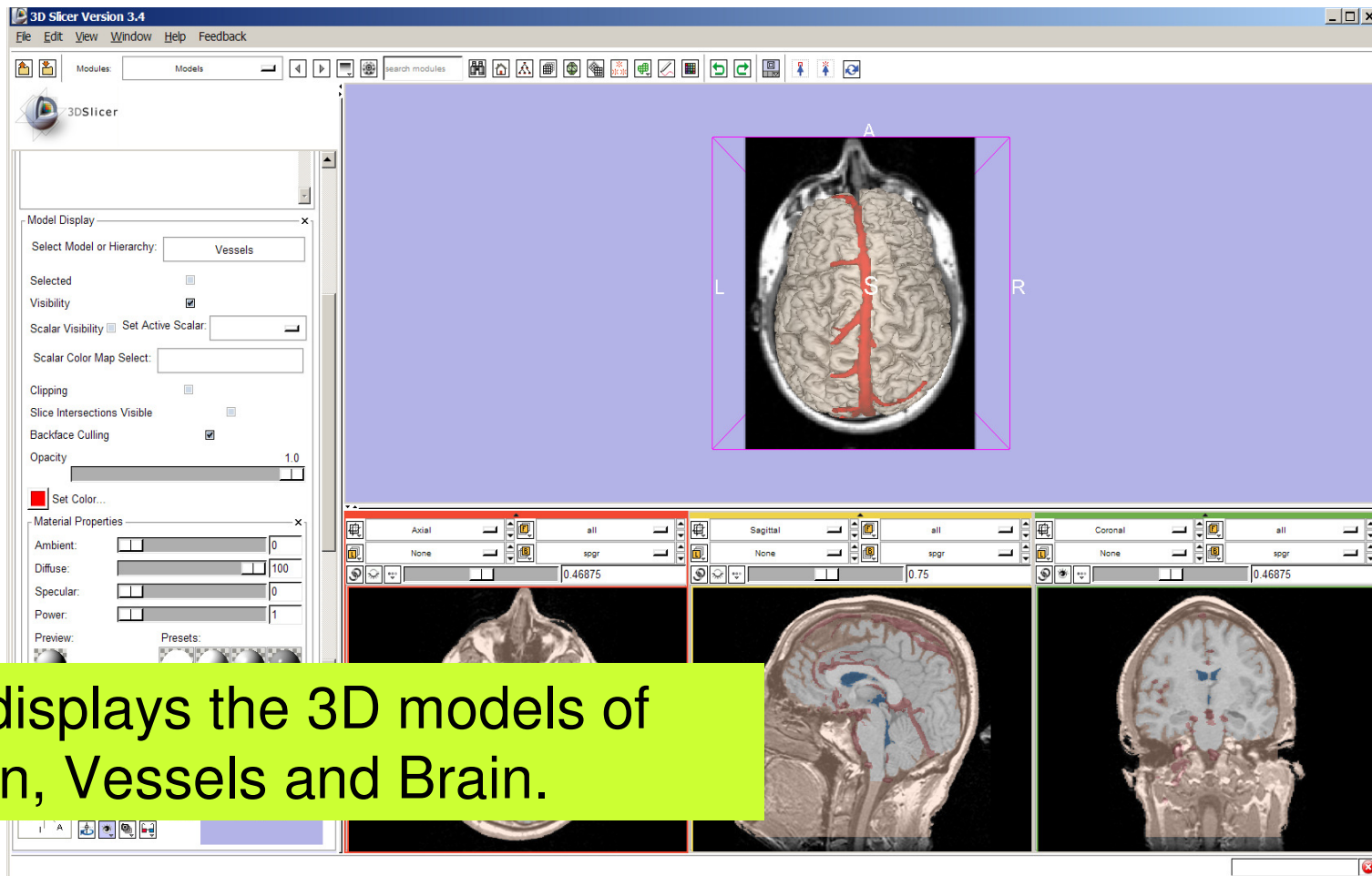


Turn off the option clipping for the model **Brain** and set the **Yellow Slice Clipping** to **Off**

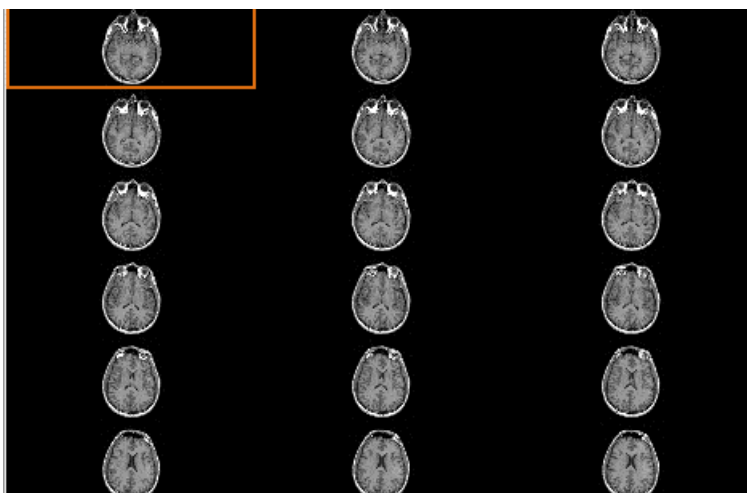
Turn on the visibility of the model **Skin**



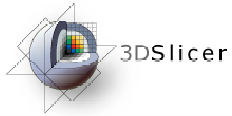
# Visualizing a 3D model



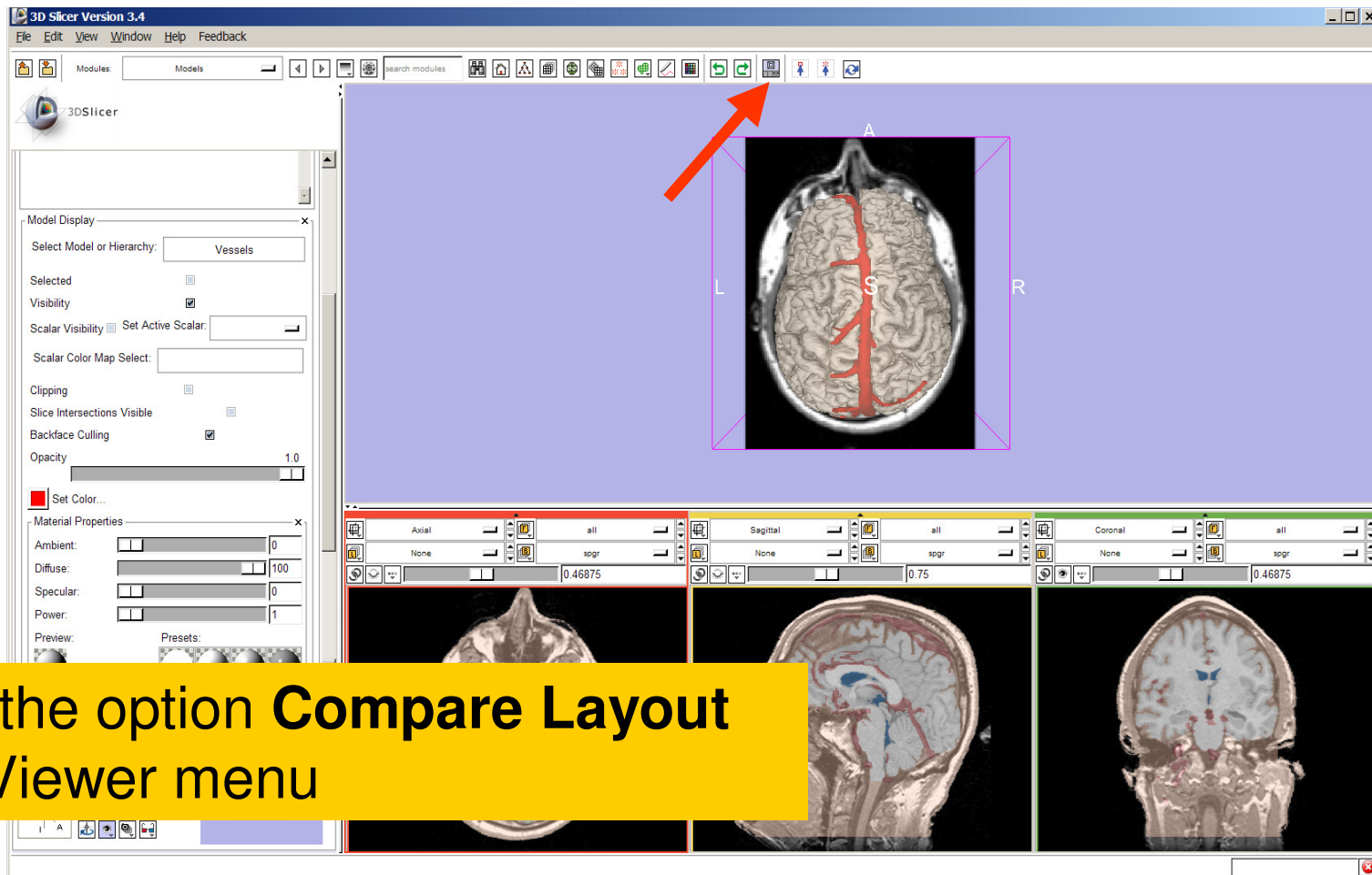
Slicer displays the 3D models of the Skin, Vessels and Brain.



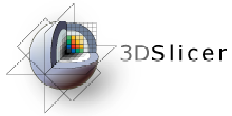
## Part 4: Lightbox viewer



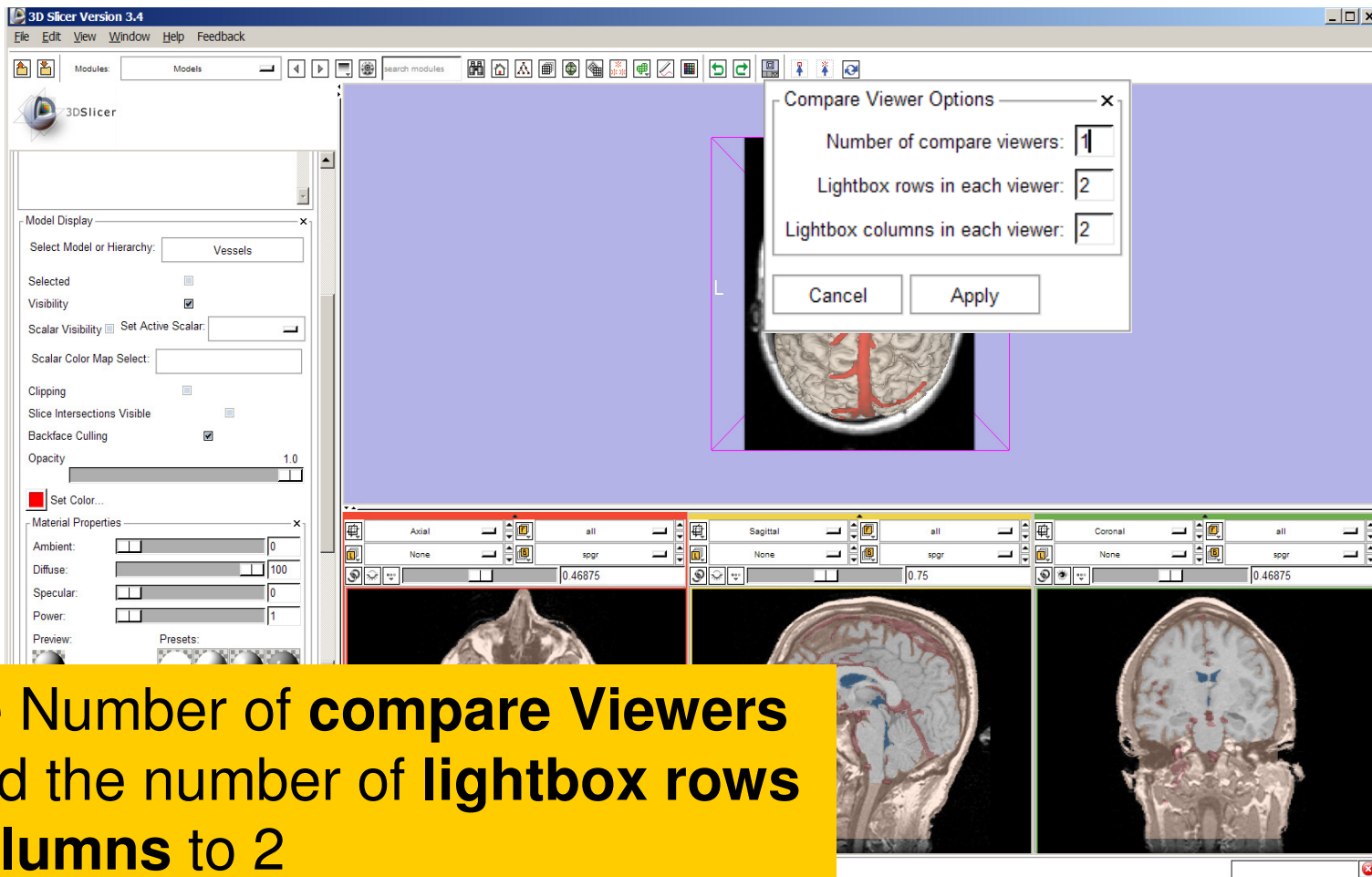
# Visualizing a 3D model





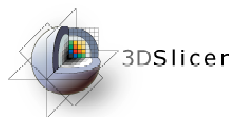


# Visualizing a 3D model

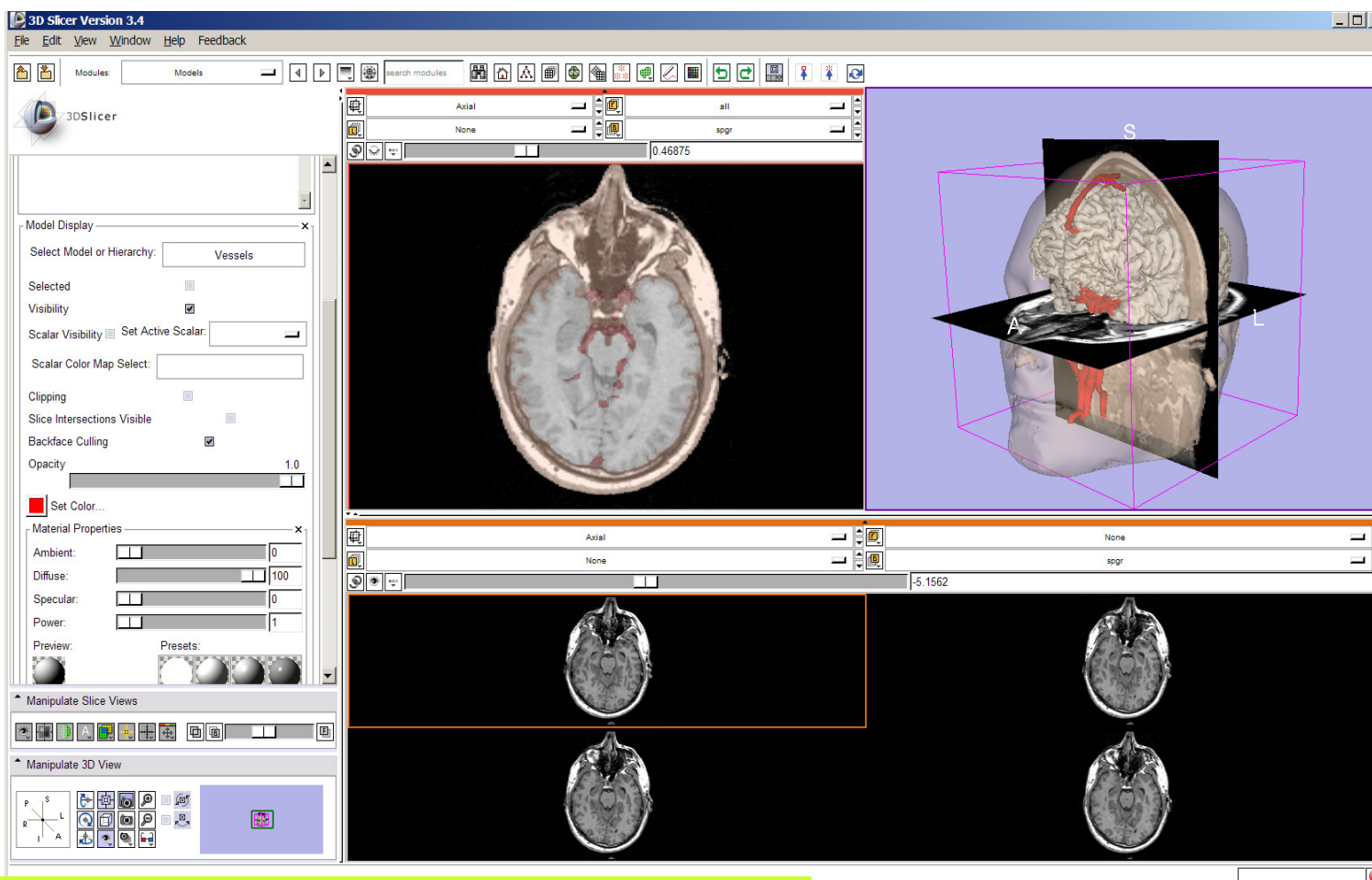


Set the Number of **compare Viewers** to 1 and the number of **lightbox rows** and **columns** to 2

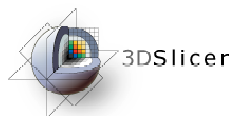
Click on **Apply**



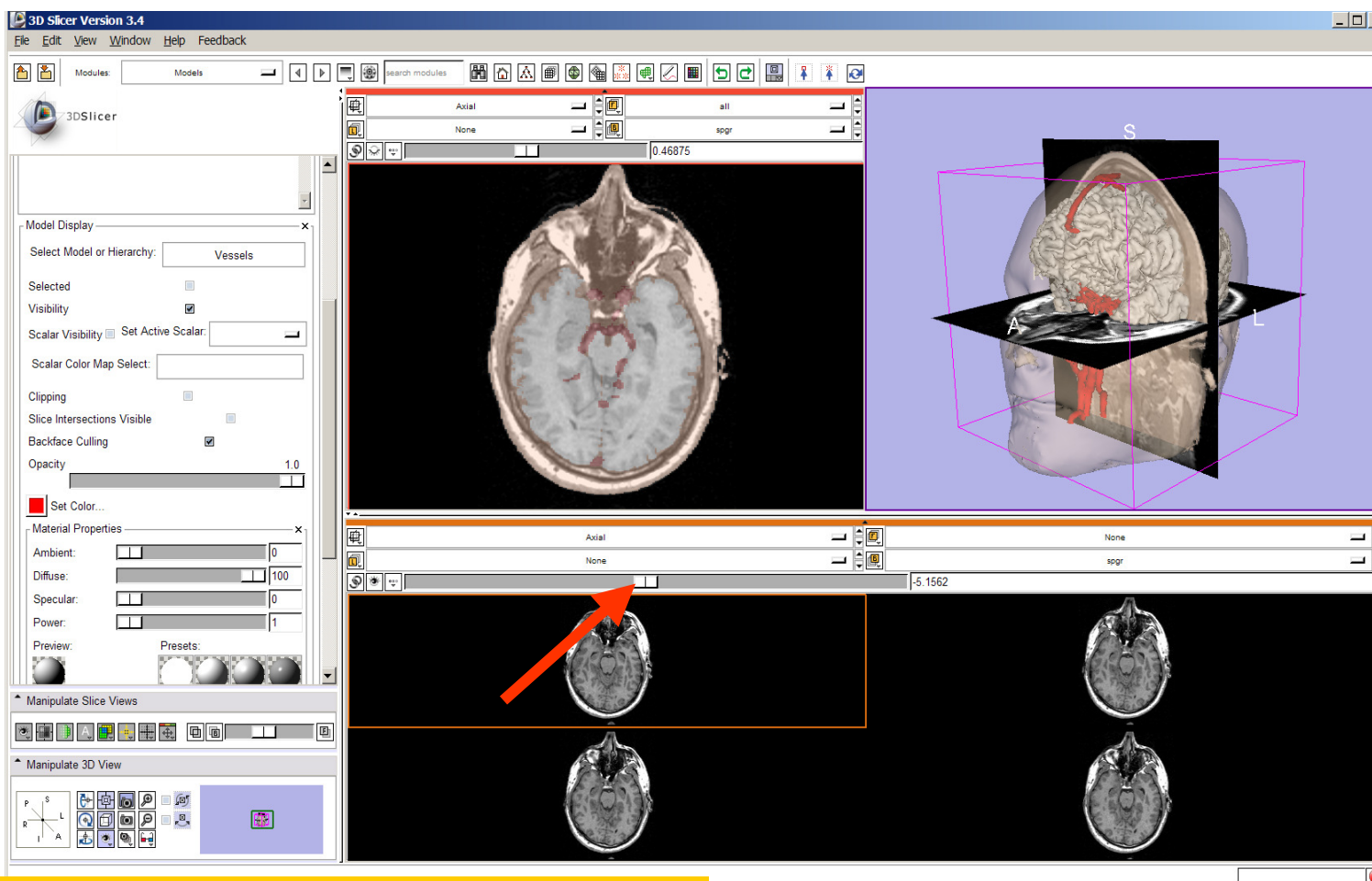
# Lightbox viewer



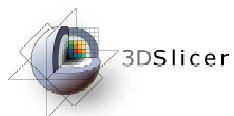
Slicer displays a lightbox view of the Background dataset.



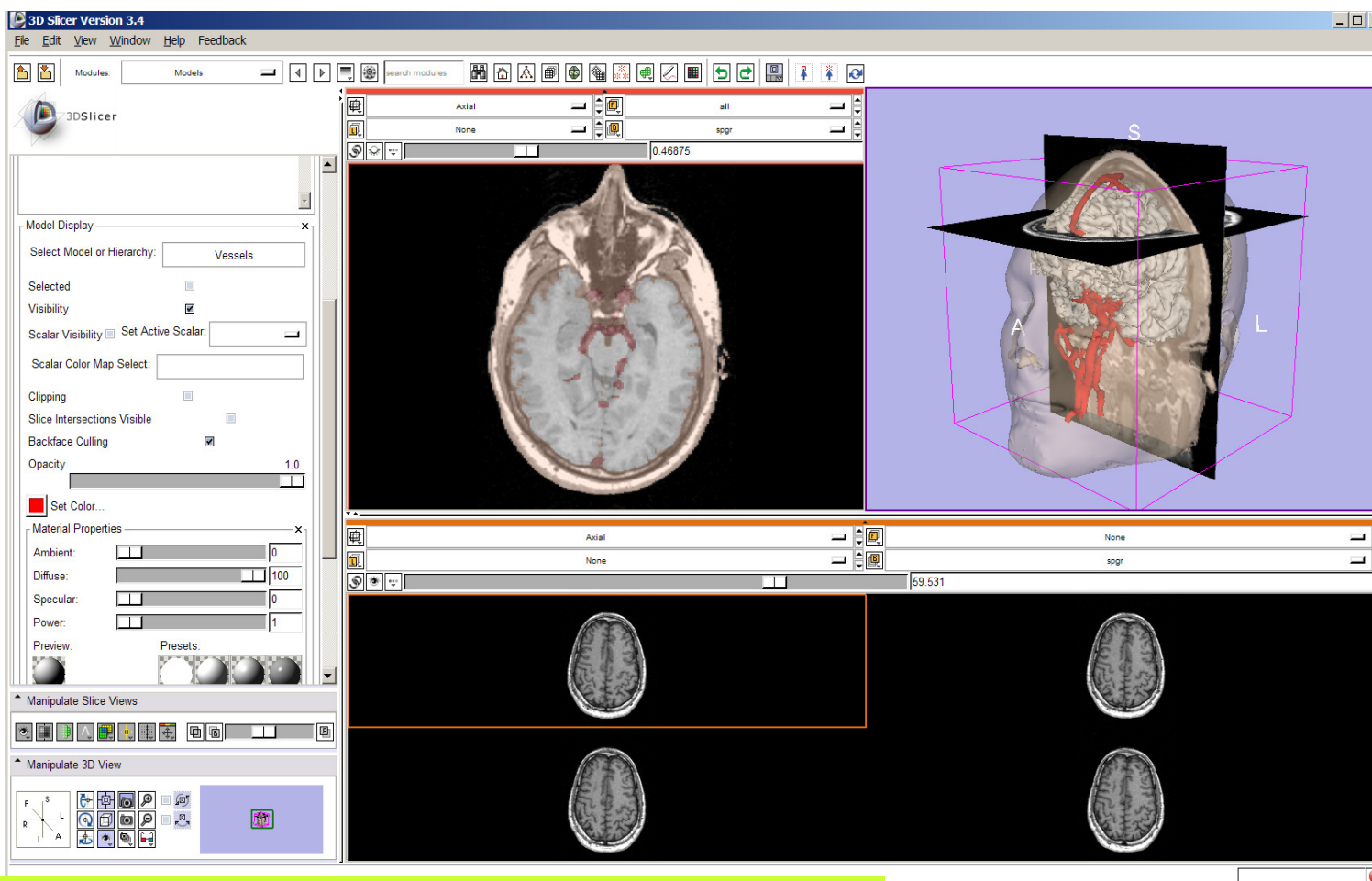
# Lightbox viewer



Browse through the spgr volume using the lightbox slider

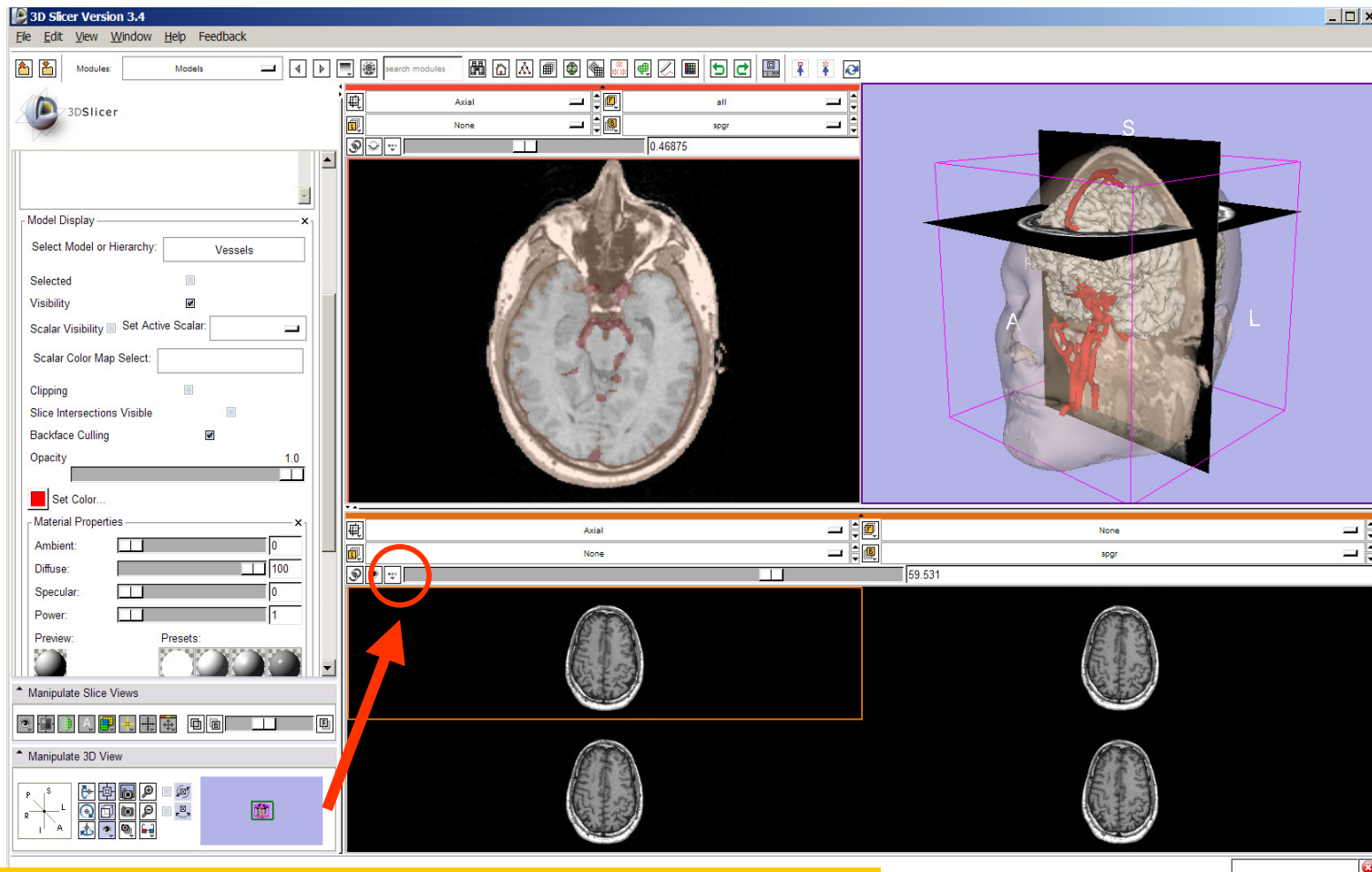


# Lightbox viewer



Slicer displays 4 adjacent axial slices of the spgr volume simultaneously

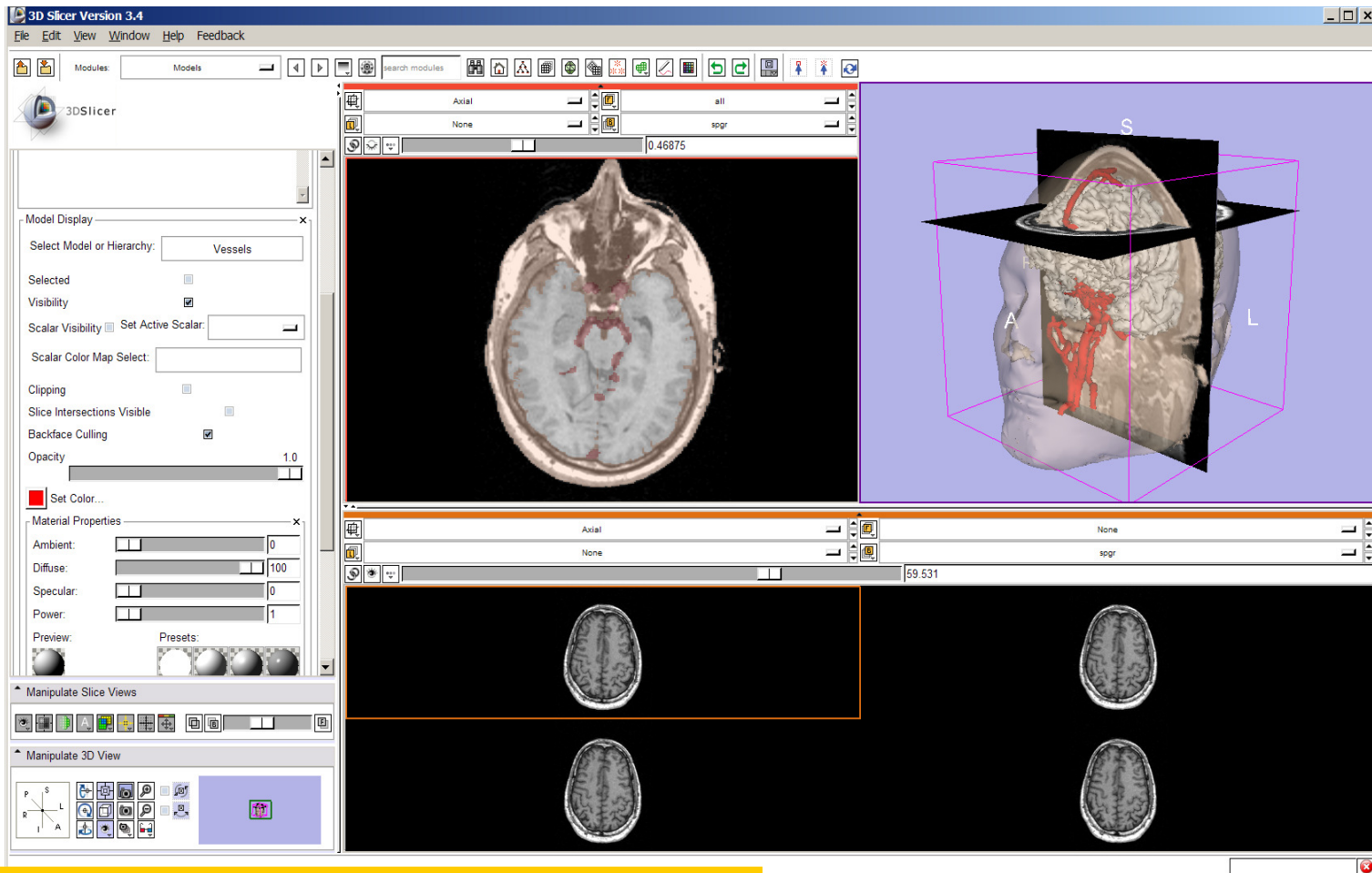
# Lightbox viewer



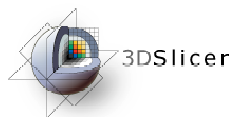
Left click on the Slice Viewer menu of the Compare Layout viewer



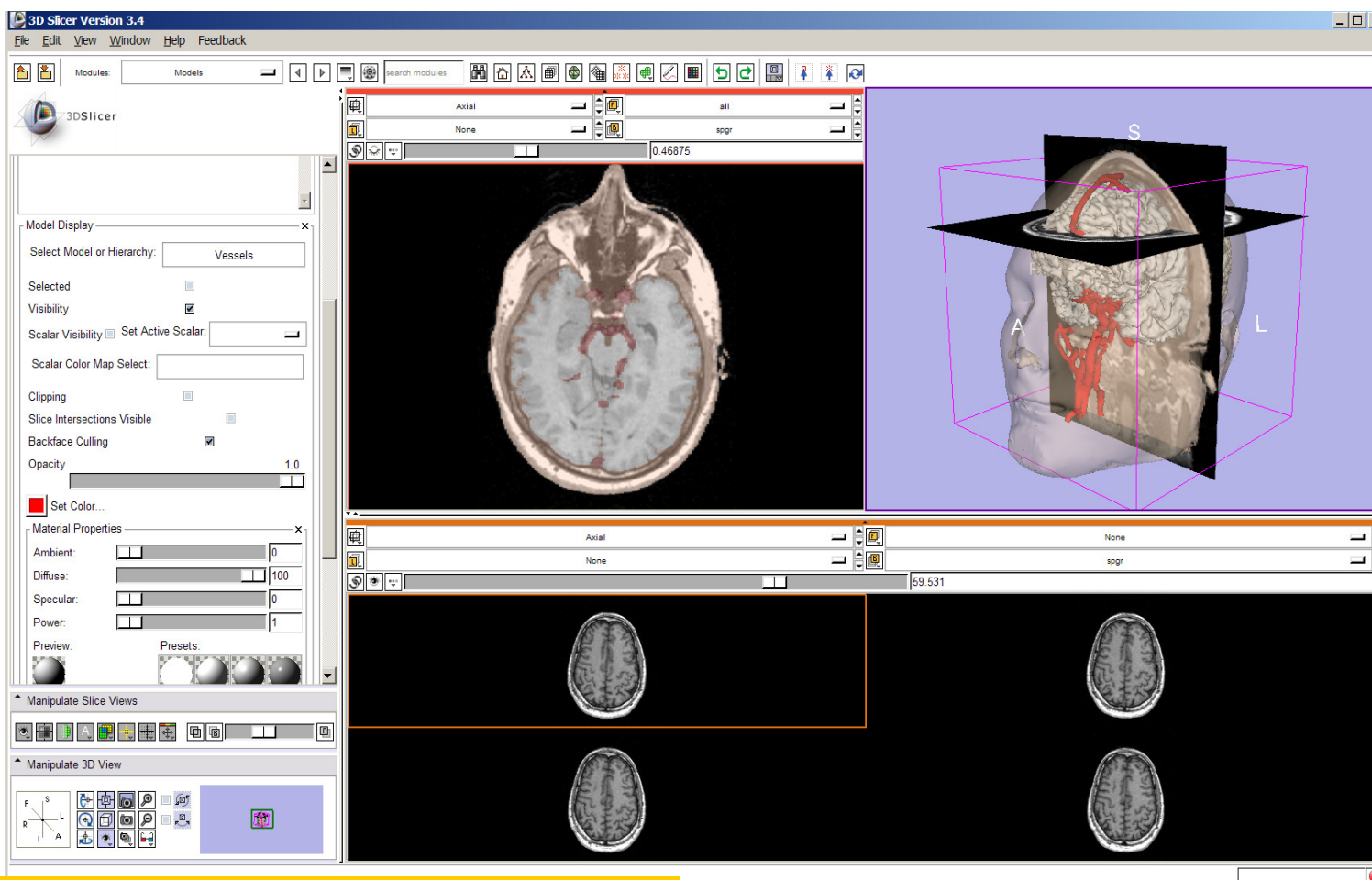
# Lightbox viewer



Select the **lightbox** view option 

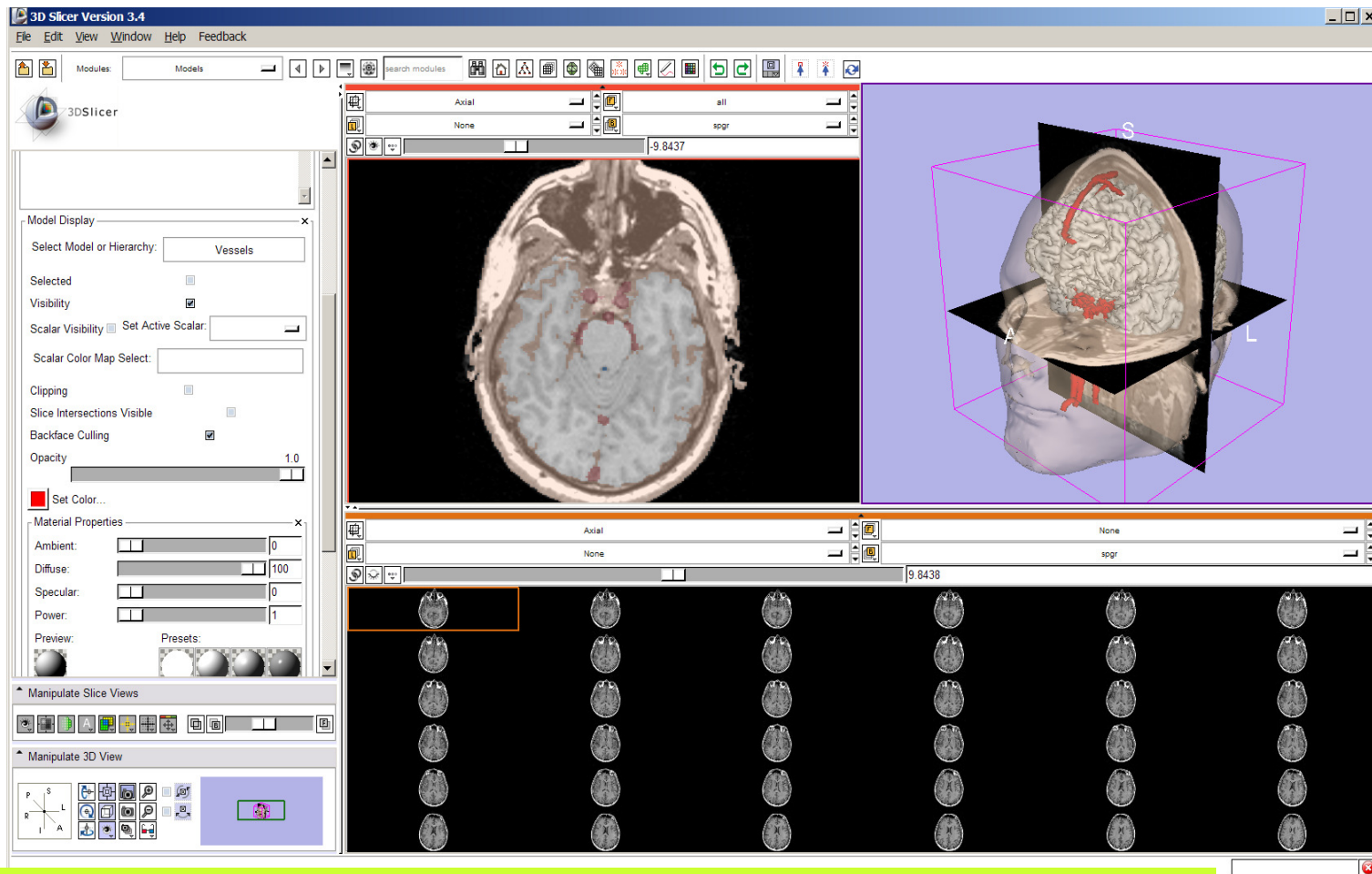


# Lightbox viewer



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

# Lightbox viewer



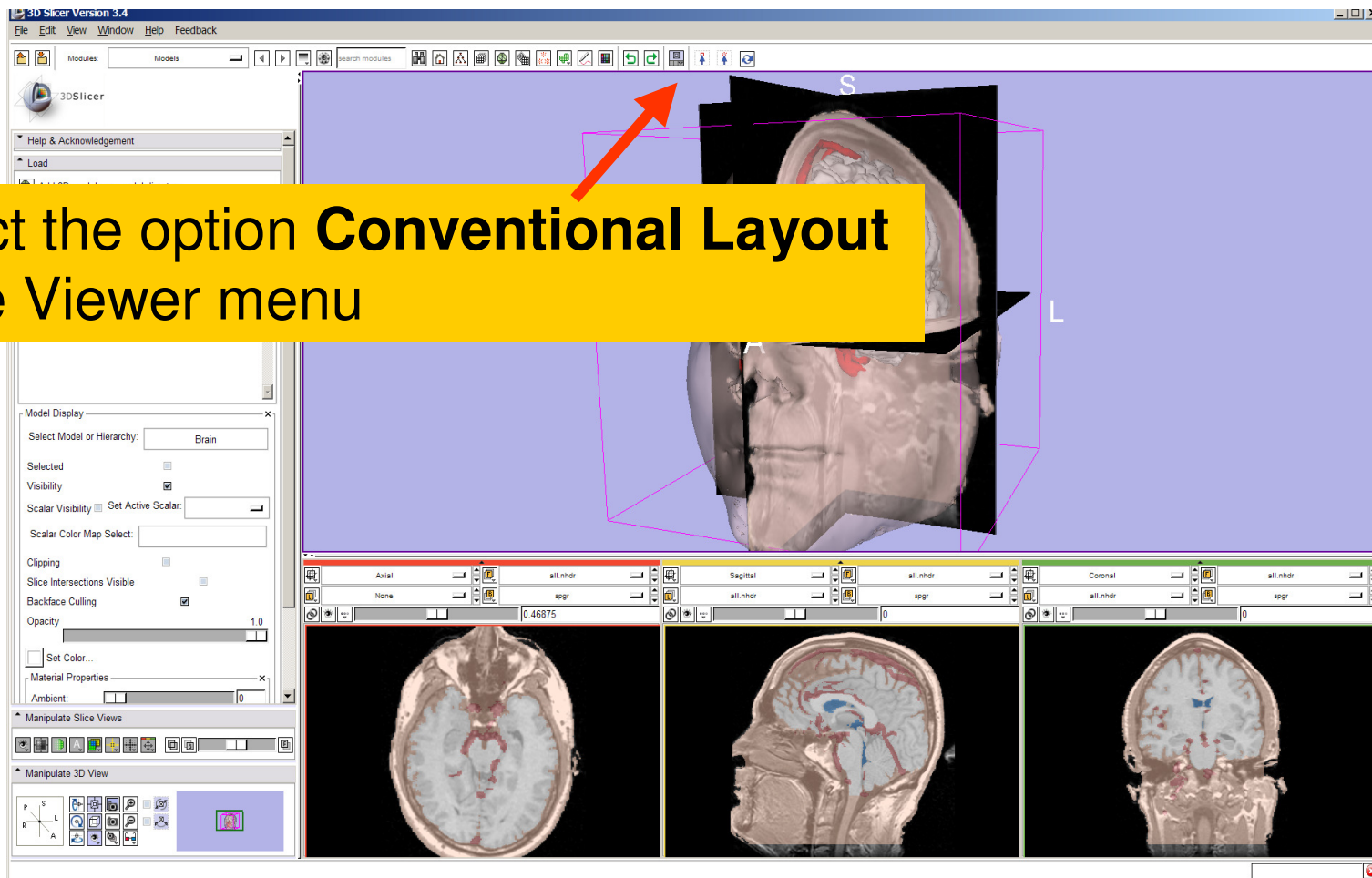
Slicer displays a matrix of 36 adjacent axial slices of the spgr volume.

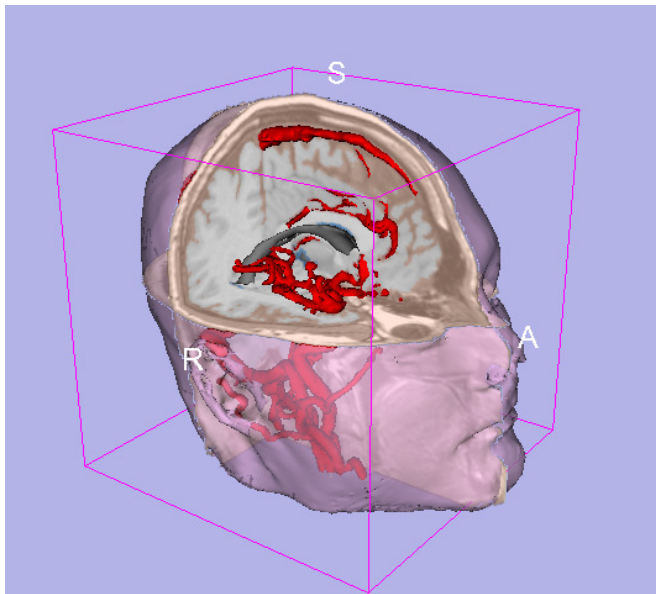




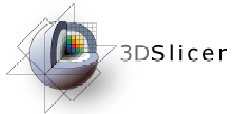
# Lightbox viewer

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

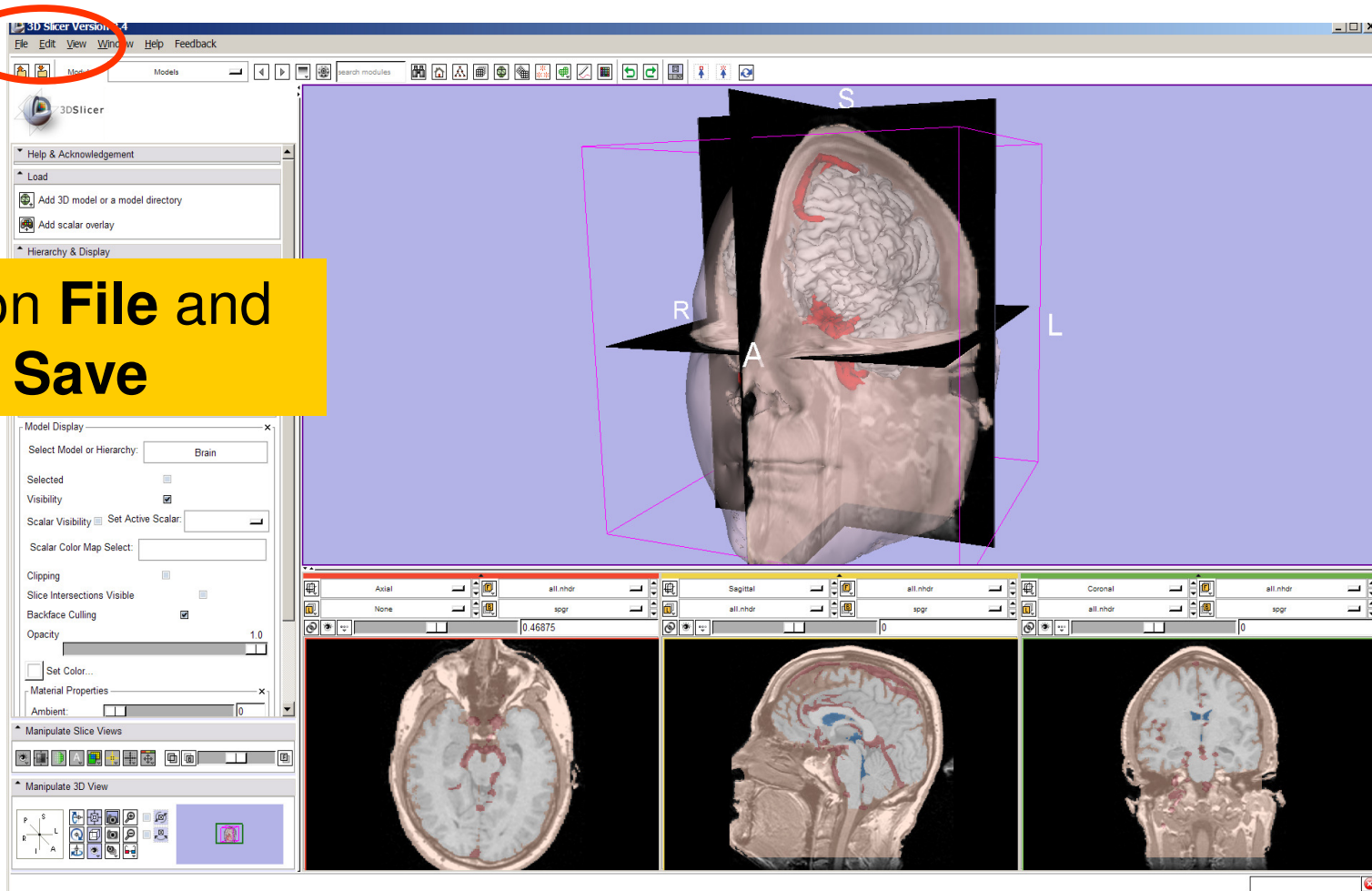




## Part 5: Loading and saving a Scene



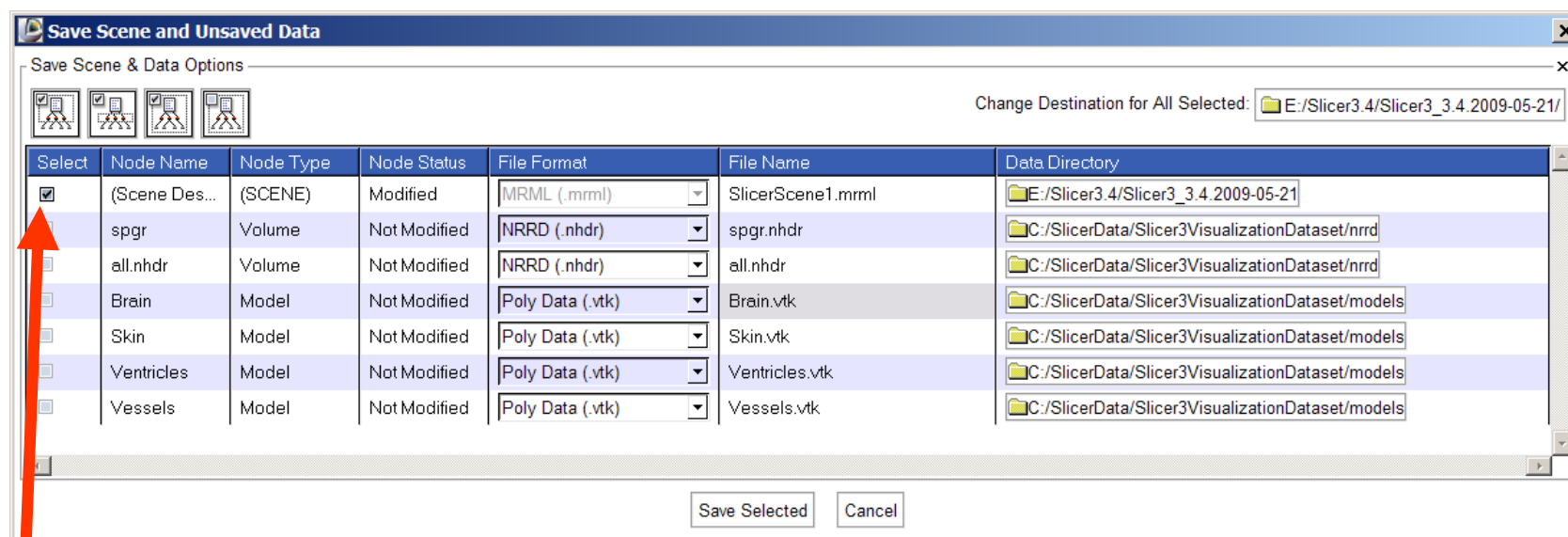
# Saving Data



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

# Saving Data

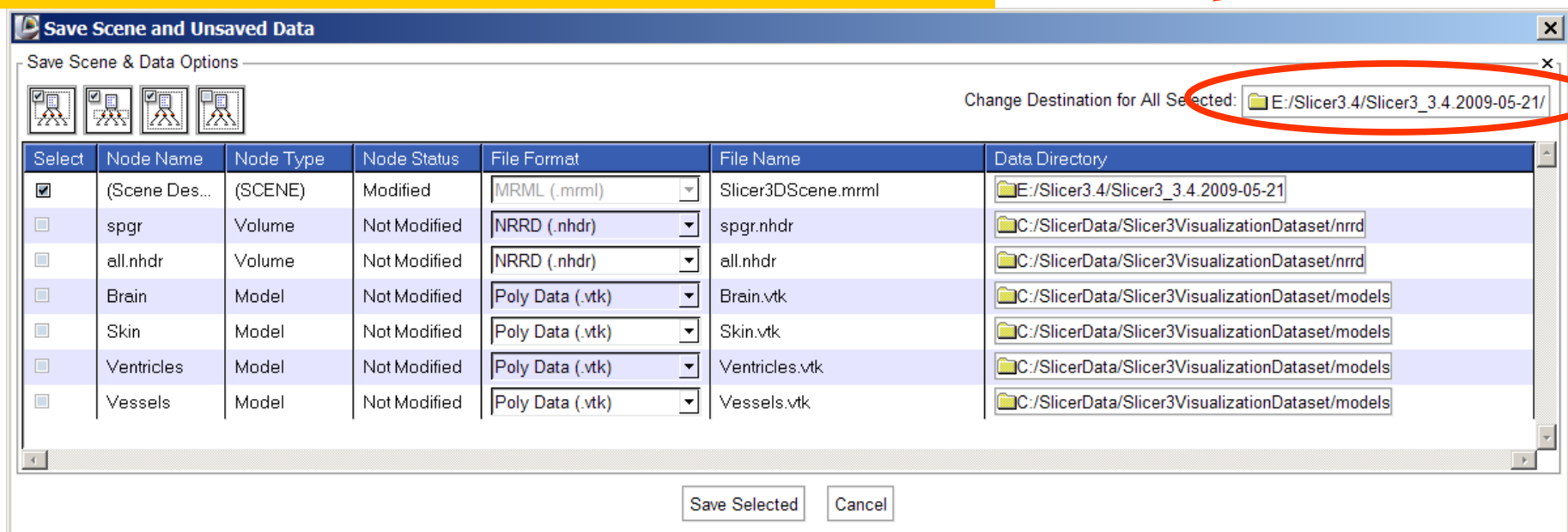
The list of elements currently loaded into Slicer3 appears.



Make sure only the first check box is selected

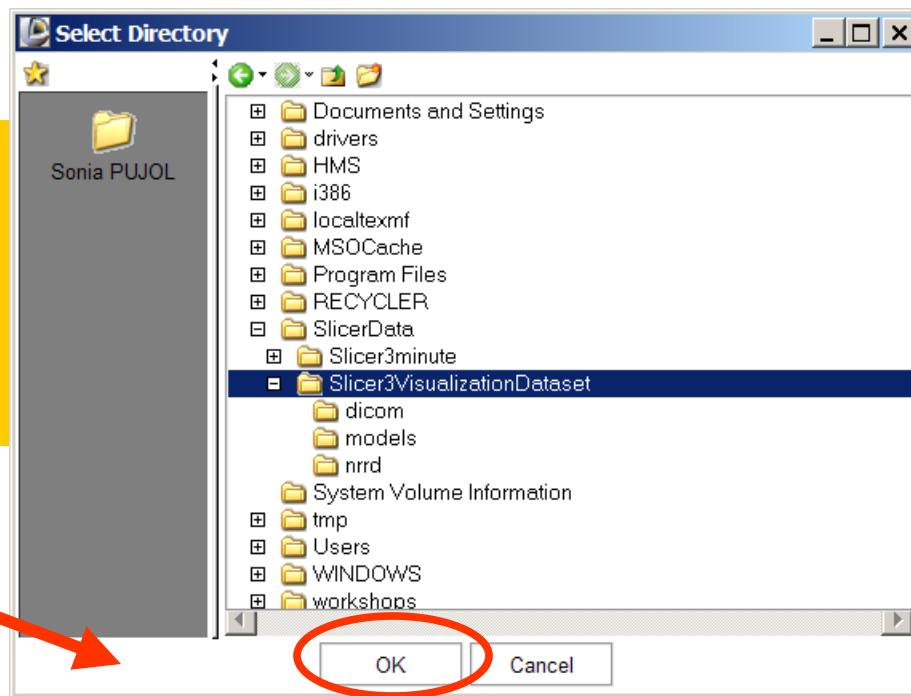
# Saving Data

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



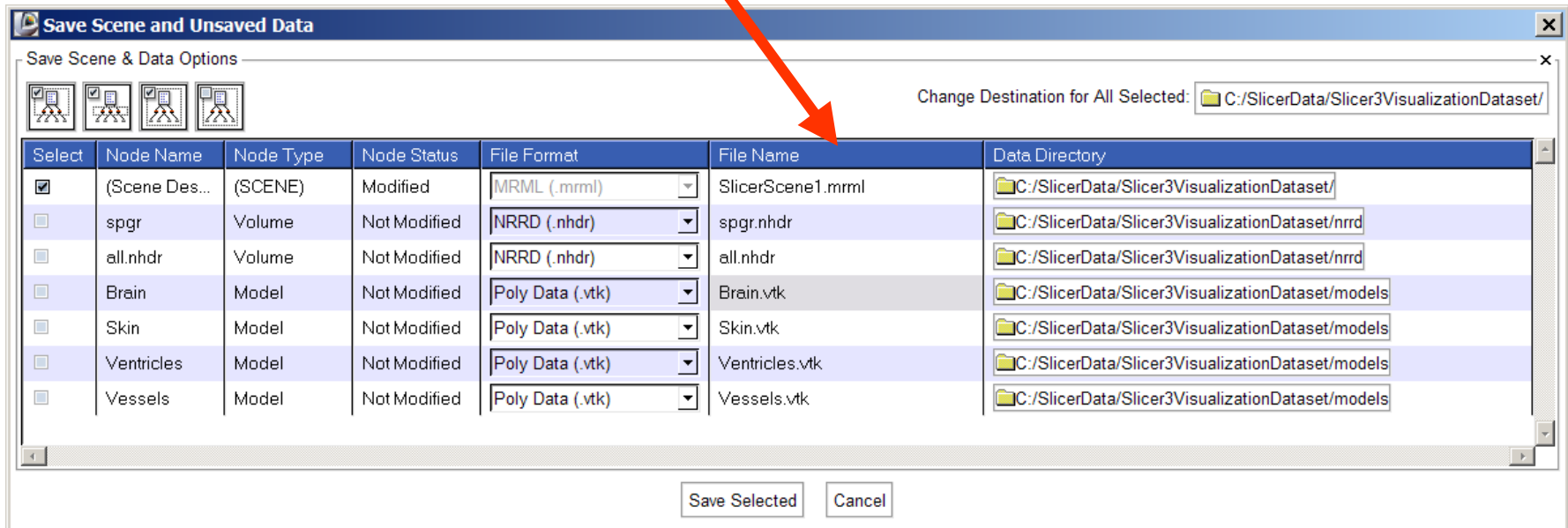
# Saving Data

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



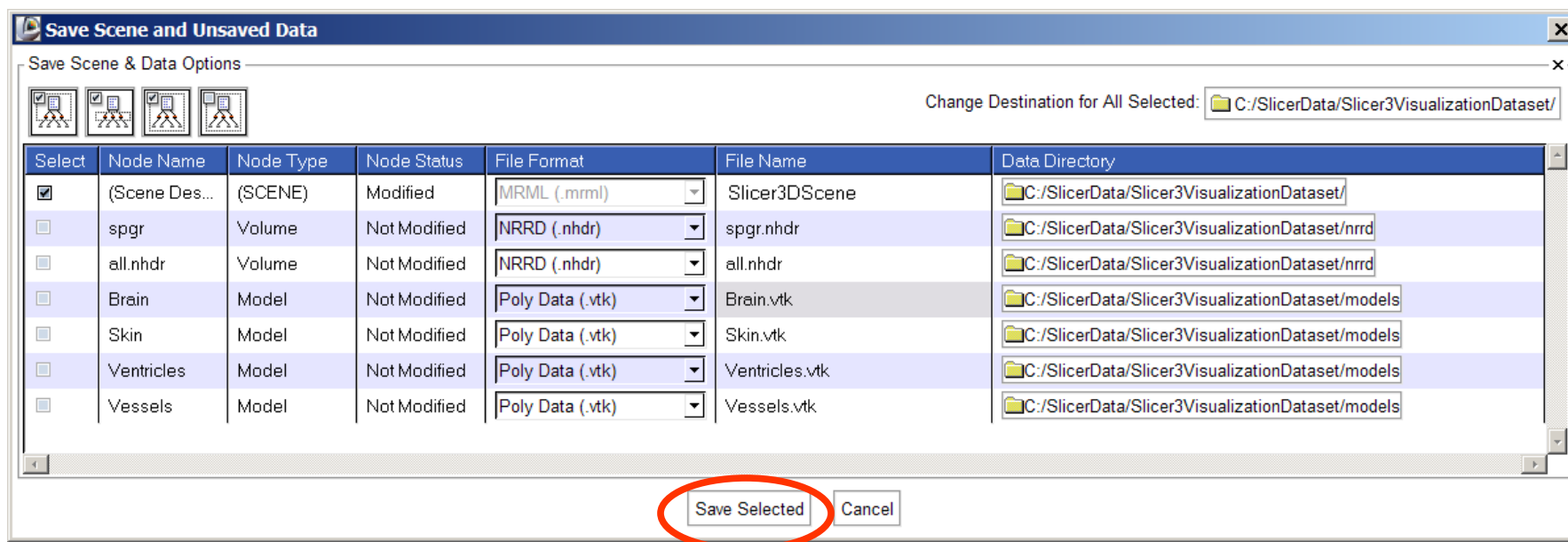
# Saving Data

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

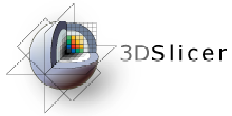


# Saving Data

Click on **Save Selected**

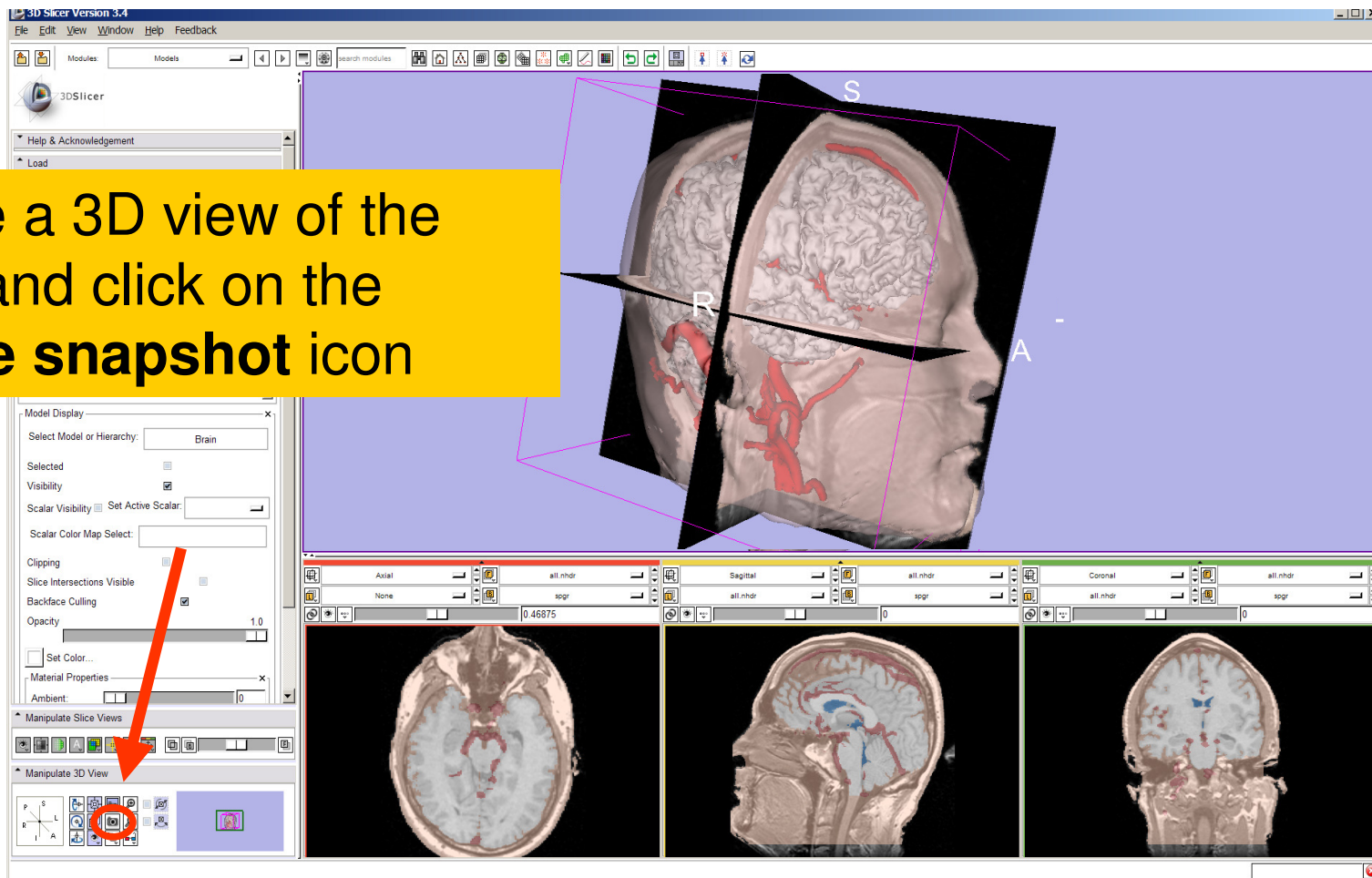


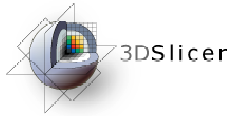




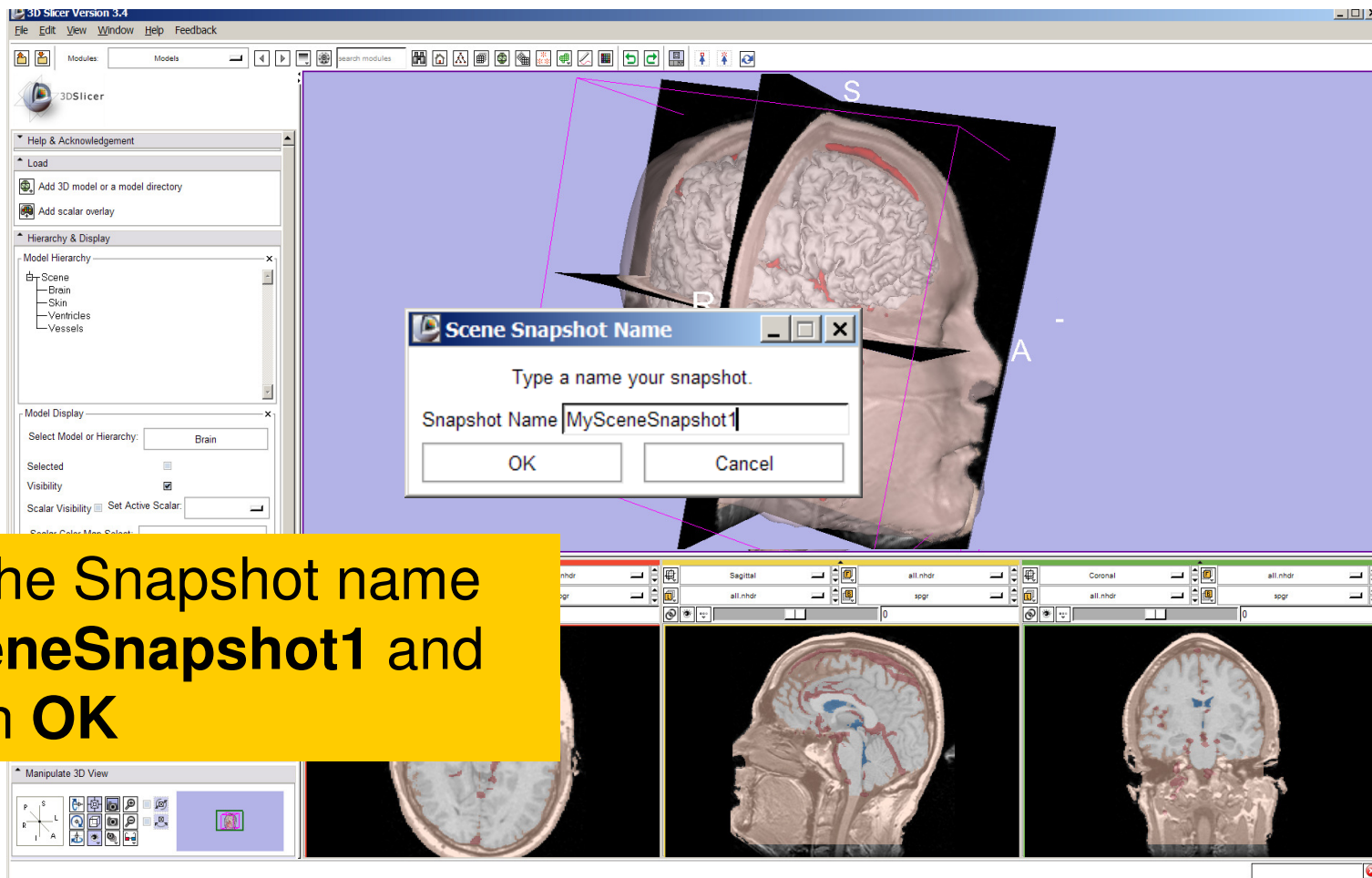
# Creating Scene Snapshots

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

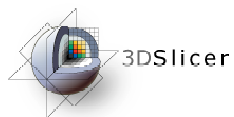




# Creating Scene Snapshots

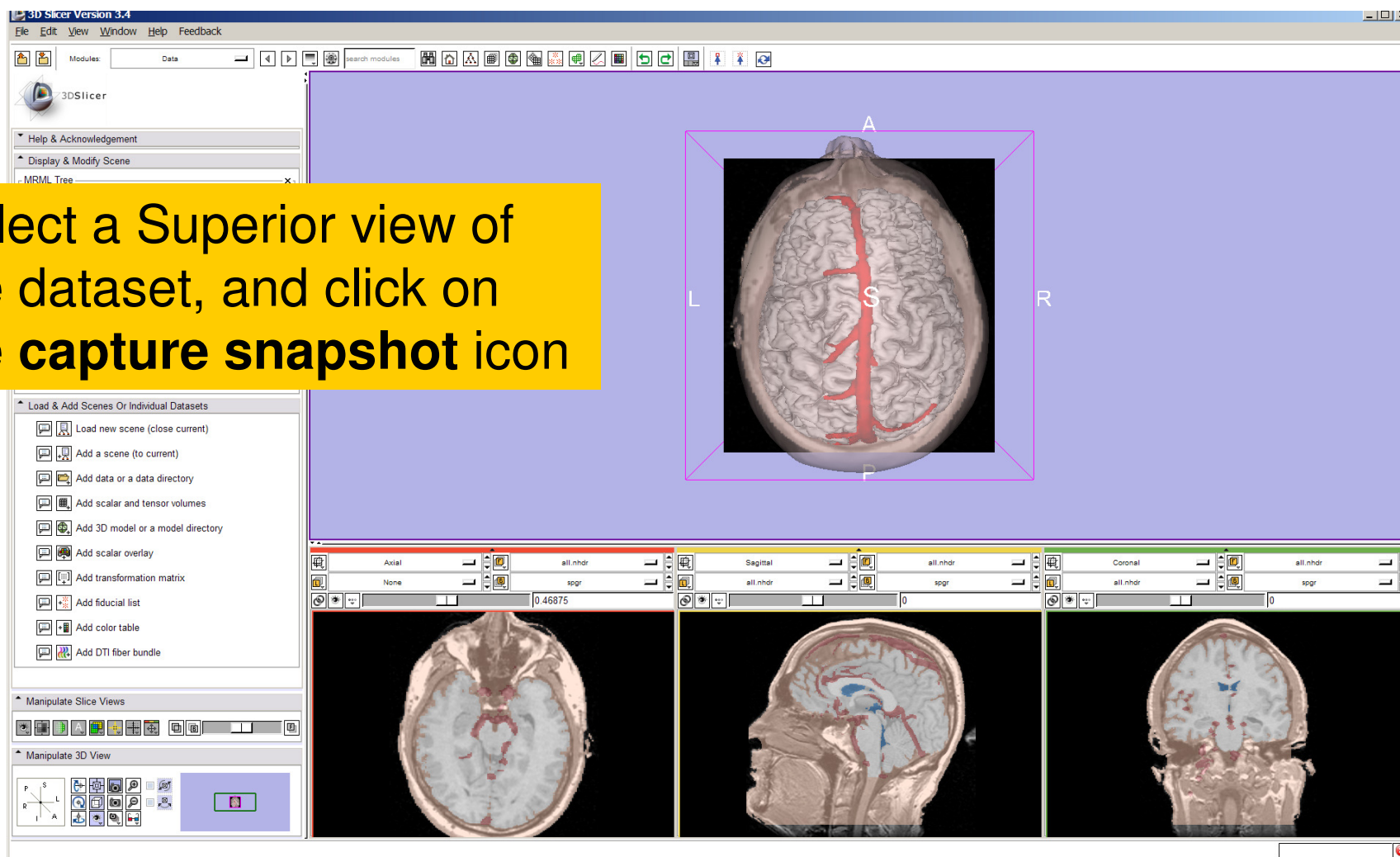


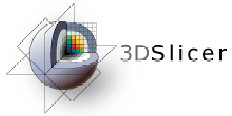
Enter the Snapshot name  
**MySceneSnapshot1** and  
click on **OK**



# Creating Scene Snapshots

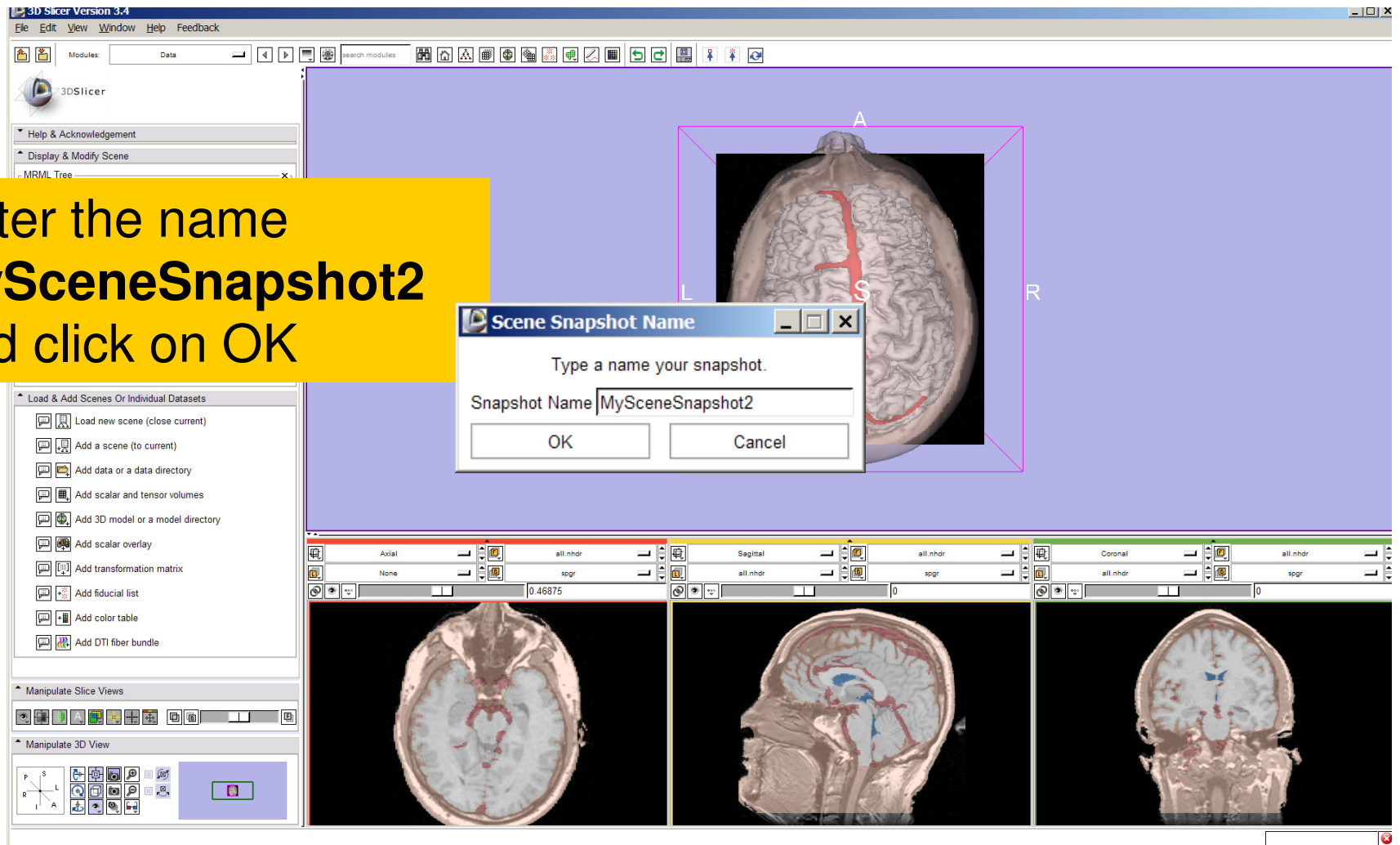
Select a Superior view of the dataset, and click on the **capture snapshot** icon





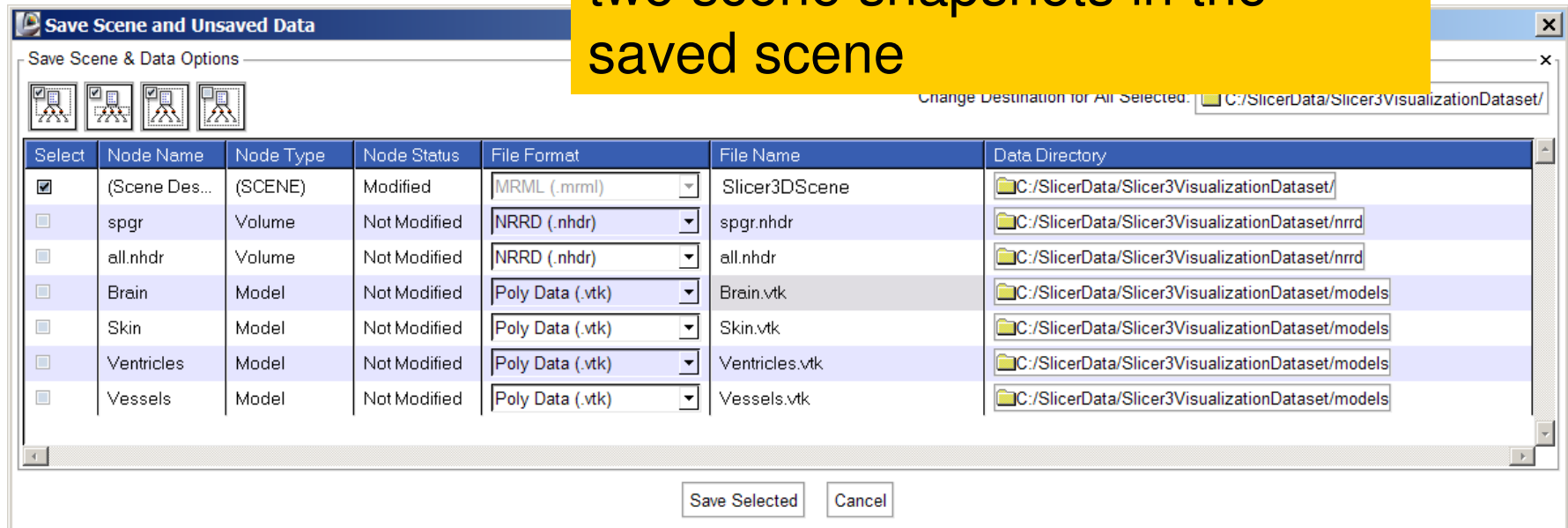
# Creating Scene Snapshots

Enter the name  
**MySceneSnapshot2**  
and click on OK



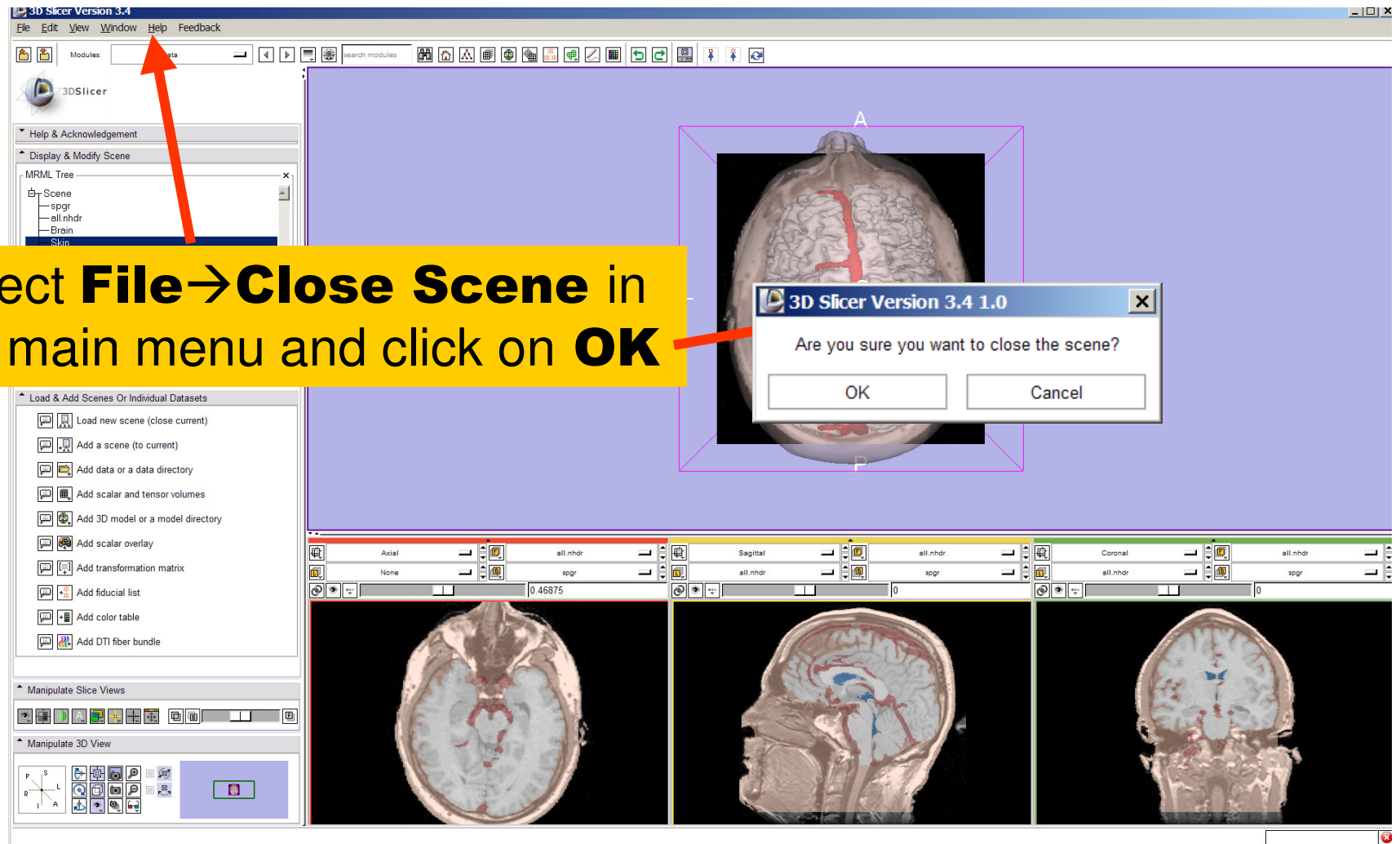
# Creating Scene Snapshots

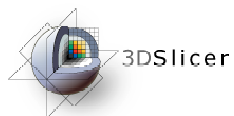
Select **File** → **Save** and click on **Save Selected** to include the two scene snapshots in the saved scene





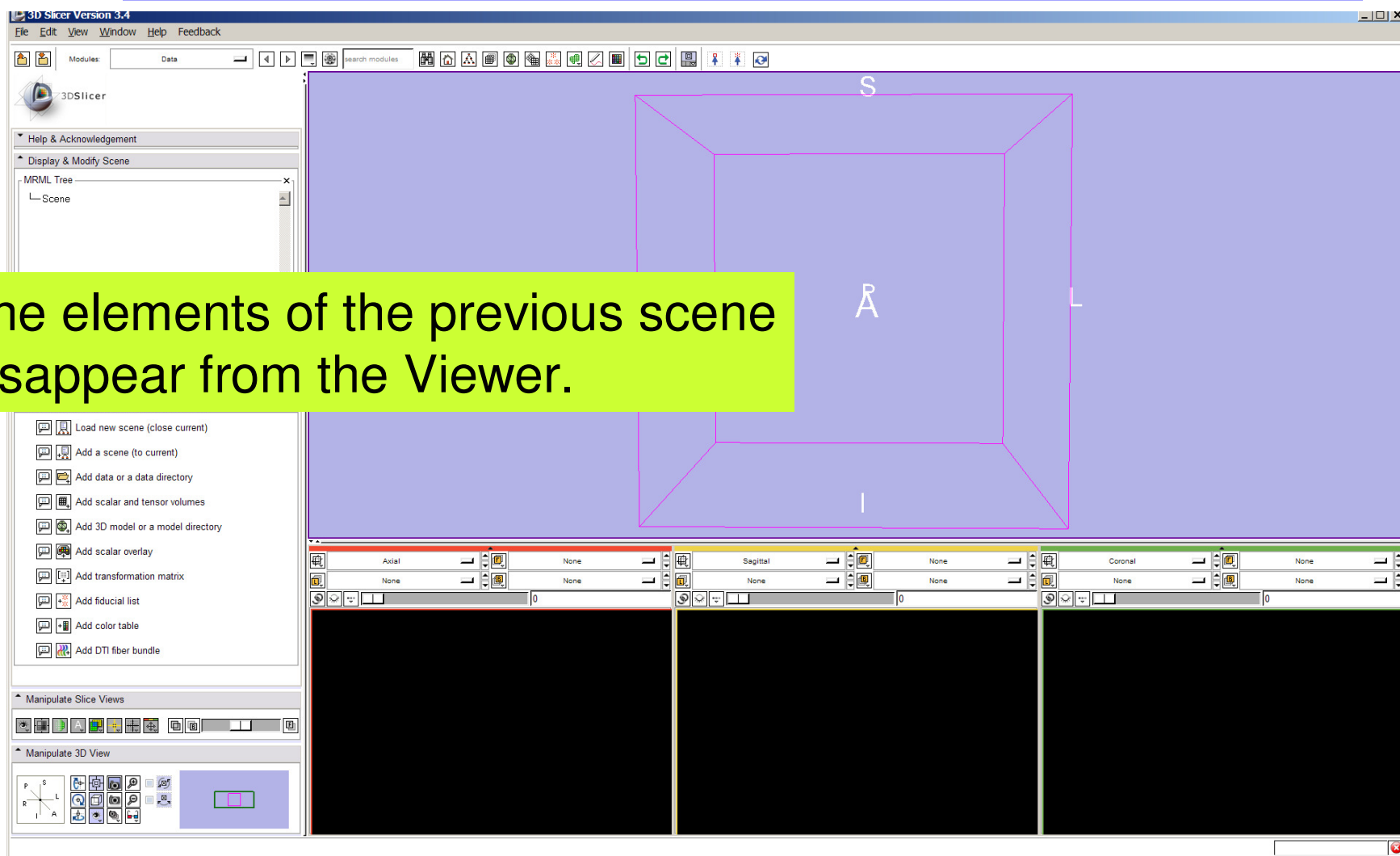
# Saving Data



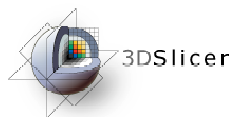


# Saving Data

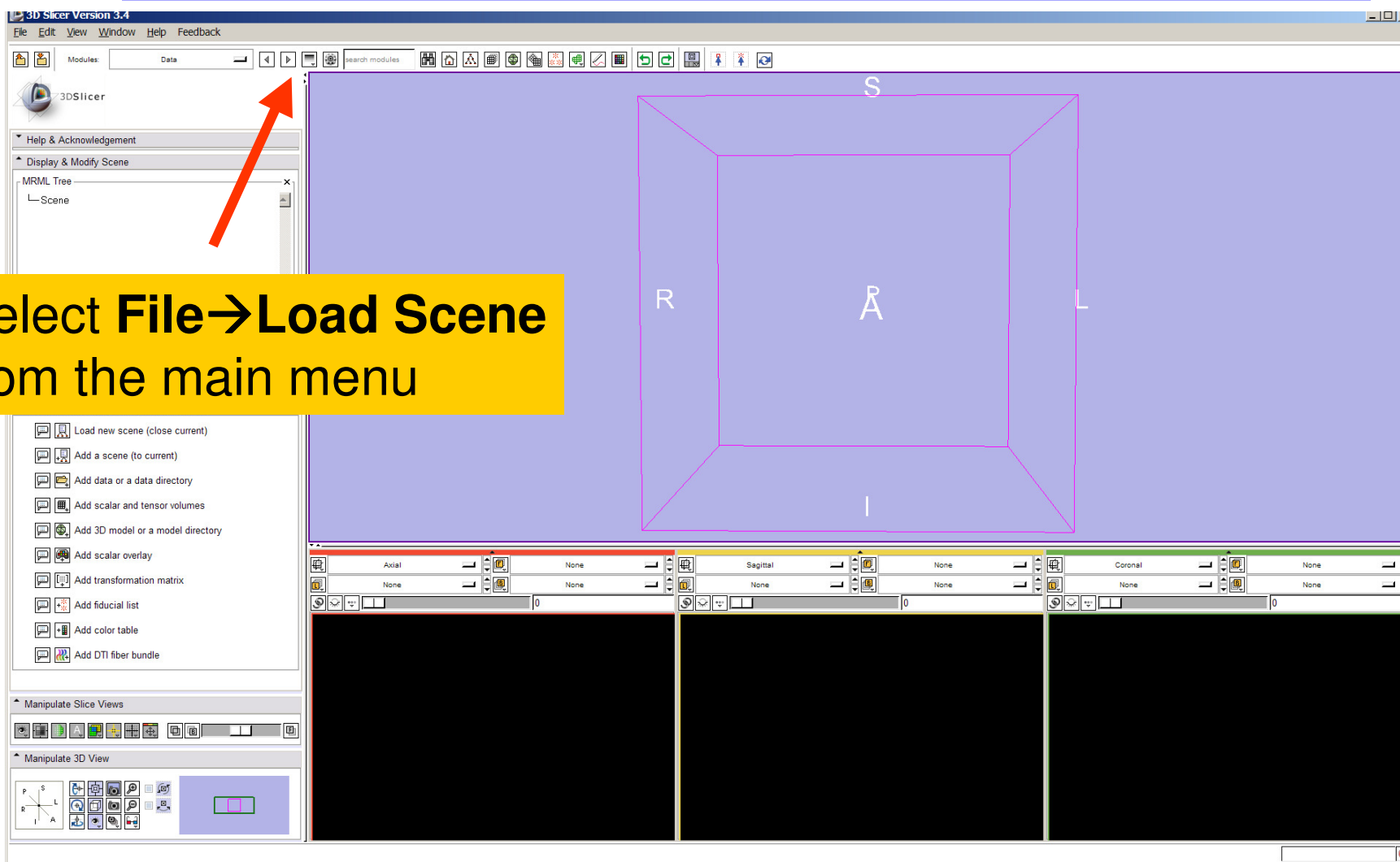
The elements of the previous scene disappear from the Viewer.







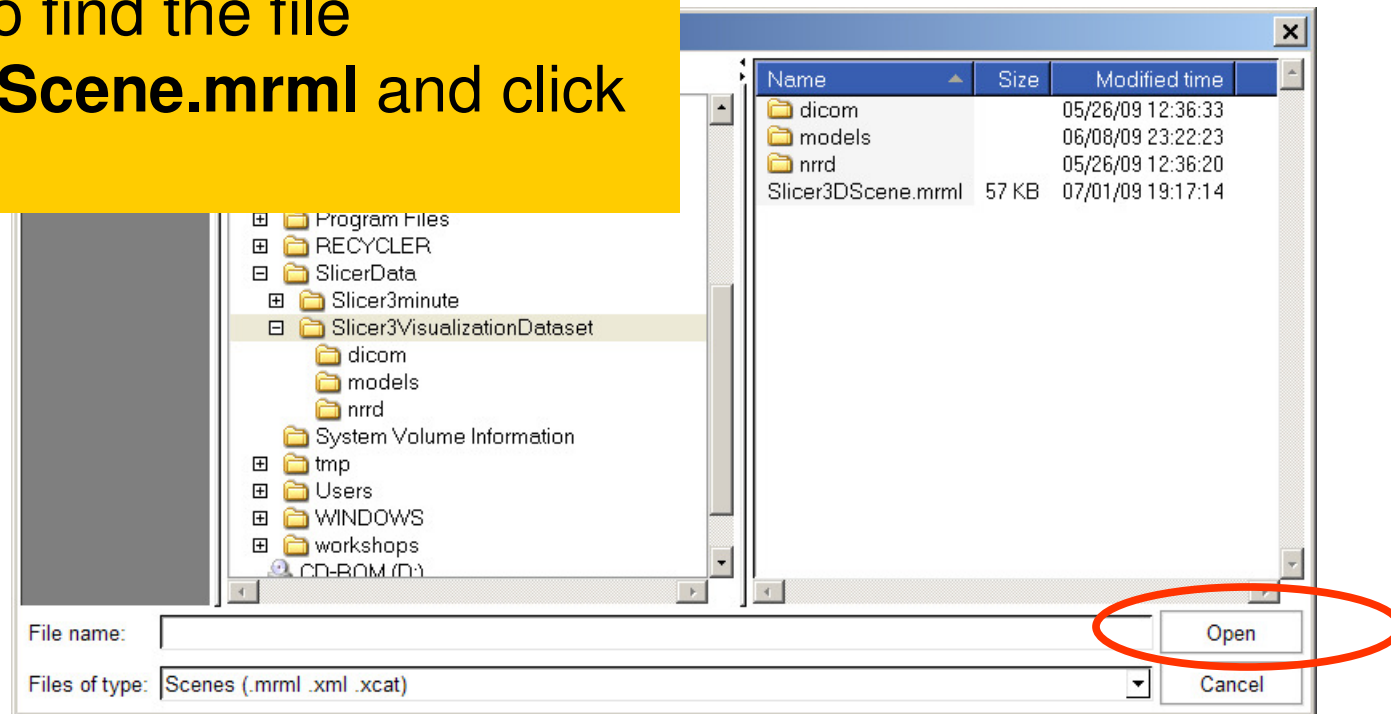
# Saving Data



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

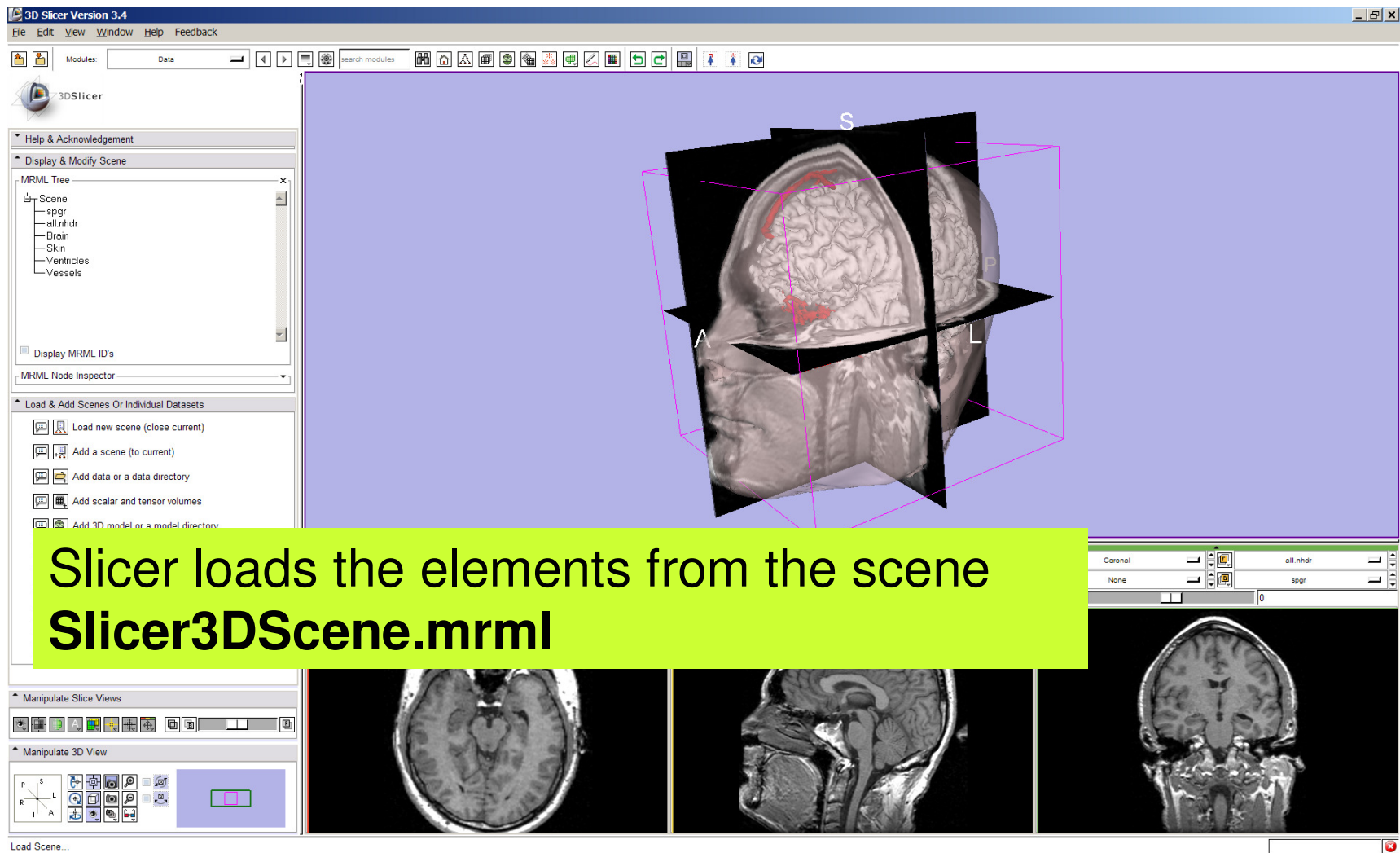
# *Saving Data*

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

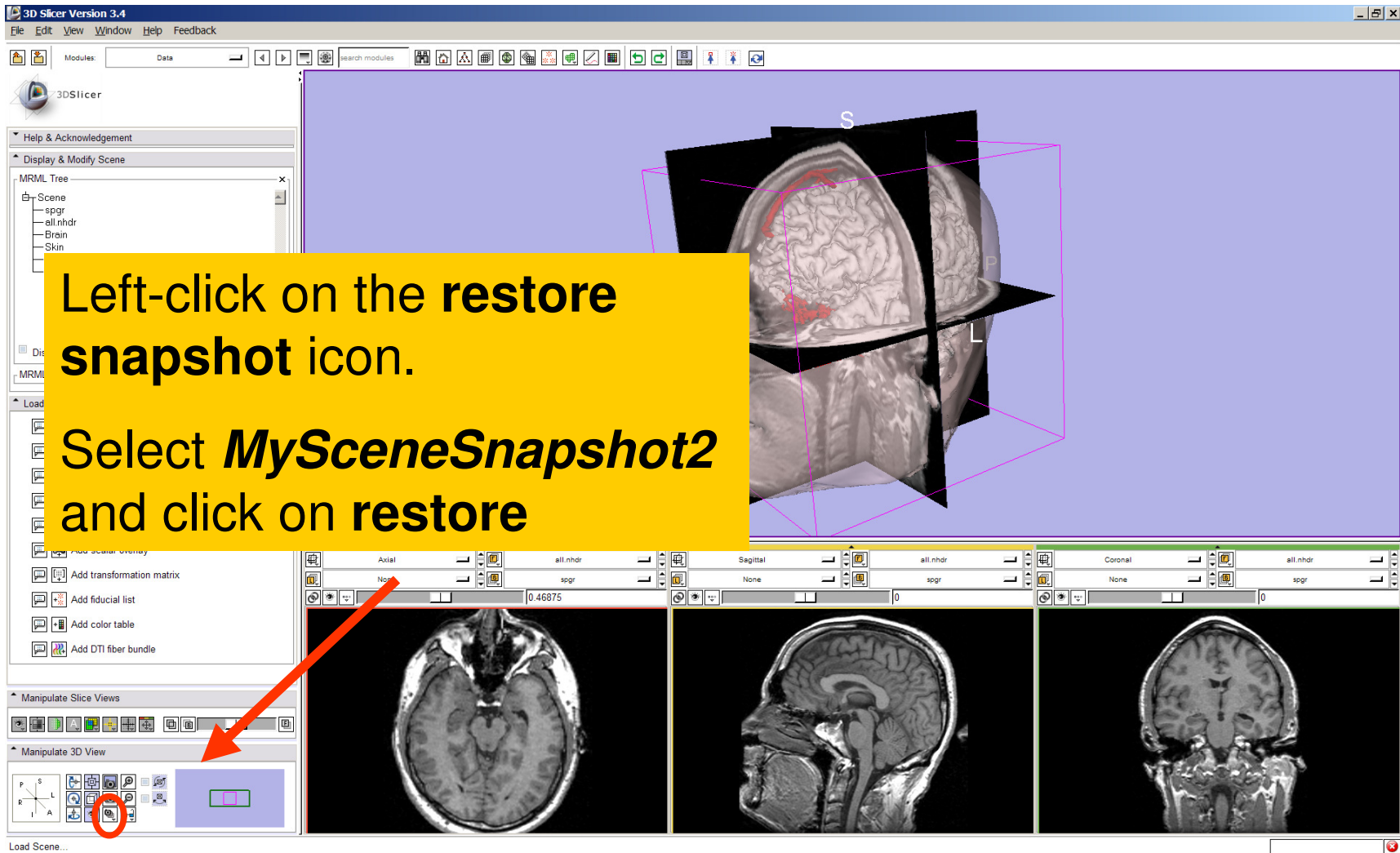




# Loading a Scene



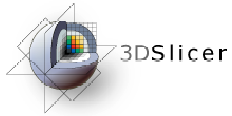
# Loading a Scene



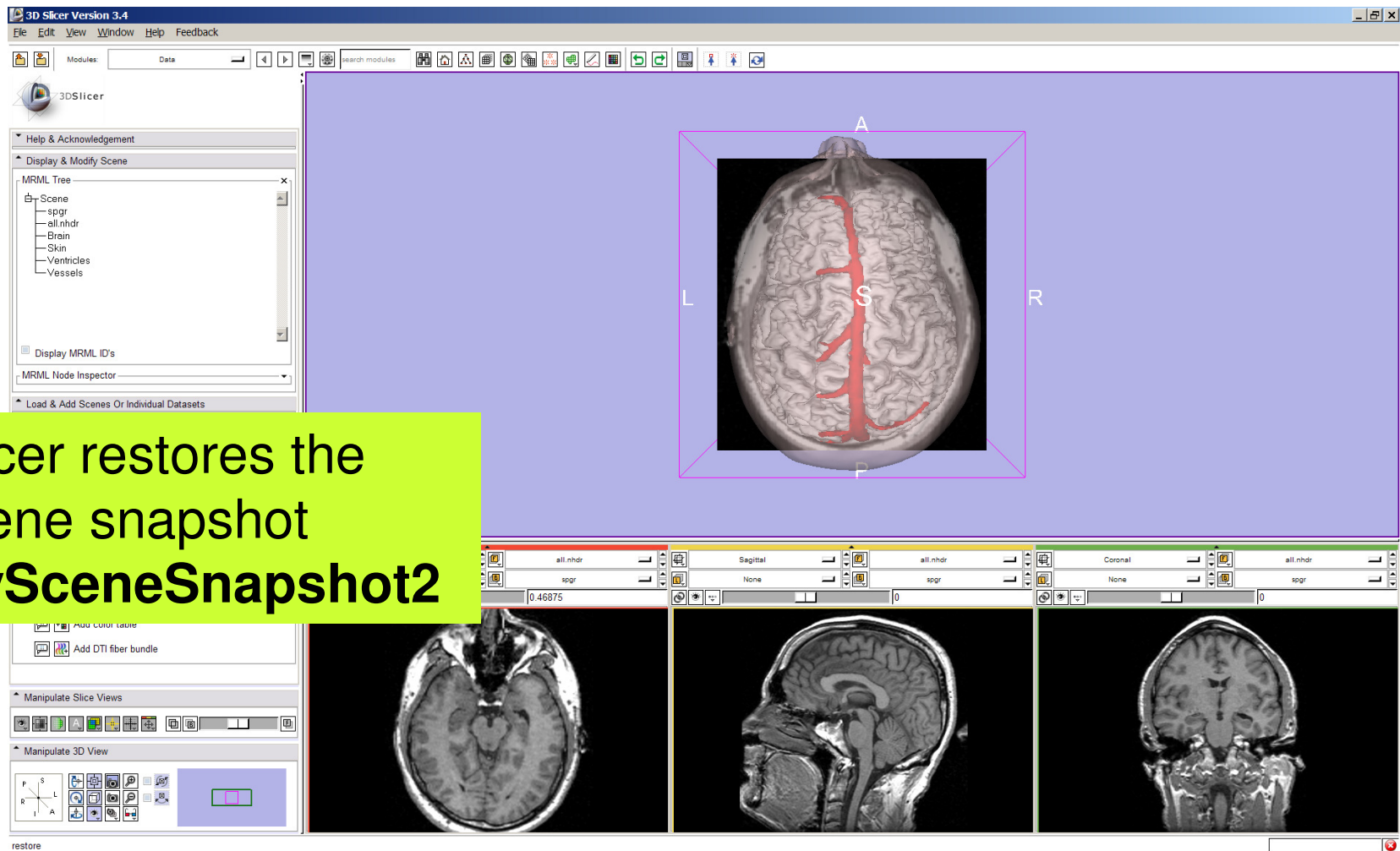
Left-click on the **restore snapshot** icon.

Select ***MySceneSnapshot2*** and click on **restore**

The screenshot shows the 3D Slicer 3.4 interface. The main window displays a 3D brain model with a red wireframe box. The left sidebar contains the MRML Tree, which lists the scene and its components. The bottom panel shows the Manipulate 3D View section, where the restore snapshot icon (a circular arrow) is circled in red. An orange arrow points from this icon to the text overlay. The bottom right panel shows three slice views: Axial, Sagittal, and Coronal.

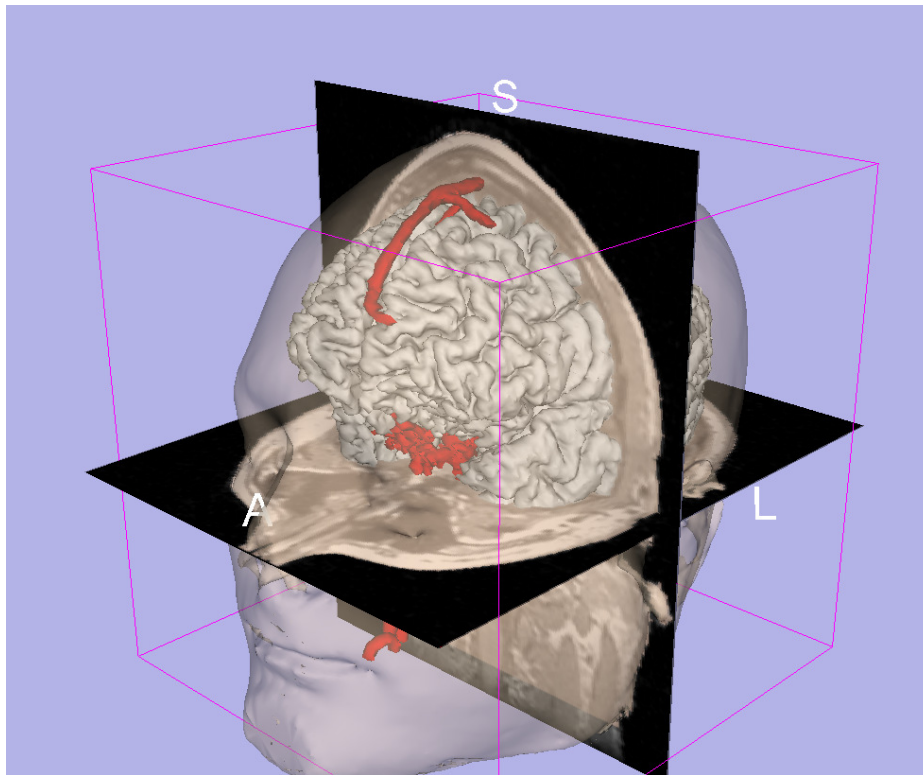


# Loading a Scene



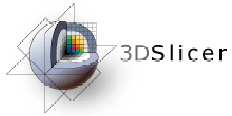
Slicer restores the scene snapshot  
**MySceneSnapshot2**

# Conclusion



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

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