

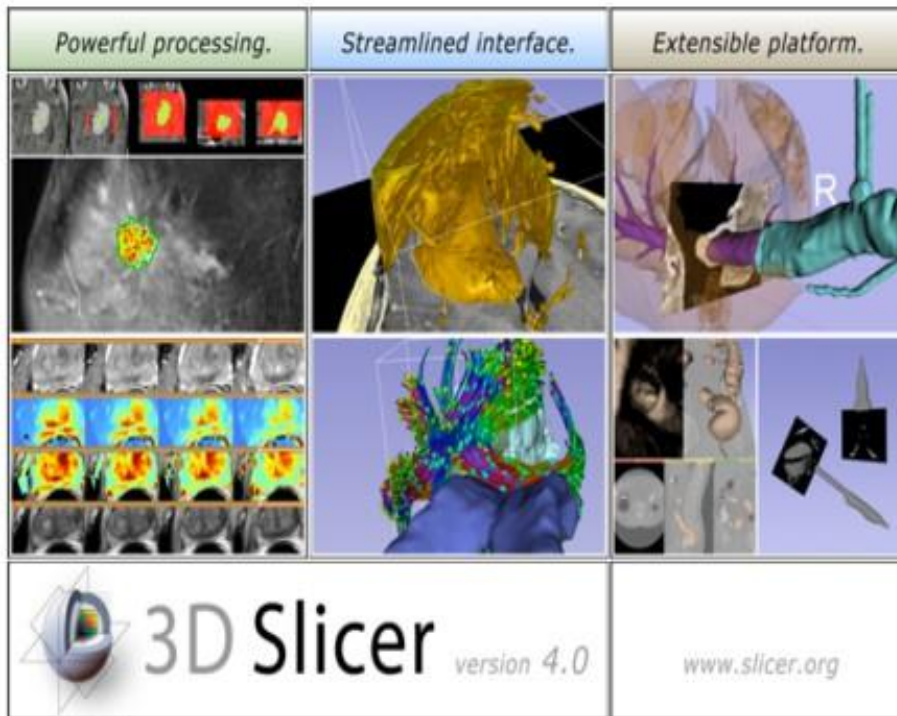


3D Data Loading and Visualization

Sonia Pujol, Ph.D.

Surgical Planning Laboratory
Harvard University

3DSlicer



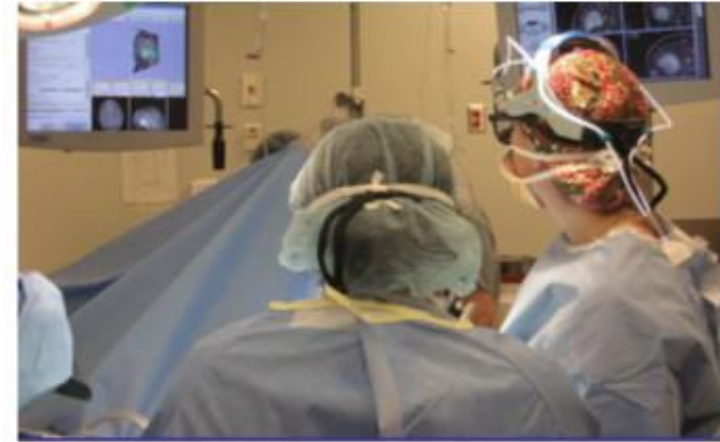
Slicer is a freely available [open-source](#) platform for segmentation, registration and 3D visualization of medical imaging data

Slicer is a [multi-institutional effort](#) supported by the [National Institute of Health](#).

Translational research



An **open-source environment**
for software developers



An **end-user application**
for clinical investigators
and scientists

3D Slicer: an open-source platform for
translating innovative algorithms into
clinical research applications

3DSlicer History

- 1997: Slicer started as a research project between the Surgical Planning Lab (Harvard) and the CSAIL (MIT)

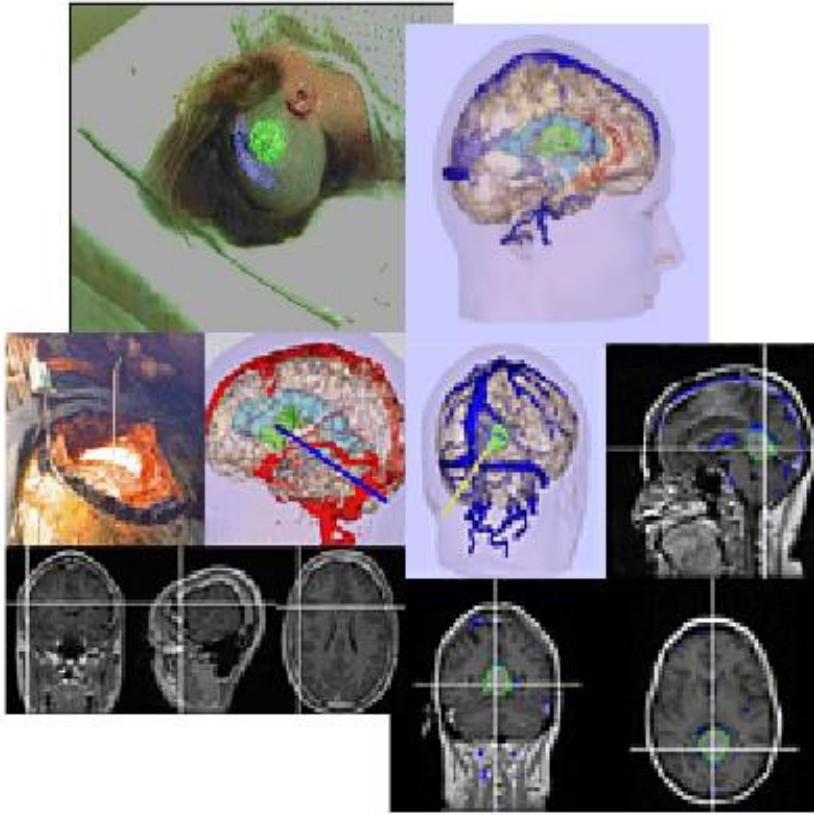
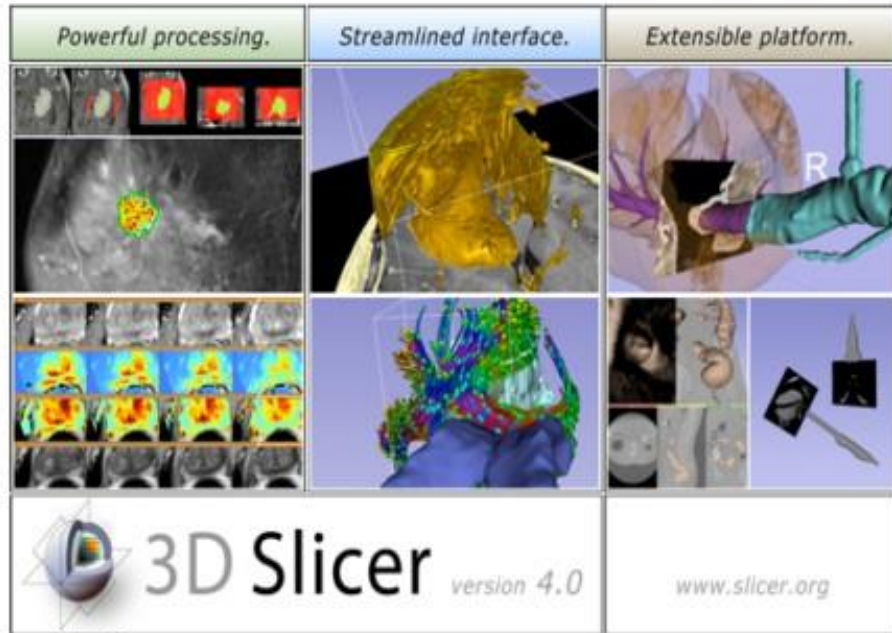


Image Courtesy of the CSAIL, MIT

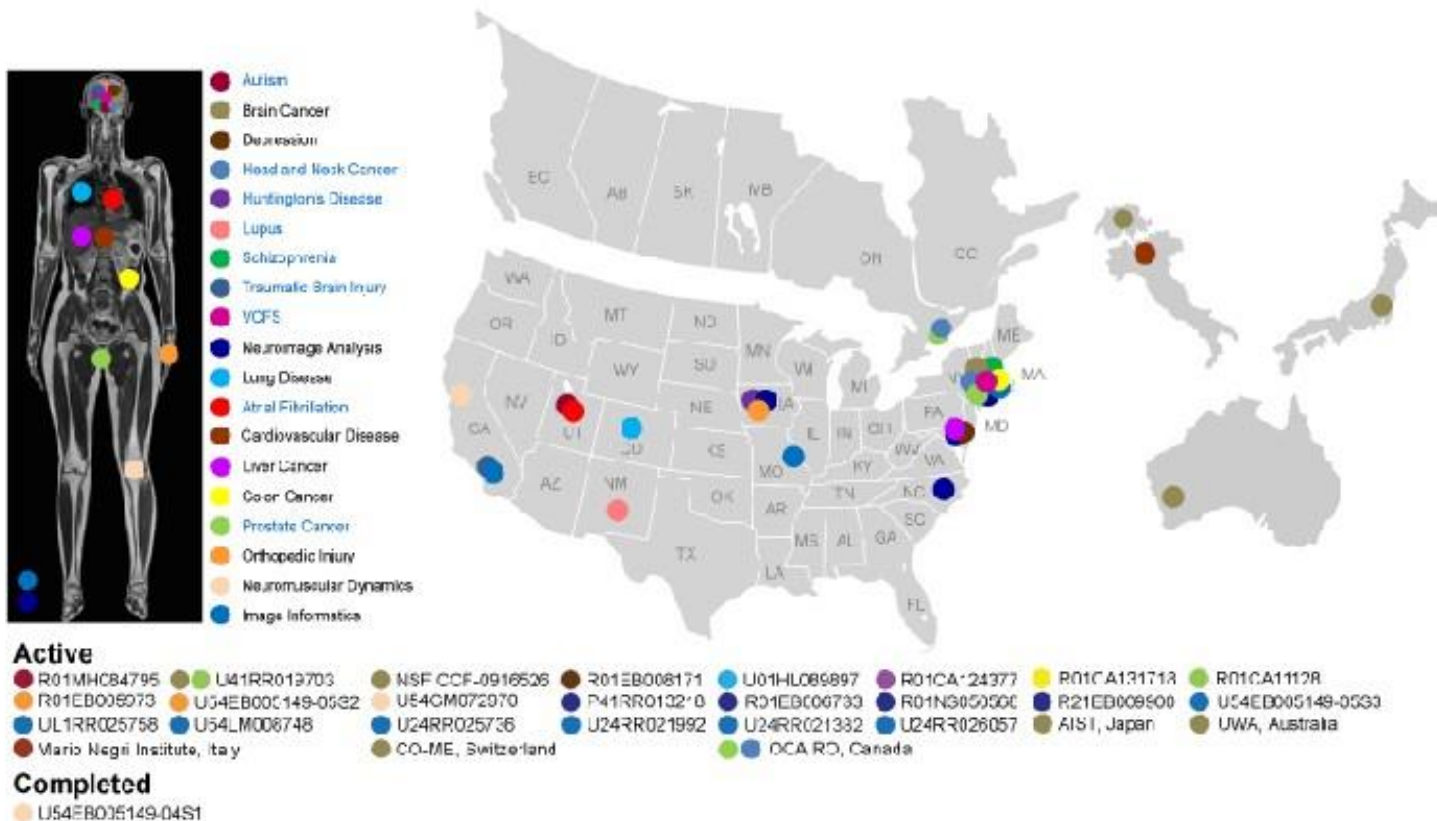
3DSlicer History

1997: Slicer started as a research project between the Surgical Planning Lab (Harvard) and the CSAIL (MIT)

2013: Multi-institution effort to share the latest advances in image analysis with clinicians and scientists



A Multi-institution Effort



- Infrastructure grants fund the platform
- Collaborative projects (e.g. Canada, Japan, Australia, Italy) fund the application packages

Slicer Is Open

- Open Science
=
Open Source
+
Open Data
+
Open Community

Madrid 2012



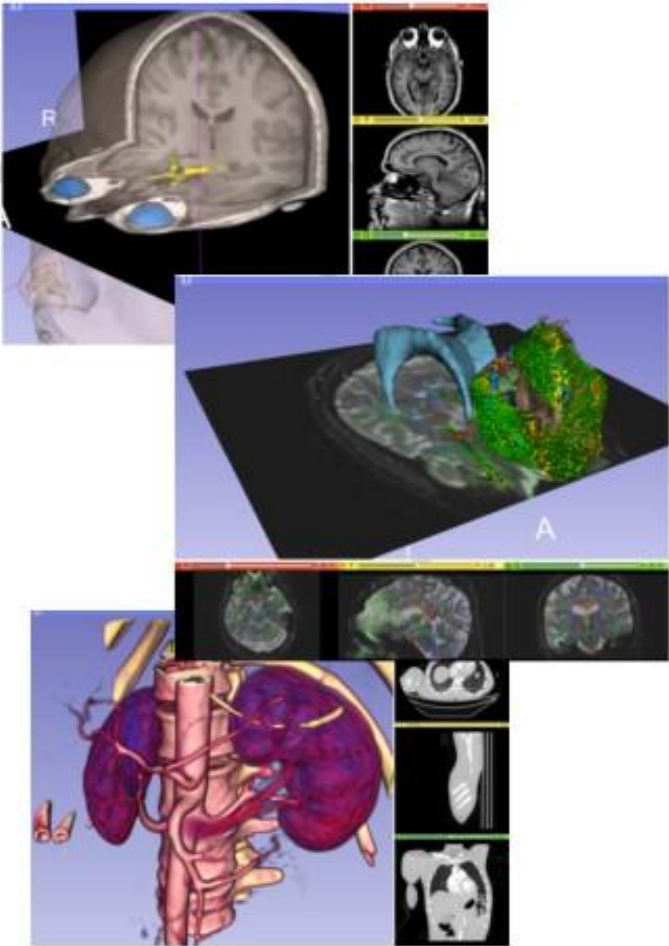
Iowa City, USA 2012



Courtesy R. Kikinis

Slicer Open Community

- 80 authorized developers contributing to the source code of Slicer
- Over 700 subscribers on Slicer user and Slicer developer mailing list



Nov.2011-March.2013 Downloads



Slicer 4 download statistics

Total matching
downloads:
62948

Date range:

forever

Release type:

any

Browser type:

desktop

Update

Download location **By Country** By Filename By Month



3D Slicer in practice



Get Slicer 4.

Slicer 4 is the latest stable version of 3D Slicer, a free, comprehensive software platform for medical image analysis and visualization developed with NIH support.

3D Slicer is distributed under a permissive BSD-style open source license. It has a thriving user and developer community.

Pre-compiled binaries

	Windows	Mac OS X	Linux
stable release	64 bit 4.1.0 64 bit installer 2013-04-11 #19998 (153.8MB)	4.1.0 64 bit installer 2013-04-11 #19998 (236.9MB)	4.1.0 64 bit archive 2013-04-11 #19998 (251.5MB)
	32 bit 4.1.0 32 bit installer 2013-04-11 #19998 (153.3MB)		
nightly build	64 bit nightly 64 bit installer 2013-04-23 #19993 (180.4MB)	nightly 64 bit installer 2013-04-21 #19991 (207.4MB)	nightly 64 bit archive 2013-04-23 #19993 (162.0MB)
	32 bit nightly 32 bit installer 2013-04-23 #19993 (154.0MB)		

System requirements

Slicer requires 1GB of RAM absolute minimum, with more highly recommended. Common data sets may require 4GB or more RAM for processing. A fast graphics card or GPU that supports OpenGL is also recommended.

Slicer is built and tested on many hardware and software platforms. 3D Slicer runs on Microsoft Windows XP, Vista, and Windows 7; Mac OS X versions 10.5 (Leopard), 10.6 (Snow Leopard), and 10.7 (Lion); and a variety of Linux distributions.

- Slicer is open-source
- Slicer works on Windows, Linux, and Mac
- Slicer is distributed under a BSD-style license agreement with no restriction on use

Slicer: Behind the scenes

The screenshot shows the Slicer4 CDash dashboard with a navigation bar (Dashboard, Calendar, Previous, Current, Project) and a warning message: "WARNING: This CDash instance is running the bleeding edge svn trunk CDash code, and is updated frequently. You are changed by 1 author as of Sunday, November 27 2011 - 22:00 EST".

There are three main sections of build data:

ightly-Packages

Site	Build Name	Update			Configure			Build			Build Time
		File	Error	Warn	Error	Warn	Not Run	Fail	Pass		
stony-win7.kitware	Windows7-VS2010-32bits-QT4.7.1-PythonQt-With-Tool-Release	0	0	0	2	107	0	0	0	47 minutes ago	
stony-mac-64bits.kitware	SnowLeopard-g++4.2.1-64bits-QT4.7-PythonQt-With-Tool-Release	1	0	0	0	14	0	26	458	9 hours ago	
stony-ubuntu-64bits.kitware	Linux-g++4.4.3-64bits-QT4.7-PythonQt-With-Tool-Release	1	0	0	0	13	0	28	459	13 hours ago	
stony-win7.kitware	Windows7-VS2008-64bits-QT4.7.1-PythonQt-With-Tool-Release	0	0	0	0	1000	0	26	481	4 hours ago	
stony-win7.kitware	Windows7-VS2008-32bits-QT4.7.1-PythonQt-With-Tool-Release	1	0	0	0	1000	0	26	483	11 hours ago	

ightly

Site	Build Name	Update			Configure			Build			Test			Build Time
		File	Error	Warn	Error	Warn	Not Run	Fail	Pass	Not Run	Fail	Pass		
decube.kitware	SnowLeopard-gcc4.2.1-QT4.7.5-PythonQt-With-Tool-Release	1	0	0	27	190	0	36	301				11 hours ago	
upl.sci.utah.edu	OpenSuse-c++4.5.0-64bits-QT4.6.3-PythonQt-With-Tool-Release	0	0	0	0	15	0	304	8				11 hours ago	
s.kitware	Linux-g++4.4-QT4.6.3-PythonQt-CLI-Release	1	0	0	0	16	0	36	491				3 hours ago	
stony-ubuntu-64bits.kitware	Linux-g++4.4.3-QT4.7-PythonQt-With-Tool-Valgrind-Release	0	0	0	0	13	0	27	460				11 hours ago	
stony-ubuntu-64bits.kitware	Linux-g++4.4.3-64bits-QT4.7-PythonQt-With-Tool-Release-Coverage-Release	0	0	0	0	12	0	23	257				11 hours ago	
garmath.kitware	Linux-g++4.3.3-QT4.7-PythonQt-With-Tool-Release	0	0	0	0	13	0	20	308				12 hours ago	

ontinuous

Site	Build Name	Update			Configure			Build			Test			Build Time
		File	Error	Warn	Error	Warn	Not Run	Fail	Pass	Not Run	Fail	Pass		
upl.sci.utah.edu	OpenSuse-c++4.5.0-64bits-QT4.6.3-PythonQt-With-Tool-Release	0	0	0	0	0	0	304	8				1 hour ago	

Slicer is built every night on Windows, Mac and Linux platforms

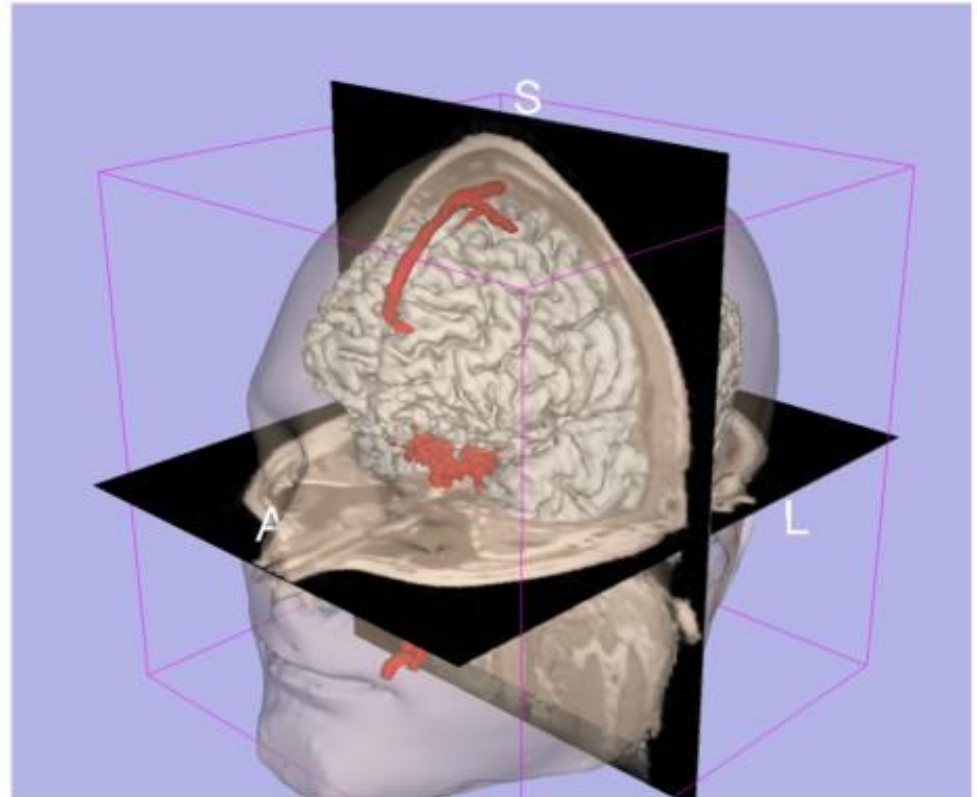
Slicer Training



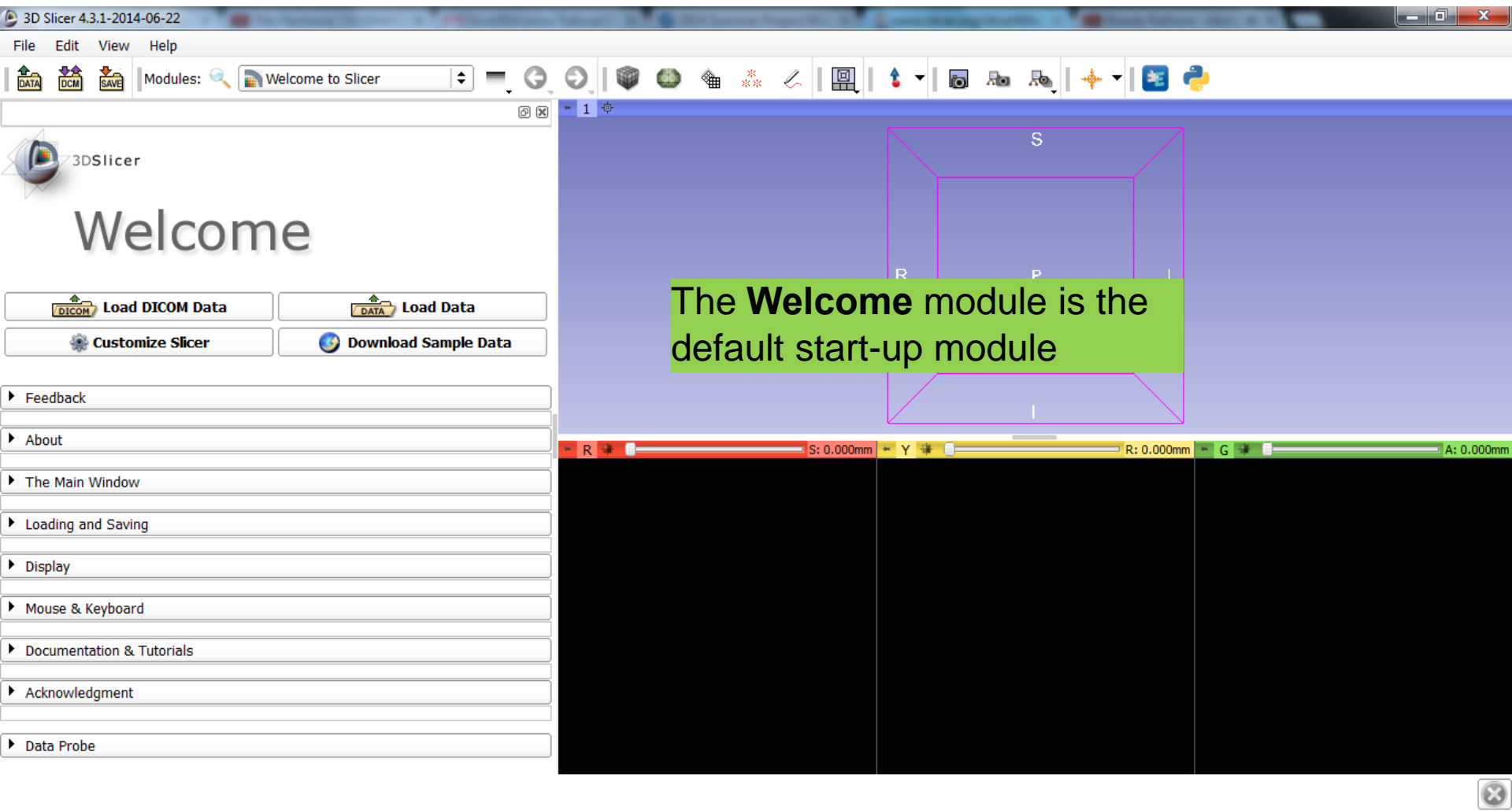
- Hands-on training workshops at national and international venues
- >2,300 clinicians, clinical researchers and scientists trained since 2005

3D Visualization of the Anatomy

Following this tutorial, you will be able to **load and visualize volumes** within Slicer4, and to **interact in 3D** with structural images and models of the anatomy.



3D Slicer Version4



3D Slicer Version4

The screenshot shows the 3D Slicer 4.3.1-2014-06-22 interface. The top menu bar includes File, Edit, View, and Help. Below it is a toolbar with icons for loading data, saving, and various viewing options. The main window displays a 'Welcome' screen with several buttons: 'Load DICOM Data', 'Load Data', 'Customize Slicer', and 'Download Sample Data'. A sidebar on the left contains a 'Feedback' section and an 'About' section. The 'About' section is expanded, showing text about the software's license and purpose. A green callout box with a red arrow pointing to the 'About' section contains the text: 'Each module of Slicer includes a series of tabs, which gives access to different functionalities' and 'Click on the arrow symbol to display the content of each tab'. The bottom of the window shows a 3D view area with coordinate axes (R, Y, G, A) and scale indicators (S: 0.000mm, R: 0.000mm, A: 0.000mm).

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Welcome to Slicer

3DSlicer

Welcome

Load DICOM Data Load Data

Customize Slicer Download Sample Data

Feedback

About

3D Slicer is a free open source software platform for medical image processing and 3D visualization of image data. This module contains some basic information and useful links to get you started using Slicer. For more information, please visit our website <http://www.slicer.org>.

3D Slicer is distributed under a BSD-style license; for details about the contribution and software license agreement, please see the [3D Slicer Software License Agreement](#). This software has been designed for research purposes only and has not been reviewed or approved by the Food and Drug Administration, or by any other agency.

The Main Window

Loading and Saving

Data Probe

Each module of Slicer includes a series of tabs, which gives access to different functionalities

Click on the arrow symbol to display the content of each tab

R S: 0.000mm Y R: 0.000mm G A: 0.000mm

3D Slicer Version4

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Welcome to Slicer

3DSlicer

Load DICOM Data Load Data

Customize Slicer Download Sample Data

Feedback

About

The Main Window

File Menu GUI Panel Data Probe

Toolbar 3D Viewer

Slice Viewers Message Bar

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.

Toolbar:

Data Probe

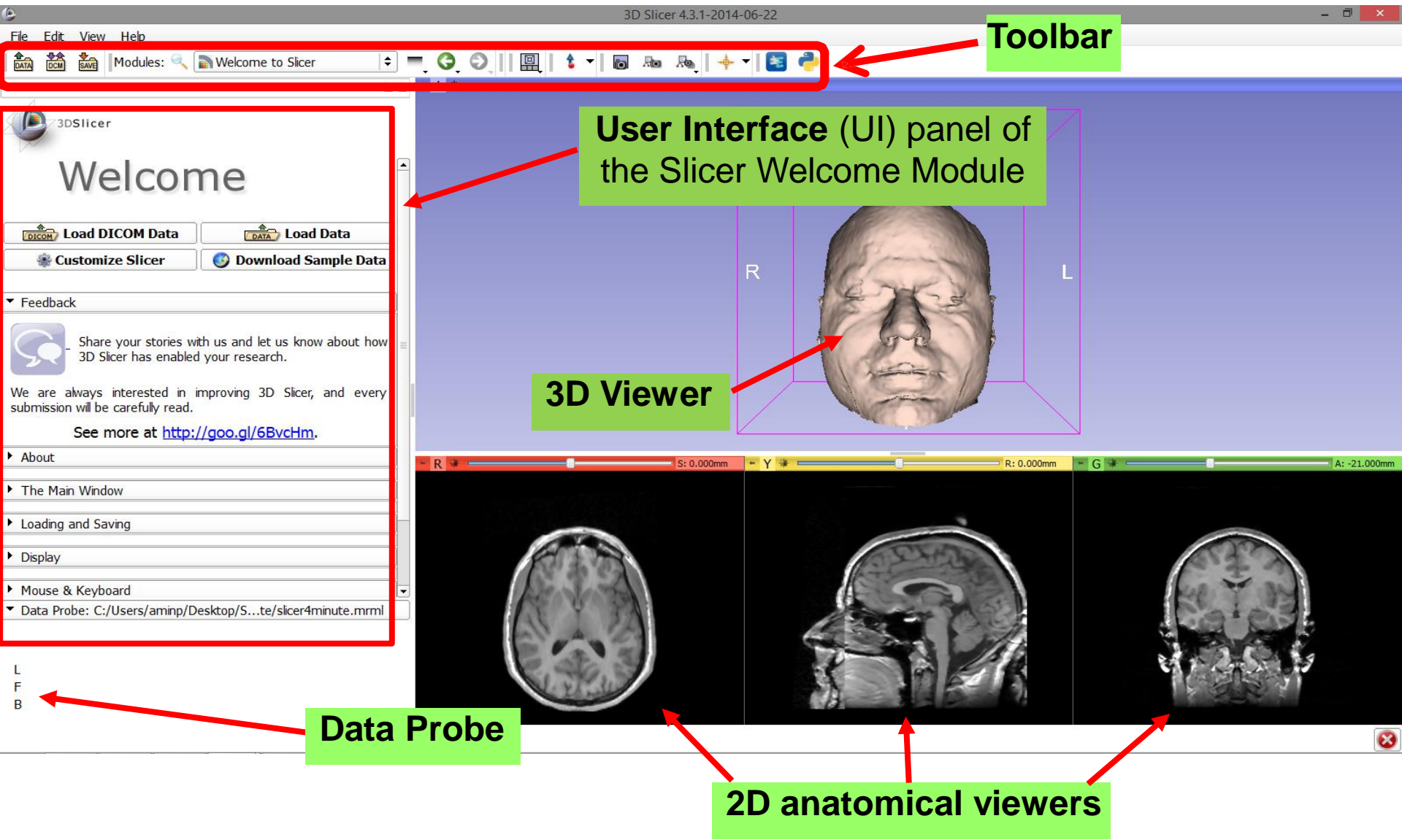
S

A: 0.000mm

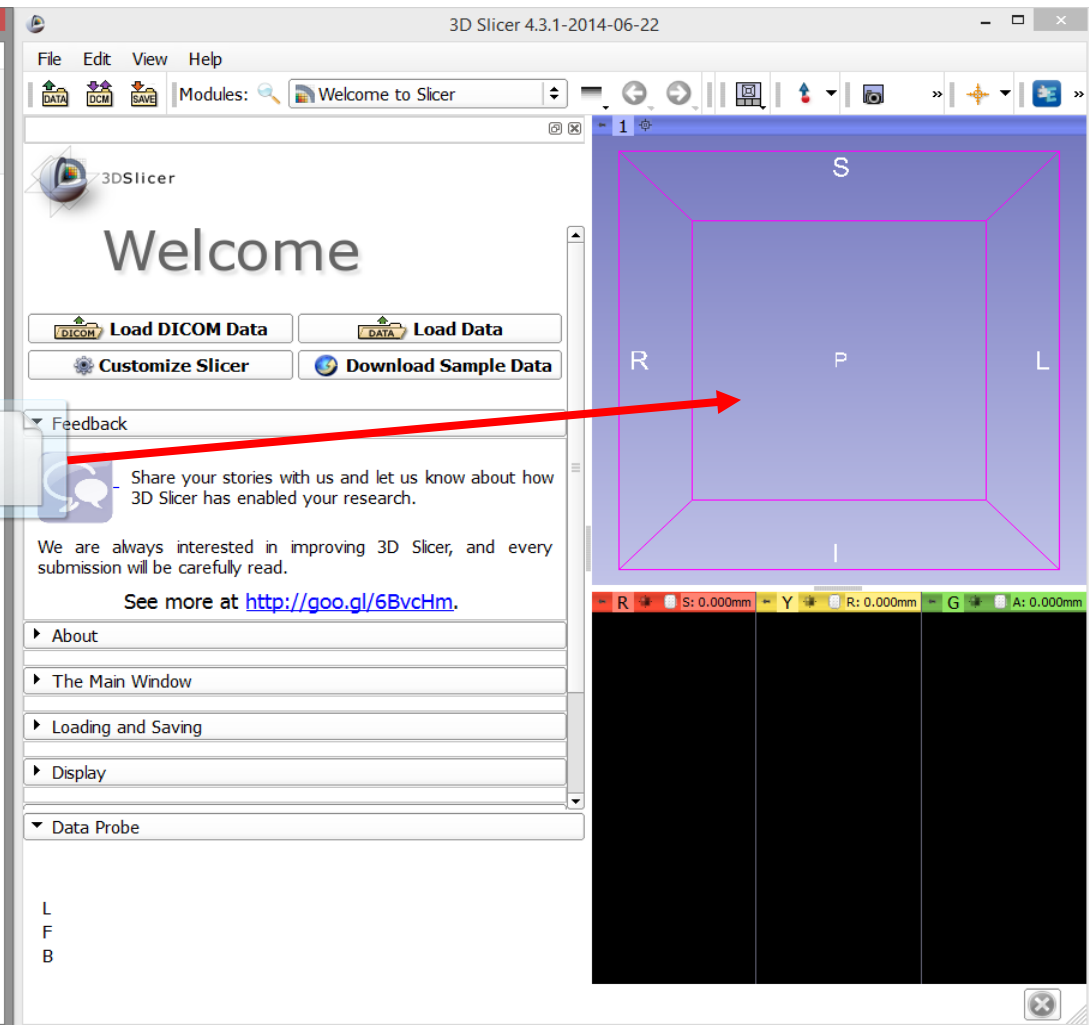
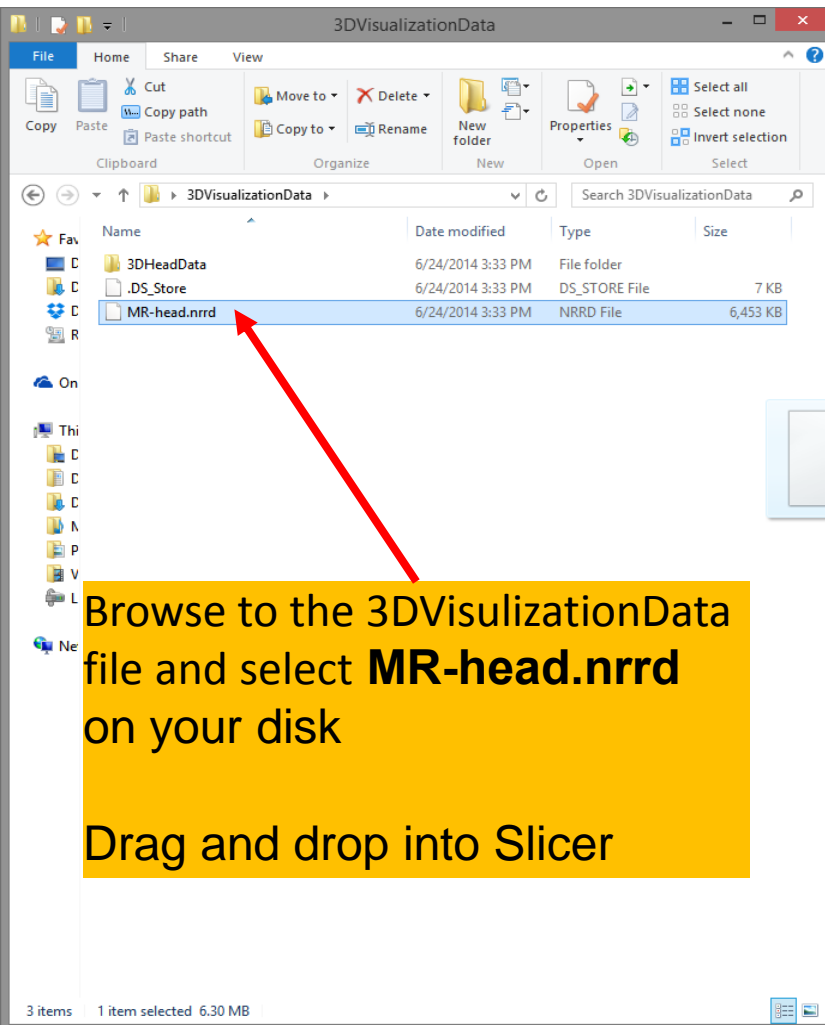
The Main Window tab contains information on the basic organization of Slicer's user interface

Scroll down to see all the contents

Slicer User Interface



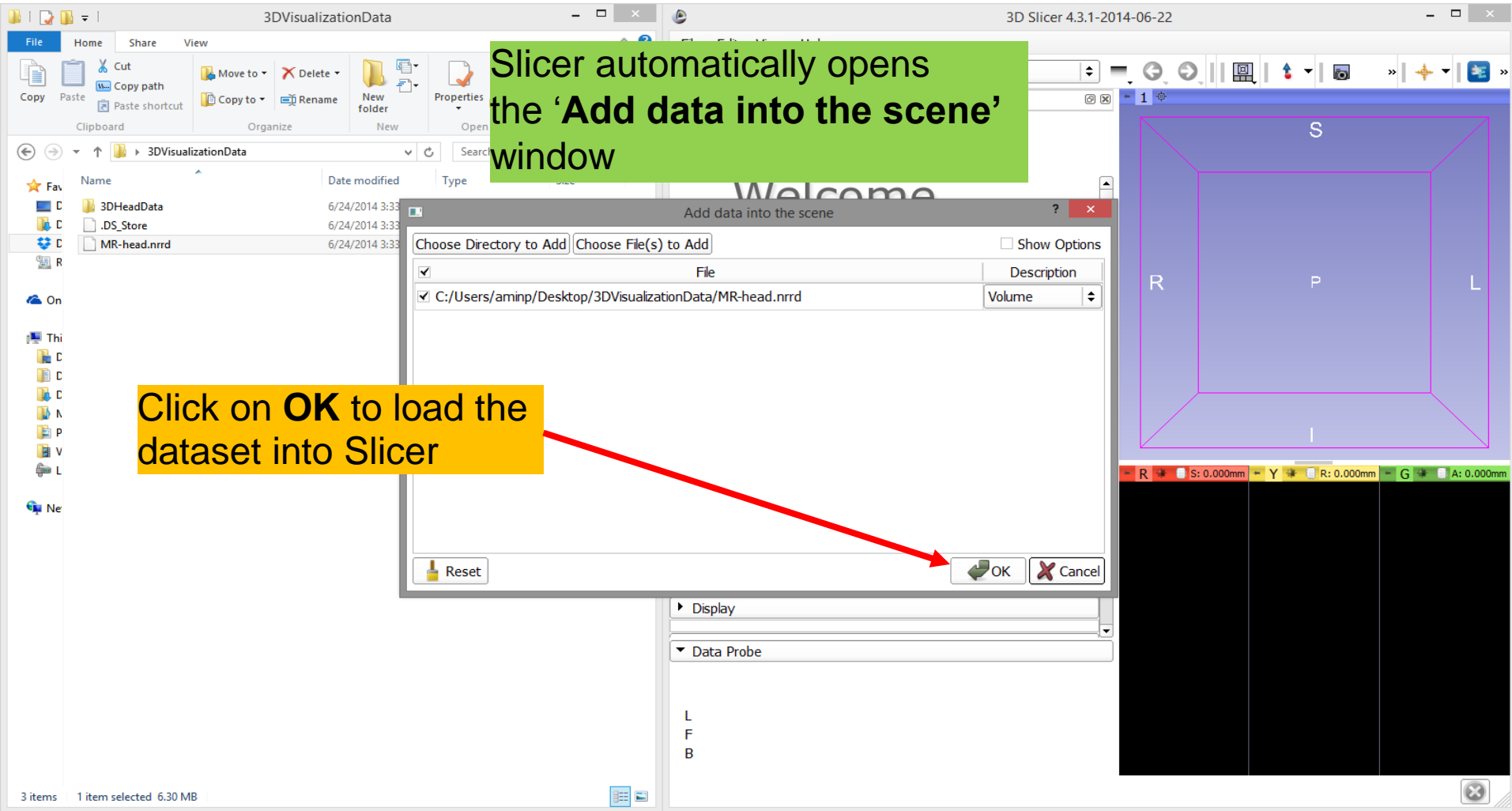
Slicer4



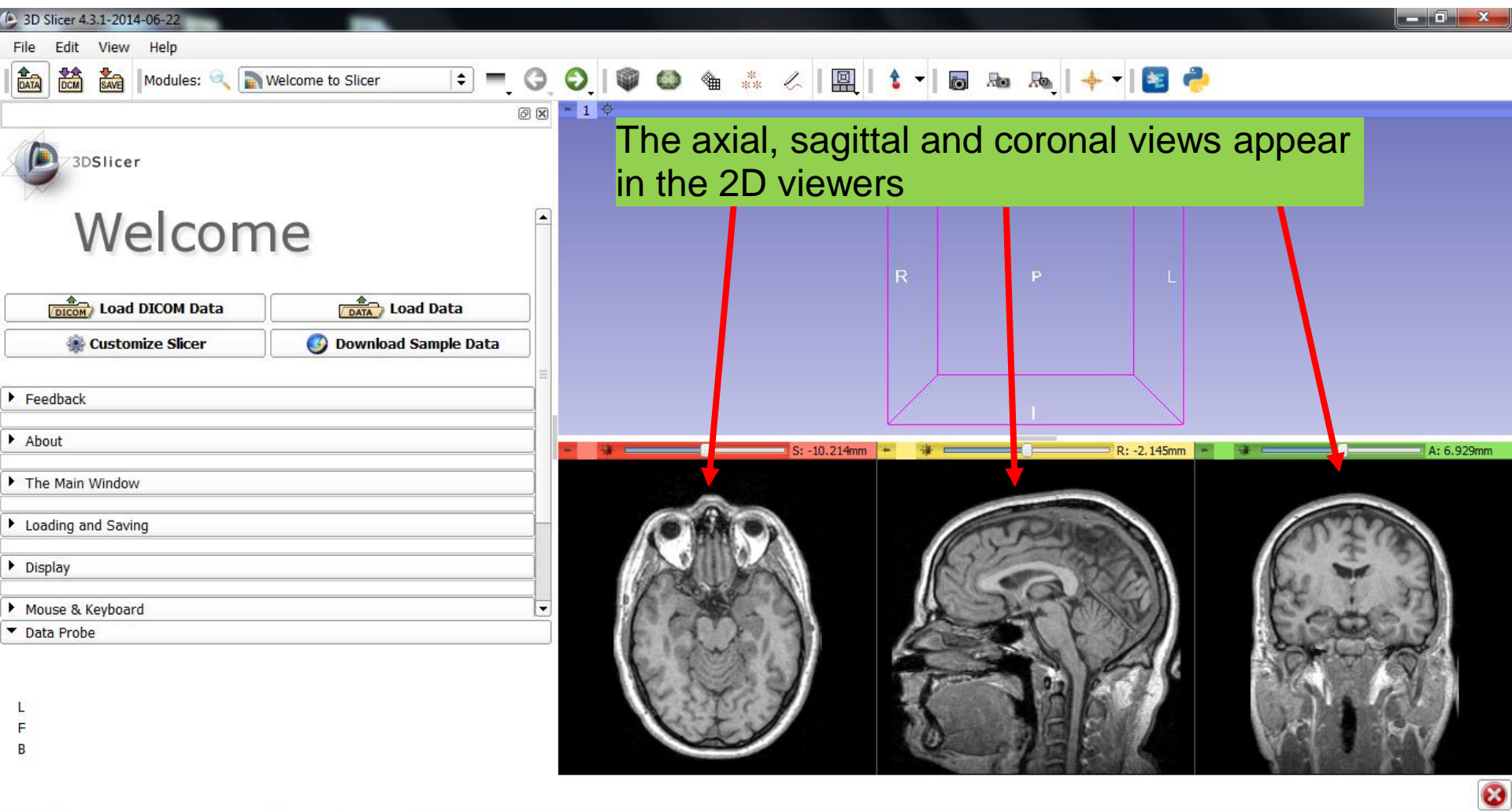
Slicer4

Slicer automatically opens the 'Add data into the scene' window

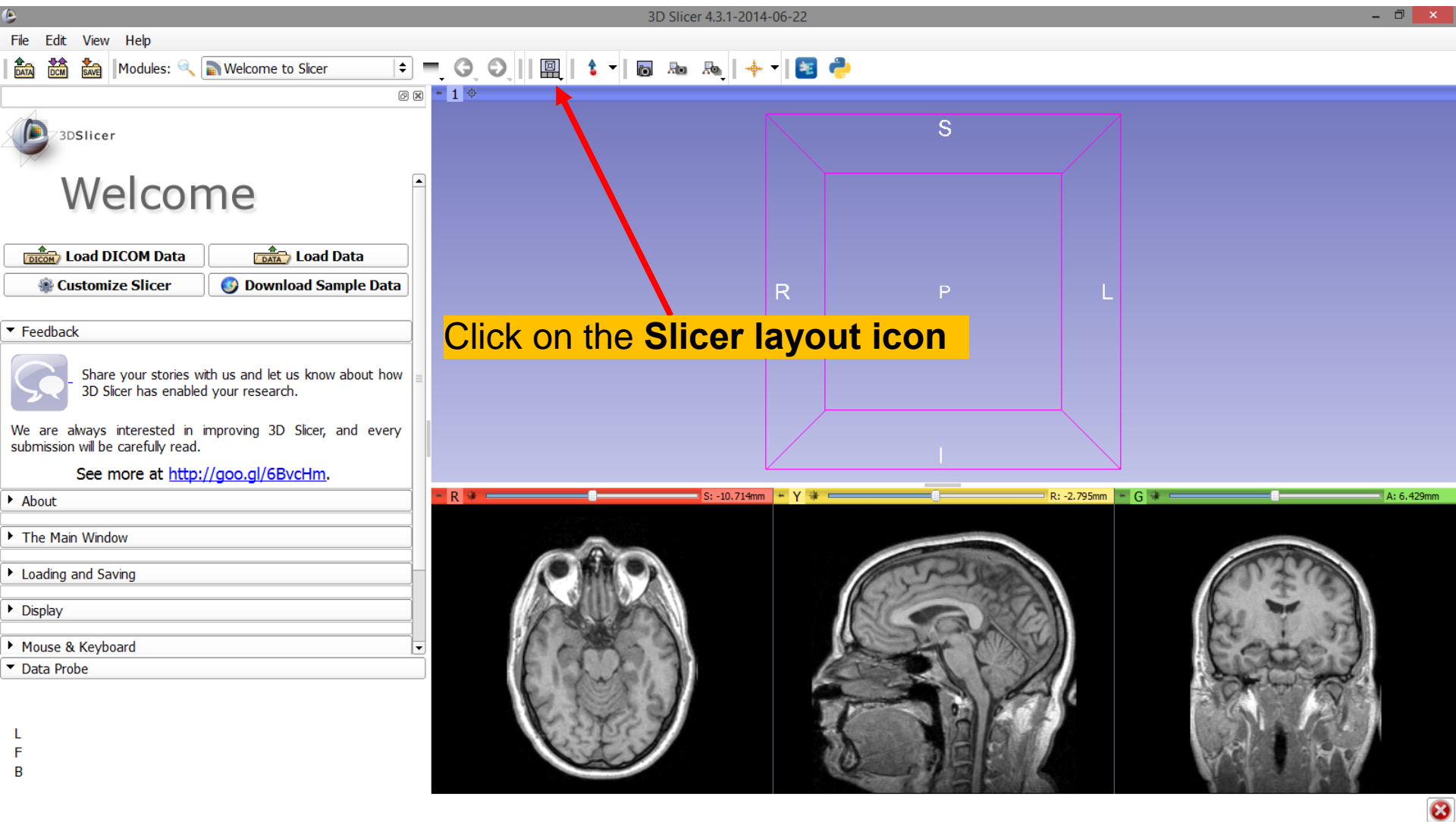
Click on **OK** to load the dataset into Slicer



Loading a volume



Loading a volume



Loading a volume

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Welcome to Slicer

3DSlicer

Welcome

Load DICOM Data Load Data

Customize Slicer Download Sample Data

Feedback

Share your stories with us and let us know about how 3D Slicer has enabled your research.

We are always interested in improving 3D Slicer, and every submission will be carefully read.

See more at <http://goo.gl/6BvcHm>.

About

The Main Window

Loading and Saving

Display

Mouse & Keyboard

Data

- Conventional
- Conventional Widescreen
- Conventional Quantitative
- Four-Up
- Four-Up Quantitative
- Dual 3D
- Triple 3D
- 3D only
- One-Up Quantitative
- Red slice only**
- Yellow slice only
- Green slice only
- Tabbed 3D
- Tabbed slice
- Compare
- Compare Widescreen
- Compare Grid
- Three over three
- Three Over Three Quantitative
- Four over four
- Two over Two
- Side by side
- Four by three slice
- Four by two slice
- Three by three slice

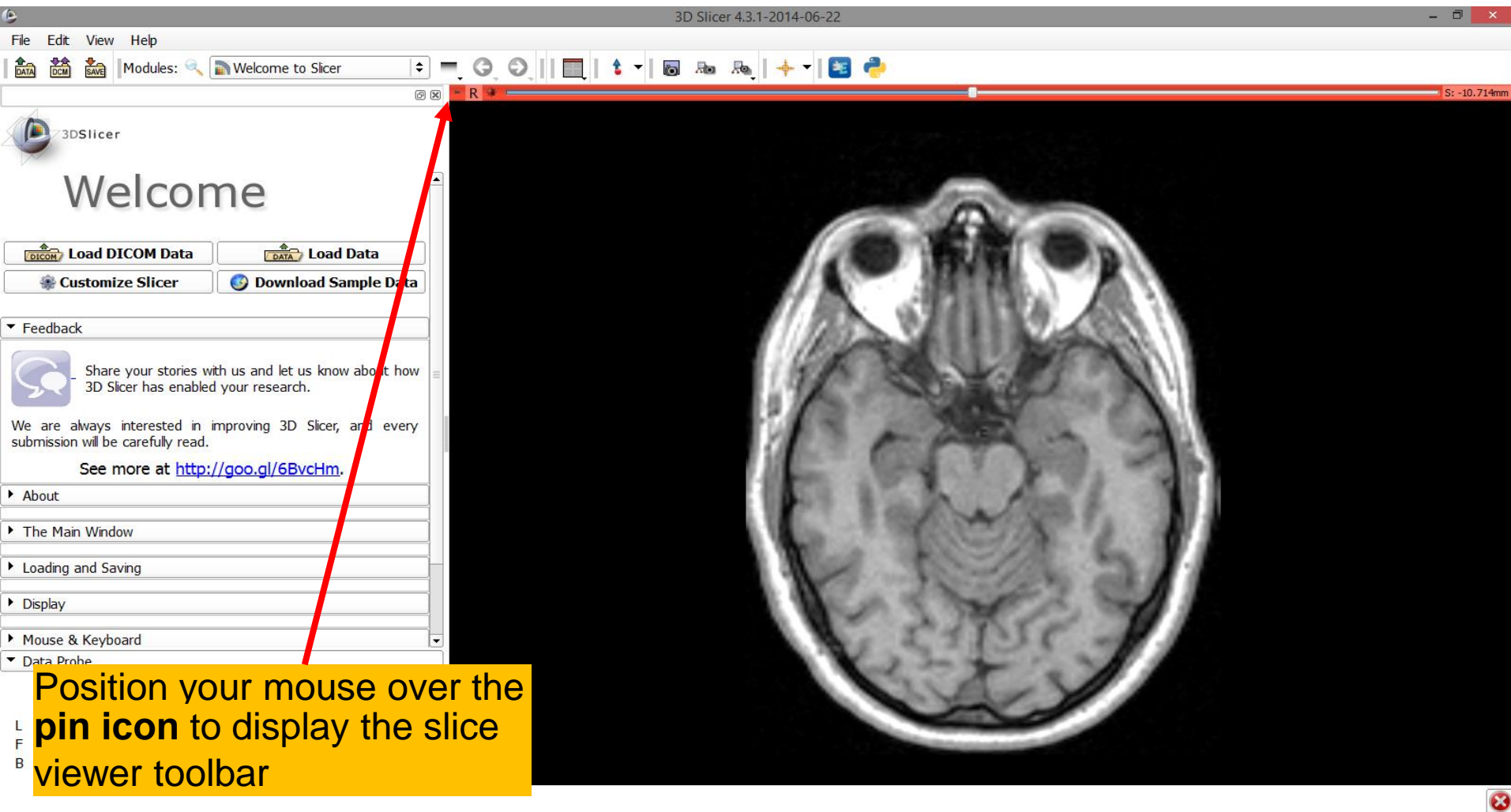
R L S I

R: -2.795mm G: A: 6.429mm

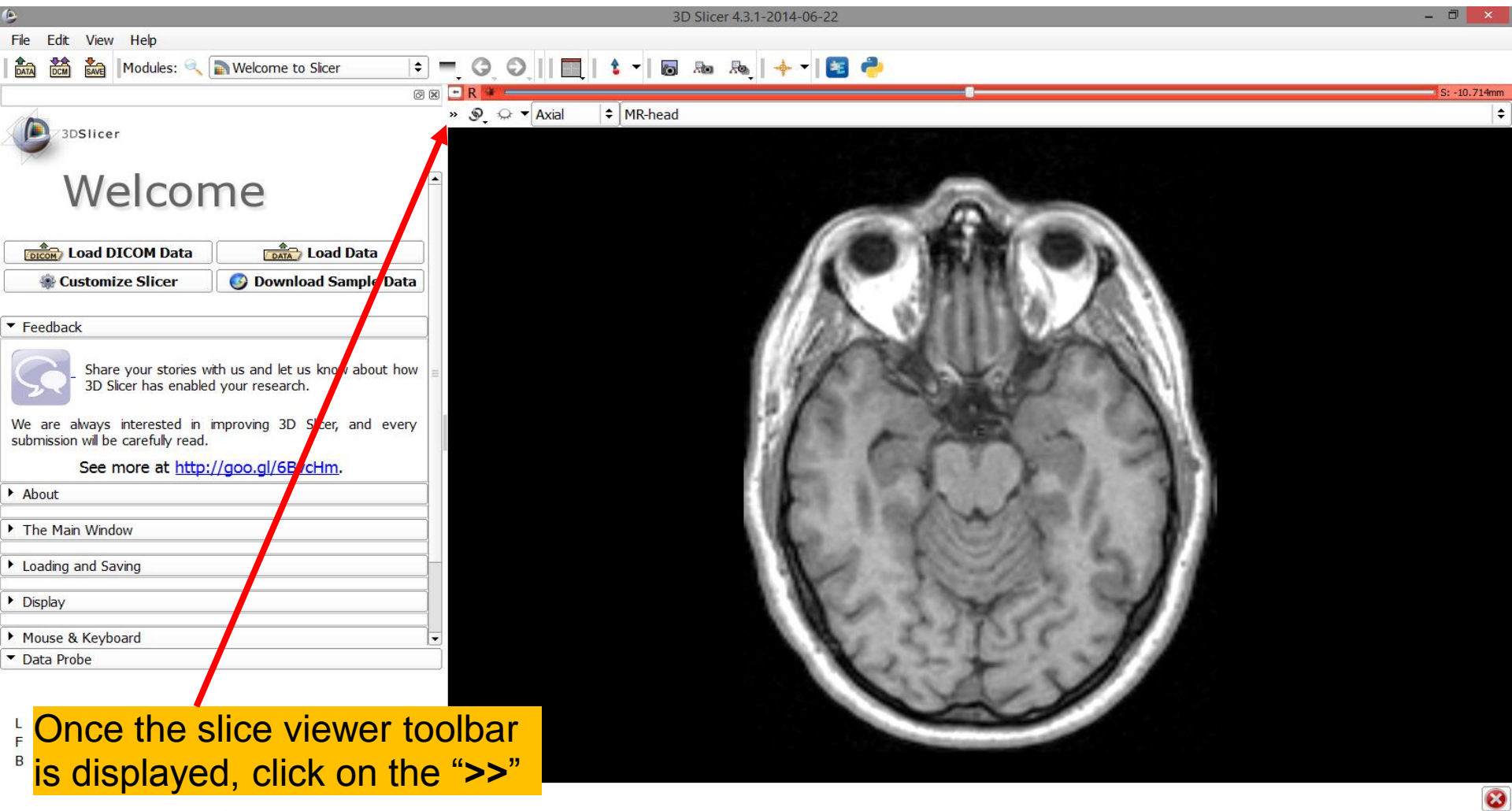
L F B

Click on the Red slice only option

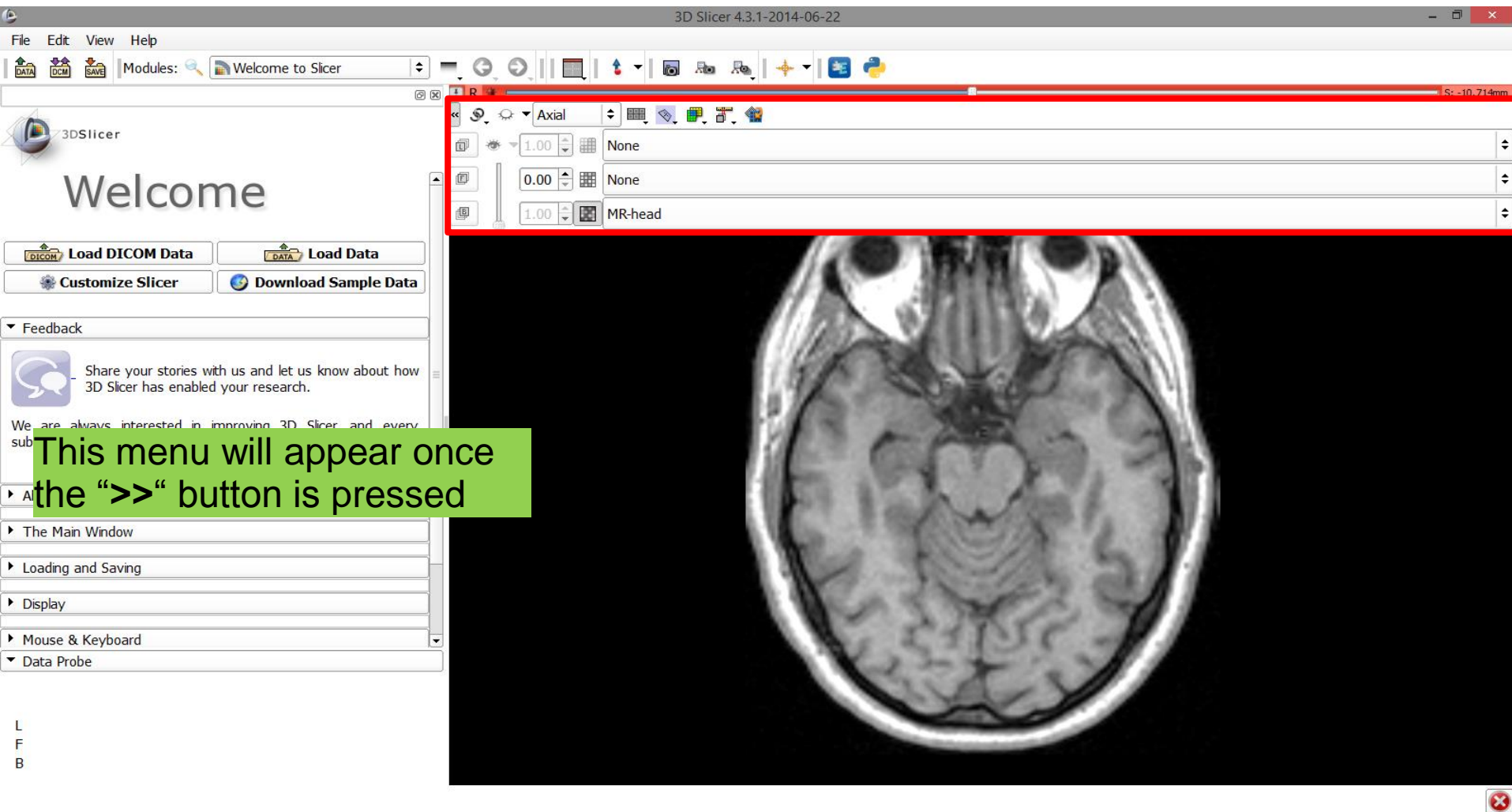
Loading a volume



Loading a volume



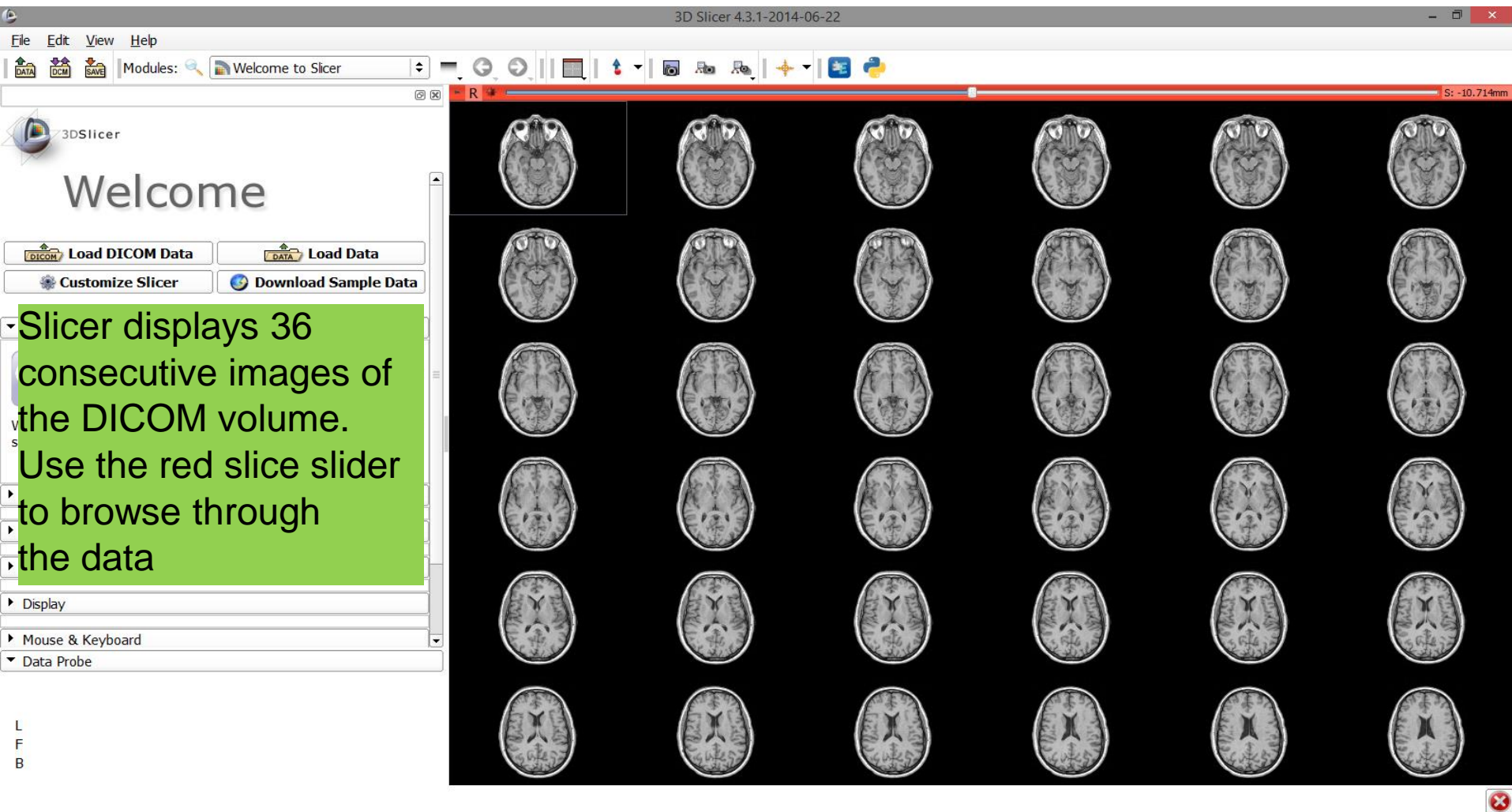
Loading a volume



Loading a volume

The screenshot shows the 3D Slicer interface. The title bar reads "3D Slicer 4.3.1-2014-06-22". The menu bar includes "File", "Edit", "View", and "Help". The toolbar contains icons for "DATA", "DCM", "SAVE", and "Modules". The main window displays a "Welcome" message and a "Lightbox" menu. The "Lightbox" menu is open, showing options: "1x1 view", "1x2 view", "1x3 view", "1x4 view", "1x6 view", "1x8 view", "2x2 view", "3x3 view", "6x6 view" (highlighted), and "Custom". A red arrow points from a yellow callout box to the "6x6 view" option. The callout box contains the text: "Click on the **Lightbox** menu and choose the option **“6x6 view”**". The main window displays an axial MRI brain scan.

Loading a volume



Loading a volume

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Welcome to Slicer

3DSlicer

Welcome

Load DICOM Data Load Data

Customize Slicer Download Sample Data

Feedback

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About

The Main Window

Loading and Saving

Display

Mouse & Keyboard

Data Probe

Conventional

- Conventional Widescreen
- Conventional Quantitative
- Four-Up
- Four-Up Quantitative
- Dual 3D
- Triple 3D
- 3D only
- One-Up Quantitative
- Red slice only
- Yellow slice only
- Green slice only
- Tabbed 3D
- Tabbed slice
- Compare
- Compare Widescreen
- Compare Grid
- Three over three
- Three Over Three Quantitative
- Four over four
- Two over Two
- Side by side
- Four by three slice
- Four by two slice
- Three by three slice

Click on the Slicer layout icon and select **Conventional**

L
F
B

S: -10.714mm

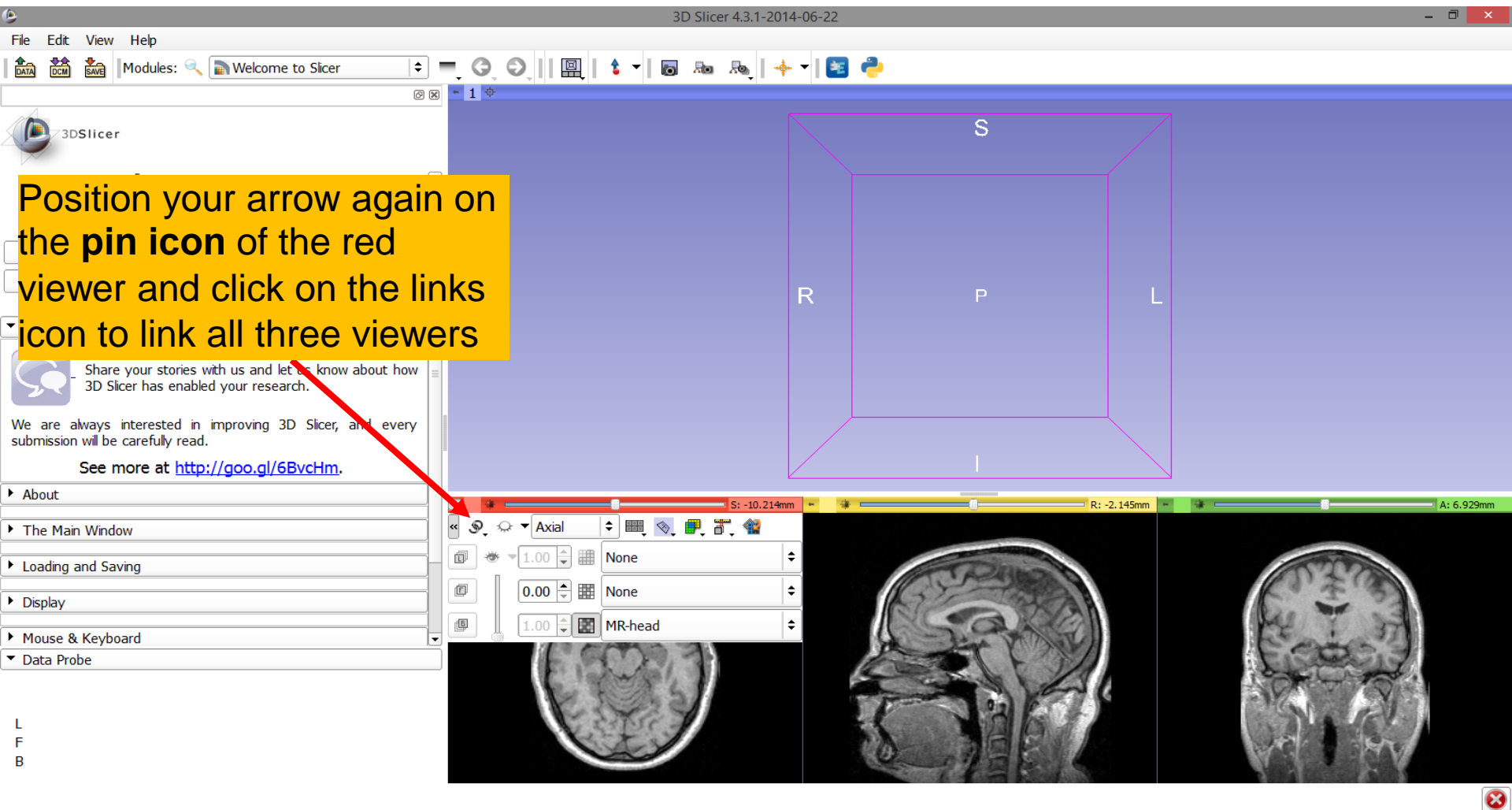
Loading a volume

The screenshot shows the 3D Slicer interface. The main window displays a 3D view of a brain volume with a purple wireframe box labeled with 'S' (Superior), 'I' (Inferior), 'R' (Right), and 'L' (Left). The 'Lightbox' menu is open, showing a list of view configurations. The '1x1 view' option is selected, indicated by a red arrow. A yellow text box with a red arrow pointing to the '1x1 view' option contains the following text:

Position your arrow again on the **pin icon** of the red viewer, select the **Lightbox** menu and change it back to "1x1 view"

The interface also shows a sidebar with a 'Data Probe' section and a 'Display' section. The 'Display' section is expanded, showing a list of view configurations. The '1x1 view' option is selected. The 'Lightbox' menu is also open, showing a list of view configurations. The '1x1 view' option is selected. The 'Lightbox' menu is also open, showing a list of view configurations. The '1x1 view' option is selected.

Loading a volume



Loading a volume

Once the icons are linked, click on the **eye icon** to display all 3 anatomical slices in the 3D viewer

See more at <http://goo.gl/6BvcHm>.

3D Slicer 4.3.1-2014-06-22

File Edit View Help

DATA DCM SAVE Modules: Welcome to Slicer

3DSlicer

Welcome

Once the icons are linked, click on the **eye icon** to display all 3 anatomical slices in the 3D viewer

See more at <http://goo.gl/6BvcHm>.

About

The Main Window

Loading and Saving

Display

Mouse & Keyboard

Data Probe

L
F
B

3D Slicer 4.3.1-2014-06-22

S: -10.714mm Y R: -2.795mm G A: 6.429mm

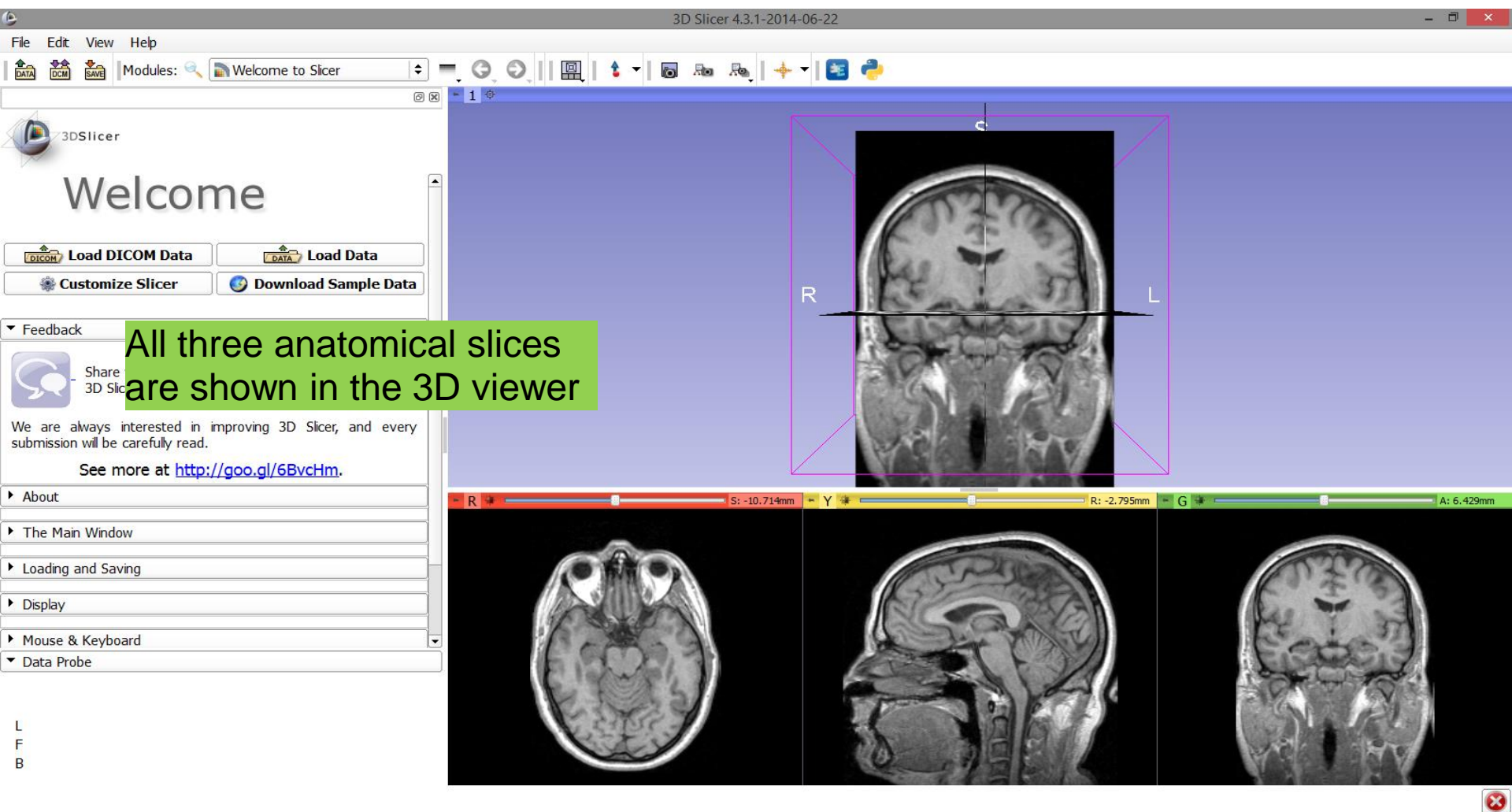
Axial

1.00 None

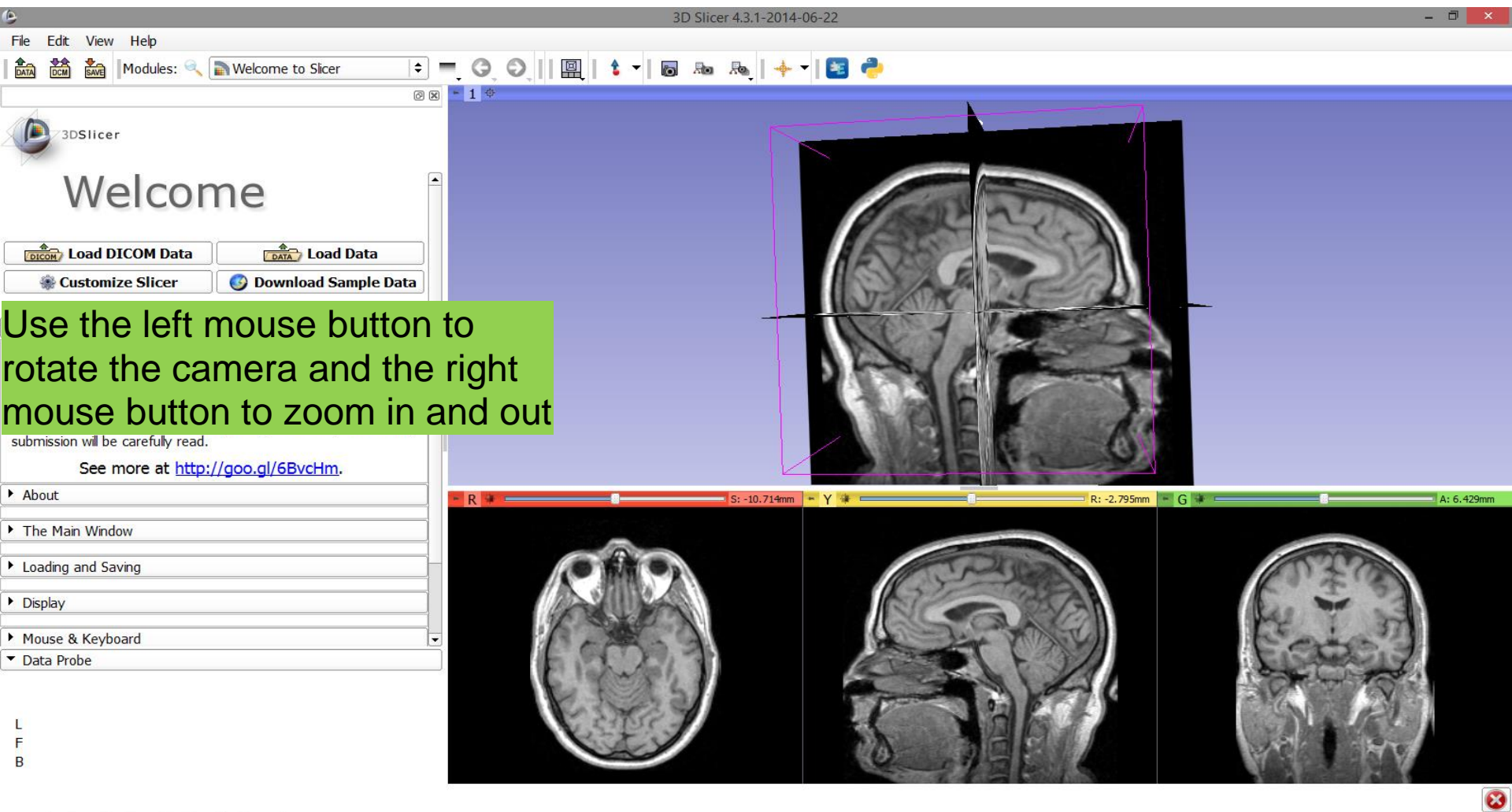
0.00 None

1.00 MR-head

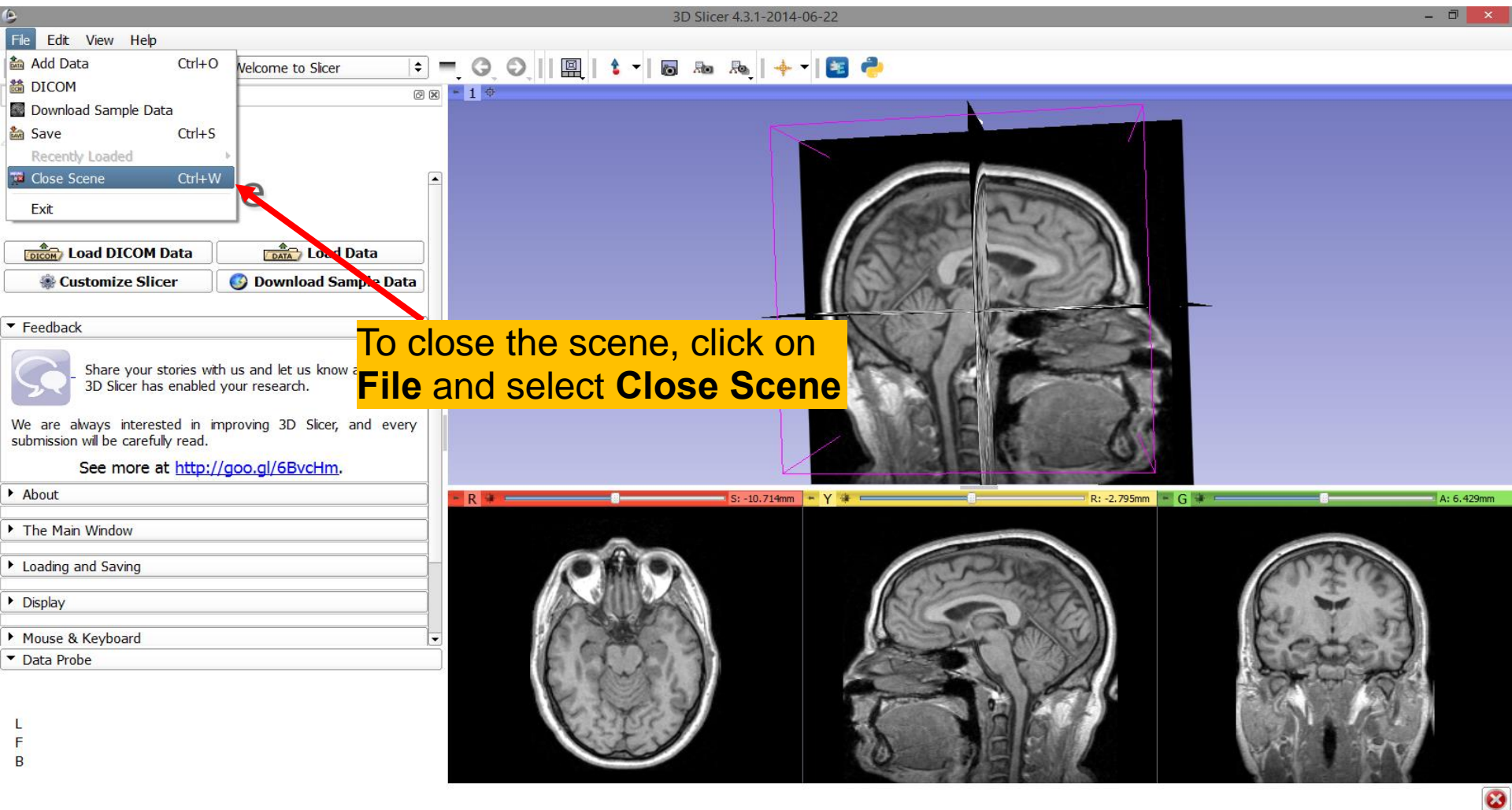
Loading a volume



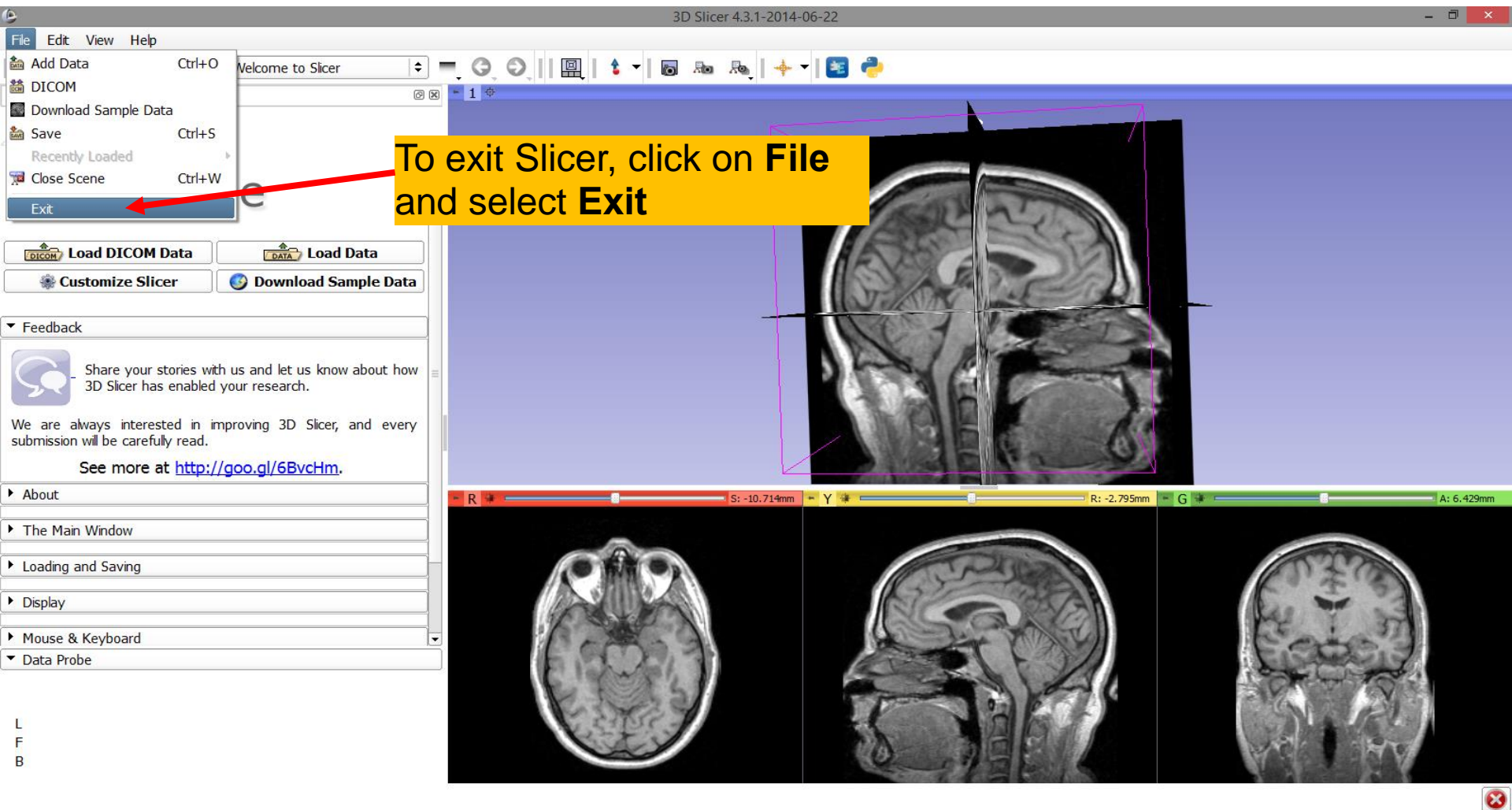
Loading a volume



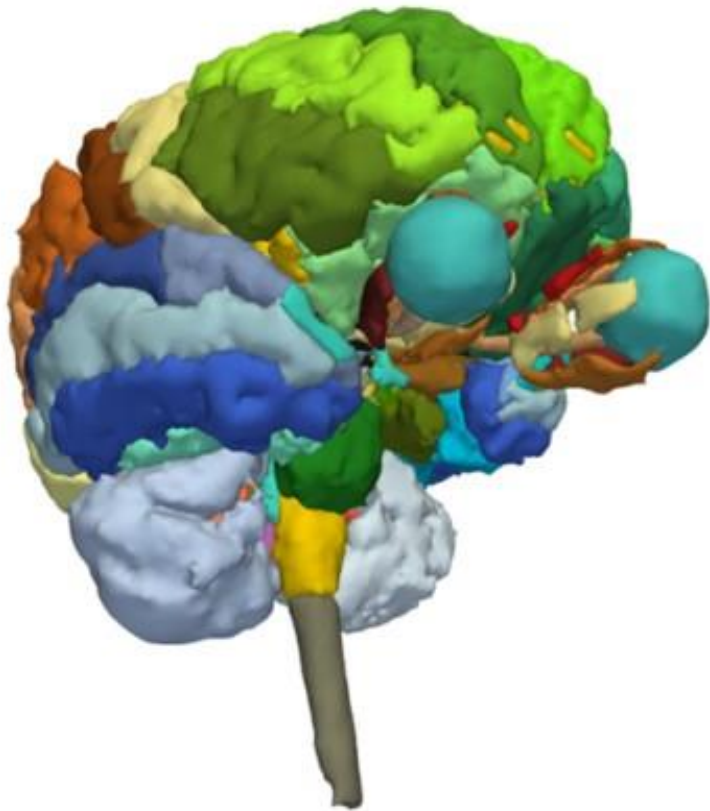
Close the scene



Exit Slicer



Part 2



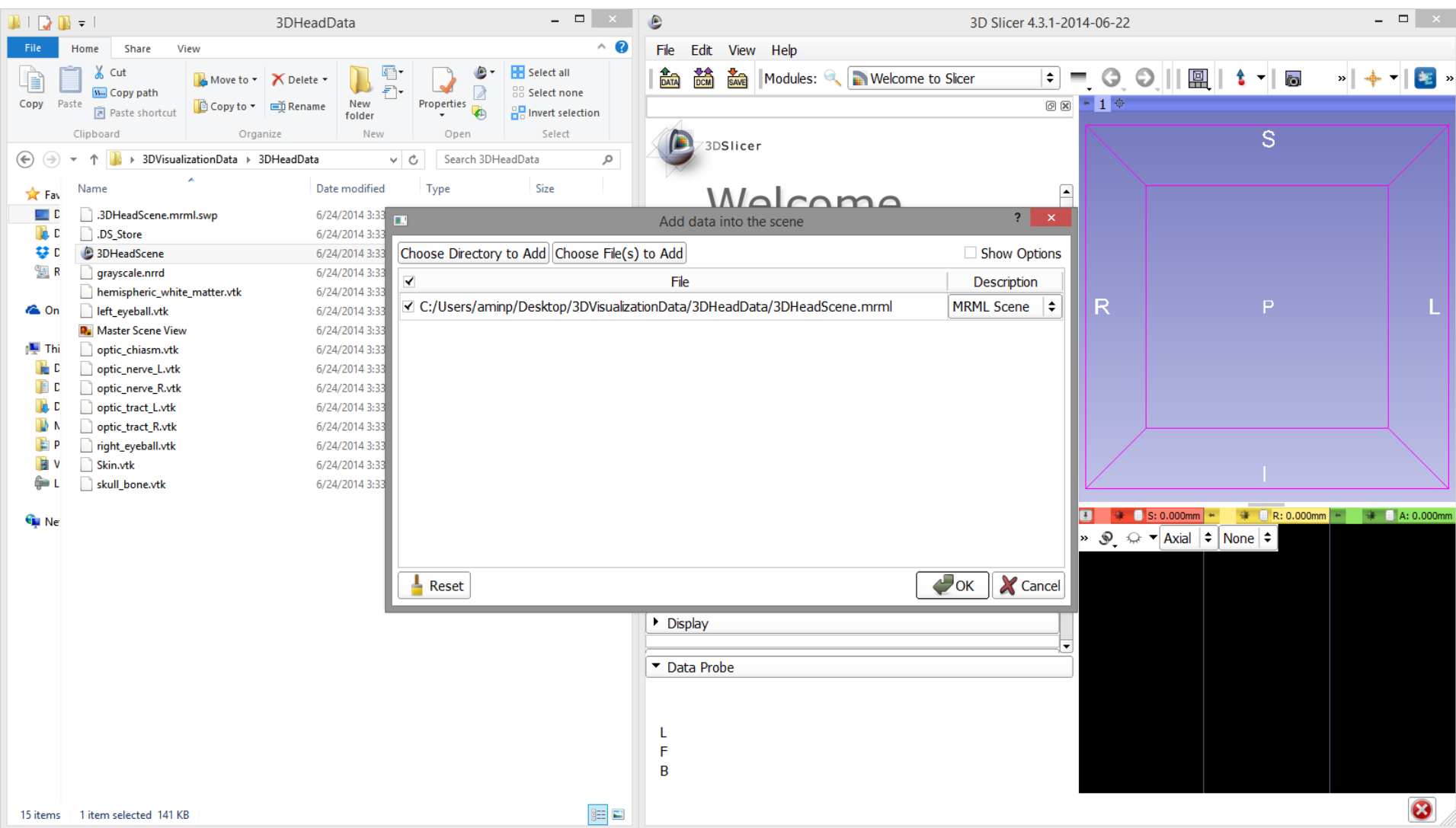
3D Visualization of Surface Models of the Brain

Loading a Scene

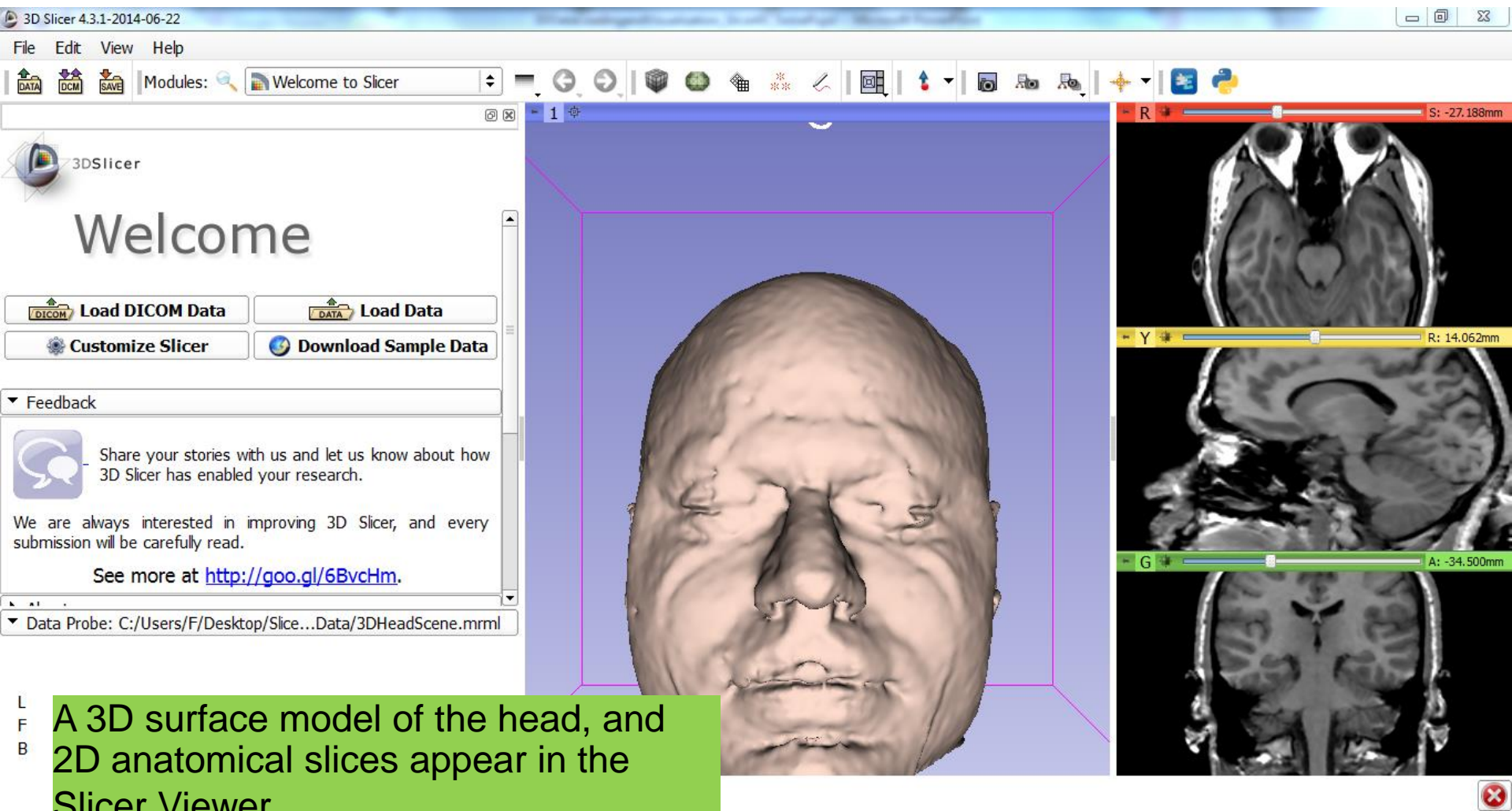
The image shows two windows side-by-side. On the left is a Windows File Explorer window titled '3DHeadData' showing a list of files. The file '3DHeadScene.mrml' is selected. On the right is the 3D Slicer software interface, version 4.3.1-2014-06-22, showing a 'Welcome' screen with buttons for 'Load DICOM Data', 'Load Data', 'Customize Slicer', and 'Download Sample Data'. A red arrow points from the selected file in the File Explorer to the 'Load Data' button. A yellow text box at the bottom left of the File Explorer window contains the text: 'Drag and drop the file '3DHeadScene.mrml' into Slicer'.

Name	Date modified	Type	Size
.3DHeadScene.mrml.swp	6/24/2014 3:33 PM	SWP File	164 KB
.DS_Store	6/24/2014 3:33 PM	DS_STORE File	7 KB
3DHeadScene	6/24/2014 3:33 PM	Slicer supported file	142 KB
grayscale.nrrd	6/24/2014 3:33 PM	NRRD File	20,353 KB
hemispheric_white_matter.vtk	6/24/2014 3:33 PM	VTK File	6,270 KB
left_eyeball.vtk	6/24/2014 3:33 PM	VTK File	56 KB
Master Scene View	6/24/2014 3:33 PM	PNG image	604 KB
optic_chiasm.vtk	6/24/2014 3:33 PM	VTK File	14 KB
optic_nerve_L.vtk	6/24/2014 3:33 PM	VTK File	28 KB
optic_nerve_R.vtk	6/24/2014 3:33 PM	VTK File	29 KB
optic_tract_L.vtk	6/24/2014 3:33 PM	VTK File	18 KB
optic_tract_R.vtk	6/24/2014 3:33 PM	VTK File	16 KB
right_eyeball.vtk	6/24/2014 3:33 PM	VTK File	52 KB
Skin.vtk	6/24/2014 3:33 PM	VTK File	3,393 KB
skull_bone.vtk	6/24/2014 3:33 PM	VTK File	4,712 KB

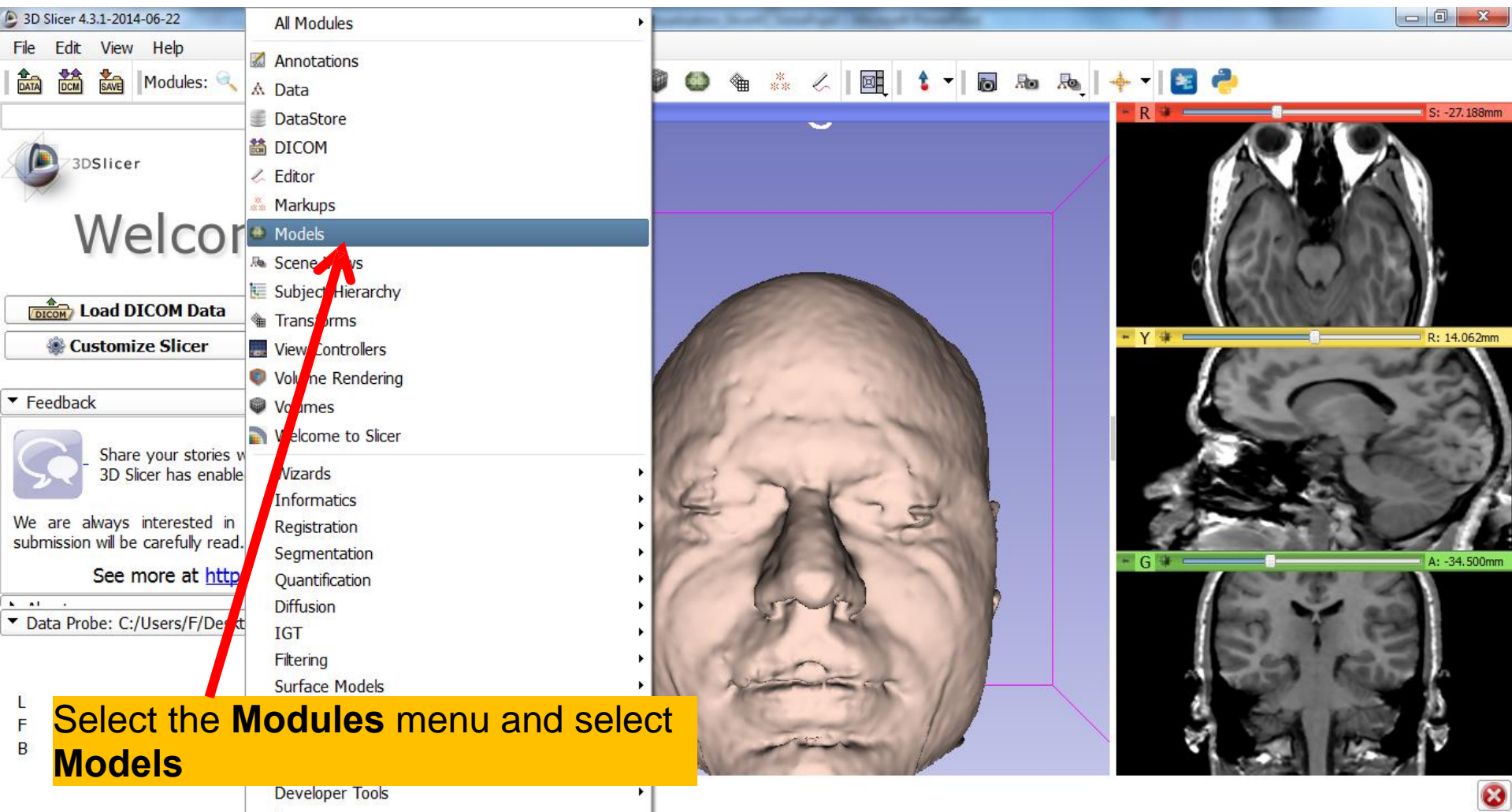
Loading a Scene



Loading the Slicer Scene

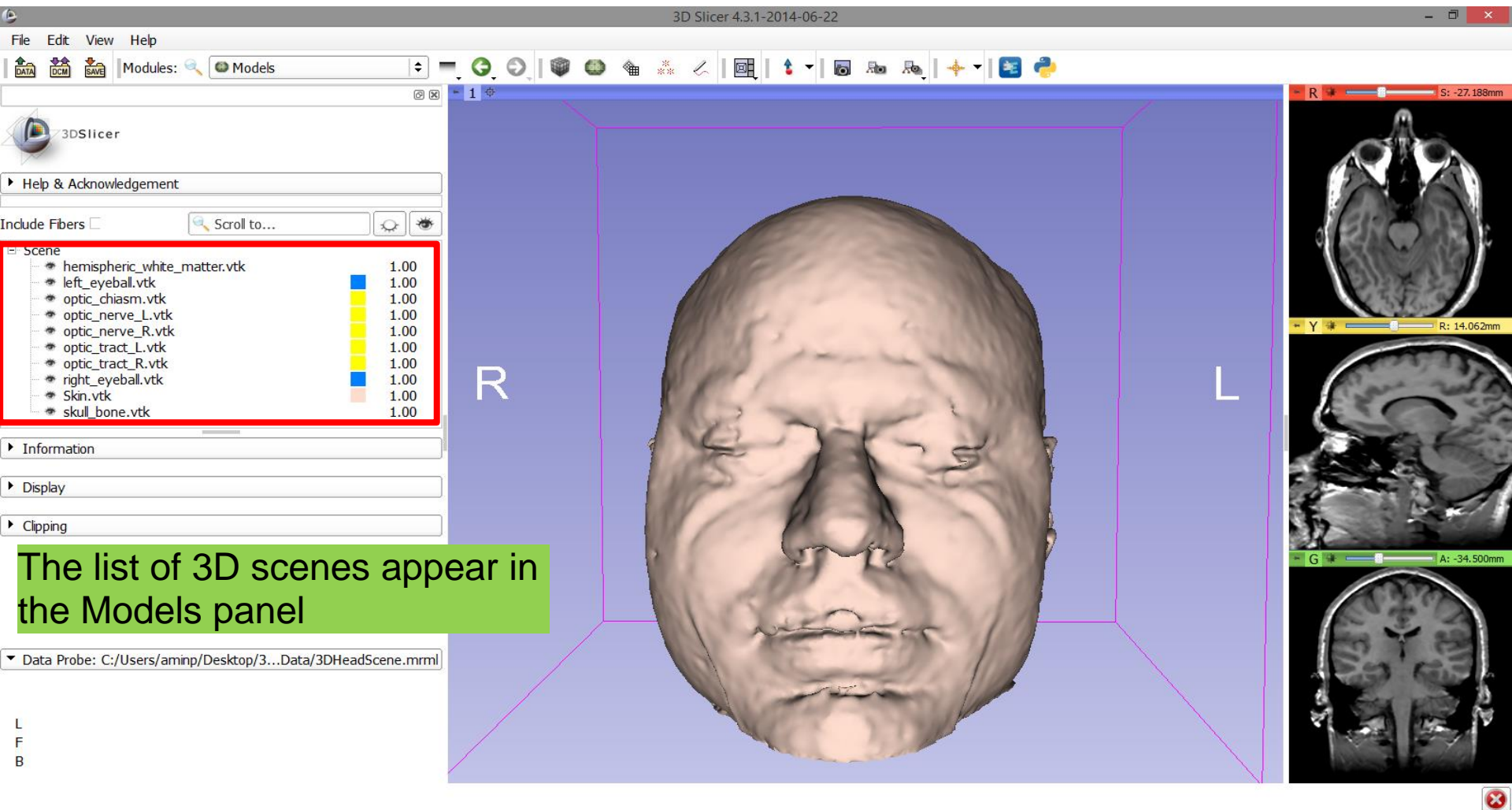


Loading the Slicer Scene

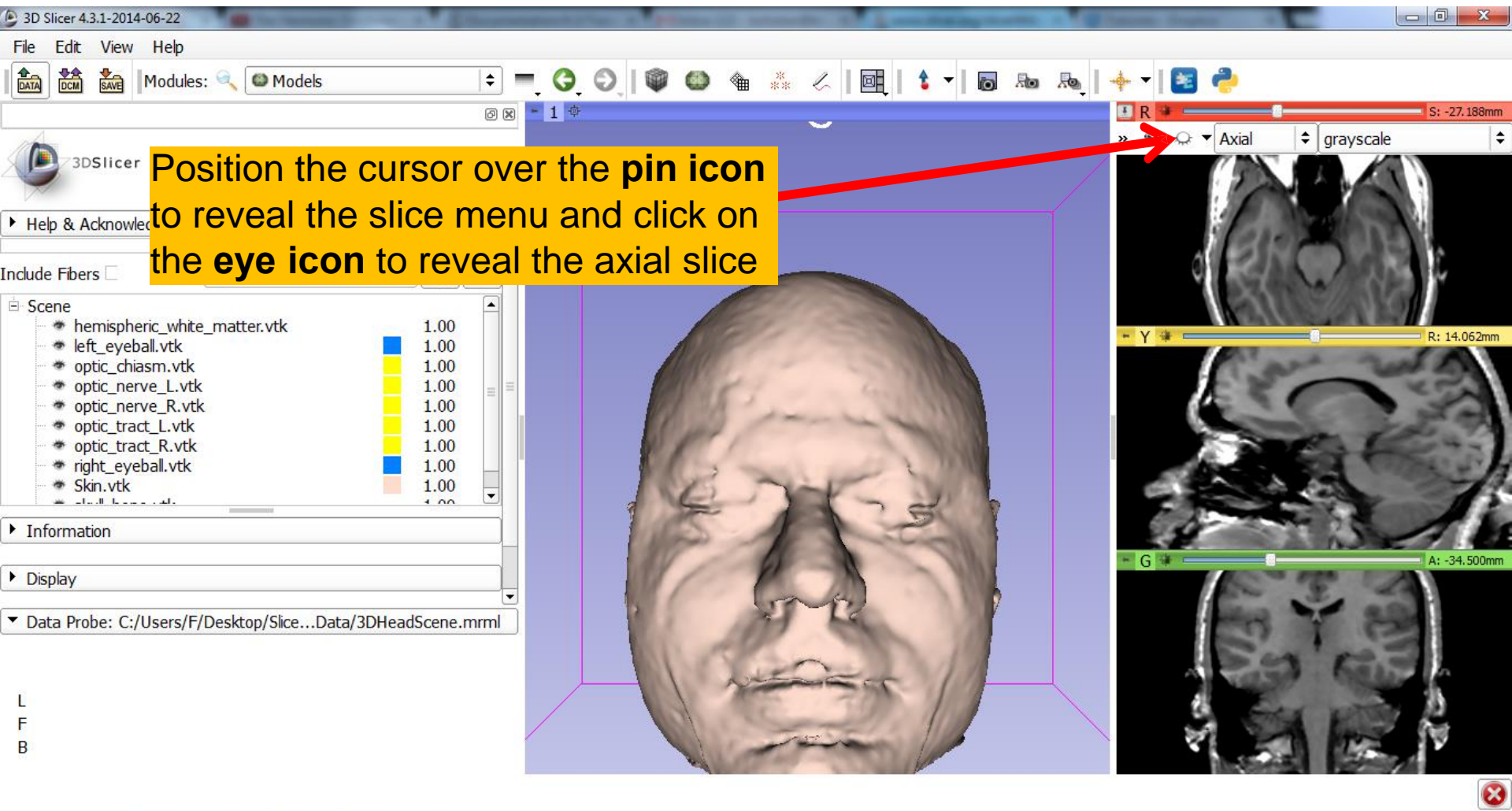


The screenshot displays the 3D Slicer 4.3.1 interface. On the left, the 'Modules' menu is open, with a red arrow pointing to the 'Models' option. The main window shows a 3D model of a human face. On the right, there are three orthogonal views (axial, sagittal, and coronal) of a brain MRI scan. A yellow box at the bottom left contains the text: 'Select the **Modules** menu and select **Models**'. The interface includes a menu bar (File, Edit, View, Help), a toolbar, and a sidebar with various tool icons.

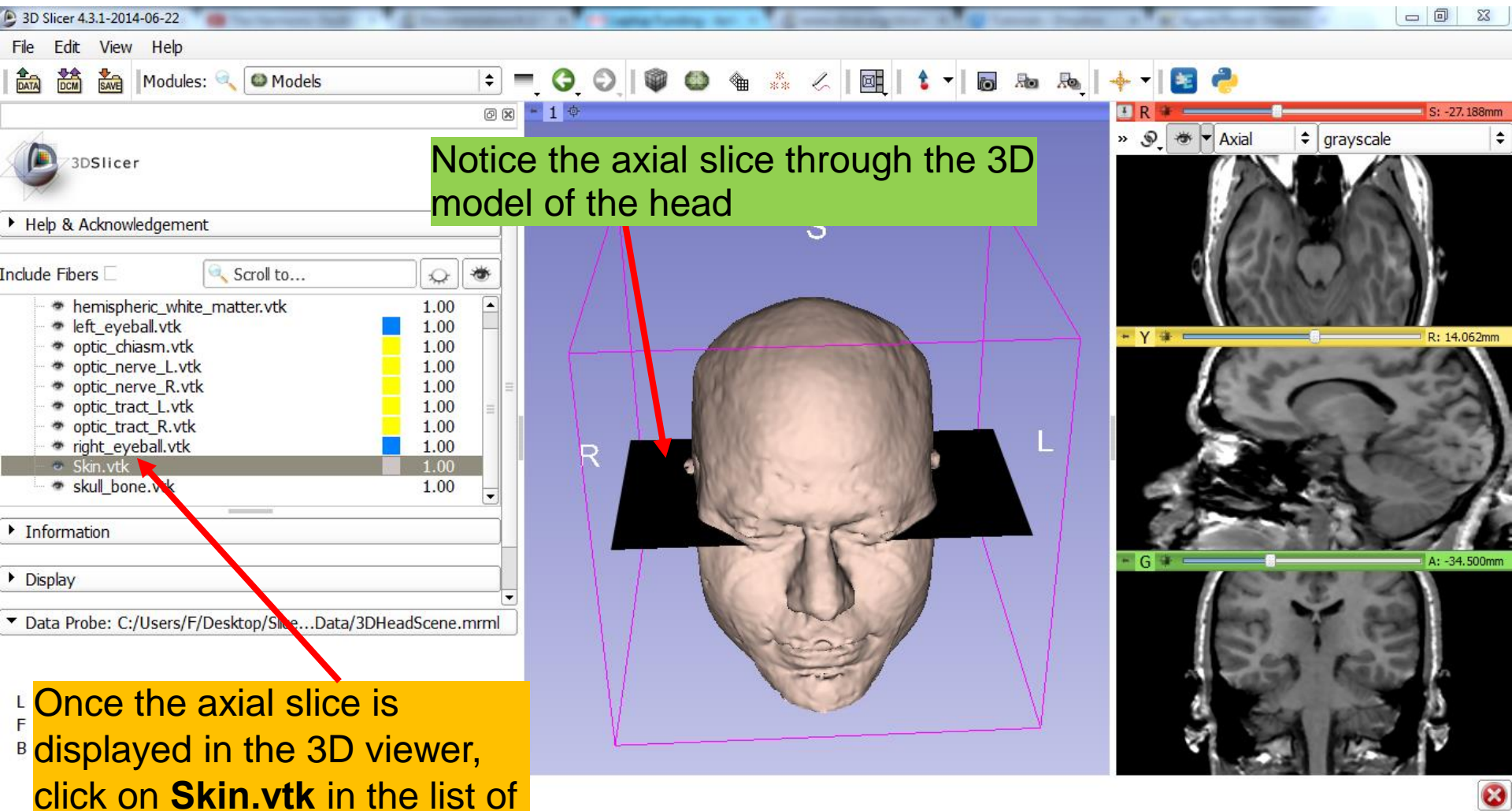
Models Module



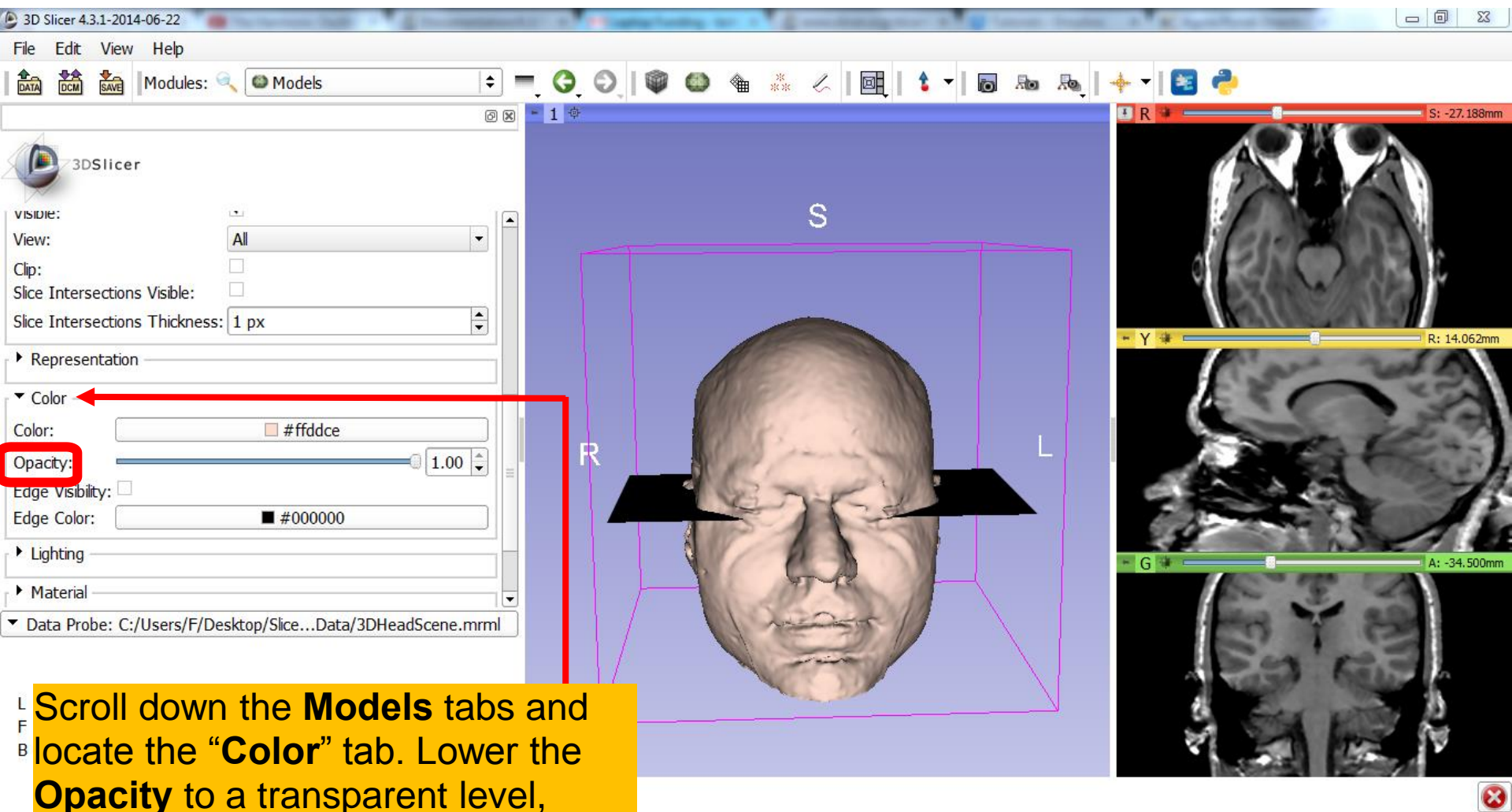
3D Visualization



3D Visualization



3D Visualization



Scroll down the **Models** tabs and locate the “**Color**” tab. Lower the **Opacity** to a transparent level, around 0.30

3D Visualization

3D Slicer 4.3.1-2014-06-22

File Edit View Help

DATA DCU SAVE Modules: Models

3DSlicer

- optic_tract_R.vtk 1.00
- right_eyeball.vtk 1.00
- Skull.vtk 0.30
- skull_bone.vtk 1.00

Information

Display

Visibility

Visible:

View: All

Clip:

Slice Intersections Visible:

Slice Intersections Thickness: 1 px

Representation

Color

Color: #ffddce

Opacity: 0.30

Edge Visibility:

Edge Color: #000000

Lighting

Data Probe: C:/Users/aminp/Desktop/3...Data/3DHeadScene.mrml

R L

Notice the skin has become almost fully transparent

L
F
B

3D Visualization

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Models

3DSlicer

Include Fibers Scroll to...

File Name	Value
hemispheric_white_matter.vtk	1.00
left_eyeball.vtk	1.00
optic_chiasm.vtk	1.00
optic_nerve_L.vtk	1.00
optic_nerve_R.vtk	1.00
optic_tract_L.vtk	1.00
optic_tract_R.vtk	1.00
right_eyeball.vtk	1.00
Skin.vtk	0.30
skull_bone.vtk	1.00

Information

Display

Visibility

Data Probe: C:/Users/F/Desktop/Slice...Data/3DHeadScene.mrml

S

R L

Y R: 14.062mm

G A: -34.500mm

L
F
B

Scroll back up to the 3D scenes menu and select **skull_bone.vtk**

3D Visualization

3D Slicer 4.3.1-2014-06-22

File Edit View Help

DATA DCMI SAVE Modules: Models

3DSlicer

- optic_tract_R.vtk 1.00
- right_eyeball.vtk 1.00
- Skin.vtk 0.30
- skull_bone.vtk 1.00

Information

Display

Visibility

Visible:

View: All

Clip:

Slice Intersections Visible:

Slice Intersections Thickness: 1 px

Representation

Color

Color: #ffffff

Opacity: 1.00

Edge Visibility:

Edge Color: #000000

Lighting

Data

Turn off its visibility by unchecking the **Visibility** option and notice the bone disappearing from the 3D view of the head

R L

R S: -27.188mm

Y R: 14.062mm

G A: -34.500mm

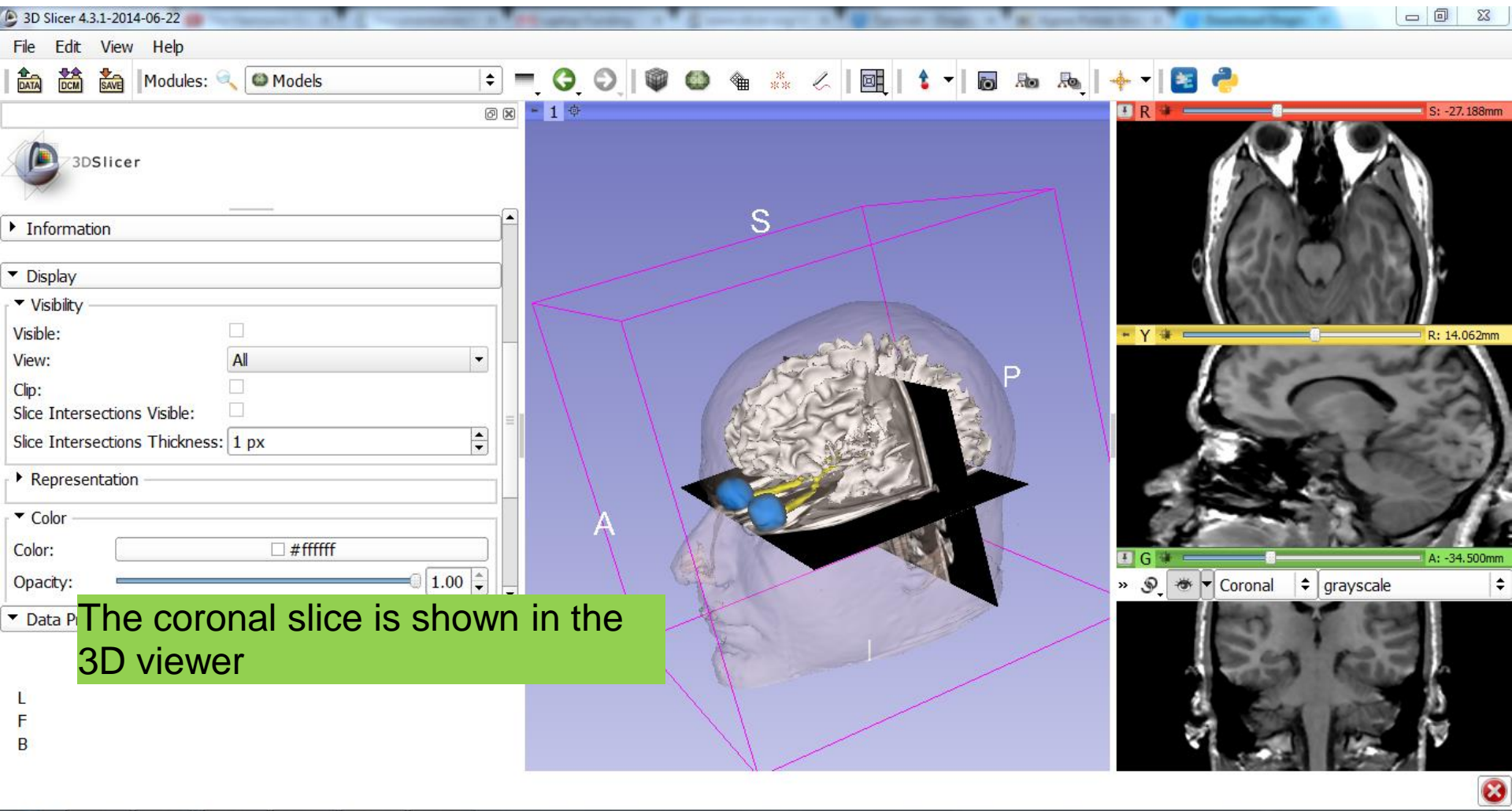
L F B

3D Visualization

The screenshot displays the 3D Slicer interface. The main 3D view shows a semi-transparent head model with a 3D brain reconstruction inside. A purple wireframe box is overlaid on the head. The 3D view is labeled with 'S' at the top, 'R' on the left, and 'L' on the right. A horizontal slice is visible through the brain. The right side of the interface shows three 2D slice views: a coronal slice (top), a sagittal slice (middle), and an axial slice (bottom). The coronal slice view has a red arrow pointing to a pin icon in its toolbar. The toolbar also shows a sun icon and the text 'Coronal' and 'grayscale'. The left sidebar contains the 'Display' panel with 'Visibility' and 'Representation' sections. The 'Data Probe' at the bottom left shows the file path: 'C:/Users/F/Desktop/Slice...Data/3DHeadScene.mrml'.

Position your mouse over the **pin icon** in the coronal slice view and select the **eye icon** to reveal the coronal slice in the 3D view

3D Visualization



3D Visualization

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Models

Scene

- hemispheric_white_matter.vtk
- left_eyeball.vtk
- optic_chiasm.vtk
- optic_nerve_L.vtk
- optic_nerve_R.vtk
- optic_tract_L.vtk
- optic_tract_R.vtk
- right_eyeball.vtk

Information

Display

Visibility

Visible:

View: All

Clip:

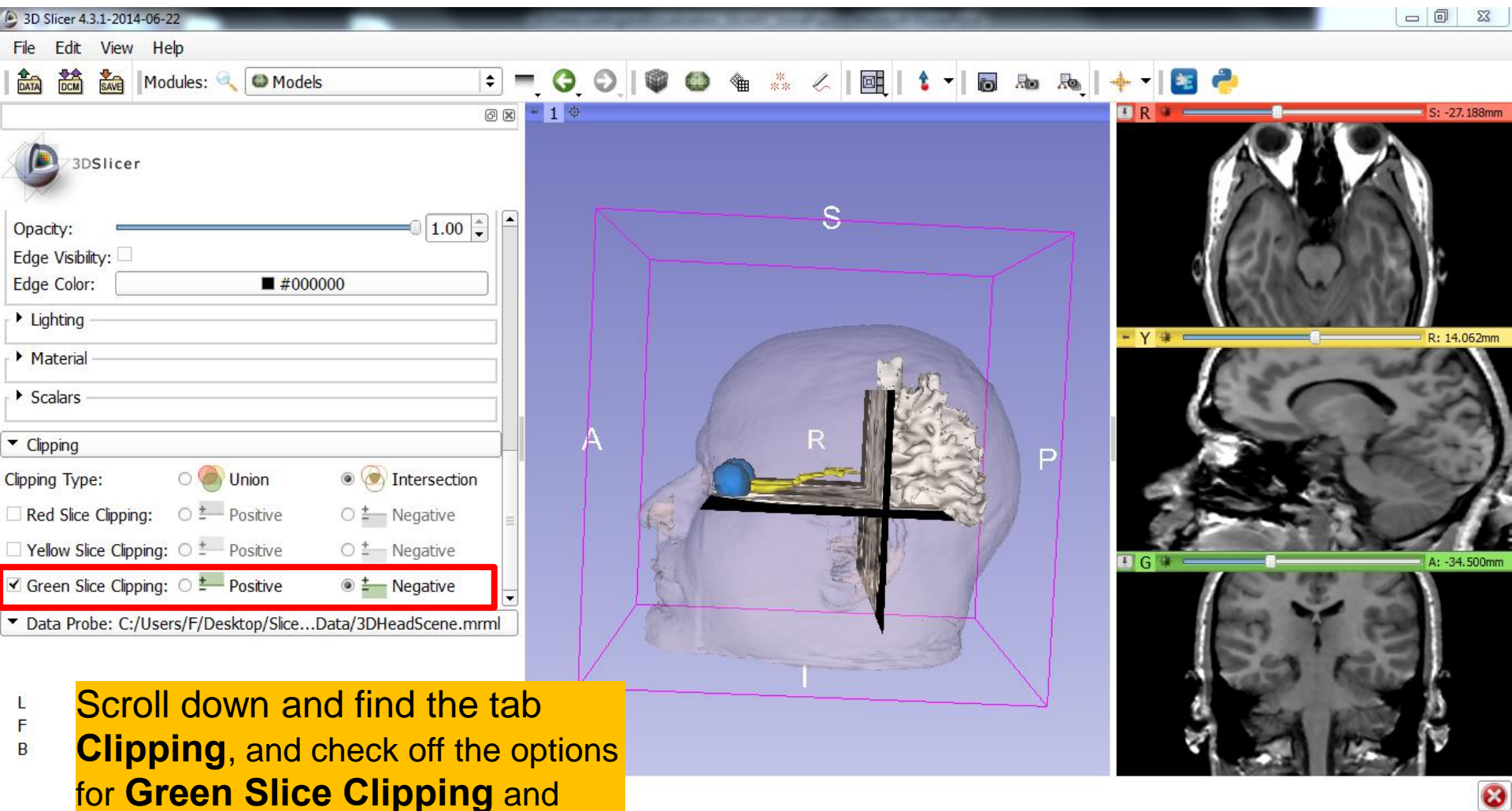
Slice Intersections Visible:

Data Probe: C:/Users/F/Desktop/Slice...Data/3DHeadScene.mrml

L
F
B

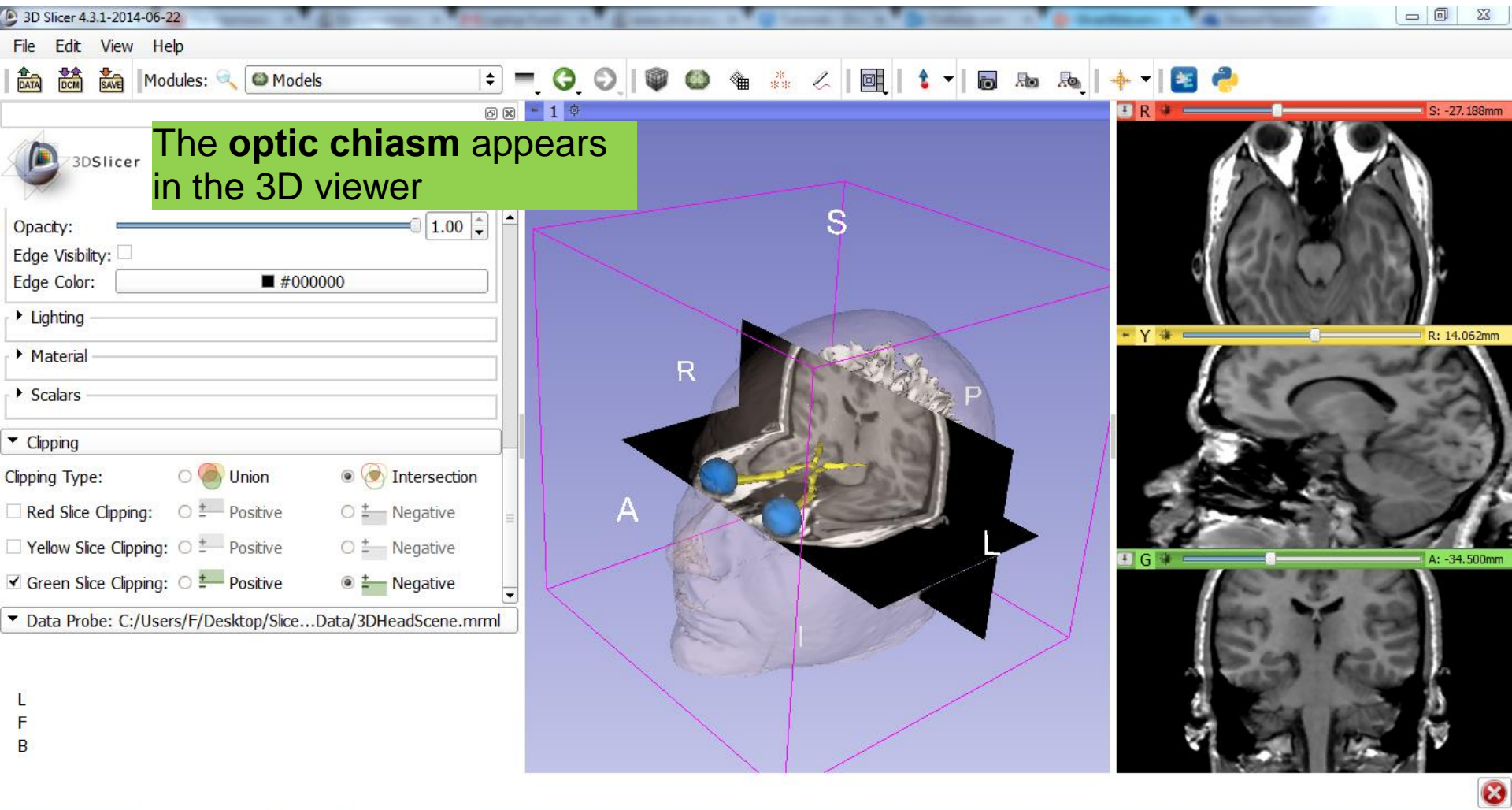
Scroll up and select the 3D scene **hemispheric_white_matter.vtk**, then check off the option for **Clip** under the **Visibility** tab

3D Visualization

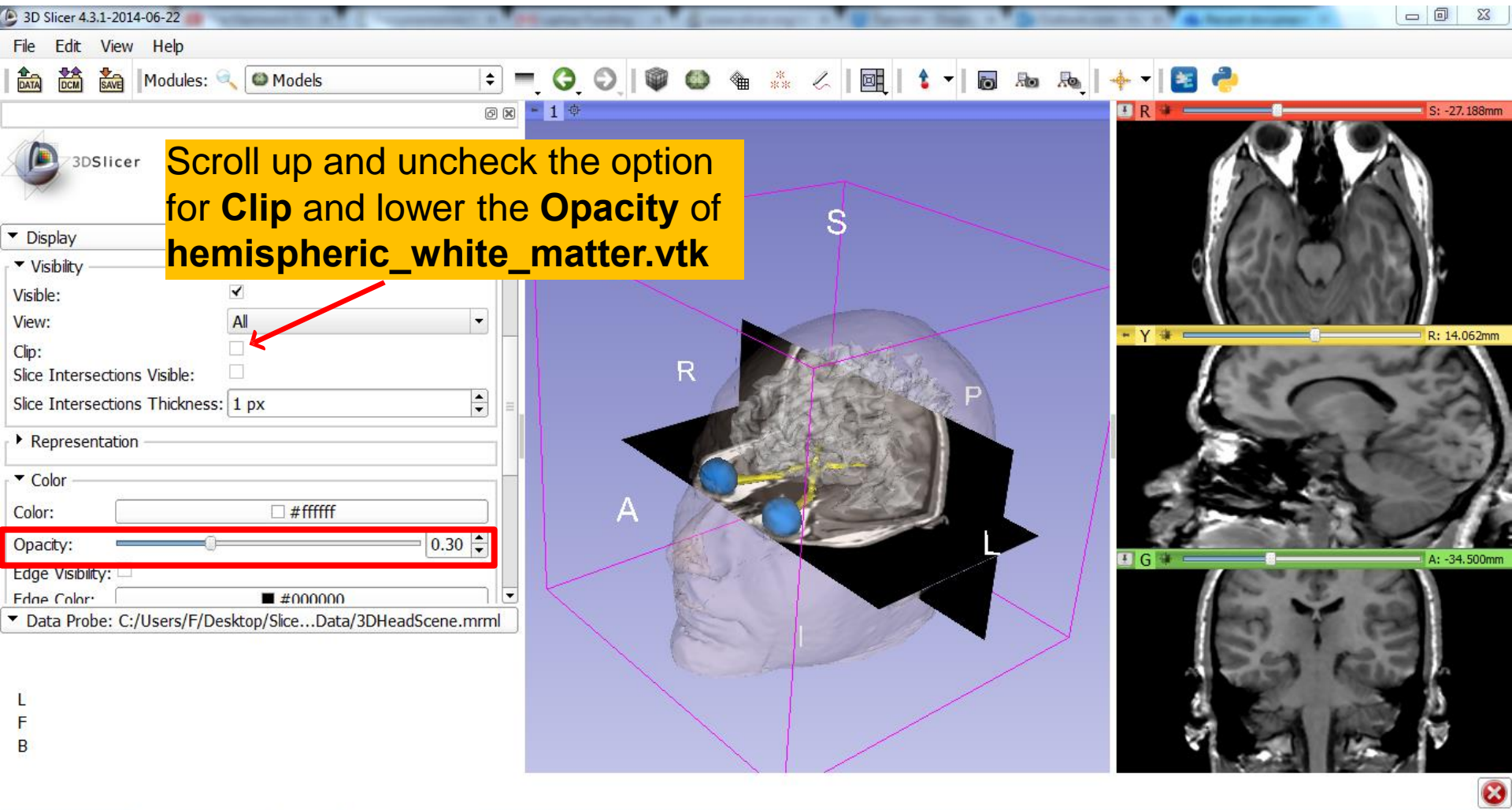


LF B
Scroll down and find the tab **Clipping**, and check off the options for **Green Slice Clipping** and **Negative Space**

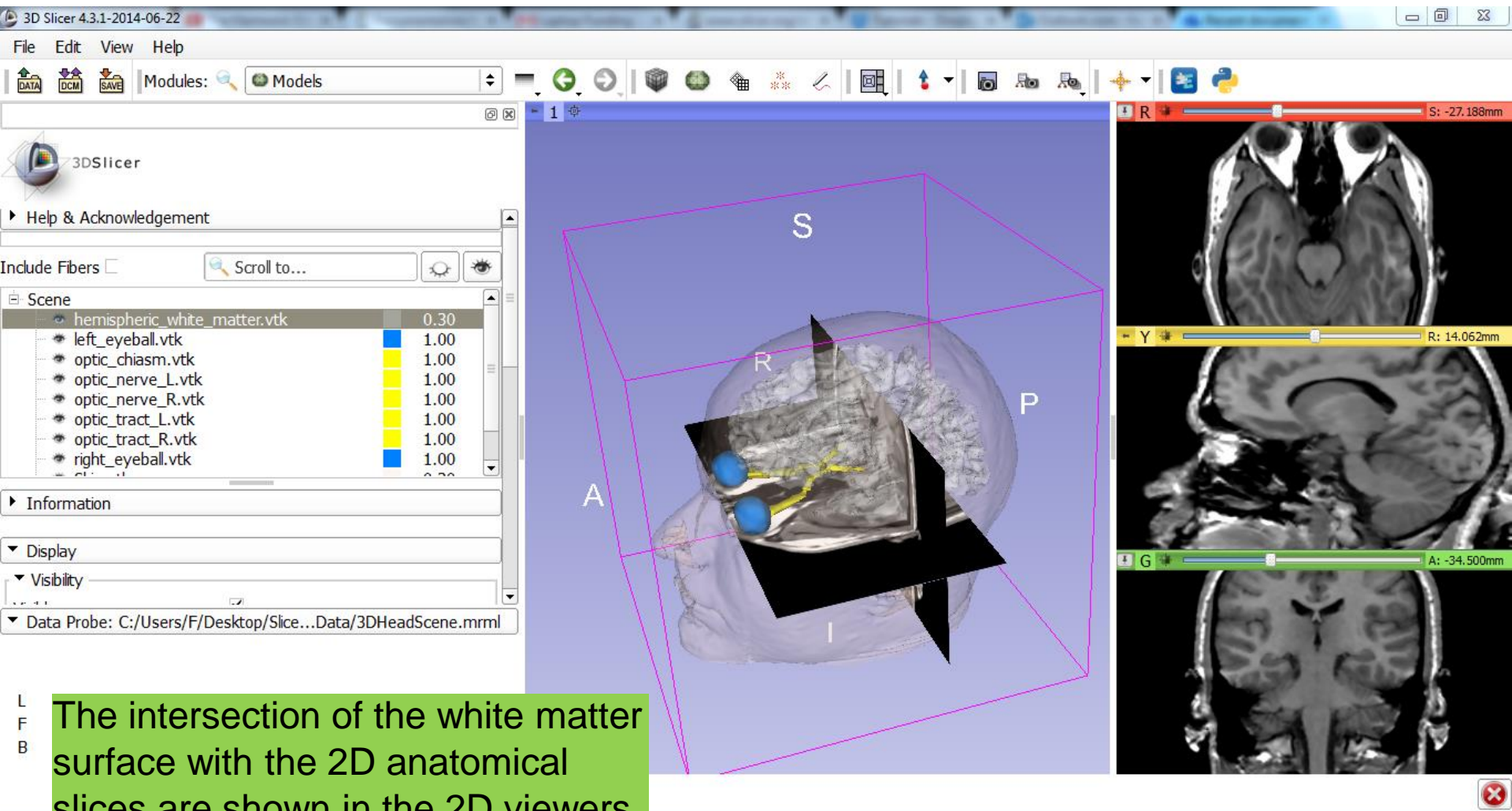
3D Visualization



3D Visualization



3D Visualization



The intersection of the white matter surface with the 2D anatomical slices are shown in the 2D viewers

3D Visualization

The screenshot shows the 3D Slicer interface. The main window displays a 3D model of a head with a brain slice. The slice is labeled with 'S' (Superior), 'R' (Right), 'P' (Posterior), 'A' (Anterior), and 'I' (Inferior). To the right, two coronal slice views are shown. The top slice view has a red bar at the top with 'R' and '-27.188mm'. The bottom slice view has a green bar at the top with 'G' and 'A: -34.500mm'. Below the slice views, there are controls for 'Coronal' and 'grayscale'. A red arrow points from a yellow text box to the pin icon in the slice view controls.

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Models

3DSlicer

Help & Acknowledgement

Include Fibers Scroll to...

Scene

hemispheric_white_matter.vtk	0.30
left_eyeball.vtk	1.00
optic_chiasm.vtk	1.00
optic_nerve_L.vtk	1.00
optic_nerve_R.vtk	1.00
optic_tract_L.vtk	1.00
optic_tract_R.vtk	1.00
right_eyeball.vtk	1.00

Information

Display

Visibility

Data Probe: C:/Users/F/Desktop/Slice...Data/3DHeadScene.mrml

Position your cursor over the **pin icon** in the coronal slice view and unselect the **eye icon**

3D Visualization

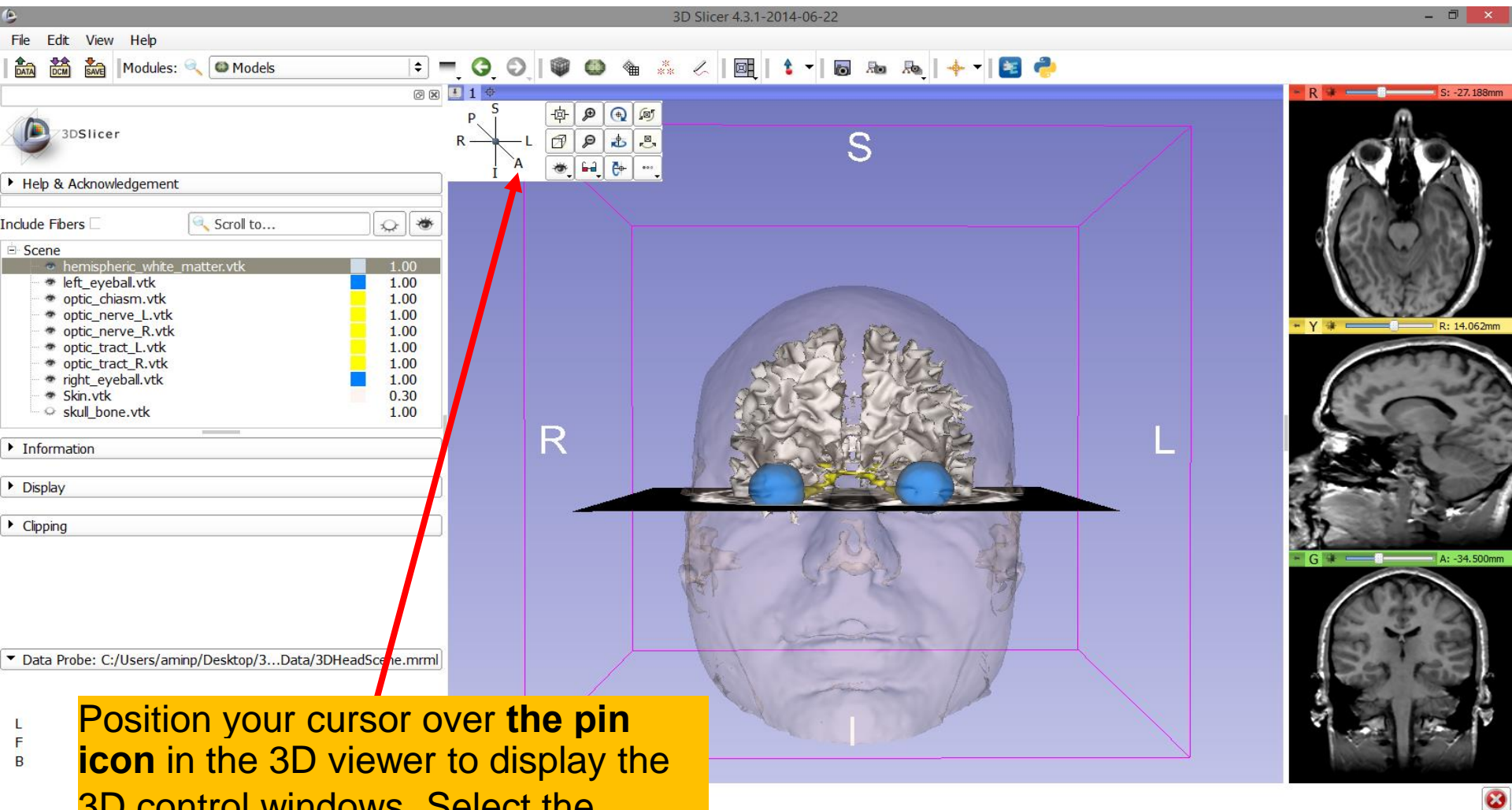
The screenshot displays the 3D Slicer interface. The main window shows a 3D model of a head with a red arrow pointing to the 'Conventional' layout option in the View menu. The View menu is open, showing various layout options. The 'Conventional' layout is selected. The 'Scene' panel on the left lists the loaded models and their visibility. The 'Display' panel on the right shows the current view settings, including 'Coronal' and 'grayscale'.

Click on the **Slicer Layout** icon and select **Conventional**

Model Name	Visibility
hemispheric_white_matter.vtk	0.30
left_eyeball.vtk	1.00
optic_chiasm.vtk	1.00
optic_nerve_L.vtk	1.00
optic_nerve_R.vtk	1.00
optic_tract_L.vtk	1.00
optic_tract_R.vtk	1.00
right_eyeball.vtk	1.00

- Conventional
- Conventional Widescreen
- Conventional Quantitative
- Four-Up
- Four-Up Quantitative
- Dual 3D
- Triple 3D
- 3D only
- One-Up Quantitative
- Red slice only
- Yellow slice only
- Green slice only
- Tabbed 3D
- Tabbed slice
- Compare
- Compare Widescreen
- Compare Grid
- Three over three
- Three Over Three Quantitative
- Four over four
- Two over Two
- Side by side
- Four by three slice
- Four by two slice
- Three by three slice

3D Visualization



Position your cursor over the **pin icon** in the 3D viewer to display the 3D control windows. Select the **A (Anterior) view** of the 3D models



Part 3:

Saving a scene

Saving a Scene

The screenshot shows the 3D Slicer interface. The 'File' menu is open, and the 'Save' option is highlighted in blue. A red arrow points from the 'Save' option to a yellow callout box at the bottom left. The callout box contains the text: 'Click on **File** and select **Save** or press **Ctrl+S**'. The main 3D view shows a 3D model of a human head with a brain scan overlay. The axes are labeled 'S' (Superior), 'R' (Right), and 'L' (Left). The 'Scene' panel on the left lists various models and their visibility settings. The 'Data Probe' at the bottom shows the path: 'C:/Users/aminp/Desktop/3...Data/3DHeadScene.mrml'. The right side of the interface shows three orthogonal views: Axial, Sagittal, and Coronal.

Click on **File** and select **Save** or press **Ctrl+S**

Saving a Scene

The Save Scene and Unsaved Data window lists all the elements of the slicer scene

File Name	File Format	Directory
<input type="checkbox"/> 3DHeadScene.mrml	MRML Scene (.mrml)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> hemispheric_white_matter.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> left_eyeball.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> optic_chiasm.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> optic_nerve_L.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat

Saving a Scene

3D Slicer 4.3.1-2014-06-22

File Edit View Help

Modules: Models

3DSlicer

Help & Acknowledgement

Include Fibers Scroll to...

Scene

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

Information

Display

Clipping

Data Pr

L
F
B

Save Scene and Unsaved Data

Show options

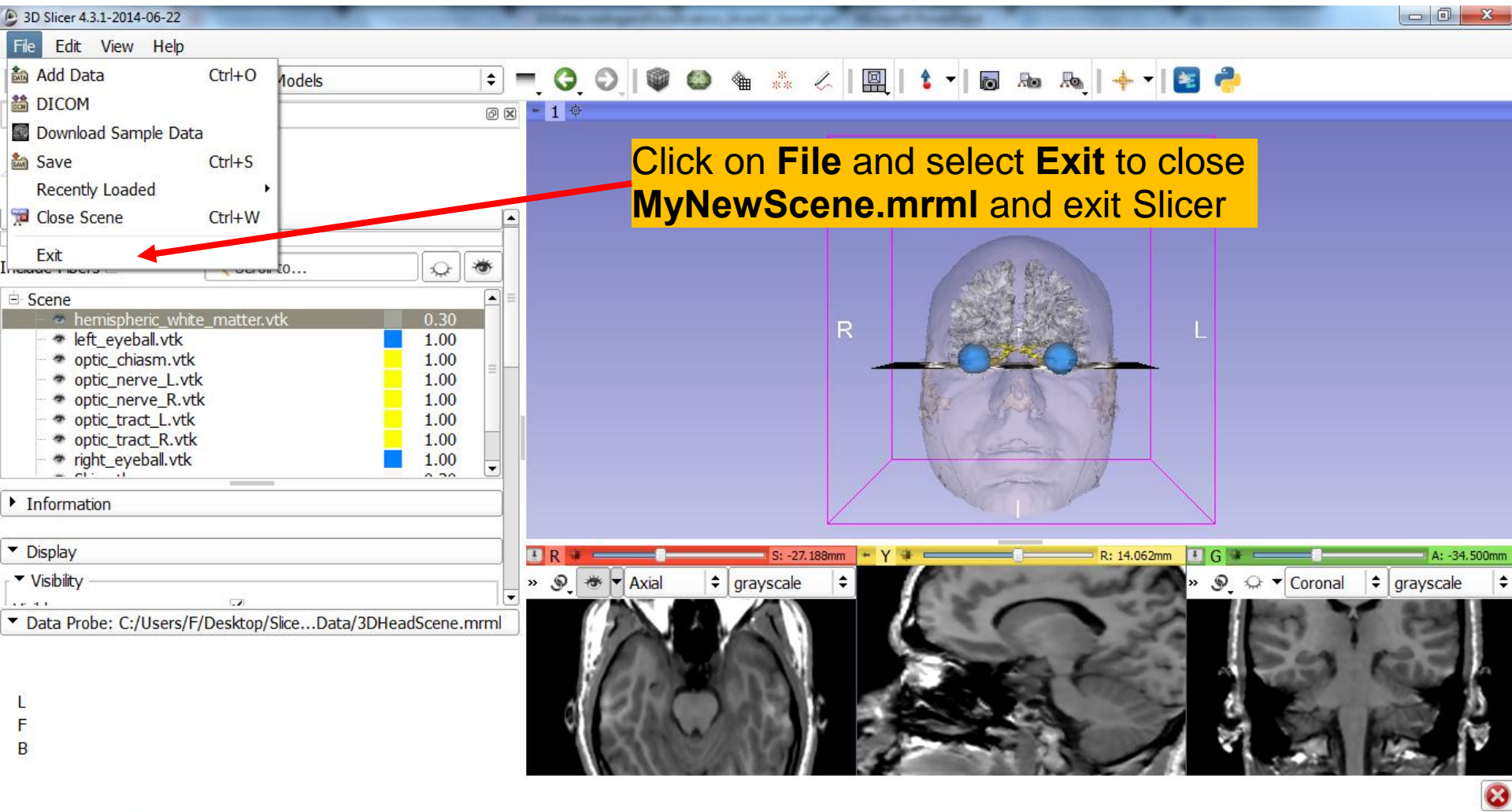
File Name	File Format	Directory
<input checked="" type="checkbox"/> MyNewScene.mrml	MRML Scene (.mrml)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> hemispheric_white_matter.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> left_eyeball.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> optic_chiasm.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat
<input type="checkbox"/> optic_nerve_L.vtk.vtk	Poly Data (.vtk)	C:/Users/aminp/Desktop/3DVisualizationData/3DHeadDat

Change directory for selected files

Save Cancel

Check off the box next to the scene named **3DHeadScene.mrml** and double click on it. Rename it **MyNewScene.mrml** and select **Save**

Saving a Scene



Scene Restore

3DHeadData

File Edit View Help

Modules: Welcome to Slicer

Welcome

Load DICOM Data Load Data

Customize Slicer Download Sample Data

Feedback

Share your stories with us and let us know about how 3D Slicer has enabled your research.

We are always interested in improving 3D Slicer, and every submission will be carefully read.

See more at <http://goo.gl/6BvcHm>.

About

The Main Window

Loading and Saving

Display

Data Probe: C:/Users/aminp/Desktop/3...dData/MyNewScene.mrml

L
F
B

Name	Date modified	Type	Size
.3DHeadScene.mrml.swp	6/24/2014 3:33 PM	SWP File	164 KB
.DS_Store	6/24/2014 3:33 PM	DS_STORE File	7 KB
3DHeadScene	6/24/2014 3:33 PM	Slicer supported file	142 KB
grayscale.nrrd	6/24/2014 3:33 PM	NRRD File	20,353 KB
hemispheric_white_matter.vtk	6/24/2014 3:33 PM	VTK File	6,270 KB
left_eyeball.vtk	6/24/2014 3:33 PM	VTK File	56 KB
Master Scene View	6/25/2014 11:37 AM	PNG image	405 KB
MyNewScene	6/25/2014 11:37 AM	Slicer supported file	166 KB
optic_chiasm.vtk	6/24/2014 3:33 PM	VTK File	14 KB
optic_nerve_L.vtk	6/24/2014 3:33 PM	VTK File	28 KB
optic_nerve_R.vtk	6/24/2014 3:33 PM	VTK File	29 KB
optic_tract_L.vtk	6/24/2014 3:33 PM	VTK File	18 KB
optic_tract_R.vtk	6/24/2014 3:33 PM	VTK File	16 KB
right_eyeball.vtk	6/24/2014 3:33 PM	VTK File	52 KB
Skin.vtk	6/24/2014 3:33 PM	VTK File	3,393 KB
skull_bone.vtk	6/24/2014 3:33 PM	VTK File	4,712 KB

Restart Slicer and find **MyNewScene.mrml** on your computer

Scene Restore

The image shows a Windows Explorer window on the left and the 3D Slicer 4.3.1 interface on the right. The Explorer window displays the contents of the '3DHeadData' folder, with 'MyNewScene.mrml' selected. The Slicer interface shows a 'Welcome' screen with buttons for 'Load DICOM Data', 'Load Data', 'Customize Slicer', and 'Download Sample Data'. A red arrow points from the 'MyNewScene.mrml' file in the Explorer to the 'Load Data' button in the Slicer interface. A yellow text box at the top right of the Slicer window contains the instruction: 'Drag and drop the MyNewScene.mrml file that's in the 3DHeadData folder into the Slicer window'. The Slicer interface also shows a 'Feedback' section and a 'Data Probe' section at the bottom.

3DHeadData

File Edit View Help

DATA DCM SAVE Modules

3DSlicer

Welcome

Load DICOM Data Load Data

Customize Slicer Download Sample Data

Feedback

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See more at <http://goo.gl/6BvcHm>.

About

The Main Window

Loading and Saving

Display

Data Probe: C:/Users/aminp/Desktop/3...dData/MyNewScene.mrml

L
F
B

3D VisualizationData > 3DHeadData

Name	Date modified	Type	Size
.3DHeadScene.mrml.swp	6/24/2014 3:33 PM	SWP File	164 KB
.DS_Store	6/24/2014 3:33 PM	DS_STORE File	7 KB
3DHeadScene	6/24/2014 3:33 PM	Slicer supported file	142 KB
grayscale.nrrd	6/24/2014 3:33 PM	NRRD File	20,353 KB
hemispheric_white_matter.vtk	6/24/2014 3:33 PM	VTK File	6,270 KB
left_eyeball.vtk	6/24/2014 3:33 PM	VTK File	56 KB
Master Scene View	6/25/2014 11:37 AM	PNG image	405 KB
MyNewScene	6/25/2014 11:37 AM	Slicer supported file	166 KB
optic_chiasm.vtk	6/24/2014 3:33 PM	VTK File	14 KB
optic_nerve_L.vtk	6/24/2014 3:33 PM	VTK File	28 KB
optic_nerve_R.vtk	6/24/2014 3:33 PM	VTK File	29 KB
optic_tract_L.vtk	6/24/2014 3:33 PM	VTK File	18 KB
optic_tract_R.vtk	6/24/2014 3:33 PM	VTK File	16 KB
right_eyeball.vtk	6/24/2014 3:33 PM	VTK File	52 KB
Skin.vtk	6/24/2014 3:33 PM	VTK File	3,393 KB
skull_bone.vtk	6/24/2014 3:33 PM	VTK File	4,712 KB

16 items 1 item selected 165 KB

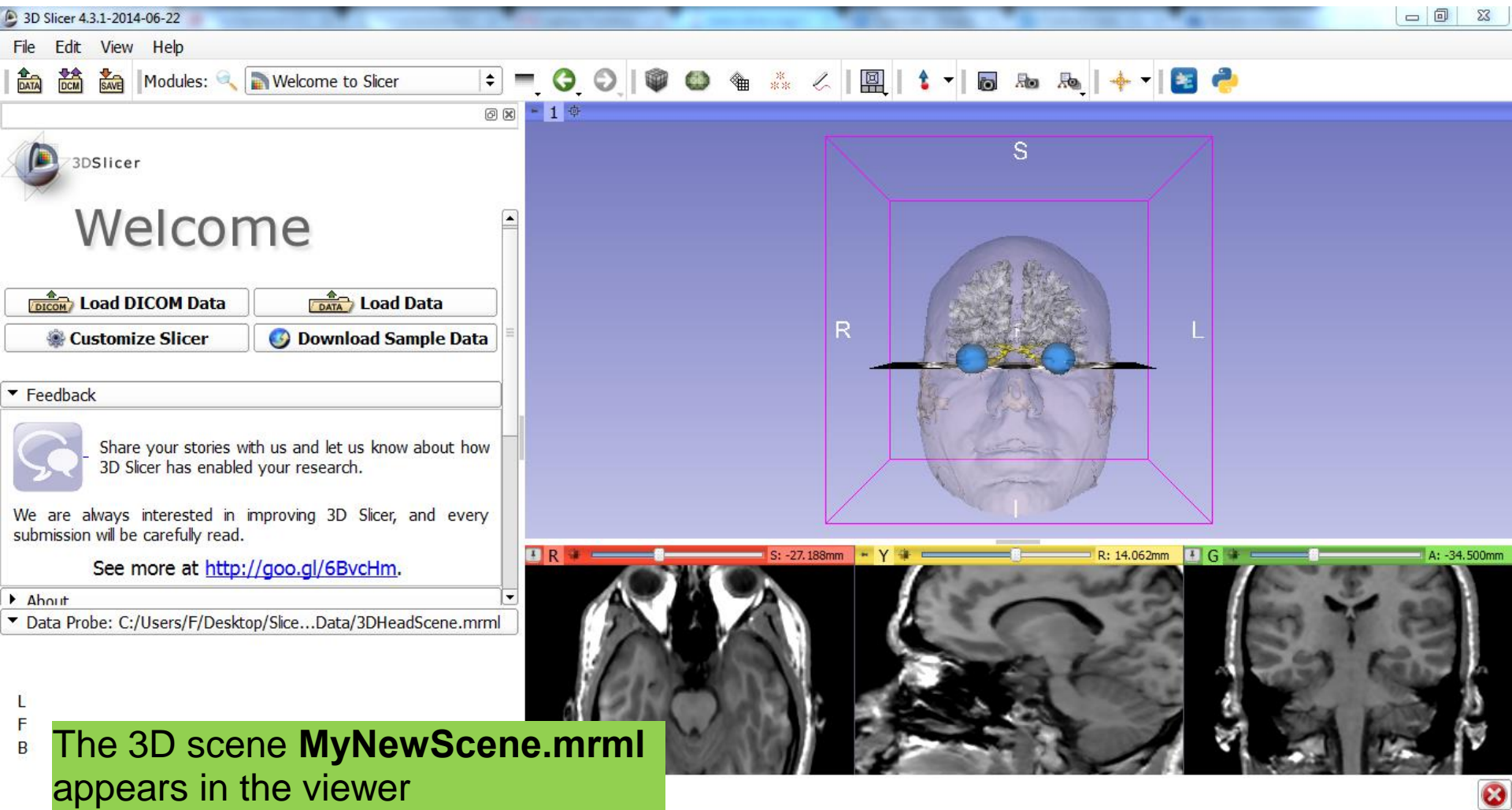
Scene Restore

The screenshot displays the 3D Slicer 4.3.1-2014-06-22 interface. A file selection dialog titled "Add data into the scene" is open, showing a table with the following content:

File	Description
<input checked="" type="checkbox"/> C:/Users/aminp/Desktop/3DVisualizationData/3DHeadData/MyNewScene.mrml	MRML Scene

The dialog includes "Reset", "OK", and "Cancel" buttons. A red arrow points to the "OK" button, which is highlighted with a yellow box and the text "Click OK". The background shows the 3D Slicer interface with a 3D view of a head model and a file explorer window.

Slicer4



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