



NA-MIC

National Alliance for Medical Image Computing

<http://na-mic.org>

3D Visualization of DICOM Data

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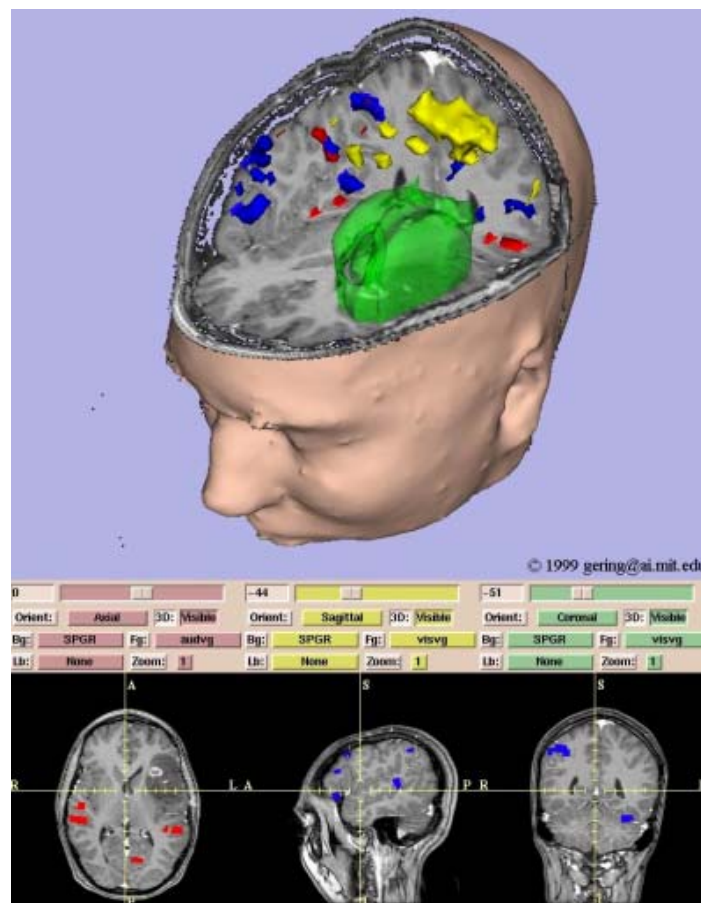
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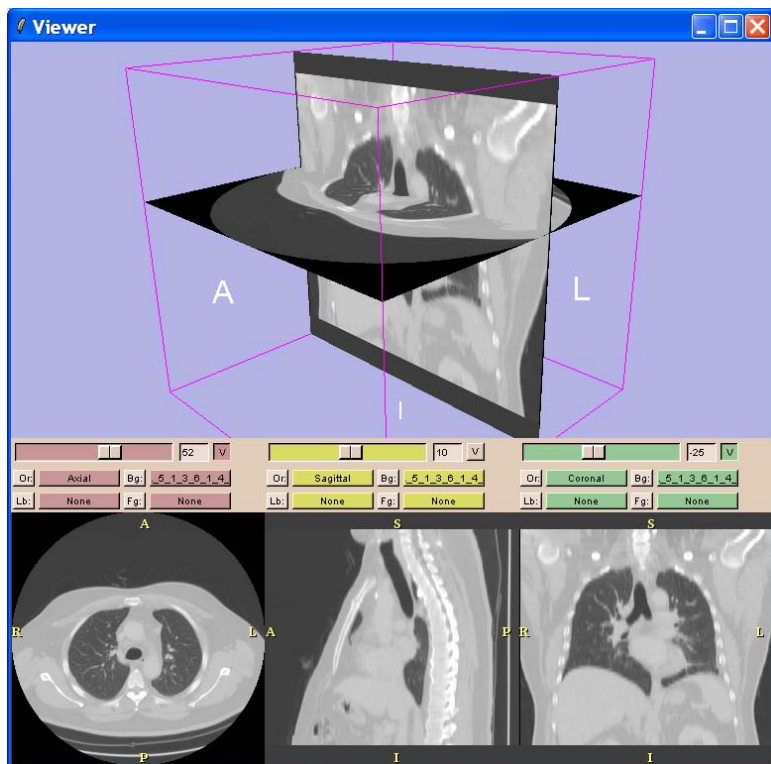
3DSlicer

- 3DSlicer is a **visualization** and **image analysis** software for medical image computing.
- Open-source platform available for Windows, Mac, Linux and Solaris.





Goal of this tutorial



This tutorial guides you step-by-step through the process **3D visualization of DICOM volumes** from the National Cancer Imaging Archive using Slicer.





Material

- Slicer: version 2.6

http://www.na-mic.org/Wiki/index.php/Slicer:Slicer2.6_Getting_Started

- Data: National Cancer Imaging Archive
Dicom Lung CT from the Rider Collection

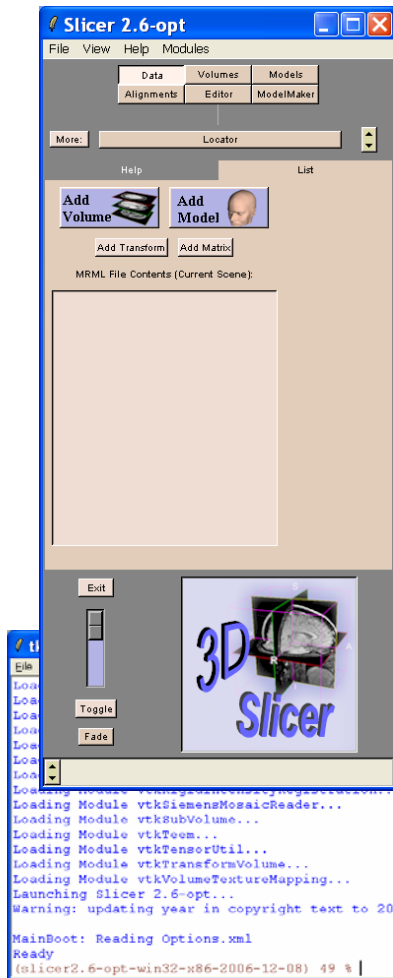
<https://imaging.nci.nih.gov/ncia/faces/baseDef.tiles>

(Disclaimer: It is the responsibility of the user of Slicer to comply with both the terms of the license and with the applicable laws, regulations and rules.)

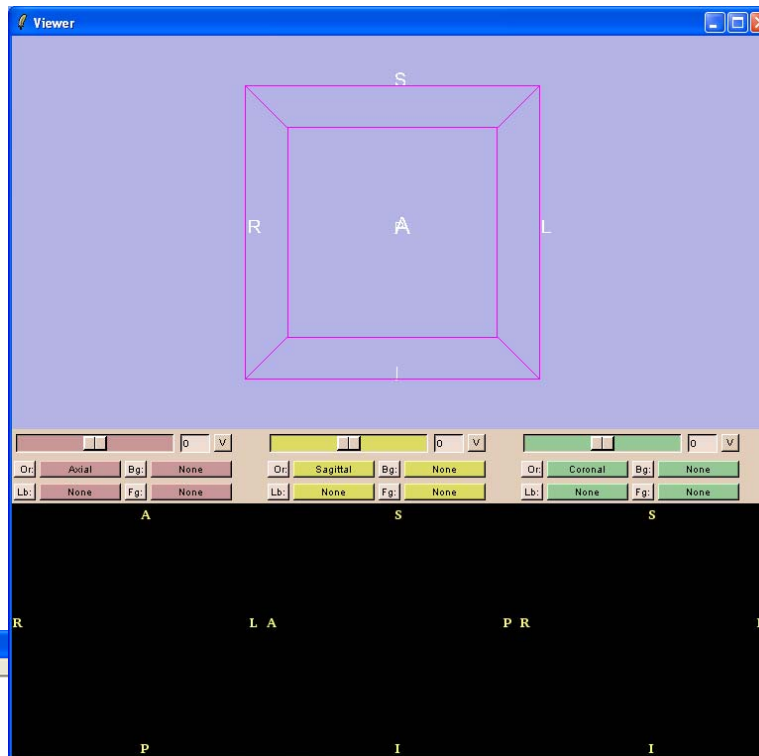


Slicer Interface

Menu



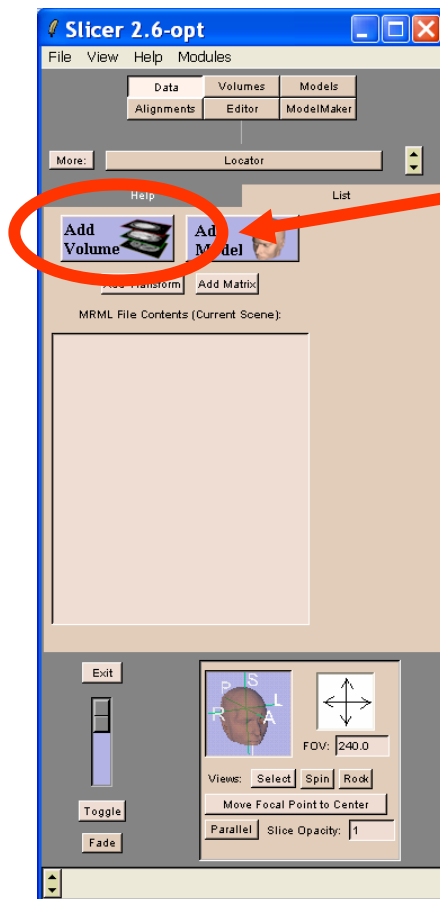
Viewer



Tk window



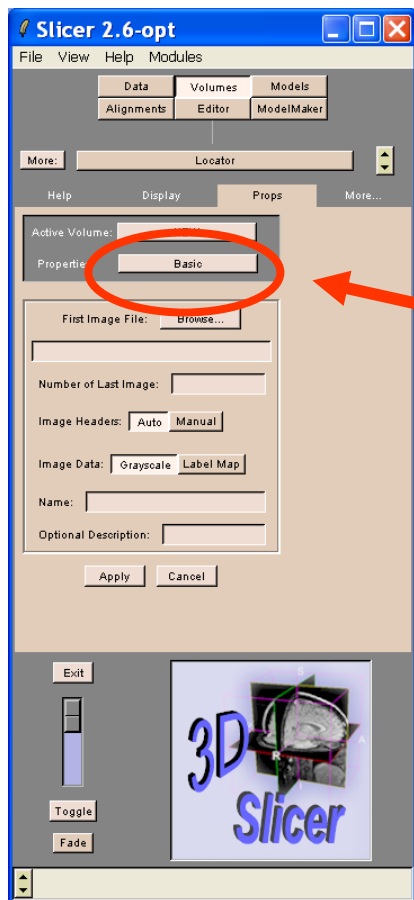
Loading Lung CT data



Click on Add Volume in the Slicer Menu



Loading Lung CT data

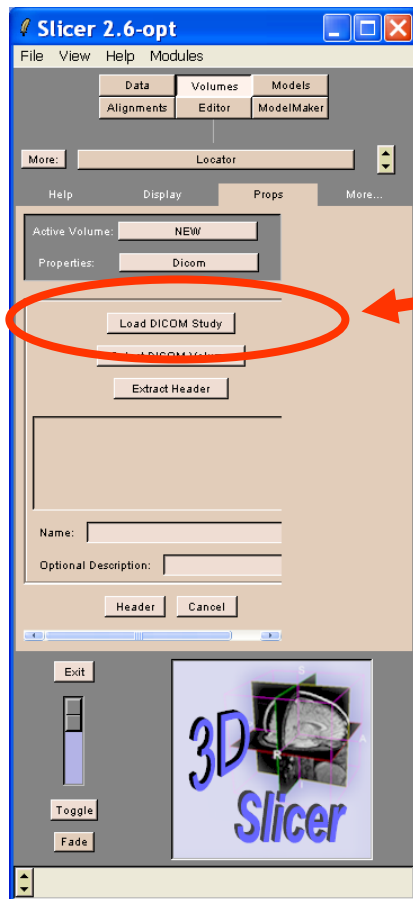


The Panel Props appears by default.

Left-click on the Menu Properties and change Basic to DICOM



Loading Lung CT data

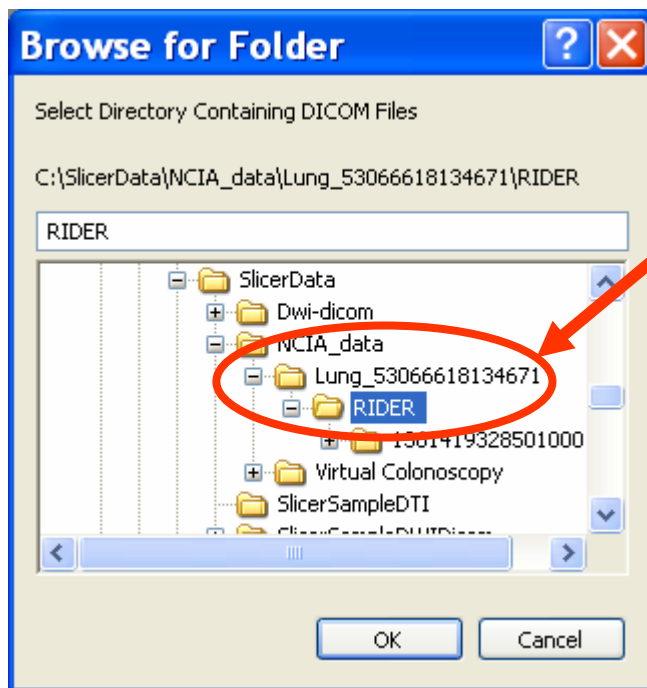


The DICOM panel appears

Click on Load DICOM Study



Loading Lung CT data

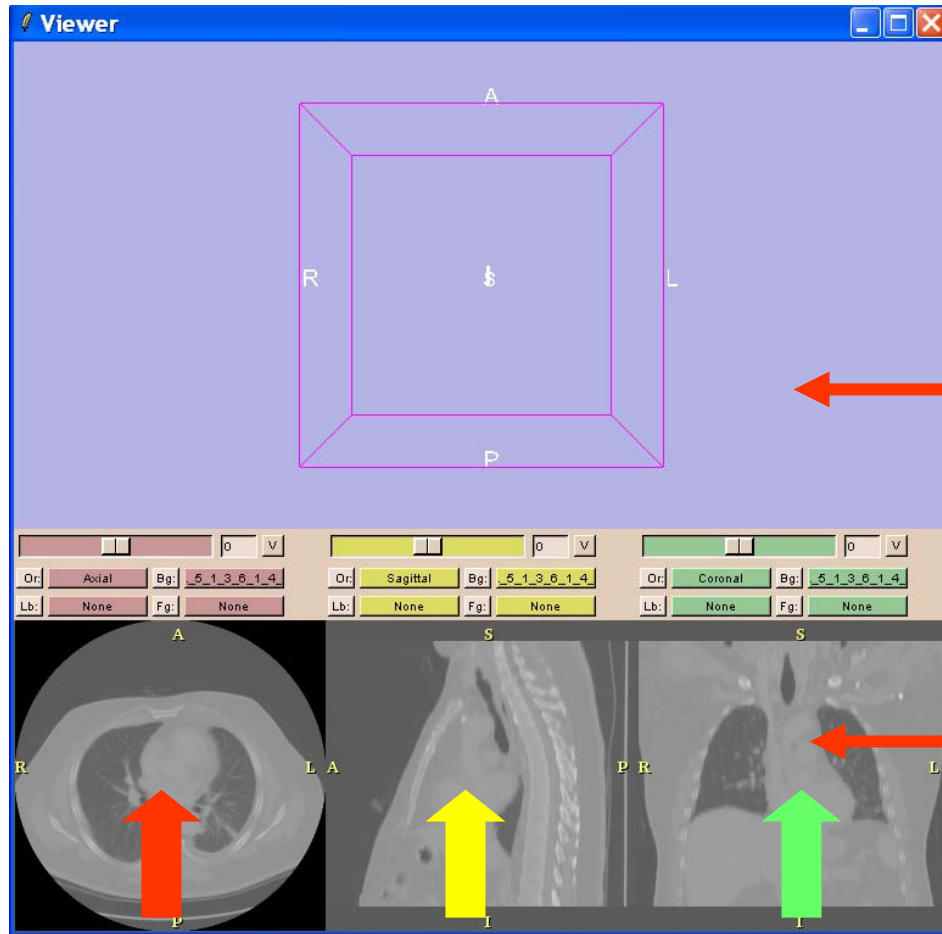
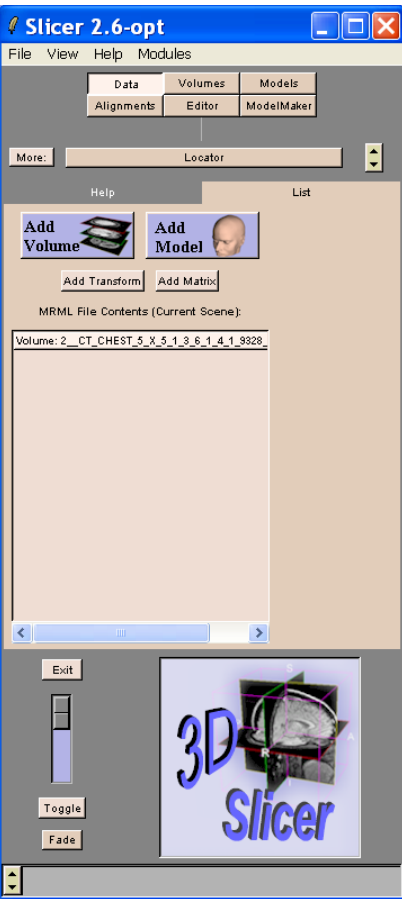


Select the directory RIDER which contains the Lung CT dataset.

Click on OK to load the volume



Loading Lung CT data



Slicer loads the DICOM volume of the lungs

3D Viewer

2D Viewer

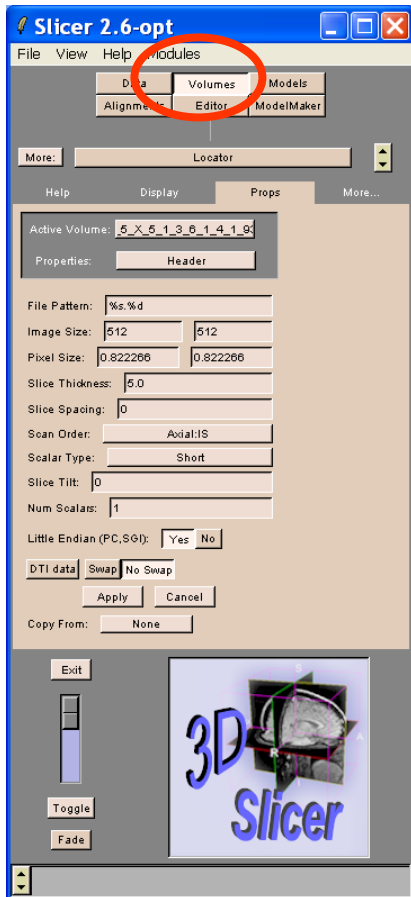
Axial View

Sagittal View

Coronal View



Loading Lung CT data

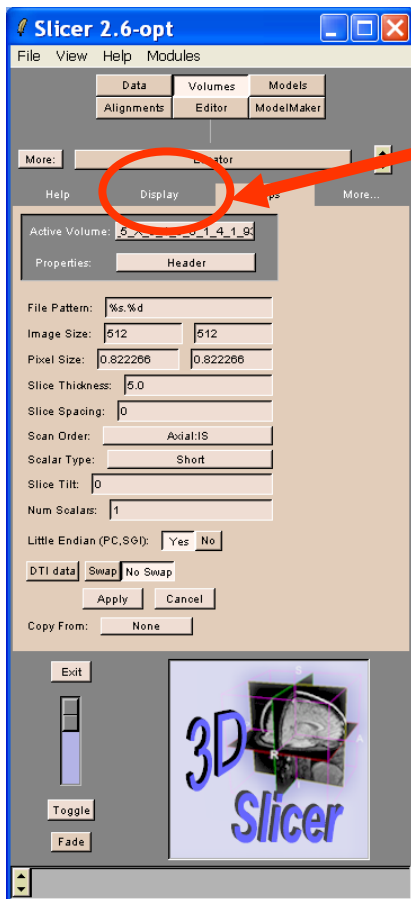


Click on Volumes in the Slicer Menu

Slicer displays the information contained in the DICOM Header



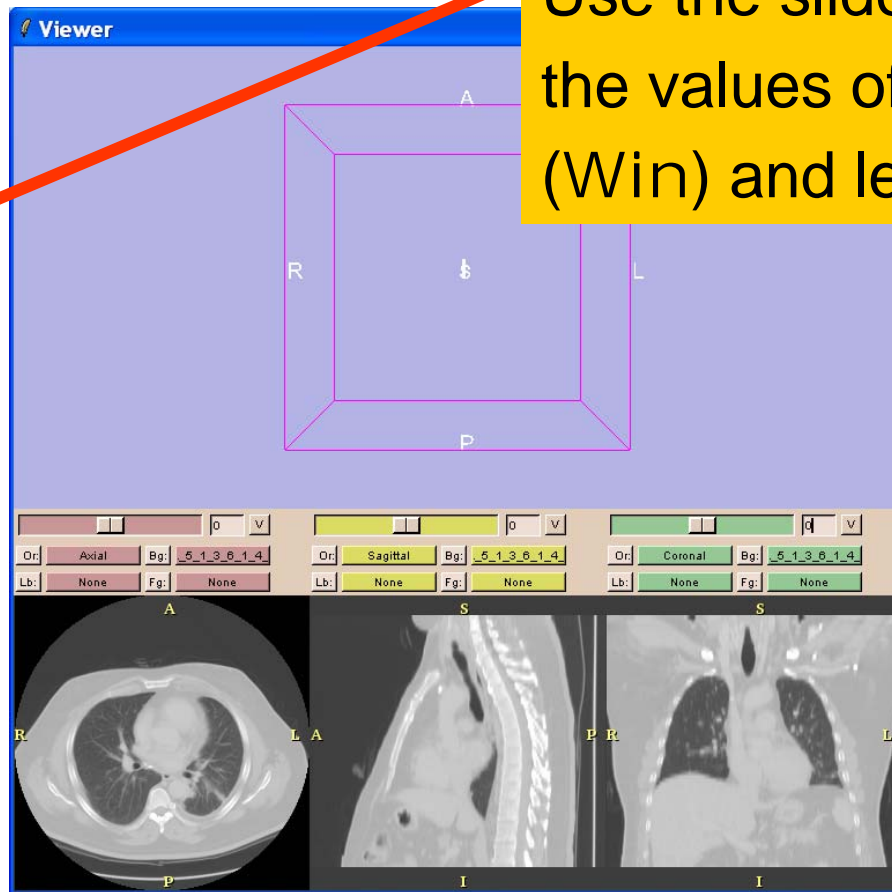
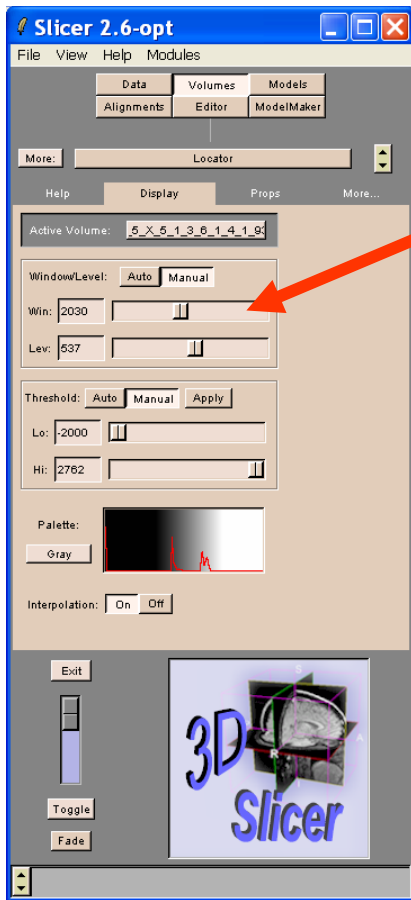
Loading Lung CT data



Click on Display to access the window parameters.



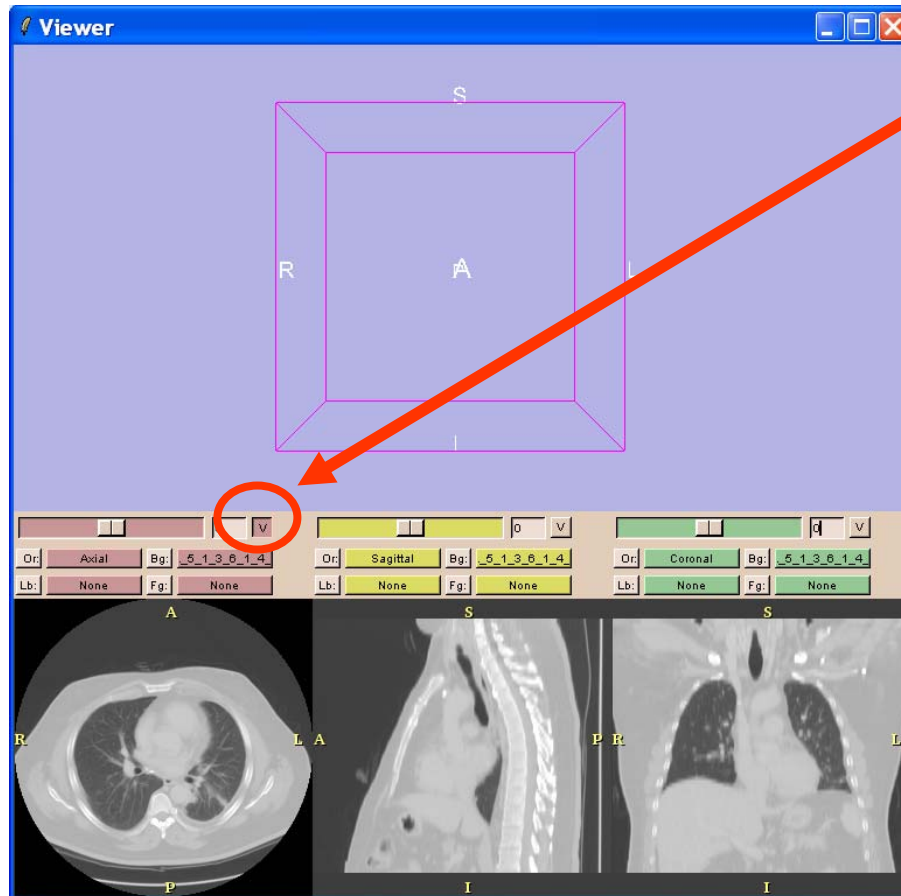
Loading Lung CT data



Use the sliders to adjust the values of the window (Win) and levels (Lev).



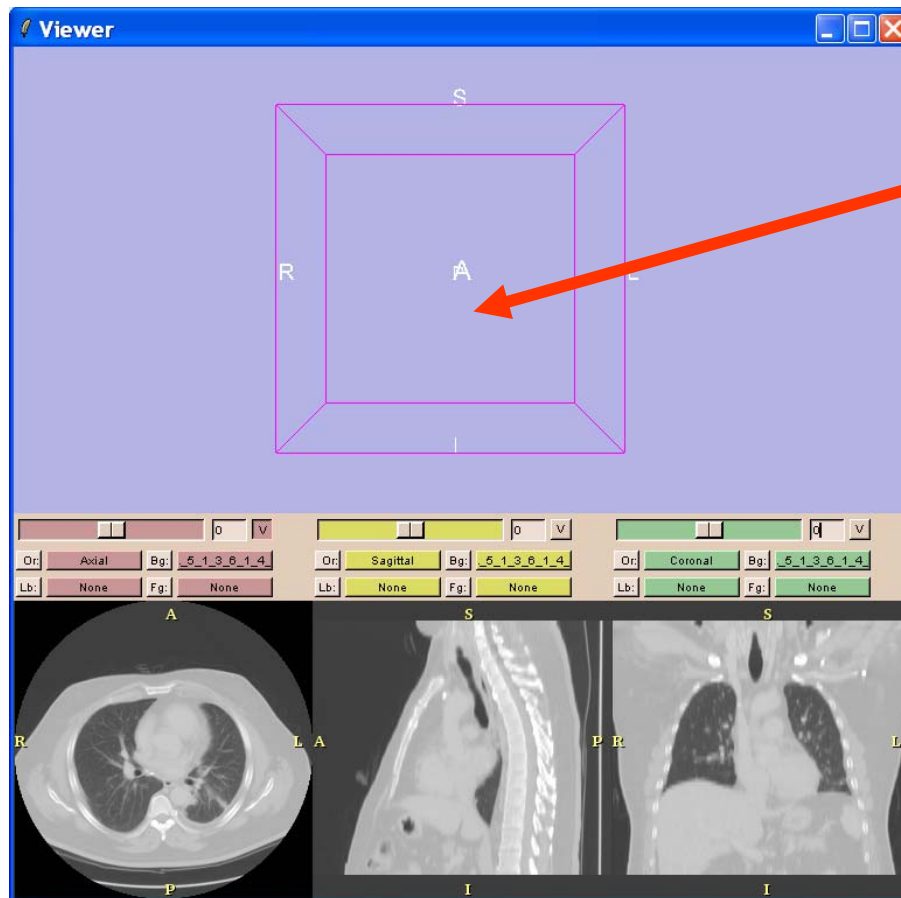
3D Visualization



Click on the V button to display the Axial slice inside the 3D Viewer. (V stands for Visible)



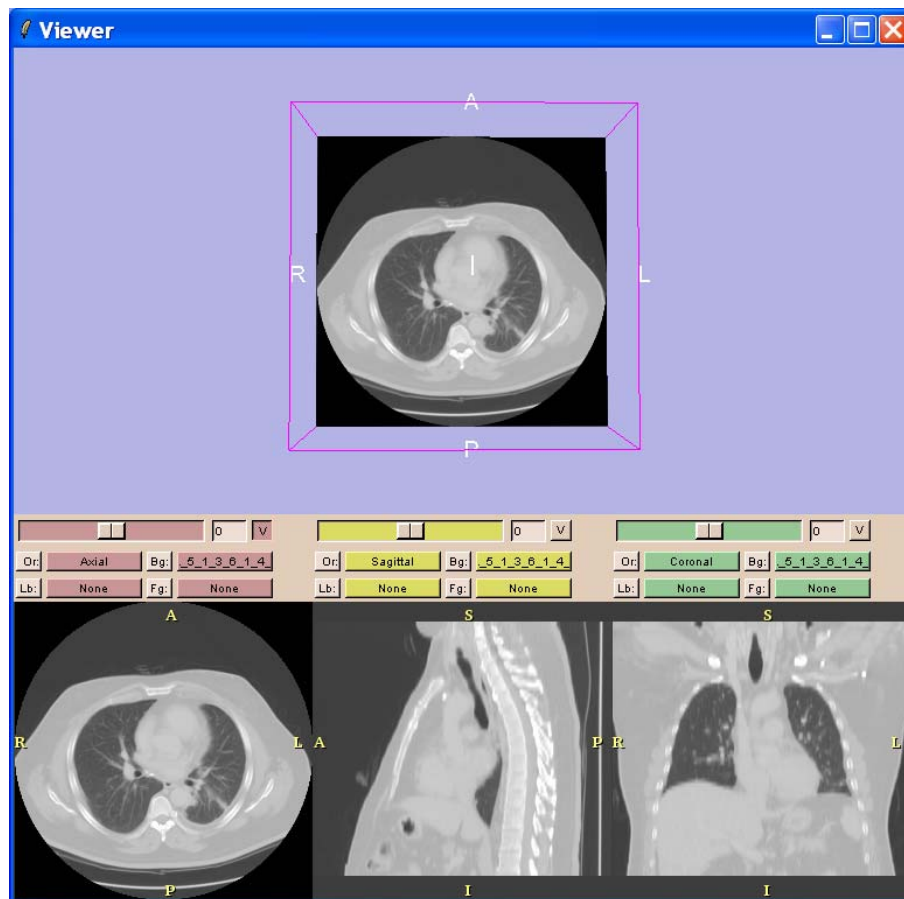
3D Visualization



Position the mouse inside the 3D Viewer
Left-click and move the mouse towards the top of the 3D Viewer.



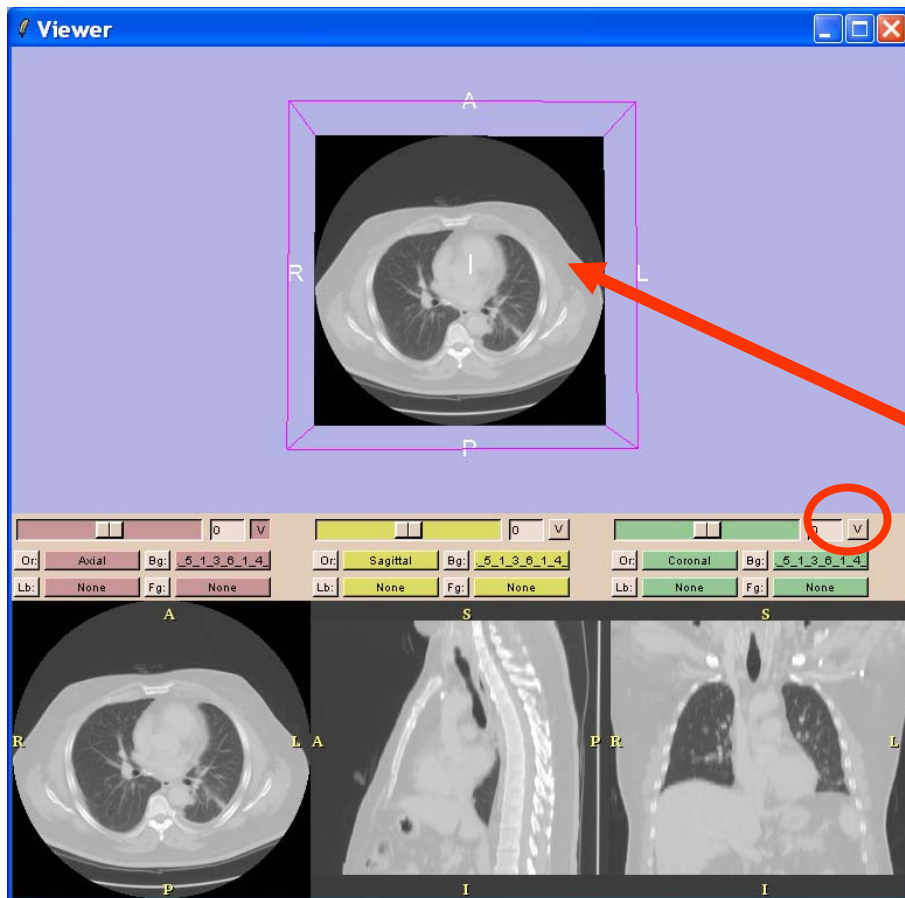
3D Visualization



The axial slice appears in the 3D Viewer.



3D Visualization

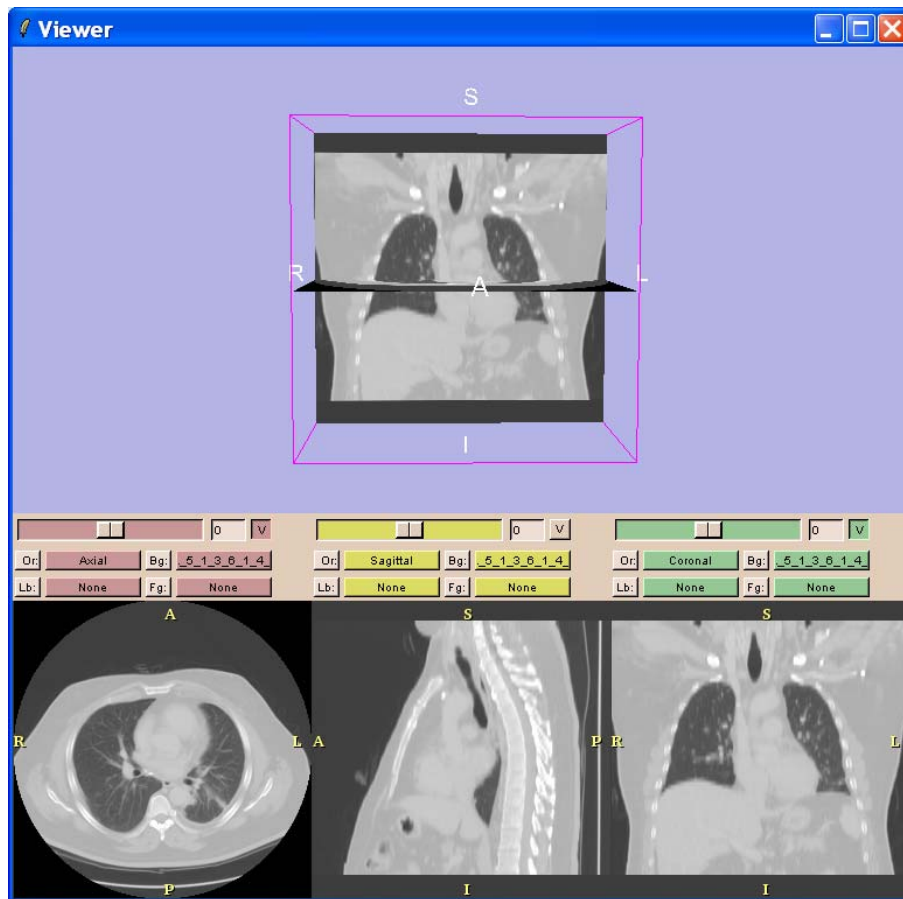


Click on the V button to display the coronal slice inside the 3D Viewer.

Left-click and move the mouse down.



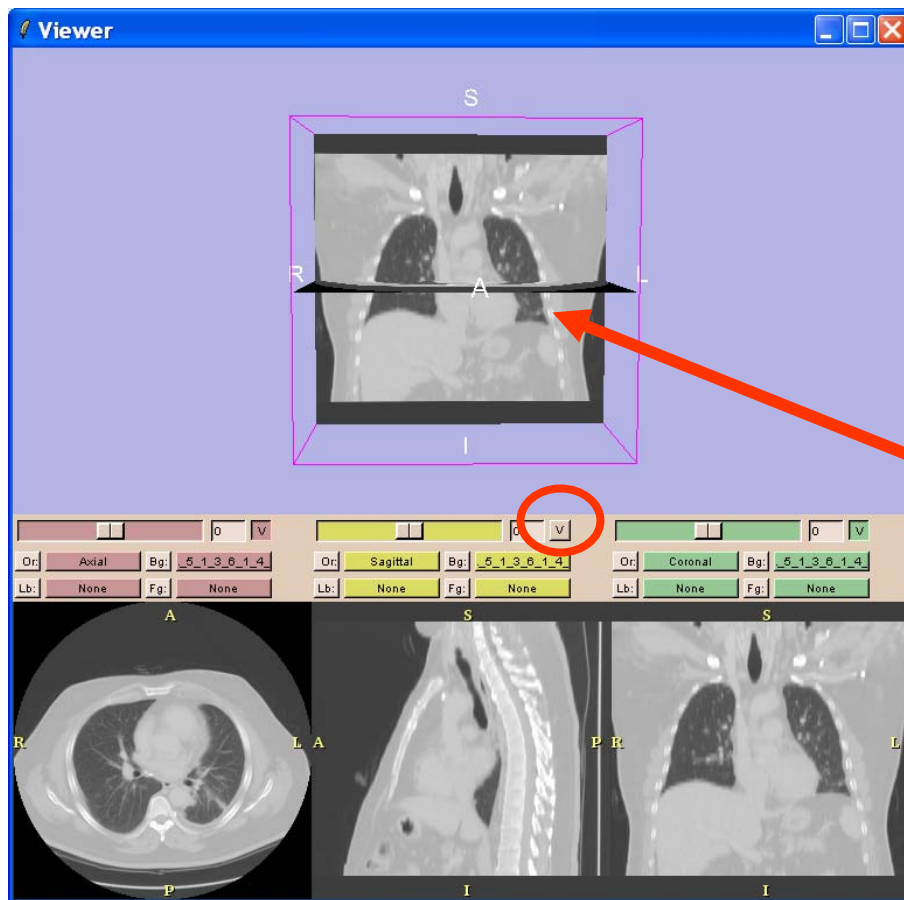
3D Visualization



The Coronal slice appears in the 3D Viewer.



3D Visualization

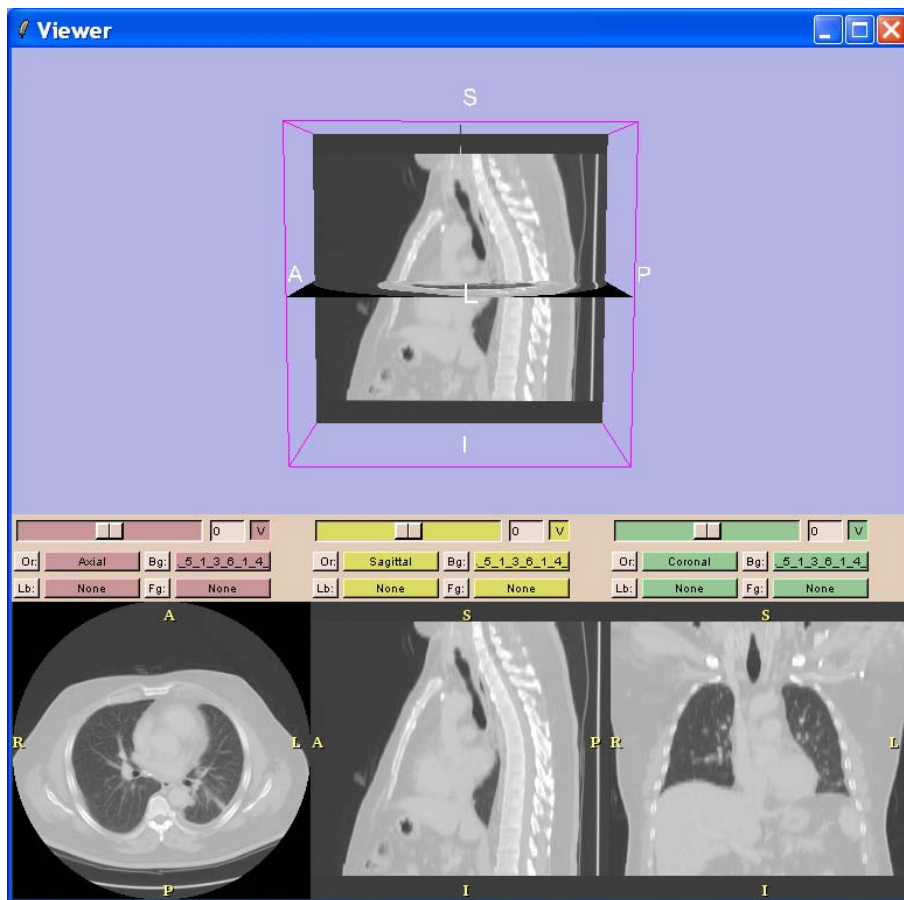


Click on the V button to display the Sagittal slice inside the 3D Viewer.

Left-click and move the mouse to the left.



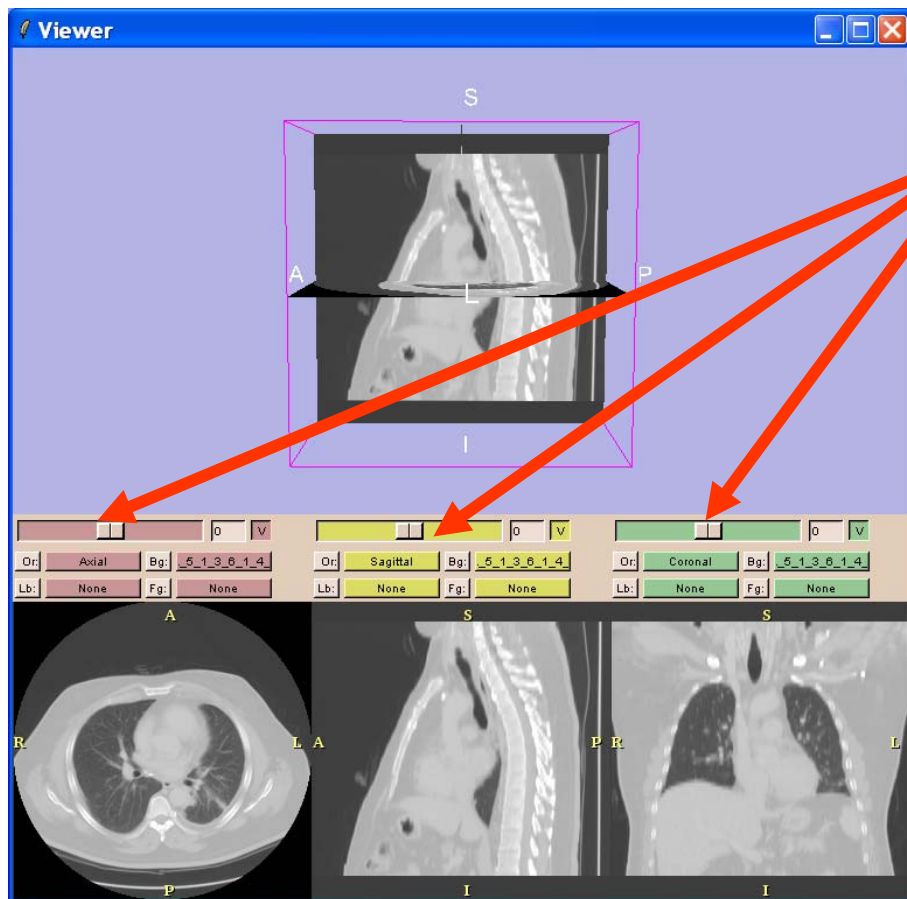
3D Visualization



The Sagittal slice appears in the 3D Viewer.



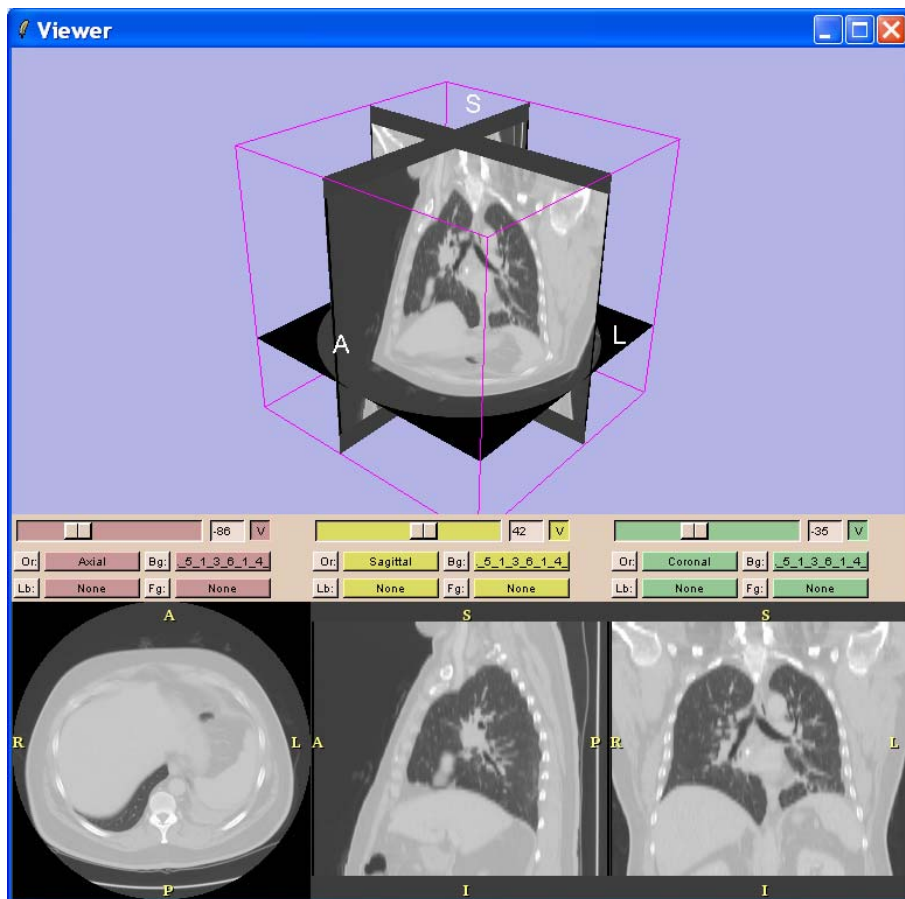
Interacting with the data



Use the sliders to slice through the volume in the three anatomical directions.



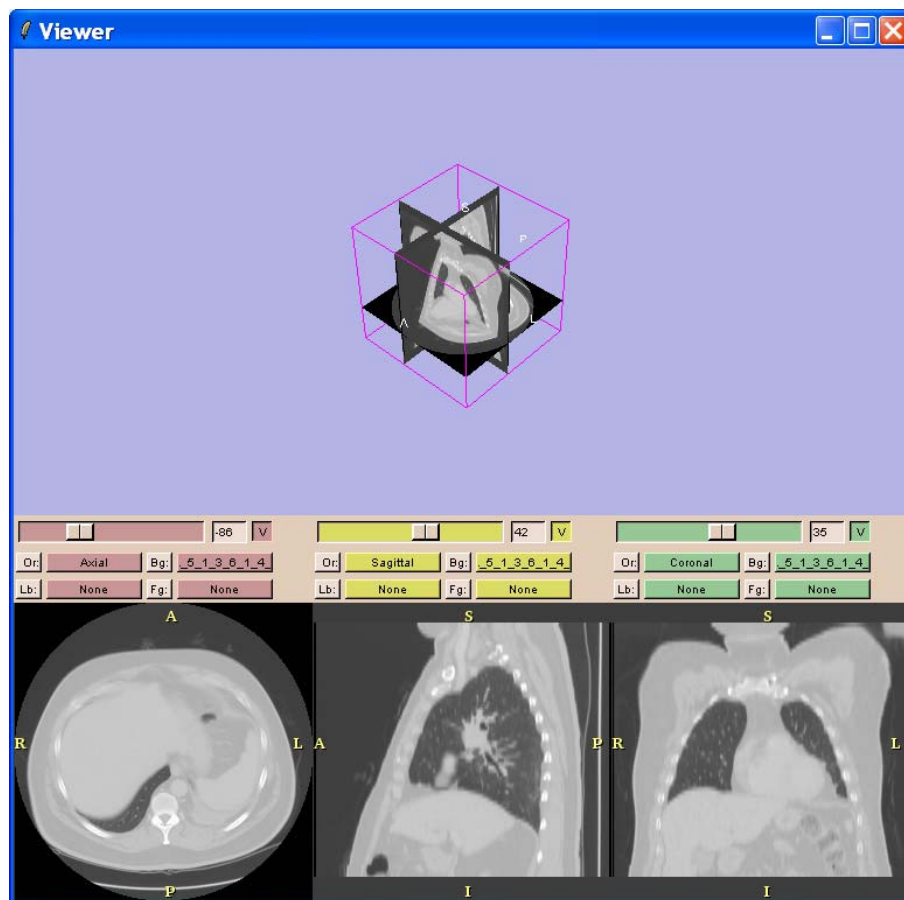
Interacting with the data



Slicer updates the anatomical slices display within the 3D Viewer.



Interacting with the data



- Zoom

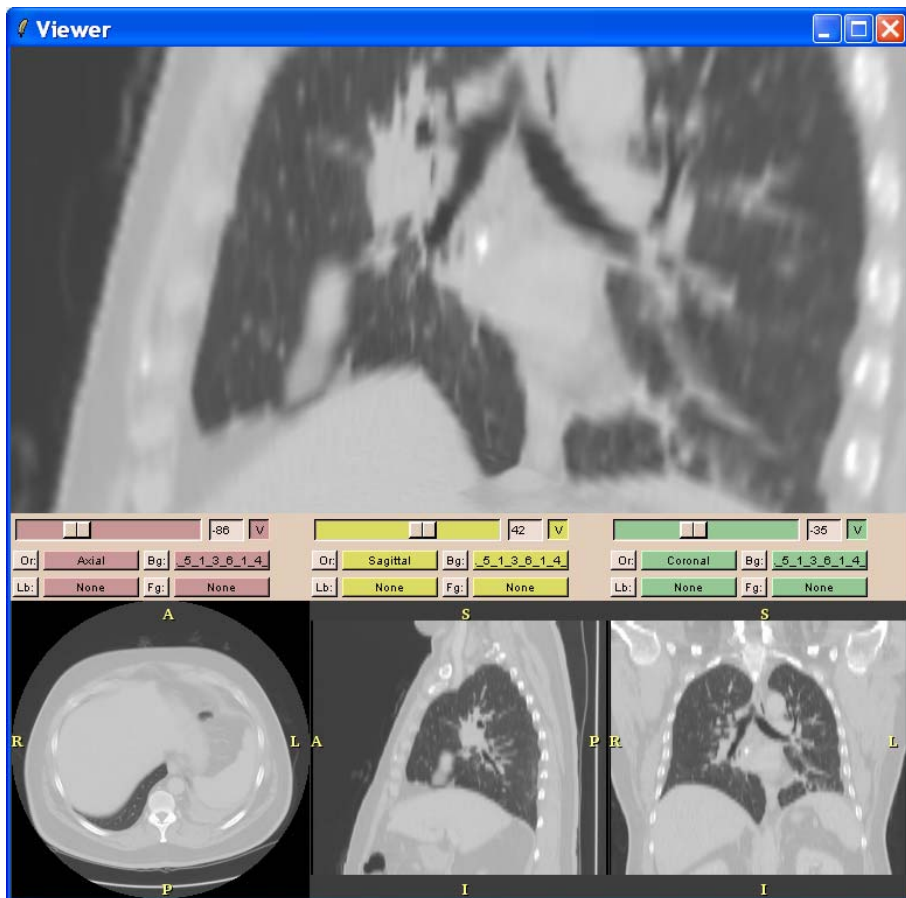
Right-click and move the mouse up



The 3D Viewer moves away from the volume.



Interacting with the data



- Zoom

Right-click and move the mouse down



The 3D Viewer gets closer to the volume.

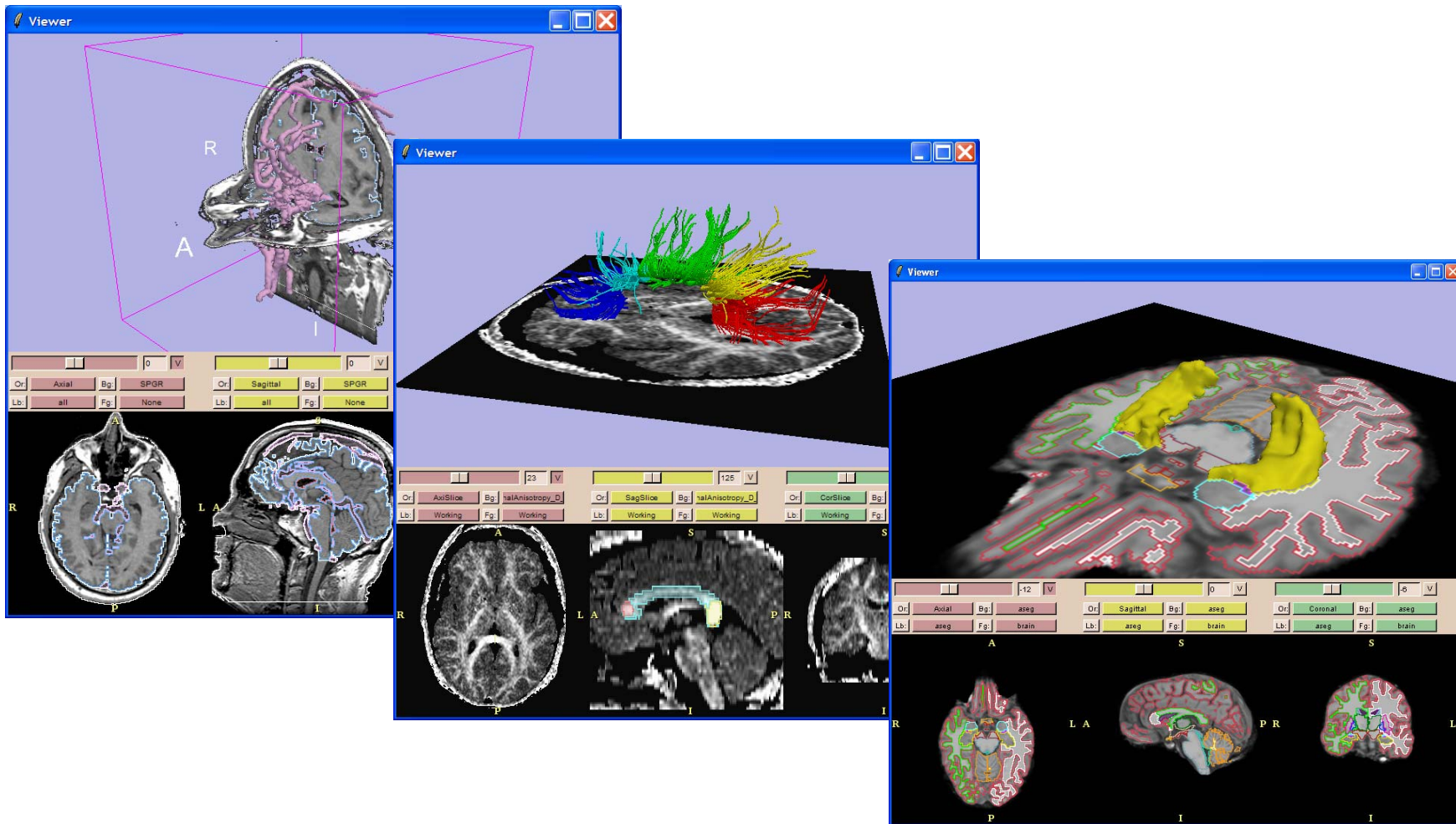


Slicer Compendium

- A **series of courses** have been developed to facilitate the use of advanced image analysis techniques available into Slicer to clinicians and scientists.
- Our compendium is available at:
http://www.namic.org/Wiki/index.php/Slicer:Workshops:User_Training_101



Slicer Compendium





Acknowledgments



National Alliance for Medical
Image Computing
NIH U54EB005149



Neuroimage Analysis Center
NIH P41RR013218