Introduction to Scientific Visualization (Lab)

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Visualizing with Paraview

- Walk you through using a popular visualization package
- Step 1:
  - Download paraview at http://www.paraview.org/New/download.html

ParaView

Parallel Visualization Application

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Download ParaView

Latest Stable Release (3.2.1)

Platform	Files
Windows (Installer)	paraview-3.2.1-win32-x86.exe
Linux(x86)	paraview-3.2.1-Linux-x86.tar.gz
Macintosh OS X (Intel)	paraview.app-3.2.1-Darwin-i386.dmg
Macintosh OS X (Intel)	paraview-3.2.1-Darwin-i386.tar.gz
Macintosh OS X (PPC)	paraview.app-3.2.1-Darwin-powerpc.dmg
Macintosh OS X (PPC)	paraview-3.2.1-Darwin-powerpc.tar.gz
Source	paraview-3.2.2.tar.gz
	paraview-3.2.2.zip
Data	ParaViewData3.2.zip

Note: 3.2.2 includes a patch to fix the paraview build with CMake 2.6. Therefore you should use it if building from source.

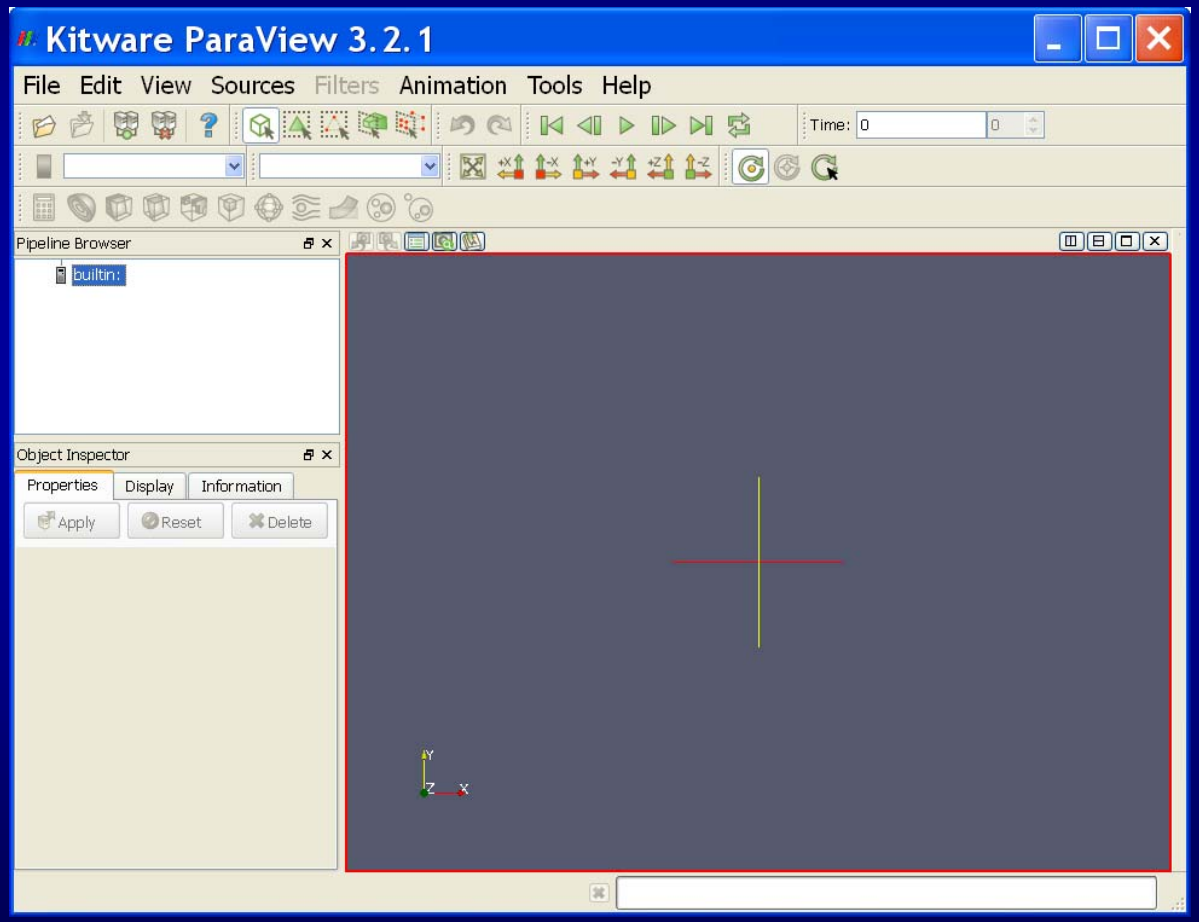
TACC

Visualizing with Paraview

- Step 2:
  - Download dataset at: http://www.tacc.utexas.edu/~kelly/PORTUGAL/RectGrid2.vtk

Visualizing with Paraview

- Step 3:
  - Locate paraview and start the application



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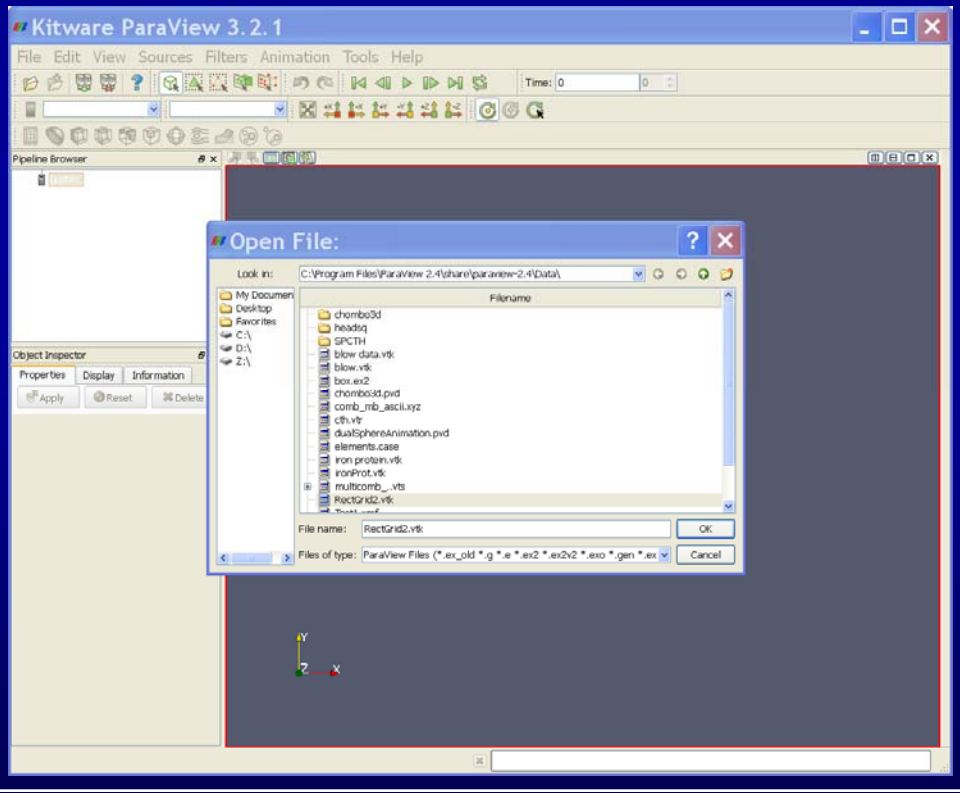
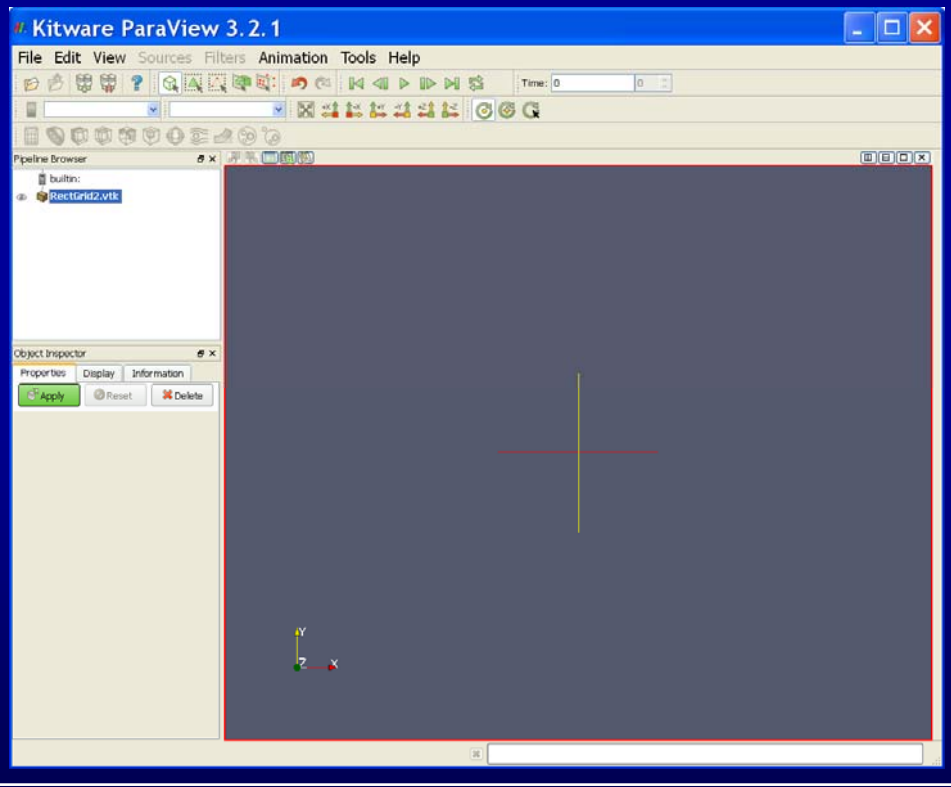
- Step 4:
  - Load the RectGrid2 data.





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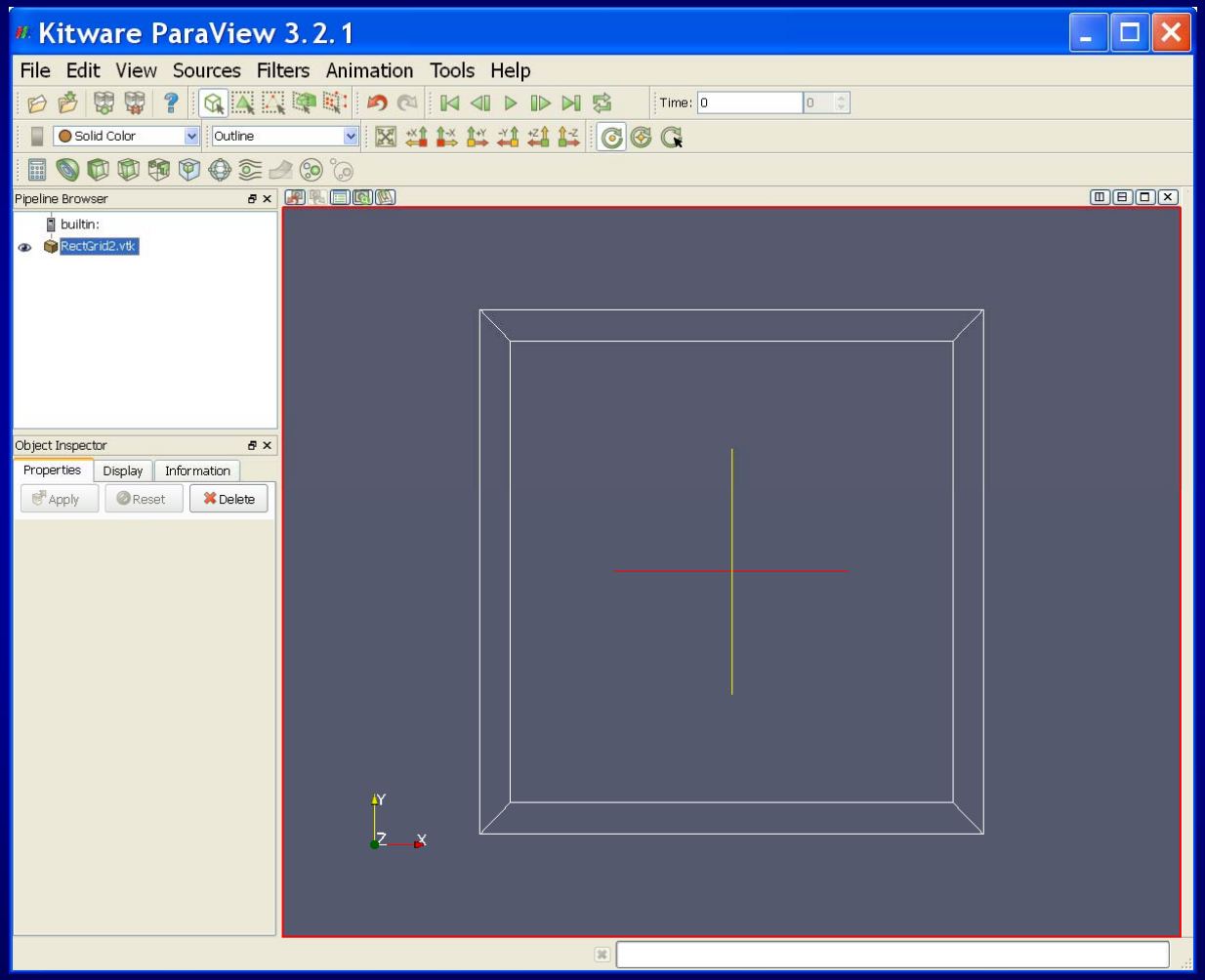
- Step 4:
  - Load the RectGrid2 data.



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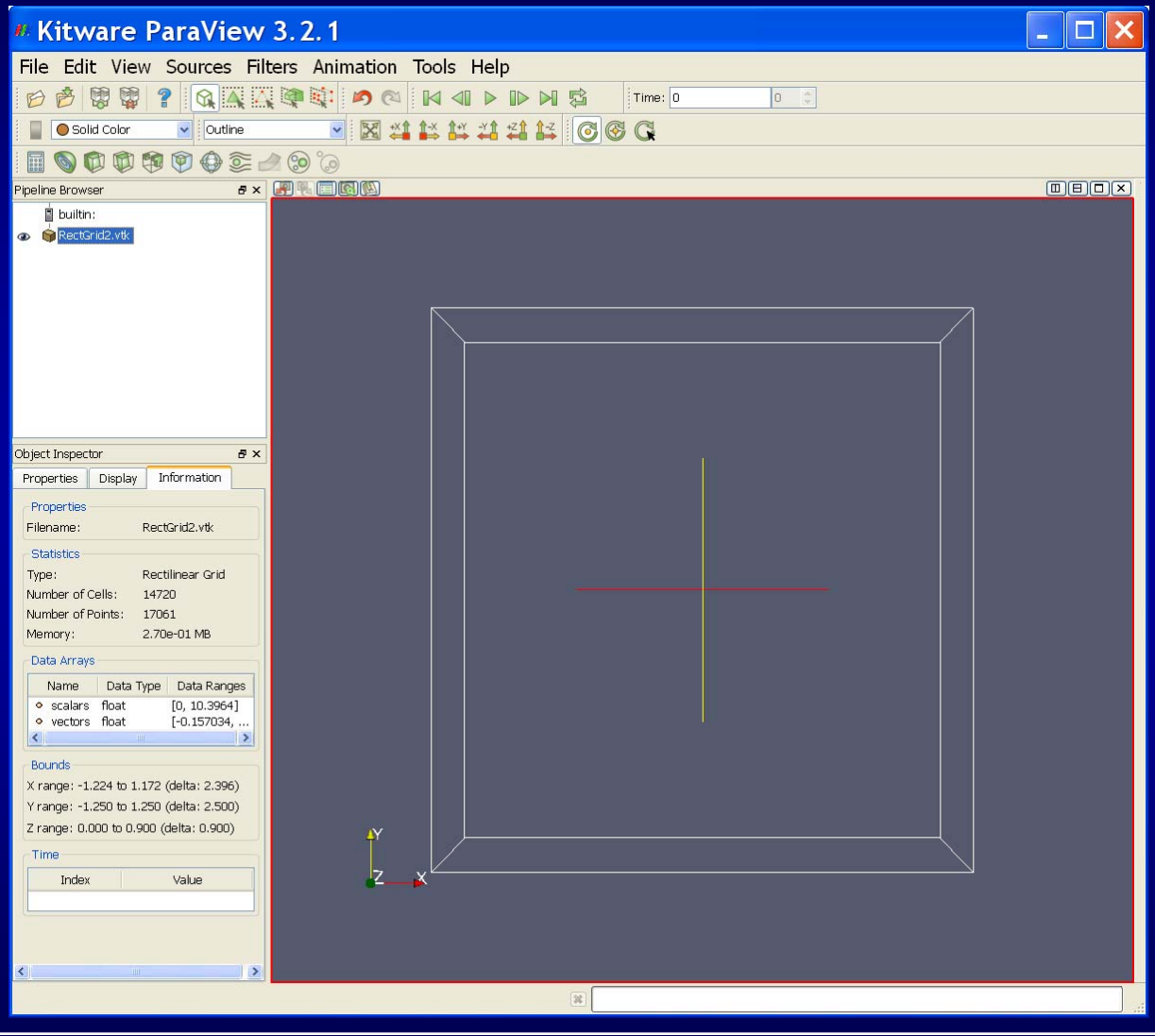
- Step 5:
  - Check that data loaded correctly.



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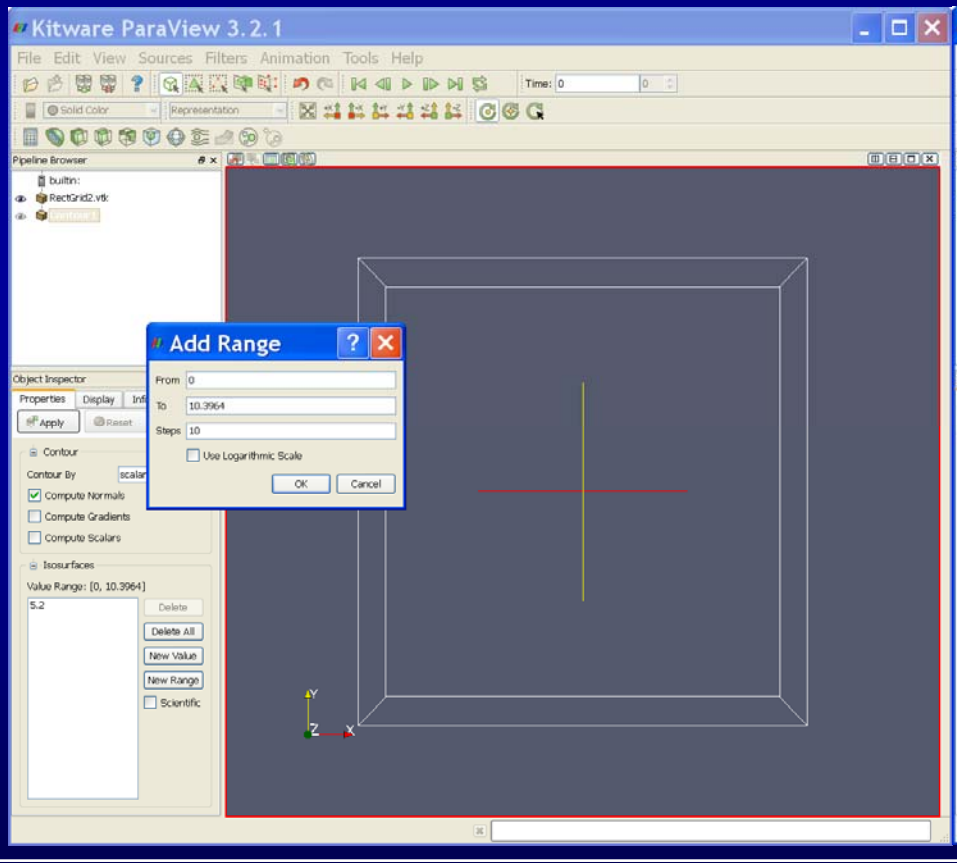
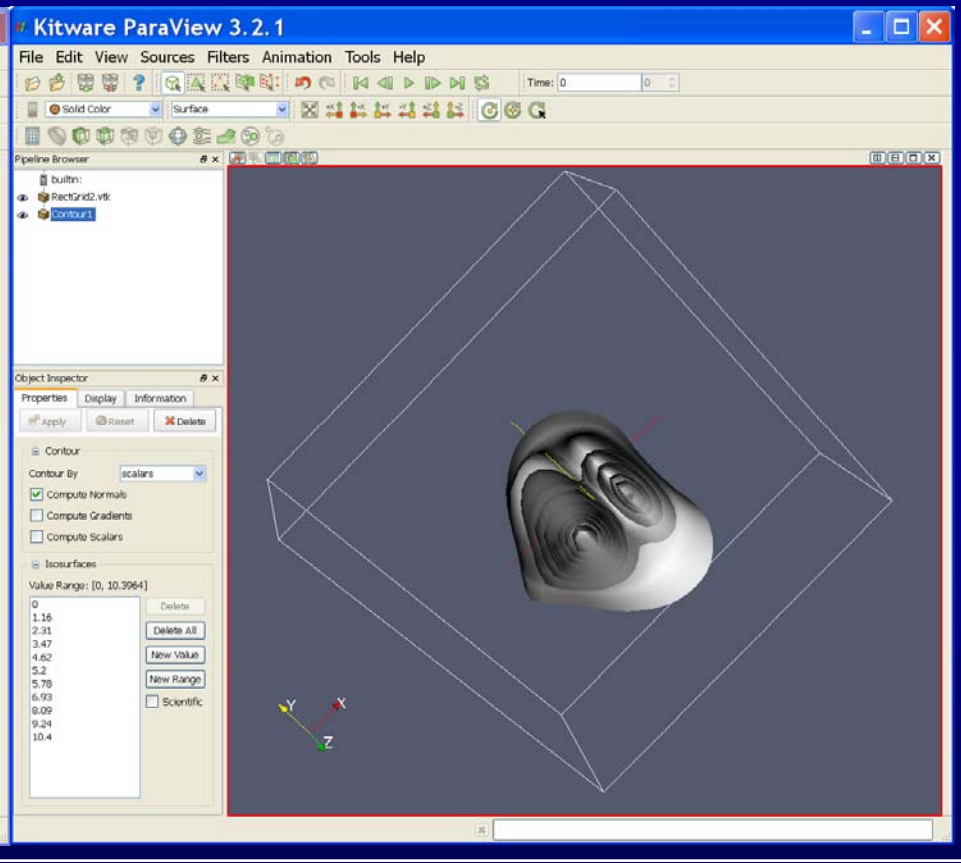
- Step 6:
  - Create an isosurface of scalar.





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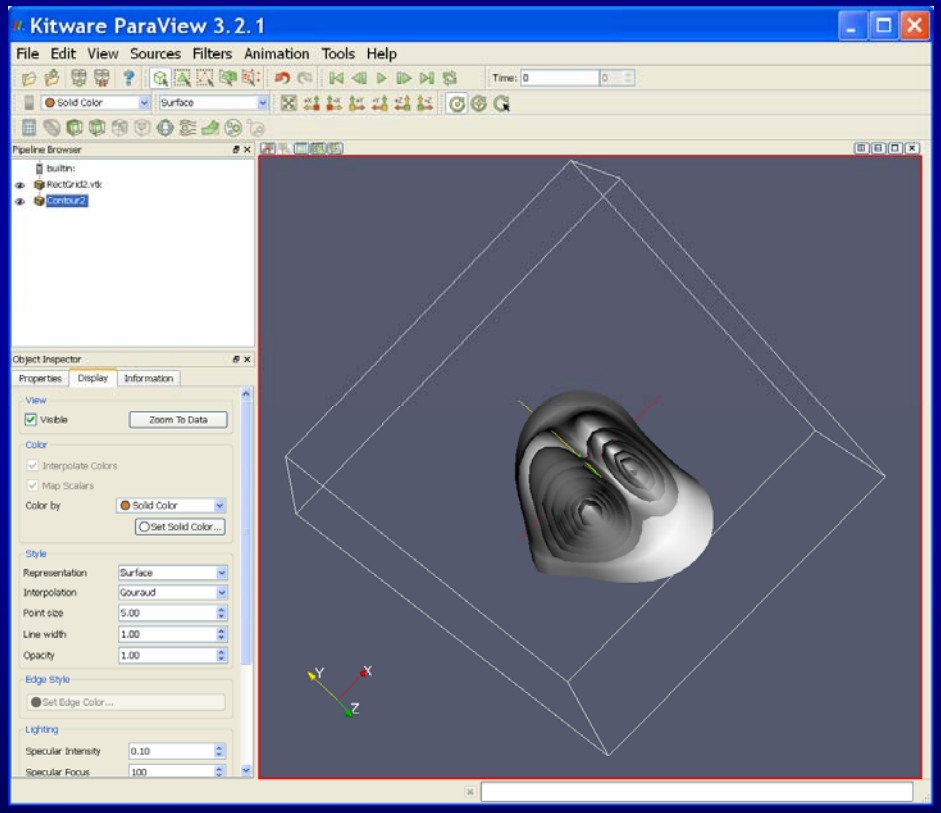
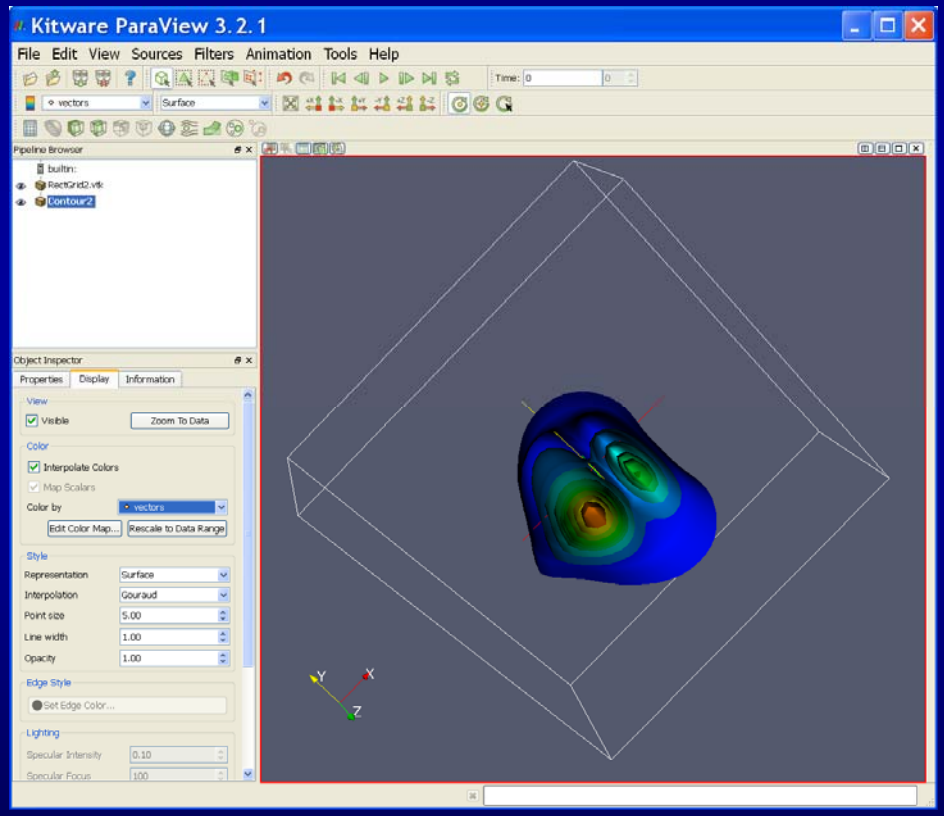
- Step 7:
  - Contour the isosurface with the vector magnitude.





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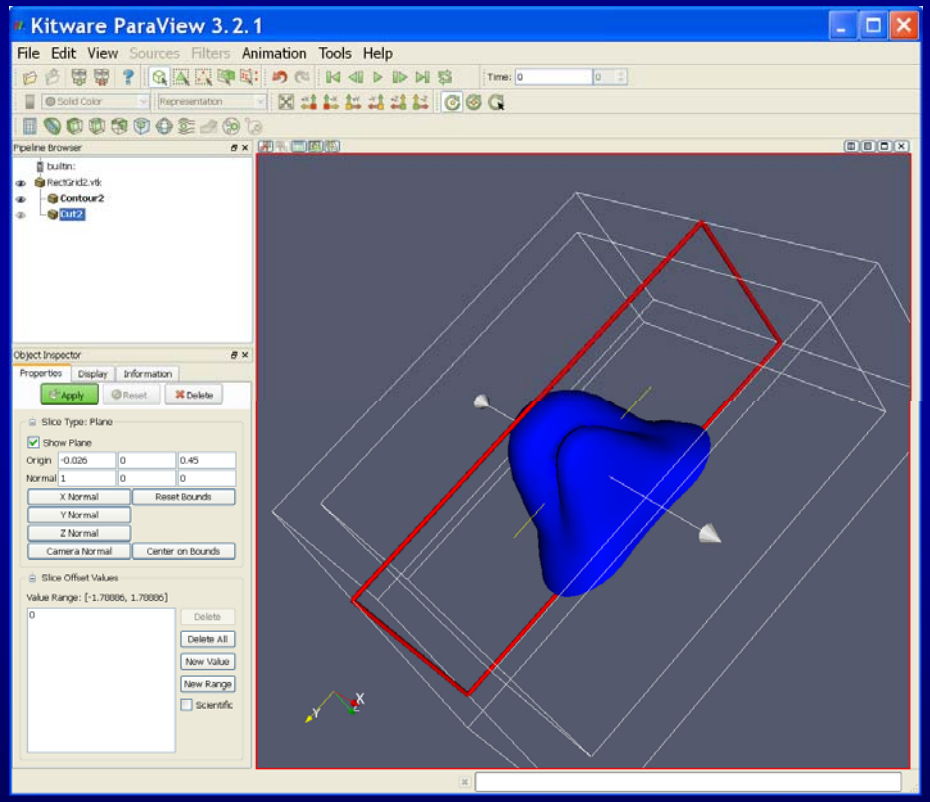
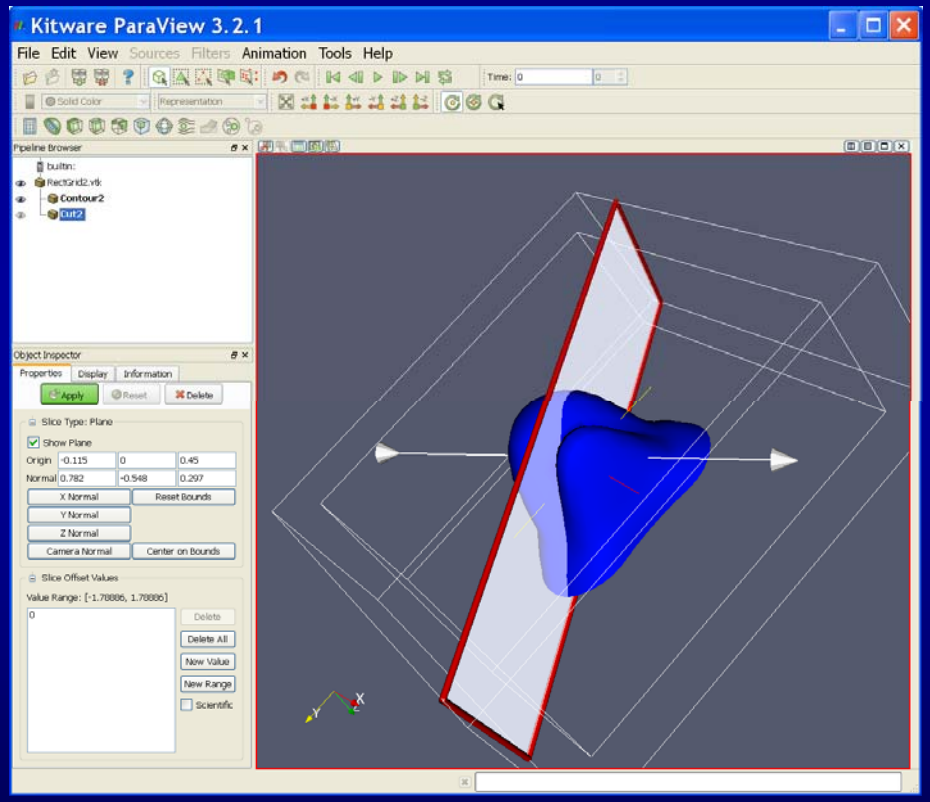
- Step 8:
  - Create a cutting plane.





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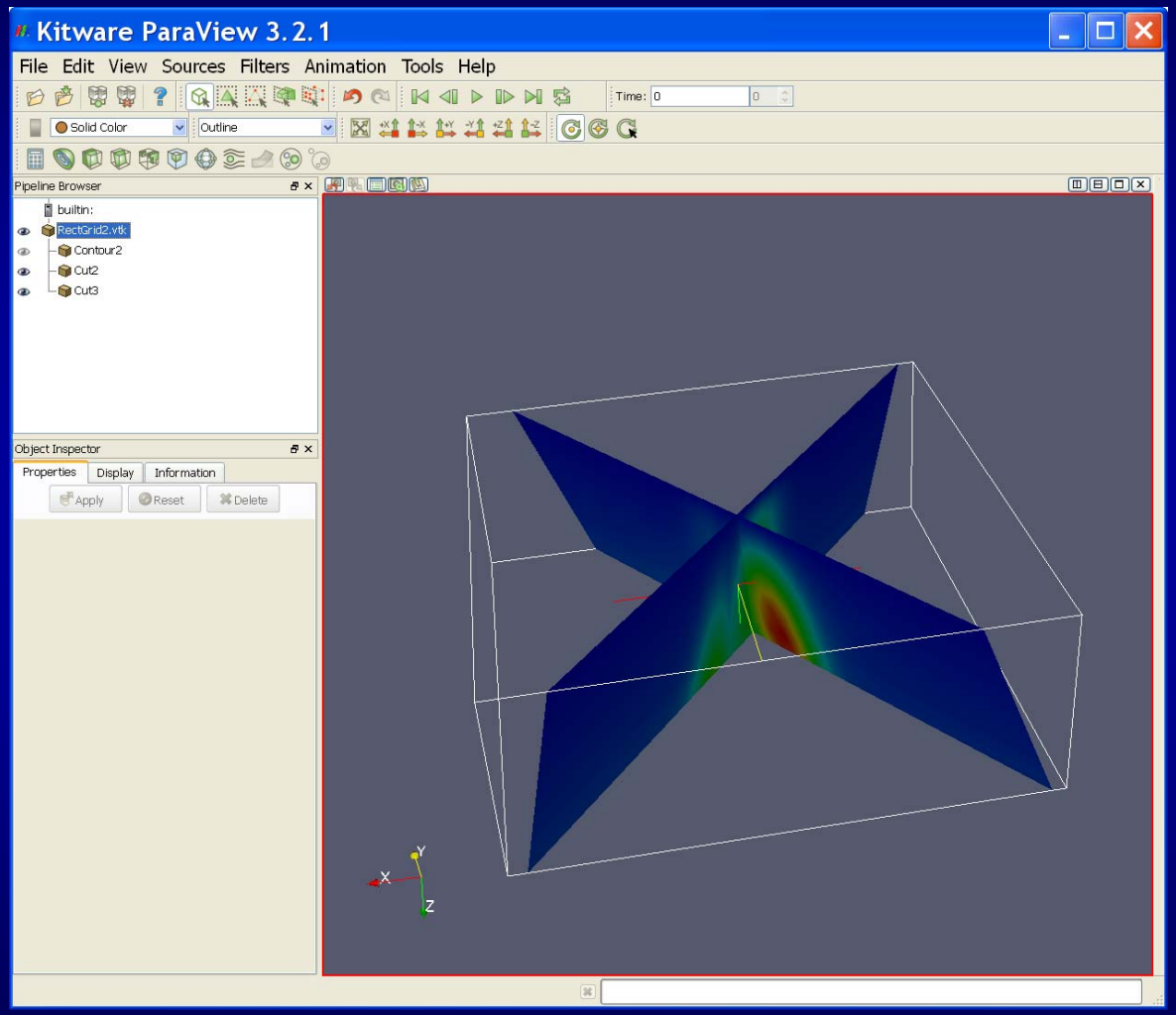
- Step 9:
  - Contour the cutting plane.



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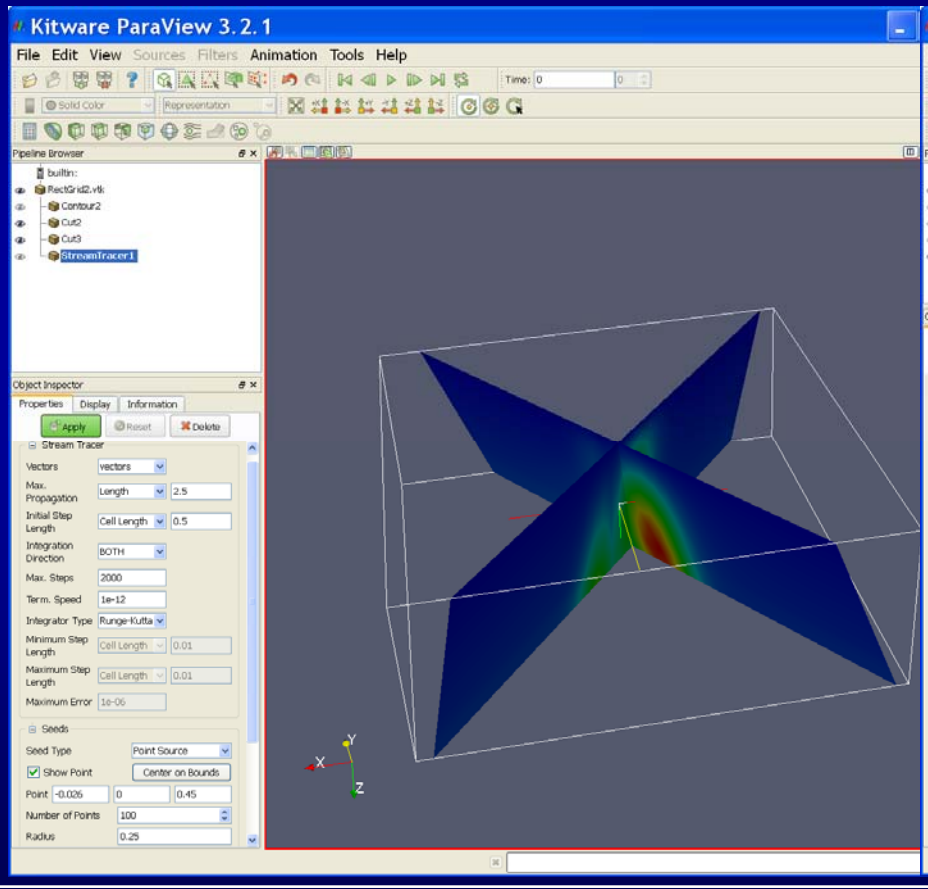
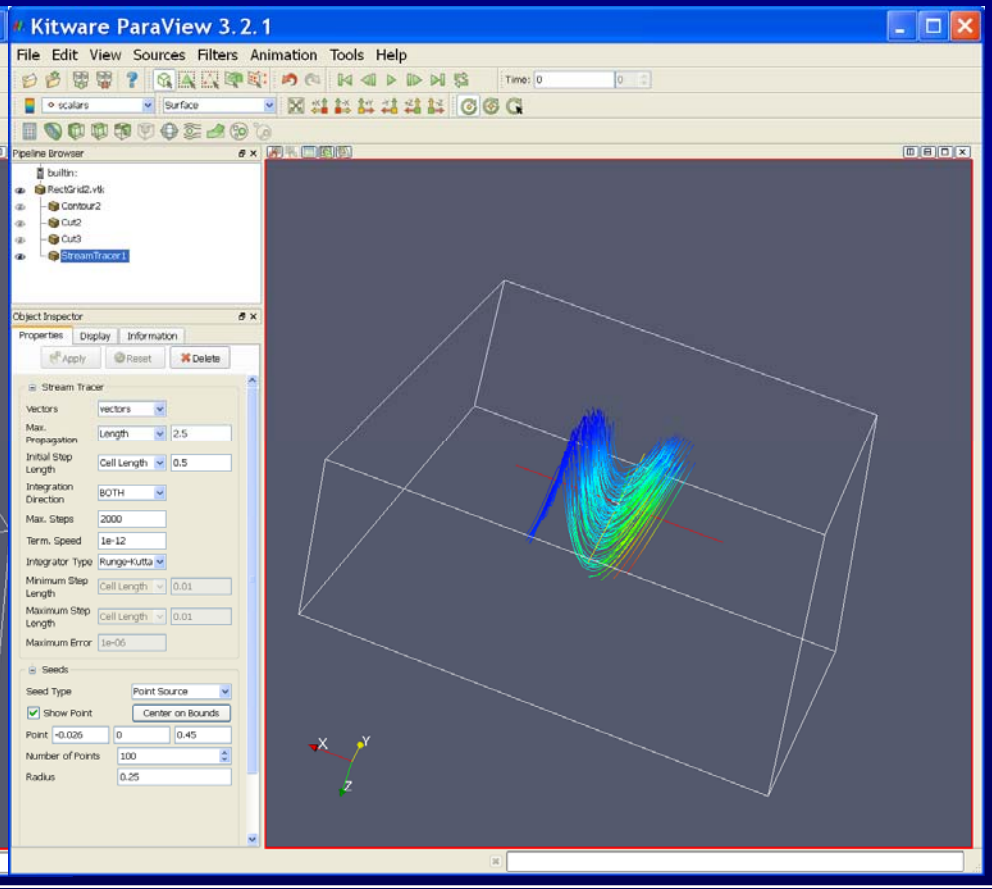
- Step 10:
  - Create Streamlines





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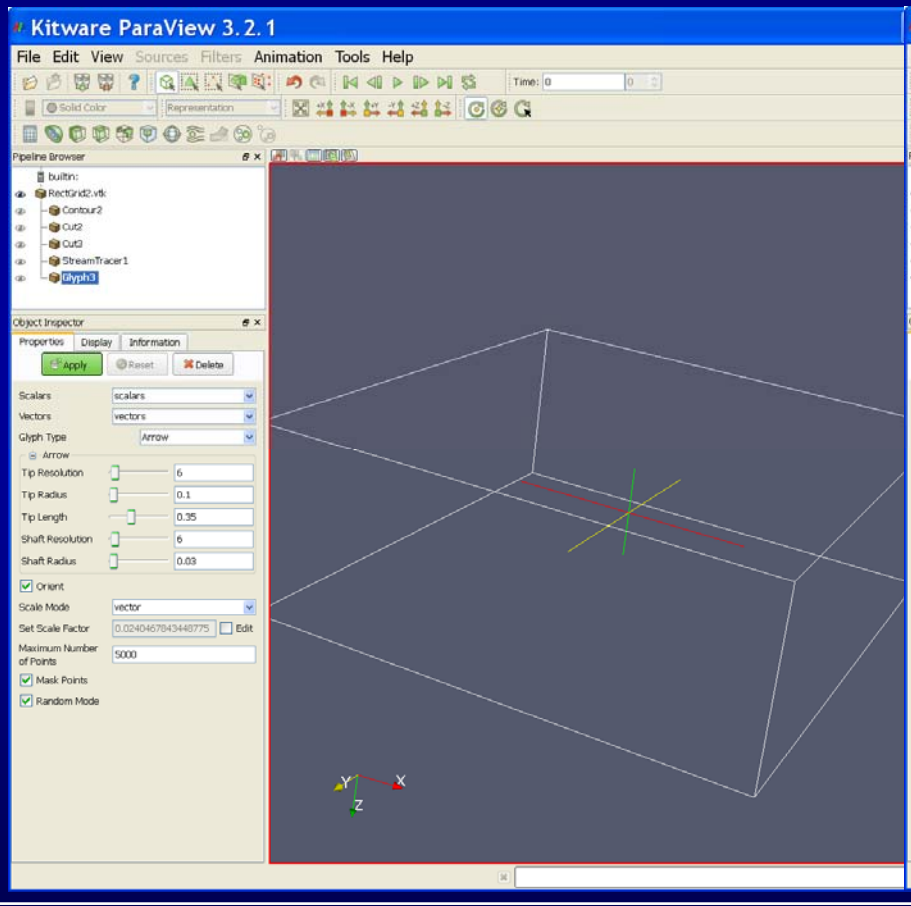
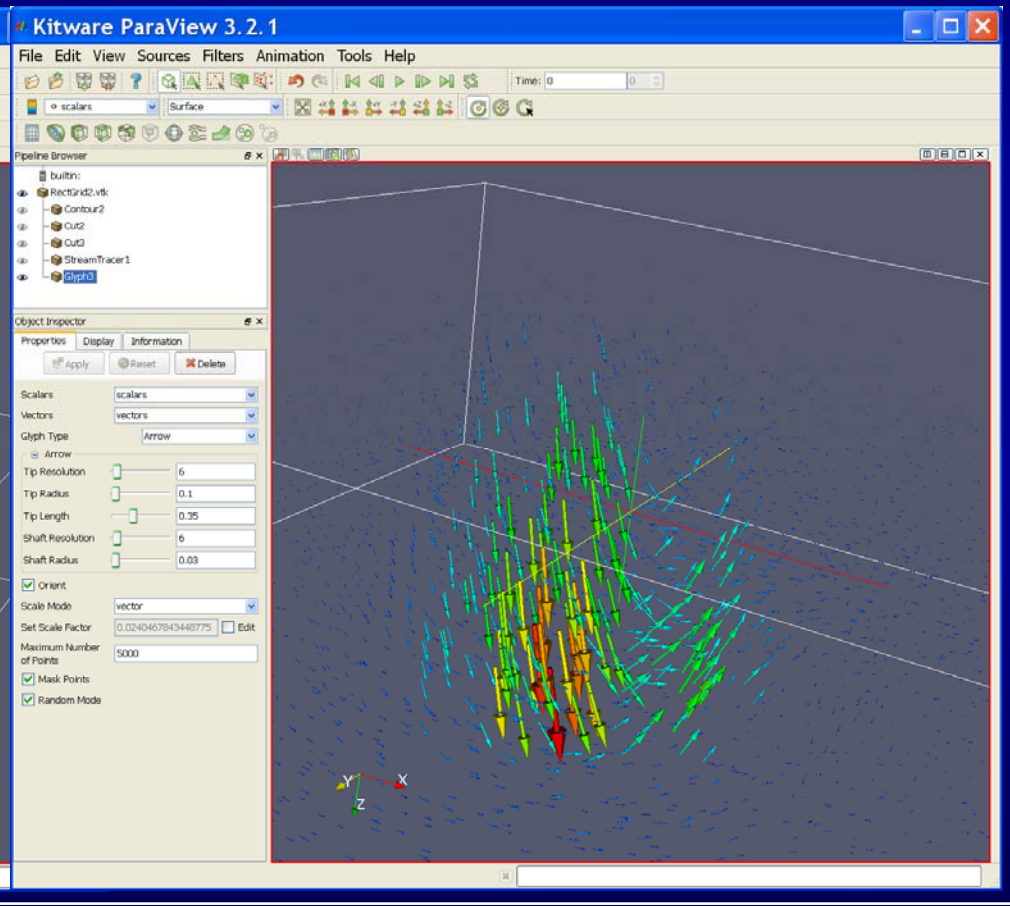
- Step 11:
  - Create Glyphs.





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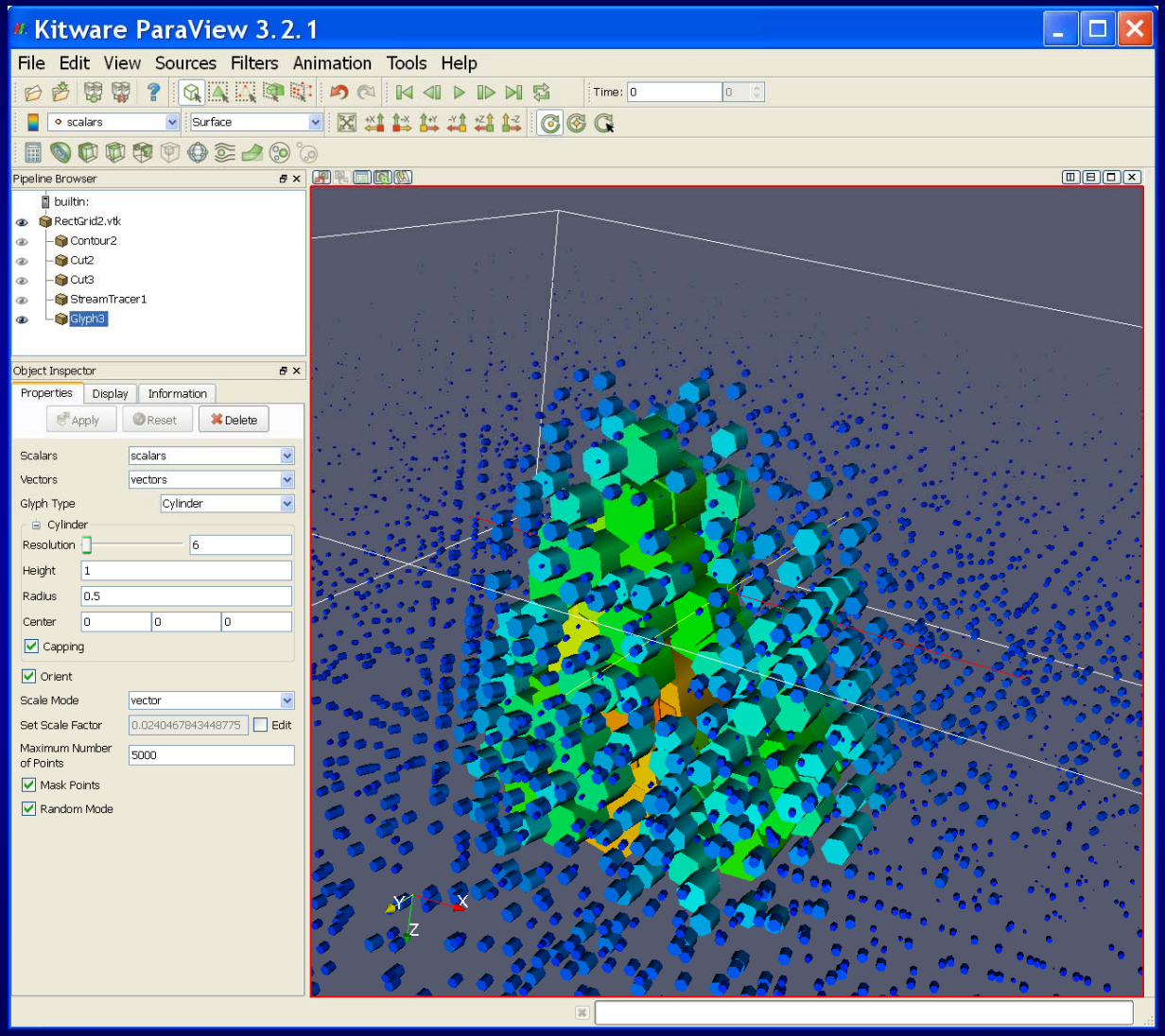
- Step 11:
  - Change glyph type.



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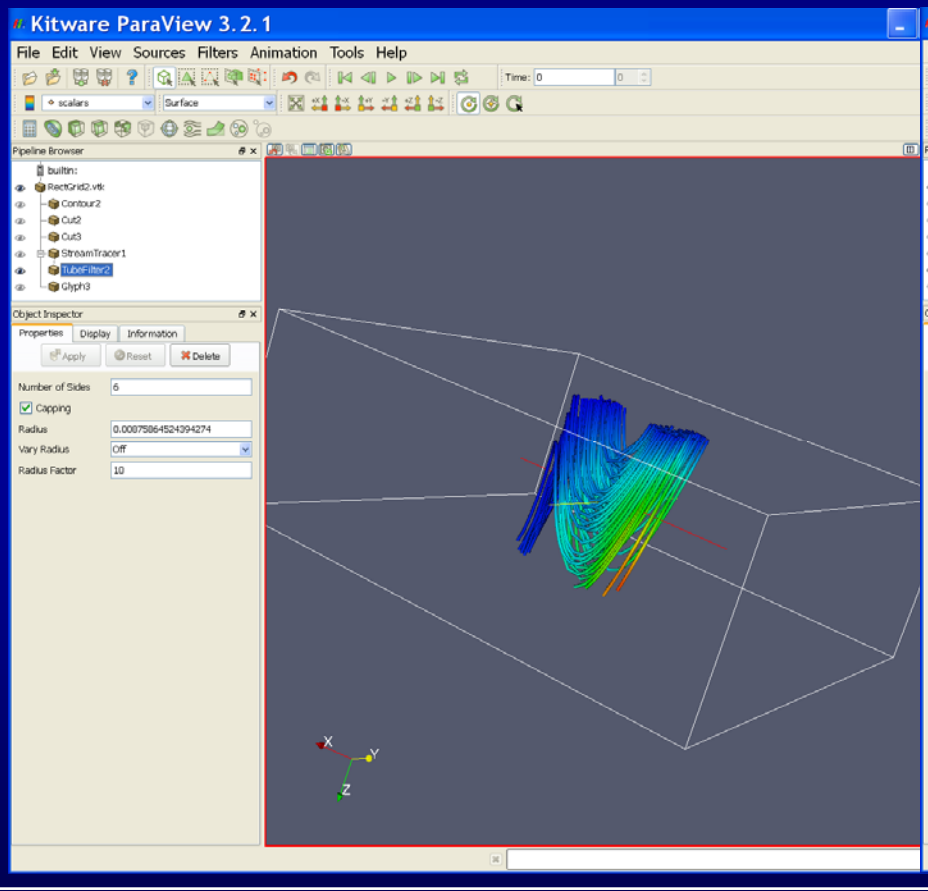
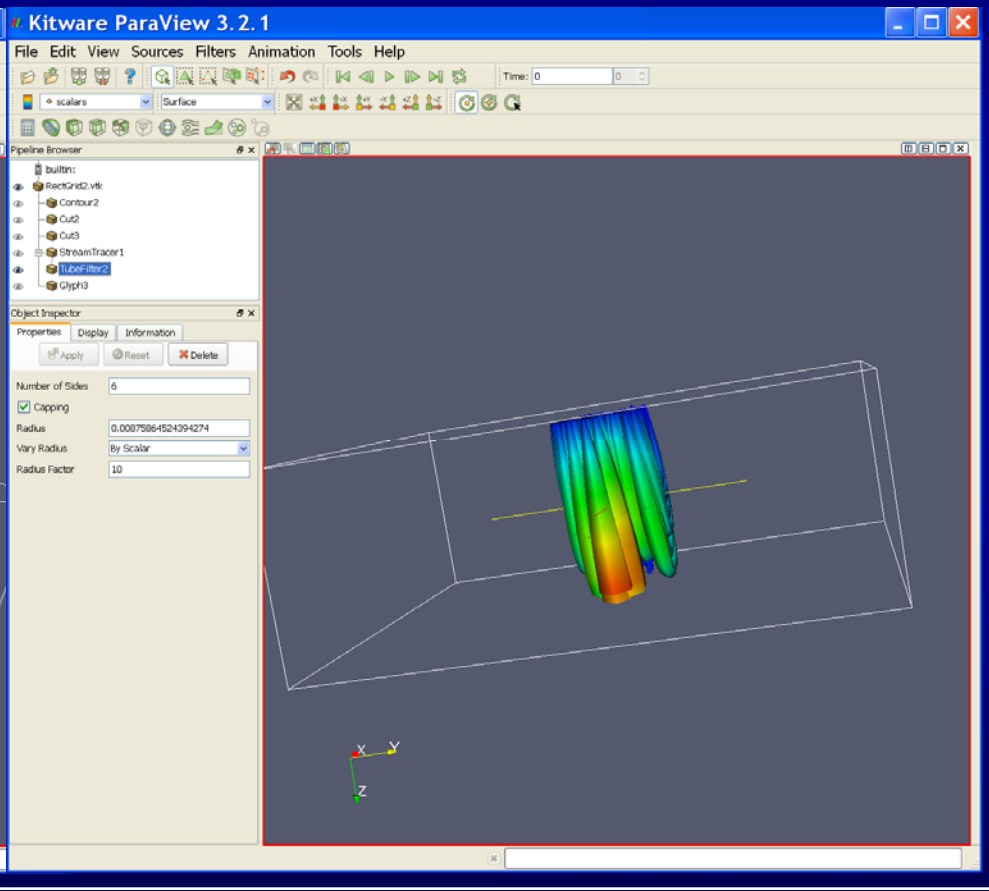
- Step 12:
  - Create stream tubes by selecting the streamlines and applying a tube filter.





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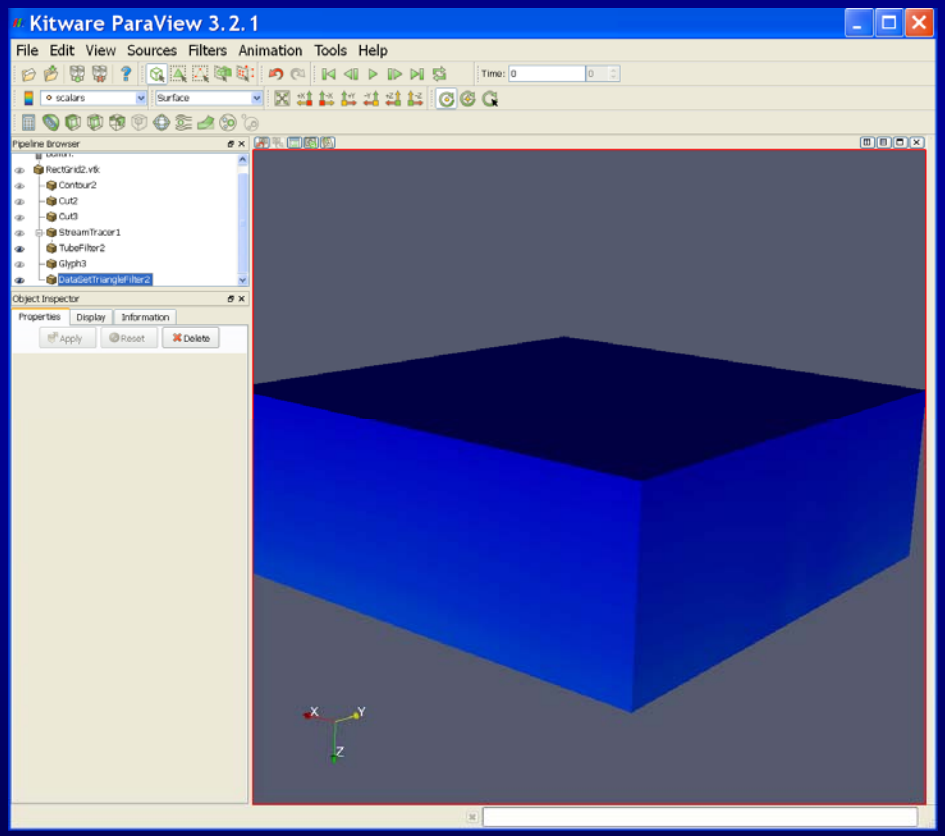
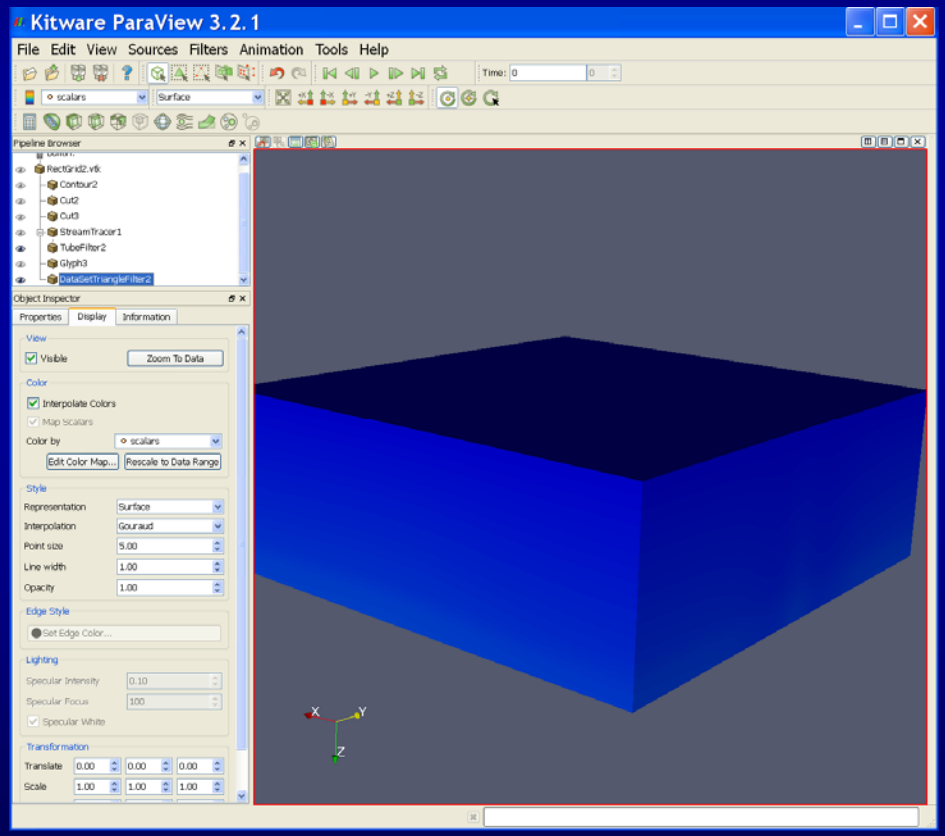
- Step 13:
  - Volume Render the Data. Paraview can only volume render unstructured data, so must create an unstructured grid from the rectilinear data using the “Tetrahedralize” filter.





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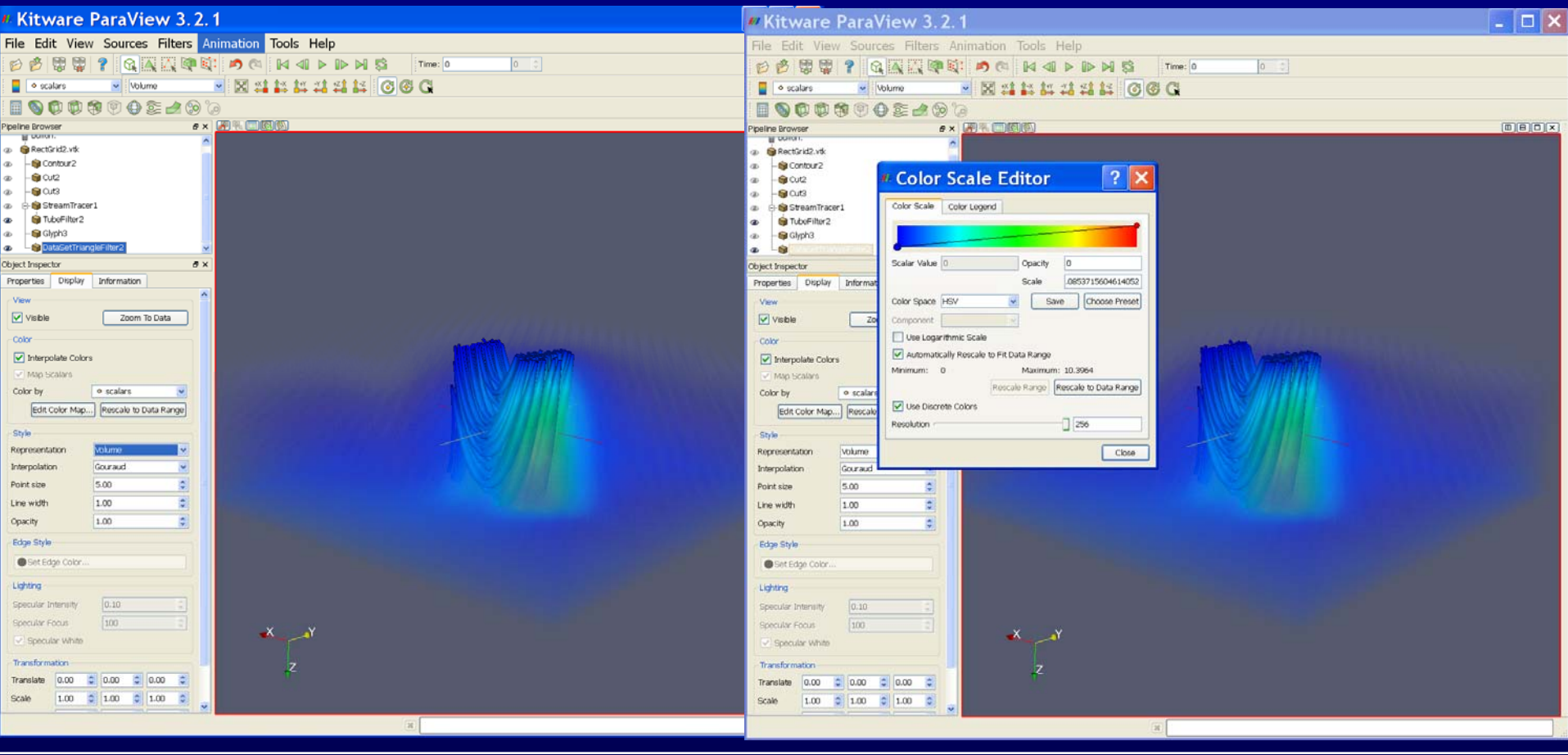
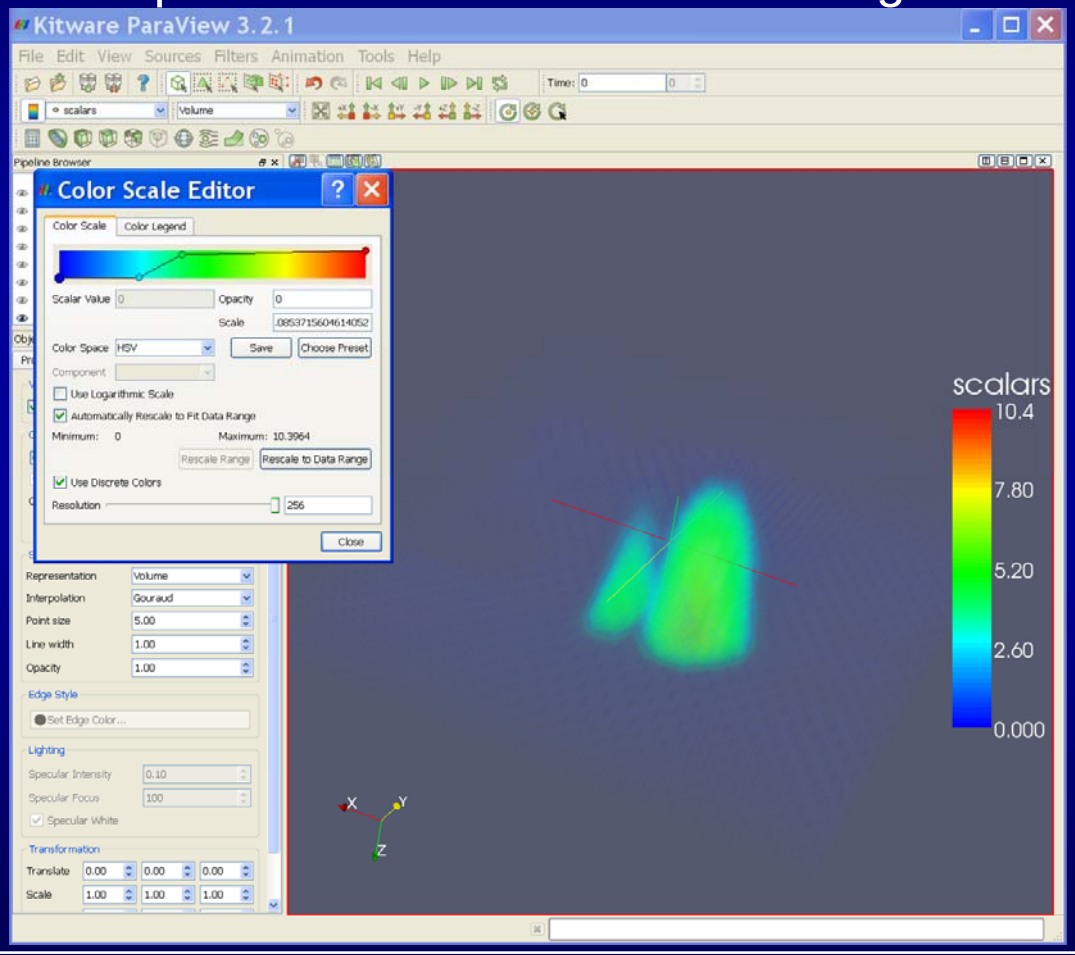
- Step 13:
  - Volume Render the Data.



Visualizing with Paraview

- Step 14:
  - Edit the colormap to refine the volume rendering.



Questions?