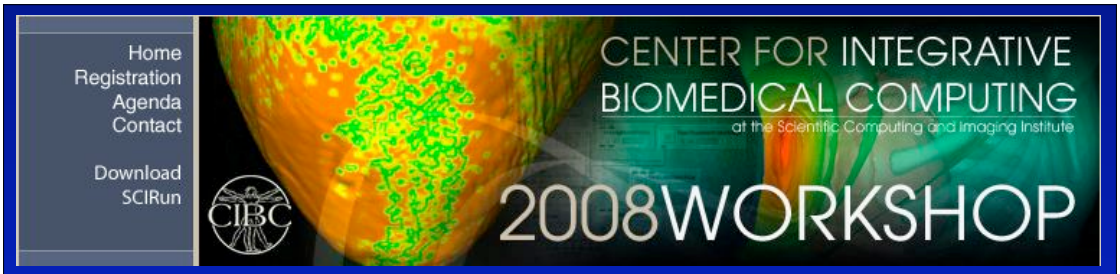

map3d History and Concepts

Rob MacLeod
Bryan Worthen
J.R. Blackham

map3d History

map3d

1990: First SGI, first GL, first map3d

1992/3: First papers:

- Visualization in Biomedical Computing 1992
- IEEE Visualization Conference 1992
- Visualizing Bioelectric Fields (Comp. Graphics and Appl.m 1993
- IEEE EMBS Conference, 1993

1999: Started conversion to OpenGL

2000: First OpenGL release: Version 5.0

2003: March 2003, Version 5.4

Why *map3d?*

map3d

Mapping: the driving application

- Spatiotemporal signals
- Electrophysiology of the heart

Graphics hardware and GL

- Interactivity is essential
- GL is (was) simple

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Goals of *map3d*

map3d

Read

- Surface based geometries
- Multichannel time signals

Render

- Color coded maps of scalars
- Plots of time signals

Provide

- Interactive control
- Interrogation of data
- Presentation graphics output

NCRR

What Does *map3d* Need?

Geometry

- Surface or pseudo-surface
- Connectivity and facets

Data

- Time signal for each point in geometry

Computer

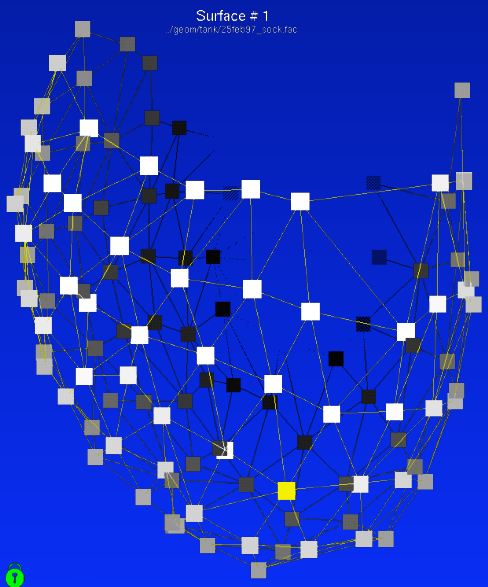
- SGI, Windows, Linux
- Mac/OSX coming soon

map3d Features

"Looking at my data has never been so much fun!"

Map3d Rendering

map3d



Nodes and mesh

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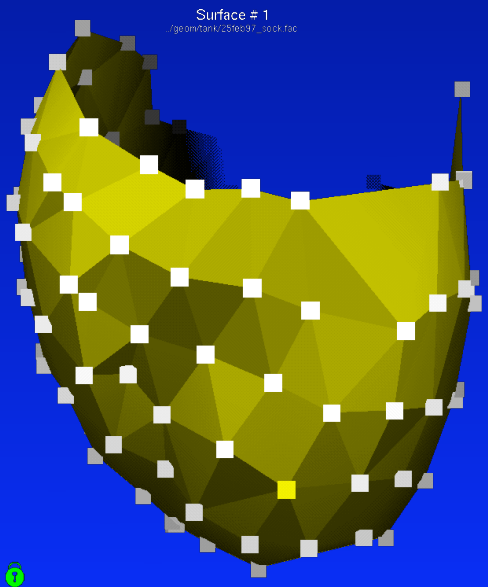
Map3d Rendering

map3d



Nodes and mesh

Lighted surface

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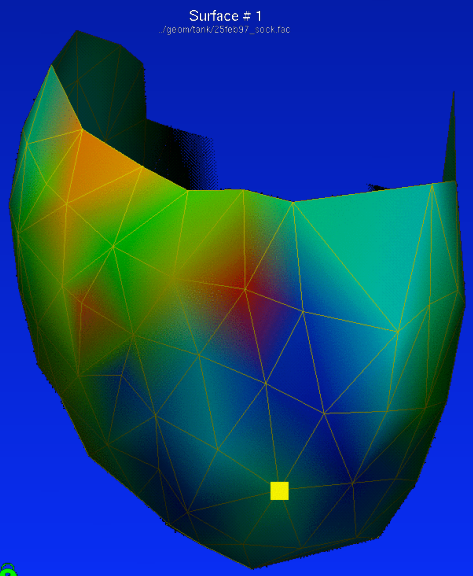
Map3d Rendering

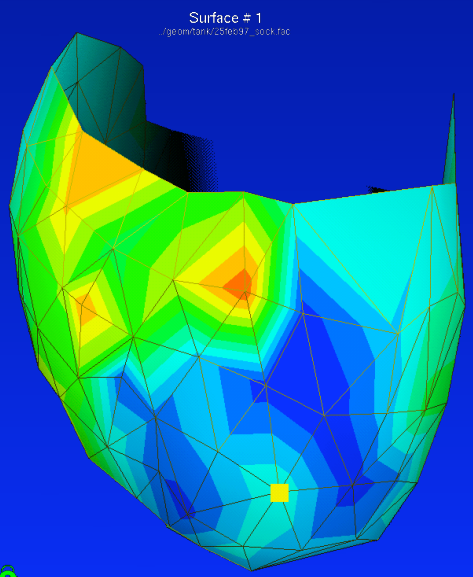
map3d



Nodes and mesh
Lighted surface
Data Gouraud

Map3d Rendering

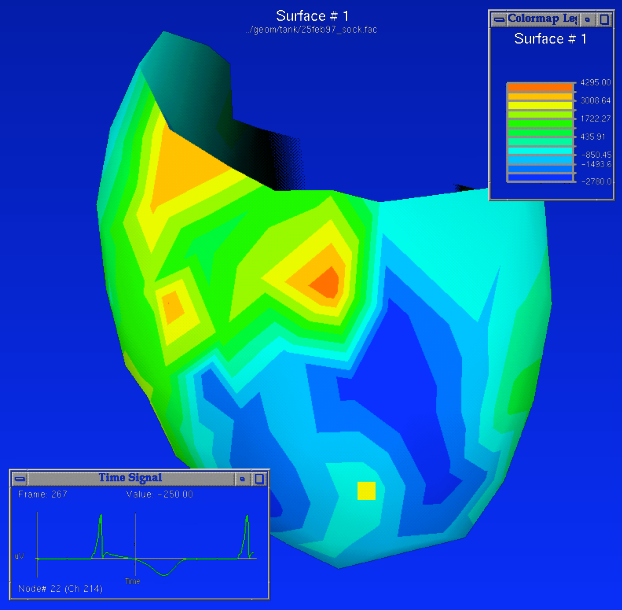
map3d



Nodes and mesh
Lighted surface
Data Gouraud
Data B-shaded

Map3d Rendering

map3d



Nodes and mesh
Lighted surface
Data Gouraud
Data B-shaded
Time signals

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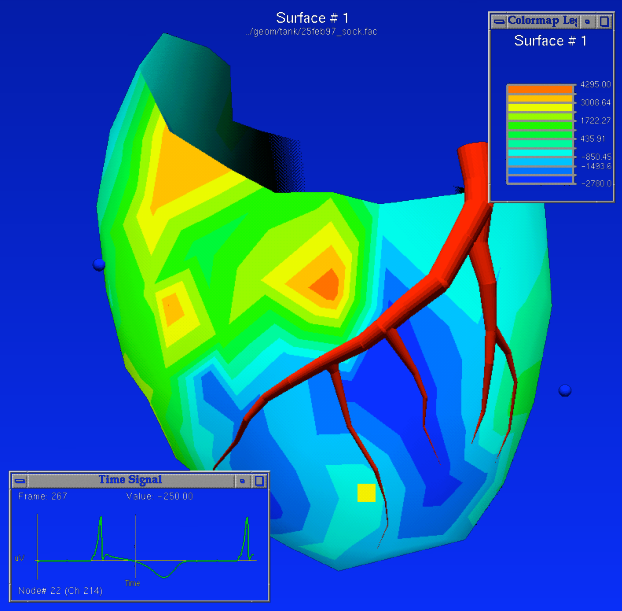
Map3d Rendering

map3d



Nodes and mesh
Lighted surface
Data Gouraud
Data B-shaded
Time signals
Landmarks

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Current Features

map3d

GTK windowing environment
- Good control of look and feel
- New UI elements

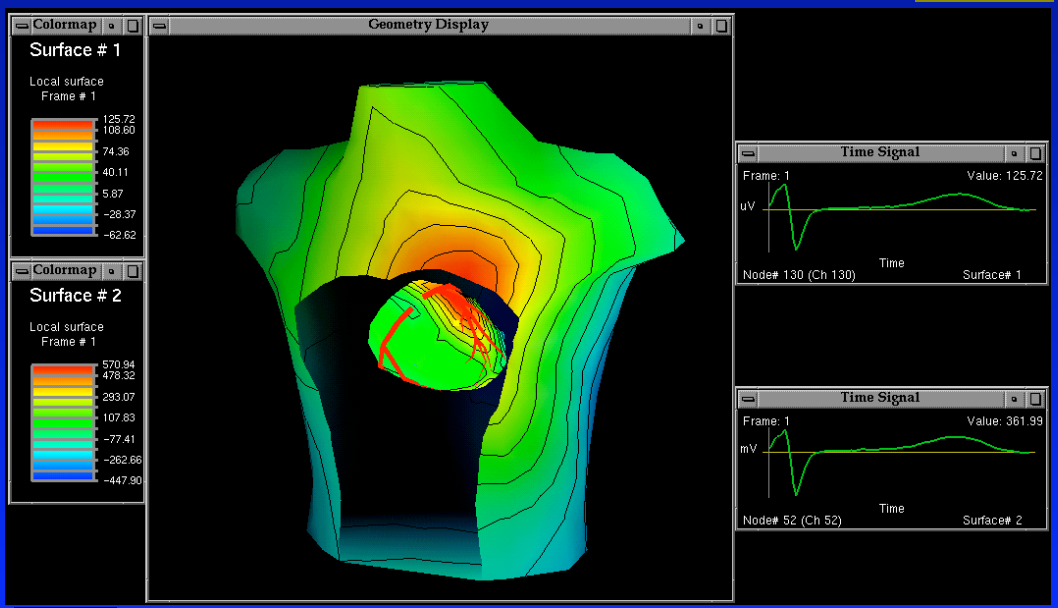
File support
- ASCII for geometry
- MATLAB for geometry and data

Image/movie capture

Image underlay

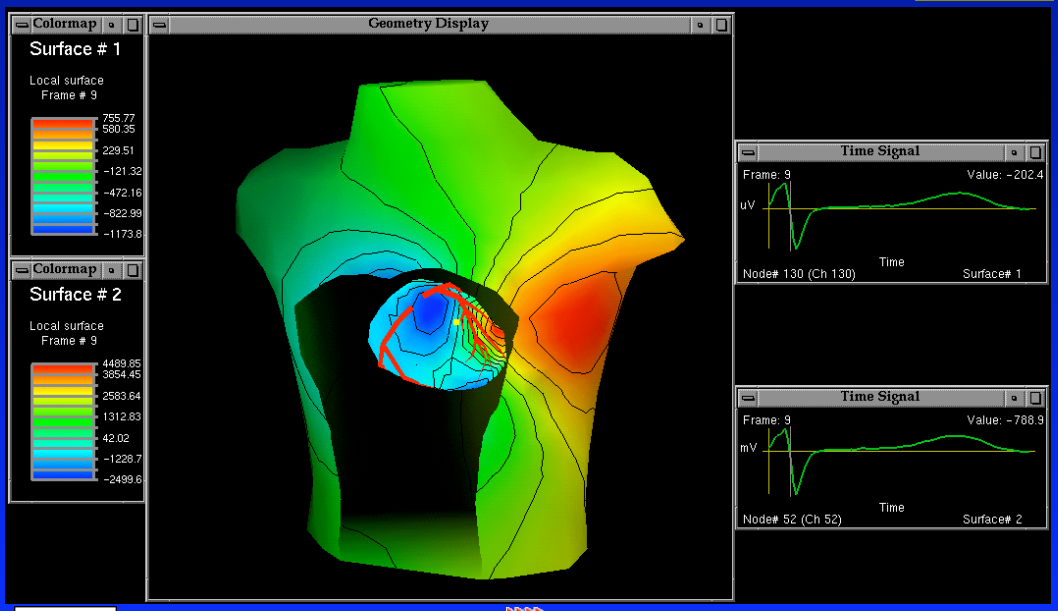
Window layout

map3d



Rendering Gouraud

map3d



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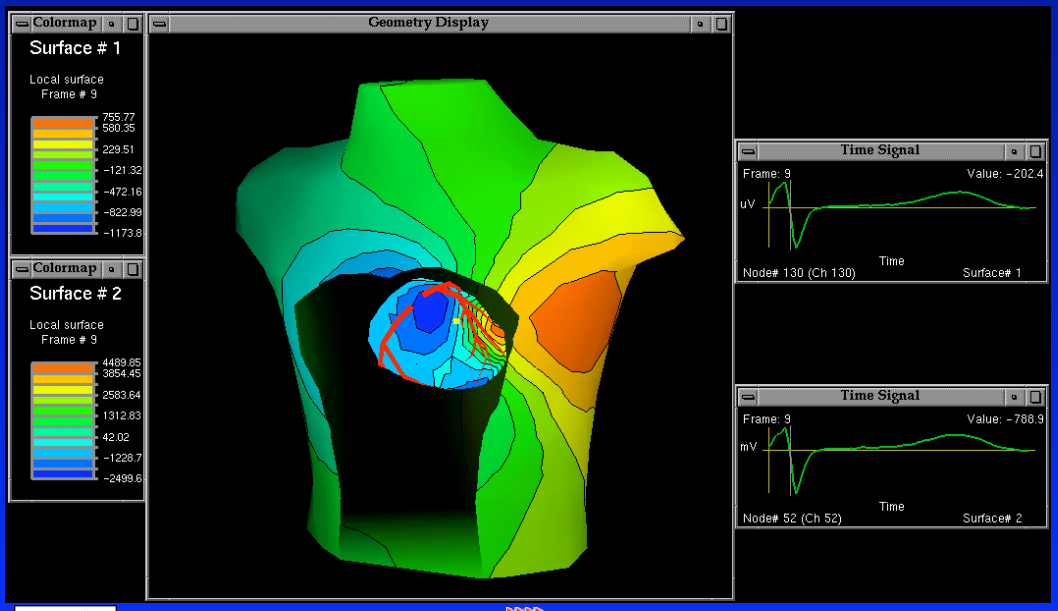
Rendering Banded

map3d



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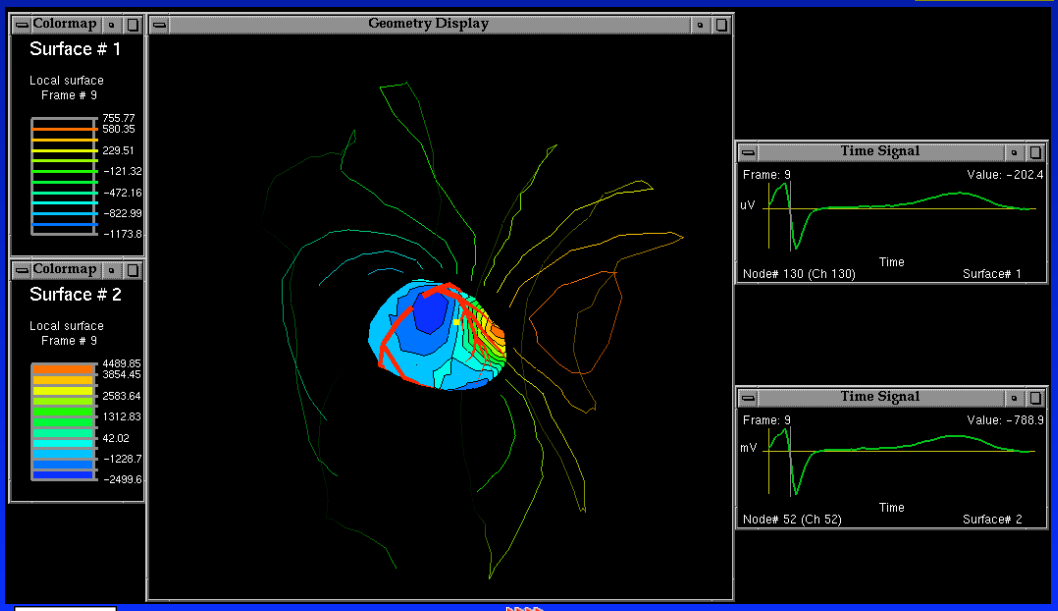
Rendering Counters

map3d



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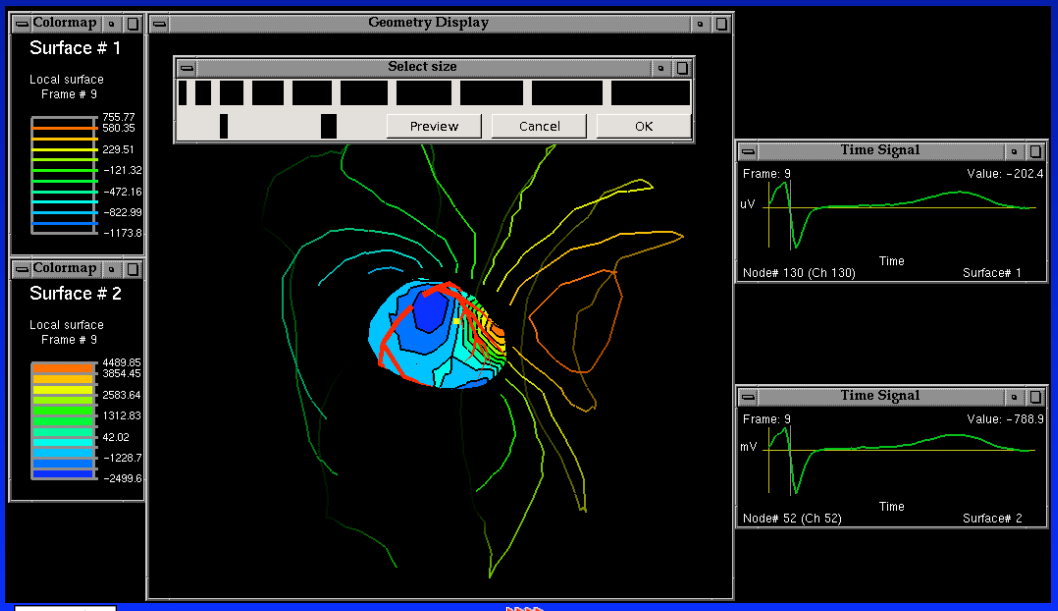
Size Picker

map3d



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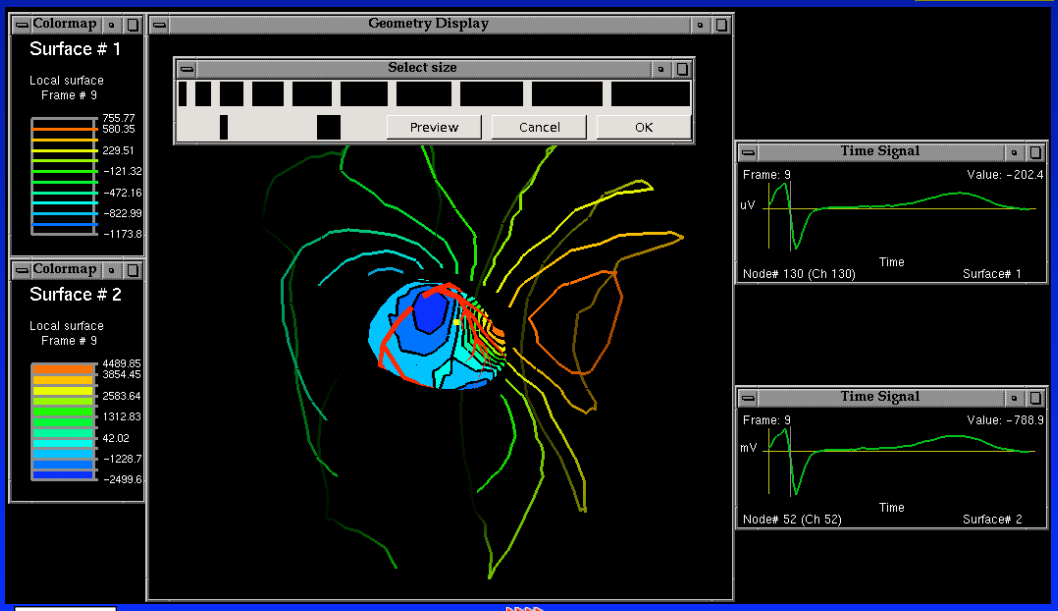
Size Picker (2)

map3d



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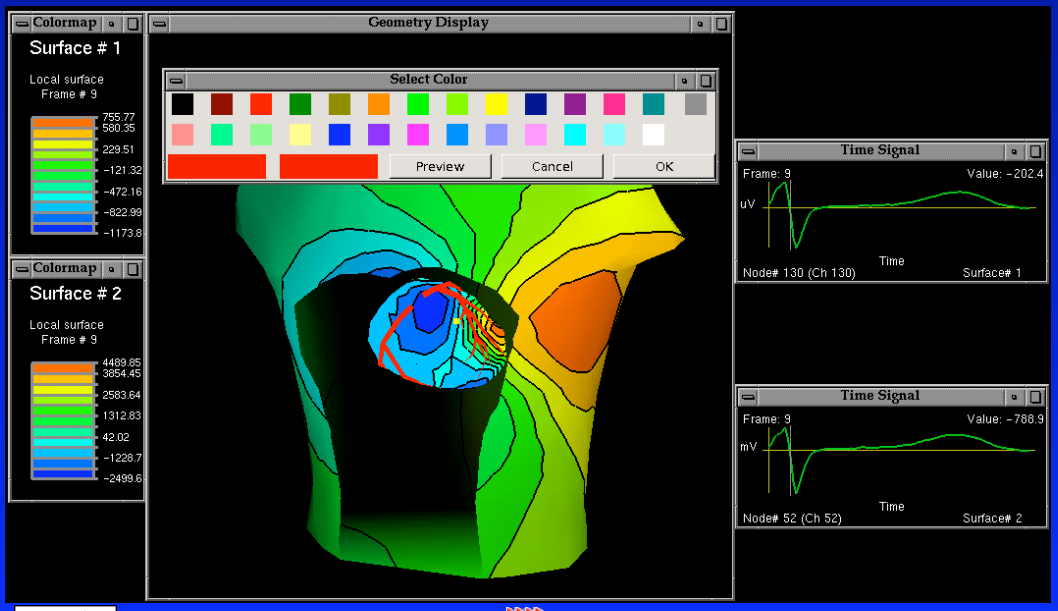
Color Picker

map3d



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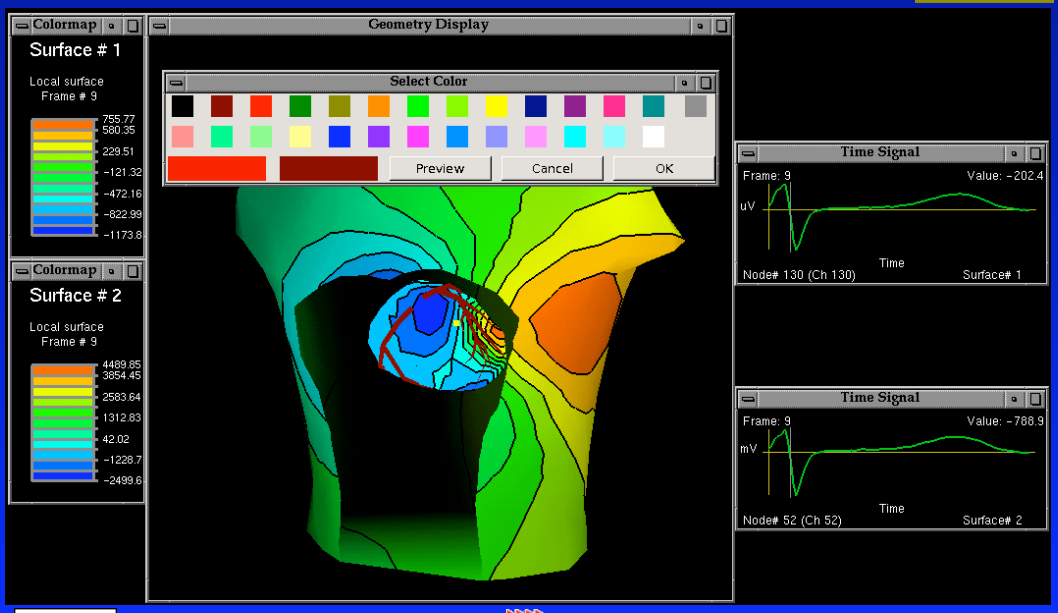
Color Picker (2)

map3d



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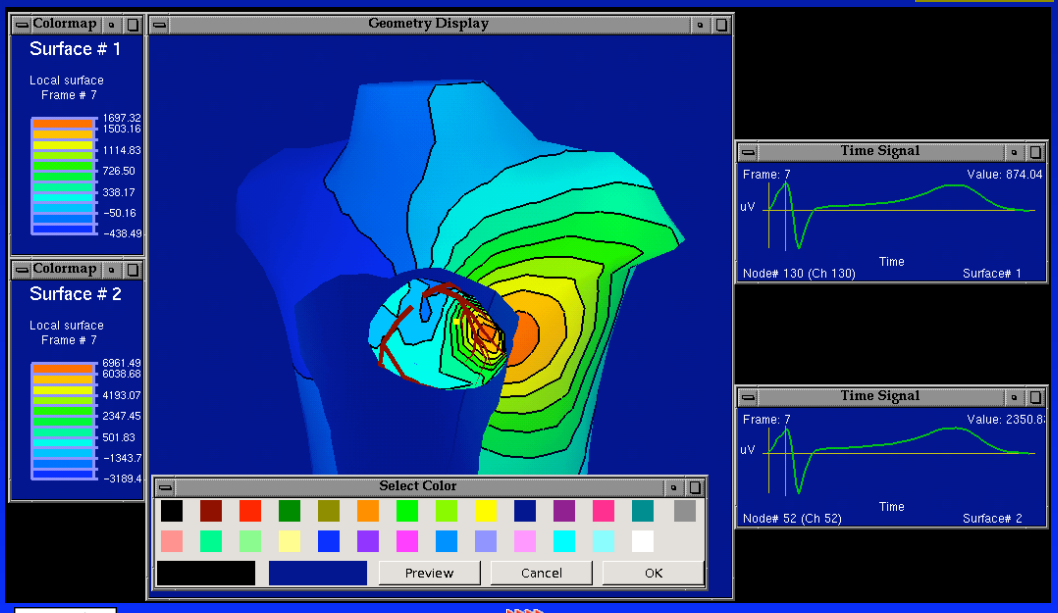
Background Color

map3d



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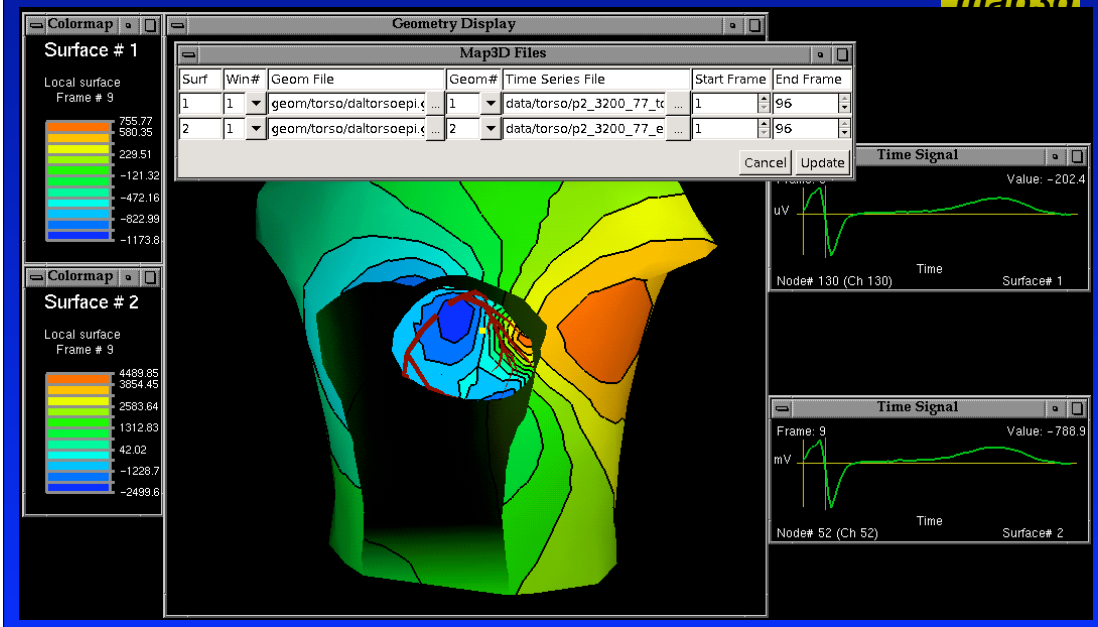
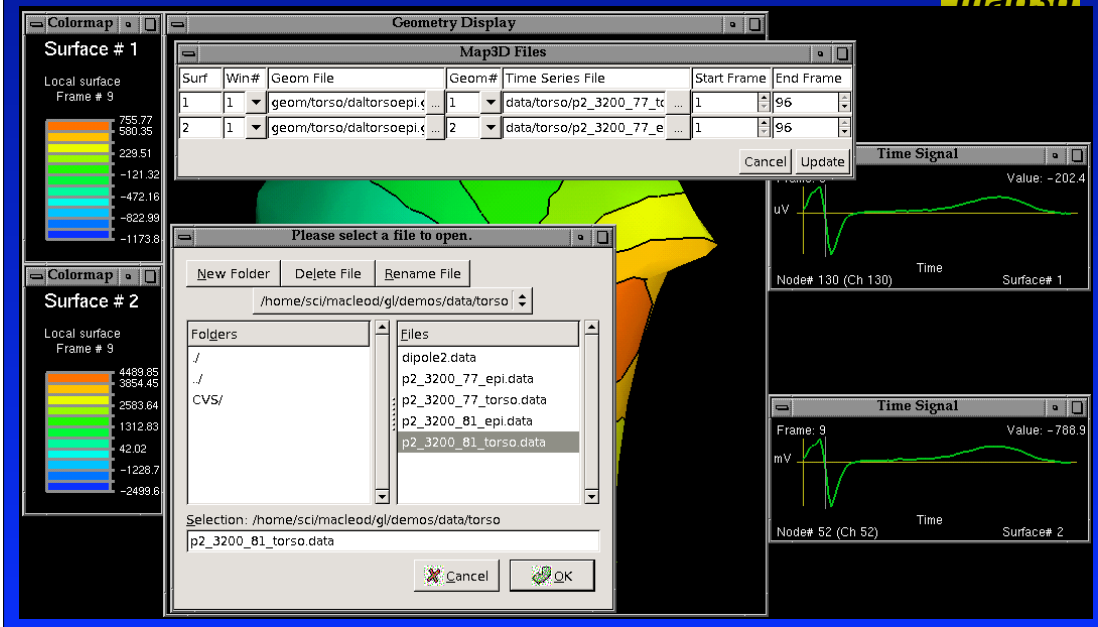
Reloading Data/Geometry

map3d



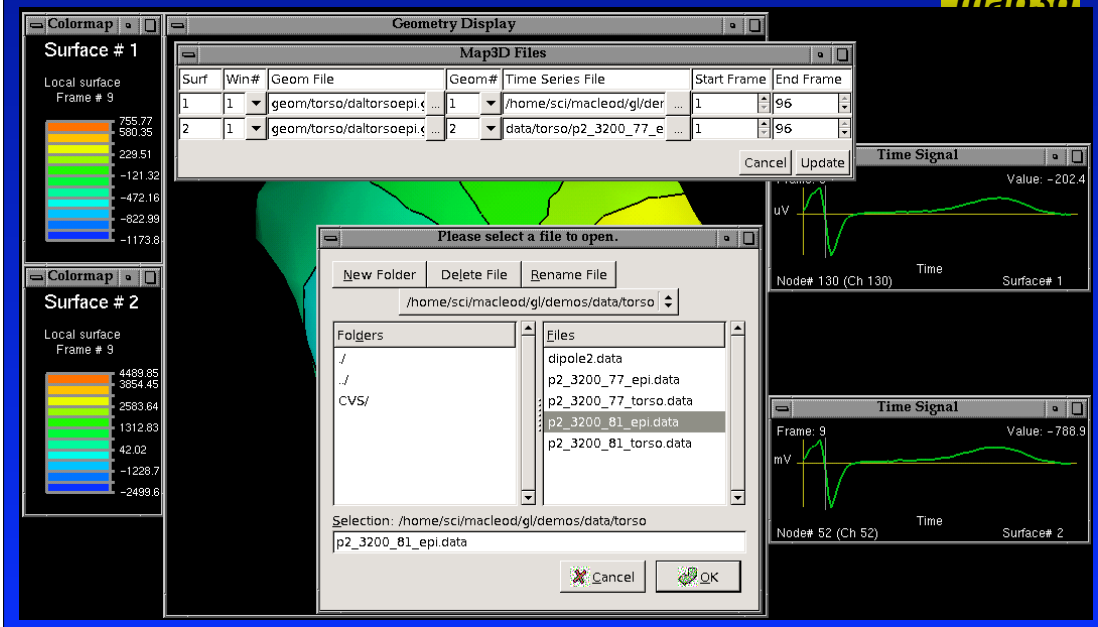
Reloading Data/Geometry

map3d



Reloading Data/Geometry

map3d



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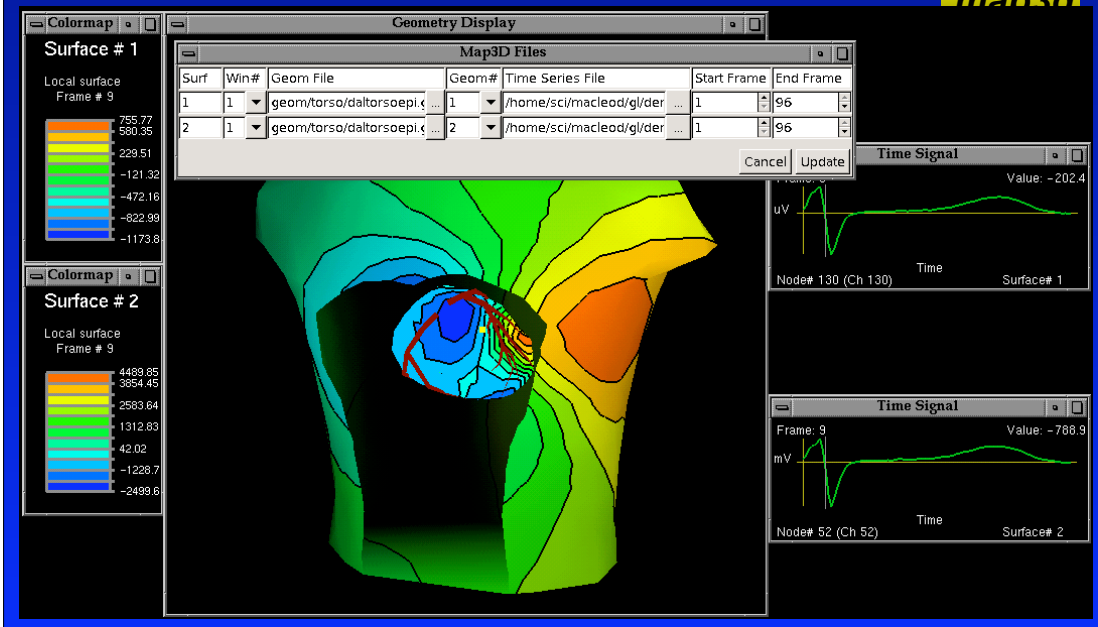
Reloading Data/Geometry

map3d



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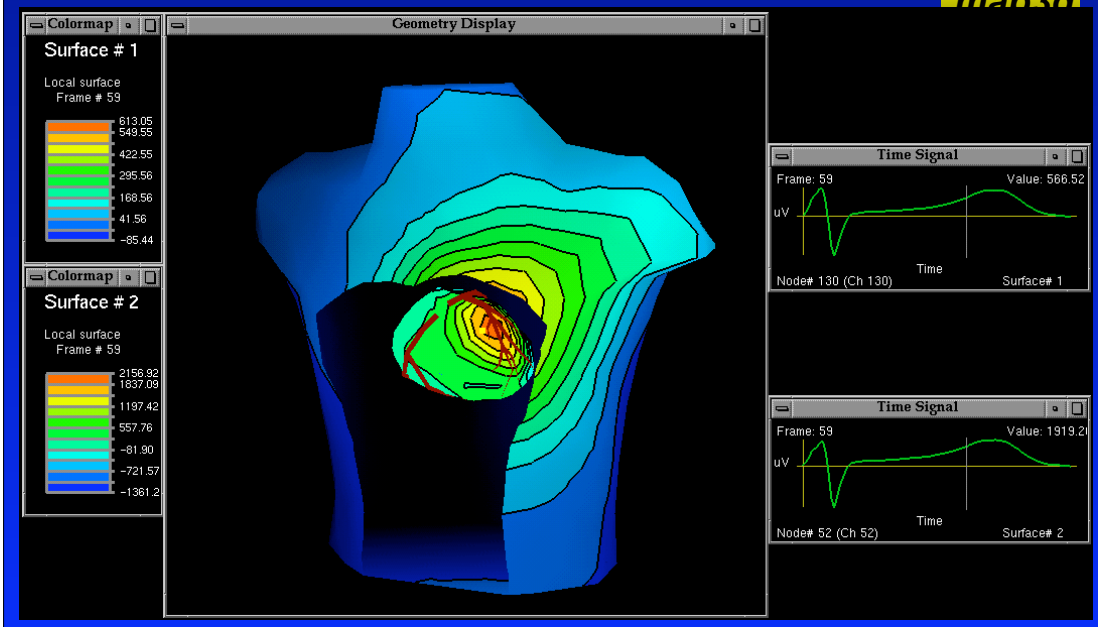
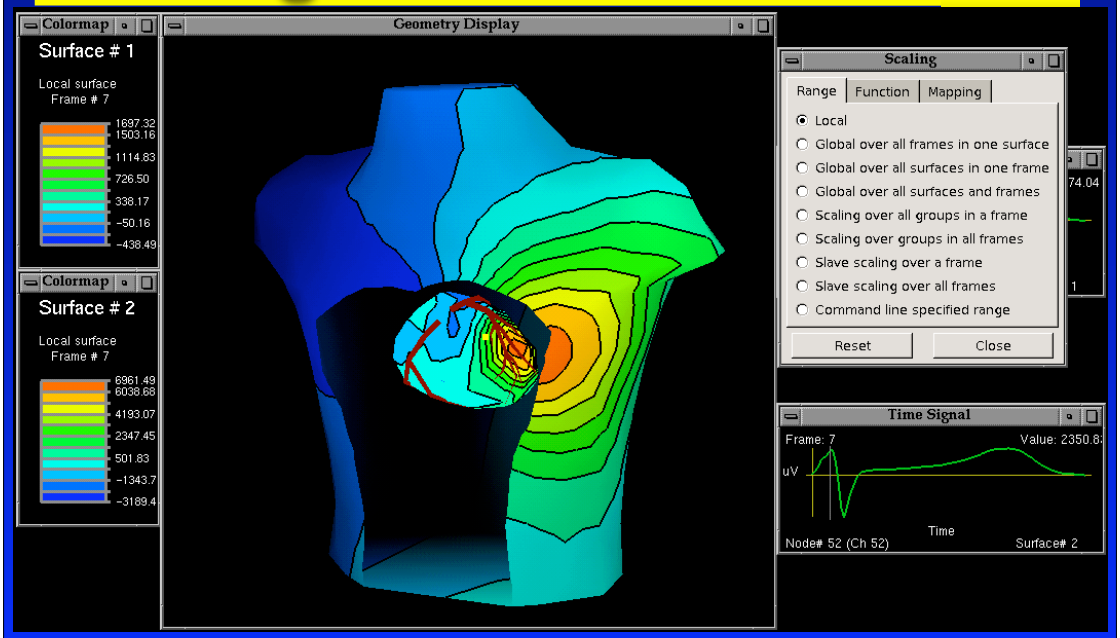
Reloading Data/Geometry

map3d



Scaling Window



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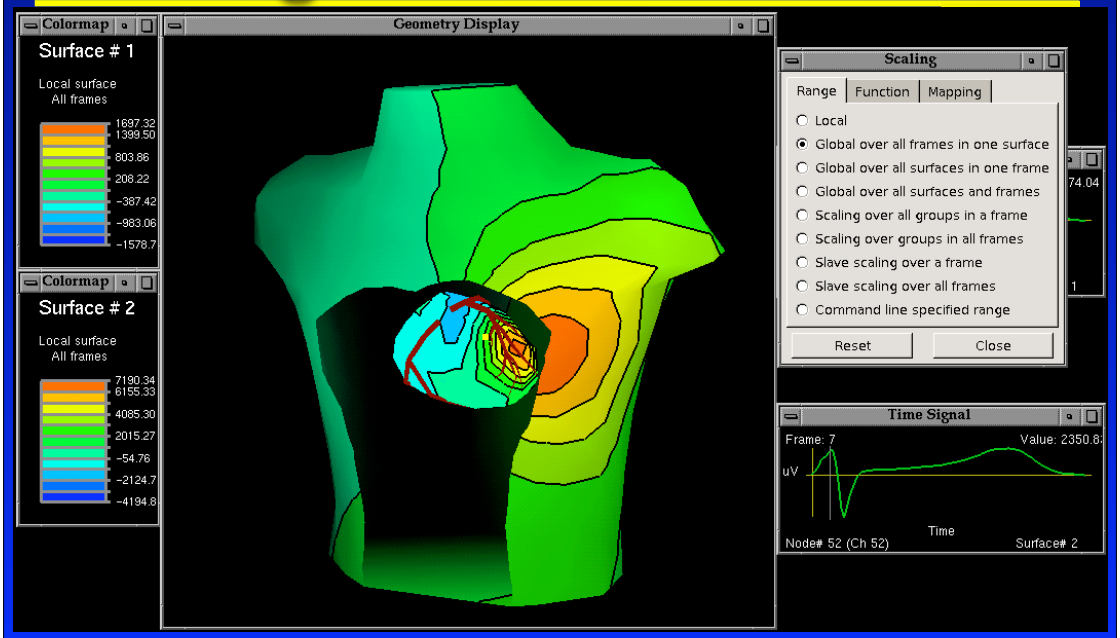

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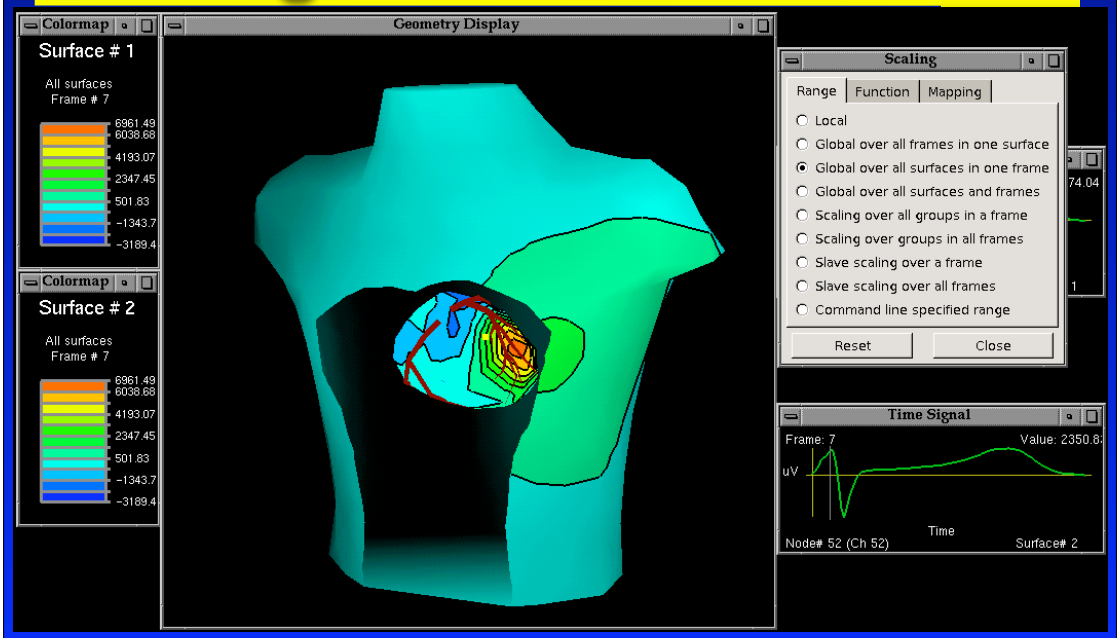

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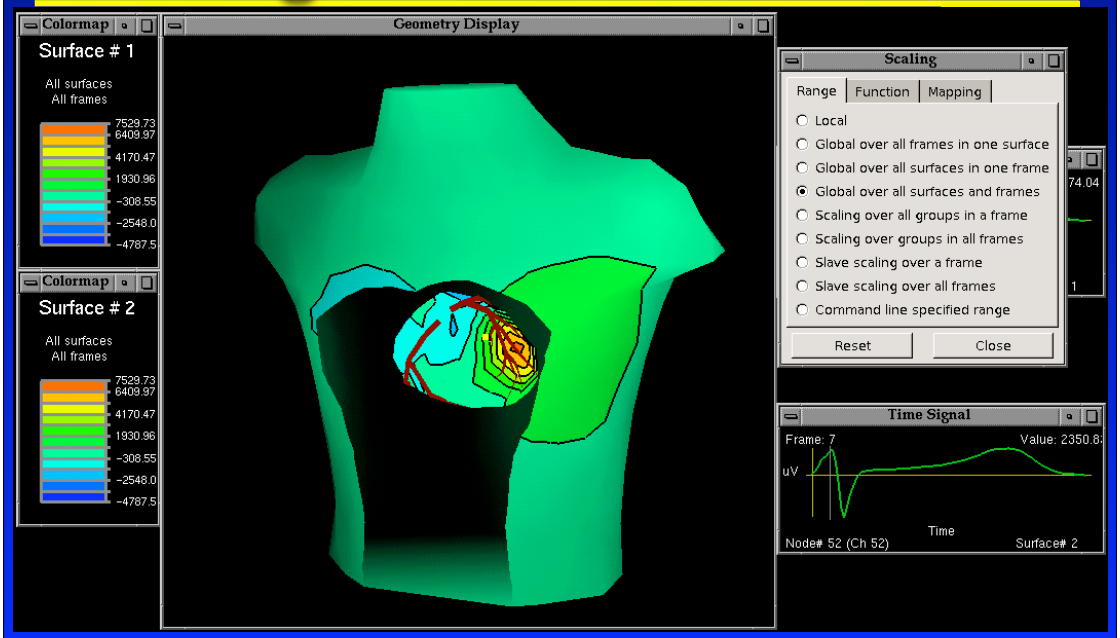

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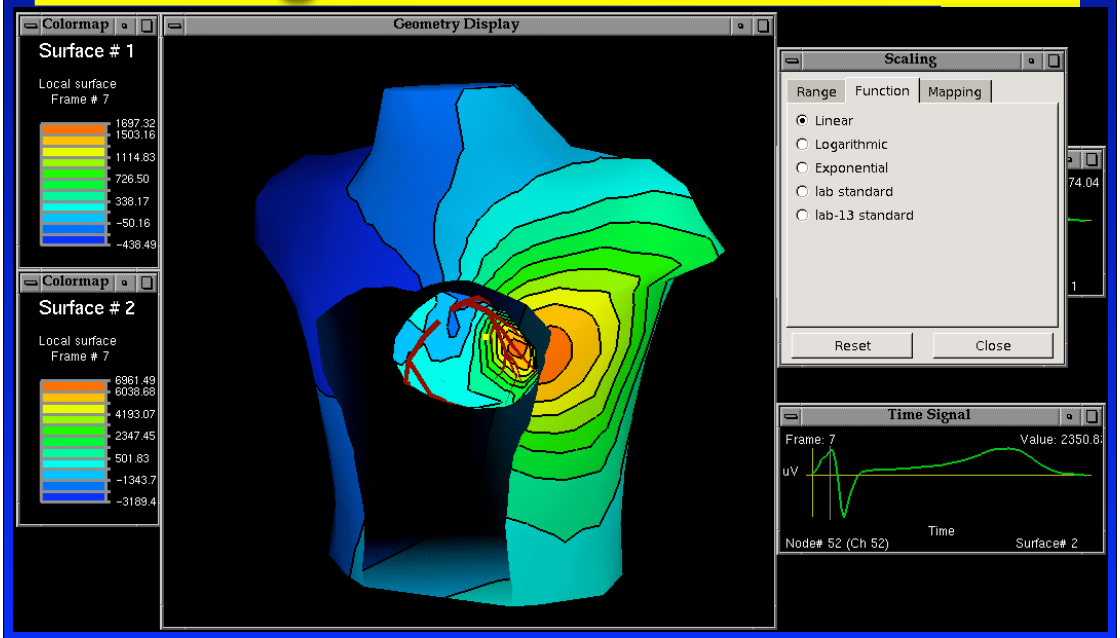

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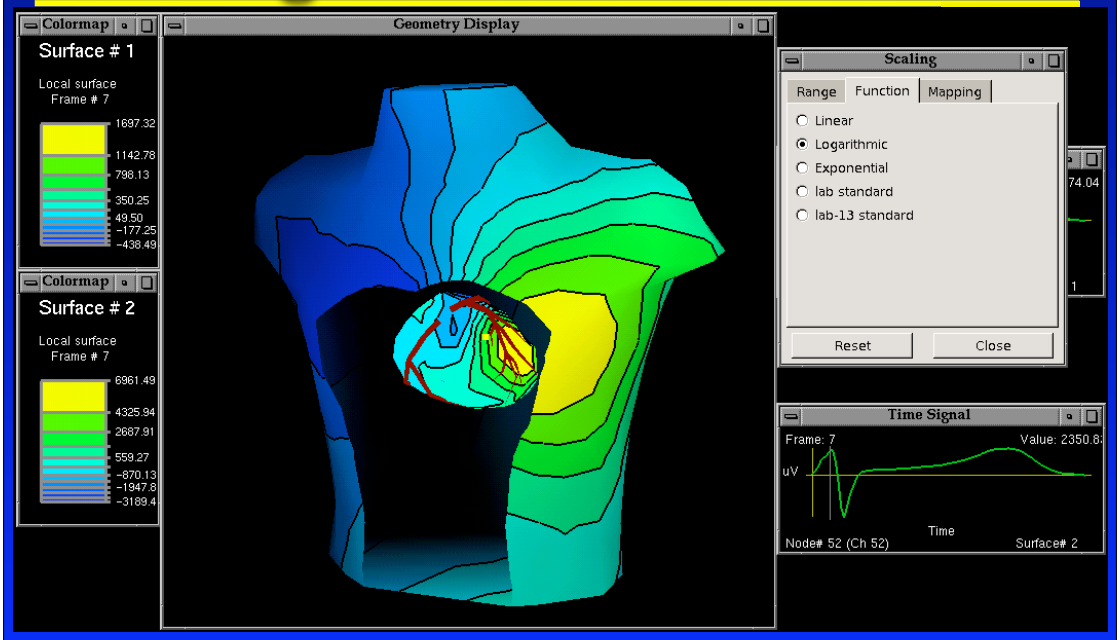

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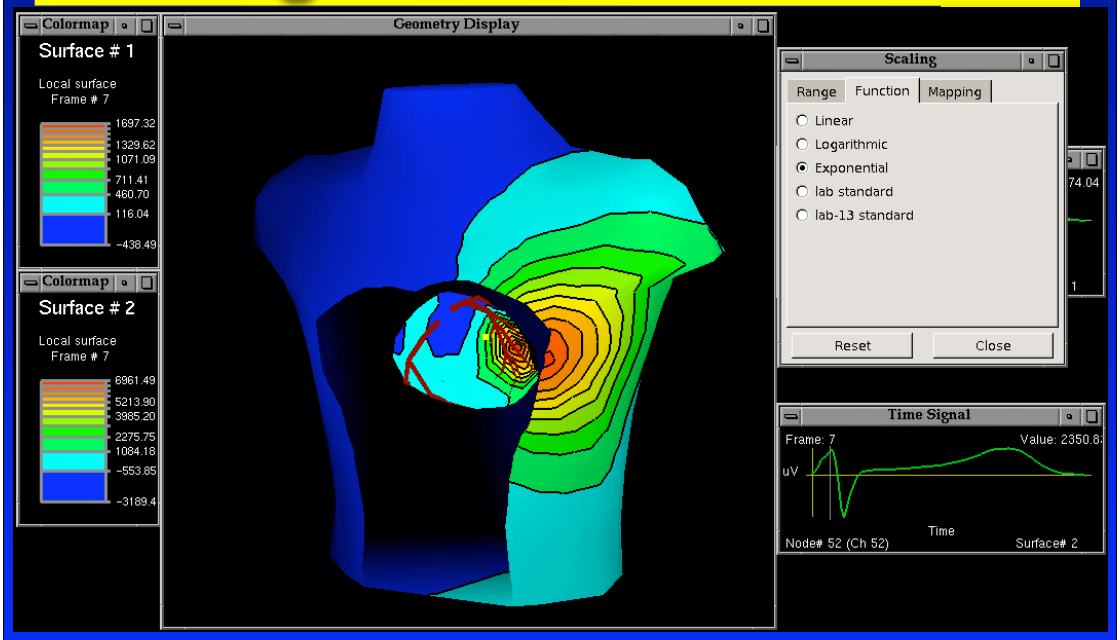

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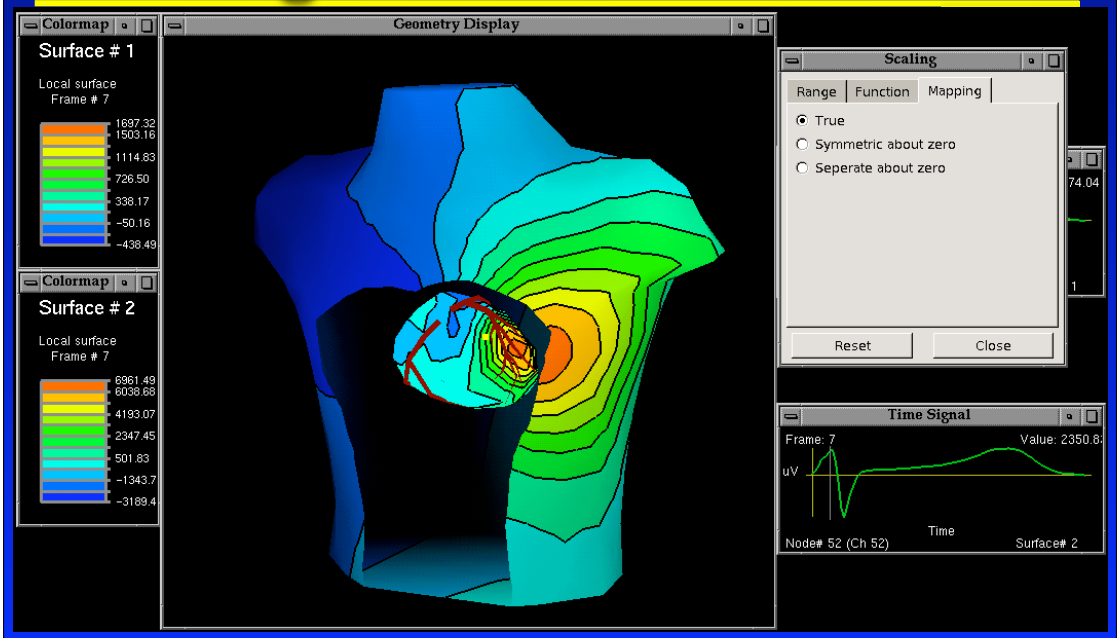

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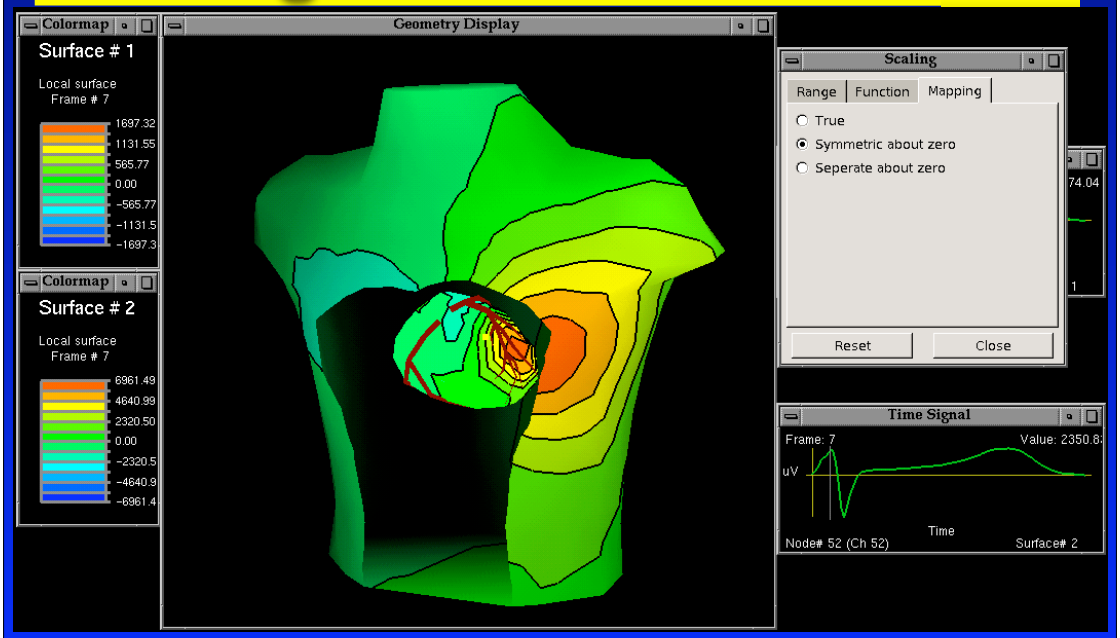
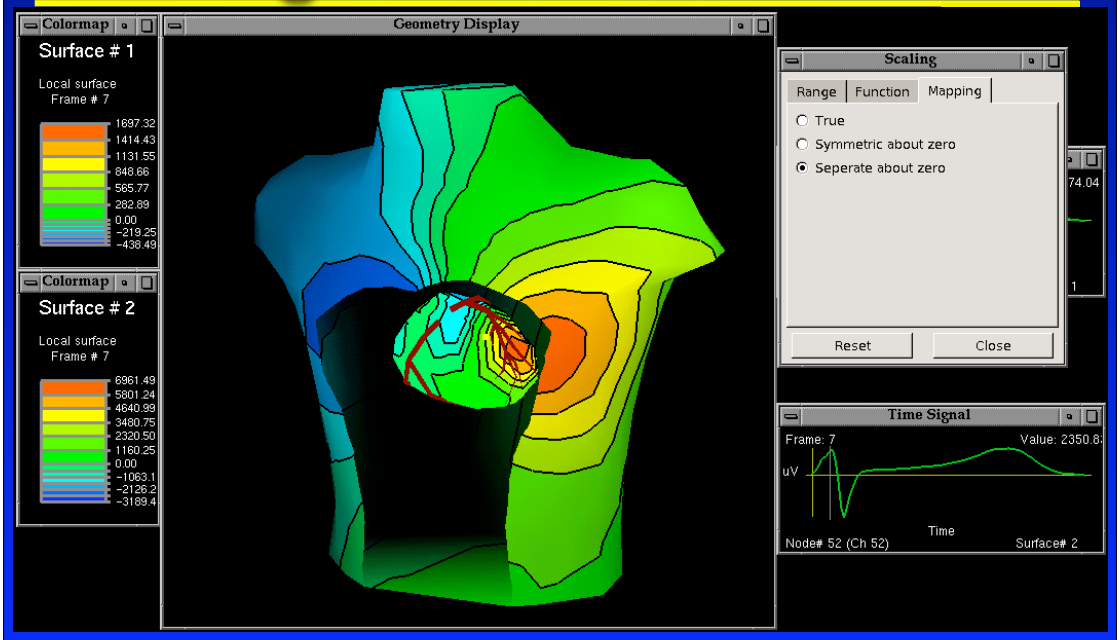
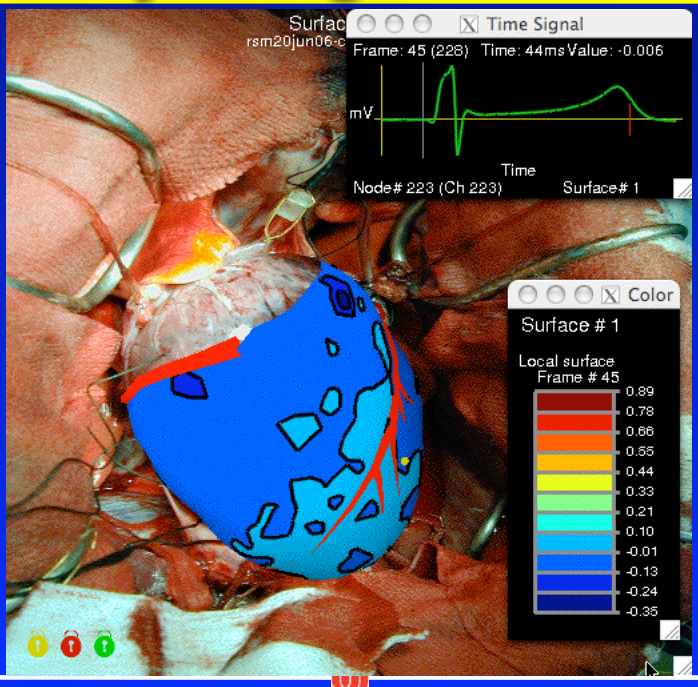


Scaling Window



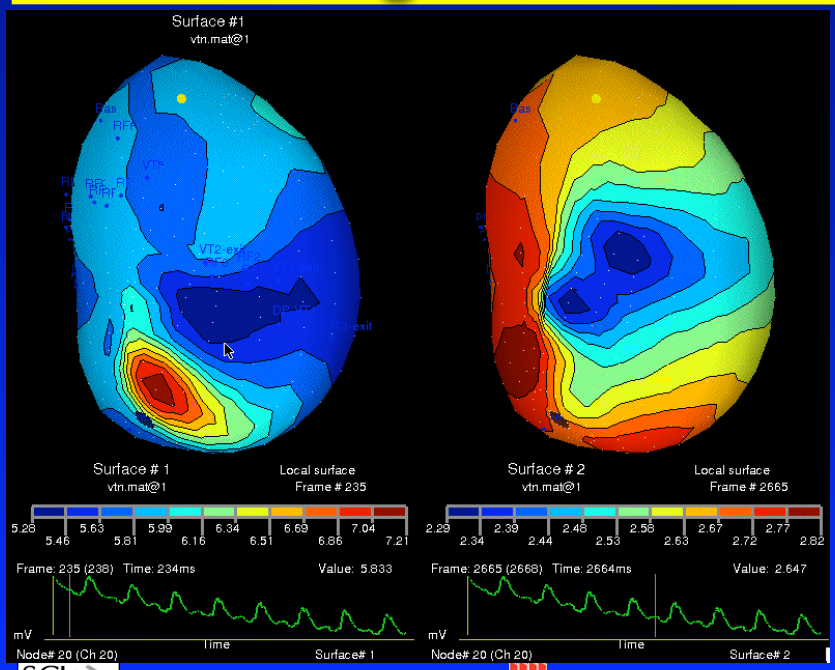
Underlay Image/Movie

map3d



Visualizing Clinical Data

map3d



Reentrant VT data computing with the Endocardial Solutions Incorporated (St. Jude Medical) system and visualized in map3d

Data courtesy Ed Ciaccio, Columbia University

What Next?

map3d

- Not much: stable application
  - You tell us!
- OS updates
- Big fixes
- Incremental new features