

Viewpoints

A high-performance high-dimensional
exploratory data analysis tool
(workstation version of the hyperwall)

<http://astrophysics.arc.nasa.gov/viewpoints>

viewpoints

- “hyperwall for the masses”
- Workstation/laptop application
- Multiple views:
 - high dimensional data
 - linked scatterplots + brushing
 - dynamic histograms
- Normalizations, outlier detection/removal
- High performance on large datasets





LP9V2
Lower panel out
(with breach)
Pressure

WP9V
Whole panel out
Pressure

STS-107 Reentry
Ames Modified CASP
James Brown
(Code ASA) POC

SB9
Benchmark
Temperature

LP9V2
Lower panel out
(with breach)
Temperature

WP9V
Whole panel out
Temperature

Scalar
Mapped
Lic

Lic
+
Streamlines

Lic
+
Separation
Lines

a 2000K =>

urface

applications

- quantum chemistry
- CFD
- virology
- machine learning
- finance
- astrophysics

dependencies

- gsl = gnu sci lib (normalization calculations)
- blitz++ = array handler/memory management
- fltk = wrapper for opengl (cross-platform!)
- flews = widgets for fltk
- gmm++ = blas, lapack, sparsepack,...

Makes use of fast graphics abilities on card
(opengl 1.6) instead of using system CPU.

availability

- linux
- Apple OSX
- MS windows

- NASA Open Source (GPL) approved:
<http://www.assembla.com/wiki/show/viewpoints/download>

enhancements

- User interface
- Machine learning
 - dimensionality reduction (ICA...)
 - clustering
 - entropy, mutual information ...
- More views (spectra, n-dimensions, tours)
- Performance (threads, shaders...)

DEMO

