BBQ

A TPC event display

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Ching Bon Lam
cblam@nikhef.nl

UNIVERSITEIT TWENTE.

UNIVERSITEIT VAN AMSTERDAM

Outline

- Motivation
- Implementation
- Short non-interactive demo
- Where to get it
- Conclusion

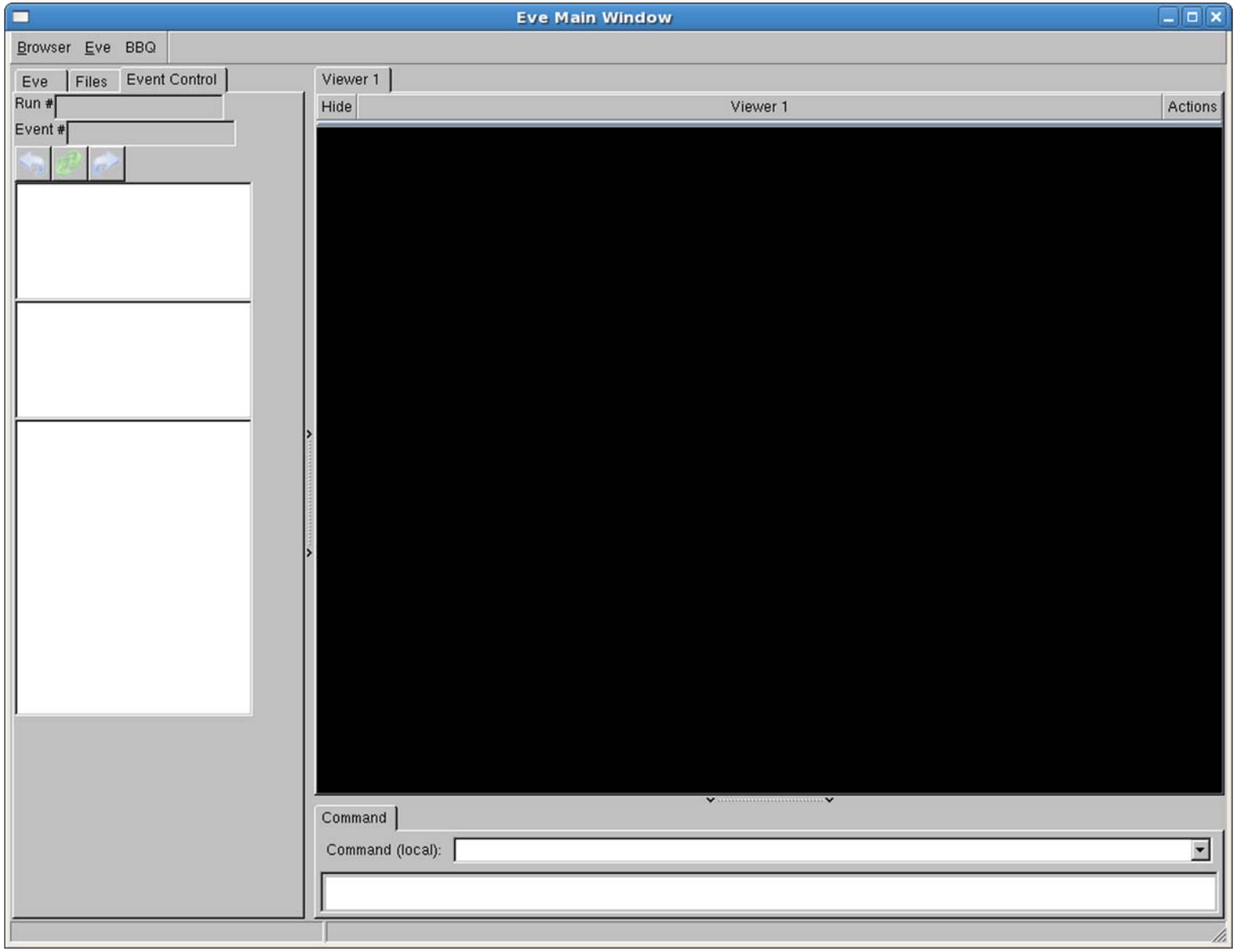
Motivation

- BBQ, a new TPC event display.
  - What do we want?
    - Inspect hits, tracks, pulses and pads in 3D
    - GEAR support
    - LCIO support
    - High performance
  - Why not use DRUID?
    - DRUID shows full events in the full detector
    - DRUID doesn't show TPC details e. g. pulses
    - Level of TPC detail too high for average DRUID use-case
      - Information only relevant for TPC studies
      - It affects performance

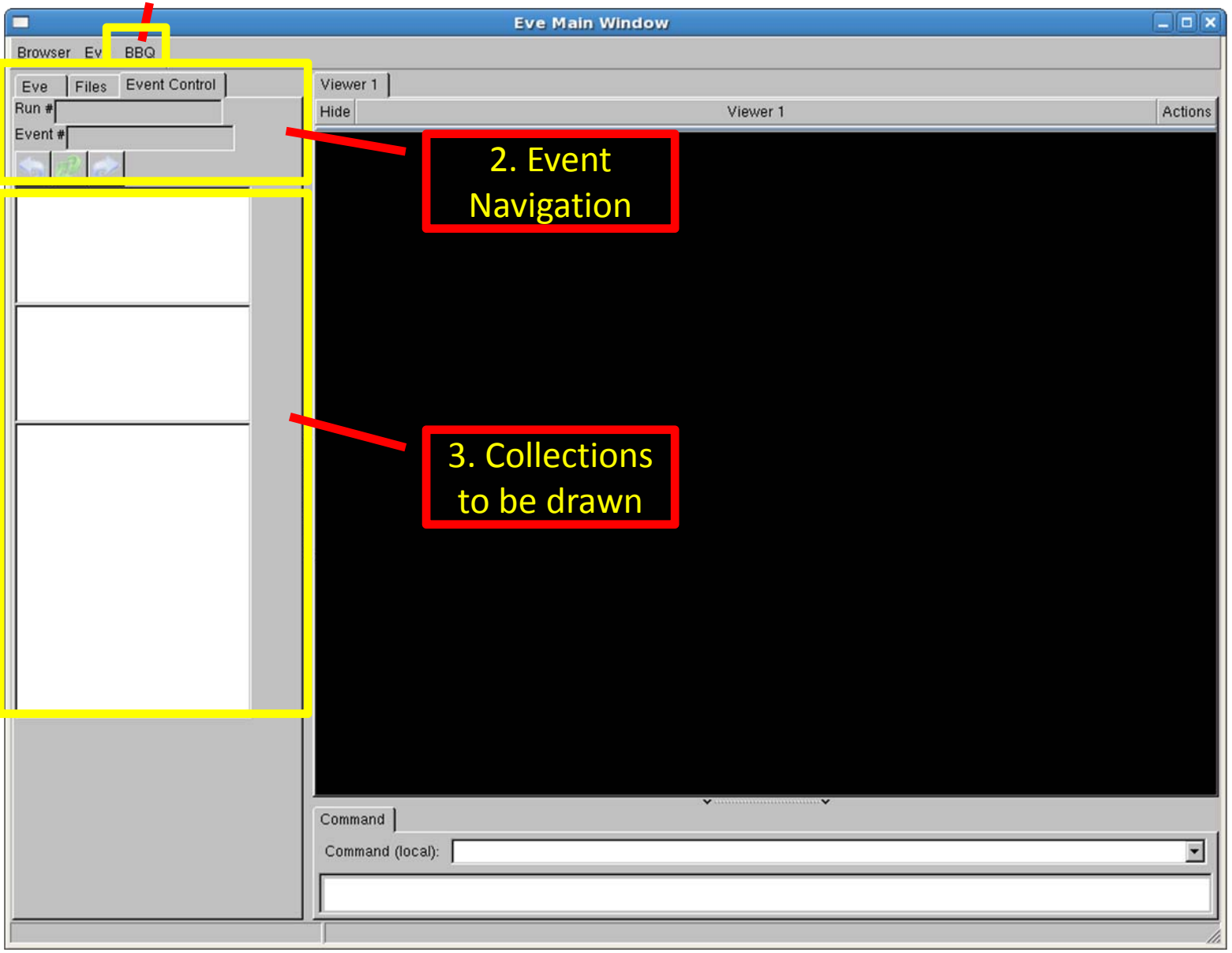
Implementation

- TEve based
  - C++, ROOT
  - OpenGL: 3D hardware acceleration
  - Object browser
  - Picking and highlighting
- Full GEAR support
  - All pad layouts
  - Multiple modules
- LCIO support
  - Read in files
  - Select collections

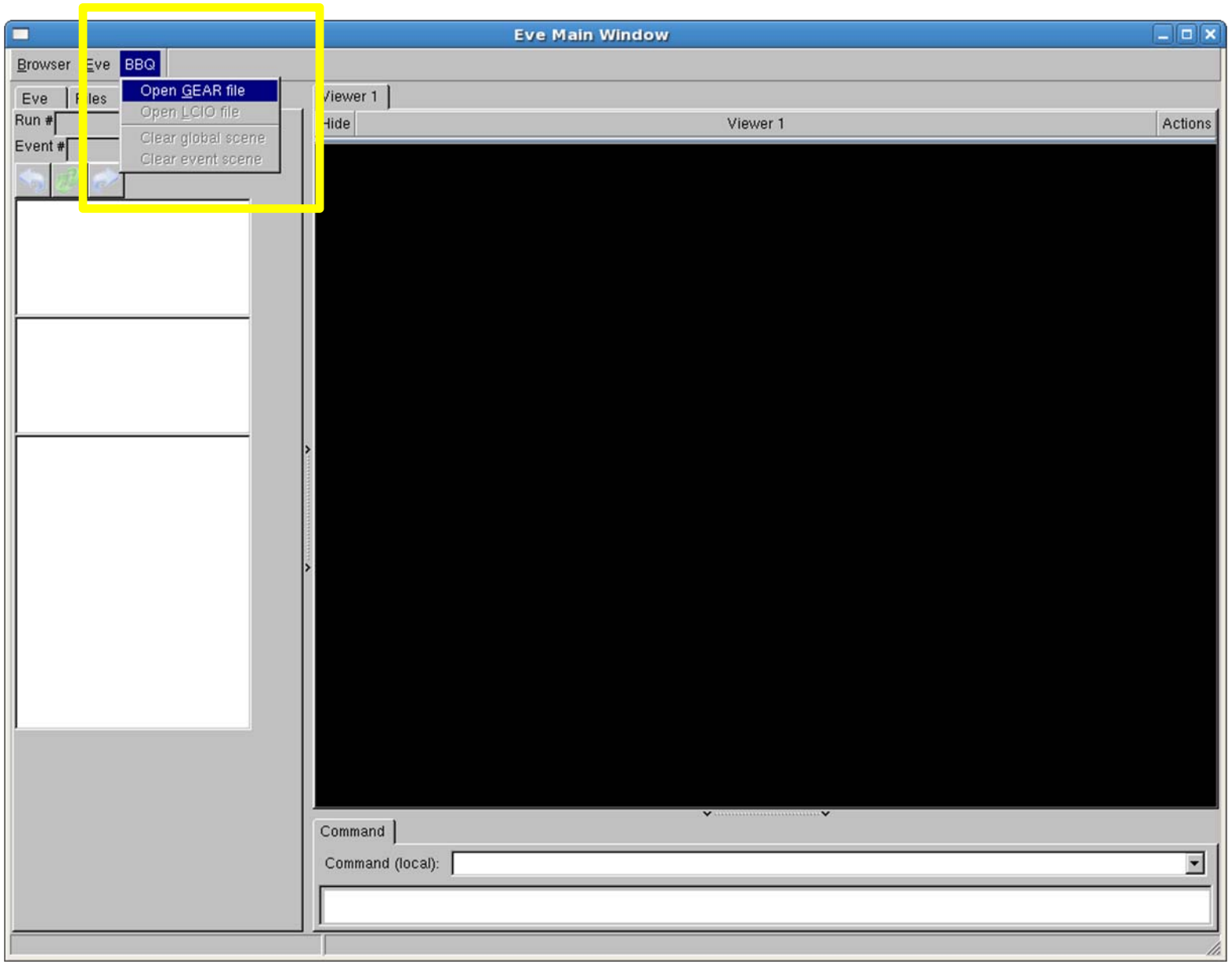
Starting screen



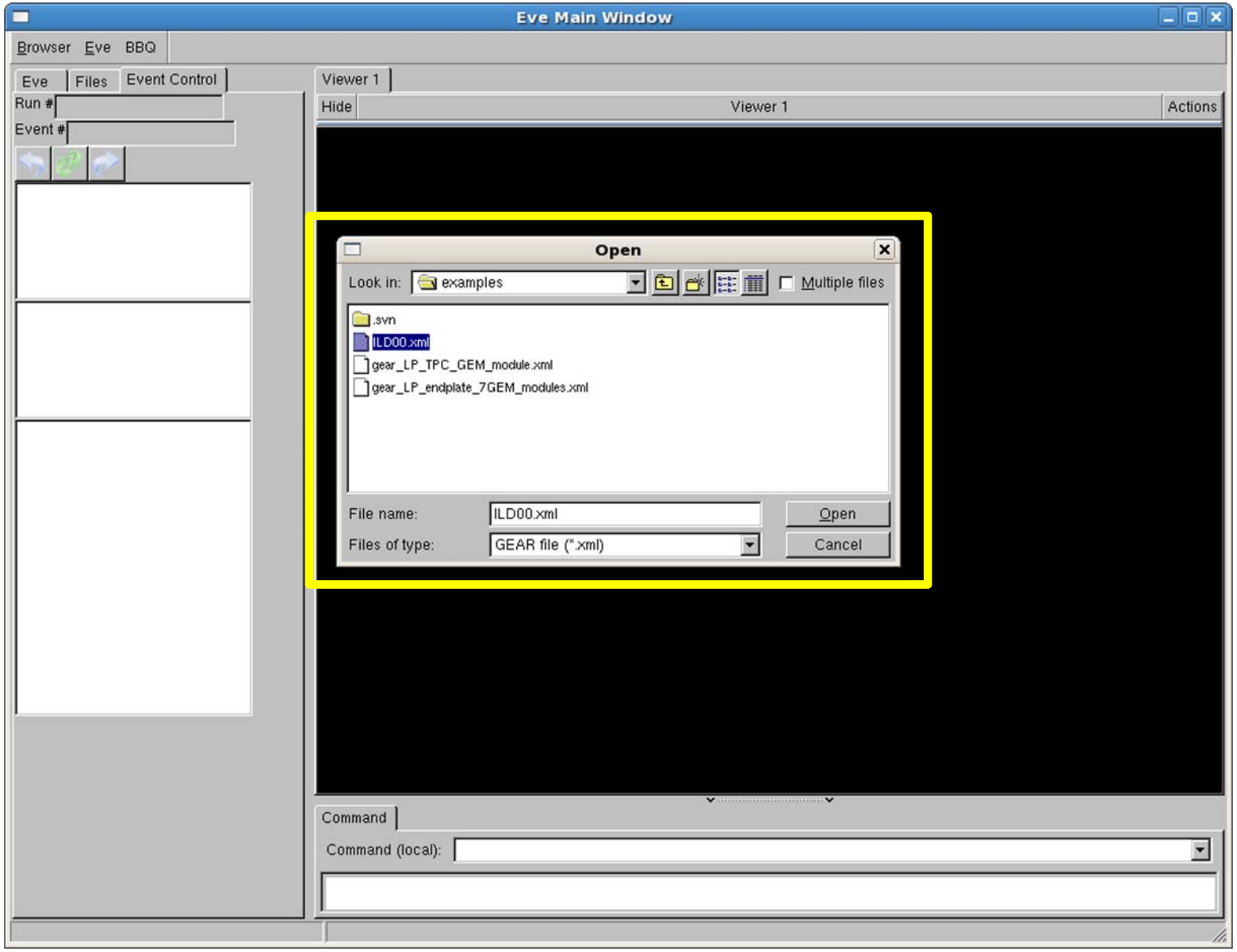
BBQ specific controls



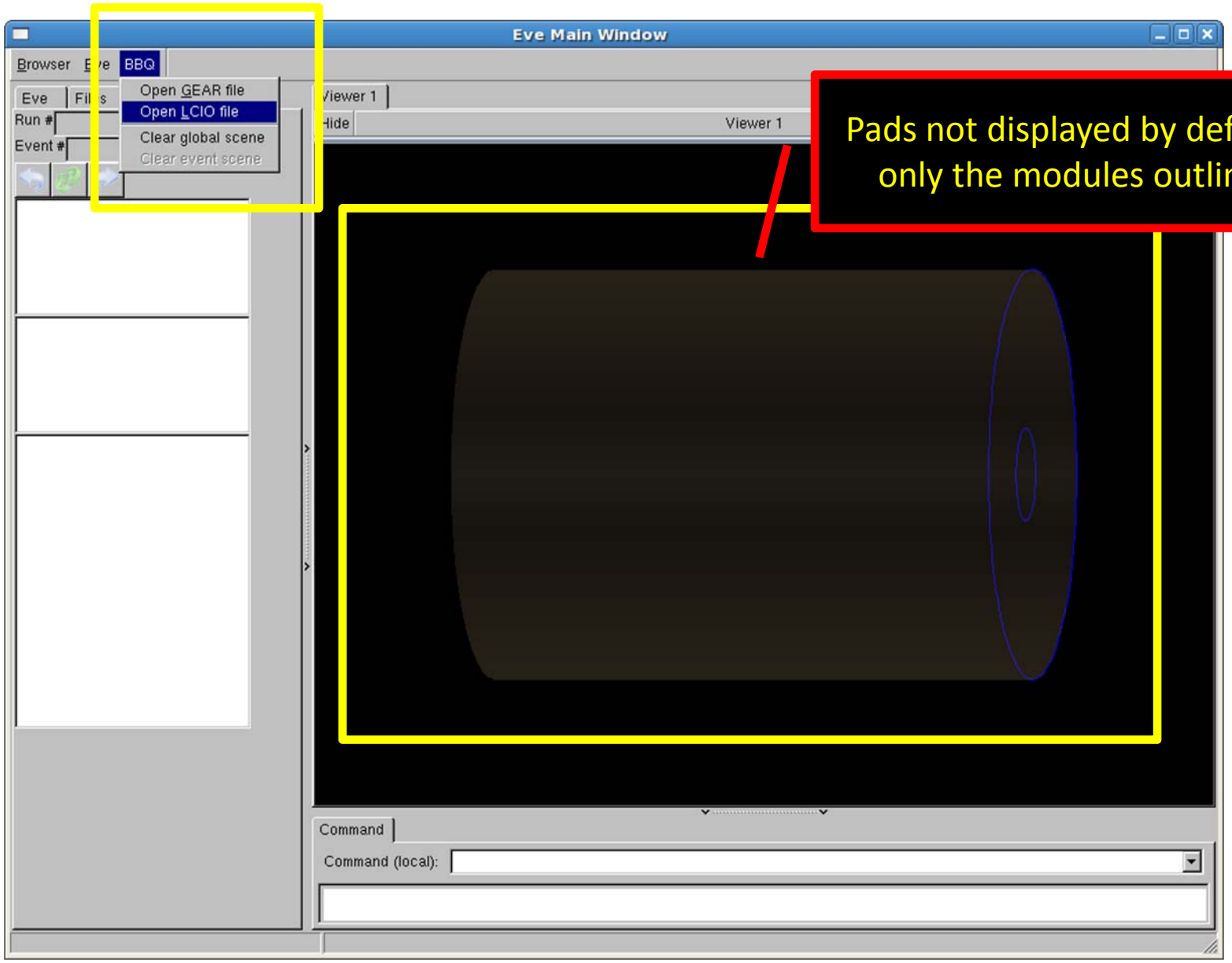
Load GEAR file



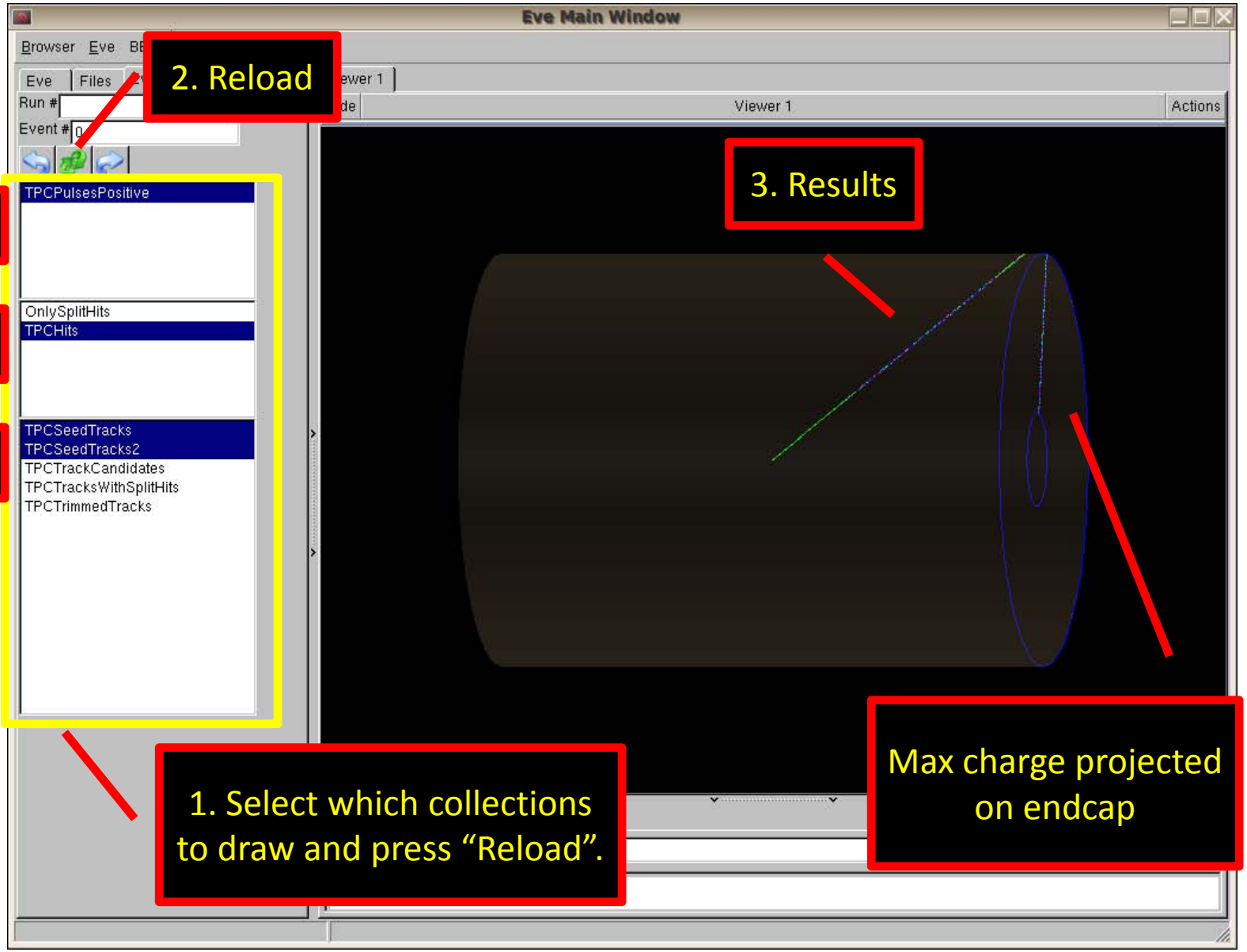
Select a GEAR file



GEAR file loaded



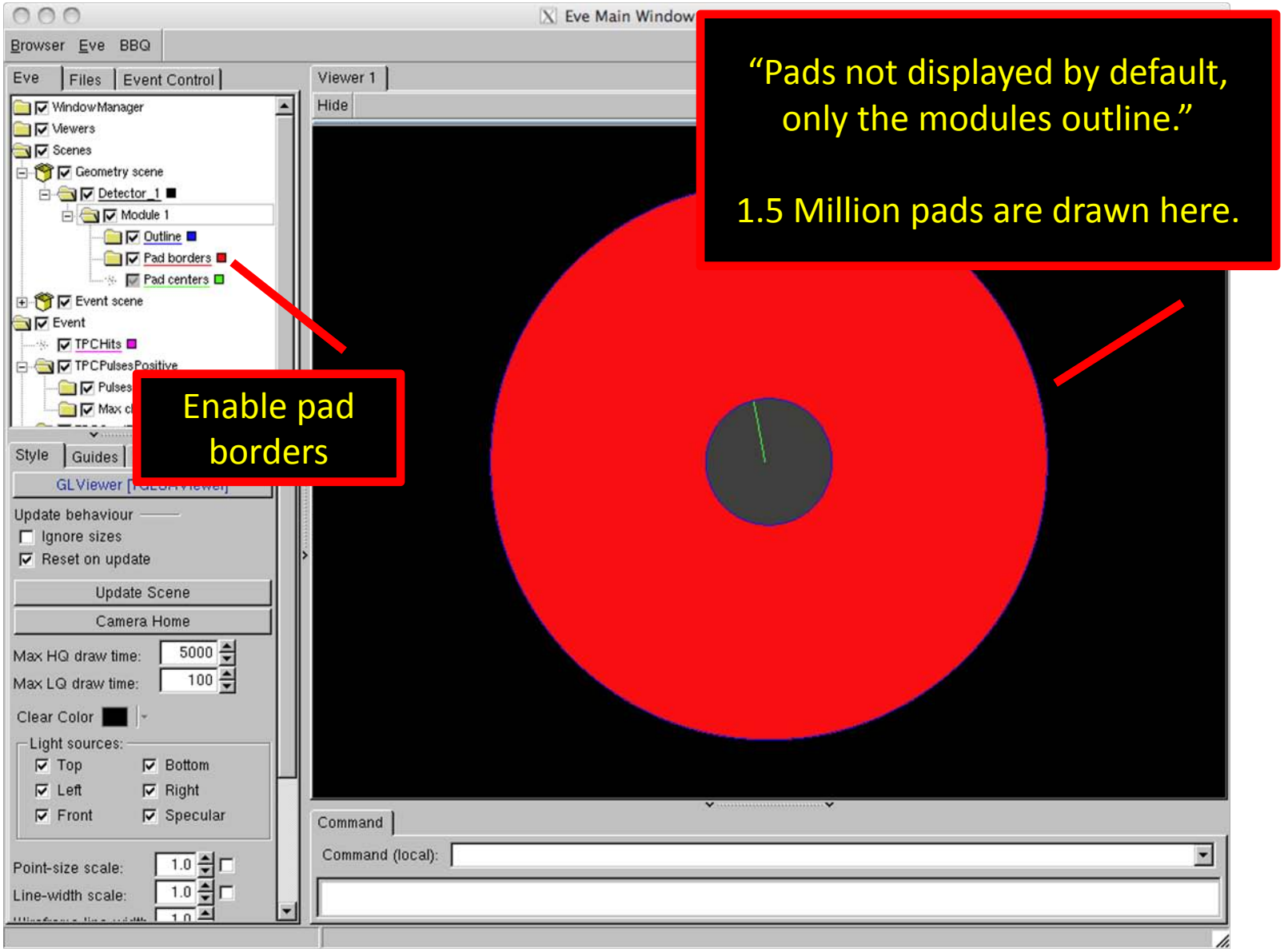
Draw the collections



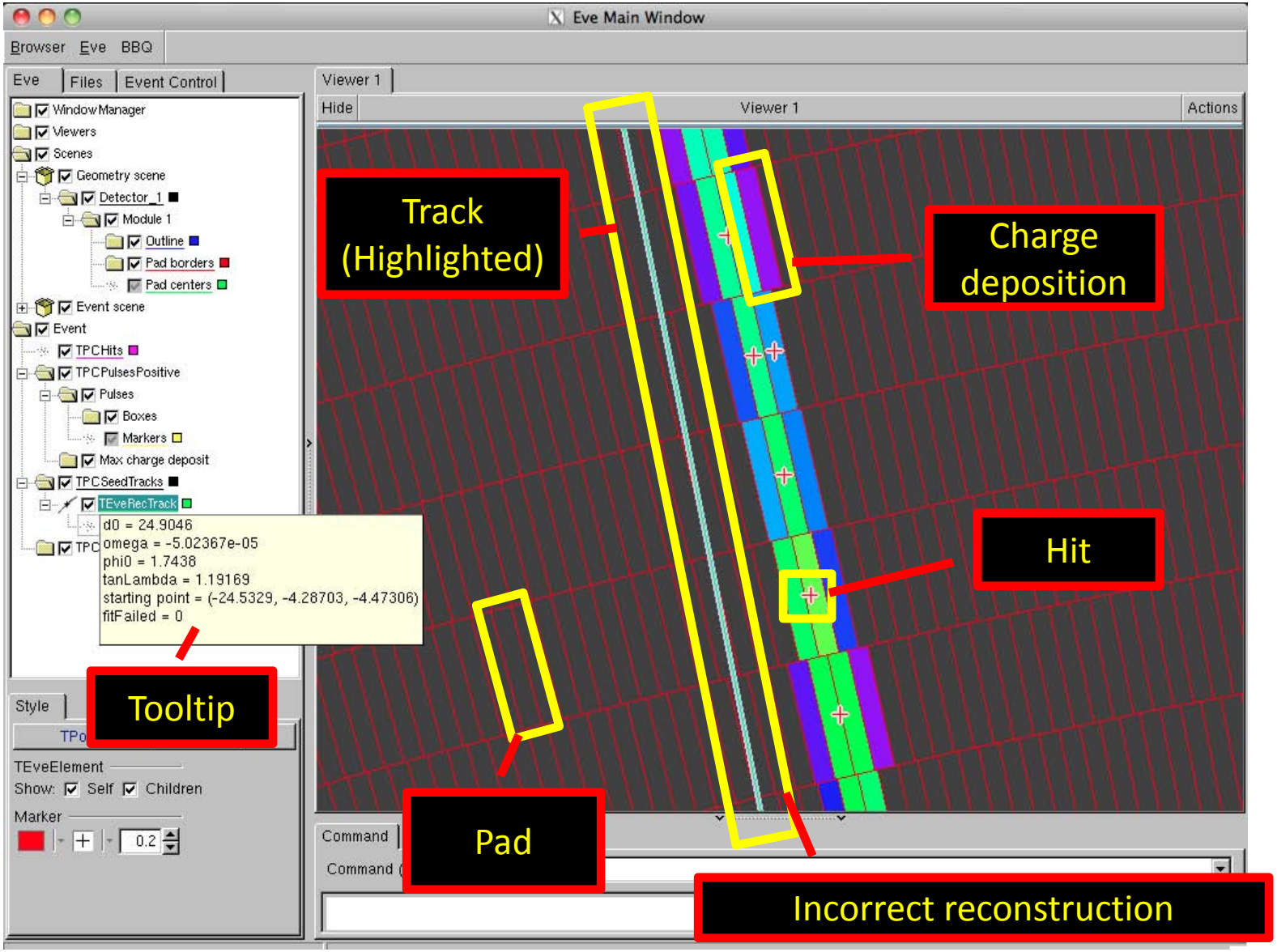
TEve Basics

- Slides on basic usage are provided at the end of the presentation as a reference
  - Rotation, translation and zoom of the 3D view
  - Change the pivoting point used for rotation
  - Change view to orthographic/perspective
  - Enable axes

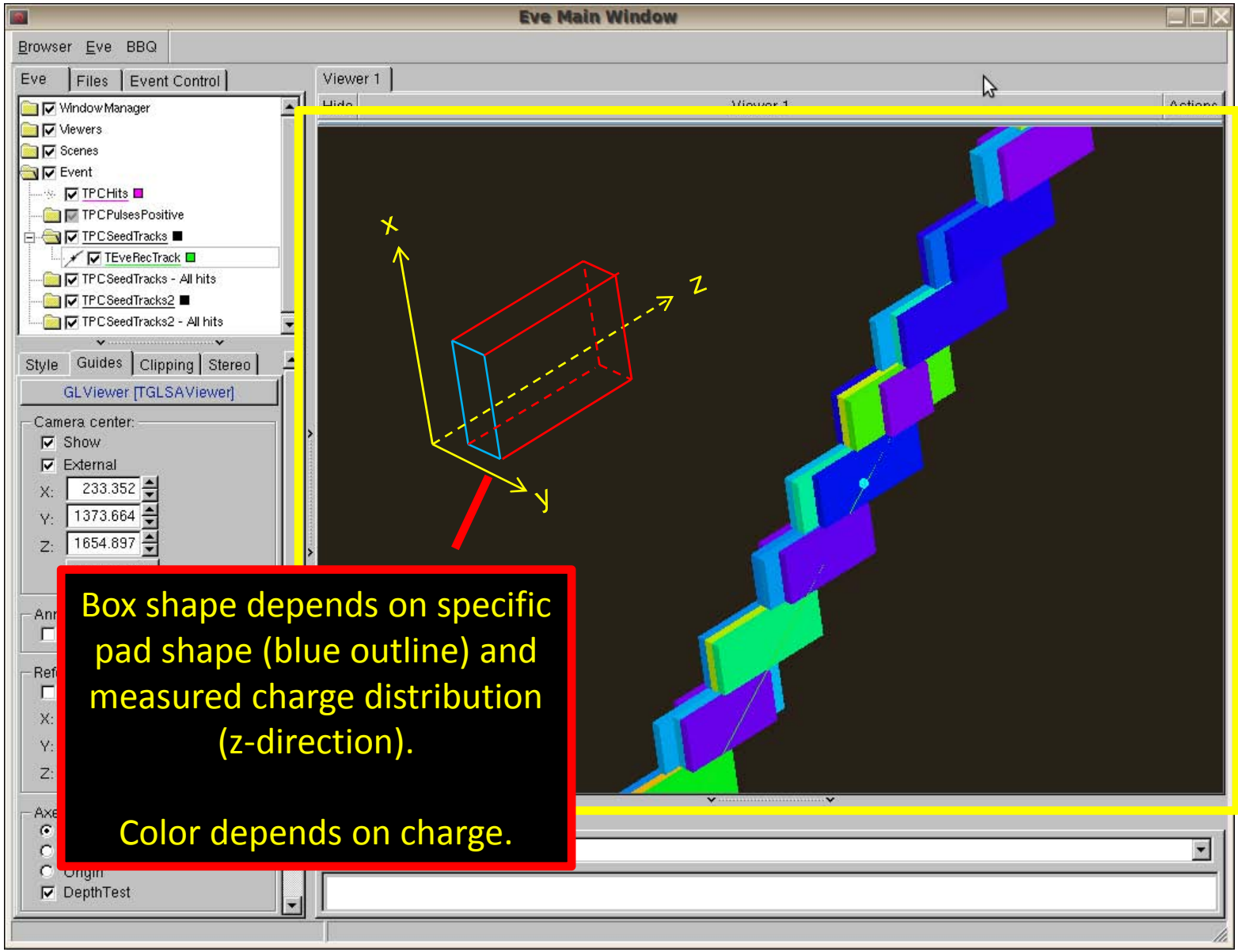
Pads displayed



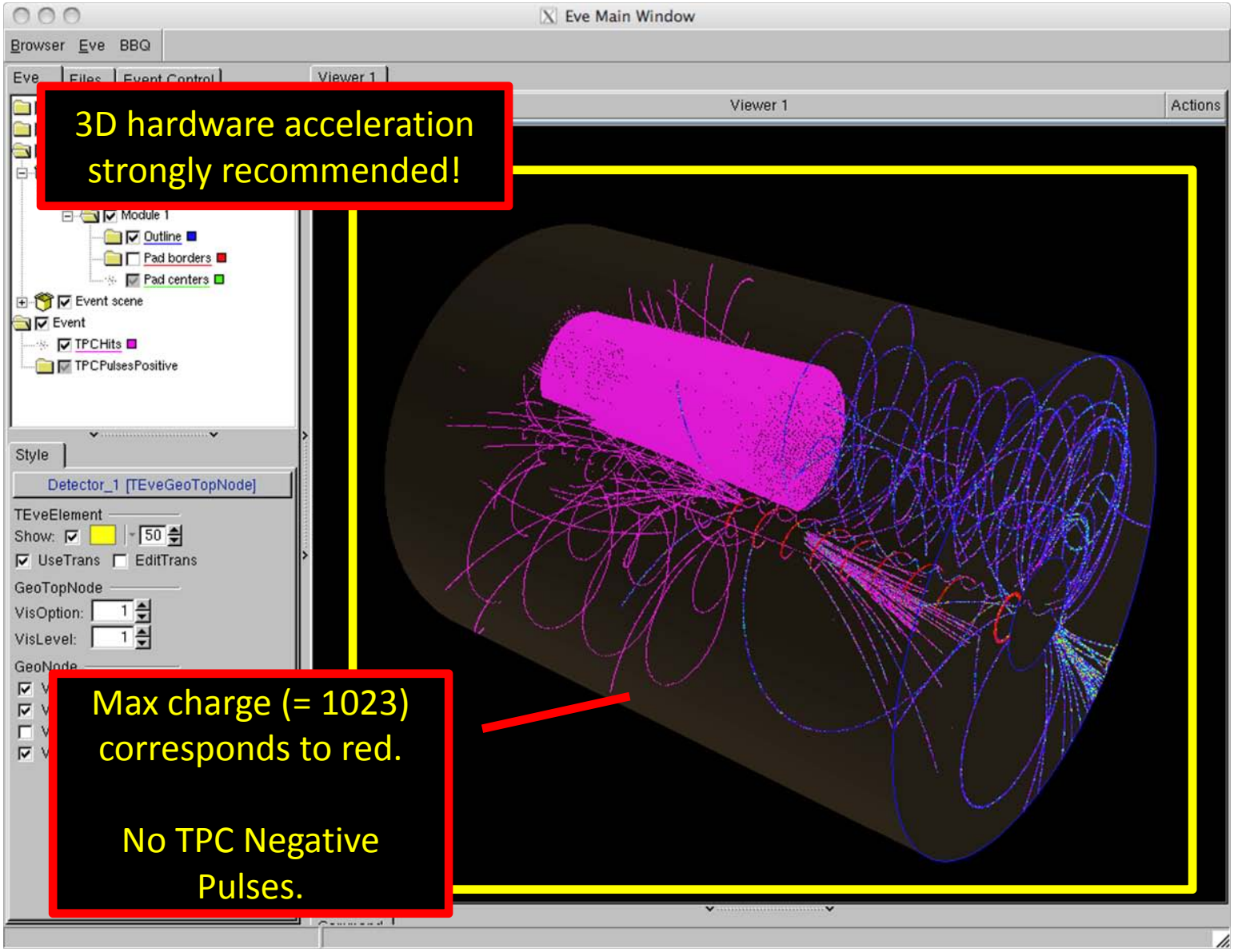
Detailed view, orthographic



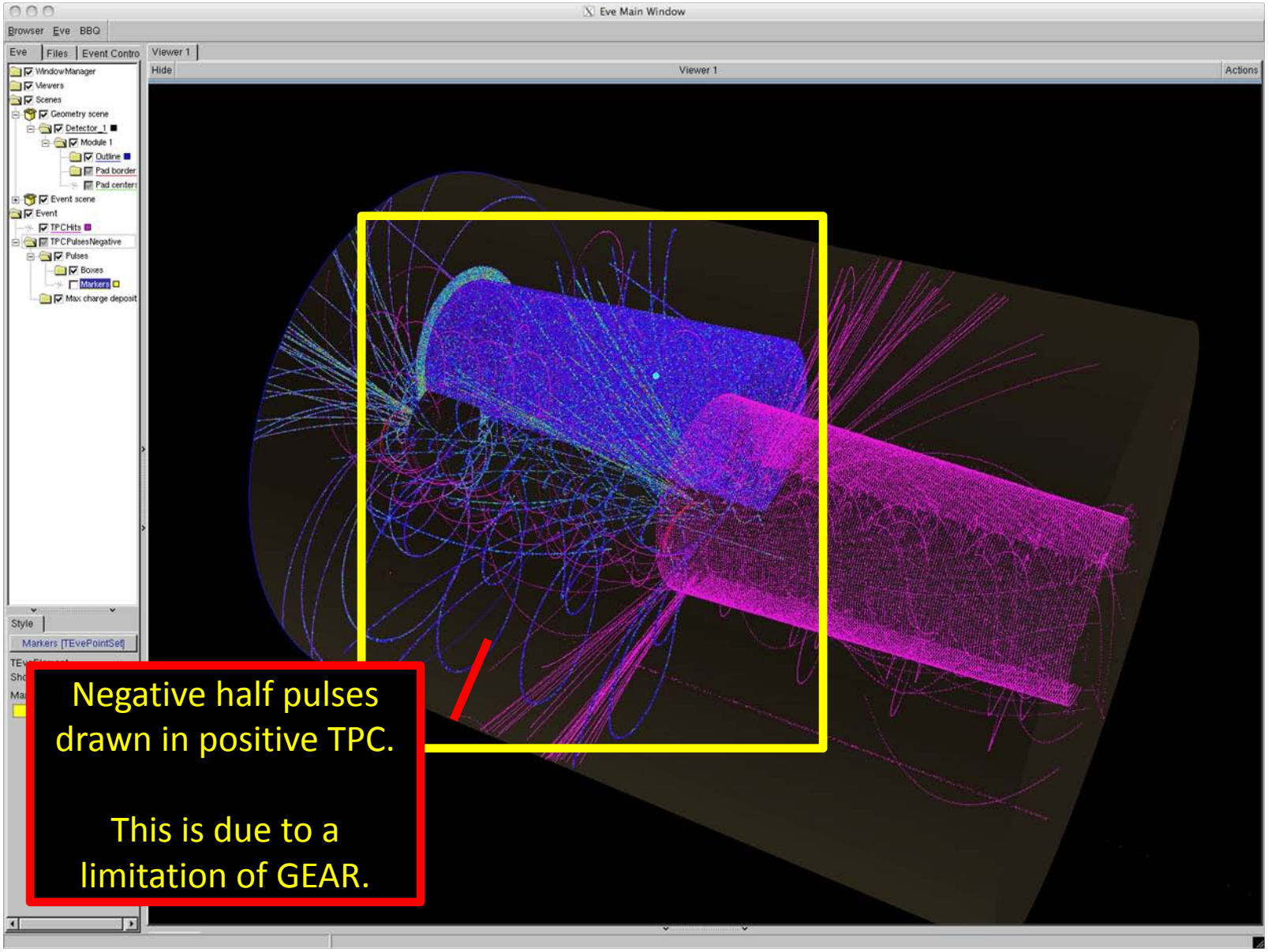
Detailed view, 3D



Complex example, t-tbar event



Negative half TPC



Where to get it

- https://svnsrv.desy.de/public/bbq/trunk
- Please try it out and give feedback
- Depends on and tested succesfully with (as of 26/08/2010)
  - ROOT >= 5.26 (OpenGL & TEve)
  - GEAR >= 00-13
  - LCIO >= 01-12-03
  - ILCSoft >= 01-08 CMake modules

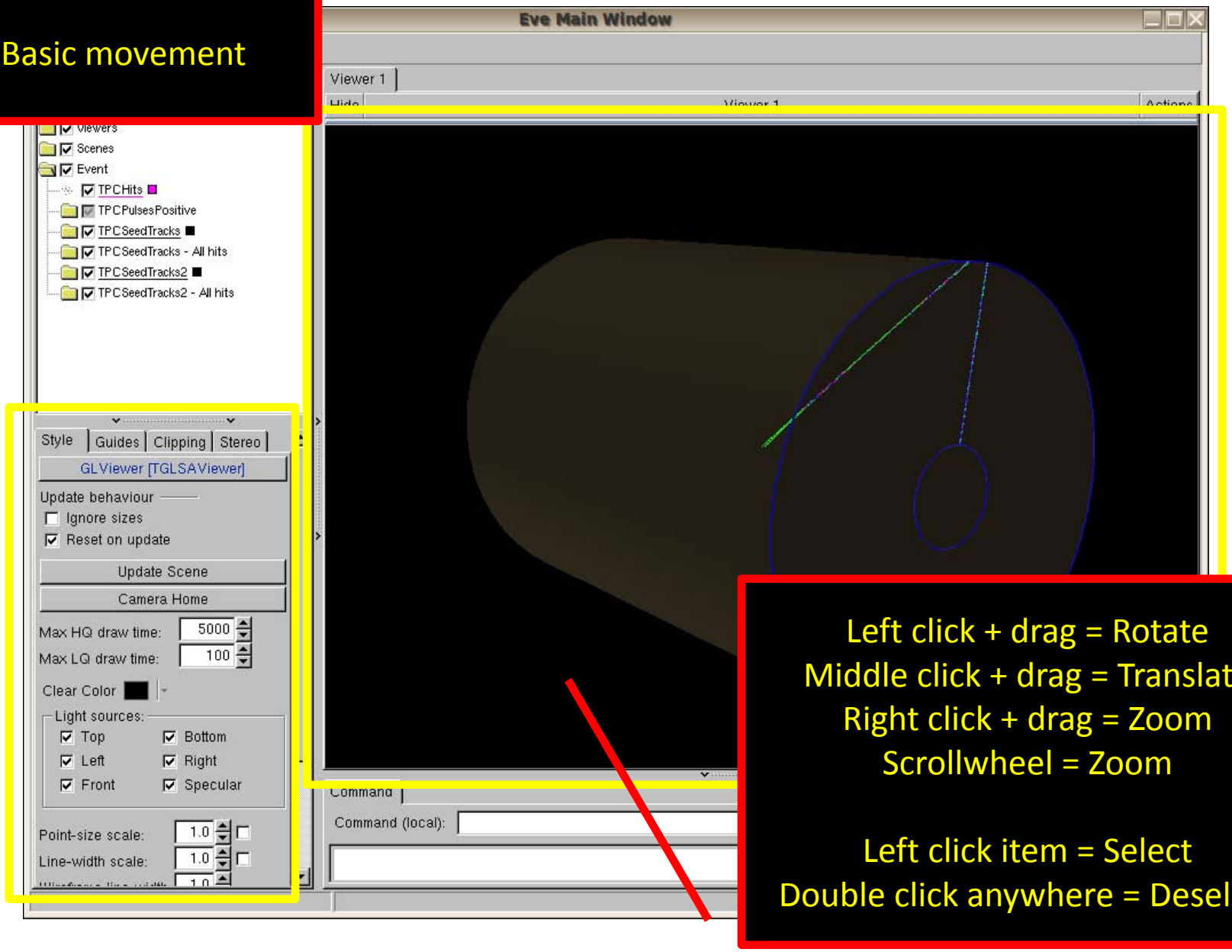
Conclusion

- BBQ, a new TPC event display.
  - Inspect hits, tracks, pulses and pads in 3D
  - Full GEAR support
  - LCIO support
  - High performance

- Outlook
  - Manual is on the way
  - Draw negative half TPC (GEAR limitation)
  - Make drift velocity and readout frequency configurable (currently hardcoded)

Slides for reference

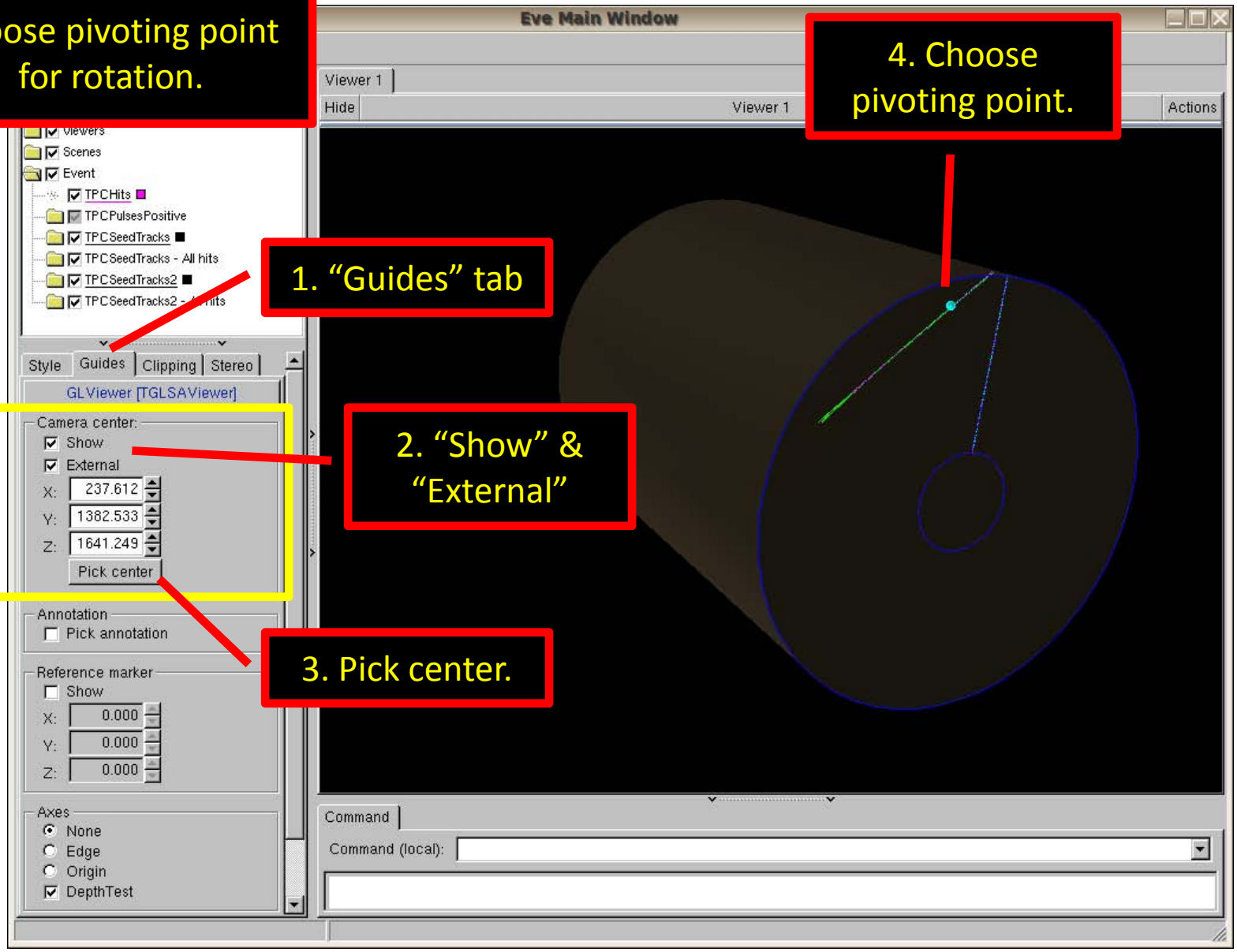
Basic movement



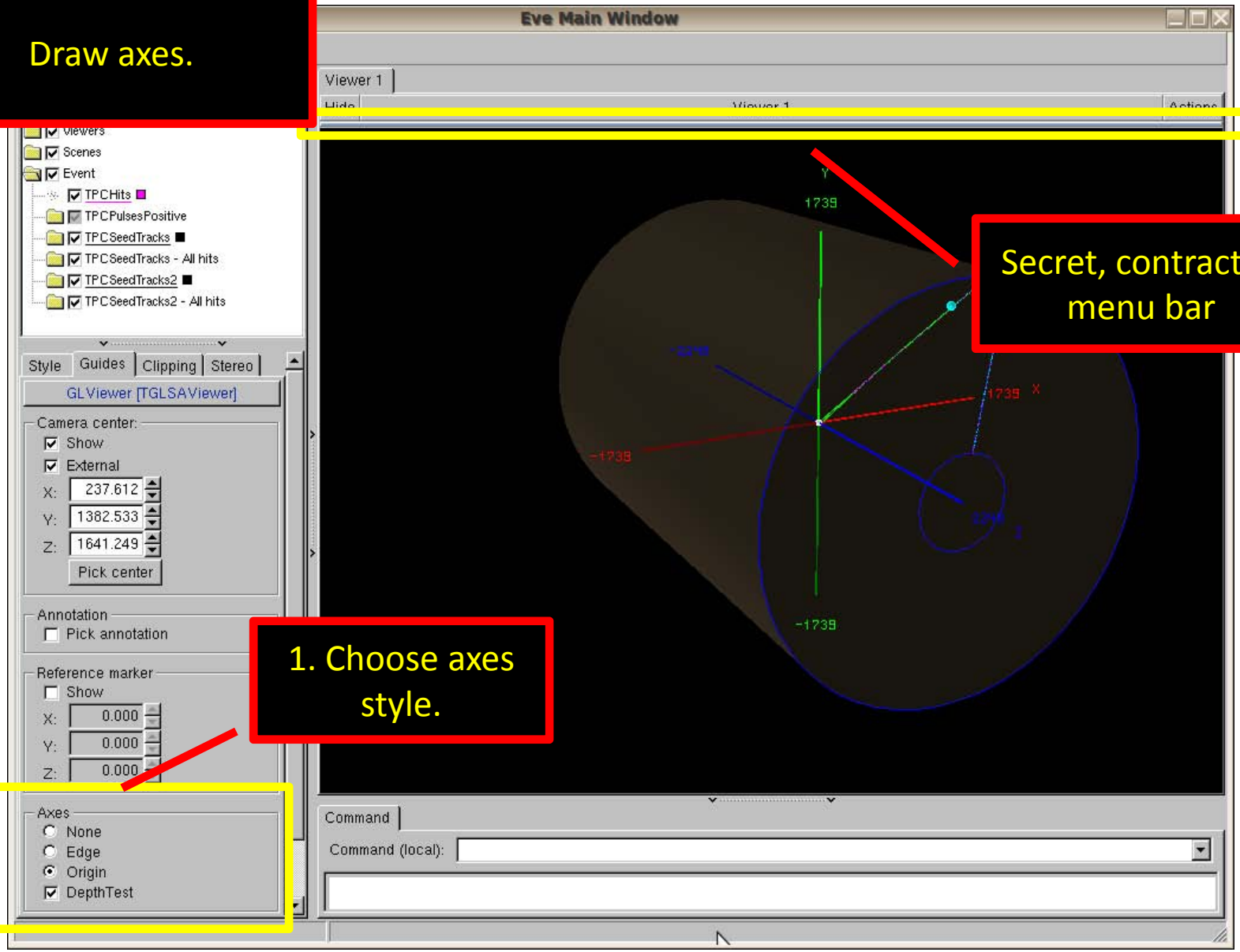
Left click + drag = Rotate
Middle click + drag = Translate
Right click + drag = Zoom
Scrollwheel = Zoom

Left click item = Select
Double click anywhere = Deselect

Choose pivoting point for rotation.



Draw axes.

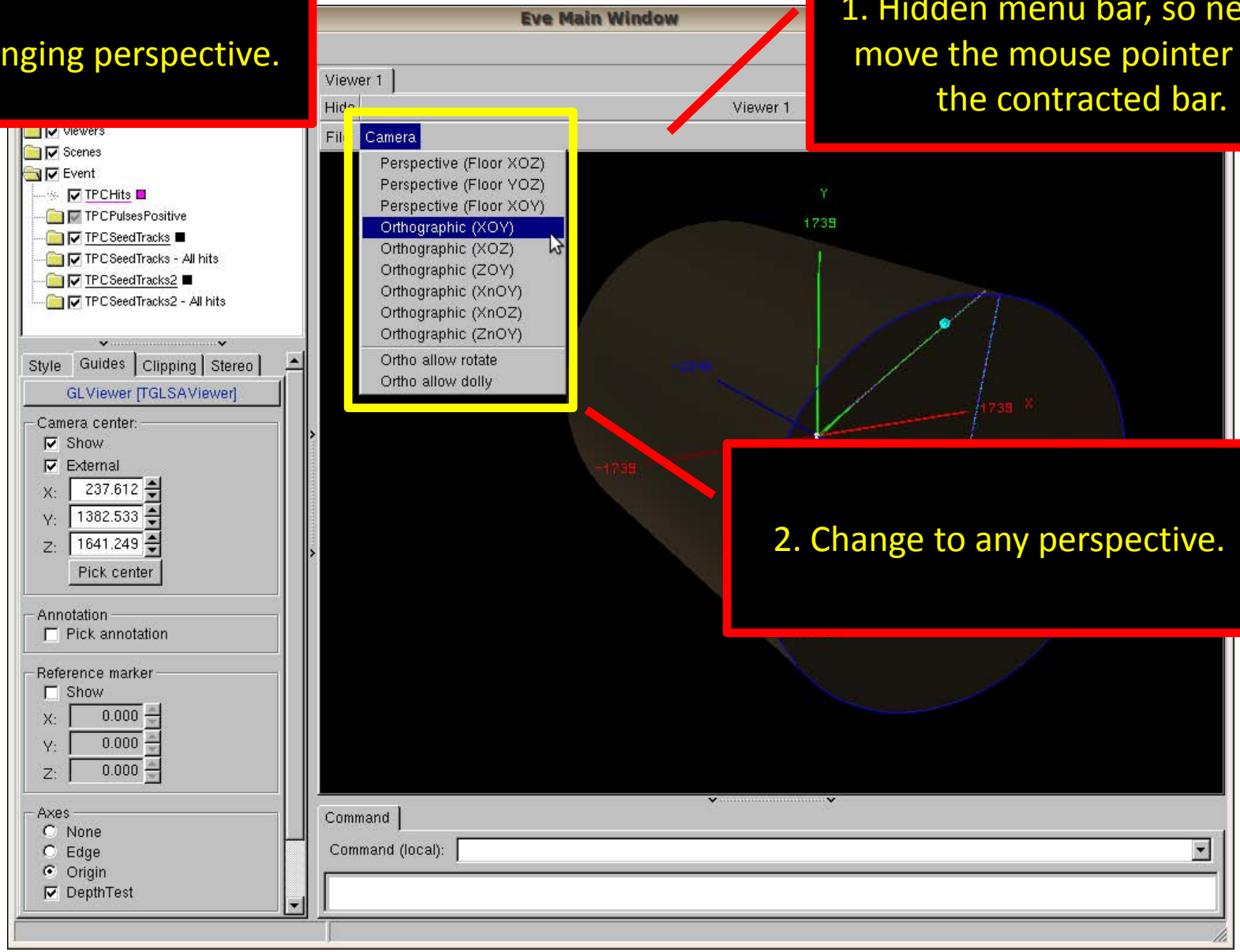


Secret, contracted menu bar

1. Choose axes style.

Changing perspective.

1. Hidden menu bar, so need to move the mouse pointer over the contracted bar.



2. Change to any perspective.