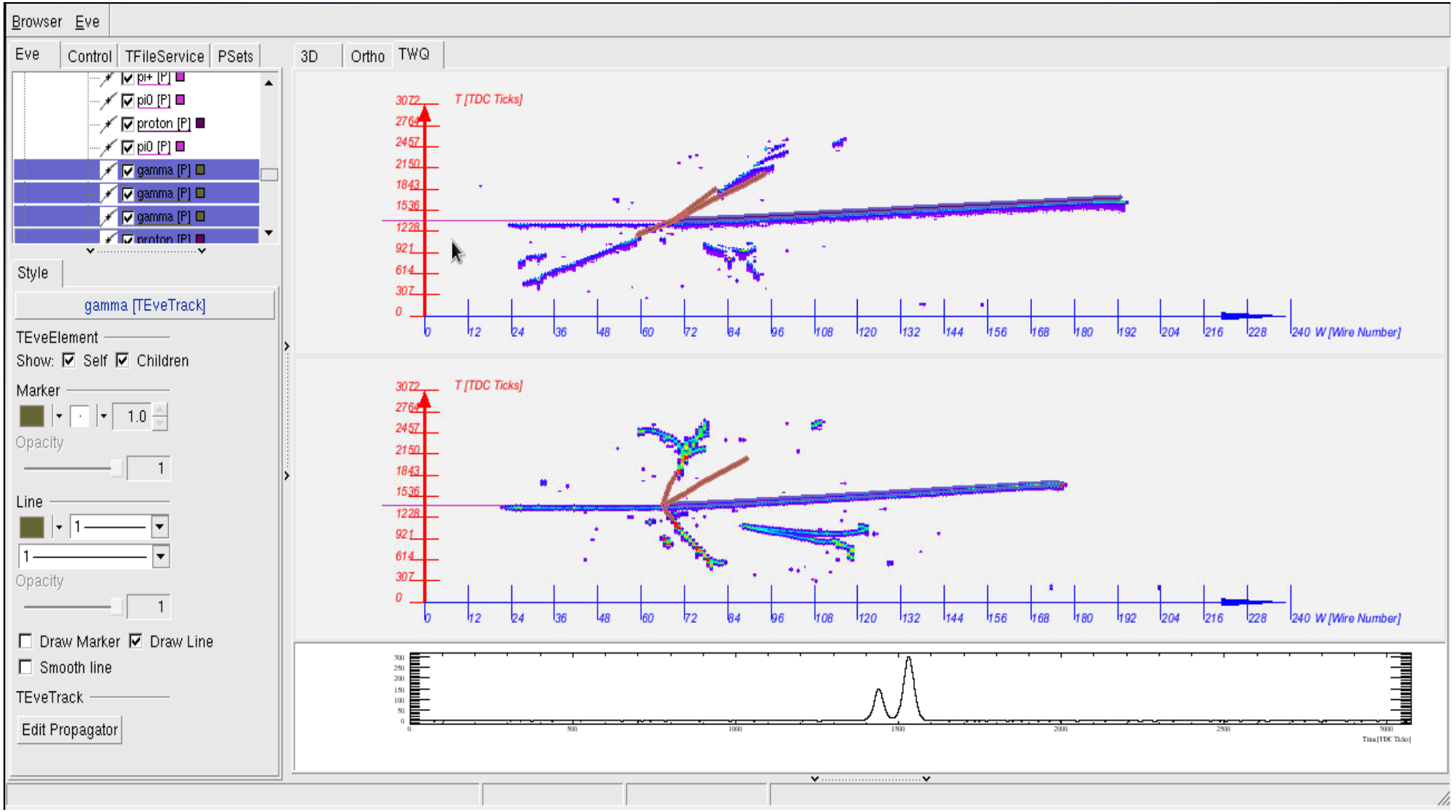
LArIAT in the Eve-Based Event Display



Andrew Olivier

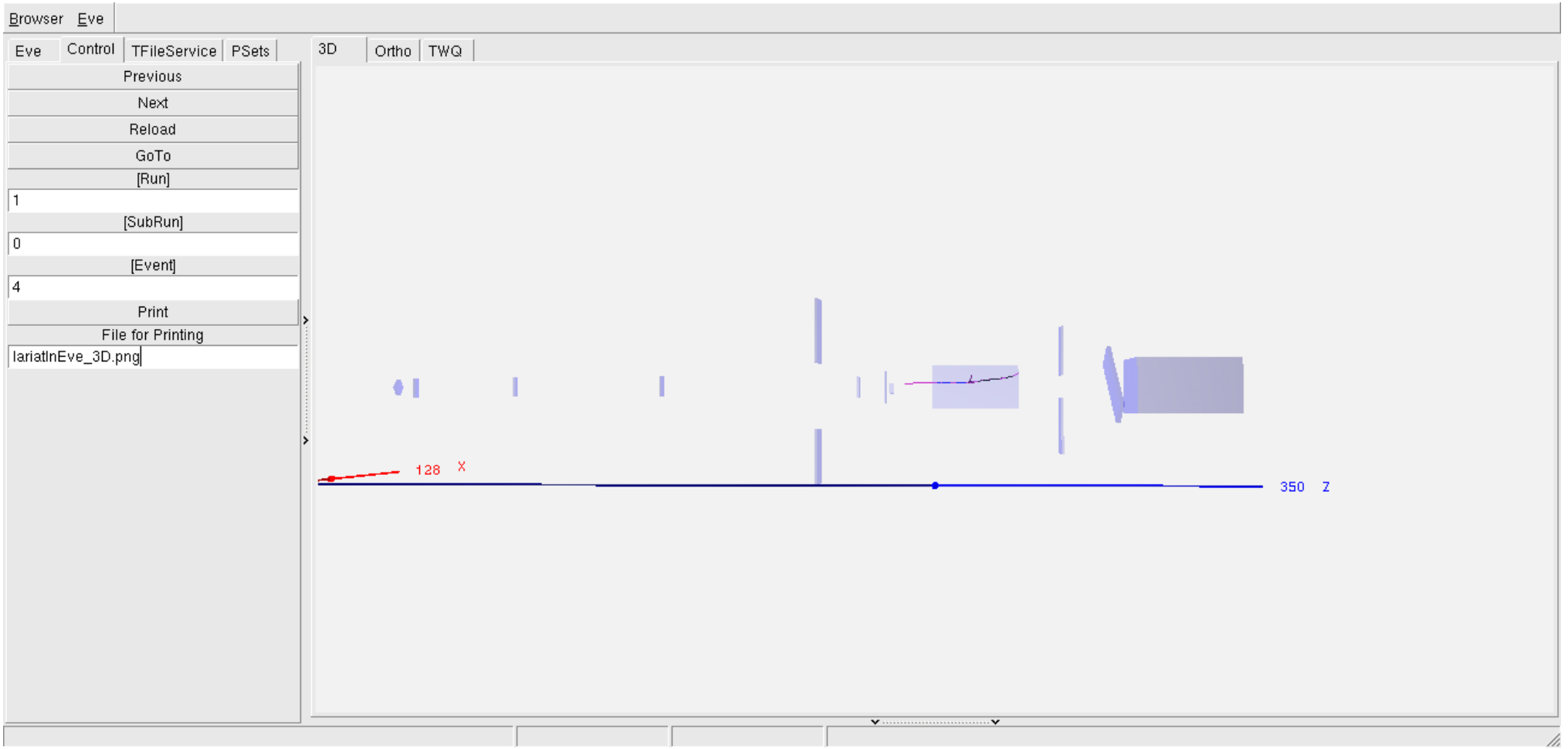
Why a New Event Display?

- Want as much information as practical available to users without writing custom visualization classes
- Want to be able to easily implement experiment-specific plugins like support for WCTrack
- Want support for directly drawing volumes
- Want to interactively take advantage of reconfigure() methods in modules

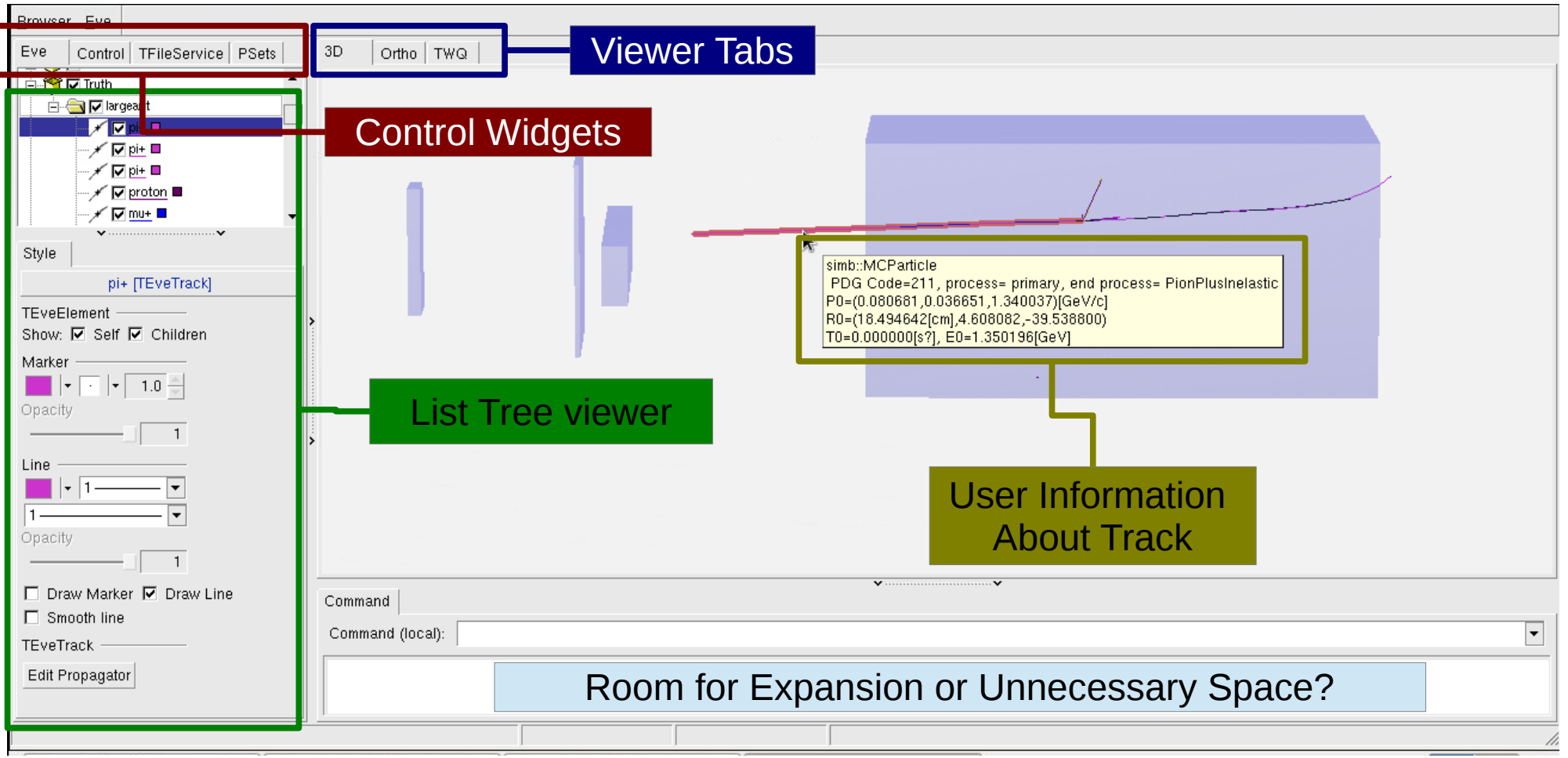
Why an Eve Event Display?

- CERN's Eve package provides:
  - Dedicated visualization objects for:
    - Physics objects like tracks and digits
    - TGeoVolumes as obtained from the geometry service
  - Specialized viewers and other GUI elements
  - An extendable GUI window
  - A framework to tie all of these elements together
- I have provided:
  - Infrastructure to map generic data products to Eve objects
  - Example algorithms for several common LArSoft data products
  - Extensions of Eve objects when needed
  - An ART interface to Eve

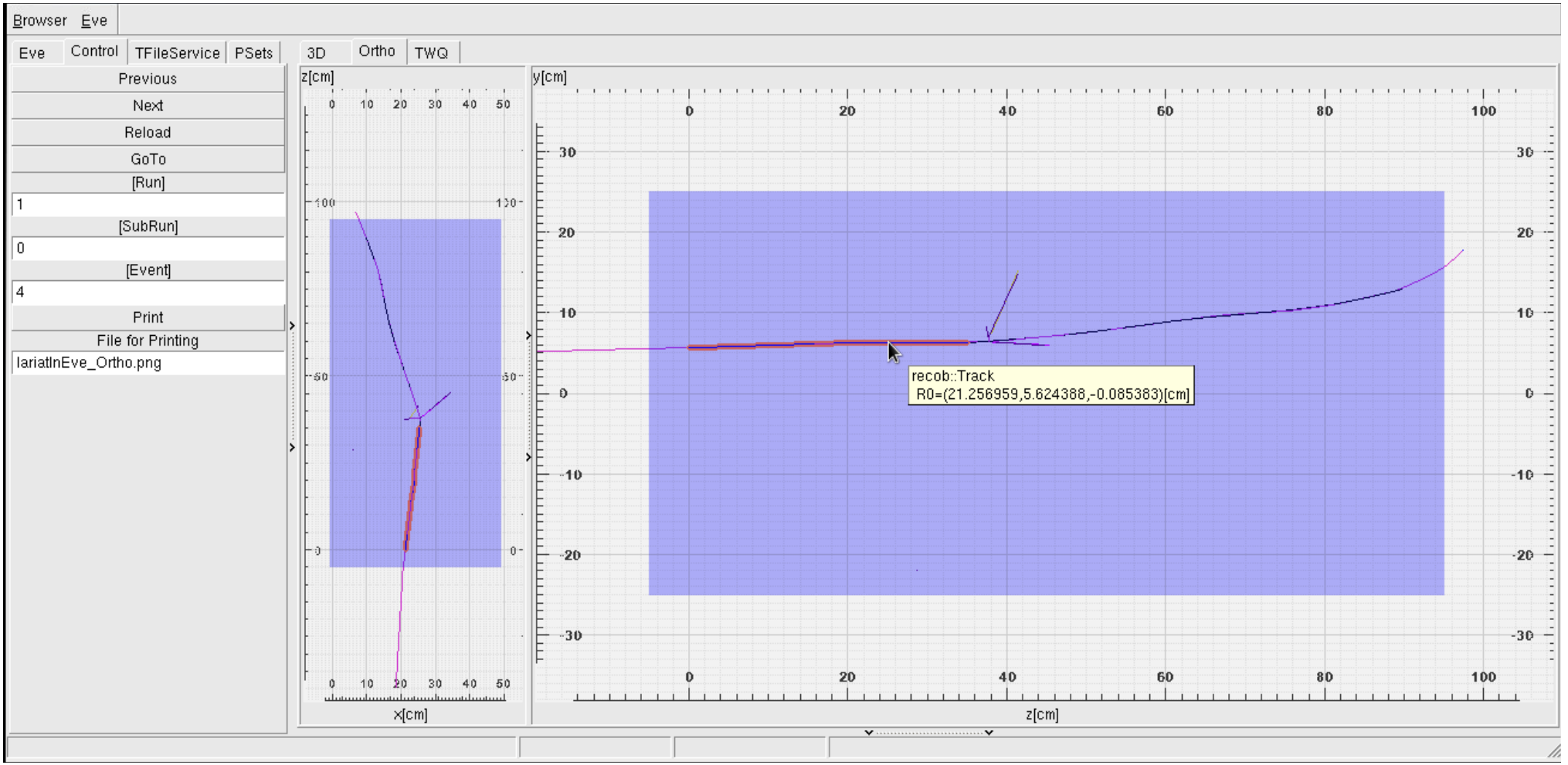
LArIAT in the Eve-Based Event Display



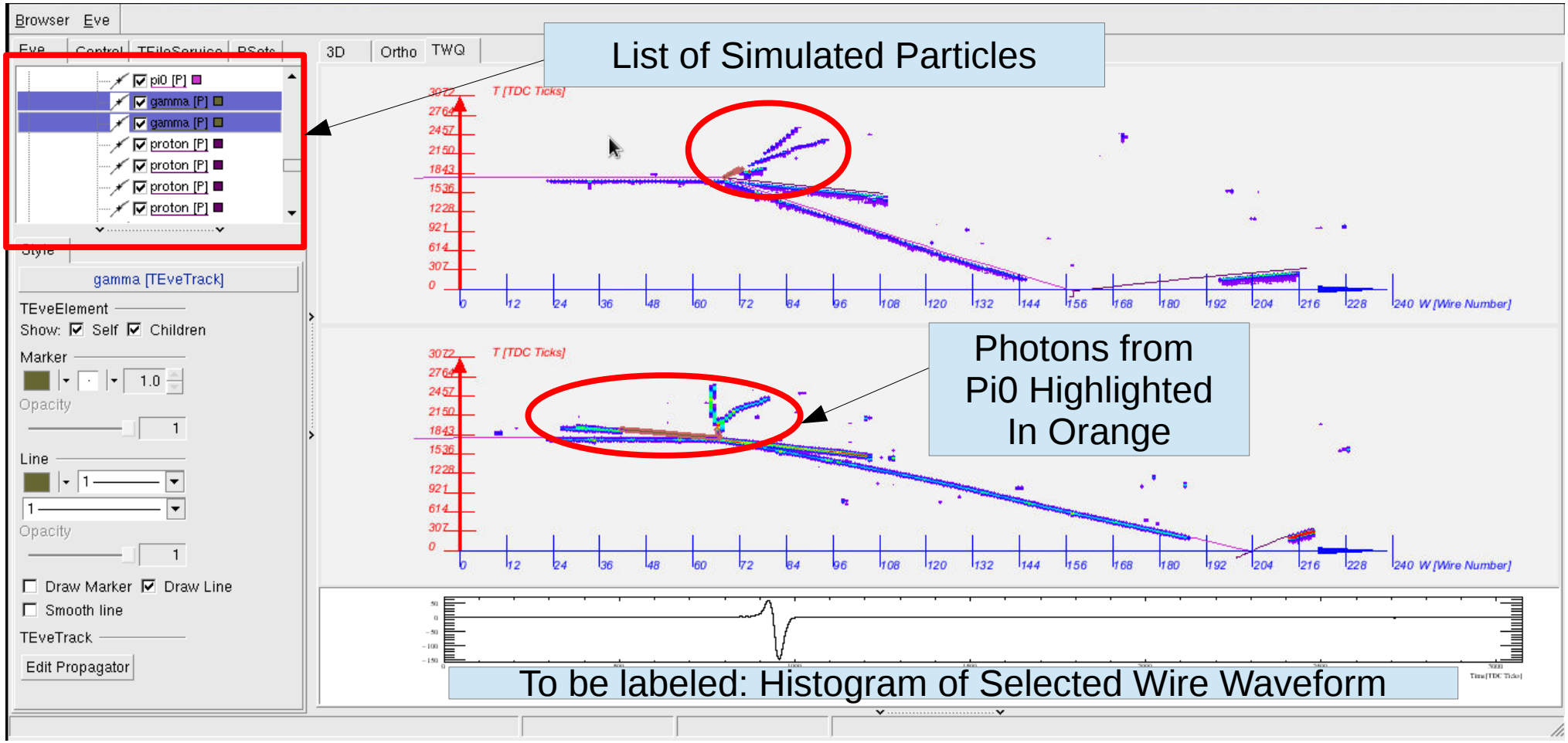
Features of the Eve Display



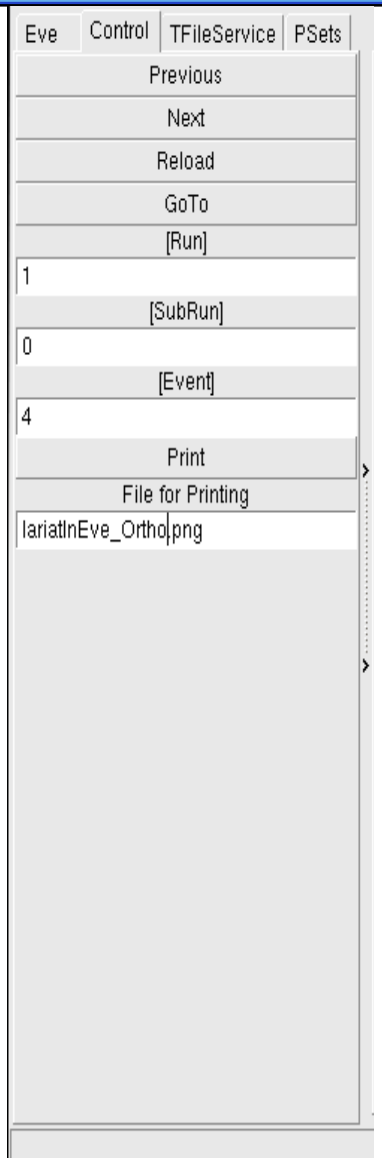
2D Orthographic Viewer



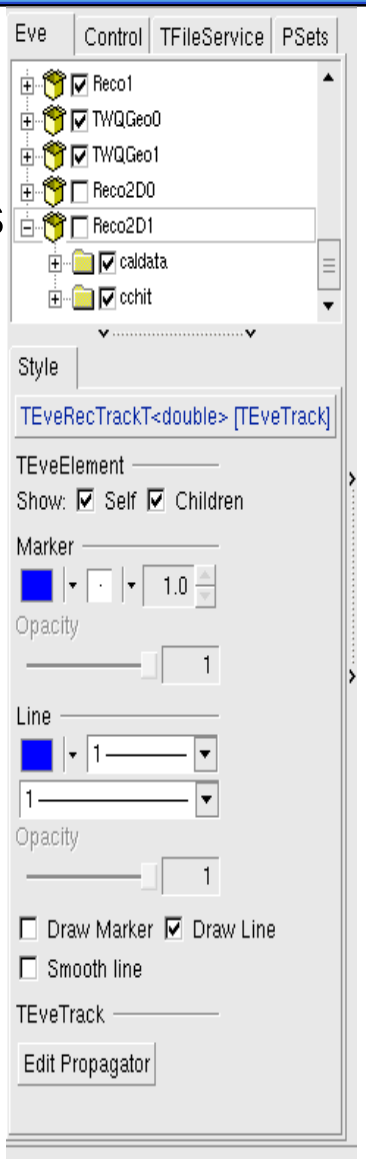
2D Digit Viewer



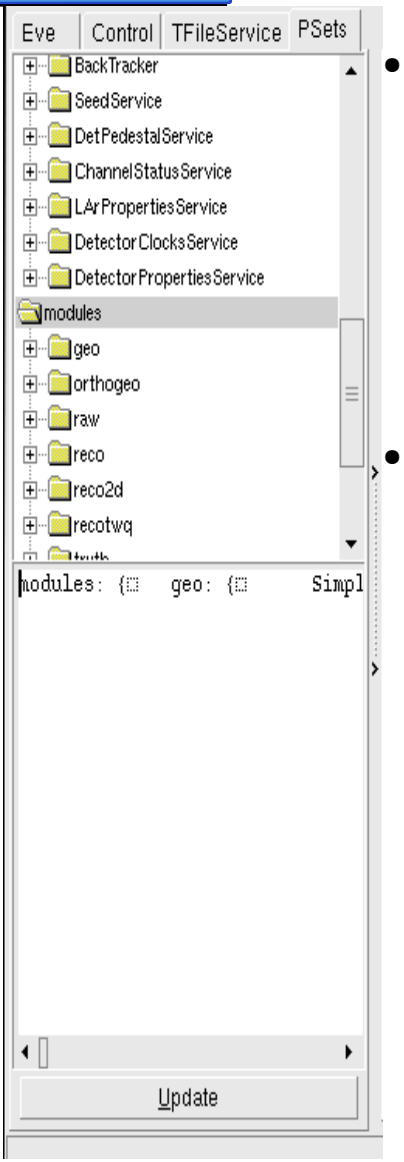
Control Widgets



- Control event
- Supports sub runs
- Prints display to file
- Room for more features



- Control Eve objects
- Hide elements without reloading event
- Elements organized into scenes
- Editor for selected element

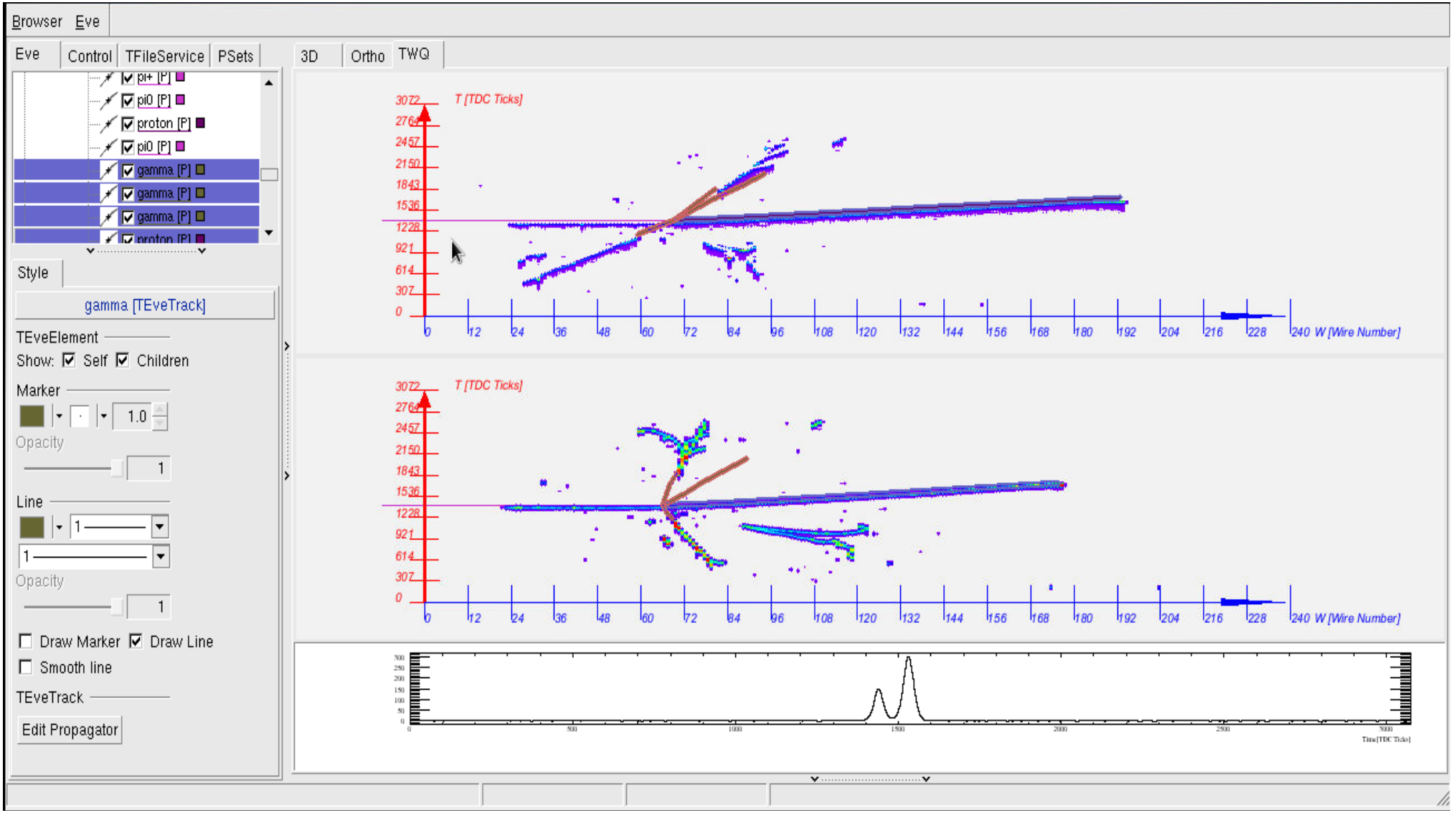


- Edit parameter sets for services and modules
- Parameter sets viewed as a list tree or in text editor

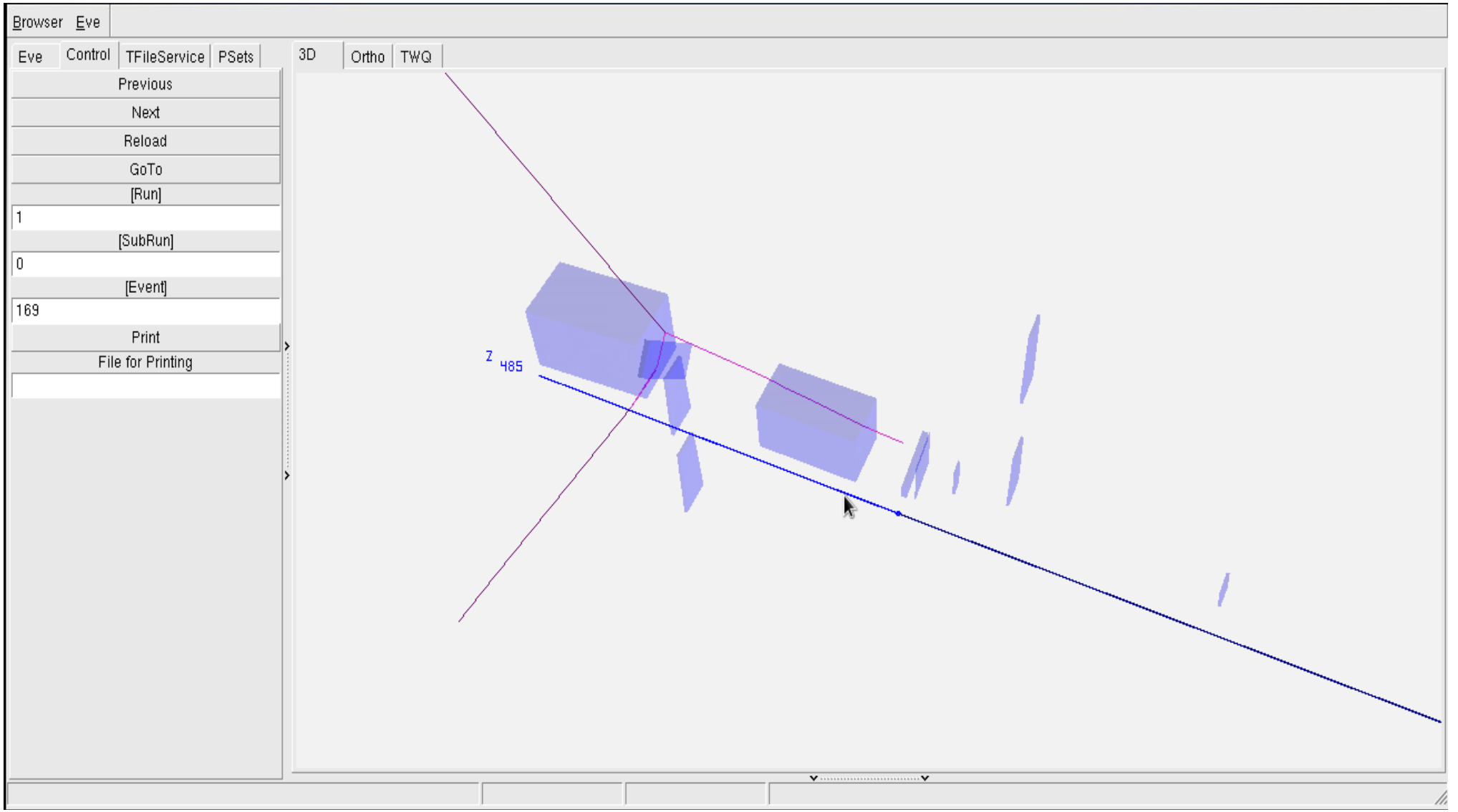
What's Next

- Test with art 2 and LArSoft 6, then comitt to lareventdisplay
- Test experiment-specific extensions with LArIAT WCTracks
- Algorithms to draw recob::Clusters and AuxDetDigits
- Drawing associated data products in a list tree
- Standard interface to color scheme and cosmetic changes to objects
- Better zoom control
- Browsing TFileService from Eve GUI (ready to test)
- Option to send message logger output to Eve display
- Other data products

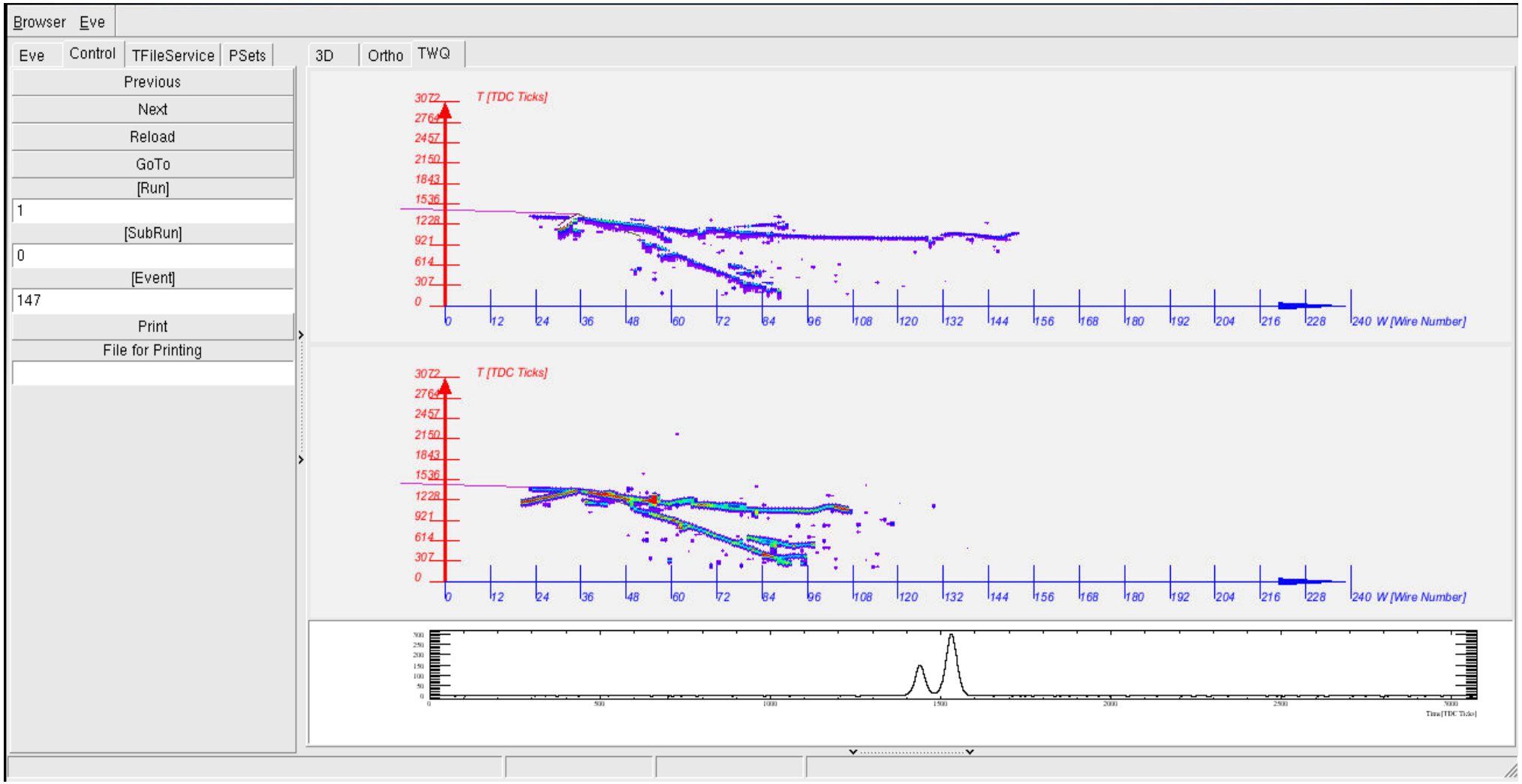
Backup: Another Event



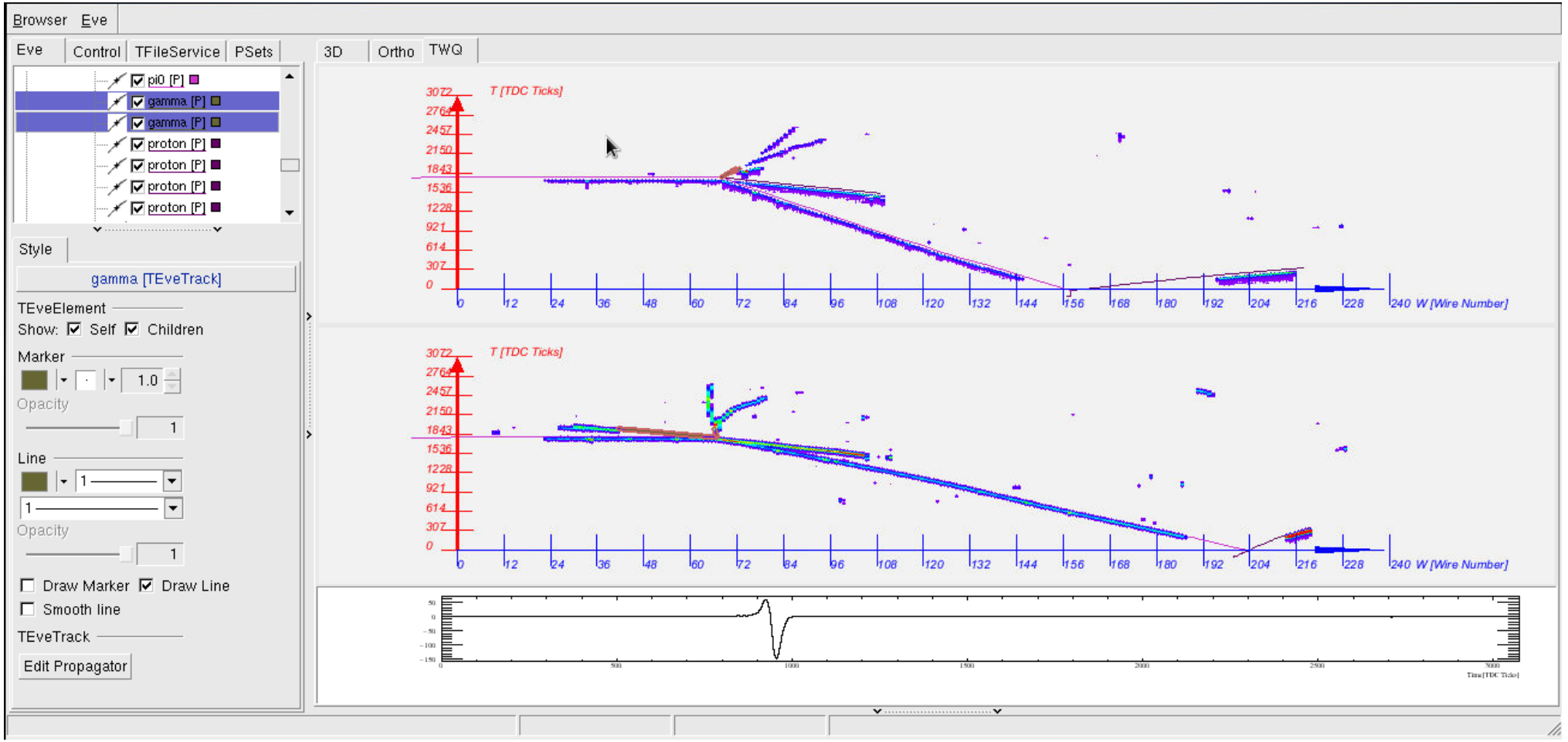
Backup: Scattering Off of Beamline



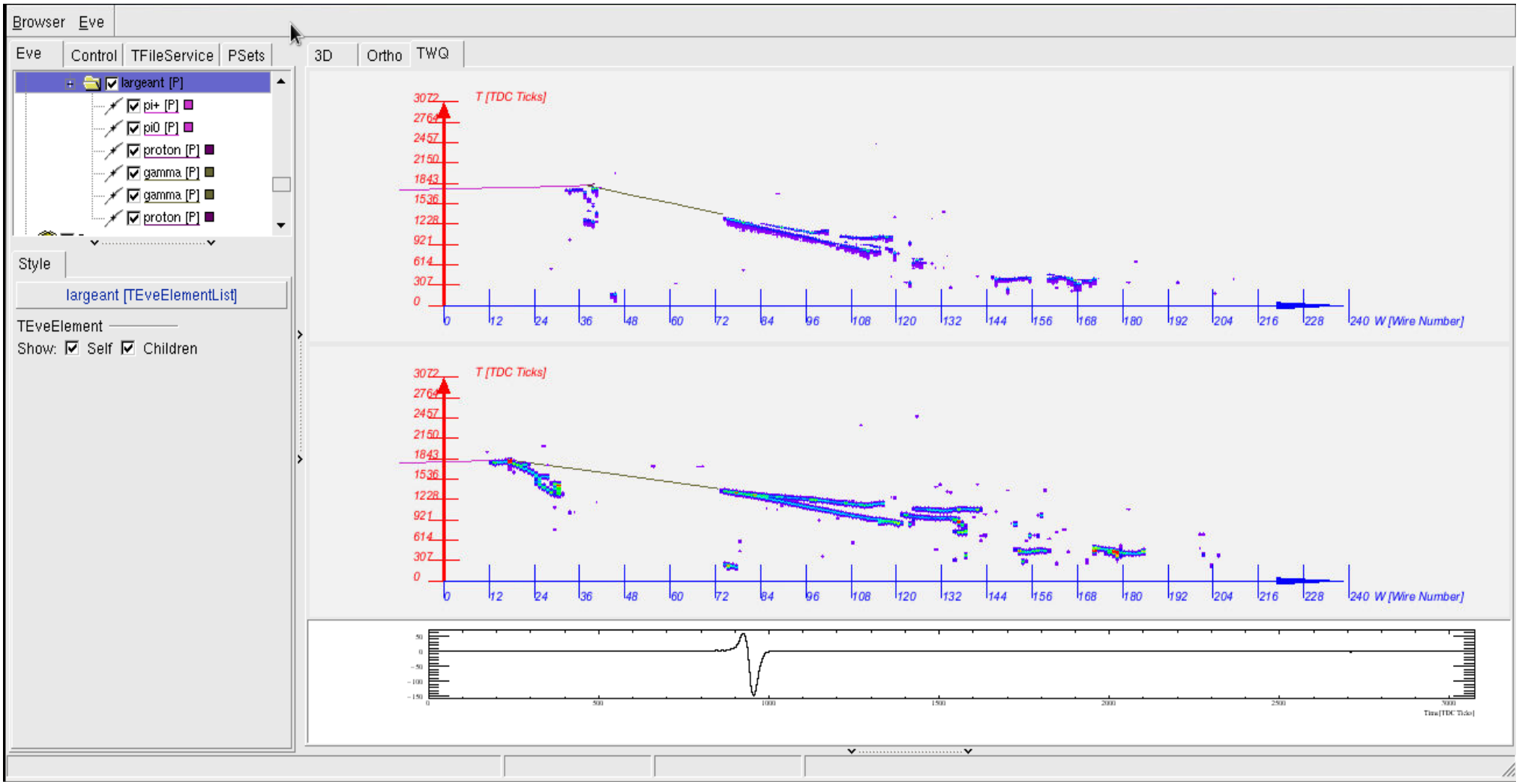
Backup: Photon Conversions



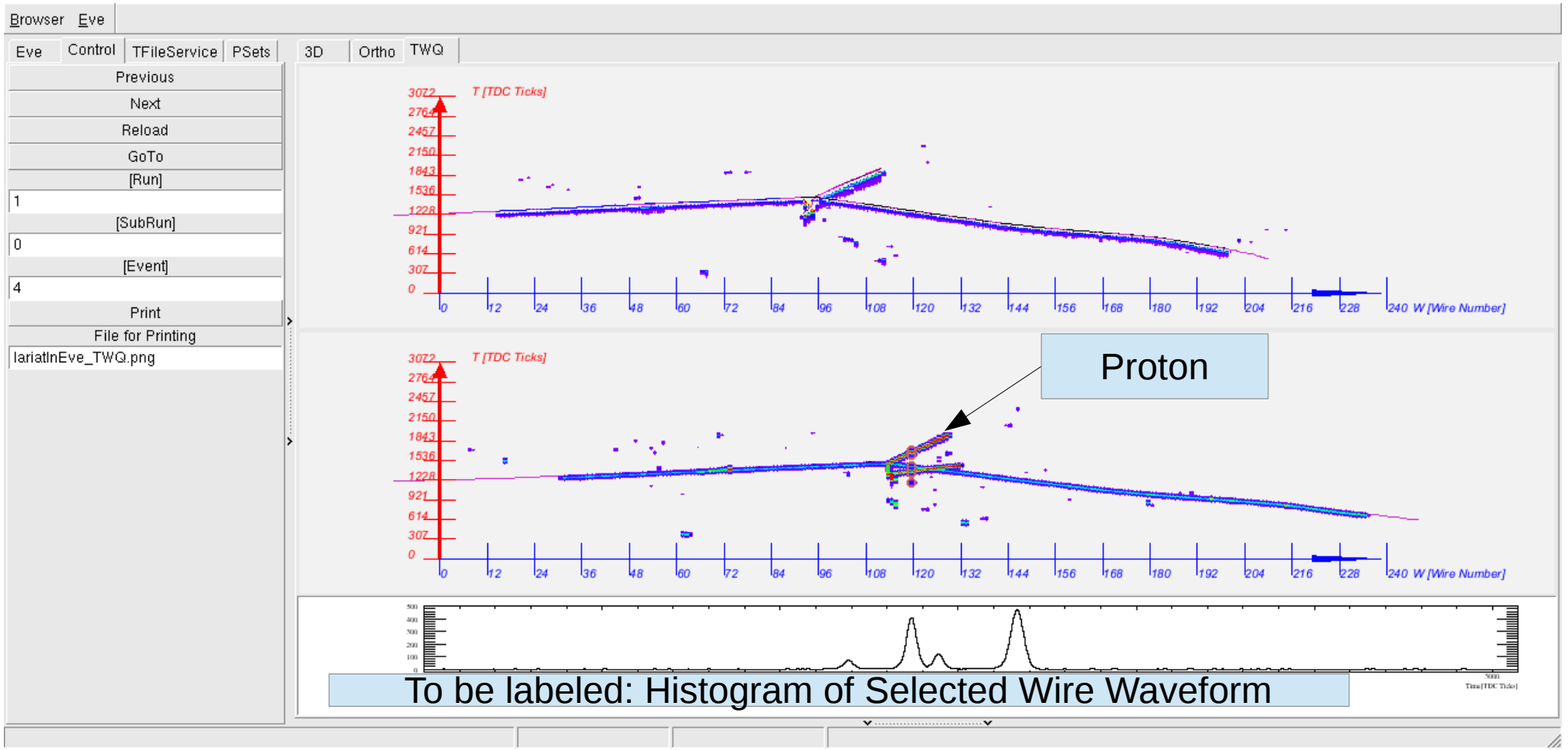
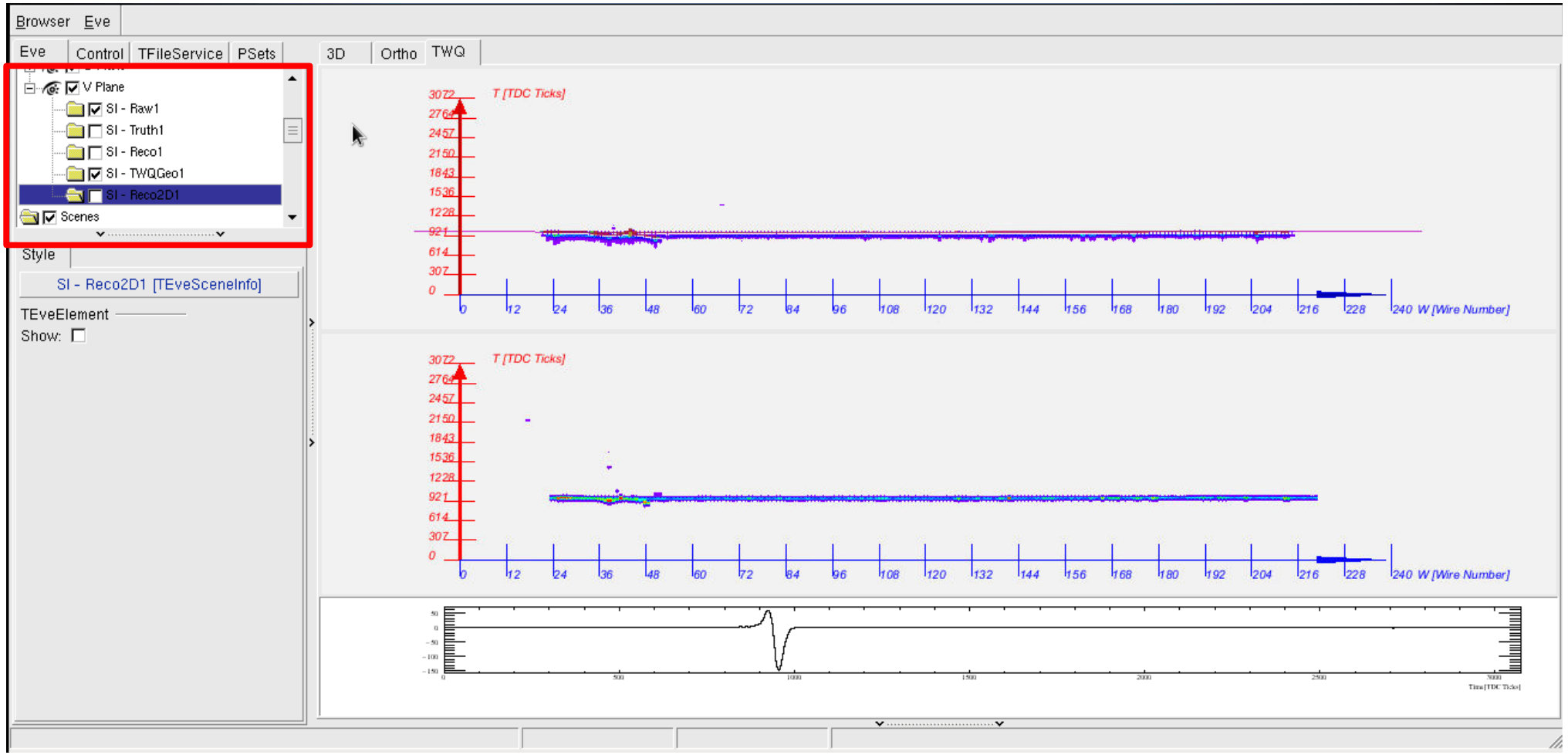
Backup: 2 Inelastic Scatters



Backup: Photon Shower



Backup: Lots of Protons



Backup: Simplified Scene Control