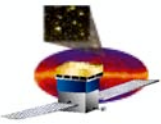


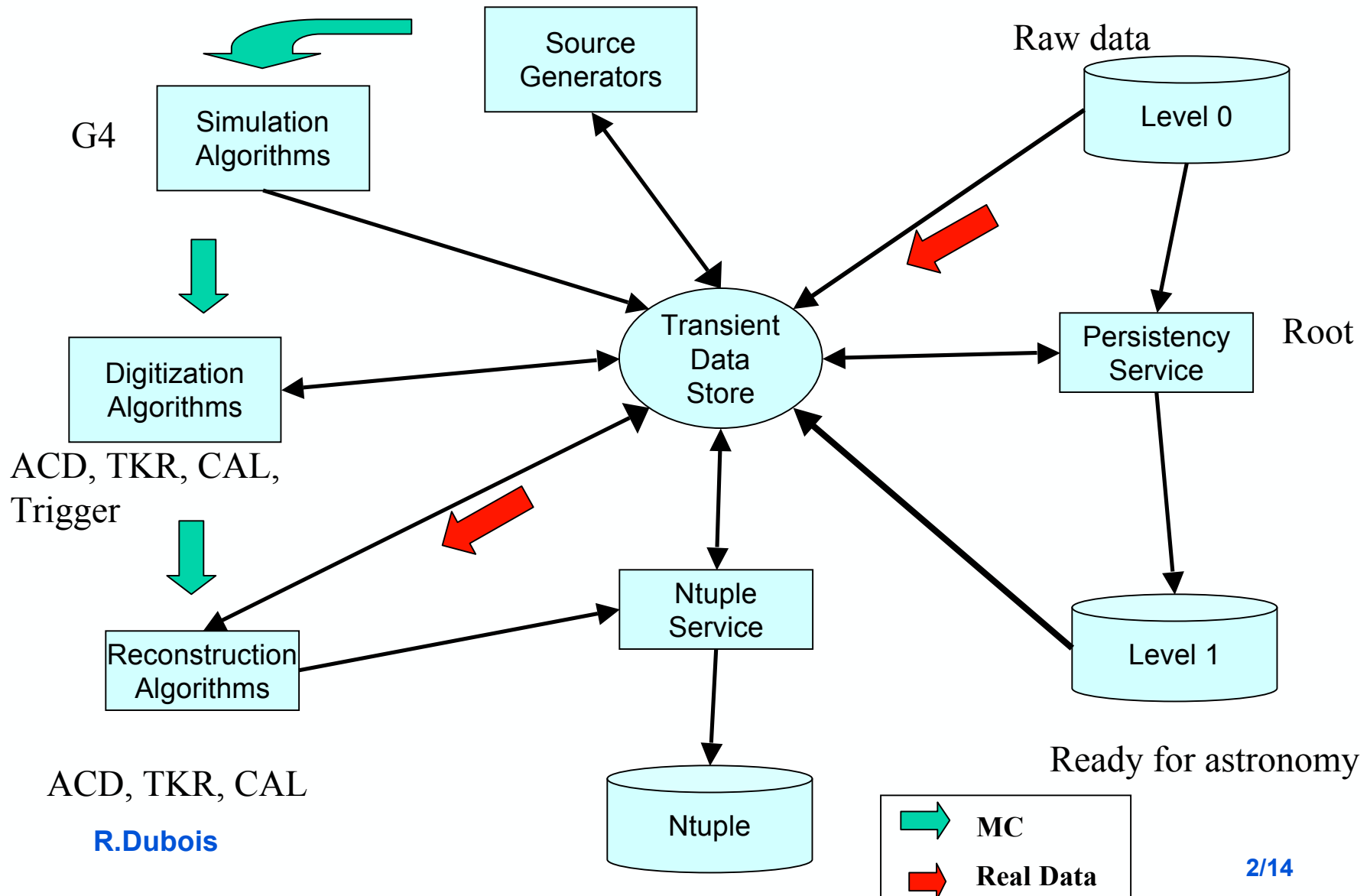
Running the Software

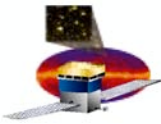
- **What**
- **Where**
- **When**
- **How**

<http://www-glast.slac.stanford.edu/software>



Data flow in Gleam





Sim/Recon Developers Toolset



Root, IDL – analysis



applications

Reconstruction
TkrRecon, CalRecon, AcdRecon

simulation package
GEANT4

xml – geometry, parameters

Root – object I/O

Gaudi – code framework

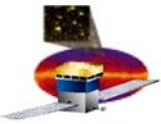
VC++ – Windows IDE
gnu tools - Linux

vcmt – Windows, linux gui

CMT – package version management

ssh – secure cvs access

cvs – file version management



Sim/Recon Users Toolset



Root, IDL – analysis



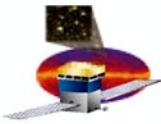
applications

Gleam “binary” distribution – Windows, Linux

CMT – package version management

vcmt – Windows, linux gui





vcmt – gui for package manipulation

The screenshot shows the 'Visual CMT for Glast' application window. On the left, there are several panels: 'Options' with a 'Package List' containing items like 'Gleam v2r4', 'Actions' with a 'Ready' status and an 'abort' button, 'Dev' with buttons for 'config', 'make', 'clean', 'run', and 'Debug/Release' radio buttons, 'Cvs' with buttons for 'commit', 'update', '-n update', 'import', 'rtag', 'status', and 'Doxygen' with 'create' and 'examine' buttons. The main area on the right has tabs for 'requirements', 'uses', 'macros', 'show...', 'release notes', 'change log', and 'output'. The 'requirements' tab is active, displaying a list of package requirements for 'Gleam'.

```
package Gleam
version v2r4
# This is a checkout package
# $Id: requirements,v 1.168 2002/10/09 06:26:55 burnett Exp $

# gaudi system files: this would checkout all of the Gaudi packages
use EXTLIB v2r4p3
use GaudiSys v9r0p6

# ROOT add-on
use ROOT v3r2p10
use RootHistCnv v5r0p1

# basic Glast packages

use XMLEXT v2r2
use GlastPolicy v4r8
use facilities v2r6
use xml v4r1p4

use geometry v3

use astro v0r2

# low-level graphics

use gui v3r3
use geomrep v4r1

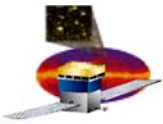
# the geometry data base
use idents v2r8p4
use xmlGeoDbs v1r7p3
use xmlUtil v2r8p3
use detModel v2r13p0

# interface to G4 - make private to avoid so many libs
private
use Geant4 v1r1p0

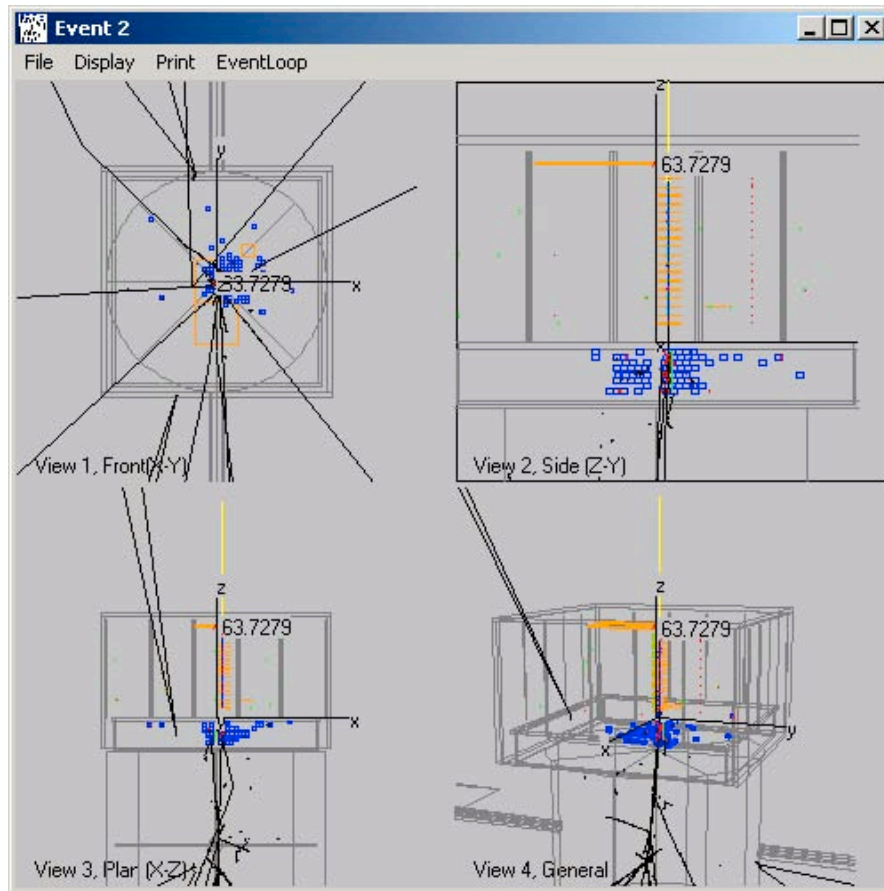
public
# this is the minimal G4 runtime only stuff
use Geant4Runtime v1r0

# Gaudi component packages follow
```

Available on windows and linux.
Glastpack available for real men.

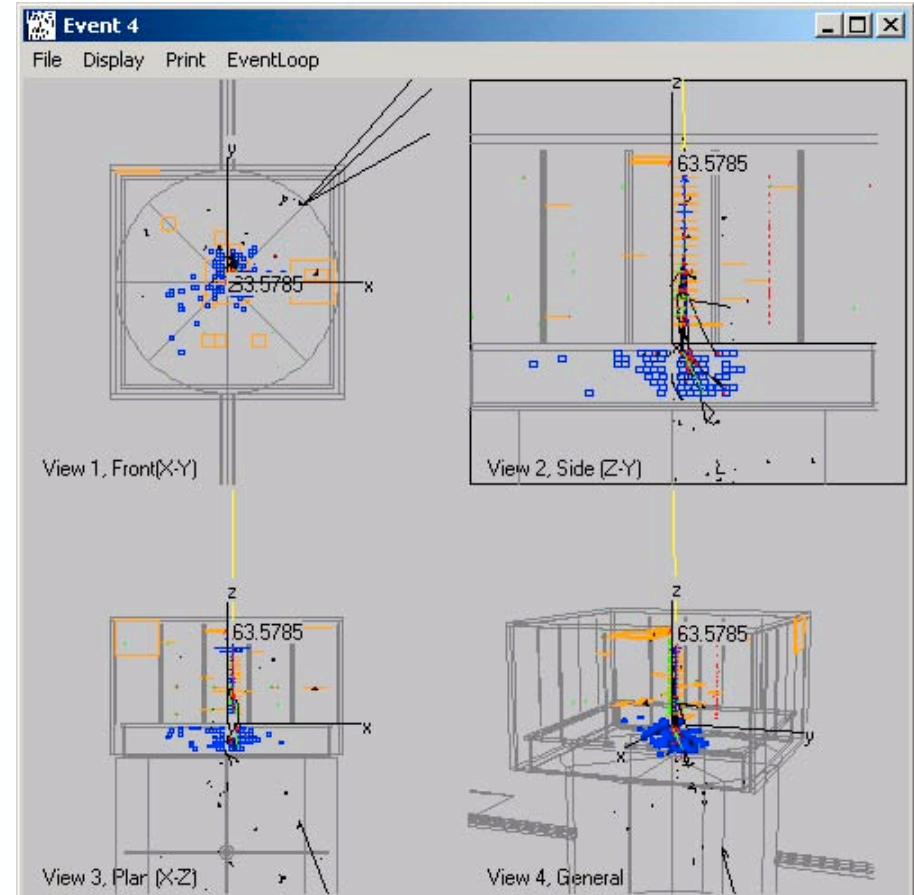


Event Displays

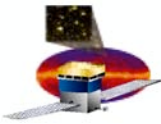


10 GeV proton

1 GeV gamma



FRED & WIRED coming soon as more interactive displays.

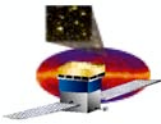


cvcs web – peruse the code

Click on a directory to enter that directory. Click on a file to display its revision history and to get a chance to display diffs between revisions.

Current directory: [\[CVS SLAC\]](#) / Gleam

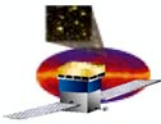
File	Rev.	Age	Author	Last log entry
Previous Directory				
cmt/				
doc/				
src/				
.cvsignore	1.1.1.1	6 months	burnett	Initial import for G4 development checkout package.
ChangeLog	1.358	36 hours	burnett	AutoUpdate



Where to Get and Run the Code

- **Developer**
 - From cvs at SLAC
 - cvsroot =
centaurusa.slac.stanford.edu
- **User**
 - Get binary distributions from our ftp site
 - Will be ready with Gleam v3
- **Run the code**
 - Your own box
 - You are the sysadmin
 - Prebuilt
 - SLAC linux farm
 - UW Windows terminal server
 - Releases already built

When? End of October for Gleam v3 !

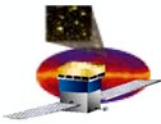


How to Run the Code

- **Gleam is configurable from a “jobOptions” file:**
 - Algorithms are loaded dynamically upon request
 - Can specify the exact sequence of algorithms to run, eg
 - Source + G4 + Digi + Recon creating output Root files
 - Recon from input Digi file, creating output Root file
 - Digi from input MC file, no output
 - Analyze results from output files (**RootTreeAnalysis**) or add your own analysis algorithm (**userAlg**) to Gleam
 - Analyze full TDS or Root trees or use the analysis ntuple and create/add your own ntuple columns
- **See the Gleam Users Guide (aka RTFM)**

<http://www-glast.slac.stanford.edu/software/gleam/userGuide/>

- Descriptions of obtaining and running the code
- A growing Cookbook of How-To examples
- <mailto:helpsoftlist@glast.stanford.edu>
- Approaching critical mass for community of users who can answer queries



SAS How To

This page lists various use cases and a how-to for doing them yourself. It assumes that you already know how to build and run Gleam!

General How To's

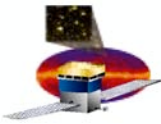
- [organizing your workspace](#)
- [using glastpack as a developer](#)
- [using SLAC batch](#)
- [creating a simple CMT application](#)

Gleam specific How To's

- [providing your own jobOptions file](#) to Gleam
- [analyzing Gleam Root files](#)
 - [creating a Root ntuple](#) from RootTreeAnalysis
 - simple ACD analysis
 - simple CAL analysis
 - simple TKR analysis
 - simple MC analysis
- Gleam analysis on the fly with [userAlg](#)
 - [creating a Root ntuple from userAlg and simple CAL analysis](#)
 - creating Root histograms via AIDA
 - simple ACD analysis
 - simple TKR analysis
 - simple MC analysis
- [changing CAL response parameters](#) in xmlGeoDbs/
- [adding a material](#) to the list

Gaudi Specific How To's

- [create a Tool](#)



Gleam Job Options Parameters - Microsoft Internet Explorer

Address http://www.slac.stanford.edu/exp/glast/ground/software/package_documentation/GleamJobOptions.htm

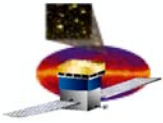
Gleam Job Options Parameters

This is a list of the job options parameters for Gleam, arranged by package. It is generated from the mainpage.h files in the src directory of the dependent packages for Gleam. Check with the individual package owners regarding any omissions or inaccuracies

Package AcdDigi v1r4p0

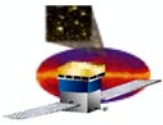
<i>AcdDigiAlg.xmlFile</i>	The full path and filename of an input XML file containing constants for the ACD digitization.
<i>AcdDigiAlg.autoCalibrate</i>	Boolean Flag that denotes whether or not to apply auto calibration 1 (One) denotes true, so that auto calibration will be applied 0 (zero) is false
<i>AcdDigiAlg.applyPoisson</i>	Boolean Flag denoting whether or not to apply Poisson fluctuations to the number of photo electrons detected by a PMT. 1 (One) denotes true, so that Poisson fluctuations are applied.
<i>AcdDigiAlg.applyGaussianNoise</i>	Boolean Flag denoting whether or not to apply gaussian noise to the electronics. Noise is applied to the PHA, veto and CNO discriminators separately. 1 (One) denotes true, meaning that the noise is applied.
<i>AcdDigiAlg.edgeEffect</i>	Boolean Flag denoting whether or not to apply edge effects, where the position of a hit is used to determine how much energy was actually detected. 1 (One) denotes true, so that edge effects are taken into account.
<i>AcdDigiMcIntHitAlg.xmlFile</i>	The full path and filename of an input XML file containing constants for the ACD digitization.

Automagically created from the package doc (for all packages).



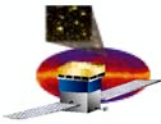
What's Coming in Gleam

- **Continual improvement of subsystem digis and recons**
 - **ACD**
 - Ribbons, efficiency maps
 - Calibrations
 - **CAL**
 - Revised leakage corrections
 - Non-linear tapers
 - Failure modes
 - Calibrations
 - **TKR**
 - Further development in all areas – digi, patrec, fitting
 - Alignment algorithms
- **Need to add Event Interpretation step**
 - **Make use of all the subsystem info**
- **Fancier event display**
 - **Separated off from Gleam proper**
 - **Expected in November (after Riccardo's teaching is done)**
- **Python interface available from Gaudi-central – starting to play with it**
- **Have NOT yet had the manpower to create a gui for Root analysis**



Development Process

- **Have been on 6-month cycle for major releases**
 - **Seems about right so far**
 - **Backward-incompatible upgrades are done!**
- **BBS (Beg Borrow & Steal) approach**
 - **Upside is all the features we gain for 'free', supplied and supported by others**
 - **Downside is keeping up with new versions**
 - **Major suspects for upgrade usually are**
 - **G4, Root, Gaudi**
 - **CMT**
 - **Compilers – interested in gcc 3.xx, and Studio 7 now**
 - » **These are essentially ANSI standard now; a good idea for us to upgrade**
 - **We expect to embark on these upgrades forthwith**



Random Quotes from Users

- **Julie Mcenery – new to us from Goddard:**
 - “I am stunned by the relative ease with which I could get things running. I was expecting more of a struggle.”
- **Berrie Giebels**
 - “It is easy now and there are more and more people available for help. Running it has also few surprises.. the only comments I got at the lab was that the event display was ugly. I think that it's a great tool and it only needs more "cookbooks", because some people will use it like me with a partial understanding of c++, but knowing a bit about Root AND what you want to look for is enough to actually use it.”
- **It works! Have fun with it!**