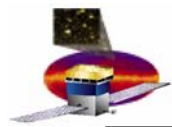


GLAST Large Area Telescope: I&T Integration Readiness Review

**Online Peer Review
July 21, 2004**

Graphical User Interfaces

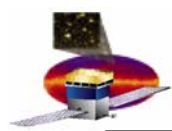
**Alicia T. Kavelaars
I&T Online
SLAC**



Agenda

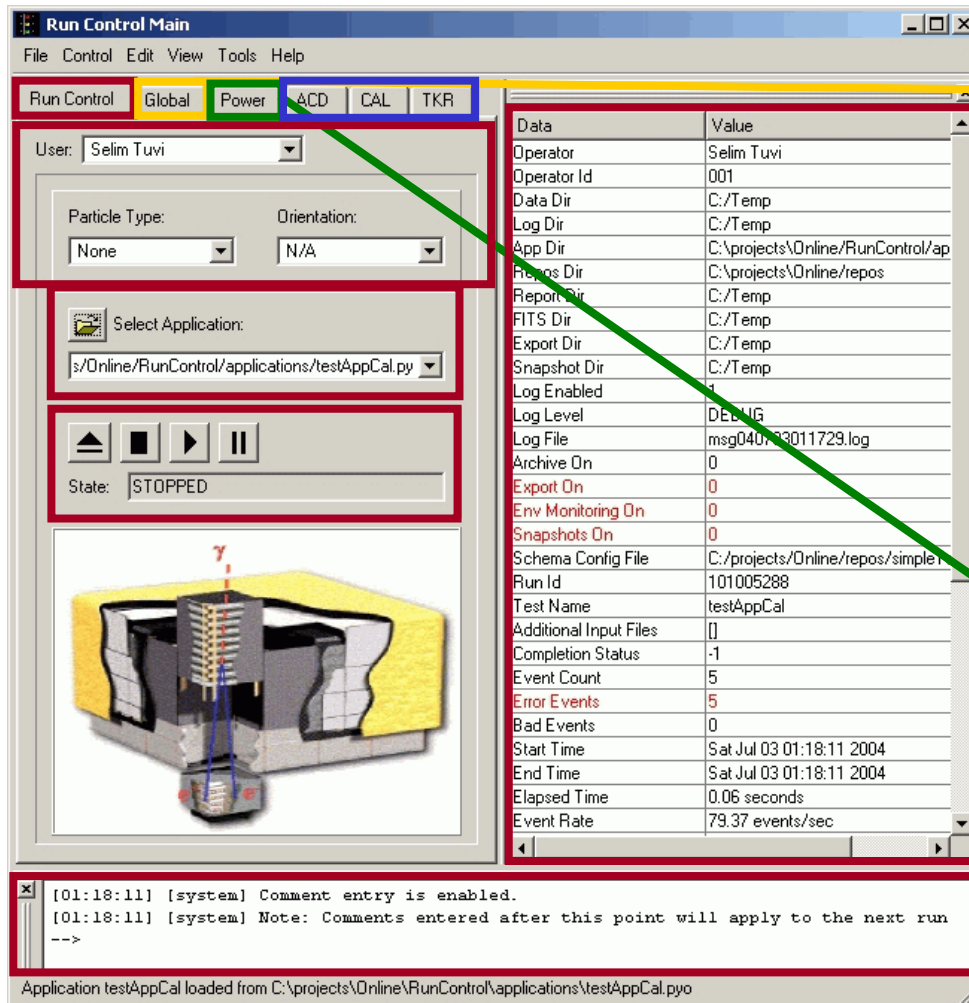
- Describe work done by I&T Online on Graphical User Interfaces
- GUIs we will cover:
 - Run Control:
 - Message Logger
 - Environmental Monitor
 - Register Browser
 - File Browser
 - Preferences
 - GLAST Online Single Event Display (GOSED)
 - TKR, CAL, ACD Display
 - Top View Display
 - Data Display
 - E-logbook:
 - User entry
 - Shift entry
 - Connector Mate/Demate
 - Component Installation Record

**Graphical User Interfaces drive the flow of information
and optimize the efficiency of the user's interaction
with the experiment**

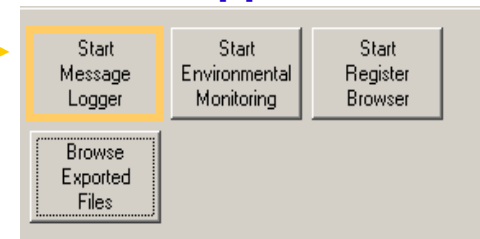


Run Control

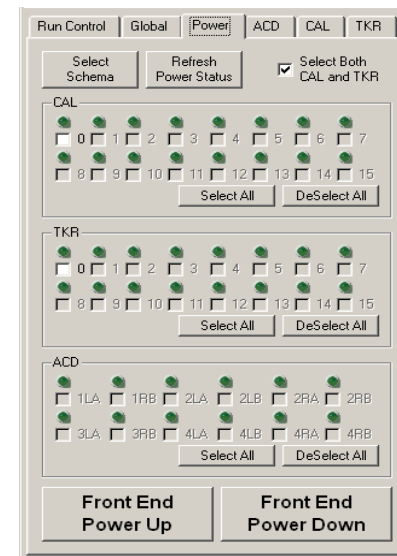
- **Main Setup**
 - A framework and user interface for subsystems to conduct testing and data collection.



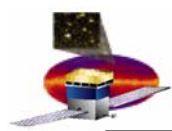
- **Global applications**



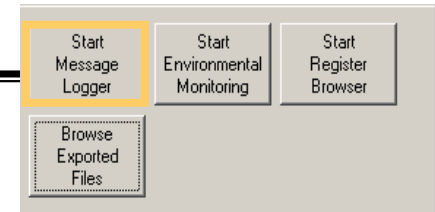
- **Power Up controls for existing nodes in schema**



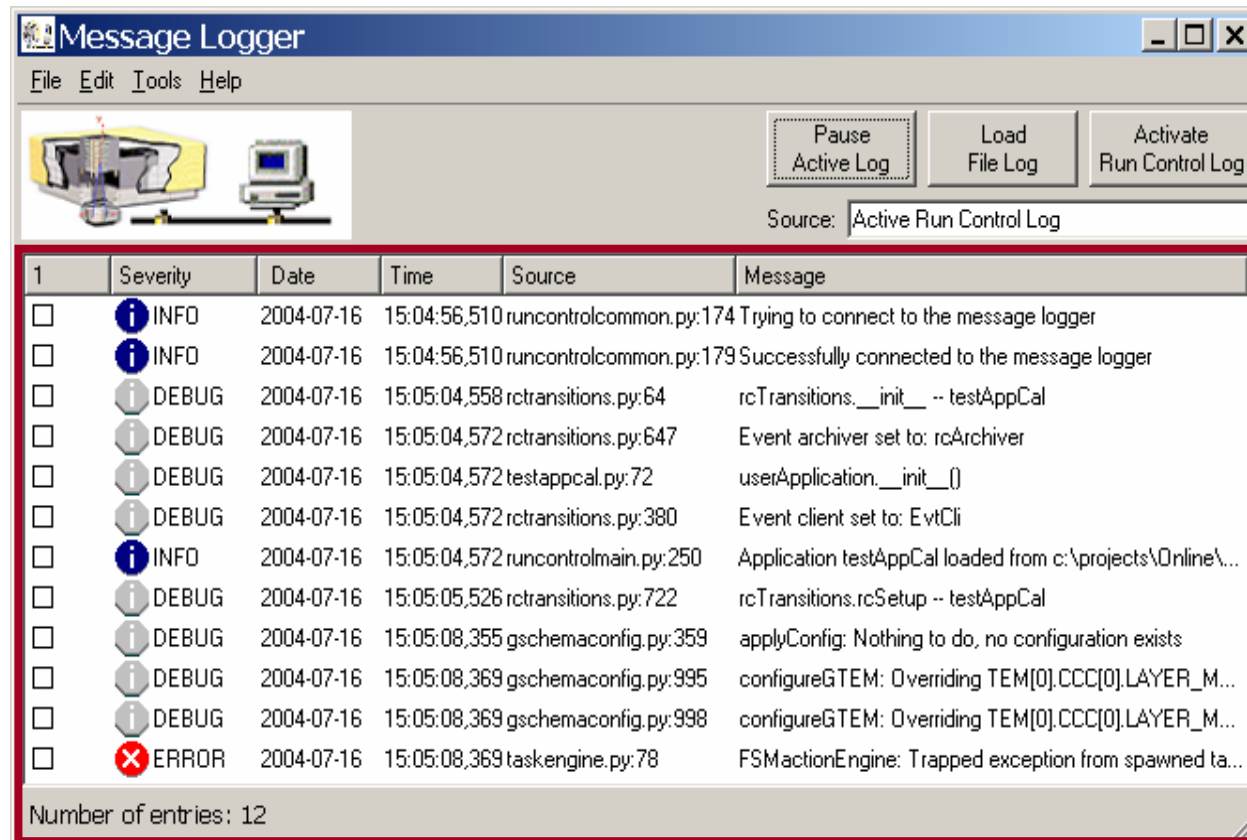
- **Subsystem customized tabs**

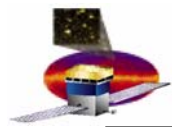


Run Control

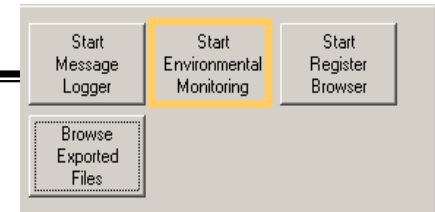


- **Message Logger**
 - Reports Run Control logging messages



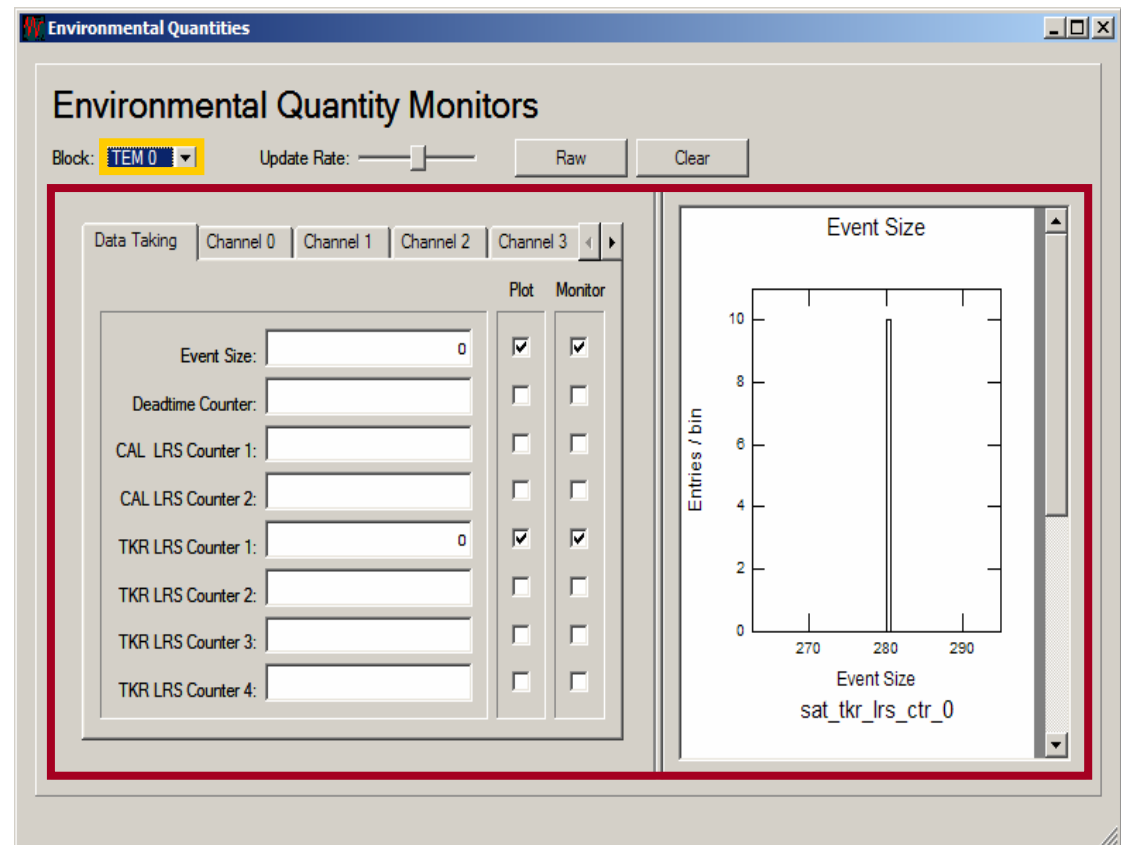


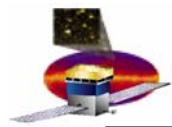
Run Control



- **Environmental Monitor**
 - **Complies with:**
 - LAT-TD-00605 The Tower Electronics Module (TEM)
 - LAT-TD-00639 The ACD Electronics Module (AEM)

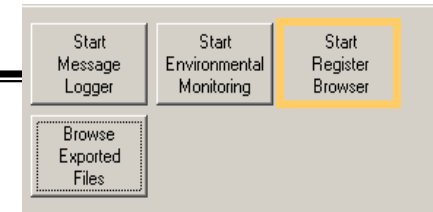
- Displays and plots user selected environmental quantities
- Subsystem selectable





Run Control

- **Register Browser**
 - Browse active registers loaded on run schema
 - Loads a browse-enabled schema from XML file.
 - Displays register information from selected node in the schema as well as parent nodes.
 - Tab is organized by subsystem.



GLAT Register Browser

File Tools Help

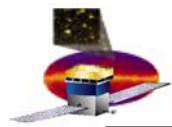
GLAT Schema

- GLAT
 - GTEM 0
 - GTIC
 - GCCC 0
 - GCCC 1
 - GCCC 2
 - GCCC 3
 - GCRC 0
 - GCRC 1
 - GCRC 2
 - GCRC 3
 - GTCC 0
 - GTCC 1
 - GTCC 2
 - GTCC 3

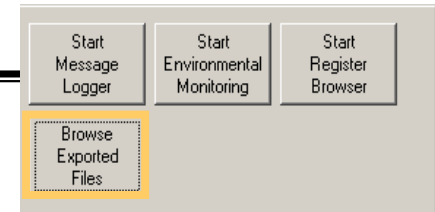
Registers:

Register	Size	Time of Last Update	Value
GTEM 0			
ADDRESS	4	21:33:45 + 680	0x00000000
CAL_TRGSEQ	4	21:33:45 + 680	0x00000000
COMMAND_RESPONSE	4	21:33:45 + 680	0x00000000
CONFIGURATION	4	21:33:45 + 680	0x00000000
DATA_MASKS	4	21:33:45 + 680	0x000010ff
GCCC 3			
CONFIGURATION	4	21:33:45 + 680	0x80000000
EVENT_TIMEOUTS	4	21:33:45 + 680	0x00000000
FIFO_STATUS	4	21:33:45 + 680	0x00000000
LATCHED_STATUS	4	21:33:45 + 680	0x00000000
LAYER MASK 0	4	21:33:45 + 680	0xffffffff
GCRC 1			
CONFIG	2	21:33:45 + 664	0x0000
CSR	2	21:33:45 + 680	0x0000
DAC	2	21:33:45 + 680	0x42fe
DELAY_1	2	21:33:45 + 680	0x00ff
DELAY_2	2	21:33:45 + 680	0x00ff
GCRC 2			
CONFIG_0	2	21:33:45 + 664	0x0000
CONFIG_1	2	21:33:45 + 664	0x0036
FHE_DAC	2	21:33:45 + 664	0x0055
FLE_DAC	2	21:33:45 + 664	0x0055
LOG ACPT	2	21:33:45 + 664	0x0010

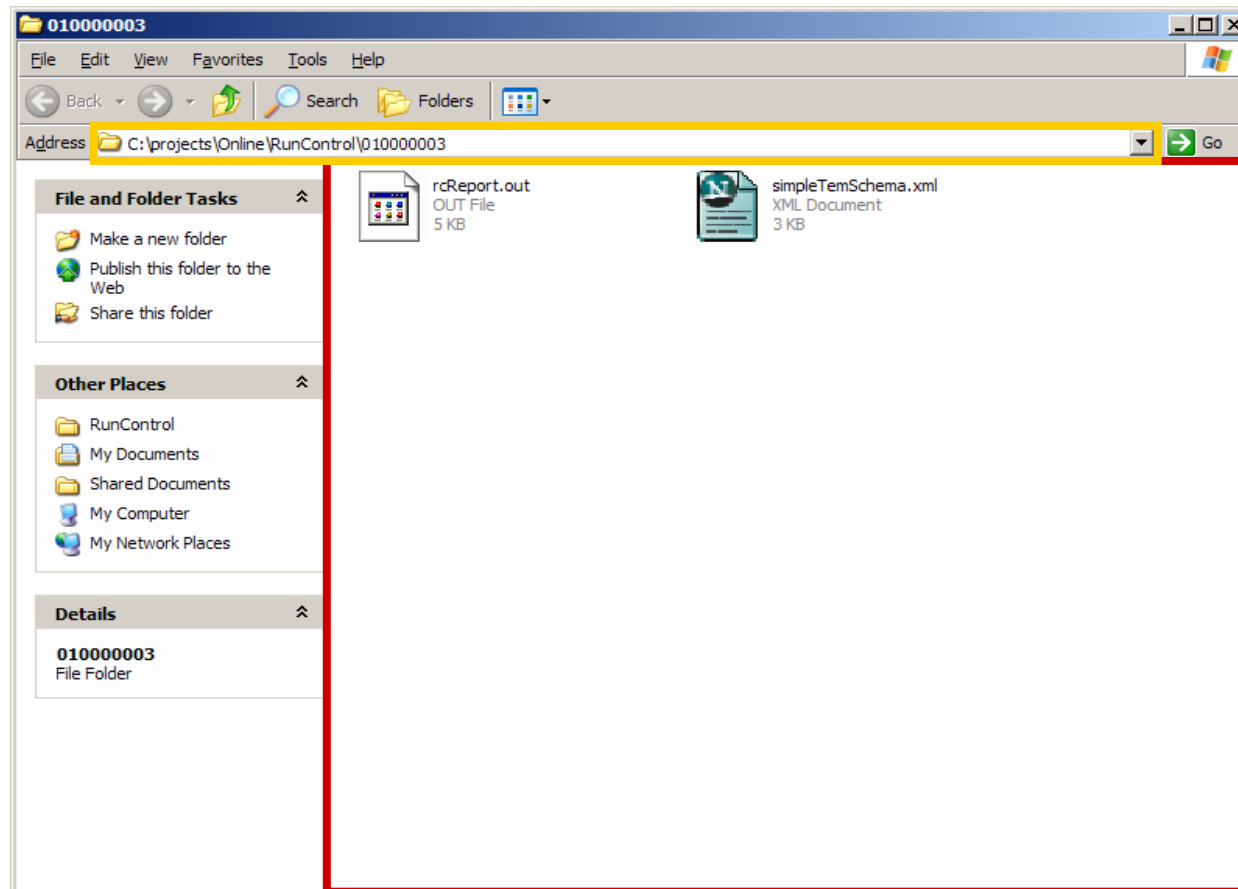
Browsing: GTEM 0, GCCC 3, GCRC 1, GCRC 2 Conversion Type: RAW Update

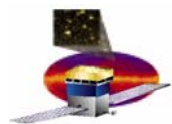


Run Control



- **File Browser**
 - Find files created during run
 - Path can be customized in Preferences window



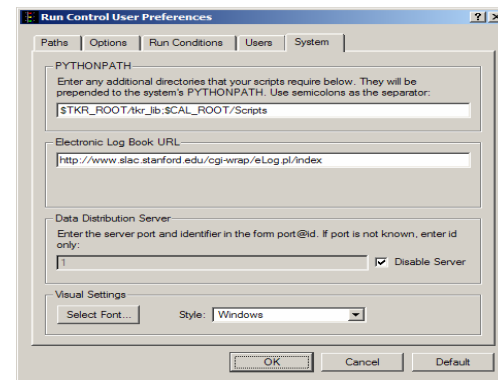
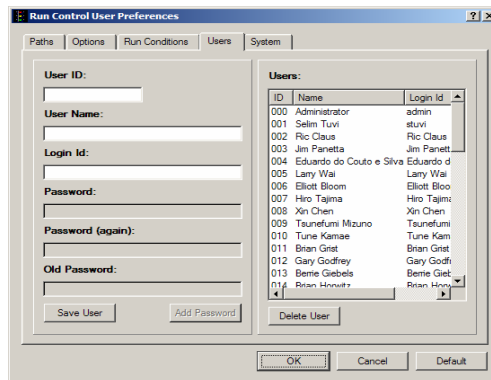
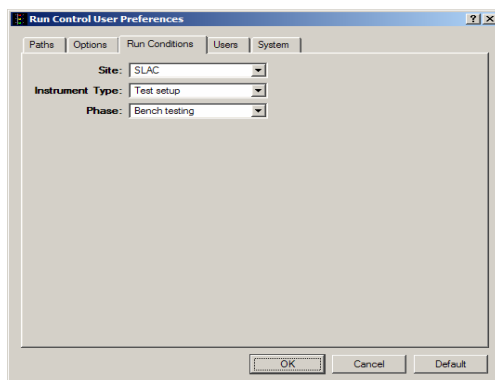
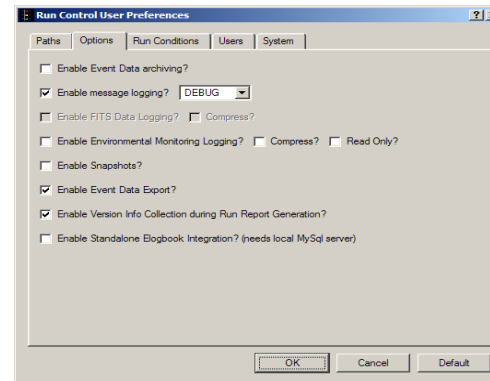
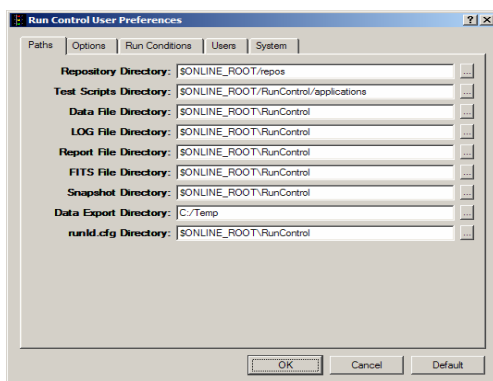


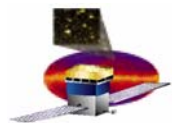
Run Control

- Preferences (Disabled during I&T testing)

Customize:

- Paths
- Data handling
- Run conditions
- Users
- System characteristics

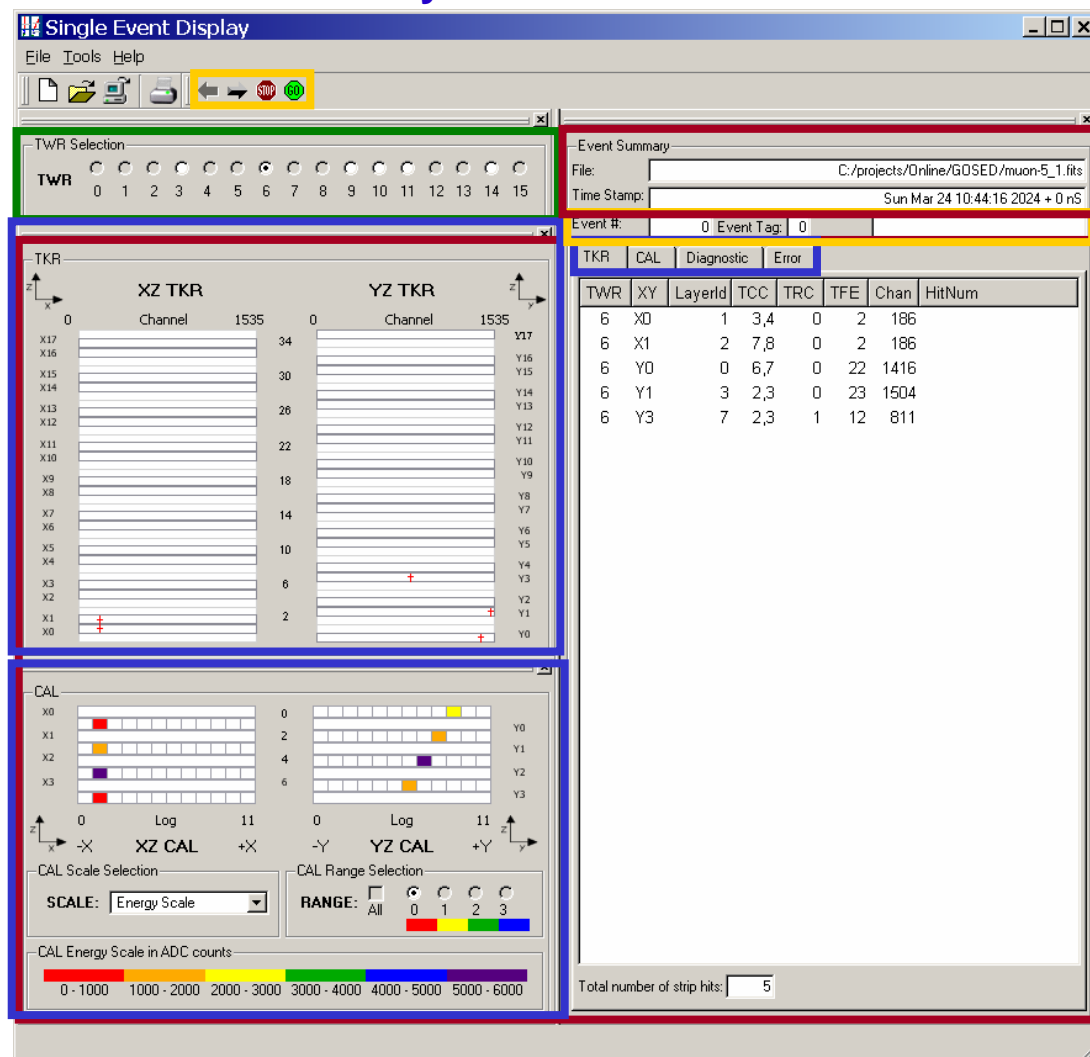
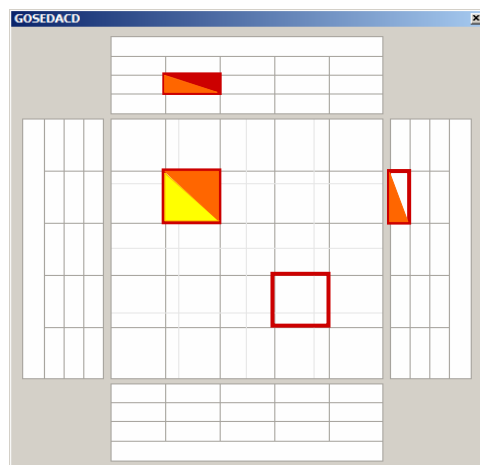


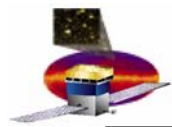


GOSED

- **Main Setup**

- Complies with LAT-TD-00035-01 LAT Coordinate System
- Monitors real time event taking
- Displays single events at a time, controls allow automatic update with selectable refresh rate
- Allows tower selection
- Allows subsystem selection in a customized setup





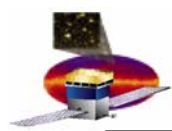
E-logbook

- **Main Display**
 - Smart way of keeping a lab logbook
 - Standalone database uploads to online oracle database
 - User can add data from remote machines
 - Critical entries are password protected

The screenshot shows a web application window titled "Main". Inside the window, there is a "Welcome to Elogbook" message followed by the instruction "Select from the following options:". Below this, there are three main sections:

- Create Shift:** This section contains a "SHIFT:" label followed by a dropdown menu showing "DAY (8-16)". To the right of the dropdown are three more dropdown menus labeled "Month:" (showing "07"), "Day:" (showing "18"), and "Year:" (showing "2004"). A button labeled "Edit/Add Shift" is positioned to the right of these dropdowns.
- Connector Mate/Demate:** This section contains a "CONNECTOR R/D:" label followed by a dropdown menu showing "MAIN CONNECTOR R/D". To the right of the dropdown is a button labeled "New". Further to the right is a button labeled "Mate/Demate".
- Component Installation Record:** This section contains a "COMPONENT R/D:" label followed by a dropdown menu showing "COMPONENT A". To the right of the dropdown is a button labeled "New". Further to the right is a button labeled "Install Record".

At the bottom left of the window, there is a button labeled "Edit/Add User" which is highlighted with a yellow border.

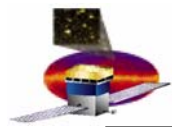


E-logbook

- **New User**
 - Allows to enter or modify users in the database interactively, during real time operations

	Name	Group	Initials	Job Title
1	Alicia Kavelaars	Online	ATK	All
2	Larry Wai	I&T	LW	All
3	Jim Panetta	Online	JSP	Mech. Tech.
4	Ric Claus	Online	RiC	All

- Creates entry with Name, Group, Initials, Username and Password
- Delete and edit capability under password protection



E-logbook

Shift Logbook

Edit SHIFT

Shift: SWING Month: 06 Day: 22 Year: 2004 << Prev Next >>

Shift Summary/Plan: Edit/Add Summary/Plan

Notes about shift

Shifters Sign In: Edit/Add Shifters

	Subsystem	Shifter Name
1	INT Engineer	Alicia Kavelaars

SYSTEM: MAIN

System Activities: Edit/Add Activity

	Time	Initials	ActivityNote
1	7/18/2004 3:06:37 PM	ATK	Activity entry 1

System Problems: Edit/Add Problem

	Time	Initials	ProblemNote
1	7/18/2004 3:06:48 PM	ATK	Problem entry 1

System Others: Edit/Add Others

	Time	Initials	OtherNote
1	7/18/2004 3:06:58 PM	ATK	Other entry 1 modified ~ Last Modified on Sun Jul 18 15:07:16 2004
2	7/18/2004 3:07:07 PM	ATK	Other entry 2

List Runs:

	RUN	EVENTS	DURATION (sec)	START (GMT)	END (GMT)	STATUS
1	105000009	10	0	6/23/2004 1:43:39	6/23/2004 1:43:39	-1

Main

Welcome to Elogbook

Select from the following options:

Create Shift:

SHIFT: DAY (8-15) Month: 07 Day: 18 Year: 2004 Edit/Add Shift

Connector Male/Female:

CONNECTOR R/D: MAIN CONNECTOR R/D New Male/Female

Component Installation Record:

COMPONENT R/D: COMPONENT A New Install Record

Edit/Add User

- Logbook of lab tests and operations organized by date and time of shift
- Select date and time of shift
- Enter Shift Note

- Enter
- Enter
- CL
- Saved D
- Display general report

Edit/Add Summary

SHIFT SUMMARY/PLAN

Notes about shift

Assign SHIFT Takers

Shift: SWING Month: 06 Day: 22 Year: 2004

Shift Takers:

ACD Engineer:

ACD Programmer:

Edit/Add Activity

TIME 07/18/2004 03:06:37 PM INITIALS ATK

ACTIVITY

Activity entry 1

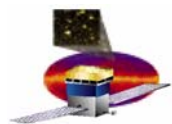
Save Cancel

INT Programmer:

TKR Engineer:

TKR Programmer:

Save Cancel



E-logbook

• Shift Logbook

Run Report [?] [X]

SUMMARY INFORMATION FOR RUN ID: 105000009

Test Name	Time Stamp	Event Count	Bad Event Count	Error Event Count	Pause Count
testAppCal	6/23/2004 1:43:36 AM	10	0	10	0

Operator	Site	Particle Type	Instrument Type	Orientation	Phase
Selim Tuvi	SLAC	None	Test setup	N/A	Bench testing

Start Time	End Time	Elapsed Time	Completion Status
6/23/2004 1:43:39 AM	6/23/2004 1:43:39 AM	0	-1

Comments:

Schema Config File: simpleTemSchema.xml

Additional Input File:

Release: P03-00-00

Archive File:

Log File: msg040623014313.log

FITS File:

	Module Name	Version	Failed Verification
1	EnvMonImpl	1.30	*
2	trigger.TrigEngines	1.4	*
3	gAttr	1.26	*
4	gEGU	1.7	*
5	trigger.TrigObject	1.2	*
6	rcStatusMonitor	1.8	*
7	guiBridges	1.2	*
8	evtCli	1.84	*
9	gLAT	1.77	*
10	trigger.TrigGemRegisterGeometry	1.7	*
11	trigger.TrigRoiAsTiles	1.3	*
12	trigger.TrigGem	1.8	*
13	GCRC	0	
14	trigger.TrigEventCounter	1.3	*
15	gutil	1.26	*
16	SocketServer	0.4	
17	trigger.TrigConditionsValue	1.2	*

Done

Main [?] [X]

Welcome to Elogbook

Select from the following options:

Create Shift:
SHIFT: DAY (8-15) Month: 07 Day: 18 Year: 2004 [Edit/Add Shift]

Connector Male/Female:
CONNECTOR R/D: MAIN CONNECTOR R/D [New] [Male/Female]

Component Installation Record:
COMPONENT R/D: COMPONENT A [New] [Install Record]

[Edit/Add User]

Edit SHIFT [X] [Y] [Z]

Edit

Shift: SWING Month: 06 Day: 22 Year: 2004 << Prev Next >>

Shift Summary/Plan: [Edit/Add Summary/Plan]

Notes about shift

Shifters Sign In: [Edit/Add Shifters]

Subsystem	Shifter Name
1 INT Engineer	Alicia Kavelaars

SYSTEM: MAIN [Edit/Add Activity]

System Activities:

Time	Initials	Activity/Note
1 7/18/2004 3:06:58 PM	ATK	Activity entry 1

System Problems: [Edit/Add Problem]

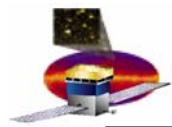
Time	Initials	Problem/Note
1 7/18/2004 3:06:48 PM	ATK	Problem entry 1

System Others: [Edit/Add Others]

Time	Initials	Other/Note
1 7/18/2004 3:06:58 PM	ATK	Other entry 1 modified - Last Modified on Sun Jul 18 15:07:16 2004
2 7/18/2004 3:07:07 PM	ATK	Other entry 2

List Runs:

RUN	EVENTS	DURATION (sec)	START (GMT)	END (GMT)	STATUS
1 105000009	10	0	6/23/2004 1:43:39	6/23/2004 1:43:39	-1



E-logbook

• Connector Mate/Demate

Assign Mate/Demate

UNIT R/D: MAIN CONNECTOR R/D UNIT DESCRIPTION: Brief description

Connector Mate/Demate:

Connector(s): MAIN CONNECTOR R/D New

Authorized By: _____

Date: (MM/DD/YY) 07/18/2004

Mate or De-mate: (M or D) M

Flight or Test: (F or T) F

Verify Power Off: (Emp. ID#)	Larry Wai	...
Pre-mate Inspect: (Emp. ID#)	Alicia Kavelaars	...
Pre-mate Inspect: (QA)		...
ESD Bleed and Connector Mate: (Emp. ID#)		...
ESD Bleed and Connector Mate: (QA)		...
Final Inspect: (Emp. ID#)		...
Final Inspect: (QA)		...

Save Cancel

Main

Welcome to Elogbook

Select from the following options:

Create Shift:
SHIFT: DAY (8-15) Month: 07 Day: 18 Year: 2004 Edit/Add Shift

Connector Mate/Demate:
CONNECTOR R/D: MAIN CONNECTOR R/D New Mate/Demate

Component Installation Record:
COMPONENT R/D: COMPONENT A New Install Record

Edit/Add User

- Logbook of connector mate/demate activities
- Select connector to mate/demate
- Enter new record
 - User entry is password protected
- Display connector mate/demate records

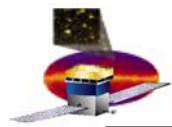
CONNECTOR MATE/DEMATE

UNIT DESCRIPTION: Brief description Edit/Add

	Connector 2 R/D	Authorized by Doc	Date	Action	Instrument	Ver. Power Off Emp. ID#	Premate Inspect Emp. ID#	Premate Inspect QA ID#	ESD Bleed/Mate Emp. ID#	ESD Bleed/Mate QA ID#	Final Inspect Emp. ID#	Final Inspect QA ID#

PrintForm Done

CONNECTOR/BRAKET R/D: MAIN CONNECTOR R/D



E-logbook

• Component Installation Record

Component Installation Record

UNIT R/D: UNIT DESCRIPTION:

	INSTALL			
PART NUMBER	123			
S/N				
DATE	2004-07-18			
AUTHORIZING DOC.				
WEIGHT (Kg)				
FLATNESS (Per ICD):				
	INSTALL			
VERIFICATION (EMP. ID#)	Alicia Kavelaars			
TORQUE:				
	INSTALL			
APPLY TORQUE (EMP. ID#)				
VERIFY TORQUE (QA)				
WITNESS STRIPE (MMR #)				
GROUNDING:				
	INSTALL			
INSTALLATION (EMP. ID#)				
LIMIT PER (ICD/SPEC)				
RESISTANCE (MEAS.)				
VERIFICATION (QA)				
LABEL TAPE (LOT #)				

Main

Welcome to Elogbook

Select from the following options:

Create Shift:
SHIFT: Month: Day: Year:

Connector Mate/Demate:
CONNECTOR R/D:

Component Installation Record:
COMPONENT R/D:

- Creates an Installation Record for every hardware component Select component to add Installation Record
- Select component to add Installation Record
- Enter new record
 - User entry is password protected
- Displays all component installation records

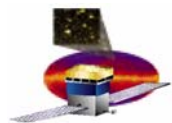
Create Component Installation Record

UNIT R/D:

UNIT DESCRIPTION:

ACTIVITY:

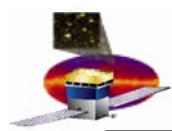
	INSTALL			
PART NUMBER	123			
S/N				
DATE	2004-07-18			
AUTHORIZING DOC.				
WEIGHT (Kg)				
FLATNESS (Per ICD):				
	INSTALL			
VERIFICATION (EMP. ID#)	Alicia Kavelaars			
TORQUE:				
	INSTALL			
APPLY TORQUE (EMP. ID#)				
VERIFY TORQUE (QA)				
WITNESS STRIPE (MMR #)				
GROUNDING:				
	INSTALL			
INSTALLATION (EMP. ID#)				
LIMIT PER (ICD/SPEC)				
RESISTANCE (MEAS.)				
VERIFICATION (QA)				
LABEL TAPE (LOT #)				



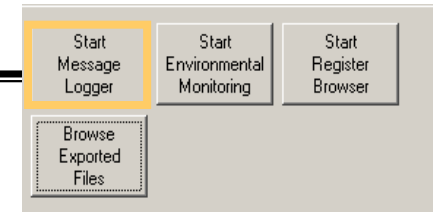
GUIs

Questions?



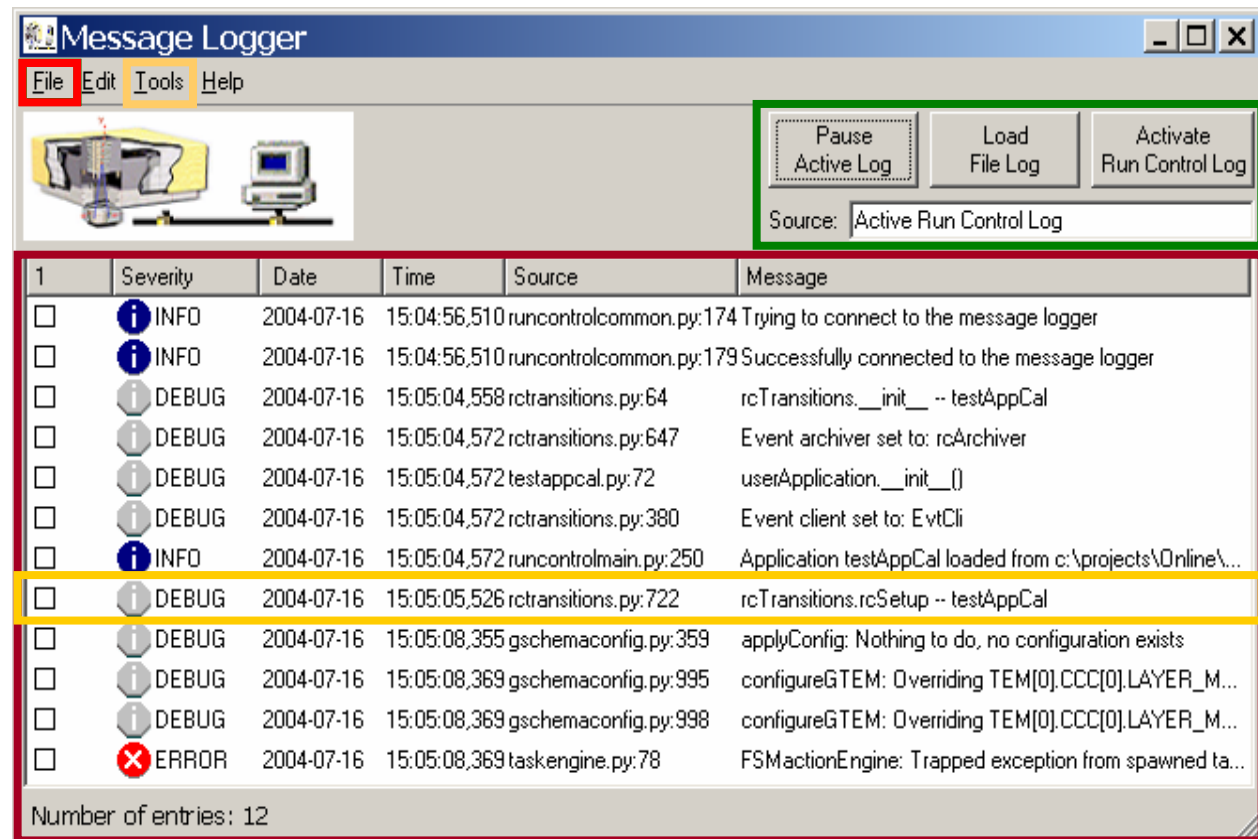


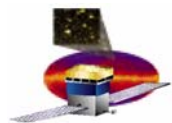
Run Control



- **Message Logger**

- Reports Run Control logging messages .
- Filters by message type.
- Active run or passive file reading enabled.
- Printable.



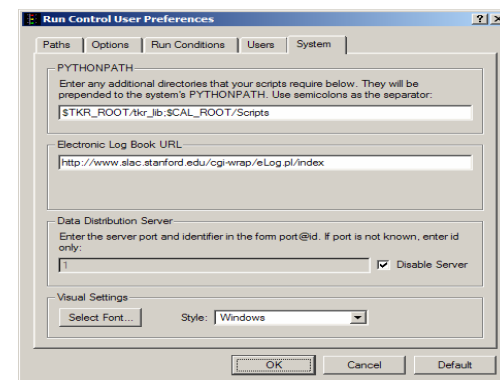
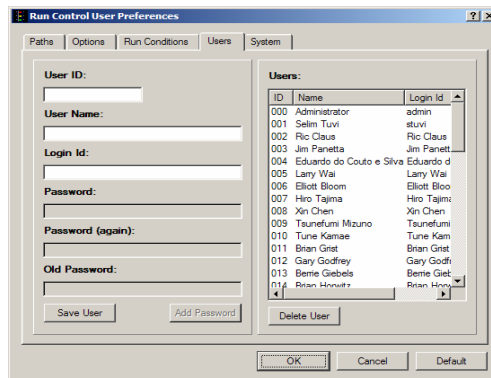
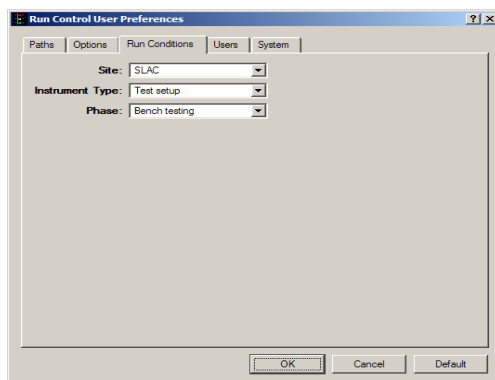
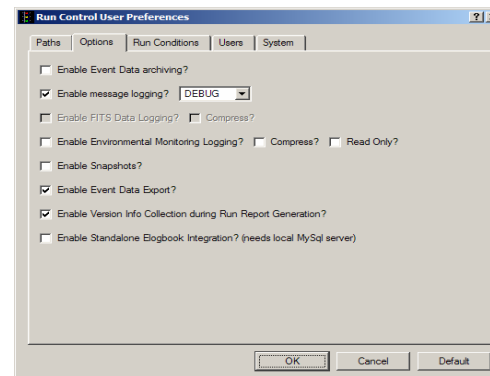
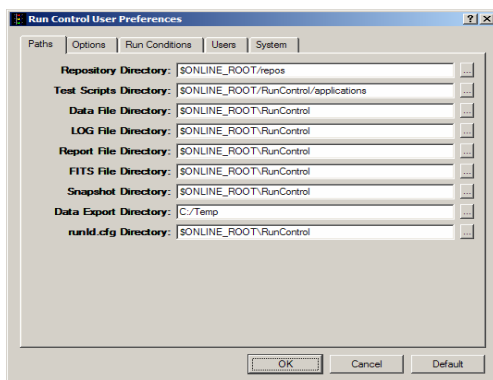


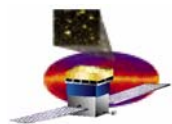
Run Control

• Preferences

Customize:

- Paths
- Data handling
- Run conditions
- Users
- System characteristics





GOSED

- Main Setup
 - Docking system to customize subsystem display
 - ACD
 - CAL
 - TKR
 - TWR
 - Data

GOSEDData

Event Summary

File: C:/projects/Online/GOSED/muon-5_1.fits

Time Stamp: Sun Mar 24 10:44:16 2024 + 0 nS

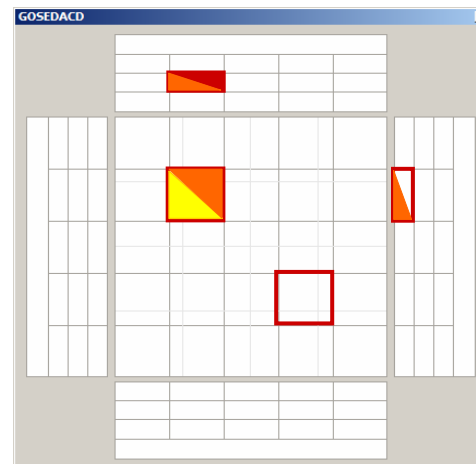
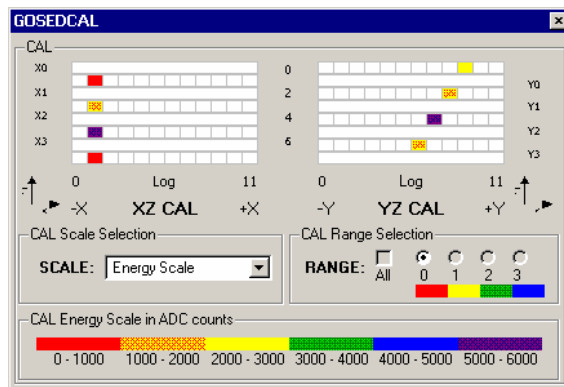
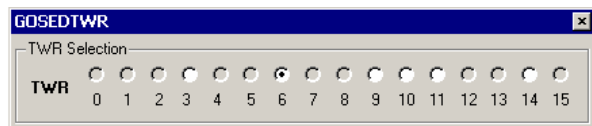
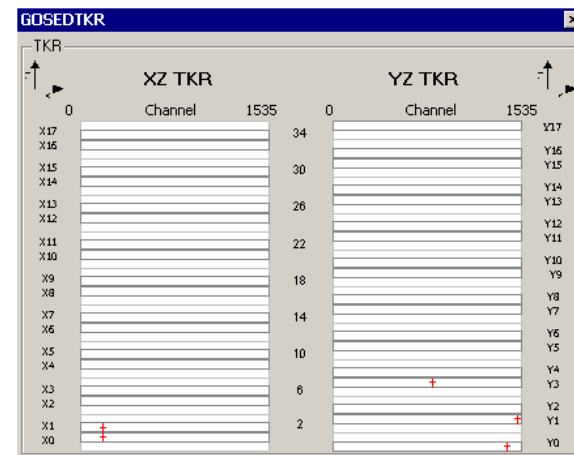
Event #: 0 Event Tag: 0

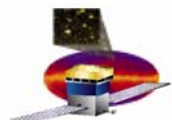
TKR	CAL	Diagnostic	Error
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TWR	XY	CCC	Column	+ Val	+ Range	- Val	- Range	CRC	CFE
6	X0	0	9	453	0	374	0	0	9
6	X1	0	8	463	0	341	0	1	8
6	X2	2	7	623	0	466	0	2	7
6	X3	2	6	429	0	320	0	3	6
6	Y0	3	1	321	0	345	0	0	1
6	Y1	3	1	375	0	410	0	1	1
6	Y2	1	1	495	0	530	0	2	1
6	Y3	1	1	353	0	372	0	3	1

Total number of log hits: 8

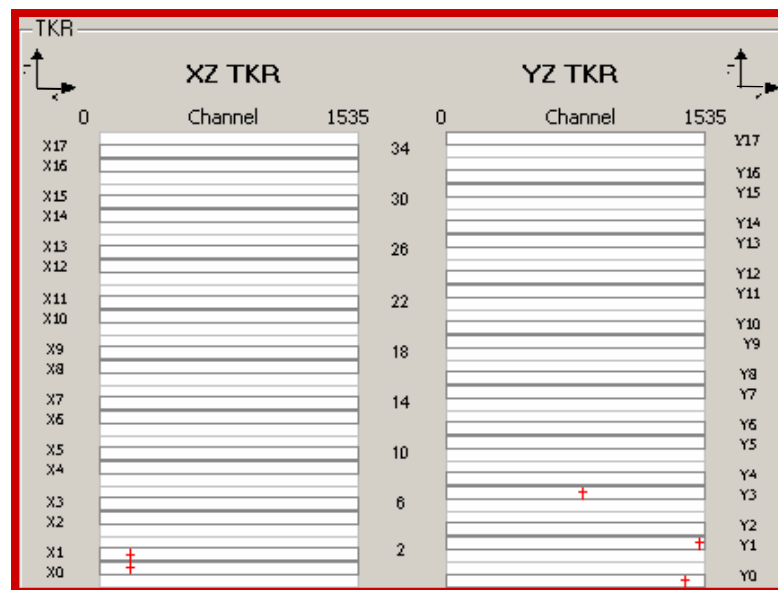
Total energy deposition: 3332





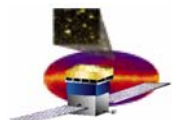
GOSED

- **TKR Display**
 - Complies with LAT-TD-00035-01 LAT Coordinate System
 - Event Data displayed on TKR tab
 - Hit data show in corresponding tower projection



TKR	CAL	Diagnostic	Error				
TWR	XY	LayerId	TCC	TRC	TFE	Chan	HitNum
6	X0	1	3,4	0	2	186	
6	X1	2	7,8	0	2	186	
6	Y0	0	6,7	0	22	1416	
6	Y1	3	2,3	0	23	1504	
6	Y3	7	2,3	1	12	811	

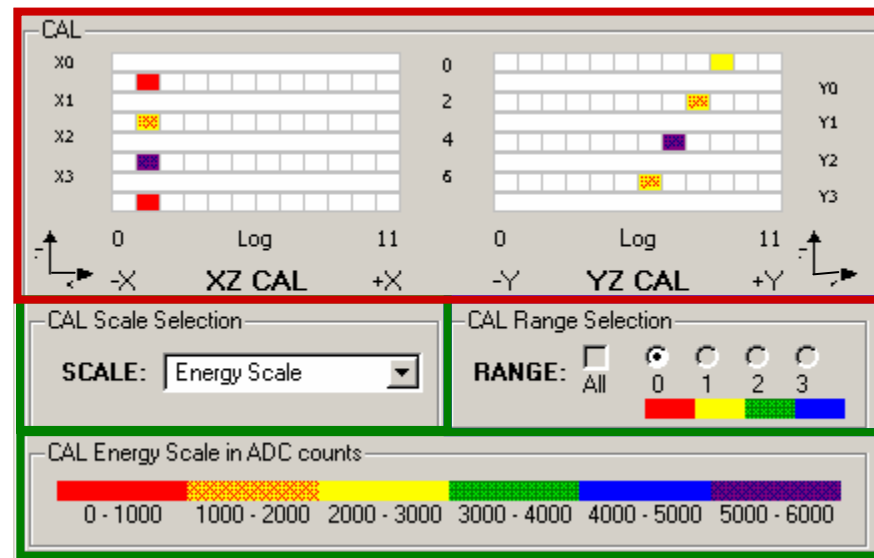
Total number of strip hits: 5



GOSED

CAL Display

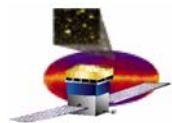
- Complies with LAT-TD-00035-01 LAT Coordinate System
- Event Data displayed on CAL tab
- Displayed by Energy color scale
- Filtered by range
- Pedestal subtraction (average values) - in progress
- Can show events by energy counts or MeVs – in progress



TKR	CAL	Diagnostic	Error						
TWR	XY	CCC	Column	+ Val	+ Range	- Val	- Range	CRC	CPE
6	X0	0	9	453	0	374	0	0	9
6	X1	0	8	463	0	341	0	1	8
6	X2	2	7	623	0	466	0	2	7
6	X3	2	6	429	0	320	0	3	6
6	Y0	3	1	321	0	345	0	0	1
6	Y1	3	1	375	0	410	0	1	1
6	Y2	1	1	495	0	530	0	2	1
6	Y3	1	1	353	0	372	0	3	1

Total number of log hits: 8

Total energy deposition: 3332



GOSED

- **ACD Display**
 - **GEM contribution** paints tile's rim in red
 - **AEM PHA A value** paints tile's upper half according to color scale
 - **AEM PHA B value** paints tile's lower half according to color scale

