Detectors at JLab
Update 10.18.17

Topics to discuss :

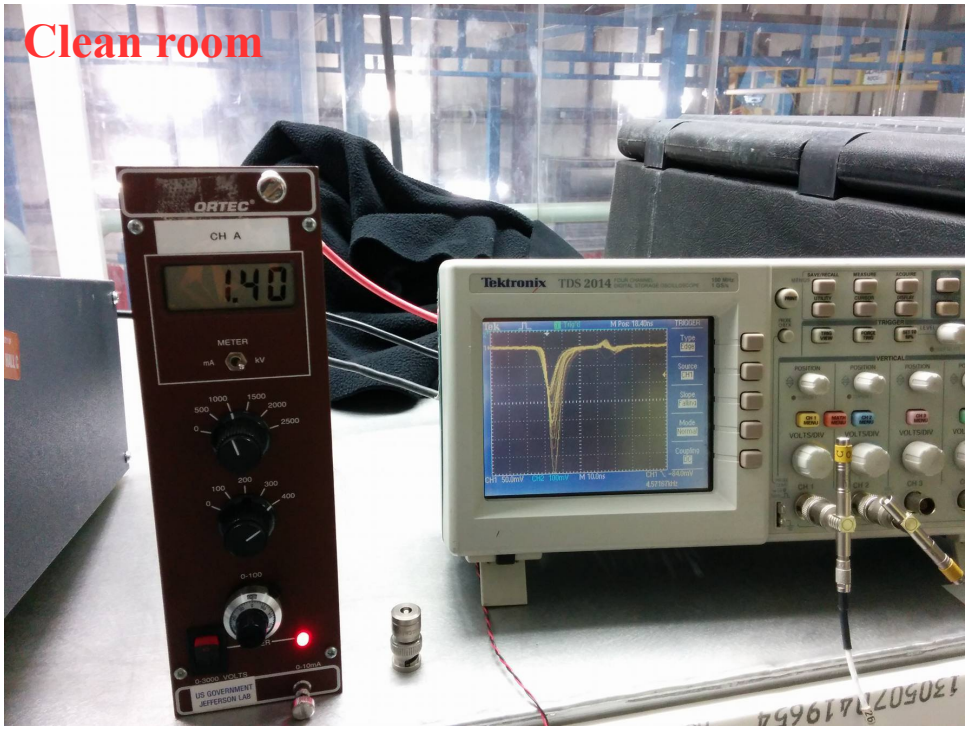
- HV power supply problem

  CAEN HV module A1535[566] installed in slot 12 of HV crate
  Trip settings: Software I=1000mkA, U=2000V; Hardware limit U=2000V

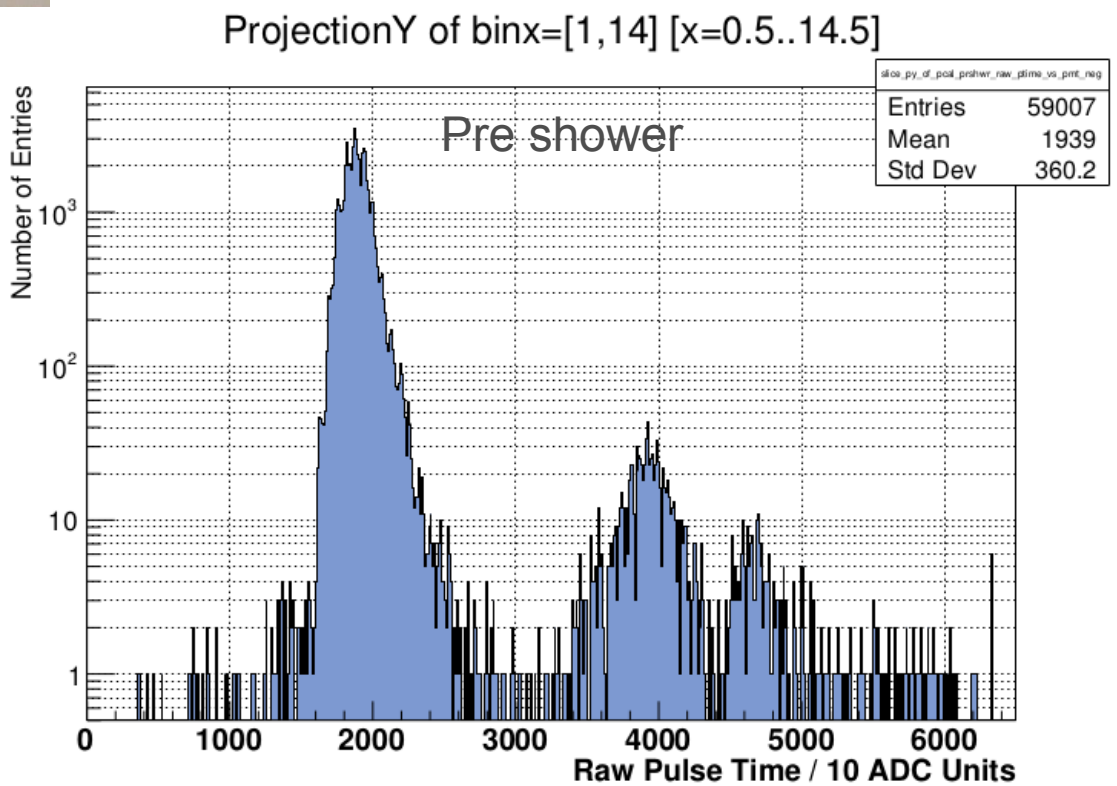
- Additional peaks(noise) in raw time pulse spectra
  Slide #2-3

- Continuous noise in Aerogel ch#6 negative
  Slide #4

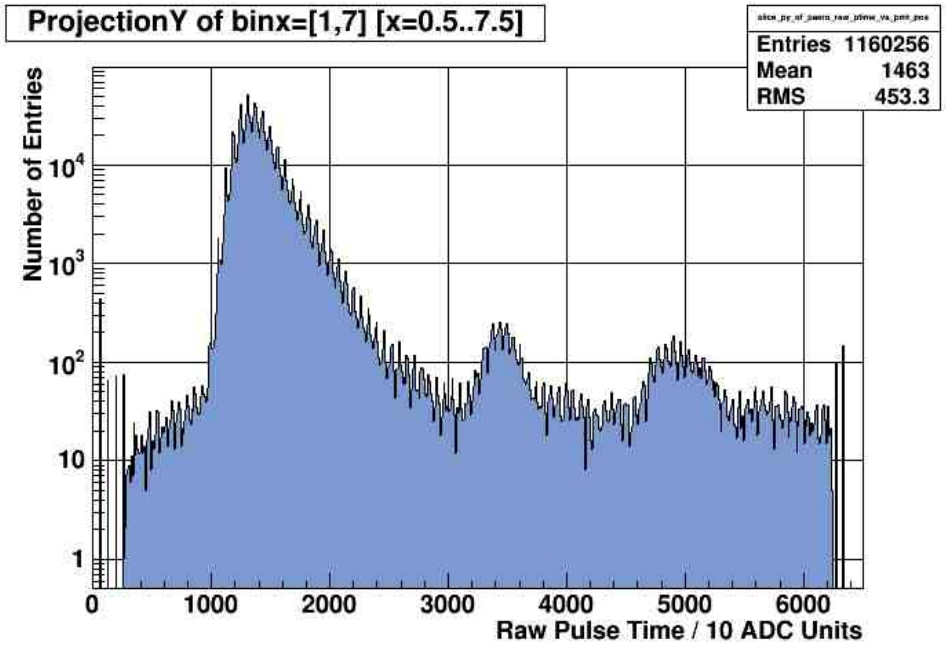
- NPS crystals characterization and mySQL database
  Slide #5



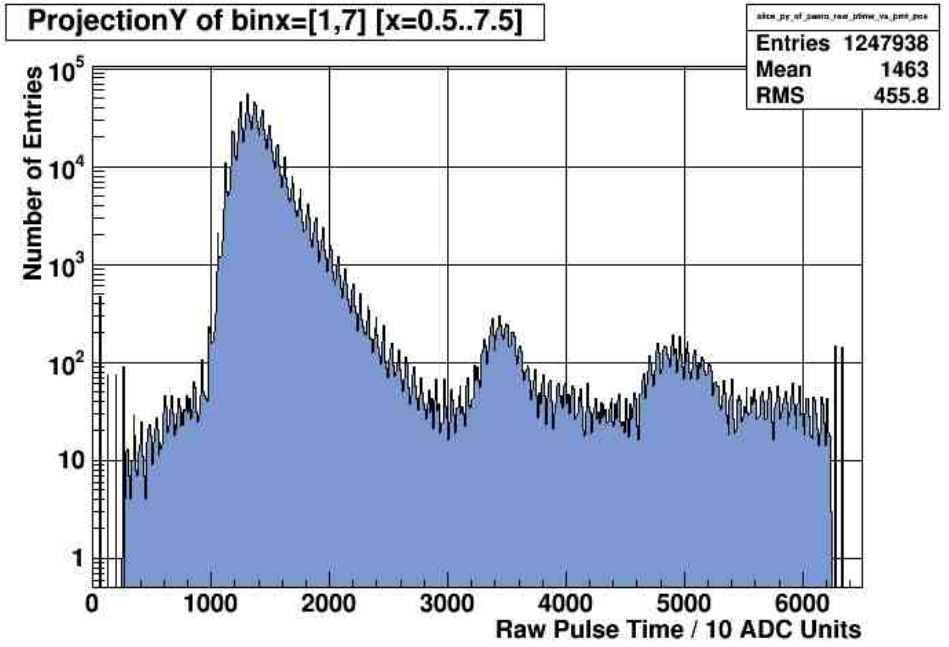
- fADC`s working in multi-peak find mode with 400ns window
- Reflections did not observed during tests with PMT base in clean room
- Reflections is visible with the scope down in the hall and up in the counting house
- Reflections is visible with the pulser
- Reflections is observed at another SHMS subdetectors: Hodoscopes, Pre-Shower,…
- Source of reflections is cables
- Reflections is proportional to the signal
- Analysis software is cutting this effect



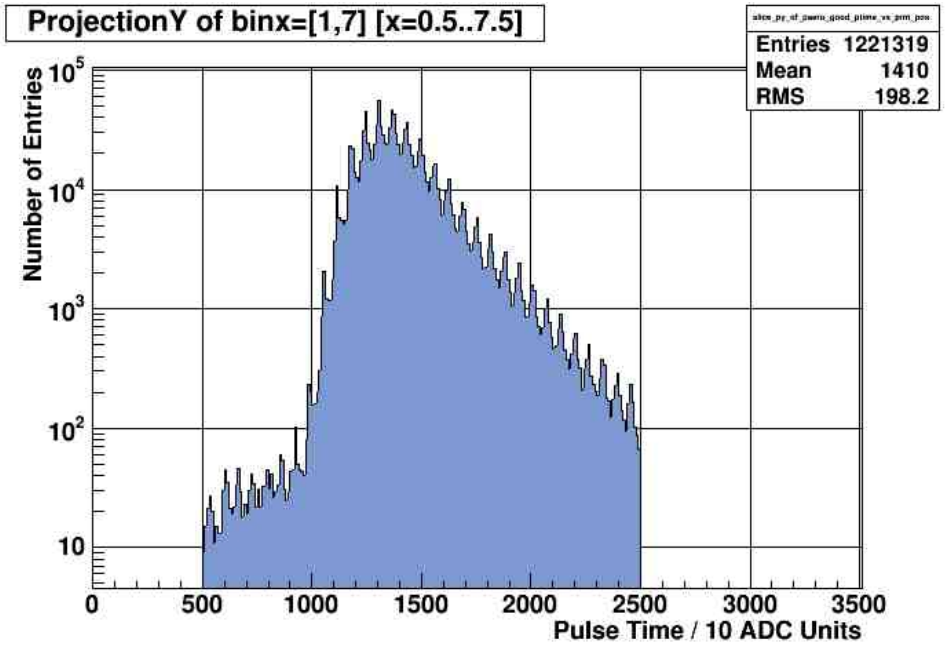
Amplitude pulse time (raw) Run1247



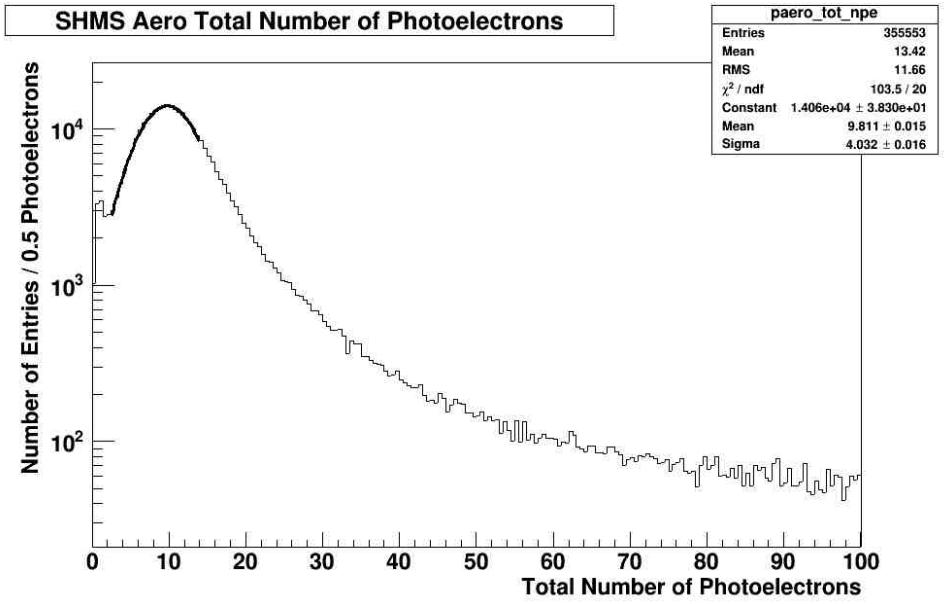
Amplitude pulse time (raw) Run1251



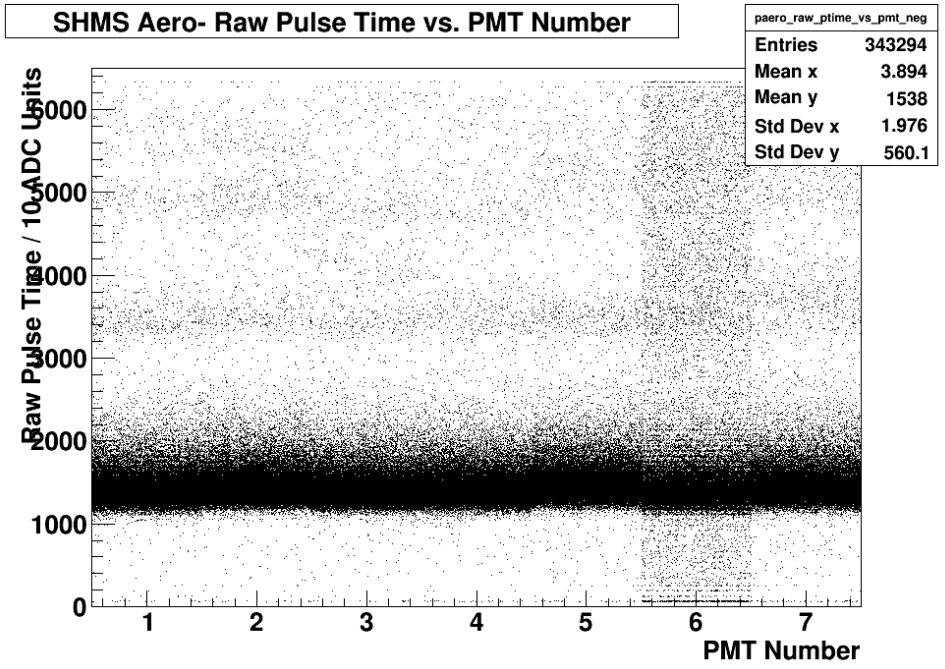
Amplitude pulse time (good hits) Run1251

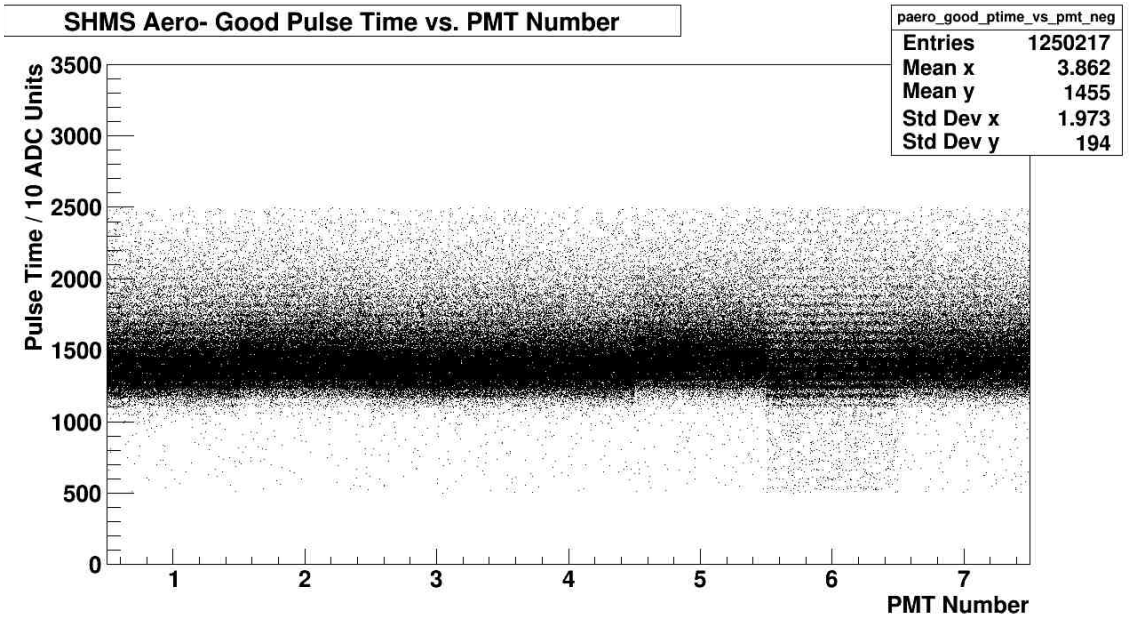


Run1251



- HallC scheduled readiness day for November 1
- SHMS Aerogel tasks to do:
  - -find proper mechanical tools
  - -schedule work in the hall
  - -PMT tests in clean room
  - -PMT change
  - -HV tests
  - -light leak tests
  - -cosmic run
  - -analysis
  - -troubleshooting of possible problems
- Need minimum one week to perform all tasks
- Must schedule PMT shipping to Jlab A.S.A.P.





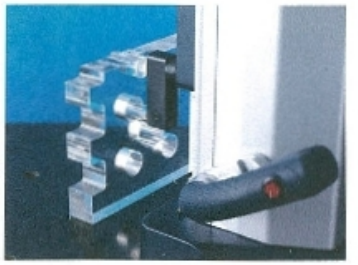
- Mitutoyo height gage is perfect tool for our needs
- Agreed with Rolf on the purchase of this tool
- Waiting for final quote from MASTER CAGE & TOOLS
- Planing the method of measuring

QM-Height High-Precision ABSOLUTE Digital Height Gage

- High-accuracy / high-resolution ABSOLUTE linear encoder for position detection
- High-accuracy – ±(2.4 + 2.1L / 600)µm
- Pneumatic flotation system / positioning grip – allows for smooth movement along surface plate (select models)
- Large, stationary display panel with user-friendly icon control keys and go/no-go LED indicator
- Digital and USB output – Supports Mitutoyo wireless SPC output
- Long battery life with standard AA batteries (4) – Up to 300 hours (80 hours with regular use of pneumatic flotation function)
- Fully compatible with existing Mitutoyo Digimatic peripherals (SPC cables, U-Wave wireless transmitters, multiplexers, etc.)

Go/±NG judgment by LED (red, orange, green) and measurement examples

- LEDs are activated at the time of tolerance judgment – green for Go, red for +NG, and orange for –NG. -NG, GO and +NG also appear on the LCD.



Inside diameter measurement

Work on mySQL NPS database:

- Studying PHP language (30% done + 5-6 more days)
- Designing the architecture of database

X coordinate (integer)	Y coordinate (integer)	Crystal label (integer)
Transmittance (float)	Light yield (float)	Dimensions (float) x 3
PMT number (integer)	PMT gain (float)	PMT efficiency (float)
Base (integer)	HV set (float)	HV cabel (integer)
Signal cable (integer)	FADC channel (integer) x 3	Crystal defects (string)