

# **MINERvA Status Report**

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# Outline

- Installation Status
- Construction Status
- PMT Cross-talk Update
- Data Acquisition Update

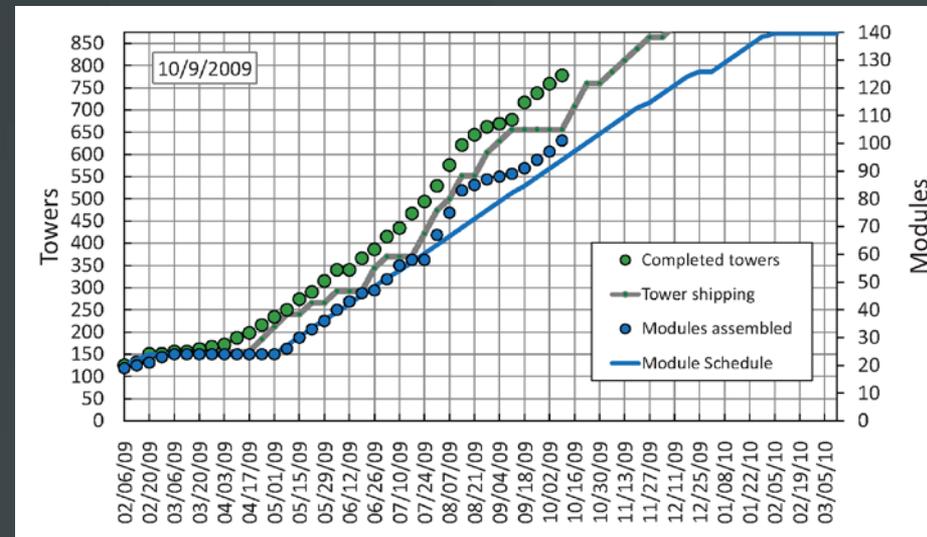
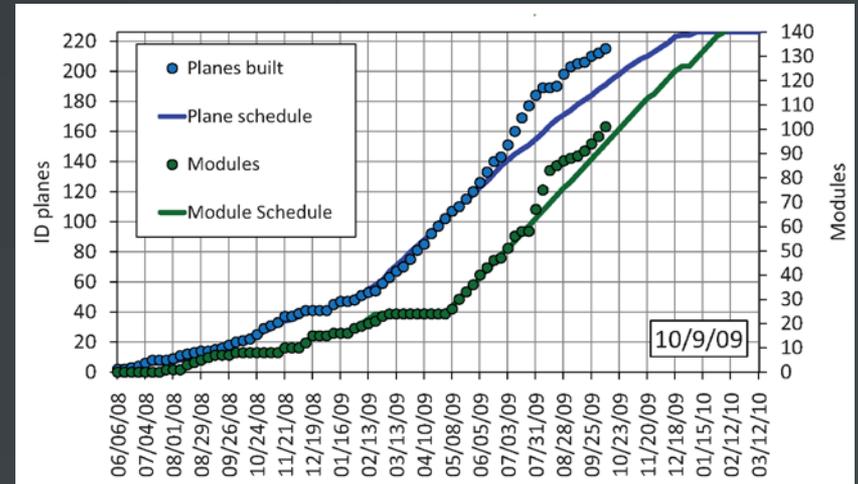
# Fall Installation Status

- Unit of installation is “module stack”
  - Four modules that share instrumentation
- Installed 10 of 16 stacks
- Instrumented 9 of 16 stacks (8 October)
  - MS #10 in progress
  - Modules will come from Wideband for the duration
- Full detector: 29 stacks



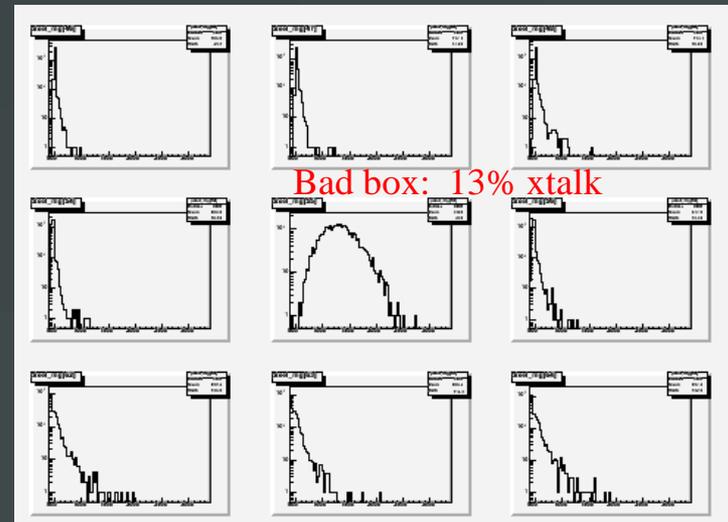
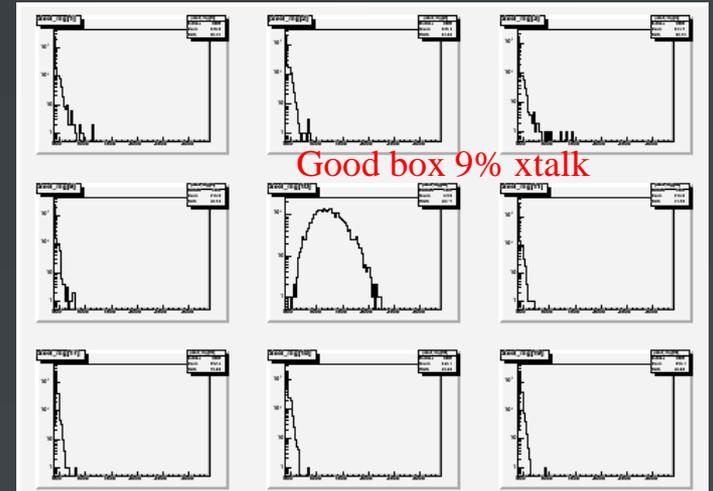
# MINERvA Construction Status

- Scintillator Planes
  - 11 planes left to finish (206+20 total)
  - Rate limited by WLS fiber delivery
  - Currently project to be done by 11/20
- Outer Detector Towers
  - 110 towers left to finish (888 total)
  - Baseline rate is 16/week
  - Project to be done by 11/20
- Steel Frames
  - Complete!
- Assembled Modules
  - 39 modules left to make
  - Project to be done by 1/25, if 3/week



# PMT Cross-Talk Update

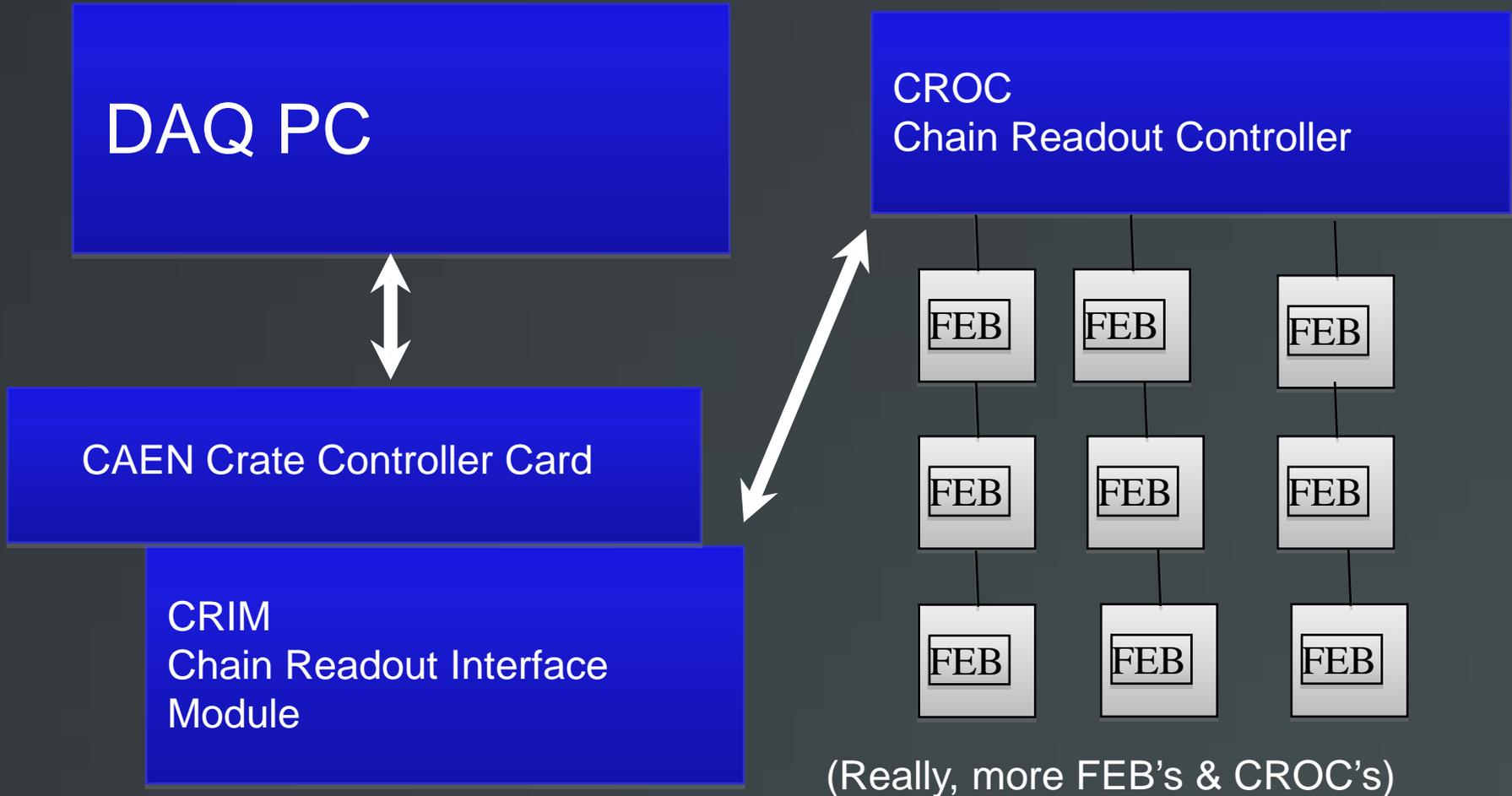
- We have tested 142 different PMT's on a test stand on the 14<sup>th</sup> floor of Wilson Hall (some boxes tested several times)
- Of those, 115 have cross-talk that meets our specification
- Plus  $88-12=76$  boxes were tested ONLY on the tracking prototype, 72 were good
- Testing continues at about 50 new PMT boxes per week (530 total, 312 left to test, need 264 for the Fall installation)
- Plan to complete testing and start repair process in parallel
- Ramping up on PMT repair in early November
- Close to identifying solutions for all failure modes



# The MINERvA DAQ

- What we have now, our “Legacy DAQ”:
  - A Windows PC-based System with Acquisition & Configuration Tools.
  - The system does some great things, but is slow and difficult to support for a multi-year run.
  - (It is fine for the short-term though.)
- Where we are going next, our “Production DAQ”:
  - Employ the same readout hardware but move to a Scientific Linux platform with absolute minimum amount proprietary code and binaries.
  - Faster and we “own the build.”

# Basic Architecture



# Monitoring Acquisition

- Our legacy DAQ has some stability and support issues that are pushing us to build a different system on a more stable operating system.
- In the interim, we have a lot of tools to trouble-shoot failure modes in the acquisition system and hardware itself.
- Our wiki contains accurate descriptions of problems and solutions, our monitoring tools are good enough to make classification easy, and we have an on-call staff to handle the “three-sigma” failure modes.

# Big Picture Schedule

- Present - January 1, 2010: Run the Legacy DAQ, essentially the TP DAQ with some minor upgrades. This is physics-quality data-taking beginning on (or before) October 23.
- January 2 - March 31, 2010: Transition to the new DAQ system. (Hopefully done well before March 31.) We will be simultaneously installing and DAQ time will be split between checkout and integration (may be able to do some of both at the same time). By running both DAQ systems in parallel sometimes and just one during other times, we will be in a position to integrate physics data through this whole period.
- April 1, 2010 and on: Run the Production DAQ system only.

# Near-Term Schedule

- We begin 24-7 shift operation on October 23. The plan is to give DAQ priority during daytime hours to the construction crew for module quality check-out, and collect data in the evenings and overnight.
- To-Do List between now and then:
  - Exercise Light Injection system for basic gain calibration.
  - Time-in the beam spill and fine-tune timing settings for our Front End Boards & link new FEB calibrations from database to analysis framework (machinery is there - simple grunt bookkeeping task).
  - Sanity-check our data handling work-flow.
- This can realistically be done quickly - timing is a question of prioritization.