



MINOS+ Status Report



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All Experimenters' Meetings
November 4, 2013



Near Detector Hardware Issues



- **Light Injection Gain code failing**
 - Can't match hits to a LI pulse
 - One new bad LED (LED #1) is exceeding the max allowed number of bad leds (3) and causing the program to end
 - Investigation is ongoing
- **One plane (101) (was) missing in LI Hit/Gain map**
 - This plane corresponds to Crate/Master 2-14
 - On Friday we made an access to fix the hot channel 2-14-1
 - When in the hall, we found some mismatched labels on the cables in the crate; re-cabled them as we believed it was the correct order, but evidently broke the LI readout (LI dynodes connected to the wrong Minders)
 - Just made an access this morning to put back things as they were
 - **Plane 101 LI is working again**
- **Two Minders show strange Singles & Pedestals patterns**
 - We'll try power cycle, re-calibrate and replace them if necessary in the next few days of beam downtime



Near Detector Low Rate Minder



- **Possible problem:** Faulty Spare Alner box
- **Further troubleshooting**

Moved a "good" Alner box from 0-20-5 (plane 141/151) to 0-20-1 (plane 121/131)

Previously low rate channels 0-20-1 are now OK

Therefore the problem was due to "bad" Alner box/ PMT

A second spare was installed in 0-20-5, which now shows low rate: another bad spare?

Alner boxes build/repair issues

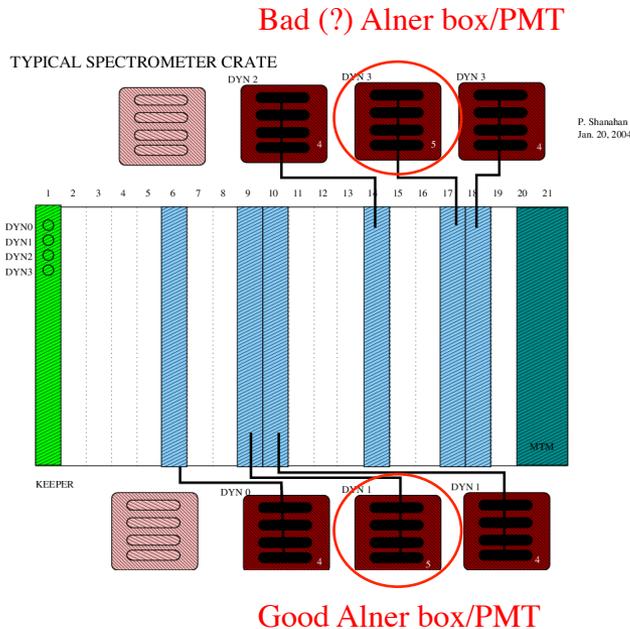
Retrieved PMTs from CalDet (Calibration Detector) Alner boxes to replace faulty boxes in Near Detector

The CalDet boxes use regular (1 to 1 channel readout) PMT bases

The Spectrometer's PMTs need a multiplexed (MXP) bases (4 anodes are shortened to 1 channel readout)

We opened up one of the spares and indeed the PMT base was not multiplexed

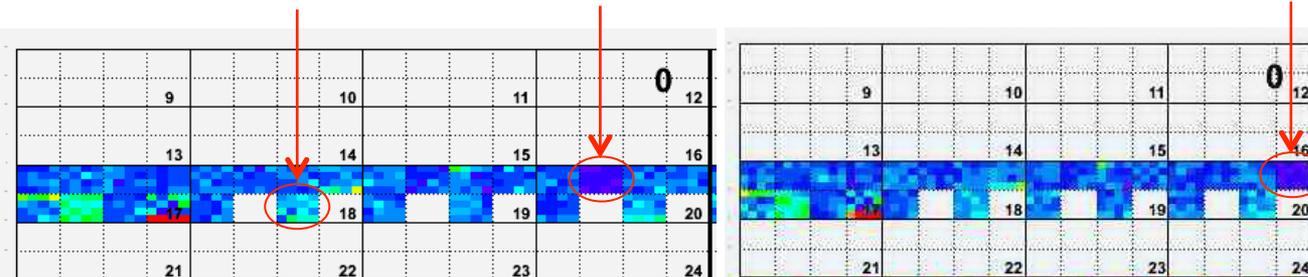
- We replaced the base today and we'll install the box in the detector tomorrow
- We have only one spare MXP base
- Oxford will ship to us some PMT assemblies spares



0-18-6

0-20-1

0-20-5





Near Detector DAQ



- ND DAQ running fine
- No crashes seen last week
- The problems we had earlier, seem to have been caused by NearCheckCal run leaving the system in a non-zero suppression state, such that whatever run came next would fail subsequently
- Since Bill Badgett added a short delay to the writing and reading of the VME zero suppression threshold registers, the problem seems to be gone
- Live Time last week was 97%



Far Detector



- Regular detector maintenance
 - ETC (External Timing Card) errors from Crates 11, 13 and 15
 - Fixed by replacing some rapidly flickering fluorescent tubes near the crates which seemed to cause some electrical noise
 - One HV channel died last night
 - The HV card was replaced this morning
 - But the data is flagged BAD
 - Lost communication with RPS in Crate 4
 - Power cycling the unit restored the communications
 - Crew will probably replace the RPS box tomorrow during the scheduled beam downtime
- FD DAQ running smoothly
- Live Time last week was 99%



POT and Live Time Fractions for ME Run



Start Date/Time	End Date/Time	Near Detector		Far Detector	
		POT Fraction	Live Time Fraction	POT Fraction	Live Time Fraction
9/2/13 12:00 AM	9/9/13 12:00 AM	66.9%	98.8%	0.2%	1.6%
9/9/13 12:00 AM	9/16/13 12:00 AM	93.5%	92.7%	47.7%	46.8%
9/16/13 12:00 AM	9/23/13 12:00 AM	92.7%	92.3%	84.7%	81.0%
9/23/13 12:00 AM	9/30/13 12:00 AM	96.2%	95.3%	93.5%	94.1%
9/30/13 12:00 AM	10/7/13 12:00 AM	94.7%	94.4%	98.0%	98.3%
10/7/13 12:00 AM	10/14/13 12:00 AM	99.1%	85.0%	99.5%	87.4%
10/14/13 12:00 AM	10/21/13 12:00 AM	79.7%	89.7%	86.9%	99.9%
10/21/13 12:00 AM	10/28/13 12:00 AM	70.3%	58.5%	99.8%	95.8%
10/28/13 12:00 AM	11/4/13 12:00 AM	98.8%	97.8%	99.9%	99.5%

Live Time Fraction sometimes penalized for problems (*e.g.*, no magnet coil) while there is no beam; working on fixing this



MINOS+ Status



- We are taking very good data – Thanks, AD!
- Regular shifts are underway
 - ✓ Shifts are mostly covered for the next two months.