MINOS+ Status Report

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All Experimenters' Meeting

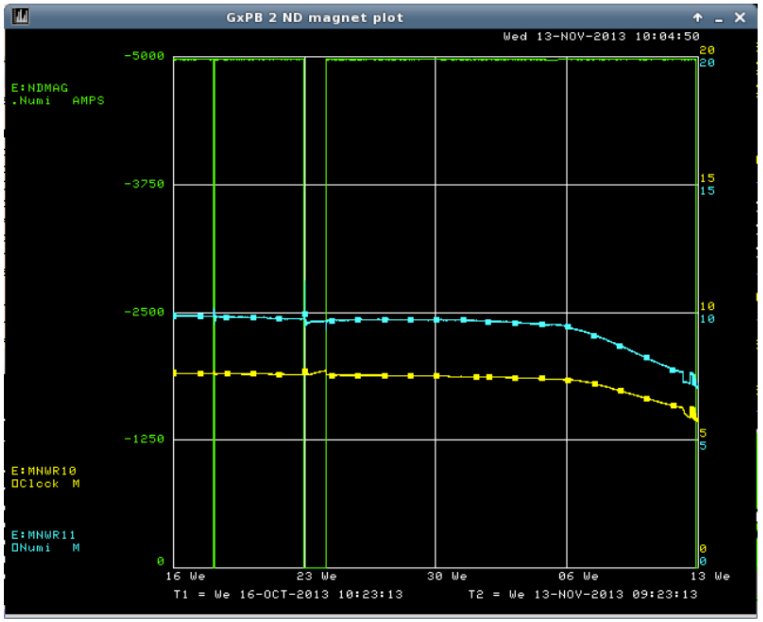
November 18, 2013

Near Detector

- **Magnet Trip on Tuesday, Nov 12**
  - The MINERvA shifter called reporting DCS alarms:
  - Magnet trip
  - LCW Pumps OFF
  - Booster Pumps OFF
  - Multiple Wiener PS in alarm
- **When in the Hall we found**
  - Water dripping from the MINERvA roof onto the LCW system
  - Called Bill Moorehouse who came with John Chyllo and cleaned a clogged copper hose from the drip pan on the ceiling above MINERvA restoring the water drainage through the hose
- **That was NOT why the system tripped**
  - MCR indeed reported a Power Outage around 7:00 am which most likely caused the ND Magnet and other systems to trip
  - The LCW PLC system was left in fault status and was erroneously reporting that:
    - The expansion tank water level was low
    - The intake water supply temperature was low
    - Neither of those were true but the warnings prevented the powering ON the pumps
  - We followed the procedure to reset the LCW PLC
  - Then we were able to restart the LCW pump, the Booster pump and finally powered on the magnet

Near Detector

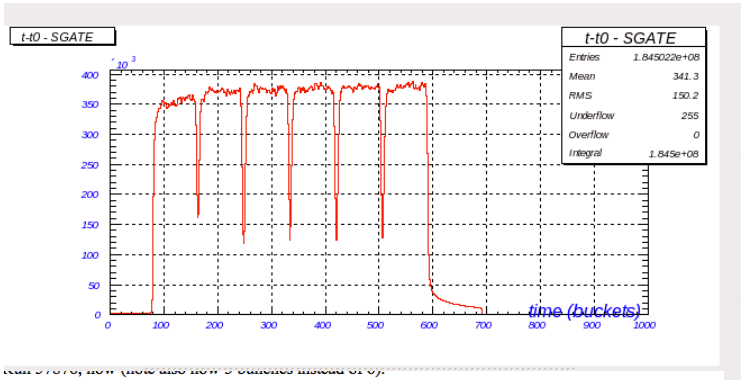
- **LCW water's drop in resistivities**
  - Much faster decline in this past week
  - Magnet Coil is fine as long as E:MNWR10 (yellow line, water returning from magnet) is above 2 MOhm (current value ~5)
  - We'll get the DI bottle replaced soon and, if necessary, the LCW skid filters as well

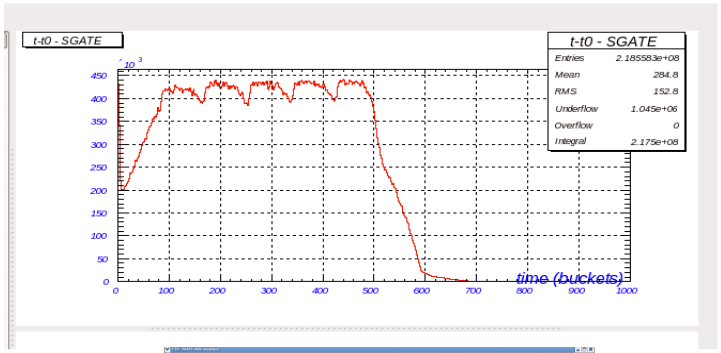


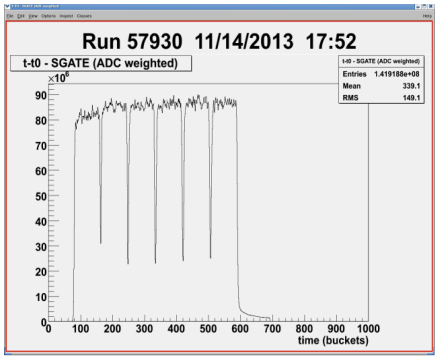
Near Detector

- **Hot channels in 0-17-2**
  - Disappeared on their own on Tuesday morning: no further actions taken
- **Cold Channels in 0-17-7**
  - Two minders swaps and Master 17 swap did not fix the problem
  - We leave it as is for now
- **LI Pin Diode Minder swap**
  - more …

Near Detector SGATE issue





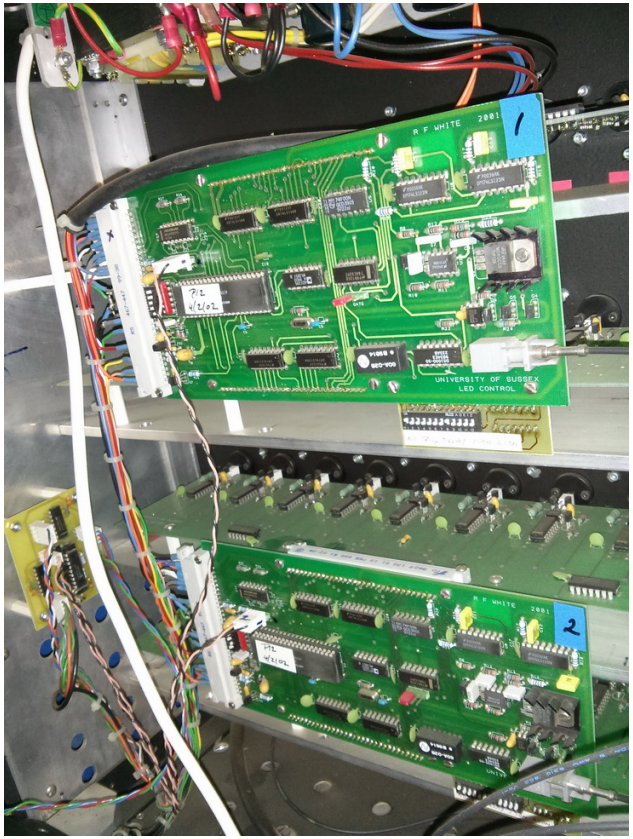


- In the attempt to fix some Light Injection (LI) issues seen lately, we swapped the Pin Diode Minder (slot 18, crate FEU-11)
- The following morning we were notified by the shifters that the SGATE plot (reference plot on top) was looking weird (middle plot)
- We contacted several people to help to investigate this issue thinking that something was broken in the ND timing system
- Eventually we found out that the strange plot was in fact due to the swap of that special minder (the very 1st minder read out at ND), whose signals are used to make this particular plot
- Swapping the original board back and recalibrating it, eventually fixed the problem (see bottom plot)
- *** DATA taken was OK throughout ***

Near Detector SGATE issue

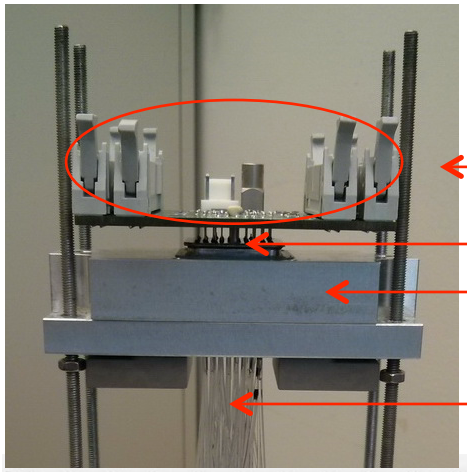
- Many people worked together eager to understand this issue in an exemplary collaborative way!
- It even looked like they were having FUN!
- Many thanks to all who helped, in particular Phil Adamson and Peter Shanahan.

Near Detector Light Injection issues

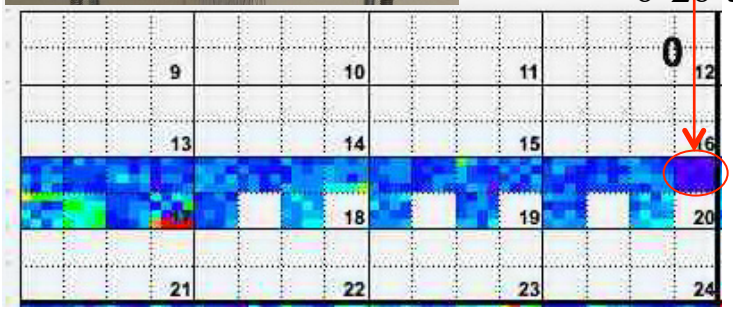


- Still three bad LI LEDs that we would like to fix
- Opened the front panel of PB 0 (Pulser Box) to examine how the LI is setup
- Since all LEDs are used up, we can't move the fibers from a bad one to a working one but we could replace the LED driver board, if we have a spare
- Will consult with Phil Adamson, the resident ND LI expert

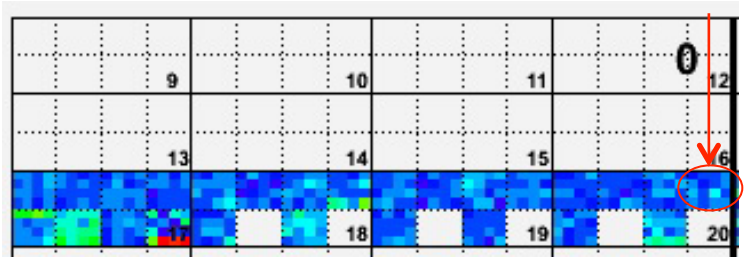
Low Rate Channels and Alner Boxes



0-20-5



0-20-5



- As reported last week, the low rate channels in the spectrometer were caused to wrong base (not multiplexed) being mounted in the Alner Boxes
  - We eventually repaired one Alner box
  - Installed it in the detector and fixed the last low rate channel
- Oxford sent us some spare PMT assemblies (PMT+holder+ base) and some extra bases, regular and multiplexed
- We can now fix the remaining two Type 5 spare Alner Boxes

Far Detector

- Regular detector maintenance always underway
  - NO issues to report this week
- FD DAQ running happily and smoothly

MINOS+ Status

		Near Detector		Far Detector	
Start Date/Time	End Date/Time	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%
11/4/13 12:00 AM	11/11/13 12:00 AM	98.4%	95.5%	95.7%	96.9%
11/11/13 12:00 AM	11/18/13 12:00 AM	91.8%	92.7%	99.9%	99.8%

MINOS+ Status

- We are taking very good data – Thanks, AD!
- Detectors are running great!!
- Regular shifts are underway
  - Shifts are covered until the end of the year
- UMN (University Minnesota) will start the ROC certification process this week