

Detector Support Group

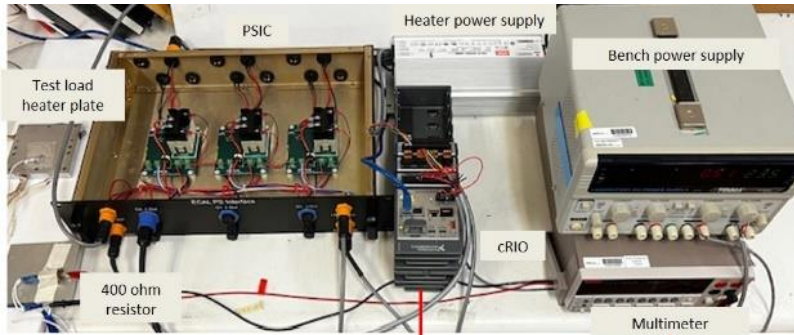
We choose to do these things "not because they are easy, but because they are hard".

Weekly Report, 2024-03-27

Hall A – ECAL

Marc McMullen and Mindy Leffel

- Completed fabrication of second power supply interface chassis
- To test the chassis, wrote LabVIEW code to turn on channel relays, adjust control voltage, and display current from an 8-ohm load; assembled test stand



- PSIC – chassis under test
- Bench power supply – cRIO and external 5V power.
- 400 ohm resistor – verify current flow (max @ 48V is ~120 mA)
- cRIO – DAQ
- Heater power supply – supply current to load @ 48 V
- Test load heater plate – 8 ohm test load
- Multimeter – measure current through 400 ohm resistor



Max current flow through the 400 ohm resistor which is in parallel to the test load

LabVIEW PSIC test software: Testing channel 1 at 100% current output

Power supply interface chassis test stand. Showing channel one under full current test

- Continued development of controls rack for radiation shielding bunker

Hall A – LAPPD

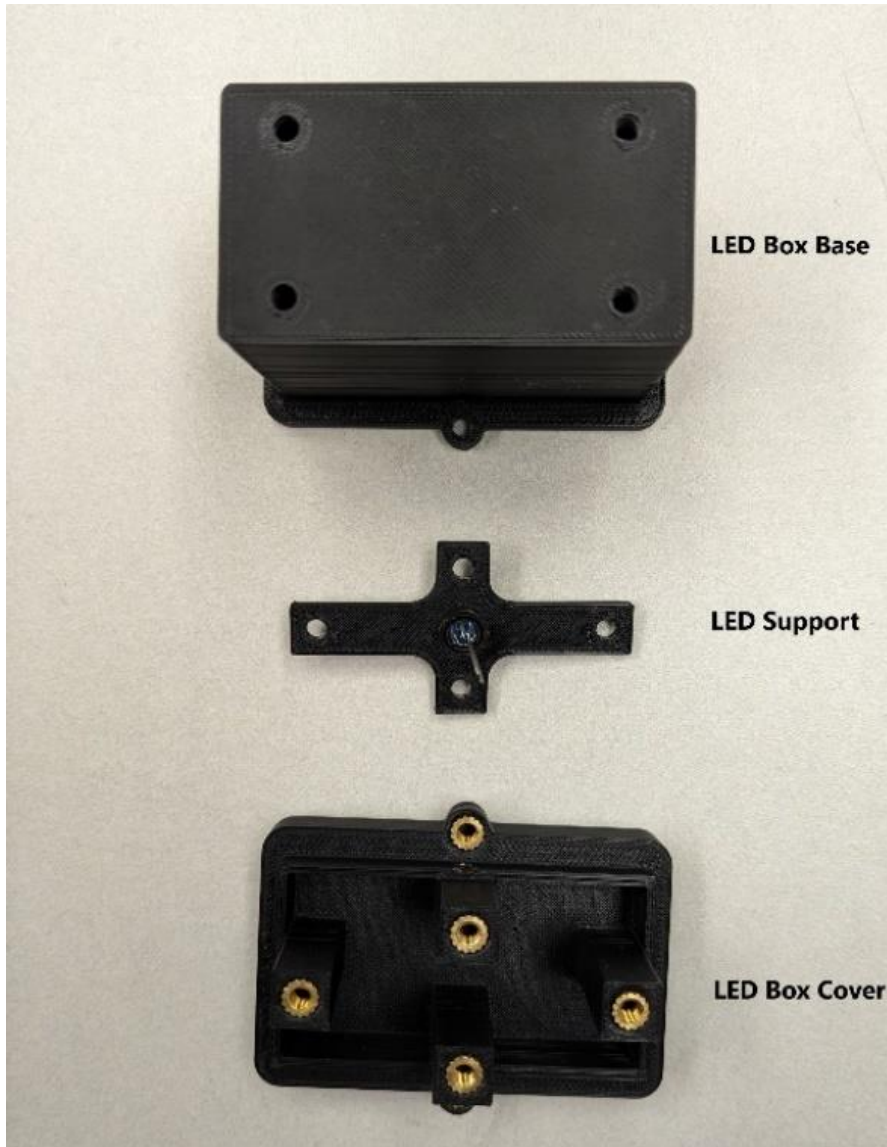
Pablo Campero

- Modified LED box model in NX and printed all three LED box parts
 - ★ 1-mm diameter hole in box cover did not print as expected; drilled by Machine Shop
 - ★ Installed heat set insert threads into box cover

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3D-printed parts for the LED box with heat set insert threads in box cover

- Assembled LED, LED holder and LED support parts

Hall A – Møller

Brian Eng

- Started adding write command functionality to PLC to set values on MPS

Hall B – ALERT

Marc McMullen

- Started writing controls software for gas system



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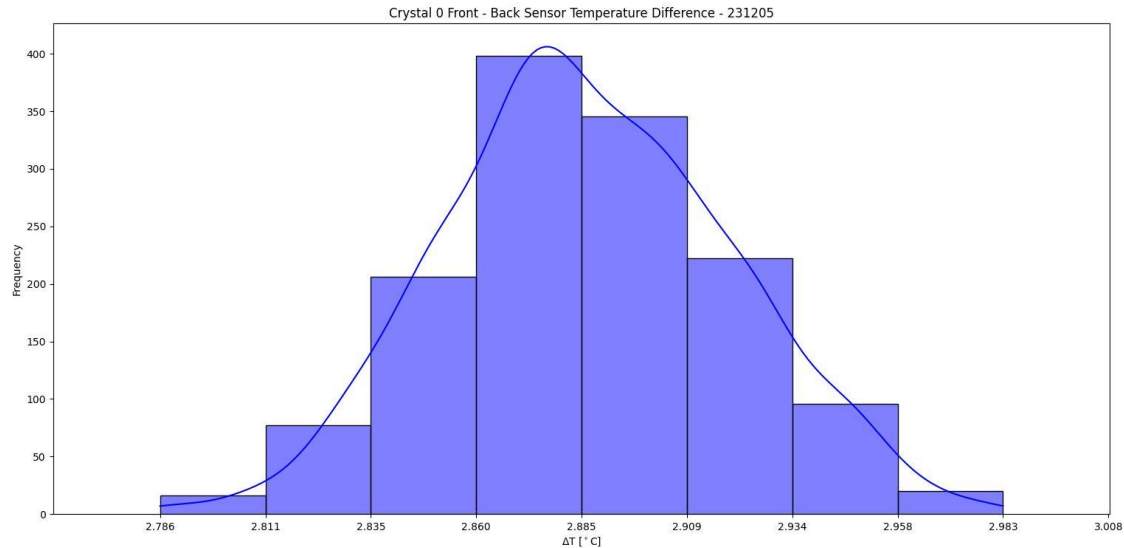
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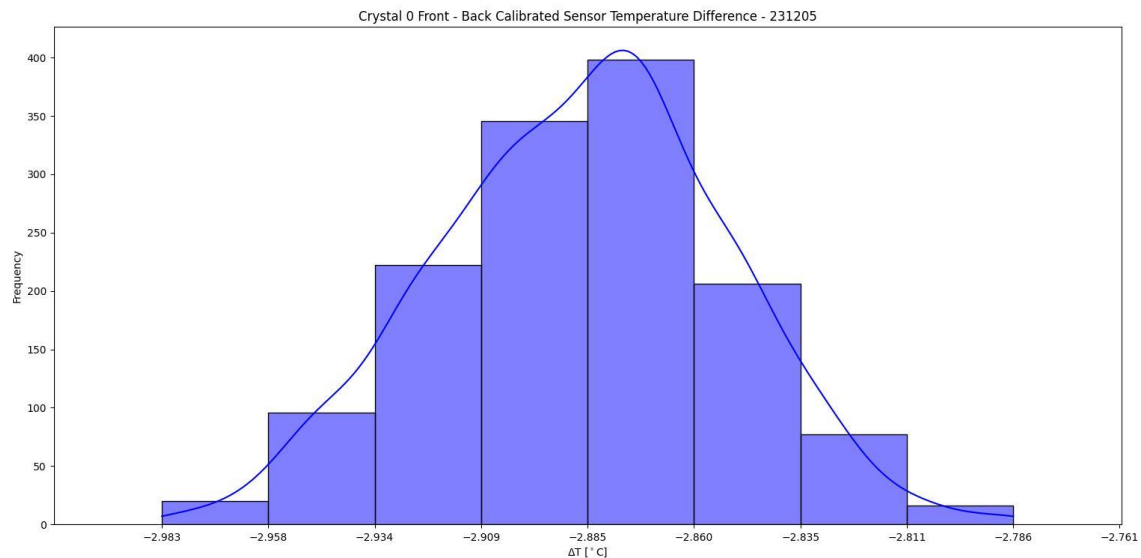
Hall C – NPS

Aaron Brown and Mary Ann Antonioli

- Developed Python program to plot histograms for the temperature difference between the front and back sensors of a crystal



Plot of temperature difference between front and back sensors for crystal #0, using raw data



Plot of temperature difference between front and back sensors of crystal #0, using calibrated data

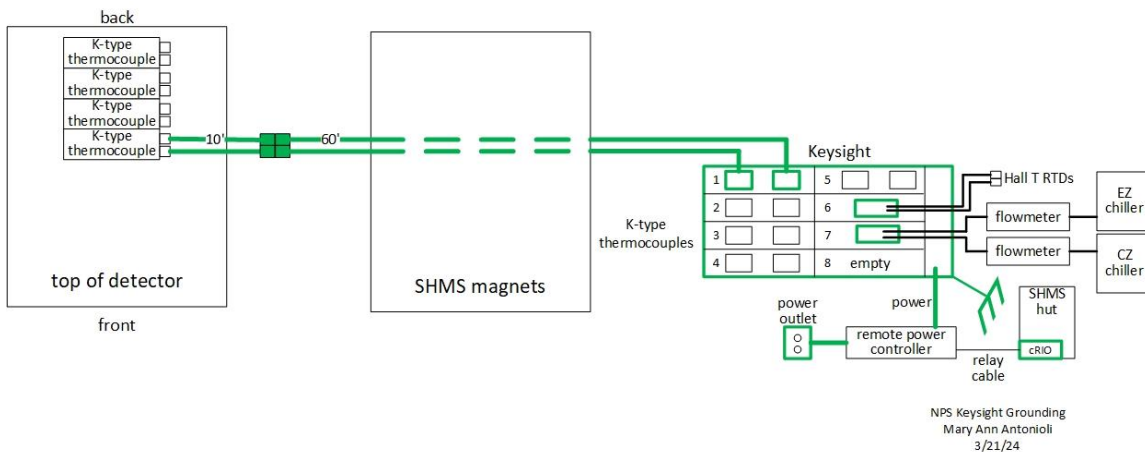
- Debugging version 2 of the control and monitoring LabVIEW program
 - ★ Reverted version 2.4 back to a previous version; now version 2.4 is running without crashing
 - ★ Changing all local variables to shared variables in version 2.4 to test if use of both shared and local variables could be causing the crash

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- Working on version 3 of control and monitoring program LabVIEW program
 - ★ Developed Keysight test VI to test Keysight scanning subVI
 - Using test VI, the first multiplexer was scanned with no problems, but the scans of each subsequent multiplexer failed
 - Debugged; Keysight scanning subVI now works as expected
 - ★ Completed chillers subVI and added to Main VI
 - ★ Started subVI to compare value to limits and to either trip or not
 - ★ Researched methods to stop simultaneous while loops
- Made Visio drawing of Keysight grounding



Drawing of grounding of Keysight multiplexer; grounding shown in green

Hall D – FCAL2

George Jacobs and Mindy Leffel

- Populated 30 PMT bases
- Cut 390 wires and stripped 270
- Tested 59 PMT bases; 600 good bases tested
 - ★ One had shorted low voltage caps (output amplitude lower than expected) and one had no signal

EIC – DIRC

Tyler Lemon and Peter Bonneau

- Continued development of new accelerometer system for barbox shipping crates
 - ★ Added code to log accelerometer data to SD card
 - ★ Added code to zero sensors based on values reported by sensors during their initialization
 - ★ Resolved problems where data was not being properly stored to declared variables
- 3D-printed and started assembly of controller box to hold Arduino, multiplexer, power distribution, and RJ11 ports for connections to accelerometers
- Debugged automated startup sequence of the Phoebus alarm system software packages
 - ★ Phoebus alarm server was failing to connect to the EPICS softIOC