



# Detector Support Group

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

**Weekly Report, 2023-11-22**

## **Hall A - SoLID LAPPD**

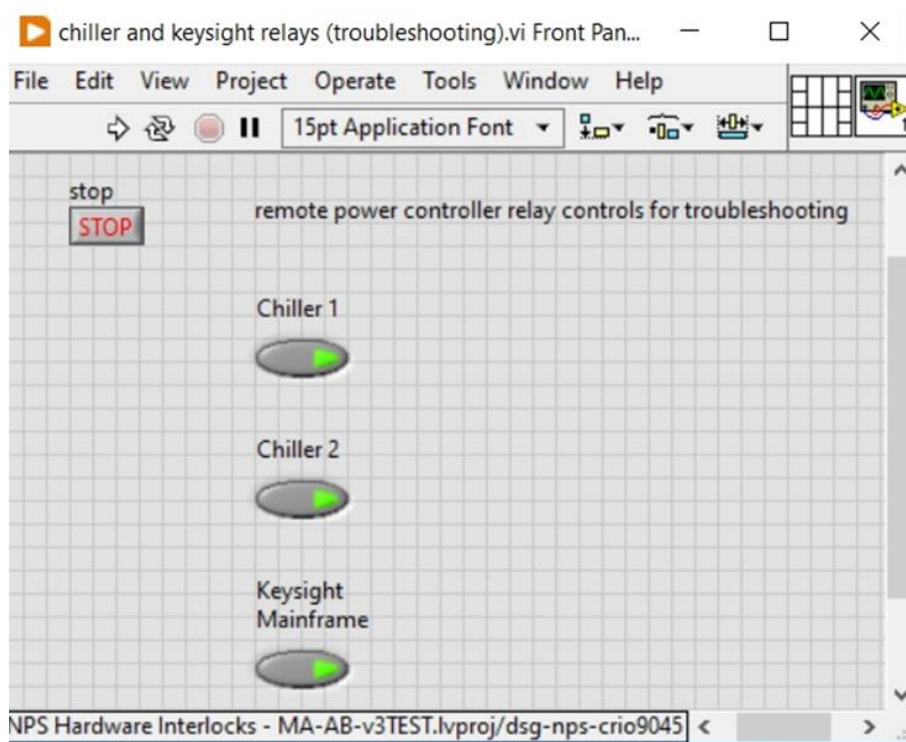
*Pablo Campero*

- Tried to open SolidWorks CAD files sent by Incom Inc., vendor of the LAPPD, that show details of the window, photocathode, and the readout board with all pixels defined
  - ★ JLab does not have shared licenses for SolidWorks, so attempted to open with NX12 and SpaceClaim, both of which should open SolidWorks files
    - Received error: Input file version is not supported
    - Possibly due to software version compatibility
  - ★ Sent files to Danovic Spell (Hall A), who has a standalone SolidWorks license

## **Hall C – NPS**

*Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, and Mindy Leffel*

- Installed remote power controller for Keysight mainframe in hall
  - ★ <https://logbooks.jlab.org/entry/4221561>
- Developed LabVIEW VI that manually toggles chiller and Keysight mainframe interlock relays to power cycle either chiller or the Keysight mainframe



Screenshot of front panel of LabVIEW VI

- Completed revision of LabVIEW control and monitoring software
- Started modifications to common model to be used in Ansys Fluent and Ansys Mechanical



# Detector Support Group

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

**Weekly Report, 2023-11-22**

## **Hall D – FCAL2**

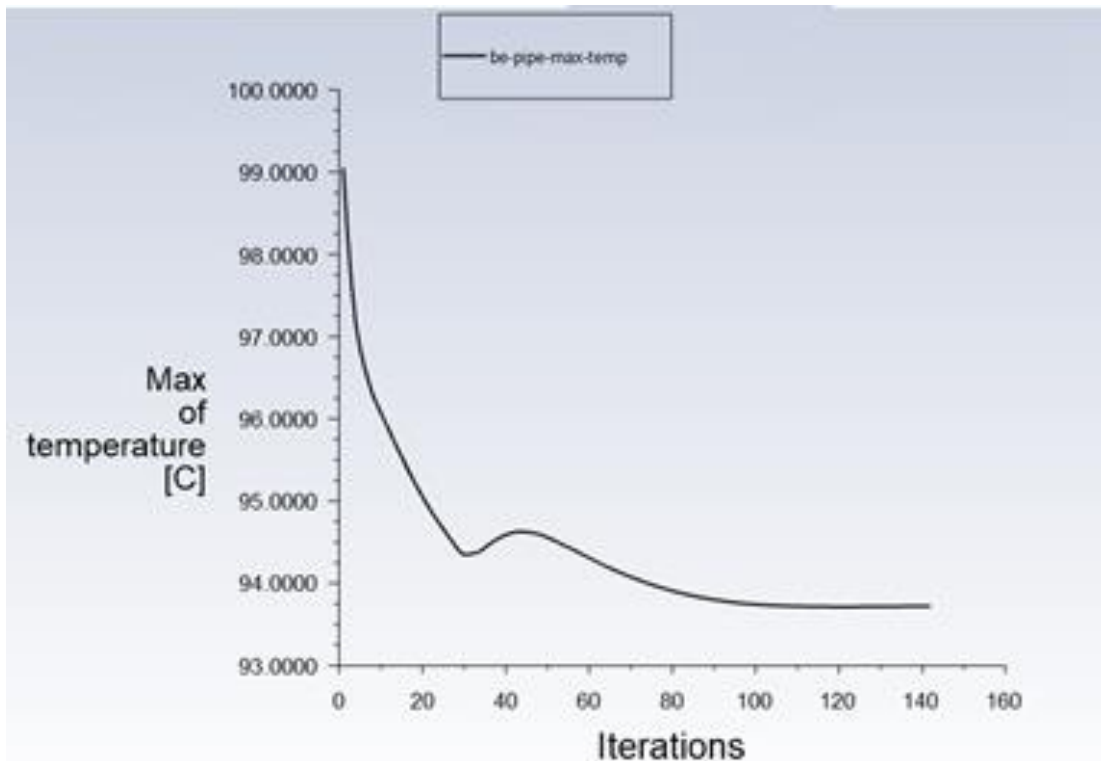
*Mindy Leffel*

- Populated 45 PMT bases; 830/1750 completed
  - ★ Cut 250 wires for bases

## **EIC – Beampipe Thermal Test**

*Pablo Campero*

- Completed mesh for 9-m beampipe using Ansys Fluent; model has three regions—two aluminum and one beryllium central section
  - ★ Final mesh has ~29 million cells
- Set up Ansys Fluent with thermal boundary condition
- Ran thermal simulation in steady state mode
  - ★ Converged at 148 iterations

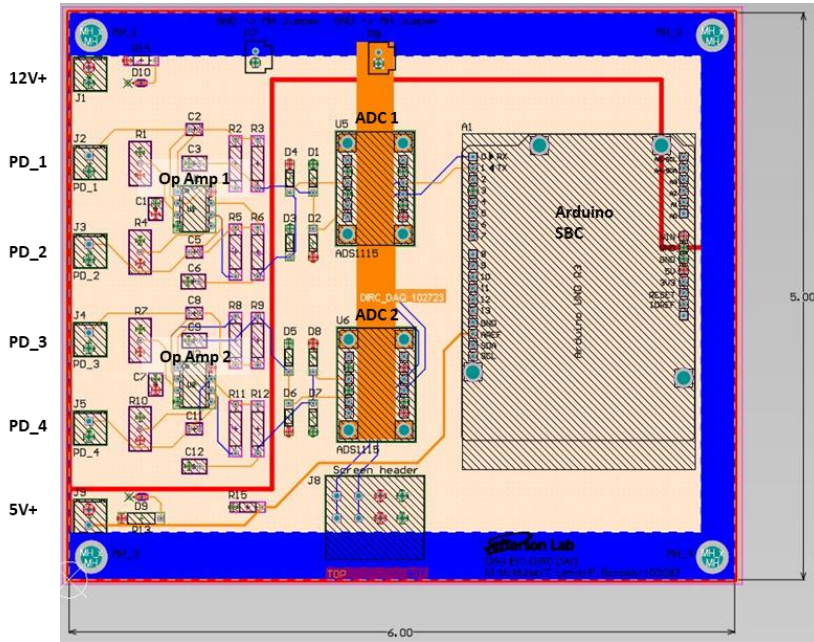


Maximum temperature of beryllium pipe section

### EIC - DIRC

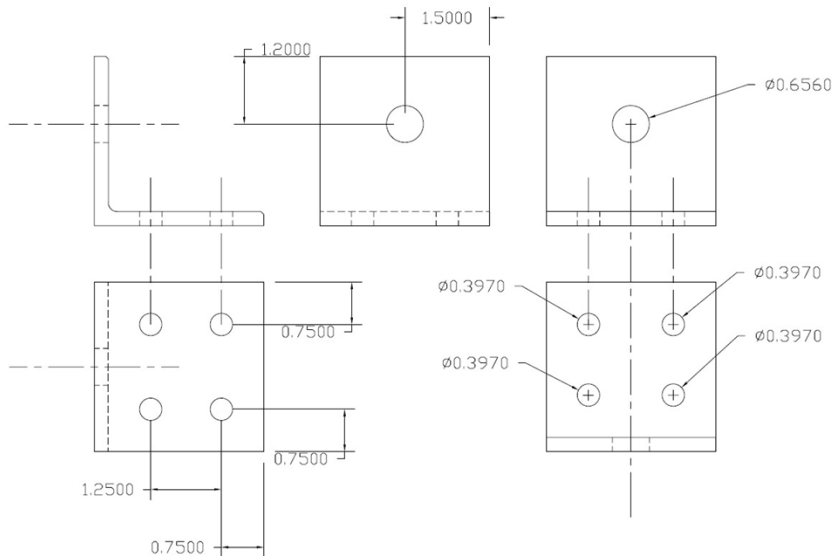
*Peter Bonneau, Brian Eng, George Jacobs, Tyler Lemon, and Marc McMullen*

- Completed initial routing of the DAQ PCB; engineering review completed
  - ★ Final design checkout underway (netlist and pads check)



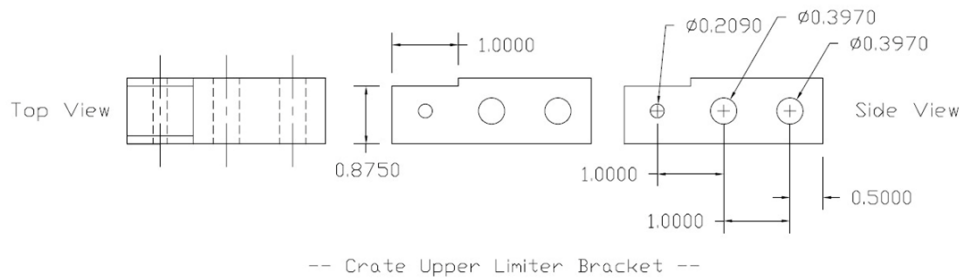
DAQ PCB

- Made diagram of crates' lateral air spring brackets

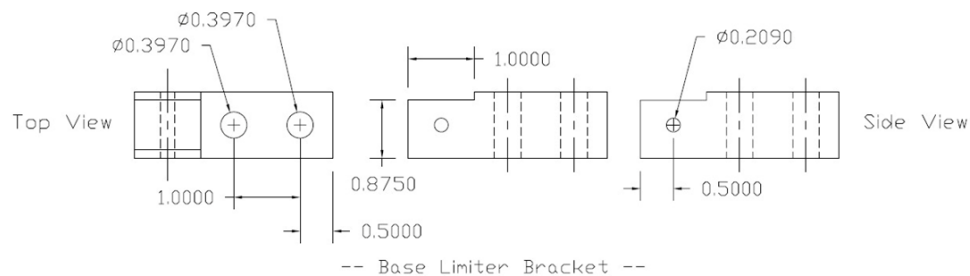


AutoCAD drawing of lateral air spring bracket

- Added dimensions to diagram of speed limiter brackets



Shipping Crate Limiter Brackets



Revised AutoCAD drawing of speed limiter brackets

- Developing code to support multiple configurations of the Phoebus alarm server
  - ★ Uses an .XML file with alarm system settings for EIC DIRC EPICS process variables
- Ordered components and hardware for missing suspension system in new shipping crates

### DSG

Peter, Bonneau, Tyler Lemon

- Updated code for the website navigation bars
- Discussed hazards and setup needed for ESH approval to use polyvinyl alcohol (PVA) filament in 3D printer
  - ★ Area needs posted signage warning of hot surfaces; will be provided by ESH
  - ★ Users must use eye protection and thermal gloves when removing components and supports from printer
  - ★ Used water-PVA solution should be disposed of in an ESH-provided container
  - ★ Air quality monitoring will be done by ESH during printing to see if printer's built-in air filter is adequate