



Detector Support Group

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

Weekly Report, 2023-12-06

Hall A – ECAL

Marc McMullen

- Ordered expansion cRIO to replace the damaged NI-9045 cRIO in the Hall

Hall A – LAPPD

Pablo Campero

- Converted five Incom Inc, LAPPD SolidWorks files to step files; using NX12, made 3D models, added dimensions, and generated orthographic projections
- Received gantry linear translation with stepper motor system

Hall A – Møller

Brian Eng, Marc McMullen

- Started setup of torus magnet 3 magnet power supply in Test Lab High Bay
 - ★ Moved half rack and installed Siemens PLC
 - ★ Configured networking on experimental subnet for PLCs, magnet power supply, remote power distribution unit, Raspberry Pi, Windows computer
- Started PCB design for new magnetometer

Hall B – ALERT

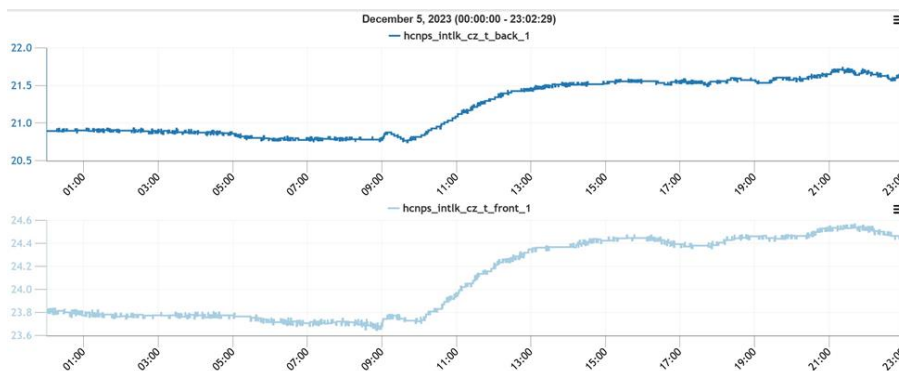
Marc McMullen

- Reviewed piping and instrumentation and design specifications for the new gas system

Hall C – NPS

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

- Set up test stand for the thermal readback LabVIEW program revision
 - ★ Changed the IP address for the Keysight mainframe (now on the Hall B development subnet)
 - ★ Troubleshoot LabVIEW issues on Hall B computer; had to uninstall older LabVIEW versions and install the most current version used in the NPS cRIO
 - ★ Revised program not initializing some arrays and not initializing the multiplexer channel lists; debugging
- Started crystal temperature study of archived data



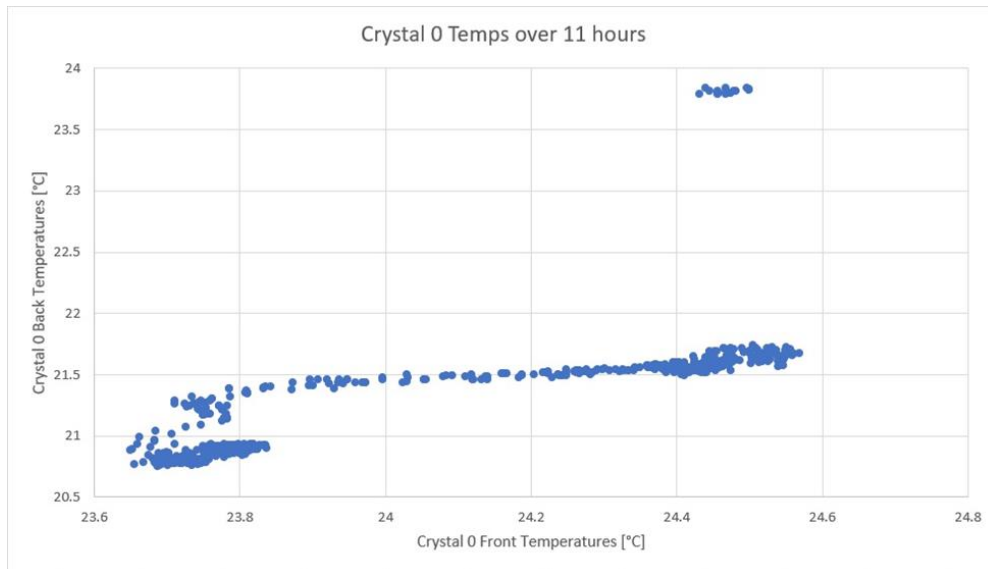
Screenshot of crystal 0 front and back temperatures over 11 hours



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Plot of crystal 0 back temperature vs front temperature

- Used SpaceClaim to modify common model, to be used in Ansys Fluent and Ansys Mechanical, to ensure contact between the 1080 new slice volumes and the mu-metal dividers

Hall D – FCAL2

Mindy Leffel

- Populated 75 PMT bases; 950/1750 completed
 - ★ Cut 450 wires for bases

Hall D – PXI

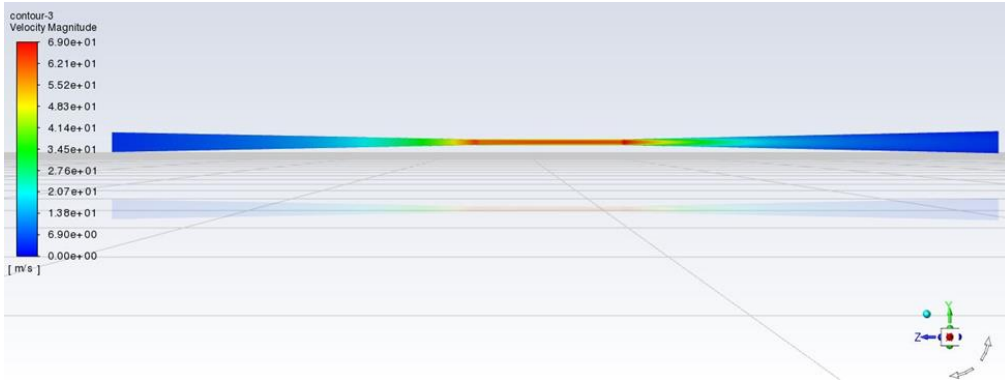
Brian Eng

- Troubleshooting offline PXI
 - ★ Occasionally remote reset does not appear to work; no issues when tested locally
 - ★ Confirmed that NI Linux + EPICS is not properly using process variable array size environment variable, which limits arrays with float elements to 4064 (PXI is trying to send arrays of 10,000 elements)

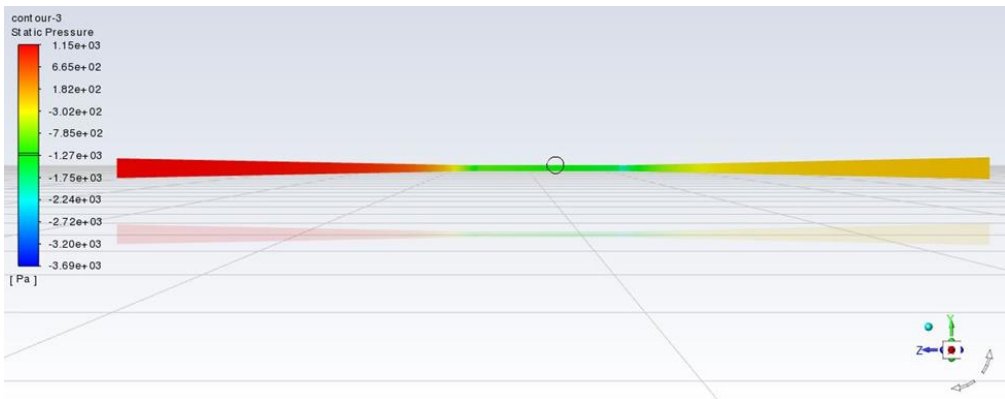
EIC – Beampipe Thermal Test

Pablo Campero

- From simulation results, measured temperature, velocity, and pressure along the beampipe with probes at the central section of the beryllium pipe
 - ★ Maximum temperature of 93.12°C
 - ★ High speed and lower pressure were noted in the central section, as expected due to the venturi effect



Right side, cross-section of the velocity contour for the beampipe

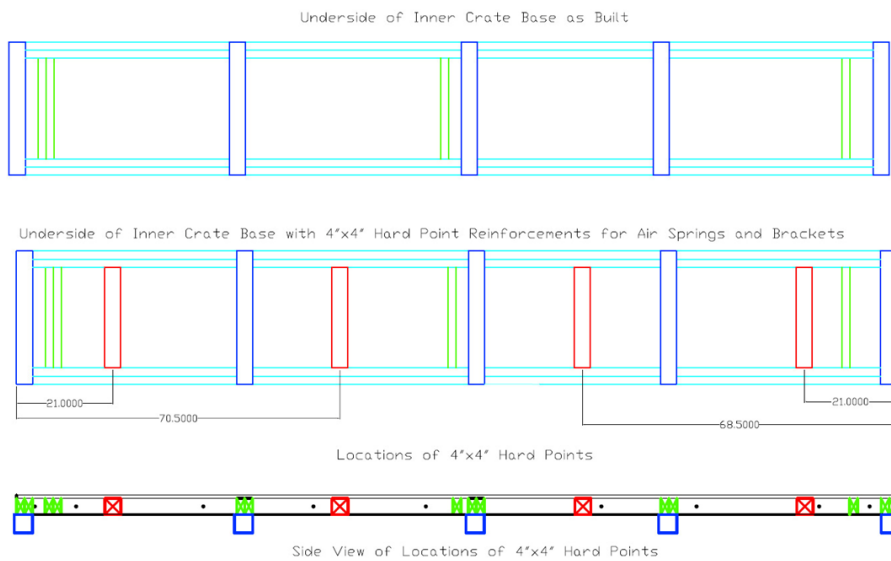


Right side, cross-section of the pressure contour for the beampipe

EIC - DIRC

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

- Working on assembly diagrams

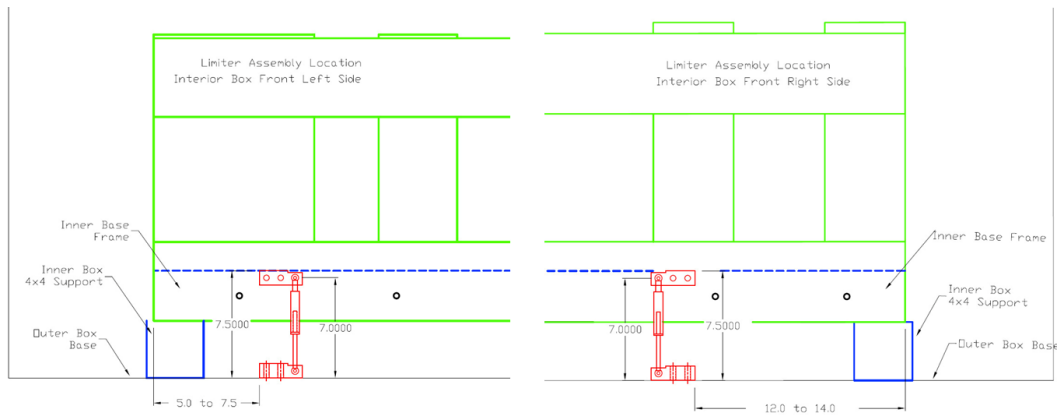


Inner crate base hard point lag bolt and mounting

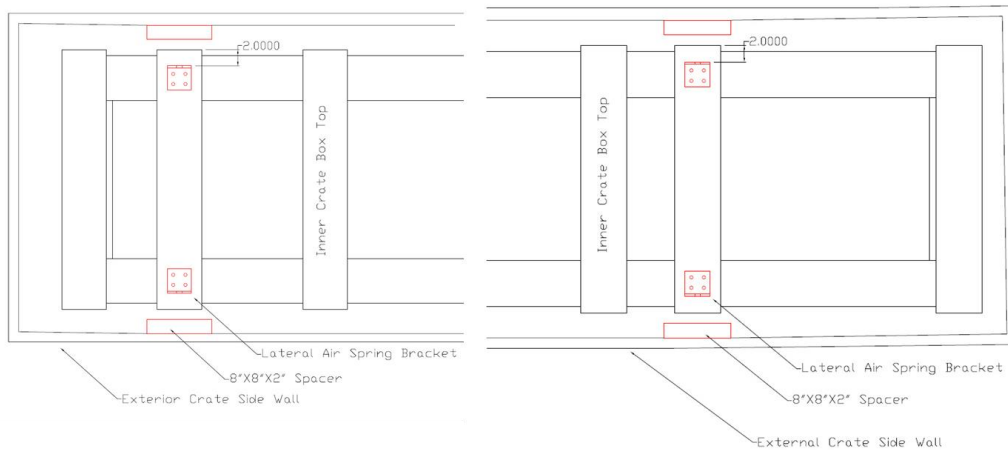
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Inner crate limiter assembly locations and mounting



Locations of lateral air spring bracket mounting

- Developing error recovery code and procedures for Phoebus alarm test to aid in restarting Phoebus applications, including the alarm system, after network outages
- Ordered components for DAQ PCB
- Sent safety data sheets for spray glue and threadlock to JLab industrial hygiene
- Printed one horseshoe clamp and one clamp fixture; seven horseshoe clamps and three fixtures remain
- Annotated DAQ system code

EIC – RICH

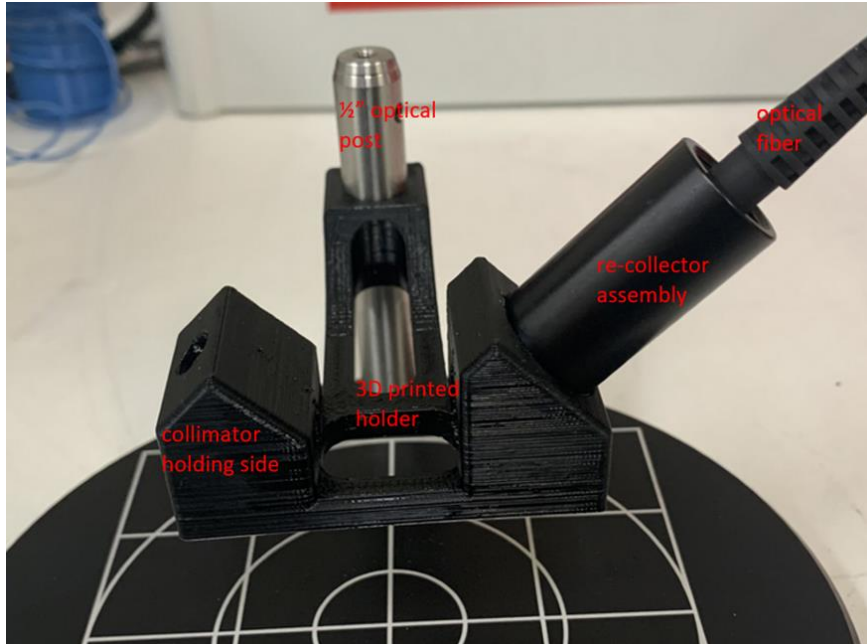
Tyler Lemon

- Received partial order of UV reflectivity components; awaiting collimator
- Designed and printed a holder that positions collimator and re-collector for a 45° angle-of-incidence on the mirror for the test beam

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Test stand holder

DSG

Mary Ann Antonioli

- Added notes from years 2020, 2021, 2022, and 2023 (145 notes) to spreadsheet that will be used for a future website upgrade