

LArFCS PrM Test at UC Irvine

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Lab Safety

▶ 6000 LN2 dewar Commissioning

- Hot fill/purge quote received from Airgas
- Estimated labor cost is ~\$700, about 4 hours by driver and cryo technician
- Putting in a web req for the PO
- A DOT NOT FILL label put on the dewar following Mike Gaffney's recommendation

▶ Lab safety inspection

- Gas tanks have been secured to the rack



Lab Safety

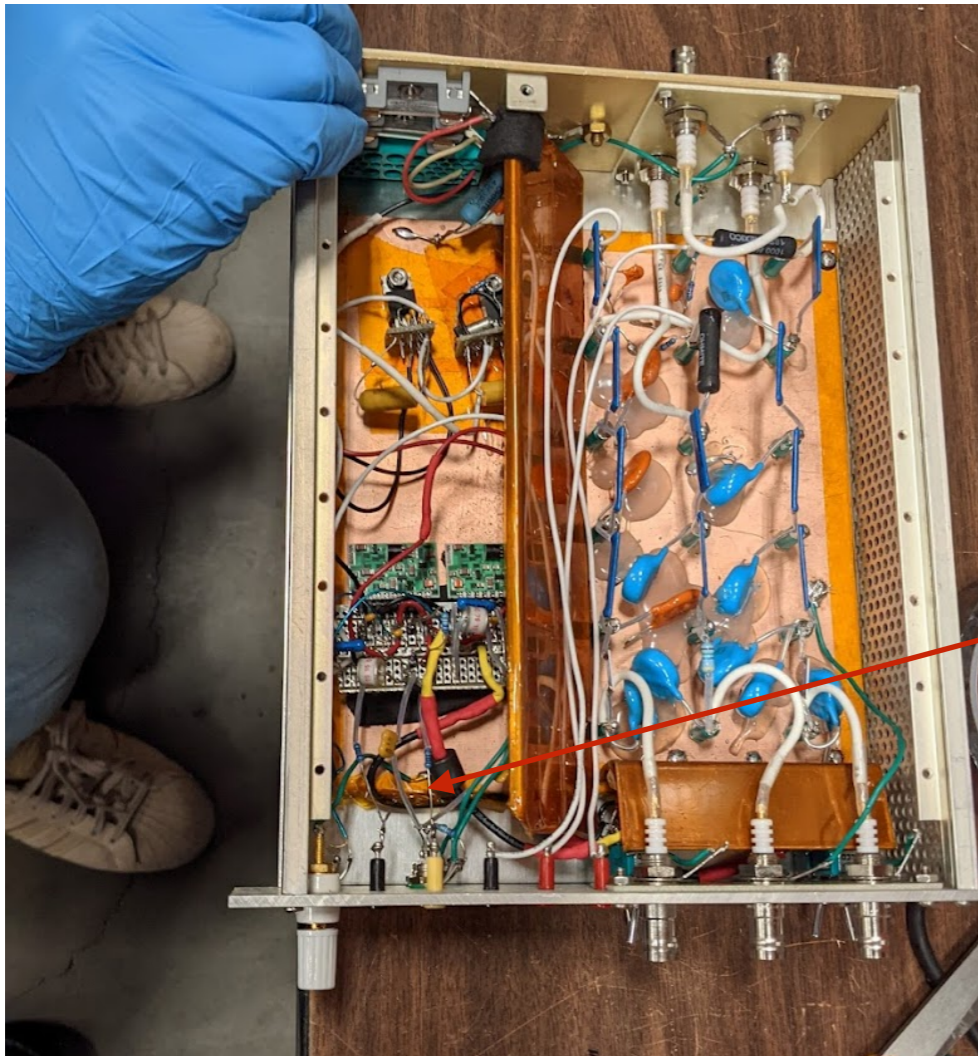
▶ **Purity Monitor System SOP**

- A SOP drafted for adding the PrM system in LArFCS
- Available on BNLIF: https://www.phy.bnl.gov/bnlif/docdb/0003/000314/001/PrM_SOP%20%281%29.pdf
- Will update once the photos when we have our PrM back

PrM test at UCI

▸ Preparing for the shipment back to BNL

- Noise issue observed again in recent test at UCI with baseline shifting on the anode channel
- Video on Oscilloscope: <https://youtu.be/yb5dP-YOucg>(Yellow baseline shifting)
- Seems to be related to the signal output cable in the electronics box, sensitive to the cabling routine
- Current solution is to tightly tape the cable down on the baseboard
- They are making HV/signal cables for us
- Expected to receive before the Christmas's vacation



PrM test at UCI

► PrM shipment

- The baseline shifting issue resolved before shipment, may need to make our own adjustment after receiving
- HV supply/signal cable with 12ft length made
- Package on the way, expected tomorrow



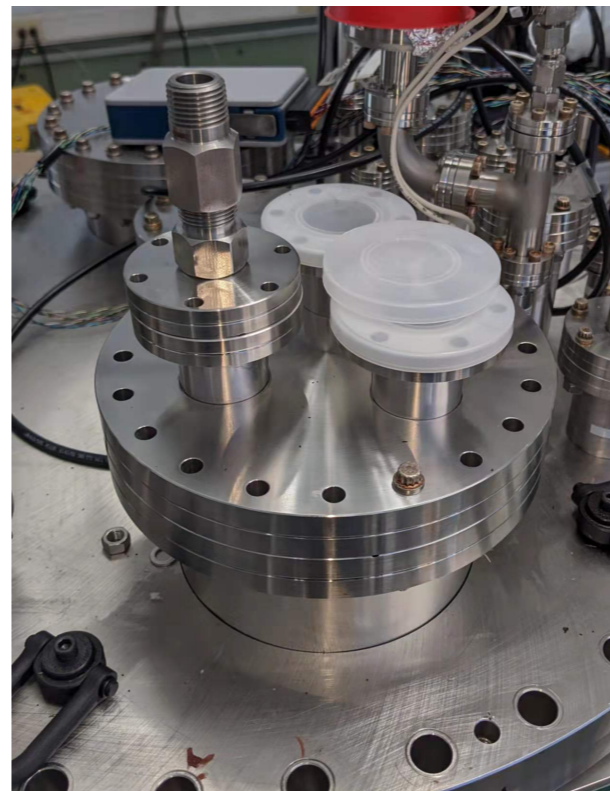
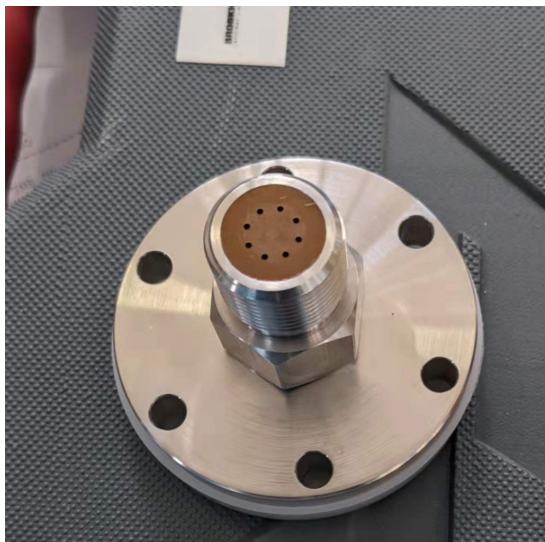
LArFCS commissioning

▶ Fiber feedthru adapter finished by KHV

- Fiber seal fitting received
- Parts dropped of at Key High Vacuum last week and received the product today
- Just cleaning and did a mock up installation

▶ UV Fiber received

- Same 600 um UV fiber used in UCI and ProtoDUNE
- 15 meters was ordered, need about 3 meters for each fiber
- Need to cut to length by ourselves



LArFCS Purity Commissioning

▸ Gas analyzer troubleshooting

- Lab equipment was influenced by the power dip on 12/03 when I was absent
 - Slow monitoring PC powered off (no auto reboot after power resumed)
 - Gas analyzers and hot getter off
- Slow monitoring PC works fine with manual restart
- H₂O analyzer and hot getter randomly issue error code with insufficient pneumatic pressure, occurring several times a day
- The compressed air output pressure regulator reading is normal at 80 psig
- Initial leak tracing doesn't find obvious leak on the compressed line
- Finally located a crack on the tube where a sharp turn ~80-90 degree was made, replaced with a 90 degree elbow
- Now everything works fine
- Not sure if it is just the aging of the tube or related to the interruption of compressed air during the site power outage.



Snowmass IF09 white paper on Cryogenic Facilities

► **Snow mass IF09 instrumentation frontier white paper**

- Received an inquiry for white paper on cryogenic facilities from Jim Fast in collaboration with
 - Matthew Hollister-Fermilab: mK cryogenic detector, Quantum devices
 - William Terrano-Princeton: Low background dark matter detection
- Chao, Me and Matt had a meeting yesterday
- I started a overleaf document at: <https://www.overleaf.com/project/61c0bb8814360f1044b3c927>
- The first request is to provide an author list before the holidays
- For now, I just put everybody on the list. Please let me know if I should add in more people

Cryogenics Facilities
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Abstract