

BaBar DIRC bars for ePIC hpDIRC

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REUSE OF BABAR DIRC BARS

- Validation of reusing BaBar DIRC radiator bars is crucial step towards hpDIRC TDR readiness
- Successful transportation of bar boxes from SLAC to JLab done in April 2024
- Disassembly in JLab is in progress
 - Bar boxes are disassembled and bars are separated in clean tent
 - Cleaning station to remove residue glue, visually inspect bars
 - QA laser lab to inspect quality of the bars after disassembly
- Team working on disassembly:
 - 3 JLab Technicians: Andrew Lumanog, Caleb Graham, David Edwards
 - 2 Scientists: Greg Kalicy (CUA), Sourav Tarafdar (JLab)
 - JLab DSG Group: Tyler Lemon, George Jacobs, Mindy Leffel
 - Graduate Students: Shelby Arrigo (W&M), Imran Hossain (CUA)

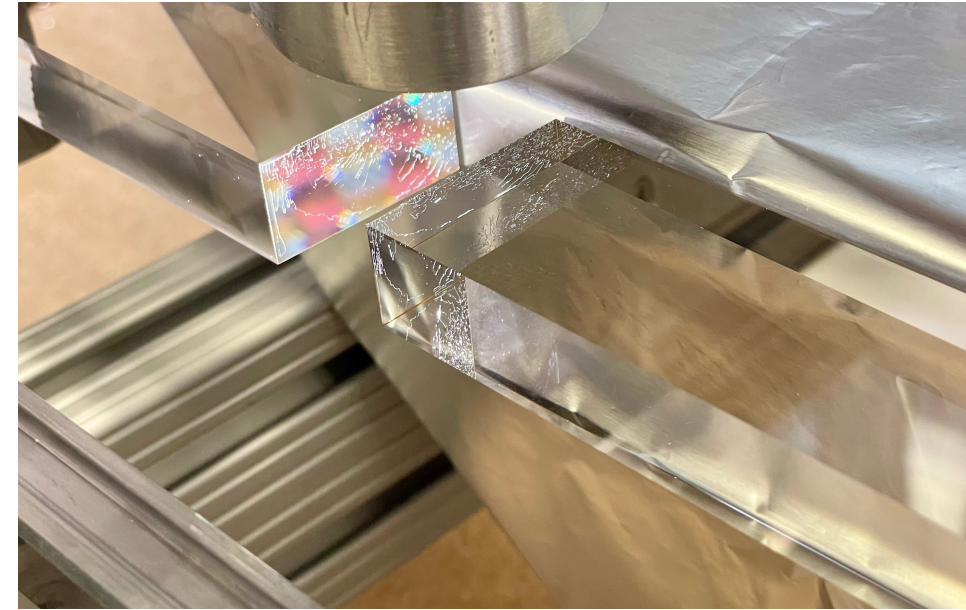
Bar box with disassembled aluminium shell



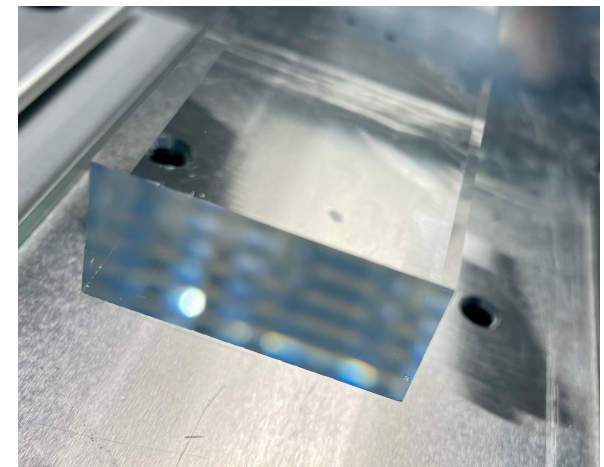
REUSE OF BABAR DIRC BARS

- Scope:
 - 8 bar boxes with 12 long bars each.
 - Each long bar is made of 4 short (1225 mm) bars glued head-to-head.
 - A total of 384 bars to separate.
- Two short bars were successfully separated using heat guns to soften glue joints
- Residue glue from the glue joint has to be removed using an acetone bath and scalpel
- Entire bar has to be thoroughly cleaned to allow reliable measurement in the QA laser setup

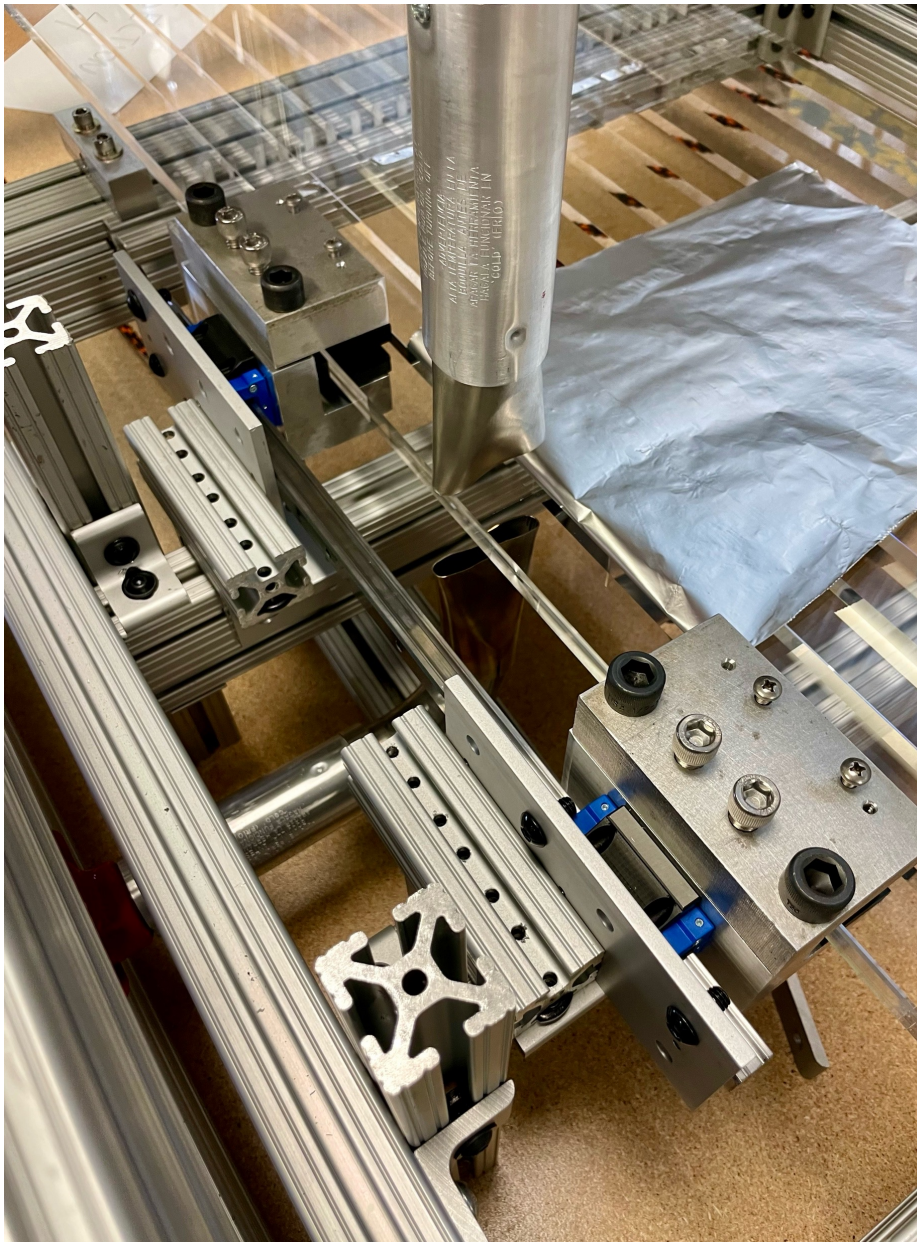
First separated glue joint



Cleaned bar end after separation



BARS SEPERATION WITH HEAT GUNS

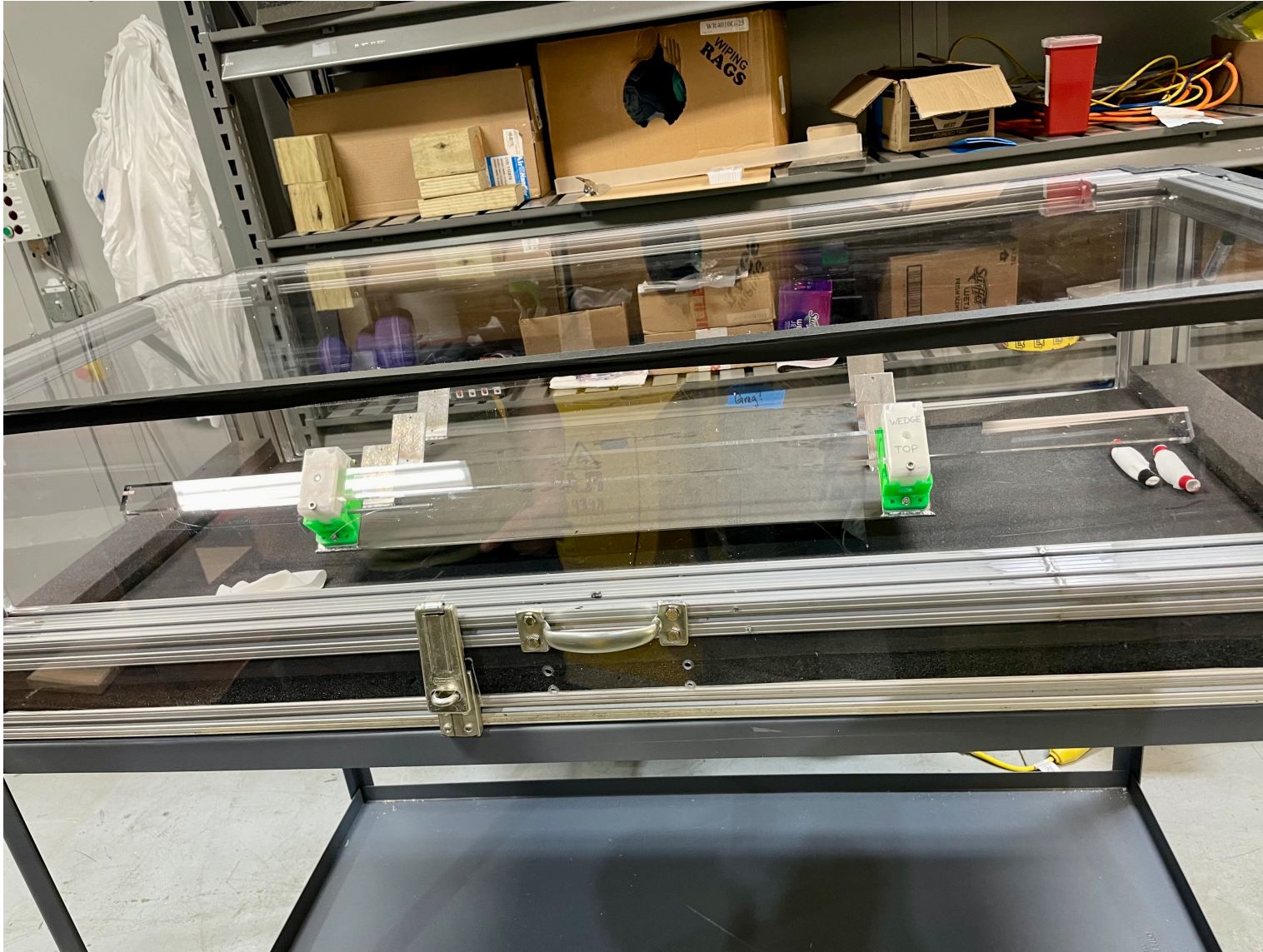


25 lbs weight



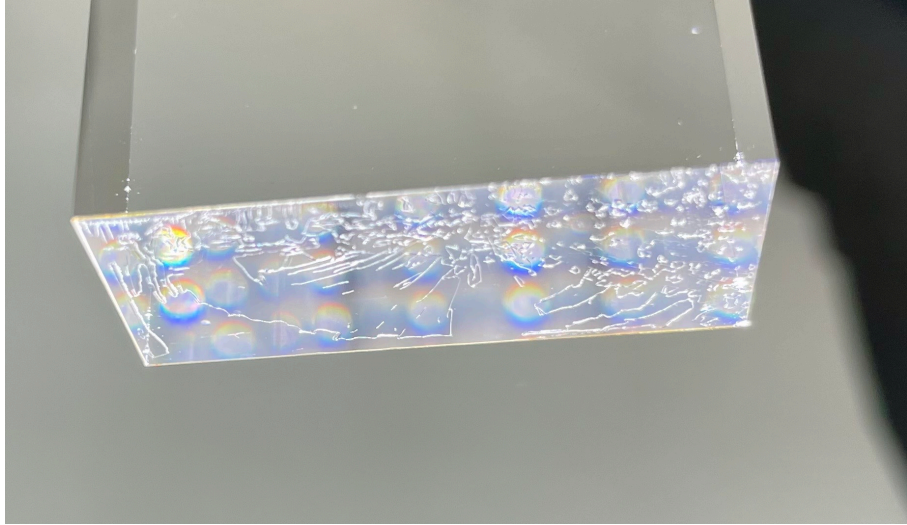
TRANSPORTATION CART

Bars are moved in cart between setups

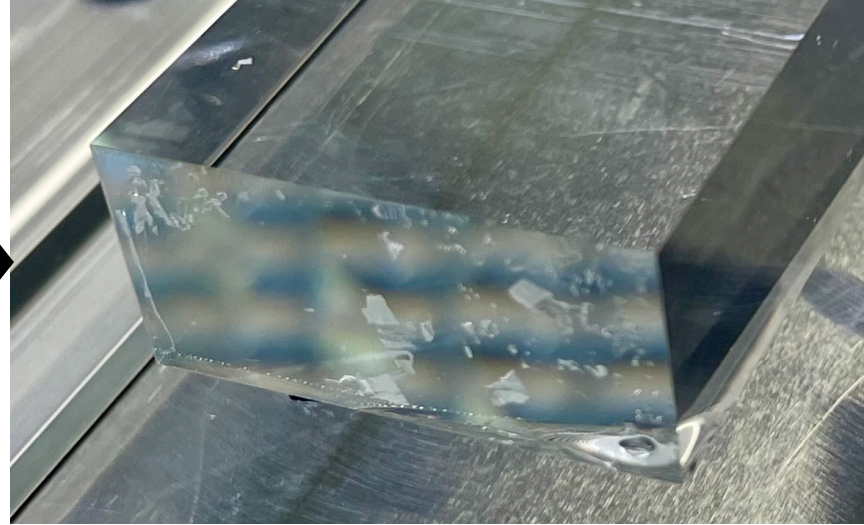


REMOVAL OF RESIDUE GLUE

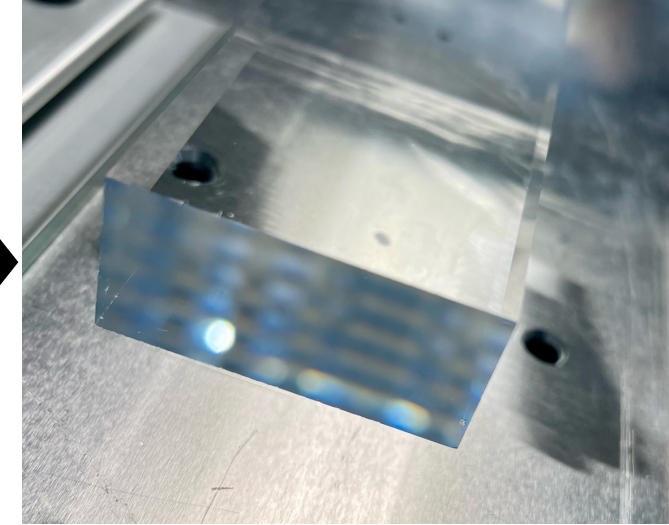
Glue residue after separation



Glue residue mid-way through cleaning



Cleaned bar end



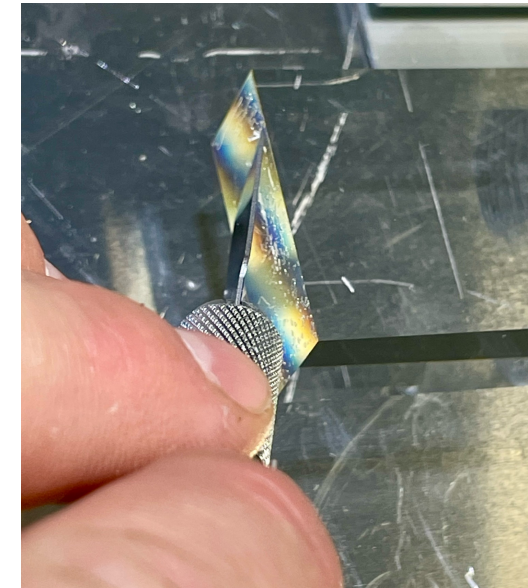
Bar end immersed in acetone bath

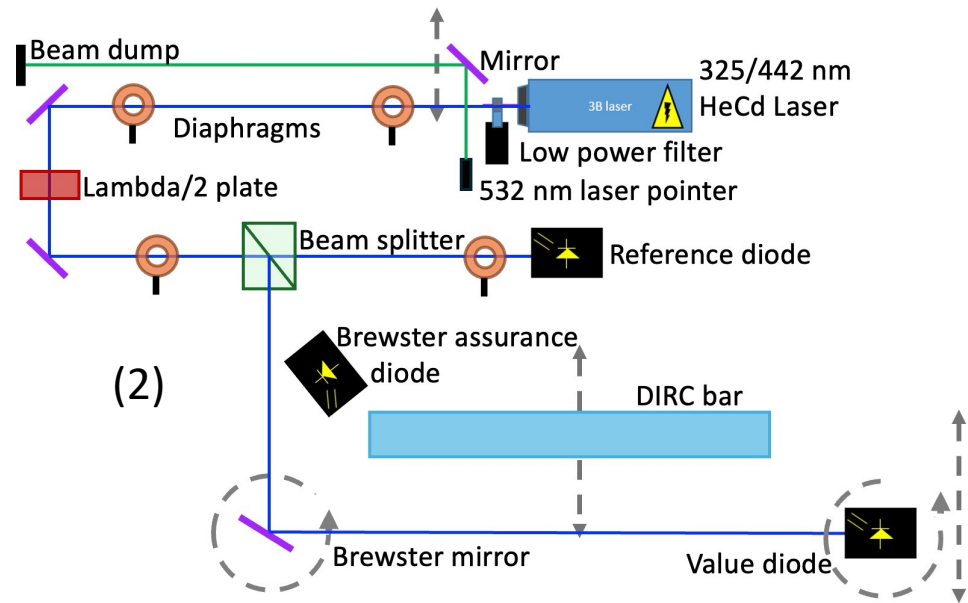
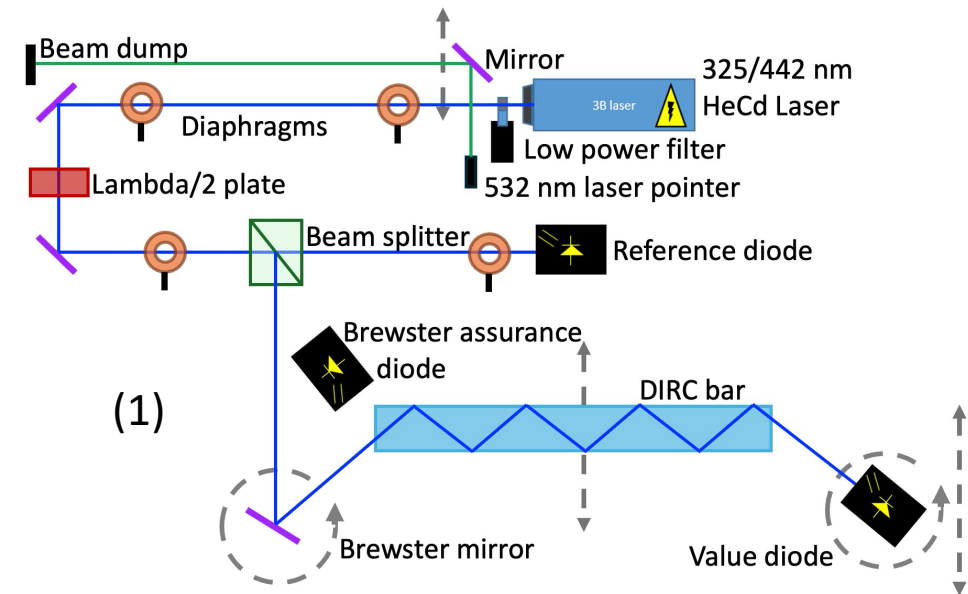


"Bathtub" in position for glue removal



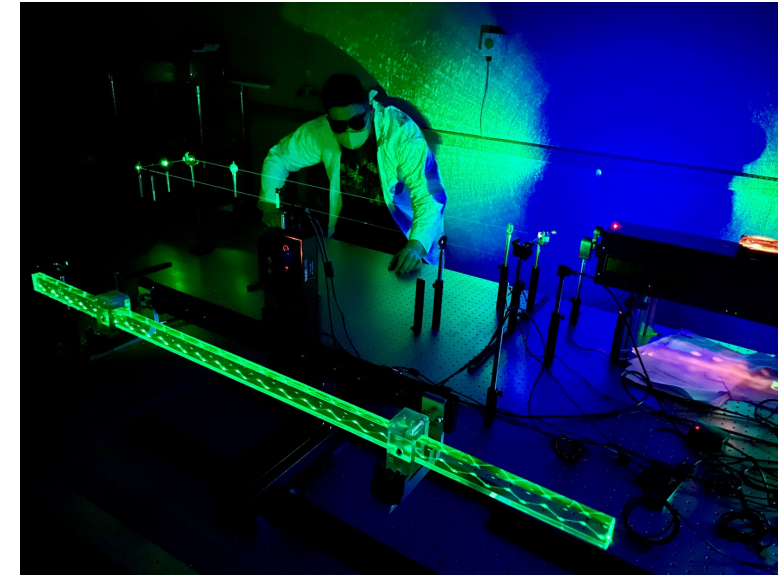
Glue removal





Measurements are done by comparing (1) beam totally internally reflected inside the bar to (2) beam passing just through air, in both cases we look at the **ValuePD/ReferencePD** ratio to take out systematic effects.

Setup alignment with 532 nm laser pointer



Measurement with 442 nm laser

