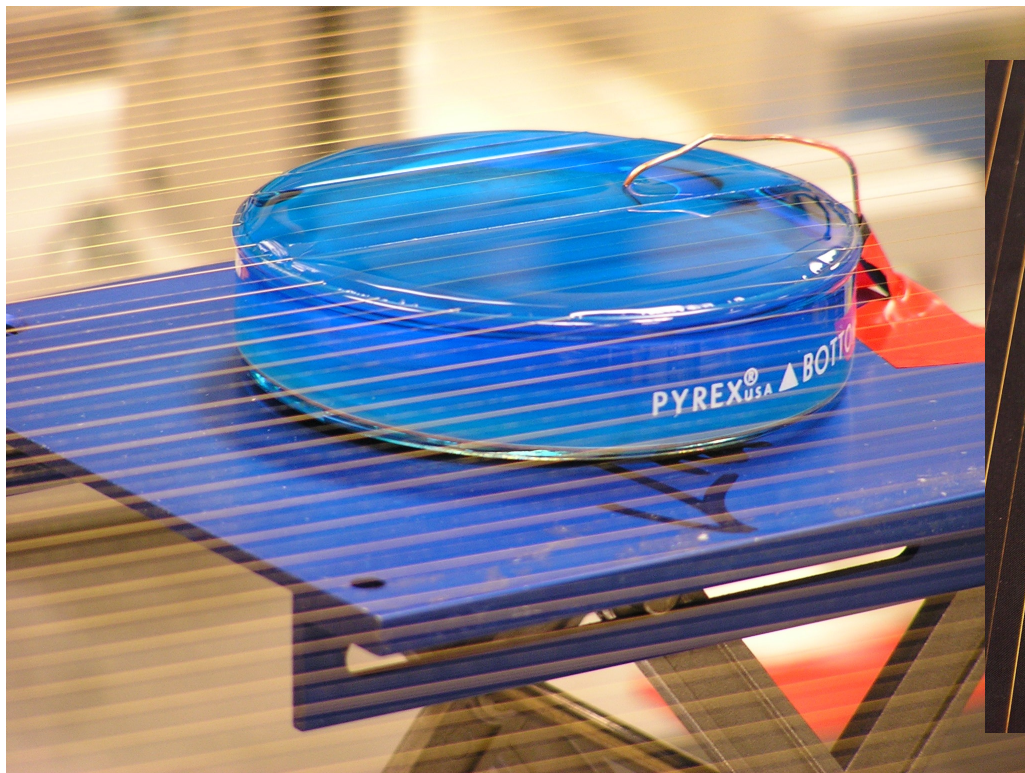


- Wire deadening
- Cathode trimming
- 3-piece cathodes – real boards soon ready for readout!
- Full-scale mechanical mock-up

# Wire deadening

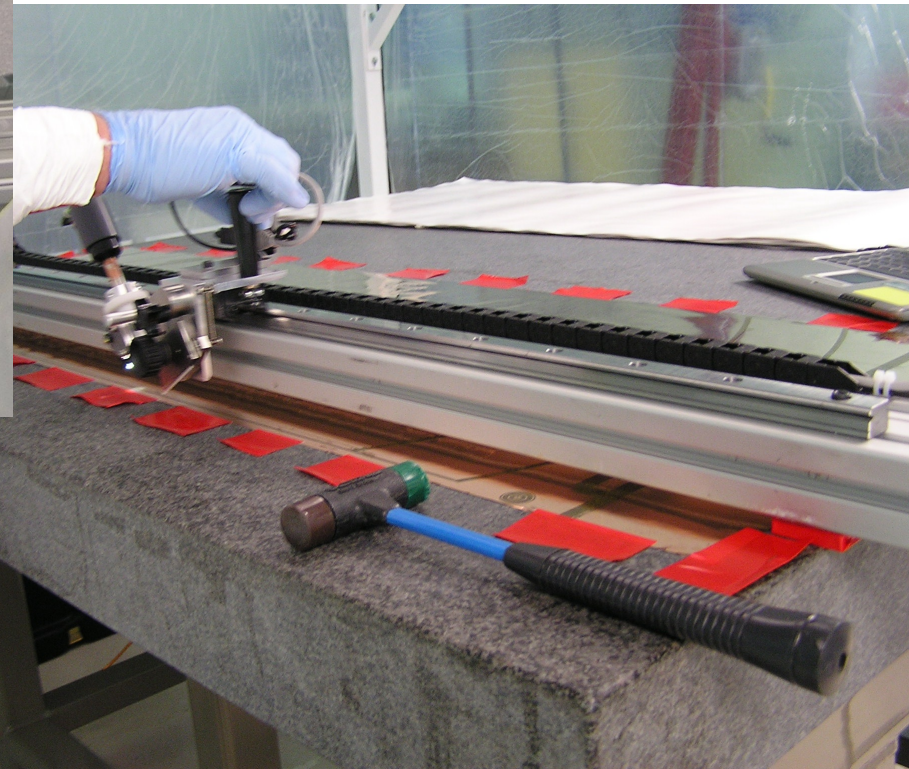
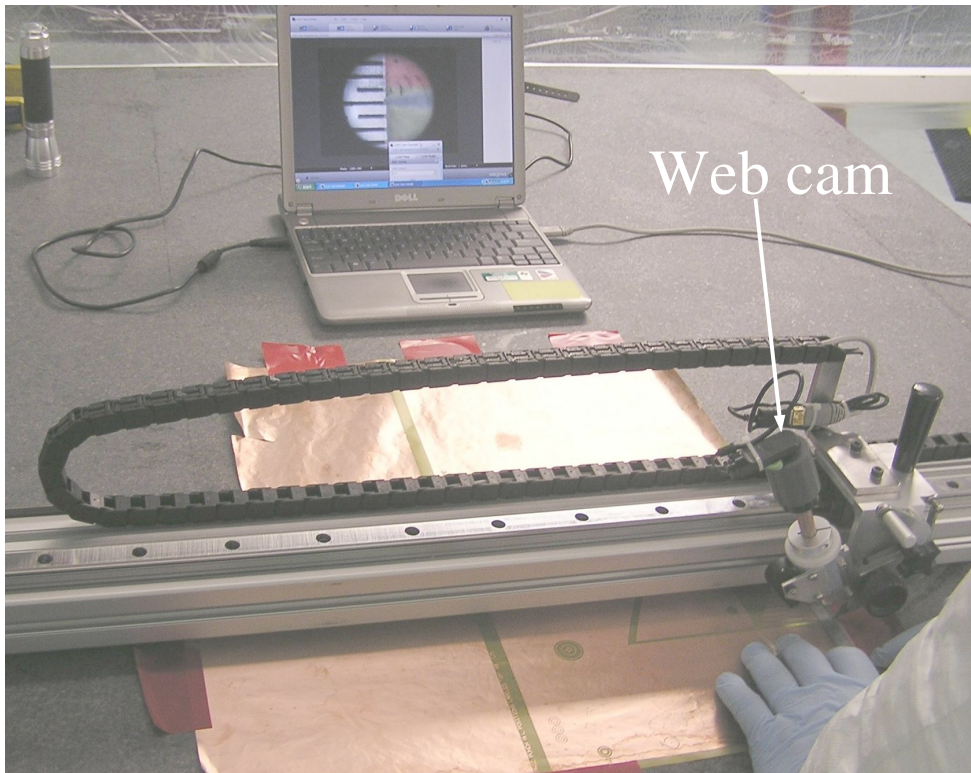
- Due to high flux of radiation near the beam line, need to suppress gain for wires within a certain radius of the beam line
  - Electric field strength near wire depends on wire radius for given  $V$
  - Technique: electro-plating using copper sulfate solution





# Cathode trimming

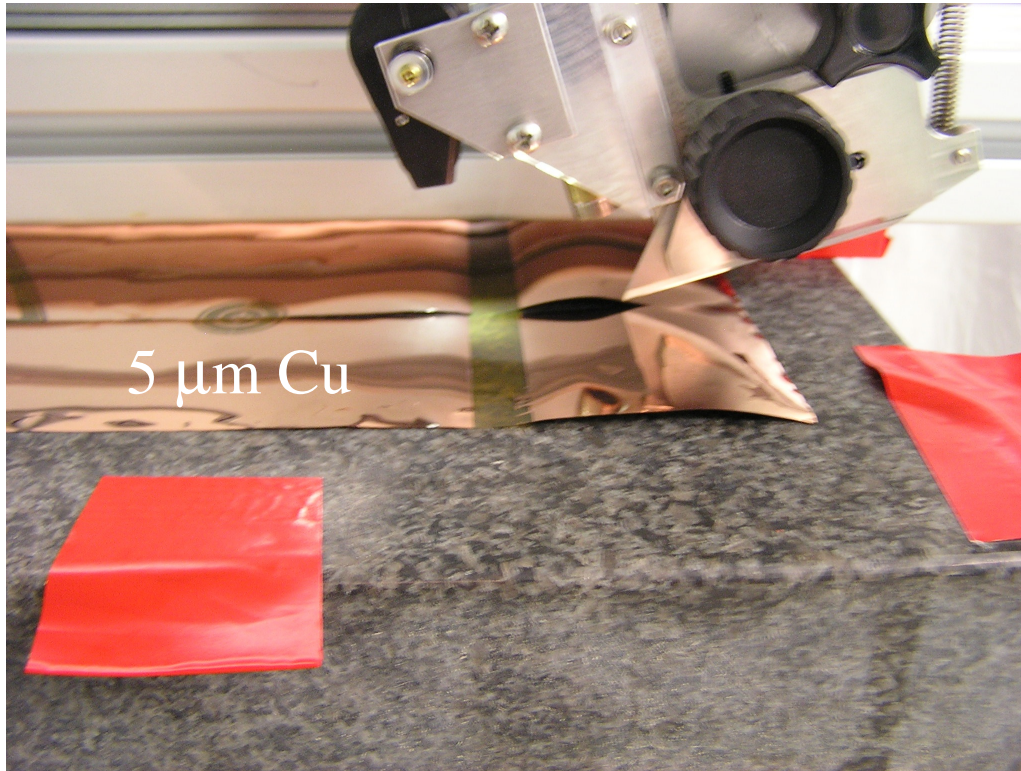
- Cathode boards do not come trimmed from the manufacturer → needed to devise our own board trimmer...



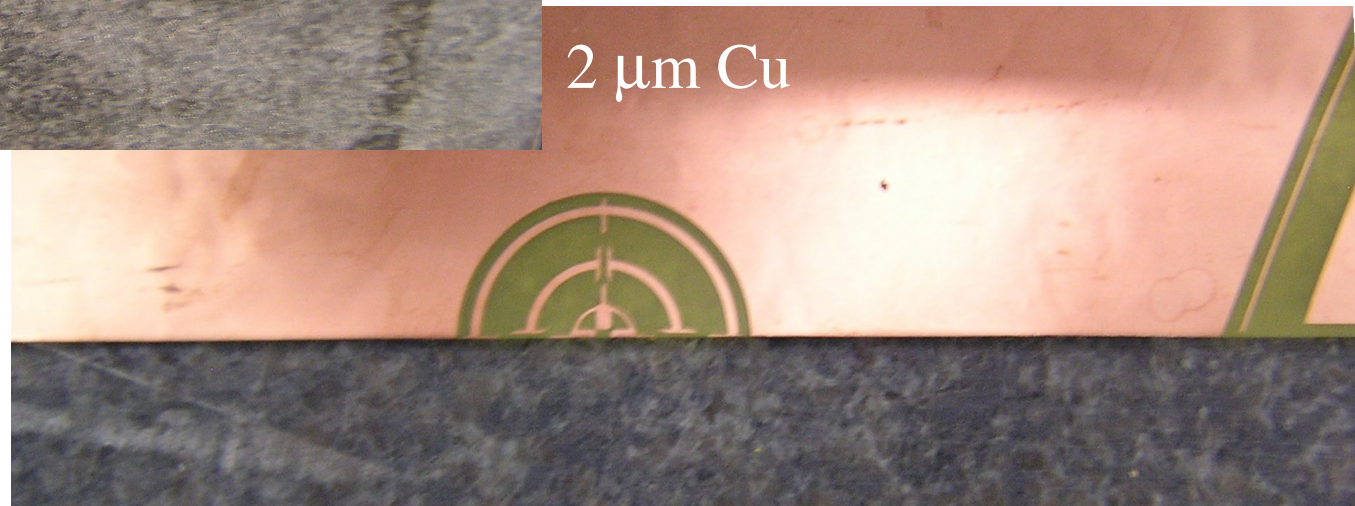
*This design essentially complete*



# Cathode trimming

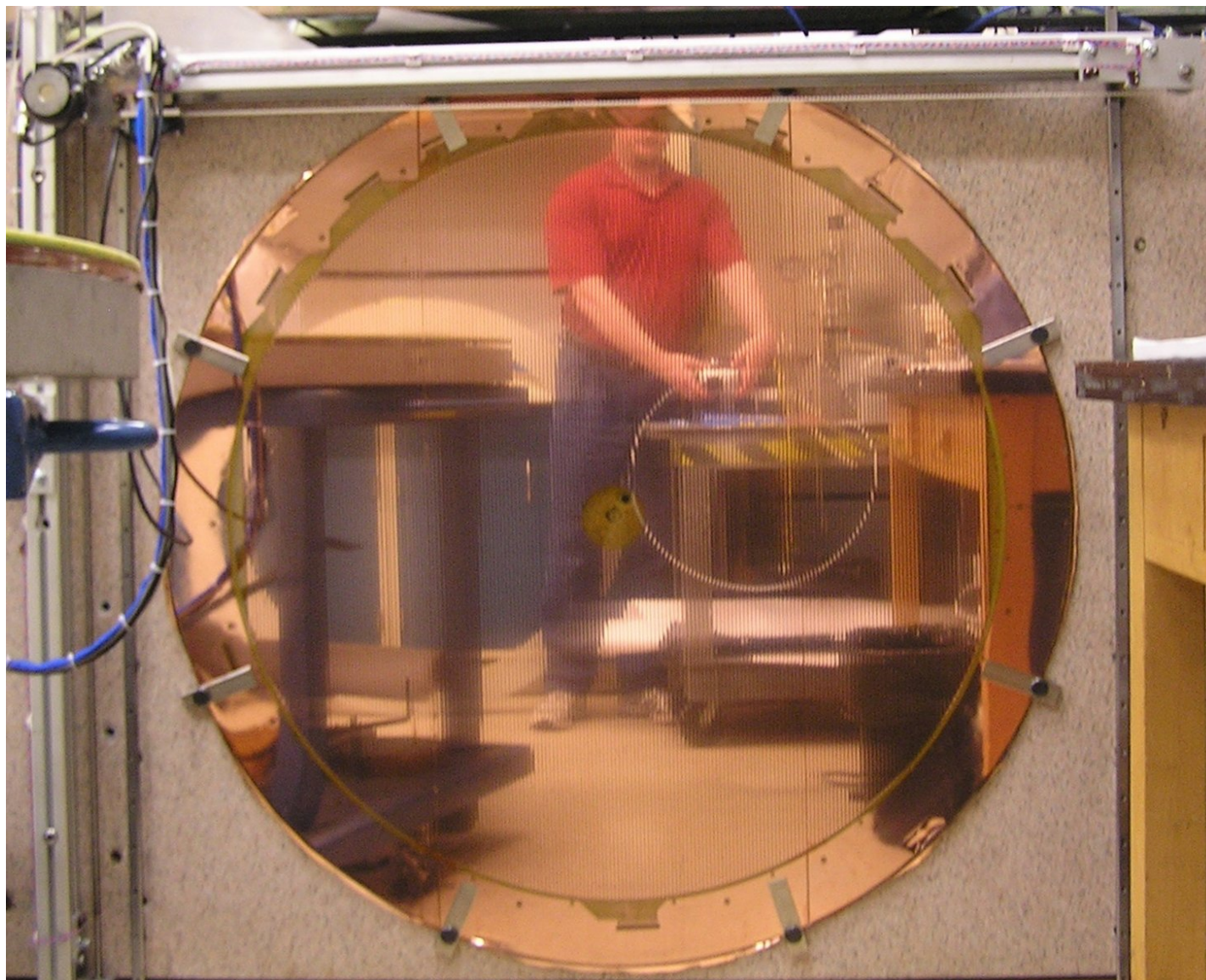


All 5  $\mu\text{m}$  Cu and 2  $\mu\text{m}$  Cu prototype boards have been successfully trimmed!

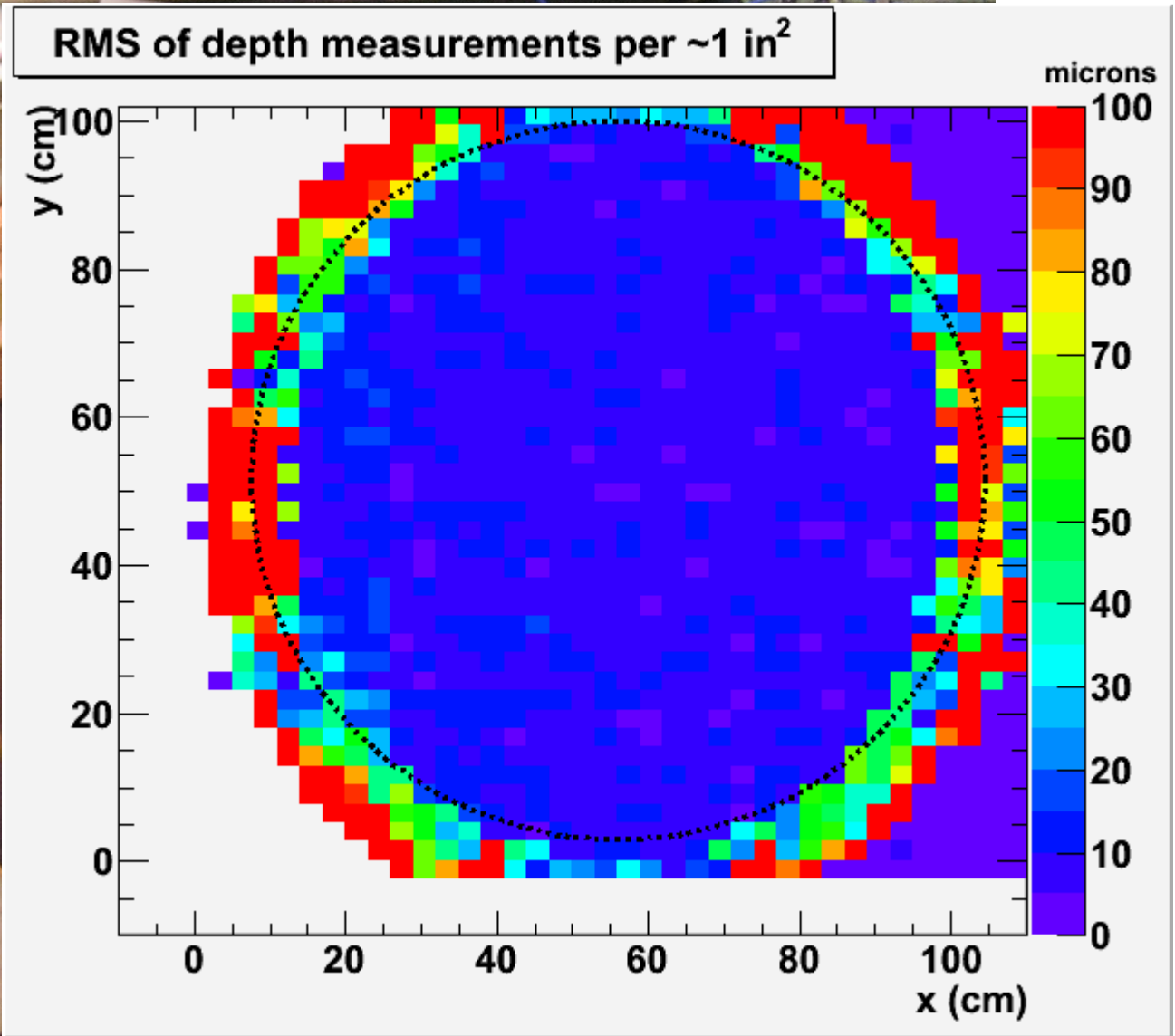
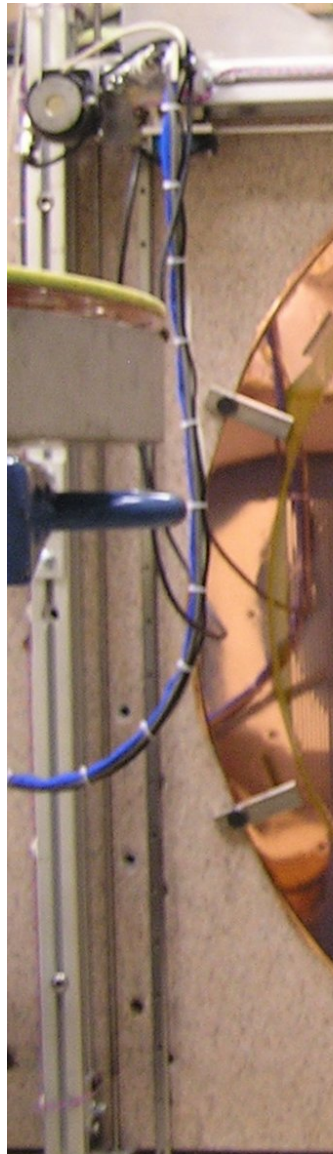




# Assembled 3-piece cathode board

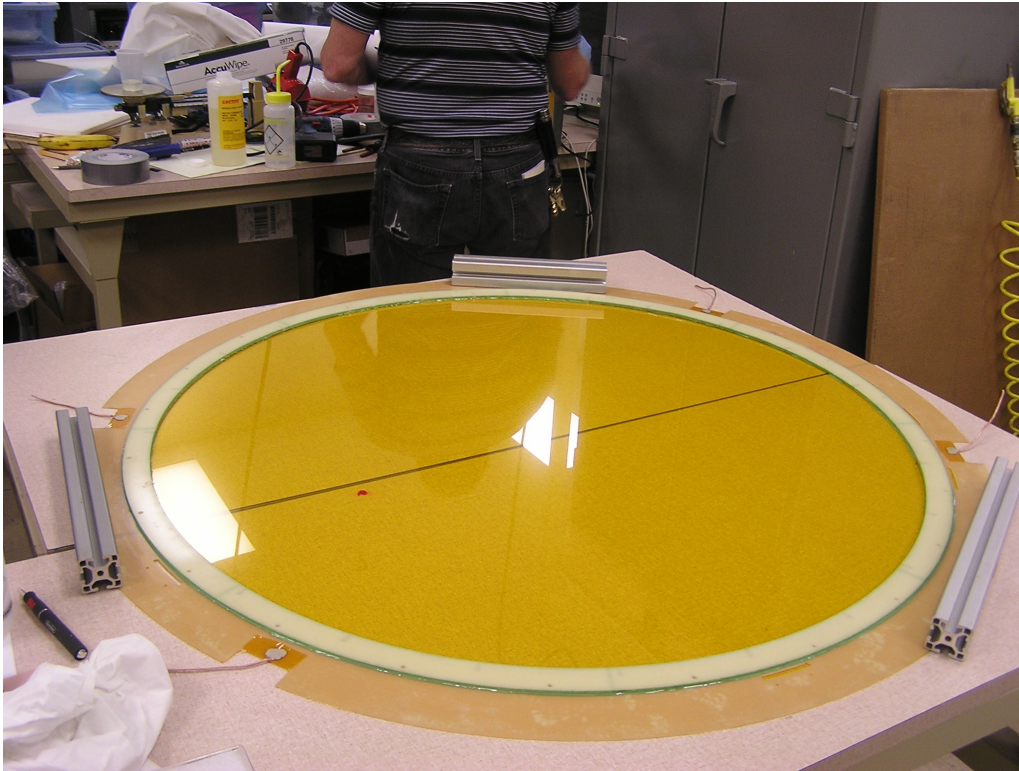


# Assembled 3-piece cathode board

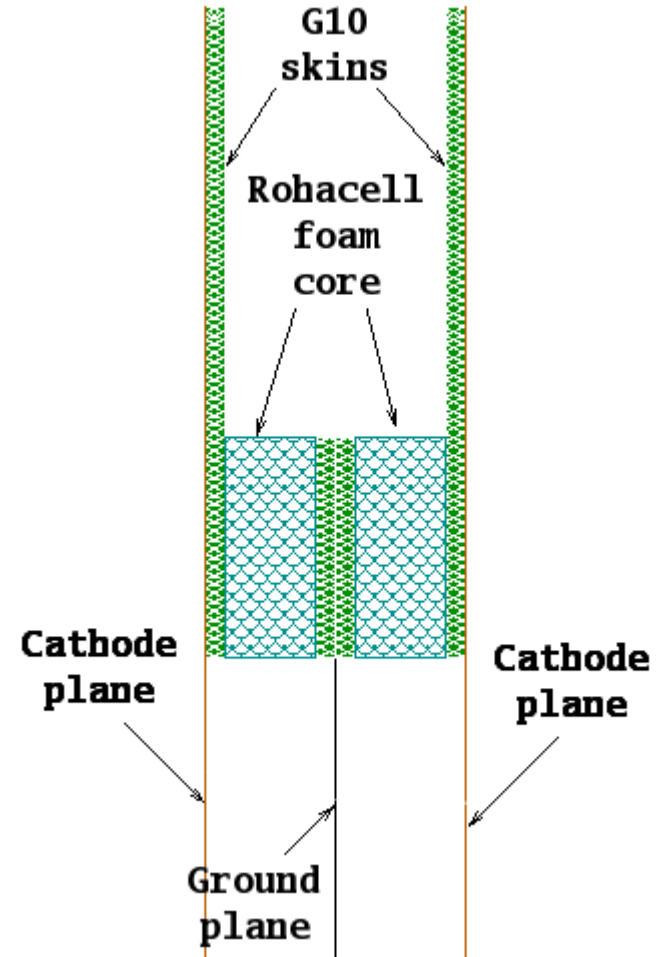




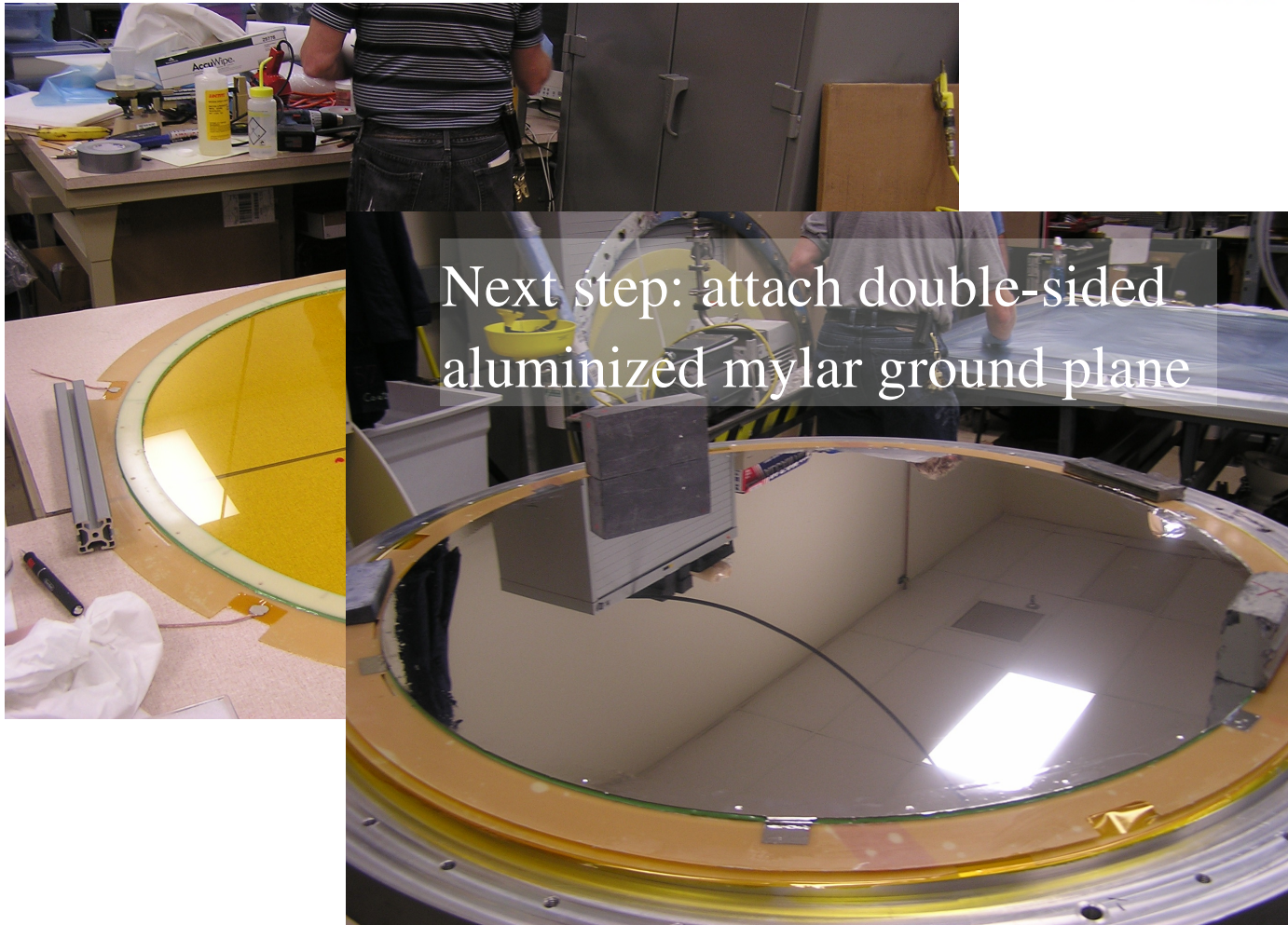
# Full-scale cathode sandwich mock-up



Once the full cathode 3-piece cathode board is tensioned and glued to its G10 skin, a narrow spacer ring is epoxied to the back side...

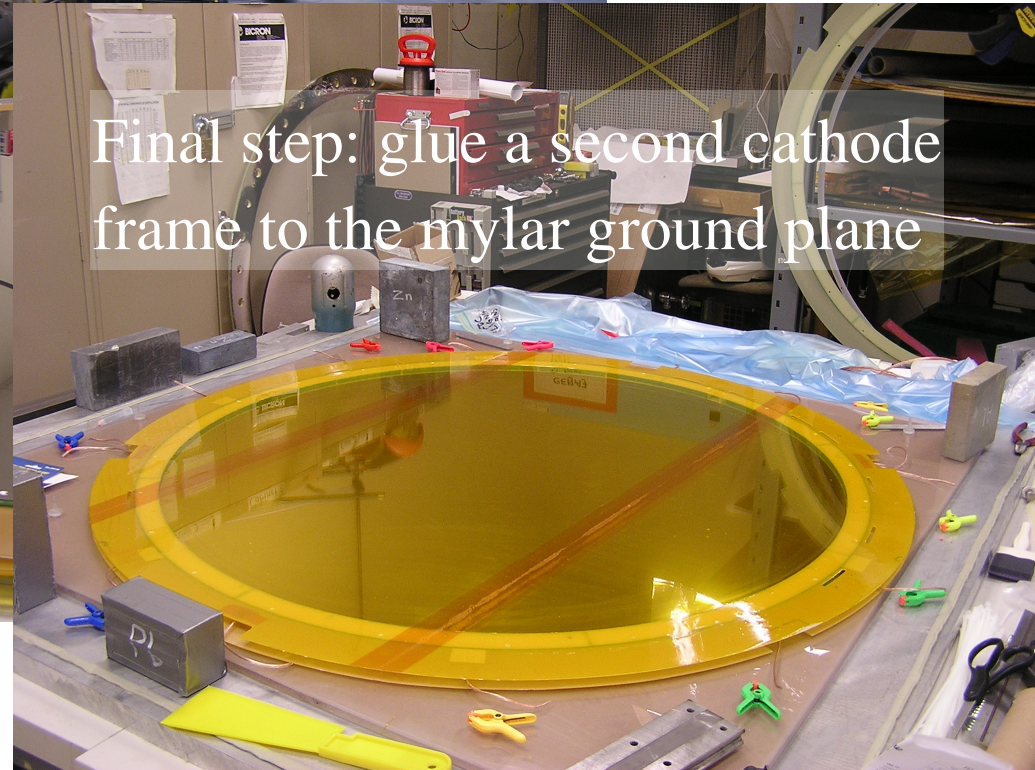
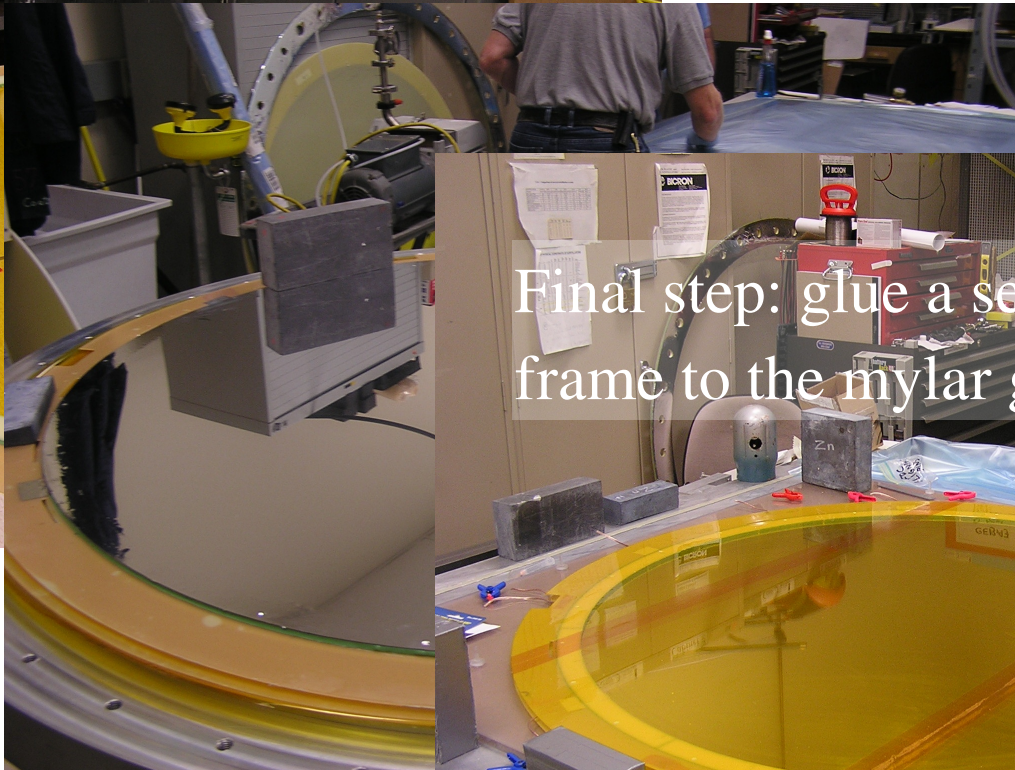
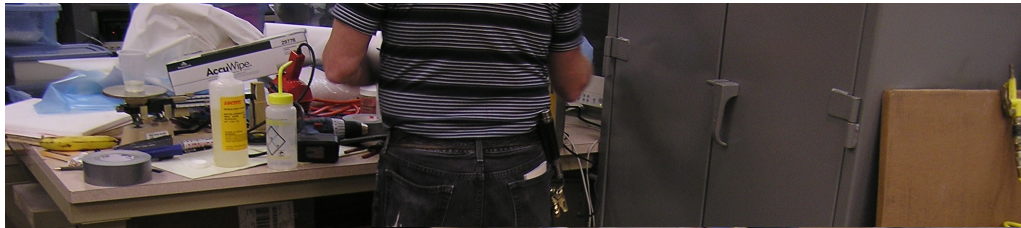


# Full-scale cathode sandwich mock-up





# Full-scale cathode sandwich mock-up





# Full-scale cathode sandwich mock-up

- Very light assembly, but robust!
- Tends to buckle due to imperfectly matched tensions on two cathode boards... but it takes very little force to remove the buckling



*Successful proof of principle!*





# Summary/Outlook

- Construction procedures coming into focus
  - Proof of principle for wire deadening
  - Cathode board trimming in good shape
  - Proof of principle for cathode sandwich construction
- 3 of 4 prototype wire frames wound by IUCF, 4<sup>th</sup> imminent
  - Mark Stevens will bring all 4 back to JLab later this month...
- Remaining part of cathode board order due from Allflex this month
- FDC test stand will be moved from Test Lab to EEL 126 this month
  - Tests of full-scale prototype – Summer '09