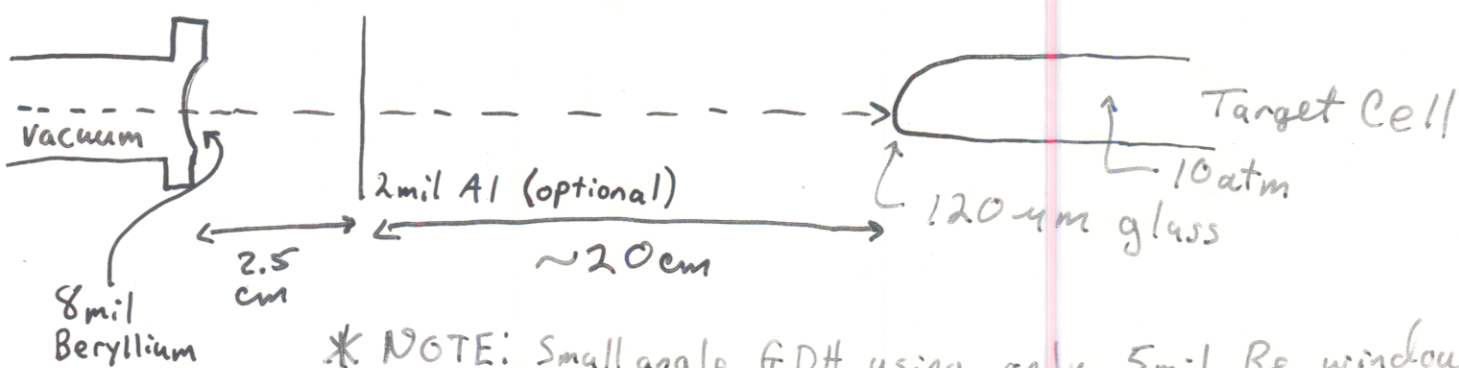


CELL RUPTURE TESTS

• Aidan Kelleher, Todd Averett - College of William and Mary

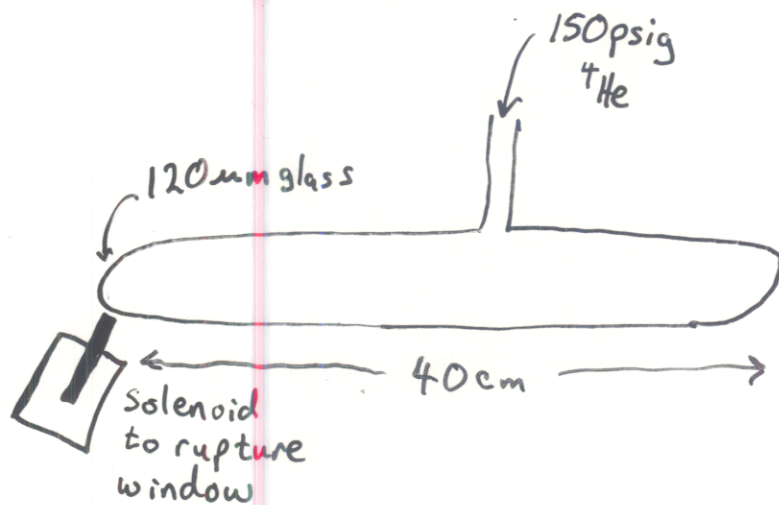
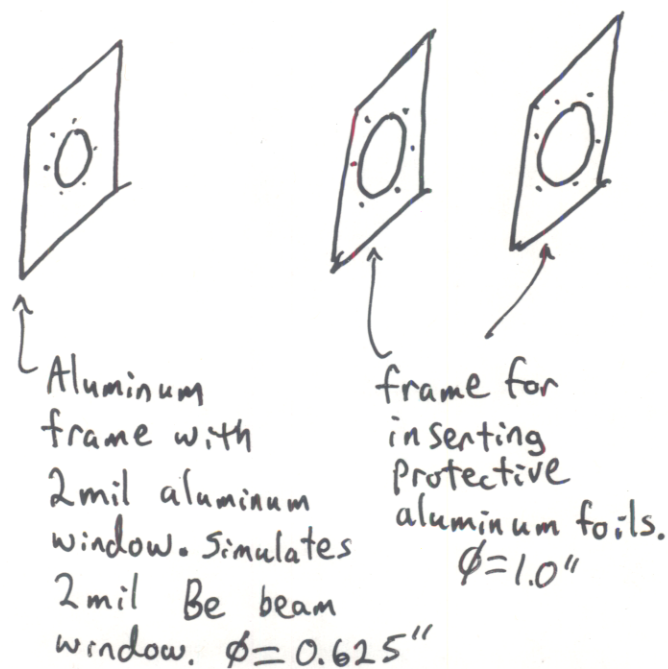
GOAL: Minimize material (radiation length) between beam exit window and polarized ^3He cell while safely protecting the beam window against ^3He cell rupture.

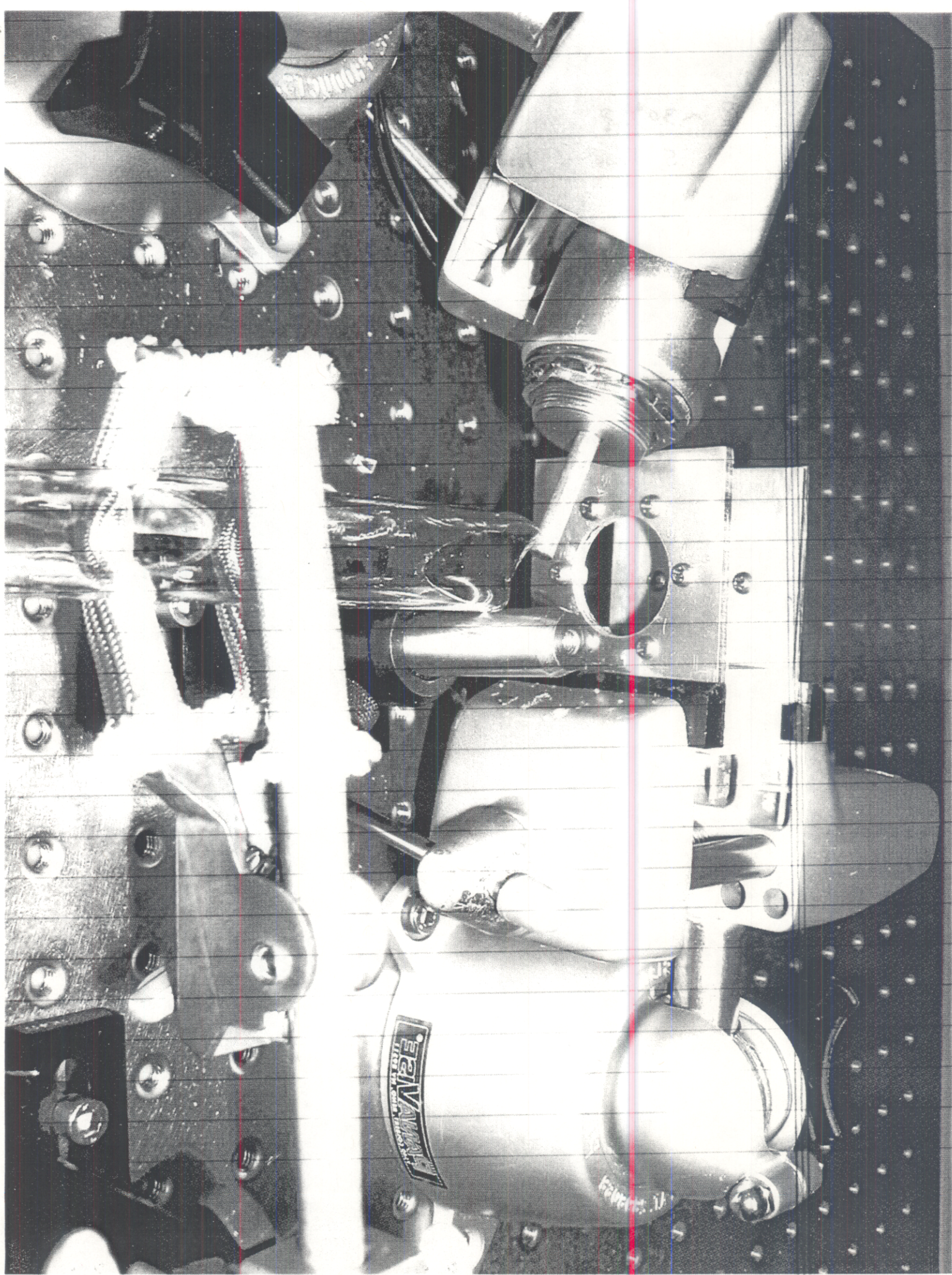
Existing Target Design: Tested for rupture at W+M, 2001

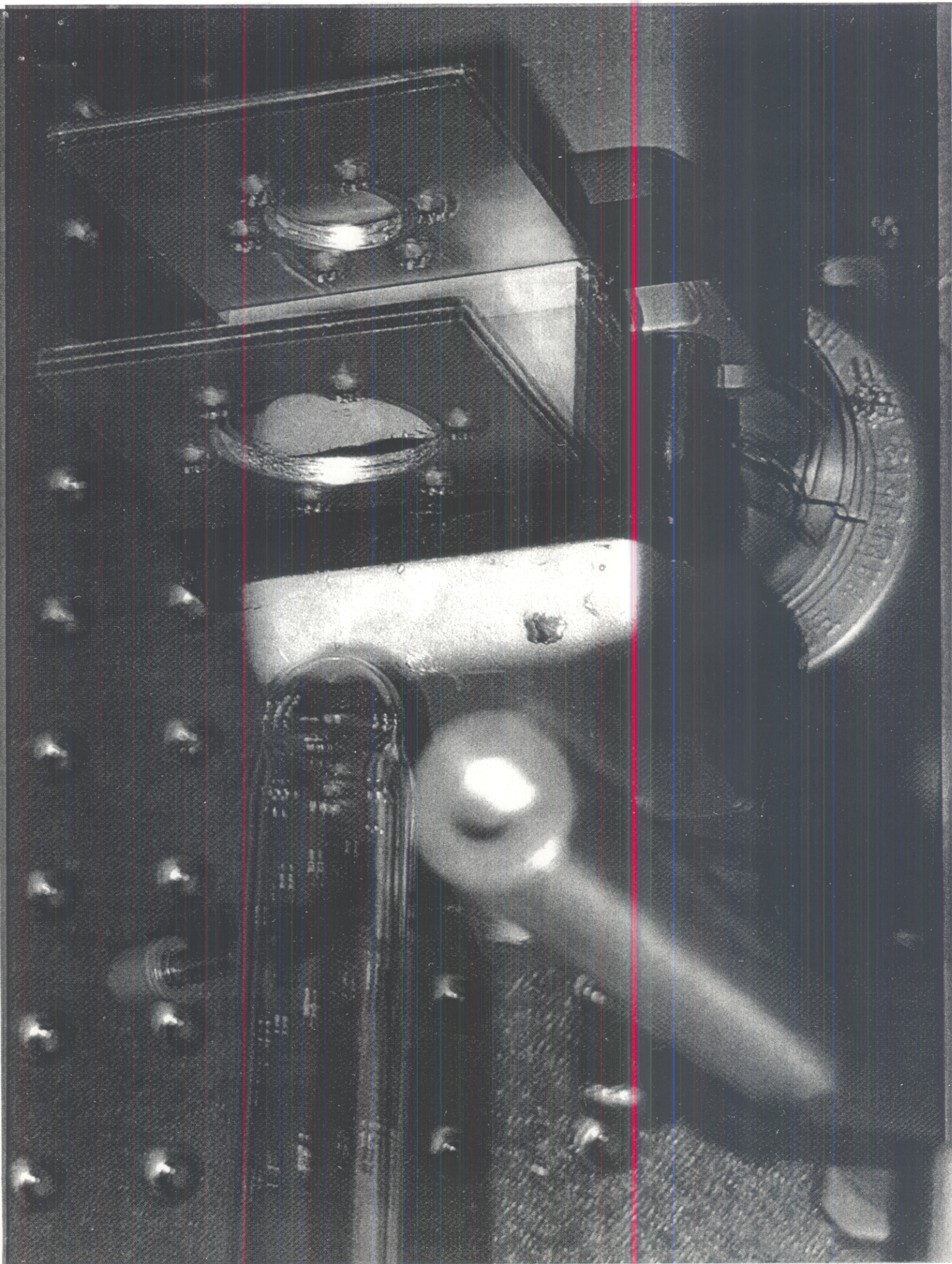


* NOTE: Small angle GDT using only 5 mil Be window.

Test Setup at W+M:

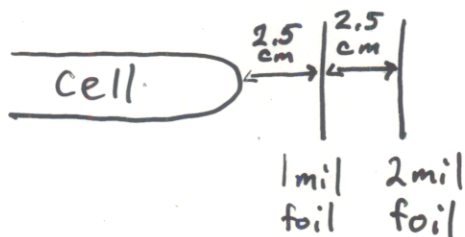






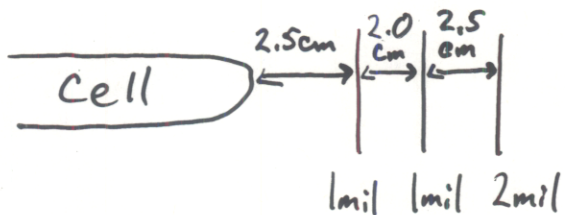
ESI RESULTS

#1)



- 1mil foil completely blown out.
- 2mil foil damaged.

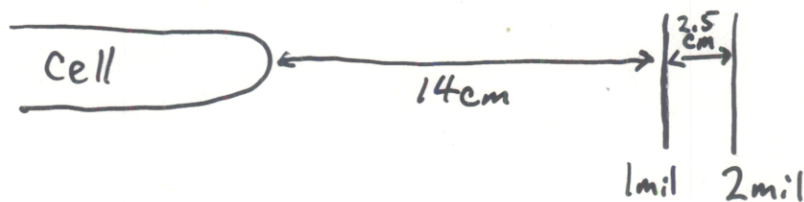
#2)



- Both 1mil foils completely blown out.
- 2mil foil damaged.

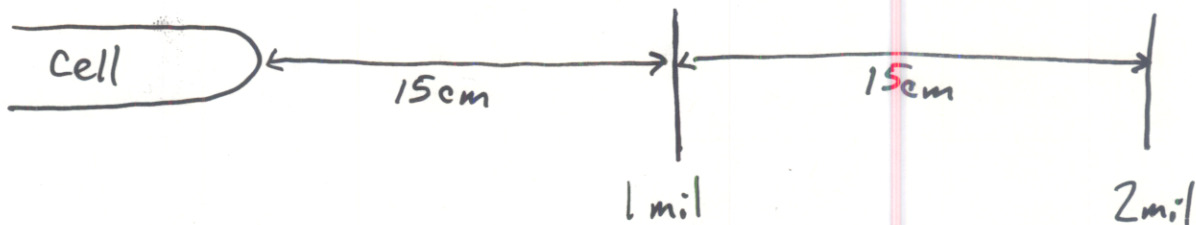
Conclusion: Escaping gas is blowing 1mil foils away; No protection for 2mil foil.

#3)



- Both foils penetrated by glass.
- 1mil foil not blown out.

#4)



- 1mil foil penetrated; one large hole; foil not blown out
- 2mil foil has one tiny puncture.

6 remaining cells to test

Suggested geometries?.....