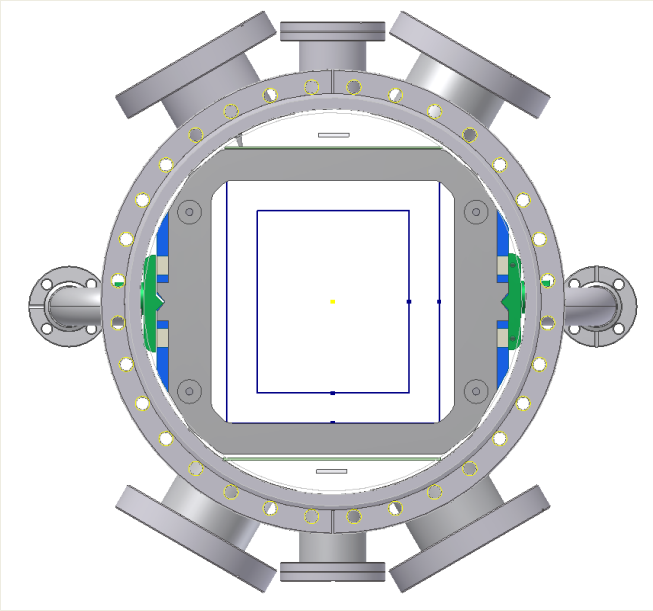
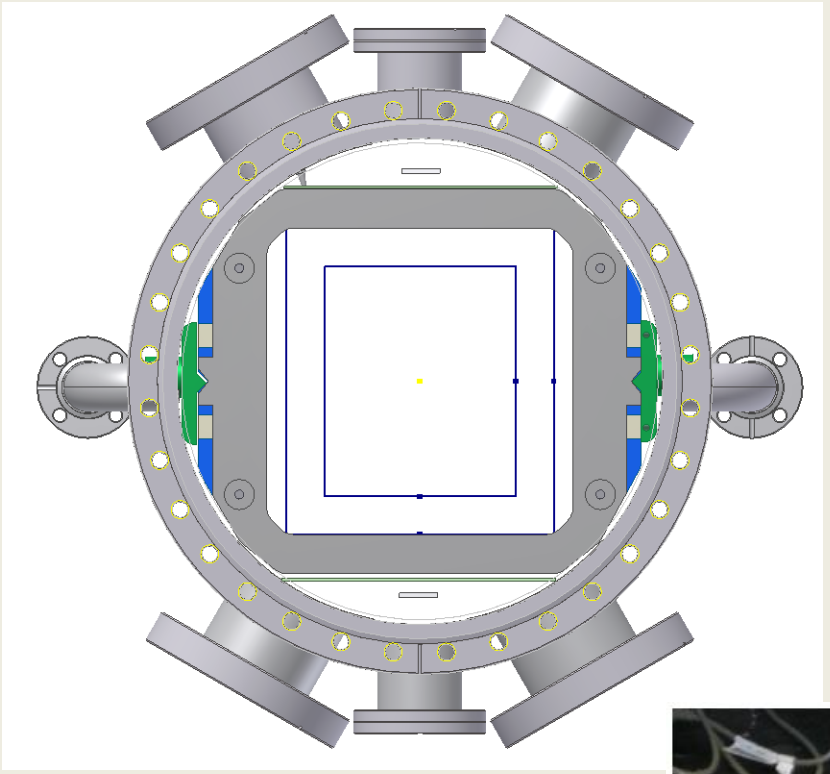
Chamber Design and Construction



Chamber design finished in 2010
Delivered to U. of Manitoba Fall of 2010.

The chamber has:
- 4 data ports for up to 200 readout channels.
- 2 HV ports
- 2 gas inlets/outlets
- 12 inch conflat aluminum windows (0.9 mm thick).

Chamber made completely from aluminum except for the knife edges.



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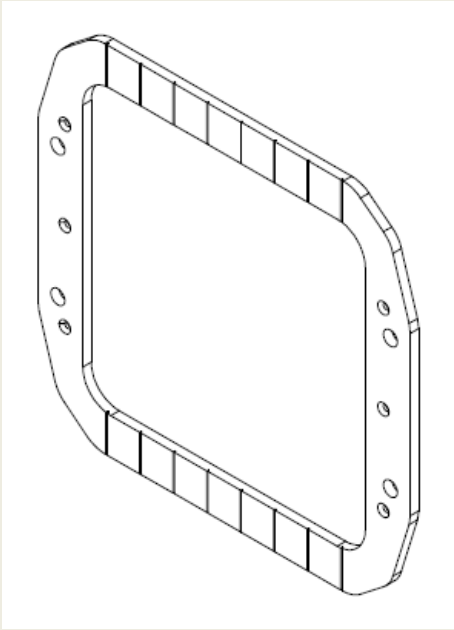
Frame Design and Construction

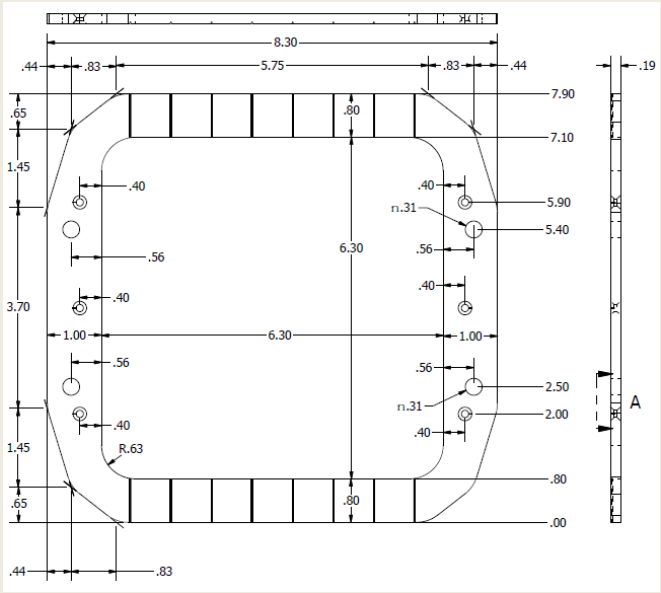
Chamber frame design was finished in 2012

Received 50 macor wire frames (up to 25 signal and 25 HV) $30K

Final feature machining planned for early this year at UT shop.

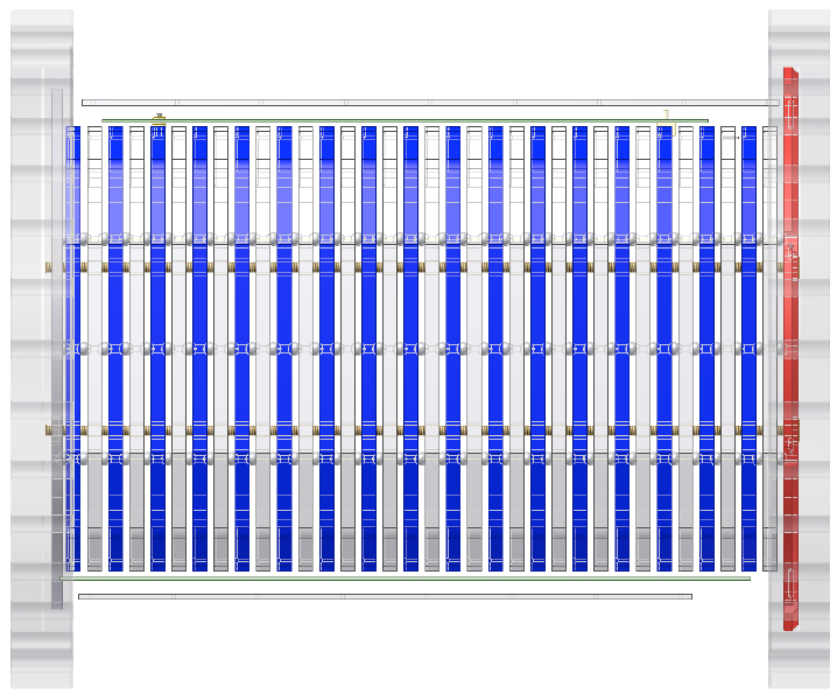
Platinum-Gold thick film wire solder pads on macor to be completed early this year by Hybrid Sources Inc..

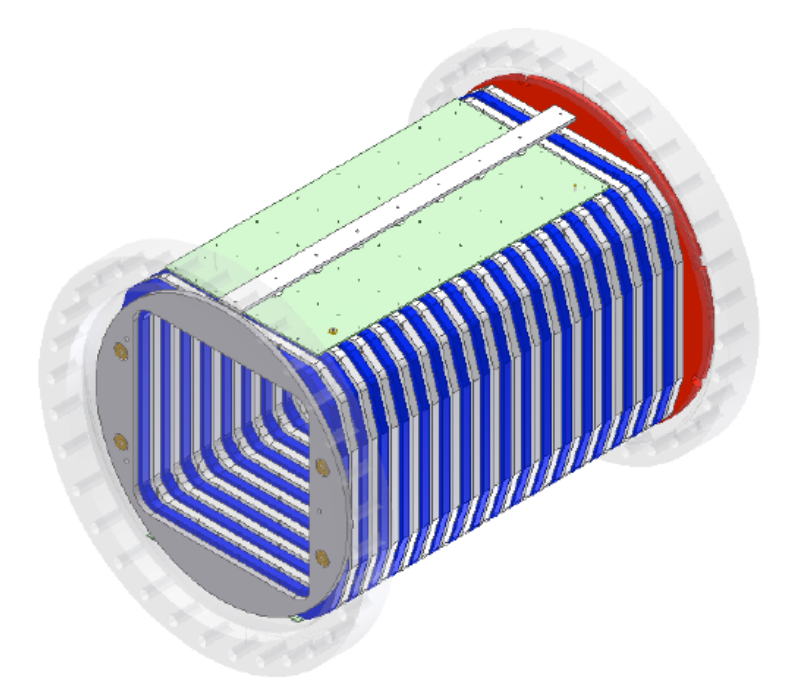




Frame Assembly and Signal Readout

The frame mounting structure is designed and pieces will be ordered in the spring.

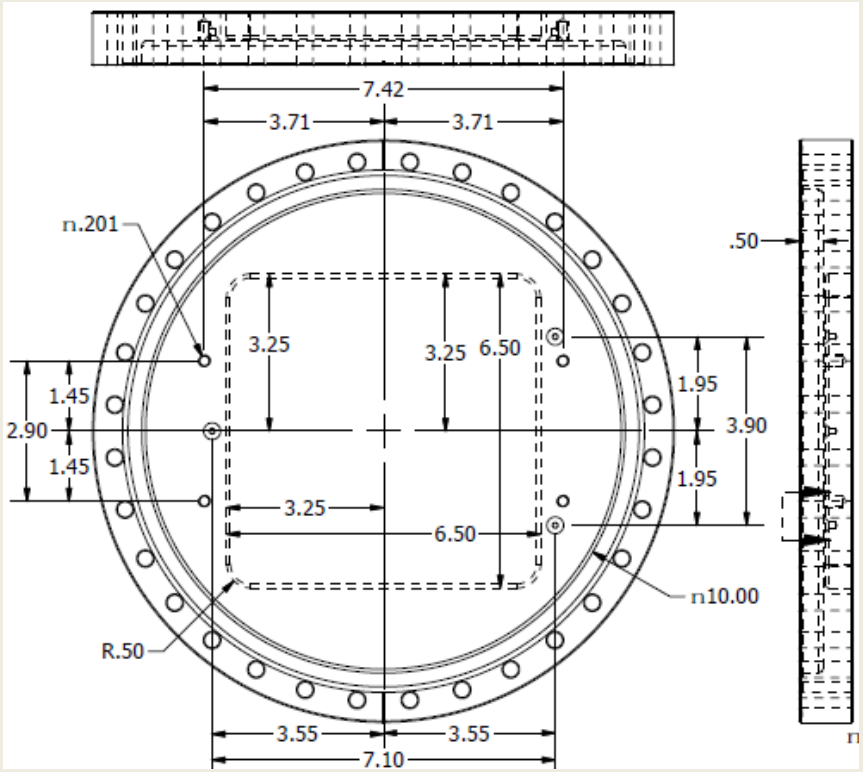


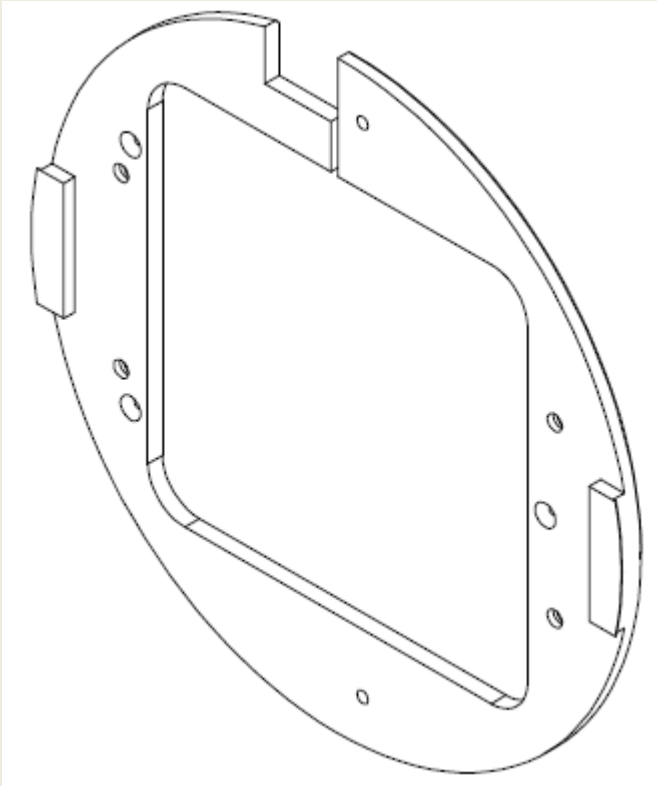


Frame Assembly and Signal Readout

Two options for frame mounting:

1) Monolithic exit flange with threaded holes for frame mounting rods
2) Insert into existing exit window flange



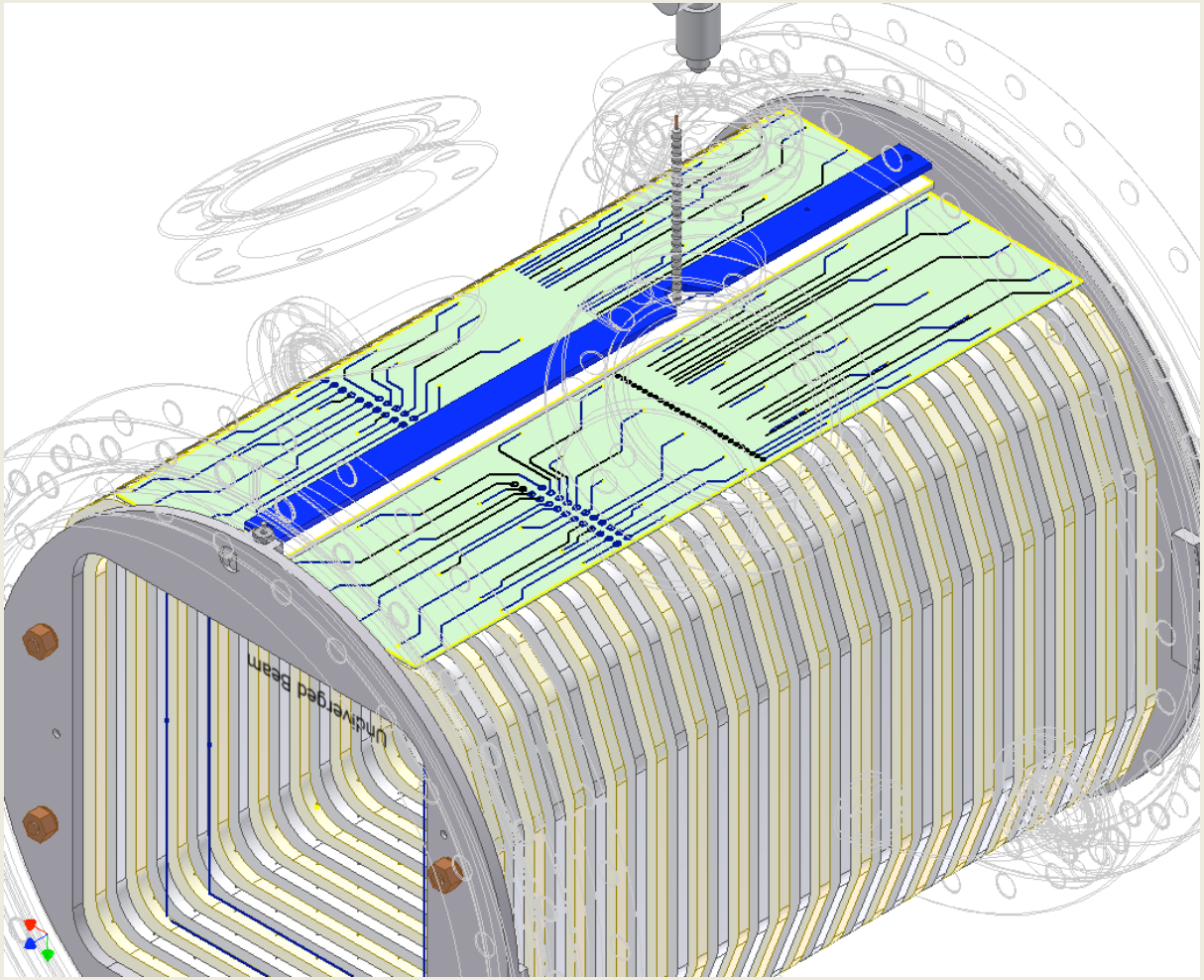


Frame Assembly and Signal Readout

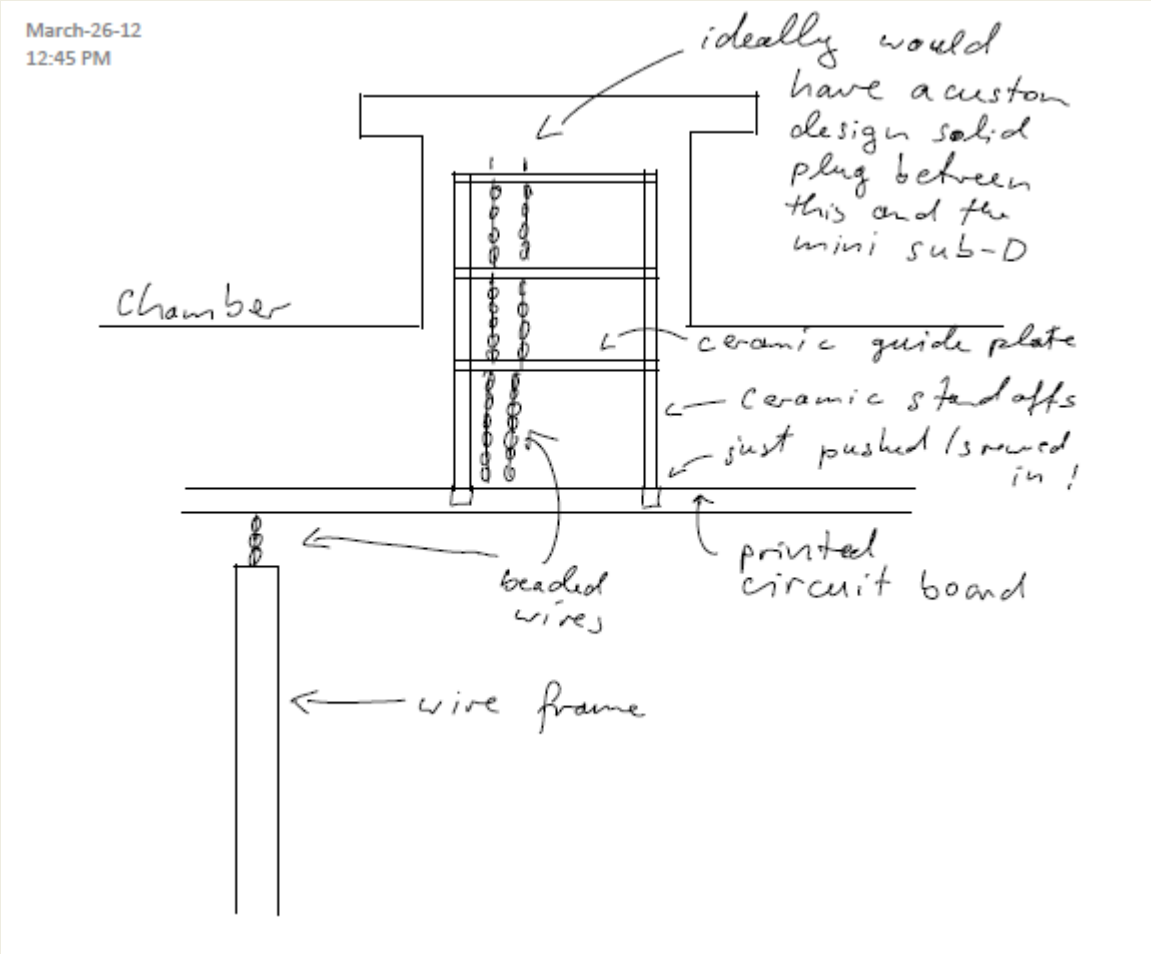
- Signal readout via circuit board traces.

-Single HV connections.

- guide wires to feedthroughs with PMT inspired stand-offs and ceramic beads



Frame Assembly and Signal Readout



Target Chamber Assembly Schedule

February 2013:

Have test frame finished by Hybrid Sources and verify measurements.

March 2013:

Complete feature machining at UT shop.

April 2013:

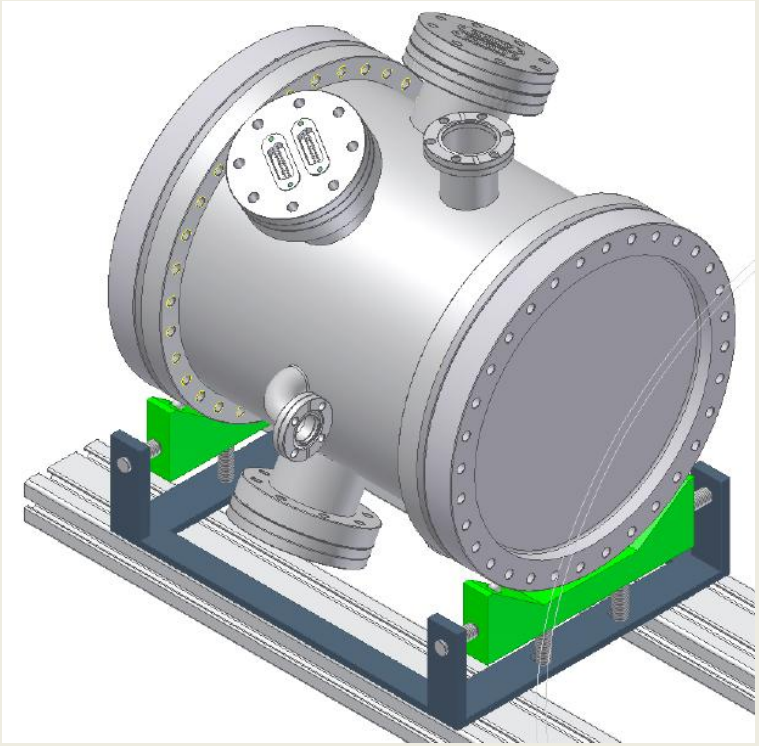
Order remaining parts for frame assembly and feed throughs.

June-July 2013:

Completed Solder pad deposition by Hybrid Sources.

October 2013:

Complete chamber assembly



Design and build readout electronics starting now.