

Large Garnet Test Stand and some updates

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14 Jan 2015

Anode resonator



Anode resonator is nearly done!

Some cooling tubes need to be welded. Aluminum part needs to be plated.

Cathode resonator has to be modified and cut (class I). To be completed soon.

If there are no delays, looking at testing in February.



Test stand goals

- We need a large garnet test stand to qualify the garnets for final installation.
 - dH must be specified in the requisition and we must check that this parameter meets specs.
 - After we glue them together, we have to check that dH or Q is still acceptable.

Lucky!

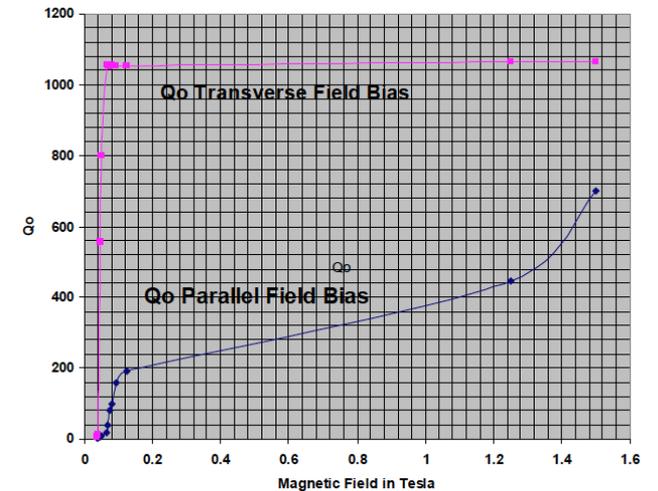
- We are lucky that Al Moretti had built such a test stand many years ago and we can use his (formerly Muons Inc experiment) equipment!



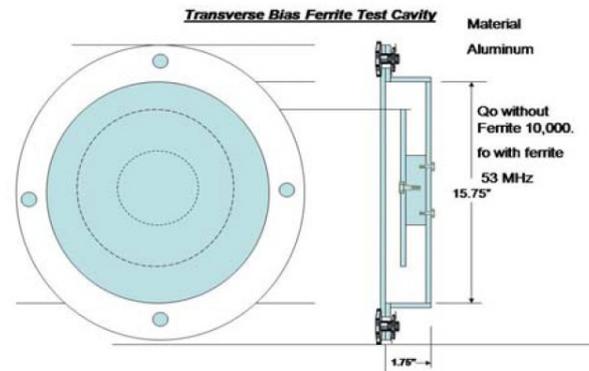
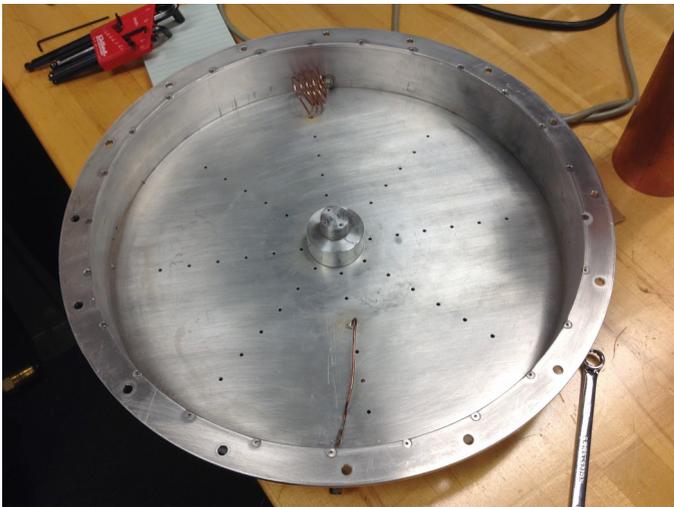
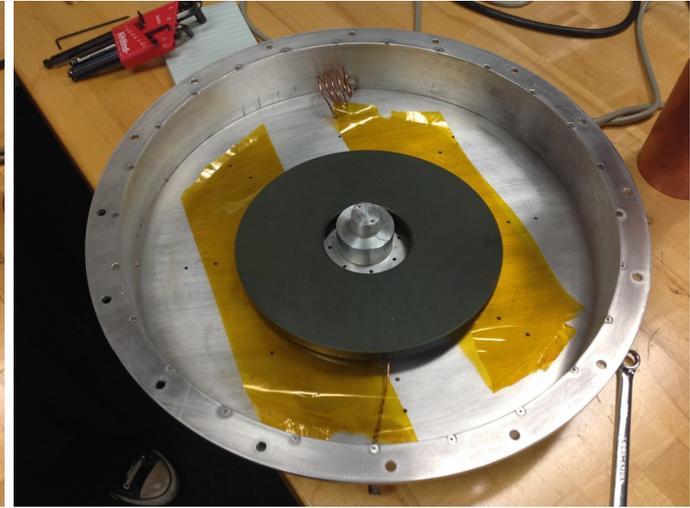
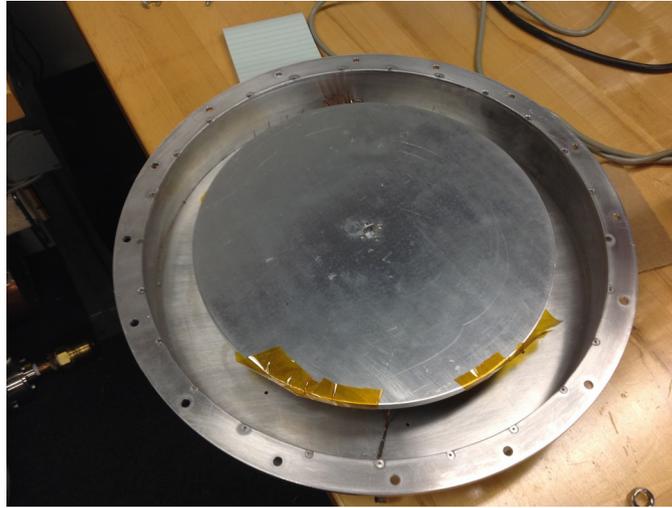
What we have now



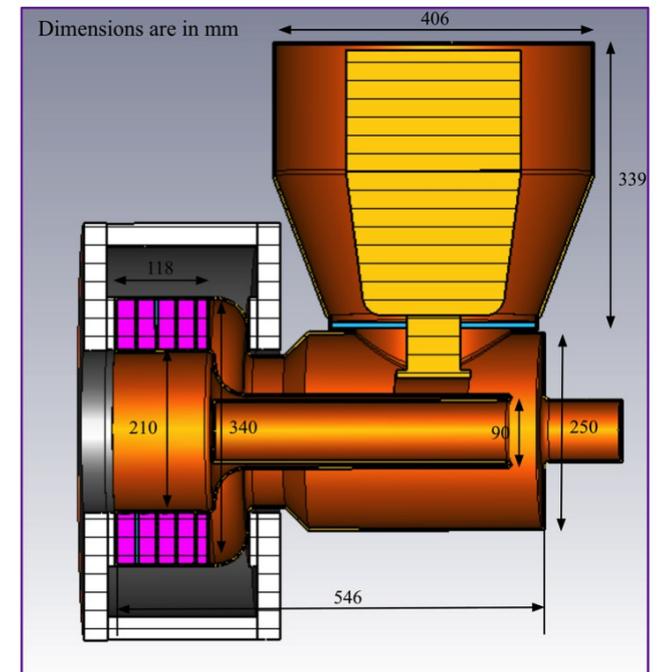
Test area is at MS7.
Magnet is still there (1.6 T field), which is plenty for what we need.
PS is still here.



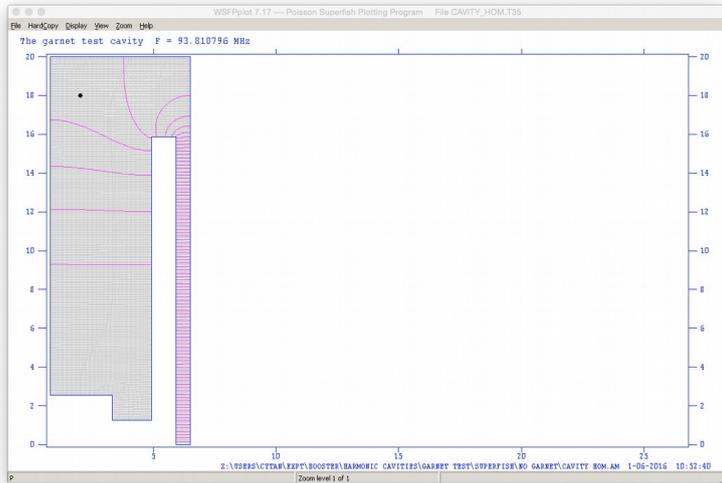
Cavity



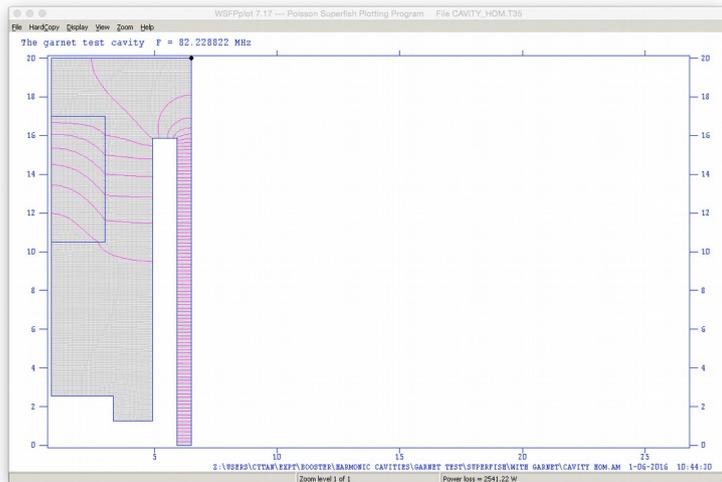
Garnet diameter: 340 mm
= 13.4 inches < 15.75
inches, so we can fit in one
garnet ring.



Superfish results



Resonant frequency without garnet 93 MHz



Resonant frequency with garnet 82 MHz at $\mu=3.5$, assuming $R_{in} = 105$ mm, and $R_{out} = 170$ mm

Conclusion

- To use the test stand
 - Check that the PS is still ok.
 - Check that water is still ok
 - Calibrate the magnet?
- I think we have the equipment to do garnet testing when we get the garnets.
- Plus we have a new Msc student, John Kuharik, who will work on testing the garnets.