Light-field Imaging Dome at Hogan Lab Experiment

Progress Update

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SLAC MAGIS Group Meeting

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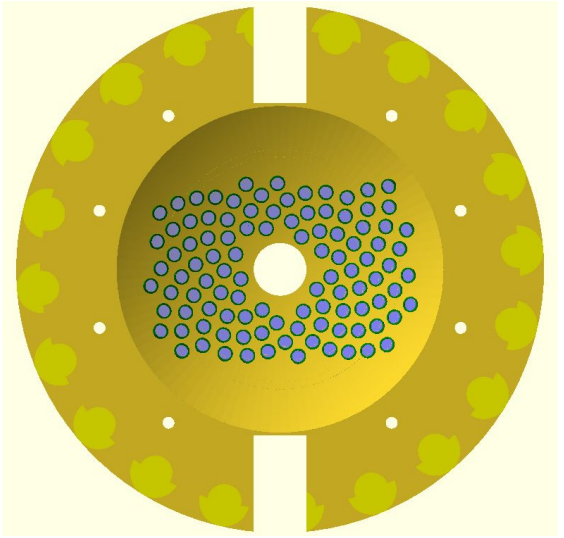
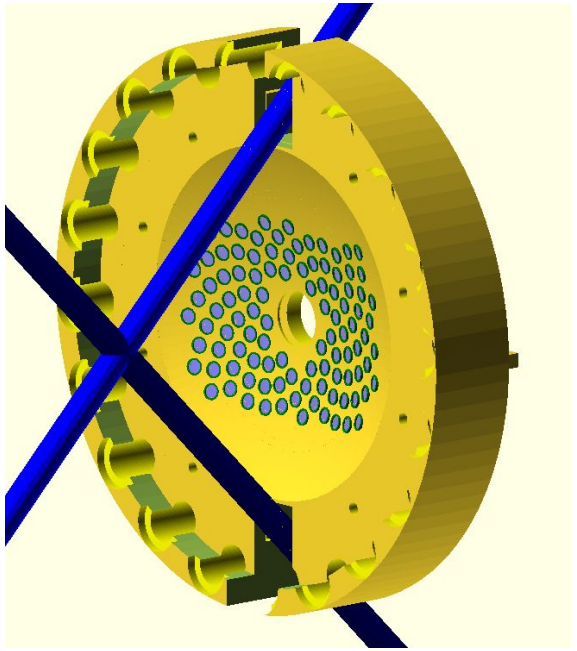
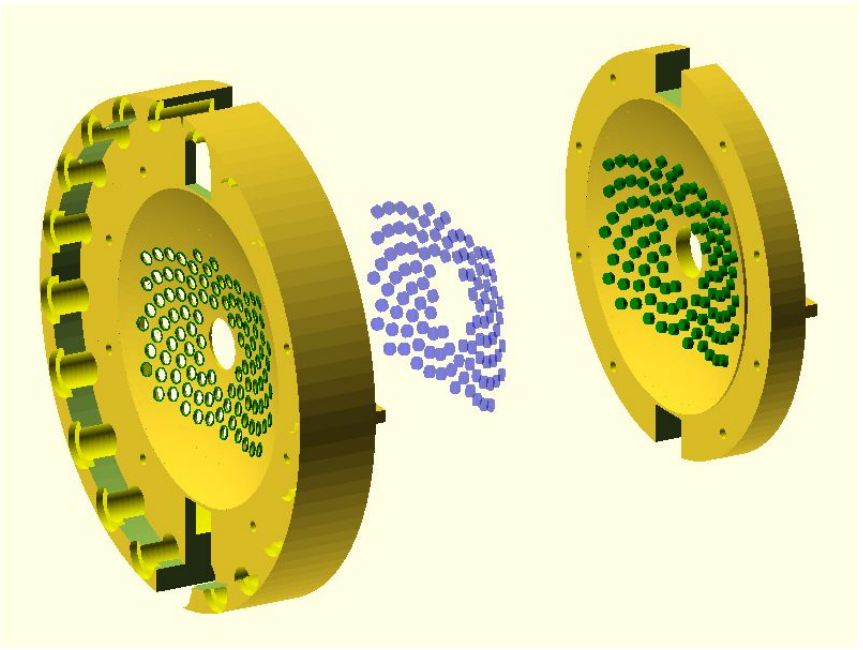
Exploring *m* = 0.1 Set-up

- Suggestion / Request from Jason:

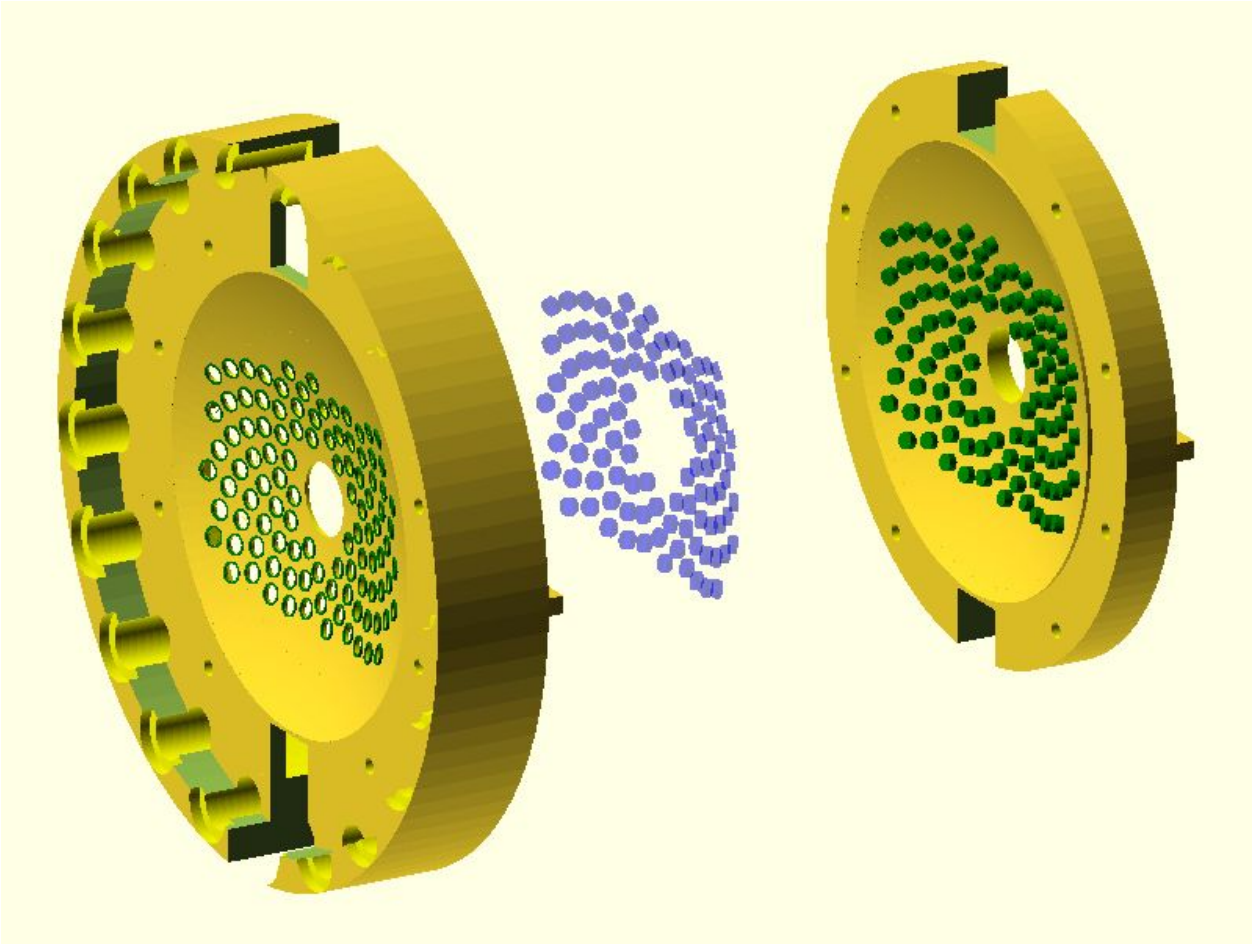
  More views & larger solid angle coverage, even at expense of worse resolution
- This requires smaller magnification
- **With m = 0.1:**
  - 100μm feature, *m* = 0.1 ⇒ 4 pixels
  - 104 mirrors, roughly ±40° range sideways
- Dipole laser clearance possible





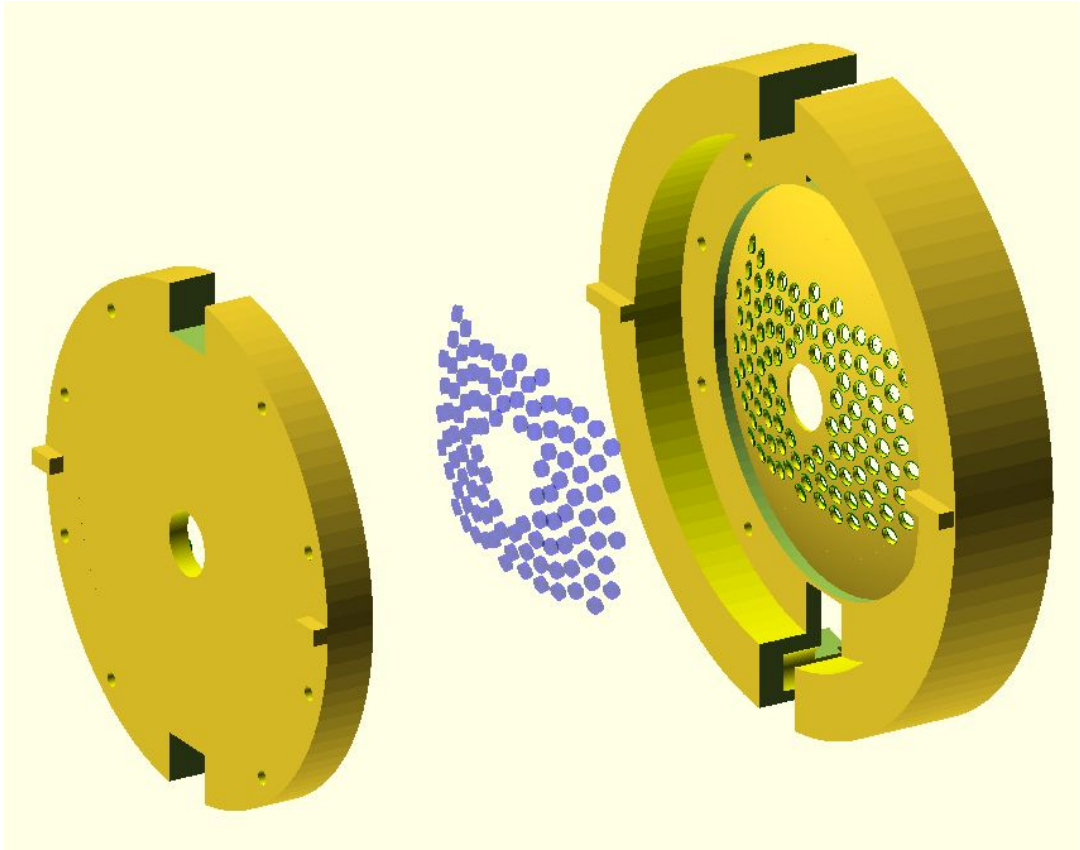


m = 0.1 Design: Exploded Overview



Exploded view, front

Exploded view, back



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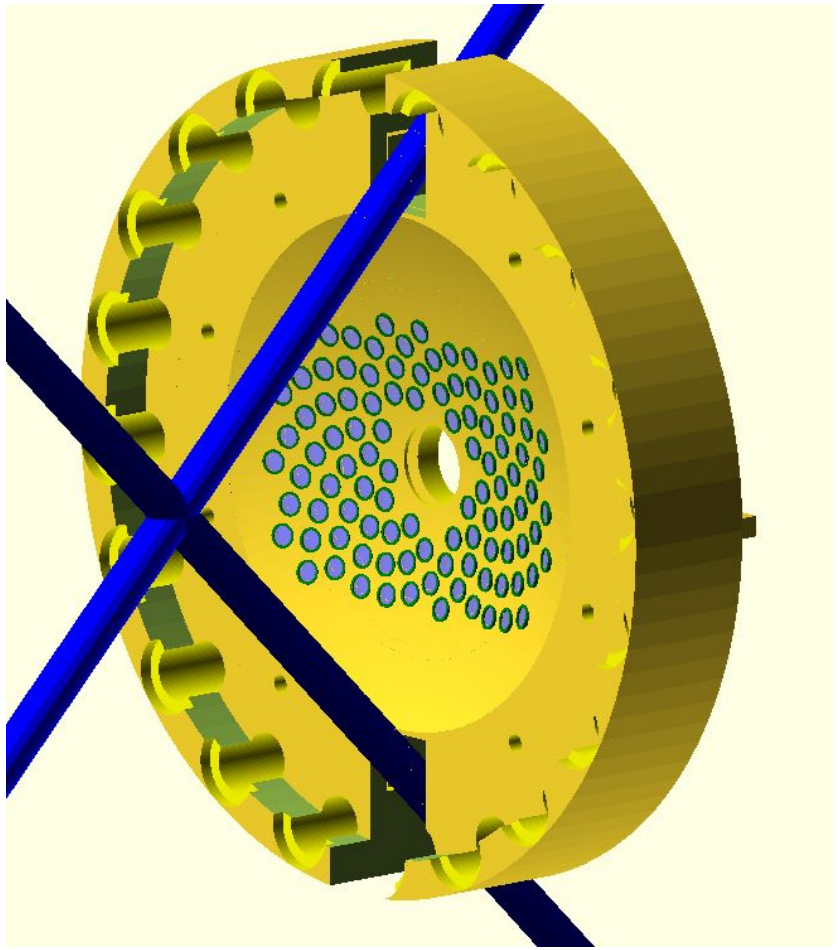
m = 0.1 Design: Dipole Laser Clearance



Assembled view, front

- Clearance a bit tight for now, but could improve it thanks to the rectangular view

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Update from Hogan Lab

So, where are our first atom cloud images?!

- SLAC side: delay due to beam-splitter cube mount
  - Initial part had magnets in them—not great for AMO experiments
  - Non-magnetic alternative: **last update says shipping on 12/29**
- Stanford side:
  - **Some damages dating back to power outage**
  - Fixing atom sources
- First tests expected in January (hopefully)

Thanks for the update. We're excited to get started too. Unfortunately we are having some problems with the atom sources right now. It's a long story, but since all the way back to the power outages earlier this year we have been dealing with a cascade of problems. On the positive side, the resulting repairs have substantially improved many parts of the system. However we're still not back to having reliable atom performance yet, and this week has been particularly tough. We won't be able to take atom pictures until this gets fixed. I think we could be quite close, but realistically it could take a a couple more weeks to work things out. At this point I'm afraid it's too ambitious to try to take this data before the end of the year. I'm happy to talk if you'd like to hear more details, or work out a more specific plan for getting started.

Email from Jason, Dec. 2nd

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