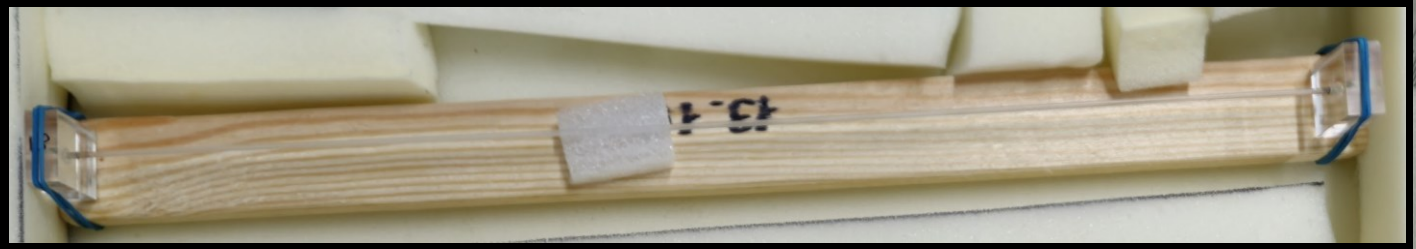
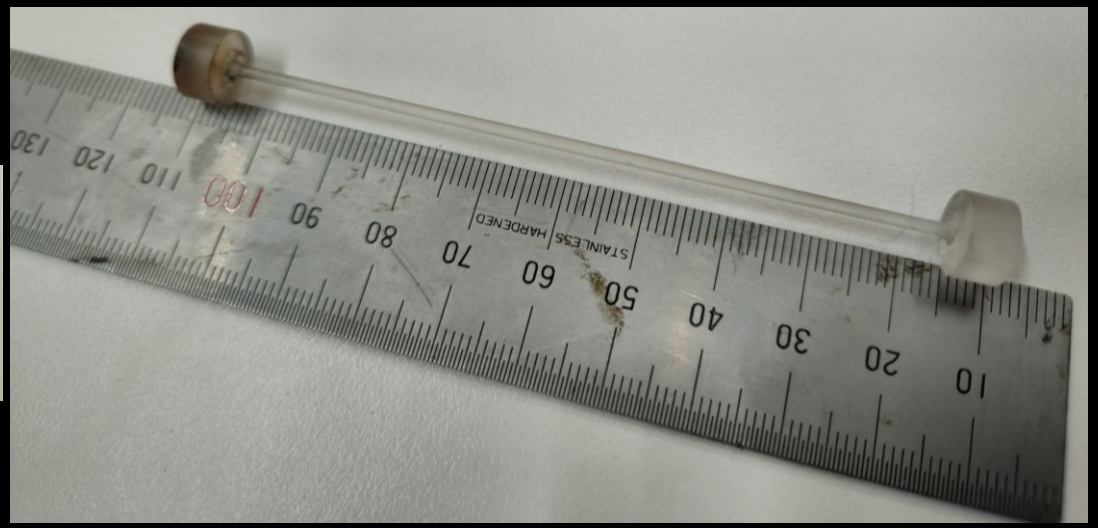
# Status Report

-Rishabh Bajpai

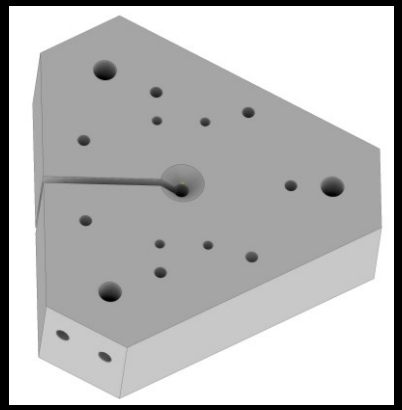
# Fibers

- Need to measure two fibers.
- Will measure KAGRA size fiber first.
- The clamping style is using a cone with Cu plate on top.
- Designed a setup which can measure both fibers.

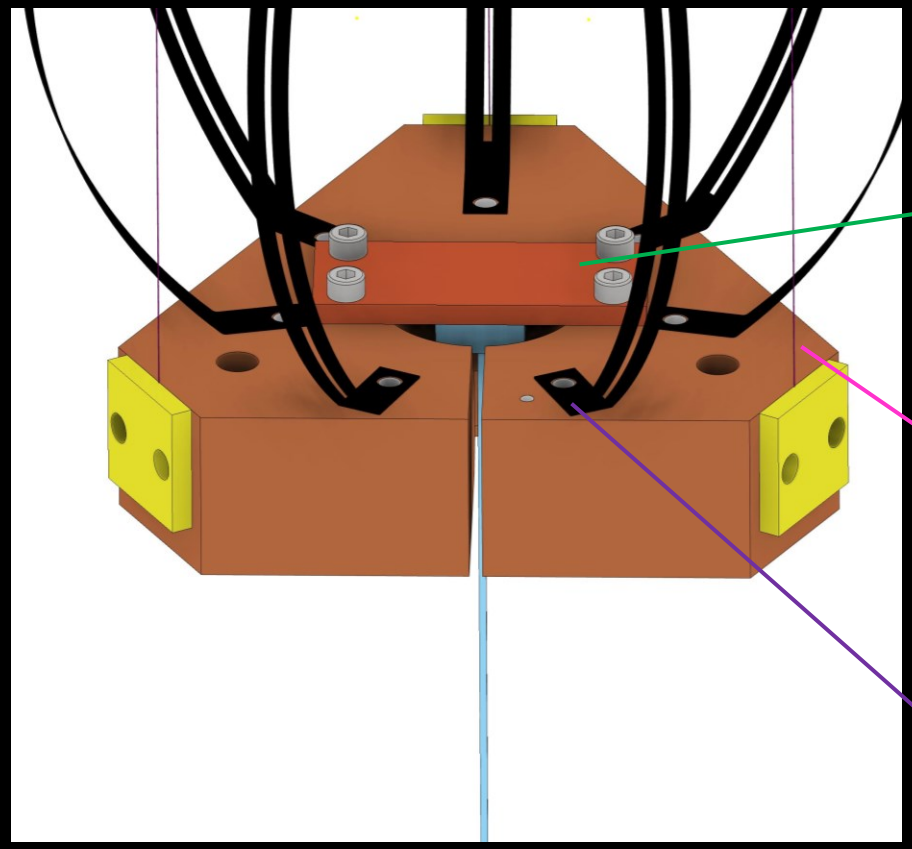




# Setup



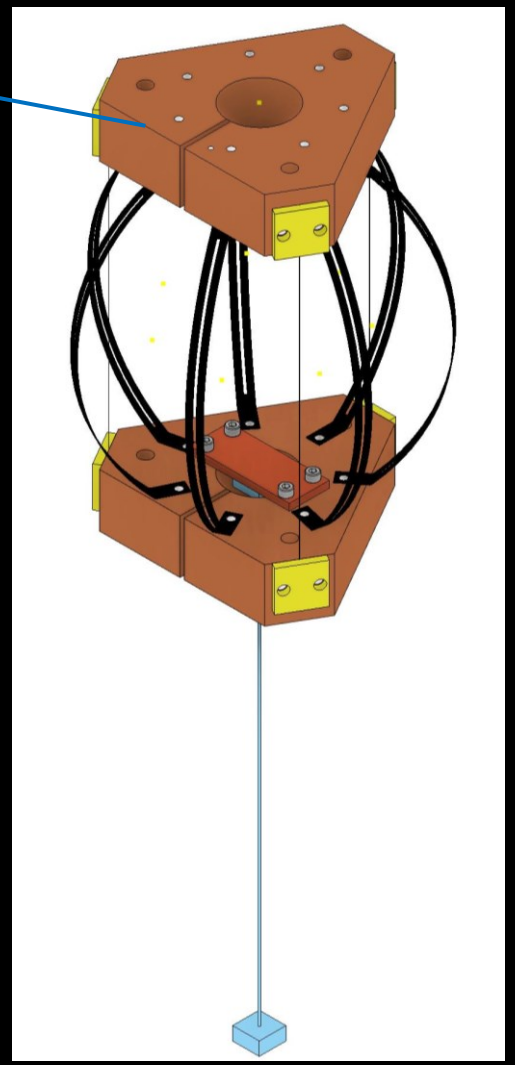
Same as bottom one. The other side has smaller countersink for smaller fiber



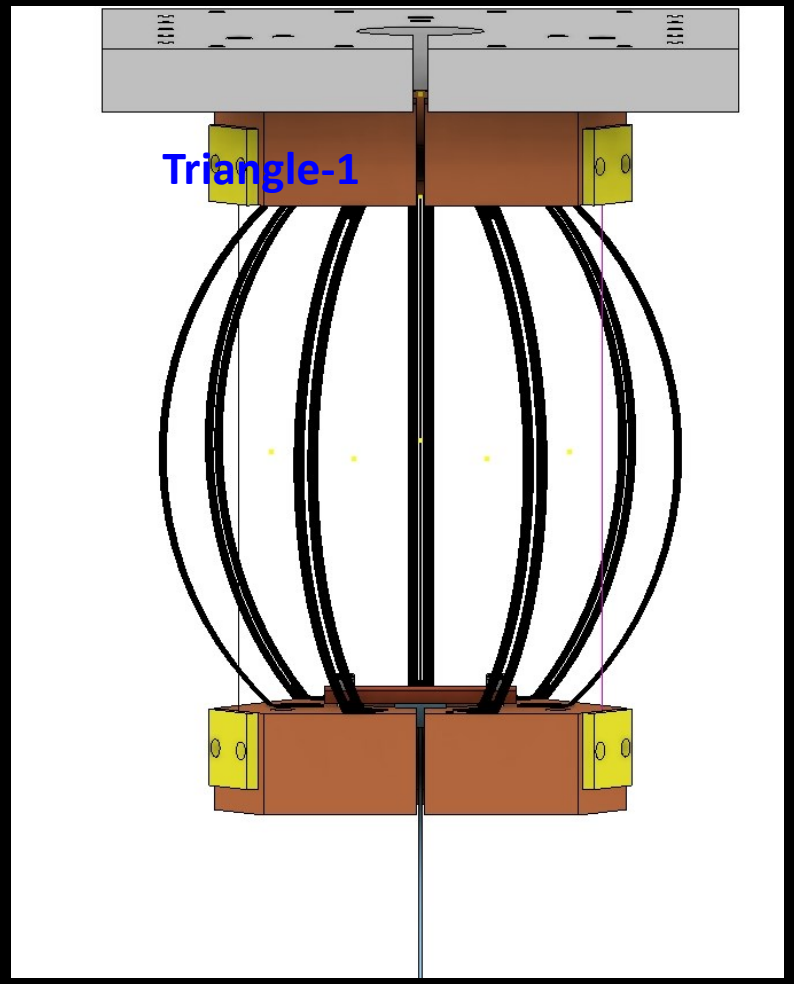
Countersunk (cone) for point contact with copper plate for clamping.

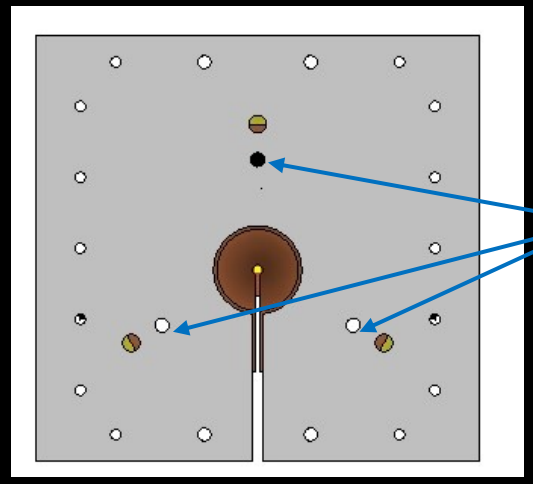
Tungsten Wire : Φ 0.15 mm
Safety factor: 3.4
Length= 200 mm

Heat-link: Al sheet
0.5 mm thick at KEK?

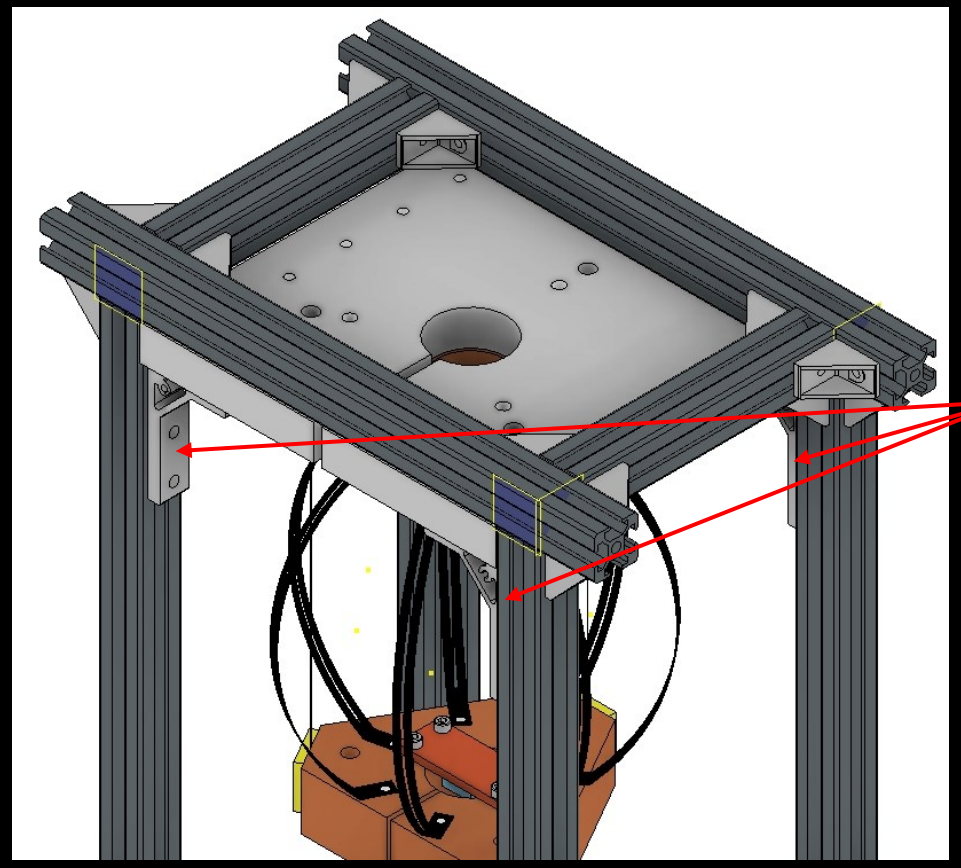


# Setup

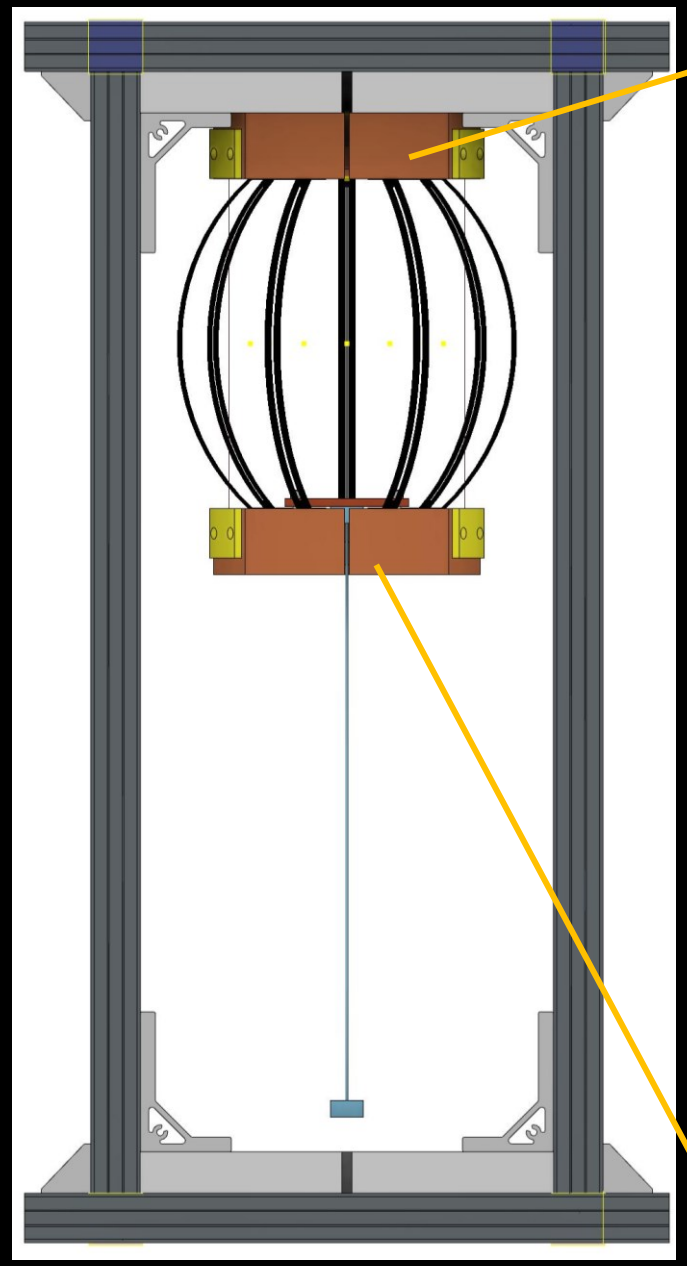


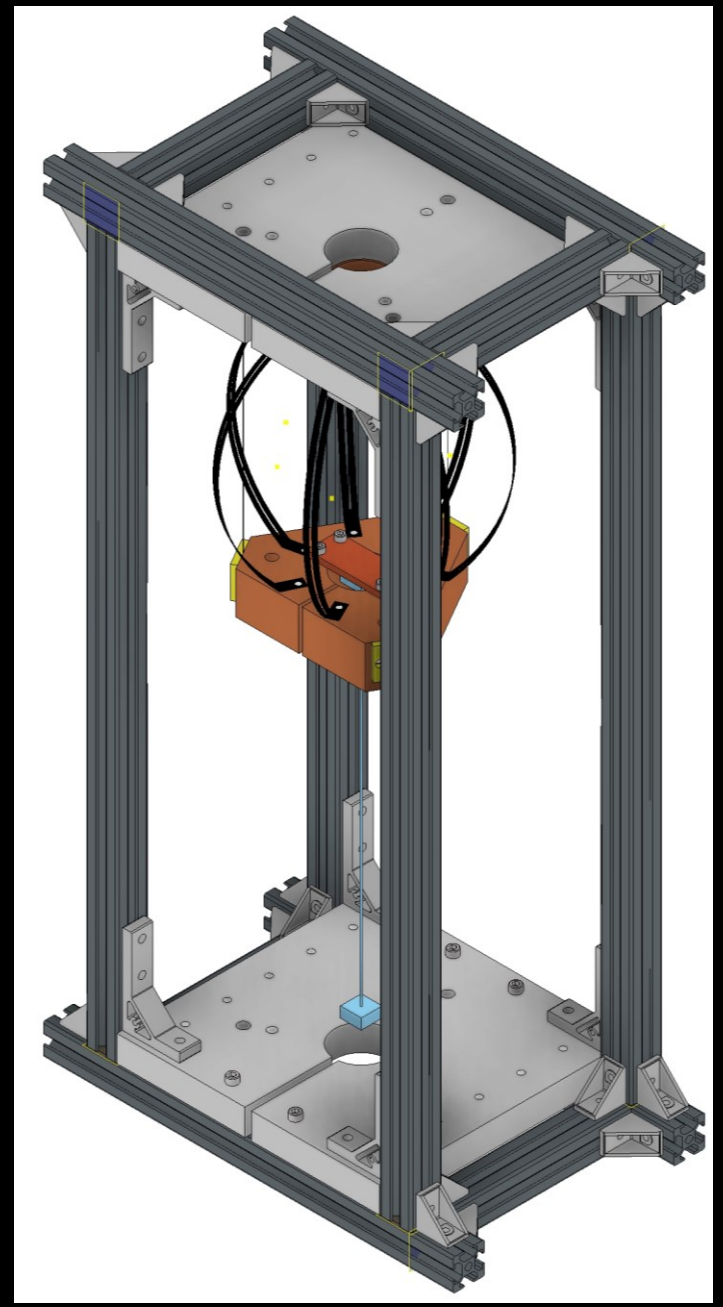
Triangle-1 bolted to square plate with 3 M8 bolts from bottom



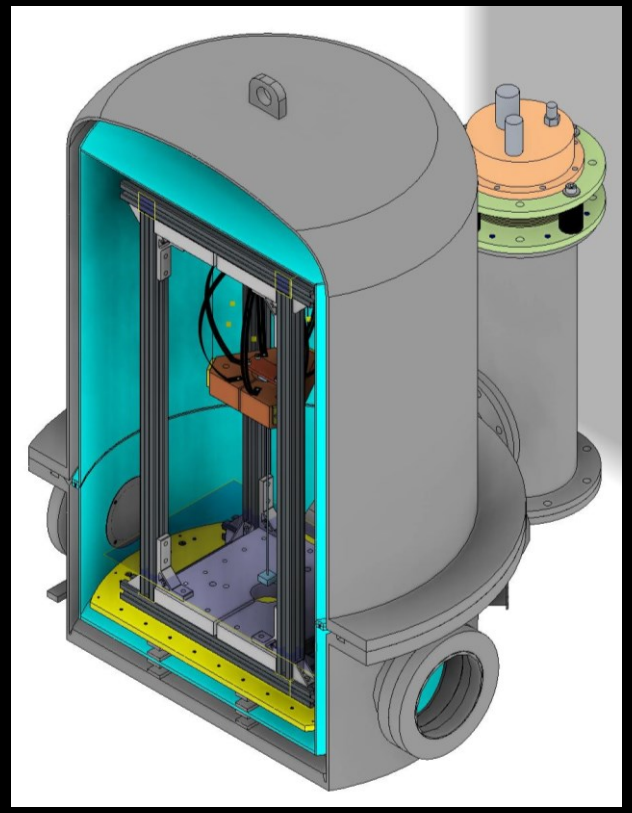
Square plate supported by 4 plates and also bolted by 4 M5/6 screws to frame.
The square plate can be moved up/down.



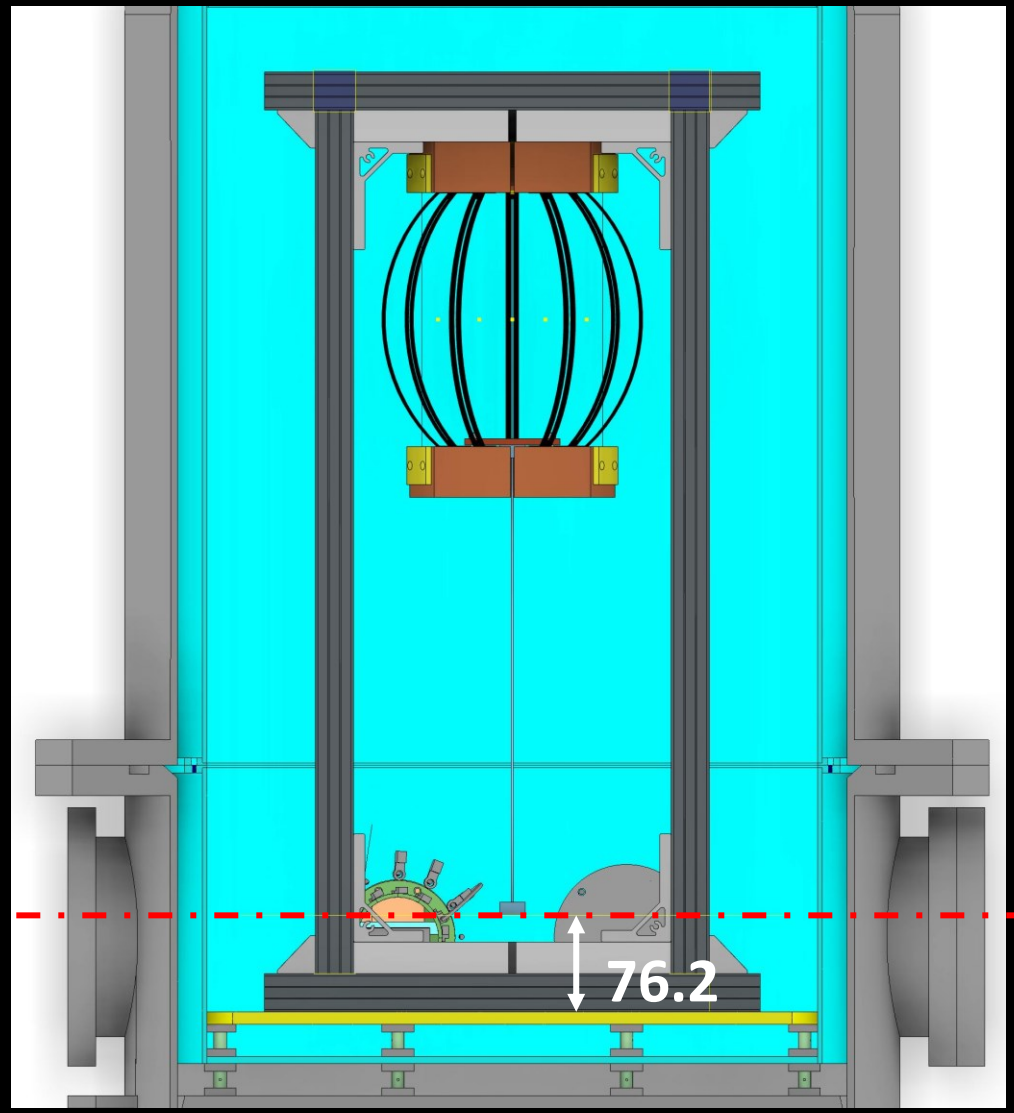

- The bottom plate can be used as earthquake stopper and to catch the fiber.
- It can also be used to lock suspended triangle to remove fiber and rotate the frame to measure smaller fiber.



# Setup-Cryostat



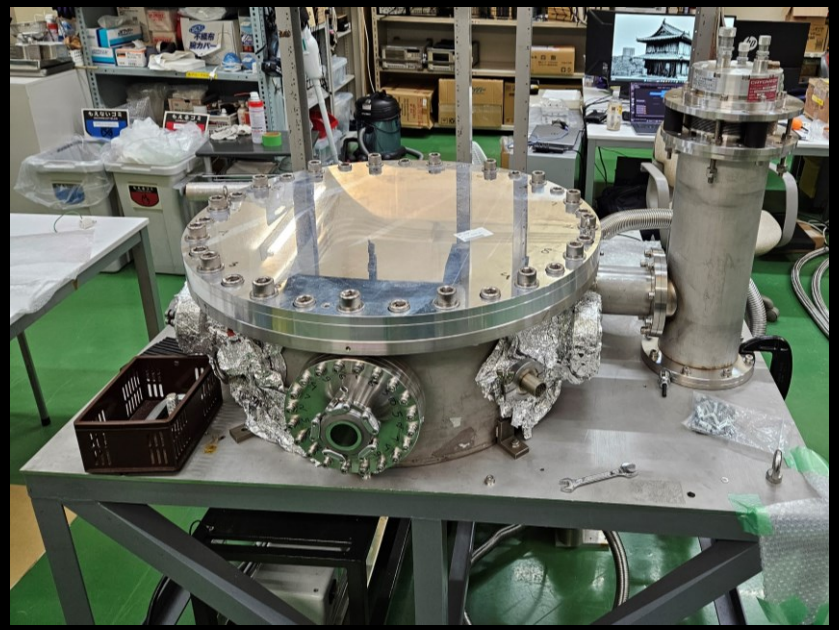
- Fiber is slightly above viewport axis.
- Increase the wire length or reduce frame height.



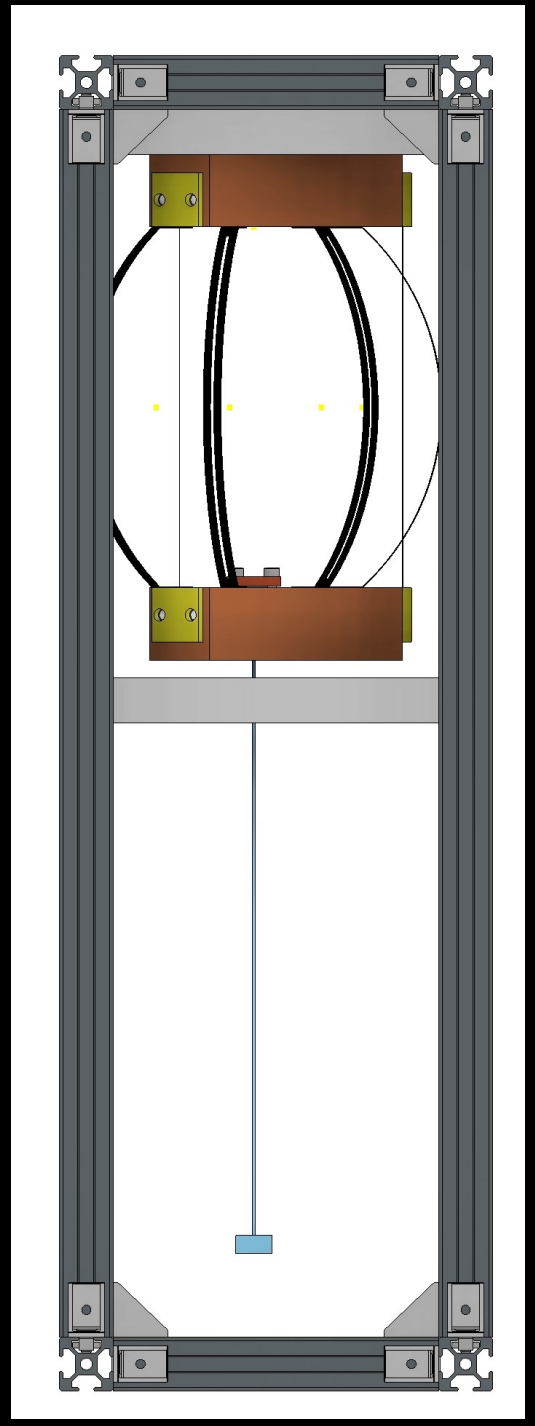

- Can bring the fiber lower by 50-55 mm.
- Other option is to use steering mirror.

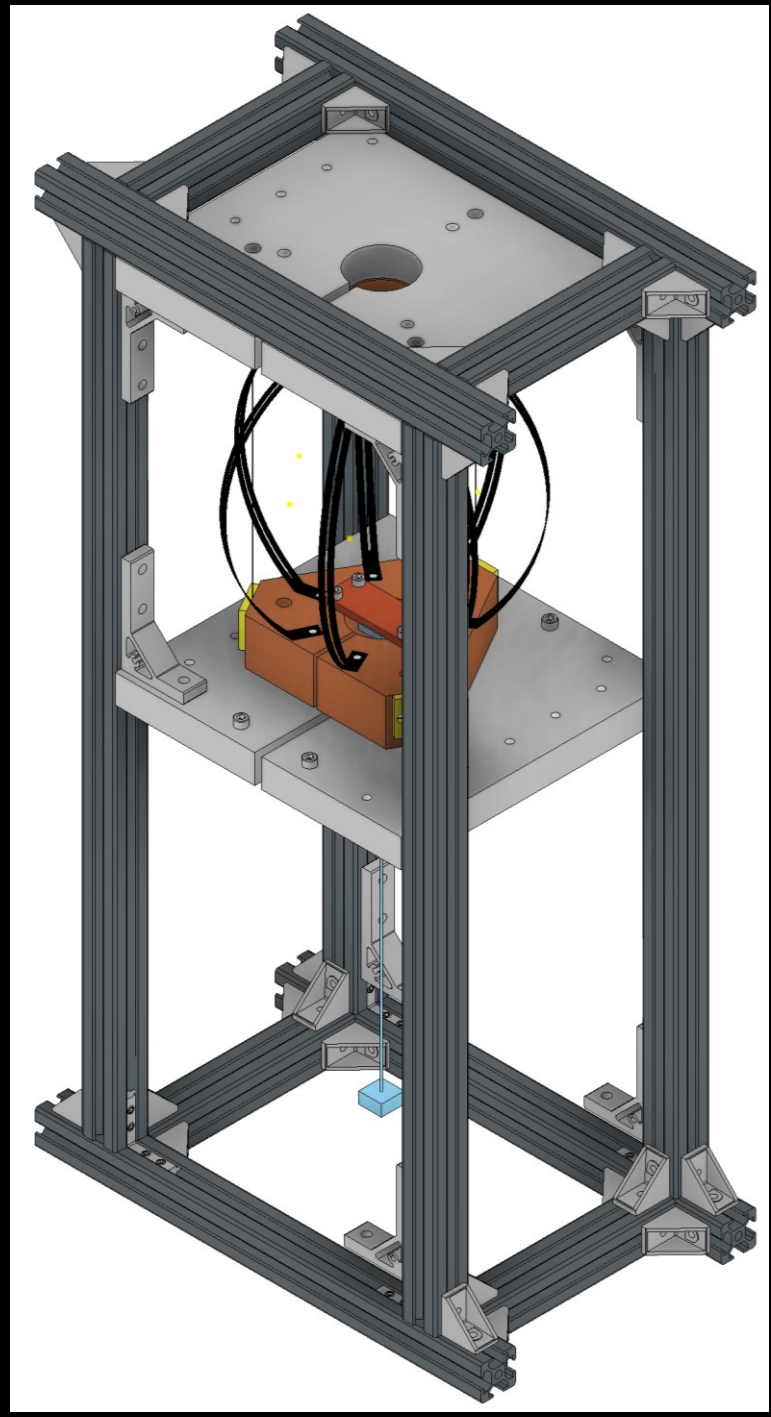
# Current Status

- Left the TMP running during LVK.
- Current pressure is:
  - $8.26 \times 10^{-6}$ mBar
- Skip leak test for now.



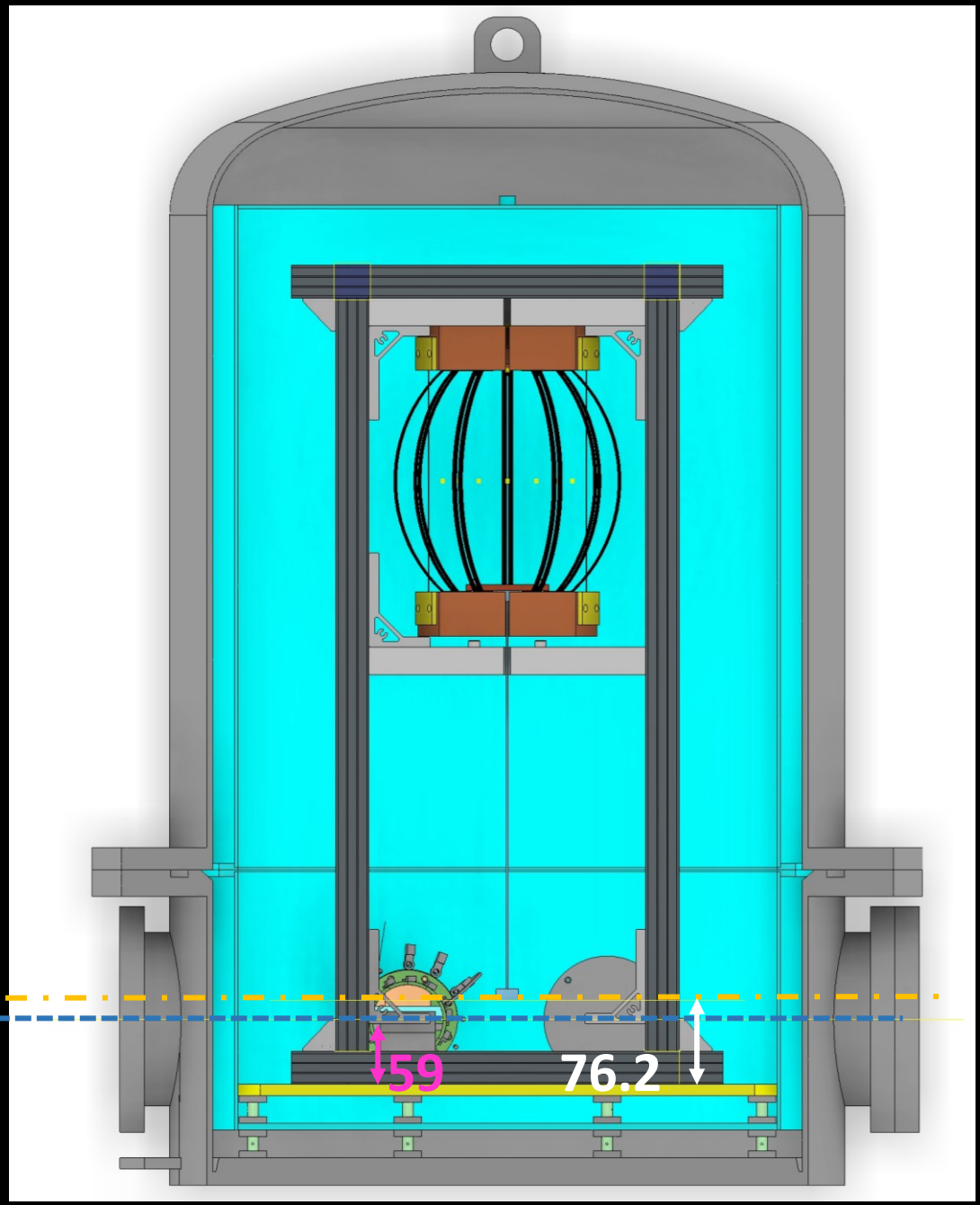
# Stopper

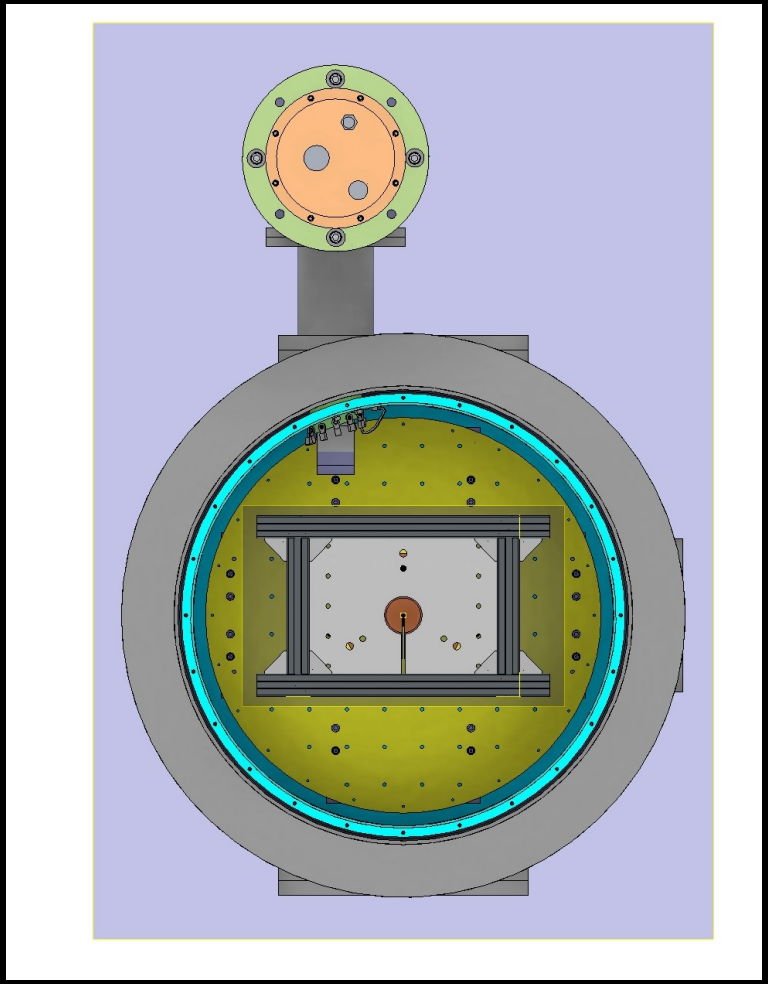


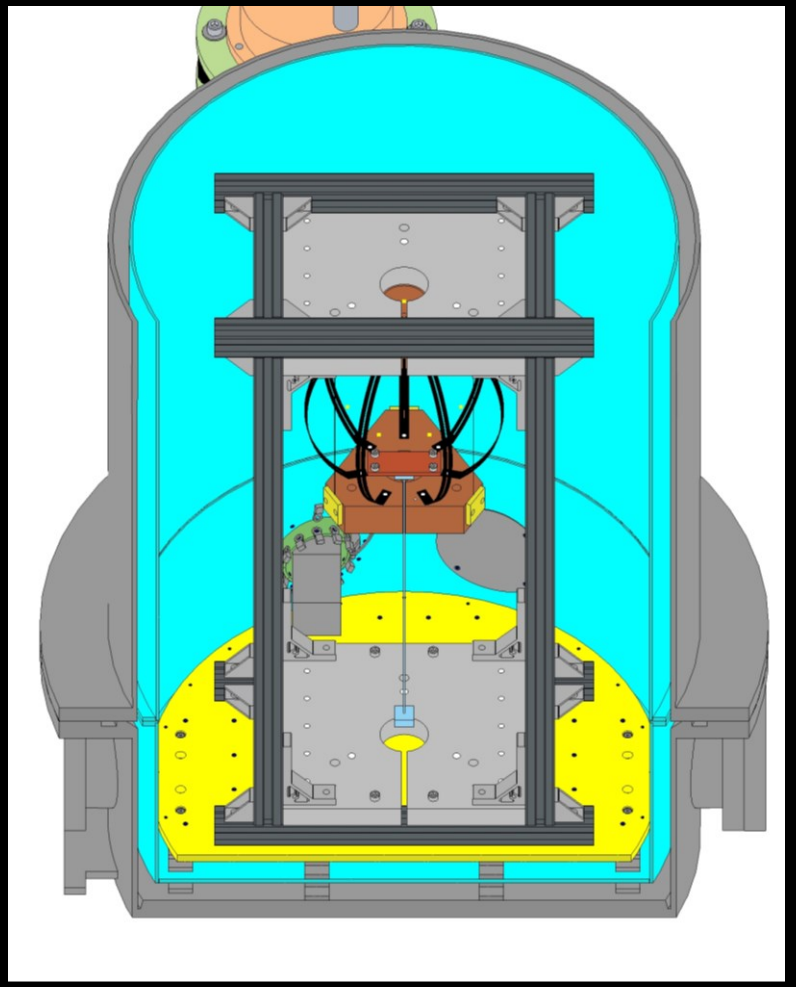


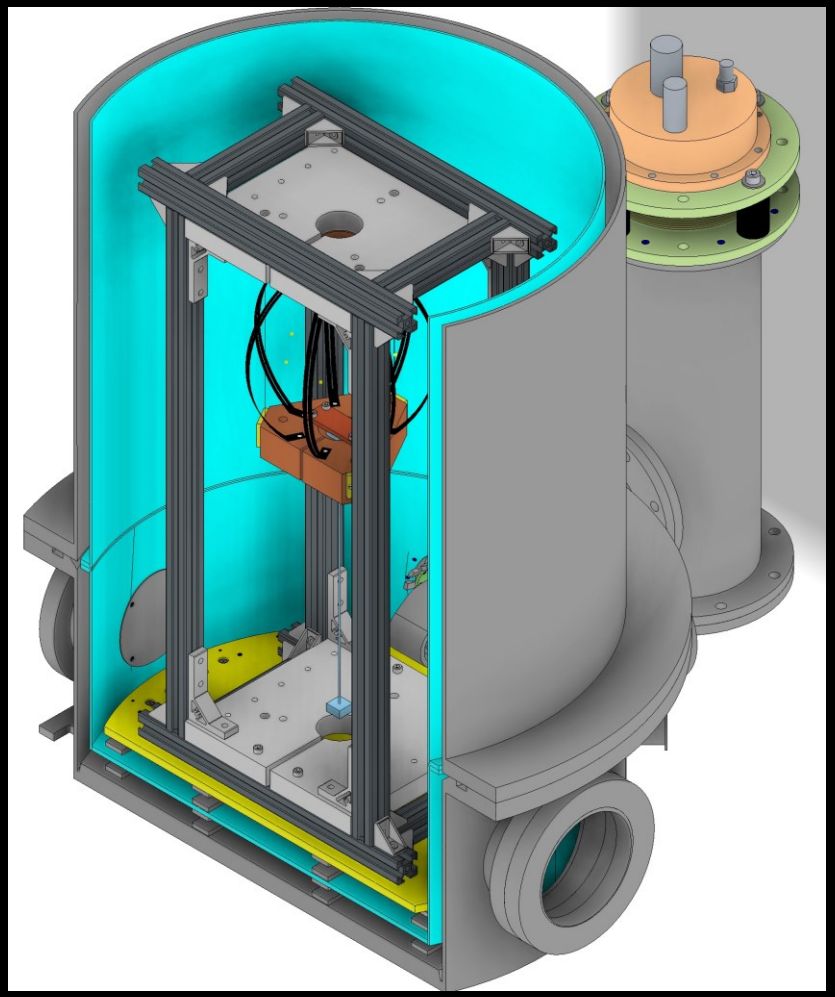
# Reduced Frame Height

- Can bring the base of fiber down by 50-55 mm. By increasing tungsten wire length or reducing frame height.
- Other option is to use steering mirror.









# Timeline

| By | Task |
|---|---|
| September 30 | Submit drawing to machining center (1-month) |
| October 31 | Preparation for calibration cooling |
| November 30 | Assemble setup and start calibration cooling |
| December 31 | Start measurement of KAGRA size fiber |

# Future Work

- Make minor changes to the design to align with view port and consider location of electrostatic actuator.
- Prepare the drawings to submit to KEK machining center.
- Prepare Labview Vi and fix troubles with vacuum gauges.
- Connect buffer tank, rotary valve and temperature sensor.
- Move items from ICRR. Maybe next week.
- Deadline for TAUP proceedings (4 pages at most) is Nov. 15. I will circulate it to the co-authors when it is complete. Do I need CPC approval?