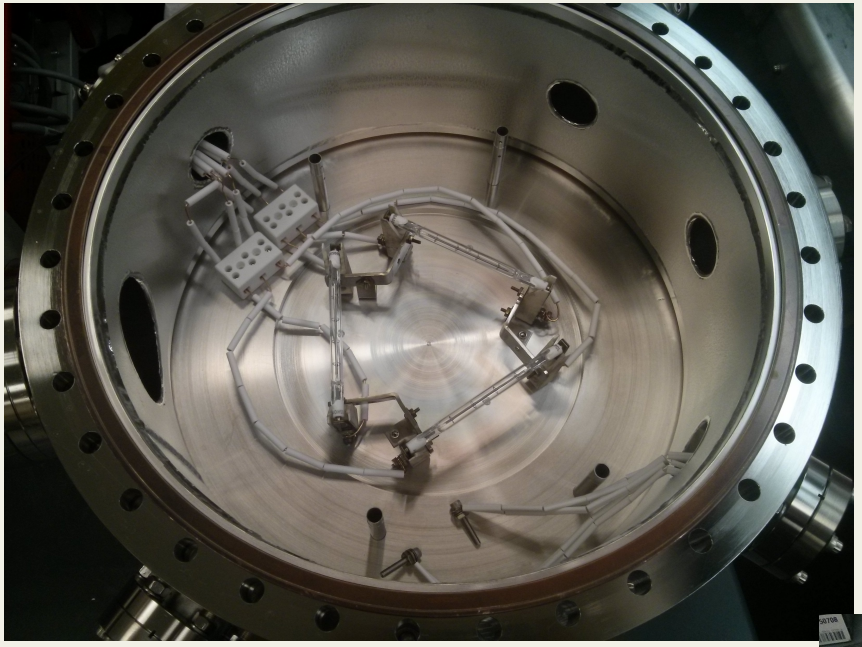
Tile Assembly Procedure

From Margherita opening to Margherita closing

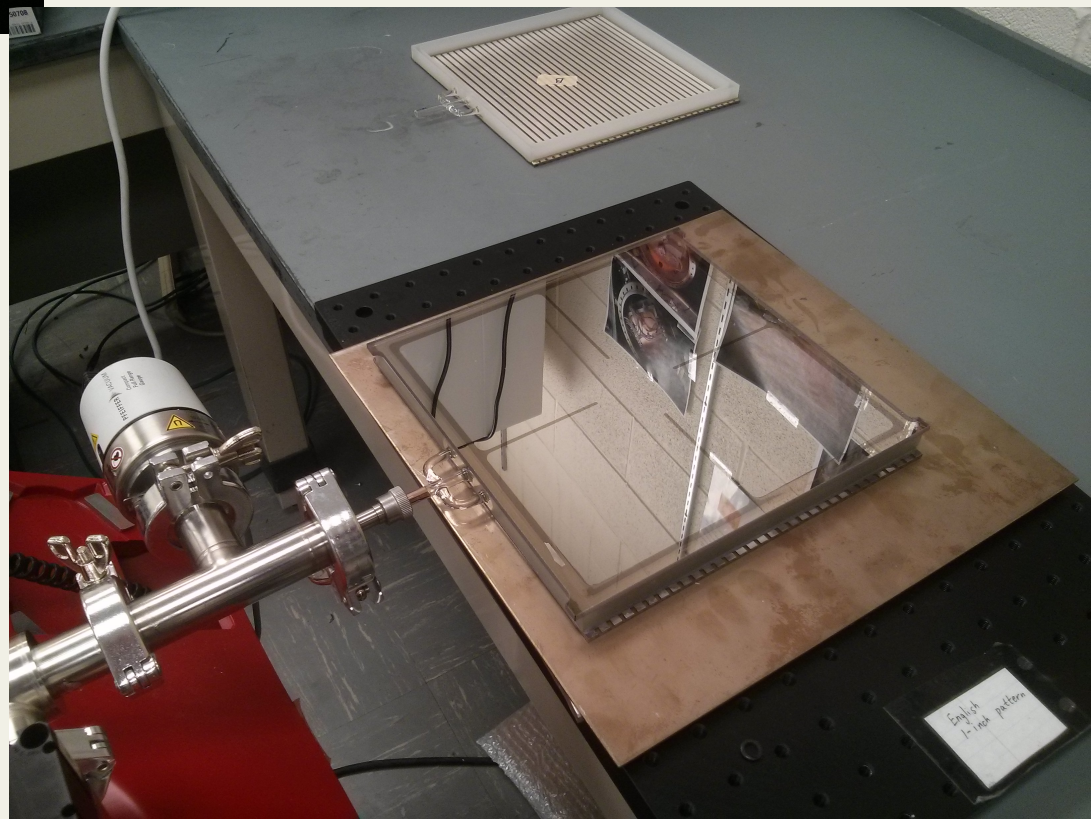


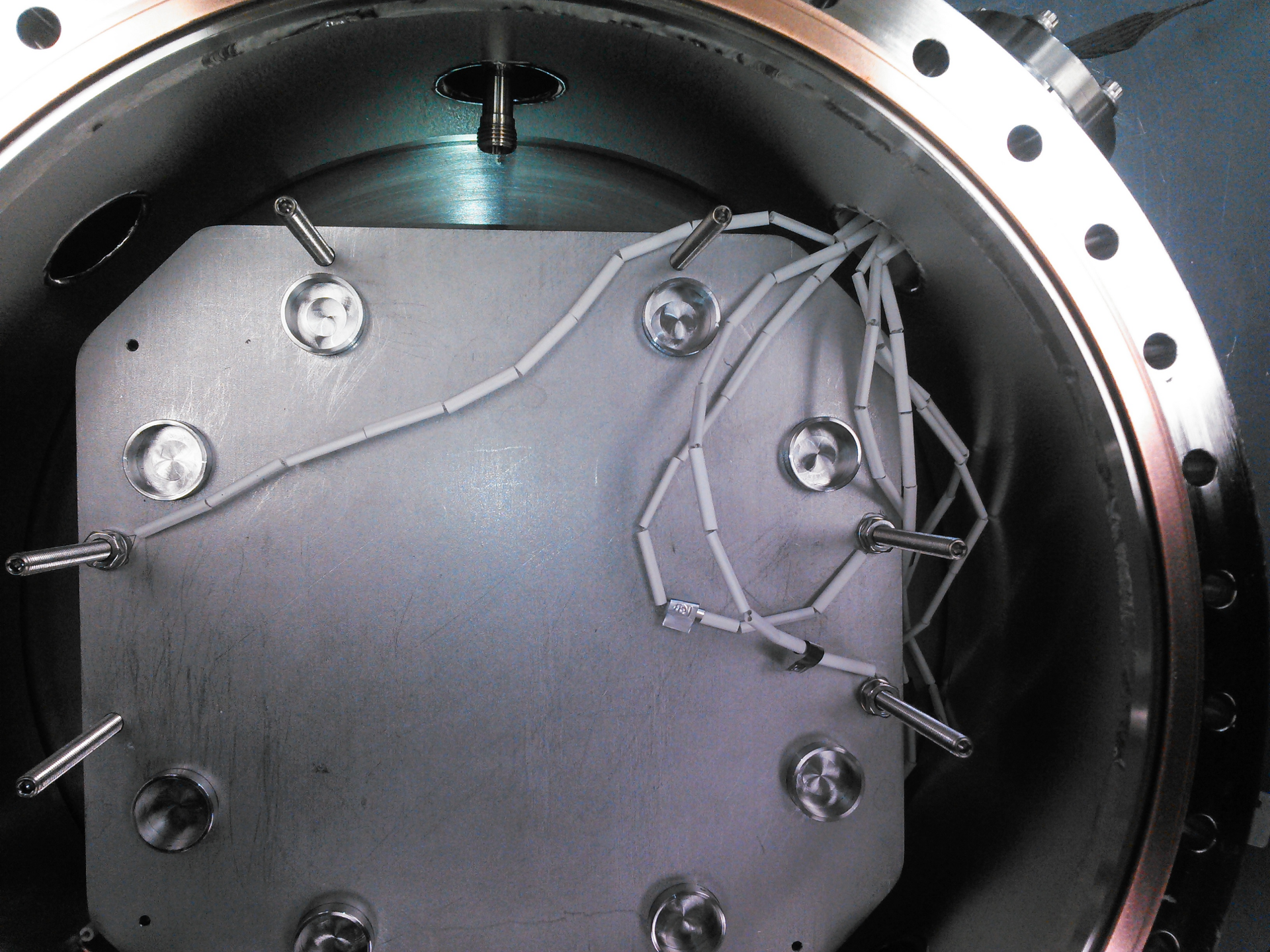
- Materials:
  - Tile base, sidewall metalized
  - Tile window, antimony, metalization
  - Stack of MCPs

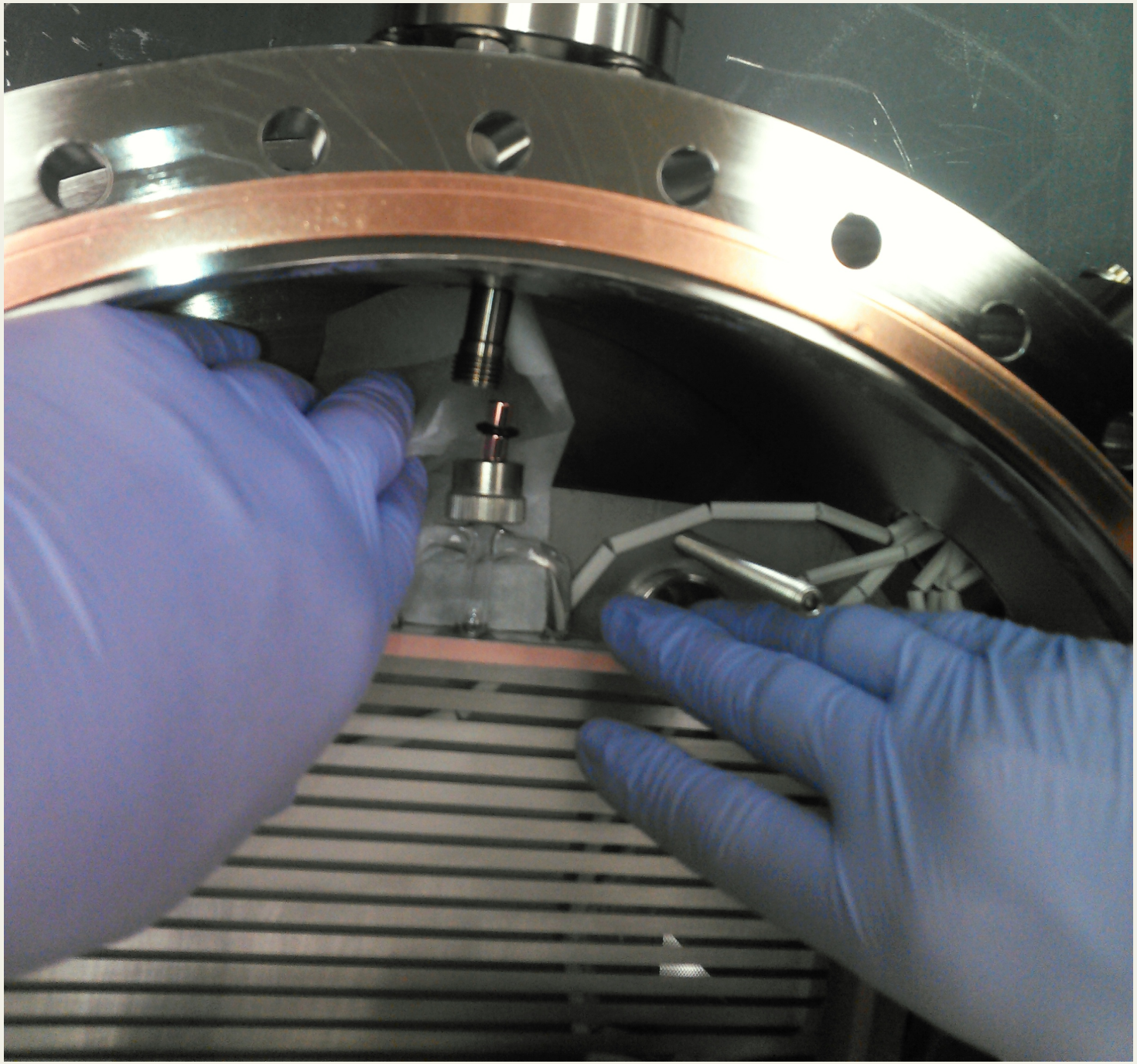
Product:

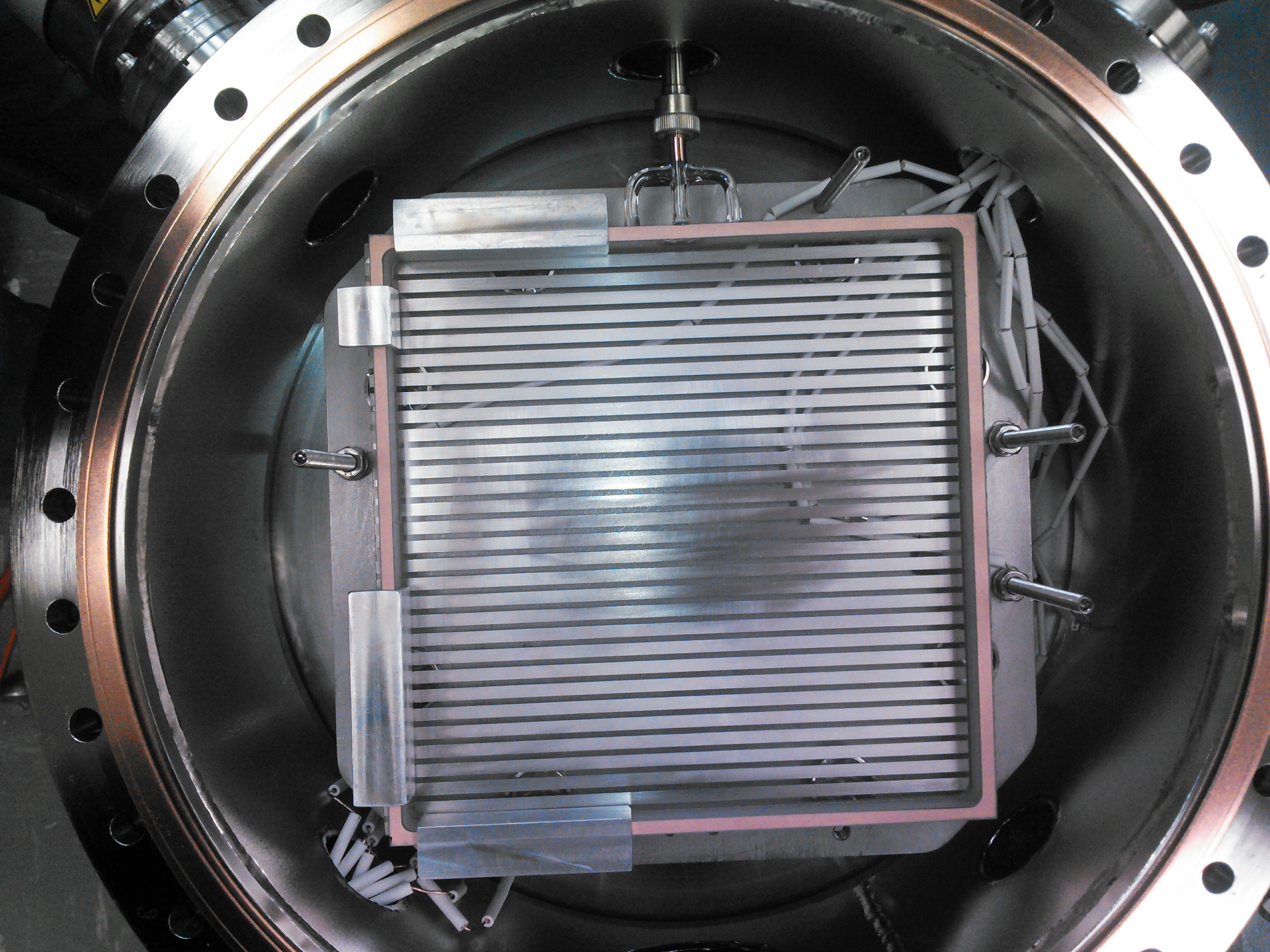
A sealed tile

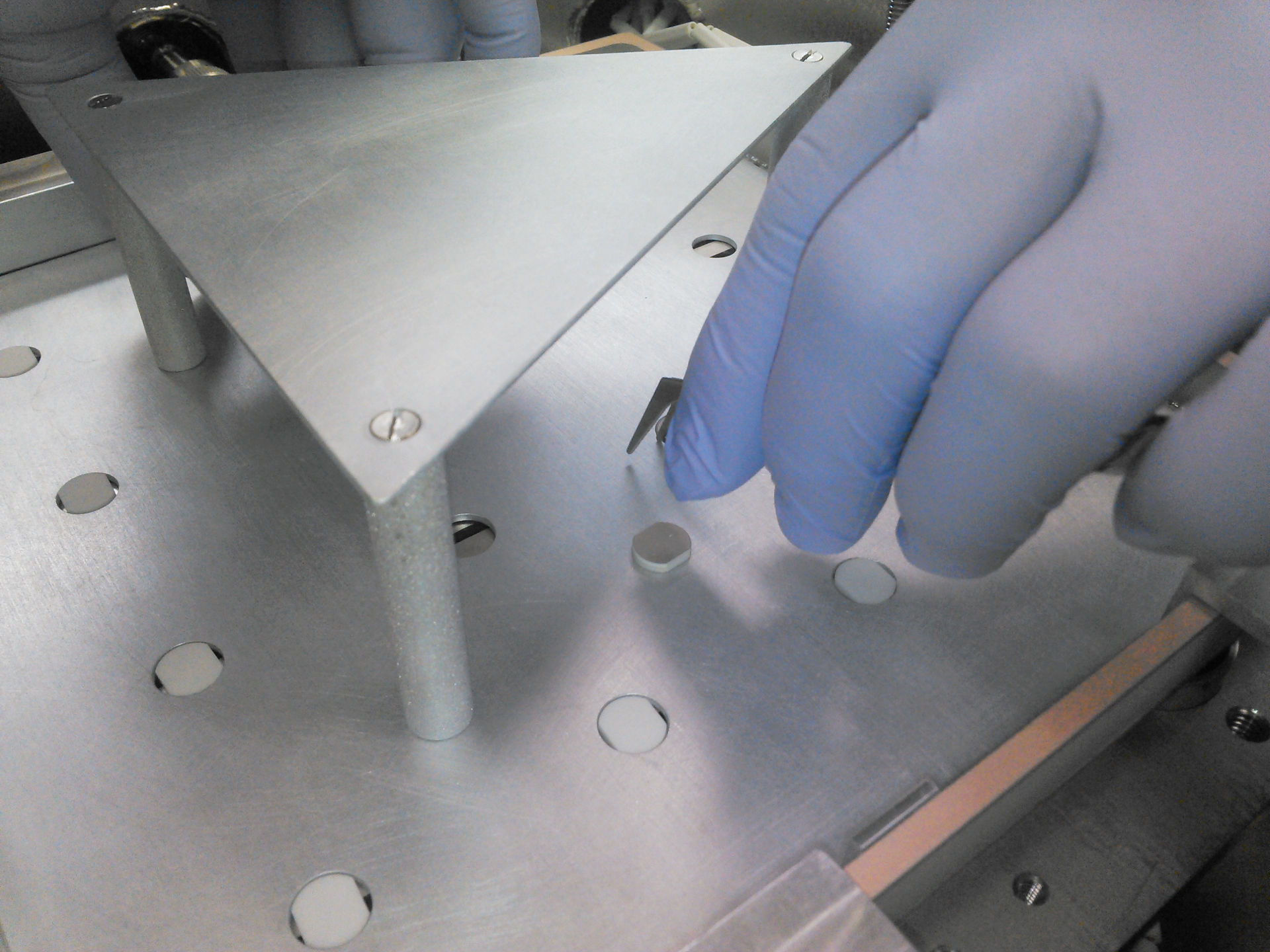
Let's make a seal!

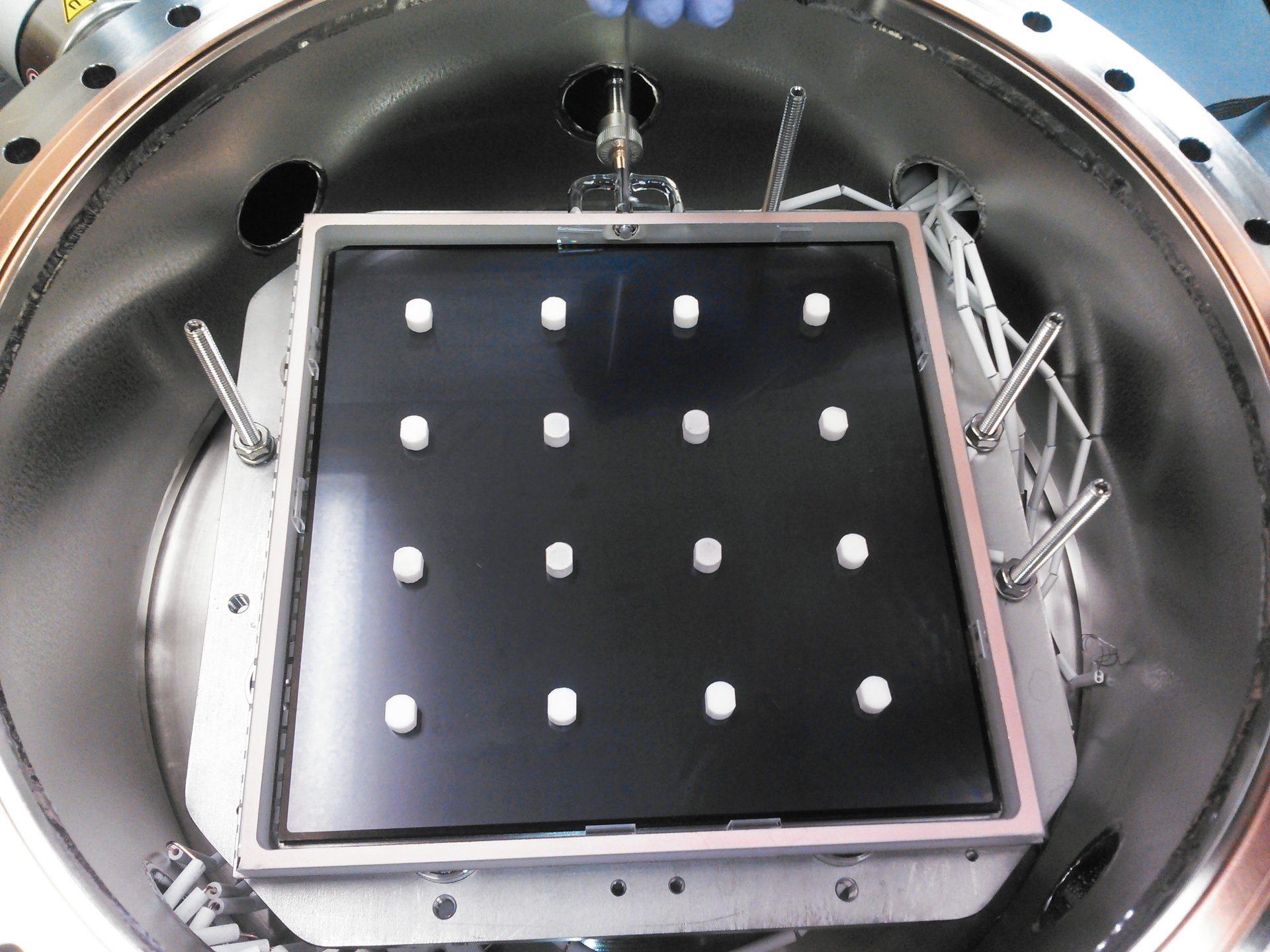


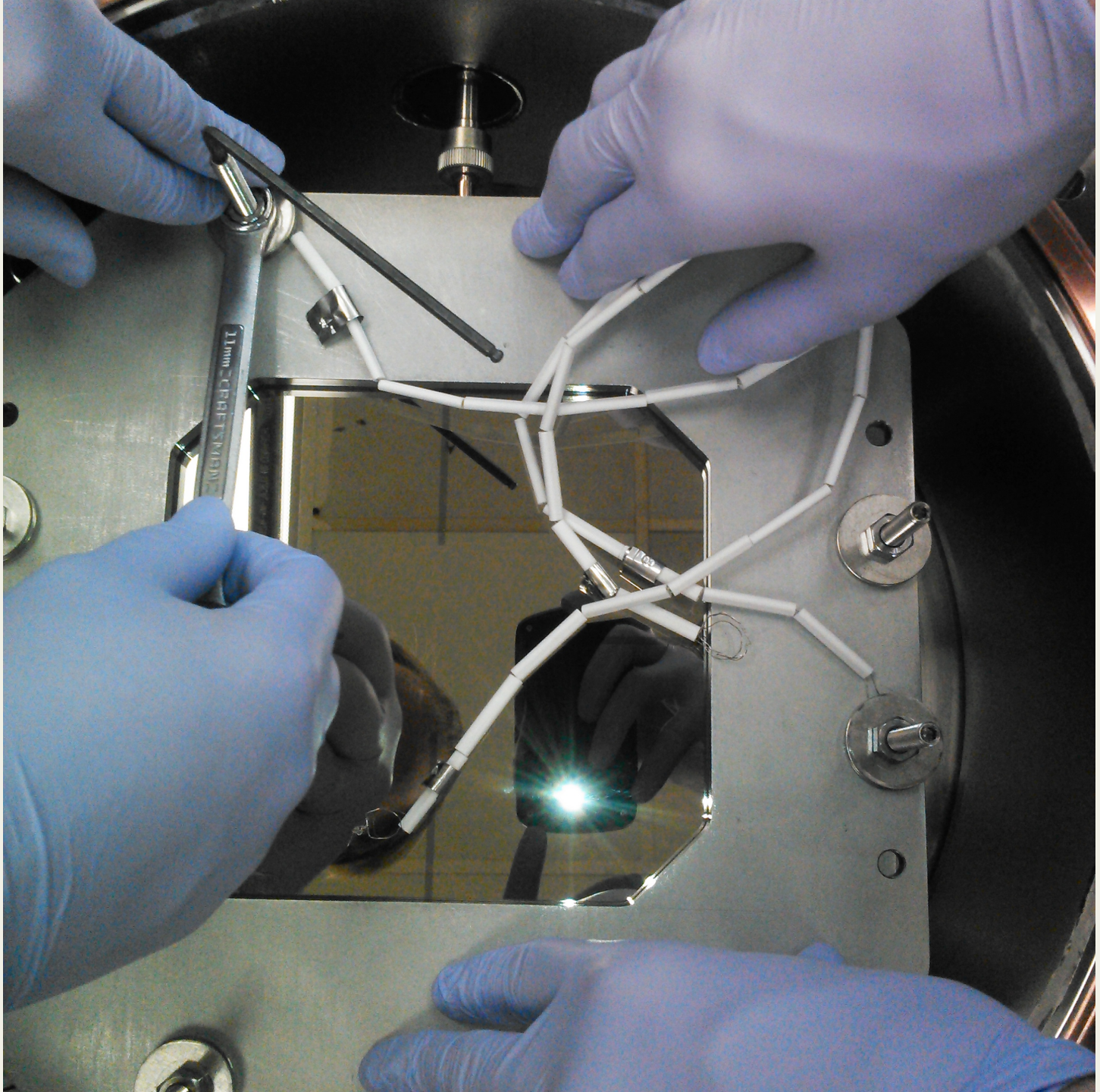


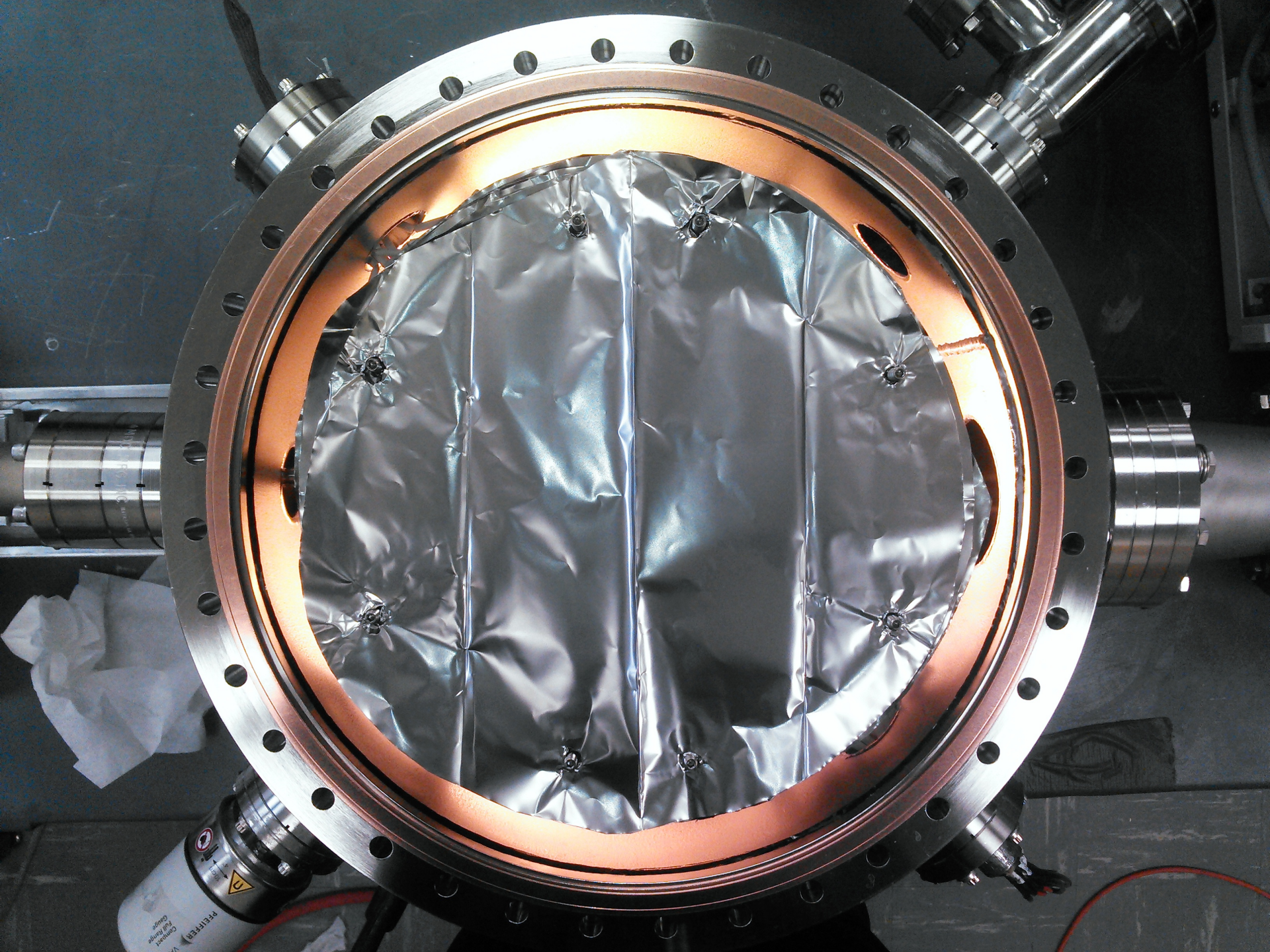




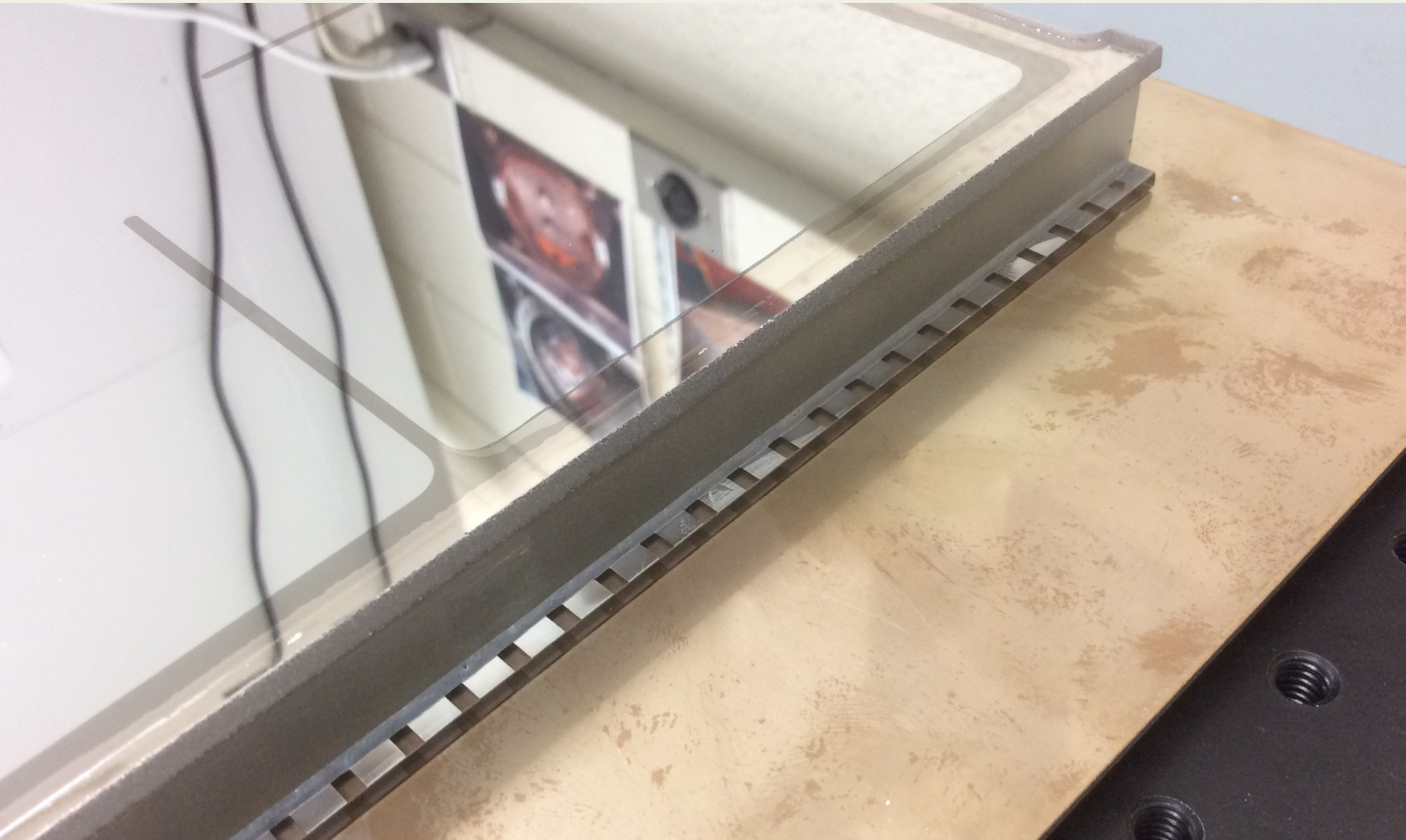





11mm CRAFTSMAN



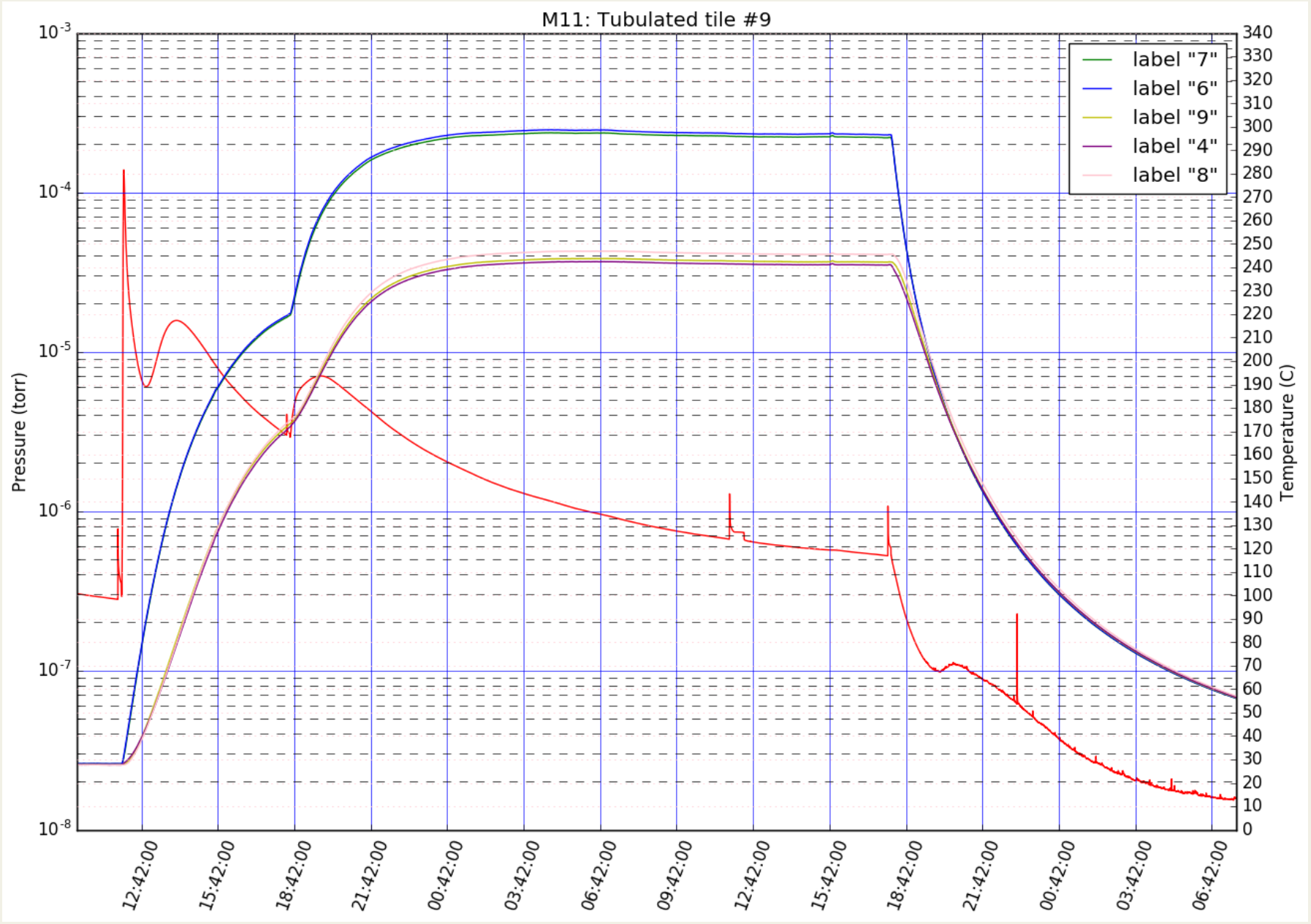
Then poof!



Thermal Cycle

Procedure and times

• Assemble tile In-Situ:	2 hours
• Bolt, close, leak check	1 hour
• Pump down to ~0.5 x 10^{-6} Torr	~12 hours (overnight)
• Slow heat through seal (~200C goal)	6 hours
• Increase to max temp (~300C goal)	3 hours
• Long bake (at 300C)	16 hours
• Cooldown	8 hours
	_____
	Total = 48 hours


M11: Tubulated tile #9
label "7"
label "6"
label "9"
label "4"
label "8"
Pressure (torr)
Temperature (C)
12:42:00
15:42:00
18:42:00
21:42:00
00:42:00
03:42:00
06:42:00
09:42:00
12:42:00
15:42:00
18:42:00
21:42:00
00:42:00
03:42:00
06:42:00

Why *this* procedure

- Indium melts at 157C
  - Higher temperature is better wetting
- Getter activation takes some time (?)
  - So do the longest time, worst case scenario
- Constraint: 300C for 16 hours is the *frit* limit

That’s it

- Thermal cycle is in an infant stage
  - More constraints to be discovered

Thank you