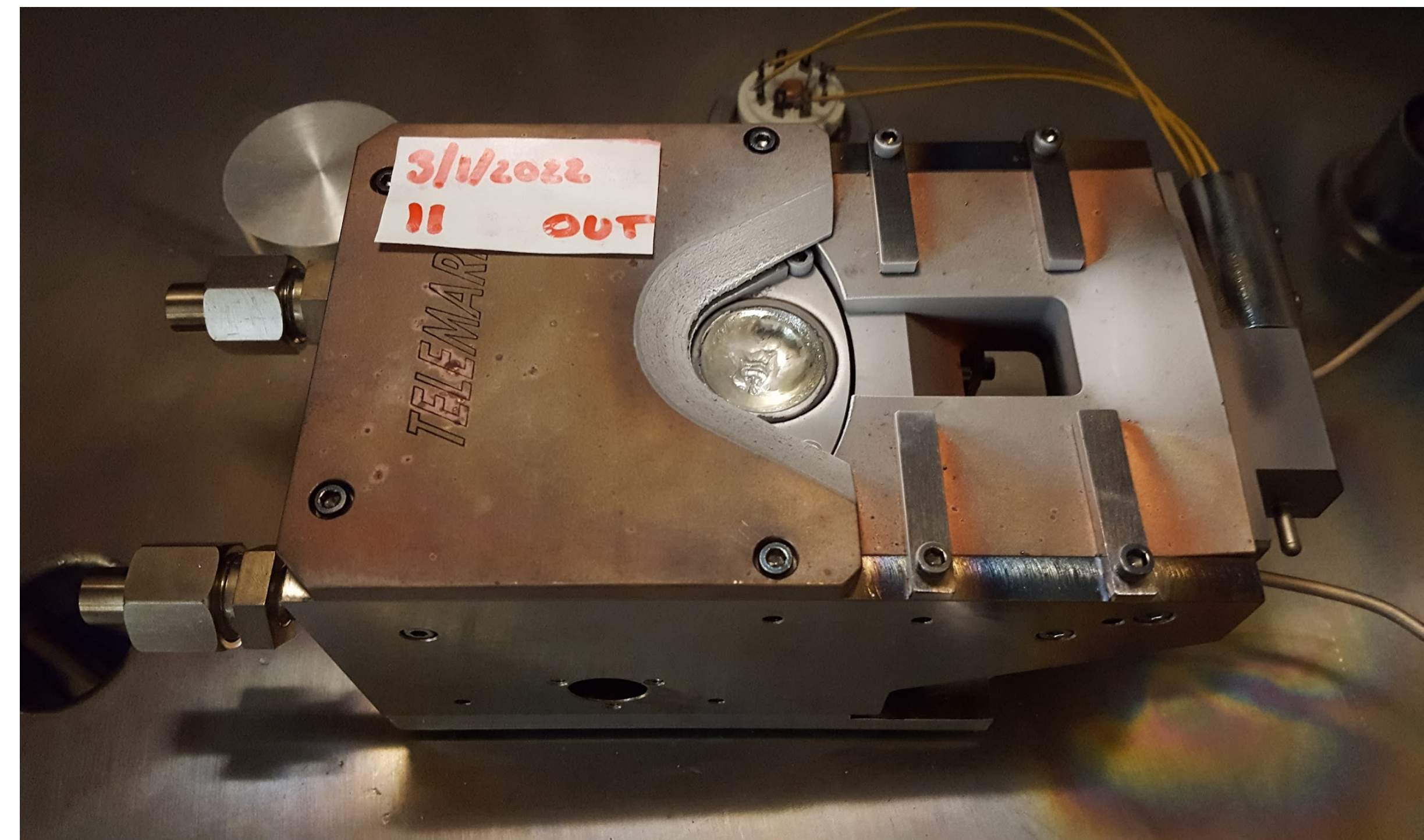


Features of the s103 Evaporator

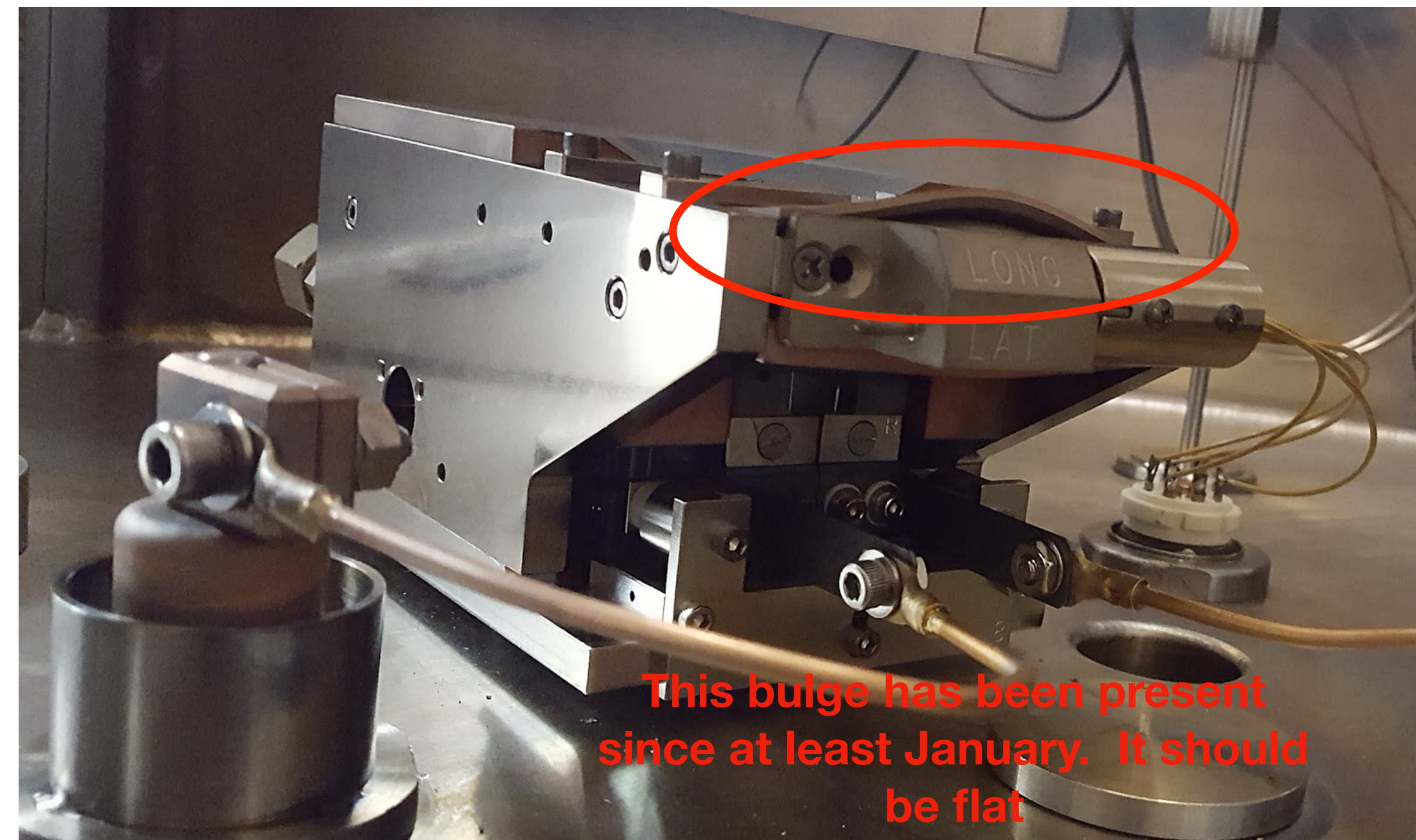
Ross Corliss
March 18, 2022

The Electron Gun

- With Aluminum crucible:



- From the end:

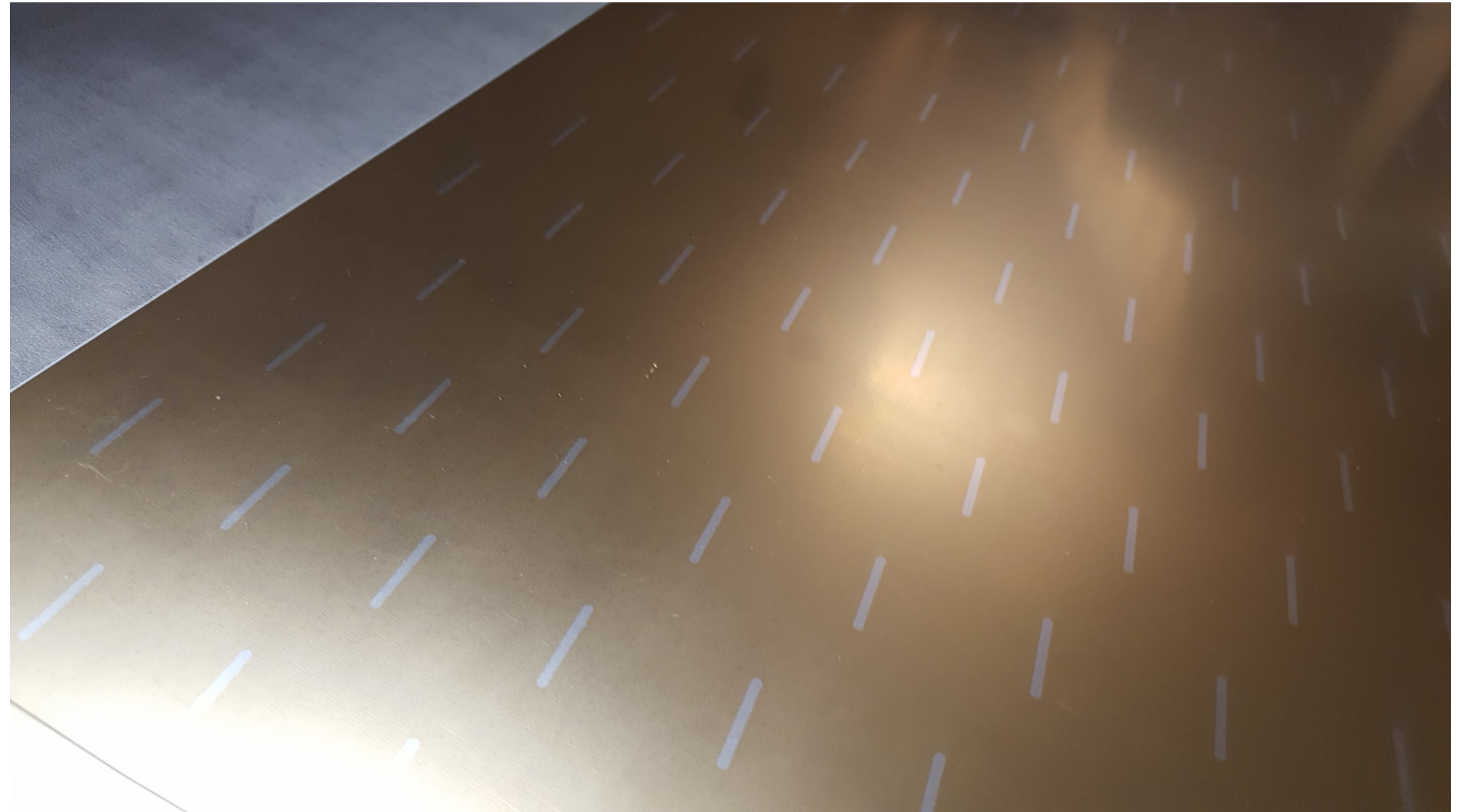


The Electron Gun

- Steering coils are now \sim kOhm, instead of \sim few Ohm as expected. The driver no longer drives the beam
- Likely this has been evolving since we repaired the wiring (late last year).
- The last evaporation had no steering. The result is we bored a deep hole in the Chromium, which affected the angular distribution ('spectral power') of the emitted material.
- We intend to manually steer by adjusting voltage, so that we do not bore deep holes

A Successful Petal

- Al is deposited atop Cr to help the Al adhere to the ENIG substrate, to form the 'test pattern' on the central membrane. 1/18 of one side of the membrane is one petal
- Good fill, sharp edges on each stripe is desired
- Al also coats the edges of each petal (<1mm) to ensure no insulator is exposed



Future

- We discussed with Telemark (vendor). Device is definitely damaged, but no further damage is likely to be caused by continuing to run
- We will repair once the CM petals are complete (partial list of tasks):
 - *Add water cooling*
 - *Replace steering magnet*
 - *Repair top plate*
 - Clean accumulated material on crucible carousel
 - Identify and repair helium cryo leak.