| **7/03/2023** |  | | | |  |
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| Objective |  | | | |  |
| Accomplishment/  Reflection |  | | | |  |
| Cold stage size | | 51 mm | | |  |
| Cold stage height | | +8 mm | | |  |
| Distance of detector from stage  (5-10mm) | | 5 mm | | |  |
| Probe current (70-90) | | 70 | | |  |
| Accelerating voltage (Vacc) (12-17kV) | | 12 k/v | | |  |
|  | | | | |  |
| Time | Action/observation | Temperature | Pressure (25-150 Pa, 40 most common) | Working Distance  (3 factors: focus, mag, stage height)  Error message if not from 9-11 mm | Magnifi-  cation |
| 3:34 | Starting the process up again, lowering the temperature to -31. |  |  |  |  |
| 3:37 | Already found a crystal that is rapidly growing. Some early signs of roughness along prismatic and pyramidal facets. Probably not calibratable but we thought it was worth the image (case 1.0). **Note: crystal was still growing during imaging.** | -31.8 | 50 | 9.2 | x140 |
| 3:45 | Found another crystal that seems to be ideal in terms of shape and initial smoothness. (case 2.0). Temperature was dropping, but between -36 and -38 when imaging occurred. **Note: crystal was still growing during imaging.** | -38.0 | 50 | 9.4 | x230 |
| 3:50 | Reimaging the crystal, after some time. Roughness is starting to take shape, but the crystal is merging with another nearby one. (case 2.1). **Note: crystal was still growing during imaging.** | -37.2 | 50 | 9.4 | x120 |
| 3:56 | Restarting the process for a second trial. |  |  |  |  |
| 4:03 | Found another crystal that looks more promising than the first two. Very defined and distinct facets, prismatic facet is facing up (case 3.0). **Note: crystal was still growing during imaging.** | -34.9 | 50 | 8.5 | x100 |
| 4:07 | Reimaging crystal, some roughness, due to growth, forming along edges of the prismatic facets. (case 3.1). **Note: crystal was still growing during imaging.** | -37.0 | 50 | 8.6 | x100 |
| 4:13 | Raising the temperature to reimage. Seeing a lot of vertical roughness, due to ablation, along the top-facing prismatic facet (case 3.2). | -33.5 | 50 | 8.6 | x90 |
| 4:17 | Raising the temperature once again. More roughness forming on the facets, following the trend we’ve seen before (case 3.3). | -32.6 | 50 | 8.6 | x90 |
| 4:20 | Raising the temperature to vaporize crystals and start a new trial. |  |  |  |  |
| 4:23 | Lowering temperature to -35 once again, as it worked well for us in the previous run. |  |  |  |  |
| 4:27 | Found a crystal with great hexagonal shape and initial smoothness. (case 4.0). **Note: crystal was still growing during imaging.** | -35.0 | 50 | 8.6 | x100 |
| 4:32 | Abandoning crystal, as it seems to have too much “cracking” roughness. |  |  |  |  |
| 4:44 | Restarted for one more trial, temperature is dropping to -35. |  |  |  |  |
| 4:50 | Found another crystal with very distinguished and distinct facets (prismatic facet facing up). (case 5.0). **Note: crystal was still growing during imaging.** | -35.5 | 50 | 8.3 | x95 |
| 4:56 | Reimaging after lowering the temperature. Signs of growth roughness between prismatic facets (case 5.1). **Note: crystal was still growing during imaging.** | -37.0 | 50 | 8.8 | x85 |
| 4:59 | Raising the temperature for the next image. Signs of horizontal roughness going through prismatic facets (case 5.2). | -34.6 | 50 | 8.8 | x70 |
| 5:02 | Capturing one more image. Ablation roughness seems to have intensified on the primstic facets (case 5.3). | -32.6 | 50 | 8.8 | x60 |
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