**Lab log**

**Date:** 7/11/2013

**Info:** A technician re-aligned the microscope the day before, so everything behaves a little differently.

**Conditions:** BSE, 12 kV, PC 60, 50 Pa, Wd 6.0 -> ~10.1 mm tech.

**Goal:**

1. Try to find an equilibrium point.
2. Make close-up pictures of roughness on prismatic facets for 3D modeling.

**What I did:**

1. Standard start, go to -45 °C, wait for crystals.
2. Zoom-in on one that is well aligned, go to -30 °C, wait for roughness
3. Zoom-in on roughness, go to -35 °C, try to do 3D pictures
4. Sometimes took a “progress” image to save how a crystal looks at a certain temperature.

**Products:**

First estimate of equilibrium temperature is -33 °C, however the crystal was ablating even at -35 °C sometimes too. Two sets of folders were made. The first is a set of snapshots at 30 °C set about 1-3 minutes apart to maybe see how ablation evolves because the crystal was getting smaller over the time snapshot0 -> snapshot5 were taken. Second set of folders is the comparison of different quality settings of 3D pictures at 30 °C. I was trying to determine how much ice would grow if the 1280/40s was used in contrast to 640/20s etc. It seems that snapshots have enough information for a profile analysis and take less time to make, not allowing the roughness to change nearly as much.

An interesting thing to notice is, that detectors A and C (those looking along the roughness) carried virtually no information. On the other hand, B and D (those looking across the roughness) had clear edges visible and a lot of information even on lower resolution. The fact that the image A was brighter than image C indicates that the stage was tilted in the L-R orientation. For future reference, it might be a good idea to rotate the roughness lines vertically instead of horizontally, so that the tilting would actually affect the most important L-R direction instead of the U-D direction like this time. Even flat/symmetrical seeming crystals can be very steep when you analyze them with the 3D tool.