

Cometary Cell C2023

Images

Aerogel Cell: [C2023-02.jpg](#)
[C2023_T1_20x.jpg](#)

Cell History: Cell C2023 was removed from the cometary grid May 18, 2006.

Track Information: This tile, like C2012 has numerous small tracks in it.

Feature Images

Allocation History

Results

Log Entries

Note: All track / features (e.g., T1) numbers assigned during the Level 3 scanning are to be considered “**Temporary**” and in do not relate to the “Official” track number that is assigned when a given features is extracted (e.g., Keystoned) from a tile. Abbreviations: EH – Entrance Hole, TP – Terminal Particle, MTW – Maximum Track / Bulb Width, TL – Track Length.

5-26-06 T.H. See

Removed tile **C023** from storage and mounted into the Level 3 fixture. Tile has a fragment loose on the top near the left end that is still attached but may fall of when the tile is rotated to take the Level 3 top images at 7x & 20x.

Had to once again repair the custom light-pipe holder as the top again came unscrewed.

Began Depth Profile scans at ~ 10:25 am.

To reduce the glare from the fixture in the tile, I mounted the polarizer on the end of the MZ16A with the lightpipe of the ringlight holder in a vertical position. I also relocated the large light source to directly behind the sample instead of from the side. I elevated the light source until it was out of the field of view ~ 3 to 4 inches behind the sample. This resulted in a much more even illumination and much less glare in the tiles toward the Level 3 fixture interface areas. The iris is set at 50% or halfway and the exposure time is for the Camera Control is at 600 ms. Intensity of the light source is set to maximum. (see images for a view of this configuration.)

For the reminder of this tile only, the filenames include the letter “c” to indicate that they were all acquired with this, the third light and filter settings. I plan to drop the “c” from all file names on the subsequent tiles.

After making the above change, I went back and retook the Depth 1 profile before proceeding on to the Depth 3 profile.

Completed Depth Profiles ~ 11:02 am.

Tracks:

As was the case with Tile C012, this tile has numerous small tracks.

C023-T1 – T6 – All on left end extreme of tile.

T1 & T2 – Actually, what was believed to be separate tracks are the bifurcated styli of one track whose entrance hole and most of the body lies in a flake of aerogel that is cocked an angle in the image. Small tracks with visible terminal particles. Stylus 1 (right) is ~ 910 μm in length, including the body in the flake above, while stylus on the order of ~ 710 μm . MTW in the flake piece is on the order of 150 μm . EH too fuzzy to measure from image. Terminal particle visible at this depth on the larger track on the order of 5 to 8 μm in size.

C023-T3-T6 – From left to right, TL is ~ 284, 320, & 165 μm deep. Too small or blurry for EH or MTW measurements. Small particles deep in tile. Track 6 length is only 140 μm . Terminal particle is visible. EH is ~ 10 with MTW of ~ 16 μm .

C023-T7 – Still further toward the back of the tile on the left side ~ 3 mm in from left end. Small, bifurcated track with terminal particles present. Track length is ~ 250 from what can be seen. MTW is ~ 42 μm , but fuzzy.

C023-T8–T10 – T8, left is small and hardly desirable in the image; no measurements. T9 is the longest of these three tracks measuring ~ 220 μm in length with a MTW of ~ 18 μm and a particle of ~ 10 μm or less. T10, right, is ~ 169 μm in length and an MTW of ~ 18 μm . What appears to be a terminal particle is visible, but barely. Too blurry to measure.

C023-T11 – More than half way back, if not $\frac{3}{4}$ of the way. Tile is tilted at ~ 15 degrees and the Z-Axis is 10.3 mm in to the tile. Track is ~ 465 to 560 μm long depending on the location of the actual terminus, or what could be the terminus. One may represent a large particle down the track and not the actual terminus. EH is fuzzy, but appears to be on the order of 11 μm with a MTW of ~ 29 μm .

C023-T12 – A little over 300 μm in length. Definitely has a small terminal particle. Several other potentially small tracks are located in the same area. Hard to tell looking through that much aerogel. MTW appears to be ~ 16 μm wide.

C023-T13 – ~ 605 μm in length, terminal particle visible but blurry. MTW is ~ 42 μm .

Second pass

C023-T14 – Iffy, if a track at all and not an artifact in the aerogel from the manufacturing process and molding process. Long track toward the front surface of the tile. Entrance hole is on the rollover front edge of the tile, assuming that it is an entrance hole and not part of the possible artifact. Track appears to be longer than 3 mm, with ~20 μm or small terminal particle. MTW is ~ 69 μm .

C023-T15 – ~ 200 plus μm in length. Terminal Particle visible, actually two since the track is appears to be bifurcated. Both less than 10 μm . MTW ~ 17 μm .

C023-T16 – Only about 80 μm in length, terminal particle visible. MTW is ~ 12 μm

C023-T17 (Imaged in Tracks18-20) – Slightly larger track with what appears to be one of the larger terminal particles for the given track length. Track is only about 150 μm deep, but TP is at least 10 μm across.

C023-T18-T20 – T17 can be seen in the foreground out of focus in this image. T18 is the smallest on the right and measures ~ 110 μm in length, EH of ~ 6 μm , MTW of ~ 22 μm . T19 is the largest of the three and measures between 640 μm in length with an EH of ~ 22 μm and a MTW of ~ 54 μm . T20 measure a little over 340 μm in length with an EH of ~ 11 μm and a MTW of ~ 31 μm . Terminal particles are visible at the end of each of the tracks. Several other, small track on the order of 120 μm in length are also visible, but not recorded with assigned feature or track number (see image - Tracks18-20_C+0001_R+0001_L+0000_X+0009621_Y+0001642_Z-0006395.jpg).

C023-T21 – Bifurcated, small track with stylus measuring ~ 140 & ~ 160; MTW is ~ 20 μm .

C023-T22 - ~ 245 μm long with a MTW of ~ 16 μm . Both T21 & T22 are way toward the rear surface of the tile and are very small, but do appear to have terminal particles.

C023-T23 – Not well defined but does appear to be a track. Only about 125 μm long and no terminal particle is visible, yet the surface above this track has that “mottled” texture to it which could be obscuring the particle from being seen. MTW is ~ 24 μm .

C023-T24 - ~325 μm in length. MTW of ~ 14 to 15 μm . Could be bifurcated at the tip only with two terminal particles visible.

C023-T25 - ~ 150 μm long with visible terminal particle of ~ 5 μm . EH of ~ 10 μm with MTW if ~ 19 μm . Out near front edge of tile.

Shutting down for the day. Made three depth passes through this tile. X=12770 if vertical cross hair is zeroed at the tile holder interface.

05-29-06 – T.H. See

Removed C023 from sample cabinet and mounted on scanning fixture. After setting up system, pick up the track documentation where I left off.

C023-T26 – Near the back surface of the tile. Track is on the order of 220 μm in length and does appear to have a terminal particle, yet since it is so far to the rear of the sample it is hard to be sure through the entire tile of aerogel. MTW appears to be on the order of ~ 33 μm .

C023-T27 – Approximately 170 μm in length with a MTW of ~ 25 μm . Terminal particle visible at end of track, if not two but very blurry due to the amount of aerogel that is being viewed through.

C023-T28 – Near the center of the tile and measures ~ 275 μm in length, with an EH of ~ 10 and a MTW of ~ 26. Definite terminal particle visible, yet small.

C023-T29 - ~ 305 μm long track with bifurcated tip on end, short stylus is ~ 294 μm . MTW is ~ 47 μm .. Terminal particles visible at the end of each terminal track.

C023-T30 - ~173 μm in length with small terminal particle and MTW of ~ 20 μm . Located toward center of tile from front to back, probably a bit less due to the angle or tilt of the tile.

C023-T31 - 250 to 333 μm in length with terminal particle visible on the order of 8 μm in size. Could be particle in track with real terminal particle visible at the 333 location MTW is ~ 19 μm .

C023-T32, possible repeat. 250 μm in length. Terminal particle is visible. MTW is ~ 19 μm . I believe this to be track 31.

C023-T33 – Smallish track not too far in to the tile from the front side or surface. Track measures ~ 105 & 110 μm in length and has two good terminal particles, both less than 5 μm in size; track could be bifurcated.

C023-T34 – Very small track on the order of 50 μm in length. Possible, very small terminal particle at the end. Too blurry for additional measurements.

C023-T35 – Nice track toward the front edge of the tile, ~ 360 μm in length, bifurcated with terminal particles visible and the end of the individual tracks. MTW is ~ 19 μm .

C023-T36 - ~ 250 μm in length with terminal particle visible at end of ~ 6 μm . MTW is ~ 18 μm .

C023-T37 - ~ 200 μm in length with visible terminal particle on the order $< 10 \mu\text{m}$ in size. MTW is ~ 10 μm .

C023-T38 - ~ 175 μm length with terminal particle visible. Nice stylus out the end of the track. MTW is ~ 20 μm .

C023-T39 – Bulbous track with two stylus and nice terminal particles. Track measures ~ 275 & 210 μm in length. Particle on the order of 8 to 10 μm . EH is ~ 15 μm while the MTW is ~ 57 μm .

C023-T40 - ~100 μm track with possible small terminal particle; very blurry. MTW is only about 10 μm .

C023-T41 - ~ 200 μm track with nice terminal particle at the terminus or ~ 5 μm in size. MTW is ~ 15 μm .

C023-T42 - ~ 150 μm length track with a visible terminal particle, small on the order of ~ 5 μm . MTW is ~ 14 μm .

C023-T43 ~ 230 μm in length, with several particles visible scattered along the track as well as a nice terminal particle. EH appears to be ~ 6 μm with MTW of ~ 20 μm . TP is ~ 5 μm .

C023-T44 - ~110 μm in length with visible terminal particle. MTW is ~ 10 μm .

C023-T45 – Larger bulbous track with single stylus out the bottom. Terminal particle visible on the order of ~15 μm in size. EH is ~ 49 μm with MTW of ~ 182 μm .

C023-T46 & 47 – Very small, toward the back side of the tile. System cannot get good focus due to running in to Level 3 fixture. Common image with poor focus of both tracks. No measurements.

C023-T48 – Largest track in tile near the right end of the tile. Track ~ 3 to 3.6 mm in length, several terminal particles visible at the end of various stylus. Track is bifurcated in to at least three stylus, if not more. Terminal particles are on the order of 10 μm in size. There may have been some additional particles associated with this track, see image [Track48_C+0001_R+0001_L+0000_X+0040345_Y-0003169_Z-0012016.jpg](#). EH is on the order of 140 μm . MTW is ~ 520 μm .

Imaged the top views at 7x & 20x.