

**From:** don brownlee <brownlee@astro.washington.edu>  
**Subject:** Re: keystones from ESRF  
**Date:** May 26, 2006 7:46:53 PM PDT  
**To:** andrew westphal <westphal@ssl.berkeley.edu>

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| [Hi Andrew](#)

Here is a quick update that I put together on a late friday night.  
all mounts are in acrylic

Track 57 (Febo)  
part 1 46 sections on 7 grids  
mount made from track top to look at fine debris  
many fine particles olivine, FeS and more  
Grid with forsterite sent to S Messenger for nanosims

part 2 - the terminal particle ~ 10 microns  
just mounted in acrylic will section next week

Other parts - several large particles still in crushed track.

Track 56  
25 sections on 8 grids  
great particle contains alkali silicates

Track 71  
180  $\mu$ m track photo documented

Track 22  
large track with >dozen particles  
photo documented/ crushed ready for mounting of the first particle behind the previously removed TP

20april

photo documented & ready to mount

Track 21

Apparently lost :( The two slide mount was placed on a compound microscope stage with the thick well slide on top and the thin non-well slide on bottom. When the bottom slide was ~ 1mm from the stage top it dropped and a ~1mm gap opened between the top and bottom slide. The keystone could not be seen afterwards and it appears to have blown out. The stage was searched without success but I will take off the microscope stage and search into the substage area. If it is there- I will find it. Lessons that I learned- Never allow a gap to occur in the slide-sandwich mount. not even the 1mm thickness of a thin slide. This can easily happen when an unclamped slide stack is placed with fingers down onto a large flat surface. This is particularly the case with the thick well slide is on top and the thin slide is on the bottom.

Sorry about your keystone- a most precious commodity in the world of cometary science.

I will give you a call next to discuss future plans.

Have a nice weekend

[Don](#)

Please send some our way. From our end, we have had trouble with several particles that were send to us in the picked-out state. Dave just spent a few days working on a "terminal particle" from JSC that turned out to be 100% aerogel. The particle that

you sent to Graciela in S also turned out to be quite problematic as she will report to you next week.

OK. What is your progress with the other keystones that we've sent you (I think a total of five or six)? I've only heard the one min/pet result from the first off-normal track that we sent you, the roedderite. What did you find in the others? If you haven't gotten to them yet, maybe we should send the next ones to JSC -- they claim to be ready for more. What do you think?

Attached is a picture of your 180 micron track 71. Its quite a clean track with essentially no debris and true skinny carrot. You can clearly see the terminal particle.

Yes. Notice the large angle with respect to the normal to the surface.

Cheers

Andrew

Cheers- Don

We just got a bunch of keystones from ESRF. Unless we hear an objection, starting next week we will:

- extract terminal particles, embed in S, and send to Keiko.
- send the remainders to Don or Mike for flattening, embedding, ultramicrotomy and TEM for min/pet.

Best

Andrew

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