APPENDICIES

APPENDIX 1

Phi Conversion table

Phi (ϕ)	Millimeters (mm)	Micrometers (μm)	
-6	64.0		
-5.5	45.3		
-5	32.0		
-4.5	22.6		
-4	16.0		
-3.5	11.3		
-3	8.0		
-2.5	5.7		
-2	4.0		
-1.5	2.8		
-1	2.0	2000.000	
-0.5	1.4	1414.214	
0	1.0	1000.000	
0.5	0.7	707.107	
1	0.5	500.000	
1.5		353.553	
2		250.000	
2.5		176.777	
3		125.000	
3.5		88.388	
4		62.500	
4.5		44.194	
5		31.250	
5.5		22.097	
6		15.625	
6.5		11.049	
7		7.813	
7.5		5.524	
8		3.906	
8.5		2.762	
9		1.953	
9.5		1.381	Formula
10		0.977	mm = 2^(-ϕ)

APPENDIX 2

2.1 Locations: GPS coordinates

Locality	X	Y	Altitude (m)	**Important Information**
Locality 1	731033	9904623	3866	GPS data is based on the UTM grid for South American 56 (PSAD), the same datum as the base maps. If required, to convert these coordinates into WGS 1984 the required ArcGIS Transformation is PSAD_1956_to_WGS_1984_6
Locality 2	730902	9904702	3845	
Locality 3	732500	9901557	3670	
Locality 4	735369	9902491	3579	
Locality 5	735238	9903150	3571	
Locality 7	733493	9909065	3493	
Locality 8	732804	9904983	3525	
Locality 9a	734367	9896189	3528	
Locality 9b	734333	9896243	3473	
Locality 10	730621	9912299	3419	
Locality 11	732370	9898902	3409	
Locality 12	734573	9894637	3462	
Locality 13 - see Locality 27				
Locality 14	729881	9900088	3882	
Locality 15	732027	9902777	3830	
Locality 16	735934	9906532	3452	
Locality 17	732221	9904514	3866	
Locality 18	730671	9912299		
Locality 19	733034	9901269	3651	
Locality 20	733462	9901152	3607	
Locality 21	735163	9902665	3575	
Locality 22	735265	9902621	3576	
Locality 23	735665	9902808	3531	
Locality 24	731960	9901590	3666	
Locality 25	732027	9903077		
Locality 25b	732027	9903080		
Locality 26	731198	9901818	3761	
Locality 27	731097	9901661	3738	
Locality 28	730216	9900397	3884	
Locality 29	734522	9899127	3634	
Locality 30	734500	9898837	3578	
Locality 31	735253	9899344	3561	
Locality 32	735113	9899804	3515	

Locality	X	Y	Altitude (m)	
Locality 33	743408	9901270	3999	
Locality 34	730218	9901653	3854	
Locality 35	730094	9901702	3816	
Locality 36	737113	9898540	3399	

2.2 Collected samples

In this thesis, samples are referred to by the label given to them in the field, which allows them to be uniquely identified.

L. 13 indicates that the *locality* number is 13,

C (for locality 17, a composite section) denotes the *subsection* the sample came from,

iii roman numerals are given to each sample *interval*. They tie into stratigraphic columns, descriptions and avoid the implications of using an interpretation (such as U2b) as a descriptive tool.

Q indicates a sample collected my Michael Ort, where Q indicates Quilotoa, the first digit indicates the month (January), the second and third the day, the fourth and fifth the year (2009), and –xy the sample number.

Locality No	Unit(s)	Sample - section	Sample - part	High-graded?	Day-Month-Year	further Sample Label
L.01	U2a		Q11409-4		14/01/2009	
L.01	U2a		i		19/01/2009	fine
L.01	U2a		Q11409-10		14/01/2009	
L.01	U2a		Q11409-9		14/01/2009	
L.01	U2a		Q11409-8		14/01/2009	
L.01	U2a		Q11409-7		14/01/2009	
L.01	U2a		Q11409-5		14/01/2009	
L.01	U2a		Q11409-3		14/01/2009	
L.01	U1		Q11409-2		14/01/2009	
L.01	U1		iii		19/01/2009	coarse
L.01	U1		ii		19/01/2009	pulse
L.01	U2a		i		19/01/2009	surge

Locality No	Unit(s)	Sample - section	Sample - part	High-graded?	Day-Month-Year	further Sample Label
L.01	U2a		i		19/01/2009	fine + coarse
L.01	U1		Q11409-1		14/01/2009	
L.01	U2a		Q11409-6		14/01/2009	
L.02			xvi		14/01/2009	
L.02			xiv		14/01/2009	
L.02			xvii		14/01/2009	
L.02			xv		14/01/2009	
L.02			x		14/01/2009	
L.02	U3		i		14/01/2009	
L.02	U3		ii		14/01/2009	
L.02	U3		iii		14/01/2009	
L.02	U3		iv		14/01/2009	
L.02	U2		v		14/01/2009	
L.02	too sml		vi			
L.02	U2		vii		14/01/2009	
L.02			ix		14/01/2009	
L.02			xiii		14/01/2009	
L.02			xi		14/01/2009	
L.02			xii		14/01/2009	
L.02			viii		14/01/2009	
L.07			v		16/01/2009	14700kBP
L.07			iv		16/01/2009	14700kBP
L.07	"U2"				10/01/2009	14700kBP - group visit
L.07			iii		16/01/2009	14700kBP
L.07			ii		16/01/2009	14700kBP
L.07			i		16/01/2009	14700kBP
L.07	U"2"				10/01/2009	14700kBP - coarse couplet
L.07	U"2"				10/01/2009	14700kBP - coarse couplet
L.08					11/01/2009	ROCK
L.09	U3		Q11209-3		12/01/2009	White crystal-rich pumice-fall
L.09	U3		Q11209-3		12/01/2009	White crystal-rich pumice-fall
L.10			vii		12/01/2009	
L.10	U3		viii		12/01/2009	fine
L.10			i		12/01/2009	

Locality No	Unit(s)	Sample - section	Sample - part	High-graded?	Day-Month-Year	further Sample Label
L.10			ii		12/01/2009	
L.10			iii		12/01/2009	
L.10			iv		12/01/2009	
L.10			v		12/01/2009	
L.10			vi		12/01/2009	
L.10	U3		ix		12/01/2009	
L.11	U2b		a		12/01/2009	
L.11	U2b		b		12/01/2009	
L.11	U2a		c		12/01/2009	
L.13	U1		vii		13/01/2009	
L.13	U2		iv		13/01/2009	
L.13	U2		vi		13/01/2009	
L.13	U3		i		13/01/2009	
L.13	U2b+'c'		n/a		13/01/2009	
L.13	U2		iii		13/01/2009	
L.13	U3		ii		13/01/2009	
L.13	U2		v		13/01/2009	coarse + fine together
L.14	U1		ii		18/01/2009	fallout
L.14	U2b		i		18/01/2009	
L.15	U3		i		17/01/2009	
L.15	U3		ii		17/01/2009	
L.15	U2'c'		iii		17/01/2009	
L.15	U2b		iv		17/01/2009	
L.15	U1?U2a?		v		17/01/2009	
L.15	U1		vi		17/01/2009	
L.15	U1		vii		17/01/2009	
L.16	U2		iv		14/01/2009	
L.16	U2		iii		14/01/2009	
L.16	U3		i		14/01/2009	
L.16	U2		v		14/01/2009	
L.16	U2		ii		14/01/2009	
L.17		K	i		18/01/2009	
L.17	U2a				19/01/2009	2x fine only - bulk for lab
L.17	U2b				19/01/2009	2x bulk for lab
L.17	U1?				19/01/2009	phreatic ash - bulk for lab

Locality No	Unit(s)	Sample - section	Sample - part	High-graded?	Day-Month-Year	further Sample Label
L.17		K	vi		18/01/2009	
L.17		K	v		18/01/2009	
L.17		K	iv		18/01/2009	
L.17		K	ii		18/01/2009	
L.17		J	iii		18/01/2009	
L.17		J	ii		18/01/2009	coarse grey
L.17		J	ii		18/01/2009	fine brown
L.17		J	i		18/01/2009	
L.17	U3	A	ii		17/01/2009	fall
L.17		K	iii		18/01/2009	
L.17	U3	A	i			flow
L.17		H		yes 4	18/01/2009	
L.17		A	iii	yes 2	17/01/2009	
L.17	U3	A	iii		17/01/2009	fall
L.17		B	i		18/01/2009	
L.17		B	ii	yes 2	18/01/2009	
L.17		C	ii		18/01/2009	
L.17		E			18/01/2009	
L.17		F			18/01/2009	
L.17		G			18/01/2009	
L.17		C	i		18/01/2009	
L.22	U3		ii		16/01/2009	fall?
L.22			vi		16/01/2009	channel
L.22	U2a?		v		16/01/2009	
L.22	U2b?		iv		16/01/2009	fine beige
L.22	U3		i		16/01/2009	flow
L.22	U3		ii		16/01/2009	ballistic - fine 40cm layer
L.22	U3		i		16/01/2009	flow - lithics/pumice
L.22	U2b		iii		16/01/2009	
L.23	U3		ii-f		16/01/2009	fine
L.23			v-gy		16/01/2009	grey
L.23			v-bl		16/01/2009	black
L.23	U2b		iv-c		16/01/2009	
L.23	U2b		iv-b		16/01/2009	
L.23	U3		ii-c		16/01/2009	coarse
L.23	U3		iii		16/01/2009	

Locality No	Unit(s)	Sample - section	Sample - part	High-graded?	Day-Month-Year	further Sample Label
L.23	U3		i		16/01/2009	
L.23	U2b		iv-a		16/01/2009	
L.24	U2'c'				16/01/2009	
L.24	U2b				16/01/2009	
L.25	U3		i		17/01/2009	
L.25	U1		vii		17/01/2009	
L.25	U2b		vi		17/01/2009	
L.25	U2b		v		17/01/2009	
L.25	U2b		iv		17/01/2009	
L.25	U3		ii		17/01/2009	
L.25	U2c		iii		17/01/2009	
L.25b	U2a?		i		17/01/2009	Correlatory
L.25b	U1		ii		17/01/2009	
L.26	U2b				18/01/2009	
L.26	U2a				18/01/2009	
L.26	U2'c'				18/01/2009	
L.27	U2'c'				18/01/2009	
L.27	U2a				18/01/2009	
L.27	U2b				18/01/2009	
L.28	U2b		i		18/01/2009	
L.28	U1		ii		18/01/2009	
L.30	U1		iv		19/01/2009	pulse
L.30	U1		v		19/01/2009	coarse base
L.30	U2a		iii		19/01/2009	
L.30	U2b		ii		19/01/2009	
L.30	U3		i		19/01/2009	fall
L.31	U2a?		ii		19/01/2009	
L.31	U1		iii		19/01/2009	pulse
L.31	U2b		i		19/01/2009	
L.32	U2				19/01/2009	
L.34	U2b+'c'				20/01/2009	
L.35	U2b				20/01/2009	
L.36	U3		i		20/01/2009	2x surges
L.36	U2b		ii		20/01/2009	

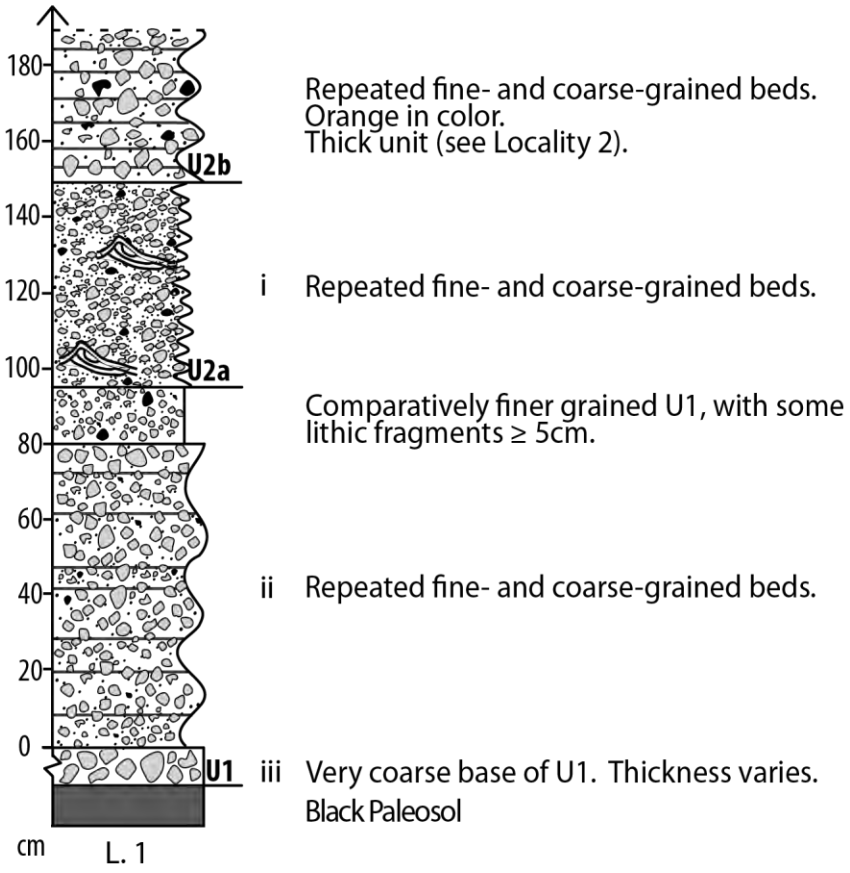
APPENDIX 3

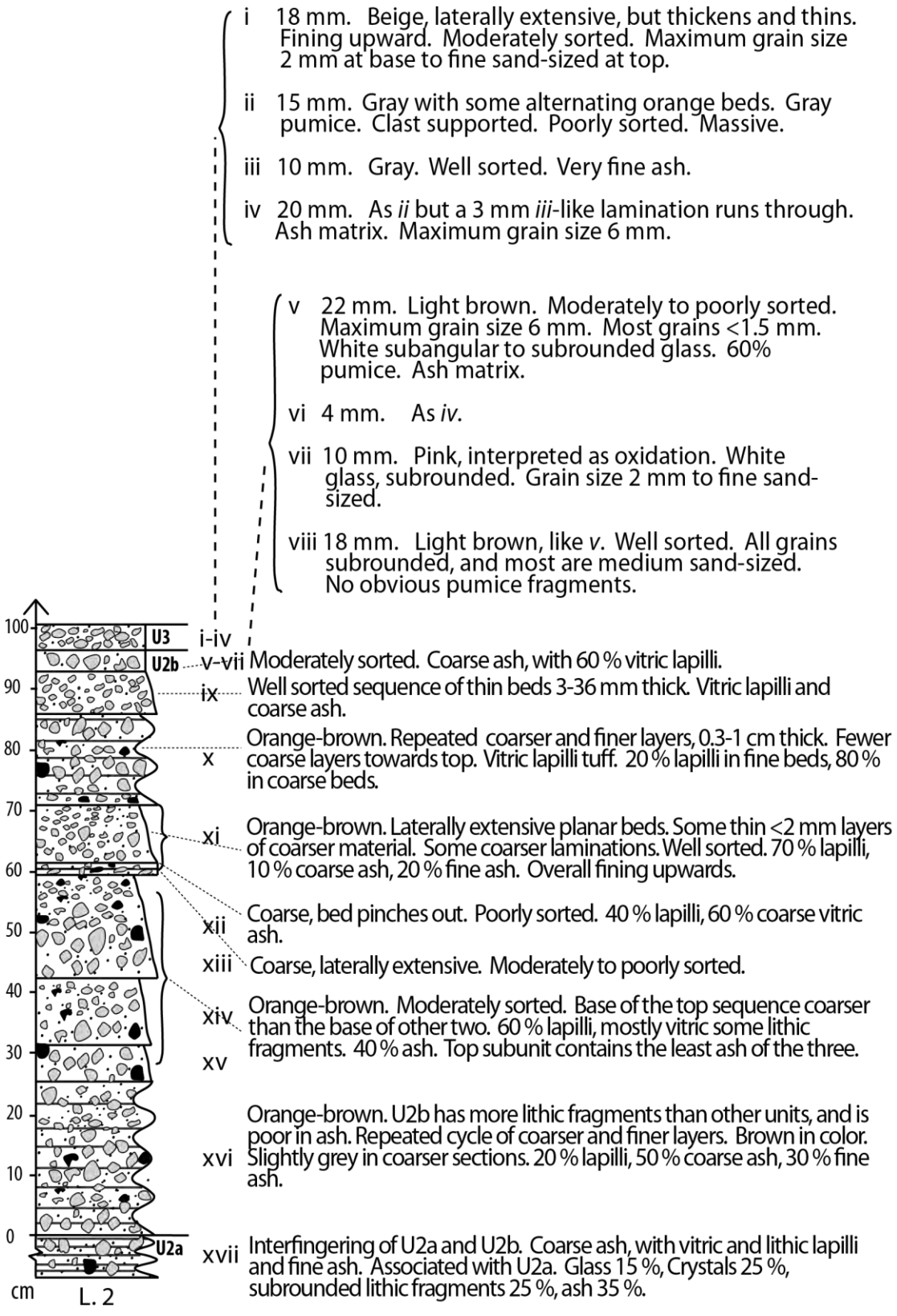
3.1 Locations: Unit 2, thickness, maximum grain size and distance from the crater

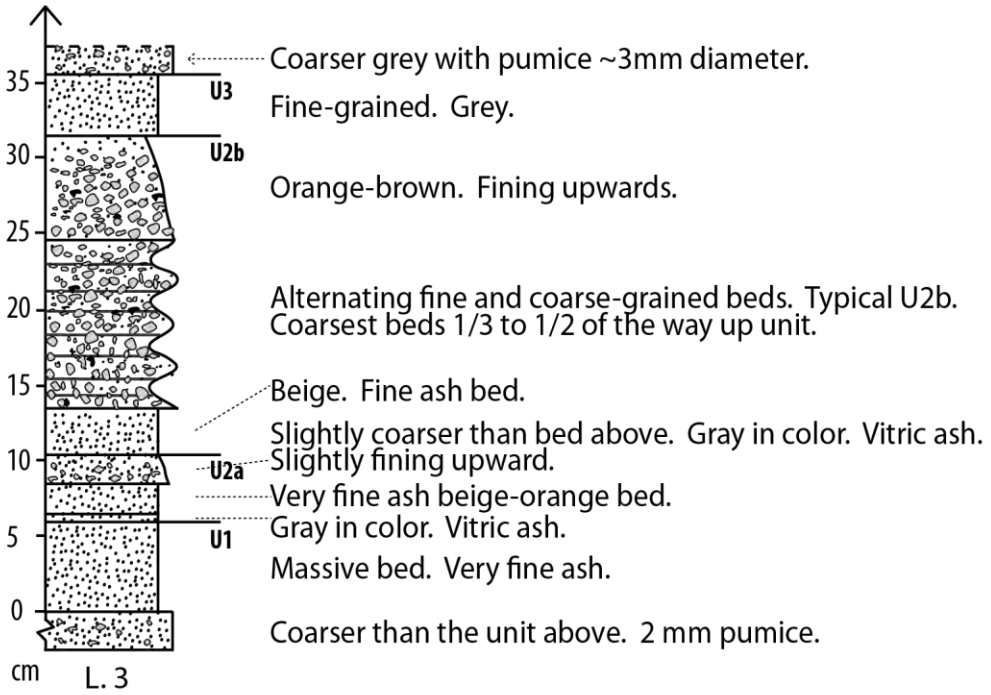
Locality Number	Thickness (cm)			Max. grain size (mm)			Distance from the craterb center (km)
	U2a	U2b	U2c	U2a	U2b	U2c	
Locality 1	54			8			2.6
Locality 2		96.9			11.31		2.7
Locality 3		21					4.1
Locality 4							
Locality 5							
Locality 7							
Locality 8							
Locality 9a							
Locality 9b							
Locality 10		42			5.65		7.5
Locality 11	4	7	1	8	5.65		6.7
Locality 12							
Locality 13 - see Locality 27							
Locality 14		12	1				6.5
Locality 15		25.5	0.8		5.65		3.1
Locality 16		23.1			8	5.65	2.7
Locality 17	47.7	695			5.65		1.5
Locality 18	5	18		8	22.5		4.1
Locality 19	3	18					4.3
Locality 20	4.5	21					4.4
Locality 21	2	26					3.3
Locality 22	9	23		16	8		3.4
Locality 23		46			8		3.5
Locality 24		22	2		8	4	4.2
Locality 25	3.3	33.2	2.1		8	11.31	2.9
Locality 25b	3	15		8			2.5
Locality 26	8	26	1	11.31	8	4	4.4
Locality 27	9	8	0.8	4	11.31	8	4.5
Locality 28		8.5	0.5		5.65		6.1
Locality 29		14	0.5				6.5
Locality 30	5	11		8	5.65		6.8
Locality 31	1.3	14		4	5.65		6.5
Locality 32	0.5	14.6	0.4		4		5.9
Locality 33							11.0

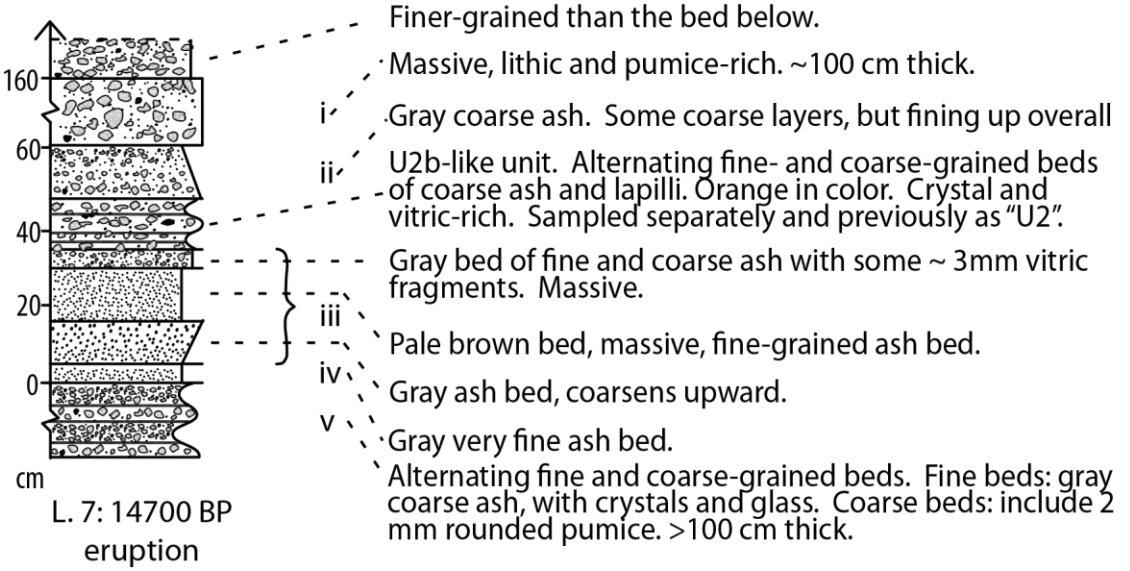
Locality Number	Thickness (cm)			Max. grain size (mm)			Distance from the crater center (km)
	U2a	U2b	U2c	U2a	U2b	U2c	
Locality 34	0.9	19	0.8	11.31		5.2	5.2
Locality 35	0.6	10	0.5	11.31		5.2	5.2
Locality 36		11.8		4		7.9	7.9
			no data				

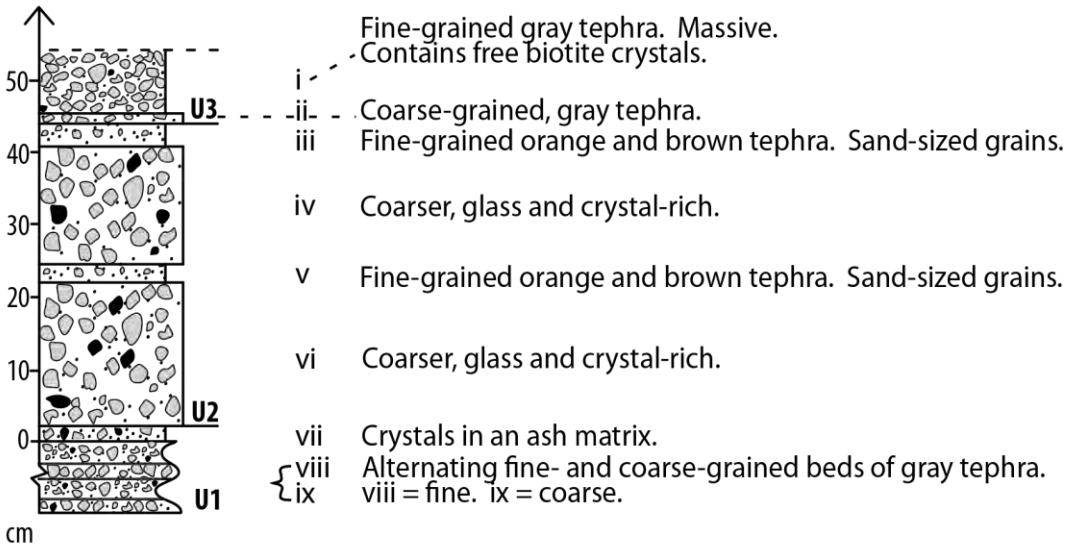
3.2 Stratigraphic columns



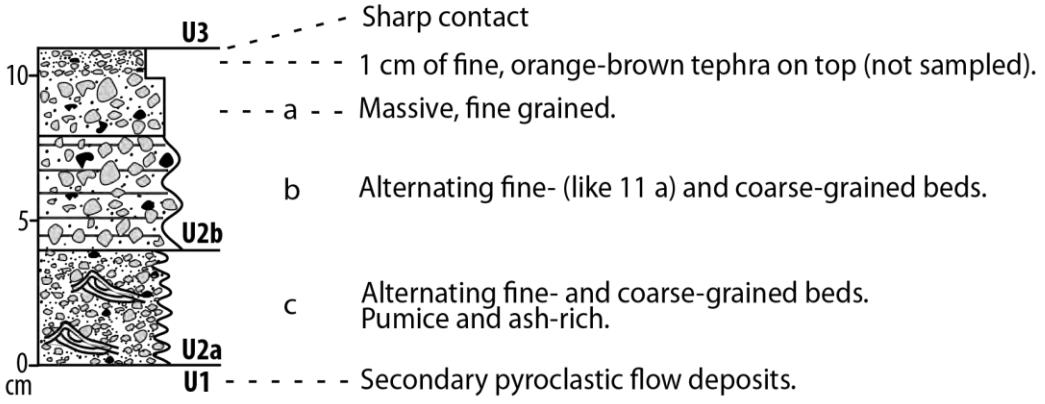

i 18 mm. Beige, laterally extensive, but thickens and thins. Fining upward. Moderately sorted. Maximum grain size 2 mm at base to fine sand-sized at top.
ii 15 mm. Gray with some alternating orange beds. Gray pumice. Clast supported. Poorly sorted. Massive.
iii 10 mm. Gray. Well sorted. Very fine ash.
iv 20 mm. As ii but a 3 mm iii-like lamination runs through. Ash matrix. Maximum grain size 6 mm.
v 22 mm. Light brown. Moderately to poorly sorted. Maximum grain size 6 mm. Most grains <1.5 mm. White subangular to subrounded glass. 60% pumice. Ash matrix.
vi 4 mm. As iv.
vii 10 mm. Pink, interpreted as oxidation. White glass, subrounded. Grain size 2 mm to fine sand-sized.
viii 18 mm. Light brown, like v. Well sorted. All grains subrounded, and most are medium sand-sized. No obvious pumice fragments.
100
90
80
70
60
50
40
30
20
10
0
cm
L. 2
U3
U2b
U2a
i-iv
v-vii Moderately sorted. Coarse ash, with 60 % vitric lapilli.
ix Well sorted sequence of thin beds 3-36 mm thick. Vitric lapilli and coarse ash.
x Orange-brown. Repeated coarser and finer layers, 0.3-1 cm thick. Fewer coarse layers towards top. Vitric lapilli tuff. 20 % lapilli in fine beds, 80 % in coarse beds.
xi Orange-brown. Laterally extensive planar beds. Some thin <2 mm layers of coarser material. Some coarser laminations. Well sorted. 70 % lapilli, 10 % coarse ash, 20 % fine ash. Overall fining upwards.
xii Coarse, bed pinches out. Poorly sorted. 40 % lapilli, 60 % coarse vitric ash.
xiii Coarse, laterally extensive. Moderately to poorly sorted.
xiv Orange-brown. Moderately sorted. Base of the top sequence coarser than the base of other two. 60 % lapilli, mostly vitric some lithic fragments. 40 % ash. Top subunit contains the least ash of the three.
xv
xvi Orange-brown. U2b has more lithic fragments than other units, and is poor in ash. Repeated cycle of coarser and finer layers. Brown in color. Slightly grey in coarser sections. 20 % lapilli, 50 % coarse ash, 30 % fine ash.
xvii Interfingering of U2a and U2b. Coarse ash, with vitric and lithic lapilli and fine ash. Associated with U2a. Glass 15 %, Crystals 25 %, subrounded lithic fragments 25 %, ash 35 %.


35
30
25
20
15
10
5
0
cm
U3
U2b
U2a
U1
Coarser grey with pumice ~3mm diameter.
Fine-grained. Grey.
Orange-brown. Fining upwards.
Alternating fine and coarse-grained beds. Typical U2b.
Coarsest beds 1/3 to 1/2 of the way up unit.
Beige. Fine ash bed.
Slightly coarser than bed above. Gray in color. Vitric ash.
Slightly fining upward.
Very fine ash beige-orange bed.
Gray in color. Vitric ash.
Massive bed. Very fine ash.
Coarser than the unit above. 2 mm pumice.
L. 3

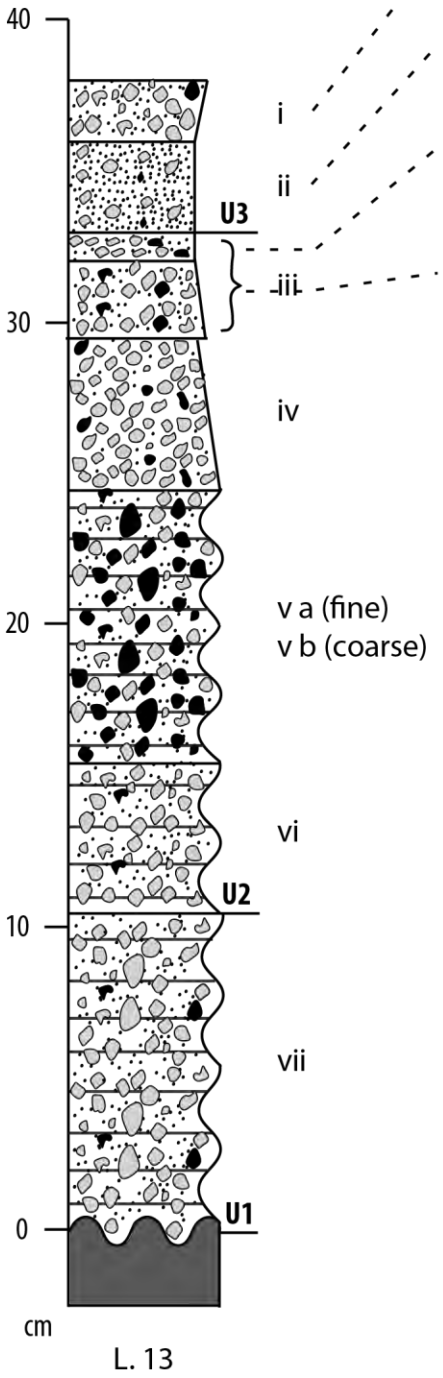

160
60
40
20
0
cm
i
ii
iii
iv
v
Finer-grained than the bed below.
Massive, lithic and pumice-rich. ~100 cm thick.
Gray coarse ash. Some coarse layers, but fining up overall
U2b-like unit. Alternating fine- and coarse-grained beds of coarse ash and lapilli. Orange in color. Crystal and vitric-rich. Sampled separately and previously as "U2".
Gray bed of fine and coarse ash with some ~ 3mm vitric fragments. Massive.
Pale brown bed, massive, fine-grained ash bed.
Gray ash bed, coarsens upward.
Gray very fine ash bed.
Alternating fine and coarse-grained beds. Fine beds: gray coarse ash, with crystals and glass. Coarse beds: include 2 mm rounded pumice. >100 cm thick.
L. 7: 14700 BP eruption


50
40
30
20
10
0
cm
U3
U2
U1
i
ii
iii
iv
v
vi
vii
viii
ix
Fine-grained gray tephra. Massive.
Contains free biotite crystals.
Coarse-grained, gray tephra.
Fine-grained orange and brown tephra. Sand-sized grains.
Coarser, glass and crystal-rich.
Fine-grained orange and brown tephra. Sand-sized grains.
Coarser, glass and crystal-rich.
Crystals in an ash matrix.
Alternating fine- and coarse-grained beds of gray tephra.
viii = fine. ix = coarse.

L. 10


10
5
0
cm
U3
U2b
U2a
U1
Sharp contact
1 cm of fine, orange-brown tephra on top (not sampled).
a
Massive, fine grained.
b
Alternating fine- (like 11 a) and coarse-grained beds.
c
Alternating fine- and coarse-grained beds.
Pumice and ash-rich.
Secondary pyroclastic flow deposits.

L. 11



L. 13

Gray. Reverse graded. Poorly sorted. Thickness varies. 80% glass 5mm; 13% ash matrix; 5% biotite; 2% lithic fragments.

Gray. Massive. Moderate sorting. All grains<2mm. Lots of ash. 85% ash; 10% biotite <1.5mm; 5% pumice ≤ 2mm; <1% rusty lithic fragments.

Brown. Massive. Poor sorting due to lapilli-sized fragments. Fine, sand-sized. ≤3mm lithic fragments (some light gray (texture and crystal size of dacite dome), some dark). Mostly ash.

30% glass, median size = 1mm; 50% lithic fragments 2mm; some dacite some rust colored; 10% crystals <1mm; 10% ash.

Gray. Normally graded. Moderate sorting. Ashy matrix. 65% glass <1mm; 15 % lithic fragments 2mm; 15% crystals <0.5 mm; 5% ash.

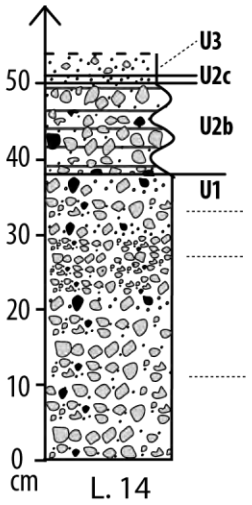
Repeated finer and coarser beds. Fine: 35% glass; 50% lithic fragments; 15% crystals. Coarse: 25% glass; 60% lithic fragments; 15% crystals.

1(top) fine. Clean, no ash. Normally graded.
2 coarse. (as above).
3 fine. ~40% (dacitic?) lithic fragments. Normally graded.
4 coarse. larger, 3 mm, lithic fragments 70 %.
5 (bottom) fine. ~40% (dacitic?) lithic fragments. Massive.

Repeated finer and coarser beds, but less well defined. 5 mm lithic fragments.

Repeated finer and coarser beds. Large pumices 15 mm. 55% glass; 40% ash; <5% crystals and lithic fragments.

Erosive contact between U1 and underlying black paleosol.



L. 14

Very fine-grained ash.

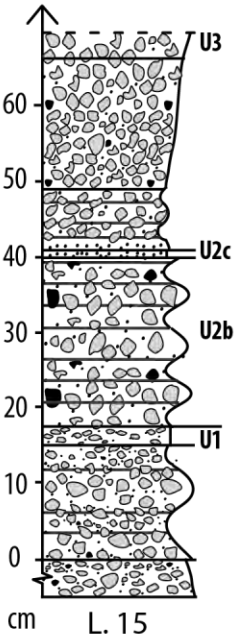
i Coarsest bed found near the middle of the unit.

Coarse-grained subunit.

Fine-grained subunit.

ii Pumice-rich. Massive. Coarse (~8 mm vitric lapilli) and fine (2 mm vitric lapilli) subunits. ~38 cm exposed.

Coarse-grained subunit.



L. 15

Coarsening upward to ~8 mm angular lithic fragments and similarly sized rounded pumice.

i Coarsening upward.

ii Fine- and coarse-grained beds. 8 mm of fine ash at base.

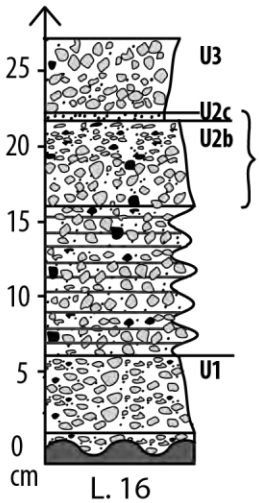
iii Fine ash.

iv Typical U2b. Coarse layer 3 cm from unit base.

v Finer-grained than subunit below.

vi Pulsatory U1. Vitric lapilli.

vii Fining upward. U1 fallout



L. 16

i Gray. Coarsening upward. Very well sorted. >70% vitric clasts.

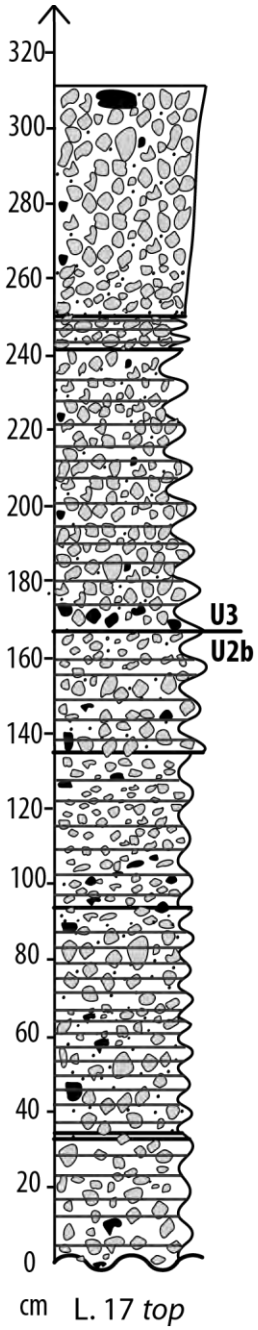
Beige-brown. Vitric ash. Crystals < 5mm.

ii Fining upward. Well sorted.

iii Gray. Alternating fine- and coarse-grained beds. Moderately sorted.

iv Beige, fining upward, moderately sorted.

v Gray, massive, poorly sorted. 12 mm thick. Difficult to sample precisely. Erosive contact with paleosol.



L. 17 *top*

A i — Gray with orange lithic fragments. Coarsening upward. Poor to very poorly sorted at the top, where there is a 40 cm non stained lithic block. Massive. Matrix supported. Median grain sizes at the top: glass and crystals, 2 mm; lithic fragments 3 mm. Median grain sizes at the bottom: glass, 2 mm, crystals 1 mm; lithic fragments 5 mm. Some larger lithic fragments, 15 mm and pumice, 10 mm.

A ii — Alternating fine- and coarse-grained beds. Fine beds well sorted, coarse beds moderately sorted. Color, component proportions and sizes as *A i*.

A iii — Gray, overall fining upward. Alternating fine- and coarse-grained beds. Some large angular lithic fragments at the base.

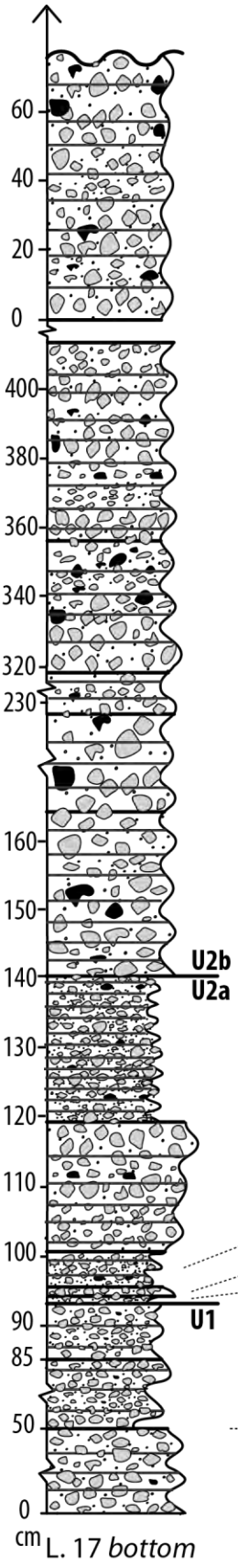
B i — Gray-brown in color, except where orange lithic fragments present. Alternating fine- and coarse-grained, laterally extensive, beds. No other structures or reworking. Coarse beds: no ash, lithic fragments 2-8 mm, glass 1.5 mm, crystals 1 mm. Fine beds: lithic fragments 2 mm, glass and crystals <1 mm (biotite 2.5 mm), ash.

B ii — As *B i* except the beds are well sorted, finer-grained, and the grain size difference between the fine (1.5-1 mm) and coarse (2-1.5 mm) beds is less. Both bed types lack ash. Sample high graded by two lithic fragments.

C i — As *B ii* except the beds are thinner ~5 mm and the alternation between fine- and coarse-grained beds more consistent. Fine beds well sorted. Coarse beds moderately sorted.

C ii — 3 cm thick. Moderately sorted. Bimodal grain-size distribution (3-5 mm and <1 mm). No ash.

D — As *C ii*.



Erosional unconformity.

E — 75 cm thick. Similar to *D* and *C ii*, except some coarse beds are thicker (2 cm as opposed to 0.5 cm), with larger lithic fragments. Coarse beds moderately sorted. Fine beds well sorted.

Outcrop partially covered by colluvium. Although there does not appear to be an unconformity, thickness uncertain.

F — 57 cm thick. Similar to *E*. Alternating fine- and coarse-grained beds. Coarse beds up to 2.5 cm thick. Slightly coarser base. Fine beds well sorted.

G — 36 cm thick. Same as *F*, but perhaps with larger lithic fragments 8 to 20 mm and thinner (~1 cm) coarse beds.

Approximately 95 cm of the outcrop covered by colluvium from above.

H — 64 cm thick. Larger lithic fragments. Coarser and many more stained lithic fragments than above. Sample high graded by four lithic fragments.

J i — Start of U2b proper. Alternating fine- and coarse-grained beds.

J ii — U2a fine material. Alternating coarse gray and fine brown beds.

J iii — U2b material. Coarsening upward. Coarser than *J i*.

K i — Looks like U2a. Coarsening upward.

K ii — Looks like U2b. Coarse ash.

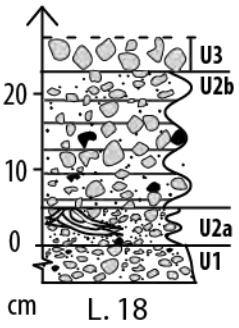
K iii — Looks like U2a. Fine ash.

K iv — Thin, alternating fine- and coarse-grained beds.

K v — Coarsening upward.

Gradational contact.

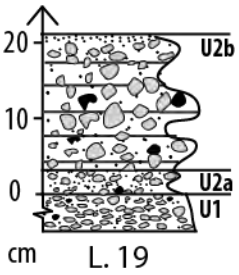
K vi — Alternating fine- and coarse-grained beds. Much coarser than the subunit *K v* above. Sample high graded by one lithic fragment.



Large pumice at the coarse base of U3.

Typical U2b.

Typical U2a.
U1, fining upwards.

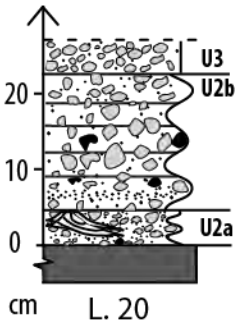


Top of U2b is a fine mud brown layer, ~12 mm thick, as observed in more proximal areas.

U2b. Fining upward, punctuated by coarse beds. Coarsest bed 6-9 cm from unit base.

U2a. Rounded 4 mm pumice.

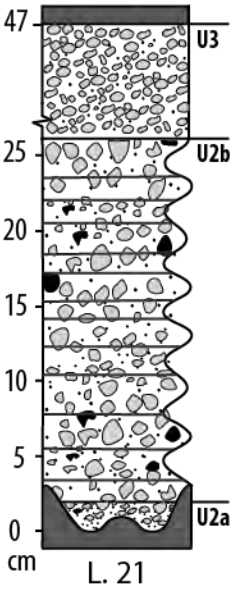
U1. Fine-grained and fining upwards.



Fine grained U3.

U2b with a 1.5 cm bed of ash toward the base which is >90 % ash with some crystals.

U2a. Pumice. Little ash.
Black paleosol.



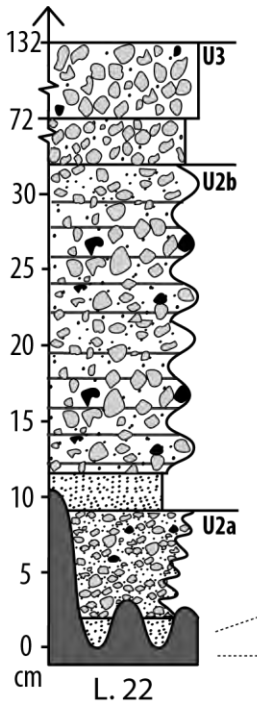
Modern soil.

Gray U3.

Orange-brown U2b. Coarsest layer 12-16 cm from unit base.

Gray, fine-grained, like U2a, but limited exposure.

Paleosol. Erosive contact with U2a and U2b.



i Gray. Massive. Very poorly sorted. Angular stained lithic fragments. Some 10 cm lithic blocks.

ii Gray. Massive. Poorly sorted.

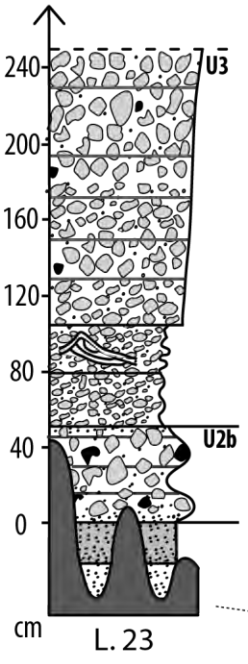
iii U2b. Coarsest bed in the top ~5 cm.

iv Beige, fine ash.

v U2a. Coarsening upward.

vi Gray, fine ash. Up to 2 cm exposed.

Paleosol. Unconformable contact with the first three subunits.



i Gray. 140 cm thick. Massive. Coarsening upward. Pumice and lithic fragments. Matrix supported. Planar bedded.

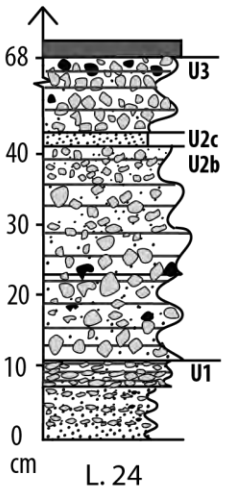
ii As *iii* except with dune forms, defined by coarse lenses of pumice.

iii Generally fine-grained, with some lenses of coarse grains.

iv U2b, with beds of fine ash at the top and bottom.

v - bl
v - gy
Two ash beds, of varying thickness. One gray (gy) in color, one more black in color (bl) due to differences in crystal components. Unit affiliation unclear.

Paleosol. Unconformable contact with the first two subunits.



Modern soil.

Gray. Alternating fine sand-sized and coarser lapilli-sized beds. Overall coarsening upward to 15 mm lithic fragments.

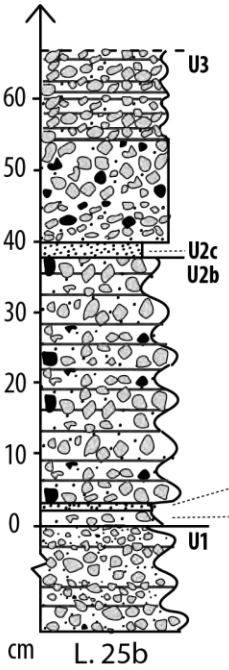
Fine ash.

U2b. Fining upward.

Alternating fine- and coarse-grained beds. Coarsest bed 6-9 cm from unit base.

Gray. Alternating fine- and coarse-grained beds. 4 mm pumice.

Gray. Alternating fine-grained and ash beds.



i Alternating fine- and coarse-grained beds.

ii Fine-grained base. Overall very coarse. Pumice and lithic fragment-rich.

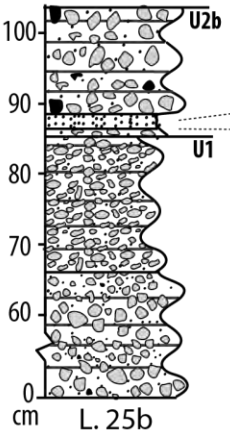
iii Fine ash.

iv Typical U2b. Fining upward at the top.

v 12 mm fine ash bed.

vi Typical U2b.

vii Alternating fine- and coarse-grained beds. Overall fining upward. >19.5 cm thick.



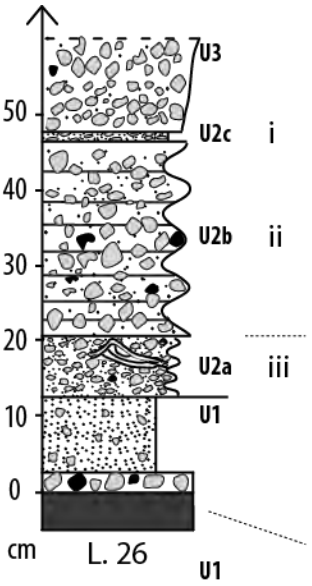
15 cm typical U2b

i 18 mm fine ash bed.

12 mm typical U2b as above. Not sampled.

ii Alternating fine- and coarse-grained beds as below, except finer grain sizes and some coarse discontinuous lenses.

Alternating fine- and coarse-grained beds.



Gray, coarsening upward, with pumice.

i Fine brown ash containing vitric lapilli.

ii Orange, alternating fine- and coarse-grained beds. Typical U2b.

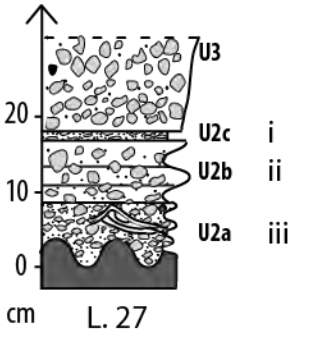
Contact defined by color. Grain size is similar on either side.

iii Gray, alternating fine- and coarse-grained beds. Two coarse beds, with pumice. Three fine beds, better sorted, no pumice.

Fine ash with some large pumice: one 2 cm pumice.

Coarse pumice bed with 5 mm stained lithic fragments. Little to no ash.

Black paleosol.

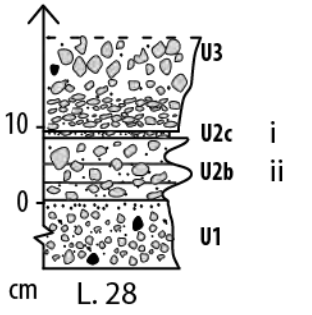


With pumice as L. 26.

i 8 mm ash bed with vitric lapilli.

ii Orange, alternating fine- and coarse-grained beds. Typical U2b. Use the thickness at recorded in the L. 13 column.

iii U2a. 9 cm minimum thickness. Erosional contact with the black paleosol.

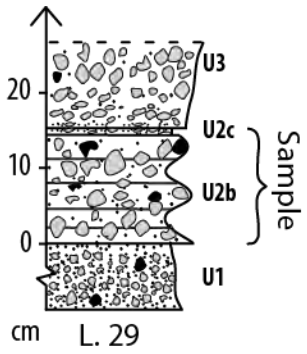


Coarsening upward, with a rapid change in grain size part way up sequence. Pumice 10 mm, with some 20 mm.

i 5 mm ash bed with ~2 mm vitric lapilli.

ii Orange, alternating fine- and coarse-grained beds. Typical U2b. Coarsest bed 3-4 cm from unit base.

Fining upward. Pumice-rich. Fine ash on top.

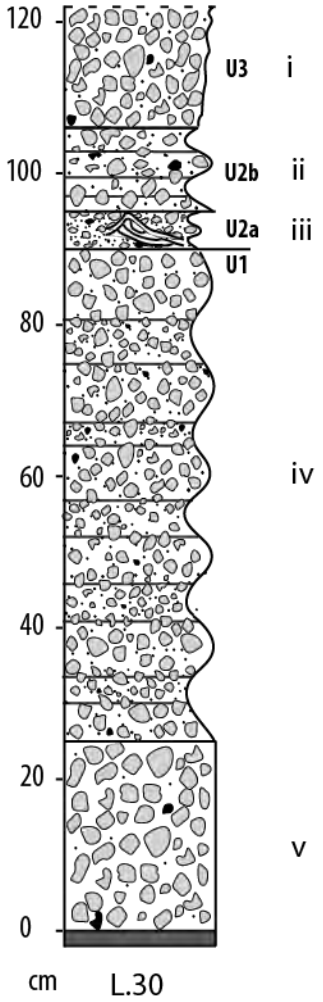


Well sorted. Ash rich. Coarsening up with round pumice located >1 cm from unit base.

5 mm ash bed with ~2 mm subrounded vitric gray/black crystalline lapilli. Mafic crystals and glass <0.5 mm.

Orange, alternating fine- and coarse-grained beds. Typical U2b. Well sorted.

Ash-rich with lithic fragments. 3 cm from top is rich in pumice >6 mm. 30 % pumice, >50 % ash.



Reverse graded, with pumice and a few stained lithic fragments.

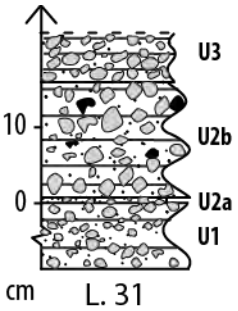
Alternating fine- and coarse-grained laterally extensive beds. Coarsest bed 2.5-3.5 cm from unit base.

Some small rounded pumice, few lithic fragments. Ash-dominated.

Alternating fine- and coarse-grained laterally extensive beds. Pumice rich, some >1 cm. Few lithic fragments.

Massive, coarse unit. Pumice rich, few lithic fragments. Very little ash.

Black paleosol

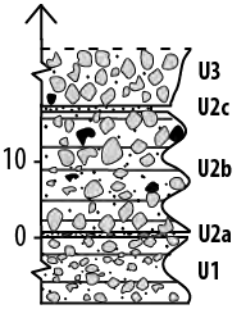


Alternating fine- and coarse-grained beds.

i Very well sorted. Coarse- (1-1.5 mm) and fine-grained (<0.5 mm) beds.

ii 13 mm ash with some small lapilli.

iii Alternating fine- and coarse-grained beds. Large ~2 cm pumice.



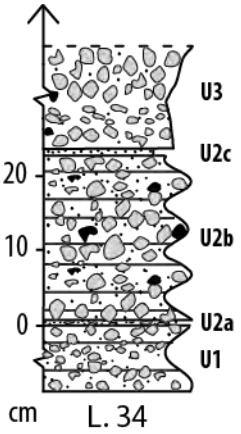
Coarsening upward.

4 mm U2c bed.

Orange, alternating fine- and coarse-grained beds. Coarsest bed 3-5 cm from unit base and a fine ash bed 9.5-10 cm from unit base.

5 mm ash with some small lapilli.

Alternating fine- and coarse-grained beds. Large pumice.



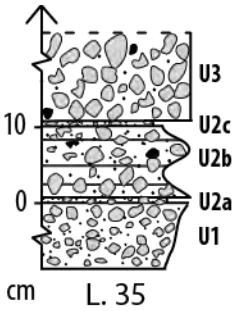
Fining then coarsening upward. 35 cm minimum thickness.

8 mm U2c bed.

Orange, alternating fine- and coarse-grained beds. Coarsest bed in the lower half of the unit.

9 mm well sorted ash bed.

Alternating fine- and coarse-grained beds. 1 cm pumice. 40 cm minimum thickness.



L. 35

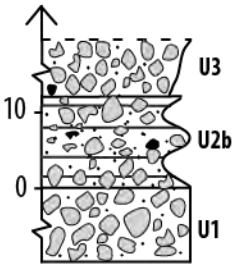
Coarse and rich in pumice.

5 mm fine ash and lapilli bed.

U2b beds, with a narrower grain-size range than L. 34.

6 mm gray U2a bed.

U1 coarsening upward. Lithic fragments ~5 mm, some >20 mm.



L. 36

Coarsening upward.

Orange, alternating fine- and coarse-grained beds.

Gray, coarse-grained bed with large pumice.

APPENDIX 4

4.1 Grain-size distribution data

4.1.1 Tables

		Locality 1					Loc. 2
weight		i	i	i	ii	iii	iii
percent		U2a	U2a	U2a	U1	U1 yellow color	U3
(wt %)	**phi (ϕ)**	fine	fine+coarse	surge	pulse	coarse	
S	**-5.5**	0.000	0.000	0.000	0.000	0.000	0.000
I	**-5**	0.000	0.000	0.000	0.000	5.259	0.000
E	**-4.5**	0.000	0.000	0.000	0.000	2.996	0.000
V	**-4**	0.000	0.000	0.000	0.000	9.603	0.000
E	**-3.5**	0.000	0.000	0.000	0.000	2.226	0.000
	-3	0.000	0.000	0.165	0.487	5.427	0.000
D	**-2.5**	0.115	0.327	0.330	0.860	5.259	0.391
A	**-2**	0.403	1.037	0.217	0.674	5.644	0.522
T	**-1.5**	1.093	2.073	0.351	1.607	8.039	1.044
A	**-1**	1.784	3.328	0.754	3.545	7.557	1.044
	-0.5	3.337	4.910	1.910	5.752	7.822	2.087
	0	5.006	6.274	3.015	7.307	7.148	3.327
	0.5	7.768	9.274	4.254	9.577	7.184	6.262
	1	9.436	10.420	5.865	9.867	6.173	10.437
	1.5	8.170	8.020	6.309	7.950	4.103	10.698
	2	12.888	11.675	11.275	11.733	5.006	16.504
	2.5	9.551	8.129	10.790	8.955	3.081	10.894
	3	9.494	8.183	14.166	8.914	2.647	10.046
	3.5	7.192	6.110	16.944	7.743	1.661	6.915
	4	7.883	8.129	15.188	7.152	1.239	6.327
	4.5	4.430	2.564	4.161	3.213	0.602	3.262
C	**5**	2.725	2.272	4.306	4.664	1.324	2.385
O	**5.5**	2.499	2.084				2.153
U	**6**	1.292	1.078				1.079
L	**6.5**	1.300	1.084				1.147
T	**7**	1.102	0.919				1.010
E	**7.5**	0.756	0.630				0.697
R	**8**	0.863	0.719				0.811
	8.5	0.632	0.527				0.626
D	**9**	0.268	0.223				0.306
A	**9.5**	0.013	0.011				0.027
T	**10**	0.000	0.000				0.000
A	**Total**	100	100	100	100	100	100

	Locality 2					
	iv	v	vii	ix	x	xiii
	U3	U2	U2	U2	U2	U2ab interfingering
phi (ϕ)						
-5.5	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	1.657
-3	1.550	0.695	0.665	0.000	0.756	0.072
-2.5	0.221	0.037	1.228	0.000	0.182	1.045
-2	0.620	0.329	0.461	0.309	1.604	1.909
-1.5	4.252	0.732	1.433	0.982	3.933	3.818
-1	10.540	2.160	3.122	4.799	7.141	6.772
-0.5	13.286	5.381	4.811	12.321	12.224	10.411
0	12.710	13.982	5.476	19.674	13.737	13.617
0.5	12.755	18.777	8.137	19.310	16.127	14.733
1	11.603	14.824	11.310	12.630	13.343	12.608
1.5	8.326	8.529	10.338	6.006	6.808	8.573
2	9.566	8.638	15.711	7.409	5.688	10.195
2.5	5.049	4.722	8.700	3.564	2.057	5.259
3	3.764	3.514	5.988	5.108	1.059	3.494
3.5	2.170	1.903	3.224	2.189	3.510	2.161
4	1.639	8.126	13.511	4.743	6.445	2.846
4.5	0.664	5.783	3.327	0.505	3.661	0.360
5	1.284	1.867	2.559	0.449	1.725	0.468
5.5						
6						
6.5						
7						
7.5						
8						
8.5						
9						
9.5						
10						
Total	100	100	100	100	100	100

	Locality 2	Locality 10						
	xvii	i	ii	iii	iv	v	vi	vii
	U2ab interbed	U3	U3	U2	U2	U2	U2	U1
phi (ϕ)								
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.202
-3	0.000	0.738	1.655	0.000	0.000	0.000	0.000	7.665
-2.5	0.542	0.639	2.845	0.000	0.000	0.101	0.000	3.457
-2	1.192	0.098	5.432	0.531	0.034	0.469	0.243	2.355
-1.5	2.961	0.738	8.691	0.342	0.168	0.637	0.608	1.453
-1	6.645	2.312	11.743	0.607	0.674	2.247	1.762	1.503
-0.5	9.642	5.312	15.727	1.746	2.460	3.823	4.739	2.505
0	11.918	8.214	17.020	1.860	6.267	5.567	7.959	2.956
0.5	14.987	13.035	17.227	3.454	15.229	9.792	13.882	4.208
1	15.060	14.658	11.330	7.438	22.978	15.761	19.198	5.261
1.5	10.004	12.248	3.621	10.588	16.947	18.712	17.467	5.261
2	11.051	15.248	1.914	19.696	19.912	26.727	21.659	9.319
2.5	5.273	8.067	0.724	16.167	10.007	10.698	8.080	7.966
3	3.828	6.640	0.569	15.598	3.032	3.119	2.096	7.665
3.5	2.203	4.279	0.207	6.110	0.505	0.637	0.304	4.008
4	3.214	3.197	0.207	4.288	0.202	0.570	0.304	6.864
4.5	0.831	1.672	0.207	3.226	0.168	0.235	0.304	11.222
5	0.650	1.033	0.879	1.873	0.260	0.905	1.397	3.096
5.5		0.433		1.687	0.299			3.096
6		0.390		0.881	0.163			1.764
6.5		0.328		0.924	0.169			1.881
7		0.226		0.798	0.143			1.589
7.5		0.253		0.561	0.099			1.081
8		0.172		0.688	0.121			1.237
8.5		0.065		0.588	0.100			0.957
9		0.003		0.317	0.054			0.413
9.5		0.000		0.032	0.008			0.016
10		0.000		0.000	0.000			0.000
Total	100	100	100	100	100	100	100	100

	Locality 10		Locality 11			Locality 13	
	viii	ix	a	b	c	i	ii
	U1	U1	U2b (+U2c?)	U2b	U2a	U3	U3
phi (ϕ)							
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-3	0.000	0.264	0.000	0.000	0.325	0.000	0.000
-2.5	0.429	0.301	0.000	0.218	0.570	1.379	0.291
-2	0.215	0.188	0.053	0.567	1.058	2.759	0.458
-1.5	0.215	0.188	0.266	1.091	2.278	9.885	0.874
-1	0.536	0.414	1.810	3.579	3.906	11.609	2.413
-0.5	1.180	1.168	4.579	7.813	5.777	11.034	6.073
0	2.521	4.145	8.892	13.007	7.893	9.080	8.236
0.5	5.633	11.417	14.963	21.432	11.147	8.851	10.316
1	8.423	17.106	19.169	23.614	12.124	8.276	11.314
1.5	9.764	12.924	17.412	15.059	7.893	6.092	9.068
2	17.704	17.332	19.702	9.821	11.473	8.851	12.812
2.5	14.539	12.434	6.763	1.353	8.137	5.747	8.735
3	13.412	9.759	3.834	0.480	6.753	5.402	8.319
3.5	6.921	3.580	1.384	0.262	3.987	3.678	5.824
4	4.560	1.922	0.532	1.004	4.068	3.103	5.532
4.5	2.092	1.243	0.373	0.349	4.312	1.149	2.662
5	1.978	5.614	0.266	0.349	8.299	3.103	1.722
5.5	2.237						1.528
6	1.338						0.736
6.5	1.551						0.764
7	1.386						0.676
7.5	0.973						0.473
8	1.131						0.551
8.5	0.875						0.420
9	0.373						0.191
9.5	0.014						0.010
10	0.000						0.000
Total	100	100	100	100	100	100	100

Locality 13							**Locality 14**	**Locality 15**
	iii	iv	v	vi	vii		i	ii
	U2b	U2b	U2b	U2b	U1	U2b+'c'	U2b	U3
phi (ϕ)			coarse and fine					
-5.5	0.000	0.000	0.000	0.000	10.241	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	1.680	0.000	0.000	0.000	0.000
-3	0.000	0.000	0.000	0.187	0.875	0.000	0.000	1.532
-2.5	1.281	0.072	0.211	0.747	1.020	0.000	0.132	1.357
-2	2.487	0.216	0.947	1.727	1.640	0.226	0.658	2.451
-1.5	2.713	0.684	2.316	3.640	2.114	0.903	0.964	4.726
-1	2.600	2.268	4.982	5.600	3.280	2.201	2.017	6.871
-0.5	2.374	5.004	9.018	9.193	4.993	5.192	4.209	8.840
0	3.768	9.035	13.930	11.106	6.086	9.142	6.927	9.234
0.5	7.385	15.119	20.526	14.886	7.726	16.479	12.188	10.941
1	13.414	18.215	21.649	15.166	7.945	20.203	16.002	10.766
1.5	9.683	14.615	13.088	10.733	6.560	14.729	14.993	8.578
2	13.489	18.143	9.123	12.599	9.913	14.391	19.553	10.941
2.5	13.489	8.243	1.860	6.533	8.236	5.756	9.163	7.002
3	10.399	5.760	0.526	2.520	7.106	3.612	5.129	5.908
3.5	4.408	1.872	0.386	0.653	4.227	1.693	2.192	3.589
4	3.956	0.468	0.842	1.820	5.284	1.016	4.165	2.888
4.5	2.600	0.072	0.211	0.747	4.920	1.693	1.140	1.400
5	5.953	0.216	0.386	0.467	1.768	2.765	0.570	2.976
5.5					1.714			
6					0.943			
6.5					0.948			
7					0.764			
7.5					0.506			
8					0.570			
8.5					0.428			
9					0.185			
9.5					0.008			
10					0.000			
Total	100	100	100	100	100	100	100	100

	Locality 15		Locality 16			Locality 17		
	iii	iv	i	ii	iii	i		ii
	U2c	U2b	U3	U2	U2			
phi (ϕ)								fine brown
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	1.562	0.000	0.000
-3	0.000	1.225	0.000	0.000	0.000	3.202	0.883	0.000
-2.5	0.575	0.408	0.000	0.000	0.339	2.148	2.035	0.205
-2	2.876	1.225	0.000	1.096	0.305	3.358	2.534	0.154
-1.5	4.684	2.487	0.000	1.242	0.983	4.998	4.568	0.256
-1	6.245	5.568	0.063	1.242	3.017	7.536	8.292	0.359
-0.5	6.574	8.909	0.127	1.352	8.169	9.488	11.670	0.461
0	5.752	11.767	0.698	1.973	14.644	10.113	11.132	0.564
0.5	4.766	16.110	4.378	5.152	24.271	11.402	12.284	1.281
1	3.451	15.219	17.576	15.711	24.780	10.777	11.094	3.637
1.5	1.972	10.134	26.332	21.556	12.542	7.653	10.096	5.686
2	1.726	12.101	35.279	29.010	6.034	9.996	7.985	13.166
2.5	1.068	6.607	11.231	9.938	1.322	5.779	5.797	20.082
3	3.122	4.269	1.650	3.946	0.915	4.451	4.607	15.625
3.5	7.067	1.448	0.444	2.046	0.576	2.538	2.726	13.473
4	13.722	1.745	0.825	2.338	1.051	1.952	1.919	11.936
4.5	11.750	0.408	1.015	1.936	0.475	0.976	0.768	11.066
5	6.986	0.371	0.381	1.461	0.576	2.070	1.612	2.049
5.5	5.328							
6	2.300							
6.5	2.199							
7	1.990							
7.5	1.484							
8	1.868							
8.5	1.552							
9	0.835							
9.5	0.108							
10	0.001							
Total	100	100	100	100	100	100	100	100

	Locality 17							Locality 22
	ii	iii	i	ii	iii	iv	v	ii
								U3
phi (ϕ)	coarse grey						N	fall?
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	5.100	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.707
-3	0.000	4.119	0.000	0.641	1.022	0.000	0.000	2.122
-2.5	0.347	2.432	0.000	0.000	0.361	0.633	0.114	1.758
-2	0.738	3.805	0.000	0.345	0.781	1.227	0.532	3.455
-1.5	1.042	4.786	0.050	1.135	0.781	3.325	0.873	4.466
-1	2.909	6.473	0.648	2.960	1.683	6.215	2.050	6.264
-0.5	5.949	9.062	0.747	4.933	4.627	10.372	3.075	8.972
0	9.205	10.082	0.997	5.377	3.065	13.302	4.784	10.325
0.5	13.461	11.534	1.495	7.203	3.365	14.648	7.973	12.528
1	14.459	10.200	2.591	8.436	4.087	12.154	10.402	11.881
1.5	11.116	7.375	3.538	7.499	4.087	8.709	9.150	8.911
2	14.112	9.337	11.809	13.567	10.276	10.610	15.072	10.891
2.5	8.207	5.375	11.858	10.656	9.736	5.978	11.390	6.082
3	6.774	4.080	13.403	10.163	9.736	4.513	10.326	4.587
3.5	3.951	2.315	12.257	7.893	9.615	2.613	6.834	2.303
4	3.821	2.236	14.599	8.535	13.401	2.494	7.593	1.697
4.5	3.213	0.824	8.520	4.243	6.911	2.019	2.202	1.778
5	0.695	0.863	3.595	1.285	3.498	1.188	1.333	1.273
5.5			3.405	1.146	3.162		1.273	
6			1.938	0.663	1.772		0.781	
6.5			2.080	0.761	1.923		0.953	
7			1.755	0.693	1.681		0.895	
7.5			1.199	0.491	1.174		0.641	
8			1.454	0.593	1.412		0.771	
8.5			1.266	0.495	1.165		0.634	
9			0.714	0.261	0.615		0.323	
9.5			0.081	0.025	0.064		0.027	
10			0.000	0.000	0.000		0.000	
Total	100	100	100	100	100	100	100	100

	Locality 22		Locality 24		Locality 25			
	iii	iv			i	ii	iii	iv
	U2b	U2b?	U2c	U2b	U3	U3	U2c	U2b
phi (ϕ)								
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	4.085	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	4.255	1.390	0.000
-3	0.000	0.232	0.000	1.292	1.215	7.573	0.103	0.262
-2.5	0.370	0.232	0.000	1.054	1.472	13.487	0.000	0.426
-2	1.233	1.394	1.463	1.428	2.613	15.831	0.103	0.820
-1.5	2.743	1.336	4.390	2.413	6.404	10.350	0.360	2.493
-1	5.763	1.336	4.390	5.065	11.042	7.645	1.184	4.460
-0.5	11.402	1.452	5.854	9.245	12.698	7.465	1.595	7.084
0	15.686	1.452	5.854	12.508	12.403	3.642	2.625	10.266
0.5	21.048	2.613	5.854	17.879	12.330	5.986	2.316	14.661
1	17.874	4.181	5.854	18.491	10.379	4.904	1.493	15.021
1.5	9.707	4.646	4.878	12.033	6.331	3.318	1.287	12.430
2	7.180	9.001	9.756	10.775	6.919	4.400	3.139	14.234
2.5	2.157	8.246	4.878	3.297	3.865	2.885	1.698	7.707
3	0.924	9.930	4.390	1.734	3.055	2.596	6.125	5.280
3.5	0.401	8.827	5.366	0.612	1.693	1.623	20.741	1.673
4	0.586	10.105	8.780	0.306	1.215	1.334	23.675	1.509
4.5	1.695	7.259	5.854	0.306	0.626	0.793	12.043	1.050
5	1.233	6.664	4.987	1.564	1.656	1.911	5.891	0.623
5.5		6.172	4.442				4.209	
6		3.024	2.300				1.698	
6.5		3.057	2.417				1.608	
7		2.618	2.169				1.549	
7.5		1.799	1.572				1.225	
8		2.077	1.947				1.615	
8.5		1.574	1.630				1.399	
9		0.727	0.876				0.797	
9.5		0.048	0.099				0.131	
10		0.000	0.000				0.002	
Total	100	100	100	100	100	100	100	100

	Locality 25			Locality 26			Locality 27	
	v	vi	vii	i	ii	iii	i	ii
	U2b	U2b	U1	U2c	U2b	U2a	U2c	U2b
phi (ϕ)								
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	1.165	0.000	0.277
-3	0.000	0.311	1.317	0.000	1.207	1.215	0.382	0.000
-2.5	0.000	0.739	2.224	0.000	0.474	1.722	0.890	0.554
-2	0.512	1.322	2.224	4.007	1.509	1.215	0.509	0.693
-1.5	0.365	1.828	4.887	7.840	3.062	3.038	1.611	1.767
-1	0.292	3.734	7.258	8.537	4.787	5.620	2.628	4.087
-0.5	0.585	6.884	10.243	6.794	9.271	8.911	4.578	7.828
0	1.535	11.241	10.389	7.143	11.600	10.380	6.189	12.054
0.5	2.632	16.258	10.799	5.749	16.386	12.203	8.817	17.215
1	3.070	16.725	9.980	5.226	16.645	11.089	9.411	18.843
1.5	2.997	12.252	7.024	4.530	11.686	6.734	7.800	13.128
2	7.383	14.352	11.150	7.840	11.341	9.367	11.785	12.504
2.5	8.626	5.757	6.292	3.484	4.398	6.684	9.114	4.711
3	12.281	3.267	5.473	4.355	2.803	5.367	8.139	2.667
3.5	11.842	0.817	3.570	5.226	1.078	2.886	4.960	1.005
4	13.889	0.545	2.634	7.317	1.035	2.481	5.299	1.628
4.5	9.357	0.506	1.346	6.272	1.725	2.532	3.773	0.346
5	7.411	3.462	3.190	3.586	0.992	7.392	2.794	0.109
5.5	5.891			3.158			2.617	0.119
6	2.535			1.594			1.527	0.076
6.5	2.247			1.682			1.728	0.088
7	1.867			1.494			1.567	0.077
7.5	1.316			1.061			1.113	0.055
8	1.564			1.302			1.311	0.068
8.5	1.188			1.108			0.992	0.063
9	0.564			0.617			0.443	0.035
9.5	0.052			0.078			0.024	0.003
10	0.000			0.001			0.000	0.000
Total	100	100	100	100	100	100	100	100

	Locality 27	**Locality 30**					**Locality 31**	
	iii	i	ii	iii	iv	v	i	ii
	U2a	U3	U2b	U2a	U1	U1	U2b	U2a
phi (ϕ)					pulse	coarse base		
-5.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-4	0.000	0.000	0.000	0.000	0.000	1.508	0.000	0.000
-3.5	0.000	0.000	0.000	0.000	0.000	0.832	0.000	0.000
-3	0.000	3.549	0.000	0.279	0.422	2.450	0.000	0.000
-2.5	0.000	3.580	0.135	1.047	0.475	3.722	0.037	0.000
-2	3.055	2.623	0.135	1.396	0.570	4.947	0.296	1.490
-1.5	4.277	3.735	0.765	2.024	0.908	7.146	0.739	2.235
-1	5.499	5.247	2.294	3.419	1.436	10.444	2.513	3.724
-0.5	5.499	7.068	6.028	5.583	2.946	12.298	5.248	7.449
0	5.499	7.901	10.526	8.095	3.970	11.293	9.645	8.566
0.5	6.721	10.278	18.578	10.607	6.980	12.078	17.554	9.311
1	9.369	12.253	22.807	11.096	8.955	10.743	20.769	7.449
1.5	6.925	9.475	15.520	7.886	8.110	6.628	14.597	4.469
2	7.943	12.037	13.630	10.956	13.611	6.534	13.821	7.076
2.5	3.462	7.253	4.498	7.676	11.088	2.858	5.322	4.097
3	5.499	5.864	2.339	6.420	10.084	1.649	3.104	5.028
3.5	5.295	3.735	0.945	3.838	6.051	0.895	1.330	4.283
4	6.314	2.284	1.395	7.606	9.641	0.848	1.035	4.842
4.5	4.481	1.111	0.180	8.165	5.882	0.801	0.776	3.724
5	4.052	0.523	0.051	0.650	2.111	0.448	3.215	5.643
5.5	3.680	0.441	0.048	0.773	1.936	0.429		5.682
6	1.901	0.218	0.024	0.487	1.001	0.258		3.024
6.5	2.144	0.214	0.024	0.517	1.007	0.293		3.134
7	1.979	0.183	0.020	0.430	0.854	0.263		2.643
7.5	1.484	0.127	0.015	0.298	0.585	0.184		1.814
8	1.947	0.145	0.018	0.350	0.668	0.214		2.083
8.5	1.818	0.103	0.016	0.278	0.489	0.157		1.567
9	1.046	0.047	0.008	0.120	0.208	0.072		0.644
9.5	0.112	0.005	0.000	0.004	0.010	0.006		0.023
10	0.000	0.000	0.000	0.000	0.000	0.000		0.000
Total	100	100	100	100	100	100	100	100

	Locality 31	**Locality 32**	**Locality 36**	
	iii		i	ii
	U1	U2b	U3	U2b
phi (ϕ)				
-5.5	0.000	0.000	0.000	0.000
-5	0.000	0.000	0.000	0.000
-4.5	0.000	0.000	0.000	0.000
-4	0.189	0.000	0.000	0.000
-3.5	0.000	0.000	0.477	0.000
-3	1.075	0.000	0.838	0.000
-2.5	1.320	0.000	1.149	0.000
-2	1.641	0.602	1.718	0.096
-1.5	2.018	1.161	2.953	0.240
-1	2.951	2.666	4.628	1.198
-0.5	4.988	6.406	6.823	3.115
0	6.007	11.522	8.981	7.285
0.5	7.610	18.917	12.686	18.405
1	8.468	20.077	13.976	27.368
1.5	8.364	13.285	10.350	20.658
2	12.466	13.027	13.370	15.002
2.5	10.580	4.471	7.037	3.067
3	8.166	2.494	6.046	0.959
3.5	4.715	1.161	3.430	0.767
4	8.175	2.794	3.246	1.246
4.5	4.592	0.774	1.168	0.575
5	6.676	0.645	1.125	0.019
5.5				
6				
6.5				
7				
7.5				
8				
8.5				
9				
9.5				
10				
Total	100	100	100	100

Gray shading indicates samples not analyzed with the Coulter particle size analyzer

4.1.2 Statistics

				Graphic Mean Grain Size (M_z)	Inclusive Graphic Standard Deviation (Sorting) (σ_1)	F1 wt%<1mm wt%< 0 phi	F2 wt%< 63μm wt%< 4 phi
Locality 1	i	U2a	fine	2.09	1.95	90.45	87.02
	i	U2a	fine+ coarse	1.76	2.02	95.69	94.63
	i	U2a	surge	2.45	1.42	95.34	91.71
	ii	U1	pulse	1.58	1.8	98.68	54.22
	iii	U1 yellow	coarse	-1.26	2.6	0.00	0.00
Locality 2	iii	U3		2.1	1.77	98.72	92.07
	iv	U3		0.38	1.48	98.13	96.34
	v	U2		1.32	1.7	0.00	0.00
	vii	U2		1.71	1.75	0.00	0.00
	ix	U2		0.6	1.38	98.28	91.80
	x	U2		0.7	1.77	0.00	0.00
	xiii	U2ab interbed		0.48	1.46	0.00	0.00
	xvii	U2ab interbed		0.6	1.43	99.90	96.42
Locality 10	i	U3		1.25	1.45	99.12	80.50
	ii	U3		-0.46	1.17	91.65	90.78
	iii	U2		2.2	1.45	98.58	98.38
	iv	U2		1.09	0.89	99.09	97.89
	v	U2		1.16	0.97	98.60	97.75
	vi	U2		1	0.96	84.87	68.74
	vii	U1		1.7	2.99	88.14	87.29
	viii	U1		2.24	1.47	94.39	93.44
	ix	U1		1.6	1.31	99.73	99.41
Locality 11	a	U2b (+U2c?)		0.98	0.99	99.65	97.77
	b	U2b		0.52	0.91	91.70	87.47
	c	U2a		1.51	1.91	96.90	82.87
Locality 13	i	U3		0.46	1.87	92.93	91.31

				Graphic Mean Grain Size (M_z)	Inclusive Graphic Standard Deviation (Sorting) (σ_1)	F1 wt%<1mm wt%< 0 phi	F2 wt%< 63μm wt%< 4 phi
	ii	U3		1.61	1.81	94.05	87.57
	iii	U2b		1.61	1.73	99.78	98.81
	iv	U2b		0.99	1.07	99.61	96.14
	v	U2b	coarse+fine	0.42	1	99.53	91.55
	vi	U2b		0.51	1.39	81.92	76.28
	vii	U1		0.74	2.67	97.23	96.11
		U2b+'c'		0.95	1.23	99.43	97.68
Locality 14	i	U2b		1.21	1.25	0.00	0.00
Locality 15	ii	U3		0.73	1.81	75.35	67.21
	iii	U2c		2.59	2.89	99.63	94.28
	iv	U2b		0.6	1.34	0.00	0.00
Locality 16	i	U3		1.44	0.6	98.54	96.20
	ii	U2		1.47	1.04	99.42	97.80
	iii	U2		0.46	0.87	0.00	0.00
Locality 17				0.34	1.88	98.39	88.37
	i			0.45	1.64	97.95	97.34
	ii		fine brown	2.71	1.11	99.31	97.18
	ii		coarse grey	1.18	1.46	99.14	78.89
	iii			0.07	2.08	82.51	82.46
	i			3.19	1.68	93.59	91.47
	ii			1.88	1.83	83.53	80.59
	iii			2.64	2.19	98.81	93.63
	iv			0.66	1.54	92.37	90.85
	v			1.91	1.77	0.00	0.00
Locality 22	ii	U3	fall?	0.47	1.73	0.00	0.00
	iii	U2b		0.32	1.13	72.24	69.05
	iv	U2b?		3.04	1.75	0.00	0.00
Locality 24		U2c		2.28	2.77	98.44	92.25
		U2b		0.45	1.22	98.34	82.55
Locality 25	i	U3		0.05	1.74	98.09	46.59

				Graphic Mean Grain Size (M_z)	Inclusive Graphic Standard Deviation (Sorting) (σ_1)	F1 wt%<1mm wt%< 0 phi	F2 wt%< 63µm wt%< 4 phi
	ii	U3		-0.99	2.04	79.88	77.92
	iii	U2c		3.53	1.82	99.38	95.38
	iv	U2b		0.82	1.31	75.37	74.49
	v	U2b		3.43	1.83	96.54	92.34
	vi	U2b		0.74	1.29	96.81	86.16
	vii	U1		0.64	1.83	84.32	72.47
Locality 26	i	U2c		1.58	2.74	99.01	92.76
	ii	U2b		0.55	1.35	92.61	84.25
	iii	U2a		0.92	1.98	85.88	82.49
Locality 27	i	U2c		2	2.27	99.31	96.02
	ii	U2b		0.66	1.18	79.84	72.51
	iii	U2a		2	2.83	97.99	84.51
Locality 30	i	U3		0.64	1.89	99.78	98.74
	ii	U2b		0.78	1	96.09	91.35
	iii	U2a		1.6	1.92	91.13	88.75
	iv	U1	pulse	2.13	1.84	97.68	77.07
	v	U1	coarse base	-0.18	1.73	96.78	95.71
Locality 31	i	U2b		0.89	1.18	73.74	70.02
	ii	U2a		2.28	2.77	93.32	87.08
	iii	U1		1.69	1.99	99.36	97.59
Locality 32		U2b		0.77	1.16	98.88	91.74
Locality 36	i	U3		0.86	1.6	99.98	99.65
	ii	U2b		0.89	0.81	0.00	0.00
				Gray shading indicates samples not analyzed with the Coulter particle size analyzer			

4.2 Mean grain-size distributions

4.2.1 Tables

	phi (ϕ)	U1	U2a	U2b	U2c	U3
SIEVE DATA	-5.5	1.024	0.000	0.000	0.000	0.000
weight percent	-5	0.526	0.000	0.000	0.000	0.000
(wt %)	-4.5	0.300	0.000	0.000	0.000	0.000
	-4	1.130	0.000	0.000	0.000	0.314
	-3.5	0.426	0.146	0.110	0.278	0.418
	-3	1.998	0.248	0.209	0.097	1.598
	-2.5	1.907	0.514	0.320	0.293	2.198
	-2	2.010	1.234	0.807	1.792	2.968
	-1.5	2.857	2.171	1.570	3.777	4.470
	-1	3.893	3.504	3.303	4.597	6.263
	-0.5	5.390	5.422	6.300	5.079	8.116
	0	6.182	6.841	9.684	5.512	8.598
	0.5	8.321	8.911	14.699	5.500	10.582
	1	9.292	9.606	16.672	5.087	11.489
	1.5	7.669	7.051	12.468	4.093	9.488
	2	11.477	10.332	13.724	6.849	12.210
	2.5	8.603	7.316	6.297	4.049	6.505
	3	7.488	7.614	4.121	5.226	4.958
	3.5	4.337	6.317	2.125	8.672	3.068
	4	4.832	7.064	3.008	11.759	2.577
	4.5	3.591	4.296	1.605	7.938	1.347
COULTER						
DATA	5	1.379	2.456	0.772	4.849	0.722
	5.5	1.380	2.356	0.671	3.951	0.580
	6	0.778	1.246	0.316	1.884	0.309
	6.5	0.833	1.309	0.307	1.927	0.313
	7	0.712	1.132	0.261	1.754	0.267
	7.5	0.488	0.797	0.181	1.291	0.198
	8	0.560	0.954	0.214	1.609	0.214
	8.5	0.426	0.772	0.167	1.336	0.155
	9	0.183	0.368	0.080	0.714	0.070
	9.5	0.008	0.026	0.007	0.088	0.005
	10	0.000	0.000	0.000	0.001	0.000
Total		100	100	100	100	100

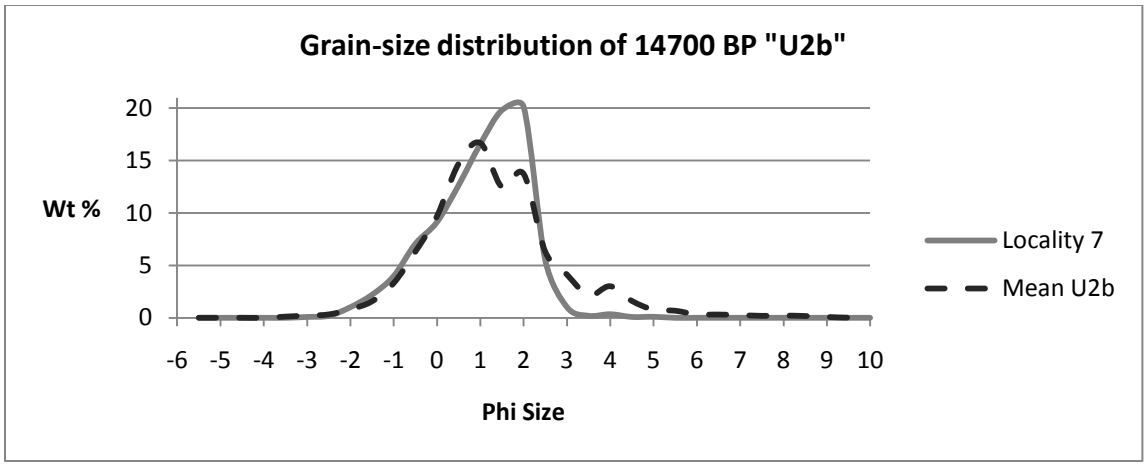
4.2.2 Statistics

		U1	U2a	U2b	U2c	U3
Graphic Mean Grain Size	(M_z)	1.23	1.8	0.97	2.33	0.64
Inclusive Graphic Standard Deviation	Sorting (σ_1)	2.35	2.21	1.43	2.54	1.84
F1	wt%< 1mm (0 phi)	72.36	79.92	77.70	78.58	65.06
F2	wt%< 63µm (4 phi)	10.34	15.71	4.58	27.34	4.18
Inclusive Graphic Skewness (asymmetry)	(Sk_1)	-0.06	+0.12	+0.08	-0.17	-0.02
Kurtosis (peakedness)	(K_G)	1.19 leptokurtic	1.01 mesokurtic	1.19 leptokurtic	0.88 platykurtic	1.06 mesokurtic

4.3 Grain-size distribution data for locality 7, sample "U2b" of 14700 BP eruption.

4.3.1 Tables

Weight percent (wt%)	Phi (ϕ)	Locality 7	Mean U2b from 800 BP deposits
SIEVE DATA	**-5.5**	0.000	0.000
	-5	0.000	0.000
	-4.5	0.000	0.000
	-4	0.000	0.000
	-3.5	0.000	0.110
	-3	0.082	0.209
	-2.5	0.191	0.320
	-2	1.010	0.807
	-1.5	2.197	1.570
	-1	3.971	3.303
	-0.5	7.041	6.300
	0	9.129	9.684
	0.5	12.650	14.699
	1	16.567	16.672
	1.5	19.801	12.468
	2	20.128	13.724
	2.5	5.499	6.297
	3	1.023	4.121
	3.5	0.191	2.125
	4	0.341	3.008
	4.5	0.082	1.605
COULTER	**5**	0.096	0.772
DATA	**5.5**		0.671
	6		0.316
	6.5		0.307
	7		0.261
	7.5		0.181
	8		0.214
	8.5		0.167
	9		0.080
	9.5		0.007
	10		0.000
TOTAL		**100**	**100**



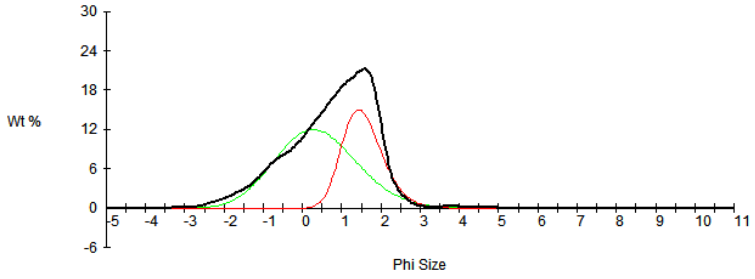
4.3.2 Statistics

		Locality 7	Mean U2b
Graphic Mean Grain Size	(M_z)	0.76	0.97
Inclusive Graphic Standard Deviation	Sorting (σ_1)	1.08	1.43
F1	wt%< 1mm (0 phi)	76.38	77.70
F2	wt%< 63µm (4 phi)	0.18	4.58

4.3.3 Modal populations from SFT

Mode 1 0.27

Mode 2 1.44



Locality 7 14700 BP "U2b"

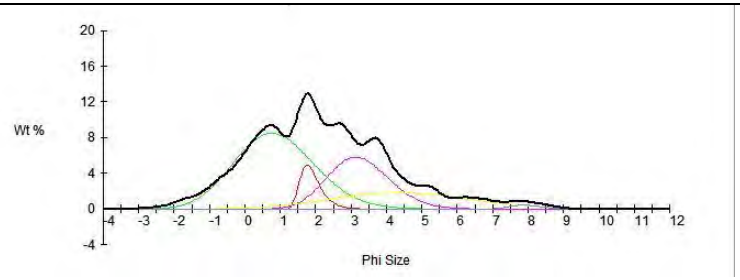
4.4 Mean grain-size distributions of Locality 17 samples

4.4.1 Tables

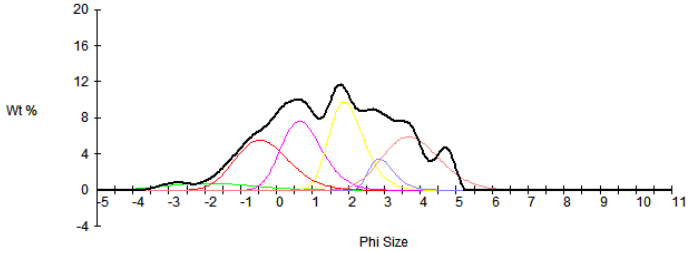
Weight percent (wt%)	Phi (ϕ)	L17 "U2a"	L17 "U2b"	L17 other	Mean U2a	Mean U2b
SIEVE DATA	-5.5	0.000	0.000	0.000	0.000	0.000
	-5	0.000	0.000	0.000	0.000	0.000
	-4.5	0.000	0.000	0.000	0.000	0.000
	-4	0.000	1.020	0.000	0.000	0.000
	-3.5	0.000	0.312	0.000	0.146	0.110
	-3	0.321	1.641	0.341	0.248	0.209
	-2.5	0.057	1.519	0.188	0.514	0.320
	-2	0.438	2.332	0.312	1.234	0.807
	-1.5	1.004	3.744	0.362	2.171	1.570
	-1	2.505	6.285	0.896	3.504	3.303
	-0.5	4.004	9.308	1.945	5.422	6.300
	0	5.081	10.767	1.542	6.841	9.684
	0.5	7.588	12.666	2.047	8.911	14.699
	1	9.419	11.737	3.438	9.606	16.672
	1.5	8.324	8.990	4.437	7.051	12.468
	2	14.319	10.408	11.750	10.332	13.724
	2.5	11.023	6.227	13.892	7.316	6.297
	3	10.245	4.885	12.921	7.614	4.121
	3.5	7.364	2.828	11.782	6.317	2.125
	4	8.064	2.485	13.312	7.064	3.008
	4.5	3.222	1.560	8.832	4.296	1.605
COULTER	5	1.309	1.285	3.047	2.456	0.772
DATA	5.5	1.210	0.000	2.189	2.356	0.671
	6	0.722	0.000	1.237	1.246	0.316
	6.5	0.857	0.000	1.335	1.309	0.307
	7	0.794	0.000	1.145	1.132	0.261
	7.5	0.566	0.000	0.791	0.797	0.181
	8	0.682	0.000	0.955	0.954	0.214
	8.5	0.564	0.000	0.811	0.772	0.167
	9	0.292	0.000	0.443	0.368	0.080
	9.5	0.026	0.000	0.049	0.026	0.007
	10	0.000	0.000	0.000	0.000	0.000
TOTAL		**100**	**100**	**100**	**100**	**100**

4.5 Sequential Fragmentation and Transport (SFT)

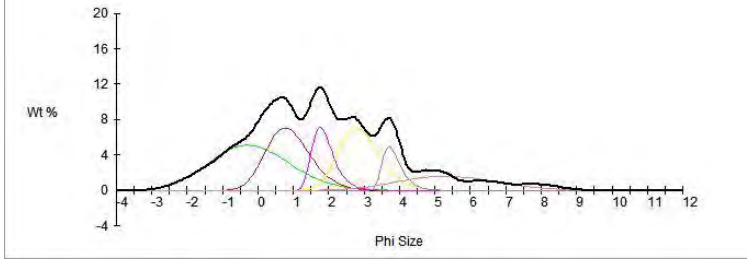
4.5.1 Graphs



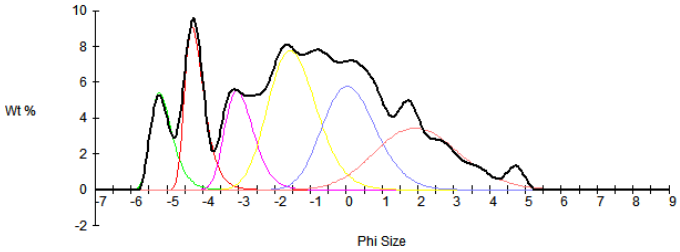
Locality 1 i U2a fine



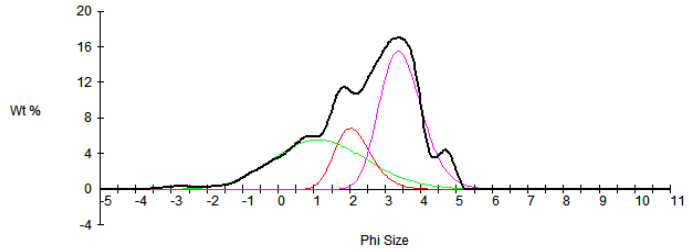
Locality 1 ii U1 pulse



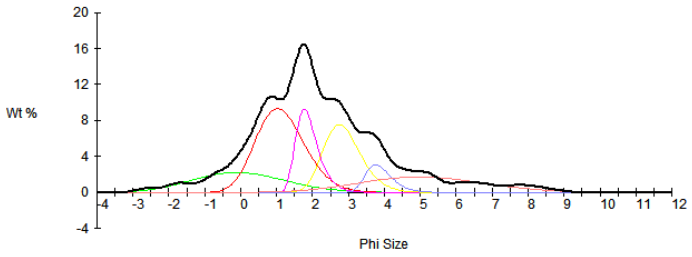
Locality 1 i U2a fine and coarse



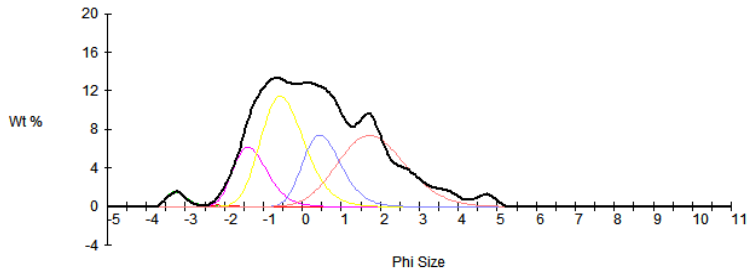
Locality 1 iii U1 coarse, yellow in color



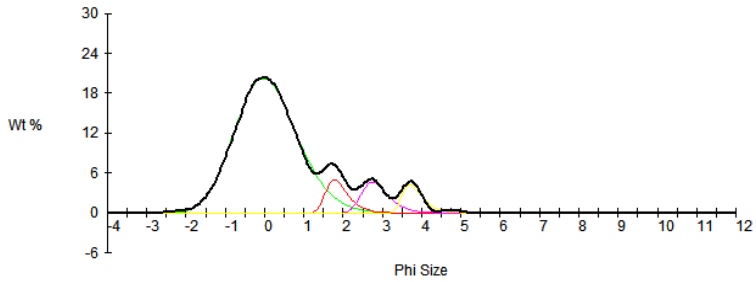
Locality 1 i U2a surge



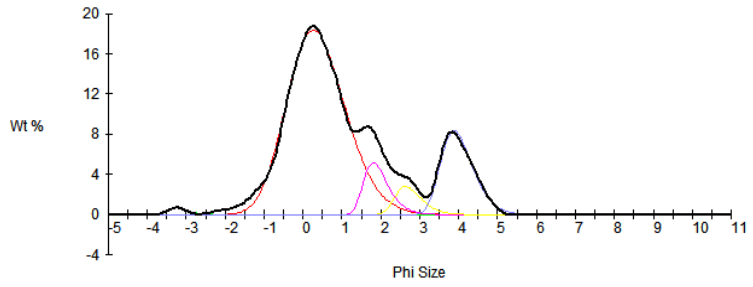
Locality 2 iii U3



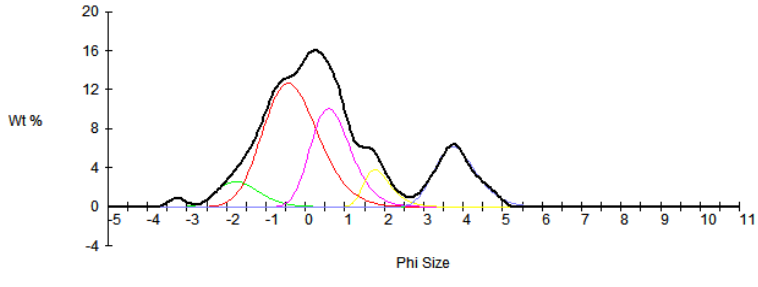
Locality 2 iv U3



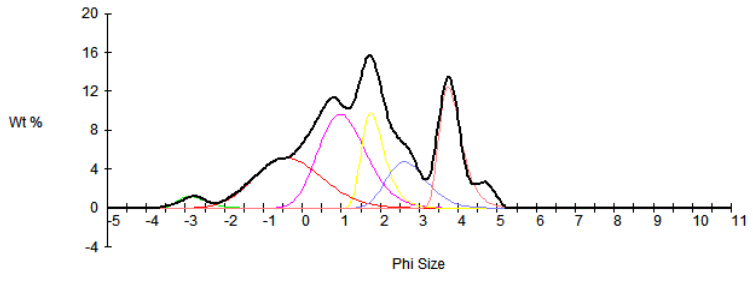
Locality 2 ix U2b



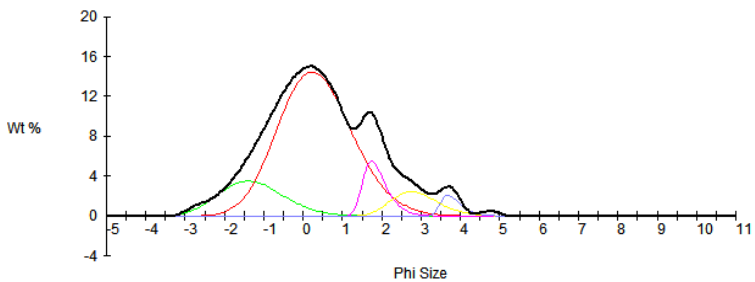
Locality 2 v U2b



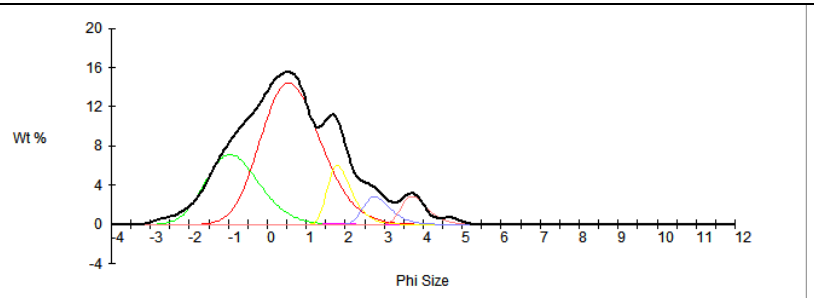
Locality 2 x U2b



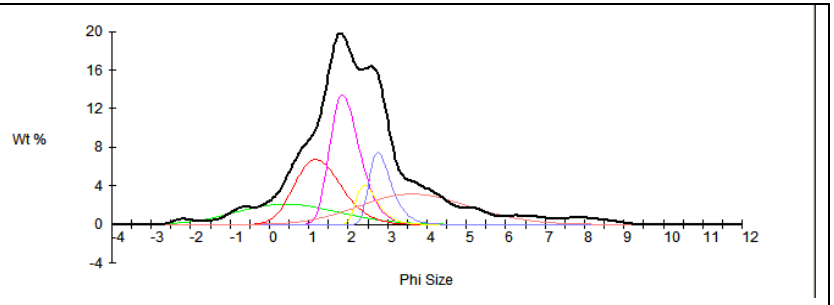
Locality 2 vii U2b



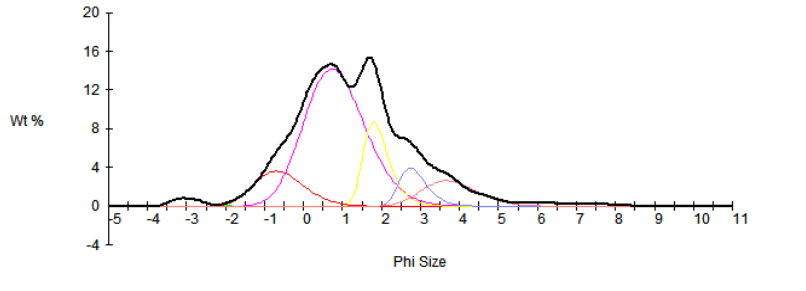
Locality 2 xiii U2a/U2b interfingering



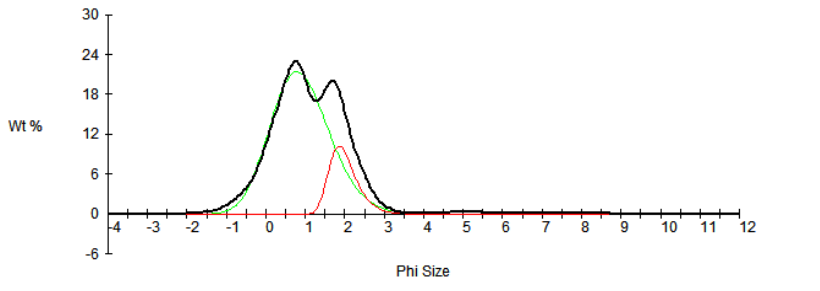
Locality 2 xvii U2a/U2b interfingering



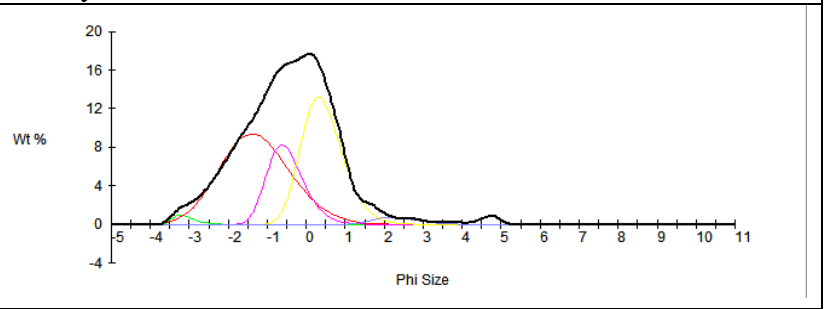
Locality 10 iii U2



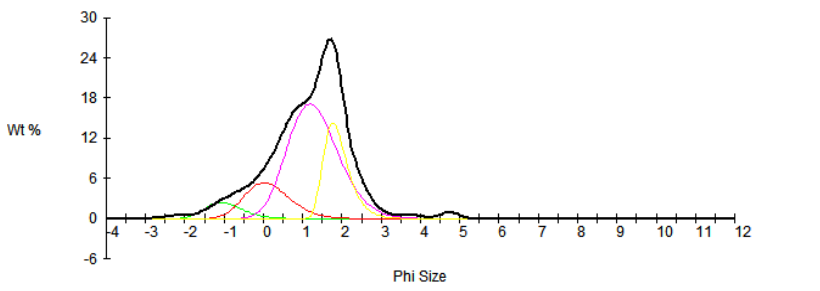
Locality 10 i U3



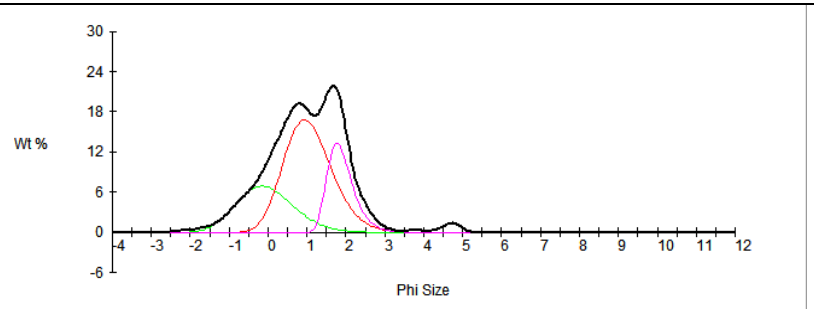
Locality 10 iv U2



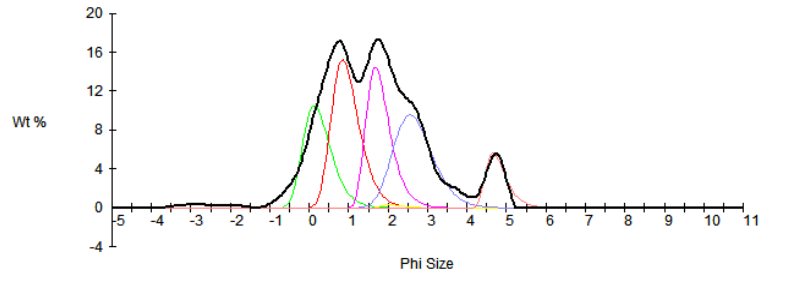
Locality 10 ii U3



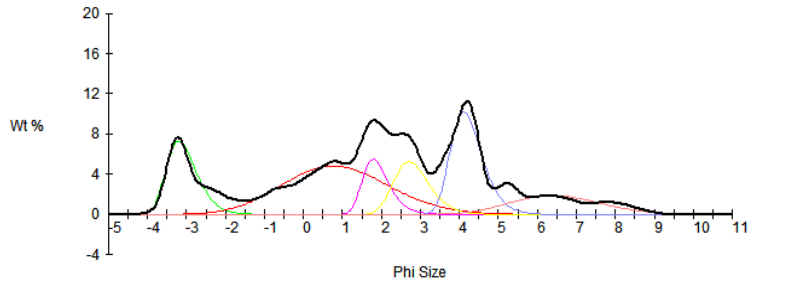
Locality 10 v U2 fine



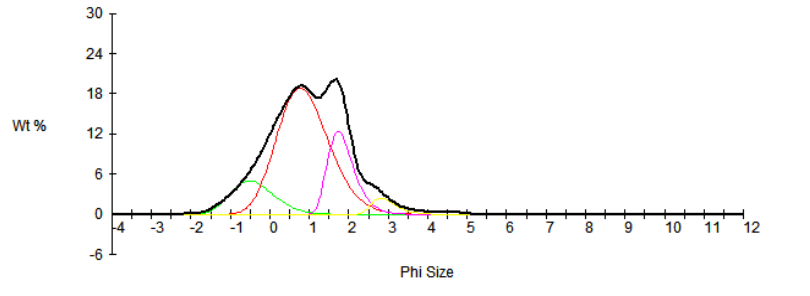
Locality 10 vi U2 coarse



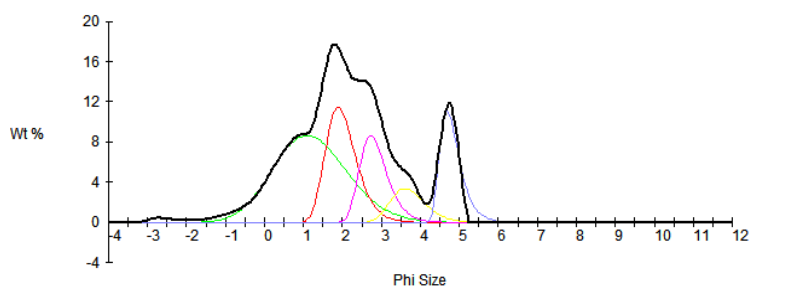
Locality 10 ix U1



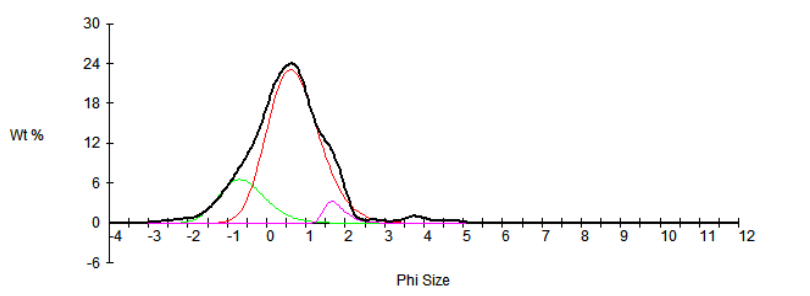
Locality 10 vii U1 crystals and fine ash



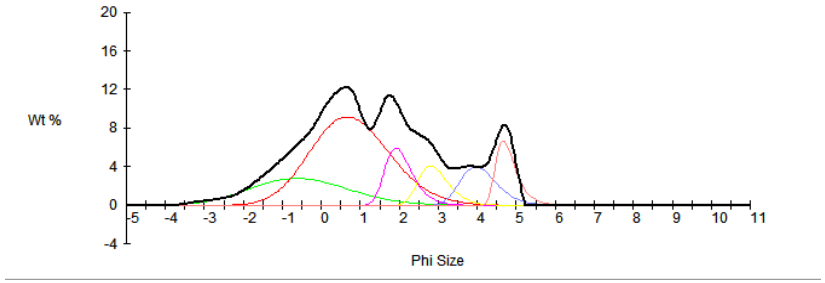
Locality 11 a U2b+U2c



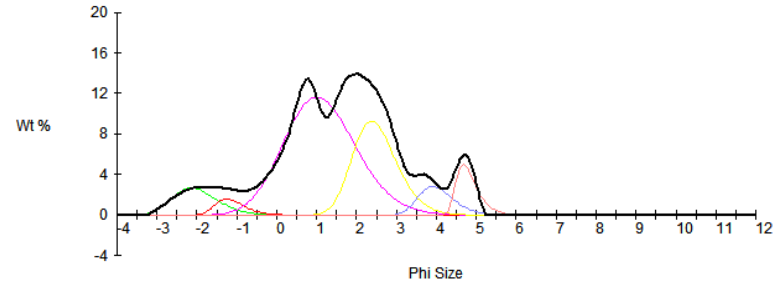
Locality 10 viii U1 fine



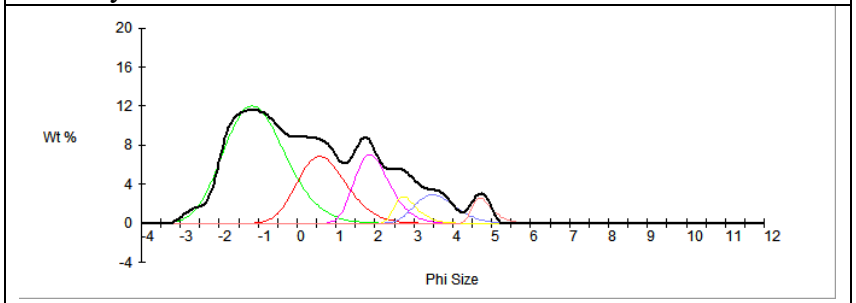
Locality 11 b U2b



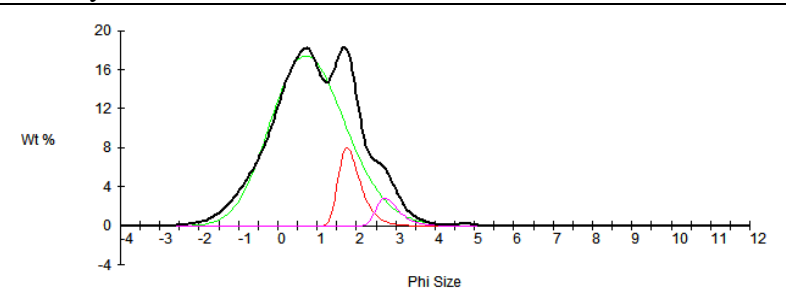
Locality 11 c U2a



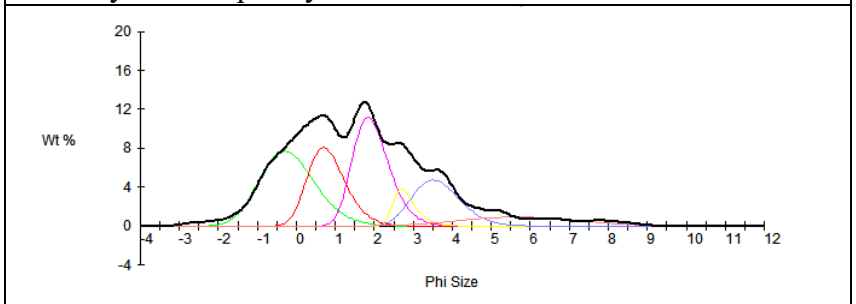
Locality 13 iii U2b



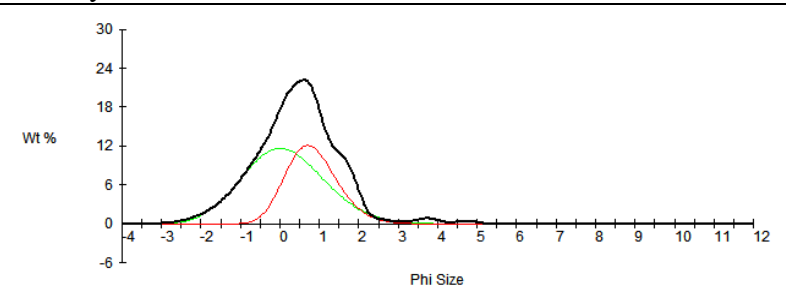
Locality 13 i U3 poorly sorted



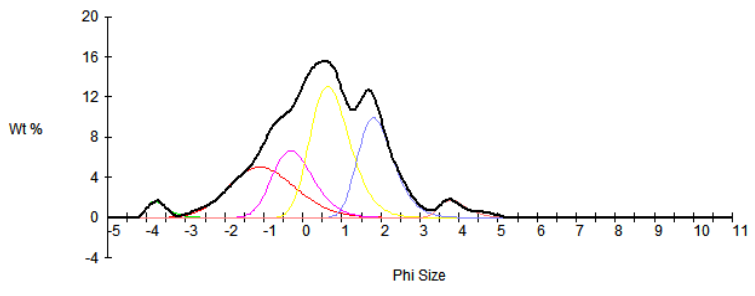
Locality 13 iv U2b



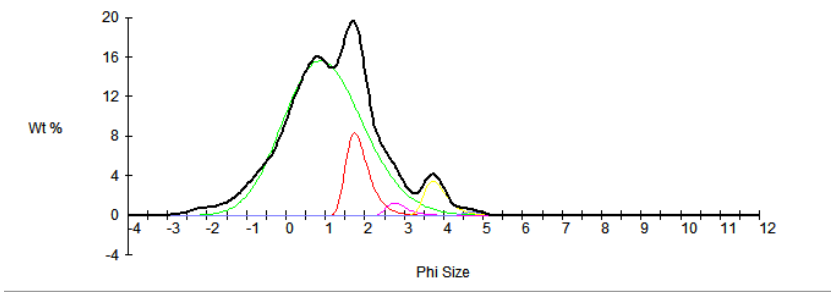
Locality 13 ii U3 moderately sorted



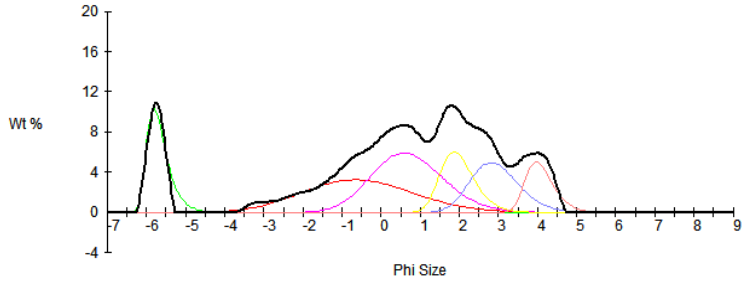
Locality 13 v U2b coarse and fine



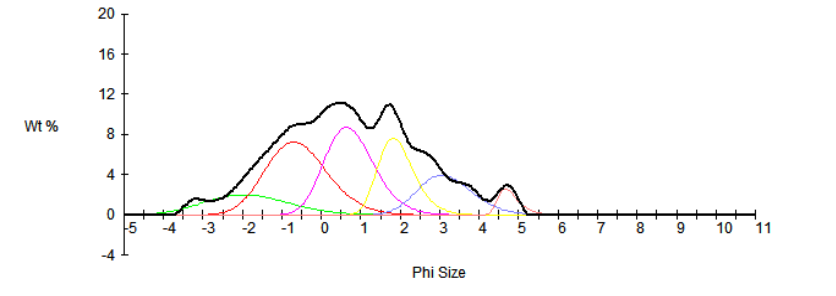
Locality 13 vi U2b



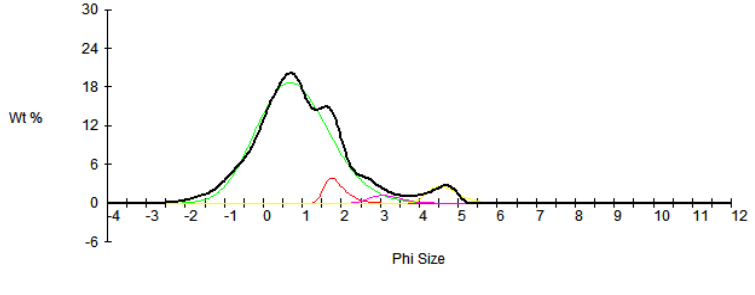
Locality 14 i U2b



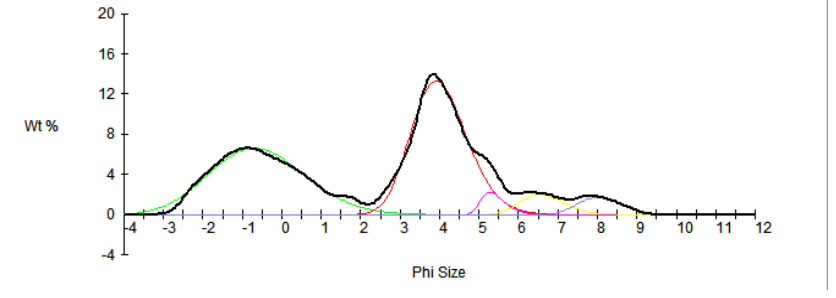
Locality 13 vii U1



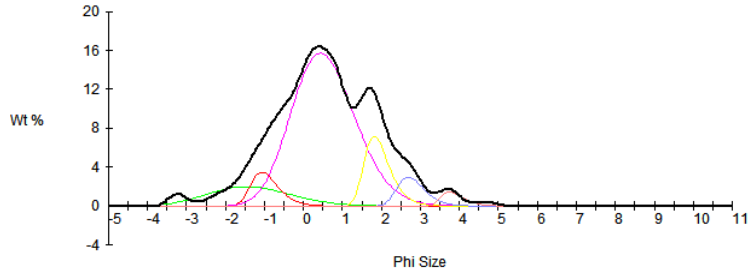
Locality 15 ii U3



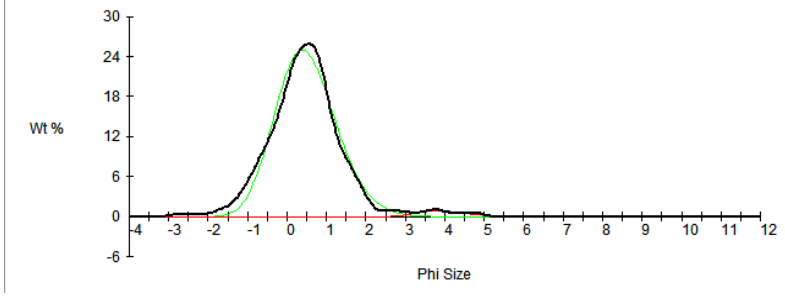
Locality 13 U2b+U2c



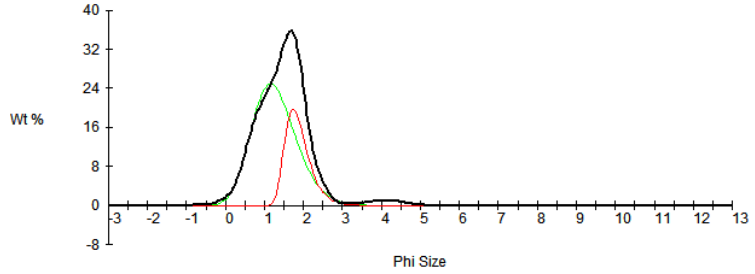
Locality 15 iii U2c



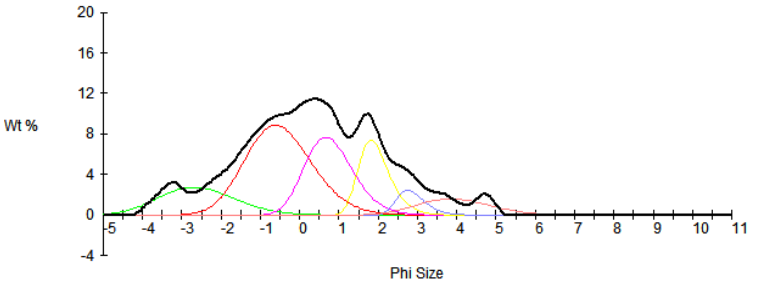
Locality 15 iv U2b



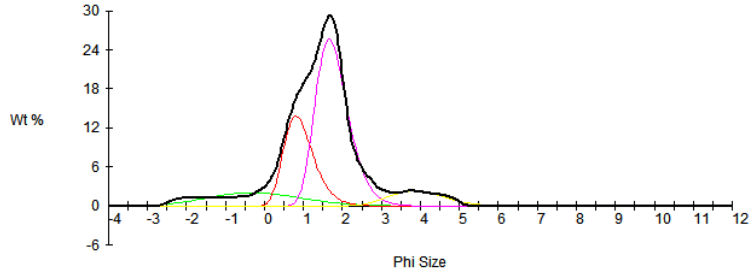
Locality 16 iii U2

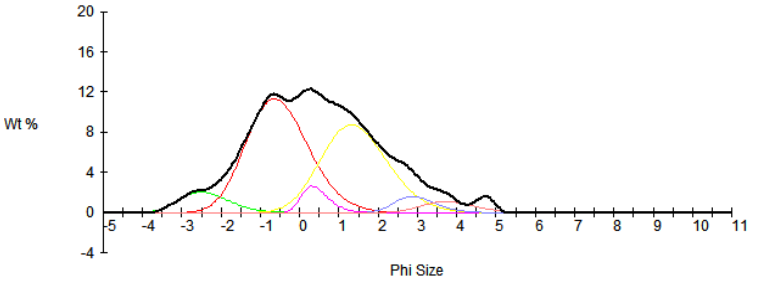


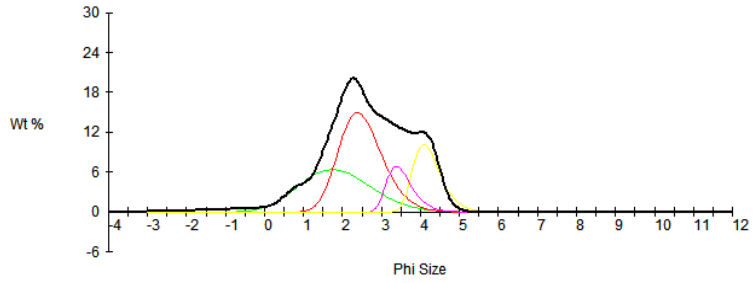
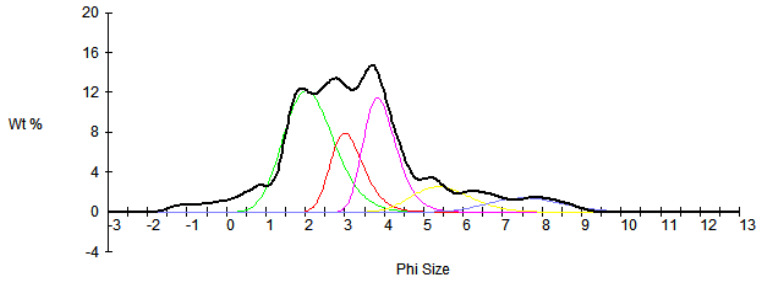
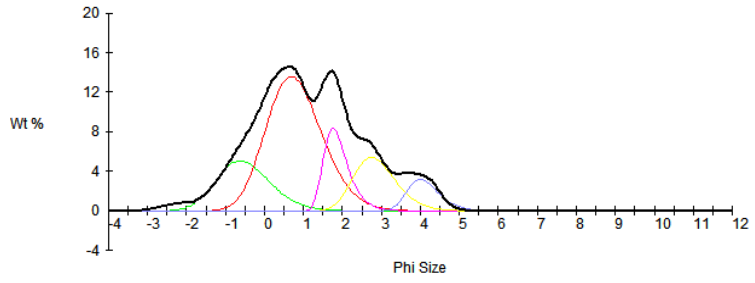
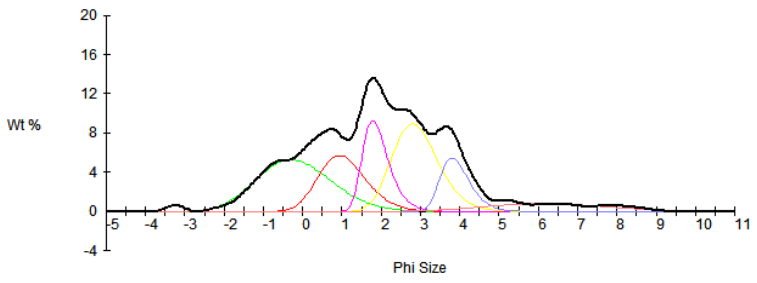
Locality 16 i U3

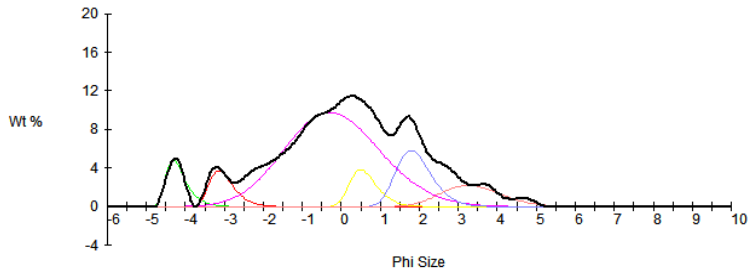


Locality 17 H

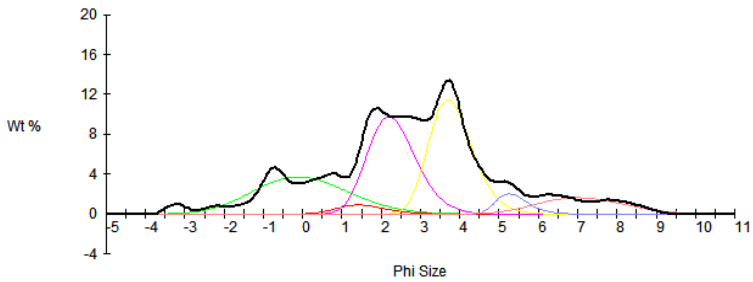




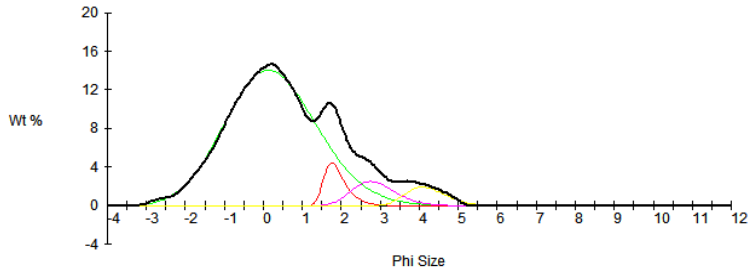
Locality 16 ii U2	Locality 17 J i
	
Locality 17 J ii fine brown	Locality K i
	
Locality 17 J ii coarse grey	Locality K ii



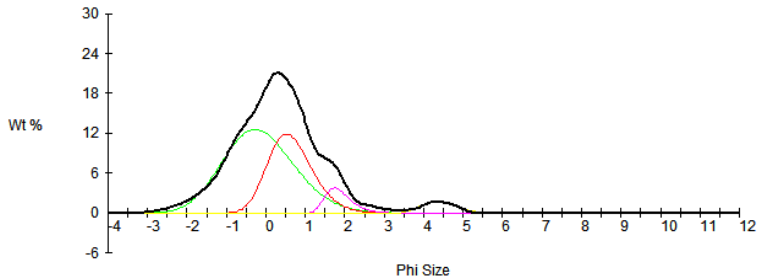
Locality 17 J iii



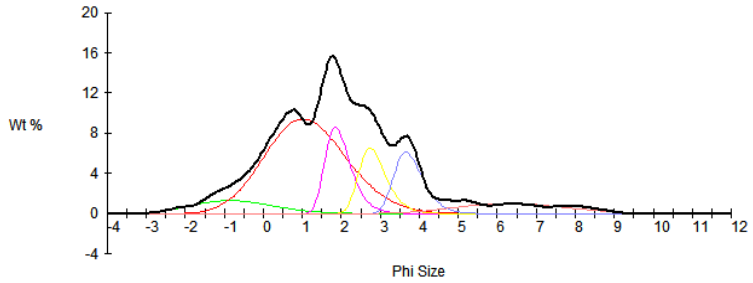
Locality K iii

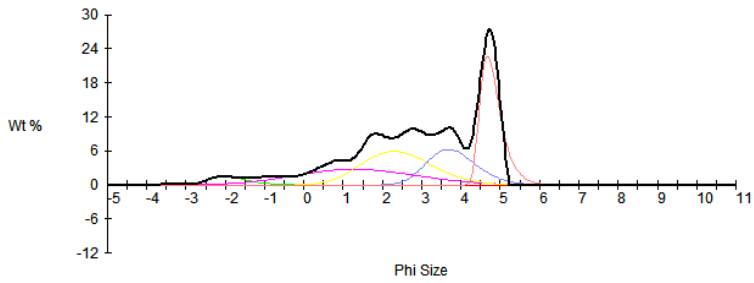


Locality K iv

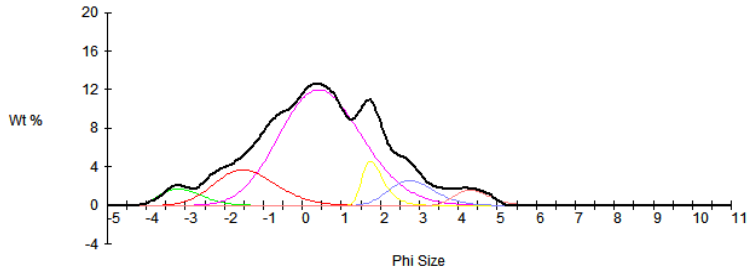


Locality 22 iii U2b



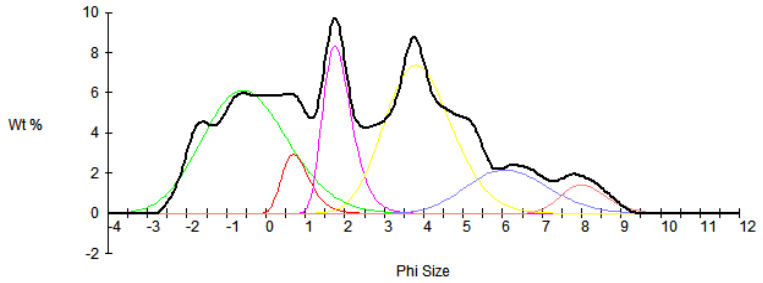


Locality K v

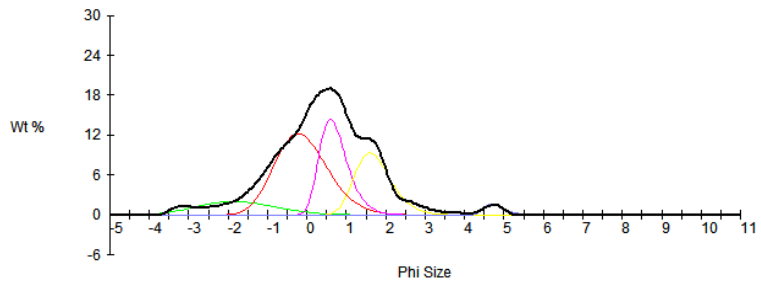


Locality 22 ii U3

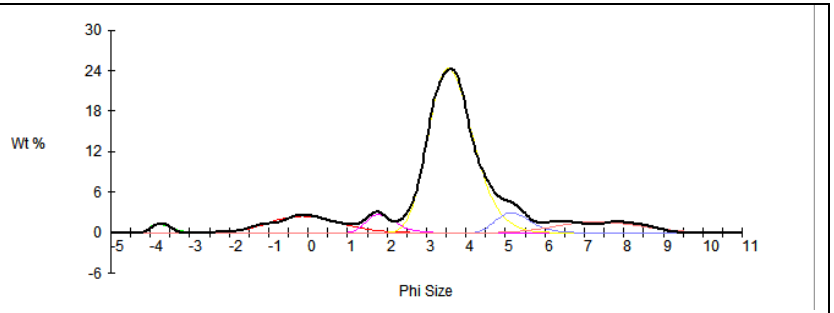
Locality 22 iv U2b



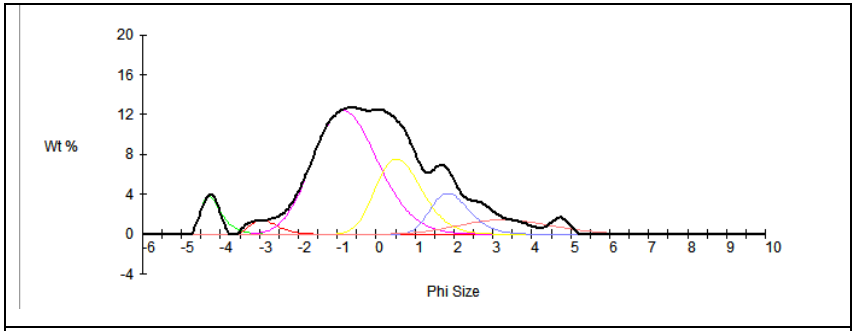
Locality 24 U2c



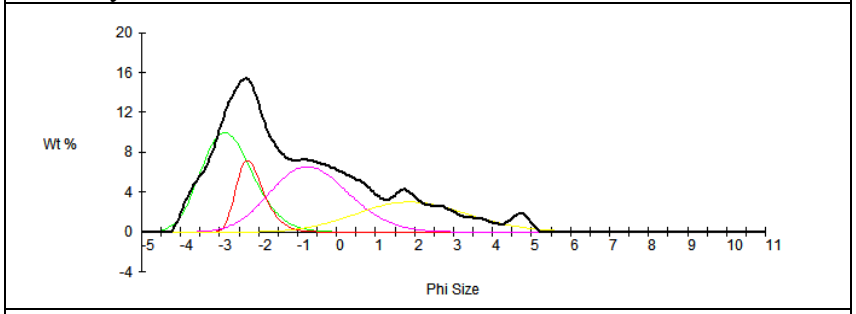
Locality 24 U2b



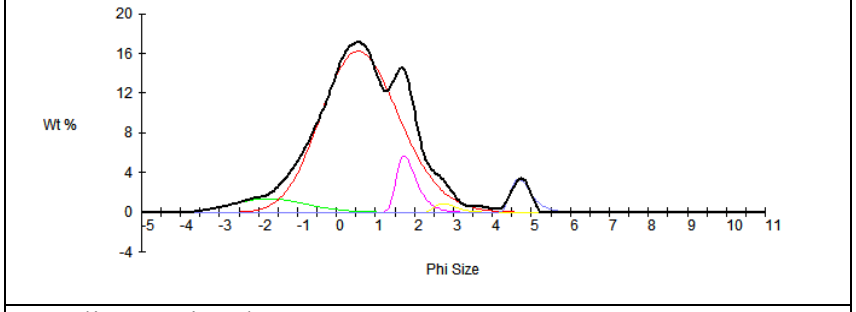
Locality 25 iii U2c



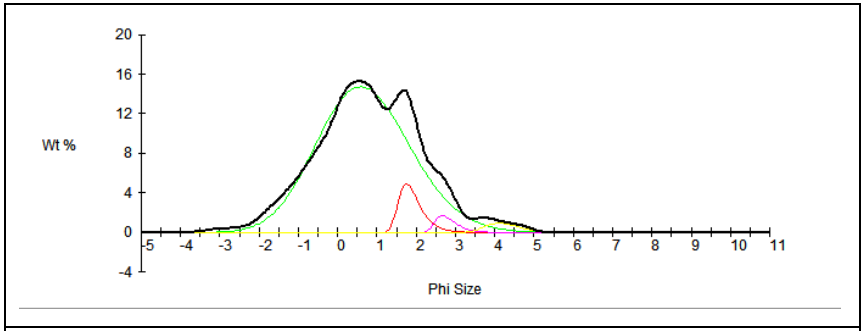
Locality 25 i U3



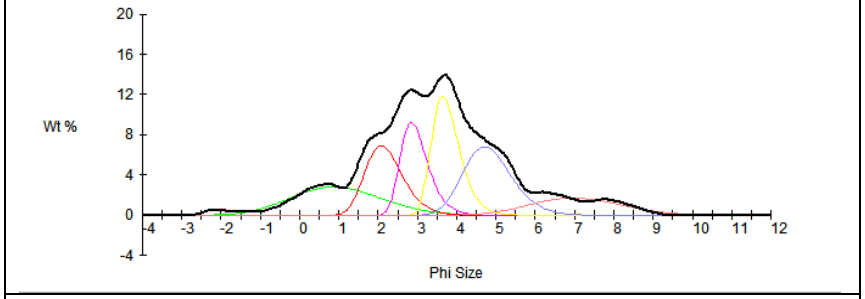
Locality 25 ii U3



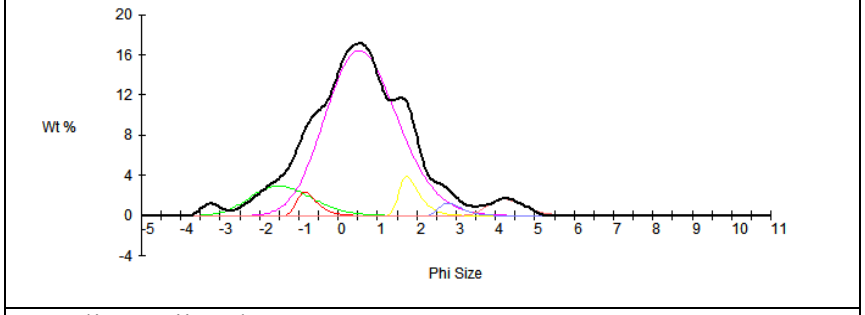
Locality 25 vi U2b



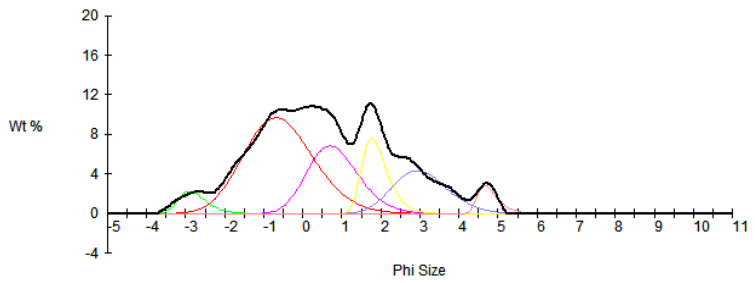
Locality 25 iv U2b



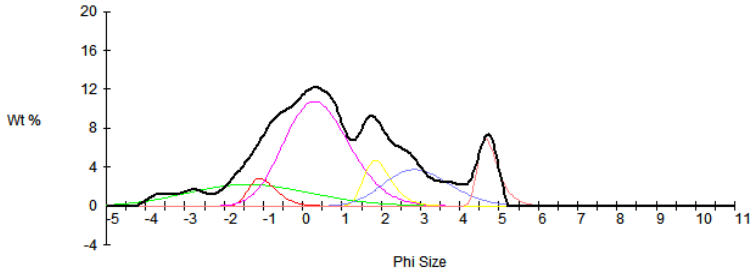
Locality 25 v U2b



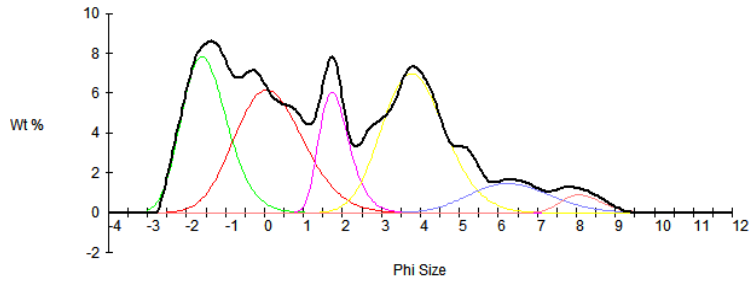
Locality 26 ii U2b



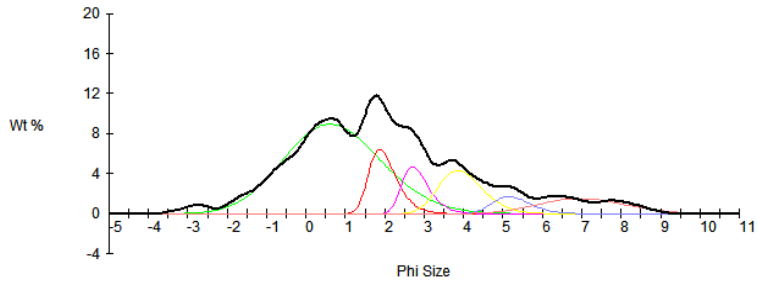
Locality 25 vii U1



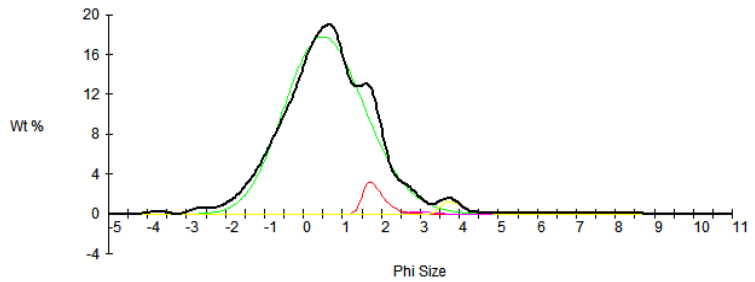
Locality 26 iii U2a

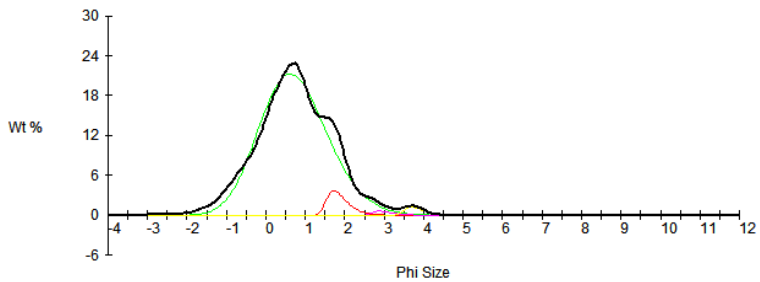


Locality 26 i U2c

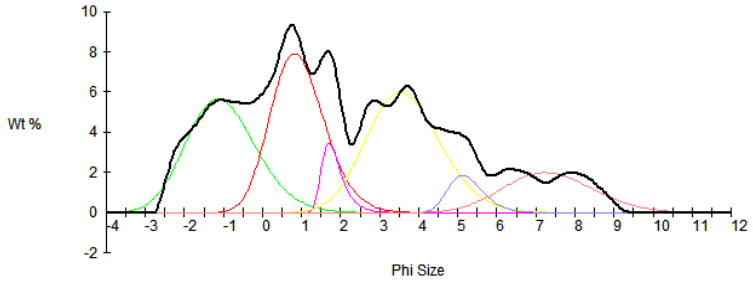


Locality 27 i U2c

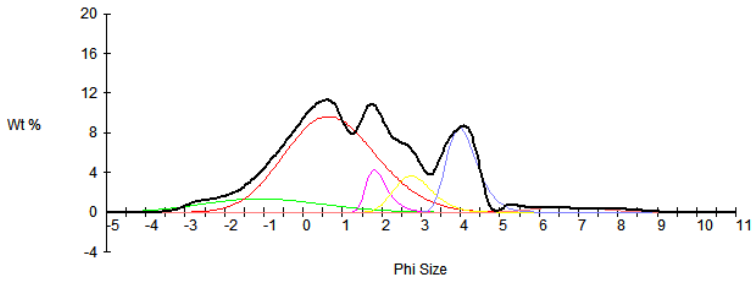




Locality 27 ii U2b



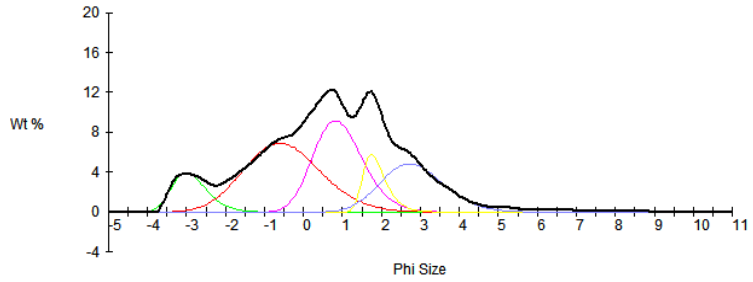
Locality 30 ii U2b



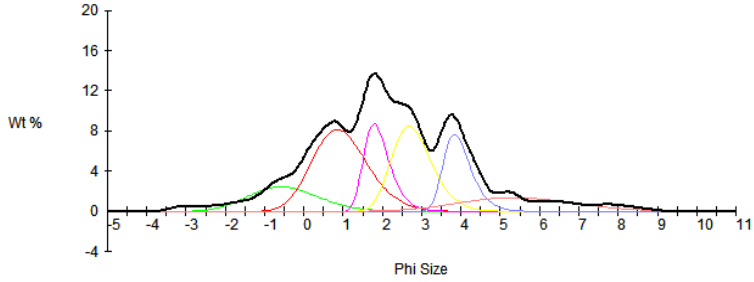
Locality 27 iii U2a

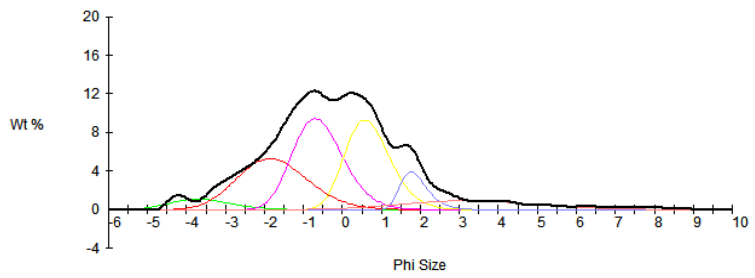
Locality 30 iii U2a

Locality 30 i U3

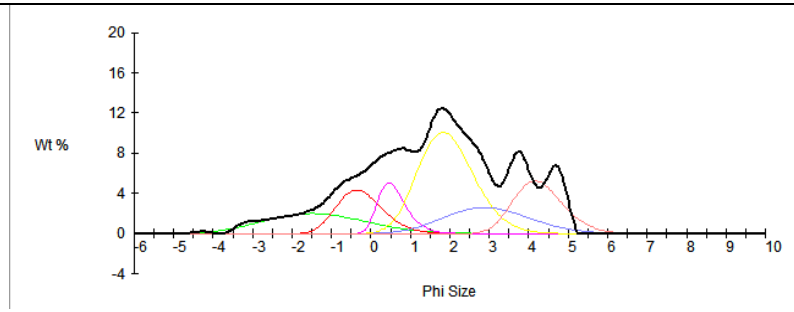


Locality 30 iv U1pulse

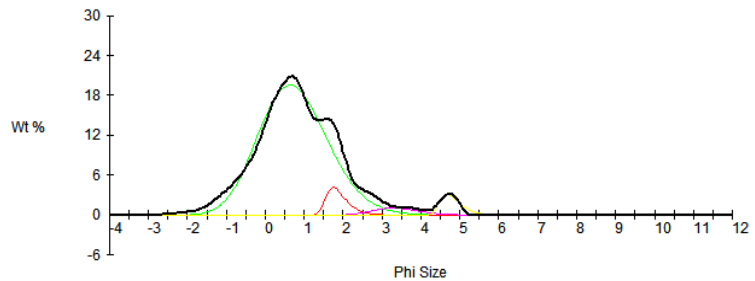




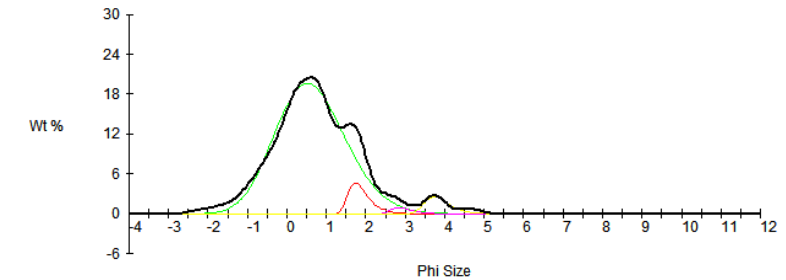
Locality 30 v U1coarse base



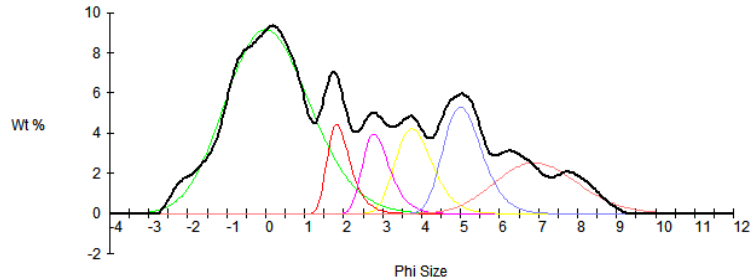
Locality 31 iii U1 pulse



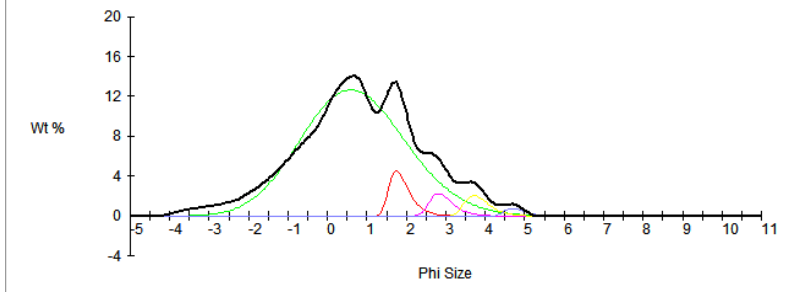
Locality 31 i U2b



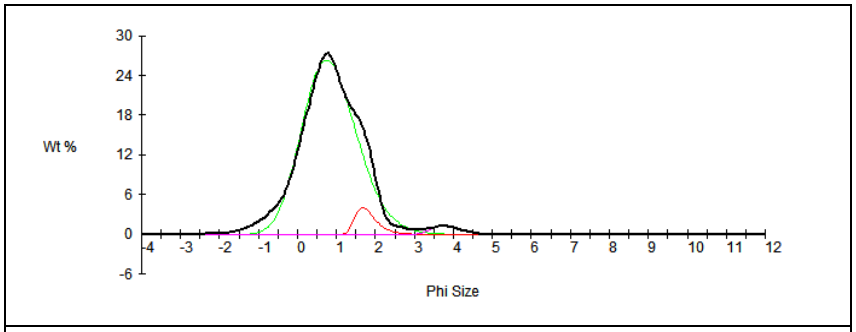
Locality 32 U2b



Locality 31 ii U2a



Locality 36 i U3 surge



Locality 36 ii U2b

4.5.2 Modes

				Mode					
				1	2	3	4	5	6
Locality 1	i	U2a	fine	0.76	1.76	3.13	4.35	7.87	
	i	U2a	fine+coarse	-0.30	0.77	1.76	2.79	3.71	5.28
	i	U2a	surge	1.11	2.03	3.37			
	ii	U1	pulse	-1.90	-0.46	0.64	1.89	2.86	3.68
	iii	U1 yellow color	coarse	-5.21	-4.29	-3.04	-1.56	0.03	1.92
Locality 2	iii	U3		-0.12	1.03	1.77	2.75	3.76	4.98
	iv	U3		-3.29	-2.18	-1.39	-0.56	0.45	1.72
	v	U2		-3.29	0.27	1.81	2.64	3.89	
	vii	U2		-2.89	-0.40	0.97	1.76	2.62	3.74
	ix	U2		-0.03	1.78	2.75	3.70		
	x	U2		-1.76	-0.43	0.59	1.77	3.74	
	xiii	U2ab interfingering		-1.40	0.23	1.75	2.76	3.69	
	xvii	U2ab interfingering		-0.95	0.55	1.73	1.80	2.76	3.72
Locality 10	i	U3		-3.09	-0.69	0.73	1.80	2.74	3.67
	ii	U3		-3.23	-1.39	-0.62	0.32	2.21	
	iii	U2		0.41	1.18	1.86	2.42	2.76	3.63
	iv	U2		0.79	1.86				
	v	U2		-1.09	0.02	1.19	1.77		
	vi	U2		-0.16	0.94	1.77			
	vii	U1		-3.19	0.76	1.79	2.71	4.12	6.39
	viii	U1		1.10	1.89	2.73	3.61		
	ix	U1		0.13	0.85	1.68	2.04	2.56	
Locality 11	a	U2b (+U2c)		-0.52	0.77	1.73	2.82		
	b	U2b		-0.69	0.61	1.66			
	c	U2a		-0.63	0.67	1.92	2.81	3.97	
Locality 13	i	U3		-1.15	0.58	1.87	2.73	3.49	
	ii	U3		-0.30	0.70	1.84	2.7	3.51	5.65
	iii	U2b		-2.13	-1.25	1.01	2.38	3.91	
	iv	U2b		0.72	1.76	2.73			
	v	U2b	coarse+fine	0.01	0.71				
	vi	U2b		-3.79	-1.10	-0.31	0.64	1.81	3.80
	vii	U1		-5.81	-0.66	0.59	1.87	2.82	
		U2b+'c'		0.69	1.75	3.07			

				Mode					
				1	2	3	4	5	6
Locality 14	i	U2b		0.89	1.74	2.75	3.73		
Locality 15	ii	U3		-1.97	-0.70	0.64	1.82	3.06	
	iii	U2c		-0.70	3.92	5.28	6.53	7.98	
	iv	U2b		-1.45	-1.06	0.44	1.82	2.69	3.74
Locality 16	i	U3		1.16	1.74				
	ii	U2		-0.32	0.81	1.66	3.83		
	iii	U2		0.39					
Locality 17				-2.70	-0.61	0.67	1.82	2.75	
	i			-2.51	-0.63	0.32	1.32	2.87	3.72
	ii		fine brown	1.74	2.39	3.39	4.09		
	ii		coarse grey	-0.62	0.69	1.76	2.75	4.00	
	iii			-4.31	-3.14	-0.29	0.5	1.79	3.25
	i			2.03	3.00	3.83	5.38	7.52	
	ii			-0.29	0.94	1.79	2.80	3.81	6.11
	iii			-0.11	1.42	2.20	3.70	5.26	7.01
	iv			0.13	1.75	2.75	4.09		
	v			-0.86	1.02	1.85	2.74	3.66	6.29
Locality 22	ii	U3	fall?	-3.17	-1.52	0.42	1.75	2.75	4.29
	iii	U2b		-0.27	0.53	1.74	4.30		
	iv	U2b?		-2.01	0.70	1.28	2.30	3.68	
Locality 24		U2c		-0.58	0.70	1.75	3.80	6.06	8.00
		U2b		-1.87	-0.22	0.60	1.60		
Locality 25	i	U3		-4.30	-2.94	-0.84	0.53	1.84	3.26
	ii	U3		-2.87	-2.28	-0.75	1.88		
	iii	U2c		-3.80	-0.14	1.78	3.56	5.14	7.31
	iv	U2b		0.59	1.76	2.67	4.12		
	v	U2b		0.87	2.08	2.85	3.65	4.71	6.96
	vi	U2b		-1.75	0.56	1.74	2.74		
	vii	U1		-2.90	-0.69	0.70	1.77	2.93	
Locality 26	i	U2c		-1.60	0.06	1.73	3.77	6.23	8.07
	ii	U2b		-1.51	-0.85	0.54	1.75	2.80	
	iii	U2a		-1.41	-1.08	0.30	1.85	2.85	
Locality 27	i	U2c		0.61	1.88	2.71	3.86	5.14	6.94
	ii	U2b		0.50	1.72	2.92	3.73		
	iii	U2a		-1.14	0.82	1.70	3.53	5.13	7.24

				Mode					
				1	2	3	4	5	6
Locality 30	i	U3		-3.00	-0.61	0.82	1.75	2.72	
	ii	U2b		0.62	1.73	2.89	3.69		
	iii	U2a		-1.10	0.64	1.81	2.74	3.98	6.68
	iv	U1	pulse	-0.59	0.85	1.79	2.68	3.84	5.36
	v	U1	coarse base	-3.71	-1.86	-0.70	0.58	1.76	3.18
Locality 31	i	U2b		0.64	1.75	3.26	4.67		
	ii	U2a		0.00	1.82	2.78	3.75	5.00	6.89
	iii	U1		-1.49	-0.36	0.46	1.83	2.87	
Locality 32		U2b		0.52	1.74	2.83	3.74		
Locality 36	i	U3		0.59	1.75	2.82	3.72		
	ii	U2b		0.75	1.67	3.71			

APPENDIX 5

5.1 Notes and abbreviations for Appendix 5

All data is normalized.

Note that L2 iv U3 is lowermost U3,but in terms of grain-size distribution it looks like fall out, so L2 iii U3 was also analyzed for componentry. The results show that L2 iv U3 resembles the rest of U3 in terms of componentry, and its affiliation with U3 was reconfirmed by the reevaluation of the field data. Therefore L2 iv U3 is used in the calculation of means and other analyses.

CRY.	Crystals
Lithic Frag.	Lithic fragments
HXL	Holocrystalline fragments
Gl-Xl-Agg	Glass-crystal aggregates

n-st	Non-stained
stain.	Stained

Glass

wh.	white
gy.	grey
br.	brown
l.pk	Light pink
d.pk	Dark pink

Crystals

qtz.	Quartz
fsp	Feldspar
cl.	Clear
bio.	Biotite
amp.	amphibole
pyx.	pyroxene
am/py	amphibole/pyroxene. These two minerals were not always distinguished
mag.	magnetite

5.2 Componentry data: complete suite

Tables overleaf.

Part 1/5 of table	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained					
	wh.	grey	br.	l.pk	d.pk	wh.	grey	br.	l.pk	d.pk	qtz.	fsp.	cl.	bio.	am/py	mag.
L1 ii U1 -2.5	28.6	14.3	20.0	0.0	0.0	5.7	14.3	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 -1.0	60.7	12.1	4.0	0.0	0.9	0.0	0.9	1.3	0.4	0.0	0.0	13.8	0.0	0.9	0.0	0.0
L1 ii U1 1.0	26.3	5.0	2.5	2.3	0.0	0.8	0.0	0.0	0.0	0.0	2.0	2.8	36.1	3.5	1.8	2.0
L1 ii U1 2.0	26.1	3.9	0.0	1.4	0.0	1.1	0.0	0.4	0.4	0.0	0.0	0.0	30.0	5.7	5.7	2.1
L1 i U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a -1.0	29.7	26.6	13.8	0.0	1.5	8.0	4.6	1.2	1.2	0.3	0.0	0.0	1.8	0.0	0.3	0.0
L1 i U2a 1.0	28.1	8.5	2.2	8.5	3.4	0.8	0.0	0.0	0.3	0.0	0.0	0.0	28.0	2.0	0.0	0.0
L1 i U2a 2.0	24.1	3.6	5.0	1.8	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	32.7	2.4	0.6	0.2
L2 xvii U2b -1.0	21.4	30.5	2.3	4.1	1.5	6.8	3.4	1.5	5.3	0.8	0.0	0.4	0.0	0.0	0.0	0.0
L2 xvii U2b 1.0	14.5	17.9	2.9	0.5	1.4	3.9	0.0	0.0	0.5	1.0	0.0	0.0	35.7	0.0	0.0	0.5
L2 xvii U2b 2.0	20.2	6.6	5.8	2.9	0.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	41.5	0.8	1.8	0.3
L2 iv U3 -1.0	16.6	31.5	2.3	6.0	2.3	10.9	1.3	2.3	8.6	3.0	0.0	0.0	4.3	0.7	0.0	0.0
L2 iv U3 1.0	16.2	15.2	3.4	1.7	0.2	2.8	0.2	0.9	0.0	0.2	0.0	0.0	26.9	1.3	1.3	0.2
L2 iv U3 2.0	22.3	5.1	0.0	1.5	0.2	2.9	0.0	0.0	0.0	0.0	0.0	0.0	33.7	1.5	2.4	1.9
L2 iii U3 -1.0	24.0	45.8	0.0	1.0	0.0	6.3	0.0	0.0	1.0	0.0	0.0	1.0	0.0	1.0	0.0	0.0
L2 iii U3 1.0	22.3	13.3	1.5	4.9	0.0	1.5	1.1	0.0	0.0	0.4	0.0	0.0	25.4	3.0	0.8	0.4
L2 iii U3 2.0	16.4	11.3	1.0	1.8	0.3	1.0	0.0	0.0	0.0	0.3	0.0	0.0	37.9	2.3	1.8	0.8
L10 vii U1 -2.5	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 -1.0	66.7	3.4	0.9	0.0	0.0	7.7	0.0	0.0	0.0	0.9	0.0	10.3	0.0	4.3	0.0	0.9
L10 vii U1 1.0	28.5	6.6	2.3	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	28.1	3.9	0.0	0.0
L10 vii U1 2.0	16.6	2.1	0.7	1.8	0.0	8.1	0.0	0.0	0.0	0.0	0.0	0.0	19.8	6.0	4.2	0.0
L10 vi U2b -1.0	23.5	17.0	17.0	5.0	5.0	9.0	2.5	2.0	7.0	0.5	0.0	0.0	3.0	0.5	0.0	0.0
L10 vi U2b 1.0	12.2	8.4	4.6	6.7	0.8	9.7	0.0	1.3	1.3	0.0	0.0	0.0	33.2	0.0	0.0	0.0
L10 vi U2b 2.0	4.4	4.0	0.4	1.5	0.7	18.5	0.0	1.1	0.0	0.0	0.0	0.0	44.0	0.0	0.4	0.0

1/5. Columns continued	**CRYSTALS stained**						**CRYSTALS + white glass non-stained**								**stained**	
	qtz.	fsp.	cl.	bio.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	bio.
L1 ii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
L1 ii U1 1.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	11.3	0.0	0.0	0.0	1.5	0.0	0.3	0.0
L1 ii U1 2.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	10.2	0.0	0.0	0.0	7.1	1.4	0.0	0.0
L1 i U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	0.3	0.0	0.0	0.3	0.0	0.0	0.0
L1 i U2a 1.0	0.0	0.0	0.5	0.2	0.0	0.0	0.0	0.0	7.0	0.2	0.0	0.0	0.9	0.5	2.2	0.0
L1 i U2a 2.0	0.0	0.0	2.4	0.0	0.0	0.2	0.0	0.0	12.2	0.2	0.0	0.0	1.6	1.4	0.8	0.0
L2 xvii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	1.5	0.0
L2 xvii U2b 1.0	0.0	0.0	1.9	0.0	1.0	0.0	0.0	0.0	6.8	0.0	0.0	0.0	1.4	0.0	0.0	0.0
L2 xvii U2b 2.0	0.0	0.0	0.8	0.0	0.3	0.0	0.0	0.0	10.8	0.0	0.0	0.0	3.7	0.8	0.0	0.0
L2 iv U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	2.3	0.0
L2 iv U3 1.0	0.0	0.0	3.4	0.2	0.0	0.0	0.0	0.0	11.8	0.0	0.0	0.0	2.6	1.3	0.9	0.0
L2 iv U3 2.0	0.0	0.0	2.2	0.2	0.0	0.0	0.0	0.0	13.3	0.2	0.0	0.0	2.9	1.0	1.0	0.0
L2 iii U3 -1.0	0.0	3.1	0.0	0.0	1.0	0.0	1.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
L2 iii U3 1.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	1.9	0.8	2.3	0.4
L2 iii U3 2.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	14.6	0.8	0.0	0.0	3.6	0.3	0.5	0.0
L10 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 1.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	12.9	0.0	0.0	0.0	1.2	0.4	7.0	0.0
L10 vii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.6	0.4	0.0	0.0	9.5	0.7	7.4	0.0
L10 vi U2b -1.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vi U2b 1.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	6.7	0.4	0.0	0.0	1.3	0.4	3.8	0.4
L10 vi U2b 2.0	0.0	0.0	0.0	1.1	0.4	0.4	0.0	0.0	5.8	0.0	0.0	0.0	1.5	0.4	7.3	0.0

1/5. Columns continued	**stained**				**CRYSTALS + grey glass non-stained**								**stained**		**CRY. + br. n-st**	
	amp.	pyx.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	am/py	cl.	bio.
L1 ii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 -1.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0
L1 i U2a 1.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.6	0.0
L1 i U2a 2.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
L2 xvii U2b -1.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii U2b 1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
L2 xvii U2b 2.0	0.0	0.0	0.3	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.3
L2 iv U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iv U3 1.0	0.0	0.0	1.1	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.2	0.0
L2 iv U3 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.0	0.2	0.0	0.0	1.2	0.0
L2 iii U3 -1.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.8	0.0	0.0	0.0	1.9	0.0
L2 iii U3 2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0
L10 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
L10 vii U1 2.0	0.0	0.0	0.4	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vi U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
L10 vi U2b 1.0	0.0	0.0	0.4	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.8	0.0
L10 vi U2b 2.0	0.0	0.0	2.2	0.4	0.0	0.0	1.5	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0

1/5. Columns continued	**CRY. + br. n-st**		**CRY. + br. Stain.**		**CRYSTALS + l. pink glass non-stained**				**stain.**	**CRY.+ d. pink non-stained**		**LITHIC F. n-st.**	**LITHIC F. stain.**
	am/py	mag.	cl.	am/py	fsp.	cl.	am/py	mag.	cl.	cl.	am/py		
L1 ii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
L1 ii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 ii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0
L1 i U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
L1 i U2a 1.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
L1 i U2a 2.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0
L2 xvii U2b -1.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
L2 xvii U2b 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii U2b 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iv U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
L2 iv U3 1.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.4
L2 iv U3 2.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2
L2 iii U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iii U3 2.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vi U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
L10 vi U2b 1.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vi U2b 2.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1/5. Columns continued	**HXL. n-st.**	**HXL. stain.**	**Gl-Xl-Agg. n-st.**	**Gl-Xl-Agg. stain.**	**Olivine**	**Olivine+white glass**	**TOTAL**
L1 ii U1 -2.5	8.6	0.0	0.0	0.0	0.0	0.0	100.0
L1 ii U1 -1.0	1.3	0.0	0.0	0.4	0.0	0.0	100.0
L1 ii U1 1.0	0.3	0.5	0.5	0.3	0.0	0.0	100.0
L1 ii U1 2.0	2.5	0.0	0.0	0.0	0.0	0.0	100.0
L1 i U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L1 i U2a -1.0	2.4	0.0	0.0	0.0	0.0	0.0	100.0
L1 i U2a 1.0	3.4	0.0	0.0	0.0	0.0	0.0	100.0
L1 i U2a 2.0	7.6	0.0	0.0	0.0	0.2	0.0	100.0
L2 xvii U2b -1.0	0.0	0.4	13.2	2.6	0.0	0.0	100.0
L2 xvii U2b 1.0	3.9	0.0	1.0	0.0	0.0	0.0	100.0
L2 xvii U2b 2.0	0.8	0.0	0.0	0.0	0.0	0.0	100.0
L2 iv U3 -1.0	2.6	1.0	0.0	0.0	0.0	0.0	100.0
L2 iv U3 1.0	2.8	0.0	0.6	0.0	0.0	0.0	100.0
L2 iv U3 2.0	3.6	0.0	0.0	0.0	0.0	0.0	100.0
L2 iii U3 -1.0	2.1	2.1	0.0	0.0	0.0	0.0	100.0
L2 iii U3 1.0	2.7	0.0	0.8	0.0	0.0	0.0	100.0
L2 iii U3 2.0	0.5	0.0	0.0	0.0	0.0	0.0	100.0
L10 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L10 vii U1 -1.0	4.3	0.0	0.0	0.0	0.0	0.0	100.0
L10 vii U1 1.0	0.8	0.0	0.0	0.0	0.0	0.0	100.0
L10 vii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L10 vi U2b -1.0	4.5	0.0	0.0	0.0	0.0	0.0	100.0
L10 vi U2b 1.0	4.6	0.0	0.0	0.0	0.0	0.0	100.0
L10 vi U2b 2.0	2.9	0.0	0.0	0.0	0.0	0.0	100.0

Part 2/5 of table	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained					
	wh.	grey	br.	l.pk	d.pk	wh.	grey	br.	l.pk	d.pk	qtz.	fsp.	cl.	bio.	am/py	mag.
L10 ii U3 -1.0	16.6	36.6	14.6	5.8	2.0	1.4	2.0	2.4	1.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0
L10 ii U3 1.0	21.3	14.8	2.9	1.2	1.6	2.5	0.4	0.8	2.0	0.0	0.0	0.0	16.8	0.0	0.0	0.4
L10 ii U3 2.0	15.3	6.3	4.0	7.8	0.9	1.4	0.0	0.3	0.3	0.0	0.0	0.0	26.5	0.9	0.6	1.2
L13 vii U1 -2.5	58.3	25.0	0.0	0.0	0.0	8.3	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 -1.0	57.7	7.7	7.2	0.0	1.4	0.0	0.5	1.4	0.5	0.0	0.0	9.0	0.0	0.0	0.0	0.0
L13 vii U1 1.0	27.7	6.7	1.1	1.1	0.0	2.6	1.5	0.0	0.0	0.0	0.0	0.0	34.5	3.0	0.4	0.0
L13 vii U1 2.0	32.5	3.5	0.9	1.3	1.7	1.7	0.4	0.0	0.0	0.0	0.0	0.0	22.1	4.3	0.9	0.0
L27 iii U2a -2.5	**No grains**															
L27 iii U2a -1.0	23.5	38.3	8.7	4.3	3.5	1.7	2.6	0.9	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0
L27 iii U2a 1.0	24.9	12.0	4.4	2.8	0.4	9.2	0.0	0.0	0.4	0.0	0.0	0.0	11.2	1.2	0.0	0.0
L27 iii U2a 2.0	7.5	13.3	0.0	1.3	0.4	3.5	0.0	0.0	0.4	0.0	0.0	0.0	17.7	3.1	0.4	0.0
L27 ii U2b -1.0	20.9	25.7	3.4	5.3	4.9	9.7	5.3	1.0	1.9	3.9	0.0	0.0	1.9	0.0	0.0	0.0
L27 ii U2b 1.0	18.0	17.2	5.2	3.0	1.7	5.6	1.3	0.0	0.4	0.4	0.0	0.0	25.8	0.4	0.0	0.0
L27 ii U2b 2.0	13.2	6.3	2.4	2.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	0.0	37.6	0.0	3.4	1.0
L27 i U2c -1.0	42.5	13.5	11.1	0.8	0.4	3.2	0.0	1.2	0.0	0.8	0.0	0.0	15.5	0.8	0.0	0.0
L27 i U2c 1.0	32.4	7.2	4.8	0.5	1.0	1.4	0.0	0.5	0.0	0.0	0.0	0.0	31.4	3.9	0.5	0.0
L27 i U2c 2.0	49.8	4.8	3.3	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	7.7	1.4	0.0
L13 ii U3 -1.0	47.2	17.5	6.1	1.2	0.4	1.6	1.6	0.4	2.4	0.0	0.0	0.0	7.3	2.0	0.0	0.0
L13 ii U3 1.0	32.9	8.7	2.1	1.4	0.3	0.0	0.0	0.3	0.3	0.0	0.0	0.0	22.0	2.4	0.3	0.0
L13 ii U3 2.0	25.6	9.4	1.6	0.0	0.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0	31.9	3.8	2.2	0.6
L30 iv U1 -2.5	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 -1.0	61.8	12.0	16.1	0.9	1.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0
L30 iv U1 1.0	26.0	7.5	10.3	1.4	2.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	3.1	0.0	0.0
L30 iv U1 2.0	35.2	5.0	6.8	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	27.9	6.4	1.8	0.0

2/5. Columns continued	**CRYSTALS stained**						**CRYSTALS + white glass non-stained**								**stained**	
	qtz.	fsp.	cl.	bio.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	bio.
L10 ii U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	3.1	0.0	0.3	1.7	0.0	0.0	0.0	0.0	0.3
L10 ii U3 1.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	16.0	0.0	0.0	0.0	3.3	1.2	3.3	0.0
L10 ii U3 2.0	0.0	0.0	0.3	0.3	0.0	0.9	0.0	0.0	13.5	0.0	0.0	0.0	4.9	4.3	1.7	0.0
L13 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 1.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	14.6	0.0	0.0	0.0	0.7	0.0	0.0	0.0
L13 vii U1 2.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	21.6	0.0	0.0	0.0	0.9	1.3	0.4	0.0
L27 iii U2a -2.5	**No grains**															
L27 iii U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	1.7	0.0	0.0	0.0
L27 iii U2a 1.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	7.6	0.4	0.0	0.0	1.6	0.8	11.6	0.4
L27 iii U2a 2.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	14.2	0.0	0.0	0.0	0.0	0.4	23.9	0.9
L27 ii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.5	0.0	0.0	0.5	0.0	0.5	0.5
L27 ii U2b 1.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	2.6	0.4	0.0	0.0	1.3	0.0	3.0	0.0
L27 ii U2b 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	0.0	3.4	0.0	2.9	0.0
L27 i U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	0.0	1.4	0.0	0.0	0.0
L27 i U2c 2.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	7.2	0.0	0.0	0.0	1.9	0.0	0.5	0.0
L13 ii U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4	0.0	0.0	0.0	4.9	1.0	1.4	0.0
L13 ii U3 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.6	0.9	0.0	0.0	3.1	1.3	0.3	0.0
L30 iv U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 1.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	8.9	1.0	0.0	0.0	1.0	0.7	0.0	0.3
L30 iv U1 2.0	0.0	0.0	0.5	0.9	0.5	0.0	0.0	0.0	5.9	0.5	0.0	0.0	2.3	0.0	0.0	0.0

2/5. Columns continued	**stained**				**CRYSTALS + grey glass non-stained**								**stained**		**CRY. + br. n-st**	
	amp.	pyx.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	am/py	cl.	bio.
L10 ii U3 -1.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 ii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0
L10 ii U3 2.0	0.0	0.0	0.3	2.6	0.0	0.0	1.2	0.0	0.0	0.0	1.4	0.3	0.0	0.0	0.0	0.0
L13 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 1.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a -2.5	**No grains**															
L27 iii U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
L27 iii U2a 1.0	0.0	0.0	0.8	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.0
L27 iii U2a 2.0	0.0	0.0	3.5	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b -1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
L27 ii U2b 1.0	0.0	0.0	0.4	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 2.0	0.0	0.0	0.5	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c 1.0	0.0	0.0	0.5	0.0	0.0	0.0	4.3	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	0.0
L27 i U2c 2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
L13 ii U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 2.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
L30 iv U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
L30 iv U1 1.0	0.0	0.0	0.7	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.3	0.3	0.0	0.0	2.4	0.0
L30 iv U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.5	0.0	0.0	0.0	2.3	0.0

2/5. Columns continued	**CRY. + br. n-st**		**CRY. + br. Stain.**		**CRYSTALS + l. pink glass non-stained**				**stain.**	**CRY.+ d. pink non-stained**		**LITHIC F. n-st.**	**LITHIC F. stain.**
	am/py	mag.	cl.	am/py	fsp.	cl.	am/py	mag.	cl.	cl.	am/py		
L10 ii U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0
L10 ii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.8
L10 ii U3 2.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.6
L13 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 2.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a -2.5	**No grains**												
L27 iii U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
L27 iii U2a 1.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a 2.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L27 ii U2b 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
L27 i U2c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 -1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0
L13 ii U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 2.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
L30 iv U1 1.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3
L30 iv U1 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5

2/5. Columns continued	**HXL. n-st.**	**HXL. stain.**	**Gl-Xl-Agg. n-st.**	**Gl-Xl-Agg. stain.**	**Olivine**	**Olivine+white glass**	**TOTAL**
L10 ii U3 -1.0	3.4	1.7	0.0	0.0	0.0	0.0	100.0
L10 ii U3 1.0	2.0	0.0	0.0	0.0	0.0	0.0	100.0
L10 ii U3 2.0	0.9	1.2	0.0	0.0	0.0	0.0	100.0
L13 vii U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L13 vii U1 -1.0	2.7	0.0	0.0	0.0	0.0	0.0	100.0
L13 vii U1 1.0	1.1	0.0	0.0	0.0	0.0	0.0	100.0
L13 vii U1 2.0	3.0	0.0	0.0	0.0	0.0	0.0	100.0
L27 iii U2a -2.5	**No Grains**						
L27 iii U2a -1.0	2.6	0.0	0.0	0.0	0.0	0.0	100.0
L27 iii U2a 1.0	5.6	1.2	0.0	0.0	0.0	0.0	100.0
L27 iii U2a 2.0	5.8	0.4	0.0	0.0	0.4	0.0	100.0
L27 ii U2b -1.0	3.4	0.0	0.0	0.0	0.0	0.0	100.0
L27 ii U2b 1.0	9.9	0.0	0.0	0.0	0.0	0.0	100.0
L27 ii U2b 2.0	8.3	0.5	0.0	0.0	0.0	0.5	100.0
L27 i U2c -1.0	3.2	0.0	0.0	0.0	0.0	0.0	100.0
L27 i U2c 1.0	1.0	0.0	0.0	0.0	0.0	0.0	100.0
L27 i U2c 2.0	1.0	0.0	0.0	0.0	0.0	0.0	100.0
L13 ii U3 -1.0	2.8	0.0	0.0	0.0	0.0	0.0	100.0
L13 ii U3 1.0	3.1	0.0	0.0	0.0	0.0	0.0	100.0
L13 ii U3 2.0	1.3	0.0	0.0	0.0	0.0	0.0	100.0
L30 iv U1 -2.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 iv U1 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 iv U1 1.0	0.7	0.0	0.0	0.0	0.0	0.0	100.0
L30 iv U1 2.0	0.5	0.0	0.0	0.0	0.0	0.0	100.0

Part 3/5 of table	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained					
	wh.	gy.	br.	l.pk	d.pk	wh.	gy.	br.	l.pk	d.pk	qtz.	fsp.	cl.	bio.	am/py	mag.
L30 iii U2a -2.5	66.7	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a -1.0	49.7	12.5	8.9	2.6	1.8	4.7	0.5	0.3	0.8	0.3	0.0	0.0	4.7	0.3	0.0	0.0
L30 iii U2a 1.0	16.3	4.3	8.7	0.0	1.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	1.9	0.0	0.0
L30 iii U2a 2.0	15.1	6.5	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.7	2.7	4.1	0.0
L30 ii U2b -1.0	31.8	30.5	18.9	3.3	1.7	0.7	0.3	2.0	0.7	0.3	0.0	0.0	1.3	0.0	0.0	0.0
L30 ii U2b 1.0	17.5	17.5	9.7	3.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.5	0.0	0.0
L30 ii U2b 2.0	14.8	11.3	5.4	0.0	0.0	1.5	1.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0
L30 i U3 -1.0	65.5	8.2	2.7	1.9	0.5	1.1	0.3	0.0	0.3	0.0	0.0	0.0	4.9	0.3	0.0	0.0
L30 i U3 1.0	26.1	4.8	2.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.7	1.4	1.0	0.0
L30 i U3 2.0	23.3	7.3	1.5	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	25.2	3.4	4.6	0.8
L15 iii U2c -1.0	13.3	41.0	12.2	7.2	1.1	0.7	1.4	0.7	1.1	0.0	0.0	0.0	1.4	0.0	0.0	0.0
L15 iii U2c 1.0	12.4	23.9	9.4	0.0	0.0	0.0	0.9	0.0	1.7	0.9	0.0	0.0	13.2	0.4	0.0	0.0
L15 iii U2c 2.0	9.9	19.2	3.9	1.5	1.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	28.1	3.9	0.5	1.0
L11 U2b+c -1.0	18.1	42.6	23.0	2.0	4.9	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L11 U2b+c 1.0	9.2	27.9	14.0	0.0	1.1	1.5	0.4	0.4	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0
L11 U2b+c 2.0	5.1	18.4	7.8	0.0	0.0	0.0	0.0	0.0	1.6	2.4	0.0	0.0	23.9	0.0	0.0	0.8
L24 U2c -1.0	36.7	32.7	16.3	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 1.0	9.7	20.4	10.7	2.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5	0.5	0.0	0.0
L24 U2c 2.0	7.4	16.3	2.8	1.9	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	31.2	0.5	0.0	0.0
More data at 0.0 and 4.0 phi																
L1 ii U1 0.0	19.4	12.3	9.1	0.0	0.0	0.8	0.4	0.8	0.0	0.0	0.0	0.0	11.9	2.0	0.0	0.0
L1 i U2a 0.0	22.0	25.4	5.7	3.8	4.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	1.9	0.0	0.0
L2 xvii U2b 0.0	16.2	32.4	14.2	2.9	2.9	1.5	0.0	1.5	1.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0
L2 iv U3 0.0	23.4	31.6	7.0	0.4	2.5	2.5	0.0	0.8	0.4	0.0	0.0	0.0	4.9	1.2	0.4	0.0

3/5. Columns continued	**CRYSTALS stained**						**CRYSTALS + white glass non-stained**								**stained**	
	qtz.	fsp.	cl.	bio.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	bio.
L30 iii U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0	0.0	0.8	0.0
L30 iii U2a 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.1	0.5	0.0	0.0	4.8	2.4	5.3	0.0
L30 iii U2a 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.8	0.0	0.0	0.0	9.2	1.4	0.7	0.3
L30 ii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.3	0.0	0.0	1.0	0.0	0.0	0.0
L30 ii U2b 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.6	0.0	0.0	0.0	0.5	0.0	7.3	0.0
L30 ii U2b 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.9	0.5	0.0	0.0	5.9	0.5	4.4	0.0
L30 i U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	0.0	0.3	0.0	0.0	0.0
L30 i U3 1.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	26.1	0.0	0.0	0.0	3.4	1.4	0.0	0.0
L30 i U3 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	0.0	0.0	0.0	5.3	0.4	0.4	0.0
L15 iii U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L15 iii U2c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.1	0.4	0.0	0.0	2.1	0.0	0.0	0.0
L15 iii U2c 2.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	3.9	0.5	0.0	0.0	0.5	0.5	0.0	0.0
L11 U2b+c -1.0	0.0	0.0	0.5	1.0	0.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L11 U2b+c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.1	0.4	0.0	0.0	3.3	0.4	0.0	0.0
L11 U2b+c 2.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	19.6	0.0	0.0	0.0	3.1	0.0	0.8	0.0
L24 U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.3	0.5	0.0	0.0	1.5	0.0	1.5	0.0
L24 U2c 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	3.7	0.9	0.9	0.0
<u>More data at 0.0 and 4.0 phi</u>																
L1 ii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.6	0.0	0.0	0.0	1.0	0.0	0.0	0.0
L2 xvii U2b 0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	2.0	0.0	0.0	0.0
L2 iv U3 0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.0	15.6	0.0	0.0	0.0	0.4	0.0	0.8	0.0

3/5. Columns continued	**stained**				**CRYSTALS + grey glass non-stained**								**stained**		**CRY. + br. n-st**	
	amp.	pyx.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	am/py	cl.	bio.
L30 iii U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a 1.0	0.0	0.0	0.5	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0
L30 iii U2a 2.0	0.0	0.0	0.3	0.7	0.0	0.0	3.4	0.0	0.0	0.0	1.7	0.0	0.0	0.3	1.4	0.0
L30 ii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.7	0.0
L30 ii U2b 1.0	0.0	0.0	2.4	0.0	0.0	0.0	4.4	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.5	0.0
L30 ii U2b 2.0	0.0	0.0	0.5	2.5	0.0	0.0	1.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.5	0.0
L30 i U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 i U3 1.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	0.0	0.5	1.4	0.0	0.0	0.0	0.0
L30 i U3 2.0	0.0	0.0	0.4	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L15 iii U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0
L15 iii U2c 1.0	0.0	0.0	0.9	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.4	0.0
L15 iii U2c 2.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.0	0.0	4.4	1.5	0.0	0.0	3.9	0.0
L11 U2b+c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
L11 U2b+c 1.0	0.0	0.0	1.1	0.7	0.0	0.0	4.4	0.0	0.0	0.0	1.1	0.0	0.0	0.7	1.5	0.0
L11 U2b+c 2.0	0.0	0.0	0.8	1.2	0.0	0.0	4.3	0.0	0.0	0.0	1.6	2.7	0.0	0.0	0.4	0.0
L24 U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
L24 U2c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	0.0	0.5	1.0	0.0	1.0	0.5	0.0
L24 U2c 2.0	0.0	0.0	0.5	0.9	0.0	0.0	21.9	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0
<u>More data at 0.0 and 4.0 phi</u>																
L1 ii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.4	0.0
L1 i U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	0.5	0.5	0.0	0.0	0.5	0.5
L2 xvii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iv U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0

3/5. Columns continued	**CRY. + br. n-st**		**CRY. + br. Stain.**		**CRYSTALS + l. pink glass non-stained**				**stain.**	**CRY.+ d. pink non-stained**		**LITHIC F. n-st.**	**LITHIC F. stain.**
	am/py	mag.	cl.	am/py	fsp.	cl.	am/py	mag.	cl.	cl.	am/py		
L30 iii U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a 1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
L30 iii U2a 2.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
L30 ii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 ii U2b 1.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 ii U2b 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5
L30 i U3 -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 i U3 1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L30 i U3 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L15 iii U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
L15 iii U2c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
L15 iii U2c 2.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L11 U2b+c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L11 U2b+c 1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L11 U2b+c 2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 2.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<u>More data at 0.0 and 4.0 phi</u>													
L1 ii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	1.0	0.0
L2 xvii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iv U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

3/5. Columns continued	**HXL. n-st.**	**HXL. stain.**	**Gl-Xl-Agg. n-st.**	**Gl-Xl-Agg. stain.**	**Olivine**	**Olivine+white glass**	**TOTAL**
L30 iii U2a -2.5	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 iii U2a -1.0	4.2	0.0	0.0	0.0	0.0	0.0	100.0
L30 iii U2a 1.0	1.9	0.0	0.0	0.0	0.0	0.0	100.0
L30 iii U2a 2.0	1.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 ii U2b -1.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 ii U2b 1.0	3.4	0.0	0.0	0.0	0.0	0.0	100.0
L30 ii U2b 2.0	1.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 i U3 -1.0	0.3	0.0	0.0	0.0	0.0	0.0	100.0
L30 i U3 1.0	0.0	0.5	0.0	0.0	0.0	0.0	100.0
L30 i U3 2.0	1.5	0.4	0.0	0.0	0.0	0.0	100.0
L15 iii U2c -1.0	7.6	2.2	0.0	0.0	0.0	0.0	100.0
L15 iii U2c 1.0	6.0	0.0	0.0	0.0	0.0	0.4	100.0
L15 iii U2c 2.0	2.0	0.0	0.0	0.0	0.0	0.0	100.0
L11 U2b+c -1.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L11 U2b+c 1.0	4.0	0.0	0.4	0.0	0.0	0.0	100.0
L11 U2b+c 2.0	4.3	0.0	0.0	0.0	0.0	0.0	100.0
L24 U2c -1.0	2.0	0.0	0.0	0.0	0.0	0.0	100.0
L24 U2c 1.0	1.0	0.5	0.0	0.0	0.0	0.0	100.0
L24 U2c 2.0	2.3	0.0	0.0	0.0	0.0	0.0	100.0
More data at 0.0 and 4.0 phi							
L1 ii U1 0.0	0.8	0.0	0.4	0.0	0.0	0.0	100.0
L1 i U2a 0.0	1.0	0.0	4.8	0.0	0.0	0.0	100.0
L2 xvii U2b 0.0	2.5	0.0	6.9	0.0	0.0	0.0	100.0
L2 iv U3 0.0	2.0	0.0	0.0	0.0	0.0	0.0	100.0

* reanalyzed, see end of table (Part 5/5)

Part 4/5 of table	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained					
	wh.	gy.	br.	l.pk	d.pk	wh.	gy.	br.	l.pk	d.pk	qtz.	fsp.	cl.	bio.	am/py	mag.
L1 ii U1 4.0	55.4	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	27.7	3.8	11.7	0.0
L1 i U2a 4.0	38.9	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	49.3	1.5	6.9	1.0
L2 xvii U2b 4.0*	26.2	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	52.4	3.4	12.6	0.5
L2 iv U3 4.0	39.3	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	36.7	4.8	13.5	2.2
L10 vii U1 0.0	42.5	3.9	6.3	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	7.7	4.3	0.0	0.0
L10 vi U2b 0.0	14.9	28.4	10.3	5.7	4.2	1.1	3.8	1.9	0.8	0.0	0.0	0.0	6.5	0.8	0.0	0.0
L10 ii U3 0.0	15.5	29.5	14.0	3.0	1.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0
L10 vii U1 4.0	53.6	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	28.4	4.3	10.0	0.9
L10 vi U2b 4.0	46.1	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	37.5	0.7	2.2	0.0
L10 ii U3 4.0	41.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	40.2	2.4	3.2	0.0
L13 vii U1 0.0	20.0	13.8	10.7	0.0	0.4	0.9	0.0	0.0	0.0	0.4	0.0	0.0	12.9	0.9	0.0	0.0
L27 iii U2a 0.0	10.7	46.8	8.3	5.9	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	3.9	1.0	0.0	0.0
L27 ii U2b 0.0	15.5	36.0	8.7	1.9	1.5	1.9	2.7	1.1	0.4	0.0	0.0	0.0	6.4	0.0	0.0	0.0
L27 i U2c 0.0	27.7	9.4	4.5	0.6	2.6	0.0	0.0	0.6	0.0	0.0	0.0	0.0	11.0	2.9	0.0	0.0
L13 ii U3 0.0	43.7	12.0	5.3	1.1	3.3	0.3	0.6	0.3	0.0	0.0	0.0	0.0	7.2	1.7	0.0	0.0
L13 vii U1 4.0	49.8	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	28.9	2.8	17.1	0.0
L27 iii U2a 4.0	44.2	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0	0.0	0.0	36.6	3.5	9.1	0.0
L27 ii U2b 4.0*	28.1	0.0	0.0	0.0	0.0	10.2	0.0	0.0	0.0	0.0	0.0	0.0	41.3	2.1	13.2	0.0
L27 i U2c 4.0	49.6	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	33.0	3.5	11.3	0.0
L13 ii U3 4.0	55.6	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	30.7	3.4	9.3	0.0
L30 iv U1 0.0	40.4	13.8	7.3	1.2	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	1.5	0.0	0.0
L30 iii U2a 0.0	30.7	8.8	10.7	0.0	0.0	0.0	0.0	0.4	1.5	0.4	0.0	0.0	10.7	2.3	0.0	0.0
L30 ii U2b 0.0	22.7	36.4	10.2	5.3	3.6	0.0	0.0	0.4	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0
L30 i U3 0.0	32.2	5.0	4.1	1.2	0.4	0.8	0.0	0.0	0.0	0.0	0.0	0.0	17.8	2.1	0.8	0.0

* reanalyzed, see end of table (Part 5/5)

4/5. Columns continued	**CRYSTALS stained**						**CRYSTALS + white glass non-stained**								**stained**	
	qtz.	fsp.	cl.	bio.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	bio.
L1 ii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iv U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	1.4	0.0	0.0	0.0	0.5	0.0	0.0
L10 vi U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.4	0.0	0.0	0.4	0.0	0.4	0.0
L10 ii U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0	3.5	0.0	0.5	0.0
L10 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vi U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.1	0.0	0.0	0.0	0.4	0.0	0.0	0.0
L27 iii U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.9	0.0	0.0	0.0	1.1	0.0	1.1	0.0
L27 i U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.1	0.6	0.0	0.0	0.0	0.3	0.0	0.3
L13 ii U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.8	0.4	0.0	0.0	0.0	0.0	0.4	0.0
L30 iii U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
L30 ii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.9	0.0	0.0	1.3	0.0	0.0	0.0
L30 i U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.8	0.0	0.0	0.0	0.8	0.4	0.0	0.0

* reanalyzed, see end of table (Part 5/5)

4/5. Columns continued	**stained**				**CRYSTALS + grey glass non-stained**								**stained**		**CRY. + br. n-st**	
	amp.	pyx.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	am/py	cl.	bio.
L1 ii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L1 i U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 iv U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
L10 vi U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.4	0.0	0.0	0.4	0.0	0.0	0.0	1.1	0.0
L10 ii U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vi U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 vii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	1.3	0.0
L27 iii U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
L27 i U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0
L13 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 i U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
L30 iii U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 ii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 i U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* reanalyzed, see end of table (Part 5/5)

4/5. Columns continued	**CRY. + br. n-st**		**CRY. + br. Stain.**		**CRYSTALS + l. pink glass non-stained**				**stain.**	**CRY.+ d. pink non-stained**		**LITHIC F. n-st.**	**LITHIC F. stain.**
	am/py	mag.	cl.	am/py	fsp.	cl.	am/py	mag.	cl.	cl.	am/py		
L1 ii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L1 i U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L2 xvii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L2 iv U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L10 vii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
L10 vi U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.4	0.8
L10 ii U3 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	1.0
L10 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L10 vi U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7
L10 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4
L13 vii U1 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0
L27 i U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L13 ii U3 0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0
L13 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1
L27 i U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
L13 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iv U1 0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8	0.0
L30 iii U2a 0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 ii U2b 0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4	0.0	0.0	0.0
L30 i U3 0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

* reanalyzed, see end of table (Part 5/5)

4/5. Columns continued	HXL. n-st.	HXL. stain.	Gl-Xl-Agg. n-st.	Gl-Xl-Agg. stain.	Olivine	Olivine+white glass	TOTAL
L1 ii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L1 i U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L2 xvii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L2 iv U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L10 vii U1 0.0	1.0	0.0	0.0	0.5	0.0	0.0	100.0
L10 vi U2b 0.0	3.8	0.0	0.0	0.0	0.0	0.0	100.0
L10 ii U3 0.0	6.5	0.0	0.0	0.0	0.0	0.0	100.0
L10 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L10 vi U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L10 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L13 vii U1 0.0	2.2	0.0	0.0	0.0	0.0	0.0	100.0
L27 iii U2a 0.0	2.4	0.0	0.0	0.0	0.0	0.0	100.0
L27 ii U2b 0.0	2.3	0.0	0.0	0.0	0.0	0.0	100.0
L27 i U2c 0.0	1.3	0.0	0.0	0.0	0.0	0.0	100.0
L13 ii U3 0.0	1.1	0.0	0.0	0.0	0.0	0.0	100.0
L13 vii U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L27 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L27 ii U2b 4.0*	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L27 i U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L13 ii U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 iv U1 0.0	0.0	0.8	1.2	0.0	0.0	0.0	100.0
L30 iii U2a 0.0	3.8	0.0	0.4	0.0	0.0	0.0	100.0
L30 ii U2b 0.0	3.1	0.0	0.0	0.0	0.0	0.0	100.0
L30 i U3 0.0	1.2	0.0	0.0	0.0	0.0	0.0	100.0

Part 5/5 of table	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained					
	wh.	gy.	br.	l.pk	d.pk	wh.	gy.	br.	l.pk	d.pk	qtz.	fsp.	cl.	bio.	am/py	mag.
L30 iv U1 4.0	47.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	35.4	4.9	8.9	1.2
L30 iii U2a 4.0	42.2	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	42.2	4.6	6.9	0.0
L30 ii U2b 4.0	36.1	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	32.8	4.4	15.3	0.0
L30 i U3 4.0	60.5	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	30.4	1.7	6.3	0.3
L15 iii U2c 0.0	20.5	37.1	10.7	3.4	2.9	0.5	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
L15 iii U2c 4.0	45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.1	3.5	8.0	0.3
L24 U2c 0.0	16.9	39.1	9.9	2.9	2.5	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
L24 U2c 4.0	48.5	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	38.5	2.7	7.7	1.2
L2 xvii 4.0 redo	34.5	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	48.4	2.2	11.7	0.0
L27 ii 4.0 redo	35.2	0.0	0.0	0.0	0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	39.4	5.6	5.2	0.9

5/5. Columns continued	CRYSTALS stained						CRYSTALS + white glass non-stained								stained	
	qtz.	fsp.	cl.	bio.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	bio.
L30 iv U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 ii U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 i U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L15 iii U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	1.0	0.0	0.5	0.0
L15 iii U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	15.6	0.0	0.0	0.0	2.1	0.0	0.0	0.0
L24 U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5/5. Columns continued	**stained**				**CRYSTALS + grey glass non-stained**								**stained**		**CRY. + br. n-st**	
	amp.	pyx.	am/py	mag.	qtz.	fsp.	cl.	bio.	amp.	pyx.	am/py	mag.	cl.	am/py	cl.	bio.
L30 iv U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 ii U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L30 i U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L15 iii U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
L15 iii U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
L24 U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5/5. Columns continued	**CRY. + br. n-st**		**CRY. + br. Stain.**		**CRYSTALS + l. pink glass non-stained**				**stain.**	**CRY.+ d. pink non-stained**		**LITHIC F. n-st.**	**LITHIC F. stain.**
	am/py	mag.	cl.	am/py	fsp.	cl.	am/py	mag.	cl.	cl.	am/py		
L30 iv U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
L30 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
L30 ii U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6
L30 i U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
L15 iii U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
L15 iii U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L24 U2c 0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0
L24 U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L2 xvii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L27 ii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7

5/5. Columns continued	**HXL. n-st.**	**HXL. stain.**	**Gl-Xl-Agg. n-st.**	**Gl-Xl-Agg. stain.**	**Olivine**	**Olivine+white glass**	**TOTAL**
L30 iv U1 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 iii U2a 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 ii U2b 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L30 i U3 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L15 iii U2c 0.0	3.4	0.0	0.0	0.0	0.0	0.0	100.0
L15 iii U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L24 U2c 0.0	2.9	0.0	0.0	0.0	0.0	0.0	100.0
L24 U2c 4.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L2 xvii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	100.0
L27 ii 4.0 redo	0.0	0.0	0.0	0.0	0.0	0.0	100.0

5.3 Componentry data: error calculations

One sample, L13 vii U1, was analysed five times at a range of grain sizes (-2.5, -1.0, 0.0, 1.0, 2.0 and 4.0 phi) and the average deviation in the componentry calculated for each grain category. Then this deviation was weighted in terms of the mean abundance of each grain type at each size, with the total representing the overall componentry error for that grain size.

5.3.1 Calculated Errors

Componentry Error	
Phi Size	Error (%)
-2.5	0.89
-1	2.52
0	2.79
1	1.83
2	1.81
4	5.24

5.3.2 Data

Normalized values used in these tables.

-2.5 and -1.0 phi	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained				CRY. stain.
	white	grey	br.	l.pk	d.pk	white	grey	br.	l.pink	d.pink	cl.	bio.	am/py	mag.	clear
-2.5 phi															
Original	58.3	25.0				8.3	8.3								
Repeat 1	58.3	33.3				8.3	0.0								
Repeat 2	58.3	33.3				8.3	0.0								
Repeat 3	58.3	33.3				8.3	0.0								
Repeat 4	58.3	33.3				8.3	0.0								
Mean	*58.3*	*31.7*				*8.3*	*1.7*								
Average Deviation	**0.0**	**2.7**				**0.0**	**2.7**								
weight the deviation	0.00	0.84				0.00	0.04								
sum the deviation	**0.89**														
-1.0 phi															
Original	63.1	7.7	7.2	0.0	1.4		0.5	1.4	0.5	0.0	9.0	0.0			
Repeat 1	52.0	9.6	10.4	1.6	1.2		0.0	0.8	0.0	0.0	14.0	1.6			
Repeat 2	63.0	10.2	5.5	0.4	1.6		0.4	0.4	0.0	0.0	13.4	0.4			
Repeat 3	57.5	11.1	7.5	0.0	1.2		0.0	0.0	0.0	0.0	15.5	0.4			
Repeat 4	58.4	8.2	7.5	0.4	2.7		2.0	0.8	0.0	0.0	10.6	0.4			
Mean	*58.8*	*9.4*	*7.6*	*0.5*	*1.6*		*0.6*	*0.7*	*0.1*	*0.0*	*12.5*	*0.6*			
Average Deviation	**3.4**	**1.1**	**1.1**	**0.4**	**0.5**		**0.6**	**0.4**	**0.1**	**0.0**	**2.2**	**0.4**			
weight the deviation	1.99	0.11	0.08	0.00	0.01		0.00	0.00	0.00	0.00	0.27	0.00			
sum the deviation	**2.52**														

Columns continued	**CRYSTALS stained**			**CRYSTALS + adhering white glass**			**CRYSTALS + adhering grey glass**			**LITHIC FRAG.**		**HXL**		**Gl-Xl-Agg**	
	bio.	am/py	mag.	clear	bio.	am/py	clear	bio.	am/py	n-st.	stain.	n-st.	stain.	n-st.	stain.
-2.5 phi															
Original															
Repeat 1															
Repeat 2															
Repeat 3															
Repeat 4															
Mean															
Average Deviation															
weight the deviation															
-1.0 phi															
Original	0.0			6.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.7			
Repeat 1	0.4			3.2	0.4	0.0	0.0	0.0	1.2	0.0	1.6	2.0			
Repeat 2	0.0			4.3	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0			
Repeat 3	0.0			4.0	0.0	0.4	0.0	0.0	0.4	0.4	0.8	0.8			
Repeat 4	0.4			4.3	0.4	0.0	0.4	0.8	0.8	0.0	0.4	1.6			
Mean	*0.2*			*4.4*	*0.2*	*0.1*	*0.1*	*0.2*	*0.6*	*0.1*	*0.6*	*1.4*			
Average Deviation	**0.2**			**0.8**	**0.2**	**0.1**	**0.1**	**0.3**	**0.3**	**0.1**	**0.5**	**0.8**			
weight the deviation	0.00			0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01			

0.0 and 1.0 phi	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained				CRY. stain.
	white	grey	br.	l.pk	d.pk	white	grey	br.	l.pink	d.pink	cl.	bio.	am/py	mag.	clear
0.0 phi															
Original	21.1	14.6	11.3	0.0	0.5	0.0		0.0		0.5	13.6	0.9	0.0	0.0	
Repeat 1	40.5	9.9	2.0	0.0	1.6	1.2		0.0		0.0	41.3	2.0	0.4	0.0	
Repeat 2	44.5	10.0	3.0	0.0	1.0	0.0		0.0		0.0	39.5	1.0	0.0	0.0	
Repeat 3	38.8	10.1	4.6	0.0	1.8	0.3		0.0		0.0	38.8	4.3	0.9	0.3	
Repeat 4	49.8	6.8	3.6	0.0	1.1	0.2		0.7		0.0	35.7	2.0	0.0	0.0	
Mean	*38.9*	*10.3*	*4.9*	*0.0*	*1.2*	*0.3*		*0.1*		*0.1*	*33.8*	*2.0*	*0.3*	*0.1*	
Average Deviation	**7.2**	**1.7**	**2.5**	**0.0**	**0.4**	**0.3**		**0.2**		**0.2**	**8.1**	**0.9**	**0.3**	**0.1**	
weight the deviation	2.79	0.18	0.12	0.00	0.00	0.00		0.00		0.00	2.72	0.02	0.00	0.00	
sum the deviation	**6.72**														
1.0 phi															
Original	30.1	7.3	1.2	1.2	0.0	0.0	1.6				37.4	3.3	0.4	0.0	
Repeat 1	49.1	2.9	3.6	0.0	0.4	0.4	0.0				0.0	4.0	2.9	0.7	
Repeat 2	33.7	4.8	3.4	0.0	0.0	1.4	0.0				0.0	2.9	3.8	1.0	
Repeat 3	36.2	5.3	2.9	0.0	0.0	1.6	0.0				0.0	6.2	2.9	1.2	
Repeat 4	33.8	4.3	0.9	0.0	0.9	1.3	0.0				0.0	3.5	4.3	0.9	
Mean	*36.6*	*4.9*	*2.4*	*0.2*	*0.2*	*0.9*	*0.3*				*7.5*	*3.9*	*2.9*	*0.8*	
Average Deviation	**5.0**	**1.1**	**1.1**	**0.4**	**0.3**	**0.6**	**0.5**				**12.0**	**0.9**	**1.0**	**0.3**	
weight the deviation	1.83	0.06	0.03	0.00	0.00	0.01	0.00				0.90	0.04	0.03	0.00	
sum the deviation	**8.05**														

Columns continued	**CRYSTALS stained**			**CRYSTALS + adhering white glass**			**CRYSTALS + adhering grey glass**			**LITHIC FRAG.**		**HXL**		**Gl-Xl-Agg**	
	bio.	am/py	mag.	clear	bio.	am/py	clear	bio.	am/py	n-st.	stain.	n-st.	stain.	n-st.	stain.
0.0 phi															
Original		0.0				37.1				0.5	0.0	0.0			
Repeat 1		0.4				0.0				0.0	0.0	0.8			
Repeat 2		0.0				0.0				0.0	0.5	0.5			
Repeat 3		0.0				0.0				0.0	0.0	0.0			
Repeat 4		0.0				0.0				0.0	0.0	0.0			
Mean		*0.1*				*7.4*				*0.1*	*0.1*	*0.3*			
Average Deviation		**0.1**				**11.9**				**0.2**	**0.2**	**0.3**			
weight the deviation		0.00				0.88				0.00	0.00	0.00			
1.0 phi															
Original	0.8					15.9				0.8	0.0				
Repeat 1	0.0					0.0				0.4	0.0				
Repeat 2	0.0					0.0				0.0	0.0				
Repeat 3	0.0					0.0				0.0	0.0				
Repeat 4	0.4					0.0				0.4	0.9				
Mean	*0.2*					*3.2*				*0.3*	*0.2*				
Average Deviation	**0.3**					**5.1**				**0.3**	**0.3**				
weight the deviation	0.00					0.16				0.00	0.00				

2.0 and 4.0 phi,	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained				CRY. stain.
	white	grey	br.	l.pk	d.pk	white	grey	br.	l.pink	d.pink	cl.	bio.	am/py	mag.	clear
2.0 phi															
Original	35.2	3.8	0.9	1.4	1.9	0.0	0.5				23.9	4.7	0.9	0.0	
Repeat 1	19.8	4.3	2.2	0.0	0.8	0.0	0.0				54.7	4.6	11.9	1.1	
Repeat 2	20.5	4.5	5.3	0.0	0.0	0.0	0.0				53.3	4.9	7.4	2.9	
Repeat 3	36.8	3.2	2.9	0.0	0.7	2.2	0.0				36.1	7.2	10.1	0.7	
Repeat 4	27.3	8.4	2.9	0.0	0.6	0.3	0.0				42.5	5.2	10.1	1.9	
Mean	*27.9*	*4.9*	*2.8*	*0.3*	*0.8*	*0.5*	*0.1*				*42.1*	*5.3*	*8.1*	*1.3*	
Average Deviation	**6.5**	**1.4**	**1.0**	**0.5**	**0.4**	**0.7**	**0.2**				**9.7**	**0.8**	**3.1**	**0.9**	
weight the deviation	1.81	0.07	0.03	0.00	0.00	0.00	0.00				4.08	0.04	0.25	0.01	
sum the deviation	**6.66**														
4.0 phi															
Original	50.5					0.0					29.3	2.9	17.3	0.0	
Repeat 1	48.2					2.6					36.9	2.3	8.7	0.3	
Repeat 2	42.2					3.2					35.8	3.2	14.2	0.0	
Repeat 3	64.4					0.0					26.9	3.2	5.5	0.0	
Repeat 4	56.9					2.7					27.1	5.1	6.1	1.0	
Mean	***52.5***					***1.7***					***31.2***	***3.3***	***10.4***	***0.3***	
Average Deviation	**6.6**					**1.4**					**4.1**	**0.7**	**4.3**	**0.3**	
weight the deviation	3.45					0.02					1.28	0.02	0.45	0.00	
sum the deviation	**5.24**														

Columns continued	**CRYSTALS stained**			**CRYSTALS + adhering white glass**			**CRYSTALS + adhering grey glass**			**LITHIC FRAG.**		**HXL**		**Gl-Xl-Agg**	
	bio.	am/py	mag.	clear	bio.	am/py	clear	bio.	am/py	n-st.	stain.	n-st.	stain.	n-st.	stain.
2.0 phi															
Original	0.5					23.5	0.0			0.9	1.4			0.5	
Repeat 1	0.0					0.0	0.0			0.3	0.3			0.0	
Repeat 2	0.0					0.0	0.0			0.0	1.2			0.0	
Repeat 3	0.0					0.0	0.0			0.0	0.0			0.0	
Repeat 4	0.0					0.0	0.0			0.3	0.3			0.0	
Mean	*0.1*					*4.7*	*0.0*			*0.3*	*0.6*			*0.1*	
Average Deviation	**0.2**					**7.5**	**0.0**			**0.3**	**0.5**			**0.2**	
weight the deviation	0.00					0.35	0.00			0.00	0.00			0.00	
4.0 phi															
Original											0.0				
Repeat 1											1.0				
Repeat 2											1.4				
Repeat 3											0.0				
Repeat 4											1.0				
Mean											***0.7***				
Average Deviation											**0.5**				
weight the deviation											0.00				

5.4 Componentry data: glass, crystals, other

5.4.1 Data

U1	L1 ii U1	L10 vii U1	L13 vii U1	L30 iv U1
Glass -2.5	88.57	100.00	100.00	100.00
Crystal -2.5	0.00	0.00	0.00	0.00
Other -2.5	11.43	0.00	0.00	0.00
Glass -1.0	80.80	79.49	81.53	93.09
Crystal -1.0	17.41	16.24	15.77	6.45
Other -1.0	1.79	4.27	2.70	0.46
Glass 0.0	42.86	55.07	46.22	64.62
Crystal 0.0	55.95	43.48	51.56	32.69
Other 0.0	1.19	1.45	2.22	2.69
Glass 1.0	36.84	44.53	40.82	48.29
Crystal 1.0	61.65	54.69	58.05	50.34
Other 1.0	1.50	0.78	1.12	1.37
Glass 2.0	33.22	29.33	41.99	47.49
Crystal 2.0	63.25	70.67	54.98	51.60
Other 2.0	3.53	0.00	3.03	0.91
Glass 4.0	56.34	55.92	51.18	49.28
Crystal 4.0	43.19	43.60	48.82	50.43
Other 4.0	0.47	0.47	0.00	0.29

U2a	L1 i U2a	L27 iii U2a	L30 iii U2a
Glass -2.5	100.00		100.00
Crystal -2.5	0.00		0.00
Other -2.5	0.00		0.00
Glass -1.0	87.46	88.70	82.03
Crystal -1.0	8.56	7.83	13.80
Other -1.0	3.98	3.48	4.17
Glass 0.0	30.58	73.17	52.49
Crystal 0.0	68.93	24.39	43.30
Other 0.0	0.49	2.44	4.21
Glass 1.0	51.78	54.22	31.73
Crystal 1.0	44.82	38.96	65.87
Other 1.0	3.40	6.83	2.40
Glass 2.0	35.66	27.43	27.40
Crystal 2.0	56.77	66.37	71.23
Other 2.0	7.57	6.19	1.37
Glass 4.0	40.89	50.79	45.87
Crystal 4.0	58.62	49.21	53.67
Other 4.0	0.49	0.00	0.46

U2b	L2 xvii U2b	L10 vi U2b	L27 ii U2b	L30 ii U2b
Glass -1.0	77.44	88.50	82.04	90.07
Crystal -1.0	5.26	7.00	14.08	9.93
Other -1.0	17.29	4.50	3.88	0.00
Glass 0.0	72.55	71.26	69.70	78.67
Crystal 0.0	18.14	23.75	26.52	18.22
Other 0.0	9.31	4.98	3.79	3.11
Glass 1.0	45.41	44.96	52.79	50.49
Crystal 1.0	49.76	50.42	37.34	46.12
Other 1.0	4.83	4.62	9.87	3.40
Glass 2.0	37.01	30.55	29.27	33.99
Crystal 2.0	62.20	66.55	61.95	64.53
Other 2.0	0.79	2.91	8.78	1.48
Glass 4.0	37.67	49.44	44.13	44.89
Crystal 4.0	62.33	40.82	51.17	52.55
Other 4.0	0.00	9.74	4.69	2.55

U2c	L27 i U2c	L15 iii U2c	L24 U2c
Glass -1.0	73.41	78.78	87.76
Crystal -1.0	23.02	10.79	10.20
Other -1.0	3.57	10.43	2.04
Glass 0.0	45.48	75.61	71.60
Crystal 0.0	53.23	20.00	25.10
Other 0.0	1.29	4.39	3.29
Glass 1.0	47.83	49.15	45.63
Crystal 1.0	51.21	44.02	52.91
Other 1.0	0.97	6.84	1.46
Glass 2.0	59.33	36.95	29.77
Crystal 2.0	39.71	61.08	67.91
Other 2.0	0.96	1.97	2.33
Glass 4.0	51.74	45.02	50.00
Crystal 4.0	47.83	54.98	50.00
Other 4.0	0.43	0.00	0.00

U3	L2 iv U3	L2 iii U3	L10 ii U3	L13 ii U3	L30 i U3
Glass -1.0	84.77	78.13	83.39	78.46	82.61
Crystal -1.0	10.93	17.71	11.19	17.48	17.12
Other -1.0	4.30	4.17	5.42	4.07	0.27
Glass 0.0	68.44		64.50	66.57	43.80
Crystal 0.0	29.51		28.00	31.75	54.96
Other 0.0	2.05		7.50	1.67	1.24
Glass 1.0	40.81	45.08	49.59	48.60	34.30
Crystal 1.0	55.34	51.52	47.54	48.25	64.73
Other 1.0	3.85	3.41	2.87	3.15	0.97
Glass 2.0	32.20	32.05	36.31	37.50	32.44
Crystal 2.0	63.92	67.44	61.10	61.25	65.65
Other 2.0	3.87	0.51	2.59	1.25	1.91
Glass 4.0	42.79		45.82	56.59	60.84
Crystal 4.0	57.21		45.82	43.41	38.81
Other 4.0	0.00		8.37	0.00	0.35

5.4.2 Range in values

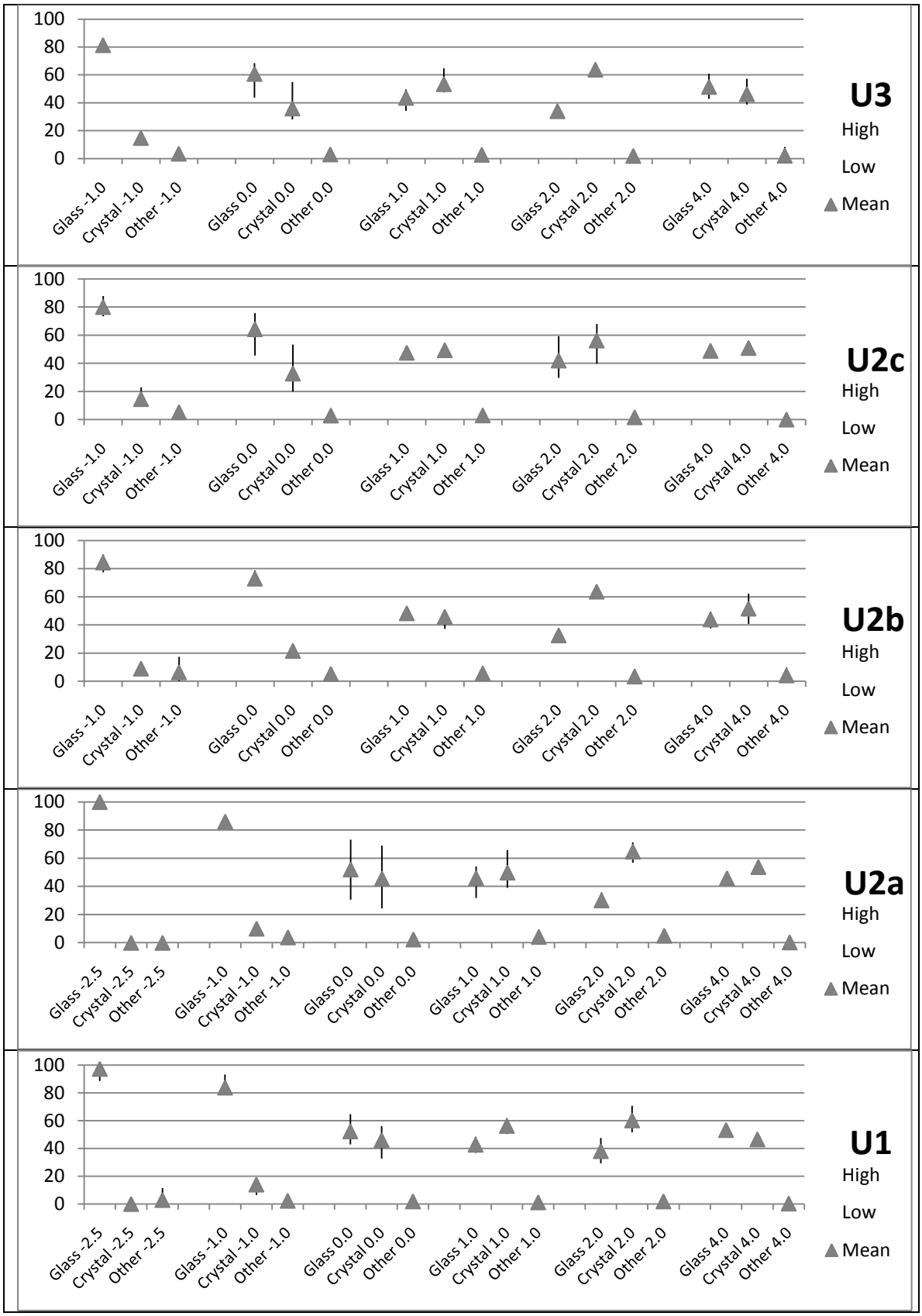
U1	High	Low	Mean
Glass -2.5	100.00	88.57	97.14
Crystal -2.5	0.00	0.00	0.00
Other -2.5	11.43	0.00	2.86
Glass -1.0	93.09	79.49	83.73
Crystal -1.0	17.41	6.45	13.97
Other -1.0	4.27	0.46	2.31
Glass 0.0	64.62	42.86	52.19
Crystal 0.0	55.95	32.69	45.92
Other 0.0	2.69	1.19	1.89
Glass 1.0	48.29	36.84	42.62
Crystal 1.0	61.65	50.34	56.18
Other 1.0	1.50	0.78	1.19
Glass 2.0	47.49	29.33	38.01
Crystal 2.0	70.67	51.60	60.12
Other 2.0	3.53	0.00	1.87
Glass 4.0	56.34	49.28	53.18
Crystal 4.0	50.43	43.19	46.51
Other 4.0	0.47	0.00	0.31

U2a	High	Low	Mean
Glass -2.5	100.00		100.00
Crystal -2.5	0.00	0.00	0.00
Other -2.5	0.00	0.00	0.00
Glass -1.0	88.70	82.03	86.06
Crystal -1.0	13.80	7.83	10.06
Other -1.0	4.17	3.48	3.87
Glass 0.0	73.17	30.58	52.08
Crystal 0.0	68.93	24.39	45.54
Other 0.0	4.21	0.49	2.38
Glass 1.0	54.22	31.73	45.91
Crystal 1.0	65.87	38.96	49.88
Other 1.0	6.83	2.40	4.21
Glass 2.0	35.66	27.40	30.16
Crystal 2.0	71.23	56.77	64.79
Other 2.0	7.57	1.37	5.04
Glass 4.0	50.79	40.89	45.85
Crystal 4.0	58.62	49.21	53.83
Other 4.0	0.49	0.00	0.32

U2b	High	Low	Mean
Glass -1.0	90.07	77.44	84.51
Crystal -1.0	14.08	5.26	9.07
Other -1.0	17.29	0.00	6.42
Glass 0.0	78.67	69.70	73.04
Crystal 0.0	26.52	18.14	21.66
Other 0.0	9.31	3.11	5.30
Glass 1.0	52.79	44.96	48.41
Crystal 1.0	50.42	37.34	45.91
Other 1.0	9.87	3.40	5.68
Glass 2.0	37.01	29.27	32.70
Crystal 2.0	66.55	61.95	63.81
Other 2.0	8.78	0.79	3.49
Glass 4.0	49.44	37.67	44.03
Crystal 4.0	62.33	40.82	51.72
Other 4.0	9.74	0.00	4.25

U2c	High	Low	Mean
Glass -1.0	87.76	73.41	79.98
Crystal -1.0	23.02	10.20	14.67
Other -1.0	10.43	2.04	5.35
Glass 0.0	75.61	45.48	64.23
Crystal 0.0	53.23	20.00	32.78
Other 0.0	4.39	1.29	2.99
Glass 1.0	49.15	45.63	47.53
Crystal 1.0	52.91	44.02	49.38
Other 1.0	6.84	0.97	3.09
Glass 2.0	59.33	29.77	42.01
Crystal 2.0	67.91	39.71	56.23
Other 2.0	2.33	0.96	1.75
Glass 4.0	51.74	45.02	48.92
Crystal 4.0	54.98	47.83	50.94
Other 4.0	0.43	0.00	0.14

U3	High	Low	Mean
Glass -1.0	84.77	78.13	81.47
Crystal -1.0	17.71	10.93	14.88
Other -1.0	5.42	0.27	3.65
Glass 0.0	68.44	43.80	60.83
Crystal 0.0	54.96	28.00	36.06
Other 0.0	7.50	1.24	3.12
Glass 1.0	49.59	34.30	43.68
Crystal 1.0	64.73	47.54	53.48
Other 1.0	3.85	0.97	2.85
Glass 2.0	37.50	32.05	34.10
Crystal 2.0	67.44	61.10	63.87
Other 2.0	3.87	0.51	2.03
Glass 4.0	60.84	42.79	51.51
Crystal 4.0	57.21	38.81	46.31
Other 4.0	8.37	0.00	2.18


U3
High
Low
Mean
U2c
High
Low
Mean
U2b
High
Low
Mean
U2a
High
Low
Mean
U1
High
Low
Mean
100
80
60
40
20
0
Glass -1.0
Crystal -1.0
Other -1.0
Glass 0.0
Crystal 0.0
Other 0.0
Glass 1.0
Crystal 1.0
Other 1.0
Glass 2.0
Crystal 2.0
Other 2.0
Glass 4.0
Crystal 4.0
Other 4.0
Glass -2.5
Crystal -2.5
Other -2.5

5.5 Componentry: stained and non-stained

-2.5, -1.0, 1.0, 2.0 phi

Sample Name	Non-stained	Stained
L1 ii U1 -2.5	71.4	28.6
L1 ii U1 -1.0	96.0	4.0
L1 ii U1 1.0	97.7	2.3
L1 ii U1 2.0	97.2	2.8
L1 i U2a -2.5	0.0	100.0
L1 i U2a -1.0	84.7	15.3
L1 i U2a 1.0	95.5	4.5
L1 i U2a 2.0	95.4	4.6
L2 xvii U2b -1.0	76.7	23.3
L2 xvii U2b 1.0	90.8	9.2
L2 xvii U2b 2.0	97.4	2.6
L2 iv U3 -1.0	70.2	29.8
L2 iv U3 1.0	89.7	10.3
L2 iv U3 2.0	93.5	6.5
L2 iii U3 -1.0	85.4	14.6
L2 iii U3 1.0	93.6	6.4
L2 iii U3 2.0	97.4	2.6
L10 vii U1 -2.5	100.0	0.0
L10 vii U1 -1.0	91.5	8.5
L10 vii U1 1.0	85.5	14.5
L10 vii U1 2.0	84.1	15.9
L10 vi U2b -1.0	77.5	22.5
L10 vi U2b 1.0	81.9	18.1
L10 vi U2b 2.0	68.7	31.3
L10 ii U3 -1.0	91.2	8.8
L10 ii U3 1.0	89.8	10.2
L10 ii U3 2.0	90.2	9.8
L13 vii U1 -2.5	83.3	16.7
L13 vii U1 -1.0	97.7	2.3
L13 vii U1 1.0	95.1	4.9
L13 vii U1 2.0	97.0	3.0
L27 iii U2a -2.5	**no grains**	
L27 iii U2a -1.0	94.8	5.2
L27 iii U2a 1.0	75.1	24.9
L27 iii U2a 2.0	66.8	33.2
L27 ii U2b -1.0	75.7	24.3
L27 ii U2b 1.0	88.0	12.0
L27 ii U2b 2.0	90.7	9.3
L27 i U2c -1.0	94.4	5.6
L27 i U2c 1.0	97.6	2.4
L27 i U2c 2.0	98.1	1.9
L13 ii U3 -1.0	93.9	6.1
L13 ii U3 1.0	97.9	2.1
L13 ii U3 2.0	98.8	1.3
L30 iv U1 -2.5	100.0	0.0
L30 iv U1 -1.0	99.1	0.9
L30 iv U1 1.0	96.9	3.1
L30 iv U1 2.0	97.3	2.7
L30 iii U2a -2.5	100.0	0.0
L30 iii U2a -1.0	92.4	7.6
L30 iii U2a 1.0	93.3	6.7
L30 iii U2a 2.0	97.3	2.7
L30 ii U2b -1.0	96.0	4.0
L30 ii U2b 1.0	89.8	10.2
L30 ii U2b 2.0	89.7	10.3
L30 i U3 -1.0	98.4	1.6
L30 i U3 1.0	98.6	1.4
L30 i U3 2.0	98.5	1.5
L15 iii U2c -1.0	92.8	7.2
L15 iii U2c 1.0	95.7	4.3
L15 iii U2c 2.0	97.0	3.0
L11 U2b+c -1.0	95.6	4.4
L11 U2b+c 1.0	95.2	4.8
L11 U2b+c 2.0	92.2	7.8
L24 U2c -1.0	100.0	0.0
L24 U2c 1.0	97.1	2.9
L24 U2c 2.0	97.2	2.8

0.0 and 4.0 phi

* reanalyzed, see end of table

Sample Name	Non-stained	Stained
L1 ii U1 0.0	98.0	2.0
L1 i U2a 0.0	99.0	1.0
L2 xvii U2b 0.0	95.6	4.4
L2 iv U3 0.0	94.7	5.3
L1 ii U1 4.0	98.6	1.4
L1 i U2a 4.0	97.5	2.5
L2 xvii U2b 4.0*	95.1	4.9
L2 iv U3 4.0	96.5	3.5
L10 vii U1 0.0	97.1	2.9
L10 vi U2b 0.0	91.2	8.8
L10 ii U3 0.0	97.5	2.5
L10 vii U1 4.0	97.2	2.8
L10 vi U2b 4.0	86.5	13.5
L10 ii U3 4.0	86.9	13.1
L13 vii U1 0.0	98.7	1.3
L27 iii U2a 0.0	99.5	0.5
L27 ii U2b 0.0	92.8	7.2
L27 i U2c 0.0	99.0	1.0
L13 ii U3 0.0	98.9	1.1
L13 vii U1 4.0	98.6	1.4
L27 iii U2a 4.0	93.4	6.6
L27 ii U2b 4.0*	84.7	15.3
L27 i U2c 4.0	97.4	2.6
L13 ii U3 4.0	99.0	1.0
L30 iv U1 0.0	98.8	1.2
L30 iii U2a 0.0	97.7	2.3
L30 ii U2b 0.0	99.6	0.4
L30 i U3 0.0	99.2	0.8
L30 iv U1 4.0	97.4	2.6
L30 iii U2a 4.0	95.9	4.1
L30 ii U2b 4.0	88.7	11.3
L30 i U3 4.0	99.3	0.7
L15 iii U2c 0.0	98.5	1.5
L15 iii U2c 4.0	100.0	0.0
L24 U2c 0.0	99.2	0.8
L24 U2c 4.0	98.5	1.5
L2 xvii 4.0 redo	96.9	3.1
L27 ii 4.0 redo	86.4	13.6

5.6 Componentry: unit means

5.6.1 Glass, crystals, other

	Phi	-2.5	-1.0	0.0	1.0	2.0	4.0
U1	Glass	97.1	83.7	52	42.6	38	53
	Crystal	0	14	46	56.2	60	47
	Other	2.86	2.31	2	1.19	1.9	0.3
U2a	Glass	100	86.1	63	45.9	30	46
	Crystal	0	10.1	33	49.9	65	54
	Other	0	3.87	4	4.21	5	0.3
U2b	Glass		84.5	73	48.4	33	44
	Crystal		9.07	22	45.9	64	52
	Other		6.42	5	5.68	3.5	4.2
U2c	Glass		80	64	47.5	42	49
	Crystal		14.7	33	49.4	56	51
	Other		5.35	3	3.09	1.8	0.1
U3	Glass		82.3	61	43.3	35	52
	Crystal		14.2	36	54	63	46
	Other		3.52	3	2.71	2.4	2.2

5.6.2 Stained and non-stained

	Phi	-2.5	-1.0	0.0	1.0	2.0	4.0
U1	Non-stained	88.7	96.1	98	93.8	94	98
	Stained	11.3	3.93	2	6.16	6.1	2.1
U2a	Non-stained	50	90.6	99	88	86	96
	Stained	50	9.35	1	12	14	4.4
U2b	Non-stained		81.5	95	87.6	87	90
	Stained		18.5	5	12.4	13	10
U2c	Non-stained		95.8	99	96.8	97	99
	Stained		4.25	1	3.2	2.6	1.4
U3	Non-stained		88.4	98	94	95	95
	Stained		11.6	2	6.01	4.8	4.6

5.7 Componentry: other data sets

5.7.1 Crystals with adhering glass

	as a % of all crystals
U1	36.37
U2a	45.85
U2b	36.62
U2c	43.62
U3	40.81

5.7.2 Lithic fragments

	% lithic fragments
U1	0.31
U2a	0.29
U2b	1.09
U2c	0.25
U3	0.70

5.7.3 Stained grains by unit

	Glass	**Crystals**	**Lithic Fragments**	**Holocrystalline Fragments**	**Glass-Crystal-Aggregates**	**Total**
U1	2.63	1.17	0.10	0.06	0.06	**4.03**
U2a	3.94	3.97	0.09	0.11	0.00	**8.11**
U2b	8.09	2.72	0.99	0.04	0.13	**11.97**
U2c	1.54	0.67	0.10	0.18	0.00	**2.49**
U3	3.57	1.48	0.60	0.27	0.00	**5.93**

5.7.4 Stained grains by grain type

Componentry on -2.5 phi excluded since the mode is only found in U1 and U2a.

	Glass	**Crystals**	**Lithic Fragments**	**Holocrystalline Fragments**	**Glass-Crystal-Aggregates**
U1	4.9	2.6	43.5	5.7	36.5
U2a	7.3	9.4	25.2	3.8	0.0
U2b	14.3	7.1	91.3	1.6	11.1
U2c	2.7	1.7	40.9	7.3	
U3	6.6	3.5	85.3	13.6	0.0

5.8 Componentry: 1.0 and 2.0 phi in detail

From locality 13/27

5.8.1 Glass, crystals, other

Phi		U1	U2a	U2b	U2c	U3
1.0	Glass	40.82	54.22	52.79	47.83	48.60
	Crystals	58.05	38.96	37.34	51.21	48.25
	Other	1.12	6.83	9.87	0.97	3.15
2.0	Glass	41.99	27.43	29.27	59.33	37.50
	Crystals	54.98	66.37	61.95	39.71	61.25
	Other	3.03	6.19	8.78	0.96	1.25

5.8.2 Glass

Phi		U1	U2a	U2b	U2c	U3
1.0	White Gl	30.34	34.14	23.61	33.82	35.31
	Gray Gl	8.24	12.05	18.45	7.25	8.74
	Brown Gl	1.12	4.42	5.15	5.31	2.45
	Li Pink Gl	1.12	3.21	3.43	0.48	1.75
	Dk Pink Gl	0.00	0.40	2.15	0.97	0.35
	Crystals	58.05	38.96	37.34	51.21	48.25
	Other	1.12	6.83	9.87	0.97	3.15
		U1	U2a	U2b	U2c	U3
2.0	White Gl	34.20	11.95	18.54	50.72	26.25
	Gray Gl	3.90	13.27	6.34	4.78	9.69
	Brown Gl	0.87	0.00	2.44	3.35	1.56
	Li Pink Gl	1.30	1.77	1.95	0.48	0.00
	Dk Pink Gl	1.73	0.44	0.00	0.00	0.00
	Crystals	54.98	66.37	61.95	39.71	61.25
	Other	3.03	6.19	8.78	0.96	1.25

Ratios: to white glass

Phi		U1	U2a	U2b	U2c	U3
1	White glass	1	1	1	1	1
	Gray glass	0.27	0.35	0.78	0.21	0.25
	Brown glass	0.04	0.13	0.22	0.16	0.07
	Light pink glass	0.04	0.09	0.15	0.01	0.05
	Dark pink glass	0.00	0.01	0.09	0.03	0.01

		U1	U2a	U2b	U2c	U3
2	White glass	1	1	1	1	1
	Gray glass	0.11	1.11	0.34	0.09	0.37
	Brown glass	0.03	0.00	0.13	0.07	0.06
	Light pink glass	0.04	0.15	0.11	0.01	0.00
	Dark pink glass	0.05	0.04	0.00	0.00	0.00

5.8.3 Crystals

Phi		U1	U2a	U2b	U2c	U3
1	Glass	40.82	54.22	52.79	47.83	48.60
	Quartz	6.11	3.53	3.26	2.79	7.80
	Potassium Feldspar	0.61	0.00	1.96	0.00	0.52
	Plagioclase Feldspar	46.46	29.40	28.69	41.17	31.19
	Mafic Crystals	4.87	6.02	3.43	7.25	8.74
	Other	1.12	6.83	9.87	0.97	3.15

		U1	U2a	U2b	U2c	U3
2	Glass	41.99	27.43	29.27	59.33	37.50
	Quartz	7.51	8.78	4.36	4.06	9.48
	Potassium Feldspar	1.07	0.00	1.74	1.01	1.05
	Plagioclase Feldspar	38.61	48.30	47.07	20.29	37.91
	Mafic Crystals	7.79	9.29	8.78	14.35	12.81
	Other	3.03	6.19	8.78	0.96	1.25

Ratios: to plagioclase feldspar

Phi		U1	U2a	U2b	U2c	U3
1	Quartz	0.13	0.12	0.11	0.07	0.25
	Potassium Feldspar	0.01	0.00	0.07	0.00	0.02
	Plagioclase Feldspar	1	1	1	1	1
	Mafic Crystals	0.10	0.20	0.12	0.18	0.28
	Other	0.02	0.23	0.34	0.02	0.10

		U1	U2a	U2b	U2c	U3
2	Quartz	0.19	0.18	0.09	0.20	0.25
	Potassium Feldspar	0.03	0.00	0.04	0.05	0.03
	Plagioclase Feldspar	1	1	1	1	1
	Mafic Crystals	0.20	0.19	0.19	0.71	0.34
	Other	0.08	0.13	0.19	0.05	0.03

5.8.4 Shape of plagioclase feldspar crystals

		Number of Grains	
phi		Blocky	Tabular
1.0	U1	82	18
	U2a	86	14
	U2b	85	15
	U2c	90	10
	U3	85	15

		Number of Grains	
phi		Blocky	Tabular
2.0	U1	82	18
	U2a	83	17
	U2b	80	20
	U2c	83	17
	U3	82	18

5.9 Componentry by distance

5.9.1 Glass, crystals, other

		L1/2	L15	L24	L13/27	L30	L10
	km	**2.5**	**3.0**	**4.0**	**4.5**	**6.5**	**7.5**
U1	Glass	44.92			55.08	55.47	51.25
	Crystals	53.18			42.89	43.39	47.84
	Other	1.90			2.03	1.15	0.91
U2a	Glass	50.53			52.85	41.76	
	Crystals	44.84			42.94	56.01	
	Other	4.63			4.21	2.23	
U2b	Glass	49.51			50.44	53.67	50.71
	Crystals	45.74			42.66	43.99	44.08
	Other	4.75			6.90	2.34	5.20
U2c	Glass		52.56	50.77	53.71		
	Crystals		43.38	47.43	45.13		
	Other		4.06	1.80	1.16		
U3	Glass	47.95			53.16	45.20	51.07
	Crystals	49.23			45.01	53.71	43.99
	Other	2.82			1.83	1.09	4.95

5.9.2 Glass types

		L1/2	L15	L24	L13/27	L30	L10
	km	**2.5**	**3.0**	**4.0**	**4.5**	**6.5**	**7.5**
U1	White Glass	31.86			34.54	39.23	44.79
	Gray Glass	8.78			9.33	10.01	4.59
	Brown Glass	5.04			5.46	10.18	3.02
	Light Pink Glass	1.15			0.67	1.04	0.22
	Dark Pink Glass	0.18			0.76	1.62	0.17
	Crystals	51.27			47.23	36.39	45.62
	Other	1.72			2.01	1.53	1.58
U2a	White Glass	28.71			23.46	29.67	
	Gray Glass	18.41			29.73	7.97	
	Brown Glass	6.52			6.30	9.21	
	Light Pink Glass	4.70			4.14	1.25	
	Dark Pink Glass	3.09			1.28	1.08	
	Crystals	33.51			30.48	47.57	
	Other	5.06			4.61	3.26	
U2b	White Glass	21.44			22.40	22.72	22.09
	Gray Glass	26.14			28.10	27.35	19.68
	Brown Glass	8.22			6.57	12.24	10.92
	Light Pink Glass	4.13			3.73	4.17	7.82
	Dark Pink Glass	2.42			3.21	2.42	3.17
	Crystals	28.62			29.86	28.72	31.71
	Other	9.03			6.11	2.38	4.60
U2c	White Glass		14.46	13.42	38.89		
	Gray Glass		30.98	32.32	8.78		
	Brown Glass		9.57	14.23	6.62		
	Light Pink Glass		3.70	1.48	0.60		
	Dark Pink Glass		1.42	2.63	1.19		
	Crystals		33.73	32.89	42.23		
	Other		6.16	3.03	1.69		
U3	White Glass	23.97			43.10	44.61	20.41
	Gray Glass	22.41			13.87	6.25	28.48
	Brown Glass	4.71			4.94	3.20	11.87
	Light Pink Glass	4.27			2.30	1.36	4.54
	Dark Pink Glass	2.09			1.26	0.33	1.75
	Crystals	39.14			31.48	43.47	27.71
	Other	3.42			3.06	0.78	5.23

5.9.3 Crystals and other grains

		L1/2	L15	L24	L13/27	L30	L10
	km	**2.5**	**3.0**	**4.0**	**4.5**	**6.5**	**7.5**
U1	Glass	44.92			48.18	55.47	47.40
	Felsic crystals	40.48			42.27	34.20	39.06
	Biotite	3.89			3.08	4.80	5.24
	Magnetite	1.62			0.39	0.47	0.65
	Other Mafic crystals	7.20			4.25	3.92	6.69
	Lithic Fragments	0.41			0.00	0.53	0.09
	Holocrystalline Fragments	1.19			1.82	0.43	0.78
	Glass-Crystal-Aggregates	0.29			0.00	0.19	0.08
U2a	Glass	50.53			52.85	41.76	
	Felsic crystals	38.62			35.96	44.68	
	Biotite	2.14			2.68	2.82	
	Magnetite	1.04			0.33	1.27	
	Other Mafic crystals	3.04			3.97	7.23	
	Lithic Fragments	0.41			0.08	0.31	
	Holocrystalline Fragments	3.35			4.13	1.86	
	Glass-Crystal-Aggregates	0.87			0.00	0.07	
U2b	Glass	50.76			51.09	54.22	49.58
	Felsic crystals	39.07			36.11	36.36	41.34
	Biotite	0.51			0.59	0.70	1.07
	Magnetite	0.50			0.33	0.90	0.81
	Other Mafic crystals	3.87			4.28	5.34	2.84
	Lithic Fragments	0.08			0.53	0.24	0.60
	Holocrystalline Fragments	2.23			7.07	2.23	3.75
	Glass-Crystal-Aggregates	2.99			0.00	0.00	0.00
U2c	Glass		54.26	57.64	54.84		
	Felsic crystals		33.84	32.17	34.19		
	Biotite		2.33	0.99	4.44		
	Magnetite		0.92	1.82	0.06		
	Other Mafic crystals		4.80	5.14	5.22		
	Lithic Fragments		0.42	0.07	0.19		
	Holocrystalline Fragments		3.43	2.11	1.06		
	Glass-Crystal-Aggregates		0.00	0.06	0.00		
U3	Glass	50.88			54.10	48.07	53.71
	Felsic crystals	38.05			35.41	41.59	33.10
	Biotite	1.64			3.01	2.34	0.59
	Magnetite	1.49			0.85	1.21	3.21
	Other Mafic crystals	4.63			4.41	5.07	4.93
	Lithic Fragments	0.29			0.30	0.57	1.16
	Holocrystalline Fragments	2.85			1.92	0.91	3.32
	Glass-Crystal-Aggregates	0.18			0.00	0.24	0.00

5.10 Overall componentry of the units

5.10.1 Glass, crystals, other

	U1	U2a	U2b	U2c	U3
Glass	47.8	48.9	51.6	53.9	53.5
Crystals	50.8	47.4	43.5	43.9	43.7
Other	1.4	3.7	5.0	2.2	2.8
	100.0	**100.0**	**100.0**	**100.0**	**100.0**

5.10.2 Glass types

Normalized so glass is 100 %.

	U1	U2a	U2b	U2c	U3
White Gl	72.8	49.4	40.2	41.8	53.4
Grey Gl	14.2	29.7	35.4	37.9	30.6
Brown Gl	9.8	12.3	13.7	14.2	8.8
Light Pink Gl	2.1	5.8	7.2	3.5	5.2
Dark Pink Gl	1.2	2.8	3.5	2.6	2.1
	100.0	**100.0**	**100.0**	**100.0**	**100.0**

5.10.3 Crystal types and other grains

Normalized so crystals and other grains are100 %.

	U1	U2a	U2b	U2c	U3
Felsic Crystals	75.9	77.0	78.7	77.8	78.0
Biotite	8.4	4.9	1.5	5.7	4.1
Magnetite	1.6	1.7	1.3	1.4	2.7
Other Mafic Crystals	11.5	9.1	8.3	10.2	9.0
Lithic Fragments	0.5	0.5	0.7	0.5	0.9
Holocrystalline Fragments	1.9	6.1	8.0	4.4	5.0
Glass-Crystal-Aggregates	0.2	0.6	1.6	0.0	0.2
	100.0	**100.0**	**100.0**	**100.0**	**100.0**

5.11 Componentry: 1.5 phi grains

From locality 13/27

	GLASS non-stained					GLASS stained (orange)					CRYSTALS non-stained				CRYSTALS stained
	wh.	grey	br.	l.pk	d.pk	wh.	grey	br.	l.pk	d.pk	cl.	bio.	am/py	mag.	am/py
L13 vii U1 1.5	38.0	7.8	2.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0	36.2	4.3	5.8	0.3	0.3
L27 iii U2a 1.5	18.4	10.0	2.5	2.5	0.5	0.0	0.0	0.5	0.0	0.0	37.3	1.0	0.5	0.0	0.0
L27 ii U2b 1.5	19.2	9.4	6.4	0.9	0.0	0.9	0.0	0.0	0.0	0.0	31.6	0.0	0.4	0.4	0.0
L27 i U2c 1.5	27.8	6.4	4.4	0.5	0.5	0.5	0.0	0.0	0.0	0.0	38.3	2.6	4.4	1.3	0.0
L13 ii U3 1.5	25.8	7.0	1.6	1.2	0.8	0.0	0.0	0.0	0.0	0.0	39.8	4.3	2.3	2.0	0.0

	CRYSTALS + white glass non-stained				CRY. + white. stained		CRYSTALS + gray non-stained			CRY + brown non-stained		LITHIC F. stain	HXL. stain.	TOTAL
	cl.	bio.	am/py	mag.	cl.	am/py	cl.	am/py	mag.	cl.	am/py			
L13 vii U1 1.5	2.9	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	100.000
L27 iii U2a 1.5	17.9	0.0	4.0	1.0	0.0	0.5	1.0	1.5	0.5	0.5	0.0	0.0	0.0	100.000
L27 ii U2b 1.5	20.9	0.0	3.8	1.7	2.6	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.9	100.000
L27 i U2c 1.5	9.3	0.5	1.0	1.0	0.0	0.0	0.5	0.5	0.3	0.0	0.3	0.0	0.0	100.000
L13 ii U3 1.5	7.4	0.0	3.9	0.0	0.4	0.0	0.8	0.8	0.0	0.0	0.0	2.0	0.0	100.000

APPENDIX 6

6.1 Abbreviations used in Appendix 6

WhGL.	White Glass
WhGLASS	White Glass
GyGL.	Gray Glass
GyGLASS	Gray Glass
BrGLASS	Brown Glass
PkGLASS	Dark Pink Glass
LiPkGLASS	Light Pink Glass
CLEAR	Clear crystals (quartz or feldspar)
MAG.	Magnetite
BLACK	Mafic crystals (amphibole or pyroxene)
LITHIC	Lithic Fragment
HXL	Hollocrystalline
GlXlAgg	Glass-crystal-aggregate
St	Stained (prefix)
+	indicates a crystal with the given type of adhering glass

6.2 SEM data: grain descriptions

Tables overleaf

1/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
1	Locality 27	iii	U2a		1	HXL	1		
2	Locality 27	iii	U2a		1	HXL	2		
3	Locality 27	iii	U2a		1	StWhGLASS	1		stained
4	Locality 27	iii	U2a		1	StWhGLASS	2		stained
5	Locality 27	iii	U2a		1	StPkGLASS			stained
6	Locality 27	iii	U2a		1	StCLEAR	1		stained
7	Locality 27	iii	U2a		1	StCLEAR	2		stained
8	Locality 27	iii	U2a		1	StCLEAR	3		stained
9	Locality 27	ii	U2b		1	CLEAR	1		
10	Locality 27	ii	U2b		1	CLEAR	2		
11	Locality 27	ii	U2b		1	WhGLASS	1	1 top grain	
12	Locality 27	ii	U2b		1	WhGLASS	1	2 right grain	
13	Locality 27	ii	U2b		1	WhGLASS	1	3 left grain	
14	Locality 27	ii	U2b		1	WhGLASS	2		
15	Locality 27	ii	U2b		1	GyGLASS	1	1 top grain	
16	Locality 27	ii	U2b		1	GyGLASS	1	2 bottom grain	
17	Locality 27	ii	U2b		1	GyGLASS	2		
18	Locality 27	ii	U2b		1	HXL	1		
19	Locality 27	ii	U2b		1	HXL	2		
20	Locality 27	ii	U2b		1	HXL	3		
21	Locality 27	ii	U2b		1	StWhGLASS	1		stained
22	Locality 27	ii	U2b		1	StWhGLASS	2		stained
23	Locality 27	ii	U2b		1	StGyGLASS	1		stained
24	Locality 27	ii	U2b		1	StGyGLASS	2		stained

1/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
1				ash		crystal/glass part is fractured	
2				ash			
3				ash			
4				ash			
5				ash			
6	no coating						
7	no coating						
8	no coating						
9	no coating						
10	no coating						
11							the grain itself is vesicular
12							the grain itself is vesicular
13							the grain itself is vesicular
14				ash			
15	no coating						
16	no coating						
17	no coating						
18				ash			the grain itself is vesicular
19							the grain itself is vesicular
20				ash			
21	no coating						
22	no coating						
23	no coating						
24	no coating						may have a "crust," likely to do with the staining

2/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
25	Locality 27	Iii	U2a		1	CLEAR	1		
26	Locality 27	Iii	U2a		1	CLEAR	2		
27	Locality 27	Iii	U2a		1	WhGLASS	1		
28	Locality 27	Iii	U2a		1	WhGLASS	2		
29	Locality 27	Iii	U2a		1	GyGLASS	1		
30	Locality 27	Iii	U2a		1	GyGLASS	2		
31	Locality 27	Iii	U2a		1	BrGLASS	1		
32	Locality 27	Iii	U2a		1	BrGLASS	2		
33	Locality 27	Iii	U2a		1	LiPkGLASS	1		
34	Locality 27	Iii	U2a		1	LiPkGLASS	2		
35	Locality 13	Ii	U3		1	CLEAR	1		
36	Locality 13	Ii	U3		1	CLEAR	2		
37	Locality 13	Ii	U3		1	WhGLASS	1		
38	Locality 13	Ii	U3		1	WhGLASS	2		
39	Locality 13	Ii	U3		1	GyGLASS	1		
40	Locality 13	Ii	U3		1	GyGLASS	2		
41	Locality 13	Ii	U3		1	HXL	1		
42	Locality 13	Ii	U3		1	HXL	2		
43	Locality 13	Ii	U3		1	StBrGLASS	1		stained
44	Locality 13	Ii	U3		1	MAGNETITE+WhGLASS	1		
45	Locality 13	Ii	U3		1	MAGNETITE+WhGLASS	2		
46	Locality 27	I	U2c		1	CLEAR	1		
47	Locality 27	I	U2c		1	CLEAR	2		
48	Locality 27	i	U2c		1	WhGLASS	1		

2/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
25	no coating						
26	no coating						
27				ash			the grain itself is vesicular
28				ash			
29				ash			
30				ash			
31				ash			
32				ash			
33				ash			
34				ash			
35			vesicular glass	ash			
36	no coating						
37	no coating						the grain itself is vesicular
38	no coating						
39	no coating						
40	no coating						
41	no coating						
42	no coating						
43	no coating						
44	no coating						
45			vesicular glass				
46	no coating						
47			vesicular glass	ash			
48				ash			the grain itself is vesicular

3/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
49	Locality 27	i	U2c		1	WhGLASS	2		
50	Locality 27	i	U2c		1	HXL	1		
51	Locality 27	i	U2c		1	StWhGLASS	1		stained
52	Locality 27	i	U2c		1	StWhGLASS	2		stained
53	Locality 27	i	U2c		1	StBrGLASS			stained
54	Locality 27	i	U2c		1	StBLACK+WhGl			stained
55	Locality 13	vii	U1		1	CLEAR	1		
56	Locality 13	vii	U1		1	CLEAR	2		
57	Locality 13	vii	U1		1	CLEAR	3		
58	Locality 13	vii	U1		1	WhGLASS	1		
59	Locality 13	vii	U1		1	WhGLASS	2		
60	Locality 13	vii	U1		1	GyGLASS	1		
61	Locality 13	vii	U1		1	GyGLASS	2		
62	Locality 13	vii	U1		1	BIOTITE	1		
63	Locality 13	vii	U1		1	BIOTITE	2		
64	Locality 13	vii	U1		1	BLACK	1		
65	Locality 13	vii	U1		1	StGyGLASS	1		stained
66	Locality 13	vii	U1		1	StGyGLASS	2		stained
67	Locality 13	vii	U1		1	StWhGLASS	1		stained
68	Locality 1	i	U2a	fine+coarse	0	HXL			
69	Locality 1	i	U2a	fine+coarse	0	GlXlAgg	1		
70	Locality 1	i	U2a	fine+coarse	0	GlXlAgg	2		
71	Locality 1	i	U2a	fine+coarse	0	GlXlAgg	3		
72	Locality 1	i	U2a	fine+coarse	0	GlXlAgg	4		

3/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
49				ash			the grain itself is vesicular
50	no coating				odd "quench" texture		
51				ash			
52	no coating						
53				ash			
54	no coating						
55	no coating						
56	no coating						
57			vesicular glass	ash			
58				ash			the grain itself is vesicular
59				ash			the grain itself is vesicular
60		glass					
61	no coating				odd "quench" texture		
62	no coating						
63	no coating						
64	no coating						
65	no coating						
66	no coating						
67				ash			
68	no coating						
69				ash			
70		glass					
71			vesicular glass	ash			
72							

4/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
73	Locality 1	I	U2a	fine+coarse	0	GlXlAgg	5		
74	Locality 1	I	U2a	fine+coarse	0	GlXlAgg	6		
75	Locality 1	I	U2a	fine+coarse	0	GlXlAgg	7		
76	Locality 1	I	U2a	fine+coarse	0	GlXlAgg	8		
77	Locality 1	I	U2a	fine+coarse	0	GlXlAgg	9		
78	Locality 1	I	U2a	fine+coarse	0	StLITHIC			stained
79	Locality 27	iii	U2a		4		3		n/a
80	Locality 27	iii	U2a		4		4		n/a
81	Locality 27	iii	U2a		4		5		n/a
82	Locality 27	iii	U2a		4		6		n/a
83	Locality 27	iii	U2a		4		7		n/a
84	Locality 27	iii	U2a		4		8		n/a
85	Locality 27	iii	U2a		4		9		n/a
86	Locality 27	iii	U2a		4		10		n/a
87	Locality 27	ii	U2b		4		1		n/a
88	Locality 27	ii	U2b		4		2		n/a
89	Locality 27	ii	U2b		4		3		n/a
90	Locality 27	ii	U2b		4		4		n/a
91	Locality 27	ii	U2b		4		5		n/a
92	Locality 27	ii	U2b		4		6		n/a
93	Locality 27	ii	U2b		4		7		n/a
94	Locality 27	ii	U2b		4		8		n/a
95	Locality 27	ii	U2b		4		9		n/a
96	Locality 27	i	U2c		4		1		n/a

4/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
73			vesicular glass	ash			
74							
75							
76							
77			vesicular glass	ash			
78				ash			
79			vesicular glass				
80	no coating						
81	no coating						
82				ash			the grain itself is vesicular
83	no coating						the grain itself is vesicular
84				ash			the grain itself is vesicular
85	no coating						
86	no coating						
87	no coating						
88	no coating						
89	no coating						
90				ash			
91	no coating						
92	no coating						
93	no coating						
94	no coating						
95	no coating						
96			vesicular glass				

5/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
97	Locality 27	i	U2c		4		2		n/a
98	Locality 27	i	U2c		4		3		n/a
99	Locality 27	i	U2c		4		4		n/a
100	Locality 27	i	U2c		4		5		n/a
101	Locality 27	i	U2c		4		6		n/a
102	Locality 27	i	U2c		4		7		n/a
103	Locality 27	i	U2c		4		8		n/a
104	Locality 27	i	U2c		4		9		n/a
105	Locality 27	i	U2c		4		10		n/a
106	Locality 13	vii	U1		4		1		n/a
107	Locality 13	vii	U1		4		2		n/a
108	Locality 13	vii	U1		4		3		n/a
109	Locality 13	vii	U1		4		4		n/a
110	Locality 13	vii	U1		4		5		n/a
111	Locality 13	vii	U1		4		6		n/a
112	Locality 13	vii	U1		4		7		n/a
113	Locality 13	vii	U1		4		8		n/a
114	Locality 13	ii	U3		4		1		n/a
115	Locality 13	ii	U3		4		2		n/a
116	Locality 13	ii	U3		4		3		n/a
117	Locality 13	ii	U3		4		4		n/a
118	Locality 13	ii	U3		4		5		n/a
119	Locality 13	ii	U3		4		6		n/a
120	Locality 13	ii	U3		4		7		n/a

5/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
97			vesicular glass				
98	no coating						the grain itself is vesicular
99		glass					
100	no coating						
101	no coating						the grain itself is vesicular
102	no coating						
103	no coating						the grain itself is vesicular
104	no coating						the grain itself is vesicular
105	no coating						the grain itself is vesicular
106	no coating						
107		glass					
108	no coating						
109	no coating						the grain itself is vesicular
110	no coating						the grain itself is vesicular
111	no coating						
112	no coating						
113	no coating						
114	no coating						
115	no coating						
116	no coating						the grain itself is vesicular
117	no coating						
118	no coating						
119	no coating						
120	no coating						

6/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
121	Locality 13	ii	U3		4		8		n/a
122	Locality 1	ii	U1		1	GyGLASS	1		
123	Locality 1	ii	U1		1	GyGLASS	2		
124	Locality 1	ii	U1		1	GyGLASS	3		
125	Locality 1	ii	U1		1	GyGLASS	4		
126	Locality 1	ii	U1		1	GyGLASS	5		
127	Locality 1	ii	U1		1	WhGLASS	1		
128	Locality 1	ii	U1		1	WhGLASS	2		
129	Locality 1	ii	U1		1	WhGLASS	3		
130	Locality 1	ii	U1		1	WhGLASS	4		
131	Locality 1	ii	U1		1	WhGLASS	5		
132	Locality 1	i	U2a		1	GyGLASS	1		
133	Locality 1	i	U2a		1	GyGLASS	2		
134	Locality 1	i	U2a		1	GyGLASS	3		
135	Locality 1	i	U2a		1	GyGLASS	4		
136	Locality 1	i	U2a		1	GyGLASS	5		
137	Locality 1	i	U2a		1	WhGLASS	1		
138	Locality 1	i	U2a		1	WhGLASS	2		
139	Locality 1	i	U2a		1	WhGLASS	3		
140	Locality 1	i	U2a		1	WhGLASS	4		
141	Locality 1	i	U2a		1	WhGLASS	5		
142	Locality 2	xvii	U2b		1	GyGLASS	1		
143	Locality 2	xvii	U2b		1	GyGLASS	2		

6/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
121				ash			
122	no coating						
123	no coating						
124	no coating						
125	no coating						
126	no coating						
127	no coating						the grain itself is vesicular
128	no coating						the grain itself is vesicular
129	no coating						the grain itself is vesicular
130	no coating						the grain itself is vesicular
131	no coating						the grain itself is vesicular
132	no coating						
133	no coating						
134	no coating						
135	no coating						
136				ash			the grain itself is vesicular
137	no coating						the grain itself is vesicular
138	no coating						the grain itself is vesicular
139	no coating						the grain itself is vesicular
140	no coating						
141	no coating						the grain itself is vesicular
142	no coating						
143	no coating						

7/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
144	Locality 2	xvii	U2b		1	GyGLASS	3		
145	Locality 2	xvii	U2b		1	GyGLASS	4		
146	Locality 2	xvii	U2b		1	GyGLASS	5		
147	Locality 2	xvii	U2b		1	WhGLASS	1		
148	Locality 2	xvii	U2b		1	WhGLASS	2		
149	Locality 2	xvii	U2b		1	WhGLASS	3		
150	Locality 2	xvii	U2b		1	WhGLASS	4		
151	Locality 2	xvii	U2b		1	WhGLASS	5		
152	Locality 2	xvii	U2b		1	WhGLASS	6		
153	Locality 2	iv	U3		1	GyGLASS	1		
154	Locality 2	iv	U3		1	GyGLASS	2		
155	Locality 2	iv	U3		1	GyGLASS	3		
156	Locality 2	iv	U3		1	GyGLASS	4		
157	Locality 2	iv	U3		1	GyGLASS	5		
158	Locality 2	iv	U3		1	WhGLASS	1		
159	Locality 2	iv	U3		1	WhGLASS	2		
160	Locality 2	iv	U3		1	WhGLASS	3		
161	Locality 2	iv	U3		1	WhGLASS	4		
162	Locality 2	iv	U3		1	WhGLASS	5		
163	Locality 13	vii	U1		1	GyGLASS	3		
164	Locality 13	vii	U1		1	GyGLASS	4		
165	Locality 13	vii	U1		1	GyGLASS	5		
166	Locality 13	vii	U1		1	GyGLASS	6		
167	Locality 13	vii	U1		1	GyGLASS	7		

7/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
144	no coating						
145	no coating						
146	no coating						
147	no coating						
148	no coating						
149	no coating						
150	no coating						
151	no coating						
152	no coating						
153	no coating						
154	no coating						
155	no coating						
156	no coating						
157	no coating						
158	no coating						the grain itself is vesicular
159	no coating						
160	no coating						the grain itself is vesicular
161	no coating						the grain itself is vesicular
162	no coating						the grain itself is vesicular
163	no coating						
164	no coating						
165	no coating						
166	no coating						
167	no coating						

8/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
168	Locality 13	vii	U1		1	WhGLASS	3		
169	Locality 13	vii	U1		1	WhGLASS	4		
170	Locality 13	vii	U1		1	WhGLASS	5		
171	Locality 13	vii	U1		1	WhGLASS	6		
172	Locality 13	vii	U1		1	WhGLASS	7		
173	Locality 27	iii	U2a		1	GyGLASS	3		
174	Locality 27	iii	U2a		1	GyGLASS	4		
175	Locality 27	iii	U2a		1	GyGLASS	5		
176	Locality 27	iii	U2a		1	WhGLASS	3		
177	Locality 27	iii	U2a		1	WhGLASS	4		
178	Locality 27	iii	U2a		1	WhGLASS	5		
179	Locality 27	ii	U2b		1	GyGLASS	3		
180	Locality 27	ii	U2b		1	GyGLASS	4		
181	Locality 27	ii	U2b		1	GyGLASS	5		
182	Locality 27	ii	U2b		1	WhGLASS	3		
183	Locality 27	ii	U2b		1	WhGLASS	4		
184	Locality 27	ii	U2b		1	WhGLASS	5		
185	Locality 27	i	U2c		1	WhGLASS	3		
186	Locality 27	i	U2c		1	WhGLASS	4		
187	Locality 27	i	U2c		1	WhGLASS	5		
188	Locality 13	ii	U3		1	GyGLASS	3		
189	Locality 13	ii	U3		1	GyGLASS	4		
190	Locality 13	ii	U3		1	GyGLASS	5		
191	Locality 13	ii	U3		1	WhGLASS	3		

8/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
168	no coating						the grain itself is vesicular
169	no coating						the grain itself is vesicular
170	no coating						the grain itself is vesicular
171	no coating						the grain itself is vesicular
172	no coating						the grain itself is vesicular
173				ash			
174				ash			
175	no coating						
176				ash			
177	no coating						
178	no coating						
179	no coating						
180	no coating						
181	no coating						
182				ash			
183				ash			
184				ash			
185	no coating						the grain itself is vesicular
186	no coating						the grain itself is vesicular
187	no coating						the grain itself is vesicular
188	no coating						
189	no coating						
190	no coating						
191	no coating						the grain itself is vesicular

9/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
192	Locality 13	ii	U3		1	WhGLASS	4		
193	Locality 13	ii	U3		1	WhGLASS	5		
194	Locality 30	iv	U1		1	GyGLASS	1		
195	Locality 30	iv	U1		1	GyGLASS	2		
196	Locality 30	iv	U1		1	GyGLASS	3		
197	Locality 30	iv	U1		1	GyGLASS	4		
198	Locality 30	iv	U1		1	GyGLASS	5		
199	Locality 30	iv	U1		1	WhGLASS	1		
200	Locality 30	iv	U1		1	WhGLASS	2		
201	Locality 30	iv	U1		1	WhGLASS	3		
202	Locality 30	iv	U1		1	WhGLASS	4		
203	Locality 30	iii	U2a		1	GyGLASS	1		
204	Locality 30	iii	U2a		1	GyGLASS	2		
205	Locality 30	iii	U2a		1	GyGLASS	3		
206	Locality 30	iii	U2a		1	WhGLASS	1		
207	Locality 30	iii	U2a		1	WhGLASS	2		
208	Locality 30	iii	U2a		1	WhGLASS	3		
209	Locality 30	iii	U2a		1	WhGLASS	4		
210	Locality 30	iii	U2a		1	WhGLASS	5		
211	Locality 30	ii	U2b		1	GyGLASS	1		
212	Locality 30	ii	U2b		1	GyGLASS	2		
213	Locality 30	ii	U2b		1	GyGLASS	3		
214	Locality 30	ii	U2b		1	GyGLASS	4		
215	Locality 30	ii	U2b		1	GyGLASS	5		

9/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
192	no coating						the grain itself is vesicular
193	no coating						the grain itself is vesicular
194	no coating						
195	no coating						
196				ash			
197	no coating						
198	no coating						the grain itself is vesicular
199	no coating						the grain itself is vesicular
200	no coating						the grain itself is vesicular
201	no coating						the grain itself is vesicular
202	no coating						the grain itself is vesicular
203	no coating						
204				ash			
205	no coating						
206	no coating						the grain itself is vesicular
207	no coating						the grain itself is vesicular
208	no coating						the grain itself is vesicular
209	no coating						
210				ash			
211	no coating						
212	no coating						
213	no coating						
214	no coating						
215	no coating						

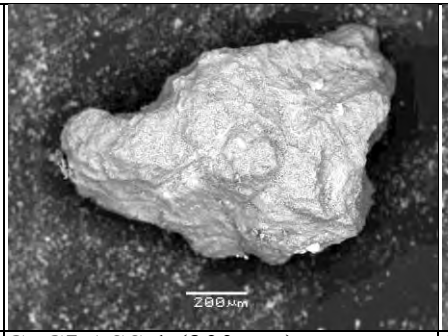
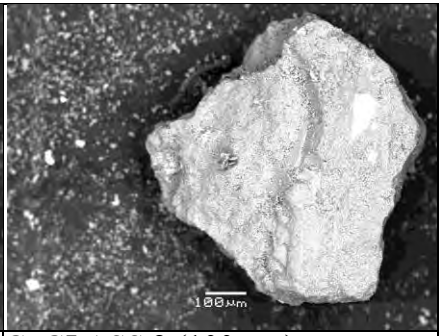
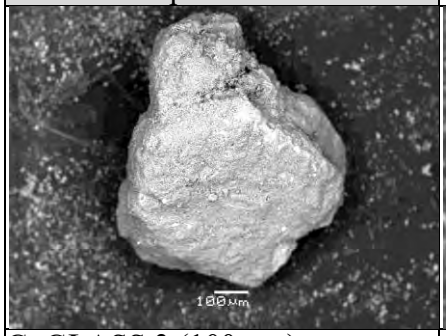
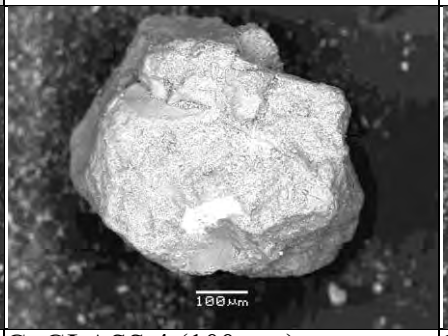
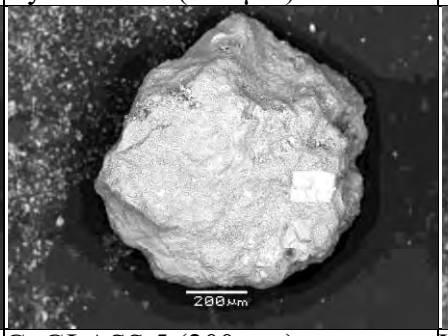
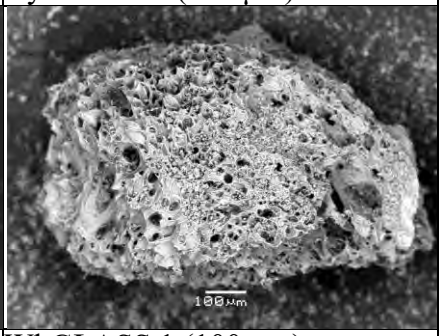
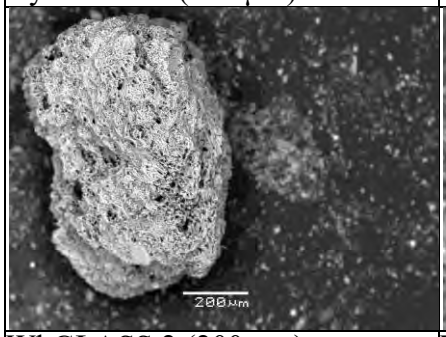
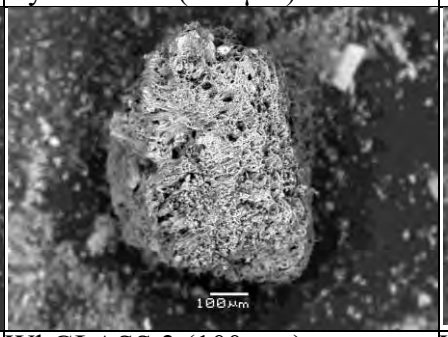
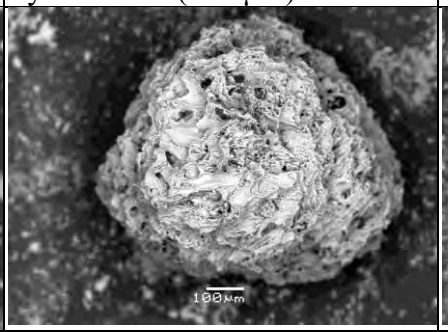
10/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
216	Locality 30	ii	U2b		1	WhGLASS	1		
217	Locality 30	ii	U2b		1	WhGLASS	2		
218	Locality 30	ii	U2b		1	WhGLASS	3		
219	Locality 30	ii	U2b		1	WhGLASS	4		
220	Locality 30	ii	U2b		1	WhGLASS	5		
221	Locality 30	i	U3		1	GyGLASS	1		
222	Locality 30	i	U3		1	GyGLASS	2		
223	Locality 30	i	U3		1	GyGLASS	3		
224	Locality 30	i	U3		1	GyGLASS	4		
225	Locality 30	i	U3		1	GyGLASS	5		
226	Locality 30	i	U3		1	WhGLASS	1		
227	Locality 30	i	U3		1	WhGLASS	2		
228	Locality 30	i	U3		1	WhGLASS	3		
229	Locality 30	i	U3		1	WhGLASS	4		
230	Locality 30	i	U3		1	WhGLASS	5		
231	Locality 15	iii	U2c		1	GyGLASS	1		
232	Locality 15	iii	U2c		1	GyGLASS	2		
233	Locality 15	iii	U2c		1	GyGLASS	3		
234	Locality 15	iii	U2c		1	GyGLASS	4		
235	Locality 15	iii	U2c		1	GyGLASS	5		
236	Locality 15	iii	U2c		1	WhGLASS	1		
237	Locality 15	iii	U2c		1	WhGLASS	2		
238	Locality 15	iii	U2c		1	WhGLASS	3		
239	Locality 15	iii	U2c		1	WhGLASS	4		

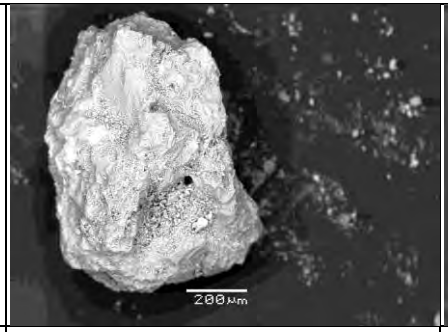
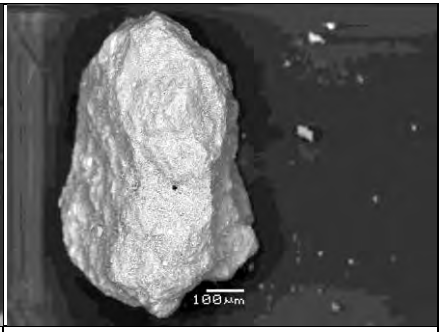
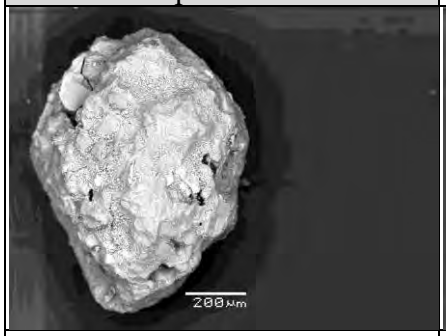
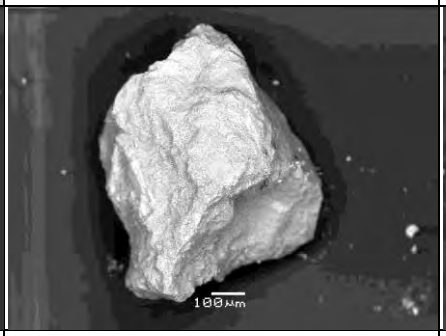
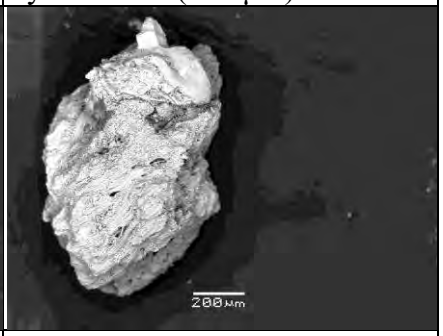
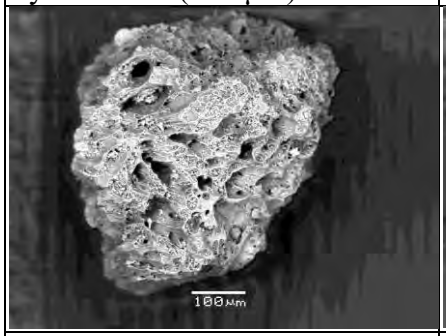
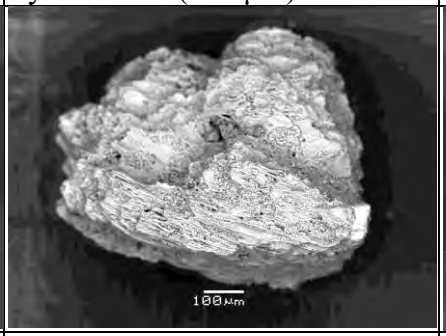
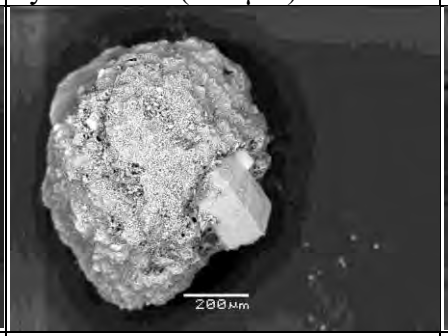
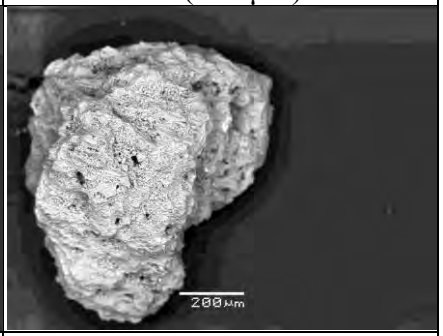
10/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
216				ash			
217	no coating						
218	no coating						
219	no coating						
220	no coating						
221	no coating						
222				ash			
223				ash			
224	no coating						
225	no coating						
226	no coating						the grain itself is vesicular
227	no coating						the grain itself is vesicular
228	no coating						the grain itself is vesicular
229	no coating						the grain itself is vesicular
230	no coating						the grain itself is vesicular
231	no coating						
232	no coating						
233	no coating						
234	no coating						
235	no coating						
236	no coating						
237				ash			
238				ash			
239	no coating						

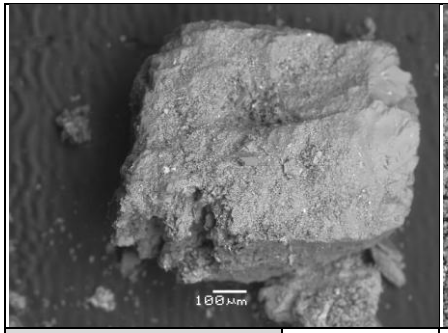
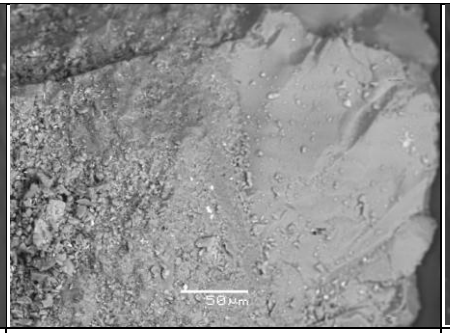
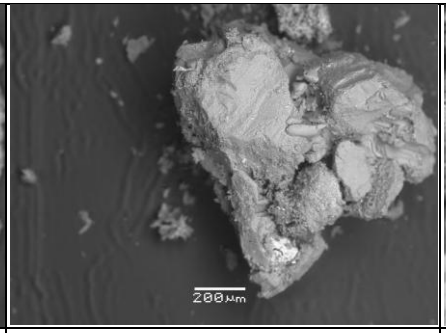
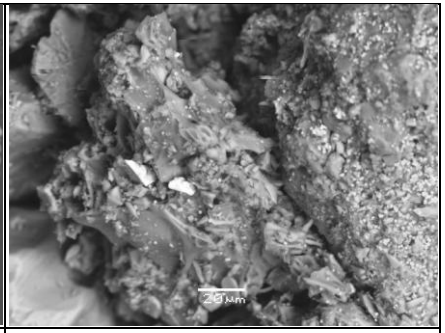
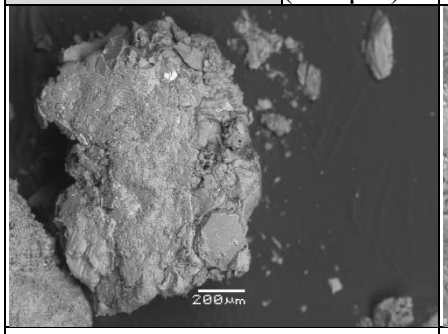
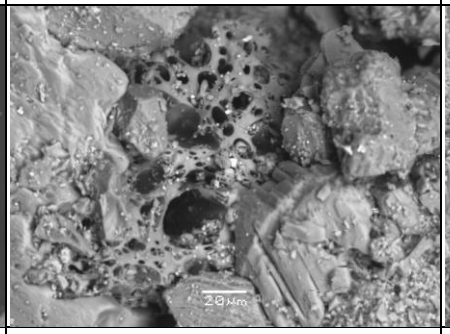
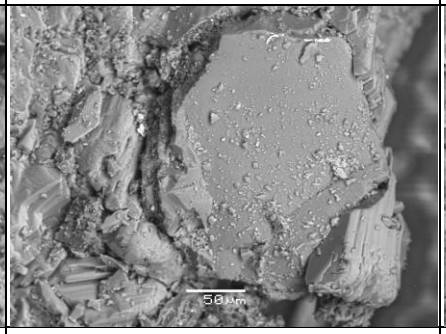
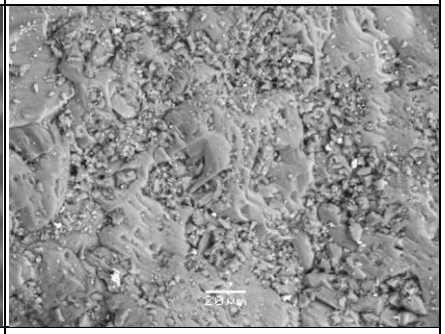
11/11							Mount information		Surface information
ID	Locality	part	units	further label	Grain Size (Phi)	Grain Type	Grain Number	Grain part	stained (optical, from description)
240	Locality 15	iii	U2c		1	WhGLASS	5		
241	Locality 24		U2c		1	GyGLASS	1		
242	Locality 24		U2c		1	GyGLASS	2		
243	Locality 24		U2c		1	GyGLASS	3		
244	Locality 24		U2c		1	GyGLASS	4		
245	Locality 24		U2c		1	GyGLASS	5		
246	Locality 24		U2c		1	WhGLASS	1		
247	Locality 24		U2c		1	WhGLASS	2		
248	Locality 24		U2c		1	WhGLASS	3		
249	Locality 24		U2c		1	WhGLASS	4		
250	Locality 24		U2c		1	WhGLASS	5		

11/11	Surface information						
ID	no coating	glass	vesicular glass	ash	odd "quench" texture	further notes	further notes
240	no coating						the grain itself is vesicular
241	no coating						
242	no coating						
243	no coating						
244				ash			
245				ash			
246	no coating						the grain itself is vesicular
247	no coating						
248	no coating						
249	no coating						
250	no coating						

6.3 SEM data: images

For all images, scale bar length is given in parentheses. **Read along the rows left to right, with the sample details given in grey boxes before the images.**			
L1 ii U1 1.0 phi		GyGLASS 1 (200 µm)	GyGLASS 2 (100 µm)
			
GyGLASS 3 (100 µm)	GyGLASS 4 (100 µm)	GyGLASS 5 (200 µm)	WhGLASS 1 (100 µm)
			
WhGLASS 2 (200 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (200 µm)

			
L1 i U2a 1.0 phi		GyGLASS 1 (200 µm)	GyGLASS 2 (100 µm)
			
GyGLASS 3 (200 µm)	GyGLASS 4 (100 µm)	GyGLASS 5 (200 µm)	WhGLASS 1 (200 µm)
			
WhGLASS 2 (100 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (200 µm)	WhGLASS 5 (200 µm)

				
L1 i U2a 0.0 phi	GlXlAgg 1 (100 µm)	GlXlAgg 1 zoom 1 (50 µm)	GlXlAgg 2 (200 µm)	GlXlAgg 2 zoom 1(20 µm)
				
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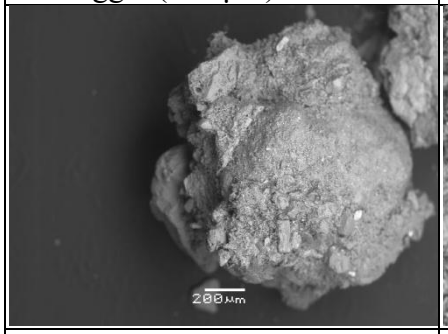
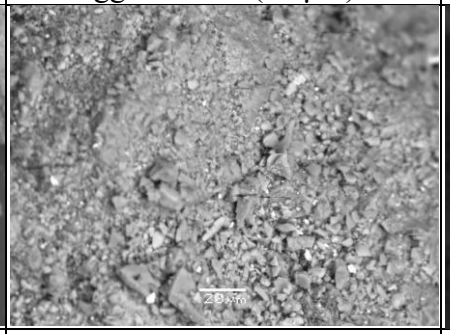
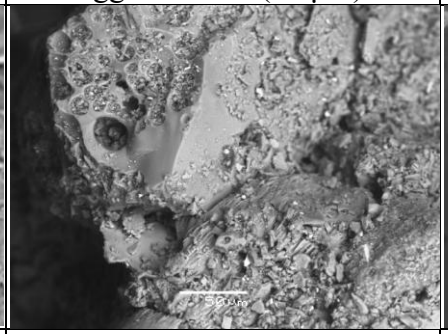
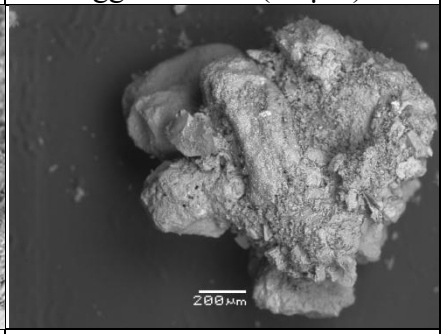
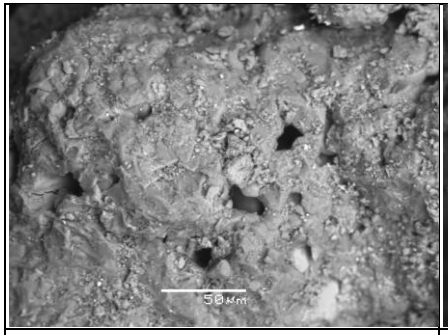
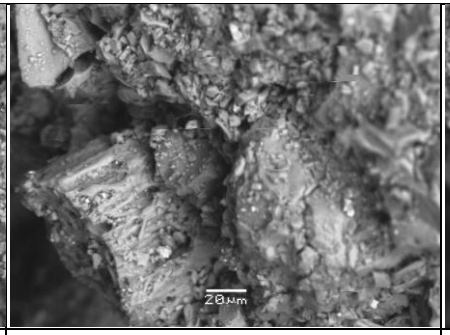
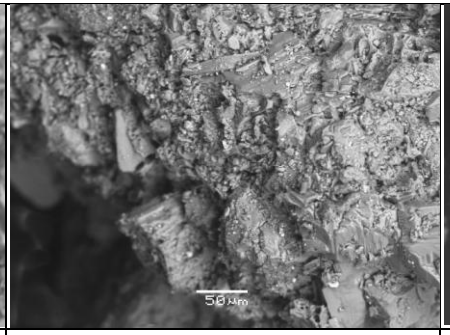
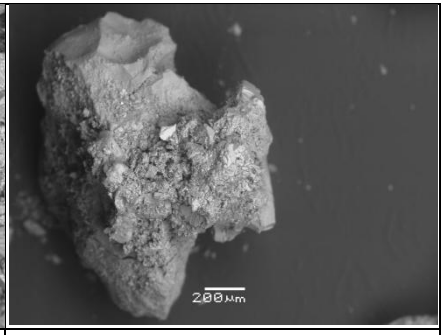
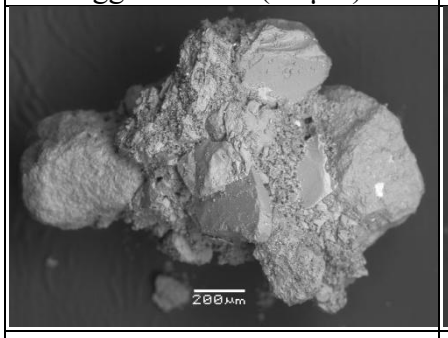
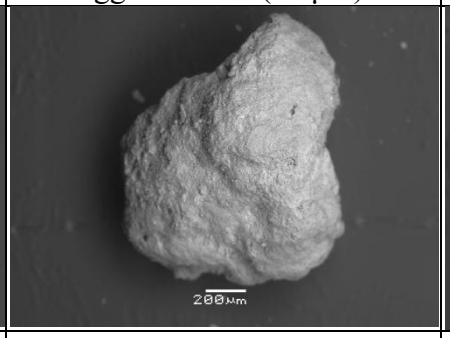
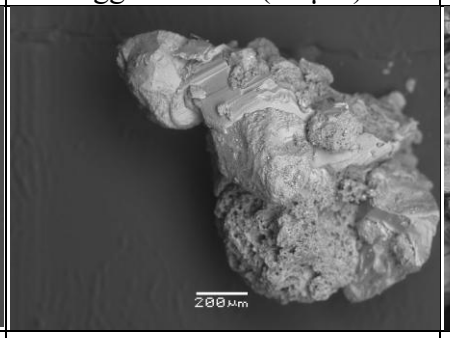
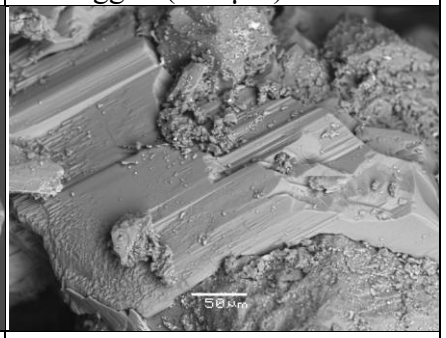
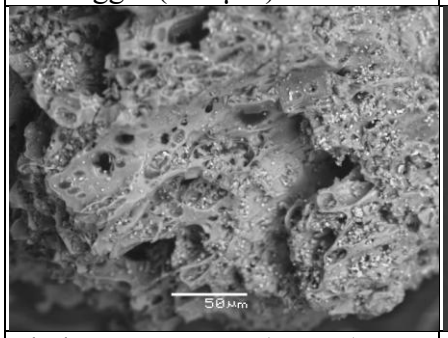
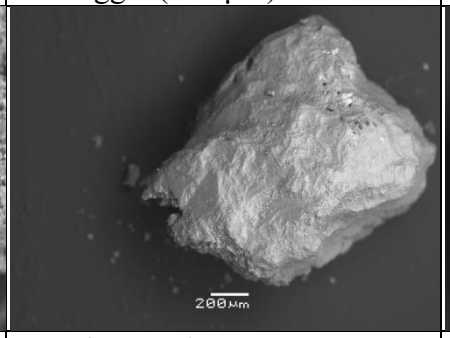
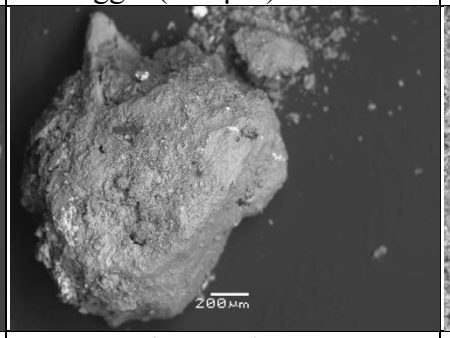
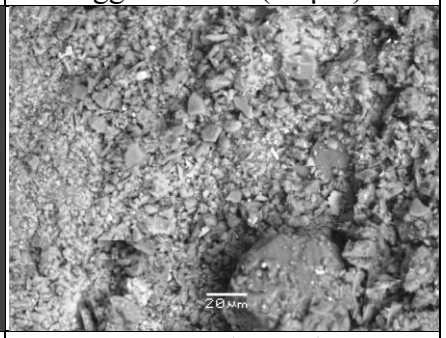
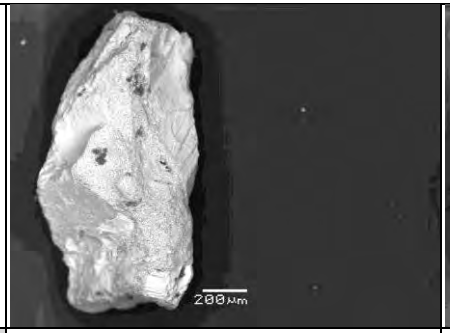
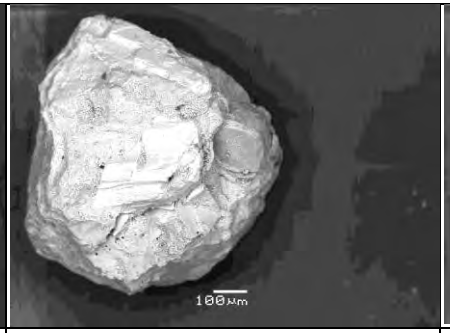
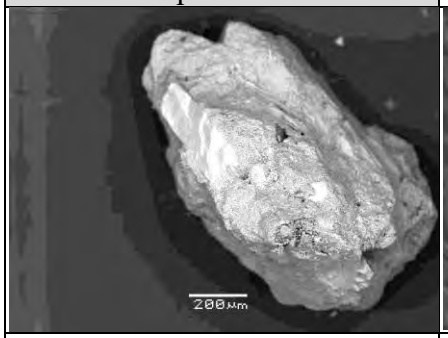
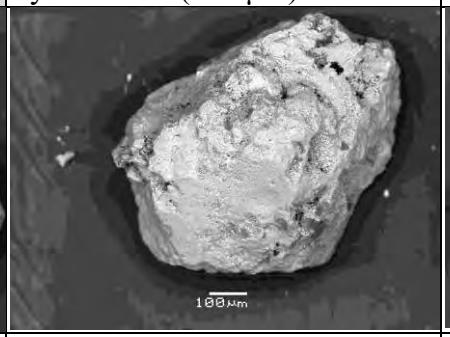
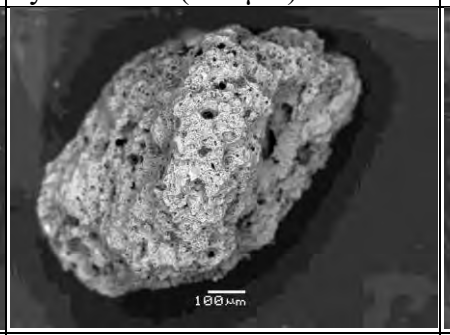
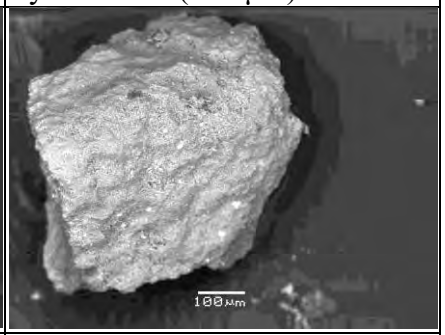
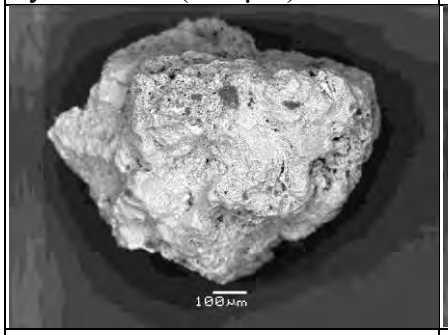
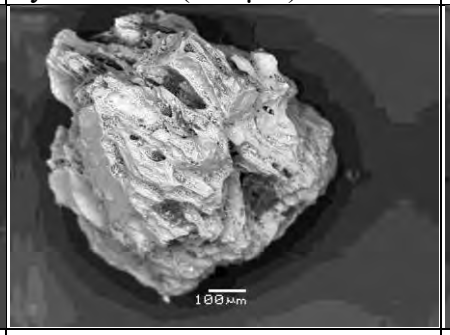
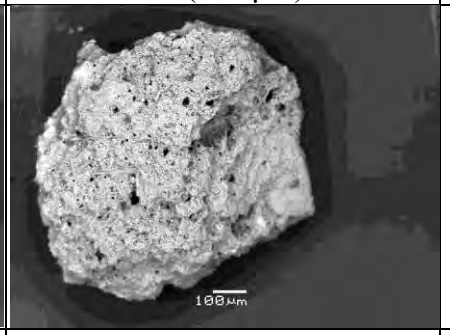
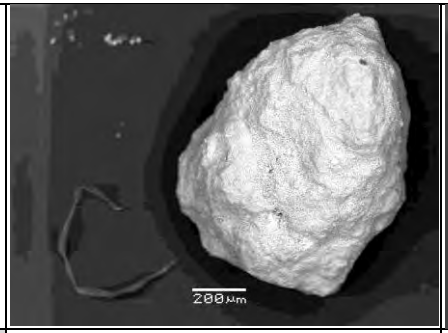
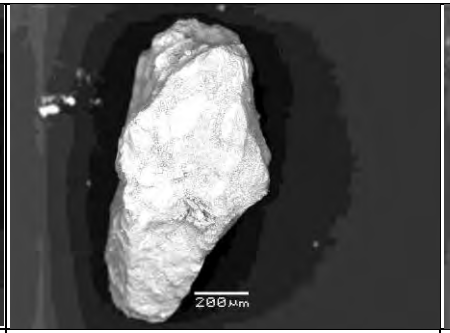
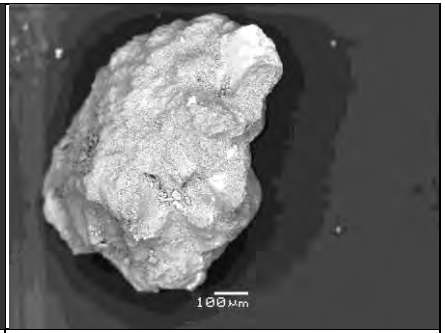
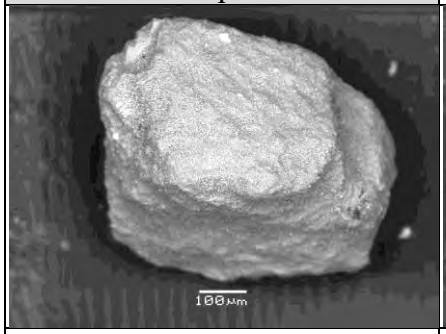
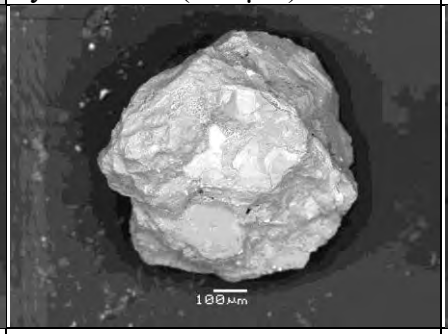
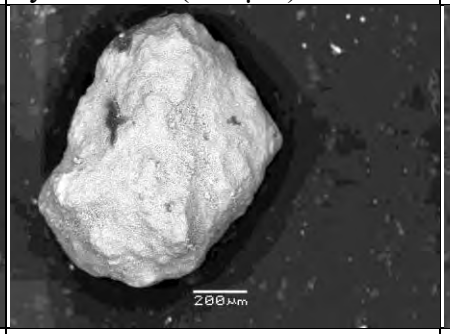
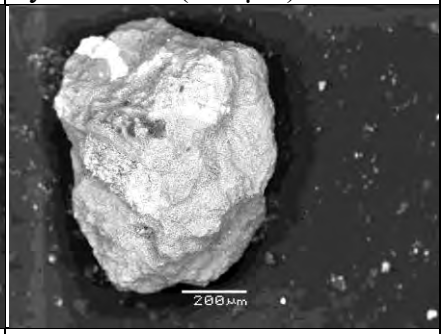
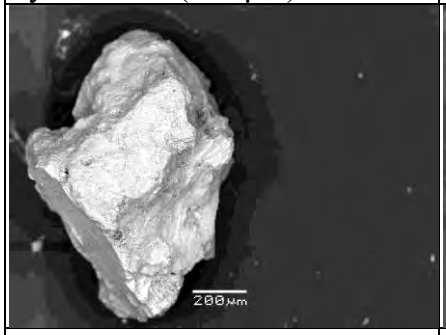
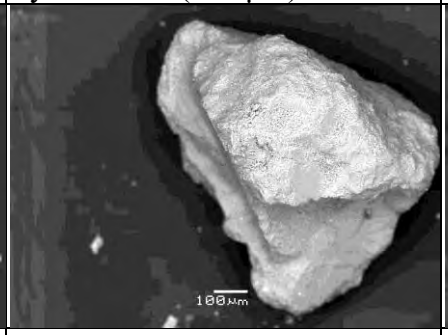
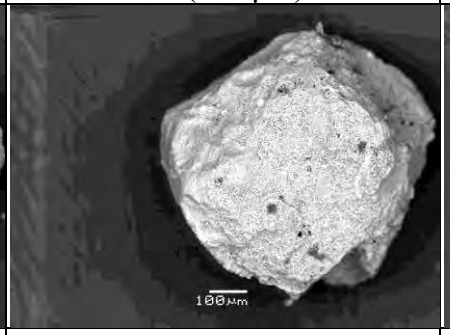
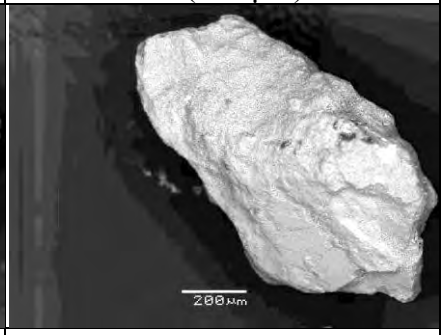
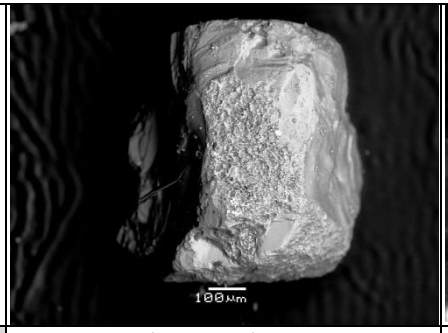
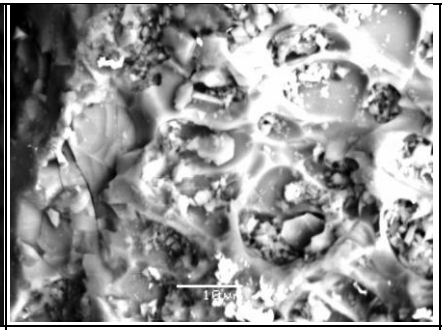
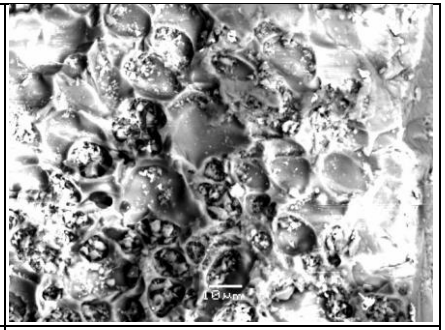
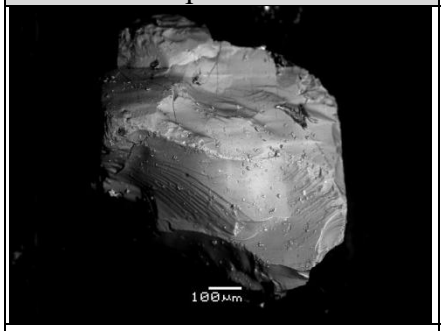
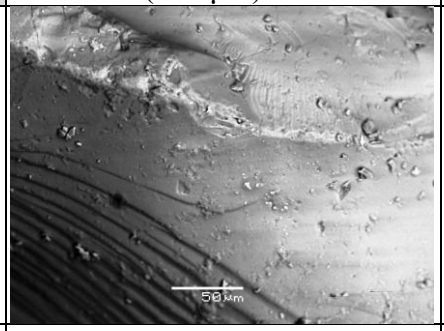
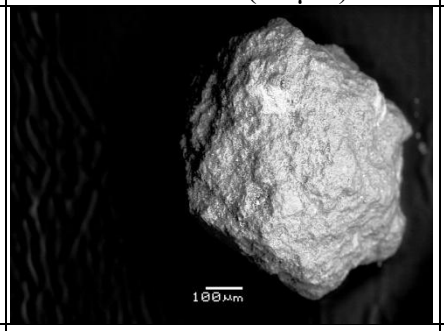
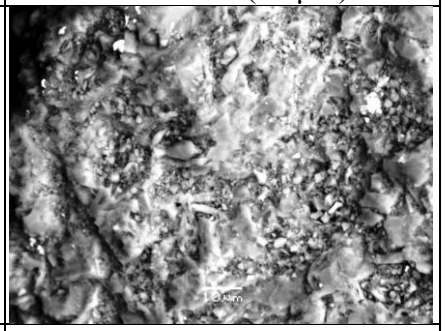
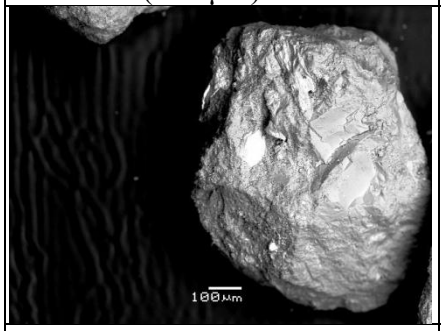
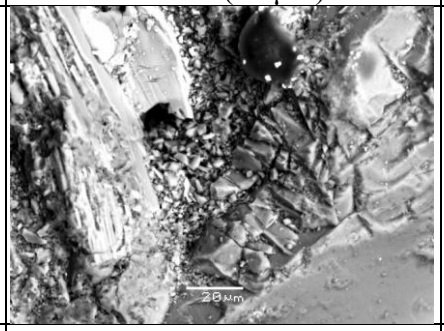
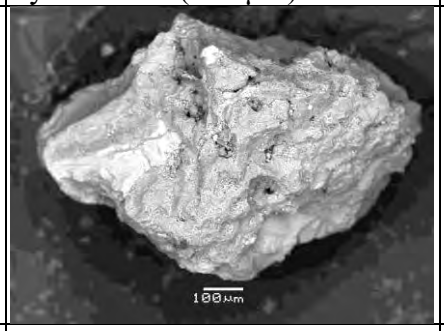
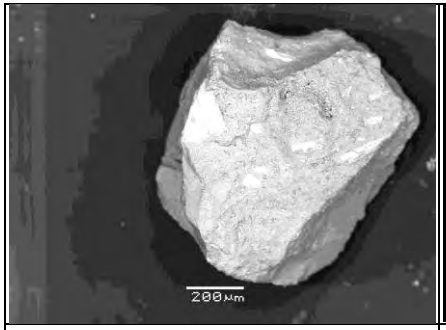
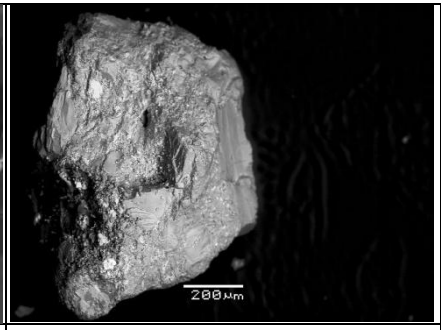
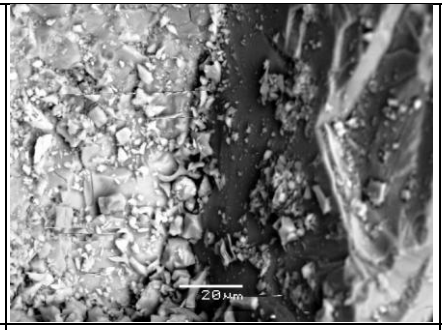
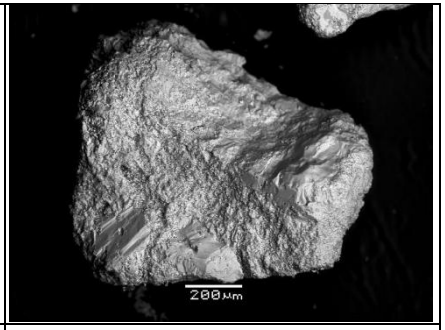
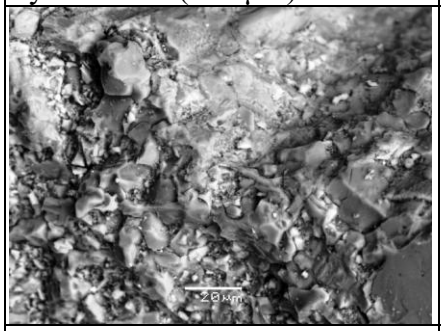
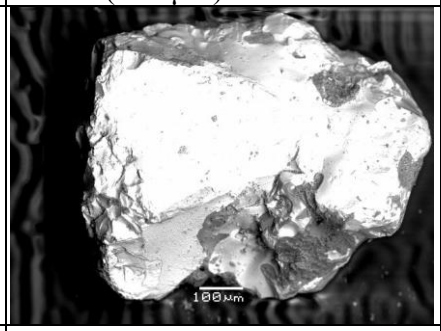
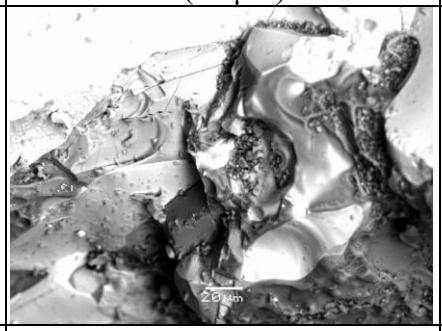
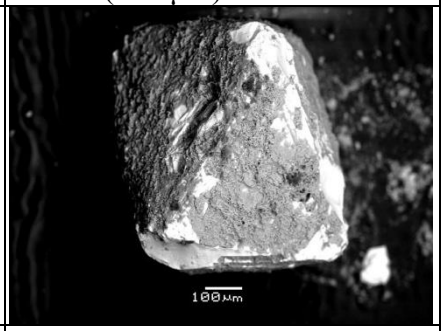
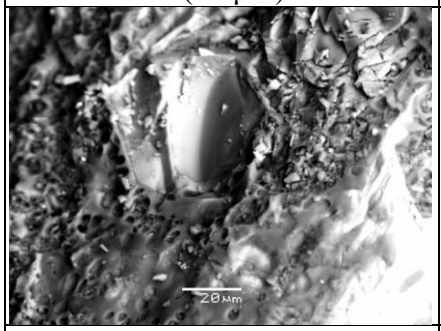
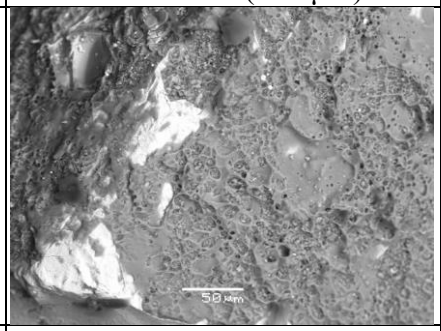
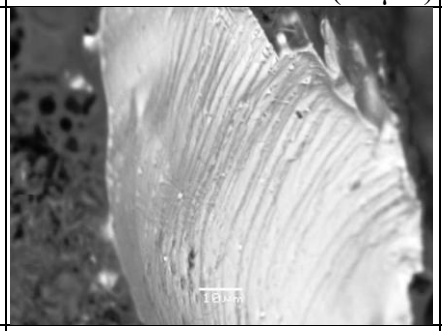
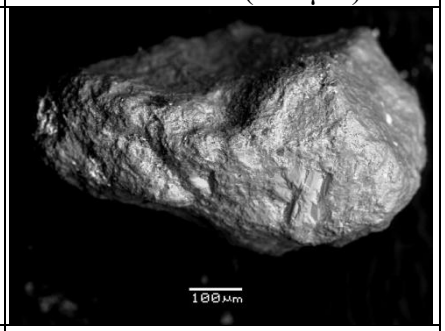
				
GlXlAgg 4 (200 µm)		GlXlAgg 4 zoom 1 (20 µm)	GlXlAgg 4 zoom 2 (50 µm)	GlXlAgg 5 (200 µm)

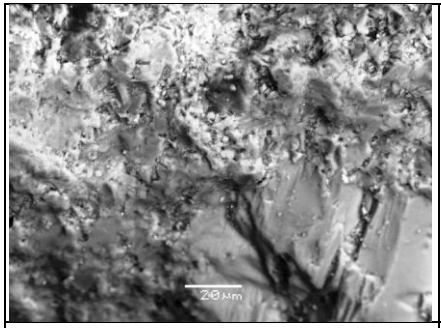
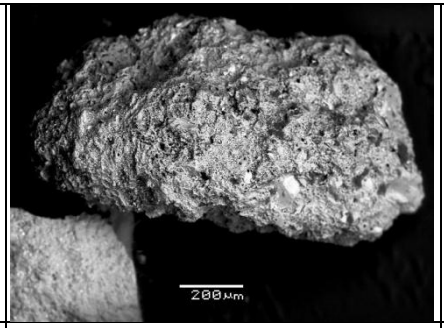
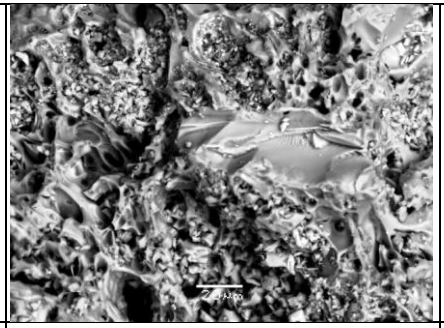
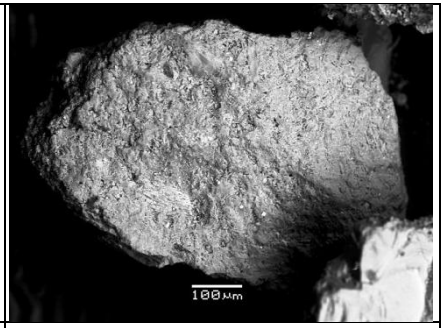
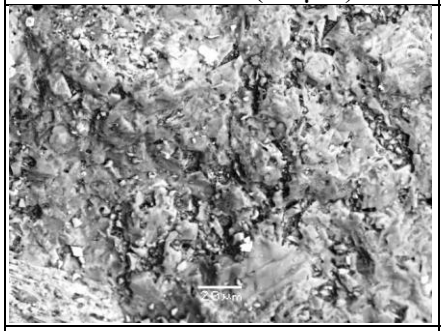
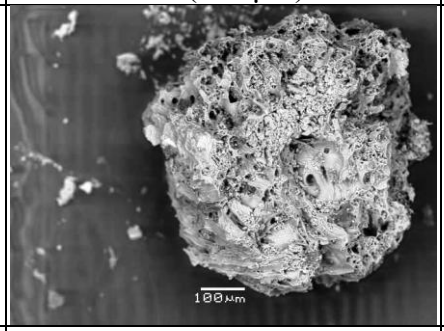
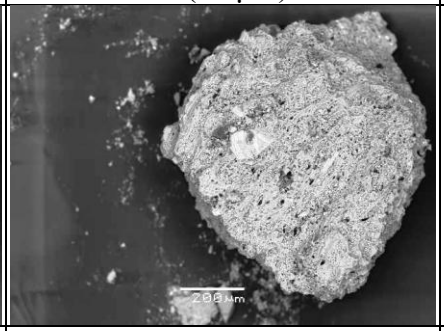
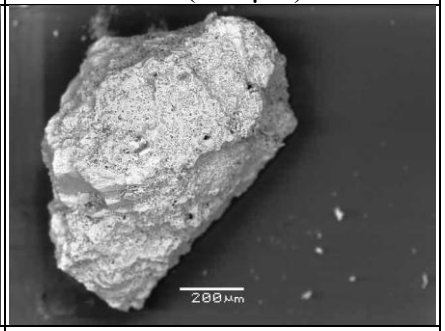
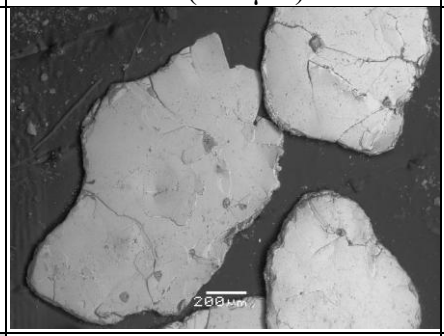
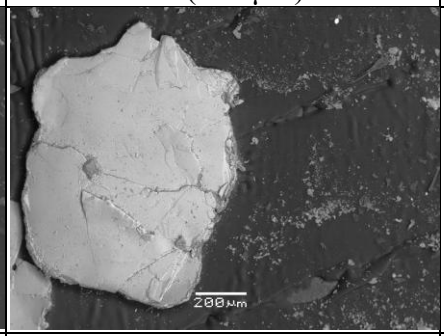
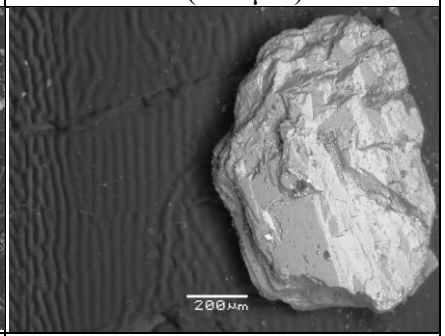
			
GlXlAgg 5 zoom 1 (50 µm)	GlXlAgg 5 zoom 2 (20 µm)	GlXlAgg 5 zoom 3 (50 µm)	GlXlAgg 6 (200 µm)
			
GlXlAgg 7 (200 µm)	GlXlAgg 8 (200 µm)	GlXlAgg 9 (200 µm)	GlXlAgg 9 zoom 1 (50 µm)
			
GlXlAgg 9 zoom 2 (50 µm)	HXL (200 µm)	StLITHIC (200 µm)	StLITHIC zoom (20 µm)

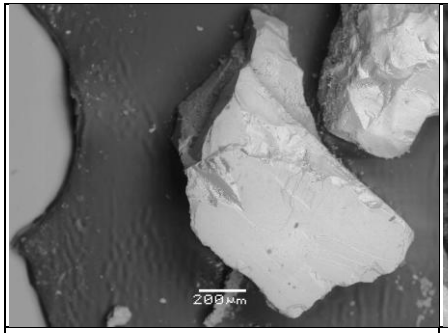
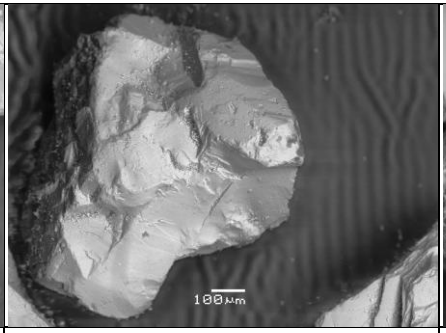
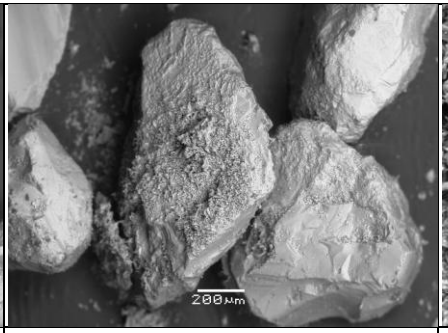
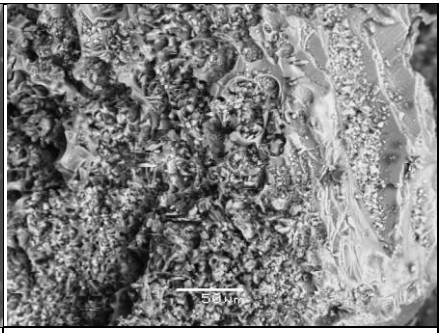
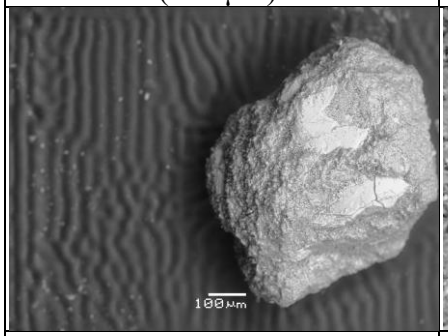
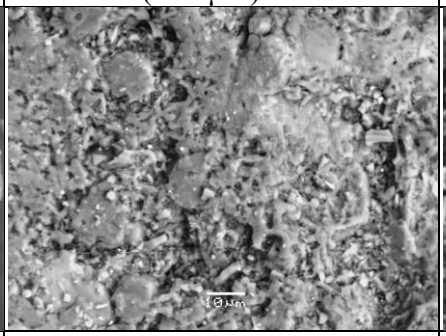
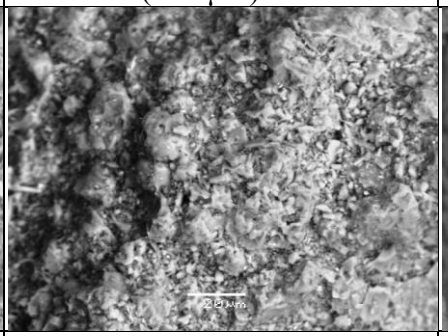
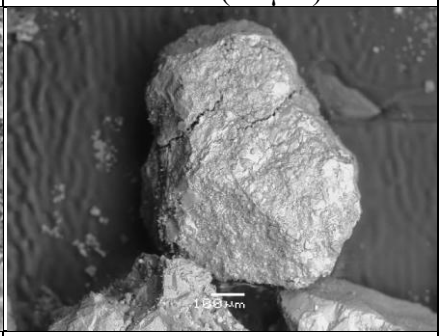
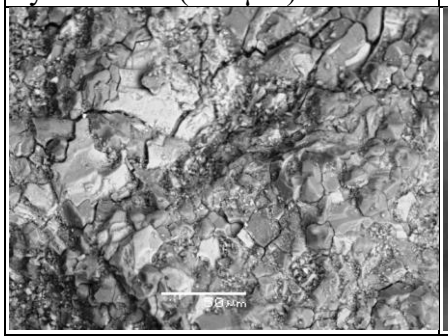
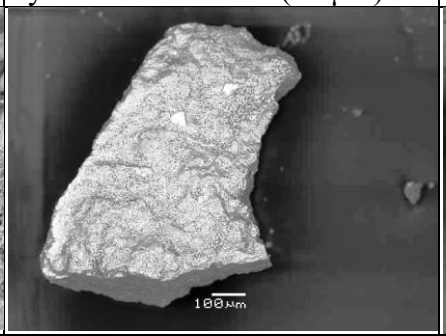
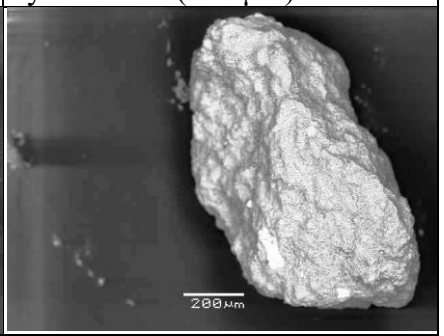
			
L2 iv U3 1.0 phi	GyGLASS 1 (200 µm)	GyGLASS 2 (100 µm)	GyGLASS 3 (200 µm)
			
GyGLASS 4 (200 µm)	GyGLASS 5 (100 µm)	WhGLASS 1 (100 µm)	WhGLASS 2 (100 µm)
			
WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (100 µm)	

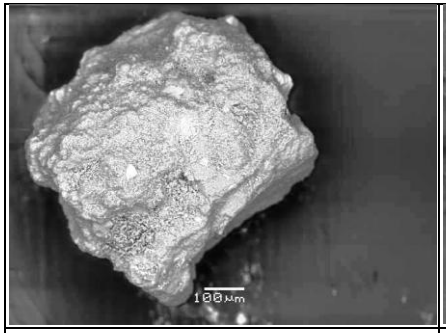
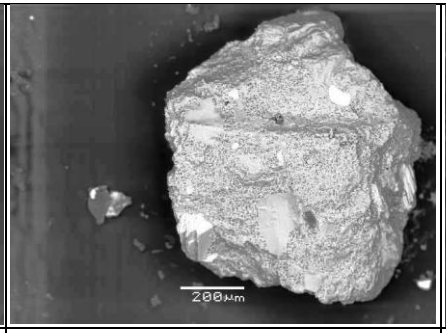
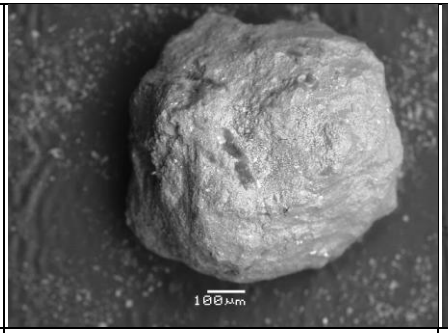
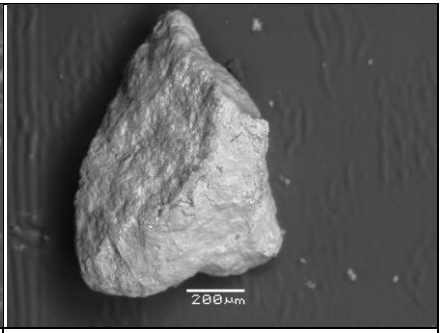
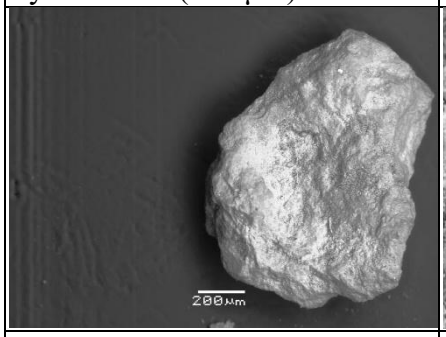
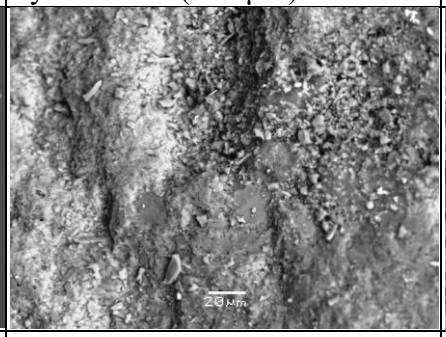
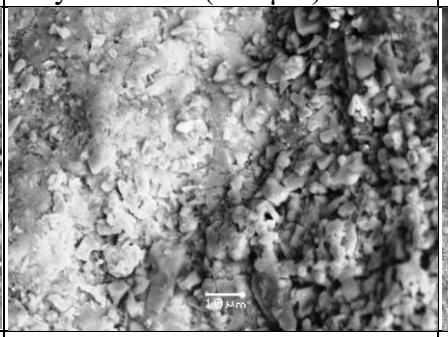
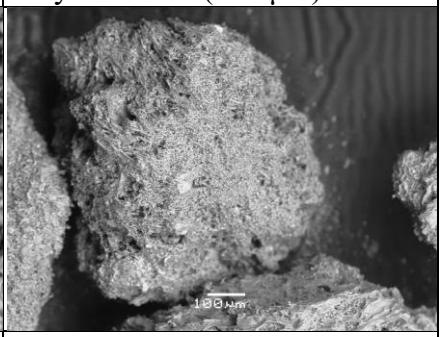
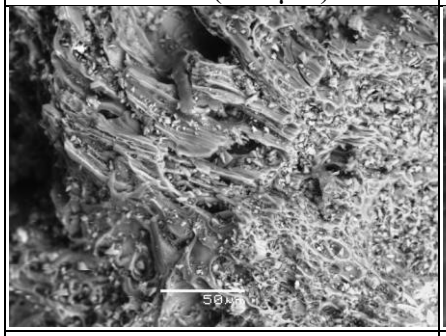
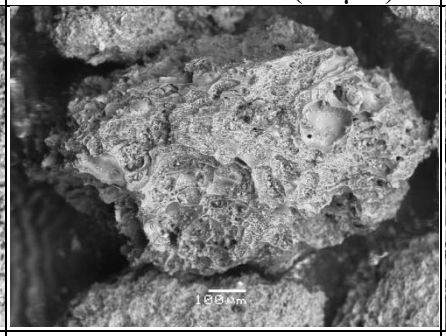
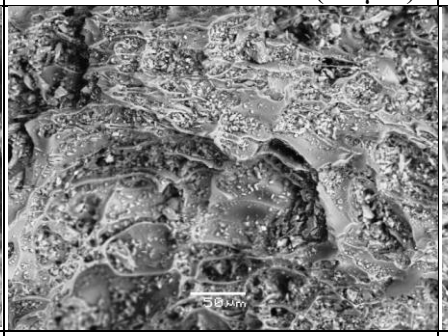
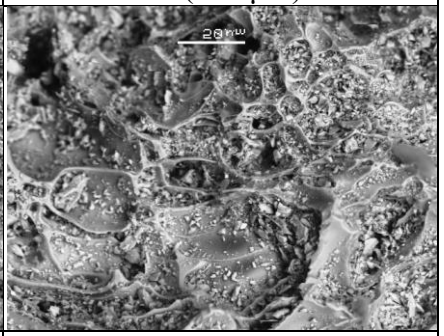
			
L2 xvii U2b 1.0 phi	GyGLASS 1 (200 µm)	GyGLASS 2 (200 µm)	GyGLASS 3 (100 µm)
			
GyGLASS 4 (100 µm)	GyGLASS 5 (100 µm)	WhGLASS 1 (200 µm)	WhGLASS 2 (200 µm)
			
WhGLASS 3 (200 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (100 µm)	WhGLASS 6 (200 µm)

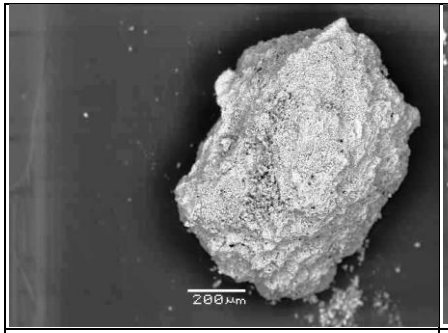
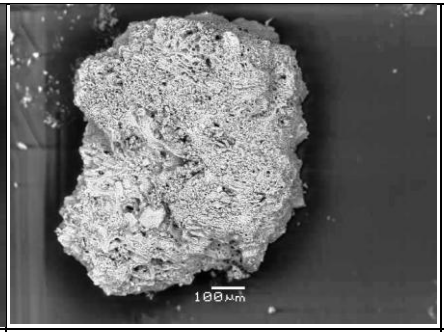
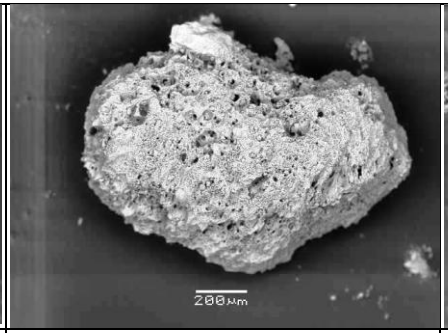
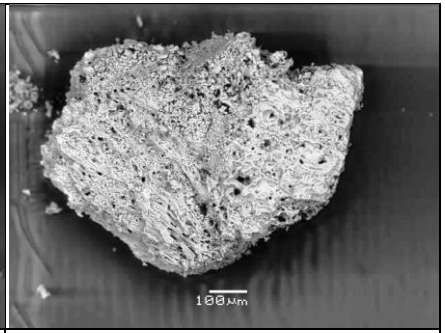
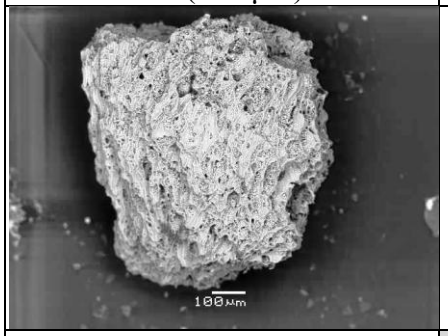
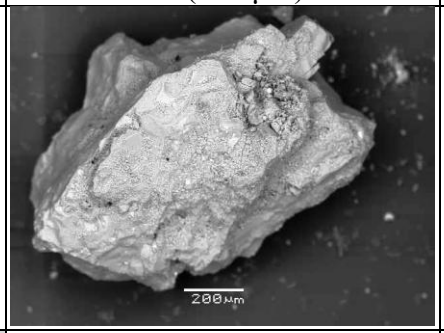
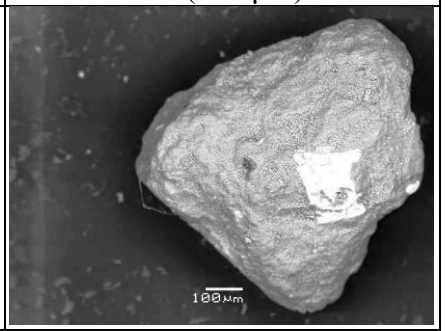
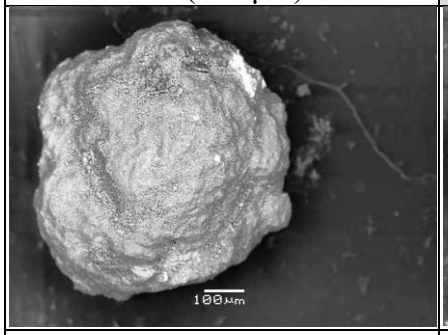
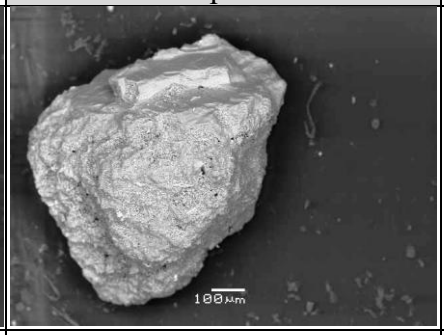
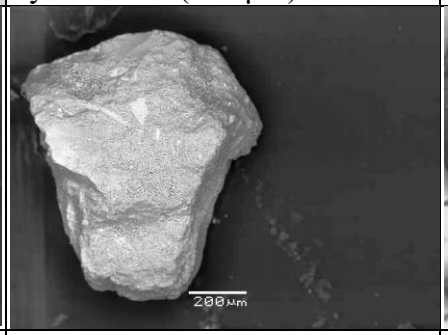
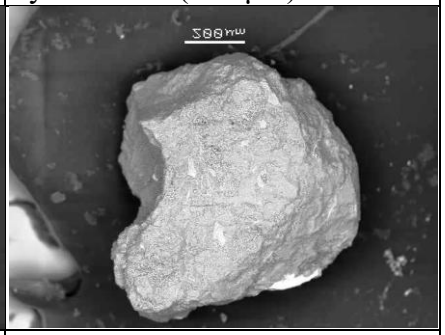
L13 ii U3 1.0 phi	 CLEAR 1 (100 µm)	 CLEAR 1 zoom 1 (10 µm)	 CLEAR 1 zoom 2 (10 µm)
 CLEAR 2 (100 µm)	 CLEAR 2 zoom (50 µm)	 GyGLASS 1 (100 µm)	 GyGLASS 1 (10 µm)
 GyGLASS 2 (100 µm)	 GyGLASS 2 zoom (20 µm)	 GyGLASS 3 (100 µm)	 GyGLASS 4 (200 µm)

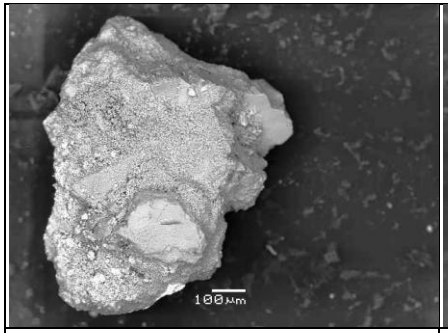
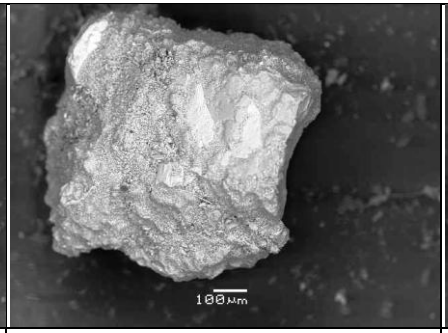
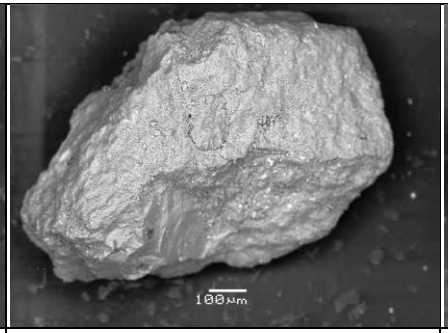
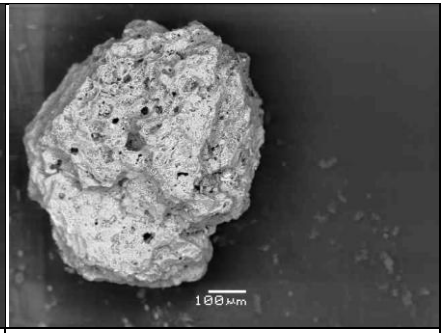
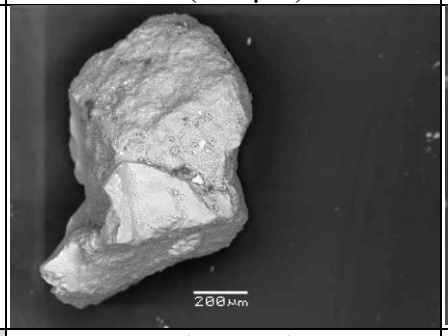
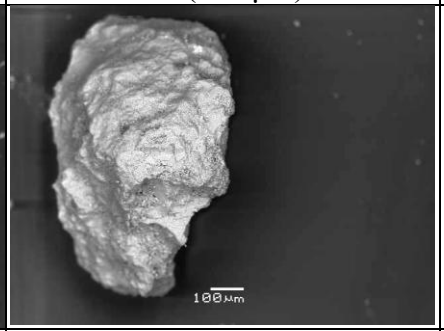
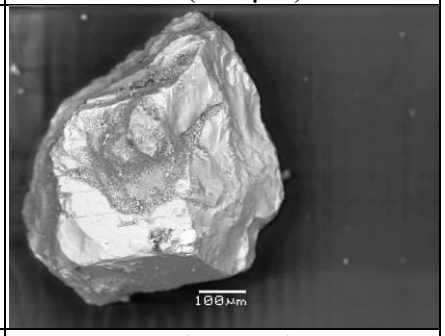
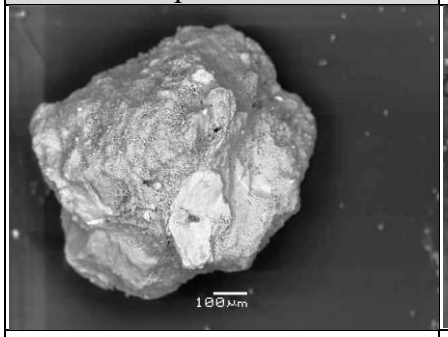
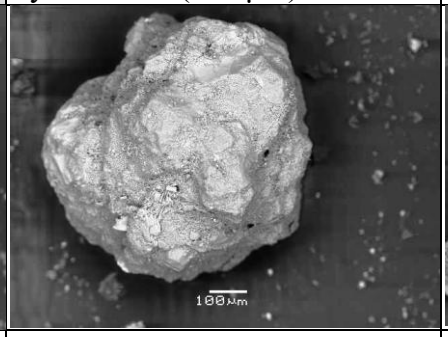
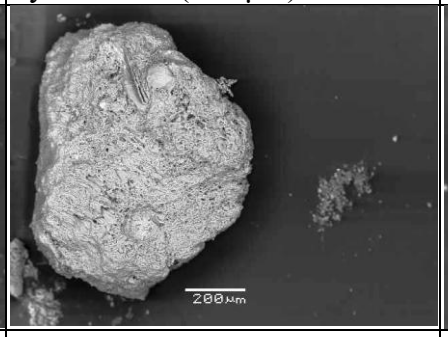
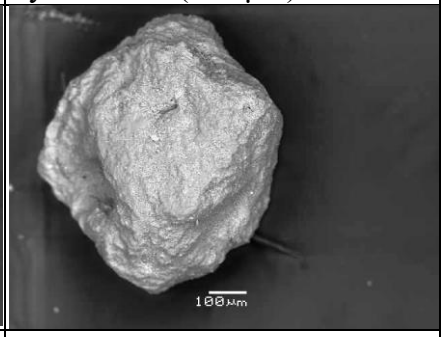
			
GyGLASS 5 (200 µm)	HXL 1 (200 µm)	HXL 1 zoom (20 µm)	HXL 2 (200 µm)
			
HXL 2 zoom (20 µm)	MAG. + WhGL 1 (100 µm)	MAG.+WhGL 1 zoom 1 (20 µm)	MAG. + WhGL 2 (100 µm)
			
MAG.+WhGL 2 zoom 1 (20 µm)	MAG.+WhGL 2 zoom 2 (50 µm)	MAG.+WhGL 2 zoom 3 (10 µm)	StBrGLASS (100 µm)

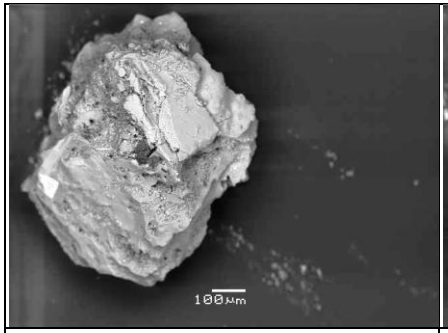
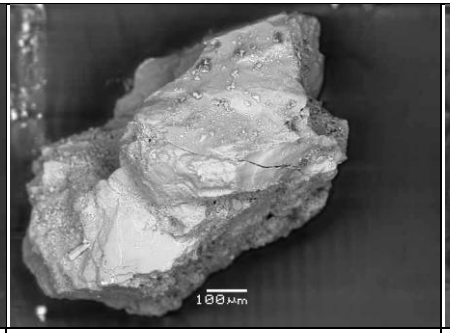
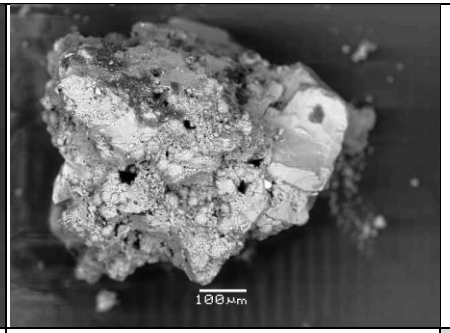
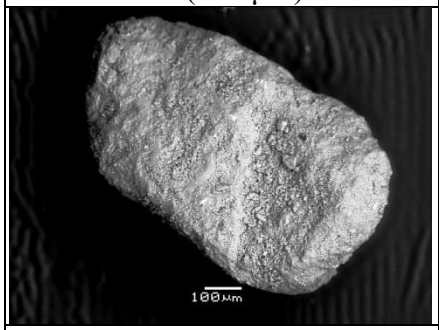
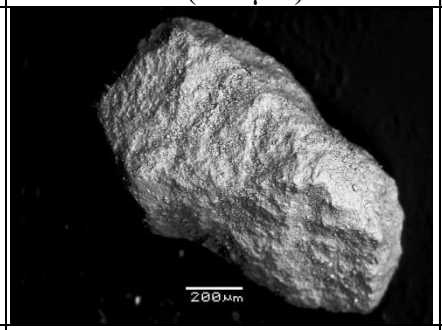
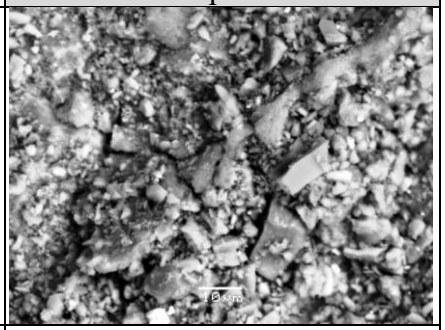
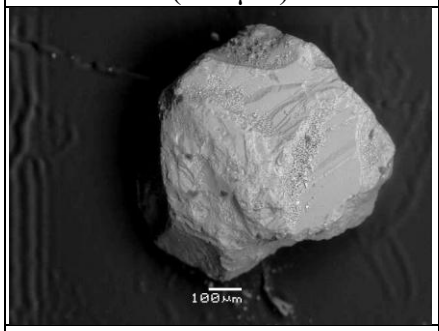
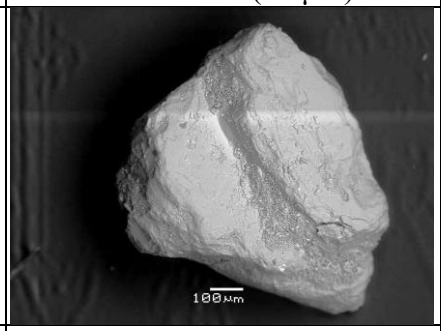
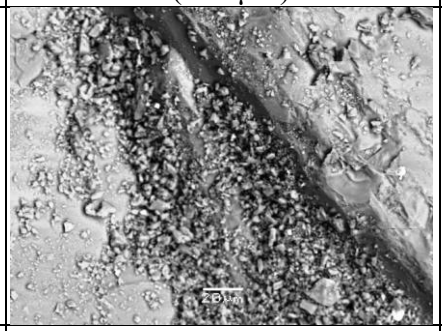
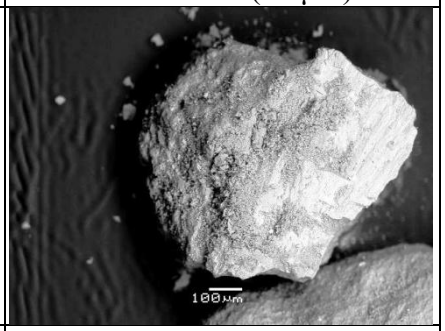
			
StBrGLASS zoom (20 µm)	WhGLASS 1 (200 µm)	WhGLASS 1 (20 µm)	WhGLASS 2 (100 µm)
			
WhGLASS 2 (20 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (200 µm)	WhGLASS 5 (200 µm)
			
L13 vii U3 1.0 phi	BIOTITE 1 (200 µm)	BIOTITE 2 (200 µm)	BLACK (200 µm)

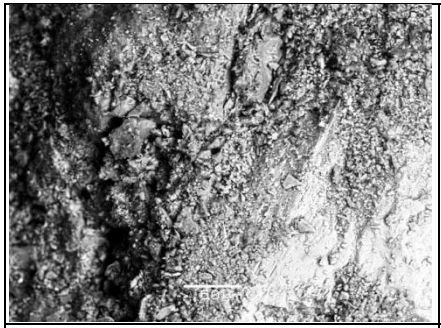
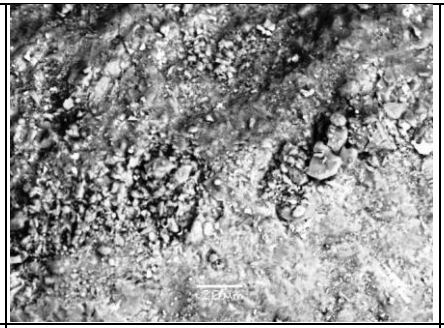
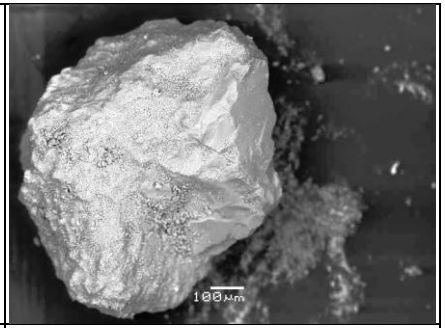
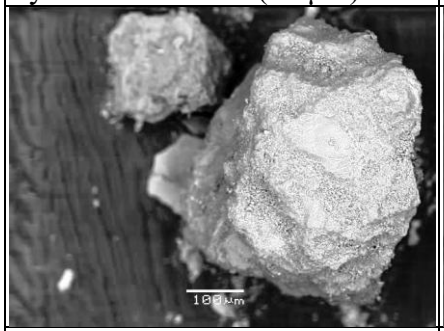
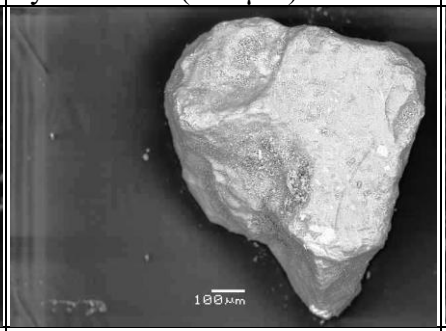
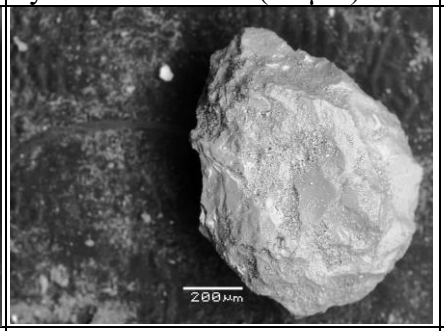
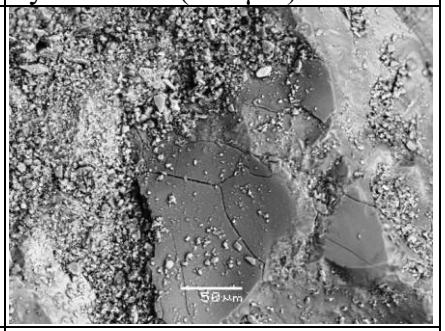
			
CLEAR 1b (200 µm)	CLEAR 2 (100 µm)	CLEAR 3 (200 µm)	CLEAR 3 zoom (50 µm)
			
GyGLASS 1 (100 µm)	GyGLASS 1 zoom 1 (10 µm)	GyGLASS 1 zoom 2 (20 µm)	GyGLASS 2 (100 µm)
			
GyGLASS 2 zoom 1 (50 µm)	GyGLASS 3 (100 µm)	GyGLASS 4 (200 µm)	GyGLASS 5 (200 µm)

			
GyGLASS 6 (100 µm)	GyGLASS 7 (200 µm)	StGyGLASS 1 (100 µm)	StGyGLASS 2 (200 µm)
			
StWhGLASS 1 (200 µm)	StWhGLASS 1 zoom (20 µm)	StWhGLASS 1 zoom 2 (10 µm)	WhGLASS 1 (100 µm)
			
WhGLASS 1 zoom (50 µm)	WhGLASS 2 (100 µm)	WhGLASS 2 zoom 1 (50 µm)	WhGLASS 2 zoom 2 (50 µm)

			
WhGLASS 3 (200 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (200 µm)	WhGLASS 6 (100 µm)
			
WhGLASS 7 (100 µm)	L15 iii U2c 1.0 phi	GyGLASS 1 (200 µm)	GyGLASS 2 (100 µm)
			
GyGLASS 3 (100 µm)	GyGLASS 4 (100 µm)	GyGLASS 5 (200 µm)	WhGLASS 1 (200 µm)

			
WhGLASS 2 (100 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (100 µm)
			
L24 U2c 1.0 phi	GyGLASS 1 (200 µm)	GyGLASS 2 (100 µm)	GyGLASS 3 (100 µm)
			
GyGLASS 4 (100 µm)	GyGLASS 5 (100 µm)	WhGLASS 1 (200 µm)	WhGLASS 2 (100 µm)

			
WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (100 µm)	L27 iii U2a 1.0 phi
			
BrGLASS 1 (100 µm)	BrGLASS 1 zoom (20 µm)	BrGLASS 2 (200 µm)	BrGLASS 2 zoom (10 µm)
			
CLEAR 1 (100 µm)	CLEAR 2 (100 µm)	CLEAR 2 zoom (20 µm)	GyGLASS 1 (100 µm)

			
GyGLASS 1 zoom (50 µm)	GyGLASS 2 (100 µm)	GyGLASS 2 zoom (20 µm)	GyGLASS 3 (100 µm)
			
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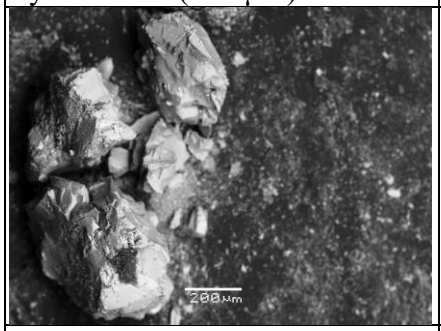	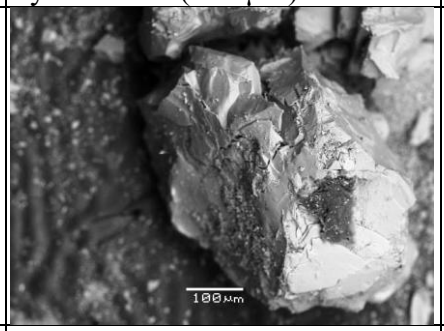	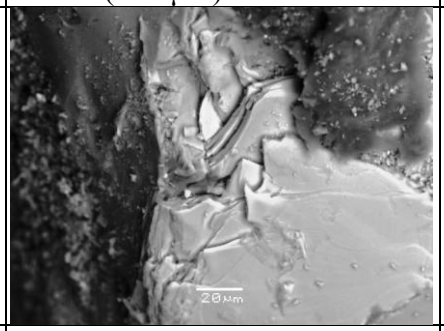	
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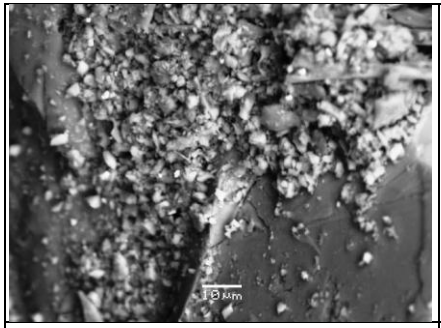
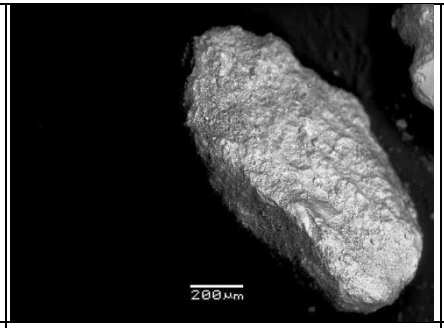
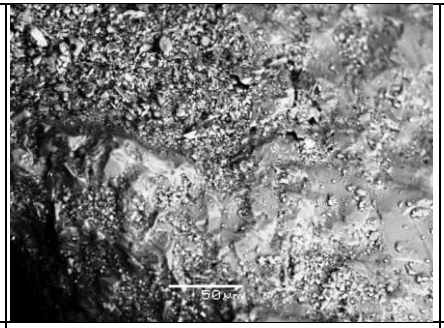
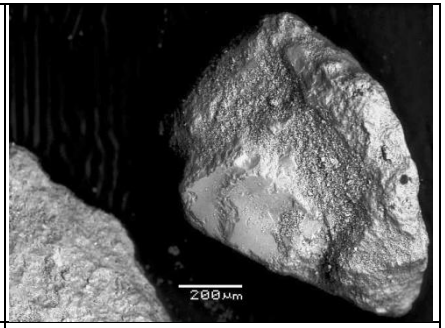
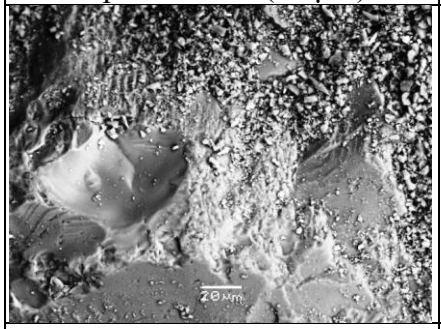
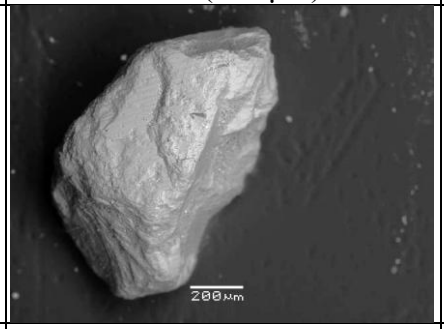
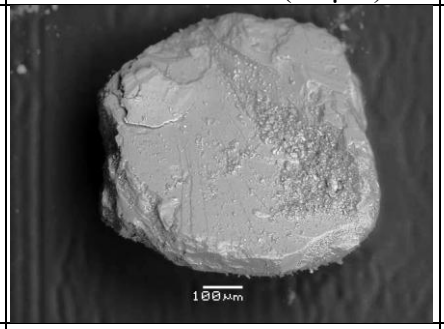
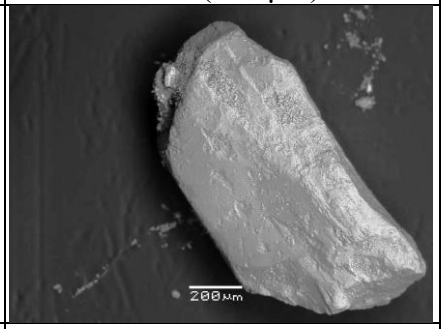
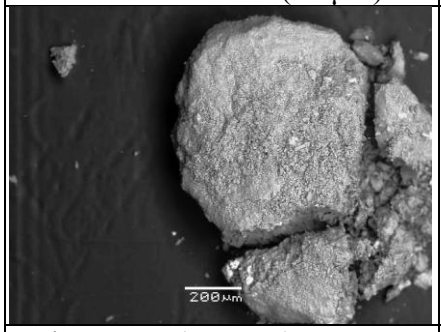
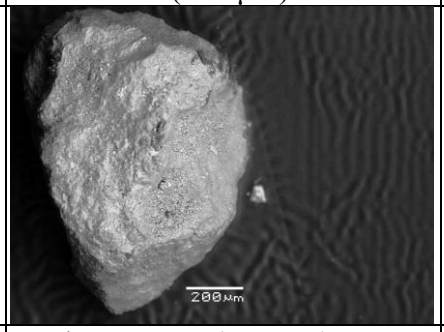
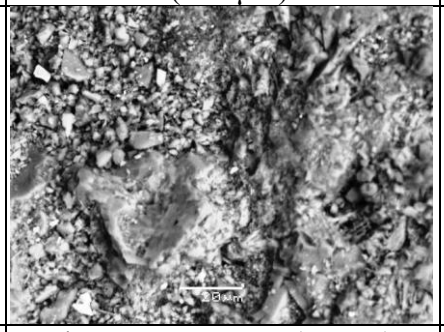
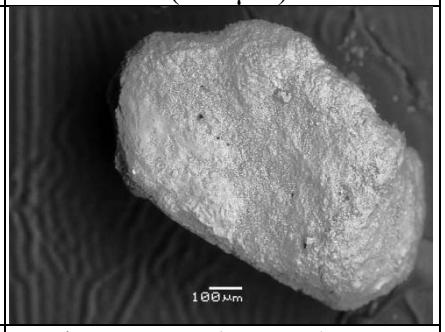
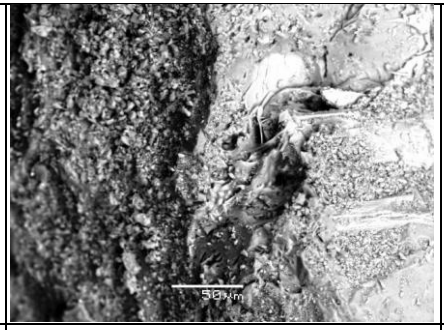
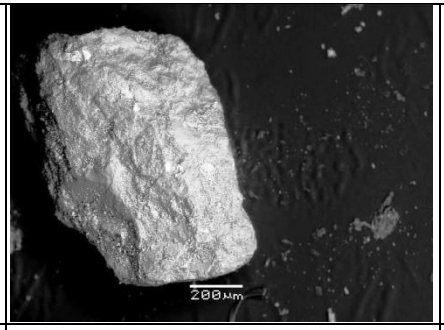
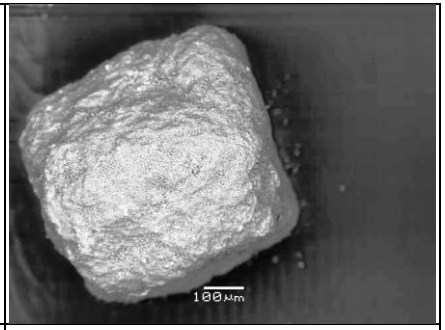
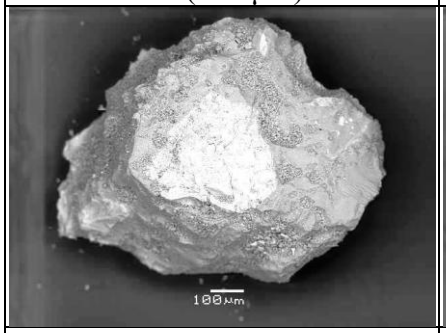
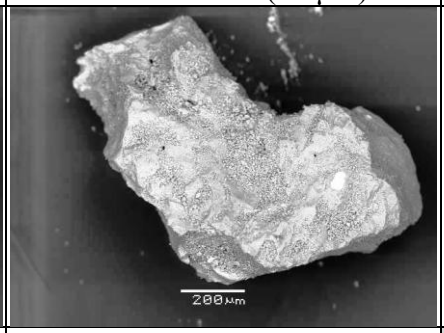
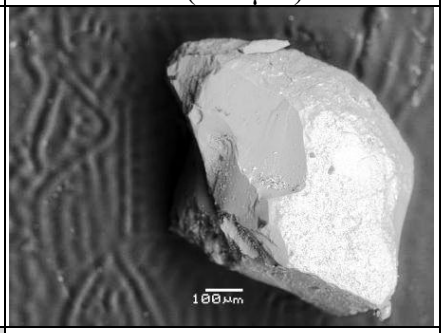
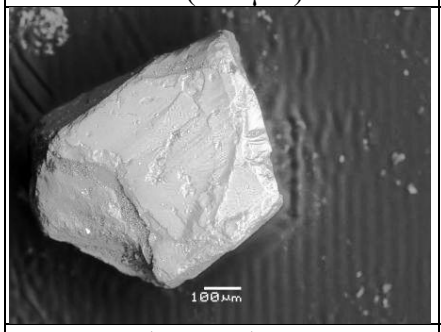
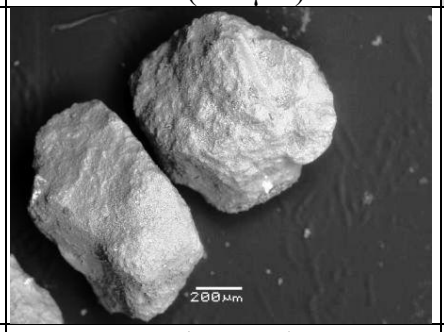
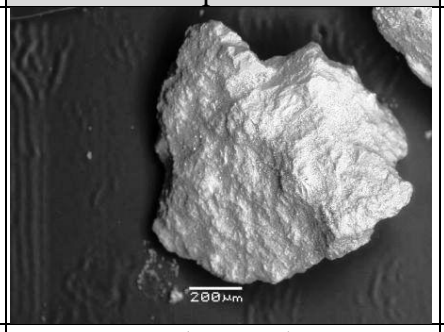
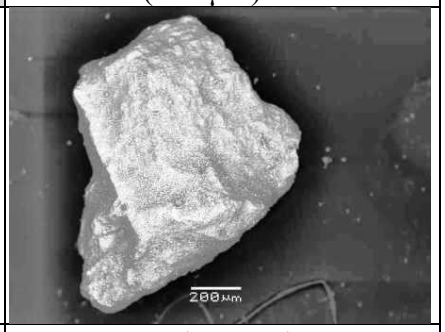
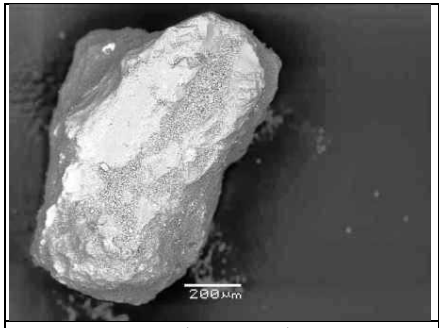
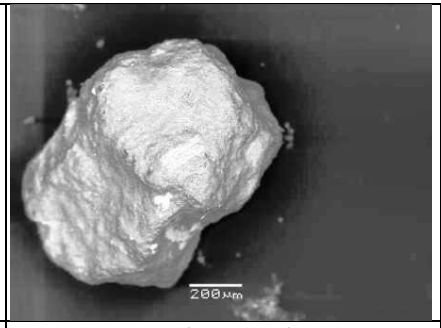
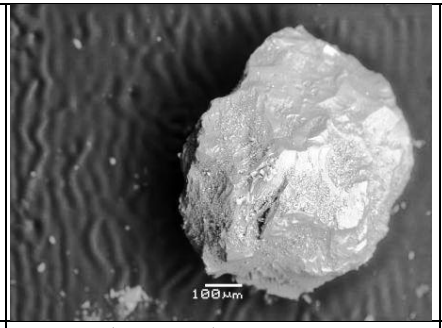
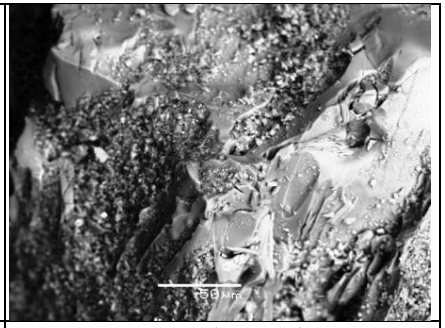
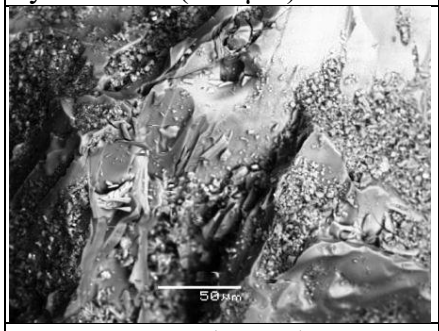
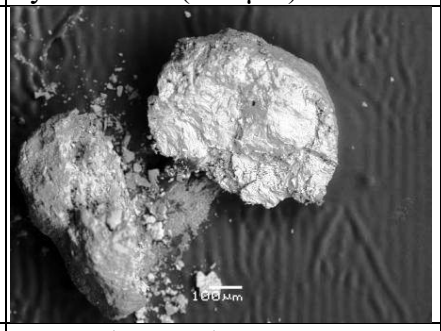
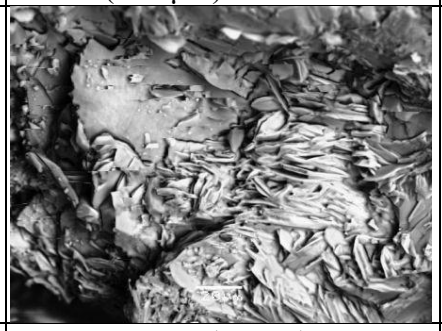
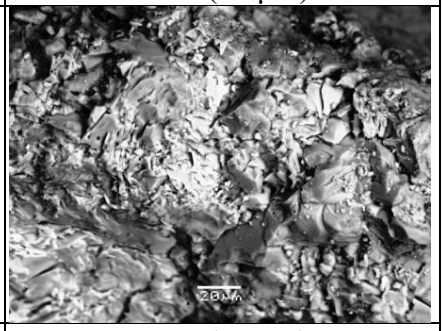
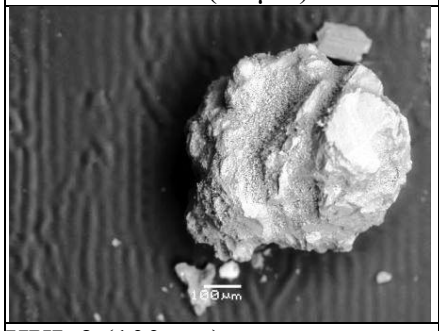
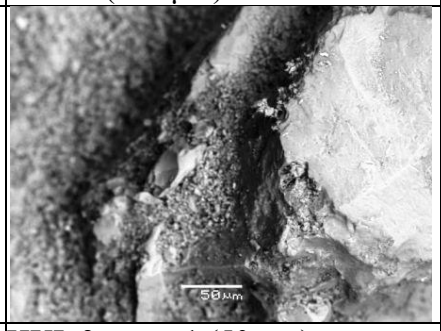
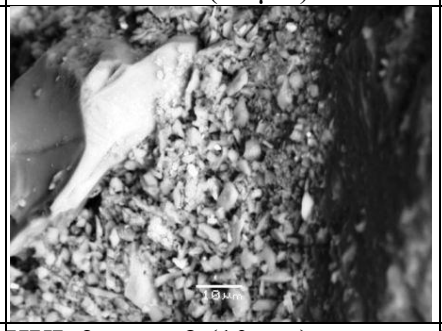
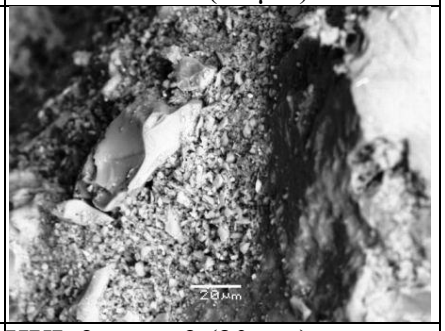
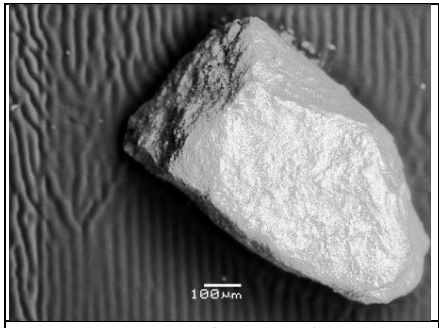
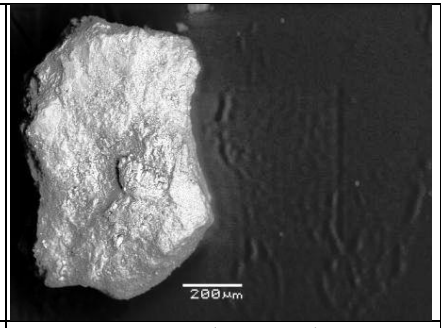
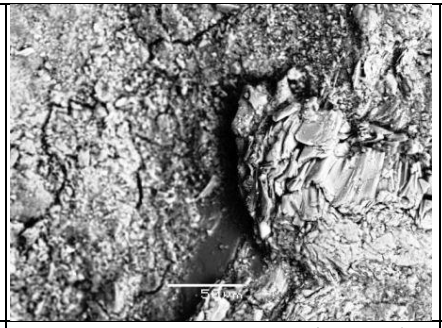
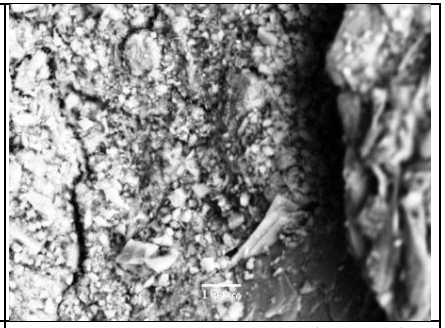
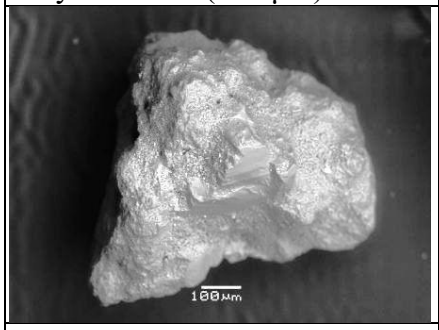
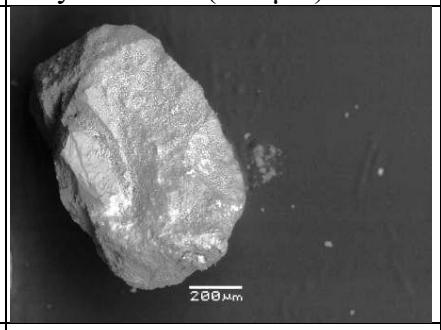
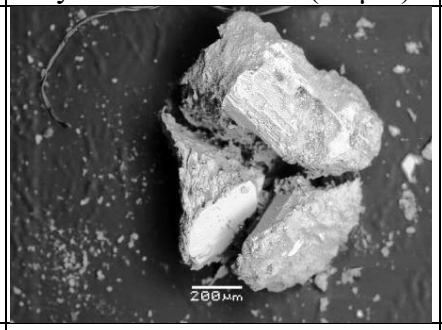
			
HXL 2 part 2 zoom (10 µm)	LiPkGLASS 1 (200 µm)	LiPkGLASS 1 zoom (50 µm)	LiPkGLASS 2 (200 µm)
			
LiPkGLASS 2 zoom (20 µm)	StCLEAR 1 (200 µm)	StCLEAR 2 (100 µm)	StCLEAR 3 (200 µm)
			
StPkGLASS (200 µm)	StWhGLASS 1 (200 µm)	StWhGLASS 1 zoom (20 µm)	StWhGLASS 2 (100 µm)

			
WhGLASS 1 (200 µm)	WhGLASS 1 zoom (50 µm)	WhGLASS 2 (200 µm)	WhGLASS 3 (100 µm)
			
WhGLASS 4 (100 µm)	WhGLASS 5 (200 µm)	L27 ii U2b 1.0 phi	CLEAR 1 (100 µm)
			
CLEAR 2 (100 µm)	GyGLASS 1 (200 µm)	GyGLASS 2 (200 µm)	GyGLASS 3 (200 µm)

			
GyGLASS 4 (200 µm)	GyGLASS 5 (200 µm)	HXL 1 (100 µm)	HXL 1 zoom 1 (50 µm)
			
HXL 1 zoom 2 (50 µm)	HXL 2 (100 µm)	HXL 2 zoom 1 (20 µm)	HXL 2 zoom 2 (20 µm)
			
HXL 3 (100 µm)	HXL 3 zoom 1 (50 µm)	HXL 3 zoom 2 (10 µm)	HXL 3 zoom 3 (20 µm)

			
StGyGLASS 1 (100 µm)	StGyGLASS 2 (200 µm)	StGyGLASS 2 zoom 1 (50 µm)	StGyGLASS 2 zoom 2 (10 µm)
			
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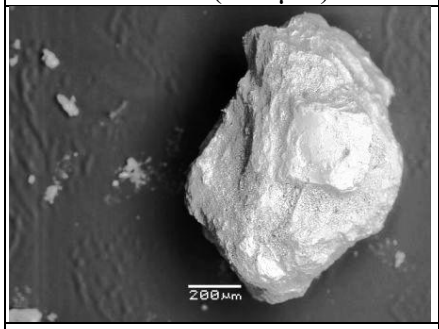
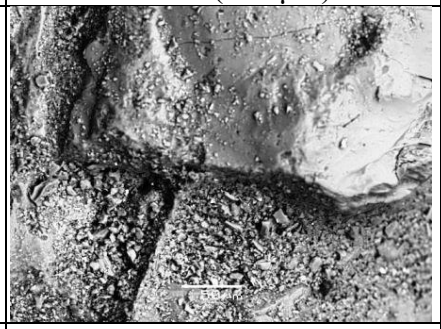
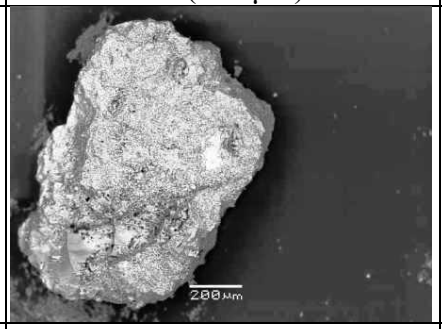
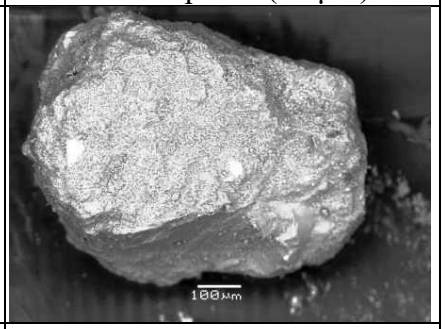
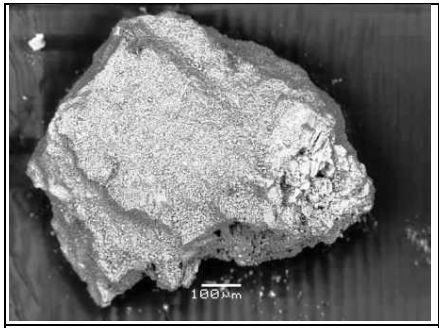
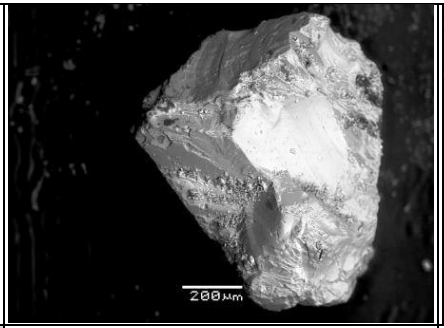
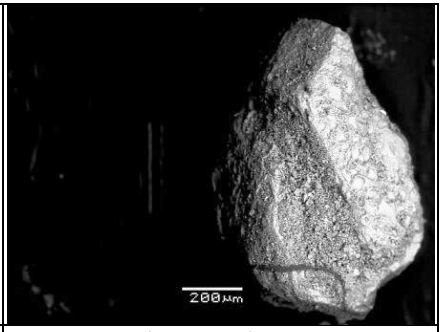
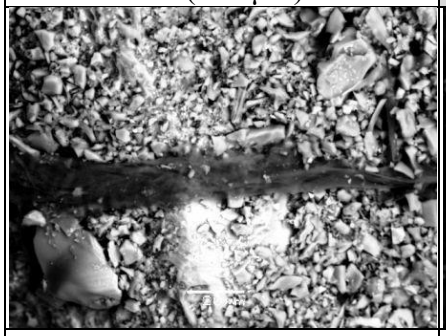
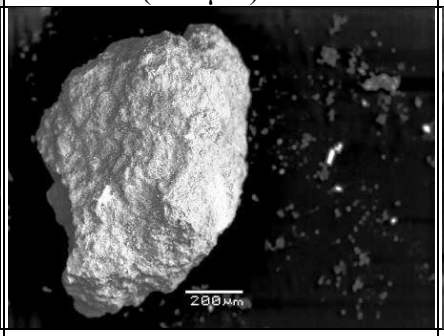
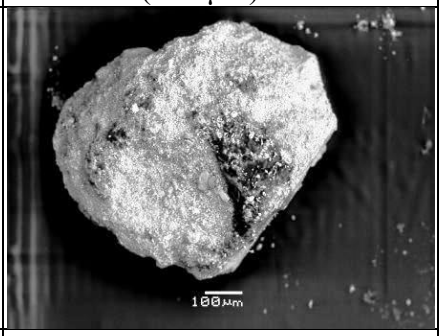
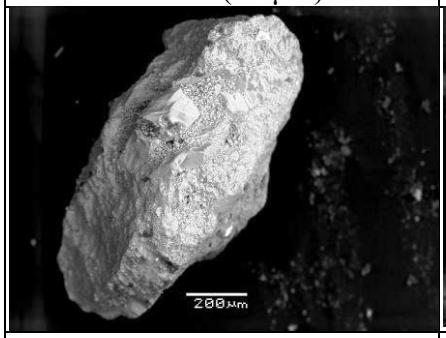
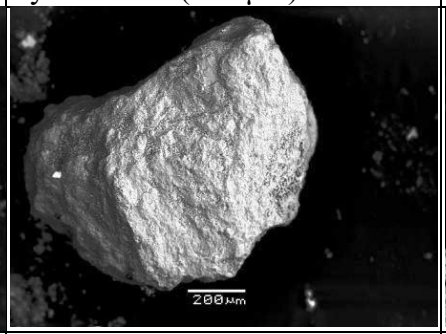
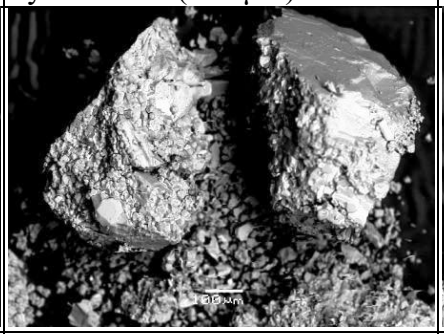
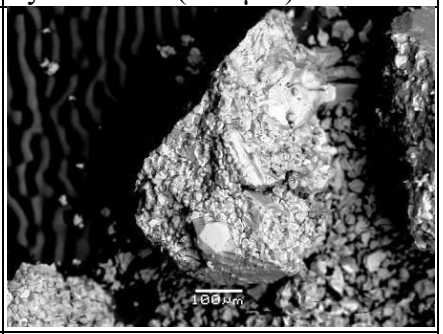
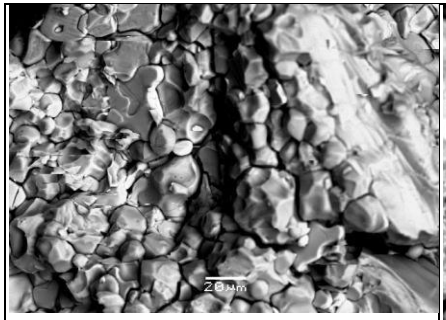
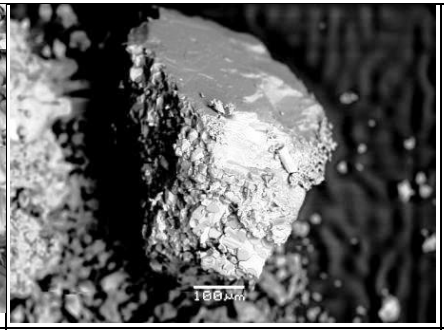
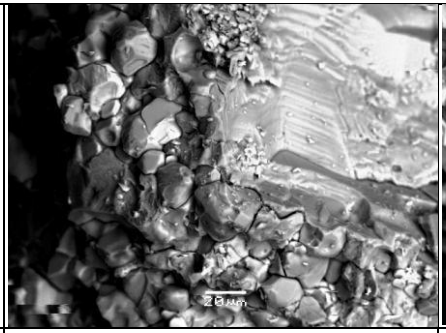
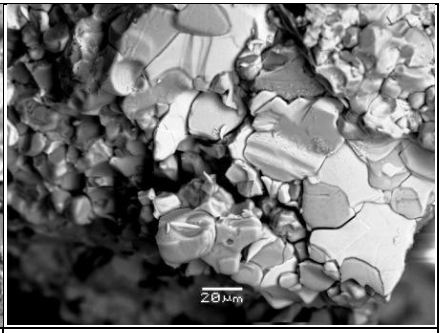
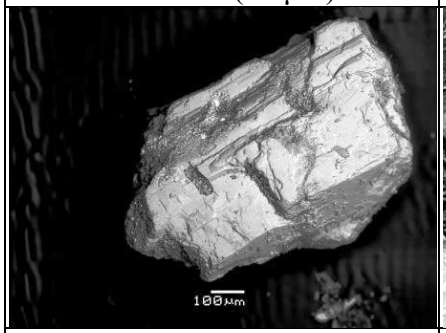
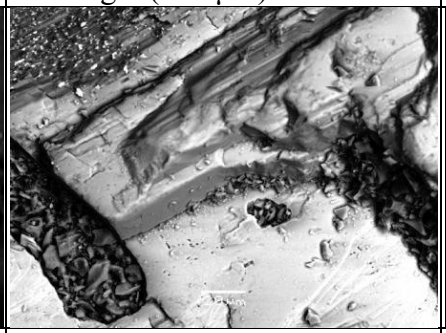
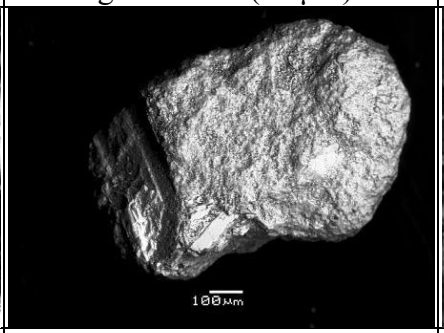
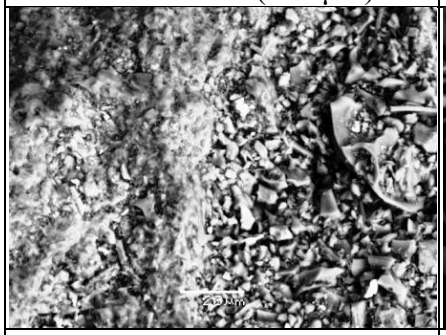
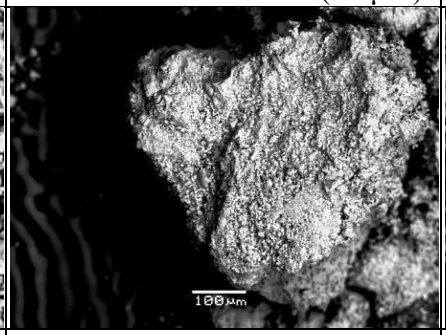
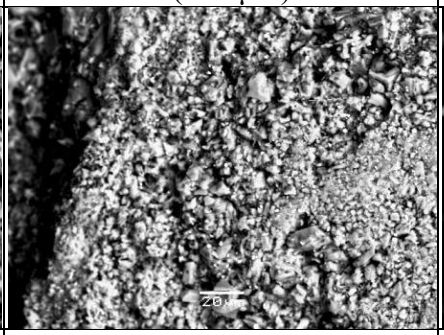
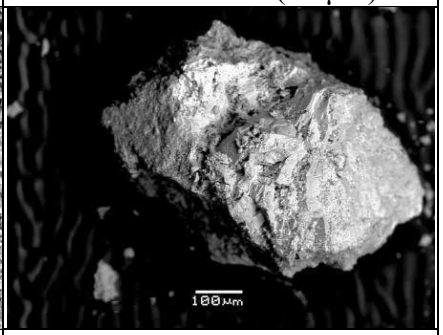
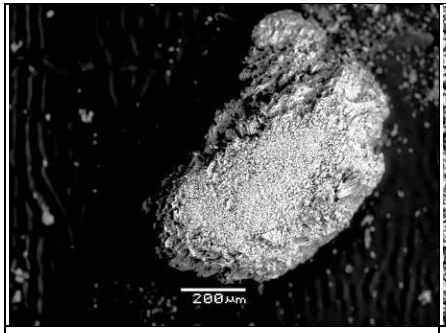
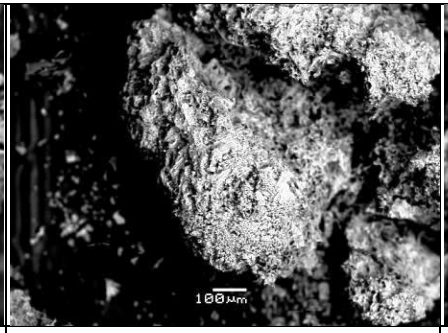
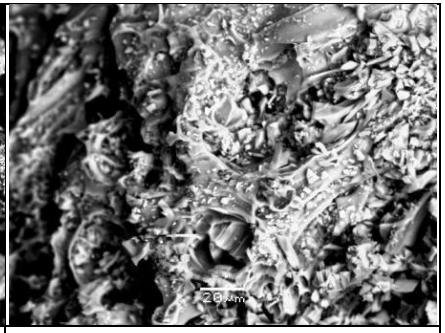
			
WhGLASS 2 (200 µm)	WhGLASS 2 part1 (50 µm)	WhGLASS 3 (200 µm)	WhGLASS 4 (100 µm)

			
WhGLASS 5 (100 µm)	L27 i U2c 1.0 phi	CLEAR 1 (200 µm)	CLEAR 2 (200 µm)
			
CLEAR 2 zoom (20 µm)	GyGLASS 1 (100 µm)	GyGLASS 2 (200 µm)	GyGLASS 3 (100 µm)
			
GyGLASS 4 (200 µm)	GyGLASS 5 (200 µm)	HXL (100 µm)	HXL left (100 µm)

			
HXL left zoom 1 (20 µm)	HXL right (100 µm)	HXL right zoom 2 (20 µm)	HXL right zoom 3 (20 µm)
			
StBLACK+WhGL (100 µm)	StBLACK+WhGL zm1 (20 µm)	StBrGLASS (100 µm)	StBrGLASS zoom 1 (20 µm)
			
StBrGLASS zoom 2 (20 µm)	StWhGLASS 1 (100 µm)	StWhGLASS 1 zoom 1 (20 µm)	StWhGLASS 2 (100 µm)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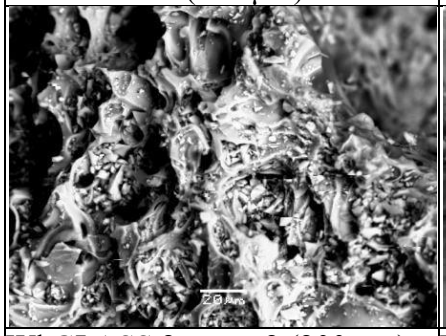
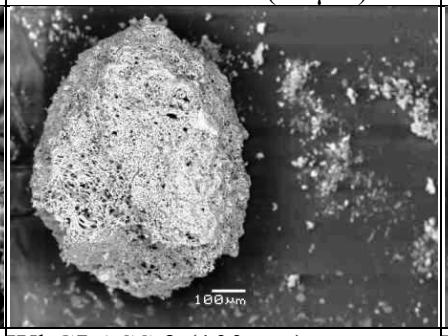
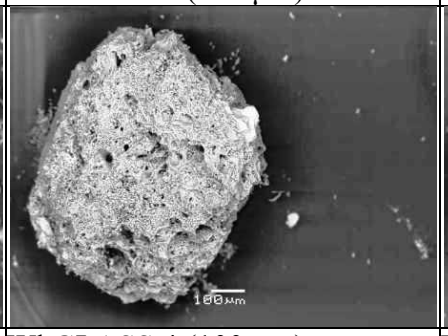
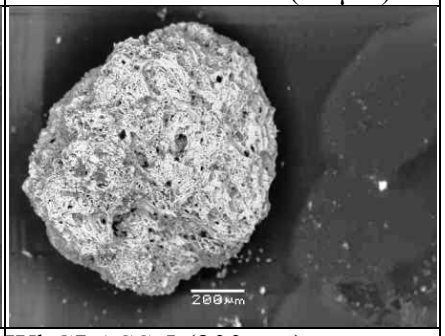
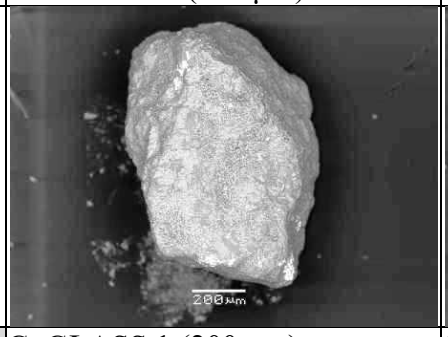
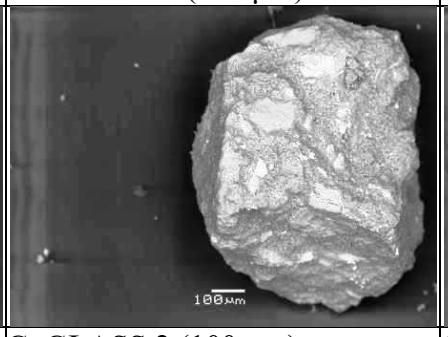
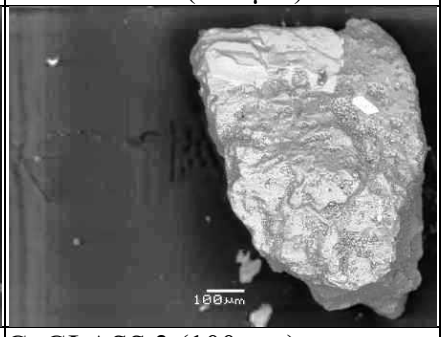
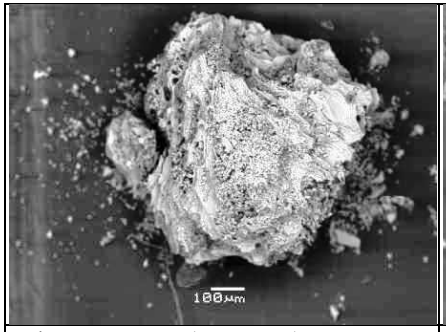
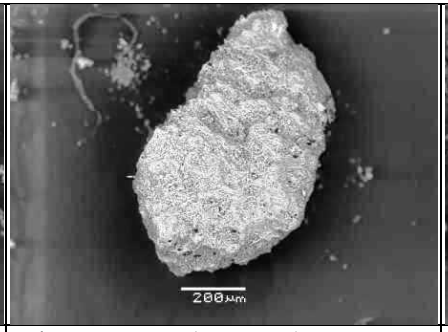
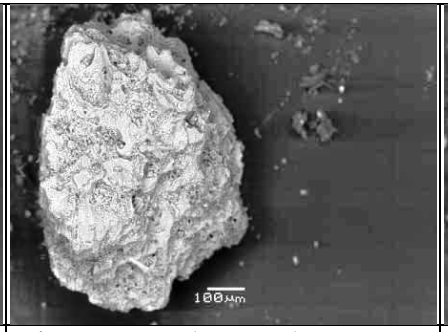
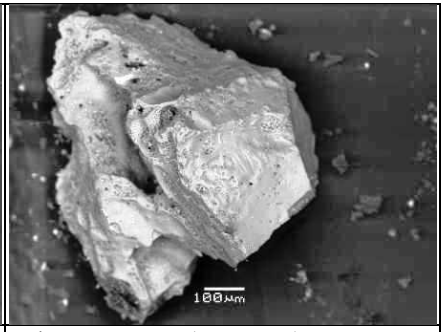
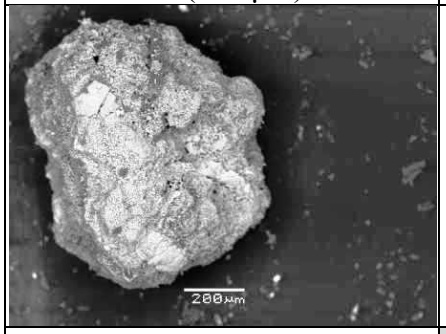
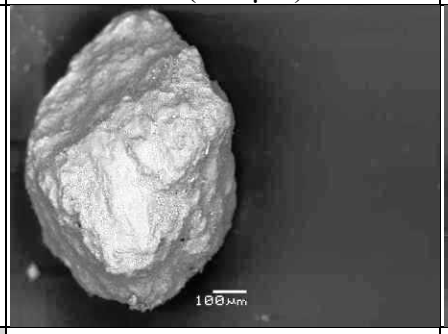
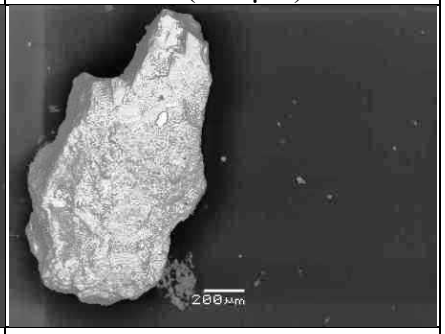
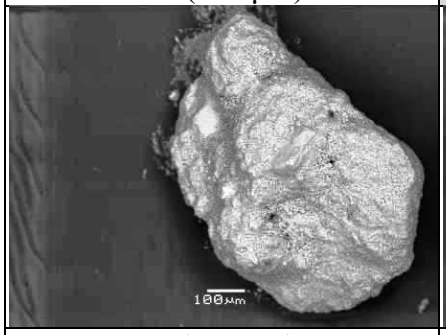
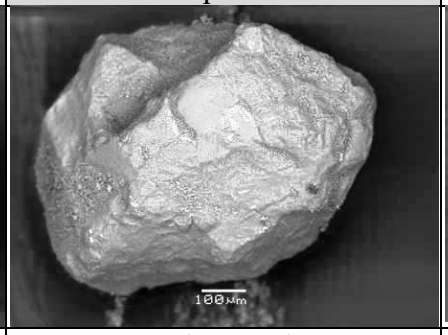
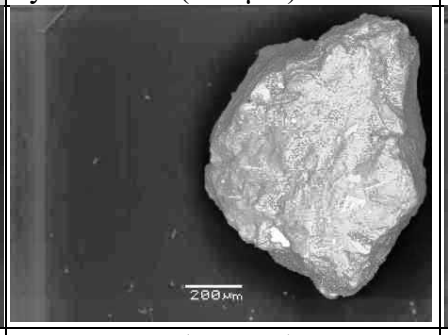
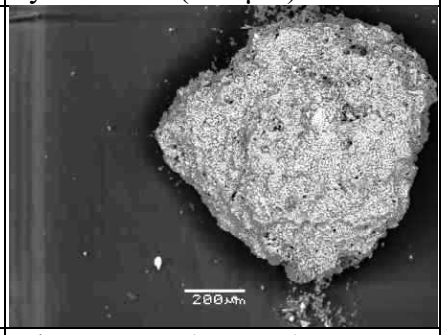
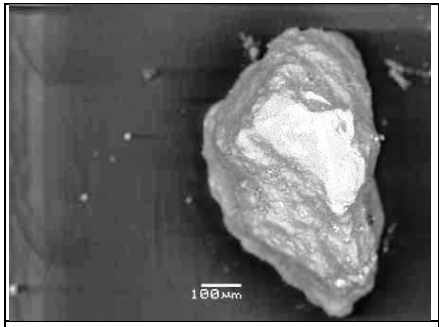
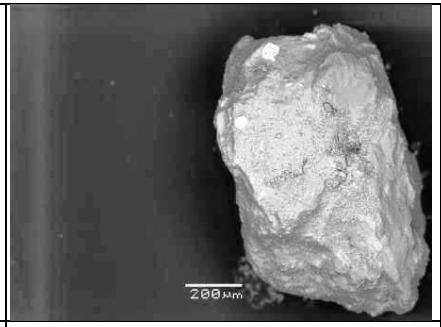
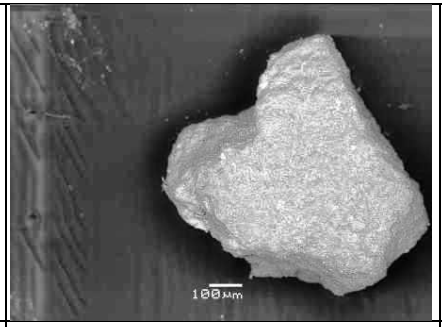
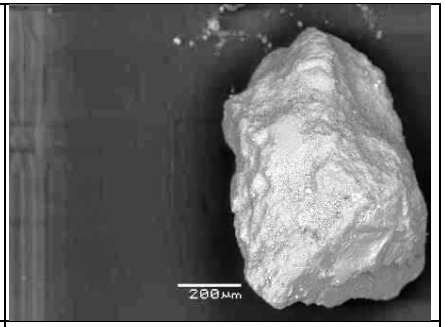
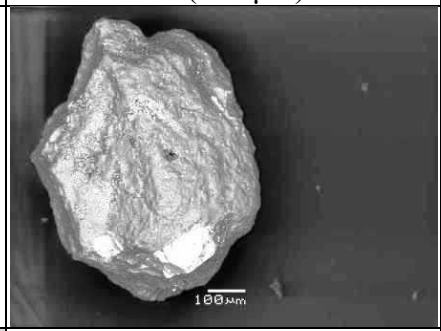
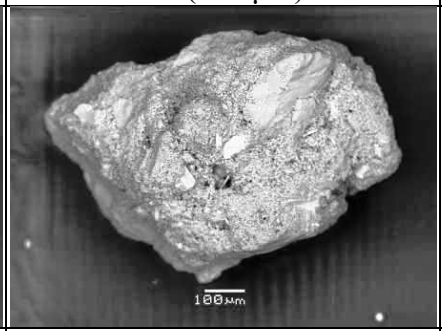
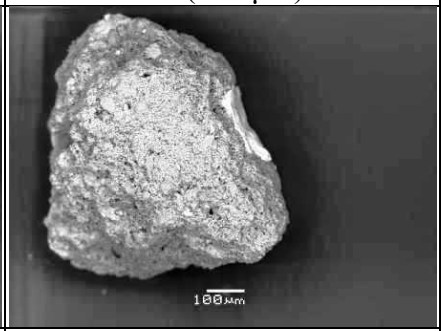
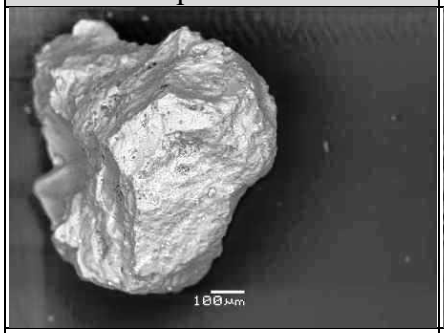
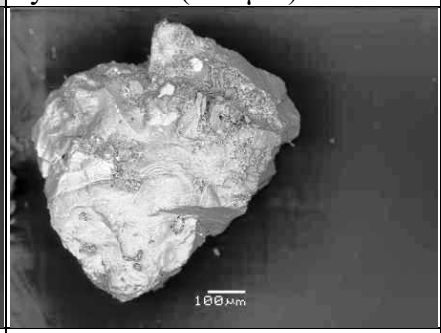
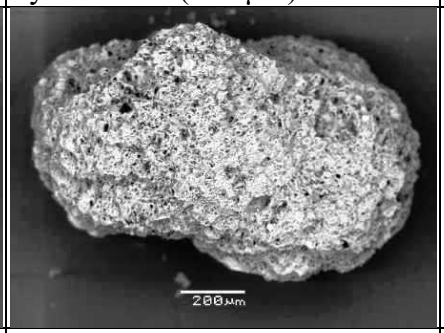
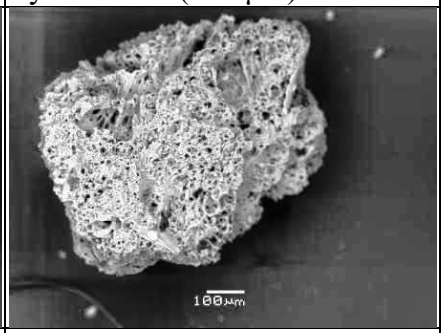
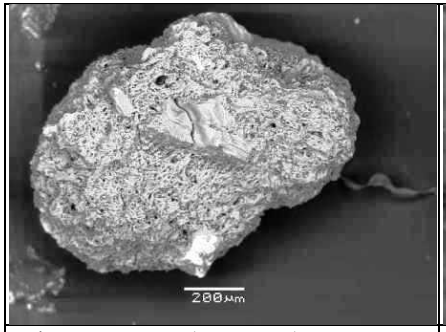
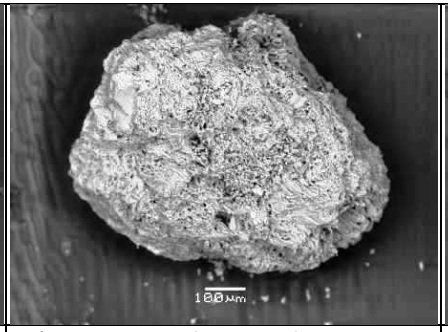
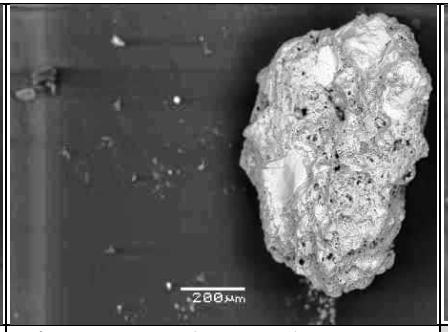
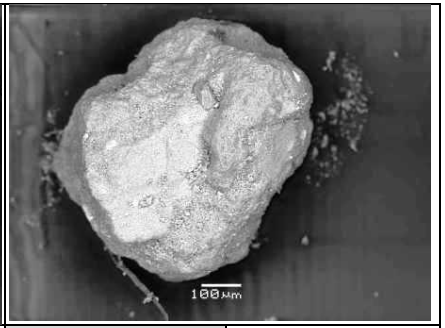
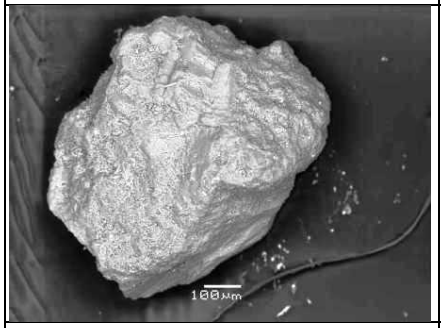
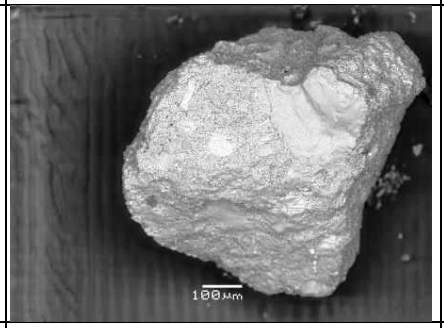
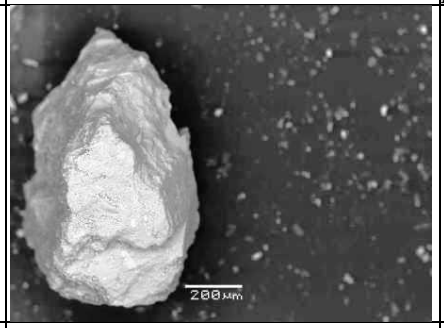
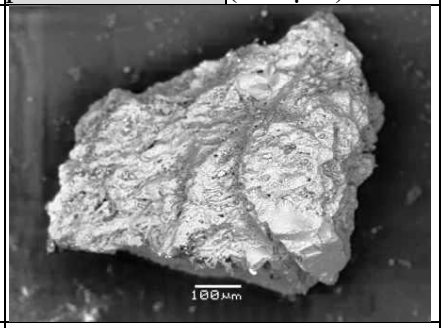
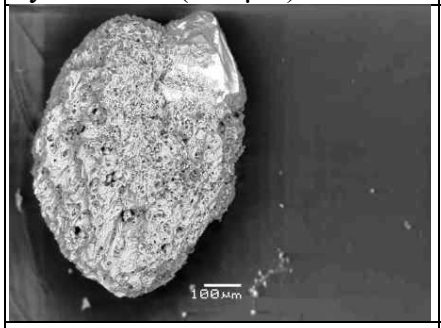
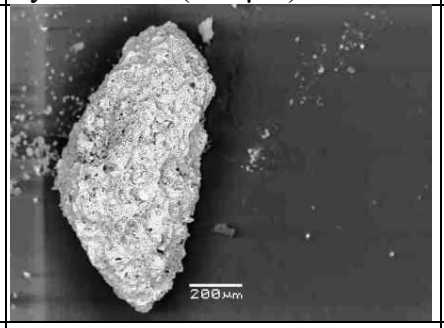
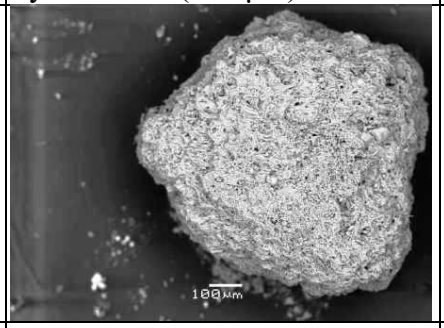
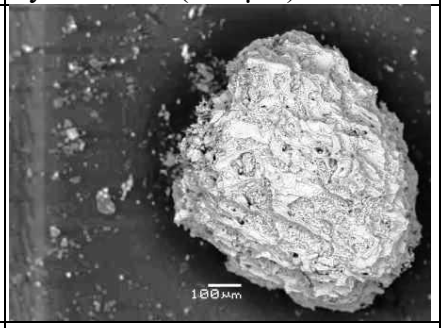
			
WhGLASS 2 zoom 2 (200 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (200 µm)
			
L30 iii U2a 1.0 phi	GyGLASS 1 (200 µm)	GyGLASS 2 (100 µm)	GyGLASS 3 (100 µm)

			
WhGLASS 1 (100 µm)	WhGLASS 2 (200 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)
			
WhGLASS 5 (200 µm)	L30 ii U2b 1.0 phi	GyGLASS 1 (100 µm)	GyGLASS 2 (200 µm)
			
GyGLASS 3 (100 µm)	GyGLASS 4 (100 µm)	GyGLASS 5 (200 µm)	WhGLASS 1 (200 µm)

			
WhGLASS 2 (100 µm)	WhGLASS 3 (200 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (200 µm)
			
L30 i U3 1.0 phi	GyGLASS 1 (100 µm)	GyGLASS 2 (100 µm)	GyGLASS 3 (100 µm)
			
GyGLASS 4 (100 µm)	GyGLASS 5 (100 µm)	WhGLASS 1 (200 µm)	WhGLASS 2 (100 µm)

				
WhGLASS 3 (200 µm)	WhGLASS 4 (100 µm)	WhGLASS 5 (200 µm)	L30 iv U1 1.0 phi	GyGLASS 1 (100 µm)
				
GyGLASS 2 (100 µm)	GyGLASS 3 (100 µm)	GyGLASS 4 (200 µm)	GyGLASS 5 (100 µm)	
				
WhGLASS 1 (100 µm)	WhGLASS 2 (200 µm)	WhGLASS 3 (100 µm)	WhGLASS 4 (100 µm)	

6.4 Circularity and vesicularity data of white and grey glass

Locality	sample parts	unit	Grain Size (Phi)	Grain Type	Mount information		Circularity	Vesicular	Non-Vesicular
					Grain Number	Grain Number			
Locality 13	vii	U1	1	WhGLASS	1		1.1913	Vesicular	
Locality 13	vii	U1	1	WhGLASS	2		1.2203	Vesicular	
Locality 13	vii	U1	1	WhGLASS	3		1.1485	Vesicular	
Locality 13	vii	U1	1	GyGLASS	1		1.1225		Non-Vesicular
Locality 13	vii	U1	1	GyGLASS	2		1.1251		Non-Vesicular
Locality 13	vii	U1	1	GyGLASS	3		1.2345		Non-Vesicular
Locality 27	iii	U2a	1	WhGLASS	1		1.1535	Vesicular	
Locality 27	iii	U2a	1	WhGLASS	2		1.1625		Non-Vesicular
Locality 27	iii	U2a	1	WhGLASS	3		1.1134		Non-Vesicular
Locality 27	iii	U2a	1	GyGLASS	1		1.1838		Non-Vesicular
Locality 27	iii	U2a	1	GyGLASS	2		1.1722		Non-Vesicular
Locality 27	iii	U2a	1	GyGLASS	3		1.1076		Non-Vesicular
Locality 27	iii	U2a	1	BrGLASS	1		1.1572		Non-Vesicular
Locality 27	iii	U2a	1	BrGLASS	2		1.1722		Non-Vesicular
Locality 27	iii	U2a	1	LiPkGLASS	1		1.2182		Non-Vesicular
Locality 27	iii	U2a	1	LiPkGLASS	2		1.1661		Non-Vesicular
Locality 27	ii	U2b	1	WhGLASS	1	1 top grain	1.2496	Vesicular	
Locality 27	ii	U2b	1	WhGLASS	1	2 right grain	1.2377	Vesicular	
Locality 27	ii	U2b	1	WhGLASS	1	3 left grain	1.4430	Vesicular	
Locality 27	ii	U2b	1	WhGLASS	2		1.1710		Non-Vesicular
Locality 27	ii	U2b	1	WhGLASS	3		1.1673		Non-Vesicular
Locality 27	ii	U2b	1	GyGLASS	1	1 top grain	1.1059		Non-Vesicular
Locality 27	ii	U2b	1	GyGLASS	1	2 bottom grain	1.1373		Non-Vesicular
Locality 27	ii	U2b	1	GyGLASS	2		1.1955		Non-Vesicular

Locality	sample parts	unit	Grain Size (Phi)	Grain Type	Mount information		Circularity	Vesicular	Non-Vesicular
					Grain Number	Grain Number			
Locality 27	i	U2c	1	WhGLASS	2		1.4003	Vesicular	
Locality 27	i	U2c	1	WhGLASS	3		1.1277	Vesicular	
Locality 27	i	U2c	1	GyGLASS	1		1.1281		Non-Vesicular
Locality 27	i	U2c	1	GyGLASS	2		1.1672		Non-Vesicular
Locality 27	i	U2c	1	GyGLASS	3		1.1165		Non-Vesicular
Locality 13	ii	U3	1	WhGLASS	1		1.2615	Vesicular	
Locality 13	ii	U3	1	WhGLASS	2		1.1857		Non-Vesicular
Locality 13	ii	U3	1	WhGLASS	3		1.1870	Vesicular	
Locality 13	ii	U3	1	GyGLASS	1		1.1583		Non-Vesicular
Locality 13	ii	U3	1	GyGLASS	2		1.1972		Non-Vesicular
Locality 13	ii	U3	1	GyGLASS	3		1.1770		Non-Vesicular
Locality 1	ii	U1	1	GyGLASS	1		1.2259		Non-Vesicular
Locality 1	ii	U1	1	GyGLASS	2		1.1430		Non-Vesicular
Locality 1	ii	U1	1	GyGLASS	3		1.1473		Non-Vesicular
Locality 1	ii	U1	1	WhGLASS	1		1.1869	Vesicular	
Locality 1	ii	U1	1	WhGLASS	2		1.1430	Vesicular	
Locality 1	ii	U1	1	WhGLASS	3		1.1473	Vesicular	
Locality 1	i	U2a	1	GyGLASS	1		1.1620		Non-Vesicular
Locality 1	i	U2a	1	GyGLASS	2		1.1488		Non-Vesicular
Locality 1	i	U2a	1	GyGLASS	3		1.1151		Non-Vesicular
Locality 1	i	U2a	1	WhGLASS	1		1.2140	Vesicular	
Locality 1	i	U2a	1	WhGLASS	2		1.1575	Vesicular	
Locality 1	i	U2a	1	WhGLASS	3		1.1797	Vesicular	
Locality 2	xvii	U2b	1	GyGLASS	1		1.1137		Non-Vesicular

Locality	sample parts	unit	Grain Size (Phi)	Grain Type	Mount information		Circularity	Vesicular	Non-Vesicular
					Grain Number	Grain Number			
Locality 2	xvii	U2b	1	WhGLASS	1		1.1157		Non-Vesicular
Locality 2	xvii	U2b	1	WhGLASS	2		1.1152		Non-Vesicular
Locality 2	xvii	U2b	1	WhGLASS	3		1.1934		Non-Vesicular
Locality 2	iv	U3	1	GyGLASS	1		1.2119		Non-Vesicular
Locality 2	iv	U3	1	GyGLASS	2		1.1006		Non-Vesicular
Locality 2	iv	U3	1	GyGLASS	3		1.1294		Non-Vesicular
Locality 2	iv	U3	1	WhGLASS	1		1.1554	Vesicular	
Locality 2	iv	U3	1	WhGLASS	2		1.1638		Non-Vesicular
Locality 2	iv	U3	1	WhGLASS	3		1.1455	Vesicular	
Locality 30	iv	U1	1	GyGLASS	1		1.1014		Non-Vesicular
Locality 30	iv	U1	1	GyGLASS	2		1.1243		Non-Vesicular
Locality 30	iv	U1	1	GyGLASS	3		1.1486		Non-Vesicular
Locality 30	iv	U1	1	WhGLASS	1		1.1257	Vesicular	
Locality 30	iv	U1	1	WhGLASS	2		1.2177	Vesicular	
Locality 30	iv	U1	1	WhGLASS	3		1.1170	Vesicular	
Locality 30	iii	U2a	1	GyGLASS	1		1.1299		Non-Vesicular
Locality 30	iii	U2a	1	GyGLASS	2		1.1038		Non-Vesicular
Locality 30	iii	U2a	1	GyGLASS	3		1.1949		Non-Vesicular
Locality 30	iii	U2a	1	WhGLASS	1		1.2105	Vesicular	
Locality 30	iii	U2a	1	WhGLASS	2		1.1808	Vesicular	
Locality 30	iii	U2a	1	WhGLASS	3		1.1747	Vesicular	
Locality 30	ii	U2b	1	GyGLASS	1		1.1051		Non-Vesicular
Locality 30	ii	U2b	1	GyGLASS	2		1.2594		Non-Vesicular
Locality 30	ii	U2b	1	GyGLASS	3		1.1393		Non-Vesicular

Locality	sample parts	unit	Grain Size (Phi)	Grain Type	Mount information		Circularity	Vesicular	Non-Vesicular
					Grain Number	Grain Number			
Locality 30	ii	U2b	1	WhGLASS	3		1.1597		Non-Vesicular
Locality 30	i	U3	1	GyGLASS	1		1.1270		Non-Vesicular
Locality 30	i	U3	1	GyGLASS	2		1.1502		Non-Vesicular
Locality 30	i	U3	1	GyGLASS	3		1.1344		Non-Vesicular
Locality 30	i	U3	1	WhGLASS	1		1.1486	Vesicular	
Locality 30	i	U3	1	WhGLASS	2		1.1806	Vesicular	
Locality 30	i	U3	1	WhGLASS	3		1.1344	Vesicular	
Locality 15	iii	U2c	1	GyGLASS	1		1.2279		Non-Vesicular
Locality 15	iii	U2c	1	GyGLASS	2		1.1259		Non-Vesicular
Locality 15	iii	U2c	1	GyGLASS	3		1.1032		Non-Vesicular
Locality 15	iii	U2c	1	WhGLASS	1		1.1356		Non-Vesicular
Locality 15	iii	U2c	1	WhGLASS	2		1.1828		Non-Vesicular
Locality 15	iii	U2c	1	WhGLASS	3		1.1595		Non-Vesicular
Locality 24		U2c	1	GyGLASS	1		1.2303		Non-Vesicular
Locality 24		U2c	1	GyGLASS	2		1.1611		Non-Vesicular
Locality 24		U2c	1	GyGLASS	3		1.1166		Non-Vesicular
Locality 24		U2c	1	WhGLASS	1		1.1235	Vesicular	
Locality 24		U2c	1	WhGLASS	2		1.1002		Non-Vesicular
Locality 24		U2c	1	WhGLASS	3		1.1411		Non-Vesicular

6.5 Vesicular glass grains

6.5.1 Number of grains

	U1	U2a	U2b	U2c	U3
Vesicular White Glass	16	8	3	7	13
Non-vesicular White Glass	0	7	15	8	2
Vesicular Grey Glass	1	1			
Non-vesicular Grey Glass	16	12	16	18	15
total	33	28	34	33	30

6.5.2 Percentage of grains

	U1	U2a	U2b	U2c	U3
Vesicular White Glass	48.48	28.57	8.82	21.21	43.33
Non-vesicular White Glass	0.00	25.00	44.12	24.24	6.67
Vesicular Grey Glass	3.03	3.57	0.00	0.00	0.00
Non-vesicular Grey Glass	48.48	42.86	47.06	54.55	50.00

6.5.3 Percentage as a fraction of the abundance of the glass type

	U1	U2a	U2b	U2c	U3
Vesicular White Glass	83.71	33.31	8.87	24.49	55.10
Non-vesicular White Glass	0.00	29.15	44.36	27.99	8.48
Vesicular Gray Glass	0.96	2.89	0.00	0.00	0.00
Non-vesicular Gray Glass	15.34	34.66	46.77	47.52	36.43

6.6 Vesicle shape and vesicularity of glass

6.6.1 Data Table

Locality	sample parts	units	Grain Size (phi)	Grain Type	Grain Number	part	Vesicularity (%)	Vesicle shape
Locality 13	vii	U1	1	WhGL.	1		10	elongate
Locality 13	vii	U1	1	WhGL.	2		20	equant
Locality 27	iii	U2a	1	WhGL.	1		2	equant
Locality 27	ii	U2b	1	WhGL.	1	1 top grain	5	elongate
Locality 27	ii	U2b	1	WhGL.	1	2 right grain	3	equant
Locality 27	ii	U2b	1	WhGL.	1	3 left grain	5	elongate
Locality 27	i	U2c	1	WhGL.	2		20	equant
Locality 13	ii	U3	1	WhGL.	1		20	equant
Locality 1	ii	U1	1	WhGL.	1		35	equant
Locality 1	ii	U1	1	WhGL.	2		25	equant
Locality 1	ii	U1	1	WhGL.	3		30	equant
Locality 1	ii	U1	1	WhGL.	4		25	equant
Locality 1	ii	U1	1	WhGL.	5		25	equant
Locality 1	i	U2a	1	WhGL.	1		10	elongate
Locality 1	i	U2a	1	WhGL.	2		30	equant
Locality 1	i	U2a	1	WhGL.	3		25	elongate
Locality 1	i	U2a	1	WhGL.	5		15	equant
Locality 2	iv	U3	1	WhGL.	1		25	equant
Locality 2	iv	U3	1	WhGL.	3		10	equant
Locality 2	iv	U3	1	WhGL.	4		35	elongate
Locality 2	iv	U3	1	WhGL.	5		15	equant
Locality 13	vii	U1	1	WhGL.	3		5	equant
Locality 13	vii	U1	1	WhGL.	4		15	equant
Locality 13	vii	U1	1	WhGL.	5		15	equant
Locality 13	vii	U1	1	WhGL.	6		15	elongate
Locality 13	vii	U1	1	WhGL.	7		15	elongate
Locality 27	i	U2c	1	WhGL.	3		15	equant
Locality 27	i	U2c	1	WhGL.	4		20	equant
Locality 27	i	U2c	1	WhGL.	5		25	equant
Locality 13	ii	U3	1	WhGL.	3		40	elongate
Locality 13	ii	U3	1	WhGL.	4		15	equant
Locality 13	ii	U3	1	WhGL.	5		10	equant
Locality 30	iv	U1	1	WhGL.	1		20	equant
Locality 30	iv	U1	1	WhGL.	2		20	equant
Locality 30	iv	U1	1	WhGL.	4		20	equant

Locality	sample parts	units	Grain Size (phi)	Grain Type	Grain Number	part	Vesicle density	Vesicle shape
Locality 30	iii	U2a	1	WhGL.	1		20	elongate
Locality 30	iii	U2a	1	WhGL.	2		10	equant
Locality 30	iii	U2a	1	WhGL.	3		15	equant
Locality 30	i	U3	1	WhGL.	1		30	equant
Locality 30	i	U3	1	WhGL.	2		40	equant
Locality 30	i	U3	1	WhGL.	3		15	equant
Locality 30	i	U3	1	WhGL.	4		20	equant
Locality 30	i	U3	1	WhGL.	5		15	equant
Locality 15	iii	U2c	1	WhGL.	5		15	equant
Locality 24		U2c	1	WhGL.	1		15	elongate
Locality 1	i	U2a	1	GyGL.	5		2	equant
Locality 30	iv	U1	1	GyGL.	5		10	equant

6.6.2 Means by unit (white glass only)

	% vesicularity (density)		Vesicle shape (as % of grains)	
	MEAN	MEDIAN	Equant	Elongate
U1	19.4	20	81.25	18.75
U2a	15.9	15	62.50	37.50
U2b	4.3	5	33.33	66.67
U2c	17.9	15	71.43	28.57
U3	22.9	20	83.33	16.67

APPENDIX 7

Black and white graphs

7.1 Chapter 4

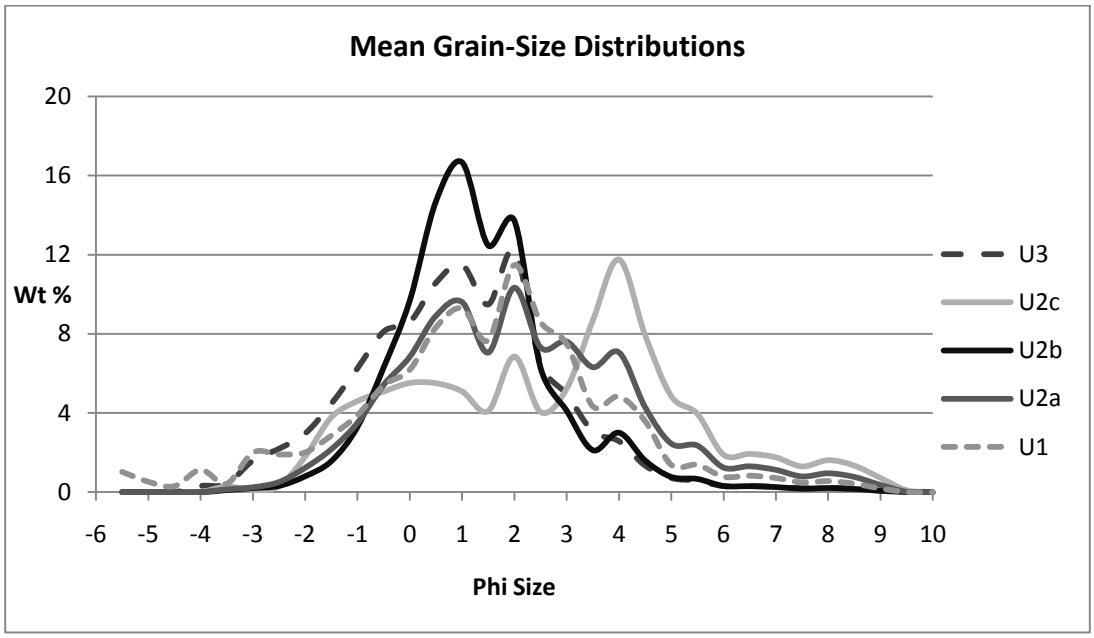
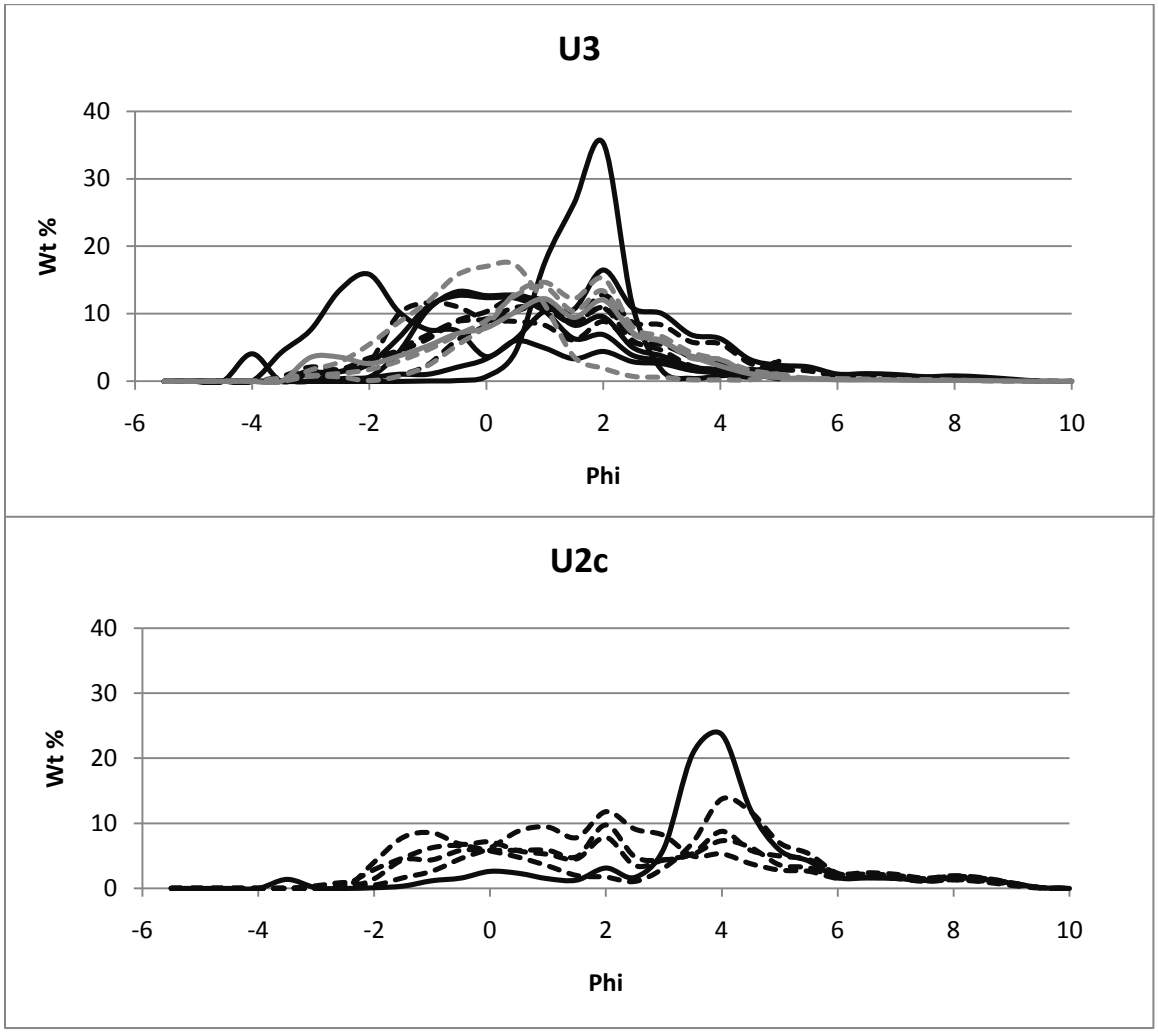


Figure 4.3. The mean grain size distributions of each unit.

Figure 4.6. Grain-size distributions of samples from each unit, in terms of distance from the vent. U3 is at the top of the sequence, U1 at the base.

Key: distance from the vent
Black 1 - 3 km
Dashed Black 3 - 5 km
Gray 5 - 7 km
Dashed Gray 7 - 11 km



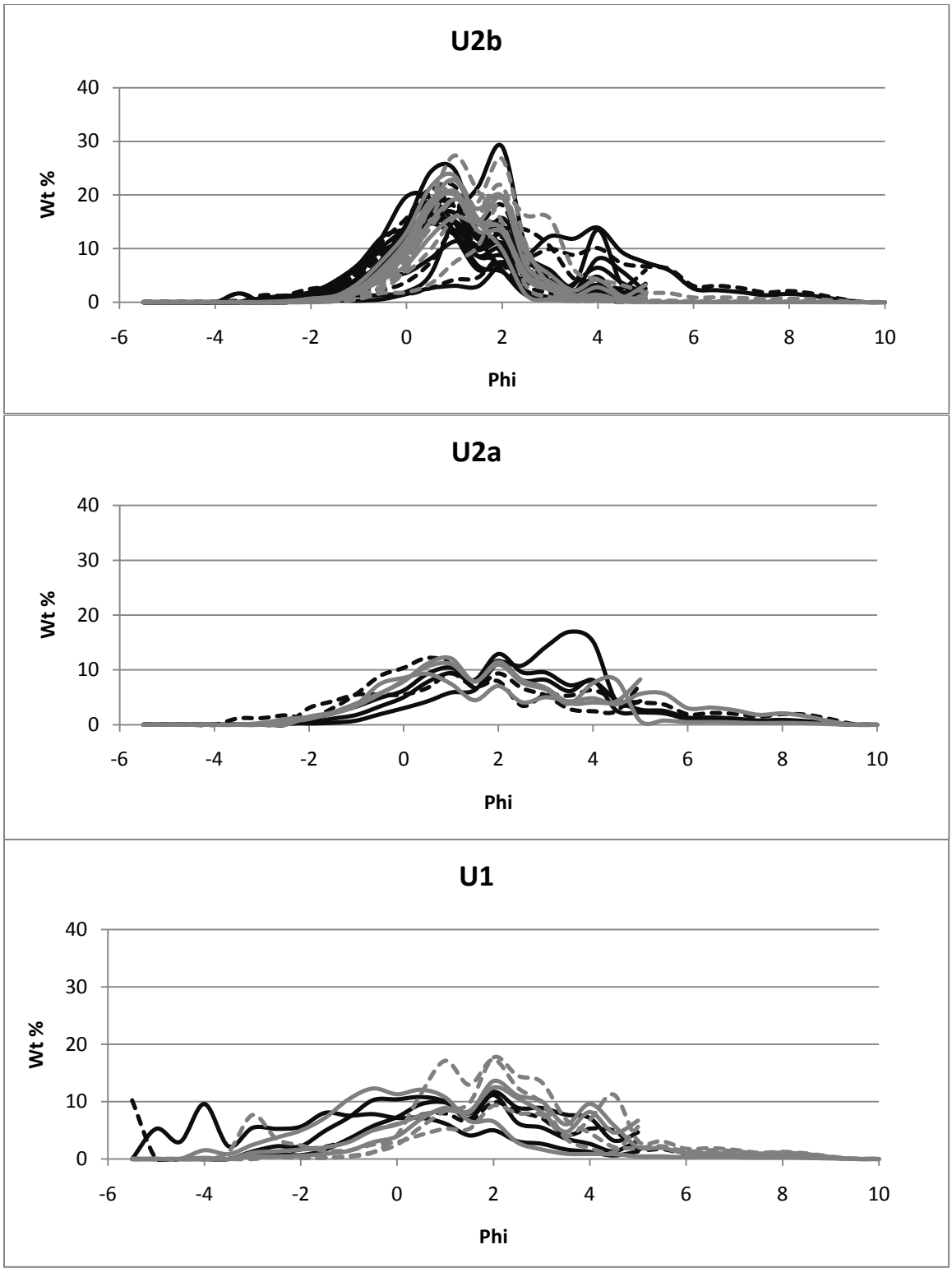


Figure 4.6 continued

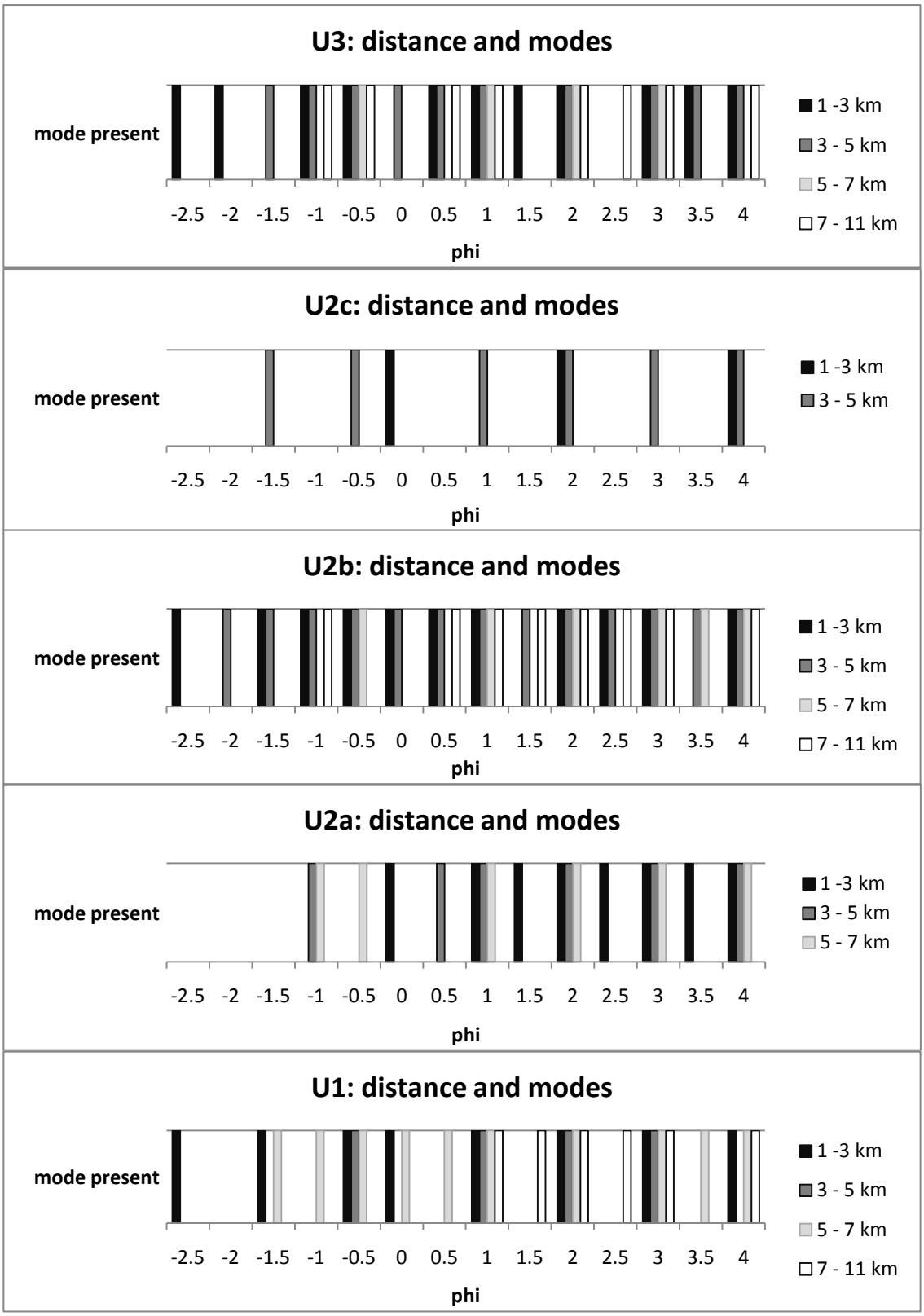


Figure 4.7. The modes that are present in each of the units, with respect to distance.

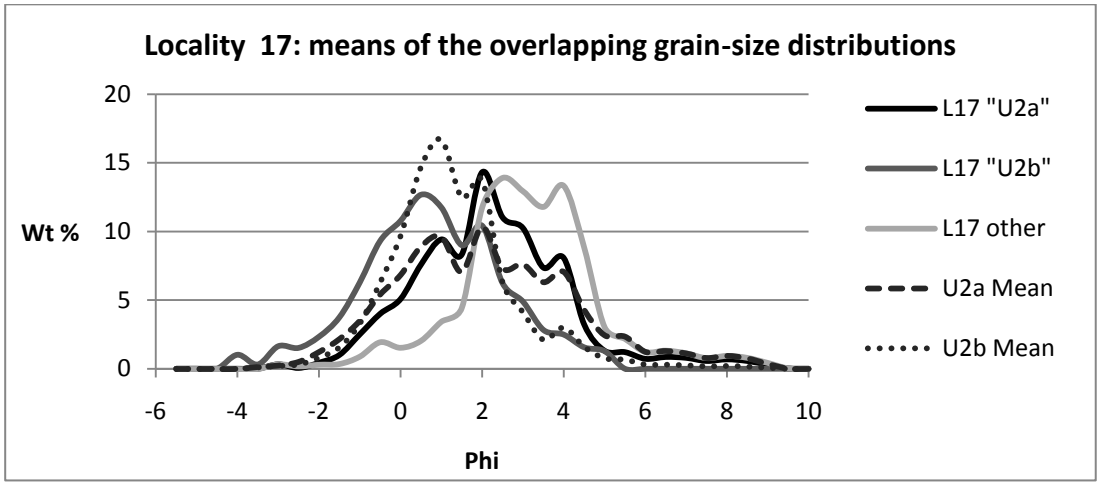


Figure 4.11. The mean grain-size distributions of the samples of the overlap sequence at locality 17. Similarities with mean U2a and U2b, as determined from other sites, are apparent.

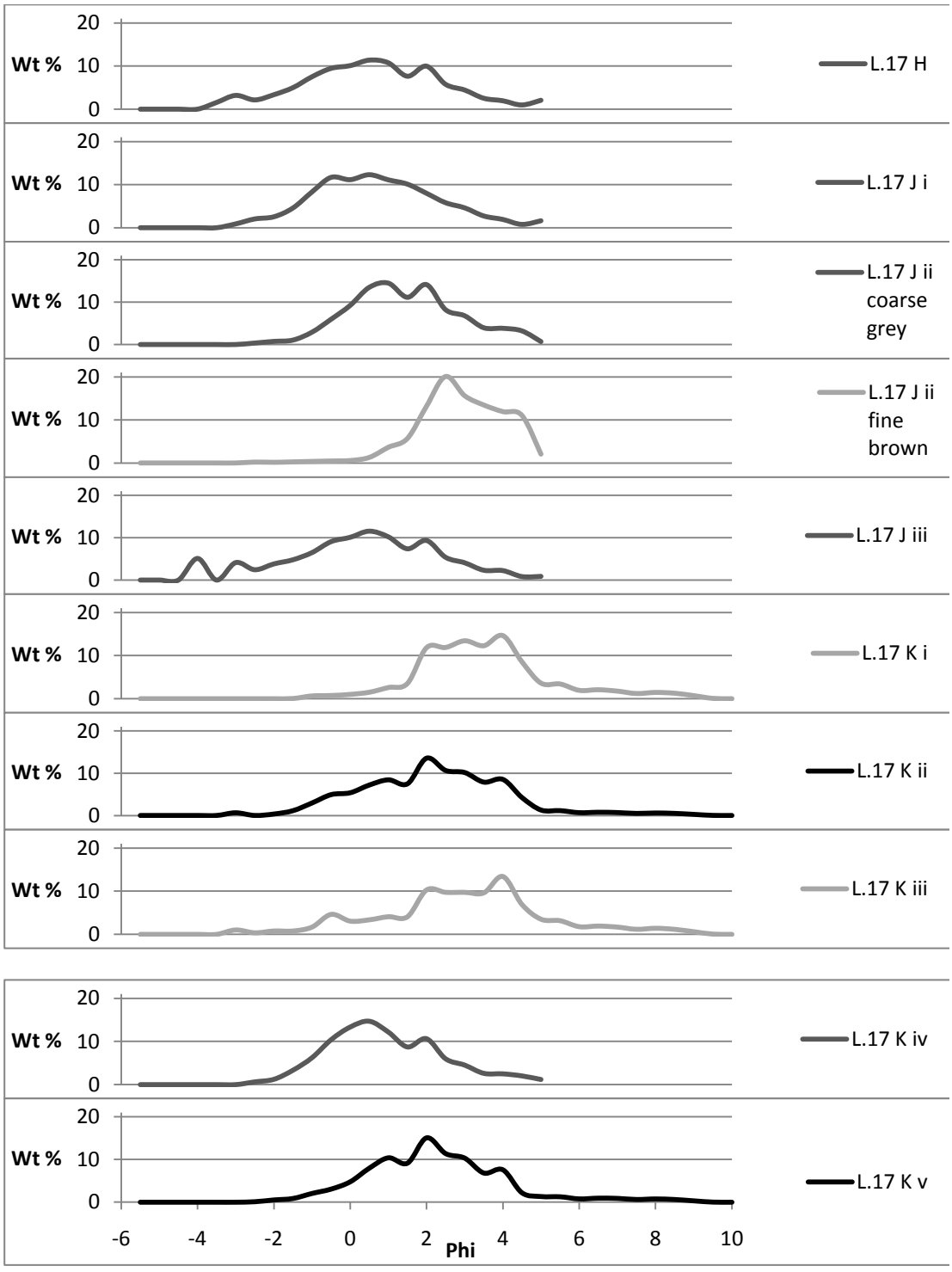


Figure 4.12. The grain-size distributions of the ten samples that lie within the overlap sequence. Sample K v is at the bottom of the sequence; H at the top. The colors are the same as in figures 4.9 and 4.10. Black denotes U2a-like samples; gray U2b-like samples; light gray non-associated samples. Samples of similar grain-size distribution are not necessarily stratigraphically adjacent.

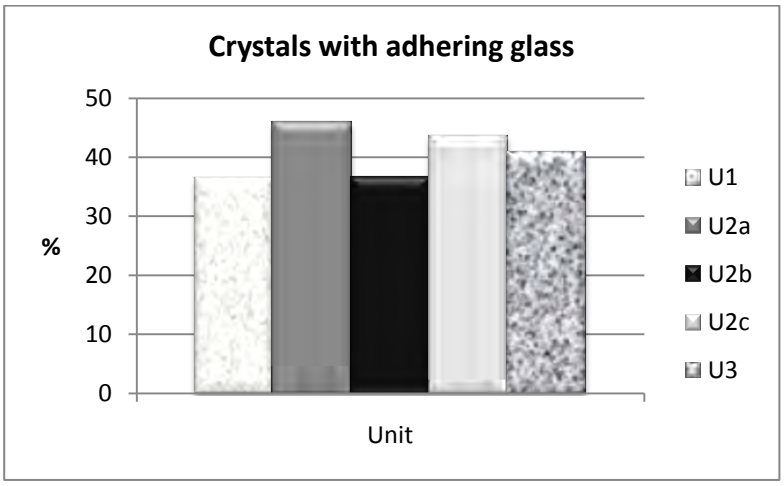


Figure 5.2. Percentage of all crystals that have adhering glass attached.

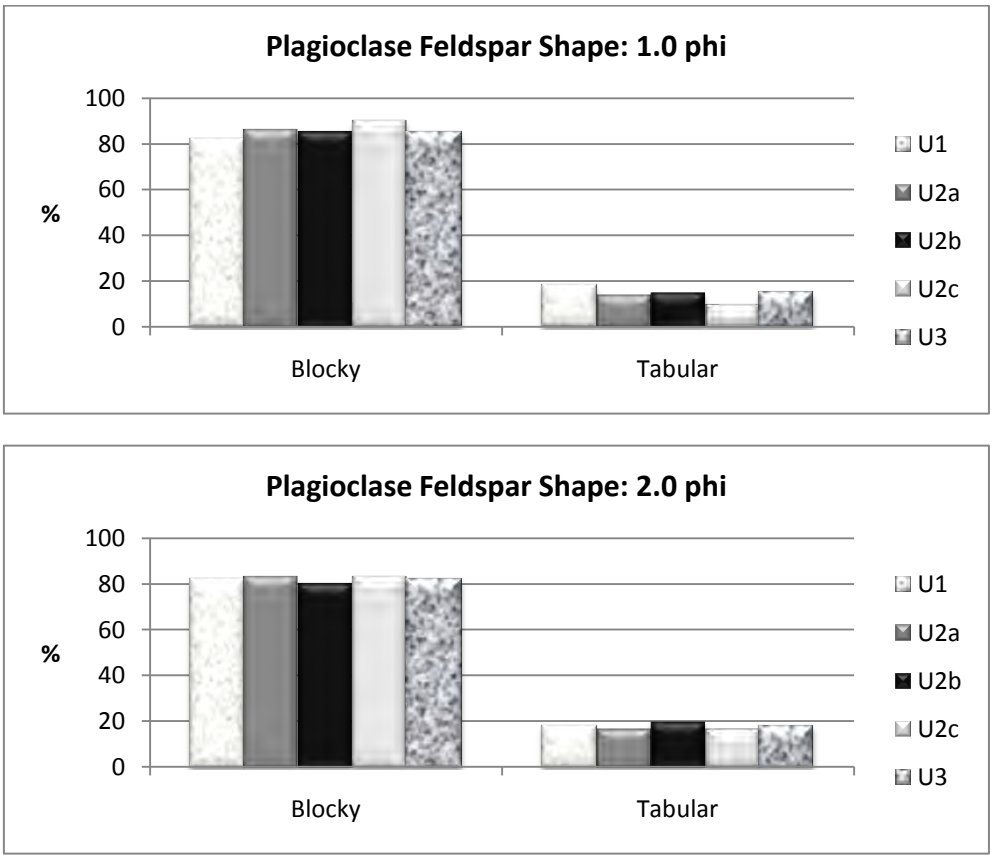


Figure 5.11. The shape of plagioclase feldspar grains in the 1.0 and 2.0 phi modes. (Locality 13/27)

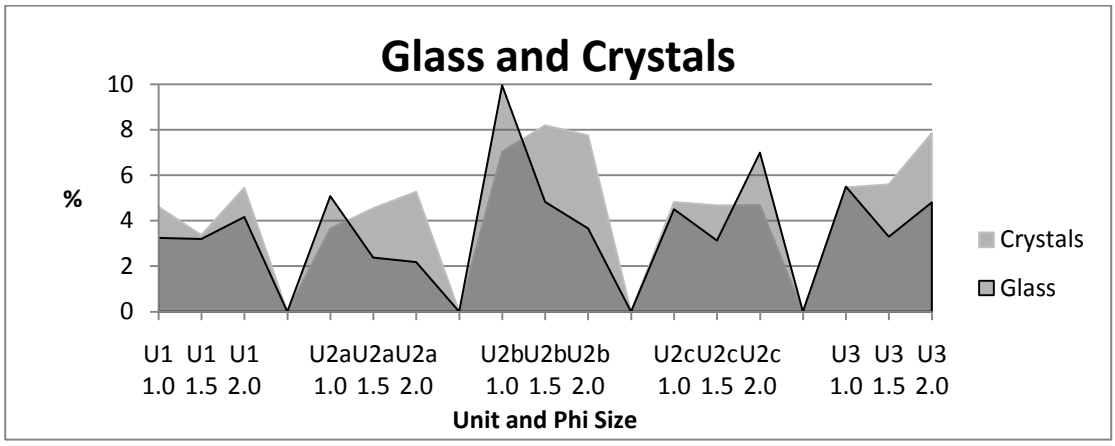


Figure 5.12. The proportion of glass and crystals in the 1.0, 1.5 and 2.0 phi modes. (Locality 13/27). Componentry is weighted to the weight percent of each mode based on the grain-size distribution data.

7.3 Chapter 6

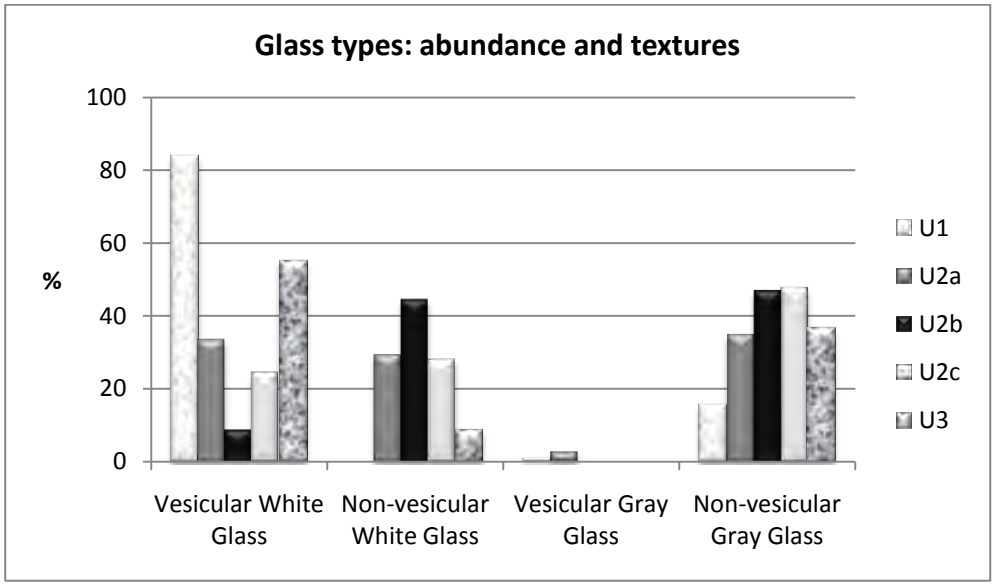


Figure 6.3. Glass texture variation with glass type and unit.

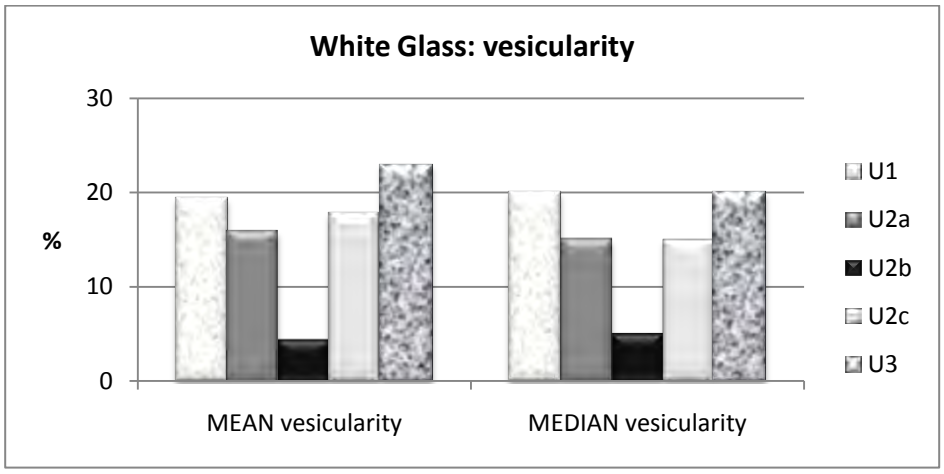


Figure 6.4. Mean and median percent vesicularity for white glass, estimated visually.

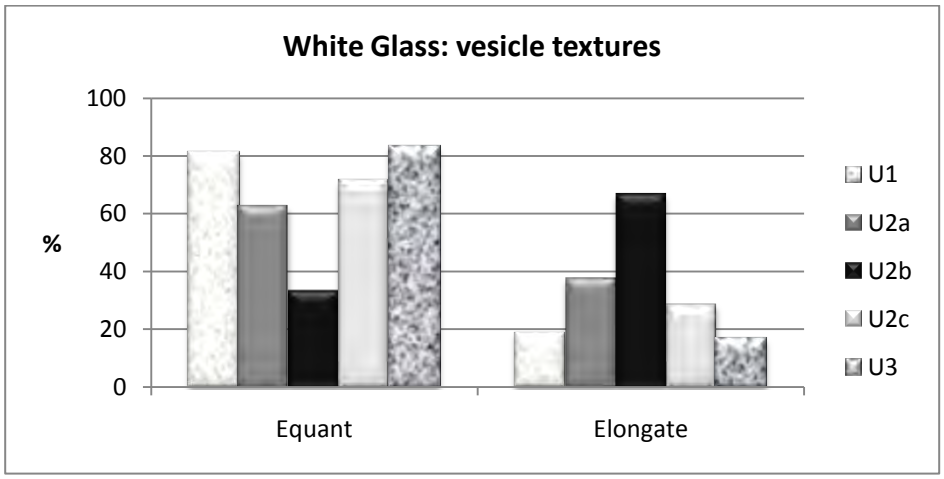


Figure 6.5. Proportion of grains with equant and elongate vesicles, by unit.