Supplementary file for

The Need for Fission Track Data Transparency

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This supplementary file contains Table S1, Figure S1 and Table S2.

Table S1: Description of images. UT: University of Texas at Austin, UM: University of Melbourne.

Grain	Image Source	Description
1	UM	Not parallel to c-axis, not acceptable
2	UM	Fluid in tracks, not acceptable
3	UM	Not 100% C-parallel and with low number of inclusion but acceptable. If U ppm is determined using LA-ICP-MS approach, need to cross check counting area as track distribution is slightly uneven.
4	UM	Acceptable grain
5	UM	Acceptable if the parts with inclusions are excluded
6	UM	Not parallel to c-axis, not acceptable
7	UM	Acceptable if the parts with inclusions and dislocations (left hand corner) are excluded
8	UM	Too many inclusions, not acceptable
9	UM	Acceptable if the parts with inclusions and cluster of small disturbing surface features are excluded
10	UM	Not parallel to c-axis, not acceptable
11	UM	Exclusively for length measurement
12	UM	Exclusively for length measurement
13	UM	Exclusively for length measurement
14	UT	Exclusively for length measurement
15	UT	Exclusively for length measurement
16	UM	Acceptable if the parts with inclusions and dislocations (left hand corner) are excluded.
17	UM	Acceptable if the parts with inclusions are excluded
18	UM	Acceptable if the parts with inclusions are excluded
19	UM	Acceptable if the parts with inclusions are excluded
20	UM	Acceptable grain
21	UM	Acceptable grain
22	UM	Acceptable grain

		If U ppm is determined using LA-ICP-MS approach, need to cross check counting area as track distribution is slightly uneven.
23	UM	Not parallel to c-axis, not acceptable
24	UT	Fluid in tracks and noticeable uneven track distribution, not acceptable
25	UM	Acceptable grain
26	UM	Acceptable grain If U ppm is determined using LA-ICP-MS approach, need to cross check counting area as track distribution is slightly uneven.
27	UM	Acceptable grain If U ppm is determined using LA-ICP-MS approach, need to cross check counting area as track distribution is slightly uneven.
28	UM	Acceptable grain If U ppm is determined using LA-ICP-MS approach, need to cross check counting area as track distribution is slightly uneven.
29	UM	Acceptable grain
30	UM	Acceptable grain if the parts with inclusions and dislocations are excluded.
31	UT	Too many inclusions, not acceptable
32	UT	Not 100% C-parallel and noticeably uneven track distribution. If U content is determined using LA-ICP-MS, need to be careful with region of interest selection. I would not count this one if there are other options. Borderline grain
33	UT	Not parallel to c-axis, obvious uneven track distribution, not acceptable
34	UT	Too many inclusions, not acceptable
35	UT	Borderline grain
36	UT	Too many inclusions, not acceptable
37	UT	Low track density, be careful with region of interest selection. Acceptable grain
38	UT	Too many inclusions, not acceptable
39	UT	Not 100% C-parallel but acceptable. Acceptable grain
40	UT	Too many inclusions, not acceptable
41	UT	Acceptable grain
42	UM	50x2 micron graticule
43	UT	Pyser-SGI Graticule 02A00429 S16 Stage MIC 1mm/0.01mm
44	UT	Pyser-SGI Graticule 02A00429 S16 Stage MIC 1mm/0.01mm
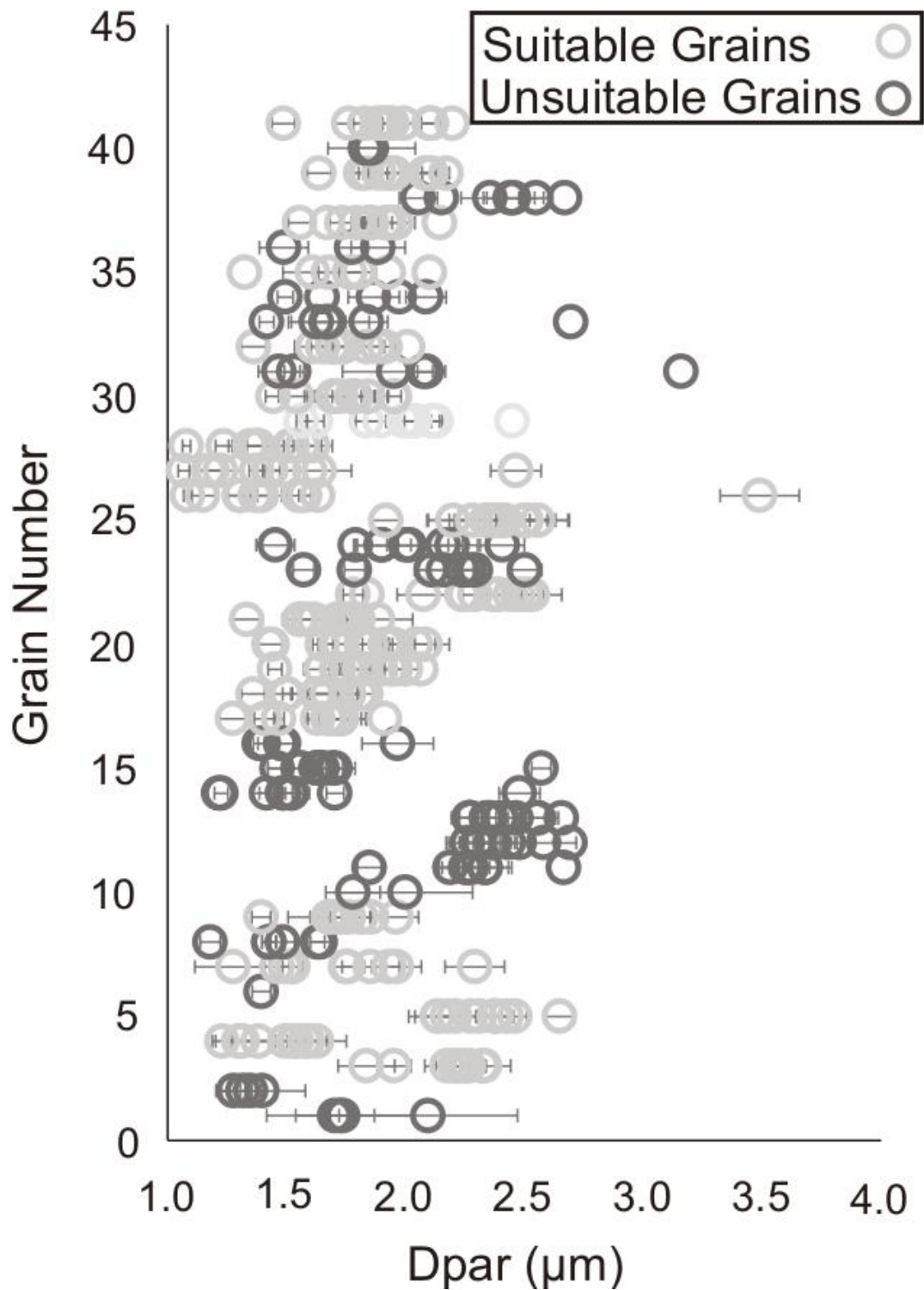
Figure S1: Dpar measurements on suitable (grey) and unsuitable (dark grey) grains. Each circle represents the mean (with an error bar showing one standard deviation, if reported) dpar for that grain. Values for suitable grains tend to cluster, with occasional outliers. Unsuitable grains tended to result in more dispersed results.

Table S2: UT: University of Texas at Austin; ATOMKI: Institute for Nuclear Research, Debrecen, Hungary; UG: University of Göttingen; UO: University of Oklahoma; UM: University of Melbourne; IGG-CNR: Institute of Geosciences and Earth Resources, National Research Council of Italy; APLLC: Apatite.com Partners Limited Liability.

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