

Preheat Temperature (°C)	Calculated D <sub>e</sub> (Gy)	Error	Accepted Grains	Disks Analysed
180	0.356	0.0354	59	5
200	0.3153	0.022	48	5
220	0.3908	0.0339	52	5
240	0.3734	0.0221	60	5
260	0.4404	0.0379	45	5
280	0.3298	0.0313	37	5

Figure S1. OSL dating methodology included preheat plateau testing done on a range of samples that represented the population from the region with pre-heat and cut heat set at 240- and 180-degrees centigrade A standard 10s dose irradiation was applied to each run and the dose response recovery measured.

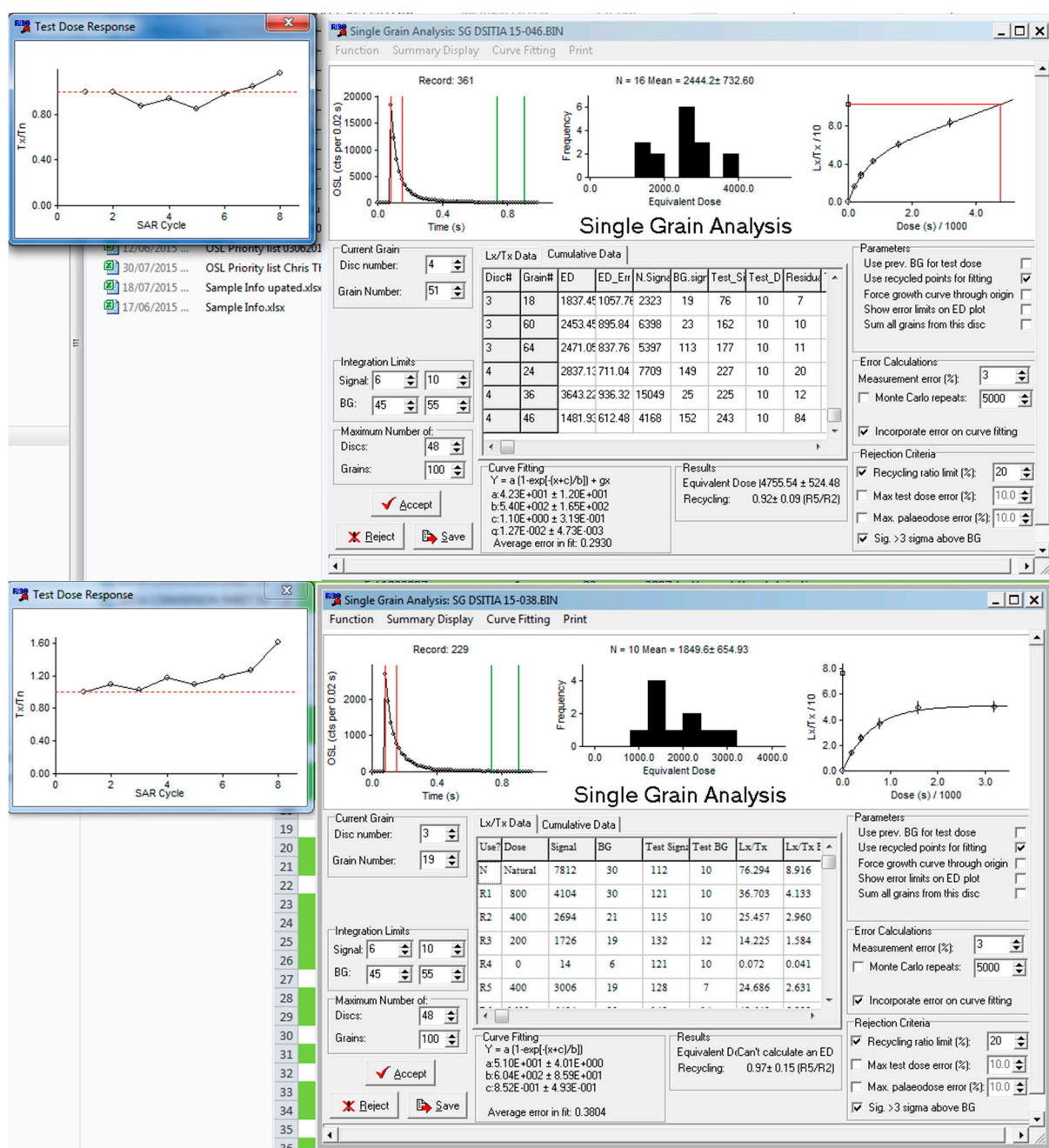


Figure S2. Outputs used to identify saturated grains using test dose response curves. In the first example, the quartz grain had an accumulated signal considerably higher than the top standard (3500s) irradiation used for this sample. Note the test dose response was within  $\pm 20\%$ . This grain was rejected from the calculation. In the second example, the quartz grain had accumulated a signal in the field that was considerably higher than what could be artificially applied and was determined to be saturated. This sample was not included in the analysis.

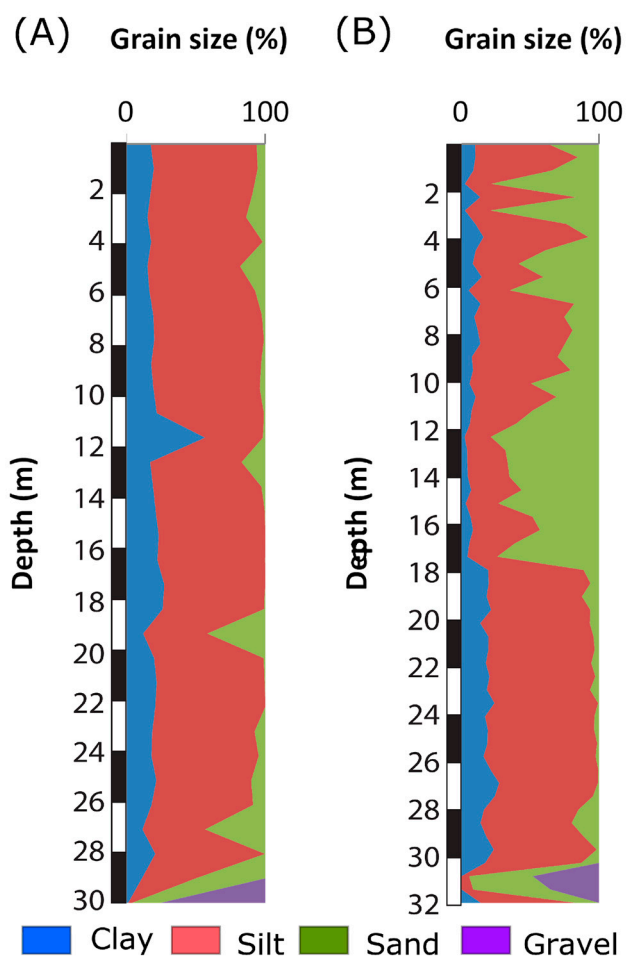


Figure S3. Down-core particle size distributions for (A) Core B1 and (B) Core B3 showing percentage gravel, sand, silt and clay.

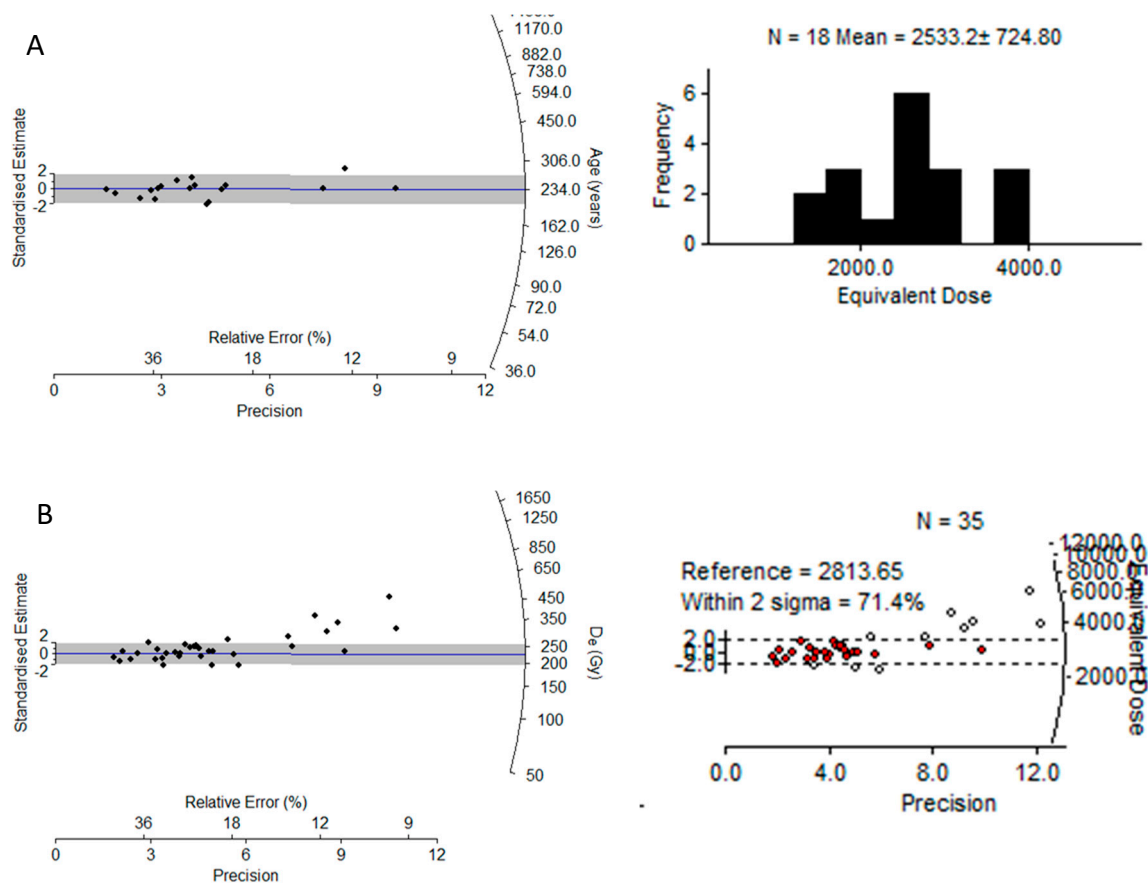


Figure S4. Quartz OSL radial plots and graphical representation of PDF<sub>Gaussian</sub> distributions for older samples: (A) sample 15-0210-0013 with an over-dispersion of ~12%, CAM accepted and multiple peaks are within uncertainty of each other; (B) sample 15-0210-0068 with an over-dispersion of ~21%. CAM, MAM and FMM (2 component mix) all identified multiple peaks within uncertainty of each other; the CAM was accepted.

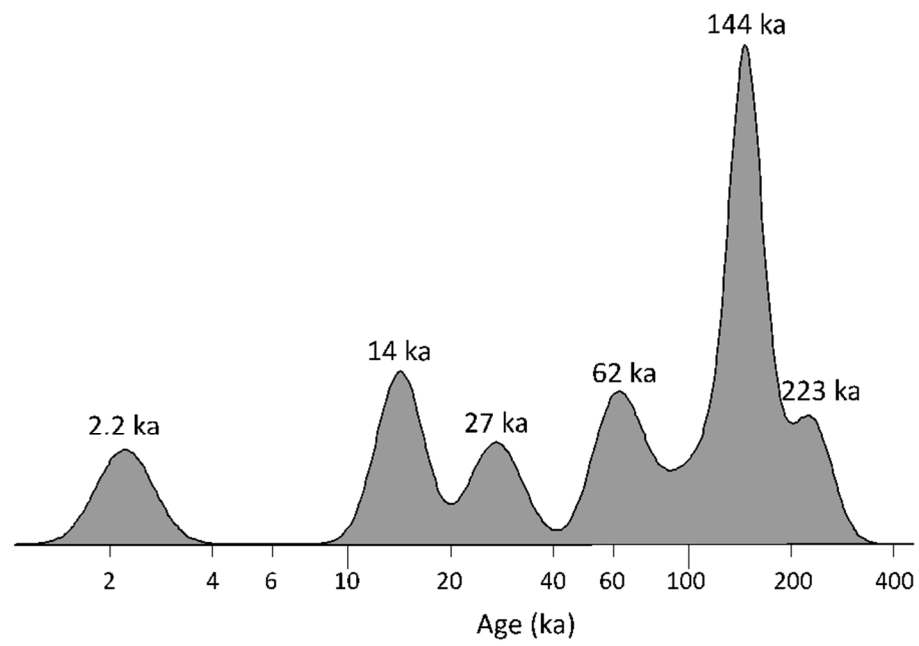


Figure S5. AKDE plot illustrating the main modes of date clusters.