



Supplementary Information for

Accidental synthesis of a previously unknown quasicrystal in the first atomic bomb test

Luca Bindi^a, William Kolb^b, G. Nelson Eby^c, Paul D. Asimow^d, Terry C. Wallace^e, Paul J. Steinhardt^{f,*}

^aDipartimento di Scienze della Terra, Università di Firenze, Via La Pira 4, Florence, I-50121, Italy; ^b2702 Church Creek Ln, Edgewater, MD-21037, USA; ^cDepartment of Environmental Earth and Atmospheric Sciences, University of Massachusetts, Lowell, MA-01854, USA; ^dDivision of Geological and Planetary Sciences, California Institute of Technology, Pasadena, CA-91125, USA; ^eLos Alamos National Laboratory, Los Alamos, NM-87545, USA; ^fDepartment of Physics, Princeton University, Jadwin Hall, Princeton, NJ-08544, USA. *corresponding author

Figure S1. Back-scattered electron scanning electron image of the studied trinitite sample. The small bright grain enclosed in the red dashed circle contains the quasicrystal. Electron microprobe spot analyses are indicated.

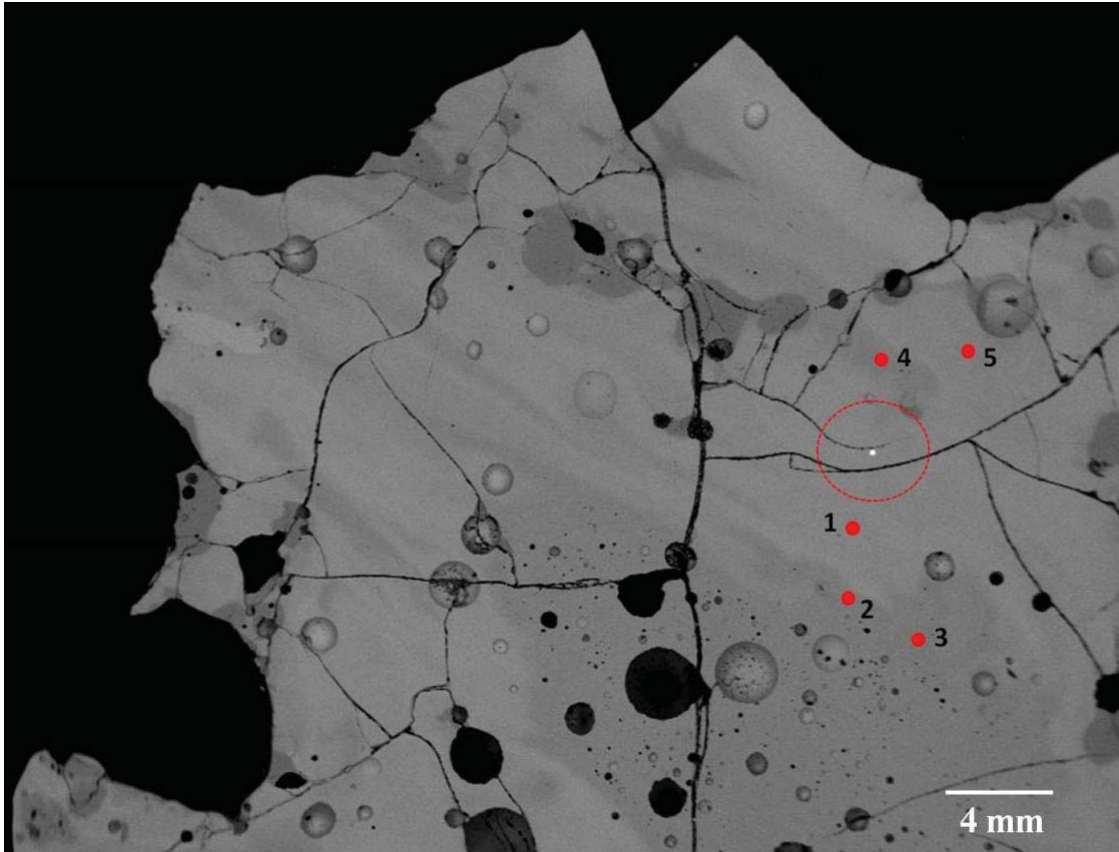


Table S1. Electron microprobe analyses of the spots indicated in Fig. S1.

	1	2	3	4	5
SiO ₂	72.52	69.62	69.52	66.31	69.08
Al ₂ O ₃	12.77	18.4	18.35	18.22	13.51
CaO	8.68	n.d.	n.d.	n.d.	8.9
Na ₂ O	0.05	n.d.	n.d.	n.d.	2.47
K ₂ O	5.92	11.9	11.89	15.41	5.88
Total	99.94	99.92	99.76	99.94	99.84

Note: n.d. = not determined, Major and minor elements were determined using a JEOL JXA-8600 electron microprobe at 15 kV accelerating voltage and 40 nA beam current (and a 1 μ m beam diameter), with 30 s as counting times. The standards used were diopside (Ca), sanidine (K) and albite (Na, Al, Si).