

Electronic Supplementary Information (ESI) MC-ICP-MS measurement conditions

Accurate measurement of uranium isotope ratios in solid samples by laser ablation multi-collector inductively coupled plasma mass spectrometry

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ESI Table 1 Optimised instrumental settings and data acquisition parameters

MC-ICP-MS instrument settings

Forward power (W)	1300
Cooling gas flow rate (L min ⁻¹)	13.0
Auxiliary gas flow rate (L min ⁻¹)	0.98-1.05
Nebulizer gas flow rate (L min ⁻¹)	0.85-0.90
Resolution	~ 300
Scan type	Static multi-collection
Cup configuration *	L1: ²³⁸ U, IC0: ²³⁶ U, L3: ²³⁵ U, IC1: ²³⁴ U
Time of data point acquisition (ms)	200

Aridus II settings

Solution uptake rate (μL min ⁻¹)	50
Spray chamber temperature (°C)	110
Membrane temperature (°C)	160
Sweep gas flow rate (L min ⁻¹)	4.20

Laser ablation conditions

LA-system	NWR-213 equipped with TV2 cell
Laser type	Nd:YAG
Ablation gas	Ar
Pulse duration	2.1 ns
Wavelength (nm)	213
Fluence (J cm ⁻²)	3-4
Repetition rate (Hz)	4
Ablation time (s)	3 (12 shots)
Spot size (μm)	8

* L1 and L3 denote Faraday detectors; IC0 and IC1 denote discrete dynode electron multipliers operated in pulse counting mode. IC0 is additionally equipped with a retardation filter for improving abundance sensitivity
