

Table 1. GPS outcrop location

Fault gouges: N35°36'21" / E137°29'49"
Host rock: N35°35'58" / E137°27'51"

Table 2. XRD data. Semi-quantification based on integrated intensity ratio using reference of corundum, WR whole rock.

Sample	ID #	Fraction (μm)	Smectite (%)	Illite (%)	Chlorite (%)	Quartz (%)	Plagioclase (%)	K-feldspar (%)
Atera 1	3369	<2	44	27	-	10	14	5
		2 – 6	22	20	-	21	31	6
		6 – 10	13	12	-	31	35	8
Atera 2	3370	<2	57	30	-	5	5	3
		2 – 6	43	17	-	18	18	4
Kawaue 1	3367	<2	9	33	-	20	28	11
Tsukechi River 1	3510	WR	-	-	6	39	51	5

Table 3. K - Ar standards and airshot data. References HD-B1 (Hess and Lippolt, 1994), LP6 (Odin et al., 1982), airshot (Steiger and Jäger, 1977).

CSIRO ID standard	K (%)	Rad. 40Ar (mol/g)	Rad. 40Ar (%)	Age* (Ma)	Error (Ma)	Remark % error to references
HD-B1-154	7.96	3.4055E-10	92.16	24.51	0.33	1.24
HD-B1-157	7.96	3.3524E-10	90.12	24.13	0.32	-0.33
HD-B1-156	7.96	3.4037E-10	91.30	24.50	1.38	1.20
LP6-171	8.37	1.9222E-09	97.12	127.77	1.64	-0.10
LP6-170	8.37	1.9144E-09	97.00	127.27	1.31	-0.49

Airshot ID	⁴⁰ Ar/ ³⁶ Ar	+/-
AS148-AirS-2	295.95	0.18
AS148-AirS-2	295.74	0.22
AS150-AirS-1	295.41	0.27
AS151-AirS-2	295.40	0.16

Table 4. K - Ar age data. WR whole rock, timescale Cohen et al. (2013).

Sample	Type	ID	K	Rad. 40Ar	Rad. ⁴⁰ Ar	Age	Error	Timescale
		(μm)	(%)	(mol/g)	(%)	(Ma)	(Ma)	Period-Epoch-Stage
Atera 1	welded tuff breccia	3369 <0.1	3.56	2.5354E-10	78.9	40.6	1.0	Paleogene – Eocene - Bartonian
		3369 <2	4.44	3.9201E-10	93.7	50.2	1.2	Paleogene – Eocene - Ypresian
		3369 2 - 6	4.00	4.1703E-10	94.9	59.1	1.4	Paleogene – Paleocene - Thanetian
		3369 6 - 10	3.92	4.1464E-10	95.7	60.0	1.4	Paleogene – Paleocene - Selandian
Atera 2	fault core	3370 <0.1	2.74	2.0091E-10	89.5	41.8	1.0	Paleogene – Eocene - Lutetian
		3370 <2	2.80	2.1694E-10	88.3	44.1	1.0	Paleogene – Eocene - Lutetian
		3370 2 - 6	3.18	2.9515E-10	92.6	52.7	1.2	Paleogene – Eocene - Ypresian
Kawaue 1	granite cataclasite	3367 <2	4.98	4.1180E-10	92.9	47.1	1.1	Paleogene – Eocene - Lutetian
Tsukechi River 1	welded tuff host rock	3510 WR	1.57	1.5170E-10	81.6	54.9	1.3	Paleogene – Eocene – Ypresian