

FILENAME: D:\FTZ\U38Y\TEMP\QZ12.FTZ
 QZ12, U38Y-65, ANTONIOS MARSELLOS, 23/MARCH/08

>>NEW PARAMETERS--ZETA METHOD<<

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 2.167E+05
 RELATIVE ERROR (%): 1.88
 EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 12.17
 ZETA FACTOR AND STANDARD ERROR (yr cm²): 382.20 11.00
 SIZE OF COUNTER SQUARE (cm²): 6.590E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U	+/-2s	Grain Age	Age (Ma)	Age (Ma)
								--95% ci--	--95% ci--	
1	8.54E+005	(9)	2.66E+006	(28)	16	149	56	13.5	5.5	29
2	1.52E+006	(15)	4.65E+006	(46)	15	261	77	13.6	7	24.6
3	5.06E+005	(3)	1.18E+006	(7)	9	66	48	18.2	3	77.3
4	8.54E+005	(9)	2.94E+006	(31)	16	165	59	12.2	5	25.9
5	1.99E+006	(21)	7.68E+006	(81)	16	431	97	10.8	6.3	17.5
6	6.74E+005	(4)	2.70E+006	(16)	9	152	75	10.7	2.5	32
7	1.30E+006	(12)	4.23E+006	(39)	14	237	76	12.9	6.1	24.8
8	2.02E+005	(2)	1.11E+006	(11)	15	62	37	8	0.8	34.4
9	3.79E+005	(3)	2.91E+006	(23)	12	163	68	5.6	1	17.9
10	9.48E+005	(10)	4.08E+006	(43)	16	229	70	9.7	4.3	19.5
11	5.69E+005	(6)	1.99E+006	(21)	16	112	48	12	3.9	30.3
12	5.06E+005	(3)	2.19E+006	(13)	9	123	67	9.9	1.7	34.7
13	1.04E+006	(11)	1.42E+006	(15)	16	80	41	30.4	12.6	70.4
14	4.74E+005	(5)	9.48E+005	(10)	16	53	33	21	5.5	66.2
15	6.64E+005	(7)	3.22E+006	(34)	16	181	62	8.7	3.2	19.5
16	4.74E+005	(5)	1.90E+006	(20)	16	107	47	10.6	3	28.4
17	8.54E+005	(9)	4.55E+006	(48)	16	256	74	7.9	3.3	16
18	1.26E+006	(10)	4.30E+006	(34)	12	241	83	12.3	5.4	25.2
19	5.06E+005	(3)	2.87E+006	(17)	9	161	77	7.6	1.4	25.2
20	1.23E+006	(13)	4.08E+006	(43)	16	229	70	12.6	6.2	23.7

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 Number of grains = 20

GRAIN AGES ORDERED WITH INCREASING AGE

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Grain Age	age 95.00%	(Ma) CI--	P(X2) (%)	Sum Age	age 95.00%	(Ma) CI--
9	3.79E+005	(3)	2.91E+006	(23)	5.6	1	17.9	100	5.6	1	17.9
19	5.06E+005	(3)	2.87E+006	(17)	7.6	1.4	25.2	73	6.4	2.2	14.7
17	8.54E+005	(9)	4.55E+006	(48)	7.9	3.3	16	87.7	7.1	3.8	12.3
8	2.02E+005	(2)	1.11E+006	(11)	8	0.8	34.4	96.6	7.2	4	12
15	6.64E+005	(7)	3.22E+006	(34)	8.7	3.2	19.5	98.3	7.5	4.6	11.6
10	9.48E+005	(10)	4.08E+006	(43)	9.7	4.3	19.5	98	8	5.4	11.6
12	5.06E+005	(3)	2.19E+006	(13)	9.9	1.7	34.7	99.2	8.1	5.5	11.6
16	4.74E+005	(5)	1.90E+006	(20)	10.6	3	28.4	99.5	8.3	5.8	11.7
6	6.74E+005	(4)	2.70E+006	(16)	10.7	2.5	32	99.7	8.5	6	11.7
5	1.99E+006	(21)	7.68E+006	(81)	10.8	6.3	17.5	99.5	9.1	6.9	12
11	5.69E+005	(6)	1.99E+006	(21)	12	3.9	30.3	99.6	9.3	7.1	12.1
4	8.54E+005	(9)	2.94E+006	(31)	12.2	5	25.9	99.6	9.5	7.4	12.2
18	1.26E+006	(10)	4.30E+006	(34)	12.3	5.4	25.2	99.7	9.8	7.7	12.3
20	1.23E+006	(13)	4.08E+006	(43)	12.6	6.2	23.7	99.6	10	8	12.5
7	1.30E+006	(12)	4.23E+006	(39)	12.9	6.1	24.8	99.7	10.2	8.3	12.7
1	8.54E+005	(9)	2.66E+006	(28)	13.5	5.5	29	99.7	10.4	8.5	12.8
2	1.52E+006	(15)	4.65E+006	(46)	13.6	7	24.6	99.6	10.7	8.8	13
3	5.06E+005	(3)	1.18E+006	(7)	18.2	3	77.3	99.7	10.8	8.9	13.1
14	4.74E+005	(5)	9.48E+005	(10)	21	5.5	66.2	99.2	10.9	9	13.3
13	1.04E+006	(11)	1.42E+006	(15)	30.4	12.6	70.4	81.8	11.4	9.5	13.8
POOL	8.67E+005	(160)	3.14E+006	(580)				81.8	11.4	9.5	13.8

MEAN URANIUM CONCENTRATION +/-2SE (ppm): 176.5, 16.1

POOLED AGE WITH 68% CONF. INTERVAL(Ma): 11.4, 10.4 -- 12.6 (-1.0 +1.1)

95% CONF. INTERVAL(Ma): 9.5 -- 13.8 (-2.0 +2.4)

REDUCED CHI^2, DEGREES OF FREEDOM: 0.7047, 19

CHI^2 PROBABILITY: 81.8%

>>> Beware: possible upward bias in Chi^2 probability due to low counts <<<

CENTRAL AGE WITH 68% CONF. INTERVAL(Ma): 11.4, 10.4 -- 12.6 (-1.0 +1.1)

95% CONF. INTERVAL(Ma): 9.5 -- 13.8 (-2.0 +2.4)

AGE DISPERSION (%): 0.2

CHI^2 AGE WITH 68% CONF. INTERVAL (Ma): 11.4, 10.4 -- 12.6 (-1.0 +1.1)

95% CONF. INTERVAL (Ma): 9.5 -- 13.8 (-2.0 +2.4)

NUMBER AND PERCENTAGE OF GRAINS: 20, 100%

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Kernel factor = .6 (Ratio of kernel window size to standard error)
Number of grains = 20

PEAKS IN PROBABILITY DISTRIBUTION

The modes in the distribution are found by inspecting the derivatives of the probability density as a function of Z.

Probability distribution uses grain-only standard errors.

Total probability mass integrates to N (= number of grains).

Probability density is given as grains per $\Delta Z=0.1$.

At 50 Ma, $\Delta Z=0.1$ is equivalent to a time interval of 5 m.y.

Total range for grain ages = 6.16 to 30.65 Ma

First Search: peaks with zero first derivatives.

AGE	PROBABILTY DENSITY AT PEAK	EST. N
(Ma)	(grains/DZ=0.1)	(grains)
11.89	2.264	26.11

Second search: find minima in the second derivative of the Gaussian probability density function.

AGE	PROBABILTY DENSITY AT PEAK	EST. N
(Ma)	(grains/DZ=0.1)	(grains)
7.17	0.804	9.27
11.96	2.263	26.10
30.39	0.299	3.45

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Kernel factor = .6 (Ratio of kernel window size to standard error)

Number of grains = 20 Barwidth (Z units) = .1

Histogram shown by asterisks and probability distribution by circles.

PROBABILITY DENSITY (PERCENT PER DELTA Z=0.1)

