

GSA Data Repository Item 2017306

Piraquive, A., Pinzón, E., Kammer, A., Bernet, M., and von Quadt, A., 2017, Early Neogene unroofing of the Sierra Nevada de Santa Marta, as determined from detrital geothermochronology and the petrology of clastic basin sediments: GSA Bulletin, <https://doi.org/10.1130/B31676.1>.

DATA REPOSITORY

Table DR1. U, Pb and Th isotopic data obtained using the LA-ICP-MS

Table DR2. Zircon and apatite fission track data, from the sedimentary rocks of the Aracataca and Palomino basins

TABLE DR2. ZIRCON AND APATITE FISSION TRACK DATA, FROM THE SEDIMENTARY ROCKS OF THE ARACATACA AND PALOMINO BASINS

Zircon Fission Track data																						
Sample	Lithology	Stratigraphic age	Elevation (m)	Latitude	Longitude	U (ppm)	2σ	Grains n	Ns	Ni	Counted squares	ζ estimate (Ma.cm ²)	se(ζ) std error on ζ estimate (Ma.cm ²)	P1	2σ se(t) (Frac)	P2	2σ se(t) (Frac)	P3	2σ se(t) (Frac)	P4	2σ se(t) (Frac)	
CP-088	Coarse Sandstone	Miocene	180	10°31'33"	74°03'13"	216	8	96	20034	5105	4606	141.03	2.32	32.9	± 15 (2%)	64.9	± 5 (37.4%)	103.6	± 6.9 (60.7%)			
CVI-1302	Conglomerate	Miocene	150	10°35'18"	74°05'06"	226	10	68	11865	2566	2249	141.03	2.32	29.2	± 3 (6.4%)	52	± 8 (18.9%)	103.8	± 6.6 (74.7%)			
EMP-16	Conglomerate	Lower Miocene	176	10°32'21"	74°03'50"	180	8	98	13572	2457	3441	128.02	1.87			56.8	± 11 (11.8%)	95.9	± 10 (72.5%)	140.9	± 29 (15.7%)	
EMP-49A	Conglomerate	Lower Miocene	55	11°12'33"	73°30'17"	180	8	97	17574	3314	3996	128.02	1.87			74.4	± 7 (37.1%)	107.4	± 14 (52.8%)	158.4	± 52 (10.1%)	
AP-045	Conglomerate	Miocene	55	11°13'12"	73°28'39"	89	4	101	17531	2781	6886	128.02	1.87	41	± 13.1 (1.4%)	89.6	± 9.4 (38.6%)	131.6	± 11.6 (60.6%)			
AP-046	Conglomerate	Miocene	65	11°13' 7.99"	73°28' 41.4"	97	5	158	13884	2172	4417	126.82	2.05	32.9	± 6.3 (5.1%)	79.6	± 15.2 (9%)	129.4	± 12.1 (74.1%)	250.6	± 68.7 (11.7%)	
AP-050	Conglomerate	Miocene	14	11°15' 29.78"	73°36' 47.4"	225	8	93	17166	5347	4696	126.82	2.05	38.9	± 4.5 (14.6%)	54.8	± 3.7 (47.3%)	94	± 14.6 (20.1%)	154.8	± 27.5 (18%)	
EMP-35b	Conglomerate	Miocene	0	11°15' 34.31"	73°29' 53.1"	129	6	99	15535	2288	3856	128.02	1.87			55.6	± 14.5 (1.8%)	104.9	± 7 (56.4)	170.5	± 21 (41.7%)	
Detrital Apatite																						
Apatite Fission Track data																						
Sample	Lithology	Stratigraphic age	Elevation (m)	Latitude	Longitude	U (ppm)	2σ	Grains n	Ns	Ni	Counted squares	ζ estimate (Ma.cm ²)	se(ζ) std error on ζ estimate (Ma.cm ²)	P1	2σ se(t) (Frac)	P2	2σ se(t) (Frac)	P3	2σ se(t) (Frac)			
CVI-1302	Conglomerate	Miocene	150	10°35'18"	74°05'06"	41	1	35	1382	7662	3350	270.07	6.38	19.2	± 4.2 (17.3%)	29.8	± 4.8 (48.8%)	42	± 5.7 (33.9%)			
EMP-16	Conglomerate	Lower Miocene	176	10°32'21"	74°03'50"	14	1	38	557	2169	3570	284.52	5.65			21.8	± 4 (41%)	59.9	± 9.3 (59%)			
AP-045	Conglomerate	Miocene	55	11°13'12"	73°28'39"	10	0	72	685	2369	5478	284.52	5.65			26.8	± 6.5 (31.3%)	52.3	± 6.3 (68.7%)			
EMP-49A	Conglomerate	Miocene	55	11°12'33"	73°30'17"	12	1	8	143	494	780	270.07	6.38			33.4	± 10.6 (72.6%)	59.2	± 36 (27.4%)			
Note: n = total number of grains counted; binomial peak- fit ages are given ± 2SE. The percentage of grains in a specific peak is also given.																						
All samples were counted at ¹ 1250 dry (¹ 100 objective, 1.25 tube factor, 10 oculars). Apatite samples by by A. Piraquive ζ (CN-1) of 284.52 ± 5.65 (± 1SE). Samples CVI-1302, EMP-16, AP-045, EMP-49A																						
Zircon Samples EMP-16, EMP-49A, AP-45, AP-46, AP-50 and EMP-35b were counted by E. Pinzón (CN-1 zeta 128.02 ± 1.87).																						
Zircon Samples CP-088 and CVI-1302 were counted by A. Piraquive (CN-1 zeta 141.03 ± 2.32). Depositional ages after Tschanz (1969)																						
Chi-squared test: values greater than 5% are considered to pass the test and represent a single age population.																						

Merged dataset:

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NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 3,06E+05

RELATIVE ERROR (%): 1,16

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 126,82 2,05SIZE OF COUNTER SQUARE (cm²): 8,30E-07**GRAIN AGES IN ORIGINAL ORDER**

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	1,33E+06	(33)	1,20E+05	(3)	30	20 21	200.3	66.5	1004.1
2	8,66E+06	(115)	2,26E+05	(3)	16	37 40	670.3	243.2	2896.0
3	4,02E+06	(70)	2,98E+06	(52)	21	488 135	26.0	17.9	38.0
4	2,85E+06	(71)	3,61E+05	(9)	30	59 38	148.8	75.7	339.0
5	4,50E+06	(56)	4,82E+05	(6)	15	79 62	174.2	77.6	494.5
6	4,22E+06	(84)	1,05E+06	(21)	24	172 75	76.6	47.4	130.4
7	6,43E+06	(320)	1,06E+06	(53)	60	174 48	114.9	86.0	153.4
8	7,04E+06	(146)	9,64E+05	(20)	25	158 70	139.0	87.7	234.3
9	2,83E+06	(47)	6,02E+05	(10)	20	99 61	89.3	45.2	199.1
10	1,53E+06	(61)	2,01E+05	(8)	48	33 23	143.6	70.0	348.2
11	5,02E+06	(150)	4,35E+05	(13)	36	71 39	217.3	125.6	416.2
12	2,98E+06	(89)	3,68E+05	(11)	36	60 36	152.9	83.0	317.6
13	3,50E+06	(93)	4,14E+05	(11)	32	68 40	159.7	86.8	331.0
14	1,73E+06	(86)	3,82E+05	(19)	60	62 28	86.5	52.7	151.0
15	7,11E+06	(354)	2,11E+06	(105)	60	345 68	64.7	51.9	80.6
16	1,03E+07	(256)	1,65E+06	(41)	30	269 84	119.5	86.1	170.5
17	1,79E+06	(89)	1,61E+05	(8)	60	26 18	208.3	103.9	495.4
18	3,31E+06	(275)	3,25E+05	(27)	100	53 20	193.4	131.3	298.2
19	3,61E+06	(54)	1,00E+06	(15)	18	164 84	68.9	38.7	131.8
20	1,76E+06	(146)	1,69E+05	(14)	100	28 15	196.9	115.6	368.3
21	6,53E+06	(130)	7,53E+05	(15)	24	123 63	164.2	97.4	301.7
22	9,17E+06	(426)	6,45E+05	(30)	56	106 38	268.1	187.0	400.5
23	1,48E+06	(60)	1,97E+05	(8)	49	32 22	141.3	68.8	342.8
24	1,72E+06	(143)	1,93E+05	(16)	100	32 16	169.4	102.2	304.1
25	3,66E+06	(76)	7,23E+05	(15)	25	118 60	96.6	55.7	181.5
26	6,27E+06	(104)	1,02E+06	(17)	20	168 80	116.5	70.2	208.0
27	9,98E+05	(58)	1,20E+05	(7)	70	20 14	155.5	72.7	404.2
28	7,68E+06	(153)	1,36E+06	(27)	24	222 85	108.4	72.1	169.9
29	5,83E+06	(121)	1,01E+06	(21)	25	166 72	110.0	69.4	184.4
30	3,64E+06	(151)	4,82E+05	(20)	50	79 35	143.7	90.8	241.9
31	3,66E+06	(146)	6,02E+05	(24)	48	99 40	116.2	75.7	187.3
32	1,90E+06	(158)	1,93E+05	(16)	100	32 16	186.9	113.2	334.4
33	5,78E+06	(288)	8,43E+05	(42)	60	138 42	131.1	95.1	185.8
34	1,12E+07	(84)	2,81E+06	(21)	9	460 199	76.6	47.4	130.4
35	4,88E+06	(385)	5,83E+05	(46)	95	95 28	159.7	118.1	221.6
36	5,71E+06	(166)	4,82E+05	(14)	35	79 41	223.4	131.7	416.0
37	3,04E+06	(53)	4,02E+05	(7)	21	66 48	142.2	66.1	371.8
38	1,08E+06	(44)	1,23E+05	(5)	49	20 17	163.7	67.4	528.9
39	2,11E+06	(70)	4,82E+05	(16)	40	79 39	83.6	48.5	154.6
40	7,48E+06	(621)	1,19E+06	(99)	100	195 39	119.8	96.8	148.3
41	8,49E+06	(296)	1,20E+06	(42)	42	197 61	134.7	97.8	190.8
42	4,63E+06	(73)	5,07E+05	(8)	19	83 57	171.4	84.6	411.7
43	2,70E+06	(179)	3,92E+05	(26)	80	64 25	131.4	87.5	206.6
44	3,23E+06	(268)	6,63E+05	(55)	100	108 29	92.9	69.5	124.1
45	2,98E+06	(99)	4,52E+05	(15)	40	74 38	125.5	73.5	233.0
46	2,25E+06	(140)	1,77E+05	(11)	75	29 17	238.8	132.3	486.8
47	6,25E+06	(363)	3,96E+05	(23)	70	65 27	296.9	197.5	471.3
48	3,83E+06	(127)	3,61E+05	(12)	40	59 33	199.5	112.4	395.2
49	1,89E+06	(47)	5,22E+05	(13)	30	85 47	69.1	37.2	139.7
50	1,03E+06	(77)	1,61E+05	(12)	90	26 15	121.8	66.9	246.4
51	4,78E+06	(119)	1,61E+05	(4)	30	26 25	532.4	215.6	1856.3
52	3,49E+06	(290)	4,22E+05	(35)	100	69 23	158.0	111.8	231.0

Merged dataset:

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Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
53	3,33E+06	(276)	4,94E+05	(41)	100	81 25	128.7	93.0	183.3
54	9,24E+05	(46)	1,41E+05	(7)	60	23 17	123.7	56.8	326.0
55	3,99E+06	(53)	6,78E+05	(9)	16	111 72	111.5	55.5	258.0
56	2,61E+06	(26)	2,01E+05	(2)	12	33 42	231.0	62.7	1885.8
57	5,18E+06	(86)	1,14E+06	(19)	20	187 85	86.5	52.7	151.0
58	2,51E+06	(75)	2,01E+05	(6)	36	33 26	232.1	105.3	647.6

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NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 3,06E+05

RELATIVE ERROR (%): 1,17

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 126,82 2,05SIZE OF COUNTER SQUARE (cm²): 8,30E-07

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)	Age	--95% CI--
59	6,02E+06	(250)	8,19E+05	(34)	50	134 46	140.5	98.6	207.4
60	4,06E+06	(101)	3,61E+05	(9)	30	59 38	210.7	109.3	472.4
61	2,53E+06	(147)	3,96E+05	(23)	70	65 27	122.1	79.0	198.8
62	6,69E+06	(50)	9,37E+05	(7)	9	153 112	134.5	62.2	352.6
63	1,97E+06	(80)	1,72E+05	(7)	49	28 21	213.6	101.9	545.7
64	6,02E+06	(100)	1,45E+06	(24)	20	236 96	79.9	51.1	130.8
65	6,61E+06	(351)	1,45E+06	(77)	64	237 54	87.3	68.2	111.8
66	9,29E+05	(27)	2,41E+05	(7)	35	39 29	73.2	31.7	200.5
67	4,76E+06	(79)	7,83E+05	(13)	20	128 70	115.6	64.8	227.2
68	3,27E+06	(114)	5,45E+05	(19)	42	89 40	114.6	70.8	197.5
69	3,10E+06	(108)	5,45E+05	(19)	42	89 40	108.6	66.9	187.6
70	3,07E+06	(252)	4,75E+05	(39)	99	78 25	123.7	88.5	178.2
71	4,70E+06	(195)	7,23E+05	(30)	50	118 43	124.3	84.9	189.3
72	1,14E+06	(57)	2,41E+05	(12)	60	39 22	90.5	48.7	186.1
73	1,08E+06	(27)	2,81E+05	(7)	30	46 34	73.2	31.7	200.5
74	6,27E+06	(156)	1,04E+06	(26)	30	171 66	114.8	76.0	181.3
75	7,92E+06	(322)	1,20E+06	(49)	49	197 56	125.9	93.4	173.7
76	5,16E+06	(60)	1,12E+06	(13)	14	183 100	88.1	48.4	175.5
77	1,45E+06	(42)	7,23E+05	(21)	35	118 51	38.5	22.4	68.7
78	6,20E+06	(72)	1,46E+06	(17)	14	239 114	81.1	47.7	147.1
79	1,42E+06	(59)	1,69E+05	(7)	50	28 20	158.3	74.1	411.2
80	4,31E+06	(143)	3,92E+05	(13)	40	64 35	207.6	119.7	398.3
81	3,15E+06	(94)	3,68E+05	(11)	36	60 36	161.6	87.9	334.8
82	1,05E+06	(21)	4,02E+05	(8)	24	66 45	50.1	21.6	131.7
83	5,16E+06	(210)	8,85E+05	(36)	49	145 48	111.8	78.6	164.0
84	2,28E+06	(34)	2,68E+05	(4)	18	44 41	157.4	58.5	610.2
85	1,41E+06	(35)	3,61E+05	(9)	30	59 38	74.0	35.4	176.1
86	3,51E+06	(70)	7,03E+05	(14)	24	115 60	95.4	53.9	184.0
87	3,21E+06	(24)	1,34E+05	(1)	9	22 36	396.5	75.5	8889.8
88	7,03E+06	(70)	1,10E+06	(11)	12	180 107	120.8	64.6	253.7
89	3,66E+06	(73)	6,02E+05	(12)	24	98 56	115.7	63.3	234.6
90	3,60E+06	(209)	4,30E+05	(25)	70	70 28	159.3	105.9	251.6
91	7,23E+06	(108)	1,27E+06	(19)	18	208 94	108.6	66.9	187.6
92	8,78E+05	(51)	4,99E+05	(29)	70	82 30	34.0	21.2	55.6
93	6,57E+06	(229)	8,89E+05	(31)	42	145 52	141.1	97.4	212.5
94	2,74E+06	(91)	1,57E+06	(52)	40	256 71	33.8	23.8	48.6
95	1,78E+06	(59)	9,34E+05	(31)	40	153 54	36.7	23.5	58.8
96	4,95E+06	(411)	6,75E+05	(56)	100	110 29	139.6	105.7	184.3
97	7,88E+06	(157)	6,53E+05	(13)	24	107 58	227.6	131.7	435.1
98	4,47E+06	(89)	9,54E+05	(19)	24	156 71	89.6	54.7	156.2
99	1,87E+06	(31)	2,41E+05	(4)	20	39 37	143.7	52.9	561.3
100	7,11E+06	(354)	1,20E+06	(60)	60	197 51	112.6	85.6	147.8
POOLED	3,79E+06	(13884)	5,92E+05	(2172)	4417	97 5	122.7	115.6	130.2

CHI² PROBABILITY (%): 0.0

POOLED AGE W/ 68% CONF. INTERVAL(Ma): 122.7, 119.0 -- 126.4 (-3.6 +3.8)
 95% CONF. INTERVAL(Ma): 115.6 -- 130.2 (-7.0 +7.5)

CENTRAL AGE W/ 68% CONF. INTERVAL(Ma): 117.6, 111.0 -- 124.5 (-6.6 +6.9)
 95% CONF. INTERVAL(Ma): 105.1 -- 131.6 (-12.5 +14.0)
 AGE DISPERSION (%): 47.2

Merged dataset:

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FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 4)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	64.80	0.771	9.6	9.65
2.	86.80	0.819	20.8	20.82
3.	122.60	0.865	41.5	41.48
4.	202.50	0.914	16.2	16.21

Total range for grain ages: 26,0 to 609,7 Ma
 Number of active grains (Num. used for fit): 100
 Number of removed grains: 0
 Degrees of freedom for fit: 93
 Average of the SE(Z)'s for the grains: 0,31
 Estimated width of peaks in PD plot in Z units: 0,36

PARAMETERS FOR BEST-FIT PEAKS

* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

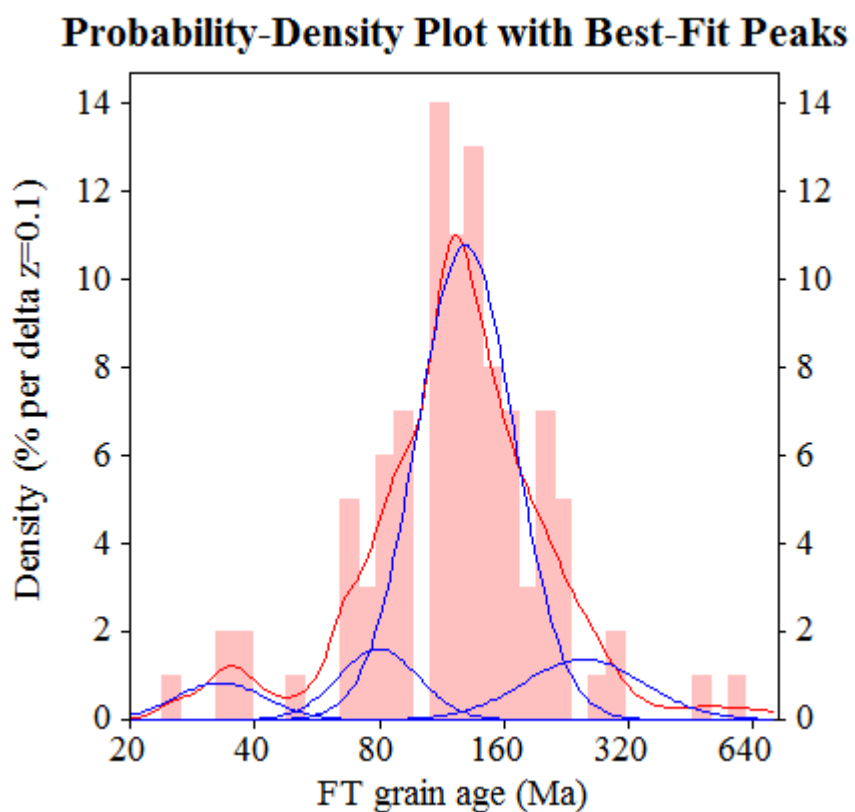
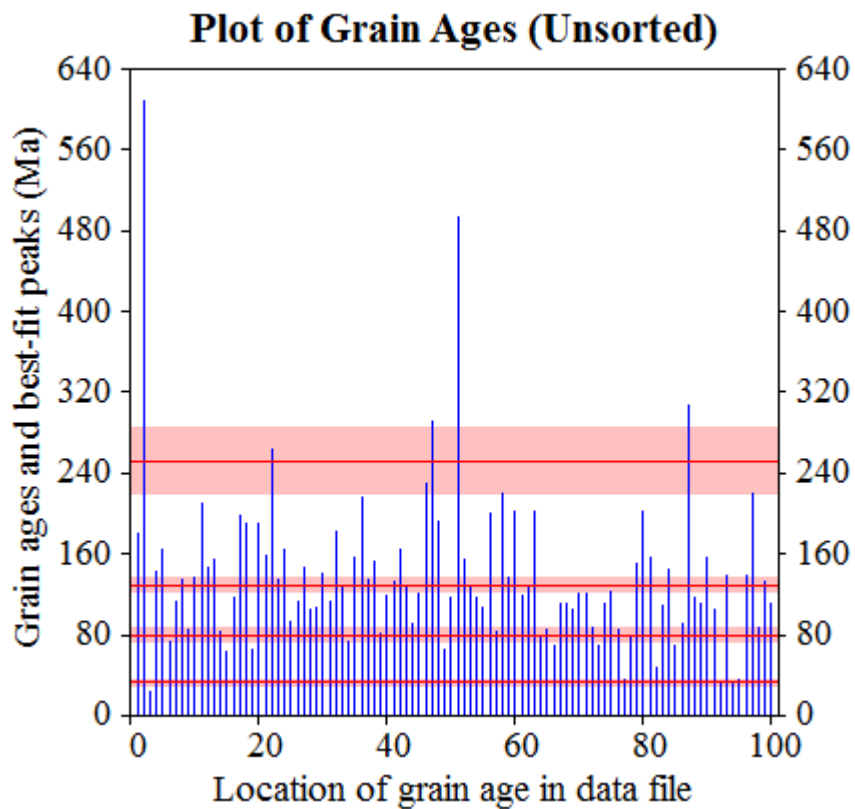
#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1.	32.9	-3,0 ...+3,3	-5,7 ...+6,9	0.25	5.1	2.3	5.1
2.	79.6	-7,3 ...+8,1	-13,7 ...+16,5	0.22	9.0	6.1	9.0
3.	129.4	-6,0 ...+6,3	-11,6 ...+12,7	0.27	74.1	8.0	74.1
4.	250.6	-30,8 ...+35,1	-56,9 ...+73,3	0.34	11.7	6.2	11.7

Log-likelihood for best fit: -324,328
 Chi-squared value for best fit: 93,580
 Reduced chi-squared value: 1,006
 Probability for F test: 4%
 Condition number for COVAR matrix: 51,79
 Number of iterations: 17

Merged dataset:

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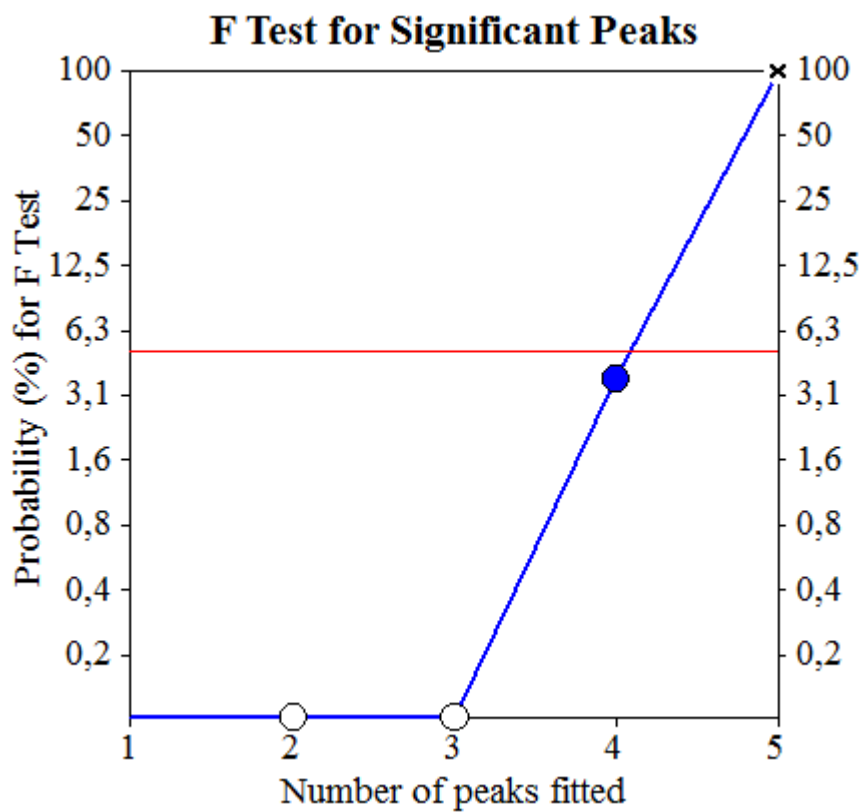
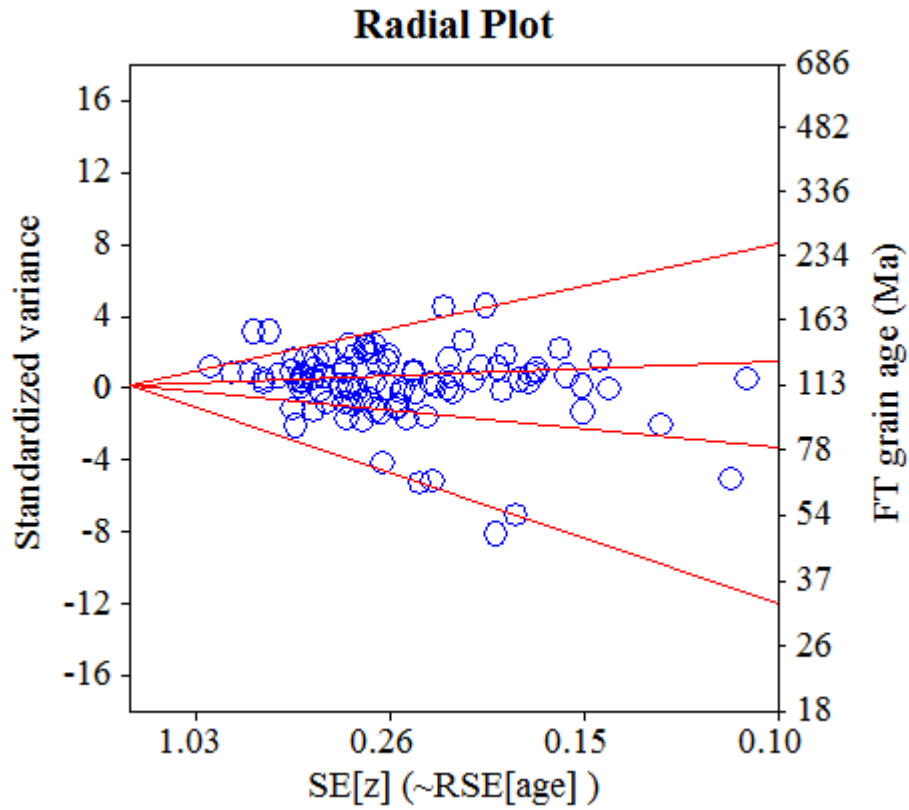
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Merged dataset:

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Merged dataset:

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NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 3,04E+05

RELATIVE ERROR (%): 1,14

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 126,82 2,05SIZE OF COUNTER SQUARE (cm²): 8,30E-07**GRAIN AGES IN ORIGINAL ORDER**

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	4,13E+06	(144)	2,01E+05	(7)	42	33 24	377.2	185.1	934.5
2	3,84E+06	(255)	1,93E+06	(128)	80	317 56	38.2	30.8	47.3
3	9,94E+06	(165)	2,23E+06	(37)	20	366 120	85.2	59.6	125.4
4	4,53E+06	(263)	1,45E+06	(84)	70	237 52	59.8	46.7	76.5
5	6,66E+06	(221)	1,08E+06	(36)	40	178 59	117.0	82.4	171.4
6	6,49E+06	(264)	6,64E+05	(27)	49	109 42	185.0	125.5	285.6
7	2,14E+06	(71)	2,71E+05	(9)	40	45 29	148.2	75.4	337.7
8	5,12E+06	(153)	1,41E+06	(42)	36	231 71	69.7	49.5	100.7
9	5,66E+06	(94)	3,01E+05	(5)	20	49 42	342.8	148.3	1053.0
10	4,82E+06	(120)	1,85E+06	(46)	30	303 89	50.1	35.4	72.0
11	1,70E+06	(113)	2,11E+05	(14)	80	35 18	152.4	88.5	287.7
12	5,71E+06	(166)	7,23E+05	(21)	35	119 51	149.8	95.8	248.3
13	4,72E+06	(47)	1,00E+06	(10)	12	165 102	89.0	45.1	198.4
14	4,80E+06	(319)	5,87E+05	(39)	80	96 31	155.4	111.9	222.5
15	3,17E+06	(158)	1,51E+06	(75)	60	247 57	40.3	30.6	53.1
16	6,55E+06	(136)	1,30E+06	(27)	25	214 82	96.0	63.6	151.2
17	2,86E+06	(190)	5,57E+05	(37)	80	92 30	98.0	69.0	143.6
18	3,41E+06	(198)	1,70E+06	(99)	70	280 56	38.3	30.0	48.8
19	5,69E+06	(85)	1,54E+06	(23)	18	253 104	70.6	44.4	117.5
20	4,39E+06	(91)	1,54E+06	(32)	25	253 89	54.5	36.2	84.4
21	4,42E+06	(33)	6,69E+05	(5)	9	110 94	122.8	49.2	405.1
22	3,98E+06	(132)	1,69E+06	(56)	40	277 74	45.3	32.9	63.1
23	4,60E+06	(382)	1,57E+06	(130)	100	257 45	56.3	46.0	68.8
24	8,43E+06	(84)	1,71E+06	(17)	12	280 134	94.0	55.9	169.2
25	2,33E+06	(31)	7,53E+05	(10)	16	124 76	58.9	28.5	135.4
26	5,01E+06	(208)	1,37E+06	(57)	50	226 60	69.9	52.1	95.5
27	4,46E+06	(148)	1,96E+06	(65)	40	322 80	43.5	32.5	58.2
28	7,99E+06	(232)	1,20E+06	(35)	35	198 67	126.2	88.7	185.6
29	4,81E+06	(399)	9,76E+05	(81)	100	160 36	93.8	73.8	119.2
30	6,44E+06	(171)	7,91E+05	(21)	32	130 56	154.2	98.8	255.5
31	5,20E+06	(108)	1,73E+06	(36)	25	285 95	57.5	39.2	86.4
32	8,19E+06	(408)	2,53E+06	(126)	60	416 75	62.0	50.6	75.8
33	3,41E+06	(198)	6,88E+05	(40)	70	113 36	94.5	67.3	136.5
34	4,99E+06	(145)	5,51E+05	(16)	35	90 45	171.1	103.3	306.9
35	5,16E+06	(214)	1,13E+06	(47)	50	186 54	87.1	63.5	122.2
36	3,04E+06	(252)	1,00E+06	(83)	100	164 36	58.0	45.2	74.4
37	4,55E+06	(378)	1,49E+06	(124)	100	245 44	58.3	47.5	71.6
38	5,62E+06	(112)	1,46E+06	(29)	24	239 88	73.8	49.0	115.4
39	1,87E+06	(124)	3,31E+05	(22)	80	54 23	107.2	68.3	177.5
40	2,54E+06	(76)	6,36E+05	(19)	36	104 47	76.3	46.0	133.9
41	8,73E+06	(87)	1,51E+06	(15)	12	247 126	110.0	63.9	205.4
42	5,09E+06	(296)	2,08E+06	(121)	70	342 63	46.9	37.8	58.0
43	5,31E+06	(141)	2,90E+06	(77)	32	476 109	35.0	26.5	46.3
44	4,61E+06	(268)	1,03E+06	(60)	70	170 44	85.0	64.2	112.4
45	4,50E+06	(56)	1,61E+06	(20)	15	264 117	53.5	31.8	94.4
46	5,50E+06	(219)	8,53E+05	(34)	48	140 48	122.7	85.7	181.7
47	5,83E+06	(121)	9,64E+05	(20)	25	158 70	115.0	71.9	195.1
48	6,02E+06	(80)	2,33E+06	(31)	16	383 137	49.5	32.4	77.6
49	4,75E+06	(197)	2,55E+06	(106)	50	420 82	35.6	28.1	45.2
50	6,78E+06	(563)	2,22E+06	(184)	100	364 54	58.6	49.5	69.5
51	3,54E+06	(294)	1,30E+06	(108)	100	214 41	52.1	41.7	65.1
52	5,83E+06	(237)	2,26E+06	(92)	49	372 78	49.3	38.7	62.8

Merged dataset:

C:\BH2\Edna\6-2015\AP-050\AP_050-2A.FTZ

C:\BH2\Edna\6-2015\AP-050\AP_050-1.ftz

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
53	4,75E+06	(197)	1,54E+06	(64)	50	253 63	58.7	44.2	77.8
54	4,67E+06	(388)	1,42E+06	(118)	100	234 43	62.9	51.1	77.5
55	4,55E+06	(151)	1,75E+06	(58)	40	287 75	50.0	36.8	68.9
56	5,42E+06	(135)	1,73E+06	(43)	30	284 86	60.2	42.5	87.0
57	4,92E+06	(204)	1,88E+06	(78)	50	309 70	50.0	38.5	64.9
58	4,71E+06	(313)	1,70E+06	(113)	80	280 53	53.0	42.7	65.9
59	3,52E+06	(292)	1,61E+06	(134)	100	265 46	41.8	34.0	51.4
60	3,10E+06	(90)	1,10E+06	(32)	35	181 64	53.9	35.8	83.5
61	1,19E+07	(158)	1,43E+06	(19)	16	235 107	157.4	98.6	268.2
62	1,05E+07	(174)	4,28E+06	(71)	20	703 167	46.8	35.5	61.7
63	5,07E+06	(202)	2,11E+06	(84)	48	346 76	46.0	35.6	59.4
64	5,64E+06	(117)	7,23E+05	(15)	25	119 60	147.4	87.0	271.9
65	6,02E+06	(300)	2,41E+06	(120)	60	396 73	47.9	38.7	59.3
66	4,54E+06	(226)	1,65E+06	(82)	60	270 60	52.7	40.9	67.9
67	4,42E+06	(55)	8,03E+05	(10)	15	132 81	103.9	53.4	229.6
68	4,72E+06	(274)	1,22E+06	(71)	70	201 48	73.6	56.6	95.5
69	2,65E+06	(77)	1,96E+06	(57)	35	322 85	26.0	18.2	37.3
70	4,08E+06	(339)	2,14E+06	(178)	100	352 53	36.6	30.4	44.0
71	3,95E+06	(164)	2,19E+06	(91)	50	360 76	34.5	26.7	44.7
72	4,82E+06	(240)	1,79E+06	(89)	60	294 62	51.6	40.4	65.9
73	5,06E+06	(126)	7,23E+05	(18)	30	119 55	132.7	81.5	231.3
74	2,41E+06	(40)	2,41E+05	(4)	20	40 37	183.7	69.4	703.2
75	4,73E+06	(110)	4,73E+05	(11)	28	78 46	187.7	102.9	386.3
76	4,04E+06	(67)	2,17E+06	(36)	20	356 118	35.8	23.6	55.3
77	4,30E+06	(125)	7,23E+05	(21)	35	119 51	113.2	71.6	189.4

Merged dataset:

C:\BH2\Edna\6-2015\AP-050\AP_050-2A.FTZ

C:\BH2\Edna\6-2015\AP-050\AP_050-1.ftz

NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 3,05E+05

RELATIVE ERROR (%): 1,14

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 126,82 2,05SIZE OF COUNTER SQUARE (cm²): 8,30E-07

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
78	5,27E+06	(328)	1,70E+06	(106)	75	279 55	59.3	47.5	73.9
79	3,57E+06	(296)	1,19E+06	(99)	100	196 39	57.3	45.5	72.0
80	3,19E+06	(238)	6,56E+05	(49)	90	108 31	93.0	68.4	129.2
81	3,23E+06	(268)	1,36E+06	(113)	100	223 42	45.5	36.4	56.8
82	3,60E+06	(239)	1,17E+06	(78)	80	193 44	58.6	45.3	75.7
83	4,56E+06	(159)	2,18E+06	(76)	42	358 82	40.1	30.4	52.7
84	3,98E+06	(330)	1,51E+06	(125)	100	247 44	50.6	41.1	62.3
85	3,96E+06	(263)	1,45E+06	(96)	80	237 49	52.5	41.5	66.4
86	1,39E+06	(115)	3,37E+05	(28)	100	55 21	78.6	51.9	123.6
87	5,46E+06	(136)	2,17E+06	(54)	30	356 97	48.4	35.1	67.7
88	2,74E+06	(91)	6,93E+05	(23)	40	114 47	75.6	47.8	125.5
89	6,58E+06	(131)	2,61E+06	(52)	24	428 119	48.4	34.9	68.2
90	2,60E+06	(54)	1,20E+06	(25)	25	198 78	41.5	25.5	69.7
91	1,36E+06	(54)	4,52E+05	(18)	48	74 35	57.4	33.4	104.3
92	3,92E+06	(130)	1,54E+06	(51)	40	252 70	49.0	35.3	69.2
93	4,63E+06	(123)	2,00E+06	(53)	32	327 90	44.6	32.1	62.9
POOLED		4,40E+06 (17166)	1,37E+06 (5347)		4696	225 8	61.7	58.7	64.8

CHI² PROBABILITY (%): 0.0

POOLED AGE W/	68% CONF. INTERVAL(Ma):	61.7,	60.1 --	63.2 (-1.5	+1.6)
	95% CONF. INTERVAL(Ma):		58.7 --	64.8 (-3.0	+3.1)
CENTRAL AGE W/	68% CONF. INTERVAL(Ma):	65.6,	62.4 --	69.0 (-3.2	+3.4)
	95% CONF. INTERVAL(Ma):		59.5 --	72.4 (-6.2	+6.8)
	AGE DISPERSION (%):	41.2			

Merged dataset:

C:\BH2\Edna\6-2015\AP-050\AP_050-2A.FTZ

C:\BH2\Edna\6-2015\AP-050\AP_050-1.ftz

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 4)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	36.60	0.655	17.4	16.17
2.	48.90	0.718	41.5	38.57
3.	61.70	0.762	32.4	30.10
4.	361.60	0.951	1.3	1.21

Total range for grain ages: 26,0 to 361,6 Ma
 Number of active grains (Num. used for fit): 93
 Number of removed grains: 0
 Degrees of freedom for fit: 86
 Average of the SE(Z)'s for the grains: 0,21
 Estimated width of peaks in PD plot in Z units: 0,24

PARAMETERS FOR BEST-FIT PEAKS

* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	38.9	-2,2 ...+2,3	-4,2 ...+4,7	0.15	14.6	5.5	13.6
2.	54.8	-1,8 ...+1,9	-3,5 ...+3,8	0.16	47.3	6.9	44.0
3.	94.0	-7,2 ...+7,7	-13,5 ...+15,8	0.22	20.1	6.4	18.7
4.	154.8	-13,5 ...+14,7	-25,3 ...+30,1	0.29	18.0	6.2	16.7

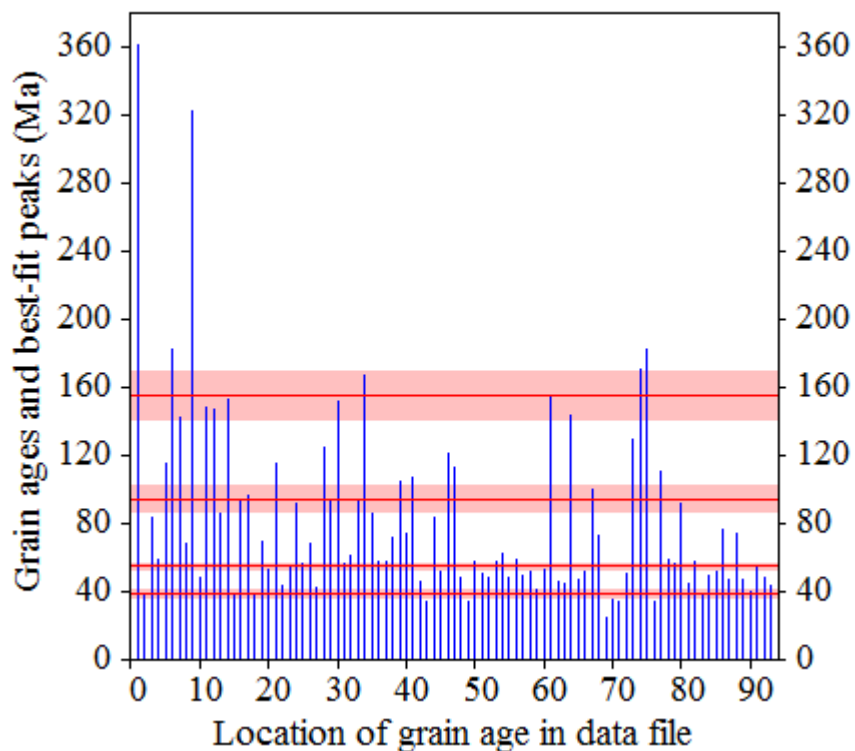
Log-likelihood for best fit: -380,676
 Chi-squared value for best fit: 93,978
 Reduced chi-squared value: 1,093
 Probability for F test: 0%
 Condition number for COVAR matrix: 20,75
 Number of iterations: 14

Merged dataset:

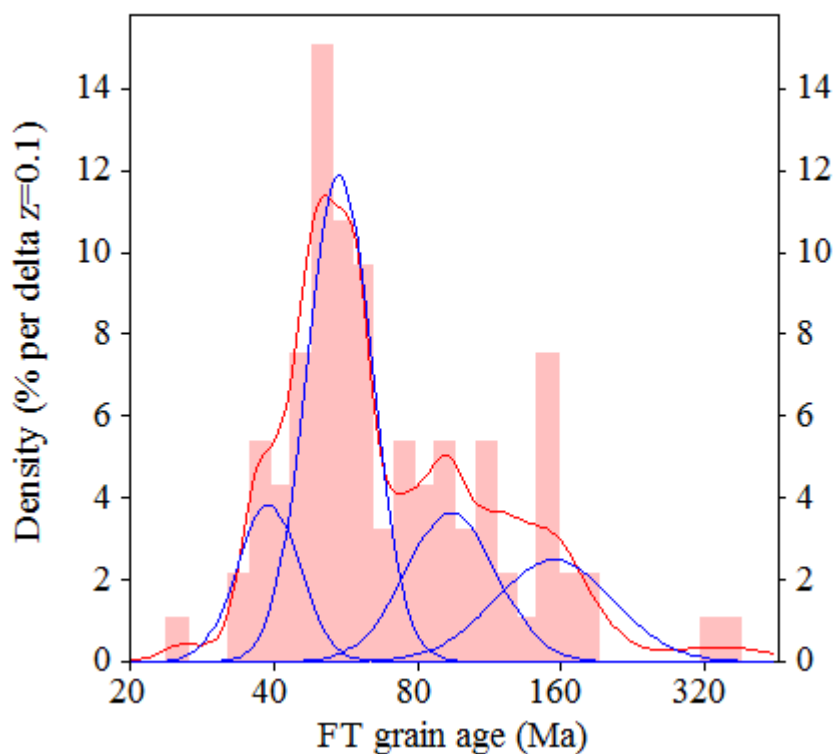
C:\BH2\Edna\6-2015\AP-050\AP_050-2A.FTZ

C:\BH2\Edna\6-2015\AP-050\AP_050-1.ftz

Plot of Grain Ages (Unsorted)



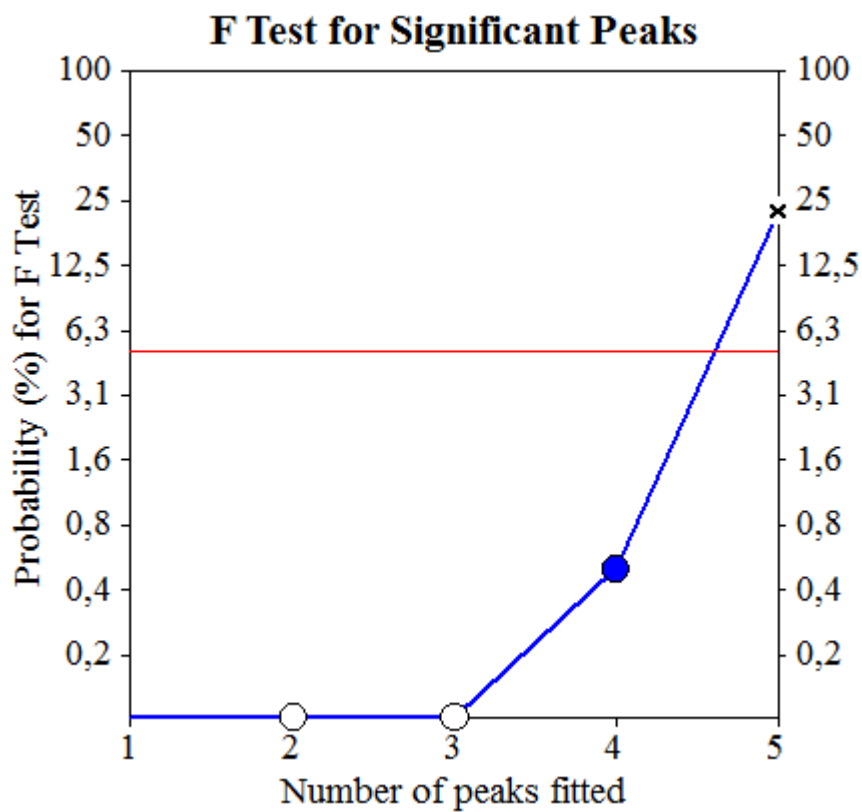
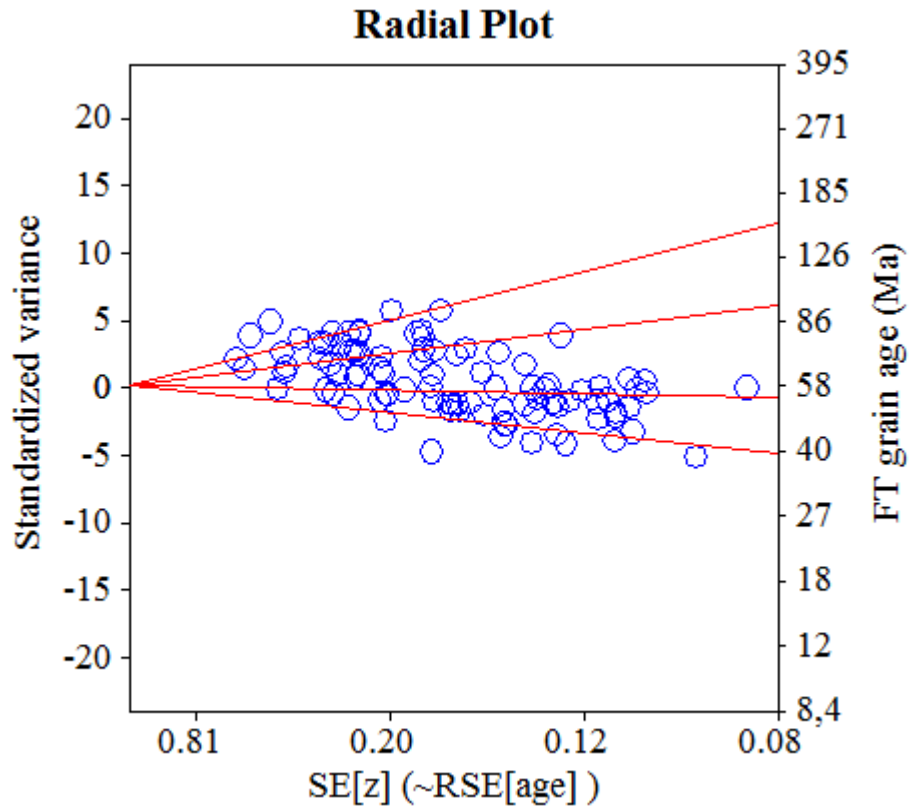
Probability-Density Plot with Best-Fit Peaks



Merged dataset:

C:\BH2\Edna\6-2015\AP-050\AP_050-2A.FTZ

C:\BH2\Edna\6-2015\AP-050\AP_050-1.ftz



Datafile: C:\BH2\Edna\12-2015\AP-045\AP_45_12_2015-19.ftz

Title: Sample No. AP-45 Irr 12-2015-19

NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 2,74E+05

RELATIVE ERROR (%): 1,20

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 128,02 1,87SIZE OF COUNTER SQUARE (cm²): 8,30E-07**GRAIN AGES IN ORIGINAL ORDER**

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	7,95E+05	(66)	1,08E+05	(9)	100	20 13	125.2	63.3	286.7
2	3,71E+06	(148)	5,77E+05	(23)	48	106 44	111.0	71.8	180.8
3	3,49E+06	(87)	3,21E+05	(8)	30	59 40	184.3	91.8	439.7
4	2,09E+06	(97)	3,44E+05	(16)	56	63 31	104.4	61.8	190.3
5	2,23E+06	(185)	3,01E+05	(25)	100	55 22	127.5	84.4	202.3
6	4,43E+06	(92)	4,34E+05	(9)	25	79 51	173.7	89.6	391.7
7	3,22E+06	(267)	3,86E+05	(32)	100	70 25	143.8	100.1	214.5
8	1,36E+06	(113)	2,29E+05	(19)	100	42 19	102.5	63.3	177.0
9	9,29E+05	(27)	2,07E+05	(6)	35	38 30	76.7	31.8	229.3
10	1,31E+06	(109)	1,45E+05	(12)	100	26 15	155.2	86.8	309.8
11	4,19E+06	(87)	9,64E+05	(20)	25	176 78	75.2	46.2	129.5
12	4,60E+06	(191)	5,30E+05	(22)	50	97 41	149.2	96.7	243.8
13	5,07E+06	(202)	1,15E+06	(46)	48	211 62	76.2	55.3	107.5
14	2,75E+06	(137)	5,02E+05	(25)	60	92 36	94.7	62.0	151.7
15	2,80E+06	(232)	4,22E+05	(35)	100	77 26	114.6	80.5	168.6
16	1,05E+06	(87)	8,43E+04	(7)	100	15 11	209.6	100.4	534.6
17	1,13E+06	(94)	1,45E+05	(12)	100	26 15	134.1	74.4	269.3
18	2,24E+06	(67)	2,68E+05	(8)	36	49 34	142.4	69.9	344.2
19	3,81E+06	(316)	5,06E+05	(42)	100	93 28	129.9	94.5	183.9
20	2,97E+06	(74)	2,81E+05	(7)	30	51 38	178.7	84.9	459.6
21	5,22E+06	(52)	9,04E+05	(9)	12	165 107	98.9	49.2	229.4
22	2,77E+06	(92)	3,61E+05	(12)	40	66 37	131.3	72.8	263.8
23	4,18E+06	(104)	7,23E+05	(18)	30	132 62	99.6	60.6	175.0
24	2,01E+06	(100)	1,81E+05	(9)	60	33 21	188.6	97.7	423.7
25	2,74E+06	(205)	3,21E+05	(24)	90	59 24	146.9	96.9	234.6
26	3,06E+06	(203)	7,08E+05	(47)	80	129 38	75.0	54.5	105.4
27	6,36E+06	(132)	1,06E+06	(22)	25	194 82	103.5	66.2	171.1
28	3,94E+06	(327)	6,14E+05	(51)	100	112 31	111.0	82.7	152.2
29	4,56E+06	(227)	5,02E+05	(25)	60	92 36	156.1	104.0	246.2
30	2,18E+06	(152)	5,88E+05	(41)	84	108 33	64.4	45.5	93.4
31	9,11E+06	(121)	1,66E+06	(22)	16	303 128	95.0	60.5	157.5
32	3,92E+06	(130)	2,41E+05	(8)	40	44 30	273.2	138.6	640.2
33	3,78E+06	(314)	4,94E+05	(41)	100	90 28	132.2	95.8	187.9
34	1,83E+06	(152)	1,93E+05	(16)	100	35 17	162.7	98.3	291.8
35	9,64E+05	(80)	9,64E+04	(8)	100	18 12	169.6	84.1	406.5
36	2,37E+06	(197)	2,05E+05	(17)	100	37 18	198.0	122.3	346.0
37	4,47E+06	(371)	5,54E+05	(46)	100	101 30	139.2	102.8	193.5
38	2,09E+06	(111)	4,89E+05	(26)	64	89 35	74.0	48.2	118.4
39	1,98E+06	(164)	2,41E+05	(20)	100	44 19	141.0	89.3	236.9
40	2,68E+06	(80)	4,69E+05	(14)	36	86 45	98.3	56.0	188.5
41	7,63E+06	(95)	1,12E+06	(14)	15	206 108	116.6	67.0	221.8
42	3,86E+06	(96)	7,63E+05	(19)	30	139 63	87.2	53.4	151.6
43	3,11E+06	(258)	6,75E+05	(56)	100	123 33	79.5	59.5	106.0
44	6,21E+05	(33)	5,65E+04	(3)	64	10 11	181.2	60.1	913.6
45	1,55E+06	(129)	2,89E+05	(24)	100	53 21	92.9	60.2	150.5
46	1,99E+06	(165)	2,89E+05	(24)	100	53 21	118.6	77.6	190.5
47	2,60E+06	(216)	5,42E+05	(45)	100	99 29	83.2	60.4	117.6
48	3,29E+06	(134)	2,21E+05	(9)	49	40 26	251.3	131.8	557.8
49	1,80E+06	(149)	3,98E+05	(33)	100	73 25	78.3	53.6	118.0
50	3,52E+06	(146)	7,95E+05	(33)	50	145 50	76.7	52.5	115.8
51	7,57E+06	(157)	1,35E+06	(28)	25	247 93	97.0	65.0	150.8
52	4,24E+06	(88)	1,06E+06	(22)	25	194 82	69.3	43.3	116.4
53	5,28E+06	(438)	1,01E+06	(84)	100	185 40	90.1	71.3	113.9

Datafile: C:\BH2\Edna\12-2015\AP-045\AP_45_12_2015-19.ftz

Title: Sample No. AP-45 Irr 12-2015-19

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
54	6,84E+06	(142)	1,20E+06	(25)	25	220 87	98.1	64.3	157.0
55	2,43E+06	(202)	3,98E+05	(33)	100	73 25	105.8	73.4	158.1
56	1,95E+06	(162)	3,01E+05	(25)	100	55 22	111.8	73.7	178.1
57	2,25E+06	(56)	2,41E+05	(6)	30	44 35	157.6	70.1	448.3
58	4,26E+06	(99)	6,02E+05	(14)	28	110 58	121.4	70.0	230.6
59	4,59E+06	(137)	1,94E+06	(58)	36	355 93	41.2	30.1	57.0
60	3,94E+06	(229)	9,98E+05	(58)	70	183 48	68.2	51.1	90.9
61	3,42E+06	(284)	4,46E+05	(37)	100	81 27	132.5	94.4	192.0
62	4,85E+06	(322)	1,02E+06	(68)	80	187 45	81.8	62.9	106.2
63	1,10E+06	(91)	1,33E+05	(11)	100	24 14	141.4	76.7	293.7
64	2,46E+06	(204)	3,86E+05	(32)	100	70 25	110.2	76.1	165.5
65	2,91E+06	(145)	5,02E+05	(25)	60	92 36	100.2	65.7	160.2
66	1,93E+06	(160)	3,49E+05	(29)	100	64 24	95.4	64.4	147.3
67	4,26E+06	(212)	6,02E+05	(30)	60	110 40	122.0	83.5	185.3
68	3,33E+06	(276)	6,75E+05	(56)	100	123 33	85.0	63.8	113.1
69	4,54E+06	(377)	4,58E+05	(38)	100	84 27	170.7	122.9	244.8
70	7,33E+06	(219)	9,71E+05	(29)	36	177 65	130.2	88.8	199.1
71	4,58E+06	(380)	5,30E+05	(44)	100	97 29	149.0	109.4	208.4
72	2,95E+06	(88)	4,02E+05	(12)	36	73 42	125.6	69.5	253.0
73	1,77E+06	(88)	3,01E+05	(15)	60	55 28	101.0	58.7	188.6
74	5,45E+06	(226)	8,43E+05	(35)	50	154 52	111.6	78.4	164.4
75	3,73E+06	(310)	7,35E+05	(61)	100	134 34	87.7	66.6	115.3
76	3,69E+06	(230)	4,66E+05	(29)	75	85 31	136.7	93.4	208.7
77	6,52E+06	(379)	1,22E+06	(71)	70	223 53	92.1	71.5	118.7
78	2,43E+06	(97)	4,02E+05	(16)	48	73 36	104.4	61.8	190.3
79	4,92E+06	(204)	7,47E+05	(31)	50	137 49	113.7	78.1	171.8
80	3,86E+06	(192)	4,42E+05	(22)	60	81 34	150.0	97.2	245.0
81	1,27E+06	(21)	6,63E+05	(11)	20	121 72	33.1	15.4	76.3
82	4,10E+06	(340)	5,06E+05	(42)	100	93 28	139.7	101.7	197.4
83	1,54E+06	(51)	3,31E+05	(11)	40	61 36	79.7	41.6	170.5
84	4,64E+06	(385)	8,07E+05	(67)	100	148 36	99.1	76.5	128.4
85	8,31E+06	(69)	9,64E+05	(8)	10	176 121	146.6	72.1	353.8
86	2,57E+06	(213)	5,66E+05	(47)	100	104 30	78.6	57.3	110.4
87	3,71E+06	(154)	5,54E+05	(23)	50	101 42	115.5	74.8	187.8
88	2,67E+06	(222)	3,49E+05	(29)	100	64 24	132.0	90.0	201.7
89	4,47E+06	(297)	7,38E+05	(49)	80	135 38	105.0	77.7	145.1
90	2,92E+06	(242)	3,61E+05	(30)	100	66 24	139.0	95.6	210.5
91	1,66E+06	(138)	2,65E+05	(22)	100	48 20	108.2	69.3	178.5
92	3,69E+06	(306)	5,42E+05	(45)	100	99 29	117.6	86.2	164.7
93	2,79E+06	(139)	7,43E+05	(37)	60	136 44	65.2	45.3	96.6
94	1,74E+06	(52)	4,02E+05	(12)	36	73 42	74.6	39.8	154.3
95	5,85E+06	(238)	8,61E+05	(35)	49	157 53	117.5	82.6	172.8
96	2,98E+06	(247)	3,37E+05	(28)	100	62 23	151.8	103.3	233.1
97	4,62E+06	(230)	8,23E+05	(41)	60	151 47	97.1	69.8	139.1
98	4,28E+06	(213)	4,62E+05	(23)	60	84 35	159.1	104.3	256.3
99	2,00E+06	(166)	3,49E+05	(29)	100	64 24	99.0	66.8	152.6
100	1,88E+06	(156)	3,13E+05	(26)	100	57 22	103.6	68.6	163.8
101	6,02E+06	(45)	4,02E+05	(3)	9	73 79	245.5	83.7	1201.9
POOLED		3,07E+06(17531)	4,87E+05(2781)		6886	89 4	109.4	103.6	115.5

CHI^2 PROBABILITY (%): 0.0

POOLED AGE W/ 68% CONF. INTERVAL(Ma): 109.4, 106.4 -- 112.5 (-3.0 +3.1)
95% CONF. INTERVAL(Ma): 103.6 -- 115.5 (-5.8 +6.1)

CENTRAL AGE W/ 68% CONF. INTERVAL(Ma): 109.7, 105.7 -- 113.8 (-4.0 +4.1)
95% CONF. INTERVAL(Ma): 102.1 -- 117.9 (-7.6 +8.2)
AGE DISPERSION (%): 23.4

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	40.90	0.701	2.0	2.06
2.	109.40	0.863	43.1	43.56
3.	263.30	0.939	2.9	2.96

Total range for grain ages: 32,6 to 263,3 Ma
 Number of active grains (Num. used for fit): 101
 Number of removed grains: 0
 Degrees of freedom for fit: 96
 Average of the SE(Z)'s for the grains: 0,25
 Estimated width of peaks in PD plot in Z units: 0,29

PARAMETERS FOR BEST-FIT PEAKS

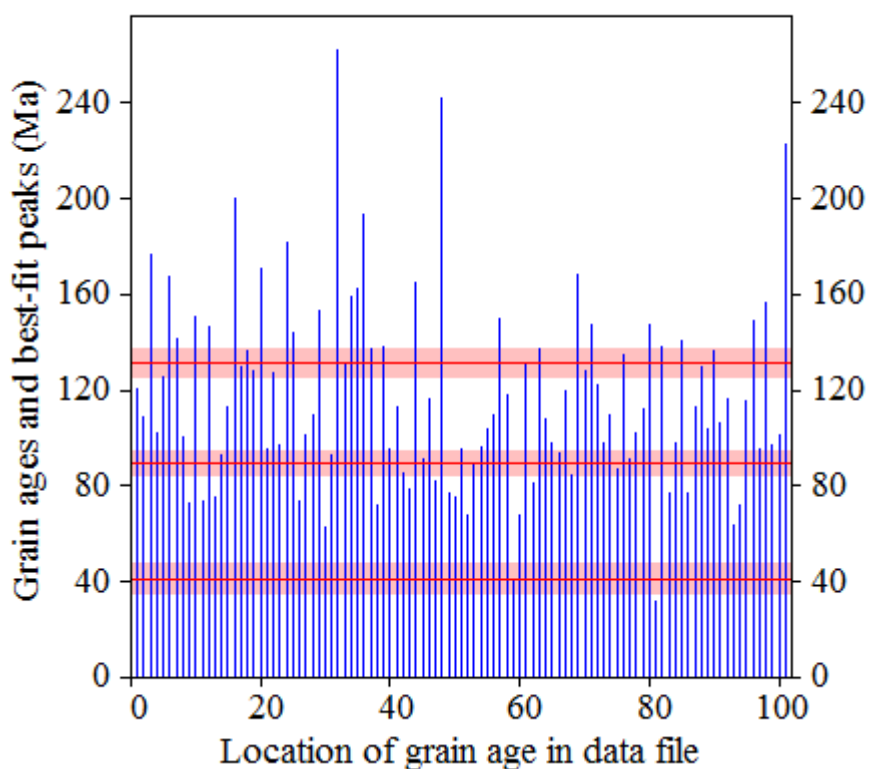
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

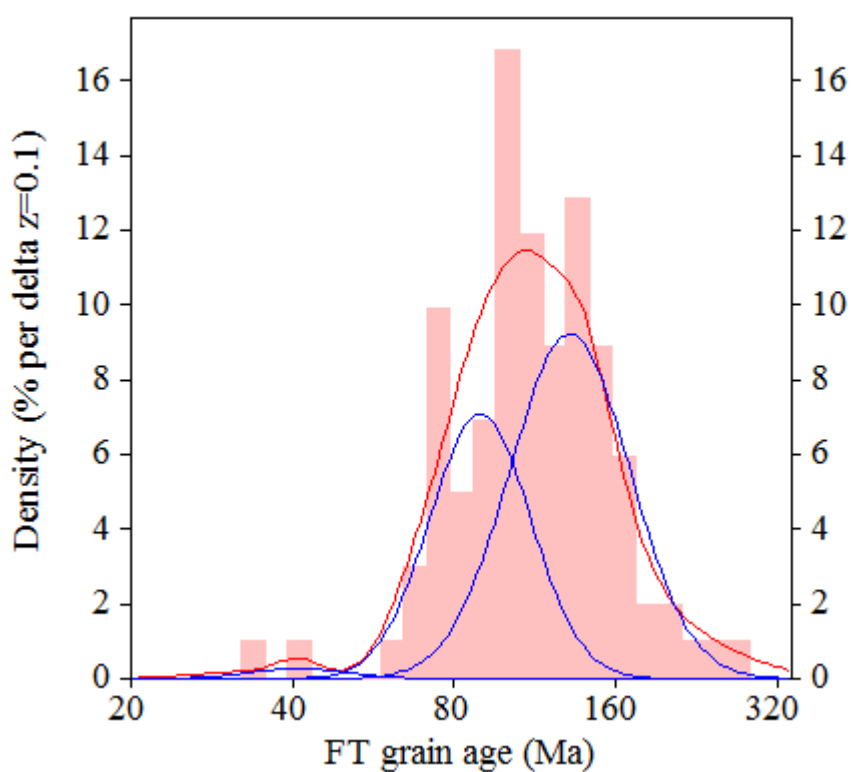
#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1.	41.0	-6,1 ...+7,1	-11,0 ...+15,1	0.21	1.4	1.3	1.4
2.	89.6	-4,7 ...+4,9	-8,9 ...+9,9	0.22	38.6	10.2	39.0
3.	131.6	-5,8 ...+6,0	-11,1 ...+12,1	0.26	60.0	10.2	60.6

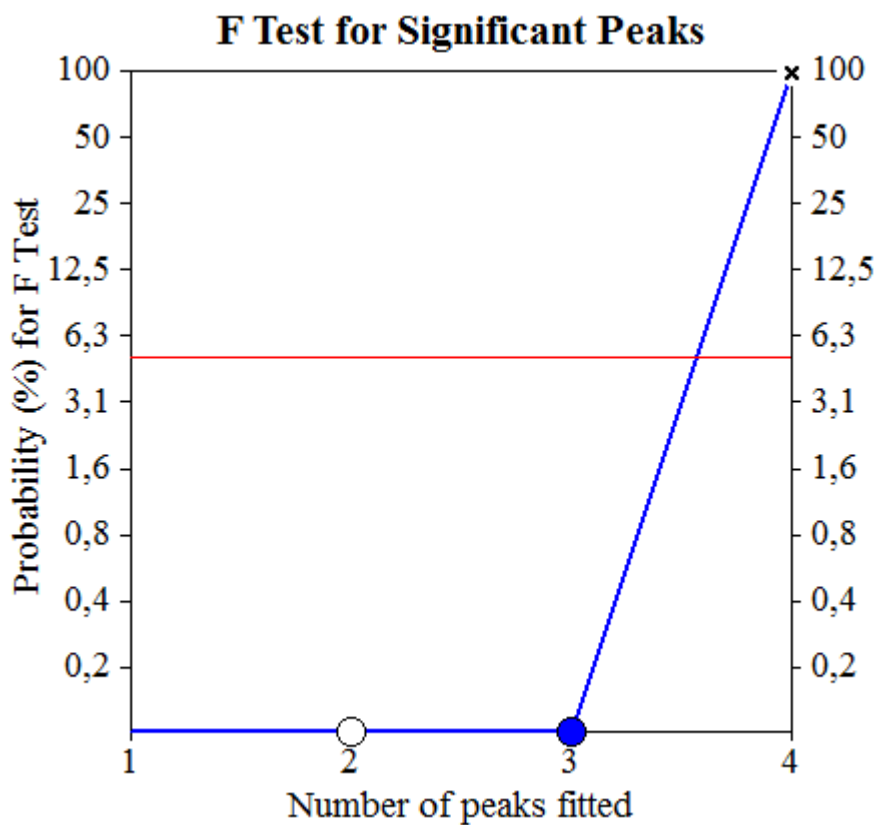
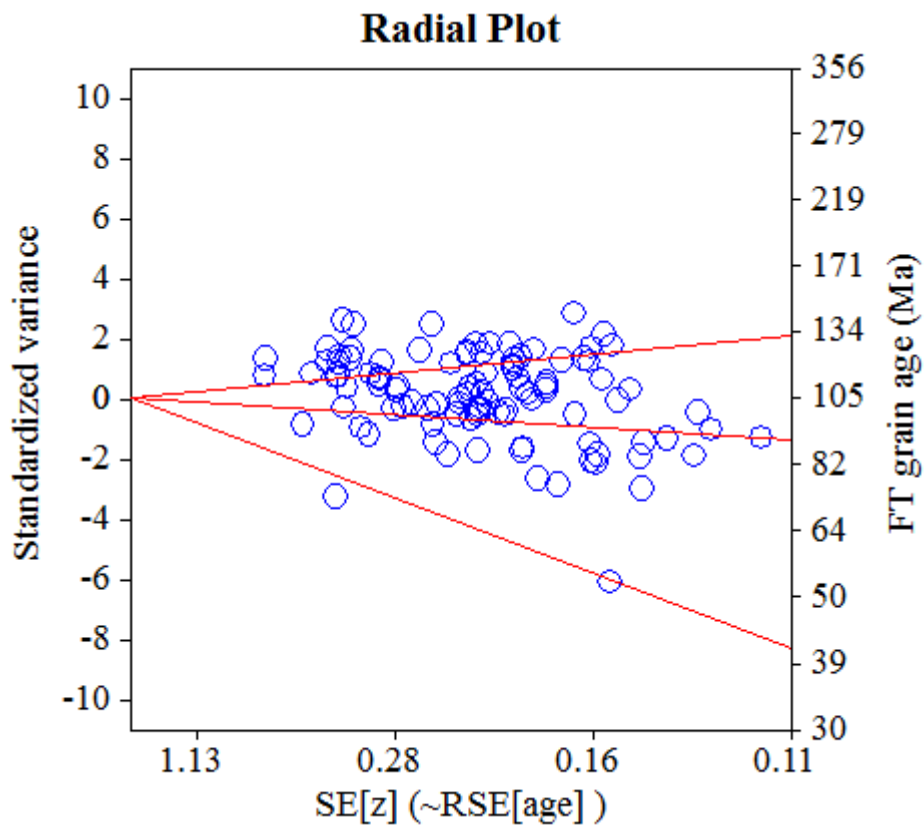
Log-likelihood for best fit: -326,691
 Chi-squared value for best fit: 98,578
 Reduced chi-squared value: 1,027
 Probability for F test: 0%
 Condition number for COVAR matrix: 152,47
 Number of iterations: 34

Plot of Grain Ages (Unsorted)



Probability-Density Plot with Best-Fit Peaks





Datafile: C:\BH2\Alejandro\6-2015_zircon\CP_088b\CP_088b.ftz

Title: Sample No. CP-088b Irr 6-2015-30

NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 3,10E+05

RELATIVE ERROR (%): 1,12

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 141,03 2,32SIZE OF COUNTER SQUARE (cm²): 8,30E-07**GRAIN AGES IN ORIGINAL ORDER**

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	7,72E+06	(205)	2,37E+06	(63)	32	383 97	70.1	52.8	93.0
2	6,31E+06	(110)	2,24E+06	(39)	21	361 115	61.1	42.2	90.6
3	1,02E+07	(676)	2,00E+06	(133)	80	324 56	109.6	90.8	132.2
4	5,75E+06	(229)	2,54E+06	(101)	48	410 82	49.1	38.7	62.1
5	6,10E+06	(253)	1,78E+06	(74)	50	288 67	73.7	56.8	95.5
6	7,73E+06	(77)	2,21E+06	(22)	12	357 151	75.5	46.8	127.7
7	5,61E+06	(466)	1,18E+06	(98)	100	191 39	102.4	82.3	127.5
8	5,72E+06	(57)	1,10E+06	(11)	12	178 105	110.8	58.4	234.9
9	4,21E+06	(339)	1,08E+06	(87)	97	175 38	84.0	66.3	106.4
10	6,53E+06	(65)	1,41E+06	(14)	12	227 119	99.6	56.0	192.7
11	4,63E+06	(384)	1,37E+06	(114)	100	222 42	72.8	58.9	89.9
12	6,43E+06	(48)	4,42E+06	(33)	9	714 247	31.6	19.9	50.9
13	1,69E+07	(126)	3,75E+06	(28)	9	606 227	97.0	64.4	152.0
14	7,07E+06	(176)	1,77E+06	(44)	30	285 86	86.5	62.1	123.3
15	8,97E+06	(521)	4,06E+06	(236)	70	656 87	47.9	40.9	56.1
16	9,04E+06	(225)	2,37E+06	(59)	30	383 100	82.0	61.6	109.2
17	8,67E+06	(180)	1,59E+06	(33)	25	257 89	117.5	81.2	175.9
18	7,19E+06	(179)	1,24E+06	(31)	30	201 72	124.3	85.1	188.3
19	8,35E+06	(104)	1,12E+06	(14)	15	182 96	158.5	91.7	299.9
20	1,32E+07	(219)	4,40E+06	(73)	20	710 166	64.7	49.6	84.4
21	5,69E+06	(236)	1,18E+06	(49)	50	191 54	104.0	76.5	144.6
22	7,49E+06	(261)	1,86E+06	(65)	42	301 75	86.4	65.8	113.4
23	5,34E+06	(124)	1,12E+06	(26)	28	181 70	102.7	67.4	163.6
24	4,73E+06	(393)	1,06E+06	(88)	100	171 37	96.2	76.3	121.3
25	9,37E+06	(389)	3,23E+06	(134)	50	522 91	62.8	51.5	76.6
26	8,19E+06	(340)	2,63E+06	(109)	50	424 82	67.4	54.2	83.8
27	1,65E+06	(41)	2,01E+05	(5)	30	32 28	171.7	70.4	555.8
28	4,53E+06	(376)	9,28E+05	(77)	100	150 34	105.0	82.1	134.2
29	6,37E+06	(148)	1,42E+06	(33)	28	229 79	96.8	66.4	145.9
30	5,22E+06	(303)	1,48E+06	(86)	70	239 52	76.0	59.7	96.7
31	6,39E+06	(371)	1,41E+06	(82)	70	228 50	97.4	76.6	123.8
32	6,99E+06	(58)	3,49E+06	(29)	10	564 208	43.4	27.4	70.4
33	5,35E+06	(311)	1,67E+06	(97)	70	270 55	69.3	55.0	87.1
34	6,39E+06	(191)	1,10E+06	(33)	36	178 62	124.6	86.3	186.2
35	4,54E+06	(264)	1,02E+06	(59)	70	164 43	96.1	72.5	127.4
36	7,59E+06	(126)	2,35E+06	(39)	20	380 121	69.9	48.7	103.0
37	9,64E+06	(200)	2,46E+06	(51)	25	397 111	84.8	62.3	117.8
38	7,90E+06	(236)	1,37E+06	(41)	36	222 69	124.0	89.2	177.3
39	6,31E+06	(220)	1,66E+06	(58)	42	269 71	81.6	61.1	108.9
40	4,40E+06	(219)	1,02E+06	(51)	60	165 46	92.8	68.4	128.6
41	4,37E+06	(58)	1,13E+06	(15)	16	182 93	83.2	47.0	158.4
42	6,12E+06	(61)	2,81E+06	(28)	12	454 170	47.2	29.8	76.8
43	6,59E+06	(164)	1,49E+06	(37)	30	240 79	95.7	67.0	140.8
44	6,48E+06	(113)	2,07E+06	(36)	21	334 111	67.9	46.5	101.9
45	3,01E+05	(25)	2,17E+05	(18)	100	35 16	30.2	15.9	58.7
46	2,92E+06	(242)	6,75E+05	(56)	100	109 29	92.8	69.4	124.0
47	4,10E+06	(170)	1,23E+06	(51)	50	199 56	72.2	52.7	100.8
48	4,87E+06	(101)	1,64E+06	(34)	25	265 90	64.3	43.4	98.0
49	5,27E+06	(70)	1,43E+06	(19)	16	231 105	79.4	47.7	140.0
50	5,16E+06	(107)	6,75E+05	(14)	25	109 57	163.0	94.4	308.1
51	5,72E+06	(285)	1,91E+06	(95)	60	308 63	64.8	51.3	81.9
52	5,66E+06	(169)	1,81E+06	(54)	36	292 79	67.8	49.8	94.0
53	8,39E+06	(174)	2,46E+06	(51)	25	397 111	73.9	53.9	103.1

Datafile: C:\BH2\Alejandro\6-2015_zircon\CP_088b\CP_088b.ftz

Title: Sample No. CP-088b Irr 6-2015-30

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
54	3,75E+06	(28)	2,54E+06	(19)	9	411 186	32.0	17.3	60.7
55	4,22E+06	(70)	1,02E+06	(17)	20	165 79	88.6	52.1	161.0
56	1,08E+06	(90)	2,41E+05	(20)	100	39 17	96.9	59.7	166.3
57	3,45E+06	(258)	9,91E+05	(74)	90	160 37	75.2	58.0	97.4
58	5,27E+06	(437)	1,17E+06	(97)	100	189 38	97.1	77.8	121.1
59	7,83E+06	(156)	1,61E+06	(32)	24	260 91	105.1	71.9	159.0
60	4,01E+06	(266)	1,36E+06	(90)	80	219 46	63.8	50.2	81.2
61	4,98E+06	(413)	1,57E+06	(130)	100	253 45	68.7	56.3	83.9
62	1,65E+06	(137)	4,58E+05	(38)	100	74 24	78.0	54.3	114.9
63	4,82E+06	(40)	1,81E+06	(15)	10	292 148	57.5	31.4	112.5
64	4,74E+06	(118)	9,64E+05	(24)	30	156 63	105.8	68.3	171.9
65	5,98E+06	(124)	9,64E+05	(20)	25	156 69	133.0	83.4	225.3
66	7,11E+06	(590)	1,11E+06	(92)	100	179 37	137.7	110.5	171.6
67	9,80E+06	(813)	1,64E+06	(136)	100	265 46	128.7	107.1	154.6
68	5,82E+06	(116)	1,36E+06	(27)	24	219 84	92.7	60.9	146.7
69	7,52E+06	(131)	2,01E+06	(35)	21	324 109	80.9	55.6	121.2
70	3,73E+06	(155)	1,11E+06	(46)	50	179 53	72.9	52.4	103.8
71	5,82E+06	(464)	1,23E+06	(98)	96	199 40	102.0	81.9	127.0
72	1,33E+06	(55)	2,65E+05	(11)	50	43 25	106.9	56.2	227.3
73	7,41E+06	(369)	1,87E+06	(93)	60	302 63	85.6	68.1	107.5
74	5,37E+06	(446)	1,13E+06	(94)	100	183 38	102.2	81.7	127.8
75	4,52E+06	(375)	9,76E+05	(81)	100	158 35	99.7	78.3	126.8
76	1,30E+06	(54)	2,41E+05	(10)	50	39 24	115.3	59.1	254.6
77	2,94E+06	(122)	5,30E+05	(22)	50	86 36	119.2	75.9	197.3
78	4,96E+06	(103)	1,73E+06	(36)	25	280 93	62.0	42.2	93.4
79	6,25E+06	(83)	2,33E+06	(31)	16	377 135	58.0	38.1	90.8
80	4,56E+06	(121)	1,69E+06	(45)	32	274 81	58.3	41.2	84.1
81	6,02E+06	(45)	1,20E+06	(9)	9	195 126	106.7	52.4	249.1
82	2,17E+06	(63)	3,10E+05	(9)	35	50 32	148.7	75.1	340.4
83	6,67E+06	(277)	1,04E+06	(43)	50	167 51	138.6	100.8	195.8
84	4,39E+06	(182)	5,54E+05	(23)	50	90 37	169.4	110.6	273.6
85	4,51E+06	(262)	1,26E+06	(73)	70	203 48	77.3	59.6	100.3
86	4,37E+06	(254)	9,64E+05	(56)	70	156 42	97.4	73.0	129.9
87	3,45E+06	(172)	8,63E+05	(43)	60	139 42	86.5	61.8	123.9
88	4,49E+06	(261)	2,05E+06	(119)	70	331 61	47.5	38.2	59.1
89	5,49E+06	(164)	2,04E+06	(61)	36	330 84	58.3	43.3	79.7
90	4,48E+06	(186)	6,02E+05	(25)	50	97 39	159.5	105.7	252.5
91	2,11E+06	(105)	5,02E+05	(25)	60	81 32	90.6	58.5	146.4
92	3,82E+06	(57)	7,36E+05	(11)	18	119 70	110.8	58.4	234.9
93	6,29E+06	(47)	1,61E+06	(12)	9	260 147	84.1	44.5	174.7
94	8,19E+06	(68)	1,33E+06	(11)	10	214 126	131.9	70.4	277.0
95	5,49E+06	(456)	1,36E+06	(113)	100	220 42	87.1	70.7	107.2
96	3,33E+06	(116)	3,44E+05	(12)	42	56 31	205.1	115.2	407.1
<hr/>									
POOLED	5,24E+06	(20034)	1,34E+06	(5105)	4606	216 8	85.1	81.0	89.4

CHI^2 PROBABILITY (%): 0.0

POOLED AGE W/	68% CONF. INTERVAL(Ma):	85.1,	83.0 --	87.2 (-2.1 +2.2)
	95% CONF. INTERVAL(Ma):		81.0 --	89.4 (-4.1 +4.3)
CENTRAL AGE W/	68% CONF. INTERVAL(Ma):	84.3,	81.1 --	87.6 (-3.2 +3.3)
	95% CONF. INTERVAL(Ma):		78.2 --	90.9 (-6.1 +6.6)
	AGE DISPERSION (%):	27.0		

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	30.80	0.586	2.9	2.80
2.	47.90	0.688	11.6	11.16
3.	85.10	0.797	42.1	40.45

Total range for grain ages: 30,0 to 200,3 Ma
 Number of active grains (Num. used for fit): 96
 Number of removed grains: 0
 Degrees of freedom for fit: 91
 Average of the SE(Z)'s for the grains: 0,2
 Estimated width of peaks in PD plot in Z units: 0,24

PARAMETERS FOR BEST-FIT PEAKS

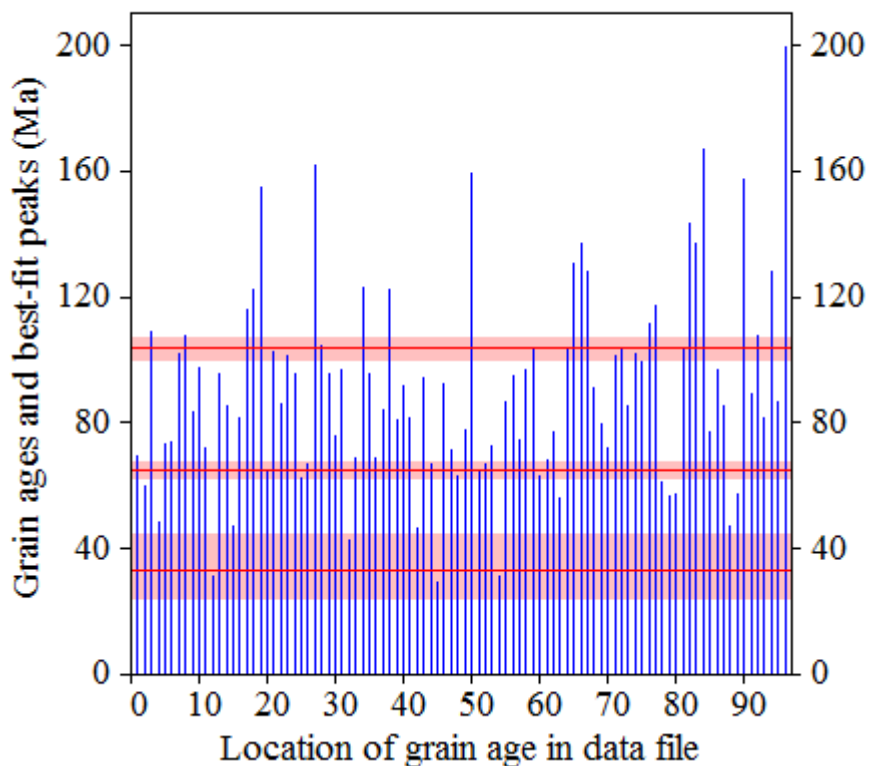
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

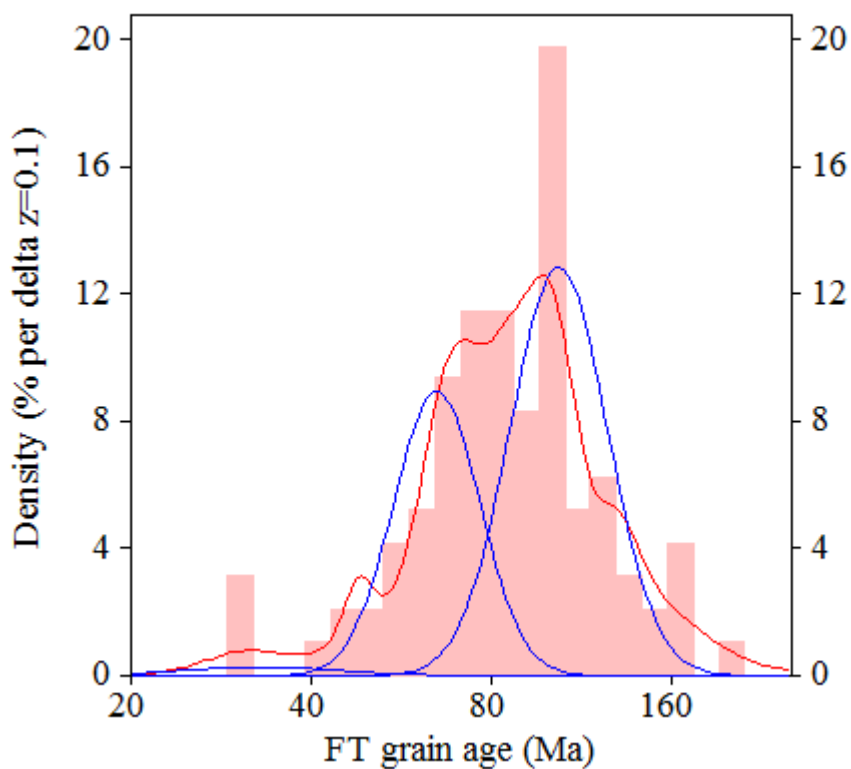
#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1.	32.9	-8,5 ...+11,4	-14,5 ...+26,0	0.29	2.0	1.9	1.9
2.	64.9	-2,5 ...+2,6	-4,7 ...+5,1	0.17	37.4	6.7	35.9
3.	103.6	-3,4 ...+3,5	-6,5 ...+6,9	0.19	60.7	6.7	58.3

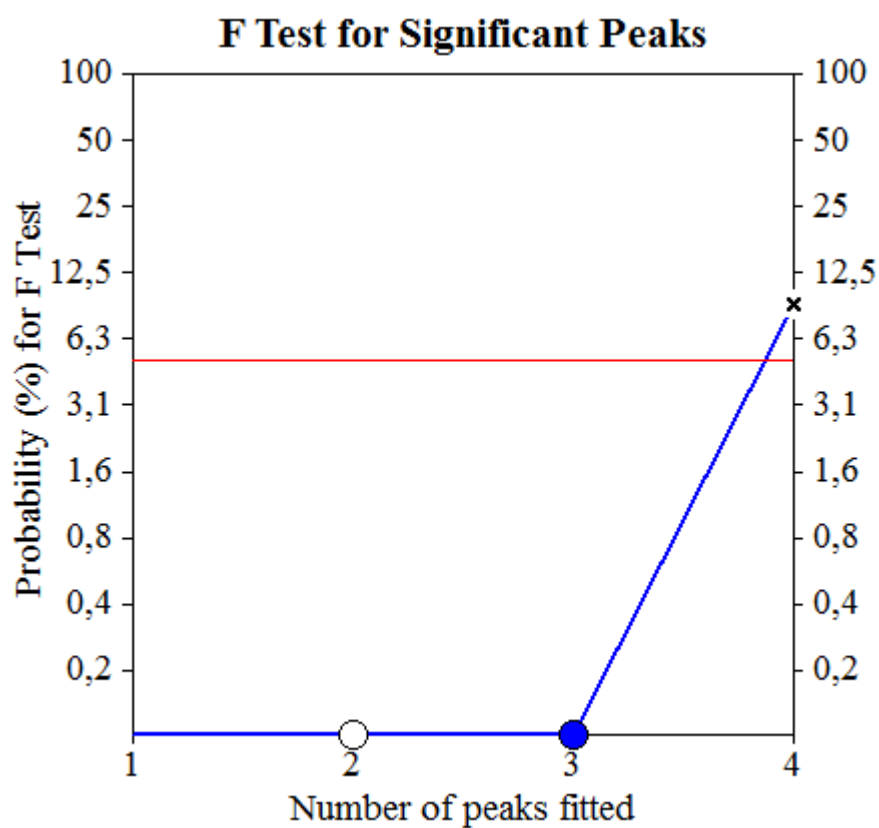
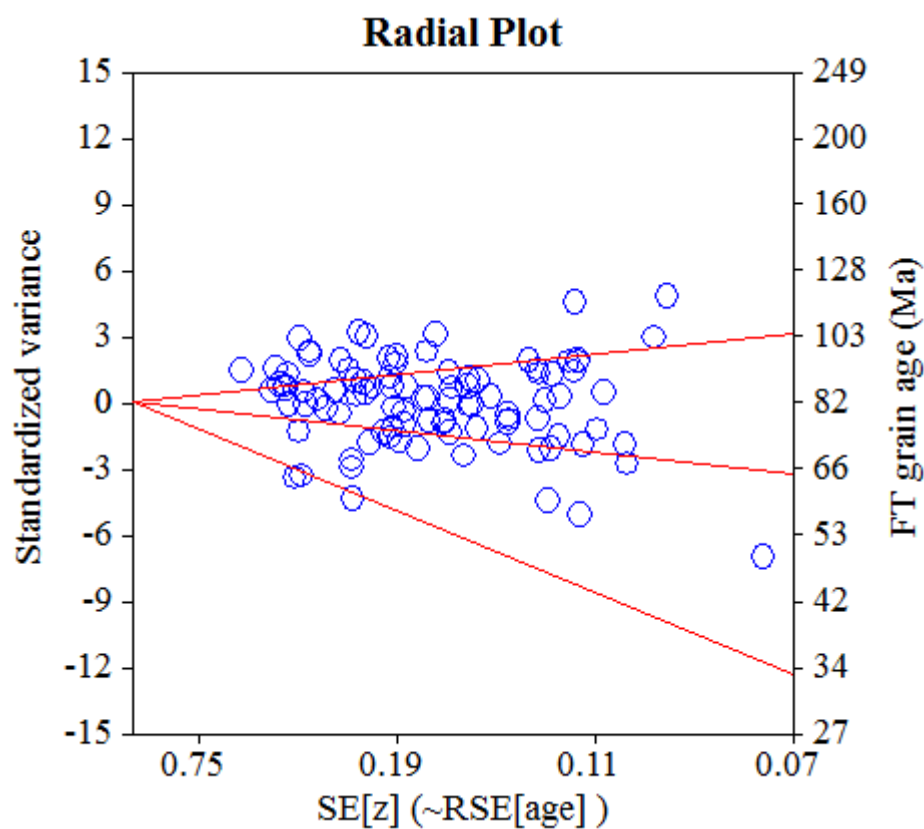
Log-likelihood for best fit: -377,072
 Chi-squared value for best fit: 98,995
 Reduced chi-squared value: 1,088
 Probability for F test: 0%
 Condition number for COVAR matrix: 282,89
 Number of iterations: 14

Plot of Grain Ages (Unsorted)



Probability-Density Plot with Best-Fit Peaks





Datafile: C:\BH2\Edna\6-2015\CVI-1302\CVI_1302_6-2015-26A.FTZ.txt

Title: Sample No. CVI_1302 Irr 6-2015-26

NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 3,04E+05

RELATIVE ERROR (%): 1,13

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 126,82 2,05SIZE OF COUNTER SQUARE (cm²): 8,30E-07**GRAIN AGES IN ORIGINAL ORDER**

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	6,75E+06	(112)	1,14E+06	(19)	20	188 85	111.8	69.1	192.9
2	4,82E+06	(64)	9,79E+05	(13)	16	161 88	93.3	51.5	185.2
3	2,41E+06	(100)	4,34E+05	(18)	50	71 33	105.4	64.1	185.4
4	5,30E+06	(176)	9,64E+05	(32)	40	159 56	104.7	72.0	157.9
5	7,83E+06	(78)	1,61E+06	(16)	12	264 130	92.5	54.1	170.3
6	6,10E+06	(253)	1,49E+06	(62)	50	246 62	77.6	58.7	102.4
7	5,76E+06	(287)	1,02E+06	(51)	60	168 47	107.3	79.7	147.6
8	6,20E+06	(144)	2,32E+06	(54)	28	382 104	51.1	37.2	71.3
9	8,13E+06	(81)	2,11E+06	(21)	12	347 150	73.5	45.4	125.4
10	4,55E+06	(34)	2,41E+06	(18)	9	396 185	36.2	20.0	68.1
11	8,48E+06	(352)	1,61E+06	(67)	50	266 65	99.8	76.8	129.5
12	8,67E+06	(144)	2,83E+06	(47)	20	466 136	58.7	42.0	83.5
13	4,69E+06	(35)	1,47E+06	(11)	9	242 143	60.4	30.4	132.6
14	7,93E+06	(79)	1,61E+06	(16)	12	264 130	93.7	54.9	172.3
15	6,48E+06	(86)	1,66E+06	(22)	16	272 115	74.5	46.5	125.3
16	8,96E+06	(119)	1,66E+06	(22)	16	272 115	102.8	65.4	170.5
17	8,98E+06	(149)	2,23E+06	(37)	20	367 120	76.9	53.6	113.6
18	6,69E+06	(333)	1,20E+06	(60)	60	198 51	105.3	80.0	138.4
19	6,25E+06	(83)	9,79E+05	(13)	16	161 88	120.6	67.8	236.5
20	6,82E+06	(283)	1,28E+06	(53)	50	210 58	101.9	76.0	139.4
21	8,04E+06	(667)	1,55E+06	(129)	100	256 45	98.5	81.4	119.2
22	5,54E+06	(69)	1,93E+06	(24)	15	317 128	54.9	34.3	91.6
23	5,60E+06	(372)	1,11E+06	(74)	80	183 43	95.6	74.4	122.6
24	2,96E+06	(59)	1,61E+06	(32)	24	264 93	35.4	22.7	56.3
25	5,25E+06	(122)	1,33E+06	(31)	28	219 78	75.1	50.6	115.5
26	4,59E+06	(61)	1,20E+06	(16)	16	198 98	72.5	41.7	135.2
27	9,13E+06	(379)	1,30E+06	(54)	50	214 58	132.7	99.9	176.1
28	5,30E+06	(132)	7,63E+05	(19)	30	126 57	131.6	81.9	225.6
29	7,63E+06	(57)	3,48E+06	(26)	9	572 223	42.0	26.1	69.7
30	3,25E+06	(135)	2,17E+06	(90)	50	357 75	28.7	21.9	37.5
31	6,33E+06	(105)	1,27E+06	(21)	20	208 90	95.1	59.6	160.3
32	5,28E+06	(92)	1,95E+06	(34)	21	321 109	51.8	34.7	79.3
33	6,46E+06	(134)	1,40E+06	(29)	25	230 85	88.1	59.0	136.7
34	5,29E+06	(123)	1,68E+06	(39)	28	276 88	60.3	41.9	89.0
35	5,42E+06	(72)	1,13E+06	(15)	16	186 94	91.1	52.3	171.6
36	4,96E+06	(103)	8,67E+05	(18)	25	143 66	108.6	66.1	190.7
37	5,54E+06	(216)	1,05E+06	(41)	47	173 54	100.4	72.0	144.0
38	2,61E+06	(26)	1,00E+05	(1)	12	17 27	425.6	81.8	9232.3
39	6,08E+06	(106)	2,29E+06	(40)	21	377 119	50.8	35.1	75.1
40	3,68E+06	(55)	1,54E+06	(23)	18	253 105	45.7	27.8	78.2
41	4,92E+06	(49)	3,21E+06	(32)	12	528 186	29.4	18.5	47.5
42	6,28E+06	(198)	1,33E+06	(42)	38	219 67	90.0	64.5	128.8
43	9,23E+06	(268)	1,62E+06	(47)	35	266 77	108.7	79.8	151.6
44	8,28E+06	(165)	8,53E+05	(17)	24	140 67	182.9	112.3	321.0
45	4,39E+06	(153)	1,15E+06	(40)	42	189 59	73.1	51.5	106.4
46	4,42E+06	(33)	2,41E+06	(18)	9	396 185	35.1	19.3	66.3
47	8,96E+06	(223)	2,01E+06	(50)	30	330 93	85.2	62.7	118.3
48	8,82E+06	(183)	3,33E+06	(69)	25	547 132	50.6	38.3	66.7
49	8,89E+06	(118)	1,73E+06	(23)	16	285 118	97.6	62.5	160.1
50	4,88E+06	(81)	2,05E+06	(34)	20	337 115	45.6	30.3	70.4
51	7,86E+06	(652)	1,33E+06	(110)	100	218 42	112.8	92.0	138.2
52	5,77E+06	(115)	9,04E+05	(18)	24	149 69	121.1	74.1	211.7
53	6,02E+06	(250)	9,88E+05	(41)	50	162 51	116.1	83.6	165.8

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
54	7,20E+06	(251)	8,61E+05	(30)	42	142 51	158.5	109.2	239.7
55	9,69E+06	(201)	1,30E+06	(27)	25	214 82	141.2	95.0	219.5
56	8,28E+06	(110)	3,01E+05	(4)	16	50 47	491.1	198.1	1727.0
57	3,88E+06	(116)	8,70E+05	(26)	36	143 56	85.0	55.6	135.8
58	3,40E+06	(79)	2,62E+06	(61)	28	432 111	24.9	17.6	35.4
59	7,23E+06	(150)	1,16E+06	(24)	25	190 77	118.7	77.4	191.2
60	7,57E+06	(628)	1,22E+06	(101)	100	200 40	118.2	95.7	146.0
61	5,87E+06	(78)	9,79E+05	(13)	16	161 88	113.4	63.5	223.0
62	5,48E+06	(364)	1,31E+06	(87)	80	216 46	79.7	63.0	100.8
63	5,98E+06	(124)	9,64E+05	(20)	25	159 70	117.6	73.7	199.4
64	5,98E+06	(248)	1,23E+06	(51)	50	202 57	92.8	68.7	128.2
65	7,13E+06	(355)	1,20E+06	(60)	60	198 51	112.1	85.3	147.3
66	5,36E+06	(267)	9,64E+05	(48)	60	159 46	106.0	78.1	147.4
67	5,62E+06	(56)	1,20E+06	(12)	12	198 112	88.4	47.5	181.9
68	6,85E+06	(273)	1,33E+06	(53)	48	219 60	98.3	73.3	134.6
<hr/>									
POOLED	6,36E+06	(11865)	1,37E+06	(2566)	2249	226 10	88.5	83.6	93.7

CHI^2 PROBABILITY (%): 0.0

POOLED AGE W/	68% CONF. INTERVAL(Ma):	88.5,	86.0 --	91.1 (-2.5 +2.6)
	95% CONF. INTERVAL(Ma):		83.6 --	93.7 (-4.9 +5.2)
CENTRAL AGE W/	68% CONF. INTERVAL(Ma):	80.9,	76.1 --	85.9 (-4.8 +5.1)
	95% CONF. INTERVAL(Ma):		71.8 --	91.1 (-9.1 +10.3)
	AGE DISPERSION (%):	43.2		

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	24.90	0.564	3.9	2.62
2.	88.50	0.822	37.4	25.45
3.	99.10	0.838	51.6	35.10

Total range for grain ages: 24,9 to 456,8 Ma
 Number of active grains (Num. used for fit): 68
 Number of removed grains: 0
 Degrees of freedom for fit: 63
 Average of the SE(Z)'s for the grains: 0,24
 Estimated width of peaks in PD plot in Z units: 0,28

PARAMETERS FOR BEST-FIT PEAKS

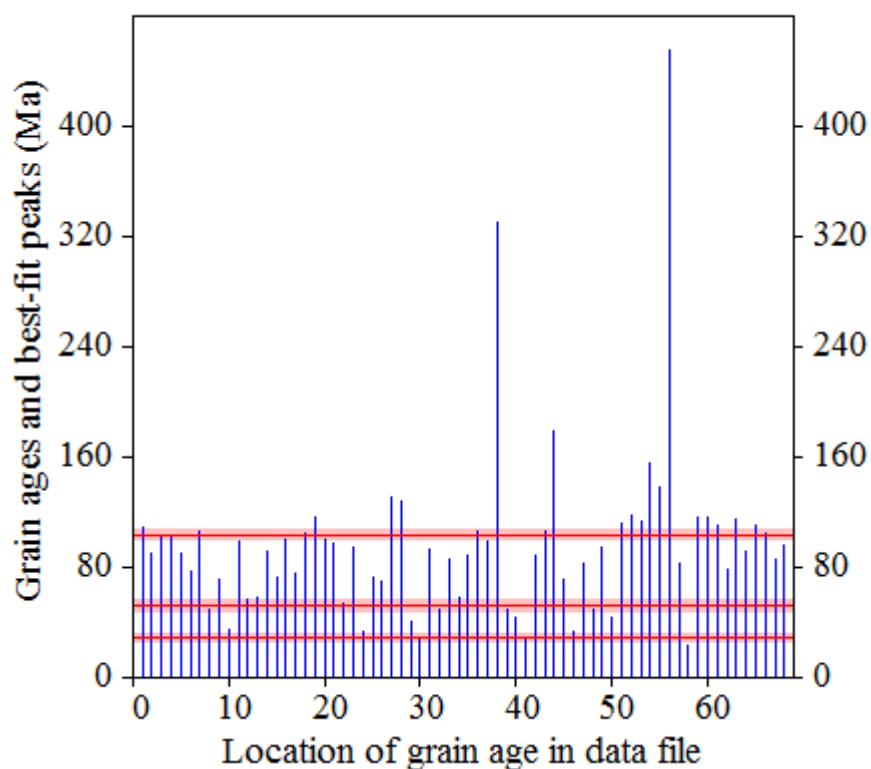
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

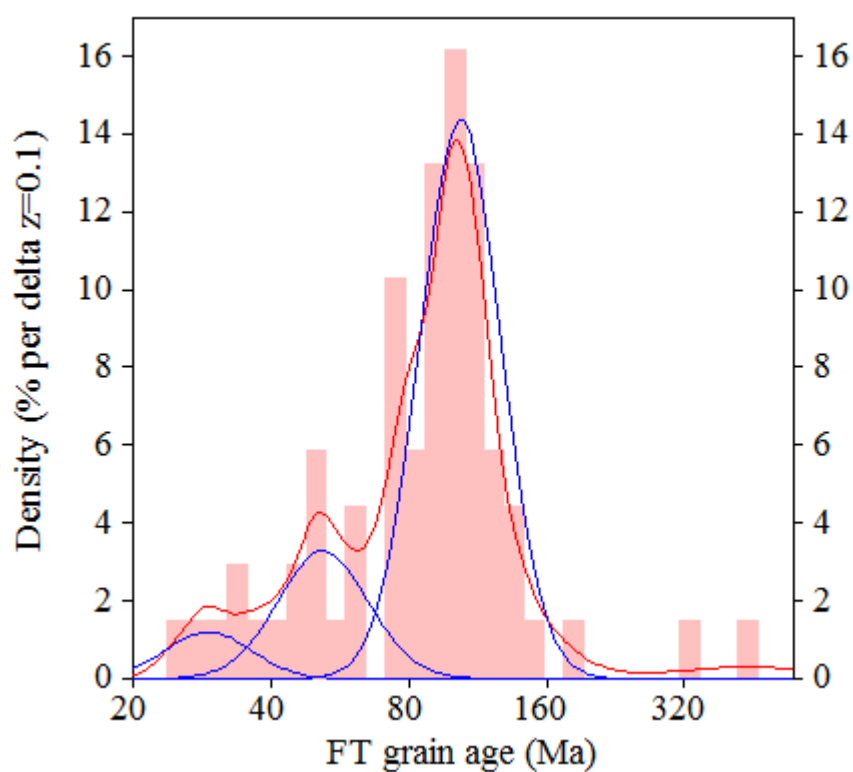
#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	29.2	-2,9 ...+3,2	-5,4 ...+6,6	0.21	6.4	3.7	4.3
2.	52.0	-3,9 ...+4,2	-7,3 ...+8,5	0.23	18.9	5.6	12.9
3.	103.8	-3,3 ...+3,4	-6,4 ...+6,8	0.21	74.7	5.8	50.8

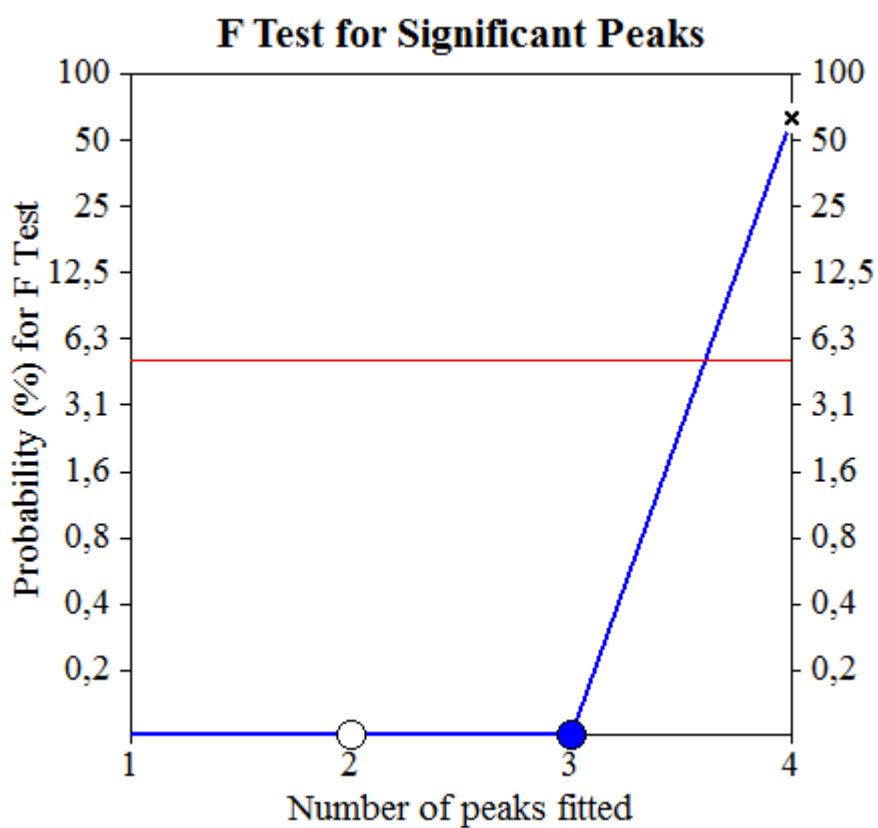
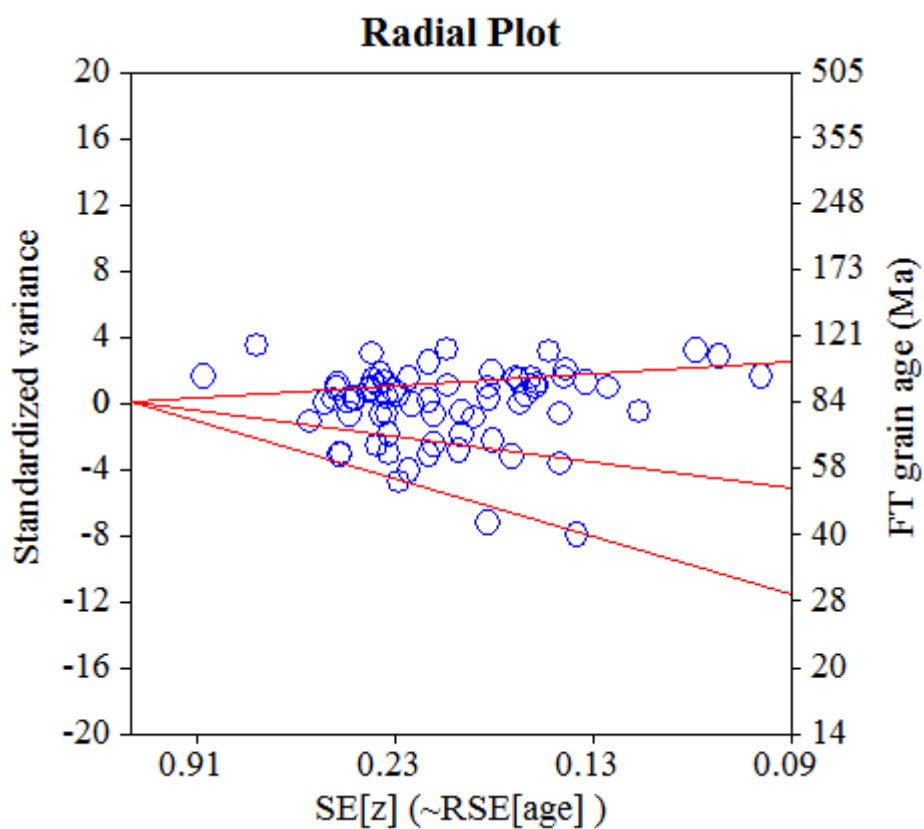
Log-likelihood for best fit: -252,314
 Chi-squared value for best fit: 67,569
 Reduced chi-squared value: 1,073
 Probability for F test: 0%
 Condition number for COVAR matrix: 17,08
 Number of iterations: 18

Plot of Grain Ages (Unsorted)



Probability-Density Plot with Best-Fit Peaks





Datafile: C:\BH2\Edna\12-2015\EMP_49\EMP_16_12_2015_20.ftz

Title: Sample No. EMP_49 Irr 12-2015-22

NEW PARAMETERS - ZETA METHODEFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 2,77E+05

RELATIVE ERROR (%): 1,23

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 128,02 1,87SIZE OF COUNTER SQUARE (cm²): 8,30E-07**GRAIN AGES IN ORIGINAL ORDER**

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
1	7,28E+06	(302)	1,20E+06	(50)	50	217 61	106.1	78.7	146.2	
2	6,60E+06	(274)	1,37E+06	(57)	50	248 66	84.1	63.2	111.8	
3	5,76E+06	(478)	1,48E+06	(123)	100	267 49	68.4	56.0	83.5	
4	3,80E+06	(63)	6,02E+05	(10)	20	109 67	109.4	56.7	240.1	
5	6,07E+06	(247)	9,34E+05	(38)	49	168 54	114.0	81.2	165.0	
6	4,73E+06	(165)	4,02E+05	(14)	42	72 38	203.8	120.0	380.0	
7	4,03E+06	(164)	4,92E+05	(20)	49	89 39	143.0	90.6	240.3	
8	9,04E+06	(225)	1,37E+06	(34)	30	246 84	116.0	81.1	171.7	
9	6,55E+06	(87)	9,04E+05	(12)	16	163 92	126.0	69.7	253.8	
10	5,54E+06	(230)	6,02E+05	(25)	50	109 43	160.4	106.9	252.9	
11	5,24E+06	(87)	7,23E+05	(12)	20	130 74	126.0	69.7	253.8	
12	8,07E+06	(134)	1,81E+06	(30)	20	326 118	78.5	52.8	121.1	
13	7,67E+06	(191)	1,53E+06	(38)	30	275 89	88.3	62.4	128.8	
14	5,75E+06	(191)	7,53E+05	(25)	40	136 54	133.5	88.5	211.6	
15	7,23E+06	(210)	1,65E+06	(48)	35	298 86	77.0	56.2	107.8	
16	8,29E+06	(344)	1,40E+06	(58)	50	252 66	103.6	78.5	136.7	
17	2,37E+06	(59)	2,41E+05	(6)	30	43 34	168.3	75.1	477.0	
18	6,60E+06	(219)	1,42E+06	(47)	40	255 74	82.0	59.8	115.0	
19	2,74E+06	(91)	4,22E+05	(14)	40	76 40	113.3	65.0	215.9	
20	8,06E+06	(107)	1,43E+06	(19)	16	258 117	98.5	60.7	170.4	
21	7,95E+06	(66)	8,43E+05	(7)	10	152 111	162.0	76.4	418.9	
22	5,73E+06	(476)	1,08E+06	(90)	100	195 41	92.7	73.9	116.2	
23	4,56E+06	(265)	1,41E+06	(82)	70	254 56	56.8	44.3	72.8	
24	3,93E+06	(261)	8,58E+05	(57)	80	155 41	80.1	60.2	106.6	
25	7,11E+06	(118)	1,39E+06	(23)	20	250 103	89.9	57.6	147.7	
26	3,32E+06	(248)	4,28E+05	(32)	90	77 27	135.6	94.2	202.6	
27	4,82E+06	(168)	1,15E+06	(40)	42	207 65	73.9	52.3	107.3	
28	8,76E+06	(109)	2,01E+06	(25)	15	362 144	76.6	49.5	123.7	
29	7,20E+06	(299)	1,57E+06	(65)	50	282 70	80.6	61.6	105.3	
30	7,44E+06	(247)	1,99E+06	(66)	40	358 88	65.6	50.0	86.1	
31	4,22E+06	(210)	4,42E+05	(22)	60	80 34	166.2	108.0	270.7	
32	6,40E+06	(85)	1,20E+06	(16)	16	217 107	92.9	54.6	170.3	
33	6,69E+06	(50)	1,47E+06	(11)	9	265 157	79.3	41.3	169.8	
34	8,55E+06	(213)	1,57E+06	(39)	30	282 90	95.9	68.3	138.8	
35	6,90E+06	(573)	1,06E+06	(88)	100	191 41	114.0	91.0	142.7	
36	7,04E+06	(146)	1,73E+06	(36)	25	313 104	71.4	49.5	106.0	
37	4,50E+06	(112)	2,81E+05	(7)	30	51 37	272.2	132.0	685.4	
38	5,93E+06	(246)	9,64E+05	(40)	50	174 55	107.9	77.4	154.9	
39	6,51E+06	(216)	1,51E+06	(50)	40	271 77	76.1	55.9	105.8	
40	5,92E+06	(59)	1,51E+06	(15)	12	271 138	68.9	39.0	131.3	
41	3,06E+06	(142)	5,38E+05	(25)	56	97 38	99.5	65.2	159.2	
42	9,12E+06	(227)	1,37E+06	(34)	30	246 84	117.0	81.8	173.2	
43	4,05E+06	(84)	6,75E+05	(14)	25	122 64	104.7	59.8	200.2	
44	5,53E+06	(225)	1,25E+06	(51)	49	226 63	77.7	57.3	107.6	
45	6,14E+06	(255)	1,57E+06	(65)	50	282 70	68.8	52.4	90.3	
46	4,13E+06	(137)	1,48E+06	(49)	40	266 76	49.4	35.5	70.0	
47	2,30E+06	(153)	4,82E+05	(32)	80	87 31	84.0	57.4	127.3	
48	3,34E+06	(222)	4,22E+05	(28)	80	76 29	138.6	94.0	213.3	
49	6,10E+06	(76)	1,12E+06	(14)	15	203 107	94.8	53.8	182.1	
50	7,13E+06	(142)	1,26E+06	(25)	24	226 90	99.5	65.2	159.2	
51	2,82E+06	(187)	3,92E+05	(26)	80	71 27	125.8	83.8	197.7	
52	8,03E+06	(80)	1,20E+06	(12)	12	217 123	116.0	63.8	234.5	
53	8,76E+06	(218)	1,20E+06	(30)	30	217 79	127.2	87.2	193.1	

Datafile: C:\BH2\Edna\12-2015\EMP_49\EMP_16_12_2015_20.ftz

Title: Sample No. EMP_49 Irr 12-2015-22

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
54	1,54E+06	(46)	1,67E+05	(5)	36	30 26	156.9	64.8	506.6
55	3,33E+06	(69)	3,37E+05	(7)	25	61 44	169.2	80.0	436.6
56	2,71E+06	(90)	4,52E+05	(15)	40	81 41	104.7	61.0	195.3
57	4,82E+06	(64)	8,28E+05	(11)	16	149 88	101.3	53.8	213.8
58	2,31E+06	(94)	4,43E+05	(18)	49	80 37	91.4	55.3	161.3
59	3,33E+06	(83)	4,82E+05	(12)	30	87 49	120.3	66.3	242.7
60	3,13E+06	(78)	7,63E+05	(19)	30	138 62	72.0	43.5	126.3
61	2,81E+06	(28)	9,04E+05	(9)	12	163 106	54.3	25.3	131.8
62	7,98E+06	(265)	1,48E+06	(49)	40	266 76	95.1	70.1	131.8
63	3,10E+06	(103)	5,12E+05	(17)	40	92 44	105.9	63.7	189.1
64	3,34E+06	(111)	6,63E+05	(22)	40	119 50	88.4	56.0	147.1
65	7,15E+06	(178)	1,24E+06	(31)	30	224 80	100.7	68.9	152.8
66	6,48E+06	(538)	1,05E+06	(87)	100	189 41	108.3	86.3	135.8
67	3,31E+06	(44)	1,51E+05	(2)	16	27 34	353.9	101.1	2682.8
68	5,37E+06	(312)	1,27E+06	(74)	70	230 53	73.9	57.4	95.3
69	7,15E+06	(178)	1,24E+06	(31)	30	224 80	100.7	68.9	152.8
70	6,48E+06	(538)	1,05E+06	(87)	100	189 41	108.3	86.3	135.8
71	3,31E+06	(44)	1,51E+05	(2)	16	27 34	353.9	101.1	2682.8
72	5,37E+06	(312)	1,27E+06	(74)	70	230 53	73.9	57.4	95.3
73	5,11E+06	(178)	1,15E+06	(40)	42	207 65	78.3	55.5	113.4
74	5,37E+06	(223)	5,30E+05	(22)	50	96 40	176.3	114.8	286.8
75	5,54E+06	(138)	9,64E+05	(24)	30	174 70	100.7	65.5	162.8
76	5,14E+06	(128)	8,03E+05	(20)	30	145 64	111.9	70.2	189.6
77	5,54E+06	(184)	1,11E+06	(37)	40	201 66	87.4	61.4	128.2
78	7,35E+06	(305)	1,01E+06	(42)	50	182 56	127.3	92.4	180.2
79	1,69E+06	(42)	3,61E+05	(9)	30	65 42	81.2	39.6	190.8
80	2,83E+06	(188)	6,02E+05	(40)	80	109 34	82.7	58.7	119.5
81	4,92E+06	(143)	8,26E+05	(24)	35	149 60	104.4	67.9	168.4
82	2,21E+06	(33)	1,34E+05	(2)	18	24 31	267.5	74.5	2127.5
83	7,08E+06	(94)	8,28E+05	(11)	16	149 88	148.1	80.5	307.1
84	5,35E+06	(71)	9,04E+05	(12)	16	163 92	103.1	56.3	209.5
85	9,49E+06	(126)	2,64E+06	(35)	16	475 160	63.4	43.5	95.2
86	8,18E+06	(285)	2,67E+06	(93)	42	481 100	53.9	42.6	68.2
87	7,68E+06	(255)	1,72E+06	(57)	40	309 82	78.3	58.8	104.3
88	2,94E+06	(171)	2,58E+05	(15)	70	47 24	197.4	118.2	359.6
89	7,93E+06	(79)	1,81E+06	(18)	12	326 152	76.9	46.1	136.8
90	6,35E+06	(369)	1,36E+06	(79)	70	245 55	81.9	64.2	104.5
91	2,82E+06	(164)	4,48E+05	(26)	70	81 31	110.5	73.3	174.3
92	3,90E+06	(97)	4,82E+05	(12)	30	87 49	140.3	78.0	281.3
93	5,79E+06	(202)	1,69E+06	(59)	42	305 79	60.0	44.9	80.2
94	8,19E+06	(204)	2,17E+06	(54)	30	391 106	66.6	49.2	91.8
95	6,53E+06	(271)	1,42E+06	(59)	50	256 67	80.4	60.7	106.5
96	5,23E+06	(152)	9,64E+05	(28)	35	174 65	95.2	63.7	148.3
97	5,49E+06	(114)	1,35E+06	(28)	25	243 91	71.6	47.3	112.7
POOLED		5,30E+06(17574)	9,99E+05(3314)		3996	180 8	93.5	88.7	98.5

CHI^2 PROBABILITY (%): 0.0

POOLED AGE W/	68% CONF. INTERVAL(Ma):	93.5,	91.0 --	96.0 (-2.5 +2.5)
	95% CONF. INTERVAL(Ma):		88.7 --	98.5 (-4.8 +5.0)
CENTRAL AGE W/	68% CONF. INTERVAL(Ma):	95.7,	92.2 --	99.3 (-3.4 +3.6)
	95% CONF. INTERVAL(Ma):		89.1 --	102.8 (-6.6 +7.1)
	AGE DISPERSION (%):	23.2		

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	93.50	0.841	41.1	39.89
2.	109.40	0.861	41.8	40.50
3.	139.60	0.888	18.9	18.33

Total range for grain ages: 49,1 to 308,6 Ma
 Number of active grains (Num. used for fit): 97
 Number of removed grains: 0
 Degrees of freedom for fit: 92
 Average of the SE(Z)'s for the grains: 0,25
 Estimated width of peaks in PD plot in Z units: 0,3

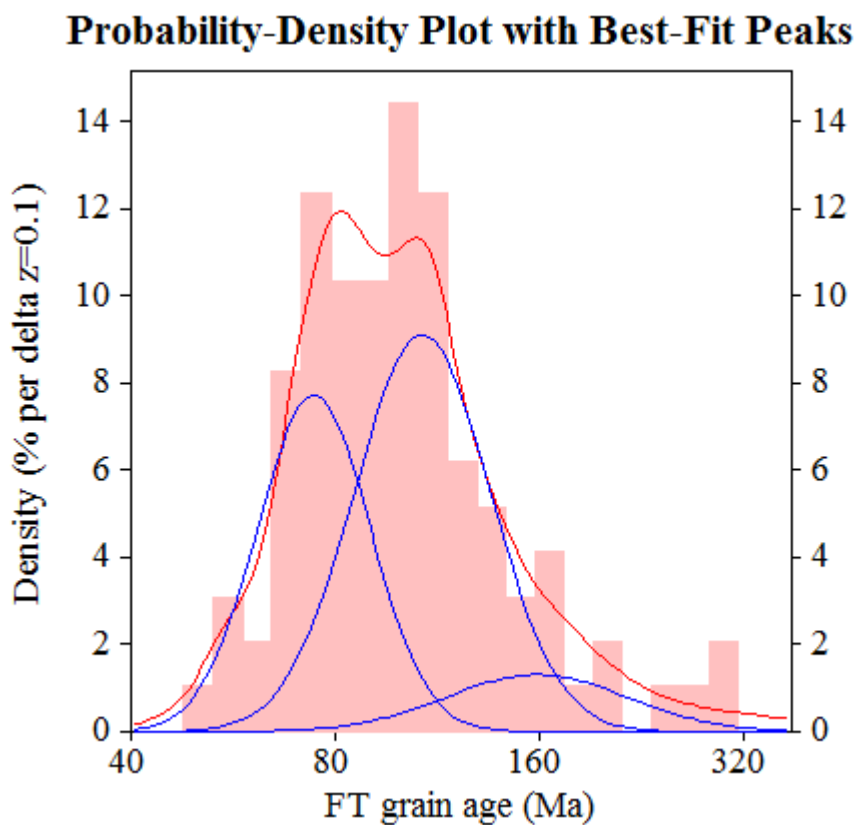
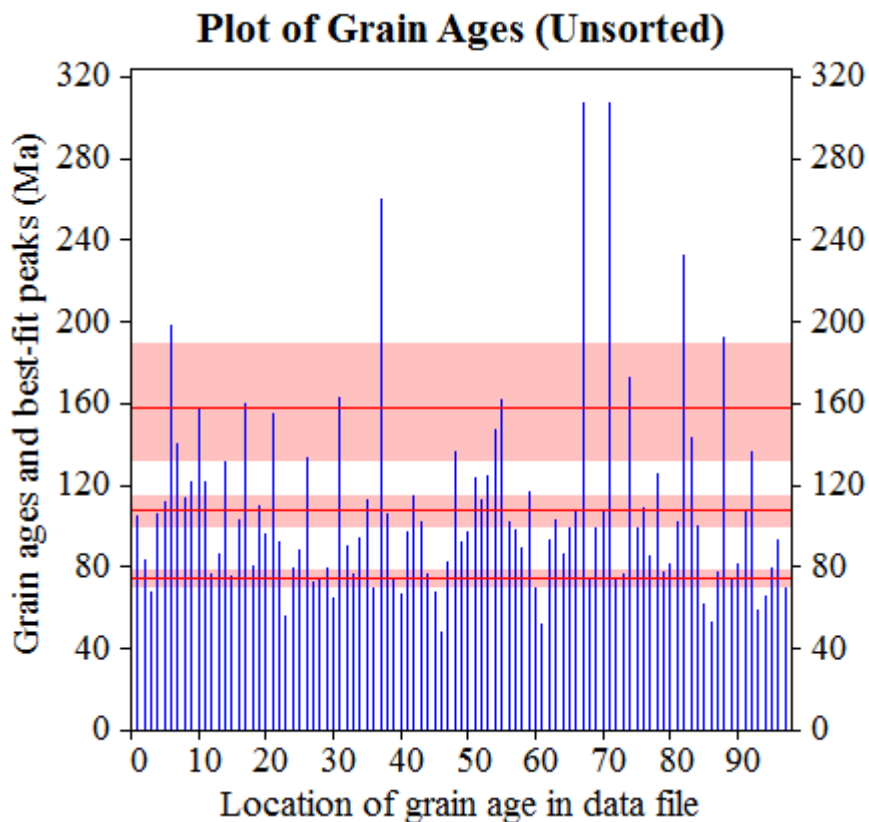
PARAMETERS FOR BEST-FIT PEAKS

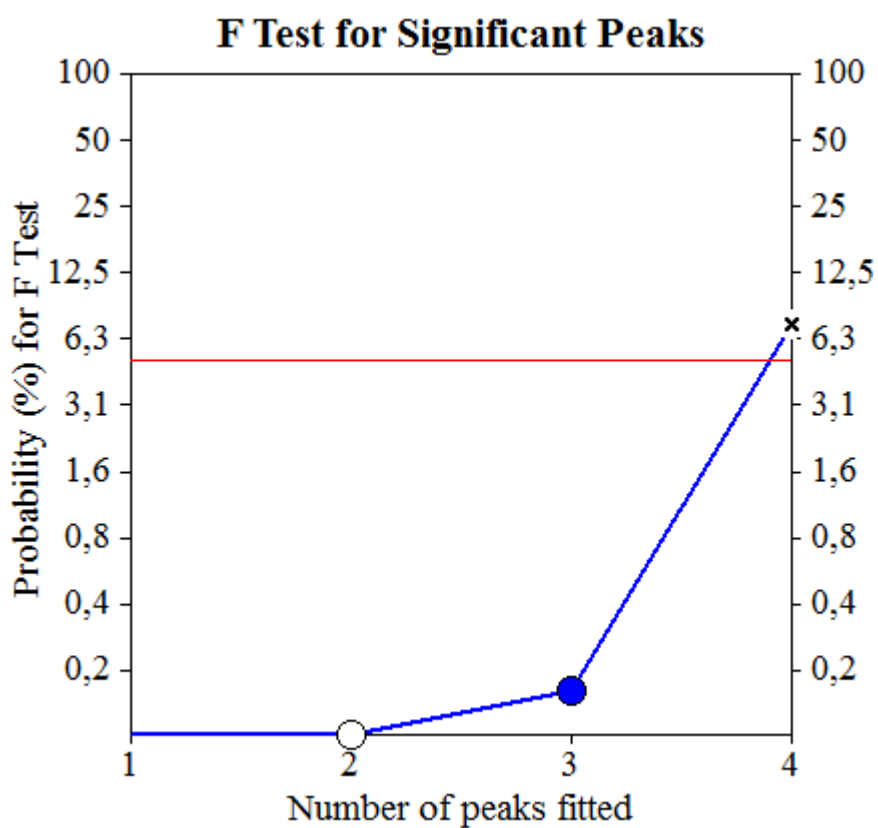
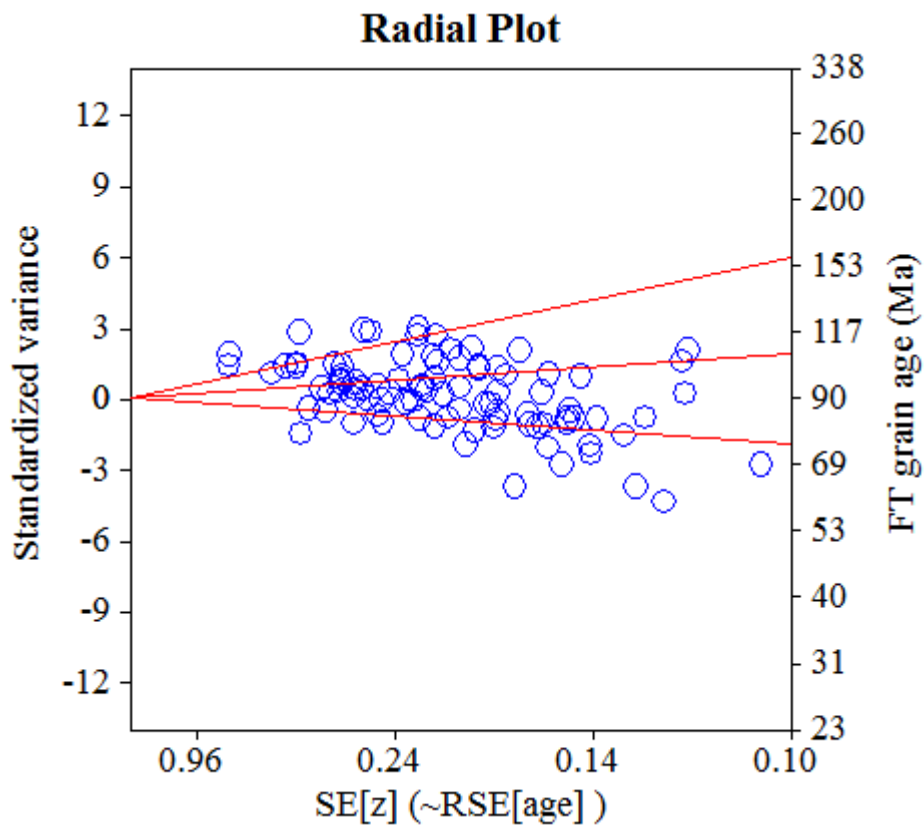
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1.	74.4	-3,5 ...+3,7	-6,7 ...+7,4	0.19	37.1	10.7	35.9
2.	107.4	-7,2 ...+7,7	-13,6 ...+15,6	0.23	52.8	11.5	51.3
3.	158.4	-25,8 ...+30,7	-46,6 ...+65,6	0.31	10.1	9.0	9.8

Log-likelihood for best fit: -331,339
 Chi-squared value for best fit: 97,246
 Reduced chi-squared value: 1,057
 Probability for F test: 0%
 Condition number for COVAR matrix: 41,65
 Number of iterations: 22





NEW PARAMETERS - ZETA METHOD

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 2.76E+05
 RELATIVE ERROR (%): 1.22
 EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50.00
 ZETA FACTOR AND STANDARD ERROR (yr cm²): 128.02 1.87
 SIZE OF COUNTER SQUARE (cm²): 8.30E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	2.61E+06	(26)	2.01E+05	(2)	12	36 46	211.0	57.3	1740.3
2	3.64E+06	(121)	1.51E+05	(5)	40	27 23	402.0	175.8	1218.6
3	5.70E+06	(142)	3.21E+05	(8)	30	58 40	300.7	153.0	701.5
4	5.22E+06	(39)	2.68E+05	(2)	9	48 61	313.3	88.6	2426.9
5	5.78E+06	(96)	5.42E+05	(9)	20	98 64	182.9	94.5	411.5
6	5.76E+06	(43)	1.20E+06	(9)	9	218 142	82.7	40.5	194.1
7	6.96E+06	(52)	1.20E+06	(9)	9	218 142	99.8	49.6	231.6
8	3.77E+06	(50)	4.52E+05	(6)	16	82 64	142.3	62.8	407.4
9	4.46E+06	(37)	3.61E+05	(3)	10	65 70	204.6	68.6	1020.2
10	7.71E+06	(192)	1.29E+06	(32)	30	233 82	104.7	72.2	157.6
11	6.96E+06	(52)	9.37E+05	(7)	9	170 124	127.4	59.1	333.9
12	5.34E+06	(93)	9.75E+05	(17)	21	177 85	95.2	57.0	170.8
13	3.09E+06	(77)	4.42E+05	(11)	30	80 47	121.0	65.1	253.2
14	6.27E+06	(156)	7.63E+05	(19)	30	138 63	142.4	89.2	243.0
15	4.96E+06	(247)	5.02E+05	(25)	60	91 36	171.3	114.4	269.6
16	6.57E+06	(229)	1.41E+06	(49)	42	255 73	81.9	60.1	114.0
17	5.22E+06	(52)	1.10E+06	(11)	12	200 118	82.1	42.9	175.3
18	3.09E+06	(77)	4.42E+05	(11)	30	80 47	121.0	65.1	253.2
19	5.14E+06	(427)	8.43E+05	(70)	100	153 37	106.2	82.5	136.6
20	3.42E+06	(142)	3.37E+05	(14)	50	61 32	175.0	102.5	328.0
21	8.70E+06	(65)	5.35E+05	(4)	9	97 91	271.0	106.0	1003.6
22	2.69E+06	(67)	6.83E+05	(17)	30	124 59	68.8	40.3	125.4
23	4.12E+06	(171)	4.34E+05	(18)	50	79 37	164.4	102.2	283.9
24	3.84E+06	(134)	4.88E+05	(17)	42	88 42	136.7	83.2	241.8
25	2.80E+06	(58)	6.27E+05	(13)	25	113 62	77.6	42.5	155.1
26	7.63E+06	(57)	1.07E+06	(8)	9	194 133	122.6	59.5	298.7
27	5.87E+06	(78)	1.28E+06	(17)	16	232 111	80.0	47.3	144.7
28	2.91E+06	(58)	2.01E+05	(4)	24	36 34	242.4	94.1	905.7
29	4.29E+06	(57)	8.28E+05	(11)	16	150 89	89.9	47.3	190.9
30	1.61E+06	(40)	1.61E+05	(4)	30	29 27	168.4	63.6	646.8
31	2.09E+06	(26)	1.61E+05	(2)	15	29 37	211.0	57.3	1740.3
32	2.13E+06	(53)	1.61E+05	(4)	30	29 27	222.0	85.7	834.8
33	5.85E+06	(102)	1.09E+06	(19)	21	197 90	93.5	57.5	162.1
34	8.99E+06	(179)	1.56E+06	(31)	24	282 101	100.8	69.0	153.0
35	5.92E+06	(59)	5.02E+05	(5)	12	91 78	199.5	83.9	633.9
36	2.77E+06	(46)	6.02E+05	(10)	20	109 67	79.8	40.3	178.3
37	5.66E+06	(169)	1.04E+06	(31)	36	188 67	95.2	65.0	144.7
38	4.30E+06	(107)	3.61E+05	(9)	30	65 43	203.4	105.7	455.7
39	7.53E+06	(75)	1.31E+06	(13)	12	236 129	100.1	55.9	197.4
40	4.15E+06	(62)	2.68E+05	(4)	18	48 46	258.8	100.9	961.8
41	3.82E+06	(57)	3.35E+05	(5)	18	61 52	192.8	80.9	614.2
42	4.19E+06	(327)	4.74E+05	(37)	94	86 28	153.7	109.9	222.1
43	1.93E+06	(32)	3.01E+05	(5)	20	55 47	109.2	43.6	361.6
44	1.00E+07	(75)	2.01E+06	(15)	9	364 185	87.0	50.1	163.7
45	2.71E+06	(36)	3.77E+05	(5)	16	68 58	122.6	49.6	402.7
46	2.29E+06	(95)	1.93E+05	(8)	50	35 24	202.8	101.4	481.9
47	5.16E+06	(214)	7.95E+05	(33)	50	144 50	113.1	78.6	168.7
48	3.77E+06	(50)	1.51E+05	(2)	16	27 35	398.7	115.0	2955.6
49	6.93E+06	(115)	4.22E+05	(7)	20	76 56	278.1	135.0	699.3
50	4.42E+06	(33)	1.34E+05	(1)	9	24 40	492.1	96.9	9950.2
51	3.68E+06	(110)	4.35E+05	(13)	36	79 43	146.2	83.3	283.6
52	2.33E+06	(116)	1.81E+05	(9)	60	33 21	220.2	114.8	491.7
53	8.51E+06	(113)	9.04E+05	(12)	16	164 93	162.4	90.9	323.6

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
54	3.35E+06	(25)	1.47E+06	(11)	9	267 157	39.7	19.0	89.9
55	1.81E+06	(60)	2.41E+05	(8)	40	44 30	129.0	62.8	313.4
56	5.06E+06	(294)	4.82E+05	(28)	70	87 33	182.0	124.4	278.3
57	7.52E+06	(624)	1.28E+06	(106)	100	231 45	102.7	83.5	126.4
58	9.42E+06	(391)	1.40E+06	(58)	50	253 66	117.1	88.9	154.0
59	7.36E+06	(55)	6.69E+05	(5)	9	121 103	186.2	77.9	594.3
60	5.66E+06	(188)	7.23E+05	(24)	40	131 53	136.2	89.6	217.9
61	3.68E+06	(214)	6.37E+05	(37)	70	115 38	101.1	71.4	147.5
62	5.31E+06	(216)	7.62E+05	(31)	49	138 49	121.4	83.6	183.2
63	8.63E+06	(86)	1.10E+06	(11)	12	200 118	135.0	73.0	281.0
64	2.73E+06	(181)	5.42E+05	(36)	80	98 33	87.9	61.5	129.7
65	8.16E+06	(271)	7.83E+05	(26)	40	142 55	180.6	121.7	281.1
66	4.28E+06	(284)	3.61E+05	(24)	80	65 26	204.6	136.2	323.8
67	4.18E+06	(52)	5.62E+05	(7)	15	102 74	127.4	59.1	333.9
68	2.69E+06	(134)	3.41E+05	(17)	60	62 30	136.7	83.2	241.8
69	2.41E+06	(50)	1.45E+05	(3)	25	26 28	274.7	94.4	1329.8
70	7.53E+06	(250)	1.27E+06	(42)	40	229 71	104.0	75.1	148.0
71	3.73E+06	(93)	4.02E+05	(10)	30	73 45	160.0	84.9	344.8
72	4.02E+06	(30)	8.03E+05	(6)	9	145 114	85.9	36.1	254.7
73	4.82E+06	(280)	4.65E+05	(27)	70	84 32	179.8	122.0	277.3
74	4.63E+06	(192)	5.30E+05	(22)	50	96 41	151.4	98.2	247.3
75	3.03E+06	(151)	3.61E+05	(18)	60	65 30	145.4	90.0	252.1
76	4.93E+06	(368)	5.49E+05	(41)	90	99 31	156.2	113.6	221.1
77	3.18E+06	(264)	1.02E+06	(85)	100	185 40	54.4	42.5	69.5
78	4.88E+06	(405)	8.80E+05	(73)	100	159 37	96.7	75.3	124.0
79	7.92E+06	(657)	1.27E+06	(105)	100	229 45	109.1	88.7	134.2
80	6.46E+06	(193)	6.36E+05	(19)	36	115 52	175.7	110.8	297.9
81	6.70E+06	(139)	1.01E+06	(21)	25	183 79	115.2	73.1	192.2
82	3.37E+06	(28)	1.20E+06	(10)	10	218 135	48.8	23.3	113.2
83	6.31E+06	(262)	9.64E+05	(40)	50	175 55	114.3	82.2	163.8
84	2.37E+06	(63)	4.52E+05	(12)	32	82 46	91.1	49.4	186.4
85	6.59E+06	(547)	1.41E+06	(117)	100	255 48	81.8	66.8	100.0
86	3.13E+06	(260)	4.70E+05	(39)	100	85 27	116.4	83.3	167.5
87	3.04E+06	(252)	6.39E+05	(53)	100	116 32	83.3	61.9	114.4
88	5.30E+06	(220)	1.16E+06	(48)	50	209 60	80.3	58.7	112.3
89	7.08E+06	(147)	1.73E+06	(36)	25	314 104	71.5	49.6	106.2
90	5.35E+06	(160)	6.69E+05	(20)	36	121 54	138.9	87.9	233.6
91	6.18E+06	(154)	6.02E+05	(15)	30	109 55	177.2	105.7	324.0
92	6.67E+06	(554)	1.02E+06	(85)	100	185 40	113.5	90.3	142.7
93	3.36E+06	(209)	4.18E+05	(26)	75	76 29	139.8	93.5	219.0
94	6.73E+06	(335)	1.08E+06	(54)	60	196 53	107.7	80.9	143.4
95	5.88E+06	(244)	8.67E+05	(36)	50	157 52	118.2	83.6	172.9
96	3.15E+06	(157)	3.61E+05	(18)	60	65 30	151.1	93.7	261.7
97	7.43E+06	(259)	1.12E+06	(39)	42	203 65	115.9	83.0	166.8
98	7.45E+06	(99)	1.20E+06	(16)	16	218 108	107.5	63.8	195.9
99	6.96E+06	(52)	1.47E+06	(11)	9	267 157	82.1	42.9	175.3
<hr/>									
POOLED	4.85E+06	(15535)	7.15E+05	(2288)	3856	129 6	118.9	112.3	125.8

CHI^2 PROBABILITY (%): 0.0

POOLED AGE W/	68% CONF. INTERVAL(Ma):	118.9,	115.5	--	122.4	(-3.4	+3.5)
	95% CONF. INTERVAL(Ma):			--	125.8	(-6.6	+7.0)
CENTRAL AGE W/	68% CONF. INTERVAL(Ma):	123.5,	118.4	--	128.9	(-5.1	+5.3)
	95% CONF. INTERVAL(Ma):			--	134.2	(-9.8	+10.7)
	AGE DISPERSION (%):	27.3					

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	39.10	0.690	1.2	1.18
2.	118.90	0.872	35.8	35.43
3.	311.20	0.947	5.2	5.12

Total range for grain ages: 39.1 to 383.1 Ma
 Number of active grains (Num. used for fit): 99
 Number of removed grains: 0
 Degrees of freedom for fit: 94
 Average of the SE(Z)'s for the grains: 0.33
 Estimated width of peaks in PD plot in Z units: 0.39

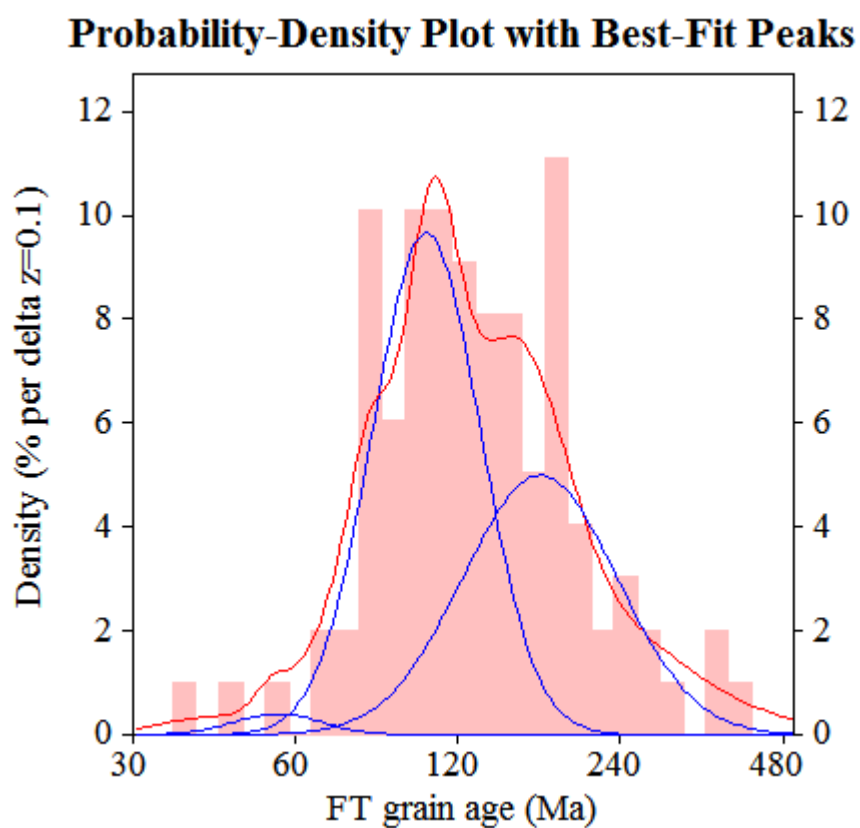
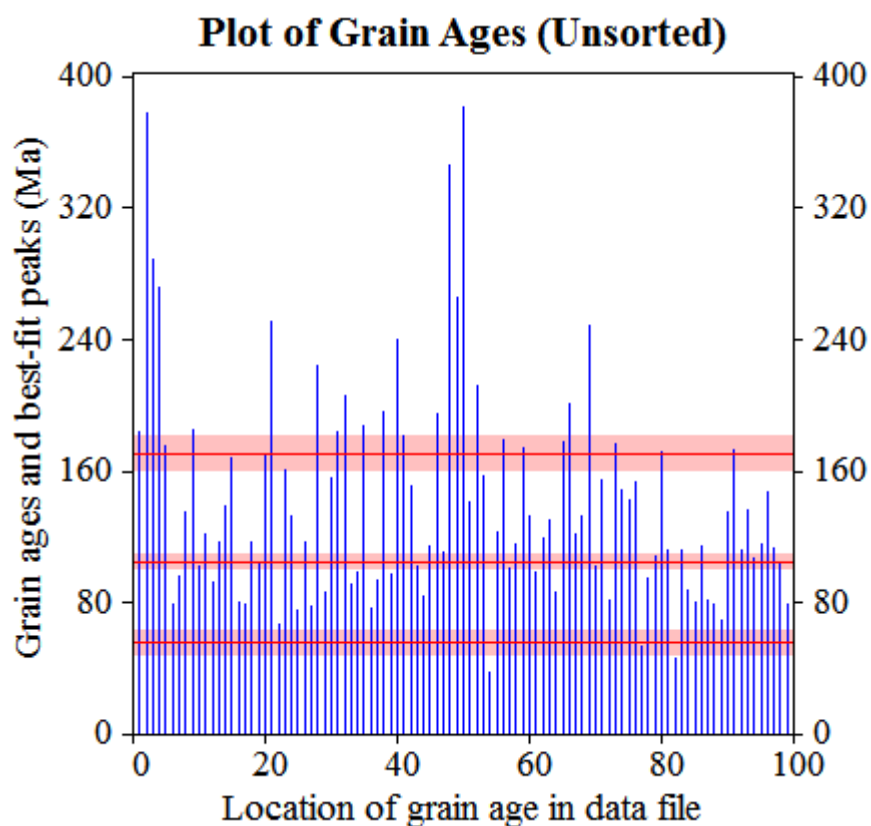
PARAMETERS FOR BEST-FIT PEAKS

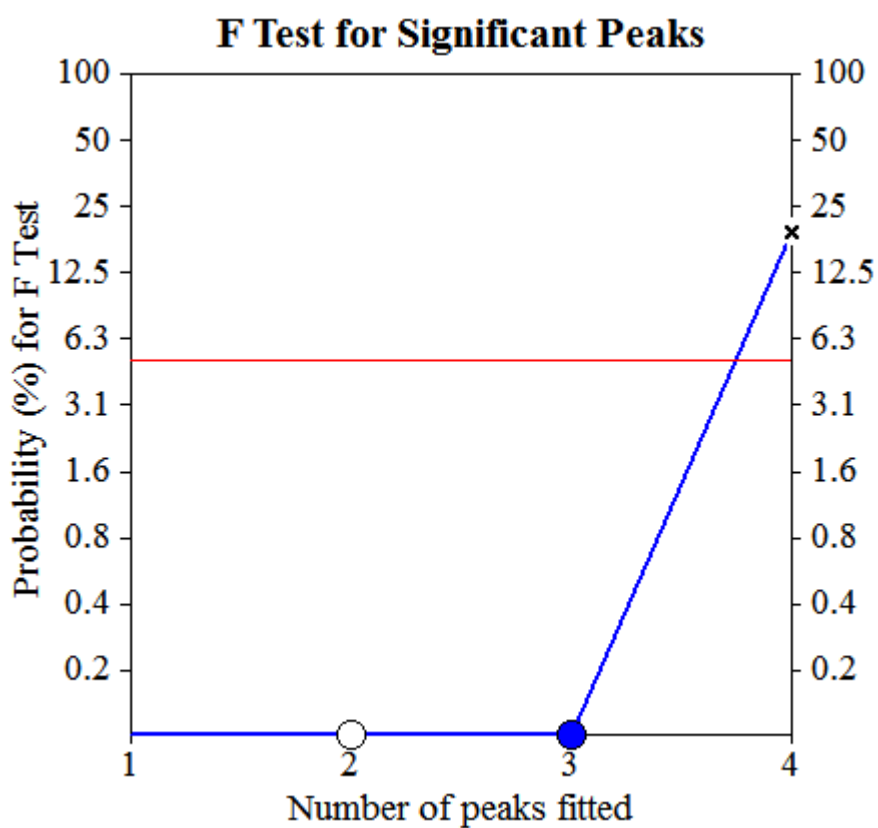
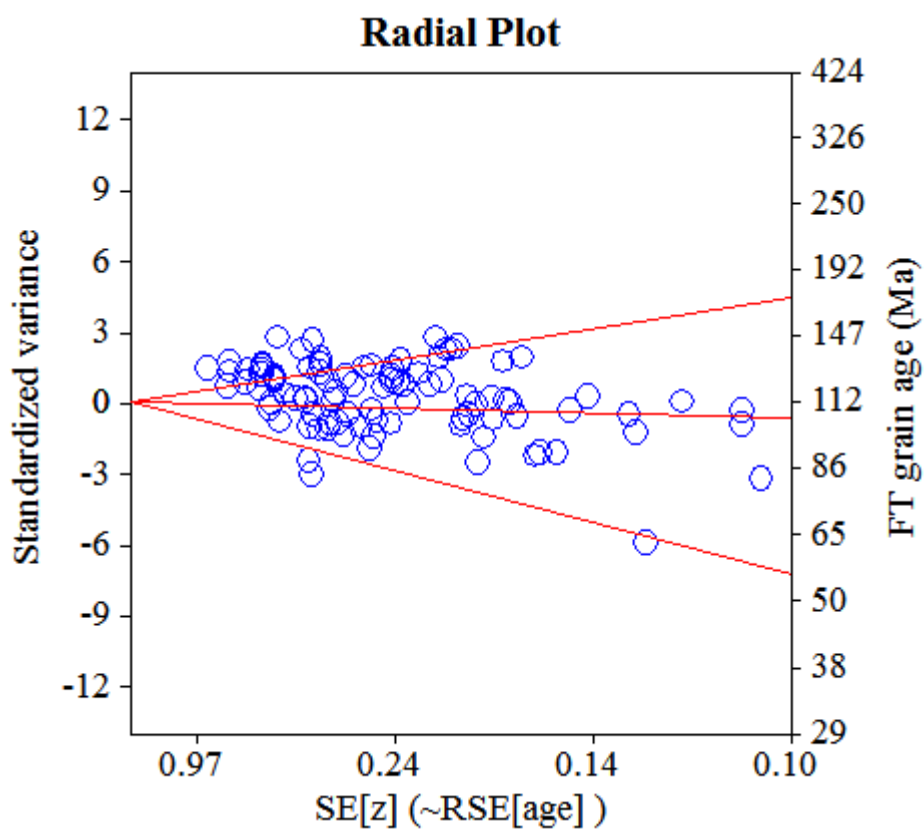
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	55.6	-7.1 ...+8.1	-13.0 ...+16.9	0.18	1.8	1.8	1.8
2.	104.9	-4.0 ...+4.2	-7.7 ...+8.3	0.23	56.4	8.4	55.8
3.	170.5	-10.3 ...+10.9	-19.6 ...+22.1	0.33	41.7	8.3	41.3

Log-likelihood for best fit: -306.293
 Chi-squared value for best fit: 103.646
 Reduced chi-squared value: 1.103
 Probability for F test: 0%
 Condition number for COVAR matrix: 64.72
 Number of iterations: 18





Datafile: C:\BH2\Edna\12-2015\EMP_49\EMP_49_12_2015_22.ftz

Title: Sample No. EMP_49 Irr 12-2015-22

NEW PARAMETERS - ZETA METHOD

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 2,77E+05
 RELATIVE ERROR (%): 1,23
 EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 50,00
 ZETA FACTOR AND STANDARD ERROR (yr cm²): 128,02 1,87
 SIZE OF COUNTER SQUARE (cm²): 8,30E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)	Age	--95% CI--
1	7,28E+06	(302)	1,20E+06	(50)	50	217 61	106.1	78.7	146.2
2	6,60E+06	(274)	1,37E+06	(57)	50	248 66	84.1	63.2	111.8
3	5,76E+06	(478)	1,48E+06	(123)	100	267 49	68.4	56.0	83.5
4	3,80E+06	(63)	6,02E+05	(10)	20	109 67	109.4	56.7	240.1
5	6,07E+06	(247)	9,34E+05	(38)	49	168 54	114.0	81.2	165.0
6	4,73E+06	(165)	4,02E+05	(14)	42	72 38	203.8	120.0	380.0
7	4,03E+06	(164)	4,92E+05	(20)	49	89 39	143.0	90.6	240.3
8	9,04E+06	(225)	1,37E+06	(34)	30	246 84	116.0	81.1	171.7
9	6,55E+06	(87)	9,04E+05	(12)	16	163 92	126.0	69.7	253.8
10	5,54E+06	(230)	6,02E+05	(25)	50	109 43	160.4	106.9	252.9
11	5,24E+06	(87)	7,23E+05	(12)	20	130 74	126.0	69.7	253.8
12	8,07E+06	(134)	1,81E+06	(30)	20	326 118	78.5	52.8	121.1
13	7,67E+06	(191)	1,53E+06	(38)	30	275 89	88.3	62.4	128.8
14	5,75E+06	(191)	7,53E+05	(25)	40	136 54	133.5	88.5	211.6
15	7,23E+06	(210)	1,65E+06	(48)	35	298 86	77.0	56.2	107.8
16	8,29E+06	(344)	1,40E+06	(58)	50	252 66	103.6	78.5	136.7
17	2,37E+06	(59)	2,41E+05	(6)	30	43 34	168.3	75.1	477.0
18	6,60E+06	(219)	1,42E+06	(47)	40	255 74	82.0	59.8	115.0
19	2,74E+06	(91)	4,22E+05	(14)	40	76 40	113.3	65.0	215.9
20	8,06E+06	(107)	1,43E+06	(19)	16	258 117	98.5	60.7	170.4
21	7,95E+06	(66)	8,43E+05	(7)	10	152 111	162.0	76.4	418.9
22	5,73E+06	(476)	1,08E+06	(90)	100	195 41	92.7	73.9	116.2
23	4,56E+06	(265)	1,41E+06	(82)	70	254 56	56.8	44.3	72.8
24	3,93E+06	(261)	8,58E+05	(57)	80	155 41	80.1	60.2	106.6
25	7,11E+06	(118)	1,39E+06	(23)	20	250 103	89.9	57.6	147.7
26	3,32E+06	(248)	4,28E+05	(32)	90	77 27	135.6	94.2	202.6
27	4,82E+06	(168)	1,15E+06	(40)	42	207 65	73.9	52.3	107.3
28	8,76E+06	(109)	2,01E+06	(25)	15	362 144	76.6	49.5	123.7
29	7,20E+06	(299)	1,57E+06	(65)	50	282 70	80.6	61.6	105.3
30	7,44E+06	(247)	1,99E+06	(66)	40	358 88	65.6	50.0	86.1
31	4,22E+06	(210)	4,42E+05	(22)	60	80 34	166.2	108.0	270.7
32	6,40E+06	(85)	1,20E+06	(16)	16	217 107	92.9	54.6	170.3
33	6,69E+06	(50)	1,47E+06	(11)	9	265 157	79.3	41.3	169.8
34	8,55E+06	(213)	1,57E+06	(39)	30	282 90	95.9	68.3	138.8
35	6,90E+06	(573)	1,06E+06	(88)	100	191 41	114.0	91.0	142.7
36	7,04E+06	(146)	1,73E+06	(36)	25	313 104	71.4	49.5	106.0
37	4,50E+06	(112)	2,81E+05	(7)	30	51 37	272.2	132.0	685.4
38	5,93E+06	(246)	9,64E+05	(40)	50	174 55	107.9	77.4	154.9
39	6,51E+06	(216)	1,51E+06	(50)	40	271 77	76.1	55.9	105.8
40	5,92E+06	(59)	1,51E+06	(15)	12	271 138	68.9	39.0	131.3
41	3,06E+06	(142)	5,38E+05	(25)	56	97 38	99.5	65.2	159.2
42	9,12E+06	(227)	1,37E+06	(34)	30	246 84	117.0	81.8	173.2
43	4,05E+06	(84)	6,75E+05	(14)	25	122 64	104.7	59.8	200.2
44	5,53E+06	(225)	1,25E+06	(51)	49	226 63	77.7	57.3	107.6
45	6,14E+06	(255)	1,57E+06	(65)	50	282 70	68.8	52.4	90.3
46	4,13E+06	(137)	1,48E+06	(49)	40	266 76	49.4	35.5	70.0
47	2,30E+06	(153)	4,82E+05	(32)	80	87 31	84.0	57.4	127.3
48	3,34E+06	(222)	4,22E+05	(28)	80	76 29	138.6	94.0	213.3
49	6,10E+06	(76)	1,12E+06	(14)	15	203 107	94.8	53.8	182.1
50	7,13E+06	(142)	1,26E+06	(25)	24	226 90	99.5	65.2	159.2
51	2,82E+06	(187)	3,92E+05	(26)	80	71 27	125.8	83.8	197.7
52	8,03E+06	(80)	1,20E+06	(12)	12	217 123	116.0	63.8	234.5
53	8,76E+06	(218)	1,20E+06	(30)	30	217 79	127.2	87.2	193.1

Datafile: C:\BH2\Edna\12-2015\EMP_49\EMP_49_12_2015_22.ftz

Title: Sample No. EMP_49 Irr 12-2015-22

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
54	1,54E+06	(46)	1,67E+05	(5)	36	30 26	156.9	64.8	506.6
55	3,33E+06	(69)	3,37E+05	(7)	25	61 44	169.2	80.0	436.6
56	2,71E+06	(90)	4,52E+05	(15)	40	81 41	104.7	61.0	195.3
57	4,82E+06	(64)	8,28E+05	(11)	16	149 88	101.3	53.8	213.8
58	2,31E+06	(94)	4,43E+05	(18)	49	80 37	91.4	55.3	161.3
59	3,33E+06	(83)	4,82E+05	(12)	30	87 49	120.3	66.3	242.7
60	3,13E+06	(78)	7,63E+05	(19)	30	138 62	72.0	43.5	126.3
61	2,81E+06	(28)	9,04E+05	(9)	12	163 106	54.3	25.3	131.8
62	7,98E+06	(265)	1,48E+06	(49)	40	266 76	95.1	70.1	131.8
63	3,10E+06	(103)	5,12E+05	(17)	40	92 44	105.9	63.7	189.1
64	3,34E+06	(111)	6,63E+05	(22)	40	119 50	88.4	56.0	147.1
65	7,15E+06	(178)	1,24E+06	(31)	30	224 80	100.7	68.9	152.8
66	6,48E+06	(538)	1,05E+06	(87)	100	189 41	108.3	86.3	135.8
67	3,31E+06	(44)	1,51E+05	(2)	16	27 34	353.9	101.1	2682.8
68	5,37E+06	(312)	1,27E+06	(74)	70	230 53	73.9	57.4	95.3
69	7,15E+06	(178)	1,24E+06	(31)	30	224 80	100.7	68.9	152.8
70	6,48E+06	(538)	1,05E+06	(87)	100	189 41	108.3	86.3	135.8
71	3,31E+06	(44)	1,51E+05	(2)	16	27 34	353.9	101.1	2682.8
72	5,37E+06	(312)	1,27E+06	(74)	70	230 53	73.9	57.4	95.3
73	5,11E+06	(178)	1,15E+06	(40)	42	207 65	78.3	55.5	113.4
74	5,37E+06	(223)	5,30E+05	(22)	50	96 40	176.3	114.8	286.8
75	5,54E+06	(138)	9,64E+05	(24)	30	174 70	100.7	65.5	162.8
76	5,14E+06	(128)	8,03E+05	(20)	30	145 64	111.9	70.2	189.6
77	5,54E+06	(184)	1,11E+06	(37)	40	201 66	87.4	61.4	128.2
78	7,35E+06	(305)	1,01E+06	(42)	50	182 56	127.3	92.4	180.2
79	1,69E+06	(42)	3,61E+05	(9)	30	65 42	81.2	39.6	190.8
80	2,83E+06	(188)	6,02E+05	(40)	80	109 34	82.7	58.7	119.5
81	4,92E+06	(143)	8,26E+05	(24)	35	149 60	104.4	67.9	168.4
82	2,21E+06	(33)	1,34E+05	(2)	18	24 31	267.5	74.5	2127.5
83	7,08E+06	(94)	8,28E+05	(11)	16	149 88	148.1	80.5	307.1
84	5,35E+06	(71)	9,04E+05	(12)	16	163 92	103.1	56.3	209.5
85	9,49E+06	(126)	2,64E+06	(35)	16	475 160	63.4	43.5	95.2
86	8,18E+06	(285)	2,67E+06	(93)	42	481 100	53.9	42.6	68.2
87	7,68E+06	(255)	1,72E+06	(57)	40	309 82	78.3	58.8	104.3
88	2,94E+06	(171)	2,58E+05	(15)	70	47 24	197.4	118.2	359.6
89	7,93E+06	(79)	1,81E+06	(18)	12	326 152	76.9	46.1	136.8
90	6,35E+06	(369)	1,36E+06	(79)	70	245 55	81.9	64.2	104.5
91	2,82E+06	(164)	4,48E+05	(26)	70	81 31	110.5	73.3	174.3
92	3,90E+06	(97)	4,82E+05	(12)	30	87 49	140.3	78.0	281.3
93	5,79E+06	(202)	1,69E+06	(59)	42	305 79	60.0	44.9	80.2
94	8,19E+06	(204)	2,17E+06	(54)	30	391 106	66.6	49.2	91.8
95	6,53E+06	(271)	1,42E+06	(59)	50	256 67	80.4	60.7	106.5
96	5,23E+06	(152)	9,64E+05	(28)	35	174 65	95.2	63.7	148.3
97	5,49E+06	(114)	1,35E+06	(28)	25	243 91	71.6	47.3	112.7
POOLED		5,30E+06(17574)	9,99E+05(3314)		3996	180 8	93.5	88.7	98.5

CHI^2 PROBABILITY (%): 0.0

POOLED AGE W/	68% CONF. INTERVAL(Ma):	93.5,	91.0 --	96.0 (-2.5 +2.5)
	95% CONF. INTERVAL(Ma):		88.7 --	98.5 (-4.8 +5.0)
CENTRAL AGE W/	68% CONF. INTERVAL(Ma):	95.7,	92.2 --	99.3 (-3.4 +3.6)
	95% CONF. INTERVAL(Ma):		89.1 --	102.8 (-6.6 +7.1)
	AGE DISPERSION (%):	23.2		

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	93.50	0.841	41.1	39.89
2.	109.40	0.861	41.8	40.50
3.	139.60	0.888	18.9	18.33

Total range for grain ages: 49,1 to 308,6 Ma
 Number of active grains (Num. used for fit): 97
 Number of removed grains: 0
 Degrees of freedom for fit: 92
 Average of the SE(Z)'s for the grains: 0,25
 Estimated width of peaks in PD plot in Z units: 0,3

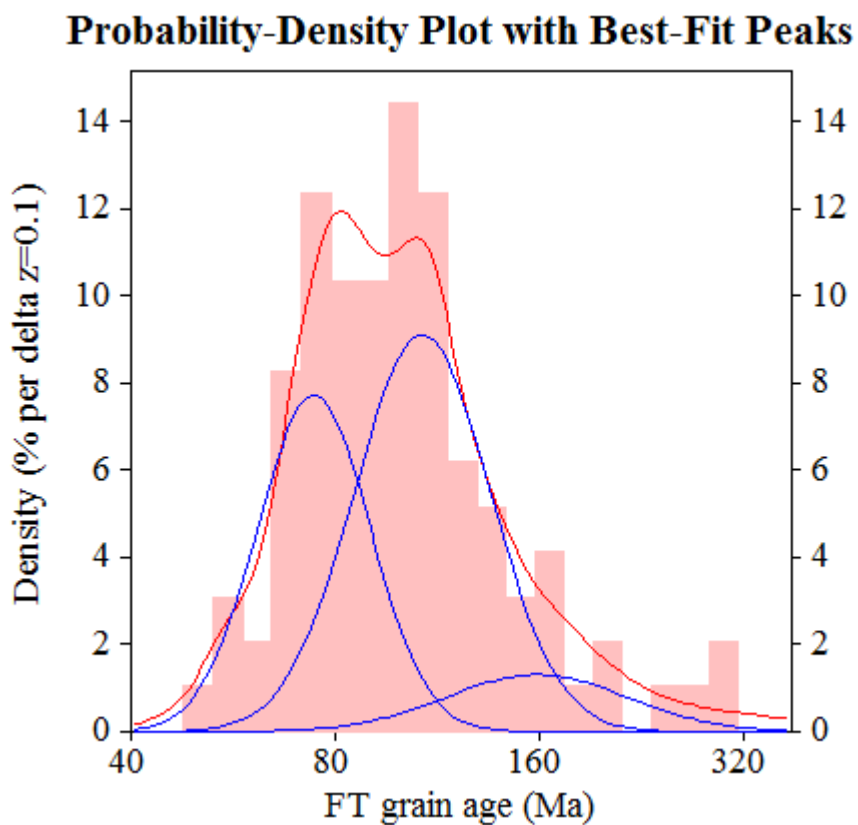
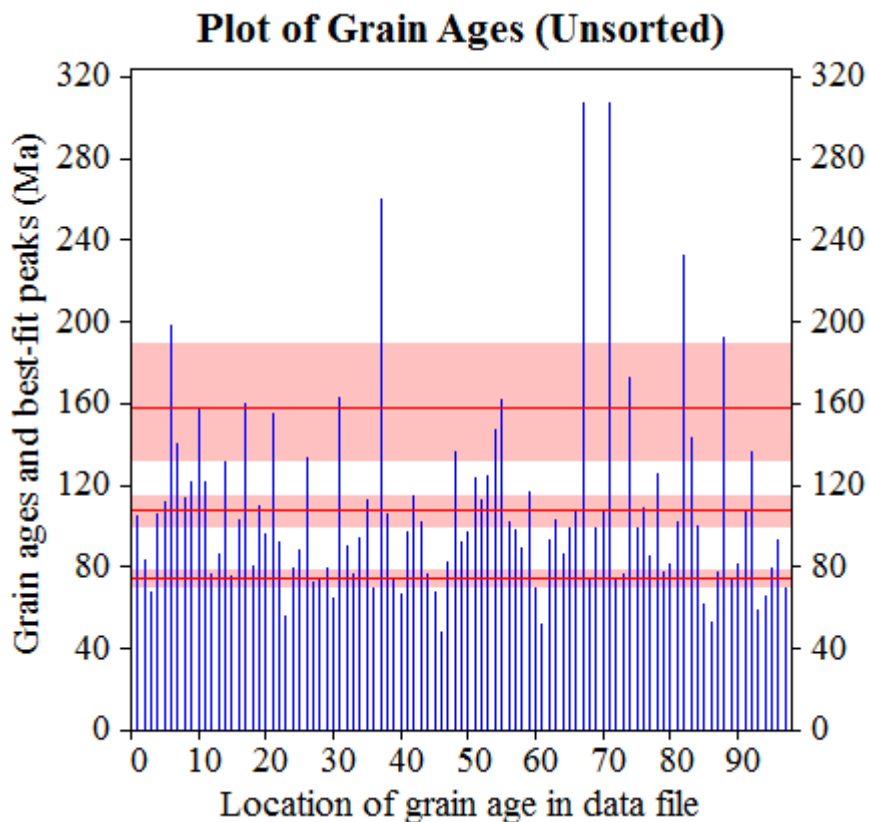
PARAMETERS FOR BEST-FIT PEAKS

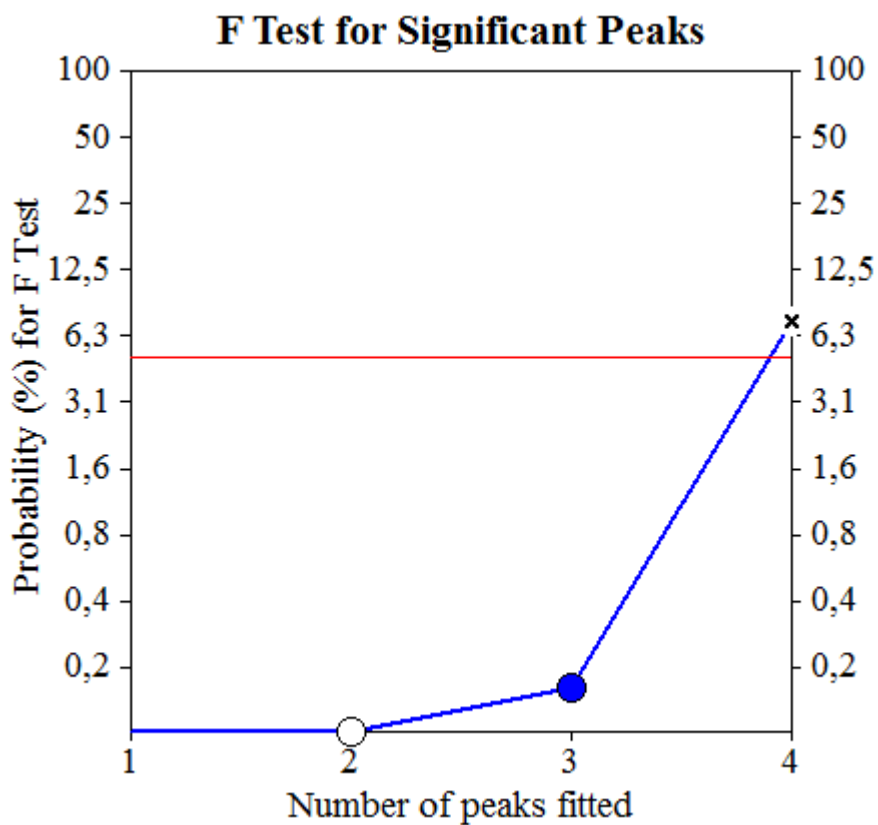
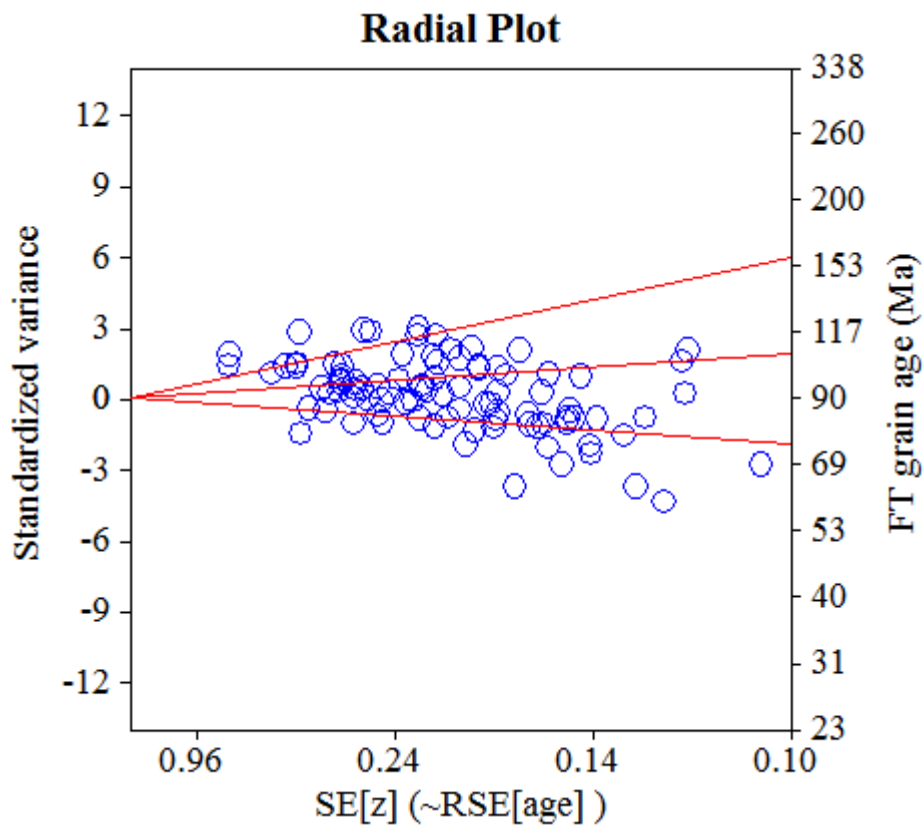
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1.	74.4	-3,5 ...+3,7	-6,7 ...+7,4	0.19	37.1	10.7	35.9
2.	107.4	-7,2 ...+7,7	-13,6 ...+15,6	0.23	52.8	11.5	51.3
3.	158.4	-25,8 ...+30,7	-46,6 ...+65,6	0.31	10.1	9.0	9.8

Log-likelihood for best fit: -331,339
 Chi-squared value for best fit: 97,246
 Reduced chi-squared value: 1,057
 Probability for F test: 0%
 Condition number for COVAR matrix: 41,65
 Number of iterations: 22





Datafile: C:\BH2\Alejandro\AFT\11-2015\AP_045\AP_045.ftz

Title: AP_045 Irr 11-2015-9

NEW PARAMETERS - ZETA METHOD

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 1,01E+06

RELATIVE ERROR (%): 1,16

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 15,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 284,52 5,65SIZE OF COUNTER SQUARE (cm²): 6,39E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95%	CI--
1	1,56E+05	(6)	3,13E+05	(12)	60	5 3	72.3	22.0	203.3
2	9,39E+04	(3)	2,19E+05	(7)	50	3 2	63.0	10.2	263.8
3	1,88E+05	(12)	5,01E+05	(32)	100	7 3	54.0	25.2	106.4
4	2,35E+05	(15)	7,36E+05	(47)	100	11 3	45.9	23.7	82.8
5	1,25E+05	(4)	1,56E+05	(5)	50	2 2	114.6	22.7	512.3
6	1,17E+05	(6)	2,15E+05	(11)	80	3 2	78.7	23.7	226.8
7	7,82E+04	(3)	2,09E+05	(8)	60	3 2	55.3	9.2	220.3
8	3,35E+05	(15)	1,12E+06	(50)	70	17 5	43.2	22.4	77.4
9	1,96E+05	(10)	3,52E+05	(18)	80	5 2	79.8	32.8	179.6
10	2,19E+05	(7)	5,63E+05	(18)	50	8 4	56.3	19.7	138.5
11	6,96E+05	(16)	2,22E+06	(51)	36	33 9	45.2	23.9	79.7
12	1,10E+05	(7)	2,50E+05	(16)	100	4 2	63.2	21.8	159.3
13	2,90E+05	(10)	8,40E+05	(29)	54	13 5	49.8	21.5	103.6
14	1,88E+05	(12)	4,54E+05	(29)	100	7 2	59.5	27.5	118.9
15	1,88E+05	(12)	4,69E+05	(30)	100	7 3	57.6	26.7	114.4
16	4,69E+04	(3)	9,39E+04	(6)	100	1 1	73.1	11.6	327.4
17	9,39E+04	(6)	2,82E+05	(18)	100	4 2	48.5	15.5	124.6
18	1,56E+04	(1)	4,69E+04	(3)	100	1 1	51.9	0.9	569.6
19	1,56E+05	(4)	4,69E+05	(12)	40	7 4	48.9	11.2	155.9
20	8,94E+04	(4)	2,46E+05	(11)	70	4 2	53.2	12.1	173.7
21	9,78E+04	(5)	6,85E+05	(35)	80	10 3	21.0	6.3	52.3
22	1,37E+05	(7)	4,30E+05	(22)	80	6 3	46.2	16.4	109.7
23	1,72E+05	(11)	5,01E+05	(32)	100	7 3	49.6	22.4	99.6
24	5,63E+05	(18)	1,82E+06	(58)	50	27 7	44.6	24.6	76.2
25	1,17E+05	(6)	5,48E+05	(28)	80	8 3	31.3	10.4	75.2
26	3,76E+05	(24)	1,82E+06	(116)	100	27 5	29.8	18.2	46.2
27	6,26E+04	(2)	1,56E+05	(5)	50	2 2	59.6	5.5	341.3
28	3,76E+05	(12)	7,82E+05	(25)	50	12 5	69.0	31.4	140.7
29	9,39E+04	(3)	1,88E+05	(6)	50	3 2	73.1	11.6	327.4
30	1,17E+05	(6)	3,91E+05	(20)	80	6 3	43.7	14.1	110.2
31	2,19E+05	(14)	7,82E+05	(50)	100	12 3	40.4	20.5	73.4
32	1,30E+05	(5)	3,39E+05	(13)	60	5 3	56.0	15.4	162.9
33	6,26E+04	(4)	3,44E+05	(22)	100	5 2	26.9	6.5	76.4
34	1,04E+05	(4)	4,69E+05	(18)	60	7 3	32.8	7.8	96.1
35	2,61E+05	(6)	9,13E+05	(21)	36	14 6	41.6	13.5	104.2
36	1,41E+05	(9)	5,16E+05	(33)	100	8 3	39.5	16.4	83.1
37	2,03E+05	(13)	1,22E+06	(78)	100	18 4	24.1	12.2	43.2
38	9,39E+05	(54)	2,07E+06	(119)	90	31 6	64.9	46.1	89.9
39	4,69E+04	(3)	2,82E+05	(18)	100	4 2	24.9	4.5	81.4
40	4,07E+05	(13)	1,44E+06	(46)	50	21 6	40.8	20.0	75.9
41	6,52E+05	(15)	3,65E+06	(84)	36	54 12	25.8	13.7	44.6
42	9,39E+04	(6)	5,63E+05	(36)	100	8 3	24.4	8.2	57.0
43	4,69E+04	(3)	1,41E+05	(9)	100	2 1	49.3	8.3	188.8
44	3,13E+04	(2)	3,44E+05	(22)	100	5 2	13.9	1.5	52.8
45	4,47E+04	(2)	3,13E+05	(14)	70	5 2	21.8	2.3	88.6
46	4,56E+05	(14)	2,18E+06	(67)	48	33 8	30.2	15.5	53.7
47	1,41E+05	(9)	2,97E+05	(19)	100	4 2	68.2	27.0	155.7
48	1,25E+05	(8)	4,07E+05	(26)	100	6 2	44.6	17.2	99.6
49	8,94E+04	(4)	8,72E+05	(39)	70	13 4	15.2	3.8	40.7
50	1,10E+05	(7)	2,97E+05	(19)	100	4 2	53.4	18.7	130.0
51	4,54E+05	(29)	2,43E+06	(155)	100	36 6	26.9	17.4	40.0
52	8,94E+04	(4)	1,56E+05	(7)	70	2 2	82.8	17.6	314.6
53	1,56E+05	(9)	4,35E+05	(25)	90	6 3	52.0	21.2	113.4
54	4,69E+04	(3)	5,63E+05	(36)	100	8 3	12.5	2.4	37.7

Datafile: C:\BH2\Alejandro\AFT\11-2015\AP_045\AP_045.ftz

Title: AP_045 Irr 11-2015-9

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
55	3,13E+04	(1)	5,01E+05	(16)	50	7 4	10.2	0.2	57.5
56	2,09E+05	(8)	2,87E+05	(11)	60	4 3	104.0	36.3	278.7
57	7,82E+04	(5)	1,22E+06	(78)	100	18 4	9.5	2.9	22.4
58	1,96E+05	(6)	3,59E+05	(11)	48	5 3	78.7	23.7	226.8
59	9,78E+04	(5)	2,35E+05	(12)	80	3 2	60.6	16.5	179.8
60	2,66E+05	(17)	1,36E+06	(87)	100	20 4	28.2	15.6	47.3
61	1,30E+05	(5)	3,13E+05	(12)	60	5 3	60.6	16.5	179.8
62	1,25E+05	(8)	2,50E+05	(16)	100	4 2	72.0	26.5	175.2
63	5,01E+05	(16)	8,14E+05	(26)	50	12 5	88.0	44.1	168.7
64	1,03E+06	(46)	2,73E+06	(122)	70	41 7	54.0	37.5	76.1
65	3,13E+05	(6)	5,22E+05	(10)	30	8 5	86.4	25.6	256.2
66	1,88E+05	(6)	4,38E+05	(14)	50	7 3	62.1	19.3	168.1
67	5,16E+05	(33)	1,35E+06	(86)	100	20 4	55.0	35.6	82.6
68	1,10E+05	(7)	6,10E+05	(39)	100	9 3	26.2	9.7	58.0
69	6,26E+04	(2)	1,25E+05	(4)	50	2 2	73.9	6.5	482.0
70	2,50E+05	(16)	8,14E+05	(52)	100	12 3	44.3	23.5	78.1
71	5,87E+04	(3)	5,48E+05	(28)	80	8 3	16.1	3.0	49.6
72	1,56E+05	(5)	2,82E+05	(9)	50	4 3	80.3	20.9	259.5
POOLED	1,96E+05	(685)	6,77E+05	(2369)	5478	10 0	41.3	37.5	45.5

CHI^2 PROBABILITY (%): 0.3

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

POOLED AGE W/	68% CONF. INTERVAL (Ma):	41.3,	39.4 --	43.4 (-2.0 +2.1)
	95% CONF. INTERVAL (Ma):		37.5 --	45.5 (-3.8 +4.2)
CENTRAL AGE W/	68% CONF. INTERVAL (Ma):	42.6,	40.0 --	45.3 (-2.6 +2.7)
	95% CONF. INTERVAL (Ma):		37.7 --	48.1 (-4.9 +5.5)
	AGE DISPERSION (%):	27.1		

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 2)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	41.30	0.224	23.4	16.81
2.	63.80	0.309	27.3	19.63

Total range for grain ages: 10,0 to 116,3 Ma
 Number of active grains (Num. used for fit): 72
 Number of removed grains: 0
 Degrees of freedom for fit: 69
 Average of the SE(Z)'s for the grains: 0,48
 Estimated width of peaks in PD plot in Z units: 0,56

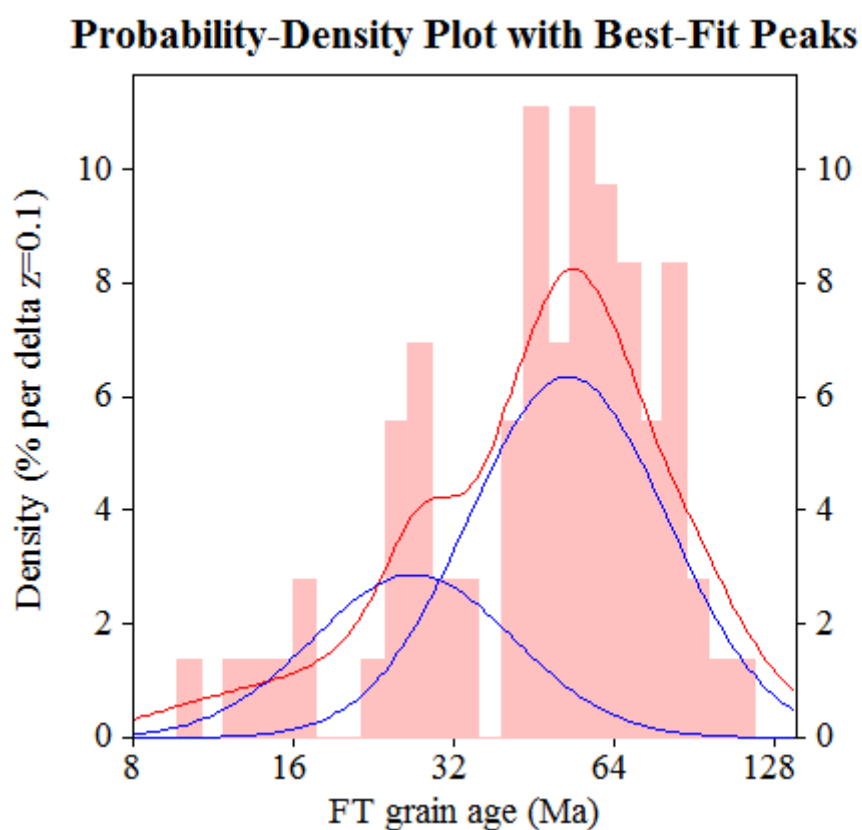
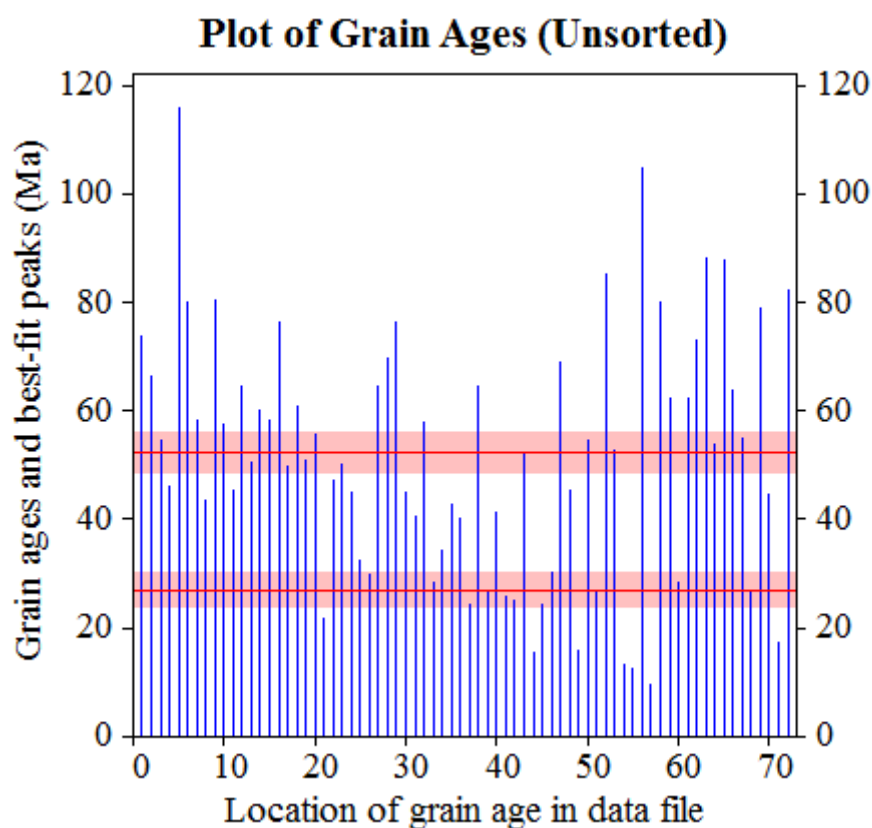
PARAMETERS FOR BEST-FIT PEAKS

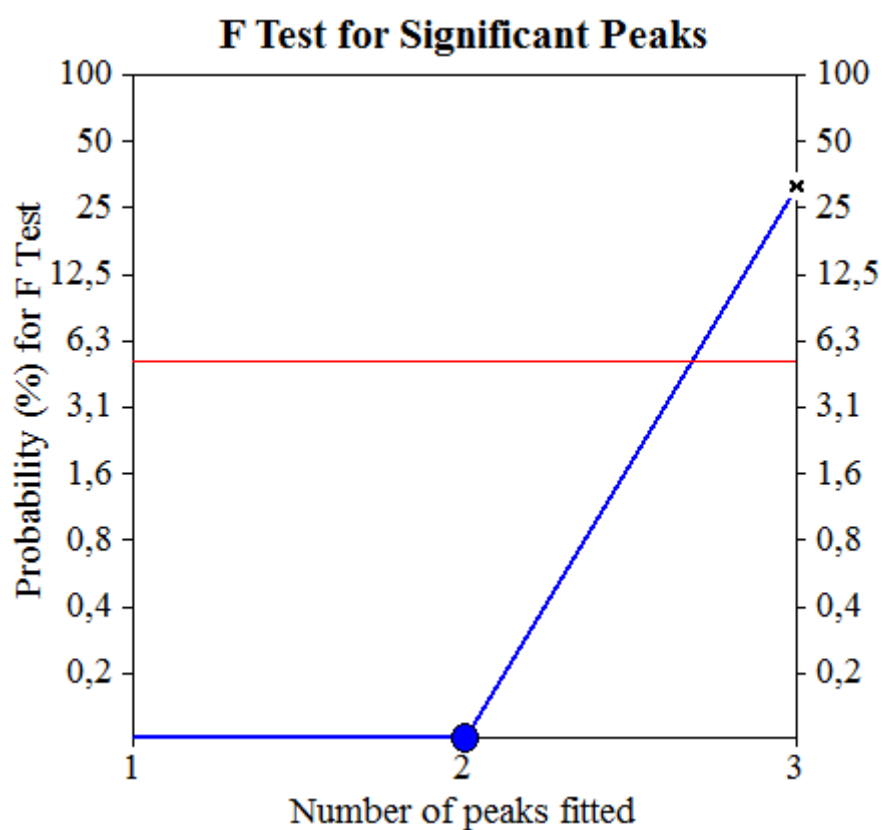
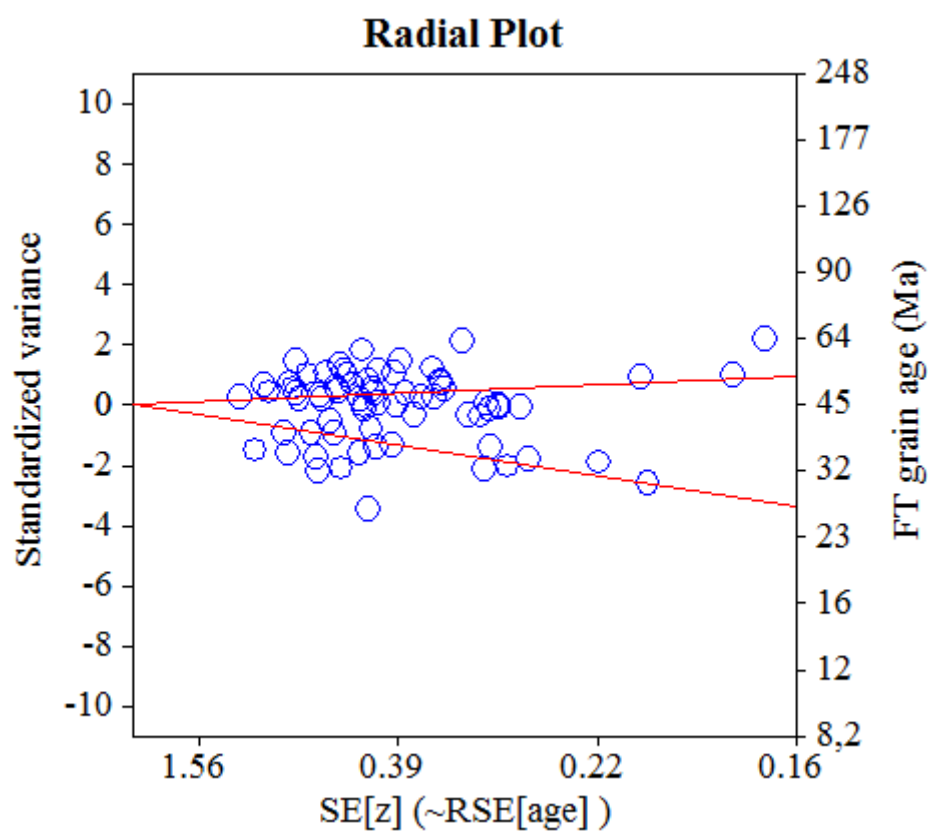
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age (Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	26.8	-3,0 ...+3,4	-5,6 ...+7,1	0.44	31.3	10.5	22.5
2.	52.3	-3,6 ...+3,9	-6,8 ...+7,8	0.43	68.7	10.5	49.5

Log-likelihood for best fit: -173,701
 Chi-squared value for best fit: 61,407
 Reduced chi-squared value: 0,890
 Probability for F test: 0%
 Condition number for COVAR matrix: 6,12
 Number of iterations: 21





NEW PARAMETERS - ZETA METHOD

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 1,31E+06
 RELATIVE ERROR (%): 1,11
 EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 15,00
 ZETA FACTOR AND STANDARD ERROR (yr cm²): 270,07 6,38
 SIZE OF COUNTER SQUARE (cm²): 6,39E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95%	CI--
1	6,26E+05	(40)	3,80E+06	(243)	100	44 6	29.0	20.2	40.6
2	4,23E+05	(27)	2,27E+06	(145)	100	26 4	32.9	20.9	49.6
3	5,48E+05	(35)	3,68E+06	(235)	100	42 6	26.3	17.8	37.5
4	3,60E+05	(23)	1,92E+06	(123)	100	22 4	33.1	20.1	51.6
5	3,76E+05	(24)	3,19E+06	(204)	100	37 5	20.8	13.0	31.7
6	6,57E+05	(42)	3,99E+06	(255)	100	46 6	29.1	20.4	40.3
7	1,33E+06	(85)	5,90E+06	(377)	100	68 7	39.6	31.1	50.3
8	1,75E+06	(112)	7,59E+06	(485)	100	87 8	40.5	32.8	50.0
9	5,48E+05	(35)	2,57E+06	(164)	100	30 5	37.6	25.3	54.3
10	4,07E+05	(26)	3,76E+06	(240)	100	43 6	19.2	12.2	28.6
11	1,03E+06	(66)	5,93E+06	(379)	100	68 7	30.6	23.5	39.9
12	5,95E+05	(38)	2,97E+06	(190)	100	34 5	35.3	24.1	50.0
13	5,63E+05	(36)	3,87E+06	(247)	100	44 6	25.7	17.5	36.5
14	2,35E+05	(15)	1,38E+06	(88)	100	16 3	30.2	16.1	52.1
15	1,72E+05	(11)	8,92E+05	(57)	100	10 3	34.3	16.1	65.2
16	4,38E+05	(28)	2,55E+06	(163)	100	29 5	30.3	19.5	45.3
17	7,51E+05	(48)	2,82E+06	(180)	100	32 5	46.9	33.3	64.7
18	4,23E+05	(27)	3,62E+06	(231)	100	42 6	20.7	13.3	30.7
19	9,55E+05	(61)	3,90E+06	(249)	100	45 6	43.0	32.4	57.0
20	3,91E+05	(25)	3,51E+06	(224)	100	40 5	19.8	12.4	29.8
21	8,14E+05	(52)	4,10E+06	(262)	100	47 6	35.0	25.4	47.1
22	6,57E+05	(42)	3,47E+06	(222)	100	40 5	33.4	23.3	46.4
23	5,16E+05	(33)	3,43E+06	(219)	100	39 5	26.6	17.8	38.3
24	7,20E+05	(46)	7,75E+06	(495)	100	89 8	16.4	11.8	22.2
25	5,01E+05	(16)	2,88E+06	(92)	50	33 7	30.8	16.8	52.3
26	7,82E+05	(50)	2,54E+06	(162)	100	29 5	54.3	38.6	74.7
27	2,97E+05	(19)	2,49E+06	(159)	100	29 5	21.2	12.3	33.9
28	3,60E+05	(23)	3,63E+06	(232)	100	42 6	17.6	10.8	26.8
29	1,10E+06	(42)	3,50E+06	(134)	60	40 7	55.1	38.0	78.2
30	5,39E+05	(31)	3,55E+06	(204)	90	41 6	26.8	17.7	39.1
31	1,03E+06	(66)	5,77E+06	(369)	100	66 7	31.4	24.1	41.0
32	7,04E+05	(45)	3,13E+06	(200)	100	36 5	39.6	28.0	54.8
33	1,27E+06	(81)	4,74E+06	(303)	100	55 6	46.9	36.6	60.1
34	5,32E+05	(17)	2,50E+06	(80)	50	29 6	37.6	20.8	63.5
35	2,35E+05	(15)	7,82E+05	(50)	100	9 3	53.1	27.5	95.0
<hr/>									
POOLED	6,46E+05	(1382)	3,58E+06	(7662)	3350	41 1	31.7	29.4	34.2

CHI² PROBABILITY (%): 0.0

POOLED AGE W/ 68% CONF. INTERVAL (Ma): 31.7, 30.5 -- 33.0 (-1.2 +1.3)
 95% CONF. INTERVAL (Ma): 29.4 -- 34.2 (-2.3 +2.5)

CENTRAL AGE W/ 68% CONF. INTERVAL (Ma): 31.9, 30.1 -- 33.9 (-1.8 +1.9)
 95% CONF. INTERVAL (Ma): 28.4 -- 35.8 (-3.5 +3.9)
 AGE DISPERSION (%): 25.3

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 3)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	31.70	0.153	48.8	17.09
2.	48.60	0.217	20.3	7.11
3.	55.40	0.240	12.9	4.52

Total range for grain ages: 16,5 to 55,4 Ma
 Number of active grains (Num. used for fit): 35
 Number of removed grains: 0
 Degrees of freedom for fit: 30
 Average of the SE(Z)'s for the grains: 0,2
 Estimated width of peaks in PD plot in Z units: 0,23

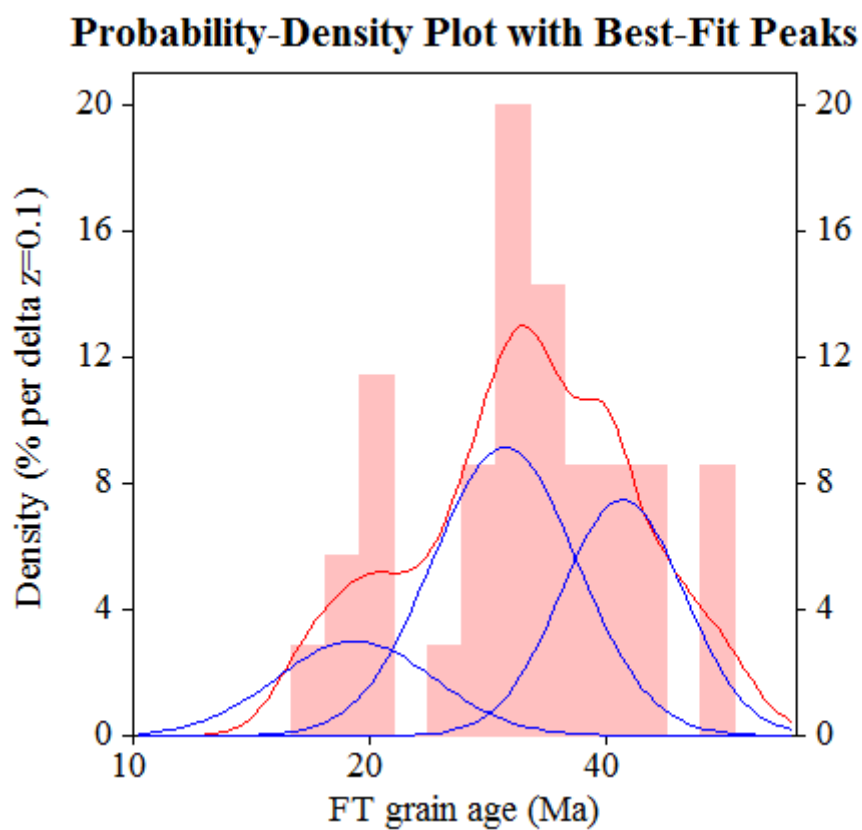
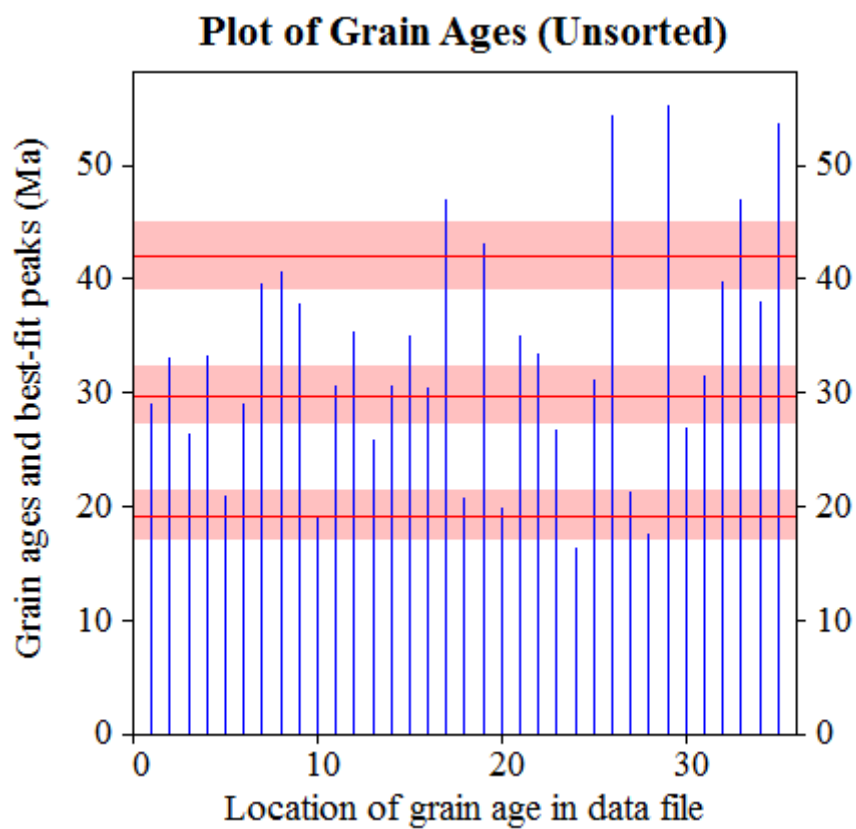
PARAMETERS FOR BEST-FIT PEAKS

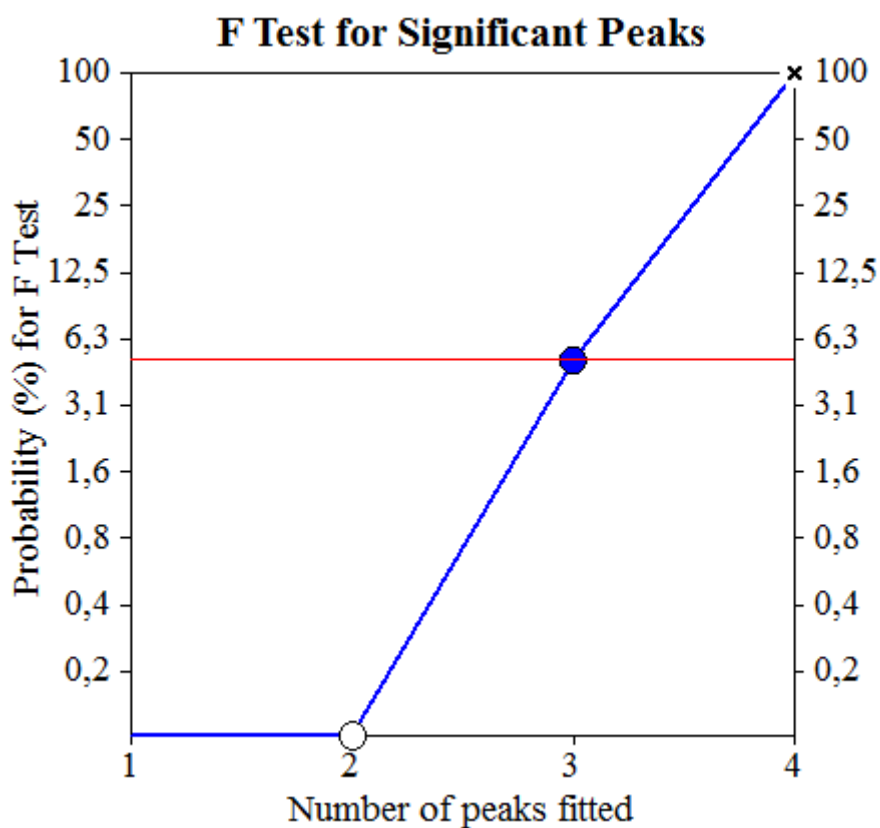
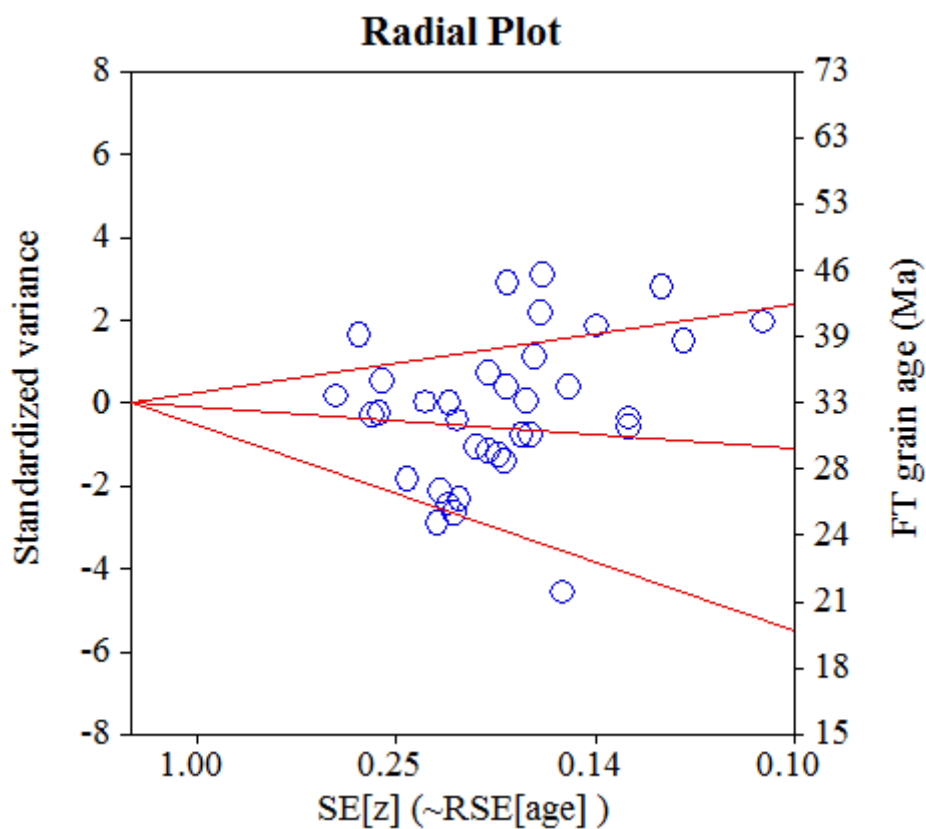
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age (Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	19.2	-2,0 ...+2,3	-3,8 ...+4,7	0.23	17.3	10.1	6.1
2.	29.8	-2,3 ...+2,5	-4,4 ...+5,1	0.21	48.8	14.5	17.1
3.	42.0	-2,8 ...+3,0	-5,4 ...+6,1	0.18	33.9	13.0	11.9

Log-likelihood for best fit: -126,208
 Chi-squared value for best fit: 33,775
 Reduced chi-squared value: 1,126
 Probability for F test: 5%
 Condition number for COVAR matrix: 11,08
 Number of iterations: 48





Datafile: C:\BH2\Alejandro\AFT\11-2015\EMP_16\EMP_16.ftz

Title: EMP_16 Irr 11-2015-10

NEW PARAMETERS - ZETA METHOD

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 1,02E+06

RELATIVE ERROR (%): 1,24

EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 15,00

ZETA FACTOR AND STANDARD ERROR (yr cm²): 284,52 5,65SIZE OF COUNTER SQUARE (cm²): 6,39E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	3,29E+05	(21)	5,32E+05	(34)	100	8 3	89.2	49.2	157.0
2	1,96E+05	(10)	1,33E+06	(68)	80	20 5	21.6	9.8	41.5
3	2,03E+05	(13)	4,69E+05	(30)	100	7 3	63.0	30.0	123.0
4	6,26E+04	(4)	1,88E+05	(12)	100	3 2	49.4	11.3	157.6
5	1,56E+05	(10)	7,36E+05	(47)	100	11 3	31.2	13.9	61.6
6	2,82E+05	(18)	4,23E+05	(27)	100	6 2	96.2	49.9	179.6
7	2,97E+05	(19)	6,73E+05	(43)	100	10 3	64.1	35.1	111.4
8	4,69E+04	(3)	2,97E+05	(19)	100	4 2	23.9	4.3	77.3
9	2,35E+05	(9)	4,43E+05	(17)	60	7 3	76.9	30.1	179.6
10	4,69E+04	(3)	2,35E+05	(15)	100	3 2	30.1	5.4	101.7
11	1,41E+05	(9)	1,00E+06	(64)	100	15 4	20.7	8.9	41.1
12	2,03E+05	(13)	5,01E+05	(32)	100	7 3	59.1	28.3	114.4
13	2,03E+05	(13)	3,60E+05	(23)	100	5 2	81.9	38.0	166.6
14	3,80E+05	(17)	7,82E+05	(35)	70	12 4	70.4	36.9	127.9
15	1,25E+05	(8)	7,51E+05	(48)	100	11 3	24.5	9.9	51.4
16	2,24E+05	(10)	4,92E+05	(22)	70	7 3	66.1	27.8	143.5
17	6,71E+04	(3)	6,04E+05	(27)	70	9 3	16.8	3.1	52.2
18	7,82E+04	(5)	5,32E+05	(34)	100	8 3	21.9	6.5	54.6
19	6,26E+04	(4)	3,13E+05	(20)	100	5 2	29.9	7.2	86.0
20	4,38E+05	(28)	3,16E+06	(202)	100	47 7	20.2	13.0	29.9
21	2,66E+05	(17)	7,98E+05	(51)	100	12 3	48.5	26.1	84.6
22	5,48E+05	(35)	9,23E+05	(59)	100	14 4	85.6	54.7	131.6
23	3,13E+05	(12)	1,98E+06	(76)	60	29 7	23.1	11.3	42.2
24	8,76E+05	(56)	7,10E+06	(454)	100	105 10	17.9	13.5	23.6
25	2,19E+05	(14)	4,23E+05	(27)	100	6 2	75.2	36.3	146.9
26	2,82E+05	(18)	9,08E+05	(58)	100	13 4	45.1	24.9	77.1
27	5,09E+05	(26)	7,63E+05	(39)	80	11 4	96.1	56.2	160.9
28	1,56E+05	(10)	5,16E+05	(33)	100	8 3	44.3	19.3	90.7
29	1,25E+05	(8)	7,67E+05	(49)	100	11 3	24.0	9.7	50.2
30	4,54E+05	(29)	1,35E+06	(86)	100	20 4	48.9	30.8	74.9
31	2,66E+05	(17)	1,13E+06	(72)	100	17 4	34.4	18.9	58.5
32	1,56E+05	(8)	1,21E+06	(62)	80	18 5	19.0	7.7	39.1
33	3,13E+05	(20)	1,03E+06	(66)	100	15 4	44.0	25.2	73.0
34	1,72E+05	(11)	8,92E+05	(57)	100	13 3	28.3	13.2	53.7
35	1,41E+05	(9)	5,95E+05	(38)	100	9 3	34.7	14.6	71.9
36	1,56E+05	(10)	5,48E+05	(35)	100	8 3	41.8	18.3	85.0
37	2,97E+05	(19)	8,14E+05	(52)	100	12 3	53.0	29.5	90.5
38	2,82E+05	(18)	5,63E+05	(36)	100	8 3	72.4	38.6	129.8
POOLED	2,44E+05	(557)	9,51E+05	(2169)	3570	14 1	37.1	33.5	41.2

CHI² PROBABILITY (%): 0.0>>> Beware: possible upward bias in Chi² probability due to low counts <<<

POOLED AGE W/ 68% CONF. INTERVAL (Ma): 37.1, 35.2 -- 39.1 (-1.9 +2.0)
 95% CONF. INTERVAL (Ma): 33.5 -- 41.2 (-3.6 +4.0)

CENTRAL AGE W/ 68% CONF. INTERVAL (Ma): 43.3, 39.5 -- 47.4 (-3.7 +4.1)
 95% CONF. INTERVAL (Ma): 36.2 -- 51.6 (-7.0 +8.4)
 AGE DISPERSION (%): 43.3

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 2)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	22.50	0.135	19.4	7.37
2.	37.10	0.204	17.7	6.71

Total range for grain ages: 18,0 to 96,8 Ma
 Number of active grains (Num. used for fit): 38
 Number of removed grains: 0
 Degrees of freedom for fit: 35
 Average of the SE(Z)'s for the grains: 0,36
 Estimated width of peaks in PD plot in Z units: 0,42

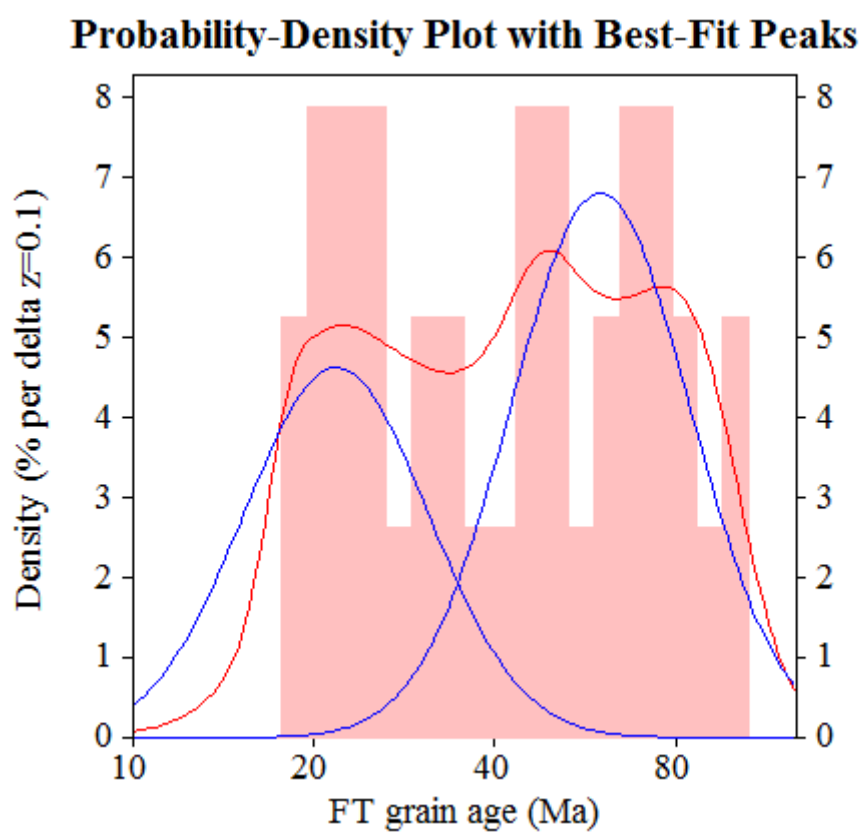
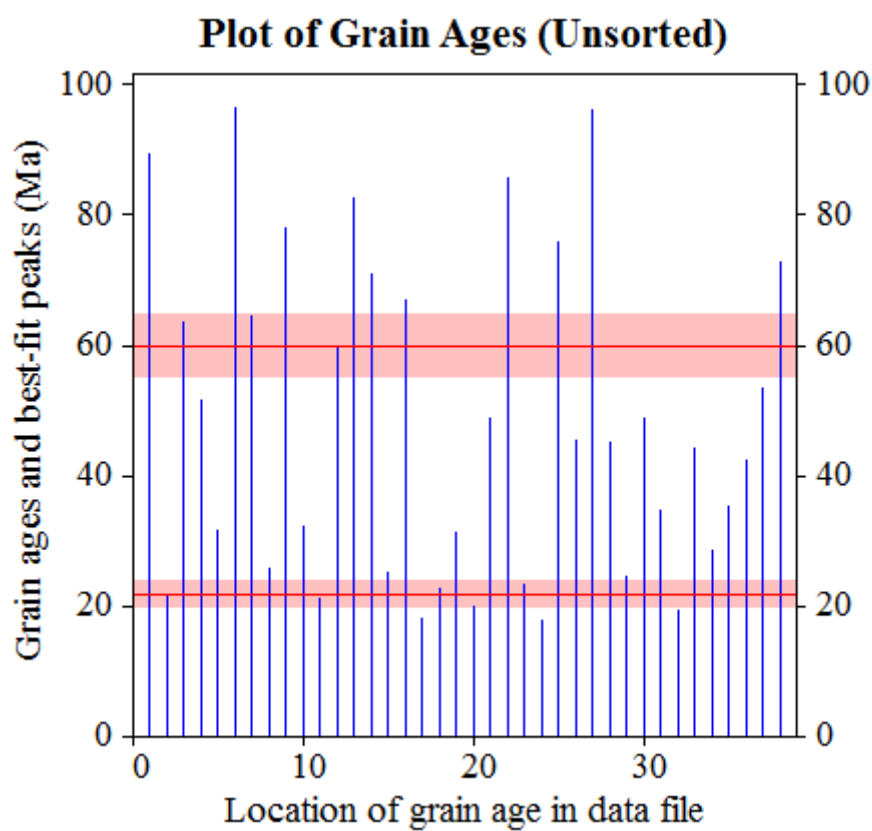
PARAMETERS FOR BEST-FIT PEAKS

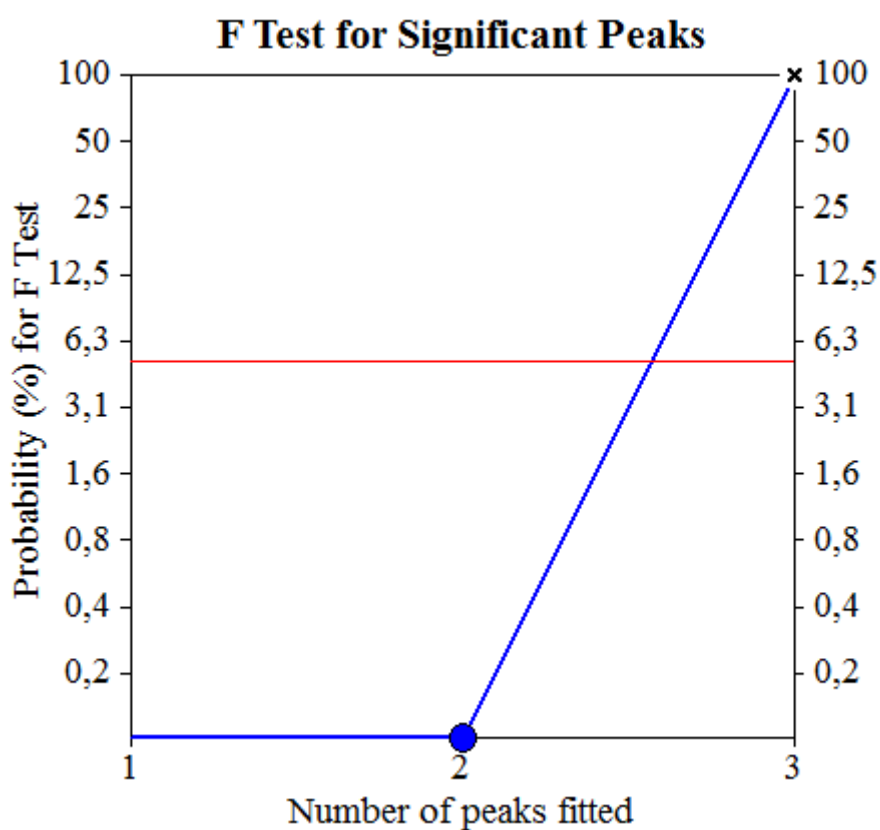
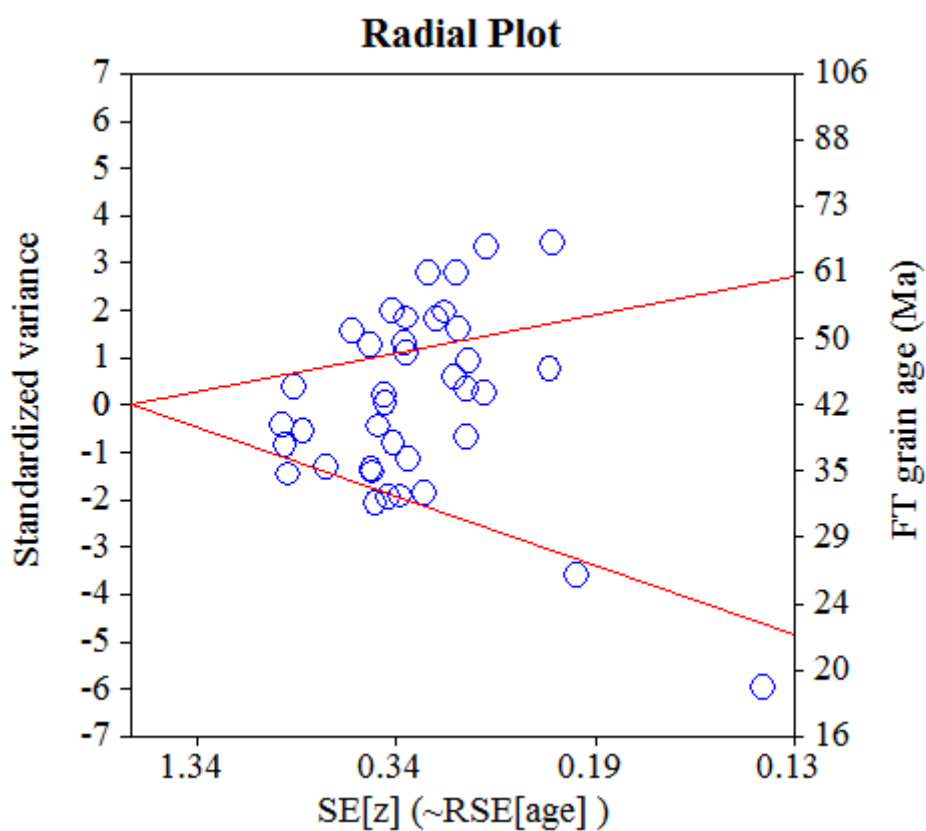
* Standard error for peak age includes group error

* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age (Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	21.8	-1,9 ...+2,1	-3,6 ...+4,3	0.35	41.0	9.9	15.6
2.	59.9	-4,6 ...+5,0	-8,6 ...+10,1	0.35	59.0	9.9	22.4

Log-likelihood for best fit: -113,730
 Chi-squared value for best fit: 34,537
 Reduced chi-squared value: 0,987
 Probability for F test: 0%
 Condition number for COVAR matrix: 2,68
 Number of iterations: 9





NEW PARAMETERS - ZETA METHOD

EFFECTIVE TRACK DENSITY FOR FLUENCE MONITOR (tracks/cm²): 1,26E+06
 RELATIVE ERROR (%): 1,15
 EFFECTIVE URANIUM CONTENT OF MONITOR (ppm): 15,00
 ZETA FACTOR AND STANDARD ERROR (yr cm²): 288,88 16,55
 SIZE OF COUNTER SQUARE (cm²): 6,39E-07

GRAIN AGES IN ORIGINAL ORDER

Grain no.	RhoS (cm ⁻²)	(Ns)	RhoI (cm ⁻²)	(Ni)	Squares	U+/-2s	Grain Age (Ma)		
							Age	--95% CI--	
1	2,35E+05	(15)	6,26E+05	(40)	100	7 2	68.2	34.8	124.8
2	1,56E+05	(8)	8,22E+05	(42)	80	10 3	35.1	14.0	74.2
3	3,13E+05	(20)	1,50E+06	(96)	100	18 4	38.0	22.1	61.4
4	5,95E+05	(38)	1,22E+06	(78)	100	15 3	88.0	58.1	130.7
5	2,50E+05	(16)	9,23E+05	(59)	100	11 3	49.4	26.4	86.2
6	4,23E+05	(27)	1,36E+06	(87)	100	16 3	56.3	35.0	87.1
7	1,72E+05	(11)	1,11E+06	(71)	100	13 3	28.4	13.4	53.2
8	1,25E+05	(8)	3,29E+05	(21)	100	4 2	69.7	26.4	160.6
POOLED	2,87E+05	(143)	9,91E+05	(494)	780	12 1	52.3	42.1	65.0

CHI² PROBABILITY (%): 3.3

POOLED AGE W/	68% CONF. INTERVAL (Ma):	52.3,	46.8 --	58.4 (-5.5 +6.1)
	95% CONF. INTERVAL (Ma):		42.1 --	65.0 (-10.2 +12.7)
CENTRAL AGE W/	68% CONF. INTERVAL (Ma):	51.9,	44.9 --	60.1 (-7.1 +8.2)
	95% CONF. INTERVAL (Ma):		39.0 --	69.2 (-13.0 +17.3)
	AGE DISPERSION (%):	26.2		

FIT OPTION: Best-fit peaks using the binomial model of Galbraith and Green

INITIAL GUESS FOR MODEL PARAMETERS (number of peaks to fit = 2)

Peak #.	Peak Age	Theta	Fraction(%)	Count
1.	29.10	0.139	17.2	1.38
2.	52.30	0.224	32.7	2.61

Total range for grain ages: 29,1 to 88,4 Ma
 Number of active grains (Num. used for fit): 8
 Number of removed grains: 0
 Degrees of freedom for fit: 5
 Average of the SE(Z)'s for the grains: 0,3
 Estimated width of peaks in PD plot in Z units: 0,35

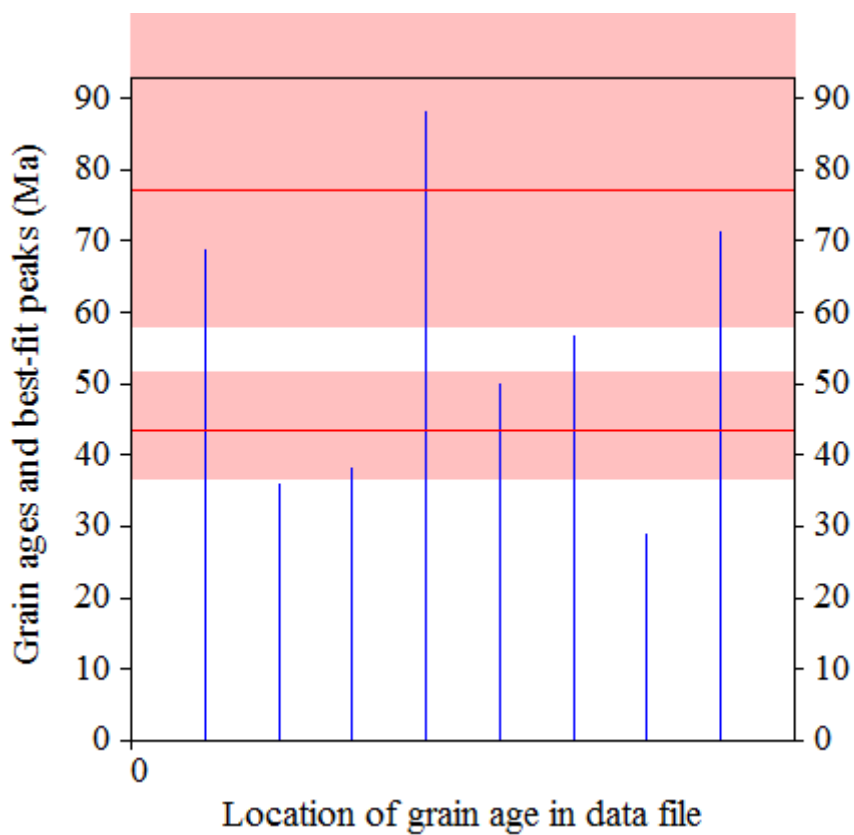
PARAMETERS FOR BEST-FIT PEAKS

* Standard error for peak age includes group error

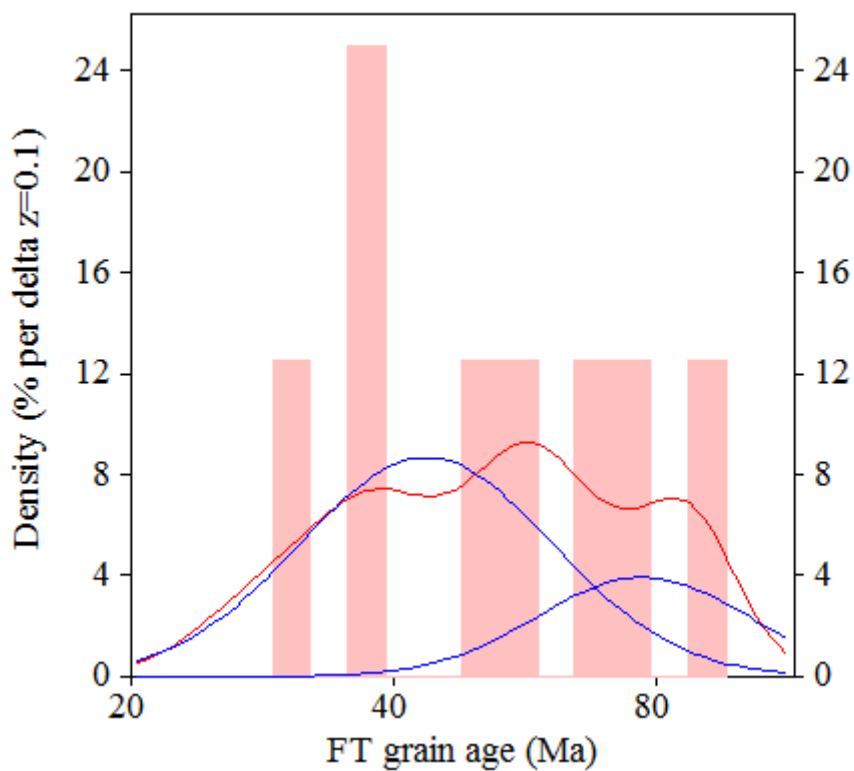
* Peak width is for PD plot assuming a kernel factor = 0.60

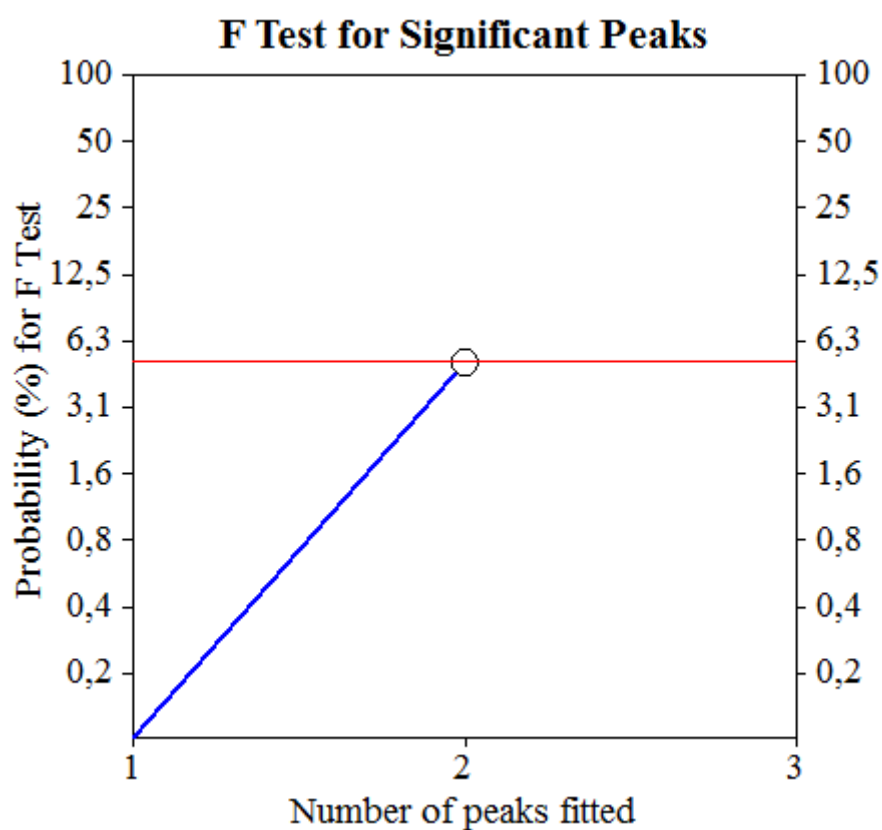
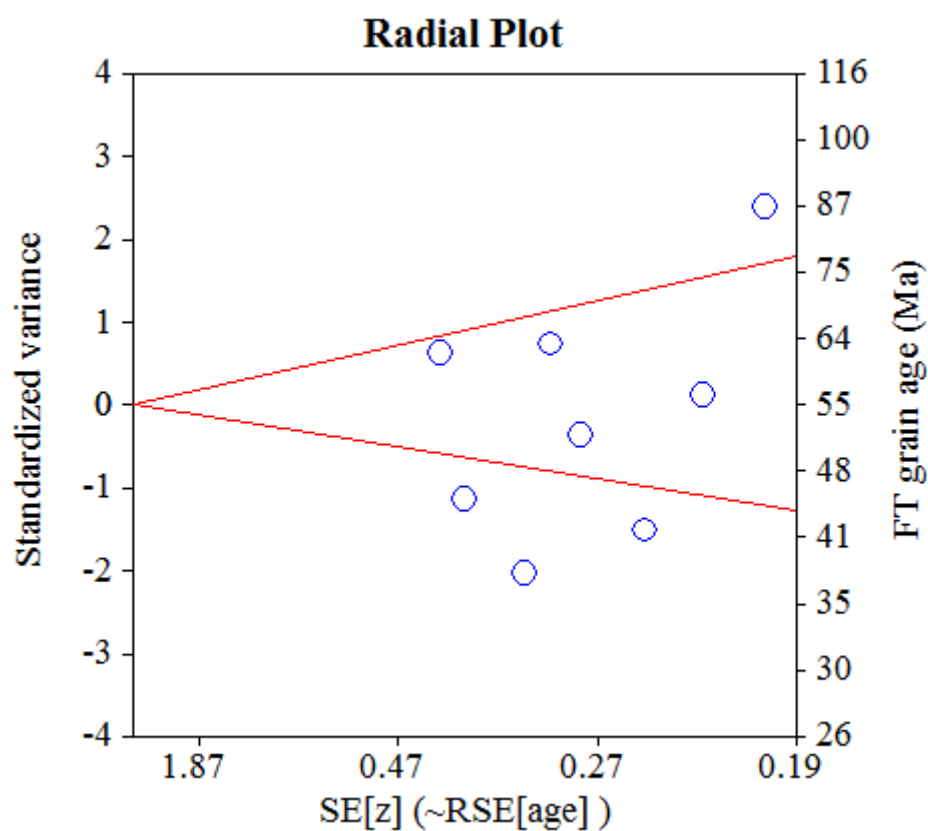
#.	Peak Age (Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE, %	Count
1.	43.6	-6,7 ...+7,9	-12,2 ...+16,9	0.33	72.6	31.3	5.8
2.	77.2	-19,0 ...+25,2	-32,9 ...+57,1	0.28	27.4	31.3	2.2

Log-likelihood for best fit: -23,278
 Chi-squared value for best fit: 7,077
 Reduced chi-squared value: 1,415
 Probability for F test: 5%
 Condition number for COVAR matrix: 9,94
 Number of iterations: 32

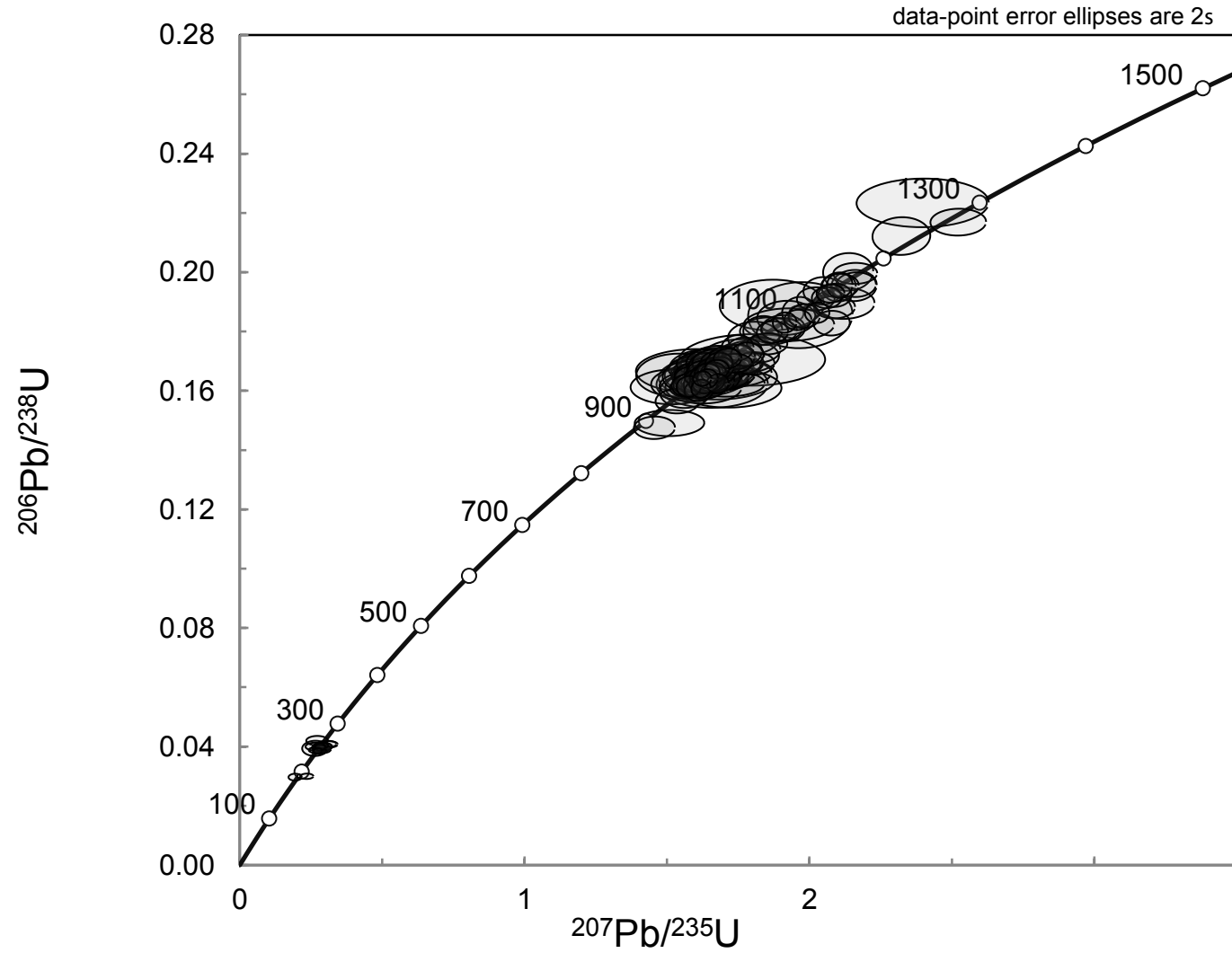


Probability-Density Plot with Best-Fit Peaks

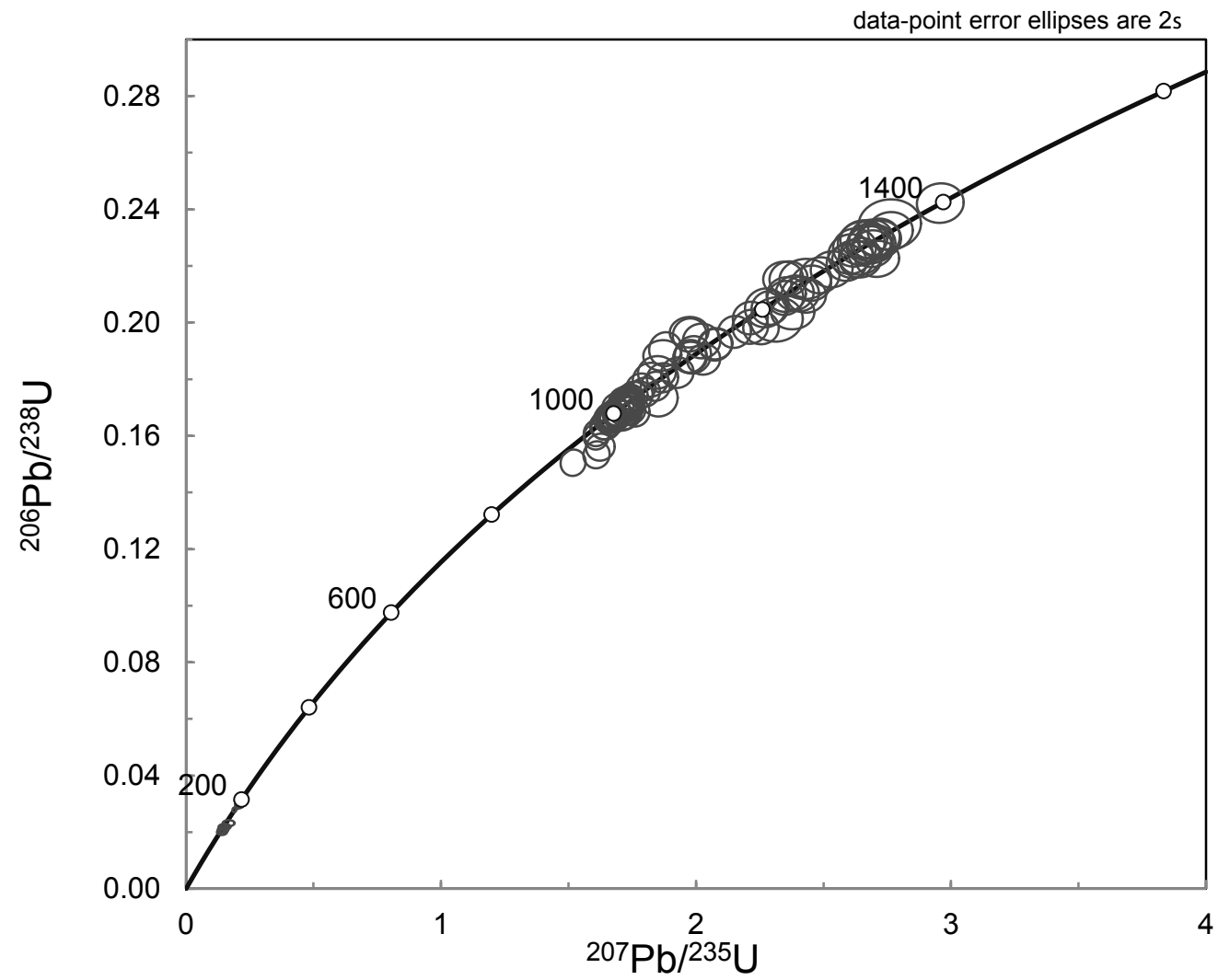




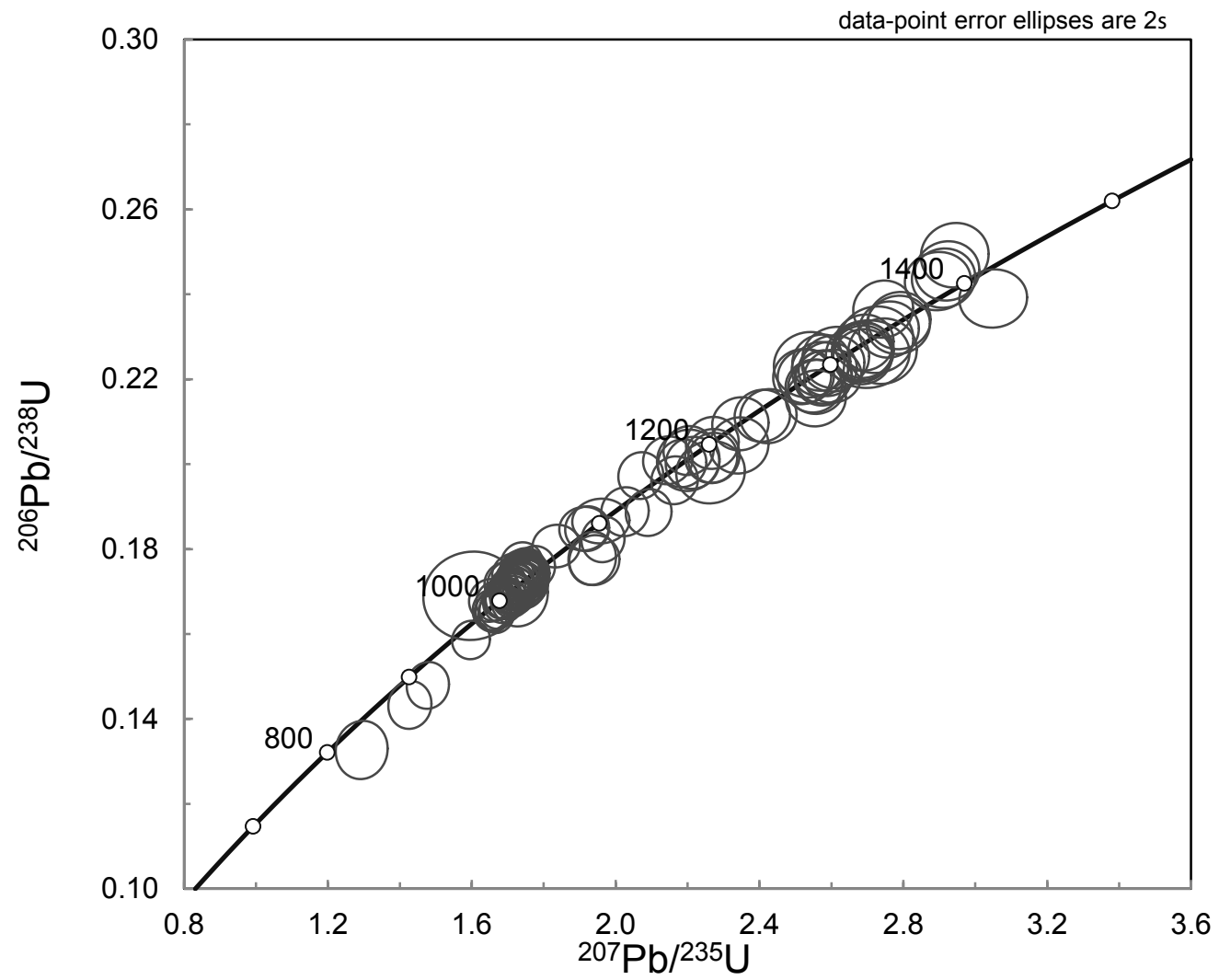
AP-045



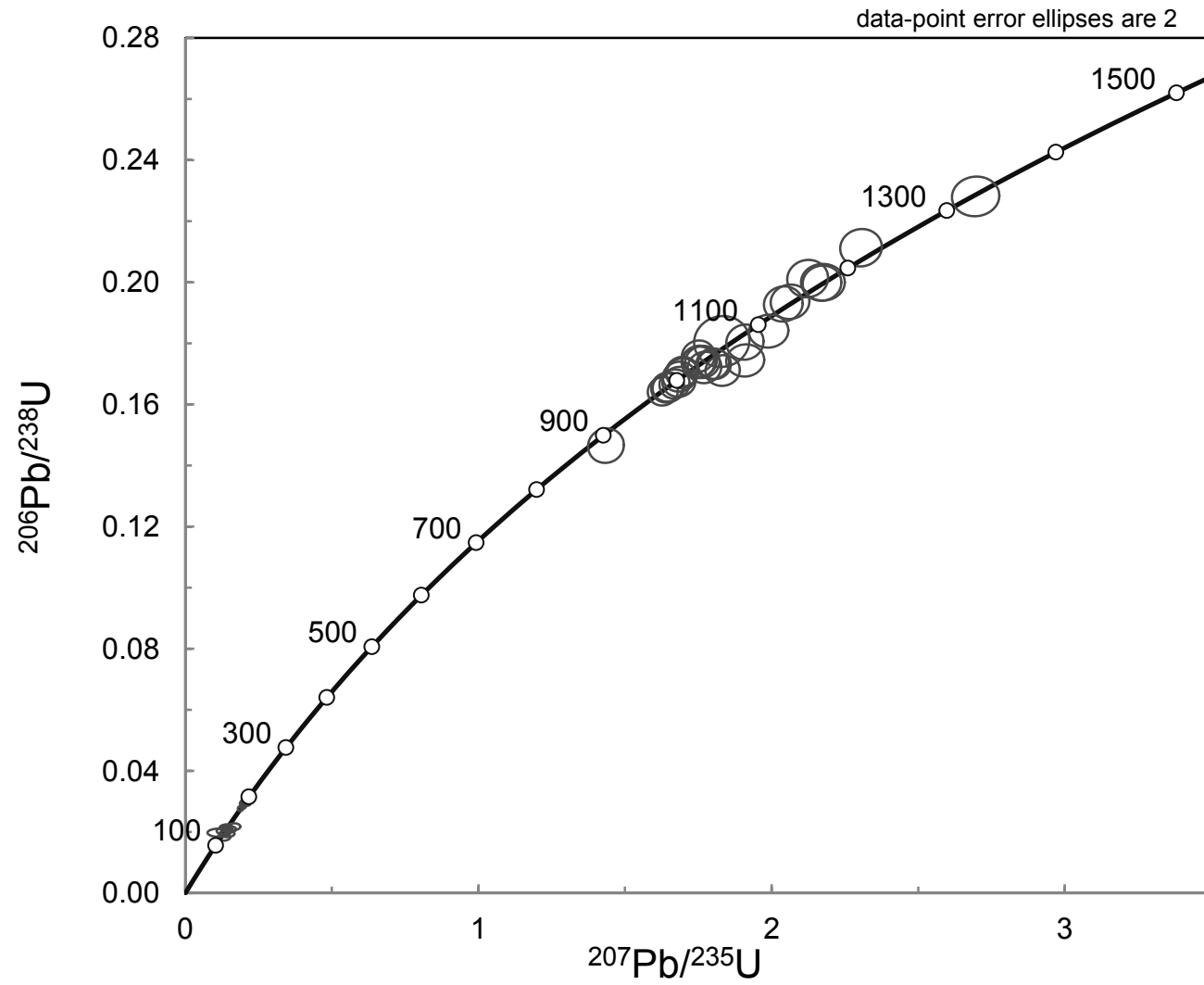
CP-088



CVI13-02

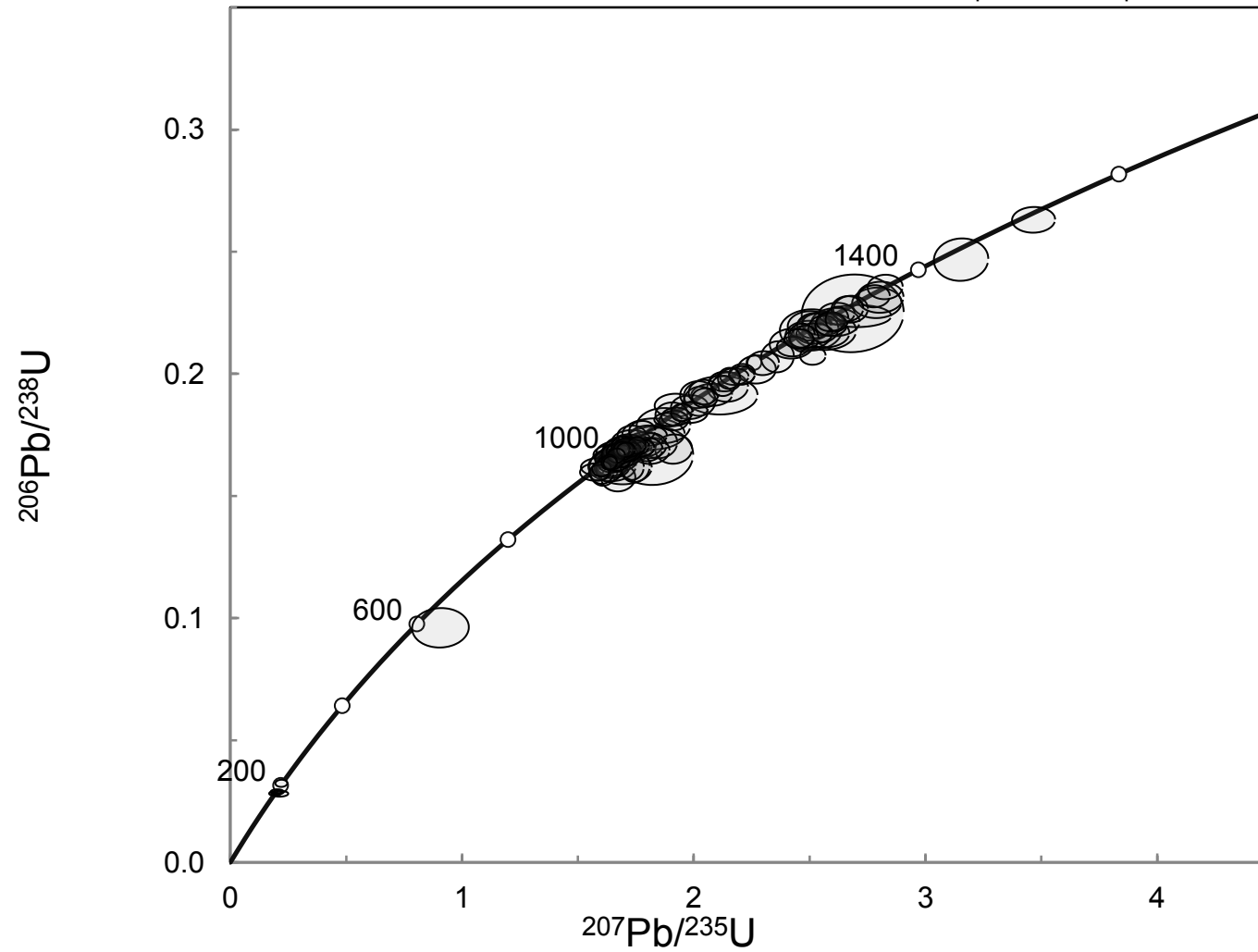


CVI13-115



EMP-16

data-point error ellipses are 2s



EMP-49A

