U.S. DEPARTMENT OF THE INTERIOR

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RESULTS OF 110 APATITE FISSION TRACK ANALYSES FROM THE BROOKS RANGE AND NORTH SLOPE OF NORTHERN ALASKA, COMPLETED IN COOPERATION WITH THE TRANS-ALASKA CRUSTAL TRANSECT (TACT)

by

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INTRODUCTION

This is a preliminary report of apatite fission track analyses of 110 samples from the Brooks Range and North Slope foreland basin in northern Alaska. In order to help constrain the shallow-level thermal and techtonic history of the mountain belt and foreland basin, basement rocks (ie. granitic and gneissic rock units) and clastic sedimentary rocks were collected from several localities along the route followed by the Trans-Alaska Crustal Transect (TACT) (Fig. 1). Apatite fission track analysis (AFTA) was ideally suited for this project since the technique is applicable at temperatures less than ~110°C (or at depths less than ~3-4 km). All sampling was completed by the authors and other participants of the TACT project and all analyses were completed by John Murphy and Paul O'Sullivan in the research laboratories of the La Trobe University Fission Track Research Group, Melbourne, Australia.

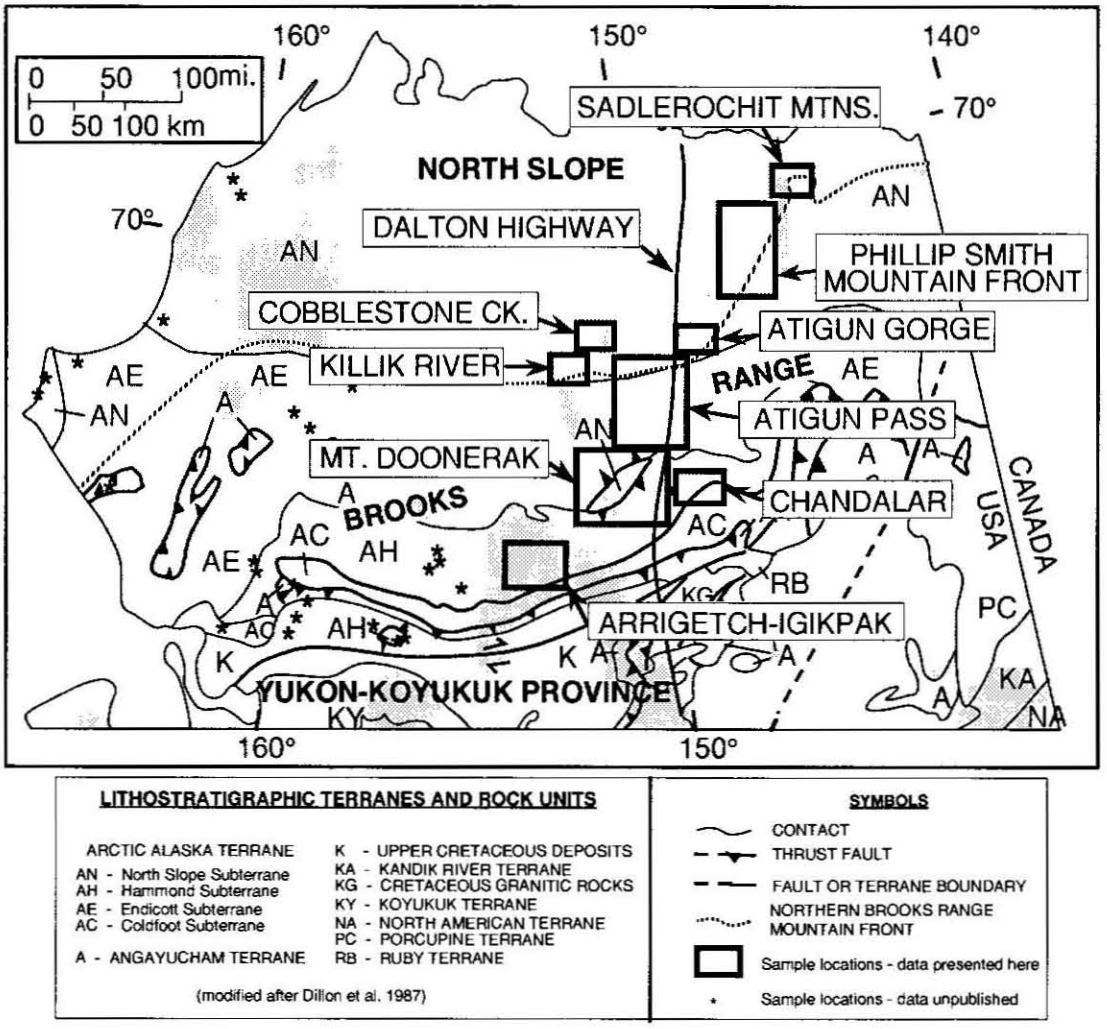

Figure 1. Location map showing sample locations. Data from samples collected for the TACT project (areas boxed) are presented here.

The data presented here is grouped geographically by the ten areas shown in Figure 1. Data from within each area is then shown by: 1) a table presenting sample details including location, elevation, stratigraphic unit, and rock type, 2) a table presenting the analytical results including the apatite fission track age and mean confined track length, 3) a table presenting the confined track length data, 4) data plots for each sample including radial plots, single-grain-age distributions, and confined track length distributions, and finally, 5) single-grain age reports for each sample.

The individual plots present the data graphically for each sample. When samples pass the Chi-squared test, the pooled age (groups all counts in a single calculation) is listed. When samples fail the Chi-squared test, the central age (weighted mean) is listed and marked by an *. Radial plots, explained in detail by Galbraith (1990) are used for the purpose of visually inspecting the value and precision of individual fission track ages of a sample and allow you to graphically inspect the presence of structure in the single grain age data presented in the single-grain-age distributions. The significance of confined track length distributions is explained in detail by Green et al. (1989).

The single-grain age reports for each sample show a listing of the individual grain ages, the resulting age and information used in determining the age. A guide to read the information is as follows:

89TM299A	-Sample number and information
IRRADIATION	-In-house number for grouping samples from the same irradiation package
SLIDE NUMBER	-Number of individual mount from irradiation package
No	-Number of each grain counted
Ns	-Number of spontaneous tracks counted
Ni	-Number of induced tracks counted
Na	-Number of area units counted in grain
Ratio	-Ratio of (NS/NI) for each grain
U(ppm)	-Uranium concentration of each grain (ppm)
RHOs	-Density of spontaneous tracks (per cm^2)
RHOi	-Density of induced tracks (per cm^2)
F.T.AGE (Ma)	-Individual fission track grain ages
P(chi squared)	-Statistical test for determining the presence of multiple grain populations, a probability of less than 5% indicates multiple grain populations
Correlation Coef.	-Statistical analysis suggesting how close all individual grain ages group together.
Variance of SQR	-Statistical comparison of values of NS or NI for all grains
Ns/Ni	-Pooled ratio of (Ns/Ni). Uses total number of spontaneous and induced tracks counted for whole sample. Value used in age calculation if sample is of a single population
Mean Ratio	-Average ratio of (Ns/Ni) for grains
POOLED AGE	-Age calculated using Ns/Ni (single population)
CENTAL AGE	-Age calculated Using weighted "Mean Ratio" (multiple populations; fail Chi-Squared test)

The stratigraphic nomenclature and stratigraphic ages used in this report are those recently summarized by Moore et al (1992) and Mull and Adams (1989). The geologic timescale of Harland et al. (1990) is utilized for radiometric ages. For an overview of the stratigraphy, structure, and tectonic history of northern Alaska, the reader is referred to the summary papers and maps of Mull (1982), Mull and Adams (1989), and Moore et al (1992) and the references therein.

TECHNIQUES

Apatites were separated from samples by conventional heavy liquid and magnetic techniques. The apatite separates were mounted in epoxy resin on glass slides, ground and polished to expose internal surfaces of the grains, then etched in 5M Nitric acid to reveal the fossil fission tracks. Neutron irradiations were carried out in a well thermalized neutron flux in the Australian Atomic Energy Commissions HIFAR reactor. All age determinations were completed using the external detector method (Hurford and Green, 1982). Thermal neutron fluences were monitored by counting tracks recorded in external muscovite detectors attached to NBS standard glass-SRM612. Standard and induced track densities were measured on mica external detectors and fossil track densities on internal mineral surfaces. Fission tracks in each mount were counted in transmitted light using a dry 80x objective at a total magnification of 1250x. Wherever possible 20-25 grains were counted on each mount. For further description of fission track counting methodology see Green (1986).

Fission track ages were calculated using the zeta calibration method and standard fission track age equation (Hurford and Green, 1982). Errors were calculated using the techniques of Green (1981). In samples with a significant spread in single grain ages, the "conventional analysis", (as defined by Green 1981), based purely on Poissonian variation, is not valid. In such cases, which can be detected by the Chi squared statistical test (Galbraith, 1981), the cental age (Galbraith, 1988) is reported. The Chi squared statistic indicates the probability that all grains counted belong to a single population of ages. A probability of less than 5% is evidence of a asymmetric spread of single grain ages. An asymmetric spread in individual grain ages can result either from inheritance of detrital grains from mixed detrital source areas, or from differential annealing in grains of different compositions (Green et al. 1989).

Lengths of confined tracks (Lal et al. 1969) were measured using the procedure outlined by Green (1986) and Green (1989). Only fully-etched and horizontal "confined tracks" were measured (Laslett et al. 1982) in grains with polished surfaces parallel to prismatic crystal faces. Measurements were made under similar conditions as those employed for age determination (e.g. 1250x, dry objective). The lengths of suitable tracks were measured using a projection tube and a Hipad™ digitizing tablet calibrated using a stage micrometer (with μm divisions). As many as ~100 tracks were measured from each sample.

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SADLEROCHIT MOUNTAINS

Sample Locations and Apatite Yields - Sadlerochit Mountains

Table 1. Sample details and apatite yields for outcrop samples: Sadlerochit Mountains.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
91POS77A	69°38.3'	145°39.3'	(555)/(*1820*)	Ivishak Fm.	Early-Mid Triassic	~235-245	Sandstone
91POS78A	69°38.2'	145°39.0'	(470)/(*1540*)	Echooka Fm.	Permian	~245-290	Standstone
91POS79A	69°38.9'	145°38.9'	(454)/(*1489*)	Kingak Shale.	Jurassic	~146-208	Tuff
91POS80A	69°39.0'	145°38.9'	(427)/(*1400*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS81A	69°39.5'	145°38.8'	(421)/(*1380*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone

Sample Results - Sadlerochit Mountains

Typical yields for the samples were excellent. Due to relatively high uranium contents (>10 ppm), 3 of 5 mounts contained 100 or more confined tracks. All samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations so the pooled age is presented for each.

Table 2. Apatite fission track analytical results: Sadlerochit Mountains.

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (µm)	Standard deviation (µm)
91POS77A	25	1.602 (3605)	1.596 (102)	1.709 (1092)	99.9	26.3 ± 2.8	14.0	14.44 ± 0.11 (105)	1.10
91POS78A	25	1.602 (3605)	1.403 (89)	1.459 (926)	99.9	27.1 ± 3.1	11.9	14.31 ± 0.18 (23)	0.86
91POS79A	25	1.602 (3605)	2.256 (119)	2.069 (1092)	93.8	30.7 ± 3.0	16.9	14.83 ± 0.12 (102)	1.25
91POS80A	25	1.602 (3605)	2.420 (164)	2.376 (1610)	70.0	28.7 ± 2.4	19.4	14.36 ± 0.12 (101)	1.22
91POS81A	25	1.602 (3605)	2.364 (127)	1.500 (806)	99.3	44.4 ± 4.3	12.3	14.38 ± 0.29 (32)	1.66

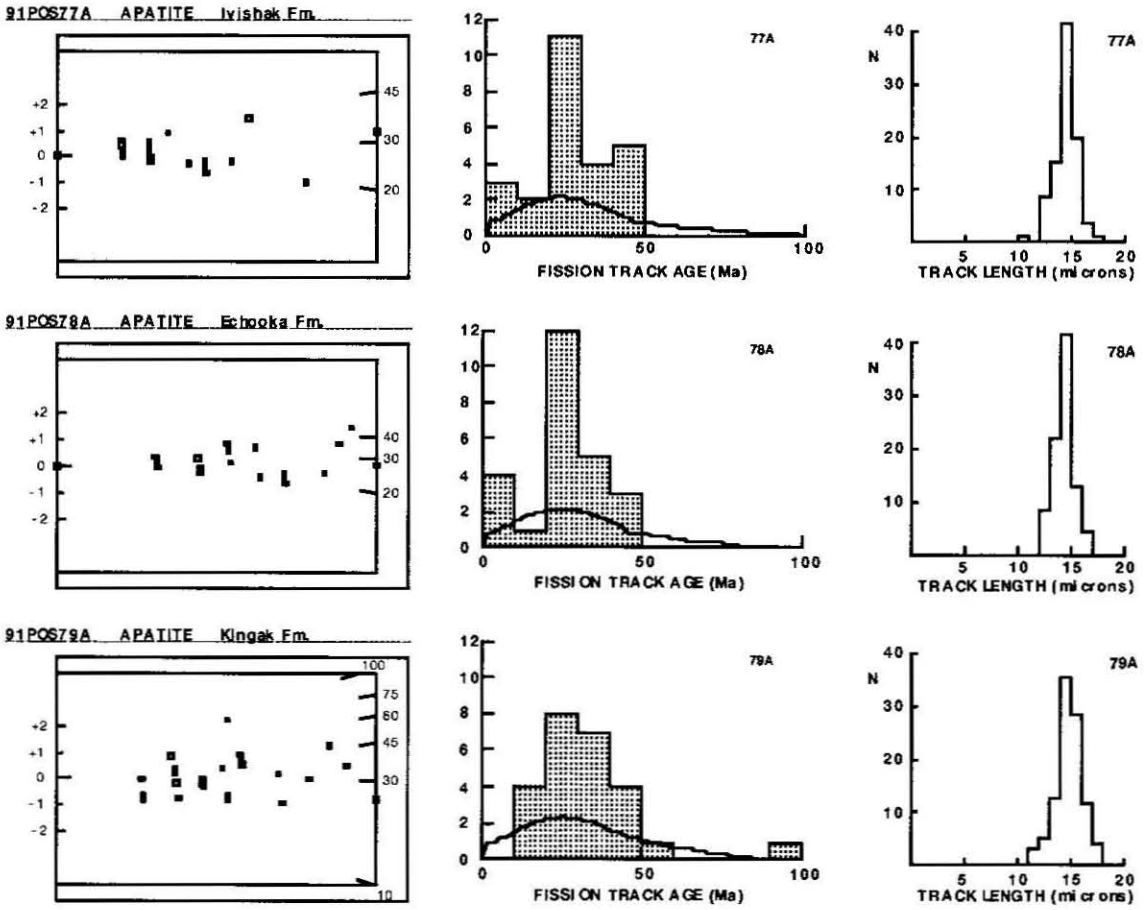
Parenthesis show number of tracks counted.

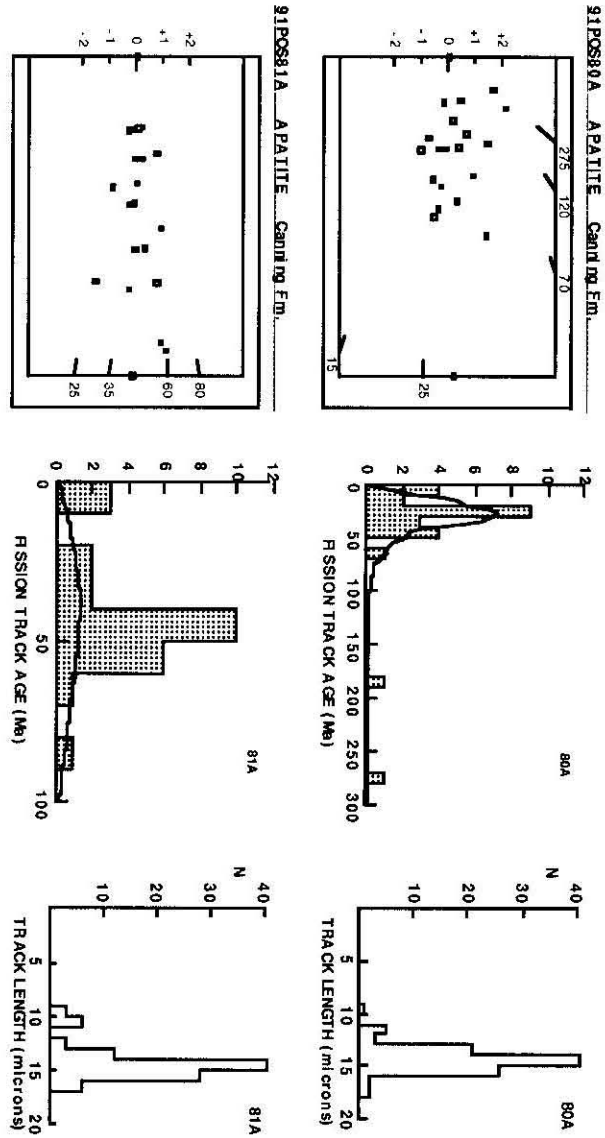
Table 3. Track length data: Sadlerochit Mountains.

Sample Number	Track Length Range (µm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
POS77A	-	-	-	-	-	-	1	-	9	16	53	21	4	1
POS78A	-	-	-	-	-	-	-	-	2	5	12	3	1	-
POS79A	-	-	-	-	-	-	-	3	5	13	36	29	12	4
POS80A	-	-	-	-	-	1	-	5	3	21	41	26	2	2
POS81A	-	-	-	-	-	1	2	-	1	4	13	9	2	-

Length measurements by P. O'Sullivan

Single-Age and Track Length Distributions - Sadlerochit Mountains





Age Sheets - Sadlerochit Mountains

91POS77A - IVISHAK FORMATION

IRRADIATION LU189
SLIDE NUMBER 11
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	7	81	28	0.086	26.3	2.778E+05	3.214E+06	24.4 ± 9.6
2	0	7	16	0.000	4.0	0.000E+00	4.861E+05	0.0 ± 0.0
3	2	17	35	0.118	4.4	6.349E+04	5.397E+05	33.2 ± 24.8
4	2	23	15	0.087	13.9	1.481E+05	1.704E+06	24.5 ± 18.1
5	1	9	35	0.111	2.3	3.175E+04	2.857E+05	31.3 ± 33.0
6	0	5	25	0.000	1.8	0.000E+00	2.222E+05	0.0 ± 0.0
7	2	24	16	0.083	13.6	1.389E+05	1.667E+06	23.5 ± 17.3
8	2	19	45	0.105	3.8	4.938E+04	4.691E+05	29.7 ± 22.1
9	1	10	24	0.100	3.8	4.630E+04	4.630E+05	28.2 ± 29.6
10	5	73	42	0.068	15.8	1.323E+05	1.931E+06	19.3 ± 8.9
11	5	66	25	0.076	24.0	2.222E+05	2.933E+06	21.4 ± 9.9
12	24	210	32	0.114	59.6	8.333E+05	7.292E+06	32.2 ± 7.0
13	0	2	12	0.000	1.5	0.000E+00	1.852E+05	0.0 ± 0.0
14	1	6	30	0.167	1.8	3.704E+04	2.222E+05	46.9 ± 50.7
15	14	198	35	0.071	51.4	4.444E+05	6.286E+06	19.9 ± 5.5
16	9	58	25	0.155	21.1	4.000E+05	2.578E+06	43.7 ± 15.7
17	1	11	48	0.091	2.1	2.315E+04	2.546E+05	25.6 ± 26.8
18	1	7	30	0.143	2.1	3.704E+04	2.593E+05	40.2 ± 43.0
19	2	15	6	0.133	22.7	3.704E+05	2.778E+06	37.6 ± 28.3
20	2	14	24	0.143	5.3	9.259E+04	6.481E+05	40.2 ± 30.4
21	7	83	42	0.084	18.0	1.852E+05	2.196E+06	23.8 ± 9.4
22	3	19	25	0.158	6.9	1.333E+05	8.444E+05	44.5 ± 27.6
23	5	59	35	0.085	15.3	1.587E+05	1.873E+06	23.9 ± 11.1
24	2	25	36	0.080	6.3	6.173E+04	7.716E+05	22.6 ± 16.6
25	4	51	24	0.078	19.3	1.852E+05	2.361E+06	22.1 ± 11.5
	102	1092			14.0	1.596E+05	1.709E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 8.145 with 24 degrees of freedom
P(chi squared) = 99.9 %
Correlation Coefficient = 0.952
Variance of SQR(Ns) = 1.27
Variance of SQR(Ni) = 11.99

Ns/Ni = 0.093 ± 0.010
Mean Ratio = 0.093 ± 0.009

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 26.3 ± 2.8 Ma
CENTRAL AGE = 26.3 ± 2.8 Ma

91POS78A - ECHOOKA FORMATION

IRRADIATION LU189
SLIDE NUMBER 12
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	6	16	0.000	3.4	0.000E+00	4.167E+05	0.0 ± 0.0
2	2	24	18	0.083	12.1	1.235E+05	1.481E+06	23.5 ± 17.3
3	4	51	24	0.078	19.3	1.852E+05	2.361E+06	22.1 ± 11.5
4	0	3	10	0.000	2.7	0.000E+00	3.333E+05	0.0 ± 0.0
5	3	29	25	0.103	10.5	1.333E+05	1.289E+06	29.2 ± 17.7
6	1	7	16	0.143	4.0	6.944E+04	4.861E+05	40.2 ± 43.0
7	7	81	49	0.086	15.0	1.587E+05	1.837E+06	24.4 ± 9.6
8	5	60	42	0.083	13.0	1.323E+05	1.587E+06	23.5 ± 11.0
9	0	5	12	0.000	3.8	0.000E+00	4.630E+05	0.0 ± 0.0
10	9	57	20	0.158	25.9	5.000E+05	3.167E+06	44.5 ± 16.0
11	5	71	56	0.070	11.5	9.921E+04	1.409E+06	19.9 ± 9.2
12	1	9	21	0.111	3.9	5.291E+04	4.762E+05	31.3 ± 33.0
13	0	6	16	0.000	3.4	0.000E+00	4.167E+05	0.0 ± 0.0
14	8	62	25	0.129	22.5	3.556E+05	2.756E+06	36.4 ± 13.7
15	3	22	16	0.136	12.5	2.083E+05	1.528E+06	38.4 ± 23.7
16	3	19	18	0.158	9.6	1.852E+05	1.173E+06	44.5 ± 27.6
17	2	25	25	0.080	9.1	8.889E+04	1.111E+06	22.6 ± 16.6
18	5	63	30	0.079	19.1	1.852E+05	2.333E+06	22.4 ± 10.4
19	7	81	56	0.086	13.1	1.389E+05	1.607E+06	24.4 ± 9.6
20	1	11	15	0.091	6.7	7.407E+04	8.148E+05	25.6 ± 26.8
21	5	64	30	0.078	19.4	1.852E+05	2.370E+06	22.0 ± 10.2
22	4	29	56	0.138	4.7	7.936E+04	5.754E+05	38.8 ± 20.7
23	2	17	15	0.118	10.3	1.481E+05	1.259E+06	33.2 ± 24.8
24	10	102	70	0.098	13.2	1.587E+05	1.619E+06	27.6 ± 9.2
25	2	22	24	0.091	8.3	9.259E+04	1.019E+06	25.6 ± 18.9
	89	926			11.9	1.403E+05	1.459E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 7.516 with 24 degrees of freedom
P(chi squared) = 99.9 %
Correlation Coefficient = 0.924
Variance of SQR(Ns) = 0.90
Variance of SQR(Ni) = 6.32

Ns/Ni = 0.096 ± 0.011
Mean Ratio = 0.088 ± 0.009

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 27.1 ± 3.1 Ma
CENTRAL AGE = 27.1 ± 3.1 Ma

91POS79A - KINGAK SHALE

IRRADIATION LU189
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	5	30	20	0.167	13.6	2.778E+05	1.667E+06	46.9 ± 22.7
2	14	161	10	0.087	146.3	1.556E+06	1.789E+07	24.5 ± 6.9
3	1	22	8	0.045	25.0	1.389E+05	3.056E+06	12.8 ± 13.1
4	2	32	63	0.062	4.6	3.527E+04	5.644E+05	17.6 ± 12.9
5	9	85	18	0.106	42.9	5.556E+05	5.247E+06	29.8 ± 10.5
6	2	10	6	0.200	15.1	3.704E+05	1.852E+06	56.3 ± 43.6
7	4	57	36	0.070	14.4	1.235E+05	1.759E+06	19.8 ± 10.2
8	2	17	12	0.118	12.9	1.852E+05	1.574E+06	33.2 ± 24.8
9	11	68	16	0.162	38.6	7.639E+05	4.722E+06	45.5 ± 14.8
10	7	93	30	0.075	28.2	2.593E+05	3.444E+06	21.2 ± 8.3
11	12	96	35	0.125	24.9	3.810E+05	3.048E+06	35.2 ± 10.8
12	2	21	16	0.095	11.9	1.389E+05	1.458E+06	26.8 ± 19.9
13	5	15	18	0.333	7.6	3.086E+05	9.259E+05	93.5 ± 48.3
14	5	37	18	0.135	18.7	3.086E+05	2.284E+06	38.1 ± 18.2
15	1	10	8	0.100	11.4	1.389E+05	1.389E+06	28.2 ± 29.6
16	3	31	25	0.097	11.3	1.333E+05	1.378E+06	27.3 ± 16.5
17	5	33	28	0.152	10.7	1.984E+05	1.310E+06	42.7 ± 20.5
18	3	28	20	0.107	12.7	1.667E+05	1.556E+06	30.2 ± 18.4
19	4	30	18	0.133	15.1	2.469E+05	1.852E+06	37.6 ± 20.0
20	1	19	28	0.053	6.2	3.968E+04	7.540E+05	14.9 ± 15.2
21	2	15	12	0.133	11.4	1.852E+05	1.389E+06	37.6 ± 28.3
22	5	35	16	0.143	19.9	3.472E+05	2.431E+06	40.2 ± 19.3
23	7	61	70	0.115	7.9	1.111E+05	9.683E+05	32.3 ± 12.9
24	3	33	25	0.091	12.0	1.333E+05	1.467E+06	25.6 ± 15.5
25	4	52	30	0.077	15.7	1.481E+05	1.926E+06	21.7 ± 11.3
	119	1091			16.9	2.256E+05	2.069E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 14.380 with 24 degrees of freedom
P(chi squared) = 93.8 %
Correlation Coefficient = 0.892
Variance of SQR(Ns) = 0.58
Variance of SQR(Ni) = 5.44

Ns/Ni = 0.109 ± 0.011
Mean Ratio = 0.119 ± 0.012

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 30.7 ± 3.0 Ma
CENTRAL AGE = 30.7 ± 3.0 Ma

91POS80A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 14
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	12	140	36	0.086	35.3	3.704E+05	4.321E+06	24.2 ± 7.3
2	2	3	42	0.667	0.6	5.291E+04	7.936E+04	185.6 ± 169.5
3	4	18	25	0.222	6.5	1.778E+05	8.000E+05	62.5 ± 34.6
4	4	69	36	0.058	17.4	1.235E+05	2.130E+06	16.4 ± 8.4
5	3	46	15	0.065	27.9	2.222E+05	3.407E+06	18.4 ± 11.0
6	4	43	30	0.093	13.0	1.481E+05	1.593E+06	26.2 ± 13.7
7	0	4	18	0.000	2.0	0.000E+00	2.469E+05	0.0 ± 0.0
8	0	3	15	0.000	1.8	0.000E+00	2.222E+05	0.0 ± 0.0
9	1	1	12	1.000	0.8	9.259E+04	9.259E+04	276.5 ± 391.1
10	1	6	42	0.167	1.3	2.646E+04	1.587E+05	46.9 ± 50.7
11	49	467	25	0.105	169.7	2.178E+06	2.076E+07	29.6 ± 4.5
12	1	12	35	0.083	3.1	3.175E+04	3.810E+05	23.5 ± 24.5
13	16	109	35	0.147	28.3	5.079E+05	3.460E+06	41.3 ± 11.1
14	4	33	18	0.121	16.7	2.469E+05	2.037E+06	34.2 ± 18.1
15	7	89	36	0.079	22.5	2.160E+05	2.747E+06	22.2 ± 8.7
16	8	89	40	0.090	20.2	2.222E+05	2.472E+06	25.3 ± 9.4
17	7	49	35	0.143	12.7	2.222E+05	1.556E+06	40.2 ± 16.3
18	0	5	12	0.000	3.8	0.000E+00	4.630E+05	0.0 ± 0.0
19	3	20	24	0.150	7.6	1.389E+05	9.259E+05	42.2 ± 26.2
20	10	90	48	0.111	17.0	2.315E+05	2.083E+06	31.3 ± 10.5
21	4	47	25	0.085	17.1	1.778E+05	2.089E+06	24.0 ± 12.5
22	0	4	18	0.000	2.0	0.000E+00	2.469E+05	0.0 ± 0.0
23	11	122	63	0.090	17.6	1.940E+05	2.152E+06	25.4 ± 8.0
24	11	123	56	0.089	20.0	2.183E+05	2.440E+06	25.2 ± 8.0
25	2	18	12	0.111	13.6	1.852E+05	1.667E+06	31.3 ± 23.4
	164	1610			19.4	2.420E+05	2.376E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.941 with 24 degrees of freedom
P(chi squared) = 70.0 %
Correlation Coefficient = 0.985
Variance of SQR(Ns) = 2.38
Variance of SQR(Ni) = 21.60

Ns/Ni = 0.102 ± 0.008
Mean Ratio = 0.150 ± 0.044

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 28.7 ± 2.4 Ma
CENTRAL AGE = 28.7 ± 2.4 Ma

91POS81A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 15
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	19	125	15	0.152	75.7	1.407E+06	9.259E+06	42.8 ± 10.6
2	7	45	35	0.156	11.7	2.222E+05	1.429E+06	43.8 ± 17.8
3	1	9	21	0.111	3.9	5.291E+04	4.762E+05	31.3 ± 33.0
4	1	5	42	0.200	1.1	2.646E+04	1.323E+05	56.3 ± 61.6
5	9	99	16	0.091	56.2	6.250E+05	6.875E+06	25.6 ± 8.9
6	4	30	12	0.133	22.7	3.704E+05	2.778E+06	37.6 ± 20.0
7	0	4	16	0.000	2.3	0.000E+00	2.778E+05	0.0 ± 0.0
8	2	11	28	0.182	3.6	7.936E+04	4.365E+05	51.2 ± 39.3
9	6	25	35	0.240	6.5	1.905E+05	7.936E+05	67.4 ± 30.7
10	10	49	9	0.204	49.5	1.235E+06	6.049E+06	57.4 ± 20.0
11	1	6	20	0.167	2.7	5.556E+04	3.333E+05	46.9 ± 50.7
12	1	6	16	0.167	3.4	6.944E+04	4.167E+05	46.9 ± 50.7
13	3	19	27	0.158	6.4	1.235E+05	7.819E+05	44.5 ± 27.6
14	17	80	36	0.212	20.2	5.247E+05	2.469E+06	59.8 ± 16.0
15	2	7	24	0.286	2.6	9.259E+04	3.241E+05	80.2 ± 64.3
16	16	79	18	0.203	39.9	9.877E+05	4.877E+06	57.0 ± 15.7
17	0	7	20	0.000	3.2	0.000E+00	3.889E+05	0.0 ± 0.0
18	10	70	25	0.143	25.4	4.444E+05	3.111E+06	40.2 ± 13.6
19	2	13	25	0.154	4.7	8.889E+04	5.778E+05	43.3 ± 32.9
20	3	33	24	0.091	12.5	1.389E+05	1.528E+06	25.6 ± 15.5
21	4	27	30	0.148	8.2	1.481E+05	1.000E+06	41.7 ± 22.4
22	0	4	42	0.000	0.9	0.000E+00	1.058E+05	0.0 ± 0.0
23	7	39	25	0.179	14.2	3.111E+05	1.733E+06	50.5 ± 20.8
24	1	7	20	0.143	3.2	5.556E+04	3.889E+05	40.2 ± 43.0
25	1	7	16	0.143	4.0	6.944E+04	4.861E+05	40.2 ± 43.0
	127	806			12.3	2.364E+05	1.500E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 10.414 with 24 degrees of freedom
P(chi squared) = 99.3 %
Correlation Coefficient = 0.934
Variance of SQR(Ns) = 1.57
Variance of SQR(Ni) = 7.67

Ns/Ni = 0.158 ± 0.015
Mean Ratio = 0.146 ± 0.014

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 44.4 ± 4.3 Ma
CENTRAL AGE = 44.4 ± 4.3 Ma

PHILIP SMITH MOUNTAIN FRONT

Sample Locations and Apatite Yields - Philip Smith Mountain Front

Table 4. Sample details and apatite yields for outcrop samples: Philip Smith Mountain Front.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
91POS41A	69°23.0'	146°37.8'	(2100)/(*640*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS43A	69°23.5'	146°37.2'	(2000)/(*610*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS44A	69°27.6'	146°20.6'	(1240)/(*378*)	Kemik Sandstone.	Hauterivian	~132-135	Sandstone
91POS54A	69°27.6'	146°21.5'	(1260)/(*384*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS62A	69°27.7'	146°34.8'	(1400)/(*427*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS63A	69°30.1'	146°36.9'	(1340)/(*409*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS64A	69°25.1'	146°44.8'	(1420)/(*433*)	Kemik Sandstone	Hauterivian	~132-135	Sandstone
91POS65A	69°26.7'	146°46.7'	(1380)/(*421*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS65B	69°26.7'	146°46.7'	(1380)/(*421*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS66A	69°32.9'	146°40.0'	(1150)/(*351*)	Canning Fm.	Campanian-Eocene	~35-83	Sandstone
91POS67A	69°35.0'	146°50.0'	(1220)/(*372*)	Sagavanirktok Fm.	Paleocene-Miocene	~5-65	Sandstone
AB91-S1	69°25.1'	147°16.7'	(1600)/(*488*)	Kemik Sandstone	Hauterivian	~132-135	Sandstone
AB91-S2	69°24.5'	147°12.9'	(1400)/(*427*)	Kemik Sandstone	Hauterivian	~132-135	Sandstone
AB91-S3	69°23.6'	147°06.4'	(1400)/(*427*)	Kemik Sandstone	Hauterivian	~132-135	Sandstone
AB91-S4	69°23.0'	147°04.1'	(1700)/(*518*)	Kemik Sandstone	Hauterivian	~132-135	Sandstone

Sample Results - Philip Smith Mountain Front

Typical yields for the samples were quite good and in most cases 20-25 dateable grains were found on each mount. Due to relatively young ages and in some cases, low uranium content (<10 ppm), only 5 mounts contained 100 or more confined tracks and an additional 4 mounts had between 50 and 100 tracks. Five mounts had less than 20 confined tracks. For all samples it was determined that the dated grains represented a single population so the pooled age is presented for each.

Table 5. Apatite fission track analytical results: Philip Smith Mountain Front.

Sample Number	Number of grains	Standard track density ($x10^6cm^{-2}$)	Fossil track density ($x10^5cm^{-2}$)	Induced track density ($x10^6cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
91POS41A	25	1.506 (3388)	1.114 (66)	95.41 (565)	85.8	30.9 ± 4.1	8.3	14.21 ± 0.17 (74)	1.45
91POS43A	25	1.506 (3388)	81.12 (43)	67.16 (356)	64.6	32.0 ± 5.2	5.8	14.05 ± 0.12 (92)	1.10
91POS44A	20	1.602 (3605)	1.878 (96)	1.493 (763)	99.6	35.4 ± 3.9	12.2	14.21 ± 0.20 (30)	1.11
91POS54A	11	1.602 (3605)	2.125 (57)	1.734 (465)	98.7	34.5 ± 4.9	14.2	14.09 ± 0.16 (21)	0.74
91POS62A	25	1.602 (3605)	3.029 (244)	1.753 (1412)	99.5	48.6 ± 3.5	14.3	13.88 ± 0.13 (101)	1.35
91POS63A	22	1.602 (3605)	2.963 (144)	1.733 (842)	99.9	48.1 ± 4.5	14.2	14.12 ± 0.31 (22)	1.46
91POS64A	25	1.602 (3605)	3.285 (102)	2.422 (752)	100	38.2 ± 4.1	19.8	14.04 ± 0.18 (27)	0.94
91POS65A	25	1.602 (3605)	2.307 (76)	1.311 (432)	94.4	49.5 ± 6.3	10.7	13.98 ± 0.14 (101)	1.35
91POS65B	25	1.602 (3605)	1.947 (102)	1.189 (623)	99.6	46.1 ± 5.0	9.7	14.02 ± 0.13 (108)	1.27
91POS66A	25	1.602 (3605)	2.045 (157)	1.260 (967)	97.6	45.7 ± 4.1	10.3	14.23 ± 0.12 (102)	1.19
91POS67A	23	1.602 (3605)	2.864 (91)	1.177 (374)	83.7	68.4 ± 8.1	9.6	12.15 ± 0.34 (26)	1.75
AB91-S1	25	1.506 (3388)	1.404 (79)	1.058 (595)	68.0	35.2 ± 4.3	9.2	14.34 ± 0.12 (103)	1.20
AB91-S2	25	1.506 (3388)	2.204 (118)	1.690 (905)	26.8	34.5 ± 3.5	14.7	13.92 ± 0.14 (78)	1.20
AB91-S3	25	1.506 (3388)	1.876 (117)	1.473 (919)	100	33.7 ± 3.4	12.8	13.76 ± 0.14 (46)	0.98
AB91-S4	22	1.506 (3388)	88.14 (33)	71.05 (266)	94.6	32.9 ± 6.1	6.2	14.40 ± 0.25 (17)	1.02

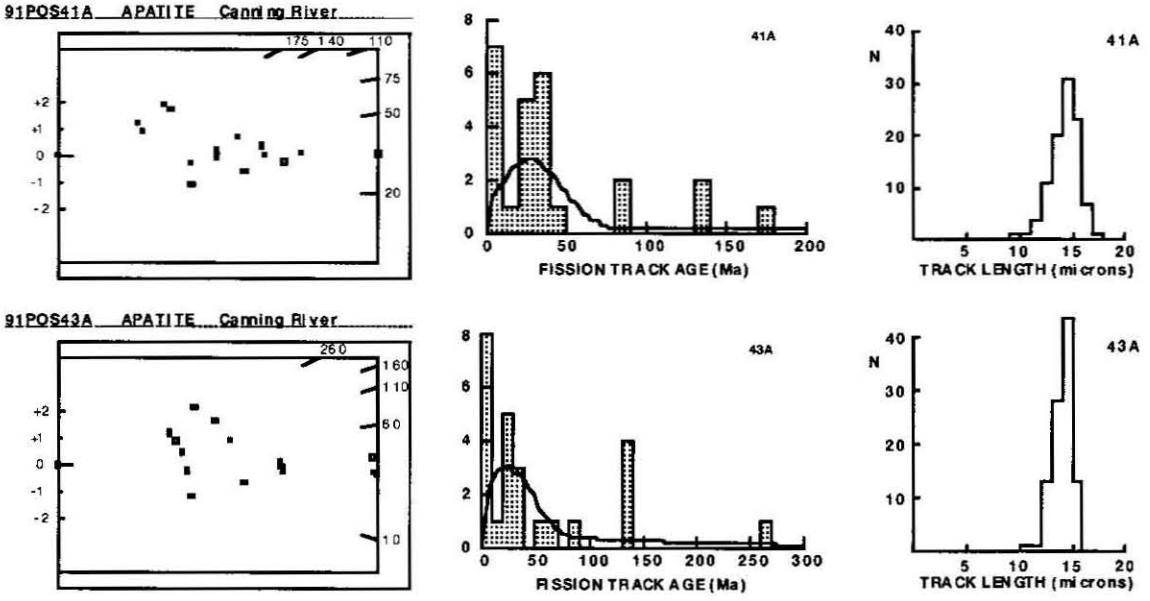
Parentheses show number of tracks counted.

Table 6. Track length data: Philip Smith Mountain Front.

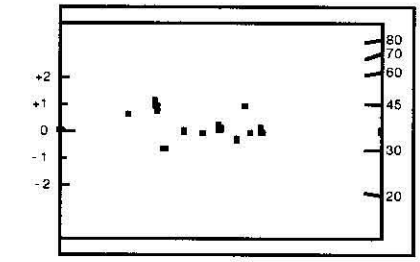
Sample Number	Track Length Range (µm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
POS41A	-	-	-	-	-	1	1	3	8	15	23	17	5	1
POS43A	-	-	-	-	-	-	1	1	12	26	40	12	-	-
POS44A	-	-	-	-	-	-	1	-	-	11	13	4	1	-
POS54A	-	-	-	-	-	-	-	-	3	6	10	2	-	-
POS62A	-	-	-	1	-	1	-	5	16	21	41	12	4	-
POS63A	-	-	-	-	-	1	-	1	1	3	11	5	-	-
POS64A	-	-	-	-	-	-	-	1	2	9	12	3	-	-
POS65A	-	-	-	-	1	-	4	2	9	26	41	13	4	1
POS65B	-	-	-	-	1	1	1	6	15	23	39	17	5	-
POS66A	-	-	-	-	-	-	1	1	12	22	40	24	2	-
POS67A	-	-	-	-	1	3	3	4	5	6	4	-	-	-
AB91-S1	-	-	-	-	-	-	-	3	11	24	43	15	4	3
AB91-S2	-	-	-	-	-	-	4	-	7	28	23	16	-	-
AB91-S3	-	-	-	-	-	-	1	-	7	20	13	5	-	-
AB91-S4	-	-	-	-	-	-	-	-	1	4	8	3	1	-

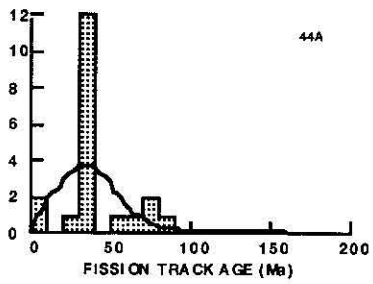
Length measurements by P. O'Sullivan

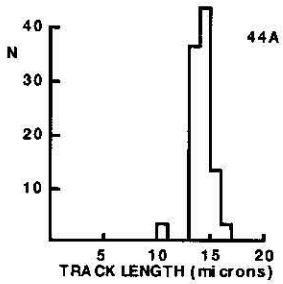
Single-Age and Track Length Distributions - Philip Smith Mountain Front



91POS44A APATITE Kemik Fm.







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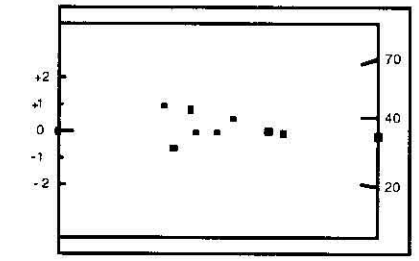

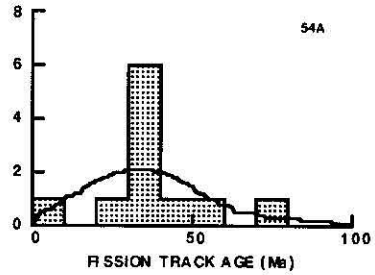

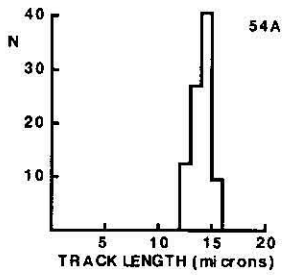

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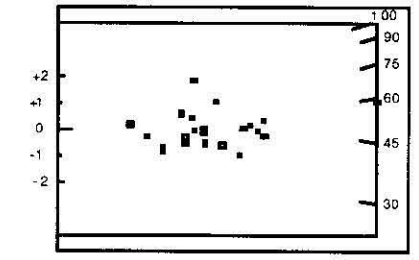

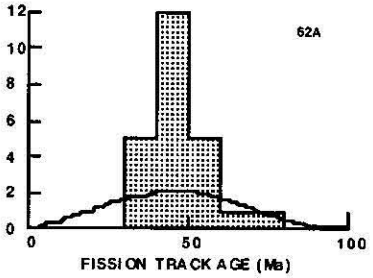

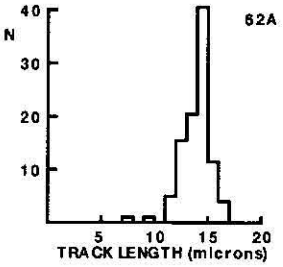

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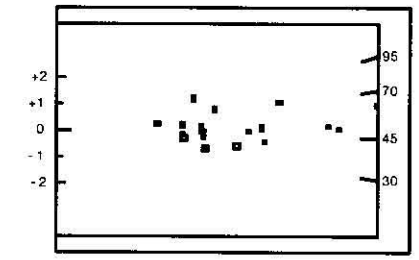
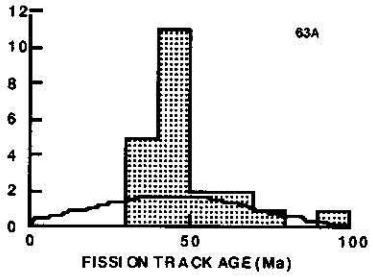
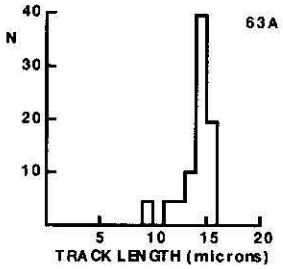
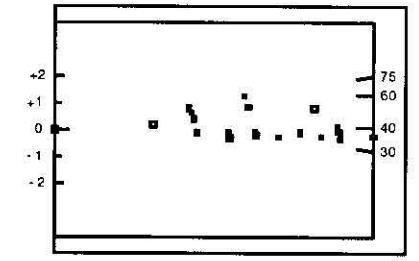
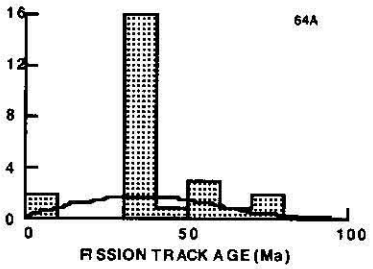


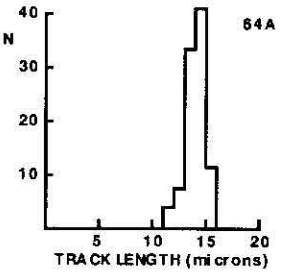




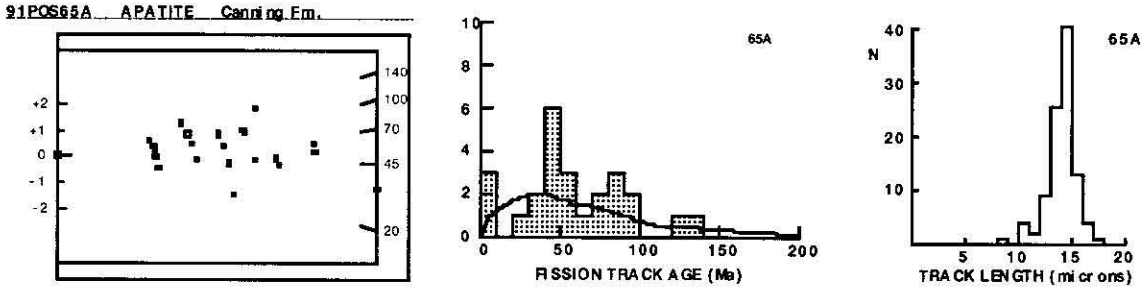
91POS64A APATITE Kemik Fm.







91POS65A APATITE Canning Fm.



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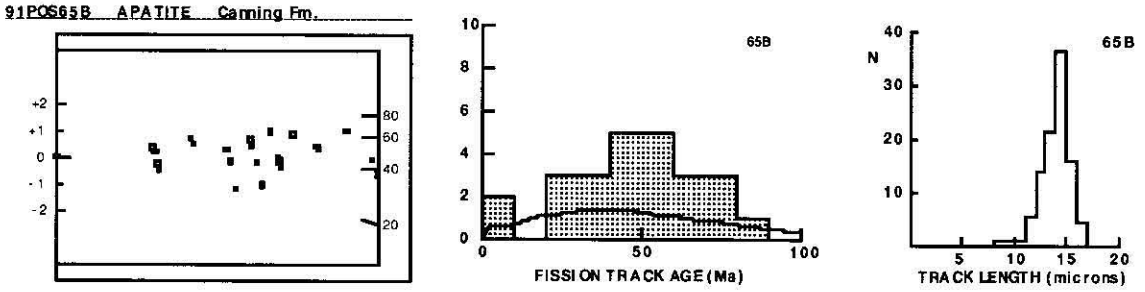

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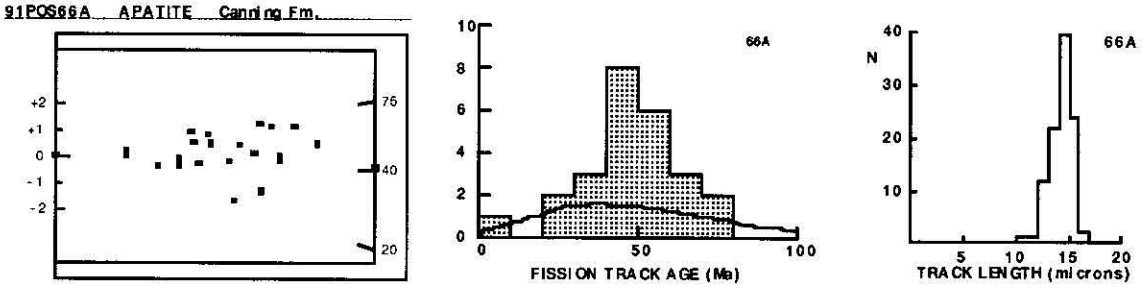

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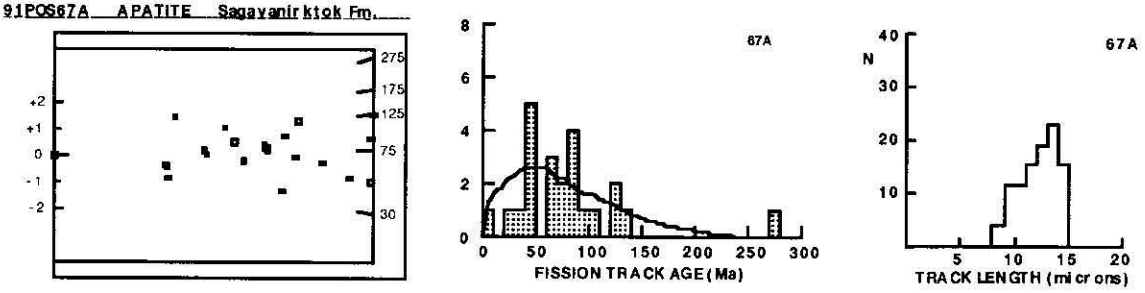
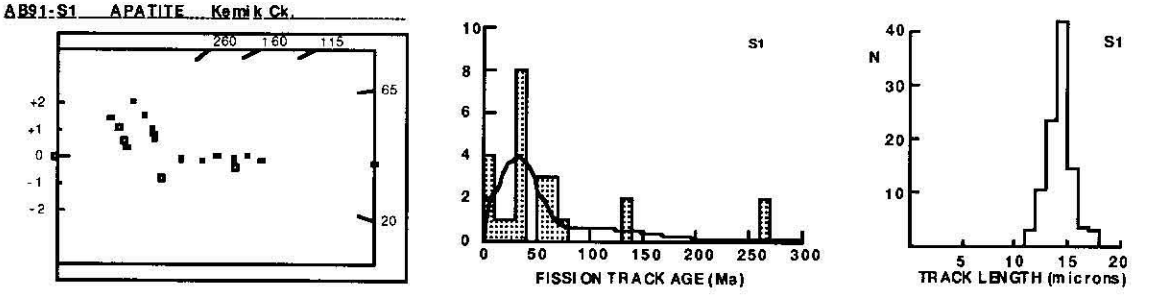
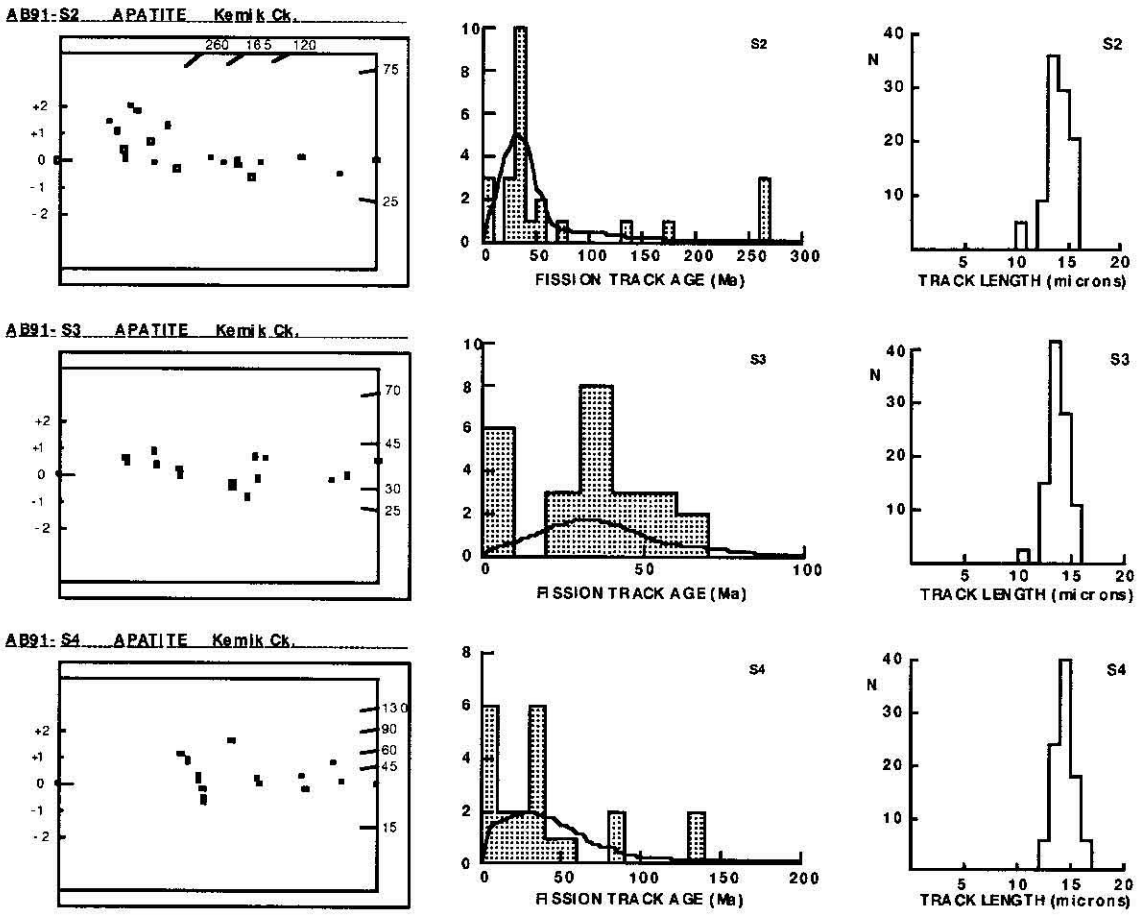


AB91-S1 APATITE Kemik Ck.




AB91-S2 APATITE Kemik Ck.
260 165 120
75
25
+2
+1
0
-1
-2
S2
FISSION TRACK AGE (Ma)
N
TRACK LENGTH (microns)
AB91-S3 APATITE Kemik Ck.
70
45
30
25
S3
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
AB91-S4 APATITE Kemik Ck.
130
90
60
45
15
S4
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)

Age Sheets - Philip Smith Mountain Front

91POS41A - CANNING FORMATION

IRRADIATION LU188
SLIDE NUMBER 14
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	1	9	0.000	1.1	0.000E+00	1.235E+05	0.0 ± 0.0
2	5	43	42	0.116	9.9	1.323E+05	1.138E+06	30.8 ± 14.6
3	6	57	49	0.105	11.2	1.361E+05	1.293E+06	27.9 ± 12.0
4	2	4	15	0.500	2.6	1.481E+05	2.963E+05	131.4 ± 113.9
5	0	1	14	0.000	0.7	0.000E+00	7.936E+04	0.0 ± 0.0
6	0	2	20	0.000	1.0	0.000E+00	1.111E+05	0.0 ± 0.0
7	2	3	36	0.667	0.8	6.173E+04	9.259E+04	174.7 ± 159.5
8	0	5	16	0.000	3.0	0.000E+00	3.472E+05	0.0 ± 0.0
9	0	5	21	0.000	2.3	0.000E+00	2.646E+05	0.0 ± 0.0
10	3	27	36	0.111	7.2	9.259E+04	8.333E+05	29.4 ± 17.9
11	4	23	24	0.174	9.3	1.852E+05	1.065E+06	46.0 ± 25.0
12	3	25	30	0.120	8.1	1.111E+05	9.259E+05	31.8 ± 19.4
13	2	22	28	0.091	7.6	7.936E+04	8.730E+05	24.1 ± 17.8
14	1	3	20	0.333	1.4	5.556E+04	1.667E+05	87.9 ± 101.5
15	2	37	24	0.054	14.9	9.259E+04	1.713E+06	14.3 ± 10.4
16	4	47	30	0.085	15.1	1.481E+05	1.741E+06	22.6 ± 11.8
17	12	102	60	0.118	16.4	2.222E+05	1.889E+06	31.2 ± 9.5
18	0	4	21	0.000	1.8	0.000E+00	2.116E+05	0.0 ± 0.0
19	3	23	20	0.130	11.1	1.667E+05	1.278E+06	34.5 ± 21.2
20	5	36	35	0.139	9.9	1.587E+05	1.143E+06	36.8 ± 17.6
21	0	6	9	0.000	6.4	0.000E+00	7.407E+05	0.0 ± 0.0
22	1	2	25	0.500	0.8	4.444E+04	8.889E+04	131.4 ± 161.0
23	7	57	40	0.123	13.8	1.944E+05	1.583E+06	32.5 ± 13.0
24	3	27	18	0.111	14.5	1.852E+05	1.667E+06	29.4 ± 17.9
25	1	3	16	0.333	1.8	6.944E+04	2.083E+05	87.9 ± 101.5
	66	565			8.3	1.114E+05	9.541E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 16.770 with 24 degrees of freedom
P(chi squared) = 85.8 %
Correlation Coefficient = 0.952
Variance of SQR(Ns) = 0.98
Variance of SQR(Ni) = 6.43

Ns/Ni = 0.117 ± 0.015
Mean Ratio = 0.152 ± 0.036

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.506E+06cm-2; ND = 3388

POOLED AGE = 30.9 ± 4.1 Ma
CENTRAL AGE = 30.9 ± 4.1 Ma

91POS43A - CANNING FORMATION

IRRADIATION LU188
SLIDE NUMBER 15
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	27	15	0.037	17.4	7.407E+04	2.000E+06	9.8 ± 10.0
2	0	3	24	0.000	1.2	0.000E+00	1.389E+05	0.0 ± 0.0
3	1	11	16	0.091	6.6	6.944E+04	7.639E+05	24.1 ± 25.2
4	1	2	42	0.500	0.5	2.646E+04	5.291E+04	131.4 ± 161.0
5	1	5	30	0.200	1.6	3.704E+04	1.852E+05	52.9 ± 58.0
6	0	3	15	0.000	1.9	0.000E+00	2.222E+05	0.0 ± 0.0
7	1	10	9	0.100	10.7	1.235E+05	1.235E+06	26.5 ± 27.8
8	2	8	24	0.250	3.2	9.259E+04	3.704E+05	66.1 ± 52.2
9	3	28	16	0.107	16.9	2.083E+05	1.944E+06	28.4 ± 17.3
10	0	2	12	0.000	1.6	0.000E+00	1.852E+05	0.0 ± 0.0
11	0	1	12	0.000	0.8	0.000E+00	9.259E+04	0.0 ± 0.0
12	2	4	24	0.500	1.6	9.259E+04	1.852E+05	131.4 ± 113.9
13	0	7	9	0.000	7.5	0.000E+00	8.642E+05	0.0 ± 0.0
14	3	26	12	0.115	20.9	2.778E+05	2.407E+06	30.6 ± 18.7
15	6	58	40	0.103	14.0	1.667E+05	1.611E+06	27.4 ± 11.8
16	2	27	40	0.074	6.5	5.556E+04	7.500E+05	19.6 ± 14.4
17	6	56	20	0.107	27.1	3.333E+05	3.111E+06	28.4 ± 12.2
18	1	2	30	0.500	0.6	3.704E+04	7.407E+04	131.4 ± 161.0
19	6	44	24	0.136	17.7	2.778E+05	2.037E+06	36.1 ± 15.7
20	0	1	15	0.000	0.6	0.000E+00	7.407E+04	0.0 ± 0.0
21	1	2	25	0.500	0.8	4.444E+04	8.889E+04	131.4 ± 161.0
22	3	23	49	0.130	4.5	6.803E+04	5.215E+05	34.5 ± 21.2
23	0	1	36	0.000	0.3	0.000E+00	3.086E+04	0.0 ± 0.0
24	1	3	25	0.333	1.2	4.444E+04	1.333E+05	87.9 ± 101.5
25	2	2	25	1.000	0.8	8.889E+04	8.889E+04	260.3 ± 260.3
	43	356			5.8	8.112E+04	6.716E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 20.874 with 24 degrees of freedom
P(chi squared) = 64.6 %
Correlation Coefficient = 0.906
Variance of SQR(Ns) = 0.65
Variance of SQR(Ni) = 4.49

Ns/Ni = 0.121 ± 0.020
Mean Ratio = 0.191 ± 0.048

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.506E+06cm-2; ND = 3388

POOLED AGE = 32.0 ± 5.2 Ma
CENTRAL AGE = 32.0 ± 5.2 Ma

91POS44A - KEMIK SANDSTONE

IRRADIATION LU189
SLIDE NUMBER 1
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	10	18	0.000	5.0	0.000E+00	6.173E+05	0.0 ± 0.0
2	8	66	35	0.121	17.1	2.540E+05	2.095E+06	34.2 ± 12.8
3	2	7	20	0.286	3.2	1.111E+05	3.889E+05	80.2 ± 64.3
4	1	4	16	0.250	2.3	6.944E+04	2.778E+05	70.2 ± 78.6
5	6	56	30	0.107	17.0	2.222E+05	2.074E+06	30.2 ± 13.0
6	5	39	20	0.128	17.7	2.778E+05	2.167E+06	36.1 ± 17.2
7	20	161	60	0.124	24.4	3.704E+05	2.981E+06	35.0 ± 8.3
8	7	57	42	0.123	12.3	1.852E+05	1.508E+06	34.6 ± 13.9
9	0	7	42	0.000	1.5	0.000E+00	1.852E+05	0.0 ± 0.0
10	6	56	12	0.107	42.4	5.556E+05	5.185E+06	30.2 ± 13.0
11	3	25	12	0.120	18.9	2.778E+05	2.315E+06	33.8 ± 20.7
12	5	37	42	0.135	8.0	1.323E+05	9.788E+05	38.1 ± 18.2
13	8	62	56	0.129	10.1	1.587E+05	1.230E+06	36.4 ± 13.7
14	5	36	9	0.139	36.3	6.173E+05	4.444E+06	39.1 ± 18.7
15	2	27	8	0.074	30.7	2.778E+05	3.750E+06	20.9 ± 15.3
16	7	39	48	0.179	7.4	1.620E+05	9.028E+05	50.5 ± 20.8
17	4	33	27	0.121	11.1	1.646E+05	1.358E+06	34.2 ± 18.1
18	2	9	16	0.222	5.1	1.389E+05	6.250E+05	62.5 ± 48.9
19	3	24	25	0.125	8.7	1.333E+05	1.067E+06	35.2 ± 21.6
20	2	8	30	0.250	2.4	7.407E+04	2.963E+05	70.2 ± 55.6
	96	763			12.2	1.878E+05	1.493E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 6.637 with 19 degrees of freedom
P(chi squared) = 99.6 %
Correlation Coefficient = 0.980
Variance of SQR(Ns) = 1.02
Variance of SQR(Ni) = 6.62

Ns/Ni = 0.126 ± 0.014
Mean Ratio = 0.137 ± 0.016

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 35.4 ± 3.9 Ma
CENTRAL AGE = 35.4 ± 3.9 Ma

91POS54A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 2
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	4	33	18	0.121	16.7	2.469E+05	2.037E+06	34.2 ± 18.1
2	3	25	16	0.120	14.2	2.083E+05	1.736E+06	33.8 ± 20.7
3	2	8	18	0.250	4.0	1.235E+05	4.938E+05	70.2 ± 55.6
4	0	5	9	0.000	5.0	0.000E+00	6.173E+05	0.0 ± 0.0
5	7	58	48	0.121	11.0	1.620E+05	1.343E+06	34.0 ± 13.6
6	2	26	21	0.077	11.2	1.058E+05	1.376E+06	21.7 ± 15.9
7	16	137	56	0.117	22.2	3.175E+05	2.718E+06	32.9 ± 8.7
8	5	33	24	0.152	12.5	2.315E+05	1.528E+06	42.7 ± 20.5
9	7	57	36	0.123	14.4	2.160E+05	1.759E+06	34.6 ± 13.9
10	8	68	36	0.118	17.2	2.469E+05	2.099E+06	33.2 ± 12.4
11	3	15	16	0.200	8.5	2.083E+05	1.042E+06	56.3 ± 35.6
	57	465			14.2	2.125E+05	1.734E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 2.727 with 10 degrees of freedom
P(chi squared) = 98.7 %
Correlation Coefficient = 0.987
Variance of SQR(Ns) = 1.04
Variance of SQR(Ni) = 7.33

Ns/Ni = 0.123 ± 0.017
Mean Ratio = 0.127 ± 0.019

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 34.5 ± 4.9 Ma
CENTRAL AGE = 34.5 ± 4.9 Ma

91POS62A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	13	74	60	0.176	11.2	2.407E+05	1.370E+06	49.4 ± 14.9
2	6	27	30	0.222	8.2	2.222E+05	1.000E+06	62.5 ± 28.2
3	8	22	28	0.364	7.1	3.175E+05	8.730E+05	101.9 ± 42.1
4	12	93	60	0.129	14.1	2.222E+05	1.722E+06	36.4 ± 11.2
5	8	49	40	0.163	11.1	2.222E+05	1.361E+06	46.0 ± 17.6
6	7	42	21	0.167	18.2	3.704E+05	2.222E+06	46.9 ± 19.2
7	39	188	30	0.207	56.9	1.444E+06	6.963E+06	58.3 ± 10.3
8	8	47	15	0.170	28.5	5.926E+05	3.481E+06	47.9 ± 18.4
9	8	56	36	0.143	14.1	2.469E+05	1.728E+06	40.2 ± 15.2
10	8	47	25	0.170	17.1	3.556E+05	2.089E+06	47.9 ± 18.4
11	6	40	30	0.150	12.1	2.222E+05	1.481E+06	42.2 ± 18.5
12	10	71	24	0.141	26.9	4.630E+05	3.287E+06	39.7 ± 13.4
13	14	78	42	0.179	16.9	3.704E+05	2.063E+06	50.5 ± 14.7
14	8	46	45	0.174	9.3	1.975E+05	1.136E+06	48.9 ± 18.8
15	16	84	49	0.190	15.6	3.628E+05	1.905E+06	53.6 ± 14.7
16	4	34	40	0.118	7.7	1.111E+05	9.444E+05	33.2 ± 17.5
17	2	10	42	0.200	2.2	5.291E+04	2.646E+05	56.3 ± 43.6
18	10	40	30	0.250	12.1	3.704E+05	1.481E+06	70.2 ± 24.9
19	6	42	56	0.143	6.8	1.190E+05	8.333E+05	40.2 ± 17.6
20	4	36	20	0.111	16.4	2.222E+05	2.000E+06	31.3 ± 16.5
21	3	20	18	0.150	10.1	1.852E+05	1.235E+06	42.2 ± 26.2
22	16	99	42	0.162	21.4	4.233E+05	2.619E+06	45.5 ± 12.3
23	7	34	36	0.206	8.6	2.160E+05	1.049E+06	57.9 ± 24.1
24	6	44	20	0.136	20.0	3.333E+05	2.444E+06	38.4 ± 16.7
25	15	89	56	0.169	14.4	2.976E+05	1.766E+06	47.4 ± 13.3
	244	1412			14.3	3.029E+05	1.753E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 9.792 with 24 degrees of freedom
P(chi squared) = 99.5 %
Correlation Coefficient = 0.957
Variance of SQR(Ns) = 0.93
Variance of SQR(Ni) = 4.73

Ns/Ni = 0.173 ± 0.012
Mean Ratio = 0.176 ± 0.010

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 48.6 ± 3.5 Ma
CENTRAL AGE = 48.6 ± 3.5 Ma

91POS63A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 4
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	10	20	0.200	4.5	1.111E+05	5.556E+05	56.3 ± 43.6
2	3	20	30	0.150	6.1	1.111E+05	7.407E+05	42.2 ± 26.2
3	4	25	12	0.160	18.9	3.704E+05	2.315E+06	45.0 ± 24.3
4	6	46	36	0.130	11.6	1.852E+05	1.420E+06	36.7 ± 16.0
5	7	42	21	0.167	18.2	3.704E+05	2.222E+06	46.9 ± 19.2
6	14	79	48	0.177	15.0	3.241E+05	1.829E+06	49.9 ± 14.5
7	4	27	15	0.148	16.4	2.963E+05	2.000E+06	41.7 ± 22.4
8	4	34	14	0.118	22.1	3.175E+05	2.698E+06	33.2 ± 17.5
9	10	41	15	0.244	24.8	7.407E+05	3.037E+06	68.5 ± 24.2
10	8	56	21	0.143	24.2	4.233E+05	2.963E+06	40.2 ± 15.2
11	4	36	16	0.111	20.4	2.778E+05	2.500E+06	31.3 ± 16.5
12	5	20	21	0.250	8.7	2.646E+05	1.058E+06	70.2 ± 35.2
13	8	47	24	0.170	17.8	3.704E+05	2.176E+06	47.9 ± 18.4
14	8	46	35	0.174	11.9	2.540E+05	1.460E+06	48.9 ± 18.8
15	4	25	35	0.160	6.5	1.270E+05	7.936E+05	45.0 ± 24.3
16	20	93	36	0.215	23.5	6.173E+05	2.870E+06	60.5 ± 15.0
17	4	12	12	0.333	9.1	3.704E+05	1.111E+06	93.5 ± 54.0
18	4	34	15	0.118	20.6	2.963E+05	2.519E+06	33.2 ± 17.5
19	4	23	36	0.174	5.8	1.235E+05	7.099E+05	48.9 ± 26.5
20	15	88	56	0.170	14.3	2.976E+05	1.746E+06	48.0 ± 13.4
21	3	16	18	0.188	8.1	1.852E+05	9.877E+05	52.8 ± 33.2
22	3	22	4	0.136	50.0	8.333E+05	6.111E+06	38.4 ± 23.7
	144	842			14.2	2.963E+05	1.733E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 6.542 with 21 degrees of freedom
P(chi squared) = 99.9 %
Correlation Coefficient = 0.943
Variance of SQR(Ns) = 0.62
Variance of SQR(Ni) = 3.17

Ns/Ni = 0.171 ± 0.015
Mean Ratio = 0.174 ± 0.011

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 48.1 ± 4.5 Ma
CENTRAL AGE = 48.1 ± 4.5 Ma

91POS64A - KEMIK SANDSTONE

IRRADIATION LU189
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	3	24	9	0.125	24.2	3.704E+05	2.963E+06	35.2 ± 21.6
2	4	15	12	0.267	11.4	3.704E+05	1.389E+06	74.9 ± 42.2
3	0	3	6	0.000	4.5	0.000E+00	5.556E+05	0.0 ± 0.0
4	7	38	9	0.184	38.4	8.642E+05	4.691E+06	51.8 ± 21.3
5	4	33	20	0.121	15.0	2.222E+05	1.833E+06	34.2 ± 18.1
6	0	6	9	0.000	6.1	0.000E+00	7.407E+05	0.0 ± 0.0
7	3	26	4	0.115	59.1	8.333E+05	7.222E+06	32.5 ± 19.8
8	8	66	30	0.121	20.0	2.963E+05	2.444E+06	34.2 ± 12.8
9	2	16	21	0.125	6.9	1.058E+05	8.466E+05	35.2 ± 26.4
10	10	80	20	0.125	36.3	5.556E+05	4.444E+06	35.2 ± 11.8
11	4	19	18	0.211	9.6	2.469E+05	1.173E+06	59.2 ± 32.6
12	8	61	18	0.131	30.8	4.938E+05	3.765E+06	36.9 ± 13.9
13	2	15	6	0.133	22.7	3.704E+05	2.778E+06	37.6 ± 28.3
14	3	24	12	0.125	18.2	2.778E+05	2.222E+06	35.2 ± 21.6
15	2	8	16	0.250	4.5	1.389E+05	5.556E+05	70.2 ± 55.6
16	1	6	9	0.167	6.1	1.235E+05	7.407E+05	46.9 ± 50.7
17	2	11	24	0.182	4.2	9.259E+04	5.093E+05	51.2 ± 39.3
18	8	57	9	0.140	57.5	9.877E+05	7.037E+06	39.5 ± 14.9
19	4	32	18	0.125	16.2	2.469E+05	1.975E+06	35.2 ± 18.7
20	4	30	4	0.133	68.1	1.111E+06	8.333E+06	37.6 ± 20.0
21	6	47	16	0.128	26.7	4.167E+05	3.264E+06	36.0 ± 15.6
22	3	27	15	0.111	16.4	2.222E+05	2.000E+06	31.3 ± 19.1
23	7	58	24	0.121	22.0	3.241E+05	2.685E+06	34.0 ± 13.6
24	5	41	12	0.122	31.0	4.630E+05	3.796E+06	34.4 ± 16.3
25	2	9	4	0.222	20.4	5.556E+05	2.500E+06	62.5 ± 48.9
	102	752			19.8	3.285E+05	2.422E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 5.751 with 24 degrees of freedom
P(chi squared) = 100.0 %
Correlation Coefficient = 0.959
Variance of SQR(Ns) = 0.63
Variance of SQR(Ni) = 3.89

Ns/Ni = 0.136 ± 0.014
Mean Ratio = 0.139 ± 0.012

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 38.2 ± 4.1 Ma
CENTRAL AGE = 38.2 ± 4.1 Ma

91POS65A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	13	10	0.154	11.8	2.222E+05	1.444E+06	43.3 ± 32.9
2	3	21	6	0.143	31.8	5.556E+05	3.889E+06	40.2 ± 24.8
3	0	2	20	0.000	0.9	0.000E+00	1.111E+05	0.0 ± 0.0
4	2	8	20	0.250	3.6	1.111E+05	4.444E+05	70.2 ± 55.6
5	1	6	12	0.167	4.5	9.259E+04	5.556E+05	46.9 ± 50.7
6	7	37	16	0.189	21.0	4.861E+05	2.569E+06	53.2 ± 22.0
7	1	5	20	0.200	2.3	5.556E+04	2.778E+05	56.3 ± 61.6
8	4	25	9	0.160	25.2	4.938E+05	3.086E+06	45.0 ± 24.3
9	1	9	9	0.111	9.1	1.235E+05	1.111E+06	31.3 ± 33.0
10	10	87	15	0.115	52.7	7.407E+05	6.444E+06	32.4 ± 10.8
11	5	11	10	0.455	10.0	5.556E+05	1.222E+06	127.2 ± 68.6
12	0	2	9	0.000	2.0	0.000E+00	2.469E+05	0.0 ± 0.0
13	3	40	20	0.075	18.2	1.667E+05	2.222E+06	21.2 ± 12.7
14	7	33	9	0.212	33.3	8.642E+05	4.074E+06	59.6 ± 24.9
15	3	10	12	0.300	7.6	2.778E+05	9.259E+05	84.2 ± 55.5
16	1	4	16	0.250	2.3	6.944E+04	2.778E+05	70.2 ± 78.6
17	0	1	12	0.000	0.8	0.000E+00	9.259E+04	0.0 ± 0.0
18	1	3	9	0.333	3.0	1.235E+05	3.704E+05	93.5 ± 108.0
19	2	6	20	0.333	2.7	1.111E+05	3.333E+05	93.5 ± 76.4
20	2	4	24	0.500	1.5	9.259E+04	1.852E+05	139.7 ± 121.0
21	5	34	30	0.147	10.3	1.852E+05	1.259E+06	41.4 ± 19.9
22	3	14	8	0.214	15.9	4.167E+05	1.944E+06	60.3 ± 38.4
23	5	30	20	0.167	13.6	2.778E+05	1.667E+06	46.9 ± 22.7
24	4	13	18	0.308	6.6	2.469E+05	8.025E+05	86.3 ± 49.4
25	4	14	12	0.286	10.6	3.704E+05	1.296E+06	80.2 ± 45.5
	76	432			10.7	2.307E+05	1.311E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 14.132 with 24 degrees of freedom
P(chi squared) = 94.4 %
Correlation Coefficient = 0.870
Variance of SQR(Ns) = 0.66
Variance of SQR(Ni) = 3.87

Ns/Ni = 0.176 ± 0.022
Mean Ratio = 0.203 ± 0.025

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 49.5 ± 6.3 Ma
CENTRAL AGE = 49.5 ± 6.3 Ma

91POS65B - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	4	19	20	0.211	8.6	2.222E+05	1.056E+06	59.2 ± 32.6
2	1	4	8	0.250	4.5	1.389E+05	5.556E+05	70.2 ± 78.6
3	2	8	8	0.250	9.1	2.778E+05	1.111E+06	70.2 ± 55.6
4	3	15	14	0.200	9.7	2.381E+05	1.190E+06	56.3 ± 35.6
5	0	5	16	0.000	2.8	0.000E+00	3.472E+05	0.0 ± 0.0
6	10	63	24	0.159	23.8	4.630E+05	2.917E+06	44.7 ± 15.2
7	3	20	15	0.150	12.1	2.222E+05	1.481E+06	42.2 ± 26.2
8	1	10	25	0.100	3.6	4.444E+04	4.444E+05	28.2 ± 29.6
9	5	36	42	0.139	7.8	1.323E+05	9.524E+05	39.1 ± 18.7
10	4	27	24	0.148	10.2	1.852E+05	1.250E+06	41.7 ± 22.4
11	9	38	30	0.237	11.5	3.333E+05	1.407E+06	66.6 ± 24.7
12	4	17	24	0.235	6.4	1.852E+05	7.870E+05	66.1 ± 36.8
13	7	38	18	0.184	19.2	4.321E+05	2.346E+06	51.8 ± 21.3
14	5	19	25	0.263	6.9	2.222E+05	8.444E+05	73.9 ± 37.2
15	5	31	9	0.161	31.3	6.173E+05	3.827E+06	45.4 ± 21.9
16	2	7	9	0.286	7.1	2.469E+05	8.642E+05	80.2 ± 64.3
17	10	76	56	0.132	12.3	1.984E+05	1.508E+06	37.1 ± 12.5
18	4	42	35	0.095	10.9	1.270E+05	1.333E+06	26.8 ± 14.1
19	3	38	30	0.079	11.5	1.111E+05	1.407E+06	22.3 ± 13.4
20	1	8	15	0.125	4.8	7.407E+04	5.926E+05	35.2 ± 37.4
21	1	5	36	0.200	1.3	3.086E+04	1.543E+05	56.3 ± 61.6
22	0	3	9	0.000	3.0	0.000E+00	3.704E+05	0.0 ± 0.0
23	6	25	36	0.240	6.3	1.852E+05	7.716E+05	67.4 ± 30.7
24	7	36	30	0.194	10.9	2.593E+05	1.333E+06	54.7 ± 22.6
25	5	33	24	0.152	12.5	2.315E+05	1.528E+06	42.7 ± 20.5
	102	623			9.7	1.947E+05	1.189E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 9.468 with 24 degrees of freedom
P(chi squared) = 99.6 %
Correlation Coefficient = 0.888
Variance of SQR(Ns) = 0.72
Variance of SQR(Ni) = 3.53

Ns/Ni = 0.164 ± 0.017
Mean Ratio = 0.168 ± 0.015

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 46.1 ± 5.0 Ma
CENTRAL AGE = 46.1 ± 5.0 Ma

91POS66A - CANNING FORMATION

IRRADIATION LU189
SLIDE NUMBER 8
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	10	67	40	0.149	15.2	2.778E+05	1.861E+06	42.0 ± 14.3
2	1	5	24	0.200	1.9	4.630E+04	2.315E+05	56.3 ± 61.6
3	4	15	21	0.267	6.5	2.116E+05	7.936E+05	74.9 ± 42.2
4	10	63	36	0.159	15.9	3.086E+05	1.944E+06	44.7 ± 15.2
5	8	82	40	0.098	18.6	2.222E+05	2.278E+06	27.5 ± 10.2
6	2	17	28	0.118	5.5	7.936E+04	6.746E+05	33.2 ± 24.8
7	1	6	24	0.167	2.3	4.630E+04	2.778E+05	46.9 ± 50.7
8	5	25	24	0.200	9.5	2.315E+05	1.157E+06	56.3 ± 27.6
9	4	19	14	0.211	12.3	3.175E+05	1.508E+06	59.2 ± 32.6
10	5	21	49	0.238	3.9	1.134E+05	4.762E+05	66.9 ± 33.3
11	3	23	16	0.130	13.1	2.083E+05	1.597E+06	36.7 ± 22.6
12	8	48	56	0.167	7.8	1.587E+05	9.524E+05	46.9 ± 17.9
13	10	42	32	0.238	11.9	3.472E+05	1.458E+06	66.9 ± 23.6
14	14	76	48	0.184	14.4	3.241E+05	1.759E+06	51.8 ± 15.1
15	6	40	27	0.150	13.5	2.469E+05	1.646E+06	42.2 ± 18.5
16	3	20	20	0.150	9.1	1.667E+05	1.111E+06	42.2 ± 26.2
17	20	138	80	0.145	15.7	2.778E+05	1.917E+06	40.8 ± 9.8
18	6	77	36	0.078	19.4	1.852E+05	2.377E+06	22.0 ± 9.3
19	4	29	49	0.138	5.4	9.070E+04	6.576E+05	38.8 ± 20.7
20	4	19	16	0.211	10.8	2.778E+05	1.319E+06	59.2 ± 32.6
21	0	3	20	0.000	1.4	0.000E+00	1.667E+05	0.0 ± 0.0
22	1	6	9	0.167	6.1	1.235E+05	7.407E+05	46.9 ± 50.7
23	9	36	54	0.250	6.1	1.852E+05	7.407E+05	70.2 ± 26.2
24	7	37	48	0.189	7.0	1.620E+05	8.565E+05	53.2 ± 22.0
25	12	53	42	0.226	11.5	3.175E+05	1.402E+06	63.6 ± 20.4
	157	967			10.3	2.045E+05	1.260E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 12.351 with 24 degrees of freedom
P(chi squared) = 97.6 %
Correlation Coefficient = 0.898
Variance of SQR(Ns) = 0.99
Variance of SQR(Ni) = 6.05

Ns/Ni = 0.162 ± 0.014
Mean Ratio = 0.169 ± 0.012

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 45.7 ± 4.1 Ma
CENTRAL AGE = 45.7 ± 4.1 Ma

91POS67A - SAGAVANIRKTOK FORMATION

IRRADIATION LU189
SLIDE NUMBER 10
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	3	6	6	0.500	9.1	5.556E+05	1.111E+06	139.7 ± 98.9
2	2	8	9	0.250	8.1	2.469E+05	9.877E+05	70.2 ± 55.6
3	6	13	6	0.462	19.7	1.111E+06	2.407E+06	129.1 ± 63.8
4	0	5	9	0.000	5.0	0.000E+00	6.173E+05	0.0 ± 0.0
5	2	2	12	1.000	1.5	1.852E+05	1.852E+05	276.5 ± 276.6
6	4	13	21	0.308	5.6	2.116E+05	6.878E+05	86.3 ± 49.4
7	1	10	6	0.100	15.1	1.852E+05	1.852E+06	28.2 ± 29.6
8	4	34	12	0.118	25.7	3.704E+05	3.148E+06	33.2 ± 17.5
9	4	14	9	0.286	14.1	4.938E+05	1.728E+06	80.2 ± 45.5
10	3	9	12	0.333	6.8	2.778E+05	8.333E+05	93.5 ± 62.4
11	1	6	16	0.167	3.4	6.944E+04	4.167E+05	46.9 ± 50.7
12	5	14	12	0.357	10.6	4.630E+05	1.296E+06	100.1 ± 52.2
13	4	15	6	0.267	22.7	7.407E+05	2.778E+06	74.9 ± 42.2
14	2	7	15	0.286	4.2	1.481E+05	5.185E+05	80.2 ± 64.3
15	1	7	12	0.143	5.3	9.259E+04	6.481E+05	40.2 ± 43.0
16	5	21	18	0.238	10.6	3.086E+05	1.296E+06	66.9 ± 33.3
17	6	28	21	0.214	12.1	3.175E+05	1.481E+06	60.3 ± 27.1
18	8	48	35	0.167	12.5	2.540E+05	1.524E+06	46.9 ± 17.9
19	10	23	30	0.435	7.0	3.704E+05	8.519E+05	121.7 ± 46.2
20	3	14	18	0.214	7.1	1.852E+05	8.642E+05	60.3 ± 38.4
21	7	41	32	0.171	11.6	2.431E+05	1.424E+06	48.1 ± 19.7
22	9	29	24	0.310	11.0	4.167E+05	1.343E+06	87.1 ± 33.3
23	1	7	12	0.143	5.3	9.259E+04	6.481E+05	40.2 ± 43.0
	91	374			9.6	2.864E+05	1.177E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 15.557 with 22 degrees of freedom
P(chi squared) = 83.7 %
Correlation Coefficient = 0.761
Variance of SQR(Ns) = 0.58
Variance of SQR(Ni) = 2.04

Ns/Ni = 0.243 ± 0.028
Mean Ratio = 0.281 ± 0.041

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.602E+06cm-2; ND = 3605

POOLED AGE = 68.4 ± 8.1 Ma
CENTRAL AGE = 68.4 ± 8.1 Ma

AB91-S1 - KEMIK SANDSTONE

IRRADIATION LU188
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	7	52	16	0.135	31.4	4.861E+05	3.611E+06	35.7 ± 14.4
2	1	4	27	0.250	1.4	4.115E+04	1.646E+05	66.1 ± 73.9
3	8	64	48	0.125	12.9	1.852E+05	1.481E+06	33.1 ± 12.4
4	1	5	8	0.200	6.0	1.389E+05	6.944E+05	52.9 ± 58.0
5	0	4	9	0.000	4.3	0.000E+00	4.938E+05	0.0 ± 0.0
6	6	48	56	0.125	8.3	1.190E+05	9.524E+05	33.1 ± 14.4
7	1	2	12	0.500	1.6	9.259E+04	1.852E+05	131.4 ± 161.0
8	4	33	42	0.121	7.6	1.058E+05	8.730E+05	32.1 ± 17.0
9	1	5	21	0.200	2.3	5.291E+04	2.646E+05	52.9 ± 58.0
10	5	37	42	0.135	8.5	1.323E+05	9.788E+05	35.8 ± 17.1
11	3	25	24	0.120	10.1	1.389E+05	1.157E+06	31.8 ± 19.4
12	2	4	24	0.500	1.6	9.259E+04	1.852E+05	131.4 ± 113.9
13	2	2	35	1.000	0.6	6.349E+04	6.349E+04	260.3 ± 260.3
14	19	153	50	0.124	29.6	4.222E+05	3.400E+06	32.9 ± 8.0
15	2	27	40	0.074	6.5	5.556E+04	7.500E+05	19.6 ± 14.4
16	0	7	9	0.000	7.5	0.000E+00	8.642E+05	0.0 ± 0.0
17	2	8	18	0.250	4.3	1.235E+05	4.938E+05	66.1 ± 52.2
18	0	11	9	0.000	11.8	0.000E+00	1.358E+06	0.0 ± 0.0
19	2	7	10	0.286	6.8	2.222E+05	7.778E+05	75.4 ± 60.5
20	2	9	16	0.222	5.4	1.389E+05	6.250E+05	58.8 ± 45.9
21	3	23	25	0.130	8.9	1.333E+05	1.022E+06	34.5 ± 21.2
22	6	54	30	0.111	17.4	2.222E+05	2.000E+06	29.4 ± 12.7
23	0	6	16	0.000	3.6	0.000E+00	4.167E+05	0.0 ± 0.0
24	1	1	20	1.000	0.5	5.556E+04	5.556E+04	260.3 ± 368.1
25	1	4	18	0.250	2.1	6.173E+04	2.469E+05	66.1 ± 73.9
	79	595			9.2	1.404E+05	1.058E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 20.294 with 24 degrees of freedom
P(chi squared) = 68.0 %
Correlation Coefficient = 0.980
Variance of SQR(Ns) = 1.02
Variance of SQR(Ni) = 7.50

Ns/Ni = 0.133 ± 0.016
Mean Ratio = 0.234 ± 0.053

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.506E+06cm-2; ND = 3388

POOLED AGE = 35.2 ± 4.3 Ma
CENTRAL AGE = 35.2 ± 4.3 Ma

AB91-S2 - KEMIK SANDSTONE

IRRADIATION LU188
SLIDE NUMBER 4
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	5	9	0.200	5.4	1.235E+05	6.173E+05	52.9 ± 58.0
2	7	57	18	0.123	30.6	4.321E+05	3.519E+06	32.5 ± 13.0
3	0	3	12	0.000	2.4	0.000E+00	2.778E+05	0.0 ± 0.0
4	3	28	20	0.107	13.5	1.667E+05	1.556E+06	28.4 ± 17.3
5	2	2	12	1.000	1.6	1.852E+05	1.852E+05	260.3 ± 260.3
6	1	6	21	0.167	2.8	5.291E+04	3.175E+05	44.1 ± 47.7
7	1	1	20	1.000	0.5	5.556E+04	5.556E+04	260.3 ± 368.1
8	6	48	30	0.125	15.5	2.222E+05	1.778E+06	33.1 ± 14.4
9	17	147	49	0.116	29.0	3.855E+05	3.333E+06	30.6 ± 7.9
10	3	10	16	0.300	6.0	2.083E+05	6.944E+05	79.2 ± 52.2
11	0	21	21	0.000	9.7	0.000E+00	1.111E+06	0.0 ± 0.0
12	0	12	12	0.000	9.7	0.000E+00	1.111E+06	0.0 ± 0.0
13	1	7	24	0.143	2.8	4.630E+04	3.241E+05	37.8 ± 40.4
14	2	2	18	1.000	1.1	1.235E+05	1.235E+05	260.3 ± 260.3
15	2	16	25	0.125	6.2	8.889E+04	7.111E+05	33.1 ± 24.8
16	22	167	30	0.132	53.8	8.148E+05	6.185E+06	34.9 ± 8.0
17	13	95	28	0.137	32.8	5.159E+05	3.770E+06	36.2 ± 10.7
18	2	9	12	0.222	7.2	1.852E+05	8.333E+05	58.8 ± 45.9
19	7	53	56	0.132	9.1	1.389E+05	1.052E+06	35.0 ± 14.1
20	9	71	24	0.127	28.6	4.167E+05	3.287E+06	33.6 ± 11.9
21	1	2	6	0.500	3.2	1.852E+05	3.704E+05	131.4 ± 161.0
22	3	27	30	0.111	8.7	1.111E+05	1.000E+06	29.4 ± 17.9
23	2	3	16	0.667	1.8	1.389E+05	2.083E+05	174.7 ± 159.5
24	5	36	56	0.139	6.2	9.921E+04	7.143E+05	36.8 ± 17.6
25	8	77	30	0.104	24.8	2.963E+05	2.852E+06	27.5 ± 10.2
	118	905			14.7	2.204E+05	1.690E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 27.806 with 24 degrees of freedom
P(chi squared) = 26.8 %
Correlation Coefficient = 0.980
Variance of SQR(Ns) = 1.47
Variance of SQR(Ni) = 11.88

Ns/Ni = 0.130 ± 0.013
Mean Ratio = 0.267 ± 0.062

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.506E+06cm-2; ND = 3388

POOLED AGE = 34.5 ± 3.5 Ma
CENTRAL AGE = 34.5 ± 3.5 Ma

AB91-S3 - KEMIK SANDSTONE

IRRADIATION LU188
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	6	57	9	0.105	61.2	7.407E+05	7.037E+06	27.9 ± 12.0
2	3	21	42	0.143	4.8	7.936E+04	5.556E+05	37.8 ± 23.4
3	7	77	16	0.091	46.5	4.861E+05	5.347E+06	24.1 ± 9.5
4	0	6	49	0.000	1.2	0.000E+00	1.361E+05	0.0 ± 0.0
5	0	1	15	0.000	0.6	0.000E+00	7.407E+04	0.0 ± 0.0
6	0	3	14	0.000	2.1	0.000E+00	2.381E+05	0.0 ± 0.0
7	2	8	20	0.250	3.9	1.111E+05	4.444E+05	66.1 ± 52.2
8	1	5	36	0.200	1.3	3.086E+04	1.543E+05	52.9 ± 58.0
9	1	4	16	0.250	2.4	6.944E+04	2.778E+05	66.1 ± 73.9
10	3	22	21	0.136	10.1	1.587E+05	1.164E+06	36.1 ± 22.2
11	21	147	49	0.143	29.0	4.762E+05	3.333E+06	37.8 ± 8.9
12	6	55	36	0.109	14.8	1.852E+05	1.698E+06	28.9 ± 12.4
13	9	57	24	0.158	23.0	4.167E+05	2.639E+06	41.8 ± 15.0
14	8	67	30	0.119	21.6	2.963E+05	2.481E+06	31.6 ± 11.9
15	1	5	28	0.200	1.7	3.968E+04	1.984E+05	52.9 ± 58.0
16	0	2	20	0.000	1.0	0.000E+00	1.111E+05	0.0 ± 0.0
17	8	49	24	0.163	19.7	3.704E+05	2.269E+06	43.2 ± 16.5
18	2	12	30	0.167	3.9	7.407E+04	4.444E+05	44.1 ± 33.7
19	15	125	63	0.120	19.2	2.646E+05	2.205E+06	31.8 ± 8.7
20	3	25	21	0.120	11.5	1.587E+05	1.323E+06	31.8 ± 19.4
21	0	5	25	0.000	1.9	0.000E+00	2.222E+05	0.0 ± 0.0
22	0	3	35	0.000	0.8	0.000E+00	9.524E+04	0.0 ± 0.0
23	1	5	36	0.200	1.3	3.086E+04	1.543E+05	52.9 ± 58.0
24	17	135	9	0.126	145.0	2.099E+06	1.667E+07	33.4 ± 8.6
25	3	23	25	0.130	8.9	1.333E+05	1.022E+06	34.5 ± 21.2
	117	919			12.8	1.876E+05	1.473E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 6.556 with 24 degrees of freedom
P(chi squared) = 100.0 %
Correlation Coefficient = 0.983
Variance of SQR(Ns) = 1.86
Variance of SQR(Ni) = 11.82

Ns/Ni = 0.127 ± 0.012
Mean Ratio = 0.117 ± 0.016

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.506E+06cm-2; ND = 3388

POOLED AGE = 33.7 ± 3.4 Ma
CENTRAL AGE = 33.7 ± 3.4 Ma

AB91-S4 - KEMIK SANDSTONE

IRRADIATION LU188
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	3	16	0.333	1.8	6.944E+04	2.083E+05	87.9 ± 101.5
2	1	2	25	0.500	0.8	4.444E+04	8.889E+04	131.4 ± 161.0
3	4	21	24	0.190	8.5	1.852E+05	9.722E+05	50.4 ± 27.5
4	0	5	21	0.000	2.3	0.000E+00	2.646E+05	0.0 ± 0.0
5	2	4	36	0.500	1.1	6.173E+04	1.235E+05	131.4 ± 113.9
6	1	3	16	0.333	1.8	6.944E+04	2.083E+05	87.9 ± 101.5
7	0	1	9	0.000	1.1	0.000E+00	1.235E+05	0.0 ± 0.0
8	0	4	12	0.000	3.2	0.000E+00	3.704E+05	0.0 ± 0.0
9	2	16	21	0.125	7.4	1.058E+05	8.466E+05	33.1 ± 24.8
10	3	27	36	0.111	7.2	9.259E+04	8.333E+05	29.4 ± 17.9
11	5	40	27	0.125	14.3	2.058E+05	1.646E+06	33.1 ± 15.7
12	1	10	16	0.100	6.0	6.944E+04	6.944E+05	26.5 ± 27.8
13	3	20	21	0.150	9.2	1.587E+05	1.058E+06	39.7 ± 24.6
14	0	5	10	0.000	4.8	0.000E+00	5.556E+05	0.0 ± 0.0
15	0	12	18	0.000	6.4	0.000E+00	7.407E+05	0.0 ± 0.0
16	1	7	16	0.143	4.2	6.944E+04	4.861E+05	37.8 ± 40.4
17	4	31	15	0.129	20.0	2.963E+05	2.296E+06	34.2 ± 18.2
18	0	4	9	0.000	4.3	0.000E+00	4.938E+05	0.0 ± 0.0
19	1	6	12	0.167	4.8	9.259E+04	5.556E+05	44.1 ± 47.7
20	1	14	12	0.071	11.3	9.259E+04	1.296E+06	18.9 ± 19.6
21	2	14	14	0.143	9.7	1.587E+05	1.111E+06	37.8 ± 28.6
22	1	17	30	0.059	5.5	3.704E+04	6.296E+05	15.6 ± 16.1
	33	266			6.2	8.814E+04	7.105E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 11.764 with 21 degrees of freedom
P(chi squared) = 94.6 %
Correlation Coefficient = 0.865
Variance of SQR(Ns) = 0.53
Variance of SQR(Ni) = 2.11

Ns/Ni = 0.124 ± 0.023
Mean Ratio = 0.145 ± 0.032

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.506E+06cm-2; ND = 3388

POOLED AGE = 32.9 ± 6.1 Ma
CENTRAL AGE = 32.9 ± 6.1 Ma

ATIGUN GORGE

Sample Locations and Apatite Yields - Atigun Gorge

Table 7. Sample details and apatite yields for outcrop samples: Atigun Gorge.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
91POS89A	68°35.5'	148°54.4'	(1037)/(*3400*)	Fortress Mtn. Formation	Early Albian	~105-112	Sandstone
91POS90A	68°38.1'	148°50.6'	(1128)/(*3700*)	Fortress Mtn. Formation	Early Albian	~105-112	Sandstone
91POS91A	68°38.9'	148°53.0'	(671)/(*2200*)	Okpikruak Fm.	Valaginian-Barremian	~124-140	Sandstone
91POS92A	68°39.8'	148°54.0'	(915)/(*3000*)	Fortress Mtn. Formation	Early Albian	~105-112	Sandstone
91POS93A	68°36.7'	149°06.1'	(976)/(*3200*)	Fortress Mtn. Formation	Early Albian	~105-112	Sandstone
91POS94A	68°32.5'	149°18.7'	(884)/(*2900*)	Fortress Mtn. Formation	Early Albian	~105-112	Sandstone

Sample Results - Atigun Gorge

Typical yields for the samples were excellent. Due to relatively high uranium content (>10 ppm) 4 of 6 mounts contained 100 or more confined tracks. Most samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations.

Table 8. Apatite fission track analytical results: Atigun Gorge.

Sample Number	Number of grains	Standard track density ($x10^6cm^{-2}$)	Fossil track density ($x10^5cm^{-2}$)	Induced track density ($x10^6cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
91POS89A	25	1.120 (2512)	3.711 (159)	1.319 (565)	96.6	55.3 ± 5.1	15.4	14.27 ± 0.13 (101)	1.22
91POS90A	25	1.120 (2512)	2.222 (98)	1.324 (584)	82.5	33.1 ± 3.7	15.5	14.39 ± 0.16 (61)	1.26
91POS91A	35	1.120 (2512)	4.117 (216)	1.647 (864)	4.3	49.2 ± 3.9 *52.8 ± 5.8**	19.3	13.32 ± 0.21 (104)	2.16
91POS92A	25	1.120 (2512)	3.408 (200)	2.347 (1377)	78.8	28.6 ± 2.3	27.4	14.02 ± 0.10 (103)	0.99
91POS93A	25	1.120 (2512)	2.110 (102)	1.138 (550)	77.4	36.5 ± 4.0	13.3	13.32 ± 0.16 (103)	1.64
91POS94A	25	1.120 (2512)	2.501 (70)	96.14 (269)	78.5	51.2 ± 7.0	11.2	14.49 ± 0.18 (39)	1.17

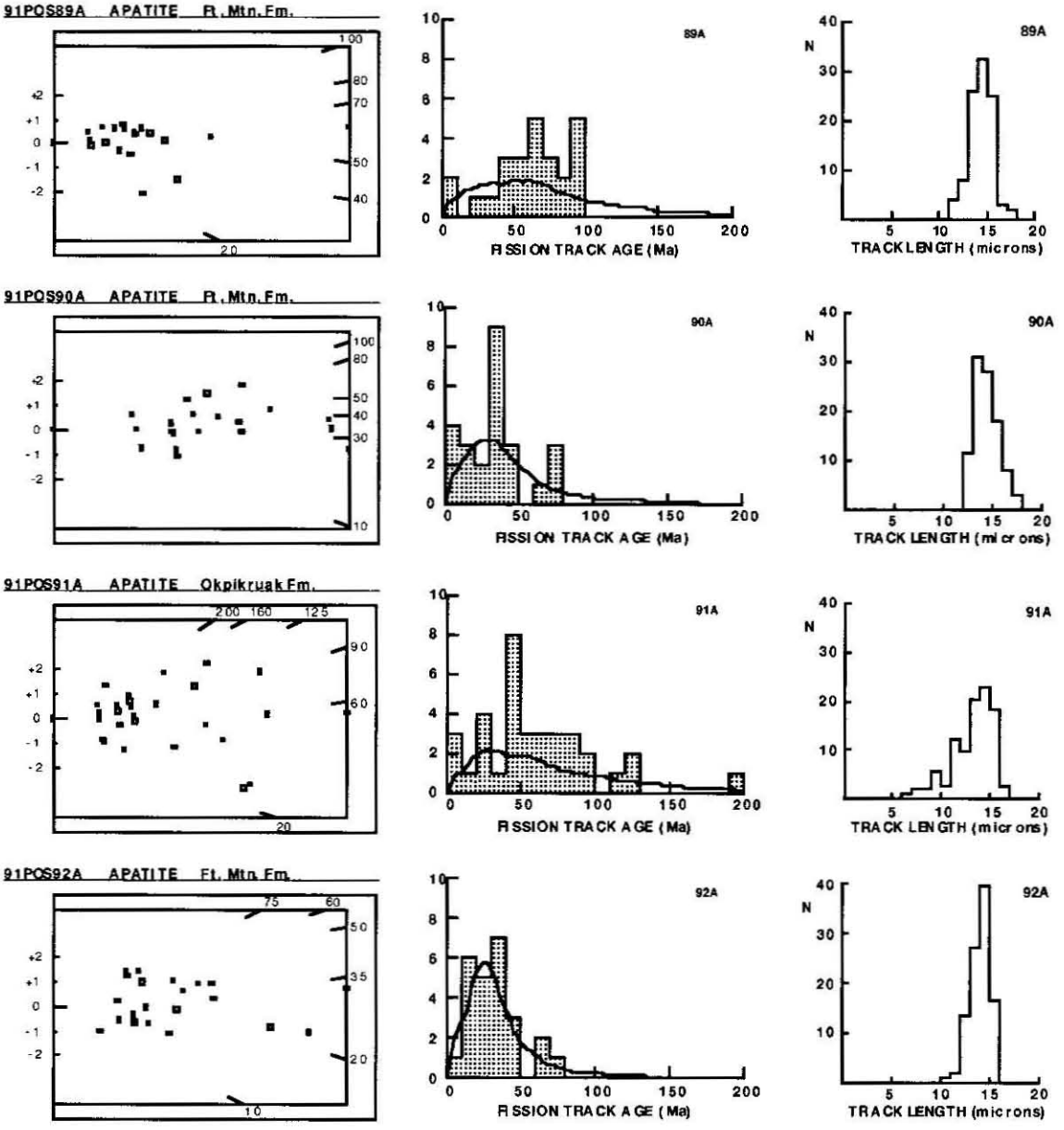
Parentheses show number of tracks counted.

Table 9. Track length data: Atigun Gorge.

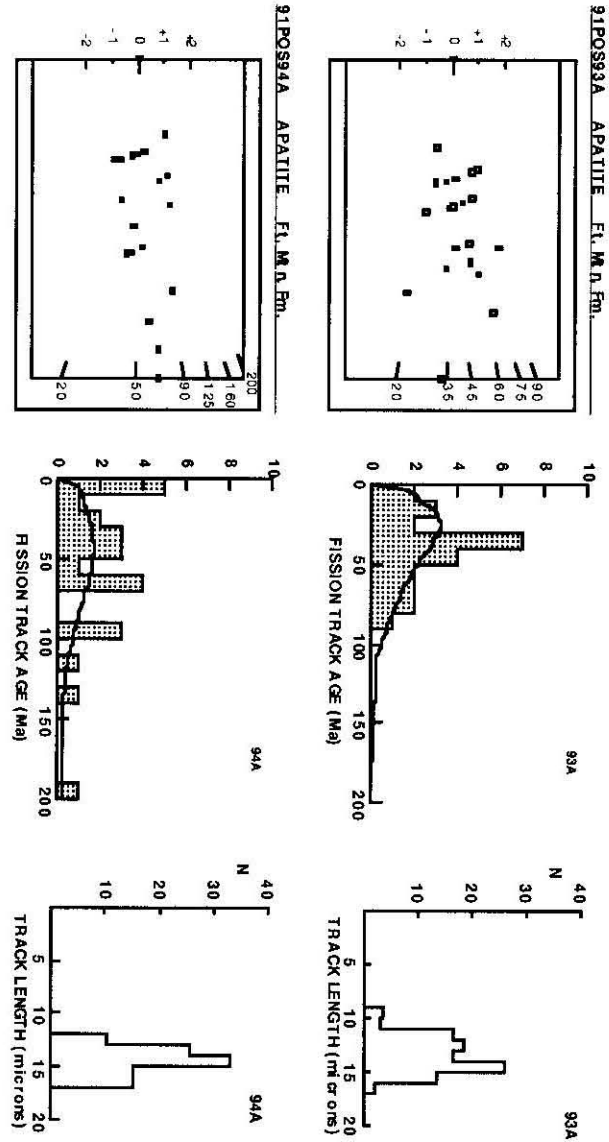
Sample Number	Track Length Range (µm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
POS89A	-	-	-	-	-	-	-	4	8	26	33	25	3	2
POS90A	-	-	-	-	-	-	-	-	7	19	17	11	5	2
POS91A	-	-	1	2	2	6	3	13	10	21	24	19	3	-
POS92A	-	-	-	-	-	-	1	2	14	28	41	17	-	-
POS93A	-	-	-	-	-	4	3	17	19	17	27	14	2	-
POS94A	-	-	-	-	-	-	-	-	4	10	13	6	6	-

Length measurements by P. O'Sullivan

Single-Age and Track Length Distributions - Atigun Gorge



Age Sheets - Atigun Gorge



91POS89A - Fortress Mountain Formation

IRRADIATION LU201
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	3	20	0.000	1.9	0.000E+00	1.667E+05	0.0 ± 0.0
2	1	2	4	0.500	6.5	2.778E+05	5.556E+05	98.0 ± 120.1
3	5	15	18	0.333	10.8	3.086E+05	9.259E+05	65.5 ± 33.9
4	5	14	9	0.357	20.2	6.173E+05	1.728E+06	70.2 ± 36.6
5	3	7	15	0.429	6.1	2.222E+05	5.185E+05	84.1 ± 58.1
6	1	4	12	0.250	4.3	9.259E+04	3.704E+05	49.2 ± 55.0
7	1	2	15	0.500	1.7	7.407E+04	1.481E+05	98.0 ± 120.1
8	4	10	35	0.400	3.7	1.270E+05	3.175E+05	78.5 ± 46.5
9	2	4	9	0.500	5.8	2.469E+05	4.938E+05	98.0 ± 84.9
10	0	3	50	0.000	0.8	0.000E+00	6.667E+04	0.0 ± 0.0
11	1	3	30	0.333	1.3	3.704E+04	1.111E+05	65.5 ± 75.7
12	4	9	24	0.444	4.9	1.852E+05	4.167E+05	87.2 ± 52.4
13	9	31	9	0.290	44.8	1.111E+06	3.827E+06	57.1 ± 21.7
14	7	21	18	0.333	15.2	4.321E+05	1.296E+06	65.5 ± 28.6
15	1	3	24	0.333	1.6	4.630E+04	1.389E+05	65.5 ± 75.7
16	6	16	20	0.375	10.4	3.333E+05	8.889E+05	73.6 ± 35.3
17	2	7	20	0.286	4.5	1.111E+05	3.889E+05	56.2 ± 45.1
18	64	208	36	0.308	75.1	1.975E+06	6.420E+06	60.5 ± 8.8
19	3	13	24	0.231	7.0	1.389E+05	6.019E+05	45.4 ± 29.1
20	18	60	15	0.300	52.0	1.333E+06	4.444E+06	59.0 ± 15.9
21	10	60	15	0.167	52.0	7.407E+05	4.444E+06	32.8 ± 11.2
22	4	18	6	0.222	39.0	7.407E+05	3.333E+06	43.7 ± 24.2
23	2	4	4	0.500	13.0	5.556E+05	1.111E+06	98.0 ± 84.9
24	5	46	24	0.109	24.9	2.315E+05	2.130E+06	21.4 ± 10.1
25	1	2	20	0.500	1.3	5.556E+04	1.111E+05	98.0 ± 120.1
	159	565			15.4	3.711E+05	1.319E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 13.019 with 24 degrees of freedom
P(chi squared) = 96.6 %
Correlation Coefficient = 0.980
Variance of SQR(Ns) = 2.47
Variance of SQR(Ni) = 8.52

Ns/Ni = 0.281 ± 0.025
Mean Ratio = 0.320 ± 0.029

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 55.3 ± 5.1 Ma
CENTRAL AGE = 55.3 ± 5.2 Ma

91POS90A - Fortress Mountain Formation

IRRADIATION LU201
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	11	64	20	0.172	41.6	6.111E+05	3.556E+06	33.9 ± 11.1
2	4	18	9	0.222	26.0	4.938E+05	2.222E+06	43.7 ± 24.2
3	1	13	12	0.077	14.1	9.259E+04	1.204E+06	15.2 ± 15.8
4	0	20	35	0.000	7.4	0.000E+00	6.349E+05	0.0 ± 0.0
5	4	10	15	0.400	8.7	2.963E+05	7.407E+05	78.5 ± 46.5
6	2	22	48	0.091	6.0	4.630E+04	5.093E+05	17.9 ± 13.2
7	1	6	16	0.167	4.9	6.944E+04	4.167E+05	32.8 ± 35.5
8	5	31	9	0.161	44.8	6.173E+05	3.827E+06	31.8 ± 15.3
9	6	15	12	0.400	16.2	5.556E+05	1.389E+06	78.5 ± 38.0
10	7	30	40	0.233	9.7	1.944E+05	8.333E+05	45.9 ± 19.3
11	5	26	6	0.192	56.3	9.259E+05	4.815E+06	37.9 ± 18.5
12	0	2	12	0.000	2.2	0.000E+00	1.852E+05	0.0 ± 0.0
13	2	27	40	0.074	8.8	5.556E+04	7.500E+05	14.6 ± 10.7
14	2	13	10	0.154	16.9	2.222E+05	1.444E+06	30.3 ± 23.0
15	11	65	12	0.169	70.4	1.019E+06	6.019E+06	33.3 ± 10.9
16	0	4	12	0.000	4.3	0.000E+00	3.704E+05	0.0 ± 0.0
17	11	57	45	0.193	16.5	2.716E+05	1.407E+06	38.0 ± 12.6
18	0	4	10	0.000	5.2	0.000E+00	4.444E+05	0.0 ± 0.0
19	3	19	9	0.158	27.4	3.704E+05	2.346E+06	31.1 ± 19.3
20	12	91	40	0.132	29.6	3.333E+05	2.528E+06	26.0 ± 8.0
21	2	14	16	0.143	11.4	1.389E+05	9.722E+05	28.2 ± 21.3
22	3	12	16	0.250	9.7	2.083E+05	8.333E+05	49.2 ± 31.8
23	3	8	28	0.375	3.7	1.190E+05	3.175E+05	73.6 ± 49.9
24	1	3	12	0.333	3.2	9.259E+04	2.778E+05	65.5 ± 75.7
25	2	10	6	0.200	21.7	3.704E+05	1.852E+06	39.4 ± 30.5
	98	584			15.5	2.222E+05	1.324E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 17.527 with 24 degrees of freedom
P(chi squared) = 82.5 %
Correlation Coefficient = 0.908
Variance of SQR(Ns) = 1.11
Variance of SQR(Ni) = 4.42

Ns/Ni = 0.168 ± 0.018
Mean Ratio = 0.172 ± 0.024

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 33.1 ± 3.7 Ma
CENTRAL AGE = 33.1 ± 3.7 Ma

91POS91A - Okpikruak Formation.

IRRADIATION LU201
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	3	9	0.333	4.3	1.235E+05	3.704E+05	65.5 ± 75.7
2	13	22	12	0.591	23.8	1.204E+06	2.037E+06	115.7 ± 40.6
3	7	11	12	0.636	11.9	6.481E+05	1.019E+06	124.5 ± 60.3
4	2	6	15	0.333	5.2	1.481E+05	4.444E+05	65.5 ± 53.5
5	12	59	15	0.203	51.1	8.889E+05	4.370E+06	40.0 ± 12.7
6	0	1	10	0.000	1.3	0.000E+00	1.111E+05	0.0 ± 0.0
7	1	2	12	0.500	2.2	9.259E+04	1.852E+05	98.0 ± 120.1
8	14	115	20	0.122	74.7	7.778E+05	6.389E+06	24.0 ± 6.8
9	2	5	16	0.400	4.1	1.389E+05	3.472E+05	78.5 ± 65.7
10	3	10	15	0.300	8.7	2.222E+05	7.407E+05	59.0 ± 38.9
11	10	23	9	0.435	33.2	1.235E+06	2.840E+06	85.3 ± 32.4
12	6	37	20	0.162	24.0	3.333E+05	2.056E+06	31.9 ± 14.1
13	10	41	28	0.244	19.0	3.968E+05	1.627E+06	48.0 ± 17.0
14	3	6	25	0.500	3.1	1.333E+05	2.667E+05	98.0 ± 69.3
15	0	9	15	0.000	7.8	0.000E+00	6.667E+05	0.0 ± 0.0
16	2	19	9	0.105	27.4	2.469E+05	2.346E+06	20.8 ± 15.4
17	3	8	9	0.375	11.6	3.704E+05	9.877E+05	73.6 ± 49.9
18	1	10	28	0.100	4.6	3.968E+04	3.968E+05	19.7 ± 20.7
19	38	135	20	0.281	87.7	2.111E+06	7.500E+06	55.4 ± 10.3
20	2	2	8	1.000	3.2	2.778E+05	2.778E+05	194.5 ± 194.6
21	1	4	6	0.250	8.7	1.852E+05	7.407E+05	49.2 ± 55.0
22	2	9	18	0.222	6.5	1.235E+05	5.556E+05	43.7 ± 34.2
23	3	12	16	0.250	9.7	2.083E+05	8.333E+05	49.2 ± 31.8
24	1	4	9	0.250	5.8	1.235E+05	4.938E+05	49.2 ± 55.0
25	5	14	6	0.357	30.3	9.259E+05	2.593E+06	70.2 ± 36.6
26	0	8	18	0.000	5.8	0.000E+00	4.938E+05	0.0 ± 0.0
27	2	6	12	0.333	6.5	1.852E+05	5.556E+05	65.5 ± 53.5
28	15	116	24	0.129	62.8	6.944E+05	5.370E+06	25.5 ± 7.0
29	3	7	16	0.429	5.7	2.083E+05	4.861E+05	84.1 ± 58.1
30	1	9	20	0.111	5.8	5.556E+04	5.000E+05	21.9 ± 23.1
31	3	12	24	0.250	6.5	1.389E+05	5.556E+05	49.2 ± 31.8
32	21	48	50	0.438	12.5	4.667E+05	1.067E+06	85.8 ± 22.6
33	2	9	9	0.222	13.0	2.469E+05	1.111E+06	43.7 ± 34.2
34	7	11	12	0.636	11.9	6.481E+05	1.019E+06	124.5 ± 60.3
35	20	71	36	0.282	25.6	6.173E+05	2.191E+06	55.4 ± 14.1
	216	864			19.3	4.117E+05	1.647E+06	

Area of basic unit = .0000009 cm-2
Chi Squared = 49.312 with 34 degrees of freedom
P(chi squared) = 4.3 %
Ns/Ni = 0.250 ± 0.019
Mean Ratio = 0.308 ± 0.035
Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 49.2 ± 3.9 Ma
CENTRAL AGE = 52.8 ± 5.8 Ma

91POS92A - Fortress Mountain Formation

IRRADIATION LU201
SLIDE NUMBER 8
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	20	15	0.050	17.3	7.407E+04	1.481E+06	9.9 ± 10.1
2	3	30	24	0.100	16.2	1.389E+05	1.389E+06	19.7 ± 12.0
3	2	12	40	0.167	3.9	5.556E+04	3.333E+05	32.8 ± 25.1
4	3	8	16	0.375	6.5	2.083E+05	5.556E+05	73.6 ± 49.9
5	7	32	28	0.219	14.9	2.778E+05	1.270E+06	43.1 ± 18.0
6	7	51	20	0.137	33.1	3.889E+05	2.833E+06	27.1 ± 10.9
7	4	12	8	0.333	19.5	5.556E+05	1.667E+06	65.5 ± 37.9
8	7	32	16	0.219	26.0	4.861E+05	2.222E+06	43.1 ± 18.0
9	8	44	60	0.182	9.5	1.481E+05	8.148E+05	35.8 ± 13.8
10	40	244	18	0.164	176.2	2.469E+06	1.506E+07	32.3 ± 5.6
11	21	177	40	0.119	57.5	5.833E+05	4.917E+06	23.4 ± 5.4
12	2	12	36	0.167	4.3	6.173E+04	3.704E+05	32.8 ± 25.1
13	4	40	21	0.100	24.8	2.116E+05	2.116E+06	19.7 ± 10.4
14	29	246	30	0.118	106.6	1.074E+06	9.111E+06	23.2 ± 4.6
15	4	16	16	0.250	13.0	2.778E+05	1.111E+06	49.2 ± 27.5
16	2	21	50	0.095	5.5	4.444E+04	4.667E+05	18.8 ± 13.9
17	4	29	20	0.138	18.8	2.222E+05	1.611E+06	27.2 ± 14.5
18	3	31	30	0.097	13.4	1.111E+05	1.148E+06	19.1 ± 11.5
19	3	30	20	0.100	19.5	1.667E+05	1.667E+06	19.7 ± 12.0
20	6	68	24	0.088	36.8	2.778E+05	3.148E+06	17.4 ± 7.4
21	10	50	9	0.200	72.2	1.235E+06	6.173E+06	39.4 ± 13.7
22	3	26	60	0.115	5.6	5.556E+04	4.815E+05	22.7 ± 13.9
23	3	9	30	0.333	3.9	1.111E+05	3.333E+05	65.5 ± 43.7
24	12	75	9	0.160	108.3	1.481E+06	9.259E+06	31.5 ± 9.8
25	12	62	12	0.194	67.1	1.111E+06	5.741E+06	38.1 ± 12.1
	200	1377			27.4	3.408E+05	2.347E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 18.308 with 24 degrees of freedom
P(chi squared) = 78.8 %
Correlation Coefficient = 0.963
Variance of SQR(Ns) = 1.67
Variance of SQR(Ni) = 12.46

Ns/Ni = 0.145 ± 0.011
Mean Ratio = 0.169 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 28.6 ± 2.3 Ma
CENTRAL AGE = 28.6 ± 2.3 Ma

91POS93A - Fortress Mountain Formation

IRRADIATION LU201
SLIDE NUMBER 9
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	14	85	15	0.165	73.6	1.037E+06	6.296E+06	32.4 ± 9.4
2	2	6	20	0.333	3.9	1.111E+05	3.333E+05	65.5 ± 53.5
3	6	36	28	0.167	16.7	2.381E+05	1.429E+06	32.8 ± 14.5
4	3	13	16	0.231	10.6	2.083E+05	9.028E+05	45.4 ± 29.1
5	0	5	16	0.000	4.1	0.000E+00	3.472E+05	0.0 ± 0.0
6	2	10	30	0.200	4.3	7.407E+04	3.704E+05	39.4 ± 30.5
7	3	10	24	0.300	5.4	1.389E+05	4.630E+05	59.0 ± 38.9
8	5	21	20	0.238	13.6	2.778E+05	1.167E+06	46.9 ± 23.3
9	2	5	9	0.400	7.2	2.469E+05	6.173E+05	78.5 ± 65.7
10	1	10	40	0.100	3.2	2.778E+04	2.778E+05	19.7 ± 20.7
11	2	5	12	0.400	5.4	1.852E+05	4.630E+05	78.5 ± 65.7
12	7	25	14	0.280	23.2	5.556E+05	1.984E+06	55.1 ± 23.6
13	6	24	9	0.250	34.7	7.407E+05	2.963E+06	49.2 ± 22.5
14	7	75	20	0.093	48.7	3.889E+05	4.167E+06	18.4 ± 7.3
15	10	31	9	0.323	44.8	1.235E+06	3.827E+06	63.4 ± 23.1
16	3	18	12	0.167	19.5	2.778E+05	1.667E+06	32.8 ± 20.5
17	3	31	16	0.097	25.2	2.083E+05	2.153E+06	19.1 ± 11.5
18	5	26	25	0.192	13.5	2.222E+05	1.156E+06	37.9 ± 18.5
19	0	4	20	0.000	2.6	0.000E+00	2.222E+05	0.0 ± 0.0
20	2	18	36	0.111	6.5	6.173E+04	5.556E+05	21.9 ± 16.3
21	6	14	40	0.429	4.5	1.667E+05	3.889E+05	84.1 ± 41.1
22	3	16	50	0.188	4.2	6.667E+04	3.556E+05	36.9 ± 23.2
23	2	13	12	0.154	14.1	1.852E+05	1.204E+06	30.3 ± 23.0
24	3	29	36	0.103	10.5	9.259E+04	8.951E+05	20.4 ± 12.4
25	5	20	8	0.250	32.5	6.944E+05	2.778E+06	49.2 ± 24.6
	102	550			13.3	2.110E+05	1.138E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 18.584 with 24 degrees of freedom
P(chi squared) = 77.4 %
Correlation Coefficient = 0.806
Variance of SQR(Ns) = 0.70
Variance of SQR(Ni) = 3.28

Ns/Ni = 0.185 ± 0.020
Mean Ratio = 0.207 ± 0.023

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 36.5 ± 4.0 Ma
CENTRAL AGE = 36.6 ± 4.1 Ma

91POS94A - Fortress Mountain Formation

IRRADIATION LU201
SLIDE NUMBER 10
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	3	13	10	0.231	16.9	3.333E+05	1.444E+06	45.4 ± 29.1
2	0	4	8	0.000	6.5	0.000E+00	5.556E+05	0.0 ± 0.0
3	4	18	18	0.222	13.0	2.469E+05	1.111E+06	43.7 ± 24.2
4	1	10	24	0.100	5.4	4.630E+04	4.630E+05	19.7 ± 20.7
5	3	5	12	0.600	5.4	2.778E+05	4.630E+05	117.4 ± 85.8
6	1	5	18	0.200	3.6	6.173E+04	3.086E+05	39.4 ± 43.2
7	2	4	9	0.500	5.8	2.469E+05	4.938E+05	98.0 ± 84.9
8	10	29	8	0.345	47.1	1.389E+06	4.028E+06	67.8 ± 24.9
9	0	2	12	0.000	2.2	0.000E+00	1.852E+05	0.0 ± 0.0
10	2	13	9	0.154	18.8	2.469E+05	1.605E+06	30.3 ± 23.0
11	7	15	9	0.467	21.7	8.642E+05	1.852E+06	91.5 ± 42.0
12	1	4	8	0.250	6.5	1.389E+05	5.556E+05	49.2 ± 55.0
13	1	3	9	0.333	4.3	1.235E+05	3.704E+05	65.5 ± 75.7
14	0	8	15	0.000	6.9	0.000E+00	5.926E+05	0.0 ± 0.0
15	1	8	12	0.125	8.7	9.259E+04	7.407E+05	24.6 ± 26.1
16	8	26	9	0.308	37.5	9.877E+05	3.210E+06	60.5 ± 24.5
17	0	5	20	0.000	3.2	0.000E+00	2.778E+05	0.0 ± 0.0
18	4	20	4	0.200	65.0	1.111E+06	5.556E+06	39.4 ± 21.6
19	1	9	16	0.111	7.3	6.944E+04	6.250E+05	21.9 ± 23.1
20	2	4	9	0.500	5.8	2.469E+05	4.938E+05	98.0 ± 84.9
21	1	1	10	1.000	1.3	1.111E+05	1.111E+05	194.5 ± 275.2
22	12	36	25	0.333	18.7	5.333E+05	1.600E+06	65.5 ± 21.9
23	0	10	15	0.000	8.7	0.000E+00	7.407E+05	0.0 ± 0.0
24	2	3	16	0.667	2.4	1.389E+05	2.083E+05	130.3 ± 119.0
25	4	14	6	0.286	30.3	7.407E+05	2.593E+06	56.2 ± 31.9
	70	269			11.2	2.501E+05	9.611E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 18.361 with 24 degrees of freedom
P(chi squared) = 78.5 %
Correlation Coefficient = 0.900
Variance of SQR(Ns) = 0.96
Variance of SQR(Ni) = 1.68

Ns/Ni = 0.260 ± 0.035
Mean Ratio = 0.277 ± 0.049

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 51.2 ± 7.0 Ma
CENTRAL AGE = 51.2 ± 7.0 Ma

COBBLESTONE CREEK

Sample Locations and Apatite Yields - Cobblestone Creek

Table 10. Sample details and apatite yields for outcrop samples: Cobblestone Creek.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
91POS82A	68°23.2'	150°19.0'	(945)/(*3100*)	Siksikpuk Fm.	Early-Late Permian	~250-290	Tuff
91POS83A	68°34.7'	150°30.0'	(915)/(*3000*)	Tuktu Fm.	Albian	~97-112	Sandstone
91POS85A	68°24.8'	150°55.3'	(793)/(*2600*)	Okpikruak Fm.	Valaginian-Barremian	~124-140	Sandstone
91POS86A	68°27.5'	150°55.8'	(671)/(*2200*)	Okpikruak Fm.	Valaginian-Barremian	~124-140	Sandstone
91POS86B	68°27.5'	150°55.8'	(671)/(*2200*)	Okpikruak Fm.	Valaginian-Barremian	~124-140	Sandstone
91POS87A	68°38.5'	150°54.4'	(489)/(*1600*)	Tuktu Fm.	Albian	~97-112	Sandstone
91POS88A	68°30.0'	150°24.0'	(793)/(*2600*)	Okpikruak Fm.	Valaginian-Barremian	~124-140	Sandstone

Sample Results - Cobblestone Creek

Typical yields for the samples were excellent. Due to relatively high uranium contents (>10 ppm), 4 of 7 mounts contained 100 or more confined tracks. All samples from the Siksikpuk Formation and Nanushuk Group passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations. Samples from the Okpikruak Formation did not pass the Chi-squared test, indicating the dated grains represented a mixture of different age populations.

Table 11. Track length data: Cobblestone Creek.

Sample	Track Length Range (µm)													
Number	<5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
POS82A	-	-	-	-	-	-	-	-	-	5	7	4	-	-
POS83A	-	-	-	-	-	1	-	-	6	35	35	5	-	-
POS85A	5	-	1	-	3	3	8	4	11	22	31	13	2	-
POS86A	-	3	4	1	1	-	4	8	21	15	1	1	-	-
POS86B	3	-	2	-	-	7	12	11	19	20	22	6	4	-
POS87A	-	-	-	-	-	1	-	3	9	28	45	7	9	-
POS88A	1	1	1	1	3	7	10	22	16	23	8	7	1	-

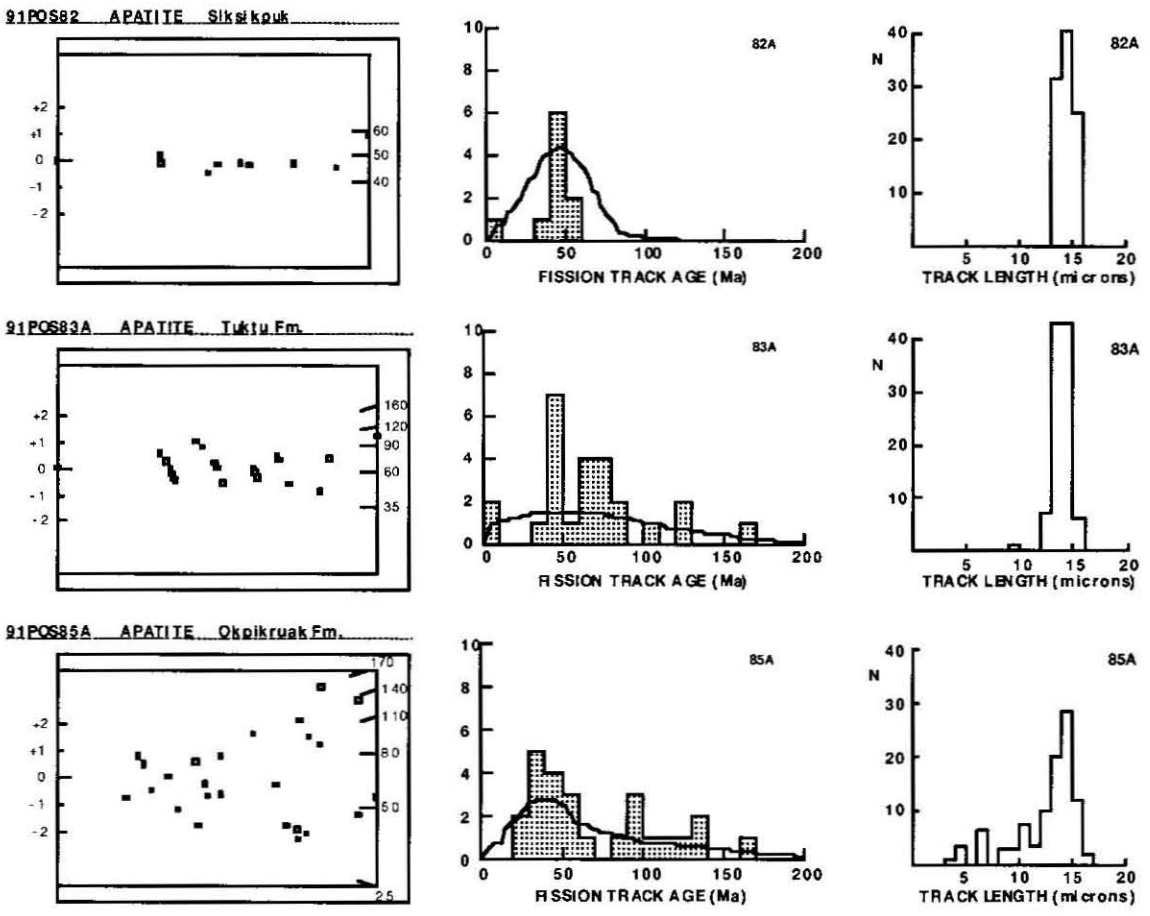
Length measurements by P. O'Sullivan

Table 12. Apatite fission track analytical results: Cobblestone Creek.

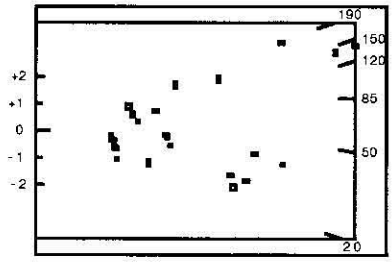
Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (µm)	Standard deviation (µm)
91POS82A	10	1.406	3.320	1.739	99.4	47.2 ± 5.2	16.2	14.44 ± 0.19	0.76
		(3164)	(101)	(529)				(16)	
91POS83A	25	1.406	2.443	96.17	100	62.7 ± 9.0	9.0	13.94 ± 0.10	1.01
		(3164)	(62)	(244)				(82)	
91POS85A	25	1.120	4.157	1.330	0.0	61.4 ± 4.6	15.6	12.92 ± 0.26	2.64
		(2512)	(260)	(832)		*64.6 ± 7.7**		(103)	
91POS86A	25	1.120	3.823	1.232	0.0	61.0 ± 6.1	14.4	11.93 ± 0.34	2.17
		(2512)	(139)	(448)		*61.0 ± 9.9**		(59)	
91POS86B	25	1.120	2.362	86.73	55.9	53.6 ± 6.5	10.1	12.51 ± 0.23	2.41
		(2512)	(91)	(334)				(106)	
91POS87A	25	1.406	3.221	1.444	86.5	55.1 ± 5.7	13.5	14.18 ± 0.11	1.15
		(3164)	(118)	(529)				(102)	
91POS88A	25	1.406	3.458	1.321	0.1	64.6 ± 5.6	12.3	12.12 ± 0.22	2.16
		(3164)	(183)	(699)		*69.0 ± 8.8**		(101)	

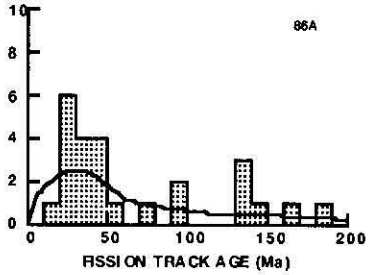
Parentheses show number of tracks counted.

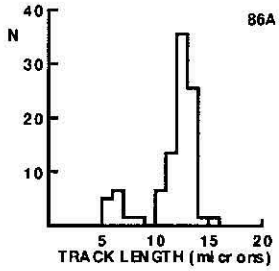
Single-Age and Track Length Distributions - Cobblestone Creek



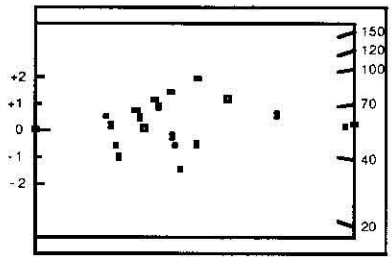
91POS86A APATITE Okpikruak Fm.

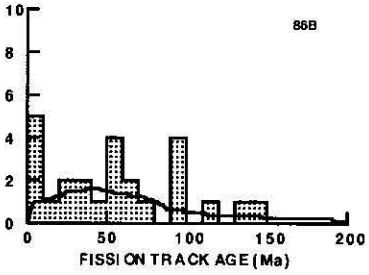


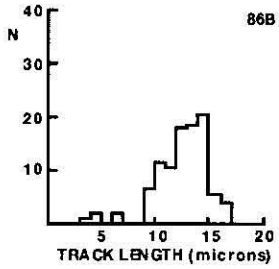




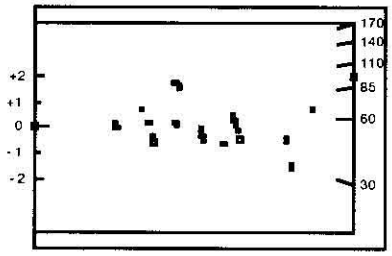
91POS86B APATITE Okpikruak Fm.

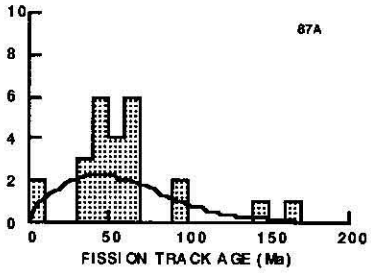


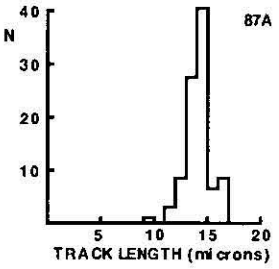




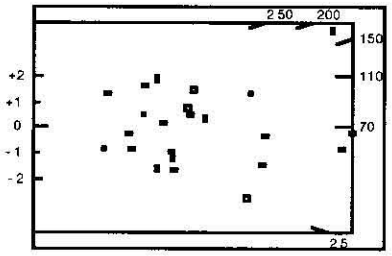
91POS87A APATITE Tuktu Fm.

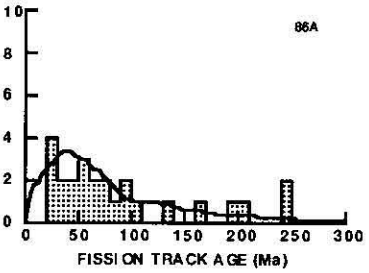


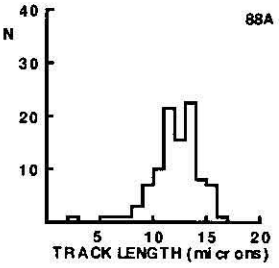




91POS88A APATITE Okpikruak Fm.







Age Sheets - Cobblestone Creek

91POS82A - SIKSIKPUK FORMATION

IRRADIATION LU194
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	10	55	48	0.182	11.9	2.315E+05	1.273E+06	44.9 ± 15.5
2	3	14	42	0.214	3.4	7.936E+04	3.704E+05	52.9 ± 33.7
3	27	116	25	0.233	48.0	1.200E+06	5.156E+06	57.5 ± 12.3
4	7	39	18	0.179	22.4	4.321E+05	2.407E+06	44.4 ± 18.2
5	3	17	28	0.176	6.3	1.190E+05	6.746E+05	43.6 ± 27.3
6	0	3	8	0.000	3.9	0.000E+00	4.167E+05	0.0 ± 0.0
7	6	39	35	0.154	11.5	1.905E+05	1.238E+06	38.0 ± 16.7
8	9	49	18	0.184	28.2	5.556E+05	3.025E+06	45.4 ± 16.5
9	15	81	60	0.185	14.0	2.778E+05	1.500E+06	45.8 ± 12.9
10	21	116	56	0.181	21.4	4.167E+05	2.302E+06	44.7 ± 10.7
	101	529			16.2	3.320E+05	1.739E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 1.844 with 9 degrees of freedom
P(chi squared) = 99.4 %
Correlation Coefficient = 0.982
Variance of SQR(Ns) = 2.28
Variance of SQR(Ni) = 8.83

Ns/Ni = 0.191 ± 0.021
Mean Ratio = 0.169 ± 0.020

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.406E+06cm-2; ND = 3164

POOLED AGE = 47.2 ± 5.2 Ma
CENTRAL AGE = 47.2 ± 5.2 Ma

91POS83A - NANUSHUK GROUP

IRRADIATION LU194
SLIDE NUMBER 9
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	2	4	0.000	5.2	0.000E+00	5.556E+05	0.0 ± 0.0
2	1	5	8	0.200	6.5	1.389E+05	6.944E+05	49.4 ± 54.1
3	2	8	9	0.250	9.2	2.469E+05	9.877E+05	61.7 ± 48.8
4	2	7	12	0.286	6.0	1.852E+05	6.481E+05	70.5 ± 56.5
5	2	7	9	0.286	8.1	2.469E+05	8.642E+05	70.5 ± 56.5
6	4	22	9	0.182	25.3	4.938E+05	2.716E+06	44.9 ± 24.4
7	1	3	6	0.333	5.2	1.852E+05	5.556E+05	82.1 ± 94.8
8	4	12	20	0.333	6.2	2.222E+05	6.667E+05	82.1 ± 47.5
9	6	20	18	0.300	11.5	3.704E+05	1.235E+06	74.0 ± 34.5
10	1	5	10	0.200	5.2	1.111E+05	5.556E+05	49.4 ± 54.1
11	2	12	12	0.167	10.4	1.852E+05	1.111E+06	41.2 ± 31.5
12	1	2	12	0.500	1.7	9.259E+04	1.852E+05	122.8 ± 150.4
13	3	12	4	0.250	31.1	8.333E+05	3.333E+06	61.7 ± 39.8
14	1	7	6	0.143	12.1	1.852E+05	1.296E+06	35.3 ± 37.8
15	2	8	12	0.250	6.9	1.852E+05	7.407E+05	61.7 ± 48.8
16	1	4	15	0.250	2.8	7.407E+04	2.963E+05	61.7 ± 69.0
17	0	2	4	0.000	5.2	0.000E+00	5.556E+05	0.0 ± 0.0
18	3	15	8	0.200	19.4	4.167E+05	2.083E+06	49.4 ± 31.3
19	1	6	18	0.167	3.4	6.173E+04	3.704E+05	41.2 ± 44.5
20	9	22	8	0.409	28.5	1.250E+06	3.056E+06	100.6 ± 39.9
21	2	3	9	0.667	3.4	2.469E+05	3.704E+05	163.2 ± 149.0
22	2	4	12	0.500	3.4	1.852E+05	3.704E+05	122.8 ± 106.4
23	3	13	8	0.231	16.8	4.167E+05	1.806E+06	57.0 ± 36.5
24	5	30	25	0.167	12.4	2.222E+05	1.333E+06	41.2 ± 19.9
25	4	13	24	0.308	5.6	1.852E+05	6.019E+05	75.8 ± 43.4
	62	244			9.0	2.443E+05	9.614E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 7.394 with 24 degrees of freedom
P(chi squared) = 100.0 %
Correlation Coefficient = 0.840
Variance of SQR(Ns) = 0.45
Variance of SQR(Ni) = 1.28

Ns/Ni = 0.254 ± 0.036
Mean Ratio = 0.263 ± 0.029

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.406E+06cm-2; ND = 3164

POOLED AGE = 62.7 ± 9.0 Ma
CENTRAL AGE = 62.7 ± 9.0 Ma

91POS85A - OKPIKRUAK FORMATION

IRRADIATION LU201
SLIDE NUMBER 1
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	20	85	42	0.235	26.3	5.291E+05	2.249E+06	46.3 ± 11.6
2	11	18	15	0.611	15.6	8.148E+05	1.333E+06	119.6 ± 45.9
3	3	9	18	0.333	6.5	1.852E+05	5.556E+05	65.5 ± 43.7
4	5	17	24	0.294	9.2	2.315E+05	7.870E+05	57.8 ± 29.5
5	12	73	35	0.164	27.1	3.810E+05	2.317E+06	32.4 ± 10.1
6	2	3	8	0.667	4.9	2.778E+05	4.167E+05	130.3 ± 119.0
7	2	9	9	0.222	13.0	2.469E+05	1.111E+06	43.7 ± 34.2
8	5	21	28	0.238	9.7	1.984E+05	8.333E+05	46.9 ± 23.3
9	4	31	17	0.129	23.7	2.614E+05	2.026E+06	25.4 ± 13.5
10	23	27	24	0.852	14.6	1.065E+06	1.250E+06	166.1 ± 47.3
11	7	15	25	0.467	7.8	3.111E+05	6.667E+05	91.5 ± 42.0
12	11	60	60	0.183	13.0	2.037E+05	1.111E+06	36.1 ± 11.9
13	18	39	20	0.462	25.3	1.000E+06	2.167E+06	90.5 ± 25.9
14	3	19	16	0.158	15.4	2.083E+05	1.319E+06	31.1 ± 19.3
15	1	7	12	0.143	7.6	9.259E+04	6.481E+05	28.2 ± 30.1
16	2	4	8	0.500	6.5	2.778E+05	5.556E+05	98.0 ± 84.9
17	5	11	18	0.455	7.9	3.086E+05	6.790E+05	89.2 ± 48.1
18	13	73	49	0.178	19.4	2.948E+05	1.655E+06	35.1 ± 10.6
19	23	83	64	0.277	16.9	3.993E+05	1.441E+06	54.5 ± 12.9
20	17	33	20	0.515	21.4	9.444E+05	1.833E+06	101.0 ± 30.2
21	12	67	35	0.179	24.9	3.810E+05	2.127E+06	35.3 ± 11.1
22	27	40	28	0.675	18.6	1.071E+06	1.587E+06	132.0 ± 33.0
23	17	27	45	0.630	7.8	4.198E+05	6.667E+05	123.2 ± 38.3
24	6	24	27	0.250	11.6	2.469E+05	9.877E+05	49.2 ± 22.5
25	11	37	48	0.297	10.0	2.546E+05	8.565E+05	58.5 ± 20.1
	260	832			15.6	4.157E+05	1.330E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 60.235 with 24 degrees of freedom
P(chi squared) = 0.0 %
Correlation Coefficient = 0.639
Variance of SQR(Ns) = 1.52
Variance of SQR(Ni) = 4.97

Ns/Ni = 0.312 ± 0.022
Mean Ratio = 0.365 ± 0.041

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 61.4 ± 4.6 Ma
CENTRAL AGE = 64.6 ± 7.7 Ma

91POS86A - OKPIKRUAK FORMATION

IRRADIATION LU201
SLIDE NUMBER 2
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	6	49	12	0.122	53.1	5.556E+05	4.537E+06	24.1 ± 10.5
2	3	12	32	0.250	4.9	1.042E+05	4.167E+05	49.2 ± 31.8
3	2	4	6	0.500	8.7	3.704E+05	7.407E+05	98.0 ± 84.9
4	1	10	21	0.100	6.2	5.291E+04	5.291E+05	19.7 ± 20.7
5	1	7	4	0.143	22.7	2.778E+05	1.944E+06	28.2 ± 30.1
6	2	5	3	0.400	21.7	7.407E+05	1.852E+06	78.5 ± 65.7
7	1	6	21	0.167	3.7	5.291E+04	3.175E+05	32.8 ± 35.5
8	16	17	20	0.941	11.0	8.889E+05	9.444E+05	183.3 ± 64.0
9	3	6	21	0.500	3.7	1.587E+05	3.175E+05	98.0 ± 69.3
10	10	50	32	0.200	20.3	3.472E+05	1.736E+06	39.4 ± 13.7
11	3	11	16	0.273	8.9	2.083E+05	7.639E+05	53.6 ± 35.0
12	3	14	9	0.214	20.2	3.704E+05	1.728E+06	42.2 ± 26.9
13	7	48	20	0.146	31.2	3.889E+05	2.667E+06	28.7 ± 11.6
14	21	30	18	0.700	21.7	1.296E+06	1.852E+06	136.8 ± 39.1
15	2	17	12	0.118	18.4	1.852E+05	1.574E+06	23.2 ± 17.3
16	6	40	18	0.150	28.9	3.704E+05	2.469E+06	29.6 ± 13.0
17	24	34	30	0.706	14.7	8.889E+05	1.259E+06	137.9 ± 36.9
18	1	5	6	0.200	10.8	1.852E+05	9.259E+05	39.4 ± 43.2
19	1	6	9	0.167	8.7	1.235E+05	7.407E+05	32.8 ± 35.5
20	5	6	12	0.833	6.5	4.630E+05	5.556E+05	162.5 ± 98.5
21	2	16	16	0.125	13.0	1.389E+05	1.111E+06	24.6 ± 18.5
22	1	4	9	0.250	5.8	1.235E+05	4.938E+05	49.2 ± 55.0
23	8	11	12	0.727	11.9	7.407E+05	1.019E+06	142.1 ± 66.1
24	2	3	9	0.667	4.3	2.469E+05	3.704E+05	130.3 ± 119.0
25	8	37	36	0.216	13.4	2.469E+05	1.142E+06	42.6 ± 16.6
	139	448			14.4	3.823E+05	1.232E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 58.599 with 24 degrees of freedom
P(chi squared) = 0.0 %
Correlation Coefficient = 0.535
Variance of SQR(Ns) = 1.27
Variance of SQR(Ni) = 3.11

Ns/Ni = 0.310 ± 0.030
Mean Ratio = 0.353 ± 0.052

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 61.0 ± 6.1 Ma
CENTRAL AGE = 61.0 ± 9.9 Ma

91POS86B - OKPIKRUAK FORMATION

IRRADIATION LU201
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	4	6	18	0.667	4.3	2.469E+05	3.704E+05	130.3 ± 84.2
2	0	3	12	0.000	3.2	0.000E+00	2.778E+05	0.0 ± 0.0
3	3	13	16	0.231	10.6	2.083E+05	9.028E+05	45.4 ± 29.1
4	3	16	16	0.188	13.0	2.083E+05	1.111E+06	36.9 ± 23.2
5	0	6	20	0.000	3.9	0.000E+00	3.333E+05	0.0 ± 0.0
6	1	3	8	0.333	4.9	1.389E+05	4.167E+05	65.5 ± 75.7
7	3	5	6	0.600	10.8	5.556E+05	9.259E+05	117.4 ± 85.8
8	0	7	30	0.000	3.0	0.000E+00	2.593E+05	0.0 ± 0.0
9	1	7	8	0.143	11.4	1.389E+05	9.722E+05	28.2 ± 30.1
10	2	4	9	0.500	5.8	2.469E+05	4.938E+05	98.0 ± 84.9
11	7	15	49	0.467	4.0	1.587E+05	3.401E+05	91.5 ± 42.0
12	3	28	24	0.107	15.2	1.389E+05	1.296E+06	21.1 ± 12.8
13	0	5	15	0.000	4.3	0.000E+00	3.704E+05	0.0 ± 0.0
14	1	11	12	0.091	11.9	9.259E+04	1.019E+06	17.9 ± 18.7
15	2	7	6	0.286	15.2	3.704E+05	1.296E+06	56.2 ± 45.1
16	10	30	6	0.333	65.0	1.852E+06	5.556E+06	65.5 ± 24.0
17	0	4	9	0.000	5.8	0.000E+00	4.938E+05	0.0 ± 0.0
18	3	6	15	0.500	5.2	2.222E+05	4.444E+05	98.0 ± 69.3
19	16	57	30	0.281	24.7	5.926E+05	2.111E+06	55.2 ± 15.7
20	17	59	16	0.288	47.9	1.181E+06	4.097E+06	56.7 ± 15.7
21	2	7	30	0.286	3.0	7.407E+04	2.593E+05	56.2 ± 45.1
22	6	8	40	0.750	2.6	1.667E+05	2.222E+05	146.5 ± 79.2
23	1	2	8	0.500	3.2	1.389E+05	2.778E+05	98.0 ± 120.1
24	2	5	9	0.400	7.2	2.469E+05	6.173E+05	78.5 ± 65.7
25	4	20	16	0.200	16.2	2.778E+05	1.389E+06	39.4 ± 21.6
	91	334			10.1	2.362E+05	8.671E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 22.347 with 24 degrees of freedom
P(chi squared) = 55.9 %
Correlation Coefficient = 0.916
Variance of SQR(Ns) = 1.30
Variance of SQR(Ni) = 2.82

Ns/Ni = 0.272 ± 0.032
Mean Ratio = 0.286 ± 0.044

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.120E+06cm-2; ND = 2512

POOLED AGE = 53.6 ± 6.5 Ma
CENTRAL AGE = 53.6 ± 6.5 Ma

91POS87A - NANUSHUK GROUP

IRRADIATION LU194
SLIDE NUMBER 12
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	9	49	16	0.184	31.7	6.250E+05	3.403E+06	45.4 ± 16.5
2	1	4	15	0.250	2.8	7.407E+04	2.963E+05	61.7 ± 69.0
3	6	29	20	0.207	15.0	3.333E+05	1.611E+06	51.1 ± 22.9
4	1	5	12	0.200	4.3	9.259E+04	4.630E+05	49.4 ± 54.1
5	12	43	20	0.279	22.3	6.667E+05	2.389E+06	68.8 ± 22.5
6	6	22	16	0.273	14.2	4.167E+05	1.528E+06	67.3 ± 31.0
7	3	13	9	0.231	15.0	3.704E+05	1.605E+06	57.0 ± 36.5
8	4	22	18	0.182	12.7	2.469E+05	1.358E+06	44.9 ± 24.4
9	3	12	15	0.250	8.3	2.222E+05	8.889E+05	61.7 ± 39.8
10	6	34	20	0.176	17.6	3.333E+05	1.889E+06	43.6 ± 19.3
11	9	69	15	0.130	47.6	6.667E+05	5.111E+06	32.3 ± 11.5
12	6	26	15	0.231	17.9	4.444E+05	1.926E+06	57.0 ± 25.8
13	4	7	12	0.571	6.0	3.704E+05	6.481E+05	140.2 ± 87.9
14	4	6	20	0.667	3.1	2.222E+05	3.333E+05	163.2 ± 105.4
15	17	44	30	0.386	15.2	6.296E+05	1.630E+06	95.1 ± 27.2
16	2	12	15	0.167	8.3	1.481E+05	8.889E+05	41.2 ± 31.5
17	0	4	15	0.000	2.8	0.000E+00	2.963E+05	0.0 ± 0.0
18	5	31	28	0.161	11.5	1.984E+05	1.230E+06	39.9 ± 19.2
19	0	3	14	0.000	2.2	0.000E+00	2.381E+05	0.0 ± 0.0
20	2	8	25	0.250	3.3	8.889E+04	3.556E+05	61.7 ± 48.8
21	4	19	6	0.211	32.8	7.407E+05	3.519E+06	52.0 ± 28.6
22	2	14	15	0.143	9.7	1.481E+05	1.037E+06	35.3 ± 26.7
23	6	24	12	0.250	20.7	5.556E+05	2.222E+06	61.7 ± 28.2
24	2	5	8	0.400	6.5	2.778E+05	6.944E+05	98.4 ± 82.4
25	4	24	16	0.167	15.5	2.778E+05	1.667E+06	41.2 ± 22.3
	118	529			13.5	3.221E+05	1.444E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 16.612 with 24 degrees of freedom
P(chi squared) = 86.5 %
Correlation Coefficient = 0.814
Variance of SQR(Ns) = 0.88
Variance of SQR(Ni) = 3.20

Ns/Ni = 0.223 ± 0.023
Mean Ratio = 0.239 ± 0.029

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.406E+06cm-2; ND = 3164

POOLED AGE = 55.1 ± 5.7 Ma
CENTRAL AGE = 55.1 ± 5.8 Ma

91POS88A - OKPIKRUAK FORMATION

IRRADIATION LU194
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	7	22	16	0.318	14.2	4.861E+05	1.528E+06	78.4 ± 34.1
2	9	83	49	0.108	17.5	2.041E+05	1.882E+06	26.8 ± 9.4
3	3	8	10	0.375	8.3	3.333E+05	8.889E+05	92.3 ± 62.5
4	3	28	28	0.107	10.4	1.190E+05	1.111E+06	26.5 ± 16.1
5	6	17	10	0.353	17.6	6.667E+05	1.889E+06	86.9 ± 41.3
6	4	24	15	0.167	16.6	2.963E+05	1.778E+06	41.2 ± 22.3
7	2	9	18	0.222	5.2	1.235E+05	5.556E+05	54.9 ± 42.9
8	6	15	12	0.400	12.9	5.556E+05	1.389E+06	98.4 ± 47.6
9	1	9	9	0.111	10.4	1.235E+05	1.111E+06	27.5 ± 29.0
10	23	88	24	0.261	38.0	1.065E+06	4.074E+06	64.5 ± 15.2
11	4	5	15	0.800	3.4	2.963E+05	3.704E+05	195.4 ± 131.1
12	2	14	9	0.143	16.1	2.469E+05	1.728E+06	35.3 ± 26.7
13	4	35	20	0.114	18.1	2.222E+05	1.944E+06	28.3 ± 14.9
14	11	63	12	0.175	54.4	1.019E+06	5.833E+06	43.1 ± 14.1
15	2	2	12	1.000	1.7	1.852E+05	1.852E+05	243.3 ± 243.4
16	12	28	24	0.429	12.1	5.556E+05	1.296E+06	105.4 ± 36.4
17	5	6	7	0.833	8.9	7.936E+05	9.524E+05	203.4 ± 123.2
18	7	13	24	0.538	5.6	3.241E+05	6.019E+05	132.1 ± 62.0
19	4	13	36	0.308	3.7	1.235E+05	4.012E+05	75.8 ± 43.4
20	2	2	20	1.000	1.0	1.111E+05	1.111E+05	243.3 ± 243.4
21	12	48	48	0.250	10.4	2.778E+05	1.111E+06	61.7 ± 20.0
22	2	9	20	0.222	4.7	1.111E+05	5.000E+05	54.9 ± 42.9
23	4	27	24	0.148	11.6	1.852E+05	1.250E+06	36.6 ± 19.6
24	27	39	56	0.692	7.2	5.357E+05	7.738E+05	169.4 ± 42.6
25	21	92	70	0.228	13.6	3.333E+05	1.460E+06	56.3 ± 13.7
	183	699			12.3	3.458E+05	1.321E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 50.808 with 24 degrees of freedom
P(chi squared) = 0.1 %
Correlation Coefficient = 0.738
Variance of SQR(Ns) = 1.26
Variance of SQR(Ni) = 5.61

Ns/Ni = 0.262 ± 0.022
Mean Ratio = 0.372 ± 0.056

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.406E+06cm-2; ND = 3164

POOLED AGE = 64.6 ± 5.6 Ma
CENTRAL AGE = 69.0 ± 8.8 Ma

KILLIK RIVER

Sample Locations and Apatite Yields - Killik River

Table 13. Sample details and apatite yields for outcrop samples: Killik River.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
86TM19A	68°14.5'	155°20.5'	(1210)/(*4030*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM22A	68°20.2'	153°47.2'	(1500)/(*5000*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM22B	68°21.0'	155°46.3'	(1200)/(*4000*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM29A	68°15.3'	154°48.2'	(1940)/(*6470*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM30A	68°06.4'	154°59.1'	(1560)/(*5200*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM39A	68°03.9'	155°7.1'	(1560)/(*5200*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM56A	68°12.8'	153°02.7'	(1740)/(*5800*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone
86TM57A	68°09.9'	153°51.8'	(1680)/(*5600*)	Kanayut Conglomerate	Late Devonian-Early Miss.	~350-377	Sandstone

Sample Results - Killik River

Typical yields for the samples were excellent and in every case 20 grains were counted on each mount. Due to relatively high uranium concentrations (>20 ppm), at least 100 tracks were measured in every sample. Most samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations. For these samples the pooled fission track age is presented. The mean age is presented for those samples where it was determined that the dated grains did not represent a single age population.

Table 14. Track length data: Killik River.

Sample	Track Length Range (μm)													
Number	<5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
TM19A	0	0	0	1	0	0	2	12	16	25	32	13	2	0
TM22A	0	0	0	0	0	1	1	5	10	24	44	13	4	0
TM22B	0	0	0	1	0	1	0	2	10	30	49	11	2	0
TM29A	0	1	0	0	0	0	0	1	15	34	34	16	0	0
TM30A	0	0	0	0	1	1	1	3	11	21	50	14	1	0
TM39A	0	0	0	0	0	2	1	10	12	23	39	14	2	0
TM56A	0	0	0	0	0	0	0	1	17	22	44	13	3	1
TM57A	0	0	0	0	0	0	0	6	17	28	34	14	3	0

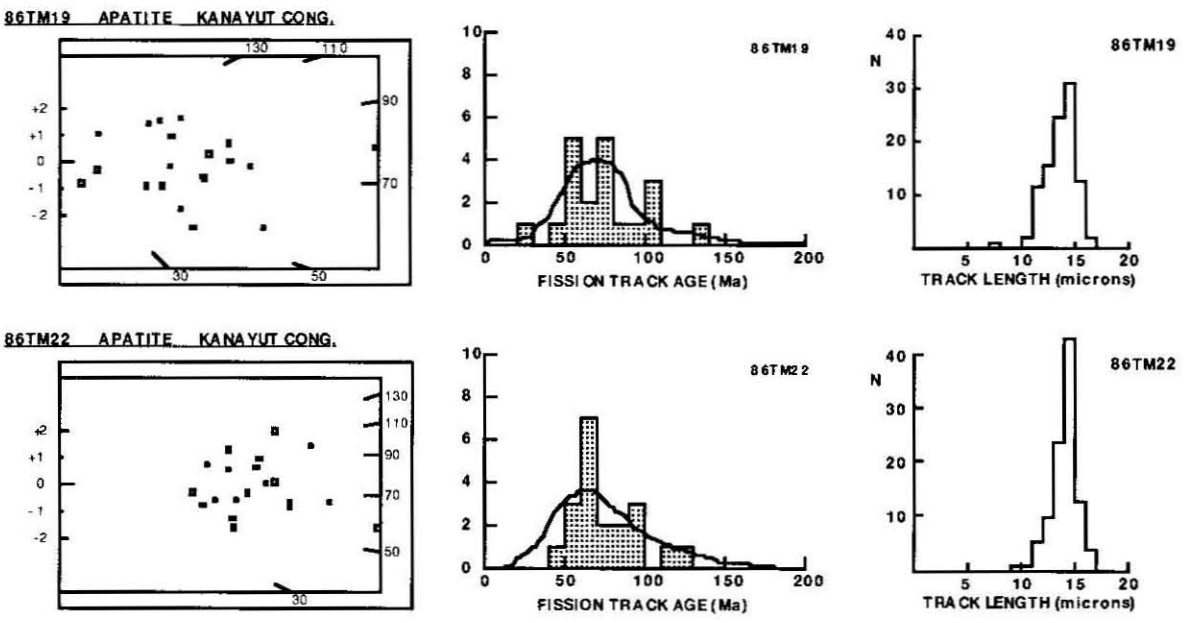
Length measurements by P. O'Sullivan

Table 15. Apatite fission track analytical results: Killik River.

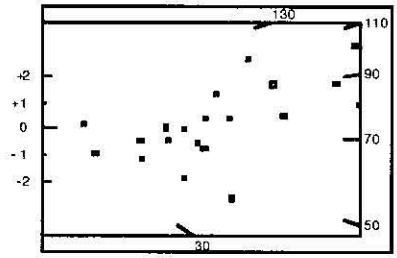
Sample Number	Number of grains	Standard track density ($x10^6cm^{-2}$)	Fossil track density ($x10^5cm^{-2}$)	Induced track density ($x10^6cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
86TM19A	20	1.354	8.477	2.830	8.1	71.1 ± 3.2	27.4	13.58 ± 0.14	1.43
		(3047)	(856)	(2858)				(103)	
86TM22A	20	1.354	4.281	1.428	40.7	71.2 ± 4.4	13.8	14.04 ± 0.12	1.20
		(3047)	(388)	(1294)				(102)	
86TM22B	20	1.354	8.159	2.489	1.7	77.8 ± 3.5	24.1	14.02 ± 0.12	1.21
		(3047)	(865)	(2639)		*72.5 ± 4.5**		(106)	
86TM29A	20	1.354	6.424	2.307	93.1	66.2 ± 4.5	22.3	14.36 ± 0.12	1.10
		(3047)	(318)	(1142)				(101)	
86TM30A	20	1.354	0.146	4.170	1.5	82.9 ± 3.7	40.3	14.00 ± 0.12	1.19
		(3047)	(949)	(2717)		*75.6 ± 4.4**		(103)	
86TM39A	20	1.354	7.330	2.532	45.4	68.8 ± 3.4	24.5	13.78 ± 0.13	1.36
		(3047)	(665)	(2297)				(103)	
86TM56A	20	1.354	5.856	1.964	3.2	70.8 ± 4.3	19.0	14.08 ± 0.11	1.07
		(3047)	(419)	(1405)		*72.8 ± 7.6**		(101)	
86TM57A	20	1.354	4.945	1.847	42.9	63.6 ± 3.3	17.9	13.93 ± 0.11	1.13
		(3047)	(579)	(2163)				(102)	

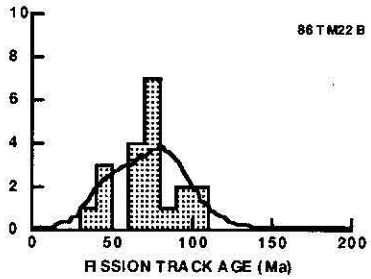
Parentheses show number of tracks counted.

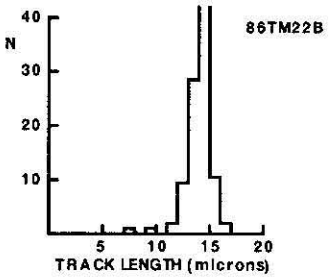
Single-Age and Track Length Distributions - Killik River



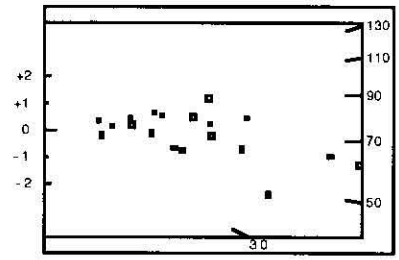
86TM22B APATITE KANAYUT CONG.

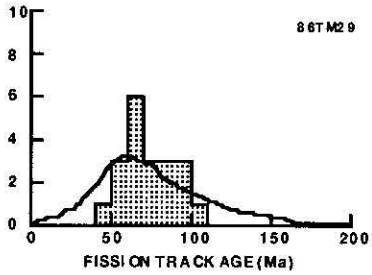


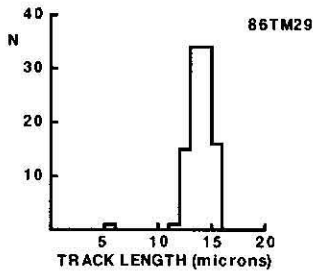




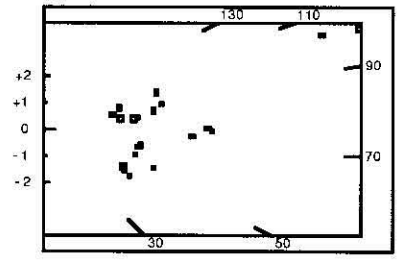
86TM29 APATITE KANAYUT CONG.

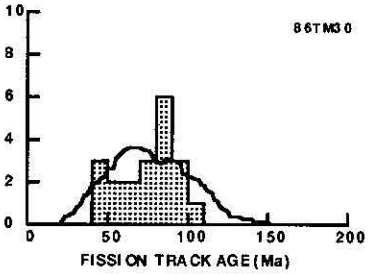


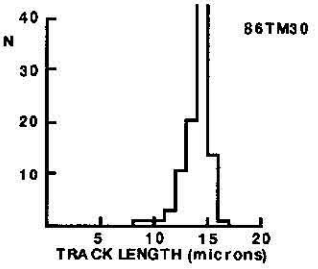




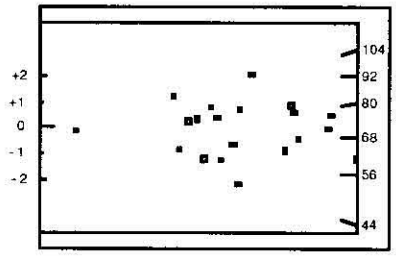
86TM30 APATITE KANAYUT CONG.

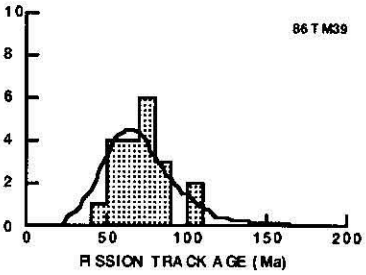


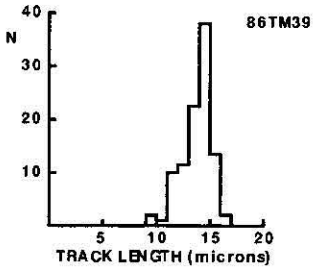




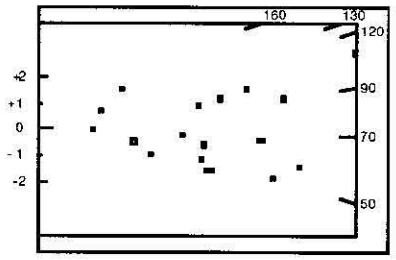
86TM39 APATITE KANAYUT CONG.

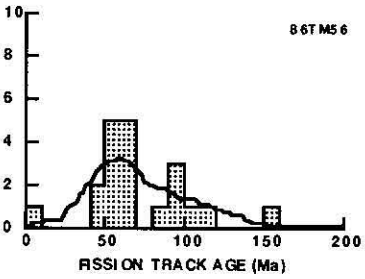


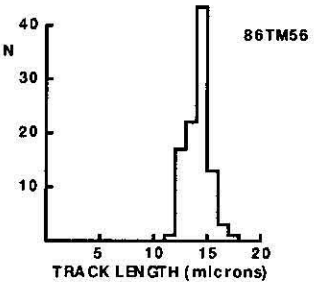




86TM56 APATITE KANAYUT CONG.







86TM19 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 1
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	25	83	28	0.301	31.9	9.921E+05	3.294E+06	71.5 ± 16.4
2	75	245	48	0.306	54.9	1.736E+06	5.671E+06	72.7 ± 9.7
3	4	7	63	0.571	1.2	7.055E+04	1.235E+05	135.0 ± 84.7
4	23	50	36	0.460	14.9	7.099E+05	1.543E+06	108.9 ± 27.6
5	43	154	100	0.279	16.6	4.778E+05	1.711E+06	66.3 ± 11.5
6	210	641	100	0.328	68.9	2.333E+06	7.122E+06	77.8 ± 6.4
7	34	78	100	0.436	8.4	3.778E+05	8.667E+05	103.3 ± 21.4
8	15	63	90	0.238	7.5	1.852E+05	7.778E+05	56.6 ± 16.3
9	29	134	36	0.216	40.0	8.951E+05	4.136E+06	51.5 ± 10.6
10	28	73	63	0.384	12.5	4.938E+05	1.287E+06	91.0 ± 20.3
11	61	194	20	0.314	104.3	3.389E+06	1.078E+07	74.7 ± 11.1
12	34	172	90	0.198	20.5	4.198E+05	2.123E+06	47.0 ± 8.9
13	81	351	36	0.231	104.8	2.500E+06	1.083E+07	54.9 ± 6.9
14	21	84	80	0.250	11.3	2.917E+05	1.167E+06	59.4 ± 14.6
15	1	8	20	0.125	4.3	5.556E+04	4.444E+05	29.8 ± 31.6
16	61	176	25	0.347	75.7	2.711E+06	7.822E+06	82.2 ± 12.4
17	47	143	36	0.329	42.7	1.451E+06	4.414E+06	78.0 ± 13.2
18	42	149	49	0.282	32.7	9.524E+05	3.379E+06	67.0 ± 11.8
19	3	12	81	0.250	1.6	4.115E+04	1.646E+05	59.4 ± 38.4
20	19	41	21	0.463	21.0	1.005E+06	2.169E+06	109.7 ± 30.6
	856	2858			27.4	8.477E+05	2.830E+06	

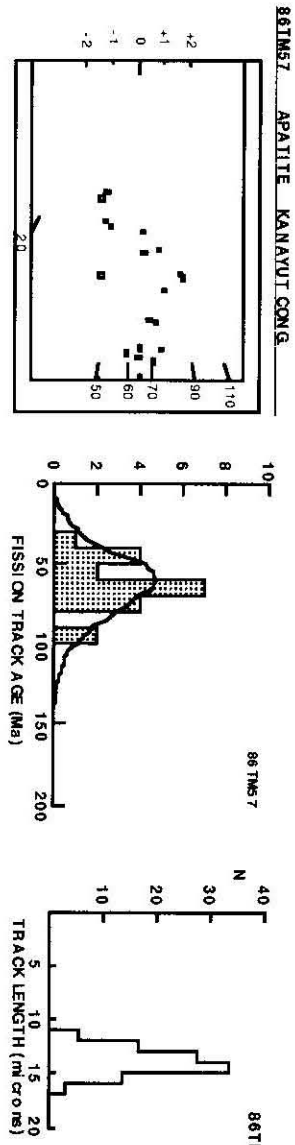
Area of basic unit = .0000009 cm-2

Chi Squared = 28.150 with 19 degrees of freedom
P(chi squared) = 8.1 %
Correlation Coefficient = 0.977
Variance of SQR(Ns) = 8.82
Variance of SQR(Ni) = 29.72

Ns/Ni = 0.300 ± 0.012
Mean Ratio = 0.315 ± 0.024

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 71.1 ± 3.2 Ma
CENTRAL AGE = 74.9 ± 5.9 Ma



Age Sheets - Killik River

86TM22 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 2
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	32	76	70	0.421	11.7	5.079E+05	1.206E+06	99.8 ± 21.2
2	13	61	25	0.213	26.2	5.778E+05	2.711E+06	50.7 ± 15.5
3	8	29	63	0.276	4.9	1.411E+05	5.115E+05	65.5 ± 26.2
4	25	49	60	0.510	8.8	4.630E+05	9.074E+05	120.7 ± 29.8
5	19	51	49	0.373	11.2	4.308E+05	1.156E+06	88.4 ± 23.8
6	33	120	60	0.275	21.5	6.111E+05	2.222E+06	65.3 ± 12.9
7	11	43	70	0.256	6.6	1.746E+05	6.825E+05	60.8 ± 20.6
8	24	89	63	0.270	15.2	4.233E+05	1.570E+06	64.1 ± 14.8
9	24	93	45	0.258	22.2	5.926E+05	2.296E+06	61.3 ± 14.1
10	16	56	80	0.286	7.5	2.222E+05	7.778E+05	67.9 ± 19.3
11	14	53	56	0.264	10.2	2.778E+05	1.052E+06	62.8 ± 18.9
12	11	27	36	0.407	8.1	3.395E+05	8.333E+05	96.6 ± 34.6
13	14	38	42	0.368	9.7	3.704E+05	1.005E+06	87.4 ± 27.4
14	45	188	64	0.239	31.6	7.812E+05	3.264E+06	56.9 ± 9.5
15	9	39	36	0.231	11.6	2.778E+05	1.204E+06	54.9 ± 20.3
16	15	32	18	0.469	19.1	9.259E+05	1.975E+06	111.0 ± 34.8
17	20	50	50	0.400	10.7	4.444E+05	1.111E+06	94.8 ± 25.2
18	22	69	30	0.319	24.7	8.148E+05	2.556E+06	75.7 ± 18.6
19	20	63	54	0.317	12.5	4.115E+05	1.296E+06	75.4 ± 19.4
20	13	68	36	0.191	20.3	4.012E+05	2.099E+06	45.5 ± 13.8
	388	1294			13.8	4.281E+05	1.428E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.794 with 19 degrees of freedom
P(chi squared) = 40.7 %
Correlation Coefficient = 0.881
Variance of SQR(Ns) = 0.99
Variance of SQR(Ni) = 4.11

Ns/Ni = 0.300 ± 0.017
Mean Ratio = 0.317 ± 0.020

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 71.2 ± 4.4 Ma
CENTRAL AGE = 75.3 ± 5.0 Ma

86TM22B - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	18	59	100	0.305	6.3	2.000E+05	6.556E+05	72.4 ± 19.6
2	38	98	25	0.388	42.1	1.689E+06	4.356E+06	91.9 ± 17.7
3	11	53	49	0.208	11.6	2.494E+05	1.202E+06	49.4 ± 16.4
4	42	130	70	0.323	20.0	6.667E+05	2.063E+06	76.7 ± 13.7
5	30	115	25	0.261	49.4	1.333E+06	5.111E+06	62.0 ± 12.8
6	121	361	64	0.335	60.6	2.101E+06	6.267E+06	79.6 ± 8.6
7	70	215	36	0.326	64.2	2.160E+06	6.636E+06	77.3 ± 10.8
8	28	103	48	0.272	23.1	6.481E+05	2.384E+06	64.6 ± 13.8
9	18	67	45	0.269	16.0	4.444E+05	1.654E+06	63.8 ± 17.0
10	56	121	48	0.463	27.1	1.296E+06	2.801E+06	109.6 ± 17.9
11	107	290	100	0.369	31.2	1.189E+06	3.222E+06	87.5 ± 10.1
12	3	18	70	0.167	2.8	4.762E+04	2.857E+05	39.7 ± 24.8
13	2	6	63	0.333	1.0	3.527E+04	1.058E+05	79.1 ± 64.6
14	24	80	63	0.300	13.6	4.233E+05	1.411E+06	71.2 ± 16.7
15	126	297	48	0.424	66.5	2.917E+06	6.875E+06	100.5 ± 10.9
16	39	201	60	0.194	36.0	7.222E+05	3.722E+06	46.2 ± 8.1
17	22	112	70	0.196	17.2	3.492E+05	1.778E+06	46.7 ± 11.0
18	32	97	70	0.330	14.9	5.079E+05	1.540E+06	78.3 ± 16.1
19	11	42	64	0.262	7.1	1.910E+05	7.292E+05	62.2 ± 21.1
20	67	174	60	0.385	31.2	1.241E+06	3.222E+06	91.3 ± 13.3
	865	2639			24.1	8.159E+05	2.489E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 34.216 with 19 degrees of freedom
P(chi squared) = 1.7 %
Correlation Coefficient = 0.958
Variance of SQR(Ns) = 7.77
Variance of SQR(Ni) = 18.19

Ns/Ni = 0.328 ± 0.013
Mean Ratio = 0.305 ± 0.018

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 77.8 ± 3.5 Ma
CENTRAL AGE = 72.5 ± 4.5 Ma

86TM29 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 4
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	5	13	30	0.385	4.7	1.852E+05	4.815E+05	91.2 ± 48.0
2	11	46	35	0.239	14.1	3.492E+05	1.460E+06	56.9 ± 19.1
3	14	39	30	0.359	14.0	5.185E+05	1.444E+06	85.2 ± 26.6
4	7	25	20	0.280	13.4	3.889E+05	1.389E+06	66.5 ± 28.5
5	3	9	48	0.333	2.0	6.944E+04	2.083E+05	79.1 ± 52.8
6	48	181	25	0.265	77.8	2.133E+06	8.044E+06	63.0 ± 10.3
7	7	24	16	0.292	16.1	4.861E+05	1.667E+06	69.3 ± 29.8
8	2	8	20	0.250	4.3	1.111E+05	4.444E+05	59.4 ± 47.0
9	23	88	16	0.261	59.1	1.597E+06	6.111E+06	62.1 ± 14.6
10	17	59	24	0.288	26.4	7.870E+05	2.731E+06	68.4 ± 18.9
11	28	148	48	0.189	33.1	6.481E+05	3.426E+06	45.0 ± 9.3
12	17	52	12	0.327	46.6	1.574E+06	4.815E+06	77.6 ± 21.8
13	10	41	21	0.244	21.0	5.291E+05	2.169E+06	58.0 ± 20.5
14	2	5	20	0.400	2.7	1.111E+05	2.778E+05	94.8 ± 79.4
15	18	42	35	0.429	12.9	5.714E+05	1.333E+06	101.5 ± 28.7
16	9	24	28	0.375	9.2	3.571E+05	9.524E+05	88.9 ± 34.8
17	5	15	32	0.333	5.0	1.736E+05	5.208E+05	79.1 ± 40.9
18	8	20	35	0.400	6.1	2.540E+05	6.349E+05	94.8 ± 39.7
19	26	76	25	0.342	32.7	1.156E+06	3.378E+06	81.2 ± 18.5
20	58	227	30	0.256	81.3	2.148E+06	8.407E+06	60.7 ± 9.0
	318	1142			22.3	6.424E+05	2.307E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 10.769 with 19 degrees of freedom
P(chi squared) = 93.1 %
Correlation Coefficient = 0.976
Variance of SQR(Ns) = 2.87
Variance of SQR(Ni) = 12.57

Ns/Ni = 0.278 ± 0.018
Mean Ratio = 0.312 ± 0.015

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 66.2 ± 4.5 Ma
CENTRAL AGE = 74.2 ± 3.9 Ma

86TM30 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	15	43	48	0.349	9.6	3.472E+05	9.954E+05	82.8 ± 24.9
2	27	117	35	0.231	35.9	8.571E+05	3.714E+06	54.9 ± 11.8
3	30	83	35	0.361	25.5	9.524E+05	2.635E+06	85.7 ± 18.4
4	33	79	24	0.418	35.4	1.528E+06	3.657E+06	99.0 ± 20.6
5	12	32	20	0.375	17.2	6.667E+05	1.778E+06	88.9 ± 30.2
6	14	68	35	0.206	20.9	4.444E+05	2.159E+06	49.0 ± 14.4
7	22	81	48	0.272	18.1	5.093E+05	1.875E+06	64.5 ± 15.6
8	15	73	25	0.205	31.4	6.667E+05	3.244E+06	48.9 ± 13.9
9	15	38	49	0.395	8.3	3.401E+05	8.617E+05	93.6 ± 28.6
10	22	63	25	0.349	27.1	9.778E+05	2.800E+06	82.9 ± 20.6
11	252	598	40	0.421	160.7	7.000E+06	1.661E+07	99.9 ± 7.8
12	20	58	40	0.345	15.6	5.556E+05	1.611E+06	81.8 ± 21.3
13	64	201	30	0.318	72.0	2.370E+06	7.444E+06	75.6 ± 11.0
14	19	78	20	0.244	41.9	1.056E+06	4.333E+06	57.9 ± 14.9
15	21	79	48	0.266	17.7	4.861E+05	1.829E+06	63.2 ± 15.6
16	16	83	40	0.193	22.3	4.444E+05	2.306E+06	45.9 ± 12.6
17	198	464	49	0.427	101.8	4.490E+06	1.052E+07	101.1 ± 8.9
18	67	214	48	0.313	47.9	1.551E+06	4.954E+06	74.3 ± 10.5
19	35	93	25	0.376	40.0	1.556E+06	4.133E+06	89.3 ± 17.8
20	52	172	40	0.302	46.2	1.444E+06	4.778E+06	71.8 ± 11.5
	949	2717			40.3	1.456E+06	4.170E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 34.792 with 19 degrees of freedom
P(chi squared) = 1.5 %
Correlation Coefficient = 0.991
Variance of SQR(Ns) = 11.23
Variance of SQR(Ni) = 23.69

Ns/Ni = 0.349 ± 0.013
Mean Ratio = 0.318 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 82.9 ± 3.7 Ma
CENTRAL AGE = 75.6 ± 4.4 Ma

86TM39 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	23	64	50	0.359	13.8	5.111E+05	1.422E+06	85.3 ± 20.8
2	1	4	60	0.250	0.7	1.852E+04	7.407E+04	59.4 ± 66.5
3	49	151	42	0.324	38.6	1.296E+06	3.995E+06	77.0 ± 12.8
4	49	144	42	0.340	36.9	1.296E+06	3.810E+06	80.8 ± 13.5
5	19	86	36	0.221	25.7	5.864E+05	2.654E+06	52.5 ± 13.4
6	27	143	36	0.189	42.7	8.333E+05	4.414E+06	44.9 ± 9.5
7	31	91	49	0.341	20.0	7.029E+05	2.063E+06	80.8 ± 16.9
8	24	75	80	0.320	10.1	3.333E+05	1.042E+06	76.0 ± 17.9
9	15	35	24	0.429	15.7	6.944E+05	1.620E+06	101.5 ± 31.4
10	17	54	48	0.315	12.1	3.935E+05	1.250E+06	74.7 ± 20.9
11	37	84	50	0.440	18.1	8.222E+05	1.867E+06	104.3 ± 20.7
12	64	201	48	0.318	45.0	1.481E+06	4.653E+06	75.6 ± 11.0
13	27	105	48	0.257	23.5	6.250E+05	2.431E+06	61.1 ± 13.3
14	49	176	49	0.278	38.6	1.111E+06	3.991E+06	66.1 ± 10.8
15	62	210	64	0.295	35.3	1.076E+06	3.646E+06	70.1 ± 10.3
16	19	59	54	0.322	11.7	3.909E+05	1.214E+06	76.5 ± 20.2
17	43	169	80	0.254	22.7	5.972E+05	2.347E+06	60.5 ± 10.4
18	23	103	50	0.223	22.1	5.111E+05	2.289E+06	53.1 ± 12.3
19	14	60	48	0.233	13.4	3.241E+05	1.389E+06	55.5 ± 16.5
20	72	283	50	0.254	60.8	1.600E+06	6.289E+06	60.5 ± 8.1
	665	2297			24.5	7.330E+05	2.532E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.040 with 19 degrees of freedom
P(chi squared) = 45.4 %
Correlation Coefficient = 0.945
Variance of SQR(Ns) = 3.21
Variance of SQR(Ni) = 11.67

Ns/Ni = 0.290 ± 0.013
Mean Ratio = 0.298 ± 0.015

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 68.8 ± 3.4 Ma
CENTRAL AGE = 70.8 ± 3.9 Ma

86TM56 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	19	49	70	0.388	7.5	3.016E+05	7.778E+05	91.9 ± 24.9
2	24	60	35	0.400	18.4	7.619E+05	1.905E+06	94.8 ± 23.0
3	0	5	35	0.000	1.5	0.000E+00	1.587E+05	0.0 ± 0.0
4	76	168	48	0.452	37.6	1.759E+06	3.889E+06	107.1 ± 15.0
5	18	88	48	0.205	19.7	4.167E+05	2.037E+06	48.7 ± 12.6
6	3	6	30	0.500	2.1	1.111E+05	2.222E+05	118.3 ± 83.7
7	19	92	36	0.207	27.5	5.864E+05	2.840E+06	49.1 ± 12.4
8	17	76	40	0.224	20.4	4.722E+05	2.111E+06	53.2 ± 14.3
9	14	50	30	0.280	17.9	5.185E+05	1.852E+06	66.5 ± 20.2
10	44	184	50	0.239	39.6	9.778E+05	4.089E+06	56.9 ± 9.6
11	18	69	35	0.261	21.2	5.714E+05	2.190E+06	62.0 ± 16.5
12	6	25	45	0.240	6.0	1.481E+05	6.173E+05	57.1 ± 26.0
13	32	77	63	0.416	13.1	5.644E+05	1.358E+06	98.5 ± 20.8
14	35	162	50	0.216	34.8	7.778E+05	3.600E+06	51.4 ± 9.7
15	6	9	30	0.667	3.2	2.222E+05	3.333E+05	157.3 ± 83.0
16	33	118	16	0.280	79.3	2.292E+06	8.194E+06	66.4 ± 13.2
17	2	7	24	0.286	3.1	9.259E+04	3.241E+05	67.9 ± 54.4
18	8	38	56	0.211	7.3	1.587E+05	7.540E+05	50.1 ± 19.5
19	2	7	30	0.286	2.5	7.407E+04	2.593E+05	67.9 ± 54.4
20	43	115	24	0.374	51.5	1.991E+06	5.324E+06	88.7 ± 16.0
	419	1405			19.0	5.856E+05	1.964E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 31.933 with 19 degrees of freedom
P(chi squared) = 3.2 %
Correlation Coefficient = 0.890
Variance of SQR(Ns) = 4.58
Variance of SQR(Ni) = 13.49

Ns/Ni = 0.298 ± 0.017
Mean Ratio = 0.306 ± 0.031

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 70.8 ± 4.3 Ma
CENTRAL AGE = 72.8 ± 7.6 Ma

86TM57 - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 8
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	41	151	60	0.272	27.0	7.593E+05	2.796E+06	64.5 ± 11.5
2	26	66	100	0.394	7.1	2.889E+05	7.333E+05	93.4 ± 21.7
3	48	228	80	0.211	30.6	6.667E+05	3.167E+06	50.1 ± 8.0
4	9	55	18	0.164	32.8	5.556E+05	3.395E+06	39.0 ± 14.0
5	19	67	60	0.284	12.0	3.519E+05	1.241E+06	67.4 ± 17.6
6	22	113	72	0.195	16.9	3.395E+05	1.744E+06	46.3 ± 10.8
7	12	67	80	0.179	9.0	1.667E+05	9.306E+05	42.6 ± 13.4
8	43	137	100	0.314	14.7	4.778E+05	1.522E+06	74.5 ± 13.1
9	25	64	49	0.391	14.0	5.669E+05	1.451E+06	92.6 ± 21.9
10	15	54	56	0.278	10.4	2.976E+05	1.071E+06	66.0 ± 19.3
11	28	84	32	0.333	28.2	9.722E+05	2.917E+06	79.1 ± 17.4
12	8	47	80	0.170	6.3	1.111E+05	6.528E+05	40.5 ± 15.5
13	13	67	49	0.194	14.7	2.948E+05	1.519E+06	46.2 ± 14.0
14	50	184	80	0.272	24.7	6.944E+05	2.556E+06	64.6 ± 10.4
15	35	114	80	0.307	15.3	4.861E+05	1.583E+06	72.9 ± 14.2
16	19	58	36	0.328	17.3	5.864E+05	1.790E+06	77.8 ± 20.6
17	42	170	63	0.247	29.0	7.407E+05	2.998E+06	58.7 ± 10.2
18	46	157	80	0.293	21.1	6.389E+05	2.181E+06	69.6 ± 11.8
19	34	117	56	0.291	22.5	6.746E+05	2.321E+06	69.0 ± 13.5
20	44	163	70	0.270	25.0	6.984E+05	2.587E+06	64.1 ± 11.0
	579	2163			17.9	4.945E+05	1.847E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.443 with 19 degrees of freedom
P(chi squared) = 42.9 %
Correlation Coefficient = 0.918
Variance of SQR(Ns) = 1.92
Variance of SQR(Ni) = 6.25

Ns/Ni = 0.268 ± 0.013
Mean Ratio = 0.269 ± 0.015

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 63.6 ± 3.3 Ma
CENTRAL AGE = 64.0 ± 3.9 Ma

ATIGUN PASS

Sample Locations and Apatite Yields - Atigun Pass

Table 16. Sample details and apatite yields for outcrop samples: Atigun Pass.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
90TM519A	68°07.5'	149°40.2'	(1860)/(*6100*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM525A	68°07.8'	149°28.7'	(1402)/(*4600*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM533A	68°07.8'	149°26.0'	(1220)/(*4000*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM545A	68°08.2'	149°30.1'	(1920)/(*6300*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM645B	68°19.0'	149°20.4'	(933)/(*3060*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM646A	68°07.7'	149°24.7'	(1646)/(*5400*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM647A	68°17.4'	149°10.0'	(1433)/(*4700*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM648A	68°17.6'	149°19.3'	(1585)/(*5200*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM649A	68°17.3'	149°20.8'	(1220)/(*4000*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90TM650A	68°07.7'	149°08.5'	(823)/(*2700*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
89POS101	68°07.3'	149°28.7'	(1402)/(*4600*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90POS23A	68°24.4'	149°19.5'	(854)/(*2800*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90POS24A	68°23.2'	149°19.3'	(854)/(*2800*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90POS25A	68°18.6'	149°22.3'	(915)/(*3000*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90POS26A	68°13.6'	149°25'.9	(976)/(*3200*)	Kanayut Conglomerate	Late Devonian-Early Miss	~350-377	Sandstone
90POS27A	68°07.8'	149°26.6'	(976)/(*3200*)	Noatak Sandstone	Late Devonian-Early Miss	~350-377	Sandstone

Sample Results - Atigun Pass

Typical yields for the samples were very good (>20 dateable grains) and in most cases 20-25 grains were counted on each mount. Due to relatively young ages and, in some cases, low uranium content (<10 ppm) only 7 of 16 mounts contained 100 or more confined tracks. Five mounts had less than 20 confined tracks. Most samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations. For these samples the pooled fission track age is presented. The mean age is presented for those samples where it was determined that the dated grains did not represent a single age population.

Table 17. Apatite fission track analytical results: Atigun Pass.

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
90TM519A	25	1.354	8.425	1.952	72.4	102.3 ± 5.7	18.9	14.01 ± 0.12	1.22
		(3047)	(549)	(1272)				(101)	
90TM525A	25	1.354	7.134	1.958	47.3	86.4 ± 4.9	18.9	13.90 ± 0.16	1.64
		(3047)	(504)	(1383)				(101)	
90TM533A	12	1.316	9.306	2.133	16.2	100.5 ± 6.7	21.2	13.93 ± 0.16	0.93
		(2961)	(366)	(839)				(34)	
90TM545A	11	1.316	8.391	1.910	0.2	101.1 ± 7.5	19.0	14.69 ± 0.18	1.06
		(2961)	(293)	(667)		*100.6 ± 12.8**		(34)	
90TM645B	20	1.316	0.128	3.568	44.9	82.4 ± 3.2	35.5	13.83 ± 0.12	1.26
		(2961)	(1342)	(3754)				(106)	
90TM646A	11	1.316	3.971	98.13	87.8	93.2 ± 11.0	9.8	14.07 ± 0.26	0.88
		(2961)	(104)	(257)				(11)	
90TM647A	20	1.316	7.442	2.193	2.1	78.3 ± 4.4	21.8	13.51 ± 0.14	1.37
		(2961)	(501)	(1476)		*82.3 ± 7.3**		(101)	
90TM648A	20	1.316	0.116	3.561	24.7	75.3 ± 3.8	35.5	13.78 ± 0.12	1.21
		(2961)	(642)	(1968)				(101)	
90TM649A	20	1.316	7.928	2.386	29.0	76.7 ± 3.9	23.7	13.34 ± 0.12	1.25
		(2961)	(660)	(1986)				(101)	
90TM650A	7	1.316	5.556	1.634	97.9	78.4 ± 15.7	16.3	13.27 ± 0.33	1.19
		(2961)	(34)	(100)				(13)	
89POS101A	20	2.548	0.142	6.363	1.8	99.5 ± 4.1	32.7	13.56 ± 0.15	1.46
		(5734)	(906)	(4060)		*99.8 ± 7.1**		(101)	
90POS23A	4	1.142	7.190	2.255	14.9	63.9 ± 7.1	25.9	13.21 ± 0.31	0.54
		(5146)	(110)	(345)				(3)	
90POS24A	25	1.142	9.475	2.598	32.9	73.0 ± 3.6	29.8	12.10 ± 0.31	2.24
		(5146)	(666)	(1826)				(52)	
90POS25A	25	1.142	8.647	2.343	26.3	73.9 ± 3.4	26.9	12.20 ± 0.25	1.76
		(5146)	(807)	(2187)				(50)	
90POS26A	17	1.142	7.221	2.202	2.1	65.7 ± 4.2	25.3	12.34 ± 0.75	2.37
		(5146)	(362)	(1104)		*75.4 ± 6.2**		(10)	
90POS27A	25	1.142	0.114	2.734	0.0	83.2 ± 4.0	31.4	13.60 ± 0.22	1.28
		(5146)	(738)	(1774)		*86.4 ± 6.3**		(33)	

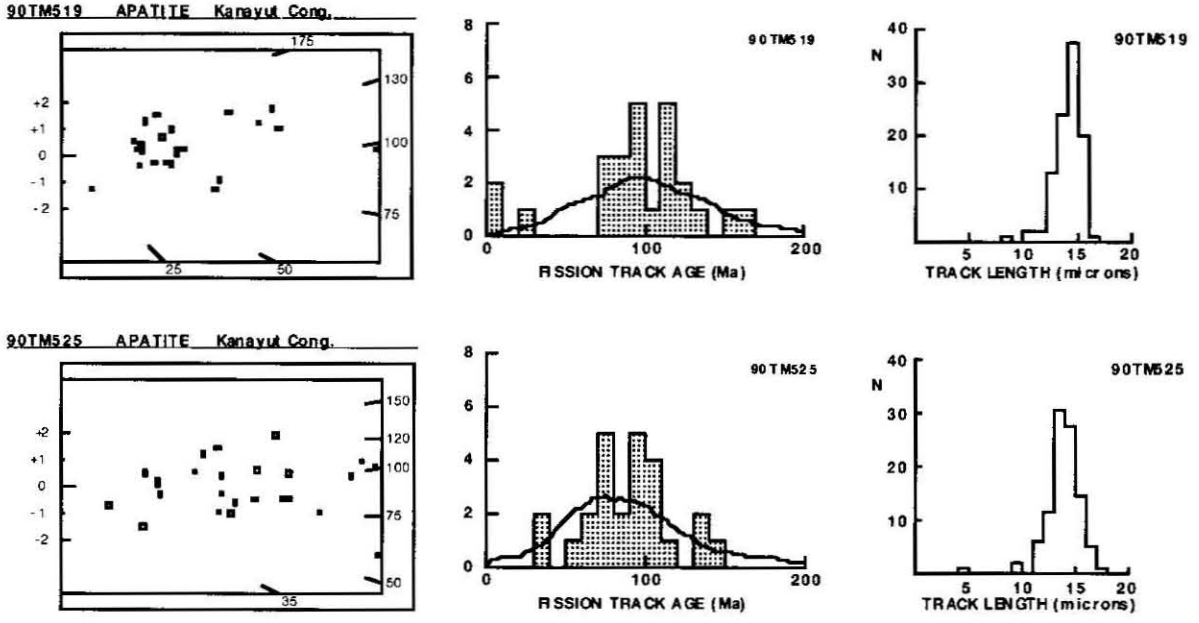
Length measurements by P. O'Sullivan

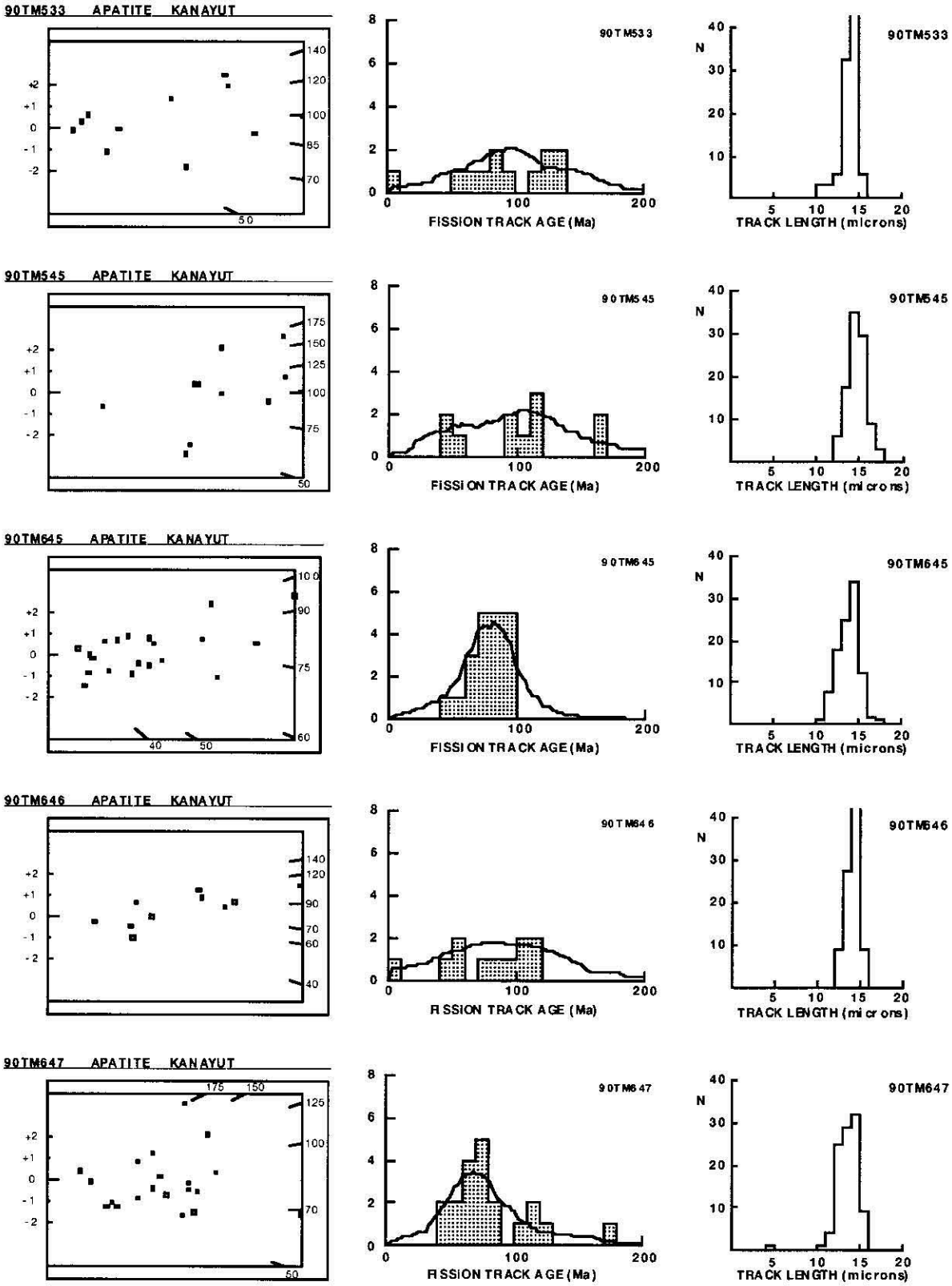
Table 18. Track length data: Atigun Pass.

Sample Number	Track Length Range (μm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
TM519A	0	0	0	0	1	0	2	2	13	24	38	20	1	0
TM525A	1	0	0	0	0	2	0	6	12	31	28	15	5	1
TM533A	0	0	0	0	0	0	1	1	2	11	17	2	0	0
TM545A	0	0	0	0	0	0	0	0	2	6	12	10	3	1
TM645B	0	0	0	0	0	0	1	8	19	26	36	13	2	1
TM646A	0	0	0	0	0	0	0	0	1	3	6	1	0	0
TM647A	1	0	0	0	0	0	1	4	25	29	32	9	0	0
TM648A	0	0	0	0	0	2	3	3	12	32	41	7	1	0
TM649A	0	0	0	1	0	0	3	10	20	34	30	3	0	0
TM650A	0	0	0	0	0	0	1	1	3	4	4	0	0	0
POS101A	0	0	0	0	0	1	3	10	23	25	21	13	5	0
POS23A	0	0	0	0	0	0	0	2	1	0	0	0	0	0
POS24A	1	0	1	0	2	4	3	9	12	11	7	2	0	0
POS25A	0	0	0	0	1	3	6	15	11	2	7	5	0	0
POS26A	0	0	0	1	0	1	1	0	2	2	3	0	0	0
POS27A	0	0	0	0	0	0	0	5	5	10	10	2	0	1

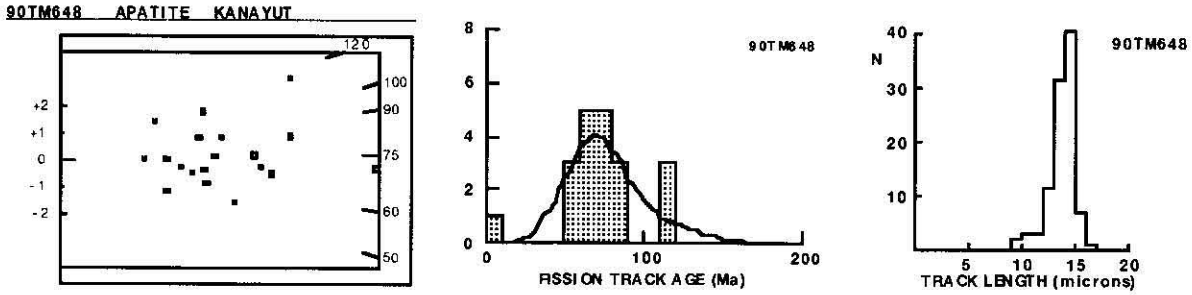
Length measurements by P. O'Sullivan

Single-Age and Track Length Distributions - Atigun Pass

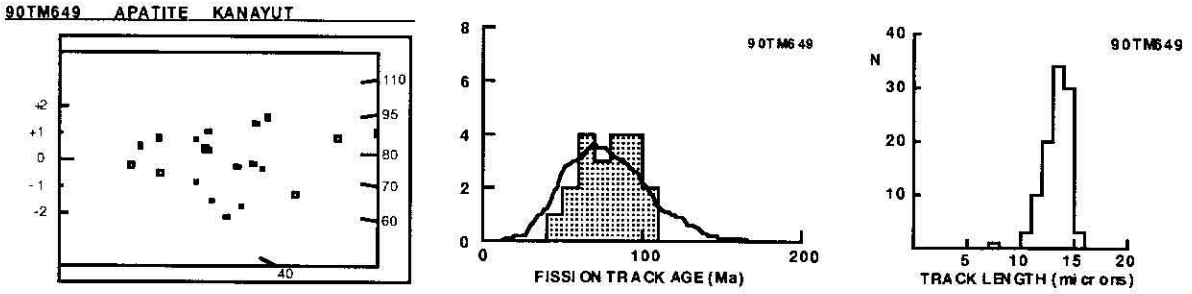



90TM533 APATITE KANAYUT
90TM533
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
90TM545 APATITE KANAYUT
90TM545
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
90TM645 APATITE KANAYUT
90TM645
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
90TM646 APATITE KANAYUT
90TM646
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
90TM647 APATITE KANAYUT
90TM647
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)

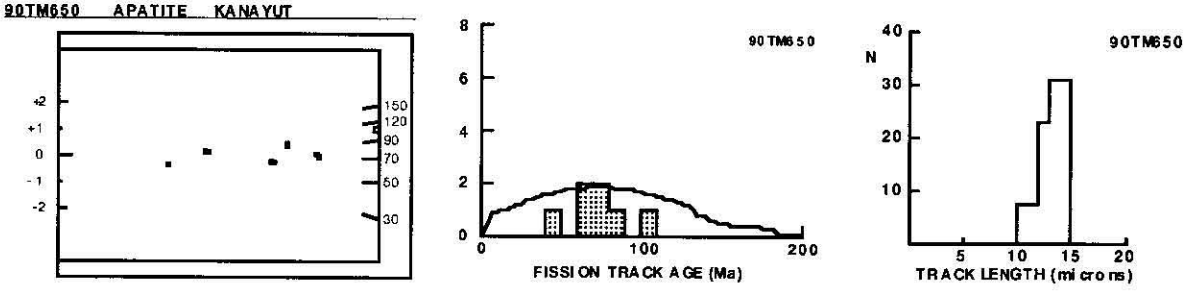
90TM648 APATITE KANAYUT



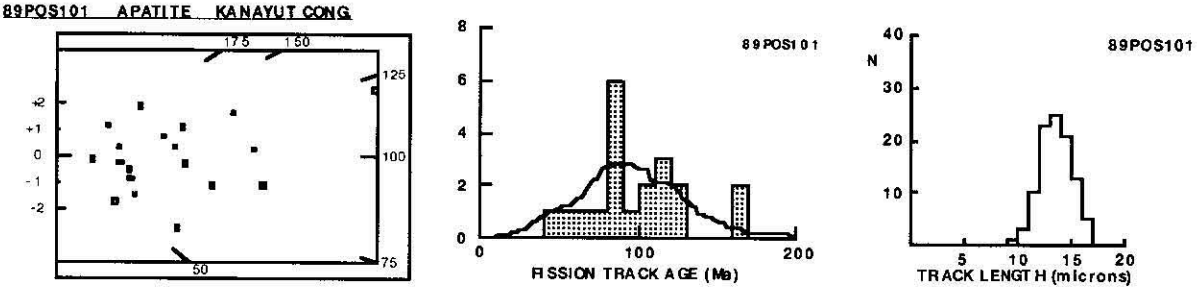
90TM649 APATITE KANAYUT



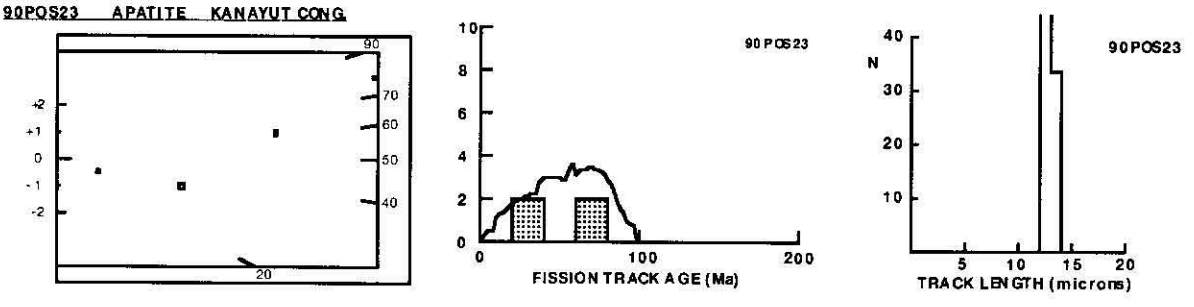
90TM650 APATITE KANAYUT

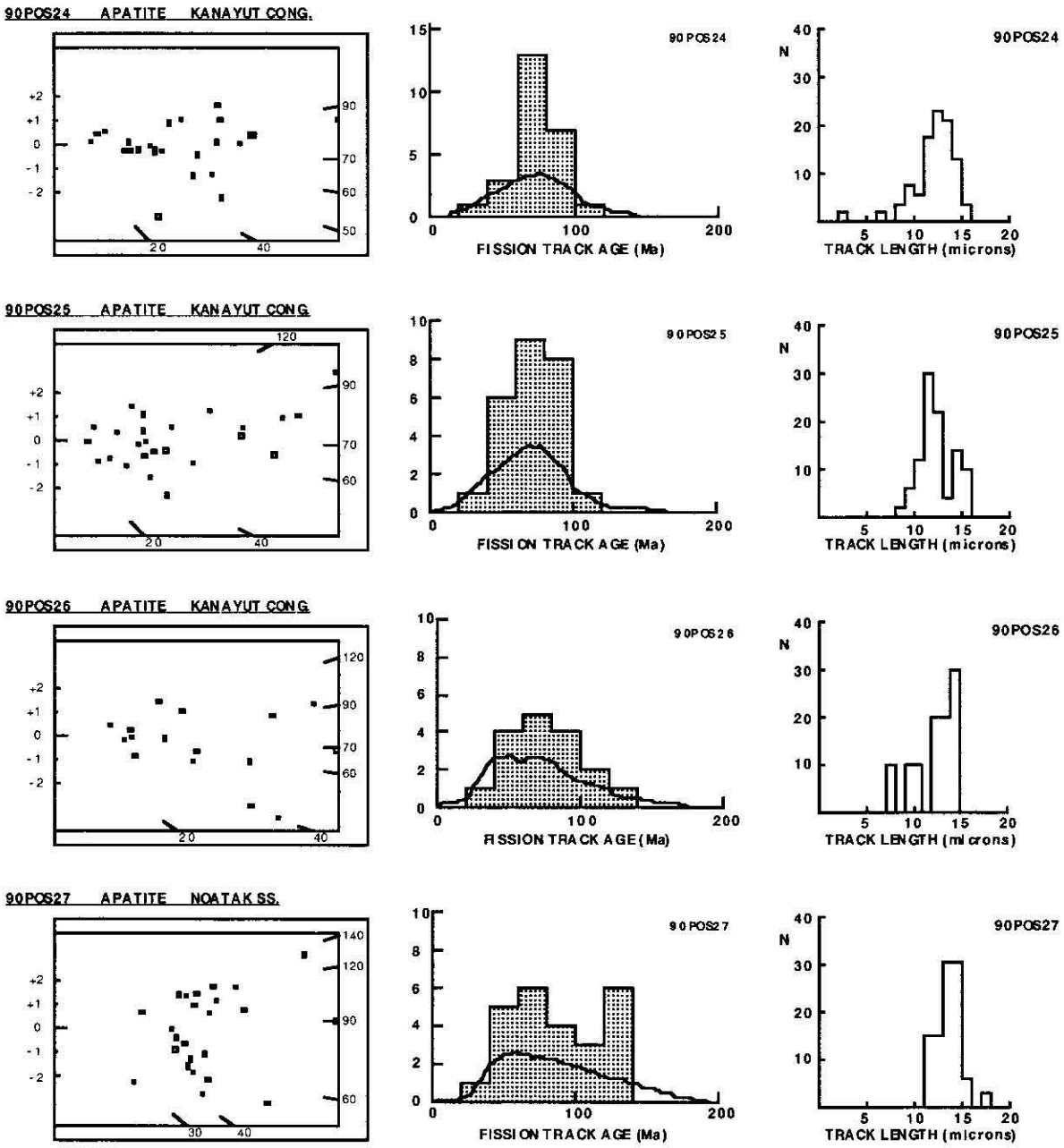


89POS101 APATITE KANAYUT CONG



90POS23 APATITE KANAYUT CONG





Age Sheets - Atigun Pass

90TM519A - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 14
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	10	15	25	0.667	6.4	4.444E+05	6.667E+05	157.3 ± 64.3
2	0	5	25	0.000	2.1	0.000E+00	2.222E+05	0.0 ± 0.0
3	58	124	36	0.468	37.0	1.790E+06	3.827E+06	110.7 ± 17.8
4	7	16	12	0.438	14.3	6.481E+05	1.481E+06	103.6 ± 47.0
5	28	86	30	0.326	30.8	1.037E+06	3.185E+06	77.3 ± 16.9
6	37	66	25	0.561	28.4	1.644E+06	2.933E+06	132.5 ± 27.4
7	0	3	6	0.000	5.4	0.000E+00	5.556E+05	0.0 ± 0.0
8	8	19	9	0.421	22.7	9.877E+05	2.346E+06	99.8 ± 42.1
9	16	40	18	0.400	23.9	9.877E+05	2.469E+06	94.8 ± 28.1
10	117	284	42	0.412	72.7	3.095E+06	7.513E+06	97.6 ± 11.0
11	13	36	30	0.361	12.9	4.815E+05	1.333E+06	85.7 ± 27.8
12	26	87	24	0.299	39.0	1.204E+06	4.028E+06	71.0 ± 15.9
13	57	107	49	0.533	23.5	1.293E+06	2.426E+06	126.0 ± 20.9
14	8	17	30	0.471	6.1	2.963E+05	6.296E+05	111.4 ± 47.8
15	16	30	56	0.533	5.8	3.175E+05	5.952E+05	126.1 ± 39.2
16	7	14	24	0.500	6.3	3.241E+05	6.481E+05	118.3 ± 54.8
17	18	43	28	0.419	16.5	7.143E+05	1.706E+06	99.2 ± 27.9
18	49	99	35	0.495	30.4	1.556E+06	3.143E+06	117.1 ± 20.6
19	1	10	16	0.100	6.7	6.944E+04	6.944E+05	23.8 ± 25.0
20	14	39	49	0.359	8.6	3.175E+05	8.844E+05	85.2 ± 26.6
21	16	38	60	0.421	6.8	2.963E+05	7.037E+05	99.8 ± 29.8
22	13	19	16	0.684	12.8	9.028E+05	1.319E+06	161.4 ± 58.2
23	7	21	25	0.333	9.0	3.111E+05	9.333E+05	79.1 ± 34.6
24	13	26	24	0.500	11.6	6.019E+05	1.204E+06	118.3 ± 40.3
25	10	28	30	0.357	10.0	3.704E+05	1.037E+06	84.7 ± 31.3
	549	1272			18.9	8.425E+05	1.952E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.510 with 24 degrees of freedom
P(chi squared) = 72.4 %
Correlation Coefficient = 0.981
Variance of SQR(Ns) = 5.81
Variance of SQR(Ni) = 11.22

Ns/Ni = 0.432 ± 0.022
Mean Ratio = 0.402 ± 0.034

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 102.3 ± 5.7 Ma
CENTRAL AGE = 95.4 ± 8.3 Ma

90TM525A - KANAYUT CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 15
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	10	22	50	0.455	4.7	2.222E+05	4.889E+05	107.6 ± 41.1
2	48	193	25	0.249	83.0	2.133E+06	8.578E+06	59.1 ± 9.6
3	15	48	24	0.312	21.5	6.944E+05	2.222E+06	74.2 ± 22.0
4	21	48	24	0.438	21.5	9.722E+05	2.222E+06	103.6 ± 27.2
5	49	112	45	0.438	26.8	1.210E+06	2.765E+06	103.6 ± 17.9
6	15	25	25	0.600	10.7	6.667E+05	1.111E+06	141.7 ± 46.4
7	33	107	70	0.308	16.4	5.238E+05	1.698E+06	73.2 ± 14.7
8	5	16	9	0.312	19.1	6.173E+05	1.975E+06	74.2 ± 38.1
9	3	21	20	0.143	11.3	1.667E+05	1.167E+06	34.0 ± 21.0
10	14	51	42	0.274	13.1	3.704E+05	1.349E+06	65.2 ± 19.7
11	28	48	20	0.583	25.8	1.556E+06	2.667E+06	137.8 ± 32.9
12	45	112	30	0.402	40.1	1.667E+06	4.148E+06	95.2 ± 17.0
13	28	67	15	0.418	48.0	2.074E+06	4.963E+06	99.0 ± 22.4
14	5	12	12	0.417	10.7	4.630E+05	1.111E+06	98.7 ± 52.6
15	27	80	24	0.338	35.8	1.250E+06	3.704E+06	80.1 ± 17.9
16	13	38	24	0.342	17.0	6.019E+05	1.759E+06	81.2 ± 26.2
17	1	6	60	0.167	1.1	1.852E+04	1.111E+05	39.7 ± 42.9
18	4	8	30	0.500	2.9	1.481E+05	2.963E+05	118.3 ± 72.5
19	12	21	28	0.571	8.1	4.762E+05	8.333E+05	135.0 ± 49.0
20	53	126	30	0.421	45.1	1.963E+06	4.667E+06	99.7 ± 16.5
21	12	44	49	0.273	9.7	2.721E+05	9.977E+05	64.8 ± 21.2
22	25	75	30	0.333	26.9	9.259E+05	2.778E+06	79.1 ± 18.4
23	5	13	48	0.385	2.9	1.157E+05	3.009E+05	91.2 ± 48.0
24	19	57	35	0.333	17.5	6.032E+05	1.810E+06	79.1 ± 21.0
25	14	33	16	0.424	22.2	9.722E+05	2.292E+06	100.5 ± 32.1
	504	1383			18.9	7.134E+05	1.958E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 23.799 with 24 degrees of freedom
P(chi squared) = 47.3 %
Correlation Coefficient = 0.925
Variance of SQR(Ns) = 3.06
Variance of SQR(Ni) = 8.53

Ns/Ni = 0.364 ± 0.019
Mean Ratio = 0.377 ± 0.023

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 86.4 ± 4.9 Ma
CENTRAL AGE = 89.5 ± 5.9 Ma

90TM533A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 1
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	2	16	0.000	1.4	0.000E+00	1.389E+05	0.0 ± 0.0
2	5	22	28	0.227	8.7	1.984E+05	8.730E+05	52.5 ± 26.1
3	1	3	16	0.333	2.1	6.944E+04	2.083E+05	76.9 ± 88.8
4	69	178	42	0.388	46.9	1.825E+06	4.709E+06	89.3 ± 12.8
5	107	250	70	0.428	39.5	1.698E+06	3.968E+06	98.6 ± 11.6
6	3	5	12	0.600	4.6	2.778E+05	4.630E+05	137.8 ± 100.7
7	2	4	8	0.500	5.5	2.778E+05	5.556E+05	115.0 ± 99.6
8	28	103	80	0.272	14.2	3.889E+05	1.431E+06	62.8 ± 13.5
9	27	49	30	0.551	18.1	1.000E+06	1.815E+06	126.6 ± 30.5
10	58	97	50	0.598	21.5	1.289E+06	2.156E+06	137.3 ± 23.0
11	8	21	60	0.381	3.9	1.481E+05	3.889E+05	87.8 ± 36.5
12	58	105	25	0.552	46.5	2.578E+06	4.667E+06	126.9 ± 21.0
	366	839			21.2	9.306E+05	2.133E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 15.468 with 11 degrees of freedom
P(chi squared) = 16.2 %
Correlation Coefficient = 0.969
Variance of SQR(Ns) = 11.52
Variance of SQR(Ni) = 24.02

Ns/Ni = 0.436 ± 0.027
Mean Ratio = 0.403 ± 0.051

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 100.5 ± 6.7 Ma
CENTRAL AGE = 92.7 ± 12.0 Ma

90TM545A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 2
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	45	90	28	0.500	35.6	1.786E+06	3.571E+06	115.0 ± 21.2
2	28	38	20	0.737	21.0	1.556E+06	2.111E+06	168.8 ± 42.2
3	13	63	18	0.206	38.7	8.025E+05	3.889E+06	47.7 ± 14.6
4	49	112	60	0.438	20.6	9.074E+05	2.074E+06	100.7 ± 17.4
5	50	71	25	0.704	31.4	2.222E+06	3.156E+06	161.4 ± 30.0
6	2	8	6	0.250	14.7	3.704E+05	1.481E+06	57.8 ± 45.7
7	12	69	40	0.174	19.1	3.333E+05	1.917E+06	40.2 ± 12.6
8	36	90	25	0.400	39.8	1.600E+06	4.000E+06	92.2 ± 18.3
9	23	54	36	0.426	16.6	7.099E+05	1.667E+06	98.1 ± 24.5
10	18	37	80	0.486	5.1	2.500E+05	5.139E+05	111.9 ± 32.3
11	17	35	50	0.486	7.7	3.778E+05	7.778E+05	111.7 ± 33.1
	293	667			19.0	8.391E+05	1.910E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 28.449 with 10 degrees of freedom
P(chi squared) = 0.2 %
Correlation Coefficient = 0.771
Variance of SQR(Ns) = 3.07
Variance of SQR(Ni) = 4.72

Ns/Ni = 0.439 ± 0.031
Mean Ratio = 0.437 ± 0.055

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 101.1 ± 7.5 Ma
CENTRAL AGE = 100.6 ± 12.8 Ma

90TM645B - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	40	128	40	0.312	35.4	1.111E+06	3.556E+06	72.1 ± 13.2
2	49	159	49	0.308	35.9	1.111E+06	3.605E+06	71.1 ± 11.7
3	310	763	100	0.406	84.4	3.444E+06	8.478E+06	93.6 ± 6.7
4	18	66	100	0.273	7.3	2.000E+05	7.333E+05	63.0 ± 16.8
5	56	154	40	0.364	42.6	1.556E+06	4.278E+06	83.8 ± 13.2
6	25	63	20	0.397	34.8	1.389E+06	3.500E+06	91.4 ± 21.7
7	6	34	81	0.176	4.6	8.230E+04	4.664E+05	40.8 ± 18.1
8	137	319	100	0.429	35.3	1.522E+06	3.544E+06	98.9 ± 10.4
9	17	42	28	0.405	16.6	6.746E+05	1.667E+06	93.3 ± 26.9
10	34	121	30	0.281	44.6	1.259E+06	4.481E+06	64.9 ± 12.7
11	53	139	30	0.381	51.2	1.963E+06	5.148E+06	87.9 ± 14.3
12	136	449	60	0.303	82.8	2.519E+06	8.315E+06	69.9 ± 7.0
13	34	84	100	0.405	9.3	3.778E+05	9.333E+05	93.3 ± 19.1
14	213	606	90	0.351	74.5	2.630E+06	7.481E+06	81.1 ± 6.7
15	9	27	80	0.333	3.7	1.250E+05	3.750E+05	76.9 ± 29.7
16	8	34	30	0.235	12.5	2.963E+05	1.259E+06	54.4 ± 21.4
17	5	13	30	0.385	4.8	1.852E+05	4.815E+05	88.6 ± 46.7
18	63	194	49	0.325	43.8	1.429E+06	4.399E+06	74.9 ± 11.0
19	10	32	42	0.312	8.4	2.646E+05	8.466E+05	72.1 ± 26.2
20	119	327	70	0.364	51.7	1.889E+06	5.190E+06	83.9 ± 9.2
	1342	3754			35.5	1.276E+06	3.568E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.118 with 19 degrees of freedom
P(chi squared) = 44.9 %
Correlation Coefficient = 0.990
Variance of SQR(Ns) = 18.16
Variance of SQR(Ni) = 45.68

Ns/Ni = 0.357 ± 0.011
Mean Ratio = 0.337 ± 0.014

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 82.4 ± 3.2 Ma
CENTRAL AGE = 77.8 ± 3.8 Ma

90TM646A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 4
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	5	15	18	0.333	9.2	3.086E+05	9.259E+05	76.9 ± 39.8
2	15	39	20	0.385	21.6	8.333E+05	2.167E+06	88.6 ± 27.0
3	4	8	48	0.500	1.8	9.259E+04	1.852E+05	115.0 ± 70.5
4	12	23	27	0.522	9.4	4.938E+05	9.465E+05	120.0 ± 42.8
5	32	69	56	0.464	13.6	6.349E+05	1.369E+06	106.7 ± 23.0
6	3	12	12	0.250	11.1	2.778E+05	1.111E+06	57.8 ± 37.3
7	12	26	25	0.462	11.5	5.333E+05	1.156E+06	106.2 ± 37.2
8	0	3	16	0.000	2.1	0.000E+00	2.083E+05	0.0 ± 0.0
9	1	4	9	0.250	4.9	1.235E+05	4.938E+05	57.8 ± 64.6
10	3	17	18	0.176	10.4	1.852E+05	1.049E+06	40.8 ± 25.6
11	17	41	42	0.415	10.8	4.497E+05	1.085E+06	95.5 ± 27.6
	104	257			9.8	3.971E+05	9.813E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 5.187 with 10 degrees of freedom
P(chi squared) = 87.8 %
Correlation Coefficient = 0.983
Variance of SQR(Ns) = 2.61
Variance of SQR(Ni) = 3.99

Ns/Ni = 0.405 ± 0.047
Mean Ratio = 0.341 ± 0.048

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 93.2 ± 11.0 Ma
CENTRAL AGE = 78.8 ± 11.3 Ma

90TM647A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	7	33	49	0.212	7.4	1.587E+05	7.483E+05	49.0 ± 20.4
2	2	4	35	0.500	1.3	6.349E+04	1.270E+05	115.0 ± 99.6
3	6	27	30	0.222	10.0	2.222E+05	1.000E+06	51.4 ± 23.2
4	20	54	40	0.370	14.9	5.556E+05	1.500E+06	85.4 ± 22.4
5	3	9	42	0.333	2.4	7.936E+04	2.381E+05	76.9 ± 51.3
6	38	50	70	0.760	7.9	6.032E+05	7.936E+05	174.0 ± 37.7
7	31	90	36	0.344	27.7	9.568E+05	2.778E+06	79.4 ± 16.6
8	17	53	42	0.321	14.0	4.497E+05	1.402E+06	74.0 ± 20.7
9	45	86	20	0.523	47.6	2.500E+06	4.778E+06	120.3 ± 22.3
10	19	38	49	0.500	8.6	4.308E+05	8.617E+05	115.0 ± 32.4
11	12	45	25	0.267	19.9	5.333E+05	2.000E+06	61.6 ± 20.1
12	14	30	36	0.467	9.2	4.321E+05	9.259E+05	107.4 ± 34.9
13	34	106	36	0.321	32.6	1.049E+06	3.272E+06	74.0 ± 14.7
14	21	70	36	0.300	21.5	6.481E+05	2.160E+06	69.2 ± 17.3
15	31	118	45	0.263	29.0	7.654E+05	2.914E+06	60.7 ± 12.3
16	30	93	36	0.323	28.6	9.259E+05	2.870E+06	74.4 ± 15.7
17	26	104	30	0.250	38.3	9.630E+05	3.852E+06	57.8 ± 12.7
18	45	119	25	0.378	52.6	2.000E+06	5.289E+06	87.2 ± 15.4
19	95	321	48	0.296	74.0	2.199E+06	7.431E+06	68.3 ± 8.1
20	5	26	18	0.192	16.0	3.086E+05	1.605E+06	44.5 ± 21.7
	501	1476			21.8	7.442E+05	2.193E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 33.554 with 19 degrees of freedom
P(chi squared) = 2.1 %
Correlation Coefficient = 0.940
Variance of SQR(Ns) = 4.05
Variance of SQR(Ni) = 11.95

Ns/Ni = 0.339 ± 0.018
Mean Ratio = 0.357 ± 0.030

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 78.3 ± 4.4 Ma
CENTRAL AGE = 82.3 ± 7.3 Ma

90TM648A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	27	83	48	0.325	19.1	6.250E+05	1.921E+06	75.1 ± 16.7
2	16	55	25	0.291	24.3	7.111E+05	2.444E+06	67.2 ± 19.1
3	43	132	25	0.326	58.4	1.911E+06	5.867E+06	75.2 ± 13.3
4	111	361	45	0.307	88.7	2.741E+06	8.914E+06	71.0 ± 7.9
5	13	41	30	0.317	15.1	4.815E+05	1.519E+06	73.2 ± 23.4
6	12	23	36	0.522	7.1	3.704E+05	7.099E+05	120.0 ± 42.8
7	68	136	16	0.500	94.0	4.722E+06	9.444E+06	115.0 ± 17.3
8	31	82	15	0.378	60.5	2.296E+06	6.074E+06	87.1 ± 18.5
9	23	59	24	0.390	27.2	1.065E+06	2.731E+06	89.8 ± 22.2
10	45	149	25	0.302	65.9	2.000E+06	6.622E+06	69.7 ± 12.0
11	23	89	32	0.258	30.8	7.986E+05	3.090E+06	59.7 ± 14.0
12	19	68	25	0.279	30.1	8.444E+05	3.022E+06	64.5 ± 16.8
13	12	55	45	0.218	13.5	2.963E+05	1.358E+06	50.4 ± 16.1
14	26	54	9	0.481	66.4	3.210E+06	6.667E+06	110.8 ± 26.6
15	49	168	35	0.292	53.1	1.556E+06	5.333E+06	67.3 ± 11.0
16	32	138	30	0.232	50.9	1.185E+06	5.111E+06	53.6 ± 10.6
17	61	168	15	0.363	123.9	4.519E+06	1.244E+07	83.7 ± 12.7
18	0	3	48	0.000	0.7	0.000E+00	6.944E+04	0.0 ± 0.0
19	8	25	56	0.320	4.9	1.587E+05	4.960E+05	73.8 ± 30.0
20	23	79	30	0.291	29.1	8.519E+05	2.926E+06	67.2 ± 16.0
	642	1968			35.5	1.162E+06	3.561E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 22.775 with 19 degrees of freedom
P(chi squared) = 24.7 %
Correlation Coefficient = 0.957
Variance of SQR(Ns) = 5.06
Variance of SQR(Ni) = 13.95

Ns/Ni = 0.326 ± 0.015
Mean Ratio = 0.320 ± 0.025

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 75.3 ± 3.8 Ma
CENTRAL AGE = 73.8 ± 6.0 Ma

90TM649A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	42	98	30	0.429	36.1	1.556E+06	3.630E+06	98.7 ± 18.3
2	20	49	15	0.408	36.1	1.481E+06	3.630E+06	94.0 ± 25.0
3	22	60	45	0.367	14.7	5.432E+05	1.481E+06	84.5 ± 21.2
4	48	109	50	0.440	24.1	1.067E+06	2.422E+06	101.4 ± 17.7
5	5	17	18	0.294	10.4	3.086E+05	1.049E+06	67.9 ± 34.6
6	18	68	35	0.265	21.5	5.714E+05	2.159E+06	61.1 ± 16.3
7	32	101	64	0.317	17.5	5.556E+05	1.753E+06	73.1 ± 14.9
8	22	95	80	0.232	13.1	3.056E+05	1.319E+06	53.5 ± 12.7
9	23	63	30	0.365	23.2	8.519E+05	2.333E+06	84.2 ± 20.6
10	24	56	30	0.429	20.6	8.889E+05	2.074E+06	98.7 ± 24.2
11	105	278	60	0.378	51.2	1.944E+06	5.148E+06	87.1 ± 10.2
12	31	131	80	0.237	18.1	4.306E+05	1.819E+06	54.7 ± 11.0
13	10	36	30	0.278	13.3	3.704E+05	1.333E+06	64.1 ± 23.0
14	81	217	35	0.373	68.6	2.571E+06	6.889E+06	86.0 ± 11.4
15	41	130	70	0.315	20.5	6.508E+05	2.063E+06	72.8 ± 13.1
16	38	117	100	0.325	12.9	4.222E+05	1.300E+06	74.9 ± 14.1
17	26	123	49	0.211	27.8	5.896E+05	2.789E+06	48.9 ± 10.6
18	11	25	25	0.440	11.1	4.889E+05	1.111E+06	101.3 ± 36.7
19	7	17	9	0.412	20.9	8.642E+05	2.099E+06	94.9 ± 42.7
20	54	196	70	0.276	31.0	8.571E+05	3.111E+06	63.6 ± 9.9
	660	1986			23.7	7.928E+05	2.386E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 21.893 with 19 degrees of freedom
P(chi squared) = 29.0 %
Correlation Coefficient = 0.950
Variance of SQR(Ns) = 4.02
Variance of SQR(Ni) = 11.56

Ns/Ni = 0.332 ± 0.015
Mean Ratio = 0.339 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 76.7 ± 3.9 Ma
CENTRAL AGE = 78.3 ± 4.3 Ma

90TM650A - KANAYUT CONGLOMERATE

IRRADIATION LU126
SLIDE NUMBER 8
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	6	16	0.333	4.1	1.389E+05	4.167E+05	76.9 ± 62.8
2	5	13	4	0.385	35.9	1.389E+06	3.611E+06	88.6 ± 46.7
3	6	19	9	0.316	23.3	7.407E+05	2.346E+06	72.9 ± 34.2
4	6	20	6	0.300	36.9	1.111E+06	3.704E+06	69.2 ± 32.3
5	1	5	9	0.200	6.1	1.235E+05	6.173E+05	46.2 ± 50.7
6	10	22	9	0.455	27.0	1.235E+06	2.716E+06	104.6 ± 40.0
7	4	15	15	0.267	11.1	2.963E+05	1.111E+06	61.6 ± 34.7
	34	100			16.3	5.556E+05	1.634E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 1.164 with 6 degrees of freedom
P(chi squared) = 97.9 %
Correlation Coefficient = 0.921
Variance of SQR(Ns) = 0.51
Variance of SQR(Ni) = 0.96

Ns/Ni = 0.340 ± 0.067
Mean Ratio = 0.322 ± 0.031

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.316E+06cm-2; ND = 2961

POOLED AGE = 78.4 ± 15.7 Ma
CENTRAL AGE = 74.3 ± 7.3 Ma

89POS101A - KANAYUT CONGLOMERATE

IRRADIATION LU043
SLIDE NUMBER 11
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	95	483	49	0.197	56.3	2.154E+06	1.095E+07	87.8 ± 10.0
2	12	71	25	0.169	16.2	5.333E+05	3.156E+06	75.5 ± 23.6
3	27	103	15	0.262	39.2	2.000E+06	7.630E+06	116.7 ± 25.3
4	9	45	28	0.200	9.2	3.571E+05	1.786E+06	89.2 ± 32.6
5	89	388	50	0.229	44.3	1.978E+06	8.622E+06	102.3 ± 12.2
6	13	91	35	0.143	14.9	4.127E+05	2.889E+06	63.9 ± 19.0
7	31	234	50	0.132	26.7	6.889E+05	5.200E+06	59.3 ± 11.4
8	3	15	10	0.200	8.6	3.333E+05	1.667E+06	89.2 ± 56.5
9	7	19	16	0.368	6.8	4.861E+05	1.319E+06	163.5 ± 72.3
10	240	896	64	0.268	80.0	4.167E+06	1.556E+07	119.2 ± 9.0
11	75	272	60	0.276	25.9	1.389E+06	5.037E+06	122.7 ± 16.2
12	9	36	10	0.250	20.6	1.000E+06	4.000E+06	111.4 ± 41.6
13	18	48	21	0.375	13.1	9.524E+05	2.540E+06	166.3 ± 46.1
14	37	176	16	0.210	62.8	2.569E+06	1.222E+07	93.8 ± 17.1
15	12	64	50	0.188	7.3	2.667E+05	1.422E+06	83.7 ± 26.4
16	54	286	80	0.189	20.4	7.500E+05	3.972E+06	84.3 ± 12.6
17	7	63	60	0.111	6.0	1.296E+05	1.167E+06	49.7 ± 19.8
18	98	497	32	0.197	88.7	3.403E+06	1.726E+07	88.0 ± 9.9
19	38	139	18	0.273	44.1	2.346E+06	8.580E+06	121.7 ± 22.4
20	32	134	20	0.239	38.3	1.778E+06	7.444E+06	106.4 ± 21.0
	906	4060			32.7	1.420E+06	6.363E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 34.177 with 19 degrees of freedom
P(chi squared) = 1.8 %
Correlation Coefficient = 0.978
Variance of SQR(Ns) = 11.63
Variance of SQR(Ni) = 47.69

Ns/Ni = 0.223 ± 0.008
Mean Ratio = 0.224 ± 0.015

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 2.548E+06cm-2; ND = 5734

POOLED AGE = 99.5 ± 4.1 Ma
CENTRAL AGE = 99.8 ± 7.1 Ma

90POS23A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 2
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	7	50	0.143	1.8	2.222E+04	1.556E+05	28.7 ± 30.7
2	69	182	40	0.379	58.0	1.917E+06	5.056E+06	75.9 ± 10.8
3	9	53	40	0.170	16.9	2.500E+05	1.472E+06	34.1 ± 12.3
4	31	103	40	0.301	32.8	8.611E+05	2.861E+06	60.3 ± 12.4
	110	345			25.9	7.190E+05	2.255E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 5.334 with 3 degrees of freedom
P(chi squared) = 14.9 %
Correlation Coefficient = 0.986
Variance of SQR(Ns) = 10.04
Variance of SQR(Ni) = 21.11

Ns/Ni = 0.319 ± 0.035
Mean Ratio = 0.248 ± 0.056

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 63.9 ± 7.1 Ma
CENTRAL AGE = 49.8 ± 11.2 Ma

90POS24A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	13	36	35	0.361	13.1	4.127E+05	1.143E+06	72.3 ± 23.4
2	16	47	12	0.340	49.9	1.481E+06	4.352E+06	68.2 ± 19.8
3	4	8	30	0.500	3.4	1.481E+05	2.963E+05	99.9 ± 61.2
4	20	42	24	0.476	22.3	9.259E+05	1.944E+06	95.2 ± 25.9
5	114	272	48	0.419	72.2	2.639E+06	6.296E+06	83.9 ± 9.5
6	7	21	36	0.333	7.4	2.160E+05	6.481E+05	66.8 ± 29.2
7	25	91	35	0.275	33.1	7.936E+05	2.889E+06	55.1 ± 12.5
8	35	143	20	0.245	91.1	1.944E+06	7.944E+06	49.1 ± 9.3
9	13	86	32	0.151	34.3	4.514E+05	2.986E+06	30.4 ± 9.1
10	54	136	25	0.397	69.3	2.400E+06	6.044E+06	79.5 ± 12.9
11	2	5	24	0.400	2.7	9.259E+04	2.315E+05	80.1 ± 67.0
12	8	24	21	0.333	14.6	4.233E+05	1.270E+06	66.8 ± 27.3
13	14	40	30	0.350	17.0	5.185E+05	1.481E+06	70.1 ± 21.8
14	14	42	35	0.333	15.3	4.444E+05	1.333E+06	66.8 ± 20.7
15	48	128	48	0.375	34.0	1.111E+06	2.963E+06	75.1 ± 12.8
16	24	50	12	0.480	53.1	2.222E+06	4.630E+06	96.0 ± 23.9
17	28	82	25	0.341	41.8	1.244E+06	3.644E+06	68.4 ± 15.0
18	41	80	21	0.512	48.6	2.169E+06	4.233E+06	102.4 ± 19.8
19	10	29	24	0.345	15.4	4.630E+05	1.343E+06	69.1 ± 25.4
20	56	141	56	0.397	32.1	1.111E+06	2.798E+06	79.5 ± 12.7
21	8	21	42	0.381	6.4	2.116E+05	5.556E+05	76.3 ± 31.7
22	40	88	50	0.455	22.4	8.889E+05	1.956E+06	90.9 ± 17.4
23	3	6	32	0.500	2.4	1.042E+05	2.083E+05	99.9 ± 70.7
24	32	110	36	0.291	38.9	9.877E+05	3.395E+06	58.3 ± 11.8
25	37	98	28	0.378	44.6	1.468E+06	3.889E+06	75.6 ± 14.7
	666	1826			29.8	9.475E+05	2.598E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 26.480 with 24 degrees of freedom
P(chi squared) = 32.9 %
Correlation Coefficient = 0.954
Variance of SQR(Ns) = 4.63
Variance of SQR(Ni) = 12.02

Ns/Ni = 0.365 ± 0.017
Mean Ratio = 0.375 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 73.0 ± 3.6 Ma
CENTRAL AGE = 75.0 ± 3.7 Ma

90POS25A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 4
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	143	302	50	0.474	77.0	3.178E+06	6.711E+06	94.7 ± 9.8
2	19	97	72	0.196	17.2	2.932E+05	1.497E+06	39.3 ± 9.9
3	8	35	25	0.229	17.8	3.556E+05	1.556E+06	45.9 ± 18.0
4	89	223	60	0.399	47.4	1.648E+06	4.130E+06	79.9 ± 10.1
5	43	97	40	0.443	30.9	1.194E+06	2.694E+06	88.7 ± 16.3
6	16	52	72	0.308	9.2	2.469E+05	8.025E+05	61.7 ± 17.7
7	12	20	25	0.600	10.2	5.333E+05	8.889E+05	119.7 ± 43.8
8	14	35	25	0.400	17.8	6.222E+05	1.556E+06	80.1 ± 25.4
9	12	36	60	0.333	7.6	2.222E+05	6.667E+05	66.8 ± 22.3
10	59	162	54	0.364	38.2	1.214E+06	3.333E+06	72.9 ± 11.2
11	3	15	49	0.200	3.9	6.803E+04	3.401E+05	40.2 ± 25.4
12	102	255	56	0.400	58.0	2.024E+06	5.060E+06	80.1 ± 9.5
13	2	6	30	0.333	2.5	7.407E+04	2.222E+05	66.8 ± 54.5
14	20	63	40	0.317	20.1	5.556E+05	1.750E+06	63.6 ± 16.4
15	5	21	30	0.238	8.9	1.852E+05	7.778E+05	47.8 ± 23.8
16	31	107	42	0.290	32.5	8.201E+05	2.831E+06	58.1 ± 11.9
17	7	17	36	0.412	6.0	2.160E+05	5.247E+05	82.4 ± 37.0
18	3	6	24	0.500	3.2	1.389E+05	2.778E+05	99.9 ± 70.7
19	79	241	42	0.328	73.1	2.090E+06	6.376E+06	65.7 ± 8.6
20	60	157	32	0.382	62.5	2.083E+06	5.451E+06	76.5 ± 11.7
21	14	63	36	0.222	22.3	4.321E+05	1.944E+06	44.6 ± 13.2
22	24	60	18	0.400	42.5	1.481E+06	3.704E+06	80.1 ± 19.4
23	15	30	30	0.500	12.7	5.556E+05	1.111E+06	99.9 ± 31.7
24	13	46	54	0.283	10.9	2.675E+05	9.465E+05	56.7 ± 17.8
25	14	41	35	0.341	14.9	4.444E+05	1.302E+06	68.4 ± 21.2
	807	2187			26.9	8.647E+05	2.343E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 27.928 with 24 degrees of freedom
P(chi squared) = 26.3 %
Correlation Coefficient = 0.977
Variance of SQR(Ns) = 8.05
Variance of SQR(Ni) = 18.75

Ns/Ni = 0.369 ± 0.015
Mean Ratio = 0.356 ± 0.020

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 73.9 ± 3.4 Ma
CENTRAL AGE = 71.2 ± 4.3 Ma

90POS26A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	59	128	36	0.461	45.3	1.821E+06	3.951E+06	92.2 ± 14.6
2	5	14	32	0.357	5.6	1.736E+05	4.861E+05	71.5 ± 37.3
3	36	181	60	0.199	38.4	6.667E+05	3.352E+06	39.9 ± 7.3
4	15	55	25	0.273	28.0	6.667E+05	2.444E+06	54.7 ± 16.0
5	5	12	40	0.417	3.8	1.389E+05	3.333E+05	83.4 ± 44.4
6	28	138	60	0.203	29.3	5.185E+05	2.556E+06	40.7 ± 8.5
7	11	17	10	0.647	21.7	1.222E+06	1.889E+06	129.0 ± 50.0
8	4	12	16	0.333	9.6	2.778E+05	8.333E+05	66.8 ± 38.6
9	30	101	48	0.297	26.8	6.944E+05	2.338E+06	59.5 ± 12.4
10	15	29	21	0.517	17.6	7.936E+05	1.534E+06	103.3 ± 32.9
11	10	28	24	0.357	14.9	4.630E+05	1.296E+06	71.5 ± 26.4
12	15	29	16	0.517	23.1	1.042E+06	2.014E+06	103.3 ± 32.9
13	64	187	35	0.342	68.1	2.032E+06	5.936E+06	68.6 ± 10.0
14	41	94	70	0.436	17.1	6.508E+05	1.492E+06	87.2 ± 16.4
15	16	52	18	0.308	36.8	9.877E+05	3.210E+06	61.7 ± 17.7
16	5	21	28	0.238	9.6	1.984E+05	8.333E+05	47.8 ± 23.8
17	3	6	18	0.500	4.2	1.852E+05	3.704E+05	99.9 ± 70.7
	362	1104			25.3	7.221E+05	2.202E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 29.412 with 16 degrees of freedom
P(chi squared) = 2.1 %
Correlation Coefficient = 0.890
Variance of SQR(Ns) = 3.89
Variance of SQR(Ni) = 13.88

Ns/Ni = 0.328 ± 0.020
Mean Ratio = 0.377 ± 0.030

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 65.7 ± 4.2 Ma
CENTRAL AGE = 75.4 ± 6.2 Ma

90POS27A - NOATAK SANDSTONE

IRRADIATION LU124
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	16	38	30	0.421	16.1	5.926E+05	1.407E+06	84.2 ± 25.2
2	19	52	25	0.365	26.5	8.444E+05	2.311E+06	73.2 ± 19.7
3	22	98	36	0.224	34.7	6.790E+05	3.025E+06	45.1 ± 10.7
4	25	94	42	0.266	28.5	6.614E+05	2.487E+06	53.3 ± 12.0
5	94	210	36	0.448	74.3	2.901E+06	6.481E+06	89.5 ± 11.3
6	21	33	24	0.636	17.5	9.722E+05	1.528E+06	126.9 ± 35.5
7	20	74	21	0.270	44.9	1.058E+06	3.915E+06	54.2 ± 13.7
8	44	89	35	0.494	32.4	1.397E+06	2.825E+06	98.8 ± 18.3
9	27	44	30	0.614	18.7	1.000E+06	1.630E+06	122.4 ± 30.0
10	85	128	20	0.664	81.6	4.722E+06	7.111E+06	132.4 ± 18.7
11	47	181	32	0.260	72.1	1.632E+06	6.285E+06	52.1 ± 8.6
12	16	49	18	0.327	34.7	9.877E+05	3.025E+06	65.4 ± 18.9
13	30	60	30	0.500	25.5	1.111E+06	2.222E+06	99.9 ± 22.4
14	34	54	24	0.630	28.7	1.574E+06	2.500E+06	125.6 ± 27.6
15	6	37	16	0.162	29.5	4.167E+05	2.569E+06	32.6 ± 14.4
16	43	71	36	0.606	25.1	1.327E+06	2.191E+06	120.8 ± 23.5
17	17	44	32	0.386	17.5	5.903E+05	1.528E+06	77.3 ± 22.1
18	25	75	36	0.333	26.6	7.716E+05	2.315E+06	66.8 ± 15.5
19	23	37	16	0.622	29.5	1.597E+06	2.569E+06	124.0 ± 33.0
20	20	65	49	0.308	16.9	4.535E+05	1.474E+06	61.7 ± 15.8
21	16	48	30	0.333	20.4	5.926E+05	1.778E+06	66.8 ± 19.3
22	25	46	35	0.543	16.8	7.936E+05	1.460E+06	108.5 ± 27.1
23	19	67	36	0.284	23.7	5.864E+05	2.068E+06	56.9 ± 14.8
24	34	62	12	0.548	65.9	3.148E+06	5.741E+06	109.5 ± 23.5
25	10	18	20	0.556	11.5	5.556E+05	1.000E+06	110.9 ± 43.8
	738	1774			31.4	1.137E+06	2.734E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 64.920 with 24 degrees of freedom
P(chi squared) = 0.0 %
Correlation Coefficient = 0.816
Variance of SQR(Ns) = 2.69
Variance of SQR(Ni) = 5.44

Ns/Ni = 0.416 ± 0.018
Mean Ratio = 0.432 ± 0.030

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 83.2 ± 4.0 Ma
CENTRAL AGE = 86.4 ± 6.3 Ma

DALTON HIGHWAY

Sample Locations and Apatite Yields - Dalton Highway

Table 19. Sample details and apatite yields for outcrop samples: Dalton Highway.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Mile Post	Rock Type
90POS22A	68°32'	149°28'	(915)/(*3000*)	Fortress Mtn. Formation	276	Sandstone
90POS23A	68°24'	149°19'	(854)/(*2800*)	Kanayut Conglomerate	267	Sandstone
90POS24A	68°23'	149°19'	(854)/(*2800*)	Kanayut Conglomerate	265	Sandstone
90POS25A	68°18'	149°22'	(915)/(*3000*)	Kanayut Conglomerate	261	Sandstone
90POS26A	68°13'	149°25'	(976)/(*3200*)	Kanayut Conglomerate	255	Sandstone
90POS27A	68°07'	149°26'	(976)/(*3200*)	Noatak Sandstone	247	Sandstone
90POS28A	68°02'	149°39'	(1220)/(*4000*)	Beaucoup Formation	237	Sandstone
90POS29A	67°57'	149°47'	(670)/(*2200*)	Hunt Fork Shale	228	Sandstone
90POS30A	67°24'	150°05'	(427)/(*1400*)	Unnamed schist	186	Quartz-mica schist
90POS31A	67°02'	150°18'	(488)/(*1600*)	Cret. sedimentary rocks	158	Sandstone
90POS32A	66°59'	150°18'	(457)/(*1500*)	Jim River pluton	154	Granitic gneiss
90POS32B	66°59'	150°18'	(457)/(*1500*)	Cret. sedimentary rocks	154	Sandstone
90POS33A	66°45'	150°38'	(518)/(*1700*)	Prospect Creek metamorphic rocks	132	Phyllite
90POS34A	66°43'	150°36'	(305)/(*1000*)	Bonanza pluton	128	Granitic gneiss
90POS35A	66°28'	150°33'	(482)/(*1580*)	Kanuti pluton	107	Granitic gneiss
90POS36A	66°26'	150°31'	(457)/(*1500*)	Kanuti ophiolite	104	Ultramafic rock
90POS37A	66°20'	150°25'	(670)/(*2200*)	Hot Springs pluton	98	Granitic gneiss

Sample Results - Dalton Highway

Typical yields for the samples were very good and in most cases at least 20 grains were counted on each mount. Due to relatively young ages and, in some cases, low uranium content (<10 ppm) only 4 of 17 mounts contained 100 or more confined tracks. Nine mounts had less than 50 confined tracks. Most samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations. For these samples the pooled fission track age is presented. The mean age is presented for the samples (shown by a * in Table 20) for which it was determined that the dated grains represented multiple populations.

Table 20. Apatite fission track analytical results: Dalton Highway.

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (µm)	Standard deviation (µm)
90POS22A	26	1.142	4.610	1.373	0.0	67.3 ± 3.7	15.7	13.12 ± 0.39	1.67
		(5146)	(502)	(1495)		*81.9 ± 10.5**		(49)	
90POS23A	4	1.142	7.190	2.255	14.9	63.9 ± 7.1	25.9	13.21 ± 0.31	0.54
		(5146)	(110)	(345)				(3)	
90POS24A	25	1.142	9.475	2.598	32.9	73.0 ± 3.6	29.8	12.10 ± 0.31	2.24
		(5146)	(666)	(1826)				(52)	
90POS25A	25	1.142	8.647	2.343	26.3	73.9 ± 3.4	26.9	12.20 ± 0.25	1.76
		(5146)	(807)	(2187)				(50)	
90POS26A	17	1.142	7.221	2.202	2.1	65.7 ± 4.2	25.3	12.34 ± 0.75	2.37
		(5146)	(362)	(1104)		*75.4 ± 6.2**		(10)	
90POS27A	25	1.142	0.114	2.734	0.0	83.2 ± 4.0	31.4	13.60 ± 0.22	1.28
		(5146)	(738)	(1774)		*86.4 ± 6.3**		(33)	
90POS28A	25	1.142	5.897	1.335	16.6	88.4 ± 5.5	15.3	14.05 ± 0.18	0.85
		(5146)	(414)	(937)				(22)	
90POS29A	25	1.142	2.303	1.961	77.1	23.6 ± 1.9	22.5	11.58 ± 0.25	2.26
		(5146)	(193)	(1643)				(83)	
90POS30A	25	1.142	86.87	24.35	21.4	71.5 ± 9.4	2.8	10.96 ± 0.42	2.31
		(5146)	(81)	(227)				(31)	
90POS31A	25	1.142	3.242	1.456	81.5	44.7 ± 3.0	16.7	13.91 ± 0.21	1.56
		(5146)	(288)	(1293)				(54)	
90POS32A	25	1.142	6.849	2.486	6.0	55.3 ± 2.1	28.5	14.01 ± 0.21	1.07
		(5146)	(1149)	(4170)				(105)	
90POS32B	20	1.142	4.124	1.526	70.7	54.2 ± 3.7	17.5	14.12 ± 0.21	1.25
		(5146)	(291)	(1077)				(106)	
90POS33A	25	1.142	94.37	68.31	6.3	27.8 ± 3.3	7.8	13.47 ± 0.19	1.25
		(5146)	(84)	(608)				(44)	
90POS34A	20	1.322	9.993	3.404	70.5	68.1 ± 2.8	33.7	13.67 ± 0.14	1.38
		(2974)	(1073)	(3655)				(102)	
90POS35A	25	1.322	9.827	3.251	46.0	70.1 ± 3.1	32.2	13.46 ± 0.20	1.28
		(2974)	(895)	(2961)				(42)	
90POS36A	20	1.322	3.310	9.443	99.8	81.2 ± 8.5	9.4	13.42 ± 0.31	1.02
		(2974)	(129)	(368)				(11)	
90POS37A	20	1.322	0.104	3.214	1.4	75.0 ± 3.1	18.9	13.61 ± 0.12	1.23
		(2974)	(1136)	(3509)		*74.2 ± 3.7**		(102)	

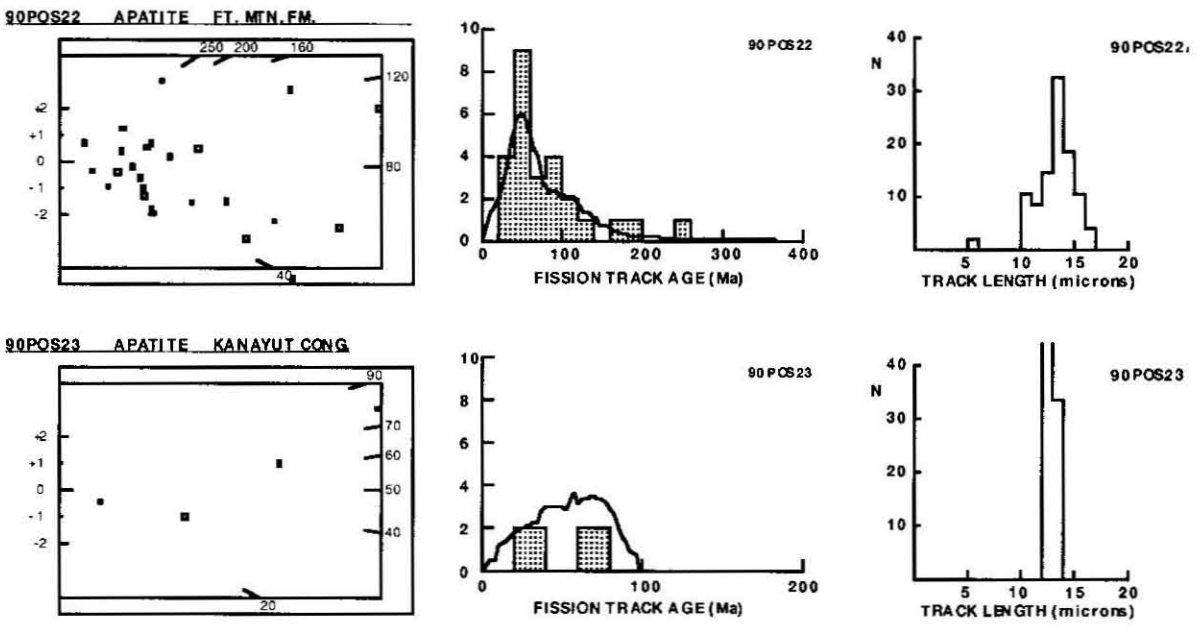
Parenthesis show number of tracks counted.

Table 21. Track length data: Dalton Highway.

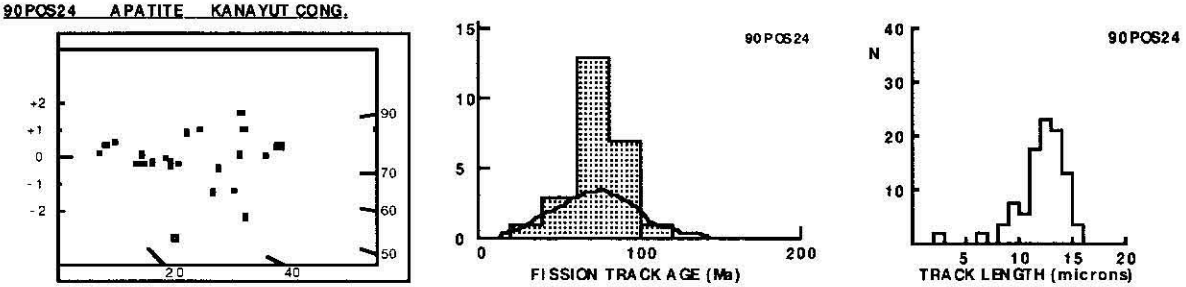
Sample Number	Track Length Range (μm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
POS22A	0	1	0	0	0	0	5	4	7	16	9	5	2	0
POS23A	0	0	0	0	0	0	0	2	1	0	0	0	0	0
POS24A	1	0	1	0	2	4	3	9	12	11	7	2	0	0
POS25A	0	0	0	0	1	3	6	15	11	2	7	5	0	0
POS26A	0	0	0	1	0	1	1	0	2	2	3	0	0	0
POS27A	0	0	0	0	0	0	0	5	5	10	10	2	0	1
POS28A	0	0	0	0	0	0	0	0	3	9	7	3	0	0
POS29A	3	0	0	0	3	8	12	18	16	15	7	1	0	0
POS30A	2	0	0	0	2	3	5	10	3	6	0	0	0	0
POS31A	0	0	0	0	0	1	1	4	9	14	9	13	2	1
POS32A	0	0	0	0	0	0	1	2	14	29	42	14	2	0
POS32B	0	0	0	0	1	0	0	4	13	24	41	18	4	1
POS33A	0	0	0	0	0	1	1	3	5	19	11	4	0	0
POS34A	0	1	0	0	0	0	1	7	12	40	28	13	0	0
POS35A	0	0	0	0	0	0	2	3	8	13	12	3	1	0
POS36A	0	0	0	0	0	0	0	1	3	3	4	0	0	0
POS37A	0	0	0	0	1	2	1	1	16	45	24	11	1	0

Length measurements by P. O'Sullivan

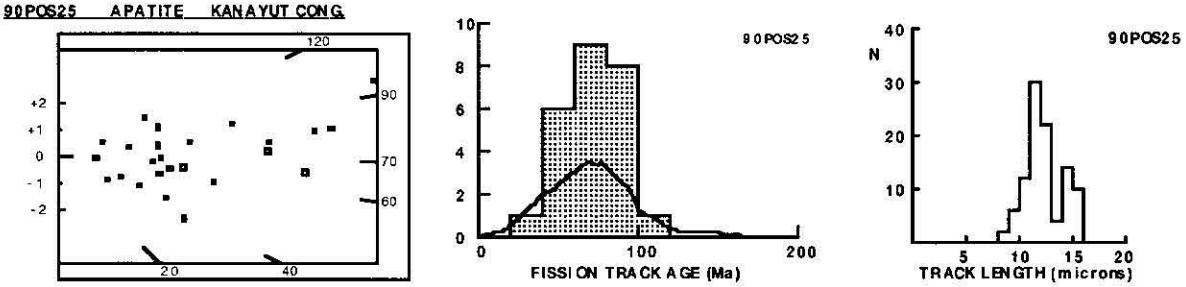
Single-Age and Track Length Distributions - Dalton Highway



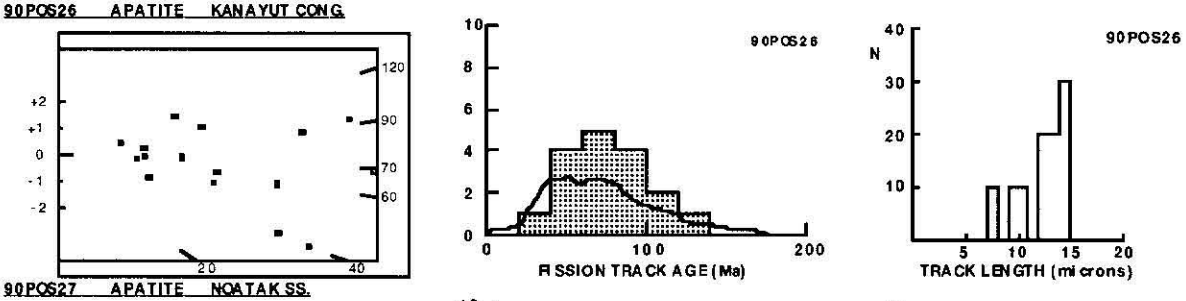
90POS24 APATITE KANAYUT CONG.



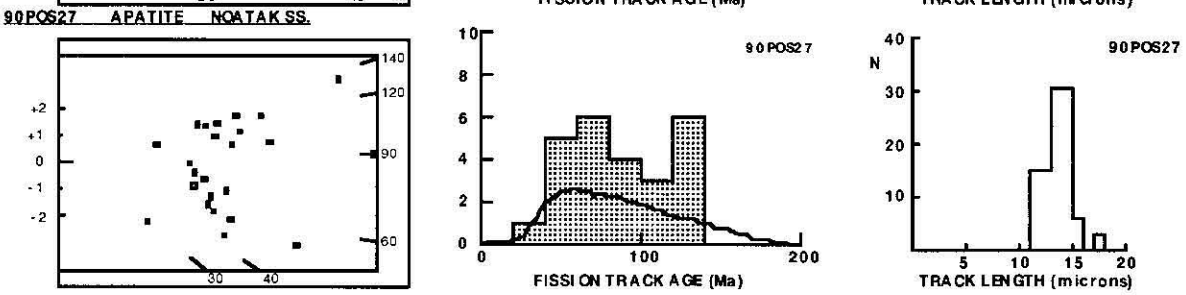
90POS25 APATITE KANAYUT CONG.



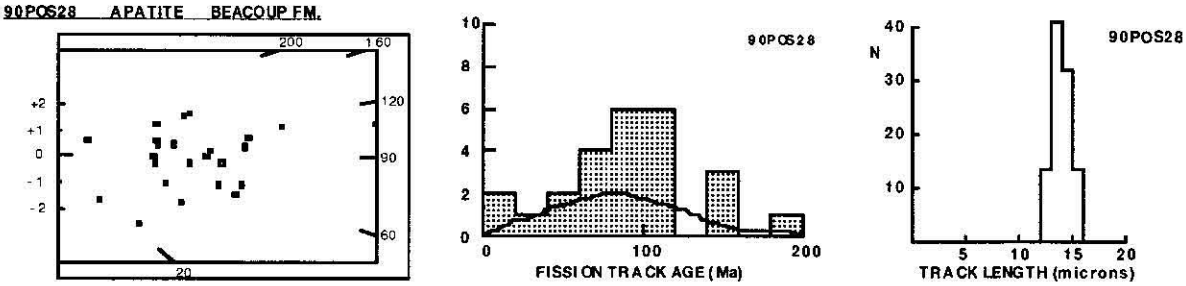
90POS26 APATITE KANAYUT CONG.



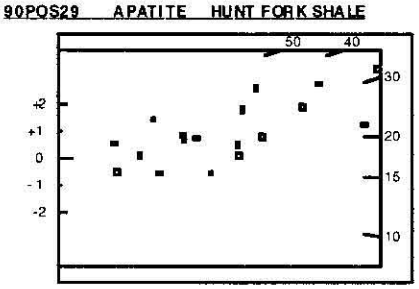
90POS27 APATITE NOATAK SS.

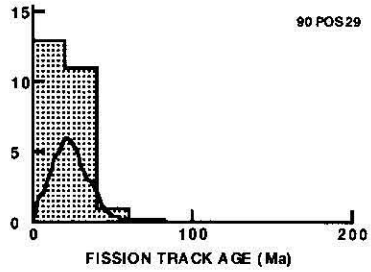


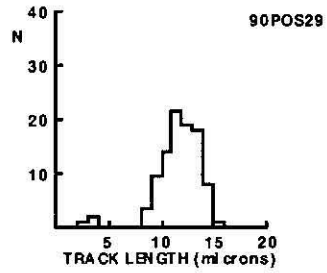
90POS28 APATITE BEACOUP FM.



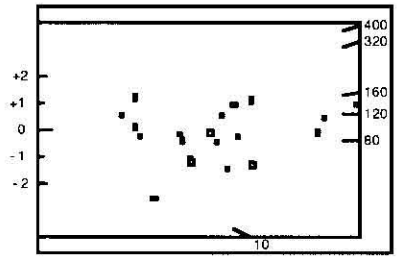
90POS29 APATITE HUNT FORK SHALE

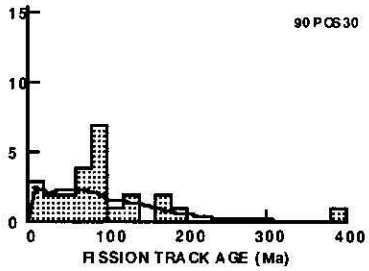


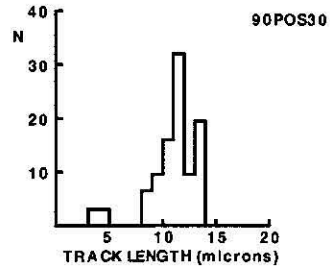




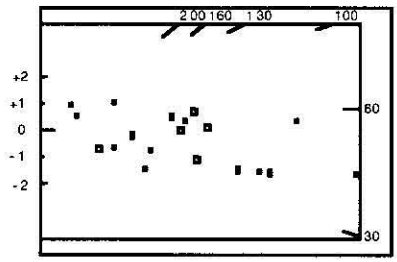
90POS30 APATITE META SCHIST

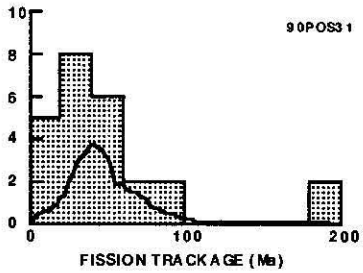


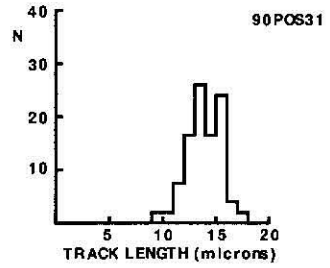




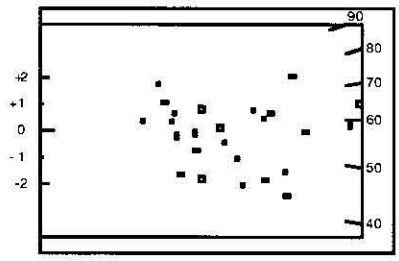
90POS31 APATITE ALBIAN SS.

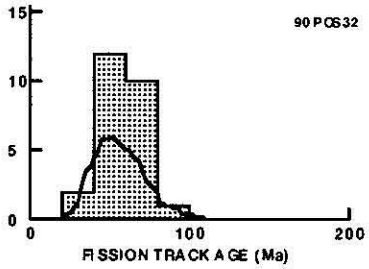


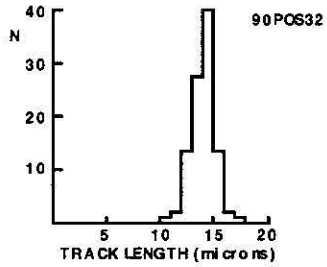




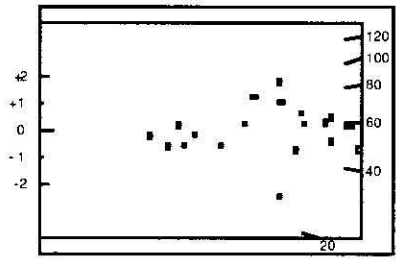
90POS32 APATITE JIM RIVER PLUTON

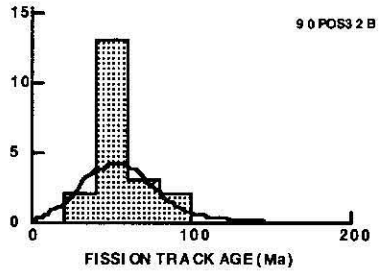


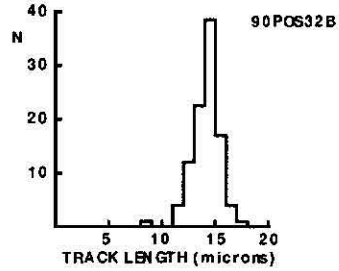




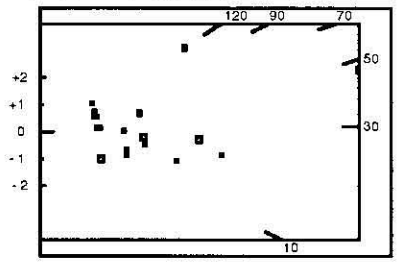
90POS32B APATITE ALBIAN CONG.

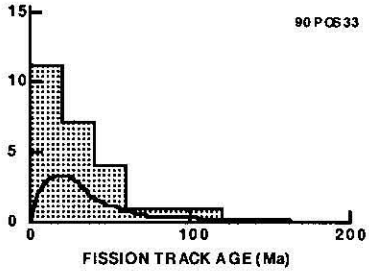


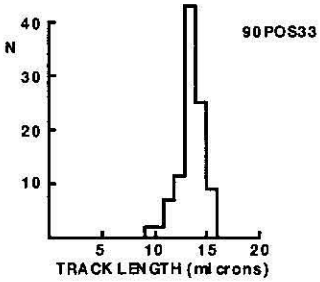




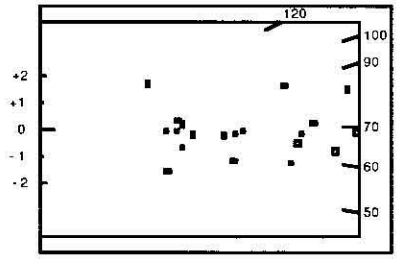
90POS33 APATITE PROSPECT CK. PHYLITTE

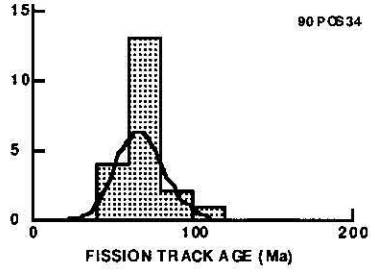


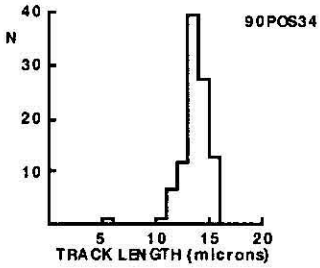




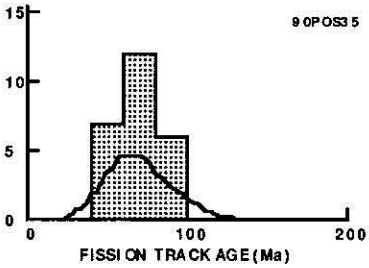
90POS34 APATITE BONANZA PLUTON

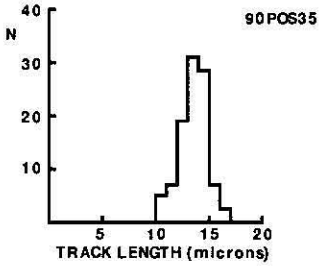




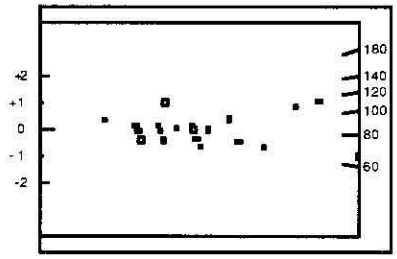


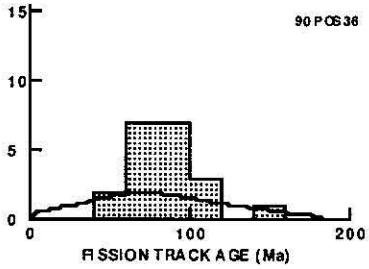
90POS35 APATITE KANUTI PLUTON

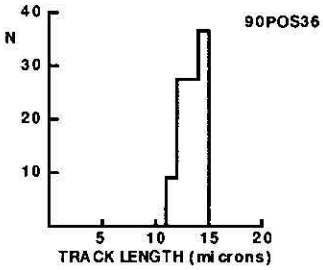




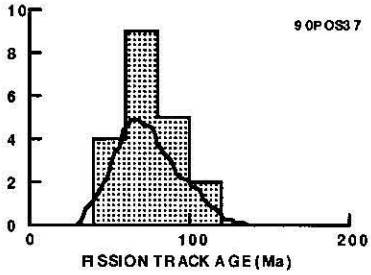
90POS36 APATITE ANGUCHAM ULTRAMAFIC

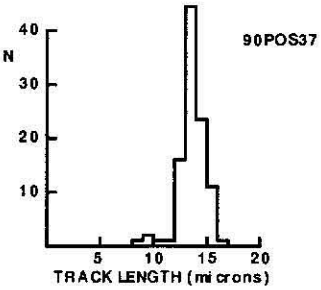






90POS37 APATITE HOT SPRINGS PLUTON





Age Sheets - Dalton Highway

90POS22A - FORTRESS MOUNTAIN FORMATION

IRRADIATION LU124
SLIDE NUMBER 1
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	44	224	24	0.196	119.0	2.037E+06	1.037E+07	39.4 ± 6.6
2	29	130	56	0.223	29.6	5.754E+05	2.579E+06	44.8 ± 9.2
3	2	11	49	0.182	2.9	4.535E+04	2.494E+05	36.5 ± 28.1
4	105	204	49	0.515	53.1	2.381E+06	4.626E+06	102.8 ± 12.5
5	15	58	42	0.259	17.6	3.968E+05	1.534E+06	51.9 ± 15.1
6	1	4	36	0.250	1.4	3.086E+04	1.235E+05	50.2 ± 56.1
7	40	147	36	0.272	52.0	1.235E+06	4.537E+06	54.6 ± 9.8
8	24	84	63	0.286	17.0	4.233E+05	1.481E+06	57.3 ± 13.3
9	4	8	72	0.500	1.4	6.173E+04	1.235E+05	99.9 ± 61.2
10	3	10	63	0.300	2.0	5.291E+04	1.764E+05	60.1 ± 39.6
11	6	24	42	0.250	7.3	1.587E+05	6.349E+05	50.2 ± 22.9
12	19	41	40	0.463	13.1	5.278E+05	1.139E+06	92.7 ± 25.8
13	8	16	64	0.500	3.2	1.389E+05	2.778E+05	99.9 ± 43.3
14	12	28	64	0.429	5.6	2.083E+05	4.861E+05	85.7 ± 29.6
15	6	20	64	0.300	4.0	1.042E+05	3.472E+05	60.1 ± 28.0
16	5	6	35	0.833	2.2	1.587E+05	1.905E+05	165.7 ± 100.4
17	59	93	40	0.634	29.6	1.639E+06	2.583E+06	126.5 ± 21.2
18	16	13	49	1.231	3.4	3.628E+05	2.948E+05	243.2 ± 90.9
19	6	27	40	0.222	8.6	1.667E+05	7.500E+05	44.6 ± 20.1
20	1	4	36	0.250	1.4	3.086E+04	1.235E+05	50.2 ± 56.1
21	5	14	49	0.357	3.6	1.134E+05	3.175E+05	71.5 ± 37.3
22	1	1	35	1.000	0.4	3.175E+04	3.175E+04	198.3 ± 280.5
23	9	17	42	0.529	5.2	2.381E+05	4.497E+05	105.7 ± 43.6
24	7	39	48	0.179	10.4	1.620E+05	9.028E+05	36.0 ± 14.8
25	68	236	42	0.288	71.6	1.799E+06	6.243E+06	57.8 ± 8.0
26	7	36	30	0.194	15.3	2.593E+05	1.333E+06	39.0 ± 16.1
	502	1495			15.7	4.610E+05	1.373E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 74.466 with 25 degrees of freedom
P(chi squared) = 0.0 %
Correlation Coefficient = 0.874
Variance of SQR(Ns) = 5.84
Variance of SQR(Ni) = 17.76

Ns/Ni = 0.336 ± 0.017
Mean Ratio = 0.409 ± 0.052

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 67.3 ± 3.7 Ma
CENTRAL AGE = 81.9 ± 10.5 Ma

90POS23A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 2
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	7	50	0.143	1.8	2.222E+04	1.556E+05	28.7 ± 30.7
2	69	182	40	0.379	58.0	1.917E+06	5.056E+06	75.9 ± 10.8
3	9	53	40	0.170	16.9	2.500E+05	1.472E+06	34.1 ± 12.3
4	31	103	40	0.301	32.8	8.611E+05	2.861E+06	60.3 ± 12.4
	110	345			25.9	7.190E+05	2.255E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 5.334 with 3 degrees of freedom
P(chi squared) = 14.9 %
Correlation Coefficient = 0.986
Variance of SQR(Ns) = 10.04
Variance of SQR(Ni) = 21.11

Ns/Ni = 0.319 ± 0.035
Mean Ratio = 0.248 ± 0.056

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 63.9 ± 7.1 Ma
CENTRAL AGE = 49.8 ± 11.2 Ma

90POS24A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	13	36	35	0.361	13.1	4.127E+05	1.143E+06	72.3 ± 23.4
2	16	47	12	0.340	49.9	1.481E+06	4.352E+06	68.2 ± 19.8
3	4	8	30	0.500	3.4	1.481E+05	2.963E+05	99.9 ± 61.2
4	20	42	24	0.476	22.3	9.259E+05	1.944E+06	95.2 ± 25.9
5	114	272	48	0.419	72.2	2.639E+06	6.296E+06	83.9 ± 9.5
6	7	21	36	0.333	7.4	2.160E+05	6.481E+05	66.8 ± 29.2
7	25	91	35	0.275	33.1	7.936E+05	2.889E+06	55.1 ± 12.5
8	35	143	20	0.245	91.1	1.944E+06	7.944E+06	49.1 ± 9.3
9	13	86	32	0.151	34.3	4.514E+05	2.986E+06	30.4 ± 9.1
10	54	136	25	0.397	69.3	2.400E+06	6.044E+06	79.5 ± 12.9
11	2	5	24	0.400	2.7	9.259E+04	2.315E+05	80.1 ± 67.0
12	8	24	21	0.333	14.6	4.233E+05	1.270E+06	66.8 ± 27.3
13	14	40	30	0.350	17.0	5.185E+05	1.481E+06	70.1 ± 21.8
14	14	42	35	0.333	15.3	4.444E+05	1.333E+06	66.8 ± 20.7
15	48	128	48	0.375	34.0	1.111E+06	2.963E+06	75.1 ± 12.8
16	24	50	12	0.480	53.1	2.222E+06	4.630E+06	96.0 ± 23.9
17	28	82	25	0.341	41.8	1.244E+06	3.644E+06	68.4 ± 15.0
18	41	80	21	0.512	48.6	2.169E+06	4.233E+06	102.4 ± 19.8
19	10	29	24	0.345	15.4	4.630E+05	1.343E+06	69.1 ± 25.4
20	56	141	56	0.397	32.1	1.111E+06	2.798E+06	79.5 ± 12.7
21	8	21	42	0.381	6.4	2.116E+05	5.556E+05	76.3 ± 31.7
22	40	88	50	0.455	22.4	8.889E+05	1.956E+06	90.9 ± 17.4
23	3	6	32	0.500	2.4	1.042E+05	2.083E+05	99.9 ± 70.7
24	32	110	36	0.291	38.9	9.877E+05	3.395E+06	58.3 ± 11.8
25	37	98	28	0.378	44.6	1.468E+06	3.889E+06	75.6 ± 14.7
	666	1826			29.8	9.475E+05	2.598E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 26.480 with 24 degrees of freedom
P(chi squared) = 32.9 %
Correlation Coefficient = 0.954
Variance of SQR(Ns) = 4.63
Variance of SQR(Ni) = 12.02

Ns/Ni = 0.365 ± 0.017
Mean Ratio = 0.375 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 73.0 ± 3.6 Ma
CENTRAL AGE = 75.0 ± 3.7 Ma

90POS25A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 4
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	143	302	50	0.474	77.0	3.178E+06	6.711E+06	94.7 ± 9.8
2	19	97	72	0.196	17.2	2.932E+05	1.497E+06	39.3 ± 9.9
3	8	35	25	0.229	17.8	3.556E+05	1.556E+06	45.9 ± 18.0
4	89	223	60	0.399	47.4	1.648E+06	4.130E+06	79.9 ± 10.1
5	43	97	40	0.443	30.9	1.194E+06	2.694E+06	88.7 ± 16.3
6	16	52	72	0.308	9.2	2.469E+05	8.025E+05	61.7 ± 17.7
7	12	20	25	0.600	10.2	5.333E+05	8.889E+05	119.7 ± 43.8
8	14	35	25	0.400	17.8	6.222E+05	1.556E+06	80.1 ± 25.4
9	12	36	60	0.333	7.6	2.222E+05	6.667E+05	66.8 ± 22.3
10	59	162	54	0.364	38.2	1.214E+06	3.333E+06	72.9 ± 11.2
11	3	15	49	0.200	3.9	6.803E+04	3.401E+05	40.2 ± 25.4
12	102	255	56	0.400	58.0	2.024E+06	5.060E+06	80.1 ± 9.5
13	2	6	30	0.333	2.5	7.407E+04	2.222E+05	66.8 ± 54.5
14	20	63	40	0.317	20.1	5.556E+05	1.750E+06	63.6 ± 16.4
15	5	21	30	0.238	8.9	1.852E+05	7.778E+05	47.8 ± 23.8
16	31	107	42	0.290	32.5	8.201E+05	2.831E+06	58.1 ± 11.9
17	7	17	36	0.412	6.0	2.160E+05	5.247E+05	82.4 ± 37.0
18	3	6	24	0.500	3.2	1.389E+05	2.778E+05	99.9 ± 70.7
19	79	241	42	0.328	73.1	2.090E+06	6.376E+06	65.7 ± 8.6
20	60	157	32	0.382	62.5	2.083E+06	5.451E+06	76.5 ± 11.7
21	14	63	36	0.222	22.3	4.321E+05	1.944E+06	44.6 ± 13.2
22	24	60	18	0.400	42.5	1.481E+06	3.704E+06	80.1 ± 19.4
23	15	30	30	0.500	12.7	5.556E+05	1.111E+06	99.9 ± 31.7
24	13	46	54	0.283	10.9	2.675E+05	9.465E+05	56.7 ± 17.8
25	14	41	35	0.341	14.9	4.444E+05	1.302E+06	68.4 ± 21.2
	807	2187			26.9	8.647E+05	2.343E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 27.928 with 24 degrees of freedom
P(chi squared) = 26.3 %
Correlation Coefficient = 0.977
Variance of SQR(Ns) = 8.05
Variance of SQR(Ni) = 18.75

Ns/Ni = 0.369 ± 0.015
Mean Ratio = 0.356 ± 0.020

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 73.9 ± 3.4 Ma
CENTRAL AGE = 71.2 ± 4.3 Ma

90POS26A - KANAYUT CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	59	128	36	0.461	45.3	1.821E+06	3.951E+06	92.2 ± 14.6
2	5	14	32	0.357	5.6	1.736E+05	4.861E+05	71.5 ± 37.3
3	36	181	60	0.199	38.4	6.667E+05	3.352E+06	39.9 ± 7.3
4	15	55	25	0.273	28.0	6.667E+05	2.444E+06	54.7 ± 16.0
5	5	12	40	0.417	3.8	1.389E+05	3.333E+05	83.4 ± 44.4
6	28	138	60	0.203	29.3	5.185E+05	2.556E+06	40.7 ± 8.5
7	11	17	10	0.647	21.7	1.222E+06	1.889E+06	129.0 ± 50.0
8	4	12	16	0.333	9.6	2.778E+05	8.333E+05	66.8 ± 38.6
9	30	101	48	0.297	26.8	6.944E+05	2.338E+06	59.5 ± 12.4
10	15	29	21	0.517	17.6	7.936E+05	1.534E+06	103.3 ± 32.9
11	10	28	24	0.357	14.9	4.630E+05	1.296E+06	71.5 ± 26.4
12	15	29	16	0.517	23.1	1.042E+06	2.014E+06	103.3 ± 32.9
13	64	187	35	0.342	68.1	2.032E+06	5.936E+06	68.6 ± 10.0
14	41	94	70	0.436	17.1	6.508E+05	1.492E+06	87.2 ± 16.4
15	16	52	18	0.308	36.8	9.877E+05	3.210E+06	61.7 ± 17.7
16	5	21	28	0.238	9.6	1.984E+05	8.333E+05	47.8 ± 23.8
17	3	6	18	0.500	4.2	1.852E+05	3.704E+05	99.9 ± 70.7
	362	1104			25.3	7.221E+05	2.202E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 29.412 with 16 degrees of freedom
P(chi squared) = 2.1 %
Correlation Coefficient = 0.890
Variance of SQR(Ns) = 3.89
Variance of SQR(Ni) = 13.88

Ns/Ni = 0.328 ± 0.020
Mean Ratio = 0.377 ± 0.030

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 65.7 ± 4.2 Ma
CENTRAL AGE = 75.4 ± 6.2 Ma

90POS27A - NOATAK SANDSTONE

IRRADIATION LU124
SLIDE NUMBER 6
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	16	38	30	0.421	16.1	5.926E+05	1.407E+06	84.2 ± 25.2
2	19	52	25	0.365	26.5	8.444E+05	2.311E+06	73.2 ± 19.7
3	22	98	36	0.224	34.7	6.790E+05	3.025E+06	45.1 ± 10.7
4	25	94	42	0.266	28.5	6.614E+05	2.487E+06	53.3 ± 12.0
5	94	210	36	0.448	74.3	2.901E+06	6.481E+06	89.5 ± 11.3
6	21	33	24	0.636	17.5	9.722E+05	1.528E+06	126.9 ± 35.5
7	20	74	21	0.270	44.9	1.058E+06	3.915E+06	54.2 ± 13.7
8	44	89	35	0.494	32.4	1.397E+06	2.825E+06	98.8 ± 18.3
9	27	44	30	0.614	18.7	1.000E+06	1.630E+06	122.4 ± 30.0
10	85	128	20	0.664	81.6	4.722E+06	7.111E+06	132.4 ± 18.7
11	47	181	32	0.260	72.1	1.632E+06	6.285E+06	52.1 ± 8.6
12	16	49	18	0.327	34.7	9.877E+05	3.025E+06	65.4 ± 18.9
13	30	60	30	0.500	25.5	1.111E+06	2.222E+06	99.9 ± 22.4
14	34	54	24	0.630	28.7	1.574E+06	2.500E+06	125.6 ± 27.6
15	6	37	16	0.162	29.5	4.167E+05	2.569E+06	32.6 ± 14.4
16	43	71	36	0.606	25.1	1.327E+06	2.191E+06	120.8 ± 23.5
17	17	44	32	0.386	17.5	5.903E+05	1.528E+06	77.3 ± 22.1
18	25	75	36	0.333	26.6	7.716E+05	2.315E+06	66.8 ± 15.5
19	23	37	16	0.622	29.5	1.597E+06	2.569E+06	124.0 ± 33.0
20	20	65	49	0.308	16.9	4.535E+05	1.474E+06	61.7 ± 15.8
21	16	48	30	0.333	20.4	5.926E+05	1.778E+06	66.8 ± 19.3
22	25	46	35	0.543	16.8	7.936E+05	1.460E+06	108.5 ± 27.1
23	19	67	36	0.284	23.7	5.864E+05	2.068E+06	56.9 ± 14.8
24	34	62	12	0.548	65.9	3.148E+06	5.741E+06	109.5 ± 23.5
25	10	18	20	0.556	11.5	5.556E+05	1.000E+06	110.9 ± 43.8
	738	1774			31.4	1.137E+06	2.734E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 64.920 with 24 degrees of freedom
P(chi squared) = 0.0 %
Correlation Coefficient = 0.816
Variance of SQR(Ns) = 2.69
Variance of SQR(Ni) = 5.44

Ns/Ni = 0.416 ± 0.018
Mean Ratio = 0.432 ± 0.030

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 83.2 ± 4.0 Ma
CENTRAL AGE = 86.4 ± 6.3 Ma

90POS28A - BEAUCOUP FORMATION

IRRADIATION LU124
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	11	21	28	0.524	9.6	4.365E+05	8.333E+05	104.6 ± 39.0
2	1	1	25	1.000	0.5	4.444E+04	4.444E+04	198.3 ± 280.5
3	18	38	64	0.474	7.6	3.125E+05	6.597E+05	94.7 ± 27.2
4	22	69	50	0.319	17.6	4.889E+05	1.533E+06	63.9 ± 15.7
5	4	34	16	0.118	27.1	2.778E+05	2.361E+06	23.6 ± 12.5
6	80	151	30	0.530	64.2	2.963E+06	5.593E+06	105.8 ± 14.8
7	41	74	42	0.554	22.5	1.085E+06	1.958E+06	110.6 ± 21.6
8	9	12	24	0.750	6.4	4.167E+05	5.556E+05	149.3 ± 65.9
9	13	32	16	0.406	25.5	9.028E+05	2.222E+06	81.3 ± 26.8
10	16	21	21	0.762	12.7	8.466E+05	1.111E+06	151.6 ± 50.4
11	27	56	30	0.482	23.8	1.000E+06	2.074E+06	96.4 ± 22.7
12	17	38	24	0.447	20.2	7.870E+05	1.759E+06	89.5 ± 26.2
13	10	41	49	0.244	10.7	2.268E+05	9.297E+05	48.9 ± 17.3
14	0	1	60	0.000	0.2	0.000E+00	1.852E+04	0.0 ± 0.0
15	8	27	32	0.296	10.8	2.778E+05	9.375E+05	59.4 ± 23.9
16	8	14	16	0.571	11.2	5.556E+05	9.722E+05	114.1 ± 50.6
17	24	69	36	0.348	24.4	7.407E+05	2.130E+06	69.7 ± 16.6
18	8	15	18	0.533	10.6	4.938E+05	9.259E+05	106.5 ± 46.7
19	20	48	32	0.417	19.1	6.944E+05	1.667E+06	83.4 ± 22.2
20	29	55	28	0.527	25.0	1.151E+06	2.183E+06	105.3 ± 24.3
21	1	12	49	0.083	3.1	2.268E+04	2.721E+05	16.8 ± 17.4
22	7	16	14	0.438	14.6	5.556E+05	1.270E+06	87.5 ± 39.7
23	15	20	15	0.750	17.0	1.111E+06	1.481E+06	149.3 ± 51.1
24	7	18	25	0.389	9.2	3.111E+05	8.000E+05	77.8 ± 34.7
25	18	54	36	0.333	19.1	5.556E+05	1.667E+06	66.8 ± 18.2
	414	937			15.3	5.897E+05	1.335E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 30.573 with 24 degrees of freedom
P(chi squared) = 16.6 %
Correlation Coefficient = 0.944
Variance of SQR(Ns) = 3.35
Variance of SQR(Ni) = 6.13

Ns/Ni = 0.442 ± 0.026
Mean Ratio = 0.452 ± 0.045

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 88.4 ± 5.5 Ma
CENTRAL AGE = 90.4 ± 9.1 Ma

90POS29A - HUNT FORK SHALE

IRRADIATION LU124
SLIDE NUMBER 8
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	0	1	48	0.000	0.3	0.000E+00	2.315E+04	0.0 ± 0.0
2	13	71	25	0.183	36.2	5.778E+05	3.156E+06	36.8 ± 11.1
3	1	7	49	0.143	1.8	2.268E+04	1.587E+05	28.7 ± 30.7
4	11	74	20	0.149	47.2	6.111E+05	4.111E+06	29.9 ± 9.7
5	2	23	40	0.087	7.3	5.556E+04	6.389E+05	17.5 ± 12.9
6	7	103	24	0.068	54.7	3.241E+05	4.769E+06	13.7 ± 5.3
7	0	4	50	0.000	1.0	0.000E+00	8.889E+04	0.0 ± 0.0
8	3	15	42	0.200	4.6	7.936E+04	3.968E+05	40.2 ± 25.4
9	13	123	42	0.106	37.3	3.439E+05	3.254E+06	21.2 ± 6.2
10	1	21	30	0.048	8.9	3.704E+04	7.778E+05	9.6 ± 9.8
11	33	211	56	0.156	48.0	6.548E+05	4.186E+06	31.4 ± 5.9
12	19	141	30	0.135	59.9	7.037E+05	5.222E+06	27.1 ± 6.6
13	3	51	25	0.059	26.0	1.333E+05	2.267E+06	11.8 ± 7.0
14	5	40	50	0.125	10.2	1.111E+05	8.889E+05	25.1 ± 11.9
15	5	43	25	0.116	21.9	2.222E+05	1.911E+06	23.4 ± 11.1
16	0	11	30	0.000	4.7	0.000E+00	4.074E+05	0.0 ± 0.0
17	10	116	64	0.086	23.1	1.736E+05	2.014E+06	17.3 ± 5.7
18	0	10	35	0.000	3.6	0.000E+00	3.175E+05	0.0 ± 0.0
19	6	52	28	0.115	23.7	2.381E+05	2.063E+06	23.2 ± 10.0
20	29	271	48	0.107	72.0	6.713E+05	6.273E+06	21.5 ± 4.2
21	0	1	35	0.000	0.4	0.000E+00	3.175E+04	0.0 ± 0.0
22	0	4	25	0.000	2.0	0.000E+00	1.778E+05	0.0 ± 0.0
23	22	139	36	0.158	49.2	6.790E+05	4.290E+06	31.8 ± 7.3
24	10	101	50	0.099	25.7	2.222E+05	2.244E+06	19.9 ± 6.6
25	0	10	24	0.000	5.3	0.000E+00	4.630E+05	0.0 ± 0.0
	193	1643			22.5	2.303E+05	1.961E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 18.636 with 24 degrees of freedom
P(chi squared) = 77.1 %
Correlation Coefficient = 0.953
Variance of SQR(Ns) = 3.28
Variance of SQR(Ni) = 18.86

Ns/Ni = 0.117 ± 0.009
Mean Ratio = 0.086 ± 0.013

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 23.6 ± 1.9 Ma
CENTRAL AGE = 17.2 ± 2.6 Ma

90POS30A - QUARTZ-MICA SCHIST

IRRADIATION LU124
SLIDE NUMBER 9
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	1	50	1.000	0.3	2.222E+04	2.222E+04	198.3 ± 280.5
2	2	5	28	0.400	2.3	7.936E+04	1.984E+05	80.1 ± 67.0
3	12	18	80	0.667	2.9	1.667E+05	2.500E+05	132.9 ± 49.6
4	1	30	40	0.033	9.6	2.778E+04	8.333E+05	6.7 ± 6.8
5	4	10	70	0.400	1.8	6.349E+04	1.587E+05	80.1 ± 47.4
6	6	7	40	0.857	2.2	1.667E+05	1.944E+05	170.4 ± 94.8
7	2	10	60	0.200	2.1	3.704E+04	1.852E+05	40.2 ± 31.1
8	2	1	25	2.000	0.5	8.889E+04	4.444E+04	390.7 ± 478.6
9	3	16	56	0.188	3.6	5.952E+04	3.175E+05	37.7 ± 23.7
10	0	3	48	0.000	0.8	0.000E+00	6.944E+04	0.0 ± 0.0
11	3	7	25	0.429	3.6	1.333E+05	3.111E+05	85.7 ± 59.2
12	4	18	18	0.222	12.7	2.469E+05	1.111E+06	44.6 ± 24.7
13	3	9	50	0.333	2.3	6.667E+04	2.000E+05	66.8 ± 44.5
14	4	6	35	0.667	2.2	1.270E+05	1.905E+05	132.9 ± 85.8
15	0	8	64	0.000	1.6	0.000E+00	1.389E+05	0.0 ± 0.0
16	2	11	60	0.182	2.3	3.704E+04	2.037E+05	36.5 ± 28.1
17	9	16	25	0.562	8.2	4.000E+05	7.111E+05	112.3 ± 46.8
18	5	6	49	0.833	1.6	1.134E+05	1.361E+05	165.7 ± 100.4
19	1	2	25	0.500	1.0	4.444E+04	8.889E+04	99.9 ± 122.4
20	8	18	4	0.444	57.4	2.222E+06	5.000E+06	88.9 ± 37.8
21	1	2	50	0.500	0.5	2.222E+04	4.444E+04	99.9 ± 122.4
22	2	6	36	0.333	2.1	6.173E+04	1.852E+05	66.8 ± 54.5
23	2	5	30	0.400	2.1	7.407E+04	1.852E+05	80.1 ± 67.0
24	3	9	48	0.333	2.4	6.944E+04	2.083E+05	66.8 ± 44.5
25	1	3	20	0.333	1.9	5.556E+04	1.667E+05	66.8 ± 77.1
	81	227			2.8	8.687E+04	2.435E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 29.158 with 24 degrees of freedom
P(chi squared) = 21.4 %
Correlation Coefficient = 0.444
Variance of SQR(Ns) = 0.66
Variance of SQR(Ni) = 1.27

Ns/Ni = 0.357 ± 0.046
Mean Ratio = 0.473 ± 0.082

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 71.5 ± 9.4 Ma
CENTRAL AGE = 94.5 ± 16.5 Ma

90POS31A - CRETACEOUS (ALBIAN) SANDSTONE

IRRADIATION LU124
SLIDE NUMBER 10
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	22	118	50	0.186	30.1	4.889E+05	2.622E+06	37.4 ± 8.7
2	0	4	25	0.000	2.0	0.000E+00	1.778E+05	0.0 ± 0.0
3	6	43	24	0.140	22.8	2.778E+05	1.991E+06	28.0 ± 12.2
4	7	36	15	0.194	30.6	5.185E+05	2.667E+06	39.0 ± 16.1
5	17	63	49	0.270	16.4	3.855E+05	1.429E+06	54.1 ± 14.8
6	0	1	36	0.000	0.4	0.000E+00	3.086E+04	0.0 ± 0.0
7	57	275	35	0.207	100.1	1.810E+06	8.730E+06	41.6 ± 6.1
8	1	2	40	0.500	0.6	2.778E+04	5.556E+04	99.9 ± 122.4
9	30	156	50	0.192	39.8	6.667E+05	3.467E+06	38.6 ± 7.7
10	13	44	50	0.295	11.2	2.889E+05	9.778E+05	59.2 ± 18.7
11	1	1	36	1.000	0.4	3.086E+04	3.086E+04	198.3 ± 280.5
12	0	1	60	0.000	0.2	0.000E+00	1.852E+04	0.0 ± 0.0
13	5	21	40	0.238	6.7	1.389E+05	5.833E+05	47.8 ± 23.8
14	12	45	30	0.267	19.1	4.444E+05	1.667E+06	53.5 ± 17.4
15	4	8	35	0.500	2.9	1.270E+05	2.540E+05	99.9 ± 61.2
16	3	17	42	0.176	5.2	7.936E+04	4.497E+05	35.4 ± 22.2
17	14	73	45	0.192	20.7	3.457E+05	1.802E+06	38.5 ± 11.3
18	11	35	35	0.314	12.7	3.492E+05	1.111E+06	63.0 ± 21.8
19	0	2	49	0.000	0.5	0.000E+00	4.535E+04	0.0 ± 0.0
20	27	141	20	0.191	89.9	1.500E+06	7.833E+06	38.4 ± 8.1
21	0	5	42	0.000	1.5	0.000E+00	1.323E+05	0.0 ± 0.0
22	40	142	80	0.282	22.6	5.556E+05	1.972E+06	56.5 ± 10.2
23	2	13	15	0.154	11.0	1.481E+05	9.630E+05	30.9 ± 23.5
24	1	1	60	1.000	0.2	1.852E+04	1.852E+04	198.3 ± 280.5
25	15	46	24	0.326	24.4	6.944E+05	2.130E+06	65.3 ± 19.5
	288	1293			16.7	3.242E+05	1.456E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 17.748 with 24 degrees of freedom
P(chi squared) = 81.5 %
Correlation Coefficient = 0.978
Variance of SQR(Ns) = 4.55
Variance of SQR(Ni) = 18.83

Ns/Ni = 0.223 ± 0.015
Mean Ratio = 0.265 ± 0.052

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 44.7 ± 3.0 Ma
CENTRAL AGE = 53.2 ± 10.5 Ma

90POS32A - JIM RIVER PLUTON

IRRADIATION LU124
SLIDE NUMBER 11
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	55	254	100	0.217	32.4	6.111E+05	2.822E+06	43.5 ± 6.5
2	20	64	60	0.312	13.6	3.704E+05	1.185E+06	62.6 ± 16.1
3	21	77	60	0.273	16.4	3.889E+05	1.426E+06	54.7 ± 13.5
4	19	50	60	0.380	10.6	3.519E+05	9.259E+05	76.1 ± 20.6
5	12	38	60	0.316	8.1	2.222E+05	7.037E+05	63.3 ± 21.0
6	21	62	60	0.339	13.2	3.889E+05	1.148E+06	67.9 ± 17.2
7	37	127	36	0.291	45.0	1.142E+06	3.920E+06	58.4 ± 11.0
8	31	92	100	0.337	11.7	3.444E+05	1.022E+06	67.5 ± 14.1
9	28	142	100	0.197	18.1	3.111E+05	1.578E+06	39.6 ± 8.2
10	65	281	70	0.231	51.2	1.032E+06	4.460E+06	46.4 ± 6.5
11	21	109	100	0.193	13.9	2.333E+05	1.211E+06	38.7 ± 9.2
12	43	179	80	0.240	28.5	5.972E+05	2.486E+06	48.2 ± 8.2
13	65	315	80	0.206	50.2	9.028E+05	4.375E+06	41.4 ± 5.7
14	44	215	100	0.205	27.4	4.889E+05	2.389E+06	41.1 ± 6.8
15	27	111	80	0.243	17.7	3.750E+05	1.542E+06	48.8 ± 10.5
16	27	97	42	0.278	29.4	7.143E+05	2.566E+06	55.8 ± 12.2
17	77	204	100	0.377	26.0	8.556E+05	2.267E+06	75.6 ± 10.2
18	58	189	80	0.307	30.1	8.056E+05	2.625E+06	61.5 ± 9.3
19	62	197	80	0.315	31.4	8.611E+05	2.736E+06	63.1 ± 9.3
20	53	164	80	0.323	26.1	7.361E+05	2.278E+06	64.8 ± 10.3
21	118	369	100	0.320	47.0	1.311E+06	4.100E+06	64.1 ± 6.9
22	109	371	100	0.294	47.3	1.211E+06	4.122E+06	58.9 ± 6.5
23	38	144	36	0.264	51.0	1.173E+06	4.444E+06	52.9 ± 9.7
24	18	38	20	0.474	24.2	1.000E+06	2.111E+06	94.7 ± 27.2
25	80	281	80	0.285	44.8	1.111E+06	3.903E+06	57.1 ± 7.3
	1149	4170			28.5	6.849E+05	2.486E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 35.598 with 24 degrees of freedom
P(chi squared) = 6.0 %
Correlation Coefficient = 0.936
Variance of SQR(Ns) = 3.97
Variance of SQR(Ni) = 15.39

Ns/Ni = 0.276 ± 0.009
Mean Ratio = 0.289 ± 0.013

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 55.3 ± 2.1 Ma
CENTRAL AGE = 57.9 ± 2.9 Ma

90POS32B - SANDSTONE BED IN CRETACEOUS (ALBIAN) CONGLOMERATE

IRRADIATION LU124
SLIDE NUMBER 12
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	18	56	36	0.321	19.8	5.556E+05	1.728E+06	64.4 ± 17.5
2	3	13	20	0.231	8.3	1.667E+05	7.222E+05	46.3 ± 29.7
3	4	21	30	0.190	8.9	1.481E+05	7.778E+05	38.2 ± 20.9
4	21	71	60	0.296	15.1	3.889E+05	1.315E+06	59.3 ± 14.8
5	17	37	18	0.459	26.2	1.049E+06	2.284E+06	91.9 ± 27.0
6	11	37	49	0.297	9.6	2.494E+05	8.390E+05	59.6 ± 20.5
7	5	24	18	0.208	17.0	3.086E+05	1.481E+06	41.8 ± 20.6
8	13	32	49	0.406	8.3	2.948E+05	7.256E+05	81.3 ± 26.8
9	16	43	60	0.372	9.1	2.963E+05	7.963E+05	74.5 ± 21.9
10	6	24	20	0.250	15.3	3.333E+05	1.333E+06	50.2 ± 22.9
11	18	62	40	0.290	19.8	5.000E+05	1.722E+06	58.2 ± 15.6
12	16	71	36	0.225	25.1	4.938E+05	2.191E+06	45.2 ± 12.5
13	13	97	70	0.134	17.7	2.063E+05	1.540E+06	26.9 ± 8.0
14	21	85	42	0.247	25.8	5.556E+05	2.249E+06	49.6 ± 12.1
15	8	37	25	0.216	18.9	3.556E+05	1.644E+06	43.4 ± 16.9
16	25	107	60	0.234	22.7	4.630E+05	1.981E+06	46.9 ± 10.5
17	25	88	48	0.284	23.4	5.787E+05	2.037E+06	57.0 ± 13.0
18	24	84	28	0.286	38.2	9.524E+05	3.333E+06	57.3 ± 13.3
19	22	71	60	0.310	15.1	4.074E+05	1.315E+06	62.1 ± 15.2
20	5	17	15	0.294	14.4	3.704E+05	1.259E+06	59.0 ± 30.0
	291	1077			17.5	4.124E+05	1.526E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 15.248 with 19 degrees of freedom
P(chi squared) = 70.7 %
Correlation Coefficient = 0.854
Variance of SQR(Ns) = 1.15
Variance of SQR(Ni) = 4.24

Ns/Ni = 0.270 ± 0.018
Mean Ratio = 0.278 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 54.2 ± 3.7 Ma
CENTRAL AGE = 55.7 ± 3.6 Ma

90POS33A - PROSPECT CREEK PHYLLITE

IRRADIATION LU124
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	5	57	30	0.088	24.2	1.852E+05	2.111E+06	17.6 ± 8.2
2	0	18	36	0.000	6.4	0.000E+00	5.556E+05	0.0 ± 0.0
3	8	14	16	0.571	11.2	5.556E+05	9.722E+05	114.1 ± 50.6
4	1	20	56	0.050	4.6	1.984E+04	3.968E+05	10.1 ± 10.3
5	2	26	50	0.077	6.6	4.444E+04	5.778E+05	15.5 ± 11.4
6	30	131	25	0.229	66.8	1.333E+06	5.822E+06	46.0 ± 9.3
7	0	2	60	0.000	0.4	0.000E+00	3.704E+04	0.0 ± 0.0
8	3	24	16	0.125	19.1	2.083E+05	1.667E+06	25.1 ± 15.4
9	1	4	42	0.250	1.2	2.646E+04	1.058E+05	50.2 ± 56.1
10	1	3	48	0.333	0.8	2.315E+04	6.944E+04	66.8 ± 77.1
11	1	6	50	0.167	1.5	2.222E+04	1.333E+05	33.5 ± 36.2
12	0	3	60	0.000	0.6	0.000E+00	5.556E+04	0.0 ± 0.0
13	1	20	40	0.050	6.4	2.778E+04	5.556E+05	10.1 ± 10.3
14	0	1	36	0.000	0.4	0.000E+00	3.086E+04	0.0 ± 0.0
15	2	24	25	0.083	12.2	8.889E+04	1.067E+06	16.8 ± 12.3
16	3	27	48	0.111	7.2	6.944E+04	6.250E+05	22.3 ± 13.6
17	0	32	36	0.000	11.3	0.000E+00	9.877E+05	0.0 ± 0.0
18	1	2	50	0.500	0.5	2.222E+04	4.444E+04	99.9 ± 122.4
19	7	56	60	0.125	11.9	1.296E+05	1.037E+06	25.1 ± 10.1
20	9	86	35	0.105	31.3	2.857E+05	2.730E+06	21.0 ± 7.4
21	0	5	60	0.000	1.1	0.000E+00	9.259E+04	0.0 ± 0.0
22	3	13	36	0.231	4.6	9.259E+04	4.012E+05	46.3 ± 29.7
23	2	14	30	0.143	5.9	7.407E+04	5.185E+05	28.7 ± 21.7
24	1	6	24	0.167	3.2	4.630E+04	2.778E+05	33.5 ± 36.2
25	3	14	20	0.214	8.9	1.667E+05	7.778E+05	43.0 ± 27.4
	84	608			7.8	9.437E+04	6.831E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 35.372 with 24 degrees of freedom
P(chi squared) = 6.3 %
Correlation Coefficient = 0.879
Variance of SQR(Ns) = 1.53
Variance of SQR(Ni) = 6.63

Ns/Ni = 0.138 ± 0.016
Mean Ratio = 0.145 ± 0.030

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.142E+06cm-2; ND = 5146

POOLED AGE = 27.8 ± 3.3 Ma
CENTRAL AGE = 29.1 ± 6.0 Ma

90POS34A - BONANZA PLUTON

IRRADIATION LU128
SLIDE NUMBER 12
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	89	291	80	0.306	40.0	1.236E+06	4.042E+06	70.9 ± 8.7
2	77	277	70	0.278	43.6	1.222E+06	4.397E+06	64.5 ± 8.4
3	18	91	50	0.198	20.0	4.000E+05	2.022E+06	46.0 ± 11.9
4	80	274	100	0.292	30.2	8.889E+05	3.044E+06	67.7 ± 8.7
5	100	367	100	0.272	40.4	1.111E+06	4.078E+06	63.2 ± 7.3
6	40	140	80	0.286	19.3	5.556E+05	1.944E+06	66.3 ± 12.0
7	72	285	70	0.253	44.8	1.143E+06	4.524E+06	58.6 ± 7.9
8	45	156	60	0.288	28.6	8.333E+05	2.889E+06	66.9 ± 11.4
9	23	91	56	0.253	17.9	4.563E+05	1.806E+06	58.7 ± 13.8
10	24	77	25	0.312	33.9	1.067E+06	3.422E+06	72.3 ± 17.0
11	115	327	100	0.352	36.0	1.278E+06	3.633E+06	81.5 ± 9.0
12	23	72	36	0.319	22.0	7.099E+05	2.222E+06	74.0 ± 17.8
13	74	198	50	0.374	43.6	1.644E+06	4.400E+06	86.5 ± 12.0
14	117	398	100	0.294	43.8	1.300E+06	4.422E+06	68.2 ± 7.3
15	22	76	60	0.289	13.9	4.074E+05	1.407E+06	67.1 ± 16.3
16	16	32	24	0.500	14.7	7.407E+05	1.481E+06	115.5 ± 35.5
17	19	65	32	0.292	22.4	6.597E+05	2.257E+06	67.8 ± 17.7
18	49	167	30	0.293	61.3	1.815E+06	6.185E+06	68.0 ± 11.2
19	27	95	30	0.284	34.9	1.000E+06	3.519E+06	65.9 ± 14.5
20	43	176	40	0.244	48.4	1.194E+06	4.889E+06	56.7 ± 9.7
	1073	3655			33.7	9.993E+05	3.404E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 15.271 with 19 degrees of freedom
P(chi squared) = 70.5 %
Correlation Coefficient = 0.976
Variance of SQR(Ns) = 5.37
Variance of SQR(Ni) = 17.97

Ns/Ni = 0.294 ± 0.010
Mean Ratio = 0.299 ± 0.013

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.322E+06cm-2; ND = 2974

POOLED AGE = 68.1 ± 2.8 Ma
CENTRAL AGE = 69.3 ± 3.5 Ma

90POS35A - KANUTI PLUTON

IRRADIATION LU128
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	45	181	49	0.249	40.7	1.020E+06	4.104E+06	57.7 ± 9.7
2	18	74	50	0.243	16.3	4.000E+05	1.644E+06	56.5 ± 14.9
3	19	61	49	0.311	13.7	4.308E+05	1.383E+06	72.2 ± 19.0
4	32	77	30	0.416	28.3	1.185E+06	2.852E+06	96.2 ± 20.3
5	30	112	48	0.268	25.7	6.944E+05	2.593E+06	62.1 ± 12.9
6	105	275	50	0.382	60.6	2.333E+06	6.111E+06	88.4 ± 10.3
7	63	196	42	0.321	51.4	1.667E+06	5.185E+06	74.5 ± 10.9
8	34	136	36	0.250	41.6	1.049E+06	4.198E+06	58.0 ± 11.2
9	87	213	50	0.408	46.9	1.933E+06	4.733E+06	94.5 ± 12.2
10	7	28	30	0.250	10.3	2.593E+05	1.037E+06	58.0 ± 24.6
11	32	102	60	0.314	18.7	5.926E+05	1.889E+06	72.7 ± 14.8
12	14	44	30	0.318	16.1	5.185E+05	1.630E+06	73.8 ± 22.7
13	12	60	35	0.200	18.9	3.810E+05	1.905E+06	46.5 ± 14.7
14	43	121	40	0.355	33.3	1.194E+06	3.361E+06	82.3 ± 14.7
15	22	59	18	0.373	36.1	1.358E+06	3.642E+06	86.4 ± 21.7
16	40	140	30	0.286	51.4	1.481E+06	5.185E+06	66.3 ± 12.0
17	12	39	48	0.308	8.9	2.778E+05	9.028E+05	71.3 ± 23.6
18	17	60	42	0.283	15.7	4.497E+05	1.587E+06	65.7 ± 18.1
19	31	113	49	0.274	25.4	7.029E+05	2.562E+06	63.6 ± 13.0
20	18	66	36	0.273	20.2	5.556E+05	2.037E+06	63.3 ± 16.9
21	81	300	60	0.270	55.1	1.500E+06	5.556E+06	62.6 ± 8.0
22	76	287	40	0.265	79.0	2.111E+06	7.972E+06	61.4 ± 8.1
23	14	38	40	0.368	10.5	3.889E+05	1.056E+06	85.3 ± 26.7
24	18	81	20	0.222	44.6	1.000E+06	4.500E+06	51.6 ± 13.5
25	25	98	30	0.255	36.0	9.259E+05	3.630E+06	59.2 ± 13.3
	895	2961			32.2	9.827E+05	3.251E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 24.028 with 24 degrees of freedom
P(chi squared) = 46.0 %
Correlation Coefficient = 0.950
Variance of SQR(Ns) = 4.17
Variance of SQR(Ni) = 12.08

Ns/Ni = 0.302 ± 0.012
Mean Ratio = 0.299 ± 0.012

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.322E+06cm-2; ND = 2974

POOLED AGE = 70.1 ± 3.1 Ma
CENTRAL AGE = 69.2 ± 3.1 Ma

90POS36A - KANUTI OPHIOLITE

IRRADIATION LU128
SLIDE NUMBER 14
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	6	21	0.333	3.1	1.058E+05	3.175E+05	77.2 ± 63.1
2	3	11	20	0.273	6.1	1.667E+05	6.111E+05	63.3 ± 41.2
3	15	32	32	0.469	11.0	5.208E+05	1.111E+06	108.4 ± 34.0
4	2	5	9	0.400	6.1	2.469E+05	6.173E+05	92.6 ± 77.5
5	5	20	20	0.250	11.0	2.778E+05	1.111E+06	58.0 ± 29.0
6	6	17	28	0.353	6.7	2.381E+05	6.746E+05	81.8 ± 38.9
7	8	19	25	0.421	8.4	3.556E+05	8.444E+05	97.4 ± 41.1
8	4	6	18	0.667	3.7	2.469E+05	3.704E+05	153.6 ± 99.2
9	5	13	8	0.385	17.9	6.944E+05	1.806E+06	89.0 ± 46.9
10	3	9	16	0.333	6.2	2.083E+05	6.250E+05	77.2 ± 51.5
11	8	27	40	0.296	7.4	2.222E+05	7.500E+05	68.7 ± 27.7
12	4	11	18	0.364	6.7	2.469E+05	6.790E+05	84.2 ± 49.2
13	2	8	16	0.250	5.5	1.389E+05	5.556E+05	58.0 ± 45.9
14	18	37	24	0.486	17.0	8.333E+05	1.713E+06	112.4 ± 32.4
15	5	17	16	0.294	11.7	3.472E+05	1.181E+06	68.2 ± 34.7
16	3	8	9	0.375	9.8	3.704E+05	9.877E+05	86.8 ± 58.8
17	5	14	20	0.357	7.7	2.778E+05	7.778E+05	82.7 ± 43.1
18	20	71	60	0.282	13.0	3.704E+05	1.315E+06	65.3 ± 16.6
19	10	35	24	0.286	16.1	4.630E+05	1.620E+06	66.3 ± 23.8
20	1	2	9	0.500	2.4	1.235E+05	2.469E+05	115.5 ± 141.5
	129	368			9.4	3.310E+05	9.443E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 5.727 with 19 degrees of freedom
P(chi squared) = 99.8 %
Correlation Coefficient = 0.929
Variance of SQR(Ns) = 0.92
Variance of SQR(Ni) = 2.72

Ns/Ni = 0.351 ± 0.036
Mean Ratio = 0.369 ± 0.023

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.322E+06cm-2; ND = 2974

POOLED AGE = 81.2 ± 8.5 Ma
CENTRAL AGE = 85.4 ± 5.7 Ma

90POS37A - HOT SPRINGS PLUTON

IRRADIATION LU128
SLIDE NUMBER 15
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	51	227	48	0.225	52.1	1.181E+06	5.255E+06	52.2 ± 8.2
2	9	29	42	0.310	7.6	2.381E+05	7.672E+05	71.9 ± 27.5
3	36	115	100	0.313	12.7	4.000E+05	1.278E+06	72.6 ± 14.0
4	63	214	100	0.294	23.6	7.000E+05	2.378E+06	68.3 ± 9.9
5	14	39	28	0.359	15.3	5.556E+05	1.548E+06	83.2 ± 26.0
6	52	140	70	0.371	22.0	8.254E+05	2.222E+06	86.0 ± 14.1
7	104	251	80	0.414	34.5	1.444E+06	3.486E+06	95.9 ± 11.4
8	56	202	49	0.277	45.4	1.270E+06	4.580E+06	64.3 ± 9.8
9	54	154	25	0.351	67.8	2.400E+06	6.844E+06	81.2 ± 13.0
10	85	274	100	0.310	30.2	9.444E+05	3.044E+06	71.9 ± 9.1
11	29	121	64	0.240	20.8	5.035E+05	2.101E+06	55.6 ± 11.6
12	59	165	40	0.358	45.4	1.639E+06	4.583E+06	82.8 ± 12.7
13	26	102	50	0.255	22.5	5.778E+05	2.267E+06	59.2 ± 13.1
14	106	381	60	0.278	69.9	1.963E+06	7.056E+06	64.5 ± 7.2
15	36	147	70	0.245	23.1	5.714E+05	2.333E+06	56.8 ± 10.7
16	54	121	30	0.446	44.4	2.000E+06	4.481E+06	103.2 ± 17.1
17	23	74	48	0.311	17.0	5.324E+05	1.713E+06	72.1 ± 17.3
18	89	276	49	0.322	62.0	2.018E+06	6.258E+06	74.7 ± 9.3
19	35	123	100	0.285	13.5	3.889E+05	1.367E+06	66.0 ± 12.7
20	155	354	60	0.438	65.0	2.870E+06	6.556E+06	101.3 ± 10.0
	1136	3509			31.8	1.041E+06	3.214E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 35.054 with 19 degrees of freedom
P(chi squared) = 1.4 %
Correlation Coefficient = 0.923
Variance of SQR(Ns) = 5.46
Variance of SQR(Ni) = 14.09

Ns/Ni = 0.324 ± 0.011
Mean Ratio = 0.320 ± 0.014

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.322E+06cm-2; ND = 2974

POOLED AGE = 75.0 ± 3.1 Ma
CENTRAL AGE = 74.2 ± 3.7 Ma

MT. DOONERAK ANTIFORM

Sample Locations and Apatite Yields - Mt. Doonerak antiform

Table 22. Sample details and apatite yields for outcrop samples: Mt. Doonerak antiform.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Stratigraphic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
89TM299A	67°54.9'	149°58.0'	(1200)/(*4000*)	Unnamed phyllite	Devonian (?)	~362-408	Metasandstone
90TM491A	67°56.1'	150°14.6'	(882)/(*2940*)	Apoon volcanic rocks	Ordovician (?)	~439-510	Volcanic
90TM492A	67°55.6'	150°42.7'	(570)/(*1900*)	Karen Creek Sandstone	Triassic	~208-245	Sandstone
90TM494A	67°56.0'	150°07.3'	(1452)/(*4840*)	Kekiktuk Fm.	Mississippian	~323-362	Sandstone
90TM495B	67°57.8'	149°54.6'	(768)/(*2560*)	Kekiktuk Fm.	Mississippian	~323-362	Sandstone

Sample Results - Mt. Doonerak antiform

Typical yields for the samples were fair (>15 dateable grains) and in most cases at least 15 grains were counted on each mount. Due to very young fission track ages only 1 of 5 mounts contained 100 or more confined tracks. Two mounts had less than 20 confined tracks. Most samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations. For these samples the pooled fission track age is presented. The mean age is presented for 90TM491A because it was determined that the dated grains did not represent a single age population.

Table 23. Apatite fission track analytical results: Mt. Doonerak antiform.

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
TM299A	25	1.354 (3047)	1.402 (142)	1.522 (1541)	36.5	22.0 ± 2.0	14.7	13.63 ± 0.12 (101)	1.25
TM491A	12	1.354 (3047)	3.992 (97)	2.704 (657)	0.06	35.2 ± 3.9 *33.9 ± 8.0**	26.2	14.15 ± 0.18 (24)	0.63
TM492A	25	1.354 (3047)	2.227 (99)	2.215 (985)	81.8	24.0 ± 2.6	21.4	13.88 ± 0.28 (47)	1.32
TM494A	16	1.354 (3047)	1.948 (88)	1.474 (666)	11.1	31.5 ± 7.2	14.3	13.14 ± 0.26 (31)	1.46
TM495A	5	1.354 (3047)	2.735 (16)	2.051 (120)	70.5	31.8 ± 17.0	19.8	14.65 ± 0.17 (32)	0.50

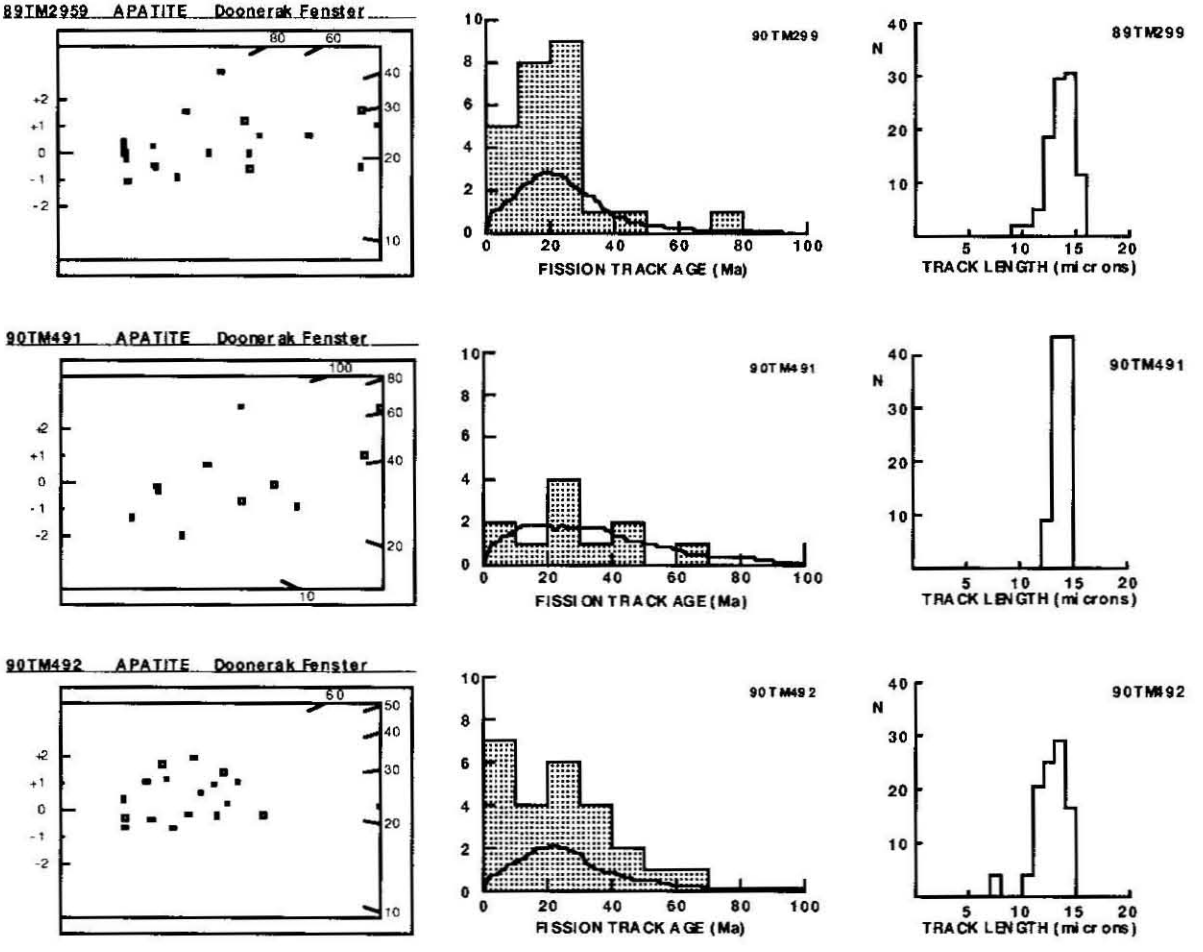
Parenthesis show number of tracks counted.

Table 24. Track length data: Mt. Doonerak antiform.

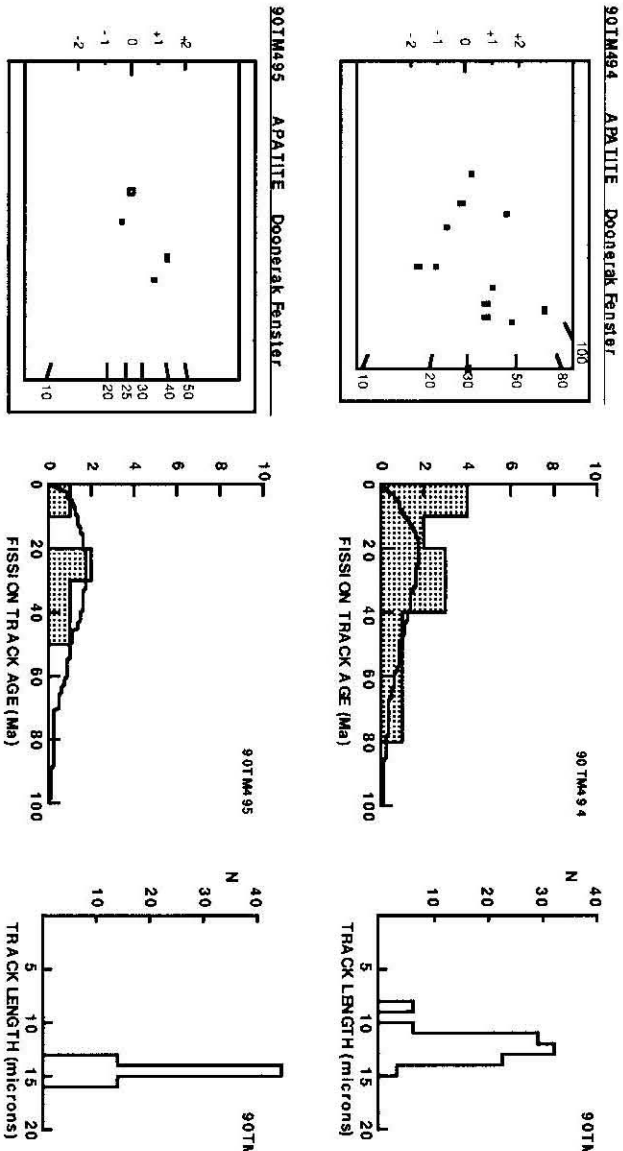
Sample Number	Track Length Range (μm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
TM299A	0	0	0	0	0	2	2	5	19	30	31	12	0	0
TM491A	0	0	0	0	0	0	0	0	1	5	5	0	0	0
TM492A	0	0	0	0	1	0	0	1	5	6	7	4	0	0
TM494A	0	0	0	0	0	2	0	2	9	10	7	1	0	0
TM495A	0	0	0	0	0	0	0	0	0	2	10	2	0	0

Length measurements by P. O'Sullivan

Single-Age and Track Length Distributions - Mt. Doonerak antiform



Age Sheets - Mt. Doonerak antiform



89TM299A - PHYLLITIC METASANDSTONE

IRRADIATION LU127
SLIDE NUMBER 9
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	7	22	30	0.318	7.9	2.593E+05	8.148E+05	75.5 ± 32.8
2	2	35	48	0.057	7.8	4.630E+04	8.102E+05	13.6 ± 9.9
3	14	137	30	0.102	49.1	5.185E+05	5.074E+06	24.4 ± 6.9
4	3	61	48	0.049	13.7	6.944E+04	1.412E+06	11.7 ± 6.9
5	9	84	40	0.107	22.6	2.500E+05	2.333E+06	25.5 ± 9.0
6	0	7	56	0.000	1.3	0.000E+00	1.389E+05	0.0 ± 0.0
7	8	60	16	0.133	40.3	5.556E+05	4.167E+06	31.8 ± 12.0
8	8	116	63	0.069	19.8	1.411E+05	2.046E+06	16.4 ± 6.0
9	2	20	48	0.100	4.5	4.630E+04	4.630E+05	23.8 ± 17.7
10	20	263	40	0.076	70.7	5.556E+05	7.306E+06	18.1 ± 4.2
11	0	7	48	0.000	1.6	0.000E+00	1.620E+05	0.0 ± 0.0
12	1	13	42	0.077	3.3	2.646E+04	3.439E+05	18.3 ± 19.0
13	1	12	70	0.083	1.8	1.587E+04	1.905E+05	19.9 ± 20.7
14	0	46	49	0.000	10.1	0.000E+00	1.043E+06	0.0 ± 0.0
15	1	15	20	0.067	8.1	5.556E+04	8.333E+05	15.9 ± 16.4
16	1	8	48	0.125	1.8	2.315E+04	1.852E+05	29.8 ± 31.6
17	8	94	70	0.085	14.4	1.270E+05	1.492E+06	20.3 ± 7.5
18	1	9	36	0.111	2.7	3.086E+04	2.778E+05	26.5 ± 27.9
19	0	3	36	0.000	0.9	0.000E+00	9.259E+04	0.0 ± 0.0
20	23	213	54	0.108	42.4	4.733E+05	4.383E+06	25.7 ± 5.7
21	2	33	48	0.061	7.4	4.630E+04	7.639E+05	14.5 ± 10.5
22	1	35	42	0.029	9.0	2.646E+04	9.259E+05	6.8 ± 6.9
23	5	59	45	0.085	14.1	1.235E+05	1.457E+06	20.2 ± 9.4
24	21	169	42	0.124	43.2	5.556E+05	4.471E+06	29.6 ± 6.9
25	4	20	56	0.200	3.8	7.936E+04	3.968E+05	47.6 ± 26.1
	142	1541			14.7	1.402E+05	1.522E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 25.763 with 24 degrees of freedom
P(chi squared) = 36.5 %
Correlation Coefficient = 0.938
Variance of SQR(Ns) = 2.09
Variance of SQR(Ni) = 15.94

Ns/Ni = 0.092 ± 0.008
Mean Ratio = 0.087 ± 0.014

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 22.0 ± 2.0 Ma
CENTRAL AGE = 20.7 ± 3.3 Ma

90TM491 - APOON (PRE-MISSISSIPPIAN) VOLCANIC ROCK

IRRADIATION LU127
SLIDE NUMBER 10
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	21	119	63	0.176	20.3	3.704E+05	2.099E+06	42.0 ± 10.0
2	9	21	20	0.429	11.3	5.000E+05	1.167E+06	101.5 ± 40.5
3	0	7	12	0.000	6.3	0.000E+00	6.481E+05	0.0 ± 0.0
4	5	26	20	0.192	14.0	2.778E+05	1.444E+06	45.8 ± 22.4
5	2	17	6	0.118	30.5	3.704E+05	3.148E+06	28.0 ± 21.0
6	12	113	28	0.106	43.4	4.762E+05	4.484E+06	25.3 ± 7.7
7	7	67	30	0.104	24.0	2.593E+05	2.481E+06	24.9 ± 9.9
8	1	28	12	0.036	25.1	9.259E+04	2.593E+06	8.5 ± 8.7
9	3	71	9	0.042	84.8	3.704E+05	8.765E+06	10.1 ± 5.9
10	25	95	18	0.263	56.7	1.543E+06	5.864E+06	62.5 ± 14.1
11	2	19	16	0.105	12.8	1.389E+05	1.319E+06	25.1 ± 18.7
12	10	74	36	0.135	22.1	3.086E+05	2.284E+06	32.2 ± 10.9
	97	657			26.2	3.992E+05	2.704E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 26.296 with 11 degrees of freedom
P(chi squared) = 0.6 %
Correlation Coefficient = 0.787
Variance of SQR(Ns) = 2.16
Variance of SQR(Ni) = 8.04

Ns/Ni = 0.148 ± 0.016
Mean Ratio = 0.142 ± 0.033

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 35.2 ± 3.9 Ma
CENTRAL AGE = 33.9 ± 8.0 Ma

90TM492 - KAREN CREEK SANDSTONE

IRRADIATION LU127
SLIDE NUMBER 11
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	7	44	12	0.159	39.4	6.481E+05	4.074E+06	37.9 ± 15.4
2	0	2	8	0.000	2.7	0.000E+00	2.778E+05	0.0 ± 0.0
3	25	265	64	0.094	44.5	4.340E+05	4.601E+06	22.5 ± 4.7
4	5	40	12	0.125	35.8	4.630E+05	3.704E+06	29.8 ± 14.1
5	0	2	9	0.000	2.4	0.000E+00	2.469E+05	0.0 ± 0.0
6	0	8	9	0.000	9.6	0.000E+00	9.877E+05	0.0 ± 0.0
7	0	8	25	0.000	3.4	0.000E+00	3.556E+05	0.0 ± 0.0
8	3	11	20	0.273	5.9	1.667E+05	6.111E+05	64.8 ± 42.2
9	0	10	6	0.000	17.9	0.000E+00	1.852E+06	0.0 ± 0.0
10	1	7	9	0.143	8.4	1.235E+05	8.642E+05	34.0 ± 36.4
11	1	15	24	0.067	6.7	4.630E+04	6.944E+05	15.9 ± 16.4
12	0	11	9	0.000	13.1	0.000E+00	1.358E+06	0.0 ± 0.0
13	5	21	20	0.238	11.3	2.778E+05	1.167E+06	56.6 ± 28.2
14	8	59	20	0.136	31.7	4.444E+05	3.278E+06	32.3 ± 12.2
15	0	9	16	0.000	6.0	0.000E+00	6.250E+05	0.0 ± 0.0
16	2	28	30	0.071	10.0	7.407E+04	1.037E+06	17.0 ± 12.5
17	1	22	16	0.045	14.8	6.944E+04	1.528E+06	10.8 ± 11.1
18	3	49	35	0.061	15.0	9.524E+04	1.556E+06	14.6 ± 8.7
19	6	44	12	0.136	39.4	5.556E+05	4.074E+06	32.5 ± 14.2
20	3	16	12	0.188	14.3	2.778E+05	1.481E+06	44.6 ± 28.1
21	2	10	3	0.200	35.8	7.407E+05	3.704E+06	47.6 ± 36.9
22	6	71	25	0.084	30.5	2.667E+05	3.156E+06	20.2 ± 8.6
23	4	47	18	0.085	28.1	2.469E+05	2.901E+06	20.3 ± 10.6
24	7	69	30	0.101	24.7	2.593E+05	2.556E+06	24.2 ± 9.6
25	10	117	50	0.085	25.2	2.222E+05	2.600E+06	20.4 ± 6.7
	99	985			21.4	2.227E+05	2.215E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 17.682 with 24 degrees of freedom
P(chi squared) = 81.8 %
Correlation Coefficient = 0.967
Variance of SQR(Ns) = 1.63
Variance of SQR(Ni) = 10.90

Ns/Ni = 0.100 ± 0.011
Mean Ratio = 0.092 ± 0.016

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 24.0 ± 2.6 Ma
CENTRAL AGE = 21.9 ± 3.8 Ma

90TM494 - KEKIKTUK CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 12
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	14	112	70	0.125	17.2	2.222E+05	1.778E+06	29.8 ± 8.5
2	11	52	32	0.212	17.5	3.819E+05	1.806E+06	50.3 ± 16.7
3	4	46	20	0.087	24.7	2.222E+05	2.556E+06	20.7 ± 10.8
4	3	27	20	0.111	14.5	1.667E+05	1.500E+06	26.5 ± 16.1
5	10	64	32	0.156	21.5	3.472E+05	2.222E+06	37.2 ± 12.7
6	9	57	25	0.158	24.5	4.000E+05	2.533E+06	37.6 ± 13.5
7	11	33	20	0.333	17.7	6.111E+05	1.833E+06	79.1 ± 27.6
8	4	14	24	0.286	6.3	1.852E+05	6.481E+05	67.9 ± 38.5
9	8	45	24	0.178	20.2	3.704E+05	2.083E+06	42.3 ± 16.3
10	0	1	40	0.000	0.3	0.000E+00	2.778E+04	0.0 ± 0.0
11	2	14	54	0.143	2.8	4.115E+04	2.881E+05	34.0 ± 25.7
12	6	103	60	0.058	18.5	1.111E+05	1.907E+06	13.9 ± 5.8
13	0	5	20	0.000	2.7	0.000E+00	2.778E+05	0.0 ± 0.0
14	0	6	20	0.000	3.2	0.000E+00	3.333E+05	0.0 ± 0.0
15	6	79	25	0.076	34.0	2.667E+05	3.511E+06	18.1 ± 7.7
16	0	8	16	0.000	5.4	0.000E+00	5.556E+05	0.0 ± 0.0
	88	666			14.3	1.948E+05	1.474E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 21.869 with 15 degrees of freedom
P(chi squared) = 11.1 %
Correlation Coefficient = 0.748
Variance of SQR(Ns) = 1.76
Variance of SQR(Ni) = 8.51

Ns/Ni = 0.132 ± 0.015
Mean Ratio = 0.120 ± 0.025

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 31.5 ± 3.6 Ma
CENTRAL AGE = 28.6 ± 6.0 Ma

90TM495 - KEKIKTUK CONGLOMERATE

IRRADIATION LU127
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	19	25	0.105	8.2	8.889E+04	8.444E+05	25.1 ± 18.7
2	5	24	9	0.208	28.7	6.173E+05	2.963E+06	49.6 ± 24.4
3	0	4	4	0.000	10.7	0.000E+00	1.111E+06	0.0 ± 0.0
4	6	38	12	0.158	34.0	5.556E+05	3.519E+06	37.6 ± 16.5
5	3	35	15	0.086	25.1	2.222E+05	2.593E+06	20.4 ± 12.3
	16	120			19.8	2.735E+05	2.051E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 2.170 with 4 degrees of freedom
P(chi squared) = 70.5 %
Correlation Coefficient = 0.823
Variance of SQR(Ns) = 0.93
Variance of SQR(Ni) = 2.77

Ns/Ni = 0.133 ± 0.035
Mean Ratio = 0.111 ± 0.035

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.354E+06cm-2; ND = 3047

POOLED AGE = 31.8 ± 8.5 Ma
CENTRAL AGE = 26.6 ± 8.4 Ma

ARRIGETCH AND IGIKPAK PLUTONS

Sample Locations and Apatite Yields - Arrigetch and Igikpak plutons

Table 25. Sample details and apatite yields for outcrop samples: Arrigetch and Igikpak plutons.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Plutonic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
77ADG110	67°23.0'	154°07.4'	(1280)/(*4200*)	Arrigetch pluton	Devonian	~362-408	Granitic gneiss
77ADG112	67°27.1'	154°10.9'	(1280)/(*4200*)	Arrigetch pluton	Devonian	~362-408	Granitic gneiss
77ANS253	67°19.0'	154°33.8'	(1280)/(*4200*)	Arrigetch pluton	Devonian	~362-408	Granitic gneiss
77AMT80	67°20.9'	154°17.1'	(1128)/(*3700*)	Arrigetch pluton	Devonian	~362-408	Granitic gneiss
77ANS78	67°23.2'	153°57.6'	(1098)/(*3600*)	Arrigetch pluton	Devonian	~362-408	Granitic gneiss
77ADG106	67°18.5'	154°02.6'	(1067)/(*3500*)	Arrigetch pluton	Devonian	~362-408	Granitic gneiss
77ADG103	67°30.0'	155°02.6'	(2165)/(*7100*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ADG124	67°28.2'	154°59.7'	(1799)/(*5900*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ADG128	67°23.8'	155°06.2'	(1524)/(*5000*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77AMT82	67°27.4'	154°30.9'	(1524)/(*5000*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ANS260	67°26.0'	154°28.5'	(1524)/(*5000*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ANS88	67°26.2'	154°55.6'	(1341)/(*4400*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ANS87	67°28.5'	155°02.1'	(1341)/(*4400*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ADG117	67°27.5'	154°42.4'	(1280)/(*4200*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ADG118	67°24.6'	154°32.9'	(1219)/(*4000*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ADG188	67°21.1'	154°54.1'	(1052)/(*3450*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
77ANS93	67°19.1'	155°07.4'	(915)/(*3000*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss
84APa713	67°27.5'	154°39.3'	(1204)/(*3950*)	Igikpak pluton	Devonian	~362-408	Granitic gneiss

Sample Results - Arrigetch and Igikpak plutons

Typical yields for the samples were very good and in most cases 20 grains were counted on each mount. Due to relatively young ages and, in some cases, low uranium content (<10 ppm) only 4 of 14 mounts contained 100 or more confined tracks. Eleven mounts had less than 50 confined tracks. All samples passed the Chi-Squared test, thus the pooled fission track age is reported for each.

Table 26. Apatite fission track analytical results: Arrigetch and Igikpak plutons.

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (µm)	Standard deviation (µm)
Arrigetch									
77ADG110	25	1.199 (2698)	3.429 (200)	2.714 (1583)	96.2	26.7 ± 2.1	29.7	13.51 ± 0.14 (102)	1.43
77ADG112	25	1.199 (2698)	1.598 (155)	1.302 (1263)	48.6	25.9 ± 2.3	14.2	13.59 ± 0.14 (101)	1.45
77ANS253	18	1.316 (3134)	95.69 (40)	48.32 (202)	94.2	45.4 ± 8.0	4.8	13.29 ± 1.50 (5)	3.35
77AMT80	20	1.199 (2698)	1.548 (198)	1.486 (1901)	94.8	22.0 ± 1.7	16.2	13.00 ± 0.16 (103)	1.59

Table 26. Apatite fission track analytical results: Arrigetch and Igikpak plutons (continued).

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (µm)	Standard deviation (µm)
Arrigetch									
77ANS78	25	1.199 (2698)	1.841 (173)	1.830 (1719)	6.3	21.2 ± 1.8	20.0	12.61 ± 0.30 (47)	2.07
77ADG106	20	1.199 (2698)	2.672 (120)	2.601 (1168)	58.3	21.7 ± 2.1	28.4	12.33 ± 0.35 (33)	2.00
Igikpak									
77ADG103	25	1.199 (2698)	1.338 (99)	77.18 (571)	59.4	36.3 ± 4.1	8.4	12.24 ± 0.41 (43)	2.68
77ADG124	16	1.199 (2698)	1.506 (137)	95.40 (868)	36.5	33.0 ± 3.2	10.4	13.39 ± 0.88 (5)	1.97
77ADG128	20	1.199 (2698)	2.264 (130)	1.233 (708)	55.8	38.4 ± 3.8	13.5	13.35 ± 0.45 (20)	2.01
77AMT82	25	1.199 (2698)	2.794 (259)	2.427 (2250)	84.4	24.3 ± 1.7	26.5	14.05 ± 0.13 (102)	1.27
77ANS260	24	1.343 (3134)	49.73 (25)	42.97 (216)	48.0	27.1 ± 5.8	4.2	9.98 ± 2.30 (2)	3.24
77ANS88	Poor contact between mica and grain mount - no age determined								
77ANS87	24	1.199 (2698)	1.508 (268)	79.20 (1407)	94.6	39.8 ± 2.8	8.7	14.14 ± 0.33 (23)	1.60
77ADG117	21	1.290 (3134)	2.527 (56)	1.363 (302)	88.9	41.7 ± 6.2	13.8	12.72 ± 0.37 (49)	2.26
77ADG118	23	1.303 (3134)	2.072 (112)	1.225 (662)	9.1	38.5 ± 4.1	4.8	13.19 ± 0.28 (61)	2.15
77ADG188	25	1.199 (2698)	1.996 (359)	1.180 (2122)	39.9	35.4 ± 2.2	12.9	13.97 ± 0.34 (45)	2.27
77ANS93	23	1.199 (2698)	2.348 (187)	1.298 (1034)	95.5	37.8 ± 3.2	14.2	13.41 ± 0.22 (92)	2.08
84APa713	12	1.304 (2963)	1.862 (106)	1.588 (904)	19.6	26.7 ± 2.9	16.0	13.36 ± 0.39 (6)	0.97

Parentheses show number of tracks counted.

Table 27. Track length data: Arrigetch and Igikpak plutons.

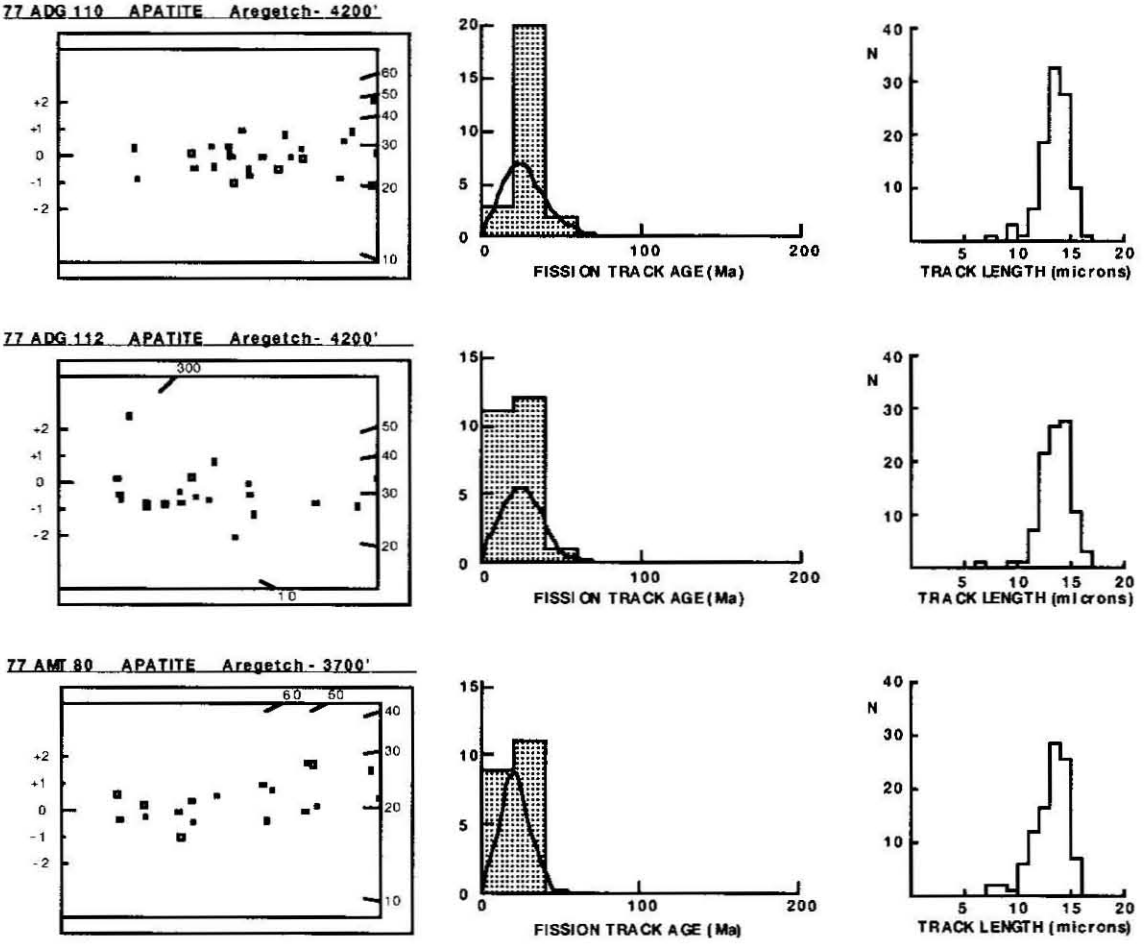
Sample Number	Track Length Range (µm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
Arrigetch														
ADG110	0	0	0	1	0	3	1	6	19	33	28	10	1	0
ADG112	0	0	1	0	0	1	1	7	22	27	28	11	3	0
ANS253	0	0	0	1	0	0	0	0	0	1	1	2	0	0
AMT80	0	0	0	2	2	1	6	12	17	29	26	7	0	0
ANS78	0	0	1	1	2	1	3	4	13	11	8	2	1	0
ADG106	0	0	1	1	1	2	1	4	5	15	3	0	0	0
Igikpak														
ADG103	1	2	0	0	3	1	4	6	5	9	8	3	1	0
ADG124	0	0	0	0	0	0	1	1	0	0	2	1	0	0
ADG128	0	0	0	0	1	1	1	1	2	5	4	5	0	0
AMT82	0	0	0	0	0	1	1	4	14	24	37	17	3	1
ANS260	0	0	0	1	0	0	0	0	1	0	0	0	0	0
ANS88	0	0	0	0	0	0	2	2	3	9	5	1	1	0
ANS87	0	0	0	0	0	0	1	2	2	5	9	1	2	1

Table 27. Track length data: Arrigetch and Igikpak plutons (continued).

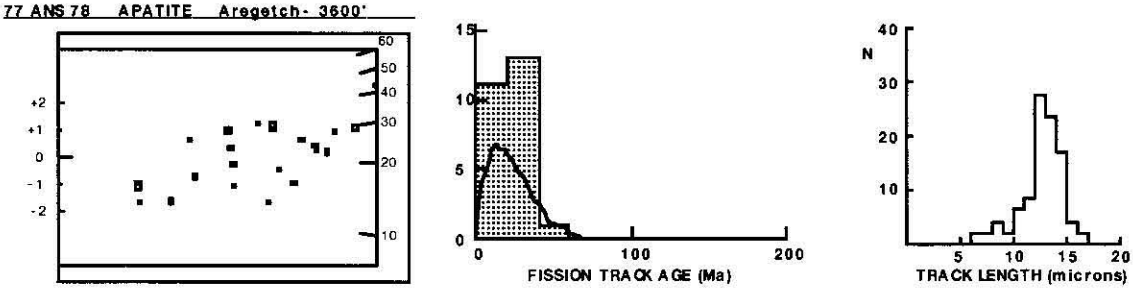
Sample Number	Track Length Range (µm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
Igikpak														
ADG117	0	1	3	0	1	1	4	5	5	10	11	1	1	0
ADG118	1	0	0	1	0	1	2	6	17	11	12	6	4	0
ADG188	0	2	0	0	0	0	0	3	6	14	13	2	1	0
ANS93	0	1	0	1	2	7	10	9	19	24	12	6	0	0
APa713	0	0	0	0	0	0	0	1	1	2	2	0	0	0

Length measurements by J. Murphy and P. O'Sullivan

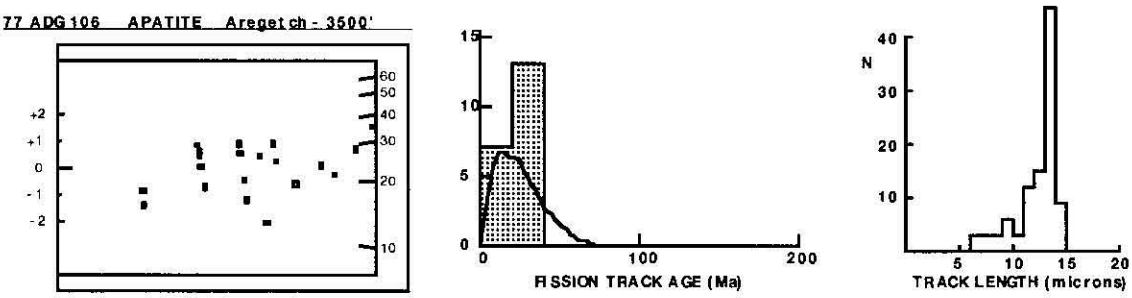
Single-Age and Track Length Distributions - Arrigetch and Igikpak plutons



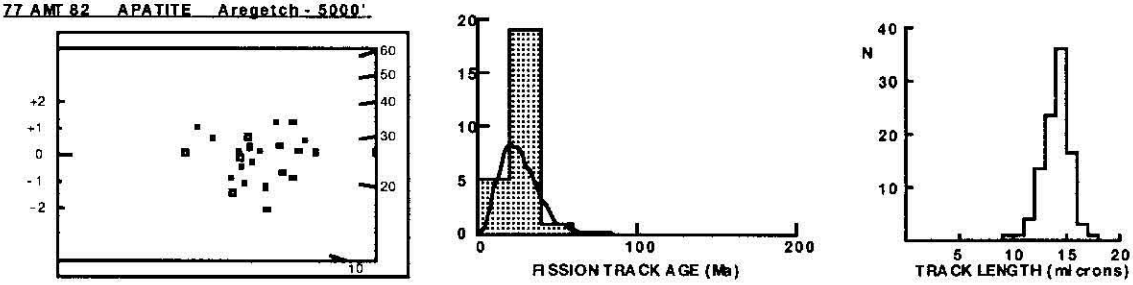
77 ANS 78 APATITE Aregetch - 3600'



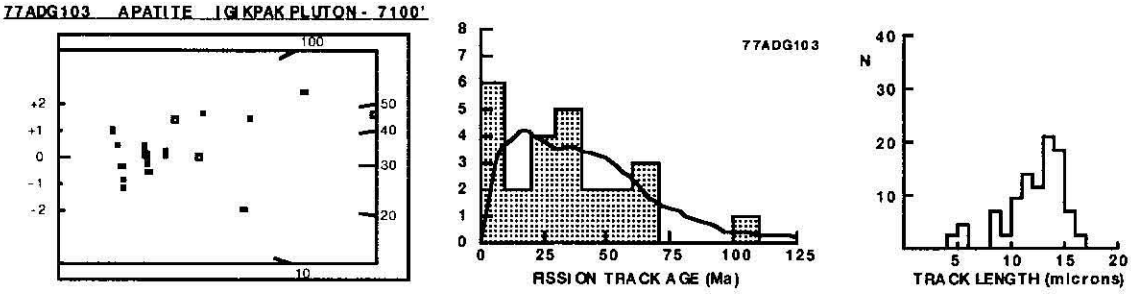
77 ADG 106 APATITE Aregetch - 3500'



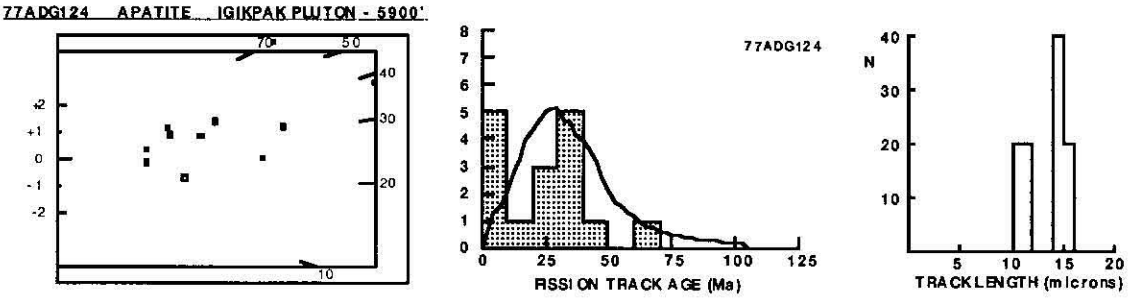
77 AMT 82 APATITE Aregetch - 5000'



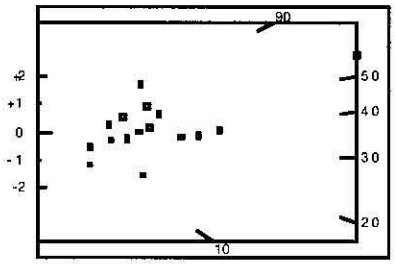
77ADG103 APATITE IGIKPAK PLUTON - 7100'

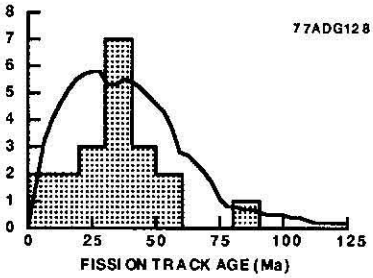


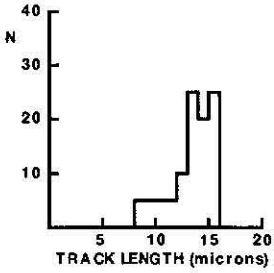
77ADG124 APATITE IGIKPAK PLUTON - 5900'

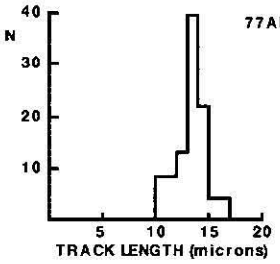


77ADG128 APATITE IGIKPAK PLUTON - 5000'



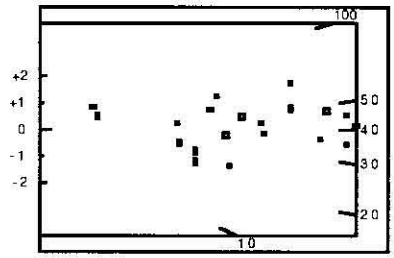


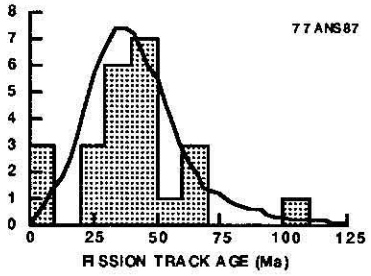


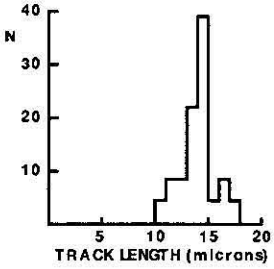


NO AGE DATA

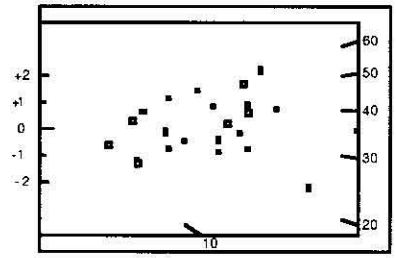
77ANS87 APATITE IGIKPAK PLUTON - 4400'

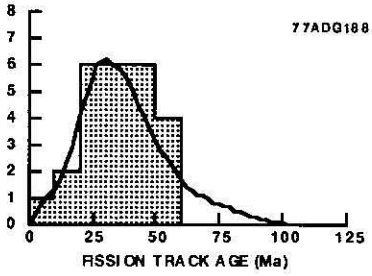


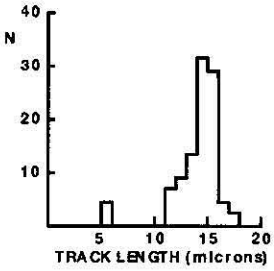




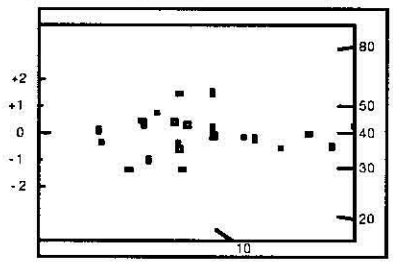
77ADG188 APATITE IGIKPAK PLUTON - 3450'

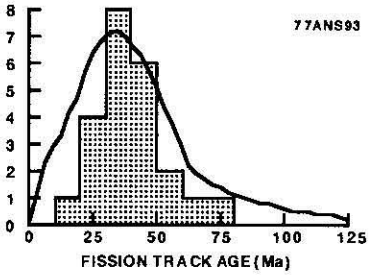


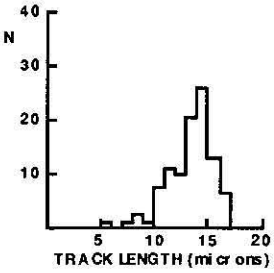


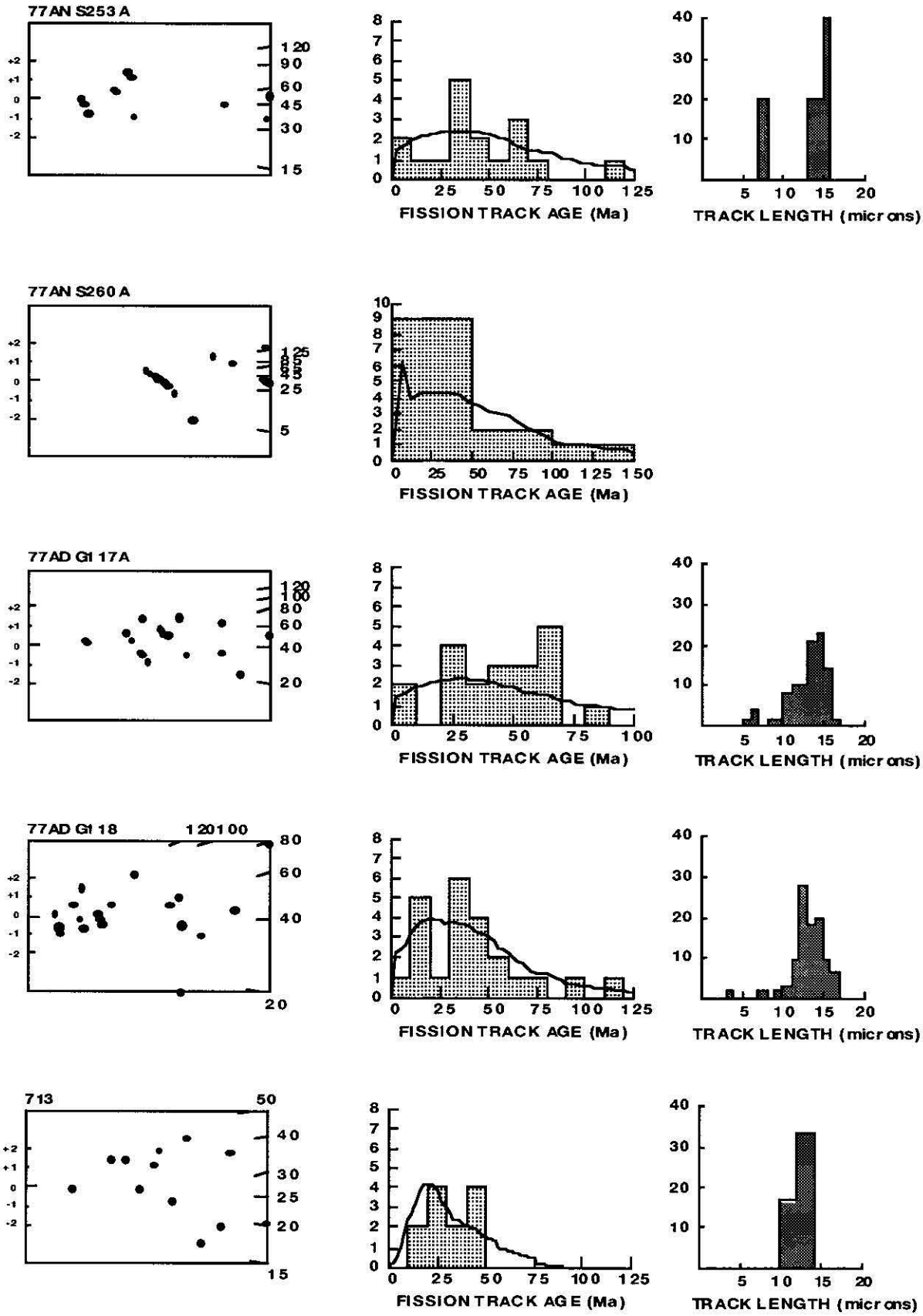


77ANS93 APATITE IGIKPAK PLUTON - 3000'








77AN S253 A
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TRACK LENGTH (microns)
77AN S260 A
FISSION TRACK AGE (Ma)
77AD G1 17A
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
77AD G1 18
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)
713
FISSION TRACK AGE (Ma)
TRACK LENGTH (microns)

Age Sheets - Arrigetch and Igikpak plutons

77ADG110 - ARRIGETCH PLUTON

IRRADIATION LU119
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	18	81	30	0.222	32.8	6.667E+05	3.000E+06	46.8 ± 12.2
2	1	20	16	0.050	15.2	6.944E+04	1.389E+06	10.6 ± 10.8
3	17	131	40	0.130	39.8	4.722E+05	3.639E+06	27.4 ± 7.1
4	5	36	20	0.139	21.9	2.778E+05	2.000E+06	29.3 ± 14.0
5	1	6	9	0.167	8.1	1.235E+05	7.407E+05	35.1 ± 38.0
6	4	39	15	0.103	31.6	2.963E+05	2.889E+06	21.6 ± 11.4
7	9	53	14	0.170	46.0	7.143E+05	4.206E+06	35.8 ± 12.9
8	5	63	24	0.079	31.9	2.315E+05	2.917E+06	16.8 ± 7.8
9	5	41	36	0.122	13.8	1.543E+05	1.265E+06	25.7 ± 12.2
10	9	72	70	0.125	12.5	1.429E+05	1.143E+06	26.4 ± 9.3
11	13	130	35	0.100	45.1	4.127E+05	4.127E+06	21.1 ± 6.2
12	8	76	25	0.105	36.9	3.556E+05	3.378E+06	22.2 ± 8.3
13	10	82	40	0.122	24.9	2.778E+05	2.278E+06	25.7 ± 8.6
14	5	34	16	0.147	25.8	3.472E+05	2.361E+06	31.0 ± 14.9
15	14	95	30	0.147	38.4	5.185E+05	3.519E+06	31.1 ± 8.9
16	6	31	15	0.194	25.1	4.444E+05	2.296E+06	40.8 ± 18.2
17	16	168	40	0.095	51.0	4.444E+05	4.667E+06	20.1 ± 5.3
18	6	59	16	0.102	44.8	4.167E+05	4.097E+06	21.5 ± 9.2
19	3	23	15	0.130	18.6	2.222E+05	1.704E+06	27.5 ± 16.9
20	15	91	24	0.165	46.0	6.944E+05	4.213E+06	34.8 ± 9.7
21	7	56	12	0.125	56.7	6.481E+05	5.185E+06	26.4 ± 10.6
22	10	73	42	0.137	21.1	2.646E+05	1.931E+06	28.9 ± 9.8
23	4	26	12	0.154	26.3	3.704E+05	2.407E+06	32.4 ± 17.4
24	6	66	32	0.091	25.0	2.083E+05	2.292E+06	19.2 ± 8.2
25	3	31	20	0.097	18.8	1.667E+05	1.722E+06	20.4 ± 12.4
	200	1583			29.7	3.429E+05	2.714E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 13.241 with 24 degrees of freedom
P(chi squared) = 96.2 %
Correlation Coefficient = 0.871
Variance of SQR(Ns) = 0.82
Variance of SQR(Ni) = 5.90

Ns/Ni = 0.126 ± 0.009
Mean Ratio = 0.129 ± 0.008

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 26.7 ± 2.1 Ma
CENTRAL AGE = 27.2 ± 1.7 Ma

77ADG112 - ARRIGETCH PLUTON

IRRADIATION LU119
SLIDE NUMBER 14
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	10	97	70	0.103	16.8	1.587E+05	1.540E+06	21.8 ± 7.2
2	1	11	16	0.091	8.3	6.944E+04	7.639E+05	19.2 ± 20.1
3	6	53	60	0.113	10.7	1.111E+05	9.815E+05	23.9 ± 10.3
4	24	191	70	0.126	33.1	3.810E+05	3.032E+06	26.5 ± 5.8
5	5	43	42	0.116	12.4	1.323E+05	1.138E+06	24.5 ± 11.6
6	0	10	42	0.000	2.9	0.000E+00	2.646E+05	0.0 ± 0.0
7	1	13	35	0.077	4.5	3.175E+04	4.127E+05	16.2 ± 16.9
8	10	76	80	0.132	11.5	1.389E+05	1.056E+06	27.8 ± 9.4
9	4	32	20	0.125	19.4	2.222E+05	1.778E+06	26.4 ± 14.0
10	3	33	16	0.091	25.0	2.083E+05	2.292E+06	19.2 ± 11.6
11	10	67	12	0.149	67.8	9.259E+05	6.204E+06	31.5 ± 10.7
12	4	39	48	0.103	9.9	9.259E+04	9.028E+05	21.6 ± 11.4
13	0	2	35	0.000	0.7	0.000E+00	6.349E+04	0.0 ± 0.0
14	0	7	20	0.000	4.2	0.000E+00	3.889E+05	0.0 ± 0.0
15	18	142	30	0.127	57.5	6.667E+05	5.259E+06	26.7 ± 6.7
16	3	32	60	0.094	6.5	5.556E+04	5.926E+05	19.8 ± 12.0
17	8	110	36	0.073	37.1	2.469E+05	3.395E+06	15.4 ± 5.6
18	28	178	70	0.157	30.9	4.444E+05	2.825E+06	33.2 ± 6.8
19	7	33	40	0.212	10.0	1.944E+05	9.167E+05	44.7 ± 18.6
20	2	23	36	0.087	7.8	6.173E+04	7.099E+05	18.4 ± 13.5
21	5	30	18	0.167	20.2	3.086E+05	1.852E+06	35.1 ± 17.0
22	0	6	28	0.000	2.6	0.000E+00	2.381E+05	0.0 ± 0.0
23	3	2	80	1.500	0.3	4.167E+04	2.778E+04	309.6 ± 282.7
24	1	6	24	0.167	3.0	4.630E+04	2.778E+05	35.1 ± 38.0
25	2	27	90	0.074	3.6	2.469E+04	3.333E+05	15.6 ± 11.5
	155	1263			14.2	1.598E+05	1.302E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 23.572 with 24 degrees of freedom
P(chi squared) = 48.6 %
Correlation Coefficient = 0.961
Variance of SQR(Ns) = 2.07
Variance of SQR(Ni) = 12.52

Ns/Ni = 0.123 ± 0.010
Mean Ratio = 0.155 ± 0.057

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 25.9 ± 2.3 Ma
CENTRAL AGE = 32.8 ± 12.1 Ma

77AMT80 - ARRIGETCH PLUTON

IRRADIATION LU119
SLIDE NUMBER 15
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	18	126	90	0.143	17.0	2.222E+05	1.556E+06	30.1 ± 7.6
2	0	4	80	0.000	0.6	0.000E+00	5.556E+04	0.0 ± 0.0
3	1	6	50	0.167	1.5	2.222E+04	1.333E+05	35.1 ± 38.0
4	5	47	50	0.106	11.4	1.111E+05	1.044E+06	22.5 ± 10.6
5	2	27	40	0.074	8.2	5.556E+04	7.500E+05	15.6 ± 11.5
6	2	19	70	0.105	3.3	3.175E+04	3.016E+05	22.2 ± 16.5
7	17	189	80	0.090	28.7	2.361E+05	2.625E+06	19.0 ± 4.8
8	12	98	100	0.122	11.9	1.333E+05	1.089E+06	25.8 ± 7.9
9	1	16	100	0.062	1.9	1.111E+04	1.778E+05	13.2 ± 13.6
10	28	224	100	0.125	27.2	3.111E+05	2.489E+06	26.4 ± 5.3
11	0	13	90	0.000	1.8	0.000E+00	1.605E+05	0.0 ± 0.0
12	4	74	100	0.054	9.0	4.444E+04	8.222E+05	11.4 ± 5.9
13	7	62	48	0.113	15.7	1.620E+05	1.435E+06	23.8 ± 9.5
14	19	199	60	0.095	40.3	3.519E+05	3.685E+06	20.2 ± 4.9
15	5	67	35	0.075	23.2	1.587E+05	2.127E+06	15.8 ± 7.3
16	12	147	48	0.082	37.2	2.778E+05	3.403E+06	17.2 ± 5.2
17	4	46	100	0.087	5.6	4.444E+04	5.111E+05	18.4 ± 9.6
18	19	136	80	0.140	20.6	2.639E+05	1.889E+06	29.5 ± 7.3
19	29	287	30	0.101	116.1	1.074E+06	1.063E+07	21.3 ± 4.2
20	13	114	70	0.114	19.8	2.063E+05	1.810E+06	24.1 ± 7.1
	198	1901			16.2	1.548E+05	1.486E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 10.204 with 19 degrees of freedom
P(chi squared) = 94.8 %
Correlation Coefficient = 0.963
Variance of SQR(Ns) = 2.68
Variance of SQR(Ni) = 19.22

Ns/Ni = 0.104 ± 0.008
Mean Ratio = 0.093 ± 0.009

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 22.0 ± 1.7 Ma
CENTRAL AGE = 19.6 ± 2.0 Ma

77ANS78 - ARRIGETCH PLUTON

IRRADIATION LU119
SLIDE NUMBER 17
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	12	114	56	0.105	24.7	2.381E+05	2.262E+06	22.2 ± 6.8
2	2	65	50	0.031	15.8	4.444E+04	1.444E+06	6.5 ± 4.7
3	11	95	50	0.116	23.1	2.444E+05	2.111E+06	24.4 ± 7.8
4	1	27	60	0.037	5.5	1.852E+04	5.000E+05	7.8 ± 8.0
5	8	51	9	0.157	68.8	9.877E+05	6.296E+06	33.1 ± 12.6
6	8	54	60	0.148	10.9	1.481E+05	1.000E+06	31.2 ± 11.9
7	13	98	16	0.133	74.4	9.028E+05	6.806E+06	28.0 ± 8.3
8	5	30	12	0.167	30.3	4.630E+05	2.778E+06	35.1 ± 17.0
9	5	43	80	0.116	6.5	6.944E+04	5.972E+05	24.5 ± 11.6
10	1	53	49	0.019	13.1	2.268E+04	1.202E+06	4.0 ± 4.0
11	3	20	54	0.150	4.5	6.173E+04	4.115E+05	31.6 ± 19.6
12	8	96	54	0.083	21.6	1.646E+05	1.975E+06	17.6 ± 6.5
13	5	31	20	0.161	18.8	2.778E+05	1.722E+06	34.0 ± 16.4
14	0	36	40	0.000	10.9	0.000E+00	1.000E+06	0.0 ± 0.0
15	11	101	40	0.109	30.7	3.056E+05	2.806E+06	23.0 ± 7.3
16	1	32	25	0.031	15.5	4.444E+04	1.422E+06	6.6 ± 6.7
17	18	91	28	0.198	39.5	7.143E+05	3.611E+06	41.7 ± 10.8
18	9	126	60	0.071	25.5	1.667E+05	2.333E+06	15.1 ± 5.2
19	7	42	30	0.167	17.0	2.593E+05	1.556E+06	35.1 ± 14.4
20	15	111	42	0.135	32.1	3.968E+05	2.936E+06	28.5 ± 7.9
21	10	81	24	0.123	41.0	4.630E+05	3.750E+06	26.1 ± 8.8
22	3	47	50	0.064	11.4	6.667E+04	1.044E+06	13.5 ± 8.0
23	5	82	35	0.061	28.4	1.587E+05	2.603E+06	12.9 ± 5.9
24	7	136	30	0.051	55.0	2.593E+05	5.037E+06	10.9 ± 4.2
25	5	57	70	0.088	9.9	7.936E+04	9.048E+05	18.5 ± 8.6
	173	1719			20.0	1.841E+05	1.830E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 35.345 with 24 degrees of freedom
P(chi squared) = 6.3 %
Correlation Coefficient = 0.692
Variance of SQR(Ns) = 1.04
Variance of SQR(Ni) = 4.40

Ns/Ni = 0.101 ± 0.008
Mean Ratio = 0.101 ± 0.011

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 21.2 ± 1.8 Ma
CENTRAL AGE = 21.3 ± 2.3 Ma

77ADG106 - ARRIGETCH PLUTON

IRRADIATION LU119
SLIDE NUMBER 18
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	5	31	30	0.161	12.5	1.852E+05	1.148E+06	34.0 ± 16.4
2	6	133	50	0.045	32.3	1.333E+05	2.956E+06	9.5 ± 4.0
3	5	58	12	0.086	58.7	4.630E+05	5.370E+06	18.2 ± 8.5
4	15	91	12	0.165	92.1	1.389E+06	8.426E+06	34.8 ± 9.7
5	3	21	15	0.143	17.0	2.222E+05	1.556E+06	30.1 ± 18.6
6	1	40	18	0.025	27.0	6.173E+04	2.469E+06	5.3 ± 5.4
7	3	43	12	0.070	43.5	2.778E+05	3.981E+06	14.7 ± 8.8
8	5	36	12	0.139	36.4	4.630E+05	3.333E+06	29.3 ± 14.0
9	1	23	10	0.043	27.9	1.111E+05	2.556E+06	9.2 ± 9.4
10	7	46	20	0.152	27.9	3.889E+05	2.556E+06	32.1 ± 13.0
11	3	27	30	0.111	10.9	1.111E+05	1.000E+06	23.5 ± 14.3
12	11	111	42	0.099	32.1	2.910E+05	2.936E+06	20.9 ± 6.6
13	5	82	20	0.061	49.8	2.778E+05	4.556E+06	12.9 ± 5.9
14	3	20	18	0.150	13.5	1.852E+05	1.235E+06	31.6 ± 19.6
15	6	47	21	0.128	27.2	3.175E+05	2.487E+06	26.9 ± 11.7
16	13	98	90	0.133	13.2	1.605E+05	1.210E+06	28.0 ± 8.3
17	8	94	12	0.085	95.1	7.407E+05	8.704E+06	18.0 ± 6.6
18	3	17	14	0.176	14.7	2.381E+05	1.349E+06	37.2 ± 23.3
19	10	90	25	0.111	43.7	4.444E+05	4.000E+06	23.5 ± 7.8
20	7	60	36	0.117	20.2	2.160E+05	1.852E+06	24.6 ± 9.9
	120	1168			28.4	2.672E+05	2.601E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 17.101 with 19 degrees of freedom
P(chi squared) = 58.3 %
Correlation Coefficient = 0.722
Variance of SQR(Ns) = 0.61
Variance of SQR(Ni) = 5.10

Ns/Ni = 0.103 ± 0.010
Mean Ratio = 0.110 ± 0.010

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 21.7 ± 2.1 Ma
CENTRAL AGE = 23.2 ± 2.2 Ma

77AMT82C - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 11
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	9	68	32	0.132	25.8	3.125E+05	2.361E+06	27.9 ± 9.9
2	8	98	32	0.082	37.2	2.778E+05	3.403E+06	17.2 ± 6.4
3	16	128	64	0.125	24.3	2.778E+05	2.222E+06	26.4 ± 7.0
4	12	67	32	0.179	25.4	4.167E+05	2.326E+06	37.8 ± 11.9
5	7	82	50	0.085	19.9	1.556E+05	1.822E+06	18.0 ± 7.1
6	8	62	50	0.129	15.1	1.778E+05	1.378E+06	27.2 ± 10.2
7	14	80	48	0.175	20.2	3.241E+05	1.852E+06	36.9 ± 10.7
8	7	100	50	0.070	24.3	1.556E+05	2.222E+06	14.8 ± 5.8
9	8	78	28	0.103	33.8	3.175E+05	3.095E+06	21.6 ± 8.1
10	9	57	30	0.158	23.1	3.333E+05	2.111E+06	33.3 ± 12.0
11	14	111	60	0.126	22.5	2.593E+05	2.056E+06	26.6 ± 7.6
12	15	106	50	0.142	25.7	3.333E+05	2.356E+06	29.9 ± 8.3
13	10	122	50	0.082	29.6	2.222E+05	2.711E+06	17.3 ± 5.7
14	9	67	18	0.134	45.2	5.556E+05	4.136E+06	28.3 ± 10.1
15	13	137	40	0.095	41.6	3.611E+05	3.806E+06	20.0 ± 5.8
16	5	25	14	0.200	21.7	3.968E+05	1.984E+06	42.2 ± 20.7
17	10	160	70	0.062	27.7	1.587E+05	2.540E+06	13.2 ± 4.3
18	12	120	60	0.100	24.3	2.222E+05	2.222E+06	21.1 ± 6.4
19	9	82	36	0.110	27.7	2.778E+05	2.531E+06	23.2 ± 8.2
20	8	69	40	0.116	20.9	2.222E+05	1.917E+06	24.5 ± 9.2
21	12	89	40	0.135	27.0	3.333E+05	2.472E+06	28.4 ± 8.8
22	6	37	12	0.162	37.4	5.556E+05	3.426E+06	34.2 ± 15.1
23	10	79	32	0.127	30.0	3.472E+05	2.743E+06	26.7 ± 9.0
24	4	32	12	0.125	32.4	3.704E+05	2.963E+06	26.4 ± 14.0
25	24	194	80	0.124	29.4	3.333E+05	2.694E+06	26.1 ± 5.7
	259	2250			26.5	2.794E+05	2.427E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 17.111 with 24 degrees of freedom
P(chi squared) = 84.4 %
Correlation Coefficient = 0.769
Variance of SQR(Ns) = 0.38
Variance of SQR(Ni) = 4.34

Ns/Ni = 0.115 ± 0.008
Mean Ratio = 0.123 ± 0.007

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 24.3 ± 1.7 Ma
CENTRAL AGE = 26.0 ± 1.6 Ma

77ADG103 - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 4
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	8	108	50	0.074	26.2	1.778E+05	2.400E+06	15.5 ± 5.7
2	3	17	28	0.176	7.4	1.190E+05	6.746E+05	36.9 ± 23.1
3	3	19	12	0.158	19.2	2.778E+05	1.759E+06	33.0 ± 20.5
4	1	2	25	0.500	1.0	4.444E+04	8.889E+04	104.1 ± 127.5
5	6	18	6	0.333	36.4	1.111E+06	3.333E+06	69.6 ± 32.8
6	4	12	32	0.333	4.6	1.389E+05	4.167E+05	69.6 ± 40.2
7	5	33	100	0.152	4.0	5.556E+04	3.667E+05	31.7 ± 15.2
8	2	10	4	0.200	30.3	5.556E+05	2.778E+06	41.8 ± 32.4
9	17	57	16	0.298	43.2	1.181E+06	3.958E+06	62.3 ± 17.3
10	0	1	20	0.000	0.6	0.000E+00	5.556E+04	0.0 ± 0.0
11	2	13	20	0.154	7.9	1.111E+05	7.222E+05	32.2 ± 24.5
12	1	10	36	0.100	3.4	3.086E+04	3.086E+05	20.9 ± 22.0
13	0	1	36	0.000	0.3	0.000E+00	3.086E+04	0.0 ± 0.0
14	2	20	18	0.100	13.5	1.235E+05	1.235E+06	20.9 ± 15.5
15	10	39	27	0.256	17.5	4.115E+05	1.605E+06	53.6 ± 19.0
16	1	16	50	0.062	3.9	2.222E+04	3.556E+05	13.1 ± 13.5
17	1	21	35	0.048	7.3	3.175E+04	6.667E+05	10.0 ± 10.2
18	26	121	50	0.215	29.4	5.778E+05	2.689E+06	44.9 ± 9.8
19	0	3	100	0.000	0.4	0.000E+00	3.333E+04	0.0 ± 0.0
20	2	16	14	0.125	13.9	1.587E+05	1.270E+06	26.2 ± 19.6
21	1	4	14	0.250	3.5	7.936E+04	3.175E+05	52.2 ± 58.4
22	0	1	9	0.000	1.3	0.000E+00	1.235E+05	0.0 ± 0.0
23	0	2	64	0.000	0.4	0.000E+00	3.472E+04	0.0 ± 0.0
24	2	15	40	0.133	4.6	5.556E+04	4.167E+05	27.9 ± 21.0
25	2	12	16	0.167	9.1	1.389E+05	8.333E+05	34.9 ± 26.7
	99	571			8.4	1.338E+05	7.718E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 21.749 with 24 degrees of freedom
P(chi squared) = 59.4 %
Correlation Coefficient = 0.857
Variance of SQR(Ns) = 1.61
Variance of SQR(Ni) = 6.79

Ns/Ni = 0.173 ± 0.019
Mean Ratio = 0.153 ± 0.025

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 36.3 ± 4.1 Ma
CENTRAL AGE = 32.1 ± 5.4 Ma

77ADG124 - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 5
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	3	22	100	0.136	2.7	3.333E+04	2.444E+05	28.5 ± 17.6
2	5	26	80	0.192	3.9	6.944E+04	3.611E+05	40.2 ± 19.7
3	3	29	40	0.103	8.8	8.333E+04	8.056E+05	21.7 ± 13.2
4	0	3	64	0.000	0.6	0.000E+00	5.208E+04	0.0 ± 0.0
5	8	53	60	0.151	10.7	1.481E+05	9.815E+05	31.6 ± 12.0
6	5	30	70	0.167	5.2	7.936E+04	4.762E+05	34.9 ± 16.9
7	0	1	81	0.000	0.1	0.000E+00	1.372E+04	0.0 ± 0.0
8	21	64	32	0.328	24.3	7.292E+05	2.222E+06	68.5 ± 17.3
9	10	57	28	0.175	24.7	3.968E+05	2.262E+06	36.7 ± 12.6
10	40	223	70	0.179	38.7	6.349E+05	3.540E+06	37.5 ± 6.5
11	6	73	70	0.082	12.7	9.524E+04	1.159E+06	17.2 ± 7.3
12	0	1	30	0.000	0.4	0.000E+00	3.704E+04	0.0 ± 0.0
13	0	5	36	0.000	1.7	0.000E+00	1.543E+05	0.0 ± 0.0
14	0	1	100	0.000	0.1	0.000E+00	1.111E+04	0.0 ± 0.0
15	16	143	50	0.112	34.7	3.556E+05	3.178E+06	23.4 ± 6.2
16	20	137	100	0.146	16.6	2.222E+05	1.522E+06	30.6 ± 7.4
	137	868			10.4	1.506E+05	9.540E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 16.252 with 15 degrees of freedom
P(chi squared) = 36.5 %
Correlation Coefficient = 0.936
Variance of SQR(Ns) = 3.81
Variance of SQR(Ni) = 18.18

Ns/Ni = 0.158 ± 0.014
Mean Ratio = 0.111 ± 0.023

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 33.0 ± 3.2 Ma
CENTRAL AGE = 23.2 ± 4.9 Ma

77ADG128 - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 6
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	15	12	0.133	15.2	1.852E+05	1.389E+06	27.9 ± 21.0
2	3	13	30	0.231	5.3	1.111E+05	4.815E+05	48.2 ± 30.9
3	5	28	16	0.179	21.2	3.472E+05	1.944E+06	37.4 ± 18.2
4	3	21	40	0.143	6.4	8.333E+04	5.833E+05	29.9 ± 18.5
5	4	24	18	0.167	16.2	2.469E+05	1.481E+06	34.9 ± 18.9
6	4	55	28	0.073	23.8	1.587E+05	2.183E+06	15.2 ± 7.9
7	2	15	32	0.133	5.7	6.944E+04	5.208E+05	27.9 ± 21.0
8	8	52	24	0.154	26.3	3.704E+05	2.407E+06	32.2 ± 12.3
9	2	10	20	0.200	6.1	1.111E+05	5.556E+05	41.8 ± 32.4
10	0	8	27	0.000	3.6	0.000E+00	3.292E+05	0.0 ± 0.0
11	13	77	30	0.169	31.2	4.815E+05	2.852E+06	35.3 ± 10.6
12	1	11	40	0.091	3.3	2.778E+04	3.056E+05	19.0 ± 19.9
13	5	28	30	0.179	11.3	1.852E+05	1.037E+06	37.4 ± 18.2
14	43	157	40	0.274	47.6	1.194E+06	4.361E+06	57.2 ± 10.0
15	1	21	21	0.048	12.1	5.291E+04	1.111E+06	10.0 ± 10.2
16	5	12	20	0.417	7.3	2.778E+05	6.667E+05	86.8 ± 46.3
17	6	27	60	0.222	5.5	1.111E+05	5.000E+05	46.5 ± 21.0
18	10	63	50	0.159	15.3	2.222E+05	1.400E+06	33.2 ± 11.3
19	8	52	70	0.154	9.0	1.270E+05	8.254E+05	32.2 ± 12.3
20	5	19	30	0.263	7.7	1.852E+05	7.037E+05	55.0 ± 27.7
	130	708			13.5	2.264E+05	1.233E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 17.473 with 19 degrees of freedom
P(chi squared) = 55.8 %
Correlation Coefficient = 0.944
Variance of SQR(Ns) = 1.73
Variance of SQR(Ni) = 5.76

Ns/Ni = 0.184 ± 0.018
Mean Ratio = 0.169 ± 0.020

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 38.4 ± 3.8 Ma
CENTRAL AGE = 35.4 ± 4.3 Ma

77ANS87 - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 8
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	8	32	64	0.250	6.1	1.389E+05	5.556E+05	52.2 ± 20.7
2	6	54	70	0.111	9.4	9.524E+04	8.571E+05	23.3 ± 10.0
3	22	100	50	0.220	24.3	4.889E+05	2.222E+06	46.0 ± 10.9
4	20	117	81	0.171	17.5	2.743E+05	1.605E+06	35.8 ± 8.7
5	26	134	100	0.194	16.3	2.889E+05	1.489E+06	40.6 ± 8.8
6	0	1	100	0.000	0.1	0.000E+00	1.111E+04	0.0 ± 0.0
7	20	117	90	0.171	15.8	2.469E+05	1.444E+06	35.8 ± 8.7
8	9	52	100	0.173	6.3	1.000E+05	5.778E+05	36.2 ± 13.1
9	17	73	100	0.233	8.9	1.889E+05	8.111E+05	48.7 ± 13.2
10	1	3	100	0.333	0.4	1.111E+04	3.333E+04	69.6 ± 80.3
11	9	30	49	0.300	7.4	2.041E+05	6.803E+05	62.6 ± 23.9
12	18	60	100	0.300	7.3	2.000E+05	6.667E+05	62.6 ± 16.9
13	6	46	80	0.130	7.0	8.333E+04	6.389E+05	27.3 ± 11.9
14	5	24	36	0.208	8.1	1.543E+05	7.407E+05	43.6 ± 21.4
15	5	34	100	0.147	4.1	5.556E+04	3.778E+05	30.8 ± 14.8
16	11	50	100	0.220	6.1	1.222E+05	5.556E+05	46.0 ± 15.4
17	1	2	100	0.500	0.2	1.111E+04	2.222E+04	104.1 ± 127.5
18	0	1	100	0.000	0.1	0.000E+00	1.111E+04	0.0 ± 0.0
19	0	1	100	0.000	0.1	0.000E+00	1.111E+04	0.0 ± 0.0
20	9	77	50	0.117	18.7	2.000E+05	1.711E+06	24.5 ± 8.6
21	25	118	60	0.212	23.9	4.630E+05	2.185E+06	44.3 ± 9.8
22	24	144	64	0.167	27.3	4.167E+05	2.500E+06	34.9 ± 7.7
23	13	73	80	0.178	11.1	1.806E+05	1.014E+06	37.3 ± 11.3
24	13	64	100	0.203	7.8	1.444E+05	7.111E+05	42.5 ± 13.0
	268	1407			8.7	1.508E+05	7.920E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 13.279 with 23 degrees of freedom
P(chi squared) = 94.6 %
Correlation Coefficient = 0.949
Variance of SQR(Ns) = 2.59
Variance of SQR(Ni) = 12.39

Ns/Ni = 0.190 ± 0.013
Mean Ratio = 0.189 ± 0.022

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 39.8 ± 2.8 Ma
CENTRAL AGE = 39.6 ± 4.8 Ma

77ADG188 - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 9
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	4	43	100	0.093	5.2	4.444E+04	4.778E+05	19.5 ± 10.2
2	20	78	80	0.256	11.8	2.778E+05	1.083E+06	53.6 ± 13.5
3	20	96	100	0.208	11.7	2.222E+05	1.067E+06	43.6 ± 10.8
4	14	94	49	0.149	23.3	3.175E+05	2.132E+06	31.2 ± 9.0
5	16	88	100	0.182	10.7	1.778E+05	9.778E+05	38.0 ± 10.4
6	18	110	100	0.164	13.4	2.000E+05	1.222E+06	34.2 ± 8.8
7	20	103	100	0.194	12.5	2.222E+05	1.144E+06	40.6 ± 10.0
8	14	65	36	0.215	21.9	4.321E+05	2.006E+06	45.0 ± 13.3
9	12	45	64	0.267	8.5	2.083E+05	7.812E+05	55.7 ± 18.2
10	0	2	49	0.000	0.5	0.000E+00	4.535E+04	0.0 ± 0.0
11	26	131	100	0.198	15.9	2.889E+05	1.456E+06	41.5 ± 9.0
12	7	57	80	0.123	8.6	9.722E+04	7.917E+05	25.7 ± 10.3
13	2	19	100	0.105	2.3	2.222E+04	2.111E+05	22.0 ± 16.4
14	19	136	80	0.140	20.6	2.639E+05	1.889E+06	29.2 ± 7.2
15	5	22	100	0.227	2.7	5.556E+04	2.444E+05	47.5 ± 23.6
16	8	30	40	0.267	9.1	2.222E+05	8.333E+05	55.7 ± 22.2
17	4	20	90	0.200	2.7	4.938E+04	2.469E+05	41.8 ± 22.9
18	4	47	100	0.085	5.7	4.444E+04	5.222E+05	17.8 ± 9.3
19	9	63	60	0.143	12.7	1.667E+05	1.167E+06	29.9 ± 10.7
20	14	106	100	0.132	12.9	1.556E+05	1.178E+06	27.7 ± 7.9
21	31	279	100	0.111	33.9	3.444E+05	3.100E+06	23.3 ± 4.4
22	45	268	100	0.168	32.5	5.000E+05	2.978E+06	35.1 ± 5.7
23	24	86	30	0.279	34.8	8.889E+05	3.185E+06	58.3 ± 13.5
24	7	43	100	0.163	5.2	7.778E+04	4.778E+05	34.1 ± 13.9
25	16	91	40	0.176	27.6	4.444E+05	2.528E+06	36.8 ± 10.0
	359	2122			12.9	1.996E+05	1.180E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 25.116 with 24 degrees of freedom
P(chi squared) = 39.9 %
Correlation Coefficient = 0.907
Variance of SQR(Ns) = 2.12
Variance of SQR(Ni) = 11.89

Ns/Ni = 0.169 ± 0.010
Mean Ratio = 0.170 ± 0.013

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 35.4 ± 2.2 Ma
CENTRAL AGE = 35.5 ± 2.9 Ma

77ANS93 - IGIKPAK PLUTON

IRRADIATION LU119
SLIDE NUMBER 10
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	8	43	40	0.186	13.0	2.222E+05	1.194E+06	38.9 ± 15.0
2	6	28	30	0.214	11.3	2.222E+05	1.037E+06	44.8 ± 20.2
3	12	68	21	0.176	39.3	6.349E+05	3.598E+06	36.9 ± 11.6
4	1	5	70	0.200	0.9	1.587E+04	7.936E+04	41.8 ± 45.8
5	4	14	9	0.286	18.9	4.938E+05	1.728E+06	59.7 ± 33.9
6	8	39	40	0.205	11.8	2.222E+05	1.083E+06	42.9 ± 16.7
7	9	27	81	0.333	4.0	1.235E+05	3.704E+05	69.6 ± 26.8
8	8	44	30	0.182	17.8	2.963E+05	1.630E+06	38.0 ± 14.7
9	11	62	42	0.177	17.9	2.910E+05	1.640E+06	37.1 ± 12.2
10	26	130	60	0.200	26.3	4.815E+05	2.407E+06	41.8 ± 9.0
11	19	102	100	0.186	12.4	2.111E+05	1.133E+06	39.0 ± 9.8
12	3	30	25	0.100	14.6	1.333E+05	1.333E+06	20.9 ± 12.7
13	3	12	12	0.250	12.1	2.778E+05	1.111E+06	52.2 ± 33.8
14	15	92	40	0.163	27.9	4.167E+05	2.556E+06	34.1 ± 9.5
15	5	36	45	0.139	9.7	1.235E+05	8.889E+05	29.1 ± 13.9
16	22	130	50	0.169	31.6	4.889E+05	2.889E+06	35.4 ± 8.2
17	3	14	21	0.214	8.1	1.587E+05	7.407E+05	44.8 ± 28.5
18	5	22	18	0.227	14.8	3.086E+05	1.358E+06	47.5 ± 23.6
19	2	29	60	0.069	5.9	3.704E+04	5.370E+05	14.5 ± 10.6
20	5	51	30	0.098	20.6	1.852E+05	1.889E+06	20.5 ± 9.6
21	1	8	21	0.125	4.6	5.291E+04	4.233E+05	26.2 ± 27.8
22	5	32	30	0.156	12.9	1.852E+05	1.185E+06	32.7 ± 15.7
23	6	16	10	0.375	19.4	6.667E+05	1.778E+06	78.2 ± 37.5
	187	1034			14.2	2.348E+05	1.298E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 12.104 with 22 degrees of freedom
P(chi squared) = 95.5 %
Correlation Coefficient = 0.958
Variance of SQR(Ns) = 1.21
Variance of SQR(Ni) = 6.64

Ns/Ni = 0.181 ± 0.014
Mean Ratio = 0.193 ± 0.015

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.199E+06cm-2; ND = 2698

POOLED AGE = 37.8 ± 3.2 Ma
CENTRAL AGE = 40.3 ± 3.3 Ma

84APa713 - IGIKPAK PLUTON

IRRADIATION LU221
SLIDE NUMBER 7
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	8	50	24	0.160	23.2	3.700E+05	2.312E+06	36.4± 13.9
2	2	20	16	0.100	13.9	1.388E+05	1.388E+06	22.8± 16.9
3	15	95	20	0.158	53.0	8.325E+05	5.272E+06	35.9± 10.1
4	6	32	80	0.188	4.5	8.325E+04	4.440E+05	42.6± 19.0
5	15	168	100	0.089	18.7	1.665E+05	1.865E+06	20.3± 5.5
6	8	83	100	0.096	9.3	8.880E+04	9.213E+05	22.0± 8.2
7	11	135	50	0.081	30.1	2.442E+05	2.997E+06	18.6± 5.9
8	9	47	60	0.191	8.7	1.665E+05	8.695E+05	43.6± 15.9
9	9	136	45	0.066	33.7	2.220E+05	3.355E+06	15.1± 5.2
10	12	59	49	0.203	13.4	2.718E+05	1.337E+06	46.2± 14.7
11	5	25	18	0.200	15.5	3.083E+05	1.542E+06	45.5± 22.3
12	6	54	70	0.111	8.6	9.514E+04	8.563E+05	25.3± 10.9
	106	904			16.0	1.862E+05	1.588E+06	

Area of basic unit = 9.009E-07 cm-2

CHI SQUARED = 14.70642 WITH 11 DEGREES OF FREEDOM
P(chi squared) = 19.6 %
CORRELATION COEFFICIENT = 0.737
VARIANCE OF SQR(Ns) = .4972125
VARIANCE OF SQR(Ni) = 7.654225

Ns/Ni = 0.117 ± 0.012
MEAN RATIO = 0.137 ± 0.015

POOLED AGE = 26.7 ± 2.9 Ma
CENTRAL AGE = 31.2 ± 3.5 Ma

Ages calculated using a zeta of 350 ± 10 for SRM612 glass
RHO D = 1.304E+06cm-2; ND = 2936

77ADG117A - IGIKPAK PLUTON

IRRADIATION LU212
SLIDE NUMBER 1
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	4	10	4	0.400	28.2	1.110E+06	2.775E+06	89.7± 53.1
2	0	4	6	0.000	7.5	0.000E+00	7.400E+05	0.0± 0.0
3	3	13	16	0.231	9.2	2.081E+05	9.019E+05	51.9± 33.3
4	1	5	6	0.200	9.4	1.850E+05	9.250E+05	45.0± 49.3
5	3	23	16	0.130	16.2	2.081E+05	1.596E+06	29.4± 18.1
6	4	27	20	0.148	15.2	2.220E+05	1.498E+06	33.4± 17.9
7	3	6	6	0.500	11.3	5.550E+05	1.110E+06	111.9± 79.2
8	0	8	9	0.000	10.0	0.000E+00	9.867E+05	0.0± 0.0
9	2	9	16	0.222	6.3	1.388E+05	6.244E+05	50.0± 39.1
10	3	13	9	0.231	16.3	3.700E+05	1.603E+06	51.9± 33.3
11	1	4	6	0.250	7.5	1.850E+05	7.400E+05	56.2± 62.9
12	2	7	7	0.286	11.3	3.171E+05	1.110E+06	64.2± 51.5
13	2	15	12	0.133	14.1	1.850E+05	1.388E+06	30.0± 22.6
14	3	11	12	0.273	10.3	2.775E+05	1.018E+06	61.3± 40.0
15	3	11	5	0.273	24.8	6.660E+05	2.442E+06	61.3± 40.0
16	2	22	15	0.091	16.5	1.480E+05	1.628E+06	20.5± 15.1
17	3	10	18	0.300	6.3	1.850E+05	6.167E+05	67.4± 44.4
18	5	17	9	0.294	21.3	6.167E+05	2.097E+06	66.1± 33.7
19	4	42	16	0.095	29.6	2.775E+05	2.914E+06	21.5± 11.3
20	6	28	20	0.214	15.8	3.330E+05	1.554E+06	48.2± 21.7
21	2	17	18	0.118	10.6	1.233E+05	1.048E+06	26.5± 19.8
	56	302			13.8	2.527E+05	1.363E+06	

Area of basic unit = 9.009E-07 cm-2

CHI SQUARED = 12.72117 WITH 20 DEGREES OF FREEDOM
P(chi squared) = 88.9 %
CORRELATION COEFFICIENT = 0.610
VARIANCE OF SQR(Ns) = .3800077
VARIANCE OF SQR(Ni) = 1.382889

Ns/Ni = 0.185 ± 0.027
MEAN RATIO = 0.209 ± 0.026

POOLED AGE = 41.7 ± 6.2 Ma
CENTRAL AGE = 47.0 ± 6.1 Ma

Ages calculated using a zeta of 350 ± 10 for SRM612 glass
RHO D = 1.290E+06cm-2; ND = 3134

77ADG118A - IGIKPAK PLUTON

IRRADIATION LU212
SLIDE NUMBER 2
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	5	12	0.200	4.6	9.250E+04	4.625E+05	45.4± 49.8
2	1	14	18	0.071	8.7	6.167E+04	8.633E+05	16.3± 16.8
3	9	65	50	0.138	14.5	1.998E+05	1.443E+06	31.5± 11.3
4	1	18	18	0.056	11.2	6.167E+04	1.110E+06	12.7± 13.0
5	8	38	40	0.211	10.6	2.220E+05	1.054E+06	47.8± 18.7
6	2	13	18	0.154	8.1	1.233E+05	8.017E+05	35.0± 26.6
7	0	20	40	0.000	5.6	0.000E+00	5.550E+05	0.0± 0.0
8	13	68	50	0.191	15.2	2.886E+05	1.510E+06	43.4± 13.2
9	7	17	30	0.412	6.3	2.590E+05	6.290E+05	93.2± 42.0
10	4	17	30	0.235	6.3	1.480E+05	6.290E+05	53.4± 29.7
11	6	98	16	0.061	68.4	4.162E+05	6.799E+06	13.9± 5.9
12	8	51	24	0.157	23.7	3.700E+05	2.359E+06	35.7± 13.6
13	3	6	9	0.500	7.4	3.700E+05	7.400E+05	113.0± 80.0
14	3	21	12	0.143	19.5	2.775E+05	1.942E+06	32.5± 20.1
15	3	19	16	0.158	13.3	2.081E+05	1.318E+06	35.9± 22.3
16	3	16	20	0.188	8.9	1.665E+05	8.880E+05	42.6± 26.8
17	2	7	8	0.286	9.8	2.775E+05	9.713E+05	64.8± 52.0
18	9	39	40	0.231	10.9	2.498E+05	1.082E+06	52.4± 19.5
19	2	19	28	0.105	7.6	7.929E+04	7.532E+05	24.0± 17.8
20	22	64	70	0.344	10.2	3.489E+05	1.015E+06	77.9± 19.4
21	1	13	16	0.077	9.1	6.938E+04	9.019E+05	17.5± 18.2
22	1	12	14	0.083	9.6	7.929E+04	9.514E+05	19.0± 19.8
23	3	22	21	0.136	11.7	1.586E+05	1.163E+06	31.0± 19.1
	112	662			12.3	2.072E+05	1.225E+06	

Area of basic unit = 9.009E-07 cm-2

CHI SQUARED = 31.2624 WITH 22 DEGREES OF FREEDOM
P(chi squared) = 9.1 %
CORRELATION COEFFICIENT = 0.696
VARIANCE OF SQR(Ns) = 1.097652
VARIANCE OF SQR(Ni) = 4.199987

Ns/Ni = 0.169 ± 0.017
MEAN RATIO = 0.180 ± 0.025

POOLED AGE = 38.5 ± 4.1 Ma
CENTRAL AGE = 40.9 ± 5.8 Ma

Ages calculated using a zeta of 350 ± 10 for SRM612 glass
RHO D = 1.303E+06cm-2; ND = 3134

77ANS253A - IGIKPAK PLUTON

IRRADIATION LU212
SLIDE NUMBER 3
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	7	15	0.286	5.2	1.480E+05	5.180E+05	65.5± 52.5
2	6	39	80	0.154	5.4	8.325E+04	5.411E+05	35.3± 15.5
3	1	6	18	0.167	3.7	6.167E+04	3.700E+05	38.3± 41.4
4	2	18	15	0.111	13.3	1.480E+05	1.332E+06	25.5± 19.1
5	7	31	60	0.226	5.7	1.295E+05	5.735E+05	51.8± 21.7
6	0	4	16	0.000	2.8	0.000E+00	2.775E+05	0.0± 0.0
7	2	7	16	0.286	4.8	1.388E+05	4.856E+05	65.5± 52.5
8	3	6	16	0.500	4.1	2.081E+05	4.162E+05	114.1± 80.8
9	1	13	16	0.077	9.0	6.938E+04	9.019E+05	17.7± 18.4
10	3	5	10	0.600	5.5	3.330E+05	5.550E+05	136.7±100.0
11	2	7	21	0.286	3.7	1.057E+05	3.700E+05	65.5± 52.5
12	5	26	60	0.192	4.8	9.250E+04	4.810E+05	44.1± 21.6
13	0	3	15	0.000	2.2	0.000E+00	2.220E+05	0.0± 0.0
14	1	6	18	0.167	3.7	6.167E+04	3.700E+05	38.3± 41.4
15	1	5	16	0.200	3.5	6.938E+04	3.469E+05	45.9± 50.3
16	2	6	16	0.333	4.1	1.388E+05	4.162E+05	76.3± 62.4
17	1	6	21	0.167	3.2	5.286E+04	3.171E+05	38.3± 41.4
18	1	7	35	0.143	2.2	3.171E+04	2.220E+05	32.8± 35.1
	40	202			4.8	9.569E+04	4.832E+05	

Area of basic unit = 9.009E-07 cm-2

CHI SQUARED = 8.94663 WITH 17 DEGREES OF FREEDOM; **PASS**
P(chi squared) = 94.2 %
CORRELATION COEFFICIENT = 0.862
VARIANCE OF SQR(Ns) = .4914746
VARIANCE OF SQR(Ni) = 1.709024

Ns/Ni = 0.198 ± 0.034
MEAN RATIO = 0.216 ± 0.036

POOLED AGE = 45.4 ± 8.0 Ma
CENTRAL AGE = 49.6 ± 8.4 Ma

Ages calculated using a zeta of 350 ± 10 for SRM612 glass
RHO D = 1.316E+06cm-2; ND = 3134

77ANS60A - IGIKPAK PLUTON

IRRADIATION LU212
SLIDE NUMBER 3
COUNTED BY: J. MURPHY

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	10	20	0.100	5.4	5.550E+04	5.550E+05	23.5± 24.6
2	2	12	20	0.167	6.5	1.110E+05	6.660E+05	39.1± 29.9
3	0	3	16	0.000	2.0	0.000E+00	2.081E+05	0.0± 0.0
4	0	1	18	0.000	0.6	0.000E+00	6.167E+04	0.0± 0.0
5	1	6	20	0.167	3.2	5.550E+04	3.330E+05	39.1± 42.2
6	2	13	36	0.154	3.9	6.167E+04	4.008E+05	36.1± 27.4
7	0	3	40	0.000	0.8	0.000E+00	8.325E+04	0.0± 0.0
8	1	67	16	0.015	45.3	6.938E+04	4.648E+06	3.5± 3.5
9	2	14	16	0.143	9.5	1.388E+05	9.713E+05	33.5± 25.3
10	1	6	14	0.167	4.6	7.929E+04	4.757E+05	39.1± 42.2
11	0	6	16	0.000	4.1	0.000E+00	4.162E+05	0.0± 0.0
12	1	5	16	0.200	3.4	6.938E+04	3.469E+05	46.8± 51.3
13	2	6	16	0.333	4.1	1.388E+05	4.162E+05	77.9± 63.6
14	1	8	16	0.125	5.4	6.938E+04	5.550E+05	29.3± 31.1
15	0	4	36	0.000	1.2	0.000E+00	1.233E+05	0.0± 0.0
16	0	1	8	0.000	1.4	0.000E+00	1.388E+05	0.0± 0.0
17	2	4	20	0.500	2.2	1.110E+05	2.220E+05	116.5±100.9
18	1	7	36	0.143	2.1	3.083E+04	2.158E+05	33.5± 35.8
19	1	15	50	0.067	3.2	2.220E+04	3.330E+05	15.6± 16.2
20	1	4	40	0.250	1.1	2.775E+04	1.110E+05	58.5± 65.4
21	1	4	16	0.250	2.7	6.938E+04	2.775E+05	58.5± 65.4
22	1	9	36	0.111	2.7	3.083E+04	2.775E+05	26.1± 27.5
23	1	3	16	0.333	2.0	6.938E+04	2.081E+05	77.9± 90.0
24	3	5	20	0.600	2.7	1.665E+05	2.775E+05	139.5±102.0
	25	216			4.2	4.973E+04	4.297E+05	

Area of basic unit = 9.009E-07 cm-2

CHI SQUARED = 22.66551 WITH 23 DEGREES OF FREEDOM
P(chi squared) = 48.0 %
CORRELATION COEFFICIENT = 0.133
VARIANCE OF SQR(Ns) = .3029534
VARIANCE OF SQR(Ni) = 1.977424

Ns/Ni = 0.116 ± 0.024
MEAN RATIO = 0.159 ± 0.032

POOLED AGE = 27.1 ± 5.8 Ma
CENTRAL AGE = 37.3 ± 7.7 Ma

Ages calculated using a zeta of 350 ± 10 for SRM612 glass
RHO D = 1.343E+06cm-2; ND = 3134

CHANDALAR PLUTONS

Sample Locations and Apatite Yields - Plutons of the Chandalar quadrangle (Baby Creek, Geroe Creek, Horace Mountain, Phoebe Creek, Twin Lakes, and Willow Creek plutons)

Table 28. Sample details and apatite yields for outcrop samples: Chandalar plutons.

Sample Number	Lat.	Long.	Elevation (m)/(*ft*)	Plutonic Unit	Geochronometric Units	Corresponding Age Range (Ma)	Rock Type
90TM425	67°42.2'	148°48.4'	(1860)/(*6100*)	Geroe Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM400A	67°36.8'	149°04.2'	(1799)/(*5900*)	Willow Ck. pluton	Devonian	~362-408	Granitic gneiss
90ANK29B	67°35.0'	148°52.6'	(1753)/(*5750*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM400C	67°36.4'	149°03.9'	(1543)/(*5060*)	Willow Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM408A	67°42.0'	148°42.3'	(1524)/(*5000*)	Geroe Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM421	67°35.0'	148°48.8'	(1512)/(*4960*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90ALU29A	67°35.0'	148°49.4'	(1479)/(*4850*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM420A	67°38.7'	149°16.0'	(1372)/(*4500*)	Horace Mtn. pluton	Devonian	~362-408	Granitic gneiss
90ALU29B	67°35.1'	148°47.8'	(1204)/(*3950*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM422	67°35.1'	148°47.1'	(1043)/(*3420*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM423	67°36.2'	148°47.9'	(1024)/(*3360*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM424	67°35.6'	148°45.2'	(848)/(*2780*)	Baby Ck. pluton	Devonian	~362-408	Granitic gneiss
90TM434	67°35.1'	149°16.3'	(732)/(*2400*)	Phoebe Ck. pluton	Devonian	~362-408	Granitic gneiss

Sample Results - Chandalar plutons

Typical yields for the samples from Chandalar plutons were very good and in all but one case 20 dateable grains were found on each mount. Due to relatively young ages and in some cases, low uranium content (<10 ppm), only 7 of 13 mounts contained 100 or more confined tracks. Four mounts had less than 50 confined tracks. All but two samples passed the Chi-squared test, indicating that the dated grains from those samples represent statistically valid single populations.

Table 29. Apatite fission track analytical results: Chandalar plutons.

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
90TM425	22	1.057 (4761)	1.839 (146)	51.65 (410)	87.6	65.5 ± 6.5	6.4	14.72 ± 0.51 (9)	1.54
90TM400A	21	1.057 (4761)	2.701 (221)	76.89 (629)	50.3	64.7 ± 5.3	9.5	13.80 ± 0.26 (43)	1.69
90ANK29B	20	1.057 (4761)	0.211 (2174)	6.742 (6935)	70.7	58.2 ± 1.9	83.6	13.06 ± 0.14 (102)	1.44
90TM400C	20	1.057 (4761)	3.038 (213)	1.228 (861)	0.5	45.6 ± 3.6 *53.1 ± 5.3**	15.2	12.61 ± 0.30 (51)	2.15
90TM408A	20	1.057 (4761)	0.109 (649)	2.946 (1747)	86.8	68.4 ± 3.5	36.5	13.36 ± 0.10 (100)	1.85
90TM421	20	1.057 (4761)	3.790 (539)	1.390 (1977)	22.0	50.6 ± 2.7	17.2	14.15 ± 0.14 (102)	1.41
90ALU29A	20	1.057 (4761)	6.179 (481)	2.116 (1647)	11.3	54.2 ± 3.0	26.2	13.73 ± 0.11 (102)	1.12

Table 29. Apatite fission track analytical results: Chandalar plutons (continued).

Sample Number	Number of grains	Standard track density ($x10^6 cm^{-2}$)	Fossil track density ($x10^5 cm^{-2}$)	Induced track density ($x10^6 cm^{-2}$)	Chi square probability (%)	Fission track age (Ma)	Uranium (ppm)	Mean track length (μm)	Standard deviation (μm)
90TM420A	21	1.057	2.983	99.94	54.0	55.0 ± 3.9	12.4	13.33 ± 0.26	1.46
		(4761)	(283)	(948)				(31)	
90ALU29B	18	1.057	9.596	4.113	0.5	43.3 ± 2.1	51.0	14.03 ± 0.14	1.19
		(4761)	(608)	(2606)		*45.2 ± 3.6**		(76)	
90TM422	25	1.057	59.94	20.61	100.0	54.0 ± 5.8	2.6	13.73 ± 0.16	1.64
		(4761)	(117)	(402)				(101)	
90TM423	20	1.057	5.817	2.144	34.8	50.4 ± 3.4	26.6	12.74 ± 0.16	1.57
		(4761)	(311)	(1146)				(101)	
90TM424	25	1.057	3.660	1.458	84.9	46.6 ± 2.2	18.1	12.28 ± 0.20	2.01
		(4761)	(693)	(2760)				(101)	
90TM434	21	1.057	1.277	47.28	86.0	49.8 ± 4.9	5.9	13.61 ± 0.37	1.93
		(4761)	(138)	(511)				(27)	

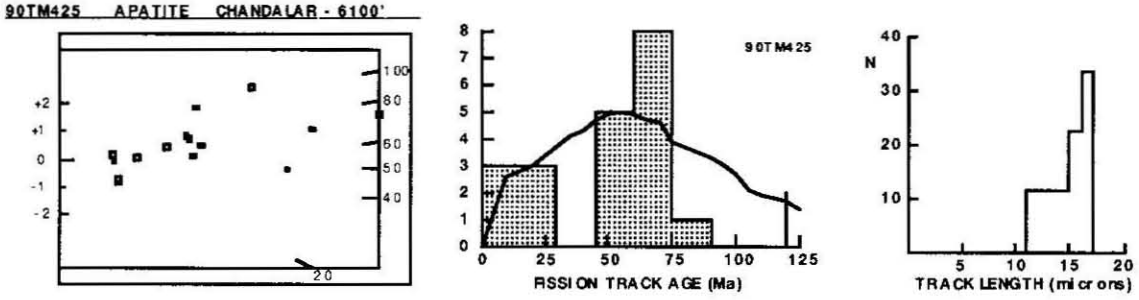
Parentheses show number of tracks counted.

Table 30. Track length data: Chandalar plutons.

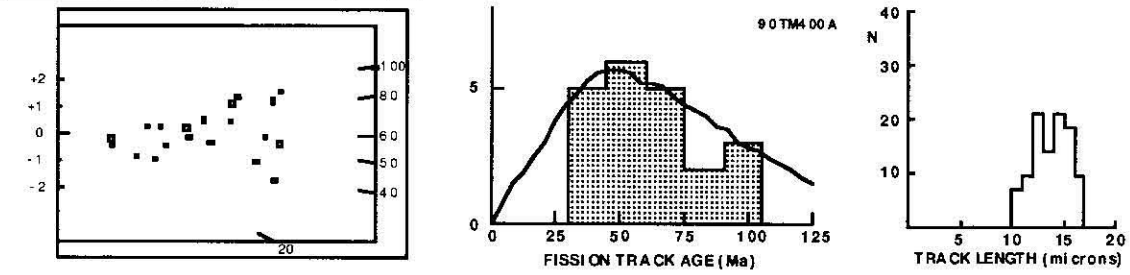
Sample Number	Track Length Range (μm) <5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	>17
90TM425	0	0	0	0	0	0	0	1	1	1	1	2	3	0
90TM400A	0	0	0	0	0	0	3	4	9	6	9	8	4	0
90ANK29B	0	0	0	0	0	1	7	18	24	20	23	9	0	0
90TM400C	0	0	1	2	1	3	3	7	6	15	10	2	1	0
90TM408A	0	0	0	0	2	3	3	18	16	21	15	15	5	2
90TM421	0	0	0	0	0	1	3	2	13	25	31	19	8	0
90ALU29A	0	0	0	0	0	1	2	5	13	38	32	11	0	0
90TM420A	0	0	0	0	0	1	1	4	6	7	9	2	1	0
90TALU29B	0	0	0	0	0	1	0	1	5	34	25	5	3	2
90TM422	0	0	0	0	1	4	2	8	10	27	22	24	3	0
90TM423	0	0	0	0	2	6	9	10	22	31	18	3	0	0
90TM424	1	1	1	0	2	5	15	16	18	22	16	4	0	0
90TM434	0	0	0	0	0	1	2	4	2	5	7	3	3	0

Length measurements by J. Murphy and P. O'Sullivan

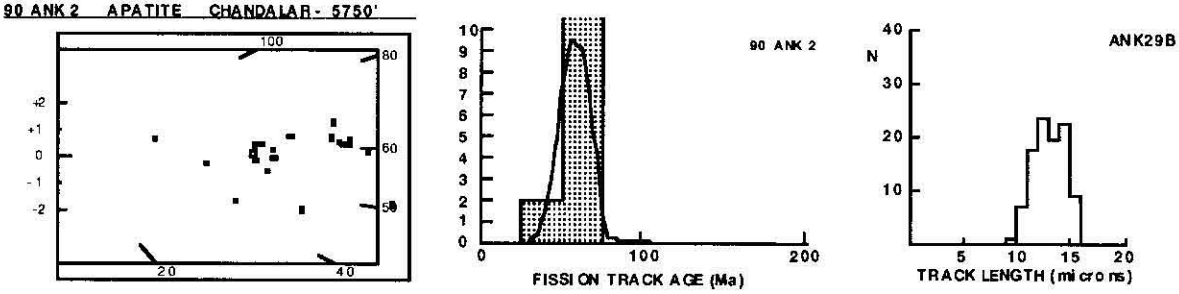
Single-Age and Track Length Distributions - Chandalar plutons



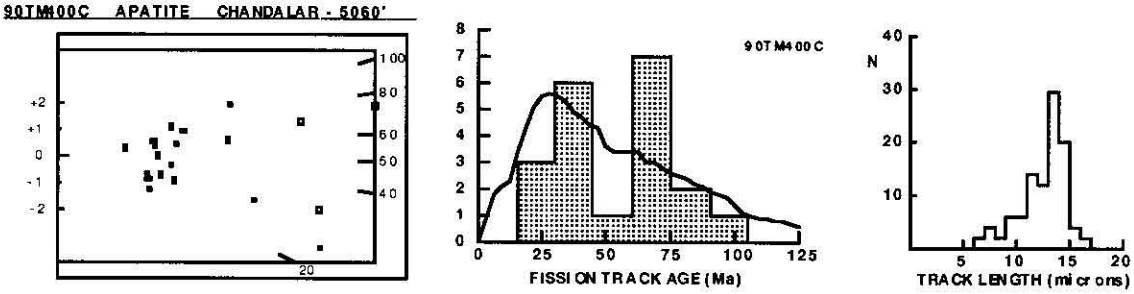
90TM400A APATITE CHANDALAR - 5900'



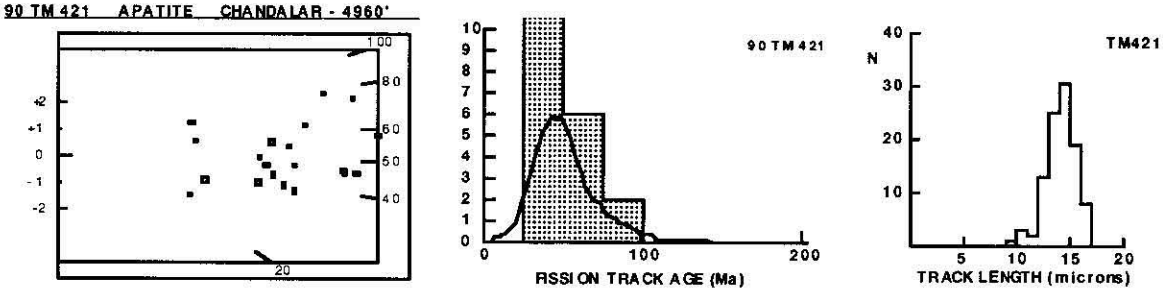
90 ANK 2 APATITE CHANDALAR - 5750'



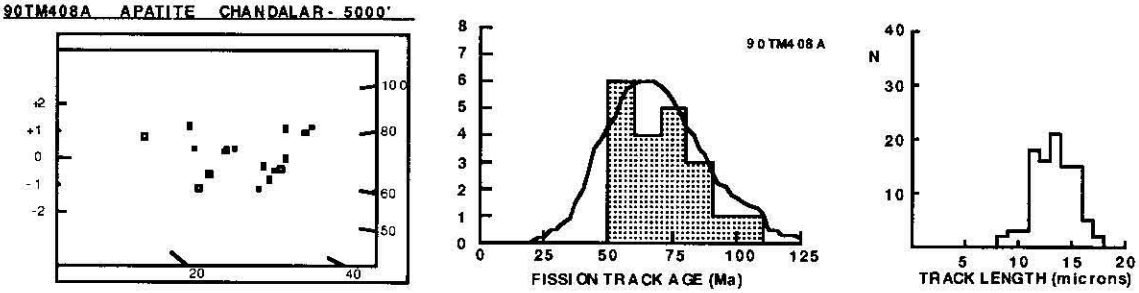
90TM400C APATITE CHANDALAR - 5060'



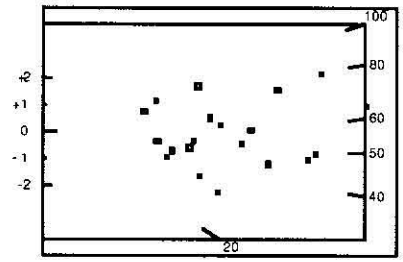
90 TM 421 APATITE CHANDALAR - 4960'

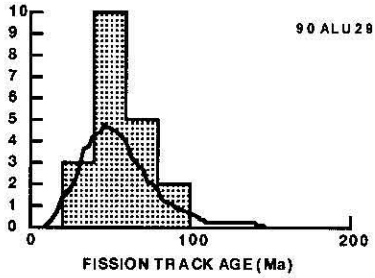


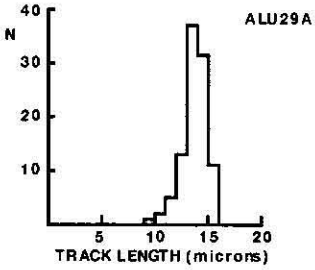
90TM408A APATITE CHANDALAR - 5000'



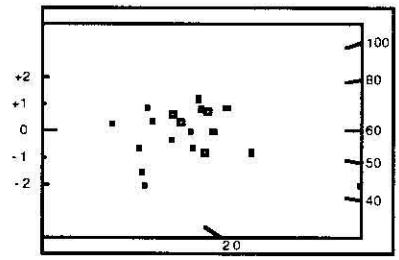
90 ALU 29 APATITE CHANDALAR - 4850'

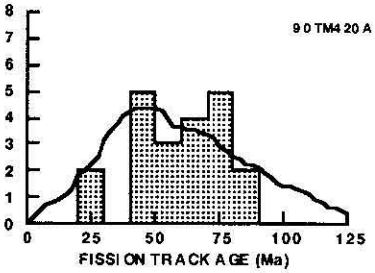


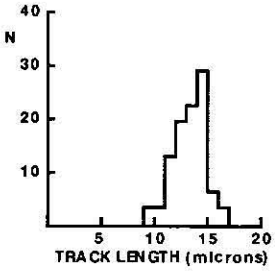




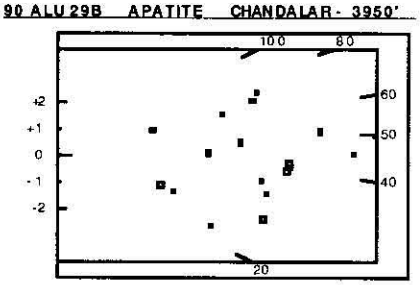
90TM420A APATITE CHANDALAR - 4500'

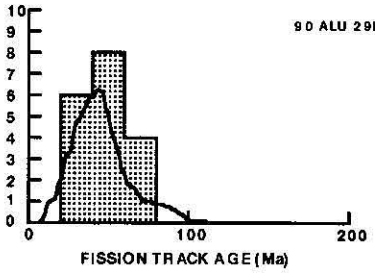


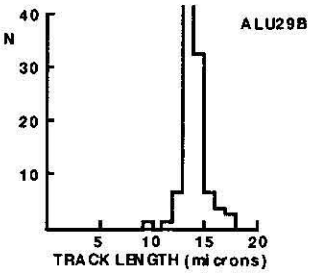




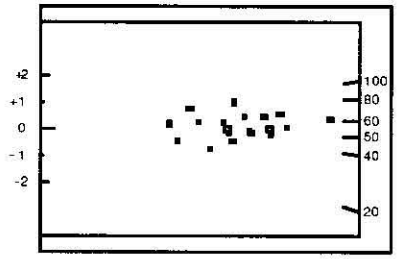
90 ALU 29B APATITE CHANDALAR - 3950'

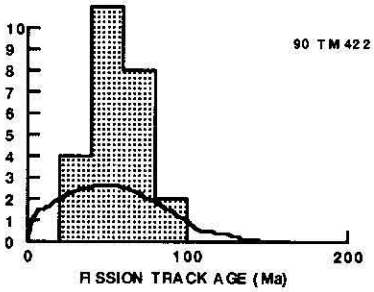


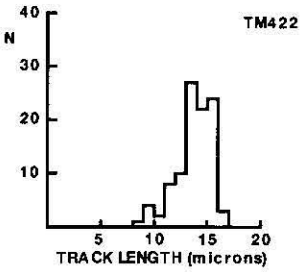




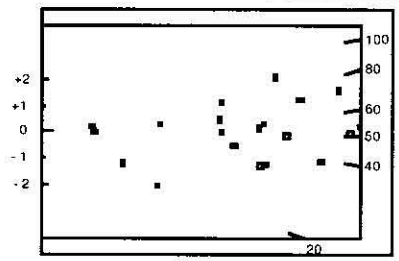
90 TM 422 APATITE CHANDALAR - 3420'

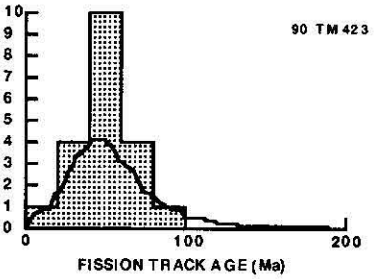


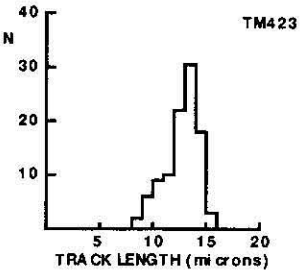


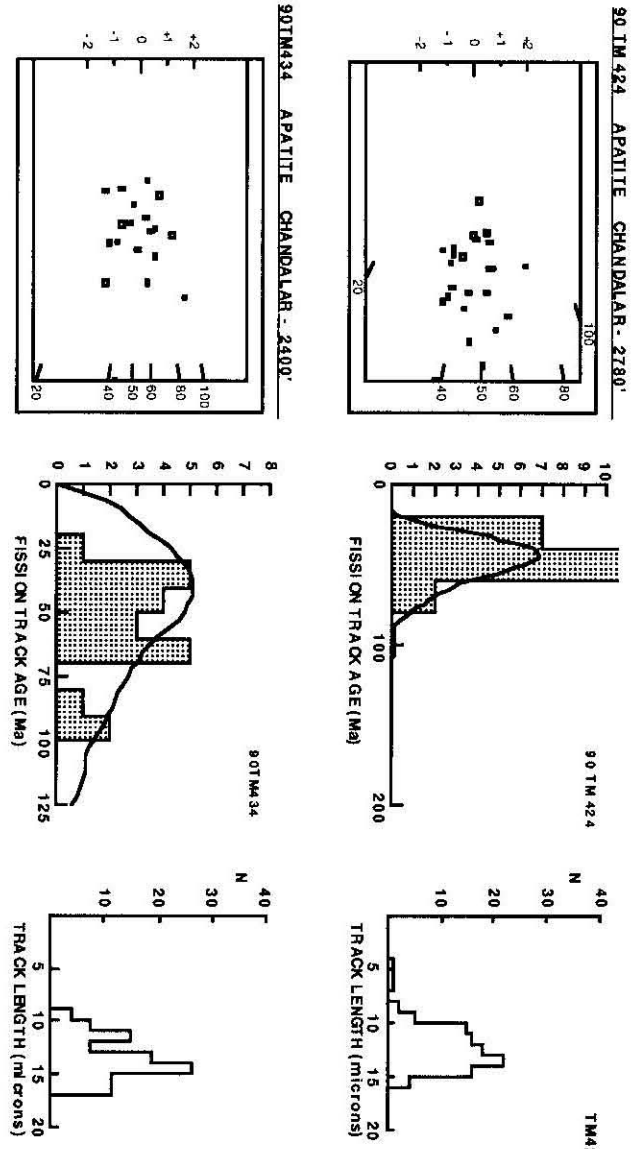


90 TM423 APATITE CHANDALAR - 3360'









Age Sheets - Chandalar plutons

90TM425 - GEROE CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 1
COUNTED BY: J. Murphy

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	1	3	18	0.333	2.3	6.173E+04	1.852E+05	61.4 ± 70.9
2	7	20	16	0.350	17.2	4.861E+05	1.389E+06	64.4 ± 28.3
3	8	12	20	0.667	8.3	4.444E+05	6.667E+05	122.2 ± 55.8
4	16	24	36	0.667	9.2	4.938E+05	7.407E+05	122.2 ± 39.5
5	1	8	49	0.125	2.2	2.268E+04	1.814E+05	23.1 ± 24.5
6	4	11	24	0.364	6.3	1.852E+05	5.093E+05	66.9 ± 39.1
7	6	15	32	0.400	6.5	2.083E+05	5.208E+05	73.6 ± 35.6
8	7	20	40	0.350	6.9	1.944E+05	5.556E+05	64.4 ± 28.3
9	37	94	40	0.394	32.4	1.028E+06	2.611E+06	72.4 ± 14.1
10	1	4	70	0.250	0.8	1.587E+04	6.349E+04	46.1 ± 51.5
11	2	7	40	0.286	2.4	5.556E+04	1.944E+05	52.6 ± 42.2
12	23	62	25	0.371	34.2	1.022E+06	2.756E+06	68.3 ± 16.7
13	0	2	78	0.000	0.4	0.000E+00	2.849E+04	0.0 ± 0.0
14	1	4	30	0.250	1.8	3.704E+04	1.481E+05	46.1 ± 51.5
15	1	3	40	0.333	1.0	2.778E+04	8.333E+04	61.4 ± 70.9
16	0	2	70	0.000	0.4	0.000E+00	3.175E+04	0.0 ± 0.0
17	1	8	49	0.125	2.2	2.268E+04	1.814E+05	23.1 ± 24.5
18	0	2	36	0.000	0.8	0.000E+00	6.173E+04	0.0 ± 0.0
19	6	20	45	0.300	6.1	1.481E+05	4.938E+05	55.3 ± 25.7
20	17	66	60	0.258	15.1	3.148E+05	1.222E+06	47.5 ± 13.0
21	1	9	28	0.111	4.4	3.968E+04	3.571E+05	20.5 ± 21.6
22	6	14	36	0.429	5.4	1.852E+05	4.321E+05	78.8 ± 38.5
	146	410			6.4	1.839E+05	5.165E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 13.838 with 21 degrees of freedom
P(chi squared) = 87.6 %
Correlation Coefficient = 0.960
Variance of SQR(Ns) = 2.59
Variance of SQR(Ni) = 5.18

Ns/Ni = 0.356 ± 0.034
Mean Ratio = 0.289 ± 0.039

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 65.5 ± 6.5 Ma
CENTRAL AGE = 53.3 ± 7.2 Ma

90TM400A - WILLOW CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 2
COUNTED BY: J. Murphy

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	15	48	40	0.312	16.5	4.167E+05	1.333E+06	57.5 ± 17.1
2	2	12	36	0.167	4.6	6.173E+04	3.704E+05	30.8 ± 23.5
3	8	20	32	0.400	8.6	2.778E+05	6.944E+05	73.6 ± 30.8
4	3	8	40	0.375	2.8	8.333E+04	2.222E+05	69.0 ± 46.7
5	13	55	60	0.236	12.6	2.407E+05	1.019E+06	43.6 ± 13.5
6	1	4	50	0.250	1.1	2.222E+04	8.889E+04	46.1 ± 51.5
7	6	20	30	0.300	9.2	2.222E+05	7.407E+05	55.3 ± 25.7
8	4	11	50	0.364	3.0	8.889E+04	2.444E+05	66.9 ± 39.1
9	18	39	42	0.462	12.8	4.762E+05	1.032E+06	84.8 ± 24.2
10	11	29	70	0.379	5.7	1.746E+05	4.603E+05	69.8 ± 24.8
11	1	5	25	0.200	2.8	4.444E+04	2.222E+05	36.9 ± 40.4
12	3	17	32	0.176	7.3	1.042E+05	5.903E+05	32.6 ± 20.4
13	12	25	30	0.480	11.5	4.444E+05	9.259E+05	88.2 ± 31.0
14	17	58	60	0.293	13.3	3.148E+05	1.074E+06	54.0 ± 14.9
15	15	75	40	0.200	25.8	4.167E+05	2.083E+06	36.9 ± 10.5
16	20	40	50	0.500	11.0	4.444E+05	8.889E+05	91.8 ± 25.2
17	13	25	50	0.520	6.9	2.889E+05	5.556E+05	95.5 ± 32.7
18	6	17	25	0.353	9.4	2.667E+05	7.556E+05	65.0 ± 30.9
19	41	77	80	0.532	13.3	5.694E+05	1.069E+06	97.7 ± 19.0
20	4	16	25	0.250	8.8	1.778E+05	7.111E+05	46.1 ± 25.8
21	8	28	42	0.286	9.2	2.116E+05	7.407E+05	52.6 ± 21.1
	221	629			9.5	2.701E+05	7.689E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 19.291 with 20 degrees of freedom
P(chi squared) = 50.3 %
Correlation Coefficient = 0.844
Variance of SQR(Ns) = 1.78
Variance of SQR(Ni) = 3.84

Ns/Ni = 0.351 ± 0.027
Mean Ratio = 0.335 ± 0.025

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 64.7 ± 5.3 Ma
CENTRAL AGE = 61.7 ± 4.8 Ma

90ANK29B - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 3
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	71	224	35	0.317	88.1	2.254E+06	7.111E+06	58.8 ± 8.1
2	72	235	48	0.306	67.4	1.667E+06	5.440E+06	56.9 ± 7.7
3	19	52	10	0.365	71.6	2.111E+06	5.778E+06	67.8 ± 18.2
4	56	229	40	0.245	78.8	1.556E+06	6.361E+06	45.4 ± 6.8
5	106	421	70	0.252	82.8	1.683E+06	6.683E+06	46.8 ± 5.2
6	153	469	40	0.326	161.5	4.250E+06	1.303E+07	60.5 ± 5.8
7	161	494	100	0.326	68.0	1.789E+06	5.489E+06	60.5 ± 5.6
8	181	567	100	0.319	78.1	2.011E+06	6.300E+06	59.2 ± 5.2
9	41	137	100	0.299	18.9	4.556E+05	1.522E+06	55.5 ± 10.0
10	87	279	36	0.312	106.7	2.685E+06	8.611E+06	57.9 ± 7.2
11	163	489	100	0.333	67.3	1.811E+06	5.433E+06	61.8 ± 5.7
12	86	266	40	0.323	91.6	2.389E+06	7.389E+06	60.0 ± 7.5
13	142	422	70	0.336	83.0	2.254E+06	6.698E+06	62.4 ± 6.2
14	203	747	70	0.272	147.0	3.222E+06	1.186E+07	50.5 ± 4.1
15	103	302	50	0.341	83.2	2.289E+06	6.711E+06	63.3 ± 7.3
16	148	417	70	0.355	82.0	2.349E+06	6.619E+06	65.8 ± 6.4
17	78	234	30	0.333	107.4	2.889E+06	8.667E+06	61.8 ± 8.2
18	80	273	32	0.293	117.5	2.778E+06	9.479E+06	54.4 ± 7.0
19	151	457	60	0.330	104.9	2.796E+06	8.463E+06	61.3 ± 5.9
20	73	221	42	0.330	72.5	1.931E+06	5.847E+06	61.3 ± 8.4
	2174	6935			83.6	2.113E+06	6.742E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 15.236 with 19 degrees of freedom
P(chi squared) = 70.7 %
Correlation Coefficient = 0.973
Variance of SQR(Ns) = 6.60
Variance of SQR(Ni) = 21.25

Ns/Ni = 0.313 ± 0.008
Mean Ratio = 0.316 ± 0.007

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 58.2 ± 1.9 Ma
CENTRAL AGE = 58.6 ± 1.8 Ma

90TM400C - WILLOW CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 4
COUNTED BY: J. Murphy

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	6	16	0.333	5.2	1.389E+05	4.167E+05	61.4 ± 50.1
2	24	185	21	0.130	121.3	1.270E+06	9.788E+06	24.0 ± 5.2
3	3	24	24	0.125	13.8	1.389E+05	1.111E+06	23.1 ± 14.1
4	4	11	16	0.364	9.5	2.778E+05	7.639E+05	66.9 ± 39.1
5	3	17	25	0.176	9.4	1.333E+05	7.556E+05	32.6 ± 20.4
6	14	82	80	0.171	14.1	1.944E+05	1.139E+06	31.5 ± 9.1
7	4	12	18	0.333	9.2	2.469E+05	7.407E+05	61.4 ± 35.5
8	5	29	50	0.172	8.0	1.111E+05	6.444E+05	31.8 ± 15.4
9	14	27	32	0.519	11.6	4.861E+05	9.375E+05	95.2 ± 31.4
10	5	22	40	0.227	7.6	1.389E+05	6.111E+05	41.9 ± 20.8
11	4	15	30	0.267	6.9	1.481E+05	5.556E+05	49.1 ± 27.7
12	25	67	64	0.373	14.4	4.340E+05	1.163E+06	68.7 ± 16.2
13	43	110	100	0.391	15.1	4.778E+05	1.222E+06	71.9 ± 13.0
14	3	19	36	0.158	7.3	9.259E+04	5.864E+05	29.1 ± 18.1
15	25	139	90	0.180	21.3	3.086E+05	1.716E+06	33.2 ± 7.2
16	4	22	18	0.182	16.8	2.469E+05	1.358E+06	33.5 ± 18.2
17	6	18	35	0.333	7.1	1.905E+05	5.714E+05	61.4 ± 29.0
18	7	17	15	0.412	15.6	5.185E+05	1.259E+06	75.7 ± 34.0
19	6	13	9	0.462	19.9	7.407E+05	1.605E+06	84.8 ± 41.9
20	12	26	60	0.462	6.0	2.222E+05	4.815E+05	84.8 ± 29.7
	213	861			15.2	3.038E+05	1.228E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 38.544 with 19 degrees of freedom
P(chi squared) = 0.5 %
Correlation Coefficient = 0.796
Variance of SQR(Ns) = 2.04
Variance of SQR(Ni) = 9.52

Ns/Ni = 0.247 ± 0.019
Mean Ratio = 0.288 ± 0.028

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 45.6 ± 3.6 Ma
CENTRAL AGE = 53.1 ± 5.3 Ma

90TM408A - GEROE CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 6
COUNTED BY: J. Murphy

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	52	116	40	0.448	39.9	1.444E+06	3.222E+06	82.4 ± 13.9
2	18	57	40	0.316	19.6	5.000E+05	1.583E+06	58.2 ± 15.8
3	26	63	30	0.413	28.9	9.630E+05	2.333E+06	75.9 ± 17.8
4	35	107	50	0.327	29.5	7.778E+05	2.378E+06	60.2 ± 11.8
5	18	56	30	0.321	25.7	6.667E+05	2.074E+06	59.2 ± 16.1
6	7	13	12	0.538	14.9	6.481E+05	1.204E+06	98.8 ± 46.4
7	55	120	30	0.458	55.1	2.037E+06	4.444E+06	84.2 ± 13.8
8	34	95	24	0.358	54.5	1.574E+06	4.398E+06	65.9 ± 13.2
9	23	57	18	0.404	43.6	1.420E+06	3.519E+06	74.2 ± 18.4
10	45	97	36	0.464	37.1	1.389E+06	2.994E+06	85.2 ± 15.5
11	35	108	50	0.324	29.7	7.778E+05	2.400E+06	59.7 ± 11.7
12	38	108	40	0.352	37.2	1.056E+06	3.000E+06	64.8 ± 12.3
13	16	38	20	0.421	26.2	8.889E+05	2.111E+06	77.4 ± 23.1
14	16	29	10	0.552	39.9	1.778E+06	3.222E+06	101.3 ± 31.6
15	31	103	36	0.301	39.4	9.568E+05	3.179E+06	55.4 ± 11.4
16	40	113	50	0.354	31.1	8.889E+05	2.511E+06	65.1 ± 12.1
17	42	110	50	0.382	30.3	9.333E+05	2.444E+06	70.2 ± 12.8
18	15	55	30	0.273	25.2	5.556E+05	2.037E+06	50.3 ± 14.7
19	24	59	27	0.407	30.1	9.877E+05	2.428E+06	74.8 ± 18.2
20	79	243	36	0.325	93.0	2.438E+06	7.500E+06	59.9 ± 7.9
	649	1747			36.5	1.094E+06	2.946E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 12.402 with 19 degrees of freedom
P(chi squared) = 86.8 %
Correlation Coefficient = 0.951
Variance of SQR(Ns) = 2.19
Variance of SQR(Ni) = 6.61

Ns/Ni = 0.371 ± 0.017
Mean Ratio = 0.387 ± 0.017

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 68.4 ± 3.5 Ma
CENTRAL AGE = 71.2 ± 3.5 Ma

90TM421 - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 5
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	40	162	100	0.247	22.3	4.444E+05	1.800E+06	45.9 ± 8.2
2	22	95	100	0.232	13.1	2.444E+05	1.056E+06	43.0 ± 10.2
3	39	91	64	0.429	19.6	6.771E+05	1.580E+06	79.4 ± 15.3
4	23	75	80	0.307	12.9	3.194E+05	1.042E+06	56.9 ± 13.6
5	27	107	80	0.252	18.4	3.750E+05	1.486E+06	46.9 ± 10.1
6	10	30	21	0.333	19.7	5.291E+05	1.587E+06	61.8 ± 22.6
7	43	175	100	0.246	24.1	4.778E+05	1.944E+06	45.6 ± 7.8
8	39	157	100	0.248	21.6	4.333E+05	1.744E+06	46.1 ± 8.3
9	10	23	30	0.435	10.6	3.704E+05	8.519E+05	80.5 ± 30.6
10	20	75	45	0.267	23.0	4.938E+05	1.852E+06	49.5 ± 12.5
11	26	126	100	0.206	17.4	2.889E+05	1.400E+06	38.3 ± 8.3
12	10	51	70	0.196	10.0	1.587E+05	8.095E+05	36.4 ± 12.6
13	32	93	80	0.344	16.0	4.444E+05	1.292E+06	63.8 ± 13.1
14	8	51	70	0.157	10.0	1.270E+05	8.095E+05	29.2 ± 11.1
15	19	90	80	0.211	15.5	2.639E+05	1.250E+06	39.2 ± 9.9
16	52	169	100	0.308	23.3	5.778E+05	1.878E+06	57.1 ± 9.1
17	27	92	100	0.293	12.7	3.000E+05	1.022E+06	54.5 ± 12.0
18	24	113	70	0.212	22.2	3.810E+05	1.794E+06	39.5 ± 8.9
19	21	84	100	0.250	11.6	2.333E+05	9.333E+05	46.4 ± 11.4
20	47	118	90	0.398	18.1	5.802E+05	1.457E+06	73.8 ± 12.8
	539	1977			17.2	3.790E+05	1.390E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 23.394 with 19 degrees of freedom
P(chi squared) = 22.0 %
Correlation Coefficient = 0.867
Variance of SQR(Ns) = 1.68
Variance of SQR(Ni) = 5.42

Ns/Ni = 0.273 ± 0.013
Mean Ratio = 0.279 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 50.6 ± 2.7 Ma
CENTRAL AGE = 51.7 ± 3.4 Ma

90ALU29 - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 7
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	30	128	50	0.234	35.3	6.667E+05	2.844E+06	43.5 ± 8.9
2	18	53	30	0.340	24.3	6.667E+05	1.963E+06	63.0 ± 17.2
3	14	52	49	0.269	14.6	3.175E+05	1.179E+06	50.0 ± 15.1
4	20	63	40	0.317	21.7	5.556E+05	1.750E+06	58.9 ± 15.2
5	9	19	12	0.474	21.8	8.333E+05	1.759E+06	87.7 ± 35.5
6	17	35	30	0.486	16.1	6.296E+05	1.296E+06	89.9 ± 26.6
7	10	43	21	0.233	28.2	5.291E+05	2.275E+06	43.2 ± 15.2
8	37	91	24	0.407	52.2	1.713E+06	4.213E+06	75.3 ± 14.8
9	45	173	100	0.260	23.8	5.000E+05	1.922E+06	48.3 ± 8.1
10	13	53	50	0.245	14.6	2.889E+05	1.178E+06	45.6 ± 14.1
11	67	196	60	0.342	45.0	1.241E+06	3.630E+06	63.4 ± 9.1
12	7	17	16	0.412	14.6	4.861E+05	1.181E+06	76.3 ± 34.3
13	53	125	80	0.424	21.5	7.361E+05	1.736E+06	78.6 ± 13.0
14	14	76	48	0.184	21.8	3.241E+05	1.759E+06	34.2 ± 10.0
15	8	31	16	0.258	26.7	5.556E+05	2.153E+06	47.9 ± 19.0
16	24	89	35	0.270	35.0	7.619E+05	2.825E+06	50.1 ± 11.6
17	17	103	48	0.165	29.5	3.935E+05	2.384E+06	30.7 ± 8.1
18	9	43	14	0.209	42.3	7.143E+05	3.413E+06	38.9 ± 14.3
19	42	168	100	0.250	23.1	4.667E+05	1.867E+06	46.4 ± 8.1
20	27	89	42	0.303	29.2	7.143E+05	2.354E+06	56.3 ± 12.4
	481	1647			26.2	6.179E+05	2.116E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 26.673 with 19 degrees of freedom
P(chi squared) = 11.3 %
Correlation Coefficient = 0.906
Variance of SQR(Ns) = 2.56
Variance of SQR(Ni) = 8.22

Ns/Ni = 0.292 ± 0.015
Mean Ratio = 0.304 ± 0.021

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 54.2 ± 3.0 Ma
CENTRAL AGE = 56.4 ± 4.0 Ma

90TM420A - HORACE MOUNTAIN PLUTON

IRRADIATION LU117
SLIDE NUMBER 9
COUNTED BY: J. Murphy

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	15	36	60	0.417	8.3	2.778E+05	6.667E+05	76.6 ± 23.6
2	7	19	12	0.368	21.8	6.481E+05	1.759E+06	67.8 ± 30.0
3	16	50	36	0.320	19.1	4.938E+05	1.543E+06	58.9 ± 17.0
4	52	221	64	0.235	47.6	9.028E+05	3.837E+06	43.4 ± 6.8
5	20	49	50	0.408	13.5	4.444E+05	1.089E+06	75.1 ± 20.0
6	9	32	48	0.281	9.2	2.083E+05	7.407E+05	51.8 ± 19.6
7	16	40	32	0.400	17.2	5.556E+05	1.389E+06	73.6 ± 21.8
8	11	31	60	0.355	7.1	2.037E+05	5.741E+05	65.3 ± 23.0
9	12	46	70	0.261	9.0	1.905E+05	7.302E+05	48.1 ± 15.6
10	15	32	80	0.469	5.5	2.083E+05	4.444E+05	86.1 ± 27.0
11	23	86	100	0.267	11.8	2.556E+05	9.556E+05	49.3 ± 11.6
12	11	31	50	0.355	8.5	2.444E+05	6.889E+05	65.3 ± 23.0
13	14	55	70	0.255	10.8	2.222E+05	8.730E+05	46.9 ± 14.1
14	12	38	60	0.316	8.7	2.222E+05	7.037E+05	58.2 ± 19.3
15	7	15	42	0.467	4.9	1.852E+05	3.968E+05	85.7 ± 39.3
16	5	42	48	0.119	12.0	1.157E+05	9.722E+05	22.0 ± 10.4
17	10	25	30	0.400	11.5	3.704E+05	9.259E+05	73.6 ± 27.6
18	5	22	40	0.227	7.6	1.389E+05	6.111E+05	41.9 ± 20.8
19	3	8	30	0.375	3.7	1.111E+05	2.963E+05	69.0 ± 46.7
20	15	37	40	0.405	12.7	4.167E+05	1.028E+06	74.6 ± 22.9
21	5	33	32	0.152	14.2	1.736E+05	1.146E+06	28.0 ± 13.4
	283	948			12.4	2.983E+05	9.994E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 18.724 with 20 degrees of freedom
P(chi squared) = 54.0 %
Correlation Coefficient = 0.948
Variance of SQR(Ns) = 1.36
Variance of SQR(Ni) = 5.66

Ns/Ni = 0.299 ± 0.020
Mean Ratio = 0.326 ± 0.021

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 55.0 ± 3.9 Ma
CENTRAL AGE = 60.1 ± 4.1 Ma

90ALU29B - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 10
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	33	180	35	0.183	70.8	1.048E+06	5.714E+06	34.1 ± 6.5
2	42	188	60	0.223	43.1	7.778E+05	3.481E+06	41.5 ± 7.1
3	32	160	40	0.200	55.1	8.889E+05	4.444E+06	37.2 ± 7.2
4	23	65	24	0.354	37.3	1.065E+06	3.009E+06	65.6 ± 16.0
5	31	205	60	0.151	47.0	5.741E+05	3.796E+06	28.1 ± 5.4
6	27	101	36	0.267	38.6	8.333E+05	3.117E+06	49.6 ± 10.8
7	17	141	70	0.121	27.7	2.698E+05	2.238E+06	22.4 ± 5.8
8	10	66	10	0.152	90.9	1.111E+06	7.333E+06	28.2 ± 9.6
9	8	51	25	0.157	28.1	3.556E+05	2.267E+06	29.2 ± 11.1
10	82	309	48	0.265	88.6	1.898E+06	7.153E+06	49.3 ± 6.2
11	33	90	25	0.367	49.6	1.467E+06	4.000E+06	68.0 ± 13.9
12	42	183	35	0.230	72.0	1.333E+06	5.810E+06	42.6 ± 7.3
13	41	189	60	0.217	43.4	7.593E+05	3.500E+06	40.3 ± 7.0
14	18	73	24	0.247	41.9	8.333E+05	3.380E+06	45.8 ± 12.1
15	35	91	25	0.385	50.1	1.556E+06	4.044E+06	71.3 ± 14.3
16	70	288	70	0.243	56.7	1.111E+06	4.571E+06	45.1 ± 6.1
17	56	203	45	0.276	62.1	1.383E+06	5.012E+06	51.2 ± 7.8
18	8	23	12	0.348	26.4	7.407E+05	2.130E+06	64.5 ± 26.5
	608	2606			51.0	9.596E+05	4.113E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 35.524 with 17 degrees of freedom
P(chi squared) = 0.5 %
Correlation Coefficient = 0.902
Variance of SQR(Ns) = 3.03
Variance of SQR(Ni) = 12.20

Ns/Ni = 0.233 ± 0.010
Mean Ratio = 0.244 ± 0.019

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 43.3 ± 2.1 Ma
CENTRAL AGE = 45.2 ± 3.6 Ma

90TM422 - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 11
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	2	10	100	0.200	1.4	2.222E+04	1.111E+05	37.2 ± 28.8
2	5	14	80	0.357	2.4	6.944E+04	1.944E+05	66.2 ± 34.5
3	4	14	100	0.286	1.9	4.444E+04	1.556E+05	53.0 ± 30.1
4	2	6	60	0.333	1.4	3.704E+04	1.111E+05	61.8 ± 50.5
5	3	6	56	0.500	1.5	5.952E+04	1.190E+05	92.5 ± 65.5
6	3	9	70	0.333	1.8	4.762E+04	1.429E+05	61.8 ± 41.2
7	4	18	100	0.222	2.5	4.444E+04	2.000E+05	41.3 ± 22.8
8	7	19	100	0.368	2.6	7.778E+04	2.111E+05	68.3 ± 30.2
9	4	12	100	0.333	1.7	4.444E+04	1.333E+05	61.8 ± 35.7
10	10	30	70	0.333	5.9	1.587E+05	4.762E+05	61.8 ± 22.6
11	6	17	100	0.353	2.3	6.667E+04	1.889E+05	65.5 ± 31.1
12	5	19	70	0.263	3.7	7.936E+04	3.016E+05	48.9 ± 24.6
13	5	18	100	0.278	2.5	5.556E+04	2.000E+05	51.6 ± 26.1
14	2	10	70	0.200	2.0	3.175E+04	1.587E+05	37.2 ± 28.8
15	4	15	81	0.267	2.6	5.487E+04	2.058E+05	49.5 ± 27.9
16	3	17	100	0.176	2.3	3.333E+04	1.889E+05	32.8 ± 20.6
17	7	19	40	0.368	6.5	1.944E+05	5.278E+05	68.3 ± 30.2
18	5	10	100	0.500	1.4	5.556E+04	1.111E+05	92.5 ± 50.7
19	6	23	100	0.261	3.2	6.667E+04	2.556E+05	48.4 ± 22.2
20	6	21	100	0.286	2.9	6.667E+04	2.333E+05	53.0 ± 24.6
21	7	24	100	0.292	3.3	7.778E+04	2.667E+05	54.1 ± 23.3
22	4	18	100	0.222	2.5	4.444E+04	2.000E+05	41.3 ± 22.8
23	6	21	100	0.286	2.9	6.667E+04	2.333E+05	53.0 ± 24.6
24	3	17	70	0.176	3.3	4.762E+04	2.698E+05	32.8 ± 20.6
25	4	15	100	0.267	2.1	4.444E+04	1.667E+05	49.5 ± 27.9
	117	402			2.6	5.999E+04	2.061E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 5.170 with 24 degrees of freedom
P(chi squared) = 100.0 %
Correlation Coefficient = 0.828
Variance of SQR(Ns) = 0.19
Variance of SQR(Ni) = 0.55

Ns/Ni = 0.291 ± 0.031
Mean Ratio = 0.298 ± 0.017

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 54.0 ± 5.8 Ma
CENTRAL AGE = 55.4 ± 3.3 Ma

90TM423 - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 12
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	5	16	60	0.312	3.7	9.259E+04	2.963E+05	58.0 ± 29.7
2	2	18	21	0.111	11.8	1.058E+05	9.524E+05	20.7 ± 15.4
3	21	45	24	0.467	25.8	9.722E+05	2.083E+06	86.4 ± 22.9
4	25	117	30	0.214	53.7	9.259E+05	4.333E+06	39.7 ± 8.8
5	4	43	15	0.093	39.5	2.963E+05	3.185E+06	17.3 ± 9.1
6	11	35	12	0.314	40.2	1.019E+06	3.241E+06	58.3 ± 20.2
7	12	52	30	0.231	23.9	4.444E+05	1.926E+06	42.9 ± 13.8
8	11	41	24	0.268	23.5	5.093E+05	1.898E+06	49.8 ± 16.9
9	16	57	24	0.281	32.7	7.407E+05	2.639E+06	52.1 ± 14.8
10	15	79	18	0.190	60.4	9.259E+05	4.877E+06	35.3 ± 10.0
11	1	3	30	0.333	1.4	3.704E+04	1.111E+05	61.8 ± 71.4
12	32	119	40	0.269	41.0	8.889E+05	3.306E+06	49.9 ± 10.0
13	12	30	25	0.400	16.5	5.333E+05	1.333E+06	74.1 ± 25.4
14	32	85	32	0.376	36.6	1.111E+06	2.951E+06	69.8 ± 14.5
15	34	121	30	0.281	55.5	1.259E+06	4.481E+06	52.2 ± 10.2
16	16	82	25	0.195	45.2	7.111E+05	3.644E+06	36.3 ± 9.9
17	1	4	50	0.250	1.1	2.222E+04	8.889E+04	46.4 ± 51.9
18	24	66	24	0.364	37.9	1.111E+06	3.056E+06	67.4 ± 16.1
19	20	76	32	0.263	32.7	6.944E+05	2.639E+06	48.9 ± 12.3
20	17	57	48	0.298	16.4	3.935E+05	1.319E+06	55.4 ± 15.3
	311	1146			26.6	5.817E+05	2.144E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 20.804 with 19 degrees of freedom
P(chi squared) = 34.8 %
Correlation Coefficient = 0.893
Variance of SQR(Ns) = 2.23
Variance of SQR(Ni) = 7.19

Ns/Ni = 0.271 ± 0.017
Mean Ratio = 0.276 ± 0.020

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 50.4 ± 3.4 Ma
CENTRAL AGE = 51.2 ± 3.9 Ma

90TM424 - BABY CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 13
COUNTED BY: P. O'Sullivan

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	55	264	100	0.208	36.4	6.111E+05	2.933E+06	38.7 ± 5.8
2	26	65	70	0.400	12.8	4.127E+05	1.032E+06	74.1 ± 17.3
3	53	195	100	0.272	26.9	5.889E+05	2.167E+06	50.5 ± 7.9
4	30	143	64	0.210	30.8	5.208E+05	2.483E+06	39.0 ± 7.9
5	19	99	90	0.192	15.1	2.346E+05	1.222E+06	35.7 ± 9.0
6	19	90	80	0.211	15.5	2.639E+05	1.250E+06	39.2 ± 9.9
7	17	57	70	0.298	11.2	2.698E+05	9.048E+05	55.4 ± 15.3
8	39	120	100	0.325	16.5	4.333E+05	1.333E+06	60.3 ± 11.2
9	20	94	100	0.213	12.9	2.222E+05	1.044E+06	39.5 ± 9.8
10	25	82	80	0.305	14.1	3.472E+05	1.139E+06	56.6 ± 13.0
11	31	151	100	0.205	20.8	3.444E+05	1.678E+06	38.2 ± 7.6
12	21	91	80	0.231	15.7	2.917E+05	1.264E+06	42.9 ± 10.4
13	28	130	60	0.215	29.8	5.185E+05	2.407E+06	40.0 ± 8.4
14	42	141	100	0.298	19.4	4.667E+05	1.567E+06	55.3 ± 9.8
15	17	67	80	0.254	11.5	2.361E+05	9.306E+05	47.1 ± 12.8
16	22	105	80	0.210	18.1	3.056E+05	1.458E+06	38.9 ± 9.2
17	31	109	70	0.284	21.4	4.921E+05	1.730E+06	52.8 ± 10.8
18	11	41	70	0.268	8.1	1.746E+05	6.508E+05	49.8 ± 16.9
19	17	58	60	0.293	13.3	3.148E+05	1.074E+06	54.4 ± 15.0
20	18	69	80	0.261	11.9	2.500E+05	9.583E+05	48.4 ± 12.9
21	30	122	100	0.246	16.8	3.333E+05	1.356E+06	45.7 ± 9.4
22	19	63	80	0.302	10.8	2.639E+05	8.750E+05	56.0 ± 14.7
23	25	85	100	0.294	11.7	2.778E+05	9.444E+05	54.6 ± 12.5
24	34	142	100	0.239	19.6	3.778E+05	1.578E+06	44.5 ± 8.5
25	44	177	90	0.249	27.1	5.432E+05	2.185E+06	46.2 ± 7.8
	693	2760			18.1	3.660E+05	1.458E+06	

Area of basic unit = .0000009 cm-2

Chi Squared = 16.981 with 24 degrees of freedom
P(chi squared) = 84.9 %
Correlation Coefficient = 0.917
Variance of SQR(Ns) = 1.09
Variance of SQR(Ni) = 5.22

Ns/Ni = 0.251 ± 0.011
Mean Ratio = 0.259 ± 0.010

Ages calculated using a zeta of 352.7 ± 5 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 46.6 ± 2.2 Ma
CENTRAL AGE = 48.2 ± 2.1 Ma

90TM434 - PHOEBE CREEK PLUTON

IRRADIATION LU117
SLIDE NUMBER 14
COUNTED BY: J. Murphy

No.	Ns	Ni	Na	RATIO	U (ppm)	RHOs	RHOi	F.T. AGE (Ma)
1	4	9	36	0.444	3.4	1.235E+05	2.778E+05	81.7 ± 49.1
2	13	25	49	0.520	7.0	2.948E+05	5.669E+05	95.5 ± 32.7
3	5	21	30	0.238	9.6	1.852E+05	7.778E+05	43.9 ± 21.9
4	5	15	30	0.333	6.9	1.852E+05	5.556E+05	61.4 ± 31.7
5	3	16	60	0.188	3.7	5.556E+04	2.963E+05	34.6 ± 21.8
6	10	31	60	0.323	7.1	1.852E+05	5.741E+05	59.4 ± 21.6
7	6	34	60	0.176	7.8	1.111E+05	6.296E+05	32.6 ± 14.4
8	5	16	42	0.312	5.2	1.323E+05	4.233E+05	57.5 ± 29.5
9	7	25	50	0.280	6.9	1.556E+05	5.556E+05	51.6 ± 22.1
10	3	9	25	0.333	5.0	1.333E+05	4.000E+05	61.4 ± 40.9
11	6	17	90	0.353	2.6	7.407E+04	2.099E+05	65.0 ± 30.9
12	19	83	100	0.229	11.4	2.111E+05	9.222E+05	42.2 ± 10.8
13	6	30	100	0.200	4.1	6.667E+04	3.333E+05	36.9 ± 16.5
14	4	16	60	0.250	3.7	7.407E+04	2.963E+05	46.1 ± 25.8
15	4	16	40	0.250	5.5	1.111E+05	4.444E+05	46.1 ± 25.8
16	3	23	49	0.130	6.5	6.803E+04	5.215E+05	24.1 ± 14.8
17	9	49	100	0.184	6.7	1.000E+05	5.444E+05	33.9 ± 12.3
18	7	14	60	0.500	3.2	1.296E+05	2.593E+05	91.8 ± 42.6
19	6	16	60	0.375	3.7	1.111E+05	2.963E+05	69.0 ± 33.1
20	5	24	50	0.208	6.6	1.111E+05	5.333E+05	38.4 ± 18.9
21	8	22	50	0.364	6.1	1.778E+05	4.889E+05	66.9 ± 27.7
	138	511			5.9	1.277E+05	4.728E+05	

Area of basic unit = .0000009 cm-2

Chi Squared = 13.396 with 20 degrees of freedom
P(chi squared) = 86.0 %
Correlation Coefficient = 0.824
Variance of SQR(Ns) = 0.42
Variance of SQR(Ni) = 1.89

Ns/Ni = 0.270 ± 0.026
Mean Ratio = 0.295 ± 0.023

Ages calculated using a zeta of 350 ± 6 for SRM612 glass
Rho D = 1.057E+06cm-2; ND = 4761

POOLED AGE = 49.8 ± 4.9 Ma
CENTRAL AGE = 54.3 ± 4.5 Ma

REFERENCES CITED

Galbraith, R.F., 1981, On statistical models for fission track counts: Mathematical Geology, v. 13, p. 471-488.

Galbraith, R.F., 1988, Graphical display of estimates having differing standard errors: Technometrics, v. 30, p. 271-281.

Galbraith, R.F., 1990, The radial plot: graphical assessment of spread in ages: Nuclear Tracks 17, p. 207-214.

Green, P.F., 1981, A new look at statistics in fission track dating: Nuclear Tracks 5, p. 77-86.

Green, P.F., 1986, On the thermo-tectonic evolution of Northern England: evidence from fission track analysis: Geology, v. 5, p. 493-506.

Green, P.F., 1989, Thermal and tectonic history of the East Midlands shelf (onshore UK) and surrounding regions assessed by apatite fission track analysis: Journal of the London Geological Society, v. 146, p. 755-773.

Green, P.F., Duddy, I.R., Laslett, G.M., Hegarty, K.A., Gleadow, A.J.W., and Lovering, J.F., 1989, Thermal annealing of fission tracks in apatite 4. Qualitative modelling techniques and extensions to geological timescales: Chemical Geology (Isotope Geoscience Section), v. 79, p. 155-182.

Harland, W.B., Armstrong, R.L., Cox, A.V., Craig, L.E., Smith, A.G., and Smith, D.G., 1990, A geologic time scale 1989: Cambridge University Press, Cambridge, 263 p.

Hurford, A.J. and Green, P.F., 1982, A users' guide to fission-track dating calibration: Earth and Planetary Science Letters, v. 59, p. 343-354.

Lal, D., Rajan, R.S. and Tamhane, A.S., 1969, Chemical composition of nuclei of $Z > 22$ in cosmic rays using meteoric minerals as detectors: Nature, v. 221, p. 33-37.

Laslett, G.M., Kendall, W.S., Gleadow, A.J.W. and Duddy, I.R., 1982, Bias in measurement of fission track length distributions: Nuclear Tracks 6, p. 79-85.

Moore, T.E., Wallace, W.K., Bird, K.J., Karl, S.M., Mull, C.G., and Dillon, J.T., 1992, Stratigraphy, structure, and geologic synthesis of northern Alaska: U.S. Geological Survey Open-File Report 92-330, 183p, 1 sheet.

Mull, C.G., 1982, Tectonic evolution and structural style of the Brooks Range and Arctic Slope, Alaska, *in* Powers, R.B., ed., Geologic studies of the Cordilleran Thrust belt: Rocky Mountain Association of Geologists, Denver, Colorado, 1, p. 1-45.

Mull, C.G., and Adams, K.E., 1989, Dalton Highway, Yukon Biver to Prudhoe Bay, Alaska; bedrock geology of the eastern Koyukuk basin, central Brooks Range, and eastcentral Arctic Slope: Alaska Division of Geological and Geophysical Surveys Guidebook 7, 309p.