TABLE A. Apatite and zircon data from central Laramie Mountains shear zone

Sample name	Wt (mg)	U (ppm)	Tot Pb (ppm)	com Pb (ppm)	206Pb* 204Pb	206Pb 238U	207Pb 235U	207Pb 206Pb	age (Ma)			
									206Pb 238U	207Pb 235U	207Pb 206Pb	Intercept w/ 100 Ma lower
Northwest of Cottonwood Park and Garrett shear zones												
WY 70-86 apat I	23.26	6.5	4.9	1.4	117.7	0.389822	7.11407	0.132358	2122	2126	2129.5 ± 24	2130 ± 20
WY 70-86 apat II	14.64	10	7.4	2.1	115.8	0.379578	6.95100	0.132814	2074	2105	2135.5 ± 23	2137 ± 19
LR-37 apat I	7.61	7.1	6.8	2.7	63.2	0.328716	6.34147	0.139916	1832	2024	2226.2 ± 47	2238 ± 37
WY 70-86 d-1 z	0.138	560.6	244.6	6.9	1725.3	0.387004	9.30718	0.174422	2109	2369	2600.5 ± 1.6	2612 ± 1.1
Southeast of Cottonwood Park and Garrett shear zones												
LR-21 apat I	17.52	3.4	3.1	1.8	47.0	0.288279	4.42026	0.111207	1633	1716	1819.2 ± 75	1826 ± 76
LR-22 apat I	8.23	6.9	3.7	1.4	93.8	0.289013	4.44191	0.111468	1637	1720	1823.5 ± 31	1831 ± 31
LR-23 apat II	13.52	11.4	6.2	3.1	71.1	0.263308	4.00052	0.110192	1507	1634	1802.6 ± 41	1815 ± 42
LR-31 apat I	14.09	18.1	10.1	4.6	86.1	0.307579	4.69333	0.110668	1729	1766	1810.4 ± 36	1813 ± 37
LR-32 apat I	11.57	25.7	11.8	4	122.4	0.304552	4.57591	0.108972	1714	1745	1782.3 ± 24	1785 ± 25
LR-21 d-1 zircon	0.194	294.7	154.5	6.7	1052.1	0.430282	10.27580	0.173205	2307	2460	2588.9 ± 2.4	2595 ± 1.5
LR-22 d-1 zircon	0.173	173.2	77.2	2.4	1587.9	0.395202	9.75473	0.179017	2147	2412	2643.8 ± 2.0	2654 ± 1.3
LR-23 nm10-A z	0.037	243.6	123.0	8.6	709.9	0.448923	10.80750	0.174603	2390	2507	2597.9 ± 2.7	2602 ± 2.8

* 206Pb/204Pb corrected for blank.

NOTES:

Isotopic compositions for common Pb correction of apatite data came from analysis of coexisting alkali feldspar.

Magnetic suseptibility of zircon fractions indicated by degree for diamagnetic (d) and paramagnetic (nm) configuration of Franz barrier magnetic separator.

A = air-abraded fraction.

ANALYTICAL PROCEDURES

Heavy minerals were concentrated from crushed samples by standard density and magnetic separation procedures. Apatite samples were dissolved in 800 μl 6N HCl in capped, screw top teflon beakers. Zircon samples were dissolved in 100 μl concentrated HF in teflon microbombs after Parrish (1987). Alkali feldspars were dissolved by steps in 5% HF after Ludwig and Silver (1978). Aliquots of apatite and zircon samples were spiked with a mixed $^{235}U/^{208}Pb$ spike. Pb and U were purified from zircon samples on anion exchange columns using HCl chemistry modified from Krogh (1973). An HCl-HBr chemistry after Tilton (1973) was used to purify Pb from apatite and feldspar samples. U from apatites was purified from the HBr washes by using the same HCl chemistry as for zircon samples. Laboratory Pb and U blanks during the period of this research averaged 100 pg and 5 pg, respectively, for apatite and 70 pg and 5 pg for zircon. Pb and U samples were loaded onto single rhenium filaments for isotopic analysis by thermal emission mass spectrometry. The H_3PO_4-silica gel technique was used for Pb. U samples were loaded with H_3PO_4 and graphite and run as metal ions. The samples were analysed isotopically at the Massachusetts Institute of Technology on a VG Sector 54 with multiple collectors. Mass discrimination factors for Pb and U were determined by multiple analyses of NBS SRM 981 and U-500, respectively, and were 0.124 ± .04%/amu for Pb and 0 ± .04%/amu for U. PBDAT by Ludwig (1988a) was used to reduce the raw mass spectrometer data, correct for blanks, and calculate uncertainties. Isotopic compositions for common Pb corrections of apatite data came from analyses of the least radiogenic step of coexisting alkali feldspars. Radiogenic Pb/U uncertainties (2 sigma) ranged from 0.5 to 2.5% for apatite data, and were approximately 0.47% for zircon data. Concordia intercepts were calculated by ISOPLOT (Ludwig 1988b).

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