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Isochron/West, Bulletin of Isotopic Geochronology, v. 35, pp. 15-16

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REVISED K-Ar AGES FOR THE KIRTLAND FORMATION (CRETACEOUS), SAN JUAN BASIN, NEW MEXICO

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K-Ar dates for biotites and K-feldspars from volcanic ashes of the Kirkland Formation (Cretaceous) of the San Juan Basin, New Mexico, have been reported by Brookins and Rigby (1982a, 1982b). The dates reported in these two references are not in good agreement, and this was attributed to sample inhomogeneities, purification, etc. In Brookins and Rigby (1982b), the biotite:K-feldspar pair from sample JKR-54-2 yielded the best K-Ar date, about 68 MYBP, although a tentative date of 68–71 ± 2.5 MYBP was suggested by us for the Kirtland.

There may have been analytical error by the use of an old Ar-spike for the samples listed in Brookins and Rigby (1982b), and six of the samples previously analyzed were re-analyzed by Geochron Laboratories, Inc. using a new, very precise Ar-spike. These results are shown below and the data convincingly argue for an average date of 71.6 ± 2.7 MYBP. This date should be referred to for these Kirtland Formation ashes in future discussions.

SAMPLE DESCRIPTIONS

1. *JKR-54a* K-Ar
Volcanic ash, Kirtland Formation (C S23,T24N,R13W; 108°11'29.5"W, 36°18'03.5"N; Alamo Mesa West quad, San Juan Co., NM). *Analytical data:* K = 3.145, 3.184%; $^{*40}Ar$ = 0.01553, 0.01690 ppm; $^{*40}Ar/\Sigma^{40}Ar$ = 0.822, 0.758.
(sanidine concentrate)70.5 ± 3.1 m.y.

2. *JKR-54b* K-Ar
Volcanic ash, Kirtland Formation (C S23,T24N,R13W; 108°11'29.5"W, 36°18'03.5"N; Alamo Mesa West quad, San Juan Co., NM). *Analytical data:* K = 6.450, 6.317%; $^{*40}Ar$ = 0.03437, 0.03452; $^{*40}Ar/\Sigma^{40}Ar$ = 0.775, 0.776.
(biotite concentrate)74.1 ± 2.8 m.y.

3. *JKR-54c* K-Ar
Volcanic ash, Kirtland Formation (C S23,T24N,R13W; 108°11'29.5"W, 36°18'03.5"N; Alamo Mesa West quad, San Juan Co., NM). *Analytical data:* K = 6.168, 6.066%; $^{*40}Ar$ = 0.03259, 0.03082; $^{*40}Ar/\Sigma^{40}Ar$ = 0.754, 0.767.
(biotite concentrate)71.3 ± 2.7 m.y.

4. *JKR-54d* K-Ar
Volcanic ash, Kirtland Formation (C S23,T24N,R13W; 108°11'29.5"W, 36°18'03.5"N; Alamo Mesa West quad, San Juan Co., NM). *Analytical data:* K = 10.227, 9.896%; $^{*40}Ar$ = 0.05240, 0.05359; $^{*40}Ar/\Sigma^{40}Ar$ = 0.886, 0.839.
(sanidine concentrate)72.4 ± 2.6 m.y.

5. *JKR-62a* K-Ar
Volcanic ash, Kirtland Formation (C SE/4 SE/4 S21,T24N,R13W; 108°13'28.6"W, 36°17'43.9"N; Alamo Mesa quad, San Juan Co., NM). *Analytical data:* K = 9.269, 9.474%; $^{*40}Ar$ = 0.05004, 0.04960; $^{*40}Ar/\Sigma^{40}Ar$ = 0.961, 0.917.
(sanidine concentrate)73.1 ± 2.7 m.y.

6. *JKR-93a* K-Ar
Volcanic ash, Kirtland Formation (T24N,R12W; 108°08'4.5"W, 36°16'04.8"N; Alamo Mesa quad, San Juan Co., NM). *Analytical data:* K = 9.472, 9.203; $^{*40}Ar$ = 0.04627, 0.04596; $^{*40}Ar/\Sigma^{40}Ar$ = 0.817, 0.871.
(sanidine concentrate)68.0 ± 2.5 m.y.

REFERENCES

Brookins, D.G., and Rigby, J.K. (1982a) New K-Ar dates from the Kirtland Formation (Cretaceous), San Juan Basin, New Mexico: Isochron/West, no. 33, p. 17–18.

Brookins, D.G., and Rigby, J.K. (1982b) K-Ar ages for the Kirtland Formation (Cretaceous), San Juan Basin, New Mexico: Isochron/West, no. 34, p. 19.