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Title of article Significance of new Potassium-argon ages from the Goldens
Ranch and Moroni Formations, Sanpete-Sevier Valley area, central Utah

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The following data accompany an article prepared by Irving J. Witkind and Richard F. Marvin entitled: Significance of new Potassium-Argon ages from the Goldens Ranch and Moroni Formations, Sanpete-Sevier Valley area, central Utah. The article was published in the Bulletin of the Geological Society of America, vol. , no. , p. .

Sample locations

Goldens Ranch Formation

Field number	Comments
1. WP-468	Volcanic breccia exposed south of Utah Highway 132. Upper unit. Sample locality is $39^{\circ} 40' 04''$ N., $111^{\circ} 58' 57''$ W. (W1/2, sec. 19, T. 13 S., R. 1 W.). Sugarloaf 7 1/2-minute quadrangle, Juab County.
2. WP-473	Stream-laid volcanic detritus in borrow pit south of Utah Highway 132. Sample locality is $39^{\circ} 39' 38''$ N., $112^{\circ} 02' 25''$ W. (SW1/4, SW1/4, sec. 22, T. 13 S., R. 2 W.). Furner Ridge 7 1/2-minute quadrangle, Juab County.
3. WP-469	Ash-flow tuff exposed in borrow pit in small knoll south of Utah Highway 132. Sample locality is $39^{\circ} 39' 10''$ N., $112^{\circ} 00' 33''$ W. (C, NE1/4, sec. 26, T. 13 S., R. 1 W.). Furner Ridge 7 1/2-minute quadrangle, Juab County.
4. WP-422	Ash-flow tuff. Sample locality is $39^{\circ} 34' 37''$ N., $112^{\circ} 01' 36''$

- W. (Sec. 25, T. 14 S., R. 2 W.). Sage Valley 7 1/2-minute quadrangle, Juab County.
5. WP-421 Ash-flow tuff exposed in fresh roadcut southwest of Chicken Creek Reservoir. Lower unit. Part of Chicken Creek Tuff Member of Meibos (1983). Sample locality is $39^{\circ} 29' 00''$ N., $111^{\circ} 58' 29''$ W. (Sec. 19, T. 15 S., R. 1 W.). Skinner Peaks 7 1/2-minute quadrangle, Juab County.
 6. WP-480 Rhyolitic ash-flow tuff near Chriss Canyon. Identified as the Goldens Ranch Formation by Vogel (1957). Sample locality is $39^{\circ} 24' 43''$ N., $111^{\circ} 54' 58''$ W. (Sec. 15, T. 16 S., R. 1 W.). Skinner Peaks 7 1/2-minute quadrangle, Juab County.
 7. WP-479 Rhyolitic ash-flow tuff near Chriss Canyon. Identified as the Goldens Ranch Formation by Vogel (1957). Sample locality is $39^{\circ} 24' 30''$ N., $111^{\circ} 55' 17''$ W. (Sec. 22, T. 16 S., R. 1 W.). Skinner Peaks 7 1/2-minute quadrangle, Juab County.
 8. WP-381 Ash-flow tuff at Painted Rocks, northeast of Sevier Bridge Reservoir. Sample locality is $39^{\circ} 21' 48''$ N., $111^{\circ} 57' 17''$ W. (C, NW1/4, sec. 5, T. 17 S., R. 1 W.). Hells Kitchen Canyon SW 7 1/2-minute quadrangle, Juab County.

Moroni Formation

9. WP-461 Volcanic breccia exposed near road to Santaquin Meadows. Sample locality is $39^{\circ} 54' 33''$ N., $111^{\circ} 41' 08''$ W. (S1/2, sec. 27, T. 10 S., R. 2 E.). Payson Lakes 7 1/2-minute quadrangle, Utah County.

10. WP-435 Ash-flow tuff exposed in roadcut east of U.S. Highway 89.
Sample locality is $39^{\circ} 52' 55''$ N., $111^{\circ} 32' 37''$ W. (Sec. 12, T. 11 S., R. 3 E.). Birdseye 7 1/2-minute quadrangle, Utah County.
11. WP-434 Stream-laid tuff and volcanic detritus exposed in roadcut on east side of U.S. Highway 89. Sample locality is $39^{\circ} 49' 18''$ N., $111^{\circ} 30' 27''$ W. (Sec. 31, T. 11 S., R. 4 E.). Spencer Canyon 7 1/2-minute quadrangle, Utah County.
12. WP-478 Latite(?) exposure on small knoll near junction of Salt and Pole Creeks. Sample locality is $39^{\circ} 44' 46''$ N., $111^{\circ} 42' 33''$ W. (Sec. 28, T. 12 S., R. 2 E.). Fountain Green North 7 1/2-minute quadrangle, Juab County.
13. WP-485 Ash-flow tuff in southern Cedar Hills, north of Moroni. Sample locality is $39^{\circ} 35' 50''$ N., $111^{\circ} 32' 56''$ W. (E1/2, sec. 14, T. 14 S., R. 3 E.). Moroni 7 1/2-minute quadrangle, Sanpete County.
14. WP-433 Ash-flow tuff exposed in low hills directly north of Moroni. Sample locality is $39^{\circ} 33' 10''$ N., $111^{\circ} 35' 16''$ W. (Sec. 33, T. 14 S., R. 3 E.). Moroni 7 1/2-minute quadrangle, Sanpete County.

Intrusions

15. WP-483 Minette dike that intrudes beds of the Twin Creek Limestone exposed near head of Birch Creek. Sample locality is $39^{\circ} 45' 47''$ N., $111^{\circ} 48' 44''$ W. (Sec. 22, T. 12 S., R. 1 E.). Mona 7 1/2-minute quadrangle, Juab County.
16. WP-475 Rhyolite(?) dike in roadcut along Mount Nebo Scenic Loop Road.

- Sample locality is $39^{\circ} 44' 30''$ N., $111^{\circ} 42' 58''$ W. (Sec. 28, T. 12 S., R. 2 E.). Fountain Green North 7 1/2-minute quadrangle, Juab County.
17. FGN-1 Rhyolite(?) dike in roadcut along Mount Nebo Scenic Loop Road. Sample locality is $39^{\circ} 44' 30''$ N., $111^{\circ} 42' 58''$ W. (Sec. 28, T. 12 S., R. 2 E.). Fountain Green North 7 1/2-minute quadrangle, Juab County. Collected by R. L. Banks, Northern Illinois University.
18. Lamprophyre dike. Juab County, specific location uncertain. No data available. Collected by Michel LeVot, University of Brest, Brest, France.
19. LE-T1m Leuco-monzonite sill dipping steeply to the east along Chicken Creek. Sample locality is $39^{\circ} 32' 30''$ N., $111^{\circ} 46' 35''$ W. (NW1/4, sec. 2, T. 15 S., R. 1 E.). Levan 7 1/2-minute quadrangle, Juab County. Collected by W. L. Auby, Northern Illinois University.
20. Thmp-5 Leuco-monzonite dike in Maple Hollow, south of Chicken Creek. Sample locality is (approximately) $39^{\circ} 31' 45''$ N., $111^{\circ} 46' 45''$ W. (NW1/4, sec. 11, T. 15 S., R. 1 E.). Levan 7 1/2-minute quadrangle, Juab County. Collected by W. L. Auby, Northern Illinois University.
21. WP-482 Leuco-monzonite intrusion exposed along north wall of Deep Creek. Sample locality is $39^{\circ} 31' 17''$ N., $111^{\circ} 51' 35''$ W. (Sec. 7, T. 15 S., R. 1 E.). Levan 7 1/2-minute quadrangle, Juab County.
22. WP-481 Specimen of monzonite porphyry from the Levan stock exposed in small ravine about 1.6 km (1 mi) north of the mouth of

Deep Creek. Sample locality is $39^{\circ} 30' 31''$ N., $111^{\circ} 51' 20''$ W.). (Sec. 18, T. 15 S., R. 1 E.). Levan 7 1/2-minute quadrangle, Juab County.

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Analytical data and K-Ar ages for minerals from the Goldens Ranch Formation, the Moroni Formation, and intrusive units, in the Sanpete-Sevier Valley area, central Utah.

(Analysts: R. F. Marvin, H. H. Mehnert, E. L. Brandt).

Ma--million years.

No.	Field number	Mineral dated	$^{40}\text{Ar}^1$ ($\times 10^{-10}$)		$\%^{40}\text{Ar}^1$	Age <u>+ 2 sigma</u>
			K ₂ O %	mol/gm		
1.	WP-468	plagioclase	0.32, 0.32	0.1620	44	34.8 <u>±</u> 4.9
2.	WP-473	biotite	7.65 ²	3.841	67	34.5 <u>±</u> 1.0
3.	WP-469	biotite	7.49, 7.46	4.220	73	38.8 <u>±</u> 1.4
		plagioclase	0.62, 0.62	0.3351	56	37.2 <u>±</u> 2.3
4.	WP-422	biotite	8.31, 8.27	4.043	79	33.6 <u>±</u> 1.2
		sanidine	11.68, 11.58	5.225	92	30.9 <u>±</u> 0.7
5.	WP-421	biotite	8.23, 8.22	4.602	79	38.5 <u>±</u> 1.4
		plagioclase	0.51, 0.53	0.2414	71	32.0 <u>±</u> 2.1
6.	WP-480	biotite	8.68, 8.77	3.787	71	29.9 <u>±</u> 1.1
7.	WP-479	biotite	8.83, 8.82	4.473	83	34.9 <u>±</u> 1.3
		sanidine	8.70, 8.81	4.165	86	32.7 <u>±</u> 1.2

8.	WP-381	biotite	6.66, 6.64	3.311	22	34.3 \pm 1.2
		sanidine	11.14, 11.18	5.402	88	33.3 \pm 0.9
9.	WP-461	plagioclase	0.39, 0.40	0.1881	45	32.8 \pm 3.3
10.	WP-435	hornblende	0.89, 0.86	0.4871	84	37.8 \pm 2.2
		plagioclase	0.64, 0.62	0.3455	85	37.7 \pm 2.4
11.	WP-434	plagioclase	0.49, 0.49	0.5372	79	74.6 \pm 5.0
12.	WP-478	biotite	7.86, 7.85	3.840	72	33.6 \pm 1.2
13.	WP-485	biotite	8.94, 8.96	4.605	82	35.4 \pm 1.3
		sanidine	11.58, 11.44	5.111	79	30.6 \pm 1.1
		plagioclase	0.47, 0.47	0.2402	75	35.2 \pm 2.2
14.	WP-433	biotite	8.83, 8.78	4.503	67	35.2 \pm 1.3
15.	WP-483	biotite	3.13, 3.12	1.051	63	23.2 \pm 0.8
16.	WP-475	biotite	8.23, 8.20	4.302	75	36.0 \pm 1.3
17.	FGN-1 ³	biotite	6.285, 6.511	3.027	37	33.6 \pm 1.4
18.	?	(Data not available)				
19.	LE-Tlm ³	biotite	8.836, 8.877	3.168	52	23.5 \pm 1.0
				2.865	51	
20.	Thmp-5	hornblende	1.609, 1.577	0.5314	58	23.3 \pm 1.2
				0.5429	48	
21.	WP-482	biotite	8.42, 8.42	2.849	64	23.3 \pm 0.8
22.	WP-481	biotite	8.29, 8.27	2.852	68	23.8 \pm 0.9

¹ Radiogenic ⁴⁰Ar

² Isotope dilution, Kiyoto Futa (analyst)

³ Analysis done by Krueger Enterprises, Inc., Cambridge, Massachusetts