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Title of article Tectonic Implications of Paleomagnetic and Geochronologic Data from the Yukon-Koyukuk Province, Alaska

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TABLE A. K-AR AGE DETERMINATIONS FROM VOLCANIC ROCKS

Locality Number	Latitude Longtitude	Sample Number	Rock Type	Material Dated	K_2O (wt%)	^{40}Ar RAD (mol/g) x 10^{-11}	$\frac{^{40}Ar\ RAD}{^{40}Ar\ TOTAL}$	Age ± σ Ma
24A	63.96N 158.95W	DT83-17	Basalt	Whole rock	1.25	7.77	.432	42.7 ± 1.3
32	62.98N 159.99W	DT83-25	Basalt	Whole rock	1.17	7.3'	.309	42.9 ± 1.3
7	65.78N 155.96W	83HS-1	Basalt	Whole rock	1.99	12.5	.561	43.0 ± 1.3
		83HS-2	Basalt	Whole rock	2.07	13.2	.691	43.7 ± 1.3
27	63.77N 159.26W	DT83-20A	Basalt	Whole rock	1.49	9.47	.645	43.5 ± 1.3* (Min. Age)
		DT83-20F	Basalt	Plag.	0.150	1.16	.606	52.6 ± 1.6
		DT83-20D	Andesite(?)	Anorthoclase	3.86	30.4	.959	54.0 ± 1.6
		DT83-20B	Andesite	Whole rock	1.71	13.6	.943	54.4 ± 1.6* (Min. Age)
		DT83-20E	Andesite	Whole rock	2.42	19.4	.891	54.8 ± 1.6
31	62.98N 159.97W	DT83-24	Basalt	Whole rock	1.27	9.43	.410	50.8 ± 1.5
23	64.05N 159.97W	DT83-15A	Dacite	Amph.	0.583	4.17	.606	49.1 ± 1.5
		DT83-15A	Dacite	Biotite	7.43	57.9	.813	53.3 ± 1.6
22	64.09N 158.73W	DT83-13D	Basalt	Whole rock	1.10	8.46	.466	52.4 ± 1.6
		DT83-13A	Basalt	Whole rock	1.09	8.55	.597	53.7 ± 1.6
		DT83-13B	Basalt	Whole rock	1.09	9.05	.161	56.5 ± 1.7
11	64.92N 157.63W	DT83-3	Andesite	Plag.	0.618	9.92	.926	108.1 ± 3.2
		DT83-4	Andesite	Plag.	0.610	10.1	.874	111.9 ± 3.4
		DT83-2	Basaltic andesite	Plag.	0.610	10.2	.899	113.2 ± 3.4

K-Ar determinations from volcanic rocks. Abreviations: Mineral dated, Plag. = plagioclase, Amph. = amphibole; RAD = radiogenic; σ = standard deviation; *(min. age) = minimum age (sample does not meet petrographic criteria for reliable age). Analyses by University of Alaska - Alaska Division of Geological and Geophysical Surveys Cooperative Geochronology Laboratory.

Constants Used: $\lambda_\varepsilon + \lambda_{\varepsilon'} = 0.581 \times 10^{-11}$/yr; $\lambda_\beta = 4.962 \times 10^{-10}$/yr; $^{40}K/K_{total} = 1.167 \times 10^{-4}$ mol/mol

TABLE B. EARLY CRETACEOUS VOLCANIC ARC ASSEMBLAGE - CHARACTERISTIC MAGNETIZATIONS

Loc.	Lat. Long.	Rock Type	Age	Beds/ Thick.	N	$\frac{N}{N_o}$	Demag Type	Coord.	Dec.	Inc.	κ	α95	ST
Melozitna Region													
3	65.91N 154.53	sh, ss, volc breccia	EK	8/10m	10	1.00	T	G	283	68	147	4	-F
								S	79	59	18	12	
4	65.90N 154.55	bas, volc breccia, volc debris, ss	EK	8/50m	17	1.00	T + A	G	280	70	33	6	
								S	63	71	70	4	
5	65.86N 154.54	sh, ss, Buchia coquina	EK	12?/?	12	.92	T	G	280	78	109	4	
								S	26	69	67	5	
		Grand Mean			39		T + A	G	281	72	51	3	-F
								S	57	69	27	4	
		Mean of Locality Means			3		T + A	G	282	72	234	8	
								S	61	66	48	18	
Nulato Region													
10	64.92N 157.62	alt volc clastics, bas dikes in brec		8/20m	15	1.00	T + A	G	60	74	33	7	
								S	112	40	33	7	
11	64.92N 157.63	alt volc clastics, bas dikes	K-Ar = 108.1 (plag) 111.9 (plag) 113.2 (plag)	8/34m	9	.89	T	G	44	70	31	9	
								S	119	56	31	9	
12	64.92N 157.65	jointed bas, andesite		5/?	15	1.00	T + A	G	1	72	106	4	
								S	127	66	105	4	
		Grand Mean			39		T + A	G	33	74	32	4	
								S	118	54	23	5	
		Mean of Locality Means			3		T + A	G	35	74	78	14	
								S	118	54	36	21	

TABLE B. MID-LATE CRETACEOUS SEDIMENTARY ROCKS - CHARACTERISTICS MAGNETIZATIONS

Loc.	Lat. Long.	Rock Type	Age	Beds/ Thick.	N	$\frac{N}{N_o}$	Demag Type	Coord.	Dec.	Inc.	κ	α95	ST
Melozitna Region													
1	65.20N 154.83	ss, cgl	EK	10/20m	20	1.00	T + A	G	349	79	19	8	-F
								S	161	86	12	10	
2	65.19N 154.86	sh, ss, ign cgl	EK	17/56m	8	.57	T	G	0	85	11	17	
								S	175	52	37	9	
		(cgl test)			5*		T	G	46	45	2	27	
								S	5	-48	2	65	
8	65.18N 154.93	carb ss	EK	8/32m	15	1.00	T	G	354	81	30	7	
								S	306	68	20	9	
9	65.13N 155.07	sh, ss, pelecypod coquina	EK	8/15m	12	1.00	T	G	351	76	22	9	
								S	129	86	23	9	
		Grand Mean			55		T + A	G	352	80	20	4	-F
								S	332	83	10	6	
		Mean of Locality Means			4		T + A	G	352	80	430	4	-F
								S	346	80	17	23	
Nulato Region													
41	64.85N 157.95	coal, sh, slts, mica ss, plant fos	Al-Cen	?/44m	11	.69	A	G	350	80	5	23	
								S	330	74	4	25	
42	64.78N 158.00	sh, slts, ss	Al-Cen	?/10m	13	.80	A	G	60	67	19	9	
								S	349	73	13	12	
43	64.85N 157.95	sh, slts, ss	Al-Cen	?/42m	33	.91	A	G	149	71	9	9	
								S	331	77	12	7	
13	64.77N 157.08	ss, qtz cgl	Al-Cen	7/10m	7	.88	T	G	92	69	20	14	
								S	291	78	19	14	
14	64.72N 158.08	sh, slts, ss	Al-Cen	13/33m	9	.64	T	G	71	58	18	13	
								S	358	66	16	13	
15	64.62N 158.30	cyclic carb sh, mica ss	Al-Cen	8/53m	4	.50	T	G	148	46	35	16	
								S	49	82	34	16	

TABLE B (cont.)

Loc.	Lat. Long.	Rock Type	Age	Beds/ Thick.	N	$\frac{N}{N_o}$	Demag Type	Coord.	Dec.	Inc.	κ	$\alpha 95$	ST
Nulato Region (cont.)													
16	64.58N 158.34	cyclic carb sh, mica ss	Al-Cen	6/10m	6	.86	T	G	88	37	9	27	
								S	27	67	10	26	
17	64.55N 158.40	sh, slts, mica, ss	Al-Cen	11/36m	14*	.88	T + A	G	306	-52	--	10**	+R
								S	170	-75	--	10**	
18	64.53N 158.42	cyclic coal, sh, slts, ss, cgl	Al-Cen	12/32m	9	.93	T	G	131	79	6	24	
								S	9	70	6	22	
		(cgl test)			4*		T	G	306	66	6	43	+Cg
								S	325	48	6	43	
19	64.45N 158.50	ss, cgl	Al-Cen	7/16m	6	.89	T	G	116	76	8	25	
								S	359	68	5	33	
		(cgl test)			4*		T	G	317	82	4	56	+Cg
								S	341	62	4	56	
20	64.38N 158.67	mica ss	Al-Cen	13/68m	18	.81	T	G	203	58	10	12	
								S	189	84	10	12	
21	64.07N 158.74	(cgl test)	Al-Cen	7/51m	2*	.33	T	G	20	-28	1	180	
								S	346	-47	1	180	
		Grand Mean			116		T + A	G	126	76	6	6	+F
								S	346	78	9	5	
		Mean of Locality Means			12		T + A	G	114	70	12	14	+F,+R
								S	355	76	57	6	
Ruby Region													
36	64.75N 155.80	ss, cgl	Al-Cen	8/30m	3	.63	A	G	338	49	8	34	
								S	346	57	19	22	
37	64.74N 155.88	slts, ss, cgl plant fos	Al-Cen	?/159m	26	.78	A	G	38	78	13	8	
								S	277	58	12	9	
38	64.72N 156.13	ss, plant fos	Al-Cen	?/12m	11	.69	A	G	336	70	16	12	
								S	301	49	13	13	

TABLE B (cont.)

Loc.	Lat. Long.	Rock Type	Age	Beds/ Thick.	N	$\frac{N}{N_o}$	Demag Type	Coord.	Dec.	Inc.	κ	α95	ST
Ruby Region (Cont'd)													
39	64.66N 156.46	sh, slts, ss, cgl	Al-Cen	?/10m	9	.75	A	G	353	78	15	14	
								S	320	44	11	17	
40	64.64N 156.64	ss, fos	Al-Cen	?/23m	23	1.00	A	G	166	78	32	5	-F
								S	288	63	5	16	
		Grand Mean			72		A	G	20	85	12	5	-F
								S	295	57	7	7	
		Mean of Locality Means			4		A	G	2	83	31	17	
								S	299	55	33	16	
Unalakleet Region													
25	63.83N 159.22	mica ss	Al-Cen	12/125m	22	1.00	T + A	G	106	56	11	10	
								S	349	64	10	10	
28	63.39N 156.56	cyclic sh, slts, ss	Al-Cen	6/68m	12	.80	T	G	38	85	6	20	-Cs
								S	71	30	5	21	
29	63.29N 159.69	(cgl test)	Al-Cen	2/15m	6*	1.00	T	G	125	79	2	67	+Cg
								S	72	66	2	66	
30	63.17N 159.72	sh, slts, ss	Al-Cen	15/67m	12	.60	T	G	8	35	5	21	-Cs
								S	4	2	5	22	
		Grand Mean			46		T + A	G	69	67	4	12	-Cs
								S	17	61	3	14	
		Mean of Locality Means			3		T + A	G	44	67	5	62	-Cs
								S	25	37	3	85	
Wiseman Region													
33	67.09N 150.50	qtz, ign cgl	LK	11/388m	8	.87	T	G	193	66	11	17	
								S	42	69	10	19	
		(cgl test)			19*		T	G	250	80	2	31	+Cg
								S	16	50	2	32	

TABLE B (cont.)

Loc.	Lat. Long.	Rock Type	Age	Beds/ Thick.	N	$\frac{N}{N_o}$	Demag Type	Coord.	Dec.	Inc.	κ	α95	ST
Wiseman Region (cont.)													
34	67.08N 150.5B	ign cgl	LK	5/40m	12	.94	T	G	192	53	10	14	
								S	41	66	9	16	
		(cgl test)			3*		T	G	129	10	1	180	
								S	126	21	1	180	
35	67.04N 150.96	cyclic sh, slts, ss	EK	11/90m	25	1.00	T	G	166	65	75	4	
								S	293	74	100	3	
					25*	1.00	A	6	143	87	37	5	
								S	327	58	36	5	
					50	1.00	T + A	G	164	76	26	4	
								S	315	67	29	4	

*Not included in mean calculations.
**Estimated from cluster of converging remagnetization circles (Halls, 1978).

TABLE B. EOCENE VOLCANIC ROCKS - CHARACTERISTIC MAGNETIZATIONS

Loc.	Lat. Long.	Rock Type	Beds/ Age	Thick.	N	Demag N_o	Type	Coord.	Dec.	Inc.	κ	α95	ST
7	65.78N 154.96	vesicular bas	K-Ar = 43.0 (wr) 43.3 (wr)	7/60m	8	1.00	T + A	G	231	-87	25	11	
							S	311	-82	27	11		
22	64.09N 158.73	volc breccia, felsic dikes	K-Ar = 53.7 (wr) 53.0 (wr) 52.4 (wr)	4?/30?m	7	1.00	T	G	167	-76	14	17	
							S*	--	--	--	--		
23	64.05N 158.80	dac, tuff	K-Ar = 53.3 (bi) 49.0 (hb)	5?/150m	22	1.00	T + A	G	254	-57	54	4	
							S*	--	--	--	--		
24	64.02N 158.80	lithic tuff, rhyodacite	--	6?/55m	15	1.00	T + A	G	31	31	69	5	
						S*	--	--	--	--			
26	63.80N 159.22	rhy flows, tuff	--	14/175m	20	1.00	T + A	G	141	-54	158	3	
						S*	--	--	--	--			
27	63.77N 159.26	bas, rhy, brec, pyroc, flows	K-Ar = 52.6 (plag) 54.8 (wr) 54.0 (wr) 54.5 (wr)** 43.5 (wr)**	11/92m	22	1.00	T + A	G	344	-70	19	7	+R
							S	126	-80	19	7		
31	62.99N 159.97	bas flows	K-Ar = 50.8 (wr)	2/16m	10	1.00	T + A	G	284	-17	7	20	
							S	257	-72	7	20		
32	62.98N 159.99	jointed bas	K-Ar = 42.4 (wr)	2/26m	8	.90	A	G	330	-79	38	9	
							S	156	-64	61	7		
		Grand Mean of Localities 7, 27, 31, 32			48		T + A	G	327	-71	7	8	
								S	167	-84	15	6	
		Mean of Locality Means			4		T + A	G	301	-67	6	42	+F,+R
								S	190	-83	21	21	

** - Minimum age

* - No ancient horizontal indicators.

Abbreviations: Rock type, sh = shale, slts = siltstone, ss = sandstone, cgl = conglomerate, ign = igneous, fos = fossils, carb = carbonaceous, volc = volcanic rocks, qtz = quartz, fos = fossil, bas = basalt, an = andesite, rhy = rhyolite, dac = dacite, pyroc = pyroclastic rocks, ves = vesicular; Age, EK = Early Cretaceous, Al-Cen = Albian-Cenomanian, LK = Late Cretaceous, K-Ar determinations on plag = plagioclase, wr = whole rock, bi = biotite, hb = hornblende; N = number of samples yielding a characteristic magnetic vector direction; N/N_o = ratio of samples with characteristic magnetic directions of those originally collected; Beds = number of distinct layers sampled; Thick. = stratigraphic thickness of section sampled; Demag. Type, T = thermal, A = alternating field; Coord., G = geographic (in situ), S = stratigraphic (corrected for structural tilt); Dec. = declination of magnetic vector; Inc. = inclination of magnetic vector; κ = precision parameter (high value is low dispersion); α95 = radius of 95% circle of confidence; ST = stability test(s), F = fold test, R = reversal test, cg = conglomerate test, cs, consistency test (+, pass; -, fail stability test).