

UNITED STATES DEPARTMENT OF THE INTERIOR
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INDEX TO K-AR AGE DETERMINATIONS FOR THE STATE OF OREGON

By

Robin B. Fiebelkorn, George W. Walker, Norman S. MacLeod,
Edwin H. McKee, and James G. Smith

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INTRODUCTION

As an adjunct to the preparation of a geologic map of Oregon, all available potassium-argon age determinations on rocks and minerals from the state were compiled and are presented in the accompanying table. The age determinations come from published reports, including earlier summaries of radiometric ages, unpublished U.S. Geological Survey radiometric ages, and unpublished ages from non-U.S. Geological Survey investigators. The data are complete through February 1982. Every effort has been made to obtain all analytical data and accurate sample locations and to cross reference all source publications. Age determinations are presented both as they were originally published in the source references and as recalculated ages using currently accepted potassium isotopic abundance and decay constants (Steiger and Jager, 1977).

We strongly recommend that original source reports be carefully checked before making reference to the reported ages included in this report. This is especially important because space limitations prevent us from presenting authors' interpretations of their data. In addition, typographic errors as well as errors of omission are possible in a compilation of this type and size. If a reader detects an error or omission, we would appreciate being contacted through: George W. Walker, Branch of Western Mineral Resources, MS 41, U.S. Geological Survey, 345 Middlefield Road, Menlo Park, CA 94025.

Map and sample numbers

The ages are grouped and numbered by county; each map number identifies a sample location within a county on the index map. Whenever different authors referred to samples by different numbers, listed multiple determinations on the same sample, or gave different published versions of the same age, each age is listed as a subset of the map number, for example: 1a, 1b, 1c.

Location

Most sample locations are given in latitude and longitude, to the nearest 0.1' (minute), and were plotted on the index map by computer. Where authors included maps or reported location by section, township, and range (Willamette Meridian and baseline), the geodetic coordinates of these samples were determined from the largest scale topographic map available and manually transferred to the index map. Geodetic coordinates which do not match cadastral locations given by the same author are footnoted as approximate. If authors give incomplete cadastral coordinates or vague descriptive sample location information, an abbreviated location description is listed in place of latitude and longitude. Although the latter have an assigned county number, they are not plotted on the index map and are so footnoted. The reader should refer to the source publications for any additional location information.

Geologic unit and rock type

Dated samples represent rocks with a broad range of compositions and textures collected from a wide variety of geologic structures, evolved during the course of a complex geologic history of diastrophism, intrusion, and volcanism. Information concerning geologic units and rock type was extracted from the references and included in the table. The geologic units listed are those given by the original author and more recent workers, the latter of whom may have reconsidered formational assignments after evaluating radiometric data. Wherever possible, some kind of formational name or abbreviated geologic description is listed in the column titled "Geologic unit". Where the sample was taken from a body of limited areal extent, such as a volcanic dome, the geographic name or physical description of that body is given instead of a geologic unit name. Specific rock names are tabulated in the "Rock type" column.

It should be noted that formational units which were separated in one area may represent parts of undifferentiated units in another area. Also, some geologic units may have been assigned new formational names since the original publications were written. Thus, some samples have multiple entries in the "Geologic unit" column; the most recent assignment is listed first. For example, several of the widespread ash-flow tuffs formerly incorporated in the Danforth Formation (Piper and others, 1939) have been separated into the Devine Canyon, Prater Creek and Rattlesnake Ash-flow Tuffs (Walker, 1979). These ash-flow tuff units also were assigned by other authors to the Rattlesnake Formation, part of the Drewsey Formation, and the silicic marginal facies of the Columbia River Group. In all cases, the users of the table should consult original sources.

Potassium-argon age data

Analytical data are presented as weight-percent potassium oxide, moles per gram of radiogenic ^{40}Ar , and percent ratio of radiogenic ^{40}Ar to total ^{40}Ar . Factors used to convert the data in source reports into these units were taken from Dalrymple and Lanphere (1969). Where the authors give an average of the data for an age determination, the average is listed in parentheses. If the authors also give multiple measurements of analytical data, all the measurements are listed below the average value.

Reported ages

Ages are presented in this column as they appear in the source publications. Most of the ages from references published prior to 1978 were calculated with abundance and decay constants different from those currently in use. Where the ages have been calculated with different sets of constants by various authors, all of the versions of the reported ages were listed in an effort to resolve duplication. The reader should refer to the specific reference for the set of constants used by that author.

Recalculated ages

This column lists ages calculated from the analytical data given in the source publications, using currently accepted abundance and decay constants ($^{40}\text{K}/\text{K}_{\text{total}} = 1.167 \times 10^{-4} \text{ mol/mol}$, $\lambda_{\beta} = 4.962 \times 10^{-10} \text{ yr}^{-1}$, $\lambda_{\epsilon} + \lambda'_{\epsilon} = 0.581 \times 10^{-10} \text{ yr}^{-1}$;

Steiger and Jager, 1977). These constants, adopted by the subcommission of the International Union of Geological Sciences are used today by most isotope chronology laboratories in the United States and Canada. The recalculated ages using the new constants are generally older by a few percent than the originally reported ages determined using the old constants.

The analytical uncertainty listed in this column was adjusted to correspond with the recalculated ages by the percent difference between the reported and recalculated age. As the percent difference is usually very small, the analytical uncertainty is generally the same as the one given by the original author.

We have tried to trace and correct all typographical and other errors and remove ambiguities found in the references which caused the recalculated ages to differ from the reported ages by more than an arbitrary cutoff of 5 percent. Recalculated ages which deviate more than 5 percent from the ages reported in source publications are footnoted. Some of the age determinations were reported to be spurious in the references and are also footnoted. No other attempts have been made to evaluate the data and users are once again reminded to consult the original references for interpretation of the data.

Selected references

All known publications that include K-Ar age determinations are listed and cross referenced in this column. The publications are abbreviated in standard form and in order of earliest publication date. A complete bibliography is given at the end of the tabular data.

Index map

The general distribution and location of dated rocks are shown on an index map at a scale of 1:1,000,000. The four age ranges symbolized on the map are: ● Present through the Pliocene epoch (0-<5 million years (m.y.) ago), ▲ Miocene epoch (5-<24 m.y. ago), ■ Paleogene/early Cenozoic period (24-<63 m.y. ago), and ♦ pre-Cenozoic (63+ m.y. ago).

These age intervals were chosen so that most units representing major events in the geologic record of Oregon would be placed in the same age group. For example, the extrusive events represented in the stratigraphic record by the extensive ash-flow tuffs of southeast Oregon, including the Devine Canyon, Prater Creek and Rattlesnake Ash-flow Tuffs, fall within the Miocene (5-<24 m.y. ago) age interval, as do the vast outpourings of flood basalt of the Columbia River Basalt Group; the John Day and Clarno Formations of northcentral Oregon occur within the early Cenozoic range (24-<63 m.y. ago); the pre-Cenozoic (63+ million years) rocks of the Blue Mountains of northeastern Oregon and of the Klamath Mountains of southwestern Oregon, including their respective intrusive episodes, are grouped together.

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	⁴⁰ Ar _{rad} x 10 ¹¹ (moles/gm)	Percent ⁴⁰ Ar _{rad} (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Baker County												
1	--	45°02.7'	117°06.0'	Wallawa Batholith	Trondhjemite	Biotite	--	--	--	95±3 ^b	--	Taubeneck, 1962; Laursen and Hammond, 1974
2	BR-1-70	44°34.5'	118°12.8'	Dinner Creek(?) welded tuff	Tuff	Plagioclase	(0.925)	(1.995)	81	14.5±0.4	14.9±0.4	Walker and others, 1974; Laursen and Hammond, 1978
3	GMW-68-69	44°34.7'	117°48.3'	Dooley Mountain breccia	Rhyolite	Plagioclase	(1.296)	(2.747)	74	14.3±0.4	14.7±0.4	Walker and others, 1974; Brooks and others, 1976; Laursen and Hammond, 1978
4	GMW-22-69	44°19.7'	118°08.5'	Dinner Creek(?) welded tuff	Tuff	Plagioclase	(1.837)	(3.485)	73	14.1±0.4	13.1±0.4 ^a	Walker and others, 1974; Laursen and Hammond, 1978
5	YU-WT-165	44°51.1'	118°05.3'	Bald Mountain Batholith	Gabbro	Hornblende	(0.249) 0.242 0.252 0.253	(5.953) 6.042 5.864	(40) 35 45	155±5	159±5	Armstrong and others, 1976; Laursen and Hammond, 1978
6a	YU-WT-35	44°52.2'	118°09.9'	Bald Mountain Batholith	Quartz diorite	Hornblende Biotite	(0.552) 0.552 0.551 (7.543) 7.483 7.604	(11.870) 11.558 12.183 151.591	(58) 39 77 83	140±4	144±4	Do.
6b												131±4
7	WT-745	45°03.4'	117°16.6'	Cornucopia stock, Crater Lake trondhjemite	Trondhjemite	Biotite	7.531	157.972	--	136±4	140±4	Do.
8a	WT-818	45°00.3'	117°19.0'	Cornucopia tonalite	Tonalite	Biotite Hornblende	8.302 1.241	161.542 16.779	93 81	128±4 125±4	130±4 ^b 92±3 ^{a,b}	Do. Do.
9	WT-753	45°02.4'	117°25.3'	Needle Point quartz diorite, Wallawa Batholith	Quartz diorite	Biotite	8.278	152.171	74	122±4	123±4 ^b	Do.
10	WR-987	45°02.4'	117°14.1'	Cornucopia stock, Tramway trondhjemite	Trondhjemite	Biotite	8.15	146.0	--	118±4	120±4 ^b	Do.
11	WR-988	45°02.2'	117°14.5'	Cornucopia stock, Pine Lake trondhjemite	Pegmatite	Muscovite	7.604	106.654	84	93±3	95±3 ^b	Do.
12a	UB-2-70K	44°30.0'	118°10.0'	Monolithic breccia	Rhyolite clast	Hornblende Biotite Plagioclase	(0.446) 0.446 0.447 (0.520) 0.520 0.519	1.265	26.69	19.1±8	19.6±8	Brooks and others, 1976; G. W. Walker, unpub. data
12b								1.468	39.9	19.0±0.6	19.5±0.6	Do.
13	70USGS (D), 72F69	44°48.0'	117°19.0'	--	Diorite	Biotite	(7.73) 7.73 7.73	257.7	96	218±5	218±5	Marvin and Cole, 1978
14a	5-9	44°21.0'	118°18.0'	--	Dacite	Plagioclase Plagioclase	(0.872) (0.950)	2.50 2.48	80.81 80.74	19.8±0.38 18.1±0.50	19.8±0.4 18.1±0.5	Robyn, 1977 Do.
15	U-4	44°25.0'	118°15.0'	Abutment, Whited Reservoir	Dacite	Plagioclase	(0.468)	1.30	57.39	19.1±0.65	19.1±0.7	Do.
Benton County												
1	SR65-115	44°30.5'	123°34.3'	Mary's Peak sill	Pegmatite	Hornblende	(0.696) 0.698 0.695	3.08	--	29.7	30.5±1.2	Tatsumoto and Snively, 1969; Laursen and Hammond, 1974 P. D. Snively, unpub. data
Clackamas County												
1	KAI205	45°08.4'	122°32.5'	Molalla Formation	Tuff	Plagioclase	0.189	--	27	10.8	--	Evernden and James, 1964; Laursen and Hammond, 1974; Walker and others, 1974
2	42, R0719	45°16.4'	121°47.6'	Still Creek intrusion	Diorite	Whole rock	2.14	3.65	--	11.6±1.2	11.8±1.2 ^b	Wise, 1969; Bikerman, 1970; Laursen and Hammond, 1974

Footnotes at end of tabular data

Location												
Map number	Sample number	Latitude (N)	Longitude (W)	Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	⁴⁰ Ar _{rad} x 10 ¹¹ (moles/gm)	Percent ⁴⁰ Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
Clackamas County--Cont.												
3	Hornblende, A0726	45°22.5'	121°50.8'	Rhododendron Formation, andesite clast in breccia	Breccia	Hornblende	0.35	0.350	--	7±2	7±2	Wise, 1969; Laursen and Hammond, 1974; Walker and others, 1974
4	33, R0724	45°25.7'	121°48.1'	Zigzag Mountain	Hypersthene andesite	Whole rock	1.20	1.025	--	5.8±0.8	5.9±0.8	Do.
5	72, R0722	45°21.2'	121°51.1'	Top flow, Horseshoe Ridge	Olivine-augite andesite	Whole rock	1.45	1.175	--	5.5±0.7	5.6±0.7	Do.
6	97, R0723	45°23.1'	121°43.9'	Sandy Glacier Volcano	Pyroxene andesite	Whole rock	1.62	0.775	--	3.2±0.3	3.3±0.3	Do.
7a	Ito 512				Quartz diorite	Hornblende	0.31	0.3885	13.6	8.4±0.6	8.6±0.6	Bikerman, 1970;
7b	Ito 509	45°17.9'	121°46.2'	Laurel Hill pluton	Quartz diorite	Hornblende	0.29	0.3379	11.3	8.0±0.6	8.1±0.6	Laursen and Hammond, 1974
8a	M.B. 1-69	T. 3. S., R. 8 E.		Dike	Andesite	Whole rock	1.386	1.025	80.0	5.0-1.0 5.0±0.5	5.1±1.0 ^e	Do. Do.
8b												
9	DKA-1174	45°08.4'	122°32.5'	Molalla Formation	Tuff	Plagioclase	0.152	0.349	35	12.9±1.0	15.9±1.0 ^a	Walker and others, 1974; Laursen and Hammond, 1978
10	DKA-1175	45°08.4'	122°32.5'	Molalla Formation	Tuff	Plagioclase	0.184	0.400	65	12.2±0.6	15.0±0.7 ^a	Do.
11a	3	44°55.4'	122°12.0'	Horn Formation, "Big Black" flow	Andesite porphyry	Plagioclase Whole rock Plagioclase Whole rock	--	--	--	16.5±1.0	--	Laursen and Hammond, 1978
11b							--	--	--	13.5±0.5	--	
11c							--	--	--	13.3±1.6	--	
11d						Whole rock	--	--	--	13.0±0.7	--	Do.
12a	DMS-23-1					Whole rock	(1.268) 1.276 1.276	3.526	15.9	18.73±0.63	19.2±0.6	Sutter, 1978
12b	DMS-23-4					Whole rock	(1.296) 1.259	2.937	39.3	15.28±0.19	15.7±0.2	Do.
12c	DMS-23-3	45°00.7'	122°28.9'	Assumed Columbia River Basalt equivalents	Basalt	HF etched Whole rock 30/60 mesh	1.298 1.294 1.259	2.868	53.9	15.25±0.24	15.6±0.2	Do.
12d	DMS-23-2					Whole rock (1.264) 1.274 1.274 1.254	1.276 1.274 1.274 1.254	2.824	49.5	15.06±0.60	15.5±0.6	Do.
13	DMS-18	45°03.33'	122°22.1'	Sardine Lavas	Andesite	Whole rock	(1.132) 1.140 1.124	2.893	25.8	17.22±0.20	17.7±0.2	Do.
14	DMS-21	45°04.2'	122°21.7'	Sardine Lavas	Andesite	Whole rock	(1.420) 1.424 1.416	3.256	19.0	15.45±0.52	15.7±0.5	Do.
15a	DMS-24	44°57.5'	122°23.7'	Sardine Lavas	Andesite	Whole rock	(1.116) 1.120	2.547	55.0	15.38±0.17	15.8±0.2	Do.
15b							(1.112) (1.048) 1.048	2.371	37.3	15.27±0.22	15.6±0.2	Do.
16	DMS-22	45°02.1'	122°29.4'	Sardine Lavas	Andesite	Whole rock	(1.326) 1.336 1.317	2.958	47.2	15.03±0.20	15.4±0.2	Do.
17a	PEH-77-7, FRL-4822	44°53.4'	122°13.2'	Rhododendron Formation, welded pyroclastic flows	Andesite	Plagioclase Plagioclase	-- --	-- --	-- --	12.5±0.4 12.0±0.4	-- --	Hammond and others, 1980
17b												
18a	PEH-77-6, FRL-4821	44°59.8'	122°08.9'	Rhododendron Formation, tephra bed	Andesite	Plagioclase Plagioclase	-- --	-- --	-- --	11.9±0.3 11.5±0.3	-- --	Do. Do.
18b												
19	MH-20/ UT-228	45°23.7'	121°52.0'	Mount Hood Group	--	Whole rock	2.28	3.983	90	12.2±1.7	12.2±1.7	Evans and Brown, 1981
20	LGM/ UT-240	45°23.0'	121°52.0'	Mount Hood Group	--	Whole rock	0.965	1.495	68	10.7±0.5	10.7±0.5	Do.
21	MH-10/ UT-227	45°23.8'	121°48.2'	Mount Hood Group	--	Whole rock	0.956	1.469	64	10.6±0.5	10.6±0.5	Do.

Footnotes at end of tabular data

Location			Geologic unit or geographic locality	Rock type	Material dated	K_2O		$^{40}Ar_{rad}$ x 10 ¹¹ (moles/gm)	Percent $^{40}Ar_{rad}$ (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References	
Map number	Sample number	Latitude (N)				Longitude (W)	weight percent						percent
Clackamas County--Cont.													
22	LCW/ AH-48	45°23.8'	121°49.8'	Mount Hood Group	--	Whole rock	0.965	1.460	52	10.5±0.4	10.5±0.4	Evans and Brown, 1981	
23	MH-19/ AH-47	45°23.7'	121°52.0'	Mount Hood Group	--	Whole rock	0.945	1.300	95	9.5±2.4	9.5±2.4	Do.	
24	OMF-7A-3750/ UT-224	45°23.8'	121°48.4'	Mount Hood Group	--	Hornblende	0.230	0.309	85	9.30±0.87	9.30±0.87	Do.	
25a 25b	#7774	45°12.0'	122°13.3'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock Whole rock	1.822 1.683	4.144 3.636	31.5 30.7	-- --	15.7±0.6 14.9±0.6	D. R. Lux, in prep. Do.	
	#7765	45°01.0'	122°44.0'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.382	2.955	42.1	--	14.8±0.4 ^d	Do.	
Clatsop County													
1	KA2134	45°55.0'	123°58.0'	Yakima-type Basalt, Depoe Bay Basalt	Basalt	Plagioclase	(0.386)	0.79685	4.9	14.0±2.7	14.3±2.8	Turner, 1970; Snively and others, 1973; Laursen and Hammond, 1974; Walker and others, 1974	
2	YU-E1	45°56.0'	123°59.0'	Ecola St. Park sill	Basalt	Whole rock	(1.54) 1.54 1.54	3.634	25	15.9±0.3	16.3±0.3	Nien and Cressy, 1973; Laursen and Hammond, 1978	
Coos County													
1a 1b	9A-97	43°07.0'	124°25.8'	--	Schist	Phengite Glaucoaphane	(10.46) 10.47 10.46 (0.075) 0.077 0.073	236.0	79	147±4	150±4	Coleman and Langphere, 1971; Laursen and Hammond, 1974 Do.	
								1.671	38	145±8	148±8		
Crook County													
1a 1b	GMW-121-64	43°47.8'	120°22.8'	--	Ash-flow tuff	Plagioclase Glass	(0.625) 0.62 0.63 (3.65) 3.63 3.67	0.335	59	3.6±0.6	3.7±0.6	Walker, 1970, 1974; Walker and others, 1974; Laursen and Hammond, 1978 Do.	
								1.93	71	3.6±0.2	3.7±0.2		
2	RCG-61-1-65	43°48.1'	120°01.2'	--	Ash-flow tuff	Alkali feldspar	(6.76)	9.298	92	9.29±0.23	9.53±0.24	Greene and others, 1972; Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978	
3	RCG-102-66	43°58.8'	119°54.1'	--	Basalt	Whole rock	(0.306)	0.268	16	5.92±0.41	6.07±0.42	Greene and others, 1972; Walker and others, 1974; Laursen and Hammond, 1978	
4	RCG-106-165	43°48.0'	120°00.6'	--	Ash-flow tuff	Alkali feldspar	(6.90)	9.252	88	9.05±0.28	9.29±0.29	Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978	
5	DOGM1-Bas81- 2/UT-225	44°11.6'	121°03.1'	Powell Buttes	--	Whole rock	1.181	5.153	41	30.1±1.1	30.1±1.1	Evans and Brown, 1981	
6	Pb-5/ AH-34	44°11.0'	121°00.2'	Powell Buttes	--	Anorthoclase	5.29	21.718	32	28.3±1.0	28.3±1.0	Do.	
7	Pb-1/ UT-216	44°14.5'	121°03.1'	Powell Buttes	--	Plagioclase	0.151	0.192	91	8.83±1.36	8.83±1.36	Do.	
8	Pb-2/ UT-210	44°15.7'	121°04.8'	Powell Buttes	--	Whole rock	0.355	0.305	96	5.96±2.08	5.96±2.08	Do.	
9	DOGM1-Bas81- 1/UT-226	44°09.6'	121°03.1'	Powell Buttes	--	Whole rock	0.640	0.141	97	1.53±0.77	1.53±0.77	Do.	
10	648-628	44°15.4'	120°32.8'	Clarno Formation	--	Plagioclase	0.264	2.071	23.75	--	53.7±1.0	P. I. Robinson and E. H. McKee, unpub. data	

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Crook County--Cont.												
11	648-657	44°22.8'	120°21.9'	John Day Formation	--	Hornblende	0.317	1.983	10.7	--	42.9±5.4	P. T. Robinson and E. H. McKee, unpub. data
12	648-625A	44°13.2'	120°37.4'	Lower John Day Formation	Welded tuff	Plagioclase	0.396	1.849	21.47	--	32.1±0.7	Do.
13	648-623B	44°13.2'	120°57.4'	John Day Formation, Powell Butte dome	Rhyolite	Alkali feldspar	3.58	13.40	70.01	--	25.8±0.2	Do.
14	648-644C	43°56.0'	120°08.0'	Mescal Formation	Welded tuff	Alkali feldspar	3.89	7.742	9.17	--	13.8±0.8	Do.
Curry County												
1	35-B, A-0072	42°24.3'	124°08.4'	Saddle Mountain diorite	Diorite	Hornblende	0.223	10.12	6	285±25	291±25 ^b	Dott, 1965; Koch, 1966; Laursen and Hammond, 1974
2	Q11, A-0070	42°40.8'	124°20.9'	Pearse Peak diorite	Quartz diorite	Hornblende	1.10	48.00	24	275±20	280±20 ^b	Do.
3	16-28-5	42°13.7'	124°21.3'	Dike	Mafic	Whole rock	0.43	14.42	32	215±5	219±5	Dott, 1965; Laursen and Hammond, 1974
4	CB-14(68), A-0071	42°21.6'	124°06.5'	Collier Butte diorite	Diorite	Hornblende	1.103	25.75	66	151 150	155	Dott, 1965; Koch, 1966; Laursen and Hammond, 1974
5	18-28-7	42°10.7'	124°16.4'	Dothan Formation	Andesite or dacite	Whole rock	0.22	4.95	40	149±4	150±4	Dott, 1965; Laursen and Hammond, 1974
6a } 6b } 6c }	ERR-1, U.A.A.#428, 80321	42°42.3'	124°21.0'	Pearse Peak diorite	Quartz diorite	Biotite Biotite Biotite	-- 4.39 3.43	-- 81.7 74.5	-- 89 46	146±4 145±4 141±7	125±3 ^a 145±7	Dott, 1965; Koch, 1966; Laursen and Hammond, 1974
7	62-173, R-0074	42°29.7'	124°12.5'	Colebrook Formation	Schist	Whole rock	1.922	40.75	46	138±10	142±10	Do.
8	62-82, A-0073	42°24.6'	124°20.9'	Dike	Diorite	Hornblende	0.097	1.95	29	130±15	135±15	Do.
9	C-1, CS-1, R-0069	42°41.4'	124°23.3'	Colebrook Formation	Schist	Whole rock	2.22	42.5	44	125±6	128±6	Do.
10	Rhg	42°03.3'	124°18.3'	Dike	Rhyolite	Whole rock	1.12	5.0	25	30.0±1.0	30.7±1.0	Dott, 1965; Laursen and Hammond, 1974; Walker and others, 1974
11	RD-62-62	42°13.6'	124°22.8'	Sill	Mafic	Whole rock	3.89	16.3	35	28.0±1.0	28.9±1.0	Do.
12	54-65A, 54-RCG-65A	42°23.3'	124°02.1'	Big Craggies Klippe	Amphibolite	Hornblende	(0.145) 0.147 0.143	3.362	50	151±6	154±6	Coleman and Lanphere, 1971; Coleman, 1972; Laursen and Hammond, 1974
13a } 13b }	59-69	42°54.8'	124°18.0'	Sixes River area	Schist	Phengite Glaucophane	(9.87) 9.87 (0.025) 0.025 0.025	226.5 0.504	69 12	149±4 132±13	153±4 135±13	Coleman and Lanphere, 1971; Laursen and Hammond, 1974
14a }	29-69	42°51.4'	124°15.2'	Roseburg area	Schist	Phengite	(9.68) 9.70 9.66	210.5	72	142±4	145±4	Do.
14b }						Actinolite	(0.132) 0.132 0.132	2.854	34	141±6	144±6	Do.
14c }						Glaucophane	(0.084) 0.086 0.082	1.695	37	132±8	135±8	Do.
15	34-RCG-65	42°39.1'	124°09.1'	Pearse Peak-type diorite	Diorite	Hornblende	(0.728) 0.730 0.725	16.20	78	145±4	148±4	Do.
16	47-RCG-64-1	T. 36 S., R. 12 W.		Pearse Peak-type diorite	Diorite	Muscovite	(9.36) 9.42 9.30	202.8	80	141±4	145±4 ^e	Do.

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K_2O		$^{40}Ar_{rad}$ x 10 ¹¹ (moles/gm)	percent $^{40}Ar_{rad}$ (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)				weight percent						
Curry County--Cont.													
17a } 17b }	19-RCG-65	42°41.4'	124°21.7'	Pearse Peak type Diorite	Diorite	{ Biotite Hornblende	(2.445)		52.85	57	141±4	145	Coleman, 1972; Laursen and Hammond, 1978
							2.45						
							2.44						
							(0.453)						
							0.456		9.542	69	137±4	141	Do.
						0.450							
18	MAR-1-67	42°43.0'	121°55.0'	--	Quartz diorite	Hornblende	(0.228)		4.967	54.4	--	146±4.4	M. A. Lanphere, unpub. data
Deschutes County													
1	GMW-123-64	43°53.0'	120°47.4'	--	Basalt	Plagioclase	0.34		(0.331)	26	6.6±2.0	6.7±2.0	Walker and Swanson, 1969; Walker and others, 1974; Laursen and Hammond, 1978
2	GMW-16-65	43°41.7'	119°54.1'	Devine Canyon Ash-flow Tuff	Ash-flow tuff	Alkali feldspar	(6.65)		(9.306)	75	9.45±0.21	9.70±0.22	Greene and others, 1972; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
3	FB-1-70	43°37.5'	120°27.6'	--	Rhyodacite	Plagioclase	(0.377)		(0.219)	13	3.9±0.4	4.0±0.4	Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
4	MO73-31	43°37.5'	120°53.3'	Quartz Mountain dome	Rhyolite	Obsidian	(3.835)		0.6268	36.4	1.10±0.05	1.13±0.05	Walker, 1974; MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
							3.83						
							3.84						
5	MO73-29	43°39.9'	120°59.6'	East Butte dome	Rhyolite	Obsidian	3.84		0.4823	22.8	0.85±0.05	0.87±0.05	Do.
6	M3-53	43°40.8'	121°03.0'	China Hat dome	Rhyolite	Obsidian	3.69		0.42764	7.2	0.78±0.20	0.80±0.21	Do.
7	HB-7	44°12.3'	121°24.5'	--	Basaltic andesite	Whole rock	0.944		(0.6656)	(6.75)	4.8±0.4	4.9±0.4	Armstrong and others, 1975; Laursen and Hammond, 1978
							0.669		0.6622	8.2			
8	S-84	44°19.2'	121°31.0'	--	Basaltic andesite	Whole rock	1.027		(0.4947)	(9.85)	3.3±0.2	3.3±0.2	Do.
										9.7			
										10.0			
9	TFJ-363	44°23.3'	121°46.0'	--	Basaltic andesite	Whole rock	1.110		(0.1432)	(13.1)	0.88±0.05	0.90±0.05	Do.
									0.1468	13.8			
									0.1397	12.4			
10	B-4	44°08.1'	121°22.6'	--	Dacite, ash-flow tuff	Whole rock	3.45		0.4119	0.7	0.5±0.9	0.83±1.5 ^a	Do.
11	BT-31	44°10.4'	121°36.1'	Melvin Butte plug dome	Dacite	Whole rock	(3.705)		0.2289	12	0.4±0.4	0.4±0.4	Do.
							3.66						
							3.75						
12	BT-72	44°09.0'	121°34.0'	Three Creek Butte plug dome	Dacite	Whole rock	3.44		0.0821	0.2	0.2±0.9	0.2±0.9	Do.
13	M3-99	43°49.4'	121°01.1'	North of China Hat	Rhyodacite, ash-flow tuff	Plagioclase	0.501		0.05478	0.05	0.7±0.7	0.7±0.7	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
14	M-4-16	43°43.8'	121°21.6'	East McKay Butte dome	Rhyolite	Obsidian	4.01		0.3442	10.2	0.58±0.10	0.60±0.10	Do.
15	M-4-72	43°48.0'	120°47.0'	Pine Mountain	Rhyodacite	Hornblende	0.285		0.906759	8.45	--	22.0±4	N. S. MacLeod and E. H. McKee, unpub. data
16	M-6-4	43°55.7'	121°00.8'	Horse Ridge	Basalt	Whole rock	0.992		1.08962	64.5	--	7.61±0.08	Do.
17a } 17b }	MO-73-28	43°40.8'	121°03.0'	China Hat dome	Obsidian	{ Sanidine Whole rock	0.782		0.8315	3.3	--	7.4±0.8	Do.
							3.85		3.4870	1.2	--	6.3±1.1	Do.
18	M-6-58	43°42.7'	121°24.1'	Newberry Volcano	Ash-flow pumice	Plagioclase	0.311		0.234070	0.92	--	5.22±3.02	Do.
19	M-5-41	44°03.8'	121°21.6'	Bend ash-flow tuff	Ash-flow tuff	Plagioclase	0.768		0.440525	3.85	--	3.98±1.9	Do.
20	M-5-21	43°38.6'	121°41.2'	Eaton Butte	Rhyodacite	Plagioclase	0.325		0.172522	1.10	--	3.68±3.3	Do.

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Deschutes County--Cont..												
21	M-5-25	43°41.2'	121°15.6'	Newberry Volcano	Rhyolite	Plagioclase	0.50	0.226224	1.06	--	3.14±3.0	N. S. MacLeod and E. H. McKee, unpub. data
22	M-6-23	43°44.8'	121°12.8'	Newberry Volcano	Obsidian	Plagioclase	(0.604) 0.608 0.600	0.2407012	9.7	--	2.8±0.4	Do.
23	M-6-47	43°38.8'	121°01.2'	Newberry Volcano	Ash-flow	Plagioclase	0.325	0.128935	64.5	--	2.75±0.49	Do.
24	B0-2	44°10.0'	121°32.0'	Bend tephra set	Pumice	Plagioclase	0.303	0.1126	2.24	--	2.6±2.2	Do.
25	M-5-40	44°03.7'	121°21.5'	Bend ash-flow	Ash-flow	Plagioclase	0.709	0.255426	1.52	--	2.50±2.0	Do.
26	M-5-18	43°55.8'	121°24.7'	Benham dome	--	Potassium feldspar	0.986	0.2488	3.25	--	1.8±0.8	Do.
27	M-6-45	44°04.7'	121°33.2'	Bearwall Butte	Rhyolacite	Plagioclase	0.590	0.138427	2.03	--	1.63±1.1	Do.
28	M-6-64	43°41.4'	121°19.0'	Newberry Volcano	Rhyolite	Plagioclase	0.818	0.111510	6.17	--	0.95±0.2	Do.
29	M-6-31	43°41.0'	121°14.3'	Newberry Volcano	Rhyolite	--	3.94	0.459403	5.06	--	0.80±0.23	Do.
30	M-6-44	43°42.2'	121°23.3'	Newberry Volcano	--	Plagioclase	1.201	0.127209	10.96	--	0.74±0.12	Do.
31	M-9-12	43°49.4'	121°00.9'	Newberry Volcano	Ash-flow	Plagioclase	0.277	0.0198104	1.03	--	0.50±0.25	Do.
32	M-6-80	43°43.1'	121°09.6'	Newberry Volcano	Obsidian	Whole rock	4.00	0.27051	9.59	--	0.47±0.06	Do.
33	M-6-5	43°39.2'	121°20.7'	Newberry Volcano	Obsidian	Whole rock	3.87	0.227196	6.96	--	0.41±0.08	Do.
34	M-6-67	43°41.4'	121°19.0'	Newberry Volcano	Rhyolite	Feldspar	3.36	0.195582	1.45	--	0.40±0.15	Do.
35	N-1075	43°44.9'	121°09.1'	Newberry Volcano; drill core	Basalt	Whole rock	0.586	0.030430	0.21	--	0.36±0.25	Do.
36	N-630	43°44.9'	121°09.1'	Newberry Volcano; drill core	Basalt	Whole rock	2.024	0.0738245	4.89	--	0.25±0.09	Do.
37	M-6-76	43°42.7'	121°09.8'	Newberry Volcano	Obsidian	Whole rock	3.46	0.10023	8.40	--	0.20±0.03	Do.
38	M-6-36	43°44.2'	121°13.8'	Newberry Volcano	--	Rhyolite	3.64	0.063703	4.69	--	0.12±0.01	Do.
39	M-6-97	43°45.7'	121°10.7'	Newberry Volcano	Obsidian	Whole rock	4.02	0.0413527	0.58	--	0.07±0.12	Do.
40	M-6-109	43°45.6'	121°26.5'	Newberry Volcano	Basalt	Whole rock	1.157	0.0078064	0.32	--	0.05±0.07	Do.
41	M0-73-30	43°37.5'	120°53.3'	Quartz Mountain	Obsidian	Whole rock	(3.905) 3.91 3.90	0.01709	0.22	--	0.03±0.03	Do.

Douglas County

1a	10-58	43°08.5'	123°24.0'	Roseburg area	Schist	Phengite { Glauconophane	(10.22) 10.27 10.18 (0.113) 0.113 0.133	233.3	80	148±4	152±4	Coleman and Lanphere, 1971; Laursen and Hammond, 1974
1b								2.288	56		132±5	135±5
2	DMS-133	42°59.0'	122°51.8'	Little Butte Formation	Basalt	Whole rock	(0.274) 0.276 0.273 0.269	1.009	12.9	24.83±0.50	25.4±0.51	McBirney, 1978; Sutter, 1978
3a	7605J397 7605J395 7605J394	42°59.3'	122°55.2'	Volcanic rocks of the Western Cascade range	Ash-flow tuff	Biotite	{ (8.58) 8.58 8.58	(43.59) 43.69 43.49	(89.5) 91.0 88.0	-- -- --	(34.9±1) 35.0±1 34.9±1	J. G. Smith, in prep. Do. Do.
3b		43°55.2'	122°52.3'	Volcanic rocks of the Western Cascade range	Basalt flow	Whole rock (acid treated)	(0.7185) 0.721 0.716	3.259	15.0	--	31.2±1	Do.
3c												
4	7605J395	43°55.2'	122°52.3'	Volcanic rocks of the Western Cascade range	Basalt flow	Whole rock (acid treated)	(0.7185) 0.721 0.716	3.259	15.0	--	31.2±1	Do.
5	7605J394	42°53.6'	122°50.3'	Volcanic rocks of the Western Cascade range	Mafic flow	Whole rock (acid treated)	(0.9405) 0.938 0.943	4.008	76.0	--	29.4±0.88	Do.
6	7605J359	42°56.3'	122°33.6'	Volcanic rocks of the Western Cascade range	Mafic flow	Whole rock (acid treated)	(0.9145) 0.906 0.923	2.900	83.0	--	21.9±0.7	Do.

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References	
		Latitude (N)	Longitude (W)										
Douglas County--Cont.													
7a 7b 7c	7905J034	42°51.2'	122°44.8'	Volcanic rocks of the Western Cascade range	Mafic flow	Plagioclase	(0.249) 0.247 0.248 0.252	(0.7709) 0.7728 0.7689	28.5 36.0 21.0	-- -- --	(21.4±0.9) 21.4±0.9 21.3±0.9	J. G. Smith, in prep. Do. Do.	
	8	S79-19	43°38.3'	123°21.7'	Dike cutting Siletz River Volcanics	Camptonite	Whole rock	1.23	9.25	80.94	--	51.5	P. D. Snively, unpub. data
	Grant County												
1a 1b	--	John Day Basin		John Day Formation	Tuff	Sanidine	--	--	--	{ 26.7 ^e 25.7 ^e	--	Curtis and others, 1961; Laursen and Hammond, 1974	
2	KA1203	44°26.0'	119°18.0'	Columbia River Basalt	Basalt	Whole rock	(0.778)	--	8	15.4	--	Evernden and others, 1964; Gray and Kittelman, 1967; Swanson, 1969; Walker and others, 1974; Laursen and Hammond, 1974	
3	KA1206	44°26.0'	119°21.0'	Rattlesnake Formation	Rhyolite, ash-flow tuff	Sanidine	(4.643)	--	84	6.4	--	Evernden and others, 1964 Swanson, 1969, Davenport, 1970; Walker and others, 1974; Laursen and Hammond, 1974; Enlows, 1976; Walker, 1979	
4	CEB-61-75	44°31.5'	118°42.0'	Dixie Creek area	Quartz diorite	Biotite	8.02	175.8	95	145	146±7	Thayer and Brown, 1964; Laursen and Hammond, 1978; Marvin and Dobson, 1979	
5	KA-1-2	Powell Creek Roadcut, Paulina Basin		Rattlesnake Ash-flow Tuff	Ash-flow tuff	Alkali feldspar	--	--	41.5	6.5±0.5 ^e	--	Davenport, 1970	
6	E-71-67	44°25.9'	118°30.6'	Rattlesnake Ash-flow Tuff	Ash-flow tuff	Anorthoclase	(4.612) 4.709 4.518	(3.975) 4.025 3.925	--	5.8±0.5	6.0±0.5	Davenport, 1970; Enlows, 1976	
7	KA-147	Davin Spring, Paulina Basin		Rattlesnake Ash-flow Tuff	Ash-flow tuff	Alkali feldspar	--	--	29	5.8±0.4 ^e	--	Davenport, 1970	
8	KA-155	44°11.7'	119°31.7'	Mescal Formation	Ignimbrite	Anorthoclase	(1.344) 1.350 1.336	(3.150) 3.175 3.125	(38.1) 39.4 36.8	15.8±1.4	16.2±1.4	Enlows and Davenport, 1971; Laursen and Hammond, 1974	
9	Yu-Cottonwood, E-3-65	44°26.6'	119°38.7'	Rattlesnake Ash-flow Tuff; Danforth Formation, Double O Ranch welded tuff	Rhyolite, ash-flow tuff	Anorthoclase	(4.53) 4.53 4.52	4.306	56	6.42±0.1 6.4±0.1	6.59±0.1	Enlows and Davenport, 1971; Parker and Armstrong, 1972; Parker, 1974; Laursen and Hammond, 1974, 1978; Walker and others, 1974; Enlows, 1976; Robyn and others, 1977; Nicols, 1977; Walker, 1979	
10	8-8-2(i)	44°30.9'	119°38.2'	Picture Gorge Basalt	Basalt	Whole rock	0.596	(1.412) 1.428 1.419 1.410 1.410 1.392	(56.1) 68.0 61.0 48.4 46.9	15.9±0.2	16.4±0.2	Watkins and Baksi, 1968, 1974; Baksi and Watkins, 1973; Baksi, 1972, 1974; Laursen and Hammond, 1974, 1978; Walker and others, 1974	
11	13-3-2(i)	44°30.3'	119°37.9'	Picture Gorge Basalt	Basalt	Whole rock	0.572	(1.350) 1.352 1.348	(45) 41 42	15.8±0.3	16.3±0.3	Do.	
12	1-15-1(i)	44°31.6'	119°37.9'	Picture Gorge Basalt	Basalt	Whole rock	0.525	(1.223) 1.245 1.214 1.209	(38.0) 39.3 39.6 35.0	15.7±0.3	16.1±0.3	Do.	
13	3-13-1(i)	44°31.0'	119°38.3'	Picture Gorge Basalt	Basalt	Whole rock	0.465	1.08	35.2	15.6±0.4	16.1±0.4	Do.	
14	14-2-1(i)	44°30.3'	119°37.9'	Picture Gorge Basalt	Basalt	Whole rock	0.761	(1.684) 1.696 1.673	(61.4) 62.0 60.8	14.9±0.3	15.3±0.3	Do.	

Footnotes at end of tabular data

Map number		Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O		40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported	Calculated	References	
			Latitude (N)	Longitude (W)				weight	percent			age (10 ⁶ yr)	age (10 ⁶ yr)		
Grant County--Cont.															
15a	5-11	5-11-2(i) 5-11-2	44°31.0'	119°38.3'	Picture Gorge Basalt	Basalt	Whole rock Whole rock Whole rock	(0.792) 0.790 0.793	(1.728) 1.785 (1.709)	(50.5) 58.6 (47.8)	(14.7±0.3) 14.9 14.5	(15.1±0.3) 15.6 14.9	Watkins and Baksi, 1968, 1974; Baksi and Watkins, 1973; Baksi, 1972, 1974; Laursen and Hammond, 1974, 1978; Walker and others, 1974		
15b															
15c															
16a	4-12	4-12-1(i) 4-12-1(ii) 4-12-2(ii)	44°31.0'	119°38.3'	Picture Gorge Basalt	Basalt	Whole rock Whole rock Whole rock	(0.541) 0.566 0.543	(1.180) (1.248) 1.182	(56.4) (59.0) 52.9	(14.7±0.2) 14.8 14.6	(15.1±0.2) 15.3 15.0	Do. Do. Do.		
16b															
16c															
16d								0.513	(1.113) 1.124 1.102	(45) 49.9 30.0	14.6	15.0	Do.		
17a	Yu-E-84-67	17b	44°19.0'	119°30.0'	Rattlesnake Ash-flow Tuff; Danforth Formation, Double O Ranch welded tuff	Rhyolite, ash-flow tuff	Anorthoclase	(5.326) 5.314 5.338	(5.181)	29	6.6±0.2 6.56±0.226	6.74±0.2	Parker and Armstrong, 1972; Walker and others, 1974; Enlows, 1976; Laursen and Hammond, 1978; Walker, 1979		
17b															
18a	Yu-E-6-70	18b	44°46.9'	119°27.9'	Rattlesnake Ash-flow Tuff; Danforth Formation, Double O Ranch welded tuff	Rhyolite, ash-flow tuff	Anorthoclase	(4.626) 4.638 4.614	4.395	28	6.41±0.2 6.4±0.2	6.59±0.2	Parker and Armstrong, 1972; Walker and others, 1974; Enlows, 1976; Laursen and Hammond, 1978		
18b															
19	GMW-16-69		44°00.9'	118°50.5'	Strawberry Volcanics	Rhyolite	Plagioclase	(0.525)	(0.948)	49	12.2±0.4	12.5±0.4	Walker and others, 1974; Laursen and Hammond, 1978		
20	TUR 75-3		44°19.0'	118°55.0'		Dacite	Plagioclase	(1.357)	5.183	62.67	25.7±0.52	25.7±0.5	Robyn, 1977; Robyn and others, 1977; Nicols, 1977		
21	V-23		44°10.0.'	118°44.0'	--	Obsidian	Glass	(3.417)	8.58	92.37	17.3±0.36	17.3±0.36	Do.		
22a	5-12	22b	44°21.0'	118°39.0'	Columbia River Basalt	Basalt	Plagioclase	0.192	0.410	32.24	14.9±0.85 14.9±0.4	14.9±0.9 14.9±0.4	Do. Do.		
22b															
23a	3-27	23b	44°20.0'	118°43.0'	Summit, Strawberry Mountain	Micromorite	Plagioclase	(1.833)	3.282	59.04	12.4±0.5 12.4±0.4	12.4±0.5 12.4±0.4	Do. Do.		
23b															
24	76-1		44°32.0'	119°01.0'	Intrusion in Beech Creek Fault zone	Dacite	Plagioclase	2.194	--	51.84	3.1±0.03	3.1±0.03	Do.		
25	DX-1		44°32.2'	118°35.4'	Clarno Formation	Basalt	--	0.241	1.462	11.7	--	41.7±6.0	P. T. Robinson and E. H. McKee, unpub. data		
26	B-1		44°37.8'	118°36.0'	Clarno Formation	Andesite	Whole rock	1.72	10.31	38.2	--	41.2±0.4	Do.		
Harney County															
1	KAI230		42°36.5'	118°30.0'	Alvord Creek Formation	Basalt	Whole rock	0.249	--	69	21.3	--	--	Evernden and James, 1964; Evernden and others, 1967; Laursen and Hammond, 1974; Walker and others, 1974	
2	KAI251		42°32.0'	118°35.0'	Steens Basalt	Basalt	Whole rock	(0.367)	--	58	14.7	--	--	Evernden and others, 1964; Walker and Reppening, 1965; Laursen and Hammond, 1974; Walker and others, 1974	
3	KAI165		42°44.0'	118°37.8'	Steens Basalt	Basalt	Whole rock	(1.643)	--	40	14.5	--	--	Do.	
4	KAI256		42°12.4'	118°21.5'	Trout Creek Formation	Basaltic, tuff	Whole rock	0.664	--	50	13.1	--	--	Do.	
5	KAI240		43°45.2'	118°27.5'	Juntura Formation	Basalt	Whole rock	(1.289)	--	40	12.1	--	--	Do.	
6	KAI225		43°47.1'	118°16.8'	Devine Canyon Ash-flow Tuff, Drewsey Formation	Rhyolite, ash-flow tuff	Sanidine	(6.992)	--	98.5	8.9	--	--	Evernden and others, 1964; Laursen and Hammond, 1974; Walker and others, 1974; Walker, 1979	

Footnotes at end of tabular data

		Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
Map number	Sample number	Latitude (N)	Longitude (W)									
Harney County--Cont.												
7a	GMW-140-61	43°35.6'	119°16.5'	Devine Canyon Ash-flow Tuff	Rhyolite, ash-flow tuff	Alkali feldspar Glass	6.67	9.872	56	10.0±0.3	10.3±0.3	Walker and Repenning, 1965; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
7b	--	42°35.6'	119°16.5'	Devine Canyon Ash-flow Tuff	Rhyolite, ash-flow tuff	--	--	--	--	9.7±0.3	--	Walker and Repenning, 1965; Greene and others, 1972; Laursen and Hammond, 1978; Walker, 1979
9a	11	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	(1.853)	(4.193)	(74.8)	(15.2±0.2)	(15.6±0.2)	Baksi and others, 1967; Laursen and Hammond, 1974; Walker and others, 1974; Watkins and Baksi, 1974 Do.
9b	11-6(i)						1.94	(4.413)	(76.8)	15.3	15.7	Do.
9c	11-3(i)						1.844	4.413	78.7	15.2	15.6	Do.
9d	11-4(i)	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	(4.166)	(4.166)	(78.5)	15.1	15.5	Do.
9e	11-7(i)						1.820	4.186	81.3	15.1	15.5	Do.
10a	51						(4.070)	4.146	75.7	15.1	15.5	Do.
10b	51-2(i)	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	1.808	4.106	64.2	14.9	15.3	Do.
10c	51-5(i)						1.609	4.034	59.9	14.8	15.2	Do.
10d	51-6(i)						1.530	3.454	65.1	15.0	15.3	Do.
10e	51-1(i)	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	3.463	3.356	82.4	15.0	15.3	Do.
11a	61						(1.100)	3.374	7.0	15.0	15.3	Do.
11b	61-6(i)						1.048	(2.454)	(28.8)	(15.1±0.3)	(15.4±0.3)	Do.
11c	61-1(i)	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	2.312	2.405	31.7	15.2	15.6	Do.
12a	17						(2.628)	(5.3)	15.0	15.3	15.3	Do.
12b	14-4(i)						(1.006)	(2.241)	(55.0)	(15.0±0.2)	(15.4±0.2)	Do.
12c	17-4(i)	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	1.012	(2.267)	(54.4)	15.0	15.5	Do.
12d	17-6(i)						1.000	2.258	52.4	15.0	15.3	Do.
13a	68						1.006	2.276	56.3	14.9	15.3	Do.
13b	68-6(i)	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	2.218	2.218	58.5	15.2	15.2	Do.
13c	68-5(i)						1.072	2.213	52.9	15.2	15.2	Do.
13d	68-4(i)						(1.149)	(2.539)	(14.6)	(15.2±0.3)	(15.3±0.3)	Do.
13e	68-1(i)	1.205	2.642	29.4	15.5	15.2	Do.					
14a	70	42°40.0'	118°33.0'	Steens Basalt	Basalt	{ Whole rock Whole rock	1.113	2.535	6.4	15.3	15.8	Do.
14b	70-5(i)						1.104	2.535	6.4	15.3	15.8	Do.
14c	70-3(i)						1.148	2.726	9.3	15.2	15.6	Do.
15	W-16	43°47.1'	118°16.8'	Devine Canyon Ash-flow Tuff; Drewsey Formation, lowest member	Rhyolite, ash-flow tuff	Sanidine	(7.25)	(9.826)	(81.2)	9.15±0.19	9.39±0.19	Dalrymple and others, 1967; Walker and others, 1974; Laursen and Hammond, 1978; Walker, 1979
16	RCG-248-66	43°45.5'	118°59.9'	Devine Canyon Ash-flow Tuff	Ash-flow tuff	Sanidine	(7.12)	9.710	15	9.21±0.50	9.45±0.51	Enlows and Davenport, 1971; Greene and others, 1972; Greene, 1972a; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
17	RCG-54-5-66	43°30.8'	119°08.3'	--	Rhyodacite	Plagioclase	(7.10)	1.338	59	7.82±0.26	8.03±0.26	Greene and others, 1972; Greene, 1972a; Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978; Brown and others, 1980a

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	⁴⁰ Ar _{rad} x 10 ¹¹ (moles/gm)	Percent ⁴⁰ Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Harney County--Cont.												
18	RCG-121-66	43°47.2'	119°18.9'	Rattlesnake Ash-flow Tuff; Double O Ranch welded tuff	Ash-flow tuff	Anorthoclase	(4.65) 4.64 4.66	3.713	60	5.40±0.20	5.54±0.21	Greene and others, 1972; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
19	RCG-166-68	43°52.2'	118°55.8'	--	Andesite	Plagioclase	(0.406)	(1.167)	59	19.4±0.8	19.9±0.8	Greene and others, 1972; Greene, 1972a; Walker and others, 1974; Laursen and Hammond, 1978
20	RCG-185-67	43°04.7'	118°23.4'	Steens Basalt	Basalt	Plagioclase	0.262	(0.593)	39	15.3±1.0	15.7±1.0	Do.
21	RCG-162-66	43°54.0'	119°30.2'	--	Basalt	Plagioclase	(0.152)	(0.264)	4	11.8±5.1	12.0±5.2	Greene and others, 1972; Walker and others, 1974; Laursen and Hammond, 1978
22	GMW-176-62	43°00.6'	118°38.1'	Devine Canyon Ash-flow Tuff	Rhyolite, ash-flow tuff	Alkali feldspar	7.15	8.976	61	8.5±0.3	8.7±0.3	Greene and others, 1972; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
23	RCG-165-68	43°24.8'	118°34.8'	Drinkwater Basalt	Basalt	Plagioclase	(0.216)	0.221	18	6.91±1.09	7.10±1.12	Greene and others, 1972; Walker and others, 1974; Laursen and Hammond, 1978
24	RCG-257-3-66	43°37.7'	119°04.2'	Rattlesnake Ash-flow Tuff; Double O Ranch welded tuff	Ash-flow tuff	Anorthoclase	(4.93) 4.93 4.93	4.978	31	6.82±0.33	7.00±0.34	Greene and others, 1972; Greene, 1972a; Ntem, 1974; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978; Brown and others, 1980a b
25	RCG-32-67	43°27.0'	119°00.5'	Harney Formation, Wrights Point	Basalt	Whole rock	(0.356)	(0.125)	39	2.38±0.07	2.44±0.07	Do.
26	YU-P-1	42°06.5'	118°37.3'	--	Andesite	Plagioclase	(4.358) 4.350 4.338 4.386	(71.42) 70.95 71.89	(87) 92 82	108±1.5	110±1.5	Harrold, 1972; Laursen and Hammond, 1978
27	YU-P-156-1	42°07.5'	118°37.8'	--	Metaquartz diorite	Whole rock	4.37	66.13	80	100±2.0	102±2.0	Do.
28	YU-P-3	42°01.5'	118°38.2'	--	Quartz monzonite	Riotite	7.64	105.7	(88.5)	91.3±1.3	93.7±1.3	Do.
29	YU-P-156	42°07.5'	118°37.8'	--	Aplite	Microperthitic microcline	(10.46) 10.51 10.40	93.43	84	59.5±1.2	61.0±1.2	Do.
30	YU-DP-300	43°03.1'	119°04.3'	--	Basalt	Whole rock	(0.415) 0.411 0.419	(0.542) 0.553 0.531	(4.5) 4 5	8.9±1.4	9.0±1.4	Parker and Armstrong, 1972; Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
31	YU-DP-311B	43°09.0'	119°22.4'	Prater Creek Ash-flow Tuff	Rhyolite, ash-flow tuff	Whole rock	(4.51) 4.49 4.53	(5.91) 5.62 6.20	(25) 42 8	8.6±0.2	9.1±0.2 ^a	Parker and Armstrong, 1972; Parker, 1974; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
32	YU-DP-146	43°13.5'	119°21.2'	--	Rhyolite	Whole rock	(5.13) 5.13 5.13	(6.38) 6.29 6.47	(4.5) 4 5	8.4±1.3	8.6±1.3	Parker and Armstrong, 1972; Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
33	YU-DP-119	43°14.3'	119°13.5'	Prater Creek Ash-flow Tuff	Rhyolite, ash-flow tuff	Whole rock	(4.56) 4.55 4.58	(5.555) (5.62) (5.49)	(53) 59 47	8.2±0.12	8.4±0.12	Parker and Armstrong, 1972; Parker, 1974; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
34	YU-DP-250	43°03.5'	119°03.8'	--	Basalt	Whole rock	(0.352) 0.348 0.353 0.354	0.4114	8	7.9±0.9	8.1±0.9	Parker and Armstrong, 1972; Parker, 1974; Walker and others, 1974; Laursen and Hammond, 1978

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	⁴⁰ Ar- x 10 ¹¹ (moles/gm)	Percent 40Ar- (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Harney County--Cont.												
35	YU-DP-316D	43°17.0'	119°18.8'	--	Rhyolite	Whole rock	(4.92) 4.98 4.86	5.713	16	7.8±0.5	8.0±0.5	Parker and Armstrong, 1972; Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
36	YU-DP-243	43°04.9'	119°03.8'	--	--	Sanidine	(7.86) 7.87 7.84	(8.216) 8.198 8.233	(57) 59 55	7.1±1.0	7.2±1.0	Do.
37	YU-DP-330	43°09.0'	119°22.4'	Rattlesnake Ash-flow Tuff; Double O Ranch member, Danforth Formation	Rhyolite, ash-flow tuff	Whole rock	(4.86) 4.87 4.86	(4.797) 4.659 4.936	(10.5) 10 11	6.7±0.4	6.8±0.4	Parker and Armstrong, 1972; Parker, 1974; Walker, 1974, 1979; Walker and others, 1974; Laursen and Hammond, 1978
38	YU-DP-311G	43°09.0'	119°22.4'	Rattlesnake Ash-flow Tuff; Double O Ranch member, Danforth Formation	Rhyolite, ash-flow tuff	Whole rock	(4.93) 4.93 4.93	(4.853) 4.873 4.833	(23.5) 26 21	6.6±0.2	6.8±0.2	Do.
39a	YU-DP-214	43°30.3'	119°18.0'	--	Rhyolite	Biotite Whole rock	(8.31) 8.22 8.40	7.831	35	6.4±0.2	6.5±0.2	Parker and Armstrong, 1972; Parker, 1974; Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
39b							(4.90) 4.91 4.89	4.047	16	5.6±0.4	5.7±0.4	
40	YU-DP-160	43°16.5'	119°28.0'	--	Andesite	Whole rock	(2.13) 2.16 2.10	(1.892) 2.076 1.707	(7) 8 6	5.8±0.8	6.2±0.8 ^a	Parker and Armstrong, 1972; Walker and others, 1974; Laursen and Hammond, 1978
41	YU-DP-41	43°20.4'	119°06.6'	Harney Formation, Wrights Point Member	Basalt	Whole rock	(0.798) 0.789 0.806	(0.32910) 0.31639 0.34182	(8) 9 6	2.8±0.2	2.9±0.2	Do.
42a	YU-DP-158	43°13.8'	119°12.0'	--	Rhyolite	Biotite Whole rock	(6.47) 6.45 6.48	2.539	7	2.7±0.4	2.7±0.4	Parker and Armstrong, 1972; Parker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
42b							(4.46) 4.52 4.41	1.370	9	2.1±0.24	2.1±0.24	
43	YU-DP-14	43°26.4'	119°00.4'	Harney Formation	Basalt	Whole rock	(0.291) 0.294 0.288	(0.1136) 0.1821 0.1250	(6) 5 7	2.6±0.3	2.7±0.3	Parker and Armstrong, 1972; Parker, 1974; Walker and others, 1974; Laursen and Hammond, 1978; Walker, 1979; Brown and others, 1980b
44	UO-129 KAR	43°47.2'	118°17.6'	Drinkwater Basalt	Basalt	Whole rock	0.487	0.782	7	10.8±1.2	11.1±1.2	Laursen and Hammond, 1974 L. R. Kittelman, unpub. data
45	UO-132 KAR	43°45.3'	118°25.8'	Drewsey Formation, volcanic sandstone	Sandstone	15% Sanidine, 85% Plagioclase	1.539	1.947	22	8.5±1.0	8.7±1.0	Do.
46a	PB-2-70	43°28.8'	119°18.0'	Palamino Ruttes dome	Rhyodacite	Plagioclase Biotite	(1.27) (8.27)	(1.227) (7.434)	31 53	6.5±0.3 6.1±0.2	6.7±0.3 6.2±0.2	Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978
46b												
47	M4-114	43°38.9'	118°37.3'	Buchanan dome	Rhyolite	Sanidine	7.94	17.36	49.9	14.74±0.50	15.1±0.5	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
48a	M3-88	43°22.5'	119°52.2'	Wagontire Mountain dome	Rhyolite	Plagioclase	0.584	1.274	29.1	{ 17.71±1.10 14.70±1.10	15.1±1.1	Do. Do.
48b												
49	M4-117	42°06.8'	119°07.5'	Hawkes Valley dome	Rhyolite	Sanidine	7.26	14.541	64.9	13.48±0.23	13.9±0.2	Do.
50a	M073-43	42°25.5'	119°18.8'	Beatys Butte dome	Rhyolite	Obsidian	4.81	7.386	37.0	{ 10.37±0.53 10.36±0.53	10.6±0.5	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978; Walker, 1979
50b												
51a	M3-79	43°34.1'	119°08.2'	Burns Butte dome	Rhyolite	Obsidian	5.43	6.065	72.7	{ 7.55±0.10 7.54±0.10	7.74±0.10	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
51b												
52a	M3-86	43°22.8'	119°51.0'	Egli Ridge dome	Rhyolite	Obsidian	4.93	4.672	44.9	{ 6.42±0.19 6.41±0.19	6.57±0.19	Do. Do.
52b												
52c												

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K_2O		$^{40}Ar_{rad}$ x 10^{11} (moles/gm)	Percent $^{40}Ar_{rad}$	Reported age (10^6 yr)	Calculated age (10^6 yr)	References
		Latitude (N)	Longitude (W)				weight percent	percent					
Harney County--Cont.													
53a 53b 53c	M30-70	43°29.0'	119°32.1'	East of Squaw Butte dome	Rhyolite	Obsidian	5.046		4.258	75.1	$\begin{Bmatrix} 5.70\pm0.7 \\ 5.74\pm0.1 \\ 5.69\pm0.67 \end{Bmatrix}$	5.85±0.72	McKee and others, 1976; Laursen and Hammond, 1978 Do.
	M3-90	43°30.0'	119°46.7'	Squaw Butte dome	Rhyolite	Obsidian	4.22		3.209	61.4	5.12±0.08	5.27±0.08	Do.
	55	1105	42°02.3'	118°14.5'	Disaster Peak, top andesite	Andesite	Plagioclase	(1.032)		2.682	23.26	17.5±2	18.0±2
56	SH-4	43°08.0'	118°56.8'	Jackass Butte	Andesite	Plagioclase	--	--	--	--	16.7±0.6	--	Brown and others, 1980b
57	SH-105/ UT-204	43°14.8'	118°30.9'	Southern Harney Basin Group	Rhyodacite	Whole rock	4.326		7.025	37	11.3±0.5	11.3±0.5	Brown and others, 1980b Evans and Brown, 1981
58	SH-106/ UT-194	43°21.9'	118°21.9'	Southern Harney Basin Group	Basalt	Whole rock	0.605		0.959	11	11.1±1.3	11.1±1.3	Do.
59	SH-106A/ AH-35	43°21.8'	118°30.1'	Southern Harney Basin Group	Basalt	Whole rock	0.780		1.054	16	9.44±0.8	9.44±0.8	Do.
60	SH-113/ AH-15	43°08.2'	118°53.1'	Southern Harney Basin Group	Basalt	Whole rock	0.895		1.035	16	8.07±0.69	8.07±0.69	Do.
61	SH-12/ UT-209	43°15.7'	118°50.4'	Southern Harney Basin Group	Basalt	Whole rock	0.321		0.311	5	2.91±0.38	2.91±0.38	Do.
62	SH-111/ UT-214	43°44.2'	118°31.6'	Southern Harney Basin Group	--	Anorthoclase	2.83		6.316	50	15.4±0.6	15.4±0.6	Evans and Brown, 1981
63	SH-113/ AH-15	43°35.4'	118°31.6'	Southern Harney Basin Group	--	Anorthoclase	3.16		6.357	23	13.9±0.9	13.9±0.9	Do.
64a 64b	M-5-7	43°21.2'	118°17.9'	Venator	Obsidian	Whole rock	4.37 4.36		10.1522 9.92262	73.4 70.2	--	16.1±0.3 15.7±0.3	N. S. MacLeod and E. H. McKee, unpub. data
	65	M-5-9	43°15.4'	118°36.2'	Dome	--	Sanidine	6.47		9.87466	20.44	--	10.6±0.7
66	M-5-6	43°20.3'	118°26.4'	Crane Creek dome	--	Biotite	7.58		10.371	45.1	--	9.48±0.3	Do.
67	M-5-10	43°14.9'	118°30.7'	Dome	Obsidian	Whole rock	4.77		6.41098	62.2	--	9.3±0.2	Do.
Hood River County													
1	40, R0725	45°25.4'	121°34.0'	Blue Ridge and east flank of Hood River Canyon	Andesite	Whole rock	1.33		1.35	--	7.0±0.8	7.0±0.8	Wise, 1969; Laursen and Hammond, 1974; Walker and others, 1974
2	49, R0720	45°18.7'	121°34.1'	Gunsight Rutte	Pyroxene andesite	Whole rock	1.53		0.925	--	4.1±0.6	4.2±0.6	Do.
3	70, R0721	45°20.6'	121°31.4'	Badger Butte Area	Andesite	Whole rock	2.13		0.95	--	3.0±0.2	3.1±0.2	Do.
4	PH-MCB-1	45°26.1'	121°31.5'	Mill Creek Butte	--	Hornblende	0.271		0.1384	3.7	--	6.2±1.3	P. E. Hammond, unpub. data
Jackson County													
1a 1b 1c 1d	ASH-7-67	42°10.0'	122°44.0'	Ashland pluton	Granodiorite	Hornblende Hornblende Biotite	(0.716) (0.716) (8.92)		$\begin{Bmatrix} 17.99 \\ 18.31 \\ 17.67 \\ 198.1 \end{Bmatrix}$	$\begin{Bmatrix} 81.6 \\ 76.7 \\ 86.6 \\ 74.4 \end{Bmatrix}$	166 160 144	167±3.5	Holz, 1971; Laursen and Hammond, 1978; M. A. Lanphere, unpub. data Do.
	2a 2b	MEQ-3-67	42°27.0'	Gold Hill pluton	Granodiorite	Biotite Hornblende	(6.77) (0.451)		$\begin{Bmatrix} 147.4 \\ 9.247 \end{Bmatrix}$	$\begin{Bmatrix} 88.6 \\ 84.5 \end{Bmatrix}$	142 134	$\begin{Bmatrix} 145\pm4.4 \\ 137\pm4.1 \end{Bmatrix}$	Do. Do.
3	WIM-8-67	42°41.0'	123°02.0'	White Rock Pluton	Trondhjemite	Biotite	(9.06)		191.1	92.1	138	141±4.2	Do.
4a 4b	MEQ-1-67	42°20.0'	122°59.0'	Jacksonville pluton	Granodiorite	Biotite Hornblende	(8.39) (0.451)		$\begin{Bmatrix} 177.5 \\ 9.247 \end{Bmatrix}$	$\begin{Bmatrix} 88.6 \\ 84.5 \end{Bmatrix}$	138 134	$\begin{Bmatrix} 141\pm4.2 \\ 137\pm4.1 \end{Bmatrix}$	Do. Do.
	MS-270	42°02.4'	122°36.2'	Little Butte Andesite, Coldest in Formation	Andesite	Whole rock	(1.017) 1.028 1.005		4.408	31.5	29.11±0.34	29.9±0.3	McBirney, 1978; Sutter, 1978
6	DMS-144	42°28.2'	122°48.1'	Little Butte Andesite	Andesite	Whole rock	(0.864) 0.868 0.859		3.697	30.0	28.75±0.34	29.5±0.3	Do.

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad} (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Jackson County--Cont.												
7	DMS-147	42°25.4'	122°37.5'	Elk Lake age lavas	Andesite	Whole rock	(0.843) 0.844 0.842	1.146	20.2	9.17±0.12	9.42±0.12	Sutter, 1978
8	MS-262, NA-137	42°04.6'	122°20.8'	Outerson age lavas	Basalt	Whole rock	(0.455) 0.457 0.454	0.2264	7.1	3.33±0.09	3.45±0.09	Do.
9	MS-263, NA-1758	42°08.2'	122°26.0'	Outerson age lavas	Basalt	Whole rock	(0.584) 0.586 0.582	0.2606	4.9	3.01±0.14	3.10±0.14	Do.
10	750SJ235	42°21.1'	122°47.1'	Roxy Basalt	Basalt	Whole rock	(0.373) 0.368 0.369 0.381	1.670	25.0	--	30.8±2	J. G. Smith, in prep.
11	750SJ201	42°12.9'	122°37.2'	Roxy Basalt	Basalt	Whole rock	(0.742) 0.739 0.740 0.747	3.250	49.0	--	30.2±0.9	Do.
12	770SJ766	42°02.8'	122°35.2'	Coleston Formation	Ash-flow tuff	Plagioclase	(0.4925) 0.490 0.495	2.139	69.0	--	29.9±1.5	Do.
13	760SJ356	42°39.8'	122°44.6'	Volcanic rocks of the Western Cascade range	Andesite	Whole rock (acid treated)	(1.2215) 1.216 1.227	5.135	83.0	--	29.0±0.9	Do.
14	760SJ355B	42°40.3'	122°41.2'	Volcanic rocks of the Western Cascade range	Ash-flow tuff	Plagioclase	(0.323) 0.317 0.318 0.324 0.324 0.333	1.340	9.5	--	28.6±0.9	Do.
15	750SJ202	42°13.3'	122°36.5'	Roxy Basalt	Basalt	Whole rock	(1.1205) 1.120 1.121	4.518	30.0	--	27.8±0.9	Do.
16	750SJ206A	42°10.7'	122°33.0'	Volcanic rocks of the Western Cascade range	Andesite	Plagioclase	(0.231) 0.233 0.229	0.9196	16.0	--	27.4±1	Do.
17a 17b 17c	750SJ221	42°02.8'	122°36.1'	Volcanic rocks of the Western Cascade range	Basalt flow	Whole rock (acid treated)	(0.498) 0.494 0.502	(1.876) 1.876 1.875	(50.5) 46.0 55.0	-- -- --	(26.0±0.8) 26.0±0.8 26.0±0.8	Do. Do. Do.
18	790SJ041	42°40.5'	122°40.7'	Volcanic rocks of the Western Cascade range	Basaltic andesite(?) flow	Whole rock (acid treated)	(0.9943) 0.999 0.998 0.986	3.732	82.0	--	25.9±0.9	Do.
19	760SJ317	42°41.1'	122°37.8'	Volcanic rocks of the Western Cascade range	Ash-flow tuff	Plagioclase	(0.1985) 0.193 0.196 0.201 0.204	(0.7375) 0.7454 0.7296	(13.5) 14.0 13.0	-- -- --	(25.6±0.8) 25.9±0.7 25.4±0.8	Do. Do. Do.
20	760SJ335	42°04.6'	122°24.7'	Volcanic rocks of the Western Cascade range	Andesite	Whole rock (acid treated)	(1.369) 1.366 1.373	5.106	57.0	--	25.7±1	Do.
21	790SJ040	42°39.6'	122°41.4'	Volcanic rocks of the Western Cascade range	Basaltic andesite	Whole rock (acid treated)	(0.5075) 0.512 0.510 0.508 0.500	1.869	39.0	--	25.4±0.8	Do.
22	750SJ212	42°07.5'	122°30.3'	Volcanic rocks of the Western Cascade range	Andesite flow	Plagioclase	(0.2735) 0.273 0.274	0.9988	13.0	--	25.2±0.8	Do.
23	750SJ216	42°04.8'	122°28.9'	Volcanic rocks of the Western Cascade range; intrusive	Andesite	Plagioclase	(0.3405) 0.340 0.341	1.213	9.0	--	24.6±1	Do.

Footnotes at end of tabular data

Map number		Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40ArRad x 10 ¹¹ (moles/gm)	Percent 40ArRad	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)										
Jackson County--Cont.													
24	750SJ220	42°25.2'	122°32.7'	Volcanic rocks of the Western Cascade range	--	Plagioclase	(0.2105) 0.209 0.212	0.7310	6.0	--	--	24.0±1	J.G. Smith, in prep.
25	750SJ233	42°19.5'	122°31.0'	Volcanic rocks of the Western Cascade range	--	Plagioclase	(0.4245) 0.424 0.425	1.402	60.0	--	--	22.8±0.8	Do.
26	750SJ226	42°25.6'	122°30.6'	Volcanic rocks of the Western Cascade range	--	Whole rock (acid treated)	(0.800) 0.797 0.803	2.627	42.0	--	--	22.7±1	Do.
27	750SJ263	42°22.6'	122°30.9'	Volcanic rocks of the Western Cascade range	--	Whole rock (acid treated)	(0.547) 0.543 0.551	1.735	25.0	--	--	21.9±1	Do.
28	760SJ315	42°42.3'	122°35.5'	Volcanic rocks of the Western Cascade range	--	Whole rock (acid treated)	(1.3045) 1.294 1.315	3.924	78.0	--	--	20.8±0.6	Do.
29	790SJ042	42°41.8'	122°36.1'	Volcanic rocks of the Western Cascade range	--	Whole rock (acid treated)	(0.516) 0.520 0.517 0.517 0.511	1.492	37.0	--	--	20.0±0.6	Do.
30	790SJ033	42°50.4'	122°31.0'	Volcanic rocks of the Western Cascade range	--	Whole rock (acid treated)	(0.6158) 0.621 0.615 0.614 0.613	1.603	8.2	--	--	18.2±0.5	Do.
31a	790SJ090	42°26.2'	122°25.0'	Volcanic rocks of the Western Cascade range	--	Plagioclase	(0.2525) 0.253 0.252	0.6130	5.8	--	--	16.8±0.67	Do.
							Whole rock (hydrofluoric and nitric acid)						
32	760SJ361	42°54.0'	122°32.5'	Volcanic rocks of the Western Cascade range	--	Plagioclase	(0.383) 0.378 0.382 0.389	0.9107	19.0	--	--	16.4±0.7	Do.
33	790BearN	42°38.9'	122°45.3'	Table Rock flows	Andesite	Whole rock (nitric acid only)	(2.463) 2.475 2.459 2.454	2.522	35.0	--	--	7.10±0.2	Do.
34	790Bearf	42°38.9'	122°45.3'	Table Rock flows	Andesite	Whole rock (nitric and hydrofluoric acid)	(2.395) 2.410 2.409 2.366	2.327	22.0	--	--	6.77±0.2	Do.
35	80SJ155	42°40.1'	122°25.8'	Volcanic rocks of the High Cascade range	Basalt	Whole rock (acid treated)	(0.725) 0.730 0.720	(0.5660) 0.6126 0.5194	(59.0) 55.0 63.0	--	--	5.41±0.28 5.86±0.41 ^b 4.97±0.15	Do. Do. Do.
36	760SJ324	42°45.2'	122°21.6'	Bessie Rock, High Cascade range	Andesite	Whole rock (acid treated)	(1.2075) 1.199 1.216	0.8501	39.0	--	--	4.88±0.15	Do.
37	800SJ158	42°47.7'	122°23.4'	Volcanic rocks of the High Cascade range	Basalt	Whole rock (acid treated)	(0.849) 0.853 0.845	0.5690	19	--	--	4.65±0.14	Do.
38a	80SJ170	42°34.2'	122°24.7'	Blue Rock, High Cascade range	Basaltic andesite	Whole rock (acid treated)	(0.3465) 0.351 0.342	(0.1546) 0.1634 0.1458	(17.0) 15.0 19.0	--	--	(3.10±0.15) 3.27±0.17 2.92±0.11	Do. Do. Do.
39a						Whole rock (acid treated)	(0.1375) 0.138 0.137	(0.06348) 0.06380 0.06315	(9.6) 10.1 9.1	--	--	(3.20±0.94) 3.22±1.69 3.19±0.19	Do. Do. Do.
39c						Whole rock (acid treated)	(0.256) 0.257 0.255	0.1087	13.0	--	--	2.95±0.15	Do.
40	760SJ303	42°38.7'	122°19.9'	Volcanic rocks of the High Cascade range	Basaltic andesite	Whole rock (acid treated)	(0.256) 0.257 0.255	0.1087	13.0	--	--	2.95±0.15	Do.

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	⁴⁰ Ar _{rad} x 10 ¹¹ (moles/gm)	Percent ⁴⁰ Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Jackson County--Cont.												
41	760SJ313	42°43.1'	122°18.3'	Volcanic rocks of the High Cascade range	Basaltic andesite	Whole rock (acid treated)	(0.6215) 0.621 0.622	0.1516	15.0	--	1.69±0.08	J. G. Smith, in prep.
42	80SJ159	42°45.1'	122°29.8'	Volcanic rocks of the High Cascade range	Basalt	Whole rock (acid treated)	(0.120) 0.120 0.120	0.02162	1.4	--	1.25±0.11	Do.
43	760SJ306	42°39.2'	122°17.2'	Devil's Peak, High Cascade range	Andesite	Whole rock (acid treated)	(0.734) 0.728 0.740	0.08805	7.0	--	0.833±0.058	Do.
Jefferson County												
1	KAI280	44°43.4'	121°12.6'	Deschutes (Madras) Formation	Tuff	Plagioclase	0.245	--	21	5.3	--	Evernden and James, 1964; Laursen and Hammond, 1974; Walker and others, 1974
2	KAI223	Vanora Grade, T. 10 S., R. 13 E.		Deschutes (Madras) Formation	Tuff	Plagioclase	0.222	--	58	4.3 ^e	--	Do.
3a 3b 3c	DAS-67-80	44°43.9'	120°30.0'	Clarno Formation	Rhyolite	Sanidine	(10.90)	66.78	96	(43.1±0.6 41.0±1.2	42.1±0.8	Swanson and Robinson, 1968; Dalrymple and Lanphere, 1974; Laursen and Hammond, 1974; Walker and others, 1974
4	DAS-66-208	44°43.3'	120°47.1'	John Day Formation	Welded tuff	Sanidine	(5.78)	31.41	85	36.4±1.1	37.4±1.1	Swanson and Robinson, 1968; Laursen and Hammond, 1974; Walker and others, 1974
5	DAS-66-195	44°41.9'	120°36.1'	John Day Formation	Ash-flow tuff	Sanidine	(7.06)	38.07	74	36.1±1.0	37.1±1.0	Swanson and Robinson, 1968; Laursen and Hammond, 1974; Walker and others, 1974
6	M-9	44°38.4'	121°16.1'	--	Basalt	Whole rock	0.269	(0.6350) 0.5721 0.6980	(3.6) 3.1 4.1	15.9±3.0	16.3±3.0	Armstrong and others, 1975; Laursen and Hammond, 1978
7	WR-248	44°35.6'	121°35.0'	--	Basaltic andesite	Whole rock	(0.874) 0.880 0.868	(1.184) 1.252 1.115	(10.95) 11.9 10	9.2±0.6	9.4±0.6	Do.
8a 8b 8c	WR-143-Gb, WR-143	44°36.8'	121°34.6'	--	Basalt	{Hornblende Whole rock	0.446 1.452	0.5351 (1.565) 1.580 1.549	13 (50.5) 56 45	8.1±0.6 7.3±0.1	8.31±0.6 7.5±0.1	Do. Do.
9	M-8	44°31.4'	121°18.0'	Deschutes Formation	Basalt	Whole rock	0.145	(0.1243) 0.1089 0.1397	(5.2) 2.6 7.8	5.8±1.0	5.9±1.0	Do.
10	WR-328	44°40.6'	121°32.1'	--	Andesite	Whole rock	1.36	(1.158) 1.269 1.048	(7) 8 6	5.7±0.6	5.9±0.6	Do.
11	WR-246	44°36.2'	121°34.6'	--	Basaltic andesite	Whole rock	0.958	(0.7515) 0.7760 0.7269	(5.5) 6 5	5.3±0.7	5.4±0.7	Do.
12	WR-102	44°33.3'	121°36.0'	--	Andesite	Whole rock	1.53	(1.175) 1.191 1.159	(29.5) 33 26	5.2±0.1	5.3±0.1	Do.
13	S-74	44°25.6'	121°36.0'	--	Basaltic andesite	Whole rock	1.100	(0.813) 0.879 0.821 0.839 0.714	(15.25) 17 17 17 10	5.0±0.2	5.1±0.2	Do.
14	M-2	44°31.0'	121°18.5'	--	Basalt	Whole rock	0.319	(0.2291) 0.2557 0.2026	(7.8) 6 9.6	4.9±0.5	5.0±0.5	Do.
15	WR-189	44°30.2'	121°38.2'	--	Basaltic andesite	Whole rock	1.024	(0.694) 0.634 0.754	(11) 6 16	4.5±0.4	4.7±0.4	Do.

Footnotes at end of tabular data

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		Latitude (N)	Longitude (W)									
Jefferson County--Cont.												
16	B-22	44°28.7'	121°28.6'	--	Basaltic andesite	Whole rock	1.389	(0.5846) 0.5815 0.5877	(12.35) 12.3 12.4	2.9±0.2	2.9±0.2	Armstrong and others, 1975; Laursen and Hammond, 1978
17	WR-308	44°39.2'	121°41.6'	--	Andesite	Whole rock	1.181	0.3659	14	2.1±0.2	2.2±0.2	Do.
18	WR-311	44°39.2'	121°41.9'	--	Basaltic andesite	Whole rock	1.103	(0.3376) 0.3155 0.3597	7.5 8 7	2.1±0.2	2.1±0.2	Do.
19	WR-11	44°34.4'	121°38.4'	--	Basalt	Whole rock	0.349	(0.08234) 0.08380 0.08077	(4.45) 5 3.9	1.6±0.3	1.6±0.3	Do.
20	Tr-J-427	44°25.2'	121°46.3'	--	Basaltic andesite	Whole rock	0.621	(0.0498) 0.0509 0.0486	(3) 3 3	0.54±0.14	0.56±0.14	Do.
21	S-80	44°24.3'	121°37.7'	--	Basaltic andesite	Whole rock	0.170	(0.0112) 0.0062 0.0161	(1.05) 0.6 1.5	0.45±0.3	0.46±0.3	Do.
22	S-23	44°24.3'	121°37.7'	--	Basaltic andesite	Whole rock	0.321	(0.0221) 0.0192 0.0250	(1.5) 1 2	0.45±0.2	0.48±0.2 ^a	Do.
23	PTR-71-5a	44°46.9'	120°55.5'	John Day Formation	--	Plagioclase	(3.645) 3.66 3.63	16.737	65.7	--	30.9	P. T. Robinson and E. H. McKee, unpub. data
24	10-6-78-2	44°26.1'	121°05.4'	Clarno Formation	Basalt	Whole rock	2.156	9.654	69.6	--	30.8±0.5	Do.
25	PVT-71-10	44°38.8'	120°58.1'	John Day Formation	--	Sandstone	6.86	30.38	75.4	--	30.5	Do.
26	648-584	44°34.7'	120°57.3'	John Day Formation	--	Potassium feldspar	5.43	22.56	45.6	--	28.6±0.5	Do.
27	648-34b	44°45.1'	120°52.7'	John Day Formation	--	Potassium feldspar	6.02	24.57	46.3	--	28.1±0.5	Do.
28	PTR-71-6	44°44.9'	120°56.9'	John Day Formation, Basal member I	Ash-flow tuff	--	1.399	5.615	47.14	--	27.7±0.25	Do.
29	R08-Tuff-3	44°46.9'	121°12.4'	John Day Formation	--	Plagioclase	0.589	1.993	12.37	--	23.4±3.3	Do.
30	R08-TUF-3	44°46.8'	121°12.4'	John Day Formation, near top	Tuff	Plagioclase	0.396	1.300	14.28	--	22.7±2.7	Do.
Josephine County												
1a } 1b }	GAL-12-76	42°33.0'	123°42.0'	Chetco Complex	Quartz diorite	Hornblende Biotite	(0.490) (7.58)	11.40 176.2	75.3 89.8	151 151	155±4.6 155±4.6	Hotz, 1971; Laursen and Hammond, 1978; M. A. Lanphere, unpub. data
2	GAL-1-67	42°34.0'	123°42.0'	Chetco Complex	Gabbro	Hornblende	(0.588)	13.52	86.8	150	153±4.6	Do.
3	PP-1-67	42°33.0'	123°48.0'	Chetco Complex	Quartz diorite	Hornblende	(0.422)	9.715	82.4	150	153±4.6	Do.
4	OC-1-67	42°09.0'	123°20.0'	Greyback pluton	Gabbro	Hornblende	(0.668)	15.35	84.9	149	153±4.6	Do.
5	GAL-11-67	42°34.0'	123°41.0'	Chetco Complex	Gabbro	Hornblende	(0.163)	(3.485) 3.450 3.520	(25.55) 25.7 25.4	140	143±3.0	Do.
6	OC-2-76	42°08.0'	123°21.0'	Greyback pluton	Quartz diorite	Biotite	(8.90)	188.8	56.8	138	142±4.3	Do.
7	GP-1-67	42°28.0'	123°21.0'	Grants Pass pluton	Quartz monzonite	Hornblende	(0.360)	7.483	81.2	136	139±4.2	Do.
8	PP-2-67	42°21.0'	123°46.0'	--	Trondhjemite	Muscovite	(9.78)	222.1	90.7	--	151±4.5	M. A. Lanphere, unpub. data
Klamath County												

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K_2O		$^{40}Ar_{rad}$ x 10^{11} (moles/gm)	Percent $^{40}Ar_{rad}$	Reported age (10^6 yr)	Calculated age (10^6 yr)	References
		Latitude (N)	Longitude (W)				weight	percent					
Klamath County--Cont.													
2	M4-122	43°16.5'	121°21.3'	Bald Mountain area dome	Rhyolite	Plagioclase	0.862	0.6469	15.9	5.07±0.64	5.21±0.65	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978	
3	M4-135	43°19.2'	121°22.5'	Bald Mountain area dome	Rhyolite	Plagioclase	0.826	0.5973	19.7	4.88±0.59	5.02±0.61	Do.	
4	M4-84	43°20.1'	121°22.8'	Bald Mountain area dome	Rhyolite	Biotite	6.81	4.466	40.4	4.43±0.18	4.55±0.18	Do.	
5	M4-127	43°19.2'	121°53.3'	Burn Butte dome complex	Dacite	Plagioclase	0.385	0.1395	4.6	2.45±0.94	2.52±0.96	McKee and others, 1976	
6	M5-261 NA-348	42°05.6'	122°04.5'	Outerson Age lavas	Basalt	Whole rock	(1.197) 1.202 1.195	0.6290	4.9	3.55±0.23	3.65±0.24	Sutter, 1978	
7	KFW-6	42°14.0'	121°50.0'	Yonna Formation	Andesite, tuff	Whole rock	1.234	0.40690	6.63	2.3±0.2	2.3±0.2	O'Brien and Benson, 1981	
8	KFE-11	42°21.0'	121°49.0'	--	Basalt	Whole rock	0.490	0.13067	2.23	1.9±0.5	1.9±0.5	Do.	
9	M-5-2	42°21.1'	121°23.9'	Bly Mountain	Rhyolite	Plagioclase	0.32	0.265832	1.17	--	5.8±4	N. S. MacLeod and E. H. McKee, unpub. data	
10	M-5-3	42°26.7'	121°14.4'	Near Bly Ridge	--	Plagioclase	1.544	0.0049461	21.63	--	0.023±0.01	Do.	
11	760SJ340	42°03.3'	122°16.7'	Grizzly Peak, High Cascade range	Andesite	Whole rock (acid treated)	(0.8085) 0.807 0.810	0.7029	24.0	--	6.03±0.8	J. G. Smith, in prep.	
12	750SJ270	42°22.2'	122°13.8'	Mountain Lakes Wilderness, High Cascade range	Andesite	Whole rock (acid treated)	(1.2315) 1.230 1.233	0.6419	22.0	--	3.62±0.19	Do.	
13	750SJ275	42°16.6'	122°15.5'	Burton Butte, High Cascade range	Basalt	Whole rock (acid treated)	(0.164) 0.160 0.166	0.07873	22.0	--	3.33±0.66	Do.	
14	750SJ283	42°31.0'	122°11.9'	Volcanic rocks of the High Cascade range	Basaltic andesite	Whole rock (acid treated)	(0.5585) 0.555 0.562	0.09449	11.0	--	1.17±0.12	Do.	
15a 15b 15c	750SJ273	42°20.2'	122°12.9'	Mountain Lakes Wilderness, High Cascade range	Andesite	Whole rock (acid treated)	(1.1935) 1.192 1.195	(0.1596) 0.1603 0.1589	(22.5) 40 5.0	-- -- --	(0.924±0.066) 0.924±0.090 0.923±0.033	Do. Do. Do.	
Lake County													
1a 1b	YU-JM-291, JM-291	42°37.7'	120°32.0'	Paisley Hills	Adenellite	Hornblende Biotite	(1.525) 1.53 1.52 (6.625) 6.68 6.57	7.631	29	33.6±1.5 31.6±1.0 33 32.6±1.0 32.26 32.6±0.7	34.4±1.5 33.5±1.0	Muntzert and Field, 1968; Armstrong and others, 1976; Laursen and Hammond, 1978; Walker, 1980	
2a 2b	Core 9576- 9579 (ft)	42°05.0'	120°19.6'	"Leavitt No. 1" core	Andesite Andesite	-- --	-- --	-- --	-- --	83.4±2 79.8±4	-- --	Denison, 1970; Laursen and Hammond, 1978; Walker, 1980	
3a 3b	Cuttings 11840- 11850 (ft)	42°24.0'	120°18.0'	"Thomas Creek No. 1" core	Basalt Basalt	-- --	-- --	-- --	-- --	30.3±1.4 29.7±1.8	-- --	Do. Do.	
4	B-1233, Sample no. 1	42°19.9'	120°35.2'	Thomas Creek dome	Rhyolite	Sanidine	5.130	6.15	(36.9) 29.1 44.7	8.1±0.5	8.3±0.5	Peterson and McIntyre, 1970; Laursen and Hammond, 1978;	
5	B-1234, Sample no. 2	42°21.0'	120°47.6'	Quartz Butte dome	Rhyolite	Biotite	7.873	8.85	(28.4) 27.8 29	7.6±0.4	7.8±0.4	Do.	
6a 6b	GMW-3-60	42°28.2'	119°47.4'	Hart Mountain, older core rocks	Soda rhyolite	Anothoclase Anothoclase	4.89 4.95	19.99 19.96	73 63	27.5±0.8 27.1±0.8	28.2±0.8 27.8±0.8	Noble and others, 1974; Walker and others, 1974; Laursen and Hammond, 1978	
7	GMW-4-60	42°28.8'	119°43.7'	Hart Mountain, older core rocks	Soda rhyolite	Anothoclase	4.87	18.10	74.52	25.0±0.8	25.6±0.8	Do.	

Footnotes at end of tabular data

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Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Lake County--Cont.												
8a } 8b }	M073-33	43°33.3'	120°00.4'	Glass Butte dome	Rhyolite	Obsidian	(4.18) 4.21 4.15	3.038	16.9	(4.91±0.73 4.90±.3	5.04±0.75	Walker, 1974; MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
9a } 9b }	M3-33	43°31.8'	120°46.8'	Squaw Ridge dome	Rhyolite	Obsidian	3.98	2.116	53.5	{ 3.6±0.1 3.59±0.07	3.69±0.10	Do. Do.
10a } 10b }	M073-39	42°34.6'	120°37.1'	McComb Butte dome	Rhyolite	Obsidian	(4.52) 4.47 4.56	5.152	76.0	{ 7.71±0.09 7.70±0.09	7.90±0.09	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978; Walker, 1980
11a } 11b }	M073-30	42°36.0'	120°25.3'	Tucker Hill dome	Rhyolite	Obsidian	4.42	4.854	55.0	{ 7.42±0.19 7.41±0.19	7.61±0.19	Do.
12a } 12b }	M073-36	42°18.3'	120°37.9'	Cougar Peak dome complex	Rhyolite	Biotite	7.99	8.605	25.7	{ 7.28±0.50 7.27±0.50	7.47±0.51	Do.
13	M073-37	42°19.9'	120°35.2'	Thomas Creek dome	Rhyolite	Sandine	11.69	12.45	40.0	7.19±0.32	7.38±0.33	Do.
14a } 14b }	M4-73	43°05.2'	121°11.2'	West of Silver Lake	Rhyolite, ash-flow tuff	Plagioclase	0.335	0.3558	11.3	{ 7.18±1.54 7.17±1.54	7.36±1.58	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
15a } 15b }	M073-343	42°16.1'	120°43.8'	Drews Ranch dome	Rhyolite	Obsidian	(4.425) 4.42 4.43	4.670	31.9	{ 7.14±0.34 7.13±0.34	7.32±0.34	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978; Walker, 1980
16	M073-35	42°19.7'	120°51.9'	Owens Butte dome	Rhyolite	Biotite	6.55	6.896	15.2	7.11±0.94	7.30±0.96	Do.
17a } 17b }	M073-41	43°09.1'	120°07.7'	Horse Mountain dome	Rhyolite	Obsidian	(4.405) 4.38 4.43	4.510	67.6	{ 6.92±0.14 6.91±0.14	7.10±0.14	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978
18a } 18b }	M3-57	43°02.8'	120°08.6'	South of Horse Mountain dome	Rhyolite	Sandine	(6.51) 6.50 6.52	6.589	44.7	{ 6.84±0.22 6.83±0.22	7.02±0.23	Do.
19	M4-74	43°01.6'	121°06.9'	South of Silver Lake	Rhyolite, ash-flow tuff	Plagioclase	0.404	0.4050	12.0	6.77±1.10	6.95±1.13	Do.
20	M3-60	43°15.0'	120°10.5'	Elk Mountain dome	Rhyolite	Biotite	8.75	8.641	4.84	6.67±0.18	6.85±0.18	Do.
21	M3-61	43°00.6'	121°01.2'	Hager Mountain dome	Rhyolite	Obsidian	4.06	3.547	61.2	5.90±0.09	6.06±0.09	Do.
22a } 22b }	M4-130	42°54.9'	121°08.5'	Partin Butte dome	Rhyolite	Whole rock	3.77	2.798	39.5	{ 5.02±0.20 5.01±0.20	5.15±0.21	Do. Do.
23a } 23b }	M4-431	42°56.6'	121°19.5'	Yansey Mountain area dome	Rhyodacitic	Whole rock	2.414	1.668	36.7	{ 4.68±0.17 4.67±0.17	4.79±0.17	Do. Do.
24	M4-30	43°21.7'	121°12.1'	Peyerl tuff	Rhyolite, ash-flow tuff	Plagioclase	0.598	0.3958	12.0	4.47±0.84	4.59±0.89	Do.
25	M0-73-32	43°24.0'	120°53.0'	Cougar Mountain dome	Rhyolite	Obsidian	(3.715) 3.72 3.71	2.369	24.7	4.31±0.34	4.42±0.35	Do.
26a } 26b }	M4-48	43°22.5'	121°17.3'	Upper Dry Creek ash-flow tuff	Rhyolite, ash-flow tuff	Obsidian	3.63	1.797	15.8	{ 3.35±0.44 3.34±0.44	3.44±0.45	Do. Do.
27a } 27b }	M3-31	43°33.5'	120°49.8'	Long Butte dome	Rhyolite	Sandine	(7.385) 7.34 7.43	2.508	16.5	{ 2.30±0.32 2.29±0.32	2.36±0.33	Do. Do.
28	M4-42	43°17.2'	121°03.8'	Connley Hill's dome	Rhyolite	Whole rock	3.63	3.322	22.5	6.18±0.63	6.35±0.65	McKee and others, 1976; Laursen and Hammond, 1978
29	DP-154	42°20.9'	120°07.2'	--	Andesite	Hornblende	0.363	2.180	17.3	40.2±4	41.2±4	Wells, 1979
30	DP-108	42°18.0'	120°08.2'	Drake Peak complex	Rhyolite	Plagioclase	(0.890) 0.871 0.910	1.890	17.3	14.3±2	14.7±2	Wells, 1979; Walker, 1980

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O		40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)				weight percent						
Lake County--Cont.													
31	GM-33-77	42°27.5'	120°39.4'	Drum Hill dome	Rhyolite	Alkali feldspar	6.05	14.028	62.9	16.0±0.4	16.0±0.4	Walker, 1980; G. W. Walker and E. H. McKee, unpub. data	
32	39-78	42°28.0'	120°13.5'	Abert Rim flow	Basalt	Whole rock	0.741	1.619	31.4	15.1±0.8	15.1±0.8	Do.	
33	10-78	42°22.9'	120°31.7'	Shoestring Butte flow	Basaltic andesite	Whole rock	2.78	4.220	52.43	10.5±0.3	10.5±0.3	Do.	
34	7-78	42°20.2'	120°41.0'	Coleman Rim flow	Basalt	Whole rock	0.126	0.1549	5.88	8.5±1.3	8.5±1.3	Do.	
35	69-78	42°20.0'	120°31.3'	White King mine	Perlite	Whole rock	5.44	5.533	34.5	7.0±0.4	7.0±0.4	Do.	
36	PRP-2-70	43°04.0'	120°48.4'	Picture Rock Pass	Basalt	Whole rock	0.471	0.4716	13.1	6.8±0.9	6.9±0.9	Do.	
37	M-5-5	42°37.7'	119°54.2'	Rabbit Hills	Plagioclase	Plagioclase	0.352	1.4950	8.74	--	29.3±5	N. S. Macleod and E. H. McKee, unpub. data	
38	M-4	42°31.4'	119°59.3'	Coyote Hills dome	Rhyolitic/ rhyodacitic	Alkali feldspar	1.850	7.29075	54.37	--	27.2±0.7	Do.	
39	M-4-53	43°23.8'	121°20.4'	Peyrerl tuff	Ash-flow tuff	Plagioclase	0.59	0.399325	4.34	--	4.7±2	Do.	

Lane County													
1	KA 1282	43°59.9'	123°00.4'	--	Tuff	Plagioclase	0.245	--	57	31.0	--	--	Evernden and James, 1964; Laursen and Hammond, 1974; Walker and others, 1974
2	SE57-14	44°12.5'	123°53.4'	Indian Creek dike	Syenite porphyry	Whole rock	4.34	21.4	57.0	33.6	34.4	34.4	Tatsumoto and Snively, 1969 Laursen and Hammond, 1974; Walker and others, 1974; Marvin and Dobson, 1979
3	MB-17	44°12.2'	122°02.0'	--	Basaltic andesite	Whole rock	1.052	(0.9704) 0.9791 0.9617	(24.8) 16 33.6	6.2±0.2	6.4±0.2	6.4±0.2	Armstrong and others, 1975; Laursen and Hammond, 1978
4	MB-130	44°13.2'	122°06.1'	--	Basalt	Whole rock	0.862	(0.779) 0.759 0.799	(32) 32 32	6.2±0.2	6.3±0.2	6.3±0.2	Do.
5	MB-132	44°11.5'	122°00.5'	--	Basalt	Whole rock	0.451	(0.1691) 0.1584 0.1798	(8) 6 10	2.6±0.2	2.6±0.2	2.6±0.2	Do.
6	MB-110	44°11.8'	122°00.8'	--	Basalt	Whole rock	0.451	(0.1431) 0.1316 0.1495 0.1482	(38.0) 93.0 12.0 9.0	2.1±0.1	2.2±0.1	2.2±0.1	Do.
7	TS-137	44°07.3'	121°51.3'	Husband Volcano	Basaltic andesite	Whole rock	0.640	(0.0109) 0.0147 0.0071	(1.2) 1.7 0.7	0.04±0.1	0.12±0.3 ^a	0.12±0.3 ^a	Do.
8	M-343	43°38.0'	123°05.0'	Fisher Formation	Andesite	--	--	--	--	34.3±0.46	--	--	McBirney, 1978
9	CP-173	43°55.5'	122°41.8'	Little Butte Volcanic series	Gabbro	Whole rock	(0.419)	1.330	28.6	21.34±0.55	21.9±0.6	21.9±0.6	McBirney, 1978; Sutter, 1978
10a	MS-252	44°13.2'	122°13.6'	Columbia River Basalt equivalent	Basalt	Whole rock	(0.690) 0.694	3.537	6.8	34.39±0.85	35.3±0.9	35.3±0.9	Sutter, 1978
10b						Whole rock (30/60 mesh)	(0.685) (0.659) 0.659 0.658	1.404	34	14.36±0.29	14.7±0.3	14.7±0.3	Do.
11	MS-254	44°14.2'	122°07.5'	Columbia River Basalt equivalent	Basalt	Whole rock	(0.624) 0.627 0.622	1.847	6.3	19.9±1.94	20.4±2.0	20.4±2.0	Do.
12	DMS-158	43°31.5'	122°29.8'	Columbia River Basalt equivalent	Basalt	Whole rock	(0.510) 0.512 0.508	1.222	31.2	16.14±0.19	16.6±0.3	16.6±0.3	Do.
13	DMS-77	44°07.7'	122°24.1'	Nimrod stock	Granitic	Whole rock	(4.902) 4.932 4.873	11.54	32.3	15.86±0.18	16.3±0.2	16.3±0.2	Do.

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar-rad x 10 ¹¹ (moles/gm)	Percent 40Ar-rad	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Lane County--Cont.												
14	DMS-159	43°31.9'	122°30.0'	Sardine lavas	Andesite	Whole rock	(1.155) 1.164 1.147	2.623	10.7	15.30±0.25	15.7±0.3	Sutter, 1978
15	CP-166	44°00.9'	122°17.7'	Columbia River Basalt equivalent	Basalt	Whole rock	(1.030) 1.035 1.026	2.282	26.9	14.93±0.28	15.3±0.3	Do.
16	CP-168	43°59.1'	122°23.2'	Sardine lavas	Andesite	Whole rock	(1.548) 1.548 1.548	3.263	34.2	14.21±0.16	14.6±0.2	Do.
17	MS-251	44°12.2'	122°15.0'	Sardine lavas	Basalt	Whole rock	(1.162) 1.167 1.158	2.354	28.6	13.66±0.17	14.0±0.2	Do.
18	DMS-161	43°45.7'	122°30.5'	Elk Lake age lavas	Basalt	Whole rock	(1.645) 1.651 1.639	2.704	14.2	11.09±0.15	11.4±0.4	Do.
19	DMS-153	43°31.5'	122°30.9'	Elk Lake age lavas	Basalt	Whole rock	(0.194) 0.194 0.194	0.3101	6.1	10.79±0.28	11.1±0.3	Do.
20	MS-253	44°12.8'	122°12.7'	Elk Lake age lavas	Andesite	Whole rock	(1.724) 1.730 1.717	2.162	55.7	8.46±0.11	8.69±0.11	Do.
21	CP-208	44°09.5'	122°02.9'	Outerson age lavas	Basalt	Whole rock	(1.089) 1.100 1.077	0.8150	15.4	5.06±0.06	5.19±0.06	Do.
22	CP-205	44°13.0'	122°05.5'	Outerson age lavas	Basalt	Whole rock	(0.625) 0.625 0.625	0.3588	16.8	3.88±0.06	3.98±0.06	Do.
23	U-Cougar	44°06.8'	122°14.2'	Lavas of Cougar Dam	Basaltic andesite	Plagioclase	0.286	0.669	87	16.3±1.8	16.3±1.8	Brown and others, 1980c; Evans and Brown, 1981
24	U-R1-85	44°07.7'	122°16.2'	Tuffs of Rush Creek	Dacite, ash-flow tuff	Plagioclase	0.421	0.838	74	13.9±0.8	13.9±0.8	Do.
25	U-R1-112	44°06.5'	122°17.0'	Walker Creek	Andesite	Plagioclase	0.251	0.414	65	11.5±0.5	11.5±0.5	Do.
26	U-BF-5	44°08.8'	122°12.5'	Castle Rock plug dome	Dacite	Whole rock	--	--	--	9.31±0.44	--	Brown and others, 1980c
27	U-TNW-10p	44°12.2'	122°11.8'	--	Andesite	Whole rock	1.35	1.726	39	8.93±0.34	8.93±0.34	Brown and others, 1980c; Evans and Brown, 1981
28	U-Tpb	44°12.5'	122°11.5'	Tipsoo Butte	Basaltic andesite	Whole rock	0.440	0.529	61	8.39±3.88	8.39±3.88	Do.
29	U-Foley	44°10.8'	122°10.5"	--	Basalt	Whole rock	0.660	0.193	95	2.05±0.52	2.05±0.52	Do.
30	OM-5	43°34.2'	122°20.2'	--	Dacite	--	--	--	--	21.3±1.0	--	Brown, and others, 1980d
31	OM-49	43°36.7'	122°23.4'	--	Basalt	--	--	--	--	18.7±0.9	--	Do.
32	OM-520	43°48.8'	122°22.2'	--	Rhyolite	--	--	--	--	17.3±0.7	--	Do.
33	BB-16/ AH-79	43°48.01'	122°31.7'	Burnt Bridge Group	--	Whole rock	0.976	3.489	17	24.7±2.0	24.7±2.0	Evans and Brown, 1981
34	Stack/ UT-199	43°48.9'	122°32.2'	Burnt Bridge Group	--	Whole rock	0.651	2.074	35	22.0±1.0	22.0±1.0	Do.
35	BB-30/ UT-242	43°48.8'	122°33.5'	Burnt Bridge Group	--	Whole rock	0.621	1.970	11	21.9±2.9	21.9±2.9	Do.
36	T-14/ UT-247	43°01.0'	122°16.5'	Tumblebug Creek Group	--	Whole rock	0.80	1.957	28	17.0±0.9	17.0±0.9	Do.
37	BB-NSH/ AH-62	43°49.5'	122°31.8'	Burnt Bridge Group	--	Whole rock	0.29	0.668	3	15.9±7.6	15.9±7.6	Do.
38	T-10/ UT-254	43°28.3'	122°17.0'	Tumblebug Creek Group	--	Whole rock	1.33	2.984	47	15.6±0.6	15.6±0.6	Do.

Footnotes at end of tabular data

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		Latitude (N)	Longitude (W)									
Lane County--Cont.												
39	T-F122/ UT-250	43°29.3'	122°16.4'	Tumblebug Creek Group	--	Whole rock	0.96	1.964	26	14.1±0.8	14.1±0.8	Evans and Brown, 1981
40	Imw1/ AH-60	44°06.5'	122°13.6'	Rider Creek Group	--	Whole rock	0.530	0.950	7	12.4±2.5	12.4±2.5	Do.
41a	MO-ENG-B/ UT-232	44°04.0'	122°03.5'	Mosquito Creek Group	--	Whole rock	0.230	0.340	14	10.2±1.0	10.2±1.0	Do.
							0.230	0.319	19	9.6±1.5	9.6±1.5	Do.
42	BB-PAT-H1/ AH-63	43°54.7'	122°37.4'	Burnt Bridge Group	--	Whole rock	0.121	0.145	2	8.3±5.5	8.3±5.5	Do.
43	R1-28/ AH-86	44°07.2'	122°12.9'	Rider Creek Group	--	Whole rock	0.63	0.734	5	8.1±2.3	8.1±2.3	Do.
44	MO-160/ AH-49	44°04.5'	122°01.2'	Mosquito Creek Group	--	Whole rock	0.430	0.476	11	7.67±0.96	7.67±0.96	Do.
45	MO-159/ UT-220	44°04.5'	122°00.8'	Mosquito Creek Group	--	Whole rock	0.400	0.392	8	6.80±1.18	6.80±1.18	Do.
46	P-324/ AH-85	44°32.8'	122°17.2'	Pinto Creek Group	--	Whole rock	1.13	0.903	19	5.53±0.41	5.53±0.41	Do.
47	M8-133/ UT-222	44°10.5'	122°06.2'	Mosquito Creek Group	--	Whole rock	0.521	0.167	8	2.23±0.37	2.23±0.37	Do.
48	P-22/ AH-73	43°36.1'	122°13.9'	Pinto Creek Group	--	Whole rock	0.86	0.244	11	1.98±0.25	1.98±0.25	Do.
49	P-319/ UT-260	43°32.8'	122°15.0'	Pinto Creek Group	--	Whole rock	0.52	0.130	34	1.73±0.8	1.73±0.8	Do.
50	P-Motch/ UT-239	43°33.9'	122°11.6'	Pinto Creek Group	--	Whole rock	1.040	0.147	4	0.98±0.34	0.98±0.34	Do.
51	T-211/ UT-251	43°28.9'	122°15.6'	Tumblebug Creek Group	--	Whole rock	0.82	0.115	3	0.97±0.46	0.97±0.46	Do.
52	T-208/ AH-74	43°29.1'	122°18.1'	Tumblebug Creek Group	--	Whole rock	0.75	0.083	5	0.77±0.21	0.77±0.21	Do.
53	B8-Tpba/ AH-64	43°50.3'	122°37.0'	Burnt Bridge Group	--	Whole rock	1.42	0.114	5	0.56±0.16	0.56±0.16	Do.
54	T-210/ AH-75	43°29.5'	122°15.7'	Tumblebug Creek Group	--	Whole rock	0.98	0.024	1	0.17±0.48	0.17±0.48	Do.
55	B0-7	43°35.1'	122°37.5'	Champion Creek area	Quartz diorite	Whole rock	(1.65) 1.66 1.63	5.163	44.1	21.7±0.8	21.7±0.8	Power and others, 1981
56	BR-6	44°12.9'	122°20.4'	Gold Hill area	Quartz diorite	Whole rock	(1.004) 1.009 0.999	1.945	89.4	13.4±1.2	13.4±1.2	Do.
57	78C65	43°53.3'	123°00.3'	Little Butte Volcanic Series	Basalt	Whole rock	0.300	1.733	7.4	--	39.7±1.4	D. R. Lux, in prep.
58	78C67	43°55.5'	123°05.0'	Little Butte Volcanic Series	Basalt	Whole rock	0.798	4.490	38.1	--	38.7±0.5	Do.
59	78C62	43°47.5'	123°01.0'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	0.868	4.755	63.7	--	37.7±0.9	Do.
60	7775	43°52.0'	123°00.2'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	1.128	6.075	23.4	--	37.0±1.3	Do.
61	7778	43°46.0'	123°07.0'	Little Butte Volcanic Series	Basalt	Whole rock	0.480	2.525	56.6	--	36.2±5	Do.
62a	78C629	44°00.0'	123°06.0'	Little Butte Volcanic Series	Basalt	Whole rock	0.546	2.801	54.8	--	35.3±0.9	Do.
						Whole rock	0.551	2.594	55.6	--	32.4±0.8	Do.
63	78MAR27	44°02.3'	123°00.0'	Little Butte Volcanic Series	Basalt	Whole rock	0.601	2.649	36.1	--	30.3±1.1	Do.

Footnotes at end of tabular data

Map number		Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	⁴⁰ Ar _{rad} x 10 ¹¹ (moles/gm)	Percent ⁴⁰ Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
Latitude (N)	Longitude (W)												
Lane County--Cont.													
64		7786	44°12.5'	122°49.8'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	0.735	3.165	15.8	--	29.7±0.8	D. R. Lux, in prep.
65a } 65b }		7790	44°12.8'	122°49.8'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	0.516	2.120	32.5	--	28.3±1.1	Do.
							Whole rock	0.517	2.027	36.8	--	27.0±1.0	Do.
66		35-33(G)	44°03.8'	122°06.0'	--	Andesite	Whole rock	0.615	0.04074	0.54	--	0.46±0.46	N. S. MacLeod, G. W. Walker and E. H. McKee, unpub. data
67		Skinner F	44°06.0'	123°10.0'	Skinner Butte	Basalt	Whole rock (nitric & hydro-fluoric acid)	(0.199) 0.201 0.199 0.197	0.8761	56	--	30.3±0.9	J. G. Smith, unpub. data
68		Skinner F	44°06.0'	123°10.0'	Skinner Butte	Basalt	Whole rock (nitric acid)	(0.433) 0.441 0.431 0.427	1.846	53.0	--	29.4±0.9	Do.
69		35-46 (G)	44°04.3'	122°07.4'	Lowder Mountain	Basalt	Whole rock	1.043	2.144	16.19	--	14.2±2.0	G. W. Walker and E. H. McKee, unpub. data
70		35-44 (G)	44°03.8'	122°06.0'	Three Sisters area	--	Whole rock	0.083	0.102775	2.96	--	8.6±7.0	Do.
71		35-47 (G)	44°03.8'	122°06.0'	Lowder Mountain	Basalt	Whole rock	0.047	0.0105214	0.04	--	1.55±0.2	Do.
Lincoln County													
1		SR59-47	44°57.0'	123°49.0'	Hogsback dike	Camptonite pegmatite	Hornblende	1.00	5.029	59	33.6±1.7	34.6±1.2	Tatsumoto and Snarely, 1969; Laursen and Hammond, 1974; Marvin and Dobson, 1979
2a } 2b }		SR59-9 (SR66-1)	44°51.7'	123°55.9'	Siletz dike	Camptonite	Biotite	(5.84) 5.81 5.89 5.85 5.82 1.770	28.2	81	32.6±0.98	33.2±1.0	Tatsumoto and Snarely, 1969; Laursen and Hammond, 1974; Marvin and Dobson, 1979; P. D. Snarely, unpub. data
	Whole rock						--	--	32.4±1.0	Do.			
3a } 3b }		SR57-263, SR58-2, SR57-3	44°48.9'	123°51.6'	Lambert Point sill	Gabbro	Actinolite	0.435	2.04	34	31.6±1.6	32.3±1.6	Do.
	Plagioclase						(0.870) 0.873 0.868	3.91	--	30.2	Do.		
4		SR-64-178	44°16.8'	124°06.8'	Yachats Basalt	Andesitic basalt	Plagioclase	0.23	1.24	3.3	36.6±3.6	37.1±3.6	Snarely and MacLeod, 1974; Laursen and Hammond, 1978
5		S79-6	44°20.6'	124°03.0'	Ridgett Peak stock	Nepheline syenite	Whole rock	4.06	18.7	71.4	--	31.8	P. D. Snarely, unpub. data
Linn County													
1		EM-20	44°16.6'	122°02.6'	--	Basaltic andesite, ash-flow tuff	Whole rock	0.790	(0.624) 0.656 0.768 0.567 0.504	(17.9) 23 22 15 10	5.3±0.2	5.5±0.2	Armstrong and others, 1975; Laursen and Hammond, 1978; Brown and others, 1980c
2		EM-78	44°19.5'	122°05.6'	--	Basaltic andesite	Whole rock	1.152	(0.8524) 0.8390 0.8657	(34) 46 22	5.0±0.1	5.1±0.1	Do.
3		TFJ-431	44°19.8'	121°59.6'	--	Basaltic andesite	Whole rock	0.621	(0.1299) 0.1013 0.1584	(3.5) 4 3	1.4±0.3	1.6±0.3	Do.
4		TFJ-256	44°19.8'	121°59.6'	--	Basaltic andesite	Whole rock	1.021	(0.1671) 0.1553 0.1789	(4.5) 5 5	1.1±0.2	1.1±0.2	Do.
5		EM-77	44°17.0'	122°00.8'	--	Basaltic andesite	Whole rock	0.901	(0.09081) 0.08702 0.09460	(10.5) 9 12	0.68±0.05	0.70±0.05	Do.
6		TFJ-321	44°26.0'	121°55.5'	--	Basaltic andesite	Whole rock	0.651	(0.0414) 0.0428 0.0402	(3) 3 3	0.43±0.12	0.44±0.12	Do.

Map number		Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O		40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
			Latitude (N)	Longitude (W)				weight percent						
Linn County--Cont.														
7a } 7b }	6		44°35.9'	122°05.0'	Breitenbush tuff	Tuff	Plagioclase Plagioclase	--	--	--	--	13.1±0.6 13.1±0.5	--	Laursen and Hammond, 1978 Do.
	8a } 8b }	5	44°36.2'	122°06.0'	Breitenbush tuff	tuff		Plagioclase Plagioclase	--	--	--	--	13.0±0.6 12.2±0.6	
9a } 9b }	DMS-68		44°24.8'	122°36.8'	Assumed Columbia River Basalt equivalent	Basalt	Whole rock 30/60 mesh Whole rock		(0.615) 0.619 (0.703) 0.741 0.665	2.292	44.9	25.05±0.28	25.7±0.3	Sutter, 1978
									2.286	1.1	21.88±3.77	22.4±3.9		
10a } 10b }	DMS-69		44°24.1'	122°27.7'	Assumed Columbia River Basalt equivalent	Basalt	Whole rock 30/60 mesh Whole rock	(0.937) 0.938 0.936 (0.976) 0.973 0.978	3.243	14.0	23.27±0.80	23.9±0.8	Do.	Do.
									3.153	59.6	21.74±0.25	22.3±0.3		
11	DMS-70		44°24.2'	122°26.8'	Assumed Columbia River Basalt equivalent	Basalt	Whole rock 30/60 mesh	(1.074) 1.076 1.072	3.484	57.5	21.83±0.36	22.4±0.4	Do.	Do.
12	CP-180		44°45.2'	122°39.3'	Stayton lava, assumed Columbia River Basalt equivalent	Basalt	Whole rock	(0.578) 0.581 0.575	1.653	31.6	19.26±0.23	19.8±0.2	Do.	Do.
13	DMS-58		44°36.2'	122°14.2'	Elk Lake age lavas	Andesite	Whole rock	(1.638) 1.640 1.636	2.570	35.2	10.59±0.12	10.9±0.1	Do.	Do.
14	DMS-75		44°23.3'	122°10.7'	Outerson age lavas	Basalt	Whole rock	(1.019)	0.7848	30.3	5.20±0.07	5.34±0.07	Do.	Do.
15	77113		44°32.0'	122°53.0'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	1.318	7.971	87.4	--	41.5±0.9	Do. R. Lux, in prep.	
16	78LB42		44°33.5'	122°51.5'	Little Butte Volcanic Series	Andesite	Whole rock	1.197	6.822	19.9	--	39.2±0.5	Do.	
17	78HAL17		44°24.8'	122°01.0'	Little Butte Volcanic Series	Andesite	Whole rock	1.178	6.037	64.7	--	35.2±0.8	Do.	
18	77121		44°27.3'	123°03.3'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	0.728	3.673	40.7	--	34.7±0.4	Do.	
19	77112		44°31.0'	122°49.0'	Little Butte Volcanic Series	Basalt	Whole rock	1.546	7.622	67.0	--	33.9±0.8	Do.	
20	77110		44°32.0'	122°52.0'	Little Butte Volcanic Series	Basaltic andesite	Whole rock	0.871	4.169	40.3	--	32.9±0.4	Do.	
21a } 21b }	78BR12		44°17.3'	122°59.5'	Little Butte Volcanic Series	Basaltic andesite	Whole rock Whole rock	0.859 0.913	3.970 4.115	68.3 31.9	--	31.8±0.7 31.0±1.2	Do. Do.	
	22	78BR19	44°25.3'	123°00.0'	Little Butte Volcanic Series	Basalt		Whole rock	0.437	1.997	42.3	--	31.4±0.5	Do.
23	78BR31		44°20.0'	122°54.3'	Little Butte Volcanic Series	Andesite	Whole rock	1.155	4.972	42.9	--	29.7±0.4	Do.	
24	78BR22		44°20.5'	122°59.0'	Little Butte Volcanic Series	Andesite	Whole rock	1.763	7.387	79.2	--	28.9±0.5	Do.	
25a } 25b }	78BR36		44°24.3'	122°47.3'	Little Butte Volcanic Series	Basalt	Whole rock Whole rock	0.492 0.489	1.810 1.712	37.7 40.2	--	25.4±0.9 24.1±0.8	Do. Do.	
	26	77118	44°20.3'	122°54.5'	Little Butte Volcanic Series	Andesite		Whole rock	1.289	4.731	34.2	--	25.3±0.4	Do.
27	77100		44°23.8'	122°32.0'	Little Butte Volcanic Series	Andesite	Whole rock	0.512	1.899	30.0	--	25.1±1.1	Do.	
28	7792		44°25.0'	122°37.8'	Little Butte Volcanic Series	Basalt	Whole rock	0.477	1.593	17.2	--	24.6±0.3	Do.	
29a } 29b }	7791		44°24.8'	122°39.0'	Little Butte Volcanic Series	Basalt	Whole rock Whole rock	0.424 0.430	1.298 1.310	23.2 26.7	--	21.1±1.1 21.0±1.0	Do. Do.	

Footnotes at end of tabular data

Map number		Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O		40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad} (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
			Latitude (N)	Longitude (W)				weight percent						
Linn County--Cont.														
30a 30b	7799	44°25.0'	122°37.8'	Little Butte Volcanic Series	Basalt	Whole rock	0.464	0.470	1.242	22.4	--	--	18.5±1.0	Sutter, 1978
									1.217	25.2	--	--	17.9±0.9	Do.
31	77104	44°24.5'	122°36.3'	Little Butte Volcanic Series	Basalt	Whole rock	0.394		0.979	23.1	--	--	17.2±1.2	Do.
32	78SP49	44°41.3'	122°44.8'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.815		3.997	53.9	--	--	15.2±0.4	Do.
33	7797AW	44°41.3'	122°44.8'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.673		3.644	41.0	--	--	15.1±0.5	Do.
34	7795	44°43.3'	122°48.3'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.272		2.754	48.2	--	--	15.0±0.4	Do.
35	7794	44°43.3'	122°50.3'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.368		2.951	60.8	--	--	14.9±0.4	Do.
Malheur County														
1	KA-1285	43°15.4'	117°02.5'	Payette Formation	Basalt	Plagioclase	0.258		--	27	16.7	--	--	Evernden and James, 1964; Laursen and Hammond, 1974; Walker and others, 1974; L. R. Kittleman, unpub. data
2	KA-1029	43°34.5'	117°47.5'	Butte Creek Volcanic Sandstone	Volcanic sandstone	Glass shards	4.76		--	91	15.1	--	--	Do.
3	CEB-61-76	44°11.6'	118°11.5'	Southeast of Ironside Mountain	Mica diorite	Biotite	8.78		158.0	91	120	121±6	121±6	Thayer and Brown, 1964; Laursen and Hammond, 1974; Marvin and Dobson, 1979
4	W-17	42°22.8'	118°03.4'	--	Rhyolite, tuff	Sanidine	(7.275) 7.19 7.36		(17.07) 17.09 17.05	(81.85) 80.0 83.7	15.8±0.40	16.2±0.4	16.2±0.4	Dalrymple and others, 1967; Walker and others, 1974; Laursen and Hammond, 1978
5	W-18	42°23.0'	117°39.6'	--	Rhyolite, tuff	Sanidine	(8.56) 8.51 8.53		(17.22) 17.49 16.95	(78.35) 79.2 77.5	13.56±0.28	13.9±0.3	13.9±0.3	Do.
6a 6b	W-13	42°41.9'	117°49.4'	--	Basalt	Whole rock	(0.374) 0.373 0.375		0.436	16.0	7.87±0.55	8.08±0.56	8.08±0.56	Do.
						Whole rock	(0.372) 0.371 0.374		0.431	15.8	7.81±0.55	8.03±0.57	8.03±0.57	Do.
7a 7b	16-1 (ii) 16-1 (ii)	43°36.9'	117°14.6'	Owyhee Ridge flows	Basalt	Whole rock	(1.122) 1.166		(2.437) (2.559) 2.843	(46.3) (???.?) 12.9	(13.6±0.3) (14.8)	(15.0±0.3) 15.2	(15.0±0.3) 15.2	Baksi and Watkins, 1973; Watkins and Baksi, 1974; Walker and others, 1974; Laursen and Hammond, 1978
7c	16-2 (iii)					Whole rock	1.078		2.191	60.7	13.6	14.1	14.1	Do.
8	5-1 (i)	43°35.1'	117°14.3'	Owyhee Ridge flows	Basalt	Whole rock	1.25		(2.490) 2.499 2.481	(67.55) 69.6 65.5	13.4±0.3	13.8±0.3	13.8±0.3	Do. Do. Do.
9	U0-122KAr	43°37.3'	117°13.2'	Owyhee Basalt, basal flow	Basalt	Whole rock	1.024		3.750	15	24.6±1.8	25.3±1.8	25.3±1.8	Laursen and Hammond, 1974 L. R. Kittleman, unpub. data
10	U0-131KAr	43°42.1'	117°48.0'	Tims Peak Basalt	Basalt	Whole rock	0.488		1.527	22	21.0±2.2	21.6±2.3	21.6±2.3	Do.
11	U0-114KAr	43°27.1'	117°20.8'	Deer Butte Formation, Holdout member	Volcanic sandstone	Sanidine	8.65		25.22	87	19.7±1.0	20.2±1.0	20.2±1.0	Do.
12a 12b	U0-128KAr U0-120KAr	43°39.1'	117°06.1'	Sucker Creek Formation, vitric tuff	--	Glass shards	4.94		13.57	49	18.5±1.7	19.0±1.7	19.0±1.7	Do.
						Sanidine	8.11		18.47	85	15.4±0.9	16.0±0.9	16.0±0.9	Do.
13	U0-120KAr	43°31.4'	117°47.7'	Littlefield Rhyolite	Rhyolite	Plagioclase	2.68		6.95	42	17.5±0.6	17.9±0.6	17.9±0.6	Do.
14	U0-125KAr (ii)	43°22.4'	117°41.5'	Antelope Flat Basalt	Basalt	Whole rock	1.440		3.35	20	15.6±0.9	16.1±0.6	16.1±0.6	Do.

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K_2O		$^{40}Ar_{rad}$ x 10^{11} (moles/gm)	Percent $^{40}Ar_{rad}$	Reported age (10^6 yr)	Calculated age (10^6 yr)	References
		Latitude (N)	Longitude (W)				weight percent						
Malheur County--Cont.													
15a 15b	UO-117KAr	43°40.9'	117°10.2'	Owyhee Basalt	Basalt	Whole rock Whole rock	2.06 1.89	4.65 4.075	18 65	15.2±1.1 14.4±0.7	16.1±0.9 14.9±1.1	Laursen and Hammond, 1978; L. R. Kittelman, unpub. data	
	16	UO-126KAr (11)	43°27.8'	117°54.6'	Monument Rock Basalt	Basalt	Whole rock	2.48	4.82	65	13.2±0.6		13.4±0.6
17	UO-130KAr	43°34.7'	117°47.5'	Shumway Ranch Basalt	Basalt	Whole rock	1.480	2.67	45	12.1±0.5	12.4±0.5	Do.	
18	UO-133KAr	43°45.7'	118°08.9'	Juntura Formation, vitric tuff	Tuff	Glass shards	5.41	9.02	61	11.3±0.6	11.5±0.6	Do.	
19	UO-123KAr	43°43.9'	117°20.1'	Grassy Mountain Formation	Basalt	Whole rock	0.560	0.632	26	7.6±0.5	7.8±0.5	Do.	
20	1135 (Trr), No. 8	43°01.2'	118°01.8'	Cordero area; Reiser Creek welded tuff	Rhyolite, welded tuff	Sanidine	5.43	14.41	69.6	17.9±0.5	18.3±0.5	McKee and Marvin, 1974; Greene, 1976	
21a 21b	RCG-281-1-67	43°12.2'	118°07.5'	--	Rhyodacite	Biotite Plagioclase	(7.75) (0.754)	11.52 1.066	51 32	10.0±0.4 9.6±0.6	10.3±0.4 9.8±0.6	Walker, 1974; Walker and others, 1974; Laursen and Hammond, 1978	
22a 22b	8C-1-64	42°22.8'	117°39.4'	--	Vitrophyre	Sanidine Glass	9.16 5.70	21.80 11.40	51 84	16.0±0.8 13.5±0.6	16.5±0.8 13.8±0.6	Do. Do.	
23	DC-2-70	43°47.7'	117°54.1'	Dinner Creek(?) welded tuff	Welded tuff	Plagioclase	(1.482)	3.283	73	14.9±0.4	15.3±0.4	Do.	
24	GHW-36-69	44°04.5'	118°10.6'	Dinner Creek(?) welded tuff	Welded tuff	Plagioclase	(1.770)	3.763	72	14.3±0.4	14.7±0.4	Do.	
25	GHW-68-62	42°08.8'	118°10.5'	--	Welded tuff	Alkali feldspar	7.01	13.67	85	13.1	13.5	Do.	
26	K4392	42°58.0'	117°35.0'	Rome beds(?)	Rhyolitic(?), tuff	Glass	4.89	7.60	79	10.5±0.4	10.8±0.4	Do.	
27	M4-115	43°49.8'	117°20.4'	Double Mountain dome	Silicic rock	Sanidine	(7.68) 7.75 7.61	8.938	54.3	7.86±0.21	8.07±0.21	MacLeod and others, 1975; McKee and others, 1976; Laursen and Hammond, 1978	
28	1649	42°11.3'	118°10.2'	Trout Creek ash-flow tuff	Rhyolite, ash-flow tuff	Sanidine	7.67	18.12	68.4	15.9±0.3	16.3±0.3	Greene, 1976	
29	167	42°09.2'	118°09.9'	North of Cordero caldera, ash-flow tuff, basal unit	Rhyolite, ash-flow tuff	Sanidine	6.50	15.18	75.7	15.8±0.3	16.2±0.3	Do.	
30	CEB-61-76	44°11.7'	118°11.5'	--	Diorite	Biotite	8.78	158.0	91	121±6	121±6	Marvin and Dobson, 1979	
31	1703	42°03.3'	117°57.4'	--	Rhyolite	Sanidine	6.17	14.74	54.0	--	16.5±0.6	R. C. Greene and E. H. McKee, unpub. data	
32	1654	42°12.1'	118°11.2'	Trout Creek top unit	Rhyolite, ash-flow tuff	Sanidine	7.72	12.42	37.0	--	11.1±0.5	Do.	
33	M-5-8	43°27.8'	118°07.4'	Stockade	--	Sanidine	7.76	12.7037	41.44	--	11.3±0.5	N. S. MacLeod and E. H. McKee, unpub. data	
34	OG-2-70	42°48.0'	117°35.0'	Owyhee Gorge, south of Rome	Basalt	Whole rock	0.656	1.259	12.06	--	13.3±1.5	G. W. Walker and E. H. McKee, unpub. data	

Marion County

1a 1b	No. 4	44°41.5'	121°59.9'	Breitenbush tuff, uppermost unit	Dacite, tuff	{Plagioclase Plagioclase	-- --	-- --	-- --	12.7±0.8 12.3±0.8	-- --	Laursen and Hammond, 1978; Do.	
2	BX-99	44°46.0'	122°01.6'	Little Butte flows	Andesite	Whole rock	(0.972) 0.974 0.970	3.500	64.1	24.22±0.27	24.9±0.3	McBirney, 1978; Sutter, 1978	
3	DMS-43	44°46.5'	121°59.6'	Breitenbush tuff, Little Butte ignimbrite	Tuff	Plagioclase	(0.884) 0.877 0.892	2.594	32.4	19.74±0.24	20.3±0.2	Do.	

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar-rad x 10 ¹¹ (moles/gm)	Percent 40Ar-rad	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Marion County--Cont.												
4a	MS-256	44°44.1'	122°01.2'	Sardine lavas	Andesite	{ Whole rock Whole rock (30/60 mesh)	(1.173) 1.181 1.165 (1.292) 1.306 1.277	3.002	20.9	17.24±0.32	17.7±0.3	Sutter, 1978
5	DMS-8	44°45.2'	122°13.5'	Sardine lavas	Andesite	Whole rock	(1.306) 1.311 1.300	3.240	28.3	16.72±0.20	17.2±0.2	Do.
6	DMS-5	44°44.2'	122°14.2'	Sardine lavas	Andesite	Whole rock	(1.009) 1.012 1.006	2.386	17.8	15.94±0.21	16.4±0.2	Do.
7	DMS-7	44°44.5'	122°14.3'	Sardine lavas	Andesite	Whole rock	(1.595) 1.604 1.586	3.668	17.5	15.50±0.20	15.9±0.2	Do.
8	DMS-11	44°50.7'	122°18.5'	Columbia River Basalt equivalent	Basalt	Whole rock	(0.205) 0.213 0.198	0.3900	1.7	12.80±0.76	13.2±0.8	Do.
9	DMS-49	44°44.6'	121°55.6'	Elk Lake age lavas	Basalt	Whole rock	(1.015) 1.017 1.012	1.688	10.9	11.23±0.17	11.5±0.2	Do.
10	BX-256	44°46.9'	122°11.8'	Elk Lake age lavas	Dacite	Whole rock	(2.383) 2.377 2.390	3.893	15.6	11.02±0.35	11.3±0.4	Do.
11	DMS-40	44°49.8'	122°07.8'	Elk Lake age lavas	Andesite	Whole rock	1.494	2.420	16.2	10.96±0.75	11.2±0.8	Do.
12	DMS-53	44°43.1'	122°15.0'	Detroit pluton	Diorite	Whole rock	(1.480) 1.488 1.473	2.124	16.1	9.68±0.18	9.94±0.18	Do.
13	MS-239	44°43.3'	121°57.2'	Outerson age lavas	Basalt	Whole rock	(1.987) 1.995 1.982	1.648	7.1	5.60±0.10	5.75±0.10	Do.
14	DMS-48	44°45.3'	121°56.7'	Outerson age lavas	Andesite	Whole rock	(0.747) 0.750 0.743	0.5216	17.6	4.72±0.19	4.84±0.19	Do.
15	DMS-50	44°45.9'	121°55.2'	Outerson age lavas	Andesite	Whole rock	(0.770) 0.774 0.766	0.5184	7.9	4.55±0.07	4.67±0.07	Do.
16	DMS-47	44°45.6'	121°55.2'	Outerson age lavas	Andesite	Whole rock	(1.645) 1.658 1.633	0.8767	19.8	3.60±0.05	3.70±0.05	Do.
17	MS-258	44°43.9'	121°56.8'	Outerson age lavas	Basalt	Whole rock	(0.925) 0.938 0.912	0.3830	15.8	2.80±0.18	2.97±0.18	Do.
18a	DMS-53	44°49.4'	122°08.2'	Battle Ax/High Cascades flows	Andesite	{ Whole rock Whole rock	0.713 0.711	0.2005 0.1357	9.1 5.5	1.88±0.50 1.27±0.41	1.95±0.52 1.33±0.43	Do.
19a	DMS-41	44°48.7'	122°05.8'	Battle Ax/High Cascades flows	Andesite	{ Whole rock Whole rock	0.807 0.818	0.1693 0.1489	21.8 5.5	1.41±0.60 1.24±0.53	1.46±0.61 1.26±0.54	Do.
20	MS-237	44°44.7'	122°00.0'	Battle Ax/High Cascades flows	Basalt	Whole rock	(0.707) 0.717 0.698	0.04634	0.3	0.44±0.19	0.46±0.21	Do.
21	MS-238	44°43.8'	121°59.0'	Battle Ax/High Cascades flows	Basalt	Whole rock	(0.561) 0.572 0.550	0.02149	1.6	0.26±0.02	0.27±0.02	Do.
22	DMS-33	44°49.5'	122°08.1'	Battle Ax/High Cascades flows	Andesite	Whole rock	(0.724) 0.725 0.722	0.02680	1.9	0.25±0.03	0.26±0.03	Do.
23a	PEH-77-8, FRL #4823	44°46.9'	122°01.0'	Sardine Formation, upper part	--	{ Plagioclase Plagioclase	-- --	-- --	-- --	24.3±1.1 23.7±0.8	-- --	Hammond and others, 1980

Footnotes at end of tabular data

Map		Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar-rad. x 10 ¹¹ (moles/gm)	Percent 40Ar-rad	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
number	Sample number	Latitude (N)	Longitude (W)									
Marion County--Cont.												
24a 24b 24c 24d	PEH-77-9, FRL #4824	44°45.0'	122°01.2'	Breitenbush Formation	Andesite	Plagioclase Plagioclase Whole rock Whole rock	-- -- -- --	-- -- -- --	-- -- -- --	15.4±1.0 14.8±0.9 14.7±0.2 14.5±0.2	-- -- -- --	Hammond and others, 1980 Do. Do. Do.
25a 25b	PEH-77-10, FRL #4825	44°48.4'	121°56.3'	Rhododendron Formation	--	Plagioclase Plagioclase	-- --	-- --	-- --	12.6±0.2 12.3±0.2	-- --	Do. Do.
26	PH-40A	44°44.9'	122°00.6'	Rhododendron Formation, tephra bed	Tephra	Plagioclase	0.535	0.8206	6.5	10.4±1.2	10.6±1.2	Do.
27	PH-10	44°48.0'	121°55.8'	High Cascade group, tephra bed near base	Tephra	Plagioclase	0.392	0.2404	12.1	4.2±0.3	4.3±0.3	Do.
28	NS-11	44°49.9'	122°13.2'	North Santiam mining district	Granodiorite	Hornblende	(0.445) 0.446 0.443	0.8604	86.7	13.4±0.9	13.4±0.9	Power and others, 1981
29a 29b 29c	7703	44°52.0'	122°39.5'	Columbia River Basalt Group, Manapum Basalt	Basalt	Whole rock	1.348 (3.161) 3.221 3.101	-- -- -- --	-- -- -- --	-- -- -- --	(16.2±0.4) 16.5±0.3 15.9±0.4	D. R. Lux, in prep. Do.
30	7722	44°49.0'	123°01.5'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.300	2.934	42.6	--	15.6±0.8	Do.
31a 31b	7763	44°53.8'	122°47.5'	Columbia River Basalt Group, Manapum Basalt	Basalt	Whole rock	1.406 1.409	3.154 3.132	52.3 51.3	-- --	15.5±0.4 15.4±0.4	Do. Do.
32	7727	44°47.3'	122°39.0'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.568	3.503	52.3	--	15.5±0.2	Do.
33	7709	44°55.3'	122°33.3'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.398	3.037	51.5	--	15.0±0.4	Do.
34	7798	44°41.8'	122°56.3'	Columbia River Basalt Group, Manapum Basalt	Basalt	Whole rock	1.434	3.054	27.1	--	14.7±0.2	Do.
35	7723M	44°49.0'	123°01.5'	Columbia River Basalt Group, Manapum Basalt	Basalt	Whole rock	1.736	3.659	45.4	--	14.6±0.4	Do.
36	7729	44°47.3'	122°39.0'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.238	2.508	48.3	--	14.5±0.4	Do.
Multnomah County												
1	7757	45°35.1'	122°06.5'	Columbia River Basalt Group, Grande Ronde Basalt	Basalt	Whole rock	1.804	4.082	48.7	--	15.7±0.4	D. R. Lux, in prep.
2	7755	45°35.1'	122°06.5'	Columbia River Basalt Group, Manapum Basalt	Basalt	Whole rock	1.744	3.898	62.5	--	15.2±0.2	Do.
Tillamook County												
1	SR59-61, SR59-17	45°13.1'	123°43.9'	Mt. Hebo sill	Diorite	Plagioclase	(2.86) 2.89 2.82	6.76	--	16.0±0.65	16.4±0.66	Tatsumoto and Snively, 1969; Laursen and Hammond, 1974 P. D. Snively, unpub. data
2	KA2161	45°28.5'	123°58.0'	Depoe Bay Basalt	Basalt	Whole rock	(1.59)	3.564	38.3	15.2±0.6	15.5±0.6	Turner, 1970; Snively and others, 1973; Walker and others, 1974 Laursen and Hammond, 1974
3	KA2140R	45°29.5'	123°58.0'	Depoe Bay Basalt	Basalt	Whole rock	(0.770)	1.6553	15.3	14.5±1.0	14.9±1.0	Do.
4	YU-1N	45°45.0'	123°58.0'	Neahkahnie Mountain sill	Basalt	Whole rock	(1.542) 1.547 1.542	3.634	25	15.5±0.4	16.3±0.4	Niem and Cressy, 1973; Laursen and Hammond, 1978
5	Y027	--	--	Tillamook Volcanic Series	Basalt	--	0.913	6.1016	50.3	46.0±0.9	46.0±0.9	Magill and others, 1981

Footnotes at end of tabular data

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Map		Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad} (10 ⁶ yr)	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
number	Sample number	Latitude (N)	Longitude (W)									
Tillamook County--Cont.												
6a 6b 6c	Y051	--	--	Tillamook Volcanic Series	Basalt	--	0.831	(5.3693) 5.5290 5.2095	(39.95) 48.5 31.4	(44.5±0.6) 45.8±0.5 43.2±0.6	(44.5±0.6)	Magill and others, 1981 Do. Do.
7	D78-T-5	--	--	Tillamook Volcanic Series	Basalt	--	0.566	3.7605	48.3	45.7±0.5	45.7±0.5	Do.
8	D78-T-3	--	--	Tillamook Volcanic Series	Basalt	--	1.110	7.0784	51.6	43.9±0.5	43.9±0.5	Do.
9	Y106	--	--	Tillamook Volcanic Series	Basalt	--	1.546	9.5721	46.7	42.7±0.5	42.7±0.5	Do.
10	D78-T-14	--	--	Tillamook Volcanic Series	Basalt	--	0.953	5.9128	68.2	42.7±0.4	42.7±0.4	Do.
Umatilla County												
1	CC-1	45°03.8'	118°41.5'	John Day Formation	Rhyolite	Anorthoclase	(5.15)	21.02	29	27.4±5	28.1±5	Walker, 1973; Walker and others, 1974; Laursen and Hammond, 1978
2	DS14-77-245	45°50.5'	118°11.4'	Columbia River Basalt, Frenchman Springs(?)	Basalt	Whole rock	1.384	2.900	48.2	--	14.5±0.11	D. A. Swanson and E. H. McKee, unpub. data
3	DS14-77-249	45°49.8'	118°10.2'	Columbia River Basalt, Frenchman Springs(?)	Basalt	Whole rock	1.104	1.854	3.32	--	11.6±6.7	Do.
Union County												
1	SC-1-70	45°01.5'	118°28.4'	Clarno Formation(?)	Andesite	Plagioclase	(0.523)	2.186	67	28.2±0.8	28.8±0.8	Walker, 1973; Walker and others, 1974; Laursen and Hammond, 1978
2	GM-56-69	45°09.2'	118°08.5'	John Day Formation(?)	Vitrophyre	Biotite	(7.89)	31.73	89	27.0±0.8	27.7±0.8	Do.
3	WT-487	45°07.2'	117°26.4'	Wallowa Batholith	Granodiorite	Biotite	6.75	140.1	--	136±4	139±4	Armstrong and others, 1976; Laursen and Hammond, 1978
4	YU-WT-180	45°11.7'	117°31.5'	Wallowa Batholith	Granodiorite	Biotite	(7.83) 7.86 7.80	140.52	78	118±4	121±4	Do.
5	F-2	45°18.2'	117°44.2'	Grande Ronde Basalt, group I flows	Basalt	--	0.230	0.4584	7.71	--	13.8±2.5	M. H. Taubeneck and E. H. McKee, unpub. data
6	L-44	45°24.4'	117°41.2'	Columbia River flows, Grande Ronde section	Nepheline Basalt	--	0.325	0.5442	10.3	--	11.6±0.6	Do.
7	MM-2	45°29.1'	117°42.2'	Grande Ronde Basalt, group II flows	Basalt	--	0.324	0.5374	5.59	--	11.5±2.9	Do.
8	D-8	45°19.6'	117°41.3'	Grande Ronde Basalt, group III flows	Basalt	--	2.030	2.784	8.42	--	9.5±1.8	Do.
Wallowa County												
1	--	1 mile West of Petes Point, 9,675' elevation		Wallowa Batholith	Granite	Biotite	--	--	--	149±5 ^e	--	Taubeneck, 1962; Laursen and Hammond, 1974
2	--	T. 1 N., R. 47 E.		Picture Gorge Basalt	Basalt	--	--	--	--	16.6 ^e	--	Watkins and Baksi, 1968; Laursen and Hammond, 1974
3	19-2 (11)	45°31.2'	116°45.2'	Imnaha flows, Hat Point section; Picture Gorge Basalt	Basalt	Whole rock	1.71	(3.877) 3.860 3.905 3.869	(53.6) 54.0 52.9 53.9	(15.3±0.3)	15.7±0.3	Baksi and Watkins, 1973; Watkins and Baksi, 1974; Laursen and Hammond, 1974; Walker and others, 1974
4	8-2 (1)	45°27.0'	116°44.0'	Imnaha flows, Hat Point section; Picture Gorge Basalt	Basalt	Whole rock	1.49	(3.369) 3.360 3.378	(48.8) 49.0 49.6	(15.2±0.3)	15.6±0.3	Do.
5	YU-WT-146	45°16.0'	117°25.6'	Wallowa Batholith (Pre-Hurricane Divide)	Gabbro	Hornblende	(0.332) 0.335 0.328 0.334	(8.19) 8.21 8.17	30.5 32 29	160±5	164±5	Armstrong and others, 1976; Laursen and Hammond, 1978
6	WT-204	45°11.5'	117°14.0'	Wallowa Batholith, Craig Mountain	Granodiorite	Biotite	6.51	--	--	149±5	--	Do.

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O weight percent	40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References
		Latitude (N)	Longitude (W)									
Wallowa County--Cont.												
7	WT-211	45°19.2'	117°25.7'	Wallowa Batholith, Pole Bridge unit	Quartz diorite	Biotite	7.35	162.4	--	144±5	147±5	Armstrong and others, 1976; Laursen and Hammond, 1978
8a	YU-WT-216	45°18.4'	117°25.0'	Wallowa Batholith, Pole Bridge unit	Tonalite granodiorite	{hornblende Biotite	(0.394) 0.382 0.406 (8.36)	(8.673) 8.657 8.688 160.7	(29.5) 35 24 76	143±4	147±4	Do.
9	WT-811	45°17.7'	117°28.5'	Wallowa Batholith	Quartz diorite	Biotite	(9.07) 9.05 9.09	170.5	--	124±4	126±4	Do.
10	WT-308	45°13.8'	117°10.0'	Wallowa Batholith, Craig Mountain	Quartz diorite	Biotite	9.50	171.8	--	119±4	121±4 ^b	Do.
11	WT-582	45°16.4'	117°27.4'	Wallowa Batholith	Quartz Monzonite	Biotite	(7.41) 7.46 7.36	--	--	117±3 ^b	--	Do.
12	WT-1019	45°10.2'	117°21.4'	Blue Lake cordierite trondhjemite	Trondhjemite	Biotite	7.12	102.6	63	95±3	97±3 ^b	Do.
13	DB-19	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, Frenchman Springs magna type	Basalt	Whole rock	1.003	2.530	55.7	17.4±0.3	17.4±0.3	McKee and others, 1981
14	DB-23	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, Rock Creek magna type(?)	Basalt	Whole rock	0.900	2.209	37.2	17.0±0.5	17.0±0.5	Do.
15	DB-12	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, Rock Creek magna type	Basalt	Whole rock	0.848	2.063	29.4	16.8±0.9	16.8±0.9	Do.
16	DB-15	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, Rock Creek magna type(?)	Basalt	Whole rock	0.970	2.319	23.4	16.5±1.2	16.5±1.2	Do.
17	1-74	--	--	Innaha flows, Joseph Volcanics	Basalt	Whole rock	1.738	4.358	48.5	--	17.3±0.5 ^e	D. A. Swanson and E. H. McKee, unpub. data
18	DB-6	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, American Bar magna type	Basalt	Whole rock	0.735	1.695	19.8	--	16.0±1.0	Do.
19	DB-7	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, American Bar magna type	Basalt	Whole rock	0.690	1.382	16.00	--	13.9±2.5	Do.
20	DB-20	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, Rock Creek magna type	Basalt	Whole rock	0.974	1.768	19.85	--	12.6±1.5	Do.
21	DB-2	45°48.5'	116°42.2'	Innaha flows, Dug Bar type section, Picture Gorge magna type	Basalt	Whole rock	0.466	0.3558	1.74	--	5.3±4.5	Do.

Masco County												
1	18-1 (i)	45°16.0'	121°11.0'	Butler Canyon, Yakima Basalt	Basalt	Whole rock	1.892	(4.596) 4.596 4.596 5.176	(82.75) 80.5 85.0 34.1	16.4±0.3	16.8±0.3	Baksi and Watkins, 1973; Watkins and Baksi, 1974; Walker and others, 1974; Laursen and Hammond, 1978
2	8-9-1 (i)	44°50.7'	120°55.4'	Cow Canyon, Picture Gorge, Yakima Basalt	Basalt	Whole rock	1.77	(4.036) 4.047 4.025	(76.4) 68.9 83.9	15.3±0.3	15.8±0.3	Do. Do. Do.
3	2-2-2 (i)	44°52.6'	120°55.2'	Cow Canyon, Picture Gorge, Yakima Basalt	Basalt	Whole rock	3.31	(7.564) 7.631 7.497 8.613	(85.65) 86.0 85.3 17.4	15.3±0.3	15.8±0.3	Do. Do. Do. Do.
4	14-1 (i)	45°16.8'	121°10.8'	Butler Canyon, Yakima Basalt	Basalt	Whole rock	1.844	(3.990) 3.972 4.007	67.9 66 68.8	14.6±0.3	15.0±0.3	Do. Do. Do.

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K_2O		$^{40}Ar_{rad}$ x 10^{11} (moles/gm)	Percent $^{40}Ar_{rad}$	Reported age (10^6 yr)	Calculated age (10^6 yr)	References
		Latitude (N)	Longitude (W)				weight percent						
Wasco County--Cont.													
5	648-552	44°55.0'	121°06.2'	John Day Formation, basal sheet member G	--	Potassium feldspar	7.48	29.25	66.76	--	--	27.0±0.3	P. T. Robinson and E. H. McKee, unpub. data
Wheeler County													
1	No. 6	44°43.3'	120°12.9'	John Day Formation	Basalt	--	--	--	--	31	--	--	Hay, 1962; Laursen and Hammond, 1978
2	No. 4	44°39.0'	120°16.0'	John Day Formation	Tuff	Sanidine	--	--	--	31	--	--	Do.
3	No. 1	44°40.0'	120°14.0'	John Day Formation	Tuff	Albite	--	--	--	25	--	--	Do.
4a 4b	No. 2	44°39.3'	120°15.4'	John Day Formation	Obsidian	Whole rock Whole rock	--	--	--	25 24	--	--	Do. Do.
5	--	44°41.4'	120°04.5'	John Day Formation	Altered pumice	Celadonite	--	--	--	24±2.4	--	--	Do.
6	No. 3	44°42.1'	120°16.0'	John Day Formation	Tuff	Sanidine	--	--	--	24	--	--	Do.
7	No. 5	44°39.0'	120°16.9'	John Day Formation	--	Orthoclase	--	--	--	22	--	--	Do.
8	KA818	44°37.6'	120°14.2'	Clarno Formation	Andesite	Whole rock	1.17	--	46	37.5	--	--	Evernden and others, 1964; Enlows and Parker, 1972; Laursen and Hammond, 1974; Walker and others, 1974
9	KA824A	44°38.3'	120°09.8'	Clarno Formation	Bentonitic claystone	Sanidine	5.53	--	86	36.5±0.9	--	--	Do.
10	KA1204	44°55.9'	120°25.9'	Clarno Formation	Tuff	Plagioclase	0.631	--	65	34.0	--	--	Evernden and others, 1964; Laursen and Hammond, 1974; Walker and others, 1974
11	KA1384	44°54.9'	120°27.2'	John Day Formation	Bentonite	Sanidine	7.645	--	82	32.0	--	--	Do.
12	KA845	44°43.2'	120°13.4'	John Day Formation	Basalt	Whole rock	1.45	--	45	31.5	--	--	Evernden and others, 1964; Enlows and Parker, 1972; Laursen and Hammond, 1974; Walker and others, 1974
13	KA489	44°38.9'	120°16.2'	John Day Formation	Rhyolite, tuff	Sanidine	6.88	--	46	31.1	--	--	Evernden and others, 1964; Laursen and Hammond, 1974; Walker and others, 1974
14	KA648	44°39.4'	120°15.5'	John Day Formation	Obsidian	Whole rock	5.43	--	42	25.5	--	--	Evernden and others, 1964; Enlows and Parker, 1972; Laursen and Hammond, 1974; Walker and others, 1974
15	KA649A	44°40.0'	120°14.5'	John Day Formation	--	Potassium albite	1.72	--	30	24.9	--	--	Do.
16	KA647A	44°41.9'	120°15.9'	John Day Formation	Rhyolite, tuff	Sanidine	6.86	--	56	23.3	--	--	Evernden and others, 1964; Laursen and Hammond, 1974; Walker and others, 1974
17	KA646	44°34.2'	120°17.4'	John Day Formation	Claystone	Alularia	14.2	--	69	21.6	--	--	Do.
18a 18b	W-14	44°29.8'	119°42.4'	Rattlesnake Ash-flow Tuff; Rattlesnake Formation, lower tuff	Rhyolite, ash-flow tuff	Anorthoclase	(4.98) 5.00 4.95	4.923	39.6	6.7±0.2 6.69±0.2	6.85±0.2	--	Dalrymple and others, 1967; Davenport, 1970; Walker and others, 1974; Laursen and Hammond, 1978; Walker, 1979
19	W-15	44°29.8'	119°42.4'	Rattlesnake Ash-flow Tuff; Rattlesnake Formation, upper red welded tuff	Tuff	Anorthoclase	(5.68) 5.69 5.67	4.998	47.9	5.95±0.18	6.10±0.18	--	Do.
20a 20b	W-3-58	44°31.0'	120°13.5'	Clarno Formation	Andesite	Hornblende Whole rock	(0.578) 0.568 0.588 (1.808)	3.889	12	46.110±3.9601 46.1±4.0	46.1±0.4	--	Enlows and Parker, 1972; Walker and others, 1974; Armstrong and others, 1975; Laursen and Hammond, 1978; Do.
20c							10.95	45	40.6±0.9	41.6±0.9	--	--	
20d							1.920 1.795	40.5524±0.9020					

Footnotes at end of tabular data

Map number	Sample number	Location		Geologic unit or geographic locality	Rock type	Material dated	K ₂ O		40Ar _{rad} x 10 ¹¹ (moles/gm)	Percent 40Ar _{rad}	Reported age (10 ⁶ yr)	Calculated age (10 ⁶ yr)	References	
		Latitude (N)	Longitude (W)				weight percent							
Wheeler County--Cont.														
21a 21b 21c 21d 21e	KF0-17028	44°35.4'	120°07.0'	Clarno Formation	Basalt	Whole rock	(1.442) 1.446 1.434		(9.693)	73	(44.9±0.07) 45.03±0.90 45.0299±0.9006 44.81±0.90 44.8056±0.8961	46.1±0.07	Enlows and Parker, 1972; Walker and others, 1974; Armstrong and others, 1975; Laursen and Hammond, 1978; Do.	
		22a 22b 22c 22d 22e	44°35.8'	120°13.0'	Lower Clarno Formation	Andesite	Whole rock	(1.130) 1.145 1.115	(7.237)	62	(42.8±0.6) 43.35±0.87 43.3548±0.6871 42.3±0.85 42.3114±0.8462	44.0±0.6	Do. Do. Do. Do. Do.	
23a 23b 23c 23d 23e	M-859	44°35.2'	120°10.4'	Clarno Formation, dike	Diorite	Whole rock	(1.000) 1.007 0.998 0.994		(4.980)	26	(33.4±0.9) 33.48±1.27 33.4757±1.2738 33.30±1.23 33.2966±1.2327	34.3±0.9	Do. Do. Do. Do. Do.	
		24a 24b 24c 24d 24e	44°34.0'	120°07.0'	Upper Clarno Formation	Andesite	Whole rock	(0.157) 0.159 0.155	(0.768)	8	(32.8±3.0) 35.59±3.41 35.5886±3.4077 30.09±4.71 30.0923±4.7059	33.7±3.1	Do. Do. Do. Do. Do.	
25a 25b 25c 25d 25e	EMT-11	44°33.4'	120°10.8'	Clarno Formation, dike	Diorite	Whole rock	(1.053) 1.054 1.044 1.062		(4.478)	66	(29.4±0.4) 29.45±0.59 29.4461±0.5889 29.33±0.59 29.3317±0.5866	29.3±0.4	Do. Do. Do. Do. Do.	
		26	PTR-71-9a	44°56.8'	120°00.6'	John Day Formation(?)	--	Plagioclase	(0.507) 0.507 0.507	4.229	63.23	--	57.0	P. T. Robinson and E. H. McKee, unpub. data
27 28 29	E-16-77 648-695 PTR-71-11	44°33.1'	120°06.2'	Clarno Formation	Andesite	Hornblende	0.256		1.826	9.9	--	48.9±5.2	Do.	
		44°53.9'	120°08.2'	John Day Formation	--	Hornblende	0.359		2.460	6.97	--	47±9.5	Do.	
		44°45.9'	120°11.4'	John Day Formation, middle-lower unit, Picture Gorge ignimbrite	Ignimbrite	Plagioclase	1.440		5.628	51.62	--	26.94±0.23	Do.	
30	648-456	44°45.9'	120°11.5'	John Day Formation, basal air-fall tuff	Air-fall tuff	Potassium feldspar	7.42		28.79	59.6	--	26.8±0.4	Do.	

FOOTNOTES

^aRecalculated age varies more than 5 percent from published age.

^bChronological age: age appears to be either too old or too young, based on other geologic or geochronologic data. Check source reference for more specific information.

^cData excluded from average.

^dApproximate location.

^eLocation not plotted on index map.

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