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NUEVAS EDADES K-Ar CENOZOICAS DE ROCAS VOLCANICAS DE LA CORDILLERA DE LOS ANDES, SUR ESTE DEL PERU

NEW CENOZOIC K-Ar AGES OF VOLCANIC ROCKS OF THE EASTERN HIGH ANDES, SOUTH PERU

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New K-Ar ages of Cenozoic volcanic rocks from the southeastern Peruvian Andes are presented in this paper. They will contribute to a better understanding of the tectonic and magmatic evolution of this region where geochronological data is still scarce.

North of Lake Titicaca, the new data provides evidence of various volcanic pulses of late Oligocene to Pliocene age. In the Crucero intramontane basin (14°20S,70°W), basaltic andesites, dacites, rhyolites and ash-flow tuffs interbedded in fluvial and lacustrine sediments yield ages in-between 25 and 22 Ma, characterizing a late Oligocene to early Miocene volcanic pulse. In the same area, large acid ash-flow tuffs and rhyolites, with ages ranging between 17 and 12 Ma demostrate that the volcanism was also very active during mid-late Miocene. Finally,the younger ages show that the volcanism was still active during mid-Pliocene and Pleistocene in the southeastern Peruvian Andes.

TABLA 1
UBICACION, PETROGRAFIA Y DATOS ISOTOPICOS K-Ar DE LAS MUESTRAS ESTUDIADAS
LOCATION, PETROGRAPHIC AND K-Ar ISOTOPIC DATA OF THE SAMPLES STUDIED

Sample number	Latitude type	Longitude	Petrographic definition	Analysed fraction	K_2O %	$^{40}Ar_{rad}$ %	$^{40}Ar_{rad}$ (nl/g)	t(Ma ± 1σ)
1. CRUCERO REGION								
MS 82003	14° 15S	70° 04W	rhyo-dacitic tuff	FK	11.49	98.1	8.77	23.6 ± 0.3
MS 82006	14° 34S	69° 50W	rhyolitic	V	4.47	81.1	3.32	22.9 ± 0.6
				B	8.58	82.4	6.75	23.6 ± 0.4
MS 82007	14° 33S	69° 47W	andesite	R	2.56	54.2	2.058	24.8 ± 0.7
MS 82008	14° 32S	69° 46W	andesite	R	2.07	48.3	1.263	18.8 ± 1.5
MS 82009	14° 32S	69° 46W	andesite	R	1.97	39.1	1.574	24.6 ± 1.3
MS 82012	14° 15S	70° 07W	rhyolite	FK	10.90	96.8	7.84	22.2 0.2
MS 82015	14° 13S	70° 08W	rhyolite	FK	10.19	97.2	7.41	22.4 0.3
MF 271801	14° 17S	70° 03W	andesite	RI	1.32	20.9	1.016	23.7 1.8
				RII	1.32	24.6	0.954	22.3 0.7
PALCA 11	14° 42S	69° 41W	rhyolite	FK	7.67	81.5	3.10	12.7 0.6
				B	8.80	78.5	3.44	12.1 0.3
PO 232	14° 40S	69° 29W	acid tuff	V	6.19	27.6	0.76	3.79 (n.d.)
2. CUSCO REGION								
MS 82021	13° 37S	71° 42W	latite	R	3.77	8.99	0.880	7.2 0.5
MS 82022	13° 38S	71° 43W	latite	R	3.89	18.18	0.074	0.69 0.25

(1) R: whole rock, V: glass, B: biotita, FK: K-feldspar. Analytical procedure and constants in LAVENU et al. this volume
(1) R: roca total, V: vidrio, B: biotita, FK: feldespato y potasico. Métodos analíticos y constantes en LAVENU et al., este volumen.