



Table 1. Chocolate Mountains $^{40}\text{Ar}/^{39}\text{Ar}$ age data.
[Volcanic-rock samples from volcanic and sedimentary section (unit Tv8). See table 3 for positions of samples]

Sample number	Mineral (method) ¹	Best estimate age (Ma) ²	MSWD ³
952-19F	Plagioclase (LF)	21.87±0.19	1.70
	Plagioclase (III)	22.95±0.13	1.05
952-19G	Biotite (LF)	23.41±0.06	1.26
	Biotite (III)	23.42±0.12	1.90
952-19G	Plagioclase (LF)	23.16 ± 0.15	1.83
952-20B	Plagioclase (LF)	17.9±0.2	8.87
952-20C	Plagioclase (LF)	25.17±0.19	0.29
	Plagioclase (LF)	25.75±0.13	1.40

¹ Extraction method: LF, laser fusion; III, incremental heating
² Adjusted to Fish Canyon sandline standard age of 28.198 Ma (Kusper and others, 2008)
³ Uncertainties shown at 1 standard error of the mean.
⁴ Mean square of weighted deviates (McIntyre and others, 1966).

Table 2. Chocolate Mountains K-Ar data from basalt samples.
[Basalt samples from flows (unit Tb) interbedded with sedimentary strata (unit Tsy). See table 3 for stratigraphic positions of samples]

Sample number	Age (Ma) ¹	\pm Age(Ma)	Sample age (Ma) ²
952-19A	8.757	0.148	8.73 \pm 0.11
	8.692	0.162	
952-19B	9.204	0.213	9.20 \pm 0.21
952-19C	9.224	0.203	9.22 \pm 0.20
	9.422	0.182	
952-19D	9.311	0.177	9.36 \pm 0.13
	9.388	0.139	
952-19E	9.388	0.139	9.39 \pm 0.14

Table 3. Stratigraphic position of Chocolate Mountains geochronology samples.

Site	Rock type	Description	Sequencing relations	Approx. age (Ma)
K&R dates from basal samples from a stack of the basal (int. T2) interbedded within a laminated section of sedimentary rocks (int. T2) in the core of the Canyons of Chaco (40° 10'N)				
Average age for the five flows is 9.7 (2σ) 10.1 Ma				
952-19D	Ofionine basalt	Stratigraphically highest flow	Flow 5	9.36
952-19C	Ofionine basalt		Flow 4	9.27
952-19B	Ofionine basalt	Middle flow	Flow 3	9.20
952-19A	Ofionine basalt		Flow 2	8.77
952-19E	Ofionine basalt	Stratigraphically lowest flow	Flow 1	9.30
Locality dates on volcanic samples from the top of the section (int. T2) to the base of the section (int. T1)				
952-20C	Dacite flow	Porphyry containing phenocrysts of quartz, plagioclase, and biotite	Aspenur highest in SW, dipping section	25.8
952-19I	Unwelded lithic tuff	Nearly lithologic basaltic breccias of unbedded biotite-quartz and orthopyroxene	Aspenur lowest in SW, dipping section	23.4
952-20B	Ignimbrite	Pyroclastic welded tuff	Aspenur lowest in SW, dipping section	17.9
952-19F	Dacite volcanic ashne	Dacite porphyry containing quartz, hornblende, biotite, and sandine	Intrusive into tuffaceous sandstone, includes units represented by samples 952-19G	23.0

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By
Robert E. Powell, Robert J. Fleck, and Pamela M. Cossette
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