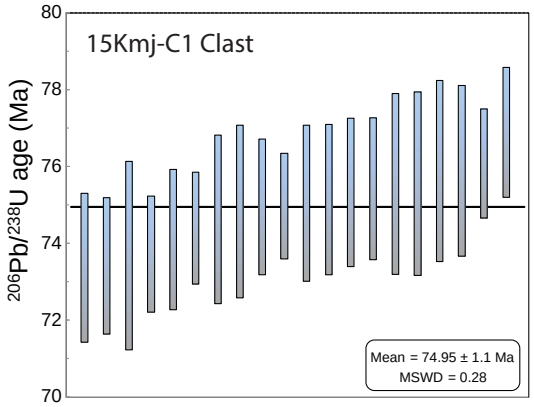
GSA Data Repository Item 2017146
J.M. Amato et al., 2017, Onset of the Laramide orogeny and associated magmatism in southern New Mexico based on U-Pb geochronology: GSA Bulletin, doi:10.1130/B31629.1.

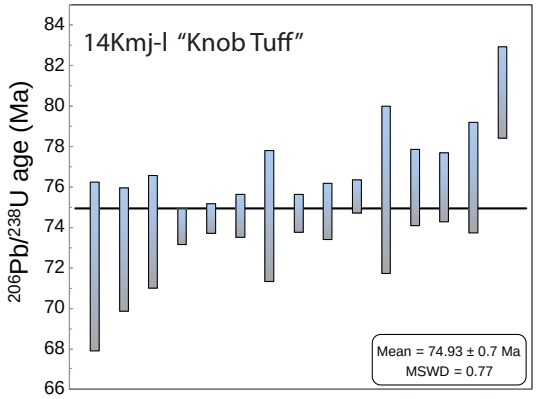
Data Repository Items

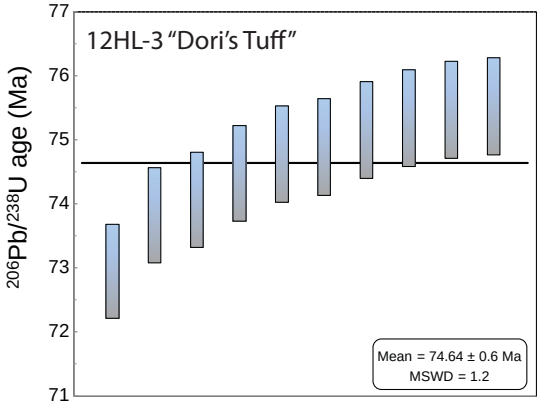
Figure DR1: Weighted mean plots from U-Pb data

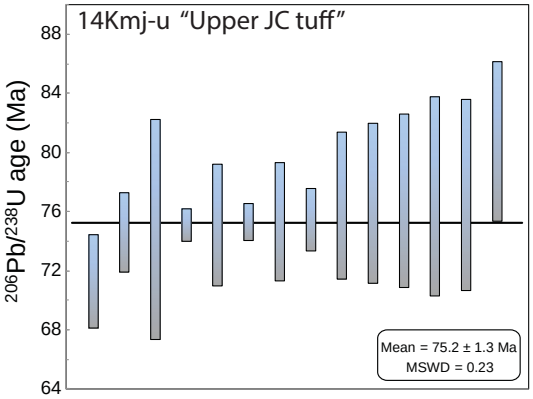
Table DR1: Compilation of published geochronology data

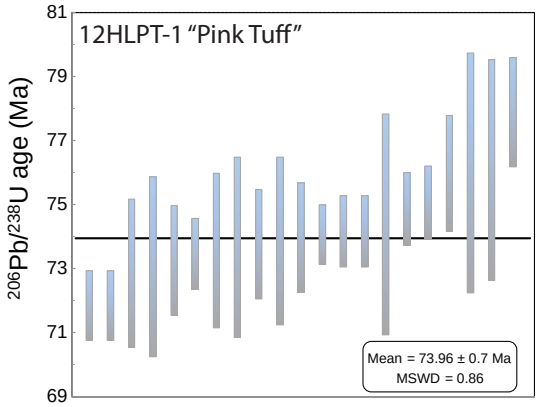
Table DR2: Whole-rock chemistry as determined by XRF

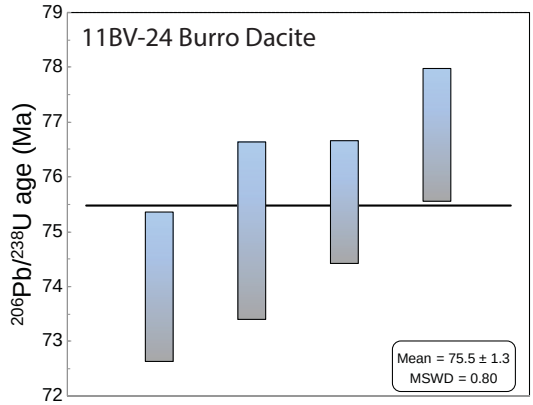

15Kmj-C1 Clast
$^{206}Pb/^{238}U$ age (Ma)
Mean = 74.95 ± 1.1 Ma
MSWD = 0.28


14Kmj-l "Knob Tuff"
$^{206}Pb/^{238}U$ age (Ma)
Mean = 74.93 ± 0.7 Ma
MSWD = 0.77


12HL-3 "Dori's Tuff"
$^{206}Pb/^{238}U$ age (Ma)
Mean = 74.64 ± 0.6 Ma
MSWD = 1.2


14Kmj-u "Upper JC tuff"
$^{206}Pb/^{238}U$ age (Ma)
Mean = 75.2 ± 1.3 Ma
MSWD = 0.23


12HLPT-1 "Pink Tuff"
$^{206}Pb/^{238}U$ age (Ma)
Mean = 73.96 ± 0.7 Ma
MSWD = 0.86


11BV-24 Burro Dacite
$^{206}Pb/^{238}U$ age (Ma)
Mean = 75.5 ± 1.3
MSWD = 0.80

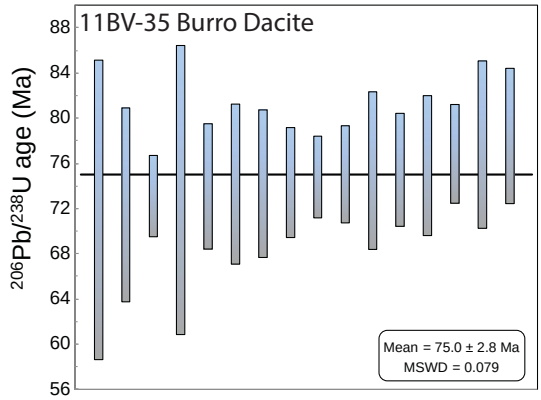

11BV-35 Burro Dacite
$^{206}Pb/^{238}U$ age (Ma)
Mean = 75.0 ± 2.8 Ma
MSWD = 0.079

FIGURE DR1

Table DR1: Compliation of Published Ages from Laramide Igneous Rocks in Southern New Mexico

Region	Rock		Age	Error	Method	Material	Sample #	Formation	Reference
South-Central Region	Ash fall tuff	volcanic	40.0	0.5	UPB	zircon		Palm Park	Creitz et al., 2016
Cookes Range/Las Cruces Region	Andesite, Cooke's Range	volcanic	40.2	0.3	AA	hornblende	CR-TRFI-10	Rubio Peak	McMillan, 2004
South-Central Region	Subvolcanic vent	volcanic	41.0	0.7	UPB	zircon		Palm Park	Creitz et al., 2016
South-Central Region	Dacite, Goodsight Mountains	volcanic	41.8	0.2	AA	hornblende	GSM-TRIP-15	Rubio Peak	McMillan, 2004
South-Central Region	Andesite flow	volcanic	42.0	0.7	UPB	zircon		Palm Park	Creitz et al., 2016
South-Central Region	Andesite flow, Organ Mountains	volcanic	44.2	0.1	UPB	zircon	Orejon-1	Orejon Andesite	Rioux et al., 2016
South-Central Region	Andesite clast, Cooke's Range	volcanic	46.3	0.3	AA	hornblende	RB-116	Rubio Peak	McMillan, 2004
Cuchillo Mt.	monzonite	plutonic	48.8	2.6	KA	hornblende			Chapin et al., 1978
South-Central Region	quartz monzonite	plutonic	50.3	2.6	KA	hornblende	KA-TH-1	Tres Hermanas Quartz Monzonite	Bloom, 1975
Silver City/Pinos Altos Region	granodiorite dike	plutonic	56.5	1.7	KA	hornblende		Santa Rita pluton	McDowell, 1971
Silver City/Pinos Altos Region	granodiorite dike	plutonic	56.5	1.7	KA	hornblende	L-849	Santa Rita Stock	McDowell, 1971
Silver City/Pinos Altos Region	granodiorite	plutonic	58.0	1.7	KA	hornblende	L-849	Santa Rita Porphyry	McDowell, 1971
Silver City/Pinos Altos Region	granodiorite	plutonic	58.0	1.7	KA	hornblende	L-849	Santa Rita Porphyry	McDowell, 1971
Little Hatchet Mountains	diorite	plutonic	58.2	2.0	KA	hornblende	HTA-T		Loring and Loring, 1980
Silver City/Pinos Altos Region	diorite	plutonic	58.2	2.0	KA	hornblende			Loring and Loring, 1980
Silver City/Pinos Altos Region	diorite	plutonic	58.2	2.0	KA	hornblende	HTA-T		Loring and Loring, 1980
Silver City/Pinos Altos Region	granodiorite	plutonic	58.4	1.8	KA	hornblende	L-1017	Hanover-Fierro stock	McDowell, 1971
Silver City/Pinos Altos Region	diorite	plutonic	58.6	1.8	KA	hornblende	L-1016	Central	McDowell, 1971
Silver City/Pinos Altos Region	diorite	plutonic	58.6	1.8	KA	hornblende	L-1016	Central	McDowell, 1971
Bootheel Region	granodiorite	plutonic	59.8	4.4	KA	hornblende	77D197	Lordsburg Granodiorite	Marvin et al., 1988
Boot Heel Region	granodiorite	plutonic	59.8	4.4	KA	hornblende	77D197	Lordsburg granodiorite	Marvin et al., 1978
Silver City/Pinos Altos Region	porphyritic granodiorite	plutonic	59.9	1.8	KA	hornblende	L-1017	Hanover-Fierro Porphyry	McDowell, 1971
Silver City/Pinos Altos Region	porphyritic diorite	plutonic	60.1	1.8	KA	hornblende	L-1016		McDowell, 1971
Silver City/Pinos Altos Region	porphyritic diorite	plutonic	60.1	1.8	KA	hornblende	L-1016		McDowell, 1971
Silver City/Pinos Altos Region	qtz monzonite	plutonic	61.6	2.2	KA	hornblende	78S25	Eighty Mountain stock	Marvin et al., 1988
Silver City/Pinos Altos Region	qtz monzonite	plutonic	61.6	2.2	KA	hornblende	78S25	Eighty Mountain stock	Marvin et al., 1988
Eighty Mtn. pluton	quartz monzonite	plutonic	61.6	2.2	KA	hornblende	Gr-129	Eighty Mountain Stock	Marvin et al., 1988
Northern Pyramid Mountains, southwest NM	andesite	volcanic	66.3	0.4	AA	groundmass	Lord 17	Animas Road	McLemore et al., 2000
Northern Pyramid Mountains, southwest NM	andesite	volcanic	67.9	0.4	AA	plagioclase	Lord 22	Gore Canyon	McLemore et al., 2000
Pinos Altos Range-Fierro-Hanover mining district	granodiorite	plutonic	68.9	2.9	KA	hornblende	L-851B	Hanover-Fierro Porphyry	McDowell, 1971
Peloncillo Mountains	pegmatite	plutonic	69.9	2.1	KA	muscovite	73NP-19		Hoggatt et al., 1977
Copper Flat	quartz latite dike	plutonic	70.2	0.2	AA	K-feldspar	HILL17	Copper Flat Porphyry	McLemore et al., 1999
Little Hatchet Mountains, southwest NM	ash-fall tuff	volcanic	70.4	0.5	UPB	zircon	5.27.10.1	Skunk Ranch Formation	Clinkscales and Lawton, 2015
Copper Flat	monzonite (Warm Springs)	plutonic	70.5	0.5	AA	K-feldspar	HILL11	Copper Flat Porphyry	McLemore et al., 1999
Little Hatchet Mountains, southwest NM	basalt flow	volcanic	70.5	0.4	AA	hornblende	HDV-127	Hidalgo Formation	Young et al., 2000
Little Hatchet Mountains, southwest NM	ash-fall tuff	volcanic	70.6	0.7	UPB	zircon	10GJ-2	Skunk Ranch Formation	Clinkscales and Lawton, 2015
Little Hatchet Mountains, southwest NM	andesite breccia clast	volcanic	70.7	0.4	AA	hornblende	99PP3	Hidalgo Formation	Young et al., 2000
Silver City-Pinos Altos mining district	porphyritic granodiorite	plutonic	70.9	2.1	KA	hornblende	L-1052	Pinos Altos stock	McDowell, 1971
Little Hatchet Mountains, southwest NM	andesite breccia clast	volcanic	71.4	0.4	AA	hornblende	NM679	Hidalgo Formation	Young et al., 2000
Little Hatchet Mountains, southwest NM	ash-fall tuff	volcanic	71.4	0.5	UPB	zircon	10GJ-1	Skunk Ranch Formation	Clinkscales and Lawton, 2015
Pinos Altos Range-Fierro-Hanover mining district	granodiorite	plutonic	72.2	2.1	KA	hornblende	L-851A	Hanover-Fierro Porphyry	McDowell, 1971
Big Burro Mountains	monzonite porphyry	plutonic	72.5	4.7	KA	hornblende	R-34A-78	Twin Peaks stock	Hedlund, 1980
Little Hatchet Mountains, southwest NM	ash-fall tuff	volcanic	73.3	0.7	UPB	zircon	15.8.28.10	Ringbone Formation	Clinkscales and Lawton, 2015
Little Hatchet Mountains, southwest NM	ash-fall tuff	volcanic	73.4	1.0	UPB	zircon	10.11.22.10	Ringbone Formation	Clinkscales and Lawton, 2015
Silver City-Pinos Altos mining district	porphyritic granodiorite	plutonic	74.4	2.2	KA	hornblende	L-1052	Pinos Altos stock	McDowell, 1971
Copper Flat	monzonite (Warm Springs)	plutonic	74.4	2.6	AA	hornblende	HILL15	Copper Flat Porphyry	McLemore et al., 1999
Silver City-Pinos Altos Range	qtz monzonite	plutonic	74.6	3*	KA	not given		Round Mountain Pluton	Sharp, 1991
Copper Flat	quartz monzonite	plutonic	74.9	0.7	AA	hornblende	HILL19	Copper Flat Porphyry	McLemore et al., 1999
Copper Flat	qtz monzonite	plutonic	75.1	2.5	KA	biotite	HL-24-72	Copper Flat Porphyry	Hedlund, 1974
Silver City-Pinos Altos Range	qtz monzonite	plutonic	75.4		KA	not given		Sanatorium Pluton	Sharp, 1991
Copper Flat	andesite	volcanic	75.4	3.5	AA	hornblende	HILL5	Copper Flat Porphyry	McLemore et al., 1999

Notes: Data from NM Bureau of Geology and Mineral Resources database. Method abbreviations are AA–40Ar/39Ar; KA–K/Ar; UPB–U/Pb zircon.
*Uncertainty not given in original publication. Assumed to be 3 m.y. for graph.
References are in the manuscript. Additional references include:

Creitz, R.H., Hampton, B.A., Mack, G.H., and Amato, J. M., 2016, Sedimentology, stratigraphy, and geochronology from Early (?)–Middle Eocene rocks of the Palm Park formation in south-central New Mexico, Geological Society of America Annual Meeting, Abstracts with Programs, v. 48, no. 7, doi: 10.1130/abs/2016AM-287394.

Hedlund, D.C., 1974, Age and structural setting of base-metal mineralization in the Hillsboro–San Lorenzo area, southwestern New Mexico (abstr.), in Siemers, C.T., Woodward, L.A., Callender, J.F. (Eds.), Ghost Ranch. New Mexico Geological Society Guidebook 25, p. 378–379.

Hoggatt, W. C., Silberman, M. L., and Todd, V. R., 1977, K-Ar ages of intrusive rocks of the Peloncillo Mountains, Hidalgo County, New Mexico: Isochron/West, v. 19, p. 3-6.

TABLE DR2. WHOLE-ROCK CHEMISTRY AS DETERMINED BY XRF

Sample	15Kmj-C1	12HL-3	12HLPT-1	11BV-24	11BV-35
SiO2	65.3	73.0	77.0	64.6	64.8
TiO2	0.7	0.5	0.2	0.4	0.4
Al2O3	17.0	13.6	12.0	16.5	15.5
Fe2O3[a]	6.2	5.6	1.6	2.8	2.5
MnO	0.1	0.1	0.1	0.1	0.1
MgO	0.2	0.9	0.9	1.0	1.0
CaO	1.5	1.2	5.9	3.6	5.3
Na2O	6.5	4.9	0.5	3.7	0.1
K2O	2.6	0.5	0.5	2.3	3.3
P2O5	0.4	0.1	0.0	0.2	0.2
total	100.5	100.4	98.8	99.6	101.2
alks	9.1	5.4	1.0	6.0	3.4
LOI (%)[b]	1.5	3.8	11.6	3.6	7.2
Rb	56	15	55	67	152
Th	10	7	16		
Nb	11	8	12	8	13
Sr	724	424	4624	795	215
Zr	240	141	174	164	212
Y	28	22	21	20	38
Pb	15	38	43	12	15
U	1	1	1		
V	82	69	15	33	44
Cr	bd	bd	4	12	8
Co	42	24	0		
Ni	bd	bd	9	17	15
Cu	15	48	21	9	8
Zn	33	91	39	64	108
Ga	14	16	12		
Ba				927	1012

Notes: Whole-rock major element concentrations were determined by X-ray fluorescence spectroscopy. spectrograph equipped with an end-window Rh target X-ray tube.

[a]All Fe was calculated as Fe2O3.

[b]LOI (loss on ignition) determined by weight loss after heating at 1000 °C for 20 min.

bd indicates below detection limits; blanks indicate not analyzed