Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D01972	1.3 %	✓	0.37877	1.6322	0.000000	1.8616	1.28973	2235.0 ± 26451.0	1.14	0.11	0.0000 ± 0.0000
13D01974	1.5 %	✓	0.61759	5.1256	0.117404	4.4870	1.77853	1279.9 ± 11024.4	0.98	0.26	0.3764 ± 0.0579
13D01975	1.7 %	✓	1.30916	9.8217	0.264532	8.8795	1.35629	493.1 ± 5620.1	0.35	0.51	0.3887 ± 0.0300
13D01976	2.0 %	✓	3.02150	19.0035	0.571030	17.2383	0.23870	44.7 ± 3033.4	0.03	0.99	0.3901 ± 0.0160
13D01978	2.3 %	✓	9.12893	36.3352	1.110352	31.3370	2.29827	236.7 ± 2227.5	0.09	1.80	0.3708 ± 0.0083
13D01979	2.6 %	✓	15.18311	80.7054	2.089171	63.0515	15.73900	805.6 ± 1503.2	0.35	3.63	0.3359 ± 0.0042
13D01980	2.9 %	✓	5.13802	60.9328	1.281554	44.2493	5.80577	423.5 ± 1287.8	0.38	2.55	0.3123 ± 0.0045
13D01982	3.2 %	✓	2.82666	61.3234	1.088545	41.8572	5.11812	394.7 ± 1242.3	0.61	2.41	0.2935 ± 0.0045
13D01983	3.5 %	✓	2.14126	53.8368	0.897275	37.5512	8.00802	688.3 ± 1358.1	1.25	2.16	0.2999 ± 0.0048
13D01984	3.8 %	✓	2.20559	64.8074	0.940278	42.0971	1.05284	80.7 ± 1214.5	0.16	2.42	0.2793 ± 0.0038
13D01987	4.1 %	✓	2.41802	67.9041	0.846019	41.3148	3.11120	243.1 ± 468.7	0.43	2.38	0.2616 ± 0.0039
13D01988	4.4 %	✓	3.52832	80.8383	1.021463	48.6080	1.83149	121.6 ± 492.0	0.18	2.80	0.2586 ± 0.0033
13D01989	4.7 %	✓	2.40095	52.5417	0.823421	34.6466	5.34412	497.8 ± 557.8	0.75	1.99	0.2835 ± 0.0047
13D01991	5.2 %	✓	2.66614	62.8743	0.964358	40.6083	3.83310	304.7 ± 497.6	0.48	2.34	0.2777 ± 0.0042
13D01992	5.7 %	✓	3.60803	65.7323	1.219905	45.7749	4.71484	332.5 ± 537.2	0.44	2.63	0.2994 ± 0.0042
13D01993	6.2 %	✓	3.98753	62.0986	1.342263	48.1458	7.30618	489.8 ± 540.6	0.62	2.77	0.3334 ± 0.0051
13D01995	6.7 %	✓	3.73302	61.4969	1.333305	52.5858	6.46514	396.8 ± 480.2	0.58	3.03	0.3677 ± 0.0057
13D01996	7.2 %	✓	3.83914	66.2164	1.433199	57.6993	7.67701	429.4 ± 440.0	0.67	3.32	0.3747 ± 0.0055
13D01997	7.7 %	✓	2.75719	55.2201	1.126000	47.7741	5.08854	343.8 ± 431.7	0.62	2.75	0.3720 ± 0.0061
13D01999	8.2 %	✓	2.31997	72.3180	1.044369	54.4875	9.11400	539.9 ± 350.8	1.31	3.13	0.3240 ± 0.0046
13D02000	8.7 %	✓	1.97342	66.2366	0.777804	47.8950	4.83588	325.9 ± 368.2	0.82	2.76	0.3109 ± 0.0045
13D02001	9.2 %	✓	1.80565	92.8479	0.873321	54.1972	12.56057	747.9 ± 320.6	2.30	3.12	0.2510 ± 0.0029
13D02003	9.7 %	✓	1.52415	83.4674	0.701087	46.4532	4.00612	278.4 ± 356.5	0.88	2.67	0.2393 ± 0.0030
13D02004	10.2 %	✓	1.34912	89.3697	0.671977	46.4560	5.76444	400.5 ± 344.0	1.43	2.67	0.2235 ± 0.0026
13D02005	10.7 %	✓	1.93722	123.2865	0.679345	57.0965	10.59600	598.9 ± 310.3	1.82	3.28	0.1991 ± 0.0020
13D02007	11.2 %	✓	1.53556	114.6808	0.527827	47.6300	10.54375	714.4 ± 346.3	2.27	2.74	0.1786 ± 0.0019
13D02008	11.7 %	✓	2.08276	161.9946	0.663973	60.6711	16.16901	860.1 ± 299.1	2.56	3.49	0.1610 ± 0.0015
13D02009	12.2 %	✓	2.08848	174.3390	0.639782	61.1130	12.63603	667.3 ± 301.3	2.01	3.52	0.1507 ± 0.0014
13D02011	13.0 %	✓	2.89025	248.6920	0.833677	76.2333	16.58916	702.3 ± 282.3	1.91	4.39	0.1318 ± 0.0011
13D02012	14.0 %	✓	2.67385	252.6765	0.779832	72.9505	17.86208	790.2 ± 283.5	2.21	4.20	0.1241 ± 0.0010
13D02013	16.0 %	✓	7.23330	715.8166	1.955442	187.1940	48.98645	844.5 ± 225.9	2.24	10.77	0.1124 ± 0.0008
13D02015	18.0 %	✓	6.19749	645.3520	1.526843	149.4369	44.53686	961.8 ± 248.1	2.37	8.60	0.0996 ± 0.0008
13D02016	20.0 %	✓	2.65936	306.5046	0.737033	66.7544	17.36412	839.5 ± 310.0	2.16	3.84	0.0937 ± 0.0008
		Σ	109.15951	4116.0291	30.882384	1738.3357	312.87432				

Information on Analysis

Sample = HH-12
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00178506 ± 0.00000418
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.19530 ± 0.02537 ± 12.99%	630.3 ± 81.9 ± 13.00%	1.30	100.00 12% 33	0.1402 ± 0.0220
		Full External Error ± 83.1	1.50	2σ Confidence Limit	
		Analytical Error ± 81.9	1.1421	Error Magnification	
Total Fusion Age	0.17998 ± 0.03868 ± 21.49%	580.9 ± 124.8 ± 21.49%		33	0.0000 ± 0.0000
		Full External Error ± 125.5			
		Analytical Error ± 124.8			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D01972	1.3 %	✓	4.91 ± 0.66	298.91 ± 40.53	0.4643
13D01974	1.5 %	✓	7.27 ± 0.50	292.62 ± 24.69	0.5465
13D01975	1.7 %	✓	6.78 ± 0.23	294.46 ± 11.79	0.5435
13D01976	2.0 %	✓	5.71 ± 0.10	295.42 ± 5.36	0.5516
13D01978	2.3 %	✓	3.43 ± 0.03	295.75 ± 2.37	0.6318
13D01979	2.6 %	✓	4.15 ± 0.03	296.54 ± 1.94	0.8019
13D01980	2.9 %	✓	8.61 ± 0.08	296.63 ± 3.44	0.6863
13D01982	3.2 %	✓	14.81 ± 0.21	297.31 ± 5.72	0.6748
13D01983	3.5 %	✓	17.54 ± 0.32	299.24 ± 7.43	0.6735
13D01984	3.8 %	✓	19.09 ± 0.33	295.98 ± 7.19	0.6749
13D01987	4.1 %	✓	17.09 ± 0.14	296.79 ± 2.49	0.8129
13D01988	4.4 %	✓	13.78 ± 0.10	296.02 ± 2.10	0.8468
13D01989	4.7 %	✓	14.43 ± 0.12	297.73 ± 2.51	0.7918
13D01991	5.2 %	✓	15.23 ± 0.12	296.94 ± 2.36	0.8140
13D01992	5.7 %	✓	12.69 ± 0.09	296.81 ± 2.12	0.8453
13D01993	6.2 %	✓	12.07 ± 0.08	297.33 ± 2.03	0.8501
13D01995	6.7 %	✓	14.09 ± 0.10	297.23 ± 2.11	0.8616
13D01996	7.2 %	✓	15.03 ± 0.10	297.50 ± 2.06	0.8647
13D01997	7.7 %	✓	17.33 ± 0.13	297.35 ± 2.33	0.8320
13D01999	8.2 %	✓	23.49 ± 0.19	299.43 ± 2.58	0.8355
13D02000	8.7 %	✓	24.27 ± 0.21	297.95 ± 2.79	0.8131
13D02001	9.2 %	✓	30.02 ± 0.27	302.46 ± 3.03	0.8266
13D02003	9.7 %	✓	30.48 ± 0.30	298.13 ± 3.39	0.8080
13D02004	10.2 %	✓	34.43 ± 0.37	299.77 ± 3.71	0.8030
13D02005	10.7 %	✓	29.47 ± 0.25	300.97 ± 2.87	0.8284
13D02007	11.2 %	✓	31.02 ± 0.31	302.37 ± 3.38	0.8103
13D02008	11.7 %	✓	29.13 ± 0.24	303.26 ± 2.75	0.8350
13D02009	12.2 %	✓	29.26 ± 0.25	301.55 ± 2.78	0.8389
13D02011	13.0 %	✓	26.38 ± 0.19	301.24 ± 2.34	0.8696
13D02012	14.0 %	✓	27.28 ± 0.21	302.18 ± 2.44	0.8631
13D02013	16.0 %	✓	25.88 ± 0.16	302.27 ± 1.85	0.9367
13D02015	18.0 %	✓	24.11 ± 0.15	302.69 ± 1.90	0.9285
13D02016	20.0 %	✓	25.10 ± 0.19	302.03 ± 2.45	0.8607

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	294.08 ± 1.25 ± 0.43%	0.25709 ± 0.06022 ± 23.42%	829.7 ± 194.3 ± 23.42% Full External Error ± 195.2 Analytical Error ± 194.3	1.16 25%

Statistics				
	2σ Confidence Limit	1.51	Convergence	0.000000078622
	Error Magnification	1.0761	Number of Iterations	4
	Number of Data Points	33	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D01972	1.3 %	✓	0.0164427 ± 0.0022896	0.00334554 ± 0.00045367	0.5290
13D01974	1.5 %	✓	0.0248283 ± 0.0018463	0.00341740 ± 0.00028830	0.6250
13D01975	1.7 %	✓	0.0230335 ± 0.0008236	0.00339600 ± 0.00013593	0.6028
13D01976	2.0 %	✓	0.0193122 ± 0.0003198	0.00338500 ± 0.00006142	0.5386
13D01978	2.3 %	✓	0.0116067 ± 0.0000854	0.00338121 ± 0.00002710	0.3164
13D01979	2.6 %	✓	0.0140041 ± 0.0000587	0.00337226 ± 0.00002207	0.2694
13D01980	2.9 %	✓	0.0290332 ± 0.0002512	0.00337120 ± 0.00003914	0.5606
13D01982	3.2 %	✓	0.0498064 ± 0.0007105	0.00336349 ± 0.00006468	0.6661
13D01983	3.5 %	✓	0.0586049 ± 0.0010781	0.00334180 ± 0.00008294	0.6867
13D01984	3.8 %	✓	0.0644864 ± 0.0011579	0.00337864 ± 0.00008204	0.6930
13D01987	4.1 %	✓	0.0575707 ± 0.0002902	0.00336942 ± 0.00002827	0.3641
13D01988	4.4 %	✓	0.0465394 ± 0.0001828	0.00337816 ± 0.00002400	0.2803
13D01989	4.7 %	✓	0.0484687 ± 0.0002618	0.00335879 ± 0.00002830	0.3424
13D01991	5.2 %	✓	0.0512940 ± 0.0002456	0.00336771 ± 0.00002673	0.3402
13D01992	5.7 %	✓	0.0427448 ± 0.0001705	0.00336920 ± 0.00002406	0.2653
13D01993	6.2 %	✓	0.0406081 ± 0.0001533	0.00336324 ± 0.00002300	0.2464
13D01995	6.7 %	✓	0.0473929 ± 0.0001763	0.00336438 ± 0.00002385	0.2708
13D01996	7.2 %	✓	0.0505185 ± 0.0001814	0.00336135 ± 0.00002329	0.2736
13D01997	7.7 %	✓	0.0582725 ± 0.0002602	0.00336309 ± 0.00002634	0.3486
13D01999	8.2 %	✓	0.0784370 ± 0.0003766	0.00333970 ± 0.00002877	0.4006
13D02000	8.7 %	✓	0.0814567 ± 0.0004496	0.00335626 ± 0.00003138	0.4399
13D02001	9.2 %	✓	0.0992385 ± 0.0005643	0.00330626 ± 0.00003316	0.4584
13D02003	9.7 %	✓	0.1022314 ± 0.0006896	0.00335426 ± 0.00003811	0.4859
13D02004	10.2 %	✓	0.1148680 ± 0.0008510	0.00333586 ± 0.00004125	0.5100
13D02005	10.7 %	✓	0.0979282 ± 0.0005281	0.00332259 ± 0.00003172	0.4480
13D02007	11.2 %	✓	0.1025843 ± 0.0006777	0.00330725 ± 0.00003700	0.4831
13D02008	11.7 %	✓	0.0960554 ± 0.0004845	0.00329747 ± 0.00002995	0.4322
13D02009	12.2 %	✓	0.0970384 ± 0.0004904	0.00331620 ± 0.00003052	0.4280
13D02011	13.0 %	✓	0.0875583 ± 0.0003401	0.00331962 ± 0.00002583	0.3616
13D02012	14.0 %	✓	0.0902870 ± 0.0003721	0.00330928 ± 0.00002673	0.3757
13D02013	16.0 %	✓	0.0856164 ± 0.0001859	0.00330827 ± 0.00002025	0.1967
13D02015	18.0 %	✓	0.0796616 ± 0.0001878	0.00330375 ± 0.00002069	0.2154
13D02016	20.0 %	✓	0.0831101 ± 0.0003480	0.00331094 ± 0.00002691	0.3718

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	294.08 ± 1.25	0.25825 ± 0.05023	833.4 ± 162.1	1.15
Clustered Points	± 0.43%	± 19.45%	± 19.45%	25%
			Full External Error ± 163.2	
			Analytical Error ± 162.1	

Statistics				
	2σ Confidence Limit	1.51	Convergence	0.0021352649
	Error Magnification	1.0742	Number of Iterations	3
	Number of Data Points	33	Calculated Line	Weighted York-2
	Spreading Factor	2.7%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D01972	1.3 %	✓	0.37877	4.583	1.6322	25.262	0.147320	27.505	1.8616	4.848	113.217	4.997	0.69281 ± 8.20446	2235.0 ± 26451.0	1.14	0.11	0.0000 ± 0.0000
13D01974	1.5 %	✓	0.61897	2.820	5.1256	7.427	0.284606	13.949	4.4904	2.004	180.724	3.131	0.39638 ± 3.41288	1279.9 ± 11024.4	0.98	0.26	0.3764 ± 0.0579
13D01975	1.7 %	✓	1.31180	1.357	9.8217	3.718	0.611628	6.225	8.8861	1.019	385.510	1.469	0.15274 ± 1.74058	493.1 ± 5620.1	0.35	0.51	0.3887 ± 0.0300
13D01976	2.0 %	✓	3.02662	0.646	19.0035	1.981	1.334562	2.866	17.2511	0.530	892.631	0.636	0.01385 ± 0.93969	44.7 ± 3033.4	0.03	0.99	0.3901 ± 0.0160
13D01978	2.3 %	✓	9.13871	0.337	36.3352	1.078	3.178213	1.220	31.3614	0.297	2699.927	0.216	0.07334 ± 0.69016	236.7 ± 2227.5	0.09	1.80	0.3708 ± 0.0083
13D01979	2.6 %	✓	15.20478	0.297	80.7054	0.600	5.655637	0.698	63.1058	0.159	4502.411	0.136	0.24962 ± 0.46588	805.6 ± 1503.2	0.35	3.63	0.3359 ± 0.0042
13D01980	2.9 %	✓	5.15434	0.442	60.9328	0.688	2.753877	1.423	44.2903	0.215	1524.137	0.375	0.13121 ± 0.39903	423.5 ± 1287.8	0.38	2.55	0.3123 ± 0.0045
13D01982	3.2 %	✓	2.84304	0.680	61.3234	0.724	2.101707	1.867	41.8984	0.228	840.439	0.676	0.12228 ± 0.38494	394.7 ± 1242.3	0.61	2.41	0.2935 ± 0.0045
13D01983	3.5 %	✓	2.15563	0.864	53.8368	0.757	1.732293	2.301	37.5874	0.249	640.789	0.885	0.21326 ± 0.42088	688.3 ± 1358.1	1.25	2.16	0.2999 ± 0.0048
13D01984	3.8 %	✓	2.22287	0.841	64.8074	0.647	1.840576	2.154	42.1407	0.225	652.847	0.869	0.02501 ± 0.37627	80.7 ± 1214.5	0.16	2.42	0.2793 ± 0.0038
13D01987	4.1 %	✓	2.43610	0.368	67.9041	0.721	1.777548	2.059	41.3605	0.158	717.677	0.196	0.07530 ± 0.14522	243.1 ± 468.7	0.43	2.38	0.2616 ± 0.0039
13D01988	4.4 %	✓	3.54984	0.325	80.8383	0.619	2.245301	1.715	48.6624	0.138	1044.498	0.140	0.03768 ± 0.15243	121.6 ± 492.0	0.18	2.80	0.2586 ± 0.0033
13D01989	4.7 %	✓	2.41497	0.370	52.5417	0.814	1.673742	2.364	34.6820	0.184	714.861	0.197	0.15425 ± 0.17285	497.8 ± 557.8	0.75	1.99	0.2835 ± 0.0047
13D01991	5.2 %	✓	2.68291	0.352	62.8743	0.735	1.933520	1.960	40.6506	0.158	791.717	0.180	0.09439 ± 0.15416	304.7 ± 497.6	0.48	2.34	0.2777 ± 0.0042
13D01992	5.7 %	✓	3.62560	0.328	65.7323	0.693	2.424301	1.618	45.8192	0.144	1070.934	0.137	0.10300 ± 0.16646	332.5 ± 537.2	0.44	2.63	0.2994 ± 0.0042
13D01993	6.2 %	✓	4.00416	0.317	62.0986	0.745	2.644063	1.536	48.1876	0.140	1185.670	0.126	0.15175 ± 0.16753	489.8 ± 540.6	0.62	2.77	0.3334 ± 0.0051
13D01995	6.7 %	✓	3.74949	0.327	61.4969	0.762	2.637980	1.521	52.6272	0.129	1109.625	0.134	0.12294 ± 0.14881	396.8 ± 480.2	0.58	3.03	0.3677 ± 0.0057
13D01996	7.2 %	✓	3.85687	0.319	66.2164	0.719	2.816555	1.450	57.7438	0.123	1142.200	0.130	0.13305 ± 0.13634	429.4 ± 440.0	0.67	3.32	0.3747 ± 0.0055
13D01997	7.7 %	✓	2.77197	0.349	55.2201	0.802	2.192664	1.817	47.8112	0.139	819.887	0.175	0.10651 ± 0.13375	343.8 ± 431.7	0.62	2.75	0.3720 ± 0.0061
13D01999	8.2 %	✓	2.33925	0.376	72.3180	0.693	2.108092	1.833	54.5362	0.127	694.721	0.204	0.16727 ± 0.10870	539.9 ± 350.8	1.31	3.13	0.3240 ± 0.0046
13D02000	8.7 %	✓	1.99105	0.399	66.2366	0.714	1.700889	2.377	47.9396	0.139	588.030	0.238	0.10097 ± 0.11410	325.9 ± 368.2	0.82	2.76	0.3109 ± 0.0045
13D02001	9.2 %	✓	1.83032	0.426	92.8479	0.555	1.840467	2.206	54.2597	0.124	546.185	0.256	0.23176 ± 0.09936	747.9 ± 320.6	2.30	3.12	0.2510 ± 0.0029
13D02003	9.7 %	✓	1.54631	0.472	83.4674	0.605	1.526190	2.576	46.5094	0.144	454.440	0.305	0.08624 ± 0.11045	278.4 ± 356.5	0.88	2.67	0.2393 ± 0.0030
13D02004	10.2 %	✓	1.37283	0.506	89.3697	0.567	1.465218	2.763	46.5161	0.143	404.476	0.342	0.12408 ± 0.10659	400.5 ± 344.0	1.43	2.67	0.2235 ± 0.0026
13D02005	10.7 %	✓	1.96989	0.406	123.2865	0.497	1.708305	2.291	57.1794	0.122	583.102	0.240	0.18558 ± 0.09616	598.9 ± 310.3	1.82	3.28	0.1991 ± 0.0020
13D02007	11.2 %	✓	1.56593	0.464	114.6808	0.507	1.372792	2.895	47.7072	0.141	464.349	0.299	0.22137 ± 0.10731	714.4 ± 346.3	2.27	2.74	0.1786 ± 0.0019
13D02008	11.7 %	✓	2.12565	0.388	161.9946	0.439	1.766196	2.154	60.7801	0.119	631.687	0.222	0.26650 ± 0.09272	860.1 ± 299.1	2.56	3.49	0.1610 ± 0.0015
13D02009	12.2 %	✓	2.13462	0.394	174.3390	0.435	1.749818	2.320	61.2303	0.118	629.843	0.223	0.20676 ± 0.09339	667.3 ± 301.3	2.01	3.52	0.1507 ± 0.0014
13D02011	13.0 %	✓	2.95605	0.344	248.6920	0.400	2.275966	1.844	76.4006	0.102	870.734	0.165	0.21761 ± 0.08749	702.3 ± 282.3	1.91	4.39	0.1318 ± 0.0011
13D02012	14.0 %	✓	2.74070	0.354	252.6765	0.395	2.144874	1.830	73.1206	0.106	808.059	0.177	0.24485 ± 0.08786	790.2 ± 283.5	2.21	4.20	0.1241 ± 0.0010
13D02013	16.0 %	✓	7.42263	0.288	715.8166	0.369	5.537113	0.706	187.6758	0.072	2186.616	0.081	0.26169 ± 0.07002	844.5 ± 225.9	2.24	10.77	0.1124 ± 0.0008
13D02015	18.0 %	✓	6.36814	0.292	645.3520	0.370	4.475450	0.898	149.8712	0.077	1876.047	0.089	0.29803 ± 0.07690	961.8 ± 248.1	2.37	8.60	0.0996 ± 0.0008
13D02016	20.0 %	✓	2.74041	0.354	306.5046	0.388	2.036336	1.980	66.9607	0.110	803.272	0.178	0.26012 ± 0.09608	839.5 ± 310.0	2.16	3.84	0.0937 ± 0.0008
		Σ	110.25120	0.084	4116.0291	0.116	71.693800	0.317	1741.1047	0.027	32571.263	0.060					

Information on Analysis and Constants Used in Calculations

Sample = HH-12
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00178506 ± 0.00000418
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Production Ratio 36/38(cl) = 262.80 ± 1.71
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.19530 ± 0.02537 ± 12.99%	630.3 ± 81.9 ± 13.00%	1.30 12%	100.00 33	0.1402 ± 0.0220
		Full External Error ± 83.1		1.50	2σ Confidence Limit	
		Analytical Error ± 81.9		1.1421	Error Magnification	
Total Fusion Age		0.17998 ± 0.03868 ± 21.49%	580.9 ± 124.8 ± 21.49%		33	0.0000 ± 0.0000
		Full External Error ± 125.5				
		Analytical Error ± 124.8				
Normal Isochron	294.08 ± 1.25 ± 0.43%	0.25709 ± 0.06022 ± 23.42%	829.7 ± 194.3 ± 23.42%	1.16 25%	100.00 33	
		Full External Error ± 195.2		1.51	2σ Confidence Limit	
		Analytical Error ± 194.3		1.0761	Error Magnification	
				4	Number of Iterations	
				0.0000000786	Convergence	
Inverse Isochron Clustered Points	294.08 ± 1.25 ± 0.43%	0.25825 ± 0.05023 ± 19.45%	833.4 ± 162.1 ± 19.45%	1.15 25%	100.00 33	
		Full External Error ± 163.2		1.51	2σ Confidence Limit	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D01972	1.3 %	✓	0.37877	4.58	0.0000000	0.00	0.0000000	0.00	0.0000000	0.00	1.6322	25.26	0.000000	0.00	0.0000000	0.00	0.000000	0.00	0.0000000	0.00	0.000000	0.00	1.8616	4.85	0.0000000	0.00	1.28973	592.10	111.927	4.58	0.0000000	0.00	0.0000000	0.00
13D01974	1.5 %	✓	0.61759	2.83	0.0000000	0.00	0.0013532	7.43	0.0000207	33.95	5.1256	7.43	0.115428	2.83	0.0000000	0.00	0.051062	2.01	0.0007125	7.43	0.117404	33.97	4.4870	2.01	0.0034496	7.43	1.77853	430.50	182.498	2.83	0.0000000	0.00	0.0045318	2.01
13D01975	1.7 %	✓	1.30916	1.36	0.0000000	0.00	0.0025929	3.72	0.0000467	14.48	9.8217	3.72	0.244683	1.36	0.0000000	0.00	0.101048	1.02	0.0013652	3.72	0.264532	14.51	8.8795	1.02	0.0066100	3.72	1.35629	569.77	386.858	1.36	0.0000000	0.00	0.0089683	1.02
13D01976	2.0 %	✓	3.02150	0.65	0.0000000	0.00	0.0050169	1.98	0.0001008	6.79	19.0035	1.98	0.564718	0.65	0.0000000	0.00	0.196172	0.53	0.0026415	1.98	0.571030	6.85	17.2383	0.53	0.0127894	1.98	0.23870	3393.09	892.853	0.65	0.0000000	0.00	0.0174107	0.53
13D01978	2.3 %	✓	9.12893	0.34	0.0000000	0.00	0.0095925	1.08	0.0001960	3.65	36.3352	1.08	1.706196	0.34	0.0000000	0.00	0.356615	0.30	0.0050506	1.08	1.110352	3.76	31.3370	0.30	0.0244536	1.08	2.29827	470.52	2697.597	0.34	0.0000000	0.00	0.0316503	0.30
13D01979	2.6 %	✓	15.18311	0.30	0.0000000	0.00	0.0213062	0.60	0.0003689	2.14	80.7054	0.60	2.837723	0.30	0.0000000	0.00	0.717526	0.16	0.0112180	0.60	2.089171	2.33	63.0515	0.16	0.0543147	0.60	15.73900	93.32	4486.608	0.30	0.0000000	0.00	0.0636820	0.16
13D01980	2.9 %	✓	5.13802	0.44	0.0000000	0.00	0.0160863	0.69	0.0002263	3.21	60.9328	0.69	0.960297	0.44	0.0000000	0.00	0.503557	0.22	0.0084697	0.69	1.281554	3.34	44.2493	0.22	0.0410078	0.69	5.80577	152.06	1518.286	0.44	0.0000000	0.00	0.0446918	0.22
13D01982	3.2 %	✓	2.82666	0.68	0.0000000	0.00	0.0161894	0.72	0.0001922	3.74	61.3234	0.72	0.528303	0.68	0.0000000	0.00	0.476334	0.23	0.0085240	0.72	1.088545	3.85	41.8572	0.23	0.0412706	0.72	5.11812	157.40	835.279	0.68	0.0000000	0.00	0.0422757	0.23
13D01983	3.5 %	✓	2.14126	0.87	0.0000000	0.00	0.0142129	0.76	0.0001585	4.55	53.8368	0.76	0.400202	0.87	0.0000000	0.00	0.427332	0.25	0.0074833	0.76	0.897275	4.65	37.5512	0.25	0.0362322	0.76	8.00802	98.68	632.743	0.87	0.0000000	0.00	0.0379267	0.25
13D01984	3.8 %	✓	2.20559	0.85	0.0000000	0.00	0.0171092	0.65	0.0001661	4.33	64.8074	0.65	0.412225	0.85	0.0000000	0.00	0.479065	0.22	0.0090082	0.65	0.940278	4.43	42.0971	0.22	0.0436154	0.65	1.05284	752.24	651.752	0.85	0.0000000	0.00	0.0425180	0.22
13D01987	4.1 %	✓	2.41802	0.37	0.0000000	0.00	0.0179267	0.72	0.0001504	4.43	67.9041	0.72	0.451928	0.37	0.0000000	0.00	0.470162	0.16	0.0094387	0.72	0.846019	4.52	41.3148	0.16	0.0456995	0.72	3.11120	96.42	714.524	0.37	0.0000000	0.00	0.0417279	0.16
13D01988	4.4 %	✓	3.52832	0.33	0.0000000	0.00	0.0213413	0.62	0.0001816	3.89	80.8383	0.62	0.659442	0.33	0.0000000	0.00	0.553159	0.14	0.0112365	0.62	1.021463	3.99	48.6080	0.14	0.0544042	0.62	1.83149	202.28	1042.618	0.33	0.0000000	0.00	0.0490941	0.14
13D01989	4.7 %	✓	2.40095	0.37	0.0000000	0.00	0.0138710	0.81	0.0001464	4.90	52.5417	0.81	0.448738	0.37	0.0000000	0.00	0.394279	0.18	0.0073033	0.81	0.823421	4.98	34.6466	0.18	0.0353606	0.81	5.34412	56.03	709.482	0.37	0.0000000	0.00	0.0349931	0.18
13D01991	5.2 %	✓	2.66614	0.35	0.0000000	0.00	0.0165988	0.74	0.0001715	4.04	62.8743	0.74	0.498301	0.35	0.0000000	0.00	0.462122	0.16	0.0087395	0.74	0.964358	4.14	40.6083	0.16	0.0423144	0.74	3.83310	81.66	787.843	0.35	0.0000000	0.00	0.0410144	0.16
13D01992	5.7 %	✓	3.60803	0.33	0.0000000	0.00	0.0173533	0.69	0.0002170	3.35	65.7323	0.69	0.674341	0.33	0.0000000	0.00	0.520919	0.14	0.0091368	0.69	1.219905	3.47	45.7749	0.14	0.0442378	0.69	4.71484	80.80	1066.173	0.33	0.0000000	0.00	0.0462327	0.14
13D01993	6.2 %	✓	3.98753	0.32	0.0000000	0.00	0.0163940	0.74	0.0002387	3.17	62.0986	0.74	0.745269	0.32	0.0000000	0.00	0.547899	0.14	0.0086317	0.74	1.342263	3.30	48.1458	0.14	0.0417924	0.74	7.30618	55.20	1178.315	0.32	0.0000000	0.00	0.0486273	0.14
13D01995	6.7 %	✓	3.73302	0.33	0.0000000	0.00	0.0162352	0.76	0.0002372	3.15	61.4969	0.76	0.697701	0.33	0.0000000	0.00	0.598427	0.13	0.0085481	0.76	1.333305	3.28	52.5858	0.13	0.0413874	0.76	6.46514	60.52	1103.106	0.33	0.0000000	0.00	0.0531117	0.13
13D01996	7.2 %	✓	3.83914	0.32	0.0000000	0.00	0.0174811	0.72	0.0002550	3.00	66.2164	0.72	0.717535	0.32	0.0000000	0.00	0.656618	0.12	0.0092041	0.72	1.433199	3.14	57.6993	0.12	0.0445636	0.72	7.67701	51.24	1134.465	0.32	0.0000000	0.00	0.0582763	0.12
13D01997	7.7 %	✓	2.75719	0.35	0.0000000	0.00	0.0145781	0.80	0.0002003	3.66	55.2201	0.80	0.515319	0.35	0.0000000	0.00	0.543669	0.14	0.0076756	0.80	1.126000	3.77	47.7741	0.14	0.0371632	0.80	5.08854	62.79	814.750	0.35	0.0000000	0.00	0.0482518	0.14
13D01999	8.2 %	✓	2.31997	0.38	0.0000000	0.00	0.0190919	0.69	0.0001858	3.82	72.3180	0.69	0.433603	0.38	0.0000000	0.00	0.620068	0.13	0.0100522	0.69	1.044369	3.93	54.4875	0.13	0.0486700	0.69	9.11400	32.49	685.552	0.38	0.0000000	0.00	0.0550324	0.13
13D02000	8.7 %	✓	1.97342	0.40	0.0000000	0.00	0.0174865	0.71	0.0001384	5.28	66.2366	0.71	0.368832	0.40	0.0000000	0.00	0.545046	0.14	0.0092069	0.71	0.777804	5.36	47.8950	0.14	0.0445772	0.71	4.83588	56.50	583.146	0.40	0.0000000	0.00	0.0483740	0.14
13D02001	9.2 %	✓	1.80565	0.43	0.0000000	0.00	0.0245118	0.56	0.0001554	4.74	92.8479	0.56	0.337476	0.43	0.0000000	0.00	0.616764	0.12	0.0129059	0.56	0.873321	4.83	54.1972	0.12	0.0624866	0.56	12.56057	21.44	533.570	0.43	0.0000000	0.00	0.0547392	0.12
13D02003	9.7 %	✓	1.52415	0.48	0.0000000	0.00	0.0220354	0.61	0.0001248	5.69	83.4674	0.61	0.284864	0.48	0.0000000	0.00	0.528637	0.14	0.0116020	0.61	0.701087	5.76	46.4532	0.14	0.0561736	0.61	4.00612	64.04	450.387	0.48	0.0000000	0.00	0.0469177	0.14
13D02004	10.2 %	✓	1.34912	0.52	0.0000000	0.00	0.0235936	0.57	0.0001196	6.10	89.3697	0.57	0.252150	0.52	0.0000000	0.00	0.528669	0.14	0.0124224	0.57	0.671977	6.17	46.4560	0.14	0.0601458	0.57	5.76444	42.95	398.664	0.52	0.0000000	0.00	0.0469205	0.14
13D02005	10.7 %	✓	1.93722	0.41	0.0000000	0.00	0.0325476	0.50	0.0001209	5.84	123.2865	0.50	0.362066	0.41	0.0000000	0.00	0.649758	0.12	0.0171368	0.50	0.679345	5.91	57.0965	0.12	0.0829718	0.50	10.59600	25.91	572.448	0.41	0.0000000	0.00	0.0576674	0.12
13D02007	11.2 %	✓	1.53556	0.47	0.0000000	0.00	0.0302757	0.51	0.0000940	7.59	114.6808	0.51	0.286996	0.47	0.0000000	0.00	0.542029	0.14	0.0159406	0.51	0.527827	7.65	47.6300	0.14	0.0771802	0.51	10.54375	24.24	453.757	0.47	0.0000000	0.00	0.0481063	0.14
13D02008	11.7 %	✓	2.08276	0.40	0.0000000	0.00	0.0427666	0.44	0.0001182	5.81	161.9946	0.44	0.389269	0.40	0.0000000	0.00	0.690437	0.12	0.0225172	0.44	0.663973	5.88	60.6711	0.12	0.1090223	0.44	16.16901	17.39	615.457	0.40	0.0000000	0.00	0.0612778	0.12
13D02009	12.2 %	✓	2.08848	0.40	0.0000000	0.00	0.0460255	0.44	0.0001139	6.42	174.3390	0.44	0.390337	0.40	0.0000000	0.00	0.695466	0.12	0.0242331	0.44	0.639782	6.48	61.1130	0.12	0.1173301	0.44	12.63603	22.58	617.146	0.40	0.0000000	0.00	0.0617241	0.12
13D02011	13.0 %	✓	2.89025	0.35	0.0000000	0.00	0.0656547	0.40	0.0001485	5.12	248.6920	0.40	0.540187	0.35	0.0000000	0.00	0.867534	0.10	0.0345682	0.40	0.833677	5.21	76.2333	0.10	0.1673697	0.40	16.58916	20.10	854.067	0.35	0.0000000	0.00	0.0769956	0.10
13D02012	14.0 %	✓	2.67385	0.36	0.0000000	0.00	0.0667066	0.40	0.0001389	5.12	252.6765	0.40	0.499743	0.36	0.0000000	0.00	0.830177	0.11	0.0351220	0.40	0.779832	5.20	72.9505	0.11	0.1700513	0.40	17.86208	17.94	790.123	0.36	0.0000000	0.00	0.0736800	0.11
13D02013	16.0 %	✓	7.23330	0.30	0.0000000	0.00	0.1889756	0.37	0.0003484	2.21	715.8166	0.37	1.351904	0.30	0.0000000	0.00	2.130268	0.07	0.0994985	0.37	1.955442	2.39	187.1940	0.07	0.4817446	0.37	48.98645	13.38	2137.441	0.30	0.0000000	0.00	0.1890660	0.07
13D02015	18.0 %	✓	6.19749	0.30	0.0000000	0.00	0.1703729	0.37	0.0002721	2.80	645.3520	0.37	1.158312	0.30	0.0000000	0.00	1.700591	0.08	0.0897039	0.37	1.526843	2.95	149.4369	0.08	0.4343219	0.37	44.53686	12.90	1831.359	0.30	0.0000000	0.00	0.1509312	0.08
13D02016	20.0 %	✓	2.65936	0.37	0.0000000	0.00	0.0809172	0.39	0.0001313	5.56	306.5046	0.39	0.497034	0.37	0.0000000	0.00	0.759665	0.11	0.0426041	0.39	0.737033	5.63	66.7544	0.11	0.2062776	0.39	17.36412	18.47	785.840	0.37	0.0000000	0.00	0.0674220	0.11
		Σ	109.15951	0.09	0.0000000	0.00	1.0862008	0.12	0.0054846	0.75	4116.0291	0.12	20.331120	0.08	0.0000000	0.00	19.761075	0.03	0.5719012	0.12	30.882384	0.77	1738.3357	0.03	2.7689891	0.12	312.87432	10.74	32256.635	0.09	0.0000000	0.00	1.7538388	0.03
		Σ							110.25120	0.08	4116.0291	0.12									71.546480	0.33			1741.1047	0.03							32571.263	0.13

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D01972	1.3 %	✓	60.817104	4.234365	0.876798	0.225540	0.203466	0.013574	108.664	8.574538	1.00076791	5.434E-12
13D01974	1.5 %	✓	40.246722	1.496088	1.141463	0.087812	0.137842	0.004769	108.681	8.577479	1.00076803	8.675E-12
13D01975	1.7 %	✓	43.383675	0.775417	1.105295	0.042612	0.147625	0.002505	108.690	8.578891	1.00076809	1.850E-11
13D01976	2.0 %	✓	51.743430	0.428259	1.101583	0.022587	0.175445	0.001465	108.699	8.580421	1.00076815	4.285E-11
13D01978	2.3 %	✓	86.090750	0.316464	1.158597	0.012956	0.291400	0.001310	108.715	8.583246	1.00076827	1.296E-10
13D01979	2.6 %	✓	71.346989	0.149346	1.278889	0.007944	0.240941	0.000812	108.724	8.584777	1.00076834	2.161E-10
13D01980	2.9 %	✓	34.412422	0.148837	1.375759	0.009918	0.116376	0.000572	108.733	8.586190	1.00076839	7.316E-11
13D01982	3.2 %	✓	20.058962	0.143053	1.463620	0.011109	0.067856	0.000487	108.750	8.589135	1.00076852	4.034E-11
13D01983	3.5 %	✓	17.047973	0.156788	1.432310	0.011411	0.057350	0.000516	108.758	8.590548	1.00076858	3.076E-11
13D01984	3.8 %	✓	15.492096	0.139063	1.537883	0.010536	0.052749	0.000459	108.767	8.592080	1.00076864	3.134E-11
13D01987	4.1 %	✓	17.351755	0.043717	1.641762	0.012116	0.058899	0.000236	109.469	8.712062	1.00077360	3.445E-11
13D01988	4.4 %	✓	21.464165	0.042141	1.661206	0.010530	0.072948	0.000257	109.478	8.713496	1.00077366	5.014E-11
13D01989	4.7 %	✓	20.611862	0.055629	1.514956	0.012636	0.069632	0.000288	109.487	8.715050	1.00077372	3.431E-11
13D01991	5.2 %	✓	19.476159	0.046602	1.546700	0.011631	0.065999	0.000254	109.503	8.717919	1.00077384	3.800E-11
13D01992	5.7 %	✓	23.373063	0.046586	1.434602	0.010151	0.079128	0.000284	109.512	8.719474	1.00077390	5.140E-11
13D01993	6.2 %	✓	24.605279	0.046434	1.288684	0.009765	0.083095	0.000288	109.521	8.720909	1.00077396	5.691E-11
13D01995	6.7 %	✓	21.084622	0.039208	1.168538	0.009034	0.071246	0.000250	109.538	8.723900	1.00077408	5.326E-11
13D01996	7.2 %	✓	19.780462	0.035493	1.146726	0.008368	0.066793	0.000229	109.547	8.725456	1.00077415	5.483E-11
13D01997	7.7 %	✓	17.148421	0.038277	1.154962	0.009397	0.057977	0.000218	109.556	8.726892	1.00077421	3.935E-11
13D01999	8.2 %	✓	12.738717	0.030574	1.326055	0.009346	0.042894	0.000170	109.573	8.729885	1.00077433	3.335E-11
13D02000	8.7 %	✓	12.266060	0.033842	1.381668	0.010045	0.041532	0.000175	109.581	8.731322	1.00077439	2.823E-11
13D02001	9.2 %	✓	10.066138	0.028610	1.711177	0.009733	0.033733	0.000150	109.590	8.732879	1.00077445	2.622E-11
13D02003	9.7 %	✓	9.770924	0.032944	1.794636	0.011162	0.033247	0.000164	109.611	8.736474	1.00077460	2.181E-11
13D02004	10.2 %	✓	8.695394	0.032201	1.921265	0.011228	0.029513	0.000155	109.619	8.737912	1.00077466	1.941E-11
13D02005	10.7 %	✓	10.197754	0.027485	2.156134	0.011043	0.034451	0.000146	109.628	8.739470	1.00077472	2.799E-11
13D02007	11.2 %	✓	9.733318	0.032138	2.403848	0.012653	0.032824	0.000159	109.646	8.742468	1.00077484	2.229E-11
13D02008	11.7 %	✓	10.392990	0.026200	2.665256	0.012120	0.034973	0.000142	109.654	8.743907	1.00077490	3.032E-11
13D02009	12.2 %	✓	10.286464	0.025979	2.847265	0.012839	0.034862	0.000143	109.662	8.745346	1.00077496	3.023E-11
13D02011	13.0 %	✓	11.396944	0.022118	3.255104	0.013439	0.038691	0.000139	109.680	8.748346	1.00077508	4.180E-11
13D02012	14.0 %	✓	11.051042	0.022757	3.455614	0.014138	0.037482	0.000138	109.689	8.749906	1.00077515	3.879E-11
13D02013	16.0 %	✓	11.651031	0.012633	3.814113	0.014353	0.039550	0.000117	109.697	8.751346	1.00077521	1.050E-10
13D02015	18.0 %	✓	12.517731	0.014735	4.306045	0.016287	0.042491	0.000128	109.722	8.755668	1.00077538	9.005E-11
13D02016	20.0 %	✓	11.996166	0.025089	4.577382	0.018465	0.040926	0.000152	109.731	8.757110	1.00077544	3.856E-11

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D01972	1.3 %	0.0760983	0.0167540	0.0102496	0.0300174	0.0194027	0.0264838	0.0361160	0.0859382	22.968227	5.656854
13D01974	1.5 %	0.1114735	0.0167540	0.0037160	0.0300174	0.0017592	0.0264838	0.0911073	0.0859382	33.783822	5.656854
13D01975	1.7 %	0.1492836	0.0167540	0.0005798	0.0300174	0.0119169	0.0264838	0.1175032	0.0859382	45.225235	5.656854
13D01976	2.0 %	0.2010925	0.0167540	0.0028176	0.0300174	0.0229210	0.0264838	0.1460987	0.0859382	60.888472	5.656854
13D01978	2.3 %	0.3146005	0.0167540	0.0090899	0.0300174	0.0432364	0.0264838	0.1988903	0.0859382	95.237160	5.656854
13D01979	2.6 %	0.3792478	0.0167540	0.0124874	0.0300174	0.0542406	0.0264838	0.2274858	0.0859382	114.851439	5.656854
13D01980	2.9 %	0.4369160	0.0167540	0.0156235	0.0300174	0.0643983	0.0264838	0.2538817	0.0859382	132.404234	5.656854
13D01982	3.2 %	0.5383513	0.0167540	0.0221571	0.0300174	0.0855601	0.0264838	0.3088730	0.0859382	163.550030	5.656854
13D01983	3.5 %	0.5721714	0.0167540	0.0252933	0.0300174	0.0957178	0.0264838	0.3352688	0.0859382	174.148069	5.656854
13D01984	3.8 %	0.5935270	0.0167540	0.0286908	0.0300174	0.1067220	0.0264838	0.3638643	0.0859382	181.137274	5.656854
13D01987	4.1 %	0.0805716	0.0048211	0.0406957	0.0332159	0.0141522	0.0280988	0.7128244	0.0515109	20.641660	1.362068
13D01988	4.4 %	0.0402742	0.0048211	0.0399924	0.0332159	0.0133768	0.0280988	0.6968495	0.0515109	9.012040	1.362068
13D01989	4.7 %	0.0021210	0.0048211	0.0392305	0.0332159	0.0125368	0.0280988	0.6795434	0.0515109	1.997944	1.362068
13D01991	5.2 %	0.0547499	0.0048211	0.0378238	0.0332159	0.0109861	0.0280988	0.6475935	0.0515109	18.406600	1.362068
13D01992	5.7 %	0.0789839	0.0048211	0.0370619	0.0332159	0.0101461	0.0280988	0.6302874	0.0515109	25.396866	1.362068
13D01993	6.2 %	0.0977093	0.0048211	0.0363586	0.0332159	0.0093707	0.0280988	0.6143124	0.0515109	30.796782	1.362068
13D01995	6.7 %	0.1268333	0.0048211	0.0348934	0.0332159	0.0077553	0.0280988	0.5810314	0.0515109	39.190410	1.362068
13D01996	7.2 %	0.1373822	0.0048211	0.0341315	0.0332159	0.0069153	0.0280988	0.5637252	0.0515109	42.227388	1.362068
13D01997	7.7 %	0.1447232	0.0048211	0.0334282	0.0332159	0.0061400	0.0280988	0.5477503	0.0515109	44.338315	1.362068
13D01999	8.2 %	0.1537643	0.0048211	0.0319629	0.0332159	0.0045246	0.0280988	0.5144692	0.0515109	46.929131	1.362068
13D02000	8.7 %	0.1556062	0.0048211	0.0312596	0.0332159	0.0037492	0.0280988	0.4984943	0.0515109	47.450761	1.362068
13D02001	9.2 %	0.1561260	0.0048211	0.0304977	0.0332159	0.0029093	0.0280988	0.4811881	0.0515109	47.589293	1.362068
13D02003	9.7 %	0.1528776	0.0048211	0.0287394	0.0332159	0.0009708	0.0280988	0.4412508	0.0515109	46.623089	1.362068
13D02004	10.2 %	0.1503485	0.0048211	0.0280361	0.0332159	0.0001955	0.0280988	0.4252759	0.0515109	45.880998	1.362068
13D02005	10.7 %	0.1471149	0.0048211	0.0272742	0.0332159	0.0006445	0.0280988	0.4079697	0.0515109	44.934345	1.362068
13D02007	11.2 %	0.1401619	0.0048211	0.0258090	0.0332159	0.0022599	0.0280988	0.3746887	0.0515109	42.901563	1.362068
13D02008	11.7 %	0.1367804	0.0048211	0.0251057	0.0332159	0.0030353	0.0280988	0.3587137	0.0515109	41.913234	1.362068
13D02009	12.2 %	0.1335403	0.0048211	0.0244024	0.0332159	0.0038106	0.0280988	0.3427388	0.0515109	40.965998	1.362068
13D02011	13.0 %	0.1277134	0.0048211	0.0229371	0.0332159	0.0054260	0.0280988	0.3094577	0.0515109	39.260537	1.362068
13D02012	14.0 %	0.1253967	0.0048211	0.0221752	0.0332159	0.0062660	0.0280988	0.2921516	0.0515109	38.580731	1.362068
13D02013	16.0 %	0.1238036	0.0048211	0.0214719	0.0332159	0.0070414	0.0280988	0.2761767	0.0515109	38.111605	1.362068
13D02015	18.0 %	0.1227466	0.0048211	0.0193620	0.0332159	0.0093675	0.0280988	0.2282519	0.0515109	37.785874	1.362068
13D02016	20.0 %	0.1237670	0.0048211	0.0186587	0.0332159	0.0101428	0.0280988	0.2122770	0.0515109	38.076631	1.362068

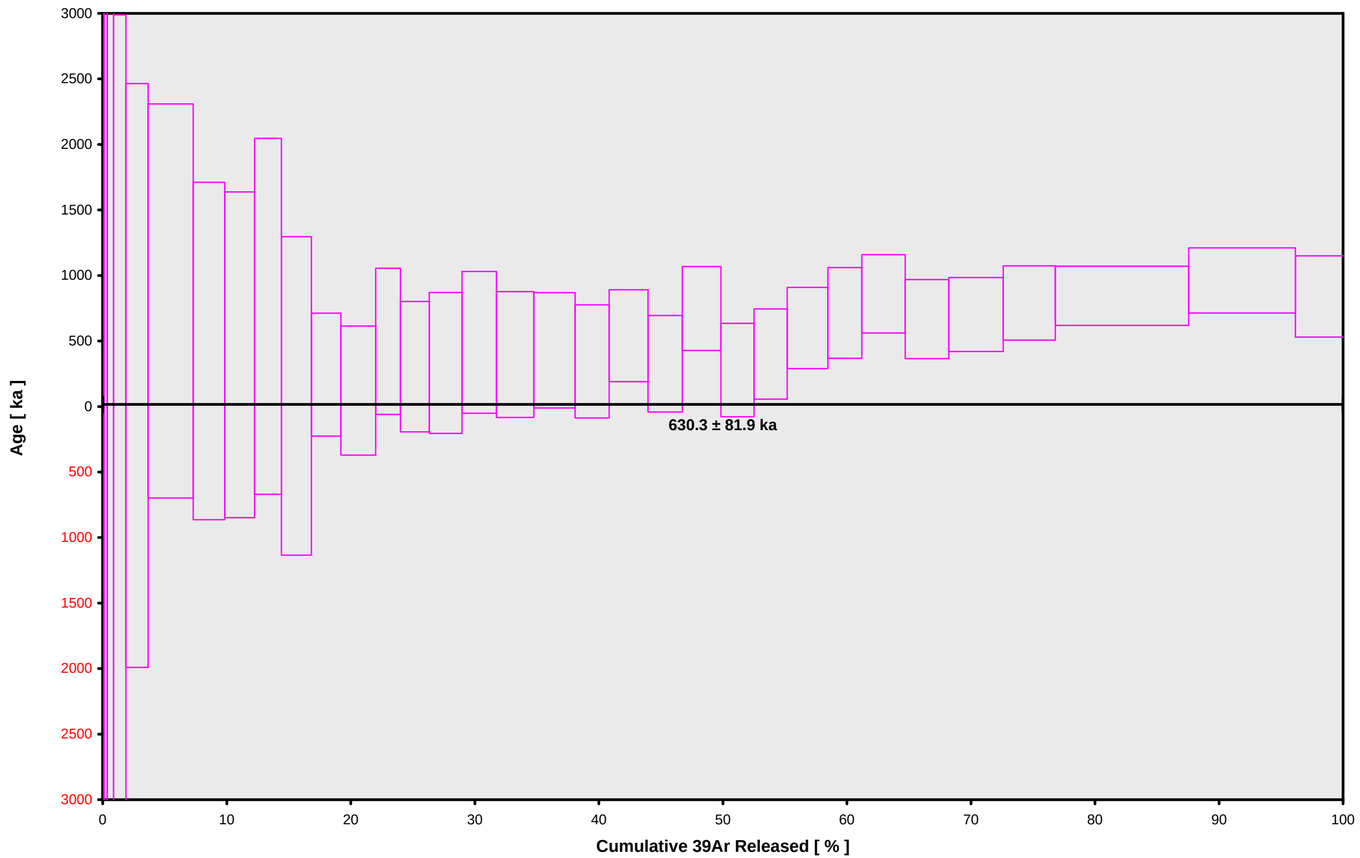
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D01972	1.3 %	0.44411	0.00164	0.6767	EXP 150 of 150	0.1765	0.0364	0.0088	EXP 150 of 150	0.126075	0.029995	0.0017	EXP 150 of 150	1.8847	0.0254	0.2428	EXP 149 of 150	136.18390	0.03999	0.9966	EXP 150 of 150
13D01974	1.5 %	0.71285	0.00207	0.8204	EXP 150 of 150	0.5827	0.0315	0.0299	EXP 150 of 150	0.282806	0.028902	0.0079	EXP 150 of 150	4.5501	0.0243	0.6209	EXP 150 of 150	214.50646	0.04289	0.9988	EXP 150 of 150
13D01975	1.7 %	1.42380	0.00256	0.9354	EXP 150 of 150	1.1228	0.0288	0.0690	EXP 150 of 150	0.615896	0.026678	0.0107	EXP 150 of 150	8.9413	0.0258	0.8563	EXP 150 of 150	430.73173	0.05042	0.9997	EXP 150 of 150
13D01976	2.0 %	3.14169	0.00418	0.9645	EXP 150 of 150	2.1761	0.0298	0.2118	EXP 150 of 150	1.340793	0.026870	0.1076	EXP 150 of 150	17.2764	0.0270	0.9525	EXP 150 of 150	953.51090	0.07550	0.9999	EXP 150 of 150
13D01978	2.3 %	9.19358	0.00705	0.9875	EXP 150 of 150	4.1631	0.0296	0.4957	EXP 150 of 150	3.181702	0.027368	0.3423	EXP 150 of 150	31.3406	0.0286	0.9837	EXP 150 of 150	2795.13725	0.15592	0.9999	EXP 150 of 150
13D01979	2.6 %	15.15190	0.00906	0.9928	EXP 150 of 150	9.2373	0.0325	0.7451	EXP 150 of 150	5.639148	0.027739	0.5355	EXP 150 of 150	62.8913	0.0321	0.9949	EXP 150 of 150	4617.21656	0.22755	0.9999	EXP 150 of 150
13D01980	2.9 %	5.44476	0.00514	0.9815	EXP 150 of 150	6.9793	0.0276	0.7030	EXP 150 of 150	2.783835	0.028015	0.2447	EXP 150 of 150	44.2339	0.0284	0.9919	EXP 150 of 150	1656.52552	0.10592	0.9999	EXP 150 of 150
13D01982	3.2 %	3.30059	0.00393	0.9711	EXP 150 of 150	7.0280	0.0321	0.6336	EXP 150 of 150	2.160983	0.028171	0.1866	EXP 150 of 150	41.9138	0.0300	0.9901	EXP 150 of 150	1003.98050	0.08303	0.9998	EXP 150 of 150
13D01983	3.5 %	2.66654	0.00365	0.9602	EXP 150 of 150	6.1749	0.0277	0.5501	EXP 150 of 150	1.806346	0.029035	0.0433	EXP 150 of 150	37.6593	0.0268	0.9901	EXP 150 of 150	814.93038	0.07114	0.9998	EXP 150 of 150
13D01984	3.8 %	2.75322	0.00375	0.9621	EXP 150 of 150	7.4301	0.0260	0.7322	EXP 150 of 150	1.924279	0.028753	0.0961	EXP 150 of 150	42.2093	0.0278	0.9916	EXP 150 of 150	833.97814	0.07659	0.9998	EXP 150 of 150
13D01987	4.1 %	2.28629	0.00358	0.9518	EXP 150 of 150	7.6889	0.0341	0.6167	EXP 150 of 150	1.769470	0.022611	0.1827	EXP 149 of 150	41.7834	0.0300	0.9899	EXP 150 of 150	697.02833	0.06914	0.9998	EXP 150 of 150
13D01988	4.4 %	3.40868	0.00416	0.9695	EXP 150 of 150	9.1436	0.0312	0.7059	EXP 150 of 150	2.230598	0.025465	0.1661	EXP 150 of 150	49.0181	0.0294	0.9930	EXP 150 of 150	1035.47551	0.09250	0.9998	EXP 150 of 150
13D01989	4.7 %	2.34421	0.00359	0.9507	EXP 150 of 150	5.9551	0.0274	0.5882	EXP 150 of 150	1.665347	0.027061	0.1183	EXP 150 of 150	35.1184	0.0300	0.9859	EXP 150 of 150	716.85149	0.07518	0.9998	EXP 150 of 150
13D01991	5.2 %	2.66141	0.00348	0.9652	EXP 150 of 150	7.1148	0.0307	0.6454	EXP 150 of 150	1.920325	0.024605	0.1742	EXP 149 of 150	41.0132	0.0278	0.9912	EXP 150 of 150	810.11585	0.07276	0.9998	EXP 150 of 150
13D01992	5.7 %	3.60154	0.00462	0.9672	EXP 150 of 150	7.4344	0.0283	0.6934	EXP 149 of 150	2.404129	0.026499	0.2846	EXP 150 of 150	46.1282	0.0291	0.9923	EXP 150 of 150	1096.32036	0.09305	0.9998	EXP 150 of 150
13D01993	6.2 %	3.98807	0.00446	0.9742	EXP 150 of 150	7.0236	0.0310	0.6974	EXP 150 of 150	2.620367	0.028435	0.3313	EXP 150 of 150	48.4641	0.0310	0.9923	EXP 150 of 150	1216.45447	0.09467	0.9999	EXP 150 of 150
13D01995	6.7 %	3.76976	0.00481	0.9662	EXP 150 of 150	6.9521	0.0323	0.6304	EXP 150 of 150	2.612745	0.027724	0.1799	EXP 150 of 150	52.8393	0.0291	0.9941	EXP 150 of 150	1148.80381	0.09962	0.9998	EXP 150 of 150
13D01996	7.2 %	3.88464	0.00437	0.9739	EXP 150 of 150	7.4808	0.0321	0.6858	EXP 150 of 150	2.788247	0.028730	0.3369	EXP 150 of 150	57.9027	0.0324	0.9939	EXP 150 of 150	1184.41581	0.10160	0.9998	EXP 150 of 150
13D01997	7.7 %	2.83791	0.00356	0.9677	EXP 149 of 150	6.2425	0.0294	0.5763	EXP 150 of 150	2.171382	0.027406	0.2553	EXP 150 of 150	48.0238	0.0287	0.9931	EXP 150 of 150	864.21728	0.07378	0.9998	EXP 150 of 150
13D01999	8.2 %	2.42653	0.00355	0.9587	EXP 149 of 150	8.1607	0.0346	0.6423	EXP 150 of 150	2.086252	0.025695	0.1848	EXP 149 of 150	54.6683	0.0307	0.9939	EXP 150 of 150	741.64318	0.06996	0.9998	EXP 150 of 150
13D02000	8.7 %	2.09007	0.00302	0.9562	EXP 150 of 150	7.4752	0.0314	0.6255	EXP 149 of 150	1.683367	0.028282	0.0323	EXP 150 of 150	48.1020	0.0291	0.9929	EXP 150 of 150	635.47510	0.06925	0.9997	EXP 150 of 150
13D02001	9.2 %	1.93443	0.00333	0.9358	EXP 150 of 150	10.4633	0.0285	0.8350	EXP 150 of 150	1.820360	0.028501	0.1162	EXP 150 of 150	54.3604	0.0263	0.9955	EXP 150 of 150	593.76906	0.06882	0.9997	EXP 150 of 150
13D02003	9.7 %	1.65524	0.00327	0.9185	EXP 150 of 150	9.4036	0.0309	0.7624	EXP 150 of 150	1.508074	0.026728	0.1407	EXP 150 of 150	46.6245	0.0301	0.9918	EXP 150 of 150	501.05803	0.05800	0.9997	EXP 150 of 150
13D02004	10.2 %	1.48416	0.00306	0.9192	EXP 149 of 150	10.0642	0.0283	0.8114	EXP 149 of 150	1.447090	0.028375	0.1819	EXP 150 of 150	46.6152	0.0292	0.9925	EXP 150 of 150	450.35268	0.06101	0.9996	EXP 150 of 150
13D02005	10.7 %	2.06102	0.00324	0.9504	EXP 150 of 150	13.8698	0.0332	0.8518	EXP 150 of 150	1.686297	0.026445	0.0756	EXP 150 of 150	57.1865	0.0303	0.9946	EXP 150 of 150	628.03025	0.06930	0.9997	EXP 150 of 150
13D02007	11.2 %	1.66158	0.00312	0.9305	EXP 149 of 150	12.8977	0.0311	0.8557	EXP 150 of 150	1.353364	0.027354	0.0347	EXP 150 of 150	47.7474	0.0300	0.9922	EXP 150 of 150	507.24581	0.06415	0.9996	EXP 150 of 150
13D02008	11.7 %	2.20202	0.00317	0.9554	EXP 150 of 150	18.2046	0.0299	0.9241	EXP 150 of 150	1.741073	0.024830	0.1148	EXP 150 of 150	60.7127	0.0323	0.9944	EXP 150 of 150	673.59406	0.06971	0.9998	EXP 150 of 150
13D02009	12.2 %	2.20749	0.00351	0.9492	EXP 150 of 150	19.5860	0.0328	0.9230	EXP 150 of 150	1.724124	0.028521	0.0511	EXP 149 of 150	61.1437	0.0329	0.9942	EXP 150 of 150	670.80304	0.07022	0.9998	EXP 150 of 150
13D02011	13.0 %	2.99975	0.00390	0.9644	EXP 150 of 150	27.9177	0.0325	0.9615	EXP 150 of 150	2.242077	0.030339	0.1613	EXP 150 of 150	76.1744	0.0324	0.9965	EXP 150 of 150	909.98538	0.08297	0.9998	EXP 150 of 150
13D02012	14.0 %	2.78820	0.00382	0.9630	EXP 150 of 150	28.3588	0.0285	0.9720	EXP 150 of 150	2.111784	0.026556	0.1435	EXP 150 of 150	72.9000	0.0340	0.9958	EXP 150 of 150	846.63119	0.07072	0.9998	EXP 150 of 150
13D02013	16.0 %	7.33547	0.00587	0.9871	EXP 150 of 150	80.2841	0.0382	0.9934	EXP 150 of 150	5.460824	0.025519	0.6458	EXP 150 of 150	186.6360	0.0433	0.9990	EXP 150 of 150	2224.70592	0.15630	0.9999	EXP 150 of 150
13D02015	18.0 %	6.30990	0.00538	0.9844	EXP 150 of 150	72.3452	0.0368	0.9924	EXP 150 of 150	4.410112	0.027457	0.4328	EXP 150 of 150	149.0485	0.0419	0.9985	EXP 150 of 150	1913.81408	0.14129	0.9999	EXP 150 of 150
13D02016	20.0 %	2.78629	0.00384	0.9612	EXP 150 of 150	34.3636	0.0322	0.9746	EXP 150 of 150	2.000727	0.028105	0.1956	EXP 150 of 150	66.7034	0.0312	0.9957	EXP 150 of 150	841.34009	0.08147	0.9998	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos
13D01972	1.3 %	HH-12	Groundmass	Harrat	Dan Miggins	1.3	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	13	32	1	13-OSU-05			6.00
13D01974	1.5 %	HH-12	Groundmass	Harrat	Dan Miggins	1.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	13	57	1	13-OSU-05			6.00
13D01975	1.7 %	HH-12	Groundmass	Harrat	Dan Miggins	1.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	14	9	1	13-OSU-05			6.00
13D01976	2.0 %	HH-12	Groundmass	Harrat	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	14	22	1	13-OSU-05			6.00
13D01978	2.3 %	HH-12	Groundmass	Harrat	Dan Miggins	2.3	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	14	46	1	13-OSU-05			6.00
13D01979	2.6 %	HH-12	Groundmass	Harrat	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	14	59	1	13-OSU-05			6.00
13D01980	2.9 %	HH-12	Groundmass	Harrat	Dan Miggins	2.9	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	15	11	1	13-OSU-05			6.00
13D01982	3.2 %	HH-12	Groundmass	Harrat	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	15	36	1	13-OSU-05			6.00
13D01983	3.5 %	HH-12	Groundmass	Harrat	Dan Miggins	3.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	15	48	1	13-OSU-05			6.00
13D01984	3.8 %	HH-12	Groundmass	Harrat	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	8	OCT	2013	16	1	1	13-OSU-05			6.00
13D01987	4.1 %	HH-12	Groundmass	Harrat	Dan Miggins	4.1	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	8	52	1	13-OSU-05			6.00
13D01988	4.4 %	HH-12	Groundmass	Harrat	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	9	4	1	13-OSU-05			6.00
13D01989	4.7 %	HH-12	Groundmass	Harrat	Dan Miggins	4.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	9	17	1	13-OSU-05			6.00
13D01991	5.2 %	HH-12	Groundmass	Harrat	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	9	41	1	13-OSU-05			6.00
13D01992	5.7 %	HH-12	Groundmass	Harrat	Dan Miggins	5.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	9	54	1	13-OSU-05			6.00
13D01993	6.2 %	HH-12	Groundmass	Harrat	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	10	6	1	13-OSU-05			6.00
13D01995	6.7 %	HH-12	Groundmass	Harrat	Dan Miggins	6.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	10	31	1	13-OSU-05			6.00
13D01996	7.2 %	HH-12	Groundmass	Harrat	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	10	44	1	13-OSU-05			6.00
13D01997	7.7 %	HH-12	Groundmass	Harrat	Dan Miggins	7.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	10	56	1	13-OSU-05			6.00
13D01999	8.2 %	HH-12	Groundmass	Harrat	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	11	21	1	13-OSU-05			6.00
13D02000	8.7 %	HH-12	Groundmass	Harrat	Dan Miggins	8.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	11	33	1	13-OSU-05			6.00
13D02001	9.2 %	HH-12	Groundmass	Harrat	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	11	46	1	13-OSU-05			6.00
13D02003	9.7 %	HH-12	Groundmass	Harrat	Dan Miggins	9.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	12	16	1	13-OSU-05			6.00
13D02004	10.2 %	HH-12	Groundmass	Harrat	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	12	28	1	13-OSU-05			6.00
13D02005	10.7 %	HH-12	Groundmass	Harrat	Dan Miggins	10.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	12	41	1	13-OSU-05			6.00
13D02007	11.2 %	HH-12	Groundmass	Harrat	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	13	6	1	13-OSU-05			6.00
13D02008	11.7 %	HH-12	Groundmass	Harrat	Dan Miggins	11.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	13	18	1	13-OSU-05			6.00
13D02009	12.2 %	HH-12	Groundmass	Harrat	Dan Miggins	12.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	13	30	1	13-OSU-05			6.00
13D02011	13.0 %	HH-12	Groundmass	Harrat	Dan Miggins	13	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	13	55	1	13-OSU-05			6.00
13D02012	14.0 %	HH-12	Groundmass	Harrat	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	14	8	1	13-OSU-05			6.00
13D02013	16.0 %	HH-12	Groundmass	Harrat	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	14	20	1	13-OSU-05			6.00
13D02015	18.0 %	HH-12	Groundmass	Harrat	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	14	56	1	13-OSU-05			6.00
13D02016	20.0 %	HH-12	Groundmass	Harrat	Dan Miggins	20	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.80495	0.234	0.00178506	0.234	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	15	8	1	13-OSU-05			6.00

Project	Experiment	Nmb
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01
Harrat\Hutaymah (13-05)	13D01858	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D01972	1.3 %	295.5																									
13D01974	1.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01975	1.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01976	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01978	2.3 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01979	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01980	2.9 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01982	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01983	3.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01984	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01987	4.1 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01988	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01989	4.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01991	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01992	5.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01993	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01995	6.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01996	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01997	7.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D01999	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02000	8.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02001	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02003	9.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02004	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02005	10.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02007	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02008	11.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02009	12.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02011	13.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02012	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02013	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02015	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02016	20.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

13D01858.AGE >>> HH-12 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
630.3 ± 81.9
TOTAL FUSION
580.9 ± 124.8
NORMAL ISOCHRON
829.7 ± 194.3
INVERSE ISOCHRON
833.4 ± 162.1

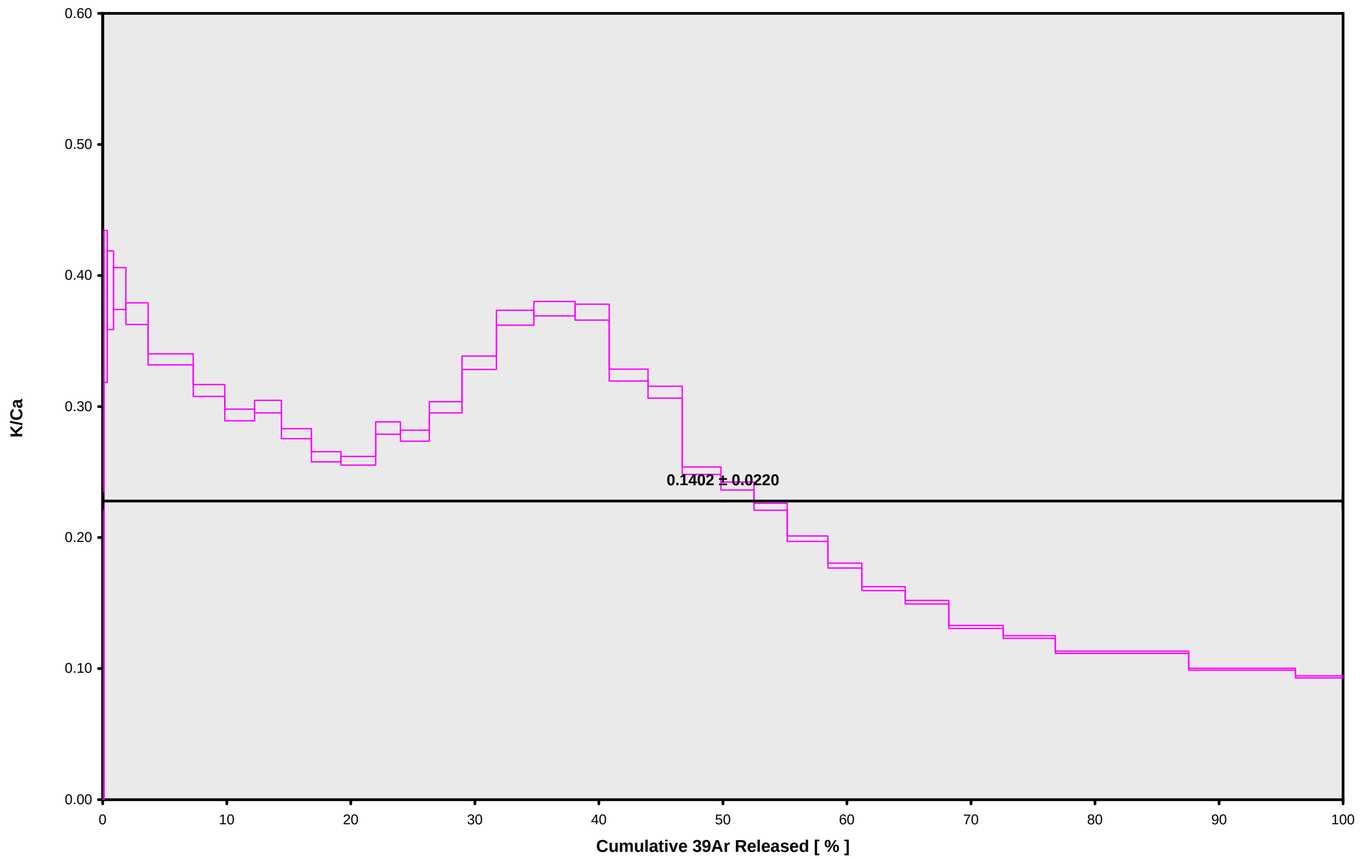
MSWD (PROBABILITY)
1.30 (12%)

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178506 ± 0.00000418

13D01858.AGE >>> HH-12 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
630.3 ± 81.9
TOTAL FUSION
580.9 ± 124.8
NORMAL ISOCHRON
829.7 ± 194.3
INVERSE ISOCHRON
833.4 ± 162.1

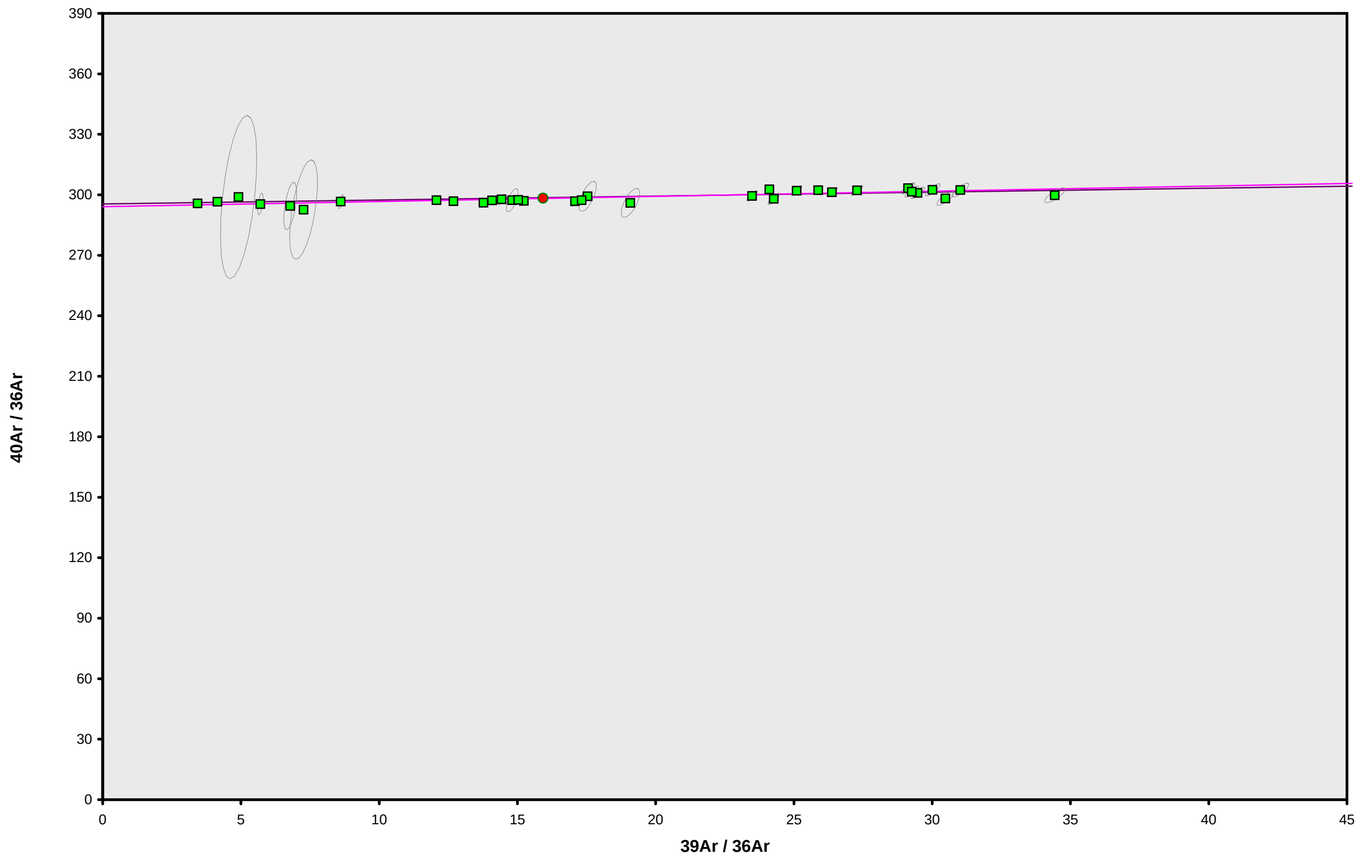
Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178506 ± 0.00000418

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D01858.AGE >>> HH-12 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
630.3 ± 81.9
TOTAL FUSION
580.9 ± 124.8
NORMAL ISOCHRON
829.7 ± 194.3
INVERSE ISOCHRON
833.4 ± 162.1

MSWD (PROBABILITY)
1.16 (25%)

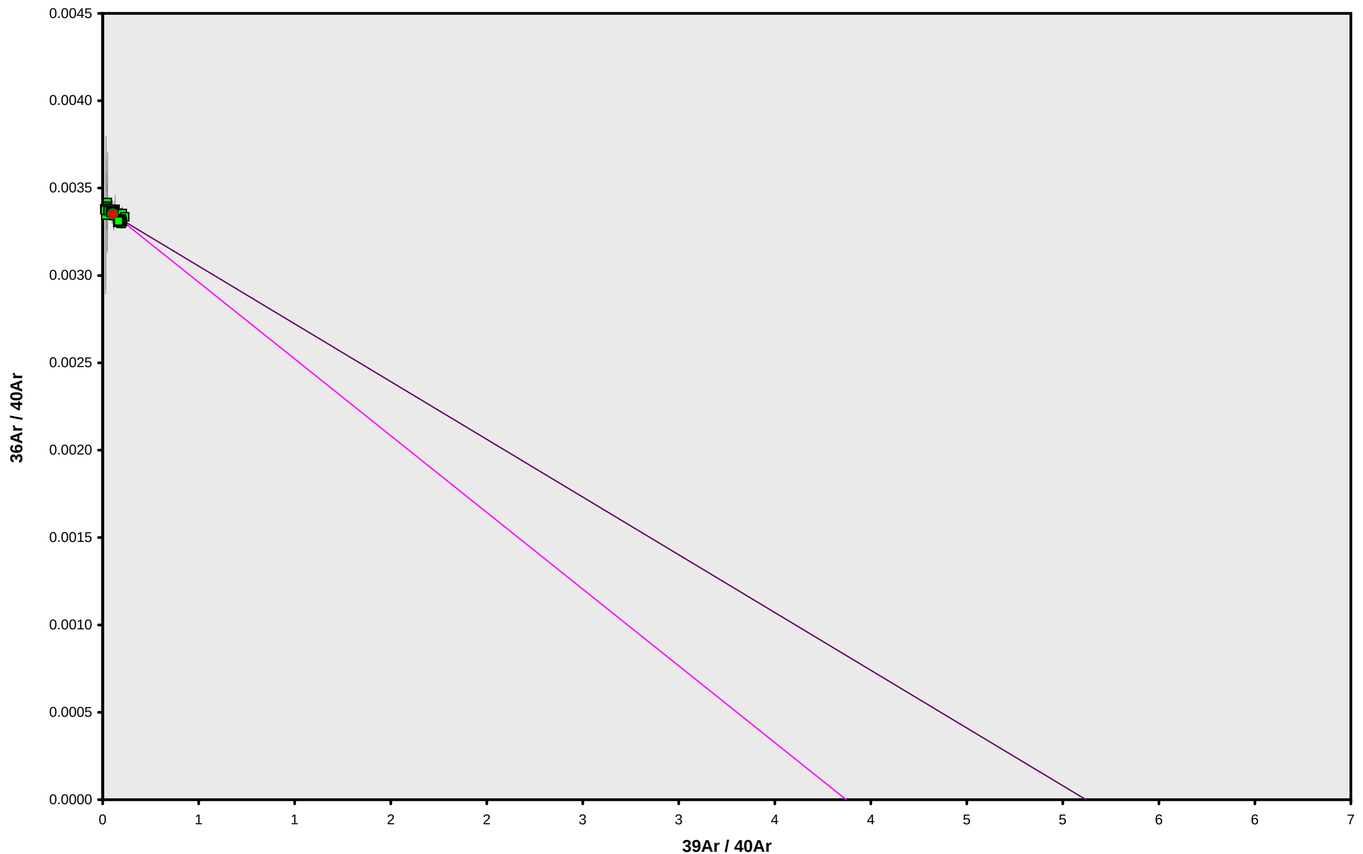
40AR/36AR INTERCEPT
294.1 ± 1.3

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178506 ± 0.00000418

13D01858.AGE >>> HH-12 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
630.3 ± 81.9
TOTAL FUSION
580.9 ± 124.8
NORMAL ISOCHRON
829.7 ± 194.3
INVERSE ISOCHRON
833.4 ± 162.1

MSWD (PROBABILITY)
1.15 (25%)

SPREADING FACTOR
2.7%

40AR/36AR INTERCEPT
294.1 ± 1.3

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178506 ± 0.00000418

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02018	2.0 %	✓	1.610099	25.1151	1.303175	22.5349	2.08928	296.5 ± 749.2	0.44	1.53	0.386 ± 0.015
13D02020	2.6 %	✓	3.281876	61.6005	3.030502	56.2798	11.34221	644.4 ± 411.6	1.16	3.81	0.393 ± 0.007
13D02021	3.2 %	✓	3.307577	105.4739	4.741774	98.1003	27.02779	880.9 ± 238.5	2.69	6.65	0.400 ± 0.005
13D02022	3.8 %	✓	3.107658	169.5823	6.220354	162.5651	34.88264	686.1 ± 138.7	3.66	11.02	0.412 ± 0.004
13D02024	4.4 %	✓	1.819756	176.0658	4.975152	158.4371	28.86603	582.6 ± 112.3	5.09	10.74	0.387 ± 0.004
13D02025	5.2 %	✓	1.590073	177.6871	4.487749	151.7669	31.61465	666.1 ± 112.2	6.30	10.29	0.367 ± 0.003
13D02026	6.2 %	✓	2.329821	229.5599	5.680953	202.5162	58.25048	919.6 ± 97.6	7.80	13.73	0.379 ± 0.003
13D02028	7.2 %	✓	1.727010	179.6881	5.172489	159.0580	30.58446	614.8 ± 110.9	5.65	10.78	0.381 ± 0.003
13D02029	8.2 %	✓	1.421609	169.8603	3.640685	114.5917	24.92343	695.4 ± 143.2	5.60	7.77	0.290 ± 0.003
13D02030	9.2 %	✓	1.347741	215.6356	2.355568	94.1777	20.98338	712.4 ± 172.4	5.00	6.38	0.188 ± 0.002
13D02032	10.2 %	✓	1.149397	234.9374	1.423944	74.6322	16.00222	685.6 ± 210.6	4.50	5.06	0.137 ± 0.001
13D02033	11.2 %	✓	0.875044	175.5926	0.930729	52.8933	13.33538	806.1 ± 285.9	4.90	3.59	0.130 ± 0.001
13D02034	12.5 %	✓	1.047333	231.8159	0.741414	55.4094	11.14947	643.4 ± 278.9	3.48	3.76	0.103 ± 0.001
13D02036	14.0 %	✓	0.466503	82.8615	0.362532	24.7748	5.45185	703.6 ± 572.0	3.80	1.68	0.129 ± 0.002
13D02037	16.0 %	✓	0.504517	96.0709	0.298134	23.6962	4.71714	636.5 ± 600.0	3.07	1.61	0.106 ± 0.001
13D02038	18.0 %	✓	0.603032	117.6152	0.268147	23.9660	3.57766	477.3 ± 598.7	1.97	1.62	0.088 ± 0.001
		Σ	26.189048	2449.1622	45.633299	1475.3995	324.79808				

Information on Analysis

Sample = HH-10
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00176852 ± 0.00000410
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.22183 ± 0.01932	709.3 ± 61.9	2.14	100.00	0.150 ± 0.045
Error Mean	± 8.71%	± 8.72%	1%	16	
		Full External Error ± 63.9	1.73	2σ Confidence Limit	
		Analytical Error ± 61.8	1.4631	Error Magnification	
Total Fusion Age	0.22014 ± 0.01505	703.9 ± 48.2		16	0.259 ± 0.001
	± 6.84%	± 6.85%			
		Full External Error ± 50.8			
		Analytical Error ± 48.1			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02018	2.0 %	✓	14.00 ± 0.17	296.80 ± 3.29	0.6060
13D02020	2.6 %	✓	17.15 ± 0.13	298.96 ± 2.23	0.7987
13D02021	3.2 %	✓	29.66 ± 0.21	303.67 ± 2.26	0.8553
13D02022	3.8 %	✓	52.31 ± 0.37	306.72 ± 2.34	0.8721
13D02024	4.4 %	✓	87.07 ± 0.76	311.36 ± 3.17	0.8282
13D02025	5.2 %	✓	95.45 ± 0.90	315.38 ± 3.50	0.8182
13D02026	6.2 %	✓	86.92 ± 0.69	320.50 ± 2.82	0.8614
13D02028	7.2 %	✓	92.10 ± 0.84	313.21 ± 3.33	0.8279
13D02029	8.2 %	✓	80.61 ± 0.81	313.03 ± 3.75	0.7999
13D02030	9.2 %	✓	69.88 ± 0.73	311.07 ± 3.90	0.7912
13D02032	10.2 %	✓	64.93 ± 0.76	309.42 ± 4.40	0.7743
13D02033	11.2 %	✓	60.45 ± 0.87	310.74 ± 5.57	0.7549
13D02034	12.5 %	✓	52.91 ± 0.67	306.15 ± 4.72	0.7552
13D02036	14.0 %	✓	53.11 ± 1.30	307.19 ± 9.70	0.7077
13D02037	16.0 %	✓	46.97 ± 1.08	304.85 ± 8.96	0.6990
13D02038	18.0 %	✓	39.74 ± 0.80	301.43 ± 7.52	0.6860

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	295.49 ± 2.73	0.22116 ± 0.04351	707.2 ± 139.1	2.26
Error Chron	± 0.92%	± 19.67%	± 19.67%	0%
			Full External Error ± 140.0	
			Analytical Error ± 139.1	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.000000104520
	Error Magnification	1.5046	Number of Iterations	4
	Number of Data Points	16	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02018	2.0 %	✓	0.0471566 ± 0.0004872	0.00336930 ± 0.00003734	0.3627
13D02020	2.6 %	✓	0.0573618 ± 0.0002729	0.00334497 ± 0.00002493	0.3007
13D02021	3.2 %	✓	0.0976689 ± 0.0003837	0.00329303 ± 0.00002453	0.3493
13D02022	3.8 %	✓	0.1705475 ± 0.0006396	0.00326025 ± 0.00002485	0.3930
13D02024	4.4 %	✓	0.2796258 ± 0.0016001	0.00321169 ± 0.00003273	0.5114
13D02025	5.2 %	✓	0.3026373 ± 0.0019337	0.00317075 ± 0.00003519	0.5329
13D02026	6.2 %	✓	0.2712104 ± 0.0012153	0.00312010 ± 0.00002746	0.4469
13D02028	7.2 %	✓	0.2940530 ± 0.0017538	0.00319275 ± 0.00003391	0.5151
13D02029	8.2 %	✓	0.2575041 ± 0.0018538	0.00319456 ± 0.00003826	0.5530
13D02030	9.2 %	✓	0.2246387 ± 0.0017246	0.00321472 ± 0.00004026	0.5571
13D02032	10.2 %	✓	0.2098479 ± 0.0018934	0.00323183 ± 0.00004597	0.5767
13D02033	11.2 %	✓	0.1945245 ± 0.0022941	0.00321813 ± 0.00005770	0.5950
13D02034	12.5 %	✓	0.1728106 ± 0.0017530	0.00326642 ± 0.00005032	0.5809
13D02036	14.0 %	✓	0.1728836 ± 0.0038764	0.00325535 ± 0.00010283	0.6349
13D02037	16.0 %	✓	0.1540695 ± 0.0032630	0.00328030 ± 0.00009646	0.6271
13D02038	18.0 %	✓	0.1318452 ± 0.0024246	0.00331749 ± 0.00008279	0.6099

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	295.46 ± 2.75	0.22268 ± 0.04107	712.0 ± 131.3	2.30
Error Chron	± 0.93%	± 18.44%	± 18.44%	0%
			Full External Error ± 132.3	
			Analytical Error ± 131.3	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.0001055787
	Error Magnification	1.5171	Number of Iterations	4
	Number of Data Points	16	Calculated Line	Weighted York-2
	Spreading Factor	5.7%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02018	2.0 %	✓	1.616961	0.449	25.1151	1.859	1.864040	2.671	22.5518	0.403	477.8962	0.322	0.09271 ± 0.23432	296.5 ± 749.2	0.44	1.53	0.386 ± 0.015
13D02020	2.6 %	✓	3.298679	0.333	61.6005	0.828	4.292911	1.210	56.3212	0.173	981.1935	0.163	0.20153 ± 0.12874	644.4 ± 411.6	1.16	3.81	0.393 ± 0.007
13D02021	3.2 %	✓	3.336268	0.334	105.4739	0.565	6.491002	0.782	98.1713	0.114	1004.5159	0.160	0.27551 ± 0.07461	880.9 ± 238.5	2.69	6.65	0.400 ± 0.005
13D02022	3.8 %	✓	3.153537	0.337	169.5823	0.448	8.674738	0.597	162.6792	0.084	953.3598	0.168	0.21458 ± 0.04337	686.1 ± 138.7	3.66	11.02	0.412 ± 0.004
13D02024	4.4 %	✓	1.867125	0.419	176.0658	0.448	7.142751	0.719	158.5556	0.085	566.7639	0.273	0.18219 ± 0.03514	582.6 ± 112.3	5.09	10.74	0.387 ± 0.004
13D02025	5.2 %	✓	1.637783	0.448	177.6871	0.444	6.536740	0.774	151.8865	0.087	501.6345	0.307	0.20831 ± 0.03509	666.1 ± 112.2	6.30	10.29	0.367 ± 0.003
13D02026	6.2 %	✓	2.391438	0.377	229.5599	0.417	8.452940	0.625	202.6707	0.078	746.9171	0.210	0.28763 ± 0.03052	919.6 ± 97.6	7.80	13.73	0.379 ± 0.003
13D02028	7.2 %	✓	1.775371	0.435	179.6881	0.444	7.330324	0.704	159.1789	0.086	541.0767	0.286	0.19228 ± 0.03468	614.8 ± 110.9	5.65	10.78	0.381 ± 0.003
13D02029	8.2 %	✓	1.467102	0.474	169.8603	0.449	5.234047	0.957	114.7060	0.102	445.1247	0.345	0.21750 ± 0.04479	695.4 ± 143.2	5.60	7.77	0.290 ± 0.003
13D02030	9.2 %	✓	1.405089	0.487	215.6356	0.420	3.709176	1.353	94.3228	0.116	419.3360	0.366	0.22281 ± 0.05394	712.4 ± 172.4	5.00	6.38	0.188 ± 0.002
13D02032	10.2 %	✓	1.211675	0.537	234.9374	0.411	2.520737	1.959	74.7903	0.136	355.7245	0.430	0.21441 ± 0.06586	685.6 ± 210.6	4.50	5.06	0.137 ± 0.001
13D02033	11.2 %	✓	0.921566	0.664	175.5926	0.450	1.720607	2.856	53.0115	0.182	271.9642	0.561	0.25212 ± 0.08945	806.1 ± 285.9	4.90	3.59	0.130 ± 0.001
13D02034	12.5 %	✓	1.108665	0.571	231.8159	0.413	1.599942	3.154	55.5654	0.174	320.6924	0.476	0.20122 ± 0.08725	643.4 ± 278.9	3.48	3.76	0.103 ± 0.001
13D02036	14.0 %	✓	0.488444	1.118	82.8615	0.647	0.743176	6.677	24.8306	0.363	143.3286	1.060	0.22006 ± 0.17893	703.6 ± 572.0	3.80	1.68	0.129 ± 0.002
13D02037	16.0 %	✓	0.529933	1.036	96.0709	0.590	0.675444	7.334	23.7608	0.380	153.8258	0.988	0.19907 ± 0.18767	636.5 ± 600.0	3.07	1.61	0.106 ± 0.001
13D02038	18.0 %	✓	0.634131	0.880	117.6152	0.529	0.669935	7.269	24.0452	0.380	181.7979	0.836	0.14928 ± 0.18724	477.3 ± 598.7	1.97	1.62	0.088 ± 0.001
		Σ	26.843765	0.116	2449.1622	0.123	67.658512	0.299	1477.0478	0.031	8065.1518	0.077					

Information on Analysis and Constants Used in Calculations

Sample = HH-10
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00176852 ± 0.00000410
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 10.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.22183 ± 0.01932	709.3 ± 61.9	2.14	100.00	0.150 ± 0.045
Error Mean		± 8.71%	± 8.72%	1%	16	
			Full External Error ± 63.9	1.73	2σ Confidence Limit	
			Analytical Error ± 61.8	1.4631	Error Magnification	
Total Fusion Age		0.22014 ± 0.01505	703.9 ± 48.2		16	0.259 ± 0.001
		± 6.84%	± 6.85%			
			Full External Error ± 50.8			
			Analytical Error ± 48.1			
Normal Isochron	295.49 ± 2.73	0.22116 ± 0.04351	707.2 ± 139.1	2.26	100.00	
Error Chron	± 0.92%	± 19.67%	± 19.67%	0%	16	
			Full External Error ± 140.0	1.76	2σ Confidence Limit	
			Analytical Error ± 139.1	1.5046	Error Magnification	
				4	Number of Iterations	
				0.0000001045	Convergence	
Inverse Isochron	295.46 ± 2.75	0.22268 ± 0.04107	712.0 ± 131.3	2.30	100.00	
Error Chron	± 0.93%	± 18.44%	± 18.44%	0%	16	
			Full External Error ± 132.3	1.76	2σ Confidence Limit	
			Analytical Error ± 131.3	1.5171	Error Magnification	
				4	Number of Iterations	
				0.0001055787	Convergence	
				6%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02018	2.0 %	✓	1.610099	0.45	0.0000000	0.00	0.0066304	1.86	0.0002323	3.93	25.1151	1.86	0.3009274	0.45	0.0000000	0.00	0.256447	0.40	0.0034910	1.86	1.303175	4.04	22.5349	0.40	0.0169025	1.86	2.08928	126.37	475.7841	0.45	0.0000000	0.00	0.0227602	0.40
13D02020	2.6 %	✓	3.281876	0.34	0.0000000	0.00	0.0162625	0.83	0.0005403	1.95	61.6005	0.83	0.6133827	0.34	0.0000000	0.00	0.640464	0.17	0.0085625	0.83	3.030502	2.15	56.2798	0.17	0.0414571	0.83	11.34221	31.94	969.7945	0.34	0.0000000	0.00	0.0568426	0.17
13D02021	3.2 %	✓	3.307577	0.34	0.0000000	0.00	0.0278451	0.56	0.0008454	1.41	105.4739	0.56	0.6181862	0.34	0.0000000	0.00	1.116381	0.11	0.0146609	0.56	4.741774	1.69	98.1003	0.11	0.0709840	0.56	27.02779	13.54	977.3891	0.34	0.0000000	0.00	0.0990813	0.11
13D02022	3.8 %	✓	3.107658	0.34	0.0000000	0.00	0.0447697	0.45	0.0011091	1.24	169.5823	0.45	0.5808213	0.34	0.0000000	0.00	1.849991	0.08	0.0235719	0.45	6.220354	1.54	162.5651	0.08	0.1141289	0.45	34.88264	10.11	918.3129	0.34	0.0000000	0.00	0.1641908	0.08
13D02024	4.4 %	✓	1.819756	0.43	0.0000000	0.00	0.0464814	0.45	0.0008872	1.38	176.0658	0.45	0.3401124	0.43	0.0000000	0.00	1.803014	0.09	0.0244731	0.45	4.975152	1.66	158.4371	0.09	0.1184923	0.45	28.86603	9.64	537.7379	0.43	0.0000000	0.00	0.1600215	0.09
13D02025	5.2 %	✓	1.590073	0.46	0.0000000	0.00	0.0469094	0.44	0.0008004	1.46	177.6871	0.44	0.2971847	0.46	0.0000000	0.00	1.727108	0.09	0.0246985	0.44	4.487749	1.72	151.7669	0.09	0.1195834	0.44	31.61465	8.42	469.8666	0.46	0.0000000	0.00	0.1532846	0.09
13D02026	6.2 %	✓	2.329821	0.39	0.0000000	0.00	0.0606038	0.42	0.0010133	1.31	229.5599	0.42	0.4354435	0.39	0.0000000	0.00	2.304634	0.08	0.0319088	0.42	5.680953	1.60	202.5162	0.08	0.1544938	0.42	58.25048	5.30	688.4621	0.39	0.0000000	0.00	0.2045414	0.08
13D02028	7.2 %	✓	1.727010	0.45	0.0000000	0.00	0.0474377	0.44	0.0009227	1.36	179.6881	0.44	0.3227783	0.45	0.0000000	0.00	1.810080	0.09	0.0249767	0.44	5.172489	1.64	159.0580	0.09	0.1209301	0.44	30.58446	9.02	510.3316	0.45	0.0000000	0.00	0.1606486	0.09
13D02029	8.2 %	✓	1.421609	0.49	0.0000000	0.00	0.0448431	0.45	0.0006495	1.66	169.8603	0.45	0.2656988	0.49	0.0000000	0.00	1.304053	0.10	0.0236106	0.45	3.640685	1.89	114.5917	0.10	0.1143160	0.45	24.92343	10.30	420.0856	0.49	0.0000000	0.00	0.1157376	0.10
13D02030	9.2 %	✓	1.347741	0.51	0.0000000	0.00	0.0569278	0.42	0.0004203	2.32	215.6356	0.42	0.2518928	0.51	0.0000000	0.00	1.071742	0.12	0.0299733	0.42	2.355568	2.50	94.1777	0.12	0.1451227	0.42	20.98338	12.10	398.2575	0.51	0.0000000	0.00	0.0951195	0.12
13D02032	10.2 %	✓	1.149397	0.57	0.0000000	0.00	0.0620235	0.41	0.0002541	3.59	234.9374	0.41	0.2148223	0.57	0.0000000	0.00	0.849314	0.14	0.0326563	0.41	1.423944	3.71	74.6322	0.14	0.1581129	0.41	16.00222	15.36	339.6469	0.57	0.0000000	0.00	0.0753785	0.14
13D02033	11.2 %	✓	0.875044	0.70	0.0000000	0.00	0.0463565	0.45	0.0001661	5.36	175.5926	0.45	0.1635457	0.70	0.0000000	0.00	0.601926	0.18	0.0244074	0.45	0.930729	5.44	52.8933	0.18	0.1181739	0.45	13.33538	17.74	258.5754	0.70	0.0000000	0.00	0.0534222	0.18
13D02034	12.5 %	✓	1.047333	0.61	0.0000000	0.00	0.0611994	0.41	0.0001323	6.87	231.8159	0.41	0.1957466	0.61	0.0000000	0.00	0.630559	0.17	0.0322224	0.41	0.741414	6.93	55.4094	0.17	0.1560121	0.41	11.14947	21.68	309.4869	0.61	0.0000000	0.00	0.0559635	0.17
13D02036	14.0 %	✓	0.466503	1.17	0.0000000	0.00	0.0218754	0.65	0.0000647	13.72	82.8615	0.65	0.0871895	1.17	0.0000000	0.00	0.281938	0.36	0.0115178	0.65	0.362532	13.76	24.7748	0.36	0.0557658	0.65	5.45185	40.65	137.8518	1.17	0.0000000	0.00	0.0250226	0.36
13D02037	16.0 %	✓	0.504517	1.09	0.0000000	0.00	0.0253627	0.59	0.0000532	16.65	96.0709	0.59	0.0942942	1.09	0.0000000	0.00	0.269662	0.38	0.0133539	0.59	0.298134	16.68	23.6962	0.38	0.0646557	0.59	4.71714	47.14	149.0847	1.09	0.0000000	0.00	0.0239331	0.38
13D02038	18.0 %	✓	0.603032	0.93	0.0000000	0.00	0.0310504	0.53	0.0000479	18.19	117.6152	0.53	0.1127067	0.93	0.0000000	0.00	0.272733	0.38	0.0163485	0.53	0.268147	18.22	23.9660	0.38	0.0791551	0.53	3.57766	62.71	178.1960	0.93	0.0000000	0.00	0.0242057	0.38
		Σ	26.189048	0.12	0.0000000	0.00	0.6465788	0.12	0.0081388	0.53	2449.1622	0.12	4.8947330	0.12	0.0000000	0.00	16.790047	0.03	0.3404336	0.12	45.633299	0.60	1475.3995	0.03	1.6482862	0.12	324.79808	3.42	7738.8636	0.12	0.0000000	0.00	1.4901535	0.03
		Σ							26.843765	0.12	2449.1622	0.12									67.658512	0.40			1477.0478	0.03							8065.1518	0.18

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02018	2.0 %	✓	21.191072	0.109409	1.113666	0.021182	0.071700	0.000433	109.762	8.762517	1.00077566	2.294E-11
13D02020	2.6 %	✓	17.421377	0.041431	1.093735	0.009247	0.058569	0.000220	109.779	8.765522	1.00077578	4.710E-11
13D02021	3.2 %	✓	10.232278	0.020095	1.074387	0.006192	0.033984	0.000120	109.787	8.766965	1.00077584	4.822E-11
13D02022	3.8 %	✓	5.860365	0.010986	1.042434	0.004756	0.019385	0.000067	109.797	8.768528	1.00077591	4.576E-11
13D02024	4.4 %	✓	3.574544	0.010224	1.110436	0.005061	0.011776	0.000050	109.814	8.771536	1.00077603	2.720E-11
13D02025	5.2 %	✓	3.302693	0.010548	1.169868	0.005289	0.010783	0.000049	109.822	8.772980	1.00077609	2.408E-11
13D02026	6.2 %	✓	3.685373	0.008255	1.132674	0.004811	0.011800	0.000045	109.831	8.774544	1.00077615	3.585E-11
13D02028	7.2 %	✓	3.399173	0.010133	1.128844	0.005106	0.011153	0.000049	109.848	8.777433	1.00077627	2.597E-11
13D02029	8.2 %	✓	3.880572	0.013964	1.480832	0.006823	0.012790	0.000062	109.857	8.778999	1.00077633	2.137E-11
13D02030	9.2 %	✓	4.445752	0.017060	2.286143	0.009960	0.014897	0.000075	109.865	8.780444	1.00077639	2.013E-11
13D02032	10.2 %	✓	4.756291	0.021449	3.141281	0.013588	0.016201	0.000090	109.883	8.783455	1.00077652	1.707E-11
13D02033	11.2 %	✓	5.130289	0.030239	3.312352	0.016080	0.017384	0.000120	109.892	8.785022	1.00077658	1.305E-11
13D02034	12.5 %	✓	5.771441	0.029258	4.171947	0.018691	0.019952	0.000119	109.900	8.786468	1.00077664	1.539E-11
13D02036	14.0 %	✓	5.772257	0.064688	3.337072	0.024777	0.019671	0.000231	109.917	8.789481	1.00077676	6.880E-12
13D02037	16.0 %	✓	6.473924	0.068521	4.043247	0.028355	0.022303	0.000246	109.926	8.790928	1.00077682	7.384E-12
13D02038	18.0 %	✓	7.560688	0.069473	4.891432	0.031888	0.026372	0.000253	109.935	8.792496	1.00077688	8.726E-12

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02018	2.0 %	0.1118539	0.0048129	0.0422115	0.0397558	0.0098226	0.0412669	0.2954359	0.0844329	34.486445	1.516541
13D02020	2.6 %	0.1075642	0.0048129	0.0423394	0.0397558	0.0103616	0.0412669	0.2890120	0.0844329	33.188573	1.516541
13D02021	3.2 %	0.1055400	0.0048129	0.0424008	0.0397558	0.0106203	0.0412669	0.2859285	0.0844329	32.571583	1.516541
13D02022	3.8 %	0.1033797	0.0048129	0.0424673	0.0397558	0.0109006	0.0412669	0.2825881	0.0844329	31.909495	1.516541
13D02024	4.4 %	0.0993397	0.0048129	0.0425952	0.0397558	0.0114396	0.0412669	0.2761642	0.0844329	30.660183	1.516541
13D02025	5.2 %	0.0974624	0.0048129	0.0426566	0.0397558	0.0116984	0.0412669	0.2730808	0.0844329	30.074182	1.516541
13D02026	6.2 %	0.0954794	0.0048129	0.0427231	0.0397558	0.0119786	0.0412669	0.2697404	0.0844329	29.451114	1.516541
13D02028	7.2 %	0.0919713	0.0048129	0.0428458	0.0397558	0.0124961	0.0412669	0.2635734	0.0844329	28.337537	1.516541
13D02029	8.2 %	0.0901608	0.0048129	0.0429123	0.0397558	0.0127764	0.0412669	0.2602330	0.0844329	27.756667	1.516541
13D02030	9.2 %	0.0885492	0.0048129	0.0429737	0.0397558	0.0130351	0.0412669	0.2571496	0.0844329	27.235839	1.516541
13D02032	10.2 %	0.0853865	0.0048129	0.0431016	0.0397558	0.0135741	0.0412669	0.2507257	0.0844329	26.202493	1.516541
13D02033	11.2 %	0.0838508	0.0048129	0.0431681	0.0397558	0.0138544	0.0412669	0.2473853	0.0844329	25.695014	1.516541
13D02034	12.5 %	0.0825019	0.0048129	0.0432295	0.0397558	0.0141131	0.0412669	0.2443018	0.0844329	25.246019	1.516541
13D02036	14.0 %	0.0799100	0.0048129	0.0433574	0.0397558	0.0146521	0.0412669	0.2378779	0.0844329	24.374438	1.516541
13D02037	16.0 %	0.0787732	0.0048129	0.0434188	0.0397558	0.0149108	0.0412669	0.2347945	0.0844329	23.988463	1.516541
13D02038	18.0 %	0.0776214	0.0048129	0.0434853	0.0397558	0.0151911	0.0412669	0.2314541	0.0844329	23.595280	1.516541

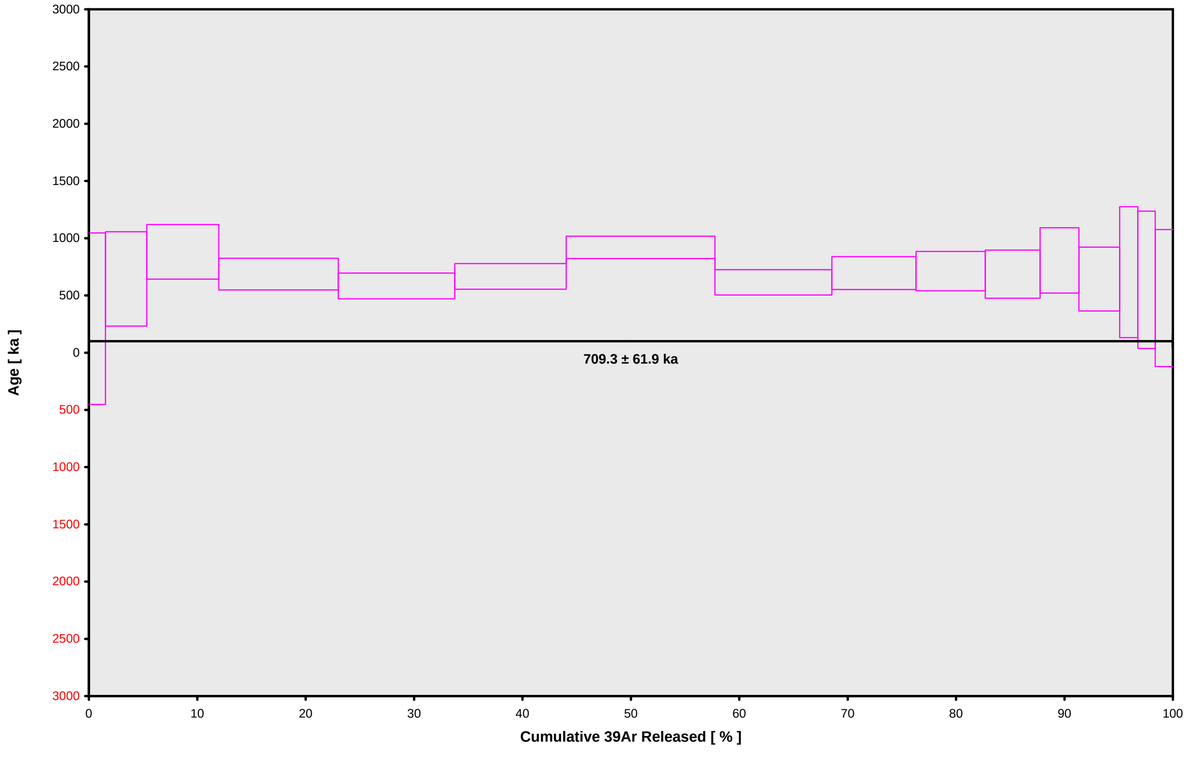
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02018	2.0 %	1.682860	0.002950	0.9384	EXP 150 of 150	2.8547	0.0324	0.2288	EXP 150 of 150	1.830905	0.026641	0.1800	EXP 150 of 150	22.6891	0.0289	0.9677	EXP 150 of 150	512.37779	0.06464	0.9996	EXP 150 of 150
13D02020	2.6 %	3.312492	0.004147	0.9685	EXP 149 of 150	6.9383	0.0323	0.5909	EXP 150 of 150	4.228862	0.029985	0.3769	EXP 150 of 150	56.2153	0.0315	0.9937	EXP 150 of 150	1014.37218	0.08879	0.9998	EXP 150 of 150
13D02021	3.2 %	3.346988	0.004277	0.9668	EXP 148 of 150	11.8478	0.0319	0.8051	EXP 150 of 150	6.399205	0.027320	0.6319	EXP 150 of 150	97.7688	0.0389	0.9969	EXP 150 of 150	1037.07736	0.08738	0.9998	EXP 150 of 150
13D02022	3.8 %	3.167290	0.004021	0.9685	EXP 150 of 150	19.0200	0.0298	0.9295	EXP 150 of 150	8.555351	0.028157	0.7359	EXP 150 of 150	161.8210	0.0332	0.9992	EXP 150 of 150	985.25962	0.08238	0.9998	EXP 150 of 150
13D02024	4.4 %	1.913399	0.003309	0.9342	EXP 150 of 150	19.7389	0.0324	0.9294	EXP 150 of 150	7.041984	0.028075	0.7203	EXP 150 of 150	157.7198	0.0349	0.9990	EXP 150 of 150	597.41838	0.06300	0.9997	EXP 150 of 150
13D02025	5.2 %	1.688698	0.003079	0.9294	EXP 150 of 150	19.9171	0.0309	0.9303	EXP 150 of 150	6.443293	0.027007	0.6986	EXP 150 of 150	151.0945	0.0341	0.9990	EXP 150 of 150	531.70364	0.07052	0.9996	EXP 150 of 150
13D02026	6.2 %	2.418951	0.003823	0.9463	EXP 150 of 150	25.7146	0.0341	0.9514	EXP 150 of 150	8.335249	0.030193	0.7250	EXP 150 of 150	201.5192	0.0426	0.9991	EXP 150 of 150	776.36069	0.07187	0.9998	EXP 150 of 150
13D02028	7.2 %	1.816885	0.003431	0.9241	EXP 150 of 150	20.1309	0.0320	0.9289	EXP 149 of 150	7.226154	0.028451	0.6964	EXP 150 of 150	158.3262	0.0384	0.9989	EXP 150 of 150	569.40876	0.06790	0.9997	EXP 150 of 150
13D02029	8.2 %	1.515566	0.002791	0.9253	EXP 150 of 150	19.0289	0.0302	0.9355	EXP 149 of 150	5.155813	0.026512	0.5763	EXP 150 of 150	114.1618	0.0351	0.9981	EXP 150 of 150	472.87690	0.06127	0.9996	EXP 150 of 150
13D02030	9.2 %	1.453705	0.002757	0.9229	EXP 150 of 150	24.1415	0.0309	0.9534	EXP 150 of 150	3.649754	0.027042	0.3847	EXP 150 of 150	93.9185	0.0343	0.9974	EXP 150 of 150	446.56760	0.05932	0.9996	EXP 150 of 150
13D02032	10.2 %	1.262624	0.002598	0.9068	EXP 150 of 150	26.2897	0.0299	0.9657	EXP 149 of 150	2.475639	0.025808	0.1459	EXP 150 of 150	74.5165	0.0296	0.9969	EXP 150 of 150	381.92337	0.05880	0.9994	EXP 150 of 150
13D02033	11.2 %	0.979225	0.002514	0.8680	EXP 150 of 150	19.6564	0.0333	0.9263	EXP 150 of 150	1.685235	0.025449	0.1653	EXP 149 of 150	52.8871	0.0307	0.9935	EXP 150 of 150	297.65646	0.05438	0.9991	EXP 150 of 150
13D02034	12.5 %	1.159657	0.002513	0.9033	EXP 150 of 150	25.9322	0.0309	0.9611	EXP 149 of 150	1.565819	0.027871	0.1028	EXP 150 of 150	55.4200	0.0292	0.9945	EXP 150 of 150	345.93515	0.05378	0.9994	EXP 150 of 150
13D02036	14.0 %	0.554472	0.001818	0.7718	EXP 150 of 150	9.2941	0.0295	0.7598	EXP 150 of 150	0.719230	0.026405	0.0340	EXP 150 of 150	24.8943	0.0257	0.9794	EXP 150 of 150	167.70163	0.03924	0.9984	EXP 150 of 150
13D02037	16.0 %	0.593645	0.001828	0.7918	EXP 150 of 150	10.7671	0.0298	0.8119	EXP 149 of 150	0.652087	0.026259	0.0331	EXP 150 of 150	23.8290	0.0261	0.9769	EXP 150 of 150	177.81267	0.03962	0.9985	EXP 150 of 150
13D02038	18.0 %	0.693729	0.001860	0.8537	EXP 150 of 150	13.1696	0.0310	0.8487	EXP 150 of 150	0.646366	0.024680	0.0292	EXP 149 of 150	24.1080	0.0300	0.9705	EXP 150 of 150	205.39135	0.03926	0.9990	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02018	2.0 %	HH-10	Groundmass	Harrat	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	15	53	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02020	2.6 %	HH-10	Groundmass	Harrat	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	16	18	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02021	3.2 %	HH-10	Groundmass	Harrat	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	16	30	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02022	3.8 %	HH-10	Groundmass	Harrat	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	16	43	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02024	4.4 %	HH-10	Groundmass	Harrat	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	17	8	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02025	5.2 %	HH-10	Groundmass	Harrat	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	17	20	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02026	6.2 %	HH-10	Groundmass	Harrat	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	17	33	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02028	7.2 %	HH-10	Groundmass	Harrat	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	17	57	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02029	8.2 %	HH-10	Groundmass	Harrat	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	18	10	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02030	9.2 %	HH-10	Groundmass	Harrat	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	18	22	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02032	10.2 %	HH-10	Groundmass	Harrat	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	18	47	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02033	11.2 %	HH-10	Groundmass	Harrat	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	19	0	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02034	12.5 %	HH-10	Groundmass	Harrat	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	19	12	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02036	14.0 %	HH-10	Groundmass	Harrat	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	19	37	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02037	16.0 %	HH-10	Groundmass	Harrat	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	19	49	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01
13D02038	18.0 %	HH-10	Groundmass	Harrat	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.88733	0.232	0.00176852	0.232	303.072	0.095	0.993745887	0.063	1	4.8E-14	9	OCT	2013	20	2	1	13-OSU-05			13.90	Harrat\Hutaymah (13-05)	13D02017	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02018	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02020	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02021	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02022	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02024	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02025	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02026	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02028	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02029	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02030	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02032	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02033	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02034	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02036	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02037	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02038	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02017.AGE >>> HH-10 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
709.3 ± 61.9
TOTAL FUSION
703.9 ± 48.2
NORMAL ISOCHRON
707.2 ± 139.1
INVERSE ISOCHRON
712.0 ± 131.3

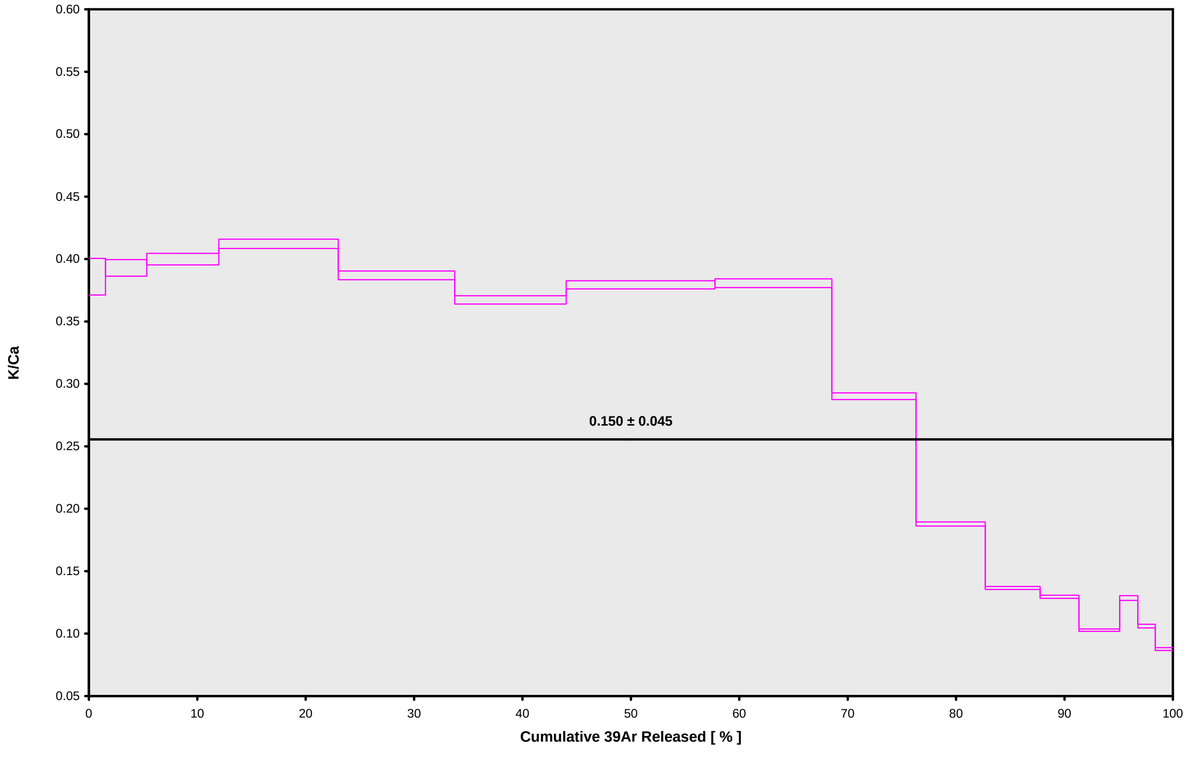
MSWD (PROBABILITY)
2.14 (1%)

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00176852 ± 0.00000410

13D02017.AGE >>> HH-10 >>> HARRAT | HUTAYMAH (13-05) PROJECT



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709.3 ± 61.9
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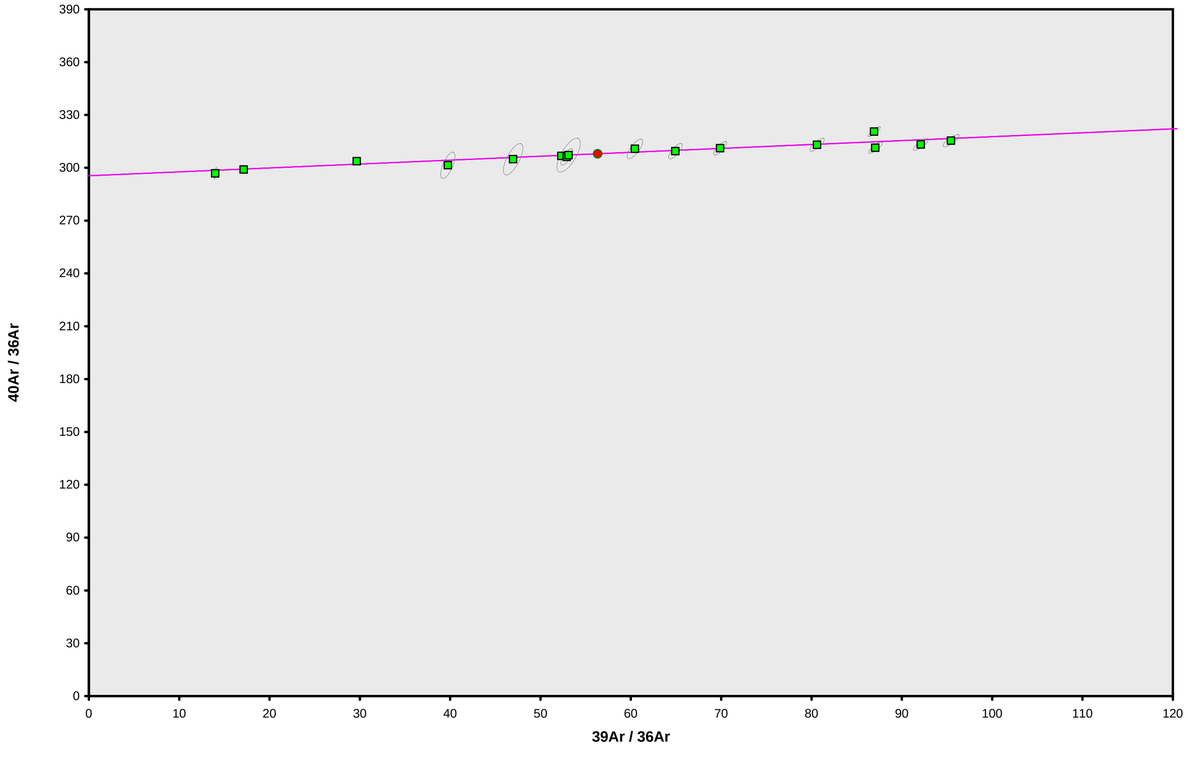
13D02017.AGE >>> HH-10 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
709.3 ± 61.9
TOTAL FUSION
703.9 ± 48.2
NORMAL ISOCHRON
707.2 ± 139.1
INVERSE ISOCHRON
712.0 ± 131.3

MSWD (PROBABILITY)
2.26 (0%)

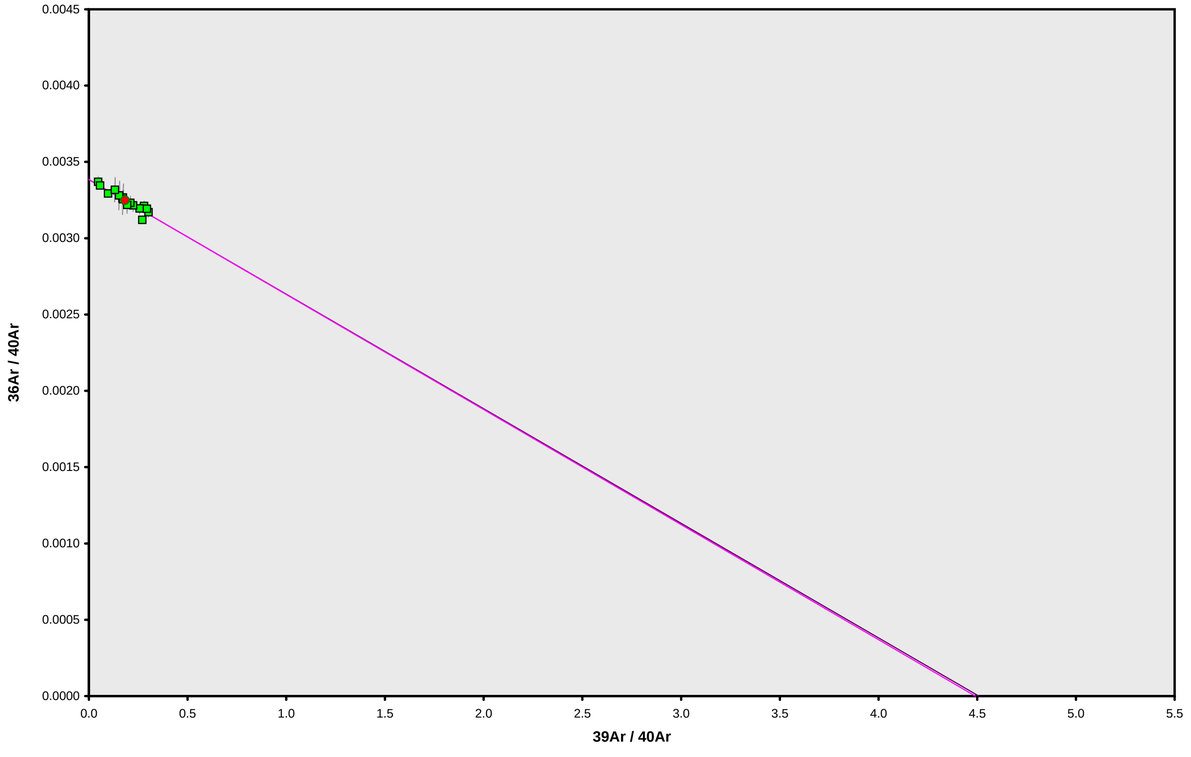
40AR/36AR INTERCEPT
295.5 ± 2.7

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00176852 ± 0.00000410

13D02017.AGE >>> HH-10 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
709.3 ± 61.9
TOTAL FUSION
703.9 ± 48.2
NORMAL ISOCHRON
707.2 ± 139.1
INVERSE ISOCHRON
712.0 ± 131.3

MSWD (PROBABILITY)
2.30 (0%)

SPREADING FACTOR
5.7%

40AR/36AR INTERCEPT
295.5 ± 2.8

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00176852 ± 0.00000410

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02064	2.0 %	✓	10.65797	18.8599	0.758502	18.3084	2.54266	427.4 ± 3240.0	0.08	1.22	0.417 ± 0.019
13D02066	2.6 %	✓	13.82574	46.0411	1.450257	37.9123	5.15055	418.1 ± 1961.5	0.13	2.53	0.354 ± 0.007
13D02067	3.2 %	✓	4.08331	35.7586	1.210582	32.1126	1.38022	132.2 ± 1013.6	0.11	2.15	0.386 ± 0.009
13D02068	3.8 %	✓	5.76429	46.7808	1.519633	43.4876	6.14961	435.2 ± 889.5	0.36	2.91	0.400 ± 0.008
13D02070	4.4 %	✓	7.49682	60.3402	2.092027	61.7857	6.76197	336.7 ± 735.4	0.30	4.13	0.440 ± 0.007
13D02071	5.2 %	✓	10.82031	89.0263	3.060229	99.1642	14.08418	437.0 ± 605.6	0.44	6.63	0.479 ± 0.006
13D02072	6.2 %	✓	13.83024	129.2952	4.814467	155.7726	22.74413	449.2 ± 476.0	0.55	10.41	0.518 ± 0.005
13D02074	7.2 %	✓	13.08859	145.0362	5.464401	183.2330	26.00938	436.7 ± 386.3	0.67	12.25	0.543 ± 0.005
13D02075	8.2 %	✓	11.03945	129.7716	4.395329	169.3377	5.51229	100.2 ± 361.8	0.17	11.32	0.561 ± 0.006
13D02076	9.2 %	✓	9.33794	130.9609	3.380383	157.6454	9.56304	186.6 ± 340.4	0.35	10.54	0.518 ± 0.005
13D02078	10.2 %	✓	7.69980	140.6934	2.328814	134.5156	10.20687	233.5 ± 345.7	0.45	8.99	0.411 ± 0.004
13D02079	11.2 %	✓	6.30920	149.5614	1.621551	109.3733	7.08737	199.4 ± 371.1	0.38	7.31	0.314 ± 0.003
13D02080	12.5 %	✓	5.28651	140.1609	1.174789	90.3216	6.04206	205.8 ± 402.2	0.39	6.04	0.277 ± 0.003
13D02082	14.0 %	✓	5.30818	237.3508	1.109618	93.8244	14.11458	462.8 ± 388.5	0.89	6.27	0.170 ± 0.001
13D02083	16.0 %	✓	3.54691	153.8231	0.741650	62.3573	3.75196	185.1 ± 485.9	0.36	4.17	0.174 ± 0.002
13D02084	18.0 %	✓	2.72933	131.1493	0.480774	46.8186	6.04630	397.3 ± 595.9	0.74	3.13	0.154 ± 0.002
		Σ	130.82460	1784.6097	35.603006	1495.9703	119.46152				

Information on Analysis
Sample = HH-1
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00170152 ± 0.00000379
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.08432 ± 0.03884 (± 46.06%)	259.4 ± 119.5 (± 46.06%)	0.51	100.00	0.243 ± 0.064
		Full External Error ± 119.6	94%	16	
		Analytical Error ± 119.5	1.73	2σ Confidence Limit	
			1.0000	Error Magnification	
Total Fusion Age	0.07986 ± 0.04483 (± 56.14%)	245.7 ± 137.9 (± 56.13%)		16	0.360 ± 0.001
		Full External Error ± 138.0			
		Analytical Error ± 137.9			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02064	2.0 %	✓	1.72 ± 0.03	295.26 ± 1.81	0.3370
13D02066	2.6 %	✓	2.74 ± 0.03	295.13 ± 1.75	0.5828
13D02067	3.2 %	✓	7.86 ± 0.09	295.84 ± 2.59	0.5742
13D02068	3.8 %	✓	7.54 ± 0.07	294.43 ± 2.17	0.6473
13D02070	4.4 %	✓	8.24 ± 0.06	296.40 ± 1.98	0.7388
13D02071	5.2 %	✓	9.16 ± 0.06	296.80 ± 1.81	0.8389
13D02072	6.2 %	✓	11.26 ± 0.07	297.14 ± 1.75	0.8961
13D02074	7.2 %	✓	14.00 ± 0.08	297.49 ± 1.77	0.9065
13D02075	8.2 %	✓	15.34 ± 0.09	296.00 ± 1.81	0.8958
13D02076	9.2 %	✓	16.88 ± 0.11	296.52 ± 1.87	0.8860
13D02078	10.2 %	✓	17.47 ± 0.12	296.83 ± 1.97	0.8654
13D02079	11.2 %	✓	17.34 ± 0.12	296.62 ± 2.10	0.8361
13D02080	12.5 %	✓	17.09 ± 0.13	296.64 ± 2.24	0.8037
13D02082	14.0 %	✓	17.68 ± 0.13	298.16 ± 2.25	0.8092
13D02083	16.0 %	✓	17.58 ± 0.16	296.56 ± 2.78	0.7411
13D02084	18.0 %	✓	17.15 ± 0.19	297.72 ± 3.34	0.6977

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	295.07 ± 1.20 ± 0.41%	0.11402 ± 0.09223 ± 80.88%	350.8 ± 283.7 ± 80.88% Full External Error ± 283.8 Analytical Error ± 283.7	0.51 93%

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.000000009508
	Error Magnification	1.0000	Number of Iterations	3
	Number of Data Points	16	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02064	2.0 %	✓	0.0058179 ± 0.0000897	0.00338683 ± 0.00002073	0.0393
13D02066	2.6 %	✓	0.0092914 ± 0.0000709	0.00338837 ± 0.00002004	0.0588
13D02067	3.2 %	✓	0.0265833 ± 0.0002593	0.00338023 ± 0.00002963	0.2133
13D02068	3.8 %	✓	0.0256231 ± 0.0001858	0.00339636 ± 0.00002508	0.1834
13D02070	4.4 %	✓	0.0278055 ± 0.0001477	0.00337380 ± 0.00002249	0.1751
13D02071	5.2 %	✓	0.0308780 ± 0.0001120	0.00336925 ± 0.00002056	0.1608
13D02072	6.2 %	✓	0.0379047 ± 0.0001037	0.00336537 ± 0.00001984	0.1622
13D02074	7.2 %	✓	0.0470590 ± 0.0001221	0.00336149 ± 0.00001999	0.1801
13D02075	8.2 %	✓	0.0518222 ± 0.0001453	0.00337839 ± 0.00002062	0.2030
13D02076	9.2 %	✓	0.0569338 ± 0.0001722	0.00337241 ± 0.00002131	0.2291
13D02078	10.2 %	✓	0.0588561 ± 0.0002028	0.00336898 ± 0.00002237	0.2575
13D02079	11.2 %	✓	0.0584429 ± 0.0002366	0.00337128 ± 0.00002384	0.2872
13D02080	12.5 %	✓	0.0575955 ± 0.0002725	0.00337106 ± 0.00002546	0.3141
13D02082	14.0 %	✓	0.0592819 ± 0.0002756	0.00335391 ± 0.00002529	0.3146
13D02083	16.0 %	✓	0.0592827 ± 0.0003984	0.00337202 ± 0.00003166	0.3729
13D02084	18.0 %	✓	0.0576183 ± 0.0005010	0.00335891 ± 0.00003768	0.3960

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	295.07 ± 1.20	0.11410 ± 0.06269	351.1 ± 192.9	0.51
Clustered Points	± 0.41%	± 54.94%	± 54.94%	93%
			Full External Error ± 193.0	
			Analytical Error ± 192.8	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.0007266151
	Error Magnification	1.0000	Number of Iterations	3
	Number of Data Points	16	Calculated Line	Weighted York-2
	Spreading Factor	0.6%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02064	2.0 %	✓	10.66308	0.290	18.8599	2.111	2.961447	1.298	18.3211	0.764	3146.905	0.096	0.13888 ± 1.05276	427.4 ± 3240.0	0.08	1.22	0.417 ± 0.019
13D02066	2.6 %	✓	13.83816	0.284	46.0411	0.899	4.472130	0.883	37.9433	0.373	4080.394	0.081	0.13585 ± 0.63735	418.1 ± 1961.5	0.13	2.53	0.354 ± 0.007
13D02067	3.2 %	✓	4.09297	0.382	35.7586	1.116	2.344166	1.792	32.1367	0.438	1208.032	0.214	0.04298 ± 0.32943	132.2 ± 1013.6	0.11	2.15	0.386 ± 0.009
13D02068	3.8 %	✓	5.77692	0.334	46.7808	0.920	3.098371	1.303	43.5191	0.327	1697.243	0.157	0.14141 ± 0.28902	435.2 ± 889.5	0.36	2.91	0.400 ± 0.008
13D02070	4.4 %	✓	7.51312	0.308	60.3402	0.751	4.204691	0.951	61.8263	0.234	2222.134	0.125	0.10944 ± 0.23906	336.7 ± 735.4	0.30	4.13	0.440 ± 0.007
13D02071	5.2 %	✓	10.84437	0.290	89.0263	0.571	6.223409	0.681	99.2241	0.155	3211.587	0.094	0.14203 ± 0.19687	437.0 ± 605.6	0.44	6.63	0.479 ± 0.006
13D02072	6.2 %	✓	13.86524	0.283	129.2952	0.479	9.190003	0.465	155.8596	0.110	4109.738	0.081	0.14601 ± 0.15475	449.2 ± 476.0	0.55	10.41	0.518 ± 0.005
13D02074	7.2 %	✓	13.12786	0.284	145.0362	0.455	10.016011	0.412	183.3306	0.099	3893.873	0.083	0.14195 ± 0.12556	436.7 ± 386.3	0.67	12.25	0.543 ± 0.005
13D02075	8.2 %	✓	11.07449	0.290	129.7716	0.480	8.403702	0.506	169.4250	0.105	3267.840	0.093	0.03255 ± 0.11758	100.2 ± 361.8	0.17	11.32	0.561 ± 0.006
13D02076	9.2 %	✓	9.37312	0.297	130.9609	0.476	6.937853	0.593	157.7335	0.109	2769.085	0.105	0.06066 ± 0.11065	186.6 ± 340.4	0.35	10.54	0.518 ± 0.005
13D02078	10.2 %	✓	7.73736	0.307	140.6934	0.462	5.318251	0.767	134.6103	0.122	2285.634	0.121	0.07588 ± 0.11236	233.5 ± 345.7	0.45	8.99	0.411 ± 0.004
13D02079	11.2 %	✓	6.34897	0.321	149.5614	0.456	4.066197	0.966	109.4739	0.143	1871.565	0.143	0.06480 ± 0.12062	199.4 ± 371.1	0.38	7.31	0.314 ± 0.003
13D02080	12.5 %	✓	5.32372	0.336	140.1609	0.457	3.210179	1.273	90.4159	0.167	1568.297	0.168	0.06689 ± 0.13074	205.8 ± 402.2	0.39	6.04	0.277 ± 0.003
13D02082	14.0 %	✓	5.37104	0.335	237.3508	0.404	3.202429	1.253	93.9841	0.162	1582.775	0.166	0.15044 ± 0.12630	462.8 ± 388.5	0.89	6.27	0.170 ± 0.001
13D02083	16.0 %	✓	3.58765	0.397	153.8231	0.449	2.135575	1.834	62.4608	0.232	1051.926	0.242	0.06017 ± 0.15795	185.1 ± 485.9	0.36	4.17	0.174 ± 0.002
13D02084	18.0 %	✓	2.76404	0.461	131.1493	0.476	1.541912	2.514	46.9069	0.303	812.612	0.311	0.12914 ± 0.19372	397.3 ± 595.9	0.74	3.13	0.154 ± 0.002
		Σ	131.30213	0.081	1784.6097	0.135	77.326326	0.210	1497.1713	0.042	38779.641	0.030					

Information on Analysis and Constants Used in Calculations

Sample = HH-1
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00170152 ± 0.00000379
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.08432 ± 0.03884 ± 46.06%	259.4 ± 119.5 ± 46.06%	0.51	100.00	0.243 ± 0.064
				94%	16	
			Full External Error ± 119.6	1.73	2σ Confidence Limit	
			Analytical Error ± 119.5	1.0000	Error Magnification	
Total Fusion Age		0.07986 ± 0.04483 ± 56.14%	245.7 ± 137.9 ± 56.13%		16	0.360 ± 0.001
			Full External Error ± 138.0			
			Analytical Error ± 137.9			
Normal Isochron	295.07 ± 1.20 ± 0.41%	0.11402 ± 0.09223 ± 80.88%	350.8 ± 283.7 ± 80.88%	0.51	100.00	
				93%	16	
			Full External Error ± 283.8	1.76	2σ Confidence Limit	
			Analytical Error ± 283.7	1.0000	Error Magnification	
				3	Number of Iterations	
				0.0000000095	Convergence	
Inverse Isochron	295.07 ± 1.20 ± 0.41%	0.11410 ± 0.06269 ± 54.94%	351.1 ± 192.9 ± 54.94%	0.51	100.00	
Clustered Points				93%	16	
			Full External Error ± 193.0	1.76	2σ Confidence Limit	
			Analytical Error ± 192.8	1.0000	Error Magnification	
				3	Number of Iterations	
				0.0007266151	Convergence	
				1%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02064	2.0 %	✓	10.65797	0.29	0.0000000	0.00	0.0049790	2.11	0.0001361	5.21	18.8599	2.11	1.991974	0.29	0.0000000	0.00	0.208349	0.76	0.0026215	2.11	0.758502	5.29	18.3084	0.76	0.0126927	2.11	2.54266	379.02	3149.429	0.29	0.0000000	0.00	0.0184915	0.76
13D02066	2.6 %	✓	13.82574	0.28	0.0000000	0.00	0.0121549	0.90	0.0002603	2.92	46.0411	0.90	2.584031	0.28	0.0000000	0.00	0.431442	0.37	0.0063997	0.90	1.450257	3.06	37.9123	0.37	0.0309857	0.90	5.15055	234.57	4085.507	0.28	0.0000000	0.00	0.0382915	0.37
13D02067	3.2 %	✓	4.08331	0.38	0.0000000	0.00	0.0094403	1.12	0.0002173	3.60	35.7586	1.12	0.763171	0.38	0.0000000	0.00	0.365442	0.44	0.0049704	1.12	1.210582	3.72	32.1126	0.44	0.0240655	1.12	1.38022	383.23	1206.619	0.38	0.0000000	0.00	0.0324337	0.44
13D02068	3.8 %	✓	5.76429	0.33	0.0000000	0.00	0.0123501	0.92	0.0002728	2.82	46.7808	0.92	1.077347	0.33	0.0000000	0.00	0.494889	0.33	0.0065025	0.92	1.519633	2.97	43.4876	0.33	0.0314835	0.92	6.14961	102.19	1703.349	0.33	0.0000000	0.00	0.0439225	0.33
13D02070	4.4 %	✓	7.49682	0.31	0.0000000	0.00	0.0159298	0.75	0.0003756	2.13	60.3402	0.75	1.401155	0.31	0.0000000	0.00	0.703122	0.23	0.0083873	0.75	2.092027	2.32	61.7857	0.23	0.0406089	0.75	6.76197	109.22	2215.309	0.31	0.0000000	0.00	0.0624036	0.23
13D02071	5.2 %	✓	10.82031	0.29	0.0000000	0.00	0.0235030	0.57	0.0005494	1.67	89.0263	0.57	2.022317	0.29	0.0000000	0.00	1.128489	0.15	0.0123747	0.57	3.060229	1.91	99.1642	0.15	0.0599147	0.57	14.08418	69.31	3197.403	0.29	0.0000000	0.00	0.1001558	0.15
13D02072	6.2 %	✓	13.83024	0.28	0.0000000	0.00	0.0341339	0.48	0.0008644	1.29	129.2952	0.48	2.584873	0.28	0.0000000	0.00	1.772692	0.11	0.0179720	0.48	4.814467	1.58	155.7726	0.11	0.0870157	0.48	22.74413	52.99	4086.837	0.28	0.0000000	0.00	0.1573303	0.11
13D02074	7.2 %	✓	13.08859	0.29	0.0000000	0.00	0.0382895	0.45	0.0009813	1.20	145.0362	0.45	2.446258	0.29	0.0000000	0.00	2.085192	0.10	0.0201600	0.45	5.464401	1.51	183.2330	0.10	0.0976093	0.45	26.00938	44.23	3867.679	0.29	0.0000000	0.00	0.1850654	0.10
13D02075	8.2 %	✓	11.03945	0.29	0.0000000	0.00	0.0342597	0.48	0.0007894	1.34	129.7716	0.48	2.063272	0.29	0.0000000	0.00	1.927063	0.10	0.0180382	0.48	4.395329	1.63	169.3377	0.10	0.0873363	0.48	5.51229	180.60	3262.156	0.29	0.0000000	0.00	0.1710311	0.10
13D02076	9.2 %	✓	9.33794	0.30	0.0000000	0.00	0.0345737	0.48	0.0006071	1.53	130.9609	0.48	1.745262	0.30	0.0000000	0.00	1.794005	0.11	0.0182036	0.48	3.380383	1.79	157.6454	0.11	0.0881367	0.48	9.56304	91.20	2759.362	0.30	0.0000000	0.00	0.1592218	0.11
13D02078	10.2 %	✓	7.69980	0.31	0.0000000	0.00	0.0371430	0.46	0.0004183	1.99	140.6934	0.46	1.439093	0.31	0.0000000	0.00	1.530787	0.12	0.0195564	0.46	2.328814	2.19	134.5156	0.12	0.0946866	0.46	10.20687	74.04	2275.291	0.31	0.0000000	0.00	0.1358607	0.12
13D02079	11.2 %	✓	6.30920	0.32	0.0000000	0.00	0.0394842	0.46	0.0002913	2.60	149.5614	0.46	1.179189	0.32	0.0000000	0.00	1.244668	0.14	0.0207890	0.46	1.621551	2.76	109.3733	0.14	0.1006548	0.46	7.08737	93.07	1864.367	0.32	0.0000000	0.00	0.1104670	0.14
13D02080	12.5 %	✓	5.28651	0.34	0.0000000	0.00	0.0370025	0.46	0.0002111	3.61	140.1609	0.46	0.988049	0.34	0.0000000	0.00	1.027859	0.17	0.0194824	0.46	1.174789	3.73	90.3216	0.17	0.0943283	0.46	6.04206	97.72	1562.164	0.34	0.0000000	0.00	0.0912248	0.17
13D02082	14.0 %	✓	5.30818	0.34	0.0000000	0.00	0.0626606	0.40	0.0001994	3.75	237.3508	0.40	0.992098	0.34	0.0000000	0.00	1.067721	0.16	0.0329918	0.40	1.109618	3.86	93.8244	0.16	0.1597371	0.40	14.11458	41.98	1568.566	0.34	0.0000000	0.00	0.0947626	0.16
13D02083	16.0 %	✓	3.54691	0.40	0.0000000	0.00	0.0406093	0.45	0.0001333	5.38	153.8231	0.45	0.662917	0.40	0.0000000	0.00	0.709626	0.23	0.0213814	0.45	0.741650	5.46	62.3573	0.23	0.1035229	0.45	3.75196	131.25	1048.111	0.40	0.0000000	0.00	0.0629809	0.23
13D02084	18.0 %	✓	2.72933	0.47	0.0000000	0.00	0.0346234	0.48	0.0000864	8.14	131.1493	0.48	0.510113	0.47	0.0000000	0.00	0.532796	0.30	0.0182298	0.48	0.480774	8.19	46.8186	0.30	0.0882635	0.48	6.04630	75.00	806.518	0.47	0.0000000	0.00	0.0472868	0.30
	Σ		130.82460	0.08	0.0000000	0.00	0.4711369	0.14	0.0063934	0.54	1784.6097	0.14	24.451117	0.08	0.0000000	0.00	17.024142	0.04	0.2480607	0.14	35.603006	0.60	1495.9703	0.04	1.2010423	0.14	119.46152	28.07	38658.669	0.08	0.0000000	0.00	1.5109300	0.04
	Σ								131.30213	0.08	1784.6097	0.14									77.326326	0.28			1497.1713	0.04							38779.641	0.12

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02064	2.0 %	✓	171.764257	1.323283	1.029412	0.023116	0.582012	0.004759	110.494	8.890120	1.00078083	1.511E-10
13D02066	2.6 %	✓	107.539177	0.410234	1.213418	0.011805	0.364706	0.001709	110.511	8.893169	1.00078095	1.959E-10
13D02067	3.2 %	✓	37.590416	0.183222	1.112702	0.013344	0.127361	0.000740	110.520	8.894755	1.00078102	5.799E-11
13D02068	3.8 %	✓	38.999999	0.141301	1.074950	0.010490	0.132745	0.000620	110.528	8.896219	1.00078108	8.147E-11
13D02070	4.4 %	✓	35.941538	0.095414	0.975962	0.007683	0.121520	0.000471	110.546	8.899270	1.00078120	1.067E-10
13D02071	5.2 %	✓	32.366999	0.058694	0.897225	0.005310	0.109292	0.000359	110.554	8.900735	1.00078126	1.542E-10
13D02072	6.2 %	✓	26.368207	0.036060	0.829562	0.004076	0.088960	0.000270	110.563	8.902323	1.00078132	1.973E-10
13D02074	7.2 %	✓	21.239621	0.027540	0.791118	0.003683	0.071608	0.000216	110.581	8.905376	1.00078144	1.869E-10
13D02075	8.2 %	✓	19.287820	0.027030	0.765953	0.003766	0.065365	0.000201	110.589	8.906842	1.00078150	1.569E-10
13D02076	9.2 %	✓	17.555460	0.026539	0.830266	0.004051	0.059424	0.000188	110.597	8.908308	1.00078156	1.329E-10
13D02078	10.2 %	✓	16.979642	0.029245	1.045190	0.004997	0.057480	0.000190	110.615	8.911363	1.00078168	1.097E-10
13D02079	11.2 %	✓	17.095989	0.034583	1.366183	0.006529	0.057995	0.000204	110.624	8.912952	1.00078175	8.984E-11
13D02080	12.5 %	✓	17.345371	0.041011	1.550181	0.007542	0.058880	0.000221	110.632	8.914420	1.00078181	7.528E-11
13D02082	14.0 %	✓	16.840882	0.039114	2.525435	0.010990	0.057148	0.000213	110.649	8.917477	1.00078193	7.597E-11
13D02083	16.0 %	✓	16.841373	0.056539	2.462712	0.012448	0.057438	0.000264	110.658	8.918945	1.00078199	5.049E-11
13D02084	18.0 %	✓	17.323944	0.075250	2.795952	0.015788	0.058926	0.000325	110.667	8.920536	1.00078205	3.901E-11

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02064	2.0 %	0.3526868	0.0093658	0.1981060	0.0304968	0.0162352	0.0278462	0.0730938	0.1354875	109.034769	2.484932
13D02066	2.6 %	0.3103946	0.0093658	0.1001147	0.0304968	0.0016617	0.0278462	0.1543252	0.1354875	95.701905	2.484932
13D02067	3.2 %	0.2897512	0.0093658	0.0644098	0.0304968	0.0047438	0.0278462	0.2570683	0.1354875	89.202560	2.484932
13D02068	3.8 %	0.2715147	0.0093658	0.0396172	0.0304968	0.0099444	0.0278462	0.3424861	0.1354875	83.466572	2.484932
13D02070	4.4 %	0.2360469	0.0093658	0.0097649	0.0304968	0.0185832	0.0278462	0.4913889	0.1354875	72.328769	2.484932
13D02071	5.2 %	0.2202345	0.0093658	0.0043101	0.0304968	0.0216758	0.0278462	0.5489177	0.1354875	67.372467	2.484932
13D02072	6.2 %	0.2039915	0.0093658	0.0037095	0.0304968	0.0242546	0.0278462	0.6010335	0.1354875	62.288497	2.484932
13D02074	7.2 %	0.1753482	0.0093658	0.0146026	0.0304968	0.0269588	0.0278462	0.6714200	0.1354875	53.345756	2.484932
13D02075	8.2 %	0.1628115	0.0093658	0.0238405	0.0304968	0.0272028	0.0278462	0.6912610	0.1354875	49.443084	2.484932
13D02076	9.2 %	0.1510609	0.0093658	0.0346481	0.0304968	0.0267632	0.0278462	0.7020570	0.1354875	45.793282	2.484932
13D02078	10.2 %	0.1291057	0.0093658	0.0588945	0.0304968	0.0236514	0.0278462	0.6954975	0.1354875	39.001701	2.484932
13D02079	11.2 %	0.1190374	0.0093658	0.0706225	0.0304968	0.0208606	0.0278462	0.6765717	0.1354875	35.903823	2.484932
13D02080	12.5 %	0.1105626	0.0093658	0.0798181	0.0304968	0.0175724	0.0278462	0.6496799	0.1354875	33.307651	2.484932
13D02082	14.0 %	0.0954318	0.0093658	0.0905705	0.0304968	0.0085260	0.0278462	0.5646041	0.1354875	28.711132	2.484932
13D02083	16.0 %	0.0893811	0.0093658	0.0901079	0.0304968	0.0031298	0.0278462	0.5098232	0.1354875	26.894645	2.484932
13D02084	18.0 %	0.0837133	0.0093658	0.0843033	0.0304968	0.0034877	0.0278462	0.4402702	0.1354875	25.212143	2.484932

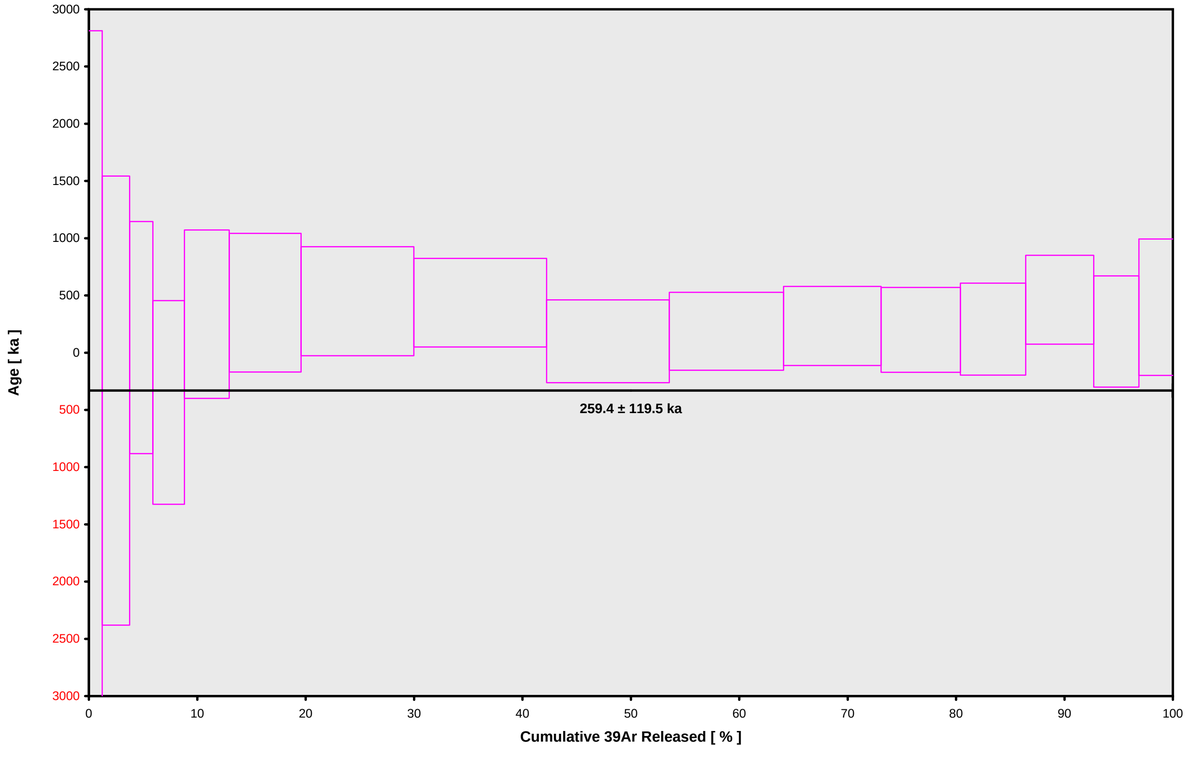
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02064	2.0 %	10.70387	0.00749	0.9902	EXP 150 of 150	2.2798	0.0307	0.1619	EXP 150 of 150	2.908157	0.025514	0.3430	EXP 150 of 150	18.1194	0.0292	0.9509	EXP 150 of 150	3255.61654	0.25211	0.9999	EXP 150 of 150
13D02066	2.6 %	13.74377	0.00957	0.9901	EXP 150 of 150	5.1802	0.0284	0.5656	EXP 150 of 150	4.414511	0.026712	0.4196	EXP 150 of 150	37.8313	0.0283	0.9891	EXP 149 of 150	4175.67692	0.21202	0.9999	EXP 150 of 150
13D02067	3.2 %	4.26300	0.00546	0.9656	EXP 150 of 150	4.0092	0.0283	0.4699	EXP 149 of 150	2.319578	0.030600	0.2005	EXP 150 of 150	32.1681	0.0282	0.9852	EXP 150 of 150	1297.10992	0.09807	0.9999	EXP 150 of 150
13D02068	3.8 %	5.87945	0.00622	0.9779	EXP 150 of 150	5.1996	0.0311	0.4944	EXP 150 of 150	3.069547	0.028258	0.3238	EXP 150 of 150	43.5560	0.0290	0.9915	EXP 150 of 150	1780.53542	0.12941	0.9999	EXP 150 of 150
13D02070	4.4 %	7.52940	0.00644	0.9851	EXP 150 of 150	6.6630	0.0313	0.5479	EXP 150 of 150	4.170663	0.027524	0.4597	EXP 149 of 150	61.8836	0.0298	0.9955	EXP 150 of 150	2294.23421	0.14018	0.9999	EXP 150 of 150
13D02071	5.2 %	10.74739	0.00760	0.9899	EXP 150 of 150	9.8190	0.0304	0.8115	EXP 150 of 150	6.167215	0.030274	0.5991	EXP 150 of 150	99.0764	0.0335	0.9978	EXP 150 of 150	3278.62932	0.16638	0.9999	EXP 150 of 150
13D02072	6.2 %	13.66366	0.00899	0.9911	EXP 150 of 150	14.2552	0.0317	0.8753	EXP 150 of 150	9.099268	0.029516	0.7626	EXP 150 of 150	155.3663	0.0373	0.9989	EXP 150 of 150	4171.60459	0.23300	0.9999	EXP 150 of 150
13D02074	7.2 %	12.91921	0.00891	0.9902	EXP 150 of 150	15.9957	0.0305	0.9050	EXP 150 of 150	9.917645	0.027077	0.8235	EXP 150 of 150	182.7149	0.0369	0.9992	EXP 150 of 150	3946.81903	0.20492	0.9999	EXP 150 of 150
13D02075	8.2 %	10.91337	0.00807	0.9890	EXP 150 of 150	14.3206	0.0324	0.8676	EXP 149 of 150	8.325754	0.029657	0.7387	EXP 150 of 150	168.9267	0.0396	0.9989	EXP 150 of 150	3316.94678	0.22517	0.9999	EXP 150 of 150
13D02076	9.2 %	9.25001	0.00758	0.9866	EXP 149 of 150	14.4601	0.0314	0.8733	EXP 150 of 150	6.877806	0.028265	0.6779	EXP 150 of 150	157.3281	0.0353	0.9990	EXP 150 of 150	2814.59333	0.15138	0.9999	EXP 150 of 150
13D02078	10.2 %	7.64015	0.00684	0.9841	EXP 150 of 150	15.5510	0.0313	0.8945	EXP 150 of 150	5.275358	0.028348	0.5071	EXP 150 of 150	134.3606	0.0366	0.9986	EXP 150 of 150	2324.40099	0.14292	0.9999	EXP 150 of 150
13D02079	11.2 %	6.28230	0.00596	0.9809	EXP 150 of 150	16.5363	0.0328	0.8975	EXP 150 of 150	4.036179	0.026493	0.5056	EXP 150 of 150	109.3818	0.0329	0.9982	EXP 150 of 150	1907.27648	0.12408	0.9999	EXP 150 of 150
13D02080	12.5 %	5.27856	0.00501	0.9817	EXP 150 of 150	15.5080	0.0292	0.9031	EXP 150 of 150	3.187585	0.028943	0.2823	EXP 150 of 150	90.4307	0.0305	0.9978	EXP 150 of 150	1601.44351	0.12027	0.9999	EXP 150 of 150
13D02082	14.0 %	5.30936	0.00494	0.9822	EXP 150 of 150	26.2080	0.0323	0.9573	EXP 150 of 150	3.170885	0.027913	0.3049	EXP 150 of 150	93.8888	0.0346	0.9974	EXP 150 of 150	1611.32384	0.11331	0.9999	EXP 150 of 150
13D02083	16.0 %	3.57209	0.00423	0.9715	EXP 150 of 150	17.0136	0.0317	0.9177	EXP 150 of 150	2.111984	0.026717	0.2349	EXP 150 of 150	62.5321	0.0295	0.9957	EXP 150 of 150	1078.71294	0.09269	0.9998	EXP 150 of 150
13D02084	18.0 %	2.76691	0.00379	0.9597	EXP 149 of 150	14.5107	0.0316	0.8762	EXP 150 of 150	1.519131	0.026185	0.0852	EXP 149 of 150	47.0178	0.0279	0.9932	EXP 150 of 150	837.74060	0.07873	0.9998	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02064	2.0 %	HH-1	Groundmass	Harrat	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	9	27	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02066	2.6 %	HH-1	Groundmass	Harrat	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	9	52	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02067	3.2 %	HH-1	Groundmass	Harrat	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	10	5	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02068	3.8 %	HH-1	Groundmass	Harrat	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	10	17	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02070	4.4 %	HH-1	Groundmass	Harrat	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	10	42	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02071	5.2 %	HH-1	Groundmass	Harrat	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	10	54	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02072	6.2 %	HH-1	Groundmass	Harrat	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	11	7	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02074	7.2 %	HH-1	Groundmass	Harrat	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	11	32	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02075	8.2 %	HH-1	Groundmass	Harrat	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	11	44	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02076	9.2 %	HH-1	Groundmass	Harrat	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	11	56	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02078	10.2 %	HH-1	Groundmass	Harrat	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	12	21	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02079	11.2 %	HH-1	Groundmass	Harrat	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	12	34	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02080	12.5 %	HH-1	Groundmass	Harrat	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	12	46	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02082	14.0 %	HH-1	Groundmass	Harrat	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	13	11	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02083	16.0 %	HH-1	Groundmass	Harrat	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	13	23	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01
13D02084	18.0 %	HH-1	Groundmass	Harrat	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.23725	0.223	0.00170152	0.223	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	13	36	1	13-OSU-05			34.10	Harrat\Hutaymah (13-05)	13D02063	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02064	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02066	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02067	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02068	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02070	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02071	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02072	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02074	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02075	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02076	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02078	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02079	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02080	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02082	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02083	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02084	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02063.AGE >>> HH-1 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
259.4 ± 119.5
TOTAL FUSION
245.7 ± 137.9
NORMAL ISOCHRON
350.8 ± 283.7
INVERSE ISOCHRON
351.1 ± 192.9

MSWD (PROBABILITY)
0.51 (94%)

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00170152 ± 0.00000379

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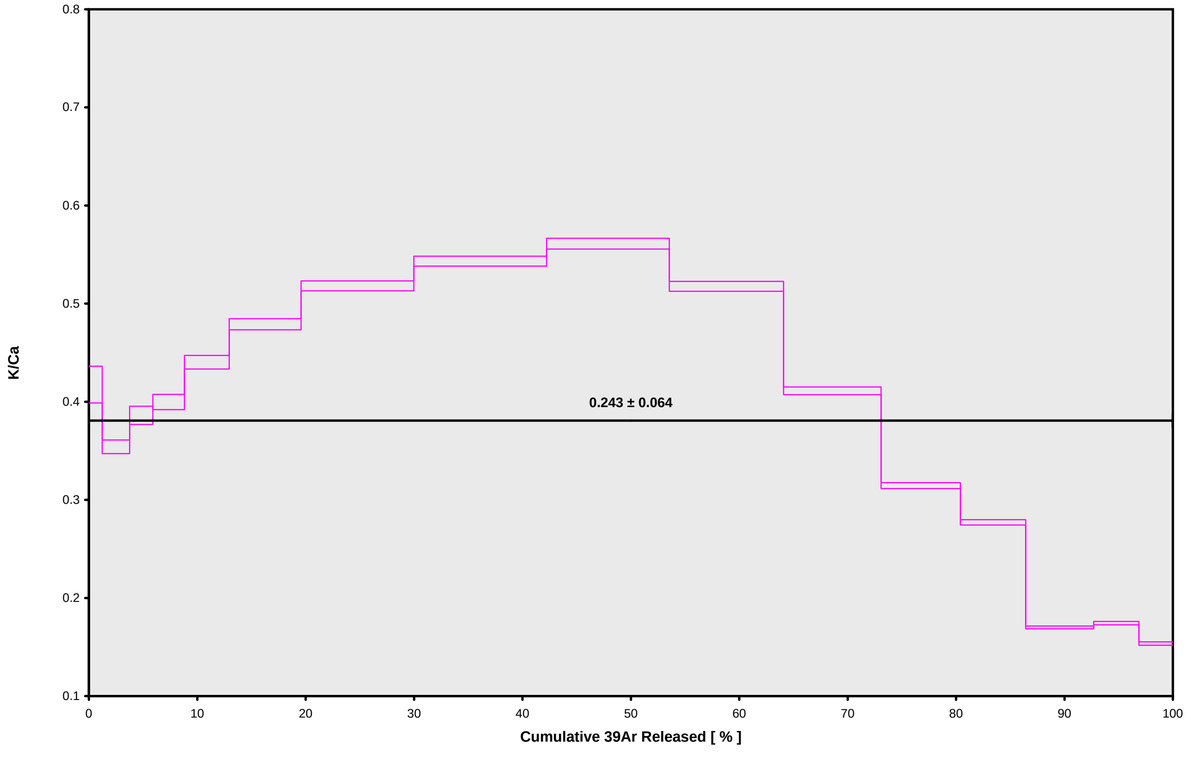
13D02063.AGE >>> HH-1 >>> HARRAT | HUTAYMAH (13-05) PROJECT



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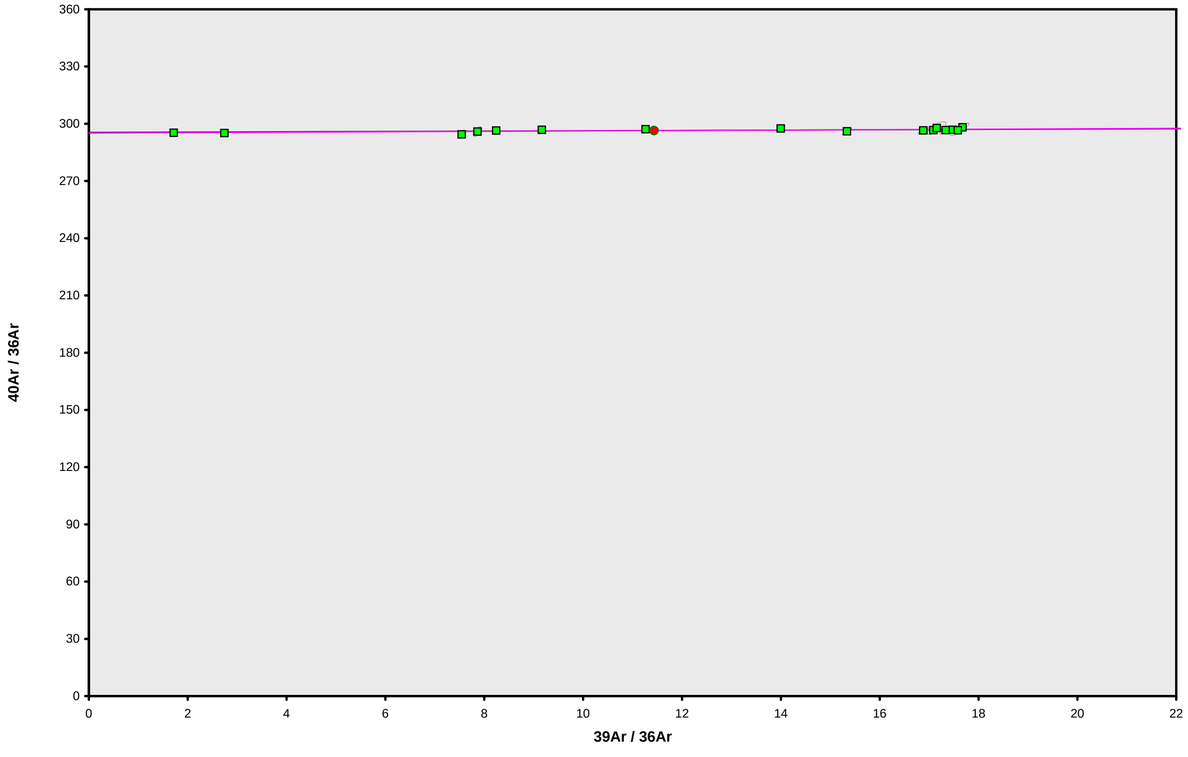
13D02063.AGE >>> HH-1 >>> HARRAT | HUTAYMAH (13-05) PROJECT



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TOTAL FUSION
245.7 ± 137.9
NORMAL ISOCHRON
350.8 ± 283.7
INVERSE ISOCHRON
351.1 ± 192.9

MSWD (PROBABILITY)
0.51 (93%)

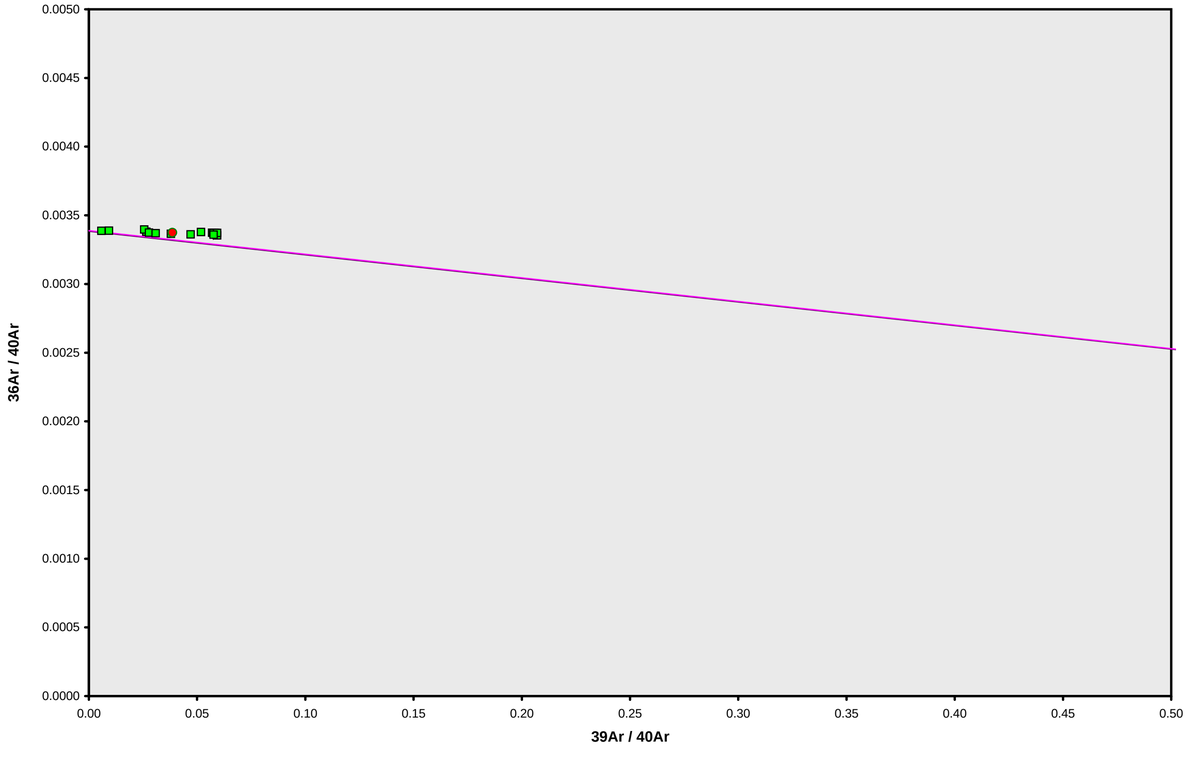
40AR/36AR INTERCEPT
295.1 ± 1.2

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00170152 ± 0.00000379

13D02063.AGE >>> HH-1 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
259.4 ± 119.5
TOTAL FUSION
245.7 ± 137.9
NORMAL ISOCHRON
350.8 ± 283.7
INVERSE ISOCHRON
351.1 ± 192.9

MSWD (PROBABILITY)
0.51 (93%)

SPREADING FACTOR
0.6%

40AR/36AR INTERCEPT
295.1 ± 1.2

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00170152 ± 0.00000379

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02086	2.0 %		0.893719	12.7066	0.346238	6.5807	1.84820	905.0 ± 1174.4	0.70	0.61	0.223 ± 0.016
13D02088	2.6 %		1.792640	44.1011	0.904407	20.9442	2.11609	325.4 ± 547.0	0.40	1.93	0.204 ± 0.005
13D02089	3.2 %	✓	1.549377	58.5587	1.162830	29.2102	9.51257	1048.8 ± 348.4	2.04	2.69	0.214 ± 0.004
13D02090	3.8 %	✓	2.279598	81.9957	1.559879	41.9945	11.95514	916.8 ± 325.2	1.74	3.87	0.220 ± 0.003
13D02092	4.4 %	✓	1.711841	100.2069	1.774330	51.9678	14.90263	923.6 ± 221.5	2.86	4.79	0.223 ± 0.003
13D02093	5.2 %	✓	1.570242	123.2128	2.129692	72.4240	17.41023	774.2 ± 144.4	3.62	6.68	0.253 ± 0.003
13D02094	6.2 %	✓	1.660194	128.2603	2.146735	87.0771	24.18988	894.7 ± 123.6	4.70	8.03	0.292 ± 0.003
13D02096	7.2 %	✓	1.778915	136.8340	1.949433	100.0907	25.79354	830.0 ± 112.4	4.68	9.23	0.315 ± 0.003
13D02097	8.2 %	✓	1.626805	141.0771	1.580449	101.1112	24.16738	769.8 ± 107.8	4.79	9.33	0.308 ± 0.003
13D02098	9.2 %	✓	1.323259	139.0480	1.183420	93.7673	24.85100	853.6 ± 101.8	5.97	8.65	0.290 ± 0.003
13D02100	10.2 %	✓	1.051630	149.6610	0.930619	86.8692	26.17005	970.2 ± 94.1	7.77	8.01	0.250 ± 0.002
13D02101	11.2 %	✓	1.113266	171.7091	0.731063	85.3237	20.66527	780.0 ± 99.0	5.91	7.87	0.214 ± 0.002
13D02102	12.5 %	✓	2.034936	236.1880	0.680757	95.0995	24.74960	838.2 ± 136.4	3.95	8.77	0.173 ± 0.001
13D02104	14.0 %	✓	1.923333	211.2140	0.492073	80.8461	24.58518	979.4 ± 152.1	4.15	7.46	0.165 ± 0.001
13D02105	16.0 %	✓	1.321546	274.2230	0.463665	84.5938	19.84287	755.5 ± 113.6	4.83	7.80	0.133 ± 0.001
13D02106	18.0 %	✓	0.554328	125.6662	0.198624	46.2223	10.99367	766.0 ± 136.6	6.29	4.26	0.158 ± 0.002
		Σ	24.185630	2134.6625	18.234212	1084.1223	280.05692				

Information on Analysis

Sample = HH-11
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00178143 ± 0.00000415
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.26192 ± 0.01364 (± 5.21%)	843.5 ± 44.1 (± 5.23%)	1.65	97.46	0.191 ± 0.031
		Full External Error ± 48.0	6%	14	
		Analytical Error ± 43.9	1.78	2σ Confidence Limit	
			1.2850	Error Magnification	
Total Fusion Age	0.25833 ± 0.01203 (± 4.66%)	832.0 ± 38.9 (± 4.68%)		16	0.218 ± 0.001
		Full External Error ± 43.2			
		Analytical Error ± 38.8			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02086	2.0 %		7.36 ± 0.14	293.43 ± 2.67	0.4268
13D02088	2.6 %		11.68 ± 0.10	296.68 ± 1.99	0.7479
13D02089	3.2 %	✓	18.85 ± 0.15	301.64 ± 2.08	0.8246
13D02090	3.8 %	✓	18.42 ± 0.13	300.74 ± 1.89	0.8841
13D02092	4.4 %	✓	30.36 ± 0.22	304.21 ± 2.15	0.9162
13D02093	5.2 %	✓	46.12 ± 0.33	306.59 ± 2.14	0.9310
13D02094	6.2 %	✓	52.45 ± 0.36	310.07 ± 2.11	0.9391
13D02096	7.2 %	✓	56.27 ± 0.38	310.00 ± 2.06	0.9429
13D02097	8.2 %	✓	62.15 ± 0.44	310.36 ± 2.18	0.9445
13D02098	9.2 %	✓	70.86 ± 0.53	314.28 ± 2.37	0.9405
13D02100	10.2 %	✓	82.60 ± 0.66	320.39 ± 2.60	0.9315
13D02101	11.2 %	✓	76.64 ± 0.60	314.06 ± 2.49	0.9318
13D02102	12.5 %	✓	46.73 ± 0.32	307.66 ± 2.06	0.9484
13D02104	14.0 %	✓	42.03 ± 0.29	308.28 ± 2.07	0.9402
13D02105	16.0 %	✓	64.01 ± 0.49	310.51 ± 2.36	0.9367
13D02106	18.0 %	✓	83.38 ± 0.94	315.33 ± 3.74	0.8975

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	296.57 ± 1.98 ± 0.67%	0.24307 ± 0.03689 ± 15.17%	782.9 ± 118.8 ± 15.18% Full External Error ± 120.1 Analytical Error ± 118.8	1.62 8%

Statistics				
	2σ Confidence Limit	1.82	Convergence	0.000000665511
	Error Magnification	1.2733	Number of Iterations	3
	Number of Data Points	14	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02086	2.0 %		0.0250938 ± 0.0004312	0.00340794 ± 0.00003096	0.0574
13D02088	2.6 %		0.0393806 ± 0.0002235	0.00337063 ± 0.00002263	0.0581
13D02089	3.2 %	✓	0.0625012 ± 0.0002791	0.00331521 ± 0.00002286	0.0927
13D02090	3.8 %	✓	0.0612543 ± 0.0001973	0.00332508 ± 0.00002092	0.0660
13D02092	4.4 %	✓	0.0997939 ± 0.0002955	0.00328725 ± 0.00002319	0.1101
13D02093	5.2 %	✓	0.1504393 ± 0.0003936	0.00326171 ± 0.00002278	0.1468
13D02094	6.2 %	✓	0.1691548 ± 0.0004035	0.00322507 ± 0.00002192	0.1451
13D02096	7.2 %	✓	0.1815003 ± 0.0004090	0.00322581 ± 0.00002139	0.1368
13D02097	8.2 %	✓	0.2002644 ± 0.0004702	0.00322211 ± 0.00002263	0.1482
13D02098	9.2 %	✓	0.2254703 ± 0.0005860	0.00318187 ± 0.00002401	0.1831
13D02100	10.2 %	✓	0.2578281 ± 0.0007687	0.00312124 ± 0.00002532	0.2254
13D02101	11.2 %	✓	0.2440363 ± 0.0007109	0.00318408 ± 0.00002526	0.2191
13D02102	12.5 %	✓	0.1518984 ± 0.0003293	0.00325032 ± 0.00002174	0.1107
13D02104	14.0 %	✓	0.1363501 ± 0.0003203	0.00324378 ± 0.00002176	0.1133
13D02105	16.0 %	✓	0.2061455 ± 0.0005585	0.00322046 ± 0.00002452	0.1789
13D02106	18.0 %	✓	0.2644331 ± 0.0013944	0.00317126 ± 0.00003759	0.3217

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	296.55 ± 1.99	0.24384 ± 0.03572	785.3 ± 115.1	1.64
Clustered Points	± 0.67%	± 14.65%	± 14.65%	7%
			Full External Error ± 116.4	
			Analytical Error ± 115.0	

Statistics				
	2σ Confidence Limit	1.82	Convergence	0.0008513307
	Error Magnification	1.2796	Number of Iterations	3
	Number of Data Points	14	Calculated Line	Weighted York-2
	Spreading Factor	5.0%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02086	2.0 %		0.897136	0.427	12.7066	3.541	0.589929	6.625	6.5893	0.845	262.2526	0.150	0.28085 ± 0.36437	905.0 ± 1174.4	0.70	0.61	0.223 ± 0.016
13D02088	2.6 %		1.804445	0.325	44.1011	1.074	1.483926	2.624	20.9739	0.273	531.8623	0.074	0.10103 ± 0.16983	325.4 ± 547.0	0.40	1.93	0.204 ± 0.005
13D02089	3.2 %	✓	1.565046	0.331	58.5587	0.854	1.792960	2.166	29.2496	0.206	467.3831	0.084	0.32566 ± 0.10821	1048.8 ± 348.4	2.04	2.69	0.214 ± 0.004
13D02090	3.8 %	✓	2.301525	0.306	81.9957	0.652	2.475230	1.631	42.0497	0.150	685.6187	0.058	0.28468 ± 0.10100	916.8 ± 325.2	1.74	3.87	0.220 ± 0.003
13D02092	4.4 %	✓	1.738614	0.339	100.2069	0.585	2.699596	1.470	52.0353	0.127	520.8040	0.076	0.28677 ± 0.06878	923.6 ± 221.5	2.86	4.79	0.223 ± 0.003
13D02093	5.2 %	✓	1.603154	0.332	123.2128	0.518	3.264482	1.161	72.5069	0.102	481.4900	0.082	0.24039 ± 0.04485	774.2 ± 144.4	3.62	6.68	0.253 ± 0.003
13D02094	6.2 %	✓	1.694441	0.324	128.2603	0.502	3.465791	1.074	87.1634	0.091	514.8653	0.077	0.27780 ± 0.03840	894.7 ± 123.6	4.70	8.03	0.292 ± 0.003
13D02096	7.2 %	✓	1.815390	0.317	136.8340	0.499	3.439964	1.108	100.1828	0.087	551.5640	0.071	0.25770 ± 0.03491	830.0 ± 112.4	4.68	9.23	0.315 ± 0.003
13D02097	8.2 %	✓	1.664334	0.334	141.0771	0.486	3.054754	1.325	101.2061	0.088	504.9904	0.078	0.23902 ± 0.03348	769.8 ± 107.8	4.79	9.33	0.308 ± 0.003
13D02098	9.2 %	✓	1.360181	0.355	139.0480	0.497	2.517136	1.556	93.8609	0.089	415.9688	0.095	0.26503 ± 0.03160	853.6 ± 101.8	5.97	8.65	0.290 ± 0.003
13D02100	10.2 %	✓	1.091308	0.374	149.6610	0.487	2.136543	1.881	86.9699	0.093	337.0145	0.117	0.30126 ± 0.02923	970.2 ± 94.1	7.77	8.01	0.250 ± 0.002
13D02101	11.2 %	✓	1.158729	0.365	171.7091	0.457	1.933983	2.061	85.4393	0.092	349.7215	0.112	0.24220 ± 0.03075	780.0 ± 99.0	5.91	7.87	0.214 ± 0.002
13D02102	12.5 %	✓	2.097412	0.318	236.1880	0.419	2.176149	1.785	95.2585	0.088	626.1692	0.063	0.26025 ± 0.04235	838.2 ± 136.4	3.95	8.77	0.173 ± 0.001
13D02104	14.0 %	✓	1.979182	0.319	211.2140	0.423	1.800931	2.229	80.9883	0.096	593.0118	0.067	0.30410 ± 0.04724	979.4 ± 152.1	4.15	7.46	0.165 ± 0.001
13D02105	16.0 %	✓	1.394025	0.349	274.2230	0.405	1.711456	2.190	84.7784	0.095	410.4452	0.096	0.23457 ± 0.03527	755.5 ± 113.6	4.83	7.80	0.133 ± 0.001
13D02106	18.0 %	✓	0.587540	0.517	125.6662	0.525	0.845706	4.653	46.3069	0.138	174.8444	0.224	0.23784 ± 0.04243	766.0 ± 136.6	6.29	4.26	0.158 ± 0.002
	Σ		24.752461	0.086	2134.6625	0.134	35.388536	0.442	1085.5589	0.027	7428.0056	0.021					

Information on Analysis and Constants Used in Calculations

Sample = HH-11
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00178143 ± 0.00000415
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = Not Done

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.26192 ± 0.01364 ± 5.21%	843.5 ± 44.1 ± 5.23%	1.65	97.46	0.191 ± 0.031
			Full External Error ± 48.0	6%	14	
			Analytical Error ± 43.9	1.78	2σ Confidence Limit	
				1.2850	Error Magnification	
Total Fusion Age		0.25833 ± 0.01203 ± 4.66%	832.0 ± 38.9 ± 4.68%		16	0.218 ± 0.001
			Full External Error ± 43.2			
			Analytical Error ± 38.8			
Normal Isochron	296.57 ± 1.98 ± 0.67%	0.24307 ± 0.03689 ± 15.17%	782.9 ± 118.8 ± 15.18%	1.62	97.46	
			Full External Error ± 120.1	8%	14	
			Analytical Error ± 118.8	1.82	2σ Confidence Limit	
				1.2733	Error Magnification	
				3	Number of Iterations	
				0.0000006655	Convergence	
Inverse Isochron	296.55 ± 1.99 ± 0.67%	0.24384 ± 0.03572 ± 14.65%	785.3 ± 115.1 ± 14.65%	1.64	97.46	
Clustered Points			Full External Error ± 116.4	7%	14	
			Analytical Error ± 115.0	1.82	2σ Confidence Limit	
				1.2796	Error Magnification	
				3	Number of Iterations	
				0.0008513307	Convergence	
				5%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02086	2.0 %		0.893719	0.43	0.0000000	0.00	0.0033545	3.54	0.0000622	11.33	12.7066	3.54	0.1670362	0.43	0.0000000	0.00	0.074889	0.85	0.0017662	3.54	0.346238	11.37	6.5807	0.85	0.0085515	3.54	1.84820	64.86	264.0941	0.43	0.0000000	0.00	0.0066465	0.85
13D02088	2.6 %		1.792640	0.33	0.0000000	0.00	0.0116427	1.07	0.0001626	4.40	44.1011	1.07	0.3350444	0.33	0.0000000	0.00	0.238345	0.27	0.0061301	1.07	0.904407	4.50	20.9442	0.27	0.0296801	1.07	2.11609	84.05	529.7251	0.33	0.0000000	0.00	0.0211537	0.27
13D02089	3.2 %	✓	1.549377	0.33	0.0000000	0.00	0.0154595	0.85	0.0002091	3.47	58.5587	0.85	0.2895786	0.33	0.0000000	0.00	0.332412	0.21	0.0081397	0.85	1.162830	3.59	29.2102	0.21	0.0394100	0.85	9.51257	16.61	457.8410	0.33	0.0000000	0.00	0.0295023	0.21
13D02090	3.8 %	✓	2.279598	0.31	0.0000000	0.00	0.0216469	0.65	0.0002805	2.75	81.9957	0.65	0.4260568	0.31	0.0000000	0.00	0.477897	0.15	0.0113974	0.65	1.559879	2.90	41.9945	0.15	0.0551831	0.65	11.95514	17.74	673.6211	0.31	0.0000000	0.00	0.0424144	0.15
13D02092	4.4 %	✓	1.711841	0.34	0.0000000	0.00	0.0264546	0.58	0.0003191	2.42	100.2069	0.58	0.3199430	0.34	0.0000000	0.00	0.591394	0.13	0.0139288	0.58	1.774330	2.59	51.9678	0.13	0.0674392	0.58	14.90263	11.99	505.8489	0.34	0.0000000	0.00	0.0524875	0.13
13D02093	5.2 %	✓	1.570242	0.34	0.0000000	0.00	0.0325282	0.52	0.0003830	2.00	123.2128	0.52	0.2934783	0.34	0.0000000	0.00	0.824185	0.10	0.0171266	0.52	2.129692	2.20	72.4240	0.10	0.0829222	0.52	17.41023	9.33	464.0066	0.34	0.0000000	0.00	0.0731483	0.10
13D02094	6.2 %	✓	1.660194	0.33	0.0000000	0.00	0.0338607	0.50	0.0003861	1.96	128.2603	0.50	0.3102903	0.33	0.0000000	0.00	0.990937	0.09	0.0178282	0.50	2.146735	2.17	87.0771	0.09	0.0863192	0.50	24.18988	6.91	490.5874	0.33	0.0000000	0.00	0.0879478	0.09
13D02096	7.2 %	✓	1.778915	0.32	0.0000000	0.00	0.0361242	0.50	0.0003507	2.16	136.8340	0.50	0.3324792	0.32	0.0000000	0.00	1.139032	0.09	0.0190199	0.50	1.949433	2.35	100.0907	0.09	0.0920893	0.50	25.79354	6.77	525.6693	0.32	0.0000000	0.00	0.1010916	0.09
13D02097	8.2 %	✓	1.626805	0.34	0.0000000	0.00	0.0372444	0.49	0.0002843	2.72	141.0771	0.49	0.3040499	0.34	0.0000000	0.00	1.150645	0.09	0.0196097	0.49	1.580449	2.87	101.1112	0.09	0.0949449	0.49	24.16738	7.00	480.7209	0.34	0.0000000	0.00	0.1021223	0.09
13D02098	9.2 %	✓	1.323259	0.37	0.0000000	0.00	0.0367087	0.50	0.0002129	3.44	139.0480	0.50	0.2473171	0.37	0.0000000	0.00	1.067072	0.09	0.0193277	0.50	1.183420	3.56	93.7673	0.09	0.0935793	0.50	24.85100	5.96	391.0231	0.37	0.0000000	0.00	0.0947049	0.09
13D02100	10.2 %	✓	1.051630	0.39	0.0000000	0.00	0.0395105	0.49	0.0001675	4.42	149.6610	0.49	0.1965497	0.39	0.0000000	0.00	0.988571	0.09	0.0208029	0.49	0.930619	4.51	86.8692	0.09	0.1007219	0.49	26.17005	4.85	310.7567	0.39	0.0000000	0.00	0.0877379	0.09
13D02101	11.2 %	✓	1.113266	0.38	0.0000000	0.00	0.0453312	0.46	0.0001316	5.53	171.7091	0.46	0.2080694	0.38	0.0000000	0.00	0.970984	0.09	0.0238676	0.46	0.731063	5.61	85.3237	0.09	0.1155602	0.46	20.66527	6.35	328.9701	0.38	0.0000000	0.00	0.0861769	0.09
13D02102	12.5 %	✓	2.034936	0.33	0.0000000	0.00	0.0623536	0.42	0.0001225	5.78	236.1880	0.42	0.3803295	0.33	0.0000000	0.00	1.082233	0.09	0.0328301	0.42	0.680757	5.86	95.0995	0.09	0.1589546	0.42	24.74960	8.14	601.3235	0.33	0.0000000	0.00	0.0960505	0.09
13D02104	14.0 %	✓	1.923333	0.33	0.0000000	0.00	0.0557605	0.42	0.0000886	8.22	211.2140	0.42	0.3594710	0.33	0.0000000	0.00	0.920029	0.10	0.0293587	0.42	0.492073	8.27	80.8461	0.10	0.1421470	0.42	24.58518	7.77	568.3450	0.33	0.0000000	0.00	0.0816546	0.10
13D02105	16.0 %	✓	1.321546	0.37	0.0000000	0.00	0.0723949	0.41	0.0000835	8.14	274.2230	0.41	0.2469970	0.37	0.0000000	0.00	0.962678	0.10	0.0381170	0.41	0.463665	8.19	84.5938	0.10	0.1845521	0.41	19.84287	7.52	390.5169	0.37	0.0000000	0.00	0.0854398	0.10
13D02106	18.0 %	✓	0.554328	0.55	0.0000000	0.00	0.0331759	0.53	0.0000358	19.84	125.6662	0.53	0.1036039	0.55	0.0000000	0.00	0.526010	0.14	0.0174676	0.53	0.198624	19.86	46.2223	0.14	0.0845734	0.53	10.99367	8.92	163.8040	0.55	0.0000000	0.00	0.0466845	0.14
		Σ	24.185630	0.09	0.0000000	0.00	0.5635509	0.13	0.0032798	0.90	2134.6625	0.13	4.5202943	0.09	0.0000000	0.00	12.337312	0.03	0.2967181	0.13	18.234212	0.94	1084.1223	0.03	1.4366279	0.13	280.05692	2.33	7146.8537	0.09	0.0000000	0.00	1.0949635	0.03
		Σ							24.752461	0.09	2134.6625	0.13									35.388536	0.48			1085.5589	0.03							7428.0056	0.12

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02086	2.0 %		39.799842	0.341554	1.928367	0.070209	0.136151	0.001289	110.684	8.923595	1.00078217	1.259E-11
13D02088	2.6 %		25.358296	0.071872	2.102667	0.023307	0.086033	0.000366	110.701	8.926533	1.00078229	2.553E-11
13D02089	3.2 %	✓	15.979138	0.035635	2.002035	0.017585	0.053507	0.000209	110.710	8.928125	1.00078236	2.243E-11
13D02090	3.8 %	✓	16.304971	0.026231	1.949972	0.013040	0.054733	0.000187	110.718	8.929595	1.00078241	3.291E-11
13D02092	4.4 %	✓	10.008670	0.014804	1.925748	0.011519	0.033412	0.000121	110.735	8.932657	1.00078254	2.500E-11
13D02093	5.2 %	✓	6.640606	0.008680	1.699324	0.008976	0.022110	0.000077	110.744	8.934250	1.00078260	2.311E-11
13D02094	6.2 %	✓	5.906898	0.007041	1.471493	0.007504	0.019440	0.000065	110.753	8.935721	1.00078266	2.471E-11
13D02096	7.2 %	✓	5.505578	0.006200	1.365844	0.006914	0.018121	0.000060	110.770	8.938786	1.00078278	2.648E-11
13D02097	8.2 %	✓	4.989723	0.005854	1.393959	0.006884	0.016445	0.000057	110.778	8.940257	1.00078284	2.424E-11
13D02098	9.2 %	✓	4.431760	0.005756	1.481427	0.007482	0.014491	0.000053	110.787	8.941852	1.00078290	1.997E-11
13D02100	10.2 %	✓	3.875071	0.005773	1.720837	0.008530	0.012548	0.000048	110.805	8.944918	1.00078303	1.618E-11
13D02101	11.2 %	✓	4.093218	0.005958	2.009721	0.009371	0.013562	0.000051	110.813	8.946391	1.00078309	1.679E-11
13D02102	12.5 %	✓	6.573369	0.007117	2.479443	0.010614	0.022018	0.000073	110.822	8.947864	1.00078315	3.006E-11
13D02104	14.0 %	✓	7.322195	0.008590	2.607958	0.011304	0.024438	0.000081	110.839	8.950933	1.00078327	2.846E-11
13D02105	16.0 %	✓	4.841390	0.006550	3.234586	0.013468	0.016443	0.000059	110.848	8.952529	1.00078333	1.970E-11
13D02106	18.0 %	✓	3.775776	0.009948	2.713771	0.014735	0.012688	0.000068	110.856	8.954002	1.00078339	8.393E-12

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02086	2.0 %	0.0841507	0.0016249	0.0551713	0.0380710	0.0042461	0.0270616	0.3417408	0.0487565	25.434290	0.389952
13D02088	2.6 %	0.0802283	0.0016249	0.0349287	0.0380710	0.0056133	0.0270616	0.3185531	0.0487565	24.253321	0.389952
13D02089	3.2 %	0.0781988	0.0016249	0.0249361	0.0380710	0.0063776	0.0270616	0.3119212	0.0487565	23.640134	0.389952
13D02090	3.8 %	0.0763848	0.0016249	0.0170743	0.0380710	0.0070978	0.0270616	0.3090915	0.0487565	23.090646	0.389952
13D02092	4.4 %	0.0727885	0.0016249	0.0066238	0.0380710	0.0086438	0.0270616	0.3118431	0.0487565	21.996850	0.389952
13D02093	5.2 %	0.0710161	0.0016249	0.0049843	0.0380710	0.0094720	0.0270616	0.3169855	0.0487565	21.455296	0.389952
13D02094	6.2 %	0.0694393	0.0016249	0.0059813	0.0380710	0.0102513	0.0270616	0.3233740	0.0487565	20.971931	0.389952
13D02096	7.2 %	0.0663374	0.0016249	0.0157757	0.0380710	0.0119203	0.0270616	0.3396265	0.0487565	20.015891	0.389952
13D02097	8.2 %	0.0649363	0.0016249	0.0239153	0.0380710	0.0127432	0.0270616	0.3477540	0.0487565	19.581458	0.389952
13D02098	9.2 %	0.0634827	0.0016249	0.0348605	0.0380710	0.0136508	0.0270616	0.3559191	0.0487565	19.128729	0.389952
13D02100	10.2 %	0.0608752	0.0016249	0.0603137	0.0380710	0.0154428	0.0270616	0.3669467	0.0487565	18.310446	0.389952
13D02101	11.2 %	0.0597114	0.0016249	0.0734819	0.0380710	0.0163248	0.0270616	0.3686527	0.0487565	17.942135	0.389952
13D02102	12.5 %	0.0586046	0.0016249	0.0863966	0.0380710	0.0172210	0.0270616	0.3670819	0.0487565	17.589694	0.389952
13D02104	14.0 %	0.0564816	0.0016249	0.1090587	0.0380710	0.0191336	0.0270616	0.3500121	0.0487565	16.906411	0.389952
13D02105	16.0 %	0.0554754	0.0016249	0.1164175	0.0380710	0.0201524	0.0270616	0.3318812	0.0487565	16.578325	0.389952
13D02106	18.0 %	0.0546059	0.0016249	0.1190357	0.0380710	0.0211077	0.0270616	0.3083177	0.0487565	16.292007	0.389952

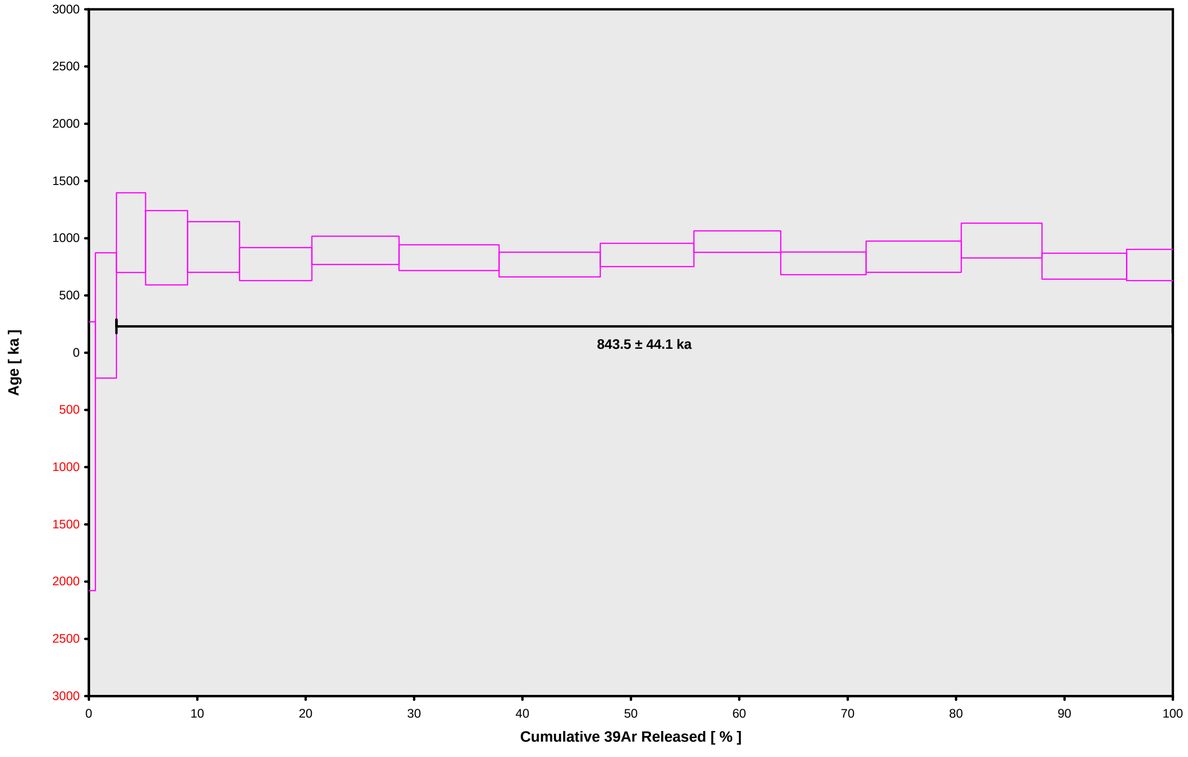
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02086	2.0 %	0.958861	0.002515	0.8635	EXP 149 of 150	1.4524	0.0312	0.0424	EXP 150 of 150	0.578301	0.027507	0.0273	EXP 150 of 150	6.8848	0.0257	0.7718	EXP 150 of 150	287.68684	0.04643	0.9993	EXP 150 of 150
13D02088	2.6 %	1.839568	0.003146	0.9400	EXP 150 of 150	4.8828	0.0308	0.4653	EXP 150 of 150	1.459745	0.027249	0.1157	EXP 150 of 150	21.1452	0.0264	0.9695	EXP 150 of 150	556.11563	0.06676	0.9997	EXP 150 of 150
13D02089	3.2 %	1.604123	0.002767	0.9385	EXP 150 of 150	6.4609	0.0318	0.5653	EXP 150 of 150	1.764148	0.027093	0.1008	EXP 149 of 150	29.3561	0.0298	0.9810	EXP 150 of 150	491.02319	0.06123	0.9996	EXP 150 of 150
13D02090	3.8 %	2.320378	0.003430	0.9548	EXP 150 of 150	9.0274	0.0301	0.7755	EXP 150 of 150	2.437161	0.029105	0.2202	EXP 150 of 150	42.0635	0.0295	0.9906	EXP 150 of 150	708.70931	0.07137	0.9998	EXP 150 of 150
13D02092	4.4 %	1.767943	0.003417	0.9249	EXP 149 of 150	11.0144	0.0326	0.7893	EXP 150 of 150	2.657173	0.028140	0.2965	EXP 150 of 150	51.9817	0.0297	0.9936	EXP 150 of 150	542.80089	0.06192	0.9997	EXP 150 of 150
13D02093	5.2 %	1.634096	0.002902	0.9341	EXP 150 of 150	13.5375	0.0318	0.8550	EXP 150 of 150	3.214163	0.025529	0.3035	EXP 150 of 150	72.3148	0.0312	0.9964	EXP 150 of 150	502.94529	0.05781	0.9997	EXP 150 of 150
13D02094	6.2 %	1.721525	0.002874	0.9424	EXP 150 of 150	14.0906	0.0297	0.8854	EXP 150 of 150	3.412174	0.024519	0.4367	EXP 150 of 150	86.8747	0.0304	0.9976	EXP 150 of 150	535.83720	0.06190	0.9997	EXP 150 of 150
13D02096	7.2 %	1.836348	0.002904	0.9453	EXP 150 of 150	15.0367	0.0336	0.8745	EXP 149 of 150	3.385001	0.025811	0.2886	EXP 150 of 150	99.8188	0.0352	0.9976	EXP 150 of 150	571.57987	0.05814	0.9998	EXP 150 of 150
13D02097	8.2 %	1.687667	0.003106	0.9312	EXP 150 of 150	15.5081	0.0315	0.8861	EXP 149 of 150	3.003788	0.029187	0.3357	EXP 150 of 150	100.8431	0.0374	0.9973	EXP 150 of 150	524.57186	0.06065	0.9997	EXP 150 of 150
13D02098	9.2 %	1.389663	0.002840	0.9146	EXP 150 of 150	15.2936	0.0343	0.8726	EXP 150 of 150	2.471990	0.027458	0.2060	EXP 150 of 150	93.5576	0.0328	0.9976	EXP 150 of 150	435.09751	0.05675	0.9996	EXP 150 of 150
13D02100	10.2 %	1.124904	0.002409	0.8993	EXP 150 of 150	16.4781	0.0363	0.8869	EXP 150 of 150	2.094366	0.028904	0.1976	EXP 150 of 150	86.7261	0.0331	0.9972	EXP 150 of 150	355.32493	0.05129	0.9995	EXP 150 of 150
13D02101	11.2 %	1.189475	0.002459	0.9113	EXP 150 of 150	18.9068	0.0346	0.9148	EXP 150 of 150	1.893459	0.028482	0.1379	EXP 150 of 150	85.2079	0.0307	0.9975	EXP 150 of 150	367.66364	0.05190	0.9995	EXP 150 of 150
13D02102	12.5 %	2.103588	0.003530	0.9419	EXP 150 of 150	25.9876	0.0362	0.9463	EXP 150 of 150	2.131699	0.027036	0.3009	EXP 150 of 150	94.9566	0.0319	0.9978	EXP 150 of 150	643.75889	0.07205	0.9997	EXP 150 of 150
13D02104	14.0 %	1.986190	0.003319	0.9436	EXP 150 of 150	23.2636	0.0303	0.9522	EXP 150 of 150	1.759263	0.028877	0.1257	EXP 150 of 150	80.7695	0.0332	0.9967	EXP 150 of 150	609.91824	0.06976	0.9997	EXP 150 of 150
13D02105	16.0 %	1.414653	0.002788	0.9196	EXP 150 of 150	30.1730	0.0353	0.9616	EXP 150 of 150	1.669889	0.025157	0.1237	EXP 150 of 150	84.5149	0.0358	0.9965	EXP 150 of 150	427.02354	0.05787	0.9996	EXP 150 of 150
13D02106	18.0 %	0.627459	0.001996	0.8013	EXP 150 of 150	13.8906	0.0350	0.8472	EXP 150 of 150	0.814016	0.027871	0.0155	EXP 150 of 150	46.2900	0.0291	0.9924	EXP 150 of 150	191.13636	0.03934	0.9988	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02086	2.0 %	HH-11	Groundmass	Harrat	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	14	1	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02088	2.6 %	HH-11	Groundmass	Harrat	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	14	25	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02089	3.2 %	HH-11	Groundmass	Harrat	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	14	38	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02090	3.8 %	HH-11	Groundmass	Harrat	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	14	50	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02092	4.4 %	HH-11	Groundmass	Harrat	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	15	15	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02093	5.2 %	HH-11	Groundmass	Harrat	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	15	28	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02094	6.2 %	HH-11	Groundmass	Harrat	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	15	40	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02096	7.2 %	HH-11	Groundmass	Harrat	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	16	5	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02097	8.2 %	HH-11	Groundmass	Harrat	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	16	17	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02098	9.2 %	HH-11	Groundmass	Harrat	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	16	30	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02100	10.2 %	HH-11	Groundmass	Harrat	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	16	55	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02101	11.2 %	HH-11	Groundmass	Harrat	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	17	7	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02102	12.5 %	HH-11	Groundmass	Harrat	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	17	19	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02104	14.0 %	HH-11	Groundmass	Harrat	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	17	44	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02105	16.0 %	HH-11	Groundmass	Harrat	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	17	57	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01
13D02106	18.0 %	HH-11	Groundmass	Harrat	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.82291	0.233	0.00178143	0.233	303.076	0.095	0.993742665	0.063	1	4.8E-14	10	OCT	2013	18	9	1	13-OSU-05			8.00	Harrat\Hutaymah (13-05)	13D02085	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02086	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02088	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02089	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02090	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02092	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02093	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02094	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02096	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02097	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02098	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02100	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02101	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02102	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02104	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02105	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02106	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02085.AGE >>> HH-11 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
843.5 ± 44.1
TOTAL FUSION
832.0 ± 38.9
NORMAL ISOCHRON
782.9 ± 118.8
INVERSE ISOCHRON
785.3 ± 115.1

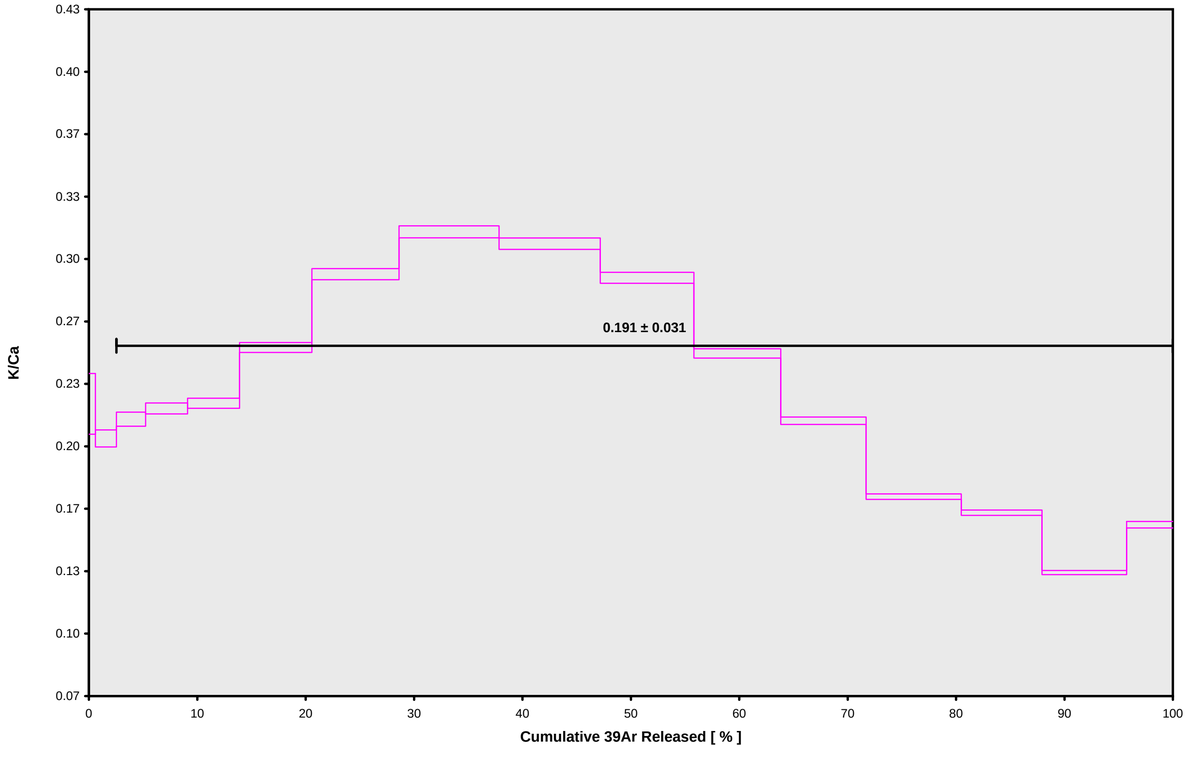
MSWD (PROBABILITY)
1.65 (6%)

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178143 ± 0.00000415

13D02085.AGE >>> HH-11 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

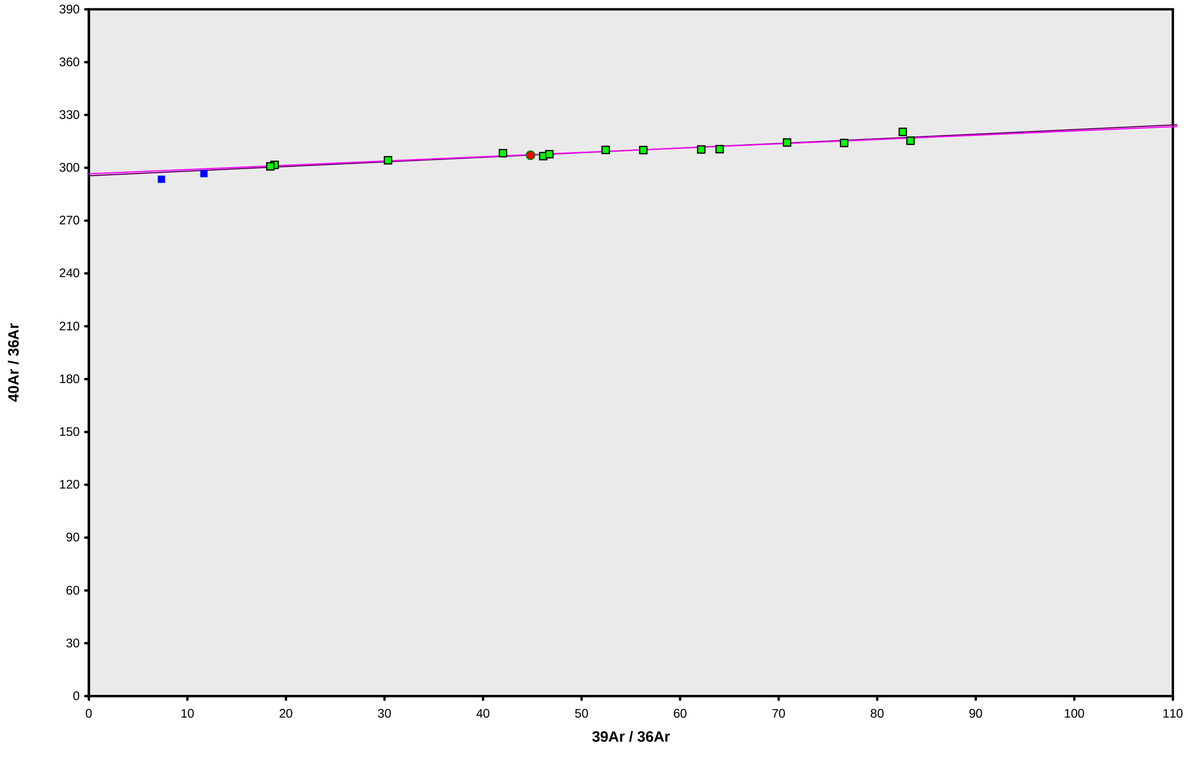
WEIGHTED PLATEAU
843.5 ± 44.1
TOTAL FUSION
832.0 ± 38.9
NORMAL ISOCHRON
782.9 ± 118.8
INVERSE ISOCHRON
785.3 ± 115.1

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178143 ± 0.00000415

13D02085.AGE >>> HH-11 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
843.5 ± 44.1
TOTAL FUSION
832.0 ± 38.9
NORMAL ISOCHRON
782.9 ± 118.8
INVERSE ISOCHRON
785.3 ± 115.1

MSWD (PROBABILITY)
1.62 (8%)

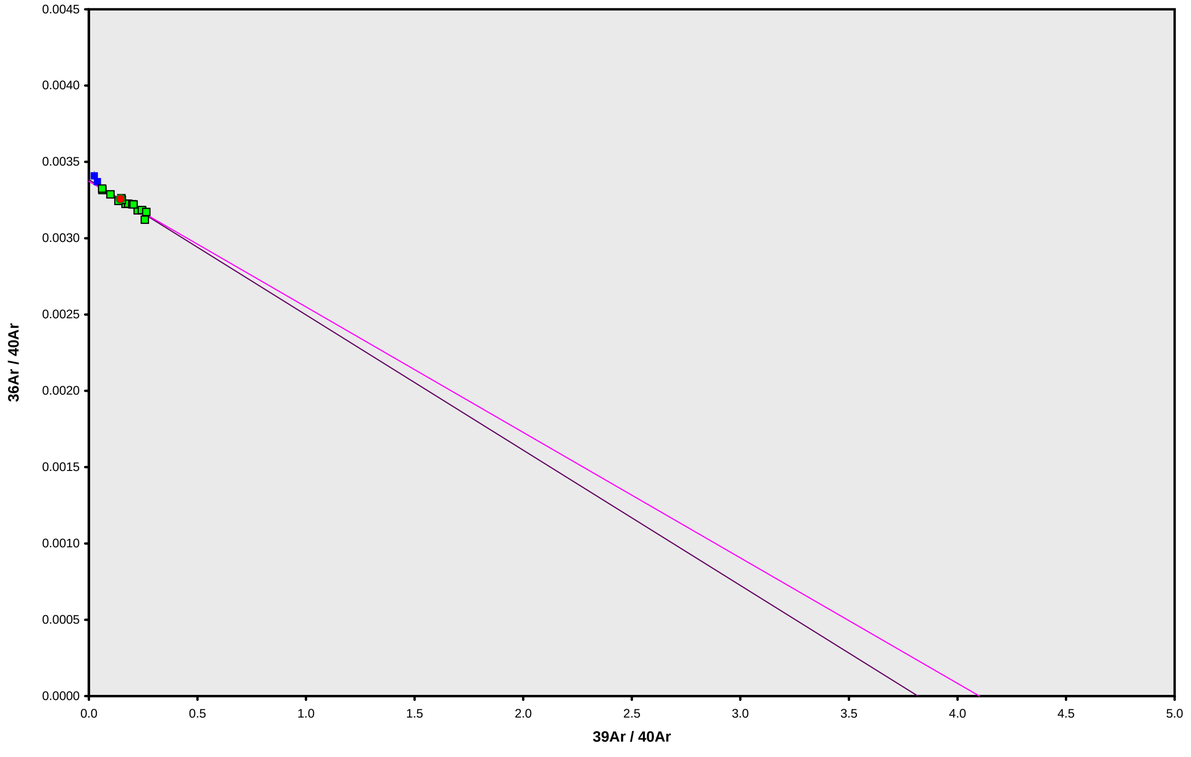
40AR/36AR INTERCEPT
296.6 ± 2.0

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178143 ± 0.00000415

13D02085.AGE >>> HH-11 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
843.5 ± 44.1
TOTAL FUSION
832.0 ± 38.9
NORMAL ISOCHRON
782.9 ± 118.8
INVERSE ISOCHRON
785.3 ± 115.1

MSWD (PROBABILITY)
1.64 (7%)

SPREADING FACTOR
5.0%

40AR/36AR INTERCEPT
296.5 ± 2.0

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00178143 ± 0.00000415

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02118	2.0 %	✓	12.434757	41.2508	0.860300	14.75122	9.47650	2045.9 ± 4434.9	0.26	1.81	0.154 ± 0.004
13D02120	2.6 %	✓	12.057035	83.3900	1.425362	25.06420	2.50263	318.2 ± 2547.3	0.07	3.07	0.129 ± 0.002
13D02121	3.2 %	✓	9.011203	123.0291	1.843727	36.87953	3.71359	320.9 ± 1321.5	0.14	4.52	0.129 ± 0.001
13D02122	3.8 %	✓	5.618712	122.4204	1.855174	43.04864	6.18112	457.5 ± 729.3	0.37	5.27	0.151 ± 0.002
13D02124	4.4 %	✓	4.296907	118.1563	2.001681	49.80308	0.40196	25.7 ± 492.9	0.03	6.10	0.181 ± 0.002
13D02125	5.2 %	✓	5.199470	156.4654	2.693204	70.33794	7.06979	320.2 ± 410.5	0.46	8.62	0.193 ± 0.002
13D02126	6.2 %	✓	7.701744	224.7952	4.662370	103.02223	17.66484	546.3 ± 403.9	0.77	12.62	0.197 ± 0.002
13D02128	7.2 %	✓	4.501884	214.5190	4.608998	89.34243	16.08725	573.7 ± 287.2	1.19	10.95	0.179 ± 0.002
13D02129	8.2 %	✓	4.148649	234.3701	3.417567	92.77321	14.38450	494.0 ± 256.9	1.16	11.37	0.170 ± 0.001
13D02130	9.2 %	✓	3.219094	225.0090	2.105151	81.24821	13.48390	528.7 ± 237.7	1.40	9.96	0.155 ± 0.001
13D02132	10.2 %	✓	2.245455	169.8497	1.104967	57.63428	7.28319	402.6 ± 252.5	1.09	7.06	0.146 ± 0.001
13D02133	11.2 %	✓	1.473605	109.8647	0.629018	36.13077	3.56729	314.6 ± 296.2	0.81	4.43	0.141 ± 0.002
13D02134	12.5 %	✓	0.901316	67.9572	0.414650	21.84982	3.40106	495.9 ± 386.0	1.26	2.68	0.138 ± 0.002
13D02136	14.0 %	✓	0.982298	91.9676	0.323432	23.90640	2.92634	390.0 ± 351.0	1.00	2.93	0.112 ± 0.002
13D02137	16.0 %		1.484151	178.1633	0.375005	34.79516	11.14790	1020.6 ± 310.8	2.48	4.26	0.084 ± 0.001
13D02138	18.0 %		1.699452	238.3990	0.313610	35.54338	14.59582	1308.0 ± 326.6	2.82	4.36	0.064 ± 0.001
		Σ	76.975730	2399.6067	28.634217	816.13053	120.65130				

Information on Analysis

Sample = HH-9
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00176208 ± 0.00000407
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.13675 ± 0.03053 (± 22.32%)	435.7 ± 97.3 (± 22.33%)	0.69	91.38 (78%, 14)	0.154 ± 0.014
		Full External Error ± 97.8	1.78	2σ Confidence Limit	
		Analytical Error ± 97.3	1.0000	Error Magnification	
Total Fusion Age	0.14783 ± 0.05045 (± 34.13%)	471.0 ± 160.7 (± 34.13%)		16	0.146 ± 0.000
		Full External Error ± 161.1			
		Analytical Error ± 160.7			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02118	2.0 %	✓	1.19 ± 0.01	296.26 ± 1.66	0.7069
13D02120	2.6 %	✓	2.08 ± 0.01	295.29 ± 1.66	0.8378
13D02121	3.2 %	✓	4.09 ± 0.03	295.09 ± 1.69	0.8930
13D02122	3.8 %	✓	7.66 ± 0.05	296.60 ± 1.76	0.9109
13D02124	4.4 %	✓	11.59 ± 0.07	295.41 ± 1.79	0.9182
13D02125	5.2 %	✓	13.53 ± 0.08	296.86 ± 1.75	0.9323
13D02126	6.2 %	✓	13.38 ± 0.08	297.79 ± 1.71	0.9450
13D02128	7.2 %	✓	19.85 ± 0.12	299.07 ± 1.81	0.9388
13D02129	8.2 %	✓	22.36 ± 0.14	298.97 ± 1.82	0.9371
13D02130	9.2 %	✓	25.24 ± 0.16	299.69 ± 1.91	0.9329
13D02132	10.2 %	✓	25.67 ± 0.17	298.74 ± 2.05	0.9132
13D02133	11.2 %	✓	24.52 ± 0.18	297.92 ± 2.29	0.8652
13D02134	12.5 %	✓	24.24 ± 0.23	299.27 ± 2.97	0.8084
13D02136	14.0 %	✓	24.34 ± 0.21	298.48 ± 2.70	0.8044
13D02137	16.0 %		23.44 ± 0.18	303.01 ± 2.34	0.8664
13D02138	18.0 %		20.91 ± 0.15	304.09 ± 2.20	0.8709

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	295.12 ± 0.93 ± 0.32%	0.15615 ± 0.05678 ± 36.37%	497.5 ± 180.9 ± 36.36%	0.69 76%
			Full External Error ± 181.2	
			Analytical Error ± 180.9	

Statistics				
	2σ Confidence Limit	1.82	Convergence	0.000000125495
	Error Magnification	1.0000	Number of Iterations	3
	Number of Data Points	14	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02118	2.0 %	✓	0.0040042 ± 0.0000215	0.00337539 ± 0.00001888	0.0432
13D02120	2.6 %	✓	0.0070398 ± 0.0000248	0.00338647 ± 0.00001904	0.0654
13D02121	3.2 %	✓	0.0138692 ± 0.0000386	0.00338882 ± 0.00001946	0.0884
13D02122	3.8 %	✓	0.0258316 ± 0.0000664	0.00337154 ± 0.00002001	0.1177
13D02124	4.4 %	✓	0.0392356 ± 0.0000976	0.00338517 ± 0.00002054	0.1454
13D02125	5.2 %	✓	0.0455700 ± 0.0000997	0.00336859 ± 0.00001987	0.1442
13D02126	6.2 %	✓	0.0449186 ± 0.0000860	0.00335803 ± 0.00001927	0.1332
13D02128	7.2 %	✓	0.0663568 ± 0.0001409	0.00334366 ± 0.00002023	0.1607
13D02129	8.2 %	✓	0.0747984 ± 0.0001621	0.00334485 ± 0.00002040	0.1678
13D02130	9.2 %	✓	0.0842189 ± 0.0001960	0.00333680 ± 0.00002125	0.1955
13D02132	10.2 %	✓	0.0859168 ± 0.0002445	0.00334735 ± 0.00002302	0.2420
13D02133	11.2 %	✓	0.0822992 ± 0.0003249	0.00335660 ± 0.00002586	0.3117
13D02134	12.5 %	✓	0.0810032 ± 0.0004854	0.00334143 ± 0.00003312	0.3888
13D02136	14.0 %	✓	0.0815374 ± 0.0004505	0.00335032 ± 0.00003033	0.3940
13D02137	16.0 %		0.0773717 ± 0.0003054	0.00330021 ± 0.00002546	0.2980
13D02138	18.0 %		0.0687781 ± 0.0002516	0.00328852 ± 0.00002377	0.2708

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	295.12 ± 0.93	0.15609 ± 0.05021	497.3 ± 159.9	0.69
Clustered Points	± 0.32%	± 32.16%	± 32.16%	76%
			Full External Error ± 160.3	
			Analytical Error ± 159.9	

Statistics				
	2σ Confidence Limit	1.82	Convergence	0.0001464038
	Error Magnification	1.0000	Number of Iterations	3
	Number of Data Points	14	Calculated Line	Weighted York-2
	Spreading Factor	1.3%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02118	2.0 %	✓	12.445803	0.274	41.2508	1.305	3.357959	1.150	14.77898	0.262	3683.962	0.057	0.64242 ± 1.39338	2045.9 ± 4434.9	0.26	1.81	0.154 ± 0.004
13D02120	2.6 %	✓	12.079308	0.275	83.3900	0.719	3.975643	0.977	25.12032	0.166	3560.376	0.057	0.09985 ± 0.79929	318.2 ± 2547.3	0.07	3.07	0.129 ± 0.002
13D02121	3.2 %	✓	9.044016	0.280	123.0291	0.566	3.964711	1.005	36.96233	0.125	2659.134	0.059	0.10070 ± 0.41466	320.9 ± 1321.5	0.14	4.52	0.129 ± 0.001
13D02122	3.8 %	✓	5.651367	0.287	122.4204	0.577	3.412221	1.170	43.13102	0.109	1666.554	0.067	0.14358 ± 0.22895	457.5 ± 729.3	0.37	5.27	0.151 ± 0.002
13D02124	4.4 %	✓	4.328463	0.292	118.1563	0.577	3.387956	1.231	49.88260	0.100	1269.384	0.074	0.00807 ± 0.15469	25.7 ± 492.9	0.03	6.10	0.181 ± 0.002
13D02125	5.2 %	✓	5.241264	0.285	156.4654	0.503	4.487180	0.871	70.44324	0.085	1543.584	0.068	0.10051 ± 0.12885	320.2 ± 410.5	0.46	8.62	0.193 ± 0.002
13D02126	6.2 %	✓	7.761935	0.278	224.7952	0.434	7.305466	0.543	103.17352	0.074	2293.634	0.060	0.17147 ± 0.12681	546.3 ± 403.9	0.77	12.62	0.197 ± 0.002
13D02128	7.2 %	✓	4.559352	0.290	214.5190	0.442	6.496935	0.594	89.48680	0.078	1346.484	0.072	0.18006 ± 0.09015	573.7 ± 287.2	1.19	10.95	0.179 ± 0.002
13D02129	8.2 %	✓	4.211142	0.291	234.3701	0.433	5.281286	0.725	92.93094	0.079	1240.404	0.074	0.15505 ± 0.08064	494.0 ± 256.9	1.16	11.37	0.170 ± 0.001
13D02130	9.2 %	✓	3.278877	0.301	225.0090	0.435	3.662681	1.113	81.39964	0.079	964.808	0.085	0.16596 ± 0.07463	528.7 ± 237.7	1.40	9.96	0.155 ± 0.001
13D02132	10.2 %	✓	2.290495	0.320	169.8497	0.481	2.204129	1.815	57.74859	0.092	670.873	0.109	0.12637 ± 0.07925	402.6 ± 252.5	1.09	7.06	0.146 ± 0.001
13D02133	11.2 %	✓	1.502723	0.346	109.8647	0.605	1.330875	3.178	36.20471	0.123	439.054	0.154	0.09873 ± 0.09296	314.6 ± 296.2	0.81	4.43	0.141 ± 0.002
13D02134	12.5 %	✓	0.919332	0.425	67.9572	0.855	0.841203	4.492	21.89556	0.179	269.762	0.240	0.15566 ± 0.12118	495.9 ± 386.0	1.26	2.68	0.138 ± 0.002
13D02136	14.0 %	✓	1.006636	0.385	91.9676	0.665	0.791862	5.013	23.96830	0.164	293.220	0.222	0.12241 ± 0.11018	390.0 ± 351.0	1.00	2.93	0.112 ± 0.002
13D02137	16.0 %		1.531254	0.344	178.1633	0.472	1.073127	3.615	34.91507	0.127	449.750	0.151	0.32039 ± 0.09760	1020.6 ± 310.8	2.48	4.26	0.084 ± 0.001
13D02138	18.0 %		1.762446	0.323	238.3990	0.430	1.068859	3.631	35.70383	0.124	516.820	0.134	0.41065 ± 0.10256	1308.0 ± 326.6	2.82	4.36	0.064 ± 0.001
		Σ	77.614413	0.087	2399.6067	0.133	52.642092	0.301	817.74546	0.026	22867.804	0.020					

Information on Analysis and Constants Used in Calculations

Sample = HH-9
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00176208 ± 0.00000407
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.13675 ± 0.03053 ± 22.32%	435.7 ± 97.3 ± 22.33%	0.69	91.38	0.154 ± 0.014
		Full External Error ± 97.8		78%	14	
		Analytical Error ± 97.3		1.78	2σ Confidence Limit	
				1.0000	Error Magnification	
Total Fusion Age		0.14783 ± 0.05045 ± 34.13%	471.0 ± 160.7 ± 34.13%		16	0.146 ± 0.000
		Full External Error ± 161.1				
		Analytical Error ± 160.7				
Normal Isochron	295.12 ± 0.93 ± 0.32%	0.15615 ± 0.05678 ± 36.37%	497.5 ± 180.9 ± 36.36%	0.69	91.38	
		Full External Error ± 181.2		76%	14	
		Analytical Error ± 180.9		1.82	2σ Confidence Limit	
				1.0000	Error Magnification	
				3	Number of Iterations	
				0.0000001255	Convergence	
Inverse Isochron	295.12 ± 0.93 ± 0.32%	0.15609 ± 0.05021 ± 32.16%	497.3 ± 159.9 ± 32.16%	0.69	91.38	
Clustered Points		Full External Error ± 160.3		76%	14	
		Analytical Error ± 159.9		1.82	2σ Confidence Limit	
				1.0000	Error Magnification	
				3	Number of Iterations	
				0.0001464038	Convergence	
				1%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02118	2.0 %	✓	12.434757	0.27	0.0000000	0.00	0.0108902	1.30	0.0001557	4.64	41.2508	1.30	2.324056	0.27	0.0000000	0.00	0.1678689	0.26	0.0057339	1.30	0.860300	4.73	14.75122	0.26	0.0277618	1.30	9.47650	108.45	3674.471	0.27	0.0000000	0.00	0.0148987	0.26
13D02120	2.6 %	✓	12.057035	0.28	0.0000000	0.00	0.0220150	0.72	0.0002580	2.91	83.3900	0.72	2.253460	0.28	0.0000000	0.00	0.2852306	0.17	0.0115912	0.72	1.425362	3.05	25.06420	0.17	0.0561214	0.72	2.50263	400.25	3562.854	0.28	0.0000000	0.00	0.0253148	0.17
13D02121	3.2 %	✓	9.011203	0.28	0.0000000	0.00	0.0324797	0.57	0.0003338	2.36	123.0291	0.57	1.684194	0.28	0.0000000	0.00	0.4196891	0.13	0.0171010	0.57	1.843727	2.54	36.87953	0.13	0.0827986	0.57	3.71359	205.90	2662.810	0.28	0.0000000	0.00	0.0372483	0.13
13D02122	3.8 %	✓	5.618712	0.29	0.0000000	0.00	0.0323190	0.58	0.0003359	2.35	122.4204	0.58	1.050137	0.29	0.0000000	0.00	0.4898935	0.11	0.0170164	0.58	1.855174	2.52	43.04864	0.11	0.0823889	0.58	6.18112	79.73	1660.329	0.29	0.0000000	0.00	0.0434791	0.11
13D02124	4.4 %	✓	4.296907	0.29	0.0000000	0.00	0.0311933	0.58	0.0003625	2.28	118.1563	0.58	0.803092	0.29	0.0000000	0.00	0.5667591	0.10	0.0164237	0.58	2.001681	2.46	49.80308	0.10	0.0795192	0.58	0.40196	958.32	1269.736	0.29	0.0000000	0.00	0.0503011	0.10
13D02125	5.2 %	✓	5.199470	0.29	0.0000000	0.00	0.0413069	0.50	0.0004878	1.72	156.4654	0.50	0.971781	0.29	0.0000000	0.00	0.8004458	0.09	0.0217487	0.50	2.693204	1.95	70.33794	0.09	0.1053012	0.50	7.06979	64.10	1536.443	0.29	0.0000000	0.00	0.0710413	0.09
13D02126	6.2 %	✓	7.701744	0.28	0.0000000	0.00	0.0593459	0.43	0.0008445	1.26	224.7952	0.43	1.439456	0.28	0.0000000	0.00	1.1723930	0.07	0.0312465	0.43	4.662370	1.56	103.02223	0.07	0.1512871	0.43	17.66484	36.98	2275.865	0.28	0.0000000	0.00	0.1040525	0.07
13D02128	7.2 %	✓	4.501884	0.29	0.0000000	0.00	0.0566330	0.44	0.0008350	1.24	214.5190	0.44	0.841402	0.29	0.0000000	0.00	1.0167168	0.08	0.0298181	0.44	4.608998	1.55	89.34243	0.08	0.1443713	0.44	16.08725	25.03	1330.307	0.29	0.0000000	0.00	0.0902359	0.08
13D02129	8.2 %	✓	4.148649	0.30	0.0000000	0.00	0.0618737	0.43	0.0006192	1.45	234.3701	0.43	0.775383	0.30	0.0000000	0.00	1.0557591	0.08	0.0325774	0.43	3.417567	1.72	92.77321	0.08	0.1577311	0.43	14.38450	26.01	1225.926	0.30	0.0000000	0.00	0.0937009	0.08
13D02130	9.2 %	✓	3.219094	0.31	0.0000000	0.00	0.0594024	0.44	0.0003814	2.15	225.0090	0.44	0.601649	0.31	0.0000000	0.00	0.9246047	0.08	0.0312763	0.44	2.105151	2.33	81.24821	0.08	0.1514311	0.44	13.48390	22.48	951.242	0.31	0.0000000	0.00	0.0820607	0.08
13D02132	10.2 %	✓	2.245455	0.33	0.0000000	0.00	0.0448403	0.48	0.0002002	3.74	169.8497	0.48	0.419675	0.33	0.0000000	0.00	0.6558781	0.09	0.0236091	0.48	1.104967	3.85	57.63428	0.09	0.1143088	0.48	7.28319	31.36	663.532	0.33	0.0000000	0.00	0.0582106	0.09
13D02133	11.2 %	✓	1.473605	0.35	0.0000000	0.00	0.0290043	0.60	0.0001140	6.79	109.8647	0.60	0.275417	0.35	0.0000000	0.00	0.4111682	0.12	0.0152712	0.60	0.629018	6.85	36.13077	0.12	0.0739389	0.60	3.56729	47.08	435.450	0.35	0.0000000	0.00	0.0364921	0.12
13D02134	12.5 %	✓	0.901316	0.43	0.0000000	0.00	0.0179407	0.85	0.0000752	9.16	67.9572	0.85	0.168456	0.43	0.0000000	0.00	0.2486510	0.18	0.0094460	0.85	0.414650	9.21	21.84982	0.18	0.0457352	0.85	3.40106	38.93	266.339	0.43	0.0000000	0.00	0.0220683	0.18
13D02136	14.0 %	✓	0.982298	0.39	0.0000000	0.00	0.0242794	0.66	0.0000586	12.31	91.9676	0.66	0.183592	0.39	0.0000000	0.00	0.2720549	0.16	0.0127835	0.66	0.323432	12.35	23.90640	0.16	0.0618942	0.66	2.92634	45.01	290.269	0.39	0.0000000	0.00	0.0241455	0.16
13D02137	16.0 %		1.484151	0.36	0.0000000	0.00	0.0470351	0.47	0.0000680	10.39	178.1633	0.47	0.277388	0.36	0.0000000	0.00	0.3959689	0.13	0.0247647	0.47	0.375005	10.43	34.79516	0.13	0.1199039	0.47	11.14790	15.23	438.566	0.36	0.0000000	0.00	0.0351431	0.13
13D02138	18.0 %		1.699452	0.34	0.0000000	0.00	0.0629373	0.43	0.0000569	12.41	238.3990	0.43	0.317628	0.34	0.0000000	0.00	0.4044837	0.12	0.0331375	0.43	0.313610	12.45	35.54338	0.12	0.1604425	0.43	14.59582	12.49	502.188	0.34	0.0000000	0.00	0.0358988	0.12
	Σ		76.975730	0.09	0.0000000	0.00	0.6334962	0.13	0.0051865	0.63	2399.6067	0.13	14.386764	0.09	0.0000000	0.00	9.2875654	0.03	0.3335453	0.13	28.634217	0.69	816.13053	0.03	1.6149353	0.13	120.65130	17.06	22746.328	0.09	0.0000000	0.00	0.8242918	0.03
	Σ								77.614413	0.09	2399.6067	0.13									52.642092	0.38			817.74546	0.03							22867.804	0.13

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02118	2.0 %	✓	249.270304	0.667947	2.791177	0.037145	0.842128	0.003189	111.449	9.059507	1.00078758	1.768E-10
13D02120	2.6 %	✓	141.732900	0.249118	3.319621	0.024500	0.480858	0.001545	111.467	9.062614	1.00078770	1.709E-10
13D02121	3.2 %	✓	71.941729	0.099849	3.328499	0.019310	0.244682	0.000751	111.475	9.064106	1.00078776	1.276E-10
13D02122	3.8 %	✓	38.639333	0.049567	2.838337	0.016675	0.131028	0.000403	111.484	9.065722	1.00078782	7.999E-11
13D02124	4.4 %	✓	25.447435	0.031632	2.368688	0.013877	0.086773	0.000268	111.518	9.071817	1.00078806	6.093E-11
13D02125	5.2 %	✓	21.912451	0.023958	2.221155	0.011337	0.074404	0.000221	111.527	9.073435	1.00078813	7.409E-11
13D02126	6.2 %	✓	22.230844	0.021268	2.178807	0.009592	0.075232	0.000217	111.535	9.074929	1.00078819	1.101E-10
13D02128	7.2 %	✓	15.046735	0.015959	2.397214	0.010763	0.050950	0.000153	111.553	9.078041	1.00078831	6.463E-11
13D02129	8.2 %	✓	13.347590	0.014447	2.521982	0.011101	0.045315	0.000137	111.561	9.079536	1.00078837	5.954E-11
13D02130	9.2 %	✓	11.852731	0.013782	2.764251	0.012225	0.040281	0.000125	111.570	9.081155	1.00078843	4.631E-11
13D02132	10.2 %	✓	11.617136	0.016513	2.941192	0.014406	0.039663	0.000132	111.587	9.084145	1.00078855	3.220E-11
13D02133	11.2 %	✓	12.126985	0.023914	3.034541	0.018732	0.041506	0.000152	111.596	9.085765	1.00078861	2.107E-11
13D02134	12.5 %	✓	12.320407	0.036883	3.103697	0.027100	0.041987	0.000193	111.604	9.087260	1.00078867	1.295E-11
13D02136	14.0 %	✓	12.233643	0.033765	3.837051	0.026269	0.041999	0.000176	111.622	9.090377	1.00078879	1.407E-11
13D02137	16.0 %		12.881245	0.025380	5.102764	0.024962	0.043857	0.000161	111.631	9.091998	1.00078886	2.159E-11
13D02138	18.0 %		14.475190	0.026415	6.677126	0.029912	0.049363	0.000171	111.639	9.093495	1.00078892	2.481E-11

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02118	2.0 %	0.3249721	0.0015440	0.0015388	0.0467733	0.0799212	0.0270530	1.0025115	0.0263997	99.358003	0.627380
13D02120	2.6 %	0.2789459	0.0015440	0.0115987	0.0467733	0.0635594	0.0270530	0.6910751	0.0263997	85.216153	0.627380
13D02121	3.2 %	0.2584869	0.0015440	0.0164274	0.0467733	0.0562383	0.0270530	0.5548399	0.0263997	78.930816	0.627380
13D02122	3.8 %	0.2375187	0.0015440	0.0216585	0.0467733	0.0486968	0.0270530	0.4169536	0.0263997	72.489705	0.627380
13D02124	4.4 %	0.1696626	0.0015440	0.0413758	0.0467733	0.0239149	0.0270530	0.0120820	0.0263997	51.651668	0.627380
13D02125	5.2 %	0.1546254	0.0015440	0.0466069	0.0467733	0.0183068	0.0270530	0.1018472	0.0263997	47.035861	0.627380
13D02126	6.2 %	0.1418487	0.0015440	0.0514357	0.0467733	0.0134899	0.0270530	0.1757518	0.0263997	43.114813	0.627380
13D02128	7.2 %	0.1186340	0.0015440	0.0614955	0.0467733	0.0045642	0.0270530	0.3021068	0.0263997	35.993361	0.627380
13D02129	8.2 %	0.1091245	0.0015440	0.0663242	0.0467733	0.0008123	0.0270530	0.3495030	0.0263997	33.077815	0.627380
13D02130	9.2 %	0.1000183	0.0015440	0.0715554	0.0467733	0.0028624	0.0270530	0.3911470	0.0263997	30.287311	0.627380
13D02132	10.2 %	0.0864741	0.0015440	0.0812128	0.0467733	0.0085815	0.0270530	0.4415198	0.0263997	26.141114	0.627380
13D02133	11.2 %	0.0809073	0.0015440	0.0864440	0.0467733	0.0111025	0.0270530	0.4544464	0.0263997	24.439905	0.627380
13D02134	12.5 %	0.0768726	0.0015440	0.0912727	0.0467733	0.0130697	0.0270530	0.4574231	0.0263997	23.209254	0.627380
13D02136	14.0 %	0.0718702	0.0015440	0.1013325	0.0467733	0.0160587	0.0270530	0.4360115	0.0263997	21.692797	0.627380
13D02137	16.0 %	0.0710866	0.0015440	0.1065637	0.0467733	0.0170204	0.0270530	0.4101307	0.0263997	21.463607	0.627380
13D02138	18.0 %	0.0714669	0.0015440	0.1113924	0.0467733	0.0175484	0.0270530	0.3772851	0.0263997	21.591743	0.627380

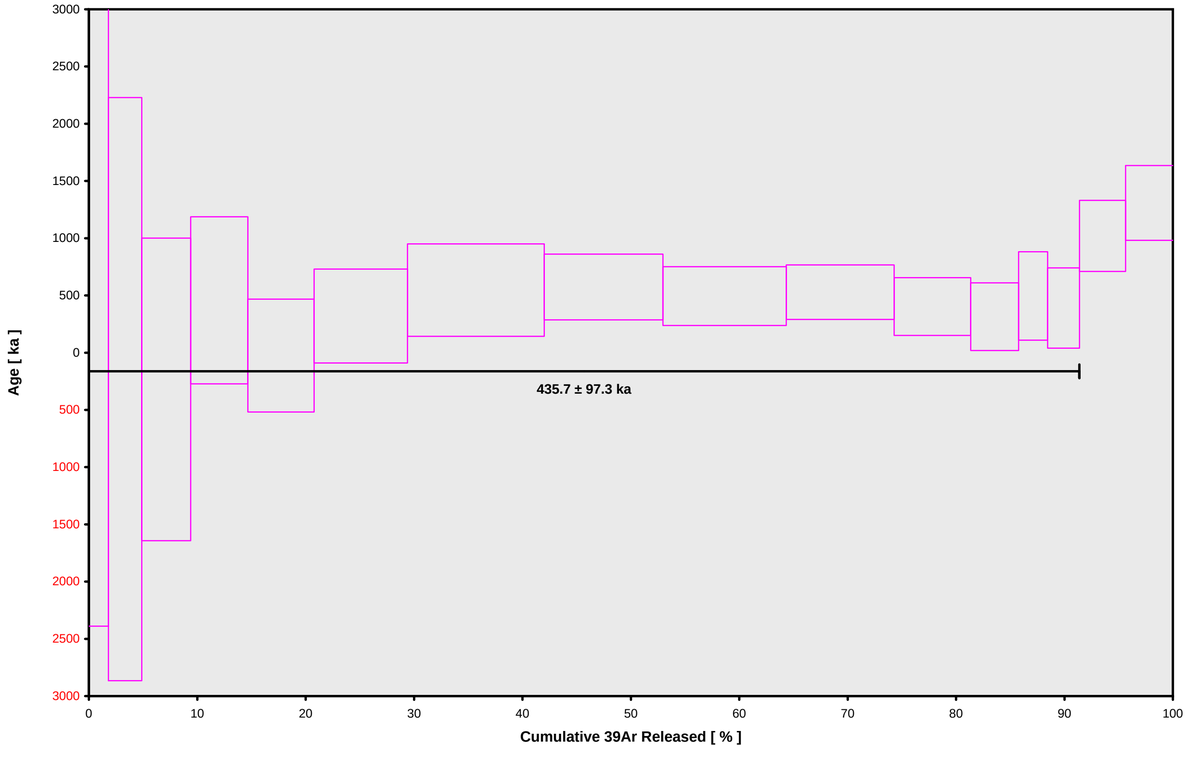
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02118	2.0 %	12.406247	0.007522	0.9923	EXP 150 of 150	4.4694	0.0307	0.4458	EXP 150 of 150	3.395799	0.026543	0.3248	EXP 150 of 150	13.67247	0.02637	0.9318	EXP 149 of 150	3782.94145	0.21355	0.9999	EXP 150 of 150
13D02120	2.6 %	12.004461	0.007950	0.9913	EXP 150 of 150	9.0404	0.0304	0.7577	EXP 150 of 150	3.989381	0.026733	0.5372	EXP 150 of 150	24.25248	0.02793	0.9743	EXP 150 of 150	3645.22673	0.18258	0.9999	EXP 150 of 150
13D02121	3.2 %	9.037611	0.007465	0.9865	EXP 150 of 150	13.3348	0.0331	0.8367	EXP 150 of 150	3.971264	0.028161	0.4054	EXP 149 of 150	36.14738	0.02992	0.9871	EXP 150 of 150	2737.79168	0.15834	0.9999	EXP 150 of 150
13D02122	3.8 %	5.723362	0.005709	0.9798	EXP 150 of 150	13.2718	0.0358	0.8236	EXP 150 of 150	3.418157	0.028370	0.3481	EXP 150 of 150	42.41055	0.02793	0.9917	EXP 150 of 150	1738.87247	0.11960	0.9999	EXP 150 of 150
13D02124	4.4 %	4.371348	0.004788	0.9756	EXP 150 of 150	12.8214	0.0323	0.8559	EXP 150 of 150	3.369413	0.030770	0.3718	EXP 150 of 150	49.54364	0.02803	0.9939	EXP 150 of 150	1320.90551	0.08592	0.9999	EXP 150 of 150
13D02125	5.2 %	5.242377	0.004883	0.9818	EXP 150 of 150	16.9672	0.0343	0.9000	EXP 150 of 150	4.449254	0.026945	0.5227	EXP 150 of 150	70.04935	0.03096	0.9962	EXP 150 of 150	1590.46132	0.11999	0.9999	EXP 150 of 150
13D02126	6.2 %	7.676442	0.005987	0.9873	EXP 150 of 150	24.3574	0.0304	0.9564	EXP 150 of 150	7.227405	0.026878	0.7185	EXP 150 of 150	102.62318	0.03096	0.9982	EXP 150 of 150	2336.51338	0.13956	0.9999	EXP 150 of 150
13D02128	7.2 %	4.544446	0.004880	0.9757	EXP 150 of 150	23.2484	0.0321	0.9450	EXP 150 of 150	6.420081	0.025611	0.6749	EXP 149 of 150	89.15913	0.03191	0.9975	EXP 150 of 150	1382.33914	0.11232	0.9999	EXP 150 of 150
13D02129	8.2 %	4.196926	0.004590	0.9754	EXP 150 of 150	25.3947	0.0338	0.9531	EXP 150 of 150	5.215914	0.025545	0.6487	EXP 150 of 150	92.62642	0.03498	0.9972	EXP 150 of 150	1273.35440	0.09993	0.9999	EXP 150 of 150
13D02130	9.2 %	3.282860	0.004207	0.9668	EXP 150 of 150	24.3840	0.0313	0.9547	EXP 150 of 150	3.613918	0.029455	0.3538	EXP 149 of 150	81.21792	0.02906	0.9975	EXP 150 of 150	994.99625	0.07925	0.9999	EXP 150 of 150
13D02132	10.2 %	2.309882	0.003611	0.9498	EXP 150 of 150	18.4276	0.0322	0.9128	EXP 150 of 150	2.167926	0.028653	0.1202	EXP 150 of 150	57.78368	0.02771	0.9955	EXP 150 of 150	696.94540	0.06513	0.9998	EXP 150 of 150
13D02133	11.2 %	1.539617	0.002821	0.9314	EXP 149 of 150	11.9514	0.0324	0.8185	EXP 150 of 150	1.303094	0.031779	0.0677	EXP 150 of 150	36.40435	0.02758	0.9887	EXP 150 of 150	463.44878	0.05838	0.9996	EXP 150 of 150
13D02134	12.5 %	0.969278	0.002506	0.8714	EXP 150 of 150	7.4292	0.0318	0.6675	EXP 150 of 150	0.817592	0.025679	0.1020	EXP 150 of 150	22.19888	0.02501	0.9759	EXP 150 of 150	292.94367	0.04950	0.9992	EXP 150 of 150
13D02136	14.0 %	1.049023	0.002220	0.9125	EXP 150 of 150	10.0284	0.0288	0.8187	EXP 150 of 150	0.765880	0.028351	0.0342	EXP 150 of 150	24.23562	0.02462	0.9804	EXP 150 of 150	314.88226	0.04735	0.9994	EXP 150 of 150
13D02137	16.0 %	1.557491	0.002836	0.9268	EXP 150 of 150	19.3343	0.0323	0.9246	EXP 150 of 150	1.042658	0.027087	0.0849	EXP 150 of 150	35.07946	0.02781	0.9877	EXP 150 of 150	471.16692	0.05781	0.9996	EXP 150 of 150
13D02138	18.0 %	1.782292	0.002732	0.9566	EXP 150 of 150	25.8356	0.0329	0.9529	EXP 150 of 150	1.037916	0.027107	0.0312	EXP 149 of 150	35.82982	0.02733	0.9890	EXP 150 of 150	538.35830	0.06322	0.9997	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02118	2.0 %	HH-9	Groundmass	Harrat	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	8	23	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02120	2.6 %	HH-9	Groundmass	Harrat	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	8	48	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02121	3.2 %	HH-9	Groundmass	Harrat	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	9	0	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02122	3.8 %	HH-9	Groundmass	Harrat	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	9	13	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02124	4.4 %	HH-9	Groundmass	Harrat	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	10	2	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02125	5.2 %	HH-9	Groundmass	Harrat	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	10	15	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02126	6.2 %	HH-9	Groundmass	Harrat	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	10	27	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02128	7.2 %	HH-9	Groundmass	Harrat	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	10	52	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02129	8.2 %	HH-9	Groundmass	Harrat	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	11	4	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02130	9.2 %	HH-9	Groundmass	Harrat	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	11	17	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02132	10.2 %	HH-9	Groundmass	Harrat	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	11	41	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02133	11.2 %	HH-9	Groundmass	Harrat	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	11	54	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02134	12.5 %	HH-9	Groundmass	Harrat	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	12	6	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02136	14.0 %	HH-9	Groundmass	Harrat	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	12	31	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02137	16.0 %	HH-9	Groundmass	Harrat	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	12	44	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01
13D02138	18.0 %	HH-9	Groundmass	Harrat	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.91978	0.231	0.00176208	0.231	303.088	0.095	0.993733002	0.063	1	4.8E-14	11	OCT	2013	12	56	1	13-OSU-05			16.40	Harrat\Hutaymah (13-05)	13D02117	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02118	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02120	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02121	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02122	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02124	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02125	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02126	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02128	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02129	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02130	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02132	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02133	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02134	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02136	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02137	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02138	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02117.AGE >>> HH-9 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
435.7 ± 97.3
TOTAL FUSION
471.0 ± 160.7
NORMAL ISOCHRON
497.5 ± 180.9
INVERSE ISOCHRON
497.3 ± 159.9

MSWD (PROBABILITY)
0.69 (78%)

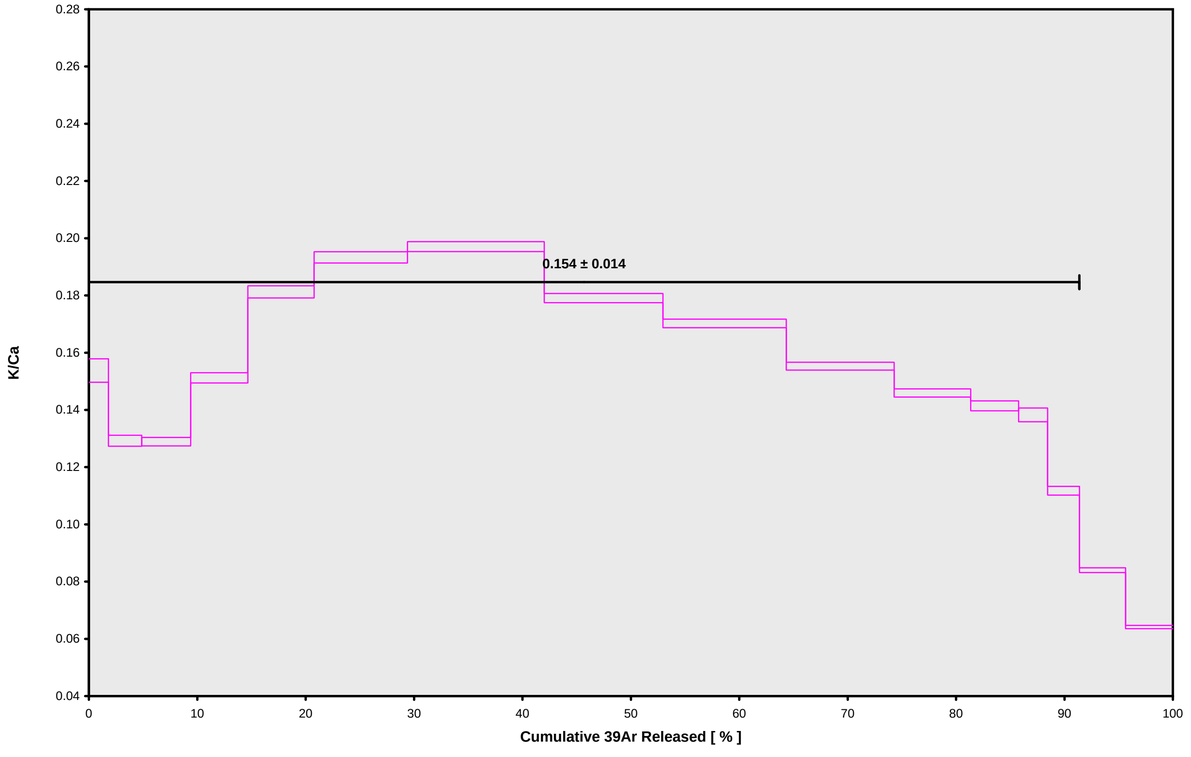
Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00176208 ± 0.00000407

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02117.AGE >>> HH-9 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

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435.7 ± 97.3
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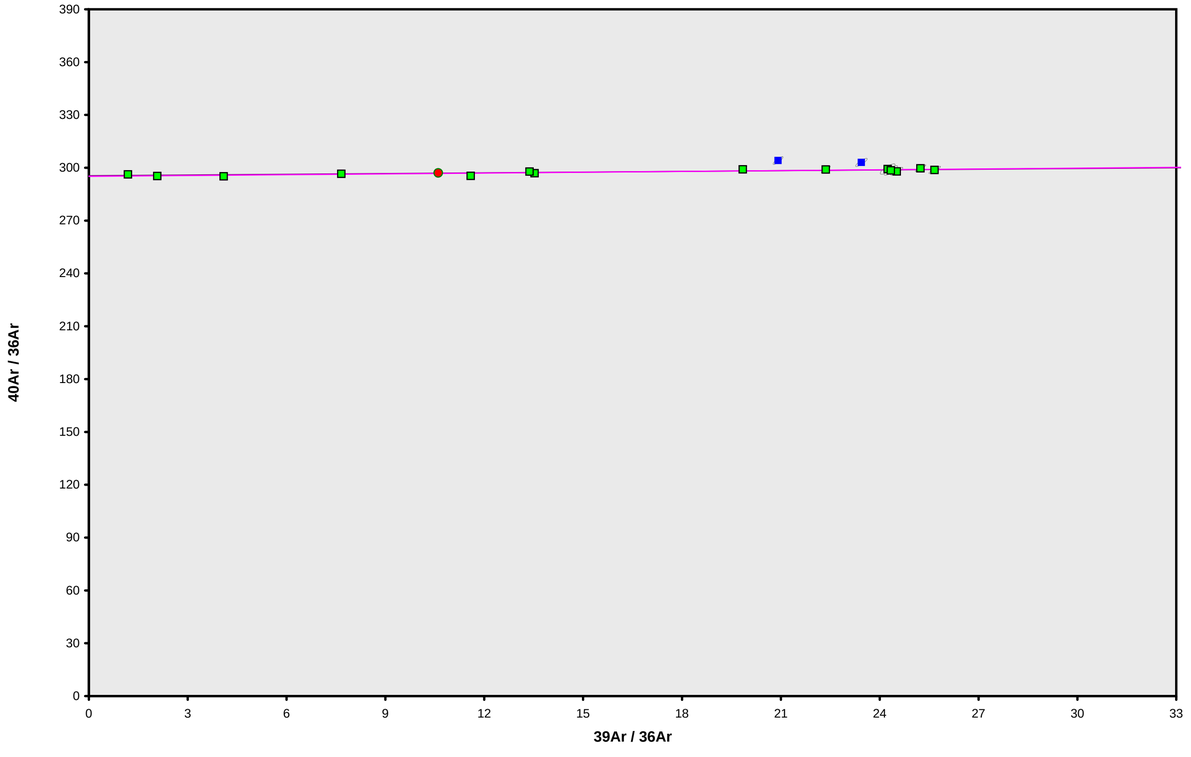
13D02117.AGE >>> HH-9 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
435.7 ± 97.3
TOTAL FUSION
471.0 ± 160.7
NORMAL ISOCHRON
497.5 ± 180.9
INVERSE ISOCHRON
497.3 ± 159.9

MSWD (PROBABILITY)
0.69 (76%)

40AR/36AR INTERCEPT
295.1 ± 0.9

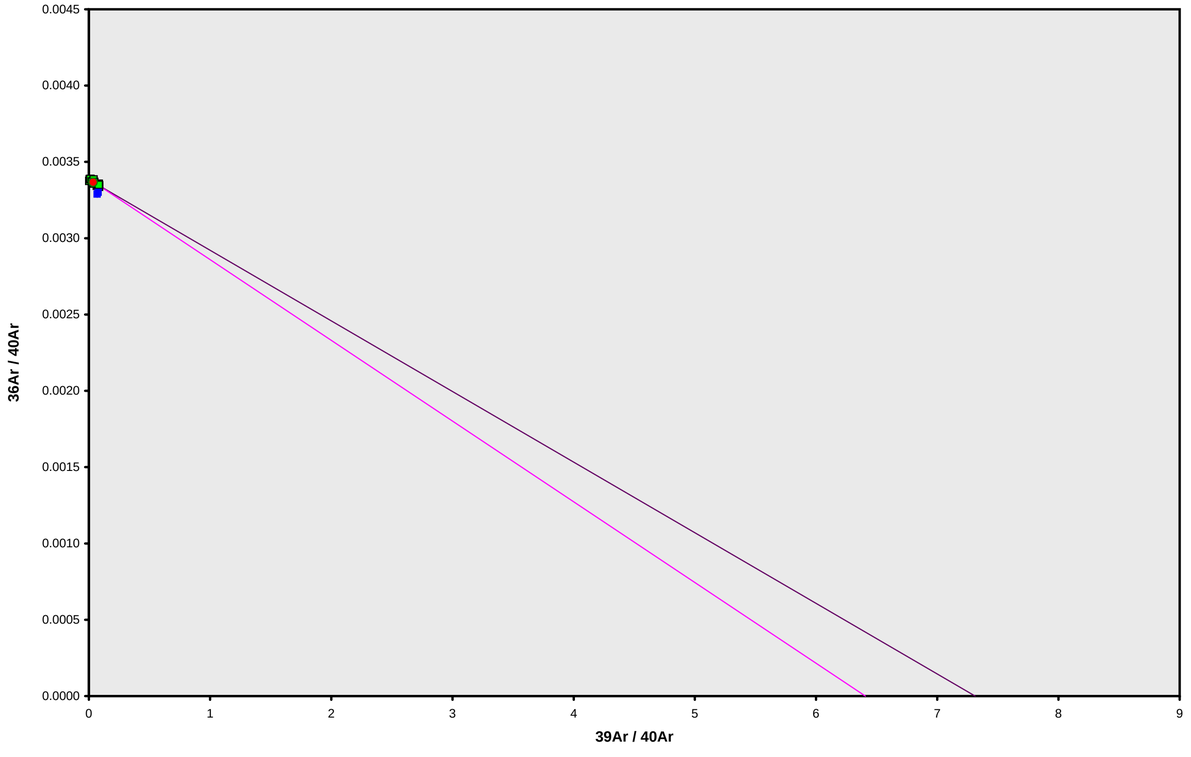
Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00176208 ± 0.00000407

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02117.AGE >>> HH-9 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
435.7 ± 97.3
TOTAL FUSION
471.0 ± 160.7
NORMAL ISOCHRON
497.5 ± 180.9
INVERSE ISOCHRON
497.3 ± 159.9

MSWD (PROBABILITY)
0.69 (76%)

SPREADING FACTOR
1.3%

40AR/36AR INTERCEPT
295.1 ± 0.9

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00176208 ± 0.00000407

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02218	2.0 %		11.05162	7.1764	0.32195	9.9128	8.83335	2604.5 ± 5514.2	0.27	0.57	0.594 ± 0.081
13D02220	2.6 %		109.76471	56.2856	6.08432	74.8116	33.62361	1313.2 ± 6526.5	0.10	4.31	0.572 ± 0.010
13D02221	3.2 %		82.54019	69.6170	7.24313	96.5409	33.34998	1009.2 ± 3838.4	0.14	5.56	0.596 ± 0.009
13D02223	3.8 %		47.34599	51.9656	5.37177	76.2196	248.39865	9493.6 ± 2758.2	1.74	4.39	0.631 ± 0.012
13D02224	4.4 %	✓	53.39082	86.9905	7.84063	121.8948	9.80099	234.8 ± 1999.0	0.06	7.02	0.603 ± 0.008
13D02226	5.2 %	✓	56.00700	117.8422	9.71432	155.2692	19.68139	370.3 ± 1641.0	0.12	8.94	0.567 ± 0.006
13D02227	6.2 %	✓	53.50746	135.1062	12.49887	188.0331	26.96109	418.7 ± 1295.7	0.17	10.82	0.598 ± 0.006
13D02229	7.2 %	✓	30.27484	101.1845	10.06081	143.5124	91.93459	1870.0 ± 950.2	1.02	8.26	0.610 ± 0.007
13D02230	8.2 %	✓	26.57938	148.7697	11.01425	176.7314	75.49955	1247.3 ± 681.8	0.95	10.17	0.511 ± 0.005
13D02232	9.2 %	✓	21.76140	188.9818	8.00278	158.3369	41.30437	761.7 ± 628.0	0.64	9.11	0.360 ± 0.003
13D02233	10.2 %	✓	24.40633	247.7140	7.28986	166.5843	44.85867	786.3 ± 667.8	0.62	9.59	0.289 ± 0.003
13D02235	11.2 %	✓	16.59372	161.7014	4.47702	106.3527	16.31010	447.9 ± 724.1	0.33	6.12	0.283 ± 0.003
13D02236	12.5 %	✓	13.51491	135.0007	3.30846	82.5202	14.28910	505.7 ± 779.9	0.36	4.75	0.263 ± 0.003
13D02238	14.0 %	✓	7.69780	75.0006	2.04210	49.4988	4.55871	269.0 ± 804.9	0.20	2.85	0.284 ± 0.005
13D02239	16.0 %	✓	8.65755	91.5411	2.14917	53.8518	7.41436	402.1 ± 812.1	0.29	3.10	0.253 ± 0.004
13D02241	18.0 %	✓	14.09093	137.9422	2.89655	77.4504	23.84386	898.9 ± 859.2	0.57	4.46	0.241 ± 0.003
		Σ	577.18465	1812.8196	100.31598	1737.5208	509.68571				

Information on Analysis

Sample = HH-6
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00161515 ± 0.00000213
FCT-3 = 28.020 ± 0.153 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.24949 ± 0.09120 ± 36.56%	728.5 ± 266.3 ± 36.55%	1.22	85.18	0.326 ± 0.067
		27%	12	
		Full External Error ± 266.9	1.85	2σ Confidence Limit	
		Analytical Error ± 266.3	1.1049	Error Magnification	
Total Fusion Age	0.29334 ± 0.16249 ± 55.39%	856.6 ± 474.4 ± 55.38%		16	0.412 ± 0.001
		Full External Error ± 474.8			
		Analytical Error ± 474.4			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02218	2.0 %		0.90 ± 0.05	294.70 ± 1.69	0.0996
13D02220	2.6 %		0.68 ± 0.01	295.19 ± 1.52	0.5766
13D02221	3.2 %		1.17 ± 0.01	295.10 ± 1.53	0.6727
13D02223	3.8 %		1.61 ± 0.01	300.75 ± 1.55	0.5840
13D02224	4.4 %	✓	2.28 ± 0.02	295.68 ± 1.56	0.7530
13D02226	5.2 %	✓	2.77 ± 0.02	295.15 ± 1.56	0.8180
13D02227	6.2 %	✓	3.51 ± 0.02	296.00 ± 1.56	0.8586
13D02229	7.2 %	✓	4.74 ± 0.03	298.54 ± 1.56	0.7926
13D02230	8.2 %	✓	6.65 ± 0.04	298.34 ± 1.57	0.8415
13D02232	9.2 %	✓	7.28 ± 0.05	297.40 ± 1.57	0.8166
13D02233	10.2 %	✓	6.83 ± 0.04	297.34 ± 1.57	0.8290
13D02235	11.2 %	✓	6.41 ± 0.05	296.48 ± 1.59	0.7043
13D02236	12.5 %	✓	6.11 ± 0.05	296.56 ± 1.64	0.6204
13D02238	14.0 %	✓	6.43 ± 0.08	296.09 ± 1.78	0.4387
13D02239	16.0 %	✓	6.22 ± 0.07	296.36 ± 1.73	0.4668
13D02241	18.0 %	✓	5.50 ± 0.05	297.19 ± 1.63	0.5963

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	294.93 ± 1.79 ± 0.61%	0.34577 ± 0.31935 ± 92.36%	1009.6 ± 932.2 ± 92.33% Full External Error ± 932.5 Analytical Error ± 932.2	1.28 23%

Statistics				
	2σ Confidence Limit	1.89	Convergence	0.000000078716
	Error Magnification	1.1333	Number of Iterations	3
	Number of Data Points	12	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02218	2.0 %		0.0030436 ± 0.0001645	0.00339327 ± 0.00001941	0.0057
13D02220	2.6 %		0.0023089 ± 0.0000168	0.00338761 ± 0.00001745	0.0005
13D02221	3.2 %		0.0039635 ± 0.0000226	0.00338873 ± 0.00001762	0.0011
13D02223	3.8 %		0.0053528 ± 0.0000383	0.00332506 ± 0.00001719	0.0027
13D02224	4.4 %	✓	0.0077213 ± 0.0000356	0.00338199 ± 0.00001789	0.0032
13D02226	5.2 %	✓	0.0093930 ± 0.0000347	0.00338812 ± 0.00001786	0.0036
13D02227	6.2 %	✓	0.0118720 ± 0.0000373	0.00337833 ± 0.00001783	0.0046
13D02229	7.2 %	✓	0.0158785 ± 0.0000633	0.00334967 ± 0.00001750	0.0114
13D02230	8.2 %	✓	0.0222873 ± 0.0000744	0.00335187 ± 0.00001762	0.0173
13D02232	9.2 %	✓	0.0244657 ± 0.0000901	0.00336250 ± 0.00001781	0.0231
13D02233	10.2 %	✓	0.0229552 ± 0.0000808	0.00336318 ± 0.00001777	0.0195
13D02235	11.2 %	✓	0.0216175 ± 0.0001141	0.00337288 ± 0.00001814	0.0274
13D02236	12.5 %	✓	0.0205891 ± 0.0001382	0.00337203 ± 0.00001861	0.0316
13D02238	14.0 %	✓	0.0217171 ± 0.0002404	0.00337733 ± 0.00002025	0.0542
13D02239	16.0 %	✓	0.0209889 ± 0.0002137	0.00337432 ± 0.00001975	0.0477
13D02241	18.0 %	✓	0.0184947 ± 0.0001314	0.00336483 ± 0.00001842	0.0276

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	294.94 ± 1.79	0.34564 ± 0.17986	1009.2 ± 525.0	1.29
Clustered Points	± 0.61%	± 52.04%	± 52.02%	23%
			Full External Error ± 525.6	
			Analytical Error ± 525.0	

Statistics				
	2σ Confidence Limit	1.89	Convergence	0.0007129508
	Error Magnification	1.1368	Number of Iterations	3
	Number of Data Points	12	Calculated Line	Weighted York-2
	Spreading Factor	0.6%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02218	2.0 %		11.05357	0.278	7.1764	6.241	2.50131	2.551	9.9176	2.701	3256.93	0.067	0.89111 ± 1.88524	2604.5 ± 5514.2	0.27	0.57	0.594 ± 0.081
13D02220	2.6 %		109.78070	0.257	56.2856	0.791	27.45853	0.262	74.8495	0.364	32401.92	0.007	0.44944 ± 2.23293	1313.2 ± 6526.5	0.10	4.31	0.572 ± 0.010
13D02221	3.2 %		82.55991	0.260	69.6170	0.700	23.77820	0.298	96.5878	0.285	24357.37	0.009	0.34545 ± 1.31347	1009.2 ± 3838.4	0.14	5.56	0.596 ± 0.009
13D02223	3.8 %		47.36071	0.258	51.9656	0.914	15.09534	0.443	76.2546	0.357	14239.22	0.016	3.25899 ± 0.94934	9493.6 ± 2758.2	1.74	4.39	0.631 ± 0.012
13D02224	4.4 %	✓	53.41525	0.264	86.9905	0.605	19.21863	0.349	121.9533	0.230	15786.91	0.014	0.08041 ± 0.68450	234.8 ± 1999.0	0.06	7.02	0.603 ± 0.008
13D02226	5.2 %	✓	56.03992	0.263	117.8422	0.510	21.96537	0.313	155.3485	0.184	16530.54	0.013	0.12676 ± 0.56173	370.3 ± 1641.0	0.12	8.94	0.567 ± 0.006
13D02227	6.2 %	✓	53.54546	0.263	135.1062	0.482	24.65801	0.284	188.1240	0.156	15838.61	0.014	0.14338 ± 0.44374	418.7 ± 1295.7	0.17	10.82	0.598 ± 0.006
13D02229	7.2 %	✓	30.30343	0.260	101.1845	0.561	17.36642	0.390	143.5805	0.198	9038.30	0.024	0.64060 ± 0.32565	1870.0 ± 950.2	1.02	8.26	0.610 ± 0.007
13D02230	8.2 %	✓	26.62070	0.261	148.7697	0.474	18.01382	0.377	176.8315	0.165	7929.88	0.028	0.42720 ± 0.23360	1247.3 ± 681.8	0.95	10.17	0.511 ± 0.005
13D02232	9.2 %	✓	21.81278	0.262	188.9818	0.433	13.89813	0.468	158.4641	0.181	6471.96	0.034	0.26086 ± 0.21510	761.7 ± 628.0	0.64	9.11	0.360 ± 0.003
13D02233	10.2 %	✓	24.47309	0.262	247.7140	0.409	13.78156	0.480	166.7510	0.173	7257.10	0.030	0.26929 ± 0.22875	786.3 ± 667.8	0.62	9.59	0.289 ± 0.003
13D02235	11.2 %	✓	16.63724	0.265	161.7014	0.458	8.81115	0.744	106.4615	0.260	4919.86	0.044	0.15336 ± 0.24800	447.9 ± 724.1	0.33	6.12	0.283 ± 0.003
13D02236	12.5 %	✓	13.55117	0.270	135.0007	0.488	6.79224	0.937	82.6110	0.331	4008.03	0.054	0.17316 ± 0.26710	505.7 ± 779.9	0.36	4.75	0.263 ± 0.003
13D02238	14.0 %	✓	7.71798	0.284	75.0006	0.682	4.05454	1.568	49.5493	0.545	2279.31	0.095	0.09210 ± 0.27561	269.0 ± 804.9	0.20	2.85	0.284 ± 0.005
13D02239	16.0 %	✓	8.68212	0.279	91.5411	0.594	4.39282	1.455	53.9134	0.501	2565.78	0.084	0.13768 ± 0.27811	402.1 ± 812.1	0.29	3.10	0.253 ± 0.004
13D02241	18.0 %	✓	14.12789	0.268	137.9422	0.485	6.43070	0.991	77.5433	0.351	4187.79	0.052	0.30786 ± 0.29433	898.9 ± 859.2	0.57	4.46	0.241 ± 0.003
		Σ	577.68190	0.083	1812.8196	0.140	228.21676	0.117	1738.7408	0.064	171069.51	0.005					

Information on Analysis and Constants Used in Calculations

Sample = HH-6
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00161515 ± 0.00000213
FCT-3 = 28.020 ± 0.153 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = Not Done

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.24949 ± 0.09120 (± 36.56%)	728.5 ± 266.3 (± 36.55%)	1.22 (27%)	85.18 (12)	0.326 ± 0.067
			Full External Error ± 266.9	1.85	2σ Confidence Limit	
			Analytical Error ± 266.3	1.1049	Error Magnification	
Total Fusion Age		0.29334 ± 0.16249 (± 55.39%)	856.6 ± 474.4 (± 55.38%)		16	0.412 ± 0.001
			Full External Error ± 474.8			
			Analytical Error ± 474.4			
Normal Isochron	294.93 ± 1.79 (± 0.61%)	0.34577 ± 0.31935 (± 92.36%)	1009.6 ± 932.2 (± 92.33%)	1.28 (23%)	85.18 (12)	
			Full External Error ± 932.5	1.89	2σ Confidence Limit	
			Analytical Error ± 932.2	1.1333	Error Magnification	
				3	Number of Iterations	
				0.0000000787	Convergence	
Inverse Isochron Clustered Points	294.94 ± 1.79 (± 0.61%)	0.34564 ± 0.17986 (± 52.04%)	1009.2 ± 525.0 (± 52.02%)	1.29 (23%)	85.18 (12)	
			Full External Error ± 525.6	1.89	2σ Confidence Limit	
			Analytical Error ± 525.0	1.1368	Error Magnification	
				3	Number of Iterations	
				0.0007129508	Convergence	
				1%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02218	2.0 %		11.05162	0.28	0.0000000	0.00	0.0018946	6.24	0.0000599	19.94	7.1764	6.24	2.06555	0.28	0.0000000	0.00	0.112808	2.70	0.0009975	6.24	0.32195	19.96	9.9128	2.70	0.0048297	6.24	8.83335	105.75	3265.75	0.28	0.0000000	0.00	0.0100119	2.70
13D02220	2.6 %		109.76471	0.26	0.0000000	0.00	0.0148594	0.79	0.0011312	1.73	56.2856	0.79	20.51502	0.26	0.0000000	0.00	0.851356	0.36	0.0078237	0.79	6.08432	1.96	74.8116	0.36	0.0378802	0.79	33.62361	248.41	32435.47	0.26	0.0000000	0.00	0.0755597	0.36
13D02221	3.2 %		82.54019	0.26	0.0000000	0.00	0.0183789	0.70	0.0013469	1.45	69.6170	0.70	15.42676	0.26	0.0000000	0.00	1.098636	0.29	0.0096768	0.70	7.24313	1.72	96.5409	0.29	0.0468522	0.70	33.34998	190.11	24390.63	0.26	0.0000000	0.00	0.0975063	0.29
13D02223	3.8 %		47.34599	0.26	0.0000000	0.00	0.0137189	0.91	0.0009991	1.61	51.9656	0.91	8.84897	0.26	0.0000000	0.00	0.867379	0.36	0.0072232	0.91	5.37177	1.85	76.2196	0.36	0.0349728	0.91	248.39865	14.56	13990.74	0.26	0.0000000	0.00	0.0769818	0.36
13D02224	4.4 %	✓	53.39082	0.26	0.0000000	0.00	0.0229655	0.60	0.0014583	1.30	86.9905	0.60	9.97874	0.26	0.0000000	0.00	1.387163	0.23	0.0120917	0.60	7.84063	1.59	121.8948	0.23	0.0585446	0.60	9.80099	425.66	15776.99	0.26	0.0000000	0.00	0.1231137	0.23
13D02226	5.2 %	✓	56.00700	0.26	0.0000000	0.00	0.0311104	0.51	0.0018071	1.20	117.8422	0.51	10.46771	0.26	0.0000000	0.00	1.766963	0.18	0.0163801	0.51	9.71432	1.51	155.2692	0.18	0.0793078	0.51	19.68139	221.58	16550.07	0.26	0.0000000	0.00	0.1568219	0.18
13D02227	6.2 %	✓	53.50746	0.26	0.0000000	0.00	0.0356680	0.48	0.0023253	1.10	135.1062	0.48	10.00054	0.26	0.0000000	0.00	2.139816	0.16	0.0187798	0.48	12.49887	1.43	188.0331	0.16	0.0909265	0.48	26.96109	154.74	15811.46	0.26	0.0000000	0.00	0.1899134	0.16
13D02229	7.2 %	✓	30.27484	0.26	0.0000000	0.00	0.0267127	0.56	0.0018720	1.15	101.1845	0.56	5.65837	0.26	0.0000000	0.00	1.633171	0.20	0.0140647	0.56	10.06081	1.47	143.5124	0.20	0.0680972	0.56	91.93459	25.42	8946.22	0.26	0.0000000	0.00	0.1449475	0.20
13D02230	8.2 %	✓	26.57938	0.26	0.0000000	0.00	0.0392752	0.47	0.0020496	1.11	148.7697	0.47	4.96769	0.26	0.0000000	0.00	2.011203	0.16	0.0206790	0.47	11.01425	1.44	176.7314	0.16	0.1001220	0.47	75.49955	27.34	7854.21	0.26	0.0000000	0.00	0.1784987	0.16
13D02232	9.2 %	✓	21.76140	0.26	0.0000000	0.00	0.0498912	0.43	0.0014894	1.23	188.9818	0.43	4.06721	0.26	0.0000000	0.00	1.801874	0.18	0.0262685	0.43	8.00278	1.54	158.3369	0.18	0.1271848	0.43	41.30437	41.23	6430.49	0.26	0.0000000	0.00	0.1599203	0.18
13D02233	10.2 %	✓	24.40633	0.26	0.0000000	0.00	0.0653965	0.41	0.0013568	1.30	247.7140	0.41	4.56154	0.26	0.0000000	0.00	1.895729	0.17	0.0344322	0.41	7.28986	1.59	166.5843	0.17	0.1667115	0.41	44.85867	42.47	7212.07	0.26	0.0000000	0.00	0.1682501	0.17
13D02235	11.2 %	✓	16.59372	0.27	0.0000000	0.00	0.0426892	0.46	0.0008334	1.74	161.7014	0.46	3.10137	0.27	0.0000000	0.00	1.210294	0.26	0.0224765	0.46	4.47702	1.97	106.3527	0.26	0.1088250	0.46	16.31010	80.86	4903.44	0.27	0.0000000	0.00	0.1074162	0.26
13D02236	12.5 %	✓	13.51491	0.27	0.0000000	0.00	0.0356402	0.49	0.0006159	2.14	135.0007	0.49	2.52594	0.27	0.0000000	0.00	0.939079	0.33	0.0187651	0.49	3.30846	2.33	82.5202	0.33	0.0908555	0.49	14.28910	77.13	3993.66	0.27	0.0000000	0.00	0.0833454	0.33
13D02238	14.0 %	✓	7.69780	0.28	0.0000000	0.00	0.0198002	0.68	0.0003802	3.26	75.0006	0.68	1.43872	0.28	0.0000000	0.00	0.563297	0.55	0.0104251	0.68	2.04210	3.38	49.4988	0.55	0.0504754	0.68	4.55871	149.63	2274.70	0.28	0.0000000	0.00	0.0499938	0.55
13D02239	16.0 %	✓	8.65755	0.28	0.0000000	0.00	0.0241669	0.59	0.0004002	3.12	91.5411	0.59	1.61810	0.28	0.0000000	0.00	0.612833	0.50	0.0127242	0.59	2.14917	3.26	53.8518	0.50	0.0616072	0.59	7.41436	101.00	2558.31	0.28	0.0000000	0.00	0.0543903	0.50
13D02241	18.0 %	✓	14.09093	0.27	0.0000000	0.00	0.0364167	0.48	0.0005394	2.40	137.9422	0.48	2.63360	0.27	0.0000000	0.00	0.881386	0.35	0.0191740	0.48	2.89655	2.57	77.4504	0.35	0.0928351	0.48	23.84386	47.80	4163.87	0.27	0.0000000	0.00	0.0782249	0.35
		Σ	577.18465	0.08	0.0000000	0.00	0.4785844	0.14	0.0186648	0.38	1812.8196	0.14	107.87581	0.08	0.0000000	0.00	19.772987	0.06	0.2519819	0.14	100.31598	0.47	1737.5208	0.06	1.2200276	0.14	509.68571	27.70	170558.07	0.08	0.0000000	0.00	1.7548960	0.06
		Σ							577.68190	0.08	1812.8196	0.14									228.21676	0.21			1738.7408	0.06							171069.51	0.12

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02218	2.0 %		328.398141	8.872102	0.723602	0.049205	1.114538	0.030261	114.471	9.616649	1.00080892	1.563E-10
13D02220	2.6 %		432.894376	1.577500	0.751984	0.006552	1.466686	0.006543	114.488	9.619947	1.00080904	1.555E-09
13D02221	3.2 %		252.178668	0.719836	0.720764	0.005445	0.854766	0.003298	114.508	9.623643	1.00080918	1.169E-09
13D02223	3.8 %		186.732552	0.668088	0.681474	0.006686	0.621087	0.002738	114.525	9.626944	1.00080930	6.835E-10
13D02224	4.4 %	✓	129.450444	0.298181	0.713310	0.004616	0.437997	0.001533	114.534	9.628660	1.00080936	7.578E-10
13D02226	5.2 %	✓	106.409434	0.196605	0.758567	0.004112	0.360737	0.001159	114.551	9.631963	1.00080948	7.935E-10
13D02227	6.2 %	✓	84.192383	0.132182	0.718177	0.003640	0.284629	0.000872	114.560	9.633548	1.00080954	7.603E-10
13D02229	7.2 %	✓	62.949315	0.125324	0.704723	0.004189	0.211055	0.000689	114.577	9.636852	1.00080967	4.338E-10
13D02230	8.2 %	✓	44.844303	0.074806	0.841308	0.004221	0.150543	0.000464	114.585	9.638439	1.00080972	3.806E-10
13D02232	9.2 %	✓	40.841790	0.075162	1.192584	0.005595	0.137651	0.000438	114.603	9.641744	1.00080985	3.107E-10
13D02233	10.2 %	✓	43.520573	0.076484	1.485532	0.006593	0.146764	0.000461	114.612	9.643464	1.00080991	3.483E-10
13D02235	11.2 %	✓	46.212590	0.121809	1.518872	0.008000	0.156275	0.000580	114.628	9.646639	1.00081003	2.362E-10
13D02236	12.5 %	✓	48.516872	0.162619	1.634173	0.009635	0.164036	0.000700	114.637	9.648359	1.00081009	1.924E-10
13D02238	14.0 %	✓	46.000807	0.254375	1.513657	0.013216	0.155764	0.000957	114.655	9.651668	1.00081021	1.094E-10
13D02239	16.0 %	✓	47.590713	0.241956	1.697930	0.013194	0.161038	0.000924	114.663	9.653257	1.00081027	1.232E-10
13D02241	18.0 %	✓	54.005873	0.191677	1.778905	0.010650	0.182194	0.000805	114.681	9.656568	1.00081040	2.010E-10

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02218	2.0 %	4.8211195	0.0070959	0.2841330	0.0297511	1.8079711	0.0561035	4.8890850	0.2646783	1485.839746	2.157544
13D02220	2.6 %	5.0330638	0.0070959	0.2023350	0.0297511	1.4967011	0.0561035	3.0201852	0.2646783	1538.571467	2.157544
13D02221	3.2 %	4.5969497	0.0070959	0.1746359	0.0297511	1.1833886	0.0561035	2.1807701	0.2646783	1398.723234	2.157544
13D02223	3.8 %	3.8554006	0.0070959	0.1791568	0.0297511	0.9351718	0.0561035	2.0661581	0.2646783	1170.387226	2.157544
13D02224	4.4 %	3.4046487	0.0070959	0.1854125	0.0297511	0.8178532	0.0561035	2.1193343	0.2646783	1032.749184	2.157544
13D02226	5.2 %	2.5111004	0.0070959	0.1953553	0.0297511	0.6148444	0.0561035	2.2641157	0.2646783	761.012153	2.157544
13D02227	6.2 %	2.0992802	0.0070959	0.1965879	0.0297511	0.5279646	0.0561035	2.3050514	0.2646783	636.071685	2.157544
13D02229	7.2 %	1.3352416	0.0070959	0.1877270	0.0297511	0.3689742	0.0561035	2.2476761	0.2646783	404.545789	2.157544
13D02230	8.2 %	1.0289540	0.0070959	0.1774124	0.0297511	0.3032232	0.0561035	2.1358174	0.2646783	311.779440	2.157544
13D02232	9.2 %	0.5394908	0.0070959	0.1443154	0.0297511	0.1882510	0.0561035	1.7267494	0.2646783	163.487042	2.157544
13D02233	10.2 %	0.3663475	0.0070959	0.1224519	0.0297511	0.1402196	0.0561035	1.4379376	0.2646783	110.964381	2.157544
13D02235	11.2 %	0.1803290	0.0070959	0.0796064	0.0297511	0.0726750	0.0561035	0.8476260	0.2646783	54.381985	2.157544
13D02236	12.5 %	0.1388532	0.0070959	0.0587014	0.0297511	0.0475331	0.0561035	0.5493293	0.2646783	41.683327	2.157544
13D02238	14.0 %	0.1255549	0.0070959	0.0346219	0.0297511	0.0217872	0.0561035	0.1894680	0.2646783	37.581652	2.157544
13D02239	16.0 %	0.1242559	0.0070959	0.0359429	0.0297511	0.0199936	0.0561035	0.1972825	0.2646783	37.350841	2.157544
13D02241	18.0 %	0.0469724	0.0070959	0.0819035	0.0297511	0.0382661	0.0561035	0.8399573	0.2646783	15.069507	2.157544

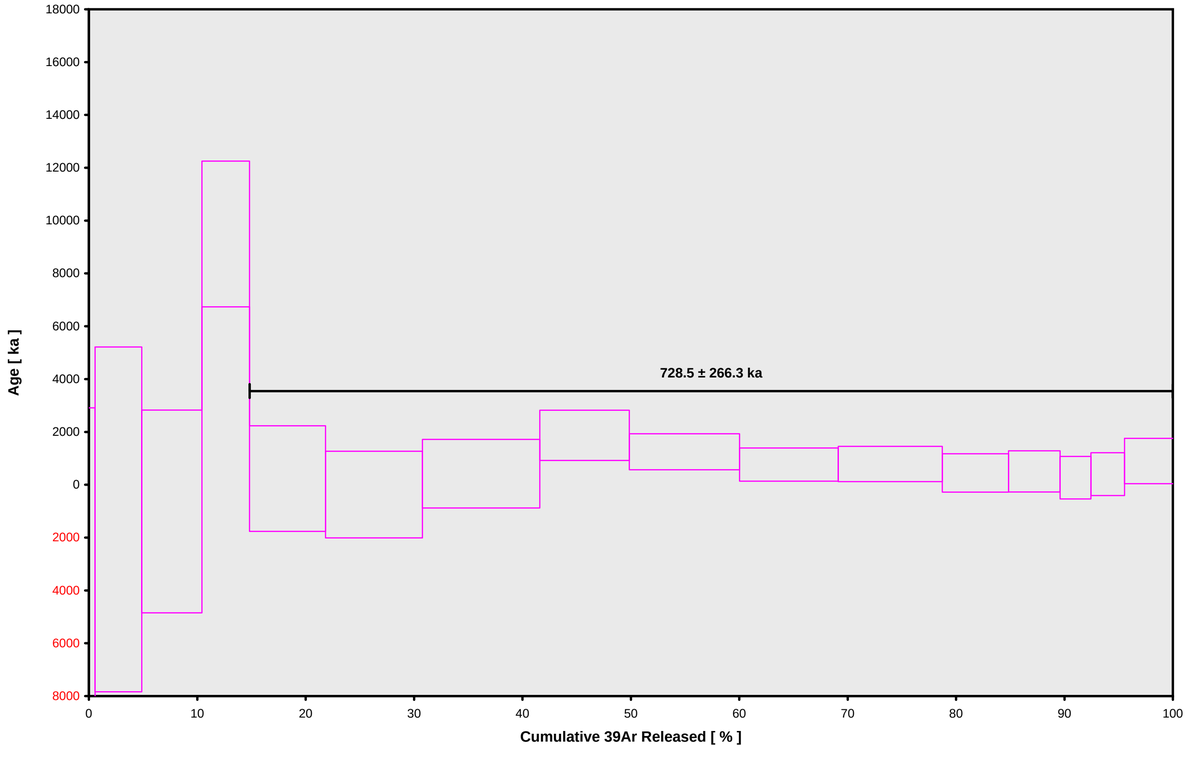
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02218	2.0 %	15.59764	0.00966	0.9921	EXP 150 of 150	1.0164	0.0346	0.0190	EXP 150 of 150	4.27790	0.02850	0.4093	EXP 150 of 150	14.7366	0.0254	0.9404	EXP 150 of 150	4742.76922	0.22510	1.0000	EXP 150 of 150
13D02220	2.6 %	112.06216	0.03699	0.9978	EXP 150 of 150	5.9433	0.0267	0.7086	EXP 150 of 150	28.61073	0.02710	0.9824	EXP 150 of 150	77.3408	0.0333	0.9959	EXP 150 of 150	33940.49576	0.65078	1.0000	EXP 150 of 150
13D02221	3.2 %	85.08753	0.03920	0.9957	EXP 150 of 150	7.2726	0.0295	0.7533	EXP 150 of 150	24.66326	0.02960	0.9713	EXP 150 of 150	98.0861	0.0349	0.9973	EXP 150 of 150	25756.09635	0.53035	1.0000	EXP 150 of 150
13D02223	3.8 %	50.02903	0.01655	0.9977	EXP 150 of 150	5.4756	0.0326	0.4421	EXP 150 of 150	15.84112	0.02933	0.9072	EXP 150 of 150	77.7820	0.0307	0.9970	EXP 150 of 150	15409.60240	0.69711	1.0000	EXP 150 of 150
13D02224	4.4 %	55.48106	0.03483	0.9920	EXP 150 of 150	9.0501	0.0297	0.8392	EXP 150 of 150	19.79536	0.02566	0.9682	EXP 149 of 150	123.2110	0.0417	0.9975	EXP 150 of 150	16819.66147	0.38758	1.0000	EXP 150 of 150
13D02226	5.2 %	57.14640	0.03456	0.9927	EXP 150 of 150	12.1999	0.0288	0.9088	EXP 150 of 150	22.30463	0.02694	0.9709	EXP 150 of 150	156.5149	0.0382	0.9987	EXP 150 of 150	17291.55550	0.41005	1.0000	EXP 150 of 150
13D02227	6.2 %	54.30264	0.03357	0.9922	EXP 150 of 150	13.9575	0.0291	0.9254	EXP 150 of 150	24.87660	0.02651	0.9787	EXP 150 of 150	189.0998	0.0407	0.9990	EXP 150 of 150	16474.67781	0.40548	1.0000	EXP 150 of 150
13D02229	7.2 %	30.87912	0.01291	0.9963	EXP 150 of 150	10.4901	0.0309	0.8060	EXP 150 of 150	17.51751	0.02934	0.9261	EXP 150 of 150	144.8136	0.0369	0.9987	EXP 150 of 150	9442.84091	0.41955	1.0000	EXP 150 of 150
13D02230	8.2 %	26.98242	0.01253	0.9955	EXP 150 of 150	15.3223	0.0321	0.8912	EXP 149 of 150	18.09104	0.02895	0.9304	EXP 150 of 150	177.7178	0.0368	0.9992	EXP 150 of 150	8241.66406	0.32629	1.0000	EXP 150 of 150
13D02232	9.2 %	21.80554	0.01072	0.9949	EXP 150 of 150	19.3763	0.0287	0.9415	EXP 150 of 150	13.91201	0.02593	0.9088	EXP 150 of 150	159.0711	0.0365	0.9990	EXP 150 of 150	6635.44514	0.26880	1.0000	EXP 150 of 150
13D02233	10.2 %	24.22603	0.01220	0.9948	EXP 150 of 150	25.3269	0.0276	0.9662	EXP 150 of 150	13.74887	0.02870	0.8928	EXP 150 of 150	167.0106	0.0378	0.9990	EXP 150 of 150	7368.06274	0.32486	1.0000	EXP 150 of 150
13D02235	11.2 %	16.40057	0.00901	0.9938	EXP 150 of 150	16.5270	0.0312	0.9019	EXP 150 of 150	8.77328	0.03030	0.7535	EXP 150 of 150	106.5568	0.0323	0.9982	EXP 150 of 150	4974.24411	0.23845	1.0000	EXP 150 of 150
13D02236	12.5 %	13.35036	0.00926	0.9901	EXP 150 of 150	13.7878	0.0307	0.8700	EXP 149 of 150	6.75455	0.02704	0.6672	EXP 150 of 150	82.5766	0.0306	0.9973	EXP 150 of 150	4049.71137	0.22332	0.9999	EXP 150 of 150
13D02238	14.0 %	7.65008	0.00610	0.9864	EXP 150 of 150	7.6593	0.0316	0.6883	EXP 149 of 150	4.02546	0.02771	0.4263	EXP 149 of 150	49.3886	0.0290	0.9933	EXP 150 of 150	2316.88921	0.12370	0.9999	EXP 150 of 150
13D02239	16.0 %	8.58876	0.00658	0.9876	EXP 150 of 150	9.3406	0.0307	0.7440	EXP 150 of 150	4.35770	0.02840	0.4458	EXP 150 of 150	53.7297	0.0294	0.9941	EXP 150 of 150	2603.12663	0.16155	0.9999	EXP 150 of 150
13D02241	18.0 %	13.82075	0.00889	0.9913	EXP 150 of 150	14.0982	0.0310	0.8807	EXP 150 of 150	6.38829	0.02733	0.6374	EXP 149 of 150	77.8353	0.0267	0.9977	EXP 150 of 150	4202.86200	0.24266	0.9999	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02218	2.0 %	HH-6	Groundmass	Harrat	Dan Miggins	2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	8	54	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02220	2.6 %	HH-6	Groundmass	Harrat	Dan Miggins	2.6	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	9	19	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02221	3.2 %	HH-6	Groundmass	Harrat	Dan Miggins	3.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	9	47	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02223	3.8 %	HH-6	Groundmass	Harrat	Dan Miggins	3.8	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	10	12	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02224	4.4 %	HH-6	Groundmass	Harrat	Dan Miggins	4.4	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	10	25	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02226	5.2 %	HH-6	Groundmass	Harrat	Dan Miggins	5.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	10	50	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02227	6.2 %	HH-6	Groundmass	Harrat	Dan Miggins	6.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	11	2	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02229	7.2 %	HH-6	Groundmass	Harrat	Dan Miggins	7.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	11	27	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02230	8.2 %	HH-6	Groundmass	Harrat	Dan Miggins	8.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	11	39	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02232	9.2 %	HH-6	Groundmass	Harrat	Dan Miggins	9.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	12	4	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02233	10.2 %	HH-6	Groundmass	Harrat	Dan Miggins	10.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	12	17	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02235	11.2 %	HH-6	Groundmass	Harrat	Dan Miggins	11.2	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	12	41	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02236	12.5 %	HH-6	Groundmass	Harrat	Dan Miggins	12.5	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	12	54	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02238	14.0 %	HH-6	Groundmass	Harrat	Dan Miggins	14	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	13	19	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02239	16.0 %	HH-6	Groundmass	Harrat	Dan Miggins	16	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	13	31	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01
13D02241	18.0 %	HH-6	Groundmass	Harrat	Dan Miggins	18	FCT-3	28.02	0.546	Renne et al 1998	9.66828	0.132	0.00161515	0.132	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	13	56	1	13-OSU-05			22.10	Harrat\Hutaymah (13-05)	13D02217	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02218	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02220	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02221	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02223	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02224	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02226	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02227	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02229	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02230	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02232	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02233	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02235	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02236	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02238	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02239	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02241	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

13D02217.AGE >>> HH-6 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
728.5 ± 266.3
TOTAL FUSION
856.6 ± 474.4
NORMAL ISOCHRON
1009.6 ± 932.2
INVERSE ISOCHRON
1009.2 ± 525.0

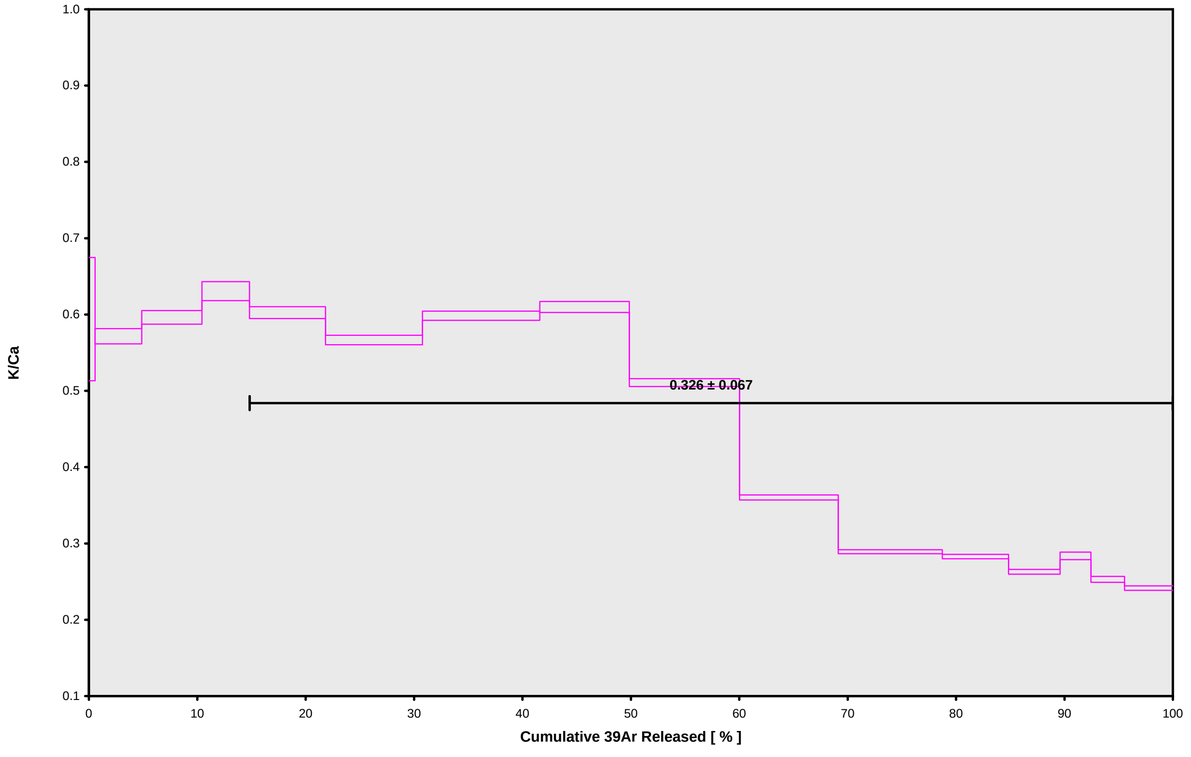
MSWD (PROBABILITY)
1.22 (27%)

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00161515 ± 0.00000213

13D02217.AGE >>> HH-6 >>> HARRAT | HUTAYMAH (13-05) PROJECT



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728.5 ± 266.3
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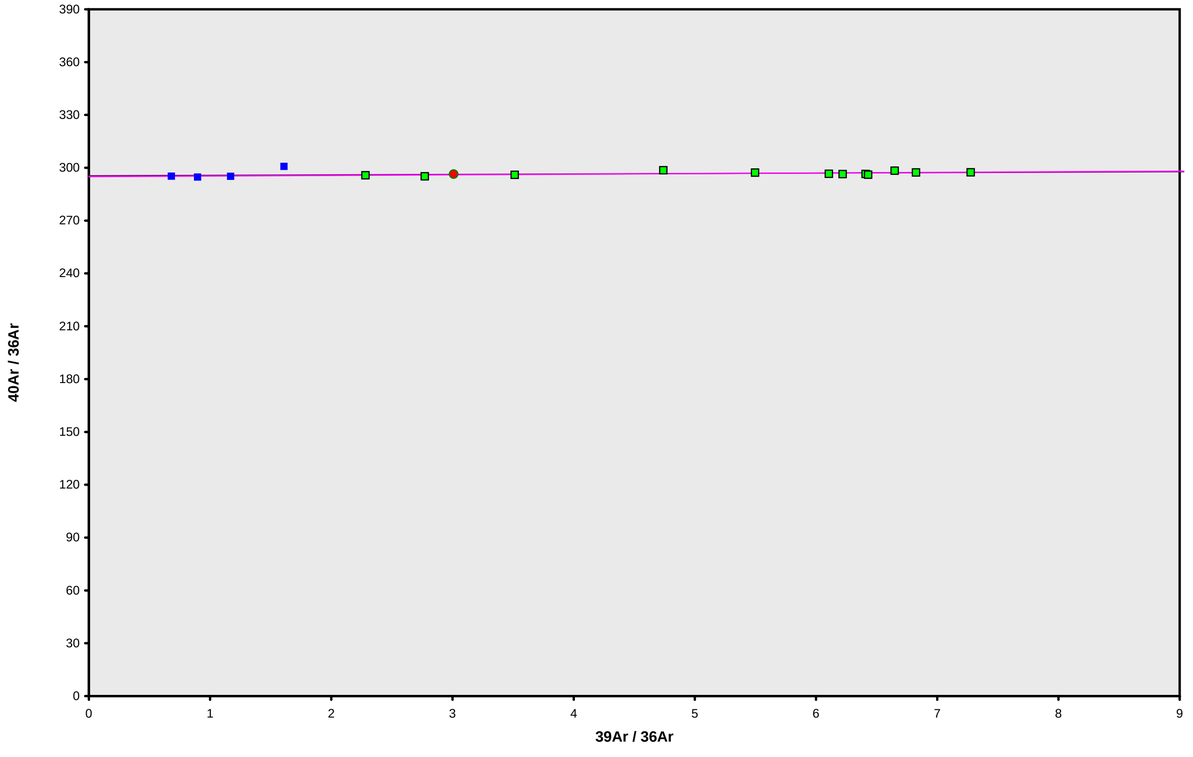
13D02217.AGE >>> HH-6 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

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728.5 ± 266.3
TOTAL FUSION
856.6 ± 474.4
NORMAL ISOCHRON
1009.6 ± 932.2
INVERSE ISOCHRON
1009.2 ± 525.0

MSWD (PROBABILITY)
1.28 (23%)

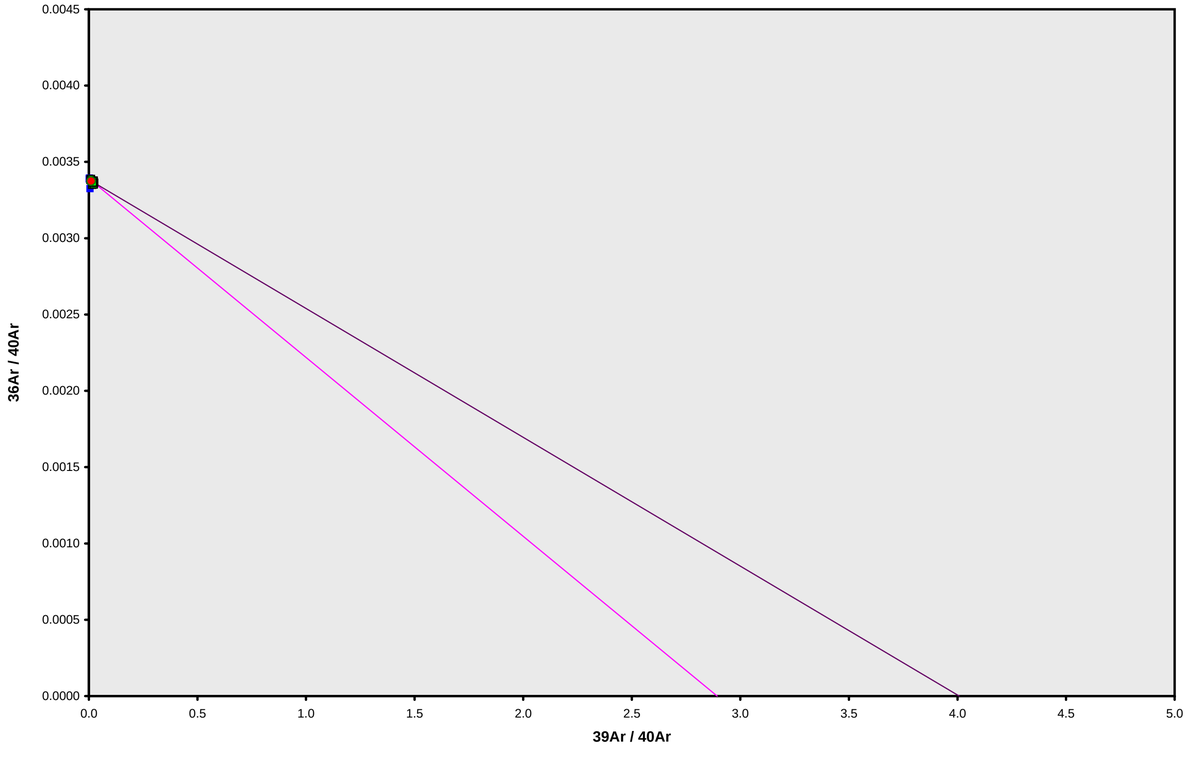
40AR/36AR INTERCEPT
294.9 ± 1.8

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00161515 ± 0.00000213

13D02217.AGE >>> HH-6 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
728.5 ± 266.3
TOTAL FUSION
856.6 ± 474.4
NORMAL ISOCHRON
1009.6 ± 932.2
INVERSE ISOCHRON
1009.2 ± 525.0

MSWD (PROBABILITY)
1.29 (23%)

SPREADING FACTOR
0.6%

40AR/36AR INTERCEPT
294.9 ± 1.8

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00161515 ± 0.00000213

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02243	2.0 %	✓	4.83199	14.9441	1.205047	17.1456	9.9312	1.82 ± 8.16	0.69	0.97	0.493 ± 0.029
13D02245	2.6 %	✓	5.30699	23.0527	1.917298	26.2380	2.9549	0.35 ± 5.35	0.19	1.48	0.489 ± 0.018
13D02246	3.2 %	✓	17.50300	38.6683	2.941445	40.8080	11.3742	0.88 ± 3.97	0.22	2.30	0.454 ± 0.011
13D02248	3.8 %	✓	10.85260	51.9700	3.165475	44.8034	10.9616	0.77 ± 3.30	0.34	2.52	0.371 ± 0.007
13D02249	4.4 %	✓	16.29760	104.2621	4.381994	65.2906	37.7298	1.82 ± 2.44	0.78	3.68	0.269 ± 0.003
13D02251	5.2 %	✓	24.35053	116.4712	4.375886	67.4576	62.2417	2.90 ± 2.68	0.86	3.80	0.249 ± 0.003
13D02252	6.2 %	✓	36.52357	159.0310	5.391331	92.8964	164.9581	5.57 ± 2.39	1.51	5.23	0.251 ± 0.002
13D02254	7.2 %	✓	38.39837	140.7857	5.103751	98.3527	138.4092	4.42 ± 2.34	1.21	5.54	0.300 ± 0.003
13D02255	8.2 %	✓	46.83748	119.4471	5.074047	104.0259	287.6869	8.67 ± 2.52	2.04	5.86	0.374 ± 0.004
13D02257	9.2 %	✓	29.95989	105.4958	4.092017	93.9011	67.9095	2.27 ± 2.12	0.76	5.29	0.383 ± 0.004
13D02258	10.2 %	✓	23.35585	92.1322	3.597449	87.5629	42.7683	1.53 ± 2.04	0.62	4.93	0.409 ± 0.005
13D02260	11.2 %	✓	18.96898	93.1563	3.272947	89.0402	44.5511	1.57 ± 1.86	0.79	5.01	0.411 ± 0.005
13D02261	12.5 %	✓	24.88555	146.5563	3.899530	117.4588	67.1243	1.79 ± 1.55	0.90	6.61	0.345 ± 0.003
13D02263	14.0 %	✓	41.42124	228.2398	5.409641	170.0063	215.7227	3.98 ± 1.42	1.73	9.57	0.320 ± 0.003
13D02264	16.0 %	✓	83.04000	446.9591	8.795151	280.4558	100.7197	1.13 ± 1.51	0.41	15.79	0.270 ± 0.002
13D02266	18.0 %	✓	126.99502	673.6955	12.261693	380.6217	232.4266	1.92 ± 1.63	0.62	21.43	0.243 ± 0.002
		Σ	549.52865	2554.8670	74.884703	1776.0652	1497.4698				

Information on Analysis

Sample = HH-4
Material = Groundmass
Location = Harrat
Analyst = Susan Schnur
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00173784 ± 0.00000396
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.84307 ± 0.30047	2.65 ± 0.94	3.12	100.00	0.290 ± 0.027
Error Mean	± 35.64%	± 35.62%	0%	16	
		Full External Error ± 0.94	1.73	2σ Confidence Limit	
		Analytical Error ± 0.94	1.7657	Error Magnification	
Total Fusion Age	0.84314 ± 0.18570	2.65 ± 0.58		16	0.299 ± 0.001
	± 22.02%	± 22.01%			
		Full External Error ± 0.59			
		Analytical Error ± 0.58			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02243	2.0 %	✓	3.55 ± 0.08	297.56 ± 9.26	0.6737
13D02245	2.6 %	✓	4.94 ± 0.10	296.06 ± 8.43	0.6940
13D02246	3.2 %	✓	2.33 ± 0.02	296.15 ± 2.95	0.7251
13D02248	3.8 %	✓	4.13 ± 0.05	296.51 ± 4.34	0.7169
13D02249	4.4 %	✓	4.01 ± 0.03	297.82 ± 3.12	0.7563
13D02251	5.2 %	✓	2.77 ± 0.02	298.06 ± 2.39	0.7936
13D02252	6.2 %	✓	2.54 ± 0.02	300.02 ± 1.97	0.8536
13D02254	7.2 %	✓	2.56 ± 0.02	299.10 ± 1.93	0.8617
13D02255	8.2 %	✓	2.22 ± 0.01	301.64 ± 1.82	0.8822
13D02257	9.2 %	✓	3.13 ± 0.02	297.77 ± 2.13	0.8313
13D02258	10.2 %	✓	3.75 ± 0.03	297.33 ± 2.44	0.8016
13D02260	11.2 %	✓	4.69 ± 0.04	297.85 ± 2.80	0.7820
13D02261	12.5 %	✓	4.72 ± 0.03	298.20 ± 2.35	0.8187
13D02263	14.0 %	✓	4.10 ± 0.02	300.71 ± 1.88	0.8860
13D02264	16.0 %	✓	3.38 ± 0.02	296.71 ± 1.63	0.9422
13D02266	18.0 %	✓	3.00 ± 0.02	297.33 ± 1.57	0.9569

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Normal Isochron	300.41 ± 3.69	0.59862 ± 1.10688	1.88 ± 3.48	2.18
Error Chron	± 1.23%	± 184.90%	± 185.00%	1%
			Full External Error ± 3.48	
			Analytical Error ± 3.48	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.000000097012
	Error Magnification	1.4750	Number of Iterations	3
	Number of Data Points	16	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02243	2.0 %	✓	0.0119251 ± 0.0002764	0.00336072 ± 0.00010459	0.6510
13D02245	2.6 %	✓	0.0166996 ± 0.0003433	0.00337773 ± 0.00009623	0.6713
13D02246	3.2 %	✓	0.0078727 ± 0.0000553	0.00337667 ± 0.00003362	0.5170
13D02248	3.8 %	✓	0.0139232 ± 0.0001429	0.00337257 ± 0.00004940	0.6237
13D02249	4.4 %	✓	0.0134518 ± 0.0000928	0.00335779 ± 0.00003522	0.5693
13D02251	5.2 %	✓	0.0092945 ± 0.0000459	0.00335507 ± 0.00002685	0.4664
13D02252	6.2 %	✓	0.0084778 ± 0.0000294	0.00333315 ± 0.00002185	0.3554
13D02254	7.2 %	✓	0.0085635 ± 0.0000285	0.00334331 ± 0.00002154	0.3439
13D02255	8.2 %	✓	0.0073630 ± 0.0000214	0.00331519 ± 0.00001998	0.2786
13D02257	9.2 %	✓	0.0105258 ± 0.0000424	0.00335833 ± 0.00002404	0.4235
13D02258	10.2 %	✓	0.0126091 ± 0.0000623	0.00336325 ± 0.00002761	0.4962
13D02260	11.2 %	✓	0.0157597 ± 0.0000926	0.00335741 ± 0.00003151	0.5519
13D02261	12.5 %	✓	0.0158283 ± 0.0000721	0.00335348 ± 0.00002646	0.4909
13D02263	14.0 %	✓	0.0136489 ± 0.0000400	0.00332548 ± 0.00002084	0.3408
13D02264	16.0 %	✓	0.0113826 ± 0.0000213	0.00337026 ± 0.00001849	0.1560
13D02266	18.0 %	✓	0.0100802 ± 0.0000158	0.00336326 ± 0.00001773	0.0826

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Inverse Isochron	300.46 ± 3.69	0.60471 ± 0.31187	1.90 ± 0.98	2.19
Error Chron	± 1.23%	± 51.57%	± 51.60%	1%
			Full External Error ± 0.98	
			Analytical Error ± 0.98	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.0002767089
	Error Magnification	1.4784	Number of Iterations	3
	Number of Data Points	16	Calculated Line	Weighted York-2
	Spreading Factor	0.6%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02243	2.0 %	✓	4.83616	1.116	14.9441	2.893	2.30534	1.757	17.1557	0.411	1437.80	1.083	0.57923 ± 2.60047	1.82 ± 8.16	0.69	0.97	0.493 ± 0.029
13D02245	2.6 %	✓	5.31344	1.021	23.0527	1.858	3.21097	1.285	26.2535	0.271	1571.20	0.991	0.11262 ± 1.70428	0.35 ± 5.35	0.19	1.48	0.489 ± 0.018
13D02246	3.2 %	✓	17.51375	0.397	38.6683	1.219	6.68252	0.656	40.8340	0.181	5183.55	0.301	0.27872 ± 1.26287	0.88 ± 3.97	0.22	2.30	0.454 ± 0.011
13D02248	3.8 %	✓	10.86691	0.549	51.9700	0.916	5.71091	0.705	44.8384	0.170	3217.95	0.484	0.24466 ± 1.04998	0.77 ± 3.30	0.34	2.52	0.371 ± 0.007
13D02249	4.4 %	✓	16.32594	0.414	104.2621	0.553	8.18551	0.493	65.3607	0.127	4853.74	0.321	0.57788 ± 0.77587	1.82 ± 2.44	0.78	3.68	0.269 ± 0.003
13D02251	5.2 %	✓	24.38209	0.337	116.4712	0.522	9.71086	0.457	67.5360	0.122	7257.89	0.215	0.92268 ± 0.85571	2.90 ± 2.68	0.86	3.80	0.249 ± 0.003
13D02252	6.2 %	✓	36.56656	0.295	159.0310	0.459	13.29685	0.331	93.0035	0.100	10957.77	0.142	1.77572 ± 0.76365	5.57 ± 2.39	1.51	5.23	0.251 ± 0.002
13D02254	7.2 %	✓	38.43649	0.292	140.7857	0.494	13.41923	0.333	98.4474	0.096	11485.23	0.136	1.40727 ± 0.74504	4.42 ± 2.34	1.21	5.54	0.300 ± 0.003
13D02255	8.2 %	✓	46.86996	0.280	119.4471	0.525	15.02839	0.313	104.1063	0.094	14128.27	0.110	2.76553 ± 0.80421	8.67 ± 2.52	2.04	5.86	0.374 ± 0.004
13D02257	9.2 %	✓	29.98851	0.312	105.4958	0.574	10.77478	0.403	93.9721	0.100	8921.15	0.175	0.72320 ± 0.67617	2.27 ± 2.12	0.76	5.29	0.383 ± 0.004
13D02258	10.2 %	✓	23.38085	0.343	92.1322	0.609	8.97193	0.471	87.6249	0.104	6944.51	0.224	0.48843 ± 0.64817	1.53 ± 2.04	0.62	4.93	0.409 ± 0.005
13D02260	11.2 %	✓	18.99418	0.379	93.1563	0.607	7.84448	0.548	89.1029	0.101	5649.97	0.276	0.50035 ± 0.59246	1.57 ± 1.86	0.79	5.01	0.411 ± 0.005
13D02261	12.5 %	✓	24.92497	0.333	146.5563	0.484	9.90769	0.442	117.5574	0.088	7420.92	0.210	0.57147 ± 0.49522	1.79 ± 1.55	0.90	6.61	0.345 ± 0.003
13D02263	14.0 %	✓	41.48250	0.287	228.2398	0.430	15.11767	0.303	170.1600	0.076	12455.87	0.125	1.26891 ± 0.45247	3.98 ± 1.42	1.73	9.57	0.320 ± 0.003
13D02264	16.0 %	✓	83.15964	0.267	446.9591	0.389	27.56904	0.191	280.7566	0.069	24639.32	0.063	0.35913 ± 0.48018	1.13 ± 1.51	0.41	15.79	0.270 ± 0.002
13D02266	18.0 %	✓	127.17517	0.260	673.6955	0.383	40.42218	0.162	381.0751	0.066	37759.84	0.041	0.61065 ± 0.51985	1.92 ± 1.63	0.62	21.43	0.243 ± 0.002
		Σ	550.21710	0.094	2554.8670	0.152	198.15836	0.092	1777.7846	0.026	163884.98	0.038					

Information on Analysis and Constants Used in Calculations

Sample = HH-4
Material = Groundmass
Location = Harrat
Analyst = Susan Schnur
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00173784 ± 0.00000396
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 30
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = Not Done

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau Error Mean		0.84307 ± 0.30047 ± 35.64%	2.65 ± 0.94 ± 35.62%	3.12 0%	100.00 16	0.290 ± 0.027
		Full External Error ± 0.94		1.73	2σ Confidence Limit	
		Analytical Error ± 0.94		1.7657	Error Magnification	
Total Fusion Age		0.84314 ± 0.18570 ± 22.02%	2.65 ± 0.58 ± 22.01%		16	0.299 ± 0.001
		Full External Error ± 0.59				
		Analytical Error ± 0.58				
Normal Isochron Error Chron	300.41 ± 3.69 ± 1.23%	0.59862 ± 1.10688 ± 184.90%	1.88 ± 3.48 ± 185.00%	2.18 1%	100.00 16	
		Full External Error ± 3.48		1.76	2σ Confidence Limit	
		Analytical Error ± 3.48		1.4750	Error Magnification	
				3	Number of Iterations	
				0.0000000970	Convergence	
Inverse Isochron Error Chron	300.46 ± 3.69 ± 1.23%	0.60471 ± 0.31187 ± 51.57%	1.90 ± 0.98 ± 51.60%	2.19 1%	100.00 16	
		Full External Error ± 0.98		1.76	2σ Confidence Limit	
		Analytical Error ± 0.98		1.4784	Error Magnification	
				3	Number of Iterations	
				0.0002767089	Convergence	
				1%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02243	2.0 %	✓	4.83199	1.12	0.0000000	0.00	0.0039452	2.89	0.0002245	3.58	14.9441	2.89	0.90310	1.12	0.0000000	0.00	0.195117	0.41	0.0020772	2.89	1.205047	3.70	17.1456	0.41	0.0100574	2.89	9.9312	224.48	1427.85	1.12	0.0000000	0.00	0.0173171	0.41
13D02245	2.6 %	✓	5.30699	1.02	0.0000000	0.00	0.0060859	1.86	0.0003573	2.40	23.0527	1.86	0.99188	1.02	0.0000000	0.00	0.298589	0.27	0.0032043	1.86	1.917298	2.57	26.2380	0.27	0.0155145	1.86	2.9549	756.66	1568.22	1.02	0.0000000	0.00	0.0265004	0.27
13D02246	3.2 %	✓	17.50300	0.40	0.0000000	0.00	0.0102084	1.22	0.0005481	1.81	38.6683	1.22	3.27131	0.40	0.0000000	0.00	0.464395	0.18	0.0053749	1.22	2.941445	2.03	40.8080	0.18	0.0260237	1.22	11.3742	226.54	5172.14	0.40	0.0000000	0.00	0.0412161	0.18
13D02248	3.8 %	✓	10.85260	0.55	0.0000000	0.00	0.0137201	0.92	0.0005900	1.61	51.9700	0.92	2.02835	0.55	0.0000000	0.00	0.509863	0.17	0.0072238	0.92	3.165475	1.85	44.8034	0.17	0.0349758	0.92	10.9616	214.58	3206.94	0.55	0.0000000	0.00	0.0452515	0.17
13D02249	4.4 %	✓	16.29760	0.41	0.0000000	0.00	0.0275252	0.55	0.0008167	1.33	104.2621	0.55	3.04602	0.41	0.0000000	0.00	0.743006	0.13	0.0144924	0.55	4.381994	1.62	65.2906	0.13	0.0701684	0.55	37.7298	67.13	4815.94	0.41	0.0000000	0.00	0.0659435	0.13
13D02251	5.2 %	✓	24.35053	0.34	0.0000000	0.00	0.0307484	0.52	0.0008157	1.41	116.4712	0.52	4.55111	0.34	0.0000000	0.00	0.767668	0.12	0.0161895	0.52	4.375886	1.69	67.4576	0.12	0.0783851	0.52	62.2417	46.37	7195.58	0.34	0.0000000	0.00	0.0681322	0.12
13D02252	6.2 %	✓	36.52357	0.30	0.0000000	0.00	0.0419842	0.46	0.0010051	1.28	159.0310	0.46	6.82626	0.30	0.0000000	0.00	1.057162	0.10	0.0221053	0.46	5.391331	1.58	92.8964	0.10	0.1070278	0.46	164.9581	21.50	10792.72	0.30	0.0000000	0.00	0.0938254	0.10
13D02254	7.2 %	✓	38.39837	0.29	0.0000000	0.00	0.0371674	0.49	0.0009516	1.33	140.7857	0.49	7.17665	0.29	0.0000000	0.00	1.119253	0.10	0.0195692	0.49	5.103751	1.62	98.3527	0.10	0.0947488	0.49	138.4092	26.47	11346.72	0.29	0.0000000	0.00	0.0993362	0.10
13D02255	8.2 %	✓	46.83748	0.28	0.0000000	0.00	0.0315340	0.52	0.0009462	1.39	119.4471	0.52	8.75392	0.28	0.0000000	0.00	1.183815	0.09	0.0166031	0.52	5.074047	1.67	104.0259	0.09	0.0803879	0.52	287.6869	14.54	13840.47	0.28	0.0000000	0.00	0.1050662	0.09
13D02257	9.2 %	✓	29.95989	0.31	0.0000000	0.00	0.0278509	0.57	0.0007632	1.47	105.4958	0.57	5.59950	0.31	0.0000000	0.00	1.068595	0.10	0.0146639	0.57	4.092017	1.73	93.9011	0.10	0.0709987	0.57	67.9095	46.75	8853.15	0.31	0.0000000	0.00	0.0948401	0.10
13D02258	10.2 %	✓	23.35585	0.34	0.0000000	0.00	0.0243229	0.61	0.0006710	1.55	92.1322	0.61	4.36521	0.34	0.0000000	0.00	0.996466	0.10	0.0128064	0.61	3.597449	1.80	87.5629	0.10	0.0620049	0.61	42.7683	66.35	6901.65	0.34	0.0000000	0.00	0.0884386	0.10
13D02260	11.2 %	✓	18.96898	0.38	0.0000000	0.00	0.0245933	0.61	0.0006105	1.65	93.1563	0.61	3.54530	0.38	0.0000000	0.00	1.013278	0.10	0.0129487	0.61	3.272947	1.89	89.0402	0.10	0.0626942	0.61	44.5511	59.20	5605.33	0.38	0.0000000	0.00	0.0899306	0.10
13D02261	12.5 %	✓	24.88555	0.33	0.0000000	0.00	0.0386909	0.48	0.0007275	1.51	146.5563	0.48	4.65111	0.33	0.0000000	0.00	1.336681	0.09	0.0203713	0.48	3.899530	1.76	117.4588	0.09	0.0986324	0.48	67.1243	43.33	7353.68	0.33	0.0000000	0.00	0.1186334	0.09
13D02263	14.0 %	✓	41.42124	0.29	0.0000000	0.00	0.0602553	0.43	0.0010093	1.32	228.2398	0.43	7.74163	0.29	0.0000000	0.00	1.934672	0.08	0.0317253	0.43	5.409641	1.61	170.0063	0.08	0.1536054	0.43	215.7227	17.83	12239.98	0.29	0.0000000	0.00	0.1717064	0.08
13D02264	16.0 %	✓	83.04000	0.27	0.0000000	0.00	0.1179972	0.39	0.0016412	1.19	446.9591	0.39	15.52018	0.27	0.0000000	0.00	3.191587	0.07	0.0621273	0.39	8.795151	1.51	280.4558	0.07	0.3008034	0.39	100.7197	66.85	24538.32	0.27	0.0000000	0.00	0.2832603	0.07
13D02266	18.0 %	✓	126.99502	0.26	0.0000000	0.00	0.1778556	0.38	0.0022884	1.18	673.6955	0.38	23.73537	0.26	0.0000000	0.00	4.331475	0.07	0.0936437	0.38	12.261693	1.49	380.6217	0.07	0.4533970	0.38	232.4266	42.57	37527.03	0.26	0.0000000	0.00	0.3844279	0.07
	Σ		549.52865	0.09	0.0000000	0.00	0.6744849	0.15	0.0139662	0.38	2554.8670	0.15	102.70690	0.09	0.0000000	0.00	20.211622	0.03	0.3551265	0.15	74.884703	0.46	1776.0652	0.03	1.7194255	0.15	1497.4698	11.01	162385.72	0.09	0.0000000	0.00	1.7938258	0.03
	Σ								550.21710	0.09	2554.8670	0.15									198.15836	0.18			1777.7846	0.03							163884.98	0.14

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02243	2.0 %	✓	83.808918	0.971009	0.871086	0.025456	0.281898	0.003352	114.721	9.664254	1.00081068	6.901E-11
13D02245	2.6 %	✓	59.847128	0.615165	0.878081	0.016486	0.202389	0.002139	114.738	9.667568	1.00081080	7.542E-11
13D02246	3.2 %	✓	126.941973	0.445469	0.946962	0.011669	0.428901	0.001870	114.747	9.669292	1.00081087	2.488E-10
13D02248	3.8 %	✓	71.767710	0.368169	1.159051	0.010795	0.242357	0.001392	114.765	9.672609	1.00081099	1.545E-10
13D02249	4.4 %	✓	74.260763	0.256215	1.595180	0.009043	0.249782	0.001081	114.773	9.674201	1.00081105	2.330E-10
13D02251	5.2 %	✓	107.466972	0.265343	1.724579	0.009250	0.361024	0.001295	114.790	9.677519	1.00081117	3.484E-10
13D02252	6.2 %	✓	117.821063	0.204508	1.709947	0.008024	0.393174	0.001224	114.799	9.679112	1.00081123	5.260E-10
13D02254	7.2 %	✓	116.663559	0.193859	1.430060	0.007194	0.390427	0.001200	114.816	9.682432	1.00081135	5.513E-10
13D02255	8.2 %	✓	135.709960	0.196736	1.147356	0.006118	0.450212	0.001331	114.825	9.684158	1.00081142	6.782E-10
13D02257	9.2 %	✓	94.934050	0.191029	1.122629	0.006537	0.319121	0.001046	114.842	9.687480	1.00081154	4.282E-10
13D02258	10.2 %	✓	79.252678	0.195876	1.051438	0.006494	0.266829	0.000957	114.851	9.689074	1.00081160	3.333E-10
13D02260	11.2 %	✓	63.409530	0.186173	1.045491	0.006438	0.213171	0.000836	114.868	9.692398	1.00081172	2.712E-10
13D02261	12.5 %	✓	63.125956	0.143676	1.246679	0.006139	0.212024	0.000731	114.876	9.693993	1.00081178	3.562E-10
13D02263	14.0 %	✓	73.200951	0.107297	1.341325	0.005857	0.243785	0.000724	114.894	9.697318	1.00081190	5.979E-10
13D02264	16.0 %	✓	87.760447	0.081998	1.591981	0.006292	0.296198	0.000815	114.903	9.699047	1.00081197	1.183E-09
13D02266	18.0 %	✓	99.087654	0.077533	1.767881	0.006870	0.333727	0.000895	114.920	9.702374	1.00081209	1.812E-09

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02243	2.0 %	0.1275222	0.0509909	0.0350158	0.0311890	0.0219442	0.0294772	0.3980543	0.0637780	39.028318	15.577045
13D02245	2.6 %	0.2192767	0.0509909	0.0546682	0.0311890	0.0478581	0.0294772	0.5034799	0.0637780	66.869127	15.577045
13D02246	3.2 %	0.2702694	0.0509909	0.0656067	0.0311890	0.0627034	0.0294772	0.5624252	0.0637780	82.326579	15.577045
13D02248	3.8 %	0.3672029	0.0509909	0.0860047	0.0311890	0.0911356	0.0294772	0.6740615	0.0637780	111.687611	15.577045
13D02249	4.4 %	0.4108261	0.0509909	0.0948643	0.0311890	0.1038565	0.0294772	0.7237601	0.0637780	124.891490	15.577045
13D02251	5.2 %	0.4905014	0.0509909	0.1100451	0.0311890	0.1265570	0.0294772	0.8125208	0.0637780	148.988203	15.577045
13D02252	6.2 %	0.5217803	0.0509909	0.1153644	0.0311890	0.1350622	0.0294772	0.8459789	0.0637780	158.437799	15.577045
13D02254	7.2 %	0.5692251	0.0509909	0.1216028	0.0311890	0.1466849	0.0294772	0.8924794	0.0637780	172.745523	15.577045
13D02255	8.2 %	0.5834764	0.0509909	0.1220686	0.0311890	0.1491571	0.0294772	0.9030345	0.0637780	177.024280	15.577045
13D02257	9.2 %	0.5895543	0.0509909	0.1174711	0.0311890	0.1466779	0.0294772	0.8954816	0.0637780	178.785747	15.577045
13D02258	10.2 %	0.5824070	0.0509909	0.1127571	0.0311890	0.1421197	0.0294772	0.8787250	0.0637780	176.580707	15.577045
13D02260	11.2 %	0.5472853	0.0509909	0.0981681	0.0311890	0.1260221	0.0294772	0.8174465	0.0637780	165.857699	15.577045
13D02261	12.5 %	0.5213644	0.0509909	0.0891618	0.0311890	0.1154274	0.0294772	0.7762309	0.0637780	157.966254	15.577045
13D02263	14.0 %	0.4075924	0.0509909	0.0672717	0.0311890	0.0885509	0.0294772	0.6692988	0.0637780	136.623900	15.577045
13D02264	16.0 %	0.4075924	0.0509909	0.0547991	0.0311890	0.0726785	0.0294772	0.6045129	0.0637780	123.387990	15.577045
13D02266	18.0 %	0.3150606	0.0509909	0.0304370	0.0311890	0.0405276	0.0294772	0.4686223	0.0637780	95.297762	15.577045

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02243	2.0 %	4.84246	0.00488	0.9782	EXP 150 of 150	1.5523	0.0304	0.0876	EXP 150 of 150	2.298361	0.026875	0.1389	EXP 150 of 150	17.4325	0.0266	0.9567	EXP 150 of 150	1476.8286	0.1222	0.9998	EXP 150 of 150
13D02245	2.6 %	5.39953	0.00506	0.9823	EXP 149 of 150	2.3944	0.0290	0.1540	EXP 150 of 150	3.218541	0.027858	0.3541	EXP 150 of 150	26.5715	0.0259	0.9820	EXP 150 of 150	1638.0669	0.1140	0.9999	EXP 150 of 150
13D02246	3.2 %	17.34505	0.00950	0.9940	EXP 150 of 150	3.9895	0.0331	0.3249	EXP 150 of 150	6.661387	0.030581	0.6260	EXP 150 of 150	41.1079	0.0262	0.9921	EXP 150 of 150	5265.8775	0.2447	1.0000	EXP 150 of 150
13D02248	3.8 %	10.96174	0.00714	0.9914	EXP 150 of 150	5.3579	0.0311	0.4961	EXP 150 of 150	5.730397	0.025740	0.6079	EXP 150 of 150	45.1956	0.0295	0.9919	EXP 150 of 150	3329.6370	0.1692	0.9999	EXP 150 of 150
13D02249	4.4 %	16.32757	0.00972	0.9928	EXP 150 of 150	10.6696	0.0293	0.8341	EXP 150 of 150	8.186673	0.024851	0.7991	EXP 150 of 150	65.6225	0.0321	0.9953	EXP 150 of 150	4978.6283	0.2529	0.9999	EXP 150 of 150
13D02251	5.2 %	24.26146	0.01232	0.9946	EXP 150 of 150	11.9191	0.0293	0.8359	EXP 150 of 150	9.715578	0.030068	0.7874	EXP 150 of 150	67.8712	0.0294	0.9963	EXP 150 of 150	7406.8784	0.3348	1.0000	EXP 150 of 150
13D02252	6.2 %	36.17182	0.01379	0.9971	EXP 150 of 150	16.2369	0.0286	0.9192	EXP 150 of 150	13.265090	0.027232	0.8883	EXP 150 of 150	93.1921	0.0324	0.9976	EXP 150 of 150	11116.2055	0.4110	1.0000	EXP 150 of 150
13D02254	7.2 %	38.04232	0.01545	0.9966	EXP 150 of 150	14.3886	0.0333	0.8710	EXP 150 of 150	13.397552	0.028175	0.8929	EXP 150 of 150	98.6441	0.0314	0.9980	EXP 150 of 150	11657.9713	0.5779	0.9999	EXP 150 of 150
13D02255	8.2 %	46.27866	0.01504	0.9978	EXP 150 of 150	12.2245	0.0315	0.8289	EXP 150 of 150	14.988996	0.030700	0.8865	EXP 150 of 150	104.2736	0.0347	0.9978	EXP 150 of 150	14305.2907	0.6050	1.0000	EXP 150 of 150
13D02257	9.2 %	29.82641	0.01307	0.9963	EXP 150 of 150	10.8027	0.0342	0.7987	EXP 150 of 150	10.786273	0.028185	0.8402	EXP 150 of 150	94.2034	0.0350	0.9975	EXP 149 of 150	9099.9381	0.3921	1.0000	EXP 150 of 150
13D02258	10.2 %	23.37722	0.01207	0.9945	EXP 150 of 150	9.4429	0.0320	0.7597	EXP 150 of 150	9.001485	0.027287	0.7929	EXP 150 of 150	87.8843	0.0334	0.9972	EXP 150 of 150	7121.0916	0.3010	1.0000	EXP 150 of 150
13D02260	11.2 %	19.06539	0.01006	0.9943	EXP 150 of 150	9.5288	0.0324	0.7415	EXP 150 of 150	7.872078	0.028903	0.7153	EXP 150 of 150	89.2906	0.0287	0.9980	EXP 150 of 150	5815.8317	0.3366	0.9999	EXP 150 of 150
13D02261	12.5 %	24.82160	0.01124	0.9957	EXP 150 of 150	14.9233	0.0328	0.8783	EXP 150 of 150	9.898814	0.029147	0.7911	EXP 150 of 150	117.5027	0.0336	0.9984	EXP 150 of 150	7578.8892	0.3337	1.0000	EXP 150 of 150
13D02263	14.0 %	40.85035	0.01504	0.9972	EXP 150 of 150	23.1613	0.0365	0.9336	EXP 150 of 150	15.016549	0.028718	0.9017	EXP 150 of 150	169.6265	0.0378	0.9990	EXP 150 of 150	12592.4943	0.4837	1.0000	EXP 150 of 150
13D02264	16.0 %	81.48287	0.03715	0.9958	EXP 150 of 150	45.2714	0.0322	0.9903	EXP 150 of 150	27.295830	0.025589	0.9825	EXP 150 of 150	279.3766	0.0483	0.9994	EXP 150 of 150	24762.7115	0.5057	1.0000	EXP 150 of 150
13D02266	18.0 %	124.30264	0.03692	0.9982	EXP 150 of 150	68.1615	0.0362	0.9946	EXP 150 of 150	39.955561	0.028222	0.9902	EXP 150 of 150	378.8501	0.0570	0.9995	EXP 150 of 150	37855.1382	0.7772	1.0000	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02243	2.0 %	HH-4	Groundmass	Harrat	Susan Schnur	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	14	54	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02245	2.6 %	HH-4	Groundmass	Harrat	Susan Schnur	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	15	19	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02246	3.2 %	HH-4	Groundmass	Harrat	Susan Schnur	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	15	32	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02248	3.8 %	HH-4	Groundmass	Harrat	Susan Schnur	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	15	57	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02249	4.4 %	HH-4	Groundmass	Harrat	Susan Schnur	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	16	9	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02251	5.2 %	HH-4	Groundmass	Harrat	Susan Schnur	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	16	34	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02252	6.2 %	HH-4	Groundmass	Harrat	Susan Schnur	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	16	46	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02254	7.2 %	HH-4	Groundmass	Harrat	Susan Schnur	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	17	11	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02255	8.2 %	HH-4	Groundmass	Harrat	Susan Schnur	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	17	24	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02257	9.2 %	HH-4	Groundmass	Harrat	Susan Schnur	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	17	49	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02258	10.2 %	HH-4	Groundmass	Harrat	Susan Schnur	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	18	1	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02260	11.2 %	HH-4	Groundmass	Harrat	Susan Schnur	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	18	26	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02261	12.5 %	HH-4	Groundmass	Harrat	Susan Schnur	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	18	38	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02263	14.0 %	HH-4	Groundmass	Harrat	Susan Schnur	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	19	3	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02264	16.0 %	HH-4	Groundmass	Harrat	Susan Schnur	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	19	16	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01
13D02266	18.0 %	HH-4	Groundmass	Harrat	Susan Schnur	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.04423	0.228	0.00173784	0.228	303.097	0.094	0.993725755	0.063	1	4.8E-14	14	OCT	2013	19	41	1	13-OSU-05			24.40	Harrat\Hutaymah (13-05)	13D02242	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02243	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02245	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02246	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02248	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02249	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02251	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02252	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02254	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02255	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02257	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02258	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02260	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02261	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02263	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02264	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02266	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

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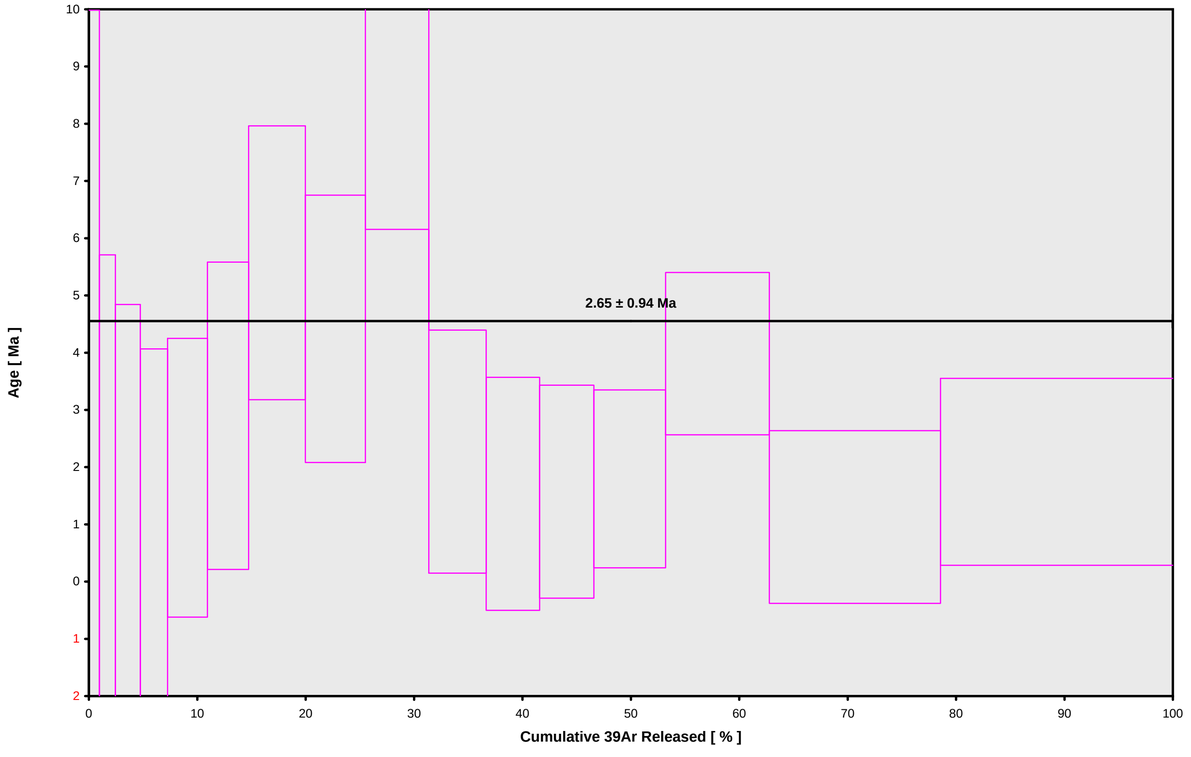
13D02242.AGE >>> HH-4 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.65 ± 0.94
TOTAL FUSION
2.65 ± 0.58
NORMAL ISOCHRON
1.88 ± 3.48 (NEG)
INVERSE ISOCHRON
1.90 ± 0.98 (NEG)

MSWD (PROBABILITY)
3.12 (0%)

Sample Info

Groundmass
Harrat
Susan Schnur

IRR = 13-OSU-05
J = 0.00173784 ± 0.00000396

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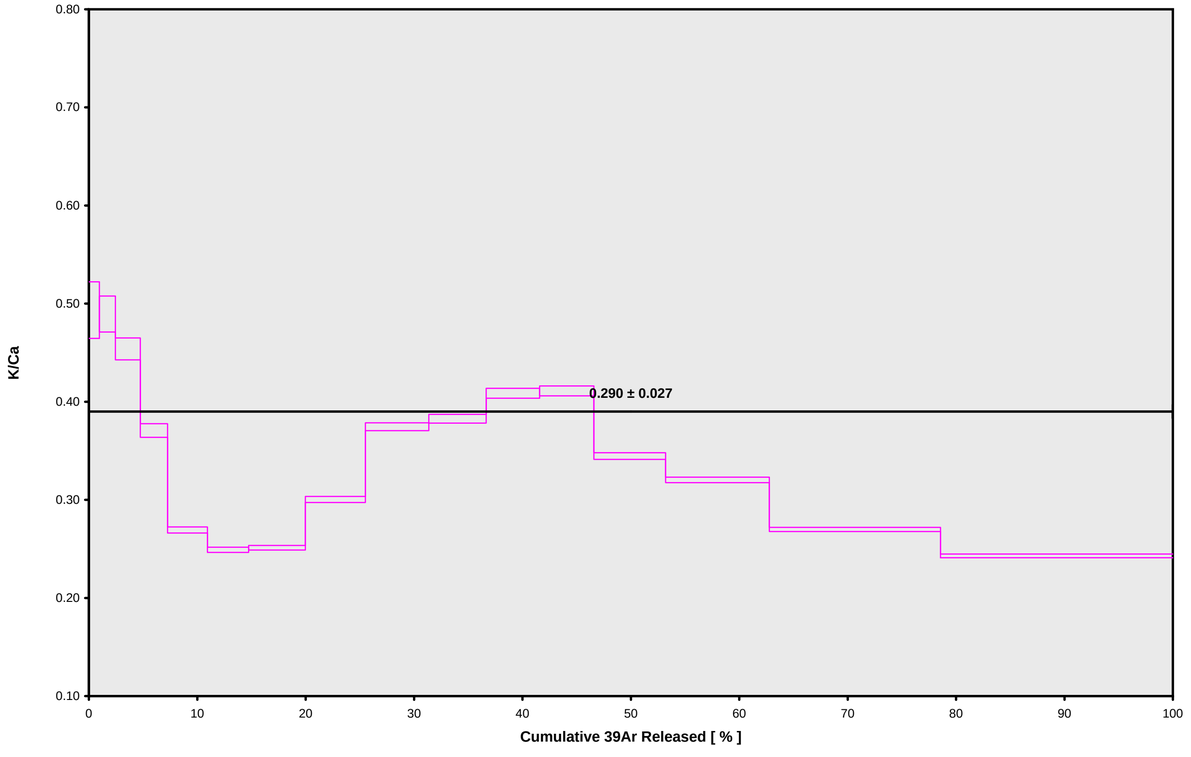
13D02242.AGE >>> HH-4 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.65 ± 0.94
TOTAL FUSION
2.65 ± 0.58
NORMAL ISOCHRON
1.88 ± 3.48 (NEG)
INVERSE ISOCHRON
1.90 ± 0.98 (NEG)

Sample Info

Groundmass
Harrat
Susan Schnur

IRR = 13-OSU-05
J = 0.00173784 ± 0.00000396

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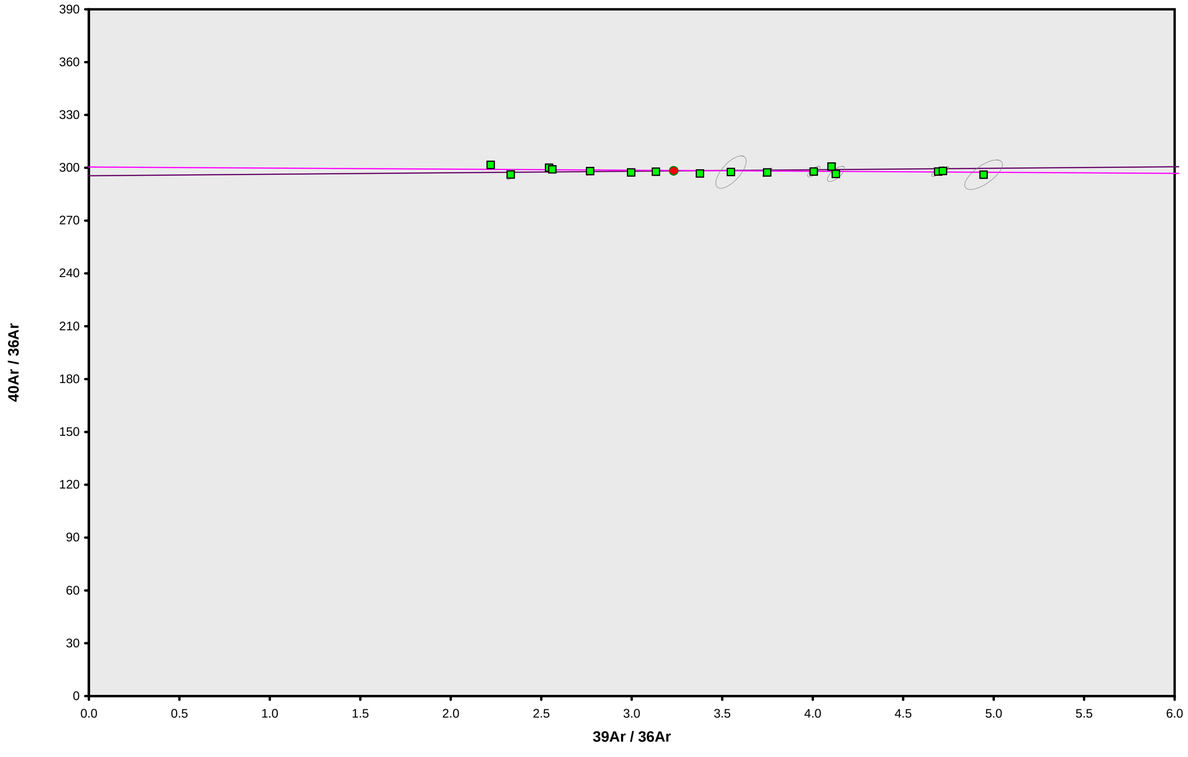
13D02242.AGE >>> HH-4 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.65 ± 0.94
TOTAL FUSION
2.65 ± 0.58
NORMAL ISOCHRON
1.88 ± 3.48 (NEG)
INVERSE ISOCHRON
1.90 ± 0.98 (NEG)

MSWD (PROBABILITY)
2.18 (1%)

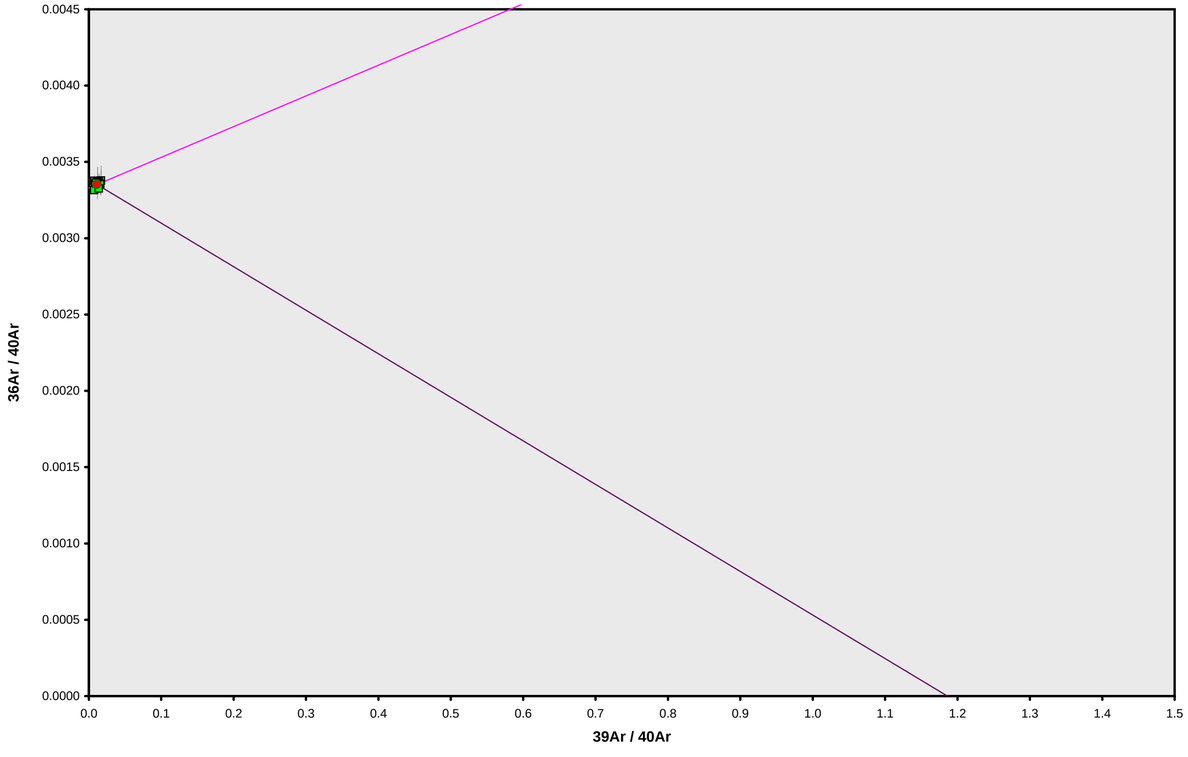
40AR/36AR INTERCEPT
300.4 ± 3.7

Sample Info

Groundmass
Harrat
Susan Schnur

IRR = 13-OSU-05
J = 0.00173784 ± 0.00000396

13D02242.AGE >>> HH-4 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.65 ± 0.94
TOTAL FUSION
2.65 ± 0.58
NORMAL ISOCHRON
1.88 ± 3.48 (NEG)
INVERSE ISOCHRON
1.90 ± 0.98 (NEG)

MSWD (PROBABILITY)
2.19 (1%)

SPREADING FACTOR
0.6%

40AR/36AR INTERCEPT
300.5 ± 3.7

Sample Info

Groundmass
Harrat
Susan Schnur

IRR = 13-OSU-05
J = 0.00173784 ± 0.00000396

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02326	2.0 %	✓	4.30985	13.0166	0.633827	10.8062	4.1693	1.19 ± 55.75	0.33	0.74	0.357 ± 0.024
13D02328	2.6 %	✓	20.46211	26.5274	1.742937	22.3931	25.6541	3.54 ± 27.20	0.42	1.52	0.363 ± 0.013
13D02329	3.2 %	✓	59.54122	56.1718	4.922615	49.4391	12.5023	0.78 ± 13.49	0.07	3.36	0.378 ± 0.006
13D02331	3.8 %	✓	67.75826	77.7633	7.196178	68.9316	8.3441	0.37 ± 9.91	0.04	4.69	0.381 ± 0.005
13D02332	4.4 %	✓	56.97071	94.1309	7.499453	79.8081	29.8141	1.16 ± 8.29	0.18	5.43	0.365 ± 0.004
13D02400	5.2 %	✓	22.13132	88.2953	4.440163	65.4686	44.8612	2.12 ± 2.60	0.68	4.46	0.319 ± 0.004
13D02402	6.2 %	✓	27.53499	121.9108	5.377829	86.5438	81.5502	2.92 ± 2.16	0.99	5.89	0.305 ± 0.003
13D02403	7.2 %	✓	33.50271	102.9357	5.845012	96.2075	99.3653	3.20 ± 2.15	0.99	6.55	0.402 ± 0.005
13D02405	8.2 %	✓	26.38118	88.1951	4.211503	81.2705	50.0565	1.91 ± 2.26	0.64	5.53	0.396 ± 0.005
13D02406	9.2 %	✓	17.18635	74.2495	3.132996	66.2469	109.1630	5.10 ± 2.37	2.10	4.51	0.384 ± 0.006
13D02408	10.2 %	✓	8.57262	72.0471	2.335056	57.6174	10.6367	0.57 ± 2.44	0.42	3.92	0.344 ± 0.005
13D02409	11.2 %	✓	6.61519	85.6826	1.713534	55.3396	9.9464	0.56 ± 2.49	0.51	3.77	0.278 ± 0.004
13D02411	12.5 %	✓	11.15772	158.4693	2.038832	82.2611	15.2378	0.57 ± 1.76	0.46	5.60	0.223 ± 0.002
13D02412	14.0 %	✓	47.33948	651.1156	6.373843	270.3301	286.0062	3.27 ± 0.96	2.00	18.40	0.179 ± 0.001
13D02414	16.0 %	✓	45.03185	655.7886	5.283098	243.1484	265.2490	3.37 ± 1.03	1.95	16.55	0.159 ± 0.001
13D02416	18.0 %	✓	25.19655	385.5167	2.829196	133.5973	82.6215	1.91 ± 1.34	1.10	9.09	0.149 ± 0.001
		Σ	479.69211	2751.8163	65.576073	1469.4094	1110.1731				

Information on Analysis
Sample = HH-3
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00171234 ± 0.00000384
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.84878 ± 0.19080 ± 22.48%	2.63 ± 0.59 ± 22.47%	1.46	100.00	0.201 ± 0.038
		Full External Error ± 0.59	11%	16	
		Analytical Error ± 0.59	1.73	2σ Confidence Limit	
			1.2098	Error Magnification	
Total Fusion Age	0.75552 ± 0.34576 ± 45.76%	2.34 ± 1.07 ± 45.74%		16	0.230 ± 0.001
		Full External Error ± 1.07			
		Analytical Error ± 1.07			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
13D02326	2.0 %	✓	2.51 ± 0.27	296.47 ± 45.25	0.7058
13D02328	2.6 %	✓	1.09 ± 0.03	296.75 ± 9.65	0.6987
13D02329	3.2 %	✓	0.83 ± 0.01	295.29 ± 3.62	0.7385
13D02331	3.8 %	✓	1.02 ± 0.01	295.62 ± 3.26	0.7575
13D02332	4.4 %	✓	1.40 ± 0.01	296.02 ± 3.76	0.7503
13D02400	5.2 %	✓	2.96 ± 0.02	297.53 ± 2.50	0.8087
13D02402	6.2 %	✓	3.14 ± 0.02	298.46 ± 2.21	0.8399
13D02403	7.2 %	✓	2.87 ± 0.02	298.47 ± 2.02	0.8647
13D02405	8.2 %	✓	3.08 ± 0.02	297.40 ± 2.26	0.8326
13D02406	9.2 %	✓	3.85 ± 0.03	301.85 ± 3.00	0.7843
13D02408	10.2 %	✓	6.72 ± 0.09	296.74 ± 5.30	0.7309
13D02409	11.2 %	✓	8.37 ± 0.14	297.00 ± 6.75	0.7220
13D02411	12.5 %	✓	7.37 ± 0.08	296.87 ± 4.19	0.7465
13D02412	14.0 %	✓	5.71 ± 0.03	301.54 ± 1.81	0.9091
13D02414	16.0 %	✓	5.40 ± 0.03	301.39 ± 1.84	0.9044
13D02416	18.0 %	✓	5.30 ± 0.04	298.78 ± 2.32	0.8328

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Normal Isochron	295.95 ± 2.19 ± 0.74%	0.74923 ± 0.50203 ± 67.01%	2.32 ± 1.55 ± 66.96% Full External Error ± 1.55 Analytical Error ± 1.55	1.56 8%

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.000003291212
	Error Magnification	1.2483	Number of Iterations	3
	Number of Data Points	16	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
13D02326	2.0 %	✓	0.0084573 ± 0.0009144	0.00337305 ± 0.00051482	0.7013
13D02328	2.6 %	✓	0.0036878 ± 0.0000860	0.00336980 ± 0.00010963	0.6758
13D02329	3.2 %	✓	0.0028119 ± 0.0000233	0.00338650 ± 0.00004146	0.6021
13D02331	3.8 %	✓	0.0034413 ± 0.0000248	0.00338269 ± 0.00003727	0.5924
13D02332	4.4 %	✓	0.0047323 ± 0.0000398	0.00337811 ± 0.00004287	0.6231
13D02400	5.2 %	✓	0.0099426 ± 0.0000494	0.00336104 ± 0.00002827	0.5204
13D02402	6.2 %	✓	0.0105308 ± 0.0000426	0.00335051 ± 0.00002486	0.4654
13D02403	7.2 %	✓	0.0096213 ± 0.0000328	0.00335047 ± 0.00002263	0.4092
13D02405	8.2 %	✓	0.0103586 ± 0.0000437	0.00336250 ± 0.00002552	0.4779
13D02406	9.2 %	✓	0.0127699 ± 0.0000788	0.00331288 ± 0.00003290	0.5713
13D02408	10.2 %	✓	0.0226497 ± 0.0002762	0.00336994 ± 0.00006021	0.6682
13D02409	11.2 %	✓	0.0281664 ± 0.0004430	0.00336696 ± 0.00007653	0.6826
13D02411	12.5 %	✓	0.0248347 ± 0.0002335	0.00336853 ± 0.00004759	0.6464
13D02412	14.0 %	✓	0.0189375 ± 0.0000477	0.00331629 ± 0.00001991	0.3061
13D02414	16.0 %	✓	0.0179152 ± 0.0000469	0.00331796 ± 0.00002022	0.3213
13D02416	18.0 %	✓	0.0177462 ± 0.0000765	0.00334695 ± 0.00002602	0.4960

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Inverse Isochron	295.91 ± 2.19	0.76464 ± 0.31588	2.37 ± 0.98	1.54
Clustered Points	± 0.74%	± 41.31%	± 41.29%	9%
		Full External Error	± 0.98	
		Analytical Error	± 0.98	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.0005218991
	Error Magnification	1.2421	Number of Iterations	4
	Number of Data Points	16	Calculated Line	Weighted York-2
	Spreading Factor	1.9%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
13D02326	2.0 %	✓	4.31340	5.409	13.0166	3.278	1.56412	8.661	10.8149	0.543	1277.74	5.379	0.38582 ± 18.01705	1.19 ± 55.75	0.33	0.74	0.357 ± 0.024
13D02328	2.6 %	✓	20.46944	1.168	26.5274	1.784	5.82583	2.330	22.4110	0.277	6072.23	1.132	1.14562 ± 8.80230	3.54 ± 27.20	0.42	1.52	0.363 ± 0.013
13D02329	3.2 %	✓	59.55698	0.471	56.1718	0.842	16.62129	0.820	49.4769	0.138	17581.98	0.391	0.25288 ± 4.35591	0.78 ± 13.49	0.07	3.36	0.378 ± 0.006
13D02331	3.8 %	✓	67.78013	0.431	77.7633	0.649	20.65545	0.666	68.9839	0.111	20030.98	0.343	0.12105 ± 3.20109	0.37 ± 9.91	0.04	4.69	0.381 ± 0.005
13D02332	4.4 %	✓	56.99697	0.486	94.1309	0.583	19.06858	0.718	79.8715	0.102	16864.74	0.408	0.37357 ± 2.67905	1.16 ± 8.29	0.18	5.43	0.365 ± 0.004
13D02400	5.2 %	✓	22.15547	0.350	88.2953	0.668	9.33381	0.442	65.5280	0.085	6584.73	0.233	0.68523 ± 0.84196	2.12 ± 2.60	0.68	4.46	0.319 ± 0.004
13D02402	6.2 %	✓	27.56819	0.320	121.9108	0.539	11.52593	0.380	86.6258	0.077	8218.23	0.187	0.94230 ± 0.69944	2.92 ± 2.16	0.99	5.89	0.305 ± 0.003
13D02403	7.2 %	✓	33.53099	0.301	102.9357	0.611	13.21582	0.332	96.2768	0.074	9999.51	0.154	1.03282 ± 0.69660	3.20 ± 2.15	0.99	6.55	0.402 ± 0.005
13D02405	8.2 %	✓	26.40526	0.325	88.1951	0.683	10.07926	0.409	81.3299	0.079	7845.78	0.196	0.61593 ± 0.72937	1.91 ± 2.26	0.64	5.53	0.396 ± 0.005
13D02406	9.2 %	✓	17.20654	0.398	74.2495	0.745	7.10933	0.556	66.2968	0.088	5187.80	0.296	1.64782 ± 0.76709	5.10 ± 2.37	2.10	4.51	0.384 ± 0.006
13D02408	10.2 %	✓	8.59208	0.657	72.0471	0.764	4.60298	0.888	57.6659	0.088	2543.90	0.603	0.18461 ± 0.78700	0.57 ± 2.44	0.42	3.92	0.344 ± 0.005
13D02409	11.2 %	✓	6.63814	0.823	85.6826	0.714	3.59159	1.133	55.3972	0.091	1964.79	0.781	0.17973 ± 0.80486	0.56 ± 2.49	0.51	3.77	0.278 ± 0.004
13D02411	12.5 %	✓	11.19994	0.531	158.4693	0.488	5.08237	0.779	82.3678	0.080	3312.43	0.463	0.18524 ± 0.56734	0.57 ± 1.76	0.46	5.60	0.223 ± 0.002
13D02412	14.0 %	✓	47.51258	0.279	651.1156	0.389	18.38845	0.254	270.7683	0.065	14275.10	0.108	1.05799 ± 0.31158	3.27 ± 0.96	2.00	18.40	0.179 ± 0.001
13D02414	16.0 %	✓	45.20598	0.282	655.7886	0.388	16.55774	0.271	243.5898	0.066	13572.41	0.113	1.09089 ± 0.33449	3.37 ± 1.03	1.95	16.55	0.159 ± 0.001
13D02416	18.0 %	✓	25.29886	0.330	385.5167	0.405	9.11235	0.457	133.8568	0.070	7528.34	0.204	0.61844 ± 0.43459	1.91 ± 1.34	1.10	9.09	0.149 ± 0.001
		Σ	480.43096	0.138	2751.8163	0.161	172.33491	0.195	1471.2613	0.024	142860.68	0.113					

Information on Analysis and Constants Used in Calculations

Sample = HH-3
Material = Groundmass
Location = Harrat
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00171234 ± 0.00000384
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 25
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = Not Done

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.84878 ± 0.19080 (± 22.48%)	2.63 ± 0.59 (± 22.47%)	1.46	100.00	0.201 ± 0.038
		Full External Error ± 0.59		11%	16	
		Analytical Error ± 0.59		1.73	2σ Confidence Limit	
				1.2098	Error Magnification	
Total Fusion Age		0.75552 ± 0.34576 (± 45.76%)	2.34 ± 1.07 (± 45.74%)		16	0.230 ± 0.001
		Full External Error ± 1.07				
		Analytical Error ± 1.07				
Normal Isochron	295.95 ± 2.19 (± 0.74%)	0.74923 ± 0.50203 (± 67.01%)	2.32 ± 1.55 (± 66.96%)	1.56	100.00	
		Full External Error ± 1.55		8%	16	
		Analytical Error ± 1.55		1.76	2σ Confidence Limit	
				1.2483	Error Magnification	
				3	Number of Iterations	
				0.0000032912	Convergence	
Inverse Isochron	295.91 ± 2.19 (± 0.74%)	0.76464 ± 0.31588 (± 41.31%)	2.37 ± 0.98 (± 41.29%)	1.54	100.00	
Clustered Points		Full External Error ± 0.98		9%	16	
		Analytical Error ± 0.98		1.76	2σ Confidence Limit	
				1.2421	Error Magnification	
				4	Number of Iterations	
				0.0005218991	Convergence	
				2%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
13D02326	2.0 %	✓	4.30985	5.41	0.0000000	0.00	0.0034364	3.28	0.0001188	22.47	13.0166	3.28	0.805511	5.41	0.0000000	0.00	0.122974	0.54	0.0018093	3.28	0.633827	22.49	10.8062	0.54	0.0087602	3.28	4.1693	2334.88	1273.56	5.41	0.0000000	0.00	0.0109142	0.54
13D02328	2.6 %	✓	20.46211	1.17	0.0000000	0.00	0.0070032	1.78	0.0003268	8.25	26.5274	1.78	3.824368	1.17	0.0000000	0.00	0.254834	0.28	0.0036873	1.78	1.742937	8.30	22.3931	0.28	0.0178529	1.78	25.6541	384.17	6046.55	1.17	0.0000000	0.00	0.0226171	0.28
13D02329	3.2 %	✓	59.54122	0.47	0.0000000	0.00	0.0148293	0.84	0.0009231	3.11	56.1718	0.84	11.128255	0.47	0.0000000	0.00	0.562617	0.14	0.0078079	0.84	4.922615	3.24	49.4391	0.14	0.0378036	0.84	12.5023	861.25	17594.43	0.47	0.0000000	0.00	0.0499335	0.14
13D02331	3.8 %	✓	67.75826	0.43	0.0000000	0.00	0.0205295	0.65	0.0013497	2.25	77.7633	0.65	12.664018	0.43	0.0000000	0.00	0.784442	0.11	0.0108091	0.65	7.196178	2.43	68.9316	0.11	0.0523347	0.65	8.3441	1322.23	20022.56	0.43	0.0000000	0.00	0.0696209	0.11
13D02332	4.4 %	✓	56.97071	0.49	0.0000000	0.00	0.0248506	0.58	0.0014067	2.16	94.1309	0.58	10.647825	0.49	0.0000000	0.00	0.908216	0.10	0.0130842	0.58	7.499453	2.35	79.8081	0.10	0.0633501	0.58	29.8141	358.57	16834.84	0.49	0.0000000	0.00	0.0806062	0.10
13D02400	5.2 %	✓	22.13132	0.35	0.0000000	0.00	0.0233100	0.67	0.0008396	1.35	88.2953	0.67	4.136344	0.35	0.0000000	0.00	0.745033	0.09	0.0122730	0.67	4.440163	1.63	65.4686	0.09	0.0594228	0.67	44.8612	61.44	6539.81	0.35	0.0000000	0.00	0.0661233	0.09
13D02402	6.2 %	✓	27.53499	0.32	0.0000000	0.00	0.0321844	0.54	0.0010170	1.27	121.9108	0.54	5.146290	0.32	0.0000000	0.00	0.984868	0.08	0.0169456	0.54	5.377829	1.56	86.5438	0.08	0.0820459	0.54	81.5502	37.11	8136.59	0.32	0.0000000	0.00	0.0874092	0.08
13D02403	7.2 %	✓	33.50271	0.30	0.0000000	0.00	0.0271750	0.61	0.0011054	1.23	102.9357	0.61	6.261657	0.30	0.0000000	0.00	1.094842	0.07	0.0143081	0.61	5.845012	1.54	96.2075	0.07	0.0692758	0.61	99.3653	33.72	9900.05	0.30	0.0000000	0.00	0.0971696	0.07
13D02405	8.2 %	✓	26.38118	0.33	0.0000000	0.00	0.0232835	0.68	0.0007966	1.40	88.1951	0.68	4.930642	0.33	0.0000000	0.00	0.924858	0.08	0.0122591	0.68	4.211503	1.67	81.2705	0.08	0.0593553	0.68	50.0565	59.21	7795.64	0.33	0.0000000	0.00	0.0820832	0.08
13D02406	9.2 %	✓	17.18635	0.40	0.0000000	0.00	0.0196019	0.75	0.0005927	1.61	74.2495	0.75	3.212128	0.40	0.0000000	0.00	0.753889	0.09	0.0103207	0.75	3.132996	1.86	66.2469	0.09	0.0499699	0.75	109.1630	23.28	5078.57	0.40	0.0000000	0.00	0.0669093	0.09
13D02408	10.2 %	✓	8.57262	0.66	0.0000000	0.00	0.0190204	0.76	0.0004418	2.03	72.0471	0.76	1.602222	0.66	0.0000000	0.00	0.655686	0.09	0.0100145	0.76	2.335056	2.23	57.6174	0.09	0.0484877	0.76	10.6367	213.15	2533.21	0.66	0.0000000	0.00	0.0581936	0.09
13D02409	11.2 %	✓	6.61519	0.83	0.0000000	0.00	0.0226202	0.71	0.0003242	2.62	85.6826	0.71	1.236380	0.83	0.0000000	0.00	0.629764	0.09	0.0119099	0.71	1.713534	2.77	55.3396	0.09	0.0576644	0.71	9.9464	223.90	1954.79	0.83	0.0000000	0.00	0.0558930	0.09
13D02411	12.5 %	✓	11.15772	0.53	0.0000000	0.00	0.0418359	0.49	0.0003858	2.22	158.4693	0.49	2.085378	0.53	0.0000000	0.00	0.936132	0.08	0.0220272	0.49	2.038832	2.40	82.2611	0.08	0.1066498	0.49	15.2378	153.14	3297.11	0.53	0.0000000	0.00	0.0830837	0.08
13D02412	14.0 %	✓	47.33948	0.28	0.0000000	0.00	0.1718945	0.39	0.0012062	1.24	651.1156	0.39	8.847749	0.28	0.0000000	0.00	3.076356	0.07	0.0905051	0.39	6.373843	1.54	270.3301	0.07	0.4382008	0.39	286.0062	14.72	13988.82	0.28	0.0000000	0.00	0.2730334	0.07
13D02414	16.0 %	✓	45.03185	0.28	0.0000000	0.00	0.1731282	0.39	0.0010000	1.33	655.7886	0.39	8.416454	0.28	0.0000000	0.00	2.767029	0.07	0.0911546	0.39	5.283098	1.62	243.1484	0.07	0.4413457	0.39	265.2490	15.33	13306.91	0.28	0.0000000	0.00	0.2455799	0.07
13D02416	18.0 %	✓	25.19655	0.33	0.0000000	0.00	0.1017764	0.40	0.0005356	1.82	385.5167	0.40	4.709235	0.33	0.0000000	0.00	1.520337	0.07	0.0535868	0.40	2.829196	2.04	133.5973	0.07	0.2594528	0.40	82.6215	35.14	7445.58	0.33	0.0000000	0.00	0.1349333	0.07
		Σ	479.69211	0.14	0.0000000	0.00	0.7264795	0.16	0.0123700	0.60	2751.8163	0.16	89.654456	0.14	0.0000000	0.00	16.721879	0.02	0.3825025	0.16	65.576073	0.66	1469.4094	0.02	1.8519724	0.16	1110.1731	22.88	141749.02	0.14	0.0000000	0.00	1.4841035	0.02
		Σ							480.43096	0.14	2751.8163	0.16									172.33491	0.26			1471.2613	0.02							142860.68	0.22

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
13D02326	2.0 %	✓	118.145895	6.387084	1.203579	0.039987	0.398838	0.021681	115.449	9.804316	1.00081582	6.133E-11
13D02328	2.6 %	✓	270.948962	3.157495	1.183679	0.021367	0.913367	0.010963	115.467	9.807678	1.00081595	2.915E-10
13D02329	3.2 %	✓	355.357107	1.473030	1.135312	0.009690	1.203732	0.005908	115.475	9.809293	1.00081601	8.439E-10
13D02331	3.8 %	✓	290.371601	1.047355	1.127267	0.007425	0.982549	0.004373	115.492	9.812657	1.00081613	9.615E-10
13D02332	4.4 %	✓	211.148466	0.886895	1.178530	0.006972	0.713609	0.003545	115.501	9.814272	1.00081619	8.095E-10
13D02400	5.2 %	✓	100.487280	0.249407	1.347444	0.009079	0.338107	0.001217	116.432	9.996467	1.00082276	3.161E-10
13D02402	6.2 %	✓	94.870406	0.191759	1.407326	0.007667	0.318244	0.001048	116.449	9.999896	1.00082289	3.945E-10
13D02403	7.2 %	✓	103.862117	0.177126	1.069164	0.006582	0.348277	0.001078	116.458	10.001679	1.00082295	4.800E-10
13D02405	8.2 %	✓	96.468589	0.203597	1.084412	0.007455	0.324669	0.001086	116.476	10.005109	1.00082307	3.766E-10
13D02406	9.2 %	✓	78.251039	0.241465	1.119956	0.008403	0.259538	0.001058	116.484	10.006756	1.00082313	2.490E-10
13D02408	10.2 %	✓	44.114498	0.268974	1.249388	0.009613	0.148998	0.000988	116.501	10.010188	1.00082325	1.221E-10
13D02409	11.2 %	✓	35.467329	0.278905	1.546694	0.011127	0.119828	0.000992	116.510	10.011836	1.00082331	9.431E-11
13D02411	12.5 %	✓	40.215085	0.189059	1.923923	0.009513	0.135975	0.000730	116.527	10.015270	1.00082344	1.590E-10
13D02412	14.0 %	✓	52.720716	0.066397	2.404697	0.009481	0.175473	0.000503	116.535	10.016919	1.00082349	6.852E-10
13D02414	16.0 %	✓	55.718298	0.072896	2.692184	0.010597	0.185582	0.000537	116.553	10.020354	1.00082362	6.515E-10
13D02416	18.0 %	✓	56.241732	0.121253	2.880069	0.011833	0.188999	0.000637	116.570	10.023791	1.00082374	3.614E-10

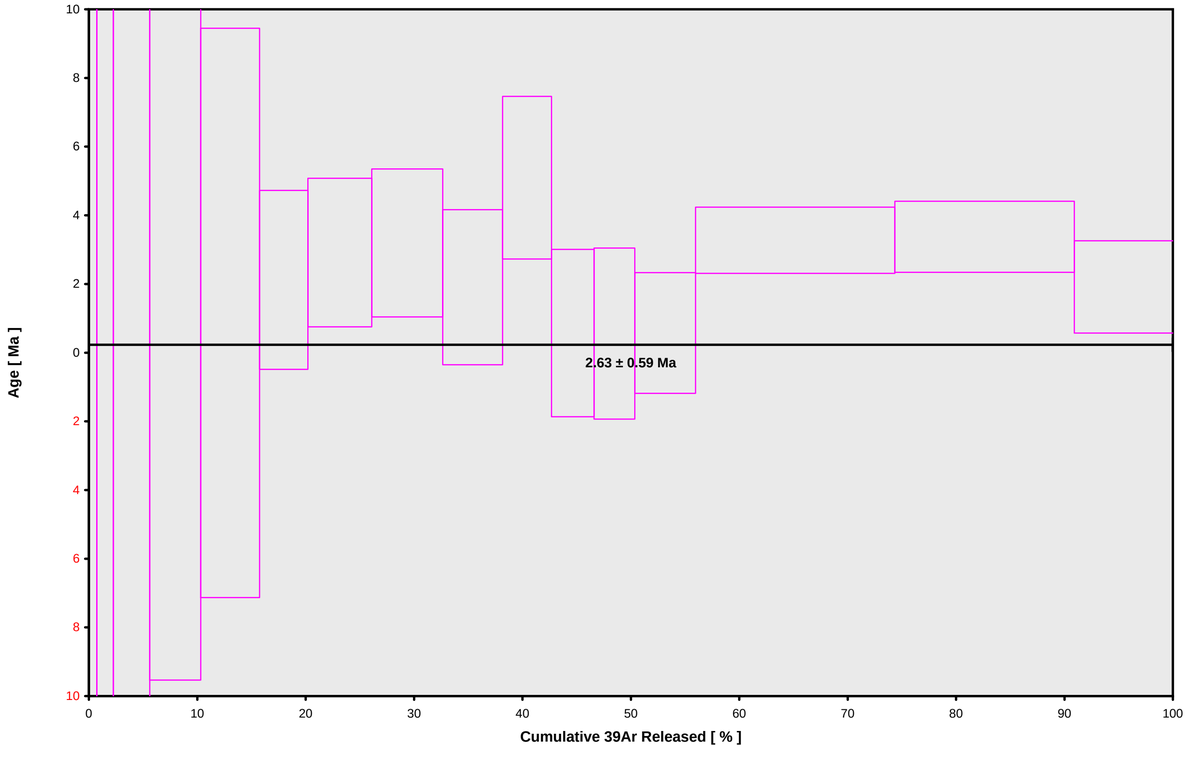
Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
13D02326	2.0 %	0.0926296	0.2271592	0.0022107	0.0317118	0.0390473	0.1304271	0.1221851	0.0529699	27.786402	68.726663
13D02328	2.6 %	0.4817837	0.2271592	0.0303164	0.0317118	0.0775830	0.1304271	0.3298734	0.0529699	145.766673	68.726663
13D02329	3.2 %	0.6685776	0.2271592	0.0438072	0.0317118	0.1335655	0.1304271	0.4295638	0.0529699	202.397203	68.726663
13D02331	3.8 %	1.0577317	0.2271592	0.0719129	0.0317118	0.2501958	0.1304271	0.6372521	0.0529699	320.377475	68.726663
13D02332	4.4 %	1.2445256	0.2271592	0.0854036	0.0317118	0.3061783	0.1304271	0.7369425	0.0529699	377.008005	68.726663
13D02400	5.2 %	1.2479142	0.0502511	0.1283847	0.0357834	0.3460035	0.0275159	0.6519150	0.0241962	378.078103	15.345646
13D02402	6.2 %	1.1223197	0.0502511	0.1140718	0.0357834	0.3528299	0.0275159	1.1161815	0.0241962	339.209706	15.345646
13D02403	7.2 %	1.0238227	0.0502511	0.1066291	0.0357834	0.3343528	0.0275159	1.2244344	0.0241962	309.167886	15.345646
13D02405	8.2 %	0.7945852	0.0502511	0.0923162	0.0357834	0.2687439	0.0275159	1.2339578	0.0241962	239.650793	15.345646
13D02406	9.2 %	0.6748439	0.0502511	0.0854460	0.0357834	0.2277511	0.0275159	1.1669875	0.0241962	203.449474	15.345646
13D02408	10.2 %	0.4281589	0.0502511	0.0711331	0.0357834	0.1343264	0.0275159	0.9334548	0.0241962	128.988632	15.345646
13D02409	11.2 %	0.3198079	0.0502511	0.0642629	0.0357834	0.0900965	0.0275159	0.7971112	0.0241962	96.310256	15.345646
13D02411	12.5 %	0.1380304	0.0502511	0.0499500	0.0357834	0.0109997	0.0275159	0.5175793	0.0241962	41.472090	15.345646
13D02412	14.0 %	0.0806002	0.0502511	0.0430798	0.0357834	0.0162383	0.0275159	0.4064498	0.0241962	24.108540	15.345646
13D02414	16.0 %	0.0460852	0.0502511	0.0287669	0.0357834	0.0388635	0.0275159	0.2779758	0.0241962	13.459473	15.345646
13D02416	18.0 %	0.1576936	0.0502511	0.0144540	0.0357834	0.0005258	0.0275159	0.3631232	0.0241962	46.575122	15.345646

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
13D02326	2.0 %	4.29802	0.00505	0.9710	EXP 150 of 150	1.3049	0.0282	0.0815	EXP 150 of 150	1.505468	0.029650	0.1095	EXP 150 of 150	10.8607	0.0234	0.9168	EXP 150 of 150	1305.5269	0.0977	0.9999	EXP 150 of 150
13D02328	2.6 %	20.43863	0.01090	0.9942	EXP 150 of 150	2.6843	0.0337	0.2629	EXP 150 of 150	5.830383	0.029968	0.5832	EXP 150 of 150	22.5825	0.0285	0.9686	EXP 150 of 150	6217.9967	0.3144	0.9999	EXP 150 of 150
13D02329	3.2 %	58.73412	0.03478	0.9927	EXP 150 of 150	5.6627	0.0280	0.6584	EXP 150 of 150	16.546512	0.026282	0.9516	EXP 150 of 150	49.5569	0.0290	0.9923	EXP 150 of 150	17784.3763	0.3881	1.0000	EXP 150 of 150
13D02331	3.8 %	67.14051	0.03184	0.9954	EXP 150 of 150	7.8479	0.0261	0.8266	EXP 149 of 150	20.646726	0.028046	0.9627	EXP 150 of 150	69.1337	0.0341	0.9947	EXP 150 of 150	20351.3557	0.4637	1.0000	EXP 150 of 150
13D02332	4.4 %	56.81417	0.03546	0.9920	EXP 150 of 150	9.4965	0.0271	0.8628	EXP 150 of 150	19.135733	0.026722	0.9631	EXP 150 of 150	80.0440	0.0352	0.9958	EXP 150 of 150	17241.7470	0.3998	1.0000	EXP 150 of 150
13D02400	5.2 %	22.84857	0.01174	0.9945	EXP 150 of 150	8.7952	0.0314	0.7323	EXP 150 of 150	9.562817	0.027683	0.8019	EXP 149 of 150	65.7164	0.0289	0.9962	EXP 150 of 150	6962.8116	0.2474	1.0000	EXP 150 of 150
13D02402	6.2 %	28.00015	0.01306	0.9954	EXP 150 of 150	12.0763	0.0285	0.8407	EXP 150 of 150	11.734285	0.030126	0.8517	EXP 150 of 150	87.1293	0.0303	0.9976	EXP 150 of 150	8557.4377	0.5049	0.9999	EXP 150 of 150
13D02403	7.2 %	33.71513	0.01282	0.9970	EXP 150 of 150	10.2052	0.0325	0.7640	EXP 150 of 150	13.384511	0.029105	0.8640	EXP 150 of 150	96.8202	0.0295	0.9982	EXP 150 of 150	10308.6818	0.4984	0.9999	EXP 150 of 150
13D02405	8.2 %	26.53860	0.01228	0.9956	EXP 150 of 150	8.7418	0.0336	0.7054	EXP 150 of 150	10.221663	0.027309	0.8174	EXP 150 of 150	81.9885	0.0307	0.9972	EXP 150 of 150	8085.4279	0.4290	0.9999	EXP 150 of 150
13D02406	9.2 %	17.45050	0.01018	0.9928	EXP 150 of 150	7.3661	0.0299	0.6372	EXP 150 of 150	7.247970	0.026209	0.7352	EXP 150 of 150	66.9948	0.0324	0.9954	EXP 150 of 150	5391.2447	0.2672	0.9999	EXP 150 of 150
13D02408	10.2 %	8.80507	0.00702	0.9866	EXP 150 of 150	7.1334	0.0302	0.6624	EXP 150 of 150	4.679607	0.028981	0.4526	EXP 150 of 150	58.1914	0.0264	0.9959	EXP 150 of 150	2672.8916	0.1614	0.9999	EXP 150 of 150
13D02409	11.2 %	6.79171	0.00608	0.9832	EXP 150 of 150	8.4617	0.0359	0.6353	EXP 150 of 150	3.636663	0.028944	0.3310	EXP 149 of 150	55.8025	0.0273	0.9953	EXP 150 of 150	2061.1024	0.1353	0.9999	EXP 150 of 150
13D02411	12.5 %	11.05750	0.00782	0.9897	EXP 150 of 150	15.5756	0.0311	0.9043	EXP 150 of 150	5.029661	0.027016	0.5208	EXP 150 of 150	82.3027	0.0325	0.9970	EXP 150 of 150	3353.8990	0.1498	1.0000	EXP 150 of 150
13D02412	14.0 %	46.40337	0.01495	0.9978	EXP 150 of 150	63.8240	0.0363	0.9907	EXP 150 of 150	18.141715	0.029204	0.9332	EXP 149 of 150	269.2592	0.0453	0.9994	EXP 150 of 150	14299.2051	0.6806	1.0000	EXP 150 of 150
13D02414	16.0 %	44.12002	0.01552	0.9974	EXP 150 of 150	64.2455	0.0336	0.9922	EXP 150 of 150	16.311320	0.027842	0.9212	EXP 150 of 150	242.1445	0.0406	0.9995	EXP 150 of 150	13585.8671	0.7847	0.9999	EXP 150 of 150
13D02416	18.0 %	24.82302	0.01084	0.9960	EXP 150 of 150	37.7524	0.0379	0.9717	EXP 150 of 150	8.998657	0.028421	0.7425	EXP 150 of 150	133.2729	0.0341	0.9987	EXP 150 of 150	7574.9112	0.3512	1.0000	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
13D02326	2.0 %	HH-3	Groundmass	Harrat	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	15	OCT	2013	8	23	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02328	2.6 %	HH-3	Groundmass	Harrat	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	15	OCT	2013	8	48	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02329	3.2 %	HH-3	Groundmass	Harrat	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	15	OCT	2013	9	0	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02331	3.8 %	HH-3	Groundmass	Harrat	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	15	OCT	2013	9	25	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02332	4.4 %	HH-3	Groundmass	Harrat	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	15	OCT	2013	9	37	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02400	5.2 %	HH-3	Groundmass	Harrat	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	7	58	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02402	6.2 %	HH-3	Groundmass	Harrat	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	8	23	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02403	7.2 %	HH-3	Groundmass	Harrat	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	8	36	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02405	8.2 %	HH-3	Groundmass	Harrat	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	9	1	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02406	9.2 %	HH-3	Groundmass	Harrat	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	9	13	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02408	10.2 %	HH-3	Groundmass	Harrat	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	9	38	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02409	11.2 %	HH-3	Groundmass	Harrat	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	9	50	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02411	12.5 %	HH-3	Groundmass	Harrat	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	10	15	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02412	14.0 %	HH-3	Groundmass	Harrat	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	10	27	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02414	16.0 %	HH-3	Groundmass	Harrat	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	10	52	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01
13D02416	18.0 %	HH-3	Groundmass	Harrat	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.17889	0.224	0.00171234	0.224	303.09	0.095	0.993731392	0.063	1	4.8E-14	16	OCT	2013	11	17	1	13-OSU-05			31.40	Harrat\Hutaymah (13-05)	13D02325	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
13D02326	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02328	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02329	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02331	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02332	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02400	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02402	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02403	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02405	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02406	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02408	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02409	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02411	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02412	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02414	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
13D02416	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

13D02325.AGE >>> HH-3 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.63 ± 0.59
TOTAL FUSION
2.34 ± 1.07
NORMAL ISOCHRON
2.32 ± 1.55
INVERSE ISOCHRON
2.37 ± 0.98

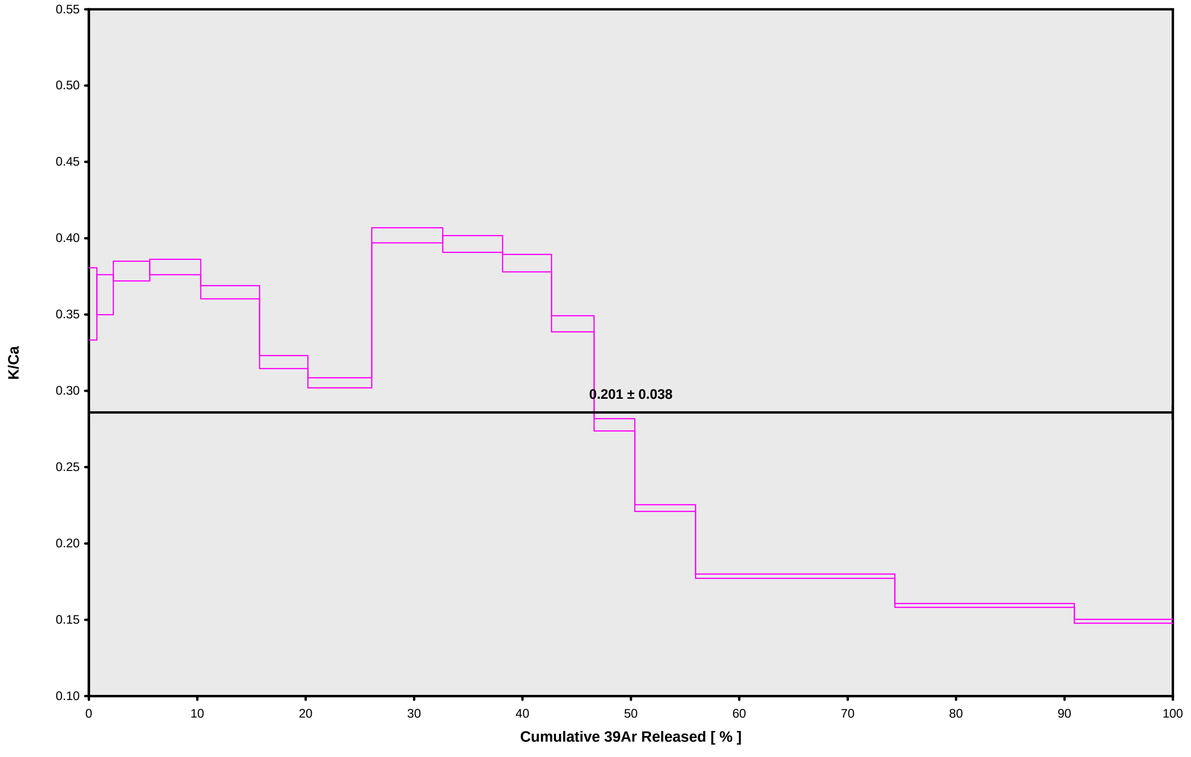
MSWD (PROBABILITY)
1.46 (11%)

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00171234 ± 0.00000384

13D02325.AGE >>> HH-3 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.63 ± 0.59
TOTAL FUSION
2.34 ± 1.07
NORMAL ISOCHRON
2.32 ± 1.55
INVERSE ISOCHRON
2.37 ± 0.98

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
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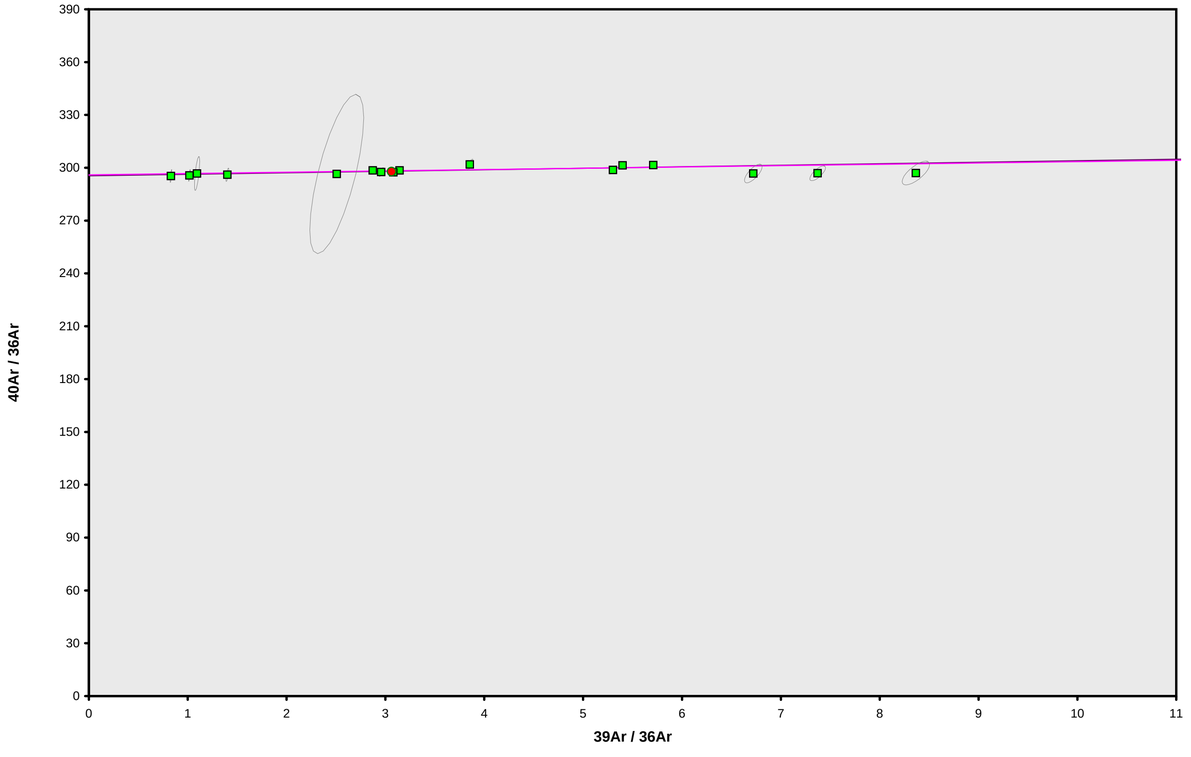
13D02325.AGE >>> HH-3 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.63 ± 0.59
TOTAL FUSION
2.34 ± 1.07
NORMAL ISOCHRON
2.32 ± 1.55
INVERSE ISOCHRON
2.37 ± 0.98

MSWD (PROBABILITY)
1.56 (8%)

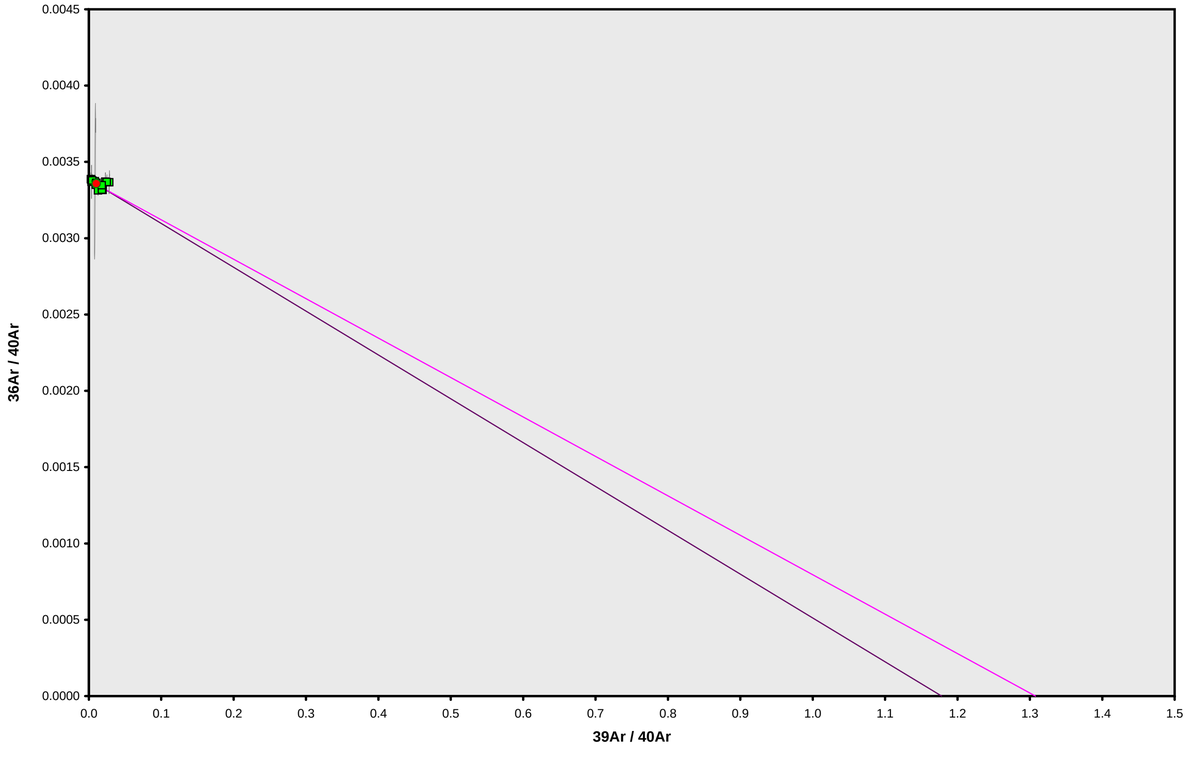
40AR/36AR INTERCEPT
295.9 ± 2.2

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00171234 ± 0.00000384

13D02325.AGE >>> HH-3 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.63 ± 0.59
TOTAL FUSION
2.34 ± 1.07
NORMAL ISOCHRON
2.32 ± 1.55
INVERSE ISOCHRON
2.37 ± 0.98

MSWD (PROBABILITY)
1.54 (9%)

SPREADING FACTOR
1.9%

40AR/36AR INTERCEPT
295.9 ± 2.2

Sample Info

Groundmass
Harrat
Dan Miggins

IRR = 13-OSU-05
J = 0.00171234 ± 0.00000384

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D02941	2.0 %		1.58845	2.49863	0.059478	4.86574	11.25607	6.90 ± 7.81	2.34	0.74	0.84 ± 2.77
14D02943	2.6 %		4.09254	0.47903	0.249077	10.65898	22.75293	6.37 ± 3.95	1.85	1.62	9.57 ± 158.07
14D02944	3.2 %		11.35742	14.11297	0.803332	20.74161	73.21543	10.52 ± 3.10	2.13	3.14	0.63 ± 0.37
14D02946	3.8 %		26.50815	15.72190	1.470760	35.62523	203.07374	16.95 ± 3.52	2.53	5.40	0.97 ± 0.50
14D02947	4.4 %		20.86428	16.42709	1.067320	29.42776	99.80306	10.10 ± 3.47	1.59	4.46	0.77 ± 0.36
14D02949	5.2 %		14.02998	16.73447	0.863237	32.42939	13.32377	1.23 ± 2.31	0.32	4.92	0.83 ± 0.41
14D02953	6.2 %		25.62071	22.78499	1.732633	53.82039	137.76415	7.63 ± 2.28	1.79	8.16	1.02 ± 0.37
14D02954	7.2 %	✓	20.60640	31.84311	1.598227	52.04379	46.31848	2.66 ± 1.95	0.75	7.89	0.70 ± 0.17
14D02956	8.2 %	✓	20.92907	26.11372	1.803627	54.54611	74.23085	4.06 ± 1.89	1.19	8.27	0.90 ± 0.29
14D02957	9.2 %	✓	18.55364	31.53662	1.892866	54.46844	74.24111	4.07 ± 1.71	1.34	8.26	0.74 ± 0.18
14D02959	10.2 %	✓	11.55677	29.28114	1.724077	47.25110	1.65006	0.10 ± 1.39	0.05	7.16	0.69 ± 0.20
14D02960	11.2 %	✓	11.17134	33.26669	1.435992	41.08288	33.71685	2.45 ± 1.56	1.01	6.23	0.53 ± 0.14
14D02962	12.5 %	✓	4.83718	32.19454	1.533422	45.08927	5.56064	0.37 ± 0.98	0.39	6.83	0.60 ± 0.15
14D02964	14.0 %	✓	4.35836	49.17024	1.748667	57.37944	25.06302	1.30 ± 0.75	1.91	8.70	0.50 ± 0.08
14D02965	16.0 %	✓	8.87754	82.21205	1.952838	73.47310	68.12897	2.77 ± 0.77	2.53	11.14	0.38 ± 0.04
14D02967	18.0 %	✓	5.60735	53.02189	1.281075	46.86594	58.15761	3.70 ± 0.98	3.39	7.10	0.38 ± 0.06
		Σ	210.55918	456.44100	21.216629	659.76917	948.25673				

Information on Analysis

Sample = 176-710
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00165213 ± 0.00000357
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.70495 ± 0.30576	2.10 ± 0.91	6.16	71.57	0.43 ± 0.07
Error Mean	± 43.37%	± 43.35%	0%	9	
		Full External Error ± 0.91	2.00	2σ Confidence Limit	
		Analytical Error ± 0.91	2.4812	Error Magnification	
Total Fusion Age	1.43726 ± 0.16204	4.29 ± 0.48		16	0.62 ± 0.04
	± 11.27%	± 11.27%			
		Full External Error ± 0.49			
		Analytical Error ± 0.48			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D02941	2.0 %		3.06 ± 0.09	302.59 ± 8.19	0.7575
14D02943	2.6 %		2.60 ± 0.03	301.06 ± 3.51	0.7515
14D02944	3.2 %		1.83 ± 0.01	301.95 ± 1.95	0.8068
14D02946	3.8 %		1.34 ± 0.01	303.16 ± 1.64	0.8906
14D02947	4.4 %		1.41 ± 0.01	300.28 ± 1.67	0.8512
14D02949	5.2 %		2.31 ± 0.02	296.45 ± 1.80	0.8684
14D02953	6.2 %		2.10 ± 0.01	300.88 ± 1.64	0.9312
14D02954	7.2 %	✓	2.53 ± 0.01	297.75 ± 1.66	0.9219
14D02956	8.2 %	✓	2.61 ± 0.02	299.05 ± 1.67	0.9309
14D02957	9.2 %	✓	2.94 ± 0.02	299.50 ± 1.71	0.9298
14D02959	10.2 %	✓	4.09 ± 0.03	295.64 ± 1.90	0.9182
14D02960	11.2 %	✓	3.68 ± 0.02	298.52 ± 1.94	0.9044
14D02962	12.5 %	✓	9.32 ± 0.09	296.65 ± 3.06	0.9071
14D02964	14.0 %	✓	13.17 ± 0.14	301.25 ± 3.35	0.9138
14D02965	16.0 %	✓	8.28 ± 0.06	303.17 ± 2.18	0.9325
14D02967	18.0 %	✓	8.36 ± 0.08	305.87 ± 2.83	0.9110

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Normal Isochron	297.09 ± 3.20	0.44746 ± 0.58319	1.34 ± 1.74	6.18
Error Chron	± 1.08%	± 130.33%	± 130.29%	0%
			Full External Error ± 1.74	
			Analytical Error ± 1.74	

Statistics				
	2σ Confidence Limit	2.07	Convergence	0.000000037705
	Error Magnification	2.4855	Number of Iterations	4
	Number of Data Points	9	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D02941	2.0 %		0.0101234 ± 0.0002014	0.00330484 ± 0.00008947	0.2318
14D02943	2.6 %		0.0086511 ± 0.0000775	0.00332160 ± 0.00003874	0.1820
14D02944	3.2 %		0.0060483 ± 0.0000269	0.00331185 ± 0.00002133	0.0857
14D02946	3.8 %		0.0044331 ± 0.0000121	0.00329858 ± 0.00001786	0.0305
14D02947	4.4 %		0.0046970 ± 0.0000158	0.00333019 ± 0.00001855	0.0395
14D02949	5.2 %		0.0077971 ± 0.0000258	0.00337325 ± 0.00002043	0.0834
14D02953	6.2 %		0.0069818 ± 0.0000146	0.00332362 ± 0.00001809	0.0428
14D02954	7.2 %	✓	0.0084824 ± 0.0000195	0.00335855 ± 0.00001878	0.0600
14D02956	8.2 %	✓	0.0087151 ± 0.0000187	0.00334396 ± 0.00001866	0.0619
14D02957	9.2 %	✓	0.0098021 ± 0.0000215	0.00333888 ± 0.00001902	0.0750
14D02959	10.2 %	✓	0.0138296 ± 0.0000364	0.00338246 ± 0.00002172	0.1463
14D02960	11.2 %	✓	0.0123193 ± 0.0000357	0.00334988 ± 0.00002175	0.1381
14D02962	12.5 %	✓	0.0314222 ± 0.0001375	0.00337098 ± 0.00003479	0.3104
14D02964	14.0 %	✓	0.0437024 ± 0.0001980	0.00331950 ± 0.00003692	0.3322
14D02965	16.0 %	✓	0.0272988 ± 0.0000717	0.00329843 ± 0.00002371	0.2113
14D02967	18.0 %	✓	0.0273250 ± 0.0001055	0.00326934 ± 0.00003027	0.2746

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Inverse Isochron	297.08 ± 3.20	0.46223 ± 0.29843	1.38 ± 0.89	6.17
Error Chron	± 1.08%	± 64.56%	± 64.54%	0%
			Full External Error ± 0.89	
			Analytical Error ± 0.89	

Statistics				
	2σ Confidence Limit	2.07	Convergence	0.0000123464
	Error Magnification	2.4836	Number of Iterations	3
	Number of Data Points	9	Calculated Line	Weighted York-2
	Spreading Factor	1.6%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D02941	2.0 %		1.58913	1.231	2.49863	165.456	0.412079	10.351	4.86743	0.821	480.648	0.559	2.31333 ± 2.62269	6.90 ± 7.81	2.34	0.74	0.84 ± 2.77
14D02943	2.6 %		4.09250	0.540	0.47903	826.009	1.135205	3.674	10.65866	0.390	1232.109	0.218	2.13463 ± 1.32699	6.37 ± 3.95	1.85	1.62	9.57 ± 158.07
14D02944	3.2 %		11.36145	0.312	14.11297	29.143	3.164036	1.339	20.75111	0.208	3429.355	0.078	3.52988 ± 1.04375	10.52 ± 3.10	2.13	3.14	0.63 ± 0.37
14D02946	3.8 %		26.51284	0.269	15.72190	25.852	6.832733	0.638	35.63581	0.132	8036.267	0.034	5.70028 ± 1.19091	16.95 ± 3.52	2.53	5.40	0.97 ± 0.50
14D02947	4.4 %		20.86902	0.275	16.42709	23.639	5.304026	0.814	29.43882	0.162	6265.229	0.043	3.39146 ± 1.16734	10.10 ± 3.47	1.59	4.46	0.77 ± 0.36
14D02949	5.2 %		14.03472	0.296	16.73447	24.437	3.856812	1.078	32.44065	0.152	4159.215	0.065	0.41085 ± 0.77441	1.23 ± 2.31	0.32	4.92	0.83 ± 0.41
14D02953	6.2 %		25.62737	0.270	22.78499	18.065	7.136788	0.581	53.83572	0.099	7708.739	0.035	2.55970 ± 0.76595	7.63 ± 2.28	1.79	8.16	1.02 ± 0.37
14D02954	7.2 %	✓	20.61540	0.276	31.84311	12.130	6.046248	0.683	52.06522	0.106	6135.562	0.044	0.88999 ± 0.65434	2.66 ± 1.95	0.75	7.89	0.70 ± 0.17
14D02956	8.2 %	✓	20.93663	0.276	26.11372	15.988	6.339634	0.699	54.56368	0.098	6258.825	0.043	1.36088 ± 0.63301	4.06 ± 1.89	1.19	8.27	0.90 ± 0.29
14D02957	9.2 %	✓	18.56267	0.281	31.53662	12.413	5.984776	0.707	54.48967	0.098	5556.897	0.048	1.36301 ± 0.57373	4.07 ± 1.71	1.34	8.26	0.74 ± 0.18
14D02959	10.2 %	✓	11.56514	0.311	29.28114	14.326	4.425824	0.990	47.27081	0.105	3416.722	0.079	0.03492 ± 0.46420	0.10 ± 1.39	0.05	7.16	0.69 ± 0.20
14D02960	11.2 %	✓	11.18066	0.314	33.26669	12.953	3.996063	1.059	41.10527	0.120	3334.890	0.081	0.82070 ± 0.52200	2.45 ± 1.56	1.01	6.23	0.53 ± 0.14
14D02962	12.5 %	✓	4.84625	0.479	32.19454	12.852	2.955083	1.421	45.11093	0.113	1434.994	0.187	0.12333 ± 0.32736	0.37 ± 0.98	0.39	6.83	0.60 ± 0.15
14D02964	14.0 %	✓	4.37199	0.515	49.17024	8.156	3.223057	1.260	57.41253	0.097	1313.017	0.205	0.43679 ± 0.25032	1.30 ± 0.75	1.91	8.70	0.50 ± 0.08
14D02965	16.0 %	✓	8.89997	0.344	82.21205	4.779	4.459602	0.909	73.52843	0.085	2691.517	0.100	0.92726 ± 0.25713	2.77 ± 0.77	2.53	11.14	0.38 ± 0.04
14D02967	18.0 %	✓	5.62182	0.434	53.02189	7.869	2.869792	1.432	46.90163	0.113	1715.176	0.157	1.24094 ± 0.32872	3.70 ± 0.98	3.39	7.10	0.38 ± 0.06
		Σ	210.68757	0.084	456.44100	3.565	68.141758	0.248	660.07635	0.031	63169.161	0.017					

Information on Analysis and Constants Used in Calculations

Sample = 176-710
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00165213 ± 0.00000357
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 21.5
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = Not Done

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.70495 ± 0.30576	2.10 ± 0.91	6.16	71.57	0.43 ± 0.07
Error Mean		± 43.37%	± 43.35%	0%	9	
			Full External Error ± 0.91	2.00	2σ Confidence Limit	
			Analytical Error ± 0.91	2.4812	Error Magnification	
Total Fusion Age		1.43726 ± 0.16204	4.29 ± 0.48		16	0.62 ± 0.04
		± 11.27%	± 11.27%			
			Full External Error ± 0.49			
			Analytical Error ± 0.48			
Normal Isochron	297.09 ± 3.20	0.44746 ± 0.58319	1.34 ± 1.74	6.18	71.57	
Error Chron	± 1.08%	± 130.33%	± 130.29%	0%	9	
			Full External Error ± 1.74	2.07	2σ Confidence Limit	
			Analytical Error ± 1.74	2.4855	Error Magnification	
				4	Number of Iterations	
				0.0000000377	Convergence	
Inverse Isochron	297.08 ± 3.20	0.46223 ± 0.29843	1.38 ± 0.89	6.17	71.57	
Error Chron	± 1.08%	± 64.56%	± 64.54%	0%	9	
			Full External Error ± 0.89	2.07	2σ Confidence Limit	
			Analytical Error ± 0.89	2.4836	Error Magnification	
				3	Number of Iterations	
				0.0000123464	Convergence	
				2%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D02941	2.0 %		1.58845	1.23	0.0000000	0.00	0.0006596	165.46	0.0000221	72.00	2.49863	165.46	0.296882	1.23	0.0000000	0.00	0.0553722	0.82	0.0003473	165.46	0.059478	72.01	4.86574	0.82	0.0016816	165.46	11.25607	56.68	469.387	1.23	0.0000000	0.00	0.0049144	0.82
14D02943	2.6 %		4.09254	0.54	0.0000000	0.00	0.0001265	826.01	0.0000926	16.86	0.47903	826.01	0.764895	0.54	0.0000000	0.00	0.1212992	0.39	0.0000666	826.01	0.249077	16.88	10.65898	0.39	0.0003224	826.01	22.75293	31.08	1209.345	0.54	0.0000000	0.00	0.0107656	0.39
14D02944	3.2 %		11.35742	0.31	0.0000000	0.00	0.0037258	29.14	0.0002986	5.42	14.11297	29.14	2.122703	0.31	0.0000000	0.00	0.2360395	0.21	0.0019617	29.14	0.803332	5.50	20.74161	0.21	0.0094980	29.14	73.21543	14.78	3356.119	0.31	0.0000000	0.00	0.0209490	0.21
14D02946	3.8 %		26.50815	0.27	0.0000000	0.00	0.0041506	25.85	0.0005466	3.23	15.72190	25.85	4.954373	0.27	0.0000000	0.00	0.4054151	0.13	0.0021853	25.85	1.470760	3.36	35.62523	0.13	0.0105808	25.85	203.07374	10.45	7833.157	0.27	0.0000000	0.00	0.0359815	0.13
14D02947	4.4 %		20.86428	0.28	0.0000000	0.00	0.0043368	23.64	0.0003967	4.27	16.42709	23.64	3.899535	0.28	0.0000000	0.00	0.3348880	0.16	0.0022834	23.64	1.067320	4.37	29.42776	0.16	0.0110554	23.64	99.80306	17.21	6165.396	0.28	0.0000000	0.00	0.0297220	0.16
14D02949	5.2 %		14.02998	0.30	0.0000000	0.00	0.0044179	24.44	0.0003209	4.99	16.73447	24.44	2.622203	0.30	0.0000000	0.00	0.3690464	0.15	0.0023261	24.44	0.863237	5.07	32.42939	0.15	0.0112623	24.44	13.32377	94.24	4145.858	0.30	0.0000000	0.00	0.0327537	0.15
14D02953	6.2 %		25.62071	0.27	0.0000000	0.00	0.0060152	18.06	0.0006442	2.67	22.78499	18.06	4.788511	0.27	0.0000000	0.00	0.6124760	0.10	0.0031671	18.06	1.732633	2.82	53.82039	0.10	0.0153343	18.06	137.76415	14.96	7570.921	0.27	0.0000000	0.00	0.0543586	0.10
14D02954	7.2 %	✓	20.60640	0.28	0.0000000	0.00	0.0084066	12.13	0.0005942	2.82	31.84311	12.13	3.851336	0.28	0.0000000	0.00	0.5922584	0.11	0.0044262	12.13	1.598227	2.97	52.04379	0.11	0.0214304	12.13	46.31848	36.76	6089.191	0.28	0.0000000	0.00	0.0525642	0.11
14D02956	8.2 %	✓	20.92907	0.28	0.0000000	0.00	0.0068940	15.99	0.0006706	2.69	26.11372	15.99	3.911642	0.28	0.0000000	0.00	0.6207347	0.10	0.0036298	15.99	1.803627	2.84	54.54611	0.10	0.0175745	15.99	74.23085	23.26	6184.539	0.28	0.0000000	0.00	0.0550916	0.10
14D02957	9.2 %	✓	18.55364	0.28	0.0000000	0.00	0.0083257	12.41	0.0007038	2.47	31.53662	12.41	3.467675	0.28	0.0000000	0.00	0.6198509	0.10	0.0043836	12.41	1.892866	2.64	54.46844	0.10	0.0212241	12.41	74.24111	21.05	5482.601	0.28	0.0000000	0.00	0.0550131	0.10
14D02959	10.2 %	✓	11.55677	0.31	0.0000000	0.00	0.0077302	14.33	0.0006411	2.73	29.28114	14.33	2.159960	0.31	0.0000000	0.00	0.5377175	0.11	0.0040701	14.33	1.724077	2.88	47.25110	0.11	0.0197062	14.33	1.65006	664.64	3415.025	0.31	0.0000000	0.00	0.0477236	0.11
14D02960	11.2 %	✓	11.17134	0.31	0.0000000	0.00	0.0087824	12.95	0.0005340	3.12	33.26669	12.95	2.087924	0.31	0.0000000	0.00	0.4675232	0.12	0.0046241	12.95	1.435992	3.25	41.08288	0.12	0.0223885	12.95	33.71685	31.80	3301.131	0.31	0.0000000	0.00	0.0414937	0.12
14D02962	12.5 %	✓	4.83718	0.48	0.0000000	0.00	0.0084994	12.85	0.0005703	2.90	32.19454	12.85	0.904069	0.48	0.0000000	0.00	0.5131158	0.11	0.0044750	12.85	1.533422	3.05	45.08927	0.11	0.0216669	12.85	5.56064	132.72	1429.387	0.48	0.0000000	0.00	0.0455402	0.11
14D02964	14.0 %	✓	4.35836	0.52	0.0000000	0.00	0.0129809	8.16	0.0006504	2.51	49.17024	8.16	0.814578	0.52	0.0000000	0.00	0.6529780	0.10	0.0068347	8.16	1.748667	2.67	57.37944	0.10	0.0330916	8.16	25.06302	28.65	1287.896	0.52	0.0000000	0.00	0.0579532	0.10
14D02965	16.0 %	✓	8.87754	0.35	0.0000000	0.00	0.0217040	4.78	0.0007264	2.29	82.21205	4.78	1.659213	0.35	0.0000000	0.00	0.8361239	0.09	0.0114275	4.78	1.952838	2.47	73.47310	0.09	0.0553287	4.78	68.12897	13.86	2623.314	0.35	0.0000000	0.00	0.0742078	0.09
14D02967	18.0 %	✓	5.60735	0.44	0.0000000	0.00	0.0139978	7.87	0.0004765	3.36	53.02189	7.87	1.048013	0.44	0.0000000	0.00	0.5333344	0.11	0.0073700	7.87	1.281075	3.48	46.86594	0.11	0.0356837	7.87	58.15761	13.24	1656.971	0.44	0.0000000	0.00	0.0473346	0.11
		Σ	210.55918	0.08	0.0000000	0.00	0.1205004	3.57	0.0078891	0.85	456.44100	3.57	39.353511	0.08	0.0000000	0.00	7.5081732	0.03	0.0634453	3.57	21.216629	0.88	659.76917	0.03	0.3071848	3.57	948.25673	5.64	62220.238	0.08	0.0000000	0.00	0.6663669	0.03
		Σ							210.68757	0.08	456.44100	3.57									68.141758	0.28			660.07635	0.03							63169.161	0.12

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D02941	2.0 %		98.747939	0.980550	0.513337	0.849355	0.326483	0.004829	228.826	92.040905	1.00161678	2.307E-11
14D02943	2.6 %		115.596984	0.516925	0.044943	0.371230	0.383961	0.002560	228.843	92.072473	1.00161690	5.914E-11
14D02944	3.2 %		165.261325	0.367168	0.680107	0.198207	0.547511	0.002053	228.851	92.087629	1.00161696	1.646E-10
14D02946	3.8 %		225.510996	0.306437	0.441182	0.114057	0.743994	0.002225	228.869	92.119213	1.00161709	3.857E-10
14D02947	4.4 %		212.822017	0.356371	0.558008	0.131910	0.708895	0.002262	228.877	92.134377	1.00161714	3.007E-10
14D02949	5.2 %		128.209974	0.211984	0.515849	0.126059	0.432627	0.001439	228.894	92.165977	1.00161727	1.996E-10
14D02953	6.2 %		143.190043	0.150001	0.423232	0.076456	0.476029	0.001368	228.939	92.246922	1.00161758	3.700E-10
14D02954	7.2 %	✓	117.843772	0.135082	0.611600	0.074190	0.395953	0.001170	228.947	92.262107	1.00161764	2.945E-10
14D02956	8.2 %	✓	114.706791	0.122696	0.478592	0.076517	0.383710	0.001122	228.965	92.293751	1.00161776	3.004E-10
14D02957	9.2 %	✓	101.980743	0.111875	0.578763	0.071846	0.340664	0.001013	228.973	92.308944	1.00161782	2.667E-10
14D02959	10.2 %	✓	72.279755	0.095036	0.619434	0.088746	0.244657	0.000803	228.990	92.340603	1.00161794	1.640E-10
14D02960	11.2 %	✓	81.130468	0.117520	0.809305	0.104836	0.272001	0.000915	228.999	92.357071	1.00161801	1.601E-10
14D02962	12.5 %	✓	31.810329	0.069566	0.713675	0.091724	0.107430	0.000529	229.017	92.388747	1.00161813	6.888E-11
14D02964	14.0 %	✓	22.869866	0.051794	0.856437	0.069858	0.076151	0.000399	229.033	92.419166	1.00161825	6.302E-11
14D02965	16.0 %	✓	36.605117	0.048050	1.118099	0.053438	0.121041	0.000429	229.042	92.435648	1.00161831	1.292E-10
14D02967	18.0 %	✓	36.569647	0.070529	1.130492	0.088965	0.119864	0.000538	229.060	92.467351	1.00161844	8.233E-11

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D02941	2.0 %	0.0434783	0.0184507	0.0662865	0.0302661	0.1141977	0.0302905	0.0800254	0.0304397	20.542169	2.684880
14D02943	2.6 %	0.0456265	0.0184507	0.0909966	0.0302661	0.2686034	0.0302905	0.0928873	0.0304397	41.224606	2.684880
14D02944	3.2 %	0.0466576	0.0184507	0.1014462	0.0302661	0.3560955	0.0302905	0.0990611	0.0304397	53.297380	2.684880
14D02946	3.8 %	0.0488058	0.0184507	0.1202761	0.0302661	0.5452690	0.0302905	0.1119231	0.0304397	79.780808	2.684880
14D02947	4.4 %	0.0498369	0.0184507	0.1279031	0.0302661	0.6325760	0.0302905	0.1180968	0.0304397	92.115282	2.684880
14D02949	5.2 %	0.0519851	0.0184507	0.1408527	0.0302661	0.7922638	0.0302905	0.1309588	0.0304397	114.801951	2.684880
14D02953	6.2 %	0.0574845	0.0184507	0.1558989	0.0302661	0.9663938	0.0302905	0.1638855	0.0304397	139.842851	2.684880
14D02954	7.2 %	0.0585157	0.0184507	0.1558213	0.0302661	0.9532087	0.0302905	0.1700592	0.0304397	138.047233	2.684880
14D02956	8.2 %	0.0606639	0.0184507	0.1527194	0.0302661	0.8792683	0.0302905	0.1829212	0.0304397	127.772124	2.684880
14D02957	9.2 %	0.0616950	0.0184507	0.1498192	0.0302661	0.8232276	0.0302905	0.1890949	0.0304397	119.979745	2.684880
14D02959	10.2 %	0.0638432	0.0184507	0.1408371	0.0302661	0.6713232	0.0302905	0.2019569	0.0304397	98.971348	2.684880
14D02960	11.2 %	0.0649603	0.0184507	0.1345962	0.0302661	0.5781787	0.0302905	0.2086451	0.0304397	86.206962	2.684880
14D02962	12.5 %	0.0671085	0.0184507	0.1195748	0.0302661	0.3862294	0.0302905	0.2215071	0.0304397	60.324489	2.684880
14D02964	14.0 %	0.0691707	0.0184507	0.1014164	0.0302661	0.2081410	0.0302905	0.2338546	0.0304397	37.190656	2.684880
14D02965	16.0 %	0.0702878	0.0184507	0.0900518	0.0302661	0.1248232	0.0302905	0.2405428	0.0304397	26.978416	2.684880
14D02967	18.0 %	0.0724360	0.0184507	0.0651771	0.0302661	0.0151866	0.0302905	0.2534048	0.0304397	15.665763	2.684880

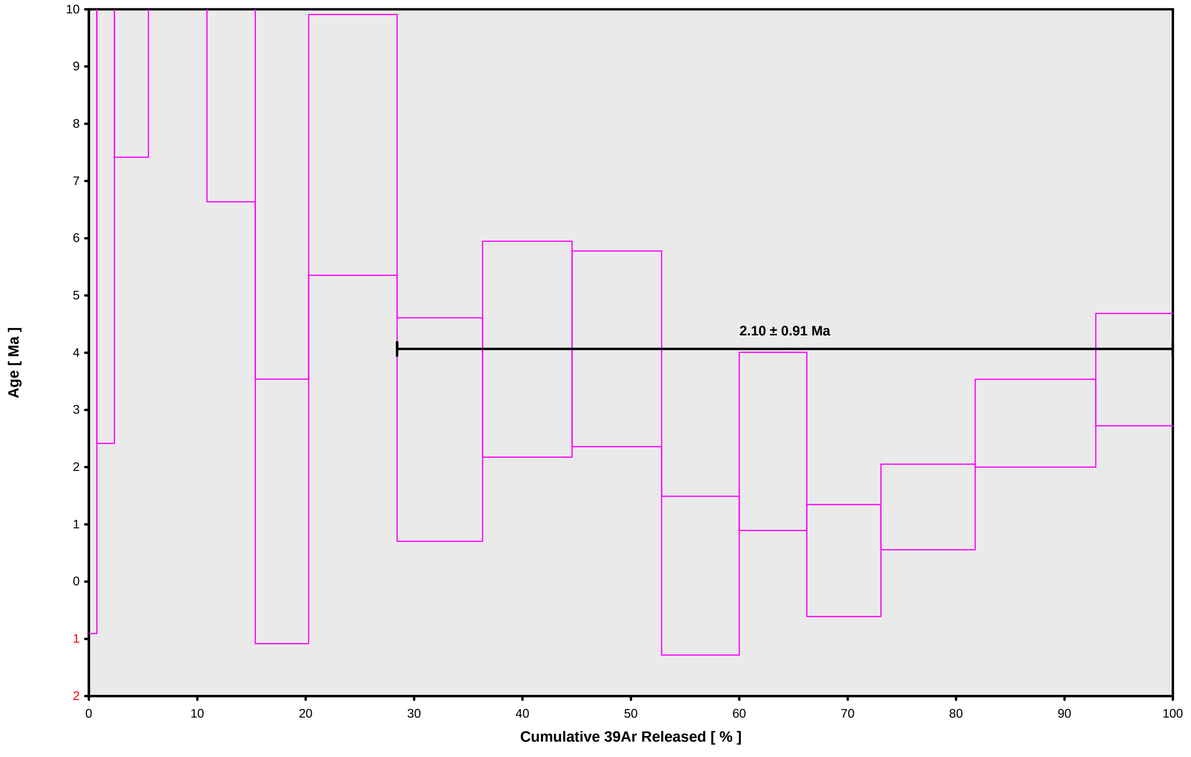
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D02941	2.0 %	1.59443	0.00285	0.9367	EXP 150 of 150	0.09294	0.03208	0.0012	EXP 150 of 150	0.521321	0.029294	0.0103	EXP 150 of 150	4.91043	0.02523	0.5779	EXP 150 of 150	501.19048	0.05564	0.9996	EXP 150 of 150
14D02943	2.6 %	4.03981	0.00462	0.9751	EXP 150 of 150	0.08589	0.02941	0.0132	EXP 150 of 150	1.390157	0.027900	0.0479	EXP 150 of 150	10.67046	0.02711	0.8461	EXP 150 of 150	1273.33311	0.08980	0.9998	EXP 150 of 150
14D02944	3.2 %	11.13515	0.00748	0.9914	EXP 150 of 150	0.25194	0.03173	0.0217	EXP 150 of 150	3.482082	0.028632	0.3736	EXP 150 of 150	20.69231	0.02720	0.9557	EXP 150 of 150	3482.65264	0.14408	0.9999	EXP 150 of 150
14D02946	3.8 %	25.92469	0.01105	0.9965	EXP 150 of 150	0.28787	0.03098	0.0018	EXP 150 of 150	7.295834	0.029424	0.6474	EXP 150 of 150	35.47665	0.02741	0.9811	EXP 150 of 150	8116.04779	0.22456	1.0000	EXP 150 of 150
14D02947	4.4 %	20.41749	0.00964	0.9959	EXP 150 of 150	0.30299	0.02820	0.0154	EXP 150 of 150	5.872818	0.029275	0.5017	EXP 150 of 150	29.33297	0.03121	0.9667	EXP 150 of 150	6357.34418	0.18929	1.0000	EXP 150 of 150
14D02949	5.2 %	13.74952	0.00874	0.9924	EXP 150 of 150	0.31915	0.03132	0.0150	EXP 150 of 150	4.602695	0.027322	0.4979	EXP 149 of 150	32.32482	0.03266	0.9734	EXP 150 of 150	4274.01674	0.15440	1.0000	EXP 150 of 150
14D02953	6.2 %	25.06917	0.01162	0.9958	EXP 150 of 150	0.39845	0.03164	0.0000	EXP 150 of 150	8.017357	0.026097	0.7406	EXP 150 of 150	53.59005	0.02714	0.9931	EXP 150 of 150	7848.58215	0.24102	1.0000	EXP 150 of 150
14D02954	**7.2 %**	**20.17864**	**0.01014**	**0.9952**	**EXP 150 of 150**	**0.49474**	**0.02773**	**0.0325**	**EXP 150 of 150**	**6.926746**	**0.026227**	**0.6737**	**EXP 150 of 150**	**51.83919**	**0.03193**	**0.9897**	**EXP 150 of 150**	**6273.60961**	**0.21017**	**1.0000**	**EXP 150 of 150**
14D02956	**8.2 %**	**20.49430**	**0.01042**	**0.9951**	**EXP 150 of 150**	**0.43056**	**0.03246**	**0.0078**	**EXP 150 of 150**	**7.142664**	**0.030593**	**0.6249**	**EXP 150 of 150**	**54.33150**	**0.02712**	**0.9935**	**EXP 150 of 150**	**6386.59685**	**0.18992**	**1.0000**	**EXP 150 of 150**
14D02957	**9.2 %**	**18.17841**	**0.01014**	**0.9942**	**EXP 150 of 150**	**0.48531**	**0.02852**	**0.0000**	**EXP 150 of 150**	**6.736032**	**0.027791**	**0.6269**	**EXP 150 of 150**	**54.26422**	**0.02755**	**0.9931**	**EXP 150 of 150**	**5676.87663**	**0.18697**	**1.0000**	**EXP 150 of 150**
14D02959	**10.2 %**	**11.35113**	**0.00781**	**0.9909**	**EXP 150 of 150**	**0.45222**	**0.03271**	**0.0037**	**EXP 150 of 150**	**5.043924**	**0.030413**	**0.4666**	**EXP 150 of 150**	**47.11313**	**0.02555**	**0.9925**	**EXP 150 of 150**	**3515.69366**	**0.11560**	**1.0000**	**EXP 150 of 150**
14D02960	**11.2 %**	**10.97701**	**0.00757**	**0.9908**	**EXP 150 of 150**	**0.48830**	**0.03431**	**0.0254**	**EXP 150 of 150**	**4.526187**	**0.028386**	**0.4738**	**EXP 150 of 150**	**41.00118**	**0.02880**	**0.9873**	**EXP 150 of 150**	**3421.09648**	**0.16028**	**0.9999**	**EXP 150 of 150**
14D02962	**12.5 %**	**4.79693**	**0.00529**	**0.9753**	**EXP 150 of 150**	**0.46177**	**0.03182**	**0.0012**	**EXP 150 of 150**	**3.305775**	**0.028122**	**0.2693**	**EXP 150 of 150**	**44.98923**	**0.02913**	**0.9902**	**EXP 150 of 150**	**1495.31809**	**0.08723**	**0.9999**	**EXP 150 of 150**
14D02964	**14.0 %**	**4.33613**	**0.00487**	**0.9761**	**EXP 150 of 150**	**0.62387**	**0.02979**	**0.0002**	**EXP 150 of 150**	**3.392439**	**0.026005**	**0.2572**	**EXP 150 of 150**	**57.20958**	**0.02940**	**0.9940**	**EXP 150 of 150**	**1350.20753**	**0.07927**	**0.9999**	**EXP 150 of 150**
14D02965	**16.0 %**	**8.75644**	**0.00782**	**0.9850**	**EXP 150 of 150**	**0.96343**	**0.02813**	**0.0443**	**EXP 150 of 150**	**4.530795**	**0.025619**	**0.4679**	**EXP 150 of 150**	**73.20955**	**0.02913**	**0.9963**	**EXP 150 of 150**	**2718.49514**	**0.12586**	**0.9999**	**EXP 150 of 150**
14D02967	**18.0 %**	**5.55920**	**0.00553**	**0.9812**	**EXP 150 of 150**	**0.62826**	**0.03214**	**0.0067**	**EXP 150 of 150**	**2.850468**	**0.026797**	**0.3355**	**EXP 150 of 150**	**46.79819**	**0.03107**	**0.9899**	**EXP 150 of 150**	**1730.84177**	**0.10191**	**0.9999**	**EXP 150 of 150**

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
14D02941	2.0 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	17	25	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02943	2.6 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	17	50	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02944	3.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	18	2	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02946	3.8 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	18	27	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02947	4.4 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	18	39	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02949	5.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	19	4	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02953	6.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	20	8	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02954	7.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	20	20	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02956	8.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	20	45	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02957	9.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	20	57	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02959	10.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	21	22	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02960	11.2 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	21	35	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02962	12.5 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	22	0	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02964	14.0 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	22	24	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02965	16.0 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	22	37	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01
14D02967	18.0 %	176-710	Groundmass	Harrat Hutaymah	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.51341	0.216	0.00165213	0.216	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	23	2	1	13-OSU-05	0.00	0.00	45.15	Harrat\Hutaymah (13-05)	14D02940	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D02941	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02943	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02944	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02946	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02947	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02949	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02953	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02954	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02956	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02957	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02959	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02960	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02962	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02964	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02965	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02967	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D02940.AGE >>> 176-710 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.10 ± 0.91
TOTAL FUSION
4.29 ± 0.48
NORMAL ISOCHRON
1.34 ± 1.74
INVERSE ISOCHRON
1.38 ± 0.89

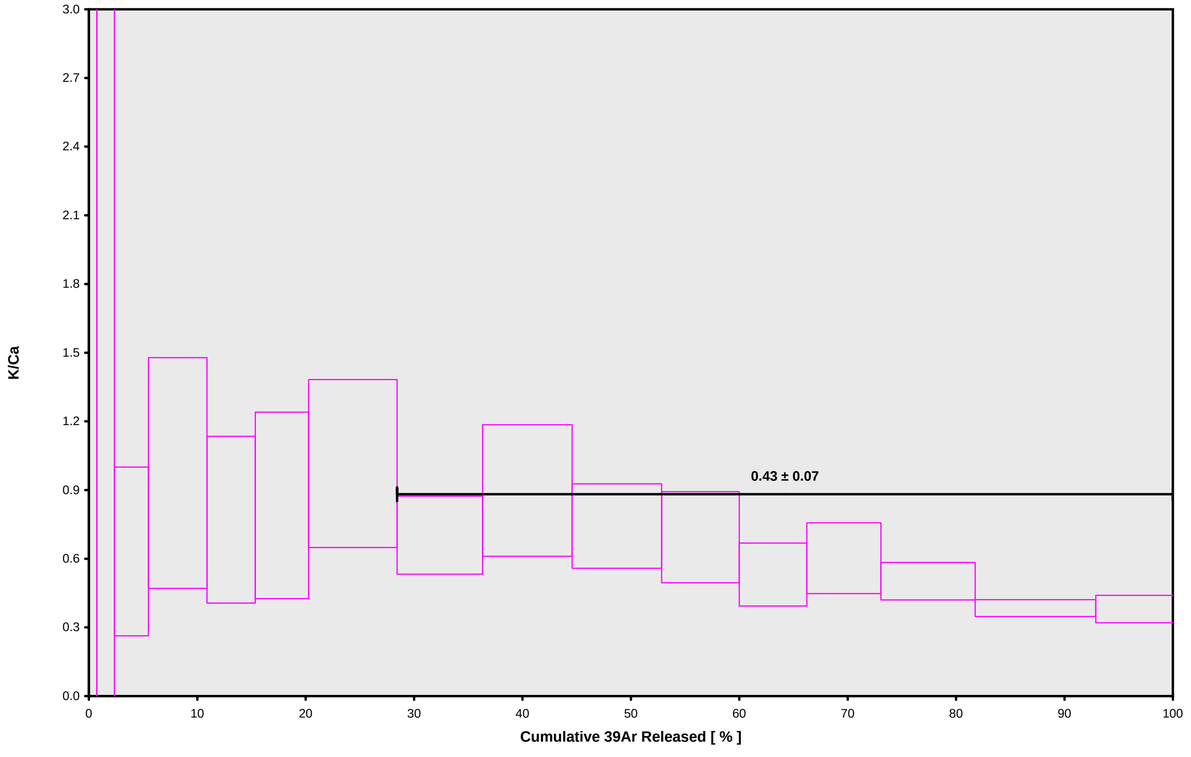
MSWD (PROBABILITY)
6.16 (0%)

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00165213 ± 0.00000357

14D02940.AGE >>> 176-710 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

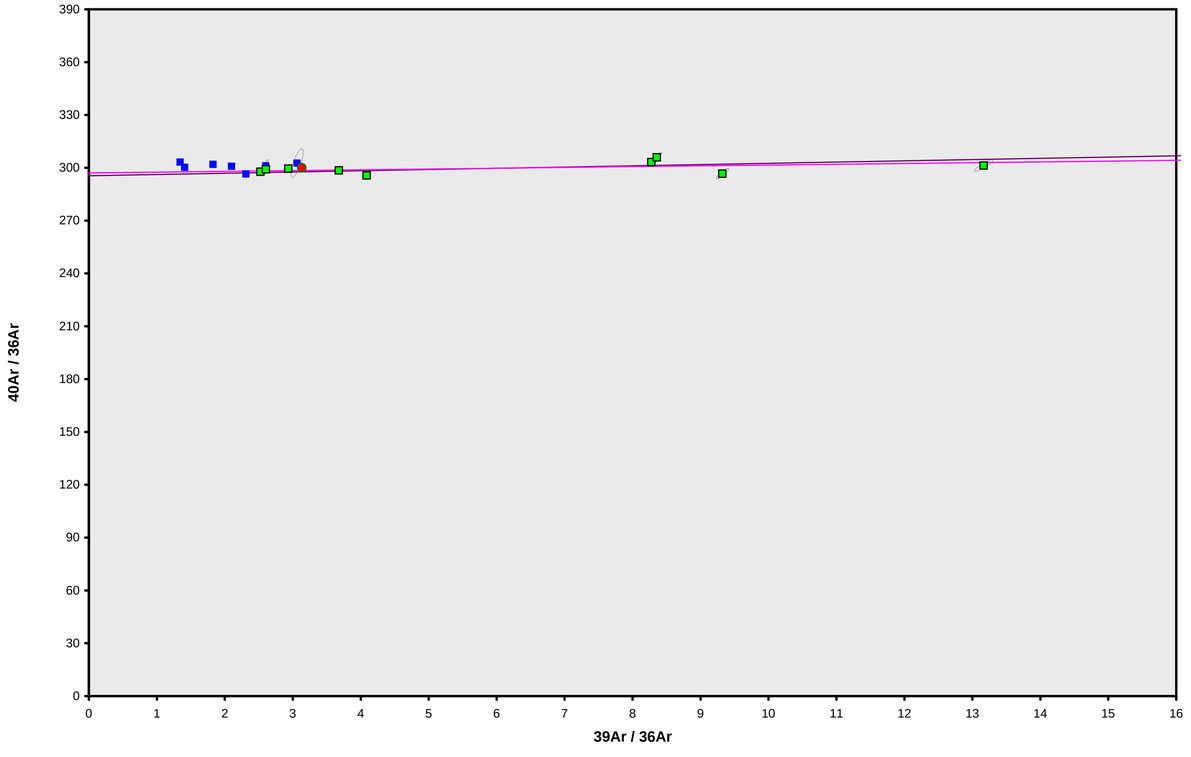
WEIGHTED PLATEAU
2.10 ± 0.91
TOTAL FUSION
4.29 ± 0.48
NORMAL ISOCHRON
1.34 ± 1.74
INVERSE ISOCHRON
1.38 ± 0.89

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00165213 ± 0.00000357

14D02940.AGE >>> 176-710 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.10 ± 0.91
TOTAL FUSION
4.29 ± 0.48
NORMAL ISOCHRON
1.34 ± 1.74
INVERSE ISOCHRON
1.38 ± 0.89

MSWD (PROBABILITY)
6.18 (0%)

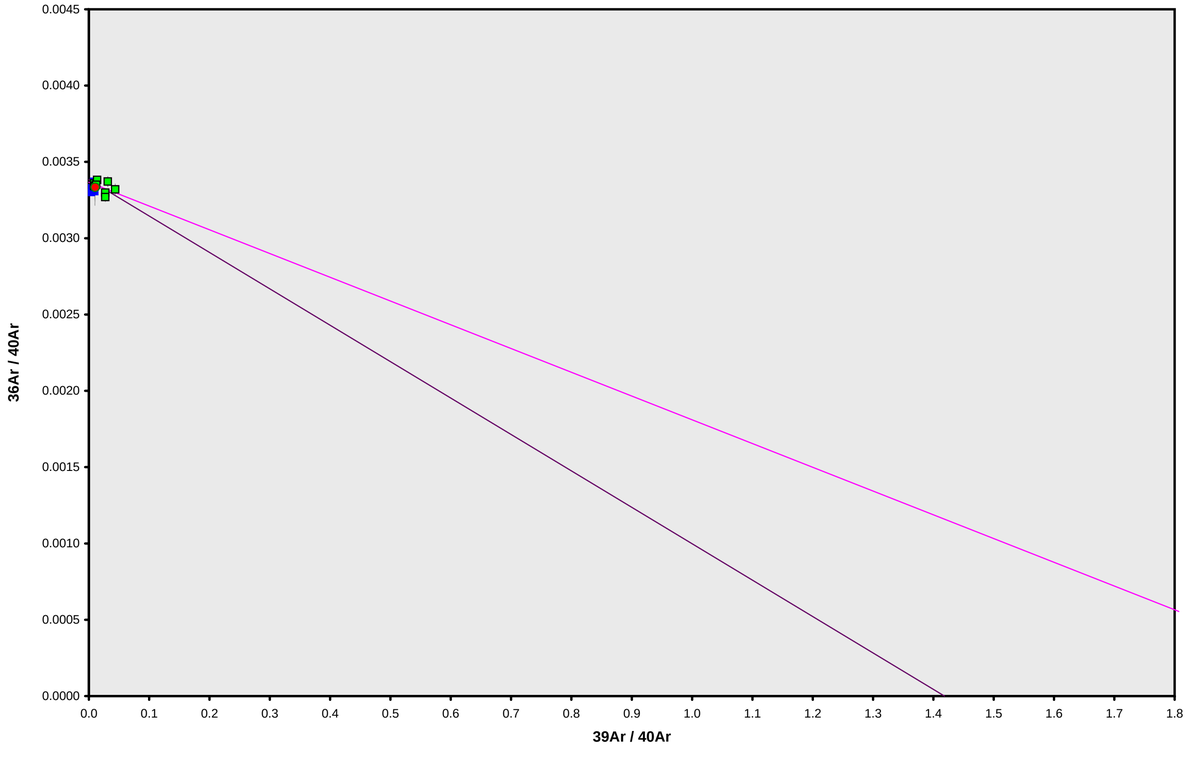
40AR/36AR INTERCEPT
297.1 ± 3.2

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00165213 ± 0.00000357

14D02940.AGE >>> 176-710 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
2.10 ± 0.91
TOTAL FUSION
4.29 ± 0.48
NORMAL ISOCHRON
1.34 ± 1.74
INVERSE ISOCHRON
1.38 ± 0.89

MSWD (PROBABILITY)
6.17 (0%)

SPREADING FACTOR
1.6%

40AR/36AR INTERCEPT
297.1 ± 3.2

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00165213 ± 0.00000357

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D02969	2.0 %		7.09814	19.29089	0.814805	24.3353	65.8243	8.13 ± 3.55	3.04	2.31	0.542 ± 0.254
14D02971	2.6 %		7.33058	15.93696	0.694258	22.3542	57.5493	7.74 ± 3.89	2.59	2.12	0.603 ± 0.350
14D02972	3.2 %		16.78357	16.76014	0.786908	26.1247	136.9062	15.72 ± 4.24	2.69	2.48	0.670 ± 0.365
14D02974	3.8 %		72.93840	41.45486	2.349004	65.3283	0.8047	0.04 ± 5.31	0.00	6.19	0.678 ± 0.141
14D02975	4.4 %		47.86685	50.37944	2.249014	65.1677	567.8356	26.06 ± 3.53	3.86	6.17	0.556 ± 0.100
14D02977	5.0 %		39.98935	48.38866	2.115176	69.6558	418.5346	18.01 ± 2.85	3.42	6.60	0.619 ± 0.121
14D02978	**5.6 %**	✓	**28.40874**	**29.71121**	**1.647618**	**53.1811**	**239.9257**	**13.54 ± 2.86**	**2.78**	**5.04**	**0.770 ± 0.239**
14D02980	**6.2 %**	✓	**22.98871**	**34.49058**	**1.507090**	**56.4711**	**190.7192**	**10.14 ± 2.34**	**2.73**	**5.35**	**0.704 ± 0.188**
14D02981	**7.2 %**	✓	**25.53603**	**39.28844**	**1.699018**	**57.0737**	**213.1896**	**11.22 ± 2.48**	**2.75**	**5.41**	**0.625 ± 0.153**
14D02983	**8.2 %**	✓	**22.73932**	**40.54458**	**1.747772**	**60.9091**	**188.4828**	**9.30 ± 2.16**	**2.73**	**5.77**	**0.646 ± 0.149**
14D02984	**9.2 %**	✓	**20.30193**	**42.47960**	**1.775309**	**64.5169**	**175.1853**	**8.16 ± 1.90**	**2.84**	**6.11**	**0.653 ± 0.147**
14D02986	**10.2 %**	✓	**11.51324**	**37.50905**	**1.317327**	**53.5301**	**88.5615**	**4.98 ± 1.80**	**2.54**	**5.07**	**0.614 ± 0.150**
14D02987	**11.2 %**	✓	**6.01870**	**38.53664**	**0.974539**	**43.0224**	**44.8546**	**3.14 ± 1.97**	**2.46**	**4.08**	**0.480 ± 0.115**
14D02989	**12.5 %**	✓	**5.14512**	**46.80088**	**0.955164**	**56.8059**	**46.7637**	**2.48 ± 1.47**	**2.98**	**5.38**	**0.522 ± 0.105**
14D02990	**14.0 %**	✓	**4.05944**	**55.33921**	**0.852923**	**58.4282**	**30.2324**	**1.56 ± 1.41**	**2.46**	**5.54**	**0.454 ± 0.075**
14D02992	**16.0 %**	✓	**11.09407**	**138.38485**	**1.575019**	**113.1633**	**114.2707**	**3.04 ± 0.84**	**3.37**	**10.72**	**0.352 ± 0.024**
14D02994	**18.0 %**	✓	**23.58702**	**223.96704**	**2.517347**	**165.3844**	**244.0454**	**4.44 ± 0.82**	**3.38**	**15.67**	**0.318 ± 0.014**
		Σ	373.39921	919.26303	25.578292	1055.4523	2822.0762				

Information on Analysis

Sample = 176-712
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00166560 ± 0.00000363
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	1.52396 ± 0.58304	4.58 ± 1.75	16.58	74.14	0.342 ± 0.041
Error Mean	± 38.26%	± 38.21%	0%	11	
		Full External Error ± 1.75	1.89	2σ Confidence Limit	
		Analytical Error ± 1.75	4.0716	Error Magnification	
Total Fusion Age	2.67381 ± 0.19760	8.04 ± 0.59		17	0.494 ± 0.021
	± 7.39%	± 7.39%			
		Full External Error ± 0.62			
		Analytical Error ± 0.59			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D02969	2.0 %		3.43 ± 0.06	304.77 ± 4.12	0.4494
14D02971	2.6 %		3.05 ± 0.05	303.35 ± 4.01	0.4207
14D02972	3.2 %		1.56 ± 0.02	303.66 ± 2.25	0.3911
14D02974	3.8 %		0.90 ± 0.01	295.49 ± 1.58	0.7107
14D02975	4.4 %		1.36 ± 0.01	307.36 ± 1.68	0.7013
14D02977	5.0 %		1.74 ± 0.01	305.97 ± 1.72	0.7167
14D02978	5.6 %	✓	1.87 ± 0.02	303.95 ± 1.83	0.6224
14D02980	6.2 %	✓	2.46 ± 0.02	303.80 ± 1.97	0.6377
14D02981	7.2 %	✓	2.24 ± 0.02	303.85 ± 1.89	0.6426
14D02983	8.2 %	✓	2.68 ± 0.02	303.79 ± 1.97	0.6593
14D02984	9.2 %	✓	3.18 ± 0.03	304.13 ± 2.06	0.6714
14D02986	10.2 %	✓	4.65 ± 0.04	303.19 ± 2.83	0.6189
14D02987	11.2 %	✓	7.15 ± 0.10	302.95 ± 4.75	0.6072
14D02989	12.5 %	✓	11.04 ± 0.16	304.59 ± 5.48	0.6562
14D02990	14.0 %	✓	14.39 ± 0.24	302.95 ± 6.81	0.6645
14D02992	16.0 %	✓	10.20 ± 0.08	305.80 ± 2.92	0.7372
14D02994	18.0 %	✓	7.01 ± 0.04	305.85 ± 1.96	0.8407

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Normal Isochron	303.48 ± 1.28 ± 0.42%	0.17884 ± 0.25937 ± 145.03%	0.54 ± 0.78 ± 145.01%	0.40 93%
			Full External Error ± 0.78	
			Analytical Error ± 0.78	

Statistics				
	2σ Confidence Limit	1.94	Convergence	0.000001277354
	Error Magnification	1.0000	Number of Iterations	3
	Number of Data Points	11	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D02969	2.0 %		0.0112490 ± 0.0001802	0.00328113 ± 0.00004437	0.3786
14D02971	2.6 %		0.0100525 ± 0.0001696	0.00329652 ± 0.00004354	0.3482
14D02972	3.2 %		0.0051261 ± 0.0000661	0.00329319 ± 0.00002440	0.1546
14D02974	3.8 %		0.0030311 ± 0.0000156	0.00338422 ± 0.00001809	0.0301
14D02975	4.4 %		0.0044294 ± 0.0000232	0.00325348 ± 0.00001779	0.0620
14D02977	5.0 %		0.0056930 ± 0.0000287	0.00326834 ± 0.00001835	0.0907
14D02978	5.6 %	✓	0.0061590 ± 0.0000405	0.00329006 ± 0.00001986	0.1298
14D02980	6.2 %	✓	0.0080859 ± 0.0000522	0.00329168 ± 0.00002129	0.1884
14D02981	7.2 %	✓	0.0073557 ± 0.0000463	0.00329111 ± 0.00002049	0.1629
14D02983	8.2 %	✓	0.0088172 ± 0.0000540	0.00329176 ± 0.00002139	0.2020
14D02984	9.2 %	✓	0.0104491 ± 0.0000630	0.00328808 ± 0.00002229	0.2464
14D02986	10.2 %	✓	0.0153349 ± 0.0001270	0.00329824 ± 0.00003078	0.4075
14D02987	11.2 %	✓	0.0235949 ± 0.0003099	0.00330085 ± 0.00005175	0.5605
14D02989	12.5 %	✓	0.0362480 ± 0.0004994	0.00328311 ± 0.00005905	0.6305
14D02990	14.0 %	✓	0.0475104 ± 0.0008027	0.00330090 ± 0.00007416	0.6683
14D02992	16.0 %	✓	0.0333562 ± 0.0002190	0.00327011 ± 0.00003125	0.5316
14D02994	18.0 %	✓	0.0229254 ± 0.0000819	0.00326961 ± 0.00002092	0.3228

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD
Inverse Isochron	303.48 ± 1.28	0.18149 ± 0.15368	0.55 ± 0.46	0.40
Clustered Points	± 0.42%	± 84.68%	± 84.67%	93%
			Full External Error ± 0.46	
			Analytical Error ± 0.46	

Statistics				
	2σ Confidence Limit	1.94	Convergence	0.0001974588
	Error Magnification	1.0000	Number of Iterations	4
	Number of Data Points	11	Calculated Line	Weighted York-2
	Spreading Factor	0.8%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D02969	2.0 %		7.10353	0.501	19.29089	23.374	2.42106	1.769	24.3483	0.660	2163.35	0.453	2.70489 ± 1.18253	8.13 ± 3.55	3.04	2.31	0.542 ± 0.254
14D02971	2.6 %		7.33505	0.492	15.93696	29.013	2.32095	1.928	22.3649	0.719	2223.76	0.440	2.57443 ± 1.29569	7.74 ± 3.89	2.59	2.12	0.603 ± 0.350
14D02972	3.2 %		16.78829	0.317	16.76014	27.200	4.22339	1.056	26.1360	0.615	5096.48	0.192	5.24049 ± 1.41872	15.72 ± 4.24	2.69	2.48	0.670 ± 0.365
14D02974	3.8 %		72.95022	0.263	41.45486	10.425	16.73039	0.285	65.3562	0.253	21552.56	0.045	0.01232 ± 1.76364	0.04 ± 5.31	0.00	6.19	0.678 ± 0.141
14D02975	4.4 %		47.88099	0.265	50.37944	9.013	11.94394	0.404	65.2016	0.253	14712.56	0.067	8.71345 ± 1.19066	26.06 ± 3.53	3.86	6.17	0.556 ± 0.100
14D02977	5.0 %		40.00291	0.269	48.38866	9.785	10.38860	0.443	69.6884	0.239	12235.46	0.080	6.00861 ± 0.95544	18.01 ± 2.85	3.42	6.60	0.619 ± 0.121
14D02978	5.6 %	✓	28.41720	0.280	29.71121	15.528	7.56654	0.581	53.2011	0.308	8634.76	0.113	4.51148 ± 0.95713	13.54 ± 2.86	2.78	5.04	0.770 ± 0.239
14D02980	6.2 %	✓	22.99838	0.291	34.49058	13.321	6.45112	0.717	56.4943	0.291	6983.94	0.140	3.37729 ± 0.78254	10.14 ± 2.34	2.73	5.35	0.704 ± 0.188
14D02981	7.2 %	✓	25.54703	0.284	39.28844	12.230	7.12666	0.629	57.1001	0.288	7759.14	0.126	3.73534 ± 0.82736	11.22 ± 2.48	2.75	5.41	0.625 ± 0.153
14D02983	8.2 %	✓	22.75068	0.292	40.54458	11.563	6.69653	0.668	60.9364	0.271	6908.01	0.142	3.09449 ± 0.72105	9.30 ± 2.16	2.73	5.77	0.646 ± 0.149
14D02984	9.2 %	✓	20.31380	0.299	42.47960	11.244	6.30985	0.690	64.5455	0.256	6174.47	0.159	2.71534 ± 0.63457	8.16 ± 1.90	2.84	6.11	0.653 ± 0.147
14D02986	10.2 %	✓	11.52364	0.372	37.50905	12.252	4.08354	1.125	53.5553	0.304	3490.78	0.281	1.65443 ± 0.59883	4.98 ± 1.80	2.54	5.07	0.614 ± 0.150
14D02987	11.2 %	✓	6.02923	0.569	38.53664	11.940	2.59439	1.778	43.0483	0.378	1823.42	0.537	1.04259 ± 0.65584	3.14 ± 1.97	2.46	4.08	0.480 ± 0.115
14D02989	12.5 %	✓	5.15783	0.645	46.80088	10.079	2.56974	1.729	56.8374	0.290	1567.20	0.625	0.82322 ± 0.48864	2.48 ± 1.47	2.98	5.38	0.522 ± 0.105
14D02990	14.0 %	✓	4.07437	0.789	55.33921	8.264	2.28424	1.955	58.4654	0.282	1229.86	0.796	0.51743 ± 0.46716	1.56 ± 1.41	2.46	5.54	0.454 ± 0.075
14D02992	16.0 %	✓	11.13119	0.379	138.38485	3.382	4.95553	0.911	113.2564	0.156	3392.68	0.289	1.00979 ± 0.28041	3.04 ± 0.84	3.37	10.72	0.352 ± 0.024
14D02994	18.0 %	✓	23.64708	0.289	223.96704	2.137	8.83897	0.529	165.5352	0.116	7214.18	0.136	1.47563 ± 0.27143	4.44 ± 0.82	3.38	15.67	0.318 ± 0.014
		Σ	373.65142	0.087	919.26303	2.078	107.50543	0.174	1056.0710	0.065	113162.61	0.036					

Information on Analysis and Constants Used in Calculations

Sample = 176-712
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00166560 ± 0.00000363
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 21.6
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = Not Done

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ma)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		1.52396 ± 0.58304	4.58 ± 1.75	16.58	74.14	0.342 ± 0.041
Error Mean		± 38.26%	± 38.21%	0%	11	
			Full External Error ± 1.75	1.89	2σ Confidence Limit	
			Analytical Error ± 1.75	4.0716	Error Magnification	
Total Fusion Age		2.67381 ± 0.19760	8.04 ± 0.59		17	0.494 ± 0.021
		± 7.39%	± 7.39%			
			Full External Error ± 0.62			
			Analytical Error ± 0.59			
Normal Isochron	303.48 ± 1.28	0.17884 ± 0.25937	0.54 ± 0.78	0.40	74.14	
	± 0.42%	± 145.03%	± 145.01%	93%	11	
			Full External Error ± 0.78	1.94	2σ Confidence Limit	
			Analytical Error ± 0.78	1.0000	Error Magnification	
				3	Number of Iterations	
				0.0000012774	Convergence	
Inverse Isochron	303.48 ± 1.28	0.18149 ± 0.15368	0.55 ± 0.46	0.40	74.14	
Clustered Points	± 0.42%	± 84.68%	± 84.67%	93%	11	
			Full External Error ± 0.46	1.94	2σ Confidence Limit	
			Analytical Error ± 0.46	1.0000	Error Magnification	
				4	Number of Iterations	
				0.0001974588	Convergence	
				1%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D02969	2.0 %		7.09814	0.50	0.0000000	0.00	0.0050928	23.37	0.0003031	5.40	19.29089	23.37	1.326642	0.50	0.0000000	0.00	0.276935	0.66	0.0026814	23.37	0.814805	5.48	24.3353	0.66	0.0129828	23.37	65.8243	21.85	2097.50	0.50	0.0000000	0.00	0.0245786	0.66
14D02971	2.6 %		7.33058	0.49	0.0000000	0.00	0.0042074	29.01	0.0002583	6.59	15.93696	29.01	1.370086	0.49	0.0000000	0.00	0.254391	0.72	0.0022152	29.01	0.694258	6.65	22.3542	0.72	0.0107256	29.01	57.5493	25.15	2166.19	0.49	0.0000000	0.00	0.0225777	0.72
14D02972	3.2 %		16.78357	0.32	0.0000000	0.00	0.0044247	27.20	0.0002928	5.88	16.76014	27.20	3.136850	0.32	0.0000000	0.00	0.297299	0.62	0.0023297	27.20	0.786908	5.96	26.1247	0.62	0.0112796	27.20	136.9062	13.52	4959.55	0.32	0.0000000	0.00	0.0263860	0.62
14D02974	3.8 %		72.93840	0.26	0.0000000	0.00	0.0109441	10.43	0.0008740	2.70	41.45486	10.43	13.632188	0.26	0.0000000	0.00	0.743436	0.25	0.0057622	10.43	2.349004	2.86	65.3283	0.25	0.0278991	10.43	0.8047	7158.79	21553.30	0.26	0.0000000	0.00	0.0659816	0.25
14D02975	4.4 %		47.86685	0.27	0.0000000	0.00	0.0133002	9.01	0.0008368	2.56	50.37944	9.01	8.946315	0.27	0.0000000	0.00	0.741608	0.25	0.0070027	9.01	2.249014	2.72	65.1677	0.25	0.0339054	9.01	567.8356	6.83	14144.65	0.27	0.0000000	0.00	0.0658194	0.25
14D02977	5.0 %		39.98935	0.27	0.0000000	0.00	0.0127746	9.78	0.0007871	2.55	48.38866	9.78	7.474010	0.27	0.0000000	0.00	0.792684	0.24	0.0067260	9.78	2.115176	2.71	69.6558	0.24	0.0325656	9.78	418.5346	7.95	11816.85	0.27	0.0000000	0.00	0.0703524	0.24
14D02978	5.6 %	✓	28.40874	0.28	0.0000000	0.00	0.0078438	15.53	0.0006131	2.96	29.71121	15.53	5.309594	0.28	0.0000000	0.00	0.605201	0.31	0.0041299	15.53	1.647618	3.10	53.1811	0.31	0.0199956	15.53	239.9257	10.60	8394.78	0.28	0.0000000	0.00	0.0537129	0.31
14D02980	6.2 %	✓	22.98871	0.29	0.0000000	0.00	0.0091055	13.32	0.0005609	3.31	34.49058	13.32	4.296590	0.29	0.0000000	0.00	0.642641	0.29	0.0047942	13.32	1.507090	3.44	56.4711	0.29	0.0232122	13.32	190.7192	11.58	6793.16	0.29	0.0000000	0.00	0.0570358	0.29
14D02981	7.2 %	✓	25.53603	0.28	0.0000000	0.00	0.0103721	12.23	0.0006323	2.91	39.28844	12.23	4.772683	0.28	0.0000000	0.00	0.649499	0.29	0.0054611	12.23	1.699018	3.05	57.0737	0.29	0.0264411	12.23	213.1896	11.07	7545.90	0.28	0.0000000	0.00	0.0576444	0.29
14D02983	8.2 %	✓	22.73932	0.29	0.0000000	0.00	0.0107038	11.56	0.0006505	2.81	40.54458	11.56	4.249979	0.29	0.0000000	0.00	0.693146	0.27	0.0056357	11.56	1.747772	2.96	60.9091	0.27	0.0272865	11.56	188.4828	11.65	6719.47	0.29	0.0000000	0.00	0.0615182	0.27
14D02984	9.2 %	✓	20.30193	0.30	0.0000000	0.00	0.0112146	11.24	0.0006608	2.70	42.47960	11.24	3.794430	0.30	0.0000000	0.00	0.734202	0.26	0.0059047	11.24	1.775309	2.85	64.5169	0.26	0.0285888	11.24	175.1853	11.68	5999.22	0.30	0.0000000	0.00	0.0651621	0.26
14D02986	10.2 %	✓	11.51324	0.37	0.0000000	0.00	0.0099024	12.25	0.0004904	3.66	37.50905	12.25	2.151825	0.37	0.0000000	0.00	0.609172	0.30	0.0052138	12.25	1.317327	3.77	53.5301	0.30	0.0252436	12.25	88.5615	18.10	3402.16	0.37	0.0000000	0.00	0.0540654	0.30
14D02987	11.2 %	✓	6.01870	0.57	0.0000000	0.00	0.0101737	11.94	0.0003628	4.87	38.53664	11.94	1.124894	0.57	0.0000000	0.00	0.489595	0.38	0.0053566	11.94	0.974539	4.96	43.0224	0.38	0.0259352	11.94	44.8546	31.45	1778.52	0.57	0.0000000	0.00	0.0434526	0.38
14D02989	12.5 %	✓	5.14512	0.65	0.0000000	0.00	0.0123554	10.08	0.0003556	4.79	46.80088	10.08	0.961623	0.65	0.0000000	0.00	0.646452	0.29	0.0065053	10.08	0.955164	4.88	56.8059	0.29	0.0314970	10.08	46.7637	29.68	1520.38	0.65	0.0000000	0.00	0.0573740	0.29
14D02990	14.0 %	✓	4.05944	0.79	0.0000000	0.00	0.0146096	8.26	0.0003175	5.37	55.33921	8.26	0.758709	0.79	0.0000000	0.00	0.664913	0.28	0.0076922	8.26	0.852923	5.45	58.4282	0.28	0.0372433	8.26	30.2324	45.14	1199.56	0.79	0.0000000	0.00	0.0590125	0.28
14D02992	16.0 %	✓	11.09407	0.38	0.0000000	0.00	0.0365336	3.38	0.0005864	3.05	138.38485	3.38	2.073481	0.38	0.0000000	0.00	1.287798	0.16	0.0192355	3.38	1.575019	3.19	113.1633	0.16	0.0931330	3.38	114.2707	13.88	3278.30	0.38	0.0000000	0.00	0.1142949	0.16
14D02994	18.0 %	✓	23.58702	0.29	0.0000000	0.00	0.0591273	2.14	0.0009374	2.14	223.96704	2.14	4.408414	0.29	0.0000000	0.00	1.882075	0.12	0.0311314	2.14	2.517347	2.33	165.3844	0.12	0.1507298	2.14	244.0454	9.20	6969.96	0.29	0.0000000	0.00	0.1670383	0.12
	Σ		373.39921	0.09	0.0000000	0.00	0.2426854	2.08	0.0095200	0.81	919.26303	2.08	69.788313	0.09	0.0000000	0.00	12.011048	0.06	0.1277776	2.08	25.578292	0.84	1055.4523	0.06	0.6186640	2.08	2822.0762	3.69	110339.47	0.09	0.0000000	0.00	1.0660069	0.06
	Σ								373.65142	0.09	919.26303	2.08									107.50543	0.21			1056.0710	0.06							113162.61	0.13

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D02969	2.0 %		88.850258	0.711232	0.792291	0.185262	0.291747	0.002419	229.076	92.497796	1.00161855	1.038E-10
14D02971	2.6 %		99.430600	0.838332	0.712587	0.206806	0.327971	0.002856	229.094	92.529520	1.00161868	1.067E-10
14D02972	3.2 %		194.998347	1.256914	0.641266	0.174466	0.642343	0.004445	229.103	92.546022	1.00161874	2.446E-10
14D02974	3.8 %		329.770663	0.847044	0.634291	0.066147	1.116194	0.004075	229.120	92.577763	1.00161886	1.035E-09
14D02975	4.4 %		225.647148	0.590688	0.772672	0.069668	0.734353	0.002692	229.128	92.593002	1.00161892	7.062E-10
14D02977	5.0 %		175.573780	0.442035	0.694357	0.067963	0.574025	0.002064	229.146	92.624759	1.00161904	5.873E-10
14D02978	5.6 %	✓	162.304138	0.533227	0.558470	0.086737	0.534147	0.002223	229.154	92.640007	1.00161910	4.145E-10
14D02980	6.2 %	✓	123.621961	0.399056	0.610514	0.081343	0.407092	0.001675	229.172	92.671780	1.00161923	3.352E-10
14D02981	7.2 %	✓	135.886618	0.426977	0.688062	0.084174	0.447408	0.001810	229.181	92.688306	1.00161929	3.724E-10
14D02983	8.2 %	✓	113.364344	0.347115	0.665359	0.076960	0.373351	0.001489	229.197	92.718824	1.00161941	3.316E-10
14D02984	9.2 %	✓	95.660732	0.288208	0.658134	0.074018	0.314721	0.001240	229.206	92.735359	1.00161947	2.964E-10
14D02986	10.2 %	✓	65.180808	0.269774	0.700380	0.085836	0.215173	0.001035	229.224	92.767165	1.00161959	1.676E-10
14D02987	11.2 %	✓	42.357590	0.278120	0.895195	0.106941	0.140057	0.000957	229.232	92.782436	1.00161965	8.752E-11
14D02989	12.5 %	✓	27.573436	0.189919	0.823417	0.083027	0.090747	0.000641	229.249	92.814258	1.00161978	7.523E-11
14D02990	14.0 %	✓	21.035606	0.177685	0.946529	0.078265	0.069688	0.000584	229.258	92.829536	1.00161983	5.903E-11
14D02992	16.0 %	✓	29.955751	0.098292	1.221872	0.041363	0.098283	0.000403	229.275	92.861374	1.00161996	1.628E-10
14D02994	18.0 %	✓	43.580936	0.077764	1.352988	0.028955	0.142852	0.000445	229.292	92.893224	1.00162008	3.463E-10

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D02969	2.0 %	0.0840421	0.0293804	0.0585494	0.0369443	0.0379932	0.0336093	0.3432324	0.1561336	25.906342	9.793747
14D02971	2.6 %	0.0843408	0.0293804	0.0624080	0.0369443	0.0373941	0.0336093	0.3457057	0.1561336	26.042483	9.793747
14D02972	3.2 %	0.0844961	0.0293804	0.0641463	0.0369443	0.0370826	0.0336093	0.3469917	0.1561336	26.110471	9.793747
14D02974	3.8 %	0.0847948	0.0293804	0.0669733	0.0369443	0.0364835	0.0336093	0.3494650	0.1561336	26.235823	9.793747
14D02975	4.4 %	0.0849381	0.0293804	0.0680893	0.0369443	0.0361959	0.0336093	0.3506521	0.1561336	26.293470	9.793747
14D02977	5.0 %	0.0852368	0.0293804	0.0699120	0.0369443	0.0355968	0.0336093	0.3531253	0.1561336	26.408316	9.793747
14D02978	5.6 %	0.0853802	0.0293804	0.0705459	0.0369443	0.0353093	0.0336093	0.3543125	0.1561336	26.460921	9.793747
14D02980	6.2 %	0.0856788	0.0293804	0.0713642	0.0369443	0.0347102	0.0336093	0.3567857	0.1561336	26.565261	9.793747
14D02981	7.2 %	0.0858341	0.0293804	0.0715216	0.0369443	0.0343987	0.0336093	0.3580718	0.1561336	26.616713	9.793747
14D02983	8.2 %	0.0861209	0.0293804	0.0713301	0.0369443	0.0338235	0.0336093	0.3604461	0.1561336	26.706658	9.793747
14D02984	9.2 %	0.0862762	0.0293804	0.0709652	0.0369443	0.0335120	0.0336093	0.3617321	0.1561336	26.752647	9.793747
14D02986	10.2 %	0.0865748	0.0293804	0.0697477	0.0369443	0.0329129	0.0336093	0.3642054	0.1561336	26.835692	9.793747
14D02987	11.2 %	0.0867182	0.0293804	0.0689223	0.0369443	0.0326253	0.0336093	0.3653925	0.1561336	26.873032	9.793747
14D02989	12.5 %	0.0870169	0.0293804	0.0667005	0.0369443	0.0320262	0.0336093	0.3678657	0.1561336	26.945572	9.793747
14D02990	14.0 %	0.0871602	0.0293804	0.0653930	0.0369443	0.0317387	0.0336093	0.3690529	0.1561336	26.977869	9.793747
14D02992	16.0 %	0.0874589	0.0293804	0.0621669	0.0369443	0.0311396	0.0336093	0.3715261	0.1561336	27.039903	9.793747
14D02994	18.0 %	0.0877576	0.0293804	0.0582622	0.0369443	0.0305405	0.0336093	0.3739993	0.1561336	27.094839	9.793747

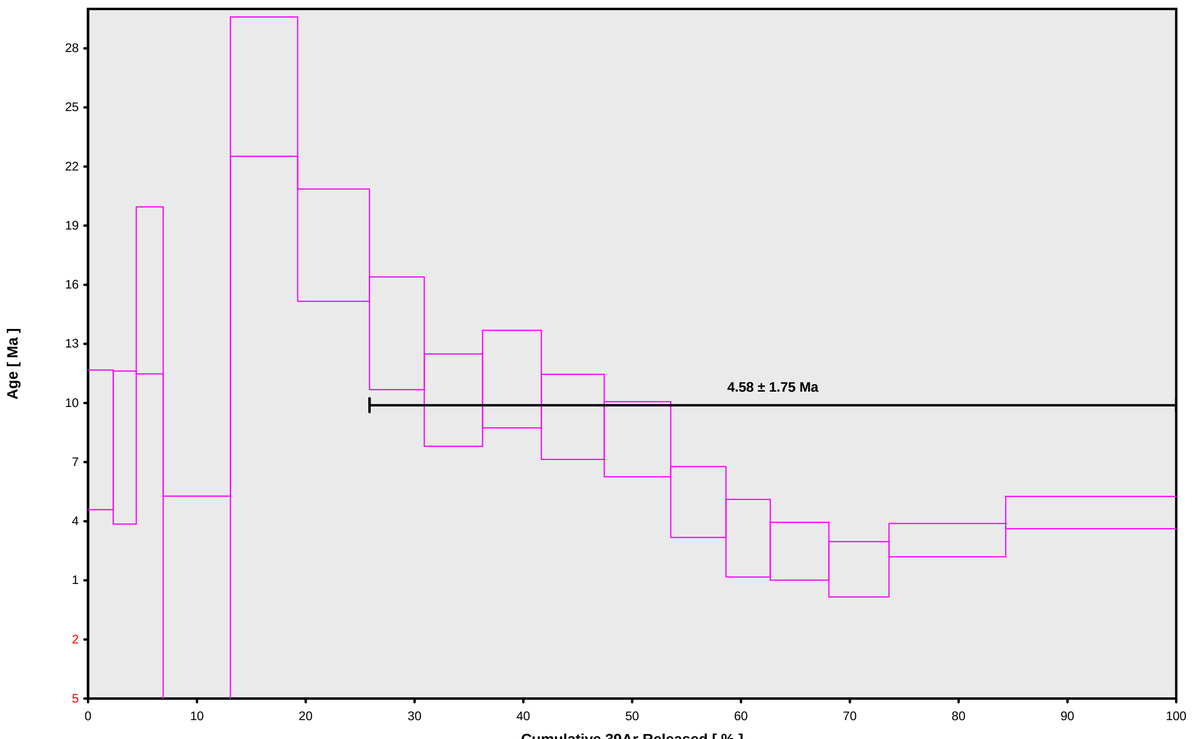
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D02969	2.0 %	7.01692	0.00566	0.9877	EXP 150 of 150	0.26335	0.03041	0.0020	EXP 150 of 150	2.429942	0.025541	0.2248	EXP 149 of 150	24.5062	0.0289	0.9649	EXP 150 of 150	2189.2548	0.1038	0.9999	EXP 150 of 150
14D02971	2.6 %	7.24317	0.00639	0.9847	EXP 150 of 150	0.23154	0.03228	0.0013	EXP 150 of 150	2.330433	0.028574	0.1619	EXP 150 of 150	22.5405	0.0299	0.9566	EXP 149 of 150	2249.8011	0.1092	0.9999	EXP 150 of 150
14D02972	3.2 %	16.46946	0.00878	0.9946	EXP 150 of 150	0.24198	0.03120	0.0043	EXP 150 of 150	4.209681	0.028000	0.3015	EXP 149 of 150	26.2841	0.0287	0.9660	EXP 150 of 150	5122.5887	0.1849	1.0000	EXP 150 of 150
14D02974	3.8 %	71.28242	0.03522	0.9949	EXP 150 of 150	0.50669	0.02698	0.0979	EXP 150 of 150	16.565679	0.025616	0.9503	EXP 150 of 150	65.2084	0.0292	0.9930	EXP 150 of 150	21578.7952	0.4731	1.0000	EXP 150 of 150
14D02975	4.4 %	46.81561	0.01572	0.9978	EXP 150 of 150	0.60238	0.03068	0.0127	EXP 149 of 150	11.836502	0.030385	0.8122	EXP 150 of 150	65.0561	0.0285	0.9938	EXP 150 of 150	14738.8499	0.3562	1.0000	EXP 150 of 150
14D02977	5.0 %	39.12710	0.01479	0.9973	EXP 150 of 150	0.58292	0.03381	0.0020	EXP 150 of 150	10.299262	0.027663	0.7850	EXP 150 of 150	69.5113	0.0315	0.9939	EXP 150 of 150	12261.8662	0.3137	1.0000	EXP 150 of 150
14D02978	5.6 %	27.81987	0.01155	0.9967	EXP 150 of 150	0.38548	0.03197	0.0001	EXP 150 of 150	7.510860	0.025792	0.7451	EXP 149 of 150	53.1506	0.0320	0.9895	EXP 150 of 150	8661.2238	0.2427	1.0000	EXP 150 of 150
14D02980	6.2 %	22.53153	0.01123	0.9952	EXP 150 of 150	0.43684	0.03161	0.0070	EXP 150 of 150	6.408247	0.029903	0.5707	EXP 150 of 150	56.4212	0.0309	0.9919	EXP 150 of 150	7010.5062	0.2256	1.0000	EXP 150 of 150
14D02981	7.2 %	25.01911	0.01060	0.9967	EXP 150 of 150	0.48776	0.03491	0.0236	EXP 150 of 150	7.075357	0.027439	0.6342	EXP 150 of 150	57.0237	0.0308	0.9919	EXP 150 of 150	7785.7599	0.2080	1.0000	EXP 150 of 150
14D02983	8.2 %	22.29022	0.01148	0.9950	EXP 150 of 150	0.50074	0.03305	0.0002	EXP 150 of 150	6.649826	0.027415	0.6011	EXP 150 of 150	60.8331	0.0335	0.9920	EXP 150 of 150	6934.7206	0.1862	1.0000	EXP 150 of 150
14D02984	9.2 %	19.91205	0.00974	0.9954	EXP 150 of 150	0.52079	0.03441	0.0098	EXP 150 of 150	6.267478	0.025649	0.6659	EXP 150 of 150	64.4161	0.0305	0.9941	EXP 150 of 150	6201.2221	0.1799	1.0000	EXP 150 of 150
14D02986	10.2 %	11.33336	0.00811	0.9902	EXP 150 of 150	0.46680	0.03153	0.0069	EXP 150 of 150	4.067343	0.030065	0.3616	EXP 150 of 150	53.5120	0.0257	0.9944	EXP 150 of 150	3517.6144	0.1300	1.0000	EXP 150 of 150
14D02987	11.2 %	5.97110	0.00583	0.9819	EXP 150 of 150	0.47678	0.03161	0.0867	EXP 150 of 150	2.595811	0.030616	0.2262	EXP 150 of 150	43.0861	0.0305	0.9881	EXP 150 of 150	1850.2960	0.1042	0.9999	EXP 150 of 150
14D02989	12.5 %	5.12093	0.00496	0.9816	EXP 150 of 150	0.56186	0.03339	0.0154	EXP 150 of 150	2.570866	0.028058	0.1877	EXP 150 of 150	56.7728	0.0324	0.9924	EXP 150 of 150	1594.1489	0.1061	0.9998	EXP 150 of 150
14D02990	14.0 %	4.06364	0.00420	0.9789	EXP 150 of 150	0.65079	0.03098	0.0075	EXP 150 of 150	2.288507	0.028454	0.1452	EXP 150 of 150	58.3896	0.0316	0.9931	EXP 150 of 150	1256.8340	0.0866	0.9998	EXP 150 of 150
14D02992	16.0 %	10.95122	0.00806	0.9894	EXP 150 of 150	1.52555	0.03141	0.0680	EXP 150 of 150	4.927080	0.028628	0.4918	EXP 150 of 150	112.7661	0.0372	0.9974	EXP 150 of 150	3419.7215	0.1415	0.9999	EXP 150 of 150
14D02994	18.0 %	23.16673	0.01052	0.9960	EXP 150 of 150	2.42584	0.03065	0.2385	EXP 150 of 150	8.763213	0.029781	0.7327	EXP 150 of 150	164.6494	0.0346	0.9990	EXP 150 of 150	7241.2717	0.2128	1.0000	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
14D02969	2.0 %	176-712	Groundmass	Harrat Hutaymah	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.43645	0.218	0.00166560	0.218	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	23	26	1	13-OSU-05	0.00	0.00	42.30	Harrat\Hutaymah (13-05)	14D02968	01
14D02971	2.6 %	176-712	Groundmass	Harrat Hutaymah	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.43645	0.218	0.00166560	0.218	302.774	0.095	0.993986107	0.063	1	4.8E-14	5	FEB	2014	23	51	1	13-OSU-05	0.00	0.00	42.30	Harrat\Hutaymah (13-05)	14D02968	01
14D02972	3.2 %	176-712	Groundmass	Harrat Hutaymah	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.43645	0.218	0.00166560	0.218	302.774	0.095	0.993986107	0.063	1	4.8E-14	6	FEB	2014	0	4	1	13-OSU-05	0.00	0.00	42.30	Harrat\Hutaymah (13-05)	14D02968	01
14D02974	3.8 %	176-712	Groundmass	Harrat Hutaymah	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.43645	0.218	0.00166560	0.218	302.774	0.095	0.993986107	0.063	1	4.8E-14	6	FEB	2014	0	29	1	13-OSU-05	0.00	0.00	42.30	Harrat\Hutaymah (13-05)	14D02968	01
14D02975	4.4 %	176-712	Groundmass	Harrat Hutaymah	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.43645	0.218	0.00166560	0.218	302.774	0.095	0.993986107	0.063	1	4.8E-14	6	FEB	2014	0	41	1	13-OSU-05	0.00	0.00	42.30	Harrat\Hutaymah (13-05)	14D02968	01
14D02977	5.0 %	176-712	Groundmass	Harrat Hutaymah	Dan Miggins	5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.43645	0.218	0.00166560	0.218	302.774	0.095	0.993986107	0.063	1	4.8E-14	6	FEB	2014	1	6	1	13-OSU-05	0.00	0.00	42.30	Harrat\Hutaymah (13-05)	14D02968	01
14D02978	**5.6 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**5.6**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**1**	**18**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02980	**6.2 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**6.2**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**1**	**43**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02981	**7.2 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**7.2**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**1**	**56**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02983	**8.2 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**8.2**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**2**	**20**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02984	**9.2 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**9.2**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**2**	**33**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02986	**10.2 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**10.2**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**2**	**58**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02987	**11.2 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**11.2**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**3**	**10**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02989	**12.5 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**12.5**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**3**	**35**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02990	**14.0 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**14**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**3**	**47**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02992	**16.0 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**16**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**4**	**12**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**
14D02994	**18.0 %**	**176-712**	**Groundmass**	**Harrat Hutaymah**	**Dan Miggins**	**18**	**FCT-NM**	**28.201**	**0.082**	**Kuiper et al (2008)**	**9.43645**	**0.218**	**0.00166560**	**0.218**	**302.774**	**0.095**	**0.993986107**	**0.063**	**1**	**4.8E-14**	**6**	**FEB**	**2014**	**4**	**37**	**1**	**13-OSU-05**	**0.00**	**0.00**	**42.30**	**Harrat\Hutaymah (13-05)**	**14D02968**	**01**

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D02969	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02971	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02972	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02974	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02975	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02977	5.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02978	5.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02980	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02981	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02983	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02984	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02986	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02987	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02989	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02990	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02992	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02994	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D02968.AGE >>> 176-712 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
4.58 ± 1.75
TOTAL FUSION
8.04 ± 0.59
NORMAL ISOCHRON
0.54 ± 0.78
INVERSE ISOCHRON
0.55 ± 0.46

MSWD (PROBABILITY)
16.58 (0%)

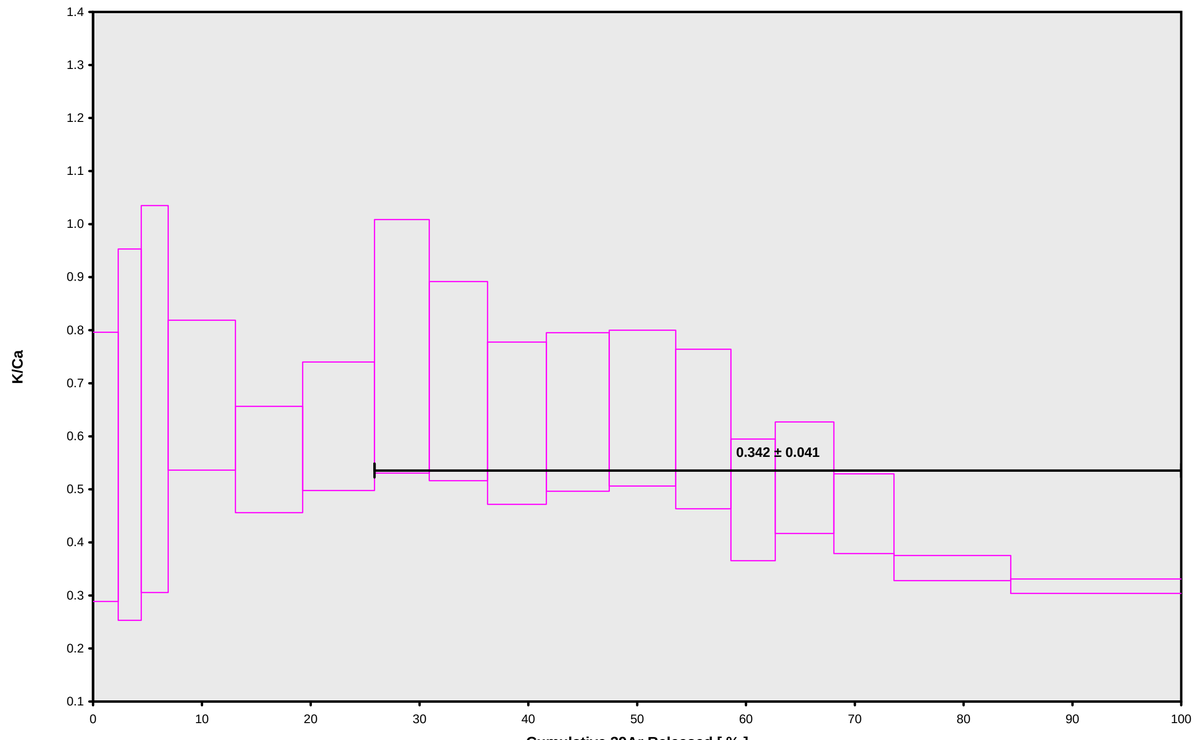
Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00166560 ± 0.00000363

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D02968.AGE >>> 176-712 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

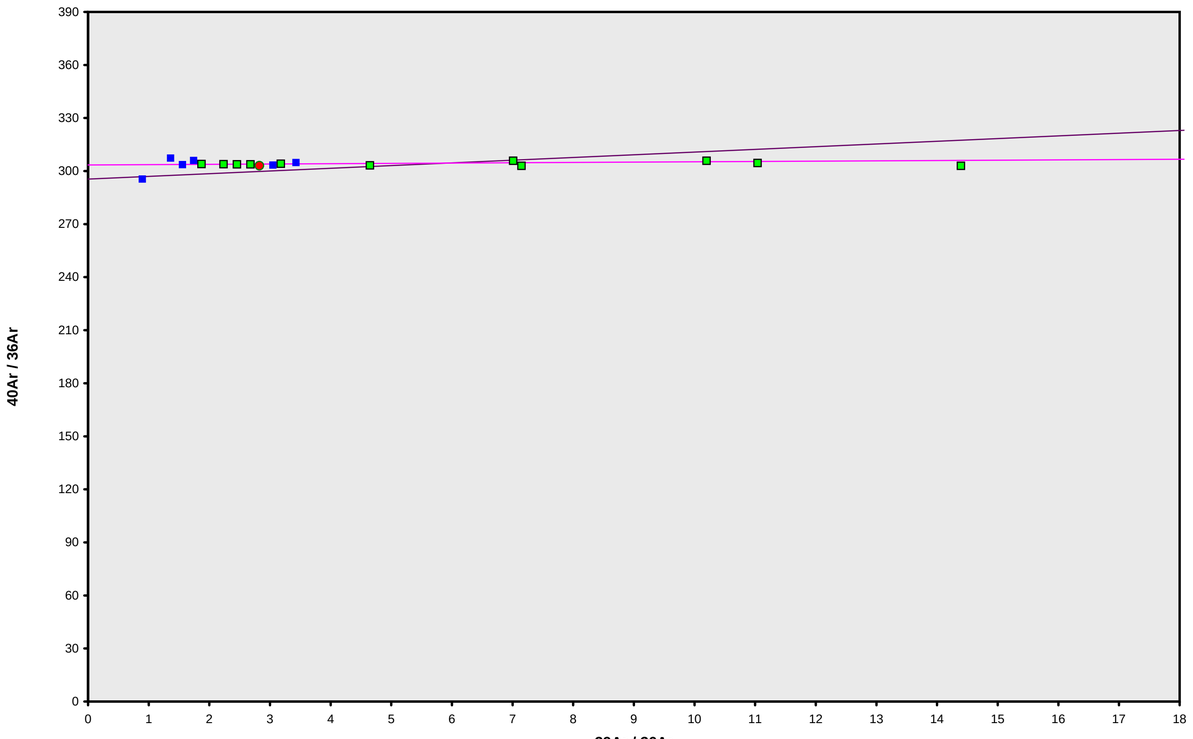
WEIGHTED PLATEAU
4.58 ± 1.75
TOTAL FUSION
8.04 ± 0.59
NORMAL ISOCHRON
0.54 ± 0.78
INVERSE ISOCHRON
0.55 ± 0.46

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00166560 ± 0.00000363

14D02968.AGE >>> 176-712 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
4.58 ± 1.75
TOTAL FUSION
8.04 ± 0.59
NORMAL ISOCHRON
0.54 ± 0.78
INVERSE ISOCHRON
0.55 ± 0.46

MSWD (PROBABILITY)
0.40 (93%)

40AR/36AR INTERCEPT
303.5 ± 1.3

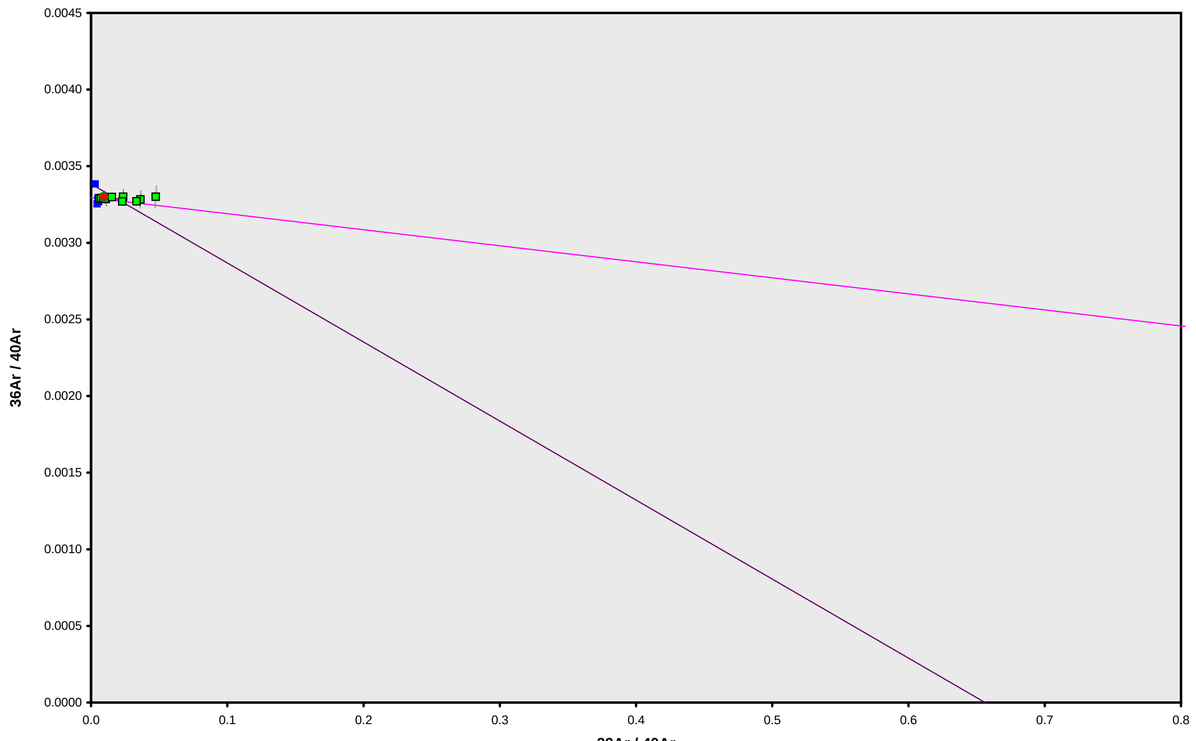
Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00166560 ± 0.00000363

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D02968.AGE >>> 176-712 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in Ma

WEIGHTED PLATEAU
4.58 ± 1.75
TOTAL FUSION
8.04 ± 0.59
NORMAL ISOCHRON
0.54 ± 0.78
INVERSE ISOCHRON
0.55 ± 0.46

MSWD (PROBABILITY)
0.40 (93%)

SPREADING FACTOR
0.8%

40AR/36AR INTERCEPT
303.5 ± 1.3

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00166560 ± 0.00000363

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D02996	2.0 %		19.953986	34.0364	1.108518	43.0724	42.27898	2974.3 ± 2808.2	0.71	2.10	0.544 ± 0.150
14D02998	2.6 %	✓	4.182999	45.7025	1.815591	74.2017	25.55902	1044.3 ± 611.6	2.03	3.63	0.698 ± 0.145
14D02999	3.2 %	✓	2.405292	52.9567	2.677852	107.1946	29.94541	847.0 ± 379.1	4.04	5.24	0.870 ± 0.157
14D03001	3.8 %	✓	2.749682	78.7256	3.663409	176.6598	49.80718	854.8 ± 235.4	5.77	8.63	0.965 ± 0.109
14D03002	4.4 %	✓	2.053468	79.5330	3.086669	176.0868	49.30656	849.0 ± 227.4	7.51	8.60	0.952 ± 0.110
14D03004	5.0 %	✓	1.874207	92.3332	2.665530	168.1514	43.67896	787.6 ± 236.7	7.31	8.22	0.783 ± 0.082
14D03005	5.6 %	✓	1.033804	38.4460	1.218636	71.6187	16.69968	707.0 ± 536.4	5.18	3.50	0.801 ± 0.191
14D03007	6.2 %	✓	1.093181	45.8341	1.360532	91.3804	24.63909	817.5 ± 421.4	7.08	4.47	0.857 ± 0.170
14D03008	7.2 %	✓	0.950672	41.1825	1.232669	80.6013	21.07509	792.8 ± 475.7	6.98	3.94	0.842 ± 0.188
14D03010	8.2 %	✓	1.127317	47.4232	1.452673	87.0360	23.03275	802.3 ± 443.3	6.47	4.25	0.789 ± 0.149
14D03011	9.2 %	✓	0.810871	38.8800	1.136756	60.6253	14.45666	723.0 ± 631.1	5.69	2.96	0.670 ± 0.162
14D03013	10.2 %	✓	0.752652	42.9429	1.028362	51.7022	13.13062	770.0 ± 737.9	5.57	2.53	0.518 ± 0.110
14D03014	11.2 %	✓	0.607846	28.5584	0.764209	37.8115	6.99173	560.7 ± 1005.6	3.75	1.85	0.569 ± 0.190
14D03016	12.5 %	✓	0.755804	45.6746	0.807687	43.8548	9.12002	630.5 ± 870.5	3.92	2.14	0.413 ± 0.086
14D03017	14.0 %	✓	1.742087	94.6757	1.219108	78.4151	16.68144	645.0 ± 503.3	3.14	3.83	0.356 ± 0.036
14D03019	16.0 %	✓	9.280739	349.2152	3.948541	263.8392	88.98031	1022.5 ± 252.3	3.14	12.89	0.325 ± 0.010
14D03021	18.0 %	✓	18.386565	682.8526	6.761694	434.0809	152.01213	1061.7 ± 262.5	2.72	21.21	0.273 ± 0.005
		Σ	69.761172	1838.9726	35.948438	2046.3321	627.39561				

Information on Analysis
Sample = 176-734
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00167702 ± 0.00000369
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ		Age ± 2σ (Ka)		MSWD	39Ar(k) (%,n)		K/Ca ± 2σ
Age Plateau	0.28620	± 0.02959	867.7	± 89.8	0.46	97.90		0.294 ± 0.034
		± 10.34%		± 10.35%	96%	16		
			Full External Error	± 91.9	1.73	2σ Confidence Limit		
			Analytical Error	± 89.7	1.0000	Error Magnification		
Total Fusion Age	0.30660	± 0.03747	929.5	± 113.6		17		0.478 ± 0.010
		± 12.22%		± 12.22%				
			Full External Error	± 115.6				
			Analytical Error	± 113.6				

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D02996	2.0 %		2.16 ± 0.02	297.62 ± 2.02	0.8664
14D02998	2.6 %	✓	17.74 ± 0.18	301.61 ± 3.63	0.7881
14D02999	3.2 %	✓	44.57 ± 0.63	307.95 ± 5.71	0.7543
14D03001	3.8 %	✓	64.25 ± 0.83	313.61 ± 5.17	0.7737
14D03002	4.4 %	✓	85.75 ± 1.38	319.51 ± 6.72	0.7603
14D03004	5.0 %	✓	89.72 ± 1.57	318.81 ± 7.31	0.7565
14D03005	5.6 %	✓	69.28 ± 2.05	311.65 ± 12.60	0.7272
14D03007	6.2 %	✓	83.59 ± 2.35	318.04 ± 12.08	0.7362
14D03008	7.2 %	✓	84.78 ± 2.72	317.67 ± 13.82	0.7330
14D03010	8.2 %	✓	77.21 ± 2.11	315.93 ± 11.70	0.7350
14D03011	9.2 %	✓	74.77 ± 2.80	313.33 ± 16.04	0.7268
14D03013	10.2 %	✓	68.69 ± 2.75	312.95 ± 17.22	0.7243
14D03014	11.2 %	✓	62.21 ± 3.07	307.00 ± 21.04	0.7149
14D03016	12.5 %	✓	58.02 ± 2.32	307.57 ± 17.01	0.7180
14D03017	14.0 %	✓	45.01 ± 0.84	305.08 ± 7.60	0.7347
14D03019	16.0 %	✓	28.43 ± 0.21	305.09 ± 2.43	0.9028
14D03021	18.0 %	✓	23.61 ± 0.16	303.77 ± 2.10	0.9548

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	298.11 ± 2.43	0.23144 ± 0.05889	701.7 ± 178.5	0.16
Overestimated Error	± 0.82%	± 25.44%	± 25.44%	100%
			Full External Error ± 179.2	
			Analytical Error ± 178.5	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.000000253147
	Error Magnification	1.0000	Number of Iterations	4
	Number of Data Points	16	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D02996	2.0 %		0.0072529 ± 0.0000270	0.00336000 ± 0.00002276	0.0896
14D02998	2.6 %	✓	0.0588139 ± 0.0004365	0.00331554 ± 0.00003988	0.5591
14D02999	3.2 %	✓	0.1447189 ± 0.0017609	0.00324728 ± 0.00006017	0.6420
14D03001	3.8 %	✓	0.2048613 ± 0.0021394	0.00318864 ± 0.00005255	0.6205
14D03002	4.4 %	✓	0.2683815 ± 0.0036677	0.00312978 ± 0.00006584	0.6416
14D03004	5.0 %	✓	0.2814216 ± 0.0042189	0.00313671 ± 0.00007190	0.6473
14D03005	5.6 %	✓	0.2222879 ± 0.0061696	0.00320869 ± 0.00012974	0.6816
14D03007	6.2 %	✓	0.2628333 ± 0.0067568	0.00314427 ± 0.00011943	0.6727
14D03008	7.2 %	✓	0.2668927 ± 0.0078962	0.00314793 ± 0.00013692	0.6765
14D03010	8.2 %	✓	0.2443766 ± 0.0061340	0.00316524 ± 0.00011717	0.6737
14D03011	9.2 %	✓	0.2386174 ± 0.0083928	0.00319154 ± 0.00016343	0.6830
14D03013	10.2 %	✓	0.2195059 ± 0.0083292	0.00319544 ± 0.00017585	0.6854
14D03014	11.2 %	✓	0.2026229 ± 0.0097077	0.00325730 ± 0.00022319	0.6945
14D03016	12.5 %	✓	0.1886554 ± 0.0072605	0.00325133 ± 0.00017976	0.6905
14D03017	14.0 %	✓	0.1475443 ± 0.0024948	0.00327788 ± 0.00008169	0.6671
14D03019	16.0 %	✓	0.0931820 ± 0.0003202	0.00327775 ± 0.00002611	0.3622
14D03021	18.0 %	✓	0.0777193 ± 0.0001608	0.00329199 ± 0.00002274	0.1787

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	298.10 ± 2.43	0.23179 ± 0.05783	702.8 ± 175.3	0.16
Overestimated Error	± 0.82%	± 24.95%	± 24.95%	100%
			Full External Error ± 176.1	
			Analytical Error ± 175.3	

Statistics				
	2σ Confidence Limit	1.76	Convergence	0.0020950289
	Error Magnification	1.0000	Number of Iterations	4
	Number of Data Points	16	Calculated Line	Weighted York-2
	Spreading Factor	5.2%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D02996	2.0 %		19.963384	0.330	34.0364	13.796	5.332813	0.780	43.0953	0.170	5938.725	0.075	0.98158 ± 0.92754	2974.3 ± 2808.2	0.71	2.10	0.544 ± 0.150
14D02998	2.6 %	✓	4.195740	0.484	45.7025	10.380	3.448162	1.186	74.2325	0.114	1261.710	0.353	0.34445 ± 0.20179	1044.3 ± 611.6	2.03	3.63	0.698 ± 0.145
14D02999	3.2 %	✓	2.420270	0.698	52.9567	9.016	4.354636	0.882	107.2302	0.091	740.817	0.601	0.27936 ± 0.12508	847.0 ± 379.1	4.04	5.24	0.870 ± 0.157
14D03001	3.8 %	✓	2.771830	0.635	78.7256	5.655	6.198655	0.643	176.7128	0.075	862.517	0.517	0.28194 ± 0.07766	854.8 ± 235.4	5.77	8.63	0.965 ± 0.109
14D03002	4.4 %	✓	2.075614	0.793	79.5330	5.756	5.485385	0.738	176.1403	0.076	656.284	0.679	0.28001 ± 0.07501	849.0 ± 227.4	7.51	8.60	0.952 ± 0.110
14D03004	5.0 %	✓	1.899576	0.856	92.3332	5.227	4.942217	0.847	168.2136	0.076	597.677	0.745	0.25976 ± 0.07807	787.6 ± 236.7	7.31	8.22	0.783 ± 0.082
14D03005	5.6 %	✓	1.044408	1.455	38.4460	11.907	2.232219	1.767	71.6446	0.117	322.261	1.383	0.23317 ± 0.17694	707.0 ± 536.4	5.18	3.50	0.801 ± 0.191
14D03007	6.2 %	✓	1.105788	1.381	45.8341	9.896	2.611127	1.631	91.4112	0.100	347.766	1.281	0.26963 ± 0.13903	817.5 ± 421.4	7.08	4.47	0.857 ± 0.170
14D03008	7.2 %	✓	0.962004	1.574	41.1825	11.177	2.333317	1.733	80.6290	0.109	302.080	1.475	0.26147 ± 0.15694	792.8 ± 475.7	6.98	3.94	0.842 ± 0.188
14D03010	8.2 %	✓	1.140378	1.345	47.4232	9.436	2.660430	1.475	87.0679	0.101	356.243	1.251	0.26463 ± 0.14624	802.3 ± 443.3	6.47	4.25	0.789 ± 0.149
14D03011	9.2 %	✓	0.821559	1.835	38.8800	12.077	1.983628	1.995	60.6515	0.133	254.130	1.753	0.23846 ± 0.20820	723.0 ± 631.1	5.69	2.96	0.670 ± 0.162
14D03013	10.2 %	✓	0.764372	1.961	42.9429	10.670	1.763373	2.234	51.7311	0.147	235.591	1.891	0.25397 ± 0.24344	770.0 ± 737.9	5.57	2.53	0.518 ± 0.110
14D03014	11.2 %	✓	0.615670	2.417	28.5584	16.646	1.312080	2.846	37.8307	0.196	186.648	2.387	0.18491 ± 0.33170	560.7 ± 1005.6	3.75	1.85	0.569 ± 0.190
14D03016	12.5 %	✓	0.768163	1.953	45.6746	10.424	1.454364	2.697	43.8856	0.171	232.504	1.916	0.20796 ± 0.28716	630.5 ± 870.5	3.92	2.14	0.413 ± 0.086
14D03017	14.0 %	✓	1.767536	0.906	94.6757	5.054	2.450228	1.591	78.4788	0.109	531.547	0.838	0.21273 ± 0.16603	645.0 ± 503.3	3.14	3.83	0.356 ± 0.036
14D03019	16.0 %	✓	9.374403	0.362	349.2152	1.487	8.734142	0.478	264.0743	0.069	2831.705	0.157	0.33725 ± 0.08324	1022.5 ± 252.3	3.14	12.89	0.325 ± 0.010
14D03021	18.0 %	✓	18.569358	0.333	682.8526	0.956	15.232900	0.295	434.5404	0.066	5585.681	0.080	0.35019 ± 0.08661	1061.7 ± 262.5	2.72	21.21	0.273 ± 0.005
		Σ	70.260054	0.162	1838.9726	1.081	72.529678	0.230	2047.5698	0.024	21243.889	0.086					

Information on Analysis and Constants Used in Calculations

Sample = 176-734
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00167702 ± 0.00000369
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 22.7
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.28620 ± 0.02959 ± 10.34%	867.7 ± 89.8 ± 10.35%	0.46	97.90	0.294 ± 0.034
				96%	16	
			Full External Error ± 91.9	1.73	2σ Confidence Limit	
			Analytical Error ± 89.7	1.0000	Error Magnification	
Total Fusion Age		0.30660 ± 0.03747 ± 12.22%	929.5 ± 113.6 ± 12.22%		17	0.478 ± 0.010
			Full External Error ± 115.6			
			Analytical Error ± 113.6			
Normal Isochron	298.11 ± 2.43 ± 0.82%	0.23144 ± 0.05889 ± 25.44%	701.7 ± 178.5 ± 25.44%	0.16	97.90	
Overestimated Error				100%	16	
			Full External Error ± 179.2	1.76	2σ Confidence Limit	
			Analytical Error ± 178.5	1.0000	Error Magnification	
				4	Number of Iterations	
				0.0000002531	Convergence	
Inverse Isochron	298.10 ± 2.43 ± 0.82%	0.23179 ± 0.05783 ± 24.95%	702.8 ± 175.3 ± 24.95%	0.16	97.90	
Overestimated Error				100%	16	
			Full External Error ± 176.1	1.76	2σ Confidence Limit	
			Analytical Error ± 175.3	1.0000	Error Magnification	
				4	Number of Iterations	
				0.0020950289	Convergence	
				5%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D02996	2.0 %		19.953986	0.33	0.0000000	0.00	0.0089856	13.80	0.0004128	4.02	34.0364	13.80	3.729400	0.33	0.0000000	0.00	0.490164	0.17	0.0047311	13.80	1.108518	4.13	43.0724	0.17	0.0229065	13.80	42.27898	47.25	5896.403	0.33	0.0000000	0.00	0.0435032	0.17
14D02998	2.6 %	✓	4.182999	0.49	0.0000000	0.00	0.0120655	10.38	0.0006762	2.44	45.7025	10.38	0.781802	0.49	0.0000000	0.00	0.844416	0.11	0.0063526	10.38	1.815591	2.61	74.2017	0.11	0.0307578	10.38	25.55902	29.29	1236.076	0.49	0.0000000	0.00	0.0749437	0.11
14D02999	3.2 %	✓	2.405292	0.70	0.0000000	0.00	0.0139806	9.02	0.0009973	1.71	52.9567	9.02	0.449549	0.70	0.0000000	0.00	1.219874	0.09	0.0073610	9.02	2.677852	1.94	107.1946	0.09	0.0356399	9.02	29.94541	22.39	710.764	0.70	0.0000000	0.00	0.1082665	0.09
14D03001	3.8 %	✓	2.749682	0.64	0.0000000	0.00	0.0207836	5.66	0.0013645	1.43	78.7256	5.66	0.513916	0.64	0.0000000	0.00	2.010388	0.08	0.0109429	5.66	3.663409	1.70	176.6598	0.08	0.0529823	5.66	49.80718	13.77	812.531	0.64	0.0000000	0.00	0.1784264	0.08
14D03002	4.4 %	✓	2.053468	0.80	0.0000000	0.00	0.0209967	5.76	0.0011497	1.61	79.5330	5.76	0.383793	0.80	0.0000000	0.00	2.003867	0.08	0.0110551	5.76	3.086669	1.85	176.0868	0.08	0.0535257	5.76	49.30656	13.39	606.800	0.80	0.0000000	0.00	0.1778476	0.08
14D03004	5.0 %	✓	1.874207	0.87	0.0000000	0.00	0.0243760	5.23	0.0009929	1.82	92.3332	5.23	0.350289	0.87	0.0000000	0.00	1.913563	0.08	0.0128343	5.23	2.665530	2.04	168.1514	0.08	0.0621402	5.23	43.67896	15.03	553.828	0.87	0.0000000	0.00	0.1698329	0.08
14D03005	5.6 %	✓	1.033804	1.47	0.0000000	0.00	0.0101498	11.91	0.0004540	3.37	38.4460	11.91	0.193218	1.47	0.0000000	0.00	0.815021	0.12	0.0053440	11.91	1.218636	3.50	71.6187	0.12	0.0258742	11.91	16.69968	37.94	305.489	1.47	0.0000000	0.00	0.0723349	0.12
14D03007	6.2 %	✓	1.093181	1.40	0.0000000	0.00	0.0121002	9.90	0.0005069	3.27	45.8341	9.90	0.204316	1.40	0.0000000	0.00	1.039909	0.10	0.0063709	9.90	1.360532	3.40	91.3804	0.10	0.0308463	9.90	24.63909	25.78	323.035	1.40	0.0000000	0.00	0.0922942	0.10
14D03008	7.2 %	✓	0.950672	1.60	0.0000000	0.00	0.0108722	11.18	0.0004592	3.42	41.1825	11.18	0.177681	1.60	0.0000000	0.00	0.917242	0.11	0.0057244	11.18	1.232669	3.54	80.6013	0.11	0.0277158	11.18	21.07509	30.01	280.924	1.60	0.0000000	0.00	0.0814073	0.11
14D03010	8.2 %	✓	1.127317	1.36	0.0000000	0.00	0.0125197	9.44	0.0005412	2.86	47.4232	9.44	0.210696	1.36	0.0000000	0.00	0.990469	0.10	0.0065918	9.44	1.452673	3.01	87.0360	0.10	0.0319158	9.44	23.03275	27.63	333.122	1.36	0.0000000	0.00	0.0879063	0.10
14D03011	9.2 %	✓	0.810871	1.87	0.0000000	0.00	0.0102643	12.08	0.0004236	3.61	38.8800	12.08	0.151552	1.87	0.0000000	0.00	0.689916	0.13	0.0054043	12.08	1.136756	3.73	60.6253	0.13	0.0261662	12.08	14.45666	43.66	239.612	1.87	0.0000000	0.00	0.0612315	0.13
14D03013	10.2 %	✓	0.752652	2.00	0.0000000	0.00	0.0113369	10.67	0.0003832	3.95	42.9429	10.67	0.140671	2.00	0.0000000	0.00	0.588371	0.15	0.0059691	10.67	1.028362	4.06	51.7022	0.15	0.0289006	10.67	13.13062	47.93	222.409	2.00	0.0000000	0.00	0.0522193	0.15
14D03014	11.2 %	✓	0.607846	2.46	0.0000000	0.00	0.0075394	16.65	0.0002848	4.99	28.5584	16.65	0.113606	2.46	0.0000000	0.00	0.430295	0.20	0.0039696	16.65	0.764209	5.07	37.8115	0.20	0.0192198	16.65	6.99173	89.69	179.618	2.46	0.0000000	0.00	0.0381896	0.20
14D03016	12.5 %	✓	0.755804	1.99	0.0000000	0.00	0.0120581	10.42	0.0003010	4.96	45.6746	10.42	0.141260	1.99	0.0000000	0.00	0.499068	0.17	0.0063488	10.42	0.807687	5.04	43.8548	0.17	0.0307390	10.42	9.12002	69.04	223.340	1.99	0.0000000	0.00	0.0442934	0.17
14D03017	14.0 %	✓	1.742087	0.92	0.0000000	0.00	0.0249944	5.05	0.0004543	3.34	94.6757	5.05	0.325596	0.92	0.0000000	0.00	0.892364	0.11	0.0131599	5.05	1.219108	3.46	78.4151	0.11	0.0637167	5.05	16.68144	39.02	514.787	0.92	0.0000000	0.00	0.0791993	0.11
14D03019	16.0 %	✓	9.280739	0.37	0.0000000	0.00	0.0921928	1.49	0.0014717	1.41	349.2152	1.49	1.734570	0.37	0.0000000	0.00	3.002491	0.07	0.0485409	1.49	3.948541	1.68	263.8392	0.07	0.2350219	1.49	88.98031	12.34	2742.458	0.37	0.0000000	0.00	0.2664776	0.07
14D03021	18.0 %	✓	18.386565	0.34	0.0000000	0.00	0.1802731	0.96	0.0025204	1.15	682.8526	0.96	3.436449	0.34	0.0000000	0.00	4.939840	0.07	0.0949165	0.96	6.761694	1.47	434.0809	0.07	0.4595598	0.96	152.01213	12.37	5433.230	0.34	0.0000000	0.00	0.4384217	0.07
		Σ	69.761172	0.16	0.0000000	0.00	0.4854888	1.08	0.0133936	0.54	1838.9726	1.08	13.038363	0.16	0.0000000	0.00	23.287260	0.02	0.2556172	1.08	35.948438	0.61	2046.3321	0.02	1.2376285	1.08	627.39561	6.11	20614.426	0.16	0.0000000	0.00	2.0667955	0.02
		Σ							70.260054	0.16	1838.9726	1.08									72.529678	0.30			2047.5698	0.02							21243.889	0.24

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D02996	2.0 %		137.804324	0.256411	0.789792	0.108968	0.463238	0.001720	229.310	92.925084	1.00162020	2.851E-10
14D02998	2.6 %	✓	16.996739	0.063061	0.615667	0.063911	0.056522	0.000281	229.327	92.956955	1.00162033	6.056E-11
14D02999	3.2 %	✓	6.908662	0.042026	0.493860	0.044530	0.022571	0.000159	229.335	92.972257	1.00162038	3.556E-11
14D03001	3.8 %	✓	4.880896	0.025481	0.445500	0.025196	0.015686	0.000100	229.353	93.004144	1.00162051	4.140E-11
14D03002	4.4 %	✓	3.725917	0.025452	0.451532	0.025992	0.011784	0.000094	229.361	93.019454	1.00162057	3.150E-11
14D03004	5.0 %	✓	3.553084	0.026625	0.548905	0.028694	0.011293	0.000097	229.378	93.051357	1.00162069	2.869E-11
14D03005	5.6 %	✓	4.498054	0.062407	0.536622	0.063897	0.014578	0.000213	229.387	93.067951	1.00162075	1.547E-11
14D03007	6.2 %	✓	3.804418	0.048888	0.501405	0.049622	0.012097	0.000168	229.404	93.098594	1.00162087	1.669E-11
14D03008	7.2 %	✓	3.746545	0.055407	0.510766	0.057089	0.011931	0.000188	229.413	93.115197	1.00162093	1.450E-11
14D03010	8.2 %	✓	4.091554	0.051338	0.544669	0.051398	0.013098	0.000177	229.431	93.147133	1.00162106	1.710E-11
14D03011	9.2 %	✓	4.190010	0.073669	0.641039	0.077422	0.013546	0.000249	229.439	93.162466	1.00162112	1.220E-11
14D03013	10.2 %	✓	4.554151	0.086384	0.830117	0.088578	0.014776	0.000291	229.456	93.194419	1.00162124	1.131E-11
14D03014	11.2 %	✓	4.933778	0.118164	0.754899	0.125666	0.016274	0.000395	229.465	93.209760	1.00162130	8.959E-12
14D03016	12.5 %	✓	5.297965	0.101926	1.040766	0.108499	0.017504	0.000343	229.482	93.241728	1.00162142	1.116E-11
14D03017	14.0 %	✓	6.773132	0.057254	1.206385	0.060990	0.022522	0.000205	229.491	93.258356	1.00162148	2.551E-11
14D03019	16.0 %	✓	10.723139	0.018419	1.322413	0.019690	0.035499	0.000131	229.508	93.290342	1.00162161	1.359E-10
14D03021	18.0 %	✓	12.854225	0.013290	1.571436	0.015064	0.042733	0.000145	229.525	93.321058	1.00162172	2.681E-10

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D02996	2.0 %	0.0836785	0.0139057	0.0390519	0.0378871	0.0093549	0.0279687	0.2766892	0.0625563	25.592689	4.464662
14D02998	2.6 %	0.0927549	0.0139057	0.0418042	0.0378871	0.0182595	0.0279687	0.3055134	0.0625563	28.611854	4.464662
14D02999	3.2 %	0.0947684	0.0139057	0.0430391	0.0378871	0.0219252	0.0279687	0.3172888	0.0625563	29.293566	4.464662
14D03001	3.8 %	0.0951301	0.0139057	0.0454318	0.0378871	0.0282944	0.0279687	0.3375286	0.0625563	29.462625	4.464662
14D03002	4.4 %	0.0938257	0.0139057	0.0464941	0.0378871	0.0307431	0.0279687	0.3451834	0.0625563	29.062858	4.464662
14D03004	5.0 %	0.0888873	0.0139057	0.0485274	0.0378871	0.0345768	0.0279687	0.3568388	0.0625563	27.511144	4.464662
14D03005	5.6 %	0.0854611	0.0139057	0.0494887	0.0378871	0.0358933	0.0279687	0.3606074	0.0625563	26.428115	4.464662
14D03007	6.2 %	0.0782329	0.0139057	0.0510908	0.0378871	0.0371067	0.0279687	0.3634442	0.0625563	24.141463	4.464662
14D03008	7.2 %	0.0740672	0.0139057	0.0518651	0.0378871	0.0371047	0.0279687	0.3627489	0.0625563	22.824900	4.464662
14D03010	8.2 %	0.0660472	0.0139057	0.0531697	0.0378871	0.0357989	0.0279687	0.3570035	0.0625563	20.295476	4.464662
14D03011	9.2 %	0.0623395	0.0139057	0.0537095	0.0378871	0.0345637	0.0279687	0.3521855	0.0625563	19.128908	4.464662
14D03013	10.2 %	0.0551913	0.0139057	0.0546545	0.0378871	0.0307224	0.0279687	0.3378557	0.0625563	16.884756	4.464662
14D03014	11.2 %	0.0521070	0.0139057	0.0550218	0.0378871	0.0282701	0.0279687	0.3289172	0.0625563	15.917713	4.464662
14D03016	12.5 %	0.0464937	0.0139057	0.0556073	0.0378871	0.0218934	0.0279687	0.3060030	0.0625563	14.154924	4.464662
14D03017	14.0 %	0.0440057	0.0139057	0.0558158	0.0378871	0.0179005	0.0279687	0.2917954	0.0625563	13.368316	4.464662
14D03019	16.0 %	0.0399416	0.0139057	0.0560320	0.0378871	0.0089198	0.0279687	0.2600648	0.0625563	12.060612	4.464662
14D03021	18.0 %	0.0366579	0.0139057	0.0560111	0.0378871	0.0013134	0.0279687	0.2241466	0.0625563	10.955708	4.464662

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D02996	2.0 %	19.068555	0.009129	0.9956	EXP 150 of 150	0.3987	0.0320	0.0007	EXP 150 of 150	5.278020	0.029369	0.4616	EXP 150 of 150	43.0440	0.0258	0.9902	EXP 150 of 150	5977.09224	0.19860	1.0000	EXP 150 of 150
14D02998	2.6 %	4.082840	0.004088	0.9791	EXP 150 of 150	0.5246	0.0326	0.0165	EXP 150 of 150	3.424944	0.028852	0.2646	EXP 150 of 150	73.9729	0.0311	0.9960	EXP 150 of 150	1293.03583	0.08712	0.9998	EXP 150 of 150
14D02999	3.2 %	2.396408	0.003150	0.9638	EXP 149 of 150	0.6024	0.0331	0.0310	EXP 150 of 150	4.324180	0.025073	0.5484	EXP 149 of 150	106.7313	0.0316	0.9980	EXP 150 of 150	771.70449	0.07751	0.9995	EXP 150 of 150
14D03001	3.8 %	2.731099	0.003890	0.9580	EXP 150 of 150	0.8767	0.0273	0.0721	EXP 150 of 150	6.152387	0.026654	0.6513	EXP 150 of 150	175.7052	0.0383	0.9989	EXP 150 of 150	893.83463	0.06701	0.9998	EXP 150 of 150
14D03002	4.4 %	2.067703	0.003266	0.9477	EXP 150 of 150	0.8861	0.0295	0.0374	EXP 150 of 150	5.450145	0.027727	0.5951	EXP 150 of 150	175.1447	0.0398	0.9988	EXP 150 of 150	686.75860	0.06174	0.9996	EXP 150 of 150
14D03004	5.0 %	1.895355	0.003417	0.9325	EXP 150 of 150	1.0229	0.0334	0.0254	EXP 150 of 150	4.917344	0.029824	0.5002	EXP 150 of 150	167.2899	0.0352	0.9990	EXP 150 of 150	626.47372	0.06441	0.9995	EXP 150 of 150
14D03005	5.6 %	1.078677	0.002216	0.9075	EXP 150 of 150	0.4551	0.0298	0.0107	EXP 150 of 150	2.241261	0.027000	0.1945	EXP 150 of 150	71.4598	0.0311	0.9958	EXP 150 of 150	349.38251	0.04707	0.9987	EXP 150 of 150
14D03007	6.2 %	1.129821	0.002424	0.8967	EXP 150 of 150	0.5345	0.0290	0.0059	EXP 150 of 150	2.616825	0.031268	0.1726	EXP 150 of 150	91.0788	0.0319	0.9972	EXP 150 of 150	372.65599	0.05647	0.9986	EXP 150 of 150
14D03008	7.2 %	0.988918	0.002243	0.8779	EXP 150 of 150	0.4862	0.0302	0.0104	EXP 149 of 150	2.342354	0.028362	0.1119	EXP 150 of 150	80.3780	0.0337	0.9960	EXP 150 of 150	325.55482	0.04438	0.9988	EXP 150 of 150
14D03010	8.2 %	1.150530	0.002618	0.8899	EXP 150 of 150	0.5531	0.0279	0.0010	EXP 150 of 150	2.664227	0.026632	0.3579	EXP 150 of 150	86.7621	0.0280	0.9976	EXP 150 of 150	377.30473	0.04619	0.9991	EXP 150 of 150
14D03011	9.2 %	0.843629	0.002375	0.8334	EXP 150 of 150	0.4635	0.0317	0.0148	EXP 150 of 150	1.994331	0.027212	0.1480	EXP 150 of 150	60.5419	0.0324	0.9935	EXP 150 of 150	273.80579	0.04771	0.9977	EXP 150 of 150
14D03013	10.2 %	0.782097	0.002063	0.8623	EXP 150 of 150	0.5071	0.0298	0.0305	EXP 150 of 150	1.772884	0.026978	0.1094	EXP 150 of 150	51.6752	0.0275	0.9936	EXP 150 of 150	252.98288	0.04371	0.9978	EXP 150 of 150
14D03014	11.2 %	0.637600	0.001798	0.8328	EXP 150 of 150	0.3559	0.0327	0.0001	EXP 150 of 150	1.324568	0.023994	0.0741	EXP 150 of 150	37.8716	0.0305	0.9853	EXP 150 of 150	202.96761	0.04067	0.9962	EXP 150 of 150
14D03016	12.5 %	0.777005	0.002143	0.8511	EXP 148 of 150	0.5366	0.0327	0.0019	EXP 150 of 150	1.458763	0.026757	0.0601	EXP 150 of 150	43.8575	0.0302	0.9891	EXP 150 of 150	247.15929	0.04507	0.9976	EXP 150 of 150
14D03017	14.0 %	1.724906	0.003066	0.9409	EXP 150 of 150	1.0527	0.0325	0.0114	EXP 150 of 150	2.438655	0.026300	0.2154	EXP 150 of 150	78.1732	0.0306	0.9965	EXP 150 of 150	546.05912	0.06098	0.9995	EXP 150 of 150
14D03019	16.0 %	8.954857	0.006585	0.9892	EXP 150 of 150	3.7319	0.0306	0.3492	EXP 150 of 150	8.638000	0.028274	0.7300	EXP 150 of 150	262.3239	0.0392	0.9995	EXP 150 of 150	2849.85668	0.12531	0.9999	EXP 150 of 150
14D03021	18.0 %	17.695837	0.010302	0.9934	EXP 150 of 150	7.2414	0.0305	0.5872	EXP 150 of 150	15.048352	0.028726	0.9036	EXP 150 of 150	431.4563	0.0560	0.9996	EXP 150 of 150	5608.65102	0.18384	1.0000	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
14D02996	2.0 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	5	2	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D02998	2.6 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	5	27	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D02999	3.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	5	39	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03001	3.8 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	6	4	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03002	4.4 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	6	16	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03004	5.0 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	6	41	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03005	5.6 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	5.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	6	54	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03007	6.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	7	18	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03008	7.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	7	31	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03010	8.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	7	56	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03011	9.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	8	8	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03013	10.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	8	33	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03014	11.2 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	8	45	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03016	12.5 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	9	10	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03017	14.0 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	9	23	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03019	16.0 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	9	48	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01
14D03021	18.0 %	176-734	Groundmass	Harrat Hutaymah	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.37222	0.22	0.00167702	0.220	302.776	0.095	0.993984494	0.063	1	4.8E-14	6	FEB	2014	10	12	1	13-OSU-05	0.00	0.00	39.80	Harrat\Hutaymah (13-05)	14D02995	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D02996	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02998	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D02999	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03001	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03002	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03004	5.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03005	5.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03007	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03008	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03010	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03011	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03013	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03014	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03016	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03017	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03019	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03021	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

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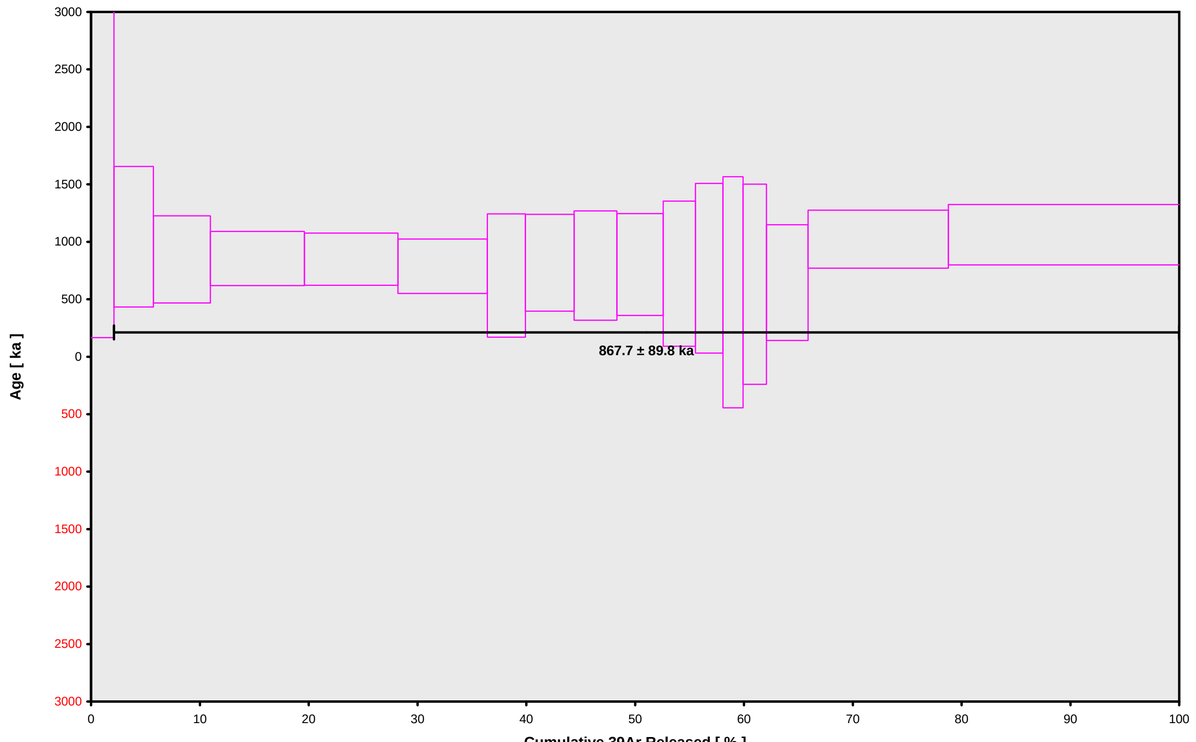
14D02995.AGE >>> 176-734 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
867.7 ± 89.8
TOTAL FUSION
929.5 ± 113.6
NORMAL ISOCHRON
701.7 ± 178.5
INVERSE ISOCHRON
702.8 ± 175.3

MSWD (PROBABILITY)
0.46 (96%)

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00167702 ± 0.00000369

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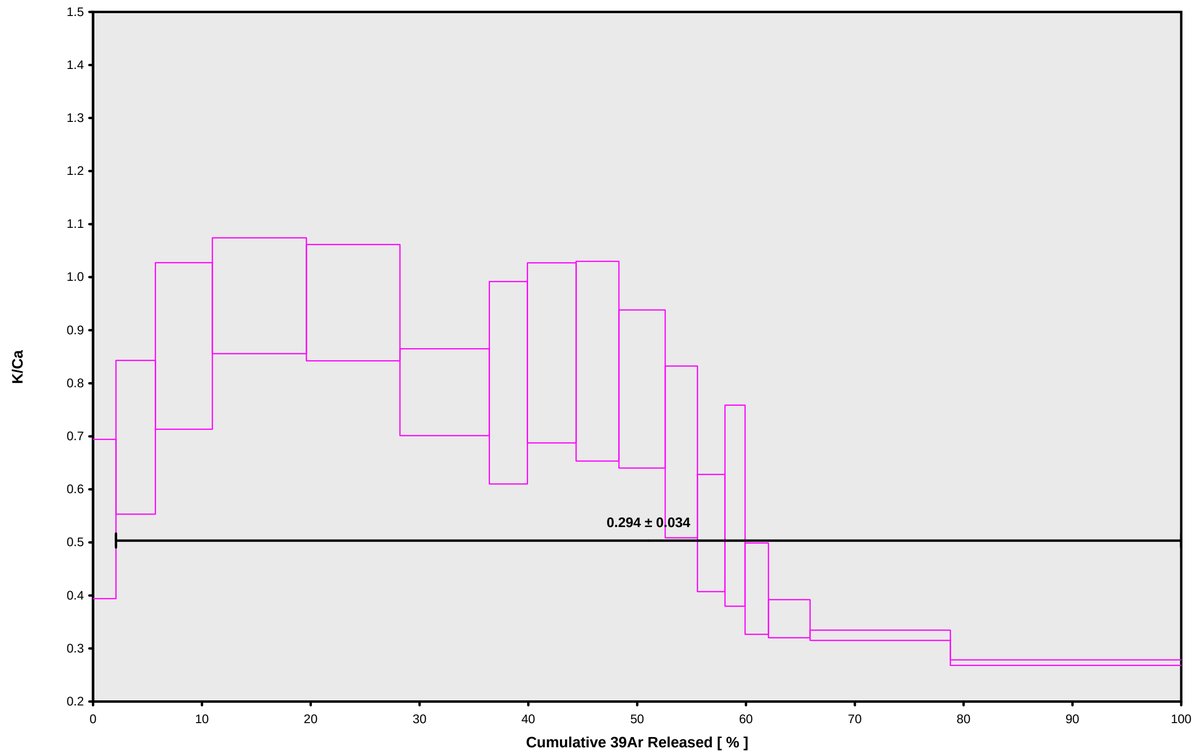
14D02995.AGE >>> 176-734 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
867.7 ± 89.8
TOTAL FUSION
929.5 ± 113.6
NORMAL ISOCHRON
701.7 ± 178.5
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Sample Info

Groundmass
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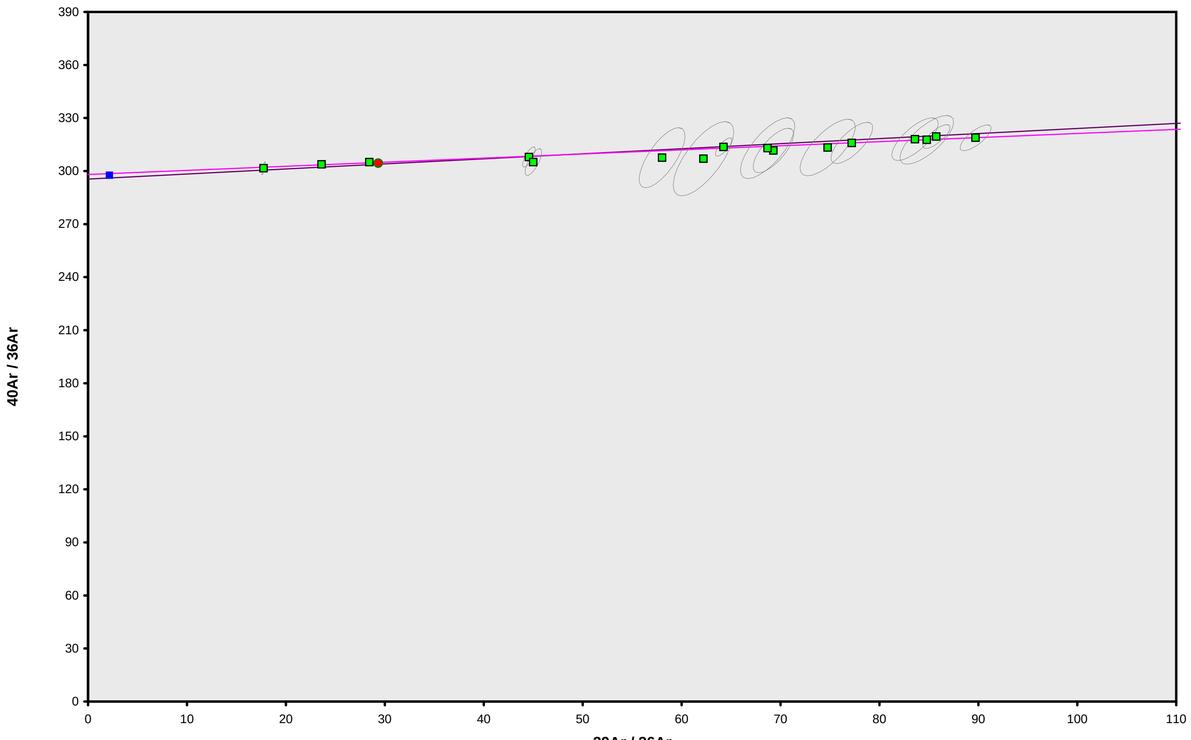
14D02995.AGE >>> 176-734 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
867.7 ± 89.8
TOTAL FUSION
929.5 ± 113.6
NORMAL ISOCHRON
701.7 ± 178.5
INVERSE ISOCHRON
702.8 ± 175.3

MSWD (PROBABILITY)
0.16 (100%)

40AR/36AR INTERCEPT
298.1 ± 2.4

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00167702 ± 0.00000369

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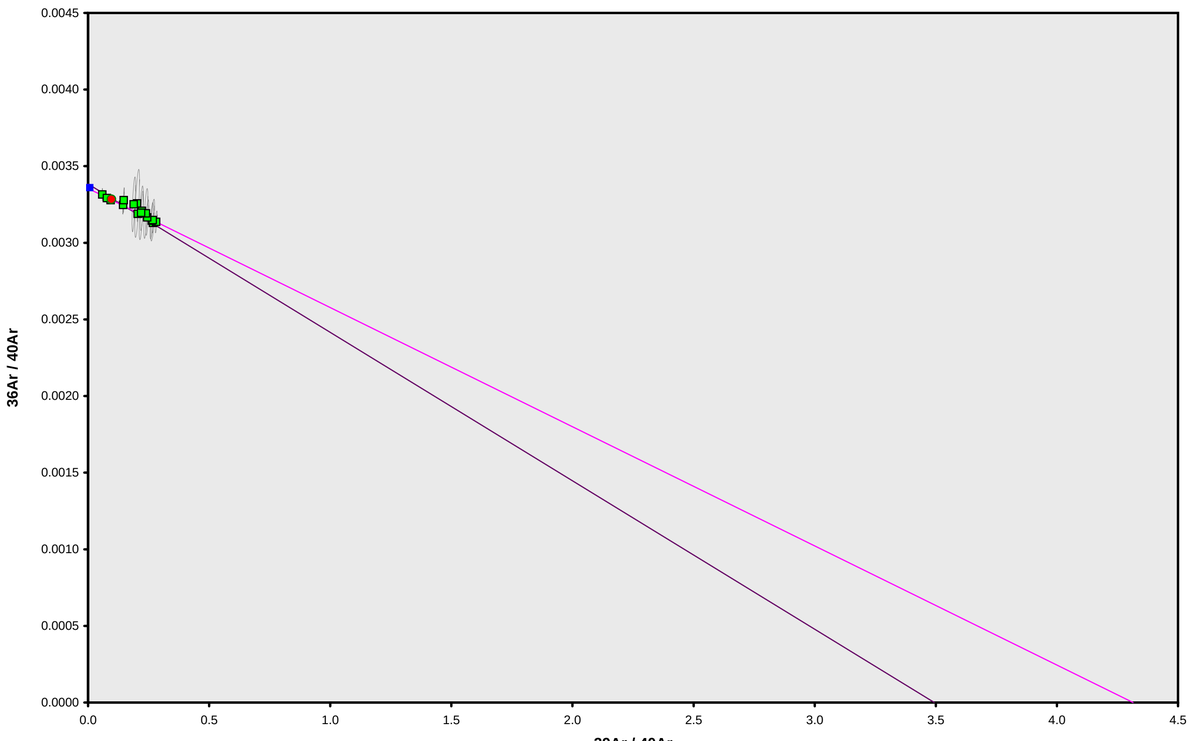
14D02995.AGE >>> 176-734 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
867.7 ± 89.8
TOTAL FUSION
929.5 ± 113.6
NORMAL ISOCHRON
701.7 ± 178.5
INVERSE ISOCHRON
702.8 ± 175.3

MSWD (PROBABILITY)
0.16 (100%)

SPREADING FACTOR
5.2%

40AR/36AR INTERCEPT
298.1 ± 2.4

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00167702 ± 0.00000369

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D03050	2.0 %	✓	7.622231	54.0165	3.054595	46.21644	25.43991	1620.1 ± 1208.7	1.12	5.66	0.368 ± 0.058
14D03052	2.6 %	✓	2.139587	41.9517	2.898265	44.12966	13.03406	869.5 ± 842.0	2.02	5.41	0.452 ± 0.091
14D03053	3.2 %	✓	1.377365	36.0684	2.496350	41.64743	8.81977	623.5 ± 860.7	2.12	5.10	0.497 ± 0.113
14D03055	3.8 %	✓	1.338558	54.9001	2.614379	47.77201	13.01552	802.1 ± 749.5	3.19	5.86	0.374 ± 0.056
14D03056	4.4 %	✓	1.239933	51.4936	2.109059	40.10731	11.35825	833.7 ± 888.7	3.01	4.92	0.335 ± 0.054
14D03058	5.0 %	✓	1.303553	67.2365	2.073624	40.65915	10.78092	780.6 ± 879.3	2.72	4.98	0.260 ± 0.033
14D03059	5.6 %	✓	1.311913	57.0494	1.665387	34.36930	8.27629	708.9 ± 1042.3	2.09	4.21	0.259 ± 0.036
14D03061	6.2 %	✓	1.489773	73.5586	1.630762	32.79798	8.82570	792.2 ± 1099.6	1.97	4.02	0.192 ± 0.022
14D03062	7.2 %	✓	2.069616	87.4317	1.893268	37.44207	5.32601	418.8 ± 988.4	0.86	4.59	0.184 ± 0.017
14D03064	8.2 %	✓	2.192269	92.1908	1.989890	39.29057	6.36381	476.9 ± 948.8	0.97	4.82	0.183 ± 0.016
14D03065	9.2 %	✓	2.294265	97.6846	1.946451	40.38341	8.47734	618.0 ± 927.8	1.23	4.95	0.178 ± 0.016
14D03067	10.2 %	✓	2.504083	104.9176	1.901606	40.64379	8.77457	635.6 ± 933.2	1.17	4.98	0.167 ± 0.014
14D03068	11.2 %	✓	2.237508	89.2543	1.635855	36.74713	5.47332	438.5 ± 1017.9	0.82	4.50	0.177 ± 0.017
14D03070	12.5 %	✓	2.185461	93.2635	1.487239	35.60633	6.44858	533.2 ± 1048.8	0.99	4.36	0.164 ± 0.016
14D03071	14.0 %	✓	3.345861	148.5603	2.144430	51.20572	7.95476	457.4 ± 784.3	0.80	6.28	0.148 ± 0.009
14D03073	16.0 %	✓	7.744477	339.4156	4.688074	108.70816	46.87574	1269.3 ± 522.6	2.01	13.32	0.138 ± 0.004
14D03075	18.0 %	✓	7.290109	297.9125	4.322535	98.16602	33.65511	1009.2 ± 558.7	1.54	12.03	0.142 ± 0.004
		Σ	49.686563	1786.9060	40.551769	815.89249	228.89966				

Information on Analysis

Sample = 176-701
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00162835 ± 0.00000347
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ		Age ± 2σ (Ka)		MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.27790	± 0.06887	818.1	± 202.7	0.54	100.00	0.149 ± 0.014
		± 24.78%		± 24.78%	93%	17	
			Full External Error	± 203.6	1.71	2σ Confidence Limit	
			Analytical Error	± 202.7	1.0000	Error Magnification	
Total Fusion Age	0.28055	± 0.07023	825.9	± 206.7		17	0.196 ± 0.004
		± 25.03%		± 25.03%			
			Full External Error	± 207.6			
			Analytical Error	± 206.7			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D03050	2.0 %	✓	6.06 ± 0.05	298.84 ± 2.51	0.8652
14D03052	2.6 %	✓	20.63 ± 0.31	301.59 ± 5.97	0.7530
14D03053	3.2 %	✓	30.24 ± 0.67	301.90 ± 8.95	0.7360
14D03055	3.8 %	✓	35.69 ± 0.81	305.22 ± 9.25	0.7401
14D03056	4.4 %	✓	32.35 ± 0.78	304.66 ± 9.93	0.7362
14D03058	5.0 %	✓	31.19 ± 0.72	303.77 ± 9.46	0.7369
14D03059	5.6 %	✓	26.20 ± 0.61	301.81 ± 9.38	0.7349
14D03061	6.2 %	✓	22.02 ± 0.46	301.42 ± 8.32	0.7370
14D03062	7.2 %	✓	18.09 ± 0.28	298.07 ± 6.10	0.7448
14D03064	8.2 %	✓	17.92 ± 0.27	298.40 ± 5.81	0.7489
14D03065	9.2 %	✓	17.60 ± 0.25	299.20 ± 5.59	0.7529
14D03067	10.2 %	✓	16.23 ± 0.22	299.00 ± 5.18	0.7577
14D03068	11.2 %	✓	16.42 ± 0.24	297.95 ± 5.71	0.7494
14D03070	12.5 %	✓	16.29 ± 0.25	298.45 ± 5.84	0.7494
14D03071	14.0 %	✓	15.30 ± 0.17	297.88 ± 4.10	0.7830
14D03073	16.0 %	✓	14.04 ± 0.11	301.55 ± 2.53	0.8891
14D03075	18.0 %	✓	13.47 ± 0.11	300.12 ± 2.59	0.8801

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	297.79 ± 2.86 ± 0.96%	0.14499 ± 0.17890 ± 123.39%	426.9 ± 526.7 ± 123.38%	0.41 98%
			Full External Error ± 526.8	
			Analytical Error ± 526.7	

Statistics				
	2σ Confidence Limit	1.73	Convergence	0.000000125220
	Error Magnification	1.0000	Number of Iterations	4
	Number of Data Points	17	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D03050	2.0 %	✓	0.0202899 ± 0.0000865	0.00334630 ± 0.00002815	0.3686
14D03052	2.6 %	✓	0.0683882 ± 0.0008911	0.00331574 ± 0.00006563	0.6384
14D03053	3.2 %	✓	0.1001547 ± 0.0020092	0.00331232 ± 0.00009814	0.6670
14D03055	3.8 %	✓	0.1169279 ± 0.0023832	0.00327629 ± 0.00009928	0.6649
14D03056	4.4 %	✓	0.1061719 ± 0.0023418	0.00328234 ± 0.00010698	0.6683
14D03058	5.0 %	✓	0.1026796 ± 0.0021614	0.00329196 ± 0.00010250	0.6670
14D03059	5.6 %	✓	0.0868029 ± 0.0018307	0.00331336 ± 0.00010302	0.6668
14D03061	6.2 %	✓	0.0730380 ± 0.0013622	0.00331758 ± 0.00009152	0.6608
14D03062	7.2 %	✓	0.0606941 ± 0.0008298	0.00335488 ± 0.00006870	0.6435
14D03064	8.2 %	✓	0.0600609 ± 0.0007752	0.00335117 ± 0.00006524	0.6376
14D03065	9.2 %	✓	0.0588308 ± 0.0007235	0.00334230 ± 0.00006242	0.6335
14D03067	10.2 %	✓	0.0542836 ± 0.0006144	0.00334444 ± 0.00005796	0.6235
14D03068	11.2 %	✓	0.0551215 ± 0.0006994	0.00335631 ± 0.00006428	0.6348
14D03070	12.5 %	✓	0.0545898 ± 0.0007074	0.00335064 ± 0.00006554	0.6357
14D03071	14.0 %	✓	0.0513775 ± 0.0004401	0.00335708 ± 0.00004618	0.5858
14D03073	16.0 %	✓	0.0465486 ± 0.0001797	0.00331617 ± 0.00002788	0.3878
14D03075	18.0 %	✓	0.0448681 ± 0.0001843	0.00333204 ± 0.00002874	0.4046

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	297.79 ± 2.85	0.14623 ± 0.09854	430.5 ± 290.1	0.40
Clustered Points	± 0.96%	± 67.39%	± 67.38%	98%
			Full External Error ± 290.3	
			Analytical Error ± 290.1	

Statistics				
	2σ Confidence Limit	1.73	Convergence	0.0026693153
	Error Magnification	1.0000	Number of Iterations	4
	Number of Data Points	17	Calculated Line	Weighted York-2
	Spreading Factor	1.4%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D03050	2.0 %	✓	7.637631	0.378	54.0165	7.848	5.012641	0.860	46.25279	0.111	2277.856	0.182	0.55045 ± 0.41086	1620.1 ± 1208.7	1.12	5.66	0.368 ± 0.058
14D03052	2.6 %	✓	2.151743	0.748	41.9517	10.077	3.806180	1.195	44.15790	0.113	645.326	0.642	0.29536 ± 0.28608	869.5 ± 842.0	2.02	5.41	0.452 ± 0.091
14D03053	3.2 %	✓	1.387818	1.086	36.0684	11.388	3.232741	1.287	41.67170	0.122	415.873	0.995	0.21177 ± 0.29241	623.5 ± 860.7	2.12	5.10	0.497 ± 0.113
14D03055	3.8 %	✓	1.354028	1.111	54.9001	7.526	3.415832	1.323	47.80896	0.108	408.608	1.013	0.27245 ± 0.25464	802.1 ± 749.5	3.19	5.86	0.374 ± 0.056
14D03056	4.4 %	✓	1.254314	1.189	51.4936	8.034	2.804382	1.543	40.14197	0.123	377.799	1.096	0.28320 ± 0.30195	833.7 ± 888.7	3.01	4.92	0.335 ± 0.054
14D03058	5.0 %	✓	1.322078	1.134	67.2365	6.391	2.789305	1.616	40.70440	0.121	396.022	1.045	0.26515 ± 0.29874	780.6 ± 879.3	2.72	4.98	0.260 ± 0.033
14D03059	5.6 %	✓	1.327596	1.134	57.0494	7.030	2.309636	1.909	34.40770	0.137	395.981	1.045	0.24080 ± 0.35413	708.9 ± 1042.3	2.09	4.21	0.259 ± 0.036
14D03061	6.2 %	✓	1.509801	1.010	73.5586	5.636	2.292667	1.823	32.84748	0.140	449.087	0.922	0.26909 ± 0.37361	792.2 ± 1099.6	1.97	4.02	0.192 ± 0.022
14D03062	7.2 %	✓	2.093405	0.763	87.4317	4.581	2.718323	1.595	37.50091	0.130	616.935	0.671	0.14225 ± 0.33574	418.8 ± 988.4	0.86	4.59	0.184 ± 0.017
14D03064	8.2 %	✓	2.217350	0.730	92.1908	4.482	2.859566	1.485	39.35261	0.126	654.219	0.633	0.16197 ± 0.32230	476.9 ± 948.8	0.97	4.82	0.183 ± 0.016
14D03065	9.2 %	✓	2.320780	0.703	97.6846	4.586	2.848391	1.568	40.44915	0.119	686.473	0.603	0.20992 ± 0.31518	618.0 ± 927.8	1.23	4.95	0.178 ± 0.016
14D03067	10.2 %	✓	2.532492	0.658	104.9176	4.106	2.846730	1.644	40.71440	0.120	748.772	0.553	0.21589 ± 0.31703	635.6 ± 933.2	1.17	4.98	0.167 ± 0.014
14D03068	11.2 %	✓	2.261682	0.719	89.2543	4.876	2.484634	1.756	36.80720	0.129	666.694	0.621	0.14895 ± 0.34578	438.5 ± 1017.9	0.82	4.50	0.177 ± 0.017
14D03070	12.5 %	✓	2.210638	0.734	93.2635	4.801	2.313865	1.859	35.66909	0.130	652.288	0.635	0.18111 ± 0.35630	533.2 ± 1048.8	0.99	4.36	0.164 ± 0.016
14D03071	14.0 %	✓	3.385882	0.541	148.5603	2.966	3.373142	1.326	51.30570	0.104	996.708	0.415	0.15535 ± 0.26641	457.4 ± 784.3	0.80	6.28	0.148 ± 0.009
14D03073	16.0 %	✓	7.835833	0.376	339.4156	1.435	7.419794	0.622	108.93659	0.076	2335.478	0.177	0.43121 ± 0.17761	1269.3 ± 522.6	2.01	13.32	0.138 ± 0.004
14D03075	18.0 %	✓	7.370372	0.383	297.9125	1.564	6.843595	0.656	98.36651	0.079	2187.981	0.189	0.34284 ± 0.18985	1009.2 ± 558.7	1.54	12.03	0.142 ± 0.004
		Σ	50.173443	0.155	1786.9060	0.992	59.371424	0.306	817.09507	0.027	14912.103	0.114					

Information on Analysis and Constants Used in Calculations

Sample = 176-701
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00162835 ± 0.00000347
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 22.3
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.27790 ± 0.06887 ± 24.78%	818.1 ± 202.7 ± 24.78%	0.54	100.00	0.149 ± 0.014
			Full External Error ± 203.6	93%	17	
			Analytical Error ± 202.7	1.71	2σ Confidence Limit	
				1.0000	Error Magnification	
Total Fusion Age		0.28055 ± 0.07023 ± 25.03%	825.9 ± 206.7 ± 25.03%		17	0.196 ± 0.004
			Full External Error ± 207.6			
			Analytical Error ± 206.7			
Normal Isochron	297.79 ± 2.86 ± 0.96%	0.14499 ± 0.17890 ± 123.39%	426.9 ± 526.7 ± 123.38%	0.41	100.00	
			Full External Error ± 526.8	98%	17	
			Analytical Error ± 526.7	1.73	2σ Confidence Limit	
				1.0000	Error Magnification	
				4	Number of Iterations	
				0.0000001252	Convergence	
Inverse Isochron	297.79 ± 2.85 ± 0.96%	0.14623 ± 0.09854 ± 67.39%	430.5 ± 290.1 ± 67.38%	0.40	100.00	
Clustered Points			Full External Error ± 290.3	98%	17	
			Analytical Error ± 290.1	1.73	2σ Confidence Limit	
				1.0000	Error Magnification	
				4	Number of Iterations	
				0.0026693153	Convergence	
				1%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D03050	2.0 %	✓	7.622231	0.38	0.0000000	0.00	0.0142604	7.85	0.0011396	1.69	54.0165	7.85	1.4245950	0.38	0.0000000	0.00	0.5259431	0.11	0.0075083	7.85	3.054595	1.93	46.21644	0.11	0.0363531	7.85	25.43991	37.32	2252.369	0.38	0.0000000	0.00	0.0466786	0.11
14D03052	2.6 %	✓	2.139587	0.75	0.0000000	0.00	0.0110753	10.08	0.0010814	1.82	41.9517	10.08	0.3998887	0.75	0.0000000	0.00	0.5021956	0.11	0.0058313	10.08	2.898265	2.04	44.12966	0.11	0.0282335	10.08	13.03406	48.43	632.248	0.75	0.0000000	0.00	0.0445710	0.11
14D03053	3.2 %	✓	1.377365	1.10	0.0000000	0.00	0.0095221	11.39	0.0009315	1.91	36.0684	11.39	0.2574295	1.10	0.0000000	0.00	0.4739477	0.12	0.0050135	11.39	2.496350	2.12	41.64743	0.12	0.0242740	11.39	8.81977	69.04	407.011	1.10	0.0000000	0.00	0.0420639	0.12
14D03055	3.8 %	✓	1.338558	1.13	0.0000000	0.00	0.0144936	7.53	0.0009756	1.96	54.9001	7.53	0.2501766	1.13	0.0000000	0.00	0.5436455	0.11	0.0076311	7.53	2.614379	2.17	47.77201	0.11	0.0369478	7.53	13.01552	46.73	395.544	1.13	0.0000000	0.00	0.0482497	0.11
14D03056	4.4 %	✓	1.239933	1.21	0.0000000	0.00	0.0135943	8.03	0.0007870	2.25	51.4936	8.03	0.2317435	1.21	0.0000000	0.00	0.4564212	0.12	0.0071576	8.03	2.109059	2.43	40.10731	0.12	0.0346552	8.03	11.35825	53.31	366.400	1.21	0.0000000	0.00	0.0405084	0.12
14D03058	5.0 %	✓	1.303553	1.15	0.0000000	0.00	0.0177504	6.39	0.0007739	2.36	67.2365	6.39	0.2436341	1.15	0.0000000	0.00	0.4627011	0.12	0.0093459	6.39	2.073624	2.54	40.65915	0.12	0.0452502	6.39	10.78092	56.33	385.200	1.15	0.0000000	0.00	0.0410657	0.12
14D03059	5.6 %	✓	1.311913	1.15	0.0000000	0.00	0.0150610	7.03	0.0006215	2.81	57.0494	7.03	0.2451966	1.15	0.0000000	0.00	0.3911227	0.14	0.0079299	7.03	1.665387	2.95	34.36930	0.14	0.0383942	7.03	8.27629	73.53	387.670	1.15	0.0000000	0.00	0.0347130	0.14
14D03061	6.2 %	✓	1.489773	1.03	0.0000000	0.00	0.0194195	5.64	0.0006087	2.73	73.5586	5.64	0.2784385	1.03	0.0000000	0.00	0.3732410	0.14	0.0102246	5.64	1.630762	2.88	32.79798	0.14	0.0495049	5.64	8.82570	69.42	440.228	1.03	0.0000000	0.00	0.0331260	0.14
14D03062	7.2 %	✓	2.069616	0.77	0.0000000	0.00	0.0230820	4.58	0.0007067	2.47	87.4317	4.58	0.3868113	0.77	0.0000000	0.00	0.4260907	0.13	0.0121530	4.58	1.893268	2.64	37.44207	0.13	0.0588416	4.58	5.32601	118.01	611.572	0.77	0.0000000	0.00	0.0378165	0.13
14D03064	8.2 %	✓	2.192269	0.74	0.0000000	0.00	0.0243384	4.48	0.0007428	2.33	92.1908	4.48	0.4097351	0.74	0.0000000	0.00	0.4471267	0.13	0.0128145	4.48	1.989890	2.50	39.29057	0.13	0.0620444	4.48	6.36381	99.50	647.815	0.74	0.0000000	0.00	0.0396835	0.13
14D03065	9.2 %	✓	2.294265	0.71	0.0000000	0.00	0.0257887	4.59	0.0007266	2.48	97.6846	4.59	0.4287981	0.71	0.0000000	0.00	0.4595632	0.12	0.0135782	4.59	1.946451	2.64	40.38341	0.12	0.0657418	4.59	8.47734	75.07	677.955	0.71	0.0000000	0.00	0.0407872	0.12
14D03067	10.2 %	✓	2.504083	0.67	0.0000000	0.00	0.0276983	4.11	0.0007099	2.63	104.9176	4.11	0.4680132	0.67	0.0000000	0.00	0.4625264	0.12	0.0145836	4.11	1.901606	2.79	40.64379	0.12	0.0706096	4.11	8.77457	73.42	739.957	0.67	0.0000000	0.00	0.0410502	0.12
14D03068	11.2 %	✓	2.237508	0.73	0.0000000	0.00	0.0235631	4.88	0.0006107	2.83	89.2543	4.88	0.4181902	0.73	0.0000000	0.00	0.4181824	0.13	0.0124063	4.88	1.635855	2.97	36.74713	0.13	0.0600681	4.88	5.47332	116.08	661.184	0.73	0.0000000	0.00	0.0371146	0.13
14D03070	12.5 %	✓	2.185461	0.74	0.0000000	0.00	0.0246216	4.80	0.0005553	3.04	93.2635	4.80	0.4084626	0.74	0.0000000	0.00	0.4052000	0.13	0.0129636	4.80	1.487239	3.18	35.60633	0.13	0.0627663	4.80	6.44858	98.37	645.804	0.74	0.0000000	0.00	0.0359624	0.13
14D03071	14.0 %	✓	3.345861	0.55	0.0000000	0.00	0.0392199	2.97	0.0008007	2.29	148.5603	2.97	0.6253415	0.55	0.0000000	0.00	0.5827211	0.10	0.0206499	2.97	2.144430	2.46	51.20572	0.10	0.0999811	2.97	7.95476	85.75	988.702	0.55	0.0000000	0.00	0.0517178	0.10
14D03073	16.0 %	✓	7.744477	0.38	0.0000000	0.00	0.0896057	1.44	0.0017506	1.35	339.4156	1.44	1.4474428	0.38	0.0000000	0.00	1.2370989	0.08	0.0471788	1.44	4.688074	1.63	108.70816	0.08	0.2284267	1.44	46.87574	20.59	2288.493	0.38	0.0000000	0.00	0.1097952	0.08
14D03075	18.0 %	✓	7.290109	0.39	0.0000000	0.00	0.0786489	1.56	0.0016142	1.39	297.9125	1.56	1.3625214	0.39	0.0000000	0.00	1.1171293	0.08	0.0414098	1.56	4.322535	1.67	98.16602	0.08	0.2004951	1.56	33.65511	27.69	2154.227	0.39	0.0000000	0.00	0.0991477	0.08
		Σ	49.686563	0.16	0.0000000	0.00	0.4717432	0.99	0.0151366	0.51	1786.9060	0.99	9.2864187	0.16	0.0000000	0.00	9.2848565	0.03	0.2483799	0.99	40.551769	0.56	815.89249	0.03	1.2025877	0.99	228.89966	12.52	14682.379	0.16	0.0000000	0.00	0.8240514	0.03
		Σ							50.173443	0.16	1786.9060	0.99									59.371424	0.38			817.09507	0.03							14912.103	0.25

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D03050	2.0 %	✓	49.247967	0.104956	1.167854	0.091662	0.165128	0.000651	229.739	93.716149	1.00162324	1.093E-10
14D03052	2.6 %	✓	14.614066	0.095197	0.950039	0.095741	0.048728	0.000368	229.756	93.747005	1.00162335	3.098E-11
14D03053	3.2 %	✓	9.979749	0.100089	0.865537	0.098570	0.033304	0.000364	229.765	93.763723	1.00162342	1.996E-11
14D03055	3.8 %	✓	8.546679	0.087084	1.148323	0.086436	0.028322	0.000316	229.782	93.795882	1.00162354	1.961E-11
14D03056	4.4 %	✓	9.411570	0.103782	1.282787	0.103067	0.031247	0.000374	229.790	93.811322	1.00162360	1.813E-11
14D03058	5.0 %	✓	9.729220	0.102386	1.651825	0.105582	0.032480	0.000370	229.808	93.843497	1.00162372	1.901E-11
14D03059	5.6 %	✓	11.508511	0.121340	1.658041	0.116589	0.038584	0.000441	229.816	93.858945	1.00162378	1.901E-11
14D03061	6.2 %	✓	13.671876	0.127471	2.239399	0.126253	0.045964	0.000469	229.833	93.891136	1.00162390	2.156E-11
14D03062	7.2 %	✓	16.451214	0.112434	2.331456	0.106835	0.055823	0.000432	229.842	93.907880	1.00162397	2.961E-11
14D03064	8.2 %	✓	16.624537	0.107268	2.342686	0.105037	0.056346	0.000417	229.860	93.940088	1.00162409	3.140E-11
14D03065	9.2 %	✓	16.971267	0.104341	2.414998	0.110784	0.057375	0.000409	229.868	93.955552	1.00162415	3.295E-11
14D03067	10.2 %	✓	18.390844	0.104054	2.576917	0.105848	0.062201	0.000416	229.885	93.987776	1.00162427	3.594E-11
14D03068	11.2 %	✓	18.113142	0.114893	2.424914	0.118290	0.061447	0.000449	229.894	94.003248	1.00162433	3.200E-11
14D03070	12.5 %	✓	18.287210	0.118468	2.614685	0.125581	0.061976	0.000462	229.911	94.035489	1.00162445	3.131E-11
14D03071	14.0 %	✓	19.426855	0.083183	2.895591	0.085938	0.065994	0.000363	229.919	94.050968	1.00162451	4.784E-11
14D03073	16.0 %	✓	21.438881	0.041354	3.115717	0.044777	0.071930	0.000276	229.937	94.083225	1.00162463	1.121E-10
14D03075	18.0 %	✓	22.243153	0.045662	3.028597	0.047435	0.074928	0.000293	229.954	94.115494	1.00162476	1.050E-10

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D03050	2.0 %	0.0495703	0.0134220	0.0514375	0.0316070	0.0117604	0.0332054	0.1397515	0.0304160	14.687644	4.148352
14D03052	2.6 %	0.0544880	0.0134220	0.0525318	0.0316070	0.0161434	0.0332054	0.1768403	0.0304160	16.271544	4.148352
14D03053	3.2 %	0.0568147	0.0134220	0.0531245	0.0316070	0.0184081	0.0332054	0.1954444	0.0304160	17.022361	4.148352
14D03055	3.8 %	0.0606234	0.0134220	0.0542643	0.0316070	0.0225468	0.0332054	0.2282869	0.0304160	18.254653	4.148352
14D03056	4.4 %	0.0621405	0.0134220	0.0548114	0.0316070	0.0244322	0.0332054	0.2426798	0.0304160	18.747264	4.148352
14D03058	5.0 %	0.0646529	0.0134220	0.0559512	0.0316070	0.0281497	0.0332054	0.2698079	0.0304160	19.567520	4.148352
14D03059	5.6 %	0.0655477	0.0134220	0.0564984	0.0316070	0.0298329	0.0332054	0.2814579	0.0304160	19.862354	4.148352
14D03061	6.2 %	0.0667638	0.0134220	0.0576382	0.0316070	0.0331291	0.0332054	0.3028715	0.0304160	20.270574	4.148352
14D03062	7.2 %	0.0670500	0.0134220	0.0582309	0.0316070	0.0347306	0.0332054	0.3124806	0.0304160	20.372823	4.148352
14D03064	8.2 %	0.0669347	0.0134220	0.0593707	0.0316070	0.0375941	0.0332054	0.3280253	0.0304160	20.357871	4.148352
14D03065	9.2 %	0.0665682	0.0134220	0.0599178	0.0316070	0.0388674	0.0332054	0.3341153	0.0304160	20.251805	4.148352
14D03067	10.2 %	0.0651566	0.0134220	0.0610577	0.0316070	0.0413096	0.0332054	0.3439455	0.0304160	19.824816	4.148352
14D03068	11.2 %	0.0641680	0.0134220	0.0616048	0.0316070	0.0423808	0.0332054	0.3472925	0.0304160	19.520973	4.148352
14D03070	12.5 %	0.0614600	0.0134220	0.0627446	0.0316070	0.0444017	0.0332054	0.3514083	0.0304160	18.681948	4.148352
14D03071	14.0 %	0.0598491	0.0134220	0.0632917	0.0316070	0.0452706	0.0332054	0.3520124	0.0304160	18.180328	4.148352
14D03073	16.0 %	0.0558449	0.0134220	0.0644316	0.0316070	0.0468702	0.0332054	0.3504136	0.0304160	16.929267	4.148352
14D03075	18.0 %	0.0509647	0.0134220	0.0655714	0.0316070	0.0481852	0.0332054	0.3449538	0.0304160	15.399803	4.148352

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D03050	2.0 %	7.312794	0.006224	0.9855	EXP 150 of 150	0.6174	0.0310	0.0739	EXP 150 of 150	4.964089	0.025947	0.6126	EXP 149 of 150	46.04026	0.02915	0.9902	EXP 150 of 150	2297.44326	0.10376	0.9999	EXP 150 of 150
14D03052	2.6 %	2.100750	0.003274	0.9470	EXP 150 of 150	0.4920	0.0309	0.0101	EXP 150 of 150	3.776527	0.029903	0.3388	EXP 150 of 150	43.99841	0.02776	0.9906	EXP 150 of 150	662.98610	0.06272	0.9992	EXP 150 of 150
14D03053	3.2 %	1.376600	0.002664	0.9072	EXP 150 of 150	0.4309	0.0291	0.0038	EXP 150 of 150	3.212252	0.023878	0.2851	EXP 149 of 150	41.54975	0.03077	0.9868	EXP 150 of 150	433.79006	0.05997	0.9968	EXP 150 of 150
14D03055	3.8 %	1.348275	0.002659	0.9118	EXP 150 of 150	0.6290	0.0293	0.0147	EXP 150 of 150	3.397279	0.029528	0.2717	EXP 150 of 150	47.67310	0.02879	0.9916	EXP 150 of 150	427.74135	0.05375	0.9981	EXP 150 of 150
14D03056	4.4 %	1.254967	0.002463	0.9112	EXP 150 of 150	0.5938	0.0294	0.0130	EXP 150 of 150	2.795071	0.026688	0.2164	EXP 150 of 150	40.07890	0.02941	0.9876	EXP 150 of 150	397.35886	0.05713	0.9974	EXP 150 of 150
14D03058	5.0 %	1.321921	0.002572	0.9135	EXP 150 of 150	0.7595	0.0316	0.0287	EXP 150 of 150	2.783894	0.029470	0.2943	EXP 150 of 150	40.66417	0.02883	0.9884	EXP 150 of 150	416.44140	0.05346	0.9984	EXP 150 of 150
14D03059	5.6 %	1.328063	0.002857	0.8987	EXP 150 of 150	0.6534	0.0273	0.0078	EXP 149 of 150	2.311679	0.028031	0.1057	EXP 150 of 150	34.42708	0.02827	0.9845	EXP 150 of 150	416.69551	0.04485	0.9989	EXP 150 of 150
14D03061	6.2 %	1.502552	0.002914	0.9178	EXP 150 of 150	0.8270	0.0292	0.0456	EXP 150 of 150	2.298210	0.024384	0.2157	EXP 150 of 150	32.90015	0.02704	0.9844	EXP 150 of 150	470.32326	0.05408	0.9991	EXP 150 of 150
14D03062	7.2 %	2.057833	0.003071	0.9548	EXP 150 of 150	0.9725	0.0268	0.0303	EXP 150 of 150	2.720346	0.026836	0.2085	EXP 150 of 150	37.52774	0.02923	0.9860	EXP 150 of 150	638.63531	0.05745	0.9996	EXP 150 of 150
14D03064	8.2 %	2.175587	0.003238	0.9568	EXP 150 of 150	1.0231	0.0287	0.0580	EXP 150 of 150	2.862754	0.025414	0.2409	EXP 150 of 150	39.38088	0.02996	0.9865	EXP 149 of 150	675.98409	0.06014	0.9996	EXP 150 of 150
14D03065	9.2 %	2.273580	0.003195	0.9591	EXP 150 of 150	1.0809	0.0338	0.0375	EXP 150 of 150	2.852986	0.028820	0.2307	EXP 150 of 150	40.47516	0.02719	0.9891	EXP 150 of 150	708.20177	0.06936	0.9995	EXP 150 of 150
14D03067	10.2 %	2.473502	0.003356	0.9624	EXP 150 of 150	1.1572	0.0312	0.0446	EXP 150 of 150	2.853787	0.031959	0.2504	EXP 150 of 150	40.74821	0.02798	0.9890	EXP 150 of 150	770.20768	0.06920	0.9996	EXP 150 of 150
14D03068	11.2 %	2.214979	0.003376	0.9504	EXP 150 of 150	0.9940	0.0321	0.0051	EXP 150 of 150	2.497119	0.027311	0.2962	EXP 150 of 150	36.87411	0.02801	0.9863	EXP 148 of 150	687.64905	0.05712	0.9997	EXP 150 of 150
14D03070	12.5 %	2.163729	0.003488	0.9479	EXP 150 of 150	1.0367	0.0338	0.0064	EXP 150 of 150	2.330426	0.026360	0.1694	EXP 150 of 150	35.74879	0.02629	0.9877	EXP 150 of 150	672.37321	0.06383	0.9996	EXP 150 of 150
14D03071	14.0 %	3.279750	0.004090	0.9699	EXP 150 of 150	1.6144	0.0317	0.0643	EXP 150 of 150	3.377827	0.028858	0.2331	EXP 150 of 150	51.26689	0.02916	0.9925	EXP 150 of 150	1017.03274	0.07709	0.9998	EXP 150 of 150
14D03073	16.0 %	7.507555	0.006447	0.9855	EXP 150 of 150	3.6070	0.0318	0.2266	EXP 150 of 150	7.377388	0.029788	0.6004	EXP 150 of 150	108.45715	0.03473	0.9976	EXP 150 of 150	2357.43138	0.10212	0.9999	EXP 150 of 150
14D03075	18.0 %	7.060031	0.006396	0.9834	EXP 150 of 150	3.1739	0.0304	0.3426	EXP 150 of 150	6.809438	0.028116	0.6515	EXP 150 of 150	97.96212	0.03661	0.9968	EXP 150 of 150	2208.08760	0.10471	0.9999	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
14D03050	2.0 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	15	20	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03052	2.6 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	15	44	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03053	3.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	15	57	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03055	3.8 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	16	22	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03056	4.4 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	16	34	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03058	5.0 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	16	59	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03059	5.6 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	5.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	17	11	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03061	6.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	17	36	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03062	7.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	17	49	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03064	8.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	18	14	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03065	9.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	18	26	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03067	10.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	18	51	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03068	11.2 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	19	3	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03070	12.5 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	19	28	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03071	14.0 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	19	40	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03073	16.0 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	20	5	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01
14D03075	18.0 %	176-701	Groundmass	Harrat Hutaymah	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.65234	0.213	0.00162835	0.213	302.778	0.096	0.99398288	0.063	1	4.8E-14	6	FEB	2014	20	30	1	13-OSU-05	0.00	0.00	49.96	Harrat\Hutaymah (13-05)	14D03049	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D03050	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03052	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03053	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03055	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03056	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03058	5.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03059	5.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03061	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03062	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03064	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03065	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03067	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03068	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03070	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03071	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03073	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03075	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

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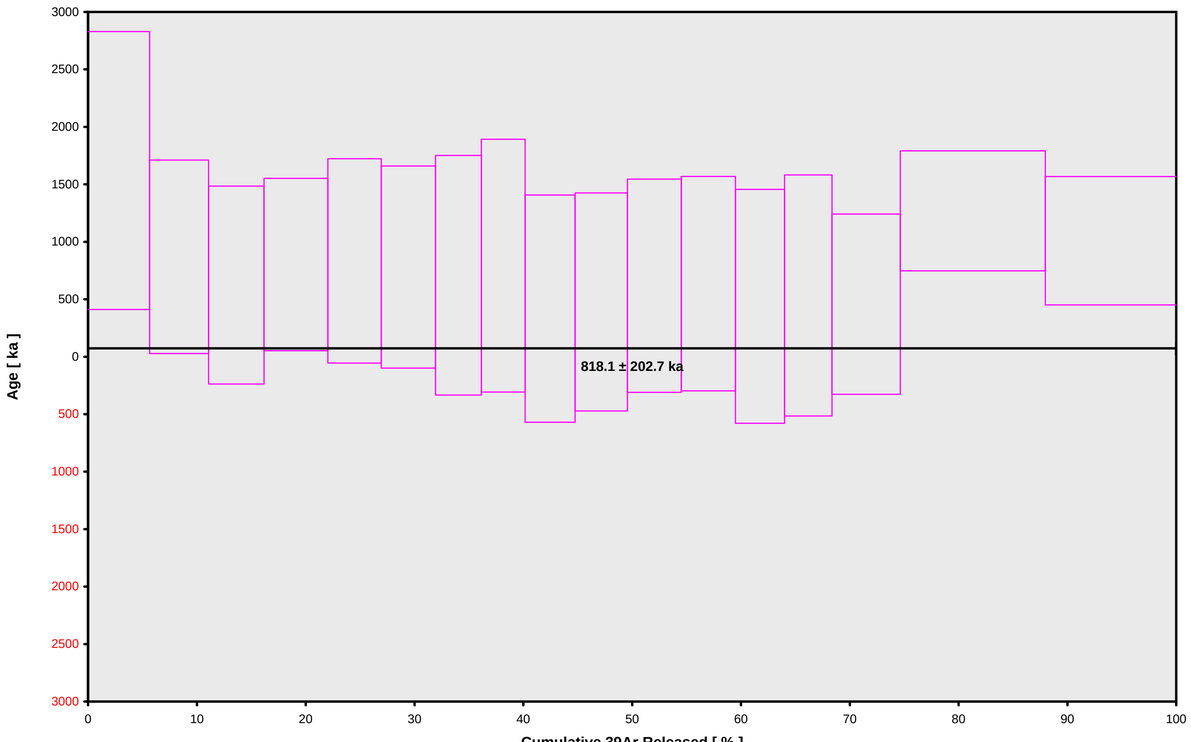
CEOAS Oregon State University, Corvallis, USA

14D03049.AGE >>> 176-701 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
818.1 ± 202.7
TOTAL FUSION
825.9 ± 206.7
NORMAL ISOCHRON
426.9 ± 526.7
INVERSE ISOCHRON
430.5 ± 290.1

MSWD (PROBABILITY)
0.54 (93%)

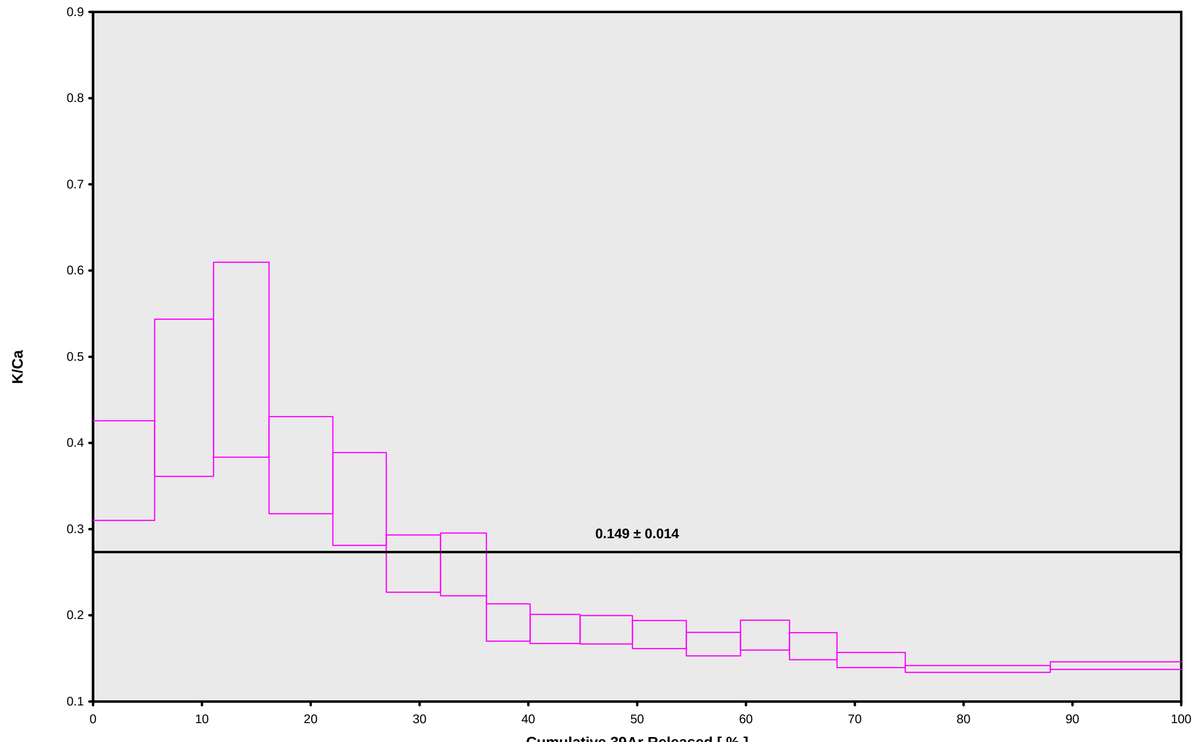
Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00162835 ± 0.00000347

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D03049.AGE >>> 176-701 >>> HARRAT | HUTAYMAH (13-05) PROJECT



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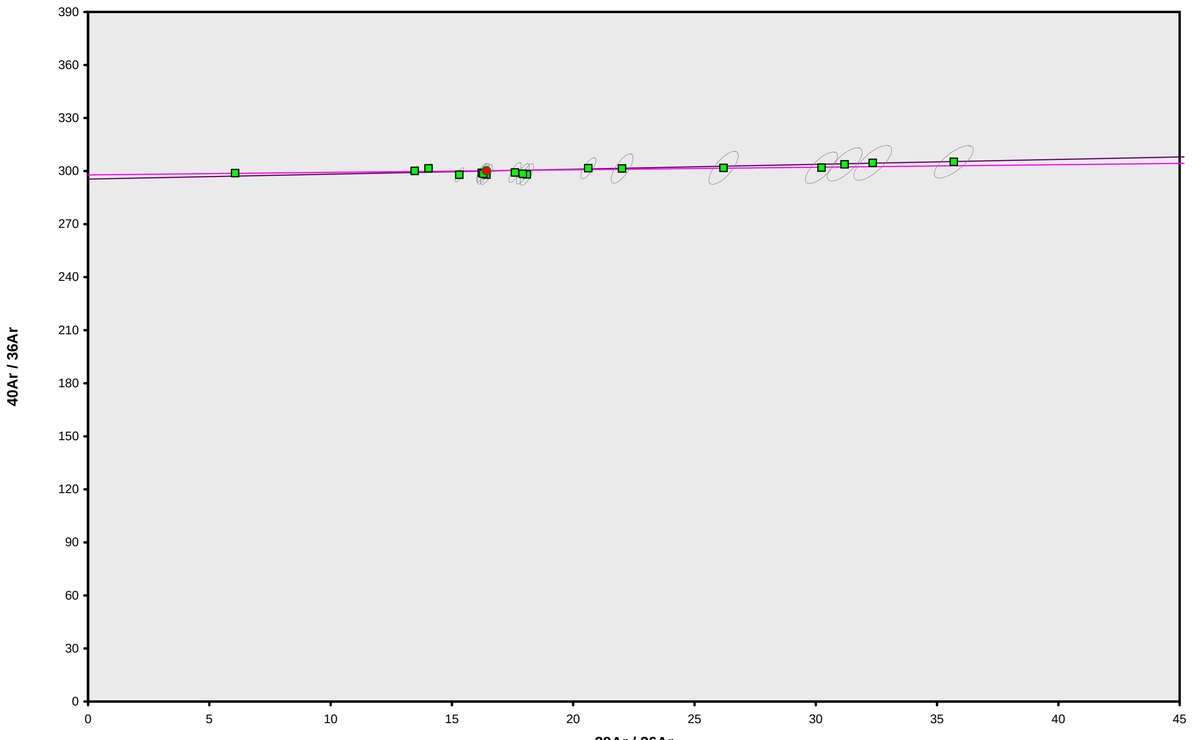


Ar-Ages in ka

WEIGHTED PLATEAU
818.1 ± 202.7
TOTAL FUSION
825.9 ± 206.7
NORMAL ISOCHRON
426.9 ± 526.7
INVERSE ISOCHRON
430.5 ± 290.1

MSWD (PROBABILITY)
0.41 (98%)

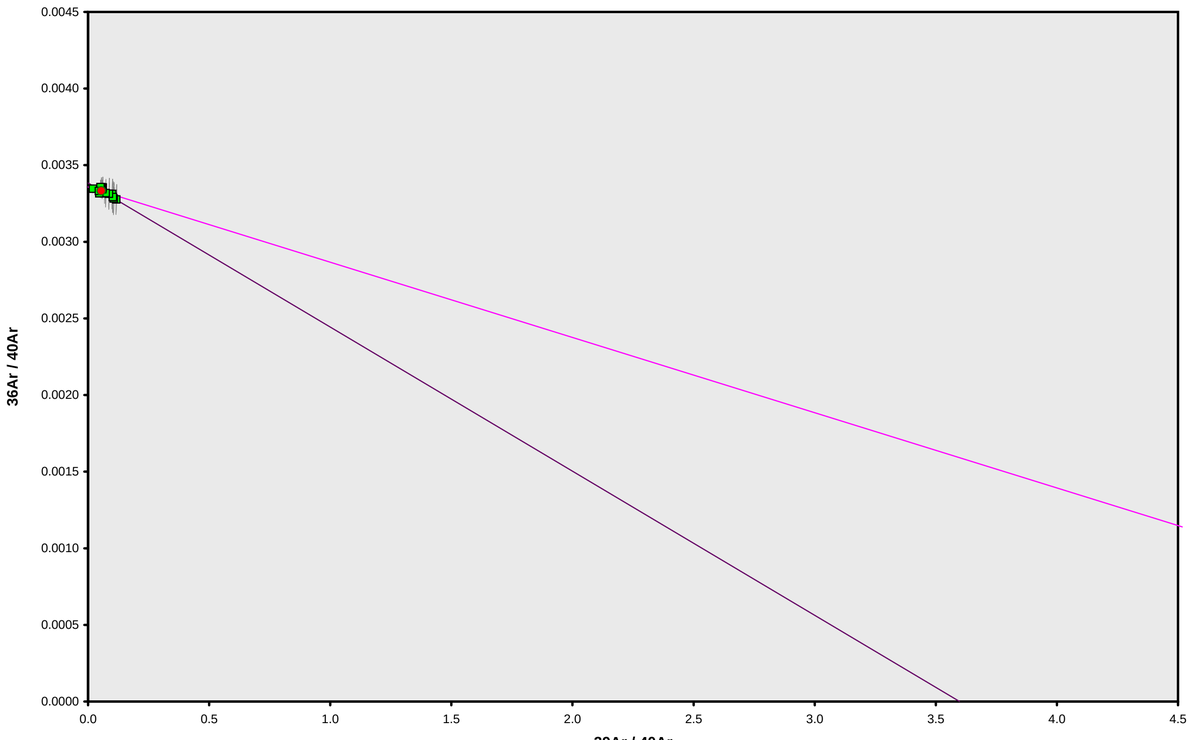
40AR/36AR INTERCEPT
297.8 ± 2.9

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00162835 ± 0.00000347

14D03049.AGE >>> 176-701 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
818.1 ± 202.7
TOTAL FUSION
825.9 ± 206.7
NORMAL ISOCHRON
426.9 ± 526.7
INVERSE ISOCHRON
430.5 ± 290.1

MSWD (PROBABILITY)
0.40 (98%)

SPREADING FACTOR
1.4%

40AR/36AR INTERCEPT
297.8 ± 2.9

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00162835 ± 0.00000347

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D03104	2.0 %		14.05459	28.5876	0.693956	22.08339	9.82498	1291.1 ± 3731.7	0.24	2.25	0.332 ± 0.099
14D03106	2.6 %		23.70771	29.3618	1.024696	26.58861	60.70741	6616.0 ± 4571.0	0.86	2.71	0.389 ± 0.115
14D03107	3.2 %		59.59557	37.3886	1.618140	40.03236	391.31377	28601.4 ± 7327.5	2.27	4.08	0.460 ± 0.099
14D03109	3.8 %		36.71490	61.3622	2.471104	60.21772	179.34865	8625.4 ± 3459.4	1.63	6.13	0.422 ± 0.063
14D03110	4.4 %	✓	18.04072	44.9499	1.540290	44.02594	37.37897	2463.0 ± 3309.8	0.70	4.48	0.421 ± 0.084
14D03112	5.0 %	✓	19.44555	104.0559	2.351566	78.82725	48.89247	1799.7 ± 1896.9	0.84	8.03	0.326 ± 0.028
14D03113	5.6 %	✓	10.75764	72.8845	1.483403	47.30388	16.53633	1014.5 ± 2716.0	0.52	4.82	0.279 ± 0.034
14D03115	6.2 %	✓	10.92986	117.7042	1.939244	63.22908	29.97374	1375.6 ± 2036.0	0.92	6.44	0.231 ± 0.018
14D03116	7.2 %	✓	7.91487	85.3819	1.535329	46.71209	4.17235	259.3 ± 2647.4	0.18	4.76	0.235 ± 0.025
14D03118	8.2 %	✓	9.01319	118.1399	2.063175	60.89475	13.34224	635.9 ± 2058.2	0.50	6.20	0.222 ± 0.017
14D03119	9.2 %	✓	12.90889	100.5576	2.613963	73.25553	29.76496	1179.1 ± 1812.0	0.77	7.46	0.313 ± 0.029
14D03121	10.2 %	✓	12.59911	88.5851	2.927504	78.11766	30.49988	1133.1 ± 1689.4	0.81	7.95	0.379 ± 0.038
14D03122	11.2 %	✓	8.57498	68.0045	2.306529	65.94101	14.47583	637.2 ± 1889.5	0.57	6.71	0.417 ± 0.053
14D03124	12.5 %	✓	9.20590	80.8720	2.216248	76.43718	17.98517	682.9 ± 1643.6	0.66	7.78	0.406 ± 0.045
14D03125	14.0 %	✓	8.66560	102.9172	2.025338	88.90450	21.91414	715.4 ± 1403.7	0.85	9.05	0.371 ± 0.032
14D03127	16.0 %	✓	6.10832	84.5233	1.351662	67.28193	17.39274	750.3 ± 1801.0	0.95	6.85	0.342 ± 0.037
14D03129	18.0 %	✓	4.14993	44.6844	0.745823	42.26588	6.55194	450.0 ± 2821.5	0.53	4.30	0.407 ± 0.080
		Σ	272.38734	1269.9605	30.907971	982.11876	147.44802				

Information on Analysis

Sample = 176-688
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00160535 ± 0.00000337
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ		Age ± 2σ (Ka)		MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.32901	± 0.18771	954.9	± 544.6	0.23	84.84	0.282 ± 0.038
Overestimated Error		± 57.05%		± 57.04%	100%	13	
			Full External Error	± 545.1	1.82	2σ Confidence Limit	
			Analytical Error	± 544.6	1.0000	Error Magnification	
Total Fusion Age	0.15013	± 0.21265	435.8	± 617.2		17	0.333 ± 0.010
		± 141.64%		± 141.63%			
			Full External Error	± 617.3			
			Analytical Error	± 617.2			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D03104	2.0 %		1.57 ± 0.01	296.20 ± 2.03	0.5970
14D03106	2.6 %		1.12 ± 0.01	298.06 ± 1.79	0.6708
14D03107	3.2 %		0.67 ± 0.00	288.93 ± 1.63	0.7975
14D03109	3.8 %		1.64 ± 0.01	300.38 ± 1.99	0.6575
14D03110	4.4 %	✓	2.44 ± 0.03	297.57 ± 2.80	0.5728
14D03112	5.0 %	✓	4.05 ± 0.04	298.01 ± 2.67	0.7104
14D03113	5.6 %	✓	4.40 ± 0.06	297.04 ± 4.13	0.6276
14D03115	6.2 %	✓	5.78 ± 0.07	298.24 ± 4.08	0.6781
14D03116	7.2 %	✓	5.90 ± 0.09	296.03 ± 5.39	0.6497
14D03118	8.2 %	✓	6.76 ± 0.09	296.98 ± 4.81	0.6785
14D03119	9.2 %	✓	5.67 ± 0.06	297.81 ± 3.56	0.6949
14D03121	10.2 %	✓	6.20 ± 0.07	297.92 ± 3.63	0.7029
14D03122	11.2 %	✓	7.69 ± 0.11	297.19 ± 5.02	0.6896
14D03124	12.5 %	✓	8.30 ± 0.11	297.45 ± 4.72	0.7027
14D03125	14.0 %	✓	10.26 ± 0.14	298.03 ± 4.99	0.7152
14D03127	16.0 %	✓	11.01 ± 0.20	298.35 ± 6.87	0.7014
14D03129	18.0 %	✓	10.18 ± 0.26	297.08 ± 9.93	0.6839

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	297.60 ± 3.01	0.00614 ± 0.50036	17.8 ± 1452.5	0.08
Overestimated Error	± 1.01%	± 8148.25%	± 8148.21%	100%
			Full External Error ± 1452.5	
			Analytical Error ± 1452.5	

Statistics				
	2σ Confidence Limit	1.85	Convergence	0.000000022999
	Error Magnification	1.0000	Number of Iterations	3
	Number of Data Points	13	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D03104	2.0 %		0.0053047 ± 0.0000409	0.00337611 ± 0.00002308	0.1512
14D03106	2.6 %		0.0037627 ± 0.0000231	0.00335502 ± 0.00002011	0.0754
14D03107	3.2 %		0.0023249 ± 0.0000098	0.00346100 ± 0.00001955	0.0198
14D03109	3.8 %		0.0054601 ± 0.0000356	0.00332906 ± 0.00002207	0.1537
14D03110	4.4 %	✓	0.0082009 ± 0.0000793	0.00336053 ± 0.00003161	0.3083
14D03112	5.0 %	✓	0.0136025 ± 0.0000920	0.00335554 ± 0.00003003	0.3977
14D03113	5.6 %	✓	0.0148037 ± 0.0001727	0.00336658 ± 0.00004680	0.4880
14D03115	6.2 %	✓	0.0193969 ± 0.0002021	0.00335298 ± 0.00004590	0.5331
14D03116	7.2 %	✓	0.0199367 ± 0.0002858	0.00337807 ± 0.00006149	0.5641
14D03118	8.2 %	✓	0.0227496 ± 0.0002768	0.00336723 ± 0.00005448	0.5728
14D03119	9.2 %	✓	0.0190554 ± 0.0001697	0.00335789 ± 0.00004016	0.5133
14D03121	10.2 %	✓	0.0208118 ± 0.0001853	0.00335660 ± 0.00004088	0.5288
14D03122	11.2 %	✓	0.0258756 ± 0.0003217	0.00336487 ± 0.00005687	0.5921
14D03124	12.5 %	✓	0.0279138 ± 0.0003190	0.00336187 ± 0.00005335	0.5941
14D03125	14.0 %	✓	0.0344244 ± 0.0004051	0.00335538 ± 0.00005614	0.6152
14D03127	16.0 %	✓	0.0369194 ± 0.0006090	0.00335180 ± 0.00007720	0.6403
14D03129	18.0 %	✓	0.0342829 ± 0.0008413	0.00336611 ± 0.00011250	0.6481

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	297.60 ± 3.01	0.00644 ± 0.01411	18.7 ± 41.0	0.08
Overestimated Error	± 1.01%	± 218.98%	± 218.98%	100%
		Full External Error	± 41.0	
		Analytical Error	± 41.0	

Statistics				
	2σ Confidence Limit	1.85	Convergence	0.0077772292
	Error Magnification	1.0000	Number of Iterations	4
	Number of Data Points	13	Calculated Line	Weighted York-2
	Spreading Factor	0.0%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D03104	2.0 %		14.06240	0.311	28.5876	14.830	3.576042	1.148	22.10263	0.358	4162.979	0.141	0.44490 ± 1.28639	1291.1 ± 3731.7	0.24	2.25	0.332 ± 0.099
14D03106	2.6 %		23.71585	0.288	29.3618	14.759	5.762327	0.690	26.60837	0.295	7066.363	0.083	2.28321 ± 1.58036	6616.0 ± 4571.0	0.86	2.71	0.389 ± 0.115
14D03107	3.2 %		59.60604	0.280	37.3886	10.707	13.217317	0.329	40.05753	0.208	17219.217	0.034	9.77494 ± 2.48454	28601.4 ± 7327.5	2.27	4.08	0.460 ± 0.099
14D03109	3.8 %		36.73203	0.305	61.3622	7.421	10.026926	0.409	60.25902	0.299	11028.663	0.129	2.97834 ± 1.19738	8625.4 ± 3459.4	1.63	6.13	0.422 ± 0.063
14D03110	4.4 %	✓	18.05316	0.388	44.9499	9.907	5.419364	0.751	44.05619	0.404	5368.456	0.265	0.84902 ± 1.14170	2463.0 ± 3309.8	0.70	4.48	0.421 ± 0.084
14D03112	5.0 %	✓	19.47390	0.374	104.0559	4.355	6.897457	0.613	78.89728	0.232	5795.132	0.245	0.62025 ± 0.65408	1799.7 ± 1896.9	0.84	8.03	0.326 ± 0.028
14D03113	5.6 %	✓	10.77744	0.533	72.8845	6.032	4.042455	0.999	47.35293	0.377	3195.467	0.445	0.34958 ± 0.93613	1014.5 ± 2716.0	0.52	4.82	0.279 ± 0.034
14D03115	6.2 %	✓	10.96166	0.526	117.7042	3.800	4.717943	0.839	63.30829	0.285	3259.812	0.436	0.47405 ± 0.70189	1375.6 ± 2036.0	0.92	6.44	0.231 ± 0.018
14D03116	7.2 %	✓	7.93799	0.676	85.3819	5.303	3.558070	1.077	46.76956	0.381	2343.064	0.607	0.08932 ± 0.91210	259.3 ± 2647.4	0.18	4.76	0.235 ± 0.025
14D03118	8.2 %	✓	9.04515	0.608	118.1399	3.818	4.457144	0.910	60.97425	0.296	2676.802	0.531	0.21910 ± 0.70925	635.9 ± 2058.2	0.50	6.20	0.222 ± 0.017
14D03119	9.2 %	✓	12.93642	0.469	100.5576	4.558	5.874261	0.664	73.32321	0.248	3844.417	0.370	0.40632 ± 0.62458	1179.1 ± 1812.0	0.77	7.46	0.313 ± 0.029
14D03121	10.2 %	✓	12.62359	0.476	88.5851	4.958	6.183570	0.635	78.17727	0.234	3753.615	0.379	0.39044 ± 0.58231	1133.1 ± 1689.4	0.81	7.95	0.379 ± 0.038
14D03122	11.2 %	✓	8.59379	0.633	68.0045	6.377	4.669054	0.877	65.98678	0.274	2548.448	0.558	0.21953 ± 0.65110	637.2 ± 1889.5	0.57	6.71	0.417 ± 0.053
14D03124	12.5 %	✓	9.22808	0.599	80.8720	5.482	4.817928	0.860	76.49160	0.239	2738.407	0.519	0.23529 ± 0.56638	682.9 ± 1643.6	0.66	7.78	0.406 ± 0.045
14D03125	14.0 %	✓	8.69353	0.628	102.9172	4.254	4.670978	0.853	88.97376	0.208	2582.689	0.550	0.24649 ± 0.48373	715.4 ± 1403.7	0.85	9.05	0.371 ± 0.032
14D03127	16.0 %	✓	6.13114	0.844	84.5233	5.350	3.270724	1.253	67.33881	0.268	1822.469	0.780	0.25851 ± 0.62065	750.3 ± 1801.0	0.95	6.85	0.342 ± 0.037
14D03129	18.0 %	✓	4.16201	1.206	44.6844	9.878	2.008642	2.018	42.29595	0.420	1232.900	1.153	0.15502 ± 0.97218	450.0 ± 2821.5	0.53	4.30	0.407 ± 0.080
		Σ	272.73417	0.111	1269.9605	1.435	93.170201	0.179	982.97344	0.070	80638.899	0.067					

Information on Analysis and Constants Used in Calculations

Sample = 176-688
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Dan Miggins
Project = HARRAT | HUTAYMAH (13-05)
Mass Discrimination Law = LIN
Irradiation = 13-OSU-05
J = 0.00160535 ± 0.00000337
FCT-NM = 28.201 ± 0.023 Ma
IGSN = 22.5
Preferred Age = Undefined
Classification = Undefined
Experiment Type = 5.52
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000139
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.32901 ± 0.18771	954.9 ± 544.6	0.23	84.84	0.282 ± 0.038
Overestimated Error		± 57.05%	± 57.04%	100%	13	
			Full External Error ± 545.1	1.82	2σ Confidence Limit	
			Analytical Error ± 544.6	1.0000	Error Magnification	
Total Fusion Age		0.15013 ± 0.21265	435.8 ± 617.2		17	0.333 ± 0.010
		± 141.64%	± 141.63%			
			Full External Error ± 617.3			
			Analytical Error ± 617.2			
Normal Isochron	297.60 ± 3.01	0.00614 ± 0.50036	17.8 ± 1452.5	0.08	84.84	
Overestimated Error	± 1.01%	± 8148.25%	± 8148.21%	100%	13	
			Full External Error ± 1452.5	1.85	2σ Confidence Limit	
			Analytical Error ± 1452.5	1.0000	Error Magnification	
				3	Number of Iterations	
				0.0000000230	Convergence	
Inverse Isochron	297.60 ± 3.01	0.00644 ± 0.01411	18.7 ± 41.0	0.08	84.84	
Overestimated Error	± 1.01%	± 218.98%	± 218.98%	100%	13	
			Full External Error ± 41.0	1.85	2σ Confidence Limit	
			Analytical Error ± 41.0	1.0000	Error Magnification	
				4	Number of Iterations	
				0.0077772292	Convergence	
				0%	Spreading Factor	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D03104	2.0 %		14.05459	0.31	0.0000000	0.00	0.0075471	14.83	0.0002594	6.11	28.5876	14.83	2.626803	0.31	0.0000000	0.00	0.251309	0.36	0.0039737	14.83	0.693956	6.18	22.08339	0.36	0.0192395	14.83	9.82498	144.57	4153.132	0.31	0.0000000	0.00	0.0223042	0.36
14D03106	2.6 %		23.70771	0.29	0.0000000	0.00	0.0077515	14.76	0.0003831	4.18	29.3618	14.76	4.430971	0.29	0.0000000	0.00	0.302578	0.30	0.0040813	14.76	1.024696	4.28	26.58861	0.30	0.0197605	14.76	60.70741	34.61	7005.629	0.29	0.0000000	0.00	0.0268545	0.30
14D03107	3.2 %		59.59557	0.28	0.0000000	0.00	0.0098706	10.71	0.0006050	3.43	37.3886	10.71	11.138412	0.28	0.0000000	0.00	0.455568	0.21	0.0051970	10.71	1.618140	3.55	40.03236	0.21	0.0251625	10.71	391.31377	12.71	17610.491	0.28	0.0000000	0.00	0.0404327	0.21
14D03109	3.8 %		36.71490	0.31	0.0000000	0.00	0.0161996	7.42	0.0009240	2.08	61.3622	7.42	6.862015	0.31	0.0000000	0.00	0.685278	0.30	0.0085294	7.42	2.471104	2.27	60.21772	0.30	0.0412968	7.42	179.34865	20.10	10849.254	0.31	0.0000000	0.00	0.0608199	0.30
14D03110	4.4 %	✓	18.04072	0.39	0.0000000	0.00	0.0118668	9.91	0.0005760	2.93	44.9499	9.91	3.371811	0.39	0.0000000	0.00	0.501015	0.40	0.0062480	9.91	1.540290	3.07	44.02594	0.40	0.0302513	9.91	37.37897	67.23	5331.033	0.39	0.0000000	0.00	0.0444662	0.40
14D03112	5.0 %	✓	19.44555	0.37	0.0000000	0.00	0.0274708	4.36	0.0008794	2.10	104.0559	4.36	3.634373	0.37	0.0000000	0.00	0.897054	0.23	0.0144638	4.36	2.351566	2.30	78.82725	0.23	0.0700296	4.36	48.89247	52.73	5746.160	0.37	0.0000000	0.00	0.0796155	0.23
14D03113	5.6 %	✓	10.75764	0.53	0.0000000	0.00	0.0192415	6.03	0.0005547	2.97	72.8845	6.03	2.010603	0.53	0.0000000	0.00	0.538318	0.38	0.0101309	6.03	1.483403	3.11	47.30388	0.38	0.0490513	6.03	16.53633	133.89	3178.882	0.53	0.0000000	0.00	0.0477769	0.38
14D03115	6.2 %	✓	10.92986	0.53	0.0000000	0.00	0.0310739	3.80	0.0007253	2.31	117.7042	3.80	2.042791	0.53	0.0000000	0.00	0.719547	0.29	0.0163609	3.80	1.939244	2.48	63.22908	0.29	0.0792149	3.80	29.97374	74.03	3229.774	0.53	0.0000000	0.00	0.0638614	0.29
14D03116	7.2 %	✓	7.91487	0.68	0.0000000	0.00	0.0225408	5.30	0.0005742	2.74	85.3819	5.30	1.479289	0.68	0.0000000	0.00	0.531584	0.38	0.0118681	5.30	1.535329	2.89	46.71209	0.38	0.0574620	5.30	4.17235	510.58	2338.844	0.68	0.0000000	0.00	0.0471792	0.38
14D03118	8.2 %	✓	9.01319	0.61	0.0000000	0.00	0.0311889	3.82	0.0007717	2.23	118.1399	3.82	1.684566	0.61	0.0000000	0.00	0.692982	0.30	0.0164214	3.82	2.063175	2.41	60.89475	0.30	0.0795081	3.82	13.34224	161.85	2663.398	0.61	0.0000000	0.00	0.0615037	0.30
14D03119	9.2 %	✓	12.90889	0.47	0.0000000	0.00	0.0265472	4.56	0.0009778	1.81	100.5576	4.56	2.412672	0.47	0.0000000	0.00	0.833648	0.25	0.0139775	4.56	2.613963	2.03	73.25553	0.25	0.0676753	4.56	29.76496	76.86	3814.578	0.47	0.0000000	0.00	0.0739881	0.25
14D03121	10.2 %	✓	12.59911	0.48	0.0000000	0.00	0.0233865	4.96	0.0010951	1.67	88.5851	4.96	2.354773	0.48	0.0000000	0.00	0.888979	0.23	0.0123133	4.96	2.927504	1.91	78.11766	0.23	0.0596178	4.96	30.49988	74.57	3723.036	0.48	0.0000000	0.00	0.0788988	0.23
14D03122	11.2 %	✓	8.57498	0.63	0.0000000	0.00	0.0179532	6.38	0.0008629	2.05	68.0045	6.38	1.602663	0.63	0.0000000	0.00	0.750409	0.27	0.0094526	6.38	2.306529	2.25	65.94101	0.27	0.0457670	6.38	14.47583	148.30	2533.905	0.63	0.0000000	0.00	0.0666004	0.27
14D03124	12.5 %	✓	9.20590	0.60	0.0000000	0.00	0.0213502	5.48	0.0008292	2.14	80.8720	5.48	1.720583	0.60	0.0000000	0.00	0.869855	0.24	0.0112412	5.48	2.216248	2.33	76.43718	0.24	0.0544269	5.48	17.98517	120.36	2720.344	0.60	0.0000000	0.00	0.0772015	0.24
14D03125	14.0 %	✓	8.66560	0.63	0.0000000	0.00	0.0271701	4.25	0.0007578	2.23	102.9172	4.25	1.619601	0.63	0.0000000	0.00	1.011733	0.21	0.0143055	4.25	2.025338	2.41	88.90450	0.21	0.0692633	4.25	21.91414	98.12	2560.685	0.63	0.0000000	0.00	0.0897935	0.21
14D03127	16.0 %	✓	6.10832	0.85	0.0000000	0.00	0.0223142	5.35	0.0005057	3.25	84.5233	5.35	1.141645	0.85	0.0000000	0.00	0.765668	0.27	0.0117487	5.35	1.351662	3.38	67.28193	0.27	0.0568842	5.35	17.39274	120.05	1805.008	0.85	0.0000000	0.00	0.0679547	0.27
14D03129	18.0 %	✓	4.14993	1.21	0.0000000	0.00	0.0117967	9.88	0.0002791	5.66	44.6844	9.88	0.775622	1.21	0.0000000	0.00	0.480986	0.42	0.0062111	9.88	0.745823	5.73	42.26588	0.42	0.0300726	9.88	6.55194	313.57	1226.305	1.21	0.0000000	0.00	0.0426885	0.42
		Σ	272.38734	0.11	0.0000000	0.00	0.3352696	1.43	0.0115603	0.62	1269.9605	1.43	50.909194	0.11	0.0000000	0.00	11.176511	0.07	0.1765245	1.43	30.907971	0.66	982.11876	0.07	0.8546834	1.43	147.44802	70.82	80490.459	0.11	0.0000000	0.00	0.9919399	0.07
		Σ							272.73417	0.11	1269.9605	1.43									93.170201	0.23			982.97344	0.07							80638.899	0.17

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D03104	2.0 %		188.347716	0.725184	1.293404	0.191863	0.636232	0.003018	230.204	94.581385	1.00162652	1.998E-10
14D03106	2.6 %		265.569174	0.813312	1.103480	0.162898	0.891293	0.003671	230.222	94.613824	1.00162665	3.392E-10
14D03107	3.2 %		429.862212	0.904258	0.933372	0.099955	1.488011	0.005190	230.231	94.630697	1.00162671	8.265E-10
14D03109	3.8 %		183.020951	0.596614	1.018308	0.075625	0.609569	0.002606	230.248	94.663153	1.00162683	5.294E-10
14D03110	4.4 %	✓	121.854743	0.588753	1.020285	0.101163	0.409776	0.002297	230.256	94.678736	1.00162689	2.577E-10
14D03112	5.0 %	✓	73.451611	0.248174	1.318878	0.057520	0.246826	0.001086	230.274	94.711208	1.00162701	2.782E-10
14D03113	5.6 %	✓	67.481917	0.393412	1.539176	0.093027	0.227598	0.001486	230.282	94.726799	1.00162707	1.534E-10
14D03115	6.2 %	✓	51.491072	0.268174	1.859222	0.070853	0.173147	0.001036	230.299	94.759288	1.00162720	1.565E-10
14D03116	7.2 %	✓	50.098052	0.358919	1.825586	0.097056	0.169725	0.001318	230.308	94.774887	1.00162726	1.125E-10
14D03118	8.2 %	✓	43.900527	0.266966	1.937537	0.074200	0.148344	0.001004	230.325	94.807392	1.00162738	1.285E-10
14D03119	9.2 %	✓	52.431114	0.233427	1.371430	0.062599	0.176430	0.000936	230.334	94.824300	1.00162744	1.845E-10
14D03121	10.2 %	✓	48.014146	0.213742	1.133131	0.056248	0.161474	0.000856	230.351	94.856822	1.00162756	1.802E-10
14D03122	11.2 %	✓	38.620578	0.240029	1.030577	0.065781	0.130235	0.000899	230.360	94.872437	1.00162762	1.223E-10
14D03124	12.5 %	✓	35.800095	0.204529	1.057267	0.058012	0.120642	0.000778	230.377	94.904976	1.00162775	1.314E-10
14D03125	14.0 %	✓	29.027534	0.170765	1.156714	0.049269	0.097709	0.000646	230.385	94.920598	1.00162780	1.240E-10
14D03127	16.0 %	✓	27.064163	0.223200	1.255195	0.067235	0.091049	0.000806	230.403	94.953154	1.00162793	8.748E-11
14D03129	18.0 %	✓	29.149354	0.357603	1.056470	0.104453	0.098402	0.001257	230.420	94.985720	1.00162805	5.918E-11

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D03104	2.0 %	0.1638003	0.0186086	0.0435801	0.0315019	0.0751867	0.0279684	0.4364038	0.0714552	50.366684	5.885693
14D03106	2.6 %	0.1561072	0.0186086	0.0414962	0.0315019	0.0717062	0.0279684	0.4185144	0.0714552	48.839322	5.885693
14D03107	3.2 %	0.1580621	0.0186086	0.0404125	0.0315019	0.0698963	0.0279684	0.4092120	0.0714552	49.948226	5.885693
14D03109	3.8 %	1.7319460	0.0462789	0.0537404	0.0334938	0.3436930	0.0281739	0.7524383	0.1722338	536.774049	14.241507
14D03110	4.4 %	1.5127638	0.0462789	0.0523543	0.0334938	0.3162426	0.0281739	0.7254485	0.1722338	468.656248	14.241507
14D03112	5.0 %	1.1347794	0.0462789	0.0494668	0.0334938	0.2644082	0.0281739	0.7211419	0.1722338	351.288290	14.241507
14D03113	5.6 %	0.9866397	0.0462789	0.0480807	0.0334938	0.2418925	0.0281739	0.7370071	0.1722338	305.333230	14.241507
14D03115	6.2 %	0.7364679	0.0462789	0.0451931	0.0334938	0.1994245	0.0281739	0.7910351	0.1722338	227.798582	14.241507
14D03116	7.2 %	0.6406244	0.0462789	0.0438071	0.0334938	0.1810061	0.0281739	0.8215969	0.1722338	198.122795	14.241507
14D03118	8.2 %	0.4822247	0.0462789	0.0409195	0.0334938	0.1463496	0.0281739	0.8826131	0.1722338	149.117723	14.241507
14D03119	9.2 %	0.4182944	0.0462789	0.0394179	0.0334938	0.1301711	0.0281739	0.9085200	0.1722338	129.352666	14.241507
14D03121	10.2 %	0.3229633	0.0462789	0.0365303	0.0334938	0.1023166	0.0281739	0.9386361	0.1722338	99.884980	14.241507
14D03122	11.2 %	0.2875296	0.0462789	0.0351443	0.0334938	0.0903838	0.0281739	0.9415274	0.1722338	88.927241	14.241507
14D03124	12.5 %	0.2294089	0.0462789	0.0322567	0.0334938	0.0683515	0.0281739	0.9194465	0.1722338	70.926624	14.241507
14D03125	14.0 %	0.2071617	0.0462789	0.0308706	0.0334938	0.0590900	0.0281739	0.8946105	0.1722338	64.017755	14.241507
14D03127	16.0 %	0.1684578	0.0462789	0.0279830	0.0334938	0.0424719	0.0281739	0.8132828	0.1722338	51.952937	14.241507
14D03129	18.0 %	0.1358440	0.0462789	0.0250954	0.0334938	0.0294725	0.0281739	0.6953212	0.1722338	41.730347	14.241507

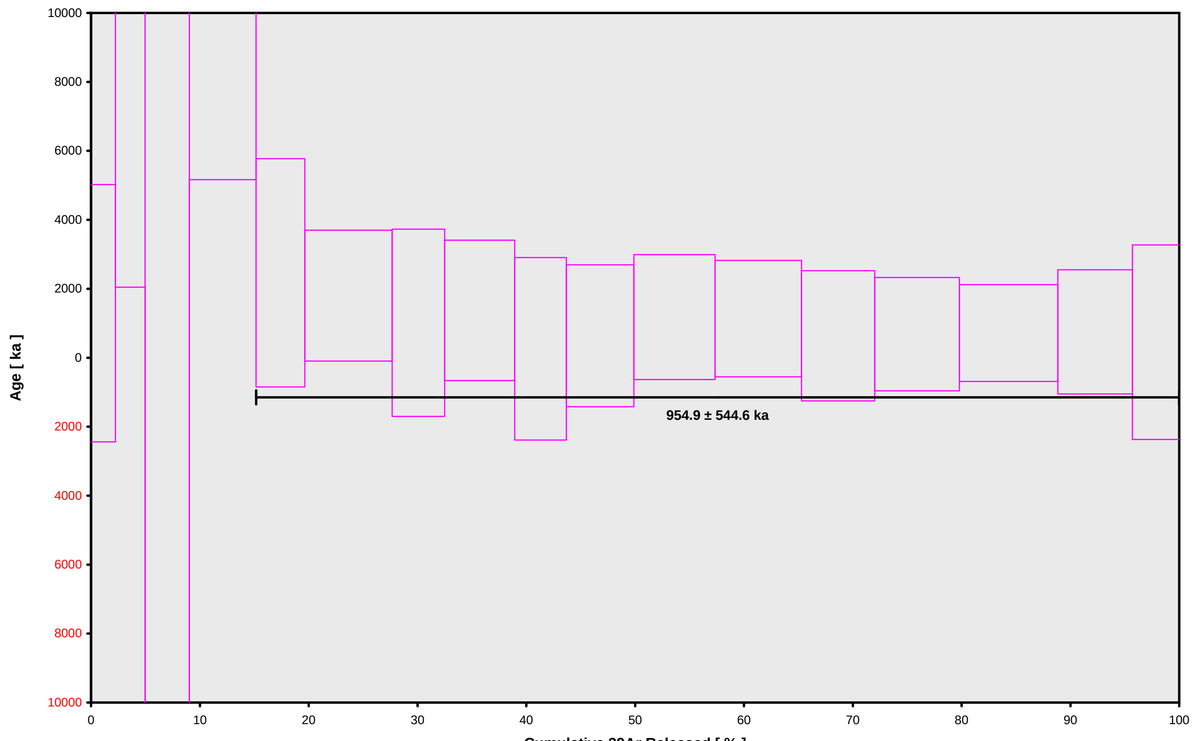
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D03104	2.0 %	13.54763	0.00845	0.9925	EXP 150 of 150	0.3404	0.0307	0.0337	EXP 150 of 150	3.608184	0.029055	0.3713	EXP 150 of 150	22.37056	0.02963	0.9492	EXP 150 of 150	4222.10548	0.16057	0.9999	EXP 150 of 150
14D03106	2.6 %	22.72757	0.01160	0.9950	EXP 150 of 150	0.3462	0.0320	0.0004	EXP 150 of 150	5.764672	0.026637	0.5770	EXP 150 of 150	26.82407	0.02601	0.9680	EXP 150 of 150	7130.07140	0.22142	1.0000	EXP 150 of 150
14D03107	3.2 %	56.88788	0.03672	0.9910	EXP 150 of 150	0.4284	0.0270	0.0005	EXP 150 of 150	13.128117	0.028064	0.9049	EXP 150 of 150	40.16141	0.03285	0.9710	EXP 150 of 150	17305.39804	0.40681	1.0000	EXP 150 of 150
14D03109	3.8 %	36.69151	0.01364	0.9973	EXP 150 of 150	0.6903	0.0330	0.0230	EXP 150 of 150	10.249926	0.026235	0.8469	EXP 150 of 150	60.55214	0.03137	0.9921	EXP 150 of 150	11588.64394	0.27787	1.0000	EXP 150 of 150
14D03110	4.4 %	18.69479	0.01029	0.9940	EXP 150 of 150	0.5186	0.0316	0.0011	EXP 150 of 150	5.670374	0.027869	0.5166	EXP 150 of 150	44.44583	0.02838	0.9885	EXP 150 of 150	5848.40869	0.20266	1.0000	EXP 150 of 150
14D03112	5.0 %	19.66899	0.01016	0.9948	EXP 150 of 150	1.1283	0.0321	0.0430	EXP 150 of 150	7.078840	0.029630	0.6432	EXP 150 of 150	79.01702	0.03200	0.9959	EXP 150 of 150	6158.61466	0.21010	1.0000	EXP 150 of 150
14D03113	5.6 %	11.24402	0.00767	0.9912	EXP 150 of 150	0.8036	0.0305	0.0520	EXP 149 of 150	4.235688	0.027798	0.4246	EXP 149 of 150	47.72899	0.02890	0.9905	EXP 150 of 150	3507.52369	0.13165	0.9999	EXP 150 of 150
14D03115	6.2 %	11.16919	0.00768	0.9907	EXP 150 of 150	1.2649	0.0310	0.0220	EXP 150 of 150	4.860577	0.026446	0.5073	EXP 150 of 150	63.61675	0.02853	0.9950	EXP 150 of 150	3494.46975	0.14815	0.9999	EXP 150 of 150
14D03116	7.2 %	8.19557	0.00655	0.9874	EXP 150 of 150	0.9285	0.0323	0.0133	EXP 150 of 150	3.696248	0.024899	0.4235	EXP 150 of 150	47.23464	0.02826	0.9911	EXP 150 of 150	2546.11671	0.11611	0.9999	EXP 150 of 150
14D03118	8.2 %	9.09091	0.00702	0.9885	EXP 150 of 150	1.2646	0.0315	0.0866	EXP 149 of 150	4.549843	0.027978	0.5289	EXP 150 of 150	61.39207	0.03283	0.9931	EXP 150 of 150	2831.55212	0.12830	0.9999	EXP 150 of 150
14D03119	9.2 %	12.73048	0.00846	0.9914	EXP 150 of 150	1.0808	0.0329	0.0002	EXP 150 of 150	5.933724	0.025279	0.6170	EXP 150 of 150	73.67279	0.02879	0.9963	EXP 150 of 150	3981.85943	0.15228	0.9999	EXP 150 of 150
14D03121	10.2 %	12.33742	0.00800	0.9918	EXP 150 of 150	0.9536	0.0301	0.0895	EXP 150 of 150	6.211455	0.025495	0.6748	EXP 150 of 150	78.51996	0.03080	0.9963	EXP 150 of 150	3861.39834	0.15762	0.9999	EXP 150 of 150
14D03122	11.2 %	8.46664	0.00695	0.9871	EXP 150 of 150	0.7390	0.0295	0.0425	EXP 149 of 150	4.703236	0.028432	0.4251	EXP 150 of 150	66.42528	0.03025	0.9951	EXP 150 of 150	2642.73725	0.14387	0.9999	EXP 150 of 150
14D03124	12.5 %	9.01220	0.00734	0.9876	EXP 150 of 150	0.8690	0.0308	0.0439	EXP 150 of 150	4.828286	0.029101	0.4352	EXP 150 of 150	76.82793	0.03049	0.9963	EXP 150 of 150	2815.09539	0.12430	0.9999	EXP 150 of 150
14D03125	14.0 %	8.48119	0.00733	0.9852	EXP 150 of 150	1.0956	0.0296	0.0237	EXP 150 of 150	4.673843	0.026888	0.4921	EXP 150 of 150	89.19010	0.03150	0.9971	EXP 150 of 150	2652.14111	0.11983	0.9999	EXP 150 of 150
14D03127	16.0 %	6.00374	0.00574	0.9819	EXP 150 of 150	0.9021	0.0321	0.0462	EXP 150 of 150	3.273826	0.028804	0.2358	EXP 150 of 150	67.63874	0.02717	0.9962	EXP 150 of 150	1878.25641	0.09037	0.9999	EXP 150 of 150
14D03129	18.0 %	4.09702	0.00497	0.9709	EXP 150 of 150	0.4870	0.0308	0.0018	EXP 149 of 150	2.013936	0.028337	0.0671	EXP 150 of 150	42.66883	0.02640	0.9910	EXP 150 of 150	1277.22437	0.07756	0.9999	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos	Project	Experiment	Nmb
14D03104	2.0 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	2	30	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03106	2.6 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	2	55	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03107	3.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	3	8	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03109	3.8 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	3.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	3	33	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03110	4.4 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	3	45	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03112	5.0 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	4	10	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03113	5.6 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	5.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	4	22	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03115	6.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	4	47	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03116	7.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	4	59	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03118	8.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	5	24	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03119	9.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	9.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	5	37	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03121	10.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	10.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	6	2	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03122	11.2 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	11.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	6	14	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03124	12.5 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	6	39	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03125	14.0 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	14	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	6	51	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03127	16.0 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	16	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	7	16	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01
14D03129	18.0 %	176-688	Groundmass	Harrat Hutaymah	Dan Miggins	18	FCT-NM	28.201	0.082	Kuiper et al (2008)	9.79066	0.21	0.00160535	0.210	302.781	0.096	0.993980459	0.063	1	4.8E-14	7	FEB	2014	7	41	1	13-OSU-05	0.00	0.00	54.40	Harrat\Hutaymah (13-05)	14D03103	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D03104	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03106	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03107	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03109	3.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03110	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03112	5.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03113	5.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03115	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03116	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03118	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03119	9.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03121	10.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03122	11.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03124	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03125	14.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03127	16.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D03129	18.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D03103.AGE >>> 176-688 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
954.9 ± 544.6
TOTAL FUSION
435.8 ± 617.2
NORMAL ISOCHRON
17.8 ± 1452.5
INVERSE ISOCHRON
18.7 ± 41.0

MSWD (PROBABILITY)
0.23 (100%)

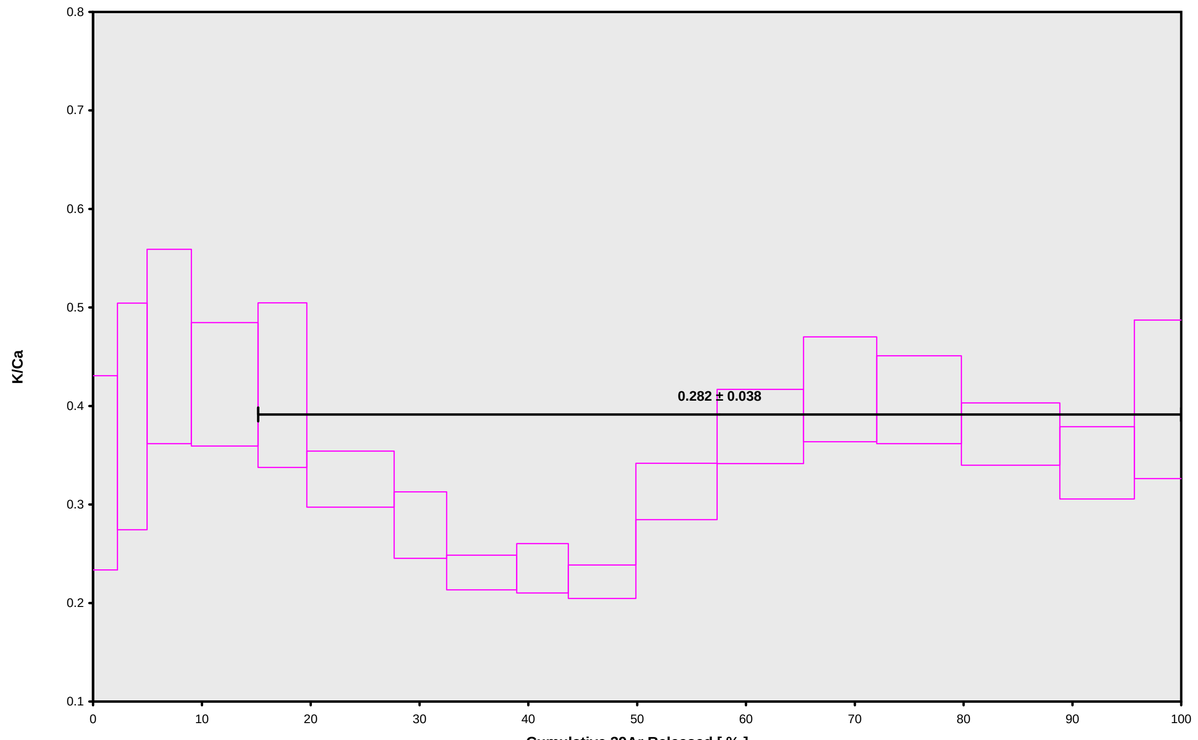
Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00160535 ± 0.00000337

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D03103.AGE >>> 176-688 >>> HARRAT | HUTAYMAH (13-05) PROJECT



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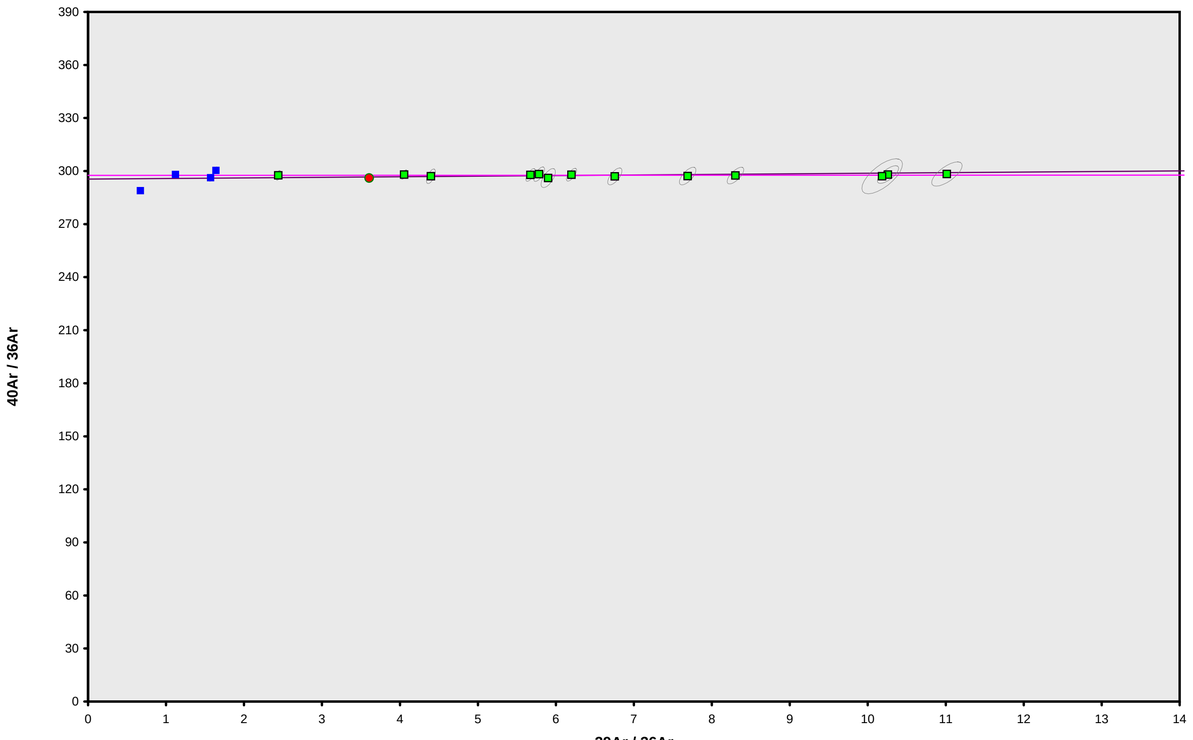


Ar-Ages in ka

WEIGHTED PLATEAU
954.9 ± 544.6
TOTAL FUSION
435.8 ± 617.2
NORMAL ISOCHRON
17.8 ± 1452.5
INVERSE ISOCHRON
18.7 ± 41.0

MSWD (PROBABILITY)
0.08 (100%)

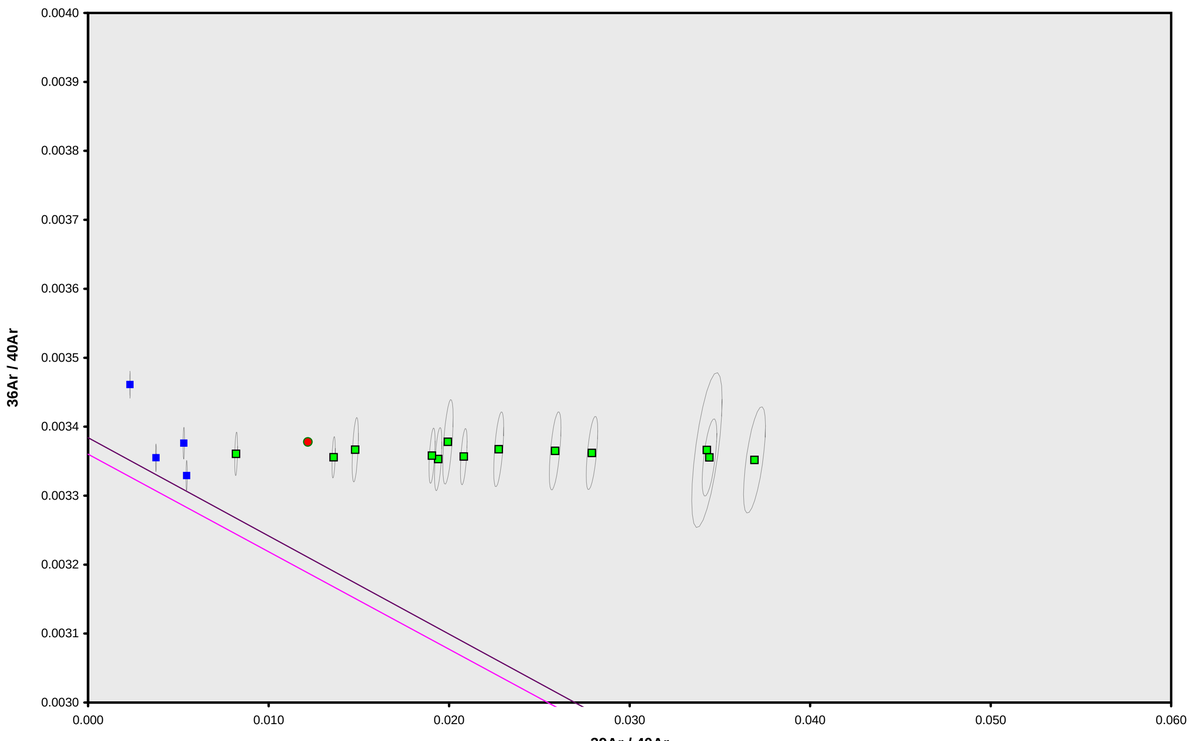
40AR/36AR INTERCEPT
297.6 ± 3.0

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00160535 ± 0.00000337

14D03103.AGE >>> 176-688 >>> HARRAT | HUTAYMAH (13-05) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
954.9 ± 544.6
TOTAL FUSION
435.8 ± 617.2
NORMAL ISOCHRON
17.8 ± 1452.5
INVERSE ISOCHRON
18.7 ± 41.0

MSWD (PROBABILITY)
0.08 (100%)

SPREADING FACTOR
0.0%

40AR/36AR INTERCEPT
297.6 ± 3.0

Sample Info

Groundmass
Harrat Hutaymah
Dan Miggins

IRR = 13-OSU-05
J = 0.00160535 ± 0.00000337

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15408	2.0 %		0.4182383	19.1994	0.2139016	45.5173	26.48033	1870.2 ± 103.9	17.64	2.11	1.019 ± 0.029
14D15410	2.6 %		0.3233878	39.8866	0.1149665	118.9431	42.71627	1154.7 ± 38.3	30.86	5.50	1.282 ± 0.018
14D15411	3.2 %		0.1608713	52.5954	0.0267909	178.3234	49.57941	894.0 ± 21.3	50.96	8.25	1.458 ± 0.017
14D15413	3.6 %	✓	0.0922099	48.4569	0.0241427	172.3563	44.79245	835.7 ± 20.5	62.03	7.98	1.529 ± 0.020
14D15414	4.0 %	✓	0.0727685	44.2344	0.0309094	153.3491	39.27764	823.6 ± 22.2	64.46	7.10	1.491 ± 0.020
14D15415	4.4 %	✓	0.0508981	38.6855	0.0409083	126.2798	31.02036	789.9 ± 26.9	67.16	5.84	1.404 ± 0.022
14D15417	4.8 %	✓	0.0442272	40.0025	0.0401846	118.9936	29.18134	788.6 ± 28.1	68.87	5.51	1.279 ± 0.019
14D15418	5.2 %	✓	0.0409202	36.0289	0.0101538	98.3229	24.81182	811.5 ± 33.4	67.05	4.55	1.173 ± 0.018
14D15419	5.7 %	✓	0.0432010	41.4440	0.0356499	101.9098	25.07228	791.1 ± 32.0	66.08	4.72	1.057 ± 0.015
14D15421	6.2 %	✓	0.0435485	45.1642	0.0684292	99.6158	24.68419	796.8 ± 33.1	65.56	4.61	0.948 ± 0.013
14D15422	6.7 %	✓	0.0409941	43.7552	0.0814718	87.3454	21.19881	780.5 ± 38.0	63.47	4.04	0.858 ± 0.012
14D15423	7.2 %	✓	0.0411942	44.2461	0.0671815	82.7682	20.53413	797.8 ± 39.9	62.62	3.83	0.804 ± 0.011
14D15425	7.7 %	✓	0.0668346	79.3464	0.0311300	179.5589	43.57991	780.5 ± 18.8	68.62	8.31	0.973 ± 0.009
14D15426	8.2 %	✓	0.0430930	50.4453	0.1440205	81.1669	19.90638	788.7 ± 41.2	60.83	3.76	0.692 ± 0.009
14D15427	8.8 %	✓	0.0498253	48.4812	0.0962631	66.9025	16.73165	804.2 ± 50.1	53.08	3.10	0.593 ± 0.008
14D15429	9.4 %	✓	0.0390756	50.1941	0.0848002	56.8593	14.33003	810.4 ± 58.0	55.26	2.63	0.487 ± 0.006
14D15430	10.1 %	✓	0.0444721	56.9327	0.1501051	53.1728	13.56690	820.5 ± 62.1	50.69	2.46	0.402 ± 0.004
14D15431	10.9 %	✓	0.0513759	71.0804	0.1542372	51.4391	12.91692	807.5 ± 65.0	45.89	2.38	0.311 ± 0.003
14D15433	11.7 %	✓	0.0596825	88.7785	0.1640815	49.4721	12.56827	816.9 ± 68.7	41.54	2.29	0.240 ± 0.002
14D15434	12.5 %	✓	0.0694017	100.0785	0.1252477	40.6981	10.33062	816.2 ± 83.8	33.45	1.88	0.175 ± 0.002
14D15435	13.5 %	✓	0.0815862	157.9935	0.2096467	42.6567	11.37902	857.8 ± 84.1	32.03	1.97	0.116 ± 0.001
14D15437	14.5 %	✓	0.0916001	195.9107	0.1869233	38.8269	10.27761	851.2 ± 91.5	27.49	1.80	0.085 ± 0.001
14D15438	15.5 %		0.0759941	179.3488	0.1600664	27.1738	8.47859	1003.3 ± 127.7	27.38	1.26	0.065 ± 0.000
14D15439	16.5 %		0.0779607	206.1080	0.1095827	22.0888	7.31819	1065.3 ± 158.8	24.09	1.02	0.046 ± 0.000
14D15441	17.5 %		0.0728061	211.7056	0.1496374	16.6192	6.33762	1226.1 ± 211.5	22.74	0.77	0.034 ± 0.000
14D15442	19.0 %		0.0970540	354.5714	0.1204146	17.9444	8.31083	1489.0 ± 220.0	22.46	0.83	0.022 ± 0.000
14D15443	20.5 %		0.0884615	249.8279	0.1019474	14.1577	6.85035	1555.6 ± 273.8	20.76	0.66	0.024 ± 0.000
14D15445	22.0 %		0.0561451	127.5233	0.0536585	8.2774	3.95905	1537.7 ± 413.2	19.26	0.38	0.028 ± 0.000
14D15446	23.5 %		0.0581380	109.0480	0.0262101	5.9698	3.19521	1720.7 ± 567.0	15.68	0.28	0.024 ± 0.000
14D15448	24.5 %		0.0588461	79.3382	0.0434516	4.4735	2.83629	2038.1 ± 748.3	14.02	0.21	0.024 ± 0.000
	Σ		2.5548117	2910.4115	2.8661142	2161.1828	592.22245				

Information on Analysis

Sample = 176734
Material = Groundmass
Location = Harrat Harhut
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177866 ± 0.00000132
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ		Age ± 2σ (Ka)		MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.24989	± 0.00302 ± 1.21%	803.6	± 9.8 ± 1.22%	1.54	78.74	0.133 ± 0.058
			Full External Error	± 20.6	1.67	2σ Confidence Limit	
			Analytical Error	± 9.7	1.2420	Error Magnification	
Total Fusion Age	0.27403	± 0.00279 ± 1.02%	881.2	± 9.1 ± 1.03%		30	0.319 ± 0.001
			Full External Error	± 21.9			
			Analytical Error	± 9.0			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D15408	2.0 %		108.83 ± 1.19	358.81 ± 4.14	0.9123
14D15410	2.6 %		367.80 ± 4.91	427.59 ± 6.00	0.9385
14D15411	3.2 %		1108.48 ± 23.29	603.69 ± 13.26	0.9524
14D15413	3.6 %	✓	1869.17 ± 61.47	781.27 ± 26.57	0.9650
14D15414	4.0 %	✓	2107.35 ± 82.64	835.26 ± 33.88	0.9656
14D15415	4.4 %	✓	2481.03 ± 139.18	904.96 ± 52.26	0.9707
14D15417	4.8 %	✓	2690.51 ± 168.99	955.31 ± 61.68	0.9722
14D15418	5.2 %	✓	2402.80 ± 158.63	901.85 ± 61.51	0.9674
14D15419	5.7 %	✓	2358.97 ± 146.32	875.86 ± 56.27	0.9650
14D15421	6.2 %	✓	2287.47 ± 143.21	862.32 ± 55.90	0.9651
14D15422	6.7 %	✓	2130.68 ± 142.93	812.62 ± 56.65	0.9617
14D15423	7.2 %	✓	2009.22 ± 132.97	793.97 ± 54.74	0.9593
14D15425	7.7 %	✓	2686.61 ± 113.24	947.56 ± 41.03	0.9723
14D15426	8.2 %	✓	1883.53 ± 121.85	757.44 ± 51.15	0.9573
14D15427	8.8 %	✓	1342.74 ± 75.29	631.31 ± 37.60	0.9403
14D15429	9.4 %	✓	1455.11 ± 101.55	662.23 ± 48.97	0.9431
14D15430	10.1 %	✓	1195.64 ± 73.49	600.57 ± 39.56	0.9321
14D15431	10.9 %	✓	1001.23 ± 54.38	546.92 ± 32.15	0.9227
14D15433	11.7 %	✓	828.92 ± 39.78	506.09 ± 26.49	0.9152
14D15434	12.5 %	✓	586.41 ± 24.33	444.35 ± 20.55	0.8942
14D15435	13.5 %	✓	522.84 ± 19.92	434.97 ± 18.28	0.9036
14D15437	14.5 %	✓	423.87 ± 14.20	407.70 ± 15.29	0.8891
14D15438	15.5 %		357.58 ± 13.95	407.07 ± 17.90	0.8820
14D15439	16.5 %		283.33 ± 10.96	389.37 ± 17.06	0.8750
14D15441	17.5 %		228.27 ± 9.49	382.55 ± 18.06	0.8705
14D15442	19.0 %		184.89 ± 6.83	381.13 ± 15.42	0.8987
14D15443	20.5 %		160.04 ± 6.33	372.94 ± 16.29	0.8899
14D15445	22.0 %		147.43 ± 7.69	366.01 ± 21.97	0.8462
14D15446	23.5 %		102.68 ± 5.19	350.46 ± 20.31	0.8163
14D15448	24.5 %		76.02 ± 3.82	343.70 ± 19.55	0.7884

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	307.46 ± 9.82 ± 3.19%	0.24331 ± 0.00573 ± 2.35%	782.4 ± 18.5 ± 2.36% Full External Error ± 25.5 Analytical Error ± 18.4	1.18 27%

Statistics				
	2σ Confidence Limit	1.69	Convergence	0.000002165892
	Error Magnification	1.0845	Number of Iterations	12
	Number of Data Points	19	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D15408	2.0 %		0.3033078 ± 0.0014381	0.00278696 ± 0.00003214	0.3290
14D15410	2.6 %		0.8601781 ± 0.0041693	0.00233869 ± 0.00003282	0.3113
14D15411	3.2 %		1.8361730 ± 0.0122869	0.00165647 ± 0.00003637	0.2913
14D15413	3.6 %	✓	2.3924927 ± 0.0213574	0.00127997 ± 0.00004354	0.2558
14D15414	4.0 %	✓	2.5229879 ± 0.0266142	0.00119723 ± 0.00004856	0.2554
14D15415	4.4 %	✓	2.7415931 ± 0.0380461	0.00110502 ± 0.00006381	0.2375
14D15417	4.8 %	✓	2.8163841 ± 0.0425527	0.00104679 ± 0.00006759	0.2316
14D15418	5.2 %	✓	2.6643072 ± 0.0460134	0.00110884 ± 0.00007563	0.2511
14D15419	5.7 %	✓	2.6933079 ± 0.0453995	0.00114173 ± 0.00007335	0.2602
14D15421	6.2 %	✓	2.6526885 ± 0.0450357	0.00115966 ± 0.00007518	0.2597
14D15422	6.7 %	✓	2.6219938 ± 0.0501323	0.00123059 ± 0.00008579	0.2723
14D15423	7.2 %	✓	2.5305946 ± 0.0492925	0.00125949 ± 0.00008684	0.2805
14D15425	7.7 %	✓	2.8353105 ± 0.0286921	0.00105535 ± 0.00004570	0.2292
14D15426	8.2 %	✓	2.4867051 ± 0.0485627	0.00132024 ± 0.00008916	0.2871
14D15427	8.8 %	✓	2.1269262 ± 0.0431010	0.00158402 ± 0.00009435	0.3376
14D15429	9.4 %	✓	2.1973014 ± 0.0540468	0.00151006 ± 0.00011166	0.3306
14D15430	10.1 %	✓	1.9908640 ± 0.0475156	0.00166510 ± 0.00010968	0.3596
14D15431	10.9 %	✓	1.8306702 ± 0.0414982	0.00182842 ± 0.00010748	0.3827
14D15433	11.7 %	✓	1.6379082 ± 0.0345658	0.00197595 ± 0.00010345	0.3995
14D15434	12.5 %	✓	1.3197045 ± 0.0273169	0.00225046 ± 0.00010407	0.4420
14D15435	13.5 %	✓	1.2020129 ± 0.0216476	0.00229900 ± 0.00009663	0.4220
14D15437	14.5 %	✓	1.0396682 ± 0.0178389	0.00245278 ± 0.00009196	0.4492
14D15438	15.5 %		0.8784210 ± 0.0182054	0.00245659 ± 0.00010803	0.4614
14D15439	16.5 %		0.7276697 ± 0.0154396	0.00256825 ± 0.00011255	0.4700
14D15441	17.5 %		0.5967014 ± 0.0138677	0.00261405 ± 0.00012343	0.4740
14D15442	19.0 %		0.4851119 ± 0.0086117	0.00262377 ± 0.00010616	0.4093
14D15443	20.5 %		0.4291424 ± 0.0085566	0.00268141 ± 0.00011714	0.4249
14D15445	22.0 %		0.4027943 ± 0.0128941	0.00273213 ± 0.00016396	0.4963
14D15446	23.5 %		0.2929948 ± 0.0098552	0.00285340 ± 0.00016539	0.4971
14D15448	24.5 %		0.2211819 ± 0.0078321	0.00290953 ± 0.00016552	0.4884

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	307.37 ± 10.10 ± 3.29%	0.24384 ± 0.00587 ± 2.41%	784.1 ± 18.9 ± 2.41%	1.22 24%
			Full External Error ± 25.9	
			Analytical Error ± 18.9	

Statistics				
	2σ Confidence Limit	1.69	Convergence	0.0037861147
	Error Magnification	1.1047	Number of Iterations	4
	Number of Data Points	19	Calculated Line	Weighted York-2
	Spreading Factor	43.8%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15408	2.0 %		0.4233378	0.529	19.1994	1.438	0.810324	4.754	45.5302	0.106	150.1157	0.212	0.58176 ± 0.03232	1870.2 ± 103.9	17.64	2.11	1.019 ± 0.029
14D15410	2.6 %		0.3339344	0.641	39.8866	0.711	1.529535	2.586	118.9700	0.076	138.3975	0.230	0.35913 ± 0.01193	1154.7 ± 38.3	30.86	5.50	1.282 ± 0.018
14D15411	3.2 %		0.1747604	0.964	52.5954	0.579	2.086909	1.979	178.3588	0.070	97.2970	0.326	0.27803 ± 0.00664	894.0 ± 21.3	50.96	8.25	1.458 ± 0.017
14D15413	3.6 %	✓	0.1050060	1.440	48.4569	0.636	2.003465	1.968	172.3889	0.071	72.2146	0.440	0.25988 ± 0.00638	835.7 ± 20.5	62.03	7.98	1.529 ± 0.020
14D15414	4.0 %	✓	0.0844509	1.686	44.2344	0.652	1.790237	2.232	153.3788	0.071	60.9356	0.521	0.25613 ± 0.00689	823.6 ± 22.2	64.46	7.10	1.491 ± 0.020
14D15415	4.4 %	✓	0.0611170	2.331	38.6855	0.784	1.488023	2.688	126.3059	0.076	46.1883	0.688	0.24565 ± 0.00837	789.9 ± 26.9	67.16	5.84	1.404 ± 0.022
14D15417	4.8 %	✓	0.0547936	2.530	40.0025	0.744	1.403153	2.917	119.0205	0.076	42.3707	0.749	0.24523 ± 0.00873	788.6 ± 28.1	68.87	5.51	1.279 ± 0.019
14D15418	5.2 %	✓	0.0504333	2.674	36.0289	0.781	1.137217	3.552	98.3471	0.078	37.0030	0.858	0.25235 ± 0.01038	811.5 ± 33.4	67.05	4.55	1.173 ± 0.018
14D15419	5.7 %	✓	0.0541474	2.470	41.4440	0.707	1.204034	3.254	101.9377	0.078	37.9411	0.837	0.24602 ± 0.00997	791.1 ± 32.0	66.08	4.72	1.057 ± 0.015
14D15421	6.2 %	✓	0.0554818	2.452	45.1642	0.665	1.210824	3.501	99.6462	0.077	37.6534	0.843	0.24779 ± 0.01030	796.8 ± 33.1	65.56	4.61	0.948 ± 0.013
14D15422	6.7 %	✓	0.0525573	2.611	43.7552	0.697	1.083732	3.577	87.3748	0.082	33.4008	0.950	0.24270 ± 0.01181	780.5 ± 38.0	63.47	4.04	0.858 ± 0.012
14D15423	7.2 %	✓	0.0528849	2.573	44.2461	0.650	1.017398	3.997	82.7980	0.082	32.7906	0.968	0.24809 ± 0.01240	797.8 ± 39.9	62.62	3.83	0.804 ± 0.011
14D15425	7.7 %	✓	0.0877866	1.600	79.3464	0.453	2.088105	1.789	179.6123	0.071	63.5109	0.500	0.24271 ± 0.00584	780.5 ± 18.8	68.62	8.31	0.973 ± 0.009
14D15426	8.2 %	✓	0.0564314	2.465	50.4453	0.625	1.076456	3.662	81.2009	0.082	32.7223	0.971	0.24525 ± 0.01282	788.7 ± 41.2	60.83	3.76	0.692 ± 0.009
14D15427	8.8 %	✓	0.0626383	2.225	48.4812	0.628	0.867600	4.583	66.9351	0.089	31.5226	1.007	0.25009 ± 0.01557	804.2 ± 50.1	53.08	3.10	0.593 ± 0.008
14D15429	9.4 %	✓	0.0523391	2.599	50.1941	0.613	0.739859	5.167	56.8930	0.096	25.9343	1.223	0.25203 ± 0.01804	810.4 ± 58.0	55.26	2.63	0.487 ± 0.006
14D15430	10.1 %	✓	0.0595240	2.291	56.9327	0.548	0.764314	5.057	53.2111	0.103	26.7621	1.186	0.25515 ± 0.01932	820.5 ± 62.1	50.69	2.46	0.402 ± 0.004
14D15431	10.9 %	✓	0.0701635	1.983	71.0804	0.481	0.750204	5.225	51.4869	0.099	28.1505	1.127	0.25111 ± 0.02022	807.5 ± 65.0	45.89	2.38	0.311 ± 0.003
14D15433	11.7 %	✓	0.0831438	1.716	88.7785	0.444	0.739463	5.036	49.5319	0.100	30.2544	1.049	0.25405 ± 0.02138	816.9 ± 68.7	41.54	2.29	0.240 ± 0.002
14D15434	12.5 %	✓	0.0958405	1.495	100.0785	0.420	0.602755	6.068	40.7655	0.116	30.8799	1.027	0.25384 ± 0.02605	816.2 ± 83.8	33.45	1.88	0.175 ± 0.002
14D15435	13.5 %	✓	0.1233268	1.252	157.9935	0.360	0.712525	5.551	42.7631	0.110	35.5308	0.893	0.26676 ± 0.02615	857.8 ± 84.1	32.03	1.97	0.116 ± 0.001
14D15437	14.5 %	✓	0.1433476	1.060	195.9107	0.348	0.648616	6.074	38.9587	0.116	37.3847	0.849	0.26470 ± 0.02847	851.2 ± 91.5	27.49	1.80	0.085 ± 0.001
14D15438	15.5 %		0.1233654	1.191	179.3488	0.351	0.486001	8.073	27.2945	0.150	30.9623	1.024	0.31201 ± 0.03974	1003.3 ± 127.7	27.38	1.26	0.065 ± 0.000
14D15439	16.5 %		0.1323891	1.125	206.1080	0.348	0.378389	10.082	22.2275	0.180	30.3779	1.045	0.33131 ± 0.04940	1065.3 ± 158.8	24.09	1.02	0.046 ± 0.000
14D15441	17.5 %		0.1287180	1.159	211.7056	0.348	0.355314	10.934	16.7617	0.221	27.8686	1.140	0.38134 ± 0.06579	1226.1 ± 211.5	22.74	0.77	0.034 ± 0.000
14D15442	19.0 %		0.1906783	0.918	354.5714	0.332	0.347690	10.990	18.1831	0.227	37.0084	0.857	0.46314 ± 0.06844	1489.0 ± 220.0	22.46	0.83	0.022 ± 0.000
14D15443	20.5 %		0.1544309	1.114	249.8279	0.339	0.283068	13.974	14.3259	0.259	33.0050	0.962	0.48386 ± 0.08521	1555.6 ± 273.8	20.76	0.66	0.024 ± 0.000
14D15445	22.0 %		0.0898191	1.602	127.5233	0.386	0.160121	25.154	8.3632	0.418	20.5583	1.543	0.47830 ± 0.12857	1537.7 ± 413.2	19.26	0.38	0.028 ± 0.000
14D15446	23.5 %		0.0869305	1.629	109.0480	0.409	0.106528	37.042	6.0432	0.629	20.3810	1.556	0.53523 ± 0.17645	1720.7 ± 567.0	15.68	0.28	0.024 ± 0.000
14D15448	24.5 %		0.0797977	1.746	79.3382	0.461	0.106461	36.353	4.5269	0.812	20.2298	1.568	0.63403 ± 0.23293	2038.1 ± 748.3	14.02	0.21	0.024 ± 0.000
		Σ	3.3235752	0.250	2910.4115	0.090	27.978323	0.770	2163.1415	0.018	1349.3521	0.129					

Information on Analysis and Constants Used in Calculations

Sample = 176734
Material = Groundmass
Location = Harrat Harhut
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13)
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177866 ± 0.00000132
FCT-NM = 28.201 ± 0.023 Ma
IGSN = Undefined
Preferred Age = Undefined
Classification = Undefined
Experiment Type = Incremental Heating
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000014
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.24989 ± 0.00302 ± 1.21%	803.6 ± 9.8 ± 1.22%	1.54	78.74	0.133 ± 0.058
				7%	19	
			Full External Error ± 20.6	1.67	2σ Confidence Limit	
			Analytical Error ± 9.7	1.2420	Error Magnification	
Total Fusion Age		0.27403 ± 0.00279 ± 1.02%	881.2 ± 9.1 ± 1.03%		30	0.319 ± 0.001
			Full External Error ± 21.9			
			Analytical Error ± 9.0			
Normal Isochron	307.46 ± 9.82 ± 3.19%	0.24331 ± 0.00573 ± 2.35%	782.4 ± 18.5 ± 2.36%	1.18	78.74	
				27%	19	
			Full External Error ± 25.5	1.69	2σ Confidence Limit	
			Analytical Error ± 18.4	1.0845	Error Magnification	
				12	Number of Iterations	
				0.0000021659	Convergence	
Inverse Isochron	307.37 ± 10.10 ± 3.29%	0.24384 ± 0.00587 ± 2.41%	784.1 ± 18.9 ± 2.41%	1.22	78.74	
				24%	19	
			Full External Error ± 25.9	1.69	2σ Confidence Limit	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D15408	2.0 %		0.4182383	0.54	0.0000000	0.00	0.0050686	1.44	0.0000309	18.04	19.1994	1.44	0.0781687	0.54	0.0000000	0.00	0.517987	0.11	0.0002669	1.44	0.2139016	18.06	45.5173	0.11	0.0129212	1.44	26.48033	2.78	123.58941	0.54	0.0000000	0.00	0.0459725	0.11
14D15410	2.6 %		0.3233878	0.66	0.0000000	0.00	0.0105301	0.71	0.0000166	34.43	39.8866	0.71	0.0604412	0.66	0.0000000	0.00	1.353573	0.08	0.0005544	0.71	0.1149665	34.44	118.9431	0.08	0.0268437	0.71	42.71627	1.66	95.56108	0.66	0.0000000	0.00	0.1201326	0.08
14D15411	3.2 %		0.1608713	1.05	0.0000000	0.00	0.0138852	0.58	0.0000039	154.25	52.5954	0.58	0.0300668	1.05	0.0000000	0.00	2.029320	0.07	0.0007311	0.58	0.0267909	154.25	178.3234	0.07	0.0353967	0.58	49.57941	1.19	47.53747	1.05	0.0000000	0.00	0.1801066	0.07
14D15413	3.6 %	✓	0.0922099	1.64	0.0000000	0.00	0.0127926	0.64	0.0000035	163.42	48.4569	0.64	0.0172340	1.64	0.0000000	0.00	1.961415	0.07	0.0006736	0.64	0.0241427	163.42	172.3563	0.07	0.0326115	0.64	44.79245	1.23	27.24803	1.64	0.0000000	0.00	0.1740799	0.07
14D15414	4.0 %	✓	0.0727685	1.96	0.0000000	0.00	0.0116779	0.65	0.0000045	129.33	44.2344	0.65	0.0136004	1.96	0.0000000	0.00	1.745112	0.07	0.0006149	0.65	0.0309094	129.33	153.3491	0.07	0.0297697	0.65	39.27764	1.34	21.50310	1.96	0.0000000	0.00	0.1548826	0.07
14D15415	4.4 %	✓	0.0508981	2.80	0.0000000	0.00	0.0102130	0.78	0.0000059	97.81	38.6855	0.78	0.0095129	2.80	0.0000000	0.00	1.437065	0.08	0.0005377	0.78	0.0409083	97.82	126.2798	0.08	0.0260353	0.78	31.02036	1.70	15.04039	2.80	0.0000000	0.00	0.1275426	0.08
14D15417	4.8 %	✓	0.0442272	3.14	0.0000000	0.00	0.0105606	0.74	0.0000058	101.91	40.0025	0.74	0.0082661	3.14	0.0000000	0.00	1.354147	0.08	0.0005560	0.74	0.0401846	101.92	118.9936	0.08	0.0269217	0.74	29.18134	1.78	13.06913	3.14	0.0000000	0.00	0.1201835	0.08
14D15418	5.2 %	✓	0.0409202	3.30	0.0000000	0.00	0.0095116	0.78	0.0000015	397.96	36.0289	0.78	0.0076480	3.30	0.0000000	0.00	1.118914	0.08	0.0005008	0.78	0.0101538	397.97	98.3229	0.08	0.0242475	0.78	24.81182	2.05	12.09191	3.30	0.0000000	0.00	0.0993061	0.08
14D15419	5.7 %	✓	0.0432010	3.10	0.0000000	0.00	0.0109412	0.71	0.0000052	109.93	41.4440	0.71	0.0080743	3.10	0.0000000	0.00	1.159734	0.08	0.0005761	0.71	0.0356499	109.93	101.9098	0.08	0.0278918	0.71	25.07228	2.02	12.76589	3.10	0.0000000	0.00	0.1029289	0.08
14D15421	6.2 %	✓	0.0435485	3.13	0.0000000	0.00	0.0119234	0.67	0.0000099	61.98	45.1642	0.67	0.0081392	3.13	0.0000000	0.00	1.133628	0.08	0.0006278	0.67	0.0684292	61.98	99.6158	0.08	0.0303955	0.67	24.68419	2.08	12.86859	3.13	0.0000000	0.00	0.1006120	0.08
14D15422	6.7 %	✓	0.0409941	3.35	0.0000000	0.00	0.0115514	0.70	0.0000118	47.61	43.7552	0.70	0.0076618	3.35	0.0000000	0.00	0.993990	0.08	0.0006082	0.70	0.0814718	47.61	87.3454	0.08	0.0294472	0.70	21.19881	2.43	12.11377	3.35	0.0000000	0.00	0.0882188	0.08
14D15423	7.2 %	✓	0.0411942	3.31	0.0000000	0.00	0.0116810	0.65	0.0000097	60.55	44.2461	0.65	0.0076992	3.31	0.0000000	0.00	0.941902	0.08	0.0006150	0.65	0.0671815	60.56	82.7682	0.08	0.0297776	0.65	20.53413	2.50	12.17290	3.31	0.0000000	0.00	0.0835959	0.08
14D15425	7.7 %	✓	0.0668346	2.11	0.0000000	0.00	0.0209474	0.45	0.0000045	120.09	79.3464	0.45	0.0124914	2.11	0.0000000	0.00	2.043381	0.07	0.0011029	0.45	0.0311300	120.10	179.5589	0.07	0.0534001	0.45	43.57991	1.20	19.74963	2.11	0.0000000	0.00	0.1813545	0.07
14D15426	8.2 %	✓	0.0430930	3.23	0.0000000	0.00	0.0133175	0.63	0.0000208	27.39	50.4453	0.63	0.0080541	3.23	0.0000000	0.00	0.923680	0.08	0.0007012	0.63	0.1440205	27.41	81.1669	0.08	0.0339497	0.63	19.90638	2.61	12.73398	3.23	0.0000000	0.00	0.0819786	0.08
14D15427	8.8 %	✓	0.0498253	2.80	0.0000000	0.00	0.0127990	0.63	0.0000139	41.32	48.4812	0.63	0.0093123	2.80	0.0000000	0.00	0.761350	0.09	0.0006739	0.63	0.0962631	41.33	66.9025	0.09	0.0326279	0.63	16.73165	3.11	14.72337	2.80	0.0000000	0.00	0.0675715	0.09
14D15429	9.4 %	✓	0.0390756	3.49	0.0000000	0.00	0.0132513	0.61	0.0000123	45.10	50.1941	0.61	0.0073032	3.49	0.0000000	0.00	0.647058	0.10	0.0006977	0.61	0.0848002	45.11	56.8593	0.10	0.0337807	0.61	14.33003	3.58	11.54683	3.49	0.0000000	0.00	0.0574278	0.10
14D15430	10.1 %	✓	0.0444721	3.07	0.0000000	0.00	0.0150302	0.55	0.0000217	25.77	56.9327	0.55	0.0083118	3.07	0.0000000	0.00	0.605106	0.10	0.0007914	0.55	0.1501051	25.79	53.1728	0.10	0.0383157	0.55	13.56690	3.79	13.14149	3.07	0.0000000	0.00	0.0537045	0.10
14D15431	10.9 %	✓	0.0513759	2.71	0.0000000	0.00	0.0187652	0.48	0.0000223	25.43	71.0804	0.48	0.0096022	2.71	0.0000000	0.00	0.585377	0.10	0.0009880	0.48	0.1542372	25.45	51.4391	0.10	0.0478371	0.48	12.91692	4.03	15.18158	2.71	0.0000000	0.00	0.0519535	0.10
14D15433	11.7 %	✓	0.0596825	2.40	0.0000000	0.00	0.0234375	0.44	0.0000238	22.72	88.7785	0.44	0.0111547	2.40	0.0000000	0.00	0.562993	0.10	0.0012340	0.44	0.1640815	22.74	49.4721	0.10	0.0597480	0.44	12.56827	4.21	17.63618	2.40	0.0000000	0.00	0.0499668	0.10
14D15434	12.5 %	✓	0.0694017	2.07	0.0000000	0.00	0.0264207	0.42	0.0000181	29.22	100.0785	0.42	0.0129712	2.07	0.0000000	0.00	0.463145	0.12	0.0013911	0.42	0.1252477	29.24	40.6981	0.12	0.0673528	0.42	10.33062	5.13	20.50820	2.07	0.0000000	0.00	0.0411051	0.12
14D15435	13.5 %	✓	0.0815862	1.90	0.0000000	0.00	0.0417103	0.36	0.0000304	18.89	157.9935	0.36	0.0152485	1.90	0.0000000	0.00	0.485434	0.11	0.0021961	0.36	0.2096467	18.91	42.6567	0.11	0.1063296	0.36	11.37902	4.90	24.10872	1.90	0.0000000	0.00	0.0430833	0.11
14D15437	14.5 %	✓	0.0916001	1.67	0.0000000	0.00	0.0517204	0.35	0.0000271	21.10	195.9107	0.35	0.0171201	1.67	0.0000000	0.00	0.441850	0.12	0.0027232	0.35	0.1869233	21.12	38.8269	0.12	0.1318479	0.35	10.27761	5.38	27.06784	1.67	0.0000000	0.00	0.0392151	0.12
14D15438	15.5 %		0.0759941	1.95	0.0000000	0.00	0.0473481	0.35	0.0000232	24.53	179.3488	0.35	0.0142033	1.95	0.0000000	0.00	0.309238	0.15	0.0024929	0.35	0.1600664	24.55	27.1738	0.15	0.1207017	0.35	8.47859	6.37	22.45625	1.95	0.0000000	0.00	0.0274456	0.15
14D15439	16.5 %		0.0779607	1.93	0.0000000	0.00	0.0544125	0.35	0.0000159	34.83	206.1080	0.35	0.0145709	1.93	0.0000000	0.00	0.251371	0.18	0.0028649	0.35	0.1095827	34.84	22.0888	0.18	0.1387107	0.35	7.31819	7.45	23.03739	1.93	0.0000000	0.00	0.0223097	0.18
14D15441	17.5 %		0.0728061	2.07	0.0000000	0.00	0.0558903	0.35	0.0000217	25.98	211.7056	0.35	0.0136075	2.07	0.0000000	0.00	0.189127	0.22	0.0029427	0.35	0.1496374	26.00	16.6192	0.22	0.1424779	0.35	6.33762	8.62	21.51419	2.07	0.0000000	0.00	0.0167854	0.22
14D15442	19.0 %		0.0970540	1.83	0.0000000	0.00	0.0936069	0.33	0.0000174	31.75	354.5714	0.33	0.0181394	1.83	0.0000000	0.00	0.204208	0.23	0.0049285	0.33	0.1204146	31.76	17.9444	0.23	0.2386266	0.33	8.31083	7.39	28.67946	1.83	0.0000000	0.00	0.0181239	0.23
14D15443	20.5 %		0.0884615	1.96	0.0000000	0.00	0.0659546	0.34	0.0000148	38.82	249.8279	0.34	0.0165335	1.96	0.0000000	0.00	0.161115	0.26	0.0034726	0.34	0.1019474	38.83	14.1577	0.26	0.1681342	0.34	6.85035	8.80	26.14038	1.96	0.0000000	0.00	0.0142993	0.26
14D15445	22.0 %		0.0561451	2.57	0.0000000	0.00	0.0336661	0.39	0.0000078	75.08	127.5233	0.39	0.0104935	2.57	0.0000000	0.00	0.094197	0.42	0.0017726	0.39	0.0536585	75.08	8.2774	0.42	0.0858232	0.39	3.95905	13.43	16.59089	2.57	0.0000000	0.00	0.0083602	0.42
14D15446	23.5 %		0.0581380	2.44	0.0000000	0.00	0.0287887	0.41	0.0000038	150.57	109.0480	0.41	0.0108660	2.44	0.0000000	0.00	0.067936	0.64	0.0015158	0.41	0.0262101	150.57	5.9698	0.64	0.0733893	0.41	3.19521	16.47	17.17979	2.44	0.0000000	0.00	0.0060295	0.64
14D15448	24.5 %		0.0588461	2.37	0.0000000	0.00	0.0209453	0.46	0.0000063	89.08	79.3382	0.46	0.0109983	2.37	0.0000000	0.00	0.050908	0.82	0.0011028	0.46	0.0434516	89.09	4.4735	0.82	0.0533946	0.46	2.83629	18.35	17.38902	2.37	0.0000000	0.00	0.0045182	0.82
		Σ	2.5548117	0.33	0.0000000	0.00	0.7683486	0.09	0.0004148	7.52	2910.4115	0.09	0.4774943	0.33	0.0000000	0.00	24.594260	0.02	0.0404547	0.09	2.8661142	7.52	2161.1828	0.02	1.9587069	0.09	592.22245	0.51	754.94687	0.33	0.0000000	0.00	2.1827946	0.02
		Σ							3.3235752	0.25	2910.4115	0.09									27.978323	0.77			2163.1415	0.02							1349.3521	0.29

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D15408	2.0 %		3.297055	0.007814	0.421685	0.006081	0.009298	0.000050	88.926	5.806212	1.00062854	7.206E-12
14D15410	2.6 %		1.163297	0.002817	0.335266	0.002399	0.002807	0.000018	88.943	5.808203	1.00062866	6.643E-12
14D15411	3.2 %		0.545513	0.001822	0.294885	0.001719	0.000980	0.000009	88.952	5.809239	1.00062873	4.670E-12
14D15413	3.6 %	✓	0.418905	0.001865	0.281090	0.001799	0.000609	0.000009	88.969	5.811151	1.00062884	3.466E-12
14D15414	4.0 %	✓	0.397288	0.002090	0.288400	0.001891	0.000551	0.000009	88.978	5.812188	1.00062891	2.925E-12
14D15415	4.4 %	✓	0.365686	0.002530	0.306284	0.002413	0.000484	0.000011	88.986	5.813145	1.00062897	2.217E-12
14D15417	4.8 %	✓	0.355995	0.002682	0.336097	0.002513	0.000460	0.000012	89.003	5.815138	1.00062909	2.034E-12
14D15418	5.2 %	✓	0.376249	0.003240	0.366344	0.002875	0.000513	0.000014	89.012	5.816096	1.00062915	1.776E-12
14D15419	5.7 %	✓	0.372199	0.003129	0.406562	0.002891	0.000531	0.000013	89.021	5.817133	1.00062921	1.821E-12
14D15421	6.2 %	✓	0.377871	0.003199	0.453246	0.003034	0.000557	0.000014	89.038	5.819128	1.00062933	1.807E-12
14D15422	6.7 %	✓	0.382270	0.003645	0.500776	0.003516	0.000602	0.000016	89.047	5.820086	1.00062939	1.603E-12
14D15423	7.2 %	✓	0.396032	0.003847	0.534385	0.003499	0.000639	0.000016	89.056	5.821124	1.00062946	1.574E-12
14D15425	7.7 %	✓	0.353600	0.001784	0.441765	0.002023	0.000489	0.000008	89.074	5.823280	1.00062959	3.049E-12
14D15426	8.2 %	✓	0.402980	0.003925	0.621240	0.003919	0.000695	0.000017	89.083	5.824318	1.00062965	1.571E-12
14D15427	8.8 %	✓	0.470942	0.004762	0.724302	0.004592	0.000936	0.000021	89.092	5.825277	1.00062971	1.513E-12
14D15429	9.4 %	✓	0.455843	0.005594	0.882254	0.005471	0.000920	0.000024	89.109	5.827275	1.00062983	1.245E-12
14D15430	10.1 %	✓	0.502942	0.005990	1.069940	0.005969	0.001119	0.000026	89.117	5.828234	1.00062989	1.285E-12
14D15431	10.9 %	✓	0.546750	0.006186	1.380553	0.006778	0.001363	0.000027	89.126	5.829274	1.00062996	1.351E-12
14D15433	11.7 %	✓	0.610807	0.006435	1.792352	0.008157	0.001679	0.000029	89.144	5.831273	1.00063008	1.452E-12
14D15434	12.5 %	✓	0.757502	0.007829	2.454980	0.010698	0.002351	0.000035	89.152	5.832233	1.00063014	1.482E-12
14D15435	13.5 %	✓	0.830877	0.007473	3.694626	0.013912	0.002884	0.000036	89.160	5.833193	1.00063020	1.705E-12
14D15437	14.5 %	✓	0.959597	0.008223	5.028675	0.018431	0.003679	0.000039	89.178	5.835194	1.00063032	1.794E-12
14D15438	15.5 %		1.134378	0.011744	6.570873	0.025068	0.004520	0.000054	89.187	5.836234	1.00063038	1.486E-12
14D15439	16.5 %		1.366678	0.014486	9.272639	0.036330	0.005956	0.000068	89.195	5.837195	1.00063044	1.458E-12
14D15441	17.5 %		1.662636	0.019303	12.630328	0.052106	0.007679	0.000091	89.213	5.839197	1.00063056	1.338E-12
14D15442	19.0 %		2.035324	0.018041	19.500103	0.078368	0.010487	0.000099	89.221	5.840158	1.00063062	1.776E-12
14D15443	20.5 %		2.303878	0.022940	17.438952	0.074435	0.010780	0.000123	89.230	5.841200	1.00063069	1.584E-12
14D15445	22.0 %		2.458180	0.039302	15.248112	0.086772	0.010740	0.000178	89.247	5.843203	1.00063081	9.868E-13
14D15446	23.5 %		3.372579	0.056607	18.044875	0.135408	0.014385	0.000251	89.256	5.844165	1.00063087	9.783E-13
14D15448	24.5 %		4.468836	0.078907	17.526061	0.163610	0.017628	0.000339	89.273	5.846169	1.00063099	9.710E-13

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D15408	2.0 %	0.0204293	0.0011095	0.0015844	0.0307787	0.0552725	0.0276125	0.0181393	0.0247130	6.3570833	0.3165921
14D15410	2.6 %	0.0206578	0.0011095	0.0022926	0.0307787	0.0503052	0.0276125	0.0190350	0.0247130	6.4553432	0.3165921
14D15411	3.2 %	0.0207766	0.0011095	0.0026608	0.0307787	0.0479224	0.0276125	0.0194396	0.0247130	6.5064383	0.3165921
14D15413	3.6 %	0.0209960	0.0011095	0.0033406	0.0307787	0.0438836	0.0276125	0.0200763	0.0247130	6.6007678	0.3165921
14D15414	4.0 %	0.0211148	0.0011095	0.0037088	0.0307787	0.0418909	0.0276125	0.0203615	0.0247130	6.6518629	0.3165921
14D15415	4.4 %	0.0212245	0.0011095	0.0040488	0.0307787	0.0401731	0.0276125	0.0205876	0.0247130	6.6990276	0.3165921
14D15417	4.8 %	0.0214531	0.0011095	0.0047569	0.0307787	0.0369695	0.0276125	0.0209439	0.0247130	6.7972874	0.3165921
14D15418	5.2 %	0.0215627	0.0011095	0.0050968	0.0307787	0.0356117	0.0276125	0.0210599	0.0247130	6.8444522	0.3165921
14D15419	5.7 %	0.0216816	0.0011095	0.0054650	0.0307787	0.0342726	0.0276125	0.0211452	0.0247130	6.8955473	0.3165921
14D15421	6.2 %	0.0219101	0.0011095	0.0061732	0.0307787	0.0320826	0.0276125	0.0211914	0.0247130	6.9938071	0.3165921
14D15422	6.7 %	0.0220198	0.0011095	0.0065131	0.0307787	0.0312114	0.0276125	0.0211585	0.0247130	7.0409718	0.3165921
14D15423	7.2 %	0.0221386	0.0011095	0.0068813	0.0307787	0.0303993	0.0276125	0.0210826	0.0247130	7.0920670	0.3165921
14D15425	7.7 %	0.0223854	0.0011095	0.0076461	0.0307787	0.0291507	0.0276125	0.0207910	0.0247130	7.1981876	0.3165921
14D15426	8.2 %	0.0225043	0.0011095	0.0080143	0.0307787	0.0287603	0.0276125	0.0205861	0.0247130	7.2492827	0.3165921
14D15427	8.8 %	0.0226140	0.0011095	0.0083543	0.0307787	0.0285216	0.0276125	0.0203598	0.0247130	7.2964474	0.3165921
14D15429	9.4 %	0.0228425	0.0011095	0.0090624	0.0307787	0.0283993	0.0276125	0.0197735	0.0247130	7.3947073	0.3165921
14D15430	10.1 %	0.0229522	0.0011095	0.0094023	0.0307787	0.0285207	0.0276125	0.0194370	0.0247130	7.4418720	0.3165921
14D15431	10.9 %	0.0230710	0.0011095	0.0097705	0.0307787	0.0287839	0.0276125	0.0190322	0.0247130	7.4929671	0.3165921
14D15433	11.7 %	0.0232995	0.0011095	0.0104787	0.0307787	0.0296752	0.0276125	0.0181359	0.0247130	7.5912269	0.3165921
14D15434	12.5 %	0.0234092	0.0011095	0.0108186	0.0307787	0.0302831	0.0276125	0.0176506	0.0247130	7.6383917	0.3165921
14D15435	13.5 %	0.0235189	0.0011095	0.0111585	0.0307787	0.0310077	0.0276125	0.0171296	0.0247130	7.6855564	0.3165921
14D15437	14.5 %	0.0237474	0.0011095	0.0118666	0.0307787	0.0328924	0.0276125	0.0159294	0.0247130	7.7838162	0.3165921
14D15438	15.5 %	0.0238663	0.0011095	0.0122349	0.0307787	0.0340727	0.0276125	0.0152441	0.0247130	7.8349113	0.3165921
14D15439	16.5 %	0.0239760	0.0011095	0.0125748	0.0307787	0.0352838	0.0276125	0.0145743	0.0247130	7.8820761	0.3165921
14D15441	17.5 %	0.0242045	0.0011095	0.0132829	0.0307787	0.0381821	0.0276125	0.0130640	0.0247130	7.9803359	0.3165921
14D15442	19.0 %	0.0243142	0.0011095	0.0136228	0.0307787	0.0397533	0.0276125	0.0122841	0.0247130	8.0275006	0.3165921
14D15443	20.5 %	0.0244330	0.0011095	0.0139911	0.0307787	0.0415872	0.0276125	0.0113988	0.0247130	8.0785958	0.3165921
14D15445	22.0 %	0.0246615	0.0011095	0.0146992	0.0307787	0.0454991	0.0276125	0.0095785	0.0247130	8.1768556	0.3165921
14D15446	23.5 %	0.0247712	0.0011095	0.0150391	0.0307787	0.0475569	0.0276125	0.0086498	0.0247130	8.2240203	0.3165921
14D15448	24.5 %	0.0249998	0.0011095	0.0157472	0.0307787	0.0522188	0.0276125	0.0066001	0.0247130	8.3222802	0.3165921

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D15408	2.0 %	0.4312467	0.0014243	0.0368	EXP 149 of 150	3.2447	0.0335	0.3384	EXP 150 of 150	0.7451685	0.0261580	0.0754	EXP 149 of 150	45.2428	0.0282	0.9906	EXP 150 of 150	156.86080	0.03923	0.9982	EXP 150 of 150
14D15410	2.6 %	0.3447160	0.0014733	0.0066	EXP 150 of 150	6.7395	0.0297	0.6747	EXP 150 of 150	1.4605747	0.0275646	0.1206	EXP 150 of 150	118.1905	0.0376	0.9977	EXP 150 of 150	145.21055	0.03849	0.9968	EXP 150 of 150
14D15411	3.2 %	0.1903684	0.0010875	0.2943	EXP 150 of 150	8.8857	0.0297	0.7603	EXP 150 of 150	2.0135333	0.0299010	0.1432	EXP 150 of 150	177.1811	0.0357	0.9991	EXP 150 of 150	104.05491	0.03451	0.9980	EXP 150 of 150
14D15413	3.6 %	0.1228964	0.0009096	0.4920	EXP 150 of 150	8.1829	0.0327	0.6599	EXP 150 of 150	1.9351459	0.0273382	0.1908	EXP 150 of 150	171.2519	0.0387	0.9989	EXP 150 of 150	79.00198	0.03233	0.9981	EXP 150 of 150
14D15414	4.0 %	0.1030680	0.0007839	0.5839	EXP 150 of 150	7.4679	0.0291	0.7124	EXP 150 of 150	1.7265113	0.0280980	0.1494	EXP 150 of 150	152.3697	0.0311	0.9991	EXP 150 of 150	67.74498	0.03462	0.9977	EXP 150 of 150
14D15415	4.4 %	0.0805339	0.0008037	0.6057	EXP 150 of 150	6.5292	0.0352	0.5483	EXP 150 of 150	1.4297014	0.0281869	0.0967	EXP 150 of 150	125.4787	0.0395	0.9978	EXP 150 of 150	53.00671	0.03491	0.9978	EXP 150 of 150
14D15417	4.8 %	0.0746261	0.0007418	0.6583	EXP 150 of 150	6.7486	0.0332	0.5297	EXP 149 of 150	1.3490700	0.0294843	0.0712	EXP 150 of 150	118.2425	0.0377	0.9977	EXP 150 of 150	49.27746	0.03359	0.9979	EXP 150 of 150
14D15418	5.2 %	0.0705044	0.0006756	0.6995	EXP 150 of 150	6.0764	0.0304	0.5478	EXP 150 of 150	1.0877349	0.0287696	0.0277	EXP 150 of 150	97.7080	0.0332	0.9974	EXP 150 of 150	43.94313	0.03165	0.9980	EXP 150 of 150
14D15419	5.7 %	0.0742275	0.0006518	0.6834	EXP 150 of 150	6.9888	0.0315	0.5882	EXP 150 of 150	1.1550764	0.0270661	0.0353	EXP 150 of 150	101.2746	0.0337	0.9975	EXP 150 of 150	44.93471	0.03352	0.9978	EXP 150 of 150
14D15421	6.2 %	0.0757510	0.0006947	0.6601	EXP 149 of 150	7.6134	0.0319	0.6575	EXP 150 of 150	1.1639739	0.0314450	0.0351	EXP 150 of 150	98.9985	0.0302	0.9979	EXP 150 of 150	44.74453	0.03276	0.9979	EXP 150 of 150
14D15422	6.7 %	0.0730227	0.0007179	0.6343	EXP 150 of 150	7.3741	0.0337	0.6333	EXP 150 of 150	1.0393029	0.0264952	0.0540	EXP 150 of 150	86.8095	0.0340	0.9966	EXP 150 of 150	40.52810	0.03108	0.9981	EXP 150 of 150
14D15423	7.2 %	0.0734594	0.0006966	0.6559	EXP 150 of 150	7.4552	0.0287	0.6298	EXP 149 of 150	0.9745900	0.0291427	0.0124	EXP 150 of 150	82.2633	0.0324	0.9965	EXP 150 of 150	39.96744	0.03211	0.9979	EXP 150 of 150
14D15425	7.7 %	0.1075757	0.0007469	0.4915	EXP 150 of 150	13.3691	0.0294	0.8555	EXP 150 of 150	2.0334862	0.0243215	0.1310	EXP 150 of 150	178.4274	0.0375	0.9990	EXP 150 of 150	70.87324	0.03104	0.9971	EXP 150 of 150
14D15426	8.2 %	0.0772667	0.0007486	0.5371	EXP 150 of 150	8.4949	0.0336	0.6526	EXP 150 of 150	1.0345661	0.0274214	0.0890	EXP 150 of 150	80.6764	0.0314	0.9966	EXP 150 of 150	40.05620	0.03383	0.9974	EXP 150 of 150
14D15427	8.8 %	0.0833997	0.0007494	0.5034	EXP 150 of 150	8.1621	0.0315	0.6911	EXP 150 of 150	0.8284964	0.0279063	0.0069	EXP 150 of 150	66.5061	0.0316	0.9948	EXP 150 of 150	38.90051	0.03277	0.9974	EXP 150 of 150
14D15429	9.4 %	0.0736336	0.0006968	0.5812	EXP 150 of 150	8.4472	0.0315	0.6901	EXP 150 of 150	0.7024363	0.0257389	0.0070	EXP 150 of 150	56.5309	0.0308	0.9933	EXP 150 of 150	33.39602	0.03084	0.9977	EXP 150 of 150
14D15430	10.1 %	0.0807157	0.0006972	0.5430	EXP 149 of 150	9.5805	0.0294	0.7553	EXP 150 of 150	0.7264717	0.0263458	0.0365	EXP 150 of 150	52.8733	0.0341	0.9905	EXP 150 of 150	34.27314	0.03330	0.9972	EXP 150 of 150
14D15431	10.9 %	0.0911594	0.0007392	0.3657	EXP 150 of 150	11.9611	0.0297	0.8456	EXP 148 of 150	0.7122705	0.0271243	0.0376	EXP 150 of 150	51.1603	0.0288	0.9928	EXP 150 of 150	35.71619	0.03056	0.9973	EXP 150 of 150
14D15433	11.7 %	0.1039843	0.0007904	0.2578	EXP 150 of 150	14.9359	0.0337	0.8594	EXP 150 of 150	0.7007687	0.0242835	0.0055	EXP 150 of 150	49.2175	0.0278	0.9926	EXP 150 of 150	37.92384	0.03076	0.9968	EXP 150 of 150
14D15434	12.5 %	0.1164152	0.0007880	0.1096	EXP 150 of 150	16.8352	0.0334	0.8891	EXP 150 of 150	0.5651200	0.0232850	0.0092	EXP 150 of 150	40.5095	0.0295	0.9879	EXP 150 of 150	38.59813	0.02967	0.9968	EXP 150 of 150
14D15435	13.5 %	0.1431983	0.0009401	0.0031	EXP 150 of 150	26.5792	0.0298	0.9610	EXP 150 of 150	0.6728268	0.0276270	0.0270	EXP 149 of 150	42.4931	0.0281	0.9900	EXP 150 of 150	43.30822	0.02953	0.9963	EXP 150 of 150
14D15437	14.5 %	0.1628555	0.0008765	0.1126	EXP 149 of 150	32.9487	0.0301	0.9750	EXP 150 of 150	0.6078130	0.0274072	0.0106	EXP 150 of 150	38.7131	0.0275	0.9884	EXP 150 of 150	45.26510	0.03234	0.9948	EXP 150 of 150
14D15438	15.5 %	0.1435831	0.0008175	0.0091	EXP 150 of 150	30.1565	0.0285	0.9725	EXP 150 of 150	0.4460004	0.0271867	0.0063	EXP 150 of 150	27.1265	0.0268	0.9779	EXP 150 of 150	38.87723	0.02979	0.9960	EXP 150 of 150
14D15439	16.5 %	0.1524496	0.0008406	0.0027	EXP 150 of 150	34.6517	0.0336	0.9723	EXP 150 of 150	0.3384905	0.0256368	0.0006	EXP 150 of 150	22.0929	0.0275	0.9647	EXP 150 of 150	38.33848	0.03116	0.9957	EXP 150 of 150
14D15441	17.5 %	0.1491156	0.0008502	0.0040	EXP 150 of 150	35.5802	0.0353	0.9705	EXP 150 of 150	0.3127984	0.0266457	0.0209	EXP 150 of 150	16.6622	0.0251	0.9486	EXP 150 of 150	35.92096	0.03414	0.9946	EXP 150 of 150
14D15442	19.0 %	0.2093531	0.0011616	0.1356	EXP 150 of 150	59.5897	0.0357	0.9890	EXP 150 of 150	0.3036962	0.0257305	0.0005	EXP 150 of 150	18.0733	0.0304	0.9345	EXP 150 of 150	45.13157	0.02932	0.9956	EXP 150 of 150
14D15443	20.5 %	0.1742965	0.0011626	0.0182	EXP 150 of 150	41.9745	0.0325	0.9815	EXP 149 of 150	0.2380286	0.0276448	0.0015	EXP 150 of 150	14.2411	0.0256	0.9236	EXP 150 of 150	41.16893	0.03156	0.9954	EXP 150 of 150
14D15445	22.0 %	0.1118242	0.0008035	0.1148	EXP 150 of 150	21.4108	0.0337	0.9321	EXP 150 of 150	0.1126693	0.0286438	0.0011	EXP 150 of 150	8.3166	0.0238	0.8301	EXP 150 of 150	28.78828	0.03078	0.9962	EXP 150 of 150
14D15446	23.5 %	0.1091308	0.0007680	0.1017	EXP 150 of 150	18.3033	0.0344	0.9065	EXP 150 of 150	0.0576717	0.0275107	0.0016	EXP 150 of 150	6.0112	0.0283	0.5960	EXP 150 of 150	28.65773	0.02961	0.9966	EXP 150 of 150
14D15448	24.5 %	0.1024374	0.0007336	0.1116	EXP 150 of 150	13.3073	0.0312	0.8548	EXP 150 of 150	0.0529436	0.0264400	0.0011	EXP 150 of 150	4.5031	0.0267	0.4298	EXP 150 of 150	28.60440	0.03009	0.9962	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos
14D15408	2.0 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	13	22	1	14-OSU-02	0.00	0.00	16.00
14D15410	2.6 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	13	47	1	14-OSU-02	0.00	0.00	16.00
14D15411	3.2 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	14	0	1	14-OSU-02	0.00	0.00	16.00
14D15413	3.6 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	3.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	14	24	1	14-OSU-02	0.00	0.00	16.00
14D15414	4.0 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	14	37	1	14-OSU-02	0.00	0.00	16.00
14D15415	4.4 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	14	49	1	14-OSU-02	0.00	0.00	16.00
14D15417	4.8 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	4.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	15	14	1	14-OSU-02	0.00	0.00	16.00
14D15418	5.2 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	15	26	1	14-OSU-02	0.00	0.00	16.00
14D15419	5.7 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	5.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	15	39	1	14-OSU-02	0.00	0.00	16.00
14D15421	6.2 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	16	4	1	14-OSU-02	0.00	0.00	16.00
14D15422	6.7 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	6.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	16	16	1	14-OSU-02	0.00	0.00	16.00
14D15423	7.2 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	16	29	1	14-OSU-02	0.00	0.00	16.00
14D15425	7.7 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	7.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	16	56	1	14-OSU-02	0.00	0.00	16.00
14D15426	8.2 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	17	9	1	14-OSU-02	0.00	0.00	16.00
14D15427	8.8 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	8.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	17	21	1	14-OSU-02	0.00	0.00	16.00
14D15429	9.4 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	9.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	17	46	1	14-OSU-02	0.00	0.00	16.00
14D15430	10.1 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	10.1	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	17	58	1	14-OSU-02	0.00	0.00	16.00
14D15431	10.9 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	10.9	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	18	11	1	14-OSU-02	0.00	0.00	16.00
14D15433	11.7 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	11.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	18	36	1	14-OSU-02	0.00	0.00	16.00
14D15434	12.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	18	48	1	14-OSU-02	0.00	0.00	16.00
14D15435	13.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	13.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	19	0	1	14-OSU-02	0.00	0.00	16.00
14D15437	14.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	14.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	19	25	1	14-OSU-02	0.00	0.00	16.00
14D15438	15.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	15.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	19	38	1	14-OSU-02	0.00	0.00	16.00
14D15439	16.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	16.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	19	50	1	14-OSU-02	0.00	0.00	16.00
14D15441	17.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	17.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	20	15	1	14-OSU-02	0.00	0.00	16.00
14D15442	19.0 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	19	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	20	27	1	14-OSU-02	0.00	0.00	16.00
14D15443	20.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	20.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	20	40	1	14-OSU-02	0.00	0.00	16.00
14D15445	22.0 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	22	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	21	5	1	14-OSU-02	0.00	0.00	16.00
14D15446	23.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	23.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	21	17	1	14-OSU-02	0.00	0.00	16.00
14D15448	24.5 %	176734	Groundmass	Harrat Harhut	Anthony Koppers	24.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.83665	0.074	0.00177866	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	21	42	1	14-OSU-02	0.00	0.00	16.00

Project	Experiment	Nmb
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
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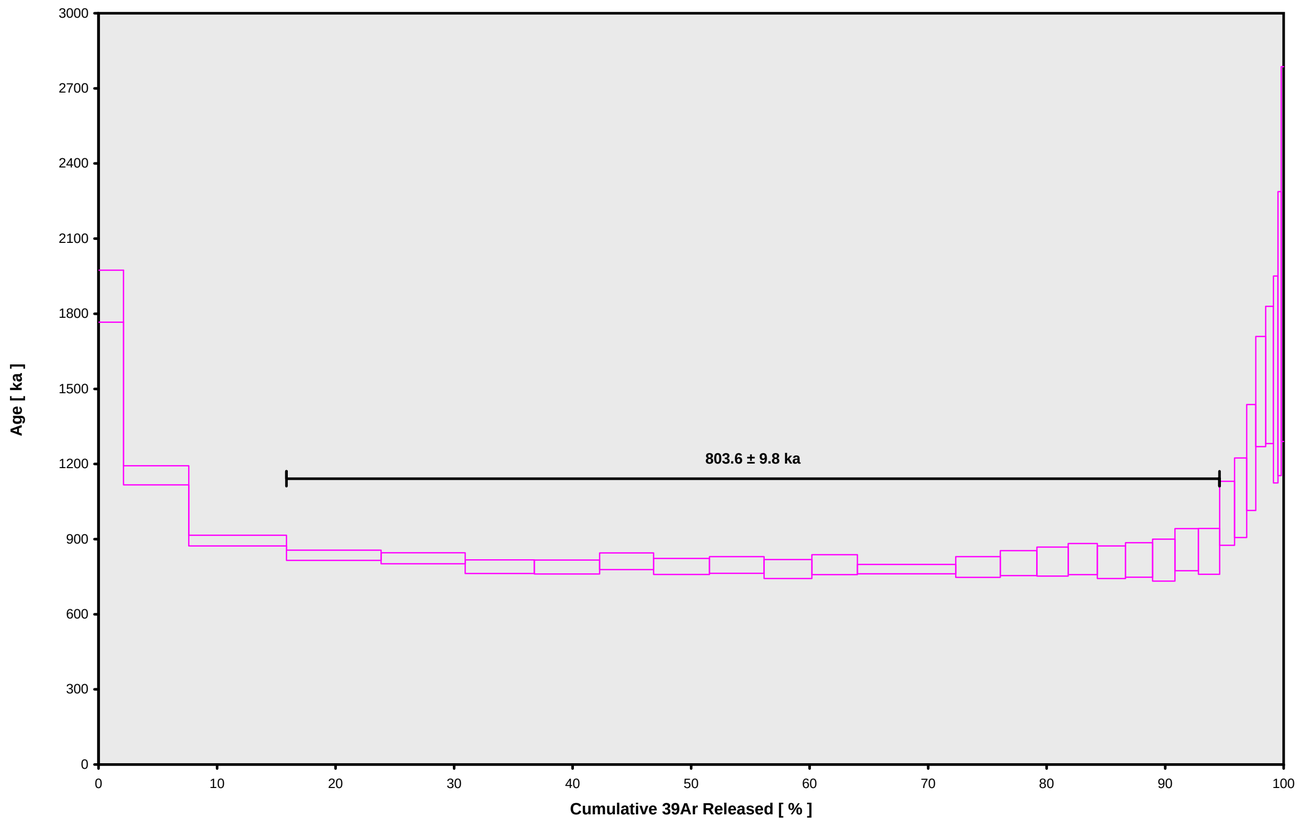
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01
Harhut\Schlieder (14-13)	14D15406	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D15408	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15410	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15411	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15413	3.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15414	4.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15415	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15417	4.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15418	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15419	5.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15421	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15422	6.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15423	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15425	7.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15426	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15427	8.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15429	9.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15430	10.1 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15431	10.9 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15433	11.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15434	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15435	13.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15437	14.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15438	15.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15439	16.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15441	17.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15442	19.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15443	20.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15445	22.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15446	23.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15448	24.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

14D15406.AGE >>> 176734 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
803.6 ± 9.8
TOTAL FUSION
881.2 ± 9.1
NORMAL ISOCHRON
782.4 ± 18.5
INVERSE ISOCHRON
784.1 ± 18.9

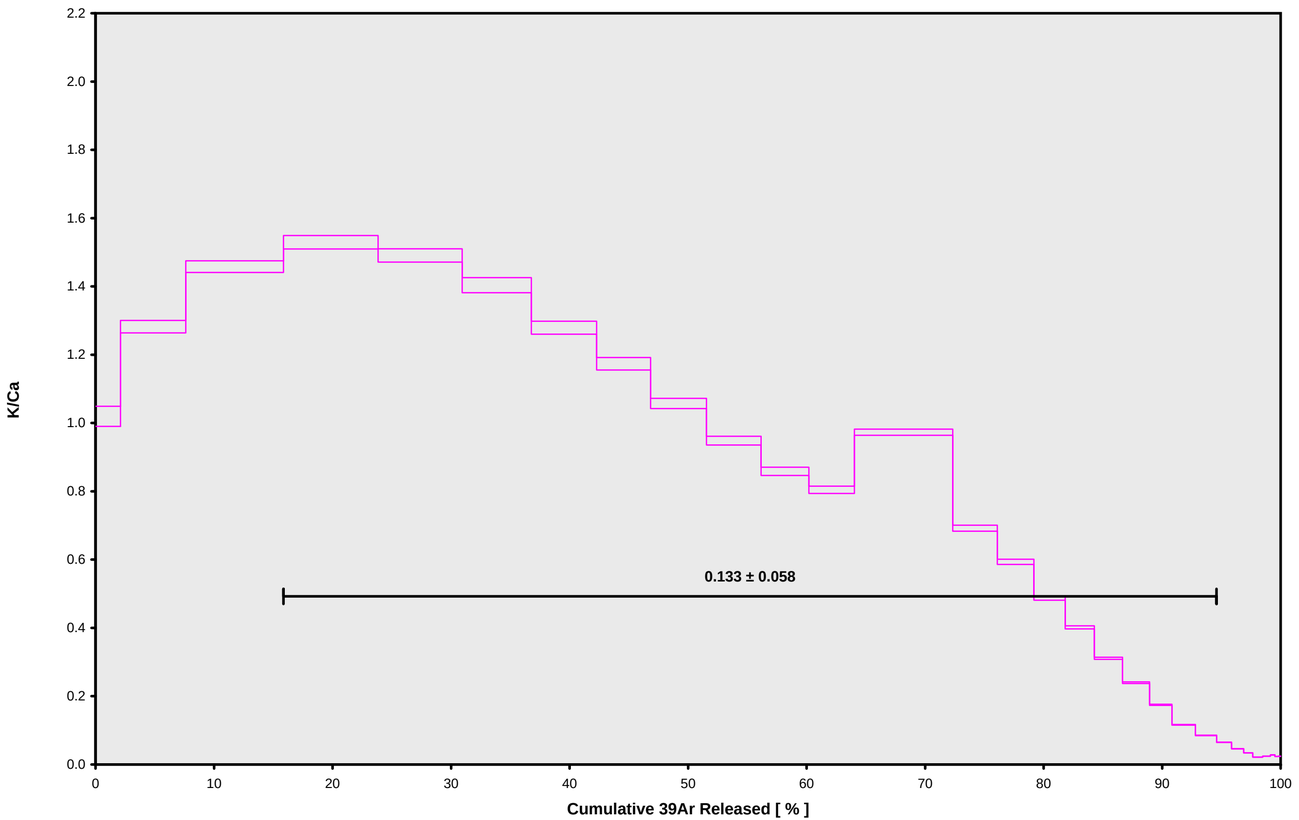
MSWD (PROBABILITY)
1.54 (7%)

Sample Info

Groundmass
Harrat Harhut
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177866 ± 0.00000132

14D15406.AGE >>> 176734 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
803.6 ± 9.8
TOTAL FUSION
881.2 ± 9.1
NORMAL ISOCHRON
782.4 ± 18.5
INVERSE ISOCHRON
784.1 ± 18.9

Sample Info

Groundmass
Harrat Harhut
Anthony Koppers

IRR = 14-OSU-02
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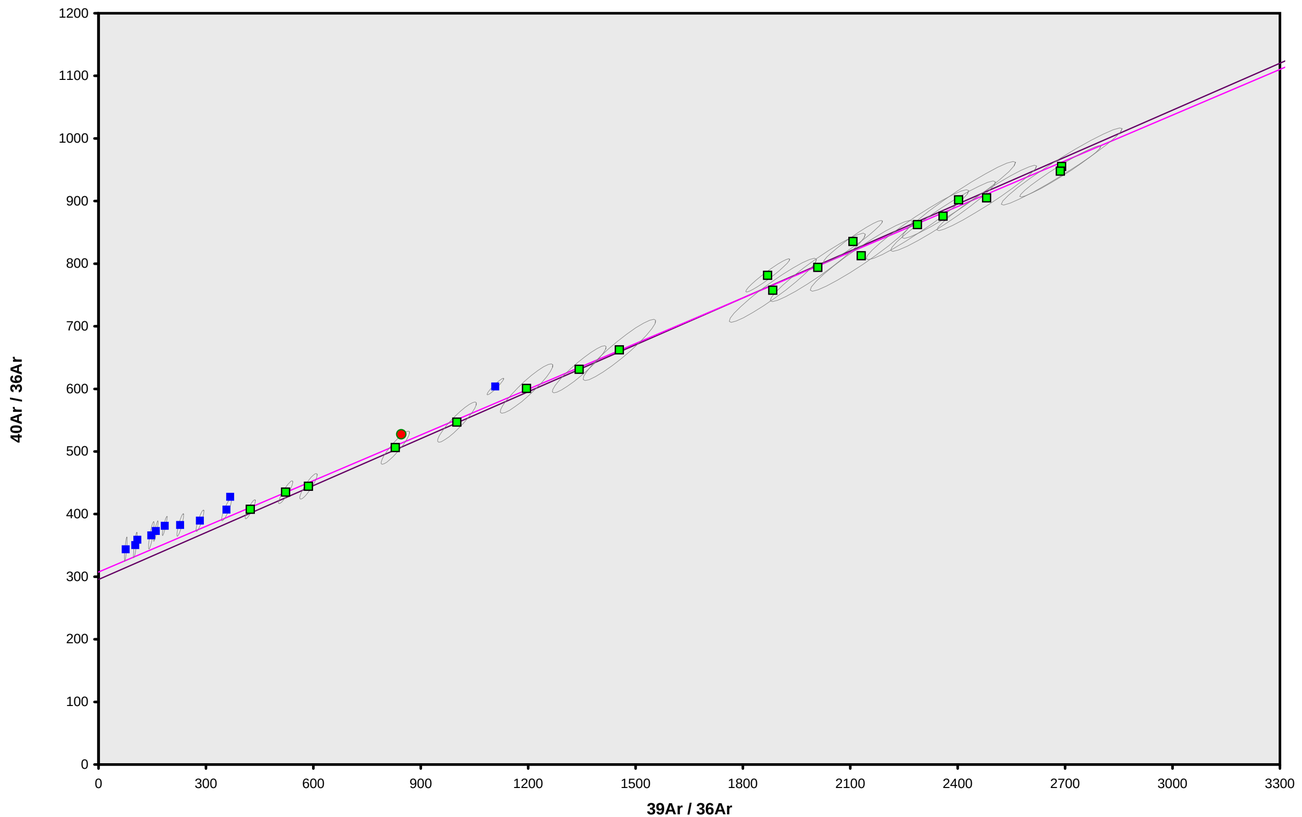
14D15406.AGE >>> 176734 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
803.6 ± 9.8
TOTAL FUSION
881.2 ± 9.1
NORMAL ISOCHRON
782.4 ± 18.5
INVERSE ISOCHRON
784.1 ± 18.9

MSWD (PROBABILITY)
1.18 (27%)

40AR/36AR INTERCEPT
307.5 ± 9.8

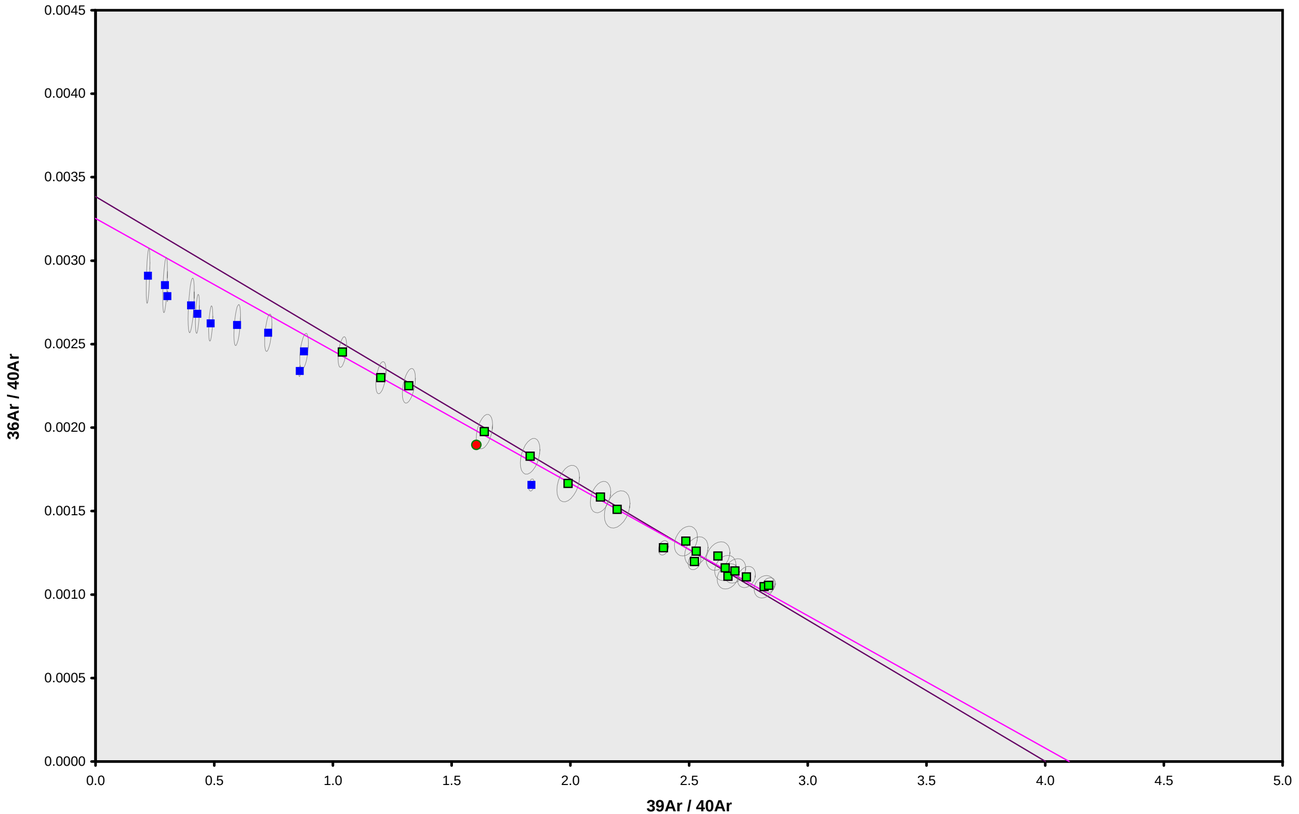
Sample Info

Groundmass
Harrat Harhut
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177866 ± 0.00000132

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D15406.AGE >>> 176734 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
803.6 ± 9.8
TOTAL FUSION
881.2 ± 9.1
NORMAL ISOCHRON
782.4 ± 18.5
INVERSE ISOCHRON
784.1 ± 18.9

MSWD (PROBABILITY)
1.22 (24%)

SPREADING FACTOR
43.8%

40AR/36AR INTERCEPT
307.4 ± 10.1

Sample Info

Groundmass
Harrat Harhut
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177866 ± 0.00000132

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15450	2.0 %		0.2117663	35.0980	0.2428367	41.5547	20.17820	1559.4 ± 78.0	24.37	2.49	0.509 ± 0.008
14D15451	2.0 %		0.0523113	24.1860	0.0842115	34.3529	12.06196	1127.7 ± 69.0	43.77	2.06	0.611 ± 0.013
14D15453	2.6 %		0.0657336	59.5733	0.0000000	89.5932	27.84402	998.2 ± 27.1	58.79	5.37	0.647 ± 0.007
14D15454	3.2 %		0.0811781	115.7911	0.0000000	174.4281	49.03776	903.0 ± 15.1	66.99	10.46	0.648 ± 0.005
14D15456	3.6 %	✓	0.0604422	102.2655	0.0756586	148.1067	39.40129	854.5 ± 17.9	68.63	8.88	0.623 ± 0.005
14D15457	4.0 %	✓	0.0511404	97.7470	0.0547361	129.7408	34.37469	851.0 ± 19.0	69.28	7.78	0.571 ± 0.005
14D15458	4.4 %	✓	0.0537860	97.6987	0.1092193	120.4133	31.28661	834.6 ± 20.7	66.14	7.22	0.530 ± 0.005
14D15460	4.8 %	✓	0.0429634	77.4885	0.0052511	89.4437	23.20072	833.1 ± 26.4	64.47	5.37	0.496 ± 0.005
14D15461	5.2 %	✓	0.0396545	76.2120	0.0710381	79.5200	20.93832	845.7 ± 30.2	63.96	4.77	0.449 ± 0.004
14D15462	5.7 %	✓	0.0391961	79.3294	0.1312632	76.6359	20.08336	841.7 ± 31.2	63.27	4.60	0.415 ± 0.004
14D15464	6.2 %	✓	0.0433663	86.5864	0.1191495	78.4599	20.88814	855.1 ± 30.6	61.83	4.71	0.390 ± 0.004
14D15465	6.7 %	✓	0.0391751	73.0934	0.0967514	65.1348	17.22157	849.2 ± 37.2	59.67	3.91	0.383 ± 0.004
14D15466	7.2 %	✓	0.0386157	70.9645	0.1339822	57.4748	15.26847	853.3 ± 41.0	57.11	3.45	0.348 ± 0.003
14D15468	7.7 %	✓	0.0341952	61.9628	0.0666103	46.7519	12.67642	870.9 ± 49.8	55.53	2.80	0.324 ± 0.004
14D15469	8.2 %	✓	0.0408675	69.8616	0.1101291	49.6750	13.37995	865.1 ± 47.8	52.46	2.98	0.306 ± 0.003
14D15470	8.8 %	✓	0.0403013	63.3950	0.0992439	40.8017	10.87744	856.3 ± 58.4	47.65	2.45	0.277 ± 0.003
14D15472	9.4 %	✓	0.0425184	66.7184	0.1436926	38.7494	10.32620	855.9 ± 62.4	45.03	2.32	0.250 ± 0.003
14D15473	10.1 %	✓	0.0539958	79.0674	0.1753859	39.2779	10.46673	855.9 ± 62.6	39.55	2.36	0.214 ± 0.002
14D15474	10.9 %		0.0651707	95.2981	0.1817159	37.2431	10.74500	926.7 ± 65.9	35.77	2.23	0.168 ± 0.002
14D15476	11.7 %		0.0785726	119.9736	0.1792379	34.6649	10.33405	957.5 ± 79.1	30.77	2.08	0.124 ± 0.001
14D15477	12.5 %		0.0757070	119.6885	0.1377411	26.9572	9.00942	1073.4 ± 98.1	28.69	1.62	0.097 ± 0.001
14D15478	13.5 %		0.0950622	185.2295	0.2088281	29.7111	9.54174	1031.5 ± 94.9	25.33	1.78	0.069 ± 0.001
14D15480	14.5 %		0.1269210	254.1909	0.2078996	29.4746	11.52951	1256.3 ± 107.5	23.50	1.77	0.050 ± 0.000
14D15481	15.5 %		0.1275637	264.3666	0.1908849	23.4699	10.61728	1452.8 ± 132.6	21.97	1.41	0.038 ± 0.000
14D15482	16.5 %		0.1208207	246.5920	0.1994904	18.9847	9.20991	1557.9 ± 162.3	20.50	1.14	0.033 ± 0.000
14D15484	17.5 %		0.1879752	228.0401	0.1675869	15.3381	10.85788	2272.8 ± 232.9	16.35	0.92	0.029 ± 0.000
14D15485	19.0 %		0.1619812	224.0434	0.1943053	13.6683	9.96857	2341.6 ± 241.1	17.23	0.82	0.026 ± 0.000
14D15486	20.5 %		0.1035207	156.7750	0.1040908	10.4559	6.68427	2052.7 ± 282.0	17.93	0.63	0.029 ± 0.000
14D15488	22.0 %		0.1290921	250.4468	0.1763194	13.5422	8.56068	2029.8 ± 222.4	18.32	0.81	0.023 ± 0.000
14D15489	23.5 %		0.1232434	182.9812	0.1298875	9.0056	7.51497	2678.9 ± 309.0	17.10	0.54	0.021 ± 0.000
14D15491	24.5 %		0.0748825	123.9178	0.0760069	4.4857	4.60296	3293.7 ± 583.9	17.22	0.27	0.016 ± 0.000
		Σ	2.5017202	3788.5827	3.8731542	1667.1161	508.68811				

Information on Analysis

Sample = 176710
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177662 ± 0.00000131
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ		Age ± 2σ (Ka)		MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.26405	± 0.00248	848.1	± 8.1	0.43	63.59	0.338 ± 0.061
		± 0.94%		± 0.95%	96%	14	
		Full External Error		± 20.8	1.78	2σ Confidence Limit	
		Analytical Error		± 8.0	1.0000	Error Magnification	
Total Fusion Age	0.30513	± 0.00280	980.0	± 9.1		31	0.189 ± 0.000
		± 0.92%		± 0.93%			
		Full External Error		± 23.9			
		Analytical Error		± 9.0			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D15450	2.0 %		196.23 ± 3.15	390.79 ± 6.25	0.9803
14D15451	2.0 %		656.70 ± 30.50	526.08 ± 24.62	0.9894
14D15453	2.6 %		1362.97 ± 51.59	719.09 ± 27.32	0.9945
14D15454	3.2 %		2148.71 ± 71.61	899.58 ± 30.03	0.9965
14D15456	3.6 %	✓	2450.39 ± 110.54	947.38 ± 42.81	0.9973
14D15457	4.0 %	✓	2536.95 ± 125.43	967.66 ± 47.94	0.9971
14D15458	4.4 %	✓	2238.75 ± 106.70	877.19 ± 41.91	0.9966
14D15460	4.8 %	✓	2081.86 ± 117.00	835.51 ± 47.11	0.9960
14D15461	5.2 %	✓	2005.32 ± 124.41	823.52 ± 51.25	0.9961
14D15462	5.7 %	✓	1955.19 ± 121.98	807.88 ± 50.57	0.9958
14D15464	6.2 %	✓	1809.24 ± 102.78	777.17 ± 44.30	0.9957
14D15465	6.7 %	✓	1662.66 ± 105.55	735.10 ± 46.85	0.9952
14D15466	7.2 %	✓	1488.38 ± 93.13	690.90 ± 43.43	0.9944
14D15468	7.7 %	✓	1367.21 ± 95.33	666.21 ± 46.70	0.9937
14D15469	8.2 %	✓	1215.51 ± 72.46	622.90 ± 37.34	0.9932
14D15470	8.8 %	✓	1012.42 ± 61.46	565.40 ± 34.56	0.9918
14D15472	9.4 %	✓	911.36 ± 53.18	538.36 ± 31.65	0.9910
14D15473	10.1 %	✓	727.43 ± 34.06	489.34 ± 23.10	0.9892
14D15474	10.9 %		571.47 ± 22.14	460.37 ± 17.99	0.9875
14D15476	11.7 %		441.18 ± 15.92	427.02 ± 15.53	0.9876
14D15477	12.5 %		356.07 ± 12.86	414.50 ± 15.09	0.9846
14D15478	13.5 %		312.54 ± 9.62	395.87 ± 12.27	0.9849
14D15480	14.5 %		232.23 ± 6.05	386.34 ± 10.09	0.9849
14D15481	15.5 %		183.99 ± 4.69	378.73 ± 9.67	0.9820
14D15482	16.5 %		157.13 ± 4.20	371.73 ± 9.93	0.9781
14D15484	17.5 %		81.60 ± 1.66	353.26 ± 7.05	0.9610
14D15485	19.0 %		84.38 ± 1.84	357.04 ± 7.62	0.9580
14D15486	20.5 %		101.00 ± 3.06	360.07 ± 10.74	0.9605
14D15488	22.0 %		104.90 ± 2.60	361.81 ± 8.84	0.9636
14D15489	23.5 %		73.07 ± 1.81	356.48 ± 8.42	0.9280
14D15491	24.5 %		59.90 ± 2.35	356.97 ± 13.03	0.9011

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	301.90 ± 14.06 ± 4.66%	0.26059 ± 0.00770 ± 2.95%	837.0 ± 24.8 ± 2.96%	0.40 96%
			Full External Error ± 31.1	
			Analytical Error ± 24.7	

Statistics				
	2σ Confidence Limit	1.82	Convergence	0.000002324074
	Error Magnification	1.0000	Number of Iterations	14
	Number of Data Points	14	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D15450	2.0 %		0.5021407 ± 0.0015970	0.00255895 ± 0.00004095	0.0902
14D15451	2.0 %		1.2482924 ± 0.0084804	0.00190085 ± 0.00008895	0.1244
14D15453	2.6 %		1.8954172 ± 0.0075326	0.00139065 ± 0.00005283	0.0877
14D15454	3.2 %		2.3885782 ± 0.0066291	0.00111163 ± 0.00003711	0.0614
14D15456	3.6 %	✓	2.5864757 ± 0.0085568	0.00105554 ± 0.00004770	0.0594
14D15457	4.0 %	✓	2.6217314 ± 0.0099059	0.00103342 ± 0.00005120	0.0644
14D15458	4.4 %	✓	2.5521907 ± 0.0100319	0.00114001 ± 0.00005446	0.0705
14D15460	4.8 %	✓	2.4917162 ± 0.0126068	0.00119687 ± 0.00006748	0.0808
14D15461	5.2 %	✓	2.4350639 ± 0.0134535	0.00121430 ± 0.00007557	0.0801
14D15462	5.7 %	✓	2.4201479 ± 0.0138484	0.00123780 ± 0.00007749	0.0831
14D15464	6.2 %	✓	2.3279870 ± 0.0123579	0.00128672 ± 0.00007335	0.0841
14D15465	6.7 %	✓	2.2617976 ± 0.0140383	0.00136035 ± 0.00008671	0.0895
14D15466	7.2 %	✓	2.1542772 ± 0.0142534	0.00144740 ± 0.00009099	0.0966
14D15468	7.7 %	✓	2.0522224 ± 0.0161052	0.00150103 ± 0.00010522	0.1033
14D15469	8.2 %	✓	1.9513830 ± 0.0136458	0.00160540 ± 0.00009624	0.1068
14D15470	8.8 %	✓	1.7906113 ± 0.0139667	0.00176865 ± 0.00010810	0.1169
14D15472	9.4 %	✓	1.6928259 ± 0.0133213	0.00185748 ± 0.00010919	0.1216
14D15473	10.1 %	✓	1.4865330 ± 0.0102669	0.00204355 ± 0.00009646	0.1279
14D15474	10.9 %		1.2413150 ± 0.0076393	0.00217214 ± 0.00008490	0.1334
14D15476	11.7 %		1.0331630 ± 0.0059009	0.00234180 ± 0.00008515	0.1261
14D15477	12.5 %		0.8590328 ± 0.0054783	0.00241252 ± 0.00008781	0.1300
14D15478	13.5 %		0.7895051 ± 0.0042359	0.00252606 ± 0.00007829	0.1251
14D15480	14.5 %		0.6010962 ± 0.0027297	0.00258839 ± 0.00006762	0.1039
14D15481	15.5 %		0.4857952 ± 0.0023502	0.00264040 ± 0.00006744	0.1032
14D15482	16.5 %		0.4227057 ± 0.0023677	0.00269014 ± 0.00007187	0.0971
14D15484	17.5 %		0.2309799 ± 0.0013061	0.00283076 ± 0.00005647	0.0603
14D15485	19.0 %		0.2363365 ± 0.0014820	0.00280079 ± 0.00005974	0.0663
14D15486	20.5 %		0.2805096 ± 0.0023756	0.00277724 ± 0.00008284	0.0822
14D15488	22.0 %		0.2899377 ± 0.0019283	0.00276385 ± 0.00006752	0.0845
14D15489	23.5 %		0.2049825 ± 0.0018944	0.00280523 ± 0.00006622	0.0698
14D15491	24.5 %		0.1678098 ± 0.0028638	0.00280136 ± 0.00010226	0.0658

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	301.71 ± 14.05 ± 4.66%	0.26084 ± 0.00767 ± 2.94%	837.8 ± 24.6 ± 2.94%	0.40 96%
			Full External Error ± 31.1	
			Analytical Error ± 24.6	

Statistics				
	2σ Confidence Limit	1.82	Convergence	0.0009743058
	Error Magnification	1.0000	Number of Iterations	2
	Number of Data Points	14	Calculated Line	Weighted York-2
	Spreading Factor	29.6%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15450	2.0 %		0.2210674	0.759	35.0980	0.809	0.755797	5.233	41.5784	0.117	82.7971	0.107	0.48558 ± 0.02429	1559.4 ± 78.0	24.37	2.49	0.509 ± 0.008
14D15451	2.0 %		0.0587086	2.062	24.1860	1.093	0.485261	7.805	34.3692	0.128	27.5546	0.314	0.35112 ± 0.02148	1127.7 ± 69.0	43.77	2.06	0.611 ± 0.013
14D15453	2.6 %		0.0814610	1.522	59.5733	0.552	0.986034	4.067	89.6333	0.080	47.3588	0.182	0.31078 ± 0.00844	998.2 ± 27.1	58.79	5.37	0.647 ± 0.007
14D15454	3.2 %		0.1117470	1.204	115.7911	0.399	1.965959	1.979	174.5060	0.071	73.2021	0.119	0.28113 ± 0.00470	903.0 ± 15.1	66.99	10.46	0.648 ± 0.005
14D15456	3.6 %	✓	0.0874513	1.553	102.2655	0.407	1.773831	2.231	148.1755	0.072	57.4115	0.149	0.26603 ± 0.00557	854.5 ± 17.9	68.63	8.88	0.623 ± 0.005
14D15457	4.0 %	✓	0.0769535	1.635	97.7470	0.441	1.542103	2.648	129.8065	0.074	49.6177	0.173	0.26495 ± 0.00592	851.0 ± 19.0	69.28	7.78	0.571 ± 0.005
14D15458	4.4 %	✓	0.0795943	1.604	97.6987	0.422	1.490933	2.644	120.4790	0.074	47.3020	0.181	0.25983 ± 0.00646	834.6 ± 20.7	66.14	7.22	0.530 ± 0.005
14D15460	4.8 %	✓	0.0634212	1.897	77.4885	0.466	1.032227	4.029	89.4958	0.080	35.9868	0.239	0.25939 ± 0.00821	833.1 ± 26.4	64.47	5.37	0.496 ± 0.005
14D15461	5.2 %	✓	0.0597848	2.051	76.2120	0.473	0.984447	4.097	79.5713	0.086	32.7365	0.262	0.26331 ± 0.00940	845.7 ± 30.2	63.96	4.77	0.449 ± 0.004
14D15462	5.7 %	✓	0.0601581	2.025	79.3294	0.463	1.011809	3.943	76.6893	0.086	31.7432	0.272	0.26206 ± 0.00970	841.7 ± 31.2	63.27	4.60	0.415 ± 0.004
14D15464	6.2 %	✓	0.0662424	1.852	86.5864	0.448	1.021332	3.882	78.5182	0.082	33.7821	0.252	0.26623 ± 0.00953	855.1 ± 30.6	61.83	4.71	0.390 ± 0.004
14D15465	6.7 %	✓	0.0584859	2.119	73.0934	0.477	0.846324	4.758	65.1840	0.088	28.8636	0.297	0.26440 ± 0.01159	849.2 ± 37.2	59.67	3.91	0.383 ± 0.004
14D15466	7.2 %	✓	0.0573697	2.099	70.9645	0.479	0.796249	4.960	57.5226	0.095	26.7375	0.316	0.26565 ± 0.01277	853.3 ± 41.0	57.11	3.45	0.348 ± 0.003
14D15468	7.7 %	✓	0.0505631	2.350	61.9628	0.538	0.605899	6.406	46.7936	0.109	22.8283	0.376	0.27114 ± 0.01552	870.9 ± 49.8	55.53	2.80	0.324 ± 0.004
14D15469	8.2 %	✓	0.0593270	2.046	69.8616	0.485	0.684040	5.737	49.7220	0.101	25.5065	0.334	0.26935 ± 0.01489	865.1 ± 47.8	52.46	2.98	0.306 ± 0.003
14D15470	8.8 %	✓	0.0570520	2.137	63.3950	0.519	0.571981	6.879	40.8444	0.113	22.8277	0.373	0.26659 ± 0.01820	856.3 ± 58.4	47.65	2.45	0.277 ± 0.003
14D15472	9.4 %	✓	0.0601529	2.055	66.7184	0.500	0.593535	6.491	38.7943	0.119	22.9295	0.374	0.26649 ± 0.01943	855.9 ± 62.4	45.03	2.32	0.250 ± 0.003
14D15473	10.1 %	✓	0.0748951	1.681	79.0674	0.461	0.633559	6.001	39.3311	0.122	26.4622	0.322	0.26648 ± 0.01950	855.9 ± 62.6	39.55	2.36	0.214 ± 0.002
14D15474	10.9 %		0.0903558	1.389	95.2981	0.432	0.619047	6.282	37.3072	0.120	30.0406	0.283	0.28851 ± 0.02052	926.7 ± 65.9	35.77	2.23	0.168 ± 0.002
14D15476	11.7 %		0.1102717	1.277	119.9736	0.399	0.590078	6.613	34.7457	0.127	33.5873	0.256	0.29811 ± 0.02463	957.5 ± 79.1	30.77	2.08	0.124 ± 0.001
14D15477	12.5 %		0.1073248	1.264	119.6885	0.392	0.460327	8.100	27.0377	0.161	31.4081	0.274	0.33421 ± 0.03056	1073.4 ± 98.1	28.69	1.62	0.097 ± 0.001
14D15478	13.5 %		0.1439932	1.005	185.2295	0.350	0.567283	6.972	29.8358	0.141	37.6626	0.228	0.32115 ± 0.02957	1031.5 ± 94.9	25.33	1.78	0.069 ± 0.001
14D15480	14.5 %		0.1940577	0.838	254.1909	0.340	0.570575	6.779	29.6456	0.143	49.0645	0.175	0.39117 ± 0.03347	1256.3 ± 107.5	23.50	1.77	0.050 ± 0.000
14D15481	15.5 %		0.1973843	0.808	264.3666	0.340	0.485489	7.891	23.6478	0.162	48.3361	0.178	0.45238 ± 0.04131	1452.8 ± 132.6	21.97	1.41	0.038 ± 0.000
14D15482	16.5 %		0.1859500	0.851	246.5920	0.342	0.441546	8.825	19.1507	0.203	44.9316	0.191	0.48512 ± 0.05058	1557.9 ± 162.3	20.50	1.14	0.033 ± 0.000
14D15484	17.5 %		0.2482022	0.744	228.0401	0.344	0.380437	10.524	15.4916	0.248	66.4200	0.130	0.70790 ± 0.07259	2272.8 ± 232.9	16.35	0.92	0.029 ± 0.000
14D15485	19.0 %		0.2211569	0.768	224.0434	0.348	0.383239	10.140	13.8191	0.273	57.8478	0.149	0.72932 ± 0.07514	2341.6 ± 241.1	17.23	0.82	0.026 ± 0.000
14D15486	20.5 %		0.1449244	1.048	156.7750	0.363	0.244606	16.826	10.5614	0.353	37.2852	0.228	0.63928 ± 0.08788	2052.7 ± 282.0	17.93	0.63	0.029 ± 0.000
14D15488	22.0 %		0.1952357	0.790	250.4468	0.341	0.358038	10.938	13.7108	0.273	46.7211	0.185	0.63215 ± 0.06930	2029.8 ± 222.4	18.32	0.81	0.023 ± 0.000
14D15489	23.5 %		0.1715694	0.830	182.9812	0.354	0.257949	15.094	9.1287	0.413	43.9425	0.195	0.83448 ± 0.09631	2678.9 ± 309.0	17.10	0.54	0.021 ± 0.000
14D15491	24.5 %		0.1076079	1.245	123.9178	0.386	0.142772	27.937	4.5691	0.776	26.7353	0.320	1.02615 ± 0.18207	3293.7 ± 583.9	17.22	0.27	0.016 ± 0.000
	Σ		3.5024689	0.219	3788.5827	0.077	23.282704	0.942	1669.6658	0.020	1249.6302	0.038					

Information on Analysis and Constants Used in Calculations

Sample = 176710
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13)
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177662 ± 0.00000131
FCT-NM = 28.201 ± 0.023 Ma
IGSN = Undefined
Preferred Age = Undefined
Classification = Undefined
Experiment Type = Incremental Heating
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000014
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.26405 ± 0.00248 ± 0.94%	848.1 ± 8.1 ± 0.95%	0.43	63.59	0.338 ± 0.061
			Full External Error ± 20.8	96%	14	
			Analytical Error ± 8.0	1.78	2σ Confidence Limit	
				1.0000	Error Magnification	
Total Fusion Age		0.30513 ± 0.00280 ± 0.92%	980.0 ± 9.1 ± 0.93%		31	0.189 ± 0.000
			Full External Error ± 23.9			
			Analytical Error ± 9.0			
Normal Isochron	301.90 ± 14.06 ± 4.66%	0.26059 ± 0.00770 ± 2.95%	837.0 ± 24.8 ± 2.96%	0.40	63.59	
			Full External Error ± 31.1	96%	14	
			Analytical Error ± 24.7	1.82	2σ Confidence Limit	
				1.0000	Error Magnification	
				14	Number of Iterations	
				0.0000023241	Convergence	
Inverse Isochron	301.71 ± 14.05 ± 4.66%	0.26084 ± 0.00767 ± 2.94%	837.8 ± 24.6 ± 2.94%	0.40	63.59	
			Full External Error ± 31.1	96%	14	
				1.82	2σ Confidence Limit	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D15450	2.0 %		0.2117663	0.79	0.0000000	0.00	0.0092659	0.81	0.0000352	16.31	35.0980	0.81	0.0395791	0.79	0.0000000	0.00	0.472893	0.12	0.0004879	0.81	0.2428367	16.34	41.5547	0.12	0.0236210	0.81	20.17820	2.50	62.57696	0.79	0.0000000	0.00	0.0419703	0.12
14D15451	2.0 %		0.0523113	2.32	0.0000000	0.00	0.0063851	1.09	0.0000122	44.99	24.1860	1.09	0.0097770	2.32	0.0000000	0.00	0.390936	0.13	0.0003362	1.09	0.0842115	45.00	34.3529	0.13	0.0162772	1.09	12.06196	3.06	15.45799	2.32	0.0000000	0.00	0.0346965	0.13
14D15453	2.6 %		0.0657336	1.89	0.0000000	0.00	0.0157274	0.55	0.0000000	0.00	59.5733	0.55	0.0122856	1.89	0.0000000	0.00	1.019570	0.08	0.0008281	0.55	0.0000000	0.00	89.5932	0.08	0.0400929	0.55	27.84402	1.35	19.42428	1.89	0.0000000	0.00	0.0904891	0.08
14D15454	3.2 %		0.0811781	1.66	0.0000000	0.00	0.0305688	0.40	0.0000000	0.00	115.7911	0.40	0.0151722	1.66	0.0000000	0.00	1.984991	0.07	0.0016095	0.40	0.0000000	0.00	174.4281	0.07	0.0779274	0.40	49.03776	0.83	23.98813	1.66	0.0000000	0.00	0.1761723	0.07
14D15456	3.6 %	✓	0.0604422	2.25	0.0000000	0.00	0.0269981	0.41	0.0000110	52.35	102.2655	0.41	0.0112966	2.25	0.0000000	0.00	1.685454	0.07	0.0014215	0.41	0.0756586	52.36	148.1067	0.07	0.0688247	0.41	39.40129	1.04	17.86067	2.25	0.0000000	0.00	0.1495877	0.07
14D15457	4.0 %	✓	0.0511404	2.47	0.0000000	0.00	0.0258052	0.44	0.0000079	74.63	97.7470	0.44	0.0095581	2.47	0.0000000	0.00	1.476450	0.07	0.0013587	0.44	0.0547361	74.63	129.7408	0.07	0.0657837	0.44	34.37469	1.11	15.11198	2.47	0.0000000	0.00	0.1310382	0.07
14D15458	4.4 %	✓	0.0537860	2.38	0.0000000	0.00	0.0257925	0.42	0.0000158	36.12	97.6987	0.42	0.0100526	2.38	0.0000000	0.00	1.370303	0.07	0.0013580	0.42	0.1092193	36.13	120.4133	0.07	0.0657512	0.42	31.28661	1.24	15.89375	2.38	0.0000000	0.00	0.1216174	0.07
14D15460	4.8 %	✓	0.0429634	2.81	0.0000000	0.00	0.0204570	0.47	0.0000008	792.14	77.4885	0.47	0.0080299	2.81	0.0000000	0.00	1.017869	0.08	0.0010771	0.47	0.0052511	792.14	89.4437	0.08	0.0521497	0.47	23.20072	1.58	12.69570	2.81	0.0000000	0.00	0.0903381	0.08
14D15461	5.2 %	✓	0.0396545	3.10	0.0000000	0.00	0.0201200	0.47	0.0000103	56.80	76.2120	0.47	0.0074114	3.10	0.0000000	0.00	0.904938	0.09	0.0010593	0.47	0.0710381	56.81	79.5200	0.09	0.0512907	0.47	20.93832	1.78	11.71791	3.10	0.0000000	0.00	0.0803152	0.09
14D15462	5.7 %	✓	0.0391961	3.12	0.0000000	0.00	0.0209430	0.46	0.0000191	30.41	79.3294	0.46	0.0073257	3.12	0.0000000	0.00	0.872117	0.09	0.0011027	0.46	0.1312632	30.43	76.6359	0.09	0.0533887	0.46	20.08336	1.85	11.58244	3.12	0.0000000	0.00	0.0774023	0.09
14D15464	6.2 %	✓	0.0433663	2.84	0.0000000	0.00	0.0228588	0.45	0.0000173	33.30	86.5864	0.45	0.0081052	2.84	0.0000000	0.00	0.892873	0.08	0.0012036	0.45	0.1191495	33.31	78.4599	0.08	0.0582727	0.45	20.88814	1.79	12.81475	2.84	0.0000000	0.00	0.0792445	0.08
14D15465	6.7 %	✓	0.0391751	3.17	0.0000000	0.00	0.0192967	0.48	0.0000140	41.64	73.0934	0.48	0.0073218	3.17	0.0000000	0.00	0.741234	0.09	0.0010160	0.48	0.0967514	41.65	65.1348	0.09	0.0491919	0.48	17.22157	2.19	11.57626	3.17	0.0000000	0.00	0.0657862	0.09
14D15466	7.2 %	✓	0.0386157	3.13	0.0000000	0.00	0.0187346	0.48	0.0000195	29.50	70.9645	0.48	0.0072173	3.13	0.0000000	0.00	0.654064	0.09	0.0009864	0.48	0.1339822	29.51	57.4748	0.09	0.0477591	0.48	15.26847	2.40	11.41093	3.13	0.0000000	0.00	0.0580496	0.09
14D15468	7.7 %	✓	0.0341952	3.48	0.0000000	0.00	0.0163582	0.54	0.0000097	58.29	61.9628	0.54	0.0063911	3.48	0.0000000	0.00	0.532037	0.11	0.0008613	0.54	0.0666103	58.29	46.7519	0.11	0.0417010	0.54	12.67642	2.86	10.10469	3.48	0.0000000	0.00	0.0472194	0.11
14D15469	8.2 %	✓	0.0408675	2.98	0.0000000	0.00	0.0184435	0.48	0.0000160	35.65	69.8616	0.48	0.0076381	2.98	0.0000000	0.00	0.565301	0.10	0.0009711	0.48	0.1101291	35.66	49.6750	0.10	0.0470168	0.48	13.37995	2.76	12.07635	2.98	0.0000000	0.00	0.0501717	0.10
14D15470	8.8 %	✓	0.0403013	3.03	0.0000000	0.00	0.0167363	0.52	0.0000144	39.66	63.3950	0.52	0.0075323	3.03	0.0000000	0.00	0.464323	0.11	0.0008812	0.52	0.0992439	39.67	40.8017	0.11	0.0426648	0.52	10.87744	3.41	11.90902	3.03	0.0000000	0.00	0.0412097	0.11
14D15472	9.4 %	✓	0.0425184	2.92	0.0000000	0.00	0.0176137	0.50	0.0000209	26.83	66.7184	0.50	0.0079467	2.92	0.0000000	0.00	0.440969	0.12	0.0009274	0.50	0.1436926	26.85	38.7494	0.12	0.0449015	0.50	10.32620	3.64	12.56418	2.92	0.0000000	0.00	0.0391369	0.12
14D15473	10.1 %	✓	0.0539958	2.34	0.0000000	0.00	0.0208738	0.46	0.0000255	21.70	79.0674	0.46	0.0100918	2.34	0.0000000	0.00	0.446982	0.12	0.0010990	0.46	0.1753859	21.72	39.2779	0.12	0.0532124	0.46	10.46673	3.66	15.95575	2.34	0.0000000	0.00	0.0396707	0.12
14D15474	10.9 %		0.0651707	1.93	0.0000000	0.00	0.0251587	0.43	0.0000264	21.42	95.2981	0.43	0.0121804	1.93	0.0000000	0.00	0.423826	0.12	0.0013246	0.43	0.1817159	21.44	37.2431	0.12	0.0641356	0.43	10.74500	3.55	19.25794	1.93	0.0000000	0.00	0.0376155	0.12
14D15476	11.7 %		0.0785726	1.80	0.0000000	0.00	0.0316730	0.40	0.0000261	21.79	119.9736	0.40	0.0146852	1.80	0.0000000	0.00	0.394487	0.13	0.0016676	0.40	0.1792379	21.81	34.6649	0.13	0.0807422	0.40	10.33405	4.13	23.21819	1.80	0.0000000	0.00	0.0350116	0.13
14D15477	12.5 %		0.0757070	1.80	0.0000000	0.00	0.0315978	0.39	0.0000200	27.09	119.6885	0.39	0.0141496	1.80	0.0000000	0.00	0.306773	0.16	0.0016637	0.39	0.1377411	27.11	26.9572	0.16	0.0805504	0.39	9.00942	4.57	22.37141	1.80	0.0000000	0.00	0.0272267	0.16
14D15478	13.5 %		0.0950622	1.53	0.0000000	0.00	0.0489006	0.35	0.0000304	18.96	185.2295	0.35	0.0177671	1.53	0.0000000	0.00	0.338113	0.14	0.0025747	0.35	0.2088281	18.99	29.7111	0.14	0.1246595	0.35	9.54174	4.60	28.09089	1.53	0.0000000	0.00	0.0300083	0.14
14D15480	14.5 %		0.1269210	1.29	0.0000000	0.00	0.0671064	0.34	0.0000302	18.63	254.1909	0.34	0.0237215	1.29	0.0000000	0.00	0.335420	0.14	0.0035333	0.34	0.2078996	18.65	29.4746	0.14	0.1710705	0.34	11.52951	4.28	37.50517	1.29	0.0000000	0.00	0.0297693	0.14
14D15481	15.5 %		0.1275637	1.26	0.0000000	0.00	0.0697928	0.34	0.0000278	20.09	264.3666	0.34	0.0238417	1.26	0.0000000	0.00	0.267088	0.16	0.0036747	0.34	0.1908849	20.11	23.4699	0.16	0.1779187	0.34	10.61728	4.56	37.69508	1.26	0.0000000	0.00	0.0237046	0.16
14D15482	16.5 %		0.1208207	1.32	0.0000000	0.00	0.0651003	0.34	0.0000290	19.56	246.5920	0.34	0.0225814	1.32	0.0000000	0.00	0.216046	0.21	0.0034276	0.34	0.1994904	19.58	18.9847	0.21	0.1659564	0.34	9.20991	5.21	35.70252	1.32	0.0000000	0.00	0.0191746	0.21
14D15484	17.5 %		0.1879752	0.99	0.0000000	0.00	0.0602026	0.34	0.0000244	23.91	228.0401	0.34	0.0351326	0.99	0.0000000	0.00	0.174548	0.25	0.0031698	0.34	0.1675869	23.93	15.3381	0.25	0.1534710	0.34	10.85788	5.12	55.54667	0.99	0.0000000	0.00	0.0154915	0.25
14D15485	19.0 %		0.1619812	1.06	0.0000000	0.00	0.0591475	0.35	0.0000283	20.02	224.0434	0.35	0.0302743	1.06	0.0000000	0.00	0.155545	0.28	0.0031142	0.35	0.1943053	20.04	13.6683	0.28	0.1507812	0.35	9.96857	5.14	47.86545	1.06	0.0000000	0.00	0.0138050	0.28
14D15486	20.5 %		0.1035207	1.47	0.0000000	0.00	0.0413886	0.36	0.0000151	39.55	156.7750	0.36	0.0193480	1.47	0.0000000	0.00	0.118988	0.36	0.0021792	0.36	0.1040908	39.56	10.4559	0.36	0.1055096	0.36	6.68427	6.86	30.59036	1.47	0.0000000	0.00	0.0105604	0.36
14D15488	22.0 %		0.1290921	1.21	0.0000000	0.00	0.0661179	0.34	0.0000257	22.23	250.4468	0.34	0.0241273	1.21	0.0000000	0.00	0.154111	0.28	0.0034812	0.34	0.1763194	22.25	13.5422	0.28	0.1685507	0.34	8.56068	5.47	38.14671	1.21	0.0000000	0.00	0.0136777	0.28
14D15489	23.5 %		0.1232434	1.16	0.0000000	0.00	0.0483070	0.35	0.0000189	29.99	182.9812	0.35	0.0230342	1.16	0.0000000	0.00	0.102483	0.42	0.0025434	0.35	0.1298875	30.01	9.0056	0.42	0.1231464	0.35	7.51497	5.76	36.41843	1.16	0.0000000	0.00	0.0090956	0.42
14D15491	24.5 %		0.0748825	1.80	0.0000000	0.00	0.0327143	0.39	0.0000111	52.49	123.9178	0.39	0.0139955	1.80	0.0000000	0.00	0.051047	0.79	0.0017225	0.39	0.0760069	52.50	4.4857	0.79	0.0833967	0.39	4.60296	8.84	22.12778	1.80	0.0000000	0.00	0.0045305	0.79
		Σ	2.5017202	0.31	0.0000000	0.00	1.0001858	0.08	0.0005629	5.48	3788.5827	0.08	0.4675715	0.31	0.0000000	0.00	18.971781	0.02	0.0526613	0.08	3.8731542	5.48	1667.1161	0.02	2.5497161	0.08	508.68811	0.46	739.25832	0.31	0.0000000	0.00	1.6837872	0.02
		Σ							3.5024689	0.22	3788.5827	0.08									23.365168	0.91			1669.6658	0.02							1249.6302	0.26

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D15450	2.0 %		1.991352	0.003165	0.844142	0.006900	0.005317	0.000041	89.290	5.848174	1.00063111	3.974E-12
14D15451	2.0 %		0.801725	0.002720	0.703711	0.007742	0.001708	0.000035	89.299	5.849137	1.00063117	1.323E-12
14D15453	2.6 %		0.528362	0.001048	0.664634	0.003705	0.000909	0.000014	89.316	5.851143	1.00063129	2.273E-12
14D15454	3.2 %		0.419482	0.000581	0.663536	0.002692	0.000640	0.000008	89.325	5.852187	1.00063136	3.514E-12
14D15456	3.6 %	✓	0.387456	0.000639	0.690165	0.002853	0.000590	0.000009	89.342	5.854114	1.00063148	2.756E-12
14D15457	4.0 %	✓	0.382244	0.000720	0.753021	0.003365	0.000593	0.000010	89.351	5.855158	1.00063154	2.382E-12
14D15458	4.4 %	✓	0.392616	0.000770	0.810919	0.003472	0.000661	0.000011	89.359	5.856121	1.00063160	2.270E-12
14D15460	4.8 %	✓	0.402105	0.001015	0.865833	0.004091	0.000709	0.000013	89.376	5.858130	1.00063172	1.727E-12
14D15461	5.2 %	✓	0.411411	0.001134	0.957782	0.004609	0.000751	0.000015	89.385	5.859094	1.00063178	1.571E-12
14D15462	5.7 %	✓	0.413920	0.001182	1.034426	0.004871	0.000784	0.000016	89.394	5.860139	1.00063184	1.524E-12
14D15464	6.2 %	✓	0.430246	0.001139	1.102757	0.005023	0.000844	0.000016	89.411	5.862149	1.00063197	1.622E-12
14D15465	6.7 %	✓	0.442802	0.001371	1.121339	0.005439	0.000897	0.000019	89.419	5.863114	1.00063203	1.385E-12
14D15466	7.2 %	✓	0.464817	0.001535	1.233680	0.006021	0.000997	0.000021	89.428	5.864160	1.00063209	1.283E-12
14D15468	7.7 %	✓	0.487851	0.001910	1.324173	0.007267	0.001081	0.000025	89.445	5.866090	1.00063221	1.096E-12
14D15469	8.2 %	✓	0.512982	0.001790	1.405043	0.006961	0.001193	0.000024	89.454	5.867136	1.00063227	1.224E-12
14D15470	8.8 %	✓	0.558894	0.002176	1.552112	0.008249	0.001397	0.000030	89.463	5.868102	1.00063233	1.096E-12
14D15472	9.4 %	✓	0.591053	0.002322	1.719798	0.008844	0.001551	0.000032	89.480	5.870115	1.00063245	1.101E-12
14D15473	10.1 %	✓	0.672805	0.002320	2.010303	0.009580	0.001904	0.000032	89.489	5.871162	1.00063252	1.270E-12
14D15474	10.9 %		0.805221	0.002474	2.554413	0.011451	0.002422	0.000034	89.497	5.872128	1.00063257	1.442E-12
14D15476	11.7 %		0.966660	0.002757	3.452908	0.014454	0.003174	0.000041	89.515	5.874142	1.00063270	1.612E-12
14D15477	12.5 %		1.161639	0.003699	4.426725	0.018777	0.003969	0.000051	89.523	5.875109	1.00063276	1.508E-12
14D15478	13.5 %		1.262330	0.003380	6.208295	0.023402	0.004826	0.000049	89.532	5.876157	1.00063282	1.808E-12
14D15480	14.5 %		1.655031	0.003748	8.574311	0.031625	0.006546	0.000056	89.549	5.878092	1.00063294	2.355E-12
14D15481	15.5 %		2.043996	0.004926	11.179318	0.042081	0.008347	0.000069	89.558	5.879140	1.00063300	2.320E-12
14D15482	16.5 %		2.346213	0.006539	12.876398	0.051259	0.009710	0.000085	89.566	5.880108	1.00063306	2.157E-12
14D15484	17.5 %		4.287491	0.012026	14.720255	0.062434	0.016022	0.000126	89.583	5.882124	1.00063318	3.188E-12
14D15485	19.0 %		4.186086	0.013013	16.212621	0.071724	0.016004	0.000130	89.592	5.883173	1.00063325	2.777E-12
14D15486	20.5 %		3.530326	0.014841	14.844149	0.075147	0.013722	0.000152	89.601	5.884142	1.00063330	1.790E-12
14D15488	22.0 %		3.407614	0.011234	18.266408	0.079822	0.014240	0.000119	89.618	5.886160	1.00063343	2.243E-12
14D15489	23.5 %		4.813651	0.021995	20.044557	0.109039	0.018794	0.000174	89.626	5.887129	1.00063349	2.109E-12
14D15491	24.5 %		5.851350	0.049145	27.120977	0.235171	0.023551	0.000346	89.644	5.889148	1.00063361	1.283E-12

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D15450	2.0 %	0.0251331	0.0009116	0.0255545	0.0296827	0.0558225	0.0272823	0.0032764	0.0251566	8.1537997	0.0799166
14D15451	2.0 %	0.0249778	0.0009116	0.0257641	0.0296827	0.0563929	0.0272823	0.0035740	0.0251566	8.0934739	0.0799166
14D15453	2.6 %	0.0246762	0.0009116	0.0262006	0.0296827	0.0574234	0.0272823	0.0043826	0.0251566	7.9767217	0.0799166
14D15454	3.2 %	0.0245311	0.0009116	0.0264275	0.0296827	0.0578748	0.0272823	0.0049038	0.0251566	7.9207778	0.0799166
14D15456	3.6 %	0.0242840	0.0009116	0.0268466	0.0296827	0.0585568	0.0272823	0.0060471	0.0251566	7.8260662	0.0799166
14D15457	4.0 %	0.0241615	0.0009116	0.0270736	0.0296827	0.0588440	0.0272823	0.0067644	0.0251566	7.7794059	0.0799166
14D15458	4.4 %	0.0240555	0.0009116	0.0272831	0.0296827	0.0590579	0.0272823	0.0074878	0.0251566	7.7392300	0.0799166
14D15460	4.8 %	0.0238565	0.0009116	0.0277196	0.0296827	0.0593457	0.0272823	0.0091834	0.0251566	7.6644566	0.0799166
14D15461	5.2 %	0.0237714	0.0009116	0.0279291	0.0296827	0.0594081	0.0272823	0.0100878	0.0251566	7.6328502	0.0799166
14D15462	5.7 %	0.0236870	0.0009116	0.0281561	0.0296827	0.0594201	0.0272823	0.0111338	0.0251566	7.6017462	0.0799166
14D15464	6.2 %	0.0235469	0.0009116	0.0285926	0.0296827	0.0592811	0.0272823	0.0133392	0.0251566	7.5510987	0.0799166
14D15465	6.7 %	0.0234902	0.0009116	0.0288021	0.0296827	0.0591386	0.0272823	0.0144883	0.0251566	7.5310726	0.0799166
14D15466	7.2 %	0.0234364	0.0009116	0.0290291	0.0296827	0.0589287	0.0272823	0.0157994	0.0251566	7.5125140	0.0799166
14D15468	7.7 %	0.0233579	0.0009116	0.0294481	0.0296827	0.0583896	0.0272823	0.0184010	0.0251566	7.4868216	0.0799166
14D15469	8.2 %	0.0233268	0.0009116	0.0296751	0.0296827	0.0580154	0.0272823	0.0199083	0.0251566	7.4775466	0.0799166
14D15470	8.8 %	0.0233051	0.0009116	0.0298846	0.0296827	0.0576189	0.0272823	0.0213608	0.0251566	7.4718802	0.0799166
14D15472	9.4 %	0.0232818	0.0009116	0.0303211	0.0296827	0.0566348	0.0272823	0.0245755	0.0251566	7.4690018	0.0799166
14D15473	10.1 %	0.0232814	0.0009116	0.0305481	0.0296827	0.0560387	0.0272823	0.0263479	0.0251566	7.4722723	0.0799166
14D15474	10.9 %	0.0232880	0.0009116	0.0307576	0.0296827	0.0554373	0.0272823	0.0280451	0.0251566	7.4781863	0.0799166
14D15476	11.7 %	0.0233236	0.0009116	0.0311941	0.0296827	0.0540263	0.0272823	0.0317696	0.0251566	7.4994336	0.0799166
14D15477	12.5 %	0.0233512	0.0009116	0.0314037	0.0296827	0.0532733	0.0272823	0.0336478	0.0251566	7.5139171	0.0799166
14D15478	13.5 %	0.0233888	0.0009116	0.0316306	0.0296827	0.0524020	0.0272823	0.0357489	0.0251566	7.5327439	0.0799166
14D15480	14.5 %	0.0234790	0.0009116	0.0320497	0.0296827	0.0506419	0.0272823	0.0398089	0.0251566	7.5760705	0.0799166
14D15481	15.5 %	0.0235393	0.0009116	0.0322767	0.0296827	0.0496064	0.0272823	0.0421061	0.0251566	7.6041809	0.0799166
14D15482	16.5 %	0.0236019	0.0009116	0.0324862	0.0296827	0.0485993	0.0272823	0.0442878	0.0251566	7.6330241	0.0799166
14D15484	17.5 %	0.0237543	0.0009116	0.0329227	0.0296827	0.0463433	0.0272823	0.0490216	0.0251566	7.7020406	0.0799166
14D15485	19.0 %	0.0238452	0.0009116	0.0331497	0.0296827	0.0450859	0.0272823	0.0515839	0.0251566	7.7426964	0.0799166
14D15486	20.5 %	0.0239362	0.0009116	0.0333592	0.0296827	0.0438739	0.0272823	0.0540103	0.0251566	7.7831199	0.0799166
14D15488	22.0 %	0.0241475	0.0009116	0.0337957	0.0296827	0.0411911	0.0272823	0.0592538	0.0251566	7.8762622	0.0799166
14D15489	23.5 %	0.0242594	0.0009116	0.0340052	0.0296827	0.0398276	0.0272823	0.0618613	0.0251566	7.9252552	0.0799166
14D15491	24.5 %	0.0245144	0.0009116	0.0344417	0.0296827	0.0368289	0.0272823	0.0674821	0.0251566	8.0362506	0.0799166

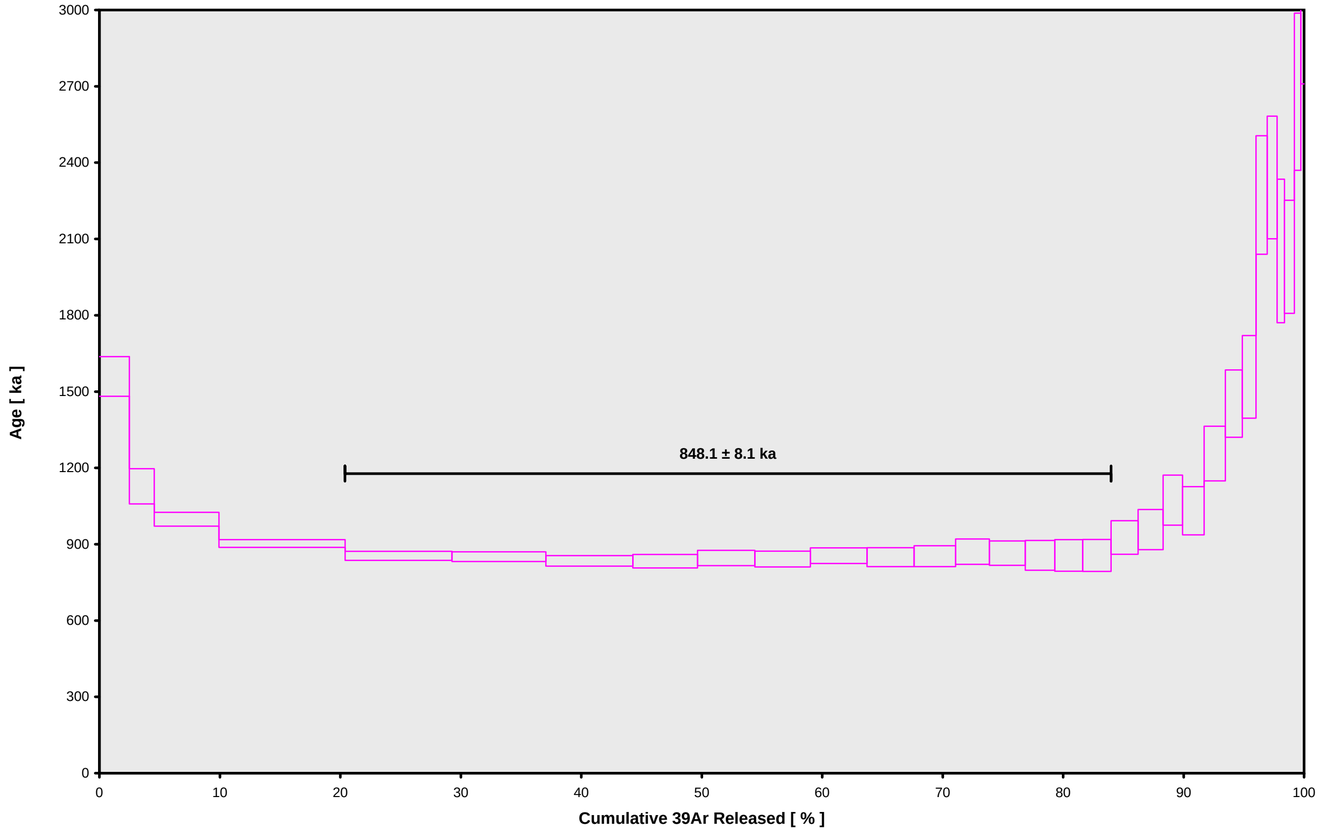
Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D15450	2.0 %	0.2406649	0.0011581	0.3947	EXP 150 of 150	5.8663	0.0321	0.5869	EXP 150 of 150	0.6907558	0.0279420	0.1236	EXP 150 of 150	41.3025	0.0313	0.9861	EXP 150 of 150	91.16585	0.03866	0.9984	EXP 150 of 150
14D15451	2.0 %	0.0822164	0.0007196	0.4895	EXP 149 of 150	4.0337	0.0303	0.4265	EXP 149 of 150	0.4229497	0.0255895	0.0642	EXP 150 of 150	34.1420	0.0279	0.9843	EXP 150 of 150	35.71964	0.03377	0.9965	EXP 150 of 150
14D15453	2.6 %	0.1040974	0.0007431	0.4133	EXP 150 of 150	9.9693	0.0335	0.7148	EXP 150 of 150	0.9165845	0.0286965	0.0019	EXP 150 of 150	89.0358	0.0312	0.9972	EXP 150 of 150	55.45845	0.03227	0.9954	EXP 150 of 150
14D15454	3.2 %	0.1334798	0.0008677	0.2454	EXP 150 of 150	19.3980	0.0349	0.9115	EXP 149 of 150	1.8841059	0.0269344	0.2068	EXP 150 of 150	173.3391	0.0374	0.9990	EXP 150 of 150	81.31286	0.03503	0.9912	EXP 150 of 150
14D15456	3.6 %	0.1095454	0.0009133	0.2169	EXP 150 of 150	17.1230	0.0306	0.9168	EXP 150 of 150	1.6936391	0.0279083	0.2156	EXP 150 of 150	147.1866	0.0335	0.9988	EXP 150 of 150	65.38664	0.03036	0.9936	EXP 150 of 150
14D15457	4.0 %	0.0991881	0.0007773	0.3466	EXP 150 of 150	16.3621	0.0392	0.8540	EXP 150 of 150	1.4644501	0.0296326	0.1089	EXP 150 of 150	128.9417	0.0369	0.9982	EXP 150 of 150	57.52591	0.03202	0.9930	EXP 150 of 150
14D15458	4.4 %	0.1016567	0.0008019	0.2015	EXP 150 of 150	16.3511	0.0331	0.8925	EXP 149 of 150	1.4136908	0.0277142	0.1955	EXP 149 of 150	119.6775	0.0321	0.9984	EXP 150 of 150	55.16399	0.03188	0.9931	EXP 150 of 150
14D15460	4.8 %	0.0856896	0.0007032	0.2533	EXP 150 of 150	12.9581	0.0320	0.8352	EXP 150 of 150	0.9602917	0.0306808	0.0036	EXP 150 of 150	88.9040	0.0307	0.9974	EXP 150 of 150	43.74462	0.03281	0.9934	EXP 150 of 150
14D15461	5.2 %	0.0820592	0.0007431	0.3330	EXP 150 of 150	12.7419	0.0328	0.8393	EXP 150 of 150	0.9130315	0.0290096	0.0221	EXP 150 of 150	79.0470	0.0358	0.9953	EXP 150 of 150	40.45437	0.03155	0.9940	EXP 150 of 150
14D15462	5.7 %	0.0823387	0.0007308	0.2763	EXP 150 of 150	13.2616	0.0327	0.8349	EXP 150 of 150	0.9400478	0.0284043	0.1009	EXP 149 of 150	76.1855	0.0338	0.9955	EXP 150 of 150	39.42735	0.03338	0.9934	EXP 150 of 150
14D15464	6.2 %	0.0881306	0.0007390	0.3475	EXP 150 of 150	14.4720	0.0339	0.8740	EXP 150 of 150	0.9495937	0.0280731	0.0700	EXP 150 of 150	78.0042	0.0293	0.9968	EXP 150 of 150	41.42092	0.02959	0.9948	EXP 150 of 150
14D15465	6.7 %	0.0805115	0.0007655	0.2753	EXP 150 of 150	12.2101	0.0311	0.8228	EXP 150 of 150	0.7768629	0.0289257	0.0179	EXP 150 of 150	64.7608	0.0284	0.9956	EXP 150 of 150	36.46960	0.03146	0.9943	EXP 150 of 150
14D15466	7.2 %	0.0793695	0.0007109	0.3138	EXP 150 of 150	11.8513	0.0298	0.8266	EXP 149 of 150	0.7276092	0.0278654	0.0475	EXP 150 of 150	57.1521	0.0294	0.9939	EXP 150 of 150	34.31937	0.02829	0.9955	EXP 150 of 150
14D15468	7.7 %	0.0726549	0.0006908	0.4294	EXP 150 of 150	10.3404	0.0333	0.7844	EXP 149 of 150	0.5401197	0.0269274	0.0063	EXP 150 of 150	46.4977	0.0315	0.9897	EXP 150 of 150	30.37440	0.03199	0.9945	EXP 150 of 150
14D15469	8.2 %	0.0811682	0.0007249	0.2291	EXP 150 of 150	11.6600	0.0302	0.8155	EXP 149 of 150	0.6176813	0.0275233	0.0019	EXP 150 of 150	49.4080	0.0285	0.9926	EXP 150 of 150	33.05023	0.03008	0.9946	EXP 150 of 150
14D15470	8.8 %	0.0789285	0.0007352	0.1830	EXP 150 of 150	10.5760	0.0313	0.7988	EXP 150 of 150	0.5073857	0.0276745	0.0017	EXP 150 of 150	40.5914	0.0272	0.9895	EXP 150 of 150	30.35881	0.02976	0.9949	EXP 150 of 150
14D15472	9.4 %	0.0819285	0.0007592	0.1759	EXP 150 of 150	11.1278	0.0306	0.8044	EXP 150 of 150	0.5296614	0.0265225	0.0173	EXP 150 of 150	38.5584	0.0288	0.9875	EXP 150 of 150	30.45804	0.03186	0.9937	EXP 150 of 150
14D15473	10.1 %	0.0963010	0.0007800	0.0715	EXP 150 of 150	13.1905	0.0317	0.8614	EXP 150 of 150	0.5697931	0.0257918	0.0269	EXP 150 of 150	39.0933	0.0315	0.9854	EXP 150 of 150	34.00311	0.03042	0.9934	EXP 150 of 150
14D15474	10.9 %	0.1113812	0.0007578	0.0166	EXP 150 of 150	15.9016	0.0348	0.8642	EXP 150 of 150	0.5560598	0.0270294	0.0120	EXP 149 of 150	37.0847	0.0274	0.9871	EXP 150 of 150	37.59672	0.02946	0.9929	EXP 150 of 150
14D15476	11.7 %	0.1308340	0.0009598	0.0003	EXP 150 of 150	20.0197	0.0365	0.9059	EXP 150 of 150	0.5288544	0.0272159	0.0388	EXP 150 of 150	34.5441	0.0275	0.9858	EXP 150 of 150	41.17387	0.03191	0.9900	EXP 150 of 150
14D15477	12.5 %	0.1279885	0.0008889	0.0017	EXP 150 of 150	19.9685	0.0332	0.9197	EXP 150 of 150	0.4014392	0.0247369	0.0007	EXP 149 of 150	26.8898	0.0305	0.9706	EXP 150 of 150	39.00351	0.03287	0.9893	EXP 150 of 150
14D15478	13.5 %	0.1637763	0.0009690	0.1115	EXP 150 of 150	30.9146	0.0291	0.9731	EXP 150 of 150	0.5079618	0.0279536	0.0280	EXP 150 of 150	29.6712	0.0269	0.9812	EXP 150 of 150	45.29314	0.03187	0.9876	EXP 150 of 150
14D15480	14.5 %	0.2126774	0.0011385	0.2514	EXP 150 of 150	42.4216	0.0339	0.9802	EXP 150 of 150	0.5129739	0.0267388	0.0061	EXP 150 of 150	29.4863	0.0277	0.9797	EXP 150 of 150	56.76788	0.03254	0.9792	EXP 150 of 150
14D15481	15.5 %	0.2159809	0.0010895	0.3026	EXP 150 of 150	44.1130	0.0360	0.9795	EXP 150 of 150	0.4299611	0.0262164	0.0104	EXP 150 of 150	23.5311	0.0240	0.9763	EXP 150 of 150	56.06570	0.03301	0.9784	EXP 150 of 150
14D15482	16.5 %	0.2048956	0.0010902	0.3580	EXP 150 of 150	41.1379	0.0358	0.9767	EXP 150 of 150	0.3875611	0.0271432	0.0155	EXP 150 of 150	19.0664	0.0266	0.9548	EXP 150 of 150	52.68126	0.03119	0.9829	EXP 150 of 150
14D15484	17.5 %	0.2657414	0.0013366	0.4374	EXP 150 of 150	38.0271	0.0336	0.9767	EXP 150 of 150	0.3294536	0.0286300	0.0158	EXP 150 of 150	15.4366	0.0269	0.9331	EXP 150 of 150	74.29449	0.03376	0.9153	EXP 150 of 150
14D15485	19.0 %	0.2394643	0.0011872	0.3316	EXP 150 of 150	37.3531	0.0384	0.9688	EXP 150 of 150	0.3334788	0.0269987	0.0457	EXP 150 of 150	13.7778	0.0262	0.9142	EXP 150 of 150	65.74068	0.03253	0.9611	EXP 150 of 150
14D15486	20.5 %	0.1652316	0.0010664	0.1552	EXP 150 of 150	26.1235	0.0312	0.9590	EXP 150 of 150	0.1977488	0.0301390	0.0012	EXP 150 of 150	10.5445	0.0263	0.8663	EXP 150 of 150	45.16509	0.02936	0.9871	EXP 150 of 150
14D15488	22.0 %	0.2144944	0.0010176	0.3439	EXP 150 of 150	41.7372	0.0353	0.9798	EXP 150 of 150	0.3124805	0.0274221	0.0188	EXP 150 of 150	13.6779	0.0258	0.9250	EXP 150 of 150	54.71860	0.03369	0.9790	EXP 150 of 150
14D15489	23.5 %	0.1915326	0.0008886	0.2514	EXP 150 of 150	30.4797	0.0325	0.9663	EXP 150 of 150	0.2149749	0.0271050	0.0159	EXP 150 of 150	9.1293	0.0271	0.7952	EXP 150 of 150	51.98182	0.03154	0.9828	EXP 150 of 150
14D15491	24.5 %	0.1294277	0.0008637	0.0015	EXP 150 of 150	20.6228	0.0319	0.9292	EXP 150 of 150	0.1042017	0.0284254	0.0097	EXP 150 of 150	4.6059	0.0245	0.5096	EXP 150 of 150	34.84092	0.03120	0.9899	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos
14D15450	2.0 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	22	7	1	14-OSU-02	0.00	0.00	13.70
14D15451	2.0 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	22	19	1	14-OSU-02	0.00	0.00	13.70
14D15453	2.6 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	22	44	1	14-OSU-02	0.00	0.00	13.70
14D15454	3.2 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	22	57	1	14-OSU-02	0.00	0.00	13.70
14D15456	3.6 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	3.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	23	21	1	14-OSU-02	0.00	0.00	13.70
14D15457	4.0 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	23	34	1	14-OSU-02	0.00	0.00	13.70
14D15458	4.4 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	11	JUN	2014	23	46	1	14-OSU-02	0.00	0.00	13.70
14D15460	4.8 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	4.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	0	11	1	14-OSU-02	0.00	0.00	13.70
14D15461	5.2 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	0	23	1	14-OSU-02	0.00	0.00	13.70
14D15462	5.7 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	5.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	0	36	1	14-OSU-02	0.00	0.00	13.70
14D15464	6.2 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	1	1	1	14-OSU-02	0.00	0.00	13.70
14D15465	6.7 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	6.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	1	13	1	14-OSU-02	0.00	0.00	13.70
14D15466	7.2 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	1	26	1	14-OSU-02	0.00	0.00	13.70
14D15468	7.7 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	7.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	1	50	1	14-OSU-02	0.00	0.00	13.70
14D15469	8.2 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	2	3	1	14-OSU-02	0.00	0.00	13.70
14D15470	8.8 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	8.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	2	15	1	14-OSU-02	0.00	0.00	13.70
14D15472	9.4 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	9.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	2	40	1	14-OSU-02	0.00	0.00	13.70
14D15473	10.1 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	10.1	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	2	53	1	14-OSU-02	0.00	0.00	13.70
14D15474	10.9 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	10.9	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	3	5	1	14-OSU-02	0.00	0.00	13.70
14D15476	11.7 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	11.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	3	30	1	14-OSU-02	0.00	0.00	13.70
14D15477	12.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	3	42	1	14-OSU-02	0.00	0.00	13.70
14D15478	13.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	13.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	3	55	1	14-OSU-02	0.00	0.00	13.70
14D15480	14.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	14.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	4	19	1	14-OSU-02	0.00	0.00	13.70
14D15481	15.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	15.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	4	32	1	14-OSU-02	0.00	0.00	13.70
14D15482	16.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	16.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	4	44	1	14-OSU-02	0.00	0.00	13.70
14D15484	17.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	17.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	5	9	1	14-OSU-02	0.00	0.00	13.70
14D15485	19.0 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	19	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	5	22	1	14-OSU-02	0.00	0.00	13.70
14D15486	20.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	20.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	5	34	1	14-OSU-02	0.00	0.00	13.70
14D15488	22.0 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	22	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	5	59	1	14-OSU-02	0.00	0.00	13.70
14D15489	23.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	23.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	6	11	1	14-OSU-02	0.00	0.00	13.70
14D15491	24.5 %	176710	Groundmass	Harrat Hutaymah	Anthony Koppers	24.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.84679	0.074	0.00177662	0.074	302.88	0.127	0.993900606	0.066	1	4.8E-14	12	JUN	2014	6	36	1	14-OSU-02	0.00	0.00	13.70

Project	Experiment	Nmb
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01
Harhut\Schlieder (14-13)	14D15449	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D15450	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15451	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15453	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15454	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15456	3.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15457	4.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15458	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15460	4.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15461	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15462	5.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15464	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15465	6.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15466	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15468	7.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15469	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15470	8.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15472	9.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15473	10.1 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15474	10.9 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15476	11.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15477	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15478	13.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15480	14.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15481	15.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15482	16.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15484	17.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15485	19.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15486	20.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15488	22.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15489	23.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15491	24.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

14D15449.AGE >>> 176710 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
848.1 ± 8.1
TOTAL FUSION
980.0 ± 9.1
NORMAL ISOCHRON
837.0 ± 24.8
INVERSE ISOCHRON
837.8 ± 24.6

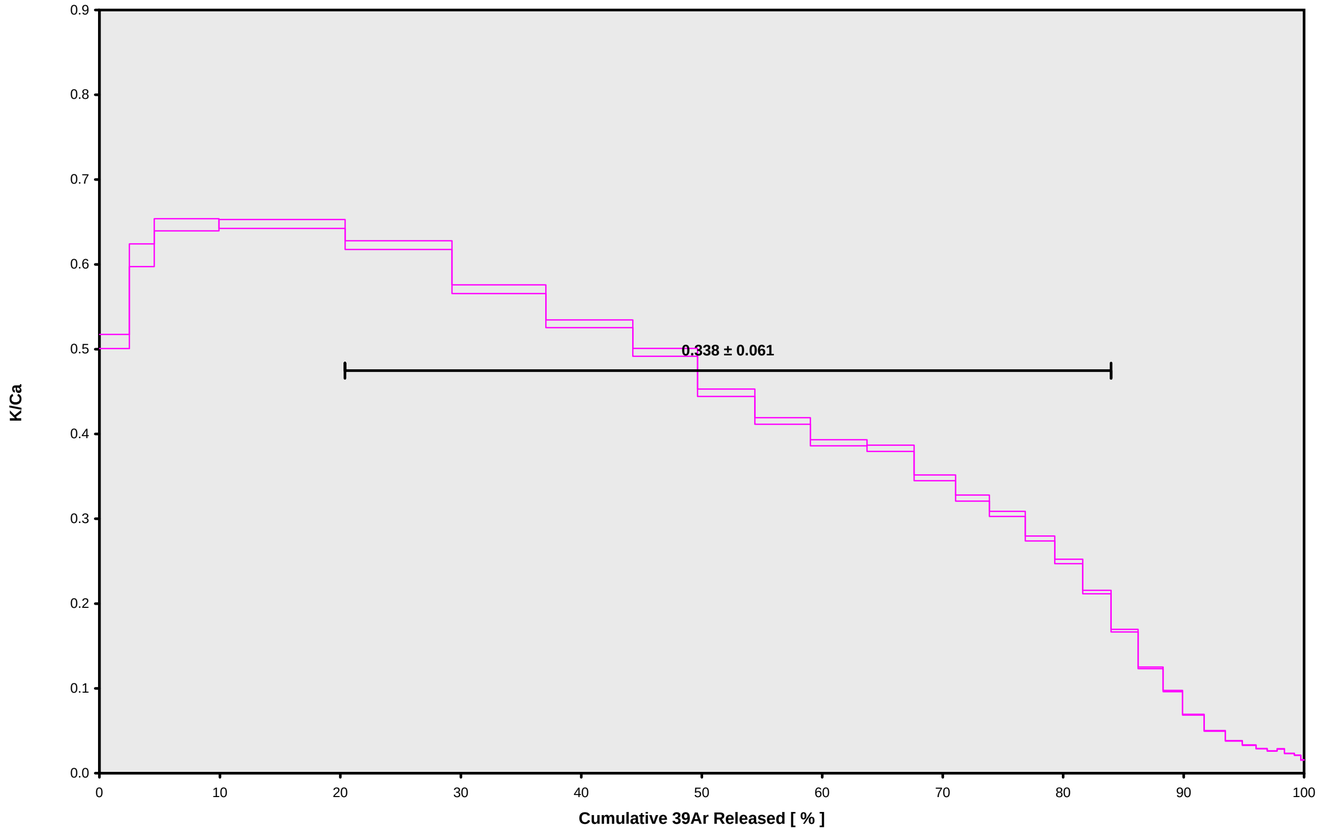
MSWD (PROBABILITY)
0.43 (96%)

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177662 ± 0.00000131

14D15449.AGE >>> 176710 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

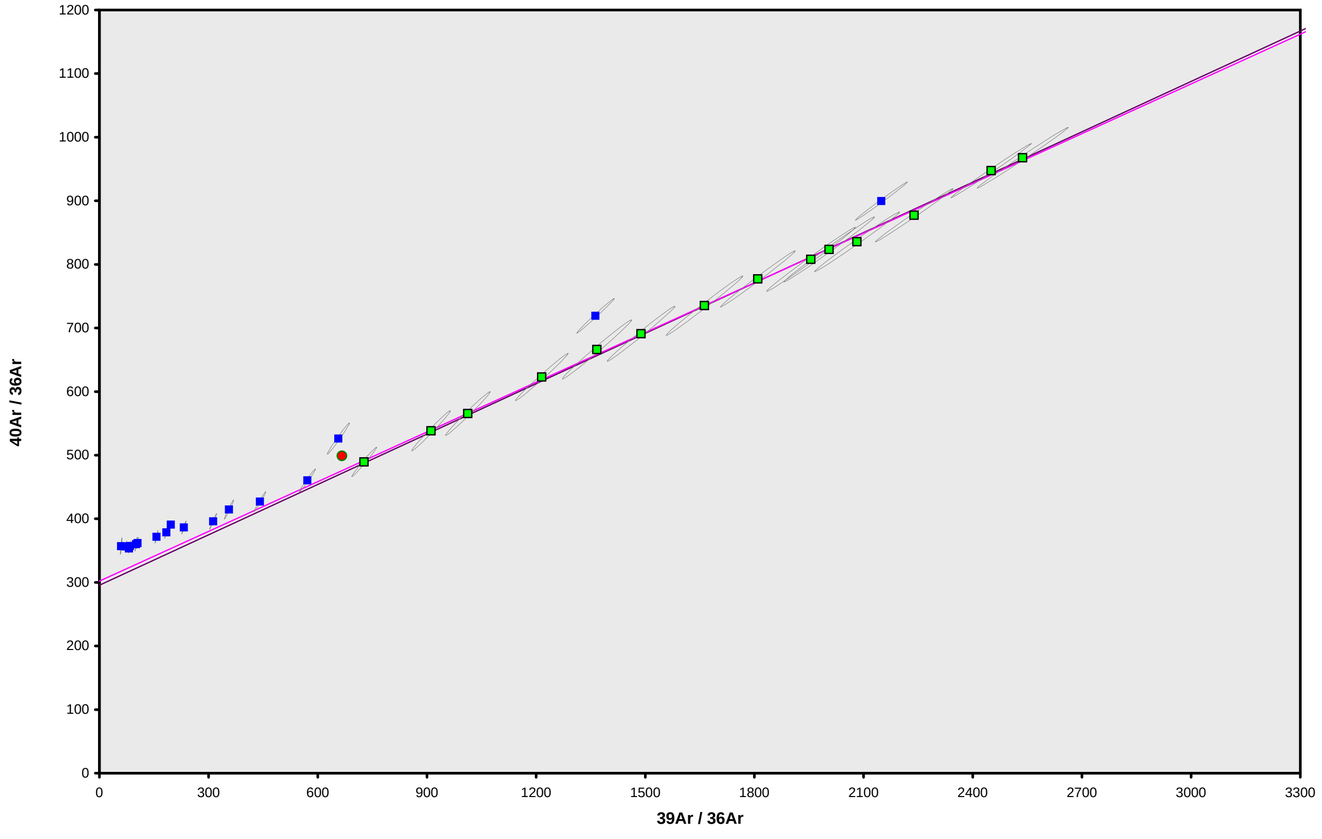
WEIGHTED PLATEAU
848.1 ± 8.1
TOTAL FUSION
980.0 ± 9.1
NORMAL ISOCHRON
837.0 ± 24.8
INVERSE ISOCHRON
837.8 ± 24.6

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177662 ± 0.00000131

14D15449.AGE >>> 176710 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
848.1 ± 8.1
TOTAL FUSION
980.0 ± 9.1
NORMAL ISOCHRON
837.0 ± 24.8
INVERSE ISOCHRON
837.8 ± 24.6

MSWD (PROBABILITY)
0.40 (96%)

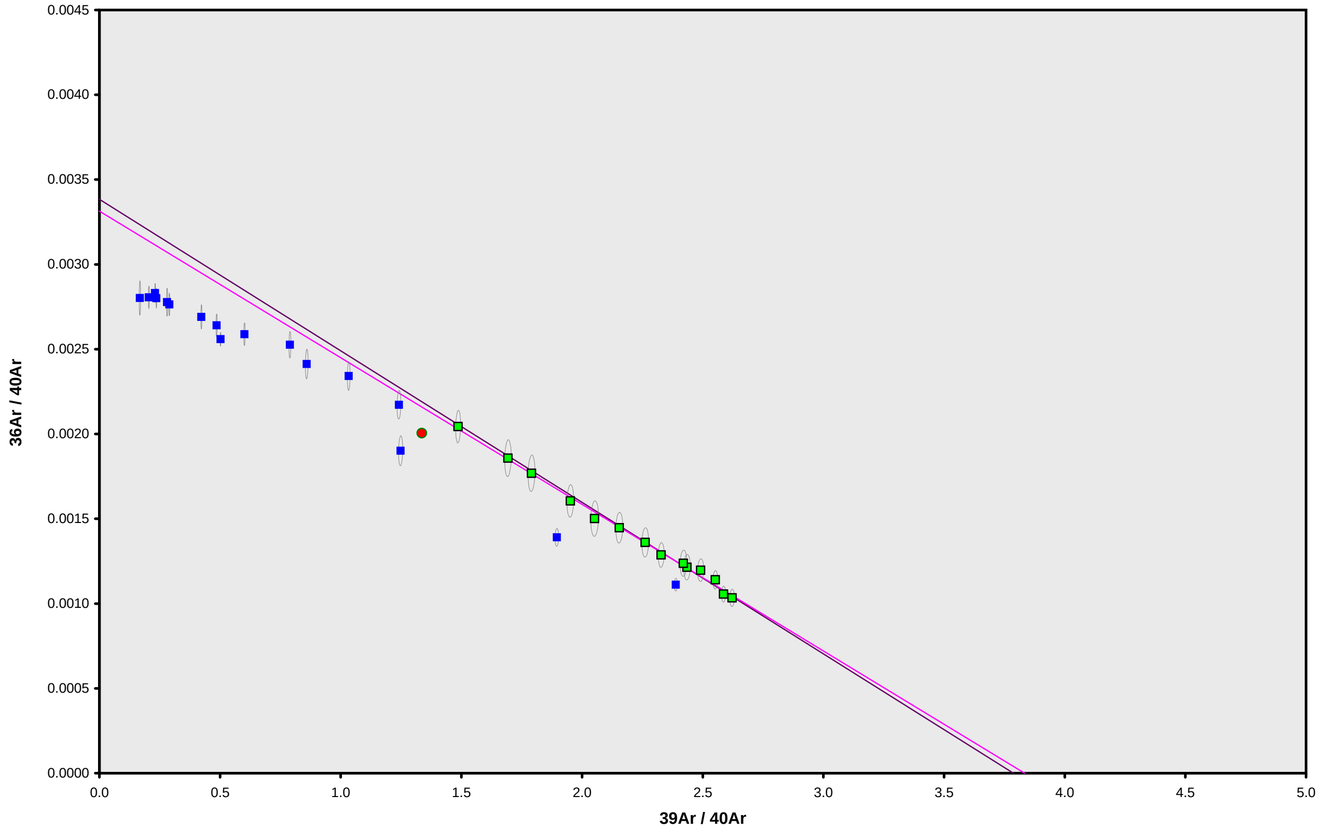
40AR/36AR INTERCEPT
301.9 ± 14.1

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177662 ± 0.00000131

14D15449.AGE >>> 176710 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
848.1 ± 8.1
TOTAL FUSION
980.0 ± 9.1
NORMAL ISOCHRON
837.0 ± 24.8
INVERSE ISOCHRON
837.8 ± 24.6

MSWD (PROBABILITY)
0.40 (96%)

SPREADING FACTOR
29.6%

40AR/36AR INTERCEPT
301.7 ± 14.1

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177662 ± 0.00000131

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15493	2.0 %	✓	1.695962	14.6602	0.2781229	13.7495	64.74122	15046.4 ± 868.1	11.44	1.04	0.403 ± 0.015
14D15494	2.0 %	✓	0.896433	10.1643	0.0528954	9.9630	33.45616	10743.4 ± 748.6	11.21	0.75	0.421 ± 0.021
14D15496	2.6 %	✓	1.058311	33.1471	0.1526305	31.4694	46.39086	4724.2 ± 267.0	12.92	2.38	0.408 ± 0.007
14D15497	3.2 %	✓	0.795216	47.1468	0.1025867	45.2320	39.76847	2819.0 ± 157.2	14.47	3.42	0.413 ± 0.005
14D15499	3.6 %	✓	0.482860	43.9755	0.1229703	42.2977	29.31179	2222.3 ± 126.3	17.04	3.20	0.414 ± 0.006
14D15500	4.0 %	✓	0.380125	49.5073	0.1024117	48.4382	29.20684	1933.8 ± 97.4	20.63	3.66	0.421 ± 0.005
14D15501	4.4 %	✓	0.376644	60.7007	0.0902474	60.9277	29.88996	1573.5 ± 77.5	21.16	4.61	0.432 ± 0.005
14D15503	4.8 %	✓	0.262800	53.5805	0.0978496	56.0280	26.15972	1497.6 ± 74.7	25.18	4.24	0.450 ± 0.005
14D15504	5.2 %	✓	0.275605	59.7885	0.1095810	64.0349	27.61913	1383.5 ± 67.5	25.31	4.84	0.461 ± 0.005
14D15505	5.7 %	✓	0.204183	48.3110	0.0849843	52.8156	22.29186	1353.8 ± 73.5	26.96	3.99	0.470 ± 0.006
14D15507	6.2 %	✓	0.175118	42.4649	0.1188639	46.8520	19.89703	1362.2 ± 80.2	27.75	3.54	0.474 ± 0.007
14D15508	6.7 %	✓	0.189347	43.9338	0.0832592	48.1388	20.36956	1357.3 ± 81.1	26.67	3.64	0.471 ± 0.007
14D15509	7.2 %	✓	0.196111	43.3540	0.1167978	48.1868	20.26875	1349.2 ± 79.5	25.90	3.64	0.478 ± 0.007
14D15511	7.7 %	✓	0.229902	45.1018	0.1422285	49.3299	22.46053	1460.4 ± 78.5	24.83	3.73	0.470 ± 0.006
14D15512	8.2 %	✓	0.220058	43.4687	0.0703833	46.1730	19.90041	1382.5 ± 82.2	23.42	3.49	0.457 ± 0.006
14D15513	8.8 %	✓	0.251805	42.6428	0.4304082	44.9003	21.12217	1508.9 ± 84.5	22.10	3.40	0.453 ± 0.007
14D15515	9.4 %	✓	0.319398	47.7645	0.4340808	48.4964	24.14940	1597.2 ± 85.1	20.37	3.67	0.437 ± 0.007
14D15518	10.3 %	✓	0.238732	37.6224	0.1851681	36.3389	18.20640	1607.0 ± 107.8	20.51	2.75	0.415 ± 0.008
14D15519	10.9 %	✓	0.300580	43.1626	0.2296184	38.7774	20.31641	1680.4 ± 104.0	18.61	2.93	0.386 ± 0.006
14D15521	11.7 %	✓	0.379882	53.4102	0.2531568	41.2115	24.12880	1877.8 ± 112.5	17.69	3.12	0.332 ± 0.004
14D15522	12.5 %	✓	0.487962	67.8913	0.2565539	45.0255	27.31578	1945.7 ± 115.3	15.92	3.40	0.285 ± 0.003
14D15523	13.5 %	✓	0.662408	103.3080	0.3516801	55.4446	40.64052	2350.5 ± 110.2	17.19	4.19	0.231 ± 0.002
14D15525	14.5 %	✓	0.667957	115.8931	0.4335106	52.3720	40.43927	2476.0 ± 113.8	17.00	3.96	0.194 ± 0.002
14D15526	15.5 %	✓	0.734459	132.9199	0.3846121	48.0658	37.79598	2521.5 ± 137.1	14.83	3.63	0.155 ± 0.001
14D15527	16.5 %	✓	0.726617	124.3433	0.3903137	43.9917	35.86901	2614.5 ± 152.7	14.31	3.33	0.152 ± 0.001
14D15529	17.5 %	✓	0.793344	154.0956	0.4304331	41.6358	41.62329	3205.0 ± 171.5	15.08	3.15	0.116 ± 0.001
14D15530	19.0 %	✓	0.843470	186.4429	0.4324089	40.7977	41.71211	3277.8 ± 181.1	14.33	3.09	0.094 ± 0.001
14D15531	20.5 %	✓	0.700216	174.1494	0.3532182	33.3521	35.53611	3415.7 ± 193.1	14.66	2.52	0.082 ± 0.001
14D15533	23.5 %	✓	1.088513	304.3618	0.4979810	46.2379	52.15998	3616.2 ± 195.2	13.95	3.50	0.065 ± 0.000
14D15534	22.0 %	✓	0.560717	115.6633	0.1983596	19.6998	27.07618	4405.0 ± 285.4	14.04	1.49	0.073 ± 0.001
14D15536	24.5 %	✓	0.495620	104.8789	0.2699953	22.3536	24.75698	3550.3 ± 240.0	14.46	1.69	0.092 ± 0.001
		Σ	16.690355	2447.8554	7.2573114	1322.3372	964.58068				

Information on Analysis

Sample = 176701
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177448 ± 0.00000131
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.55034 ± 0.07951	1765.1 ± 254.9	> 100	100.00	0.104 ± 0.026
Error Mean	± 14.45%	± 14.44%	0%	31	
		Full External Error ± 258.0	1.52	2σ Confidence Limit	
		Analytical Error ± 254.9	> 10	Error Magnification	
Total Fusion Age	0.72945 ± 0.00775	2339.2 ± 25.1		31	0.232 ± 0.000
	± 1.06%	± 1.07%			
		Full External Error ± 58.4			
		Analytical Error ± 24.8			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D15493	2.0 %	✓	8.11 ± 0.09	333.67 ± 2.47	0.6872
14D15494	2.0 %	✓	11.11 ± 0.15	332.82 ± 2.89	0.6285
14D15496	2.6 %	✓	29.74 ± 0.27	339.33 ± 2.83	0.9015
14D15497	3.2 %	✓	56.88 ± 0.54	345.51 ± 3.23	0.9400
14D15499	3.6 %	✓	87.60 ± 1.00	356.20 ± 4.09	0.9351
14D15500	4.0 %	✓	127.43 ± 1.60	372.33 ± 4.76	0.9389
14D15501	4.4 %	✓	161.76 ± 2.03	374.86 ± 4.84	0.9444
14D15503	4.8 %	✓	213.20 ± 3.33	395.04 ± 6.40	0.9415
14D15504	5.2 %	✓	232.34 ± 3.59	395.71 ± 6.33	0.9462
14D15505	5.7 %	✓	258.67 ± 4.74	404.68 ± 7.76	0.9378
14D15507	6.2 %	✓	267.55 ± 5.49	409.12 ± 8.82	0.9357
14D15508	6.7 %	✓	254.24 ± 5.06	403.08 ± 8.40	0.9384
14D15509	7.2 %	✓	245.71 ± 4.61	398.85 ± 7.87	0.9343
14D15511	7.7 %	✓	214.57 ± 3.49	393.20 ± 6.70	0.9310
14D15512	8.2 %	✓	209.82 ± 3.49	385.93 ± 6.75	0.9271
14D15513	8.8 %	✓	178.31 ± 2.37	379.38 ± 5.64	0.8731
14D15515	9.4 %	✓	151.84 ± 1.80	371.11 ± 4.80	0.8873
14D15518	10.3 %	✓	152.22 ± 2.24	371.76 ± 6.07	0.8776
14D15519	10.9 %	✓	129.01 ± 1.58	363.09 ± 4.89	0.8762
14D15521	11.7 %	✓	108.49 ± 1.26	359.02 ± 4.46	0.9021
14D15522	12.5 %	✓	92.27 ± 0.97	351.48 ± 3.85	0.9134
14D15523	13.5 %	✓	83.70 ± 0.78	356.85 ± 3.41	0.9350
14D15525	14.5 %	✓	78.41 ± 0.71	356.04 ± 3.29	0.9284
14D15526	15.5 %	✓	65.44 ± 0.60	346.96 ± 3.24	0.9352
14D15527	16.5 %	✓	60.54 ± 0.58	344.86 ± 3.32	0.9354
14D15529	17.5 %	✓	52.48 ± 0.49	347.97 ± 3.26	0.9331
14D15530	19.0 %	✓	48.37 ± 0.44	344.95 ± 3.15	0.9356
14D15531	20.5 %	✓	47.63 ± 0.45	346.25 ± 3.31	0.9225
14D15533	23.5 %	✓	42.48 ± 0.37	343.42 ± 2.98	0.9499
14D15534	22.0 %	✓	35.13 ± 0.37	343.79 ± 3.57	0.8733
14D15536	24.5 %	✓	45.10 ± 0.50	345.45 ± 3.86	0.8866

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	331.21 ± 1.42	0.27793 ± 0.01379	891.6 ± 44.2	1.73
Error Chron	± 0.43%	± 4.96%	± 4.96%	1%
			Full External Error ± 48.6	
			Analytical Error ± 44.2	

Statistics				
	2σ Confidence Limit	1.53	Convergence	0.000000730865
	Error Magnification	1.3137	Number of Iterations	5
	Number of Data Points	31	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D15493	2.0 %	✓	0.0242967 ± 0.0001872	0.00299694 ± 0.00002219	0.0150
14D15494	2.0 %	✓	0.0333933 ± 0.0003449	0.00300461 ± 0.00002610	0.0335
14D15496	2.6 %	✓	0.0876287 ± 0.0003408	0.00294694 ± 0.00002457	0.0647
14D15497	3.2 %	✓	0.1646270 ± 0.0005403	0.00289427 ± 0.00002710	0.1148
14D15499	3.6 %	✓	0.2459210 ± 0.0010168	0.00280738 ± 0.00003227	0.1878
14D15500	4.0 %	✓	0.3422372 ± 0.0015165	0.00268576 ± 0.00003433	0.2324
14D15501	4.4 %	✓	0.4315350 ± 0.0018383	0.00266767 ± 0.00003442	0.2407
14D15503	4.8 %	✓	0.5396798 ± 0.0029536	0.00253137 ± 0.00004102	0.2755
14D15504	5.2 %	✓	0.5871501 ± 0.0030442	0.00252709 ± 0.00004042	0.2667
14D15505	5.7 %	✓	0.6391972 ± 0.0042611	0.00247111 ± 0.00004741	0.3012
14D15507	6.2 %	✓	0.6539530 ± 0.0049782	0.00244427 ± 0.00005271	0.3115
14D15508	6.7 %	✓	0.6307374 ± 0.0045447	0.00248091 ± 0.00005169	0.3008
14D15509	7.2 %	✓	0.6160446 ± 0.0043362	0.00250719 ± 0.00004945	0.3096
14D15511	7.7 %	✓	0.5457052 ± 0.0034006	0.00254326 ± 0.00004332	0.3038
14D15512	8.2 %	✓	0.5436748 ± 0.0035699	0.00259113 ± 0.00004529	0.3162
14D15513	8.8 %	✓	0.4700101 ± 0.0034123	0.00263586 ± 0.00003920	0.4478
14D15515	9.4 %	✓	0.4091434 ± 0.0024452	0.00269463 ± 0.00003486	0.4072
14D15518	10.3 %	✓	0.4094437 ± 0.0032097	0.00268989 ± 0.00004394	0.4381
14D15519	10.9 %	✓	0.3553066 ± 0.0023126	0.00275413 ± 0.00003711	0.4229
14D15521	11.7 %	✓	0.3021729 ± 0.0016256	0.00278539 ± 0.00003460	0.3550
14D15522	12.5 %	✓	0.2625262 ± 0.0011761	0.00284512 ± 0.00003113	0.3074
14D15523	13.5 %	✓	0.2345548 ± 0.0007993	0.00280228 ± 0.00002674	0.2450
14D15525	14.5 %	✓	0.2202163 ± 0.0007615	0.00280866 ± 0.00002592	0.2459
14D15526	15.5 %	✓	0.1886202 ± 0.0006294	0.00288217 ± 0.00002689	0.2207
14D15527	16.5 %	✓	0.1755567 ± 0.0006038	0.00289969 ± 0.00002792	0.2141
14D15529	17.5 %	✓	0.1508236 ± 0.0005176	0.00287385 ± 0.00002695	0.1823
14D15530	19.0 %	✓	0.1402189 ± 0.0004606	0.00289895 ± 0.00002651	0.1756
14D15531	20.5 %	✓	0.1375628 ± 0.0005164	0.00288808 ± 0.00002761	0.2111
14D15533	23.5 %	✓	0.1236917 ± 0.0003418	0.00291190 ± 0.00002530	0.1337
14D15534	22.0 %	✓	0.1021943 ± 0.0005393	0.00290877 ± 0.00003019	0.2176
14D15536	24.5 %	✓	0.1305606 ± 0.0006919	0.00289476 ± 0.00003235	0.2552

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	331.24 ± 1.42	0.27822 ± 0.01363	892.5 ± 43.7	1.72
Error Chron	± 0.43%	± 4.90%	± 4.90%	1%
			Full External Error ± 48.2	
			Analytical Error ± 43.7	

Statistics				
2σ Confidence Limit	1.53	Convergence	0.0054828408
Error Magnification	1.3130	Number of Iterations	3
Number of Data Points	31	Calculated Line	Weighted York-2
Spreading Factor	17.5%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15493	2.0 %	✓	1.699873	0.366	14.6602	1.832	0.751771	5.718	13.7594	0.382	565.9120	0.046	4.70863 ± 0.27279	15046.4 ± 868.1	11.44	1.04	0.403 ± 0.015
14D15494	2.0 %	✓	0.899124	0.424	10.1643	2.477	0.333959	12.893	9.9698	0.509	298.3623	0.087	3.35805 ± 0.23468	10743.4 ± 748.6	11.21	0.75	0.421 ± 0.021
14D15496	2.6 %	✓	1.067084	0.407	33.1471	0.830	0.709011	6.314	31.4917	0.180	359.1535	0.072	1.47416 ± 0.08341	4724.2 ± 267.0	12.92	2.38	0.408 ± 0.007
14D15497	3.2 %	✓	0.807677	0.451	47.1468	0.653	0.766608	5.479	45.2638	0.135	274.8003	0.094	0.87921 ± 0.04905	2819.0 ± 157.2	14.47	3.42	0.413 ± 0.005
14D15499	3.6 %	✓	0.494488	0.542	43.9755	0.704	0.695176	6.385	42.3273	0.143	172.0397	0.149	0.69299 ± 0.03941	2222.3 ± 126.3	17.04	3.20	0.414 ± 0.006
14D15500	4.0 %	✓	0.393210	0.592	49.5073	0.613	0.725371	5.750	48.4715	0.127	141.5828	0.181	0.60297 ± 0.03037	1933.8 ± 97.4	20.63	3.66	0.421 ± 0.005
14D15501	4.4 %	✓	0.392682	0.593	60.7007	0.535	0.854843	4.975	60.9685	0.111	141.2498	0.182	0.49058 ± 0.02416	1573.5 ± 77.5	21.16	4.61	0.432 ± 0.005
14D15503	4.8 %	✓	0.276959	0.732	53.5805	0.580	0.785310	5.620	56.0640	0.117	103.8737	0.247	0.46690 ± 0.02329	1497.6 ± 74.7	25.18	4.24	0.450 ± 0.005
14D15504	5.2 %	✓	0.291405	0.722	59.7885	0.546	0.890640	5.123	64.0751	0.109	109.1252	0.235	0.43131 ± 0.02105	1383.5 ± 67.5	25.31	4.84	0.461 ± 0.005
14D15505	5.7 %	✓	0.216950	0.853	48.3110	0.651	0.724860	5.904	52.8481	0.122	82.6814	0.310	0.42207 ± 0.02292	1353.8 ± 73.5	26.96	3.99	0.470 ± 0.006
14D15507	6.2 %	✓	0.186346	0.955	42.4649	0.698	0.685360	6.502	46.8806	0.130	71.6917	0.357	0.42468 ± 0.02501	1362.2 ± 80.2	27.75	3.54	0.474 ± 0.007
14D15508	6.7 %	✓	0.200957	0.928	43.9338	0.680	0.667078	6.457	48.1684	0.130	76.3701	0.336	0.42314 ± 0.02530	1357.3 ± 81.1	26.67	3.64	0.471 ± 0.007
14D15509	7.2 %	✓	0.207574	0.878	43.3540	0.680	0.702419	6.220	48.2160	0.128	78.2683	0.328	0.42063 ± 0.02480	1349.2 ± 79.5	25.90	3.64	0.478 ± 0.007
14D15511	7.7 %	✓	0.241829	0.763	45.1018	0.675	0.747198	5.761	49.3602	0.128	90.4463	0.284	0.45531 ± 0.02447	1460.4 ± 78.5	24.83	3.73	0.470 ± 0.006
14D15512	8.2 %	✓	0.231544	0.779	43.4687	0.676	0.637565	6.563	46.2022	0.131	84.9742	0.301	0.43100 ± 0.02565	1382.5 ± 82.2	23.42	3.49	0.457 ± 0.006
14D15513	8.8 %	✓	0.263125	0.628	42.6428	0.785	0.989028	4.424	44.9290	0.104	95.5758	0.348	0.47042 ± 0.02636	1508.9 ± 84.5	22.10	3.40	0.453 ± 0.007
14D15515	9.4 %	✓	0.332072	0.560	47.7645	0.739	1.046330	4.264	48.5286	0.103	118.5806	0.280	0.49796 ± 0.02653	1597.2 ± 85.1	20.37	3.67	0.437 ± 0.007
14D15518	10.3 %	✓	0.248692	0.696	37.6224	0.899	0.643847	6.510	36.3642	0.115	88.7885	0.374	0.50102 ± 0.03362	1607.0 ± 107.8	20.51	2.75	0.415 ± 0.008
14D15519	10.9 %	✓	0.312008	0.578	43.1626	0.805	0.727683	5.893	38.8064	0.115	109.1769	0.304	0.52392 ± 0.03245	1680.4 ± 104.0	18.61	2.93	0.386 ± 0.006
14D15521	11.7 %	✓	0.394019	0.550	53.4102	0.662	0.793886	5.117	41.2475	0.114	136.4255	0.243	0.58549 ± 0.03508	1877.8 ± 112.5	17.69	3.12	0.332 ± 0.004
14D15522	12.5 %	✓	0.505922	0.493	67.8913	0.548	0.861087	4.983	45.0711	0.112	171.5539	0.194	0.60667 ± 0.03597	1945.7 ± 115.3	15.92	3.40	0.285 ± 0.003
14D15523	13.5 %	✓	0.689733	0.437	103.3080	0.439	1.107879	3.857	55.5141	0.095	236.4381	0.141	0.73299 ± 0.03439	2350.5 ± 110.2	17.19	4.19	0.231 ± 0.002
14D15525	14.5 %	✓	0.698616	0.420	115.8931	0.420	1.155956	3.741	52.4500	0.101	237.8735	0.140	0.77215 ± 0.03553	2476.0 ± 113.8	17.00	3.96	0.194 ± 0.002
14D15526	15.5 %	✓	0.769606	0.427	132.9199	0.401	1.070719	4.167	48.1552	0.103	254.8770	0.131	0.78634 ± 0.04278	2521.5 ± 137.1	14.83	3.63	0.155 ± 0.001
14D15527	16.5 %	✓	0.759500	0.442	124.3433	0.411	1.028473	4.015	44.0754	0.109	250.6287	0.133	0.81536 ± 0.04767	2614.5 ± 152.7	14.31	3.33	0.152 ± 0.001
14D15529	17.5 %	✓	0.834088	0.430	154.0956	0.389	1.054667	4.194	41.7395	0.121	276.0985	0.121	0.99970 ± 0.05354	3205.0 ± 171.5	15.08	3.15	0.116 ± 0.001
14D15530	19.0 %	✓	0.892754	0.418	186.4429	0.367	1.056923	4.033	40.9232	0.117	290.9986	0.115	1.02241 ± 0.05655	3277.8 ± 181.1	14.33	3.09	0.094 ± 0.001
14D15531	20.5 %	✓	0.746243	0.429	174.1494	0.377	0.866056	4.834	33.4693	0.127	242.4836	0.138	1.06548 ± 0.06029	3415.7 ± 193.1	14.66	2.52	0.082 ± 0.001
14D15533	23.5 %	✓	1.168937	0.395	304.3618	0.341	1.231842	3.316	46.4427	0.105	373.8622	0.090	1.12808 ± 0.06094	3616.2 ± 195.2	13.95	3.50	0.065 ± 0.000
14D15534	22.0 %	✓	0.591281	0.464	115.6633	0.424	0.528949	7.804	19.7776	0.199	192.7880	0.173	1.37444 ± 0.08916	4405.0 ± 285.4	14.04	1.49	0.073 ± 0.001
14D15536	24.5 %	✓	0.523348	0.496	104.8789	0.439	0.618469	6.549	22.4242	0.179	171.2353	0.194	1.10751 ± 0.07494	3550.3 ± 240.0	14.46	1.69	0.092 ± 0.001
		Σ	17.337649	0.094	2447.8554	0.099	25.458962	0.939	1323.9846	0.023	5897.9160	0.028					

Information on Analysis and Constants Used in Calculations

Sample = 176701
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13)
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177448 ± 0.00000131
FCT-NM = 28.201 ± 0.023 Ma
IGSN = Undefined
Preferred Age = Undefined
Classification = Undefined
Experiment Type = Incremental Heating
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000014
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.55034 ± 0.07951	1765.1 ± 254.9	> 100	100.00	0.104 ± 0.026
Error Mean		± 14.45%	± 14.44%	0%	31	
		Full External Error ± 258.0		1.52	2σ Confidence Limit	
		Analytical Error ± 254.9		> 10	Error Magnification	
Total Fusion Age		0.72945 ± 0.00775	2339.2 ± 25.1		31	0.232 ± 0.000
		± 1.06%	± 1.07%			
		Full External Error ± 58.4				
		Analytical Error ± 24.8				
Normal Isochron	331.21 ± 1.42	0.27793 ± 0.01379	891.6 ± 44.2	1.73	100.00	
Error Chron	± 0.43%	± 4.96%	± 4.96%	1%	31	
		Full External Error ± 48.6		1.53	2σ Confidence Limit	
		Analytical Error ± 44.2		1.3137	Error Magnification	
				5	Number of Iterations	
				0.0000007309	Convergence	
Inverse Isochron	331.24 ± 1.42	0.27822 ± 0.01363	892.5 ± 43.7	1.72	100.00	
Error Chron	± 0.43%	± 4.90%	± 4.90%	1%	31	
		Full External Error ± 48.2		1.53	2σ Confidence Limit	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D15493	2.0 %	✓	1.695962	0.37	0.0000000	0.00	0.0038703	1.83	0.0000405	15.49	14.6602	1.83	0.3169754	0.37	0.0000000	0.00	0.156469	0.38	0.0002038	1.83	0.2781229	15.52	13.7495	0.38	0.0098663	1.83	64.74122	2.87	501.1569	0.37	0.0000000	0.00	0.0138870	0.38
14D15494	2.0 %	✓	0.896433	0.43	0.0000000	0.00	0.0026834	2.48	0.0000077	81.42	10.1643	2.48	0.1675434	0.43	0.0000000	0.00	0.113379	0.51	0.0001413	2.48	0.0528954	81.43	9.9630	0.51	0.0068406	2.48	33.45616	3.46	264.8961	0.43	0.0000000	0.00	0.0100626	0.51
14D15496	2.6 %	✓	1.058311	0.41	0.0000000	0.00	0.0087508	0.83	0.0000222	29.35	33.1471	0.83	0.1977983	0.41	0.0000000	0.00	0.358121	0.18	0.0004607	0.83	0.1526305	29.37	31.4694	0.18	0.0223080	0.83	46.39086	2.82	312.7309	0.41	0.0000000	0.00	0.0317840	0.18
14D15497	3.2 %	✓	0.795216	0.46	0.0000000	0.00	0.0124468	0.65	0.0000149	40.96	47.1468	0.65	0.1486258	0.46	0.0000000	0.00	0.514741	0.13	0.0006553	0.65	0.1025867	40.97	45.2320	0.13	0.0317298	0.65	39.76847	2.79	234.9862	0.46	0.0000000	0.00	0.0456844	0.13
14D15499	3.6 %	✓	0.482860	0.55	0.0000000	0.00	0.0116095	0.70	0.0000179	36.11	43.9755	0.70	0.0902466	0.55	0.0000000	0.00	0.481348	0.14	0.0006113	0.70	0.1229703	36.13	42.2977	0.14	0.0295955	0.70	29.31179	2.84	142.6852	0.55	0.0000000	0.00	0.0427207	0.14
14D15500	4.0 %	✓	0.380125	0.61	0.0000000	0.00	0.0130699	0.61	0.0000149	40.75	49.5073	0.61	0.0710454	0.61	0.0000000	0.00	0.551226	0.13	0.0006882	0.61	0.1024117	40.76	48.4382	0.13	0.0333184	0.61	29.20684	2.52	112.3270	0.61	0.0000000	0.00	0.0489225	0.13
14D15501	4.4 %	✓	0.376644	0.62	0.0000000	0.00	0.0160250	0.53	0.0000132	47.14	60.7007	0.53	0.0703947	0.62	0.0000000	0.00	0.693357	0.11	0.0008437	0.53	0.0902474	47.15	60.9277	0.11	0.0408515	0.53	29.88996	2.46	111.2983	0.62	0.0000000	0.00	0.0615369	0.11
14D15503	4.8 %	✓	0.262800	0.77	0.0000000	0.00	0.0141452	0.58	0.0000143	45.12	53.5805	0.58	0.0491173	0.77	0.0000000	0.00	0.637598	0.12	0.0007448	0.58	0.0978496	45.13	56.0280	0.12	0.0360597	0.58	26.15972	2.49	77.6574	0.77	0.0000000	0.00	0.0565883	0.12
14D15504	5.2 %	✓	0.275605	0.76	0.0000000	0.00	0.0157842	0.55	0.0000160	41.66	59.7885	0.55	0.0515106	0.76	0.0000000	0.00	0.728717	0.11	0.0008311	0.55	0.1095810	41.67	64.0349	0.11	0.0402376	0.55	27.61913	2.44	81.4414	0.76	0.0000000	0.00	0.0646752	0.11
14D15505	5.7 %	✓	0.204183	0.91	0.0000000	0.00	0.0127541	0.65	0.0000124	50.37	48.3110	0.65	0.0381619	0.91	0.0000000	0.00	0.601042	0.12	0.0006715	0.65	0.0849843	50.38	52.8156	0.12	0.0325133	0.65	22.29186	2.71	60.3362	0.91	0.0000000	0.00	0.0533438	0.12
14D15507	6.2 %	✓	0.175118	1.02	0.0000000	0.00	0.0112107	0.70	0.0000173	37.51	42.4649	0.70	0.0327295	1.02	0.0000000	0.00	0.533176	0.13	0.0005903	0.70	0.1188639	37.52	46.8520	0.13	0.0285789	0.70	19.89703	2.94	51.7473	1.02	0.0000000	0.00	0.0473206	0.13
14D15508	6.7 %	✓	0.189347	0.99	0.0000000	0.00	0.0115985	0.68	0.0000121	51.75	43.9338	0.68	0.0353889	0.99	0.0000000	0.00	0.547820	0.13	0.0006107	0.68	0.0832592	51.76	48.1388	0.13	0.0295675	0.68	20.36956	2.99	55.9519	0.99	0.0000000	0.00	0.0486202	0.13
14D15509	7.2 %	✓	0.196111	0.93	0.0000000	0.00	0.0114455	0.68	0.0000170	37.43	43.3540	0.68	0.0366532	0.93	0.0000000	0.00	0.548366	0.13	0.0006026	0.68	0.1167978	37.44	48.1868	0.13	0.0291773	0.68	20.26875	2.95	57.9509	0.93	0.0000000	0.00	0.0486687	0.13
14D15511	7.7 %	✓	0.229902	0.80	0.0000000	0.00	0.0119069	0.68	0.0000207	30.28	45.1018	0.68	0.0429687	0.80	0.0000000	0.00	0.561374	0.13	0.0006269	0.68	0.1422285	30.30	49.3299	0.13	0.0303535	0.68	22.46053	2.68	67.9360	0.80	0.0000000	0.00	0.0498231	0.13
14D15512	8.2 %	✓	0.220058	0.82	0.0000000	0.00	0.0114757	0.68	0.0000103	59.47	43.4687	0.68	0.0411289	0.82	0.0000000	0.00	0.525449	0.13	0.0006042	0.68	0.0703833	59.47	46.1730	0.13	0.0292544	0.68	19.90041	2.97	65.0272	0.82	0.0000000	0.00	0.0466347	0.13
14D15513	8.8 %	✓	0.251805	0.66	0.0000000	0.00	0.0112577	0.78	0.0000628	10.21	42.6428	0.78	0.0470623	0.66	0.0000000	0.00	0.510965	0.10	0.0005927	0.78	0.4304082	10.25	44.9003	0.10	0.0286986	0.78	21.12217	2.80	74.4083	0.66	0.0000000	0.00	0.0453493	0.10
14D15515	9.4 %	✓	0.319398	0.58	0.0000000	0.00	0.0126098	0.74	0.0000633	10.32	47.7645	0.74	0.0596956	0.58	0.0000000	0.00	0.551889	0.10	0.0006639	0.74	0.4340808	10.36	48.4964	0.10	0.0321455	0.74	24.14940	2.66	94.3822	0.58	0.0000000	0.00	0.0489814	0.10
14D15518	10.3 %	✓	0.238732	0.73	0.0000000	0.00	0.0099323	0.90	0.0000271	22.66	37.6224	0.90	0.0446191	0.73	0.0000000	0.00	0.413536	0.12	0.0005230	0.90	0.1851681	22.68	36.3389	0.12	0.0253199	0.90	18.20640	3.35	70.5454	0.73	0.0000000	0.00	0.0367023	0.12
14D15519	10.9 %	✓	0.300580	0.60	0.0000000	0.00	0.0113949	0.80	0.0000336	18.70	43.1626	0.80	0.0561784	0.60	0.0000000	0.00	0.441286	0.11	0.0006000	0.80	0.2296184	18.72	38.7774	0.11	0.0290485	0.80	20.31641	3.10	88.8213	0.60	0.0000000	0.00	0.0391651	0.11
14D15521	11.7 %	✓	0.379882	0.57	0.0000000	0.00	0.0141003	0.66	0.0000370	16.08	53.4102	0.66	0.0709999	0.57	0.0000000	0.00	0.468987	0.11	0.0007424	0.66	0.2531568	16.10	41.2115	0.11	0.0359451	0.66	24.12880	2.99	112.2550	0.57	0.0000000	0.00	0.0416236	0.11
14D15522	12.5 %	✓	0.487962	0.51	0.0000000	0.00	0.0179233	0.55	0.0000375	16.75	67.8913	0.55	0.0912000	0.51	0.0000000	0.00	0.512390	0.11	0.0009437	0.55	0.2565539	16.78	45.0255	0.11	0.0456909	0.55	27.31578	2.96	144.1927	0.51	0.0000000	0.00	0.0454757	0.11
14D15523	13.5 %	✓	0.662408	0.46	0.0000000	0.00	0.0272733	0.44	0.0000514	12.19	103.3080	0.44	0.1238041	0.46	0.0000000	0.00	0.630959	0.10	0.0014360	0.44	0.3516801	12.22	55.4446	0.10	0.0695263	0.44	40.64052	2.34	195.7416	0.46	0.0000000	0.00	0.0559990	0.10
14D15525	14.5 %	✓	0.667957	0.44	0.0000000	0.00	0.0305958	0.42	0.0000634	10.02	115.8931	0.42	0.1248412	0.44	0.0000000	0.00	0.595993	0.10	0.0016109	0.42	0.4335106	10.06	52.3720	0.10	0.0779960	0.42	40.43927	2.30	197.3813	0.44	0.0000000	0.00	0.0528957	0.10
14D15526	15.5 %	✓	0.734459	0.45	0.0000000	0.00	0.0350909	0.40	0.0000562	11.64	132.9199	0.40	0.1372703	0.45	0.0000000	0.00	0.546989	0.10	0.0018476	0.40	0.3846121	11.68	48.0658	0.10	0.0894551	0.40	37.79598	2.72	217.0325	0.45	0.0000000	0.00	0.0485465	0.10
14D15527	16.5 %	✓	0.726617	0.46	0.0000000	0.00	0.0328266	0.41	0.0000571	10.62	124.3433	0.41	0.1358047	0.46	0.0000000	0.00	0.500626	0.11	0.0017284	0.41	0.3903137	10.66	43.9917	0.11	0.0836831	0.41	35.86901	2.92	214.7152	0.46	0.0000000	0.00	0.0444317	0.11
14D15529	17.5 %	✓	0.793344	0.45	0.0000000	0.00	0.0406812	0.39	0.0000630	10.32	154.0956	0.39	0.1482760	0.45	0.0000000	0.00	0.473816	0.12	0.0021419	0.39	0.4304331	10.36	41.6358	0.12	0.1037064	0.39	41.62329	2.67	234.4332	0.45	0.0000000	0.00	0.0420522	0.12
14D15530	19.0 %	✓	0.843470	0.44	0.0000000	0.00	0.0492209	0.37	0.0000633	9.90	186.4429	0.37	0.1576445	0.44	0.0000000	0.00	0.464278	0.12	0.0025916	0.37	0.4324089	9.95	40.7977	0.12	0.1254761	0.37	41.71211	2.76	249.2453	0.44	0.0000000	0.00	0.0412057	0.12
14D15531	20.5 %	✓	0.700216	0.46	0.0000000	0.00	0.0459754	0.38	0.0000517	11.89	174.1494	0.38	0.1308704	0.46	0.0000000	0.00	0.379547	0.13	0.0024207	0.38	0.3532182	11.93	33.3521	0.13	0.1172026	0.38	35.53611	2.83	206.9138	0.46	0.0000000	0.00	0.0336856	0.13
14D15533	23.5 %	✓	1.088513	0.43	0.0000000	0.00	0.0803515	0.34	0.0000729	8.26	304.3618	0.34	0.2034430	0.43	0.0000000	0.00	0.526187	0.11	0.0042306	0.34	0.4979810	8.31	46.2379	0.11	0.2048355	0.34	52.15998	2.70	321.6555	0.43	0.0000000	0.00	0.0467002	0.11
14D15534	22.0 %	✓	0.560717	0.49	0.0000000	0.00	0.0305351	0.42	0.0000290	20.83	115.6633	0.42	0.1047980	0.49	0.0000000	0.00	0.224184	0.20	0.0016077	0.42	0.1983596	20.85	19.6998	0.20	0.0778414	0.42	27.07618	3.24	165.6919	0.49	0.0000000	0.00	0.0198968	0.20
14D15536	24.5 %	✓	0.495620	0.52	0.0000000	0.00	0.0276880	0.44	0.0000395	15.03	104.8789	0.44	0.0926314	0.52	0.0000000	0.00	0.254384	0.18	0.0014578	0.44	0.2699953	15.06	22.3536	0.18	0.0705835	0.44	24.75698	3.38	146.4557	0.52	0.0000000	0.00	0.0225772	0.18
		Σ	16.690355	0.10	0.0000000	0.00	0.6462338	0.10	0.0010602	3.30	2447.8554	0.10	3.1194273	0.10	0.0000000	0.00	15.048198	0.02	0.0340252	0.10	7.2573114	3.31	1322.3372	0.02	1.6474067	0.10	964.58068	0.53	4931.9998	0.10	0.0000000	0.00	1.3355606	0.02
		Σ							17.337649	0.09	2447.8554	0.10									25.458962	0.94			1323.9846	0.02							5897.9160	0.12

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D15493	2.0 %	✓	41.129266	0.158324	1.065468	0.019938	0.123543	0.000654	89.661	5.891168	1.00063373	2.716E-11
14D15494	2.0 %	✓	29.926594	0.154448	1.019513	0.025782	0.090185	0.000597	89.670	5.892218	1.00063380	1.432E-11
14D15496	2.6 %	✓	11.404717	0.022164	1.052568	0.008940	0.033885	0.000151	89.687	5.894158	1.00063391	1.724E-11
14D15497	3.2 %	✓	6.071089	0.009958	1.041601	0.006942	0.017844	0.000084	89.696	5.895210	1.00063398	1.319E-11
14D15499	3.6 %	✓	4.064512	0.008399	1.038941	0.007461	0.011682	0.000065	89.713	5.897231	1.00063410	8.258E-12
14D15500	4.0 %	✓	2.920951	0.006469	1.021369	0.006394	0.008112	0.000049	89.722	5.898202	1.00063416	6.796E-12
14D15501	4.4 %	✓	2.316766	0.004932	0.995607	0.005438	0.006441	0.000039	89.731	5.899254	1.00063422	6.780E-12
14D15503	4.8 %	✓	1.852768	0.005067	0.955701	0.005652	0.004940	0.000037	89.747	5.901196	1.00063434	4.986E-12
14D15504	5.2 %	✓	1.703082	0.004412	0.933100	0.005197	0.004548	0.000033	89.756	5.902249	1.00063440	5.238E-12
14D15505	5.7 %	✓	1.564509	0.005211	0.914148	0.006057	0.004105	0.000035	89.765	5.903220	1.00063446	3.969E-12
14D15507	6.2 %	✓	1.529239	0.005817	0.905810	0.006435	0.003975	0.000038	89.782	5.905245	1.00063458	3.441E-12
14D15508	6.7 %	✓	1.585482	0.005708	0.912088	0.006319	0.004172	0.000039	89.790	5.906217	1.00063464	3.666E-12
14D15509	7.2 %	✓	1.623286	0.005709	0.899163	0.006225	0.004305	0.000038	89.799	5.907270	1.00063471	3.757E-12
14D15511	7.7 %	✓	1.832374	0.005706	0.913729	0.006281	0.004899	0.000038	89.817	5.909296	1.00063483	4.341E-12
14D15512	8.2 %	✓	1.839180	0.006035	0.940836	0.006482	0.005012	0.000040	89.825	5.910269	1.00063489	4.079E-12
14D15513	8.8 %	✓	2.127264	0.007718	0.949116	0.007513	0.005856	0.000037	89.834	5.911323	1.00063495	4.588E-12
14D15515	9.4 %	✓	2.443521	0.007298	0.984256	0.007340	0.006843	0.000039	89.851	5.913270	1.00063507	5.692E-12
14D15518	10.3 %	✓	2.441647	0.009566	1.034601	0.009378	0.006839	0.000048	89.979	5.928294	1.00063598	4.262E-12
14D15519	10.9 %	✓	2.813373	0.009152	1.112255	0.009041	0.008040	0.000047	89.988	5.929270	1.00063604	5.240E-12
14D15521	11.7 %	✓	3.307489	0.008893	1.294872	0.008693	0.009553	0.000054	90.005	5.931303	1.00063616	6.548E-12
14D15522	12.5 %	✓	3.806292	0.008522	1.506314	0.008427	0.011225	0.000057	90.013	5.932280	1.00063622	8.235E-12
14D15523	13.5 %	✓	4.259065	0.007253	1.860933	0.008359	0.012424	0.000056	90.022	5.933338	1.00063628	1.135E-11
14D15525	14.5 %	✓	4.535245	0.007836	2.209593	0.009554	0.013320	0.000058	90.040	5.935373	1.00063640	1.142E-11
14D15526	15.5 %	✓	5.292819	0.008823	2.760237	0.011437	0.015982	0.000070	90.048	5.936350	1.00063646	1.223E-11
14D15527	16.5 %	✓	5.686359	0.009771	2.821148	0.011992	0.017232	0.000078	90.057	5.937408	1.00063653	1.203E-11
14D15529	17.5 %	✓	6.614795	0.011334	3.691839	0.015032	0.019983	0.000089	90.074	5.939363	1.00063664	1.325E-11
14D15530	19.0 %	✓	7.110844	0.011658	4.555921	0.017567	0.021815	0.000095	90.083	5.940423	1.00063671	1.397E-11
14D15531	20.5 %	✓	7.244957	0.013576	5.203259	0.020702	0.022296	0.000100	90.091	5.941400	1.00063677	1.164E-11
14D15533	23.5 %	✓	8.049967	0.011093	6.553491	0.023399	0.025169	0.000103	90.108	5.943438	1.00063689	1.795E-11
14D15534	22.0 %	✓	9.747779	0.025659	5.848187	0.027388	0.029896	0.000151	90.117	5.944498	1.00063695	9.254E-12
14D15536	24.5 %	✓	7.636176	0.020202	4.677036	0.022187	0.023338	0.000123	90.134	5.946455	1.00063707	8.219E-12

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D15493	2.0 %	0.0260149	0.0011943	0.0164820	0.0303365	0.0468264	0.0324066	0.0435248	0.0445802	8.2672113	0.2545141
14D15494	2.0 %	0.0259648	0.0011943	0.0190564	0.0303365	0.0424194	0.0324066	0.0316498	0.0445802	8.2979294	0.2545141
14D15496	2.6 %	0.0258722	0.0011943	0.0222678	0.0303365	0.0351485	0.0324066	0.0123199	0.0445802	8.3426904	0.2545141
14D15497	3.2 %	0.0258221	0.0011943	0.0231725	0.0303365	0.0316786	0.0324066	0.0032543	0.0445802	8.3604633	0.2545141
14D15499	3.6 %	0.0257256	0.0011943	0.0232634	0.0303365	0.0259312	0.0324066	0.0114052	0.0445802	8.3818581	0.2545141
14D15500	4.0 %	0.0256793	0.0011943	0.0225364	0.0303365	0.0236050	0.0324066	0.0171452	0.0445802	8.3861529	0.2545141
14D15501	4.4 %	0.0256292	0.0011943	0.0211848	0.0303365	0.0214015	0.0324066	0.0224143	0.0445802	8.3864321	0.2545141
14D15503	4.8 %	0.0255366	0.0011943	0.0171481	0.0303365	0.0181985	0.0324066	0.0295487	0.0445802	8.3749982	0.2545141
14D15504	5.2 %	0.0254865	0.0011943	0.0141268	0.0303365	0.0169322	0.0324066	0.0320085	0.0445802	8.3623321	0.2545141
14D15505	5.7 %	0.0254402	0.0011943	0.0108172	0.0303365	0.0160555	0.0324066	0.0334029	0.0445802	8.3466034	0.2545141
14D15507	6.2 %	0.0253438	0.0011943	0.0023167	0.0303365	0.0151301	0.0324066	0.0336066	0.0445802	8.3013878	0.2545141
14D15508	6.7 %	0.0252975	0.0011943	0.0025342	0.0303365	0.0151184	0.0324066	0.0324078	0.0445802	8.2737095	0.2545141
14D15509	7.2 %	0.0252473	0.0011943	0.0083534	0.0303365	0.0154223	0.0324066	0.0301599	0.0445802	8.2393514	0.2545141
14D15511	7.7 %	0.0251509	0.0011943	0.0211930	0.0303365	0.0169323	0.0324066	0.0230627	0.0445802	8.1604941	0.2545141
14D15512	8.2 %	0.0251046	0.0011943	0.0281267	0.0303365	0.0180896	0.0324066	0.0183594	0.0445802	8.1166679	0.2545141
14D15513	8.8 %	0.0002743	0.0007502	0.0102444	0.0415554	0.3543677	0.0314758	0.7993152	0.0246257	0.8131208	0.3313318
14D15515	9.4 %	0.0039696	0.0007502	0.0045486	0.0415554	0.3074672	0.0314758	0.6676331	0.0246257	1.8755779	0.3313318
14D15518	10.3 %	0.0226781	0.0007502	0.0487187	0.0415554	0.0669982	0.0314758	0.0001092	0.0246257	7.3206395	0.3313318
14D15519	10.9 %	0.0232939	0.0007502	0.0473125	0.0415554	0.0588017	0.0314758	0.0221877	0.0246257	7.5060195	0.3313318
14D15521	11.7 %	0.0243430	0.0007502	0.0427117	0.0415554	0.0446216	0.0314758	0.0598758	0.0246257	7.8265648	0.3313318
14D15522	12.5 %	0.0247343	0.0007502	0.0397011	0.0415554	0.0392052	0.0314758	0.0739779	0.0246257	7.9489083	0.3313318
14D15523	13.5 %	0.0250761	0.0007502	0.0358524	0.0415554	0.0343551	0.0314758	0.0863358	0.0246257	8.0583763	0.3313318
14D15525	14.5 %	0.0254931	0.0007502	0.0267347	0.0415554	0.0280022	0.0314758	0.1015678	0.0246257	8.2014542	0.3313318
14D15526	15.5 %	0.0255810	0.0007502	0.0215559	0.0415554	0.0263430	0.0314758	0.1048909	0.0246257	8.2386133	0.3313318
14D15527	16.5 %	0.0255940	0.0007502	0.0153584	0.0415554	0.0255630	0.0314758	0.1055717	0.0246257	8.2557983	0.3313318
14D15529	17.5 %	0.0253936	0.0007502	0.0023124	0.0415554	0.0269032	0.0314758	0.0988521	0.0246257	8.2244879	0.3313318
14D15530	19.0 %	0.0251634	0.0007502	0.0056232	0.0415554	0.0291352	0.0314758	0.0908917	0.0246257	8.1733834	0.3313318
14D15531	20.5 %	0.0248751	0.0007502	0.0134905	0.0415554	0.0321347	0.0314758	0.0808490	0.0246257	8.1049139	0.3313318
14D15533	23.5 %	0.0240405	0.0007502	0.0315518	0.0415554	0.0412797	0.0314758	0.0516178	0.0246257	7.8966062	0.3313318
14D15534	22.0 %	0.0234817	0.0007502	0.0418363	0.0415554	0.0475818	0.0314758	0.0319802	0.0246257	7.7532186	0.3313318
14D15536	24.5 %	0.0222254	0.0007502	0.0624275	0.0415554	0.0619967	0.0314758	0.0122501	0.0246257	7.4254666	0.3313318

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D15493	2.0 %	1.683350	0.002744	0.9365	EXP 150 of 150	2.4595	0.0319	0.1436	EXP 150 of 150	0.6957817	0.0274169	0.0923	EXP 150 of 150	13.6235	0.0257	0.9076	EXP 150 of 150	575.64814	0.05855	0.9992	EXP 150 of 150
14D15494	2.0 %	0.902589	0.002129	0.8930	EXP 150 of 150	1.7126	0.0285	0.1430	EXP 150 of 150	0.2874687	0.0275418	0.0003	EXP 150 of 150	9.8712	0.0225	0.8808	EXP 150 of 150	307.43468	0.04696	0.9979	EXP 150 of 150
14D15496	2.6 %	1.066253	0.002334	0.9011	EXP 150 of 150	5.5433	0.0293	0.5621	EXP 150 of 150	0.6652204	0.0300765	0.0447	EXP 150 of 150	31.2679	0.0277	0.9822	EXP 150 of 150	368.42844	0.05485	0.9983	EXP 150 of 150
14D15497	3.2 %	0.813288	0.002201	0.8389	EXP 150 of 150	7.8746	0.0326	0.6511	EXP 150 of 150	0.7255859	0.0258855	0.0034	EXP 150 of 150	44.9566	0.0281	0.9910	EXP 150 of 150	283.87411	0.04438	0.9975	EXP 150 of 150
14D15499	3.6 %	0.507839	0.001725	0.7436	EXP 150 of 150	7.3441	0.0343	0.6138	EXP 150 of 150	0.6607712	0.0295189	0.0385	EXP 150 of 150	42.0545	0.0291	0.9895	EXP 150 of 150	180.86812	0.03891	0.9910	EXP 150 of 150
14D15500	4.0 %	0.409050	0.001479	0.6580	EXP 150 of 150	8.2629	0.0304	0.7143	EXP 150 of 150	0.6929252	0.0254277	0.0567	EXP 149 of 150	48.1632	0.0274	0.9927	EXP 150 of 150	150.33644	0.03813	0.9783	EXP 150 of 150
14D15501	4.4 %	0.408485	0.001482	0.6597	EXP 150 of 150	10.1229	0.0305	0.7747	EXP 150 of 150	0.8230218	0.0267045	0.0366	EXP 150 of 150	60.5816	0.0303	0.9944	EXP 150 of 150	150.00283	0.03818	0.9762	EXP 150 of 150
14D15503	4.8 %	0.295565	0.001303	0.4900	EXP 150 of 150	8.9310	0.0303	0.7564	EXP 150 of 150	0.7575397	0.0291440	0.0465	EXP 150 of 150	55.7172	0.0306	0.9932	EXP 150 of 150	112.51830	0.03717	0.8137	EXP 150 of 150
14D15504	5.2 %	0.309600	0.001389	0.5160	EXP 150 of 150	9.9589	0.0315	0.7504	EXP 150 of 150	0.8628519	0.0313046	0.0417	EXP 150 of 150	63.6769	0.0327	0.9939	EXP 150 of 150	117.77078	0.03606	0.8795	EXP 150 of 150
14D15505	5.7 %	0.236961	0.001161	0.3920	EXP 150 of 150	8.0452	0.0338	0.6255	EXP 150 of 150	0.6999692	0.0271243	0.0236	EXP 150 of 150	52.5267	0.0297	0.9929	EXP 150 of 150	91.24264	0.03611	0.3414	EXP 150 of 150
14D15507	6.2 %	0.207026	0.001105	0.3133	EXP 150 of 150	7.0621	0.0314	0.6335	EXP 150 of 150	0.6618763	0.0297758	0.0618	EXP 150 of 150	46.5995	0.0275	0.9919	EXP 150 of 150	80.17916	0.03421	0.7692	EXP 149 of 150
14D15508	6.7 %	0.221226	0.001210	0.3950	EXP 150 of 150	7.3002	0.0315	0.6444	EXP 150 of 150	0.6438291	0.0275582	0.0087	EXP 150 of 150	47.8774	0.0297	0.9912	EXP 150 of 150	84.84203	0.03614	0.5980	EXP 150 of 150
14D15509	7.2 %	0.227627	0.001134	0.4118	EXP 150 of 150	7.1967	0.0307	0.6355	EXP 150 of 150	0.6784355	0.0284912	0.0455	EXP 150 of 150	47.9224	0.0278	0.9924	EXP 150 of 150	86.71084	0.03593	0.4507	EXP 150 of 150
14D15511	7.7 %	0.260929	0.001100	0.5024	EXP 150 of 150	7.4718	0.0324	0.6144	EXP 150 of 150	0.7211582	0.0275108	0.0867	EXP 150 of 150	49.0519	0.0303	0.9914	EXP 150 of 150	98.84161	0.03774	0.5042	EXP 150 of 150
14D15512	8.2 %	0.250855	0.001057	0.5425	EXP 150 of 150	7.1924	0.0303	0.6140	EXP 150 of 150	0.6117045	0.0256381	0.0021	EXP 150 of 150	45.9104	0.0262	0.9926	EXP 150 of 150	93.31147	0.03134	0.0446	EXP 150 of 150
14D15513	8.8 %	0.256815	0.001171	0.4389	EXP 150 of 150	7.0923	0.0289	0.6479	EXP 150 of 150	0.6226058	0.0295875	0.0042	EXP 150 of 150	43.8280	0.0263	0.9918	EXP 150 of 150	96.63699	0.03326	0.4048	EXP 150 of 150
14D15515	9.4 %	0.327731	0.001288	0.6249	EXP 150 of 150	7.9255	0.0323	0.6641	EXP 150 of 150	0.7261092	0.0308161	0.0239	EXP 150 of 150	47.5351	0.0289	0.9917	EXP 150 of 150	120.76398	0.03690	0.9460	EXP 150 of 150
14D15518	10.3 %	0.265147	0.001288	0.4509	EXP 150 of 150	6.1817	0.0317	0.5639	EXP 150 of 150	0.5690008	0.0268899	0.0185	EXP 150 of 150	36.1201	0.0238	0.9901	EXP 150 of 150	96.33965	0.03562	0.8393	EXP 150 of 150
14D15519	10.9 %	0.327494	0.001247	0.6750	EXP 150 of 150	7.0994	0.0323	0.6316	EXP 150 of 150	0.6600120	0.0283301	0.0313	EXP 150 of 150	38.5680	0.0265	0.9895	EXP 150 of 150	116.96630	0.03495	0.9652	EXP 150 of 150
14D15521	11.7 %	0.408502	0.001538	0.7014	EXP 150 of 150	8.7977	0.0296	0.7566	EXP 150 of 150	0.7395881	0.0248698	0.0526	EXP 150 of 150	41.0303	0.0291	0.9885	EXP 150 of 150	144.60616	0.03287	0.9895	EXP 150 of 150
14D15522	12.5 %	0.517996	0.001681	0.7733	EXP 149 of 150	11.1957	0.0272	0.8425	EXP 148 of 150	0.8113866	0.0283570	0.0307	EXP 150 of 150	44.8424	0.0320	0.9886	EXP 150 of 150	179.94813	0.03920	0.9934	EXP 150 of 150
14D15523	13.5 %	0.697549	0.001854	0.8408	EXP 150 of 150	17.0577	0.0289	0.9216	EXP 150 of 150	1.0600205	0.0280883	0.0212	EXP 150 of 150	55.2276	0.0289	0.9937	EXP 150 of 150	245.11019	0.04461	0.9969	EXP 150 of 150
14D15525	14.5 %	0.706627	0.001686	0.8565	EXP 149 of 150	19.1426	0.0301	0.9317	EXP 150 of 150	1.1138640	0.0288322	0.0719	EXP 150 of 150	52.1993	0.0315	0.9916	EXP 150 of 150	246.69236	0.04045	0.9975	EXP 150 of 150
14D15526	15.5 %	0.775928	0.001978	0.8657	EXP 149 of 150	21.9604	0.0313	0.9416	EXP 149 of 150	1.0313252	0.0308248	0.0393	EXP 150 of 150	47.9367	0.0288	0.9918	EXP 150 of 150	263.77723	0.04684	0.9972	EXP 150 of 150
14D15527	16.5 %	0.766088	0.002127	0.8491	EXP 150 of 150	20.5446	0.0312	0.9370	EXP 150 of 150	0.9903742	0.0259029	0.0827	EXP 150 of 150	43.8850	0.0287	0.9903	EXP 150 of 150	259.53504	0.04409	0.9974	EXP 150 of 150
14D15529	17.5 %	0.838609	0.002216	0.8330	EXP 150 of 150	25.4688	0.0355	0.9455	EXP 150 of 150	1.0149087	0.0302807	0.0956	EXP 150 of 150	41.5581	0.0342	0.9847	EXP 150 of 150	285.03965	0.04932	0.9976	EXP 150 of 150
14D15530	19.0 %	0.895577	0.002212	0.8749	EXP 150 of 150	30.8180	0.0334	0.9642	EXP 150 of 150	1.0149057	0.0279386	0.0565	EXP 150 of 150	40.7393	0.0306	0.9874	EXP 150 of 150	299.92736	0.04750	0.9980	EXP 150 of 150
14D15531	20.5 %	0.752444	0.001934	0.8492	EXP 150 of 150	28.7895	0.0366	0.9535	EXP 150 of 150	0.8233654	0.0267993	0.0291	EXP 149 of 150	33.3254	0.0265	0.9855	EXP 150 of 150	251.21797	0.04527	0.9969	EXP 150 of 150
14D15533	23.5 %	1.163726	0.002546	0.8960	EXP 150 of 150	50.3062	0.0340	0.9863	EXP 150 of 150	1.1755475	0.0251951	0.0483	EXP 150 of 150	46.1824	0.0283	0.9914	EXP 150 of 150	382.72927	0.05222	0.9987	EXP 150 of 150
14D15534	22.0 %	0.599967	0.001776	0.7996	EXP 150 of 150	19.1438	0.0316	0.9220	EXP 150 of 150	0.4749200	0.0259098	0.0004	EXP 149 of 150	19.6768	0.0274	0.9549	EXP 150 of 150	201.04166	0.03790	0.9953	EXP 150 of 150
14D15536	24.5 %	0.532477	0.001773	0.7654	EXP 150 of 150	17.3776	0.0300	0.9152	EXP 149 of 150	0.5489340	0.0246812	0.0193	EXP 150 of 150	22.2614	0.0279	0.9654	EXP 150 of 150	179.10524	0.03903	0.9929	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos
14D15493	2.0 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	7	1	1	14-OSU-02	0.00	0.00	11.70
14D15494	2.0 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	7	14	1	14-OSU-02	0.00	0.00	11.70
14D15496	2.6 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	7	38	1	14-OSU-02	0.00	0.00	11.70
14D15497	3.2 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	7	51	1	14-OSU-02	0.00	0.00	11.70
14D15499	3.6 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	3.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	8	16	1	14-OSU-02	0.00	0.00	11.70
14D15500	4.0 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	8	28	1	14-OSU-02	0.00	0.00	11.70
14D15501	4.4 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	8	41	1	14-OSU-02	0.00	0.00	11.70
14D15503	4.8 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	4.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	9	5	1	14-OSU-02	0.00	0.00	11.70
14D15504	5.2 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	9	18	1	14-OSU-02	0.00	0.00	11.70
14D15505	5.7 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	5.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	9	30	1	14-OSU-02	0.00	0.00	11.70
14D15507	6.2 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	9	55	1	14-OSU-02	0.00	0.00	11.70
14D15508	6.7 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	6.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	10	7	1	14-OSU-02	0.00	0.00	11.70
14D15509	7.2 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	10	20	1	14-OSU-02	0.00	0.00	11.70
14D15511	7.7 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	7.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	10	45	1	14-OSU-02	0.00	0.00	11.70
14D15512	8.2 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	10	57	1	14-OSU-02	0.00	0.00	11.70
14D15513	8.8 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	8.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	11	10	1	14-OSU-02	0.00	0.00	11.70
14D15515	9.4 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	9.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	11	34	1	14-OSU-02	0.00	0.00	11.70
14D15518	10.3 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	10.3	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	14	39	1	14-OSU-02	0.00	0.00	11.70
14D15519	10.9 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	10.9	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	14	51	1	14-OSU-02	0.00	0.00	11.70
14D15521	11.7 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	11.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	15	16	1	14-OSU-02	0.00	0.00	11.70
14D15522	12.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	15	28	1	14-OSU-02	0.00	0.00	11.70
14D15523	13.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	13.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	15	41	1	14-OSU-02	0.00	0.00	11.70
14D15525	14.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	14.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	16	6	1	14-OSU-02	0.00	0.00	11.70
14D15526	15.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	15.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	16	18	1	14-OSU-02	0.00	0.00	11.70
14D15527	16.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	16.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	16	31	1	14-OSU-02	0.00	0.00	11.70
14D15529	17.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	17.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	16	55	1	14-OSU-02	0.00	0.00	11.70
14D15530	19.0 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	19	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	17	8	1	14-OSU-02	0.00	0.00	11.70
14D15531	20.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	20.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	17	20	1	14-OSU-02	0.00	0.00	11.70
14D15533	23.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	23.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	17	45	1	14-OSU-02	0.00	0.00	11.70
14D15534	22.0 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	22	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	17	58	1	14-OSU-02	0.00	0.00	11.70
14D15536	24.5 %	176701	Groundmass	Harrat Hutaymah	Anthony Koppers	24.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.85745	0.074	0.00177448	0.074	302.875	0.127	0.993904637	0.066	1	4.8E-14	12	JUN	2014	18	22	1	14-OSU-02	0.00	0.00	11.70

Project	Experiment	Nmb
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
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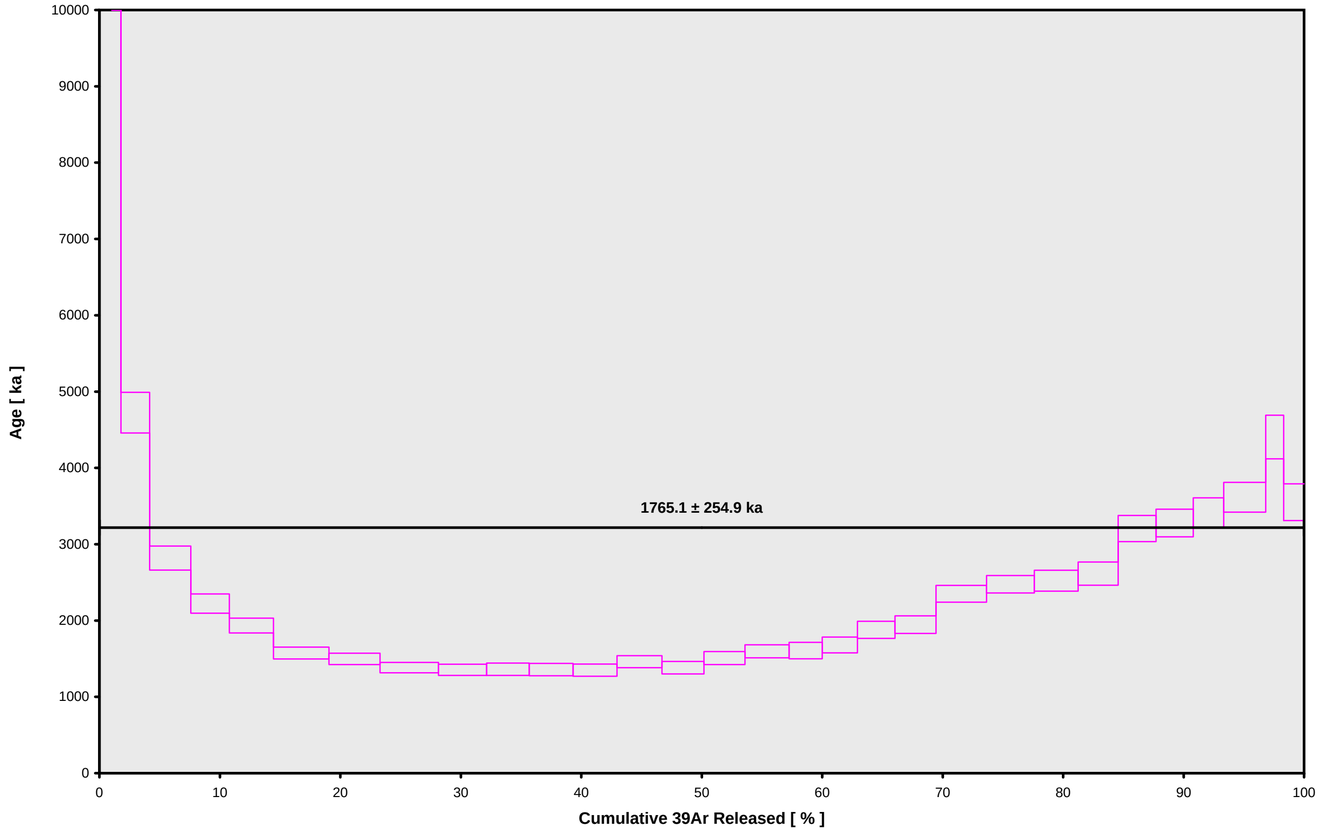
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01
Harhut\Schlieder (14-13)	14D15492	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D15493	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15494	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15496	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15497	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15499	3.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15500	4.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15501	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15503	4.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15504	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15505	5.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15507	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15508	6.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15509	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15511	7.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15512	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15513	8.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15515	9.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15518	10.3 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15519	10.9 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15521	11.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15522	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15523	13.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15525	14.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15526	15.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15527	16.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15529	17.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15530	19.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15531	20.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15533	23.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15534	22.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15536	24.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

14D15492.AGE >>> 176701 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1765.1 ± 254.9
TOTAL FUSION
2339.2 ± 25.1
NORMAL ISOCHRON
891.6 ± 44.2
INVERSE ISOCHRON
892.5 ± 43.7

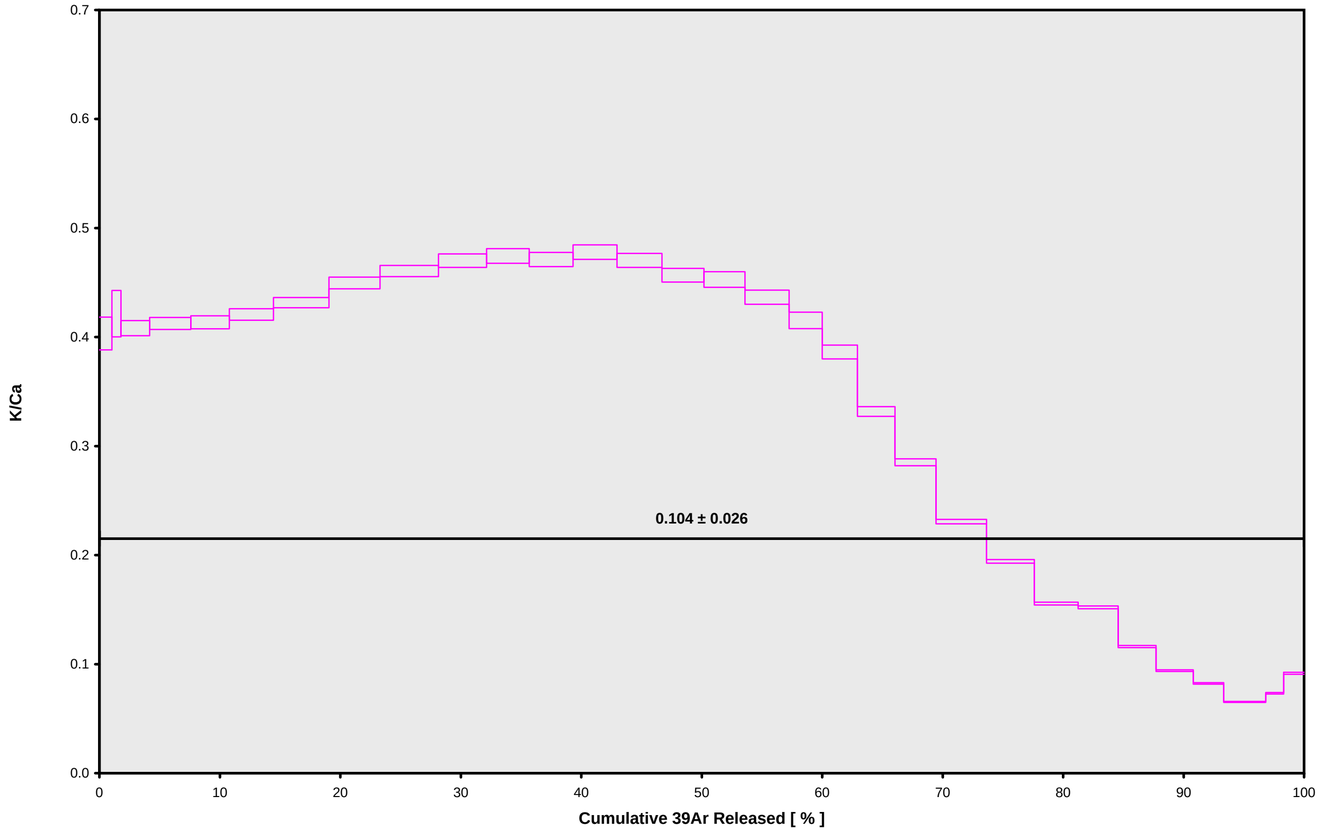
MSWD (PROBABILITY)
> 100 (0%)

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177448 ± 0.00000131

14D15492.AGE >>> 176701 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

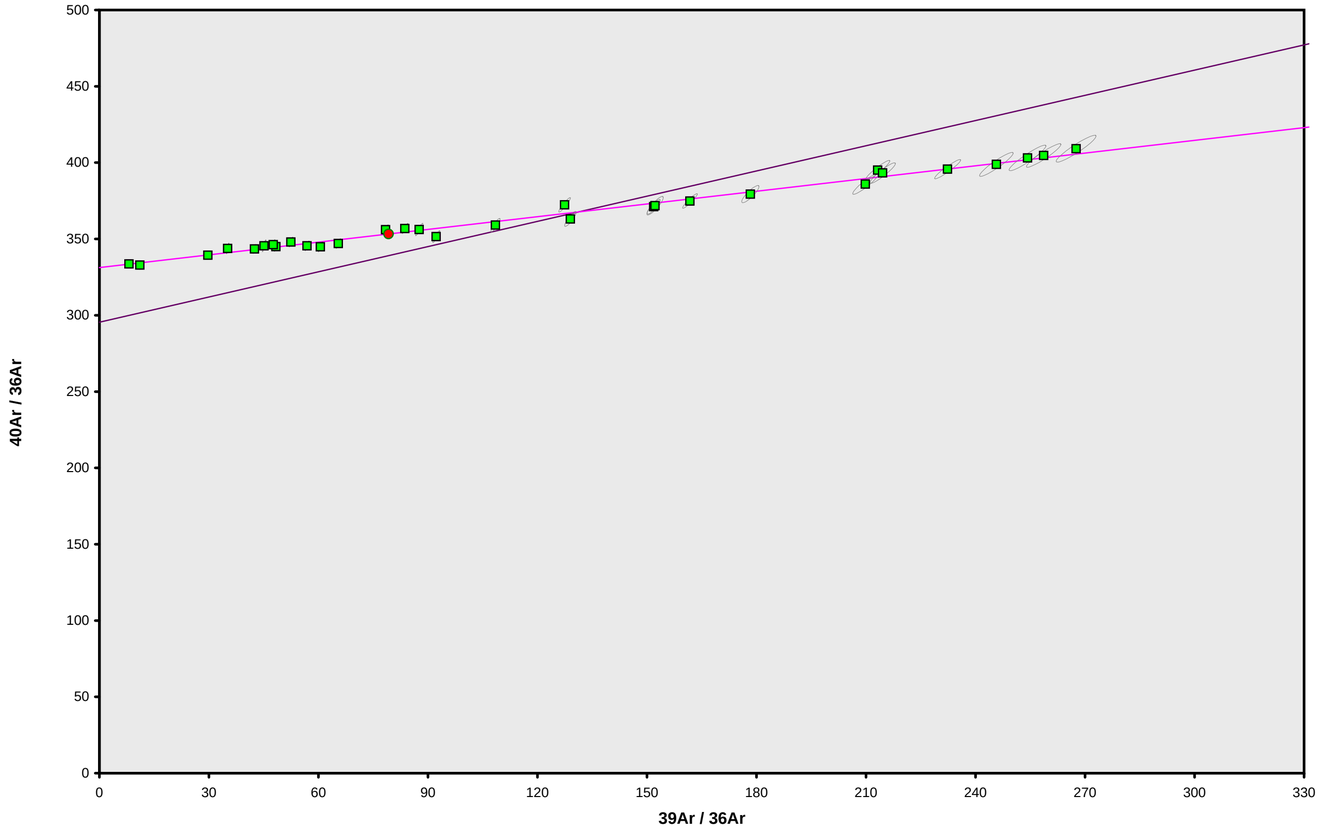
WEIGHTED PLATEAU
1765.1 ± 254.9
TOTAL FUSION
2339.2 ± 25.1
NORMAL ISOCHRON
891.6 ± 44.2
INVERSE ISOCHRON
892.5 ± 43.7

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177448 ± 0.00000131

14D15492.AGE >>> 176701 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1765.1 ± 254.9
TOTAL FUSION
2339.2 ± 25.1
NORMAL ISOCHRON
891.6 ± 44.2
INVERSE ISOCHRON
892.5 ± 43.7

MSWD (PROBABILITY)
1.73 (1%)

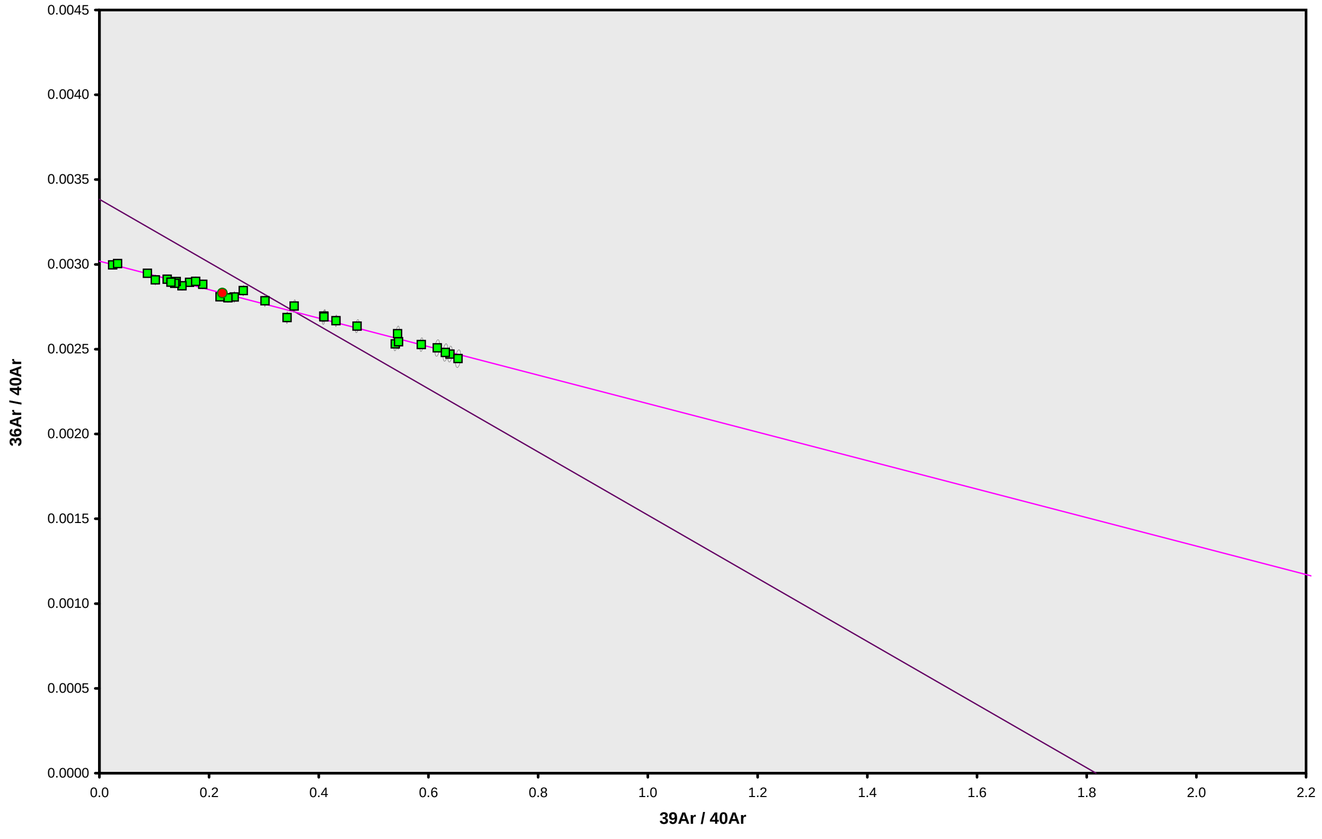
40AR/36AR INTERCEPT
331.2 ± 1.4

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177448 ± 0.00000131

14D15492.AGE >>> 176701 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1765.1 ± 254.9
TOTAL FUSION
2339.2 ± 25.1
NORMAL ISOCHRON
891.6 ± 44.2
INVERSE ISOCHRON
892.5 ± 43.7

MSWD (PROBABILITY)
1.72 (1%)

SPREADING FACTOR
17.5%

40AR/36AR INTERCEPT
331.2 ± 1.4

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177448 ± 0.00000131

Incremental Heating			36Ar(a) [fA]	37Ar(ca) [fA]	38Ar(cl) [fA]	39Ar(k) [fA]	40Ar(r) [fA]	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15565	2.0 %		0.3379204	51.5223	0.1756053	51.8710	31.77347	1962.3 ± 73.5	24.13	3.27	0.433 ± 0.005
14D15566	2.0 %		0.0253388	14.6419	0.0000000	17.0861	6.12440	1148.6 ± 103.8	44.94	1.08	0.502 ± 0.019
14D15568	2.6 %		0.0698900	99.3264	0.0000000	116.5475	41.43092	1139.1 ± 19.1	66.61	7.35	0.505 ± 0.004
14D15569	3.2 %		0.0736527	169.2079	0.0000000	205.2095	67.78574	1058.5 ± 11.8	75.52	12.93	0.521 ± 0.004
14D15571	3.6 %		0.0522906	164.6431	0.0000000	188.5620	59.84320	1017.0 ± 12.0	79.28	11.89	0.492 ± 0.004
14D15572	4.0 %		0.0410691	140.6521	0.0000000	136.9364	43.01657	1006.6 ± 14.8	77.80	8.63	0.419 ± 0.003
14D15573	4.4 %		0.0187736	60.1969	0.0000000	52.2873	16.19542	992.5 ± 34.0	74.31	3.30	0.374 ± 0.004
14D15575	4.8 %		0.0342204	121.9379	0.0399472	90.8084	28.67559	1011.9 ± 22.7	73.76	5.72	0.320 ± 0.003
14D15576	5.2 %		0.0335942	104.8889	0.0294932	72.5265	22.38995	989.2 ± 27.3	69.13	4.57	0.297 ± 0.003
14D15577	5.7 %		0.0153949	35.2670	0.0757084	25.5488	8.18500	1026.6 ± 67.6	64.15	1.61	0.312 ± 0.005
14D15579	6.2 %		0.0250148	54.3408	0.0153757	39.9825	12.43403	996.5 ± 45.7	62.59	2.52	0.316 ± 0.004
14D15580	6.7 %		0.0232238	40.6374	0.0280294	31.3834	9.93645	1014.6 ± 56.4	59.04	1.98	0.332 ± 0.005
14D15581	7.2 %	✓	0.0340941	48.9532	0.0179670	39.6227	12.12612	980.7 ± 46.3	54.52	2.50	0.348 ± 0.004
14D15583	7.7 %	✓	0.0411918	52.2559	0.0925111	44.0860	13.54595	984.6 ± 44.9	52.58	2.78	0.363 ± 0.004
14D15584	8.2 %	✓	0.0462165	52.2401	0.1408487	46.8820	14.75407	1008.4 ± 41.9	51.84	2.96	0.386 ± 0.005
14D15585	8.8 %	✓	0.0383811	32.5790	0.1107506	31.6509	9.97131	1009.5 ± 61.4	46.72	2.00	0.418 ± 0.007
14D15587	9.4 %	✓	0.0564969	42.8279	0.0827229	43.1301	13.52810	1005.1 ± 46.1	44.70	2.72	0.433 ± 0.006
14D15588	10.1 %	✓	0.0605444	41.9639	0.0847426	38.9331	12.30448	1012.7 ± 50.3	40.70	2.45	0.399 ± 0.006
14D15589	10.9 %	✓	0.0976632	67.3962	0.1180705	51.8777	16.89596	1043.6 ± 43.9	36.88	3.27	0.331 ± 0.003
14D15591	11.7 %	✓	0.0889221	72.5858	0.1712026	41.8113	14.73627	1129.3 ± 54.4	35.89	2.64	0.248 ± 0.002
14D15592	12.5 %	✓	0.1015851	88.6423	0.0974320	40.0476	14.12680	1130.3 ± 61.1	31.97	2.52	0.194 ± 0.002
14D15593	13.5 %	✓	0.1123256	125.8633	0.1085563	39.2865	14.23984	1161.4 ± 63.8	30.00	2.48	0.134 ± 0.001
14D15595	14.5 %	✓	0.1391580	187.8770	0.1246171	39.4666	15.62240	1268.3 ± 69.5	27.51	2.49	0.090 ± 0.001
14D15596	15.5 %	✓	0.1215330	175.3426	0.1339911	27.4729	12.15843	1418.0 ± 94.7	25.28	1.73	0.067 ± 0.001
14D15597	16.5 %	✓	0.1241120	254.2439	0.0700709	20.2655	10.41145	1646.0 ± 141.5	22.10	1.28	0.034 ± 0.000
14D15599	17.5 %	✓	0.0744179	144.6482	0.0179634	10.1063	6.05656	1919.9 ± 230.2	21.59	0.64	0.030 ± 0.000
14D15600	19.0 %	✓	0.1116150	301.9528	0.0748266	11.1592	8.56439	2458.3 ± 251.4	20.61	0.70	0.016 ± 0.000
14D15601	20.5 %	✓	0.0845573	179.0546	0.0005890	8.0227	5.71225	2280.8 ± 304.8	18.60	0.51	0.019 ± 0.000
14D15603	22.0 %	✓	0.1210414	333.7389	0.0565719	11.0413	9.44531	2739.9 ± 260.0	20.89	0.70	0.014 ± 0.000
14D15604	23.5 %	✓	0.0988617	207.4964	0.0599914	8.2222	7.11976	2773.4 ± 310.9	19.59	0.52	0.017 ± 0.000
14D15606	24.5 %	✓	0.0806699	148.3693	0.0000000	4.6740	5.14472	3524.7 ± 486.4	17.75	0.29	0.014 ± 0.000
		Σ	2.3837704	3615.2937	1.9275848	1586.5080	564.25491				

Information on Analysis

Sample = 176691
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177253 ± 0.00000131
FCT-NM = 28.201 ± 0.023 Ma

Results	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau	0.33872 ± 0.03202	1085.4 ± 102.6	47.10	35.16	0.021 ± 0.010
Error Mean	± 9.45%	± 9.45%	0%	19	
		Full External Error ± 105.5	1.67	2σ Confidence Limit	
		Analytical Error ± 102.6	6.8633	Error Magnification	
Total Fusion Age	0.35566 ± 0.00253	1139.6 ± 8.3		31	0.189 ± 0.000
	± 0.71%	± 0.73%			
		Full External Error ± 27.0			
		Analytical Error ± 8.1			

Normal Isochron			39(k)/36(a) ± 2σ	40(a+r)/36(a) ± 2σ	r.i.
14D15565	2.0 %		153.50 ± 1.84	389.53 ± 4.62	0.9796
14D15566	2.0 %		674.31 ± 47.46	537.20 ± 38.33	0.9824
14D15568	2.6 %		1667.58 ± 54.21	888.30 ± 28.95	0.9953
14D15569	3.2 %		2786.18 ± 93.83	1215.84 ± 40.98	0.9975
14D15571	3.6 %		3606.04 ± 158.67	1439.93 ± 63.42	0.9981
14D15572	4.0 %		3334.29 ± 166.24	1342.92 ± 67.06	0.9976
14D15573	4.4 %		2785.15 ± 264.50	1158.17 ± 110.34	0.9964
14D15575	4.8 %		2653.64 ± 163.01	1133.47 ± 69.78	0.9972
14D15576	5.2 %		2158.90 ± 128.77	961.98 ± 57.58	0.9956
14D15577	5.7 %		1659.57 ± 186.46	827.17 ± 93.54	0.9927
14D15579	6.2 %		1598.35 ± 117.60	792.57 ± 58.69	0.9926
14D15580	6.7 %		1351.35 ± 103.61	723.36 ± 55.89	0.9912
14D15581	7.2 %	✓	1162.15 ± 63.04	651.17 ± 35.64	0.9893
14D15583	7.7 %	✓	1070.26 ± 52.21	624.35 ± 30.70	0.9899
14D15584	8.2 %	✓	1014.40 ± 43.75	614.74 ± 26.74	0.9893
14D15585	8.8 %	✓	824.65 ± 42.28	555.30 ± 28.78	0.9864
14D15587	9.4 %	✓	763.41 ± 27.33	534.95 ± 19.35	0.9862
14D15588	10.1 %	✓	643.05 ± 21.12	498.73 ± 16.58	0.9831
14D15589	10.9 %	✓	531.19 ± 12.72	468.50 ± 11.32	0.9845
14D15591	11.7 %	✓	470.20 ± 12.37	461.22 ± 12.24	0.9839
14D15592	12.5 %	✓	394.23 ± 9.81	434.56 ± 10.90	0.9841
14D15593	13.5 %	✓	349.76 ± 8.07	422.27 ± 9.82	0.9828
14D15595	14.5 %	✓	283.61 ± 5.82	407.76 ± 8.40	0.9825
14D15596	15.5 %	✓	226.05 ± 5.03	395.54 ± 8.84	0.9778
14D15597	16.5 %	✓	163.28 ± 3.96	379.39 ± 9.19	0.9748
14D15599	17.5 %	✓	135.81 ± 4.47	376.89 ± 12.30	0.9571
14D15600	19.0 %	✓	99.98 ± 2.70	372.23 ± 9.80	0.9505
14D15601	20.5 %	✓	94.88 ± 2.95	363.05 ± 10.98	0.9392
14D15603	22.0 %	✓	91.22 ± 2.33	373.53 ± 9.28	0.9515
14D15604	23.5 %	✓	83.17 ± 2.33	367.52 ± 9.94	0.9358
14D15606	24.5 %	✓	57.94 ± 1.89	359.27 ± 10.54	0.8634

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Normal Isochron	340.17 ± 4.82	0.25452 ± 0.01158	815.6 ± 37.1	1.78
Error Chron	± 1.42%	± 4.55%	± 4.55%	2%
			Full External Error ± 41.4	
			Analytical Error ± 37.1	

Statistics				
	2σ Confidence Limit	1.69	Convergence	0.000001358446
	Error Magnification	1.3327	Number of Iterations	12
	Number of Data Points	19	Calculated Line	Weighted York-2

Inverse Isochron			39(k)/40(a+r) ± 2σ	36(a)/40(a+r) ± 2σ	r.i.
14D15565	2.0 %		0.3940702 ± 0.0009492	0.00256722 ± 0.00003045	0.0615
14D15566	2.0 %		1.2552232 ± 0.0167251	0.00186150 ± 0.00013282	0.1650
14D15568	2.6 %		1.8772731 ± 0.0059385	0.00112574 ± 0.00003669	0.0749
14D15569	3.2 %		2.2915602 ± 0.0055137	0.00082247 ± 0.00002772	0.0466
14D15571	3.6 %		2.5043074 ± 0.0068104	0.00069448 ± 0.00003059	0.0448
14D15572	4.0 %		2.4828677 ± 0.0085719	0.00074465 ± 0.00003718	0.0567
14D15573	4.4 %		2.4047841 ± 0.0194938	0.00086343 ± 0.00008226	0.0801
14D15575	4.8 %		2.3411655 ± 0.0107640	0.00088225 ± 0.00005431	0.0659
14D15576	5.2 %		2.2442182 ± 0.0125890	0.00103952 ± 0.00006223	0.0845
14D15577	5.7 %		2.0063187 ± 0.0273993	0.00120894 ± 0.00013672	0.1140
14D15579	6.2 %		2.0166804 ± 0.0180883	0.00126172 ± 0.00009343	0.1133
14D15580	6.7 %		1.8681602 ± 0.0191480	0.00138244 ± 0.00010681	0.1238
14D15581	7.2 %	✓	1.7847296 ± 0.0142796	0.00153571 ± 0.00008406	0.1347
14D15583	7.7 %	✓	1.7141977 ± 0.0119252	0.00160166 ± 0.00007877	0.1277
14D15584	8.2 %	✓	1.6501335 ± 0.0104534	0.00162671 ± 0.00007075	0.1290
14D15585	8.8 %	✓	1.4850561 ± 0.0126465	0.00180084 ± 0.00009334	0.1470
14D15587	9.4 %	✓	1.4270655 ± 0.0085346	0.00186934 ± 0.00006762	0.1441
14D15588	10.1 %	✓	1.2893752 ± 0.0078619	0.00200509 ± 0.00006667	0.1575
14D15589	10.9 %	✓	1.1338046 ± 0.0048064	0.00213446 ± 0.00005156	0.1362
14D15591	11.7 %	✓	1.0194708 ± 0.0048318	0.00216816 ± 0.00005752	0.1378
14D15592	12.5 %	✓	0.9071799 ± 0.0040473	0.00230116 ± 0.00005772	0.1313
14D15593	13.5 %	✓	0.8282699 ± 0.0035649	0.00236814 ± 0.00005507	0.1317
14D15595	14.5 %	✓	0.6955247 ± 0.0026736	0.00245240 ± 0.00005055	0.1169
14D15596	15.5 %	✓	0.5715005 ± 0.0026893	0.00252818 ± 0.00005651	0.1246
14D15597	16.5 %	✓	0.4303878 ± 0.0023434	0.00263583 ± 0.00006382	0.1015
14D15599	17.5 %	✓	0.3603353 ± 0.0034607	0.00265332 ± 0.00008656	0.1171
14D15600	19.0 %	✓	0.2685948 ± 0.0022593	0.00268650 ± 0.00007070	0.0781
14D15601	20.5 %	✓	0.2613346 ± 0.0028025	0.00275440 ± 0.00008327	0.0971
14D15603	22.0 %	✓	0.2442057 ± 0.0019194	0.00267713 ± 0.00006650	0.0744
14D15604	23.5 %	✓	0.2262982 ± 0.0022431	0.00272096 ± 0.00007358	0.0818
14D15606	24.5 %	✓	0.1612678 ± 0.0026617	0.00278338 ± 0.00008168	0.0709

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD
Inverse Isochron	340.27 ± 4.82	0.25525 ± 0.01142	818.0 ± 36.6	1.82
Error Chron	± 1.42%	± 4.48%	± 4.48%	2%
			Full External Error ± 41.0	
			Analytical Error ± 36.6	

Statistics				
2σ Confidence Limit	1.69	Convergence	0.0032826303
Error Magnification	1.3490	Number of Iterations	3
Number of Data Points	19	Calculated Line	Weighted York-2
Spreading Factor	41.4%		

Relative Abundances			36Ar [fA]	%1σ	37Ar [fA]	%1σ	38Ar [fA]	%1σ	39Ar [fA]	%1σ	40Ar [fA]	%1σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	40Ar(r) (%)	39Ar(k) (%)	K/Ca ± 2σ
14D15565	2.0 %		0.3515481	0.566	51.5223	0.587	0.829771	4.656	51.9057	0.100	131.6813	0.066	0.61255 ± 0.02297	1962.3 ± 73.5	24.13	3.27	0.433 ± 0.005
14D15566	2.0 %		0.0292043	3.037	14.6419	1.876	0.168794	23.517	17.0960	0.227	13.6293	0.626	0.35844 ± 0.03240	1148.6 ± 103.8	44.94	1.08	0.502 ± 0.019
14D15568	2.6 %		0.0961122	1.175	99.3264	0.421	1.329290	2.964	116.6144	0.076	62.2011	0.139	0.35549 ± 0.00597	1139.1 ± 19.1	66.61	7.35	0.505 ± 0.004
14D15569	3.2 %		0.1183236	1.038	169.2079	0.365	2.318786	1.737	205.3233	0.071	89.7574	0.097	0.33032 ± 0.00370	1058.5 ± 11.8	75.52	12.93	0.521 ± 0.004
14D15571	3.6 %		0.0957564	1.190	164.6431	0.362	2.104896	1.818	188.6728	0.071	75.4855	0.116	0.31737 ± 0.00375	1017.0 ± 12.0	79.28	11.89	0.492 ± 0.004
14D15572	4.0 %		0.0782013	1.296	140.6521	0.380	1.551706	2.539	137.0310	0.073	55.2908	0.156	0.31414 ± 0.00462	1006.6 ± 14.8	77.80	8.63	0.419 ± 0.003
14D15573	4.4 %		0.0346656	2.560	60.1969	0.525	0.597734	6.607	52.3278	0.098	21.7958	0.392	0.30974 ± 0.01061	992.5 ± 34.0	74.31	3.30	0.374 ± 0.004
14D15575	4.8 %		0.0664179	1.570	121.9379	0.395	1.081438	3.715	90.8905	0.079	38.8794	0.215	0.31578 ± 0.00710	1011.9 ± 22.7	73.76	5.72	0.320 ± 0.003
14D15576	5.2 %		0.0612893	1.623	104.8889	0.416	0.862582	4.764	72.5971	0.088	32.3903	0.266	0.30871 ± 0.00852	989.2 ± 27.3	69.13	4.57	0.297 ± 0.003
14D15577	5.7 %		0.0247165	3.485	35.2670	0.796	0.369821	10.416	25.5726	0.161	12.7600	0.662	0.32037 ± 0.02109	1026.6 ± 67.6	64.15	1.61	0.312 ± 0.005
14D15579	6.2 %		0.0393630	2.327	54.3408	0.594	0.475807	8.227	40.0191	0.114	19.8663	0.433	0.31099 ± 0.01428	996.5 ± 45.7	62.59	2.52	0.316 ± 0.004
14D15580	6.7 %		0.0339562	2.610	40.6374	0.727	0.390078	10.212	31.4107	0.132	16.8308	0.494	0.31662 ± 0.01759	1014.6 ± 56.4	59.04	1.98	0.332 ± 0.005
14D15581	7.2 %	✓	0.0470204	1.957	48.9532	0.625	0.475926	8.052	39.6556	0.112	22.2409	0.383	0.30604 ± 0.01445	980.7 ± 46.3	54.52	2.50	0.348 ± 0.004
14D15583	7.7 %	✓	0.0550010	1.819	52.2559	0.599	0.602634	6.498	44.1211	0.109	25.7627	0.330	0.30726 ± 0.01401	984.6 ± 44.9	52.58	2.78	0.363 ± 0.004
14D15584	8.2 %	✓	0.0600286	1.652	52.2401	0.627	0.683730	5.681	46.9172	0.107	28.4584	0.298	0.31471 ± 0.01308	1008.4 ± 41.9	51.84	2.96	0.386 ± 0.005
14D15585	8.8 %	✓	0.0469983	2.084	32.5790	0.876	0.478564	8.101	31.6728	0.138	21.3449	0.402	0.31504 ± 0.01915	1009.5 ± 61.4	46.72	2.00	0.418 ± 0.007
14D15587	9.4 %	✓	0.0678157	1.484	42.8279	0.721	0.584698	6.285	43.1589	0.107	30.2665	0.279	0.31366 ± 0.01439	1005.1 ± 46.1	44.70	2.72	0.433 ± 0.006
14D15588	10.1 %	✓	0.0716354	1.380	41.9639	0.700	0.539701	7.582	38.9614	0.115	30.2347	0.282	0.31604 ± 0.01570	1012.7 ± 50.3	40.70	2.45	0.399 ± 0.006
14D15589	10.9 %	✓	0.1154732	1.006	67.3962	0.512	0.727629	5.356	51.9231	0.100	45.8078	0.186	0.32569 ± 0.01369	1043.6 ± 43.9	36.88	3.27	0.331 ± 0.003
14D15591	11.7 %	✓	0.1081100	1.074	72.5858	0.482	0.664644	5.958	41.8601	0.113	41.0550	0.208	0.35245 ± 0.01698	1129.3 ± 54.4	35.89	2.64	0.248 ± 0.002
14D15592	12.5 %	✓	0.1250011	1.004	88.6423	0.440	0.573393	6.644	40.1073	0.114	44.1857	0.191	0.35275 ± 0.01907	1130.3 ± 61.1	31.97	2.52	0.194 ± 0.002
14D15593	13.5 %	✓	0.1455695	0.882	125.8633	0.388	0.578380	6.676	39.3712	0.115	47.4717	0.181	0.36246 ± 0.01991	1161.4 ± 63.8	30.00	2.48	0.134 ± 0.001
14D15595	14.5 %	✓	0.1887759	0.746	187.8770	0.357	0.602367	7.057	39.5930	0.117	56.7834	0.152	0.39584 ± 0.02171	1268.3 ± 69.5	27.51	2.49	0.090 ± 0.001
14D15596	15.5 %	✓	0.1678433	0.792	175.3426	0.365	0.471784	8.003	27.5909	0.150	48.0992	0.181	0.44256 ± 0.02955	1418.0 ± 94.7	25.28	1.73	0.067 ± 0.001
14D15597	16.5 %	✓	0.1912428	0.767	254.2439	0.343	0.327423	11.682	20.4366	0.200	47.1070	0.183	0.51375 ± 0.04419	1646.0 ± 141.5	22.10	1.28	0.034 ± 0.000
14D15599	17.5 %	✓	0.1126076	1.052	144.6482	0.376	0.148893	27.408	10.2037	0.369	28.0572	0.303	0.59928 ± 0.07189	1919.9 ± 230.2	21.59	0.64	0.030 ± 0.000
14D15600	19.0 %	✓	0.1913416	0.745	301.9528	0.340	0.226876	16.123	11.3624	0.359	41.5579	0.208	0.76747 ± 0.07855	2458.3 ± 251.4	20.61	0.70	0.016 ± 0.000
14D15601	20.5 %	✓	0.1318278	0.944	179.0546	0.358	0.110180	37.614	8.1432	0.450	30.7070	0.281	0.71201 ± 0.09520	2280.8 ± 304.8	18.60	0.51	0.019 ± 0.000
14D15603	22.0 %	✓	0.2091568	0.696	333.7389	0.338	0.209483	20.030	11.2659	0.337	45.2242	0.191	0.85545 ± 0.08124	2739.9 ± 260.0	20.89	0.70	0.014 ± 0.000
14D15604	23.5 %	✓	0.1536497	0.847	207.4964	0.354	0.174921	22.138	8.3618	0.429	36.3417	0.234	0.86592 ± 0.09716	2773.4 ± 310.9	19.59	0.52	0.017 ± 0.000
14D15606	24.5 %	✓	0.1198394	0.960	148.3693	0.373	0.067860	55.100	4.7738	0.755	28.9874	0.293	1.10072 ± 0.15204	3524.7 ± 486.4	17.75	0.29	0.014 ± 0.000
		Σ	3.3384922	0.196	3615.2937	0.082	20.329788	1.076	1588.9411	0.021	1270.2614	0.038					

Information on Analysis and Constants Used in Calculations

Sample = 176691
Material = Groundmass
Location = Harrat Hutaymah
Analyst = Anthony Koppers
Project = HARHUT | SCHLIEDER (14-13)
Mass Discrimination Law = LIN
Irradiation = 14-OSU-02
J = 0.00177253 ± 0.00000131
FCT-NM = 28.201 ± 0.023 Ma
IGSN = Undefined
Preferred Age = Undefined
Classification = Undefined
Experiment Type = Incremental Heating
Extraction Method = Undefined
Heating = 77 sec
Isolation = 6.00 min
Instrument = ARGUS-VI
Lithology = Undefined
Lat-Lon = Undefined - Undefined
Collector Calibrations = 40Ar 36Ar

Age Equations = Min et al. (2000)
Negative Intensities = Allowed
Decay Constant 40K = 5.530 ± 0.048 E-10 1/a
Decay Constant 39Ar = 2.940 ± 0.016 E-07 1/h
Decay Constant 37Ar = 8.230 ± 0.012 E-04 1/h
Decay Constant 36Cl = 2.257 ± 0.015 E-06 1/a
Decay Constant 40K(EC,β⁺) = 0.580 ± 0.009 E-10 1/a
Decay Constant 40K(β⁻) = 4.950 ± 0.043 E-10 1/a
Atmospheric Ratio 40/36(a) = 295.50
Atmospheric Ratio 38/36(a) = 0.1869
Production Ratio 39/37(ca) = 0.000673
Production Ratio 38/37(ca) = 0.000014
Production Ratio 36/37(ca) = 0.000264
Production Ratio 40/39(k) = 0.001010
Production Ratio 38/39(k) = 0.011380
Production Ratio 36/38(cl) = 262.80 ± 1.71
Scaling Ratio K/Ca = 0.430
Abundance Ratio 40K/K = 1.1700 ± 0.0100 E-04
Atomic Weight K = 39.0983 ± 0.0001 g

Results	40(a)/36(a) ± 2σ	40(r)/39(k) ± 2σ	Age ± 2σ (Ka)	MSWD	39Ar(k) (%,n)	K/Ca ± 2σ
Age Plateau		0.33872 ± 0.03202	1085.4 ± 102.6	47.10	35.16	0.021 ± 0.010
Error Mean		± 9.45%	± 9.45%	0%	19	
			Full External Error ± 105.5	1.67	2σ Confidence Limit	
			Analytical Error ± 102.6	6.8633	Error Magnification	
Total Fusion Age		0.35566 ± 0.00253	1139.6 ± 8.3		31	0.189 ± 0.000
		± 0.71%	± 0.73%			
			Full External Error ± 27.0			
			Analytical Error ± 8.1			
Normal Isochron	340.17 ± 4.82	0.25452 ± 0.01158	815.6 ± 37.1	1.78	35.16	
Error Chron	± 1.42%	± 4.55%	± 4.55%	2%	19	
			Full External Error ± 41.4	1.69	2σ Confidence Limit	
			Analytical Error ± 37.1	1.3327	Error Magnification	
				12	Number of Iterations	
				0.0000013584	Convergence	
Inverse Isochron	340.27 ± 4.82	0.25525 ± 0.01142	818.0 ± 36.6	1.82	35.16	
Error Chron	± 1.42%	± 4.48%	± 4.48%	2%	19	
			Full External Error ± 41.0	1.69	2σ Confidence Limit	

Degassing Patterns			36Ar(a) [fA]	%1σ	36Ar(c) [fA]	%1σ	36Ar(ca) [fA]	%1σ	36Ar(cl) [fA]	%1σ	37Ar(ca) [fA]	%1σ	38Ar(a) [fA]	%1σ	38Ar(c) [fA]	%1σ	38Ar(k) [fA]	%1σ	38Ar(ca) [fA]	%1σ	38Ar(cl) [fA]	%1σ	39Ar(k) [fA]	%1σ	39Ar(ca) [fA]	%1σ	40Ar(r) [fA]	%1σ	40Ar(a) [fA]	%1σ	40Ar(c) [fA]	%1σ	40Ar(k) [fA]	%1σ
14D15565	2.0 %		0.3379204	0.59	0.0000000	0.00	0.0136019	0.59	0.0000258	22.02	51.5223	0.59	0.0631573	0.59	0.0000000	0.00	0.590293	0.10	0.0007162	0.59	0.1756053	22.04	51.8710	0.10	0.0346745	0.59	31.77347	1.87	99.85547	0.59	0.0000000	0.00	0.0523898	0.10
14D15566	2.0 %		0.0253388	3.51	0.0000000	0.00	0.0038655	1.88	0.0000000	0.00	14.6419	1.88	0.0047358	3.51	0.0000000	0.00	0.194440	0.23	0.0002035	1.88	0.0000000	0.00	17.0861	0.23	0.0098540	1.88	6.12440	4.51	7.48762	3.51	0.0000000	0.00	0.0172570	0.23
14D15568	2.6 %		0.0698900	1.62	0.0000000	0.00	0.0262222	0.42	0.0000000	0.00	99.3264	0.42	0.0130624	1.62	0.0000000	0.00	1.326311	0.08	0.0013806	0.42	0.0000000	0.00	116.5475	0.08	0.0668466	0.42	41.43092	0.84	20.65250	1.62	0.0000000	0.00	0.1177130	0.08
14D15569	3.2 %		0.0736527	1.68	0.0000000	0.00	0.0446709	0.37	0.0000000	0.00	169.2079	0.37	0.0137657	1.68	0.0000000	0.00	2.335284	0.07	0.0023520	0.37	0.0000000	0.00	205.2095	0.07	0.1138769	0.37	67.78574	0.56	21.76437	1.68	0.0000000	0.00	0.2072616	0.07
14D15571	3.6 %		0.0522906	2.20	0.0000000	0.00	0.0434658	0.36	0.0000000	0.00	164.6431	0.36	0.0097731	2.20	0.0000000	0.00	2.145836	0.07	0.0022885	0.36	0.0000000	0.00	188.5620	0.07	0.1108048	0.36	59.84320	0.59	15.45188	2.20	0.0000000	0.00	0.1904476	0.07
14D15572	4.0 %		0.0410691	2.49	0.0000000	0.00	0.0371322	0.38	0.0000000	0.00	140.6521	0.38	0.0076758	2.49	0.0000000	0.00	1.558336	0.07	0.0019551	0.38	0.0000000	0.00	136.9364	0.07	0.0946589	0.38	43.01657	0.73	12.13592	2.49	0.0000000	0.00	0.1383057	0.07
14D15573	4.4 %		0.0187736	4.75	0.0000000	0.00	0.0158920	0.52	0.0000000	0.00	60.1969	0.52	0.0035088	4.75	0.0000000	0.00	0.595029	0.10	0.0008367	0.52	0.0000000	0.00	52.2873	0.10	0.0405125	0.52	16.19542	1.71	5.54761	4.75	0.0000000	0.00	0.0528102	0.10
14D15575	4.8 %		0.0342204	3.07	0.0000000	0.00	0.0321916	0.40	0.0000059	100.61	121.9379	0.40	0.0063958	3.07	0.0000000	0.00	1.033400	0.08	0.0016949	0.40	0.0399472	100.62	90.8084	0.08	0.0820642	0.40	28.67559	1.12	10.11212	3.07	0.0000000	0.00	0.0917165	0.08
14D15576	5.2 %		0.0335942	2.98	0.0000000	0.00	0.0276907	0.42	0.0000043	139.36	104.8889	0.42	0.0062788	2.98	0.0000000	0.00	0.825352	0.09	0.0014580	0.42	0.0294932	139.36	72.5265	0.09	0.0705902	0.42	22.38995	1.38	9.92710	2.98	0.0000000	0.00	0.0732518	0.09
14D15577	5.7 %		0.0153949	5.62	0.0000000	0.00	0.0093105	0.80	0.0000112	50.89	35.2670	0.80	0.0028773	5.62	0.0000000	0.00	0.290746	0.16	0.0004902	0.80	0.0757084	50.90	25.5488	0.16	0.0237347	0.80	8.18500	3.29	4.54918	5.62	0.0000000	0.00	0.0258043	0.16
14D15579	6.2 %		0.0250148	3.68	0.0000000	0.00	0.0143460	0.59	0.0000023	254.62	54.3408	0.59	0.0046753	3.68	0.0000000	0.00	0.455001	0.11	0.0007553	0.59	0.0153757	254.62	39.9825	0.11	0.0365714	0.59	12.43403	2.29	7.39187	3.68	0.0000000	0.00	0.0403823	0.11
14D15580	6.7 %		0.0232238	3.83	0.0000000	0.00	0.0107283	0.73	0.0000041	142.14	40.6374	0.73	0.0043405	3.83	0.0000000	0.00	0.357143	0.13	0.0005649	0.73	0.0280294	142.15	31.3834	0.13	0.0273489	0.73	9.93645	2.78	6.86263	3.83	0.0000000	0.00	0.0316972	0.13
14D15581	7.2 %	✓	0.0340941	2.71	0.0000000	0.00	0.0129236	0.63	0.0000026	213.32	48.9532	0.63	0.0063722	2.71	0.0000000	0.00	0.450906	0.11	0.0006804	0.63	0.0179670	213.32	39.6227	0.11	0.0329455	0.63	12.12612	2.36	10.07481	2.71	0.0000000	0.00	0.0400189	0.11
14D15583	7.7 %	✓	0.0411918	2.44	0.0000000	0.00	0.0137955	0.60	0.0000136	42.35	52.2559	0.60	0.0076988	2.44	0.0000000	0.00	0.501698	0.11	0.0007264	0.60	0.0925111	42.36	44.0860	0.11	0.0351682	0.60	13.54595	2.28	12.17218	2.44	0.0000000	0.00	0.0445268	0.11
14D15584	8.2 %	✓	0.0462165	2.15	0.0000000	0.00	0.0137914	0.63	0.0000208	27.60	52.2401	0.63	0.0086379	2.15	0.0000000	0.00	0.533517	0.11	0.0007261	0.63	0.1408487	27.61	46.8820	0.11	0.0351576	0.63	14.75407	2.07	13.65697	2.15	0.0000000	0.00	0.0473508	0.11
14D15585	8.8 %	✓	0.0383811	2.56	0.0000000	0.00	0.0086008	0.88	0.0000163	35.02	32.5790	0.88	0.0071734	2.56	0.0000000	0.00	0.360187	0.14	0.0004528	0.88	0.1107506	35.03	31.6509	0.14	0.0219256	0.88	9.97131	3.04	11.34161	2.56	0.0000000	0.00	0.0319674	0.14
14D15587	9.4 %	✓	0.0564969	1.79	0.0000000	0.00	0.0113066	0.72	0.0000122	44.44	42.8279	0.72	0.0105593	1.79	0.0000000	0.00	0.490821	0.11	0.0005953	0.72	0.0827229	44.45	43.1301	0.11	0.0288232	0.72	13.52810	2.29	16.69484	1.79	0.0000000	0.00	0.0435614	0.11
14D15588	10.1 %	✓	0.0605444	1.64	0.0000000	0.00	0.0110785	0.70	0.0000125	48.30	41.9639	0.70	0.0113158	1.64	0.0000000	0.00	0.443059	0.11	0.0005833	0.70	0.0847426	48.31	38.9331	0.11	0.0282417	0.70	12.30448	2.48	17.89087	1.64	0.0000000	0.00	0.0393225	0.11
14D15589	10.9 %	✓	0.0976632	1.19	0.0000000	0.00	0.0177926	0.51	0.0000174	33.03	67.3962	0.51	0.0182532	1.19	0.0000000	0.00	0.590368	0.10	0.0009368	0.51	0.1180705	33.04	51.8777	0.10	0.0453577	0.51	16.89596	2.10	28.85947	1.19	0.0000000	0.00	0.0523965	0.10
14D15591	11.7 %	✓	0.0889221	1.31	0.0000000	0.00	0.0191627	0.48	0.0000253	23.15	72.5858	0.48	0.0166195	1.31	0.0000000	0.00	0.475813	0.11	0.0010089	0.48	0.1712026	23.17	41.8113	0.11	0.0488503	0.48	14.73627	2.41	26.27648	1.31	0.0000000	0.00	0.0422294	0.11
14D15592	12.5 %	✓	0.1015851	1.24	0.0000000	0.00	0.0234016	0.44	0.0000144	39.12	88.6423	0.44	0.0189863	1.24	0.0000000	0.00	0.455742	0.11	0.0012321	0.44	0.0974320	39.13	40.0476	0.11	0.0596562	0.44	14.12680	2.70	30.01840	1.24	0.0000000	0.00	0.0404481	0.11
14D15593	13.5 %	✓	0.1123256	1.15	0.0000000	0.00	0.0332279	0.39	0.0000160	35.59	125.8633	0.39	0.0209936	1.15	0.0000000	0.00	0.447081	0.12	0.0017495	0.39	0.1085563	35.60	39.2865	0.12	0.0847060	0.39	14.23984	2.74	33.19220	1.15	0.0000000	0.00	0.0396794	0.12
14D15595	14.5 %	✓	0.1391580	1.02	0.0000000	0.00	0.0495995	0.36	0.0000184	34.13	187.8770	0.36	0.0260086	1.02	0.0000000	0.00	0.449130	0.12	0.0026115	0.36	0.1246171	34.14	39.4666	0.12	0.1264412	0.36	15.62240	2.74	41.12119	1.02	0.0000000	0.00	0.0398612	0.12
14D15596	15.5 %	✓	0.1215330	1.10	0.0000000	0.00	0.0462904	0.36	0.0000198	28.20	175.3426	0.36	0.0227145	1.10	0.0000000	0.00	0.312641	0.15	0.0024373	0.36	0.1339911	28.21	27.4729	0.15	0.1180056	0.36	12.15843	3.34	35.91301	1.10	0.0000000	0.00	0.0277476	0.15
14D15597	16.5 %	✓	0.1241120	1.20	0.0000000	0.00	0.0671204	0.34	0.0000103	54.60	254.2439	0.34	0.0231965	1.20	0.0000000	0.00	0.230621	0.20	0.0035340	0.34	0.0700709	54.61	20.2655	0.20	0.1711062	0.34	10.41145	4.30	36.67510	1.20	0.0000000	0.00	0.0204681	0.20
14D15599	17.5 %	✓	0.0744179	1.60	0.0000000	0.00	0.0381871	0.38	0.0000027	227.20	144.6482	0.38	0.0139087	1.60	0.0000000	0.00	0.115010	0.37	0.0020106	0.38	0.0179634	227.20	10.1063	0.37	0.0973483	0.38	6.05656	5.99	21.99048	1.60	0.0000000	0.00	0.0102074	0.37
14D15600	19.0 %	✓	0.1116150	1.30	0.0000000	0.00	0.0797155	0.34	0.0000110	48.90	301.9528	0.34	0.0208609	1.30	0.0000000	0.00	0.126992	0.37	0.0041971	0.34	0.0748266	48.91	11.1592	0.37	0.2032142	0.34	8.56439	5.10	32.98225	1.30	0.0000000	0.00	0.0112708	0.37
14D15601	20.5 %	✓	0.0845573	1.49	0.0000000	0.00	0.0472704	0.36	0.0000001	######	179.0546	0.36	0.0158038	1.49	0.0000000	0.00	0.091298	0.46	0.0024889	0.36	0.0005890	######	8.0227	0.46	0.1205037	0.36	5.71225	6.67	24.98667	1.49	0.0000000	0.00	0.0081029	0.46
14D15603	22.0 %	✓	0.1210414	1.23	0.0000000	0.00	0.0881071	0.34	0.0000084	74.18	333.7389	0.34	0.0226226	1.23	0.0000000	0.00	0.125650	0.34	0.0046390	0.34	0.0565719	74.19	11.0413	0.34	0.2246063	0.34	9.44531	4.74	35.76774	1.23	0.0000000	0.00	0.0111517	0.34
14D15604	23.5 %	✓	0.0988617	1.33	0.0000000	0.00	0.0547791	0.35	0.0000089	64.56	207.4964	0.35	0.0184773	1.33	0.0000000	0.00	0.093568	0.44	0.0028842	0.35	0.0599914	64.57	8.2222	0.44	0.1396451	0.35	7.11976	5.59	29.21364	1.33	0.0000000	0.00	0.0083044	0.44
14D15606	24.5 %	✓	0.0806699	1.44	0.0000000	0.00	0.0391695	0.37	0.0000000	0.00	148.3693	0.37	0.0150772	1.44	0.0000000	0.00	0.053190	0.77	0.0020623	0.37	0.0000000	0.00	4.6740	0.77	0.0998525	0.37	5.14472	6.86	23.83796	1.44	0.0000000	0.00	0.0047207	0.77
		Σ	2.3837704	0.28	0.0000000	0.00	0.9544375	0.08	0.0002843	10.00	3615.2937	0.08	0.4455267	0.28	0.0000000	0.00	18.054461	0.02	0.0502526	0.08	1.9275848	10.00	1586.5080	0.02	2.4330927	0.08	564.25491	0.36	704.40414	0.28	0.0000000	0.00	1.6023731	0.02
		Σ							3.3384922	0.20	3615.2937	0.08									20.477825	0.94			1588.9411	0.02							1270.2614	0.22

Additional Parameters			40Ar/39Ar	1σ	37Ar/39Ar	1σ	36Ar/39Ar	1σ	Time (days)	37Ar (decay)	39Ar (decay)	40Ar (moles)
14D15565	2.0 %		2.536933	0.003054	0.992614	0.005909	0.006773	0.000039	90.627	6.004650	1.00064055	6.321E-12
14D15566	2.0 %		0.797221	0.005305	0.856451	0.016184	0.001708	0.000052	90.635	6.005638	1.00064061	6.542E-13
14D15568	2.6 %		0.533392	0.000842	0.851751	0.003639	0.000824	0.000010	90.653	6.007698	1.00064073	2.986E-12
14D15569	3.2 %		0.437151	0.000525	0.824105	0.003065	0.000576	0.000006	90.661	6.008687	1.00064079	4.308E-12
14D15571	3.6 %		0.400087	0.000543	0.872638	0.003221	0.000508	0.000006	90.678	6.010748	1.00064091	3.623E-12
14D15572	4.0 %		0.403491	0.000695	1.026425	0.003969	0.000571	0.000007	90.688	6.011820	1.00064098	2.654E-12
14D15573	4.4 %		0.416525	0.001684	1.150380	0.006140	0.000662	0.000017	90.696	6.012809	1.00064104	1.046E-12
14D15575	4.8 %		0.427761	0.000981	1.341591	0.005406	0.000731	0.000011	90.713	6.014872	1.00064116	1.866E-12
14D15576	5.2 %		0.446165	0.001249	1.444808	0.006143	0.000844	0.000014	90.722	6.015862	1.00064122	1.555E-12
14D15577	5.7 %		0.498972	0.003400	1.379094	0.011202	0.000967	0.000034	90.731	6.016935	1.00064128	6.125E-13
14D15579	6.2 %		0.496420	0.002222	1.357873	0.008215	0.000984	0.000023	90.748	6.018998	1.00064140	9.536E-13
14D15580	6.7 %		0.535829	0.002741	1.293742	0.009564	0.001081	0.000028	90.756	6.019989	1.00064146	8.079E-13
14D15581	7.2 %	✓	0.560853	0.002240	1.234457	0.007844	0.001186	0.000023	90.765	6.021063	1.00064153	1.068E-12
14D15583	7.7 %	✓	0.583907	0.002028	1.184372	0.007211	0.001247	0.000023	90.782	6.023045	1.00064165	1.237E-12
14D15584	8.2 %	✓	0.606567	0.001918	1.113454	0.007082	0.001279	0.000021	90.791	6.024119	1.00064171	1.366E-12
14D15585	8.8 %	✓	0.673918	0.002865	1.028610	0.009122	0.001484	0.000031	90.799	6.025111	1.00064177	1.025E-12
14D15587	9.4 %	✓	0.701280	0.002094	0.992329	0.007238	0.001571	0.000023	90.817	6.027177	1.00064189	1.453E-12
14D15588	10.1 %	✓	0.776017	0.002363	1.077064	0.007643	0.001839	0.000025	90.825	6.028169	1.00064195	1.451E-12
14D15589	10.9 %	✓	0.882225	0.001868	1.298002	0.006770	0.002224	0.000022	90.834	6.029244	1.00064201	2.199E-12
14D15591	11.7 %	✓	0.980765	0.002322	1.734008	0.008591	0.002583	0.000028	90.851	6.031312	1.00064214	1.971E-12
14D15592	12.5 %	✓	1.101686	0.002455	2.210128	0.010052	0.003117	0.000031	90.860	6.032305	1.00064219	2.121E-12
14D15593	13.5 %	✓	1.205746	0.002592	3.196834	0.012950	0.003697	0.000033	90.869	6.033381	1.00064226	2.279E-12
14D15595	14.5 %	✓	1.434179	0.002752	4.745207	0.017815	0.004768	0.000036	90.885	6.035367	1.00064238	2.726E-12
14D15596	15.5 %	✓	1.743302	0.004093	6.355098	0.025051	0.006083	0.000049	90.894	6.036444	1.00064244	2.309E-12
14D15597	16.5 %	✓	2.305034	0.006245	12.440626	0.049440	0.009358	0.000074	90.903	6.037437	1.00064250	2.261E-12
14D15599	17.5 %	✓	2.749716	0.013126	14.176077	0.074673	0.011036	0.000123	90.920	6.039508	1.00064262	1.347E-12
14D15600	19.0 %	✓	3.657486	0.015172	26.574685	0.131365	0.016840	0.000139	90.929	6.040585	1.00064268	1.995E-12
14D15601	20.5 %	✓	3.770881	0.020000	21.988245	0.126511	0.016189	0.000169	90.938	6.041579	1.00064274	1.474E-12
14D15603	22.0 %	✓	4.014259	0.015532	29.623834	0.141429	0.018565	0.000144	90.955	6.043652	1.00064287	2.171E-12
14D15604	23.5 %	✓	4.346143	0.021258	24.814718	0.138117	0.018375	0.000175	90.963	6.044646	1.00064292	1.744E-12
14D15606	24.5 %	✓	6.072152	0.049192	31.079746	0.261863	0.025103	0.000307	90.981	6.046720	1.00064305	1.391E-12

Procedure Blanks		36Ar [fA]	1σ	37Ar [fA]	1σ	38Ar [fA]	1σ	39Ar [fA]	1σ	40Ar [fA]	1σ
14D15565	2.0 %	0.0210064	0.0006501	0.0008541	0.0298360	0.0339833	0.0273234	0.0259198	0.0250246	6.9451866	0.0798482
14D15566	2.0 %	0.0209666	0.0006501	0.0034695	0.0298360	0.0353380	0.0273234	0.0262787	0.0250246	6.9223116	0.0798482
14D15568	2.6 %	0.0208978	0.0006501	0.0083715	0.0298360	0.0379651	0.0273234	0.0268540	0.0250246	6.8797993	0.0798482
14D15569	3.2 %	0.0208716	0.0006501	0.0104619	0.0298360	0.0391326	0.0273234	0.0270475	0.0250246	6.8618626	0.0798482
14D15571	3.6 %	0.0208311	0.0006501	0.0142702	0.0298360	0.0413697	0.0273234	0.0272782	0.0250246	6.8296385	0.0798482
14D15572	4.0 %	0.0208176	0.0006501	0.0159585	0.0298360	0.0424288	0.0273234	0.0273062	0.0250246	6.8156292	0.0798482
14D15573	4.4 %	0.0208098	0.0006501	0.0173395	0.0298360	0.0433433	0.0273234	0.0272762	0.0250246	6.8043659	0.0798482
14D15575	4.8 %	0.0208076	0.0006501	0.0196699	0.0298360	0.0450533	0.0273234	0.0270413	0.0250246	6.7860448	0.0798482
14D15576	5.2 %	0.0208133	0.0006501	0.0205260	0.0298360	0.0457805	0.0273234	0.0268458	0.0250246	6.7797198	0.0798482
14D15577	5.7 %	0.0208245	0.0006501	0.0212613	0.0298360	0.0464998	0.0273234	0.0265736	0.0250246	6.7746752	0.0798482
14D15579	6.2 %	0.0208605	0.0006501	0.0221138	0.0298360	0.0476828	0.0273234	0.0258730	0.0250246	6.7702570	0.0798482
14D15580	6.7 %	0.0208846	0.0006501	0.0222605	0.0298360	0.0481570	0.0273234	0.0254541	0.0250246	6.7706055	0.0798482
14D15581	7.2 %	0.0209156	0.0006501	0.0222273	0.0298360	0.0486022	0.0273234	0.0249397	0.0250246	6.7727904	0.0798482
14D15583	7.7 %	0.0209866	0.0006501	0.0216411	0.0298360	0.0492370	0.0273234	0.0238246	0.0250246	6.7817623	0.0798482
14D15584	8.2 %	0.0210323	0.0006501	0.0210392	0.0298360	0.0494794	0.0273234	0.0231311	0.0250246	6.7892970	0.0798482
14D15585	8.8 %	0.0210792	0.0006501	0.0203063	0.0298360	0.0496399	0.0273234	0.0224350	0.0250246	6.7979205	0.0798482
14D15587	9.4 %	0.0211909	0.0006501	0.0182325	0.0298360	0.0497793	0.0273234	0.0208125	0.0250246	6.8210302	0.0798482
14D15588	10.1 %	0.0212514	0.0006501	0.0169746	0.0298360	0.0497526	0.0273234	0.0199510	0.0250246	6.8345921	0.0798482
14D15589	10.9 %	0.0213218	0.0006501	0.0154198	0.0298360	0.0496551	0.0273234	0.0189572	0.0250246	6.8510914	0.0798482
14D15591	11.7 %	0.0214718	0.0006501	0.0118681	0.0298360	0.0492674	0.0273234	0.0168690	0.0250246	6.8881041	0.0798482
14D15592	12.5 %	0.0215506	0.0006501	0.0099008	0.0298360	0.0489878	0.0273234	0.0157840	0.0250246	6.9083393	0.0798482
14D15593	13.5 %	0.0216409	0.0006501	0.0075774	0.0298360	0.0486162	0.0273234	0.0145481	0.0250246	6.9320682	0.0798482
14D15595	14.5 %	0.0218213	0.0006501	0.0027632	0.0298360	0.0477431	0.0273234	0.0121009	0.0250246	6.9808137	0.0798482
14D15596	15.5 %	0.0219263	0.0006501	0.0001288	0.0298360	0.0471688	0.0273234	0.0106858	0.0250246	7.0098925	0.0798482
14D15597	16.5 %	0.0220279	0.0006501	0.0029758	0.0298360	0.0465754	0.0273234	0.0093236	0.0250246	7.0384028	0.0798482
14D15599	17.5 %	0.0222536	0.0006501	0.0094537	0.0298360	0.0451441	0.0273234	0.0063135	0.0250246	7.1029433	0.0798482
14D15600	19.0 %	0.0223785	0.0006501	0.0131143	0.0298360	0.0442957	0.0273234	0.0046562	0.0250246	7.1392516	0.0798482
14D15601	20.5 %	0.0224984	0.0006501	0.0166706	0.0298360	0.0434493	0.0273234	0.0030706	0.0250246	7.1744353	0.0798482
14D15603	22.0 %	0.0227624	0.0006501	0.0246264	0.0298360	0.0414909	0.0273234	0.0004052	0.0250246	7.2528788	0.0798482
14D15604	23.5 %	0.0228959	0.0006501	0.0287077	0.0298360	0.0404573	0.0273234	0.0021562	0.0250246	7.2930008	0.0798482
14D15606	24.5 %	0.0231882	0.0006501	0.0377572	0.0298360	0.0381089	0.0273234	0.0059765	0.0250246	7.3817325	0.0798482

Intercept Values		36Ar [fA]	1σ	r2		37Ar [fA]	1σ	r2		38Ar [fA]	1σ	r2		39Ar [fA]	1σ	r2		40Ar [fA]	1σ	r2	
14D15565	2.0 %	0.3638002	0.0014501	0.2307	EXP 150 of 150	8.4237	0.0282	0.6981	EXP 150 of 150	0.7857251	0.0266231	0.0879	EXP 150 of 150	51.5844	0.0297	0.9922	EXP 150 of 150	138.96833	0.03526	0.9879	EXP 150 of 150
14D15566	2.0 %	0.0494436	0.0005578	0.4971	EXP 150 of 150	2.3903	0.0326	0.0863	EXP 150 of 150	0.1314094	0.0281271	0.0016	EXP 150 of 150	17.0079	0.0271	0.9401	EXP 150 of 150	20.58696	0.03048	0.9966	EXP 150 of 150
14D15568	2.6 %	0.1146166	0.0008289	0.1119	EXP 150 of 150	16.2244	0.0310	0.8970	EXP 150 of 150	1.2752037	0.0276696	0.0463	EXP 149 of 150	115.8611	0.0333	0.9982	EXP 150 of 150	69.24239	0.03309	0.9890	EXP 150 of 150
14D15569	3.2 %	0.1362487	0.0009276	0.0339	EXP 150 of 150	27.6385	0.0340	0.9538	EXP 150 of 150	2.2515326	0.0287450	0.1313	EXP 150 of 150	203.9769	0.0437	0.9990	EXP 150 of 150	96.85222	0.03495	0.9721	EXP 150 of 150
14D15571	3.6 %	0.1142030	0.0008418	0.0957	EXP 150 of 150	26.8796	0.0299	0.9612	EXP 150 of 150	2.0379998	0.0259902	0.1446	EXP 150 of 150	187.4380	0.0411	0.9989	EXP 150 of 150	82.51111	0.03543	0.9781	EXP 150 of 150
14D15572	4.0 %	0.0970715	0.0006954	0.1018	EXP 150 of 150	22.9549	0.0331	0.9386	EXP 150 of 150	1.4904590	0.0276464	0.0757	EXP 150 of 150	136.1416	0.0334	0.9987	EXP 150 of 150	62.24995	0.03301	0.9885	EXP 150 of 150
14D15573	4.4 %	0.0546121	0.0005549	0.3542	EXP 150 of 150	9.8122	0.0272	0.8090	EXP 150 of 150	0.5471423	0.0278365	0.0142	EXP 150 of 150	52.0050	0.0282	0.9934	EXP 150 of 150	28.65678	0.03114	0.9945	EXP 150 of 150
14D15575	4.8 %	0.0855715	0.0007476	0.1858	EXP 150 of 150	19.8848	0.0328	0.9241	EXP 150 of 150	1.0232697	0.0287562	0.0799	EXP 150 of 150	90.3095	0.0291	0.9977	EXP 150 of 150	45.76639	0.02590	0.9945	EXP 150 of 150
14D15576	5.2 %	0.0805763	0.0006873	0.1886	EXP 150 of 150	17.0981	0.0325	0.9054	EXP 150 of 150	0.8063404	0.0299989	0.0248	EXP 150 of 150	72.1383	0.0330	0.9954	EXP 150 of 150	39.25410	0.03269	0.9921	EXP 150 of 150
14D15577	5.7 %	0.0449255	0.0005210	0.4328	EXP 150 of 150	5.7335	0.0293	0.5823	EXP 150 of 150	0.3188367	0.0264813	0.0328	EXP 150 of 150	25.4280	0.0276	0.9721	EXP 149 of 150	19.56778	0.02828	0.9956	EXP 150 of 150
14D15579	6.2 %	0.0592433	0.0005940	0.2740	EXP 150 of 150	8.8421	0.0323	0.7008	EXP 150 of 150	0.4223541	0.0273562	0.0122	EXP 150 of 150	39.7772	0.0270	0.9896	EXP 150 of 150	26.68810	0.03249	0.9930	EXP 150 of 150
14D15580	6.7 %	0.0539952	0.0005538	0.3933	EXP 150 of 150	6.6055	0.0311	0.6255	EXP 150 of 150	0.3371899	0.0283171	0.0010	EXP 150 of 150	31.2260	0.0253	0.9849	EXP 150 of 150	23.64507	0.02404	0.9962	EXP 150 of 150
14D15581	7.2 %	0.0667651	0.0005944	0.2021	EXP 150 of 150	7.9604	0.0304	0.6626	EXP 150 of 150	0.4215516	0.0261961	0.0001	EXP 150 of 150	39.4152	0.0253	0.9907	EXP 150 of 150	29.07147	0.03046	0.9932	EXP 150 of 150
14D15583	7.7 %	0.0746179	0.0007003	0.0706	EXP 150 of 150	8.4967	0.0307	0.7191	EXP 150 of 150	0.5460891	0.0273733	0.0183	EXP 150 of 150	43.8498	0.0281	0.9906	EXP 150 of 150	32.61129	0.02970	0.9926	EXP 150 of 150
14D15584	8.2 %	0.0795661	0.0006842	0.0970	EXP 150 of 150	8.4932	0.0344	0.6688	EXP 150 of 150	0.6259588	0.0269294	0.0668	EXP 150 of 150	46.6264	0.0301	0.9907	EXP 150 of 150	35.32156	0.02882	0.9925	EXP 150 of 150
14D15585	8.8 %	0.0669071	0.0006786	0.1143	EXP 150 of 150	5.2887	0.0312	0.4990	EXP 150 of 150	0.4231203	0.0268271	0.0438	EXP 150 of 150	31.4833	0.0287	0.9808	EXP 150 of 150	28.19822	0.03208	0.9917	EXP 150 of 150
14D15587	9.4 %	0.0873179	0.0006965	0.0670	EXP 150 of 150	6.9585	0.0335	0.6061	EXP 150 of 150	0.5278281	0.0238893	0.0057	EXP 150 of 150	42.8910	0.0258	0.9919	EXP 150 of 150	37.16610	0.02792	0.9920	EXP 150 of 150
14D15588	10.1 %	0.0911029	0.0006681	0.0173	EXP 150 of 150	6.8179	0.0300	0.5818	EXP 150 of 150	0.4834031	0.0297811	0.0000	EXP 150 of 150	38.7207	0.0260	0.9899	EXP 149 of 150	37.14775	0.03061	0.9900	EXP 150 of 150
14D15589	10.9 %	0.1339195	0.0008460	0.1031	EXP 150 of 150	10.9597	0.0313	0.8000	EXP 150 of 150	0.6691497	0.0271096	0.0100	EXP 150 of 150	51.5946	0.0295	0.9926	EXP 150 of 150	52.77782	0.03091	0.9824	EXP 150 of 150
14D15591	11.7 %	0.1268897	0.0008549	0.0091	EXP 150 of 150	11.8043	0.0295	0.8354	EXP 150 of 150	0.6073158	0.0279822	0.0493	EXP 150 of 150	41.5969	0.0288	0.9890	EXP 150 of 150	48.04965	0.03070	0.9839	EXP 150 of 150
14D15592	12.5 %	0.1434389	0.0009517	0.1238	EXP 150 of 150	14.4177	0.0304	0.8790	EXP 150 of 150	0.5174511	0.0258674	0.0014	EXP 150 of 150	39.8547	0.0271	0.9896	EXP 150 of 150	51.20869	0.02855	0.9838	EXP 150 of 150
14D15593	13.5 %	0.1635854	0.0009586	0.1496	EXP 150 of 150	20.4746	0.0309	0.9316	EXP 150 of 150	0.5227497	0.0266066	0.0021	EXP 150 of 150	39.1224	0.0271	0.9892	EXP 150 of 150	54.52701	0.03275	0.9758	EXP 150 of 150
14D15595	14.5 %	0.2058963	0.0010442	0.4224	EXP 150 of 150	30.5610	0.0319	0.9686	EXP 150 of 150	0.5473185	0.0318822	0.0071	EXP 150 of 150	39.3402	0.0285	0.9887	EXP 150 of 150	63.91166	0.03333	0.9521	EXP 150 of 150
14D15596	15.5 %	0.1855899	0.0009813	0.2475	EXP 149 of 150	28.5197	0.0352	0.9530	EXP 150 of 150	0.4188937	0.0253835	0.0295	EXP 150 of 150	27.4169	0.0269	0.9782	EXP 150 of 150	55.23393	0.03508	0.9677	EXP 150 of 150
14D15597	16.5 %	0.2085083	0.0011157	0.3492	EXP 149 of 150	41.3491	0.0318	0.9823	EXP 150 of 150	0.2768764	0.0260953	0.0011	EXP 150 of 150	20.3092	0.0290	0.9537	EXP 150 of 150	54.26770	0.03275	0.9733	EXP 150 of 150
14D15599	17.5 %	0.1320571	0.0008782	0.0775	EXP 150 of 150	23.5247	0.0318	0.9429	EXP 150 of 150	0.1019431	0.0296403	0.0068	EXP 150 of 150	10.1417	0.0270	0.8375	EXP 150 of 150	35.23301	0.02962	0.9885	EXP 150 of 150
14D15600	19.0 %	0.2089554	0.0010615	0.3337	EXP 150 of 150	49.0923	0.0344	0.9850	EXP 150 of 150	0.1798293	0.0236474	0.0058	EXP 149 of 150	11.2910	0.0310	0.8369	EXP 150 of 150	48.80503	0.03345	0.9764	EXP 150 of 150
14D15601	20.5 %	0.1510434	0.0009286	0.1944	EXP 150 of 150	29.1153	0.0306	0.9661	EXP 150 of 150	0.0653943	0.0304878	0.0009	EXP 150 of 150	8.0918	0.0259	0.7866	EXP 150 of 150	37.96117	0.03287	0.9838	EXP 150 of 150
14D15603	22.0 %	0.2267108	0.0010669	0.4256	EXP 150 of 150	54.2428	0.0367	0.9862	EXP 150 of 150	0.1654519	0.0311678	0.0037	EXP 150 of 150	11.1901	0.0272	0.8755	EXP 150 of 150	52.59447	0.03291	0.9718	EXP 149 of 150
14D15604	23.5 %	0.1727194	0.0009688	0.2335	EXP 150 of 150	33.7324	0.0347	0.9678	EXP 150 of 150	0.1323426	0.0267730	0.0215	EXP 150 of 150	8.3037	0.0248	0.8090	EXP 149 of 150	43.72904	0.02994	0.9842	EXP 150 of 150
14D15606	24.5 %	0.1400433	0.0008239	0.0816	EXP 150 of 150	24.1291	0.0315	0.9492	EXP 150 of 150	0.0289277	0.0248549	0.0003	EXP 150 of 150	4.7359	0.0254	0.5268	EXP 150 of 150	36.44437	0.02944	0.9870	EXP 150 of 150

Sample Parameters		Sample	Material	Location	Analyst	Temp	Standard Name	Standard (in Ma)	%1σ	Standard Reference	Standard 40Ar/39Ar	%1σ	J	%1σ	Air 40Ar/36Ar	%1σ	MDF (lin)	%1σ	Volume Ratio	Sensitivity (mol/volt)	Day	Month	Year	Hour	Min	Resist	Irradiation	X-pos	Y-pos	Z/H-pos
14D15565	2.0 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	6	12	1	14-OSU-02	0.00	0.00	10.10
14D15566	2.0 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	6	24	1	14-OSU-02	0.00	0.00	10.10
14D15568	2.6 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	2.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	6	49	1	14-OSU-02	0.00	0.00	10.10
14D15569	3.2 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	3.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	7	1	1	14-OSU-02	0.00	0.00	10.10
14D15571	3.6 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	3.6	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	7	26	1	14-OSU-02	0.00	0.00	10.10
14D15572	4.0 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	7	39	1	14-OSU-02	0.00	0.00	10.10
14D15573	4.4 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	4.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	7	51	1	14-OSU-02	0.00	0.00	10.10
14D15575	4.8 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	4.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	8	16	1	14-OSU-02	0.00	0.00	10.10
14D15576	5.2 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	5.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	8	28	1	14-OSU-02	0.00	0.00	10.10
14D15577	5.7 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	5.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	8	41	1	14-OSU-02	0.00	0.00	10.10
14D15579	6.2 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	6.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	9	6	1	14-OSU-02	0.00	0.00	10.10
14D15580	6.7 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	6.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	9	18	1	14-OSU-02	0.00	0.00	10.10
14D15581	7.2 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	7.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	9	31	1	14-OSU-02	0.00	0.00	10.10
14D15583	7.7 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	7.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	9	55	1	14-OSU-02	0.00	0.00	10.10
14D15584	8.2 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	8.2	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	10	8	1	14-OSU-02	0.00	0.00	10.10
14D15585	8.8 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	8.8	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	10	20	1	14-OSU-02	0.00	0.00	10.10
14D15587	9.4 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	9.4	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	10	45	1	14-OSU-02	0.00	0.00	10.10
14D15588	10.1 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	10.1	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	10	57	1	14-OSU-02	0.00	0.00	10.10
14D15589	10.9 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	10.9	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	11	10	1	14-OSU-02	0.00	0.00	10.10
14D15591	11.7 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	11.7	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	11	35	1	14-OSU-02	0.00	0.00	10.10
14D15592	12.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	12.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	11	47	1	14-OSU-02	0.00	0.00	10.10
14D15593	13.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	13.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	12	0	1	14-OSU-02	0.00	0.00	10.10
14D15595	14.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	14.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	12	24	1	14-OSU-02	0.00	0.00	10.10
14D15596	15.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	15.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	12	37	1	14-OSU-02	0.00	0.00	10.10
14D15597	16.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	16.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	12	49	1	14-OSU-02	0.00	0.00	10.10
14D15599	17.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	17.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	13	14	1	14-OSU-02	0.00	0.00	10.10
14D15600	19.0 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	19	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	13	27	1	14-OSU-02	0.00	0.00	10.10
14D15601	20.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	20.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	13	39	1	14-OSU-02	0.00	0.00	10.10
14D15603	22.0 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	22	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	14	4	1	14-OSU-02	0.00	0.00	10.10
14D15604	23.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	23.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	14	16	1	14-OSU-02	0.00	0.00	10.10
14D15606	24.5 %	176691	Groundmass	Harrat Hutaymah	Anthony Koppers	24.5	FCT-NM	28.201	0.082	Kuiper et al (2008)	8.86722	0.074	0.00177253	0.074	302.837	0.131	0.993935283	0.067	1	4.8E-14	13	JUN	2014	14	41	1	14-OSU-02	0.00	0.00	10.10

Project	Experiment	Nmb
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
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Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
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Harhut\Schlieder (14-13)	14D15564	01
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Harhut\Schlieder (14-13)	14D15564	01
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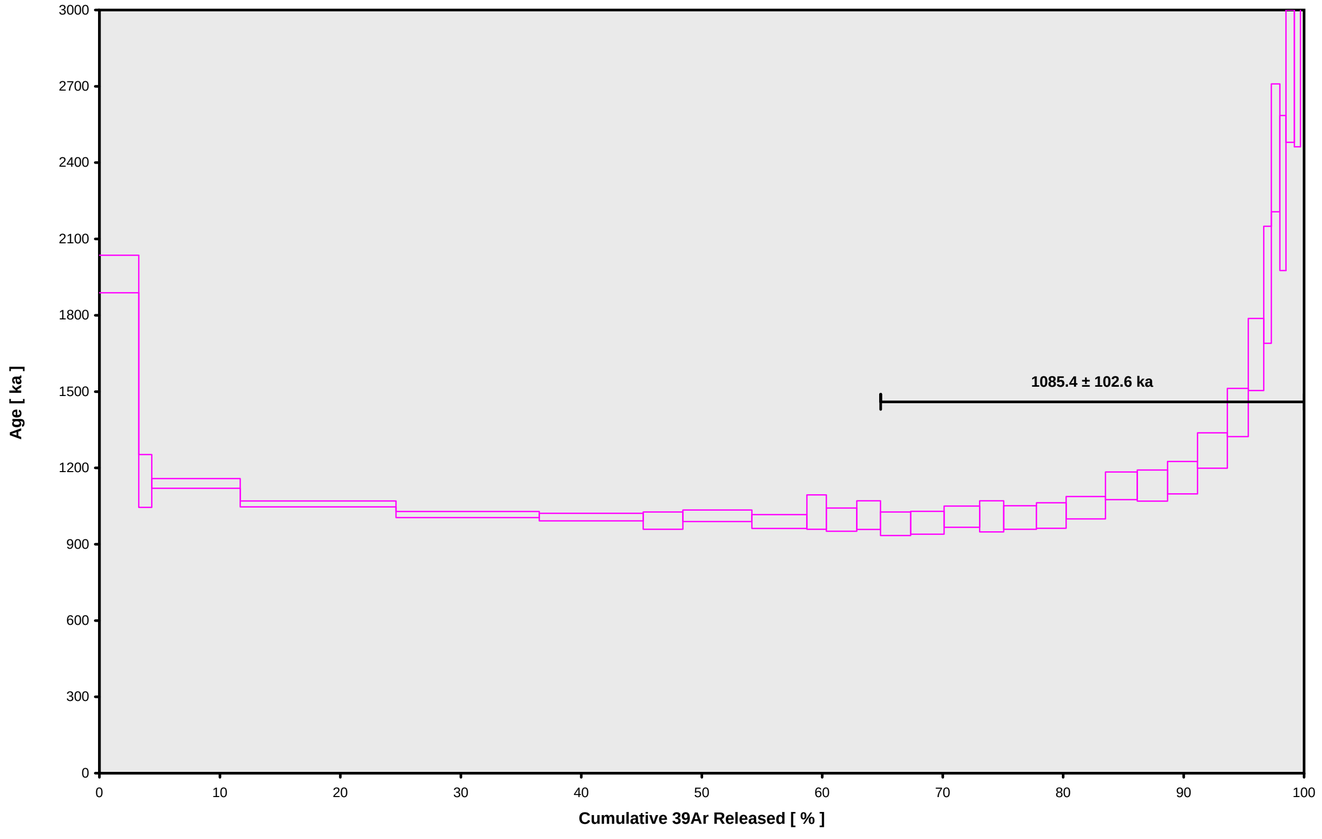
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01
Harhut\Schlieder (14-13)	14D15564	01

Irradiation Constants		40/36(a)	%1σ	40/36(c)	%1σ	38/36(a)	%1σ	38/36(c)	%1σ	39/37(ca)	%1σ	38/37(ca)	%1σ	36/37(ca)	%1σ	40/39(k)	%1σ	38/39(k)	%1σ	36/38(cl)	%1σ	K/Ca	%1σ	K/Cl	%1σ	Ca/Cl	%1σ
14D15565	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15566	2.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15568	2.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15569	3.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15571	3.6 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15572	4.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15573	4.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15575	4.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15576	5.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15577	5.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15579	6.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15580	6.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15581	7.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15583	7.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15584	8.2 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15585	8.8 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15587	9.4 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15588	10.1 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15589	10.9 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15591	11.7 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15592	12.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15593	13.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15595	14.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15596	15.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15597	16.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15599	17.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15600	19.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15601	20.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15603	22.0 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15604	23.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0
14D15606	24.5 %	295.5	0	0.018	35	0.1869	0	1.493	3	0.000673	0	0.0000139	0	0.000264	0	0.00101	0	0.01138	0	0	0	0.43	0	0	0	0	0

14D15564.AGE >>> 176691 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1085.4 ± 102.6
TOTAL FUSION
1139.6 ± 8.3
NORMAL ISOCHRON
815.6 ± 37.1
INVERSE ISOCHRON
818.0 ± 36.6

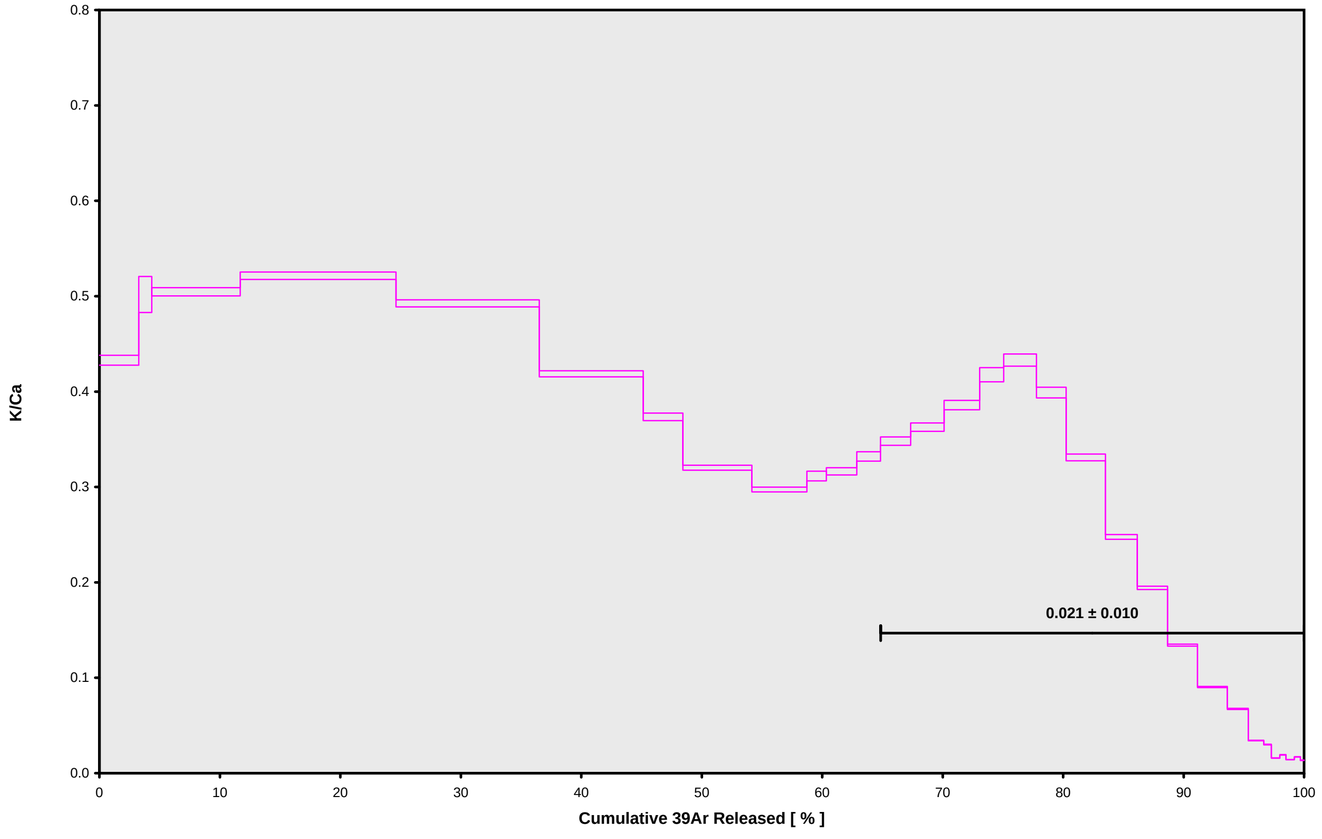
MSWD (PROBABILITY)
47.10 (0%)

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177253 ± 0.00000131

14D15564.AGE >>> 176691 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1085.4 ± 102.6
TOTAL FUSION
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NORMAL ISOCHRON
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Sample Info

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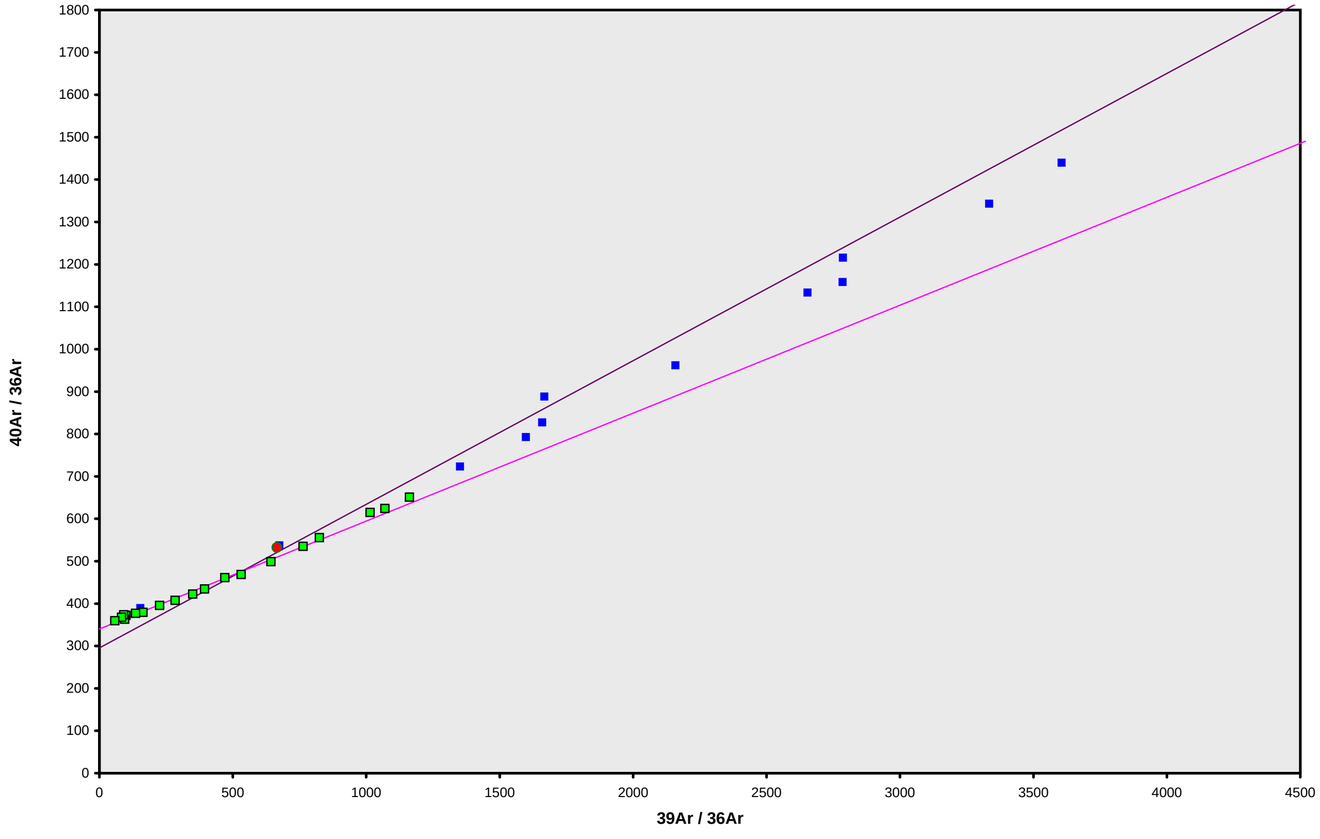
14D15564.AGE >>> 176691 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1085.4 ± 102.6
TOTAL FUSION
1139.6 ± 8.3
NORMAL ISOCHRON
815.6 ± 37.1
INVERSE ISOCHRON
818.0 ± 36.6

MSWD (PROBABILITY)
1.78 (2%)

40AR/36AR INTERCEPT
340.2 ± 4.8

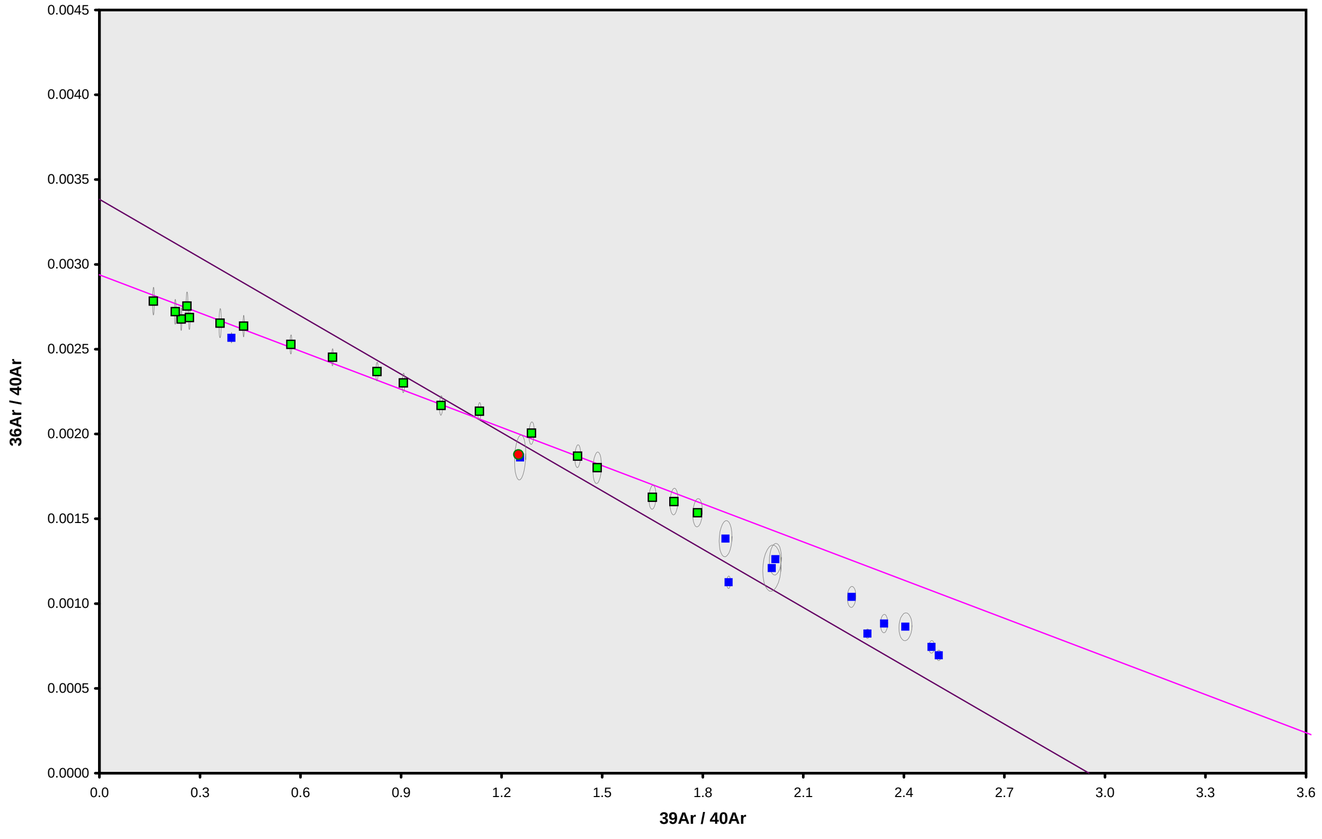
Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177253 ± 0.00000131

OSU Argon Geochronology Lab
CEOAS Oregon State University, Corvallis, USA

14D15564.AGE >>> 176691 >>> HARHUT | SCHLIEDER (14-13) PROJECT



Ar-Ages in ka

WEIGHTED PLATEAU
1085.4 ± 102.6
TOTAL FUSION
1139.6 ± 8.3
NORMAL ISOCHRON
815.6 ± 37.1
INVERSE ISOCHRON
818.0 ± 36.6

MSWD (PROBABILITY)
1.82 (2%)

SPREADING FACTOR
41.4%

40AR/36AR INTERCEPT
340.3 ± 4.8

Sample Info

Groundmass
Harrat Hutaymah
Anthony Koppers

IRR = 14-OSU-02
J = 0.00177253 ± 0.00000131