

Data Repository item 2003033

Table DR-1 $^{40}\text{Ar}/^{39}\text{Ar}$ analytical data

Temp. (°C)	^{40}Ar (moles)	$^{40}\text{Ar}/^{39}\text{Ar}$	$^{38}\text{Ar}/^{39}\text{Ar}$	$^{37}\text{Ar}/^{39}\text{Ar}$	$^{36}\text{Ar}/^{39}\text{Ar}$	$^{40}\text{Ar}^*/^{39}\text{Ar}$	% $^{40}\text{Ar}^*$	Age (Ma)	± 2 s
CHI-33 Whole rock groundmass		L#11243			$J = 0.0005260 \pm 0.000006$				
670	4.41E-13	12.1560	0.0178	0.0859	0.0318	2.7670	22.8	2.62	0.15
710	2.48E-13	12.5189	0.0194	0.5403	0.0342	2.4427	19.5	2.32	0.19
750	8.74E-14	9.0203	0.0208	2.0076	0.0228	2.4347	27.0	2.31	0.30
790	9.07E-14	6.2084	0.0176	1.8817	0.0131	2.4757	39.8	2.35	0.20
840	8.19E-14	6.2457	0.0169	1.6739	0.0130	2.5493	40.8	2.42	0.22
890	6.32E-14	6.5082	0.0165	2.2564	0.0140	2.5632	39.3	2.43	0.29
950	5.49E-14	8.3486	0.0179	2.6412	0.0203	2.5691	30.7	2.44	0.43
1010	6.12E-14	11.4328	0.0200	1.8213	0.0311	2.3865	20.8	2.26	0.54
1070	9.04E-14	12.3512	0.0201	3.1340	0.0356	2.0705	16.7	1.96	0.41
1150	2.22E-13	39.3232	0.0389	38.2264	0.1372	1.8085	4.5	1.72	0.81
1225	2.63E-13	56.6506	0.0488	46.5777	0.1975	1.9751	3.4	1.87	1.16
1350	7.49E-14	36.5320	0.0342	26.4794	0.1288	0.5384	1.4	0.51	1.82
1450	2.16E-14	6.5224	0.0134	9.2692	0.0252	-0.2000	-3.0	-0.19	1.77
CHI-36 Whole rock groundmass		L#10242			$J = 0.0005166 \pm 0.0000013$				
680	2.95E-13	6.4120	0.0130	1.4407	0.0049	5.0680	79.0	4.72	0.06
750	4.91E-13	5.8335	0.0128	1.0991	0.0029	5.0816	87.1	4.73	0.04
790	1.62E-13	6.3212	0.0133	1.2865	0.0044	5.1157	80.9	4.76	0.09
830	1.04E-13	7.4911	0.0144	1.5863	0.0084	5.1497	68.7	4.79	0.17
870	9.55E-14	9.1831	0.0160	1.9717	0.0142	5.1495	56.0	4.79	0.23
910	7.86E-14	8.0595	0.0151	2.5077	0.0108	5.0654	62.7	4.71	0.23
950	1.14E-13	7.3911	0.0144	3.0295	0.0091	4.9454	66.8	4.60	0.15
990	7.87E-14	8.4116	0.0155	4.2381	0.0134	4.7942	56.8	4.46	0.25
1040	3.69E-14	11.3569	0.0223	5.4934	0.0231	4.9711	43.6	4.63	0.70
1090	5.10E-14	14.2051	0.0255	32.2696	0.0417	4.4932	30.9	4.18	0.67
1150	1.82E-13	23.3657	0.0276	78.1761	0.0840	4.8969	19.8	4.56	0.50
1200	1.28E-13	75.9043	0.0584	46.6631	0.2565	3.8622	4.9	3.60	1.94
1300	2.06E-13	602.9305	0.4022	50.0248	2.0427	3.3199	0.5	3.09	16.21
1450	3.80E-13	2065.2240	1.3236	51.2230	7.0871	-25.9462	-1.2	-24.35	81.84
CHI-37 Whole rock groundmass		L#10243			$J = 0.0005166 \pm 0.0000013$				
670	1.32E-13	5712.6390	3.7253	3.7539	18.9932	100.7234	1.8	91.51	888.16
710	4.44E-13	251.9142	0.1741	1.8290	0.8312	6.4580	2.6	6.01	5.92
750	1.38E-13	19.3555	0.0247	1.3246	0.0534	3.6897	19.0	3.44	1.20
790	1.30E-13	5.2640	0.0147	1.5210	0.0071	3.2857	62.4	3.06	0.34
840	2.48E-13	4.1593	0.0137	0.8966	0.0032	3.2779	78.8	3.05	0.14
890	1.57E-13	4.2427	0.0134	0.8194	0.0034	3.3154	78.1	3.09	0.23
950	1.14E-13	5.0004	0.0134	1.2063	0.0059	3.3433	66.8	3.11	0.38
1010	7.87E-14	7.5279	0.0155	1.2623	0.0150	3.1818	42.2	2.96	0.82
1070	6.82E-14	9.2903	0.0170	2.1133	0.0212	3.1859	34.2	2.97	1.18
1150	7.68E-14	10.7137	0.0228	6.7763	0.0284	2.8566	26.5	2.66	1.24
1300	3.23E-13	33.5844	0.0361	84.6008	0.1243	3.6813	10.3	3.43	2.97
1500	1.83E-13	327.4534	0.2113	94.1750	1.0992	10.7049	3.1	9.95	58.69
CHI-43 Whole rock groundmass		L#10244			$J = 0.0005166 \pm 0.0000013$				
650	1.53E-12	433.8369	0.2912	2.1171	1.4667	0.5794	0.1	0.54	5.72
680	3.09E-13	24.5360	0.0285	1.7007	0.0708	3.7497	15.3	3.49	0.35
720	3.32E-13	6.2855	0.0155	1.9013	0.0078	4.1312	65.6	3.85	0.06
760	2.61E-13	5.4219	0.0140	1.1443	0.0037	4.4191	81.4	4.11	0.06
800	1.82E-13	5.7248	0.0136	1.2185	0.0047	4.4432	77.6	4.14	0.09
840	1.57E-13	6.0724	0.0136	1.3830	0.0060	4.4268	72.8	4.12	0.11
900	1.19E-13	7.1011	0.0147	1.3942	0.0094	4.4250	62.3	4.12	0.16
980	1.56E-13	10.3445	0.0173	1.4861	0.0210	4.2604	41.1	3.97	0.20
1060	1.93E-13	12.0866	0.0195	4.3033	0.0291	3.8438	31.7	3.58	0.20

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1150	3.98E-13	26.9716	0.0329	40.6697	0.0889	3.9933	14.4	3.72	0.43
1300	2.13E-13	43.0106	0.0387	46.6527	0.1348	7.0465	15.8	6.56	4.07
1500	5.45E-14	82.8618	0.0668	65.9195	0.2878	3.1053	3.6	2.89	30.85

CHI-53 Whole rock groundmass

L#10245

$J = 0.0005166 \pm 0.0000013$

600	1.84E-14	48.6546	0.0479	0.4753	0.1448	5.9100	12.1	5.50	31.50
650	1.84E-13	7.1071	0.0219	0.5552	0.0144	2.9106	40.9	2.71	0.47
700	3.09E-13	3.5465	0.0192	0.5719	0.0030	2.6997	76.1	2.51	0.14
750	4.29E-13	3.5539	0.0187	1.4045	0.0035	2.6277	73.9	2.45	0.10
790	1.80E-13	5.0436	0.0187	2.4041	0.0085	2.7158	53.8	2.53	0.34
830	1.11E-13	7.7796	0.0192	3.2383	0.0184	2.6071	33.4	2.43	0.85
870	6.56E-14	10.5055	0.0200	4.4033	0.0285	2.4228	23.0	2.26	1.96
910	4.08E-14	9.0416	0.0206	3.5352	0.0252	1.8607	20.5	1.73	2.72
950	2.34E-14	5.6208	0.0205	2.9769	0.0151	1.3950	24.8	1.30	2.97
1020	2.16E-14	6.2008	0.0232	6.9250	0.0179	1.4706	23.6	1.37	3.61
1100	5.43E-14	15.3721	0.0396	64.8460	0.0631	1.8630	11.6	1.74	3.80
1200	7.36E-14	24.7201	0.0342	129.0390	0.1049	4.1750	15.4	3.89	4.89
1350	-1.40E-14	-284.3629	-0.1750	58.4825	-0.9476	0.2257	-0.1	0.21	818.67
1500	2.66E-14	1204.0800	0.7789	51.8953	4.3010	-65.2161	-5.2	-61.83	2066.85

CHI-54 Plagioclase

L#10272

$J = 0.0005166 \pm 0.0000013$

675	6.79E-14	17.8273	0.0227	4.2634	0.0524	2.6970	15.1	2.40	0.82
725	3.71E-14	3.7023	0.0127	3.8316	0.0040	2.8144	75.8	2.50	0.24
775	5.48E-14	3.2560	0.0125	4.0519	0.0026	2.8253	86.5	2.51	0.14
825	6.06E-14	3.2129	0.0126	4.0286	0.0024	2.8256	87.7	2.51	0.13
875	6.02E-14	3.2334	0.0125	4.0152	0.0025	2.8306	87.3	2.52	0.13
925	4.41E-14	3.2857	0.0124	4.0243	0.0026	2.8312	85.9	2.52	0.18
975	5.65E-14	3.3248	0.0126	3.9476	0.0027	2.8323	85.0	2.52	0.14
1025	7.31E-14	3.3960	0.0133	4.0905	0.0029	2.8782	84.5	2.56	0.11
1060	4.80E-14	3.6339	0.0130	3.9619	0.0032	3.0150	82.8	2.68	0.18
1100	4.64E-14	3.8485	0.0126	3.9998	0.0031	3.2488	84.2	2.89	0.20
1140	4.66E-14	3.8545	0.0125	4.2479	0.0039	3.0368	78.6	2.70	0.20
1200	5.66E-14	3.8413	0.0126	6.4893	0.0030	3.4905	90.5	3.10	0.17
1260	3.47E-14	3.4291	0.0126	5.2479	0.0022	3.1905	92.7	2.84	0.24
1320	3.71E-14	3.5327	0.0125	4.2465	0.0031	2.9560	83.4	2.63	0.23
1450	5.49E-14	4.0139	0.0127	4.1834	0.0049	2.9133	72.4	2.59	0.18

CHI-56 Plagioclase

L#11242

$J = 0.0005523 \pm 0.000006$

675	4.49E-13	549.9819	0.3505	8.3894	1.7811	24.4525	4.4	24.20	12.04
725	1.88E-13	186.3450	0.1098	8.5479	0.5149	35.0629	18.7	34.60	3.18
775	2.11E-13	71.9424	0.0326	9.3912	0.1105	40.2813	55.6	39.70	0.76
820	4.68E-13	48.7252	0.0182	13.4440	0.0348	39.8586	81.0	39.28	0.35
860	4.15E-13	50.2777	0.0187	8.8595	0.0359	40.6194	80.3	40.03	0.37
900	4.70E-13	62.8727	0.0253	4.6004	0.0718	42.1533	66.8	41.52	0.54
940	3.45E-13	61.7777	0.0230	2.9902	0.0609	44.1198	71.3	43.43	0.51
980	2.46E-13	55.1481	0.0186	2.3326	0.0363	44.6840	80.9	43.98	0.49
1020	1.79E-13	54.9436	0.0184	2.4457	0.0334	45.3377	82.4	44.62	0.41
1060	1.70E-13	54.7158	0.0190	2.4787	0.0357	44.4344	81.1	43.74	0.49
1100	2.35E-13	51.9651	0.0183	2.1898	0.0347	41.9444	80.6	41.32	0.47
1140	2.28E-13	56.0463	0.0219	2.6981	0.0511	41.2483	73.5	40.64	0.56
1180	2.51E-13	61.5086	0.0245	5.0664	0.0638	43.2100	70.0	42.55	0.56
1220	1.68E-13	65.1061	0.0274	7.7838	0.0797	42.4055	64.8	41.77	0.65
1260	1.05E-13	72.6711	0.0327	10.0415	0.1012	43.8684	59.9	43.19	1.07
1300	7.45E-14	83.5756	0.0381	12.2096	0.1403	43.4479	51.5	42.78	1.56
1350	8.85E-14	88.4284	0.0401	15.3649	0.1581	43.3738	48.5	42.71	1.47
1425	1.69E-13	88.1614	0.0398	20.5374	0.1462	47.2408	52.8	46.47	1.06
1520	7.90E-14	88.0342	0.0417	21.8153	0.1620	42.5292	47.6	41.89	1.74

CHI-57 Whole rock groundmass

L#11244

$J = 0.0005260 \pm 0.000006$

625	5.67E-14	1424.4200	0.9707	1.4631	4.9582	-40.6450	-2.8	-38.99	164.52
670	3.52E-13	50.5072	0.0496	0.6247	0.1696	0.4318	0.9	0.41	0.68
710	1.23E-12	92.2163	0.0751	0.6814	0.3127	-0.1219	-0.1	-0.12	1.21
750	1.91E-12	198.7702	0.1409	2.0041	0.6703	0.8637	0.4	0.82	2.57

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790	1.42E-12	171.3563	0.1240	0.9252	0.5805	-0.1229	-0.1	-0.12	2.20
840	1.11E-12	98.9599	0.0767	0.5792	0.3328	0.6649	0.7	0.63	1.28
890	5.42E-13	49.6726	0.0451	0.6094	0.1670	0.3597	0.7	0.34	0.64
950	7.52E-13	43.6131	0.0409	0.7574	0.1463	0.4385	1.0	0.42	0.56
1010	2.55E-12	125.7031	0.0931	0.8512	0.4199	1.6981	1.4	1.61	1.61
1070	7.39E-13	117.7386	0.0901	3.3638	0.3956	1.1146	0.9	1.06	1.54
1130	3.72E-13	116.4321	0.0901	14.5665	0.3904	2.2289	1.9	2.11	1.67
1200	1.19E-14	243.2443	0.1532	130.8759	0.7966	19.9012	7.4	18.79	14.97
1300	-1.48E-14	146.7017	0.0927	21.5327	0.5717	-20.8748	-14.0	-19.92	45.34
1400	2.79E-15	-93.6415	-0.0335	10.6313	-0.1609	-45.6096	48.3	-43.81	37.97
1500	5.62E-15	-211.5961	-0.0389	9.6189	-0.6217	-27.3224	12.8	-26.12	49.99

CHI-62 Whole rock groundmass

L#10246

$J = 0.0005166 \pm 0.0000013$

600	2.61E-14	148.5587	0.1156	0.6753	0.5176	-4.3369	-2.9	-4.05	58.85
650	1.66E-13	16.9151	0.0273	0.9190	0.0504	2.1008	12.4	1.96	1.06
680	6.40E-14	5.2412	0.0200	0.8504	0.0117	1.8567	35.4	1.73	0.83
720	1.63E-13	3.2863	0.0186	1.0925	0.0054	1.7704	53.8	1.65	0.21
750	1.59E-13	2.5947	0.0182	0.9919	0.0031	1.7700	68.2	1.65	0.17
790	1.70E-13	2.8551	0.0183	0.8820	0.0039	1.7858	62.5	1.66	0.17
830	1.49E-13	3.4830	0.0186	1.0836	0.0061	1.7676	50.7	1.65	0.24
880	9.70E-14	5.0156	0.0197	1.4533	0.0118	1.6552	33.0	1.54	0.53
950	8.87E-14	5.5488	0.0205	1.8572	0.0147	1.3416	24.2	1.25	0.65
1020	1.90E-13	16.9948	0.0312	4.2335	0.0554	0.9534	5.6	0.89	0.97
1100	4.64E-13	15.4133	0.0314	16.0069	0.0509	1.6398	10.5	1.53	0.41
1200	1.66E-13	49.6908	0.0409	84.8312	0.1356	17.2789	32.7	16.03	3.58
1350	1.59E-13	656.5214	0.2221	34.0393	1.0633	353.4459	52.5	302.56	34.32
1500	3.47E-14	2761.6660	1.4402	47.0139	7.5297	558.8165	19.6	457.55	748.92

CHI-80 Whole rock groundmass

L#10247

$J = 0.0005166 \pm 0.0000013$

650	2.24E-13	389.5934	0.2774	7.8602	1.2965	7.1405	1.8	6.64	10.25
680	3.94E-13	121.4511	0.0962	3.3963	0.4027	2.7197	2.2	2.53	1.62
720	1.59E-13	17.3007	0.0318	1.9420	0.0535	1.6476	9.5	1.53	0.39
760	2.79E-13	9.6435	0.0245	1.8295	0.0277	1.6130	16.7	1.50	0.14
810	2.32E-13	6.0152	0.0191	1.3170	0.0156	1.4964	24.9	1.39	0.09
870	2.55E-13	10.1496	0.0271	1.5570	0.0292	1.6407	16.1	1.53	0.16
940	2.47E-13	14.8861	0.0363	1.9353	0.0450	1.7342	11.6	1.62	0.23
1010	1.14E-13	9.6967	0.0235	3.3253	0.0287	1.4662	15.1	1.37	0.30
1080	3.10E-13	18.7639	0.0306	11.3075	0.0615	1.4837	7.8	1.38	0.98
1150	5.49E-13	30.0576	0.0354	42.1340	0.1056	2.2169	7.2	2.06	0.93
1250	9.59E-14	31.5396	0.0337	32.3741	0.1038	3.4697	10.8	3.23	5.22
1400	5.90E-14	39.4271	0.0378	50.1701	0.1358	3.3217	8.1	3.09	11.14

CHI-82 Whole rock groundmass

L#10252

$J = 0.0005107 \pm 0.0000017$

650	1.18E-13	11.6566	0.0226	0.8049	0.0315	2.4123	20.7	2.22	0.34
680	3.02E-13	8.8663	0.0206	1.4656	0.0222	2.4187	27.3	2.23	0.12
720	5.71E-13	11.6341	0.0220	1.9551	0.0318	2.3855	20.5	2.20	0.11
760	7.67E-13	21.4310	0.0283	1.8680	0.0651	2.3292	10.9	2.14	0.19
800	1.24E-12	39.2181	0.0394	2.0993	0.1260	2.1530	5.5	1.98	0.34
840	1.28E-12	61.9648	0.0543	1.8153	0.2031	2.0846	3.4	1.92	0.55
900	1.18E-12	62.3407	0.0554	1.6462	0.2052	1.8250	2.9	1.68	0.58
980	7.58E-13	51.1561	0.0510	3.1301	0.1670	2.0452	4.0	1.88	0.47
1060	2.39E-12	83.0653	0.0725	9.8602	0.2734	3.0549	3.7	2.81	0.90
1180	1.77E-13	133.3521	0.0929	19.5516	0.4062	15.0460	11.1	13.81	13.41
1300	1.68E-13	257.6412	0.1735	22.9182	0.8013	23.0188	8.8	21.08	35.62
1500	1.80E-13	6763.5210	4.0436	0.0000	23.0213	-39.3040	-0.6	-36.58	19127.84

CHI-83 Whole rock groundmass

L#10253

$J = 0.0005107 \pm 0.0000017$

650	1.09E-12	397.9545	0.2639	2.1742	1.3291	5.3940	1.4	4.96	4.37
680	5.73E-13	221.5223	0.1515	1.7632	0.7312	5.6037	2.5	5.16	2.60
720	3.41E-13	23.1499	0.0259	1.4247	0.0687	2.9720	12.8	2.74	0.30
760	4.67E-13	6.0163	0.0143	1.1058	0.0124	2.4524	40.7	2.26	0.05
800	4.47E-13	3.7132	0.0130	0.8229	0.0047	2.4044	64.7	2.21	0.03
840	1.85E-13	4.2705	0.0141	0.8529	0.0065	2.4101	56.4	2.22	0.08

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910	2.14E-13	5.8826	0.0163	1.0290	0.0122	2.3569	40.0	2.17	0.10
1000	4.03E-13	8.6614	0.0180	1.1266	0.0215	2.3839	27.5	2.20	0.09
1100	5.66E-13	15.4469	0.0243	3.4533	0.0450	2.4097	15.6	2.22	0.44
1300	1.13E-12	30.8495	0.0334	22.8663	0.1000	3.1244	10.0	2.88	0.50
1500	6.93E-14	200.1381	0.1251	41.0152	0.6486	12.0295	5.8	11.05	63.97

CHI-84 Whole rock groundmass

L#10254

$J = 0.0005107 \pm 0.0000017$

650	2.40E-13	91.0158	0.0753	0.8058	0.2982	2.9572	3.2	2.72	1.54
680	4.53E-13	13.2508	0.0246	0.5938	0.0358	2.7183	20.5	2.50	0.13
720	4.36E-13	7.9669	0.0210	0.6530	0.0189	2.4410	30.6	2.25	0.08
760	6.78E-13	7.3015	0.0204	1.1899	0.0167	2.4607	33.7	2.27	0.06
810	7.54E-13	10.9594	0.0221	2.0504	0.0292	2.4911	22.7	2.29	0.09
870	8.83E-13	23.2973	0.0292	2.1888	0.0704	2.6699	11.4	2.46	0.20
940	4.41E-13	28.0304	0.0330	2.4861	0.0889	1.9555	7.0	1.80	0.31
1010	9.66E-14	19.7417	0.0318	8.0610	0.0630	1.7519	8.8	1.61	0.71
1080	1.33E-12	51.7299	0.0514	12.0309	0.1672	3.3025	6.3	3.04	0.76
1150	5.54E-13	46.8102	0.0465	35.3580	0.1562	3.4990	7.3	3.22	1.43
1250	2.14E-14	65.1442	0.0499	27.1160	0.1937	10.2155	15.4	9.39	48.86
1400	1.35E-14	57.0035	0.0339	38.7762	0.1749	8.5835	14.6	7.89	69.90

CHI-85 Whole rock groundmass

L#10255

$J = 0.0005107 \pm 0.0000017$

650	3.15E-12	2275.1630	1.4466	3.7587	7.6197	23.9040	1.0	21.89	42.03
680	3.29E-12	770.9464	0.5011	2.3856	2.5577	15.3517	2.0	14.09	7.99
720	4.39E-13	14.0602	0.0192	1.2153	0.0356	3.6502	25.9	3.36	0.15
760	5.62E-13	4.6129	0.0132	1.0901	0.0051	3.2015	69.4	2.95	0.03
800	2.43E-13	3.6448	0.0128	0.9233	0.0017	3.2052	87.9	2.95	0.05
840	1.56E-13	3.7873	0.0132	1.0276	0.0021	3.2524	85.8	2.99	0.08
910	1.42E-13	4.5990	0.0150	1.5671	0.0052	3.1952	69.4	2.94	0.11
1000	1.41E-13	5.5614	0.0157	2.4883	0.0094	2.9732	53.4	2.74	0.13
1100	1.80E-13	13.0775	0.0249	27.5578	0.0417	2.9709	22.3	2.74	1.17
1300	2.26E-13	26.0522	0.0307	77.1439	0.0904	5.6756	20.6	5.22	1.97
1450	2.62E-14	81.9773	0.0481	131.1680	0.2971	4.8735	5.4	4.48	104.89

CHI-87 Whole rock groundmass

L#10256

$J = 0.0005107 \pm 0.0000017$

650	2.17E-13	17.5262	0.0266	0.4456	0.0492	3.0293	17.3	2.79	0.30
680	4.77E-13	6.4672	0.0193	0.4164	0.0127	2.7556	42.6	2.54	0.06
720	4.76E-13	5.7707	0.0185	0.8997	0.0107	2.6903	46.6	2.48	0.05
760	3.96E-13	8.4005	0.0195	1.8900	0.0197	2.7294	32.4	2.51	0.09
800	3.66E-13	14.1852	0.0229	2.0737	0.0390	2.8215	19.9	2.60	0.17
840	3.00E-13	22.1253	0.0273	2.5643	0.0655	2.9703	13.4	2.73	0.31
910	4.75E-13	28.8950	0.0325	2.8213	0.0885	2.9822	10.3	2.75	0.31
1000	2.52E-13	24.8958	0.0342	3.6700	0.0778	2.1965	8.8	2.02	0.38
1100	1.41E-12	42.1486	0.0447	13.2725	0.1364	2.9044	6.8	2.67	0.59
1300	9.38E-13	39.9196	0.0417	20.5167	0.1271	4.0212	9.9	3.70	0.74
1450	1.96E-14	48.1660	0.0363	46.0578	0.1592	4.8728	9.8	4.48	40.77

CHI-91A Whole rock groundmass

L#10257

$J = 0.0005107 \pm 0.0000017$

650	4.26E-13	119.7687	0.0934	0.9053	0.3925	3.8669	3.2	3.56	1.46
680	5.27E-13	20.4828	0.0296	0.6359	0.0593	3.0162	14.7	2.78	0.20
720	5.14E-13	10.7161	0.0233	0.7252	0.0277	2.5791	24.1	2.37	0.10
760	7.06E-13	9.0318	0.0219	1.5437	0.0223	2.5744	28.5	2.37	0.07
800	6.82E-13	14.4144	0.0255	1.8641	0.0408	2.5151	17.4	2.32	0.13
840	7.98E-13	26.3525	0.0328	1.9650	0.0814	2.4552	9.3	2.26	0.24
910	1.31E-12	40.5790	0.0424	2.2060	0.1298	2.3927	5.9	2.20	0.33
1000	9.60E-13	48.2690	0.0500	3.5164	0.1561	2.4300	5.0	2.24	0.42
1100	6.58E-12	71.6120	0.0641	8.7827	0.2352	2.8274	3.9	2.60	0.62
1300	4.92E-13	114.0472	0.0841	26.6553	0.3597	10.0285	8.6	9.22	4.14
1450	3.78E-14	121.0377	0.0863	29.1636	0.4049	3.7380	3.0	3.44	58.42

CHI-91B Plagioclase

L#10273

$J = 0.0004932 \pm 0.0000016$

675	3.27E-14	13.7556	0.0241	3.1085	0.0376	2.8840	20.9	2.56	1.17
725	3.55E-14	4.3624	0.0134	3.2690	0.0063	2.7619	63.2	2.46	0.30
775	5.03E-14	3.3705	0.0127	3.2312	0.0034	2.6234	77.7	2.33	0.16

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825	7.20E-14	3.0336	0.0126	3.3558	0.0021	2.6889	88.4	2.39	0.10
875	8.02E-14	2.9806	0.0124	3.2515	0.0020	2.6641	89.2	2.37	0.09
925	7.86E-14	2.9611	0.0125	3.2905	0.0019	2.6569	89.5	2.36	0.09
975	1.09E-13	2.8606	0.0125	3.2687	0.0016	2.6613	92.8	2.37	0.07
1025	1.25E-13	2.8629	0.0123	3.2372	0.0016	2.6480	92.3	2.35	0.06
1060	6.72E-14	3.3734	0.0141	3.2439	0.0032	2.6894	79.6	2.39	0.12
1100	4.90E-14	3.5766	0.0125	3.3623	0.0029	3.0033	83.8	2.67	0.17
1140	3.66E-14	4.0752	0.0125	3.2922	0.0041	3.1426	77.0	2.79	0.27
1200	4.19E-14	4.3056	0.0126	3.7186	0.0038	3.4899	80.9	3.10	0.25
1260	5.21E-14	3.7231	0.0125	4.5757	0.0034	3.0861	82.6	2.74	0.17
1320	2.22E-14	4.5913	0.0130	4.0339	0.0067	2.9357	63.8	2.61	0.50
1400	2.30E-14	7.0255	0.0143	3.9776	0.0147	3.0046	42.7	2.67	0.76

CHI-92 Whole rock groundmass

L#10262

$J = 0.0004976 \pm 0.0000023$

650	3.27E-12	2571.2220	1.6490	4.4212	8.6046	28.9942	1.1	25.84	51.74
680	5.55E-12	738.3365	0.4809	2.4715	2.4549	13.1422	1.8	11.76	7.50
720	1.30E-12	49.8830	0.0458	1.7019	0.1590	3.0451	6.1	2.73	0.41
760	4.55E-13	9.4645	0.0193	1.4367	0.0235	2.6401	27.9	2.37	0.09
810	1.93E-13	4.8737	0.0171	1.3226	0.0080	2.6106	53.5	2.34	0.08
870	1.90E-13	5.0932	0.0185	1.5652	0.0087	2.6350	51.7	2.36	0.09
940	1.14E-13	6.5978	0.0230	1.7851	0.0142	2.5554	38.7	2.29	0.19
1020	2.49E-13	9.6773	0.0202	4.9838	0.0258	2.4629	25.4	2.21	0.14
1120	4.59E-13	21.3897	0.0304	27.9252	0.0693	3.1380	14.4	2.81	0.74
1250	1.79E-13	29.9618	0.0317	40.2188	0.0955	5.0146	16.3	4.50	2.58
1400	4.27E-14	37.4106	0.0351	72.5043	0.1342	3.6022	9.1	3.23	14.26

CHI-93 Whole rock groundmass

L#10263

$J = 0.0004976 \pm 0.0000023$

650	6.83E-13	338.8933	0.2291	1.8191	1.1252	6.5326	1.9	5.85	4.13
680	6.62E-13	68.2594	0.0547	0.9989	0.2159	4.5371	6.6	4.07	0.65
720	2.89E-13	6.1476	0.0147	0.5629	0.0124	2.5293	41.1	2.27	0.08
760	6.59E-13	7.7820	0.0160	0.8431	0.0181	2.4894	32.0	2.23	0.06
810	5.76E-13	9.7553	0.0179	0.8656	0.0247	2.5223	25.8	2.26	0.08
870	4.15E-13	7.3218	0.0170	0.8495	0.0166	2.4914	34.0	2.24	0.07
940	4.28E-13	6.8587	0.0181	0.8383	0.0154	2.3726	34.6	2.13	0.07
1020	8.90E-13	12.7931	0.0232	1.2583	0.0354	2.4396	19.1	2.19	0.10
1120	1.92E-12	15.8241	0.0262	6.9883	0.0465	2.6332	16.6	2.36	0.17
1250	1.09E-13	33.8335	0.0345	27.5388	0.1064	4.6226	13.4	4.15	4.74
1400	3.10E-14	62.6975	0.0483	54.1758	0.2150	3.5388	5.4	3.17	33.24

CHI-94 Whole rock groundmass

L#10264

$J = 0.0004976 \pm 0.0000023$

650	6.47E-13	343.2314	0.2297	1.9958	1.1458	4.8012	1.4	4.30	4.33
680	8.17E-13	80.6465	0.0631	1.1922	0.2591	4.1739	5.2	3.74	0.73
720	3.30E-13	8.4355	0.0157	0.5338	0.0191	2.8420	33.7	2.55	0.10
760	1.18E-12	14.9210	0.0197	0.5786	0.0414	2.7323	18.3	2.45	0.11
810	1.39E-12	21.1600	0.0244	0.9184	0.0624	2.8032	13.2	2.51	0.16
870	5.85E-13	13.2056	0.0199	0.9519	0.0355	2.7870	21.1	2.50	0.12
940	6.34E-13	14.1995	0.0213	0.9888	0.0392	2.7007	19.0	2.42	0.12
1010	6.88E-13	12.9644	0.0205	1.1357	0.0350	2.7116	20.9	2.43	0.11
1100	3.95E-12	33.1574	0.0345	5.3564	0.1027	3.2330	9.7	2.90	0.28
1220	2.98E-13	26.8606	0.0307	51.6283	0.0917	3.9392	14.1	3.53	1.42
1400	3.32E-14	26.4427	0.0259	65.5833	0.0893	5.4129	19.5	4.85	12.80

CHI-98A Whole rock groundmass

L#10265

$J = 0.0004976 \pm 0.0000023$

650	1.44E-12	719.9804	0.4730	1.0063	2.4060	9.0792	1.3	8.13	9.18
680	1.68E-12	93.8832	0.0753	0.5236	0.3054	3.6679	3.9	3.29	0.80
720	6.75E-13	18.0670	0.0273	0.5302	0.0524	2.6201	14.5	2.35	0.15
760	2.47E-12	36.2331	0.0386	0.9830	0.1133	2.8210	7.8	2.53	0.28
810	4.09E-12	53.6968	0.0501	1.3015	0.1721	2.9357	5.5	2.63	0.41
870	1.75E-12	30.5857	0.0348	1.2692	0.0943	2.8335	9.3	2.54	0.24
940	1.32E-12	34.2778	0.0378	1.2932	0.1072	2.7130	7.9	2.43	0.28
1010	7.55E-13	33.8227	0.0397	2.2212	0.1065	2.5285	7.5	2.27	0.29
1080	3.82E-12	42.4406	0.0447	3.5185	0.1349	2.8536	6.7	2.56	0.37
1150	2.04E-12	44.6239	0.0448	10.5696	0.1413	3.7320	8.3	3.35	0.48

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1250	2.00E-13	120.6930	0.0736	20.6037	0.3135	30.1068	24.6	26.83	9.99
1400	9.49E-14	133.4847	0.0764	28.9140	0.3405	35.8439	26.3	31.89	24.43

CHI-99 Whole rock groundmass

L#10266

$J = 0.0004976 \pm 0.0000023$

650	1.62E-13	186.0891	0.1285	2.2873	0.6017	8.4885	4.6	7.60	4.50
680	1.33E-13	58.5728	0.0481	1.5849	0.1807	5.2914	9.0	4.74	1.52
720	2.20E-13	11.2024	0.0181	1.1900	0.0281	3.0041	26.8	2.69	0.18
760	2.61E-13	3.5938	0.0130	0.8792	0.0039	2.5194	70.1	2.26	0.05
810	3.63E-13	3.0361	0.0127	0.7605	0.0019	2.5351	83.5	2.27	0.03
870	2.33E-13	3.5351	0.0137	0.9962	0.0037	2.5311	71.6	2.27	0.05
940	1.06E-13	4.1733	0.0153	1.8152	0.0061	2.5094	60.1	2.25	0.13
1010	1.08E-13	4.2479	0.0147	1.6728	0.0066	2.4311	57.2	2.18	0.13
1080	9.51E-14	6.3703	0.0191	4.1461	0.0149	2.2860	35.8	2.05	1.02
1150	1.83E-13	18.1789	0.0268	36.2178	0.0629	2.4775	13.3	2.22	1.53
1250	9.64E-14	20.0182	0.0264	49.2290	0.0705	3.1407	15.1	2.82	3.18
1400	1.95E-14	23.5631	0.0241	80.5434	0.0848	5.0690	20.3	4.54	19.51

CHI-103 Whole rock groundmass

L#11245

$J = 0.0005260 \pm 0.000006$

670	1.01E-12	75.2660	0.0426	0.1958	0.1588	28.3476	37.7	26.70	0.65
710	8.30E-13	51.7641	0.0266	0.1840	0.0687	31.4887	60.8	29.64	0.34
750	1.11E-12	42.5561	0.0215	0.2782	0.0391	31.0153	72.9	29.19	0.27
790	2.94E-13	39.4963	0.0185	0.4442	0.0272	31.5126	79.8	29.66	0.22
840	3.97E-13	39.8516	0.0189	0.6191	0.0286	31.4661	78.9	29.62	0.22
890	2.97E-13	43.3270	0.0212	0.8462	0.0416	31.1254	71.8	29.30	0.27
950	2.40E-13	46.4251	0.0235	1.1530	0.0551	30.2465	65.1	28.48	0.33
1010	2.29E-13	47.2833	0.0255	1.6414	0.0603	29.6207	62.6	27.89	0.34
1070	2.31E-13	66.5177	0.0371	1.6866	0.1226	30.4634	45.7	28.68	0.62
1150	4.30E-13	63.3742	0.0341	2.4394	0.1099	31.1459	49.1	29.32	0.51
1225	5.78E-14	56.3040	0.0301	4.5101	0.0874	30.9287	54.8	29.11	0.71
1350	3.50E-14	50.3624	0.0269	6.0224	0.0681	30.8409	61.0	29.03	0.83
1450	9.32E-15	5.1696	-0.0060	2.2838	-0.1221	41.5002	801.6	38.96	2.75

CHI-111 Whole rock groundmass

L#10267

$J = 0.001255 \pm 0.000006$

650	1.31E-12	206.1501	0.1454	2.2148	0.6852	3.8381	1.9	3.41	2.16
680	2.35E-13	58.1636	0.0448	1.6083	0.1574	11.7971	20.3	10.47	0.70
720	6.33E-13	29.9882	0.0224	2.6757	0.0497	15.5514	51.8	13.78	0.18
760	9.44E-13	19.5522	0.0147	3.3196	0.0126	16.1336	82.3	14.30	0.11
810	1.26E-12	17.1906	0.0128	2.2078	0.0046	16.0327	93.1	14.21	0.09
870	1.49E-12	16.9453	0.0128	1.3516	0.0040	15.8969	93.7	14.09	0.09
930	1.38E-12	16.7097	0.0128	0.8031	0.0034	15.7748	94.4	13.98	0.10
990	1.25E-12	18.4762	0.0139	0.6511	0.0094	15.7549	85.2	13.96	0.10
1050	1.41E-12	21.5489	0.0165	0.8005	0.0199	15.7311	73.0	13.94	0.17
1120	8.30E-13	26.5117	0.0216	1.0997	0.0369	15.7002	59.2	13.92	0.42
1250	1.04E-12	24.4386	0.0195	4.0226	0.0301	15.8979	64.9	14.09	0.51
1400	4.82E-13	23.6703	0.0199	6.5803	0.0293	15.6092	65.6	13.84	1.74

CHI-160B Plagioclase

L#11241

$J = 0.0005523 \pm 0.000006$

675	2.65E-13	1704.4630	1.1260	2.9001	5.8827	-33.7156	-2.0	-33.91	537.52
725	2.03E-13	160.5771	0.1157	3.5451	0.5383	1.7838	1.1	1.78	6.50
775	1.10E-13	14.0341	0.0182	4.2045	0.0337	4.4108	31.3	4.39	0.22
825	7.74E-14	6.2931	0.0131	5.2931	0.0068	4.7041	74.5	4.68	0.10
875	7.13E-14	6.4216	0.0132	5.8009	0.0075	4.6668	72.4	4.64	0.11
925	4.28E-14	7.1886	0.0137	5.4590	0.0099	4.6979	65.1	4.67	0.20
975	2.71E-14	6.6616	0.0132	4.9703	0.0079	4.7187	70.6	4.70	0.28
1025	3.25E-14	6.7562	0.0135	4.3654	0.0079	4.7829	70.6	4.76	0.24
1060	3.24E-14	6.8568	0.0131	4.1607	0.0079	4.8717	70.8	4.85	0.25
1100	3.31E-14	7.8717	0.0138	4.1739	0.0113	4.8832	61.9	4.86	0.28
1140	4.27E-14	7.3940	0.0136	4.5729	0.0085	5.2597	70.9	5.23	0.20
1200	6.20E-14	10.2924	0.0145	2.9145	0.0151	6.0811	59.0	6.05	0.21
1260	9.24E-14	10.0626	0.0149	3.0444	0.0164	5.4736	54.3	5.45	0.15
1320	7.05E-14	9.9473	0.0152	4.8052	0.0182	4.9657	49.8	4.94	0.19
1400	7.14E-14	7.7512	0.0137	5.5912	0.0116	4.7666	61.3	4.74	0.15
1500	4.50E-14	6.6726	0.0171	6.5694	0.0149	2.7888	41.6	2.78	0.29

Data Repository item 2003033

CHI-171 Whole rock groundmass			L#11256			$J = 0.0005523 \pm 0.000006$			
670	6.27E-14	19.7986	0.0285	1.5498	0.0518	4.6229	23.3	4.38	0.34
710	5.08E-14	9.0329	0.0242	1.0759	0.0155	4.5296	50.1	4.29	0.17
750	1.66E-13	6.0338	0.0211	0.8074	0.0067	4.1313	68.4	3.92	0.06
790	1.67E-13	5.4333	0.0196	0.9709	0.0047	4.1191	75.8	3.90	0.04
840	1.77E-13	5.5623	0.0160	1.0842	0.0051	4.1317	74.2	3.92	0.04
890	9.98E-14	7.0128	0.0161	1.3403	0.0101	4.1284	58.8	3.91	0.08
950	7.81E-14	9.0843	0.0178	1.6247	0.0177	3.9790	43.8	3.77	0.12
1010	8.23E-14	11.0911	0.0185	1.8573	0.0253	3.7625	33.9	3.57	0.16
1070	1.87E-13	11.8401	0.0194	4.0266	0.0286	3.7269	31.4	3.53	0.13
1150	3.57E-13	14.6692	0.0220	10.5731	0.0385	4.1349	28.0	3.92	0.16
1225	4.05E-14	22.1814	0.0251	26.2992	0.0673	4.4144	19.5	4.18	0.55
1350	2.16E-14	33.4091	0.0353	26.1818	0.1091	3.2726	9.6	3.10	1.83
1450	1.56E-14	6.4385	0.0169	25.2776	0.0117	5.0410	76.9	4.78	5.83

Note: $^{40}\text{Ar}/^{39}\text{Ar}$ analysis was performed using a fully automated resistance furnace system as described by Sharp et al.(1996).

The isotope ratios reported here are corrected for procedural blanks, mass discrimination, and radioactive decay.

Apparent ages are calculated from these ratios further corrected for atmospheric contamination and nucleogenic interferences.

J values are based on an age of 28.02 Ma for Fish Canyon sanidine used as a neutron fluence monitor.