

## Supplementary Information

**Table 1.** Zircon U–Pb data of the sample MB–008.

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$
MB–008_83		0.538	0.077	0.069	0.003	0.262	438	51	433	16	420	300	
MB–008_79		0.556	0.08	0.07	0.003	0.695	449	51	438	17	450	310	
MB–008_54		0.556	0.08	0.071	0.003	0.28	450	52	439	16	440	320	
MB–008_76		0.62	0.089	0.07	0.003	0.249	490	57	439	16	720	300	
MB–008_18		0.561	0.08	0.073	0.003	0.306	452	52	451	17	400	310	
MB–008_66		0.59	0.085	0.074	0.003	0.307	471	55	460	17	410	310	
MB–008_62		0.605	0.088	0.074	0.003	0.26	478	56	461	17	550	310	
MB–008_53		0.582	0.084	0.075	0.003	0.623	465	53	464	18	430	310	
MB–008_13		0.593	0.085	0.075	0.003	0.372	474	54	466	18	460	320	
MB–008_2		0.59	0.084	0.076	0.003	0.267	471	53	470	17	420	320	
MB–008_26		0.612	0.088	0.076	0.003	0.263	485	56	473	17	480	310	
MB–008_72		0.613	0.088	0.077	0.003	0.317	485	55	479	18	470	310	
MB–008_45		0.615	0.088	0.078	0.003	0.301	487	56	484	18	460	300	
MB–008_11		0.631	0.091	0.079	0.003	0.793	496	55	492	19	480	320	
MB–008_10		0.645	0.093	0.081	0.003	0.31	505	58	499	19	490	310	
MB–008_36		0.618	0.089	0.08	0.003	0.611	488	55	499	19	390	310	
MB–008_68		0.627	0.091	0.081	0.003	0.678	492	56	501	20	450	310	
MB–008_7		0.654	0.095	0.082	0.003	0.458	506	54	506	19	430	270	
MB–008_94		0.631	0.091	0.082	0.003	0.262	499	57	507	19	420	310	
MB–008_74		0.665	0.095	0.085	0.003	0.233	517	59	525	19	440	310	
MB–008_90		0.651	0.093	0.085	0.003	0.458	508	58	525	19	440	310	
MB–008_19		0.684	0.099	0.087	0.004	0.551	526	59	534	22	460	300	
MB–008_63		0.71	0.1	0.089	0.004	0.613	538	58	550	22	480	280	
MB–008_51		0.76	0.11	0.09	0.004	0.928	570	64	555	25	580	300	
MB–008_3		0.78	0.11	0.093	0.004	0.598	577	63	574	25	580	280	
MB–008_43		0.79	0.11	0.094	0.004	0.18	591	64	577	21	610	300	
MB–008_48		0.73	0.11	0.098	0.004	0.478	560	62	603	23	370	310	
MB–008_17		1,560	0.24	0.14	0.008	0.971	910	100	839	47	1080	290	
MB–008_24		1,380	0.2	0.14	0.006	0.585	878	85	847	31	900	280	
MB–008_20		1,370	0.2	0.142	0.005	0.145	873	85	855	31	880	290	
MB–008_56		1,430	0.23	0.149	0.01	0.98	857	97	887	57	800	290	
MB–008_47		1,420	0.2	0.148	0.006	0.282	898	84	892	32	890	290	
MB–008_14		1,450	0.21	0.149	0.006	0.551	910	86	897	32	920	290	
MB–008_93		1,770	0.28	0.153	0.01	0.986	980	110	911	54	1120	300	
MB–008_86		1,560	0.22	0.153	0.006	0.305	952	88	915	32	1000	280	
MB–008_87		0.4975	1.9	0.0626	1.8	0.97	1939	391.6	6.9	410	6.3	515.9	9.5
MB–008_67		0.5493	0.7	0.0698	0.6	0.87	1118	435.1	2.6	444.5	2.5	494.4	7.7
MB–008_12		0.5764	0.8	0.0734	0.7	0.86	1043	456.5	3.1	462.2	3	491.5	9.1
MB–008_52		0.5717	0.8	0.0738	0.7	0.88	1429	459.2	3	459.1	2.9	459.8	8.2
MB–008_46		0.5933	1.3	0.0739	0.7	0.52	106	459.9	3	473	4.9	538.1	24.3

**Table 1.** Zircon U–Pb data of the sample MB–008 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$
MB–008_65		0.5876	0.9	0.0743	0.7	0.81	636	461.9	3.1	469.3	3.2	506.6	11.1
MB–008_21		0.5817	1.1	0.0745	0.9	0.8	373	463.2	4.1	465.6	4.2	477.9	14.9
MB–008_93		0.575	1.1	0.0746	0.7	0.64	308	463.9	3.2	461.3	4.1	449	18.8
MB–008_43		0.582	0.8	0.0757	0.6	0.78	425	470.7	2.8	465.8	2.9	442.6	11.1
MB–008_83		0.5813	0.8	0.0759	0.6	0.75	646	471.5	2.8	465.3	3	435.7	11.8
MB–008_24		0.586	0.8	0.076	0.7	0.83	606	472.4	3	468.3	3	449.2	9.8
MB–008_4		0.594	0.9	0.0762	0.8	0.85	865	473.2	3.5	473.4	3.4	475.4	10.4
MB–008_63		0.6004	1.6	0.0765	1.2	0.79	453	475.5	5.7	477.5	6	488.4	21.5
MB–008_30		0.5899	0.8	0.0767	0.6	0.83	591	476.1	3	470.8	3	445.9	9.8
MB–008_26		0.593	0.8	0.0773	0.7	0.89	728	479.9	3.3	472.8	3	439.7	8.1
MB–008_22		0.598	0.8	0.0773	0.6	0.77	441	480.1	2.9	476	3	457	11.3
MB–008_44		0.626	2	0.0777	1.6	0.8	201	482.1	7.4	493.6	7.7	548.2	25.7
MB–008_79		0.5937	1.2	0.0777	0.9	0.75	541	482.2	4.3	473.2	4.6	430.7	17.9
MB–008_82		0.7027	2.7	0.0779	0.8	0.31	126	483.8	3.8	540.4	11.2	787.8	53.4
MB–008_80		0.6108	0.9	0.0788	0.8	0.82	400	488.8	3.6	484.1	3.6	462.9	11.6
MB008_100		0.6391	4	0.0788	3.7	0.92	982	488.9	17.2	501.8	15.8	561.6	33.9
MB–008_53		0.6027	1.2	0.0788	1	0.88	302	489.1	4.9	479	4.6	431.8	12.6
MB–008_94		0.9607	1.2	0.1063	1	0.79	358	651.4	5.9	683.7	6	792.4	15.6
MB–008_47		13,867	0.9	0.1451	0.7	0.86	938	873.2	6	883.3	5.1	909.6	9.1
MB–008_61		14,655	0.9	0.1542	0.8	0.85	234	924.3	6.8	916.3	5.6	897.9	10.1
MB–008_91		14,263	1	0.1506	0.7	0.66	51	904.4	5.8	900	6.2	890.1	16.1
MB–008_64		14,665	1	0.1536	0.9	0.91	419	921.3	7.9	916.7	6.1	906.4	8.5
MB–008_56		14,188	1.8	0.1513	0.7	0.37	71	908.3	5.6	896.9	10.5	869.5	34
MB–008_32		16,031	1	0.1647	0.8	0.84	327	983.1	7.6	971.4	6.2	946	10.8
MB–008_6		14,605	1.1	0.1493	0.8	0.78	749	896.8	7	914.2	6.4	957.4	13.7
MB–008_16		16,887	0.9	0.1714	0.7	0.84	185	1019.9	6.9	1004.3	5.5	971.3	9.5
MB–008_75		16,678	0.9	0.1685	0.8	0.84	197	1004.1	7.2	996.4	5.8	980.2	10.1
MB–008_92		16,888	0.7	0.1705	0.5	0.77	199	1014.7	5	1004.3	4.4	982.5	9
MB–008_27		16,308	0.9	0.164	0.7	0.82	266	978.8	6.4	982.1	5.4	990.4	10.2
MB–008_8		16,041	1	0.1613	0.6	0.61	79	963.7	5.4	971.8	6.2	991	15.8
MB–008_73		1.6054	1	0.1611	0.8	0.81	252	962.7	7	972.3	6.1	995.1	11.7
MB–008_67		1.6487	0.8	0.1654	0.7	0.84	239	986.5	6.4	989	5.2	995.5	8.9
MB–008_12		1.7088	0.9	0.1709	0.7	0.87	325	1016.9	6.9	1011.8	5.5	1001.7	8.7
MB–008_52		1.6802	1	0.168	0.7	0.7	70	1001.1	6.4	1001.1	6.3	1001.9	14.3
MB–008_71		1.5049	1.2	0.1504	0.8	0.65	45	903.3	6.8	932.4	7.6	1002.7	19
MB–008_88		1.7424	1.1	0.1693	1	0.91	226	1008.1	9.6	1024.3	7.4	1060.1	9.8
MB–008_58		1.7310	1.4	0.1672	1.1	0.81	64	996.7	10.3	1020.1	8.9	1071.7	16.3
MB–008_97		1.6981	1.3	0.163	1.2	0.93	742	973.3	11.1	1007.8	8.5	1084.6	10
MB–008_27		2.0650	0.8	0.1939	0.7	0.84	339	1142.4	6.9	1137.3	5.4	1128.4	8.7
MB–008_31		2.0515	0.8	0.1926	0.7	0.87	513	1135.4	7.1	1132.8	5.3	1128.7	7.7
MB–008_35		2.0674	1	0.1921	0.8	0.83	171	1133	8.5	1138.1	6.8	1148.7	11.1
MB–008_22		2.0457	0.9	0.1897	0.8	0.89	424	1119.9	7.9	1130.9	5.9	1152.9	7.8
MB–008_42		2.1669	0.9	0.2007	0.7	0.78	166	1179.2	7.2	1170.5	5.9	1155.2	10.6

**Table 1.** Zircon U–Pb data of the sample MB–008 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$
MB–008_81		2.1916	1	0.2025	0.8	0.84	210	1189	9.1	1178.4	7	1159.8	10.8
MB–008_92		1.9953	0.9	0.1843	0.8	0.89	379	1090.3	8.3	1113.9	6.3	1161.1	8.3
MB–008_61		2.1162	1.1	0.1954	0.9	0.86	100	1150.6	9.6	1154.1	7.3	1161.5	10.9
MB–008_70		2.1721	0.8	0.1989	0.7	0.85	460	1169.4	7.5	1172.1	5.7	1178.1	8.4
MB–008_21		1.8552	2.6	0.1695	0.6	0.25	76	1009.6	6	1065.3	17.1	1182.1	49.6
MB–008_49		1.8636	1.4	0.1694	1.2	0.83	1557	1008.8	10.9	1068.3	9.2	1192.7	15.3
MB–008_85		2.1323	1.1	0.1937	0.8	0.69	116	1141.5	8.3	1159.3	7.9	1193.7	16.3
MB–008_46		2.3162	0.8	0.2098	0.7	0.79	132	1227.9	7.3	1217.3	5.9	1199.4	9.9
MB–008_57		2.1167	1.1	0.1905	0.8	0.79	84	1124.2	8.7	1154.3	7.3	1212	12.7
MB–008_15		2.4870	1.3	0.2205	1.2	0.94	222	1284.4	14.2	1268.3	9.4	1241.8	8.3
MB–008_89		2.3249	0.8	0.2021	0.7	0.86	276	1186.4	7.5	1219.9	5.7	1280.6	7.9
MB–008_98		2.5226	0.9	0.2179	0.8	0.88	652	1270.9	9.3	1278.6	6.6	1292.3	8.4
MB–008_25		2.3515	1.6	0.2028	0.6	0.37	483	1190.6	6.3	1228	11.3	1295.1	28.6
MB–008_16		2.7093	2.8	0.2328	2.2	0.79	323	1349	26.8	1331	20.6	1302.9	33
MB–008_78		2.6673	0.8	0.2288	0.7	0.8	155	1328.3	8.2	1319.4	6.3	1305.9	9.8
MB–008_37		2.6708	0.9	0.229	0.7	0.76	93	1329.3	8.1	1320.4	6.5	1306.8	11.1
MB–008_40		2.6613	0.8	0.2263	0.7	0.81	253	1315.1	7.9	1317.8	6.1	1323	9.4
MB–008_69		2.2343	1.1	0.1894	0.7	0.64	276	1118.1	7	1191.9	7.5	1329	16.1
MB–008_50		2.6881	0.7	0.2248	0.6	0.91	965	1307.4	7.4	1325.2	5.1	1354.8	5.4
MB–008_41		2.8889	1.3	0.2387	0.9	0.73	98	1379.9	11.7	1379	9.7	1378.5	16.8
MB–008_59		2.7723	1	0.2289	0.7	0.77	266	1328.8	8.9	1348.1	7.2	1379.7	11.9
MB–008_34		2.9954	0.8	0.2425	0.6	0.73	114	1399.8	6.9	1406.4	5.7	1417.4	9.8
MB–008_28		3.2228	0.7	0.2598	0.6	0.81	162	1488.6	7.4	1462.7	5.3	1426.1	7.7
MB–008_29		3.1352	0.9	0.2512	0.7	0.79	127	1444.9	8.9	1441.4	6.7	1437	10.3
MB–008_44		2.9816	1	0.2374	0.9	0.9	94	1373	11	1402.9	7.5	1449.6	8
MB–008_39		3.1799	0.7	0.2503	0.6	0.8	259	1440.2	7.2	1452.3	5.4	1470.8	7.9
MB–008_80		3.0176	0.9	0.2375	0.8	0.84	421	1373.5	9.6	1412.1	7.1	1471.6	9.6
MB–008_87		3.0980	1	0.2433	0.8	0.74	41	1403.9	9.5	1432.2	7.8	1475.4	13
MB–008_75		3.1981	1	0.2496	0.8	0.78	65	1436.2	10.2	1456.7	7.9	1487.6	12.1
MB–008_95		3.1620	1.4	0.2467	1.3	0.94	279	1421.6	17.2	1447.9	11	1487.7	8.9
MB–008_8		3.4115	1	0.2658	0.8	0.81	365	1519.3	10.9	1507.1	7.8	1490.7	11.1
MB–008_77		3.2457	1	0.2518	0.8	0.86	388	1447.7	10.6	1468.2	7.4	1498.6	9.2
MB–008_23		3.3431	0.7	0.2592	0.6	0.88	540	1486	8.3	1491.2	5.6	1499.4	6.5
MB–008_30		3.3118	0.9	0.2567	0.8	0.86	256	1473.1	10.2	1483.8	7.1	1500	8.9
MB–008_84		3.4313	0.6	0.2653	0.6	0.86	177	1516.9	7.5	1511.6	5.1	1505	6.2
MB–008_60		3.4255	0.7	0.2647	0.6	0.82	595	1513.8	8.1	1510.3	5.8	1506.1	8
MB–008_38		3.4427	0.8	0.2655	0.7	0.83	467	1517.7	9	1514.2	6.3	1510.2	8.5
MB–008_64		3.4980	0.8	0.2682	0.6	0.84	781	1531.7	8.7	1526.8	6	1520.7	7.7
MB–008_65		3.5218	1.1	0.2658	1	0.92	785	1519.5	14	1532.1	8.9	1550.5	8.3
MB–008_9		3.8990	0.6	0.2911	0.5	0.78	168	1647.2	7.1	1613.5	5.1	1570.6	7.3
MB–008_96		3.7281	0.8	0.2752	0.7	0.88	228	1567.3	10.3	1577.4	6.7	1591.7	7.6
MB–008_82		3.7891	1	0.2784	0.9	0.84	110	1583.2	12	1590.4	8.2	1600.8	10.3
MB–008_91		4.1845	1.1	0.2911	1	0.93	290	1646.8	14.7	1671	8.9	1702.3	7.6

Neogene

Paleogene

**Table 2.** Zircon U–Pb data of the sample MB–009.

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	<sup>207</sup> Pb/ <sup>235</sup> U	± 2 s	<sup>206</sup> Pb/ <sup>238</sup> U	± 2 s		Correlation Error	<sup>206</sup> Pb/ <sup>238</sup> U	± 2 s	<sup>207</sup> Pb/ <sup>235</sup> U	± 2 s	<sup>206</sup> Pb/ <sup>207</sup> Pb	± 2 s
MB–009_8		0.6294	1.3	0.0772	0.7	0.54	332	479.3	3.1	495.7	5	573.1	23.3
MB–009_75		0.9039	0.8	0.1061	0.7	0.81	242	650	4.2	653.8	4	667.8	10.5
MB–009_61		1.2731	1.5	0.1371	0.8	0.51	20	828.3	5.9	833.8	8.4	849.3	26.5
MB–009_41		1.3602	2	0.1446	0.8	0.4	10	870.7	6.5	872	11.5	876	37.3
MB–009_62		1.4089	1.2	0.1473	0.5	0.47	59	886.1	4.5	892.7	7	909.9	21.4
MB–009_46		1.4709	1.6	0.153	0.8	0.47	18	918	6.5	918.5	9.8	920.5	29.4
MB–009_29		1.5302	1.2	0.1585	1.1	0.88	144	948.4	9.5	942.6	7.5	929.8	12.1
MB–009_95		1.4285	1.1	0.1469	0.7	0.65	28	883.8	6.1	900.9	6.7	944.2	17.5
MB–009_19		1.6001	1.1	0.1636	0.7	0.6	74	976.5	6.2	970.3	7.1	957	18.6
MB–009_58		1.5601	0.9	0.1589	0.7	0.75	53	950.9	6.2	954.5	5.8	963.8	12.7
MB–009_12		1.6231	1	0.165	0.8	0.73	94	984.5	7	979.2	6.6	968.2	14.5
MB–009_68		1.6598	0.8	0.168	0.5	0.66	114	1001.3	4.9	993.3	5	976.6	12.1
MB–009_76		1.6036	0.9	0.1623	0.7	0.75	148	969.6	6.1	971.6	5.7	977.2	12.3
MB–009_65		1.6416	0.8	0.1656	0.7	0.88	190	987.8	6.6	986.3	5.1	983.9	7.8
MB–009_94		1.6598	0.8	0.1673	0.6	0.8	204	997.3	6	993.3	5.1	985.4	9.8
MB–009_1		1.5866	1	0.1598	0.8	0.77	139	955.9	7.2	965	6.5	986.6	13.6
MB–009_51		1.7237	0.8	0.1736	0.7	0.82	145	1031.8	6.5	1017.4	5.4	987.4	9.9
MB–009_59		1.5545	0.9	0.156	0.6	0.72	78	934.4	5.6	952.3	5.5	994.8	12.7
MB–009_64		1.7458	0.8	0.1751	0.8	0.9	161	1040	7.3	1025.6	5.5	995.9	7.4
MB–009_55		1.6577	0.8	0.1659	0.5	0.67	64	989.7	4.7	992.5	4.9	999.7	11.7
MB–009_66		1.6603	1	0.166	0.8	0.84	231	990.3	7.4	993.5	6.1	1001.5	10.7
MB–009_96		1.6775	0.8	0.1677	0.6	0.76	131	999.7	5.6	1000	5	1001.7	10.4
MB–009_85		1.6946	0.9	0.1693	0.7	0.83	133	1008.1	6.8	1006.5	5.6	1003.9	10.1
MB–009_60		1.6471	0.9	0.1644	0.8	0.84	129	981.3	7.2	988.5	5.9	1005.2	10.4
MB–009_25		1.7073	1	0.1704	0.8	0.84	169	1014.1	7.6	1011.3	6.1	1006.2	10.6
MB–009_92		1.6505	0.8	0.1647	0.7	0.89	280	982.7	6.8	989.7	5.3	1006.4	7.7
MB–009_13		1.7374	0.9	0.1727	0.7	0.8	92	1027	7.1	1022.5	6	1013.7	11.2
MB–009_80		1.6858	0.8	0.1674	0.5	0.65	151	998	4.5	1003.2	4.8	1015.5	11.6
MB–009_27		1.6305	1.4	0.1616	0.9	0.64	29	965.5	7.8	982	8.5	1020.1	21
MB–009_7		1.7440	0.9	0.1725	0.8	0.84	123	1025.7	7.5	1024.9	6.1	1024.1	10.5
MB–009_72		1.7401	1	0.1715	0.7	0.73	127	1020.2	6.6	1023.5	6.2	1031.4	13.1
MB–009_78		1.6575	1	0.1557	0.9	0.87	292	932.6	7.5	992.4	6.3	1128.1	9.7
MB–009_21		2.0824	1	0.1945	0.8	0.8	168	1145.5	8.4	1143	6.9	1139.2	11.9
MB–009_84		2.1803	1	0.2015	0.9	0.9	237	1183.4	10	1174.8	7.2	1159.6	8.9
MB–009_28		2.1337	1	0.1964	0.8	0.82	250	1156.2	8.9	1159.8	7.1	1167.3	11.7
MB–009_74		2.1649	0.9	0.199	0.7	0.83	169	1170	7.8	1169.9	6.1	1170.5	9.8
MB–009_79		1.7988	1	0.1645	0.8	0.86	246	981.9	7.7	1045	6.4	1180.4	10
MB–009_26		2.2609	0.9	0.2059	0.7	0.76	112	1206.9	7.2	1200.2	6	1189	11
MB–009_38		2.2155	0.9	0.2014	0.7	0.82	197	1183.1	8	1185.9	6.3	1192	10
MB–009_43		2.2831	0.8	0.2058	0.5	0.68	128	1206.5	5.9	1207.1	5.5	1209	11.3
MB–009_9		1.6171	1	0.1442	0.8	0.84	208	868.1	6.7	976.9	6.2	1231	10.6
MB–009_49		2.4540	0.9	0.216	0.6	0.65	128	1260.8	7	1258.6	6.8	1255.8	14
MB–009_17		2.6436	0.8	0.2288	0.7	0.84	117	1328.2	8.4	1312.9	6.1	1288.7	8.9

**Table 2.** Zircon U–Pb data of the sample MB–009 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
MB–009_77		2.6597	0.7	0.2273	0.6	0.79	103	1320.5	6.9	1317.3	5.4	1313.1	8.6
MB–009_82		2.5879	0.8	0.2208	0.6	0.83	380	1286.1	7.3	1297.2	5.6	1316.6	8.3
MB–009_53		2.4325	1.1	0.2071	0.9	0.88	224	1213.4	10.3	1252.3	7.6	1320.6	9.9
MB–009_35		2.3732	1.2	0.2016	0.9	0.77	759	1183.9	9.7	1234.6	8.3	1325	14.4
MB–009_37		2.7233	1.5	0.231	1.3	0.89	129	1339.9	15.8	1334.8	10.9	1327.5	13.2
MB–009_14		2.4958	1.4	0.2117	1.1	0.83	553	1237.8	12.9	1270.8	10	1327.9	14.9
MB–009_23		2.6417	1.1	0.2227	0.9	0.86	202	1296.1	10.6	1312.3	7.7	1339.8	10.5
MB–009_45		2.2926	0.7	0.1932	0.6	0.8	618	1138.9	6.2	1210	5.3	1340.1	8.7
MB–009_5		2.1185	2.3	0.1756	1.5	0.65	120	1042.8	14.5	1154.9	16.1	1372.6	34.3
MB–009_40		2.1166	2.3	0.175	1.9	0.82	350	1039.7	18	1154.2	15.7	1376.9	24.9
MB–009_39		2.9931	1	0.2408	0.9	0.91	222	1390.9	11.6	1405.9	7.8	1429.5	8.1
MB–009_16		2.9633	0.7	0.2375	0.6	0.87	456	1373.5	7.6	1398.3	5.3	1437	6.7
MB–009_44		2.9380	0.9	0.2352	0.7	0.77	78	1361.5	8.4	1391.8	6.8	1439.2	11
MB–009_18		3.1345	0.9	0.2508	0.8	0.87	172	1442.7	10.4	1441.2	7.1	1439.8	8.5
MB–009_70		2.8946	0.9	0.2301	0.8	0.83	528	1335.1	9.2	1380.5	6.9	1452.3	9.5
MB–009_67		3.3838	0.8	0.2644	0.7	0.87	128	1512.4	9.1	1500.7	6.1	1485	7.4
MB–009_47		3.1713	1.2	0.2471	1	0.88	321	1423.7	13.1	1450.2	9	1490	10.4
MB–009_63		3.1553	0.8	0.2448	0.7	0.83	155	1411.6	8.3	1446.3	6	1498.5	8.2
MB–009_93		3.4371	0.9	0.2638	0.8	0.91	281	1509.2	10.8	1512.9	6.9	1519	6.8
MB–009_91		3.4566	0.7	0.2637	0.5	0.74	153	1508.7	6.7	1517.4	5.3	1530.3	8.5
MB–009_36		3.5063	1.2	0.2673	1	0.84	279	1527.1	13.3	1528.6	9.3	1531.6	12.1
MB–009_89		2.6250	2.5	0.1992	2.5	0.98	178	1170.9	26.3	1307.7	18.5	1540.4	10
MB–009_88		3.5247	0.8	0.2647	0.6	0.75	142	1513.8	8.4	1532.8	6.6	1559.9	10.3
MB–009_48		3.6470	1.1	0.2735	1	0.87	139	1558.3	13.8	1559.8	9.1	1562.7	10.6
MB–009_20		3.5196	1	0.2634	0.9	0.87	277	1507.4	12	1531.6	8.1	1566	9.6
MB–009_4		3.1942	0.9	0.2391	0.8	0.91	524	1381.8	10.1	1455.7	6.9	1566.2	7.1
MB–009_81		3.6048	1.2	0.269	1	0.83	79	1535.8	13.2	1550.6	9.2	1571.6	12.2
MB–009_42		3.6988	1.1	0.2736	0.9	0.83	247	1559.2	12.7	1571.1	8.8	1588	11.5
MB–009_87		3.5845	0.8	0.265	0.7	0.86	313	1515.6	9	1546.1	6.1	1588.8	7.2
MB–009_2		3.7299	1	0.2741	0.9	0.88	436	1561.7	12.4	1577.8	8.2	1600.2	9.1
MB–009_57		3.9202	1	0.2859	0.9	0.92	366	1621.1	12.6	1617.9	7.7	1614.5	6.9
MB–009_15		3.9490	1.1	0.283	0.9	0.78	248	1606.2	12.4	1623.8	9	1647.4	12.8
MB–009_31		4.0263	1	0.2861	0.8	0.83	181	1622.1	12	1639.5	8.2	1662.8	10.5
MB–009_71		4.1526	0.8	0.2933	0.7	0.87	319	1658.1	9.8	1664.7	6.3	1673.9	7
MB–009_30		4.2503	1.1	0.2986	1	0.88	143	1684.6	14.3	1683.8	9	1683.6	9.7
MB–009_11		4.2245	0.8	0.2965	0.7	0.83	315	1673.9	9.9	1678.8	6.6	1685.7	8.3
MB–009_83		4.3909	0.9	0.307	0.8	0.87	117	1725.8	12.4	1710.6	7.8	1692.9	8.6
MB–009_52		4.2966	1.1	0.2997	0.8	0.77	119	1689.8	12.4	1692.7	8.9	1697.1	12.7

Neogene

Paleogene

**Table 3.** Zircon U–Pb data of the sample MB–005.

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
MB–005_1		23,956	1.6	0.203	1.2	0.7	79	1191.4	12.6	1241.3	11.7	1329.8	22.5
MB–005_10		17,844	2.3	0.1637	1.3	0.56	79	977.4	11.5	1039.8	14.6	1174.2	36.8
MB–005_100		30,729	2	0.2468	1.6	0.81	78	1422.2	20.7	1426	15.4	1432.4	22.5
MB–005_101		16,606	2.3	0.1616	1.8	0.8	233	965.6	16.4	993.6	14.5	1056.8	27.6
MB–005_102		21,219	1.9	0.1934	1.7	0.86	259	1139.6	17.3	1156	13.3	1187.7	19.3
MB–005_103		14,860	2	0.1487	1.4	0.71	89	894	11.6	924.7	11.9	999.5	28.1
MB–005_104		15,354	2	0.1555	1.6	0.8	118	932	14.1	944.7	12.6	975.2	25.1
MB–005_105		15,894	1.6	0.1614	1.4	0.83	995	964.7	12.3	966.1	10.3	970	18.7
MB–005_106		30,932	1.9	0.2354	1.5	0.79	70	1362.8	18.6	1431	14.7	1534.8	22.4
MB–005_107		30,950	2.1	0.244	1.8	0.86	230	1407.4	22.8	1431.5	16	1468.3	20.1
MB–005_108		21,022	1.5	0.1933	1.2	0.8	164	1139.4	12.5	1149.5	10.3	1169.5	17.7
MB–005_109		17,373	1.5	0.1698	1.2	0.76	205	1011	11	1022.5	9.9	1048.1	20.1
MB–005_11		33,479	1.6	0.2516	1.1	0.69	49	1446.8	14.2	1492.3	12.3	1558.4	21.3
MB–005_110		14,794	1.8	0.1518	1.5	0.83	104	910.8	12.5	922	10.8	949.7	20.6
MB–005_112		15,071	2	0.1437	1.5	0.73	57	865.5	12	933.3	12.4	1097.7	27.8
MB–005_113		20,969	2	0.1893	1.7	0.84	353	1117.3	17.2	1147.8	13.7	1206.7	21
MB–005_114		35,837	1.6	0.2727	1.3	0.81	197	1554.6	17.7	1545.9	12.6	1534.9	17.7
MB–005_115		16,534	2	0.1649	1.6	0.83	521	984	14.8	990.9	12.4	1006.9	22.1
MB–005_116		15,911	1.4	0.16	1.1	0.8	286	956.7	10	966.7	8.8	990.4	17.3
MB–005_117		23,483	1.9	0.2072	1.5	0.79	365	1214	16.3	1227.1	13.2	1251	22.2
MB–005_118		21,998	1.7	0.1892	1.4	0.8	57	1117.3	13.9	1181	11.8	1300.5	19.5
MB–005_119		19,569	2.2	0.1771	1.7	0.75	69	1051	16.2	1100.8	15	1201.6	29.1
MB–005_12		34,627	2	0.2644	1.7	0.86	352	1512.2	22.9	1518.8	15.6	1528.8	19.1
MB–005_120		20,089	1.4	0.1889	1.2	0.83	282	1115.2	12.1	1118.5	9.6	1125.8	15.5
MB–005_121		0.5571	1.8	0.0697	1.4	0.77	853	434.2	5.9	449.6	6.6	530.3	25.1
MB–005_122		38,812	1.9	0.2762	1.4	0.75	434	1572.1	19.4	1609.8	15.1	1660.3	23
MB–005_123		31,267	2	0.2377	1.6	0.78	76	1374.6	19.3	1439.3	15.4	1537	23.6
MB–005_124		16,832	1.5	0.1656	1.2	0.78	458	988	10.8	1002.2	9.6	1034.3	18.9
MB–005_125		33,308	1.7	0.2569	1.4	0.81	206	1473.8	18	1488.3	13.1	1509.9	18.6
MB–005_126		17,055	1.8	0.1692	1.4	0.76	327	1008	13	1010.6	11.8	1017.1	24.3
MB–005_127		0.5748	1.7	0.0727	1.3	0.72	235	452.7	5.5	461.1	6.5	504.2	26.5
MB–005_128		21,483	1.9	0.1937	1.5	0.82	120	1141.1	16.2	1164.5	13.1	1209.1	21.2
MB–005_129		33,839	2.1	0.2559	1.6	0.78	108	1468.6	21.2	1500.7	16.2	1547	24.3
MB–005_13		32,246	1.5	0.2463	1.1	0.73	412	1419.2	13.7	1463.1	11.4	1528.1	18.8
MB–005_131		18,298	1.7	0.1725	1.3	0.75	305	1026	12.1	1056.2	11.2	1120.1	22.3
MB–005_132		16,404	2.1	0.1649	1.6	0.78	210	983.8	15	985.9	13.2	991.4	26.5
MB–005_133		38,428	2.4	0.2636	1.3	0.54	125	1508.2	17.3	1601.8	19.3	1727.8	37.1
MB–005_134		17,506	2.1	0.1709	1.8	0.86	191	1017.3	17.2	1027.4	13.7	1049.8	21.8
MB–005_135		20,815	1.9	0.1922	1.6	0.82	487	1133.5	16.3	1142.7	13.2	1161.1	21.9
MB–005_136		20,398	2.2	0.1823	1.6	0.72	70	1079.6	15.7	1128.9	15	1225.9	30.1
MB–005_137		17,601	1.9	0.1689	1.6	0.83	143	1006.2	15	1030.9	12.5	1084.5	21.6
MB–005_138		27,071	1.9	0.2275	1.5	0.79	167	1321.3	17.5	1330.4	13.7	1345.9	21.9
MB–005_139		25,454	1.9	0.2068	1.5	0.79	53	1211.5	17	1285.1	14.2	1411.2	22.8

**Table 3.** Zircon U–Pb data of the sample MB–005 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
MB–005_14	23,112	2	0.2026	1.5	0.76	412	1189	16.5	1215.7	14.2	1264.3	25.5
MB–005_140	43,621	1.9	0.2994	1.6	0.86	130	1688.4	23.6	1705.2	15.3	1726.6	17.4
MB–005_141	20,704	1.8	0.1919	1.5	0.83	219	1131.5	15.8	1139.1	12.6	1154.4	20.6
MB–005_142	17,215	1.7	0.1691	1.3	0.76	295	1007.3	12.2	1016.6	11	1037.5	22.7
MB–005_143	21,145	1.9	0.1857	1.6	0.87	270	1097.9	16.5	1153.6	13	1260.6	18.2
MB–005_144	16,754	1.7	0.1615	1.2	0.71	81	965.3	10.9	999.2	10.8	1075.4	23.9
MB–005_145	34,360	1.9	0.2629	1.5	0.8	233	1504.8	20.7	1512.7	15.1	1524.5	21.5
MB–005_146	25,069	2	0.222	1.5	0.74	397	1292.7	17.1	1274	14.3	1243.5	26
MB–005_147	20,117	2	0.1872	1.7	0.82	227	1106.4	17.1	1119.4	13.9	1145.7	23
MB–005_148	16,457	1.6	0.1592	1.1	0.7	489	952.2	10	987.9	10.1	1069	22.8
MB–005_149	16,385	2.2	0.1522	1.5	0.69	50	913.1	12.9	985.1	13.8	1150.1	31.6
MB–005_15	17,653	1.7	0.1709	1.2	0.73	157	1016.9	11.5	1032.8	10.9	1067.4	23
MB–005_150	26,297	2.4	0.2241	1.9	0.81	153	1303.7	22.8	1309	17.6	1318.4	27.2
MB–005_151	24,390	2.2	0.2044	1.8	0.81	117	1198.9	19.7	1254.2	16	1351.2	25.2
MB–005_152	40,085	2.1	0.284	1.8	0.89	91	1611.6	25.9	1635.9	16.7	1668.1	17.6
MB–005_153	33,639	1.9	0.2541	1.6	0.83	447	1459.8	21.1	1496	15.2	1548.6	20.2
MB–005_154	25,117	1.9	0.2155	1.5	0.8	55	1258.1	17.7	1275.4	14	1305.5	22.3
MB–005_155	19,021	2	0.1748	1.6	0.78	67	1038.4	15	1081.8	13.4	1171.3	24.9
MB–005_156	14,452	2.2	0.1468	1.7	0.8	232	883	14.3	907.9	13	969.7	26.6
MB–005_157	22,233	2	0.202	1.5	0.78	121	1186	16.7	1188.4	13.9	1193.7	24.6
MB–005_158	29,053	2.3	0.2355	1.9	0.85	215	1363.4	23.7	1383.3	17.2	1415	23.2
MB–005_159	33,764	2	0.256	1.7	0.86	318	1469.4	22.2	1498.9	15.4	1541.7	19.1
MB–005_16	23,608	1.6	0.1898	1.1	0.72	131	1120.5	11.8	1230.8	11.4	1430.5	21.3
MB–005_160	17,542	2.8	0.1595	1.5	0.54	32	953.9	13.4	1028.7	18.1	1192.3	46.4
MB–005_161	22,676	1.6	0.2054	1.2	0.76	930	1204	13	1202.3	11.1	1200	20.3
MB–005_162	28,809	1.7	0.2344	1.4	0.86	277	1357.8	17.5	1376.9	12.6	1407.6	16.6
MB–005_163	21,409	1.8	0.192	1.5	0.83	211	1132	15.5	1162.1	12.4	1219.5	19.6
MB–005_164	27,277	2	0.2257	1.5	0.77	245	1312	17.8	1336	14.5	1375.5	24.2
MB–005_165	21,669	1.9	0.1942	1.6	0.83	275	1144.2	16.6	1170.5	13.2	1220.3	21
MB–005_166	20,060	1.8	0.1834	1.2	0.67	85	1085.5	11.8	1117.5	11.9	1181.3	25.9
MB–005_167	21,805	2.1	0.1901	1.3	0.65	70	1121.7	13.8	1174.8	14.4	1275	30.6
MB–005_168	15,854	2	0.1553	1.5	0.72	93	930.6	12.6	964.5	12.5	1043.5	28.1
MB–005_169	20,812	1.6	0.1932	1.2	0.8	271	1138.9	13	1142.6	10.8	1150.6	18.8
MB–005_170	24,282	2.1	0.189	1.7	0.83	1186	1116	17.7	1251	14.9	1492.3	21.9
MB–005_171	20,486	1.9	0.1876	1.5	0.79	293	1108.3	15	1131.8	12.8	1178.1	23
MB–005_172	34,579	1.7	0.2569	1.4	0.81	230	1473.8	18.2	1517.7	13.5	1580.2	19
MB–005_173	16,206	2	0.16	1.5	0.75	170	956.6	13.3	978.2	12.5	1028	26.6
MB–005_174	19,003	2.3	0.1738	1.4	0.62	56	1032.9	13.4	1081.2	15	1180.6	35
MB–005_175	19,786	1.9	0.1782	1.3	0.7	71	1056.9	12.9	1108.3	12.6	1211.4	26.2
MB–005_176	31,030	2.3	0.2214	1.5	0.67	26	1289.5	17.8	1433.4	17.5	1654.9	31.5
MB–005_177	20,703	2.2	0.1858	1.8	0.84	80	1098.6	18.7	1139	15.1	1217.8	23.6
MB–005_178	20,692	2.1	0.1891	1.6	0.79	101	1116.5	16.7	1138.7	14.1	1182	24.9
MB–005_179	14,855	1.9	0.1474	1.2	0.63	94	886.6	10.2	924.5	11.8	1016.9	30.6

Neogene

Paleogene

**Table 3.** Zircon U–Pb data of the sample MB–005 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
MB–005_180	21,421	1.8	0.1913	1.5	0.83	111	1128.4	15.1	1162.5	12.2	1227.4	19.4
MB–005_181	16,958	1.9	0.1616	1.6	0.84	118	965.5	14.1	1007	11.9	1099.1	20.3
MB–005_182	32,360	2.4	0.2312	1.8	0.74	26	1340.8	21.6	1465.8	18.8	1652.8	30.5
MB–005_183	16,415	2	0.1533	1.6	0.8	57	919.7	13.9	986.3	12.8	1138.5	24.4
MB–005_184	20,263	2.3	0.1849	1.9	0.82	100	1093.7	19	1124.4	15.7	1185	26.2
MB–005_185	15,246	2	0.1521	1.5	0.75	352	912.9	12.6	940.3	12.1	1005.9	26.5
MB–005_186	16,611	2.1	0.1591	1.5	0.69	80	951.5	12.9	993.8	13.5	1089.2	30.9
MB–005_187	16,743	2	0.161	1.6	0.82	147	962.5	14.7	998.8	12.8	1080.3	23.4
MB–005_188	19,314	2.1	0.1749	1.4	0.66	50	1039	13.1	1092	13.9	1200.1	30.7
MB–005_189	16,000	1.7	0.1587	1.2	0.7	455	949.4	10.3	970.2	10.4	1018.5	24
MB–005_19	30,594	1.5	0.246	1.3	0.83	908	1417.9	16.2	1422.6	11.8	1430.3	16.6
MB–005_190	20,258	1.8	0.1889	1.5	0.86	382	1115.6	15.4	1124.2	11.9	1141.7	17.8
MB–005_191	21,458	2.1	0.1892	1.8	0.85	238	1117	18.5	1163.7	14.8	1252.5	22.1
MB–005_193	36,397	1.7	0.2682	1.4	0.78	287	1531.7	18.5	1558.3	13.8	1595.3	20.2
MB–005_194	14,860	1.9	0.1498	1.5	0.77	114	899.8	12.5	924.7	11.7	985.4	24.9
MB–005_195	15,991	2.2	0.158	1.7	0.8	134	945.5	15.3	969.9	13.6	1026.4	26.5
MB–005_196	16,628	2.6	0.1513	1.8	0.69	49	908.4	15.2	994.4	16.6	1190.4	37.6
MB–005_197	30,280	1.5	0.2387	1.2	0.81	108	1379.9	15.5	1414.7	11.8	1468.3	17.1
MB–005_198	16,373	1.6	0.1596	1.1	0.73	345	954.6	10.1	984.7	9.8	1053.2	21.2
MB–005_199	16,033	1.8	0.1595	1.3	0.72	460	953.8	11.3	971.5	11.1	1012.6	25.1
MB–005_2	20,640	1.6	0.1921	1.2	0.75	358	1132.6	12.7	1137	11.2	1146.2	21.7
MB–005_20	16,932	1.8	0.1667	1.5	0.8	188	993.9	13.5	1006	11.6	1033.2	21.9
MB–005_200	20,664	2	0.1843	1.3	0.65	784	1090.6	13.3	1137.7	14	1229.7	30.5
MB–005_201	14,611	2	0.1515	1.5	0.75	96	909.1	12.8	914.5	12.2	928.4	27.5
MB–005_202	20,451	2.1	0.1829	1.7	0.84	115	1082.9	17.4	1130.7	14.2	1224.5	22.2
MB–005_203	26,733	2	0.2241	1.6	0.81	157	1303.3	19.3	1321.1	14.9	1350.9	22.9
MB–005_204	26,372	2.2	0.2161	1.8	0.84	137	1261.3	21.2	1311.1	16.2	1394.3	22.8
MB–005_205	15,674	1.9	0.1564	1.5	0.82	162	936.6	13.5	957.4	11.7	1006.4	22.1
MB–005_206	16,406	1.8	0.1617	1.5	0.81	213	966.3	13.1	985.9	11.3	1030.8	21.3
MB–005_207	35,983	1.6	0.2712	1.4	0.83	223	1546.8	18.8	1549.2	13.1	1553.2	17.1
MB–005_208	33,988	2	0.2627	1.6	0.78	126	1503.5	21.4	1504.1	16	1505.8	24
MB–005_209	47,178	1.9	0.3165	1.6	0.86	116	1772.8	24.7	1770.4	15.6	1768.4	17.4
MB–005_21	21,673	2	0.1969	1.8	0.86	250	1158.5	18.7	1170.6	14.2	1194	20.3
MB–005_210	26,964	1.9	0.2237	1.6	0.82	182	1301.4	18.3	1327.5	14.1	1370.6	21.1
MB–005_211	25,554	2	0.2007	1.7	0.83	51	1179.2	18.4	1288	15	1475.1	21.5
MB–005_212	26,091	1.8	0.22	1.4	0.76	188	1281.9	15.9	1303.2	13.2	1339.3	22.4
MB–005_213	21,975	1.9	0.1933	1.5	0.78	97	1139.2	15.4	1180.2	13.2	1257.2	22.9
MB–005_214	23,509	1.8	0.1938	1.3	0.73	78	1141.9	13.8	1227.8	12.9	1382.8	23.6
MB–005_216	0.5706	2.3	0.0707	1.8	0.8	290	440.6	7.7	458.4	8.4	549.9	29.8
MB–005_217	25,348	2	0.2139	1.6	0.78	137	1249.6	17.7	1282.1	14.6	1337.8	24.3
MB–005_218	20,322	2.1	0.1813	1.7	0.82	73	1074.1	17.1	1126.4	14.3	1229.4	23.6
MB–005_219	21,218	2.2	0.1874	1.8	0.83	257	1107.4	18.7	1155.9	15.3	1249	24.5
MB–005_22	41,190	1.6	0.2923	1.4	0.88	600	1653.1	20.3	1658.1	13	1665.2	14



**Table 3.** Zircon U–Pb data of the sample MB–005 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
MB–005_23	19,250	1.8	0.1809	1.3	0.71	292	1072	12.9	1089.8	12.3	1126.5	26
MB–005_24	23,592	1.7	0.2062	1.2	0.75	101	1208.6	13.7	1230.4	11.8	1269.6	21.3
MB–005_25	32,278	2.1	0.251	1.7	0.8	260	1443.5	22	1463.9	16.4	1494.3	23.9
MB–005_26	15,402	1.7	0.1551	1.4	0.81	154	929.8	11.9	946.6	10.5	986.8	20.3
MB–005_27	16,920	1.5	0.1675	1.1	0.7	346	998.5	9.8	1005.5	9.6	1021.6	21.7
MB–005_28	21,489	1.6	0.196	1.4	0.83	357	1153.6	14.4	1164.7	11.4	1186.3	18.4
MB–005_29	25,729	1.9	0.2139	1.3	0.66	57	1249.5	14.4	1293	14	1366.6	27.7
MB–005_3	28,065	1.6	0.228	1.3	0.79	143	1324	15.6	1357.3	12.3	1410.9	19.3
MB–005_30	20,993	2	0.1915	1.7	0.84	255	1129.4	17.6	1148.6	13.8	1185.8	21.3
MB–005_31	20,346	2.1	0.1853	1.8	0.84	125	1095.8	17.8	1127.1	14.3	1189	22.4
MB–005_32	15,247	1.7	0.1594	1.3	0.79	170	953.3	11.8	940.4	10.3	911.2	20.9
MB–005_33	27,685	1.7	0.2228	1.2	0.74	64	1296.6	14.3	1347.1	12.4	1429	21.4
MB–005_34	20,936	1.6	0.1923	1.2	0.76	314	1134	12.5	1146.7	10.8	1171.6	20.2
MB–005_35	24,376	1.5	0.2081	1.1	0.76	781	1218.6	12.6	1253.8	10.7	1315.5	18.7
MB–005_36	25,975	2	0.2171	1.6	0.79	80	1266.6	17.8	1299.9	14.4	1356.2	23.1
MB–005_37	33,579	1.8	0.2576	1.4	0.79	111	1477.7	18.2	1494.6	13.7	1519.6	20.4
MB–005_38	20,443	1.7	0.1894	1.4	0.82	81	1118.1	14.4	1130.4	11.7	1154.9	19.5
MB–005_39	17,695	2	0.1601	1.1	0.55	53	957.6	9.7	1034.3	12.8	1201.2	32.6
MB–005_4	21,859	1.7	0.1984	1.3	0.79	301	1166.6	14	1176.6	11.6	1195.8	20.3
MB–005_40	24,541	1.5	0.2151	1.1	0.74	838	1255.7	12.7	1258.6	10.9	1264.6	20.1
MB–005_41	19,187	1.9	0.1746	1.5	0.81	90	1037.2	14.4	1087.6	12.4	1190.9	21.3
MB–005_42	22,050	1.8	0.1943	1.5	0.82	123	1144.5	15.7	1182.6	12.8	1254	20.7
MB–005_43	32,011	2.2	0.2406	1.5	0.69	52	1390	18.5	1457.4	16.6	1557.9	29.3
MB–005_44	16,415	1.5	0.1636	1.2	0.8	257	977	10.6	986.3	9.2	1007.9	18
MB–005_45	22,181	1.6	0.199	1.2	0.72	97	1169.8	12.4	1186.8	11.4	1218.8	22.2
MB–005_46	35,450	1.8	0.2616	1.6	0.88	218	1498.2	20.9	1537.3	14.2	1592.3	16.1
MB–005_47	16,836	2.2	0.1587	1.7	0.75	59	949.6	14.8	1002.3	14.1	1120.5	29.1
MB–005_48	17,734	1.8	0.1693	1.2	0.68	101	1008	11.6	1035.8	11.8	1095.7	26.5
MB–005_49	40,029	1.7	0.2791	1.4	0.82	222	1586.8	19.3	1634.8	13.6	1697.9	17.8
MB–005_5	22,123	1.8	0.1903	1.3	0.73	91	1123.2	13.7	1185	12.7	1300.3	23.9
MB–005_50	13,307	2	0.138	1.7	0.87	550	833.4	13.5	859.2	11.6	927.1	20.6
MB–005_52	28,552	2.1	0.2286	1.7	0.8	184	1327.4	20.3	1370.2	16	1438.3	24.6
MB–005_53	14,854	2	0.1503	1.6	0.79	175	902.7	13.4	924.4	12.3	977.4	25.5
MB–005_54	21,885	1.8	0.1862	1.5	0.79	51	1100.8	14.7	1177.4	12.8	1321.9	21.9
MB–005_55	30,105	1.8	0.2374	1.5	0.84	204	1373	18.4	1410.3	13.5	1467.9	18.5
MB–005_56	26,885	1.8	0.2201	1.3	0.7	64	1282.5	14.9	1325.3	13.6	1396	25.2
MB–005_57	41,950	1.7	0.2907	1.2	0.73	139	1645	17.9	1673	13.9	1709.2	21.4
MB–005_58	16,525	1.6	0.1612	1.2	0.78	290	963.6	11.1	990.5	10	1051.4	19.9
MB–005_59	17,269	1.9	0.1557	1.3	0.67	50	932.6	11	1018.6	12.1	1209.2	27.3
MB–005_6	15,783	1.9	0.152	1.2	0.62	94	912.1	9.8	961.7	11.6	1077.7	29.5
MB–005_60	16,199	2	0.1569	1.5	0.77	70	939.4	13.3	978	12.5	1066.4	25.8
MB–005_61	15,199	2.3	0.1416	1.5	0.65	39	853.6	11.7	938.4	13.9	1144.1	34.3
MB–005_62	17,304	1.9	0.167	1.4	0.74	98	995.7	12.7	1019.9	12.1	1073.2	25.5

Neogene

Paleogene

**Table 3.** Zircon U–Pb data of the sample MB–005 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
MB–005_63		38,288	1.8	0.2717	1.4	0.76	76	1549.6	19	1598.8	14.7	1665.2	22.1
MB–005_64		26,332	1.6	0.2215	1.3	0.79	342	1289.8	14.8	1309.9	11.7	1343.9	18.6
MB–005_65		31,472	1.9	0.24	1.5	0.78	53	1386.8	18.9	1444.3	14.9	1530.8	22.7
MB–005_66		18,603	1.8	0.1791	1.4	0.77	292	1062.3	13.3	1067.1	11.6	1077.7	22.3
MB–005_67		32,188	1.7	0.2489	1.4	0.79	282	1432.7	17.6	1461.7	13.4	1504.9	19.8
MB–005_68		20,867	1.9	0.1814	1.4	0.75	48	1074.8	14.2	1144.4	13.1	1279.7	24.4
MB–005_69		17,639	1.8	0.169	1.4	0.75	134	1006.5	12.8	1032.3	11.9	1088.2	24.3
MB–005_7		19,928	1.4	0.1844	1	0.74	366	1090.8	10.2	1113.1	9.3	1157.6	18.2
MB–005_70		26,907	1.8	0.2218	1.5	0.83	293	1291.6	17.1	1325.9	13.1	1382.5	19.1
MB–005_71		42,610	1.9	0.2925	1.6	0.84	153	1653.9	23	1685.9	15.5	1726.6	19.1
MB–005_72		36,420	1.7	0.2579	1.3	0.79	476	1479.3	17.8	1558.8	13.6	1669	19.2
MB–005_73		23,500	1.9	0.2061	1.5	0.78	125	1208.1	16	1227.6	13.3	1262.7	22.8
MB–005_75		16,765	1.9	0.1678	1.5	0.82	237	1000	14.2	999.7	11.9	999.9	21.5
MB–005_76		23,079	2.3	0.1892	1.9	0.81	1023	1116.8	19.6	1214.7	16.6	1393.9	26.1
MB–005_77		17,205	2.1	0.1591	1.4	0.65	42	951.8	12.4	1016.2	13.8	1158.5	32.2
MB–005_78		16,782	1.7	0.1658	1.2	0.74	266	988.9	11.2	1000.3	10.6	1026.2	22.9
MB–005_79		21,044	1.9	0.1957	1.5	0.78	265	1152	15.9	1150.3	13.4	1147.9	24.2
MB–005_8		21,760	2	0.1902	1.5	0.75	79	1122.4	15.4	1173.4	13.8	1269.7	25.4
MB–005_81		23,440	2.1	0.2064	1.6	0.78	144	1209.6	17.8	1225.7	14.8	1255	25.5
MB–005_82		16,882	1.9	0.168	1.6	0.82	130	1001.3	14.5	1004.1	12.1	1011.1	22
MB–005_83		33,169	2.2	0.2386	1.7	0.76	30	1379.6	21	1485	17.3	1639.8	26.7
MB–005_84		31,407	1.6	0.2464	1.2	0.76	298	1420	15.9	1442.7	12.7	1477.2	20.3
MB–005_85		29,264	1.7	0.234	1.4	0.8	194	1355.3	17	1388.8	13.1	1441.4	19.6
MB–005_86		26,118	1.6	0.2218	1.4	0.82	177	1291.6	15.9	1304	12.1	1325.3	18.1
MB–005_87		43,092	1.9	0.3001	1.5	0.82	301	1692	22.8	1695.1	15.4	1699.8	19.5
MB–005_88		15,597	2.2	0.1436	1.6	0.7	40	865.1	12.7	954.4	13.9	1167.2	31.7
MB–005_89		16,792	2.1	0.1658	1.7	0.82	201	988.7	15.5	1000.7	13.2	1028	24.1
MB–005_9		35,323	1.7	0.2671	1.5	0.87	242	1526	20.1	1534.5	13.5	1546.9	15.9
MB–005_90		22,489	1.9	0.2027	1.5	0.75	94	1189.8	15.8	1196.4	13.6	1209.2	25.1
MB–005_91		15,519	1.7	0.1556	1.3	0.78	731	932	11.6	951.3	10.7	996.9	22.1
MB–005_92		17,690	2.1	0.1616	1.6	0.78	51	965.9	14.7	1034.2	13.7	1182.2	26.3
MB–005_93		16,707	1.5	0.1638	1.1	0.76	649	978	10.1	997.4	9.3	1041.3	19.4
MB–005_94		16,202	1.8	0.1646	1.3	0.74	529	982.3	11.8	978.1	11.1	969.4	24.3
MB–005_95		19,330	1.9	0.1841	1.4	0.74	132	1089.1	14.4	1092.6	13	1100.4	26
MB–005_96		16,370	1.9	0.1581	1.4	0.75	95	946.1	12.4	984.5	11.8	1072.1	24.9
MB–005_97		20,189	1.9	0.185	1.4	0.74	98	1094	14.5	1121.9	13.2	1177.2	25.6
MB–005_98		17,132	2.1	0.1684	1.8	0.85	197	1003.3	16.4	1013.5	13.4	1036.3	22.6
MB–005_99		20,823	1.6	0.1939	1.2	0.77	381	1142.6	12.9	1143	10.9	1144.6	20.1

**Table 4.** Zircon U–Pb data of the sample MB–006.

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
MB–006_131		0.4149	2	0.0536	1.3	0.68	257	336.6	4.3	352.4	5.8	458.6	31.9
MB–006_213		0.4874	2.5	0.0638	1.8	0.71	583	399	6.9	403.2	8.2	428.1	38.7
MB–006_36		0.5455	1.7	0.0695	1.4	0.8	1094	432.9	5.9	442	6.3	491.1	22.9
MB–006_183		0.5491	1.8	0.0709	1.3	0.74	844	441.5	5.5	444.4	6.3	460.3	26.2
MB–006_184		0.5801	1.8	0.0744	1.5	0.79	316	462.6	6.5	464.5	6.9	475	24.8
MB–006_46		0.5971	1.8	0.0758	1.3	0.75	645	471	6.1	475.4	6.9	497.7	26.4
MB–006_97		0.6212	2.3	0.0782	1.8	0.79	368	485.4	8.6	490.6	9.1	516.1	31.8
MB–006_76		0.8223	1.7	0.0949	1.2	0.73	748	584.5	6.7	609.3	7.6	703.6	24.2
MB–006_176		13,780	2	0.1372	1.7	0.85	324	828.7	13.4	879.6	11.9	1010.9	21.9
MB–006_203		15,104	2.8	0.1419	1.8	0.63	54	855.6	14.4	934.6	17.4	1126.6	44.1
MB–006_182		14,092	2.1	0.143	1.5	0.69	59	861.5	11.8	892.8	12.6	972.1	31.5
MB–006_186		14,085	2.1	0.1458	1.5	0.74	162	877.2	12.5	892.5	12.2	931.6	28.4
MB–006_139		14,240	2	0.1475	1.5	0.76	254	887	12.8	899.1	12.1	929.8	27.3
MB–006_196		14,844	2.3	0.1478	1.6	0.7	73	888.5	13.4	924	14.1	1010.7	33.8
MB–006_195		14,482	2.4	0.1479	1.6	0.68	86	889	13.2	909.1	14.1	959.2	35.4
MB–006_38		14,470	1.6	0.1491	1.3	0.82	202	895.7	10.9	908.6	9.6	941.1	18.9
MB–006_207		15,366	2.6	0.1491	2.2	0.84	90	896.1	18.4	945.1	16.1	1062.1	28.5
MB–006_59		14,616	2.3	0.15	1.7	0.76	105	900.7	14.5	914.7	13.6	949.2	29.8
MB–006_141		14,584	2.4	0.1502	1.9	0.82	99	902.2	16.2	913.3	14.2	941.2	27.6
MB–006_199		14,233	2.5	0.1511	2.1	0.85	93	907.1	17.8	898.8	14.7	879.3	26.5
MB–006_152		14,514	1.8	0.1511	1.1	0.64	316	907.2	9.6	910.4	10.6	919.1	27.8
MB–006_19		15,898	2.2	0.1521	1.5	0.67	50	912.8	12.6	966.2	13.8	1090.6	32.8
MB–006_35		15,090	2	0.1526	1.5	0.75	131	915.3	12.9	934	12.4	979.4	27.6
MB–006_189		15,026	2	0.1532	1.6	0.81	288	918.9	13.7	931.5	12.1	962.1	23.9
MB–006_14		15,398	2	0.1538	1.7	0.83	116	922.4	14.5	946.4	12.6	1003.6	23.4
MB–006_205		15,305	2.1	0.1543	1.6	0.75	117	925.3	13.8	942.7	13.1	984.6	28.9
MB–006_16		15,429	2	0.1547	1.5	0.78	607	927.3	13.4	947.7	12.2	996.1	24.9
MB–006_168		15,031	2.1	0.1547	1.5	0.72	424	927.3	12.8	931.6	12.5	942.7	29
MB–006_20		16,137	2.5	0.1556	1.8	0.72	148	932.3	15.7	975.5	15.7	1075.1	34.7
MB–006_181		16,127	2	0.1557	1.2	0.6	56	932.7	10.5	975.2	12.5	1073	32
MB–006_100		15,784	2.3	0.1562	1.7	0.76	124	935.9	15	961.7	14	1022.1	29.5
MB–006_161		16,030	1.9	0.1567	1.4	0.72	1533	938.2	12	971.4	11.9	1048.1	26.4
MB–006_40		15,545	2	0.1568	1.7	0.84	222	938.7	14.9	952.3	12.6	984.7	22.8
MB–006_30		15,433	2.2	0.1571	1.9	0.86	155	940.9	16.7	947.8	13.7	964.9	23.5
MB–006_163		15,823	2.3	0.1575	1.8	0.77	196	943.1	15.6	963.3	14.3	1010.4	29.9
MB–006_110		15,684	2.4	0.1579	1.9	0.79	200	945	16.6	957.8	14.8	988.1	29.6
MB–006_7		16,251	2.1	0.158	1.6	0.78	124	945.9	14.1	980	13	1058.1	26.1
MB–006_197		16,025	1.9	0.1583	1.5	0.79	241	947.4	13.6	971.2	12.2	1026.2	24
MB–006_146		16,105	1.8	0.1586	1.4	0.77	543	948.7	12.5	974.3	11.6	1033.4	23.8
MB–006_175		16,036	2.3	0.1589	1.6	0.69	112	950.7	14.3	971.6	14.6	1020.1	34
MB–006_165		15,489	1.8	0.1596	1.4	0.8	133	954.4	12.5	950	11	940.9	22
MB–006_135		16,142	1.7	0.1599	1.1	0.61	177	956.2	9.4	975.7	10.8	1020.7	27.7
MB–006_147		16,085	1.9	0.16	1.5	0.79	457	956.7	13.6	973.5	12	1012.6	23.7

Neogene

Paleogene

**Table 4.** Zircon U–Pb data of the sample MB–006 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
MB–006_77	16,351	2.4	0.1604	1.8	0.78	87	959.1	16.4	983.8	14.8	1040.2	29.7
MB–006_89	16,427	2	0.1605	1.6	0.83	546	959.3	14.6	986.7	12.5	1049.1	22.4
MB–006_130	16,291	1.6	0.1606	1.2	0.77	768	960.1	10.8	981.5	10	1030.6	20.5
MB–006_192	16,287	1.8	0.1612	1.2	0.67	236	963.2	10.9	981.4	11.4	1023	27.2
MB–006_174	16,697	2	0.162	1.2	0.6	82	967.7	11	997.1	12.8	1063	32.4
MB–006_49	16,532	2.1	0.1621	1.6	0.78	352	968.7	14.7	990.8	13.3	1040.9	26.5
MB–006_217	16,263	2.5	0.1624	1.8	0.72	245	970.3	16	980.4	15.5	1004.1	34.7
MB–006_116	19,199	4.4	0.1625	1.9	0.42	382	970.9	16.8	1088	29.5	1331.5	77.5
MB–006_10	15,972	2.5	0.1629	2.2	0.85	195	972.6	19.4	969.1	15.9	962.1	27.7
MB–006_54	16,588	1.9	0.163	1.3	0.7	423	973.3	11.9	992.9	12	1037.3	27.6
MB–006_3	16,831	2.3	0.1631	1.7	0.73	81	973.9	15.2	1002.1	14.7	1065.4	31.9
MB–006_190	15,956	2.1	0.1632	1.7	0.83	130	974.5	15.4	968.5	12.9	955.8	23.7
MB–006_158	16,403	1.9	0.1633	1.3	0.72	133	975	12.2	985.8	11.8	1010.8	26.3
MB–006_151	16,568	1.5	0.1634	1.1	0.76	346	975.6	10.2	992.2	9.4	1029.9	19.6
MB–006_18	16,690	1.9	0.1638	1.6	0.83	319	977.8	14.3	996.8	12.1	1039.6	21.5
MB–006_216	16,310	2.2	0.1641	1.7	0.78	134	979.3	15.5	982.2	13.7	989.7	27.5
MB–006_101	16,614	2	0.1643	1.6	0.79	646	980.8	14.6	993.9	12.8	1023.8	24.8
MB–006_142	16,637	1.8	0.1646	1.2	0.69	362	982.3	11.4	994.8	11.4	1023.2	26.4
MB–006_136	17,145	1.4	0.1649	1	0.74	752	984.2	9.5	1014	9	1079.7	19.2
MB–006_42	16,616	2	0.1651	1.6	0.8	311	985.2	14.7	994	12.7	1014.2	24.3
MB–006_129	16,576	1.9	0.1652	1.5	0.77	132	985.5	13.3	992.5	12	1008.8	24.4
MB–006_191	16,291	2	0.1655	1.6	0.81	283	987	14.9	981.5	12.7	970	24.3
MB–006_74	16,913	1.7	0.1661	1.3	0.75	605	990.6	11.7	1005.3	10.9	1038.3	22.9
MB–006_6	17,329	1.9	0.1662	1.4	0.73	175	991.4	13	1020.8	12.5	1085.4	26.5
MB–006_22	18,463	2.1	0.1664	1.7	0.79	193	992.4	15.2	1062.1	13.7	1209.2	24.9
MB–006_66	16,902	2.1	0.1667	1.7	0.78	105	993.7	15.4	1004.8	13.6	1030	27.1
MB–006_85	17,030	1.8	0.1673	1.4	0.77	709	997.1	12.7	1009.7	11.4	1038	22.7
MB–006_86	16,895	1.8	0.1675	1.5	0.84	413	998.5	13.9	1004.6	11.5	1018.6	20
MB–006_87	16,594	2	0.1678	1.6	0.83	400	999.8	15.1	993.1	12.5	979.4	22.5
MB–006_73	17,151	2.2	0.1682	1.9	0.84	192	1001.9	17.4	1014.2	14.3	1041.6	24.1
MB–006_156	17,446	2.4	0.1682	1.5	0.61	100	1002.1	13.9	1025.2	15.7	1075.7	38.5
MB–006_80	16,636	2.1	0.1684	1.6	0.77	153	1003.3	15.3	994.7	13.5	976.8	27.6
MB–006_111	16,856	1.7	0.1686	1.1	0.62	230	1004.7	10	1003.1	11.1	1000.6	27.9
MB–006_12	17,209	2.6	0.1688	2.2	0.86	292	1005.7	20.6	1016.4	16.5	1040.2	26.5
MB–006_157	16,792	1.9	0.1689	1.4	0.72	135	1006.1	13	1000.7	12.4	989.6	27.6
MB–006_145	17,711	2.2	0.169	1.6	0.73	141	1006.6	15.1	1034.9	14.4	1096.1	30.4
MB–006_128	16,908	1.7	0.1695	1.3	0.73	263	1009.1	11.8	1005.1	11	997	23.9
MB–006_127	17,894	1.9	0.1696	1.3	0.69	219	1010.2	12	1041.6	12.2	1109	27.2
MB–006_178	17,913	2.2	0.1717	1.6	0.7	740	1021.4	14.9	1042.3	14.6	1087.3	31.9
MB–006_166	17,240	2.1	0.1723	1.5	0.72	115	1025	14.2	1017.5	13.4	1002.3	29.6
MB–006_58	19,130	2	0.1742	1.6	0.83	738	1035.2	15.6	1085.6	13.1	1189	21.8
MB–006_162	20,390	2	0.1745	1.6	0.79	41	1036.7	15.3	1128.6	13.8	1310.8	23.9
MB–006_50	19,536	1.7	0.1779	1.5	0.88	360	1055.6	14.8	1099.7	11.7	1188.8	16.4

**Table 4.** Zircon U–Pb data of the sample MB–006 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
MB–006_107		19,328	2	0.1795	1.5	0.78	144	1064.3	15.1	1092.5	13.2	1150	24.6
MB–006_45		20,104	2.2	0.1806	1.6	0.73	56	1070.1	15.5	1119	14.6	1216.2	29
MB–006_17		18,872	1.9	0.1807	1.5	0.75	182	1070.9	14.4	1076.6	12.9	1089	25.7
MB–006_138		19,611	1.6	0.1836	1.1	0.68	135	1086.6	11	1102.3	10.9	1134.2	23.6
MB–006_149		19,987	1.8	0.1836	1.3	0.74	336	1086.7	13	1115.1	11.9	1171.7	23.2
MB–006_185		23,393	3	0.1838	1.4	0.48	27	1087.5	14.4	1224.3	21.3	1475	49.9
MB–006_94		19,841	1.7	0.1842	1.4	0.81	384	1090.1	14.1	1110.1	11.7	1150.3	20.2
MB–006_53		20,094	1.8	0.1845	1.4	0.78	366	1091.6	14	1118.7	12.1	1172.6	22.2
MB–006_220		20,629	1.8	0.185	1.1	0.63	744	1094.4	11.4	1136.6	12.3	1218.8	27.5
MB–006_193		20,902	2.2	0.1855	1.6	0.74	85	1096.9	16.6	1145.6	15.3	1239.9	29.4
MB–006_133		20,846	1.7	0.1857	1.2	0.7	624	1098	12.3	1143.8	11.9	1232.6	24.3
MB–006_188		19,681	1.8	0.1857	1.4	0.81	270	1098.1	14.5	1104.7	11.9	1118.6	20.4
MB–006_57		20,774	2.1	0.1881	1.7	0.84	163	1111.2	17.5	1141.4	14.1	1200	22.2
MB–006_124		20,466	2	0.1881	1.6	0.81	228	1111.3	16.6	1131.2	13.6	1170.3	22.9
MB–006_202		20,550	2.4	0.1883	2.1	0.86	536	1112	21.3	1134	16.5	1177.2	24.1
MB–006_39		20,082	2.6	0.1887	2.3	0.9	194	1114.3	23.6	1118.3	17.3	1126.9	21.8
MB–006_218		21,573	2.5	0.1888	1.8	0.72	56	1114.9	18.8	1167.4	17.6	1266.9	34.4
MB–006_82		21,082	2.1	0.189	1.5	0.72	178	1116.1	15.8	1151.5	14.7	1219.6	29.1
MB–006_160		20,383	1.8	0.1892	1.3	0.71	137	1117.1	13	1128.4	12.2	1151.1	25.2
MB–006_187		20,272	2.2	0.1892	1.8	0.8	98	1117.1	18.1	1124.7	15	1140.2	26.4
MB–006_171		20,411	1.9	0.1895	1.2	0.66	108	1118.8	12.7	1129.3	12.8	1150.5	28.1
MB–006_132		21,360	1.7	0.1897	1.4	0.8	644	1119.5	14.4	1160.5	12.1	1238.8	20.4
MB–006_29		21,095	2.1	0.1911	1.4	0.68	366	1127.1	14.7	1151.9	14.5	1199.8	30.6
MB–006_143		21,344	1.9	0.1913	1.4	0.71	115	1128.3	14.2	1160	13.4	1220.6	27
MB–006_28		21,286	1.9	0.1916	1.6	0.84	483	1129.8	16.9	1158.1	13.4	1212.4	20.8
MB–006_144		22,315	2.5	0.1924	2	0.77	47	1134.6	20.5	1191	17.9	1295.6	31.4
MB–006_169		21,521	2.3	0.1927	1.7	0.73	100	1136.2	17.3	1165.7	15.7	1221.9	30.3
MB–006_34		21,285	2	0.1935	1.7	0.84	158	1140.1	17.3	1158.1	13.7	1192.8	21.2
MB–006_113		21,420	1.7	0.1956	1.3	0.73	252	1151.8	13.4	1162.5	12	1183.3	23.4
MB–006_104		20,819	1.8	0.1961	1.4	0.77	524	1154.4	14.9	1142.9	12.6	1122	23.6
MB–006_155		21,973	1.7	0.1963	1.1	0.69	574	1155.4	12.1	1180.2	11.6	1226.7	23.7
MB–006_125		21,347	2	0.1974	1.3	0.65	96	1161.1	13.5	1160.1	13.5	1159.1	29.5
MB–006_126		24,879	2.4	0.198	2	0.84	768	1164.7	21.3	1268.5	17.2	1450	24.3
MB–006_83		21,970	2.2	0.198	1.7	0.77	168	1164.8	18.3	1180.1	15.6	1209.1	28.2
MB–006_60		21,588	2	0.1988	1.5	0.74	108	1168.7	15.9	1167.9	14	1167.2	26.7
MB–006_194		21,706	2.1	0.1991	1.6	0.79	187	1170.4	17.4	1171.7	14.3	1174.9	25.2
MB–006_70		22,115	2.2	0.1996	2	0.88	293	1173	21	1184.7	15.6	1207.1	20.8
MB–006_106		22,235	1.5	0.2031	1.1	0.71	1260	1192	12	1188.5	10.8	1182.9	21.4
MB–006_27		22,751	2.1	0.2051	1.6	0.8	135	1202.4	18.1	1204.6	14.6	1209.3	24.5
MB–006_154		23,735	1.8	0.2064	1.6	0.85	160	1209.7	17.1	1234.7	13.1	1279.4	18.9
MB–006_114		26,127	1.4	0.2078	1	0.7	790	1217.3	10.9	1304.2	10.3	1450.9	19.2
MB–006_71		23,397	2.4	0.2086	1.9	0.78	95	1221.1	20.8	1224.4	17	1231.1	29.2
MB–006_121		30,742	1.8	0.2097	1.3	0.73	872	1227.5	14.7	1426.3	13.7	1737.7	22.3

Neogene

Paleogene

**Table 4.** Zircon U–Pb data of the sample MB–006 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
MB–006_208	25,476	2.1	0.2119	1.5	0.74	190	1238.9	17.4	1285.7	15.2	1365.7	27
MB–006_75	24,977	1.8	0.2131	1.5	0.86	469	1245.3	17.1	1271.4	12.7	1316.5	17.4
MB–006_63	25,364	1.7	0.2136	1.1	0.66	725	1248.2	12.5	1282.6	12.1	1341.3	24
MB–006_51	25,534	1.6	0.2139	1.3	0.8	288	1249.6	14.5	1287.4	11.6	1351.9	18.2
MB–006_177	26,160	2	0.2144	1.6	0.8	85	1252	17.7	1305.1	14.4	1394.4	22.7
MB–006_84	26,877	2.4	0.2164	1.8	0.74	63	1262.8	20.3	1325.1	17.7	1428.1	30.6
MB–006_9	24,909	2.1	0.2164	1.6	0.76	261	1262.8	18.2	1269.4	15.1	1281.4	26.4
MB–006_43	25,818	2.1	0.2164	1.7	0.8	114	1263	19.5	1295.5	15.6	1350.6	24.9
MB–006_210	25,644	2	0.2198	1.7	0.84	125	1280.7	19.4	1290.5	14.6	1307.7	21.2
MB–006_69	26,164	1.9	0.2202	1.6	0.85	381	1282.9	18.8	1305.3	14	1343	19.2
MB–006_134	25,908	1.9	0.2213	1.5	0.75	135	1288.5	17	1298	14.2	1314.7	25.1
MB–006_33	25,721	1.6	0.2227	1.3	0.81	356	1295.9	15.3	1292.7	11.8	1288.3	18.6
MB–006_81	26,386	2.1	0.2231	1.5	0.7	104	1298.2	17.2	1311.5	15.4	1334	29.1
MB–006_206	26,389	1.8	0.2232	1.5	0.79	262	1298.6	17.1	1311.6	13.5	1333.6	21.8
MB–006_5	26,519	1.8	0.2238	1.4	0.78	357	1301.7	16.6	1315.2	13.2	1338	21.5
MB–006_209	27,513	2.1	0.2241	1.5	0.74	332	1303.6	18	1342.4	15.3	1405.8	26.3
MB–006_180	27,101	1.7	0.2248	1.3	0.76	615	1307.3	15.6	1331.2	12.9	1370.7	21.8
MB–006_64	26,455	2	0.2259	1.5	0.76	142	1313	18.1	1313.4	14.9	1314.8	25.7
MB–006_112	26,437	1.6	0.2273	1.1	0.74	272	1320.5	13.7	1312.9	11.4	1301.3	20.4
MB–006_95	27,490	2.2	0.2283	1.8	0.81	218	1325.3	21.4	1341.8	16.5	1369	25.2
MB–006_137	29,197	2	0.229	1.4	0.73	92	1329.5	17.2	1387	14.8	1477.5	25.4
MB–006_198	27,269	2.6	0.2316	2	0.77	94	1342.9	24.4	1335.8	19.4	1325.2	32.2
MB–006_79	29,297	2.3	0.2338	1.9	0.84	84	1354.6	23.4	1389.6	17.3	1444.7	23.7
MB–006_67	33,113	2.5	0.2358	2	0.79	969	1364.7	24.2	1483.7	19.4	1659	28.1
MB–006_173	31,245	1.8	0.2391	1.4	0.75	197	1382.1	16.9	1438.7	13.9	1524.3	22.3
MB–006_102	30,372	2	0.2392	1.5	0.74	364	1382.5	18.2	1417	15.1	1470.2	25.2
MB–006_148	30,644	1.7	0.2399	1.3	0.75	104	1385.9	16	1423.8	13.1	1481.8	21.3
MB–006_21	31,340	2	0.2402	1.7	0.85	633	1387.6	21.4	1441.1	15.6	1521.7	20.4
MB–006_172	35,878	2.1	0.2415	1.4	0.69	709	1394.3	17.9	1546.8	16.5	1762.7	27.5
MB–006_120	32,387	1.9	0.2421	1.4	0.73	147	1397.6	17.2	1466.5	14.5	1568.4	24
MB–006_24	31,931	1.8	0.2437	1.4	0.8	416	1406.1	17.8	1455.5	13.6	1529.2	20
MB–006_201	30,408	2.2	0.2457	1.7	0.78	153	1416.1	21.9	1417.9	17	1421.5	26.7
MB–006_219	32,860	2	0.2486	1.5	0.75	305	1431.1	19.3	1477.8	15.5	1546.3	24.6
MB–006_108	32,992	2.4	0.2487	2	0.83	40	1431.6	25.4	1480.9	18.7	1553	25.4
MB–006_2	32,405	2	0.2489	1.7	0.82	104	1433	21.5	1466.9	15.7	1517.2	21.6
MB–006_164	32,578	1.5	0.2493	1.1	0.72	314	1435	14.1	1471	11.9	1524.2	20.1
MB–006_98	33,298	1.8	0.2498	1.5	0.81	353	1437.2	18.8	1488.1	14	1562.1	19.6
MB–006_200	32,502	1.6	0.2502	1.1	0.71	237	1439.6	14.6	1469.2	12.3	1513	21.1
MB–006_204	32,211	2.9	0.2505	2.1	0.72	54	1441	26.9	1462.3	22.3	1494.1	37.7
MB–006_52	31,422	2.1	0.2506	1.7	0.82	203	1441.6	22	1443.1	16	1446.1	22.7
MB–006_4	33,704	1.8	0.2522	1.4	0.82	871	1449.6	18.6	1497.5	13.8	1566.9	19.1
MB–006_91	31,640	2	0.2525	1.4	0.71	199	1451.2	18.5	1448.4	15.4	1445.1	26.7
MB–006_72	31,927	2	0.253	1.6	0.84	141	1453.8	21.5	1455.4	15.3	1458.6	20.6

**Table 4.** Zircon U–Pb data of the sample MB–006 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
MB–006_92		32,692	1.9	0.2532	1.6	0.82	316	1454.7	20.4	1473.7	14.8	1502.1	20.5
MB–006_68		33,685	2.2	0.2538	1.8	0.79	293	1457.9	23	1497.1	17.5	1553.9	25.8
MB–006_109		32,881	1.8	0.2544	1.5	0.83	523	1461.3	19.5	1478.2	13.9	1503.4	18.8
MB–006_25		32,603	2.4	0.2546	2	0.83	247	1462	25.8	1471.6	18.5	1486.3	25.1
MB–006_41		33,280	2.2	0.2552	1.7	0.76	225	1465	22.1	1487.6	17.3	1520.9	27
MB–006_37		35,955	2.2	0.2559	1.9	0.86	360	1468.7	25.1	1548.5	17.6	1660.1	20.9
MB–006_65		33,177	1.7	0.2559	1.4	0.78	530	1468.8	17.9	1485.2	13.6	1509.5	20.5
MB–006_93		33,752	2.1	0.256	1.7	0.8	119	1469.3	22.7	1498.7	16.8	1541.3	24
MB–006_23		33,947	1.9	0.2568	1.5	0.83	484	1473.4	20.4	1503.2	14.5	1546.2	19.2
MB–006_115		34,223	1.8	0.2576	1.3	0.75	360	1477.7	17.7	1509.5	14.1	1555.3	22.5
MB–006_123		34,479	1.9	0.2577	1.3	0.7	560	1478.2	17.5	1515.4	14.8	1568.6	25
MB–006_26		34,015	1.8	0.2589	1.4	0.77	126	1484.2	18.7	1504.7	14.4	1534.6	22.1
MB–006_105		33,675	2.1	0.2596	1.5	0.73	54	1487.6	20	1496.9	16.1	1510.8	26.4
MB–006_153		33,708	2.1	0.26	1.5	0.73	179	1489.9	20.1	1497.6	16.3	1509.4	26.9
MB–006_48		34,108	2.5	0.2607	2.1	0.81	91	1493.4	27.3	1506.9	20	1526.7	28.4
MB–006_78		35,026	2.3	0.261	1.8	0.8	60	1495.1	24.2	1527.8	17.9	1574.2	25.4
MB–006_88		34,640	2.4	0.2611	2.1	0.86	97	1495.5	27.4	1519.1	18.7	1552.8	22.5
MB–006_99		33,955	2	0.2616	1.7	0.88	132	1498.1	23.1	1503.4	15.4	1511.5	17.5
MB–006_56		33,804	2.2	0.2628	1.7	0.78	334	1503.9	23.4	1499.9	17.5	1494.9	26.3
MB–006_117		34,354	1.7	0.2643	1.2	0.69	519	1511.9	15.9	1512.5	13.5	1514.3	23.6
MB–006_118		36,146	1.6	0.2683	1.3	0.78	425	1532	17.1	1552.8	12.8	1581.9	18.6
MB–006_1		34,811	1.9	0.2684	1.7	0.89	319	1532.6	22.6	1522.9	14.6	1510.4	15.7
MB–006_122		36,282	1.9	0.2687	1.3	0.72	578	1534.2	18.3	1555.7	14.8	1586	24
MB–006_8		37,087	2.1	0.2693	1.9	0.9	188	1537.1	25.9	1573.2	16.8	1622.8	16.8
MB–006_212		36,223	2.2	0.2707	1.8	0.84	339	1544.4	24.9	1554.4	17.2	1568.9	22
MB–006_62		36,650	2	0.2713	1.7	0.85	116	1547.3	23.4	1563.8	15.9	1586.9	19.4
MB–006_211		38,090	1.7	0.2744	1.3	0.76	251	1562.9	18.4	1594.6	14	1637.7	20.9
MB–006_32		38,745	2.4	0.2788	2	0.84	163	1585.1	28.2	1608.4	19.2	1639.7	23.8
MB–006_119		38,601	1.4	0.2796	1	0.71	1027	1589.1	14.1	1605.4	11.4	1627.6	18.7
MB–006_44		41,504	1.9	0.2805	1.5	0.79	437	1593.9	21.4	1664.3	15.7	1755.1	21.4
MB–006_140		44,290	1.9	0.2863	1.4	0.76	434	1622.9	20.5	1717.8	15.5	1836.3	21.8
MB–006_11		43,260	2.2	0.2869	1.9	0.88	219	1626.2	27.5	1698.3	17.9	1789.3	18.6
MB–006_167		40,893	1.6	0.2884	1.3	0.78	203	1633.6	18.1	1652.2	13.2	1676.6	18.8
MB–006_90		42,573	2.1	0.2996	1.8	0.84	156	1689.4	26.5	1685.2	17.5	1680.6	21.3
MB–006_13		53,990	1.9	0.316	1.5	0.77	349	1770.1	22.5	1884.7	16.2	2014.2	21.5

Neogene

Paleogene

**Table 5.** Zircon U–Pb data of the sample 13MB–180.

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
13MB–180_91		0.0866	3.7	0.0131	2.5	0.67	307	83.7	2.1	84.3	3	102.6	66
13MB–180_210		0.1187	4.3	0.02	2.9	0.66	262	127.7	3.6	113.9	4.7	NA	NA
13MB–180_20		0.1421	4	0.0203	2.4	0.61	283	129.3	3.1	134.9	5.1	235.9	73
13MB–180_25		0.1401	8.1	0.0209	2.5	0.31	288	133.1	3.3	133.1	10.1	134.4	181.4
13MB–180_52		0.1491	4.4	0.0209	2.6	0.6	532	133.3	3.5	141.1	5.8	275.8	80
13MB–180_77		0.1494	2.7	0.0215	1.8	0.66	908	137.3	2.4	141.4	3.6	211.6	47.3
13MB–180_105		0.1549	5.3	0.0217	2.3	0.43	173	138.4	3.1	146.2	7.2	275.7	109.5
13MB–180_190		0.2063	3.3	0.0219	2.5	0.76	393	139.9	3.5	190.5	5.7	876.2	44
13MB–180_153		0.1661	3.9	0.0224	2.4	0.62	183	142.6	3.4	156.1	5.7	367.1	69.7
13MB–180_68		0.1559	3.6	0.0224	2.3	0.63	394	143	3.2	147.1	4.9	214.5	65.3
13MB–180_196		0.1585	3.8	0.0226	2.9	0.78	310	143.8	4.2	149.4	5.2	239.9	53.8
13MB–180_209		0.1625	8.5	0.0227	3	0.35	60	144.4	4.3	152.9	12	287.5	181.1
13MB–180_142		0.1648	3.3	0.0227	2.4	0.73	620	144.7	3.5	154.9	4.8	314.7	51.3
13MB–180_44		0.1745	3.6	0.0228	2.3	0.65	343	145.1	3.3	163.3	5.4	436.8	59.9
13MB–180_181		0.1413	4.1	0.0233	2.5	0.59	196	148.7	3.6	134.2	5.2	NA	NA
13MB–180_43		0.191	4.7	0.0234	2.8	0.6	201	148.8	4.1	177.5	7.6	579.8	80.8
13MB–180_62		0.1865	4.1	0.0234	2.7	0.66	177	148.9	4	173.7	6.6	527	67.5
13MB–180_126		0.2123	6	0.0234	2.7	0.45	69	149	4	195.5	10.6	802.3	111.7
13MB–180_159		0.1493	3.1	0.0234	2.4	0.76	620	149.2	3.5	141.3	4.1	13	49.3
13MB–180_177		0.1819	3.2	0.0235	2.4	0.74	445	149.9	3.5	169.7	5	456.5	47.6
13MB–180_187		0.1914	4.8	0.0235	2.4	0.5	153	150	3.6	177.9	7.9	567.1	91.4
13MB–180_144		0.1617	6.7	0.0236	3	0.45	64	150.1	4.4	152.2	9.4	185.3	138.7
13MB–180_72		0.0876	28.6	0.0238	2.6	0.09	120	151.4	3.9	85.2	23.4	NA	NA
13MB–180_197		0.1704	2.6	0.0238	1.9	0.72	437	151.5	2.8	159.8	3.9	284.6	41.4
13MB–180_219		0.2378	7.9	0.0238	2.4	0.3	65	151.8	3.6	216.6	15.5	997.2	154.1
13MB–180_101		0.1635	7.5	0.0239	1.9	0.25	190	152.3	2.8	153.8	10.7	177.6	169.1
13MB–180_75		0.2018	7.8	0.024	3	0.38	122	153.1	4.5	186.7	13.4	637.2	156.1
13MB–180_104		0.136	5.2	0.0241	2.6	0.5	137	153.7	3.9	129.5	6.3	NA	NA
13MB–180_123		0.1779	4.6	0.0242	2.3	0.51	132	154.2	3.6	166.2	7.1	341.8	90.4
13MB–180_30		0.1629	4.3	0.0242	2.7	0.64	275	154.4	4.1	153.3	6	136.7	77.1
13MB–180_90		0.1951	4.6	0.0245	2.6	0.55	116	156.2	4	181	7.7	518.8	84.7
13MB–180_206		0.2087	7.9	0.0245	2.7	0.34	71	156.3	4.1	192.5	13.8	663.3	158.7
13MB–180_127		0.182	4.1	0.0246	2.7	0.65	206	156.5	4.2	169.8	6.5	360.6	70.9
13MB–180_204		0.1613	4.1	0.0247	2.6	0.64	205	157.1	4.1	151.9	5.8	72.9	74.5
13MB–180_36		0.1879	3.7	0.0247	2.4	0.66	305	157.1	3.8	174.8	6	422.9	62.7
13MB–180_95		0.1797	3.3	0.0247	2	0.6	238	157.1	3.1	167.8	5.1	322.1	59.5
13MB–180_118		0.1599	10.5	0.0247	2.3	0.21	212	157.3	3.5	150.7	14.8	48.4	246.3
13MB–180_26		0.1887	5.8	0.0247	2.7	0.47	211	157.5	4.3	175.5	9.4	426.4	115.2
13MB–180_42		0.1888	5	0.0248	2.6	0.53	137	157.7	4.1	175.6	8	424.7	94.3
13MB–180_173		0.1644	3.5	0.0248	2.5	0.7	567	157.9	3.8	154.5	5.1	103.4	59.9
13MB–180_41		0.2183	6.2	0.0248	2.3	0.37	155	158	3.6	200.5	11.3	736.1	122.1
13MB–180_160		0.1651	7.6	0.0249	2.3	0.3	188	158.3	3.6	155.2	11	108.9	171.7
13MB–180_164		0.1808	4.2	0.025	2.4	0.58	246	159	3.8	168.7	6.5	309.3	77.1



**Table 5.** Zircon U–Pb data of the sample 13MB–180 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	<sup>207</sup> Pb/ <sup>235</sup> U	± 2 s	<sup>206</sup> Pb/ <sup>238</sup> U	± 2 s		Correlation Error	<sup>206</sup> Pb/ <sup>238</sup> U	± 2 s	<sup>207</sup> Pb/ <sup>235</sup> U	± 2 s	<sup>206</sup> Pb/ <sup>207</sup> Pb	± 2 s
13MB–180_5		0.2041	5.9	0.025	2.7	0.46	479	159.1	4.3	188.6	10.2	576.5	113.7
13MB–180_47		0.202	4.6	0.0253	2.7	0.58	266	161.1	4.3	186.8	7.9	527.4	82.6
13MB–180_165		0.3027	7.2	0.0255	3	0.41	79	162.2	4.7	268.5	16.9	1342.9	126.6
13MB–180_67		0.2039	3.9	0.0255	2.7	0.7	164	162.5	4.4	188.5	6.7	528.3	61.1
13MB–180_116		0.153	4.9	0.0256	2.3	0.48	140	162.7	3.7	144.6	6.6	NA	NA
13MB–180_149		0.1429	7.2	0.0256	2.7	0.37	135	162.8	4.3	135.6	9.1	NA	NA
13MB–180_31		0.1878	3.2	0.0257	2.5	0.78	836	163.7	4	174.8	5.1	327.8	45.4
13MB–180_103		0.1664	7.9	0.0258	2.9	0.37	226	164	4.8	156.3	11.5	42.7	175.6
13MB–180_179		0.2197	5	0.0259	2.3	0.46	139	164.9	3.8	201.7	9.2	657.4	95.4
13MB–180_92		0.2383	6.3	0.026	2.3	0.37	59	165.4	3.8	217	12.3	823	122.2
13MB–180_58		0.2386	7.1	0.026	2.7	0.38	110	165.7	4.4	217.3	13.8	822.1	136.4
13MB–180_97		0.2144	4.9	0.0261	3	0.61	151	165.8	4.9	197.2	8.8	592.4	84.5
13MB–180_117		0.2057	6.7	0.0262	2.8	0.41	96	166.7	4.6	189.9	11.6	490.8	134.6
13MB–180_205		0.2427	7.2	0.0264	2	0.27	71	168.2	3.3	220.6	14.3	825.6	144.5
13MB–180_147		0.1911	3.9	0.0267	2.5	0.65	176	169.8	4.3	177.6	6.3	283	67.1
13MB–180_114		0.2056	4.2	0.0268	2.5	0.6	114	170.2	4.2	189.9	7.2	443	74.1
13MB–180_138		0.1736	4.6	0.0268	2.2	0.48	96	170.3	3.7	162.5	6.9	51.8	96.4
13MB–180_51		0.2218	4.3	0.0269	2.3	0.53	222	171.2	3.9	203.4	8	596.4	79.7
13MB–180_10		0.213	5.9	0.0272	2.5	0.42	103	173	4.2	196	10.5	484	117.6
13MB–180_46		0.2396	4.2	0.0276	2.4	0.57	135	175.2	4.1	218.1	8.2	711.7	72.5
13MB–180_100		0.1946	4.6	0.0279	2.6	0.57	122	177.4	4.6	180.5	7.6	222.9	86.8
13MB–180_81		0.1928	4	0.0281	2.8	0.69	191	178.4	4.9	179	6.6	188.4	67.5
13MB–180_136		0.1377	19.9	0.0281	2.2	0.11	48	178.9	3.9	131	24.5	NA	NA
13MB–180_54		0.2186	4.9	0.0283	2.4	0.49	253	179.6	4.3	200.7	9	457.7	95.5
13MB–180_208		0.2077	5.6	0.0283	2.1	0.37	115	179.9	3.7	191.6	9.7	339.2	117
13MB–180_96		0.2263	3.3	0.0285	2.5	0.74	266	181	4.4	207.2	6.2	517.3	49.1
13MB–180_163		0.2112	6.1	0.0285	2.6	0.43	412	181.3	4.7	194.6	10.8	359.9	125
13MB–180_134		0.2172	3.9	0.0295	2.8	0.73	153	187.4	5.2	199.5	7	346.7	59.6
13MB–180_207		0.216	4.3	0.03	2.5	0.58	130	190.6	4.7	198.5	7.7	295	79.8
13MB–180_217		0.2404	3.3	0.0316	2.2	0.66	282	200.3	4.4	218.8	6.6	423.4	55.7
13MB–180_171		0.383	3.9	0.0354	3.1	0.79	94	224	6.8	329.2	10.9	1161.6	47.5
13MB–180_172		0.2852	3.6	0.0369	2.6	0.73	159	233.8	6	254.7	8.1	453.2	54.8
13MB–180_50		0.6479	2.7	0.037	2	0.72	85	234	4.5	507.2	10.8	2058.8	32.8
13MB–180_94		0.3009	4.3	0.0388	2.8	0.65	110	245.2	6.7	267.1	10.1	464.9	72
13MB–180_220		0.2826	3.4	0.0396	2.8	0.82	637	250.5	6.9	252.8	7.7	274.4	44.7
13MB–180_55		0.2864	2.3	0.0399	2	0.84	1010	252.1	4.9	255.7	5.3	289.7	28.5
13MB–180_70		0.309	3.5	0.04	2.4	0.69	265	252.9	6	273.4	8.4	453.9	56.8
13MB–180_60		0.3365	3.7	0.0401	2.8	0.77	142	253.2	7	294.6	9.4	638	51
13MB–180_11		0.3051	3.2	0.0404	2.1	0.65	187	255.5	5.2	270.4	7.5	402.6	53.9
13MB–180_19		0.3064	2.9	0.0405	2.3	0.8	322	256.1	5.8	271.3	6.9	406	39.2
13MB–180_175		0.2758	3.2	0.0406	2.5	0.8	318	256.7	6.4	247.4	7	160.2	44.9
13MB–180_63		0.2978	3.6	0.0408	2.4	0.66	204	257.6	5.9	264.7	8.3	329.1	61
13MB–180_137		0.3035	3.6	0.0408	2.4	0.67	225	257.8	6.2	269.1	8.6	369.8	61.1

Neogene

Paleogene

**Table 5.** Zircon U–Pb data of the sample 13MB–180 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)						
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$	$\pm 2\text{ s}$
13MB–180_9		0.2708	2.7	0.0412	2.1	0.78	576	260.2	5.4	243.3	5.9	84	40.1
13MB–180_157		0.2829	4	0.0412	2.4	0.59	384	260.2	6.1	252.9	9.1	186.7	75.9
13MB–180_80		0.3236	3.3	0.0413	2.5	0.77	524	260.8	6.5	284.7	8.1	486.9	46
13MB–180_17		0.2959	3.8	0.0415	2.4	0.65	263	262.3	6.3	263.2	8.7	272.6	65.5
13MB–180_61		0.3214	3	0.0417	2.5	0.85	321	263.2	6.5	283	7.3	450.4	34.3
13MB–180_28		0.2957	3.4	0.0419	2.9	0.86	640	264.4	7.6	263	7.9	251.9	39.7
13MB–180_35		0.3097	2.5	0.042	2.1	0.82	568	265	5.4	273.9	6	352.4	32.1
13MB–180_84		0.2924	3.8	0.042	2.7	0.71	299	265.5	7	260.5	8.8	216.8	62.9
13MB–180_184		0.3175	4.9	0.042	3.5	0.72	135	265.5	9.1	280	11.9	404	75.4
13MB–180_139		0.3224	3.1	0.0421	2.4	0.77	194	265.8	6.2	283.7	7.7	435	44.7
13MB–180_65		0.3346	3.2	0.0422	2.1	0.65	242	266.2	5.5	293.1	8.2	513.9	53.4
13MB–180_158		0.3211	2.9	0.0422	2.3	0.8	221	266.3	6.1	282.7	7.2	422	39.2
13MB–180_124		0.3029	2.9	0.0422	2.4	0.83	373	266.5	6.4	268.6	6.9	287.9	37.6
13MB–180_88		0.2973	5.1	0.0423	2.4	0.47	163	266.9	6.3	264.3	11.9	242.4	104.3
13MB–180_110		0.3216	3.5	0.0423	2.6	0.74	216	266.9	6.8	283.1	8.7	420.2	52.7
13MB–180_130		0.2944	3.6	0.0424	2.7	0.75	242	267.6	7.1	262	8.4	212.6	55.9
13MB–180_29		0.3032	3.1	0.0425	2.2	0.71	344	268.2	5.8	268.9	7.3	276.4	49.9
13MB–180_111		0.3294	3.4	0.0425	2.4	0.72	325	268.2	6.4	289.1	8.5	462.5	51.8
13MB–180_174		0.3517	4.5	0.0426	2.9	0.64	150	268.7	7.7	306	12	601.6	75.3
13MB–180_195		0.332	3.6	0.0427	2.4	0.68	244	269.8	6.4	291.1	9.1	466.4	58.5
13MB–180_170		0.3018	2.8	0.043	2	0.72	298	271.3	5.4	267.8	6.7	238.3	45.7
13MB–180_200		0.3657	3.6	0.043	3	0.82	356	271.4	7.9	316.5	9.8	664.1	44.1
13MB–180_150		0.3139	3.3	0.043	2.4	0.72	279	271.7	6.3	277.2	8	325.2	52.2
13MB–180_188		0.3078	2.8	0.0432	2.2	0.77	407	272.9	5.9	272.5	6.8	270.1	41.4
13MB–180_87		0.3067	3.4	0.0433	2.7	0.79	279	273.1	7.2	271.6	8.1	260.1	47.9
13MB–180_106		0.2983	5.6	0.0434	3	0.54	166	274.1	8.1	265	13	186.2	108.8
13MB–180_168		0.3434	3	0.0439	2.2	0.74	216	277.2	6	299.7	7.8	480.3	44.6
13MB–180_176		0.3809	3.4	0.0439	1.9	0.55	149	277.3	5.1	327.7	9.6	704.3	61.4
13MB–180_39		0.3046	4.4	0.044	2.4	0.54	113	277.8	6.4	270	10.4	203.6	85.4
13MB–180_71		0.3728	3.5	0.0443	2.2	0.64	262	279.3	6.1	321.7	9.5	642.8	57
13MB–180_38		0.3213	3	0.0445	2	0.65	118	280.7	5.4	282.9	7.4	301.8	51.6
13MB–180_133		0.3226	4	0.0447	2.9	0.73	169	281.7	8.1	283.9	9.9	303	61.9
13MB–180_109		0.3219	3.5	0.0447	2.7	0.77	261	282	7.4	283.4	8.6	295.7	50.6
13MB–180_112		0.2565	3.8	0.0453	2.5	0.66	172	285.7	6.9	231.8	7.8	NA	NA
13MB–180_148		0.2723	6.6	0.0458	3	0.45	87	288.8	8.3	244.6	14.3	NA	NA
13MB–180_192		0.4101	4.2	0.0458	2.9	0.68	72	289	8.1	348.9	12.5	771.2	65.5
13MB–180_135		0.4124	6.7	0.0466	2.7	0.41	34	293.8	7.9	350.6	19.7	747.4	128.3
13MB–180_167		0.6699	3.5	0.084	2.6	0.74	121	520.1	12.8	520.7	14.1	523.9	50.8
13MB–180_201		0.8097	3.4	0.0983	2.5	0.75	156	604.3	14.5	602.3	15.3	595.7	48
13MB–180_78		11,676	2.3	0.1206	1.7	0.73	2370	734	11.7	785.5	12.5	935.6	31.9
13MB–180_119		16,092	2.7	0.1647	1.9	0.7	110	982.9	17	973.8	16.7	954.3	39.1
13MB–180_3		14,342	2.7	0.1467	2.2	0.8	426	882.3	18.2	903.3	16.4	955.9	33.3
13MB–180_40		15,209	2.8	0.1541	2.5	0.88	420	923.9	21.4	938.8	17.3	975	27.4

**Table 5.** Zircon U–Pb data of the sample 13MB–180 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
13MB–180_162	17,064	3.6	0.172	2.4	0.67	63	1023.2	22.4	1010.9	22.8	985.5	54
13MB–180_129	15,939	2.5	0.1589	2.1	0.82	682	950.4	18.4	967.8	15.9	1008.4	29.7
13MB–180_108	15,958	2.9	0.1588	2.5	0.84	147	950.1	21.7	968.6	18.3	1011.6	32.3
13MB–180_215	17,309	3.1	0.1721	2.7	0.87	85	1023.9	25.7	1020.1	20.1	1012.7	31.5
13MB–180_211	17,635	2.6	0.1744	2.2	0.85	197	1036.2	20.8	1032.1	16.6	1024.4	27.4
13MB–180_23	17,518	3	0.1715	2.5	0.85	181	1020.1	24	1027.8	19.4	1045.2	31.7
13MB–180_122	15,800	2.8	0.1545	2.3	0.8	493	926.1	19.4	962.4	17.4	1047	33.7
13MB–180_15	18,344	2.8	0.1794	2.3	0.84	127	1063.5	22.8	1057.9	18.1	1047.2	29.9
13MB–180_186	16,708	3.3	0.1629	2.9	0.86	445	973	26	997.5	21.2	1052.6	34.2
13MB–180_102	16,701	2.7	0.1628	2.3	0.87	210	972.5	21.1	997.2	17.2	1053	27.4
13MB–180_74	16,763	2.6	0.1634	1.9	0.72	218	975.5	17	999.6	16.6	1053.7	36.3
13MB–180_76	14,549	3.3	0.1413	2.5	0.77	96	852.1	20	911.9	19.6	1060.5	41.9
13MB–180_27	17,115	3	0.1653	2.6	0.85	266	986	23.4	1012.8	19.2	1072.3	31.5
13MB–180_22	17,020	2.8	0.164	2.3	0.82	161	979.2	21.2	1009.3	18.1	1076.1	32.5
13MB–180_182	17,281	2.6	0.165	2.1	0.84	682	984.3	19.6	1019.1	16.4	1095.3	27.8
13MB–180_85	14,596	2.4	0.1392	1.9	0.79	1460	840.3	15	913.9	14.6	1096.8	29.9
13MB–180_113	17,204	3.6	0.1638	2.4	0.68	19	977.9	22	1016.2	23	1100.4	52.5
13MB–180_93	19,802	3	0.188	2.5	0.85	333	1110.6	26	1108.8	20.2	1106	31.2
13MB–180_86	18,186	2.4	0.1725	1.8	0.78	1109	1025.9	17.5	1052.2	15.6	1108	30
13MB–180_8	19,974	3.9	0.1878	2.9	0.75	52	1109.4	29.9	1114.6	26.5	1125.8	51.6
13MB–180_99	19,840	3.1	0.1863	2.6	0.85	245	1101.2	26.8	1110.1	21	1128.4	32.6
13MB–180_13	19,265	3.4	0.1804	2.8	0.83	193	1069.3	27.8	1090.3	22.7	1133.4	37.5
13MB–180_14	20,555	3.1	0.1919	2.6	0.85	321	1131.9	27.4	1134.1	21.3	1139.3	32.9
13MB–180_98	18,597	3.2	0.1729	2.7	0.86	101	1028.1	26	1066.9	20.9	1147.9	31.6
13MB–180_4	19,403	2.8	0.18	2.3	0.82	626	1067.2	22.9	1095.1	18.9	1151.9	31.8
13MB–180_69	20,534	3.1	0.1903	2.5	0.82	142	1123.2	26	1133.4	21.1	1153.9	35.5
13MB–180_214	18,567	6.9	0.1718	2	0.3	37	1021.9	19.3	1065.8	45.6	1157.6	131
13MB–180_146	21,128	3.1	0.1942	2.6	0.86	297	1144.1	27.7	1153	21.2	1170.6	31.1
13MB–180_2	21,022	3.1	0.1928	2.5	0.81	111	1136.6	26.3	1149.5	21.4	1174.8	36.1
13MB–180_7	19,399	2.7	0.1778	2.1	0.77	311	1055.1	20.3	1095	18.1	1176	34.1
13MB–180_178	20,393	3.1	0.1858	2.7	0.86	154	1098.7	26.9	1128.7	21	1187.9	30.7
13MB–180_180	21,743	3.1	0.196	2.6	0.83	107	1153.9	27.4	1172.8	21.7	1208.8	33.8
13MB–180_198	21,592	2.8	0.1928	2.3	0.82	184	1136.3	24	1168	19.5	1228	31.4
13MB–180_83	20,132	3	0.1786	2.6	0.89	157	1059.1	25.8	1120	20.2	1240.8	26.8
13MB–180_194	19,552	2.6	0.1734	2.2	0.84	213	1030.6	20.6	1100.2	17.3	1241.5	27.2
13MB–180_24	22,967	2.6	0.2031	2.3	0.86	197	1191.9	24.6	1211.3	18.5	1246.9	25.9
13MB–180_56	20,611	2.9	0.1818	2.5	0.88	401	1076.7	25.2	1136	19.7	1251.9	26.5
13MB–180_107	24,399	3.2	0.2151	2.7	0.86	96	1255.9	30.9	1254.4	22.7	1252.8	31.9
13MB–180_156	25,372	2.6	0.2201	2.1	0.79	146	1282.2	24.3	1282.8	19.2	1284.6	31.3
13MB–180_161	24,816	3.6	0.2151	2.3	0.64	69	1255.8	26.4	1266.7	26.3	1286	54.4
13MB–180_49	25,225	3	0.2162	2.5	0.85	155	1261.6	29.2	1278.5	21.8	1307.9	30.4
13MB–180_1	25,344	2.3	0.2165	1.8	0.76	260	1263.3	20.2	1282	16.9	1314.2	29.1
13MB–180_32	20,348	4.2	0.1721	3.3	0.78	65	1023.7	31	1127.2	28.6	1333.3	50.8

Neogene

Paleogene

**Table 5.** Zircon U–Pb data of the sample 13MB–180 (*continued*).

Sample	Isotopic ratios					U (ppm)	Ages (Ma)					
	Grain	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$		Correlation Error	$^{206}\text{Pb}/^{238}\text{U}$	$\pm 2\text{ s}$	$^{207}\text{Pb}/^{235}\text{U}$	$\pm 2\text{ s}$	$^{206}\text{Pb}/^{207}\text{Pb}$
13MB–180_18	25,239	3	0.2132	2.4	0.81	189	1246	27.7	1278.9	21.9	1335.5	34.2
13MB–180_64	26,342	2.7	0.2181	2.2	0.82	193	1272.1	25.7	1310.2	20	1374	29.8
13MB–180_21	26,506	2.4	0.2155	1.8	0.73	1421	1257.8	20.2	1314.8	17.8	1409.8	31.6
13MB–180_53	29,011	3.4	0.2334	2.7	0.82	114	1352.4	33.5	1382.2	25.4	1429.3	37
13MB–180_125	32,131	3	0.2579	2.4	0.81	76	1479.2	31.7	1460.3	23	1433.8	33.2
13MB–180_132	31,758	3.7	0.2523	3.5	0.93	447	1450.2	45.1	1451.3	28.7	1453.7	25.5
13MB–180_169	32,236	2.9	0.2557	2.4	0.82	163	1467.9	31.4	1462.9	22.5	1456.4	31.2
13MB–180_45	28,311	2.9	0.2238	2.4	0.83	614	1301.7	28.2	1363.8	21.6	1463.3	30.3
13MB–180_12	29,558	3.2	0.2294	2.8	0.89	322	1331.3	33.8	1396.3	23.9	1497.9	27.3
13MB–180_151	31,132	2.9	0.2405	2.6	0.89	506	1389.1	32.7	1436	22.5	1506.9	24.9
13MB–180_16	34,937	2.7	0.2679	2.2	0.81	126	1530.2	29.8	1525.8	21.4	1520.4	30.1
13MB–180_155	35,802	2.9	0.2714	2.5	0.86	160	1548	33.8	1545.2	22.7	1542.1	27.8
13MB–180_57	32,884	2.9	0.2486	2.3	0.81	137	1431.2	29.6	1478.3	22.3	1547.3	31.9
13MB–180_48	35,927	2.9	0.2697	2.3	0.79	43	1539.4	31.7	1547.9	23.3	1560.3	33.6
13MB–180_33	34,243	2.9	0.2558	2.5	0.85	126	1468.5	32.5	1510	22.8	1569.4	28.2
13MB–180_152	35,027	2.9	0.2609	2.5	0.86	212	1494.4	33	1527.8	22.7	1575.2	27.3
13MB–180_6	38,403	2.4	0.2856	2	0.82	125	1619.7	28.4	1601.2	19.6	1577.8	26.2
13MB–180_34	35,542	2.9	0.2638	2.4	0.81	130	1509.1	32.2	1539.4	23.4	1582	32.2
13MB–180_199	34,153	2.9	0.2494	2.5	0.88	443	1435.4	32.6	1507.9	22.5	1612.2	25.1

**Table 6.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample MB–005.

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.85E+05									
Relative error (%):	1.26									
Effective uranium content of monitor (ppm):	50									
Zeta factor and standard error (yr cm <sup>2</sup> ): 142.39 6.48	142.39	6.48								
Size of counter square (cm <sup>2</sup> ):	8.30E-07									
<b>Grain ages in original order</b>										
Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
1	7.00E+06	( 93)	5.27E+05	( 7)	16	69	50	346.6	167.4	869
2	1.10E+07	( 146)	1.13E+06	( 15)	16	147	75	258.7	154.4	471.1
3	9.82E+06	( 163)	1.20E+06	( 20)	20	157	69	217.8	138.3	364.8
4	6.43E+06	( 48)	1.34E+06	( 10)	9	174	108	128.5	65.3	285.1
5	7.23E+06	( 120)	4.82E+05	( 8)	20	63	43	391	198.7	906.7
6	1.46E+07	( 194)	1.73E+06	( 23)	16	225	93	225.5	147.7	362.9
7	8.27E+06	( 206)	1.12E+06	( 28)	30	146	55	197.4	133.8	303.6
8	1.49E+07	( 198)	9.79E+05	( 13)	16	127	69	399.5	233.9	752
9	1.12E+07	( 149)	1.28E+06	( 17)	16	166	80	233.7	143.2	410
10	1.09E+07	( 145)	1.51E+06	( 20)	16	196	87	194.2	122.6	326.5
11	1.45E+07	( 192)	2.48E+06	( 33)	16	323	112	156.7	108.7	234
12	1.04E+07	( 78)	2.54E+06	( 19)	9	331	150	110.7	67	193.8
13	1.12E+07	( 84)	1.20E+06	( 9)	9	157	102	246.7	127.1	554
14	7.59E+06	( 189)	8.03E+05	( 20)	30	104	46	251.9	160.7	419.7
15	2.17E+06	( 36)	1.51E+06	( 25)	20	196	78	39.2	23	682
16	1.55E+07	( 116)	2.01E+06	( 15)	9	261	133	206.4	122	379.4
17	1.12E+07	( 84)	9.37E+05	( 7)	9	122	89	314	150.8	791.9
18	1.27E+07	( 211)	3.19E+06	( 53)	20	415	114	107.9	797	148.7
19	1.20E+07	( 159)	1.05E+06	( 14)	16	137	72	300.6	177.4	557.3
20	2.41E+06	( 32)	2.56E+06	( 34)	16	333	114	25.7	154	429
21	1.03E+07	( 171)	4.82E+05	( 8)	20	63	43	550	283.9	1249
22	1.23E+07	( 163)	1.28E+06	( 17)	16	166	80	255.2	157	446.2
23	7.68E+06	( 102)	1.51E+06	( 20)	16	196	87	137.3	85.2	2341
24	6.16E+06	( 46)	8.03E+05	( 6)	9	104	82	201.9	88.8	575.3
25	1.29E+07	( 96)	6.69E+05	( 5)	9	87	74	490.9	213.9	1474.3
26	1.07E+07	( 80)	9.37E+05	( 7)	9	122	89	299.4	143.4	7574
27	7.91E+06	( 105)	1.58E+06	( 21)	16	206	89	134.6	84.5	226.5
28	1.36E+06	( 18)	1.20E+06	( 16)	16	157	77	307	148	64.3
29	1.46E+07	( 109)	1.34E+06	( 10)	9	174	108	287.6	154.3	610.4
30	1.20E+06	( 16)	1.28E+06	( 17)	16	166	80	257	122	541
31	1.14E+07	( 151)	1.28E+06	( 17)	16	166	80	236.7	145.2	415.1
32	8.66E+06	( 115)	1.88E+06	( 25)	16	245	97	124.1	80.6	199.7
33	9.16E+06	( 152)	2.77E+06	( 46)	20	360	106	89.6	64.3	127.6
34	8.43E+06	( 112)	1.20E+06	( 16)	16	157	77	187.3	112	338.1

**Table 6.** Zircon fission-track grain age data: New Parameters-Zeta Method. Sample MB-005 (*continued*).

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.85E+05
Relative error (%):	1.27
Effective uranium content of monitor (ppm):	50
Zeta factor and standard error (yr cm <sup>2</sup> ): 142.39 6.48	142.39 6.48
Size of counter square (cm <sup>2</sup> ):	8.30E-07

Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s		Grain Age (Ma)		
								Age	--95% CI--	
35	8.30E+06	(62)	1.87E+06	-14	9	244	128	118.9	66.7	230.2
36	6.96E+06	( 52)	1.07E+06	( 8)	9	139	96	172.4	83.3	419.5
37	5.09E+06	( 38)	1.20E+06	( 9)	9	157	102	112.9	54.6	266.1
38	4.95E+06	( 37)	5.35E+05	( 4)	9	70	66	239.7	90.2	910
39	9.19E+06	( 122)	1.13E+06	( 15)	16	147	75	216.6	128.3	397.3
40	7.19E+06	( 179)	7.63E+05	( 19)	30	99	45	250.7	158.1	424
41	7.98E+06	( 106)	1.13E+06	( 15)	16	147	75	188.7	111	348.1
42	4.82E+05	( 16)	1.05E+06	( 35)	40	137	46	12.6	6.5	23.2
43	8.96E+06	( 119)	1.51E+06	( 20)	16	196	87	159.6	99.9	270.4
44	4.86E+06	( 121)	1.49E+06	( 37)	30	193	63	88.5	61.1	131.8
45	5.24E+06	( 87)	6.02E+05	( 10)	20	78	48	230.3	122.1	494.4
46	3.73E+06	( 93)	8.84E+05	( 22)	30	115	49	113.9	71.6	190.6
47	7.90E+06	( 59)	1.87E+06	( 14)	9	244	128	113.2	63.2	219.9
48	8.06E+06	( 107)	8.28E+05	( 11)	16	108	64	257.3	141.2	527
49	3.46E+06	( 46)	9.04E+05	( 12)	16	118	67	103	54.4	213.9
50	3.86E+06	( 64)	1.14E+06	( 19)	20	149	68	90.9	54.2	160.9
51	4.82E+05	( 8)	6.02E+05	( 10)	20	78	48	21.9	7.5	61.3
52	4.82E+06	( 36)	1.34E+06	( 10)	9	174	108	96.6	47.7	218.8
53	7.76E+06	( 58)	8.03E+05	( 6)	9	105	82	253.1	113.3	709.6
54	6.16E+06	( 46)	1.07E+06	( 8)	9	139	96	152.8	73	374.8
55	2.71E+06	( 27)	1.41E+06	( 14)	12	183	96	52.2	26.6	108
56	3.21E+06	( 24)	8.03E+05	( 6)	9	105	82	106.3	43.4	319.3
57	8.13E+06	( 108)	1.66E+06	( 22)	16	216	91	132.1	83.7	219.5
58	8.06E+06	( 107)	9.04E+05	( 12)	16	118	67	236.5	132.5	469.4
59	8.03E+05	( 20)	2.53E+06	( 63)	30	329	83	8.7	5	14.5
60	5.88E+06	( 122)	6.75E+05	( 14)	25	88	46	231.6	135.2	434.1
61	6.55E+06	( 87)	9.79E+05	( 13)	16	127	69	178.6	100.8	348
62	8.43E+05	( 14)	1.45E+06	( 24)	20	188	76	16	7.6	32.1
63	6.02E+05	( 8)	1.13E+06	( 15)	16	147	75	14.7	5.4	36.6
64	1.81E+05	( 9)	5.62E+05	( 28)	60	73	27	8.9	3.6	19.1
65	6.56E+06	( 49)	8.03E+05	( 6)	9	105	82	214.5	94.8	608.6
66	6.56E+06	( 49)	5.35E+05	( 4)	9	70	66	315.3	121.6	1166.4
67	2.17E+06	( 36)	9.64E+05	( 16)	20	125	62	60.9	33.2	117.7

**Table 6.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample MB–005 (*continued*).

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.85E+05
Relative error (%):	1.28
Effective uranium content of monitor (ppm):	50
Zeta factor and standard error (yr cm <sup>2</sup> ): 142.39 6.48	142.39 6.48
Size of counter square (cm <sup>2</sup> ):	8.30E-07

Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
68	5.09E+06	(38)	6.69E+05	(5)	9	87	74	198.8	81	642.8
69	1.02E+07	(135)	1.96E+06	(26)	16	255	99	139.6	92	221.3
70	1.04E+07	(78)	1.87E+06	(14)	9	244	128	149	84.9	284.9
71	1.06E+07	(176)	2.53E+06	(42)	20	330	102	113.1	80.8	162.4
72	7.08E+06	(94)	1.20E+06	(16)	16	157	77	157.2	93.1	285.9
73	7.08E+06	(94)	2.48E+06	(33)	16	324	112	77.1	51.6	118.5
74	3.61E+06	(60)	1.02E+06	(17)	20	133	64	95	55.2	174
75	1.57E+06	(26)	3.49E+06	(58)	20	455	120	12.3	7.4	19.7
76	9.04E+06	(150)	1.08E+06	(18)	20	141	66	221.9	137.6	383.2
77	9.10E+06	(68)	2.41E+06	(18)	9	314	146	101.7	60.3	181.9
78	6.75E+06	(140)	1.40E+06	(29)	25	182	67	129.9	87.2	201.1
79	4.82E+06	(48)	4.02E+05	(4)	12	52	49	308.6	118.9	1144.2
80	6.20E+06	(103)	1.08E+06	(18)	20	141	66	153.3	93.4	268.6
81	9.40E+06	(156)	1.63E+06	(27)	20	212	81	155.1	103.5	242.7
82	1.05E+07	(174)	8.43E+05	(14)	20	110	58	327.4	193.9	605
83	9.64E+06	(72)	1.61E+06	(12)	9	209	119	160	87.6	323.7
84	9.94E+06	(132)	1.66E+06	(22)	16	216	91	160.8	102.9	265.1
85	6.40E+06	(85)	7.53E+05	(10)	16	98	61	224.9	119.1	483.2
86	7.87E+06	(196)	1.08E+06	(27)	30	141	54	194.3	130.7	301.6
87	4.10E+06	(68)	6.02E+05	(10)	20	79	49	180.6	94.3	392.7
88	7.45E+06	(99)	2.18E+06	(29)	16	285	105	92.2	60.8	144.8
89	4.89E+06	(65)	1.51E+06	(20)	16	196	87	87.7	52.8	153
90	8.13E+06	(135)	1.45E+06	(24)	20	188	76	151	98.2	243.6
91	5.20E+06	(69)	8.28E+05	(11)	16	108	64	167	89.4	349.6
92	9.91E+06	(74)	1.07E+06	(8)	9	140	96	243.5	120.6	580.2
93	7.23E+06	(54)	4.02E+05	(3)	9	52	56	452	157.5	2083.1
94	6.63E+06	(88)	3.01E+05	(4)	16	39	37	554.2	222.5	1933.6
95	7.50E+06	(56)	4.02E+05	(3)	9	52	56	468.1	163.6	2146.7
96	7.63E+06	(57)	2.01E+06	(15)	9	262	133	102.1	57.7	194.5
97	5.20E+06	(69)	1.66E+06	(22)	16	216	91	84.7	52.1	143.9
98	8.03E+06	(80)	2.21E+06	(22)	12	288	122	98	61	165.2
99	5.87E+06	(78)	9.04E+05	(12)	16	118	67	173.2	95.3	348.8
100	1.43E+06	(19)	3.09E+06	(41)	16	402	125	12.7	6.9	22.3
Pooled	6.72E+06	(9231)	1.30E+06	(1792)	1656	170	9	139.5	125.6	154.8

**Table 6.** Zircon fission-track grain age data: New Parameters-Zeta Method. Sample MB-005 (continued).

Chi<sup>2</sup> Probability (%): 0.0

Pooled age W/	68% Conf. interval (Ma):	139.5,	132.2	--	147.1	( -7.2	+7.6)
	95% Conf. interval (Ma):		125.6	--	154.8	(-13.8	+15.3)
Central age W/	68% Conf. interval (Ma):	112.8,	100.9	--	126.2	(-12.0	+13.4)
	95% Conf. interval (Ma):		90.6	--	140.5	(-22.3	+27.7)
	Age dispersion (%):	99.4					

*Fit option: Best-fit peaks using the binomial model of Galbraith and Green*

**Initial guess for model parameters (number of peaks to fit = 3)**

Peak #.	Peak Age	Theta	Fraction(%)	Count
1	12.7	0.317	4	3.99
2	108.4	0.8	18.5	18.46
3	139.6	0.838	21.4	21.4
Total range for grain ages:				8.8 to 530.1 Ma
Number of active grains (Num. used for fit):				100
Number of removed grains:				0
Degrees of freedom for fit:				95
Average of the SE(Z)'s for the grains:				0.31
Estimated width of peaks in PD plot in Z units:				0.37

**Parameters for best-fit peaks**

\* Standard error for peak age includes group error

\* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1	15.5	-1.9	2.1	-3.5	4.5	0.35	11.3
2	109.9	-9.5	10.4	-17.9	21.3	0.28	33.5
3	229.1	-16.7	18	-31.7	36.7	0.34	55.2
Log-likelihood for best fit:				-358,123			
Chi-squared value for best fit:				95,109			
Reduced chi-squared value:				1,001			
Probability for F test:				0%			
Condition number for COVAR matrix:				17.65			
Number of iterations:				10			



**Table 7.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample MB–006.

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.83E+05
Relative error (%):	1.31
Effective uranium content of monitor (ppm):	50.00
Zeta factor and standard error (yr cm <sup>2</sup> ):	142.39 6.48
Size of counter square (cm <sup>2</sup> ):	8.30E-07

Grain ages in original order										
Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s		Grain Age (Ma)		
								Age	--95% CI--	
1	3.61E+06	(27)	2.68E+05	(2)	9	35	44	334.3	91.7	2592.2
2	7.98E+06	(106)	4.52E+05	(6)	16	59	46	452.8	210.3	1218.3
3	6.85E+06	(91)	6.02E+05	(8)	16	79	54	297.1	148.9	700
4	6.83E+06	(51)	2.28E+06	(17)	9	297	142	80.7	46.2	149.2
5	3.01E+06	(50)	3.73E+06	(62)	20	488	124	21.9	14.8	32.3
6	7.83E+06	(39)	1.20E+06	(6)	6	157	124	170.8	73.9	492.5
7	7.23E+06	(54)	2.01E+06	(15)	9	262	134	96.5	54.3	184.5
8	2.53E+06	(63)	2.81E+05	(7)	30	37	27	235.8	111.2	605.3
9	9.71E+06	(129)	1.28E+06	(17)	16	167	80	201.7	122.9	355.9
10	1.04E+07	(78)	4.95E+06	(37)	9	647	212	57	38.2	86.8
11	8.84E+06	(66)	2.41E+06	(18)	9	315	147	98.4	58.3	176.4
12	1.45E+07	(108)	1.74E+06	(13)	9	227	124	220	125.5	424.5
13	4.55E+06	(34)	1.20E+06	(9)	9	157	102	100.7	48.1	239.5
14	8.92E+06	(74)	2.05E+06	(17)	10	268	128	116.6	68.9	210.9
15	5.35E+06	(40)	2.41E+06	(18)	9	315	147	59.9	33.8	111.3
16	7.35E+06	(61)	8.43E+05	(7)	10	110	81	228.4	107.5	587.7
17	3.86E+06	(64)	7.23E+05	(12)	20	94	54	142.1	77.2	289.2
18	9.37E+06	(70)	1.20E+06	(9)	9	157	102	205.2	104.5	465.4
19	5.22E+06	(39)	9.37E+05	(7)	9	122	90	147.2	66.7	390.1
20	8.43E+06	(63)	1.07E+06	(8)	9	140	96	207.3	101.6	498.7
21	4.28E+06	(71)	1.08E+06	(18)	20	142	66	105.8	63	188.8
22	5.18E+06	(129)	7.63E+05	(19)	30	100	45	181	112.6	309.7
23	6.83E+06	(51)	1.34E+06	(10)	9	175	108	135.6	69.3	299.9
24	4.54E+06	(113)	4.42E+05	(11)	30	58	34	270.3	148.7	552.3
25	9.40E+06	(156)	1.39E+06	(23)	20	181	75	181	117.6	293.4
26	5.95E+06	(79)	3.54E+06	(47)	16	463	135	45.5	31.4	66.9
27	5.49E+06	(41)	9.37E+05	(7)	9	122	90	154.6	70.4	408.3
28	5.35E+06	(40)	1.47E+06	(11)	9	192	114	97.2	49.6	210.6
29	5.57E+06	(74)	2.71E+06	(36)	16	354	118	55.6	37	85.4
30	5.09E+06	(38)	3.21E+06	(24)	9	420	170	42.9	25.1	74.8
31	5.30E+06	(44)	1.33E+06	(11)	10	173	102	106.8	55.1	229.8
32	8.30E+06	(62)	2.28E+06	(17)	9	297	142	97.9	57	178.8
33	8.13E+06	(81)	4.52E+06	(45)	12	591	176	48.8	33.5	71.9
34	5.20E+06	(69)	8.28E+05	(11)	16	108	64	166.5	89.1	348.6
35	6.71E+06	(167)	1.20E+06	(30)	30	157	57	149.2	101.4	227.8
36	6.63E+06	(110)	6.02E+05	(10)	20	79	49	288.6	154.9	612.4

**Table 7.** Zircon fission-track grain age data: New Parameters-Zeta Method. Sample MB-006 (*continued*).

Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
37	8.70E+06	(65)	1.20E+06	(9)	9	157	102	190.8	96.7	434.5
38	3.48E+06	(26)	8.03E+05	(6)	9	105	82	114.6	47.3	341.5
39	1.00E+07	(75)	1.20E+06	(9)	9	157	102	219.6	112.3	496.1
40	6.81E+06	(113)	8.43E+05	(14)	20	110	58	214	124.4	402.3
41	4.67E+06	(62)	2.48E+06	(33)	16	325	113	50.8	32.9	80.2
42	4.52E+06	(60)	1.20E+06	(16)	16	157	78	100.6	57.8	187.3
43	1.66E+06	(22)	7.53E+05	(10)	16	98	61	59.1	27.2	140.2
44	9.50E+06	(71)	5.22E+06	(39)	9	682	218	49.3	33	74.9
45	1.45E+06	(24)	1.45E+06	(24)	20	189	77	27.2	14.8	49.9
46	6.40E+06	(85)	7.53E+05	(10)	16	98	61	224.2	118.7	481.8
47	7.03E+06	(35)	1.00E+06	(5)	6	131	112	182.9	73.9	595.2
48	5.80E+06	(77)	3.46E+06	(46)	16	453	133	45.4	31.1	66.9
49	6.43E+06	(48)	9.37E+05	(7)	9	122	90	180.6	83.4	471.7
50	6.25E+06	(83)	1.20E+06	(16)	16	157	78	138.6	81.5	253.6
51	5.54E+06	(138)	8.43E+05	(21)	30	110	48	175.4	111.5	291.8
52	4.29E+06	(57)	1.88E+06	(25)	16	246	98	61.6	38	103
53	8.36E+06	(111)	1.96E+06	(26)	16	256	100	114.7	74.8	183.2
54	6.16E+06	(46)	1.74E+06	(13)	9	227	124	94.8	51	191.6
55	7.10E+06	(53)	9.37E+05	(7)	9	122	90	199	92.7	516.5
56	2.53E+06	(42)	3.55E+06	(59)	20	465	121	19.4	12.7	29.2
57	4.74E+06	(63)	2.26E+05	(3)	16	30	32	522.7	184.2	2358.7
58	2.83E+06	(47)	3.01E+05	(5)	20	39	34	244.1	101.4	776.3
59	8.57E+06	(64)	1.61E+06	(12)	9	210	119	142.1	77.2	289.2
60	5.86E+06	(146)	7.23E+05	(18)	30	94	44	215.5	133.4	372.4

**Table 7.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample MB–006 (*continued*).

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.83E+05
Relative error (%):	1.3
Effective uranium content of monitor (ppm):	50.00
Zeta factor and standard error (yr cm <sup>2</sup> ):	142.39 6.48
Size of counter square (cm <sup>2</sup> ):	8.30E-07

Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
61	1.07E+07	(80)	3.35E+06	(25)	9	437	173	86.3	54.8	141.3
62	9.64E+06	(72)	1.87E+06	(14)	9	245	129	137.4	77.9	263.9
63	1.10E+07	(146)	9.79E+05	(13)	16	128	70	295.9	171.2	563.9
64	9.24E+06	(69)	2.01E+06	(15)	9	262	133	123.2	70.6	232
65	1.69E+07	(126)	1.74E+06	(13)	9	227	124	256.2	147.3	491.2
66	1.26E+07	(94)	1.87E+06	(14)	9	245	129	178.8	103	338.8
67	9.91E+06	(74)	2.95E+06	(22)	9	384	162	90.6	56	153.4
68	1.00E+07	(75)	3.75E+06	(28)	9	489	184	72.4	46.5	116.2
69	6.93E+06	(92)	5.50E+06	(73)	16	718	168	34.3	24.9	47.3
70	8.43E+06	(63)	1.20E+06	(9)	9	157	102	185.3	93.7	422.6
71	1.26E+07	(167)	3.61E+06	(48)	16	472	136	94	68	132.4
72	1.22E+07	(91)	1.34E+06	(10)	9	175	108	240	127.6	514.1
73	9.37E+06	(70)	6.69E+05	(5)	9	87	75	360.4	154.1	1111.1
74	6.96E+06	(52)	1.87E+06	(14)	9	245	129	99.6	55	195
75	1.20E+07	(90)	3.08E+06	(23)	9	402	166	105.3	66.5	174.5
76	1.04E+07	(78)	2.01E+06	(15)	9	262	133	139	80.4	260.2
77	1.57E+07	(208)	2.33E+06	(31)	16	305	109	179.6	123.7	270.7
78	1.15E+07	(153)	1.58E+06	(21)	16	206	89	194.4	124.1	322.2
79	8.28E+06	(110)	1.96E+06	(26)	16	256	100	113.8	74.2	181.9
80	1.17E+07	(156)	1.66E+06	(22)	16	216	91	189.3	122	310.1
81	1.12E+07	(84)	1.87E+06	(14)	9	245	129	160	91.6	304.9
82	9.64E+06	(72)	3.61E+06	(27)	9	472	180	72	45.9	116.8
83	8.57E+06	(64)	4.02E+06	(30)	9	524	190	57.7	37	92.4
84	1.20E+07	(160)	2.03E+06	(27)	16	265	101	158.8	106	248.2
85	1.24E+07	(93)	3.08E+06	(23)	9	402	166	108.7	68.8	180
86	9.46E+06	(157)	1.39E+06	(23)	20	181	75	182.4	118.5	295.6
87	1.45E+07	(193)	9.79E+05	(13)	16	128	70	388.2	227	731.4
88	1.06E+07	(79)	1.61E+06	(12)	9	210	119	175.1	96.4	352.5
89	9.71E+06	(129)	1.51E+06	(20)	16	197	87	172.3	108.3	291
90	8.84E+06	(66)	2.14E+06	(16)	9	280	138	110.7	64	205
91	1.29E+07	(64)	1.61E+06	(8)	6	210	144	210.8	103.4	506.7
92	1.34E+07	(100)	2.28E+06	(17)	9	297	142	157.2	94.6	280.2
93	8.17E+06	(61)	1.61E+06	(12)	9	210	119	135.7	73.4	277
94	7.63E+06	(76)	2.71E+06	(27)	12	354	135	76	48.7	122.8
95	1.37E+07	(102)	4.55E+06	(34)	9	594	203	81	54.7	123.3
96	2.56E+06	(34)	2.94E+06	(39)	16	383	122	23.7	14.5	38.6
97	6.43E+06	(48)	6.69E+05	(5)	9	87	75	249.5	103.8	792.2

**Table 7.** Zircon fission-track grain age data: New Parameters-Zeta Method. Sample MB-006 (continued).

Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
98	7.83E+06	(104)	1.13E+06	(15)	16	147	75	184.6	108.5	340.9
99	9.77E+06	(73)	1.20E+06	(9)	9	157	102	214.1	109.3	484.5
100	8.43E+06	(70)	1.33E+06	(11)	10	173	102	169.1	90.6	353.8
Pooled	7.40E+06	-8140	1.71E+06	-1880	1326	223	12	116.8	105.2	129.7

Chi<sup>2</sup> Probability (%): 0.0

Pooled age W/  
 68% Conf. interval (Ma): 116.8, 110.7 -- 123.2 (-6.1 +6.4)  
 95% Conf. interval (Ma): 105.2 -- 129.7 (-11.6 +12.9)

Central age W/  
 68% Conf. interval (Ma): 114.3, 105 -- 124.5 (-9.3 +10.1)  
 95% Conf. interval (Ma): 96.7 -- 135 (-17.6 +20.7)  
 Age dispersion (%): 66.6

*Fit option: Best-fit peaks using the binomial model of Galbraith and Green*

**Initial guess for model parameters (number of peaks to fit = 4)**

Peak #.	Peak Age	Theta	Fraction(%)	Count
1	19.4	0.417	2.5	2.48
2	21.7	0.444	3.4	3.36
3	33.7	0.553	2.5	2.45
4	116.8	0.812	19.7	19.68

Total range for grain ages: 19.4 to 476.0 Ma  
 Number of active grains (Num. used for fit): 100  
 Number of removed grains: 0  
 Degrees of freedom for fit: 93  
 Average of the SE(Z)'s for the grains: 0.3  
 Estimated width of peaks in PD plot in Z units: 0.36

**Parameters for best-fit peaks**

\* Standard error for peak age includes group error

\* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count		
1	22.5	-3.2	3.8	-5.9	8.0	0.25	3.8	2.1	3.8
2	49.2	-4.4	4.8	-8.2	9.9	0.24	12.5	3.9	12.5
3	98.6	-8.7	9.5	-16.3	19.6	0.3	26.2	6.4	26.2
4	194.1	-12.7	13.5	-24	27.4	0.35	57.5	6.7	57.5

Log-likelihood for best fit: -343,506

Chi-squared value for best fit: 95,782

Reduced chi-squared value: 1,030

Probability for F test: 0%

Condition number for COVAR matrix: 59.46

Number of iterations: 31

**Table 8.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample 13MB–180.

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.82E+05
Relative error (%):	1.33
Effective uranium content of monitor (ppm):	50
Zeta factor and standard error (yr cm <sup>2</sup> ):	142.39 6.48
Size of counter square (cm <sup>2</sup> ):	8.30E-07

Grain ages in original order										
Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
1	8.70E+06	(65)	2.68E+06	(20)	9	350	155	87.3	52.6	152.4
2	7.63E+06	(76)	1.61E+06	(16)	12	210	104	126.9	74.2	233.2
3	1.16E+07	(58)	3.21E+06	(16)	6	421	207	97.1	55.6	181.3
4	5.35E+06	(71)	1.96E+06	(26)	16	256	100	73.5	46.6	120.3
5	7.36E+06	(55)	2.81E+06	(21)	9	368	159	70.5	42.2	122.9
6	8.70E+06	(65)	4.82E+06	(36)	9	631	209	48.8	32.1	75.6
7	1.08E+07	(144)	3.84E+06	(51)	16	503	141	76.2	55.1	107.1
8	1.20E+07	(90)	6.29E+06	(47)	9	824	240	51.8	36.1	75.4
9	8.43E+06	(63)	4.28E+06	(32)	9	561	197	53.2	34.3	84.2
10	8.80E+06	(146)	2.95E+06	(49)	20	386	110	80.4	57.9	113.5
11	1.24E+07	(62)	2.41E+06	(12)	6	315	179	137.5	74.5	280.5
12	1.34E+07	(178)	1.58E+06	(21)	16	207	89	225	144.5	371
13	1.19E+07	(89)	3.48E+06	(26)	9	456	177	92	59.2	148.6
14	1.03E+07	(77)	3.61E+06	(27)	9	473	181	76.8	49.2	124
15	9.50E+06	(71)	7.76E+06	(58)	9	1,016	267	33.2	23.1	47.8
16	6.93E+06	(69)	3.21E+06	(32)	12	421	148	58.2	37.9	91.6
17	1.03E+07	(77)	4.02E+06	(30)	9	526	191	69.2	45	109.4
18	8.63E+06	(86)	2.41E+06	(24)	12	315	128	96.3	61	158.4
19	9.50E+06	(71)	2.68E+06	(20)	9	350	155	95.3	57.8	165.4
20	1.21E+07	(161)	1.20E+06	(16)	16	158	78	265.6	161.3	472.8
21	1.17E+07	(97)	5.66E+06	(47)	10	741	216	55.8	39.1	80.9
22	9.94E+06	(99)	3.61E+06	(36)	12	473	157	74.1	50.4	111.9
23	6.56E+06	(49)	1.20E+06	(9)	9	158	102	144.3	71.5	334.2
24	1.11E+07	(148)	2.79E+06	(37)	16	365	119	107.5	74.9	158.7
25	9.44E+06	(94)	3.31E+06	(33)	12	434	150	76.8	51.4	118
26	9.84E+06	(49)	2.41E+06	(12)	6	315	179	109	57.9	225.5
27	1.17E+07	(156)	2.56E+06	(34)	16	335	114	123.1	85	184.1
28	1.20E+07	(90)	5.49E+06	(41)	9	718	224	59.3	40.7	88.1
29	1.29E+07	(96)	5.49E+06	(41)	9	718	224	63.2	43.6	93.6
30	9.91E+06	(74)	2.95E+06	(22)	9	385	163	90.4	55.9	153
31	8.70E+06	(65)	2.41E+06	(18)	9	315	147	96.8	57.3	173.7
32	1.30E+07	(97)	4.02E+06	(30)	9	526	191	87	57.6	135.9
33	8.70E+06	(65)	2.41E+06	(18)	9	315	147	96.8	57.3	173.7
34	9.50E+06	(71)	3.61E+06	(27)	9	473	181	70.9	45.1	115
35	8.17E+06	(61)	1.87E+06	(14)	9	245	129	116.4	65.1	225.6
36	1.21E+07	(121)	3.61E+06	(36)	12	473	157	90.5	62.2	135.3

**Table 8.** Zircon fission-track grain age data: New Parameters-Zeta Method. Sample 13MB-18o (*continued*).

Grain ages in original order										
Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s		Grain Age (Ma)		
								Age	--95% CI--	
37	8.13E+06	(135)	2.47E+06	(41)	20	323	101	88.7	62.3	129.1
38	8.84E+06	(66)	2.54E+06	(19)	9	333	151	93.2	55.7	164.7
39	1.04E+07	(78)	3.88E+06	(29)	9	508	188	72.5	47	115.3
40	9.16E+06	(228)	1.85E+06	(46)	30	242	71	133	97	186.8
41	7.23E+06	(54)	2.68E+06	(20)	9	350	155	72.6	43.1	128.3
42	1.04E+07	(52)	1.41E+06	(7)	6	184	134	195.1	90.7	507
43	9.04E+06	(120)	2.64E+06	(35)	16	345	116	92.3	63.1	138.7
44	1.03E+07	(77)	4.82E+06	(36)	9	631	209	57.8	38.5	88.5
45	8.30E+06	(62)	3.88E+06	(29)	9	508	188	57.7	36.7	93.1
46	9.56E+06	(127)	2.11E+06	(28)	16	276	104	121.6	80.8	190.3
47	8.70E+06	(65)	2.81E+06	(21)	9	368	159	83.2	50.6	143.5
48	1.57E+07	(117)	1.20E+06	(9)	9	158	102	338.7	177.4	747.7
49	9.44E+06	(94)	2.01E+06	(20)	12	263	116	125.8	77.7	215.3
50	1.00E+07	(75)	1.07E+06	(8)	9	140	96	245.7	121.7	585

**Table 8.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample 13MB–18o (*continued*).

Effective track density for fluence monitor (tracks/cm <sup>2</sup> ):	3.82E+05
Relative error (%):	1.35
Effective uranium content of monitor (ppm):	50
Zeta factor and standard error (yr cm <sup>2</sup> ):	142.39 6.48
Size of counter square (cm <sup>2</sup> ):	8.30E-07

Grain no.	RhoS (cm <sup>2</sup> )	(Ns)	RhoI (cm <sup>2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
51	5.20E+06	(69)	1.43E+06	(19)	16	188	85	97.3	58.3	171.4
52	6.43E+06	(48)	1.61E+06	(12)	9	211	119	106.6	56.6	220.9
53	5.22E+06	(39)	2.01E+06	(15)	9	263	134	69.8	37.9	136.5
54	5.87E+06	(78)	1.43E+06	(19)	16	188	85	109.8	66.5	192.2
55	3.92E+06	(65)	1.39E+06	(23)	20	182	75	75.9	46.8	128.2
56	4.74E+06	(63)	2.26E+06	(30)	16	296	108	56.6	36.2	90.7
57	6.63E+06	(55)	1.20E+06	(10)	10	158	98	145.7	74.9	320.7
58	4.89E+06	(65)	1.88E+06	(25)	16	247	98	69.9	43.7	115.9
59	5.12E+06	(68)	6.78E+05	(9)	16	89	58	198.9	101.1	451.8
60	7.11E+06	(59)	5.66E+06	(47)	10	742	216	34	22.8	51
61	9.46E+06	(157)	2.53E+06	(42)	20	332	102	100.4	71.3	144.8
62	6.33E+06	(105)	2.23E+06	(37)	20	292	96	76.4	52.3	114.4
63	8.58E+06	(57)	1.96E+06	(13)	8	257	140	116.9	64	233
64	4.55E+06	(34)	2.01E+06	(15)	9	263	134	60.9	32.5	120.6
65	4.12E+06	(41)	1.91E+06	(19)	12	250	113	58.1	33.1	106.1
66	5.06E+06	(63)	1.12E+06	(14)	15	147	78	120	67.3	232.1
67	6.08E+06	(101)	3.49E+06	(58)	20	458	120	47.1	33.8	66.2
68	7.23E+06	(54)	6.96E+06	(52)	9	913	253	28.1	18.9	42
69	5.72E+06	(95)	1.81E+06	(30)	20	237	86	85.1	56.2	133.1
70	8.07E+06	(134)	2.05E+06	(34)	20	269	92	105.8	72.5	159.1
71	6.83E+06	(51)	1.34E+06	(10)	9	175	108	135.3	69.1	299.1
72	7.76E+06	(58)	2.14E+06	(16)	9	281	138	97	55.5	181
73	9.24E+06	(69)	2.01E+06	(15)	9	263	134	122.7	70.3	231.1
74	5.42E+06	(72)	1.13E+06	(15)	16	148	75	127.9	73.5	240.5
75	2.47E+06	(41)	2.05E+06	(34)	20	269	92	32.6	20.2	53
76	8.70E+06	(65)	2.28E+06	(17)	9	298	143	102.3	59.8	186.4
77	5.09E+06	(38)	1.07E+06	(8)	9	140	96	125.7	59	312.5
78	7.93E+06	(79)	1.91E+06	(19)	12	250	113	111.2	67.4	194.5
79	5.72E+06	(76)	1.88E+06	(25)	16	247	98	81.7	51.7	134.1
80	5.49E+06	(41)	1.20E+06	(9)	9	158	103	120.8	58.9	283.3
81	8.57E+06	(128)	1.47E+06	(22)	18	193	82	155.1	99.1	256
82	6.70E+06	(89)	1.73E+06	(23)	16	227	94	103.7	65.4	172
83	3.75E+06	(28)	1.47E+06	(11)	9	193	114	68.1	33.3	152.1
84	7.23E+06	(96)	1.81E+06	(24)	16	237	96	107.2	68.4	175.4
85	8.51E+06	(113)	3.39E+06	(45)	16	444	132	67.7	47.6	98
86	6.02E+06	(80)	1.96E+06	(26)	16	257	100	82.7	52.8	134.2
87	4.69E+06	(35)	1.74E+06	(13)	9	228	124	72.1	37.6	148.9

**Table 8.** Zircon fission-track grain age data: New Parameters-Zeta Method. Sample 13MB-18o (continued).

Grain no.	RhoS (cm <sup>-2</sup> )	(Ns)	RhoI (cm <sup>-2</sup> )	(Ni)	Squares	U+/-2s	Grain Age (Ma)			
							Age	--95% CI--		
88	3.84E+06	(51)	1.88E+06	(25)	16	247	98	55	33.6	92.7
89	8.70E+06	(65)	1.61E+06	(12)	9	211	119	143.9	78.2	292.6
90	4.73E+06	(157)	1.51E+06	(50)	40	197	56	84.5	61.3	118.7
91	2.71E+06	(90)	5.12E+05	(17)	40	67	32	141.1	84.4	252.8
92	2.68E+06	(20)	9.37E+05	(7)	9	123	90	76	31.4	213.7
93	5.56E+06	(166)	1.91E+06	(57)	36	250	66	78.5	57.9	108
94	6.75E+06	(112)	1.57E+06	(26)	20	205	80	115.4	75.3	184.3
95	2.11E+06	(35)	1.39E+06	(23)	20	182	75	41.1	23.7	72.9
96	6.33E+06	(63)	2.71E+06	(27)	12	355	136	62.8	39.6	102.7
97	4.82E+06	(64)	1.51E+06	(20)	16	197	87	85.8	51.7	150
98	5.82E+06	(58)	2.01E+06	(20)	12	263	116	77.9	46.5	136.9
99	1.53E+06	(38)	1.12E+06	(28)	30	147	55	36.7	22	62.1
100	6.29E+06	(47)	3.08E+06	(23)	9	404	167	55.1	32.9	95.1
Pooled	7.33E+06	(8131)	2.32E+06	(2575)	1337	304	14	85	77	94.5



**Table 8.** Zircon fission–track grain age data: New Parameters–Zeta Method. Sample 13MB–180 (*continued*).

Chi<sup>2</sup> Probability (%): 0.0

Pooled age W/	68% Conf. interval (Ma):	85.3,	81	--	89.9	(-4.3	+4.6)
	95% Conf. interval (Ma):		77	--	94.5	(-8.3	+9.2)
Central age W/	68% Conf. interval (Ma):	84.1,	78.9	--	89.7	(-5.2	+5.5)
	95% Conf. interval (Ma):		74.3	--	95.3	(-9.9	+11.2)
	Age dispersion (%):	36.3					

*Fit option: Best-fit peaks using the binomial model of Galbraith and Green*

Initial guess for model parameters				
Peak #.	Peak Age	Theta	Fraction(%)	Count
1	33.1	0.55	5.5	5.47
2	55	0.67	19.2	19.16
3	85.4	0.76	38.3	38.3
4	104.9	0.795	31.9	31.95
5	327.9	0.925	1.3	1.34

Total range for grain ages:	28.1 to 327.9 Ma
Number of active grains (Num. used for fit):	100
Number of removed grains:	0
Degrees of freedom for fit:	91
Average of the SE(Z)'s for the grains:	0.25
Estimated width of peaks in PD plot in Z units:	0.29

**Parameters for best–fit peaks**

\* Standard error for peak age includes group error

\* Peak width is for PD plot assuming a kernel factor = 0.60

#.	Peak Age(Ma)	68%CI	95%CI	W(Z)	Frac(%)	SE,%	Count
1	33.6	-4	4.5	-7.3	9.4	0.24	5
2	58.9	-8.3	9.6	-15.1	20.3	0.25	15.7
3	83.7	-10.9	12.5	-20	26.2	0.26	41.8
4	108.9	-13.6	15.6	-25.1	32.6	0.28	32.6
5	245.2	-36.8	43.1	-67	91.5	0.34	4.9

Log–likelihood for best fit:	-340,234
Chi–squared value for best fit:	97,050
Reduced chi–squared value:	1,066
Probability for F test:	3%
Condition number for COVAR matrix:	1171.38
Number of iterations:	8