

Integrated Sr isotope variations and global environmental changes through the Late Permian to early Late Triassic

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Table S1 Conodont $^{87}\text{Sr}/^{86}\text{Sr}$ data for the Late Permian to Late Triassic in South China.

No.	Location	Sample No.	Series	Stage	Conodont Zones	Sr (ppm)	Age (Ma)	$^{87}\text{Sr}/^{86}\text{Sr}$	Standard error
1	Guandao	GuandaoII-59	Late Triassic	Carnian	<i>Budurovignathus mungoensis</i>	1667	236.09	0.70790	0.00013
2	Guandao	GuandaoII-57	Late Triassic	Carnian	<i>Budurovignathus mungoensis</i>	1821	236.45	0.70764	0.00018
3	Guandao	GuandaoII-53	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1668	237.49	0.70781	0.00015
4	Guandao	GuandaoII-52	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1798	237.98	0.70777	0.00026
5	Guandao	GuandaoII-51	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1718	238.46	0.70766	0.00020
6	Guandao	GuandaoII-50	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1777	238.95	0.70778	0.00017
7	Guandao	GuandaoII-49	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1708	239.44	0.70752	0.00010
8	Guandao	GuandaoII-48	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1778	239.93	0.70762	0.00009
9	Guandao	GuandaoII-47	Middle Triassic	Ladinian	<i>Budurovignathus mungoensis</i>	1622	240.41	0.70767	0.00015
10	Guandao	GuandaoII-46	Middle Triassic	Ladinian	<i>Budurovignathus hungaricus</i>	1479	240.90	0.70775	0.00013
11	Guandao	GuandaoII-45	Middle Triassic	Ladinian	<i>Budurovignathus hungaricus</i>	1246	241.00	0.70782	0.00019
12	Guandao	GuandaoII-43	Middle Triassic	Ladinian	<i>Budurovignathus hungaricus</i>	1675	241.32	0.70777	0.00015
13	Guandao	GuandaoII-42	Middle Triassic	Ladinian	<i>Budurovignathus hungaricus</i>	1687	241.49	0.70785	0.00017
14	Guandao	GuandaoII-41	Middle Triassic	Ladinian	<i>Budurovignathus hungaricus</i>	1478	241.65	0.70765	0.00012
15	Guandao	GuandaoII-33	Middle Triassic	Anisian	<i>Neogondolella constricta</i>	1709	242.94	0.70794	0.00020
16	Guandao	GuandaoII-32	Middle Triassic	Anisian	<i>Neogondolella constricta</i>	1744	243.10	0.70795	0.00017
17	Guandao	GuandaoII-31	Middle Triassic	Anisian	<i>Neogondolella constricta</i>	1720	243.26	0.70784	0.00012
18	Guandao	GuandaoII-29	Middle Triassic	Anisian	<i>Neogondolella constricta</i>	1727	243.59	0.70789	0.00022
19	Guandao	GuandaoII-27	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1610	243.91	0.70777	0.00009
20	Guandao	GuandaoII-24	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1969	244.39	0.70794	0.00018
21	Qingyan	Qingyan-47	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1928	244.80	0.70804	0.00011
22	Guandao	GuandaoI-53	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1556	244.85	0.70800	0.00016
23	Guandao	GuandaoII-20	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1181	245.04	0.70853	0.00022
24	Qingyan	Qingyan-46	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	2576	245.05	0.70799	0.00003
25	Qingyan	Qingyan-45	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	2385	245.19	0.70825	0.00005
26	Qingyan	Qingyan-44	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	6752	245.34	0.70831	0.00004
27	Qingyan	Qingyan-42	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	5935	245.63	0.70825	0.00011
28	Guandao	GuandaoII-16	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1830	245.69	0.70813	0.00020
29	Qingyan	Qingyan-41	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1776	245.77	0.70835	0.00017
30	Qingyan	Qingyan-40	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	4198	245.92	0.70811	0.00017
31	Guandao	GuandaoI-49	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	2146	246.04	0.70797	0.00011
32	Qingyan	Qingyan-39	Middle Triassic	Anisian	<i>Paragondolella bulgarica</i>	1529	246.06	0.70799	0.00009
33	Guandao	GuandaoII-13	Middle Triassic	Anisian	<i>Nicoraella kockeli</i>	1841	246.17	0.70813	0.00016
34	Guandao	GuandaoII-12	Middle Triassic	Anisian	<i>Nicoraella kockeli</i>	2019	246.33	0.70809	0.00022
35	Qingyan	Qingyan-37	Middle Triassic	Anisian	<i>Nicoraella kockeli</i>	1782	246.35	0.70816	0.00017
36	Guandao	GuandaoII-11	Middle Triassic	Anisian	<i>Nicoraella kockeli</i>	1749	246.49	0.70788	0.00019
37	Guandao	GuandaoII-9	Middle Triassic	Anisian	<i>Chiosella timorensis</i>	2169	246.82	0.70812	0.00013
38	Guandao	GuandaoII-8	Middle Triassic	Anisian	<i>Chiosella timorensis</i>	1671	246.98	0.70827	0.00022
39	Guandao	GuandaoII-7	Middle Triassic	Anisian	<i>Chiosella timorensis</i>	1506	247.14	0.70813	0.00016
40	Guandao	GuandaoI-43	Middle Triassic	Anisian	<i>Chiosella timorensis</i>	1573	247.30	0.70835	0.00016
41	Guandao	GuandaoII-6	Middle Triassic	Anisian	<i>Chiosella timorensis</i>	1611	247.30	0.70803	0.00020
42	Guandao	GuandaoI-42	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1462	247.35	0.70825	0.00012

43	Guandao	GuandaoII-2	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1875	247.35	0.70804	0.00017
44	Guandao	GuandaoII-3	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1579	247.35	0.70814	0.00017
45	Guandao	GuandaoII-4	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	974	247.35	0.70816	0.00011
46	Guandao	GuandaoI-41	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1271	247.40	0.70783	0.00012
47	Qingyan	Qingyan-36	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1556	247.40	0.70821	0.00024
48	Guandao	GuandaoI-40	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1716	247.46	0.70816	0.00017
49	Guandao	GuandaoI-39	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1004	247.55	0.70837	0.00022
50	Qingyan	Qingyan-35	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1580	247.58	0.70824	0.00017
51	Guandao	GuandaoI-37	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1368	247.75	0.70824	0.00022
52	Qingyan	Qingyan-33	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	2071	247.93	0.70797	0.00018
53	Guandao	GuandaoI-34	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1959	248.10	0.70843	0.00011
54	Guandao	GuandaoI-33	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1870	248.25	0.70848	0.00009
55	Guandao	GuandaoI-32	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	2007	248.35	0.70825	0.00017
56	Guandao	GuandaoI-31	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	2027	248.40	0.70827	0.00017
57	Qingyan	Qingyan-30	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1700	248.45	0.70830	0.00017
58	Guandao	GuandaoI-30	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1709	248.50	0.70832	0.00019
59	Guandao	GuandaoI-29	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1735	248.60	0.70818	0.00016
60	Guandao	GuandaoI-28	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1689	248.70	0.70832	0.00018
61	Qingyan	Qingyan-28	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1760	248.80	0.70822	0.00014
62	Guandao	GuandaoI-27	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1570	248.81	0.70846	0.00015
63	Qingyan	Qingyan-27	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	2197	248.98	0.70837	0.00013
64	Qingyan	Qingyan-26	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1401	249.15	0.70815	0.00022
65	Guandao	GuandaoI-25	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1469	249.20	0.70802	0.00018
66	Qingyan	Qingyan-25	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1704	249.33	0.70827	0.00024
67	Guandao	GuandaoI-24	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1473	249.40	0.70826	0.00019
68	Qingyan	Qingyan-23	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1498	249.68	0.70813	0.00017
69	Qingyan	Qingyan-22	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1528	249.85	0.70797	0.00012
70	Guandao	GuandaoI-22	Early Triassic	Spathian	<i>Icriospathodus crassatus</i>	1159	250.00	0.70780	0.00012
71	Qingyan	Qingyan-20	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	1455	250.20	0.70825	0.00011
72	Qingyan	Qingyan-19	Early Triassic	Spathian	<i>Triassospathodus homeri</i>	2249	250.38	0.70830	0.00010
73	Guandao	GuandaoI-19	Early Triassic	Smithian	<i>Icriospathodus crassatus</i>	1337	250.45	0.70782	0.00028
74	Guandao	GuandaoI-18	Early Triassic	Smithian	<i>Icriospathodus crassatus</i>	1830	250.50	0.70785	0.00016
75	Guandao	GuandaoI-17	Early Triassic	Smithian	<i>Icriospathodus crassatus</i>	1413	250.55	0.70800	0.00017
76	Guandao	GuandaoI-16	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1014	250.60	0.70788	0.00018
77	Qingyan	Qingyan-16	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1626	250.65	0.70791	0.00014
78	Qingyan	Qingyan-15	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1182	250.75	0.70796	0.00026
79	Guandao	GuandaoI-14	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1223	250.76	0.70795	0.00011
80	Guandao	GuandaoI-13	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1191	250.81	0.70791	0.00013
81	Qingyan	Qingyan-14	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1956	250.85	0.70794	0.00028
82	Guandao	GuandaoI-12	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1457	250.86	0.70818	0.00018
83	Guandao	GuandaoI-11	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1372	250.91	0.70785	0.00019
84	Qingyan	Qingyan-13	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1456	250.95	0.70770	0.00014
85	Guandao	GuandaoI-9	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1369	251.00	0.70783	0.00022
86	Guandao	GuandaoI-8	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1541	251.05	0.70774	0.00022
87	Qingyan	Qingyan-11	Early Triassic	Smithian	<i>Neospathodus waageni</i>	1387	251.15	0.70792	0.00028

88	Guandao	GuandaoI-6	Early Triassic	Dienerian	<i>Neospathodus cristagalli</i>	1440	251.25	0.70779	0.00022
89	Qingyan	Qingyan-9	Early Triassic	Dienerian	<i>Neospathodus cristagalli</i>	1510	251.26	0.70802	0.00028
90	Qingyan	Qingyan-7	Early Triassic	Dienerian	<i>Neospathodus cristagalli</i>	1264	251.44	0.70763	0.00008
91	Qingyan	Qingyan-6	Early Triassic	Dienerian	<i>Neospathodus dieneri</i>	1483	251.53	0.70771	0.00020
92	Guandao	GuandaoI-5	Early Triassic	Dienerian	<i>Neospathodus dieneri</i>	1163	251.60	0.70779	0.00013
93	Qingyan	Qingyan-5	Early Triassic	Dienerian	<i>Neospathodus dieneri</i>	1488	251.62	0.70750	0.00016
94	Meishan	Meishan-37	Early Triassic	Griesbachian	<i>Isarcicella isarcica</i>	1592	252.05	0.70750	0.00013
95	Meishan	Meishan-36	Early Triassic	Griesbachian	<i>Isarcicella isarcica</i>	2210	252.10	0.70750	0.00018
96	Meishan	Meishan-35	Early Triassic	Griesbachian	<i>Hindeodus parvus</i>	2790	252.13	0.70709	0.00009
97	Meishan	Meishan-34	Early Triassic	Griesbachian	<i>Hindeodus parvus</i>	1305	252.17	0.70709	0.00026
98	Guandao	GuandaoI-2	Early Triassic	Griesbachian	<i>Hindeodus parvus</i>	3404	252.20	0.70735	0.00014
99	Meishan	Meishan-33	Late Permian	Changhsingian	<i>Hindeodus changxingensis</i>	4397	252.22	0.70741	0.00009
100	Meishan	Meishan-32	Late Permian	Changhsingian	<i>Hindeodus changxingensis</i>	2997	252.26	0.70751	0.00005
101	Meishan	Meishan-30	Late Permian	Changhsingian	<i>Clarkina yini</i>	945	252.30	0.70716	0.00012
102	Meishan	Meishan-31	Late Permian	Changhsingian	<i>Clarkina yini</i>	1558	252.30	0.70681	0.00017
103	Meishan	Meishan-27	Late Permian	Changhsingian	<i>Clarkina yini</i>	1602	252.34	0.70717	0.00022
104	Meishan	Meishan-28	Late Permian	Changhsingian	<i>Clarkina yini</i>	1661	252.36	0.70709	0.00013
105	Meishan	Meishan-26	Late Permian	Changhsingian	<i>Clarkina yini</i>	1204	252.40	0.70717	0.00036
106	Meishan	Meishan-23	Late Permian	Changhsingian	<i>Clarkina yini</i>	1247	252.42	0.70711	0.00024
107	Meishan	Meishan-24	Late Permian	Changhsingian	<i>Clarkina yini</i>	1399	252.44	0.70716	0.00022
108	Meishan	Meishan-25	Late Permian	Changhsingian	<i>Clarkina yini</i>	1129	252.46	0.70707	0.00014
109	Meishan	Meishan-22	Late Permian	Changhsingian	<i>Clarkina yini</i>	1416	252.48	0.70713	0.00032
110	Meishan	Meishan-21	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1248	252.66	0.70713	0.00026
111	Meishan	Meishan-20	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1644	252.73	0.70706	0.00018
112	Meishan	Meishan-19	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1898	252.80	0.70709	0.00020
113	Meishan	Meishan-18	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1713	252.87	0.70694	0.00020
114	Meishan	Meishan-17	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1600	252.94	0.70711	0.00019
115	Meishan	Meishan-16	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1701	253.01	0.70711	0.00011
116	Meishan	Meishan-15	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	2213	253.08	0.70716	0.00036
117	Meishan	Meishan-13	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	2200	253.24	0.70711	0.00015
118	Meishan	Meishan-11	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	2419	253.40	0.70711	0.00019
119	Meishan	Meishan-10	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	3151	253.47	0.70705	0.00010
120	Meishan	Meishan-8	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	1942	253.63	0.70716	0.00017
121	Meishan	Meishan-7	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	2019	253.70	0.70706	0.00010
122	Meishan	Meishan-6	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	2504	253.77	0.70710	0.00014
123	Meishan	Meishan-5	Late Permian	Changhsingian	<i>Clarkina changxingensis</i>	2427	253.84	0.70695	0.00032
124	Meishan	Meishan-4	Late Permian	Changhsingian	<i>Clarkina wangi</i>	1384	253.91	0.70714	0.00048
125	Meishan	Meishan-3	Late Permian	Changhsingian	<i>Clarkina wangi</i>	1519	253.98	0.70694	0.00034
126	Meishan	Meishan-2	Late Permian	Changhsingian	<i>Clarkina wangi</i>	1541	254.05	0.70719	0.00013
127	Meishan	Meishan-1	Late Permian	Changhsingian	<i>Clarkina wangi</i>	1335	254.14	0.70718	0.00042