

11. DATA REPORT: MG/CA, SR/CA, MN/CA, AND OXYGEN AND CARBON ISOTOPE RECORDS OF PLIOCENE–PLEISTOCENE FORAMINIFERS FROM ODP LEG 202 SITE 1237¹

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INTRODUCTION

Downcore records of magnesium/calcium, strontium/calcium, manganese/calcium, and oxygen and carbon isotopes of planktonic and benthic foraminifers from Ocean Drilling Program (ODP) Site 1237 on the Peru-Chile margin provide critical information regarding the history of climate in the region over the past 6 m.y. Specifically, these records can be used to infer the sea-surface temperature (SST) and sea-surface salinity (SSS) history of a region that today is associated with substantial wind stress curl-driven upwelling (Shipboard Scientific Party, 2003).

Site 1237 is located at 16°0.421'S, 76°22.685'W, ~140 km southwest of the South American continent. The site is on a relatively flat bench on the eastern flank of the Nazca Ridge at a water depth of 3212 m. Estimates of the tectonic backtrack path indicate that Site 1237 has moved ~3° eastward over the past 6 m.y. (Shipboard Scientific Party, 2003). In the modern day, there exist strong zonal gradients along the backtrack path in temperature, salinity, nutrients, and primary productivity as estimated from ocean color with warmer (cooler), lower (higher) salinity, lower (higher) nutrient, and lower (higher) productivity waters to the west (east) (Shipboard Scientific Party, 2003). Thus, if conditions in the region have remained constant over the past 6 m.y., the site would have experienced a reduction in all of these properties as

¹Wara, M.W., and Ravelo, A.C., 2006. Data report: Mg/Ca, Sr/Ca, Mn/Ca, and oxygen and carbon isotope records of Pliocene–Pleistocene foraminifers from ODP Leg 202 Site 1237. *In* Tiedemann, R., Mix, A.C., Richter, C., and Ruddiman, W.F. (Eds.), *Proc. ODP, Sci. Results, 202*: College Station, TX (Ocean Drilling Program), 1–19. doi:10.2973/odp.proc.sr.202.206.2006

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it was transported by the Nazca plate, upon which it is located, to its modern location.

Our goals in developing records of SST and SSS at Site 1237 are to determine relationships between the timing of changes in southeast Pacific region upwelling and changes in upwelling in other regions (Ravelo et al., 2004), the end of permanent El Niño-like conditions and onset of modern La Niña-like conditions in the equatorial Pacific (Wara et al., 2005), and the intensification of Northern Hemisphere glaciation (Raymo, 1994). In particular, we hope to determine whether changes in upwelling or in the character of upwelling at Site 1237 occurred at ~2.75 Ma, when there were substantial changes to the character of both Northern Hemisphere glaciation and California Current upwelling, or at ~1.8 Ma, when large reorganizations of the tropical Pacific ocean atmosphere circulation occurred coincident with changes to the California Current system (Ravelo et al., 2004; Wara et al., 2005). Alternatively, we might determine that southeast Pacific upwelling, at least as recorded at Site 1237, has a unique regional pattern of temporal evolution through the Pliocene–Pleistocene that is unrelated to changes in the tropics or the Northern Hemisphere.

This report provides data tables and other supporting information for measurements made on planktonic and benthic foraminifers from Site 1237. Items included in this report are (1) oxygen and carbon isotopic measurements of planktonic and benthic foraminifers and (2) Mg/Ca, Sr/Ca, and Mn/Ca ratio measurements of planktonic foraminifers from Holes 1237B, 1237C, and 1237D.

METHODS

Sediment samples, 20 cm³, each from a 2-cm downcore interval, were obtained at ~40-cm intervals from the composite section of Site 1237 (Shipboard Scientific Party, 2003) for the top 121.6 m of the composite depth section, representing approximately the last 6 m.y. of sedimentation at the site. Sediment samples were freeze-dried, weighed, disaggregated with deionized water, and wet-sieved through a >63- μ m screen. The coarse (>63 μ m) fraction was oven dried at <60°C and then dry-sieved into fractions of 63–125, 125–250, 250–355, 355–425, and >425 μ m. The benthic foraminifers *Cibicides wuellerstorfi* and *Uvigerina peregrina* were then picked, when present, from the 250- to 425- μ m size fraction. The planktonic foraminifers *Globigerinoides ruber*, *Globigerinoides sacculifer* (without sac), and *Globigerina bulloides* were picked, when present, from the 250- to 355- μ m size fraction. Finally, the planktonic foraminifer *Globorotalia tumida* was picked, when present, from the 355- to 425- μ m size fraction. If three or more benthic foraminifers of a particular species were obtained, then these were pooled for stable isotopic analysis. If >5 but <10 planktonic foraminifers of a particular species were obtained, then these were pooled for minor element ratio analysis. If >10 planktonic foraminifers of a particular species were obtained, then they were crushed between glass plates and a split of the crushed sample was utilized for stable isotopic analysis and another split for minor element ratio analysis.

Stable isotope analyses were performed using either a Fisons Prism or a Fisons Optima dual-inlet light-stable isotope mass spectrometer. Both instruments utilized an automated common acid bath carbonate device. Samples were reacted at 90°C in 100% phosphoric acid. Stable isotopic values are reported in permil (‰) notation relative to the Vienna

Peedee belemnite (VPDB) standard. Analytical precision of both NBS-19 and an in-house standard, Carrera marble, were observed during analytical runs to be 0.08 and 0.04 for $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$, respectively.

Prior to minor element analyses and subsequent to crushing between glass plates, foraminifer samples were weighed, placed in acid-cleaned microcentrifuge tubes, and subjected to an oxidative-reductive cleaning process under trace metal-clean conditions (Boyle and Keigwin, 1986; Boyle and Rosenthal, 1996). This procedure included multiple sonication steps to remove fines, reductive cleaning to remove oxyhydroxide coatings, oxidative cleaning to remove organics, and partial acid dissolution to remove MnCO_3 phases. Subsequent to cleaning, samples were dried and stored until the day of analysis (Wara et al., 2003).

Immediately prior to minor element analysis, samples were dissolved in 1-N trace metal-grade HNO_3 . The volume of acid utilized was varied to produce Ca concentrations in solution between 0.6 and 2.4 mM. Samples were shaken vigorously and then analyzed within a 6-hr period using a PerkinElmer 4300 Optima inductively coupled plasma-optical emission spectrometer (ICP-OES). We utilized an intensity ratio calibration method (deVilliers et al., 2002). Interrun precision for three foraminifer consistency standards averaged 0.27 mmol/mol for Mg/Ca, 0.030 mmol/mol for Sr/Ca, and 0.004 mmol/mol for Mn/Ca (Wara et al., 2003).

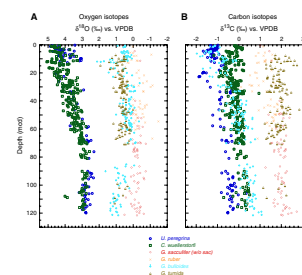
STABLE ISOTOPE DATA

Results of stable isotope analyses of planktonic and benthic foraminifers from Site 1237 are presented in Figure F1 and reported in Table T1. Species analyzed include the benthic foraminifers *C. wuellerstorfi* and *U. peregrina* as well as the planktonic foraminifers *G. sacculifer* (without sac), *G. ruber*, *G. bulloides*, and *G. tumida*. Whereas benthic oxygen isotopes indicate the growth of ice volume and possible cooling of deep waters during the 6-m.y. interval, planktonic oxygen isotopes show significant short-term variability but no long-term trend during the interval (see Fig. F1). This pattern of little surface water temperature/salinity change is similar to that observed in the western equatorial Pacific at ODP Site 806 but significantly different from the cooling trend observed in the eastern equatorial Pacific at ODP Site 847 (Wara et al., 2005).

MINOR ELEMENT DATA

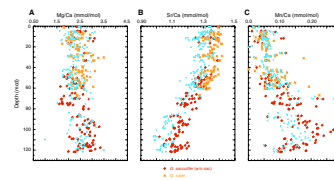
Results of Mg/Ca, Sr/Ca, and Mn/Ca analyses of planktonic foraminifers from Site 1237 are presented in Figure F2. All data are reported in Table T2. Planktonic foraminifer species analyzed include *G. sacculifer* (without sac), *G. ruber*, and *G. bulloides*. As with the planktonic oxygen isotope data at Site 1237, the planktonic Mg/Ca data possess significant short-term variability but little if any long-term variability over the past 6 m.y. This long-term pattern of little to no change in Mg/Ca values over the Pliocene–Pleistocene is similar to that observed in the western equatorial Pacific at Site 806 but significantly different from the trend toward lower values, implying cooler SST in the eastern equatorial Pacific at Site 847 (Wara et al., 2005). This is in contrast with the expected cooling trend predicted from the backtrack path of the site, discussed above, and the observed modern-day gradients in SST.

F1. Oxygen and carbon isotope records, p. 6.



T1. Oxygen and carbon stable isotopes, p. 8.

F2. Mg/Ca, Sr/Ca, and Mn/Ca records, p. 7.



T2. Elemental ratio data, p. 15.

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Figure F1. (A) Oxygen and (B) carbon isotope records of planktonic and benthic foraminifers from Site 1237. Benthic foraminifer oxygen isotope data indicate a shift from lower ice volume, warmer bottom water conditions at the beginning of the record to higher ice volume, cooler bottom water conditions near the end of the record. In contrast, planktonic foraminifer oxygen isotope values exhibit no such trend. Isotope ratio data are reported in Table T1, p. 8. VPDB = Vienna Pee Dee belemnite standard. 0.64‰ is added to all *C. wuellerstorfi* $\delta^{18}\text{O}$ values shown.

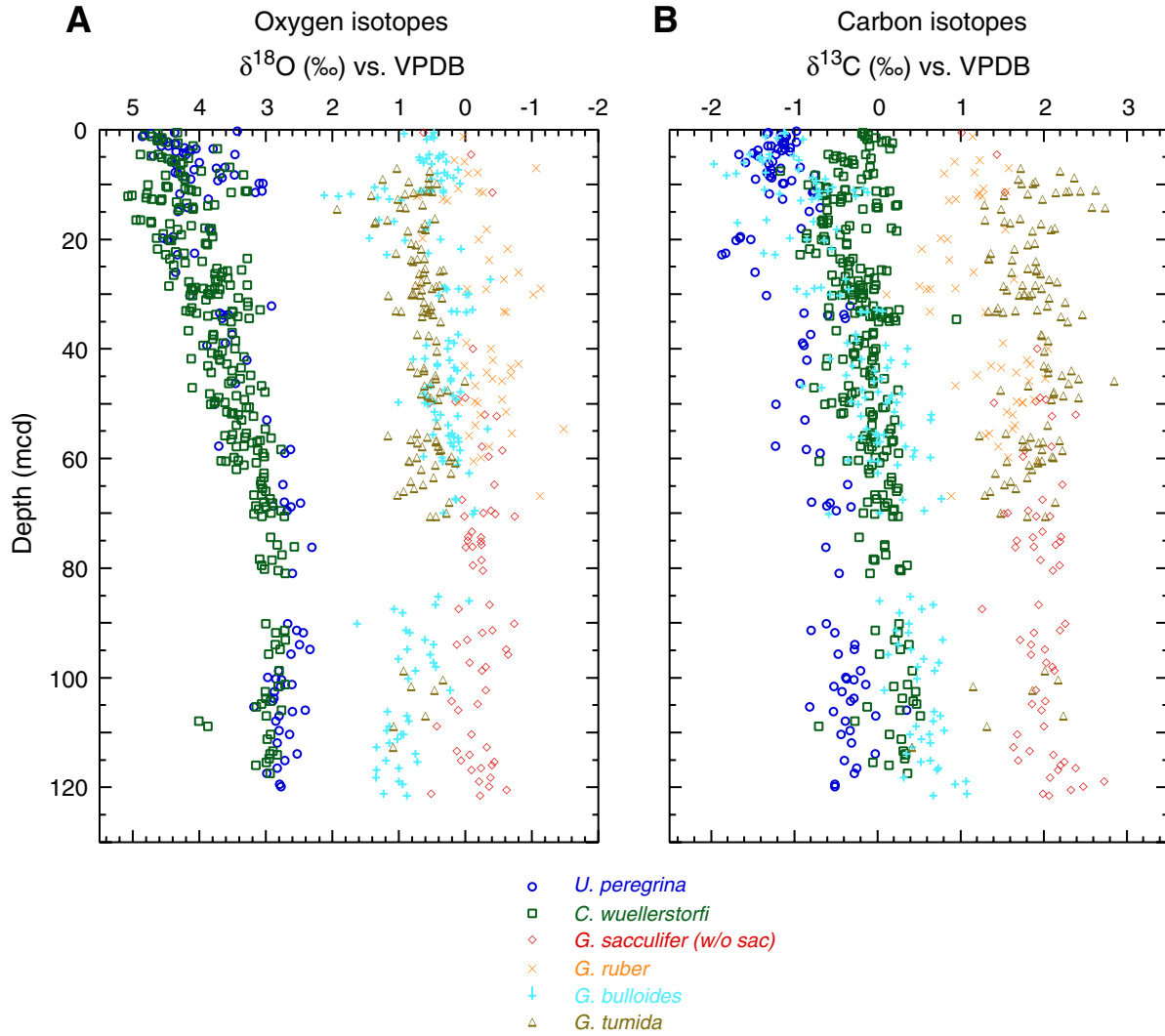


Figure F2. (A) Mg/Ca, (B) Sr/Ca, and (C) Mn/Ca records of planktonic foraminifera from Site 1237. Planktonic Mg/Ca values exhibit significant short-term but little or no long-term variability throughout the length of the record. This is in contrast with the expected cooling trend based on the backtrack path of the site and modern oceanographic conditions. Minor element ratio data are reported in Table T2, p. 15.

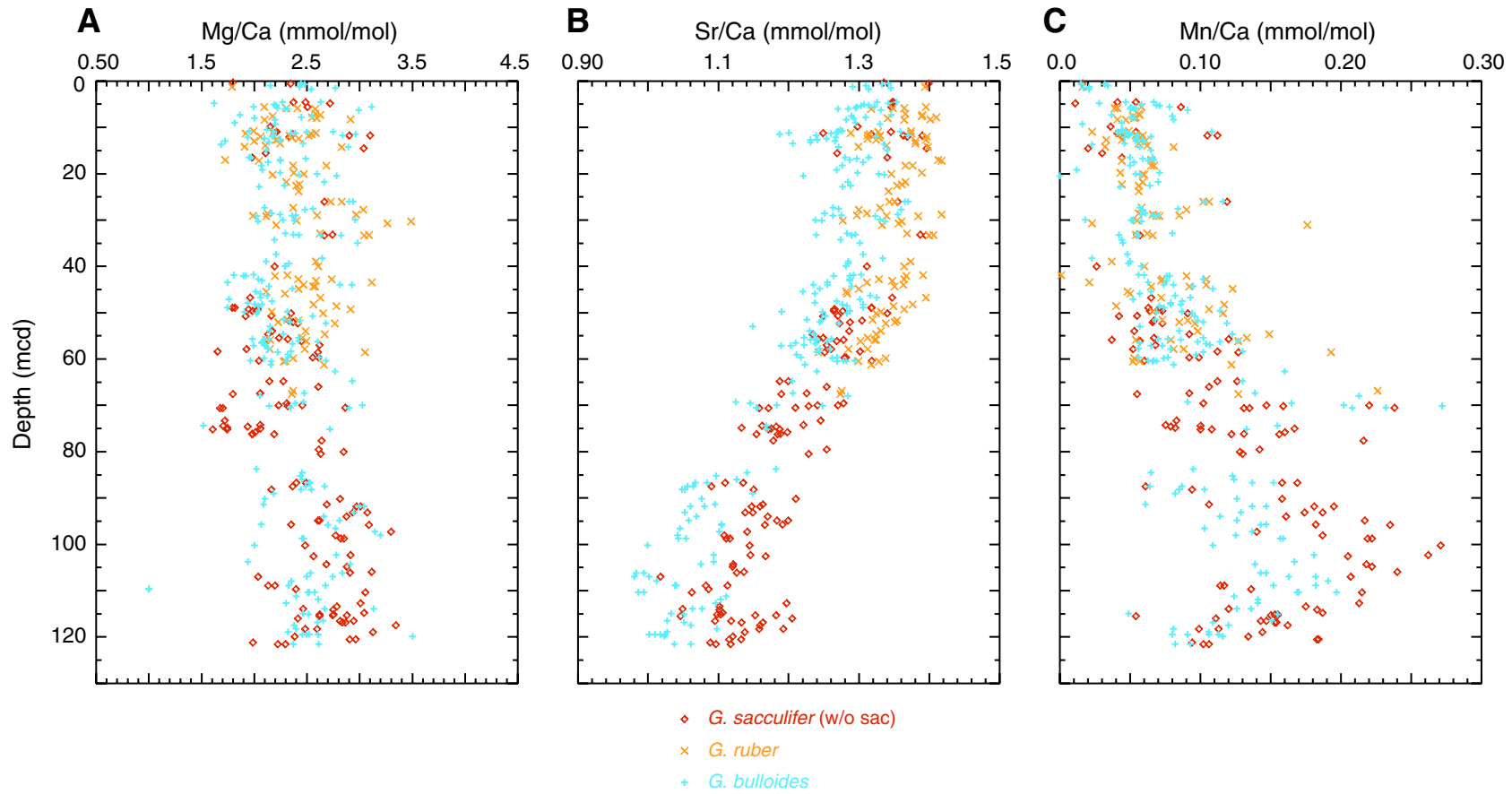


Table T1. Oxygen and carbon stable isotopes of planktonic and benthic foraminifers, Holes 1237B, 1237C, and 1237D. (Continued on next six pages.)

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer (without sac)</i>		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
202-1237B-															
1H-1, 2-4	0.03	0.03													
1H-1, 26-28	0.27	0.27	-0.973	3.428											
1H-1, 50-52	0.51	0.51	-1.308	4.372	-0.175	3.690	4.330	1.013	0.631			-1.125	0.476		
1H-1, 74-76	0.75	0.75	-1.328	4.731	-0.183	3.980	4.620					-1.110	0.926		
1H-1, 98-100	0.99	0.99	-1.1605	4.8302	-0.1095	4.1832	4.823								
1H-1, 122-124	1.23	1.23	-1.0935	4.8612	-0.1495	4.0752	4.715			1.148	0.028	-1.346	0.510		
1H-2, 1-3	1.52	1.52	-1.1105	4.6312	-0.0165	3.9232	4.563					-1.203	0.472		
1H-2, 25-27	1.76	1.76	-1.1625	4.5512	-0.1205	3.9932	4.633					-0.892	0.583		
1H-2, 49-51	2.00	2.00	-1.1245	4.5422	0.1075	3.9912	4.631								
1H-2, 73-75	2.24	2.24	-0.9745	4.4702	0.0545	3.8622	4.502								
1H-2, 97-99	2.48	2.48	-1.1385	4.3592	0.1795	3.6832	4.323								
1H-2, 121-123	2.72	2.72	-1.1155	4.3642											
1H-2, 145-147	2.96	2.96	-1.3155	4.5702											
1H-3, 1-3	3.02	3.02	-1.2785	4.4662	-0.0935	3.4542	4.094								
1H-3, 25-27	3.26	3.26	-1.0505	4.2242											
1H-3, 49-51	3.50	3.50	-1.1095	4.0502	0.1495	3.0882	3.728								
6H-1, 55-57	44.06	49.78			-0.337216	2.973878	3.614			1.739	0.091	0.230	1.012		
6H-1, 91-93	44.42	50.14	-1.215	3.777518	-0.629368	3.190718	3.831					-0.232	0.568		
6H-1, 145-147	44.96	50.68			0.097988	2.609858	3.250								
6H-2, 1-3	45.02	50.74			0.067711	2.656758	3.297								
6H-2, 75-77	45.76	51.48			-0.085943	2.945348	3.585			1.557	-0.612	0.208	0.466		
6H-2, 91-93	45.92	51.64			-0.410334	2.857768	3.498								
6H-2, 110-112	46.11	51.83			-0.437499	2.879898	3.520								
6H-2, 127-129	46.28	52.00			-0.054	2.778	3.418	2.388	-0.289	1.628	-0.223	0.648	0.374		
6H-3, 1-3	46.52	52.24			-0.057	2.548	3.188	2.103	-0.468			-0.199	0.119		
6H-3, 73-75	47.24	52.96	-0.868	2.991	0.212	2.725	3.365					0.644	0.447		
6H-4, 19-21	48.20	53.92			-0.063	2.805	3.445			1.653	-0.145	0.290	0.261	2.052	0.420
6H-4, 91-93	48.92	54.64			0.162	2.369	3.009			1.630	-1.478	-0.130	-0.33		
6H-5, 19-21	49.70	55.42			0.140	2.654	3.294			1.349	-0.695	-0.015	0.206	1.545	0.728
6H-5, 91-93	50.42	56.14			-0.044	2.674	3.314					-0.315	0.173	1.848	0.576
6H-5, 145-147	50.96	56.68			0.191	2.452	3.092							2.193	0.435
7H-2, 37-39	54.88	60.45			-0.363	3.036	3.676					-0.078	0.342	1.984	0.852
7H-2, 109-111	55.60	61.17			-0.064	2.689	3.329					0.243	0.121	1.830	0.453
7H-3, 37-39	56.38	61.95			-0.107	2.808	3.448							1.861	0.665
7H-3, 109-111	57.10	62.67			-0.093	2.393	3.033					0.005	-0.053	1.420	0.218
7H-4, 37-39	57.88	63.45			0.172	2.392	3.032							1.806	0.485
7H-4, 109-111	58.60	64.17			0.172	2.432	3.072							1.605	0.825
7H-5, 19-21	59.20	64.77	-0.356	2.741	0.135	2.435	3.075	2.229	-0.434					1.531	0.640
7H-5, 91-93	59.92	65.49			0.251	2.415	3.055							1.669	0.773
7H-5, 145-147	60.46	66.03			0.232	2.363	3.003							1.358	0.930
7H-6, 55-57	61.06	66.63			-0.031	2.539	3.179							1.297	1.027
8H-2, 73-75	64.74	70.52			0.252	2.082	2.722	1.913	-0.744					1.801	0.446
8H-4, 55-57	67.56	73.34						1.987	-0.097						
8H-5, 1-3	68.52	74.30						2.213	-0.038						

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer</i> (without sac)		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
202-1237C-															
2H-2, 121-123	12.02	10.92			-0.38557143	3.517	4.157					-1.354	0.515		
2H-2, 145-147	12.26	11.16			-0.013	2.640	3.280					-0.596	0.684	2.441	0.666
2H-3, 1-3	12.32	11.22	-0.759	3.060	0.145	2.668	3.308					-0.697	0.634	2.306	0.551
2H-3, 25-27	12.56	11.46	-0.778	3.159	0.082	2.881	3.521	1.533	-0.404	1.224	-0.263	-0.117	0.328	2.143	0.780
2H-3, 49-51	12.80	11.70	-1.297016	4.298	-0.61657143	4.146	4.786					-1.175	1.726	1.809	0.912
2H-3, 73-75	13.04	11.94			-0.647	4.377	5.017			1.209	0.698	-0.698	2.124	1.522	1.417
2H-3, 97-99	13.28	12.18			-0.423	4.431	5.071			1.259	0.733	-0.258	1.907		
2H-3, 121-123	13.52	12.42			-0.357	4.162	4.802					-0.710	1.324		
2H-3, 145-147	13.76	12.66	-1.140356	3.866	-0.52757143	3.929	4.569								
2H-4, 1-3	13.82	12.72			-0.433	4.077	4.717			0.949	0.340	-0.783	1.144	1.990	1.020
2H-4, 25-27	14.06	12.96			-0.608	3.939	4.579			0.861	0.274	-0.922	0.964		
2H-4, 49-51	14.30	13.20			-0.44057143	3.704	4.344								
2H-4, 73-75	14.54	13.44			-0.008	3.556	4.196								
2H-4, 97-99	14.78	13.68			0.243	3.133	3.773							1.290	0.643
2H-4, 121-123	15.02	13.92			0.223	3.235	3.875								
2H-4, 145-147	15.26	14.16			-0.01357143	3.463	4.103							2.578	0.977
2H-5, 1-3	15.32	14.22	-0.686	4.169	0.011	3.652	4.292							2.741	0.905
2H-5, 25-27	15.56	14.46			-0.173	3.452	4.092							1.494	1.931
2H-5, 49-51	15.80	14.70			-0.603	3.674	4.314								
2H-5, 73-75	16.04	14.94	-0.820149	4.326493											
3H-1, 121-123	20.02	21.77			-0.810167	3.98682	4.627			0.536	-0.631	-0.552	0.062	1.651	0.664
3H-2, 25-27	20.56	22.31			-0.55257143	3.717	4.357								
3H-2, 49-51	20.80	22.55	-1.824365	4.072071	-0.73834	3.594051	4.234					-1.367	0.556	1.364	1.042
3H-2, 73-75	21.04	22.79	-1.866845	4.333221	-0.927306	3.866691	4.507					-1.229	1.184		
3H-2, 145-147	21.76	23.51			-0.29074	2.641891	3.282							1.335	0.618
3H-3, 1-3	21.82	23.57			-0.44629	3.800431	4.440							1.350	0.722
3H-3, 25-27	22.06	23.81												1.620	0.817
3H-3, 49-51	22.30	24.05			-0.332586	3.316931	3.957							1.907	0.784
3H-3, 71-73	22.52	24.27			-0.41557143	3.576	4.216								
3H-3, 121-123	23.02	24.77			-0.349043	3.750791	4.391								
3H-4, 25-27	23.56	25.31			-0.204129	3.100121	3.740							1.809	0.608
3H-4, 49-51	23.80	25.55			0.049831	2.727151	3.367							1.914	0.328
3H-4, 71-73	24.02	25.77			0.112738	2.940801	3.581							1.911	0.383
3H-4, 97-99	24.28	26.03	-1.467896	4.354963	-0.09257143	3.009	3.649			1.159	-0.796			1.617	0.628
3H-4, 121-123	24.52	26.27			-0.344801	3.128821	3.769							1.966	0.694
3H-5, 1-3	24.82	26.57			-0.546002	3.746081	4.386								
3H-5, 25-27	25.06	26.81			-0.38257143	3.034	3.674								
3H-5, 49-51	25.30	27.05			-0.0363093	2.934391	3.574								
3H-5, 73-75	25.54	27.29			-0.1032184	3.121641	3.762			1.643	-0.578	-0.380	-0.376	2.069	0.581
3H-5, 100-102	25.81	27.56			-0.231283	3.079401	3.719								
3H-5, 121-123	26.02	27.77			-0.49757143	3.522	4.162							2.167	0.669
3H-6, 25-27	26.56	28.31			-0.02057143	2.638	3.278							1.748	0.752
4H-3, 28-30	31.59	33.04			-0.2079	3.559	4.199							1.662	1.041
4H-3, 37-39	31.68	33.13			-0.1889	3.509	4.149					0.064	0.209	1.427	0.967
4H-3, 46-48	31.77	33.22			0.137	2.816									

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer</i> (without sac)		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
4H-3, 73-75	32.04	33.49	-0.878345	3.695	-0.27157143	3.407	4.047								
4H-3, 100-102	32.31	33.76	-0.39882	3.566	-0.02003372	3.108	3.748							2.468	0.491
4H-3, 109-111	32.40	33.85	-0.593138	3.645	-0.0552752	3.247									
4H-3, 127-129	32.58	34.03			-0.574361	3.235	3.875								
4H-3, 136-138	32.67	34.12			-0.0833624	2.786	3.426							2.211	0.654
4H-3, 145-147	32.76	34.21			0.059	2.898									
4H-4, 1-3	32.82	34.27			0.197	2.705									
4H-4, 19-21	33.00	34.45	-0.382518	3.655	0.129	2.611	3.251								
4H-4, 37-39	33.18	34.63			0.950	1.949									
4H-4, 55-57	33.36	34.81			0.221	2.999	3.639								
4H-4, 64-66	33.45	34.90			0.145	2.899									
4H-4, 73-75	33.54	34.99			0.014	2.886	3.526							2.288	0.372
5H-1, 136-138	39.17	42.04	-0.847	3.284	-0.067	3.048	3.688		1.796	-0.414	0.163	0.239			
5H-2, 55-57	39.86	42.73			-0.259	2.949	3.589		1.837	-0.798	0.345	0.423			
5H-2, 91-93	40.22	43.09			-0.614	3.234	3.874		1.368	0.013	-0.298	0.422	2.003	0.826	
5H-2, 127-129	40.58	43.45			-0.021	2.735	3.375		1.492	-0.680	0.120	0.166	2.059	0.620	
5H-3, 28-30	41.09	43.96			-0.08	2.873	3.513				-0.027	0.125	2.339	0.622	
5H-3, 64-66	41.45	44.32			-0.149	3.180	3.820		1.670	-0.317			2.059	0.720	
5H-3, 118-120	41.99	44.86			-0.087	2.587	3.227		1.200	-0.685	-0.372	-0.079	2.222	0.453	
5H-4, 28-30	42.59	45.46			0.086	2.746	3.386		2.018	-0.402	0.053	0.215	2.420	0.444	
5H-4, 64-66	42.95	45.82			-0.051	2.874	3.514		1.825	-0.552	-0.039	0.226	2.853	0.011	
5H-4, 109-111	43.40	46.27	-0.9276	3.461	-0.0511267	2.916	3.556						2.304	0.520	
5H-5, 1-3	43.82	46.69			-0.347382	2.425	3.065		0.938	-0.149	-0.903	0.525	1.816	0.613	
5H-5, 37-39	44.18	47.05			-0.762222	3.466	4.106				-0.672	0.581			
5H-5, 82-84	44.63	47.50			0.249	2.601	3.241				-0.178	0.311	1.486	0.264	
5H-5, 118-120	44.99	47.86			-0.267834	2.374	3.014				0.011	0.075	2.126	0.378	
5H-6, 1-3	45.32	48.19			-0.302273	3.205	3.845				0.298	0.622	2.116	0.670	
5H-6, 37-39	45.68	48.55			-0.0967676	2.804	3.444				0.168	0.185	2.237	0.566	
5H-6, 73-75	46.04	48.91			-0.416099	3.067	3.707	1.958	0.001		-0.145	0.586	2.425	0.524	
5H-6, 109-111	46.40	49.27			0.125	2.683	3.323	2.029	0.120	1.881	-0.546	0.148	0.141	2.098	0.408
5H-6, 145-147	46.76	49.63			-0.396387	3.123	3.763	1.905	0.153	1.678	-0.141	-0.312	0.476		
5H-7, 19-21	47.00	49.87			-0.549103	3.131	3.771	1.405	0.539	1.755	-0.185	0.116	0.605		
6H-3, 91-93	51.22	55.69			-0.07	2.864	3.504					0.080	0.489		
6H-3, 109-111	51.40	55.87			-0.148	2.977	3.617			1.298	-0.052	0.005	0.251	1.226	1.167
6H-4, 1-3	51.82	56.29			-0.027	2.279	2.919					-0.191	0.112		
6H-4, 19-21	52.00	56.47			-0.172	2.887	3.527							1.746	0.826
6H-4, 73-75	52.54	57.01			0.175	2.493	3.133				0.034	0.103	1.996	0.443	
6H-4, 91-93	52.72	57.19			-0.02	2.572	3.212				-0.005	0.227	1.940	0.721	
6H-4, 145-147	53.26	57.73	-1.225	3.712	-0.201	2.694	3.334						1.808	0.409	
6H-5, 1-3	53.32	57.79			-0.065	2.803	3.443	2.098	-0.25	1.455	-0.358	0.345	0.177	1.753	0.652
6H-5, 55-57	53.86	58.33	-0.853	2.631	-0.097	2.130	2.770						1.980	0.367	
6H-5, 73-75	54.04	58.51			0.114	2.483	3.123	1.776	-0.555			0.449	0.077	2.229	0.386
6H-5, 127-129	54.58	59.05	-0.686	2.720	0.256	2.407	3.047								
6H-6, 37-39	55.18	59.65			0.078	2.381	3.021	1.751	-0.347			0.431	0.627	2.104	0.210
6H-6, 55-57	55.36	59.83			-0.026	2.837	3.477			1.576	-0.234	0.641	0.353	2.122	0.731
6H-6, 109-111	55.90	60.37			-0.222	2.773	3.413					-0.349	0.106	1.929	0.243

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer</i> (without sac)		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
6H-6, 127-129	56.08	60.55			-0.701	2.963	3.603			1.933	-0.121	0.010	0.333	1.560	0.842
6H-6, 145-147	56.26	60.73			0.028	2.505	3.145							1.936	0.147
7H-4, 37-39	61.68	66.65			0.070	2.430	3.070								
7H-4, 55-57	61.86	66.83								0.888	-1.120				
7H-4, 109-111	62.40	67.37			-0.005	2.299	2.939					0.769	0.152		
7H-4, 127-129	62.58	67.55						1.990	0.053			0.305	0.139		
7H-5, 19-21	63.00	67.97	-0.788	2.721	-0.117	2.392	3.032							2.140	0.240
7H-5, 37-39	63.18	68.15	-0.569	2.482	0.124	2.264	2.904								
7H-5, 91-93	63.72	68.69	-0.607	2.897	0.090	2.516	3.156								
7H-5, 109-111	63.90	68.87	-0.313	2.624	0.091	2.361	3.001								
7H-6, 1-3	64.32	69.29			0.208	2.466	3.106								
7H-6, 19-21	64.50	69.47	-0.495	2.683	0.193	2.134	2.774	1.818	-0.385			0.564	-0.138		
7H-6, 73-75	65.04	70.01			-0.165	2.282	2.922	1.570	-0.272			0.027	0.327	1.487	0.285
7H-6, 91-93	65.22	70.19			-0.031	2.539	3.179	1.524	-0.445			-0.584	-0.113		
7H-6, 127-129	65.58	70.55			0.186	2.420	3.060	2.077	0.013					2.020	0.533
8H-2, 91-93	68.72	74.39			-0.22	2.291	2.931	1.872	-0.233						
8H-3, 2-4	69.33	75.00						1.679	-0.033						
8H-3, 22-24	69.53	75.20						2.200	-0.232						
8H-3, 82-84	70.13	75.80			0.091	2.187	2.827	2.144	-0.241						
8H-3, 122-124	70.53	76.20	-0.619	2.306				1.659	-0.009						
9H-3, 22-24	79.03	85.20										0.401	0.409		
9H-3, 102-104	79.83	86.00										0.024	-0.057		
9H-4, 22-24	80.53	86.70						1.939	-0.365			0.670	0.450		
9H-4, 102-104	81.33	87.50						1.261	0.101			0.537	1.075		
9H-5, 22-24	82.03	88.20										0.266	0.949		
10H-3, 22-24	88.53	95.75						1.850	-0.64			0.132	0.527		
10H-3, 102-104	89.33	96.55										0.560	1.008		
10H-4, 22-24	90.03	97.25						2.035	-0.063			0.742	0.481		
10H-4, 102-104	90.83	98.05						2.107	-0.306			0.483	0.447		
10H-5, 22-24	91.53	98.75	-0.203	2.808	0.421	2.164	2.804	2.130	-0.251			0.691	0.751	2.014	0.931
10H-5, 142-144	92.73	99.95	-0.379	2.971											
10H-6, 22-24	93.03	100.25	-0.365	2.849								0.479	0.857		
11H-3, 22-24	98.03	106.20	-0.527	2.605								0.685	1.173		
11H-3, 102-104	98.83	107.00	-0.020	2.805	0.515	2.354	2.994					0.757	0.880	2.239	0.604
11H-4, 42-44	99.73	107.90	-0.384	2.854	-0.271	3.370	4.010					0.671	0.852		
11H-4, 142-144	100.73	108.90			-0.704	3.235	3.875	2.005	0.426			0.467	1.145	1.317	1.078
11H-5, 62-64	101.43	109.60	-0.329	2.802								0.803	1.178		
11H-5, 142-144	102.23	110.40	-0.437	2.646	0.144	2.287	2.927	1.683	-0.091			0.392	0.963		
12H-2, 92-94	106.73	115.35						2.248	-0.435			0.526	0.726		
12H-3, 2-4	107.33	115.95			0.141	2.510	3.150	2.204	-0.396						
12H-3, 57-59	107.88	116.50	-0.247	2.826				2.389	-0.234			0.733	0.999		
12H-3, 92-94	108.23	116.85						2.178	-0.088			0.719	1.337		
12H-4, 2-4	108.83	117.45	-0.279	2.990	0.363	2.294	2.934								
12H-4, 82-84	109.63	118.25						2.078	-0.381			0.321	1.345		
12H-5, 2-4	110.33	118.95						2.730	-0.205			1.069	1.002		
12H-5, 53-55	110.84	119.46	-0.509	2.798								0.936	0.946		

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer</i> (without sac)		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
12H-5, 92-94	111.23	119.85	-0.509	2.774				2.480	-0.354						
12H-6, 2-4	111.83	120.45						2.330	-0.623						
12H-6, 73-75	112.54	121.16						1.994	0.517			1.079	1.231		
12H-6, 107-109	112.88	121.50						2.070	-0.221			0.672	0.876		
202-1237D-															
1H-1, 121-123	4.02	3.52	-1.198	3.799											
1H-1, 145-147	4.26	3.76	-1.432	4.157											
1H-2, 1-3	4.32	3.82	-1.146	4.128											
1H-2, 25-27	4.56	4.06	-1.053	4.348											
1H-2, 49-51	4.80	4.30	-1.495	4.236											
1H-2, 67-69	4.98	4.48	-1.661	4.203	-0.589	4.244	4.884	1.439	-0.083			-1.532	0.328		
1H-2, 73-75	5.04	4.54	-1.216	3.468	-0.138	3.972	4.612					-1.300	0.542		
1H-2, 97-99	5.28	4.78	-1.436	4.698	-0.496	4.081	4.721					-1.007	0.396		
1H-2, 121-123	5.52	5.02			-0.429	3.926	4.566					-1.404	0.691		
1H-2, 145-147	5.76	5.26			-0.077	3.528	4.168					-1.296	0.412		
1H-3, 1-3	5.82	5.32			-0.525	3.833	4.473					-1.415	0.588		
1H-3, 25-27	6.06	5.56			-0.299	3.723	4.363			1.235	0.163	-0.943	0.681		
1H-3, 49-51	6.30	5.80	-1.256	4.428	-0.399	3.771	4.411			0.930	0.019	-1.380	0.289		
1H-3, 73-75	6.54	6.04	-1.585	3.998	-0.354	3.603	4.243					-1.599	0.629		
1H-3, 97-99	6.78	6.28	-1.304	4.347	-0.286	3.639	4.279					-1.966	0.507		
1H-4, 1-3	7.32	6.82	-0.927	3.62	-0.085	2.900	3.540								
1H-4, 25-27	7.56	7.06	-1.159	3.745						1.580	-1.065			1.722	1.029
1H-4, 49-51	7.80	7.30	-1.277	4.079								-0.942	0.112		
1H-4, 73-75	8.04	7.54			-1.169	3.333	3.973							2.198	0.539
1H-4, 97-99	8.28	7.78	-1.330	4.368	-0.470	3.650	4.290			1.170	-0.183	-1.346	0.317		
1H-4, 121-123	8.52	8.02	-1.260	4.325	-0.051	3.054	3.694			0.803	-0.036	-1.697	0.421		
1H-4, 145-147	8.76	8.26	-0.754	3.471	-0.114	2.697	3.337								
1H-5, 1-3	8.82	8.32			-0.746	3.874	4.514					-1.813	0.275		
1H-5, 25-27	9.06	8.56	-1.290	4.213	-0.405	3.612	4.252								
1H-5, 49-51	9.30	8.80	-1.273	3.656								-0.780	0.181	2.368	0.554
1H-5, 73-75	9.54	9.04	-1.465	4.131	-0.191	3.579	4.219					-0.626	0.507	1.698	1.245
1H-5, 97-99	9.78	9.28	-1.032	3.721								-0.737	0.363		
1H-5, 121-123	10.02	9.52												1.899	0.853
1H-5, 145-147	10.26	9.76	-1.124	3.046										1.736	0.554
1H-6, 1-3	10.32	9.82	-1.139	3.098								-0.734	0.083	1.872	0.433
1H-6, 25-27	10.56	10.06			-0.828	4.136	4.776								
1H-6, 49-51	10.80	10.30			-0.699	3.862	4.502								
1H-6, 73-75	11.04	10.54			-0.621	3.836	4.476					-0.536	1.368		
1H-6, 97-99	11.28	10.78			-0.596	3.574	4.214			1.277	0.106	-0.162	1.217		
1H-6, 121-123	11.52	11.02			-0.391	3.485	4.125					-0.282	0.335	2.630	0.569
1H-6, 145-147	11.76	11.26			-0.222	3.406	4.046			1.553	-0.209	-0.728	0.504	2.275	0.503
2H-2, 121-123	15.02	16.22												1.716	0.457
2H-2, 145-147	15.26	16.46			-0.592	4.316	4.956							1.293	1.173
2H-3, 1-3	15.32	16.52			-0.652	4.244	4.884					-1.333	1.300		
2H-3, 25-27	15.56	16.76			-0.671	4.088	4.728					-0.769	1.075	1.530	1.351
2H-3, 49-51	15.80	17.00			-0.604	4.079	4.719					-1.683	0.535	1.600	1.366

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer</i> (without sac)		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
2H-3, 73-75	16.04	17.24			-0.646	3.807	4.447							1.971	0.605
2H-3, 97-99	16.28	17.48			-0.331	3.482	4.122								
2H-3, 145-147	16.76	17.96			0.172186	3.27521	3.915							2.136	0.660
2H-4, 1-3	16.82	18.02	-0.916634	3.85346	-0.1336513	3.17903	3.819								
2H-4, 25-27	17.06	18.26			-0.375943	3.69247	4.332		1.539	-0.316	-0.487	0.596		2.090	0.600
2H-4, 49-51	17.30	18.50			0.229371	3.18082	3.821							1.865	0.867
2H-4, 97-99	17.78	18.98			-0.846437	3.90417	4.544								
2H-4, 121-123	18.02	19.22			-0.446818	3.63447	4.274								
2H-5, 1-3	18.32	19.52	-1.643206	4.39678	-0.640668	3.15983	3.800								
2H-5, 25-27	18.56	19.76	-1.652296	4.55365	-0.852514	4.00115	4.641		0.762	0.646	-1.052	1.442			
2H-5, 49-51	18.80	20.00	-1.522486	4.4772	-0.671757	3.81195	4.452		0.846	-0.200	-0.848	0.375			
2H-5, 75-77	19.06	20.26	-1.700316	4.47257	-0.625771	3.78572	4.426				-0.637	0.909			
2H-5, 121-123	19.52	20.72			-0.367561	3.26471	3.905							1.895	0.819
2H-5, 145-147	19.76	20.96			-0.367992	3.24368	3.884							1.808	0.749
3H-3, 97-99	25.78	28.33			-0.202951	2.899494	3.539							1.903	0.386
3H-3, 121-123	26.02	28.57			-0.368944	3.821414	4.461		0.506	0.713				1.515	0.439
3H-3, 145-147	26.26	28.81			-0.304422	3.425664	4.066				-0.673	0.310			
3H-4, 1-3	26.32	28.87			-0.1739106	3.481614	4.122								
3H-4, 10-12	26.41	28.96			-0.384114	3.296144	3.936		0.943	-1.132	-0.755	0.339		1.974	0.502
3H-4, 19-21	26.50	29.05			-0.0349631	3.136674	3.777		0.637	-0.028	-0.969	0.105			
3H-4, 28-30	26.59	29.14			-0.041122	3.056984	3.697		0.593	-0.313	-0.343	0.277			
3H-4, 37-39	26.68	29.23			-0.31828	3.204184	3.844							1.562	0.659
3H-4, 46-48	26.77	29.32			-0.205393	3.452734	4.093								
3H-4, 109-111	27.40	29.95			-0.1652163	3.230664	3.871							1.861	0.794
3H-4, 118-120	27.49	30.04			-0.188324	3.074904	3.715				-0.853	-0.05		1.762	0.773
3H-4, 126-128	27.57	30.12			-0.308357	3.201954	3.842		0.114	-1.021	-0.569	-0.012		1.774	0.810
3H-4, 136-138	27.67	30.22			-0.424578	3.499264	4.139							1.710	0.682
3H-4, 145-147	27.76	30.31	-1.334305	4.142164	-0.542743	3.461384	4.101				-0.444	0.405		1.826	1.161
3H-5, 37-39	28.18	30.73			-0.1817954	2.775854	3.416							2.071	0.349
3H-5, 73-75	28.54	31.09			-0.30012	3.258214	3.898								
3H-5, 109-111	28.90	31.45			-0.1411428	2.632954	3.273							2.260	0.622
3H-6, 28-30	29.59	32.14	-0.325433	2.915822	-0.0472091	2.635392	3.275							2.047	0.511
3H-6, 64-66	29.95	32.50			-0.58438	3.477602	4.118							1.452	0.583
3H-6, 100-102	30.31	32.86			0.259315	2.448402	3.088				-0.005	-0.110		1.923	0.529
3H-6, 126-128	30.57	33.12			-0.008101	2.867262	3.507							1.336	0.641
3H-6, 136-138	30.67	33.22							0.632	-0.573	-0.197	0.133			
3H-6, 145-147	30.76	33.31			0.059616	2.856582	3.497		1.299	-0.614	-0.128	-0.014		1.512	0.563
4H-2, 145-147	34.26	36.68			-0.49122	3.52679875	4.167								
4H-3, 28-30	34.59	37.01			-0.0504495	2.86982875	3.510								
4H-3, 64-66	34.95	37.37	-0.800897	3.50605875	-0.0561306	3.15528875	3.795				-0.261	0.107		1.973	0.724
4H-3, 82-84	35.13	37.55			-0.1300244	3.15201875	3.792							1.981	0.552
4H-4, 1-3	35.82	38.24			-0.28679	3.16326875	3.803								
4H-4, 27-29	36.08	38.50			-0.21549	2.81925875	3.459				-0.250	0.254		2.055	0.439
4H-4, 37-39	36.18	38.60													
4H-4, 73-75	36.54	38.96	-0.896962	3.61059875	-0.1526959	3.00746875	3.647		1.510	-0.013	-0.363	0.171			
4H-4, 109-111	36.90	39.32	-0.881847	3.88586875	-0.236872	3.30285875	3.943				0.100	0.588			

Table T1 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mcd)	<i>Uvigerina peregrina</i>		<i>Cibicidoides wuellerstorfi</i>			<i>Globigerinoides sacculifer (without sac)</i>		<i>Globigerinoides ruber</i>		<i>Globigerina bulloides</i>		<i>Globorotalia tumida</i>	
			$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{18}\text{O} +$ 0.64 (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)	$\delta^{13}\text{C}$ (‰)	$\delta^{18}\text{O}$ (‰)
4H-5, 28-30	37.59	40.01			-0.0193972	2.82183875	3.462	1.925	-0.113	2.055	-0.385	0.362	0.264		
4H-5, 64-66	37.95	40.37			-0.0480186	3.01973875	3.660							2.009	0.430
4H-5, 100-102	38.31	40.73			-0.286126	3.17681875	3.817								
4H-5, 136-138	38.67	41.09			-0.268418	3.08473875	3.725								
4H-6, 19-21	39.00	41.42			-0.0445277	2.68789875	3.328								
4H-6, 55-57	39.36	41.78			-0.600554	3.48445875	4.124					-0.569	0.609		
4H-6, 64-66	39.45	41.87			-0.412498	3.05266875	3.693					-0.191	0.790		
5H-1, 62-64	70.43	76.10			0.089	1.932	2.572	1.881	-0.107						
5H-1, 142-144	71.23	76.90													
5H-2, 62-64	71.93	77.60			0.104	2.118	2.758								
5H-2, 142-144	72.73	78.40			-0.048	2.455	3.095								
5H-3, 2-4	72.83	78.50			-0.031	2.269	2.909	1.967	-0.238						
5H-3, 102-104	73.83	79.50			0.360	2.429	3.069	2.195	-0.113						
5H-4, 2-4	74.33	80.00													
5H-4, 22-24	74.53	80.20			0.266	2.381	3.021								
5H-4, 42-44	74.73	80.40			0.283	2.174	2.814	2.116	-0.259						
5H-4, 102-104	75.33	81.00	-0.459578	2.60331875	-0.0873169	2.073	2.713								
6H-2, 122-124	83.03	90.10	-0.615	2.670	0.260	2.360	3.000	2.263	-0.737			0.383	1.633		
6H-3, 102-104	84.33	91.40	-0.796	2.538	-0.026	2.080	2.720	2.201	-0.404			0.226	0.895		
6H-3, 142-144	84.73	91.80	-0.510	2.435	0.248	2.213	2.853	1.882	-0.252			0.376	0.837		
6H-4, 122-124	86.03	93.10			0.211	2.073	2.713	1.720	-0.03			0.786	0.608		
6H-5, 62-64	86.93	94.00	-0.271	2.495	0.380	2.217	2.857	1.852	0.131			0.249	0.478		
6H-5, 142-144	87.73	94.80	-0.274	2.340	0.282	2.145	2.785	2.014	-0.612			0.406	0.872		
6H-6, 82-84	88.63	95.70	-0.472	2.625	0.027	2.317	2.957								
7H-2, 102-104	92.33	100.35	-0.281	2.765										2.175	0.340
7H-3, 42-44	93.23	101.25	-0.139	2.610	0.366	2.068	2.708								
7H-3, 82-84	93.63	101.65	-0.521	2.778	0.198	2.175	2.815							1.149	0.817
7H-3, 142-144	94.23	102.25						1.910	-0.306			0.086	0.231	1.867	0.467
7H-4, 22-24	94.53	102.55	-0.426	2.872	0.459	2.369	3.009								
7H-4, 142-144	95.73	103.75	-0.282	2.878	0.303	2.360	3.000								
7H-5, 42-44	96.23	104.25	-0.320	2.900	0.434	2.290	2.930	2.022	0.211						
7H-5, 102-104	96.83	104.85			0.471	2.428	3.068	1.860	-0.183						
7H-6, 2-4	97.33	105.35	-0.812	3.179	-0.123	2.502	3.142								
7H-6, 62-64	97.93	105.95	0.354	2.407	0.275	2.125	2.765	1.978	0.110						
8H-3, 2-4	102.33	110.40										0.625	0.930		
8H-3, 82-84	103.13	111.20			0.287	2.339	2.979					0.529	1.023		
8H-4, 2-4	103.83	111.90	-0.308	2.826								0.642	1.143		
8H-4, 82-84	104.63	112.70						1.641	-0.322			0.420	1.336	0.414	1.091
8H-5, 1-3	105.32	113.39			0.310	2.259	2.899	1.832	0.128						
8H-5, 55-57	105.86	113.93	-0.021	2.534	0.342	2.296	2.936					0.353	0.750		
8H-5, 73-75	106.04	114.11			0.339	2.187	2.827	2.118	-0.065						
8H-5, 145-147	106.76	114.83			0.333	2.311	2.951								
8H-6, 1-3	106.82	114.89													
8H-6, 18-20	106.99	115.06	-0.394	2.719				1.694	0.064			0.638	1.196		
8H-6, 55-57	107.36	115.43			-0.055	2.358	2.998								

Table T2. Elemental ratio data of planktonic foraminifers, Holes 1237B, 1237C, and 1237D. (Continued on next four pages.)

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mbsf)	<i>G. sacculifer</i> (without sac)			<i>G. ruber</i>			<i>G. bulloides</i>		
			Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)
202-1237B-											
1H-1, 26-28	0.27	0.27	1.795	1.335	-0.001						
1H-1, 50-52	0.51	0.51	2.347	1.399	0.016				2.443	1.342	0.015
1H-1, 74-76	0.75	0.75							2.480	1.333	0.032
1H-1, 98-100	0.99	0.99							2.153	1.310	0.034
1H-1, 122-124	1.23	1.23				1.787	1.394	0.016	2.429	1.291	0.021
1H-2, 1-3	1.52	1.52							2.773	1.345	0.017
1H-2, 25-27	1.76	1.76							2.545	1.314	0.021
6H-1, 55-57	44.06	49.78				2.165	1.331	0.066	2.312	1.190	0.087
6H-1, 91-93	44.42	50.14	2.351	1.340	0.091	2.654	1.324	0.116	2.023	1.283	0.094
6H-1, 145-147	44.96	50.68	2.162	1.270	0.055						
6H-2, 1-3	45.02	50.74	1.920	1.249	0.042				2.552	1.252	0.096
6H-2, 75-77	45.76	51.48				2.314	1.319	0.073	2.281	1.226	0.068
6H-2, 91-93	45.92	51.64	2.331	1.304	0.067	2.416	1.354	0.091	2.436	1.247	0.098
6H-2, 127-129	46.28	52.00	2.367	1.287	0.066	2.228	1.351	0.085	2.341	1.244	0.102
6H-3, 1-3	46.52	52.24	2.412	1.272	0.073	2.762	1.338	0.096	2.680	1.271	0.119
6H-3, 73-75	47.24	52.96							2.152	1.149	0.057
6H-4, 19-21	48.20	53.92	2.167	1.286	0.053	2.488	1.331	0.098	2.145	1.230	0.085
6H-4, 91-93	48.92	54.64	2.130	1.234	0.092	2.667	1.324	0.149	2.277	1.236	0.123
6H-5, 19-21	49.70	55.42	2.234	1.249	0.067	2.453	1.312	0.133	2.420	1.222	0.102
6H-5, 91-93	50.42	56.14	2.448	1.268	0.057	2.493	1.302	0.127	2.422	1.240	0.127
6H-5, 145-147	50.96	56.68							2.363	1.238	0.104
7H-2, 37-39	54.88	60.45				2.296	1.299	0.057	2.305	1.282	0.069
7H-2, 109-111	55.60	61.17				2.659	1.317	0.122	2.160	1.223	0.081
7H-3, 109-111	57.10	62.67							2.767	1.240	0.160
7H-5, 19-21	59.20	64.77	2.142	1.187	0.112						
7H-5, 19-21	59.20	64.77	2.276	1.199	0.126				2.929	1.205	0.130
7H-5, 145-147	60.46	66.03	2.608	1.254	0.106						
8H-2, 73-75	64.74	70.46	2.862	1.209	0.238				2.347	1.154	0.232
8H-4, 55-57	67.56	73.28	1.720	1.245	0.083						
8H-5, 1-3	68.52	74.24	2.057	1.221	0.075						
8H-5, 37-39	68.88	74.60	1.936	1.182	0.079						
202-1237C-											
2H-2, 121-123	12.02	10.92	2.212	1.345	0.054	2.179	1.327	0.023	2.184	1.270	0.108
2H-2, 121-123	12.02	10.92							2.748	1.359	0.047
2H-3, 1-3	12.32	11.22	2.197	1.249	0.041	2.585	1.288	0.046	2.391	1.200	0.043
2H-3, 25-27	12.56	11.46	2.365	1.317	0.046	2.545	1.315	0.054	2.961	1.187	0.050
2H-3, 49-51	12.80	11.70	2.902	1.390	0.105	2.335	1.330	0.054	2.179	1.239	0.049
2H-3, 49-51	12.80	11.70	3.100	1.363	0.113	2.515	1.312	0.059	2.841	1.370	0.055
2H-3, 73-75	13.04	11.94	2.332	1.369	0.045	2.059	1.396	0.055	2.171	1.324	0.065
2H-3, 97-99	13.28	12.18				2.356	1.328	0.057	1.938	1.267	0.046
2H-3, 121-123	13.52	12.42				2.419	1.312		2.097	1.254	0.054
2H-3, 145-147	13.76	12.66				2.206	1.324	0.033	2.237	1.231	0.056
2H-4, 1-3	13.82	12.72				2.219	1.395	0.044	2.250	1.241	0.059
2H-4, 25-27	14.06	12.96				1.997	1.380	0.061	1.724	1.266	0.054
2H-4, 49-51	14.30	13.20							2.138	1.231	0.060
2H-4, 73-75	14.54	13.44				2.246	1.380	0.056	2.463	1.206	0.046
2H-4, 97-99	14.78	13.68							1.688	1.336	0.023
2H-4, 121-123	15.02	13.92				2.105	1.339	0.062			
2H-4, 145-147	15.26	14.16				1.905	1.299	0.032			
2H-5, 1-3	15.32	14.22				2.830	1.398	0.081	2.894	1.271	0.057
2H-5, 25-27	15.56	14.46	3.037	1.396	0.020						
2H-5, 73-75	16.04	14.94							2.119	1.340	0.065
3H-1, 121-123	20.02	21.77				2.303	1.366	0.059	2.665	1.284	0.070
3H-2, 25-27	20.56	22.31				2.428	1.361	0.044			
3H-2, 49-51	20.80	22.55				2.400	1.354	0.056	2.289	1.288	0.064
3H-2, 71-73	21.02	22.77							2.049	1.277	0.043
3H-3, 25-27	22.06	23.81				2.420	1.342	0.056			
3H-4, 97-99	24.28	26.03	2.663	1.355	0.119	2.726	1.351	0.102	2.901	1.370	0.116
3H-4, 97-99	24.28	26.03				2.828	1.343	0.106	2.939	1.365	0.103
3H-5, 73-75	25.54	27.29				2.366	1.330	0.058	2.099	1.263	0.057
3H-5, 100-102	25.81	27.56							2.559	1.271	0.084
3H-5, 121-123	26.02	27.77				3.035	1.300	0.090	2.482	1.360	0.059
4H-3, 37-39	31.68	33.13							2.371	1.295	0.055
4H-3, 39-39	31.69	33.14	2.739	1.387	0.055						

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mbsf)	<i>G. sacculifer</i> (without sac)			<i>G. ruber</i>			<i>G. bulloides</i>		
			Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)
4H-3, 55-57	31.86	33.31							2.632	1.289	0.056
4H-4, 1-3	32.82	34.27							2.193	1.274	0.044
4H-4, 64-66	33.45	34.90							2.979	1.301	0.045
5H-1, 136-138	39.17	42.04				2.196	1.367	0.090	1.898	1.287	0.078
5H-1, 136-138	39.17	42.04							1.921	1.264	0.076
5H-2, 55-57	39.86	42.73				2.418	1.364	0.104	2.040	1.287	0.102
5H-2, 55-57	39.86	42.73				2.736	1.328	0.073			
5H-2, 91-93	40.22	43.09				2.587	1.347	0.072	2.072	1.287	0.076
5H-2, 127-129	40.58	43.45				3.115	1.311	0.021	1.747	1.255	0.063
5H-3, 28-30	41.09	43.96				2.465	1.363	0.104	2.813	1.255	0.081
5H-3, 28-30	41.09	43.96							2.927	1.235	0.074
5H-3, 64-66	41.45	44.32				2.558	1.350	0.065	2.140	1.289	0.095
5H-3, 64-66	41.45	44.32				2.576	1.350	0.092			
5H-3, 118-120	41.99	44.86				2.419	1.300	0.123	2.362	1.244	0.109
5H-4, 28-30	42.59	45.46				2.112	1.283	0.048	2.014	1.220	0.065
5H-4, 64-66	42.95	45.82				2.293	1.283	0.050	2.061	1.237	0.057
5H-4, 109-111	43.40	46.27							2.124	1.316	0.082
5H-5, 1-3	43.82	46.69	1.961	1.347	0.065	2.628	1.395	0.072	2.060	1.325	0.093
5H-5, 37-39	44.18	47.05							1.763	1.301	0.052
5H-5, 82-84	44.63	47.50							2.167	1.268	0.087
5H-5, 118-120	44.99	47.86							1.939	1.237	0.079
5H-6, 1-3	45.32	48.19				2.560	1.376	0.117	2.007	1.306	0.079
5H-6, 1-3	45.32	48.19							2.072	1.276	0.086
5H-6, 37-39	45.68	48.55				2.781	1.349	0.040	2.041	1.283	0.071
5H-6, 73-75	46.04	48.91	1.792	1.318	0.063				1.748	1.306	0.074
5H-6, 73-75	46.04	48.91	1.817	1.317	0.063						
5H-6, 109-111	46.40	49.27	1.946	1.265	0.072	2.911	1.364	0.106			
5H-6, 109-111	46.40	49.27	2.030	1.264	0.070						
5H-6, 145-147	46.76	49.63	1.982	1.264	0.064				2.045	1.287	0.114
5H-6, 145-147	46.76	49.63	2.023	1.277	0.073						
5H-7, 19-21	47.00	49.87							1.906	1.248	0.069
6H-3, 91-93	51.22	55.69	2.319	1.242	0.120				1.983	1.239	0.070
6H-3, 91-93	51.22	55.69							2.137	1.261	0.077
6H-3, 109-111	51.40	55.87	2.127	1.278	0.037	2.115	1.324	0.054	2.098	1.231	0.086
6H-3, 109-111	51.40	55.87				2.149	1.322	0.079			
6H-4, 1-3	51.82	56.29							2.078	1.255	0.098
6H-4, 1-3	51.82	56.29							2.602	1.255	0.114
6H-4, 19-21	52.00	56.47							2.070	1.210	0.057
6H-4, 73-75	52.54	57.01	2.619	1.254	0.068				2.096	1.222	0.107
6H-4, 91-93	52.72	57.19							1.994	1.189	0.065
6H-4, 91-93	52.72	57.19							2.115	1.203	0.073
6H-4, 145-147	53.26	57.73							2.132	1.244	0.056
6H-5, 1-3	53.32	57.79	1.926	1.260	0.052	2.145	1.312	0.088	2.129	1.259	0.079
6H-5, 1-3	53.32	57.79				2.478	1.285	0.081			
6H-5, 55-57	53.86	58.33	1.650	1.301	0.112				2.351	1.244	0.130
6H-5, 73-75	54.04	58.51	2.605	1.251	0.127	3.049	1.242	0.193	2.223	1.240	0.102
6H-5, 127-129	54.58	59.05							2.318	1.211	0.097
6H-6, 37-39	55.18	59.65	2.555	1.281	0.092				2.320	1.217	0.056
6H-6, 37-39	55.18	59.65	2.613	1.279	0.099				2.621	1.269	0.077
6H-6, 55-57	55.36	59.83				2.368	1.338	0.053	2.095	1.262	0.074
6H-6, 109-111	55.90	60.37	2.045	1.318	0.060				1.965	1.278	0.063
6H-6, 109-111	55.90	60.37							2.680	1.294	0.067
6H-6, 127-129	56.08	60.55				2.280	1.328	0.052	2.163	1.269	0.066
7H-4, 55-57	61.86	66.83				2.368	1.275	0.226			
7H-4, 109-111	62.40	67.37	2.055	1.225	0.092				2.473	1.206	0.139
7H-4, 127-129	62.58	67.55	1.794	1.189	0.055	2.357	1.273	0.127			
7H-5, 19-21	63.00	67.97							2.055	1.284	0.213
7H-6, 1-3	64.32	69.29							2.466	1.125	0.091
7H-6, 19-21	64.50	69.47	2.307	1.278	0.102				2.390	1.145	0.165
7H-6, 73-75	65.04	70.01	2.231	1.241	0.147						
7H-6, 73-75	65.04	70.01	2.454	1.270	0.220				3.026	1.183	0.202
7H-6, 91-93	65.22	70.19	2.319	1.229	0.160				2.144	1.248	0.272
7H-6, 127-129	65.58	70.55	1.675	1.171	0.131				2.901	1.155	0.208
7H-6, 127-129	65.58	70.55	1.702	1.158	0.136						
8H-2, 91-93	68.72	74.39	1.706	1.162	0.100				1.519	1.168	0.155
8H-2, 127-129	69.08	74.75	1.741	1.133	0.082						
8H-3, 2-4	69.33	75.00	2.059	1.175	0.168						

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mbsf)	<i>G. sacculifer</i> (without sac)			<i>G. ruber</i>			<i>G. bulloides</i>		
			Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)
8H-3, 22-24	69.53	75.20	1.607	1.171	0.100				2.720	1.169	0.133
8H-3, 22-24	69.53	75.20	1.741	1.187	0.108						
8H-3, 82-84	70.13	75.80	2.010	1.198	0.160						
8H-3, 122-124	70.53	76.20	1.983	1.154	0.122						
8H-3, 122-124	70.53	76.20	2.189	1.184	0.156						
9H-2, 22-24	77.53	83.70							2.021	1.182	0.095
9H-2, 102-104	78.33	84.50							2.454	1.141	0.065
9H-3, 22-24	79.03	85.20							2.441	1.097	0.123
9H-3, 102-104	79.83	86.00							2.454	1.126	0.124
9H-4, 22-24	80.53	86.70	2.398	1.135	0.158				2.518	1.084	0.137
9H-4, 22-24	80.53	86.70	2.490	1.109	0.169				2.533	1.067	0.152
9H-4, 102-104	81.33	87.50	2.363	1.090	0.061				2.490	1.056	0.087
9H-4, 102-104	81.33	87.50							2.667	1.064	0.064
9H-5, 22-24	82.03	88.20	2.164	1.150	0.094				2.446	1.048	0.103
9H-5, 22-24	82.03	88.20							2.542	1.052	0.085
9H-5, 102-104	82.83	89.00							2.185	1.149	0.082
10H-3, 22-24	88.53	95.75	3.086	1.166	0.235				2.700	1.104	0.143
10H-3, 102-104	89.33	96.55							2.770	1.045	0.103
10H-4, 22-24	90.03	97.25	3.296	1.141	0.140				3.144	1.101	0.137
10H-4, 102-104	90.83	98.05	2.770	1.108	0.187				3.198	1.042	0.125
10H-5, 22-24	91.53	98.75	2.820	1.111	0.219				2.456	1.043	0.159
10H-5, 22-24	91.53	98.75	2.850	1.116	0.222				2.471	1.054	0.157
10H-6, 22-24	93.03	100.25	2.481	1.144	0.271				2.001	0.999	0.109
11H-3, 22-24	98.03	106.20							2.536	0.983	0.143
11H-3, 22-24	98.03	106.20							2.837	0.994	0.147
11H-3, 102-104	98.83	107.00	2.035	1.017	0.207				2.498	0.980	0.163
11H-3, 102-104	98.83	107.00							2.746	1.001	0.182
11H-4, 42-44	99.73	107.90							2.355	1.012	0.191
11H-4, 142-144	100.73	108.90	2.131	1.113	0.117				2.326	1.040	0.152
11H-4, 142-144	100.73	108.90	2.198	1.082	0.114				2.677	1.038	0.183
11H-5, 62-64	101.43	109.60	2.394	1.086	0.136				1.000	0.118	
11H-5, 62-64	101.43	109.60						2.595	1.004	0.130	
11H-5, 142-144	102.23	110.40	3.052	1.062	0.215				2.506	0.994	0.170
11H-5, 142-144	102.23	110.40							2.522	0.986	0.169
12H-2, 82-84	106.63	115.25	2.744	1.152	0.150						
12H-2, 82-84	106.63	115.25	2.880	1.182	0.155						
12H-3, 2-4	107.33	115.95	2.411	1.205	0.111						
12H-3, 57-57	107.87	116.49	2.812	1.118	0.147						
12H-3, 57-57	107.87	116.49	2.941	1.095	0.143						
12H-3, 57-59	107.88	116.50							2.652	1.027	0.151
12H-3, 92-94	108.23	116.85	2.835	1.133	0.153				2.600	1.051	0.109
12H-3, 92-94	108.23	116.85	2.867	1.163	0.154						
12H-4, 2-4	108.83	117.45	3.342	1.159	0.162				2.378	1.061	0.120
12H-4, 82-84	109.63	118.25	2.481	1.158	0.099				2.400	1.098	0.081
12H-4, 82-84	109.63	118.25	2.597	1.192	0.113						
12H-5, 2-4	110.33	118.95	3.126	1.137	0.144				2.320	1.027	0.106
12H-5, 53-55	110.84	119.46							2.459	1.017	0.080
12H-5, 53-55	110.84	119.46							2.497	1.001	0.106
12H-5, 53-55	110.84	119.46							2.522	1.024	0.113
12H-5, 53-55	110.84	119.46							2.607	1.010	0.091
12H-5, 92-94	111.23	119.85	2.382	1.120	0.134				3.503	1.023	0.116
12H-6, 2-4	111.83	120.45	2.906	1.132	0.183						
12H-6, 2-4	111.83	120.45	2.964	1.115	0.184						
12H-6, 73-75	112.54	121.16	1.987	1.088	0.094						
12H-6, 107-109	112.88	121.50	2.223	1.117	0.102				2.372	1.037	0.082
12H-6, 107-109	112.88	121.50	2.297	1.096	0.106				2.612	1.061	0.093
202-1237D-											
1H-2, 67-69	4.98	4.48	2.372	1.347	0.041				2.630	1.353	0.047
1H-2, 73-75	5.04	4.54	2.487	1.349	0.054				2.269	1.326	0.067
1H-2, 97-99	5.28	4.78	2.717	1.346	0.011				1.622	1.342	0.028
1H-2, 121-123	5.52	5.02							2.188	1.307	0.058
1H-2, 145-147	5.76	5.26							2.209	1.314	0.069
1H-3, 1-3	5.82	5.32							2.207	1.303	0.071
1H-3, 25-27	6.06	5.56	2.503	1.346	0.086	2.093	1.395	0.058	1.994	1.297	0.051
1H-3, 25-27	6.06	5.56							3.114	1.322	0.078
1H-3, 49-51	6.30	5.80				2.302	1.364	0.041	2.220	1.295	0.054
1H-3, 49-51	6.30	5.80				2.410	1.348	0.039			

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mbsf)	<i>G. sacculifer</i> (without sac)			<i>G. ruber</i>			<i>G. bulloides</i>		
			Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)
1H-3, 73-75	6.54	6.04				2.577	1.317	0.052	2.290	1.270	0.050
1H-3, 73-75	6.54	6.04							2.317	1.285	0.053
1H-3, 97-99	6.78	6.28							2.993	1.331	0.091
1H-4, 25-27	7.56	7.06				2.580	1.366	0.056			
1H-4, 49-51	7.80	7.30				2.628	1.390	0.057	1.865	1.346	0.037
1H-4, 73-75	8.04	7.54				2.173	1.389	0.052	2.547	1.289	0.080
1H-4, 97-99	8.28	7.78				2.547	1.410	0.054	2.450	1.309	0.051
1H-4, 121-123	8.52	8.02				2.592	1.341	0.053	2.000	1.292	0.053
1H-4, 145-147	8.76	8.26				2.913	1.401	0.041			
1H-5, 1-3	8.82	8.32				2.098	1.364	0.047	2.198	1.282	0.081
1H-5, 73-75	9.54	9.04							1.816	1.295	0.044
1H-5, 97-99	9.78	9.28							2.200	1.330	0.016
1H-6, 1-3	10.32	9.82	2.152	1.298	0.036						
1H-6, 73-75	11.04	10.54							2.121	1.273	0.044
1H-6, 97-99	11.28	10.78				1.994	1.374	0.049	1.954	1.276	0.045
1H-6, 121-123	11.52	11.02							2.499	1.268	0.041
1H-6, 145-147	11.76	11.26				1.917	1.374	0.042	2.350	1.260	0.049
2H-2, 49-51	14.30	15.50	2.111	1.269	0.030						
2H-2, 145-147	15.26	16.46	1.980	1.340	0.044						
2H-3, 1-3	15.32	16.52							1.953	1.314	0.066
2H-3, 1-3	15.32	16.52							1.968	1.280	0.050
2H-3, 25-27	15.56	16.76							2.490	1.297	0.059
2H-3, 49-51	15.80	17.00				1.724	1.413	0.065	2.245	1.287	0.067
2H-3, 73-75	16.04	17.24				2.043	1.417	0.044	2.249		0.063
2H-3, 97-99	16.28	17.48							2.132	1.306	0.053
2H-4, 25-27	17.06	18.26				2.367	1.376	0.065	2.068	1.276	0.050
2H-4, 25-27	17.06	18.26				2.686	1.366	0.067			
2H-4, 121-123	18.02	19.22							2.079	1.268	0.012
2H-5, 25-27	18.56	19.76				2.374	1.389	0.043	2.245	1.298	0.071
2H-5, 49-51	18.80	20.00				2.472	1.346	0.059	2.597	1.328	0.054
2H-5, 75-77	19.06	20.26				2.173		0.060	2.424	1.336	0.057
2H-5, 97-99	19.28	20.48							2.785	1.221	0.000
3H-3, 121-123	26.02	28.57				2.124	1.311	0.056	2.166	1.251	0.061
3H-3, 145-147	26.26	28.81				2.967	1.417	0.066	2.247	1.355	0.058
3H-4, 10-12	26.41	28.96				2.596	1.297	0.085	2.395	1.275	0.066
3H-4, 19-21	26.50	29.05				1.987	1.339	0.069	2.358	1.263	0.070
3H-4, 28-30	26.59	29.14				2.115	1.384	0.071	2.024	1.323	0.068
3H-4, 109-111	27.40	29.95							2.959	1.330	0.018
3H-4, 118-120	27.49	30.04							2.271	1.238	0.051
3H-4, 126-128	27.57	30.12				2.404	1.277	0.055	2.381	1.247	0.052
3H-4, 145-147	27.76	30.31				3.490	1.361	0.000	2.034	1.337	0.058
3H-5, 37-39	28.18	30.73				3.263	1.356	0.023			
3H-5, 71-73	28.52	31.07				2.210	1.333	0.176			
3H-6, 100-102	30.31	32.86				2.622	1.368	0.062	2.295	1.283	0.080
3H-6, 136-138	30.67	33.22				3.089	1.406	0.054	2.425	1.239	0.042
3H-6, 145-147	30.76	33.31	2.664	1.395	0.057	3.041	1.400	0.066	2.825		0.055
4H-3, 64-66	34.95	37.37							2.209	1.306	0.048
4H-4, 1-3	35.82	38.24							2.645	1.334	0.023
4H-4, 73-75	36.54	38.96				2.584	1.373	0.037	2.112	1.285	0.050
4H-4, 109-111	36.90	39.32							2.328	1.285	0.049
4H-5, 28-30	37.59	40.01	2.192	1.311	0.026	2.609	1.364	0.060	2.292	1.281	0.058
4H-6, 55-57	39.36	41.78							1.995	1.303	0.056
4H-6, 64-66	39.45	41.87				2.314	1.391	0.001	1.809	1.292	0.060
5H-1, 62-64	70.43	76.10	1.978	1.188	0.131						
5H-2, 62-64	71.93	77.60	2.637	1.178	0.216						
5H-3, 102-104	73.83	79.50	2.613	1.254	0.142						
5H-4, 2-4	74.33	80.00	2.846		0.128						
5H-4, 42-44	74.73	80.40	2.631	1.228	0.130						
6H-2, 122-124	83.03	90.10	2.812	1.210	0.158				2.101	1.076	0.126
6H-3, 102-104	84.33	91.40	2.689	1.163	0.106				2.088	1.095	0.061
6H-3, 142-144	84.73	91.80	2.969	1.159	0.181				2.991	1.080	0.147
6H-3, 142-144	84.73	91.80	3.006	1.147	0.195				3.040	1.060	0.137
6H-4, 122-124	86.03	93.10	2.935	1.138	0.174						
6H-4, 122-124	86.03	93.10	3.073	1.149	0.187				2.946	1.052	0.129
6H-5, 62-64	86.93	94.00	2.874	1.170	0.161				2.660	1.069	0.114
6H-5, 142-144	87.73	94.80	2.602	1.199	0.217						
6H-5, 142-144	87.73	94.80	2.618	1.183	0.217				2.808	1.058	0.126

Table T2 (continued).

Core, section, interval (cm)	Depth (mbsf)	Composite depth (mbsf)	<i>G. sacculifer</i> (without sac)			<i>G. ruber</i>			<i>G. bulloides</i>		
			Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)	Mg/Ca (mmol/ mol)	Sr/Ca (mmol/ mol)	Mn/Ca (mmol/ mol)
6H-6, 82-84	88.63	95.70	2.349	1.191	0.182				2.069	1.105	0.147
7H-3, 142-144	94.23	102.25	2.914	1.145	0.262				2.779	1.093	0.181
7H-4, 22-24	94.53	102.55	2.560	1.167	0.205						
7H-4, 142-144	95.73	103.75							1.941	1.093	0.167
7H-5, 42-44	96.23	104.25	2.686	1.121	0.218				2.912	1.075	0.139
7H-5, 102-104	96.83	104.85	2.878	1.120	0.222						
7H-6, 62-64	97.93	105.95	3.115	1.136	0.240						
7H-6, 82-84	98.13	106.15	2.908	1.126	0.375						
8H-3, 2-4	102.33	110.40							2.573		0.197
8H-3, 82-84	103.13	111.20							2.399	1.111	0.124
8H-4, 2-4	103.83	111.90							2.608	1.103	0.141
8H-4, 82-84	104.63	112.70	3.009	1.197	0.213				2.302	1.096	0.141
8H-5, 1-3	105.32	113.39	2.783	1.101	0.175						
8H-5, 55-57	105.86	113.93	2.462	1.049	0.120				2.670	1.077	0.136
8H-5, 55-57	105.86	113.93							3.133	1.063	0.126
8H-5, 73-75	106.04	114.11	2.749	1.101	0.183						
8H-5, 145-147	106.76	114.83	3.042	1.106	0.187						
8H-6, 1-3	106.82	114.89							2.463	1.033	0.049
8H-6, 18-20	106.99	115.06	2.619	1.103	0.153				2.514	1.051	0.155
8H-6, 18-20	106.99	115.06	2.753	1.098	0.155						
8H-6, 55-57	107.36	115.43	2.619	1.046	0.054						