

Expedition 317 Site U1352, Table T5. Microfossil bioevents, Site U1352. (See table notes.)

Core, section		Microfossil	Bioevents, unconformities, and epoch boundaries	Age (Ma)	Depth CSF-A (m)				Comments
Top	Bottom				Top	Bottom	Midpoint	±	
317-U1352A-1H-CC	317-U1352A-5H-CC	CN	<i>Emiliana huxleyi</i> Zone (NN21a)	0-0.29 (± 0.03)	4.21	43.06	23.64	19.43	
317-U1352B-12H-CC	317-U1352B-13H-CC	CN	LO <i>Emiliana huxleyi</i> (NN21 base)	0.29 (± 0.03)	112.82	121.10	116.96	4.14	
14H-CC	15H-CC	BF	HO <i>Proxifrons advena</i>	~0.40 (± 0.2)	130.26	141.14	136.28	5.42	
16H-CC	17H-CC	BF	HO <i>Bolivinita pliozea</i>	0.60 (± 0.2)	150.74	155.99	153.45	2.66	HO controlled by bathymetry?
17H-CC	18H-CC	CN	HO <i>Pseudoemiliana lacunosa</i> (NN20 base)	0.44 (± 0.01)	155.99	164.18	160.09	4.09	
20H-CC	20H-CC	BF	<i>Loxostomum karreianum</i>	0-0.34 (± 0.2)	180.38	180.38	180.38		One specimen
20H-CC	21H-CC	PF	LO <i>Hirsutella hirsuta</i>	0.34 (± 0.1)	180.38	189.06	184.72	4.34	
21H-CC	22H-CC	PF	HO <i>Globoconella punctuloides</i>	0.5 (± 0.2)	189.06	198.87	193.97	4.91	Recalibrated at Site U1352
22H-CC	23H-CC	DT	HO <i>Fragilariopsis fossilis</i>	0.70 (± 0.03)	198.87	208.46	208.67	0.00	
29H-CC	30H-CC	CN	HCO <i>Reticulofenestra asanoi</i>	0.91 (± 0.01)	257.09	266.92	262.01	4.92	
34H-CC	35H-CC	CN	LCO <i>Reticulofenestra asanoi</i>	1.14 (± 0.01)	292.54	295.24	293.89	1.35	
42X-CC	43X-CC	CN	HO <i>Gephyrocapsa</i> >6.5 µm	1.24 (± 0.05)	348.59	360.08	354.34	5.75	
43X-CC	44X-CC	CN	HO <i>Gephyrocapsa</i> >5.5 µm	1.26 (± 0.05)	360.08	369.84	364.96	4.88	
46X-CC	47X-CC	CN	HO <i>Helicosphaera sellii</i>	1.34 (± 0.01)	388.95	398.56	393.76	4.81	
49X-CC	50X-CC	CN	LO <i>Gephyrocapsa</i> >5.5 µm	1.56 (± 0.05)	412.30	427.34	419.82	7.52	
54X-CC	55X-CC	CN	LO <i>Gephyrocapsa</i> >4 µm	1.69 (± 0.05)	463.67	469.84	466.76	3.08	
55X-CC	55X-CC	DT	?HO <i>Actinocyclus karstenii</i>	1.73 (± 0.15)	469.84	469.84	470.06		Event not well defined
55X-CC	56X-CC	CN	LO <i>Gephyrocapsa caribbeanica</i>	1.73 (± 0.01)	469.84	484.83	477.34	7.50	
57X-CC	61X-CC		Pliocene/Pleistocene boundary	1.81	491.74	525.34	508.54	16.80	
57X-CC	61X-CC		Unconformity, late Pliocene missing?		491.74	525.34	519.98	5.37	
60X-CC	61X-CC	PF	LO <i>Truncorotalia crassula</i>	<2.4 (± 0.1)	514.61	525.34	519.98	5.37	
60X-CC	61X-CC	PF	HO <i>Truncorotalia crassaconica?</i>	>3.09 (± 0.1)	514.61	525.34	519.98	5.37	
61X-CC	62X-CC	CN	HO <i>Reticulofenestra ampla</i>	2.78 (± 0.1)	525.34	542.58	533.96	8.62	Event not well defined
64X-CC	65X-CC	BF	HO <i>Haeuslerella morgani</i>	3.62-5.30 (± 1.0)	557.28	562.35	560.15	2.52	
65X-CC	65X-CC	PF	<i>Truncorotalia crassaformis</i> upper dextral coiling zone?	2.45-3.04 (± 0.1)	562.35	562.35	562.35		Poorly constrained
67X-CC	68X-CC	PF	HO <i>Zeaglobigerina woodi</i> (rare)	?>2.7 (± 0.1)	573.33	583.56	578.45	5.12	HCO dated 2.7 Ma
317-U1352C-26R-CC	317-U1352C-27R-CC	PF	HO <i>Globoconella subconomiozea</i>	3.35 (± 0.1)	855.29	864.94	860.12	4.83	
29R-CC	30R-CC	CN	HO <i>Reticulofenestra pseudoumbilicus</i>	3.70 (± 0.05)	884.91	894.37	889.64	4.73	
56R-CC	57R-CC	PF	LO <i>Globoconella inflata</i> s.s.	4.3 (± 0.3)	1147.41	1155.03	1151.22	3.81	
56R-CC	57R-CC	PF	HO <i>Globoconella puncticulata</i> s.s.	4.3 (± 0.3)	1147.41	1155.03	1151.22	3.81	
61R-CC	62R-CC	PF	HO <i>Globoconella pliozea</i>	4.49 (± 0.1)	1197.57	1206.27	1201.92	4.35	
64R-CC	65R-CC	BF	HO <i>Hopkinsina mioindex</i>	3.62 (± 0.5)	1217.80	1222.21	1220.01	2.20	HO controlled by bathymetry?
72R-CC	73R-CC	PF	LO <i>Globoconella puncticulata</i> s.s.	5.30 (± 0.1)	1266.38	1283.95	1275.17	8.79	
72R-CC	73R-CC		Miocene/Pliocene boundary	5.33	1266.38	1283.95	1275.17	8.79	Conformable?
72R-CC	73R-CC	PF	HO <i>Globoconella sphericomiozea</i> s.s.	5.30 (± 0.1)	1266.38	1283.95	1275.17	8.79	
84R-CC	85R-CC	BF	LO <i>Uvigerina pliozea</i>	5.30 (± 0.1)	1342.48	1352.39	1347.44	4.96	
90R-CC	91R-CC	PF	LO <i>Globoconella sphericomiozea</i> s.s.	5.60 (± 0.1)	1394.62	1409.66	1402.14	7.52	LO at unconformity
90R-CC	91R-CC		Unconformity, at least 5.0 m.y. missing		1394.62	1409.66	1402.14	7.52	
90R-CC	91R-CC	PF	HO <i>Globoconella miotumida</i>	7.07 (± 0.1)	1394.62	1409.66	1402.14	7.52	HO at unconformity
90R-CC	91R-CC	BB	<i>Bolboforma metzmacheri</i> s.s.	8.85-9.62 (± 0.02)	1409.66	1409.58	1409.62	-0.04	BBs reworking or bioturbated into BBs and eroded?
90R-CC	91R-CC	BB	<i>Bolboforma subfragoris</i> s.l.	10.58-11.64 (± 0.02)	1394.62	1409.66	1402.14	7.52	BBs reworking?
93R-CC	94R-CC	BB	HO <i>Bolboforma subfragoris</i> s.l.?	10.58 (± 0.02)	1438.43	1438.43	1438.43		HO without <i>B. metzmacheri</i>
94R-CC	94R-CC	BF	<i>Loxostomum truncatum</i>	8.95-12.76 (± 0.5)	1438.43	1438.43	1438.43		One specimen
94R-CC	95R-CC	CN	HO <i>Coccolithus miopelagicus</i>	11.02 (± 0.05)	1438.43	1446.91	1442.67	4.24	
94R-CC	95R-CC	BF	<i>Notorotalia wilsoni</i>	>11.01 (± 1.0)	1438.43	1446.91	1442.67	4.24	Poorly dated HO
95R-CC	96R-CC	PF	HCO <i>Paragloborotalia mayeri</i> s.l.	10.97 (± 0.02)	1438.43	1446.91	1442.67	4.24	
95R-CC	96R-CC	BF	LO <i>Notorotalia taranakia</i>	11.01 (± 0.5)	1446.91	1448.00	1447.46	0.55	
95R-CC	96R-CC	BF	LO <i>Haeuslerella morgani</i>	~11.01 (± 0.5)	1446.91	1448.00	1447.46	0.55	
101R-CC	102R-CC	PF	LO <i>Bolboforma subfragoris</i> s.l.	11.64 (± 0.02)	1486.78	1496.50	1491.64	4.86	
101R-CC	102R-CC		Unconformity, at least 1.3 m.y. missing		1486.78	1496.50	1491.64	4.86	
101R-CC	102R-CC	CN	HO <i>Calcidiscus premacintyreii</i>	12.45 (± 0.05)	1486.78	1496.50	1491.64	4.86	
101R-CC	102R-CC	PF	HO <i>Globoconella conica</i>	12.98 (± 0.1)	1486.78	1496.50	1491.64	4.86	
102R-CC	103R-CC	CN	HCO <i>Cyclicargolithus floridanus</i>	13.33 (± 0.05)	1496.50	1515.94	1506.22	9.72	
102R-CC	103R-CC	PF	LCO <i>Paragloborotalia mayeri</i> s.l.	13.33 (± 0.3)	1496.50	1515.94	1506.22	9.72	
102R-CC	103R-CC	PF	HO <i>Globoconella miozea</i>	13.33-15.1	1496.50	1515.94	1506.22	9.72	HO in Lillburnian, poorly dated
104R-CC	105R-CC	BF	?LO <i>Hopkinsina mioindex</i>	<15.10 (± 0.5)	1525.67	1534.20	1529.94	4.27	HO controlled by bathymetry?
114R-CC	115R-CC	CN	HO <i>Sphenolithus heteromorphus</i>	13.53 (± 0.1)	1622.61	1632.61	1627.61	5.00	Could be HO or increase
119R-CC	120R-CC	CN	?HCO <i>Discoaster deflandrei</i>	15.80 (± 0.1)	1670.41	1669.36	1669.89	-0.53	Caved?; event below Core 120R in 121R?
123R-CC	124R-CC	PF	?HO <i>Globoconella praescitula</i>	16.70 (± 0.3)	1697.39	1707.63	1702.51	5.12	
125R-CC	126R-CC	PF	HO <i>Globoconella zealandica</i>	16.70 (± 0.3)	1714.42	1725.45	1719.94	5.52	
129R-CC	130R-CC	CN	LCO <i>Sphenolithus heteromorphus</i>	17.71 (± 0.1)	1749.66	1760.69	1755.18	5.51	
131R-CC	132R-CC	PF	HO <i>Globoconella incognita</i>	18.3 (± 0.3)	1769.18	1777.59	1773.39	4.20	
132R-CC	133R-CC	CN	?HCO <i>Sphenolithus belemnus</i>	17.95 (± 0.05)	1777.59	1789.60	1783.60	6.01	Possibly HO, not HCO
132R-CC	133R-CC	PF	HO <i>Catapsydrax dissimilis</i>	18.7 (± 0.3)	1777.59	1789.60	1783.60	6.01	Younger at ODP Site 1171
134R-CC	135R-CC	CN	HCO <i>Sphenolithus belemnus</i>	17.95 (± 0.05)	1797.90	1810.40	1804.15	6.25	
135R-CC	136R-CC	PF	?HO <i>Zeaglobigerina connecta</i>	18.5 (± 0.3)	1810.40	1819.56	1814.98	4.58	
137R-CC	138R-CC	CN	?LO <i>Sphenolithus belemnus</i>	19.03 (± 0.1)	1829.75	1841.54	1835.65	5.89	
139R-CC	140R-CC		Oligocene/Miocene boundary; Marshall Paraconformity; cut to 30-32 Ma; ~12 m.y. missing		1848.49	1852.71	1850.60	2.11	
140R-CC	140R-CC	CN	<i>Chiasmolithus altus</i> , <i>Dictyococcites scrippsae</i> ; no <i>Reticulofenestra umbilicus</i>	27.5-32.0 (± 0.01)	1852.71	1852.71	1852.71		
140R-CC	140R-CC	PF	<i>Zeaglobigerina euapertura</i>	23.0-34.4 (± 0.3)	1852.71	1852.71	1852.71		
140R-CC	141R-CC	PF	?HO <i>Subbotina angiporoides</i>	30.1 (±)	1852.71	1862.57	1857.64	4.93	
143R-CC	144R-CC	CN	HO <i>Reticulofenestra umbilicus</i>	32.00 (± 0.05)	1878.85	1885.85	1882.35	3.50	
145R-CC	146R-CC	CN	HO <i>Isthmolithus recurvus</i>	32.50 (± 0.05)	1893.50	1903.29	1898.40	4.89	
146R-CC	147R-CC		Eocene/Oligocene boundary; unconformity >2.3 m.y. missing	33.9	1903.29	1916.63	1909.96	6.67	
147R-CC		PF	HO <i>Globigerinopsis index</i>	34.4-36.0 (± 0.3)	1916.63	1916.63	1916.63		
147R-CC	147R-CC	CN	<i>Criboecentrum reticulatum</i> , <i>Chiasmolithus oamaruensis</i>	35.2-37.0 (± 0.01)	1916.63	1916.63	1916.63		
	148R-CC	PF	<i>Globigerinopsis index</i>	34.4-36.0 (± 0.3)	1924.26	1924.26	1924.26		Bottom-hole sample
	148R-CC	CN	<i>Criboecentrum reticulatum</i> , <i>Chiasmolithus oamaruensis</i>	35.2-37.0 (± 0.01)	1924.26	1924.26	1924.26		Bottom-hole sample
317-U1352D-1H-CC	317-U1352D-14H-CC	CN	<i>Emiliana huxleyi</i> Zone (NN21a)	<0.29 (± 0.01)	3.55	127.61	65.58	62.03	
12H-CC	12H-CC	DT	HO <i>Hemidiscus karstenii</i>	0.30 (± 0.03)	108.06	108.06	108.06		

Notes: CN = calcareous nannofossil, BF = benthic foraminifer, PF = planktonic foraminifer, DT = diatom, BB = bolboform. LO = lowest occurrence, HO = highest occurrence, HCO = highest common occurrence, LCO = lowest common occurrence. ODP = Ocean Drilling Program. This table is also available in [ASCII](#).