Paleoceanography and Paleoclimatology

Supporting Information for

Controls on Sedimentation and Primary Productivity in Pleistocene Slope Sediments Seaward of the Totten Glacier, East Antarctica

L. Holder[1,2], M. Duffy[3], B. Opdyke[2], A. Leventer[3], A. Post[4], P. O'Brien[5], L. K. Armand[2]

[1]Department of Earth Science and Engineering, Imperial College London, Kensington, London SW7 2BP, United Kingdom

[2]Research School of Earth Sciences, The Australian National University, Canberra, 2601, Australia

[3]Department of Geology, Colgate University, Hamilton, NY 13346, USA

[4]Geoscience Australia, Canberra, 2609, Australia

[5]Department of Earth and Planetary Sciences, Macquarie University, North Ryde, 2113, Australia

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Introduction

Supporting Information to the manuscript Controls on Sedimentation and Primary Productivity in Pleistocene Slope Sediments Seaward of the Totten Glacier, East Antarctica. This includes visualized counts of the last common occurrence of *H. karstenii* and *R. leventerae* in figures S1 and S2 respectively. Figures S3 and S4 show the correlation between magnetic susceptibility data at site A005 and C012 respectively which was used to generate the composite depth section. Figure S5 is an expanded view of datasets from A005-PC01 between 150-350 cmcd which is used to illustrate the where MIS3 is thought to occur. Table S1 presents additional counts for the last common occurrence of *H. karstenii* from both A005-PC01 and C012-PC05.

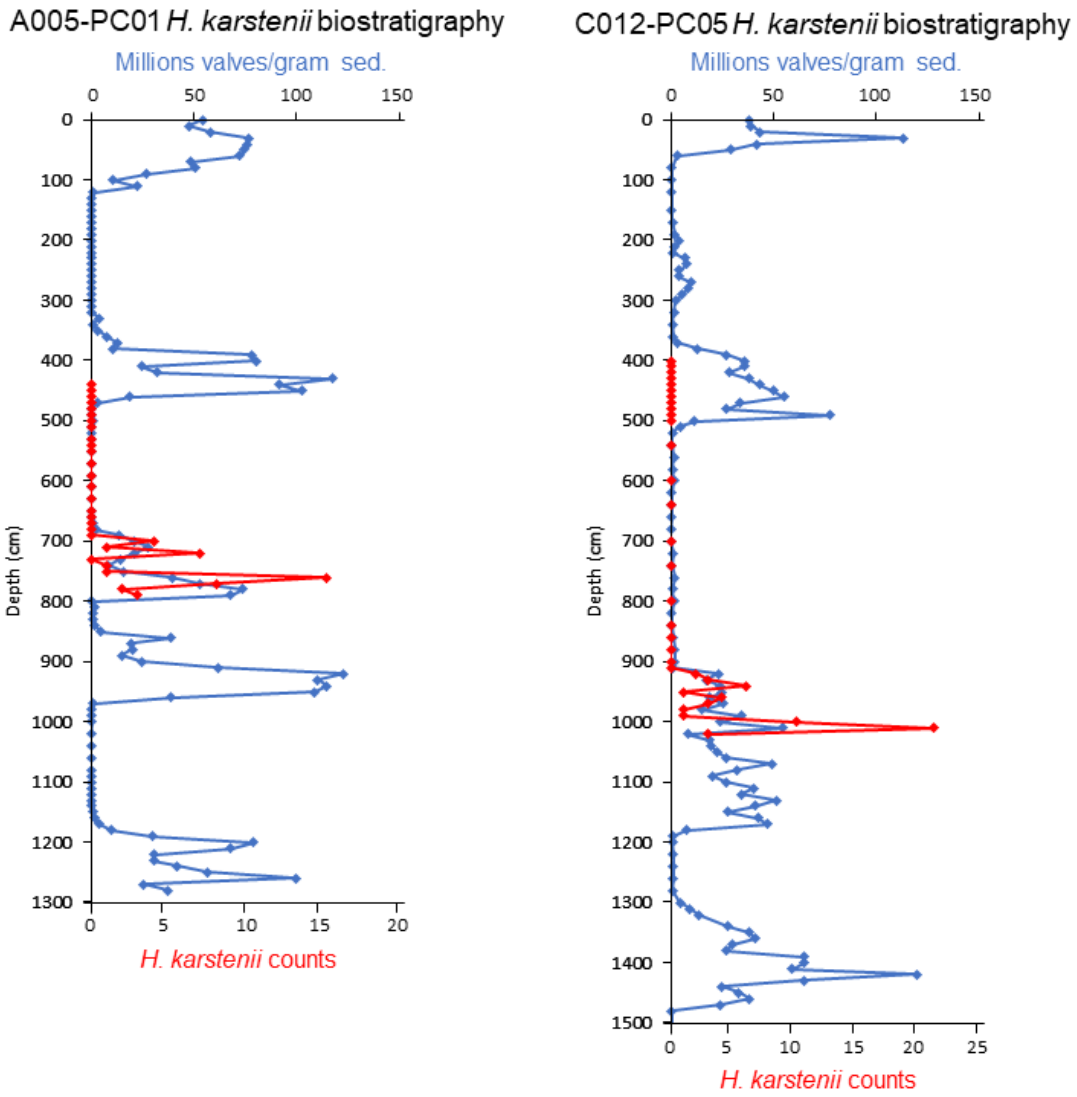

Figure S1. Four slide transects were observed at 400X to reaffirm last occurrence depths for biostratigraphic marker Hemidiscus karstenii in both A005-PC01 and C012-PC05. Absolute diatom abundances (millions of valves per gram of dried sediment) are shown in blue. Hemidiscus karstenii raw counts (number valves viewed in 4 transects at 400X) are shown in red. H. karstenii is last observed at 700 cm in A005-PC01 and 920 cm in PC05.

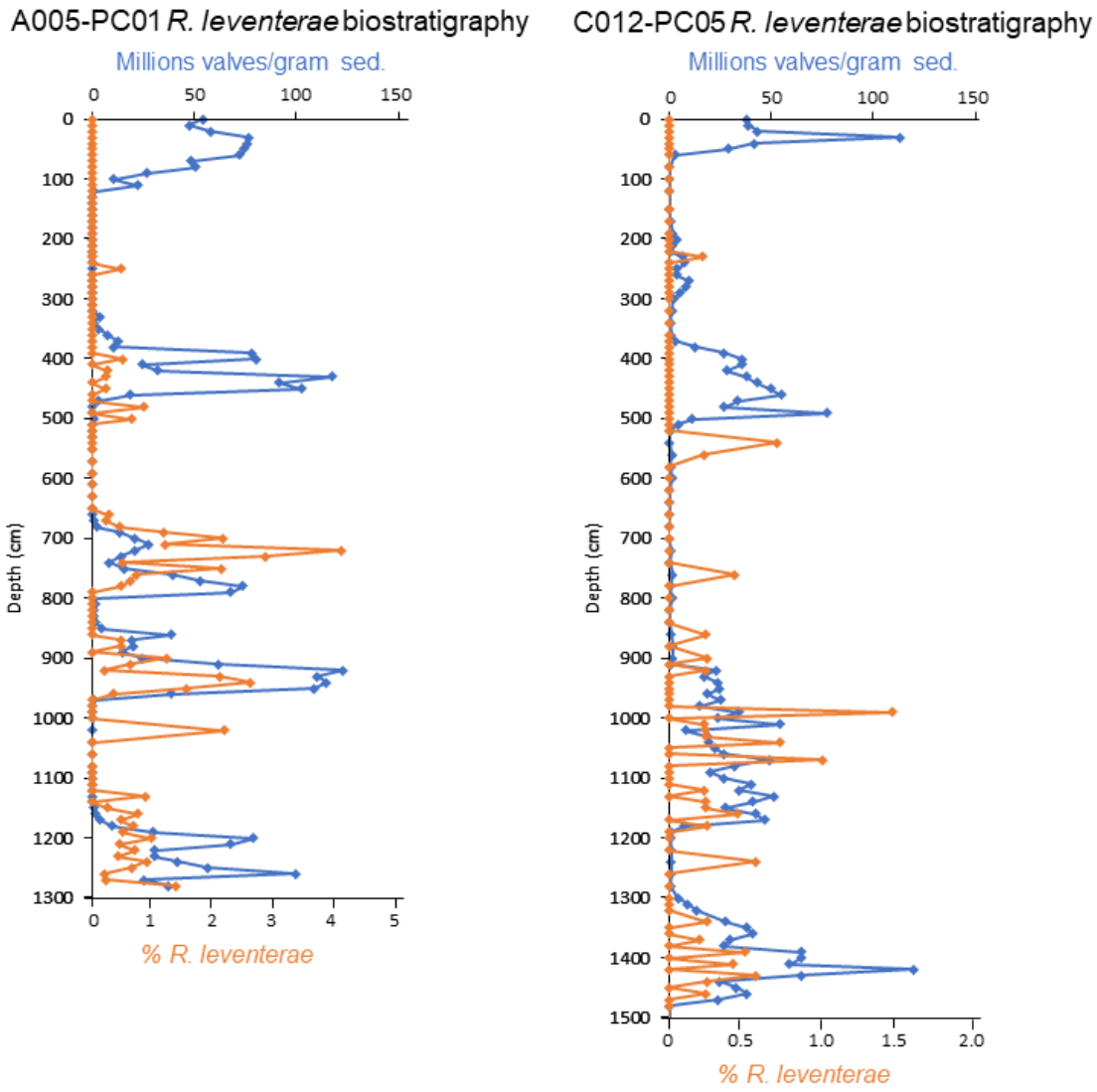

Figure S2. Relative abundance of biostratigraphic marker Rouxia leventerae in A005-PC01 and C012-PC05. Absolute diatom abundances (millions of valves per gram of dried sediment) are shown in blue. R. leventerae relative abundances are shown in orange.

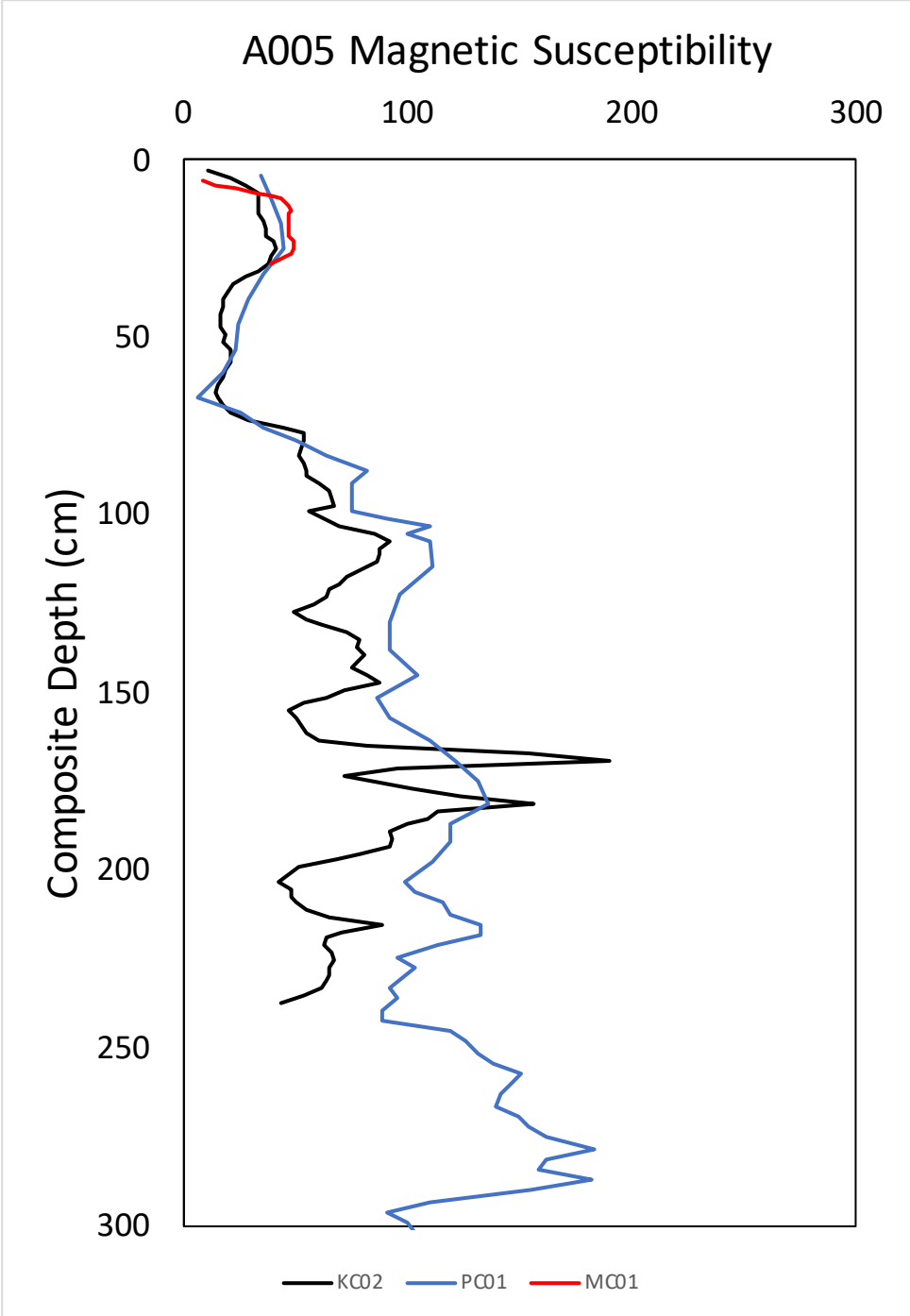

Figure S3. Magnetic susceptibility from A005 cores: KC02 (black), PC01 (blue) and MC01 (red). Tie points were visually picked to correlate the cores and generate a composite depth scale.

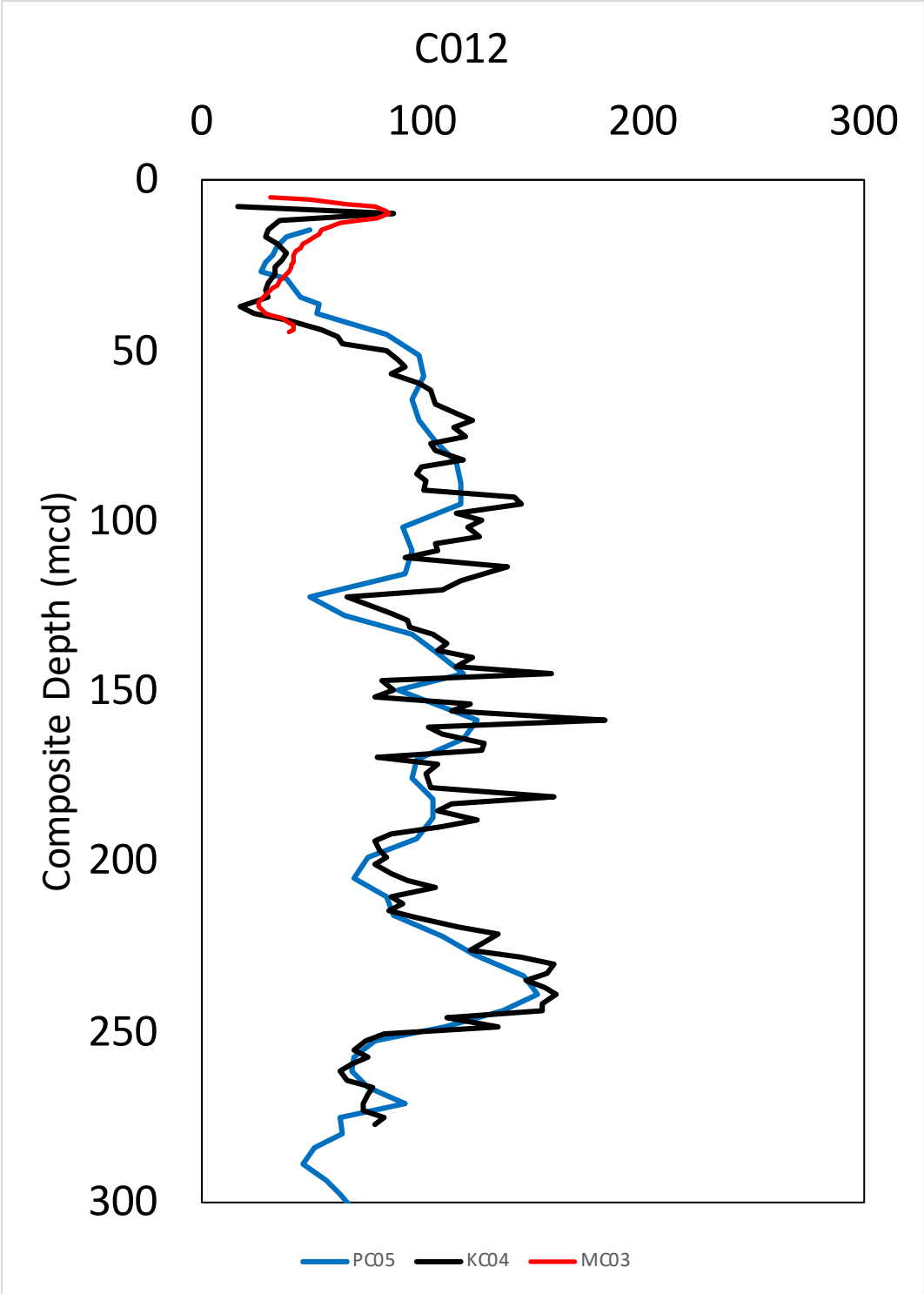

Figure S4. Magnetic susceptibility from C012 cores: KC04 (black), PC05 (blue) and MC03 (red). Tie points were visually picked to correlate the cores and generate a composite depth scale.

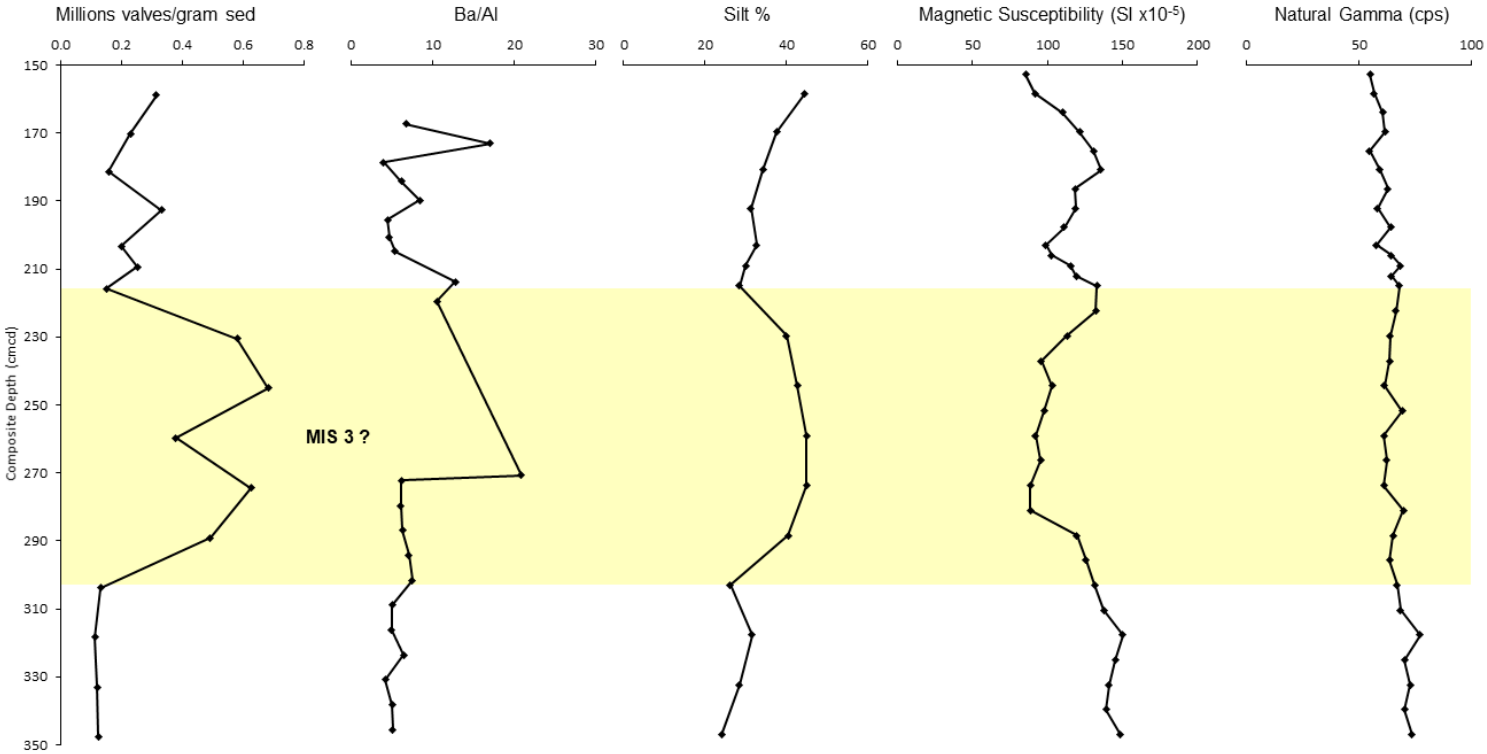

Figure S5. Expanded view of 150-350 cmcd in A005-PC01 indicating the possible MIS 3 signal including (L to R) diatom abundance (mvpgs), Ba/Al, silt %, magnetic susceptibility and natural gamma. MIS 3 interpretation is highlighted in yellow.

A005-PC01 *H. karstenii* biostratigraphy counts				C012-PC05 *H. karstenii* biostratigraphy counts			
Depth (cm)	Absolute Diatom Abundance (mvpgs)	*H. karstenii* raw counts	# Transects	Depth (cm)	Absolute Diatom Abundance (mvpgs)	*H. karstenii* raw counts	# Transects
440.5	91.98	0	4	400.5	35.56	0	4
450.5	102.44	0	4	410.5	35.63	0	4
460.5	19.25	0	4	420.5	28.30	0	4
470.5	2.97	0	4	430.5	38.05	0	4
480.5	0.37	0	4	440.5	43.09	0	4
490.5	0.23	0	4	450.5	49.85	0	4
500.5	1.41	0	4	460.5	54.83	0	4
510.5	0.19	0	4	470.5	33.81	0	4
530.5	0.16	0	4	480.5	27.05	0	4
550.5	0.14	0	4	490.5	77.65	0	4
570.5	0.05	0	4	500.5	11.49	0	4
590.5	0.05	0	4	540.5	0.53	0	4
610.5	0.05	0	4	600.5	1.35	0	4
630.5	0.05	0	4	640.5	0.24	0	4
650.5	0.17	0	4	700.5	0.17	0	4
660.5	0.43	0	4	740.5	0.26	0	4
670.5	1.13	0	4	800.5	1.42	0	4
680.5	2.47	0	4	840.5	0.59	0	4
690.5	13.40	0	4	860.5	1.26	0	4
700.5	21.01	4	4	880.5	1.80	0	4
710.5	27.92	1	4	900.5	1.72	0	4
720.5	21.22	7	4	910.5	0.88	0	4
730.5	14.43	0	4	920.5	22.89	2	4
740.5	8.75	1	5	930.5	17.15	3	4
750.5	15.72	1	4	940.5	23.73	6	4
760.5	39.66	15	4	950.5	25.08	1	4
770.5	52.77	8	1	960.5	18.97	4	4
780.5	73.83	2	4	970.5	25.14	3	4
790.5	68.04	3	4	980.5	15.21	1	4
				990.5	34.02	1	4
				1000.5	24.26	10	4
				1010.5	54.46	21	4
				1020.5	8.22	3	4

Table S1. Additional counts for biostratigraphic marker Hemidiscus karstenii. Four slide transects were observed at 400X from 440.5-790.5 cm in A005-PC01 and 400.5-1020.5 cm C012-PC05.