

**Supplementary Table S2:** Binned data used for the Arrhenius plots. The data bins representing 1°C intervals are shown together with the average temperatures and prokaryotic heterotrophic productions (PHP) for the epipelagic (0–200 m), mesopelagic (201–1,000 m) and bathypelagic (1,001–4,000 m) zones of the global ocean. The error reported for the PHP represents the standard deviation.

<b>Epipelagic</b>			<b>Mesopelagic</b>			<b>Bathypelagic</b>		
Temp. Bin (°C)	Temp. Avg (°C)	PHP Avg. ( $\mu\text{mol C m}^{-3} \text{d}^{-1}$ )	Temp. Bin (°C)	Temp. Avg (°C)	PHP Avg. ( $\mu\text{mol C m}^{-3} \text{d}^{-1}$ )	Temp. Bin (°C)	Temp. Avg (°C)	PHP Avg. ( $\mu\text{mol C m}^{-3} \text{d}^{-1}$ )
-2--1	-1.60	19 ± 36	-2--1	-1.85	4.0 ± 3.9	-1-0	-0.38	1.3 ± 0.8
-1-0	-0.54	32 ± 50	-1-0	-0.06	1.2 ± 0.2	0-1	0.57	0.2 ± 0.4
0-1	0.43	24 ± 42	0-1	0.24	1.7 ± 5.4	1-2	1.57	1.3 ± 3.3
1-2	1.56	23 ± 50	1-2	1.52	1.1 ± 1.9	2-3	2.50	2.0 ± 8.1
2-3	2.45	38 ± 67	2-3	2.49	3.0 ± 7.4	3-4	3.34	3.7 ± 10.8
3-4	3.71	26 ± 48	3-4	3.63	1.7 ± 3.1	4-5	4.43	3.1 ± 5.0
4-5	4.46	27 ± 37	4-5	4.61	1.3 ± 2.9	5-6	5.39	15.2 ± 23.8
5-6	5.48	41 ± 46	5-6	5.48	2.7 ± 5.9	6-7	6.52	12.4 ± 19.4
6-7	6.66	25 ± 24	6-7	6.54	4.3 ± 9.2	7-8	7.51	14.0 ± 12.9
7-8	7.38	40 ± 30	7-8	7.45	4.7 ± 10.6	8-9	8.55	11.5 ± 16.4
8-9	8.57	56 ± 50	8-9	8.45	6.7 ± 13.8	9-10	9.06	9.7 ± 7.9
9-10	9.46	93 ± 102	9-10	9.50	2.8 ± 5.4			
10-11	10.56	192 ± 292	10-11	10.47	4.6 ± 7.4			
11-12	11.55	73 ± 103	11-12	11.52	7.6 ± 8.4			
12-13	12.41	79 ± 119	12-13	12.43	7.8 ± 12.9			
13-14	13.49	130 ± 149	13-14	13.50	8.5 ± 9.9			
14-15	14.58	68 ± 116	14-15	14.58	8.9 ± 14.3			
15-16	15.52	39 ± 70	15-16	15.44	11.5 ± 17.8			
16-17	16.44	73 ± 123	16-17	16.52	10.0 ± 18.6			
17-18	17.54	70 ± 153	17-18	17.58	6.5 ± 17.0			
18-19	18.66	24 ± 73	18-19	18.37	9.8 ± 28.3			
19-20	19.42	23 ± 28						
20-21	20.46	32 ± 65						
21-22	21.48	43 ± 83						
22-23	22.51	55 ± 178						
23-24	23.52	48 ± 57						
24-25	24.57	95 ± 105						
25-26	25.46	103 ± 89						
26-27	26.54	102 ± 126						
27-28	27.49	89 ± 105						
28-29	28.41	83 ± 91						
29-30	29.20	191 ± 676						
30-31	30.66	103 ± 42						
31-32	31.13	86 ± 45						