

The following supplement accompanies the article

# Differential advancement of breeding phenology in response to climate may alter staggered breeding among sympatric pygoscelid penguins

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## SUPPLEMENT.

Table S1. Summary of raw clutch initiation date data (mean  $\pm$  1 SD). n: sample size

Site	Year	Adélie	Gentoo	Chinstrap
Admiralty Bay, King George Island (62°10'S, 58°30'W)	1991	5 November ( $\pm$ 3.8 d) n = 189	16 November ( $\pm$ 2.4 d) n = 197	
	1992	2 November ( $\pm$ 5.4 d) n = 194	11 November ( $\pm$ 5.4 d) n = 199	
	1993	28 October ( $\pm$ 3.1 d) n = 100	4 November ( $\pm$ 3.5 d) n = 100	
	1994	7 November ( $\pm$ 2.9 d) n = 100	17 November ( $\pm$ 2.6 d) n = 100	
	1995	30 October ( $\pm$ 3.2 d) n = 100	31 October ( $\pm$ 4.1 d) n = 99	
	1996	29 October ( $\pm$ 3.6 d) n = 100	4 November ( $\pm$ 4.9 d) n = 98	
	1997	30 October ( $\pm$ 3.4 d) n = 100	4 November ( $\pm$ 3.3 d) n = 100	
	1998	30 October ( $\pm$ 3.9 d)	2 November ( $\pm$ 4.7 d)	

	n = 100	n = 100	
1999	1 November (± 3.9 d) n = 95	4 November (± 6.0 d) n = 97	
2000	30 October (± 3.9 d) n = 97	2 November (± 4.4 d) n = 99	
2001	27 October (± 4.6 d) n = 98	28 October (± 3.4 d) n = 100	
2002	4 November (± 4.1 d) n = 100	14 November (± 3.0 d) n = 100	
2003	31 October (± 5.5 d) n = 100	1 November (± 3.8 d) n = 100	
2004	29 October (± 3.7 d) n = 98	1 November (± 4.1 d) n = 100	
2005	27 October (± 3.1 d) n = 97	27 October (± 2.9 d) n = 97	
2006	28 October (± 3.0 d) n = 100	31 October (± 2.4 d) n = 100	
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Cape Shirreff, Livingston Island (62°28' S, 60°46' W)	1997		25 November (± 3.2 d) n = 85
	1998	22 November (± 3.2 d) n = 53	21 November (± 2.1 d) n = 86
	1999	17 November (± 4.3 d) n = 49	20 November (± 2.6 d) n = 99
	2000	17 November (± 4.5 d) n = 45	20 November (± 2.5 d) n = 91
	2001	7 November (± 9.4 d) n = 47	20 November (± 2.3 d) n = 98
	2002	25 November (± 3.3 d) n = 50	25 November (± 3.1 d) n = 95
	2003	26 November (± 4.4 d) n = 49	22 November (± 3.5 d) n = 99
	2004	22 November (± 3.0 d) n = 45	24 November (± 2.9 d) n = 95
	2005		19 November (± 2.3 d) n = 98
	2006	4 November (± 2.5 d) n = 49	17 November (± 2.7 d) n = 87

Humble Island (64°46' S, 64°06' W)	1991	18 November (± 3.3 d) n = 99	
	1992	11 November (± 3.3 d) n = 100	
	1993	16 November (± 2.6 d) n = 99	
	1994	14 November (± 2.8 d) n = 100	
	1995	12 November (± 2.9 d) n = 100	
	1996	12 November (± 2.7 d) n = 99	
	1999	11 November (± 3.0 d) n = 100	
	2000	10 November (± 2.9 d) n = 81	
	Petermann Island (65° 10' S, 64° 10' W)	2005	15 November (± 2.5 d) n = 55
2006		15 November (± 2.9 d) n = 56	18 November (± 4.7 d) n = 99
2007		14 November (± 2.6 d) n = 57	20 November (± 3.9 d) n = 97