



Supplement of

Sudden stratospheric warmings during El Niño and La Niña: sensitivity to atmospheric model biases

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Supplementary Table 1. List of years used for ERA5 ENSO composites and DJF NINO3.4 temperature anomalies, and SSW central dates.

Year	NINO3.4	SSW Central date		Year	NINO3.4	SSW Central date	
1979	0.0			2001	-0.7	2001-02-11	
1980	0.6	1980-02-29		2002	-0.1	2001-12-30	2002-02-17
1981	-0.3	1981-03-04		2003	0.9	2003-01-18	
1982	0.0	1981-12-04		2004	0.4	2004-01-05	
1983	2.2			2005	0.6		
1984	-0.6	1984-02-24		2006	-0.9	2006-01-21	
1985	-1.0	1985-01-01		2007	0.7	2007-02-24	
1986	-0.5			2008	-1.6	2008-02-22	
1987	1.2	1987-01-23		2009	-0.8	2009-01-24	
1988	0.8	1987-12-08	1988-03-14	2010	1.5	2010-02-09	2010-03-24
1989	-1.7	1989-02-21		2011	-1.4		
1990	0.1			2012	-0.9		
1991	0.4			2013	-0.4	2013-01-06	
1992	1.7			2014	-0.4		
1993	0.1			2015	0.5		
1994	0.1			2016	2.5		
1995	1.0			2017	-0.3		
1996	-0.9			2018	-0.9	2018-02-12	
1997	-0.5			2019	0.7	2019-01-01	
1998	2.2						
1999	-1.5	1998-12-15	1999-02-26				
2000	-1.7	2000-03-20					