

Figure S1. Time series of: (a) average rainfall during December of climate Type II stations from the period 1961 to 2008; and (b) tau statistics from the moving t -test with varying time windows. The green line in (a) indicates the 9-year running average. The vertical lines in (a,b) indicates the robust change points around 1976/1977 and 1992/1993. The horizontal lines in (a,b) indicate the statistical significance at the 95 % confidence level for each time window: green (9-y; 2.120), grey (10-y; 2.101), blue (12-y; 2.074), and black (15-y; 2.048).

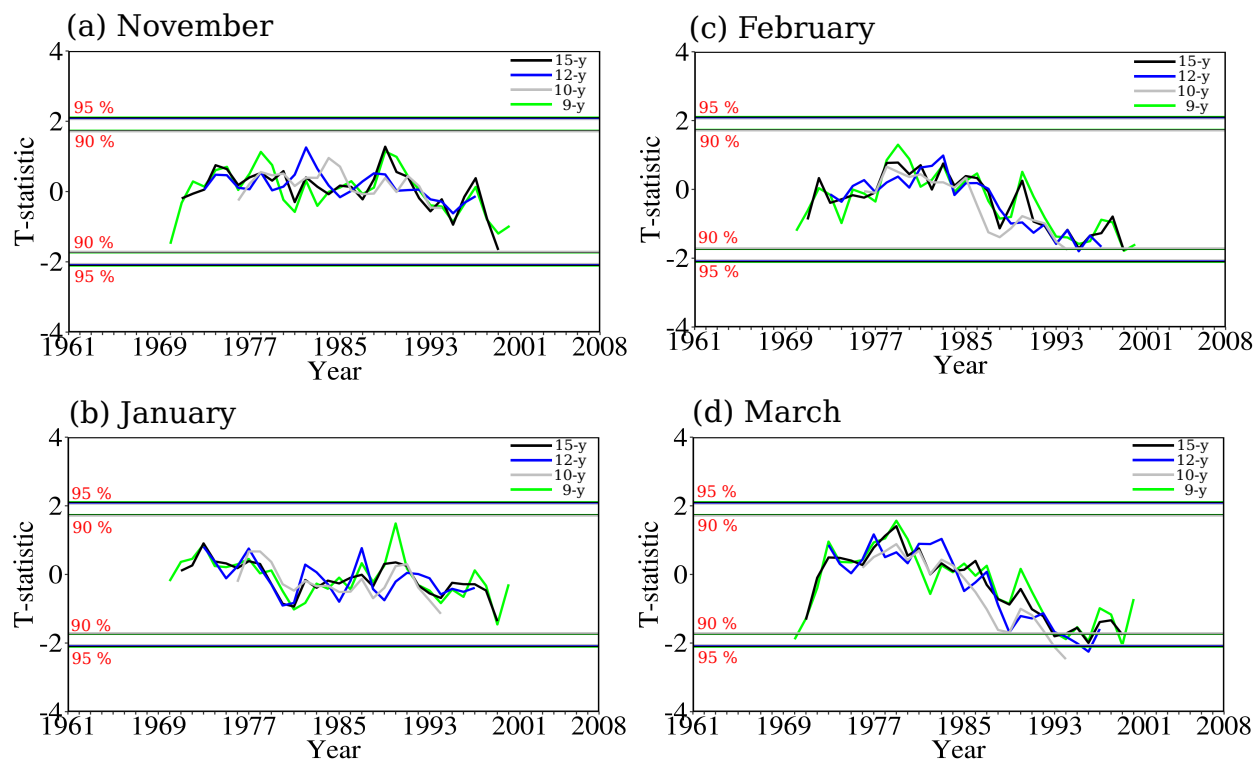


Figure S2. Time series of tau statistics from the moving t -test with varying time windows for: (a) November; (b) January; (c) February; and (d) March. The horizontal lines from (a) to (d) indicate the statistical significance at the 90 and 95 % confidence level for each time windows.

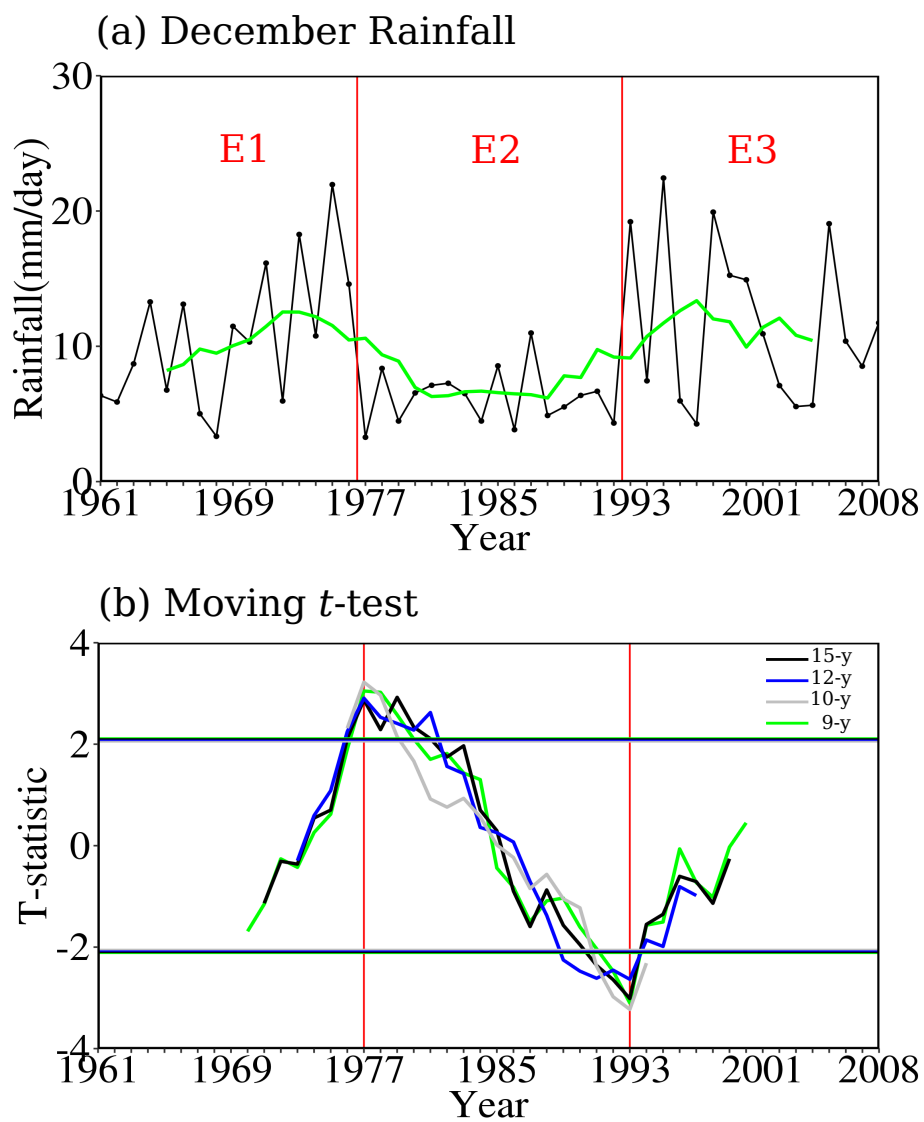


Figure S3. As in Fig. S1 but only for the 13 stations across the Philippines with significant shifts around 1976/1977 and 1992/1993.

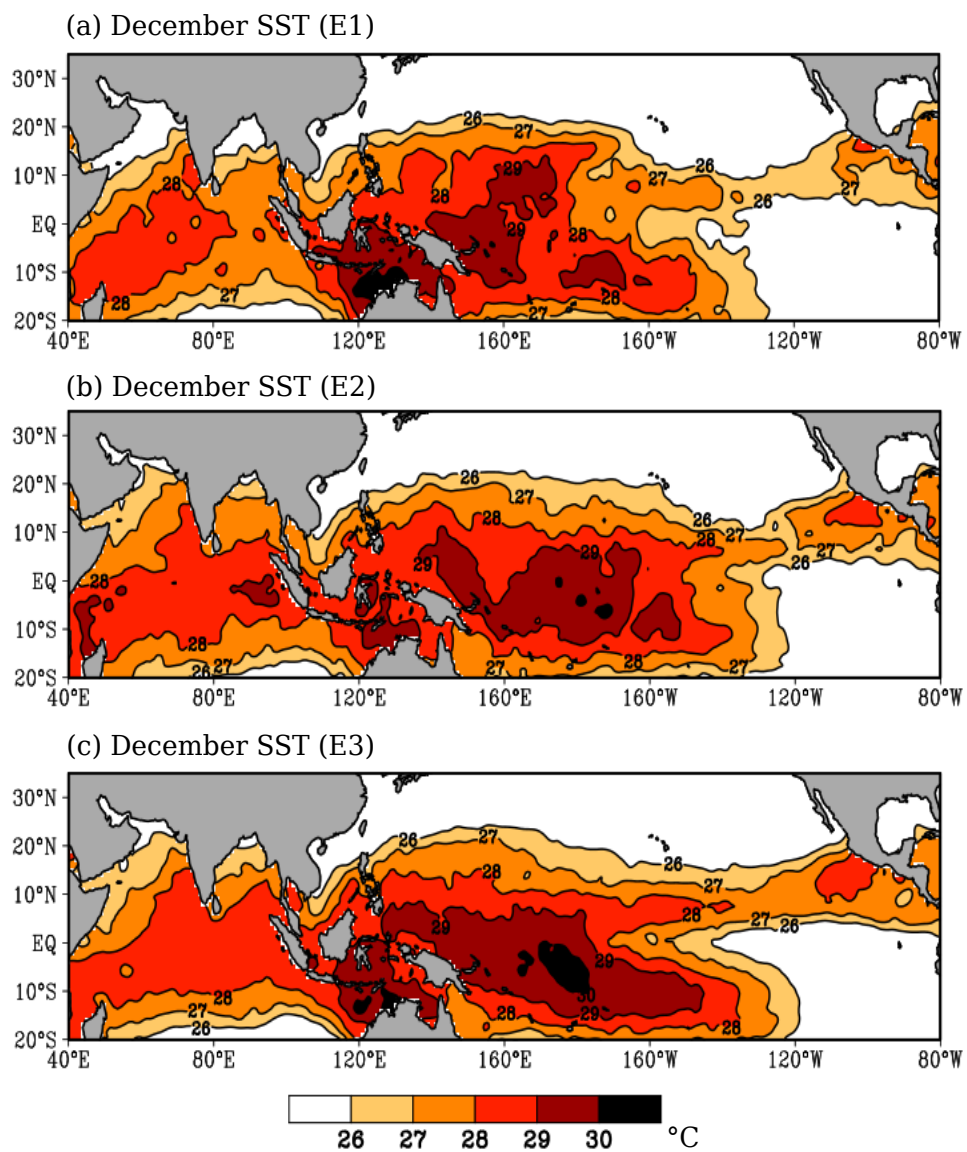


Figure S4. Epochal mean of December SST above 26° C during (a) E1 (1961–1972); (b) E2 (1977–1992); and (c) E3 (1993–2008). The contour interval is 1° C.

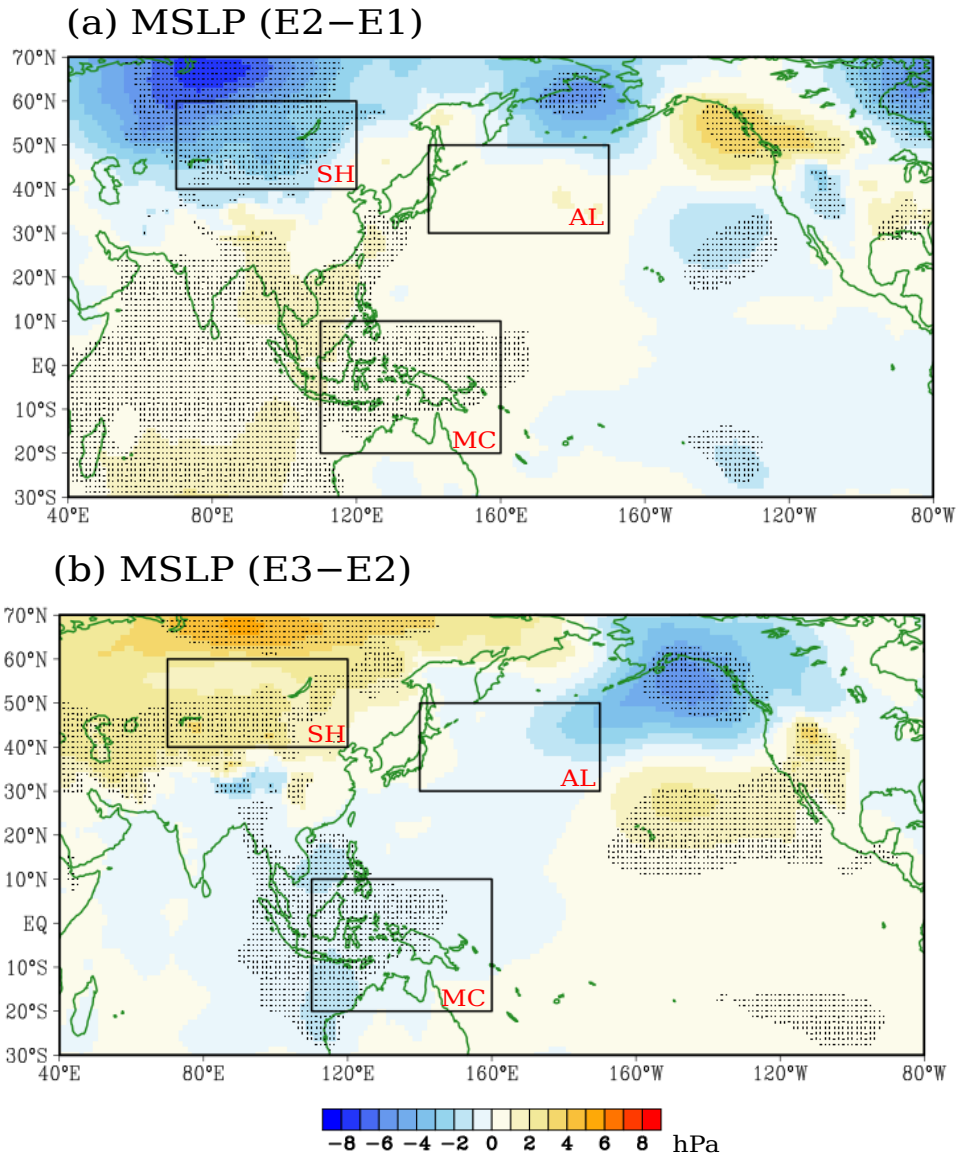


Figure S5. Epochal difference in mean sea level pressure (MSLP; hPa) during December between (a) E1 (1961–1976) and E2 (1977–1992) (E2 minus E1); and (b) E2 and E3 (1993–2008) (E3 minus E2). Stippled areas indicate statistical significance above the 90 % confidence level using the t-test. The boxes indicate the area averaging location for the East Asian winter monsoon index: Siberian high (SH), Aleutian low (AL), and Maritime Continent (MC) low.