Figure F1. Expedition 367/368/368X drill sites at the northern continental margin of the South China Sea (modified from Larsen et al., 2018a).

Figure F2. Incompatible trace elements of Hole U1501D granite/volcanic clasts compared to Mesozoic Nansha block intrusive rocks as compiled in Yan et al. (2014), MORB-type Miocene basalts and younger alkaline basalts from Site U1431 in the SCS (Zhang et al., 2017, 2018), and Miocene–Pliocene young SCS seamounts (Yan et al., 2008). Normalized to primitive mantle (McDonough and Sun, 1995).

Figure F3. (A) $^{206}Pb/^{204}Pb$ vs. $^{207}Pb/^{204}Pb$ and (B) $^{206}Pb/^{204}Pb$ vs. $^{208}Pb/^{204}Pb$ of Hole U1501D granite/volcanic clasts compared to Mesozoic Nansha block intrusive rocks as compiled in Yan et al. (2014), MORB-type Miocene basalts and younger alkaline basalts from Site U1431 in the SCS (Zhang et al., 2017, 2018), and Miocene–Pliocene young SCS seamounts (Yan et al., 2008). V = volcaniclast (24R-2, 12–16 cm). NHRL = Northern Hemisphere reference line and positive deviations (Δ, "Dupal anomaly") after Dupré and Allègre (1983). All isotope ratios are initial unless otherwise indicated.

Figure F4. $^{87}Sr/^{86}Sr$ vs. $^{143}Nd/^{144}Nd$ of medium-grained granitic cobble (Sample 368-U1501D-20R-2, 40–45 cm) compared to Mesozoic Nansha block intrusive rocks as compiled in Yan et al. (2014), MORB-type Miocene basalts and younger alkaline basalts from Site U1431 in the SCS (Zhang et al., 2017, 2018), and Miocene–Pliocene young SCS seamounts (Yan et al., 2008). All isotope ratios are initial unless otherwise indicated.

Figure F5. $^{143}Nd/^{144}Nd$ vs. $^{178}Hf/^{177}Hf$ of Hole U1501D granite/volcanic clasts compared to MORB-type Miocene basalts and younger alkaline basalts from Site U1431 in the SCS (Zhang et al., 2017, 2018) and Miocene–Pliocene young SCS seamounts (Yan et al., 2008). V = volcaniclast (24R-2, 12–16 cm). No other Mesozoic intrusives were analyzed for $^{178}Hf/^{177}Hf$. Mantle array after Vervoort et al. (1999).