

Figure F1. Distribution of Expedition 346 sites in the marginal sea between Japan and Korea and the East China Sea (modified from Tada et al., 2015b). Red arrows identify the major surface current systems in the region. Site U1427 was drilled and cored in the Yamato Basin off the coast of Japan.

Figure F2. Raw XRF scanner counts for lithogenic elements Al, Si, K, Fe, Ti, and Zr plotted on the revised Site U1427 spliced composite depth scale of Irino et al. (2018). Horizontal dashed lines indicate stratigraphic position and ages of widely distributed tephra layers ASO-4, Ata-Th, and ASO-1.

Figure F3. Raw XRF scanner counts for biogenic elements Ca, Sr, and Br plotted on the revised Site U1427 spliced composite depth scale of Irino et al. (2018).  $\ln(\text{Ca}/\text{Ti})$  captures the relative variability of biogenic and detrital sources at this site. Horizontal dashed lines indicate stratigraphic position and ages of widely distributed tephra layers ASO-4, Ata-Th, and ASO-1.

Figure F4. Crossplots of selected elements typically associated with detrital and biogenic inputs to marine sediments: Si vs. Al, K vs. Al, Fe vs. Al, Ca vs. Al, Sr vs. Ca, and Br vs. Ca, Site U1427.