**Figure S2.**

Analysis of observed magnetic anomaly along the 6K#1332 track assuming a magnetization direction parallel to the geocentric axial-dipole field; an inclination of -43° and a declination of 0°. From top to bottom: observed (red line) and synthetic (blue line) magnetic anomaly intensity of x, y, and z components, magnetization, phase, vehicle altitude, and seafloor/vehicle geometry. Black and gray circles are those with high coherency of >0.5 and from 0.3–0.5 on both the x and z components, respectively. The profile was divided into three sections depending on the survey direction, which is essential for 2-dimensional analysis of magnetic anomalies. WL, window length.

