

Figure F1. Bathymetric map of the Ross Sea showing location of Site U1523 (yellow star), as well as other Expedition 374 sites (red circles) and previous drilling during Deep Sea Drilling Project (DSDP) Leg 28 and ANDRILL (AND) (black circles). Ross Sea Bottom Water (blue arrows), derived from Ross Ice Shelf water (not shown), flows downslope in Hillary Canyon, as well as along the central and western Ross Sea shelf slope, influencing deep waters. Bathymetry from International Bathymetric Chart of the Southern Ocean (Arndt et al., 2013). Figure modified from McKay et al. (2019b).

Figure F2. Coring summary, Site U1523, showing graphic lithology, age, and lithostratigraphic units defined shipboard. Coring in Hole U1523E was designed to cover gaps in the stratigraphy from Hole U1523B, which was partially successful.

Figure F3. Linescan core images and XRF Zr/Rb for Holes U1523A (red), U1523B (green), and U1523C (blue) of the original shipboard CSF depth scale (top panel) and composite depth scale and stratigraphic splice defined in this study (bottom panel). Upper image in bottom panel shows spliced core images and data. Yellow and red lines in bottom panel denote top (yellow) and base (red) of intervals from a core included in the splice. Arrow head on red line shows splice tie between holes. Purple triangles show tie locations and data type used to create composite depth scale. (Continued on next five pages.)

Figure F4. Linescan core images and XRF Rb/Sr for Holes U1523A (red), U1523B (green), and U1523C (blue) of the original shipboard CSF depth scale (top panel) and composite depth scale and stratigraphic splice defined in this study (bottom panel). Upper image in bottom panel shows spliced core images and data. Yellow and red lines in bottom panel denote top (yellow) and base (red) of intervals from a core included in the splice. Arrowhead on red line shows splice tie between holes. Purple triangles show tie locations and data type used to create composite depth scale. (Continued on next five pages.)

Figure F5. Linescan core images and XRF Ca/Ti for Holes U1523A (red), U1523B (green), and U1523C (blue) of the original shipboard CSF depth scale (top panel) and composite depth scale and stratigraphic splice defined in this study (bottom panel). Upper image in bottom panel shows spliced core images and data. Yellow and red lines in bottom panel denote top (yellow) and base (red) of intervals from a core included in the splice. Arrowhead on red line shows splice tie between holes. Purple triangles show tie locations and data type used to create composite depth scale. (Continued on next five pages.)

Figure F6. Linescan core images and XRF Br/Ti for Holes U1523A (red), U1523B (green), and U1523C (blue) of the original shipboard CSF depth scale (top panel) and composite depth scale and stratigraphic splice defined in this study (bottom panel). Upper image in bottom panel shows spliced core images and data. Yellow and red lines in bottom panel denote top (yellow) and base (red) of intervals from a core included in the splice. Arrowhead on red line shows splice tie between holes. Purple triangles show tie locations and data type used to create composite depth scale. (Continued on next five pages.)

Figure F7. Linescan core images and magnetic susceptibility (MS) for Holes U1523A (red), U1523B (green), and U1523C (blue) of the original shipboard CSF depth scale (top panel) and composite depth scale and stratigraphic splice defined in this study (bottom panel). Upper image in bottom panel shows spliced core images and data. Yellow and red lines in bottom panel denote top (yellow) and base (red) of intervals from a core included in the splice. Arrowhead on red line shows splice tie between holes. Purple triangles show tie locations and data type used to create composite depth scale. (Continued on next five pages.)

Figure F8. Off-splice mapping of Core U1523E-1H to the splice above the tie point at 6.24 m CCSF (green line) using (A) XRF Zr/Rb and (B) XRF Rb/Sr. For each panel, the bottom graph shows the Core U1523E-1H core image and XRF data (red) on the CCSF depth scale. Middle graph shows spliced core image and XRF data (white), which are from Hole U1523A shallower than the green line and from Hole U1523E deeper than the green line. Because of core disturbance in the upper portion of Core U1523E-1H, the off-splice interval of that core does not correlate well with the splice on the CCSF depth scale. To map the off-splice portion of Core U1523E-1H to the CCSF depth scale, we picked 28 tie points (yellow numbers) using Zr/Rb data (tie points 0–12) and Sr/Rb data (tie points 13–27). The top graph shows the mapped U1523E-1H XRF data (red) and core photo with the splice XRF data (white).