Three lithospheric cross sections provide a continental-scale synthesis of more than two decades of multidisciplinary research conducted by the Lithoprobe program. These cross sections emphasize the relationships between orogens and permit visual comparisons to be made regarding structure and tectonic development. Each cross-section includes merged interpretations, near-vertical incidence seismic reflection data, and reflection seismic results. Earth curvature is incorporated; the Trans-Continental Profile spans 6000 km. For detailed discussion and references see Hammer et al., CJES, 47(5), 2010.

Map: A simplified tectonic element map of Canada with locations of the cross-sections. Thin white lines identify terranes and the boundaries between them. The tectonic elements are grouped by tectonic age—defined as the most recent episode of major tectonic deformation in an orogen (see Appendix A). See text for detailed descriptions of each orogen. The Northwest Corridor follows the Slave-Northern Cordillera Lithospheric Evolution (SNORCEL) transect. The Northeastern Corridor represents the Eastern Canadian Shield Onshore-Offshore (ECSOOT) transect. The Trans-Continental Corridor is based on the Canadian Young and Ancient Tectonics (C-AYAT) transect. Other abbreviations: AP – Arctic Plains; AB – Archean Basement; THO – Trans-Hudson Orogen; KS – Kapuskasing Structural Zone; AG – Abitibi-Grenville; LE – Lithoprobe East; JdF – Juan de Fuca; MHB – Medicine Hat Block.

Cross sections: The interpreted lithospheric structure for each profile is displayed in conjunction with seismic reflection and seismic line name are given for each segment. Direction headings note changes in the general orientation of the profile segments. In general, the reflection fabric and seismic reflections are depicted by black arrows. Other abbreviations: IP – Juan de Fuca; IP – Inner Plate.

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Estimates of lithospheric thickness are based on the work of Shapiro and Ritzwoller (2002) and Artemieva (2009). See Appendix A for a listing of references for the seismic profiles.