

Figure/Panel	Model(s): Please refer to Table S-3 for detailed model comparisons and notes	
	Type	Model Name
3	<i>Base Model – No Craton Keel; Normal Slab Buoyancy</i>	XFS01a
4	<i>Warm Oceanic Plate</i>	XFS32b
5a	<i>No Trench Retreat</i>	XFS57
5b	<i>No Lower Mantle Resistance</i>	XFS76
5c	<i>Weak Continental Core</i>	XFS137
5d	<i>No Trench Retreat + Craton Keel + Oceanic Plateau</i>	XFS49
5e	<i>Oceanic Plateau Subducts After Slab Encounters Lower Mantle Resistance; No Craton Keel</i>	XFS11a
5f	<i>Oceanic Plateau Subducts Before Slab Encounters Lower Mantle Resistance; No Craton Keel</i>	XFS86a
6	<p>39 models:</p> <p><i>No Craton vs. Lower Mantle Resistance</i></p> <p><i>No Craton + Slab Buoyancy</i></p> <p><i>No Craton vs. Craton</i></p> <p><i>Craton vs. Lower Mantle Resistance</i></p> <p><i>Craton + Slab Buoyancy vs. Lower Mantle Resistance</i></p> <p><i>Craton Keel Location</i></p> <p><i>No Craton + Young Slab vs. Continental Plate Velocity</i></p> <p><i>Craton vs. Continental Plate Velocity</i></p>	<p>XFS75, XFS97, XFS103, XFS105, XFS108, XFS01a, XFS44 XFS131, XFS11a, XFS47, XFS32b, XFS86 XFS01a, XFS03b, XFS40a XFS67, XFS96, XFS28a, XFS03b, XFS14a, XFS15a, XFS37 XFS76, XFS12a, XFS124, XFS13a, XFS125, XFS126, XFS16a XFS42a, XFS12a, XFS142, XFS143 XFS48, XFS32b XFS12a, XFS121, XFS127, XFS122</p>
7a	<i>Free Slip Boundary at 660 km depth</i>	XFS37
7b	<i>Base Model with Craton + Normal Slab Buoyancy; + Normal Viscosity & Density Jumps at 660 km</i>	XFS03b
7c	<i>No Lower Mantle Resistance + Denser Slab</i>	XFS67
7d	<i>Slab Remnant at 660 km + No Craton Keel; Normal Slab Buoyancy</i>	XFS14a
7e	<i>Lower Mantle Resistance from Viscosity Contrast + Denser Slab</i>	XFS96
7f	<i>Base Model with Craton + Normal Slab Buoyancy + No Velocity Slowdown Post Slab Flattening</i>	XFS03
7g	<i>Craton + Normal Slab Buoyancy; 5X larger Viscosity & Normal Density Jumps at 660 km</i>	XFS165
7h	<i>Craton + Normal Slab Buoyancy; 10X larger Viscosity & Normal Density Jumps at 660 km</i>	XFS159
8a	<i>Oceanic Plateau + Base Velocity (4 cm/yr) & $V_{op}/V_c = 0.6$</i>	XFS12a
8b	<i>Oceanic Plateau + Base Velocity (4 cm/yr) & $V_{op}/V_c = 0.2$</i>	XFS49
8c	<i>Oceanic Plateau + Base Velocity (4 cm/yr) & $V_{op}/V_c = 1.0$</i>	XFS121
8d	<i>Oceanic Plateau + Base Velocity (5 cm/yr) & $V_{op}/V_c = 0.8$</i>	XFS127
8e	<i>Base Model – No Craton Keel; Normal Slab Buoyancy</i>	XFS01a
8f	<i>Oceanic Plateau + Base Velocity (4 cm/yr) & $V_{op}/V_c = 0.0$</i>	XFS139
9a	<i>Warm Oceanic Plate</i>	XFS32b
9b	<i>1000 km long Oceanic Plateau + Craton</i>	XFS144
9c	<i>Weak Continental Plate</i>	XFS137
9d	<i>1000 km long Oceanic Plateau + Thick Craton</i>	XFS146