

1 **Table C1.** Age and Depth Data for all Radar Layers at EPICA Dome C and Vostok
2 Ice Core Sites

Ice core sites		Dome C			Vostok			VK - DMC
Horizons	*Z+4.06 (m)	Age (kyr)	Rms (kyr)	Z (m)	Age (kyr)	Rms (kyr)	Age (kyr)	
wsb0	700	38		597	41		3	
Radar err (±) (Pub core err (±))	±1	0.110 (1)	1.0	±3	0.247 (1)	1.0		
wsb01	784	45		UC			/	
Radar err (±) (Pub core err (±))	±8	1.093 (1.5)	1.9					
wsb1	1077	72		947	66		-6	
Radar err (±) (Pub core err (±))	±8	1.215 (1.5)	1.9	±30	1.836 (1)	2.1		
wsb2	1174	81		1366	97		16	
Radar err (±) (Pub core err (±))	±8	1.065 (1.5)	1.8	±30	2.609 (1)	2.8		
wsb22	1340	96		1498	108		12	
Radar err (±) (Pub core err (±))	±8	1.166 (1.5)	1.9	±30	2.486 (2)	3.2		
wsb24	1423	105		1555	113		8	
Radar err (±) (Pub core err (±))	±8	1.314 (3)	3.3	±30	2.583 (2)	3.3		
wlk03a	1597	122		1735	126		4	
Radar err (±) (Pub core err (±))	±1	0.095 (3)	3.0	±3	0.185 (2)	2.0		
wsb3	1685	128		1842	132		4	
Radar err (±) (Pub core err (±))	±1	0.091 (3)	3.0	±3	0.166 (2)	2.0		
wsb4	1889	159		2091	156		-3	
Radar err (±) (Pub core err (±))	±1	0.246 (6)	6.0	±3	0.463 (2)	2.1		
wsb41	1980	178		UC			/	
Radar err (±) (Pub core err (±))	±1	0.267 (6)	6.0					
wsb7	2092	201		2459	197		-4	
Radar err (±) (Pub core err (±))	±1	0.215 (6)	6.0	±3	0.388 (2)	2.0		
wsb8	2216	224		2686	230		6	
Radar err (±) (Pub core err (±))	±1	0.348 (6)	6.0	±3	0.617 (2)	2.1		
wsb9	2317	247		2779	247		0	
Radar err (±) (Pub core err (±))	±1	0.271 (6)	6.0	±3	0.580 (2)	2.1		

3 *An additional 4.06m are added to Dome C radar depths for direct comparison
4 with published ice core measurements. In dark grey, top six layers disturbed by

5 megadune areas; in light grey, more consistent layers. Age is computed for each ice core
6 site separately, using the EDC3 [Parrenin et al., 2007] and the Vostok [Suwa and Bender,
7 2008] chronologies. Rms error combines radar and ice core uncertainties at each site.
8 UC = Unconformity break in the layer.

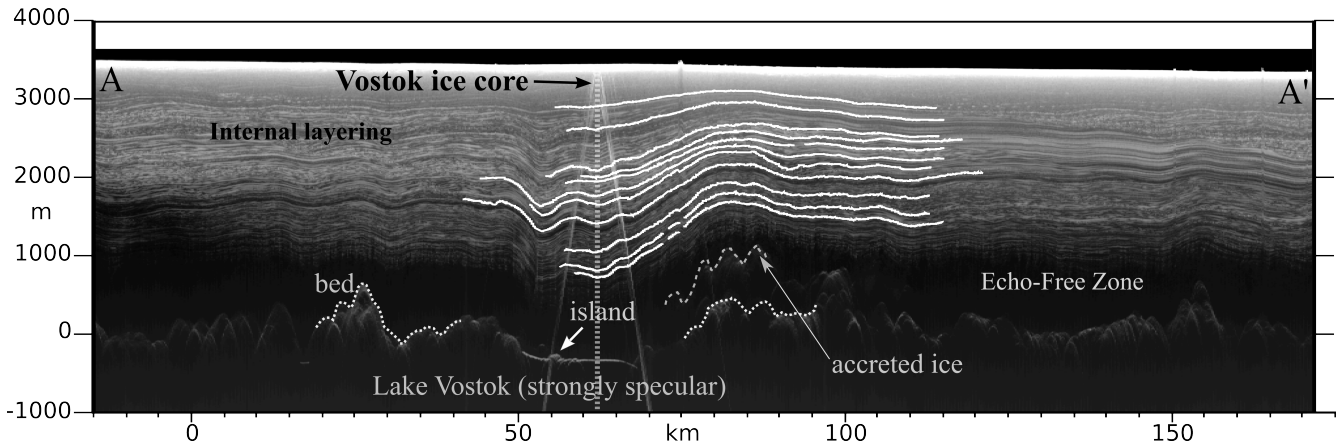
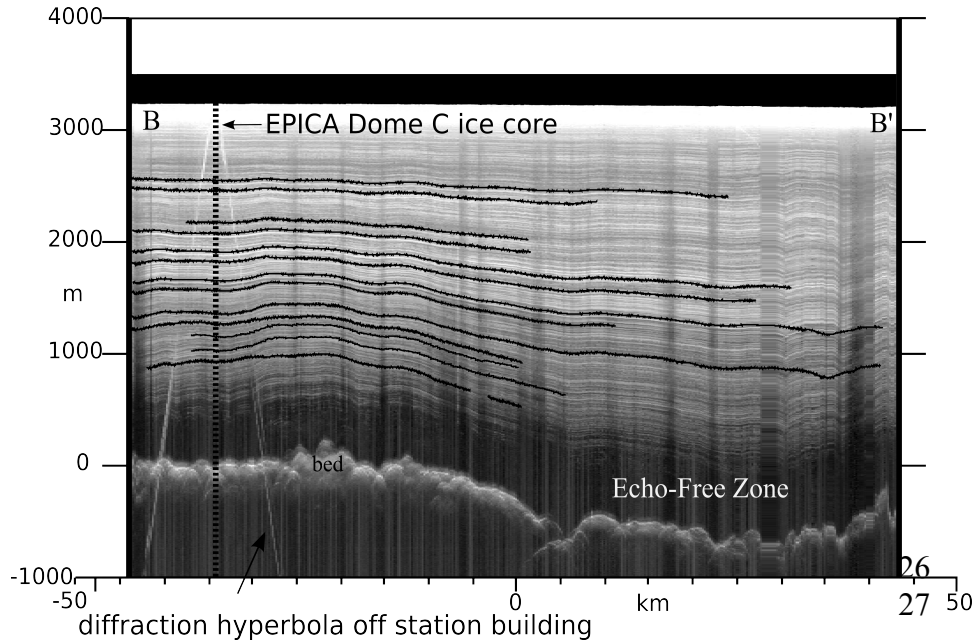


Figure B1. Internal layering along UTIG RES transects, over Vostok (A-A') and EPICA Dome C (B-B') ice core sites

Ice core locations are indicated. Note the bright bedrock and Lake Vostok reflections, as well as the thick accreted ice layer, well resolved in the Vostok section. Internal layering is clearly visible and continuous throughout.

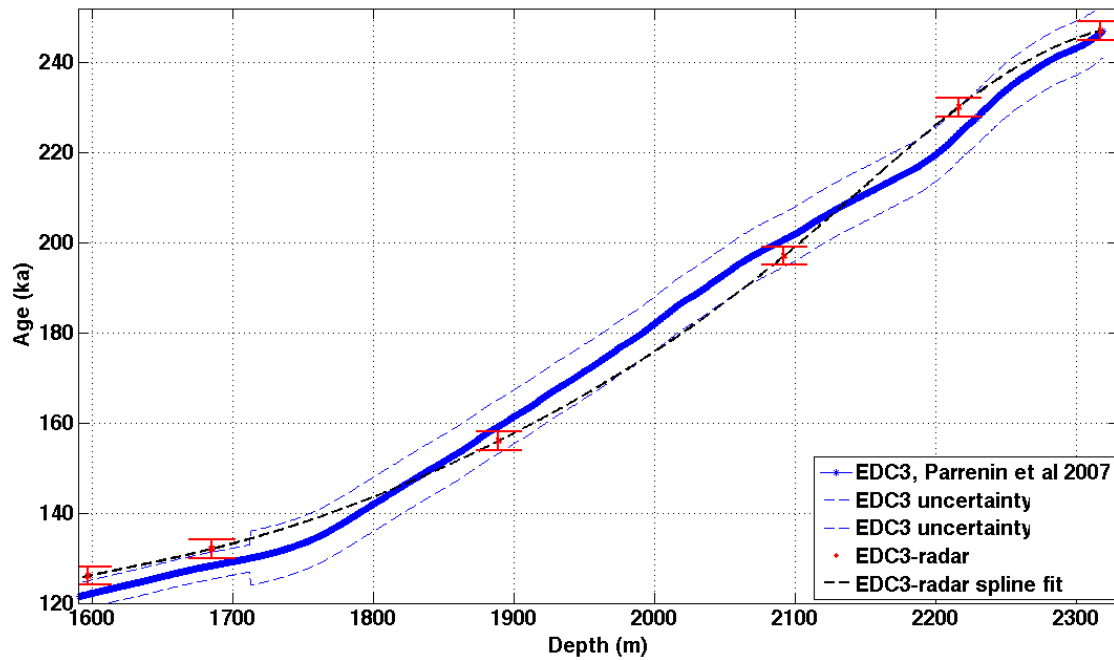


Figure B2. EPICA Dome C Timescale Comparison for the Penultimate Glacial Cycle.

In blue, EDC3 Parrenin et al. [2007] Dome C δO^{18} timescale, uncertainty bounds are dashed; in red our EDC3-radar recalibration using Vostok ages and radar direct core correlation, rms uncertainty bounds are shown. A simple cubic-spline interpolation is used to trace EDC3-radar.

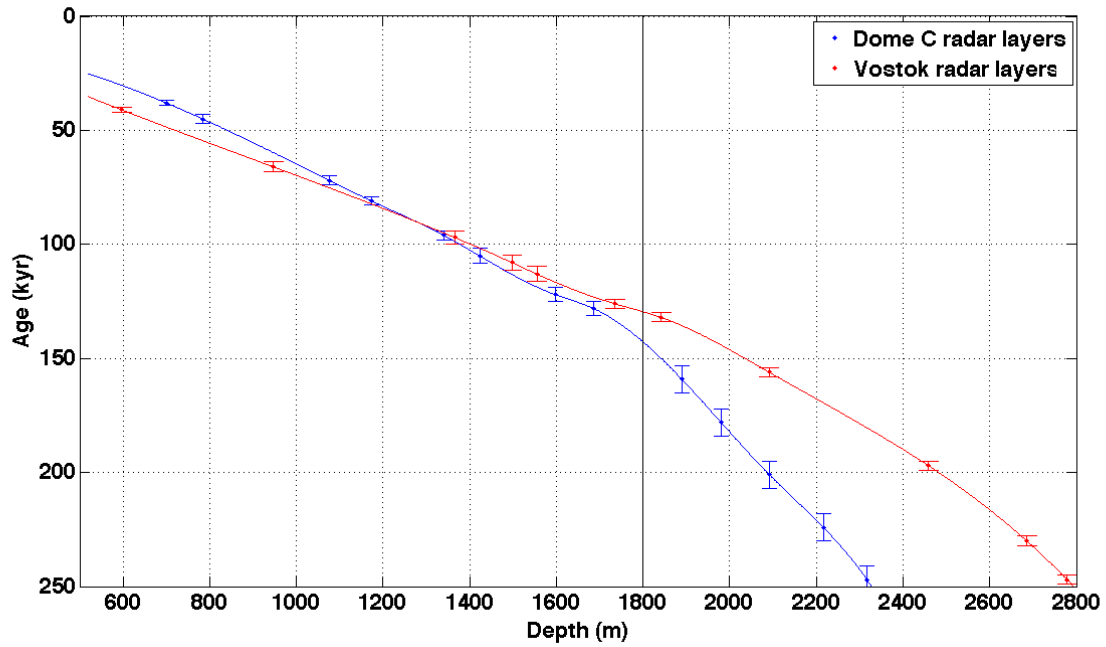


Figure B3. Age-Depth Relationship at Dome C and Vostok Ice Core Sites Based on RES Layering.

In blue, Dome C age-depth relationship; in red, Vostok age-depth stratigraphy. Uncertainties are bracketed, and increase with depth. A vertical black line separates the ultimate and penultimate glacial cycles.