

TABLE S1. Taxa examined and scanning parameters^a.

Taxon^b	Slices	Space	FR	Pixel	Size
Marsupialia					
<i>Didelphis virginiana</i> (TMM M-2517)	111	0.132	61	0.0596	1024
Eutheria					
<i>Kulbeckia kulbecke</i> (URBAC 04-36)	387	0.016	14.9	0.0146	1024
<i>Ukhaatherium nessovi</i> (PSS-MAE 110)	59	0.080	15	0.0290	512
<i>Zalambdalestes lechei</i> (PSS-MAE 108)	66	0.113	24.5	0.0479	512
Zhelestid (URBAC 03-39)	536	0.016	14.9	0.0146	1024
Afrotheria					
Afrosoricida					
<i>Chrysochloris</i> sp. (AMNH 82372)	85	0.050	31	0.0303	1024
<i>Hemicentetes semispinosum</i> (AMNH 100837)	56	0.067	48	0.0469	1024
Macroscelidea					
<i>Macroscelides proboscideus</i> (AMNH 161535)	151	0.055	22.5	0.0220	1024
Tubulidentata					
<i>Orycteropus afer</i> (AMNH 51909)	136	0.202	95	0.0930	1024
Hyracoidea					
<i>Procavia capensis</i> (TMM M-4351)	180	0.799	70	0.0683	1024
Sirenia					
<i>Trichechus manatus</i> (MSW 03156) ^c	229	0.300	80	0.1563	512
Proboscidea					
Elephantimorpha (TMM 933-950)	275	0.134	53	0.0518	1024
Xenarthra					
<i>Dasypus novemcinctus</i> (TMM M-152)	494	0.291	25	0.0244	1024
Laurasiatheria					
Ceatartiodactyla					
<i>Bathygenys reevesi</i> (TMM 40209-198)	149	0.141	64	0.0625	1024
<i>Sus scrofa</i> (TMM M-2689)	601	0.033	31	0.0303	1024
Balaenopteridae (TMM 42958-35)	1131	0.072	64.8	0.0633	1024
<i>Tursiops truncatus</i> (SDSNH 21212)	346	0.128	40	0.0391	1024
Perissodactyla					
<i>Equus caballus</i> (TMM M-171)	645	0.115	54	0.0567	1024
Carnivora					
<i>Canis familiaris</i> (TMM M-150)	92	0.144	68	0.0664	1024
<i>Eumetopias jubatus</i> (TMM M-171)	645	0.115	54	0.0527	1024
<i>Felis catus</i> (TMM M-968)	627	0.033	31	0.0303	1024
Pholidota					
<i>Manis tricuspis</i> (AMNH 53896)	101	0.116	35.5	0.0347	1024
Chiroptera					
<i>Pteropus lylei</i> (AMNH 237593)	188	0.447	41	0.0400	1024
<i>Nycteris grandis</i> (AMNH 268369)	70	0.072	67	0.0654	1024
<i>Rhinolophus ferrumequinum</i> (AMNH 245591)	45	0.097	44	0.0430	1024
<i>Tadarida brasiliensis</i> (TMM M-3030)	380	0.010	9.9	0.0097	1024

TABLE S1. (Continued)

Eulipotyphla						
<i>Atelerix albiventris</i> (unvouchered)	68	0.082	65	0.0635	1024	
<i>Sorex monticolus</i> (unvouchered)	130	0.265	12	0.0117	1024	
Euarchontoglires						
Rodentia						
<i>Cavia porcellus</i> (TMM M-7283)	728	0.038	29.4	0.0287	1024	
<i>Mus musculus</i> (TMM M-3196)	84	0.044	12.6	0.0246	512	
Lagomorpha						
<i>Lepus californicus</i> (TMM M-7500)	114	0.144	67	0.0654	1024	
<i>Sylvilagus floridanus</i> (TMM M-2689)	325	0.034	30	0.0293	1024	
Primates						
<i>Macaca mulatta</i> (TMM M-5987)	1121	0.033	31	0.0303	1024	
<i>Homo sapiens</i> (UTO-HS01)	636	0.027	24.84	0.0272	1024	
Dermoptera						
<i>Cynocephalus volans</i> (AMNH 187859)	350	0.028	22	0.0215	1024	
Scandentia						
<i>Tupaia glis</i> (TMM M-2256)	537	0.038	59	0.0576	1024	

^a Definitions of parameters are as follows: FR, field of reconstruction refers to the dimensions of an individual CT slice, expressed in millimeters; Pixel, interpixel spacing, or vertical and horizontal dimensions of an individual pixel, expressed in millimeters, and calculated as FR/Size; Size, number of pixels in a CT slice, either 512X512 or 1024X1024 pixels; Slices, number of CT slices through the ear collected in the coronal (original) slice plane; Space, interslice spacing, or distance between consecutive slices, expressed in millimeters.

^b Taxonomy and systematic arrangement follows published phylogenies [6,66].
 Institutional abbreviations: AMNH, American Museum of Natural History, New York; MSW, Mortality South West; PSS-MAE, Collections of Joint Paleontological and Stratigraphic Section of the Geological Institute, Mongolian Academy of Science, Ulaanbaatar – American Museum of Natural History, New York; SDSNH, San Diego Society of Natural History, San Diego, CA; TMM, Texas Natural Science Center, Austin, TX; URBAC, Uzbekistan/ Russian/ British/ American/ Canadian joint paleontological expedition, Kyzylkum Desert, Uzbekistan, specimens in the Institute of Zoology, Tashkent; UTO-HS, University of Texas at Austin, Department of Anthropology Teaching Collection

^c This specimen was the 156th Mortality South West in 2003, collected by S. Rommel at University of North Carolina Wilmington.