The last ceratosaur of Asia: a new noasaurid from the Early Cretaceous Great Siberian Refugium

Alexander O. Averianov[1], Pavel P. Skutschas[2], Andrey A. Atuchin[3], Dmitry A. Slobodin[4], Olga A. Feofanova[4], and Olga N. Vladimirova[4]

[1] Zoological Institute, Russian Academy of Sciences, Universitetskaya nab., 1, Saint Petersburg, 199034, Russian Federation
[2] Department of Vertebrate Zoology, Faculty of Biology, Saint Petersburg State University, Universitetskaya nab., 7–9, Saint Petersburg, 199034, Russian Federation
[3] 4455 Greenview Dr., Calgary, T2E 6M1, Alberta, Canada
[4] Kuzbass State Museum of Local Lore, Prospekt Sovetskiy 51, Kemerovo, 650000, Russian Federation

Supplementary Figures
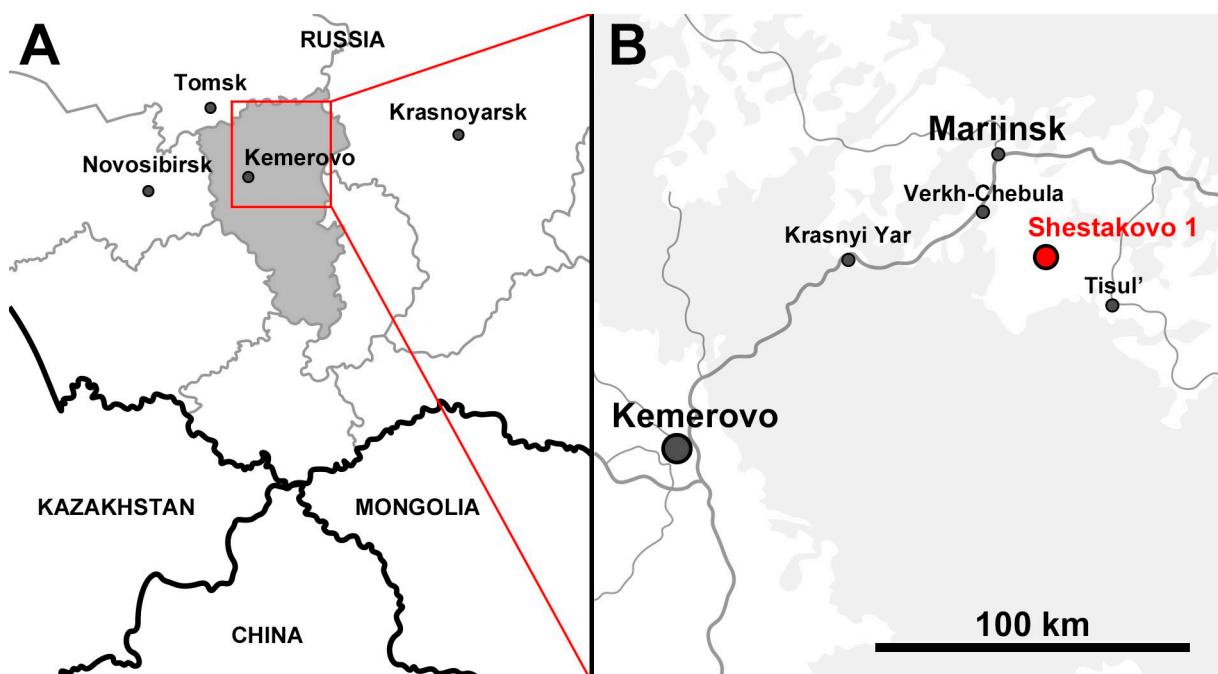
Figure S1. Geographic setting of Shestakovo 1 locality.
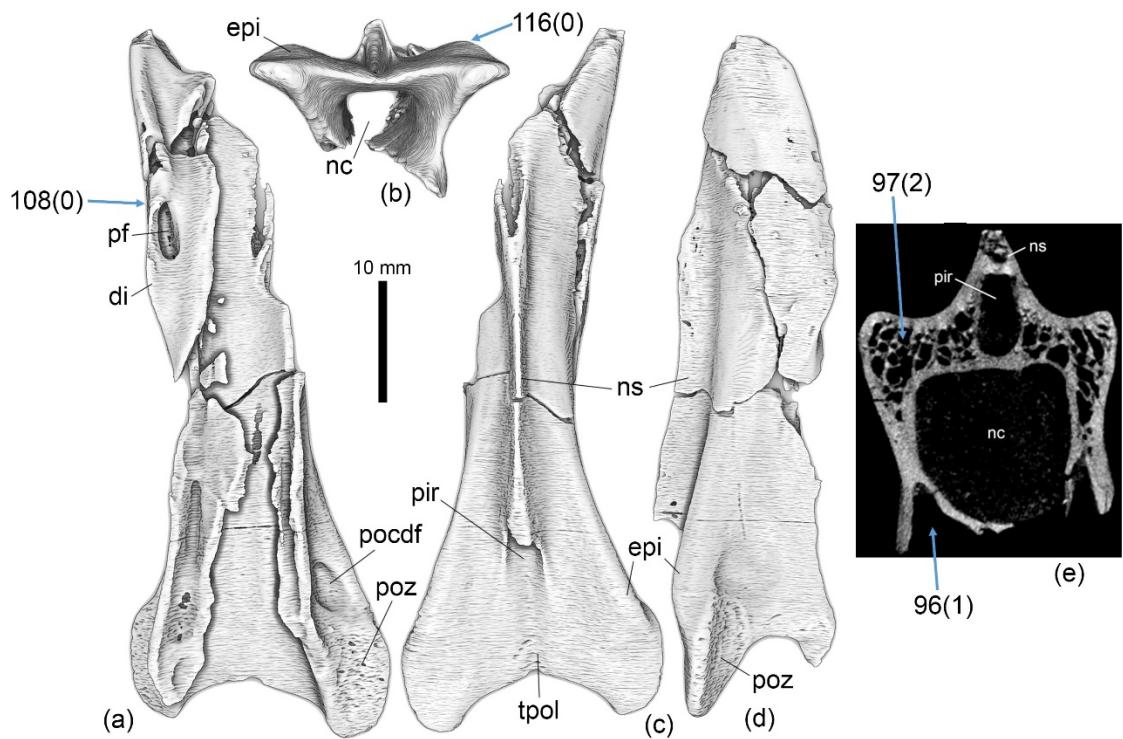
Figure S2. *Kiyacursor longipes*, PIN 329/16, anterior or middle cervical neural arch, screenshots of segmented surface 3d model (a-d) and CT section (e). (a), Ventral view. (b) Posterior view. (c) Dorsal view. (d) Right lateral view. (e) Cross-section at the posterior end of neural spine. Anatomical abbreviations: di, diapophysis; epi, epipophysis; pf, pneumatic foramen; nc, meural canal; ns, neural spine; pir, posterior interspinous recess; pocdf, postzygapophyseal centrodiapophyseal fossa; poz, postzygapophysis; tpol, interpostzygapophyseal lamina. Characters: 96(1), extreme neural arch pneumaticity; 97(2) camellate internal structure; 108(0), gently sloping demarcation of dorsal surface of neural arch from diapophyseal surface; 116(0), low epipophyses.
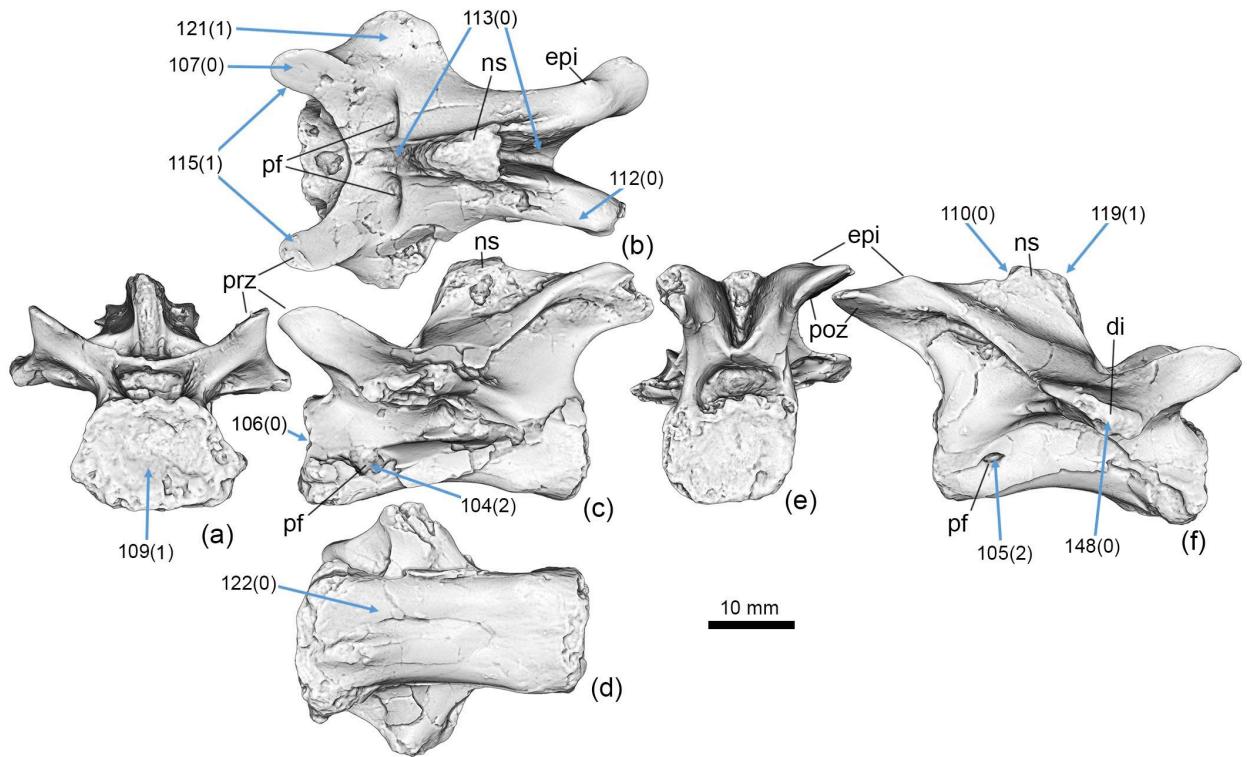
Figure S3. *Kiyacursor longipes*, KOKM 5542, holotype, posterior cervical vertebra, screenshots of segmented surface 3d model. (a) Anterior view. (b) Dorsal view. (c) Left lateral view. (d) Ventral view. (e) Posterior view. (f) Right lateral view. Anatomical abbreviations: di, diapophysis; epi, epipophysis; pf, pneumatic foramen; ns, neural spine; prz, prezygapophysis; poz, postzygapophysis. Characters: 104(2), anterior pleurocoel with pneumatic foramen; 105(2), posterior pleurocoel with pneumatic foramen; 106(0), centrum anterior articular surface concave; 107(0), zygapophyses anteroposteriorly elongated; 109(1), anterior centrum articular surface width to height ratio more than 1.3 [1.53]; 110(0), neural spine on posterior half of centrum; 112(0), anterior prongs of epipophyses absent; 113(0), pre- and postspinal fossae narrow; 115(1), zygapophyses laterally placed; 119(1), neural spine short; 121(1), accessory fossa on dorsal surface of diapophysis absent; 122(0), midcentrum constriction absent; 148(0), cervical ribs and vertebrae separate..
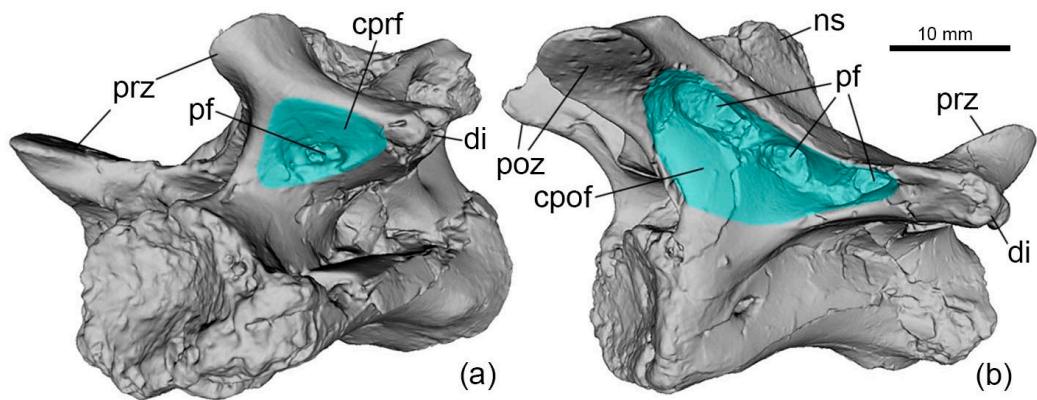
Figure S4. *Kiyacursor longipes*, KOKM 5542, holotype, posterior cervical vertebra, screenshots of segmented surface 3d model, showing pneumatic foramina in cprf and cpof (highlighted by blue). (a) Anteroventrolateral view. (b) Posteroventrolateral view. Anatomical abbreviations: cprf, centroprezygapophyseal fossa; cpof, centropostzygapophyseal fossa; di, diapophysis; pf, pneumatic foramen; ns, neural spine; prz, prezygapophysis; poz, postzygapophysis.
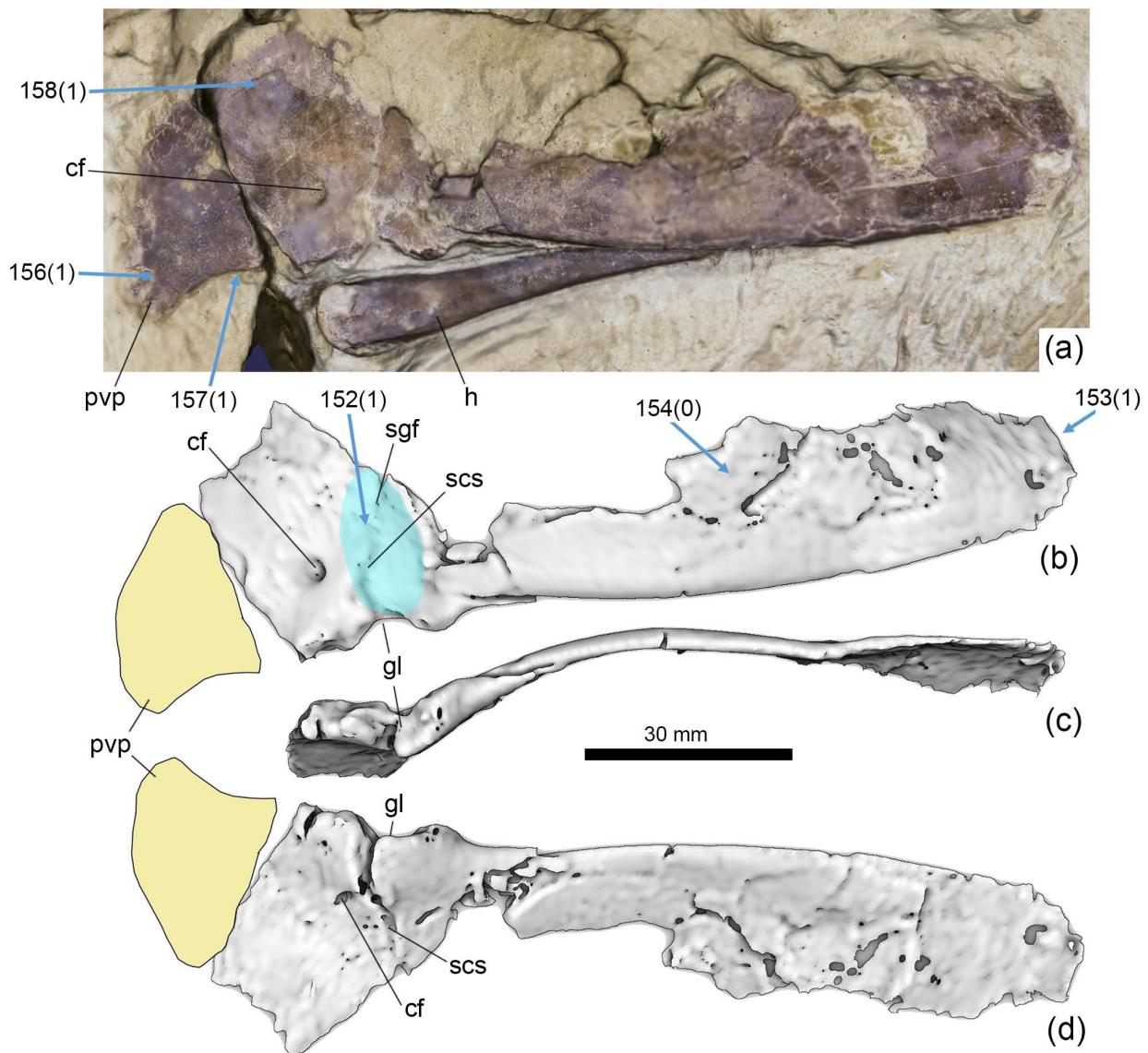
Figure S5. *Kiyacursor longipes*, KOKM 5542, holotype, left scapulocoracoid, screenshots of photogrammetric model (a) and segmented surface 3d model (b-c). The part of coracoid from large block was not segmented and shown by yellow in (b) and (c). (a) and (b) Lateral view. (c) Ventral view. (d) Medial view. Anatomical abbreviations: cf, coracoid foramen; gl, glenoid; h, humerus; scs, scapula-coracoid suture; pvp, posteroventral process; sgf, supraglenoid fossa (highlighted by blue). Characters: 152(1), supraglenoid fossa present; 153(1), scapular blade not expanded distally; 154(0), scapular blade broad, more than twice glenoid depth; 156(1), posteroventral process pronounced; 157(1), space between glenoid lip and posteroventral process more than half of the length of the glenoid; 158(1), height to length coracoid ratio more than 1.8.
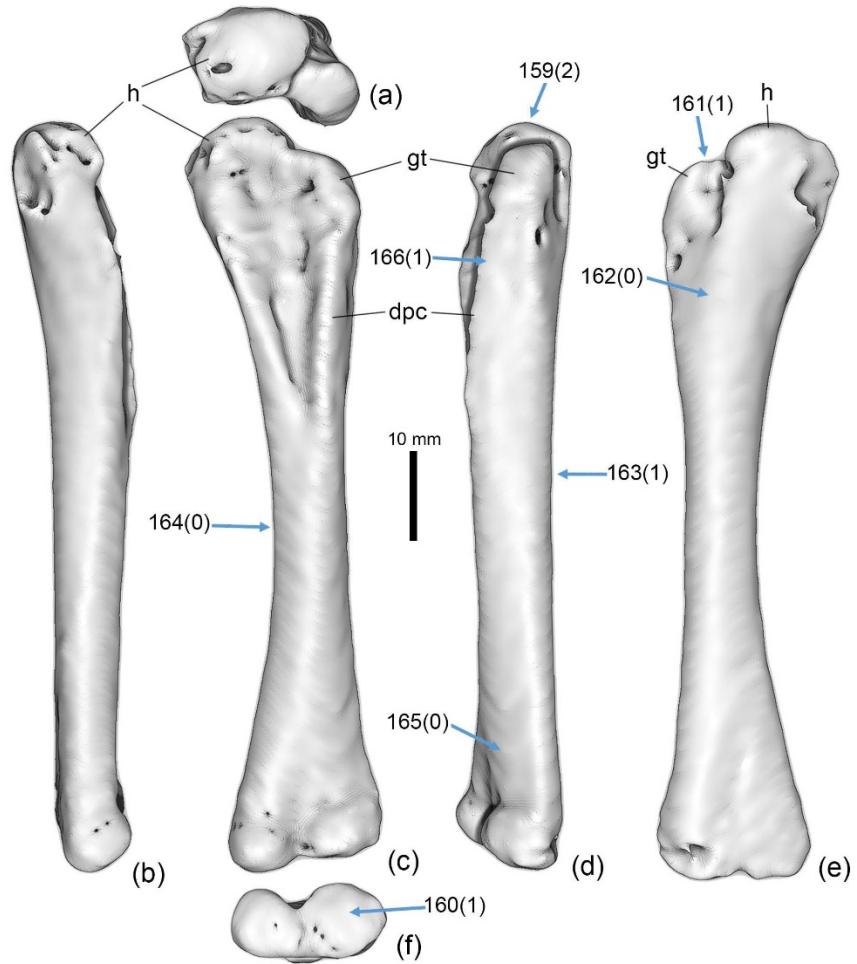
Figure S6. *Kiyacursor longipes*, KOKM 5542, holotype, left humerus, screenshots of segmented surface 3d model. (a) Proximal view. (b) Medial view. (c) Anterior view. (d) Lateral view. (e) Posterior view. (f) Distal view. Anatomical abbreviations: h, head; dpc, deltopectoral crest; gt, greater tubercle. Characters: 159(2), head globular; 160(1), distal condyles flattened; 161(1), greater tubercle offset distally, separated from proximal articular surface; 162(0), posterolateral tubercle absent; 163(1), shaft straight; 164(0), shaft with a concave or straight lateral margin and a mildly concave medial margin; 165(0), longitudinal torsion of the shaft absent; 166(1), deltopectoral crest reduced.
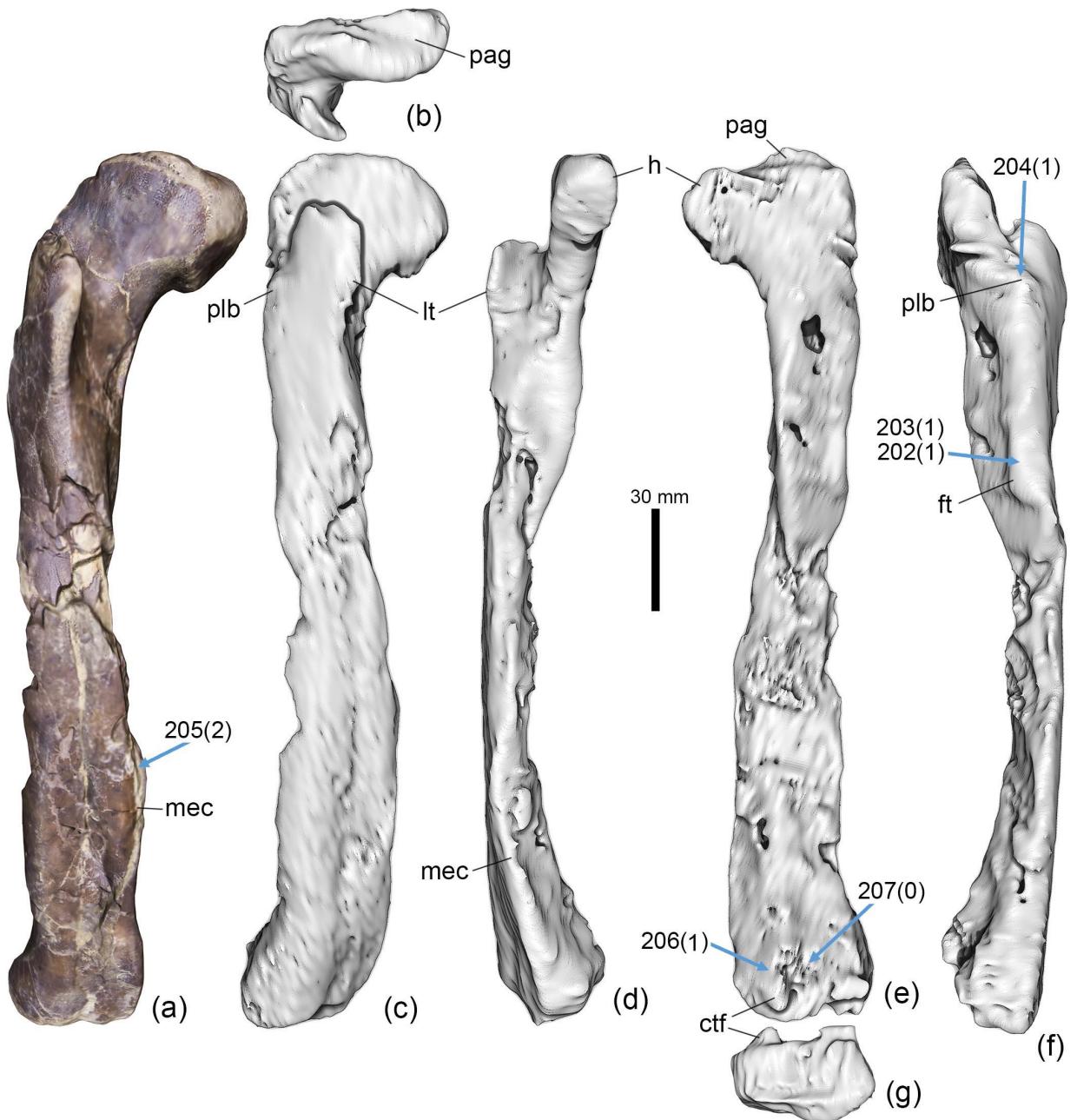
Figure S7. *Kiyacursor longipes*, KOKM 5542, holotype, right femur, screenshots of photogrammetric model (a) and segmented surface 3d model (b-g). (a) Anteromedial view. (b) Proximal view. (c) Anterior view. (d) Medial view. (e) Posterior view. (f) Lateral view. (g) Distal view. Anatomical abbreviations: h, head; ctf, crista tibiofibularis; ft, fourth trochanter; lt, lesser trochanter; mec, medial epicondylar crest; pag, proximal articular groove; plb, posterolateral bulge. Characters: 202(1), fourth trochanter reduced to a low ridge; 203(0), fourth trochanter orientation posterior; 204(1), distinct lesser trochanter and posterolateral bulge; 205(2), medial epicondylar crest developed as a long flange; 206(1), crista tibiofibularis broad, oblique; 207(0), popliteal fossa smooth.
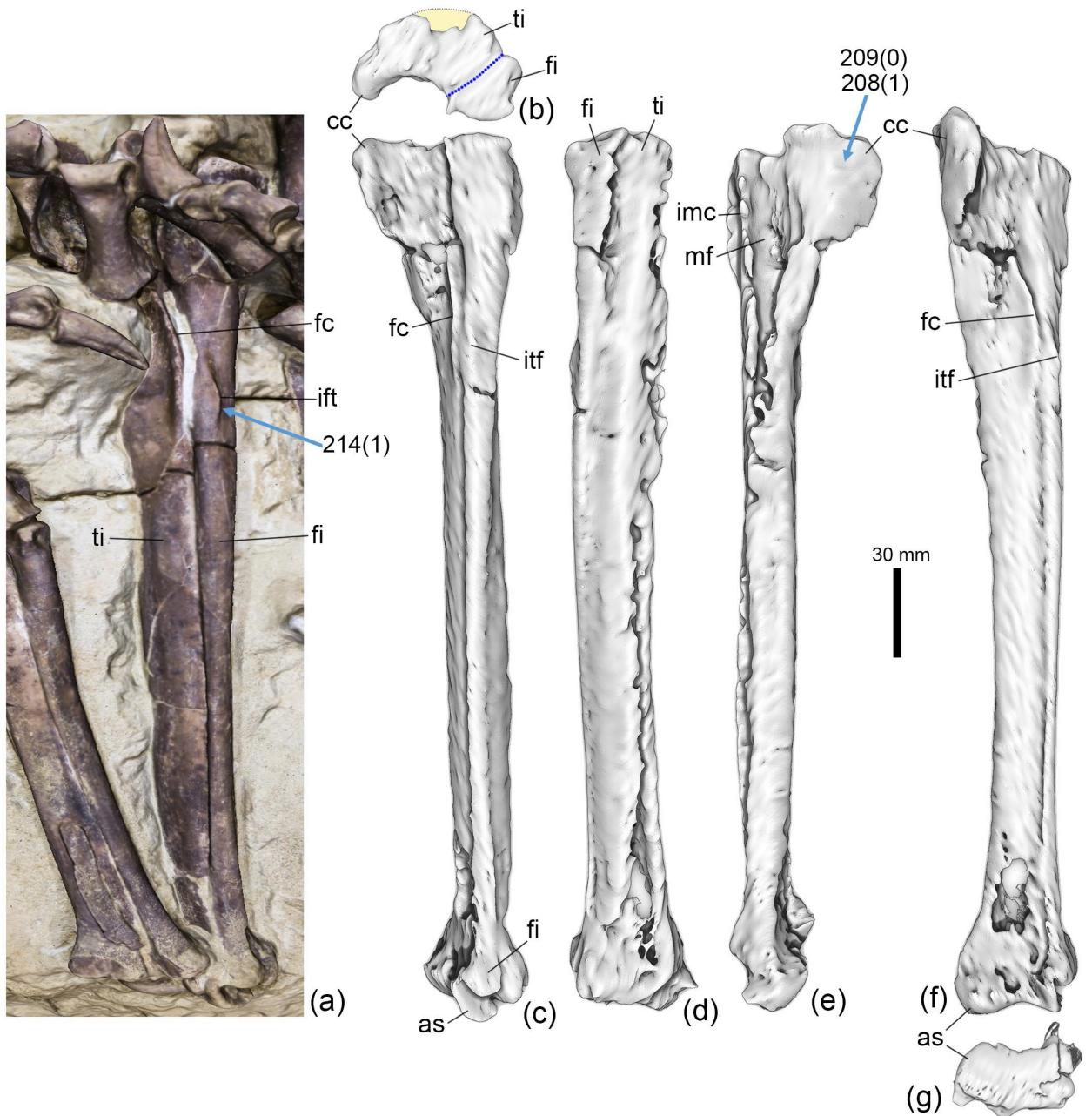
Figure S8. *Kiyacursor longipes*, KOKM 5542, holotype, left tibia, fibula, and astragalus, screenshots of photogrammetric model (a) and segmented surface 3d model (b-g). (a) Anterolateral view. (b) Proximal view. (c) Lateral view. (d) Posterior view. (e) Medial view. (f) Anterior view. (g) Distal view. Anatomical abbreviations: as, astragalus; cc, cnemial crest; fc, fibular crest; fi, fibula; imc, crest for interosseous membrane; itf, iliofibularis tubercle; mf, medial fossa; ti, tibia. Characters: 208(1), cnemial crest distal end expanded dorsoventrally, cnemial crest almost rectangular in shape; 209(0), ratio tibial length/cnemial crest >6.5 [11.0]; 214(1) iliofibularis tubercle large.
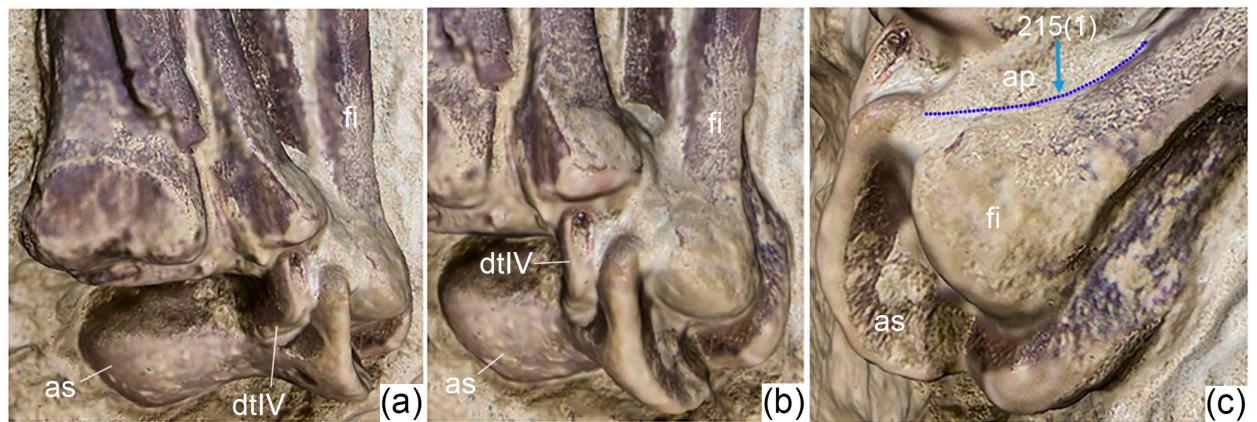
Figure S9. *Kiyacursor longipes*, KOKM 5542, holotype, left tibia, fibula, astragalus, and tarsometatarsus, screenshots of photogrammetric model. (a) Anterior view. (b) Anterolateral view. (c) Lateral view. Anatomical abbreviations: as, astragalus; ap, ascending process; dtIV, distal tarsal IV; fi, fibula. Character: 215(1), fibula and ascending process of astragalus fused. Not to scale.
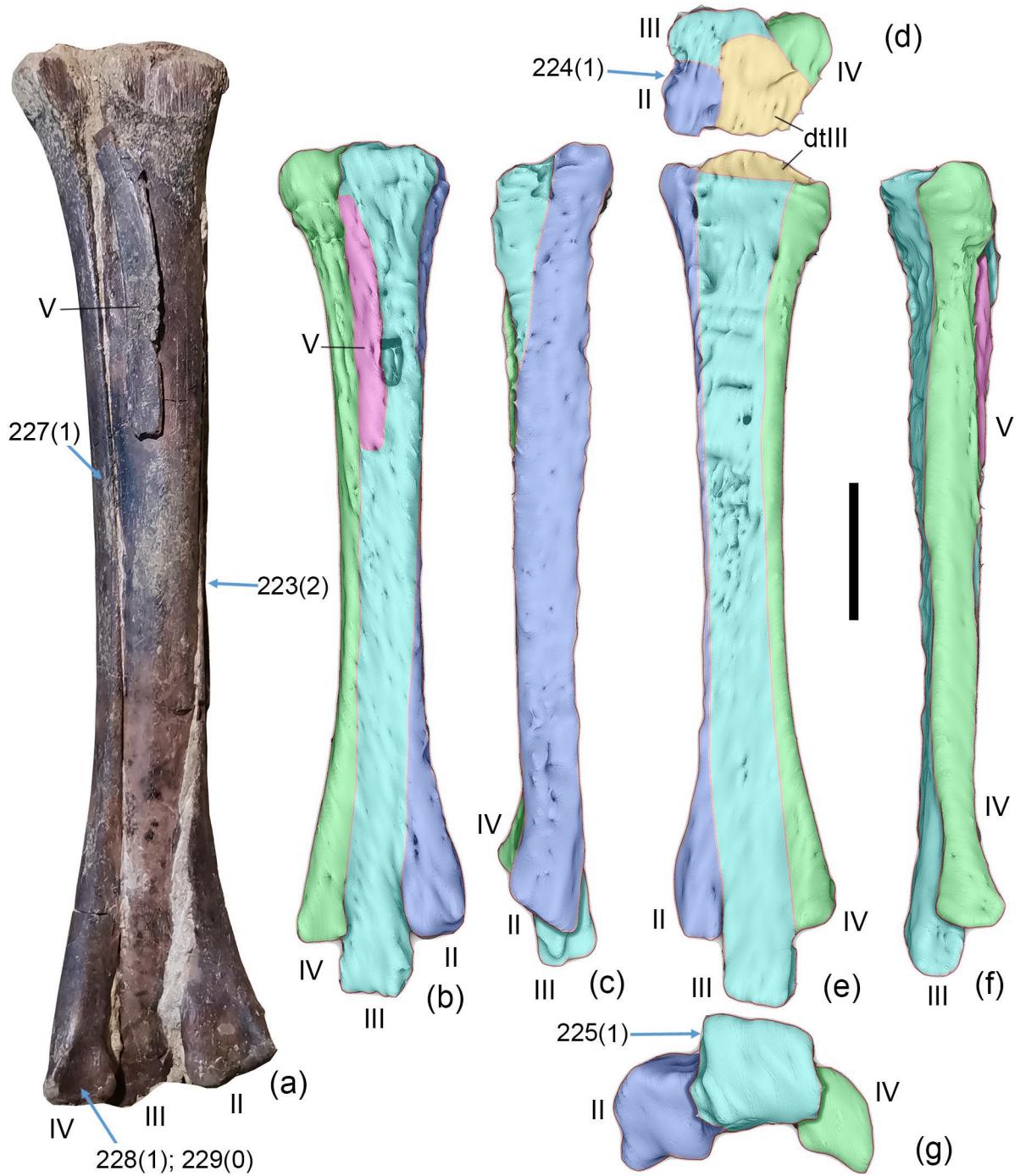
Figure S10. *Kiyacursor longipes*, KOKM 5542, holotype, left tarsometatarsus, photograph (a) and screenshots of segmented surface 3d model (b-g). (a) and (b) Posterior view. (c) Medial view. (d) Proximal view. (e) Anterior view. (f) Lateral view. (g) Distal view. Anatomical abbreviation: dtIII, distal tarsal III. Roman numerals II-V denote metatarsals II-V. Characters: 223(2), metatarsal II strongly reduced; 224(1), metatarsal II proximal articular surface two-thirds or less the width of metatarsals III or IV; 225(1), metatarsal III distal articular surface rectangular, much wider than tall; 227(1), metatarsal IV shaft lateromedially compressed with respect to the shaft of metatarsal III; 228(1), metatarsal IV distal end symmetrical, condyles subequal; 229(0), metatarsal IV distal end subequal to distal end of metatarsal III in width. Figures (a) and (g) are not to scale.

Figure S11. *Kiyacursor longipes*, KOKM 5542, holotype, left tarsals, photograph. Proximal view of tarsometatarsus. Anatomical abbreviations: as, astragalus; dtIII, distal tarsal III; dtIV, distal tarsal IV; fi, fibula; mtIII-mtV, metatarsal III-V; ti, tibia. Character: 222(1), distal tarsal III partially or totally co-ossified with the metatarsal III. Not to scale.
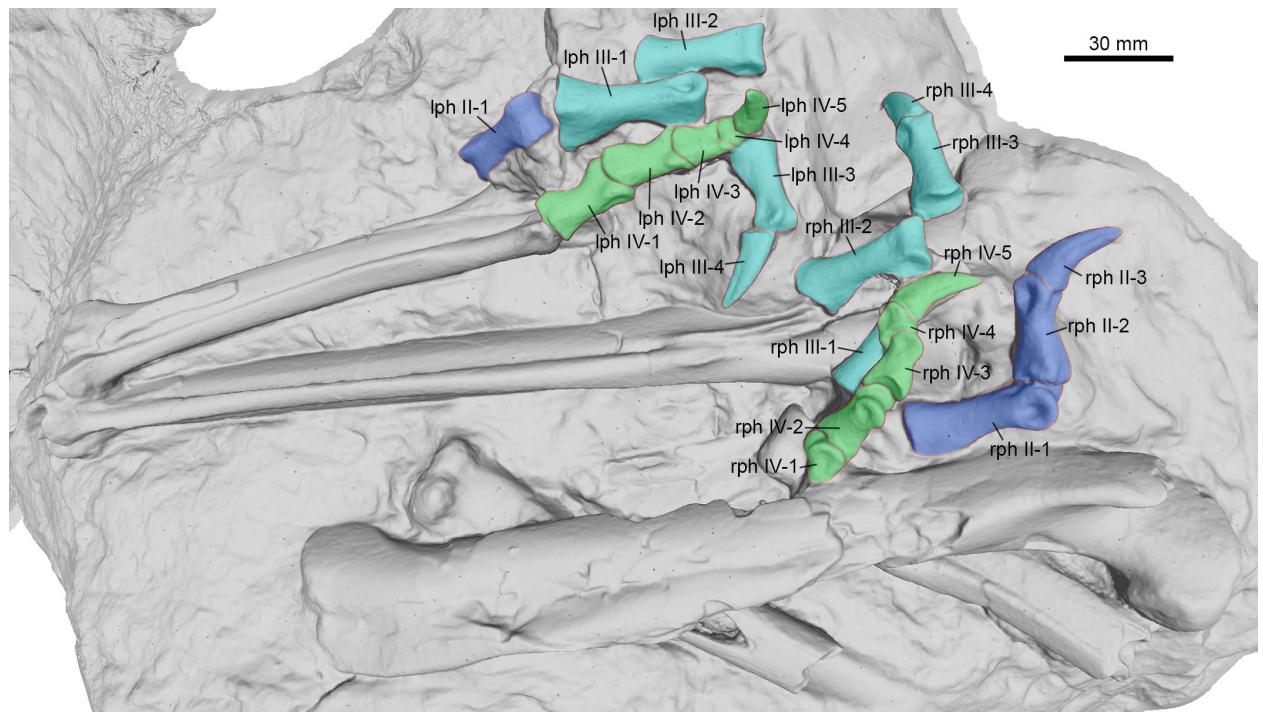
Figure S12. *Kiyacursor longipes*, KOKM 5542, holotype, identification of pedal phalanges, screenshot of photogrammetric model. Anatomical abbreviations: lph, left phalanx; rph, right phalanx. The Roman numerals II-IV denote digit number and Arab numerals denote phalanx number.
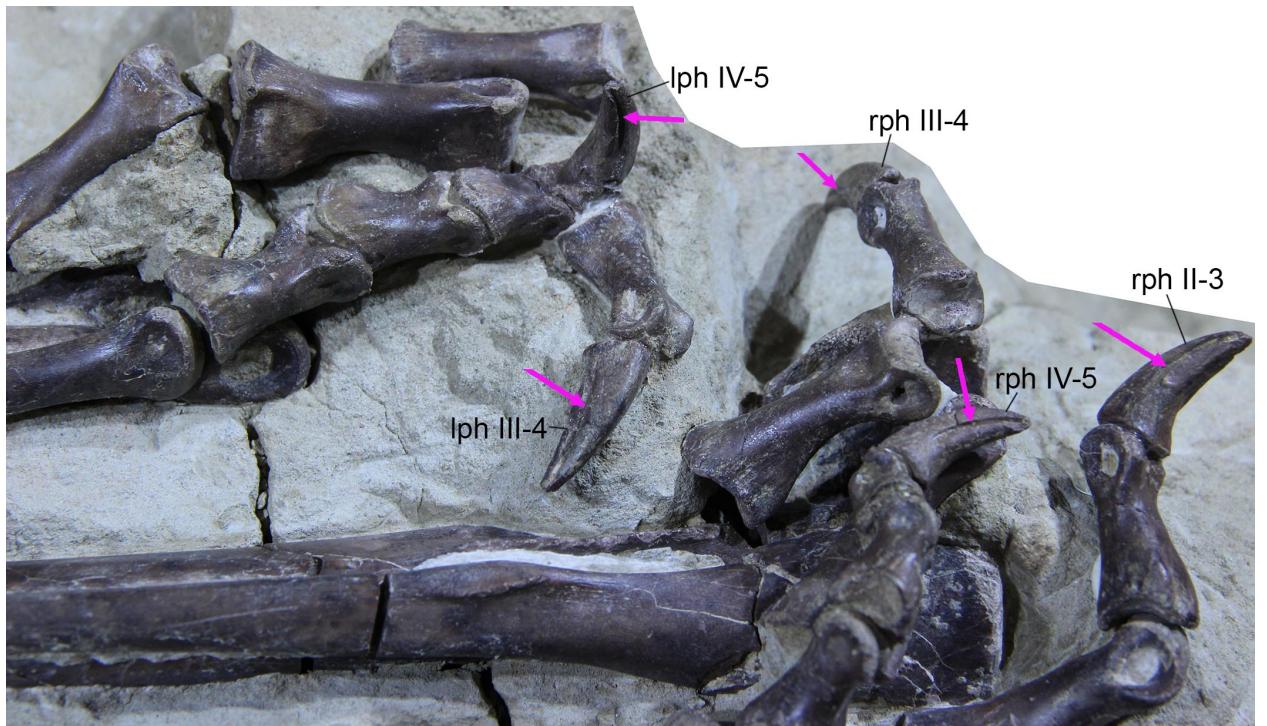
Figure S13. *Kiyacursor longipes*, KOKM 5542, holotype, photograph showing single groove on the pedal ungual phalanges (pointed by arrow; character 230(0)). Anatomical abbreviations: lph, left phalanx; rph, right phalanx. The Roman numerals II-IV denote digit number and Arab numerals denote phalanx number. Not to scale.
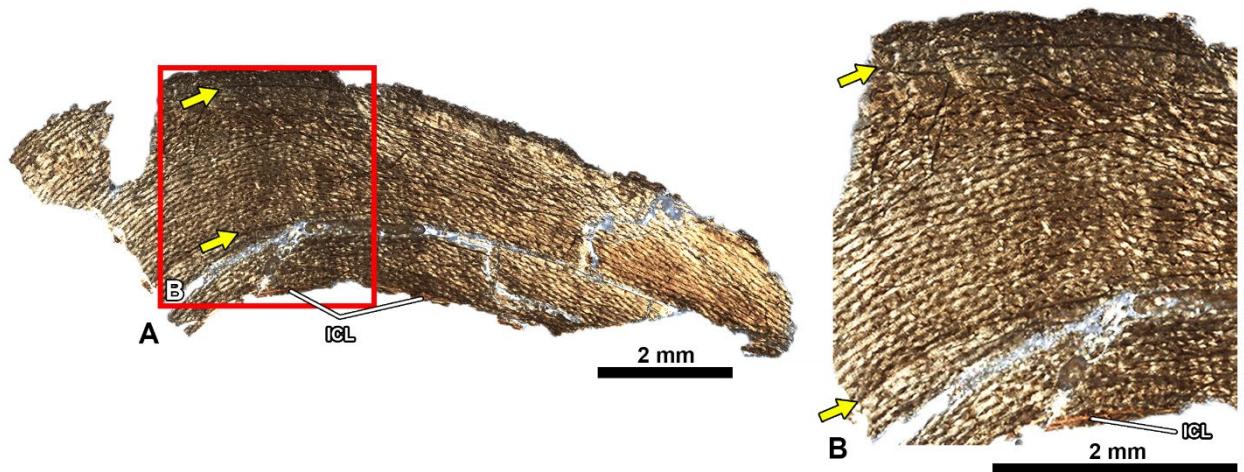
Figure S14. *Kiyacursor longipes*, KOKM 5542, right femur, histological sections under polarized light. Note the presence of ICL, LAGs (yellow arrows). Anatomical abbreviation: ICL, inner circumferential layer.
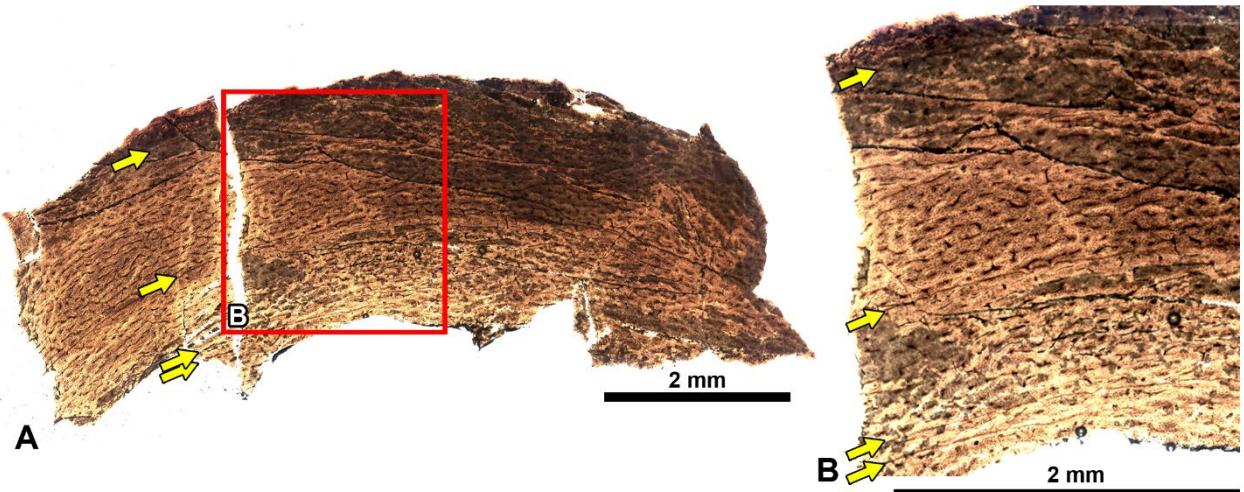
Figure S15. *Kiyacursor longipes*, KOKM 5542, right tibia, histological sections under normal light. Note the presence of three LAGs (yellow arrows).

10 taxa pruned: Dahalokely, Huinculsaurus, Kryptops, Laevisuchus, MPCN_PV_69, Llukalkan, Quilmesaurus, Elemgasem, Kurupi, Thanos,

Tree:
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 ┌── ?? Thanos
 ├── ?? Kurupi
 ├── ?? Elemgasem
 ├── ?? Quilmesaurus
 ├── ?? Llukalkan
 ├── ?? MPCN_PV_69
 ├── ?? Laevisuchus
 ├── ?? Kryptops
 ├── ?? Huinculsaurus
 ├── ?? Dahalokely
 │        ┌── Genyodectes
 ├────────┤
 │        └── Ceratosaurus
 │                   ┌── Euneralla_Formation
 │              ┌────┤── Kiyacursor
 │              │    └── Afrominus
 │              │         ┌── Vespersaurus
 │              │    ┌────┤      ┌── Noasaurus
 │         ┌────┤    │    └──────┤
 │         │    │    │           └── Masiakasaurus
 │         │    │    └── Velocisaurus
 │         │    │         ┌── Limusaurus
 │         │    └─────────┤      ┌── Elaphrosaurus
 │         │              └──────┤
 │         │                     └── CCG_20011
 │         ├── Xenotarsosaurus
 │    ┌────┤── Rahiolisaurus
 │    │    └── Eoabelisaurus
 │    │         ┌── Spectrovenator
 │    │    ┌────┤── Rugops
 │    │    │    │    ┌── Abelisaurus
 │    │    │    │    │    ┌── Rajasaurus
 │    │    │    └────┤────┤── Majungasaurus
 │    │    │         │    └── Indosaurus
 │    │    │         │    ┌── 'MPM_99'
 │    │    │         └────┤── Arcovenator
 │    │    │              │    ┌── Ilokelesia
 │    │    │              └────┤── Ekrixinatosaurus
 │    │    │                   └── Skorpiovenator
 │    │    │                        ┌── Pycnonemosaurus
 │    │    │                   ┌────┤── Genusaurus
 │    │    │                   │    └── Viavenator
 │    │    │                   │         ┌── Carnotaurus
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 │    │    │                             └── Aucasaurus
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Figure S16. Strict consensus tree of TNT analysis showing pruned taxa.
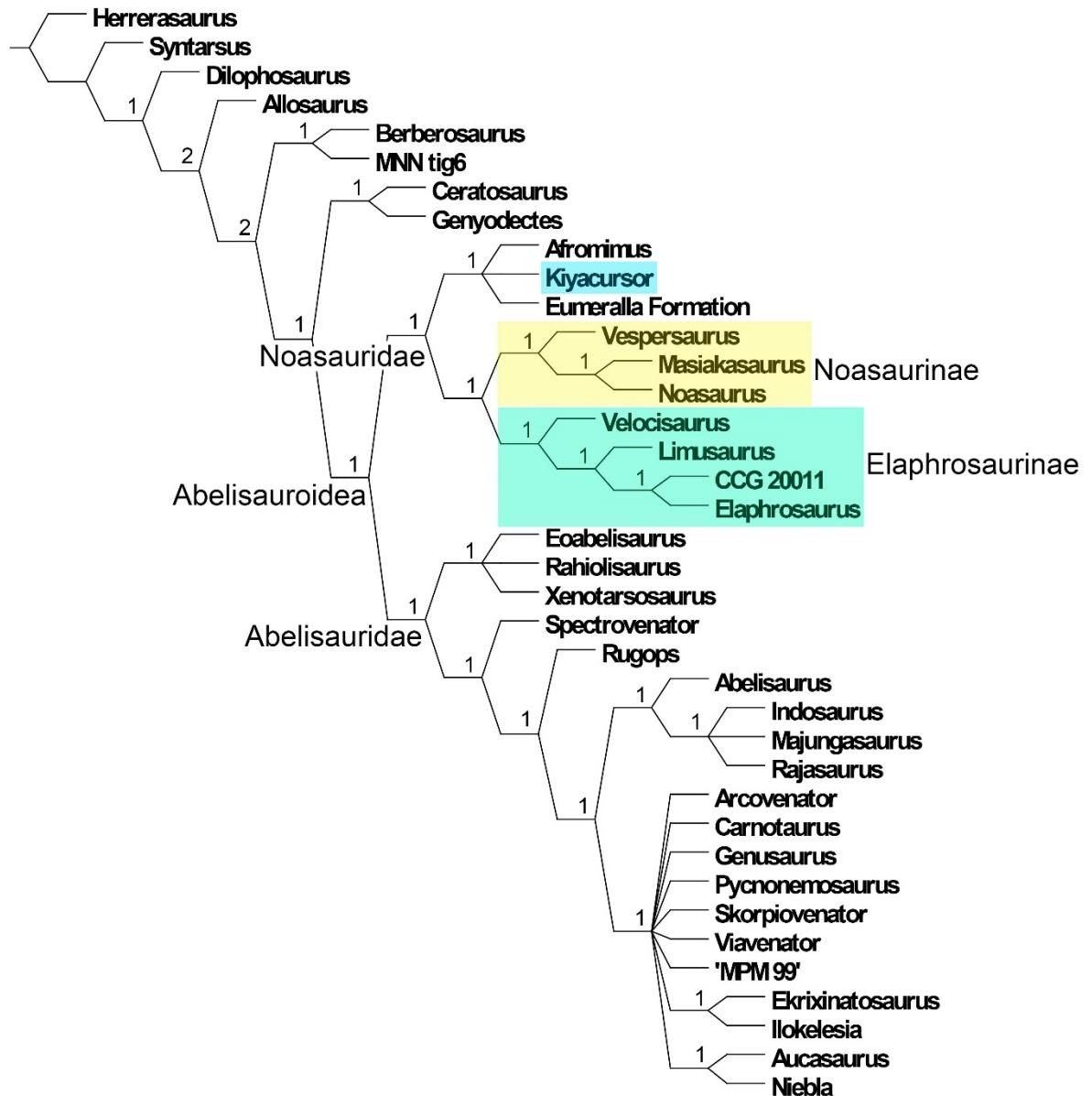
Figure S17. Strict consensus tree of the TNT phylogenetic analysis with deleted unstable taxa. The figures above nodes denote Bremer support values.
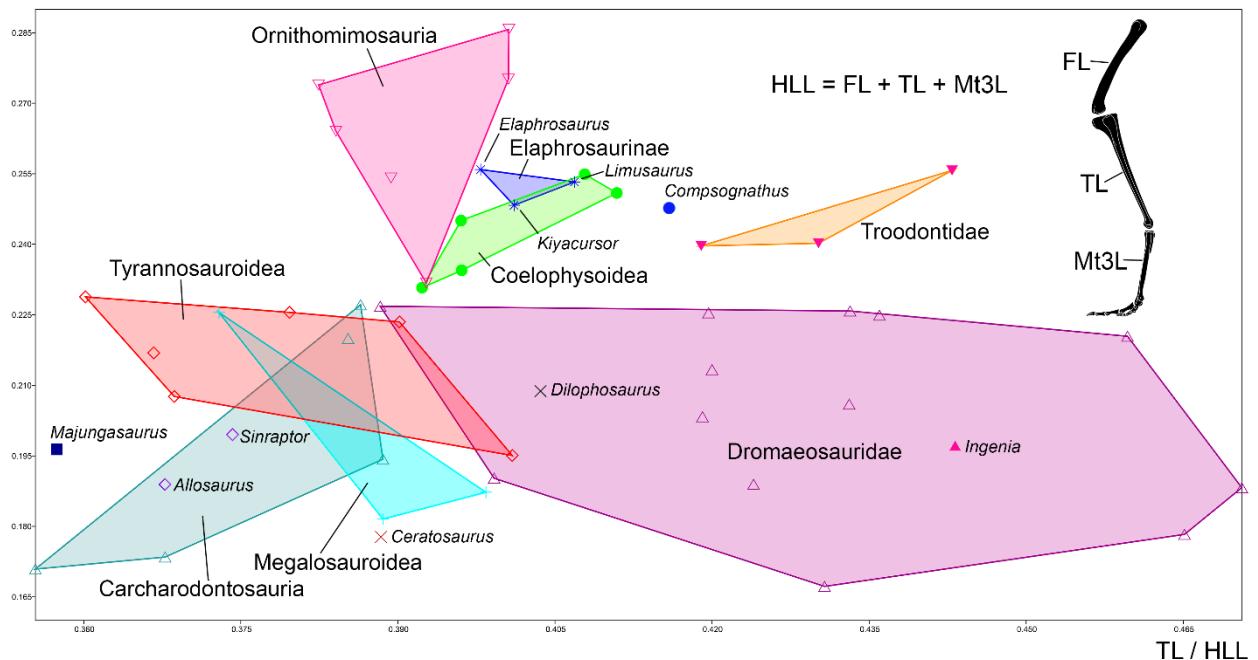
Figure S18. Morphospace of the hind limb proportions in Theropoda. The hind limb length (HLL) is the sum of femur length (FL), tibia length (TL), and third metatarsal length (Mt3L). The x-axis shows the ratio of tibia length (TL) to hind limb length (HLL). The y-axis shows the ratio of third metatarsal length (Mt3L) to hind limb length (HLL).

Supplementary Table. Measurements of hind-limb elements in Theropoda.

Clade	Taxon	Specimen	Femur L	Tibia L	Metatarsa l 3 L	Reference
Abelisauroidea	Majungasaurus crenatissimus	FMNH PR 2278	568	455	250	Carrano, 2007
Abelisauroidea	Kiyacursor longipes	KOKM 5542	257	294	182	This study
Abelisauroidea	Elaphrosaurus bambergi	NHM GrS 38-44	529	608	391	Gatesy and Middleton, 1997
Abelisauroidea	Limusaurus inextricabilis	IVPP V15923	208	249	155	Xu et al., 2009
Allosauroidea	Allosaurus fragilis	UUVP 6000r	880	730	375	Gatesy and Middleton, 1997
Allosauroidea	Sinraptor dongi	IVPP 10600	876	769	410	Gatesy and Middleton, 1997
Carcharodonto sauria	Acrocanthosaurus atokensis	MU 0-80-59	1153	865	416	Gatesy and Middleton, 1997
Carcharodonto sauria	Chilantaisaurus tashuikouensis	IVPP V2884.7	1190	954	450	Gatesy and Middleton, 1997
Carcharodonto sauria	Neovenator salerii		730	680	340	White et al., 2013
Carcharodonto sauria	Australovenator wintonensis		578	564	322	White et al., 2013
Carcharodonto sauria	Fukuiraptor kitadaniensis		507	507	298	White et al., 2013
Ceratosauridae	Ceratosaurus nasicornis	USNM 4735	620	555	254	Gatesy and Middleton, 1997
Coelophysoide a	Coelophysis bauri	UCMP 129618	245	255	150	Gatesy and Middleton, 1997
Coelophysoide a	Podokesaurus holyokensis		86	104	65	Gatesy and Middleton, 1997
Coelophysoide a	Procompsognathu s triassicus	SMNS 12591	93	113	69	Gatesy and Middleton, 1997
Coelophysoide a	Segisaurus halli	UCMP 32101	145	160	99	Gatesy and Middleton, 1997
Coelophysoide a	Megapnosaurus rhodesiensis	QG 1	208	223	132	Gatesy and Middleton, 1997
Compsognathi dae	Compsognathus longipes	MNHN CNJ 79	110	136	81	Gatesy and Middleton, 1997
Dilophosaurida e	Dilophosaurus wetherilli	UCMP 37302	557	580	300	Gatesy and Middleton, 1997
Dromaeosaurid ae	Deinonychus antirrhopus	MCZ 4371	336	368	164	Brusatte et al., 2013
Dromaeosaurid ae	Sinornithosaurus millenii	IVPP V12811	148	175	94	White, 2009
Dromaeosaurid ae	Microraptor gui	IVPP V13352	98	126	65	White, 2009
Dromaeosaurid ae	Velociraptor mongoliensis	IGM 100/986	238	255	99	Brusatte et al., 2013
Dromaeosaurid ae	Saurornitholestes langstoni	TMP 88.121.39	230	300	115	Brusatte et al., 2013
Dromaeosaurid ae	Linheraptor exquisitus	IVPP V16923	220	252	128	Brusatte et al., 2013
Dromaeosaurid ae	Bambiraptor feinbergorum	AMNH FARB FR 30556	119	171	82	Brusatte et al., 2013
Dromaeosaurid ae	Adasaurus mongoliensis	IGM 100/20	273	303	147	Brusatte et al., 2013
Dromaeosaurid ae	Achillobator giganticus	MNU FR-15	505	491	234	Brusatte et al., 2013

Dromaeosauridae	Austroraptor cabazai	MML-195	560	565	330	Brusatte et al., 2013
Dromaeosauridae	Rahonavis ostromi	UA 8656	87	120	48	Brusatte et al., 2013
Dromaeosauridae	Microraptor zhaoianus	CAGS 20-8-001	74	94	49	Brusatte et al., 2013
Dromaeosauridae	Shri devi	IGM 100/980	205	246	117	Turner et al., 2021
Megalosauroidea	Afrovenator abakensis	UC OBA 1	760	687	321	Gatesy and Middleton, 1997
Megalosauroidea	Eustreptospondylus oxoniensis	OUM J13558	520	500	235	Gatesy and Middleton, 1997
Megalosauroidea	Megalosaurus bucklandi	BMNH 31806.9	700	650	393	Gatesy and Middleton, 1997
Ornithomimosauria	Archaeornithomimus asiaticus	AMNH 6565	314	401	286	Gatesy and Middleton, 1997
Ornithomimosauria	Dromiceiomimus brevitertius	NMC 12228	468	578	397	Gatesy and Middleton, 1997
Ornithomimosauria	Gallimimus bullatus	GI 100/11	665	740	530	Gatesy and Middleton, 1997
Ornithomimosauria	Ornithomimus edmontonicus	ROM 851	435	475	310	Gatesy and Middleton, 1997
Ornithomimosauria	Struthiomimus altus	AMNH 5257	513	560	385	Gatesy and Middleton, 1997
Ornithomimosauria	Garudimimus brevipes	GIN 100/13	371	388	229	Kobayashi and Barsbold, 2005
Oviraptorosauria	Ingenia yanshini	GI 100/30	228	281	125	Gatesy and Middleton, 1997
Troodontidae	Saurornithoides mongoliensis	AMNH 6516	198	243	139	Gatesy and Middleton, 1997
Troodontidae	Sinornithoides youngi	IVPP V9612	132	194	112	White, 2009
Troodontidae	Sinovenator changii	IVPP V12615	118	154	86	White, 2009
Tyrannosauroidea	Gorgosaurus libratus	NCM 2120	1040	1000	594	Gatesy and Middleton, 1997
Tyrannosauroidea	Albertosaurus sarcophagus	ROM 807	1020	1030	590	Gatesy and Middleton, 1997
Tyrannosauroidea	Daspletosaurus torosus	AMNH 5438	1000	870	490	Gatesy and Middleton, 1997
Tyrannosauroidea	Dryptosaurus aquilinguis	ANSP 9995	787	781	380	Gatesy and Middleton, 1997
Tyrannosauroidea	Tarbosaurus bataar	PIN 551/2	970	850	540	Maleev, 1974
Tyrannosauroidea	Tyrannosaurus rex	TMP 81.12.1	1340	1180	698	Gatesy and Middleton, 1997

Supplementary matrix

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Genusaurus Genyodectes Huinculsaurus Ilokelesia Indosaurus Kryptops Laevisuchus Limusaurus Majungasaurus
Masiakasaurus Noasaurus Pycnonemosaurus Rahiolisaurus Rajasaurus Rugops Skorpiovenator MNN_tig6
Spectrovenator Velocisaurus Vespersaurus Viavenator MPCN_PV_69 Afromimus Xenotarsosaurus Llukalkan
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        Eoabelisaurus
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        Majungasaurus
1111120110011101011111111011121110111001000111010111010111111111111111111211111110011011010

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       Masiakasaurus
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1)10111100111001?011?1?01111111111010????????11011111?11010??2111101101101 2101??101111111111?211
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       Noasaurus
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       Rahiolisaurus
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       Rajasaurus
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       Rugops
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       Skorpiovenator
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       Velocisaurus
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       Viavenator
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       MPCN_PV_69
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        Xenotarsosaurus
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        Llukalkan
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        Niebla
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        Quilmesaurus
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        Kurupi
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211?00??1?1?????011????1?????????12111121??????????????????????????????????????????????????????????????
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        Kiyacursor
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        Eumeralla_Formation
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END;
BEGIN ASSUMPTIONS;
        TYPESET * UNTITLED  = unord: 1- 246;

END;

BEGIN MESQUITECHARMODELS;
        ProbModelSet * UNTITLED  = 'Mk1 (est.)': 1- 246;
END;

Begin MESQUITE;
                MESQUITESCRIPTVERSION 2;
                TITLE AUTO;
                tell ProjectCoordinator;
                timeSaved 1712471459891;
                getEmployee #mesquite.minimal.ManageTaxa.ManageTaxa;
                tell It;
                        setID 0 8008682766579681374;
```

endTell;
getEmployee #mesquite.charMatrices.ManageCharacters.ManageCharacters;
tell It;
setID 0 8768341072348500945;
tell It;
setDefaultOrder 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 171 170 173 174 172 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245;
attachments ;
endTell;
mqVersion 361;
checksumv 0 3 2711004082 null getNumChars 246 numChars 246 getNumTaxa 48 numTaxa 48   short true   bits 15   states 15   sumSquaresStatesOnly 12501.0 sumSquares 12501.0 longCompressibleToShort false usingShortMatrix true   NumFiles 1 NumMatrices 1;
mqVersion;
endTell;
getWindow;
tell It;
suppress;
setResourcesState false false 144;
setPopoutState 400;
setExplanationSize 0;
setAnnotationSize 0;
setFontIncAnnot 0;
setFontIncExp 0;
setSize 1920 961;
setLocation -8 0;
setFont SanSerif;
setFontSize 10;
getToolPalette;
tell It;
endTell;
desuppress;
endTell;
getEmployee #mesquite.charMatrices.BasicDataWindowCoord.BasicDataWindowCoord;
tell It;
showDataWindow #8768341072348500945 #mesquite.charMatrices.BasicDataWindowMaker.BasicDataWindowMaker;
tell It;
getWindow;
tell It;
setExplanationSize 30;
setAnnotationSize 20;
setFontIncAnnot 0;
setFontIncExp 0;
setSize 1776 889;
setLocation -8 0;
setFont SanSerif;
setFontSize 10;
getToolPalette;
tell It;
setTool mesquite.charMatrices.BasicDataWindowMaker.BasicDataWindow.ibeam;
endTell;
setActive;
setTool mesquite.charMatrices.BasicDataWindowMaker.BasicDataWindow.ibeam;

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                                                colorCells  #mesquite.charMatrices.ColorByState.ColorByState;
                                tell It;
                                                setStateLimit 9;
                                                toggleUniformMaximum on;
                                endTell;
                                                colorRowNames
#mesquite.charMatrices.TaxonGroupColor.TaxonGroupColor;
                                                colorColumnNames
#mesquite.charMatrices.CharGroupColor.CharGroupColor;
                                                colorText  #mesquite.charMatrices.NoColor.NoColor;
                                                setBackground White;
                                                toggleShowNames on;
                                                toggleShowTaxonNames on;
                                                toggleTight off;
                                                toggleThinRows off;
                                                toggleShowChanges on;
                                                toggleSeparateLines off;
                                                toggleShowStates on;
                                                toggleReduceCellBorders off;
                                                toggleAutoWCharNames on;
                                                toggleAutoTaxonNames off;
                                                toggleShowDefaultCharNames off;
                                                toggleConstrainCW on;
                                                toggleBirdsEye off;
                                                toggleShowPaleGrid off;
                                                toggleShowPaleCellColors off;
                                                toggleShowPaleExcluded off;
                                                togglePaleInapplicable on;
                                                togglePaleMissing off;
                                                toggleShowBoldCellText off;
                                                toggleAllowAutosize on;
                                                toggleColorsPanel off;
                                                toggleDiagonal off;
                                                setDiagonalHeight 80;
                                                toggleLinkedScrolling on;
                                                toggleScrollLinkedTables off;
                                endTell;
                                showWindow;
                                getWindow;
                                tell It;
                                                forceAutosize;
                                endTell;
                                getEmployee #mesquite.charMatrices.AlterData.AlterData;
                                tell It;
                                                toggleBySubmenus off;
                                endTell;
                                getEmployee #mesquite.charMatrices.ColorCells.ColorCells;
                                tell It;
                                                setColor Red;
                                                removeColor off;
                                endTell;
                                getEmployee #mesquite.categ.StateNamesEditor.StateNamesEditor;
                                tell It;
                                                makeWindow;
                                                tell It;
                                                                setExplanationSize 30;
                                                                setAnnotationSize 20;
                                                                setFontIncAnnot 0;
                                                                setFontIncExp 0;
                                                                setSize 1776 889;
                                                                setLocation -8 0;
                                                                setFont SanSerif;
                                                                setFontSize 10;
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                                                getToolPalette;
                                                tell It;
                                                endTell;
                                                rowsAreCharacters on;
                                                toggleConstrainChar on;
                                                toggleConstrainCharNum 3;
                                                togglePanel off;
                                                toggleSummaryPanel off;
                                        endTell;
                                        showWindow;
                                endTell;
                                getEmployee #mesquite.categ.StateNamesStrip.StateNamesStrip;
                                tell It;
                                        showStrip off;
                                endTell;
                                getEmployee #mesquite.charMatrices.AnnotPanel.AnnotPanel;
                                tell It;
                                        togglePanel off;
                                endTell;
                                getEmployee #mesquite.charMatrices.CharReferenceStrip.CharReferenceStrip;
                                tell It;
                                        showStrip off;
                                endTell;
                                getEmployee #mesquite.charMatrices.QuickKeySelector.QuickKeySelector;
                                tell It;
                                        autotabOff;
                                endTell;
                                getEmployee #mesquite.charMatrices.SelSummaryStrip.SelSummaryStrip;
                                tell It;
                                        showStrip off;
                                endTell;
                                getEmployee #mesquite.categ.SmallStateNamesEditor.SmallStateNamesEditor;
                                tell It;
                                        panelOpen true;
                                endTell;
                        endTell;
                endTell;
                getEmployee #mesquite.charMatrices.ManageCharacters.ManageCharacters;
                tell It;
                        showCharacters #8768341072348500945 #mesquite.lists.CharacterList.CharacterList;
                        tell It;
                                setData 0;
                                getWindow;
                                tell It;
                                        useTargetValue off;
                                        setTargetValue ;
                                        newAssistant #mesquite.lists.DefaultCharOrder.DefaultCharOrder;
                                        newAssistant #mesquite.lists.CharListInclusion.CharListInclusion;
                                        newAssistant #mesquite.lists.CharListPartition.CharListPartition;
                                        newAssistant
#mesquite.parsimony.CharListParsModels.CharListParsModels;
                                        setExplanationSize 30;
                                        setAnnotationSize 20;
                                        setFontIncAnnot 0;
                                        setFontIncExp 0;
                                        setSize 1776 889;
                                        setLocation -8 0;
                                        setFont SanSerif;
                                        setFontSize 10;
                                        getToolPalette;
                                        tell It;
                                                setTool
mesquite.lists.CharacterList.CharacterListWindow.ibeam;
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                    endTell;
                endTell;
                showWindow;
                getEmployee #mesquite.lists.CharListAnnotPanel.CharListAnnotPanel;
                tell It;
                        togglePanel off;
                endTell;
            endTell;
        endTell;
        endTell;
    end;
```