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SUPPLEMENTARY ONLINE MATERIAL FOR

The sauropodomorph biostratigraphy of the Elliot Formation of southern Africa: Tracking the evolution of Sauropodomorpha across the Triassic–Jurassic boundary

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Supplementary Online Material

Table S1. Age range estimates for the taxa included in the analyses.
Table S2. Results of stratigraphic congruence analyses for our old hypothesis of Elliot sauropodomorph ranges.
Table S3. Results of stratigraphic congruence analyses for our new hypothesis of Elliot sauropodomorph ranges.

Scripts and supporting files available at
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/McPhee et al_2017_R script.R
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/48MPTs_BWM.nex
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/tree file_BWM.nex
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/age_range_new.txt
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/age_range_old.txt
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/sauropodomomorph_matrix_BWM.NEXUS
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/communities_LTR_EJR.csv
http://app.pan.pl/SOM/app62-McPhee_etal_SOM/communities_UEF_LEF.csv

SUPPLEMENTARY INFORMATION FOR: "The sauropodomorph (Dinosauria) biostratigraphy of the Elliot Formation of southern Africa: tracking the evolution of Sauropodomorpha across the Triassic–Jurassic boundary"

McPhee et al.

Table S1. Age range estimates for the taxa included in the analyses. OE = Our Estimate; PBDB = The Paleobiology Database; * = Previous age estimate.

TAXON	FAD	LAD	REFERENCE
Euparkeria	247.2	242	PBDB
Marasuchus	242	235	PBDB
Aardonyx	201.3	190.8	OE
Adeopapposaurus	201.3	182.7	Martinez, 2009
Anchisaurus	201.3	190.8	PPDB
Antetonitrus	201.3	190.8	OE
*Antetonitrus**	208.5	201.3	OE
Barapasaurus	182.7	170.3	OE; Parmar et al., 2013
Blikanasaurus	208.5	201.3	OE
Camelotia	208.5	201.3	PBDB
Cetiosaurus	170.3	163.5	PBDB, Upchurch and Martin, 2003
Chindesaurus	227	208.5	PBDB
Chromogisaurus	231.4	225.9	Martinez et al., 2011, 2013
Coloradisaurus	220	213	Kent et al., 2014
Efraasia	215.56	212	PBDB
Eoraptor	231.4	225.9	Martinez et al., 2011, 2013
Eucnemesaurus_fortis	208.5	201.3	OE
Eucnemesaurus_entaxonis	208.5	201.3	OE
Glacialisaurus	196.5	183	Smith and Pol, 2007
Gongxianosaurus	182.7	174.1	PBDB; Chen et al., 2006
Guaibasaurus	227	208.5	PBDB; Langer et al., 2010
Herrerasaurus	231.4	225.9	Martinez et al., 2011, 2013
Isanosaurus	190.8	174.1	OE; Racey and Goodall, 2009
Jingshanosaurus	201.3	189.6	PBDB
Leonerasaurus	196.5	182.7	Pol et al., 2011
Lessemsaurus	220	213	Kent et al., 2014
Leyesaurus	201.3	182.7	Apaldetti et al., 2011
Lufengosaurus	201.3	189.6	PBDB
Mamenchisaurus	163.5	145.5	PBDB
Massospondylus	201.3	190.8	OE
Mussaurus	227	208.5	Pol and Powell, 2007; Otero and Pol, 2013
NMQR3314	201.3	190.8	OE
NMQR3314*	208.5	201.3	OE
NMQR1551	208.5	201.3	OE
Omeisaurus	168.3	157.3	PBDB, He et al., 1988

Panphagia	231.4	225.9	Martinez et al., 2011, 2013
Pantydraco	227	201.3	Benton et al., 2000; Yates, 2003c
Patagosaurus	164.7	161.2	PBDB
Plateosaurus_engelhardti	208.5	201.3	PBDB; Yates, 2003b
Plateosaurus_gracilis	220	209	PBDB
Plateosauravus	208.5	201.3	OE
Pulanesaura	201.3	190.8	OE
Riojasaurus	220	213	Kent et al., 2014
Ruehleia	221.5	205.6	PBDB
Sarahsaurus	201.3	182.7	Rowe et al., 2011
Saturnalia	235	221.5	Langer et al., 2010
Seitaad	190.8	182.7	Sertich and Loewen, 2010
Shunosaurus	166.1	163.5	PBDB; Chatterjee and Zheng, 2002
Silesaurus	236	228	PBDB
Spinophorosaurus	175.6	161.2	Remes et al., 2009
Staurikosaurus	235	221.5	PBDB; Langer et al., 2010
Tazoudasaurus	182.7	174.1	Allain and Aquesbi, 2008
Thecodontosaurus	227	201.3	Benton et al., 2000
Unaysaurus	227	208.5	Langer et al., 2010
Vulcanodon	185	175	OE; Yates et al., 2004
Xingxiulong	201.3	189.6	PBDB; Wang et al., 2017
Yunnanosaurus	201.3	189.6	PBDB

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Table S2. Results of stratigraphic congruence analyses for our old hypothesis of Elliot sauropodomorph ranges. See Bell and Lloyd (2015) for details.

	SCI	RCI	GER	MSM*	est.p.SCI	est.p.RCI	est.p.GER	est.p.MSM	GER*	GERt	MIG	p.Wills
tree_1	0.528302	22.55659	0.817786	0.179099	1.12E-10	2.45E-11	6.32E-18	2.07E-47	1	1	467.34	0
tree_2	0.528302	22.55659	0.817786	0.179099	1.12E-10	2.45E-11	6.32E-18	2.07E-47	1	1	467.34	0
tree_3	0.528302	22.55659	0.817786	0.179099	1.12E-10	2.45E-11	6.32E-18	2.07E-47	1	1	467.34	0
tree_4	0.509434	18.29782	0.80558	0.169763	4.85E-09	3.33E-11	1.05E-16	2.79E-41	1	1	493.04	0
tree_5	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_6	0.528302	21.38004	0.814414	0.176419	1.12E-10	2.67E-11	1.40E-17	1.28E-45	1	1	474.44	0
tree_7	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_8	0.528302	21.38004	0.814414	0.176419	1.12E-10	2.67E-11	1.40E-17	1.28E-45	1	1	474.44	0
tree_9	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_10	0.528302	22.55659	0.817786	0.179099	1.12E-10	2.45E-11	6.32E-18	2.07E-47	1	1	467.34	0
tree_11	0.509434	18.29782	0.80558	0.169763	4.85E-09	3.33E-11	1.05E-16	2.79E-41	1	1	493.04	0
tree_12	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_13	0.528302	21.38004	0.814414	0.176419	1.12E-10	2.67E-11	1.40E-17	1.28E-45	1	1	474.44	0
tree_14	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_15	0.509434	18.29782	0.80558	0.169763	4.85E-09	3.33E-11	1.05E-16	2.79E-41	1	1	493.04	0
tree_16	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_17	0.509434	17.12127	0.802208	0.167353	4.85E-09	3.62E-11	2.20E-16	9.48E-40	1	1	500.14	0
tree_18	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_19	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_20	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_21	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_22	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_23	0.528302	21.38004	0.814414	0.176419	1.12E-10	2.67E-11	1.40E-17	1.28E-45	1	1	474.44	0
tree_24	0.509434	17.12127	0.802208	0.167353	4.85E-09	3.62E-11	2.20E-16	9.48E-40	1	1	500.14	0
tree_25	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_26	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_27	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_28	0.509434	18.29782	0.80558	0.169763	4.85E-09	3.33E-11	1.05E-16	2.79E-41	1	1	493.04	0
tree_29	0.54717	24.46227	0.823248	0.183617	1.77E-12	2.14E-11	1.70E-18	1.73E-50	1	1	455.84	0
tree_30	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_31	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_32	0.509434	17.12127	0.802208	0.167353	4.85E-09	3.62E-11	2.20E-16	9.48E-40	1	1	500.14	0
tree_33	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_34	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_35	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_36	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_37	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_38	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_39	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_40	0.509434	17.12127	0.802208	0.167353	4.85E-09	3.62E-11	2.20E-16	9.48E-40	1	1	500.14	0
tree_41	0.54717	23.28572	0.819876	0.180801	1.77E-12	2.32E-11	3.84E-18	1.46E-48	1	1	462.94	0
tree_42	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_43	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_44	0.528302	20.20349	0.811042	0.173817	1.12E-10	2.90E-11	3.05E-17	6.63E-44	1	1	481.54	0
tree_45	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_46	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_47	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0
tree_48	0.528302	19.02694	0.80767	0.171292	1.12E-10	3.16E-11	6.55E-17	2.91E-42	1	1	488.64	0

Table S3. Results of stratigraphic congruence analyses for our new hypothesis of Elliot sauropodomorph ranges. See Bell and Lloyd (2015) for details.

	SCI	RCI	GER	MSM*	est.p.SCI	est.p.RCI	est.p.GER	est.p.MSM	GER*	GERt	MIG	p.Wills
tree_1	0.528302	21.034	0.812231	0.173745	3.72E-10	1.33E-11	6.55E-16	1.70E-40	1	1	481.74	0
tree_2	0.528302	21.034	0.812231	0.173745	3.72E-10	1.33E-11	6.55E-16	1.70E-40	1	1	481.74	0
tree_3	0.528302	21.034	0.812231	0.173745	3.72E-10	1.33E-11	6.55E-16	1.70E-40	1	1	481.74	0
tree_4	0.509434	16.8213	0.800108	0.164946	1.27E-08	1.82E-11	7.62E-15	2.34E-35	1	1	507.44	0
tree_5	0.54717	22.91906	0.817656	0.177994	7.77E-12	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_6	0.528302	19.87018	0.808882	0.171222	3.72E-10	1.46E-11	1.31E-15	5.37E-39	1	1	488.84	0
tree_7	0.54717	22.91906	0.817656	0.177994	7.77E-12	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_8	0.528302	19.87018	0.808882	0.171222	3.72E-10	1.46E-11	1.31E-15	5.37E-39	1	1	488.84	0
tree_9	0.528302	22.91906	0.817656	0.177994	3.72E-10	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_10	0.528302	21.034	0.812231	0.173745	3.72E-10	1.33E-11	6.55E-16	1.70E-40	1	1	481.74	0
tree_11	0.509434	16.8213	0.800108	0.164946	1.27E-08	1.82E-11	7.62E-15	2.34E-35	1	1	507.44	0
tree_12	0.54717	22.91906	0.817656	0.177994	7.77E-12	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_13	0.528302	19.87018	0.808882	0.171222	3.72E-10	1.46E-11	1.31E-15	5.37E-39	1	1	488.84	0
tree_14	0.528302	22.91906	0.817656	0.177994	3.72E-10	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_15	0.509434	16.8213	0.800108	0.164946	1.27E-08	1.82E-11	7.62E-15	2.34E-35	1	1	507.44	0
tree_16	0.54717	22.91906	0.817656	0.177994	7.77E-12	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_17	0.509434	15.65748	0.796758	0.16267	1.27E-08	1.99E-11	1.46E-14	4.52E-34	1	1	514.54	0
tree_18	0.509434	18.70636	0.805532	0.16877	1.27E-08	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_19	0.528302	18.70636	0.805532	0.16877	3.72E-10	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_20	0.54717	21.75524	0.814307	0.175347	7.77E-12	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_21	0.528302	21.75524	0.814307	0.175347	3.72E-10	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_22	0.528302	21.75524	0.814307	0.175347	3.72E-10	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_23	0.528302	19.87018	0.808882	0.171222	3.72E-10	1.46E-11	1.31E-15	5.37E-39	1	1	488.84	0
tree_24	0.509434	15.65748	0.796758	0.16267	1.27E-08	1.99E-11	1.46E-14	4.52E-34	1	1	514.54	0
tree_25	0.54717	21.75524	0.814307	0.175347	7.77E-12	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_26	0.528302	22.91906	0.817656	0.177994	3.72E-10	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_27	0.509434	18.70636	0.805532	0.16877	1.27E-08	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_28	0.509434	16.8213	0.800108	0.164946	1.27E-08	1.82E-11	7.62E-15	2.34E-35	1	1	507.44	0
tree_29	0.54717	22.91906	0.817656	0.177994	7.77E-12	1.16E-11	2.08E-16	4.55E-43	1	1	470.24	0
tree_30	0.528302	18.70636	0.805532	0.16877	3.72E-10	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_31	0.528302	21.75524	0.814307	0.175347	3.72E-10	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_32	0.509434	15.65748	0.796758	0.16267	1.27E-08	1.99E-11	1.46E-14	4.52E-34	1	1	514.54	0
tree_33	0.54717	21.75524	0.814307	0.175347	7.77E-12	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_34	0.509434	18.70636	0.805532	0.16877	1.27E-08	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_35	0.528302	18.70636	0.805532	0.16877	3.72E-10	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_36	0.509434	17.54254	0.802183	0.166388	1.27E-08	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_37	0.528302	17.54254	0.802183	0.166388	3.72E-10	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_38	0.528302	21.75524	0.814307	0.175347	3.72E-10	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_39	0.509434	17.54254	0.802183	0.166388	1.27E-08	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_40	0.509434	15.65748	0.796758	0.16267	1.27E-08	1.99E-11	1.46E-14	4.52E-34	1	1	514.54	0
tree_41	0.54717	21.75524	0.814307	0.175347	7.77E-12	1.26E-11	4.24E-16	1.85E-41	1	1	477.34	0
tree_42	0.528302	17.54254	0.802183	0.166388	3.72E-10	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_43	0.509434	18.70636	0.805532	0.16877	1.27E-08	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_44	0.528302	18.70636	0.805532	0.16877	3.72E-10	1.59E-11	2.59E-15	1.47E-37	1	1	495.94	0
tree_45	0.509434	17.54254	0.802183	0.166388	1.27E-08	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_46	0.528302	17.54254	0.802183	0.166388	3.72E-10	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_47	0.509434	17.54254	0.802183	0.166388	1.27E-08	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0
tree_48	0.528302	17.54254	0.802183	0.166388	3.72E-10	1.73E-11	5.06E-15	3.50E-36	1	1	503.04	0