

Research Update No. 9, March 2019

Finite poles for Gondwana reassembly at 182.7 Ma (start Toarcian)

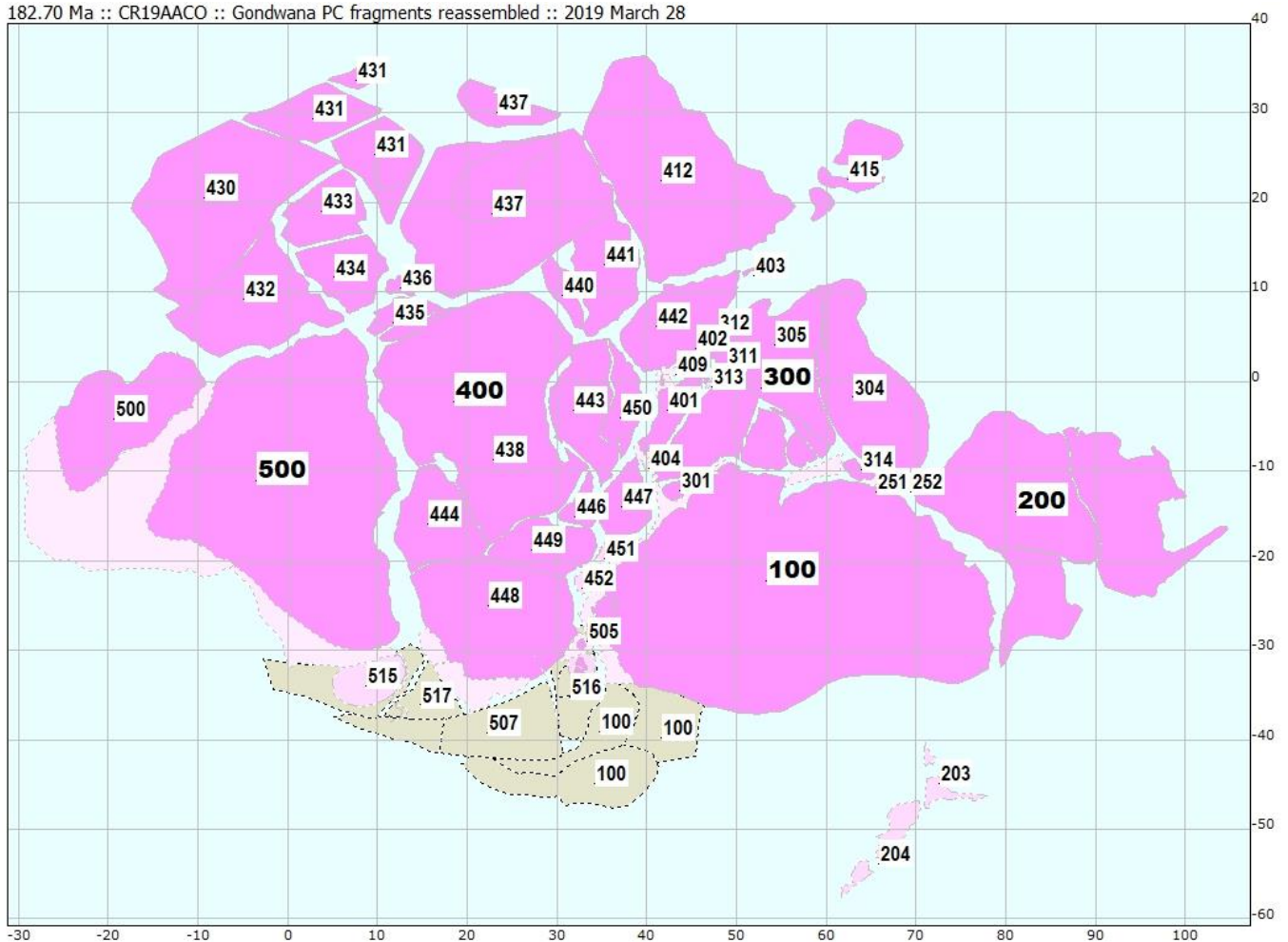
Rotation model CR19AACO

Finite Rotations of Precambrian fragments of Gondwana with respect to Africa - Model CR19AACO.twr renamed CR19AACO.rot and edited to run in TWIRL.exe, 2019 March 26. Coordinates that exceeded 2 decimal places were rounded off. The results were checked in Atlas using constructions, 2019 March 27. Comments added 2019 March 28. The figure shows the fragments and their labels reassembled in cylindrical equidistant projection with Africa fixed in its present geographical position.

Colin Reeves

Delft, 2019 March 29

182.70 Ma :: CR19AACO :: Gondwana PC fragments reassembled :: 2019 March 28



AGE= 182.700

Format of finite poles:

Fragment number/ Latitude Euler pole/ Longitude Euler pole/ Rotation angle*/ Comment
* positive angles indicate counter-clockwise rotations to reach reconstruction.

399	90.00	0.00	0.000	- fixed reference frame
400	90.00	0.00	0.000	- AFRICA fixed to reference frame
438	90.00	0.00	0.000	- Congo fixed to Africa
439	90.00	0.00	0.000	- fragment not used
445	90.00	0.00	0.000	- SE Congo fixed to Congo and not used
100	-10.39	329.39	58.292	- ANTARCTICA
101	-10.39	329.39	58.292	- fragment fixed to Antarctica and not used
102	-10.39	329.39	58.292	- ditto
103	-10.39	329.39	58.292	- ditto
104	-10.39	329.39	58.292	- ditto
111	-10.39	329.39	58.292	- ditto
112	-10.39	329.39	58.292	- ditto
113	-10.39	329.39	58.292	- ditto
410	-9.00	330.00	28.177	- MOR (Africa-Antarctica)
198	-10.13	328.99	58.479	- Reeves (2017) rotation for Antarctica
197	-11.32	329.20	58.582	- Fit of CR15GSCB (Reeves 2016)
196	-7.96	326.14	56.910	- Mueller & Jokat (2019) Antarctica
435	65.19	270.40	0.800	- North Cameroun
436	7.88	11.70	17.016	- Hawal massif
411	-23.33	13.87	0.300	- MOR
443	-6.92	210.57	0.850	- West Tanzania craton
450	-23.33	13.87	0.300	- East Tanzania craton
401	-3.36	272.60	22.314	- Madagascar
491	-2.11	273.40	11.157	- MOR
493	-3.01	21.49	14.132	- MOR
300	-29.17	221.07	66.041	- INDIA
350	-34.91	276.38	39.497	- MOR
301	-20.59	229.25	81.971	- Sri Lanka
354	-24.44	225.62	73.691	- MOR
305	-29.17	221.07	66.041	- Gangetic Plain (fixed to India)
311	-28.24	222.34	68.214	- Saurasthra
312	-33.92	213.88	51.947	- Kutchch
313	-28.87	221.74	65.596	- Bombay High
314	-29.17	221.07	66.041	- Megalaya
351	-35.23	221.47	27.876	- MOR
440	-11.45	33.89	1.050	- Sudd Block
437	-36.40	65.07	0.750	- NE Africa
441	-39.32	204.13	1.785	- Ethiopia
430	4.38	13.64	4.700	- NW Africa
432	4.38	13.64	4.700	- Ivoirian craton
431	-39.71	77.43	2.200	- Tunisia blocks
433	4.38	13.64	4.700	- Hoggar?
434	4.38	13.64	4.700	- Niger
412	-46.78	194.94	5.759	- Arabia
442	-4.67	38.70	3.055	- Somalia
398	-6.70	285.98	18.449	- MOR
403	-24.35	54.82	3.527	- Socotra
444	90.00	0.00	0.000	- Angola (always fixed to Africa)
446	-23.33	13.87	0.150	- Eastern Zambia
447	-23.33	13.87	0.300	- Northern Mozambique
449	-23.33	13.87	0.150	- Zimbabwe
448	-18.05	10.22	0.348	- Southern Kalahari (S of Okavango dyke swarm)
451	-25.33	32.68	18.143	- Biera High
452	-15.16	328.20	13.153	- Limpopia
200	-25.31	297.78	55.071	- AUSTRALIA
224	-25.31	297.78	55.071	- N of Australia - not used
299	-18.17	314.79	54.021	- MOR

353	-32.29	255.72	52.030	- MOR
251	-59.44	345.13	44.391	- de Gonville Triangle
252	-50.44	322.21	45.107	- Naturaliste Plateau
253	-42.74	312.23	46.062	- MOR
201	-11.44	299.29	72.833	- not used
202	-13.93	303.51	69.346	- not used
254	-7.63	300.24	68.372	- not used
204	23.61	298.43	93.770	- East New Zealand
255	10.81	312.26	72.270	- MOR
203	4.35	301.76	85.230	- West New Zealand
211	-72.45	154.58	54.609	- not used
212	-61.06	344.44	66.243	- not used
213	-76.67	300.94	57.969	- not used
214	-75.27	306.37	57.854	- not used
221	-17.00	300.87	68.003	- Papua New Guinea (not used)
222	-28.19	304.64	63.693	- not used
223	-42.49	325.41	25.876	- not used
225	-8.02	315.12	44.650	- not used
304	-29.17	221.07	66.041	- Greater India does same as India
402	-5.41	237.66	67.243	- The Seychelles
352	-4.71	246.24	46.292	- MOR
404	1.53	282.29	27.186	- Madagascar Rise
358	-0.68	277.94	24.637	- MOR
409	-7.72	12.63	26.215	- Comoros Islands
492	-8.81	327.77	15.889	- MOR
406	-4.23	234.88	71.692	- Mascarene frag next to Seychelles
355	-4.17	244.63	44.180	- MOR
407	-9.30	234.63	53.139	- Nazareth Bank
357	-7.87	245.95	36.100	- MOR
408	-6.36	235.56	59.908	- Saya del Malha
359	-5.76	245.70	39.541	- MOR
356	-22.22	227.55	81.648	- MOR
500	45.40	329.64	56.832	- SOUTH AMERICA
501	45.40	329.64	56.832	- Central America fragment
511	45.40	329.64	56.832	- ditto
521	45.40	329.64	56.832	- ditto
522	45.40	329.64	56.832	- ditto
550	46.58	333.56	28.478	- MOR
553	-2.59	336.10	60.151	- MOR
505	34.06	331.71	58.611	- Maurice Ewing Bank
515	34.74	330.19	58.005	- Fragment S of Buenos Aires
517	34.53	330.34	58.818	- Fragment further S of Buenos Aires
507	21.87	334.45	66.509	- Patagonia fragment
516	21.72	332.52	68.175	- Malvinas/Falkland fragment
115	10.09	293.76	51.188	- MOR
900	63.59	346.74	77.634	- NORTH AMERICA
800	60.71	2.18	67.310	- GREENLAND
700	48.92	0.28	63.677	- BALTICA (PC Europe)
415	29.17	67.08	81.293	- Iran & Lutt Block
416	32.17	65.25	85.554	- MOR

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Edition: 2019 March 29.