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Supplemental Material

Figure S1. Alternative sets of mean poles.

Table S1. Paleomagnetic data from Domeier (2016).

Table S2-4. Alternative mean poles for Gondwana, Laurentia and Baltica.

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Supplemental materials for

A TRANS-IAPETUS TRANSFORM FAULT CONTROL FOR THE EVOLUTION OF THE RHEIC OCEAN: IMPLICATIONS FOR AN EARLY PALEOZOIC TRANSITION OF ACCRETIONARY TECTONICS

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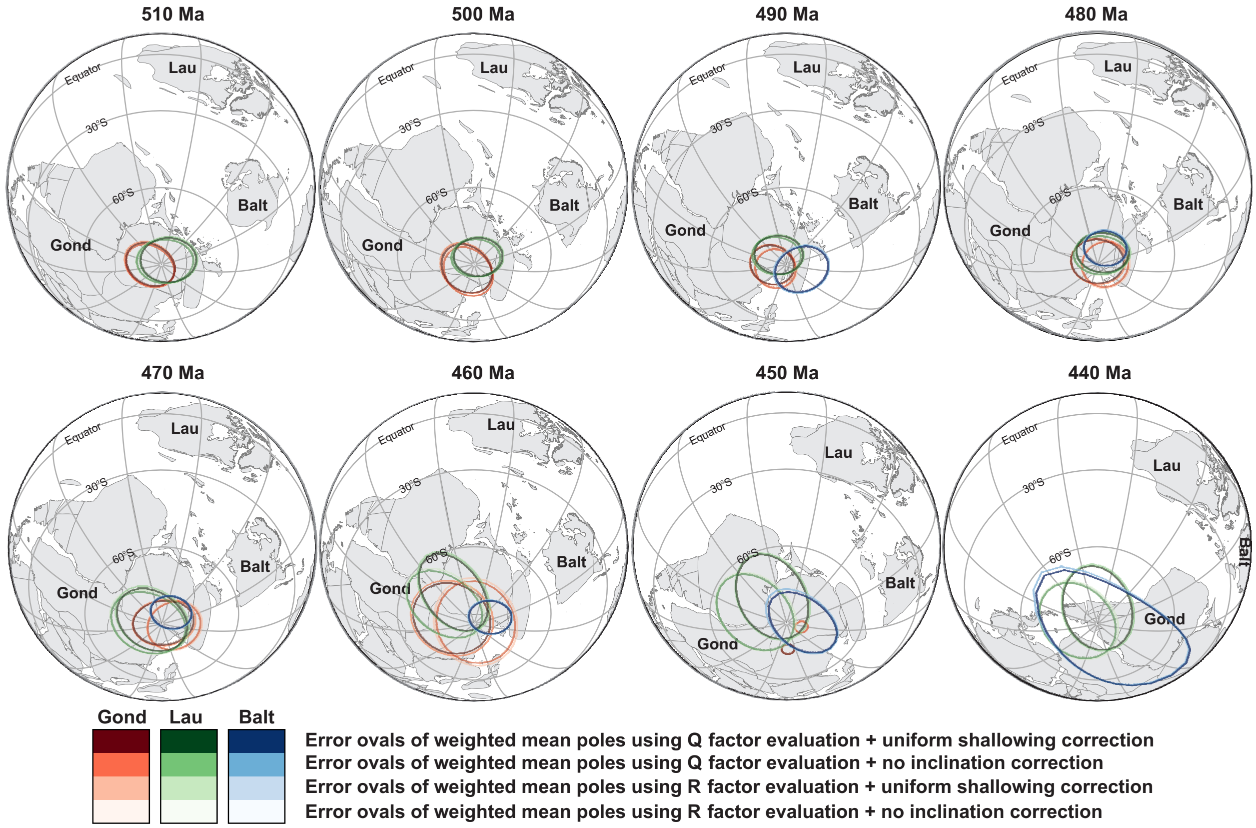

Figure S1: Alternative sets of mean poles computed from four approaches: (1) Q-factor evaluation (Van der Voo, 1990) + uniform shallowing correction, (2) Q-factor evaluation (Van der Voo, 1990) + no shallowing correction, (3) R-factor evaluation (Meert et al., 2020) + uniform shallowing correction, and (4) R-factor evaluation (Meert et al., 2020) + no shallowing correction. These mean pole error ovals are plotted on top of our reconstruction model derived from paleopoles evaluated with the Q-factor and corrected for inclination shallowing.

Table S1: Paleomagnetic data from Domeier (2016). Slat / Slong - reference point coordinates; Slat / Slong - sampling coordinates; Age / Age Err - age / age error; Plat / Plong / A95 - paleopole coordinates and error; Paleo-Rlat - paleolatitude of the reference point.

Formation / Terrane	Slat (°N)	Slon (°E)	Rlat (°N)	Rlon (°E)	Age (Ma)	Age Err (Ma)	Plat (°N)	Plong (°E)	A95 (°)	Paleo-Rlat (°N)
Treffgarne volcanics / British Avalonia	52.0	-5.0	54.5	-3.5	478.0	4.0	56.2	306.4	9.6	-61.8
Stapeley volcanics / British Avalonia	52.6	-3.0	54.5	-3.5	467.0	4.0	26.8	36.3	7.5	-51.1
Builth igneous and sediments / British Avalonia	52.1	-3.3	54.5	-3.5	464.0	4.0	18.2	12.5	16.0	-53.9
Tramore volcanics / British Avalonia	52.1	-7.4	54.5	-3.5	455.0	6.0	-11.4	197.9	11.8	-44.5
Borrowdale volcanics / British Avalonia	54.4	-3.2	54.5	-3.5	448.0	0.0	-8.3	186.3	9.4	-43.2
Browgill redbeds / British Avalonia	54.3	-2.5	54.5	-3.5	436.0	3.0	6.5	137.5	11.1	-20.6
Tortworth volcanics / British Avalonia	51.7	-2.5	54.5	-3.5	434.0	3.0	6.6	124.2	3.9	-16.1
Mendips volcanics / British Avalonia	51.2	-2.5	54.5	-3.5	432.0	3.0	-12.9	91.6	6.9	-12.6
Robert's Arm; Chanceport; Summerford volcs. / Exploits	49.5	-55.2	49.0	-55.5	470.0	12.0	-8.6	317.8	6.6	-30.8
Bourinot Group / Appalachian Ganderia	46.1	-60.4	47.7	-64.7	503.0	6.0	-21.0	160.6	12.0	-48.3
Stacyville volcanics / Appalachian Ganderia	46.0	-68.6	47.7	-64.7	464.0	6.0	14.2	7.2	11.0	-20.0
Nahant intrusives / West Avalonia	42.4	-70.9	46.5	-64.0	489.0	1.0	-34.3	139.2	7.0	-65.2
Dunn Point volcanics / West Avalonia	45.8	-62.1	46.5	-64.0	460.0	3.0	2.1	129.9	5.4	-40.9
Cape St. Mary sills / West Avalonia	46.8	-54.0	46.5	-64.0	441.0	2.0	10.2	139.8	10.0	-31.7
Cid Formation metasediments / Carolinia	35.0	-80.2	35.5	-80.0	455.0	0.0	-29.6	302.3	4.7	-22.0
Uwharrie and Cid Formation metaseds. / Carolinia	35.5	-80.0	35.5	-80.0	455.0	0.0	-20.0	239.9	13.3	-22.8
Pavon Formation sediments / Cuyania	-34.6	-68.6	-34.0	-69.0	455.0	3.0	-3.5	336.9	8.2	-37.6

Table S2: Alternative set of mean poles for Gondwana. E95a / E95b - semi-major / semi-minor axes of an error oval, ω - orientation of the semi-major axis; Ka / Kb concentration along the semi-major / semi-minor axes; - number of paleopoles in a time window.

age (Ma)	Plongf (°N)	Platf (°E)	e95a (°)	e95b (°)	omega (°)	kx	ky	npts	sumQ / sumR
Weighted mean pole error based on the Q-factor with no inclination correction									
450	5.5	17.9	2.4	2.4	0.0	19.6	19.6	1	5
460	14.3	26.0	18.4	14.7	-128.9	19.1	12.2	3	16
470	7.0	30.1	10.7	9.8	81.1	16.4	13.7	7	34
480	8.0	33.1	9.9	8.7	-121.1	15.9	12.1	10	49
490	6.5	31.7	8.6	7.6	55.5	16.2	12.7	13	61
500	6.3	26.5	11.4	8.8	-148.1	15.8	9.5	10	45
510	0.6	18.8	10.0	8.3	-164.8	17.2	11.7	10	43
Weighted mean pole error based on the R-factor and a common flattening factor 0.6									
450	17.0	14.9	2.4	2.4	0.0	19.6	19.6	1	3
460	17.2	17.0	16.4	15.6	-145.4	19.5	17.4	3	10
470	8.1	26.2	12.0	9.9	134.6	17.5	11.8	7	24
480	8.5	30.2	10.3	9.8	159.2	13.4	12.3	10	36
490	5.7	29.8	8.9	8.4	-149.9	14.3	13.0	13	46
500	5.4	25.1	11.6	9.2	26.9	15.3	9.6	10	36
510	0.0	18.4	10.3	8.6	14.2	16.8	11.6	10	34
Weighted mean pole error based on the R-factor with no inclination correction									
450	5.5	17.9	2.4	2.4	0.0	19.6	19.6	1	3
460	14.5	26.0	19.8	15.7	-128.8	19.1	12.1	3	10
470	6.9	30.2	11.2	10.2	81.1	16.4	13.6	7	24
480	8.0	33.2	10.4	9.0	-120.8	15.9	12.1	10	36
490	6.4	31.7	9.0	7.9	-125.1	16.2	12.6	13	46
500	6.3	26.3	11.7	9.0	-148.5	15.9	9.4	10	36
510	0.6	18.7	10.3	8.5	-164.5	17.1	11.8	10	34

Table S3: Alternative set of mean poles for Laurentia. E95a / E95b - semi-major / semi-minor axes of an error oval, ω - orientation of the semi-major axis; Ka / Kb concentration along the semi-major / semi-minor axes; - number of paleopoles in a time window.

age (Ma)	Plongf (°N)	Platf (°E)	e95a (°)	e95b (°)	omega (°)	kx	ky	npts	sumQ / sumR
Weighted mean pole error based on the Q-factor with no inclination correction									
440	-54.6	-19.9	17.0	13.8	-88.8	15.7	10.4	4	20
450	-54.3	-20.1	16.9	13.7	92.3	15.7	10.3	4	20
460	-44.4	-18.9	16.0	11.7	83.3	16.2	8.6	6	30
470	-30.5	-16.2	14.8	12.6	77.7	16.3	11.7	5	25
480	-20.1	-9.0	10.2	8.0	-136.4	18.2	11.1	11	56
490	-17.4	-6.1	9.1	7.9	-138.6	18.4	13.6	10	51
500	-17.3	-5.6	9.2	7.9	-138.8	18.4	13.7	10	51
510	-16.7	-3.6	10.7	9.3	-135.8	18.7	14.3	8	39
Weighted mean pole error based on the R-factor and a common flattening factor 0.6									
440	-56.0	-10.4	18.4	13.3	-77.0	18.5	9.6	4	15
450	-55.6	-10.5	18.3	13.1	-76.7	18.5	9.5	4	15
460	-45.3	-12.8	17.5	11.5	-78.5	18.4	7.9	6	22
470	-30.8	-14.1	15.4	12.3	-91.8	18.5	11.7	5	19
480	-20.3	-7.5	10.2	8.4	-130.3	17.6	11.9	11	44
490	-17.3	-5.1	9.4	8.3	-138.9	17.7	13.7	10	40
500	-17.0	-4.5	9.5	8.3	-138.8	17.8	13.8	10	40
510	-16.3	-2.3	10.9	9.8	-133.5	18.1	14.6	8	31
Weighted mean pole error based on the R-factor with no inclination correction									
440	-54.5	-19.6	17.6	14.4	-90.0	15.7	10.5	4	15
450	-54.2	-19.8	17.4	14.3	-88.6	15.6	10.5	4	15
460	-44.4	-18.6	16.6	12.3	83.3	16.2	8.8	6	22
470	-30.7	-16.0	15.5	13.0	-100.5	16.3	11.6	5	19
480	-19.9	-8.8	10.5	8.3	-136.3	18.2	11.3	11	44
490	-17.3	-6.0	9.4	8.1	-138.8	18.4	13.7	10	40
500	-17.1	-5.5	9.5	8.2	-139.0	18.4	13.7	10	40
510	-16.6	-3.6	11.0	9.6	-136.1	18.7	14.3	8	31

Table S4: Alternative set of mean poles for Baltica. E95a / E95b - semi-major / semi-minor axes of an error oval, ω - orientation of the semi-major axis; Ka / Kb concentration along the semi-major / semi-minor axes; - number of paleopoles in a time window.

age (Ma)	Plongf (°N)	Platf (°E)	e95a (°)	e95b (°)	omega (°)	kx	ky	npts	sumQ / sumR
Weighted mean pole error based on the Q-factor with no inclination correction									
440	6.9	-10.4	38.9	19.3	-118.5	18.1	4.4	2	9
450	41.9	13.2	16.2	10.0	-124.8	17.0	6.4	8	38
460	48.5	18.8	8.1	6.8	-142.1	18.2	12.9	14	70
470	49.0	19.4	7.8	6.6	-142.8	18.2	12.8	14	70
480	50.5	20.7	8.1	7.1	-147.7	18.4	14.2	13	65
490	53.5	23.8	10.5	9.7	-24.6	18.7	15.7	8	41
Weighted mean pole error based on the R-factor and a common flattening factor 0.6									
440	5.7	-11.0	39.2	19.6	-118.2	18.1	4.5	2	8
450	41.3	12.9	17.1	10.4	-124.6	16.9	6.2	8	29
460	48.4	18.8	8.5	7.1	-142.0	18.2	12.8	14	53
470	48.9	19.4	8.1	6.8	-142.7	18.2	12.8	14	53
480	50.5	20.7	8.4	7.3	-147.6	18.4	14.1	13	49
490	53.5	23.8	11.0	10.1	-24.1	18.7	15.7	8	31
Weighted mean pole error based on the R-factor with no inclination correction									
440	5.7	-11.0	39.2	19.6	-118.2	18.1	4.5	2	8
450	41.3	12.9	17.1	10.4	-124.6	16.9	6.2	8	29
460	48.4	18.8	8.5	7.1	-142.0	18.2	12.8	14	53
470	48.9	19.4	8.1	6.8	-142.7	18.2	12.8	14	53
480	50.5	20.7	8.4	7.3	-147.6	18.4	14.1	13	49
490	53.5	23.8	11.0	10.1	-24.1	18.7	15.7	8	31

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