

	49 ma paleolatitude	Upper MAT	Lower MAT	Mean MAT	Primary Reference	Locality	CMM	CMM ERROR	QC Check	Notes	55 mya (adjusted) paleolatitude		upper error	lower error		
	44.40	26.50	19.30	22.90	fricke and wing 2004	kisinger lakes		6.70		✓	Fricke and Wing, Using LMA from Hren et al 2010, recalculated with Kowalski and Dilcher	47.47 -90.64		3.60	3.60	
	40.80	24.70	16.05	20.13	Hren et al	chalk bluffs				✓	recalculated with Kowalski and Dilcher	44.12 -102.7		4.57	4.08	
	40.80	23.60	16.40	20.00	fricke and wing 2004	chalk bluffs		5.60		✓	Fricke and Wing, Using LMA from Hren et al 2010, recalculated with Kowalski and Dilcher	44.12 -102.7		3.60	3.60	
	42.50	31.70	16.80	24.50	fricke and wing 2004	green river/ wind river		7.30	1.50	✓	Fricke and Wing "Green River" localities	45.61 -88.74		7.20	7.70	
	44.50	30.78	15.38	21.73	wing et al., 2005/wing et al	a BHB polecat bench		4.00	2.50	✓	notes: used MAT from 1984 Wolfe paper. This is CLAMP, and an old version to boot.	47.54 -88.39		9.05	6.35	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	53.75	20.40	18.40	19.40	Wolfe 2004	Kulthieth		12.60		✓	notes: used MAT values from Fricke and Wing using the Kowalski and Dilcher error	57.81 -103.76		1.00	1.00	
	46.80	21.40	14.20	17.80	Hickey 1977	Camel's Butte		3.50		✓	notes: used MAT values from Fricke and Wing using the Kowalski and Dilcher error	49.45 -82.32		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	48.50	16.70	9.50	13.10	fricke and wing 2004	Yellowstone sepulcher		1.90		✓	notes: used MAT values from Fricke and Wing using the Kowalski and Dilcher error	48.75 -90.82		3.60	3.60	
										✓	Paleolocation information is the value taken directly from Gplates for 49 mya assuming location is Puryear TN.					
	50.30	14.90	7.70	11.30	Greenwood et al 2005	republic		4.10	4.00	✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	53.22 -98.41		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	51.50	8.60	1.40	5.00	Greenwood et al 2005	princeton		5.30	2.80	✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	54.55 -99.8		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	52.10	22.63	15.43	19.03	Greenwood et al 2005	quichena		5.80	2.00	✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	55.08 -99.83		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	52.30	12.50	5.30	8.90	Greenwood et al., 2005	sen Falkland		5.20	3.00	✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	55.2 -98.52		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	52.76	16.40	9.20	12.80	fricke and wing 2004/Greenwood et al., 2005	Green mabee		3.50	4.40	✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	55.54 -100		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	54.45	16.46	9.26	12.88	greenwood et al., 2005	horsefly		5.30		✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	57.45 -100.		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	57.47	11.85	4.65	8.25	greenwood et al., 2005	driftwood canyon		2.70	5.60	✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates	60.64 -105.3		3.60	3.60	
										✓	notes: use %entire from Greenwood et al., 2003 and applied Kowalski and Dilcher egt. rotation done with Gplates					
	67.00	19.68	9.30	14.46	eldrett et al., 2009,	site 913		7.00	3.00	✓	notes: used MAT values from site 913 from Eldrett et al., 2009 between 48 and 50 mya. error bars are maximum in time series (plus 1 stated error on that value) and the minimum of the time series (minus 1 stated error on that value) Paleolocation information is the value taken directly from Gplates for 49 mya.	64.81 5.21 Should be adjusted 1	5.22	5.16		
										✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates					
	-48.50	26.48	14.09	20.72	wiff et al., 2005	laguna del hurco		10.80	3.80	✓	notes: based on the analysis of Wiff et al., 2005 using the K&D calibration and utilizing all the LHF Floras.	-46.93 -57.3 (South America to	5.76	6.63		
										✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates					
	-58.00	20.41	15.99	18.20	greenwood et al 2003, 2004	brandy creek		15.70	2.80	✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates	-60.0 148.66 should be adjusted	2.21	2.21		
										✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates					
	-55.00	20.23	15.57	17.90	greenwood et al 2003, 2004	hotham heights		15.70	2.60	✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates	-58.69 149.9 should be adjusted	2.33	2.33		
										✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates					
	-58.00	20.70	17.00	18.80	greenwood et al 2003, 2004	deans marsh		15.70	2.40	✓	notes: use %entire from Greenwood et al., 2003/2004 and applied Australian calib egt. rotation done with Gplates	-60.65 145.71 should be adjusted	1.90	1.80		
										✓	Greenwood personal communication says LMA data is suspect use bioclimatic analysis instead and applied Australian calib egt. rotation done with Gplates					
	35.00	38.90	31.70	35.30	fricke and wing 2004	puryear-buchanan		16.10		✓	notes: used MAT values from Fricke and Wing using the Kowalski and Dilcher error	37.05 -70.68		3.60	3.60	
										✓	Paleolocation information is the value taken directly from Gplates for 49 mya assuming location is Puryear TN.					
	42.30				Wolfe, 1971	Susanville, California				✓	notes: recalculated MAT using K&D equation, eocene paleo lon is -105.7 lon. These are probably middle Eocene, Lutetian. gplates lat 75.68N -50.8 lon.	45.36 -102.56 P is 68% Miller says this is middle Eocene so we				
	76.68	15.40	14.00	14.70	Greenwood et al 2010	Axel Heiberg		3.70	3.30		✓	numbers taken directly from Greenwood et al 2010. These are probably irreproducible Eocene, Lutetian	77.53 -35.25		0.70	0.70
										✓	These are probably middle Eocene, Lutetian. gplates lat 75.68N -50.8 lon.					
	76.68	17.10	8.50	12.80	Greenwood et al 2010	Axel Heiberg - US 188				✓	numbers taken directly from Greenwood et al 2010. These are probably irreproducible Eocene, Lutetian	77.53 -35.25		4.30	4.30	
										✓	These are probably middle Eocene, Lutetian					
	75.26	15.00	1.00	8.00	Eberle et al., 2010	Elesmere Island		0.00	7.00	✓	numbers taken directly from Eberle et al. gplates lat 75.26 N -42.8 lon	75.45 -28.03		7.00	7.00	
										✓	numbers taken directly from Eberle et al. gplates lat 75.26 N -42.8 lon					
	83.00	19.50	16.40	18.30	Weijers et al., 2007	ACEX IODP 302				✓	numbers taken from Weijers et al., 2007 using Core 29, early Eocene, no meaningful error bars in that paper. gplates reconstruction to 85.46N, 6.06E at 49 Mya for the ACEX core, latitude is adjusted to paleo- lon. which is about 2 degrees further south than that.	83.58 27.23 But no land in mod	1.20	1.90		
										✓	CLAMP MAT from Mustoe et al., 2007					
	50.50	16.00	15.00	15.50	Mustoe et al., 2007	Chuckanut, WA		11.50	1.50	✓	Bash/Hatchett/gbnee Gplates Lat 30.91 N -75.75 Lon from van Roij Masters thesis, MBT/CBT temperature is approximate	53.59 -102.41		0.50	0.50	
	30.91	34.00	30.00	32.00	van Roij, 2009	Harell Core, Meridian, MS				✓	Bash/Hatchett/gbnee Gplates Lat 30.91 N -75.75 Lon from van Roij Masters thesis, MBT/CBT temperature is approximate	33N -71.7. May be adjusted N I	2.00	2.00		
										✓	AGHMETIEV 2009 bulletin of Geosciences, Raichikha (Irk.). Gplates lat 55. N 127 Lon. further information on Modern location and age/ stratigraphy based on VAN ITERBECK 2005 and akhmetiev, 2007. Huber calculated MAT from % data in lat.					
	48.00	25.00	22.90	23.95	Mosbrugger et al., 2005	Gesselal, Germany		19.00	2.00	✓	Gesselal, basal Lutetian (-49 mya) from mosbrugger et al. MAT based on CA approach Gplates Lat 48 N 5 Lon	46.92 7.33		1.05	1.05	
										✓	Fushun macrofossil numbers (table 4). Gplates reconstruction n 47.3N 122 lon					
	47.30	16.30	15.40	15.85	Wang et al., 2010	Fushun China		5.00	3.00	✓	Fushun macrofossil numbers (table 4). Gplates reconstruction n 47.3N 122 lon	46.81 122.22		0.45	0.45	
										✓	Age is -45 Ma. Flora is probably not completely counted and this number is not likely to be robust, but 17 out of 18 members of the flora were entire maraged. K&D calibration used to turn that into temperature. Gplates Lat is -16.6 and lon is 30.6					
	-16.60	40.10	32.90	36.50	Harrison et al., 2001	Mahenge, Tanzania				✓	Age is -45 Ma. Flora is probably not completely counted and this number is not likely to be robust, but 17 out of 18 members of the flora were entire maraged. K&D calibration used to turn that into temperature. Gplates Lat is -16.6 and lon is 30.6	-18.27 30.81 (Africa is too far w	3.60	3.60		
										✓	Based on Collinson and Hooker summary based on the work of Budantsev 1984, 1997 Gplates Lat 67.65 N 171.6 Lon					
	67.65	22.16	14.23	18.20	Collinson and Hooker, 2000	Chemurmut Bay, Kermaduck				✓	Based on Collinson and Hooker summary based on the work of Budantsev 1984, 1997 Gplates Lat 67.65 N 171.6 Lon	68.0 166.73		3.96	3.97	
										✓	AGHMETIEV 2009 bulletin of Geosciences, Raichikha (Irk.). Gplates lat 55. N 127 Lon. further information on Modern location and age/ stratigraphy based on VAN ITERBECK 2005 and akhmetiev, 2007. Huber calculated MAT from % data in lat.					
	55.00	22.00	14.80	18.40	Akhmetiev, 2010	Raichikha				✓	Main reference is AKHMETIEV 2009 bulletin of Geosciences, Raichikha (Irk.). Gplates lat 55. N 127 Lon. further information on Modern location and age/ stratigraphy based on VAN ITERBECK 2005 and akhmetiev, 2007. Huber calculated MAT from % data in lat.	54.69 127.52		3.60	3.60	
										✓	Main reference is LI, 1992. Early tertiary paleoecimate of king george island - antarctica-- evidence from the fossil hill flora. %entire is from Li, 1991. Age is constrained 49-42 mya but is subject to varying considerations . Discussion of ages of region from gplates -64.66 N and -61.65 Long.					
	-64.66	20.34	13.14	16.74	Li, 1992.	Fossil Hill Flora, King George Island, Antarctica		7.60		✓	Main reference is LI, 1992. Early tertiary paleoecimate of king george island - antarctica-- evidence from the fossil hill flora. %entire is from Li, 1991. Age is constrained 49-42 mya but is subject to varying considerations . Discussion of ages of region from gplates -64.66 N and -61.65 Long.	-62.89 -62.25		3.60	3.60	
										✓	antartica-- evidence from the fossil hill flora. %entire is from Li, 1991. Age is constrained 49-42 mya but is subject to varying considerations . Discussion of ages of region from gplates -64.66 N and -61.65 Long.					
	-66.70	20.10	12.10	16.10	Poole et al., 2005	James Ross Basin, Antarctica		7.60		✓	IRS averages from Poole et al., 2005 utilizing Co- existence approach numbers from Table 3. Age is listed there as early Eocene. Gplates Lat -66.7 -60 Long.	-64.94 -61.14		4.00	4.00	
										✓	Values from Hunt and Poole 2003 recalculated with K&D regression. Gplates lat -64.55 -61.03 Long.					
	-64.55	16.50	9.30	12.90	Hunt and Poole, 2003	Dragon Glacier, King George Island, Antarctica		10.00	0.80	✓	Values from Hunt and Poole 2003 recalculated with K&D regression. Gplates lat -64.55 -61.03 Long.	-62.75 -61.68		3.60	3.60	
										✓	modified, 5.3 degree per kilometer lapse rate correction applied to MBT/CBT numbers from Hren et al, 2010, with 1.5 "reproducibilit y" errors					
	40.22	26.01	23.01	24.51	Hren et al, 2010	China Gulch				✓	modified, 5.3 degree per kilometer lapse rate correction applied to MBT/CBT numbers from Hren et al, 2010, with 1.5 "reproducibilit y" errors	43.30 -103.38	24.50	1.50	1.50	