Appendix B. Summary of recalculated $^{40}Ar/^{39}Ar$ and K-Ar NTD ages

n.r. = not reported, GPS localities were converted using the website:
www.uwgb.edu/dutchs/UsefulData/ConvertUTMoOZ.HTM

FC2* = 28.02 ± 0.16 (Renne *et al.* 1998)
AC = 1.194 ± 0.012 Ma (Renne *et al.* 1998)
FCT-3 = 28.04 ± 0.18 Ma (Renne *et al.* 1994)

Sample	LAT	LONG	Material dated	Method	Standard	Recalculated Age [Ma]	Reference
ESSIMINGOR							
ESMT-2	-3.42436	36.05092	matrix	plateau	FC2*	5.95 ± 0.01	Mana *et al.* 2012
			whole rock	plateau	FC2*	5.93 ± 0.01	Mana *et al.* 2012
ESMT-4	-3.42358	36.05192	nepheline	plateau	FC2*	5.91 ± 0.01	Mana *et al.* 2012
ES14-2008	-3.42808	36.05444	nepheline	plateau	FC2*	5.90 ± 0.07	Mana *et al.* 2012
			matrix	plateau	FC2*	5.86 ± 0.02	Mana *et al.* 2012
ES-8	-3.46478	35.99450	whole rock	plateau	FC2*	5.89 ± 0.02	Mana *et al.* 2012
ES-18	-3.46362	36.00921	whole rock	plateau	FC2*	5.83 ± 0.01	Mana *et al.* 2012
ES-3	-3.47224	35.99492	whole rock	plateau	FC2*	5.80 ± 0.02	Mana *et al.* 2012
SADIMAN							
01-SM-3	-3.19243	35.40268	matrix	plateau	AC	4.66 ± 0.05	Mollel *et al.* 2011
01-SM-5	-3.19159	35.41198	matrix	isochron	AC	4.22 ± 0.02	Mollel *et al.* 2011
04-NT-3	-3.30222	35.22927	matrix	isochron	AC	4.05 ± 0.02	Mollel *et al.* 2011
ENGELOSIN							
ENGB	-2.90816	35.38344	matrix	isochron	AC	2.99 ± 0.02	Mollel *et al.* 2011
LEMAGRUT							
00-LM-6	-3.17588	35.39075	matrix	plateau	FC2*	2.26 ± 0.01	Mollel *et al.* 2011
00-LM-7	-3.17494	35.39086	matrix	plateau	AC	2.27 ± 0.01	Mollel *et al.* 2011
02-LM-4	-3.09797	35.33113	matrix	plateau	FC2*	2.24 ± 0.01	Mollel *et al.* 2011
04-OS-1, Osilale village	-3.21938	35.28951	anorthoclase	plateau	AC	2.23 ± 0.10	Mollel *et al.* 2011
04-OS-3, Osilale village	-3.22259	35.29458	matrix	plateau	AC	2.42 ± 0.01	Mollel *et al.* 2011
04-OS-4, Osilale village	-3.22081	35.29602	matrix	plateau	AC	2.30 ± 0.004	Mollel *et al.* 2011
OGOL							
04-OG-1	-3.23186	35.16988	matrix	plateau	AC	2.32 ± 0.01	Mollel *et al.* 2011
04-OG-2	-3.21322	35.23270	matrix	plateau	AC	2.28 ± 0.05	Mollel *et al.* 2011
NGORONGORO							
NG-DS		n.r.	Anorthoclase	SCLF	FC2*	2.02 ± 0.02	Mollel *et al.* 2008
NG-AS		n.r.	Anorthoclase	SCLF	FC2*	2.24 ± 0.08	Mollel *et al.* 2008
NG8		n.r.	Matrix	plateau	FC2*	2.21 ± 0.02	Mollel *et al.* 2008
NG2		n.r.	Matrix	isochron	FC2*	2.26 ± 0.02	Mollel *et al.* 2008
OLMOTI							
00-OLT2	-3.02063	35.67649	matrix	plateau	AC	2.02 ± 0.04	Mollel *et al.* 2009
00-OLT5	-3.02009	35.67789	matrix	plateau	AC	1.91 ± 0.02	Mollel *et al.* 2009
03-OLT1	-3.03300	35.65111	matrix	plateau	AC	1.86 ± 0.01	Mollel *et al.* 2009
03-OLT2	-3.03342	35.65070	matrix	isochron	AC	1.88 ± 0.02	Mollel *et al.* 2009
03-OLT3	-3.03298	35.65213	matrix	plat. & isoch	AC	1.81 ± 0.01	Mollel *et al.* 2009
04-OLT2	-3.03418	35.66463	anorthoclase	plat. & isoch	AC	1.86 ± 0.03	Mollel *et al.* 2009
04-OLT4	-3.03290	35.66099	matrix	isochron	AC	1.84 ± 0.04	Mollel *et al.* 2009
OLDEANI							
03-OLDI-1	-3.32075	35.35181	matrix	plateau	AC	1.53 ± 0.02	Mollel *et al.* 2011
03-OLDI-2	-3.31225	35.35937	matrix	plateau	AC	1.59 ± 0.02	Mollel *et al.* 2011
03-OLDI-4	-3.31098	35.36428	matrix	plateau	AC	1.62 ± 0.01	Mollel *et al.* 2011
03-OLDI-5	-3.31246	35.36934	matrix	plateau	AC	1.56 ± 0.02	Mollel *et al.* 2011
04-OLDI-3	-3.25200	35.42758	matrix	isochron	AC	1.58 ± 0.03	Mollel *et al.* 2011
04-OLDI-4	-3.23682	35.41454	matrix	isochron	AC	1.62 ± 0.03	Mollel *et al.* 2011
LOOLMALASIN							
LS-3			matrix	isochron	FC2	1.32 ± 0.03	Mollel *et al.* in progess
LL-8			matrix	isochron	FC2	1.36 ± 0.02	Mollel *et al.* in progess
LL-13			matrix	isochron	FC2	1.36 ± 0.04	Mollel *et al.* in progess
EMBAGAI							
EMB3	-2.88206	35.83999	matrix	isochron	AC	1.17 ± 0.04	Mollel *et al.* 2011
EMB6	-2.90590	35.86115	nepheline	isochron	AC	1.14 ± 0.01	Mollel *et al.* 2011
			matrix	isochron	AC	1.07 ± 0.01	Mollel *et al.* 2011
EMB5	-2.90545	35.86037	matrix	isochron	AC	0.82 ± 0.02	Mollel *et al.* 2011
OREMIT							
S10-L9	-2.72834	35.98290	groundmass	plateau	FCT-3	0.34 ± 0.85	Sherrod *et al.* 2013
LOOLMURWAK							
S10-L40	-2.79847	35.97977	phlogopite	plateau	FCT-3	0.93 ± 0.07	Sherrod *et al.* 2013
OLDONYO LENGAI							
S10-L103	-2.77178	35.94970	alkali feldspar	plateau	FCT-3	0.34 ± 0.23	Sherrod *et al.* 2013
S10-L236B	-2.75785	35.95010	phlogopite	plateau	FCT-3	0.36 ± 0.65	Sherrod *et al.* 2013
S10-L136 debbris avalanche	-2.55074	35.88750	phlogopite	plateau	FCT-3	0.46 ± 0.75	Sherrod *et al.* 2013
S10-L65 debbris avalanche	-2.63733	35.98360	phlogopite	plateau	FCT-3	0.78 ± 0.63	Sherrod *et al.* 2013

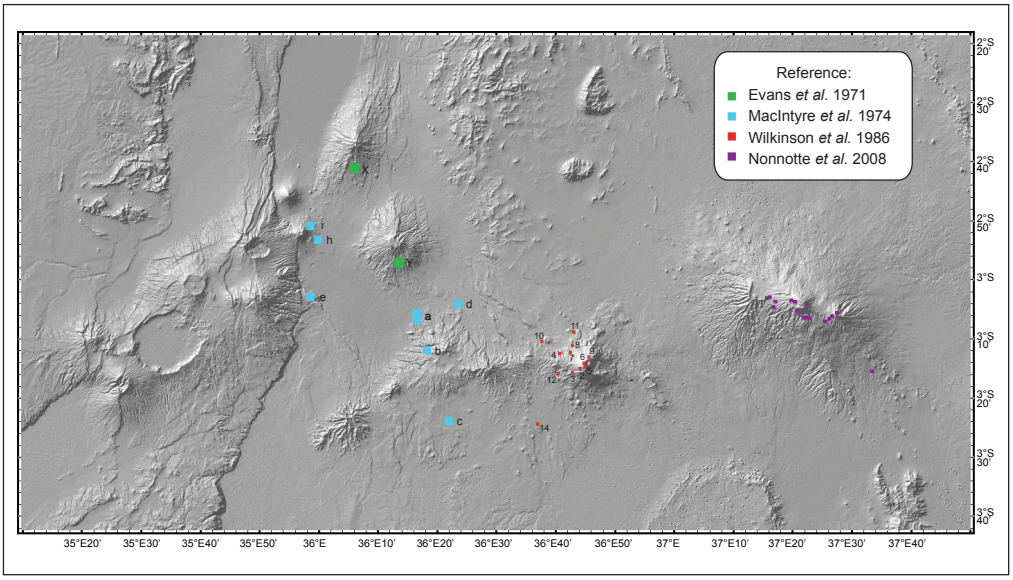
Appendix B. Continued

Data from souce publication converted where necessary, to K_2O wt. % and $^{40}Ar_{rad}$, mol x 10-11.
Ages published before 1976 are recalculated using international standards for the isotopic abundance and decay rates (Steiger and Jäger, 1977)
The samples described without LAT-LONG information are plotted in Appendix D, when appropriate a map code is reported.

Sample	LAT	LONG	Material dated	K_2O, wt.%	$^{40}Ar_{rad}$, mol x 10^{-11}	Recalculated Age [Ma]	Reference
MOSONIK							
KA1814	n.r.		nephelinite	7.04	4.820	4.75 ± 0.07	Isaac & Curtis 1974
NATM89-07 (KA1188)	-2.56370	35.84010		4.43	2.254	3.53 ± 0.06	Manega 1993
KA1757	n.r.		biotite lava	8.27	3.88	3.26 ± 0.08	Isaac & Curtis 1974
FAULTED REGIONAL FLOOD LAVAS, NORTH OF TAROSERO							
309	a		olivine basalt	0.63	0.222	2.46 ± 0.62	Macintrye *et al.* 1974
305	a		sodic trachite	5.25	1.753	2.32 ± 0.06	Macintrye *et al.* 1974
510	a		sodic trachite	4.60	1.503	2.27 ± 0.10	Macintrye *et al.* 1974
306	a		sodic trachite	4.92	1.602	2.26 ± 0.06	Macintrye *et al.* 1974
REGIONAL FLOOD LAVAS, SOUTH ARUSHA							
3705	14		alkali basalt	1.37	0.491	2.49 ± 0.06	Wilkinson *et al.* 1986
				1.37	0.482	2.44 ± 0.06	Wilkinson *et al.* 1986
3706	14		mugearite	1.82	0.602	2.30 ± 0.06	Wilkinson *et al.* 1986
				1.82	0.589	2.25 ± 0.04	Wilkinson *et al.* 1986
TAROSERO (unfaulted)							
490	b		sodic trachite	4.78	1.532	2.22 ± 0.06	Macintrye *et al.* 1974
				4.78	1.444	2.10 ± 0.04	Macintrye *et al.* 1974
				4.78	1.398	2.03 ± 0.03	Macintrye *et al.* 1974
488	b		sodic trachite	4.65	1.321	1.97 ± 0.04	Macintrye *et al.* 1974
MONDULI (north slopes)							
136	-3.19444	36.46361	olivine basalt	0.99	0.305	2.14 ± 0.06	Evans *et al.* 1971
				0.99	0.319	2.24 ± 0.05	Evans *et al.* 1971
KETUMBEINE (south slopes)							
155	Y		olivine basalt	1.73	0.393	1.58 ± 0.10	Evans *et al.* 1971
				1.73	0.424	1.70 ± 0.07	Evans *et al.* 1971
156	Y		olivine basalt	0.99	0.256	1.79 ± 0.08	Evans *et al.* 1971
				0.99	0.276	1.93 ± 0.08	Evans *et al.* 1971
SHIRA							
05KI07C			trachybasalt	3.03	0.840	1.926 ± 0.041	Nonnotte *et al.* 2008
05KI08B			basanite	2.95	0.839	1.974 ± 0.042	Nonnotte *et al.* 2008
RIFTING EVENT							
Eyasi Basin							
7c	-3.2647	35.2167	ankaramite	1.54	0.723	3.08 ± 0.3	Foster *et al.* 1997
Matunginini							
304	d		olivine basalt	0.83	0.245	2.06 ± 0.50	Macintrye *et al.* 1974
Ardai							
191	c		olivine basalt	3.43	0.849	1.72 ± 0.08	Macintrye *et al.* 1974
				3.43	0.897	1.81 ± 0.11	Macintrye *et al.* 1974
Narabala							
139	e		olivine trachybasalt	3.45	0.633	1.28 ± 0.03	Macintrye *et al.* 1974
				3.45	0.610	1.23 ± 0.04	Macintrye *et al.* 1974
				3.45	0.599	1.21 ± 0.05	Macintrye *et al.* 1974
Manyara basin (foot of Kitete escarpment)							
S13/3	-3.19260	35.94010	basalt	0.84	0.143	1.02 ± 0.1	Foster *et al.* 1997
				0.84	0.103		Foster *et al.* 1997
S14/5	-3.17820	35.93740	basalt	2.39	0.451	1.24 ± 0.06	Foster *et al.* 1997
				2.39	0.402		Foster *et al.* 1997
Natron basin (Ol Kerii escarpment)							
S13/2	-3.09770	36.02420	olivine basalt	2.07	0.370	1.26 ± 0.07	Foster *et al.* 1997
				2.07	0.379		Foster *et al.* 1997
KISETEY							
3	h		phlogopite	0.76	4.10	0.59 ± 0.15	Macintrye *et al.* 1974
			phlogopite	0.19	1.00	0.14 ± 0.15	Macintrye *et al.* 1974
LOOLMURWAK							
891	i		phlogopite	0.73	5.60	0.55 ± 0.10	Macintrye *et al.* 1974
			phlogopite	0.56	4.30	0.42 ± 0.10	Macintrye *et al.* 1974
BURKO (SE slopes)							
137	-3.31528	36.21306	nephelinite	3.64	0.540	1.03 ± 0.04	Evans *et al.* 1971
				3.64	0.486	0.93 ± 0.03	Evans *et al.* 1971

Appendix B. Continued

Sample	LAT	LONG	Material dated	K_20, wt.%	$^{40}Ar_{rad}$, mol x 10^{-11}	Recalculated Age [Ma]	Reference
GELAI (south slopes)							
138	X		nephelinite	2.39	0.338	0.98 ± 0.03	Evans *et al.* 1971
				2.39	0.349	1.01 ± 0.03	Evans *et al.* 1971
MAWENZI							
05KI43B			trachybasalt	2.87	0.203	0.492 ± 0.011	Nonnotte *et al.* 2008
05KI45			trachybasalt	2.66	0.187	0.488 ± 0.011	Nonnotte *et al.* 2008
KIBO							
05KI14			phono-tephrite	3.98	0.276	0.482 ± 0.010	Nonnotte *et al.* 2008
05KI05A			phonolite	5.68	0.294	0.359 ± 0.008	Nonnotte *et al.* 2008
05KI03A			phonolite	5.68	0.285	0.348 ± 0.007	Nonnotte *et al.* 2008
05KI29			phonolite	5.48	0.273	0.346 ± 0.008	Nonnotte *et al.* 2008
05KI32			phonolite	5.72	0.282	0.343 ± 0.007	Nonnotte *et al.* 2008
05KI37			phonolite	5.73	0.280	0.339 ± 0.007	Nonnotte *et al.* 2008
05KI30			phonolite	5.69	0.276	0.337 ± 0.007	Nonnotte *et al.* 2008
05KI17			phonolite	5.46	0.215	0.274 ± 0.006	Nonnotte *et al.* 2008
05KI12			phonolite	5.62	0.209	0.258 ± 0.006	Nonnotte *et al.* 2008
05KI38B			phonolite	5.71	0.186	0.227 ± 0.005	Nonnotte *et al.* 2008
05KI24			phonolite	5.50	0.166	0.209 ± 0.005	Nonnotte *et al.* 2008
PARASITIC ACTIVITY							
05KI41B			basanite	2.05	0.057	0.195 ± 0.005	Nonnotte *et al.* 2008
03TZ42B			basanite	2.23	0.053	0.165 ± 0.005	Nonnotte *et al.* 2008
MERU WEST scarp							
3436	12		phonolitic nephelinite	3.94	0.870	1.53 ± 0.03	Wilkinson *et al.* 1986
				3.94	0.843	1.49 ± 0.03	Wilkinson *et al.* 1986
N of Naigonesoit							
3193	11		trachytoid phonolite	5.29	0.292	0.383 ± 0.009	Wilkinson *et al.* 1986
				5.29	0.291	0.383 ± 0.009	Wilkinson *et al.* 1986
MERU WEST scarp							
Ol doinyo Sambu							
3912	10		phonolite	4.30	0.193	0.311 ± 0.011	Wilkinson *et al.* 1986
				4.30	0.186	0.300 ± 0.011	Wilkinson *et al.* 1986
3303	10		phonolitic nephelinite	4.37	0.197	0.313 ± 0.009	Wilkinson *et al.* 1986
				4.37	0.191	0.303 ± 0.010	Wilkinson *et al.* 1986
				4.37	0.188	0.299 ± 0.010	Wilkinson *et al.* 1986
Little Meru							
3127 (clast from breccia)	9		phonolitic nephelinite	4.54	0.183	0.281 ± 0.005	Wilkinson *et al.* 1986
Naigonesoit tholoid				4.54	0.179	0.273 ± 0.006	Wilkinson *et al.* 1986
3203	8		sanidine phonolite	5.52	0.142	0.179 ± 0.010	Wilkinson *et al.* 1986
				5.52	0.134	0.168 ± 0.009	Wilkinson *et al.* 1986
				5.52	0.126	0.158 ± 0.010	Wilkinson *et al.* 1986
NW flanks of Meru							
4191	7		nephelinite	3.87	0.083	0.148 ± 0.013	Wilkinson *et al.* 1986
				3.87	0.083	0.148 ± 0.010	Wilkinson *et al.* 1986
4231	6		phonolitic tephrite	4.01	0.064	0.111 ± 0.007	Wilkinson *et al.* 1986
				4.01	0.062	0.107 ± 0.007	Wilkinson *et al.* 1986
3114	5		phonolitic tephrite	4.72	0.073	0.107 ± 0.006	Wilkinson *et al.* 1986
				4.72	0.070	0.102 ± 0.005	Wilkinson *et al.* 1986
Meru West (2395 m)							
3930	4		phonolitic nephelinite	4.97	0.064	0.090 ± 0.004	Wilkinson *et al.* 1986
				4.97	0.056	0.079 ± 0.004	Wilkinson *et al.* 1986
SW of Meru West (3885 m)							
3655	3		nephelinite	4.71	0.054	0.080 ± 0.005	Wilkinson *et al.* 1986
				4.71	0.054	0.080 ± 0.005	Wilkinson *et al.* 1986
Meru summit							
3403	2		nephelinite	3.80	0.037	0.067 ± 0.008	Wilkinson *et al.* 1986
				3.80	0.032	0.059 ± 0.010	Wilkinson *et al.* 1986
LLODNYO LOOLMURWAK							
105	-2.8008	35.9908	olivine nephelinite	1.64	0.04	0.15 ± 0.12	Macintrye *et al.* 1974



Distribution map of the samples reported without LAT-LONG information (difference spot size represent location uncertainty)