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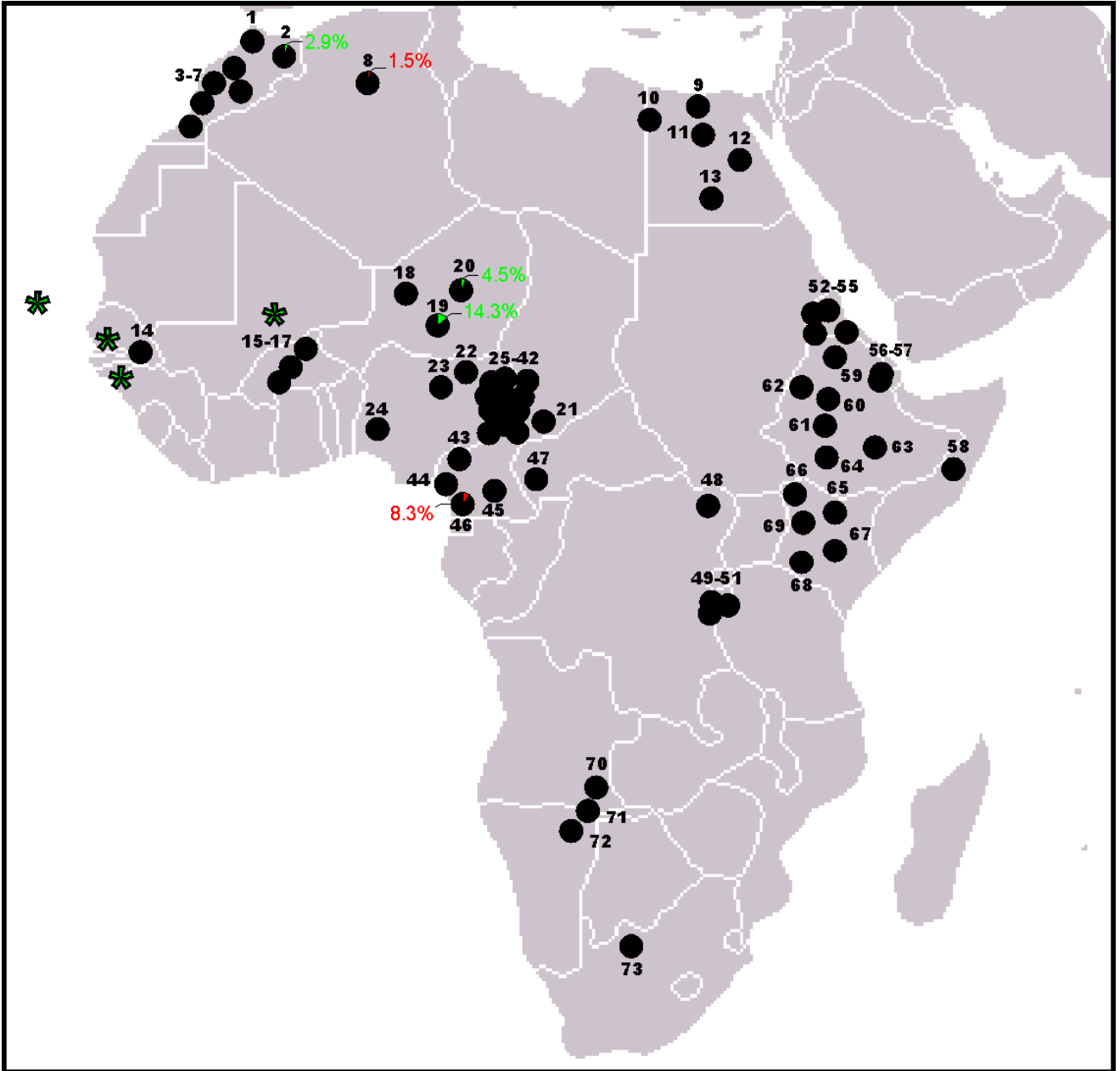
**Supplemental Data**

**A Revised Root for the Human Y Chromosomal**

**Phylogenetic Tree: The Origin of Patrilineal**

**Diversity in Africa**

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**Figure S1. Map Showing Location of the Population Samples Considered in This Study**  
 Populations are represented by circles and numbered as in Table S5. Sectors within circles are proportional to the frequency of haplogroup A1a (green), A1b (red) and A2-T (black). Green asterisks indicate countries where haplogroup A1a has previously been observed.<sup>10,30-32</sup>

**Table S1. Haplogroup Affiliation of the Seven Chromosomes that Were Re-sequenced**

Sample	Haplogroup (by lineage)	Haplogroup (by mutation)
1	A1a	A-M31
2	A1b	A-P114
3	A2c	A-P262
4	A3b2*(×A3b2a,b)	A-M13* (×M171,M118)
5	B2a1a	B-M109
6	C*(×C1,2,3,4,5,6)	C-RPS4Y <sub>711</sub> * (×M8,M38,M217,M347,M356,P55)
7	R1b1*(×R1b1a,b,c)	R-P25*(×M18,P297,M335)

Haplogroup nomenclature according to Karafet et al.<sup>13</sup>

Haplogroup	TMRCA [SE] (rho estimates)	TMRCA [SE] (ML estimates)
Y-Root	141.5 [15.6]	141.0 [16.0]
A1a-T	107.6 [12.2]	102.0 [10.0]
A2-T	104.9 [13.1]	97.0 [10.0]
BT	74.5 [12.5]	63.0 [9.0]
CT	38.8 [9.7]	35.0 [7.0]

**Table S3: Coalescence age estimates (kyears) of relevant haplogroups in the human Y chromosome phylogeny.**

Rho estimates were obtained using the network 4.6 program.

ML estimates were obtained using the PAML 4.4 program and assuming a HKY85 mutational model (estimated tree length = 0.00069).

**Table S5: Populations considered for the mutations defining major clades A1b, A1a and A2-T.**

<b>Region/population</b>	<b>Country</b>	<b>N</b>	<b>References</b>
<i>Northern Africa</i>			
1 Moroccan Arabs	Morocco	55	a,b,c,d,f
2 Moyen Atlas Berbers	Morocco	69	a,b,c,d,f
3 Asni Berbers	Morocco	54	c,d,f
4 Bohuria Berbers	Morocco	67	c,d,f
5 Marrakech Berbers	Morocco	27	b,c,d,f
6 Souss Berbers	Morocco	34	d,f
7 Ouarzazate Berbers	Morocco	32	d,f
8 Mozabite Berbers	Algeria	67	b,c,d,f
9 Northern Egyptians	Egypt	49	b,c,d,f
10 Egyptian Berbers from Siwa	Egypt	93	c,d,f
11 Egyptians from Baharia	Egypt	41	c,d,f
12 Egyptians from Gurna Oasis	Egypt	34	c,d,f
13 Southern Egyptians	Egypt	69	b,c,d,f
<i>Western Africa</i>			
14 Mandenka	Senegal	16	b
15 Mossi	Burkina Faso	49	a
16 Rimaibe	Burkina Faso	37	a
17 Fulbe from Burkina Faso	Burkina Faso	21	a
<i>Central Africa</i>			
18 Songhai	Niger	10	b,d,f
19 Fulbe from Niger	Niger	7	b,d,f
20 Tuareg	Niger	22	b,d,f
21 Ngambai	Chad	11	a,d,f
22 Hausa	Nigeria (North)	10	b,d,f
23 Fulbe from Nigeria	Nigeria (North)	32	b
24 Yoruba	Nigeria (South)	21	b,d,f
25 Ouldeme	Cameroon (North)	24	a,d,e
26 Mada	Cameroon (North)	17	d,f
27 Mafa	Cameroon (North)	9	d,e,f
28 Guiziga	Cameroon (North)	9	d,f
29 Daba	Cameroon (North)	29	a,d,e,f
30 Guidar	Cameroon (North)	9	d,f
31 Massa	Cameroon (North)	7	d,f
32 Mandara	Cameroon (North)	82	e,f
33 Podowko	Cameroon (North)	5	e,f
34 Other Chadic	Cameroon (North)	8	a,d,e,f
35 Shuwa Arabs	Cameroon (North)	5	d,f
36 Kanuri	Cameroon (North)	7	a,d,f
37 Fulbe from Cameroon	Cameroon (North)	76	a,d,e,f
38 Moundang	Cameroon (North)	21	d,f
39 Toupouri	Cameroon (North)	31	e,f
40 Fali	Cameroon (North)	105	a,d,e,f
41 Tali	Cameroon (North)	22	a,d,f
42 Mboum	Cameroon (North)	11	d,e,f
43 Bamileke	Cameroon (South)	52	a,e,f
44 Bakaka	Cameroon (South)	12	a
45 Ewondo	Cameroon (South)	32	a,d,e,f
46 Bakola Pygmies	Cameroon (South)	36	f
47 Biaka Pygmies	CAR	33	a,b,d,f
<i>Eastern Africa</i>			

48	Mbuti Pygmies	DRC	13	a,b,d,f
49	Twa Pygmies	Burundi	7	d,f
50	Tutsi	Burundi	9	d,f
51	Hutu	Burundi	14	d,f
52	Cunama	Eritrea	20	d,f
53	Nara	Eritrea	15	d,f
54	Tigrai	Eritrea	28	d,f
55	Tigre	Eritrea	5	d,f
56	Afar Djibuti	Djibuti	25	d,f
57	Somali Djibuti	Djibuti	40	d,f
58	Somali Somalia	Somalia	23	b,c,d,f
59	Tigrai	Ethiopia	5	b,c,d,f
60	Amhara	Ethiopia	83	b,c,d,f
61	Gurage	Ethiopia	7	b,c,d,f
62	Ethiopian Jews	Ethiopia	22	a
63	Oromo	Ethiopia	62	b,c,d,f
64	Wolayta	Ethiopia	12	b,c,d,f
65	Borana	Kenya	8	b,c,d,f
66	Nilotic	Kenya	62	b,c,d,f
67	Kikuyu	Kenya	8	b,c,d,f
68	Luhya	Kenya	51	b,c,d,f
69	Other Bantu	Kenya	11	b,c,d,f
	<i>Southern Africa</i>			
70	!Kung	Angola	64	a
71	Khwe	Namibia	26	a
72	San	Namibia	7	b,c,d,f
73	Bantu	Southern Africa	8	b,c,d,f

<sup>a</sup> Cruciani et al.<sup>24</sup>

<sup>b</sup> Cruciani et al.<sup>25</sup>

<sup>c</sup> Cruciani et al.<sup>26</sup>

<sup>d</sup> Cruciani et al.<sup>27</sup>

<sup>e</sup> Cruciani et al.<sup>28</sup>

<sup>f</sup> Present study