The first 5 million years of hominin evolution took place in sub-Saharan Africa.

How and when did they first leave???

7 -2 million years
DMP: Desert Migrations Project

(1) David Mattingly and his team – Burials & Identity among the Garamantes

(2) Marta Mirazon Lahr, Robert Foley and others – the prehistory of Fazzan and the role of the Central Sahara in hominin dispersals out of Africa
Late Pliocene (2.5-1.8 Myr)

- Onset of global glaciation
- Evolution of East African grasslands
- Significant African faunal turnover

* Complete (?) establishment of the Saharo-Arabian desert belt ~ 2.5 Myr
* Ain Boucherit (~2.3 Myr) and Ahl al Oughlam (~2.4 Myr): rich palaeontological sites in the Maghreb – NO archaeology
* Palaeo-Nile (late Pliocene): sources within Egypt?

E-W Eurasian faunal movements (Asian elephants+ monodactyl horses to Eur); *Equus* enters Africa probably through the Bab al-Mandab; cross-Med exchange? *Ursus, Giraffa*, – Barrier between North and Sub-Saharan Africa (2.6-2.4 Myr)
Behavioural shifts associated with early *Homo*

1. Technology
2. Meat eating
3. Growth and social behaviour
4. Geographical dispersals

Leakey, Tobias, Napier 1964, *Nature*
Latin: able, handy, mentally skilful, vigorous
Stone tools and animal bones with cut-marks found in deposits close to and of similar age to A. garhi.

Helene Roche, holding a Mode 1 (Oldowan) core with all its flakes (from Lokalalei, West Turkana, Kenya, dated to 2.34 Myr).

<table>
<thead>
<tr>
<th>Log Range Area</th>
<th>Number of Species</th>
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<tbody>
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IMPORTANT AFRO-EURASIAN FAUNAL EXCHANGE: 1.9-1.8 Myr
The diagram shows the distribution of Mode 1 or early Homo sites during the Early Lower Pleistocene (1.8 – 1.5 Myr). Key sites include Dmanisi, Riwat ?, Majuangouji & III, Pabbi Hills ?, Yuanmou ?, Sangiran, Lake Turkana, Melka-Kunture, and Olduvai Gorge.

The timeline diagram illustrates the first hominin dispersals (~1.8 Myr) and the evolution of the genus Homo. The timeline is marked with major time intervals: 0, 1, 2, 3, 4, 5, 6 Myr.

The timeline highlights the first stone tools and the evolution of the genus Homo.
When did hominins first cross the Sahara?

**Earliest North African archaeological site**

Aïn Hanech and El-Kherba, near Sétif, northern Algeria

- discovered by Camille Arambourg in 1947, and the assemblage described as showing affinities to Olduvai Bed I/lower Bed II
- proposed date for the site within the Olduvai subchron (1.95-1.78 Myr).

**DISPERsal**

1. Aïn Hanech & El-Kherba
2. Abassieh
3. Saoura valley
4. Richat Massif, Ouadane, Aftassa, Amazli
5. Sharga, Enner Group
6. Beli
Mode 1 / Oldowan sites in Fazzan, DMP
Climate change and the Sahara - constraints on population dispersals out of Africa

Mode 1 only

Mode 2

Mode 2 (only late Acheulean – all late Mid Pleistocene?)
Mode 2 / Acheulean sites in Fazzan, DMP

3.5 Myr

Onset of global Glaciation; evolution of East African grasslands

DISPERAL

Lahr, 2010
The first modern humans

200,000 to 160,000 years ago in Africa

Fossils of Herto and Omo Kibish, Ethiopia

African origins
Ethiopian fossils are the earliest Homo sapiens
Early human expansions in the last interglacial

The earliest *Homo sapiens* in North Africa: the fossils from the Haua Fteah, Libya

OIS 5

Djebel Qafzeh/ Skhul, Israel
120,000-90,000 yrs
(in association with East African faunas!!)

Rich South African record
(120,000 - 60,000)
Including the modern fossils from Klasies River and the new findings from Blombos

Friends of the Sedgwick Museum
Mode 3 / MSA sites in Fazzan, DMP

Aterian-MSA sites in Fazzan, DMP
African origins of human diversity project

NW Africa as a refugium during the LGM

Eastern Sahara: hyper-arid
Central Sahara: hyper-arid
The re-colonisation of the Central Sahara 11,000 years ago

* sub-Saharan African hunter-gatherers
* wavy-line pottery
* Acacus phase

Pastoralism and pastoralists

<table>
<thead>
<tr>
<th>NILE VALLEY</th>
<th>SAHARA (PASTROF) FORAGING</th>
<th>MULTIRESOURCE</th>
<th>PASTORALISM</th>
<th>SPECIALIZED PASTORALISM</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.C.E.</td>
<td>9000</td>
<td>8000</td>
<td>7000</td>
<td>6000</td>
</tr>
</tbody>
</table>

Kuper & Kropelin (2006) Science
Pastoral sites in Fazzan, DMP
Introduction of domestic cattle to Africa – local domestication of *Bos taurus* in North Africa during the Early Pastoral phase?

**Middle and Late Pastoral (~6,000 – 3,500 yrs)**
relations with the Nile Valley
establishment of the Berber dialect chain?
* Sedentism and the rise of the Garamantes
The Garamantes

- The first Libyan state;
- The first Libyan towns;
- The first Libyan writing
- The first Libyan agriculture;
- The first Libyan desert irrigation (foggaras);
- The first Libyan metallurgy
- The first trans-Saharan trade

N=123

Betti, Kivisild & Lahr – mtDNA diversity of the Libyan population
Friends of the Sedgwick Museum

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