

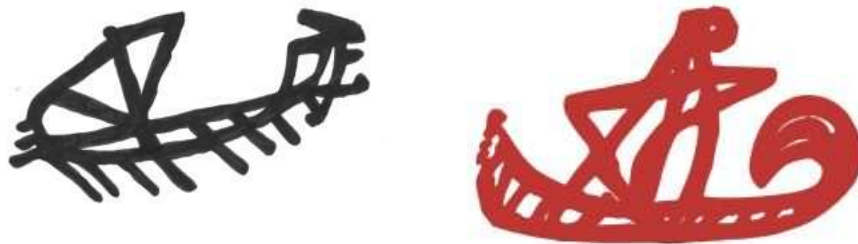
Western Megalithic culture

@ **Western Megalithic culture**- In late Neolithic period, the custom of erecting gigantic monuments became popular in North and Western Europe because Neolithic farmers paid special attentions in making the burials in contrast to the hunter-fishers of the previous period.



Dolmen de Menga, Málaga

+ **Neolithic Navigation**-After Greece (14,880 km), the Iberian Peninsula is the European region with the most kilometres of coastline (12,456 km), followed by the United Kingdom (12,429 km, including Northern Ireland), Italy (7,600 km), Denmark (7,314 km), Croatia (5,835 km) and France (5,500, including overseas departments). Other European countries have hardly any coastline – The Netherlands (451 km), Belgium (66 km), Slovenia (47 km) or simply no coastline at all (Hungary, Luxembourg, Austria, Czech Republic and Slovakia). Perhaps this is the reason why the Greeks, Romans and Spaniards dominated the Mediterranean Sea for centuries, and the reason why Western navigators (Spaniards, Portuguese, English and French) dominated the world's seas for millennia. Some skeptics will ask millennia? Yeah, millennia and the obvious proof is the spread of Western megalithic culture along the Western Mediterranean, the Atlantic coast, the British Isles and Scandinavia. Genetics has served to demonstrate that the men and women of the Iberian Peninsula and the French Atlantic coast colonized Hibernia and Albion by sailing in small sailing ships of even 20 rowers



The three essential requirements for mastering the technique of navigation at sea are autonomy of the boat, load capacity and knowledge of night navigation techniques (orientation by means of the stars)-To navigate in the northern hemisphere it is fundamental to know how to locate the Polar Star in the constellation of the Little Bear that always marks the North so that it is not necessary for the ship's crew to navigate near the coast to be able to disembark every night- The ships prepared to travel tens of nautical miles of open sea had to be built with resistant woods (maple, oak, pine) and have an aerodynamic shape to be able to carry the cargo (provisions), The weight of the cargo and the weight of the crew had to be calculated according to the power capacity of the rowers driving the boat and obviously an important reserve of drinking water had to be prepared to replace the weight lost during the voyage. The energy expenditure of the rowers has been calculated at 4000-4500 calories/day although it can always vary according to the intensity of the wind, currents, and waves, so that, rowing 8 hours a day a boat with good oarsmen can advance about 25 nautical miles a day- If only rowing boats were used, a direct crossing from La Coruña (Galicia) to Cork (Ireland) or from Alicante to Palermo (Sicily) would take about 20 days since the distance between those ports is about 1.000 kilometers in a straight line (500 nautical miles)-Conversion-1 Knot-1.1508 miles/hour-The Egyptian Bronze Age ships (sail and oars) could reach 6 knots of speed-6.90 nautical miles/hour for 10 hours-69 miles/day- These calculations show that to make a direct trip between the northern coast of Galicia and Ireland we would only need 7 days of navigation, and it is evident that our Neolithic ancestors had enough time, knowledge and courage to make these trips dozens of times a year, although these long distance trips using only the strength of the oars were perfectly possible- The cave paintings found in Iberia have demonstrated the existence of sailing boats since the Neolithic period, so it is reasonable to think that they were used to reach the British Isles from the Iberian Peninsula- Both the masts and the rods were made of wood, the rigging (lines and ropes) of esparto and the sails of leather, esparto, linen, reeds or canes, all of which were abundant materials, known and accessible to Neolithic farmers- Since the propulsion of the boat is produced by the mere push of the wind on the sails, it was always necessary to combine these with the strength of the oars to be able to sail when the wind was unfavorable, until the invention of the triangular or Latin sails joined to the mast by a single edge that allowed to take advantage even of the opposite wind.

+ **Radiocarbon dates and Bayesian modeling support maritime diffusion model for megaliths in Europe**- B Schultz Paulsson (enero 2.019)-

There are two competing hypotheses for the origin of megaliths in Europe. The conventional view from the late 19th and early 20th centuries was of a single-source diffusion of megaliths in Europe from the Near East through the Mediterranean and along the Atlantic coast. Following early radiocarbon dating in the 1970s, an alternative hypothesis arose of regional independent developments in Europe. This model has dominated megalith research until today. We applied a Bayesian statistical approach to 2,410 currently available radiocarbon results from megalithic, partly premegalithic, and contemporaneous nonmegalithic contexts in Europe to resolve this long-standing debate. The radiocarbon results suggest that megalithic graves emerged within a brief time interval of 200 y to 300 y in the second half of the fifth millennium calibrated years BC in northwest France, the Mediterranean, and the Atlantic coast of Iberia. We found decisive support for the spread of megaliths along the sea route in three main phases. Thus, a maritime diffusion model is the most likely explanation of their expansion. There are ~35,000 presently extant European megaliths, a term which is derived from Greek μέγας (mégas), "big," and λίθος (líthos), "stone." These include megalithic tombs (dólmenes), standing stones (menhires), stone circles (cromlechs), alignments (Alineamientos), and megalithic buildings (templos). Most of these were constructed during the Neolithic and the Copper Ages and are located in coastal areas. Their distribution is along the so-called Atlantic façade, including Sweden, Denmark, North Germany, The Netherlands, Belgium, Scotland, England, Wales, Ireland, northwest France, northern Spain, and Portugal, and in the Mediterranean region, including southern and southeastern Spain, southern France, the Islands of Corsica, Sardinia, Sicily, Malta and the Balearics, Apulia, northern Italy, and Switzerland. Interestingly, they share similar or even identical architectonic features throughout their distribution. The radiocarbon dates suggest that the first megalithic graves in Europe were closed small structures or dolmens built aboveground with stone slabs and covered by a round or long mound of earth or stone. These graves emerge in the second half of the fifth millennium calibrated years (cal) BC within a time interval of 4.794 cal BC to 3.986 cal BC (95.4%) which can be reduced most probably to 200-300 years, in northwest France, the Channel Islands, Catalonia, southwestern France, Corsica, and Sardinia. Taking the associated cultural material into consideration, megalithic graves from Andalusia, Galicia, and northern Italy presumably belong to this first stage. There are no radiocarbon dates available from the early megalithic graves in these regions, or their calibrated ranges show an onset extending into the fourth millennium cal BC, as is the case for Galicia. France is the only one which exhibits monumental earthen constructions before the megaliths. The Passy graves in the Paris Basin have no megalithic chamber yet, but are impressive labor-intensive structures with a length of up to 280 m. These graves seem to be the earliest monumental graves in Europe; the first individual buried in the Passy necropolis died in 5.061- 4858 cal BC (95.4%). Somewhat later, the first monumental graves emerge in Brittany, and especially in the region of Carnac, in the form of round tumuli covering pit burials, stone cists, and dry-wall chambers. 1-Phase- The first building phase of the tumulus St. Michel in Carnac is dated to the time interval 4.782-4.594 cal BC (95.4%). In Catalonia, in the Tavertet region, early megalithic graves emerged during the same time interval, even contemporaneous with the graves in Brittany. A reevaluation of the available radiocarbon results in Tavertet region yielded a dating of the construction of these graves not before 4.722-4.068 cal BC (95.4%). The grave goods from the Li Muri necropolis on Sardinia are attributed to the Late Neolithic San Ciriaco horizon, and, according to the radiocarbon results from the San Ciriaco layers in the settlement of Contraguda, it is possible to limit the emergence of these graves to a time interval from 4.733-3.986 cal BC (95.4%). From the southwest Iberian Peninsula in Andalusia, the Algarve, and the Alentejo, we find more of these possible early megaliths. In the northern half of the western Iberian Peninsula, there are early megaliths, concentrated mainly in Galicia-From Chan de Cruz 1, a possible construction or usage date from ~4080 cal BC (CSIC-642, 5210 ± 50 BP, 4.144-3.961 cal BC, 68.2%; 4.230-3.947 cal BC, 95.4%). 2-Phase-A fresh expansion occurred during the first half of the fourth millennium cal BC when thousands of passage graves were built along the Atlantic coast of the Iberian Peninsula, Ireland, England, Scotland, and France. Their distribution emphasizes the maritime linkage of these societies and a diffusion of the passage grave tradition along the seaway. The passage graves mark a radical change of burial rites, along with other economic and social changes in Europe. 3-Phase-In the second half of the fourth millennium cal BC, the passage grave tradition finally reaches Scandinavia and the Funnel Beaker areas.

Dolmen de Dombate-Galicia



Dolmen del Mellizo-Extremadura



Dolmen de Vallgorguina



Dolmen de Sorginetxe



Dolmen- Ballykee Ireland



Dolmen de Kercadoret-France



+ Who were the people who carried out these megalithic constructions in Western Europe? What was their origin? What was the reason for these trips to colonize remote and unexplored territories? The great advances in the analysis of ancient human genomes have allowed us to identify a good number of uniparental genetic markers that participated in those migrations since they are identical in Iberia, the Atlantic coast, the British Isles and Scandinavia. Look at the constant repetition of identical mitochondrial markers in Iberia, Ireland, France, Switzerland and Sardinia that reach even Sweden and Germany. In other words, the whole of Western Europe was re-colonized by a genetically homogeneous people, a mixture of WHGs and Anatolian farmers, who for the first time in human history began to develop constructive techniques that required great collective effort. These people worshipped the sun and had great knowledge of navigation, which allowed them to reach the most remote places in Europe

@Mit Hap-H5

H5- (Bulgaria, Krepot-Neolithic-I0679-5.672 AC)-I.Mathieson, 2.015
H5- (Switzerland, Niederreid-Neolithic-SX9-4.395 AC/Chalcolithic-Aesch16)-A.Furtwängler et al, 2.020
H5- (France-Saulager, Michelsberg Culture-BERG57-4.104 AC)-S.Brunel, 2.020
H5- (Poland, Krakow Nowa, Little Poland, Neolithic-NHP1-3.700 AC)
H5- (Germany, Blatterhole, Neolithic-BLA7-3.666 AC/BLA13-3.513 AC)-R.Bollongino, 2.013
H5- (England, Tinkinswood, Neolithic-I5359-3.650 AC/Neolithic-I2631-3.001 AC)
H5- (Iberia, Yacimiento de Galls Carboner, Chalcolithic-I4565-2.964 AC)

@Mit Hap-H4a1/a

H4a1/a-(Iberia-Cova de l'Or, Alicante-5.335 AC/Galeria de Cisterna, Portugal-5.280 AC)
H4a1/a- (France-Le Cres-Chasseen-CRE14-4.351 AC/Zac Agora, Cugnaux-Cx20-4.258 AC)-S.Brunel, 2.020
H4a1/a- (Sardinia, Su Crucifissu Mannu, Neolithic-Suc008-3.813 AC)
H4a1/a- (Switzerland-Oberpipp-MX150-3.173 AC)-A. Furtwängler et al, 2.020
H4a1/a1-(Ireland, Annagh-ANN2-3.578 AC/Parknabinnia-PB768-3.545 AC)-L. Cassidy, 2.020

@Mit Hap-H3

H3- (Iberia-Paternanbidea, Íbero, Neolithic-6.025 AC/ Galería de Cisterna, Neolítico, Almonda-Portugal, 5.280 AC/Cova Avellaner, Neolítico-5.000 AC/Lugar do Canto, Portugal, Neolítico Medio- 3.760 AC)
H3-(France, Burgundy Yonne, Gurgy, Neolithic-5.018 AC/Clos de Roque-4.680 AC/Le Crés, Beziers-Cultura Chasseen-CRE30-4.312 AC-S.Brunel, 2,020/Prissé la Charriere-PRI005/PRI006-4.255 AC-Rivollat et al, 2.020/Alsacia, Cultura de Michelsberg, Neolítico-3.950 AC)
H3- (Scotland, Point of Cott, Orkney, Neolithic-I2796-3.620 AC)-
H3- (Germany, Neolithic-I0800-3.298 AC/Salzmunde- I0802-3.212 BC)
H3- (Switzerland, Aesch, Chalcolithic-Aesch4-3.010 AC)-A.Furtwängler et al, 2.020

@Mit Hap-H1e1/a

H1e1/a- (Iberia- Portugal, Cabeco de Arruda, Neolithic-Ca122A-3.250 AC/Cueva de las Yurdinas, Álava, Calcolítico-I1842-3.107)
H1e1/a- (France-Zac Agora, Cugnaux-Cx165-4.100 AC/Mont D'Hubert-ES90-9-4.000 AC)-S.Brunel, 2.020
H1e1/a- (Germany-Esperstedt, Neolithic-I0807-3.840 AC)
H1e1/a- (England, Dairy Farm-2.057 AC)

@Mit Hap-H1c

H1c- (France, Rosheim, Grossgartach-ROS47-4.600 AC/Pla D39, Bucheres-Cultura de Cerny-BUCH4-4.446 AC)-S.Brunel, 2.020
H1c- (England, Neolithic-I2659-3.702 AC/Totty Pot-I5374-2.645 AC)
H1c- (Ireland, Glennamong-GNM1076-3.193 AC)-L.Cassidy, 2.020
H1c- (Sweden, Megalithic, Olliso- Oll007-2.680 AC)

@Mit Hap-H1@16189

H1@16189- (Ireland, Poul nabrone-Neolithic-PN04-3.784-L.Cassidy, 2.020/Primrose-3.725 AC)
H1@16189- (England, Raschoille Cave, Neolithic-3.442 AC)
H1@16189- (Iberia, Humanejos, Madrid-2.600 AC)

@Mit Hap-U5b2/b5

U5b2/b5- (Iberia, Les Lloletes, Alcoy-I7647/I7601-3.444 AC)-Iñigo Olalde, 2.019
U5b2/b5- (Switzerland-Aesch9-2.899 AC)-A.Furtwängler et al, 2.020
U5b2/b5- (Sardinia, Cagliari- Su Asedazzu-MA88-2.155 AC)-A.Olivieri, 2.017

@Mit Hap-K1a4/a1

K1a4/a1- (Italy, Neolithic-R9-5.546 AC)
K1a4/a1- (Iberia, Valencia, Cova de la Sarga, Neolithic-5.273 AC/El Prado, Pancorbo-I1972-5.124 AC/
Málaga, Cueva de los Botijos, Benalmádena, Neolithic-Bot1-5.000 AC/Campo de Hockey, San Fernando,
Cádiz, Neolithic-I7549-4.000 AC/Alto de la Huesera, Álava-I1978-2.945 AC)
K1a4/a1- (France, Le Pirou, Valros-PIR3-4.308 AC/Zac Agora, Cugnaux-Cx19- 4.296 AC/ Le Crès Beziers-
CRE20A-4.201 AC/Mont D'Hubert, Michelsberg-ES133-1/ES626-27-5-4.000 AC)-S.Brunel, 2.020
K1a4/a1- (Ireland, Neolithic, Primrose-Prim16/Prim7-HapY-I2a2a/1a1a-3.610 AC/ Baunogenasraid-
BG72-3.507 AC)-L. Cassidy, 2.020
K1a4/a1- (England Neolithic-I3138-3.093 AC)
K1a4/a1- (Morocco, Khef el Baroud, Casablanca-2.800 AC)
K1a4/a1- (Switzerland, Wartau-SX22-2.979 AC/Muttenz-RA61-2.885AC/RA60-2.879 AC)-A.Furtwängler

@Mit Hap- K1a@195

K1a@195- (Germany, Stuttgart-Mühlhausen I-LBK-XN166-5.177 AC)-M.Rivollat, 2.020
K1a@195- (France, Le Champ du Poste, Carcassonne-SP395-4.757 AC/Gurgy "les Noisats"-GRG003-4.453
AC-Rivollat, 2.020/ Gurgy "les Noisats"-GRG032-4.150 AC-Rivollat, 2.020/Saulager-BERG157-HapY-
E1b1b/1a1-4.100 AC)-Samantha Brunel 2.020
K1a@195- (Iberia, San Fernando, Cádiz, Neolithic-I7547-4.000 AC/Dolmen del Arroyal, Burgos,
Calcolítico Campaniforme-I0462-2.456 AC)
K1a@195- (Ireland, Neolithic-Poul nabrone-PN05-3.771 AC/Primrose-Prim17/Prim18-HapY-I-3.715
AC/Primrose-Prim10/Prim6-3.580 AC/Annagh-ANN1-3.517 AC)-L.Cassidy, 2.020
K1a@195- (England, Trumpington Meadows-Sk4/7-99- 3.705 AC/Neolithic-3.707 AC/3.115 AC)
K1a@195- (Scotland, Midhowe, Orkney- Neolithic-Mid2-3.230 AC)
K1a@195- (Switzerland, Oberpipp-Neolithic-MX183-3.190 AC/MX187-3.122 AC/MX211-3.014
AC/Aesch10-2,893 AC/Oberpipp-RA44-2.892 AC)-A.Furtwängler et al, 2.020

@Mit Hap- T2c1/d152

T2c1/d@152- (Iberia-Cueva del Toro, Antequera, Neolithic-Tor1-5.030 AC)
T2c1/d@152- (France, Clos de Roque-I4304-4.688 AC/Fleury sur Orne-FLR010-4.395 AC-Rivollat,
2.020/Aven de la Boucle-BOU11-3.189 AC/Dolmen de St Eugène-Cultura Verazien-2.898 AC)-Brunel,
T2c1/d@152- (Ireland, Parknabinnia-Neolithic-PB672-3.576 AC)-L.Cassidy, 2.020

@Mit Hap-T2b3/c

T2b3/c- (France, Mont d'Hubert, Michelsberg Culture-ES48-8-4.000 AC)-S.Brunel, 2.020
T2b3/c- (Ireland, Primrose, Neolithic-Prim13-3.500 AC)

@Mit Hap-J1c1/b

J1c1/b- (France Gurgy "les Noisats"-GRG015-4.453 AC-Rivollat, 2.020/Les Plots, Berriac, BER49-4.260
AC/ Saulager, Michelsberg-BERG157-2-4.100 AC/Dolmen des Fades-FAD1-2.808 AC)-S.Brunel, 2.020
J1c1/b- (Switzerland, Niederreid-SX11-4.410 AC)-A.Furtwängler et al, 2.020

J1c1/b- (Iberia- Cueva de Els Trocs, Bisaurri, Huesca, Neolítico Final-HapY-I2a1b-El002-3.770 AC/Cabezo de Arruda, Portugal-Calcolítico-3.250 AC/Cova da Moura-2.950 AC/Cueva de la Guineu, Calcolítico-I11305-2.950 AC)
J1c1/b-(Isbister, Orkney, Neolítico-I2629-2.980 AC)

@Mit Hap-X2b@226

X2b@226- (Iberia, Fuente Celada, Neolítico-Fuc003-5.033 AC/Les Lloletes, Alcoy-I7601-3.590 AC/Coveta Emparetá-I8568/I8567-3.426 AC)
X2b@226- (France, Gurgy "les Noisats"-GRG028-4.705 AC-Rivollat, 2.020/Prissé la Charriere PRI001-4.255 AC-Rivollat, 2.020/Mont d'Hubert, Michelsberg-ES1018-16-4.000 AC/La Terrasse, Chasseen-VT5-7-3.900 AC/Saulager, Michelsberg-BERG103-2-3.826 AC/Le Prieuré-ISM1-2.650 AC)-S.Brunel, 2020
X2b@226-(England, Neolithic-I0519/Cissbury-I5366-3.513 AC/3.230 AC)
X2b@226 (Ireland, Parknabinnia-Neolithic-PB186-3.436 AC/Newgrange-NGZ1-3.126 AC)-L. Cassidy,
X2b@226-(Germany, Niedertiefenbach, Wartberg culture-NT002-3.125 AC)
X2b@226-(Morocco, Khef el Baroud, Casablanca-3.000 AC)
X2b@226-(Switzerland--Aesch13-2.958 AC/Aesch25-2.682 AC)-A.Furtwängler et al 2.020

@Mit Hap-W1@119

W1@119- (Bohemia, Kolin, Neolithic-Kolin2-4.555 AC)
W1@119- (England, Neolithic-I2657-3.865 AC)
W1@119- (Ireland, Primrose, Neolithic-Prim12-3.710 AC)

@Mit Hap-X2b4

X2b4- (Turkey, Anatolia, Catalhöyük, Neolithic-20374-6.525 AC)
X2b4- (France, Rosheim-Neolithic, Grossgartach Culture-ROS85-4.600 AC)-S.Brunel, 2.020
X2b4- (Ireland, Carrowkeel-Neolithic-CAK534-2.800 AC)-L. Cassidy, 2.020
X2b4- (Switzerland, Wartau-MX298-2.534 AC)-A.Furtwängler et al 2.020

@Mit Hap-J1c3

J1c3- (France, Pendimoun-PEN003-5.408 AC-Rivollat, 2.020/Le Champ Buchotte-LBK-LARZ4-4.950 AC/Le Crés, Beziers-CRE11B-4.300 AC/Le Pirou, Valros-Pir2-4.296 AC)-S.Brunel, 2.020
J1c3- (Iberia-El Trocs, Bisaurri, Aragón, Cultura Cardial, Neolítico-I0409-5.270 AC/cueva de las Yurdinas, Peñacerrada-Calcolítico-I1838-3.148 AC/Sima del Ángel, Córdoba, Calcolítico-I8150-2.700 AC)
J1c3- (Sardinia, S'Isterridolzu-MA74-4.095AC/Su Crucifissu-Calcolítico-R25-2.200 AC)
J1c3- (Ireland, Millin Bay, Neolithic-MB6-3.233 AC/Carrowkeel-CAK532--2.953 AC)-L.Cassidy, 2.020
J1c3- (Switzerland-Aesch25-2.959 AC/Aesch8-2.901 AC)-Furtwängler, 2.020

@Mit Hap-K1a1/b1

K1a1/b1- (France, Pendimoun-PEN001-real1-5.425 AC-Rivollat, 2.020/Gurgy "les Noisats"-GRG022-4.652 AC-Rivollat, 2.020/Obernai-OBNO03-4.596 AC/Le Crès, Beziers -CRE29- -4.203 AC)-S.Brunel, 2.020
K1a1/b1- (Iberia-Dolmen de la Mina, Sedano, Burgos, Neolítico-Mina3-I0405-3.750 AC/Les Lloletes, Alcoy, Calcolítico-I7643-3.835 AC)
K1a1/b1- (England-I6762-3.650 AC/I2651-3.229 AC)
K1a1/b1- (Morocco, Khef el Baroud, Casablanca-3.000 AC)
K1a1/b1- (Sardinia, Serra Crabiles-I14677-2.381 AC)- Fernandes et al 2.020

@Mit Hap-K1a3/a

K1a3/a- (Iberia, cueva de Chaves, Huesca, Neolítico-CHA003-5.096 AC)
K1a3/a- (France, Gurgy "les Noisats"-GRG025-4.652 AC-Rivollat, 2.020/Saulage-BERG157-9-4.100 AC/Mont D'Hubert-ES48b-4.000 AC/Les Hautes Chanvieres-Mayry4249-3.512 AC)-S.Brunel, 2.020
K1a3/a- (England, Raschoille1, Neolithic-I3041-3.650 AC)
K1a3/a- (Switzerland-Aesch, Calcolithic-Aesch11-2.952 AC)-A.Furtwängler et al, 2.020

K1a3/a- (Sweden, Hemmor, Gotland, PWC-Hem001-2.944 AC) -A. Coutinho, 2.020

@Mit Hap-K1b1/a1

K1b1/a1- (France-Obernai, Grossgartach-OBN011-4.709 AC-Rivollat, 2.020/Pld39, Búcheres, cultura de Cerny-4.495 AC/Zac St Martin-2.350 AC)-S.Brunel, 2.020

K1b1/a1- (Iberia-Dolmen de la Mina-I0407-3.750 AC/El Mirador, Atapuerca, Burgos-I1272-2.676 AC)

K1b1/a1-(England Neolithic-I2637/I2978-3.499 AC/3.179 AC)

K1b1/a1- (Sardinia, Philigosa-MA89-3.190 AC)

K1b1/a1- (Sweden, Rossberga-FBC-Ros3-3.130 AC/Neolithic, Nesc-RISE98-2.153 AC)

K1b1/a1- (Ireland-Parknabinnia-PB443-3.552 AC/ Poul nabrone-PN16-3.511 AC/ Pollnagollum-PG911-2.242 AC)-L. Cassidy, 2.020

@Mit Hap-K2b1/a

K2b1/a- (Iberia, Rebolal, Galicia-3.450 AC/Pala da Vella, Galicia, Chalcolithic-3.172 AC)

K2b1/a- (Sweden, Ansarve, Gottland-An7-2.950 AC/An9-2.755 AC)

K2b1/a- (Switzerland-Aesch20-2.895 AC/ Wartau-SX26-2.378 AC-A.Furtwängler, 2.020)

K2b1/a- (Sardinia, Serra Crabiles, Chalcolithic-Sec004-2.332 AC)

@Mit Hap-U5b2/b2

U5b2/b2-(Germany, Blatterhohle-BLA11-3.922 AC/ Blatterhohle-BLA14-3.603 AC)-R.Bollongino,

U5b2/b2- (Switzerland-No collagen-2.900 AC)-A.Furtwängler et al 2.020

U5b2/b2- (England-Hasting Hill-I2612-2.335 AC)

U5b2/b2- (Ireland-Sliguff-SG27-1.912 AC/Keenoge-KO7-1.899 AC)-L.Cassidy, 2020

@Mit Hap-U5b1/d2

U5b1/d2- (Germany-Niedertiefenbach, Wartberg culture-NT148-3.150 AC)

U5b1/d2- (Sweden-Ajvide, Neolithic-PWC, Ajv54 -2.790 AC)

U5b1/d2- (England, Staxton Beacon -I1770-2.000 AC)

@Mit Hap-U5b2/a3

U5b2/a3- (France, Saulager, Michelsberg culture-BERG746-3.803 AC)-S.Brunel, 2.020

U5b2/a3- (Ireland, Parknabinnia-PB754-3.450 AC)-L. Cassidy, 2.020

U5b2/a3- (England, Neolithic-I2988-3.438 AC)

@Mit Hap-V

V- (Iberia-Els Trocs, Bisaurri, Aragón-I0413-5.188 AC/ Portugal, Neolítico-5.125 AC/Cabezo de Arruda I, Portugal, Calcolítico-I11601-3.100 AC/Alto de la Huesera, Alava -I3276-3.046 AC)

V- (France, ZAC St Martin, Neolítico-BRE447-5.060 AC-S.Brunel, 2.020/Burgundy, Yonne-Gurgy-5.018 AC/Obernai-OBN005-4.927 AC-Rivollat et al, 2.020/Alsace, Obernai-4.661 AC/Borgoña, Gurgy, Neolítico-4.652 AC)

V- (Ireland, Poul nabrone, Neolithic-PN13-3.649 AC)-L.Cassidy, 2.020

V- (Scotland, Holms of Papa, Neolithic-I2636-3.440 AC)

V- (Sweden, Ajvide, Gotland-PWC-Ajv52-2.804 AC)-A.Coutinho, 2.020

V- (Sardinia, Sa Ucca de su Tintirriolu-I6165-2.775 AC-Fernandez et al 2.020/Serra Crabiles-I14678-2.329 AC-Fernandez et al 2.020)

@Mit Hap—HVO@195

HVO@195- (France, Pendimoun-PEN001-real2-5.420 AC-Rivollat, 2.020/Les Bréguières-LBR003-4.889 AC-Rivollat, 2.020/La Terrasse, Villeneuve-Tolosane, Chasseen-VT7-4.187 AC)-S.Brunel, 2.020

HVO@195- (Iberia, Cueva de Chaves, Neolithic-CHA001-HapY-I2a1b-5.132 AC/Sima del Ángel, Córdoba, I8157-2.700 AC)

HVO@195- (England-I3137-Neolithic-3.500 AC)

HV0@195- (Ireland, Ballynahatty-Bally-3.181 AC)-L. Cassidy, 2.020
HV0@195- (Sardinia, Perdasdefogu, Nuragic culture-I10552-1.316 AC)

@Mit Hap- H1

H1-(Iberia-Els Trocs-Troc8-5.188 AC/Alto de Rodilla-Rodi1-5.140 AC/El Prado, Pancorbo, Burgos, Neolítico- 5.123 AC/ dolmen de la Mina-Mina4-3.750 AC/ Yacimiento de la Tarayuela, Miño de Medinaceli, valle de Ambrona, Soria-3.790 AC/ Cova de Bom Santo, Neolítico-3.555 AC/Cova De'n Pardo-Par7-3.350 AC/Monte Canelas, Portugal, Calcolítico-I5076-3.180 AC)
H1-(Germany-Stuttgart-Mühlhausen I-LBK-XN171-5.179 AC/XN175-5.173 AC-Rivollat, 2.020/Rossen Culture-4.550 AC/Quedlinburg-Qlb26-I0805- 2.304 AC)
H1- (France, Lotissement Les Terrasses de la Zorn-LBK-Schw72-16-5.301 AC/La Grotte Gazel, Occitania-Gazel-5.179 AC-S.Brunel, 2.020
H1- (Switzerland-Lingolsheim-SX33-HapY-I2a1a-L161.1-4.683 AC/Oberpipp-RA45-3.011 AC/Aesch3-2.993 AC/Aesch2-2.952 AC/Oberpipp-MX212-2.952 AC)-A.Furtwängler et al, 2.020
H1- (Sardinia, Neolithic-MA76-4.075 AC/Filigosa-Fil004-3.132 AC)
H1- (Ireland, Cohaw Court-Neolithic-CH448-3.583 AC/Parknabinnia-PB675-3.005 AC/Carrowkeel, Co Slygo-Neolithic-CAK531-2.754 AC)-L.Cassidy, 2.020
H1- (Scotland, Balintore, Neolithic-Bal4-3.240 AC)-
H1- (England, Point of Cott, Neolithic-3.230 AC/ Isbister, Neolithic-2.885 AC)

Regarding male unipersonal markers it is evident that the diversity is much less because we are talking about patrilineal societies that practiced exogamy

@Ychr-I2a1a/I2a2a/I2a1b

*PEN003 (5.408 BC)-Pendimoun-HapY-I2a1a/2-I-AM01283-Mit Hap-J1c3
*OBN005 (4.927 BC)- Obernai, France-HapY-I2a1a/2-I-AM01260-Mit-V
*OBN011 (4.709 BC)- Obernai-HapY-I2a1a/2- I-Z2587-Mit Hap-K1b1/a1
*OBN004 (4.590 BC)- Obernai-HapY-I2a1a/2-I-AM01261-Mit Hap-K1a2/b
*OBN007 (4.434 BC)- Obernai-HapY-I2a1a/2-Mit-K1
*PRI001 (4.255 BC)-Prissé la Charriere, France-HapY-I2a1a/2a-Mit-X2b@226
*SX33 (4.683 BC)-Lingolsheim, Switzerland-HapY-I2a1a/2a-L161.1/S185.1-Hap Mit-H1
*ASH3 (3.578 BC)-Ashley Park, Ireland-HapY-I2a1a-Mit-T2c1/d1
*DA96B (3.250 AC)-Dolmen de Ansiao-HapY-I2a1a/1a1b-M170>M438>CTS2257>L460>P37.1>CTS595->M26>PF3981>CTS1132>L160>F1295-Hap Mit-K1b1/a
*I11599 (3.100 AC)-Cabezo de Arruda-HapY-I2a1a/1- Mit-J2b1/a2
*I5429 (2.948 AC)-Perdigoes-HapY-I2a1a/1a- Mit-J2b1/a3
*I11605 (2.800 AC)-Tholos de Paimogo-HapY- I2a1a/1a-Mit-HV0d
*I1303-Mir25 (2.755 AC)-El Mirador-HapY- I2a1a/1a-M26/L158- Mit- U3a1
*I4229 (2.235 AC)-Cueva de Moura, Torres Vedras- HapY-I2a1a/1-M26/L158-Hap Mit-U5a2
*I3759 (278 AC)-La Hoya, Cultura Celtíbera- HapY-I2a1a/1a- Mit-H1

*TGM009 (3.239 BC)-Tangermünde, Germany-HapY-I2a2a/1b-I-S6596-Mit Hap-J1c
*Primrose12 (3.710 BC)-Ireland- HapY-I2a2a/1a1a/2-Mitochondrial Haplogroup-W1@119
*Primrose16 (3.610 BC)- Ireland- HapY-I2a2a/1a1a- Mit Hap- K1a4/a1
*PN107(3.797 BC)-Poulnabrone Portal Tomb-HapY-I2a2a/1-Mit-U4a2/f
*PN112(3.615 BC)-Poulnabrone Portal Tomb-HapY-I2a2a/1a1-Mit-U5b2/b
*MB6 (3.233 BC)-Millin Bay-HapY-I2a2a/1a1a-Mit-J1c3
*CAK532 (2.953 BC)-Carrowkeel-HapY-I2a2a/1a1a-Mit-J1c3
*CAK68 (2.651 BC)-Carrowkeel-HapY-I2a2a/1-Mit-H
*ASH1 (3.578 BC)-Ashley Park, Ireland-HapY-I2a2a/1a1a/2-Mit-k2a9
*ANN1 (3.517 BC)-Annagh-HapY-I2a2a/1-Mit-K1a@195
*I7605 (3.200 AC)-Dolmen de Mandubi-Celaya-HapY-I2a2a-Mit-H3
*I7603 (3.200 AC)-Dolmen de Mandubi-Celaya-HapY-I2a2a-Mit-K1a2/b
*I4565 (2.964 AC)-Galls Carboners -Calcolítico- HapY-I2a2a-Mit-H5
*I2467-ES0/4 (2.315 AC)-Dolmen del Sotillo-HapY-I2a2a-M223/P223-Haplogrupo Mitochondrial-X2b.

*LBR005 (5.174 BC)-Les Bréguières, France-HapY-I2a1b-I-P217-Mit Hap-K1a2/b
 *LBR002 (4.970 BC)-Les Bréguières HapY-I2a1b/1b2- I-Y6099 -Mit Hap-U5b2/b3
 *LBR001 (4.804 BC)-Les Bréguières HapY-I2a1b/1a2a/1b2-I-Y15408-Mit-H1
 *Midhowe1 (3.500 BC)- Orkney Islands HapY-I2a1b- Mit Hap-H5@16311-
 *Lairo1 (3.230 BC) Lairo, Orkney Islands -HapY-I2a1b-Mit Hap-U5b2
 *CH448 (3.583 BC)-Cohaw Court Tomb-HapY-I2a1b/1a1-Mit-H1
 *ARD2 (3.495 BC)-Ardcrony-HapY-I2a1b/1a1-Mit-J2b1/a
 *Troc5 (5.188 AC)- Cueva del Trocs-HapY- I2a1b/1-M423-Hap Mit-N1a1/a1
 *Lc45 (3.760 AC)- Lugar do Canto- HapY- I2a1b/1-CTS5375>L161.1-
 *Cm364 (3.422 AC)- Cueva da Moura-HapY-I2a1b/1a-L161.1>S2639>L1498>A10029>BY37357/Y31653-
 *El Portalón-002- (3.089 AC)- El Portalón Atapuerca-HapY-I2a1b/1-M423- Hap Mit- K1a2/b
 *I6608/Yese5 (1.894 AC)-Camino de las Yeseras- HapY-I2a1b/1-M423>Y3104/CTS848-Hap Mit-J1c1
 *Lu339- Cueva del Ángel- Calcolítico-HapY- I2a1b/1-L161.1-MitI-H3

@ Ychr-H2/H2a1

*XN180 (5.119 BC)-Stuttgart-Mühlhausen I, Germany-HapY-H2a1- H-Z18988-Mit Hap-N1a1/a1a
 *XN173 (5.112 BC)-Stuttgart-Mühlhausen I-HapY-H2-Mit-U5a2/d
 *XN170 (5.096 BC)-Stuttgart-Mühlhausen I-HapY-H2- H-SK1189 Mit Hap-H
 *XN167 (5.194 BC)-Stuttgart-Mühlhausen, Germany-HapY-H2a1-Mit-H
 *XN164 (5.181 BC)-Stuttgart-Mühlhausen I -HapY-H2a1-H-Z19016-Mit Hap-J1c5
 *XN171 (5.179 BC)-Stuttgart-Mühlhausen I-HapY-H2a1~ H-Z19016 Mit Hap-H1
 *XN165 (5.177 BC)-Stuttgart-Mühlhausen I-HapY-H2a1~H-Z18858-Mit-N1a1a1
 *XN168 (5.174 BC)-Stuttgart-Mühlhausen I-HapY-H2a1- H-Z18952-Mit Hap-N1a1/a1a/3
 *XN225 (5.173 BC)-Stuttgart-Mühlhausen I-HapY- H2 H-Z18849-Mit Hap-H
 *SCH001 (5.170 BC)-Schwetzingen, Germany-Mit Hap-H2a2/a1
 *GRG022 (4.652 BC)-Gurgy "les Noisats", France-HapY-H2-Mit-K1a1/b1
 *FLR004 (4.582 BC)-Fleury sur Orne, Normandie-HapY-H2-Mit-K1b1
 *GRG041 (4.150 BC)-Gurgy "les Noisats"-HapY-H2a1-H-Z18920 -Mit Hap-K1a2
 *FLR001 (4.310 BC)-Fleury sur Orne, France-HapY-H2a1-H-Z18920-Mit Hap-U5b2/b3a
 *FLR002 (4.005 BC)-Fleury sur Orne HapY-H2a1-H-Z18902-Mit Hap-J2b1/a
 *BG72 (3.507 BC)-Baunogenasraid, Ireland-HapY-H2a-Mit-K1a4/a1

@ Ychr-G2a2a/G2a2b

*FLR010 (4.395 BC)-Fleury sur Orne, France-HapY-G2a2a-Mit-T2c1d@152
 *FLR007 (4.390 BC)-Fleury sur Orne-HapY-G2a2a/1a-Mit-U5b1/c
 *FLR005 (4.347 BC)-Fleury sur Orne-HapY-G2a2a/1-Mit-J1c1/b1
 *MX219 (3.273 BC)-Oberpipp, Switzerland-HapY-G2a2a-PF3147-Hap Mit-K
 *MX183 (3.190 BC)-Oberpipp, Switzerland-HapY-G2a2a/1a2a-FGC7739/Z6488-Hap Mit-K1a@195
 *MX182 (3.184 BC)-Oberpipp-HapY-G2a2a-PF3239-Hap Mit-K1a
 *MX150 (3.173 BC)-Oberpipp-HapY-G2a2a/1a2-L91 *-Hap Mit-H4a1/a
 *Aesch4 (3.010 BC)-Aesch, Switzerland-HapY-G2a-PF3239-Hap Mit-H3
 *RA61 (2.885 BC)-Muttentz, Switzerland-HapY-G2a2a-PF3239-Hap Mit-K1a4/a1
 *HBS007 (5.086 BC)- Halberstadt, Germany -HapY-G2a2a/1-Mit-H2a2
 *HBS008 (5.086 BC)- Halberstadt, Germany-HapY-G2a2a-Mit-K1a
 *Mur (5.135 AC)-Cueva de los Murciélagos, Córdoba, Iberia-HapY-G2a2a/1a-L1259-Hap Mit-J1c1/b1
 *Fuc003 (5.033 AC)-Fuente Celada-Iberia-HapY-G2a2a/1-Haplogrupo Mitocondrial-X2b+226
 *I7601 (3.590 AC)-Les Llometes-HapY-G2a2a/1- Haplogrupo Mitocondrial-X2b+226
 *I7598 (3.500 AC)-Les Llometes-HapY-G2a2a/1- Haplogrupo Mitocondrial-U5b3
 *I1842 (3.107 AC)-Cueva de las Yurdinas, Álava-HapY-G2a2a/1-Haplogrupo Mitocondrial-H1e1/a
 *I8569 (2.748 AC)-Cova dels Diablets-HapY-G2a2a/1-Haplogrupo Mitocondrial-H1ah
 *I6604 (2.016 AC)- Camino de las Yeseras-HapY-G2a2a/1-PF3155/3148-Hap Mitocondrial-U5b1/c
 *GRG027 (4.726 BC)-Gurgy "les Noisats", France-HapY-G2a2b-G-Z4467-Mit Hap-H1
 GRG052 (4.717 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1a-G-PF3346-Mit Hap-J1c1/b
 *GRG057 (4.665 BC)-Gurgy "les Noisats"-G2a2b/2a1-Mit-H1

*GRG021 (4.652 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1-G-PF3337-Mit Hap-H3@152
 *GRG023 (4.652 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1a/1c1a/1a2c/2-G-FT57729-Mit Hap-J2b1/a
 *GRG003 (4.453 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1a/1b1a/1a1a/1-GY10621-Mit Hap-K1a@195
 *GRG008 (4.453 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1-Mit-U5b1@16189+@16192
 *GRG016 (4.453 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1-Mit-N1a1/a1a
 *GRG035 (4.150 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a-Mit Hap-H1@152
 *GRG043 (4.150 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1-G-Y287-Mit Hap-H1@152
 *GRG047 (4.150 BC)-Gurgy "les Noisats"-HapY-G2a2b/2a1-G-PF3337-Mit Hap-U8b1/b
 *SX11 (4.410 BC)-Niederreid, Switzerland-HapY-G2a2b-PF3239-Hap Mit-J1c1/b
 *HBS002 (5.086 BC)- Halbertadt, Germany- HapY-G2a2b G-CTS10449 –Mit-H2a2/a1
 *HBS004 (5.086 BC)- Halbertadt- HapY-G2a2b/2a1a/1a1b/1a2b/1b- G-FT48389 –Mit-K1a4/a1e
 *HBS006 (5.086 BC)- Halberstadt- HapY-G2a2b/2a1a/1c1a- G-CTS11388-Mit-T2b
 *HBS009 (5.086 BC)- Halberstadt-HapY-G2a2b/2a1-Mit-H27@16093
 *Tor5 (5.030 AC)-Cueva del Toro, Iberia-HapY-G2a2b/2a3a-GM201-Haplogrupo Mit-J2b1/a
 *I8199 (2.700 AC)-Sima del Ángel, Iberia-Hap Y-G2a2b/2a1a/1c1a-Hap Mit-U5b1+16189+16192
 *I8365 (2.700 AC)-Sima del Ángel-HapY-G2a2b/2a1a/1c1a-Haplogrupo Mitocondrial-H
 *I1302-Mir24 (2.623 AC)-El Mirador-Iberia-HapY-G2a2b/2b-Haplogrupo Mitocondrial- J2b1/a3
 *I10280 (2.950 AC)-Cueva de la Guineu-Iberia-HapY-G2a2b/2b1a/1a-Haplogrupo Mitocondrial-J1c
 *I1314 (2.755 AC)-El Mirador-Iberia-HapY-G2a2b/2b1a/1a-Haplogrupo Mitocondrial-J2a1/a1