CARBON-14 CHRONOLOGY OF ANATOLIA IN EARLY BRONZE AGE

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ABSTRACT

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This study is a conclusion of radiocarbon datings which are depend on evaluations of archaeologists or scholars who publishes these datings. So it is very attached to observations of those scholars especially for determining sub-phases of samples which are dated. According to these datings, the radiocarbon story of Anatolian Early Bronze Age starts with a dating from Troia from 3760 cal. BC and ends with a dating from Çadırhöyük in 1630 cal. BC. Of course these dates are the lower and higher borders of the 68% probability band. As a result of assessments of all datings it can be said that the beginning of Early Broze Age in Anatolia is started equally more or less in every region at the same time interval that corresponds 3700/3400 BC and continued 800 years approximately. Although error deviation bands overlap onto each other, it is possible to say that the EB2 period of Anatolia ruled between 2800-2400 BC roughly. In this work it can be observed that the ending of the Early Bronze Age in Anatolia generally not ocured simultaneously. Sos Höyük for example in the East Anatolia for example, drawing a very special profile with an ending date 2300 BC for the Early Bronze Age. Some other sites giving results as late as nearly in 18th. and 17th. century BC. For the timing of the end of Early Bronze Age in Anatolia, it can be said that, inequality among the sites are more likely other than regions.

Keywords: Early Bronze, Anatolia, Carbon-14, C14, Choronology

ÖZ

ANADOLU İLK TUNÇ ÇAĞI KARBON-14 KRONOLOJİSİ

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Burada sunulan çalışma, İlk Tunç Çağı yerleşmelerinde kazı yapan arkeologların topladıkları karbon 14 içeriği olan örneklerin, çeşitli labarotuvarlarda yapılan ölçümleri sonucu elde edilen tarihlemelerin karşılaştırılması ve topluca değerlendirilmesi sonucunda elde edilen sonuçları içeriyor. Bu sonuçlara göre elde edilen bulguların en önemlisi İlk Tunç Çağının tüm Anadolu yarımadası üzerinde yaklaşık olarak eş zamanlı olarak başladığı. İkinci önemli sonuç ise az sayıda arkeoloğun önerisinde olduğu gibi bu başlangıcın M.Ö. 3700/3400 yılları arasında bir yerlerde başlamış olabileceği. Bu başlangıç tarihi, genel kabul gören anadolu İlk Tunç Çağı başlangıç tarihi olan M.Ö. 3100/3000 tarihlerinden yaklaşık 500 yıl geride. Bir diğer sonuç ise doğal olarak erkene çekilen bu başlangıç tarihi ile birlikte ilk tunç çağı 1 evresinin yaklaşık olarak 800 yıl sürmüş olabileceği. İlk Tunç Çağı 2 evresi için söylenebilecek şey M.Ö. 2800-2400 yılları arasınada bu çağın yaşanmış olabileceği yönünde. Bu çalışma İlk Tunç Çağının başlangıç tarihi için değişik yaklaşımlar önerdiği gibi bitiş tarihi için de değişik yaklaşımlar öneriyor. Bu yaklaşım, İlk Tunç Çağı 3 evresinin, M.Ö. 2000 yılında bıçakla kesilmiş gibi sonlanmamış olabileceği yönünde. İlk Tunç Çağı'nın Anadolu'daki en erken bitiş tarihini M.Ö. 2300 ile Sos höyük veriyor. Yanısıra, İç Anadolu bölgesinde yer alan Çadır Höyük M.Ö. 1700 içlerine varabilecek sonuçlar üretiyor. Bu yüzden İlk Tunç Çağı başlangıç evresinin aksine, bitiş evresinin eş zamanlı olmayabileceği görülüyor. Burada bölgeler arası farklılıklardan çok yerleşimler arsındaki farklılıklardan söz etmek mümkün. Bu çalışma için söylenmesi gereken diğer bir şey de sözkonusu

sonuçların elde edilmesinde, kazı başkanlarının veya bu tarihlemeleri yayımlayan arkeologların söz konusu örneklerin elde edildiği katmanlar üzerindeki belirlemelerin temel dayanak noktalarından bir tanesi olduğu.

Anahtar Kelimeler: İlk Tunç, Anadolu, Karbon-14, C14, Kronoloji

To My Family

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ABBREVIATION LIST

AE: Aegean Region,

BS: Black Sea Region,

CA: Central Anatolia,

EA: Eastern Anatolia,

MA: Marmara Region,

MED: Mediterranean Region,

SE: Southeastern Turkey,

QU: Unknown Material Qualifications,

QA: A Quality Materials,

QB: B Quality Materials,

EBA: Early Bronze Age

EB1: Early Bronze Age 1

EB2: Early Bronze Age 2

EB3: Early Bronze Age 3

CHAPTER 1

INTRODUCTION

The aim of this study is to present the most accurate and precise chronological frame work of Anatolian Early Bronze Age. No doubt, it is important that to provide a much more precise chronology compared to the relative chronology which depends on pottery sequence mostly (Manning 1994). Beside the pottery sequences, datings might be derived for the EBA of Anatolia through various linkages like Mesopotamian and Egyptian chronologies (Manning 1994, 2010). But this is by definition a problematic area. The Anatolian peninsula is quite big and cultural sequences both overlap and diverge. The cultural and geographic distances and heterogeneity of Anatolia lead to some problems for area-wide schemes. The absence of an agreed, firm absolute chronology for the EBA period of Anatolia has been a major problem all the time.

In the scope of the widely varied relative archaeological chronologies, many datings have been proposed for Anatolia in the EBA. There has been a wide variation in those chronologies. For example the dates proposed for the beginning of Troia I vary by well over a thousand years. For this reason alone a radiocarbon chronology is essential and the necessity for a firm chronology is self evident. It is necessary to tie down the relevant dates. By doing so the priority of chronology, can be transferred to the radiocarbon data representing independent results. Although the conclusions are approximate and by no means perfect, the purpose is to offer the best choronology possible on the current evidence (Manning 1994).

The following is therefore aimed Anatolian archaeologists and pre-historians who wish to use a diachronic framework in their studies. Thus the present study attempts to cover and employ the maximum input from radiocarbon evidence of the Anatolian Early Bronze Age. This study also tries to offer a usable and dependable time frame for the Anatolian Early Bronze Age instead of a collection of ambiguous relative archaeological entities.

This study is constructed in a shape to give different levels of knowledge about C14 datings of Anatolia in Early Bronze Age. The whole study is divided into two parts. In part I related measurements are distributed in sites and regions. The subphases of EBA of Anatolia that depend on the related C14 measurements can be derived from this part. The qualifications of dated samples are analysed in this section also. All the analyses are shown in charts with numbers and percentages and in graphics to easify the perception. For example if one wants to learn which sites have been dated should look at Site Analysis section. In this section all of Early Bronze Age sites which are the subject of C14 measurements are stated with their sub-phase partition. Or one interested in material qualification of the samples, in the chapter of material quality all the analyses of datings depend on in the base of material qualification. Wiggle analysis likewise.

Part II is prepared as a catalog to build up a base for the all analyses of part I. For all the measurements a catalog number is given and if it is wanted, relevant measurement can be seen by following this number with essential information including the reference.

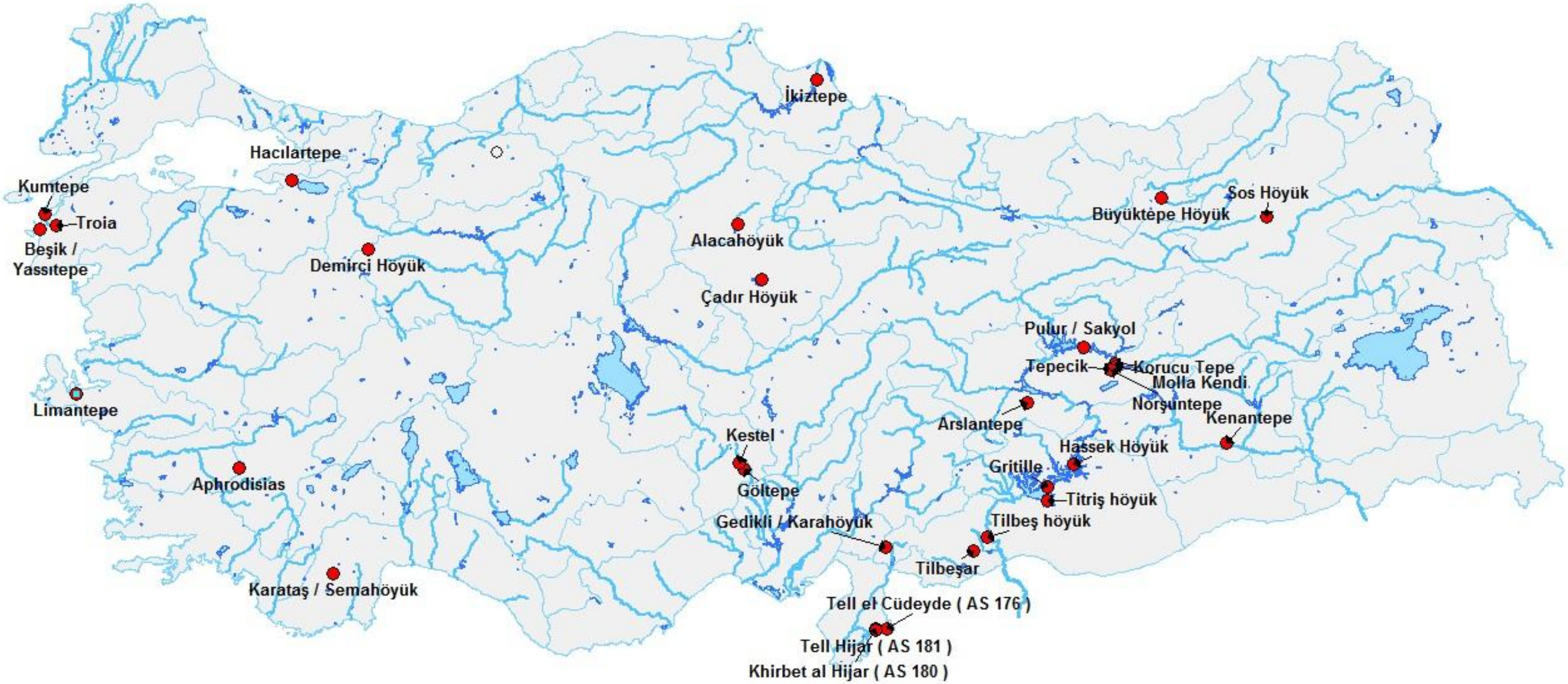


Figure 1. The sites with radiocarbon datings

CHAPTER 2

THE EARLY BRONZE AGE IN ANATOLIA: A GENERAL CHARACTERIZATION

The Late Calcholithic and the EB1 periods, taken together, cover a quite long period of 10-13 centuries Although there are several variations on the timespan and nomenclature, (4000/3800-2800/2700 BC) (Yakar 1985:1-5; Marro 2007: 2-10). There is general agreement, however, that the period is a turning point in cultural developments, foreshadowing achievements and connections in the Early Bronze Age. For this reason it is best to treat the two periods together (Sagona and Zimansky 2009: 145-162).

The Erly Bronze Age is divided into 3 phases (EBA I, II and III). As a subdivision based on stratigraphic observations and on the changes in the pottery style. This division is accepted for the whole Anatolian Early Bronze Age.

At the beginning of this period most regions of Anatolia were being settled by groups of different ancestry from that of the Early Calcholithic Anatolians. Approximately at the first half of the fourth millenium BC, previously unsettled regions of northern Anatolia were begun to settle by farming communities whose origins could be traced to southeast Europe. Eastern Anatolia, on the other hand, was populated by sedentary and pastoralist groups who were exposed to cultural influences originating from Transcaucasia, Mesopotamia and Syria. In fact, important cultural and socio-economic transformations started take to place in settlements along the Euphrates and possibly the Tigris valleys in the second half of the fourth millenium BC The expansion of the Mesopotamian merchant colonies across the Antitaurus in the Late Uruk period must have started the rather slow process of urbanization, first in southestern Anatolia and later in the central and western regions (Sagona and Zimansky 2009: 160-180).

Thanks to recent excavations, it is quite clear that the changes in the regional cultures during the early fourth millennium BC, were related to the movements of the 'Kurgan' tribes in southeastern Europe and in Transcaucasia. One of the most significant developments in Anatolian cultural history is the gradual disappearance of the Early Chalcolithic cultures in the western and southern Anatolian plateaux and the appearance of new traditions in regional architecture and pottery making during the fourth millennium BC (Yakar 1985: 23-35).

These new traditions, including a developed metallurgy, indicate that 'Old European' farmers from the Balkans and eastern Danube were among the numerous other 'groups' crossing into Anatolia, either from the east or west. In fact, the Late Chalcolithic pottery assemblage in southern Thrace includes a large number of forms known in the Balkans in the fourth millennium BC. The earliest pottery forms known in the Troad. (i.e. Hanaytepe, Kumtepe la and Besiktepe) suggest the survival of Balkan and other southeast European traditions in the local pottery repertories. In the context of demographic changes and population shifts, it is important to note that the population density in Thrace increased substantially in the late fourth and early third millennium. The Late Chalcolithic cultures which displaced and/or succeeded the earlier cultures in western Anatolia and in the central plateau originated from the Danube, the Balkans and northern Thrace (Özdoğan 1982:37-48).

In southwestern Anatolia, Kuruçay Höyüğü provides important information about events which could be related to population movements from the north. It is clear that the Early Chalcolithic settlement of the 'Hacılar I Culture' was destroiaed by newcomers who introduced a new culture with architectural traditions and pottery assemblage previously unknown in Anatolia. In this new culture, 'Late Chalcolithic', metallurgy is quite advanced and seems to have been introduced by newcomers. In this context it is important to indicate that the Chalcolithic cultures of Southeast Europe had highly developed metallurgical traditions so far unparalleled in Anatolia or in the Aegean. (Duru 1983: 13-89). And southeast European reached in the parts of western, Central and Northern Anatolia as a result of pressures exerted by 'Kurgan' invaders.

The population movements which affected the demographic structures and cultural development of many regions in the Central Plateau, Northern and Western Anatolia did not have much impact on the fourth millennium settlements in eastern Anatolia. This region was in fact exposed to human interferences in the form of invasions and immigrations from Transcaucasia, Mesopotamia and northern Syria (Yakar 1985: 23-35).

Among the earliest, and archaeologically recorded, non-Anatolian human interferences, the arrival of Mesopotamian colonists in the protoliterate C period was an important turning point in the cultural history of the Euphrates basin settlements. However, with the expansion of Transcaucasian cultural zone into eastern Anatolia at the end of the Late Chalcolithic period a new era of population movements began, with pastoralists and farmers from the east, who left their material culture remains, especially in the Keban-Malatya region. While the reasons for this era of population shifts are not entirely clear, it may have been caused by movements of pastoralists (Yakar 1981: 94-112).

At Norşuntepe in the Keban, the Mesopotamian merchant colony shared the same fate as other similar colonies along the Euphrates which were abandoned during the protoliterate D period (i.e. Malatya, Arslantepe). According to the pottery assemblage of the EB I one can postulate that the early third millennium settlers were mainly of Anatolian and Syrian stock with some elements of Transcaucasian farmers and pastoralists. Shortly afterwards, during the first half of the third millennium BC, a new wave of immigrants from the northeast arrived. These sedentary groups introduced a new architectural tradition of wooden houses previously unknown in the Keban, and a ore developed metal industry (Hauptmann 1982: 41-94).

It should be emphasized that so far the earliest signs of nomadic groups entering Anatolia in the late fourth millennium BC come from Eastern Turkey. At Korucutepe in the Keban the prehistoric mound probably served as a barrow for nomadic chieftains at the end of the Late Chalcolithic period During the time that the Chalcolithic mound was used as a burial place (3200-3000 BC), this site was apparently not inhabited. One of the two mudbrick tombs had a wooden roof recalling the roofed house-like tombs of the 'Kurgan' culture. Furthermore, the grey handmade pottery found in one of the tombs is reminiscent of the ceramics of the Grey- Ware culture of northern Iran (van Loon 1978).

The population movements into Anatolia were in the form of gradual infiltrations of areas sparsely settled and, at times, mass imigrations by large tribes causing possible destruction to existing settlements. These movements and their nature are usually difficult to identify or describe without historical records, but the interpretation of the archaeological evidence suggests that they were continuous and, therefore, they should not be limited to one particular period of human activity. The hybrid character of the local and regional cultures of the fourth and third millennia BC should be explained as the result of amalgamation of southeast European, Transcaucasian and local Anatolian traits with some influence from nomadic cultures as well (Yakar 1985: 23-35).

2.1. THE DIVISION OF EBA

Around 3000 BC in Anatolia, differing region to region, a little before – two/three hundred years in the northern Aegean coast and the southeast, and more closer to 3000 BC in the east, gentle transition of getting into EBA eventuated (Joukowsky 1986). This first phase of EBA stands for 3200/3000-2700 BC Approximately contemporary with the Old Kingdom in Egypt, and with the Old Sumerian period in Mesopotamia, (Manning 1994: 32-38) the second phase of the Anatolian EBA took place. 2700-2400 BC marked this period conveniently. Third and the last phase of Anatolian EBA is highlighted with new incomers who wanted to share the prosperity of Anatolia flourished in previous phase. With these new components, indigenous Anatolians comprised a different cultural stage consist of city states. This proto-historic period of Anatolia continued during 2400-2000/1900 BC until the beginning of Middle Bronze Age stressed with beginnings of writing and history. The first evidence of literacy are the tablets from Kültepe written in Assyrian or the first Anatolian hieroglyphs from seals at Beycesultan, Konya-Karahöyük (Yakar 1985: 23-60).

This traditional tripartite division of the EBA does not really reflect the settlement pattern or the socio-economic and cultural-technological development during the third millenia BC Rather it is an artificial division. But it is still necessary to make a division in EBA of Anatolia due to a longer time-span and different socio-economic and cultural formations which are changing in time. It is very hard to apply a sequence which may occur in a region to all Anatolia. Furthermore sometimes it is a necessity to make secondary sub-divisions to adapt the evidence into convenient EBA tripartite division as in EBA Ia or EBA IIIb (Yakar 1985: 2-10).

2.2. TRADE AND INDUSTRY IN EBA

2.2.1. Industrial Activity and Trade

In most communities, activities of the members usually went beyond the production of basic subsistence needs in a self-sufficient manner. Simple trade between pastoralists or hunters and sedentary groups existed since neolithic times, but in the fourth and third millennia BC the emergence of mercantile settlements in the lower Euphrates basin and along the Aegean coast could be construed as proof for the existence of organized trade in surplus food stuffs, smelted metal, textiles, dyes, aniroal skins, wool, goats hair, vegetable fibres, pottery, wood and finished products in metal, wool and skin, rugs and jewellery (Sagona and Zimansky 2009: 172-177).

Without textual evidence, however, it is impossible to elaborate on the trade contacts between regions, nor on the sort of merchandise which exchanged hands between different settlements. As far as southeastern Anatolia is concerned however, most archaeologists agree that the reason Mesopotamian cities formed merchant colonies in northern Syria, northern Mesopotarmia, northwestern Iran and in the Euphrates basin in Anatolia, was to gain access to new sources of wood and metal ore (copper, silver, lead and gold). In fact, in the later third millennium BC historical tradition has it that political powers in Mesopotamia and Syria never hid their desire to control the mineral rich regions of Anatolia and the wooded areas of northwestern Syria, including the Amanus region. The Euphrates, and to a certain extent the Tigris, must have provided ideal routes to ship south the Syrio-Anatolian timber, probably by tying them together as raf ts (these could have been loaded with other merchandise), floating with the southward currents of these two main waterways. (Hauptman and Palmieri 2000, Efe 2002)

It is quite obvious that this sort of mercantile undertaking must have required a highly sophisticated organization not only in individual towns, but alsa a centralized authority(on a regional basis?) that co-ordinated the various aspects of organized trade such as transportation, ore mining, smelting, tree-cutting and some sort of 'recording' system (for local inventories). At Troia I, and other settlements with an outlet to the Aegan Sea (Klazomenai, Thermi, Poliochni, Emporio, Heraion), evidence for maritime trade in the Early Bronze Age is well recorded. But again one can only postuIate about the type of merchandise which exchanged hands at various sea ports. But it is logical to assume that such ports did not only export their own industrial commodities or surplus goods, but they probably served as trade agents for other settlements, both marketing their products and supplying them with imported goods. As far as foodstuff is concerned, one may postuIate that the region of Troad, for instance, could have been a supplier of dried fish, dried or/and smoked meat, dried fruits, salt, livestock, grain (wheat and barley), wine and oil to the islands as well as to other coastal villages. lndustrial goods could have included textiles, metal ores or smelted metals, tools and weapons, jewellery and other products of leather and wood. Similar products must have alsa exchanged hands between inland regions of Anatolia as early as the early third millennium BC But in the latter third millennium BC commoditieswere most likely traded within the framework of organized commerce controlled by urban centres and city states. If the legendary accounts of Sargon and Naraın-Sin of Akkad coming to the aid of the Akkadian merchants in central Anatolia are taken to reflect a historically probable situation, then one may go even further by suggesting that trade in the EB III period in Anatolia may have alsa involved foreign traders representing foreign powers. Among the local industries which may have aimed at satisfying not only the local demands but alsa exporting directly or through intermediaries must have been textiles and metalworks (Yakar 1985: 383-404).

Every excavated site in Anatolia produces spindle-whorls, loom- weights and, occasionally, special loom combs which clearly indicate activities related to weaving, knitting, production of yarn, yarn twisting and winding. Commenting on the large flocks of sheep and goats maintained by the people of Troia II, as attested by the animal bones found in the Citadel compound, it is pointed out that this could indicate that wool prodution had increased in the second half of the third millennium. (Blegen 1963)

Recent excavations at İkiztepe in northern Anatolia produced vast quantities of loom-weights, spindle-whorls and loom combs which indicate intensive textile production in the Early Bronze Age III. It is, therefore, possible to suggest that the Black Sea region, together with the Troad and Cilicia, were among the principal production centres of Anatolia in the third millennium BC (Alkım 1983: 29-42)

2.2.2. Metallurgy

Anatolia is well supplied in metals and ores, so it is not a surprise that it played a primary role in the development of pyrometallurgy. Mountainous terrain with metalliferous zones including copper, iron, lead, silver and gold are situated especially in the eastern and northern regions. Combined with human skills, this richness in ores also enabled the ancient Anatolian smiths, known for their technical sophistication and artistry, to play a leading role in metallurgy. One point should not escape us, namely the consumption of fuel that is required for mining, which must have impacted heavily on the surrounding forests (Sagona and Zimansky 2009: 200-210).

Early Bronze Age Kestel mine and the nearby mining village at Göltepe holding a spacial place in history of Anatolian pyrometallurgy since the discovery was announced in the late 1980s (Yener 2008). Taking the later Middle Bronze Age texts of the Assyrian Trading colony period as a model, most assumed that tin was imported into Anatolia, even in the prehistoric period. The primary concern is the relatively small amount of tin recovered from the Kestel Mine today, and the conspicuous absence of tin slag deposits at the complex. Another is the apparent paradox of prehistoric miners investing a large amount effort to extract tin from low-grade, iron-rich tin are to supply a fledging tin-bronze industry in Anatolia. Despite these qualms, the archaeological evidence and accompanying scientific analyses provide persuasive argument that tin ore was mined and processed on a grand scale throughout the Early Bronze Age. Radiocarbon readings indicate that Kestel was worked over various periods among 3240-2200 BC (Sagona and Zimansky 2009: 200-210).

Despite the abundance of ore-bearing sites, not all were utilized in antiquity. Over 30 prehistoric copper mining and smelting sites have been located in Anatolia (Wagner and Öztunalı 2000). Although Anatolia has deposits of native copper, the bulk of copper used in antiquity was released by smelting more common ores that contain other impurities. The most conspicuous ores by virtue of their color are malachite (green) and azurite (blue). Gold was obtained from mine (primary) and placer (secondary) deposits. Primary gold deposits occur in few areas. One is located in the Menderes Massif, in the İzmir province, while the second group is associated with quartz veins, commonly known as reef gold, also situated in western Anatolia. In both cases, the gold can be found in association with other metals such as silver, copper, and lead. Gold from placer deposits is commonly known as alluvial or native gold. Present-day alluvial deposits in western Anatolia have too low a content to be exploited, but in antiquity the sands of the Pactolus River (Sart Çayı), near Sardis, famous for their gold dust were certainly worked. Native gold poses no problems to the goldsmith. A soft metal, it was shaped into jewellery from an early period without any modification. Silver is found either as silver glance (the sulfides) and horn silver (the chlorides), or in silverbearing ores of lead, copper, and other metals, including electrum, an alloy of gold and silver. Native silver is rare and quite pure, and even though it occurs in the vicinity of ore deposits, it is difficult to detect because it is located well below the surface. Anatolia has many silver mines, especially in the north-central region, where the Gümüşhane area has the richest deposits in the country. These were most likely exploited by the Hittites, whereas Kaz Dağı and Uludağ in the northwest supplied the Trojan silversmiths centuries earlier (Sagona and Zimansky 2009).

Anatolian communities made significant advances in metallurgy in the Chalcolithic period, which are arguably among the most innovative anywhere in the world (Chernykh 1992; Yener 2000) From the earliest appearance of copper metallurgy at Çayönü, metalworkers carried the technology forward through several stages beyond the initial hammering and annealing. Copper was now melted and cast, which meant that temperatures over 1083°C were reached. Once this barrier was overcome, smelting, the extraction of mineral ores from their matrix, was easily achieved, requiring only slightly higher temperatures. This process of experimentation soon led to another first, namely fledgling attempts to produce polymetallic substances by alloying copper with another metal.

The Chalcolithic was very much the age of copper. In the fourth millennium BC copper was smelted from oxide and sulphid ores, often containing arsenic as an impurity. Whether arsenical coppers, common in the Late Chalcolithic and earlier part of the Early Bronze Age, should be regarded as deliberate attempts to mix metals, is a point of debate. Contrarily, the metallurgical potential of tin bronzes, was very much understood by metalworkers of the Early Bronze Age II. During the Late Chalcolithic period, the focus of metallurgical activity shifted to the Upper Euphrates basin, around Malatya and Elazığ, where there is very good evidence for the smelting of polymetallic oxide and sulphide ores. Analysis of residue slag, crucibles, and lumps of ore found at Tulintepe, Tepecik, and Norşuntepe (Altınova Plain), and at Değirmentepe (near Malatya) suggest the widespread use of Arsenical copper during the first half of the fourth millenium BC.

Metallurgy was well advanced at Arslantepe by this stage with good evidence for the smelting of polymetallic oxide and sulphide ores (Hauptmann and Palmieri 2000). Nine swords, the earliest swords so far documented in the world, 12 spearheads and a quadruple spiral plaque were found in a cult context in one of the Arslantepe rooms assigned to Period V. The varying amounts of arsenic in these items, the highest being found in the swords (3.25-5.8%), are a strong argument for the deliberate addition of an arsenic mineral, possibly realgar. Some of the swords bear an inlaid silver design on the hilt. A triangular pattern was excised and filled with silver, suggesting knowledge of the relatively sophisticated technique of cupellation, whereby silver is extracted from lead sulphide ores. Silver jewellery found in tombs at Korucutepe is a further indication that the metal was in use in the late fourth millennium BC The Black Sea is another region with evidence for advanced metallurgy. At İkiztepe a range of arsenical copper objects bears typological and chemical similarities with those from Arslantepe. Here, too, the high arsenic content appears to indicate deliberate and controlled alloying. The central and western regions of Anatolia are metallurgically less advanced than in the eastern provinces during this period, and have a limited range of items.

A unifying thread within the diversity of Early Bronze Age cultural developments is the influence of innovative metal technologies, especially in the third and final phase of this period, when even pottery imitated metallic vessels through their highly burnished surfaces and angular shapes. Anatolian smiths made full use of their land's extensive mineral and polymetallic ore resources. Bronze was not the only metal that was worked. Ceremonial artefacts and jewellery of silver, gold, and electrum were already produced by the late fourth millennium BC By the Early Bronze Age III they dramatically increase in number and display a high level of craft skills suggestive of specialization and different metallurgical workshops. Metal inlay, casting in closed moulds (lost wax), hammering and repousse, soldering, granulation, and filigree were among the techniques used. Concentrations of wealth such as those found at Troia, Alaca Höyük, and Horoztepe are remarkable and also provide insights into social structures, representing as they do the worldly possessions of elite groups. Moreover, this demand for metals had economic implications, fuelling the growing commercial networks that traded both the mineral ores and the finished luxury items. (Sagona and Zimmansky 2009)

The treasures of Troia probably comprise 21 collections, spread across several periods. (Easton 2002). The most spectacular is "Priam's Treasure" (Treasure A) discovered in Troia II. Jewellery from Troia includes diadems, earrings, hair rings, bracelets, torques, pins, pendants, and a range of beads. In western Anatolia, similar diadems with repousse ornamentation have been found among the grave goods at Alaca Höyük, Kücükhöyük, and Demircihüyük-Sarıket (Antonova et al 1996). A band diadem with convex dotted decoration was also among the assemblage of the elite tomb at Arslantepe VIB, which belonged to a different (Trans-Caucasian) tradition. Basket-shaped earrings decorated with rows of granulations sometimes have pendants, and their weight has led some to suggest that they may have been attached to the hair. The hands of different craftsmen can be seen in the method of manufacture of these earrings. Much discussion has focused on quadrople spiral beads, represented by a large example in Treasure D, and at several other third milIennium sites across Anatolia and the Near East, including the Royal Tombs at Ur. These types of bead are also found in second millennium context. Their origin is disputed with both western Anatolia and northern Iran suggested as the source.

Among the pins, two with complex heads from Treasure O are quite extraordinary. One consists of a plate decorated with double-spiral filigree motifs and a row of six miniature vessels, which may date to late Troia II or even Troia III, and is a more elaborate version of a similar pin from Poliochni. The other comprises a flattened cylinder decorated with a central convex dot and filigree petals. Although numbering only two and seemingly insignificant, the amber beads from Treasure L assume importance as evidence of some contact with the Baltic amber network that travelled along the river valleys such as the Danube, and also as the earliest evidence of amber use in Anatolia (Antonova et al 1996).

In Alaca Höyük metalwork in burial goods made from metal (gold, silver, copper alloy, and iron), bone, clay, and stone. Standards with stags, bulls, or open-worked geometric forms, are among the most striking objects. In terms of jewellery, we should note the ability of the craftsmen to combine gold and silver with precious stones (carnelian, jade, and rock crystal), a technique especially favored for pins, and at the same time the conspicuous absence of filigree and granulation, obvious both at Troia and later on in Caucasus. Like the material from Troia, there is quite a repertoire of beads. Diadems are in the form of a plain gold band, ornamented with punctate design. Unique to Alaca Höyük, however, is a diadem composed of four rows of open work from Tomb H. Worth noting, too, are the stylistic similarities between the pendant from Horoztepe and the two Alaca Höyük brooches in the form of conjoint circles with a punctate pattem on the one hand, and various circular plaques from Caucasus. An outlier of this stylistic group is the gold medallion from the Kinneret tomb, in northern Israel, which was found in association with rock crystal beads that would be quite at home in lands further north. The metalwork repertoire from tombs in the southeastern region was more standardized and consisted of a variety of pins, weapons, and tools (Sagona and Zimmansky 2009).

2.2.3. Pottery

Most fourth and early third millennia pottery could only be explained as the result of firing the vessels in low temperatures and in an uncontrolled atmosphere (a domestic oven and not a potter's kiln). It should be stressed that the pottery of north Syrian/Mesopotamian tradition found in the Uruk IV and later period settlements in the southeast and eastern Anatolia were professionally manufactured and therefore are not considered here among the representative pottery of Anatolia proper (Yakar 1985: 404-407). At least in the Late Chalcolithic period EB I period as well most potters were not specialist potters who probably worked within a household tradition. This is indicated by the lack of shape standardization (Eslick 1982: 5-7).   A specialist engaged in full-time pottery manufacture would have produced a more standardized assemblage both because of the repetition involved and because customers would have required a consistent product. The important point is that in such situations pottery is produced only a few times a year, so that the potters may never develop great expertise (Nicklin 1971).

During the EBA however, the intensification of interregional trade lead to the 'specialization' of the ceramic industry. Large jars were neded for the storage of food-surplus in storerooms and their transportation. Jars for burials, too, widely used in central and western Anatolia. could have been only produced by professional potters. The excavations at Lidar in the Urfa province and Norşuntepe in the Keban provide important evidence for the existence of major pottery production centres which could have supplied large areas with various local and 'foreign imitation' products. In technology, it seems that the eastern potters were superior to their counterparts in central and western Anatolia (Yakar 1985: 404-407). The potter's wheel was introduced to western Anatolian workshops from the east in the second half of the third millennium BC Central Anatolian potters, on the other hand, preferred to produce their ceramics in the traditional way, by hand, until the second millennium BC For certain patters in EB III Anatolia, as in the Early Chalcolithic period, pottery again became an artistic medium with the painted or incised decoration being an expressian of their artistic aspirations (central, western and eastern Anatolian painted and white-filled incised or plastic decorated wares). Such decorated vessels must have been traded not only for their functional value but their artistic creativity as well. Excavations and field surveys in Anatolia suggest that same of the important Early Bronze Age regional pottery production centres in Anatolia were situated in the Troad, Balıkesir, Afyon, Denizli, Elmalı, Ankara, Çorum, Kayseri, Cilicia, Malatya, Elazığ, Erzurum, Gaziantep, Amuq and Urfa regions. It can be assumed that same of these regions were reputed for their quality and originality of their products. Otherwise it is difficult to explain why, for instance western Anatolian forms such as the depas, the tankard and the wheelmade shallow bowls/plates have such a wide distribution all over Anatolia. Often such wide distribution patterns in ceramic forms are explained in terms of population movements. But not every movement of goods could be interpreted as resulting from migrations or invasions. North Syrian–Akkadian forms found at Troia II, for instance, are a clear indication of trade with regions south of the eastern Taurus range (Yakar 1979).

CHAPTER 3

THE C14 DATES FOR THE LATE 4TH AND 3RD MILLENIUM BC

3.1 SITE ANALYSIS

Table 1. Sites in This Study

Site	Number Of Samples	Site	Number Of Samples
Alaca Höyük	3	Kestel	5
Aphrodisias	10	Khirbet al-Hijar (AS 180)	2
Arslantepe	60	Korucu Tepe	12
Beşik-Yassıtepe	16	Kumtepe	6
Büyüktepe Höyük	2	Limantepe	1
Çadır Höyük	5	Molla Kendi	1
Demircihöyük	66	Norşuntepe	34
Gedikli Höyük	2	Pulur Sakyol	5
Göltepe	15	Sos Höyük	13
Gritille	1	Tell El Cudeyde (AS 176)	3
Hacılar Tepe	11	Tell Hijar (AS 181)	3
Hassek Höyük	5	Tepecik	2
İkiztepe I	5	Tilbeş Höyük	5
İkiztepe II	2	Tilbeşar	3
Karataş-Elmalı	7	Titriş Höyük	15
Kenantepe	1	Troia	65

This table shows the sites which are included in this work with their total number of dated samples.

In this work 386 C14 measurements from 32 sites has been examined which are avaliable in puplished sources (Table 1 shows the sites which are dated). All the sites and the number of avaliable Carbon-14 dates are listed in that table. As one can see easily from the Table 1, some sites are represented with a very few datings like Limantepe, Gedikli or Alacahöyük. Some other excavations provided large amount of C14 dates up to 66. Demircihöyük, Troia, Arslantepe among this group with the most datings. One dating from Gedikli is from a grave. The other samples are all from different stratigraphies of different mounds we know so far. Generally we have just a few dates from each settlement. The main reason for that lesser datings from sites is the lack of C-14 measurements from those excavations. One other reason is that; although there are few more datings which can fall in Early Bronze Age interval, they have been kept out of this study due to unknown stratigraphical levels. Also some other sites has been excluded from this work because of same reason. Nevertheless if these excluded dates are included, the sum of total measurments could only reach up to 386 datings that can hardly affect the results of this study.

3.2. SITE LIST - REGION WISE

The sites which have been dated here are distrubuted into seven regions of Turkey. Although Troia, Beşiktepe and Kumtepe are located in Marmara region according to the T.C. regional division system, in this study these sites are located in Aegean region due to their cultural and physical hinterland. Demircihöyük which is located in the border of Central Anatolia still considered in Aegean region. Same for Aphrodisias, in spite of its location is in the Mediterranean region officially. All other sites are located in their regions according to the T.C. regional division system.

With 169 samples and 44% percentage, Aegean holds the greatest amount of C14 datings in this work. Eastern Antolia comes second with 128 dates and %33 percentage. In the third place, the percentages of the dates drop suddenly under 10%. Southeast with (33 dates %9) and Central Anatolia with (28 dates %7). The other regions share in remaining 7%. (Black Sea 7 dates 2%, Marmara 11 dates 3% and Mediterranean 8 dates 2%). It is clear that most meaningful result can be derived from Aegean and Eastern Anatolia regions. This is not a bad situation as much because of the connection regions of Anatolia to the west and to the east are these regions and represented well in our frame-work. Although in Black Sea the dates come from only one settlement (İkiztepe) it is a key site and a good candidate for representing whole Black Sea Region. In the Mediterranean the situation is little bit different. The sites which are dated in this work are located in Amuq region that is a cultural and geographical independent zone located in very south-eastern part of

Table 2. List of Sites – Region Wise

Region	Site Name
AE	Aphrodisias, Beşik-Yassıtepe, Demircihöyük, Karataş-Elmalı (Semahöyük), Kumtepe, Limantepe, Troia
BS	İkiztepe I, İkiztepe II
CA	Alaca Höyük, Çadır Höyük, Göltepe, Kestel
EA	Arslantepe, Büyüktepe Höyük, Korucu Tepe, Norşuntepe, Pulur Sakyol, Sos Höyük, Tepecik
MA	Hacılar Tepe
MED	Khirbet al-Hijar (AS 180), Tell El Cudeyde (AS 176), Tell Hijar (AS 181)
SE	Gedikli Höyük, Gritille, Hassek Höyük, Kenantepe, Molla Kendi, Tilbeş Höyük, Tilbeşar, Titriş Höyük

This table shows the sites in their regions, which have C-14 dates for the Early Bronze Age

Mediterranean, famous with strong cultural connections with northern Syria. Although Kestel and Göltepe considered here in Central Anatolia their location just above Cilician gates puts them in a special position for their connection traits from eastern Mediterranean to Central Anatolia. At the and we can take Alacahöyük and Çadır Höyük as real commissaries of Central Anatolia.

3.3. SITE AND SUB-PHASE ANALYSIS

This analysis includes the distribution of C14 measurements in sub-phases of EBA in sites. As I have showed in chapter 3.1 and in table 1 the base of my analyses are depend on 386 Carbon-14 dates taken from 32 different Archaeological sites. This big amount of measurements can be sub-divided meaningfully, into the 3 phases of Early Bronze Age according to the published material. (For details see catalog part). The highest amount of C14 dates belong to phase EB1 (205 Datings) . From EB3 we have nearly half of this amount (130 Datings). Compared to these EB1 and EB3 datings, EB2 measurements are quite less (57 Datings). Two samples from Büyüktepe Höyük, four from Kestel and three from Troia cannot be put one of these groups because of their uncertainity in publishments (See Table 2 and Fig. 2). Nevertheless there is a good base with this samples for a further detailed studies.

3.3.1. EB 1

From an overall view, the most noticeable amount of dates comes from EB 1 Sub-phase. With 60 samples Demircihöyük holds the first place. With 44 dates Arslantepe comes second. 10 sites from all Anatolia have only EB 1 dates. Totaly 17 short lived (QA), 117 charcoal (QB) and 71 (QU) unknown samples have been dated. In parallel with the amount of Demircihöyük, Beşiktepe, Kumtepe, Semahöyük and Troia C14 serials; Aegean Region keeps the most of the (112) EB 1 datings. East Anatolia keeps the second highest amount of EB 1 dates (57) with the help of Arslantepe (44). South-East (14) and Marmara (11) regions are moderate. We have only EB 1 dates for Marmara region. Mediterranean (6), Central Anatolian (3) and Black Sea (2) regions have few dates in parallel with the archaeological evidence.

3.3.2. EB 2

The EB 2 period in Anatolia represented in radiocarbon terms not as rich as EB 1 and EB 2 periods. Total number of the dates for the EB 2 period is little more than one fourth of total dates. One reason for this can be that the EB 2 period is relatively short in Anatolia according the other two periods. Göltepe (Central Anatolia) with 15 date serials is the primary site for this period. Göltepe is said to be a mining village for tin extrcating (Yener 2000). If this proposal is true, than it is possible to say in EB 2, in that part of Anatolia the process of bronze making started intensive. With 20 dates totally East Anatolia holds an important place for the period. Korucu Tepe (9) , Sos höyük (7) and Norşuntepe (4) date serials are reliable for constructing a framework. Aegean dates for the period surprisingly less compared to the archaeological evidence. Troia (8), Demircihöyük (6). From South-East there are 7 dates and from Mediterranean 1. There is no date in Marmara and Black Sea for this period.

3.3.3. EB 3

After EB 1 we have the most dates (113) from this period. But still nearly half of EB 1. East Anatolia holds the first place with 47 dates totally. Thanks to Norşuntepe (26) and Arslantepe (16) serials, it is possible to make a strong offer for this region in the period. Also Sos Höyük (3) and Korucu Tepe (2) are supporting the evidence. On the other hand Aegean represented by Troia (30) and Aphrodisias (10) only. It is interesting for Aphrodisias that there is gap between Late Chalcolithic and EB 3 period in radiocarbon terms. In South–East dates decrease down to 12 samples. Çadırhöyük (3) and Alacahöyük (2) are important for Central Anatolia. Black Sea gives (5) dates and Mediterranean give (1).

Table 3. Site - Subphase Distribution List.

Site Name	Phase				Total Number
	EB 1	EB 2	EB 3	Unknown	
Alaca Höyük	1	---	2	---	3
Aphrodisias	---	---	10	---	10
Arslantepe	44	---	16	---	60
Beşik-Yassıtepe	16	---	---	---	16
Büyüktepe Höyük	---	---	---	2	2
Çadır Höyük	2	---	3	---	5
Demircihöyük	60	6	---	---	66
Gedikli Höyük	---	---	2	---	2
Göltepe	---	15	---	---	15
Gritille	---	1	---	---	1
Hacılar Tepe	11	---	---	---	11
Hassek Höyük	5	---	---	---	5
İkiztepe I	---	---	5	---	5
İkiztepe II	2	---	---	---	2
Karataş-Elmalı (Semahöyük)	7	---	---	---	7
Kenantepe	1	---	---	---	1
Kestel	---	---	1	4	5
Khirbet al-Hijar (AS 180)	---	1	1	---	2
Korucu Tepe	1	9	2	---	12
Kumtepe	6	---	---	---	6
Limantepe	1	---	---	---	1
Molla Kendi	---	---	1	---	1
Norşuntepe	4	4	26	---	34
Pulur Sakyol	5	---	---	---	5
Sos Höyük	3	7	3	---	13
Tell El Cudeyde (AS 176)	3	---	---	---	3
Tell Hijar (AS 181)	3	---	---	---	3
Tepecik	---	1	1	---	2
Tilbeş Höyük	3		2	---	5
Tilbeşar	1	2	---	---	3
Titriş Höyük	4	3	8	---	15
Troia	23	8	30	4	65
Total	**206**	**57**	**113**	**10**	**386**

This table shows the number of dated samples distributed into sub-phases of Early Bronze Age. This division has been made according to published material which are strongly depend on excavatorses judgements. 4 datings from Kestel, 4 datings from Troia and 2 datings from Büyüktepe Höyük are not indicated in their references which sub-phase they are belong to, although it is pointed out that they are situated EBA.

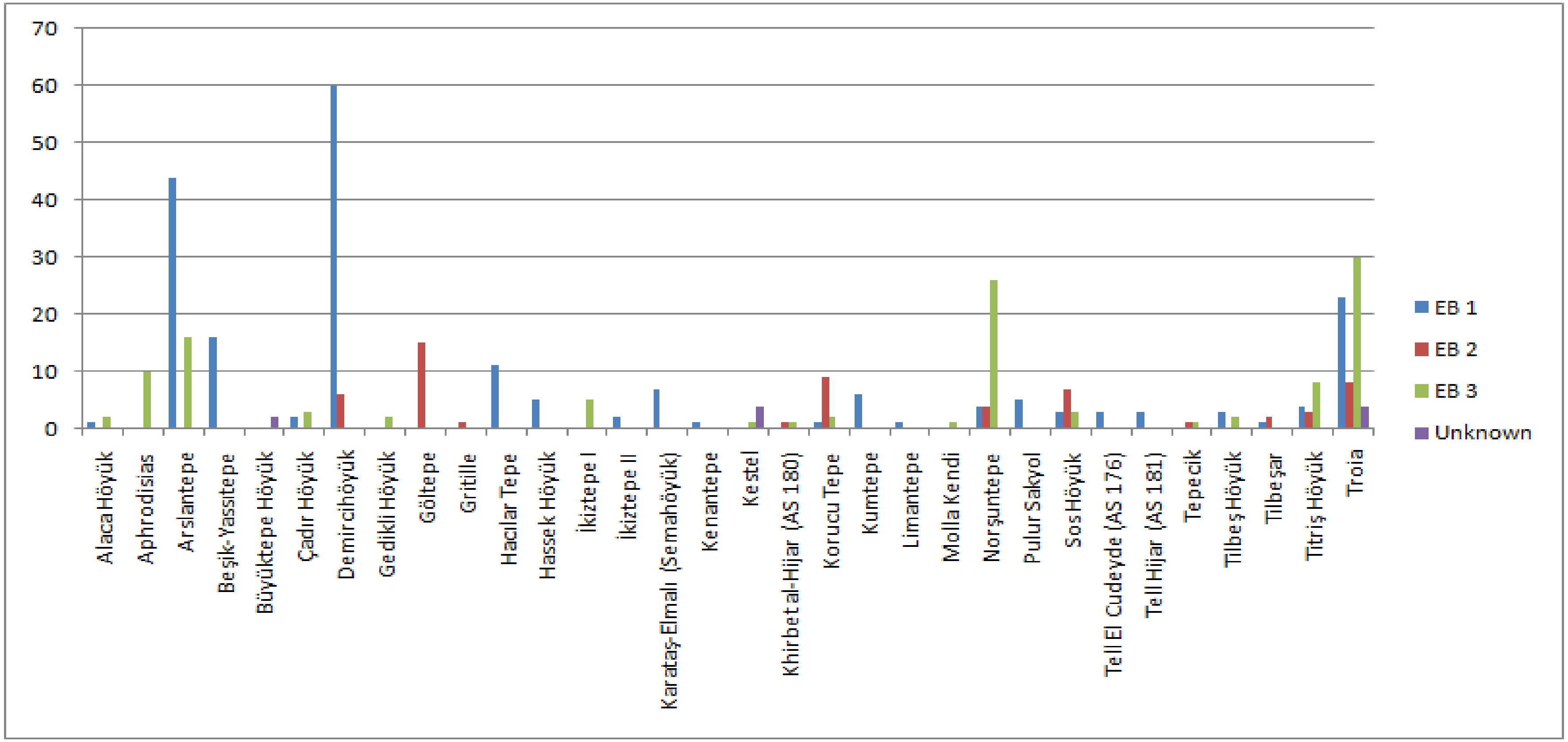


Figure 2. The Graphic of Subphase Site Analysis This figure visualises subphase distribution of C14 dates into sites. For example we have most dates in Demircihöyük in EB1, or most dates for the EB3 we should look at Troia.

CHAPTER 4

MATERIAL QUALIFICATION

4.1. THE PROPERTY OF THE DATINGS ON MATERIAL BASE

One of the most important factor of quality about datings depend on material of measured samples. Materials which are used for C14 dating are divided into two parts mainly. Short lived materials and long lived materials. Short lived materials like cereals or bones give much more dependable conclusions due to having shorter life which falls into narrow interval in calibration curve. Long lived materials being a beam or charcoal mainly here, may give lesser reliable results becasue of different reasions. We should mention here old tree affect, a beam coming from a context can generate different results then expected, due to second use of it.

It is common knowledge that short lived samples are most appreciated by archaeologists because they are supposed producing a precise point on the time scale. On the other hand, charcoal can provide quite divergent datings, depending of its origin. Particles collected from hearths and ovens may come from young firewood, where as charred wood pieces found in destruction layers may originate from older timber. Still, within these 'categories' important divergences may occur : a piece of oak timber, used by several generations as a central building post, may end up in a hearth and this way date back the age of the hearth with one century or more. While among the burnt building debris charcoal from a poplar shingle in a light saddle roof construction would give rather precise date of the conflagration. However, as recognition of the wood species or age at the moment of combustion is rarely practicable by means of charcoal particles, working with radiocarbon dating contains an element of puzzle.

4.1.1. Charcoal

Charcoal has acquired primary importance as a source of radioactive carbon for the purposes of dating. However, has observed a tendency on the part of the archaeologist to assume that any black, crumbly, amorphous substance found on or excavated from the earth is charcoal, and further, that being charcoal, it consists almost exclusively of elementary carbon. These assumptions, according to Cook, are not always justified. He points out that the sources of elementary or fixed carbon in any soil are two in number. One consists of carbonized or charred organic matter produced by fire of either human or natural origin. This is the component upon which archaeologists have focused attention.

The other consists of organic compounds manufactured initially by local vegetation or deposited as a result of those human activities that do not concern burning. Normal plant residues, together with all kinds of detritus caused by human occupation, undergo a long series of transformations. The general consequence is the formation and accumulation of a highly variable substance known as humus. The mature product of humification has a color, form, and consistency very similar to that of the charcoal derived from other sources and may very easily be mistaken for it. Humus is the final product of reactions that have been going on for a very long time. During that time the original substance may have been reworked repeatedly, with the consequent addition of new carbon compounds and the loss of old. The resulting humus therefore cannot automatically be assigned to a specific time in the past.

The debris from fires is a different category. During the high temperature combustion of wood, much of the organic matter undergoes rapid oxidation to carbon dioxide, often leaving the mineral behind as a light-colored ash. However, more or less incomplete combustion occurs in most outdoor fires. Black material (charcoal) remains and consists of some pure carbon but also much condensed organic matter.

Thus, according to Cook, the first task of the archaeologist is to take the sample from an excavation and determine by chemical means its probable origin and its composition in terms of elemental or fixed carbon. He should be able to state whether his sample has been derived from prolonged humification, or from fire, or from both.

When it has been determined that the sample is charcoal, it is submitted to the dating laboratory, where it is first treated for removal of contaminants. Rootlets, often microscopic in size, are a source of modern carbon in such samples and are mechanically and chemically eliminated. Carbonates and humic acids, introduced to the sample by groundwater, are decomposed by alternately leaching the sample with dilute hydrochloric acid and sodium hydroxide and washing it with distilled water. Next, the sample is converted into carbon dioxide, methane, acetylene, or benzene for measurement in the counting equipment (Michels 1973).

4.1.2. Wood

In a stem, the wood is arranged in concentric growth rings, each of which represents one year' s growth. The more central rings are the oldest and the peripheral rings are the youngest. Thus, the age of wood decreases from the center of the stem to the periphery. The vessels and tracheids in the older growth rings eventually cease even their water conducting activities. This more central, nonfunctioning, portion of the tree stem is called heartwood, while the more external part of the stem is known as sapwood.

It thus can happen that if various sections of a tree are radiocarbon dated, they could give off different dates each corresponding to the cessation of metabolic activity in that particular section. Furthermore, if many growth rings are included in the sample, the age obtained will not be that of any particular ring but will represent the average for the rings included.

The implications for the archaeologist are clear according to Kovar (1966). The dating of construction timbers involves an additional error factor that must be taken into consideration. This is especially true for timbers or beams that have been burned. The burning removes the outer rings, which disperse in the form of ash. Only the carbonized central part remains compact. Dating this central part or heartwood will cortsistently yield dates that are older than dates obtained by other means, and cannot possibly indicate the time when the tree was cut for use in construction.

4.1.3. Bone

Dry modern bone is composed approximately of 50% calcium phosphate (containing inorganic carbon), 10% calcium carbonate (also containing inorganic carbon), 25% collagen (an organic protein constituent), and 5-10% bone fat. There have been attempts to use the carbonate portion of bones for radiocarbon dating by generating carbon dioxide by means of hydrochloric acid. Efforts also have been made to extract inorganic carbon from calcium phosphate. Error, however, is a serious problem in both cases because of the incidence of groundwater contamination, as groundwater contains atmospheric carbon dioxide of modern carbon-14 age (Michels 1973).

This has led to the dating of bones from their collagen, since collagen does not suffer from exchange phenomena. There is no known natural mechanism by which collagen may be altered to yield a false age. A problem does arise, however, because the collagen content of bone decreases with age to such low concentrations that isolation of sufficient collagen for radiocarbon dating becomes difficult with the oldest bones. Unfortunately, collagen does not decrease uniformly with age. Bones of the same age have a different collagen content in different environmental conditions in which they were buried. This is due to such factors as groundwater erosion, collagenase activity in the bone, and invasion of saprophytes, which feed on the organic material.

In preparation for dating, bones must be checked microscopically for bone canals that contain foreign protein. After a perfect cleaning, the bone is treated in hydrochloric acid at room temperature. This dissolves the mineral matter but leaves behind about 95% of the collagen as insoluble material. The collagen then is filtered off and allowed to dry. After drying, it is converted to carbon dioxide.

4.1.4. Shell

Radiocarbon laboratories have reported many shell dates from the carbonate of the shell as the sample. Recently, there has been a growing lack of confidence in the reliability of the dates from river shells and land snail shells because of the varying and unknown amounts of dead carbonate from limestone that are incorporated by the living organisms.

This problem is not encountered with marine shells, but when marine shells are dead and buried, they may be subjected like bones to various groundwater environments. Investigators have attempted to circumvent possible errors arising from carbonate exchange by removing the outer layer of shells with hydrochloric acid and using only the central portion for dating. Similar to bones, shells also contain an organic protein constituent, conchiolin, which is present in 1-2% amounts in modern shells. Its solubility characteristics are similar to those of collagen. Thus, conchiolin can be relied on for dating to the same extent as collagen in bones. (Michels 1973).

4.1.5. Iron

lron, when reduced from its ores by man, contains carbon; if it did not, it would be too soft to be of any use in the fashioning of tools and weapons. The carbon in iron alloys derives from the fuel used in smelting. When the smelting fuel involved is charcoal or wood, a carbon-14 activity measurement of the carbon in an iron specimen can provide a date for its manufacture.

To date iron, one fol1ows the same procedures as with organic samples: (1) the sample is treated against possible contaminants; (2) the carbon is extracted in a form in which its carbon-14 activity can be measured. The carbon in an iron sample that has been buried in the ground is not subject to the contamination by rootlets, carbonates, and humic acid; it is in fact sealed in a sterile environment at the time of manufacture. lron, however, corrodes easily when sufficient moisture and oxygen are present; most ancient iron specimens have at least a layer of iron oxide. The corrosion layer is porous and may entrap small quantities of organic materials, especially at the surface. A further problem may result from the fact that a corroded surface absorbs more atmospheric carbon dioxide than does a clean iron surface. Specimens must therefore be treated to remove at least the surface corrosion layer.

Carbon can be extracted from iron either by dissolving the iron in an acid that does not attack carbon, or by burning the carbon from the iron at high temperatures. A carbon-14 date obtained from an iron specimen gives consistently accurate results for two reasons First, the fuel used to smelt the iron ore is derived from trees felled while they are still green, thus excluding the possibility of a time lag between the felling of the tree and the inclusion of its organic material in the iron alloy. Second, the probability of contamination of the carbon in the specimen is low (Michels 1973).

4.1.6. Other Materials

Nearly any material containing carbon is potentially suitable for radiocarbon dating. Organic materials with high carbon content are, of course, the most reliable ones. Some of these materials are: Peat, paper, parchment, cloth, animal tissue, leaves, pollen, nuts, carbonaceous soils, the organic temper in pottery sherds, wattle-and-daub concstruction material, and prehistoric soot from the ceiling of caves.

4.1.7. Collection and Storage of Samples

When it is determined that a sample may be used for radiocarbon dating, care must be exercised in obtaining the sample from its original environment. if possible, only metal or glass should come in contact with the sample. The tools and containers should be clean and free from all organic material, greases, lubricants, preservatives, etc. Samples should be removed with clean metal trowels or spatulas, and placed directly in new aluminum foil. After being wrapped in foil, the sample should be placed in a glass or metal container. If the sample has to be cut from a larger piece of material, again clean metal tools should be used. The cuttings should be caught directly on aluminum foil and wrapped tightly. If a piece of the sample drops on the ground, it should be discarded. Many dating laboratories have some routine decontamination or cleansing procedures. By making the laboratory aware of possible sources of contamination, one can avoid needless error in dating (Michels 1973).

4.1.8. Humic Contamination

Another physical problem, also one of the true contemporaneity of the sample, is that of so called humic contamination. This may occur from the adsorption of younger finely divided, slightly soluble organic matter by the sample, and is most likeIy to be suspected when a sample has been exposed to continual washing by ground waters. It has not been found to be a serious contaminant except in very old age ranges, that is, tens of thousands of years. Since some of the samples on these lists, however, were composed of finely divided charcoal, a good absorber, this possible intrusion was checked where sample sizes were adequate. Samples treated for removal of humic contaminant are labeled "pretreated with NaOH"

Materials which constituted by a beam or charcoal mainly here, may give lesser reliable results becasue of different reasions. We should mention here old tree affect, a beam coming from a context can generate different results then expected, due to second use of it. Here in this section, materials of samples divided in three parts. Bonesı seeds and cereals taken the represantatives of short Iived materials and stated as most quality samples and named as QA. Charchoals whether from a beam or charred fragments considered as long lived samplesandstated in secondary.

Table 4. Quality of Material - Region Wise

Material Quality	AE	BS	CA	EA	MA	MED	SE	Total Sample	Percentage of samples
QA	25	3	2	9	1	---	3	43	11,14%
QB	117	2	7	49	10	6	8	199	51,55%
QU	29	2	19	70	---	2	22	144	37,31%
Total	**171**	**7**	**28**	**128**	**11**	**8**	**33**	**386**	**100,00%**

This table shows material group of samples distributed in regions of Anatolia.The methodolgy of grouping of the materials detailed below.

4.2. MATERIAL QUALITY – REGION DISTRIBUTION

In this study, materials of samples divided in three parts. Bones, seeds, cereals etc. taken the represantatives of short lived materials and concerned as most qualified samples and named as QA (Means Quality A). Charchoals whether from a beam or charred fragments stated as a long lived samples and considered in secondary statement and has been showed as QB (Means Quality B). Sediments and pit residues are also considered in QB section. In most publishments the materials of samples are not indicated. These samples are stated in unknown section in analyses and named as QU (Means Quality Unknown). The materials of samples which are used in this study are charcoal particles mainly found in different concentrations. A lesser category is constituted by big charcoal pieces from poles and beams, and finally there are 43 samples from charred grains.

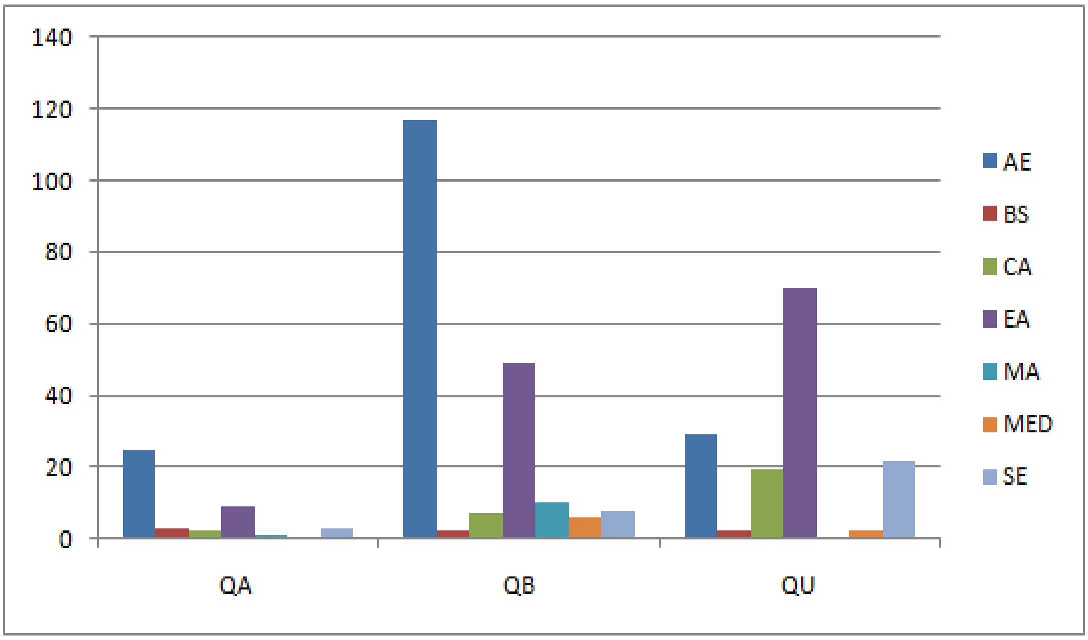


Figure 3. Quality Of Material – Region Wise This figure shows the distribution of sub-groups of samples into regions in material base. For example we can see here most quality unknown (QU) samples are from Eastern Anatolia (EA). Or Quality A (QA) samples are almost equal in Aegean (AE) and South East (SE) regions.

4.3. QUALITY OF MATERIAL MAX PERCENTAGE ANALYSIS – REGION WISE

4.3.1. Quality A Samples

As already mentioned above short lived materials are best for dating due to their contemporary conclusions in the time line. Totaly 43 pieces of Quality A (QA) samples are identified from publications. With twelve samples (28%) from Troia, eleven samples (26%) from Demircihöyük and two samples (5%) from Aphrodisias; Aegean Region keeps the great majority of QA samples which is strengthening the position of Agean region while evaluating the results. After Aegean, East Anatolia comes second with nine samples (21%). The rest of the QA materials from other regions constituted by very few numbers like 2-3 samples for each site. From Mediterranean Region we have no such good quality samples.

Table 5. Quality of Material Max QA Analysis – Region Wise

Region	Number of QA Dates	Percentage
AE	25	58,14%
EA	9	20,93%
BS	3	6,98%
SE	3	6,98%
CA	2	4,65%
MED	---	---
MA	1	2,33%
Total	**43**	**100,00%**

This table shows distribution of QA dated samples in their regions with total percentage value in all QA dated samples.

Table 6. Quality of Material QB Analysis – Region Wise

Region	Number of QB Dates	Percentage
AE	119	58,79%
EA	49	1,01%
BS	2	3,52%
SE	8	24,62%
CA	7	5,03%
MED	6	3,02%
MA	10	4,02%
Total	**199**	**100,00%**

This table shows distribution of QB dated samples in their regions with total percentage value in all QB dated samples.

Table 7. Quality Of Material 'Unknown' Analysis – Region Wise

Region	Number of QU Dates	Percentage
AE	29	20,14%
EA	70	48,61%
BS	2	1,39%
SE	22	15,28%
CA	19	13,19%
MED	2	1,39%
MA	---	---
Total	**144**	**100,00%**

This table shows distribution of unknown material samples in their regions with total percentage value in all unknown dated samples.

4.3.2. Quality B Samples

Quality B (QB) materials consist of charred woods in this study. Because of their nature of carbon-14 intake, woods are not best agents for C14 datings. They can slide up and down in time-scale for some years (for details see chapter 4). Because of that one should be careful while evaluating the results coming from charcoal measurements. Furthermore for the beams second use of the material can be possible for construction of buildings (Old Tree Affect). In such cases C14 measurements can give older dates according to stratigraphical level of the sample. In this study most QB datings are coming from Aegean Region parallel with overall view. Second amount of QB dates comes from Eastern Anatolia as expected. The rest of the regions have QB samples very few amount.

4.3.3. Unknown Material

As 'QU' ('Quality unknown') are named the dates which we don't know about the composition of the dated material. The reason for that, the publishments which the dates are taken from, do not give any information about the materials of the samples. Although we don't know the makings of specimens, they are presumably consisted of charcoals mostly. Due to we cannot be sure about the composition of that samples, they are evaluated under seperate section named QU. Total number of unknown materials hold nearly one third of all samples. Compared to the QA and QB (Aegean comes first); QU samples are accumulated in Eastern Anatolia mostly. Almost half them with 70 samples (49%) comes from this region. Aegean comes second with 29 sample (20%). Southeast (15%) and Central Anatolia (13%) comes third with closer numbers. Other regions have very few numbers of unknown samples.

Table 8. Quality Of Material - Site Wise

Site	Quality Of Material			Site Wise Total
	QA	QB	QU	
Alaca Höyük	2	1	--	3
Aphrodisias	2	8	--	10
Arslantepe	3	30	27	60
Beşik-Yassıtepe	--	16	--	16
Çadır Höyük	--	--	5	5
Demircihöyük	11	26	29	66
Gedikli Höyük	--	2	--	2
Göltepe	--	5	10	15
Gritille	--	--	1	1
Hacılar Tepe	1	10	--	11
Hassek Höyük	1	4	--	5
Kenantepe	1	--	--	1
Kestel	--	1	4	5
Korucu Tepe	2	6	4	12
Kumtepe	--	6	--	6

Site	Quality Of Material			Site Wise Total
	QA	QB	QU	
Molla Kendi	1	--	--	1
Norşuntepe	--	--	34	34
Pulur Sakyol	--	1	4	5
Sos Höyük	2	11	--	13
Tepecik	--	1	1	2
Tilbeş Höyük	--	2	3	5
Tilbeşar	--	--	3	3
Titriş Höyük	--	--	15	15
Troia	12	53	--	65
Büyüktepe Höyük	2	--	--	2
İkiztepe I	2	1	2	5
İkiztepe II	1	1	--	2
Karataş-Elmalı (Semahöyük)	--	7	--	7
Khirbet al-Hijar (AS 180)	--	1	1	2
Limantepe	--	1	--	1
Tell El Cudeyde (AS 176)	--	2	1	3
Tell Hijar (AS 181)	--	3	--	3
Quality Of Material Wise Total Samples	**43**	**199**	**144**	**386**

This table gives the numbers of samples in their sites according to their material quality.

CHAPTER 5

THE CALIBRATION CURVE AND WIGGLE MATCHING

5.1. BASICS

In many cases the age of an excavated layer is an important matter for the archaeolgy world. The site, grave or whatever under the soil representing the past human activity gives important knowledge about our human past. But it is not easy to understand the age of unsoiled artifact or building anytime. But in certain cases an organic material like bone or wood charcoal may help us. For example, measurements of the number of carbon-14 atoms preserved in an organic material provide many of the best dates for archaeological sites. Since these carbon-14 dates do not require historical documents, they can be used on objects thousands of years older than the earliest written records. The standard procedure for extracting chronological information from carbon14 can be divided into two fundamental tasks: estimate how much carbon-14 the object contained when it was part of a living creature, and determine how much carbon-14 remains in the material today. Since the current carbon-14 content of an object can be measured directly, carbon-14 dating almost always begins by obtaining the isotopic composition of a sample from the artifact. In principle, these data could be reported as a number of carbon-14 atoms in the sample, but in practice dating facilities normally compute a "raw" or "conventional" carbon-14 date for the sample. These dates are expressed as a number of years" BP ," which meant "Before Present" when the present was 1950. Such dates in general do not provide accurate age estimates, so today they are used only as a standardized measure of carbon-14 content. (Hedman 2007)

The ideas behind radiocarbon dating are not complicated. Neutrons, produced by the cosmic rays which bombard the upper atmosphere interact with nitrogen atoms to create a radioactive isotope of carbon-14. Then carbon-14 combines with oxygen to form carbon dioxide. All the living creatures like trees, grasses, elephants, insects and people intake an amount of this isotope through photosynthesis or breathing.

Metabolic processes in living organisms maintain the carbon-14 content in approximate equilibrium with atmospheric carbon-14 concentrations. Once metabolic processes cease, as at the death of an animal or plant, the amount of carbon-14 begins to decrease by radioactive decay at a rate measured by the carbon-14 half-life, this is about 5700 years (Taylor 1997).

This means that if we have a sample of pure carbon-14, then after 5700 years (one half life), half of the carbon-14 atoms will have decayed into nitrogen. After another 5700 years, half of the remaining half will have decayed, leaving a quarter of the original nuclei behind, and so on and on.

Although this highly regular behaviour is very useful for dating purposes, determining the carbon-14 content of ancient artifacts is a quite difficult task. In a typical datable object, at most only about one out of every trillion atoms of carbon is in the form of carbon-14. These carbon-14 atoms have essentially the same chemistry as the other carbon isotopes, so they cannot be isolated using standard chemical techniques. Instead, the rare carbon-14 atoms must be identified and counted based on their unique physical properties: their larger mass and their radioactivity (Hedman 2007).

5.2. PROCESS

Each time an atom of carbon-14 decays it emits an electron, which can be detected if it passes through a Geiger counter. To ensure that the electron comes from the carbon-14 in the object and not from some other radioactive element the sample must be processed and purified to isolate the carbon. Careful shielding and additional detectors are also needed in order to identify and exclude any partides coming from outside sources.

However, this method does have some serious limitations. To get a precise measure of the carbon-14 content of a given sample, we need to observe roughly 1,000 decays. Since the half-life of carbon-14 is thousands of years long, only a small fraction, 0.01%, of the carbon- 14 atoms in a sample decays within a single year.

This means we need ten million carbon-14 atoms in the sample to get a reasonable estimate of the carbon-14 content, and even then we still need to wait a full year. This method is therefore rather inefficient, and also requires relatively large amounts (1 gram) of carbon to work.

5.3. MASS SPECTROMETRY

Recently, small samples of material can be dated using a technique called mass spectrometry, which uses electric and magnetic fields to sort atoms by mass. Individual atoms are released from the sample and ionized by adding or removing electrons from each atom. These atoms have a net charge, so they are attracted toward metal plates with an opposite charge. The atoms move faster and faster as they approach the metal plates. A passage through the plates allows the atoms to go through to the other side. They then enter a magnetic field. Moving charged particles both produce magnetic fields and respond to external magnetic fields. The charge and velocity of the ion determine the strength of the force it feels in the magnetic field, and the mass of the atom determines how much it moves in response to this force. Atoms with different masses therefore take different trajectories through the magnetic fields, enabling the different atoms to be identified, isolated, and counted.

Standard mass spectrometers are table-top devices that are used to measure the major constituents of various materials. However, accurately measuring the extremely small fraction of carbon-14 atoms in a typical sample requires a special type of mass spectrometry, called accelerator mass spectrometry (AMS). This uses multiple stages of acceleration and ionization, as well as several magnets to cleanly separate the carbon-14 from all other possible atoms and molecules. The machines needed to do this are large beasts that fill entire buildings and exist only at specialized facilities in about two dozen locations throughout the world.

The major advantage of AMS is that all carbon-14 atoms in a sample are counted, not just the ones that happen to decay, so this method can be used with sample sizes as small as 1 milligram. This means that artifacts can be analyzed without doing too much damage, and that even objects with small amounts of carbon (like steel tools) can potentially be dated with carbon-14 (Hedman 2007).

5.4. CORRECTION

The process of carbon assimilation in organisms creates small deviations from the atmospheric percentages of the three carbon isotopes. The preferences also vary according to species. The measured carbon-14 in an organism, therefore, will not be exactly equal to the atmospheric level. This effect is called isotopic fractionation or mass fractionation that allows different organisms to acquire different mixes of carbon isotopes while they are alive (Manning 1994, Hedman 2007).

This means that some creatures can accumulate more carbon-14 in their bodies than others. For example, certain plants like corn use a slightly different photosynthetic process from other plants to absorb carbon from the atmosphere, which causes living corn plants to have a slightly (2-3%) higher carbon-14 fraction than tree leaves or other plants growing at the same time. If we neglect this phenomenon, carbon-14 dating will underestimate the age of materials derived from corn. To ensure a correct radiocarbon determination, the isotopic fractionation of the sample must be measured, and the date corrected according to the variation from the norm. Scientists account for the effects of mass fractionation by measuring the relative amounts of stable carbon isotopes in the sample.

5.5. TREE-RINGS

Everybody knows the pattern of dark and light bands in any cut piece of wood. This bands represent a part of the tree's artery system that carries water up from the roots to the leaves. Only the outermost layers of this tissue actively carry fluids, and new layers are constantly being added to the tree underneath the bark of the trunk. In spring, as new leaves are growing, the demand for water is high and the wood has an open structure. As the season progresses, the need for water declines and the tissue becomes denser with fewer open spaces for water to flow through. This continues until winter, when the tree can become idle until the next spring and the cycle starts all over again. Each ring consisting of a light and dark band therefore corresponds to precisely one year of growth in a temperate environment, and we can determine how old a tree is by counting its rings. This process provides chronological information related to archaeology.

A tree-ring date is an absolute calendric placement of the outermost ring on a sample achieved by crossdating the sample's ring series with a dated master chronology. These dates are accurate to the year and have no associated statistical error. The dendrochronological calibration of radiocarbon dating techniques provides more accurate and precise independent dates for archaeological contexts that lack datable tree-ring materials

Thanks to recent researches we know that the amount of atmospheric carbon-14 had not remained constant throughout the time. The dating of known age tree-rings from Europe and United States declared that there were past fluctuations in atmospheric carbon-14 levels. These variations are a result of solar activity, changes in the geomagnetic field and so on.

If the carbon-14 content of the atmosphere fluctuates, then the age estimates based on conventional radiocarbon dates will not be correct. We therefore need to determine what the isotopic composition of the air was like in the past before we can use radiocarbon dating techniques to explore the history of the plants or animals which breathed that air (Hedman 2007).

5.6. CALIBRATION

In the last 40 years, programmes of measurement of known-age tree-rings have attempted to refine our knowledge of these natural variations in order to determine that measured radiocarbon ages may be calibrated against these variations, and real calendar ages determined (Manning, 1994: 126-129).

An application of tree ring chronology building has been the calibration of the radiocarbon time scale, which involves the evaluation of radiocarbon determinations from absolutely dated wood samples. At the beginning, this effort focused on giant sequoias from California, but it soon progressed to the older bristlecone pines, which eventually produced a series of calibrations extending beyond 6000 BC. Researches showed that radiocarbon dating systematically underestimates the true ages of materials older than 2000 years and that 14C dates must be corrected.

Increasing the ages of radiocarbon-dated European sites relative to the fixed Egyptian calendric chronology had implications for Old World prehistory. (Renfrew 1973) That caused some archaeologists to question the global validity of the bristlecone pine calibration. The desire to independently test this calibration was an important stimulus to the development of the western European tree-ring chronology. When the radiocarbon analysis of dated European samples confirmed the bristlecone calibration, efforts turned to lengthening both chronologies to extend the calibration further back in time.

The result from such high-precision measurements of series of (precisely) known-age tree-rings is that it is now known there were irregular deviations, or variations, in the atmospheric carbon-14 content over time and, on the basis of the remarkable correspondence of high-precision measurements made on island wood from Ireland, mainland wood from America, and continental wood from Germany, and from studies of recent radiocarbon levels. In 1986 a series of precise curves were published which quantified these variations, based on the systematic measurement of a continuous series of 20-year (or smaller) samples of known-age wood with an accuracy of less than ±20 years over the last 7000 years. After 1990s, a new and extended set of revised high-precision calibration curves have been published in Radiocarbon 35(1). These contain a bi-decadal curve from AD 1950 to 9440 BC, and a decadal curve from AD 1950 to 6000 BC These 1993 data are likely to remain the standard calibration database for some years. In general, they vary only very slightly from the 1986. Although the match between the various high-precision laboratories is not perfect, generally quite excellent (although a problem exists 5500-5180 BC) (Manning 1994: 126-129).

Thus dendrochronology has been instrumental in refining archaeological dating theory both in general and as it applies to specific dating techniques. Because dendrochronology lacks the chronometric noise inherent in other dating systems, the consideration of tree-ring dating elucidates external sources of uncertainty and error. On a smaller geographic scale, burned clay samples from tree-ring dated archaeological contexts are used to calibrate archaeomagnetic dating systems as well. (Hedman 2007)

5.7. THE DATE

A radiocarbon date is a measurement, given with the standard deviation of the measurement error $X \pm \sigma$. That means, output is not a precise datum, but a statement of probability. However, the problem is that the radiocarbon-time cannot be measured with perfect accuracy or precision. Instead, it can be only measured with interference. The assumption is then made that this interference forms a normal distribution, with a mean of zero and a standard deviation of σ. Hence $X \pm \sigma$ is treated as the 68% confidence interval for X.

The radiocarbon date is thus treated as a Gaussian probability distribution on the radiocarbon timescale. The wiggly nature of the calibration curve shows that there is no monotonic relationship. Thus our only guide is a set of relatively precise radiocarbon 'dates' for 20-year (or shorter in some cases) intervals along the calendar scale (the calibration curve). We have to relate our radiocarbon measurement to these known calendar age measurements so as to suggest a range of possible dates which will include the real age.

For doing this there are a number of possible approaches. The most obvious is linear extrapolation. One connects together the known 20-year (or other) points to form an approximate continuous curve where each radiocarbon point has a 'known' calendar age, and then simply intersects the lσ or 2σ bounds of the radiocarbon date with this curve, and, after allowing a little bit of lapse for curve errors, looks to see what the corresponding calendar dates are for the lσ or 2σ intervals. This was the method suggested in Pearson et al. (1983), and again in the basic publications following the establishment of the international calibration curve.

Complete probability distribution, is a bell-shaped curve, and comes out with an undifferentiated range. Worse, in many cases several intercepts are possible with the calibration curve, and one finishes with a 1σ or 2σ range in several parts with no quantifiable idea of which is more likely to contain the real age. In recent years work has therefore centred on how to transfer the probability distribution from the radiocarbon timescale to the calendar timescale.

If we turn again to the calibration curve, however, it must be remembered that it is not a curve, but a probability band. For example, for the standard bi-decadal calibration curve, every 20 calendar years a Gaussian distribution is hanging in space, representing the average radiocarbon age probability for that 20-year interval . In other words, every 20 calendar years there is a distribution which allows us to know the probability of any radiocarbon interval being that calendar interval.

We move now to the radiocarbon timescale. The date we wish to calibrate is itself a similar (but invariably less defined) distribution, with an approximately known probability for any particular radiocarbon year within the distribution. To achieve a probabilistic calibration, we wish to transfer the probability for each year of the date of interest across so as it intersects with the probabilities for that same radiocarbon year known, for specific calendar years, from the calibration curve. The interaction of the two probabilities determines the overall probability that the radiocarbon date represents a particular calendar year (Manning 1994: 125-130).

We move to the radiocarbon date to be calibrated. Each radiocarbon year within its probability distribution has a certain probability, centred on the quoted mean date. For each radiocarbon year (and its probability) in the date to be calibrated, there will be a number of calendar years on the calibration curve that will have a probability for that particular radiocarbon year (best visualized as an intersection of the date's distribution with the calibration band, in order to create a large array of points whose resultant probability is then summed on the calendar axis). The likelihood of that radiocarbon year belonging to those calendar years is the interaction of the date's and the calibration band's probabilities.

One interesting technical point concerns the correct method for allocating probability when one probability (an interval of the date to be calibrated) can belong to a number of places (several possible calendar intercepts of varying probability). This situation applies both as a date passes through the band, but more particularly in wiggly sections of the calibration band when multiple probable intercepts are available for any particular radiocarbon year. Should the probability of that radiocarbon year be divided among all the possible intercepts or not? Opinion is divided at present.

When this process is done for every radiocarbon year in the date's probability distribution, and the resultant probabilities are transferred and combined on the calendar axis, we have a calibrated probability distribution for the radiocarbon date on the calendar scale. This shows the likelihood of the radiocarbon date belonging to any particular calendar year.

5.8. WIGGLE MATCHING

In this study OxCal version 3.10 calibration program has been used for the datings of given raw measurements. The calibration curve of this version is slightly different from previous ones.

If it is observed, it can be seen that the calibration curve from the second half of the fourth millenium BC cal. until early second millenium BC cal. is not linear. It draws a non-linear line with many peaks and zig-zags, so called wiggle structure. On this calibration curve, one can follow different wiggle structures on the falling line. According to this this structures, it is possible to find better dating intervals which may give sharper carbon-14 datings. For example if the curve is going down in a steeper angle, this means the carbon-14 measurements taking place on this part of the curve are more reliable. Contrary if the curve is waving up and down in a flat line relatively, that means the datings fall in that part of the curve are not sharp and giving calibrated dates in a broader band.

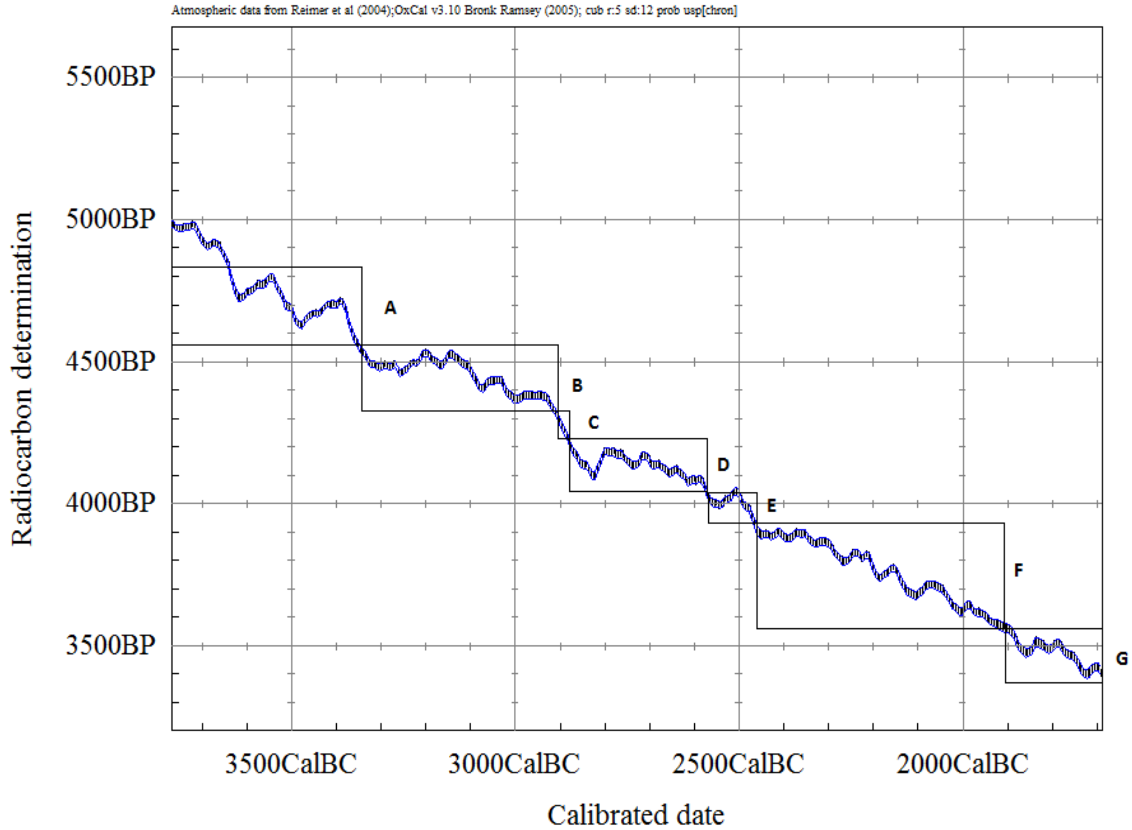


Figure 4. Calibration Curve for the Late 4th to Early 2nd Millennium BC

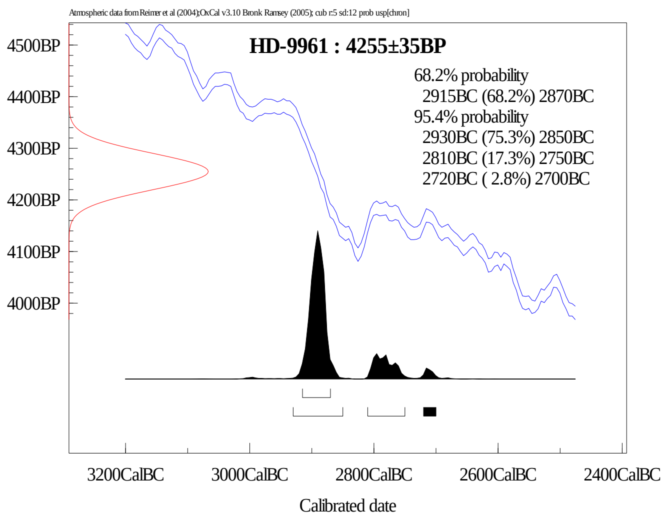


Figure 5. Sharp Dating Example: This dating from Kumtepe gives a perfect example for a sharp dating according to wiggle structure.

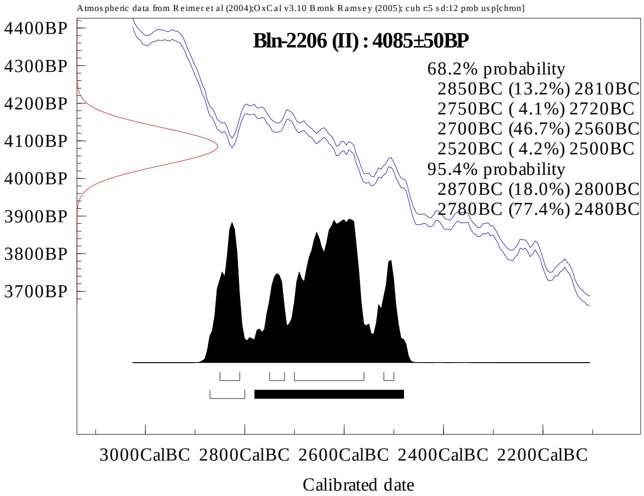


Figure 6. Diffused Dating Example: This sample from Demircihöyük is not a very good one because of its wider intersection points.

This interval structures which are derived from computer program Oxcal 3.10 named here "Wiggle Grouping". The idea behind that is to set up different groups on the calibration curve which are seperated from each other in order to get a better base for the interpretation for the cal. BP dates. For this reason I have divided the curve into seven groups. A to G according to wiggle structures of the curve. This follows a system which has been used before by Furholt and Rachel–Fasion for the German Neolithic radiocarbon analysis. There are slight differences with my grouping and theirs, because of the calibration curve calculation programming versions. The wiggle group names in Raetzl – Fabian work are different due to beginning of neolithic time-scale. The comparision of my grouping and theirs is shown in the table 9.

This grouping gives also an idea about the quality of R14 dates. The wiggle structure blocks are easily seen on the curve in figure 4. For instance a radiocarbon dating in my group C would be much more precise than a date from group B because of its sharp wiggle structure. For example in group B the calibration curve is almost flat. Because of that flatness the measurements on this block intersect the curve on many points.

Table 9. Comparison of previous works with current grouping.

Üncü 2010 (In This Study)		Fuhrholt 2003	Raetzel-Fabian 2000
New	**BP**		
A	4837-4568	---	G-I
B	4568-4322	A-B	J-K
C	4322-4226	C	L
D	4226-4053	D	M, partially N
E	4053-3944	E	N-O
F	3944-3578	F-G, partially H	P, Q
G	3578-3351	Partially H	---

Table 10. Wiggle groups Time - Intervals and Their cal. BC Equivalents.

Wiggle Groups	BP-Dates	cal. BC-Dates
A	4837-4568	3750-3350
B	4568-4322	3350-2900
C	4322-4226	2900-2870
D	4226-4053	2870-2570
E	4053-3944	2570-2470
F	3944-3578	2470-1900
G	3578-3351	1900-1750

Table 9, table 10 and figure 4 give the information of wiggle groups used in this study. Their chronological equivalents in BP and cal. BC are shown in table 10. Groups are represented by capital letters. Also a list of datings in group C is available in catalog part. In Figure 4, the calibration curve interval of late fourth and early second millenium BC is shown in detail.

In table 11, every single measurement used in this work situated in a wiggle group according to their regions. Table shows that most datings are situated in D wiggle (2870-2570 cal. BC) with 113 samples mostly from Aegean and East Anatolia. Then, F wiggle holds second place datings up to 90 measurements. Other wiggle groups sharing 46 to 60 datings except group A and group G with 19 and 5 datings. Group G samples are very few. The most important group C has 46 datings mostly from Aegean and East Anatolia as in all other groups.

Table 11. Region - Wiggle Wise Analysis.

Wiggle Group	Region							Wiggle Wise Total Samples
	AE	BS	CA	EA	MA	MED	SE	
A	8	1	1	8	--	1	--	19
B	15	1	2	21	1	3	9	52
C	22	2	1	14	2	1	4	46
D	62		8	30	8	1	4	113
E	28	1	4	20	--	--	7	60
F	34	2	10	34	--	2	9	91
G	2		2	1	--	--	--	5
Region Wise Total Samples	**171**	**7**	**28**	**128**	**11**	**8**	**33**	**386**

This table gives the numbers of samples under their wiggle groups and distribution into regions.

Table 12. Subphase Wise - Wiggle Analysis

Wiggle	Sub-Phase Periods				Wiggle Wise Total Samples
	EB 1	EB 2	EB 3	Unknown	
A	13	3	1	2	19
B	50	--	2	--	52
C	37	3	4	2	46
D	77	28	7	1	113
E	27	11	18	4	60
F	2	12	76	1	91
G	--	--	5	--	5
Sub-Phase Wise Total Samples	**206**	**57**	**113**	**10**	**386**

This table shows wiggle group distribution of samples under their sub-phases.

In table 12 we can see sub-phase distribution of wiggle groups. In wiggle group A there are 13 datings for the EB1. In wiggle B there are 50 measurements. In C wiggle the number drops to 33 but in D group it suddenly rises up to 77 datings. In group E there are 27 measurement and in F wiggle there are only two datings. Normally wiggle groups A to D refer for the EB1 time interval. The samples in E and F wiggles for the EB1 can be deviations. No samples from G wiggle for the EB1 period. In the EB2 sub-phase there are three datings in A wiggle and three datings in C wiggle. There is no any measurements from group B and G. Wiggle D has most datings for EB2. Group E and F has some measurements in EB2 period. Normally D and E wiggles are the expected groups for the EB2. In EB3 period there are few datings in A, B, C and D groups. With 76 datings group F has most datings as expecred for the EB3 period. In group E there are 18 datings and in group G there are five measurements.

In table 13 distribution of samples into wiggle groups, according to their materials are concerned. QA samples as mentioned in Quality of Material section, are the most reliable measurements due to their short lived organism structures. So distribution of QA samples into different wiggle groups give an idea about the reliability of datings. We already know from previous chapter that C wiggle datings are more precise. So the datings from QA material in C wiggle group expected to give most dependable measurements. We have three datings which can provide both conditions. They are from İkiztepe II, Demircihöyük and Büyüktepe Höyük. The dating from İkiztepe (Metu-7) has a wider deviation interval which can also situate in B or D wiggles. Demircihöyük sample (Bln-2437 III) falls in both C and D wiggles according to its deviation band. Büyüktepe Höyük sample can also fall in B or D wiggles due to its wider deviation band.

Contrary the measurements from QB material in B wiggle group give broader band of probability. In this work most QA dated materials fall in wiggle F group with 15 datings. There are 11 QA materialn datings in D wiggle. There are eight QA datings in group E and there are few QA dates in other wiggle groups.

It is very convenient that the QB materials are plenty in this study. The reason for that QB material classification represents charcoals from a beam, post or any kind of wood. Totally 199 datings we have from that kind of samples. They are mostly fall into D wiggle group. In B, C, E and F wiggles, distribution of these samples are equal more or less around 26-32. There are 10 in wiggle A and 1 in wiggle G.

Table 13. Quality Of Material Wiggle – Wise Analysis

Wiggle	Quality Of Material Groups			Wiggle Wise Total Samples
	QA	QB	QU	
A	--	10	9	19
B	4	29	19	52
C	4	27	15	46
D	11	74	28	113
E	8	26	26	60
F	15	32	44	91
G	1	1	3	5
Quality Of Material Wise Total Samples	**43**	**199**	**144**	**386**

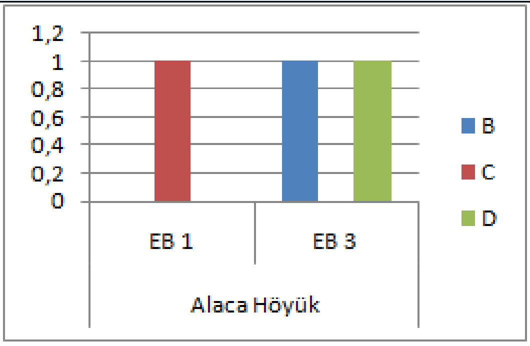
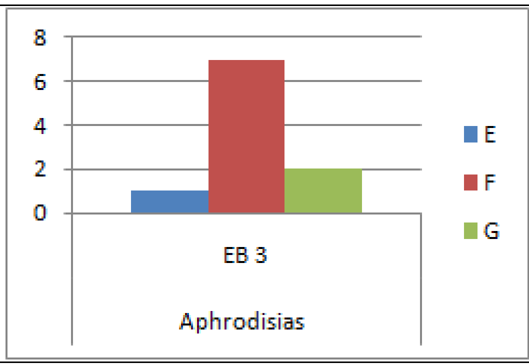
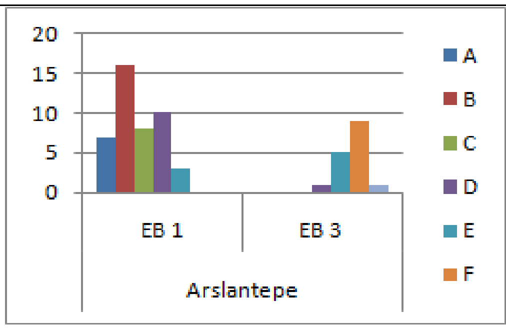
This table shows quality of material distribution under wiggle groups

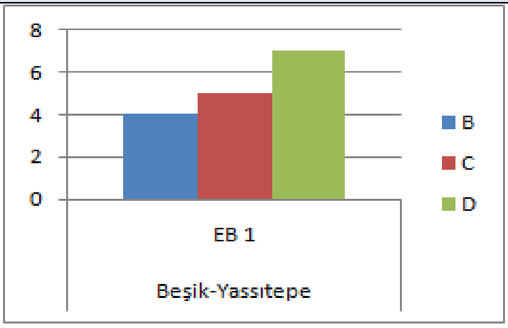
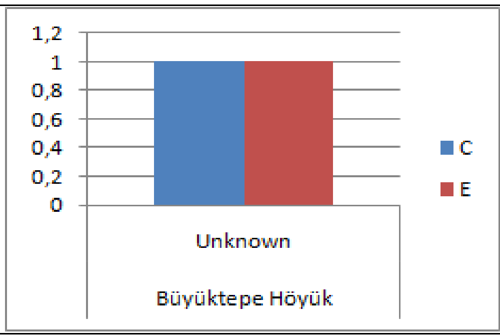
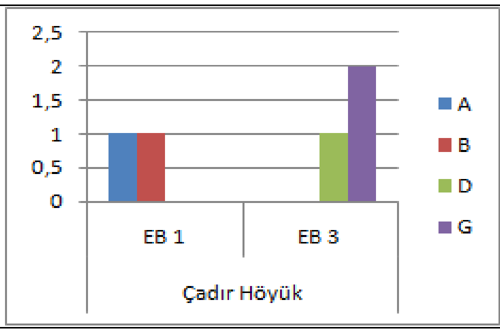
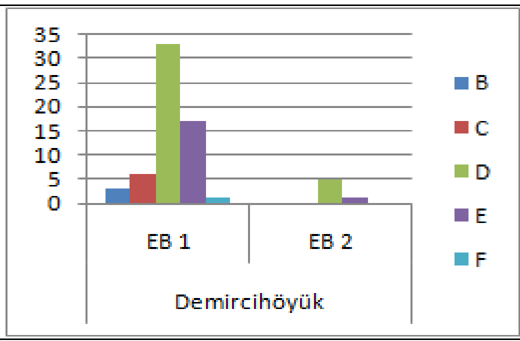
In QU section there are 144 datings. Although we don't know the origin of materials we can expect that they are mostly from charcoals. Of course some of them may be from short lived materials. The wiggle distribution of QU materials are as this. Most datings are in F wiggle with 44 units. In D and E wiggles the number is almost equal with 28 and 26 units. In B wiggle there are 19 datings and in C wiggle there are 15 datings. In A wiggle there are 9 and in G wiggle there are 3 datings.

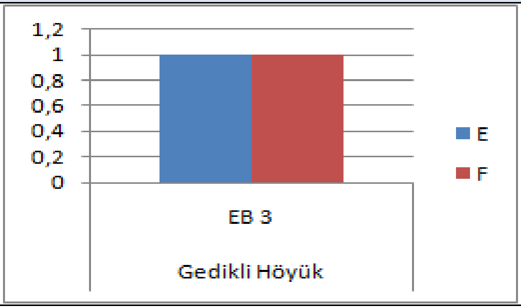
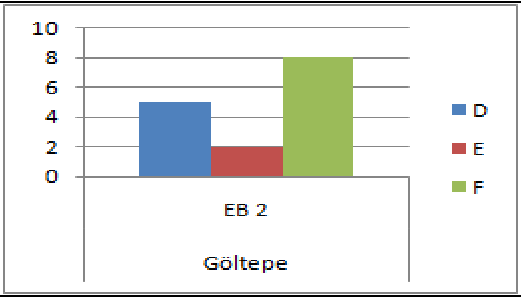
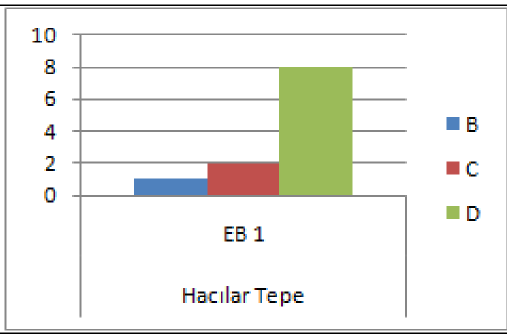
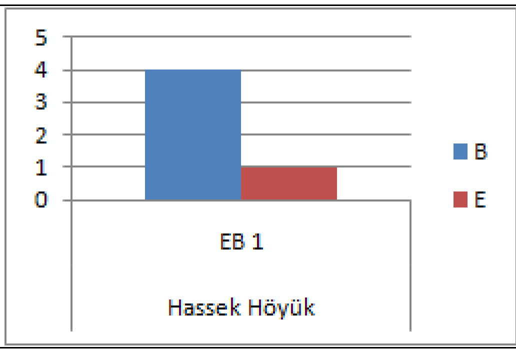
5.9. SITE – WIGGLE ANALYSIS

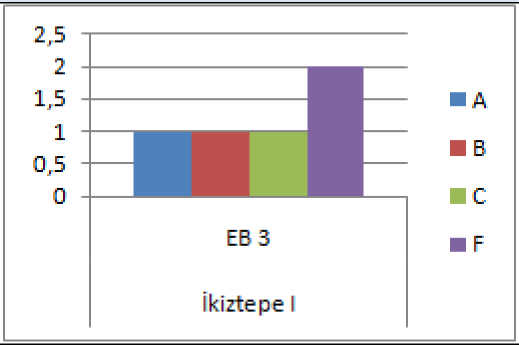
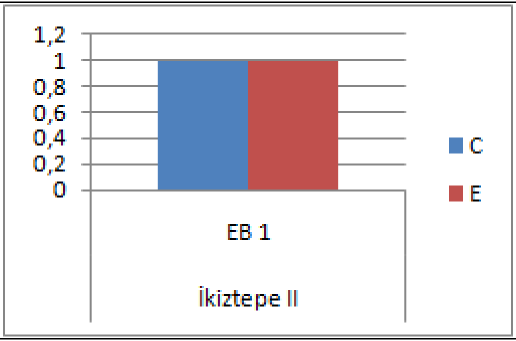
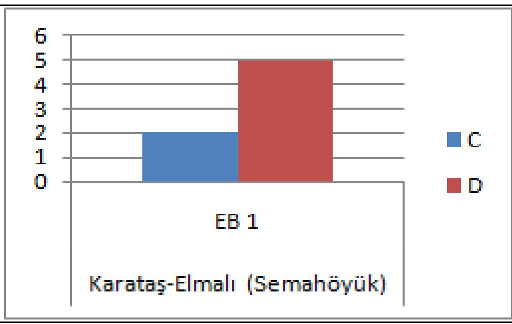
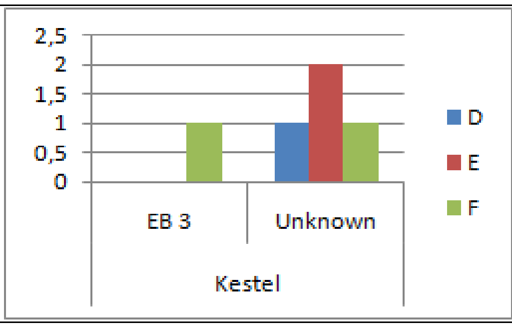
5.9.1. List of Sites – Wiggle & Subphase Wise

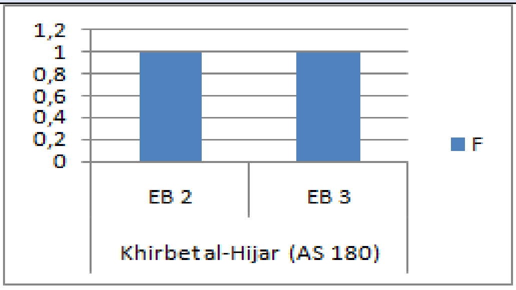
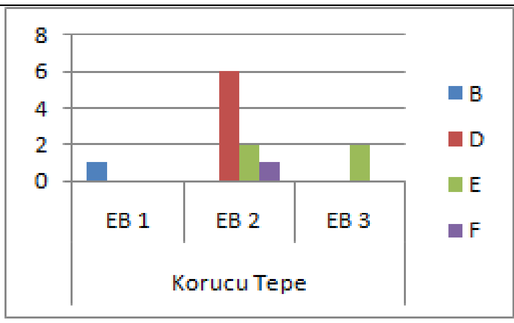
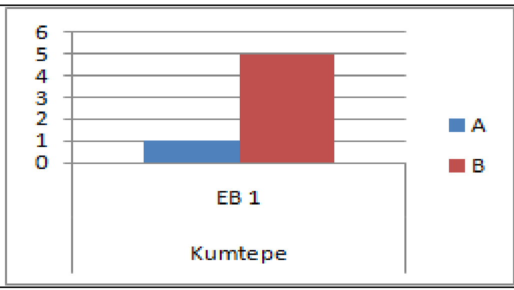
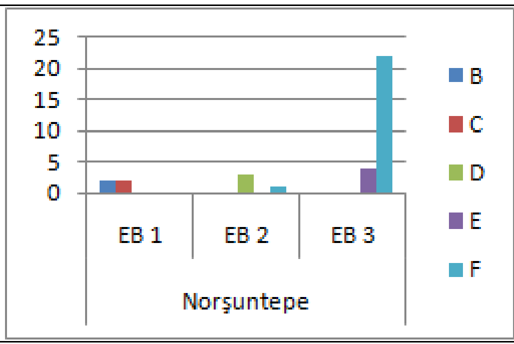
Table 14. List Of Sites – Wiggle / Subphase Wise

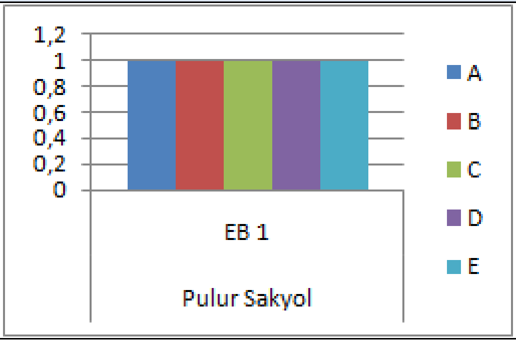
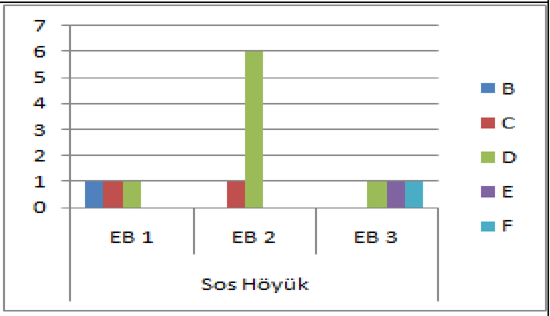
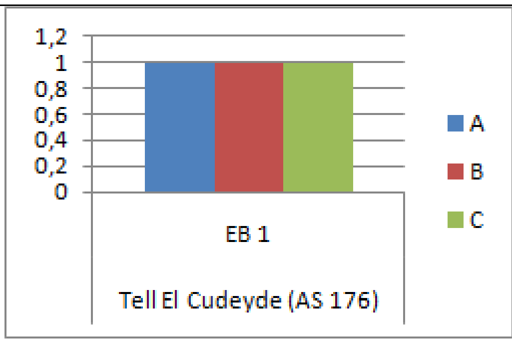
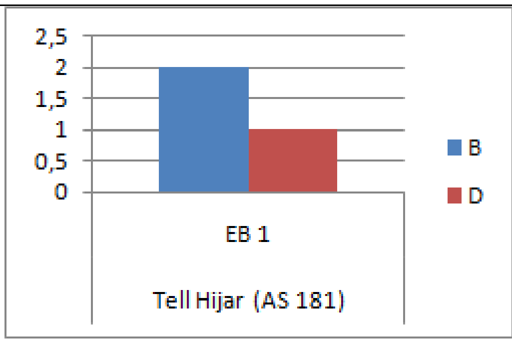
Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Alaca Höyük		***1***	***1***	***1***				***3***	
EB 1			1					1	
EB 3		1		1				2	
Aphrodisias					***1***	***7***	***2***	***10***	
EB 3					1	7	2	10	
Arslantepe	***7***	***16***	***8***	***11***	***8***	***9***	***1***	***60***	
EB 1	7	16	8	10	3			44	
EB 3				1	5	9	1	16	

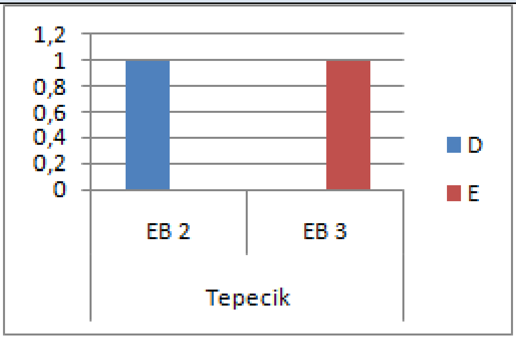
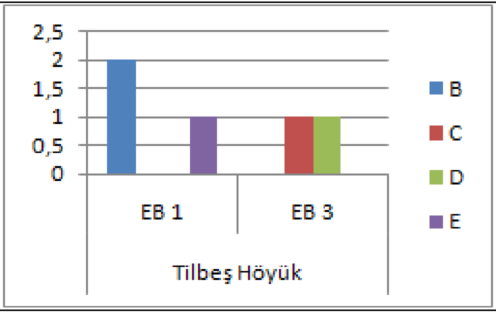
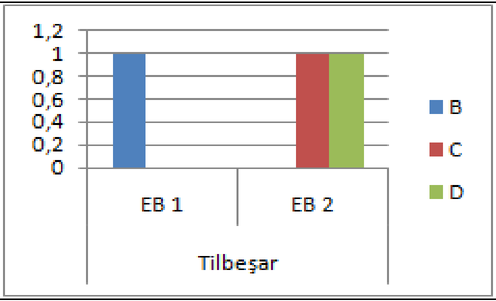
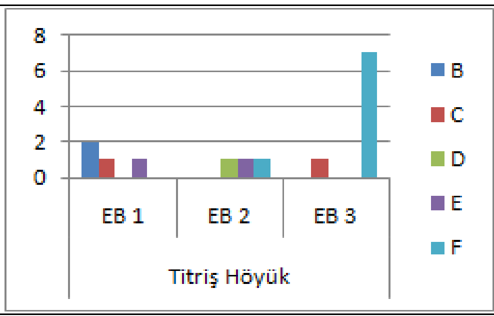
Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Beşik-Yassıtepe		***4***	***5***	***7***				***16***	
EB 1		4	5	7				16	
Büyüktepe Höyük			***1***		***1***			***2***	
Unknown			1		1			2	
Çadır Höyük	***1***	***1***		***1***			***2***	***5***	
EB 1	1	1						2	
EB 3				1			2	3	
Demircihöyük		***3***	***6***	***38***	***18***	***1***		***66***	
EB 1		3	6	33	17	1		60	
EB 2				5	1			6	

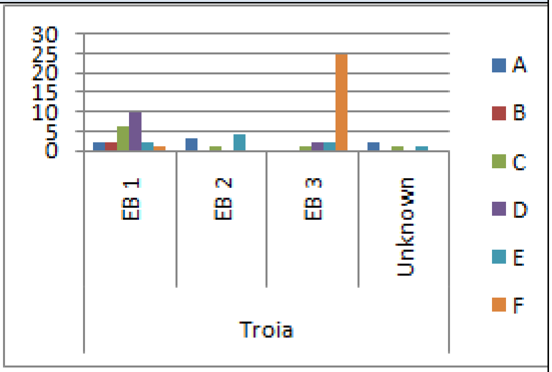
Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Gedikli Höyük					***1***	***1***		***2***	
EB 3					1	1		2	
Göltepe				***5***	***2***	***8***		***15***	
EB 2				5	2	8		15	
Gritille					***1***			***1***	All the samples are situated in EB2 and E wiggle section, graphic is not included
EB 2					1			1	
Hacılar Tepe		***1***	***2***	***8***				***11***	
EB 1		1	2	8				11	
Hassek Höyük		***4***			***1***			***5***	
EB 1		4			1			5	

Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
İkiztepe I	***1***	***1***	***1***			***2***		***5***	
EB 3	1	1	1			2		5	
İkiztepe II			***1***		***1***			***2***	
EB 1			1		1			2	
Karataş-Elmalı (Semahöyük)			***2***	***5***				***7***	
EB 1			2	5				7	
Kenantepe				***1***				***1***	All the samples are situated in EB1 and D wiggle section, graphic is not included
EB 1				1				1	
Kestel				***1***	***2***	***2***		***5***	
EB 3						1		1	
Unknown				1	2	1		4	

Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Khirbet al-Hijar (AS 180)						***2***		***2***	
EB 2						1		1	
EB 3						1		1	
Korucu Tepe		***1***		***6***	***4***	***1***		***12***	
EB 1		1						1	
EB 2				6	2	1		9	
EB 3					2			2	
Kumtepe	***1***	***5***						***6***	
EB 1	1	5						6	
Limantepe		***1***						***1***	All the samples are situated in EB1 and B wiggle section, graphic is not included
EB 1		1						1	
Molla Kendi					***1***			***1***	All the samples are situated in EB3 and E wiggle section, graphic is not included
EB 3					1			1	
Norşuntepe		***2***	***2***	***3***	***4***	***23***		***34***	
EB 1		2	2					4	
EB 2				3		1		4	
EB 3					4	22		26	

Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Pulur Sakyol	***1***	***1***	***1***	***1***	***1***			***5***	
EB 1	1	1	1	1	1			5	
Sos Höyük		***1***	***2***	***8***	***1***	***1***		***13***	
EB 1		1	1	1				3	
EB 2			1	6				7	
EB 3				1	1	1		3	
Tell El Cudeyde (AS 176)	***1***	***1***	***1***					***3***	
EB 1	1	1	1					3	
Tell Hijar (AS 181)		***2***		***1***				***3***	
EB 1		2		1				3	

Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Tepecik				***1***	***1***			***2***	
EB 2				1				1	
EB 3					1			1	
Tilbeş Höyük		***2***	***1***	***1***	***1***			***5***	
EB 1		2			1			3	
EB 3			1	1				2	
Tilbeşar		***1***	***1***	***1***				***3***	
EB 1		1						1	
EB 2			1	1				2	
Titriş Höyük		***2***	***2***	***1***	***2***	***8***		***15***	
EB 1		2	1		1			4	
EB 2				1	1	1		3	
EB 3			1			7		8	

Site /Subphase	A	B	C	D	E	F	G	Total	Graphic
Troia	***5***	***2***	***9***	***12***	***9***	***26***		***63***	
EB 1	1	2	6	10	2	1		22	
EB 2	3		1		4			8	
EB 3			1	2	2	25		30	
Unknown	1		1		1			3	
Grand Total	17	52	46	113	60	91	5	384	

Here in table 14, sites are considered one by one under their sub-phase partition and wiggle group distribution. of samples. These descriptive data shown in tables and graphics both. For example in Alacahöyük there are three datings. These datings are coming from EB1 and EB3 levels. One dating from EB1 and two datings from EB2. The dating from EB1 sub-phase belongs to C wiggle group. One dating from EB3 sub-phase belongs to B wiggle group and the other one is in D wiggle group.

CHAPTER 6

REGIONAL APPROACH

6.1 REGIONAL ANALYSIS

Table 15. Distiribution Of Samples – Region Wise

Region	Number Of Samples	Percentage Of Samples
AE	171	44,30%
BS	7	1,81%
CA	28	7,25%
EA	128	33,16%
MA	11	2,85%
MED	8	2,07%
SE	33	8,55%
Genel Toplam	**386**	**100,00%**

This table gives the numbers of dated samples in their regions within percentages. For example In Aegean Region 171 samples are dated totally and the weight of these 171 dating is % 44.3 in whole sum

In table 15, the numbers of dated samples presented according to their regions with proportion value of the in sum of all datings. Here from Aegean (AE), Black Sea (BS), Central Anatolia (CA), Eastern Anatolia (EA), Marmara (MA), Mediterranean (MED), South Eastern Anatolia (SE) regions are concerned. Aegean Region having the first place in quantity thanks to Demircihöyük and Troia. Sample number is 171 for Aegean. In Black Sea and Mediterranean regions datings are very few with seven and eight datings. The reason for this, is the lack of excavated sites in these regions. In Black Sea the samples are only coming from İkiztepe. Mediterranean datings are coming from very east of that region (Amuq). East Anatolia region holds second place in quantity with 128 datings. Aegean and East Anatolian regions together keep 75% of all measurements. In Central Anatolia there are 28 datings and in South East Anatolia there are 33 measurements.

Table 16. Distiribution Of Datings – Region &Subphase Wise

Region	Subphase Group				Region Wise Total Samples
	EB 1	EB 2	EB 3	Unknown	
AE	113	14	40	4	171
BS	2	--	5	--	7
CA	3	15	6	4	28
EA	57	21	48	2	128
MA	11	--	--	--	11
MED	6	1	1	--	8
SE	14	6	13	--	33
Subphase Wise Total Samples	**206**	**57**	**113**	**10**	**386**

This table gives the distributions of datings in their sub-phases and regions.

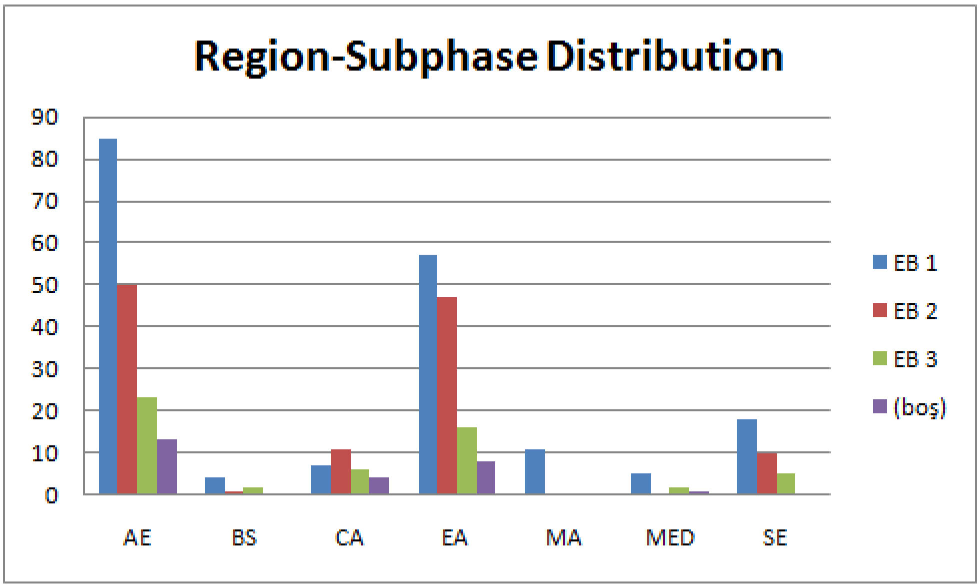


Figure 7. Distiribution Of Materials – Region Wise

In table 16 and figure 7 we can follow sub-phase distribution of samples according to their regions. In Aegean 171 total sample divided in four parts, 113 datings for EB1, 14 datings for EB2, 40 datings for EB3 and four datings for unknown sub-phase. In Black Sea region there are two datings for EB1 and five datings for EB3. In Central Anatolia three mesurements are coming from EB1 levels, 15 measurements from EB2 levels and six measurements from EB3 levels. There are four measurements which we don’t know the sub-phase of them. In East Anatolia there are 57 datings for EB1, 21 datings for EB2 and 48 datings for EB3. There are two seperate datings that sub-phases are not known. In Marmara Region 11 datings are only coming from EB1 levels. In Mediterranean there are six datings that are coming from EB1 levels. One dating from EB2 levels and one from EB3 levels. In South East region there are 14 datings for EB1, six datings for EB2 and 13 datings for EB3.

6.2. REGIONAL SURVEY

6.2.1. Marmara

Due to absence of archaeological excavations in Thrace and southeast Marmara it is impossible to infer from survey material about other aspects of human activity, settlement pattern and ethno-cultural affiliations of population groups who inhabited these regions since early prehistoric times.

The architecture of contemporary villages and towns in neighbouring regions such as the Troad or Eskisehir plain in Anatolia or eastern Macedonia/western Thrace in Greece and in the Balkans in Bulgaria could provide us with some tentative models of regional traditions in settlement planning and architecture. Burial habits which is another form of manifestation of religious beliefs in both sedentary and pastoral communities are also difficult to reconstruct.

Communities of the Fikirtepe culture practiced intramural burial with simple graves usually dug under the house floor. But whether this custom continued in the proto-urban and early urban periods or was replaced by extramural burial custom as in western Anatolia is not clear. What is relatively certain however, is that the Marmara region underwent a cultural development very similar to that observed in other parts of western Anatolia. At the same time the Marmara region, especially its southeastern part, probably had the potential, because of its natural resources and an increasing population density, to transform into a regional power (with political borders) towards the end of the third millennium BC

Some of the copper, silver and tin deposits in the Marmara region and eastern Thrace show signs of exploitation in antiquity. Since the regional cultures show signs of interaction between the Balkan cultures with advanced metalworking traditions and Anatolian elements, it is inconceivable that the Marmara region would have lagged far behind in developing its metal industries (Yakar 1985: 72-95).

In the province of Bursa tin deposits have been discovered. These deposits in Madenbelenitepe show signs of old workings which are difficult to date with any precision. But the mere fact that tin ore exists in this part of Turkey is extremely significant and would provide the much sought hard evidence by those who postulated that the metallurgical centres in northwest Anatolia had their own limited sources of this metal.In various parts of Istanbul copper , silver, lead deposits are known of which could have been known to prehistoric prospectors. Although not as large as those in the Pontus, had a high yield, enough to meet local demands in antiquity.

Table 17. Marmara – Sub-phase Analysis

Subphase	Number Of Samples
EB 1	11
Grand Total	**11**

Marmara Subphase analysis result is shown Table 17. All samples are situated in EB1.

Table 18. Marmara – Wiggle Grouping Analysis

Wiggle	Numbers	Percentage
B	1	9,09%
C	2	18,18%
D	8	72,73%
Grand Total	**11**	**100,00%**

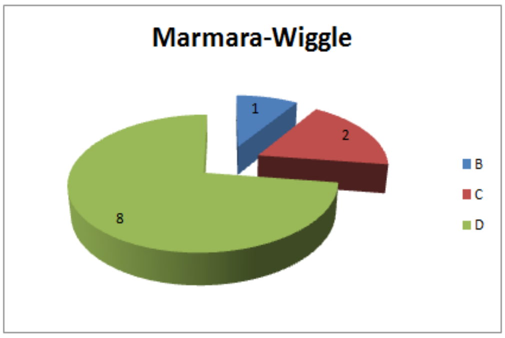


Figure 8. Marmara Wiggle Analysis

Marmara wiggle analysis results table and graphical distribution are shown in Table 18 and Figure 8.

Table 19. Marmara – Material Quality Analysis

Material Quality	Numbers	Percentage
QA	1	9,09%
QB	10	90,91%
Grand Total	**11**	**100,00%**

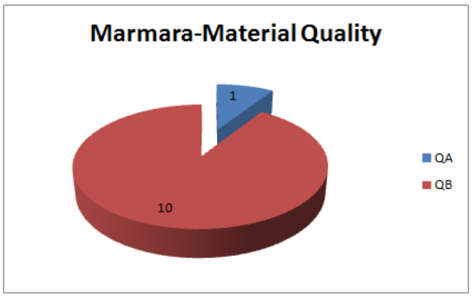


Figure 9. Marmara Material Quality Analysis

Marmara quality of materials analysis results table and graphical distribution are shown in Table 19 and Figure 9.

Table 20. Marmara Subphase Analysis (For QA)

Subphase	Number Of QA Samples
EB 1	1
Grand Total	**1**

Table 21. Marmara Wiggle Analysis (For QA)

Wiggle	Number Of QA Samples
D	1
Grand Total	**1**

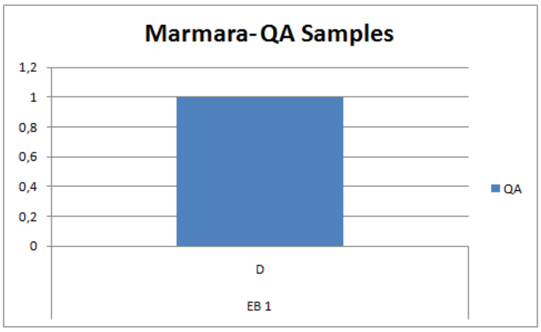


Figure 10. Marmara Subphase & Wiggle Analysis (For QA)

For QA materials, Marmara subphase analysis and wiggle results table and graphical distribution are shown in Table 20, 21 and Figure 10.

6.2.2. Aegean

The pace of cultural development in western Anatolia was very slow and what one can make out of the material culture suggests that the sedentary communities were quite conservative on matters of architecture, art, and religion. Clear cut changes in social structure, settlement types and patterns, new economies, new styles in art and religion are not readily identifiable in every prehistoric settlement, or during the whole duration of the Late Chalcolithic and Early Bronze Age, and when some of these changes are observed in certain settlements it is not always so simple to judge if they should be attributed to migrations or other 'internal' factors which we are not aware of. Tribal movements in approximately 3400- 3200 BC, definitely shaped ethnic configurations of Europe. The so-called Cernavoda I groups were pushed to the west and South. As a result of this dislocation of the Cernavoda I people and their advance to the north of the Aegean (e.g. Macedonia), east Balkans (Bulgaria) and western Anatolia. These three regions which were already populated by Old European farmers started to develop and share a cultural entity, Balkano-Danubian in character, which included same Kurgan characteristics. It is described this new culture as hybrid in character and thought that it was based on the conquers of remaining Old European groups and their rapid assimilation into the Kurgan pastoral economy and heritigally-linked, stratified societies. About this time a chain of hill-top fortifications (or hill-forts) appeared on the Danubian and Thracean plains, and in the north of the Aegean and in western Anatolia (Troia I). It is compared these smaIl settlements to hill-forts north of the Black Sea, such as in the lower Dnieper region. These forts, which were built either on hill-tops or mounds, must have served as tribal centres (Gimbutas 1973: 163-214).

Metal finds and fine pottery found in these forts indicates that the highly skilled craftsmen, were among those housed within the citadels are aforementioned people. In addition to Troia I, Mikhalic, Ezero, Karanovo, Sitagroi, Vucedol and Sarvas (the last two are in northwestern Yugoslavia) are among the known hill-forts established after the Kurgan invasion of Europe. It is believed that many southeast European, Aegean and west Anatolian settlements, such as Poliochni and Thermi, were converted into citadels by the mid third millennium BC

Their central areas were occupied by the ruling class, and the towns were surrounded by heavy fortifications. It is quite remarkable that almost every fortified town and hill-fort in western Anatolia and other areas affected directly or indirectly by the Kurgan invasion produced bronze daggers, halberd blades, fIat sharp axes, shaft-hole axes, awls (quadrangular in cross-section with a bulge in the middle), chisels, battle-axes and maceheads of semi-precious stone and flint arrowheads. Local production is evidenced by clay molds, some of them bivalved, which have been found in Thermi, Troia, Poliochni, Ezero and Sarvas.

Already in the middle third millennium BC hoards of weapons and tools emerge in the Aegean area and central Europe. Dagger axes of several kinds and chisels were kept in store and some of the items may have been used as surplus for trade or exchange. Most significant however, in addition to the widespread use of tin bronzes, weapons and tools that appear in the hoards of Troia II, Poliochni, Alacahöyük Horoztepe, İkiztepe, Maikop, Tsarkaja, Kostromskaja (the last three-sites are located in northwestern Caueasus) are clearly of Kurgan character which is recognizable in the continuous tradition of Caucasian metal forms (Yakar 1985: 94-170).

Kurgan cultural contact with the Aegean basin and northwest Anatolia had taken place ca.3200/3000 BC is generally accepted as a guideline by most scholars. It is pointed out that the baked clay anthropomorphic clay figurines from Cernavoda in Romania, both male and female (representations of deities?), show a striking resemblance to figurines from the Yortan cemetery of Babaköy. In fact the clay statuettes from Demircihhöyük and other parts of the western hinterland (e.g. Afyon) suggest that in figurative art southeast European styles may have influenced the 'new generation' Anatolian artists (Winn 1974: 117-213).

Some changes occurred in the Troad, Karataş-Semayhöyük and Beycesultan during the EB III period with heir Balkan counterparts. Some of these settlements were abandoned and some continued to be occupied with fundamental alterations in the settlement layout and architecture. If we compare the material culture of Troia III to that of Troia II, it is possible to observe the slow transformation of the local pottery assemblage from refined forms of the Troia II era to the lesser quality wares of the Troia III phase. But despite these changes, there is very little to suggest what really happened in the northwest and to what extent the events there affected areas in the western hinterland. So far, in the regional pottery assemblage the only new feature which could indicate the arrival of new immigrants from central or southeast Europe are face jars found at Troia IIg. These vessels, which continued to be manufactured until Troia V, have a wide distribution in western Anatolia, in the Aegean, and even in the southern plateau (Yakar 1985: 94-170).

By the middle third millennium, we start to witness some major changes in settlement plan at Karataş-Semayük. A large, independent megaron structure constructed on the highest point of the mound, overlooking the settlement, is conceptually different to the radial settlement. The court along three sides of the megaron and the earthen embankment around its perimeter heighten the feeling of difference. Enclosing the settlement was a palisade and beyond that pairs of ditches. These changes in architecture are likely to reflect a different level of social complexity. To this can now be added the large megaron building at Aizanoi, near Kütahya, which was built on a platform.

It is logical to assume that developments which caused the west Anatolian EB III culture to expand already in its early phases eastward to Cilicia and Islahiye must have been different to some extent from events which initiated the movement of a population group which produced these anthropomorphic vessels of cultic significance. In fact the impact of the final Kurgan invasion could have caused certain groups in central Europe to move south (e.g. northern Aegean) and cross the Dardanelles to parts of western Anatolia and the Konya plain.

Table 22. Aegean - Subphase Analysis

Sub-phase	Numbers	Percentage
EB 1	113	66,08%
EB 2	14	8,19%
EB 3	40	23,39%
Unknown	4	2,34%
Grand Total	**171**	**100,00%**

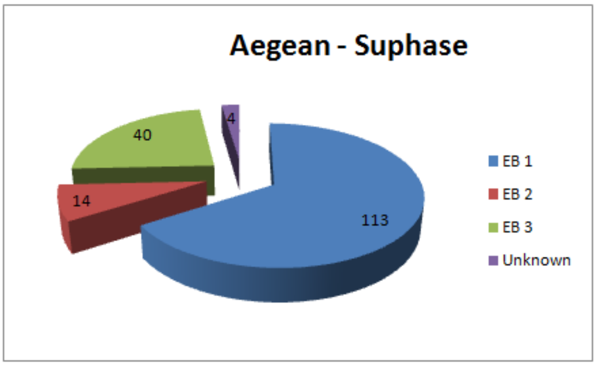


Figure 11. Aegean Subphase Analysis

Aegean sub-phase analysis results table and graphical distribution are shown in table 22 and Figure 11.

Table 23. Aegean – Wiggle Grouping Analysis

Wiggle	Numbers	Percentage
A	8	4,68%
B	15	8,77%
C	22	12,87%
D	62	36,26%
E	28	16,37%
F	34	19,88%
G	2	1,17%
Grand Total	**171**	**100,00%**

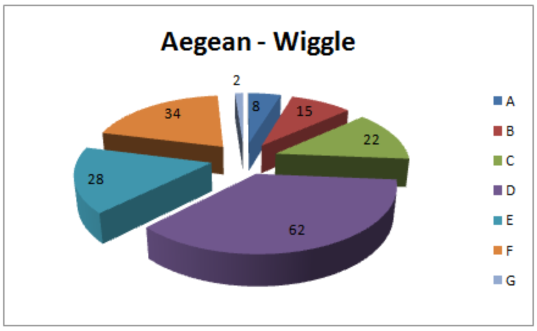


Figure 12. Aegean Wiggle Analysis

Aegean Wiggle Analysis results table and graphical distribution are as shown Table 23 and Figure 12.

Table 24. Aegean – Material Quality Analysis

Material Quality	Numbers	Percentage
QA	25	14,62%
QB	117	68,42%
QU	29	16,96%
Grand Total	**171**	**100,00%**

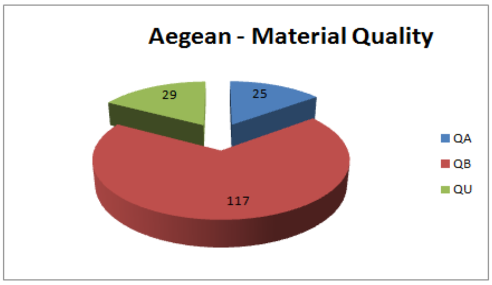


Figure 13. Aegean Material Quality Analysis

Aegean Material Quality Analysis results table and graphical distribution are as shown Table 24 and Figure 13.

Table 25. Aegean Subphase Analysis (For QA)

Subphase	Number Of QA Samples	Percentage
EB 1	11	44,00%
EB 3	12	48,00%
Unknown	2	8,00%
Grand Total	**25**	**100,00%**

Table 26. Aegean Wiggle Analysis (For QA)

Wiggle	Number Of QA Samples	Percentage
B	2	8,00%
C	2	8,00%
D	7	28,00%
E	2	8,00%
F	11	44,00%
G	1	4,00%
Grand Total	**25**	**100,00%**

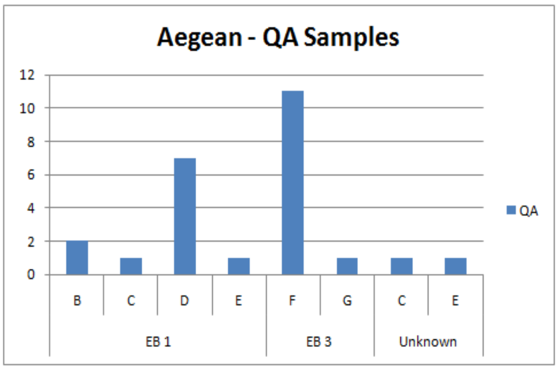


Figure 14. Aegean Subphase & Wiggle Analysis (For QA)

For QA materials, Aegean subphase and wiggle analysis results table and graphical distribution are shown Table 25, 26 and Figure 14.

6.2.3. Central Anatolia

The transition between the Late Chalcolithic and EB I in the interior of Anatolia is quite unclear. At Çadır Höyük occupation in the Early Bronze Age began with a settlement much less substantial than its earlier counterparts lt is only towards the middle stretch of the third millennium that developments become apparent, and only then in the area around Alişar, which was a fortified settlement in contact with Cilicia (Sagona and Zimansky 2009: 199-200).

Central Anatolian handmade dark slipped burnished wares, have a distant resemblance to east Anatolian dark burnished wares. These two groups developed from the very beginning independent of each other. Central Anatolian assemblage maybe Anatolian variant of southeastern origins. Ceramic dividing line between eastern and central Anatolia is better visible in the EB II-III than in EB I (Yakar 1985: 170-206).

The ethnic affiliation of the Alacahöyük burials is still enigmatic. It is regarded the Alacahöyük royal burials as members of a local dynasty. In fact, "a series of small kingdoms can be reconstructed along the route from Troia to Alacahöyük, and that the rise of metallurgy was one of the main factors which made these sites locally powerful and occcasionally useful of their Aegean neighbours. The shaft graves which were in fact subterranean stone and timber built chamber tombs suggest that the dynasty or the upper strata of the Çorum province may have been of a different background from the majority of the population. The unusual character of these and other similar but later tombs is clear in the context of rather conservative early Anatolian (intramural) jar burials (Mellink 1956: 39-58).

The kings of Alacahöyük occupied a privileged position in the field of trade and communications among the inhabitants of the Aegean and Anatolian world. Their advantage lay in superior technology and access to metallurgical centres. It is certainly correct in pointing out that all the significant correlations which can be established between Alacahöyük and the Aegean world belong in the category of metal artifacts. Among these metal objects, mirrors are particularly important to the discussion of relations between the Aegean and Anatolia, or, in other words, between the Early Cycladic (and Euboean) "frying-pans" and bronze mirrors from the Alaca tombs. The unusual feature of the raised rims on the Alaca bronze mirrors is exactly paralleled on the Early Cycladic "frying pans’. Some of the handIe forms of the latter could also be seen on certain Alacahöyük mirrors. It is very likely that these enigmatic objects of rather similar outline but of different material and decoration may be cult objects of similar religious symbolism and/or attributes of rather similar deities (Mellink 1956: 39-58).

The Pontic culture is not entirely indigenous to Anatolia. lts sophisticated metallurgy could have hardly developed from the rather modest Copper Age metalworking traditions. Although the inhabitants of north-central Anatolia were partly indigenous, the types of settlements and burials suggest that in the second half of the third millennium BC some regions (e.g. Çorum, Amasya, Tokat) may have been occupied by semi-nomadic groups practising enclosed nomadism (Yakar 1985: 170-205).

Table 27. Central Anatolia - Subphase Analysis

Subphase	Numbers	Percentage
EB 1	3	10,71%
EB 2	15	53,57%
EB 3	6	21,43%
Unknown	4	14,29%
Grand Total	**28**	**100,00%**

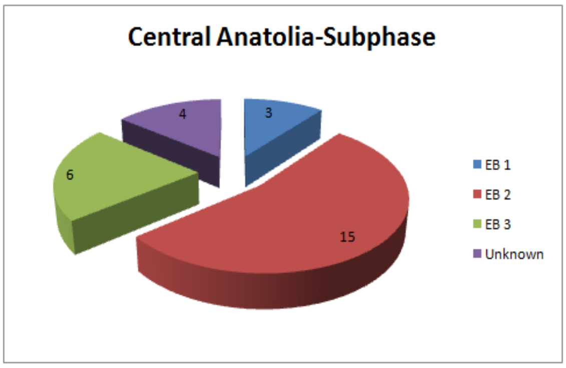


Figure 15. Central Anatolia Subphase Analysis

Central Anatolia Subphase Analysis results table and graphical distribution are shown in Table 27 and Figure 15.

Table 28. Central Anatolia – Wiggle Grouping Analysis

Wiggle	Numbers	Percentage
A	1	3,57%
B	2	7,14%
C	1	3,57%
D	8	28,57%
E	4	14,29%
F	10	35,71%
G	2	7,14%
Grand Total	**28**	**100,00%**

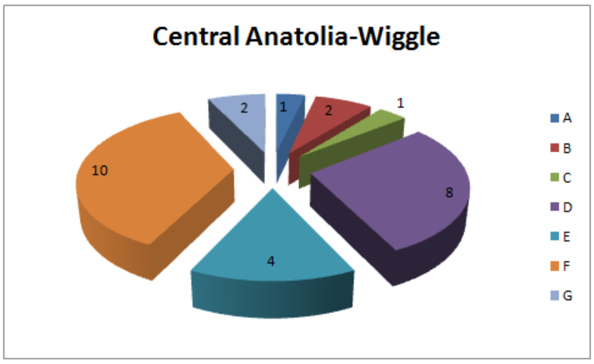


Figure 16. Central Anatolia Wiggle Analysis

Central Anatolia Wiggle Analysis results table and graphical distribution are shown in Table 28, 29 and Figure 16.

Table 29. Central Anatolia – Material Quality Analysis

Material Quality	Numbers
QA	2
Grand Total	**2**

Central Anatolia Material Quality Analysis results are shown in Table Table. All samples are situated in QA material quality. Graphic is not included.

Table 30. Central Anatolia Subphase Analysis (For QA)

Subphase	Number Of QA Samples
EB 3	2
Grand Total	**2**

Table 31. Central Anatolia Wiggle Analysis (For QA)

Wiggle	Number Of QA Samples	Percentage
B	1	50,00%
D	1	50,00%
Grand Total	**2**	**100,00%**

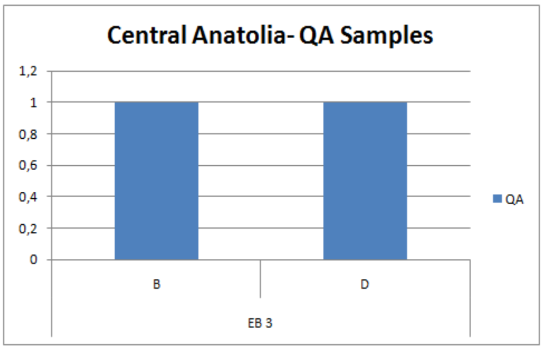


Figure 17. Central Anatolia Subphase & Wiggle Analysis (For QA)

For QA Material Analysis – Subphase and wiggle analysis of Central Anatolia results table and graphical distribution are shown in Table 30, 31 and figure 17.

6.2.4. Mediterranean

The fact that most Late Chalcolithic settlements in southern Anatolia (except Cilicia) are not located on mounds. The sedentary communities seem to have organized themselves in small settlements and maintained, as their predecessors, an economy based on mixed farming. The evidence from Can Hasan I suggests that houses were built of mud- bricks and not necessarily on stone foundations. These dwellings, although rather flimsy, were relatively spacious and were not built in closely packed units . A study of the pottery assemblage from EB-I-II mounds and from Karahöyük-Konya illustrates that the third millennium culture of the Konya plain, which expanded to Cilicia at the beginning of the EB I period, was strongly affiliated to the Late Chalcolithic of the southern plateau. Settlements of the EB I period could be classified as small to medium size villages. The process of urbanization did not really start in southern Anatolia before the EB II period. In Cilicia, Tarsus EB II architectural remains provides, the best example so far of early urban planning in Anatolia. Large houses lining both sides of a street, and a fortification system, suggest that some of the elements of urban planning started to emerge in the EB II town. Whether this was a local development or derived from northern Syria is open to question. In view of the fact that Cilicia continued to maintain its traditional links with regions beyond the Amanus, while its culture developed along the lines observed in the Konya basin, some influences in town planning could have indeed come from Syria (Yakar 1985: 207-229).

The EB II in Cilicia could be described as a period of gradually increasing trade and cultural Exchange with northern Syria and central Anatolia. Even the events which brought about the desertion of numerous EB settlements in the southern plateau, and the introduction of west Anatolian EB III culture to Cilicia, did not change much the pattern of eeonomic and trade activity in the second half of the third millennium BC In fact, contact with regions beyond the Taurus and the Amanus seems to have intensified during the EB III a-b periods. As for maritime trade, it must have involved coastal settlements between Silifke and İskenderun, on the one hand, and the Cypriote ports on the other. Trade connections with Egypt probably involved Cypriote middlemen who had the potential to supply the Egyptian markets with Anatolian silver (from the Taurus mountains), timber (both from the Amanus and Taurus) and resin (from pine and fir).

The latter commodity must have been in great demand in Egypt as it was an essential substance used in embalming the dead (the reserved slip pitcher of Cilician EB II found in Giza contained trades of this substance). Other indications of trade with and via Cyprus are pottery of Cypriote origin found in EB II contexts at Tarsus, such as red and black streak- burnished ware. The EB III period at Tarsus is characterized by the emergence of west Anatolian features in architecture, ceramic forms and an advanced metallurgy known from Tarsus (Mellink 1965: 101-131).

The presence of some extremely large mounds with EB II-III remains in the Konya plain and Cilicia could well indicate the existence of large cities which were the centres of city-states. These large urban settlements (e.g. Karahöyük-Konya), and the fact that trade contacts between central Anatolia/Cilicia and north Syria/ Mesopotamia substantially increased following the EB IIIa period, should prompt us to re-evaluate our scepticism regarding the authenticity of the 'legendary' claims by the Akkadian kings Sargon and Naram-Sin about their military campaigns against Anatolian kings and princes (Mellaart 1963: 199-236). We have to consider the following facts:

(a) The interpretation of archaeological evidence (size and shape of EB II-III mounds) does not rule out the existence of large city-states governed by 'royal' leaders (e.g. Kültepe);

(b) North Syrian/Mesopotamian imports found in major central Anatolian 'cities' and at Tarsus include not only certain goods transported in clay vessels but probably some fine jewellery and luxury items as well. The scope of the trade activity between Anatolian settlements and those in areas under Akkadian domination, beyond the Amanus, suggests that it must have been organized by major centres, probably involving foreign merchant groups (such systems existed in eastern and southeastern Anatolia as early as the Late Chalcolithic period);

(c) The fact that Cilicia and areas in and beyond the Taurus were rich in natural resources (timber, silver, copper, tin in Kestel) must have been long known to ambitious Akkadian rulers who may have indeed tried to gain access to these riches.

Table 32. Meditterranean - Subphase Analysis

Subphase	Numbers	Percentage
EB 1	6	75,00%
EB 2	1	12,50%
EB 3	1	12,50%
Grand Total	**8**	**100,00%**

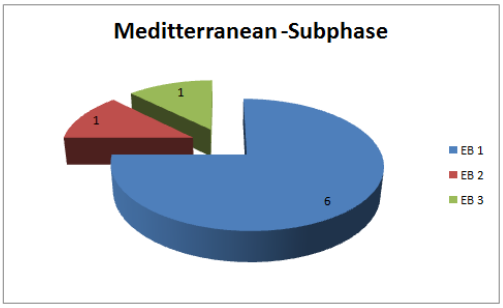


Figure 18. Meditterranean Subphase Analysis

Meditterranean Subphase Analysis results table and graphical distribution are are shown in Table 32 and Figure 18.

Table 33. Meditterranean – Wiggle Grouping Analysis

Subphase	Numbers	Percentage
A	1	12,50%
B	3	37,50%
C	1	12,50%
D	1	12,50%
F	2	25,00%
Grand Total	**8**	**100,00%**

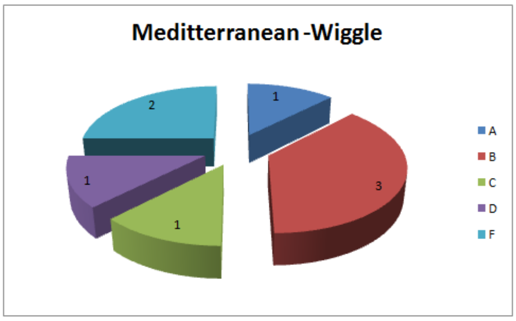


Figure 19. Meditterranean Wiggle Analysis

Meditterranean Wiggle Analysis results table and graphical distribution are shown in Table 33 and Figure 19.

Table 34. Meditterranean – Material Quality Analysis

Material Quality	Numbers	Percentage
QB	6	75,00%
QU	2	25,00%
Grand Total	**8**	**100,00%**

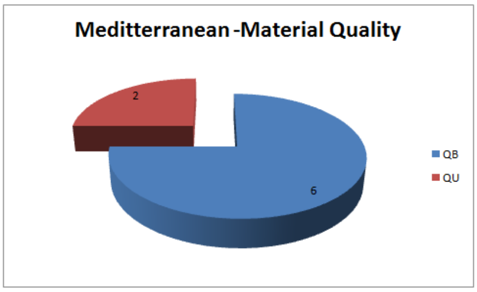


Figure 20. Meditterranean Quality Of Material Analysis

Meditterranean Material Quality Analysis results table and graphical distribution are as shown in Table 34 and Figure 20.

Mediterranean Quality Of Material Analysis (QA Type) Is Not Avaiable

6.2.5. Southeastern Anatolia

After the collapse of the Uruk colonial network, centralization of authority and its variations almost disappeared, and did not re-appear until about 2600-2500 BC when large urban centers and their polities began to dominate the landscape in response to a resurgence of Mesopotamian influences. Squeezed between these two periods Early Bronze Age I-II developed a socio-political system essentially rural, attested by the small towns and villages scattered across the Anatolian foothills and plains (Sagona and Zimansky 2009).

In the first place, we can note a marked reduction in the size of sites. For example Kurban Höyük, a bustling viIIage of four hectares in the Late Chalcolithic contracted to one hectare in the subsequent period. This pattern of a decrease in site size from the Iate fourth to the early third millennium BC is also reflected in the surrounding region where a number of settlements of similar dimensions are situated. On the other hand, the number of sites actually increased in the post- Uruk period. These two features, a reduction in the size of settlements and an increase in their number suggest a demographic shift to the countryside.

Samsat and Carchemish were the dominant sites along the Turkish Lower Euphrates and therefore probably became nodes for communication. This change in settlement pattern may also reflect the shifting routes of trade that appear to have favored the Khabur and Tigris basin rather than the Euphrates in the early third millennium BC Even so, trade may have been scaled down along the Turkish Euphrates corridor , it certainly did not collapsed. Grave goods in the form of metal artefacts and jewellery items from the Birecik and Hassek Höyük cemeteries leave no doubt that many families were stilI prosperous. Radical shifts inthe social and political structures and innovations in metal technology characterize the Early Bronze Age III ca. 2500-2000 BC Large cities and centers developed at Titriş, Samsat, Lidar, and Kazane south of the Taurus, as southeastern Anatolia became absorbed into the territorial network of the Akkadian Empire. It is not clear the degree of influence external dynamics had in the emergence of urbanism in southeastern Turkey. Titriş Höyük, the capital of a smaIl city-state that lasted about 300 years (2500-2200 BC) is a crucial site. Covering an area of 43 ha, the site comprises a high mound, where presumably the ruler lived with the central administrative quarters, and suburbs that stretched across the lower and outer town sectors. A massive fortification wall surrounded the entire city. The overall plan is suggestive of a highly organized, central authority with a clear predetermined idea of design. Large public buildings, constructed both on the high mound and in the lower areas, were the focal points of a comfortable and bustling city. Substantial terraces point to the levelling of areas before the construction of the domestic quarters, which were provided with wide streets, well-built houses of standard plan that were fitted with seweragefacilities. That the houses closest to the high mound were larger, may point to the status of its occupants. Yet despite the urban character of Titriş, the frequent occurrence of sickle blades in houses indicates that its residents were stili closely tied to the land and the agricultural cycle. Other specialized activities include textile manufacture, wine production, and the knapping of Canaanean blades. Kurban Höyük and Lidar Höyük were secondary centres, both with scaled- down features that are redolent of Titriş (Sagona and Zimansky 2009: 174-185).

Table 35. Southeastern Anatolia - Subphase Analysis

Subphase	**Numbers**	**Percentage**
EB 1	14	9,09%
EB 2	6	24,24%
EB 3	13	66,67%
Genel Toplam	**33**	**100,00%**

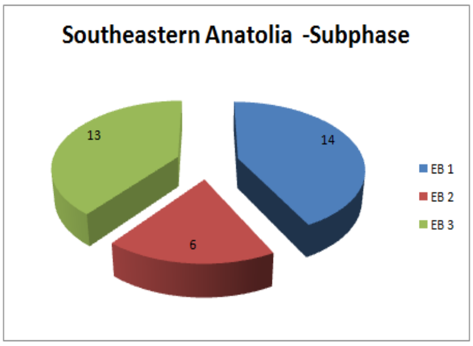


Figure 21. Southeastern Anatolia Subphase Analysis

Southeastern Anatolia Subphase Analysis results table and graphical distribution are in Table 35 and Figure 21.

Table 36. Southeastern Anatolia – Wiggle Grouping Analysis

Wiggle	Numbers	Percentage
B	9	27,27%
C	4	12,12%
D	4	12,12%
E	7	21,21%
F	9	27,27%
Genel Toplam	**33**	**100,00%**

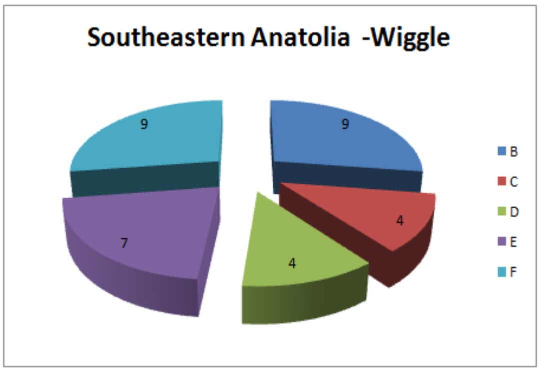


Figure 22. Southeastern Anatolia Wiggle Analysis

Southeastern Anatolia Wiggle Analysis results table and graphical distribution are shown in Table 36 and Figure 22.

Table 37. Southeastern Anatolia – Material Quality Analysis

Material Quality	Numbers	Percentage
QA	3	9,09%
QB	8	24,24%
QU	22	66,67%
Grand Total	**33**	**100,00%**

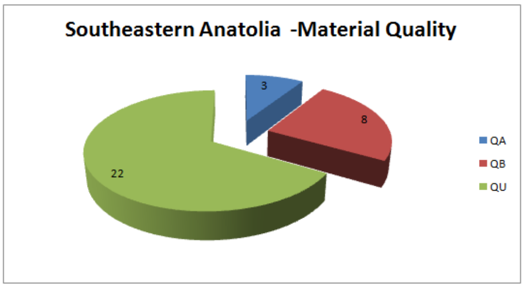


Figure 23. Southeastern Anatolia - Quality Of Material Analysis

Southeastern Anatolia Material Quality Analysis results table and graphical distribution are shown in Table 37 and Figure 23.

Table 38. Southeastern Anatolia Subphase Analysis (For QA)

Subphase	Number Of QA Samples	Percentage
EB 1	2	66,67%
EB 3	1	33,33%
Genel Toplam	**3**	**100,00%**

Table 39. Southeastern Anatolia Wiggle Analysis (For QA)

Wiggle	Number Of QA Samples	Percentage
D	1	33,33%
E	2	66,67%
Genel Toplam	**3**	**100,00%**

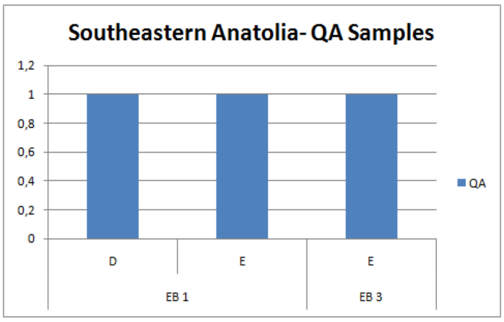


Figure 24. Aegean Subphase Analysis (For QA)

QA Material Analysis – Southeastern Anatolia subphase and wiggle analysis results table and graphical distribution are shown Table 38, 39 and Figure 24.

6.2.6. Eastern Anatolia

Around 3000 BC the impressive Uruk-influenced palace and temple complex at Arslantepe collapsed with it centralized organization. What followed was striking change in the nature of the settlement and sociocultural dynamics at Arslantepe and in the greater Malatya-Elazığ region, highlighted by the intruding of several cultural traditions. Syro-Mesopotamian influence is still clearly discernable in ceramics, but embedded in a strong East Anatolian and Trans-Caucasian context.

At Arslantepe, pastoral groups introduced a lifestyle and cultural heritage that had deep roots in Trans-Caucasus. These people, established a complex distinguished with the red-black ware which was already in circulation in previous phase. After the collapse earliest settlement was a village of freestanding huts, mostly irregular in plan, but conforming generally to a rectangular shape with rounded corners. These dwellings had wattle and daub walls supported on a framework of wooden posts.

Mud-brick was used sparingly with a sunken floor (Sagona and Zimansky 2009: 182-190).

Excavations reveal small clusters of huts sometimes joined by rows of postholes, which probably used for livestock. The village was short lived, but its material was remarkably homogenous, covering handmade red-black pottery of the Trans-Caucasian type. The subsequent and more substantial settlement has a similar organization of space and house design, but is constructed with mud bricks. For example, one house has a main room furnished with a circular hearth set into the center of the floor, and an anteroom used for storage. It is a combination of a conceptually Trans-Caucasian settlement with a ceramic assemblage that has a considerable amount of pale colored, wheelmade vessels, recalling the earlier Syro-Mesopotamian traditions.

In Norşuntepe in the earliest layers, a substantial perimeter wall built of mud-bricks on stone foundations surrounded the settlement, like the ones at its neighbors Tepecik and Tülintepe. The grave goods in the Birecik cemetery, confirm southern influences. Most part of the houses were freestanding, rectilinear structures constructed of mud bricks.

Meanwhile, in the Murat Valley which was isolated from the main traffic with northern Syria, we find an interesting connections with western regions. At Pulur (Sakyol) the settlement of Level X was laid out in a radial design, with adjoining houses and a communal central court. Yet the household fittings and contents mud brick benches, horseshoe shaped hearths with anthropomorphic decoration, ash pit and elaborately ornamented red-black pottery which are redolent of the Kura-Araxes (Early Trans- Caucasian) tradition. So here we see another tantalizing aspect of cultural interplay at work, this time combining a westerrı concept of viIIage layout, with an eastern sense of domestic space. We should place Taşkun Mevkii, with its juxtaposition of freestanding wattle and daub and mud brick buildings, and few examples of metalwork within this context too.

During the Early Bronze Age II the Syro-Mesopotamian influence at Norşuntepe started to wane, with a noticeable rise in Trans-Caucasian black burnished (Kura-Araxes) ceramics that are now associated with red-on-cream. Malatya-Elazığ painted vessels, whose ladder motifs mimic the relief designs on the burnished ceramics. Architectural designs changed rapidly from a round house through a wattle and daub structure to multiroomed, mud brick buildings. Arslantepe, by way of contrast, has no corresponding settlement during this interval. Following this, standardization set in and profound changes were experienced at Norşuntepe Wattle and daub houses have typical features like rounded corners, benches along the walls, and an eye-catching, horned hearth in the centre-well known from inner Georgia, in Trarıs-Caucasus. The Norşuntepe dwellings also yielded considerable evidence of metallurgical activiry, inclduding crucibles and a bivalve mould for a shaft hole axe. As elsewhere in the region, ceramics show various influences, although Kura-Araxes predominates In terms of socioeconomic complexity, Noşuntepe reached its summit in the Early Bronze Age III period which lasted some *500* years (2500 to 2000 BC), as indeed did a number of sites in the Altınova Plain.

Arslantepe emerged in the Early Bronze Age III as a permanent settlernent, though nowhere as grand as Norşuntepe. In addition to the Syro-Mesopotamian ceramic wares that have already been dealt within the third millennium the Upper Euphrates is distinguished by two handmade horizons-the Kura-Araxes red-black burnished pottery and the Malatya-Elazığ painted vessels. Kura-Araxes pottery shows some very general trends from Early Bronze Age I to Early Bronze Age III. Relief decoration, for instance, appears to be more popular in the earlier centuries than incised and fluted ornamentation, which found favor towards the middle and end of the millennium (Sagona and Zimansky 2009: 182-190).

As we move eastwards from the Euphrates, into the rugged highlands that comprises the vast proviınce of the Kura-Araxes culture, Syro-Mesopotamian influences begin to fade. Trans- Caucasian affiliations manifest themselves more prominently. Sos Höyük (Eruzurum) offers the most hope, but its restricted exposures for the Early Bronze Age preclude a full understanding of settlement layout. Nearby are the sites of Karaz, Güzelova and Pulur excavated by Hamit

Koşay, but none provides a differentiated stratigraphy Further along, in the Lake Van Basin, we have Karagündüz and Dilkaya.

After the formative period of the Late Chalcolithic, easterrı Anatolia continued to play a pivotal role in the character of the Kura-Araxes. Within this divided landscape, this horizon is today represented by numerous mound sites that contain the accumulated debris of farming and transhumant settlements, mostly of modest proportion averaging about 150 m. in diameter. Larger sites do exist, especially in the westerrı periphery of this culture province, along the Turkish Upper Euphrates region, and the easterrı periphery, in the Ağrı province and modem Armenia, where fortified sites have been reported. The processes involved in the swift and astonishing dispersal of this horizon are stili obscure, but evidence suggests the migration of people to a large extent (Sagona and Zimansky 2009). Whether this involved directional movement of certain groups from one region to another, or a more mosaic, is difficult to say, but the earlier view of a wave of people is unlikely. There has been a tendency to view the Kura-Araxes assemblage as rather homogenous, whose history unfolds in a linear narrative, promoting monolithic and static notions of cultural development. The picture is far more complex. Even though, on the whole, communities tenaciously preserved fundamental elements of the Kura- Araxes culture hearths, distinctive ceramic attributes, architectural styles, and use of space and so on the horizon is distinguished through multiple regional adaptations, reflecting a con-scious definition of group and individual identity.

Around 2300 BC or earlier, the fortunes of communities living in easterrı Anatolia began to change, largely because of new influences emanating from southern Caucasus. In the archaeological record of Caucasus, this is reflected in a number of large and striking elite tombs found throughout Trans-Caucasus, whose construction and contents differed markedly from the modest and simple pit inhumations of the preceding millennium. Termed *kurgan* burials and first investigated in Georgia in the Trialeti region, these new barrow inhumations and their rich assemblage, which included vessels of precious metals and, in some cases, a vehicle with four wheels of solid wood, are generally accepted as the hallmarks of a new age distinguished by fundamental social changes .

One of the issues that has generated considerable interest is the mode of economic subsistence practiced by the Kura-Araxes communities. Most researchers have argued in favor of a specialized strategy involving pastoral mobility. Accordingly, Eastern Anatolia in the Early Bronze Age has been viewed as a landscape settled largely by nomadic stockbreeders, or at the very least by communities who practiced some form of transhumance a subsistence strategy that involved part of a community moving with their flocks, seasonally or periodically, to different environmental zones (Sagona and Zimansky 2009).

Table 40. Eastern Anatolia - Subphase Analysis

Subphase	Numbers	Percentage
EB 1	57	44,53%
EB 2	21	16,41%
EB 3	48	37,50%
Unknown	2	1,56%
Genel Toplam	**128**	**100,00%**

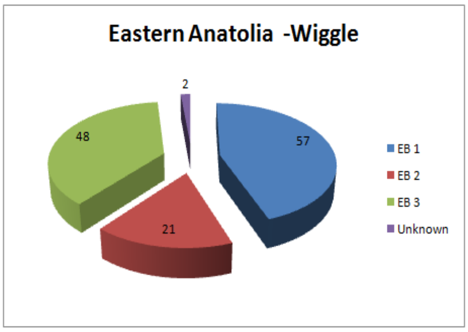


Figure 25. Eastern Anatolia Subphase Analysis

Eastern Anatolia Subphase Analysis results table and graphical distribution are shown in Table 40 and Figure 25.

Table 41. Eastern Anatolia – Wiggle Grouping Analysis

Wiggle	Numbers	Percentage
A	8	6,25%
B	21	16,41%
C	14	10,94%
D	30	23,44%
E	20	15,63%
F	34	26,56%
G	1	0,78%
Genel Toplam	**128**	**100,00%**

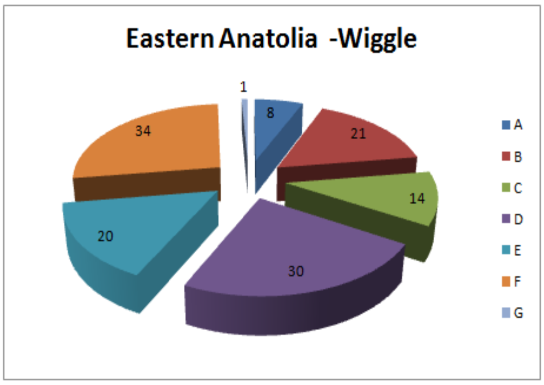


Figure 26. Eastern Anatolia Wiggle Analysis

Eastern Anatolia Wiggle Analysis results table and graphical distribution are shown in Table 41 and Figure 26.

Table 42. Eastern Anatolia – Material Quality Analysis

Material Quality	Numbers	Percentage
QA	9	7,03%
QB	49	38,28%
QU	70	54,69%
Genel Toplam	**128**	**100,00%**

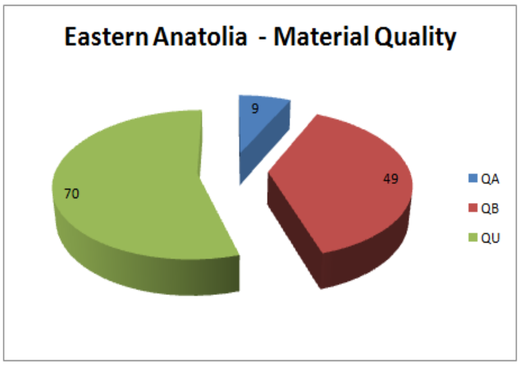


Figure 27. Eastern Anatolia Quality Of Material Analysis

Eastern Anatolia Material Quality Analysis results table and graphical distribution are shown Table 42 and Figure 27.

Table 43. Eastern Anatolia Subphase Analysis (For QA)

Subphase	Number Of QA Samples	Percentage
EB 1	1	11,11%
EB 2	5	55,56%
EB 3	1	11,11%
Unknown	2	22,22%
Genel Toplam	**9**	**100,00%**

Table 44. Aegean Wiggle Analysis (For QA)

Wiggle	Number Of QA Samples	Percentage
B	1	11,11%
C	1	11,11%
D	1	11,11%
E	4	44,44%
F	2	22,22%
Genel Toplam	**9**	**100,00%**

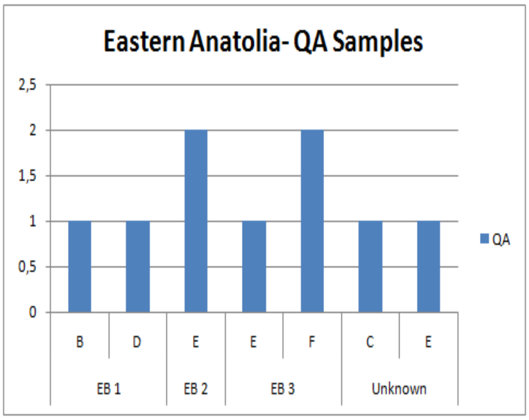


Figure 28. Aegean Subphase & Wiggle Analysis (For QA)

QA Material Analysis – Eastern Anatolia subphase and wiggle analysis results table and graphical distribution are shown in Table 3, 44 and Figure 28.

6.2.7. Black Sea

The stratigraphy of İkiztepe I and II provides us with a rare opportunity to study the sequence of prehistoric occupation in the Bafra plain. This information in turn could be used to evaluate other local stratigraphies in the Samsun province (e.g. Dundartepe, Tekeköy, Kavak) and reconstruct the regional sequence of Late Chalcolithic and EBA frameworks.

At İkiztepe I, the Late Chalcolithic settlement, which has seven architectural phases, was built on virgin soil. According to C14 estimates it dates from the fourth and third millennium BC It means that this humid forest zone in northern Anatolia was not inhabited in the Late Neolithic or Early Chalcolithic period. In fact, the first farmers arrived in this region about the same time that southern and eastern Thrace and the Troad were being settled. It is not clear if the whole of the Black Sea region was being populated by Late Chalcolithic groups arriving from the west and across the sea. The handmade grey, greyish black, black and dark brown self-slipped wares with no distinctive decoration (except for a few examples of jars with facial features in relief) characterize the strata with Late Chalcolithic occupation.

The EBA I features in the material culture were introduced by a new group of people who first destroiaed and then reoccupied the Late Chalcolithic settlement at İkiztepe. Although there is no noticeable change in the character of village architecture, the new pottery repertoire, the chipped-stone industry, and a small number of clay figurines suggest that the newcomers were affiliated with peoples of a different ancestry than those of the Late Chalcolithic sub-strata. The new culture was not confined to the Bafra plain only, but spread to other parts of the Black Sea and even to the northerrtand western parts of the central plateau as well. Another explanation for the distribution pattern of this culture could be that the newcomers, arriving from the west in great numbers, first settled in the northern parts of central Anatolia, gradually spreading to the Black Sea littoral (Yakar 1985: 230-245).

According to the stratigraphy of İkiztepe and, for that matter, of Dündartepe, no major events seem to have disturbed the human activity in the permanent settlements during the earlier part of the third millennium BC However, this assessment cannot be made for the second half of the third millennium BC In most excavated and surveyed settlements there are clear signs of temporary or even permanent interruption in sedentary occupation at the end of EB II or during EB IllA (in central Anatolian terms). At İkiztepe for instance Mound I was totally arpartly transformed into a burial ground. As at Alacahöyük the relationship with the EB residentialareaofthe
viIIage is not very clear (Yakar 1985). As long as architectural evidence for a major viIIage or town of EB III period at İkiztepe and to same extent at Dündartepe is lacking one is naturally tempted to ask the following question: was the cemetery at İkiztepe an extramural burial ground one of many dispersed in this region of a semi-nomadic people who invaded northern Anatolia in the course of the EB III period?

What happened at Ikiztepe and other Pontic sites at the end of the third millennium BC is not very clear. The cemetery on Mound I at Ikiztepe was probably not used extensively af ter that time since it is covered with remains of the so-called Transitional (early second millennium) set tlement. But this situa tion is not entirely clear , Nevertheless it is quite possible that large groups of Pontic pastoralists chose for same reason or other to move and disperse to other parts of Anatolia (e.g. central plateau).

Stratified samples for radiocarbon dating taken from Ikiztepe Mound I and II provide some grounds by no means absolute for calculating the duration of the Late Chalcolithic and EBA complexes in northern Anatolia. In estimating the beginnings of the Late Chalcolithic culture of İkiztepe (Period III) and the subsequent EB I culture it is important to note certain undeniable similarities. between the potteryand figurative art inventories of this settlement and the corresponding material culture from settlements in the Balkans and the Danube basin.

Northern Anatolia's connections with southeast Europe have long been the subject of discussion by Anatolian and Balkan archaeologists. Howevert the exact nature of these connections has always been a source of confusian due to different interpretations and chronological classifications of cultural complexes. The scarcity of well stratified sites in the middIe Danube valley and Thrace has to same extent contributed to this confusion, which only recently is in the process of being dissipated. Same of the relief-decorated (facial features) jars of Ikiztepe Late Chalcolithic repertoire are correlated with those from Anza IV in Macedonia. The decorated examples from the early strata of Ikiztepe II could alsa be compared with regional pottery from southeast European settlements of Karanova V-VI horizon. The EB I parallels are with the Karanova VII horizon in the Balkans and the Büyük Güllücek ware group of north-central Anatolia. The metalwork of the EB III period from Dündartepe or İkiztepe has a typology very similar to the weapons deriving from the Pontic tombs of EB III date (Yakar 1985).

Table 45. Black Sea - Subphase Analysis

Subphase	Numbers	Percentage
EB 1	2	28,57%
EB 3	5	71,43%
Grand Total	**7**	**100,00%**

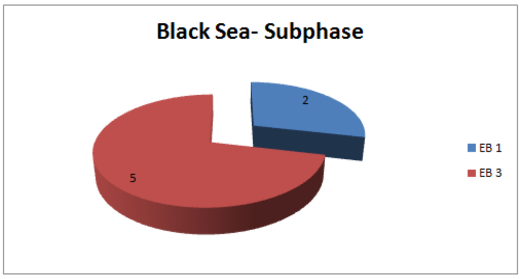


Figure 29. Black Sea Subphase Analysis

Black Sea Subphase Analysis results table and graphical distribution are shown in Table 45 and Figure 29.

Table 46. Black Sea – Wiggle Grouping Analysis

Wiggle	Numbers	Percentage
A	1	14,29%
B	1	14,29%
C	2	28,57%
E	1	14,29%
F	2	28,57%
Grand Total	**7**	**100,00%**

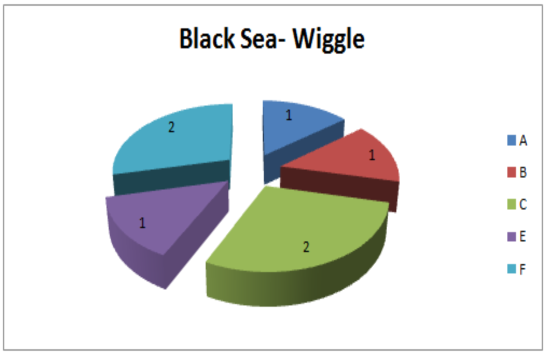


Figure 30. Black Sea Wiggle Analysis

Black Sea Wiggle Analysis results table and graphical distribution are shown in Table 46 and Figure 30.

Table 47. Black Sea – Material Quality Analysis

Material Quality	Numbers	Percentage
QA	3	42,86%
QB	2	28,57%
QU	2	28,57%
Grand Total	**7**	**100,00%**

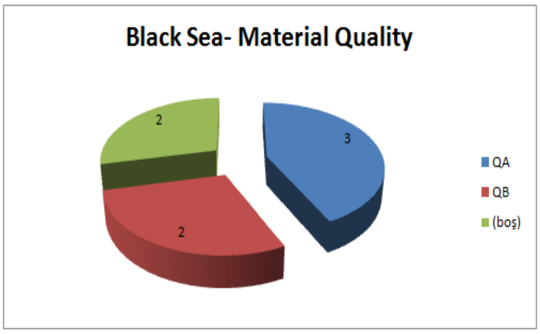


Figure 31. Black Sea Wiggle Analysis

Black Sea Material Quality Analysis results table and graphical distribution are shown in Table 47 and Figure 31.

Table 48. Black Sea Subphase Analysis (For QA)

Subphase	Number Of QA Samples	Percentage
EB 1	1	33,33%
EB 3	2	66,67%
Genel Toplam	**3**	**100,00%**

Table 49. Black Sea Wiggle Analysis (For QA)

Wiggle	Number Of QA Samples	Percentage
C	1	33,33%
F	2	66,67%
Genel Toplam	**3**	**100,00%**

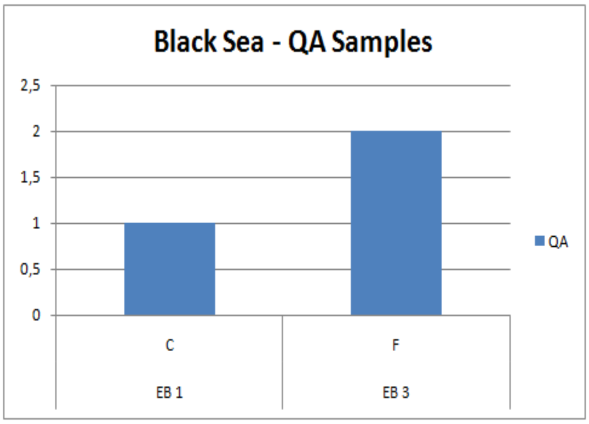


Figure 32. Black Sea Subphase & Wiggle Analysis (For QA)

QA Material Analysis – Black Sea subphase and wiggle analysis results table and graphical distribution are shown in Table 48, 49 and Figure 32.

CHAPTER 7

RELATIVE CHRONOLOGY

Relative chronology, refers to the temporal ordering of objects and events relative to each other, such that assemblage or context or object etc. At a particular site, this can be clear in a stratigraphic ordering. However, on a wider basis, connecting different contexts or sites, comparisons are made between artifact types (and assemblages thereof). Sets of stylistic traits are thus defined to represent one context or phase or period or culture and so on, and assemblages found in different contexts or at different sites with similar stylistic traits are then linked-as seeminglIy very similar (and more or less) contemporary or as seemingly a bit earlier or later, and so forth (Manning 2010). The works trying to solve Anatolian Late Chalcolithic and Early Bronze Age choronological order is not on a wider base so far. Some discussions are made by (Mellink 1965, Eslick 1992, Yakar 1985, Seheer 1987, Roodenberg 1990, Efe 1990, Özdoğan 1991). Some studies took place on Robert W. Ehrich's works which are tried to combine and figure out choronological evidence of Anatolia. (Choronologies in Old World Archaeology 1992, 1967), (Relative chronologies in Old World Archeology 1954). Relative choronological works that has been done with archaeological methods give different appearances according to absolute dates (Duru, 1996). The most detailed work which has been done before is the 'The Absolute Chronology of the Aegean Early Bronze Age' by Sturt W. Manning, 1995. Although this study is mainly concerned in Aegean world, it includes some Anatolian sites which are compared in their basis of relative and absolute chronologies.

Some different calenderical frameworks are proposed in previous works for the Early Bronze Age of Anatolia. (Ehrich 1992, Efe 1988). And for the beginning of the Early Bronze Age of Anatolia varied dates are offered in the past.

3600/3400 BC	French 1968
3100/2900 BC	Mellaart 1971, Blegen 1958
2800 BC	Mellink 1965

Even though offers varies, the general tendency is to start up EBA around somewhere 3100/3000 BC and to end it approximately 2000 BC in Anatolia (Joukowsky 1992, Sagona and Zimmansky 2009). Although it is thought the beginning ocurred in the west and southeast previously, for the end of EBA in Anatolia 2000 BC offered usually for every region.

Some scholars proposed different dates for Aegean EBA beginnings which are interesting to me. Some of those dates are (Adapted from Manning, 1995);

Before 3000 BC	Sherrat, 1986
3200 BC	Renfrew, 1972; Betancourt and Lawn, 1984
3250 BC	Treuil et al. 1989
3300 BC	Cadogan, 1983
3400 BC	Evans, PM I
Pre-3400 BC	Huot, 1982
3500 BC	Easton, 1988
3650/3600 BC	Warren and Hankey, 1989
Pre-4000/3600 BC	Warren, 1980
4000/3800 BC	Treuil, 1983
4000 BC	Easton, 1976

Even though these calenderical dates are offered for the beginning of the Aegean EBA, according to me, they are very applicable for the beginning of the EBA of Anatolia if radiocarbon evidences are considered. Also ending of the EBA of Anatolia varies in some regions. These subjects are considered in discussion section particularly. But I should say that the datings which are concluded in this work free from relative chronologies and pottery assemblages so they are unbiased.

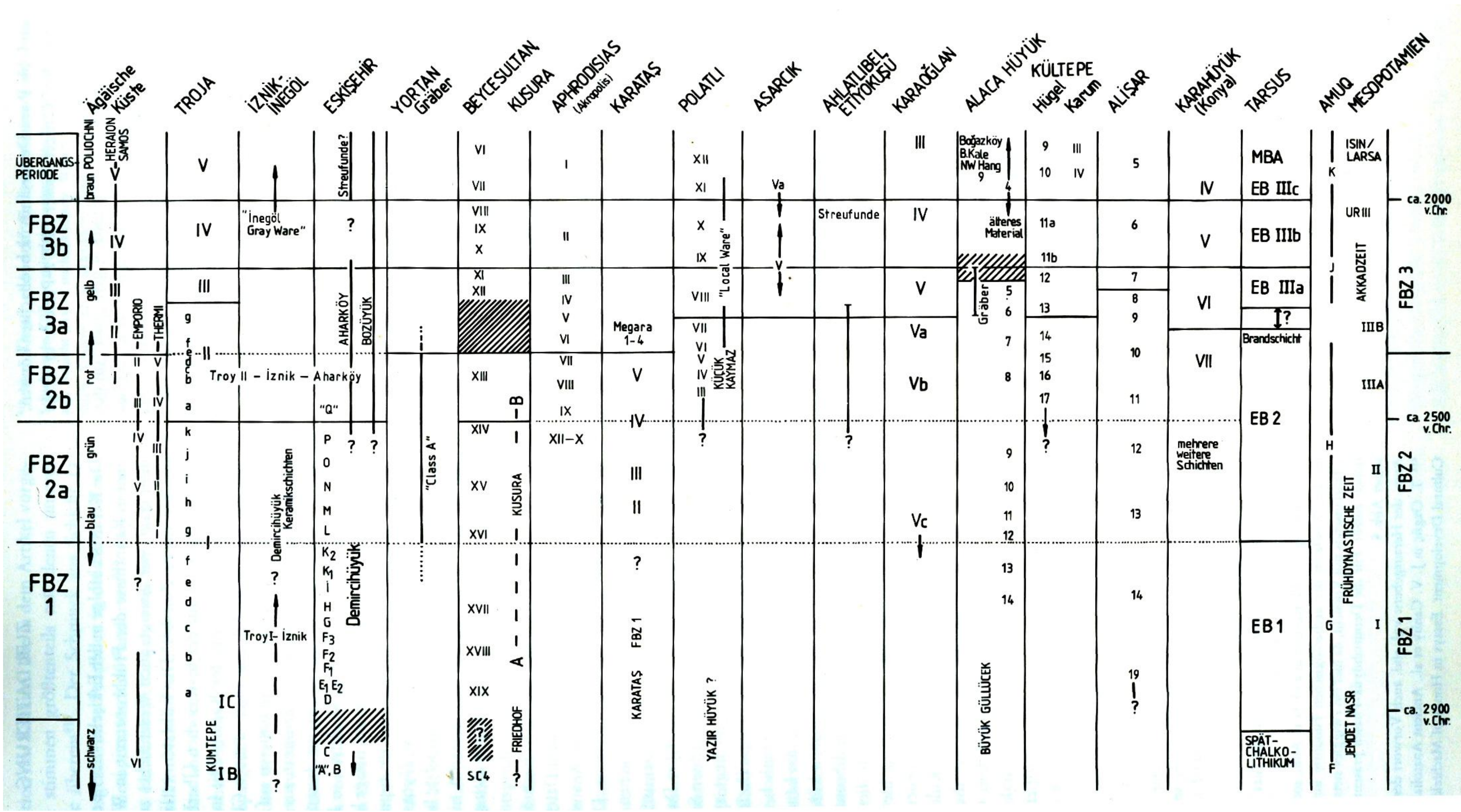


Figure 33. This figure shows a relative chronological comparison of EBA sites in Anatolia. (Adapted from Turan Efe)

CHAPTER 8

LIMITATIONS

The qualification of C14 datings depend on lots of input starting from sample collection. Any condamination that may occur on samples while picking up may affect the results. Laboratory differences are frequent. The BP dates coming with narrow standart deviation (±numbers) are more reliable. There can be some problems in archeological contexts due to human or animal activities also. For example the samples coming from a pit may belong to a different phase from related context. Generally samples collected fom a floor or grave have higher degree of reliability.

The nature of this work entails the only use of published C14 measurements. In most of the sites the excavations are progressing and final reports are not published. In preliminary reports- if C14 datings are given- the context or layers which belong to this measurements are not stated. Because of that reason it is not possible to follow author's interpretations about layers. Vice versa if the layers are appointed we have no chance to approve it and we must accept it as it is.

In this study nearly all datings are coming from mound settlements except two samples from a grave from Gedikli (Grn-5581, Grn-5580) and few samples from old mines of Kestel. Due to human or animal activity both ancient or modern, the structures of contexts may depart from original stratigraphy. And it is not possible to have an idea whether the sample taken from a layer or from a floor which can affect the reliability of the dating.

Thus an attention should be paid while using calibrated C14 measurements. It is argued that the consideration of sets of radiocarbon dates allows meaningful patterns, and helps detect and prevent undue influence by aberrant results. As a method, using sets of datings is much more reliable when a series of absolute datings have been obtained on materials from individual archaeological contexts that have been accurately identified in stratigraphy.

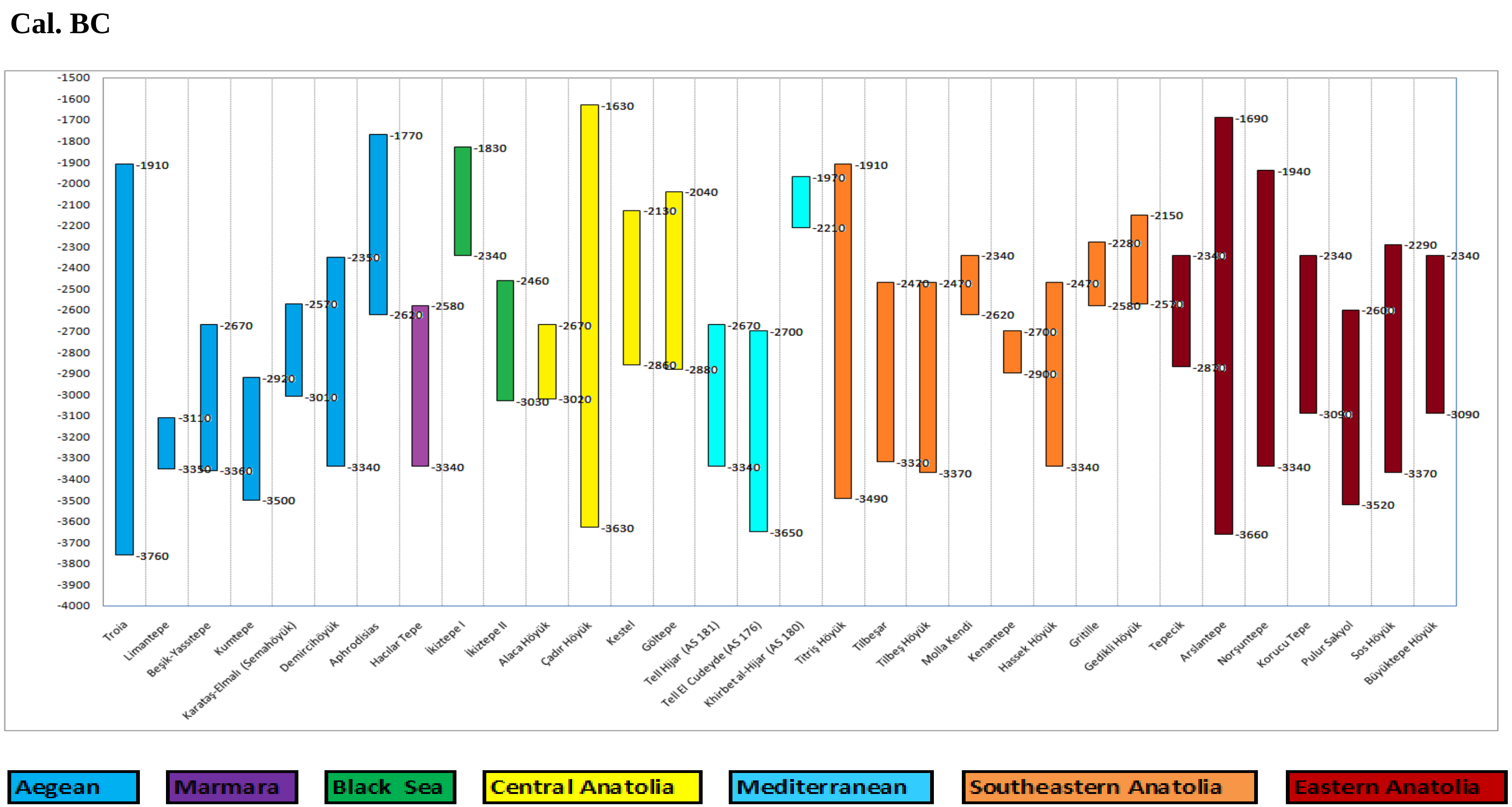


Figure 34. Radiocarbon Time-Interval of Anatolian Early Bronze Age

CHAPTER 9

DISCUSSION

Here it is discussed the radiocarbon evidence of sites on samples. Dates evaluated under given sub-phases of Early Bronze Age and only in σ 1 (%68 probability) band values. Because of that whole BC dates written below represents %68 probability band if not denoted. Sites examined according tob their regions.

9.1. EB1 AEGEAN

Kumtepe: All the datings from Kumtepe are belong to EB 1 levels. There are totaly six dates. Compared with Demircihöyük or Troia it may seem less in quantity but they are consistent and well balanced as a serial. Whole samples are charcoal. Within 68% probability band, the dates are extending up to 3500 BC, and just coming down to 2920 BC The mean value of upper probability level is 3285 BC and the mean value of lower probability level is 3043 BC As such, Kumtepe holds a unique place for Anatolian EB 1 phase, because this balanced and not jumping structure of carbon-14 evidence makes Kumtepe an anchor point. According to this evidence, it is possible to pull down the starting of EB 1 nearly in 3500 BC But to be more safe, we can use the mean value of upper probability band that locates the beginning in 3300 BC approximately. The end date for EB 1 from Kumtepe is 2920 BC

Limantepe: Although Limantepe has been represented by only one sample, its material is known (oak) and the sigma 1 probability band is dragging 3350-3110 BC Time interval is very supportive for Kumtepe and Aegean evidence.

Troia: With 24 dates, EB1 sequence of Troia is yielding a good example for a wider probability band. While strenghtening the position of the average dates, bringing its own problems like overlapping on another sequence if it is called a problem. We have two very early dates from Troia, which are quite noteworthy, HD-12065 and HD-12119. Both are from charcoal samples and giving very similar results. According to these results; HD-12065 giving a band among (3800-3500 BC 94,1% probability), (3760-3530 BC 68,2 % probability) and (3720-3630 BC 49,9% probability). Unfortunately the sub-phase position of HD-12119 is not denoted in the reference. But it is yielding a very sharp conclusion and can be use to support the HD-12065 evidence. The interval band of HD-12119 locates between (3720-3530 BC 95,4% probability), (3700-3530 BC 68,2% probability) and (3700-3630 BC 57,9% probability). Both the wiggle structure of samples are good and reliable. Especially the wiggle structure of sample HD-12119 is very high and dating curve derives a quite precise conclusion. Taken together, for Troia, it is possible to take back the beginning of EB1 approximately up to 3700 BC, if not before. There are also two more date that locates completely in fourth millenium BC HD-13291 and HD-13295. The 68% probability band of this dates yield a period 3650/3330 to 3100/3020 BC Troia has another 13 well balanced carbon-14 datings between the dates 3020–2660 BC This 13 dates serial giving a strong reference point for the EB1 period as expected. However Troia has another five dates which are situated between 2860-2470 BC for EB1. This is a situation which can show that EB1 period can extend into 2500 BC as in Demircihöyük. HD-13391 is deleted here due to its very late dating for EB1.

Beşik/Yassıtepe: This site comes with 16 carbon-14 datings all situated in EB1 as in Kumtepe. Here there is only one date which is situated in the fourth millenium (HD-10828: 3360-3100 BC 68% probability). And one more date (HD-8438: 3090-2900 BC 68% probability), which occurs in the begining of third millenium. The rest 14 ones just starting from the beginning of third millenium and ending in 2670 BC (68% probability). The distribution of this 14 dates is very well-balanced and occuring a very good serial for the Aegean EB1. In this state carbon-14 evidence of of Beşik-Yassıtepe proves that consistent settlement of EB1 occured between the period 3025-2670 BC in this site. This time interval meeting the convenient expectation for EB1 very well. Nonetheless it can be said that the EB1 settlement of

Beşik-Yassıtepe started after Troia and Kumtepe and ended before Troia, if there are not errors for the Troia and Kumtepe evidences.

Demircihöyük: Demircihöyük with total 60 dates for the EB1 is coming first in quantity among all other sites. Such abundant of dates derive a very broad band starting from 3340 BC, and ending in 2210 BC However (LJ-5236: 2570-2210 BC) and (Bln-2229 II: 2570-2300 BC) can be excluded because of their very late time interval for the EB1. Although there is one date that completely fall into fourth millenium (KN-2780: 3340-3020 BC) the sample is from a short lived material thence reliable. Just after, (KN-2422: 3270-2910 BC) and (KN-2670: 3330-2890 BC) are the other two samples which can climb up to fourth millenium. After these early dates that are mentioned above, there are 22 samples which fall into 3010-2630 BC These 22 dates are well balanced and composing a good serial for the expected EB1 time interval. Another separate grouping can be made for the 2860-2460 BC time-span. In this group, samples are reaching up to 33 units. Quantity is high and the mean values gives 2771-2488 BC time interval. Among these samples (Bln-2438 III: 2860-2500 BC), (Bln-2436 III: 2860-2570 BC) and (Bln-2458 III: 2850-2490 BC) are from short lived materials that means reliable. Supported with others these three dates can derive an anchor value for said late EB1 serial. It can be thought that there can be some mistakes in the measurements of samples because the lower boundary of probability band is infracting in EB2 expected time zone. But due to abundance of samples, it is more logical to think that EB1 period in Demircihöyük continued more than expected and extentended into 2600/2500 BC

Karataş/Semahöyük: This site represented by seven dates for EB1. Three between 3010-2680 BC and four 2870-2570 BC From this results it can be derived that EB1 period started 3000/2900 BC and ended 2700/2600 BC approximately in Karataş. In this way Semahöyük meeting the expectations for Anatolian EB1 time-span completely. It is the only example in Aegean which the dates do not extend upper or lower centuries. According the other Aegean sites which have carbon-14 evidence, it can be said that the EB1 period started a little bit late and concluded little bit early. Unfortunately due to soil condamination, only from EB1 levels the samples are collected.

9.2. EB1 MARMARA

Only site from Marmara region is ***Hacılar tepe*** and it has only EB1 dates. As an only representative of Marmara region, importance of this site is high. It has 10 dates derived from charcoal samples and one from short lived sample. As a serial, the number of dates are more than enough for deriving some conclusions. There is one date (GrN-22040: 3340-3090 BC) which fall into fourth millenium. Others are between the range 2910-2620 BC mainly. One short lived sample (GrN-22037: 2870-2630 BC) supports the correctness of other charcoal samples. The mean value of %68 probability band is 2928-2714 BC This conclusion fits very well in Anatolian EB1 sub-phase interval.

9.3. EB1 BLACK SEA

İkiztepe is the only site from Black Sea region. It is a twin mound called ***İkiztepe I*** and ***İkiztepe II***. EB1 dates are coming from İkiztepe II mound. Two dates are available (Hür-54: 3030-2670 BC) and (Metu-9: 2860-2460 BC). Although Hür-54 fits well in EB, Metu-9 prolapsing into 2500BC However Hür-54 is from a short lived sample and derived result is reliable more or less.

9.4. EB1 CENTRAL ANATOLIA

Alacahöyük: Alacahöyük comes with one date (P-1434: 3020-2780 BC) for EB1. This date fits quite well to expected time-span of Anatolian EB1. Sample material is charcoal.

Çadır Höyük: Çadır Höyük has two date for EB1. (Beta-159391: 3630-3370 BC) and (Beta-134070: 3330-2890 BC) First date is completely in fourth millenium and the second date is from late fourth early third millenium. If there is no mistake in measurements, it can be said that the beginning of EB1 in Çadır Höyük might be pulled back 3500/3400 BC This date seems too early for the convenient EB1 beginning of Central Anatolia. Normally it is expected to be somewhere on 3000 BC In this state Çadır Höyük dates are comparable with Troia and Kumtepe in the west, Arslantepe and Pulur in the east and Tell el Cüdeyde in the Amuq.

9.5. EB1 MEDITERRANEAN

In the very east of Mediterranean, in Amuq valley there are two sites which are giving EB1 radiocarbon evidence. ***Tell El Cüdeyde*** and ***Tell Hijar***. Total 6 dates are avaliable. Three from one three from other. One date from Tell El Cudeyde (P-1473: 3650-3510 BC) is early (But not far from Aegean, Eastern or Central Anatolian evidences.) After this date, others drag a band between 3090-2700 BC Three date from Tell Hijar give a probability band between 3340-2670 BC The average band interval of these Amuq sites are 3211-2971 BC According to these conclusions itis not wrong to say that early phases of EB1 in this region held place approximately 3300-3200 BC (if P-1473 is not counted). There is no carbon-14 evidence which shows a date after 2700 BC

9.6. EB 1 SOUTH EAST ANATOLIA

Hassek Höyük: Hassek Höyük has five dates mainly situated in probability interval of 3340-2900 BC One date (Bln-2733: 2830-2470 BC) is little bit late according the other four dates. But it is from a short lived sample and it can mark the late phase of EB1 in this site. Other four dates are very close to each other . The mean interval of these four dates as a serial is 3330-2947 BC According to this measurements it is fair to say, in Hassek Höyük EB1 phase started approximately in 3300 BC and finished somewhere around 2500 BC

Kenantepe: From Kenantepe there is one date which is derived from a short lived sample (bone collagen). Time interval of that sample is 2900-2700 BC and no need to talk for its strong support for EB1 of this site.

Tilbeş Höyük: Three dates are available for Tilbeş Höyük, two of them stay in fourth millenium and one corresponds (AA-35824: 2580-2470 BC) late phase. Early dates derives a mean band 3350-3050 BC This conclusion is very similar to other southeastern sites.

Tilbeşar: One date (Beta-120368: 3320-2930 BC) from Tilbeşar corresponds that EB1 period was already started in 3300 BC if we corralate this site with other southeastern sites. (e.g. Hassek Höyük, Tilbeş Höyük)

Titriş Höyük: With four dates Titriş Höyük carbon-14 evidence generates a very similar profile with some other southeastern sites. Three early date (Probability band: 3490-2700 BC) and one late date (Beta-146100: 2870-2460). The results say that early phase of EB1 may be pulled back up to 3500 BC But if it is wanted to be more safe average value corresponds approximately 3300 BC As in Hassek Höyük the late phase of EB1 in Titriş can be advanced to 2500BC approximately.

9.7. EB1 EAST ANATOLIA

Pulur/Sakyol: Although there are five dates from Pulur/Sakyol except one (P-2040: 3520-3130 BC) of them their deviation band interval are very vide. Because of that, two of them are deleted and only three dates are concerned here. (P-2040: 3520-3130 BC), (M-2172: 3500-2850 BC) and (M-2170: 3350-2600 BC) The average interval of these dates is 3450-2860 BC Even though the mesurements having a broad error deviation, they still support the conclusions for South East Anatolia. (e.g. Hassek Höyük).

Arslantepe: In total we have 44 dates fort he EB1 of Arslantepe. This is the second big amount of dates after Demircihöyük. Due to abundance of dates it is logical to seperate them in few parts. Early, middle and late phase of EB1. For the early phase, there are nine measurements between 3660-3020 BC Average value of them 3500-3200 BC Nine units for this early serial is quite enough to say EB1 has started in Arslantepe around somewhere 3500 BC without falling too apart. For the middle phase there are 19 dates mean value between 3100-2870 BC There is no need to say about this group but strenghtening the position of EB1 period. For the late phase there are 16 dates starting from (Rome-1468: 3020-2700 BC) and finishing (Rome-

169: 2570-2340 BC) Average value of this last group corresponds a date between 2850-2540 BC Than it is possible to say safely the end phase of EB1 period continued up to 2600/2500 BC approximately.

KorucuTepe: Korucutepe has one dating for EB1 and its probability band shows a date between 3090-2890 BC Needless to say it is a supporting measurement from the beginning of third millenium for Korucutepe.

Norşuntepe: Norşuntepe with four date serial yields a good example for the second half of fourth millenium beginning and the first half of third millenium ending of EB1. The probability band interval changes between 3340-2670 BC The mean value of that band is 3210-2863 BC

Sos Höyük: Sos Höyük is an important site site which is determining Trans-Caucasian relations with Anatolia. Because of that, carbon-14 evidence of this site is also important. For EB1 Sos Höyük has three dates. Beta-107909: 3370-3090 BC is the earliest one. And Beta-107911: 2870-2570 BC is the late one. There is one in the middle also. All the samples are charcoal. Average value of these three dates is 3083-2757 BC This conclusion is not far from other sites of Anatolia. It is possible to lean beginning of EB1 against the 3300 BC but there is no so much dates for a very safe evaluation. Because of that 3100/3000 BC is a more safe date for the beginning of EB1 in Sos Höyük. The end phase for EB1 is more noteworthy. If the carbon-14 evidence of Sos Höyük corresponding true dates, the end of EB1 is profiling an earlier finish for the period.

9.8. EB2 AEGEAN

For EB2 there are two sites in Aegean which are giving radiocarbon dates. ***Troia*** and ***Demircihöyük***. Eight dating from Troia and six dating from Demircihöyük. Three dates from Troia (HD-136327, HD-13644, HD-13643) are giving very early measurements for the EB2 (in fourth millenium). Because of that, they are excluded from evaluation in this part. Rest five units give a time interval between 2910-2340 BC The average value of that interval is 2691-2460 BC Although Demircihöyük measurements for EB2 are similar with Troia, they are distributed into little bit more early interval. Four dates between 2910-2670 BC and two dates between 2860- 2450 BC Average interval of Demircihöyük is 2833-2608 BC The situation of carbon-14 evidence of Demircihöyük is little bit problematic. It overlapses late centuries of EB1 carbon-14 evidence. Or vice versa, the dates of EB1 carbon-14 evidence of Demircihöyük which are giving the same measurements are problematic. But as mentioned above, the EB1 evidence of Demircihöyük for the late phase is very strong with 33 dates. One reason for that there may be some mistakes on samples (e.g. contamination, lab mistakes). On the other hand Troia is giving more meaningful conclusions about seperating EB1 from EB2 if average values are taken.

9.9. EB2 MARMARA, BLACK SEA AND MEDITERRANEAN

No dates are avaliable from Marmara and Black Sea regions for EB2 period. Athough there is one date from Mediterranean (Khirbet al Hijar, GrN-22960) it corresponds a quite late dating (2130-1780 BC). A mistake is highly probable so it is not included in this discussion.

9.10. EB2 CENTRAL ANATOLIA

In EB2 ***Göltepe*** take stage in Central Anatolia which have no dating from previous period. With 15 date serial, Göltepe dates distributed well-balanced between the dates 2880-2630 BC and 2350-2040 BC. Mean value is giving a band between 2640-2356 BC. In this state the band meets well for the expected EB2 interval. But the last six samples giving some late dates between 2480-2290 BC (Beta-75605) and 2350-2040 BC(Beta-42651).

9.11. EB2 SOUTH EAST ANATOLIA

Titriş Höyük: Titriş Höyük has three dates from this period, and well-balanced inside themselves. Two dates between 2870-2570 BC And one date between 2570-2340 BC The average band for Titriş Höyük is between 2770-2493 BC for EB2.

Tilbeşar: Tilbeşar has two dates for EB2. First one giving an early date (3100-2700) which should belong to EB1 period normally, and second 2920-2470 BC, a very wide probability band to consider it.

Gritille: One date from Gritille shows time interval between 2580-2280 BC for the EB2 period.

9.12. EB2 EAST ANATOLIA

Korucutepe: There are nine dates in Korucutepe from EB2 period. One of these dates is dragging a very broad range (M-2376: 2650-2050 BC) and excluded from this part. Six dates from charcoal samples dragging a band between 2910-2680 BC (P-1618) and 2840-2490 BC (GrN-6774). There are two dates which should be separated from others because of their material quality. The two measurements (P-1628 and P-1629) which are derived from charred wheat give give a band between 2620-2340 BC This time interval give safe point for EB2 period of Korucutepe.

Tepecik: One sample is available for Tepecik. The probability band of this sample is 2870-2580 BC

Norşuntepe: There are four dates that belong to EB2 period from Norşuntepe. The materials of samples are not known. One early date corresponds 2910-2680 BC (Bln-2218) other three dates changes between 2870-2300 BC The average value of probability band is 2780-2545 BC

Sos Höyük: Sos Höyük radiocarbon evidence with seven samples, is one of the richest for the EB2. All the samples are charcoal. The general distribution of the datings are well balanced and average value of these seven dates is 2874-2619 BC In this state EB2 evidence of Sos Höyük following the EB1 evidence quite well. It is possible to say there is no overlapping problem like some other sites (e.g. Demircihöyük). It is remarkable that EB2 period ends somewhere around 2600/2500 BC This is the earliest ending for the EB2 among all other sites in Anatolia.

Tepecik evidence can give a weak support for this offer with one date in same time interval.

9.13. EB3 AEGEAN

Troia: Troia has 30 datings for the EB3 period. This amount is the first in quantity for the EB3, among all other sites. Due to very early results HD-14573 and HD-14008 are not evaluated here. It is a better idea to concern rest 28 dates under sub-divisions. In first group there are seven dates all from charcoal samples that the interval band changes between 2850-2570 BC The average time-span of this group is 2590-2390 BC This first group overlaps onto Troian EB2 period more or less. A second group can be made between the time –span 2490-2060 BC There are 12 dates for this second group with two short lived samples. This group represents very good fit for the expected EB3 period. In the last group there are nine datings which are beginning from (Bln-1310: 2290-2040 BC). In this last group some measurements giving an ending date in the beginning of second millennium BC (e.g. Bln-1234: 2130-1910 BC). Seven of this nine dates are from short lived samples and providing a firm proposal for the last phase of EB3 in Troia. Average value of these seven date is 2238-1974 BC According to that it can be said EB3 period in Troia ended around 2000 BC approximately. But it is possible to say if wanted, in the first century of the second millenium BC the EB3 period continued,

Aphrodisias: We have dates from Aphrodisias (Acropolis Mound) only from EB3 period. Ten dates are available. The earliest dating starts from 2620-2350 BC and degrades up to 1960-1770 BC Two of them from short lived samples (Charred seeds). P-1650: 2200-2020 BC and P-1649: 2010-1770 BC The last charcoal sample gives the P-1648: 1960-1770 BC If P-1649 and P-1648 taken together it is possible to say in Aphrodisias EB3 period continued bit more; (almost up to 1800 BC) according to other Aegean sites.

9.14. EB3 BLACK SEA

İkiztepe I: There are five datings from İkiztepe I. But three of them giving very old dates for this period and not observed here (Hür-105, Hür-103 and Metu-7). Rest two datings are from short lived species and yielding more reliable conclusions. Metu-6: 2340-1880 BC and Hür-51: 2130-1830 BC Hür-51 here gives better conclusion due to narrover deviation band. According to this it can be said that EB3 in İkiztepe continued down to 1850 BC approximately.

9.15. EB3 CENTRAL ANATOLIA

Alacahöyük: There are two dates from Alacahöyük for EB3. One of them excluded from here due to very early calculating in fourth millenium BC (P-825). Rest one dating from a short lived sample yielding an early date for the period (P-826: 2900-2670 BC). In this dating a mistake is highly probable.

Çadır Höyük: There are three datings from Çadır Höyük for EB3. The dates are quite unbalanced in themselves. One date yielding an early result as in Alacahöyük (Beta-146705: 2860-2490 BC). Other two dates deriving very late dates for the period. (Beta-159389: 1880-1630 BC and Beta-159388: 1690-1490 BC). Although the last sample excluded from this discussion part due to its very late dating, the upper band level of this dating shows a probability in 17th – 16th century BC.

Kestel: One date from Kestel (AA-3375: 2400-2130 BC) gives a very logical dating for the period.

9.16. EB3 MEDITERRANEAN

Khirbet al Hijar (AS 180): This Amuq site is the only one from Mediterranean and having one dating for the period. GrN-22959: 2210-1970 BC The result is very balanced for the EB3 period.

9.17. EB3 SOUTH EAST ANATOLIA

Tilbeş Höyük: Although Tilbeş Höyük has two dates for the period one of them not included in this part due to its very early result for the EB3. (AA-35824: 3010-2890 BC) Other date is still early but supported by carbon-14 evidence of some other southeastern sites. (AA-35882: 2880-2670 BC).

Molla Kendi: One date from Molla Kendi is derived from a short lived sample and giving a little bit early result for the period (GrN-5285: 2620-2340 BC).

Gedikli Höyük: In Gedikli the dates are taken from tomb findings. This is the only grave carbon-14 evidence in this work. Two dates give seperate results from each other. (GrN-5580: 2570-2470 BC and GrN-5581: 2340-2150 BC)

Titriş Höyük: Eight date radiocarbon serial is available for EB3 in Titriş. One is not concerned here because of an error possibility (Beta-80446). Other dates hold place between 2460-2210 BC (Beta-95228) and 2130-1910 BC (Beta-80447). Average time interval shows a band between 2327-2050 BC which is a very acceptable conclusion for the EB3.

9.18. EB3 EAST ANATOLIA

Arslantepe: With 16 radiocarbon dates, Arslantepe is one of the richest site for the EB3. Radiocarbon evidence for EB3 of Arslantepe drawing a broad band between 2870-1690 BC Earliest date starts from (Rome-160: 2870-2570 BC) and latest date drop to (Rome-1011: 2020-1690 BC) Most of the dates are well balanced between 2500-2000 BC time span. The mean value for all the dates correspond an interval between 2524-2221 BC

Tepecik: One date from tepecik gives a little bit early result (GrN-5285: 2620-2340 BC)

Korucu Tepe. There are two dates from Korucu Tepe. Like Tepecik they correspond some early dates. GrN-6773: 2830-2490 BC and P-1927: 2570-2340 BC

Norşuntepe: Norşuntepe has 26 dates for EB3. After Troia this is second big amount as a serial. None of the materials are known. The dates start from (Bln-2360: 2580-2350 BC) and finish (Bln-2649: 2140-1940 BC) As a serial dates are well balanced. First 13 dates correspond early phases. The average value of this early group is 2500-2273 BC Furthermore there are four seperate datings which give the exactly the same dates 2570-2340 BC (Bln-2364, Bln-2362, Bln-2628 and Hv-4107) So it seems logical to propose for beginning of EB3 in approximately 2600/2500 BC in Norşuntepe. This date also follows well sequential order after EB2. The other 13 dates strarting from (Bln-2641: 2400-2140 BC) refer last phases of EB3 in Norşuntepe. Mean band interval of this second group is 2275-2050 BC It seems EB3 finished approximately on 2000 BC in Norşuntepe. Like its counterpart Troia in Aegean, Norşuntepe is a very good reference point for the East Anatolia thanks to crowded radiocarbon evidence for EB3.

Sos Höyük: For EB3 Sos Höyük has three radiocarbon dates. Beta-84372: 2870-2620 BC refers for earlier phase. This date is derived from a charcoal sample and overlaps previous period more or less. The important thing is, other two dates are from short lived samples (Bone) and providing an anchor point for EB3 phase of Sos Höyük. Beta-107920: 2570-2340 BC and Beta-107915: 2480-2290 BC are these datings. According to these dates it is possible to say that EB3 in Sos Höyük concluded around 2350/2300 BC This conclusion refers the earliest end date for EB3 period of Anatolia. Although it is out of the scope of this study, I should mention here radiocarbon evidence for Middle Bronze Age of Sos Höyük starts from 3520-3320 BC (Beta-95219: 45.7% probabilty).

CHAPTER 10

CONCLUSIONS

This study includes only published Carbon 14 measurements which are accessible to me and without any suspicion it is clear that there may be further C14 datings that are not published or missed by me although a careful search. Also one can understand that the sites stated here are the few ones among the plenty of EBA settlements in Anatolia. Nevertheless, the measurements reaching up to 386 are quite enough for providing meaningful conclusions. We have here, measurements in every region of Turkey more or less, enabling us to provide a chronological time-frame of Anatolia in the Early Bronze Age.

In the nature of this study, pottery assemblages and all other kind of stratigraphic events are not occupied and C14 datings are isolated from their sequential comparison. By doing that it is intended to provide an independent and unbiased chronological time-frame of Anatolian Early Bronze Age which may adverse or depart from conventional approach for the chronology of relevant period. That should be kept in mind, by the nature of absolute dating a degree of approximation must be implied. It should also be remembered that this study is an interim work and main purpose for this study is to provide firm and reliable reference for further studies with the help of the catalog part. But this does not mean that we are not having some conclusions here. First all Fig. 1 presents itself as a conclusion. Here we can see Early Bronze Age radiocarbon evidence of Anatolia with available data so far. If we divide fig.1 into three parts for a clear comparision, we can follow the approximate border time-lines of sub-phases.

10.1. EB1

cal BC

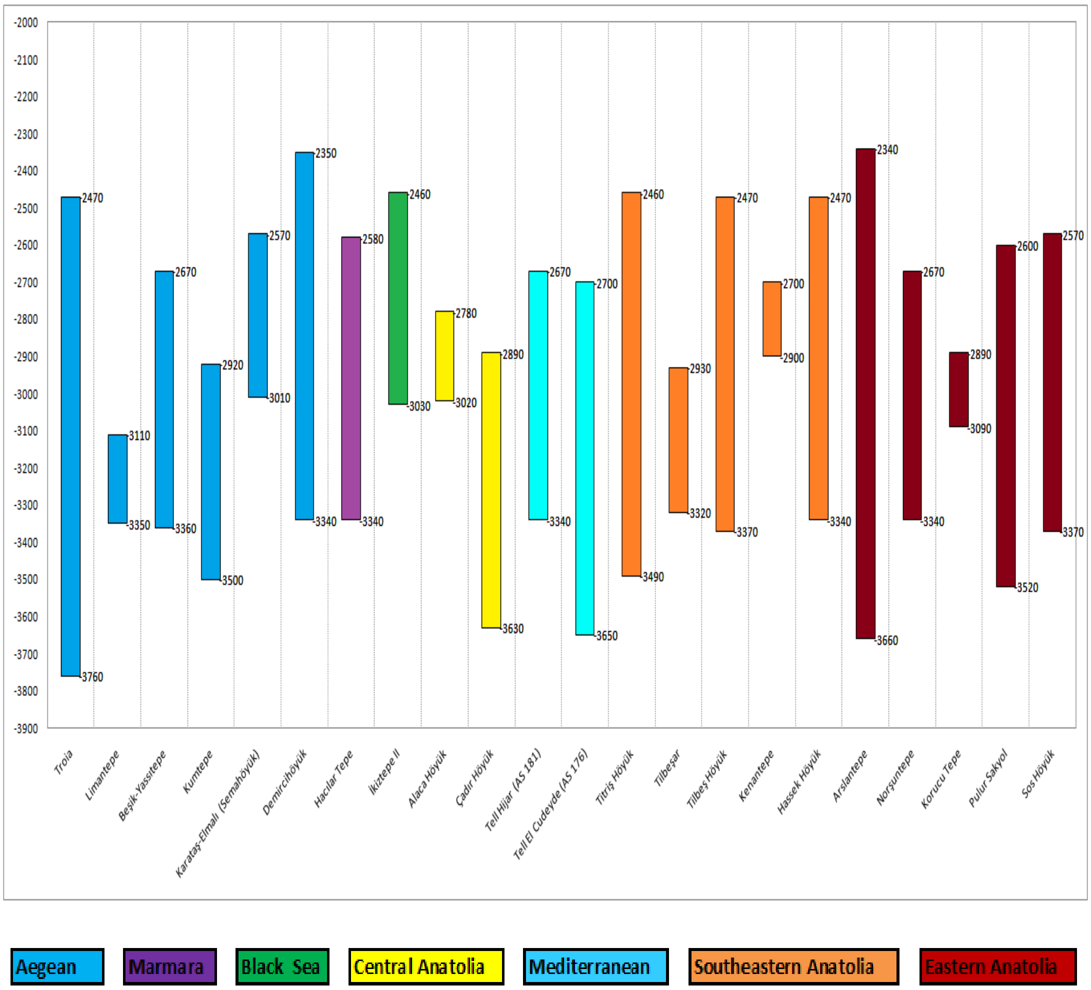


Figure 35. EB1 Time Interval According to Radiocarbon Evidence

As we can see from the diagram, EBA1 starts from somewhere around 3750/3350 BC for all the regions in Anatolia except Black Sea. But according to my opinion there is no reason to think that the Black Sea is out of this picture. Many radiocarbon dates are not included in this study from İkiztepe due to their unreliable results which are giving very early dates for the EBA. So I can say here the starting of the age is very balanced end equal in time more or less for all Anatolia. Of course there are some slidings among sites. For example in the Aegean in Demircihöyük EB1 starts after Troia and Kumtepe. In Mediterranean, Marmara, Central Anatolia and Black

Sea EB1 ends approximately 2800/2600 BC But in the Aegean, South East and East there are some extremities which are coming down to 2350 BC but the averages correspond a date approximately 2800/2500 BC for the ending of EB1. One thing is noteworthy for the continuing time of EB1; in the very big and important sites such as Troia, Demircihöyük, Arslantepe, Pulur, Titriş the process of EB1 having a longer period. But this impression may be the consequence of overage of datings from these sites. The beginning of the age is agreeable more or less but the finishing of the EB1 may be more problematic. The main reason for that is overlapping on the EB2 period. Partially this is normal due to error margins of the dates. In Mediterranean, Marmara, Central Anatolia and Black Sea EB1 finishes approximately 2800/2600 BC But in the Aegean and East Anatolia there are some extremities which are coming down to 2350 BC (e.g. Troia, Arslantepe) but the averages correspond a date approximately 2800/2500 BC for the end of EB1. According to this conclusion. EB1 period of Anatolia continued 800 years more or less.

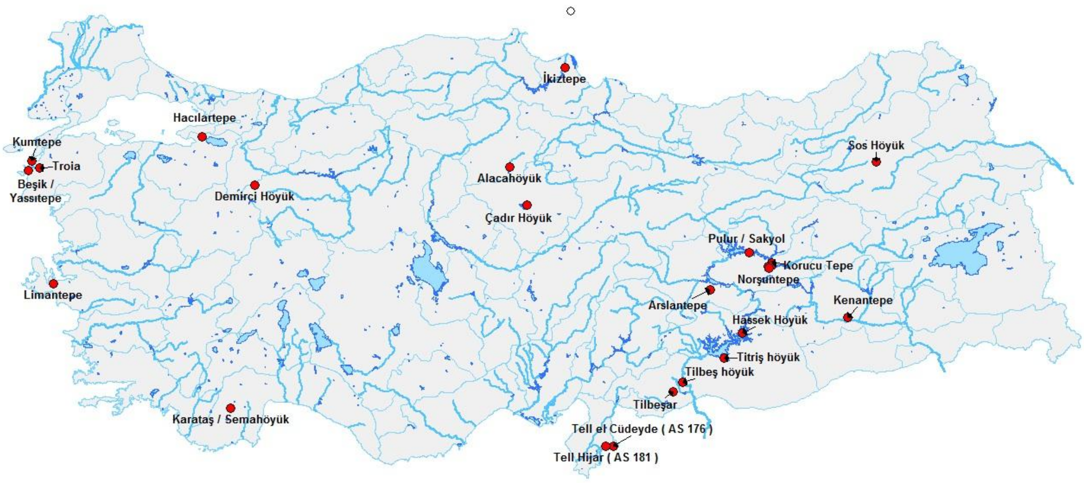


Figure 36. Map of Anatolia Including Sites Which Have Radiocarbon Datings of EB1 Period

10.2. EB2

cal. BC

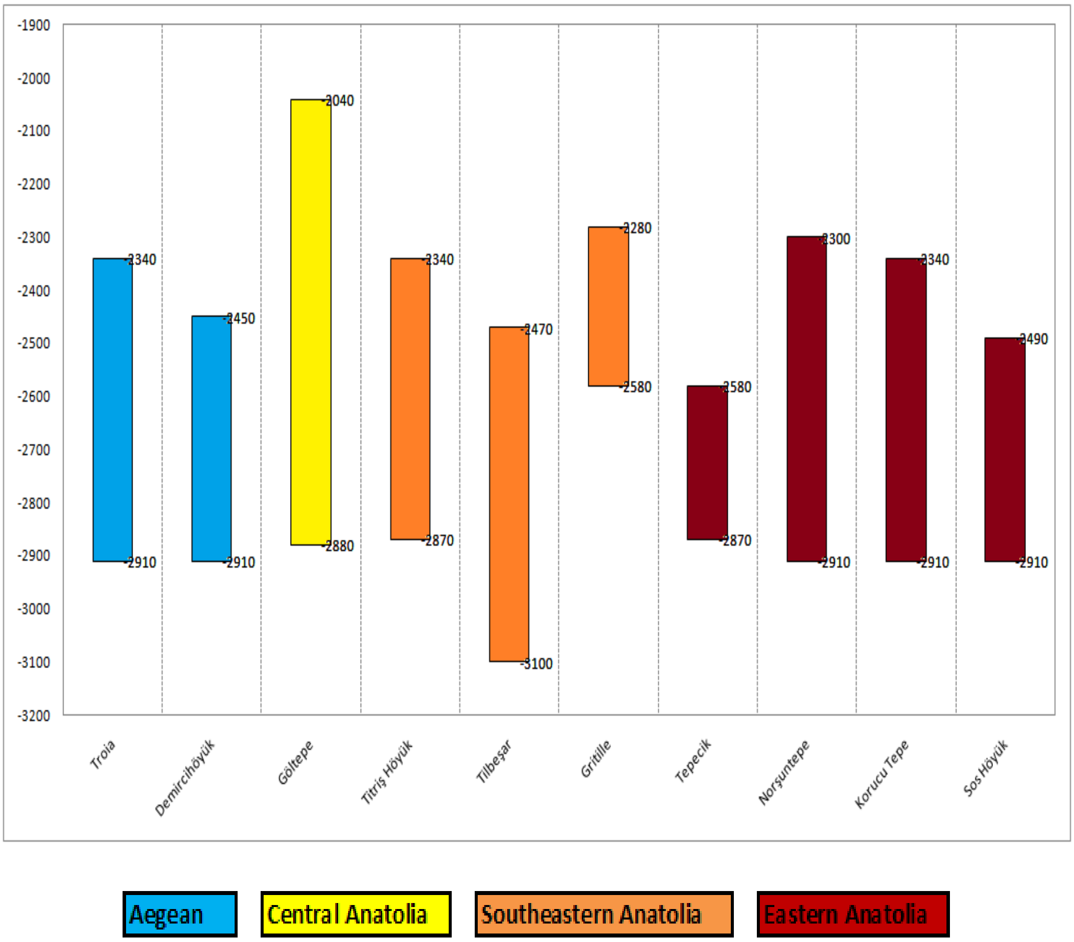


Figure 37. EB2 Time Interval According to Radiocarbon Evidence

The EB2 radiocarbon evidence of Anatolia following a flat line more or less which is not jumping up and down very much other then few exceptions. The beginning of the period showing a consistent time line except Tilbeşar. If we exclude Tilbeşar extrem early radiocarbon evidence which is presumably a mistaken dating, we can say that the beginning of EB2 period showing a coherent level. So approximate timing of the beginning of the EB2 period is applicable to whole Anatolia. The average value band of the EB2 is 2885-2363 BC. The biggest deviation is from Göltepe for the ending (2040 BC) and from Tilbeşar for the beginning (3100 BC). If the mean values considered, EB2 radiocarbon evidence follows well EB1 radiocarbon evidence generally.

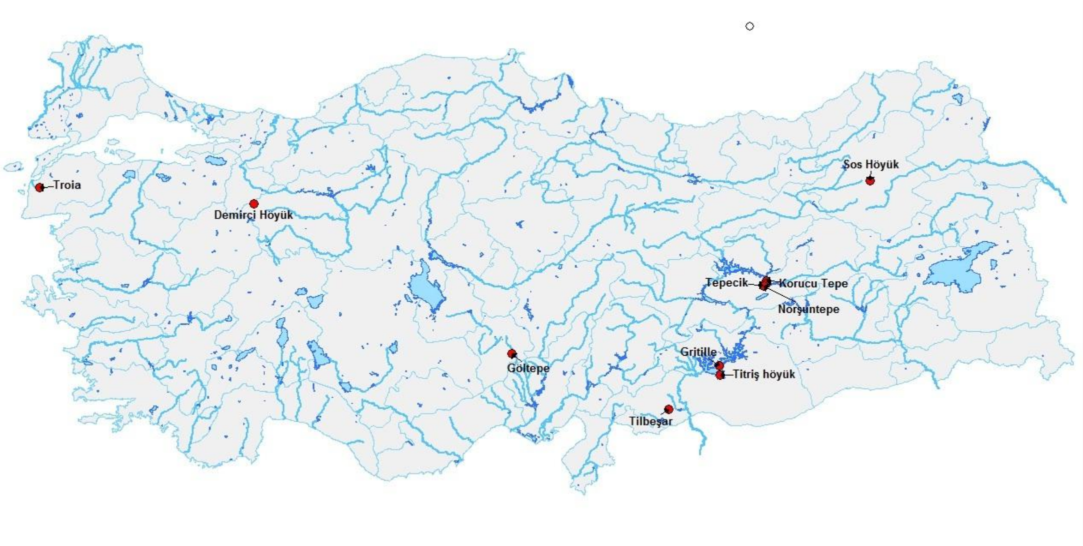


Figure 38. Map of Anatolia Including Sites Which Have Radiocarbon Datings of EB2 Period

10.3. EB3

cal BC

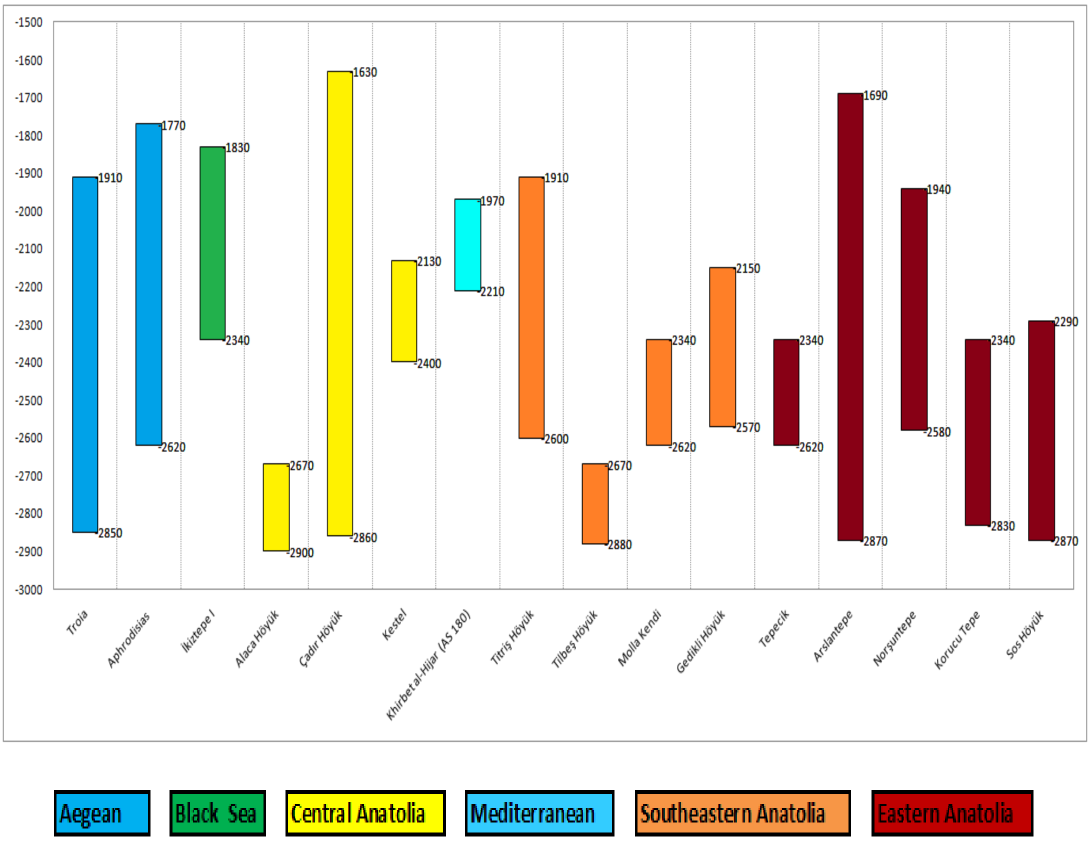


Figure 39. EB3 Time Interval According to Radiocarbon Evidence

The beginning of the EB3 radiocarbon evidence of Anatolia seems a little bit problematic at first sight, due to overlapping problems. In East Anatolia there are five sites which have datings for the EB3 period. For the beginning of the age, the average date is 2754 BC Although it seems early, the dates are coherent in each other. The ending dates for the East Anatolia varies. Tepecik, Korucu Tepe and Sos Höyük have the earliest finishing dates with 2300 BC The Midlle Bronze Age evidence of Sos Höyük can help to prove that proposal. Arslantepe and Norşuntepe have the latest dates for East Anatolia. (1815 BC Average) . The four sites from South East Anatolia yields an average date 2667 BC for the beginning. In Titriş 1910 BC defines the end of the line for South East. In Central Anatolia Alaca Höyük and Çadır Höyük both derive very early beginning dates (2880 BC average) but not far from other rgions of Anatolia. More interesting is Çadır Höyük evidence puts the end point for the ending of EBA in Anatolia with a date 1630 BC The Mediterranean evidence fit well expected time interval, no surprise. In Aegean the latest dates 1910 BC (Troia) and 1770 BC can show us EB3 continued near to 1900/1800 BC approximately. Same for Black Sea. As a result I can roughly say that at the very east of Anatolia EB3 ended first. (With the considered datings of Büyüktepe Höyük which we don't know the layer of the dates.) Being aware of overlapping problems I can say that the EB3 period of Anatolia started at the same time more or less like EB1 period. For all other regions 1900/1800 BC can be thought for the finish of the EB3 period. But the Çadır Höyük and Arslantepe extremities should be considered carefully.

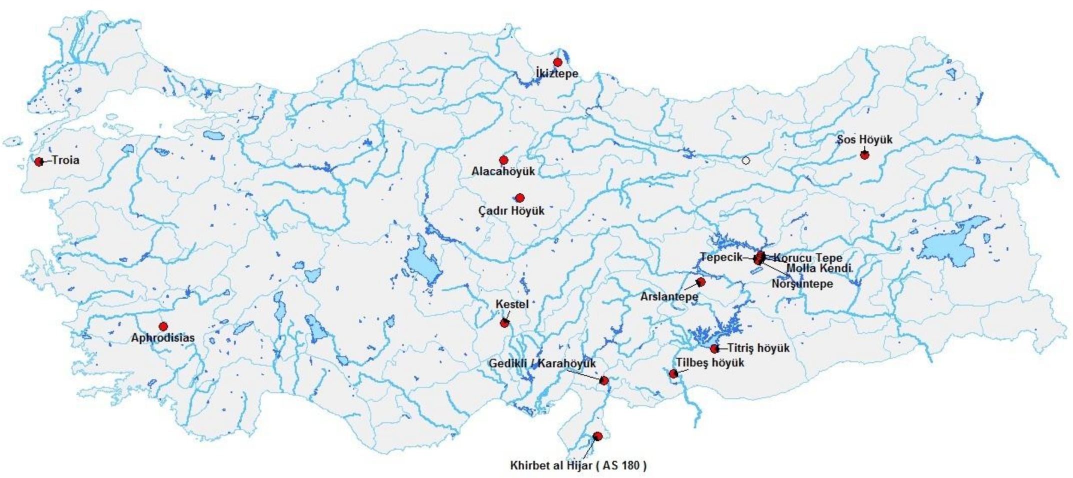


Figure 40. Map of Anatolia Including Sites Which Have Radiocarbon Datings of EB3 Period

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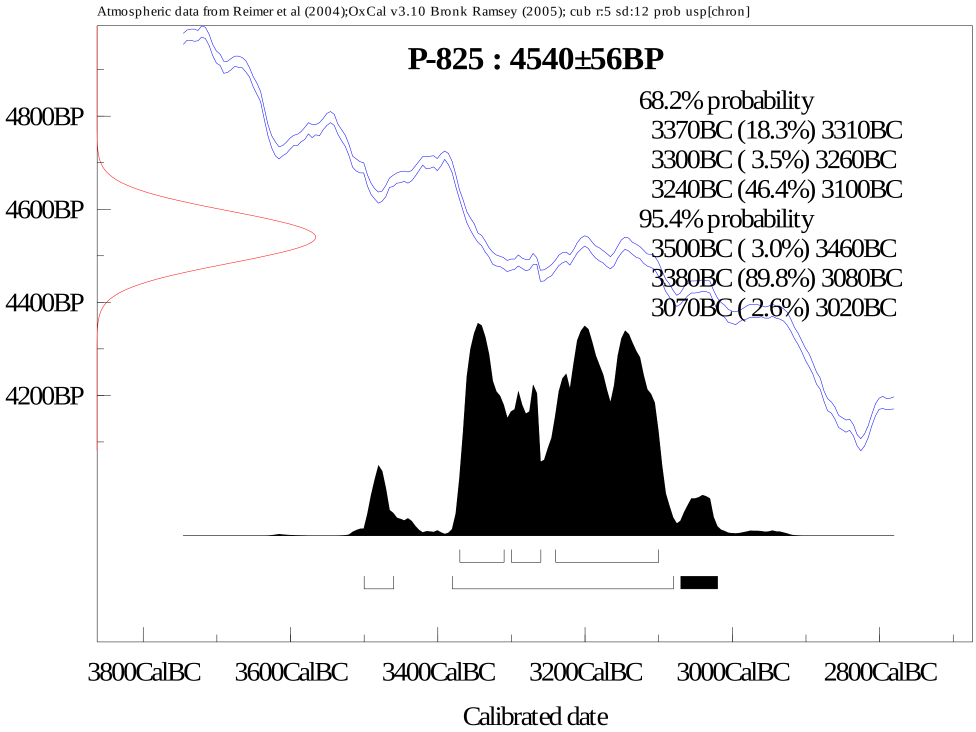
APPENDICES

PLATES / CATALOGS AND LISTS

1. APPENDIX A: PLATES

Alaca Höyük

Alaca Höyük AL.1



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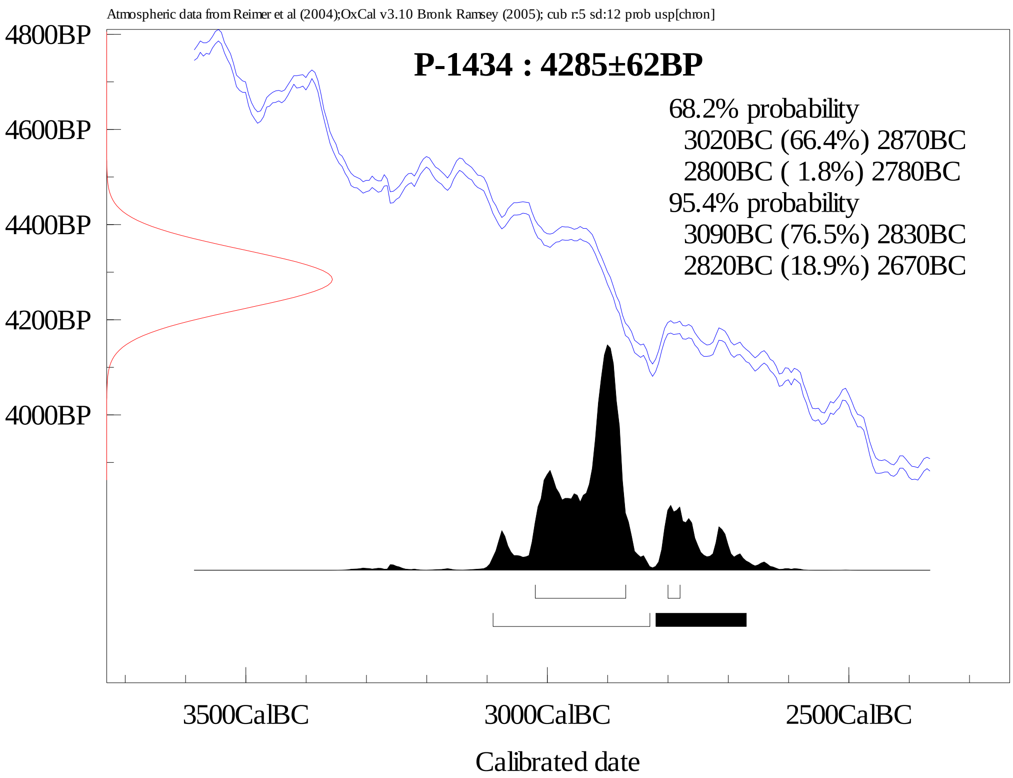

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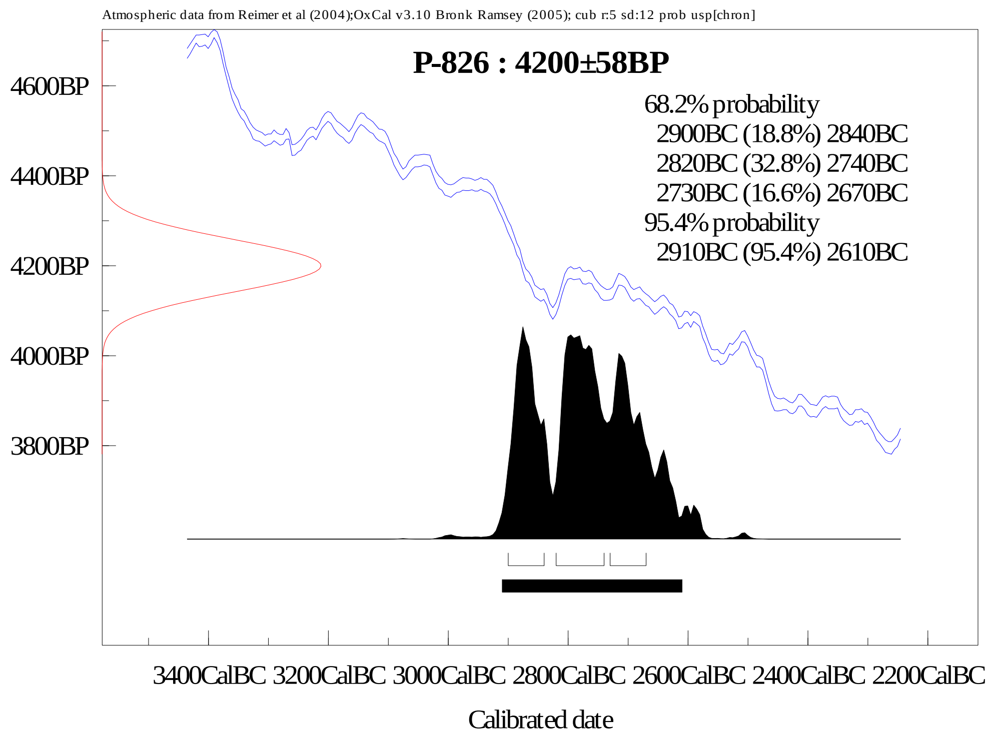

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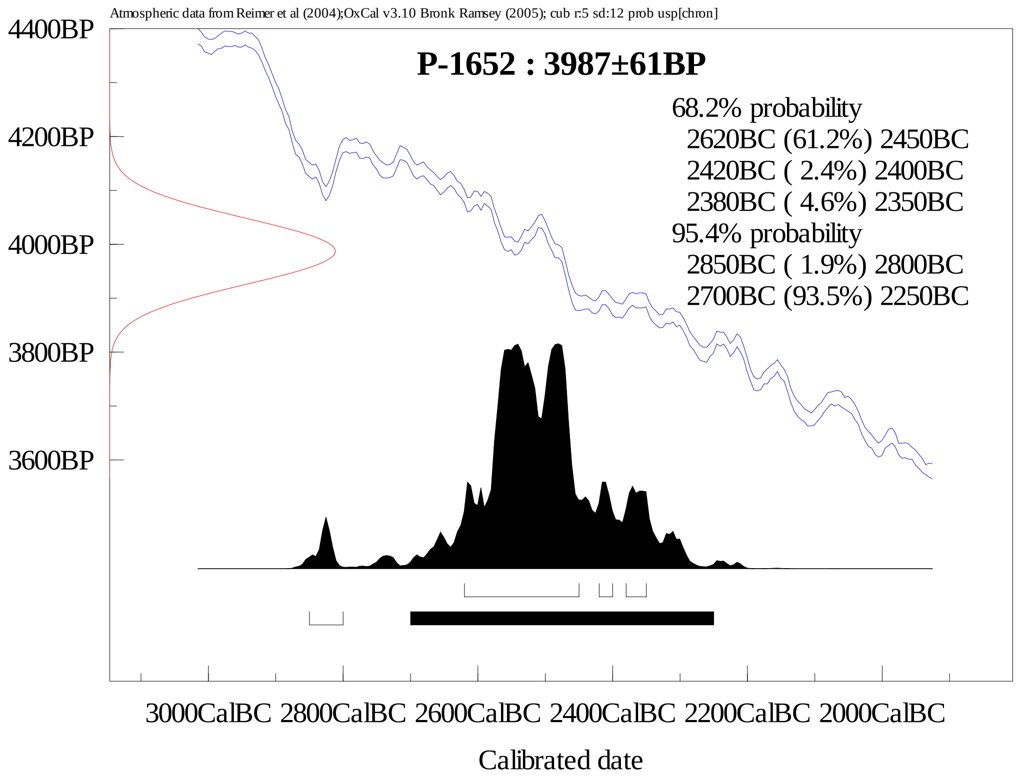

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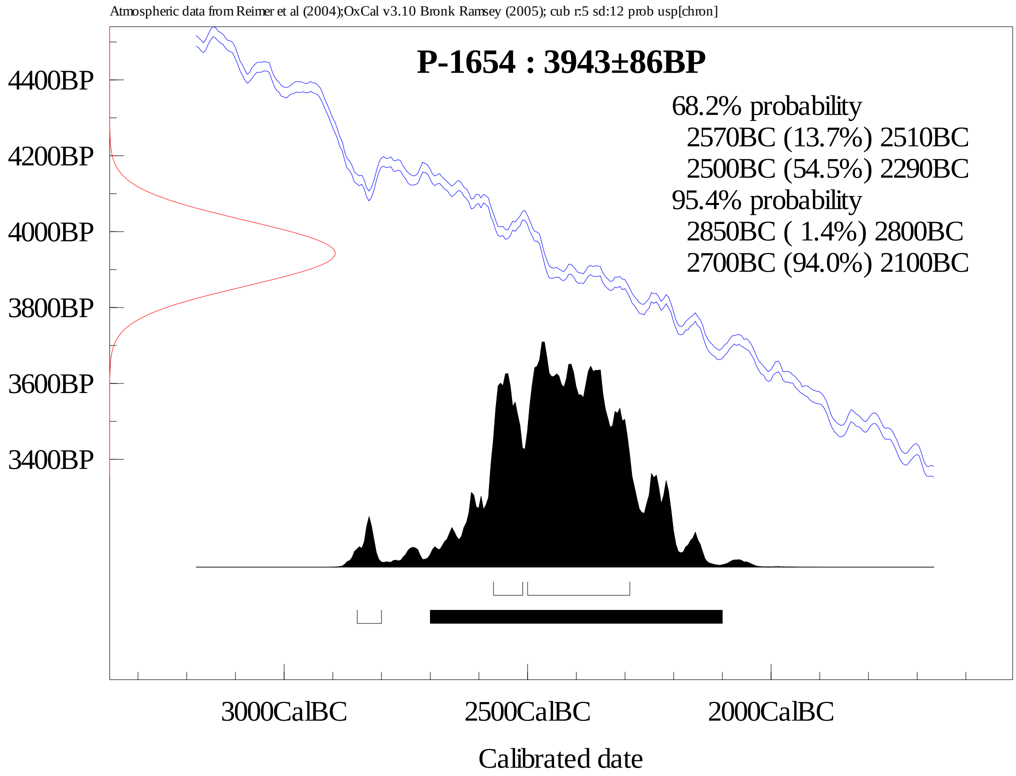

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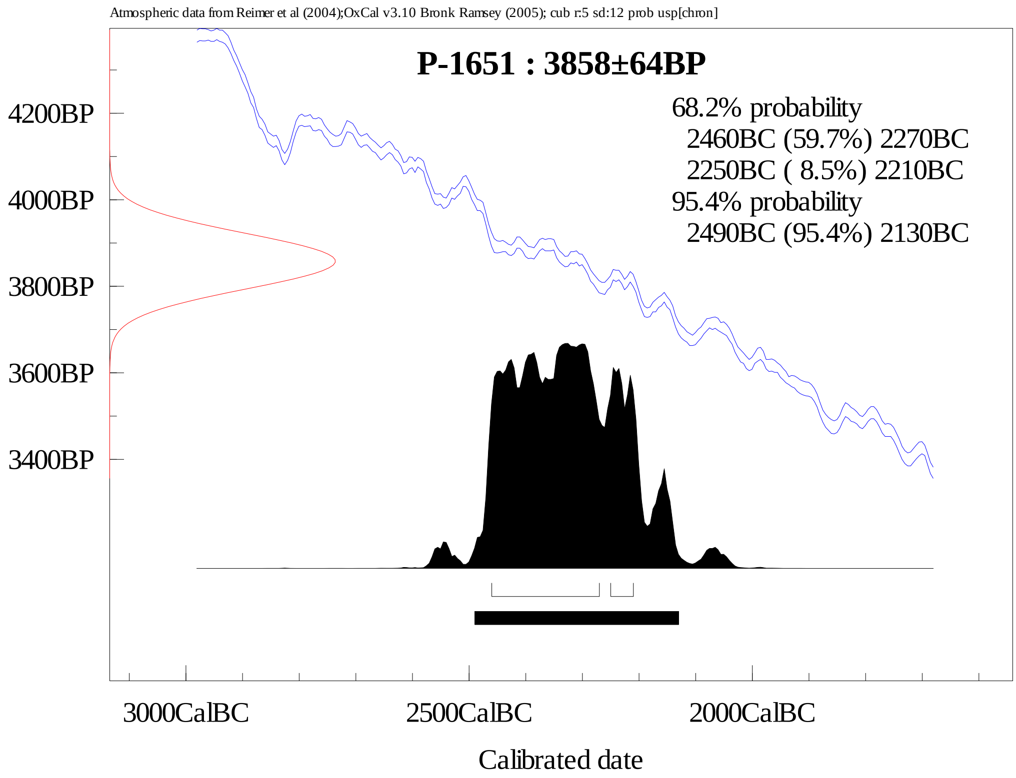

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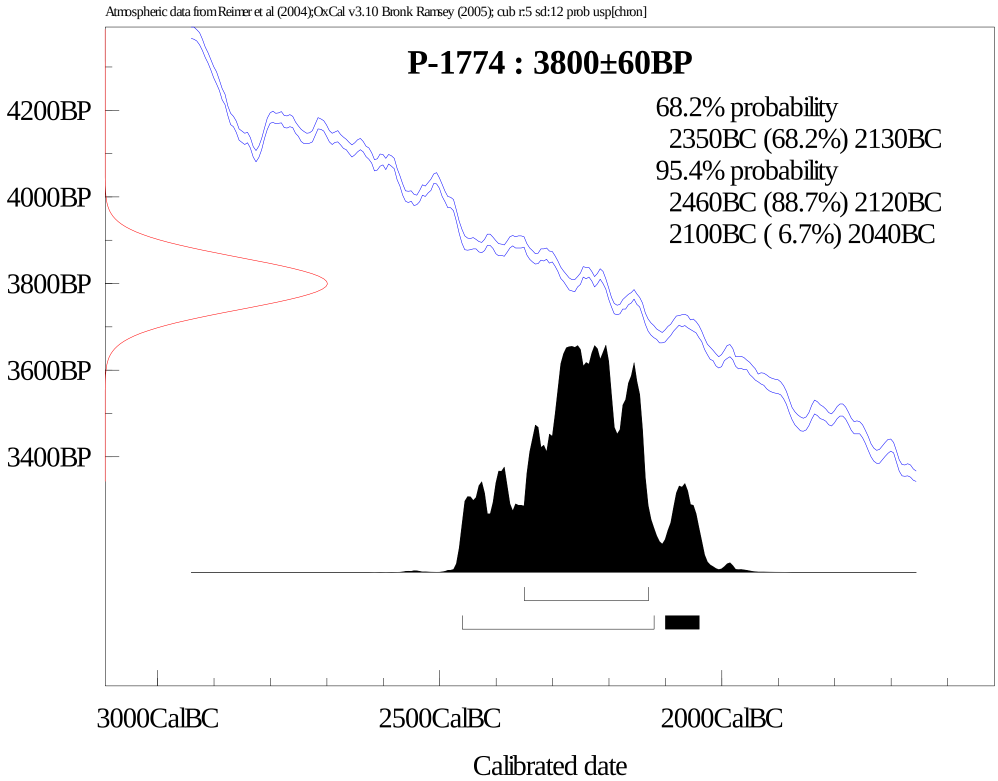

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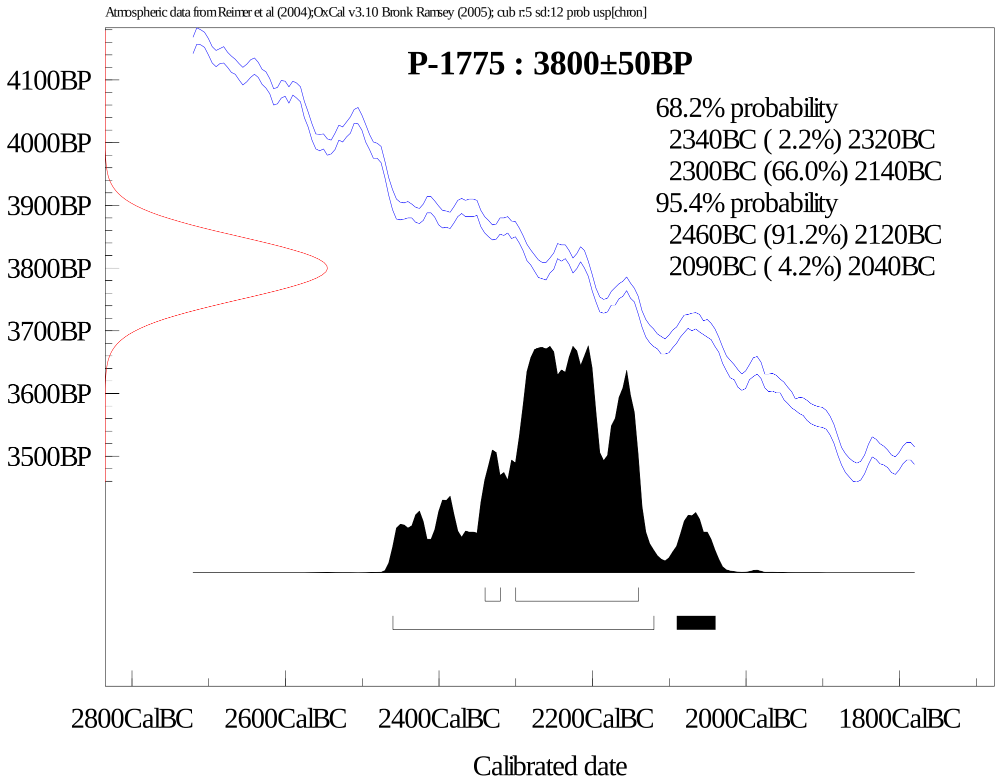

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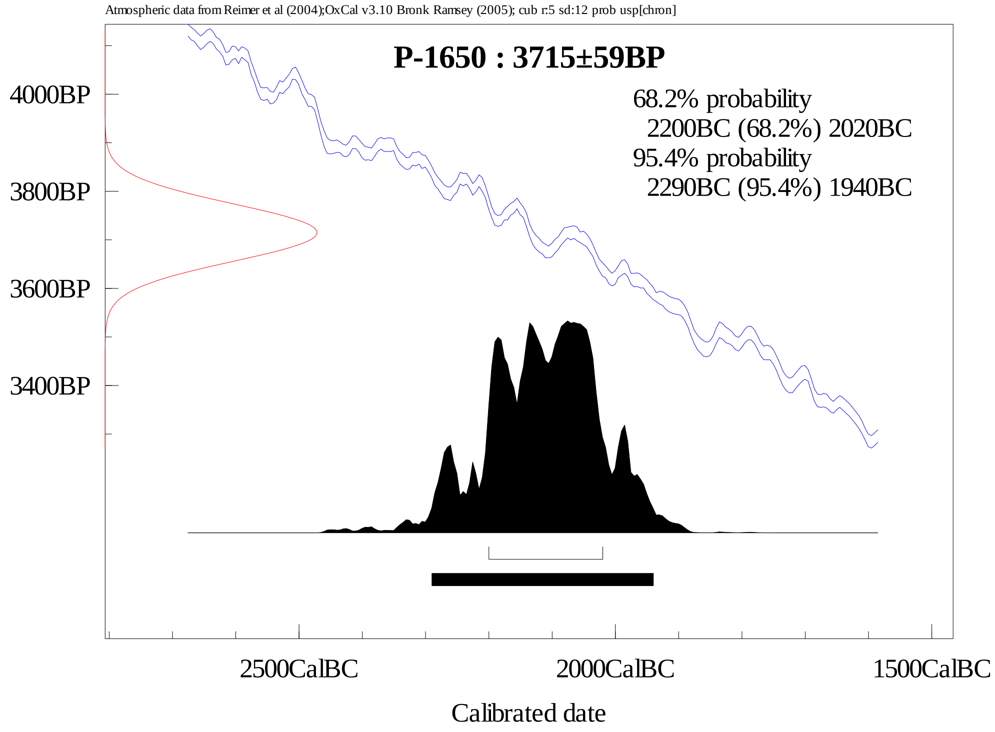

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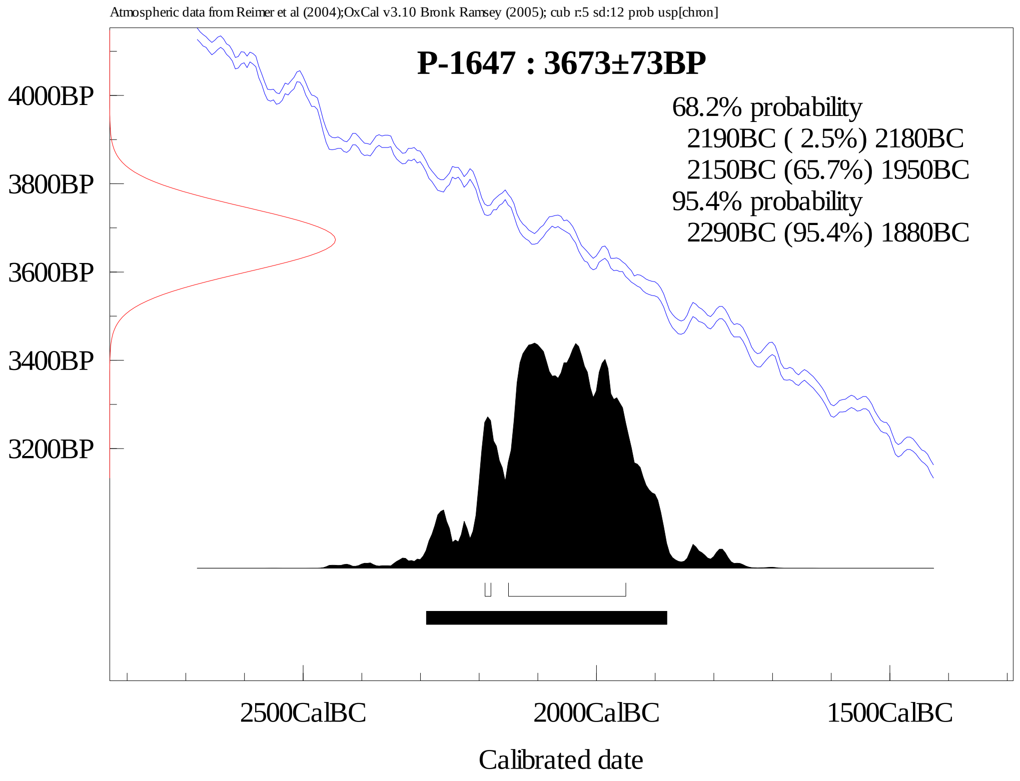

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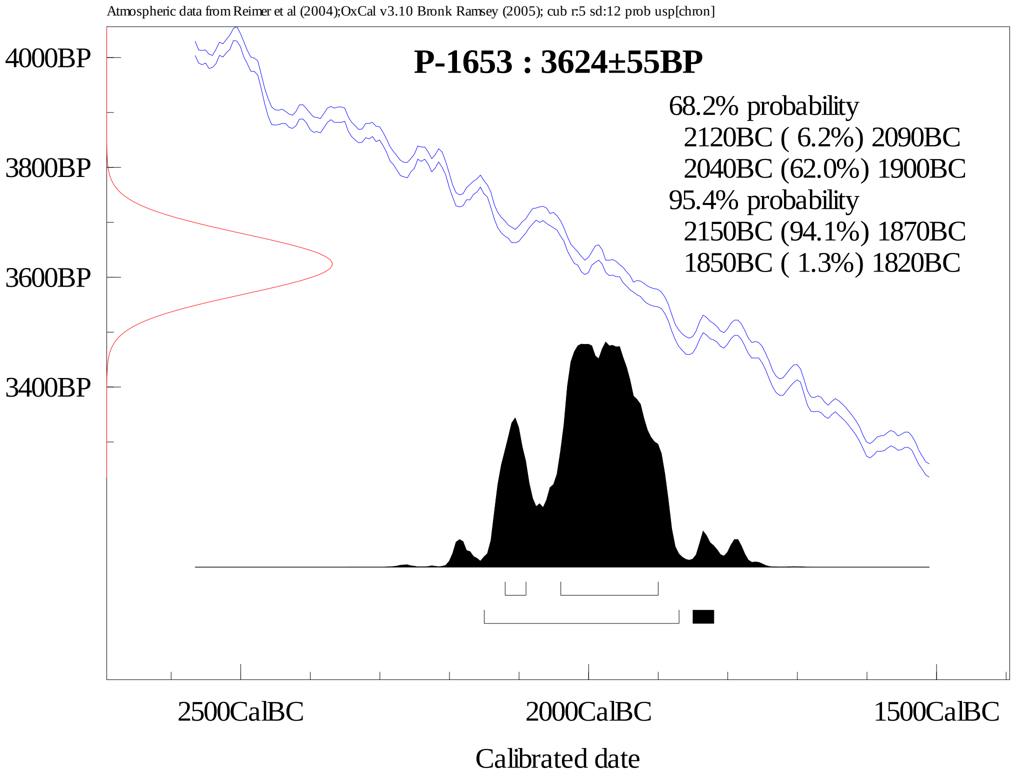

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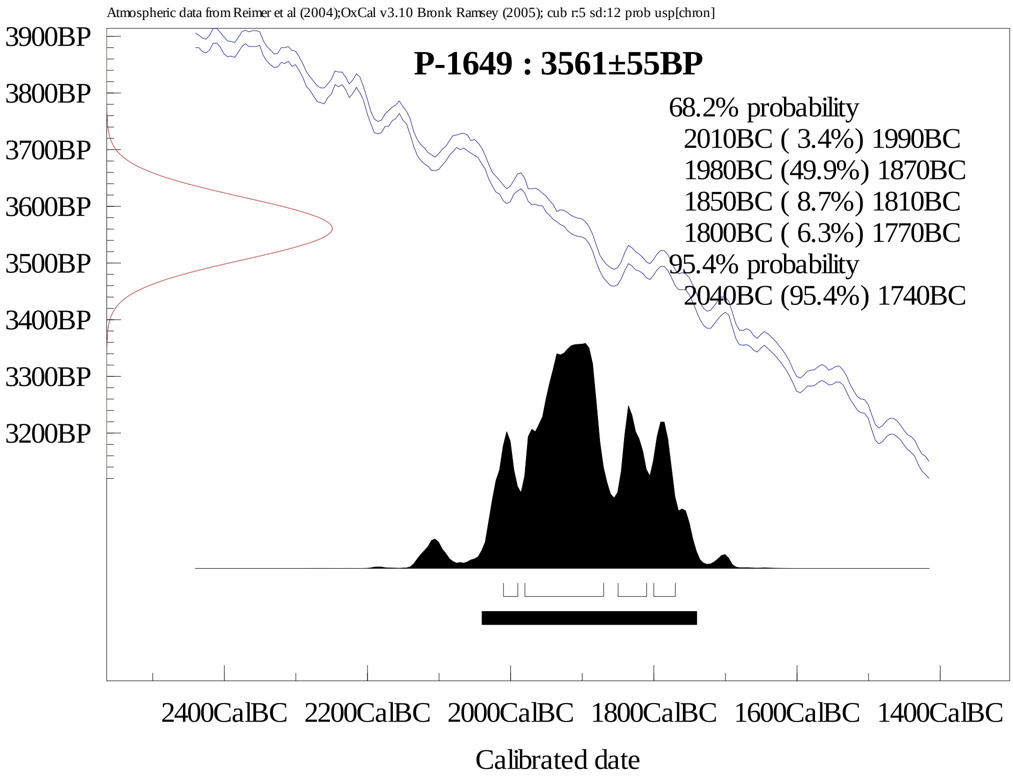

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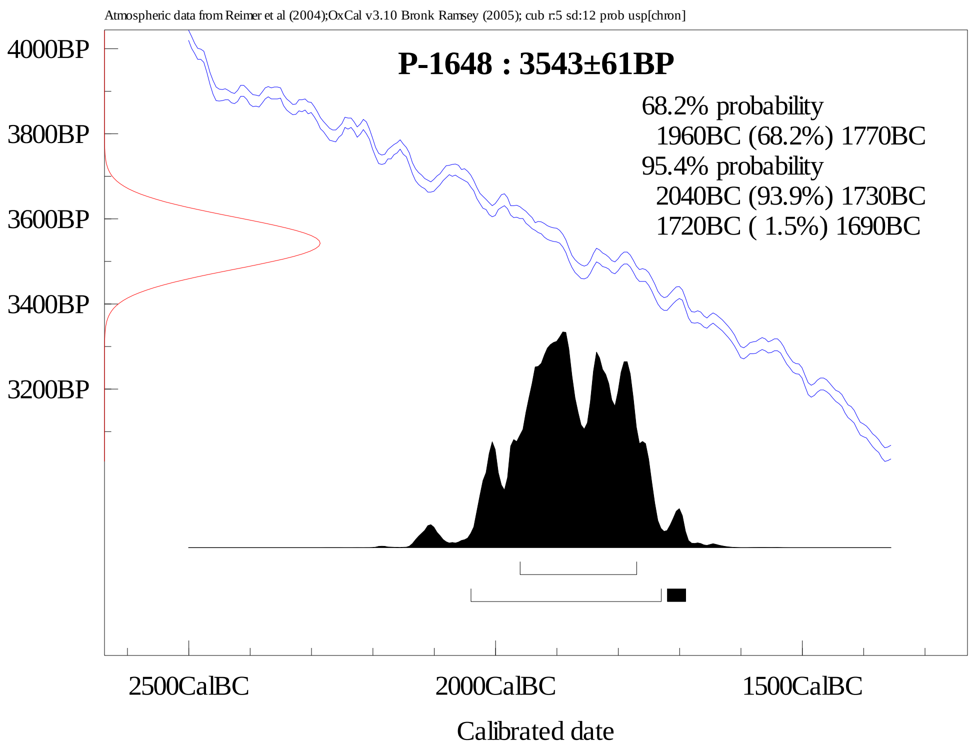

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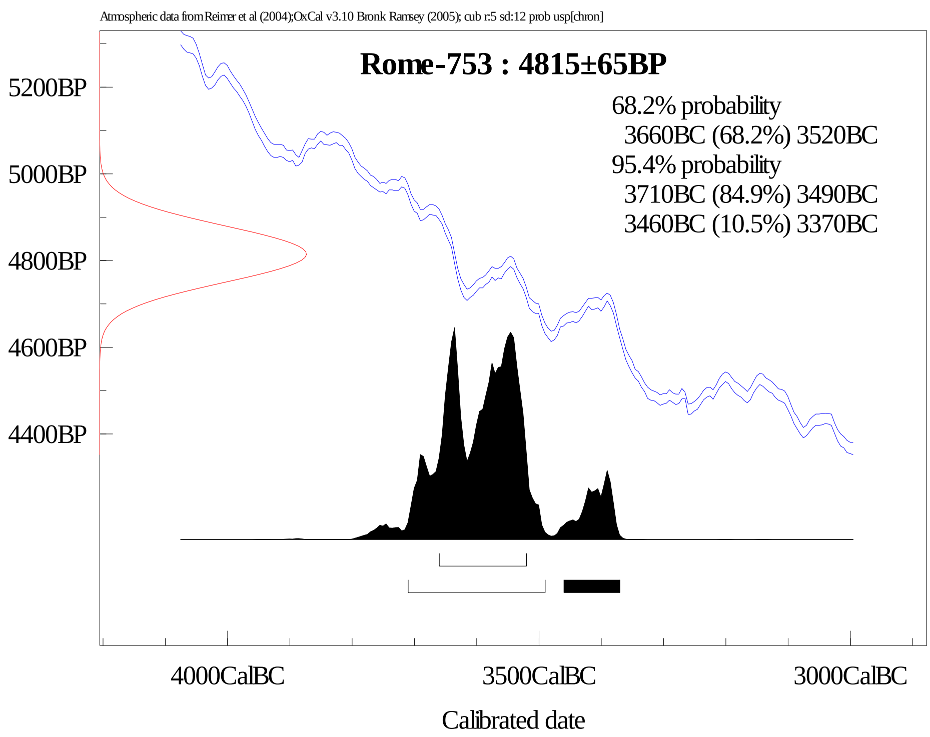

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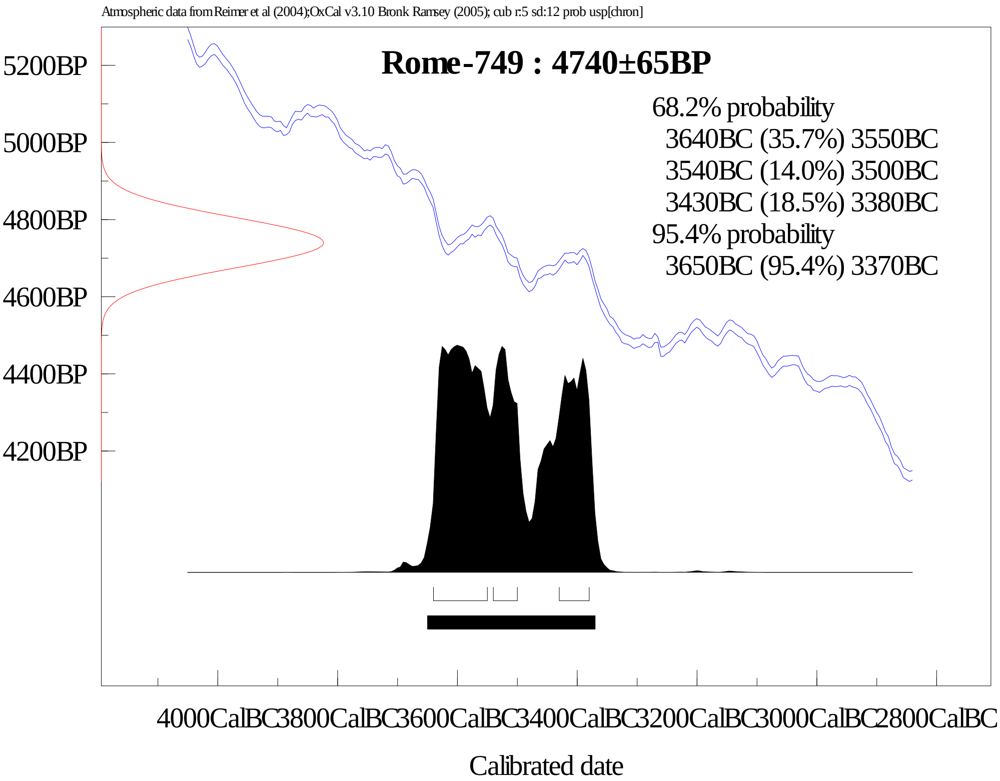

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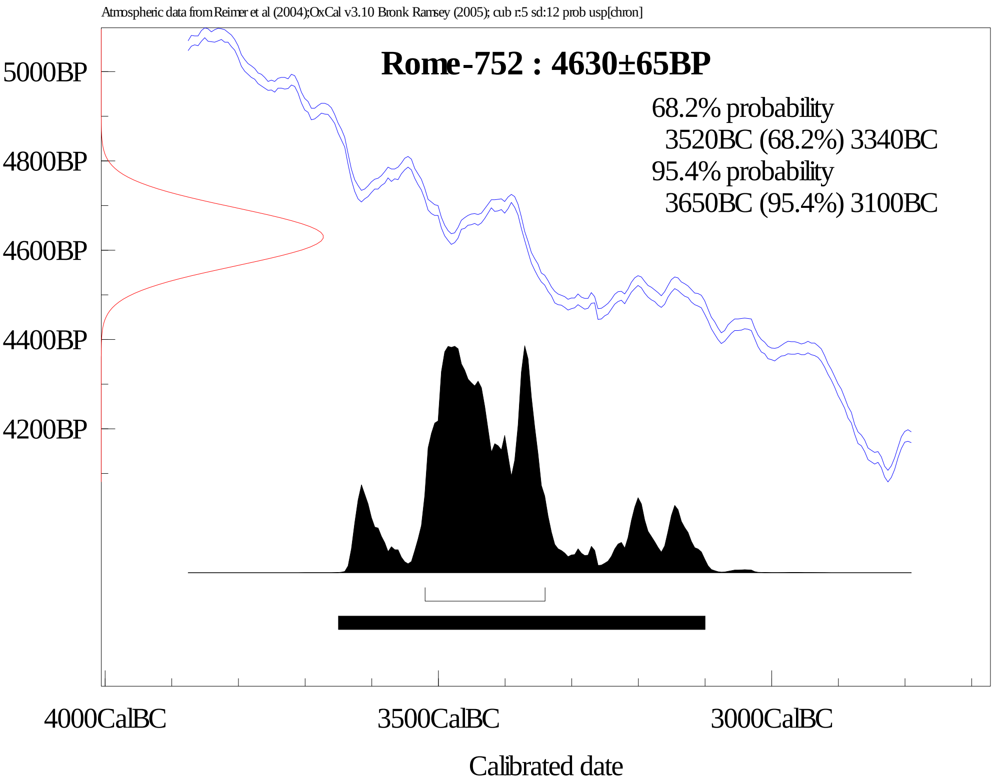

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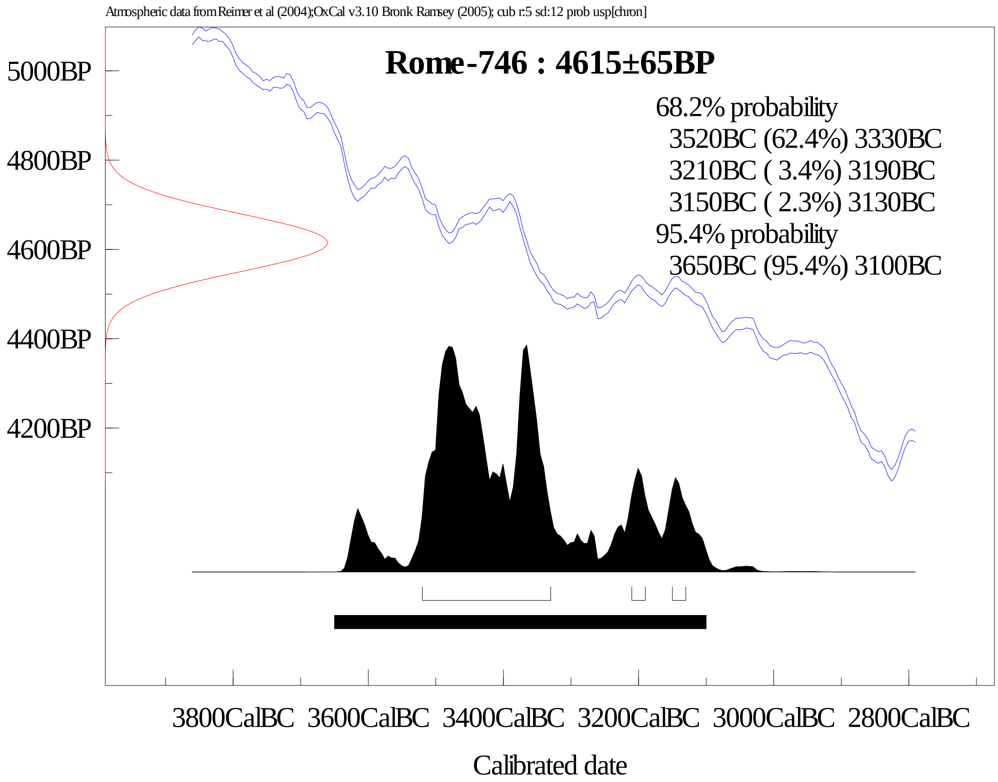

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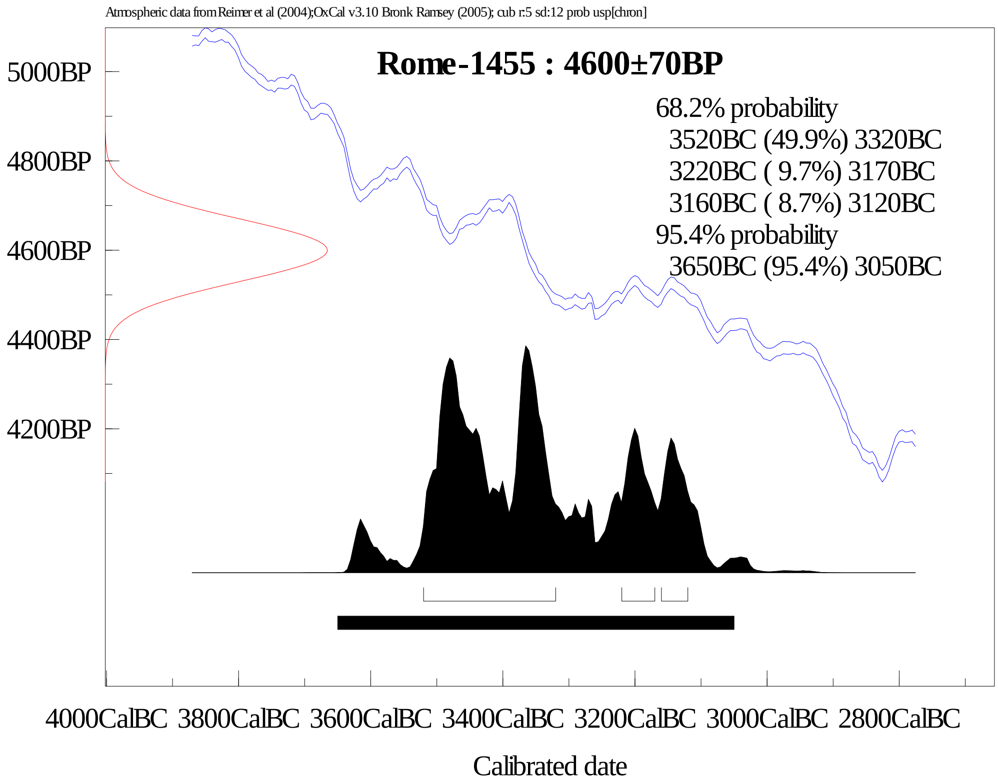

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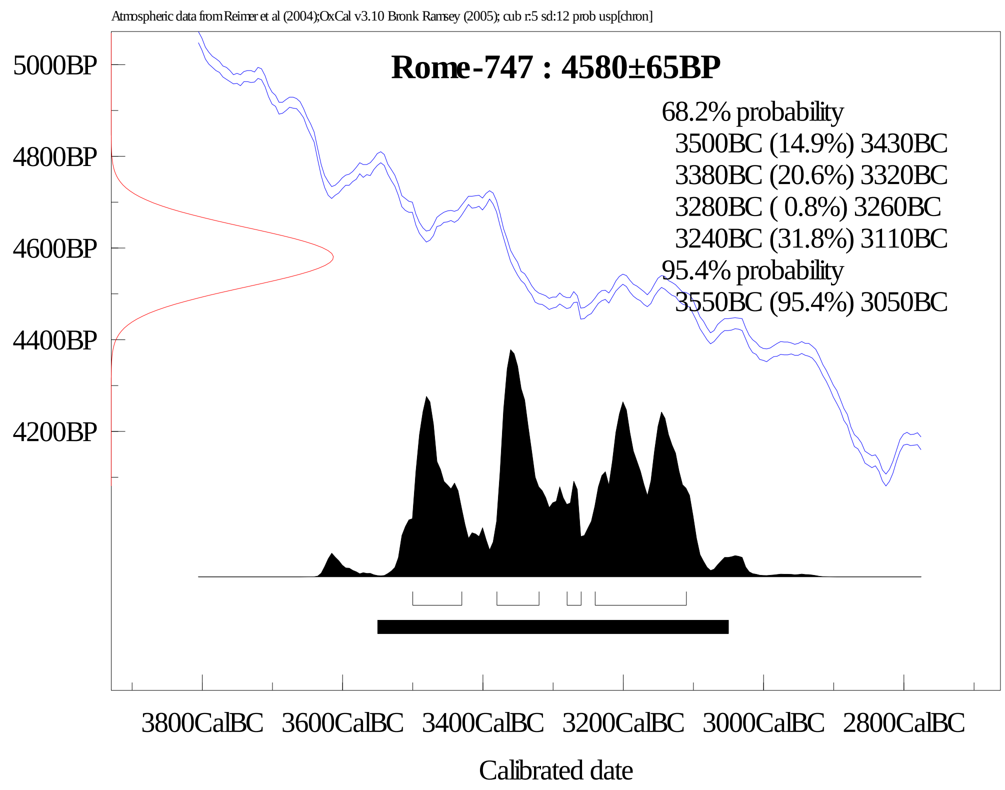

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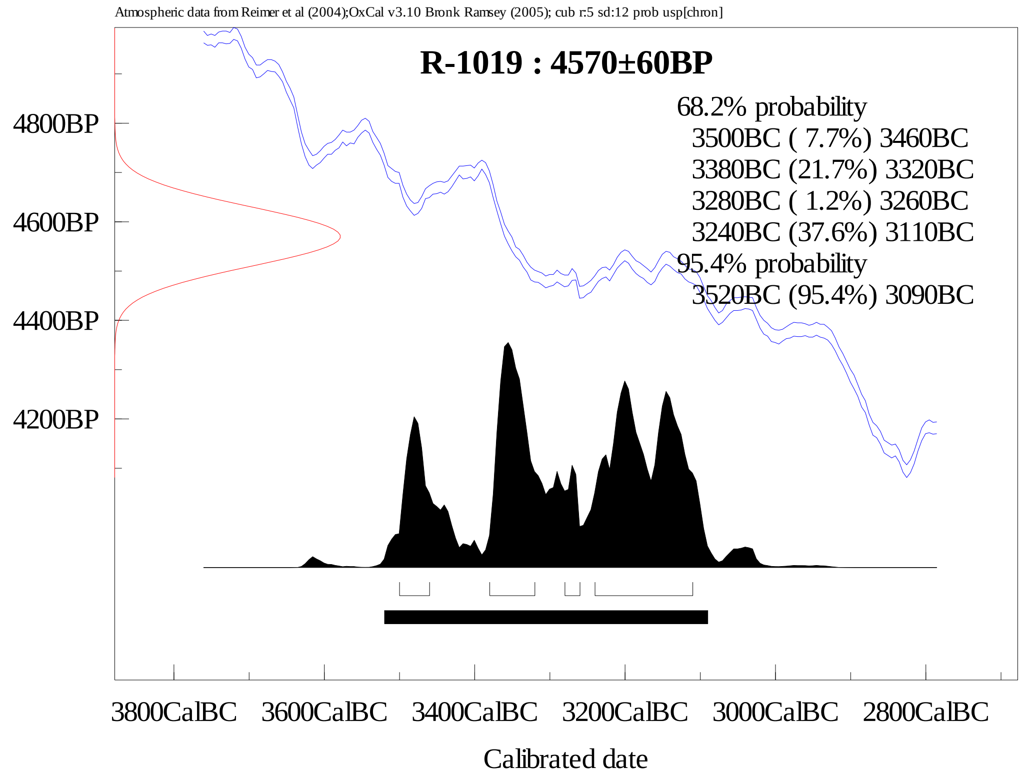

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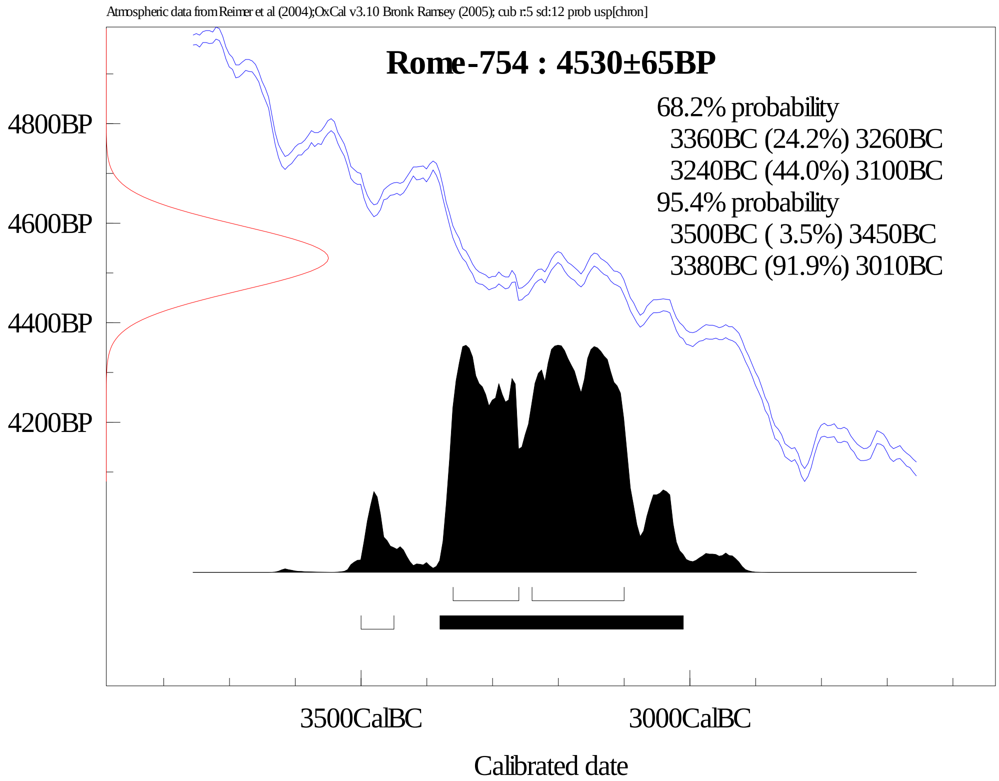

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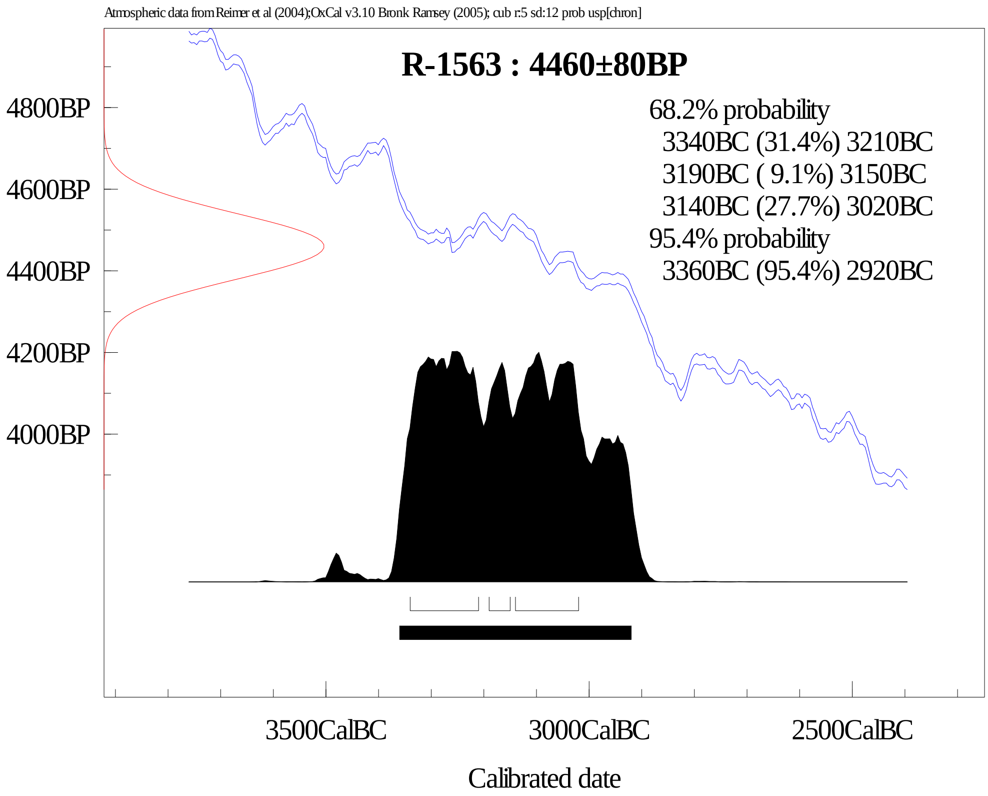

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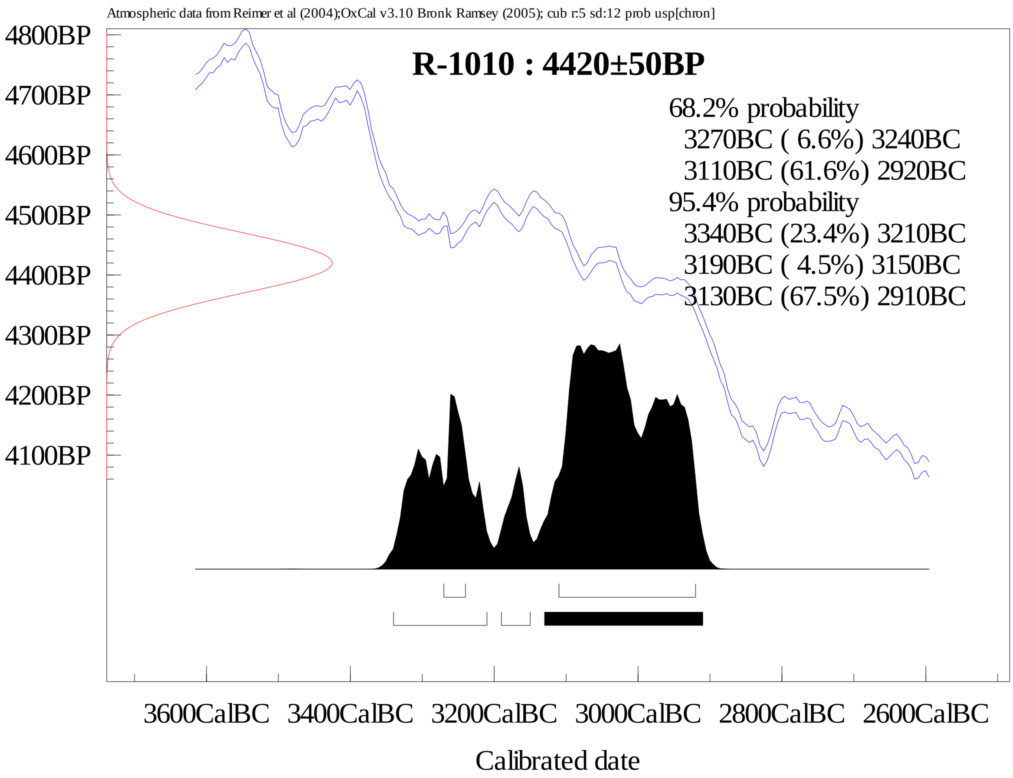

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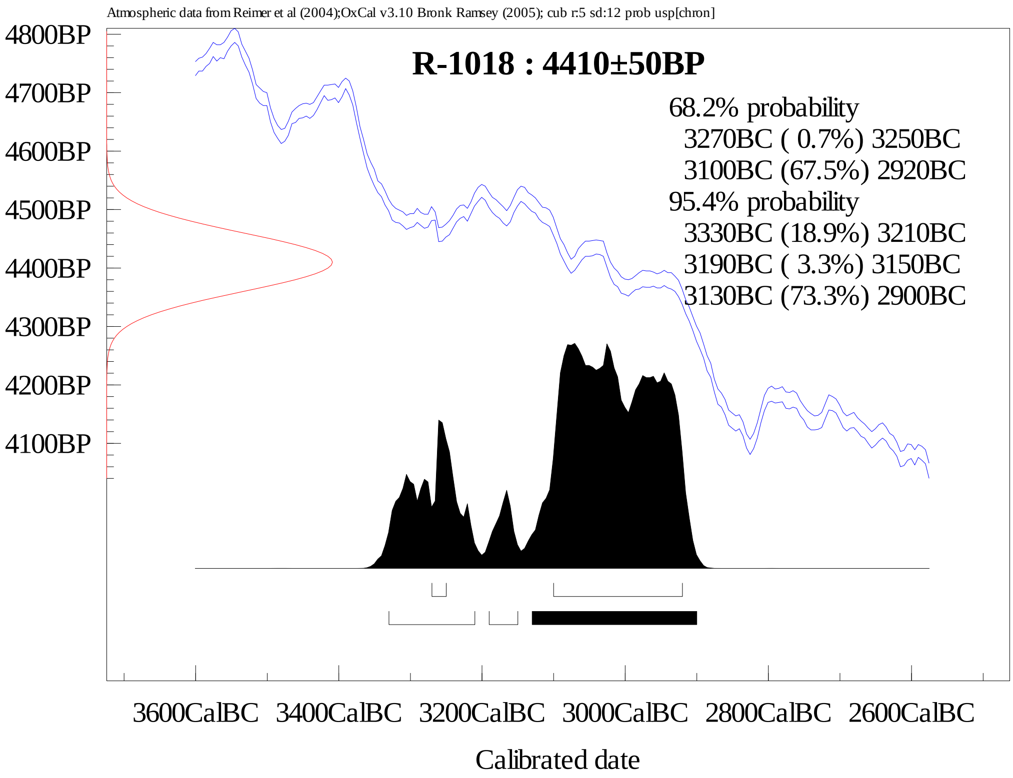

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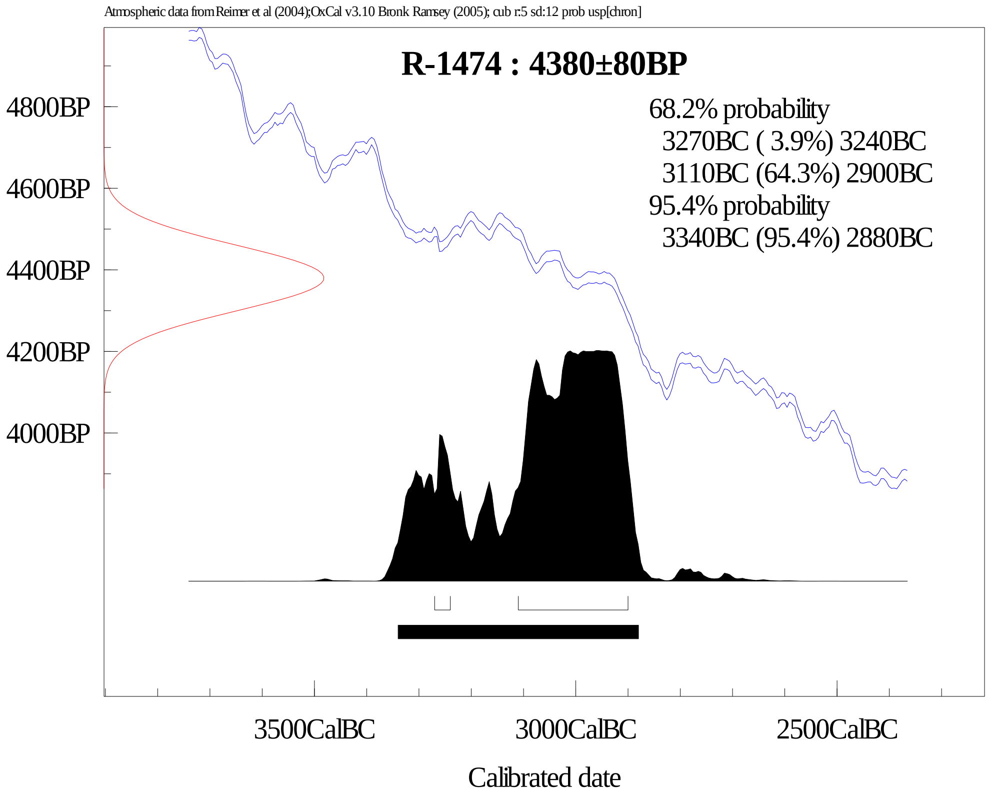

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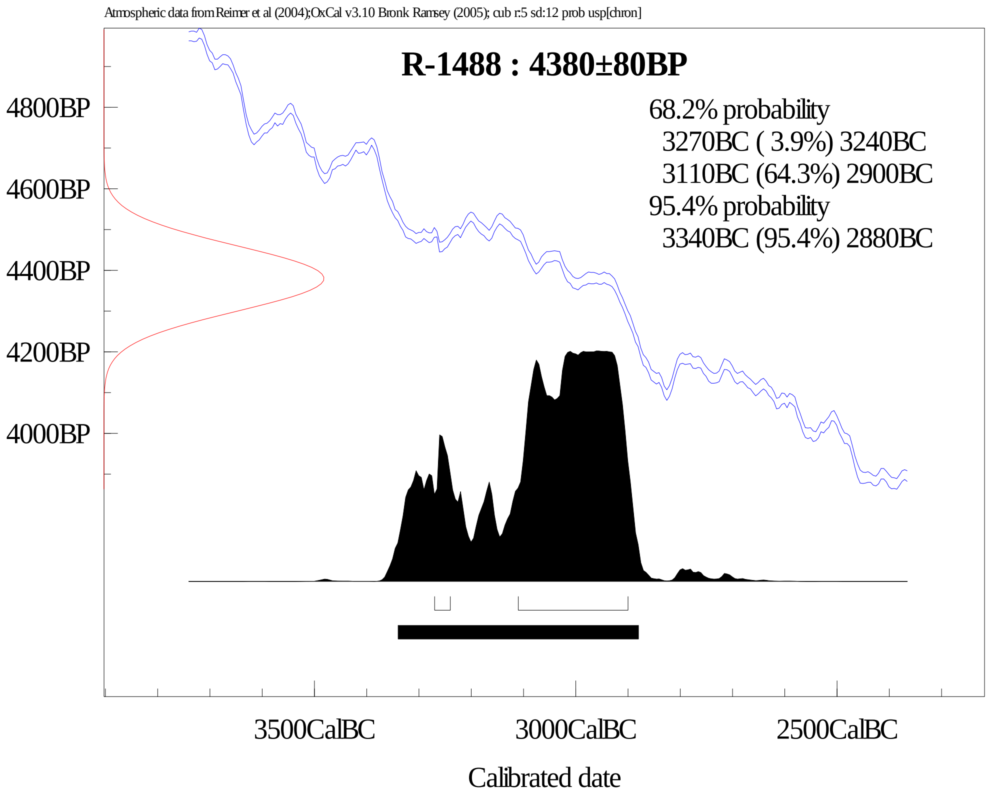

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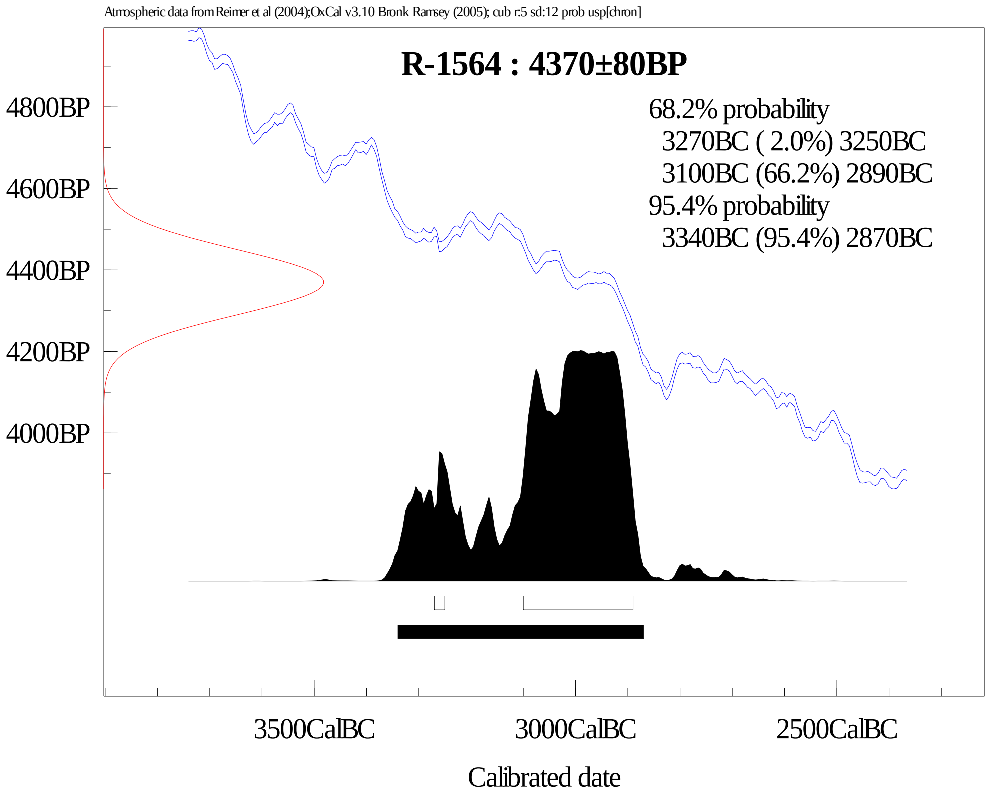

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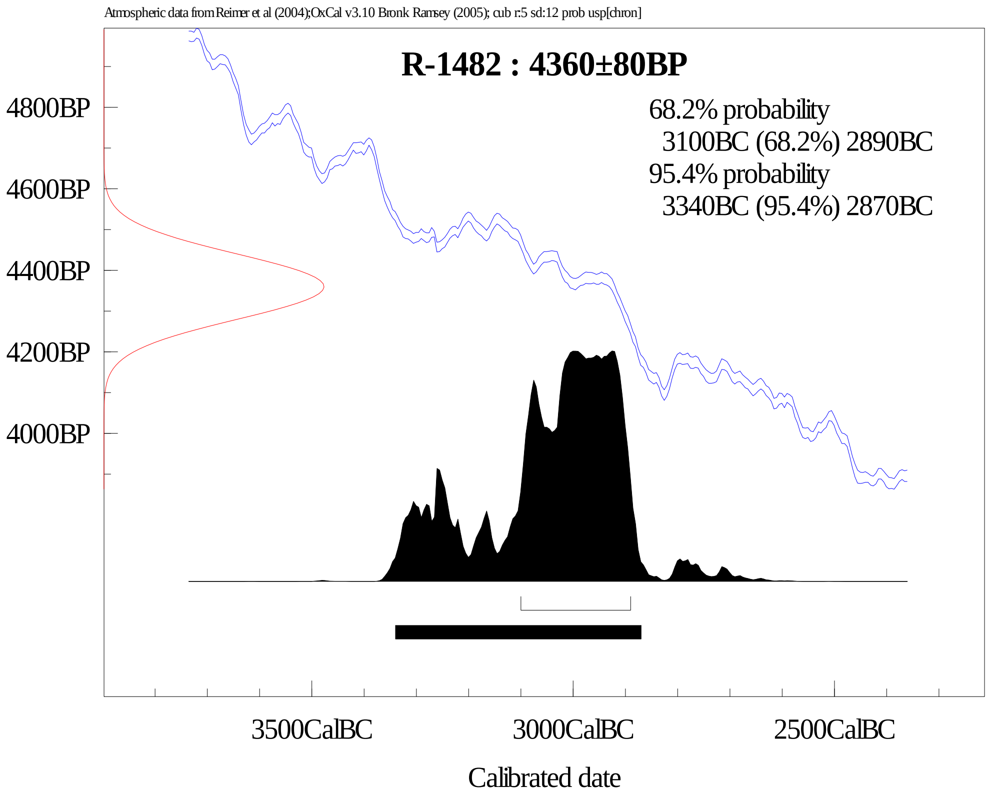

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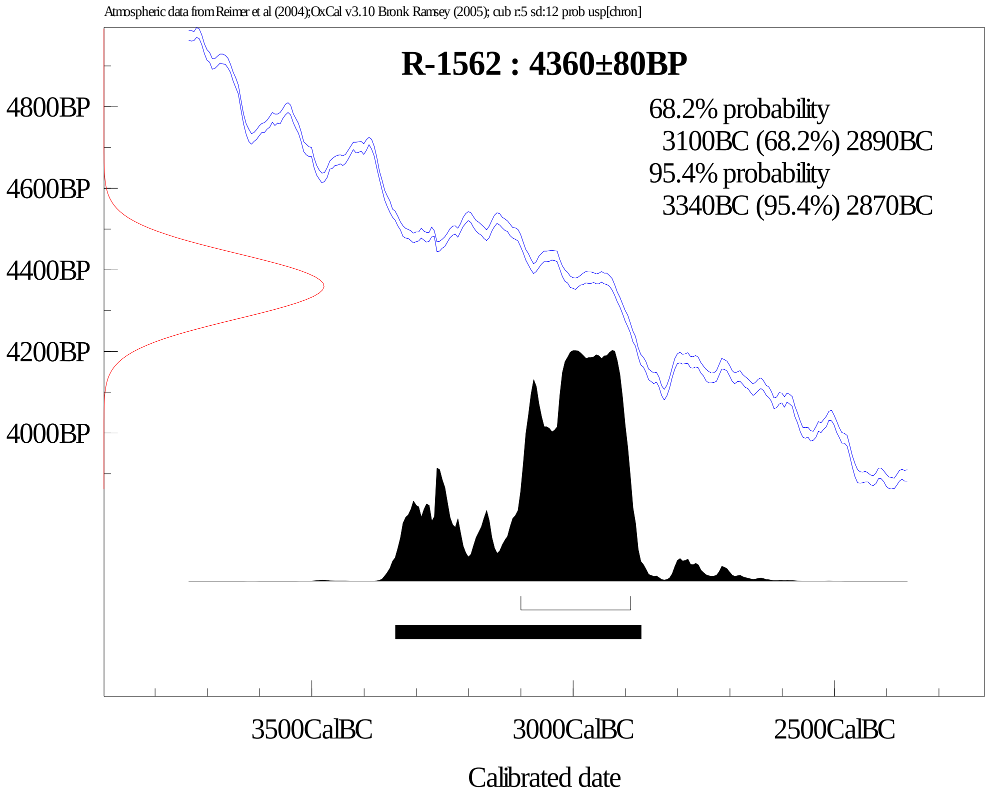

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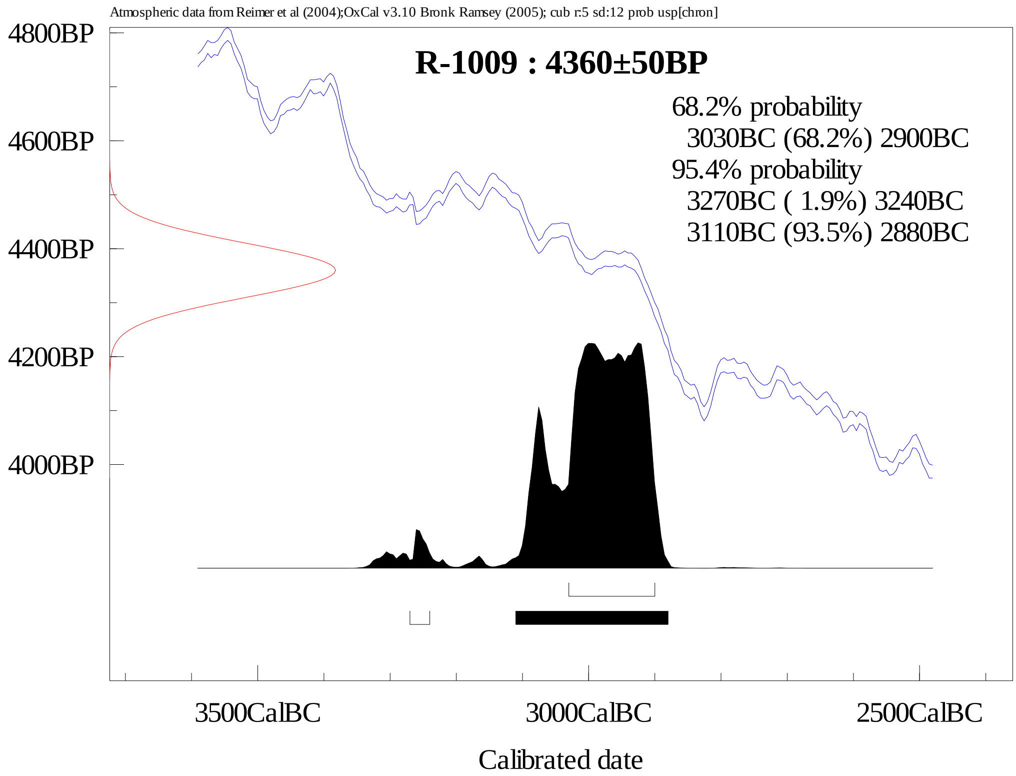

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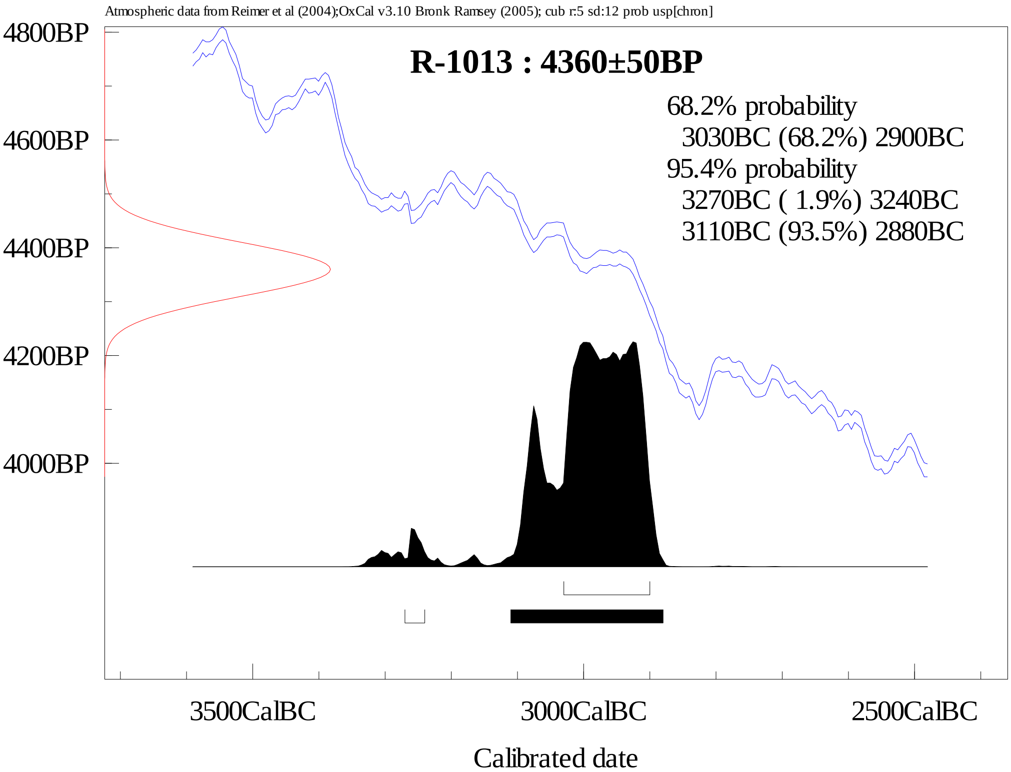

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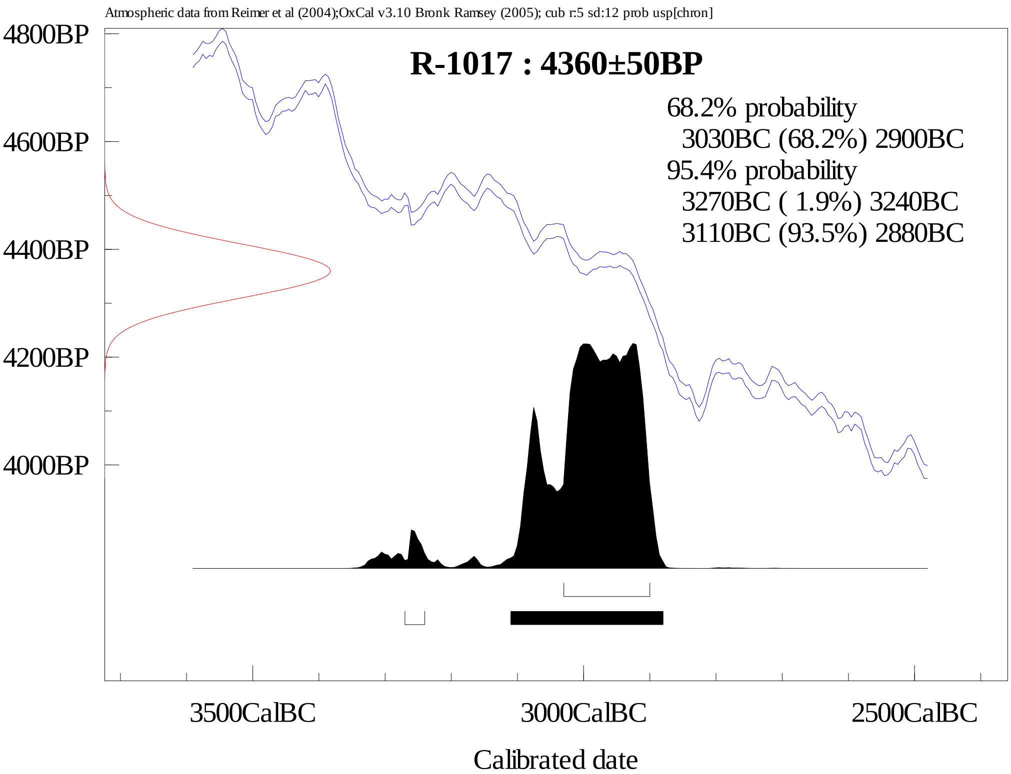

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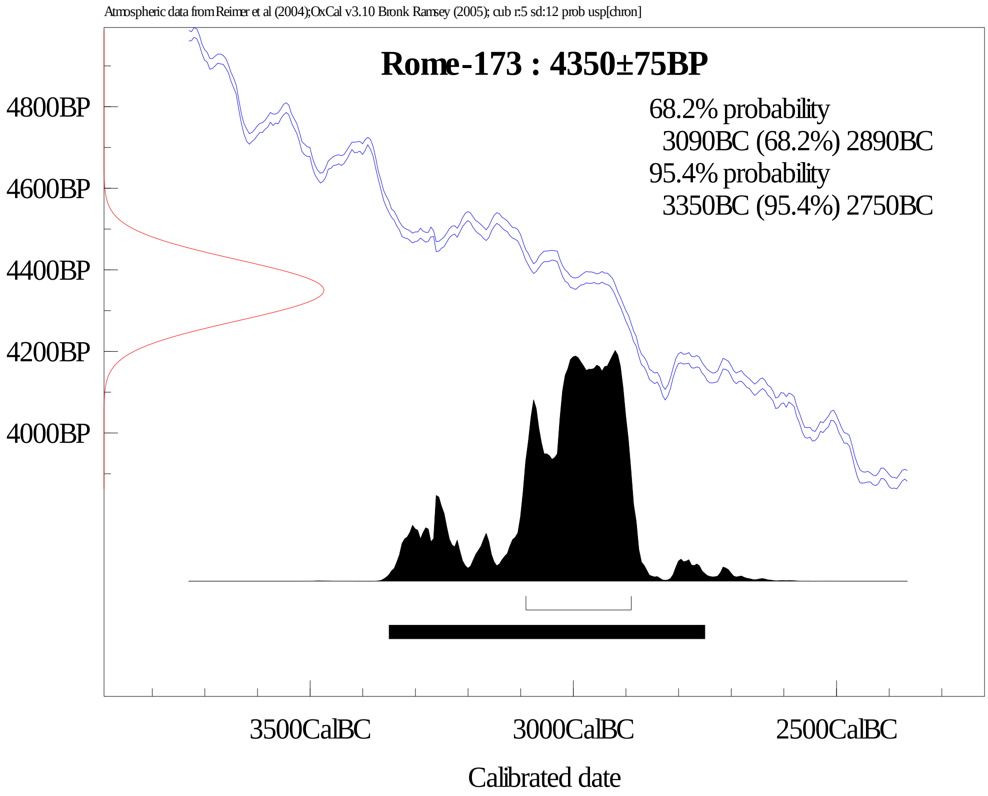

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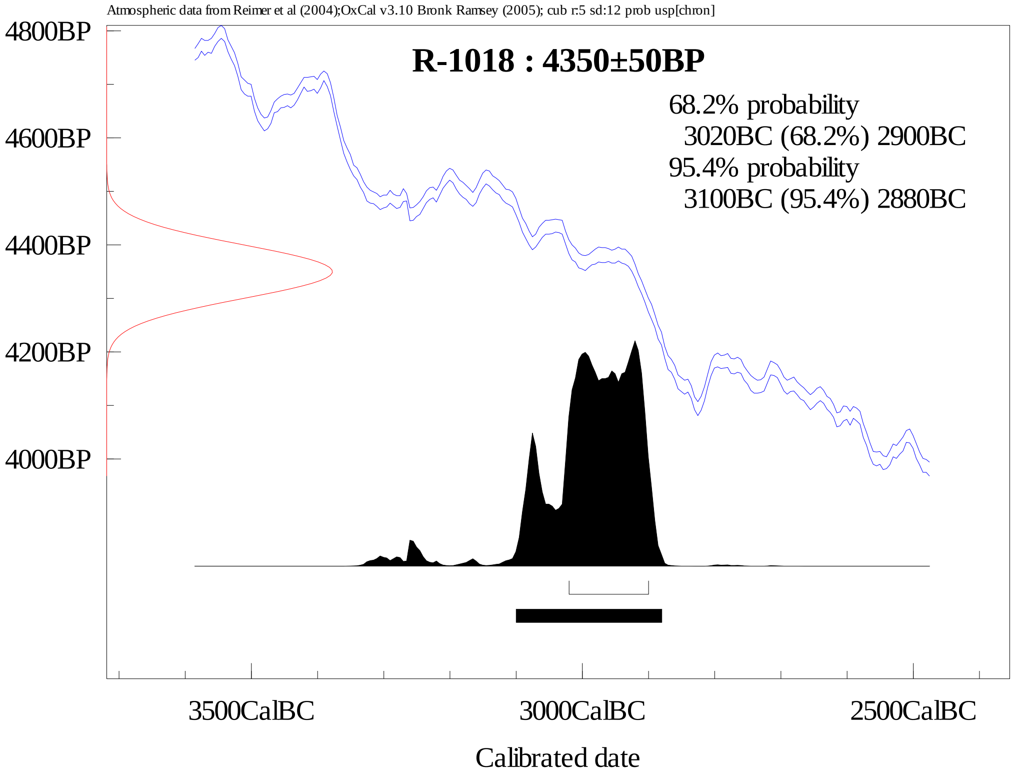

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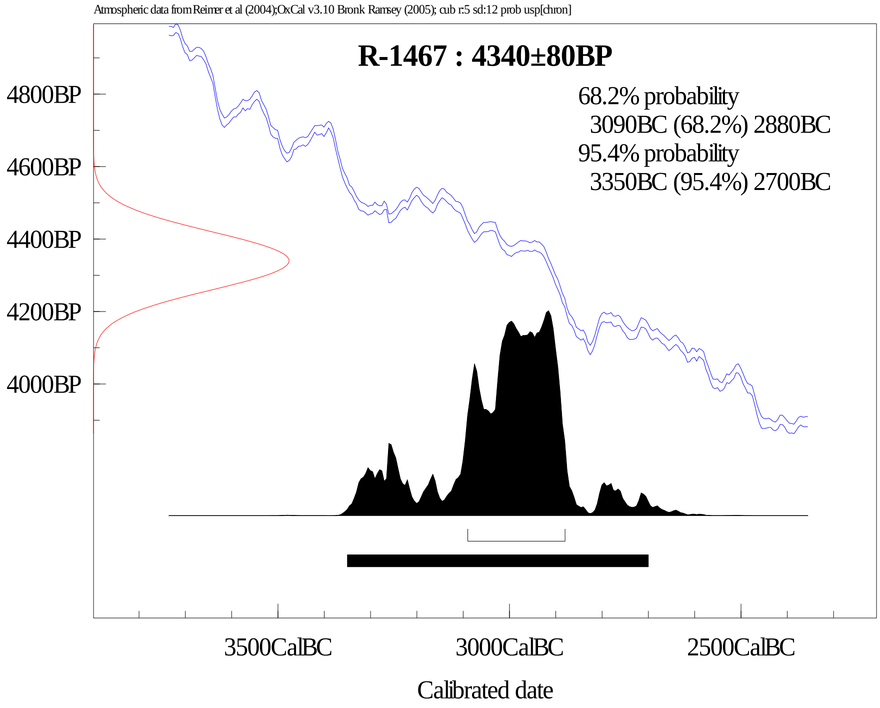

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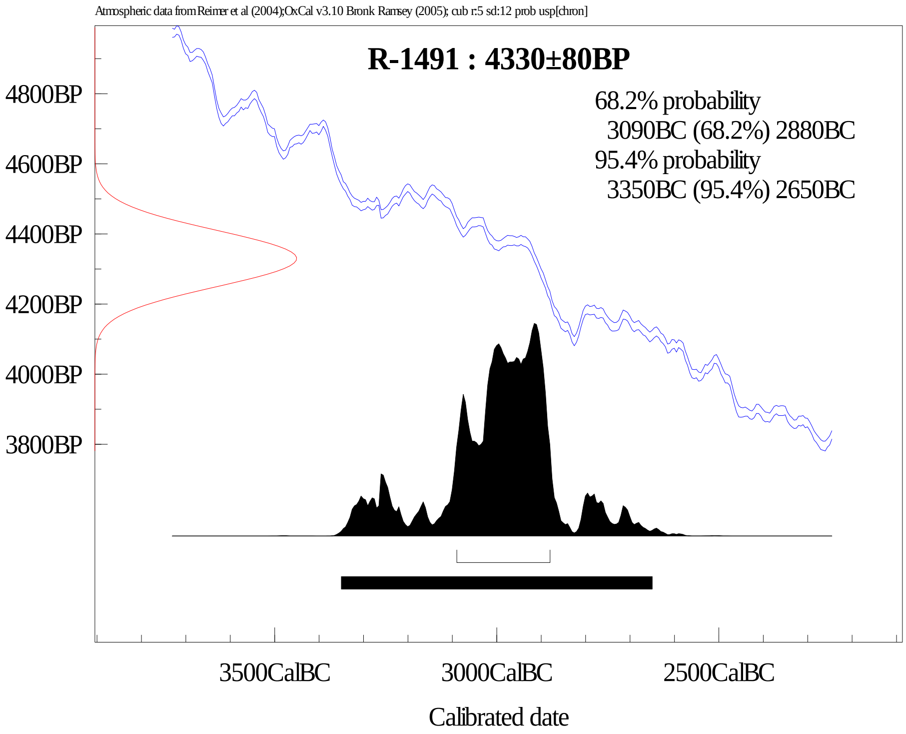

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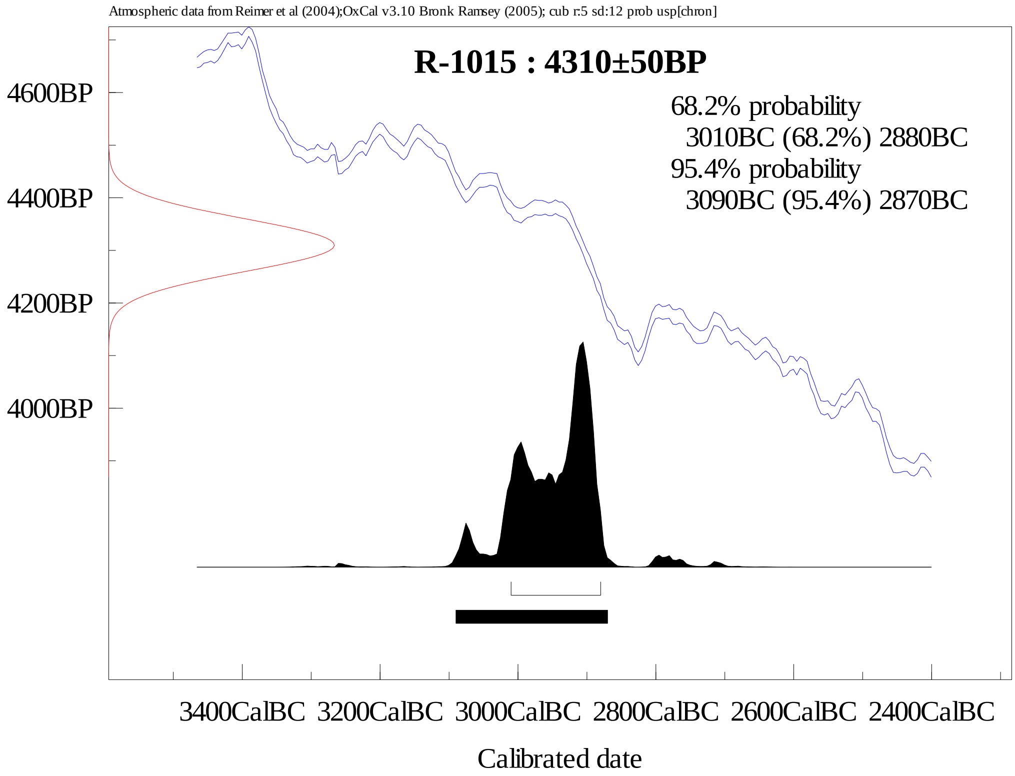

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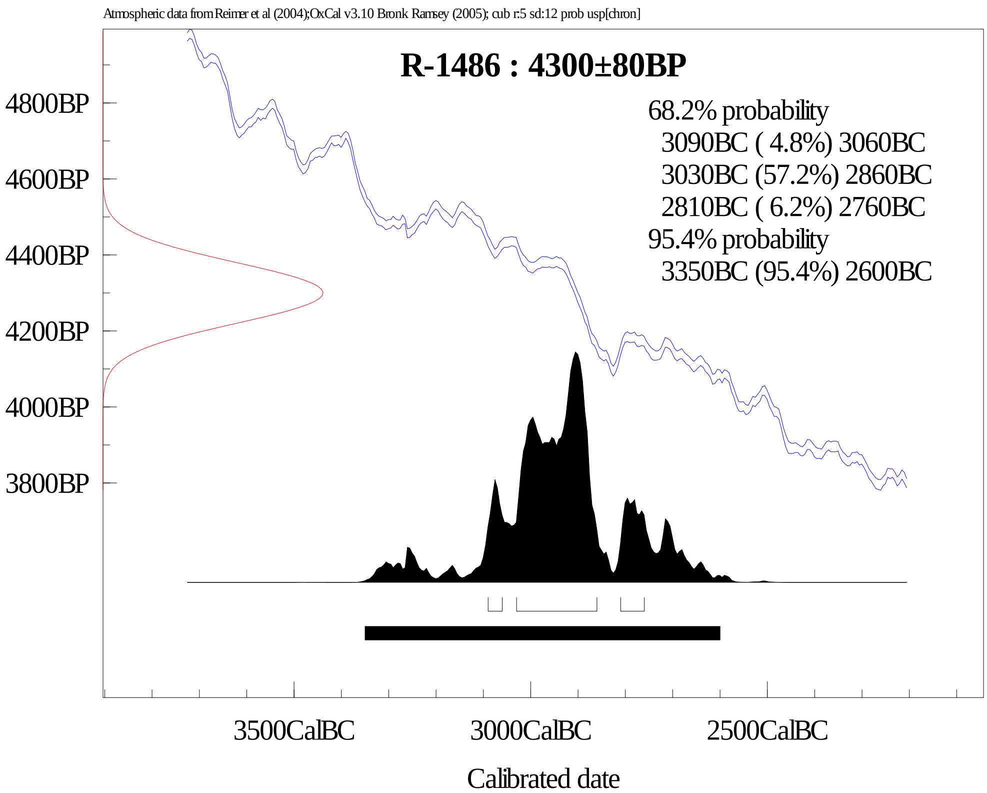

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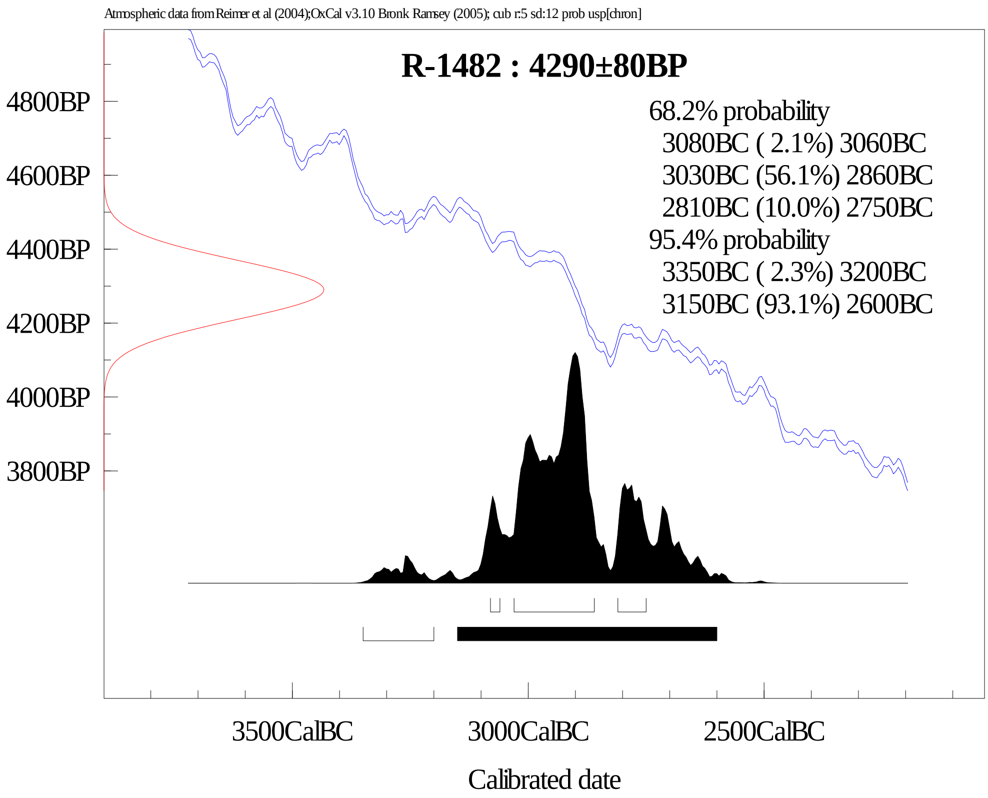

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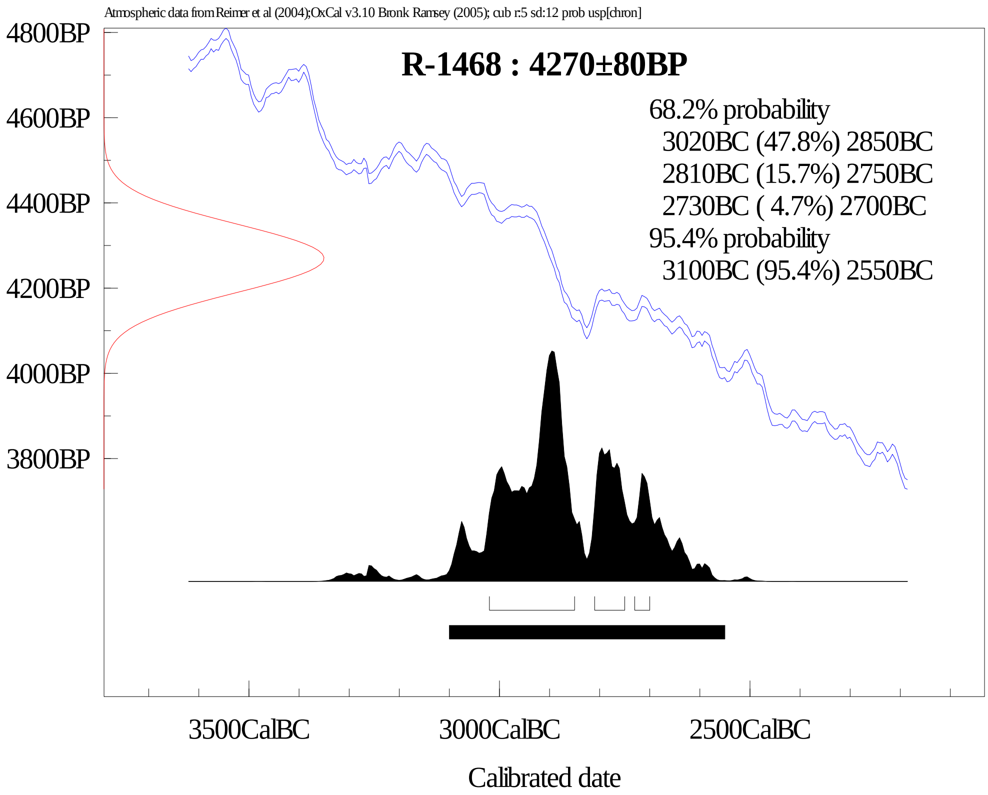

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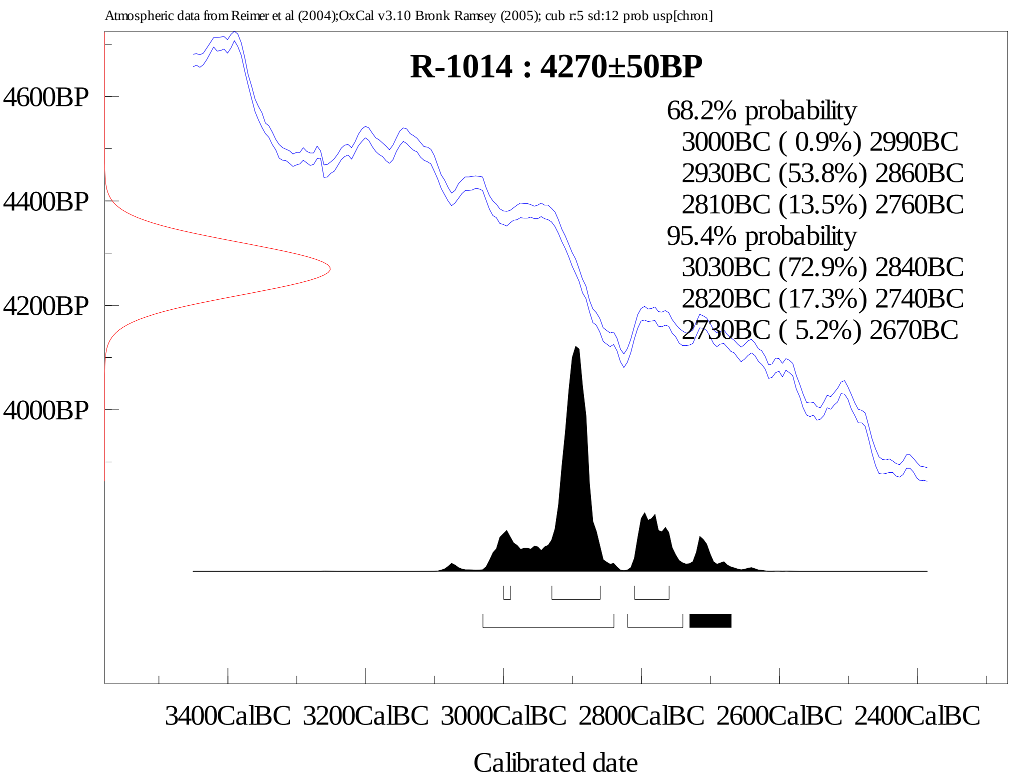

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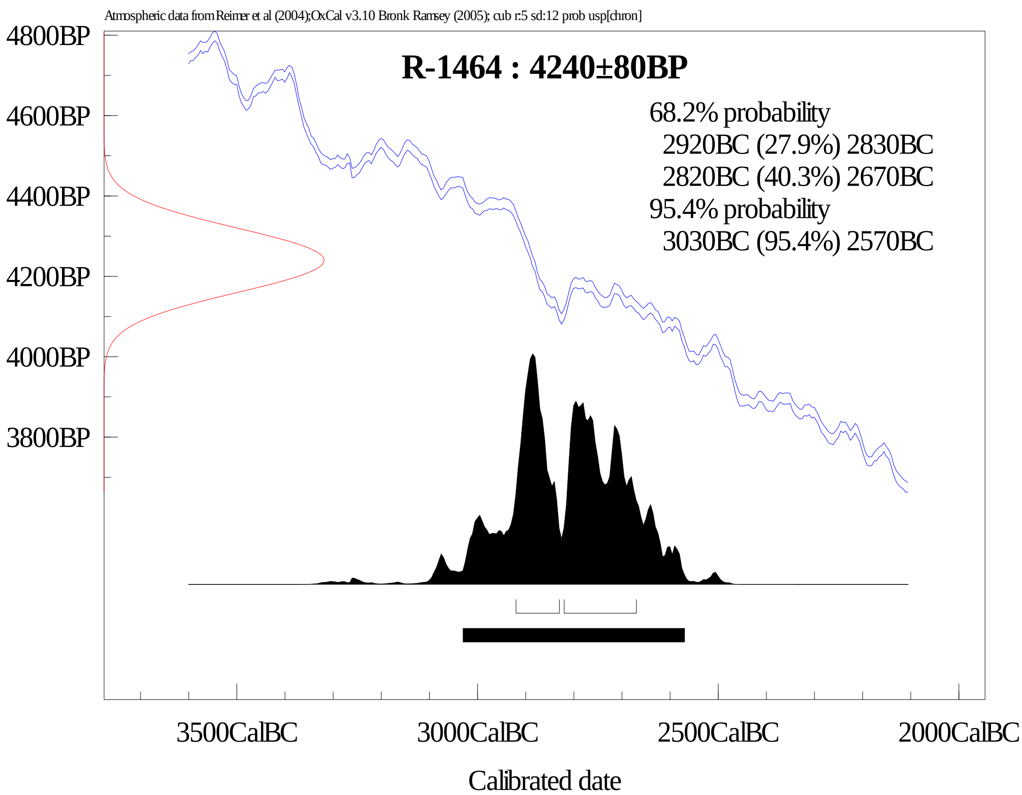

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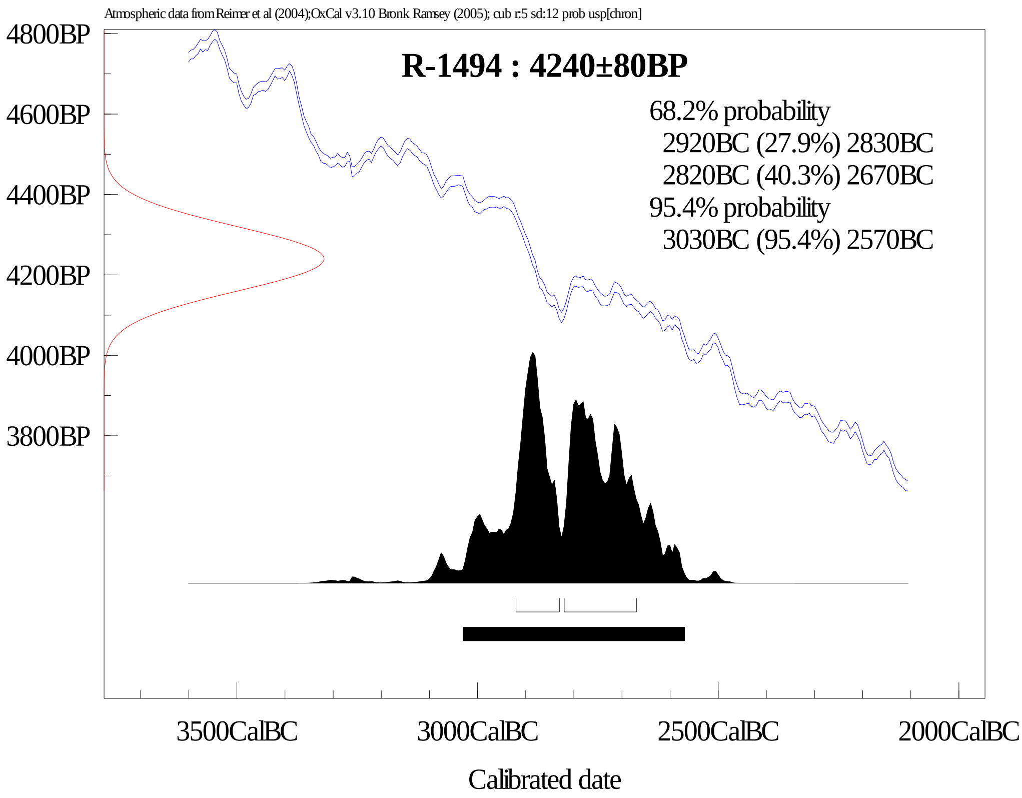

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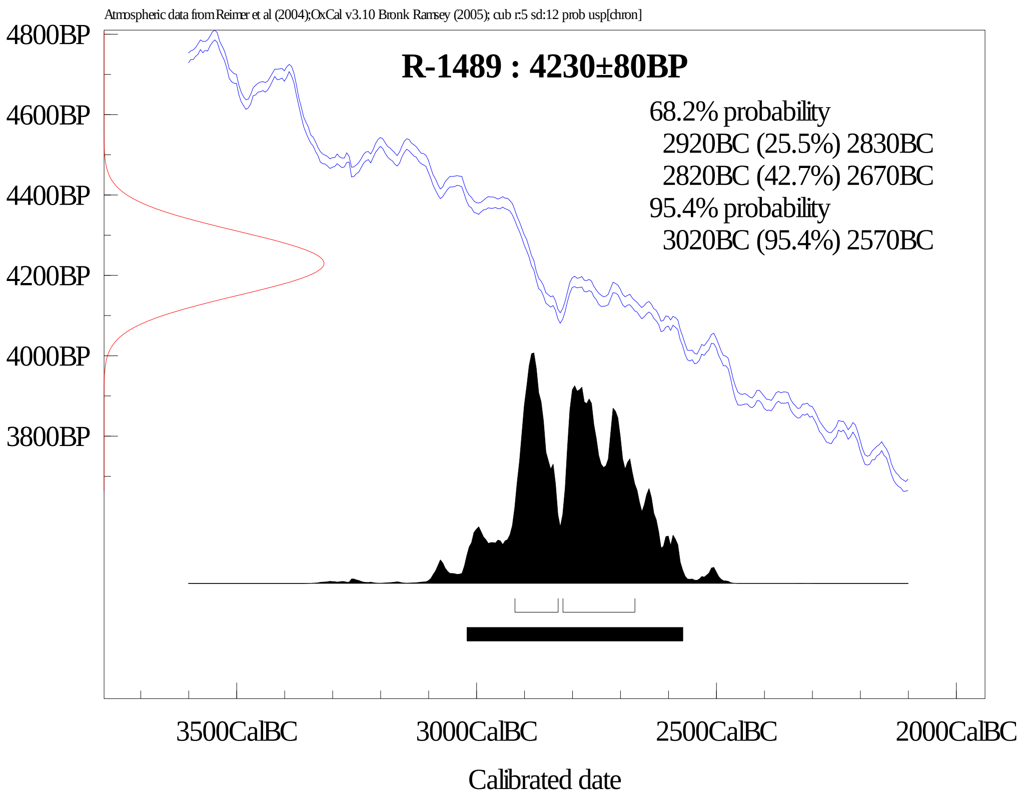

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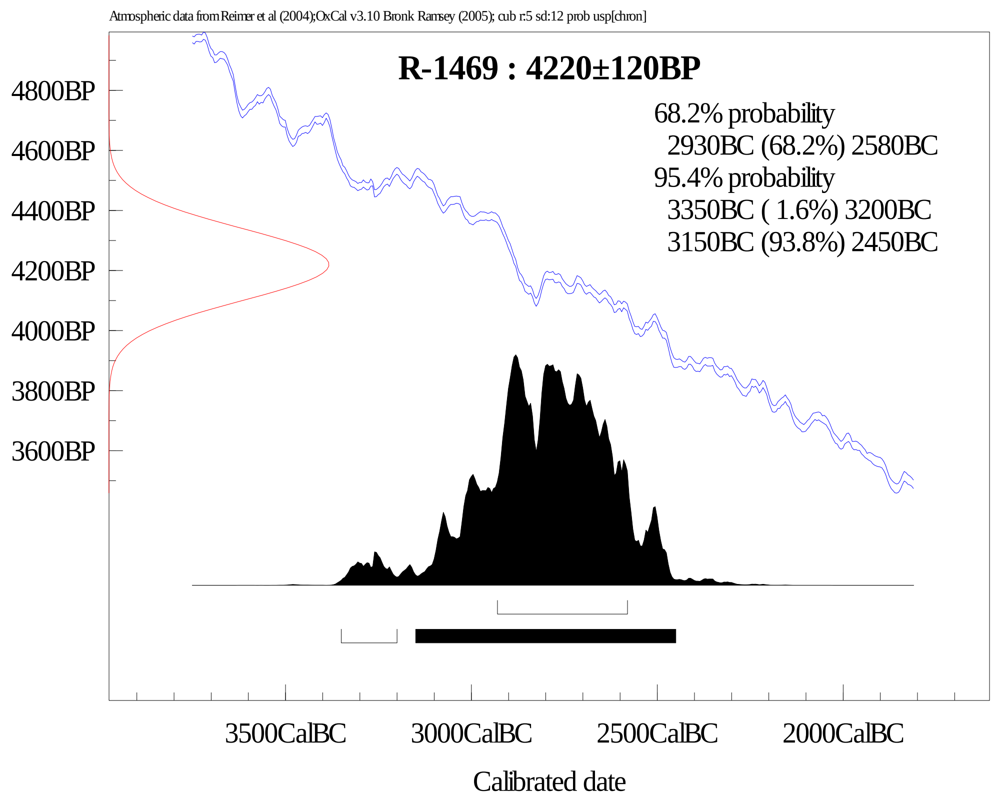

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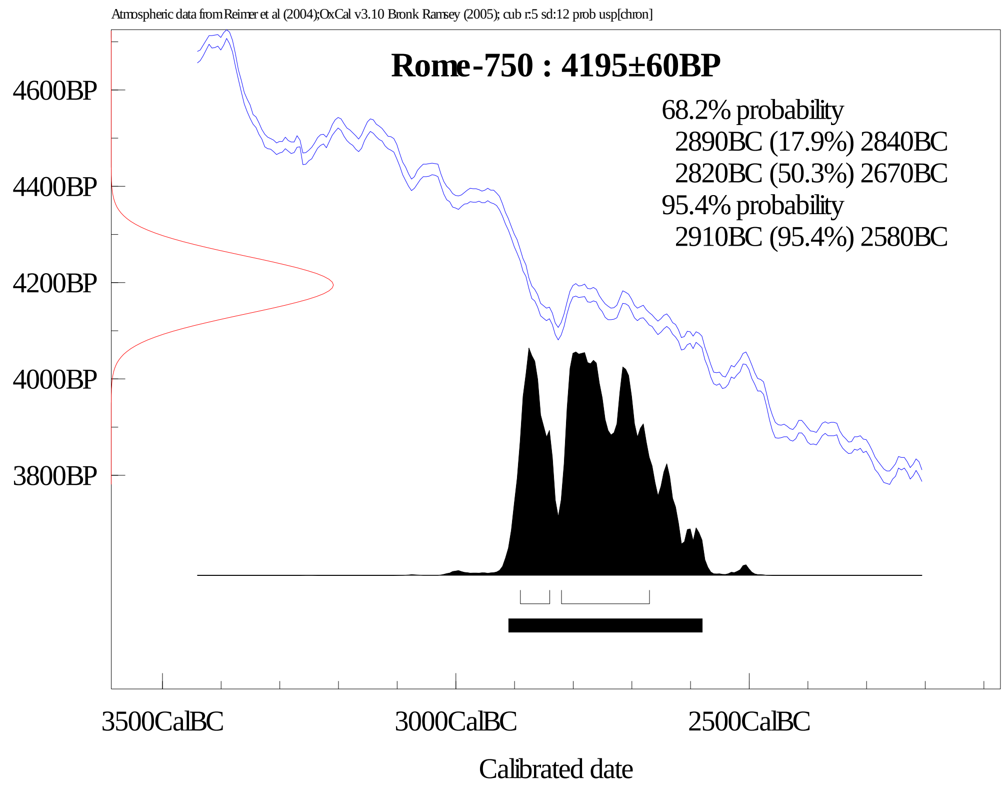

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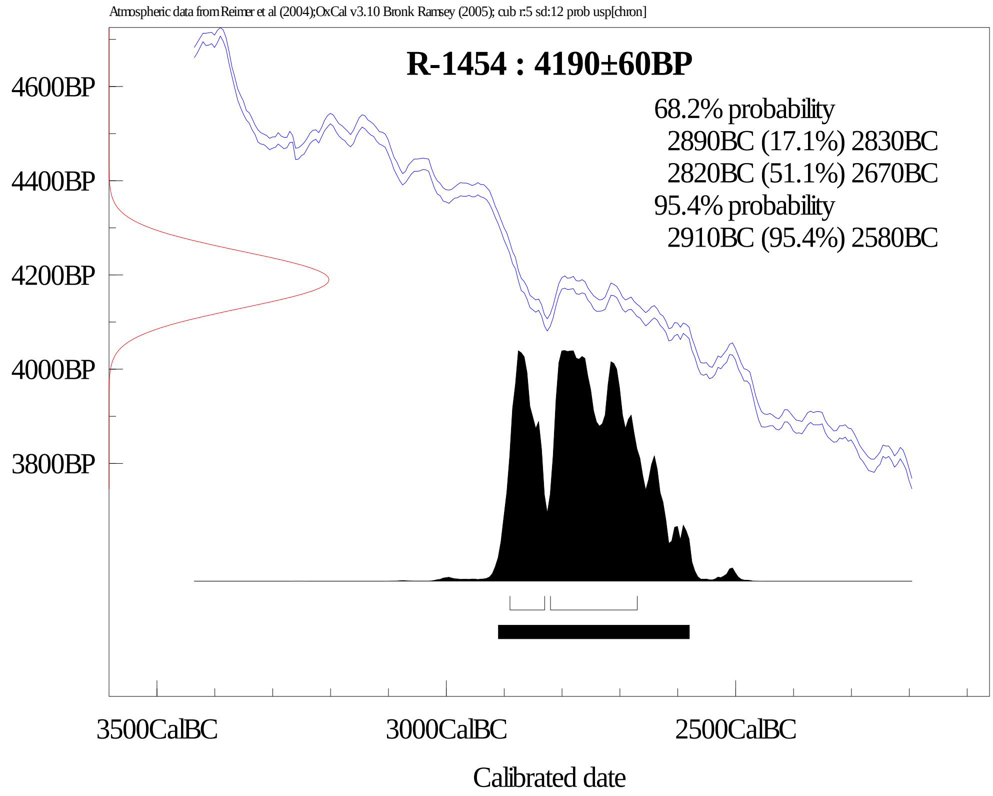

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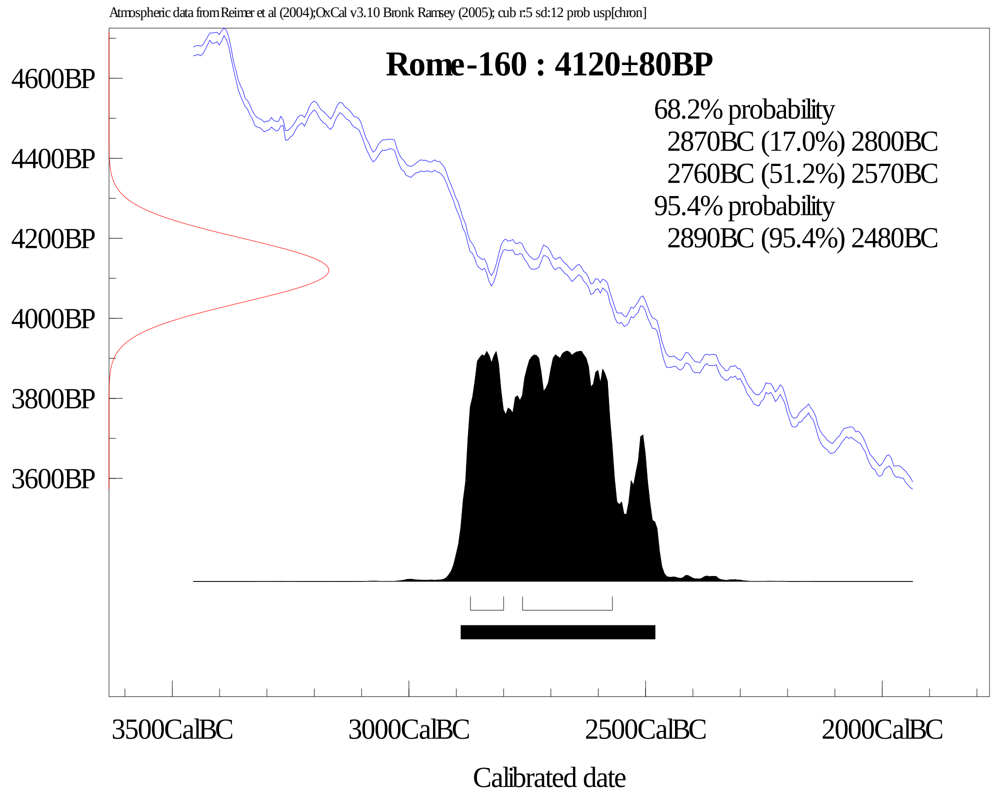

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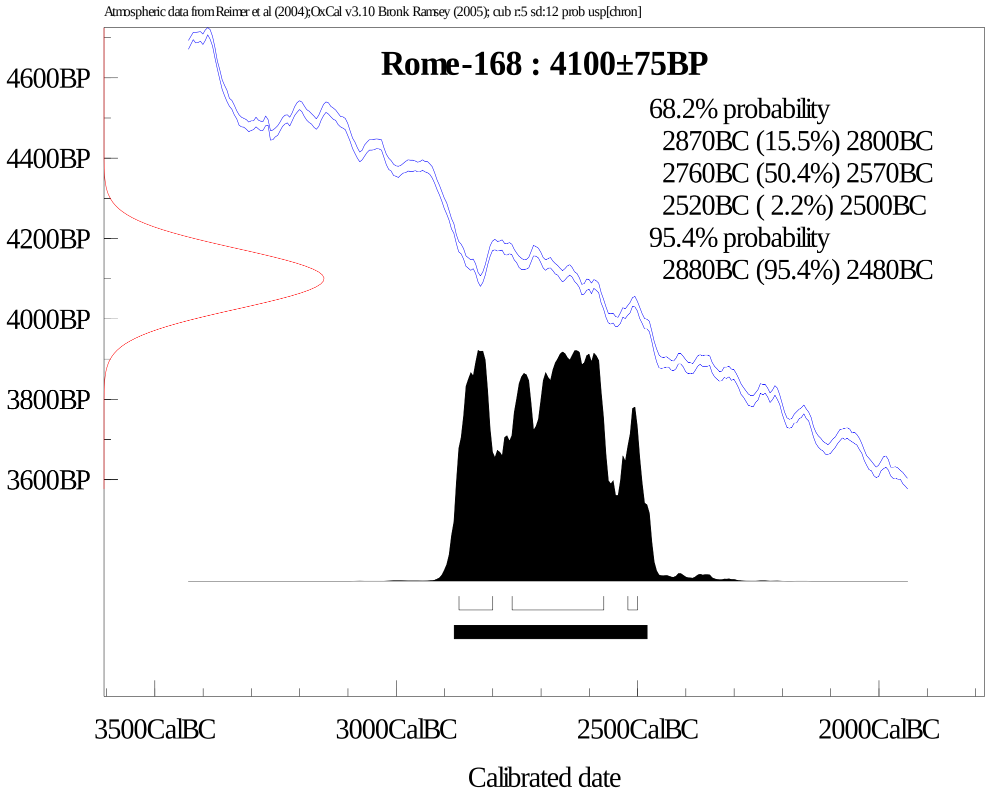

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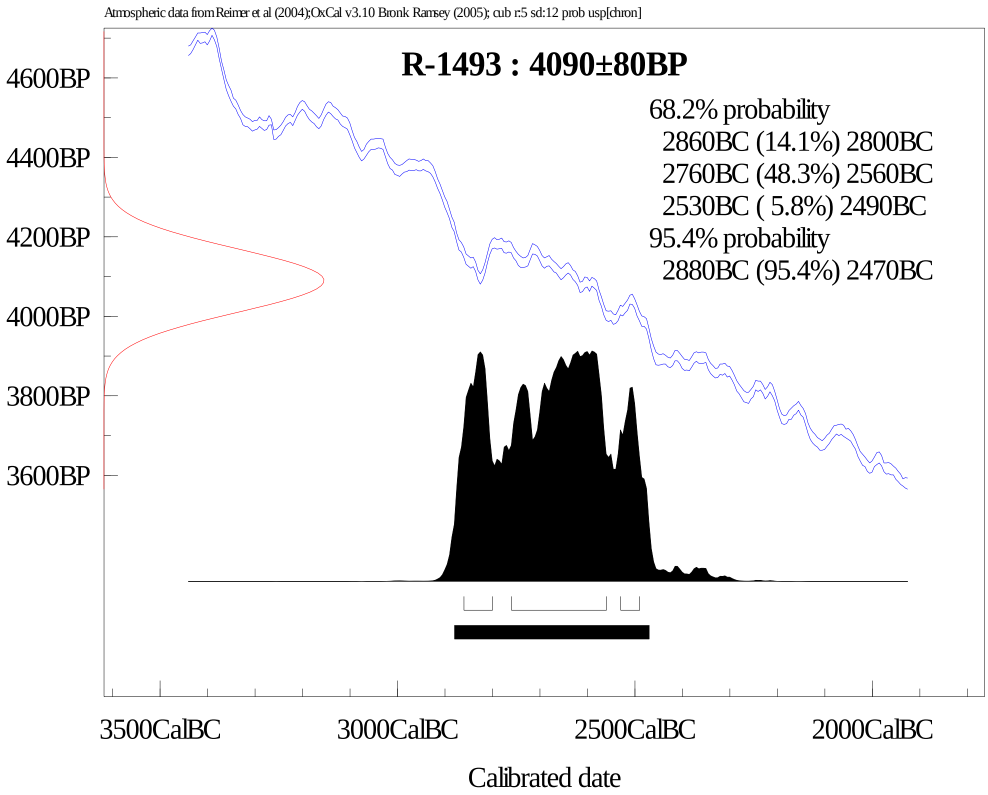

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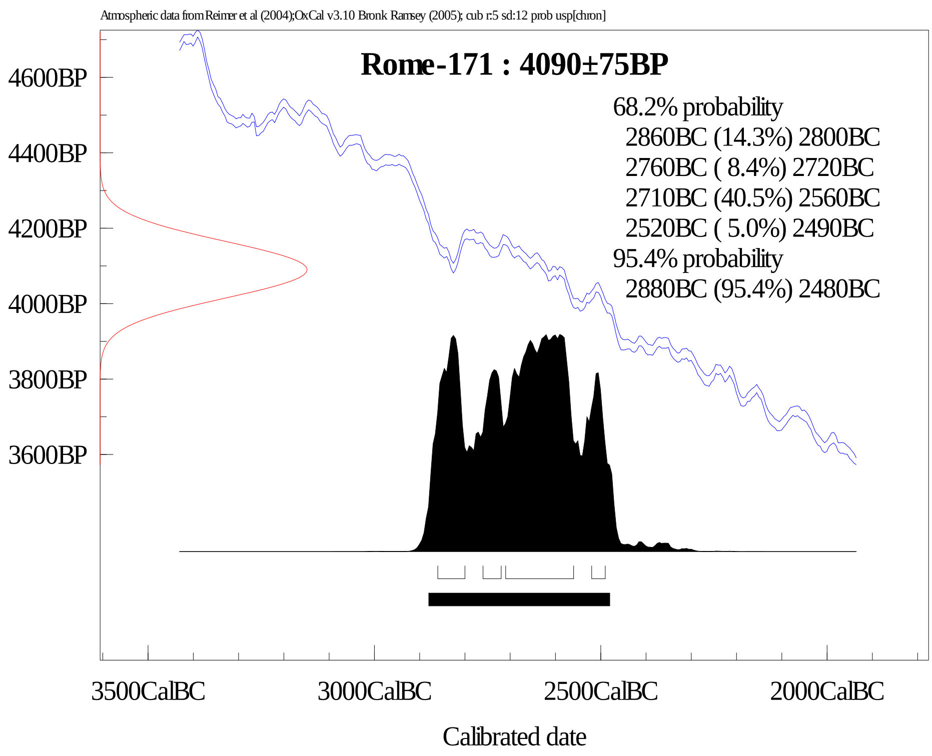

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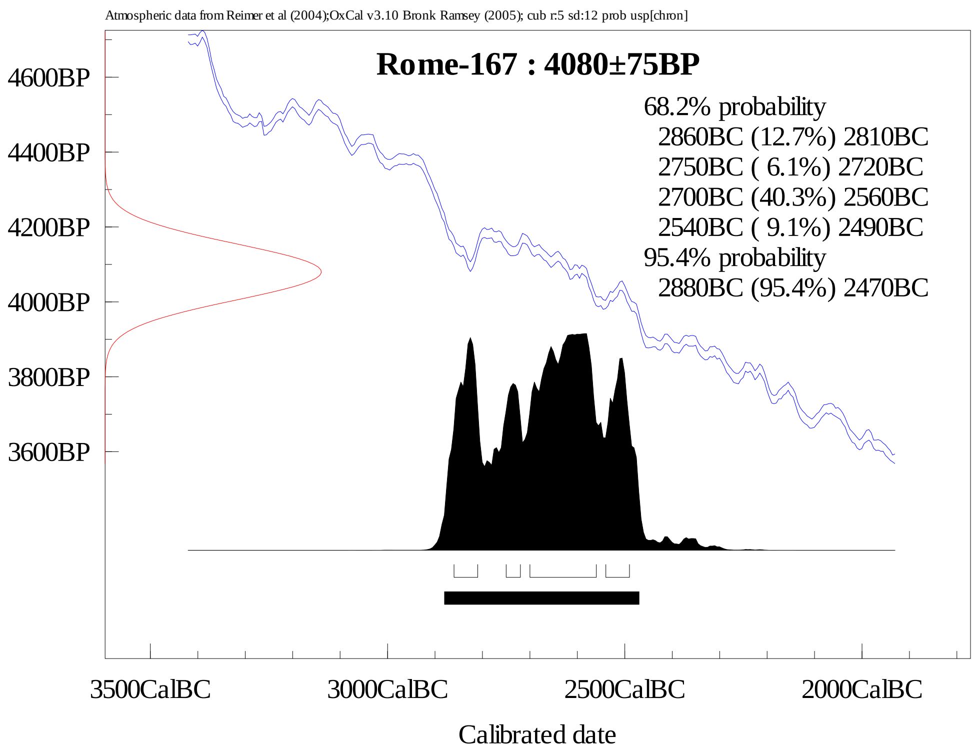

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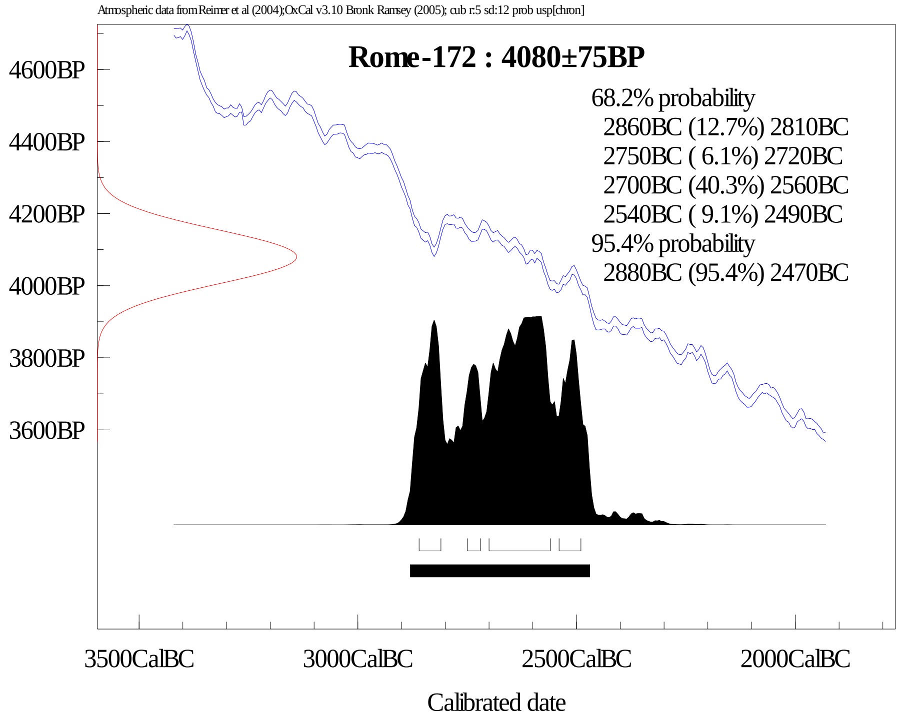
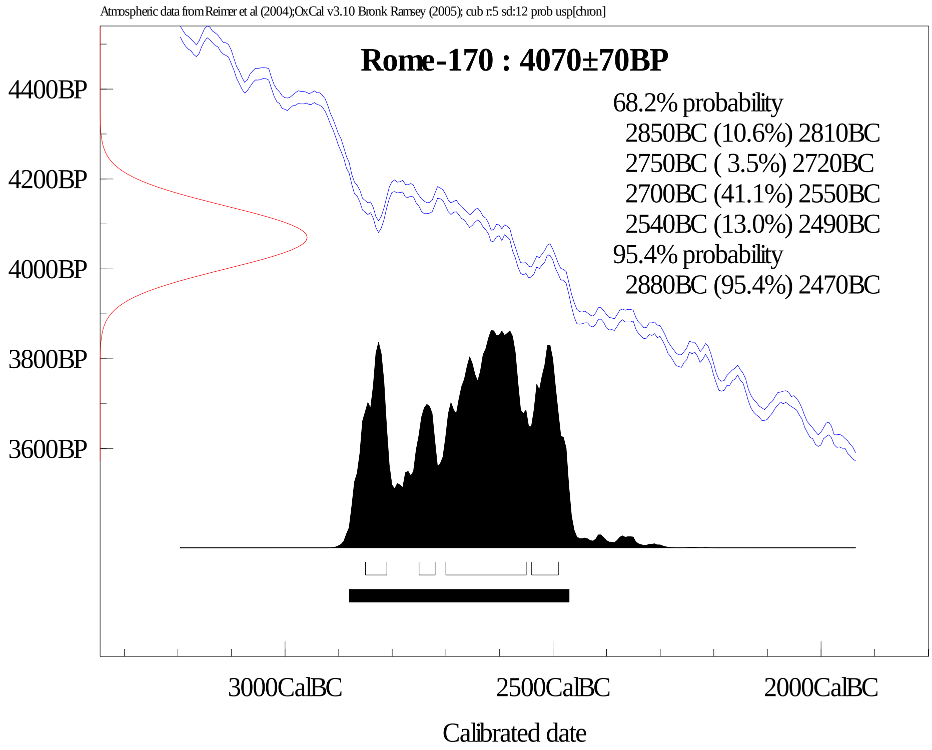


Arslantepe ARS.41



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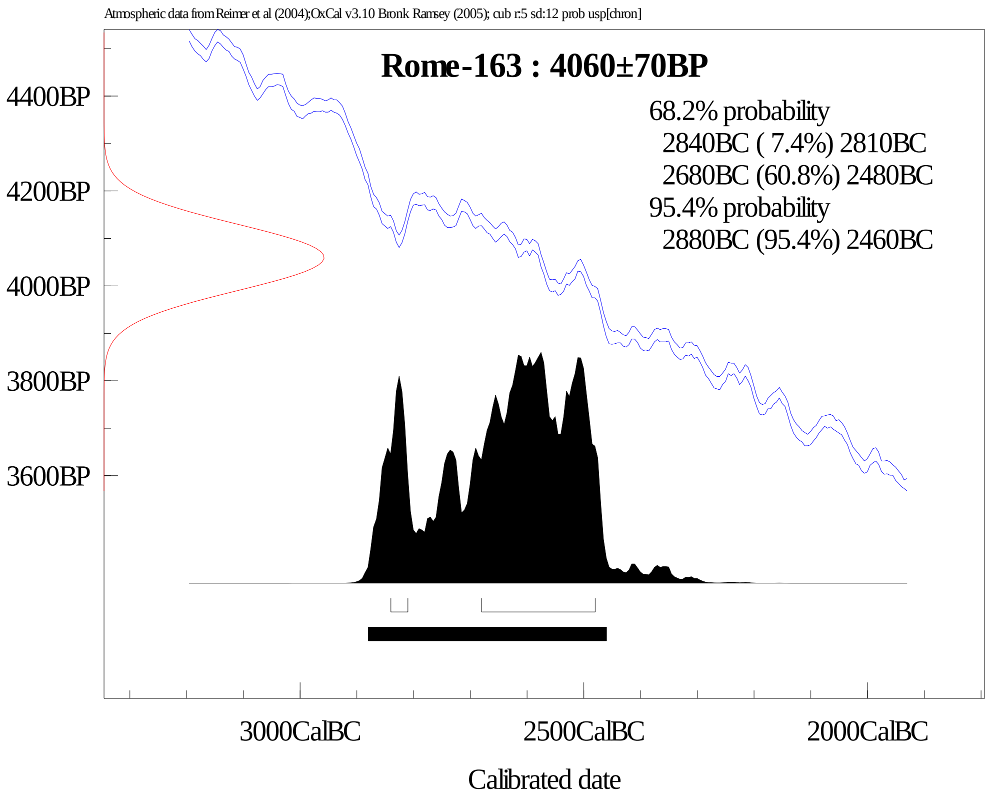

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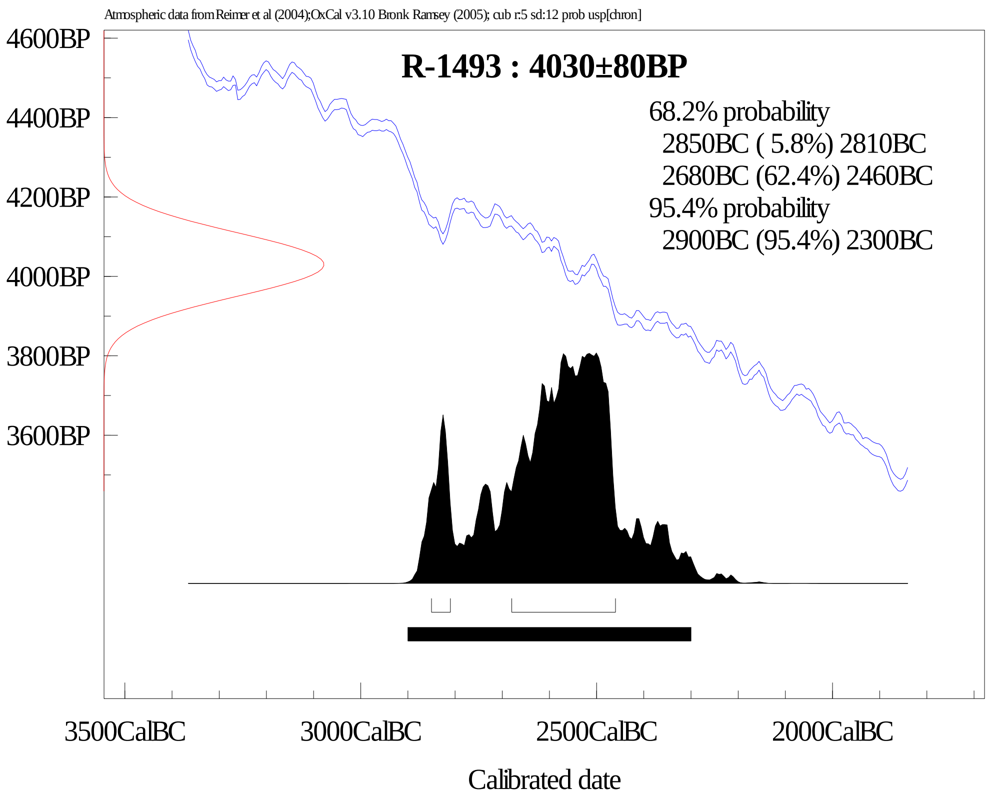

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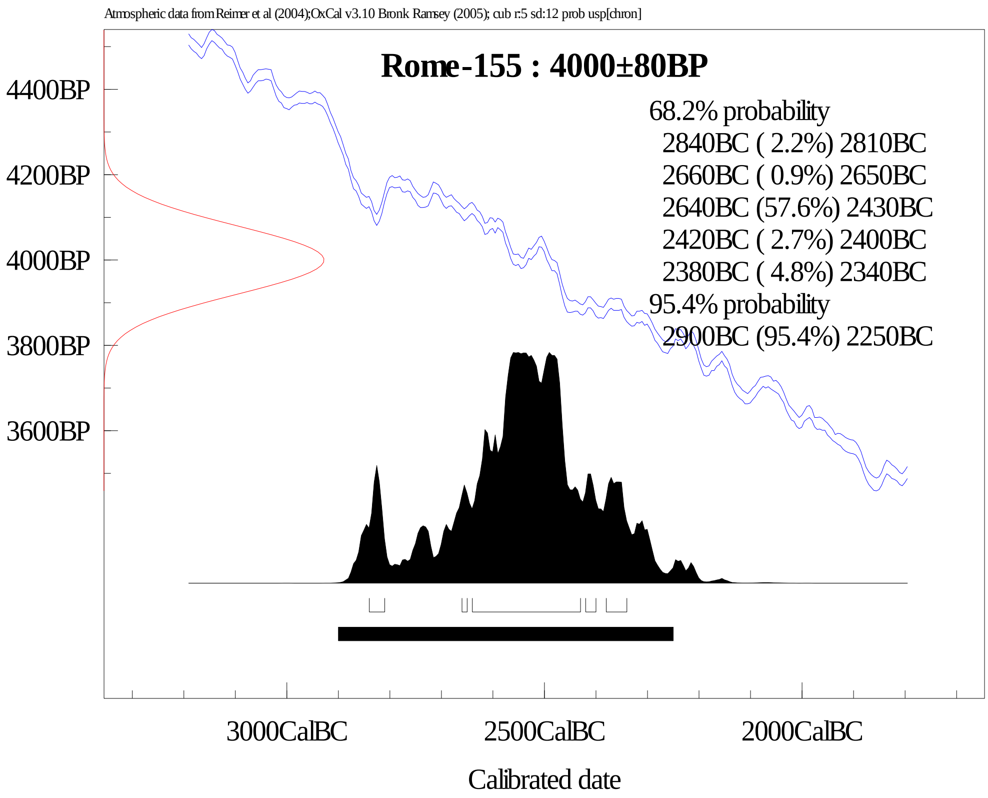

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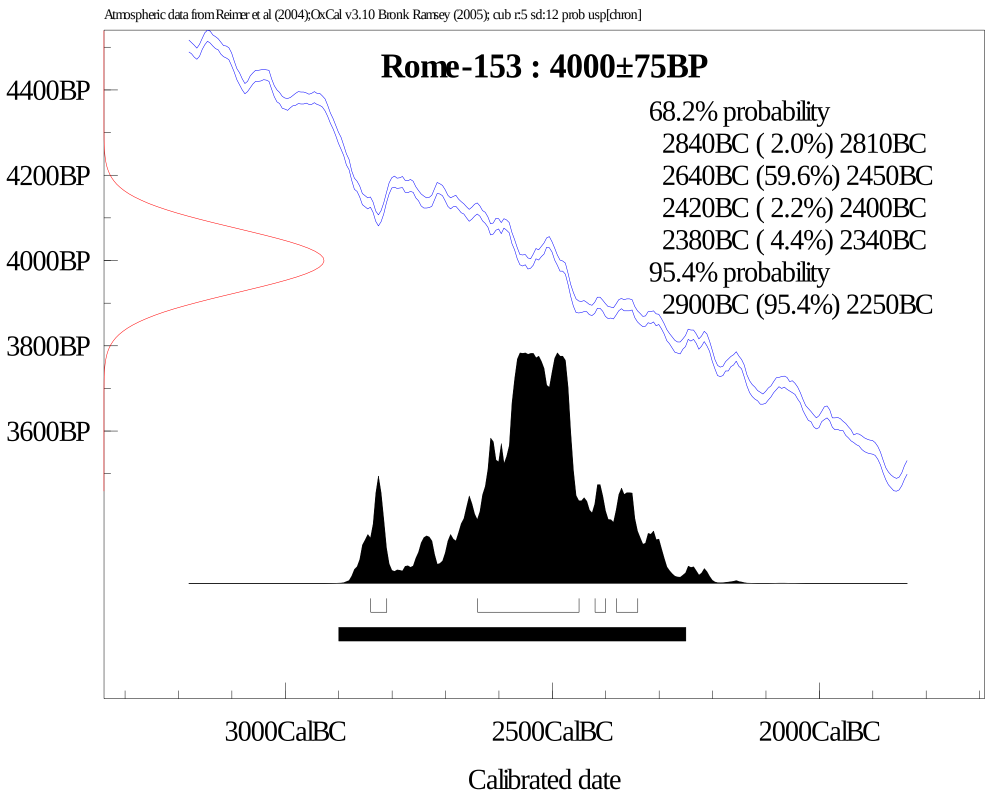

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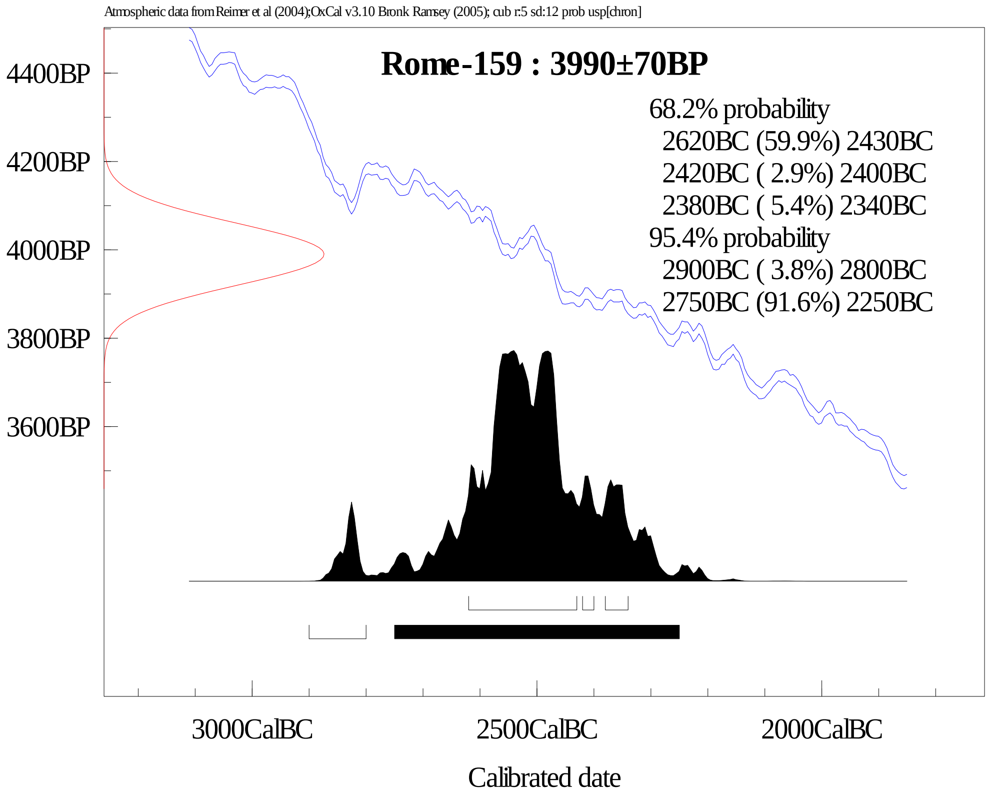

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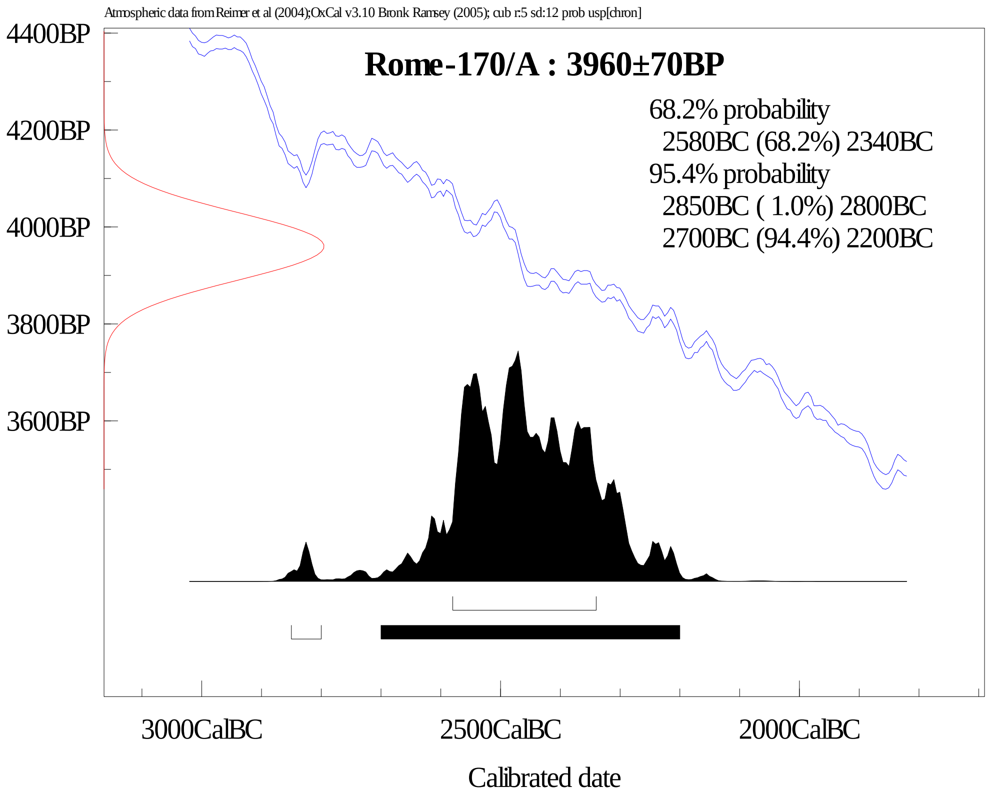

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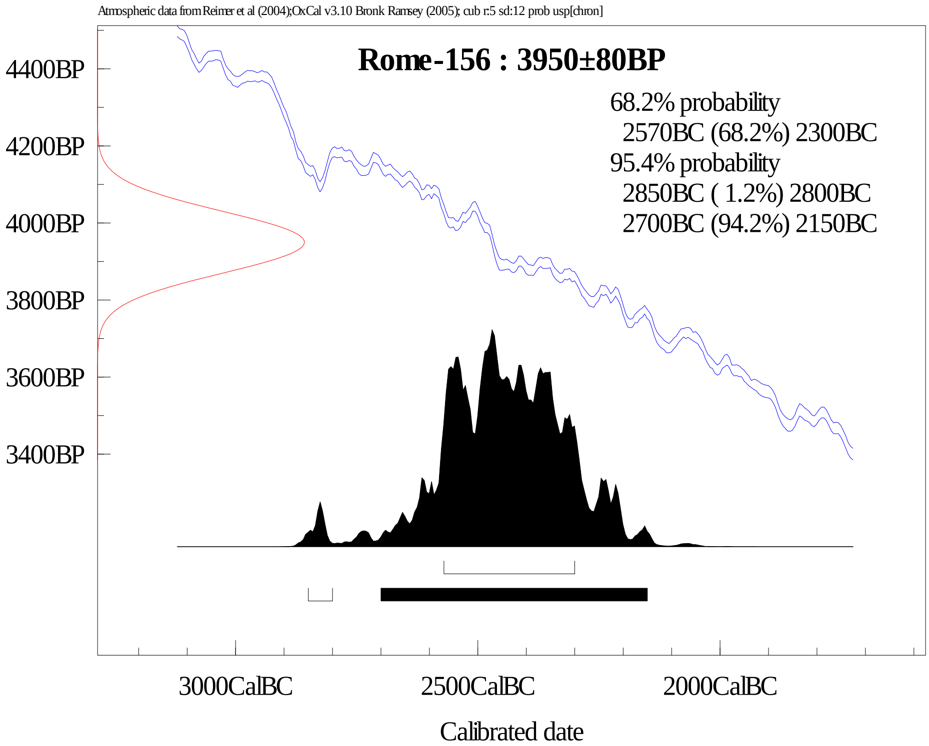
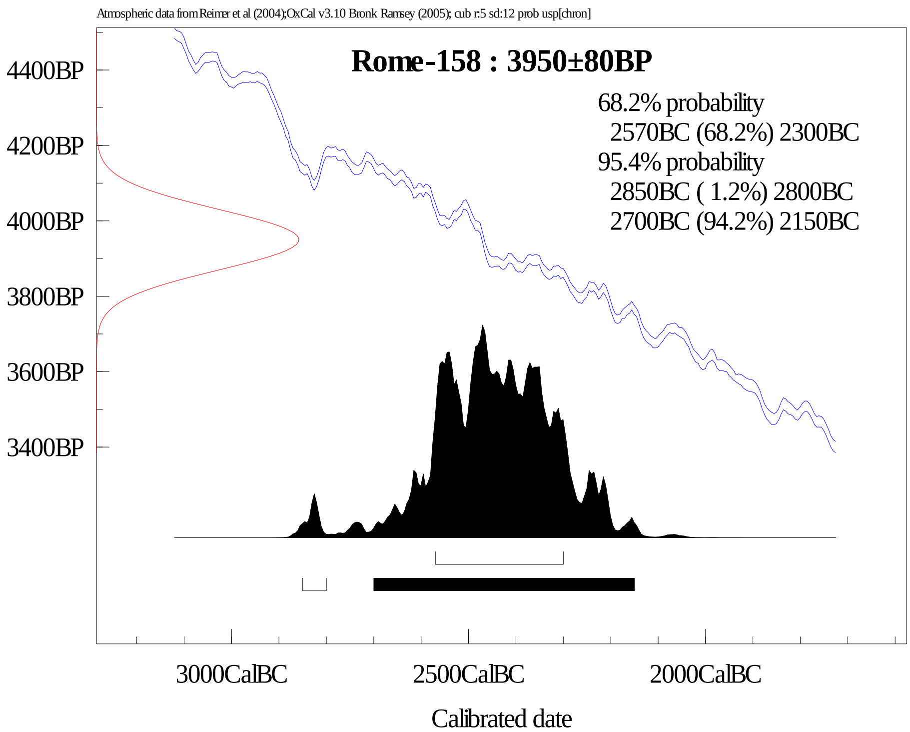
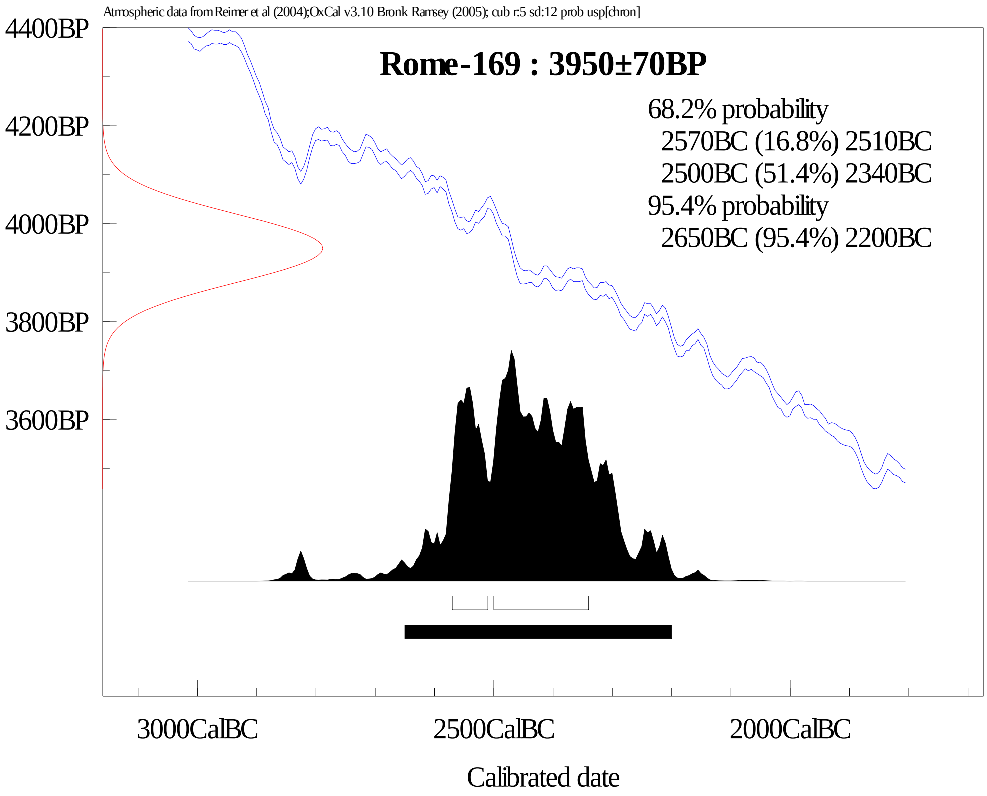


Arslantepe ARS.49



Arslantepe ARS.50



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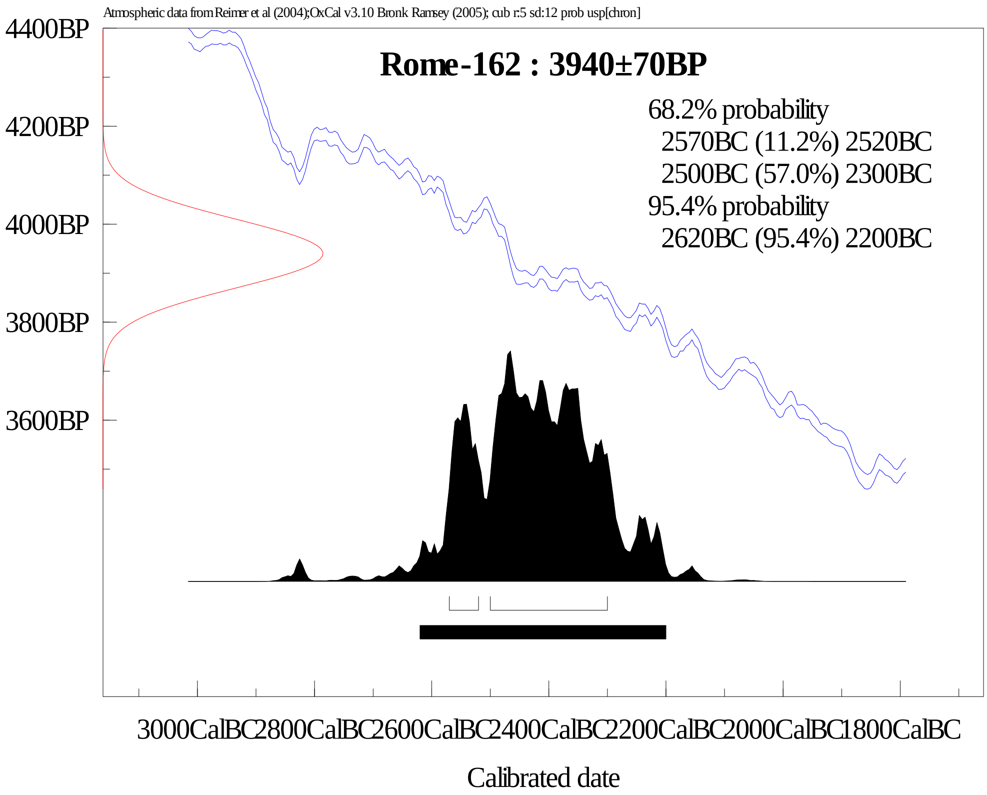

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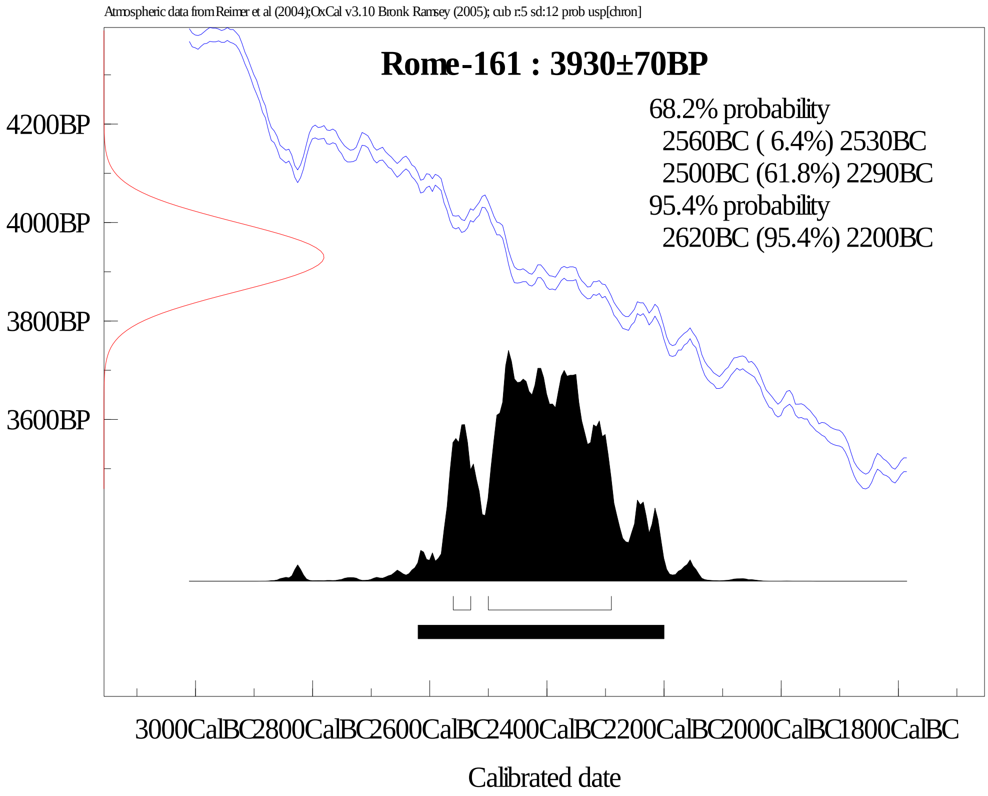

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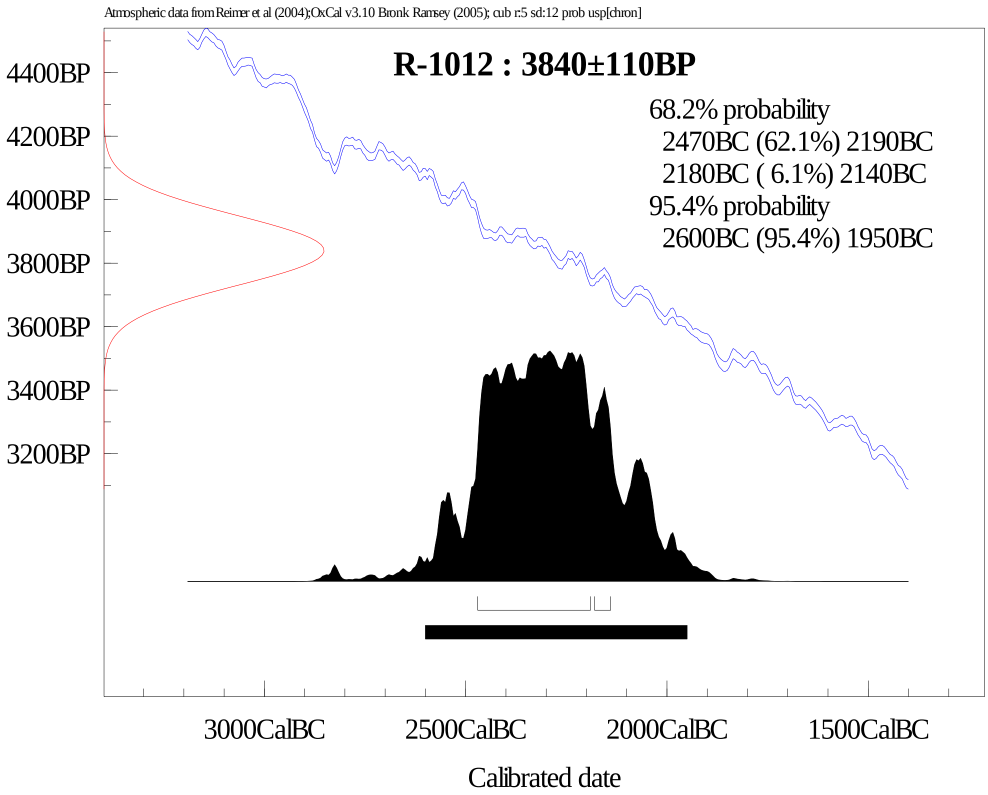

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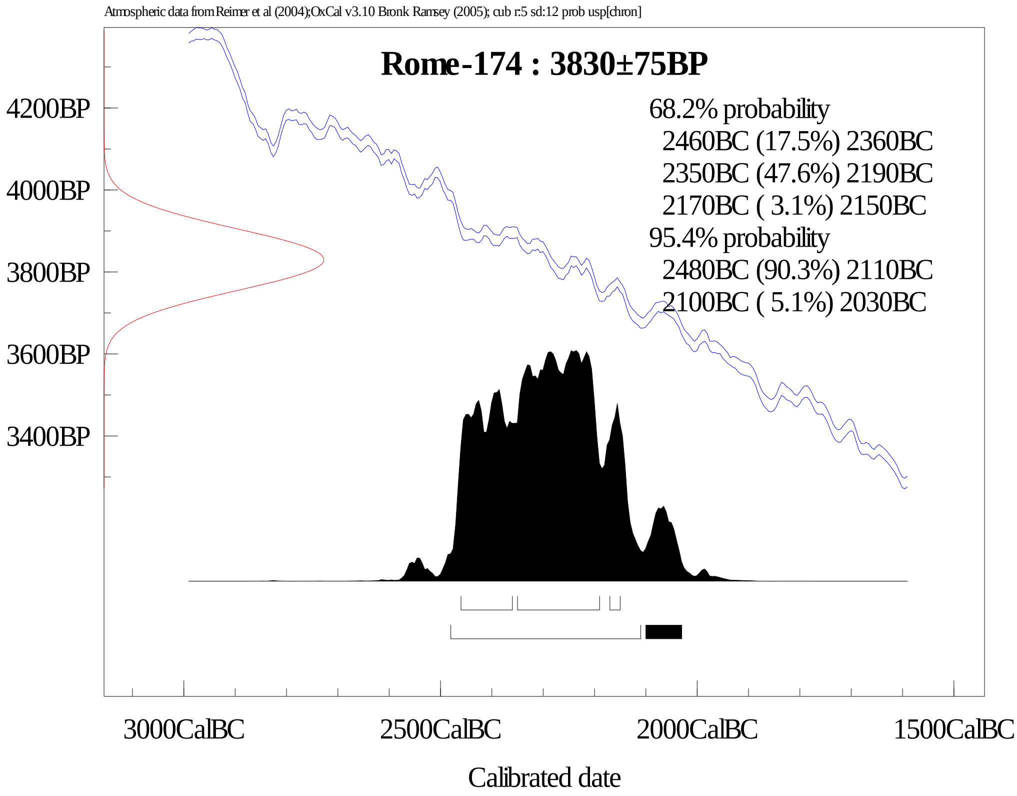

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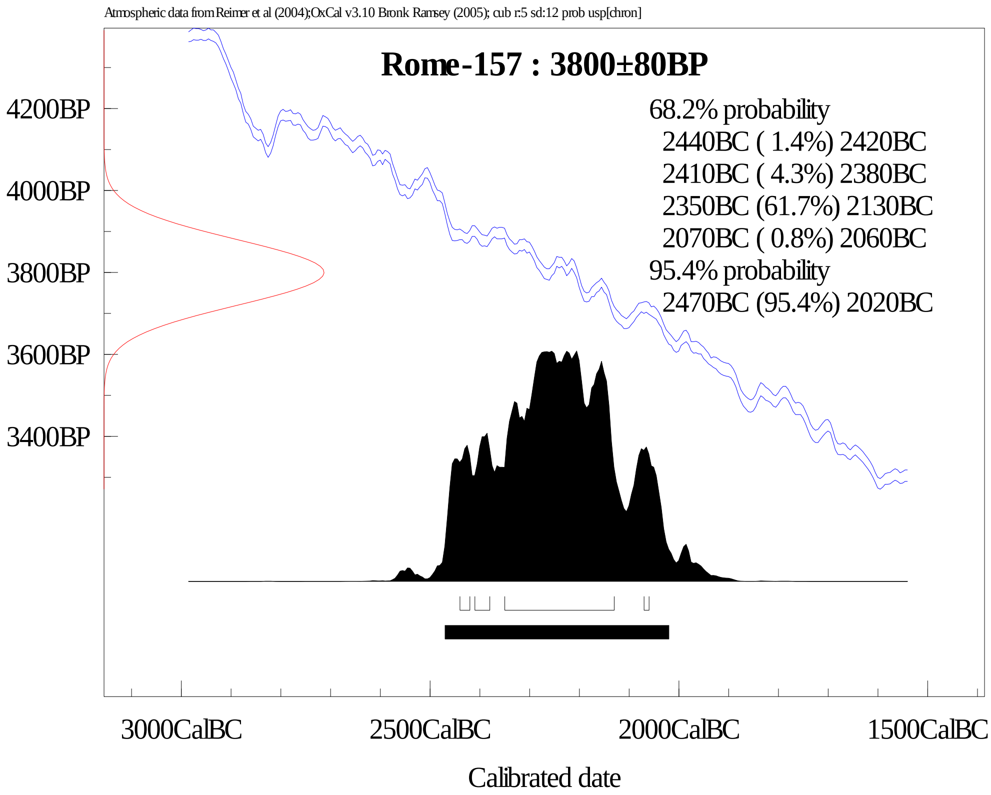
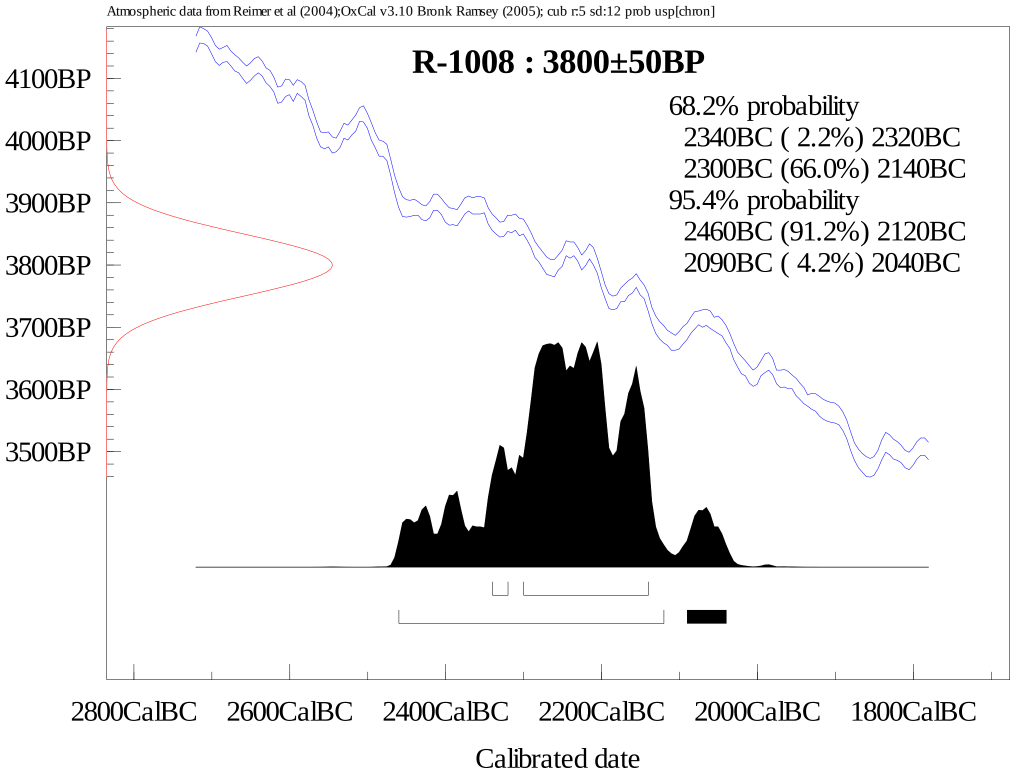


Arslantepe ARS.56



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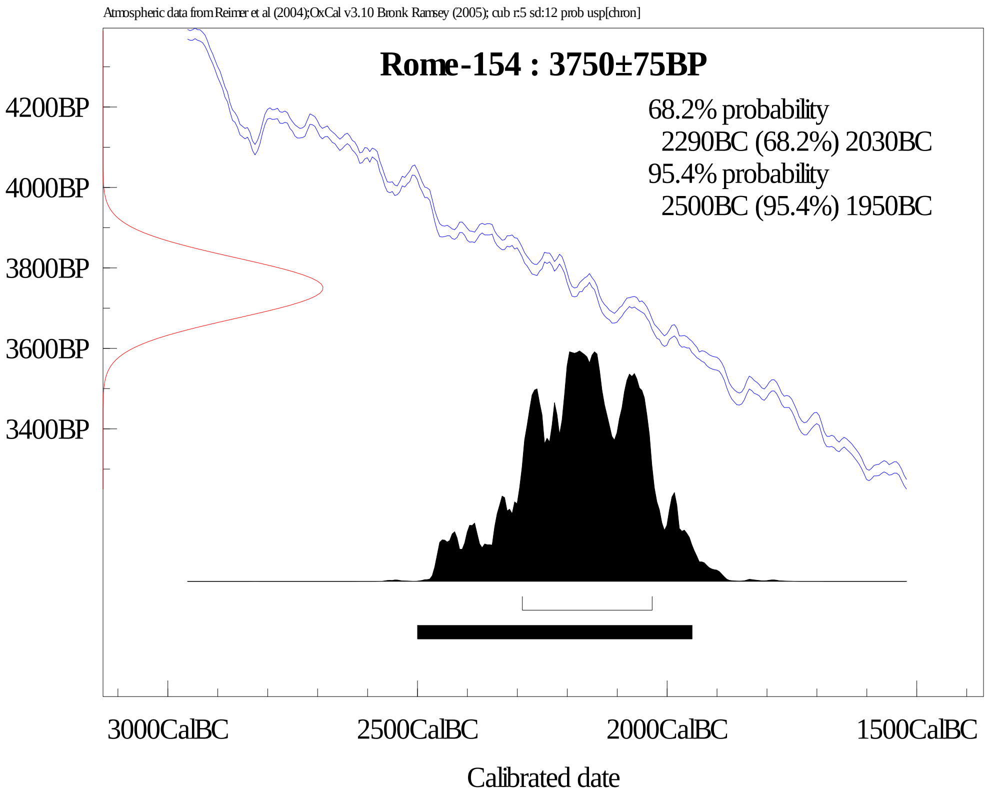

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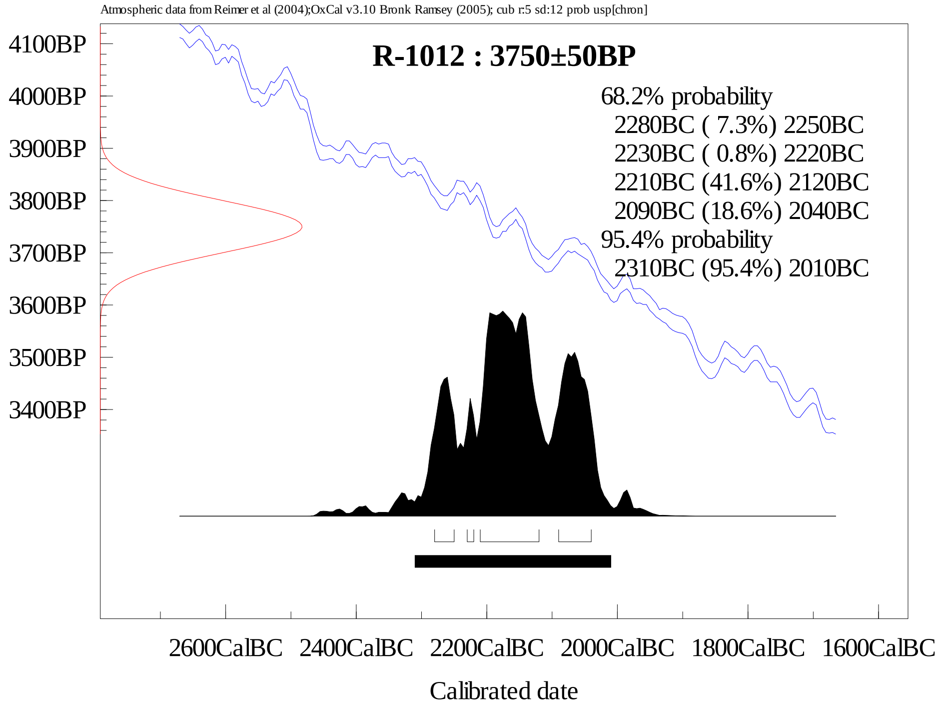
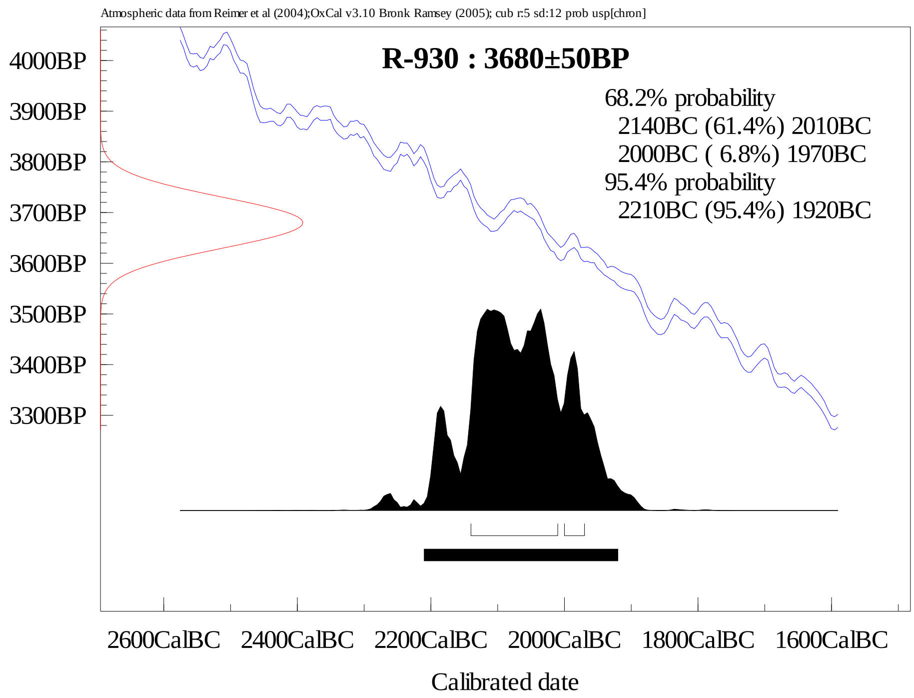


Arslantepe ARS.59



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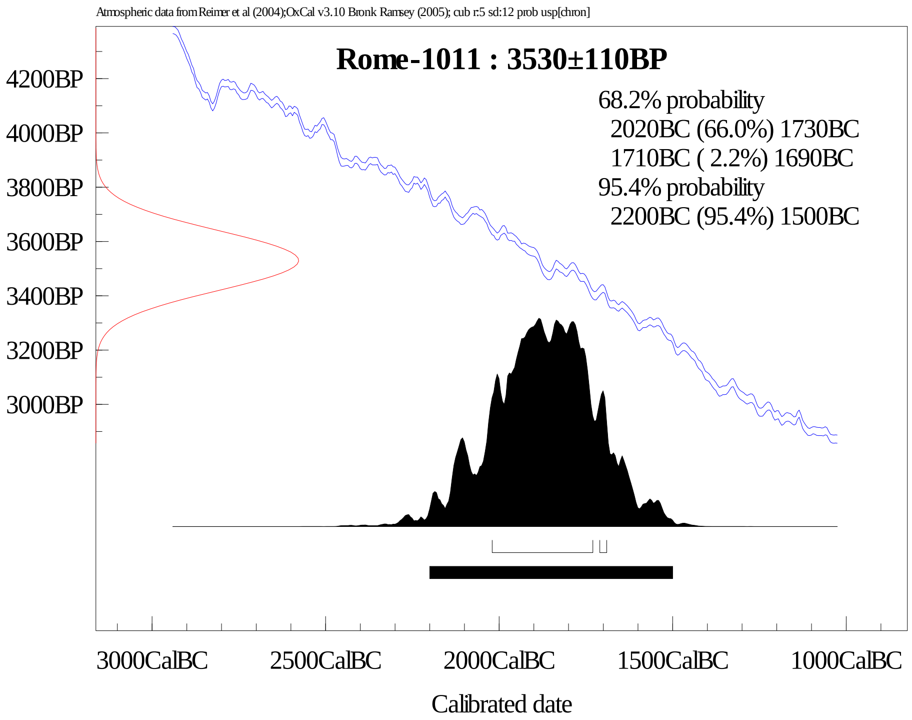
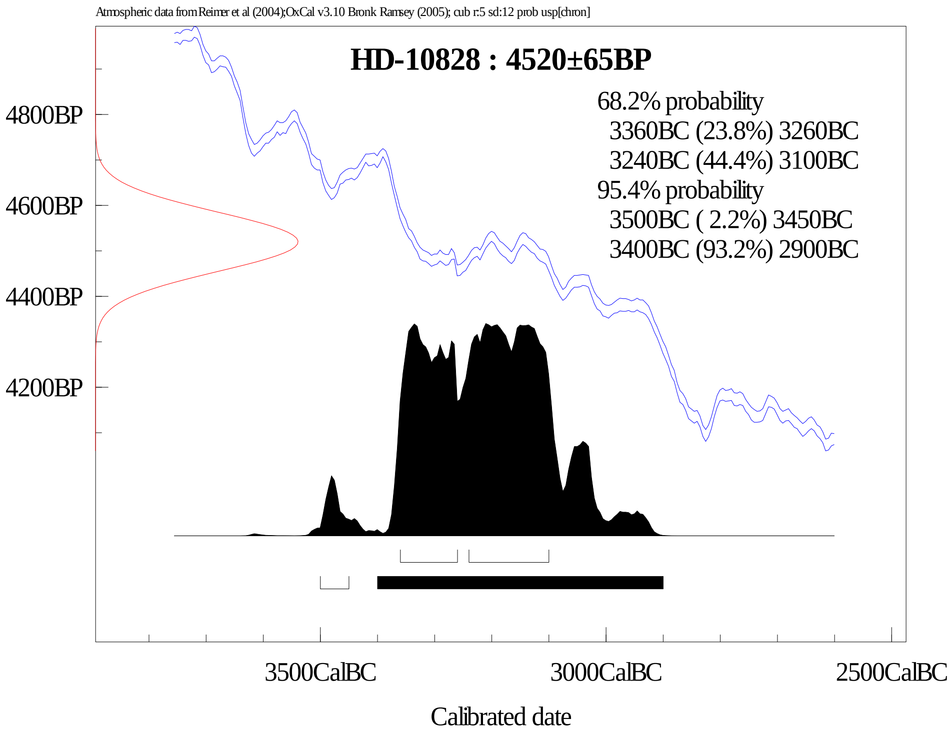
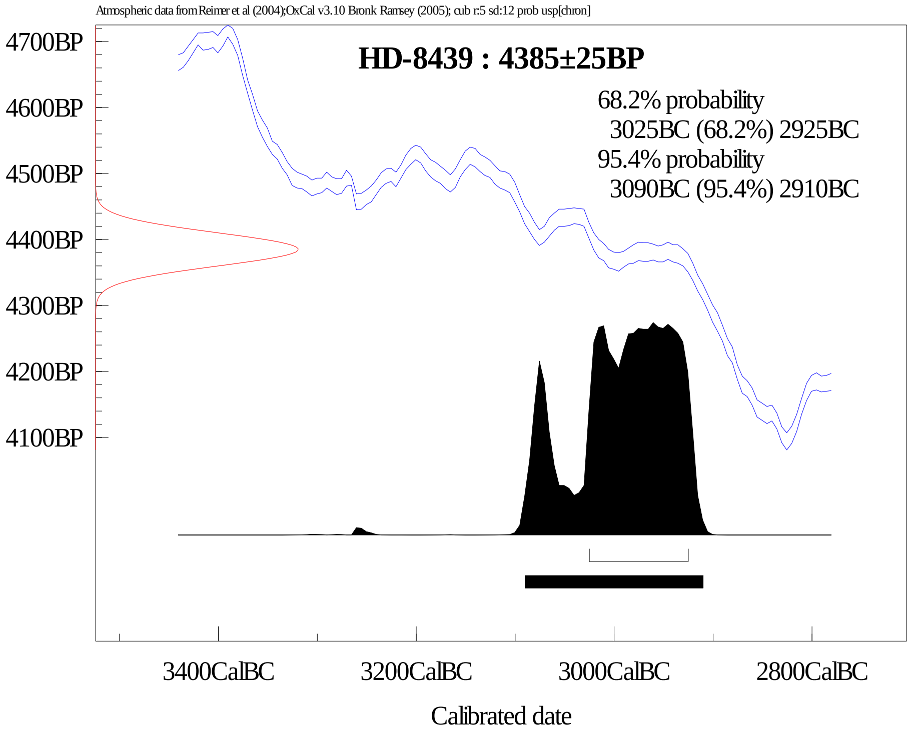


Beşik-Yassıtepe

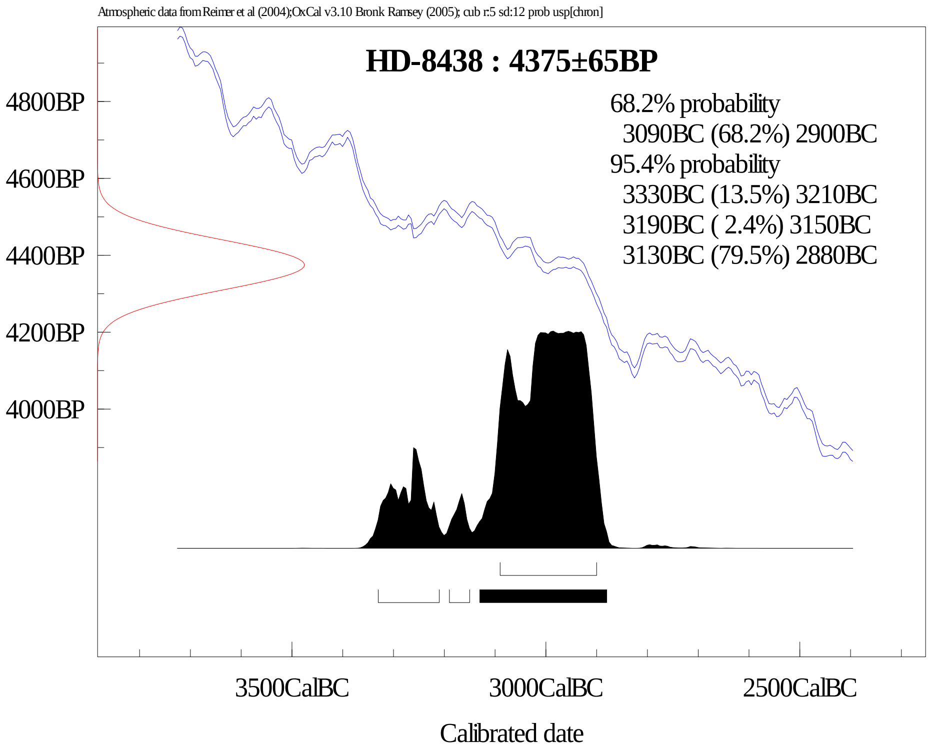
Beşik Yassıtepe BEŞ.1



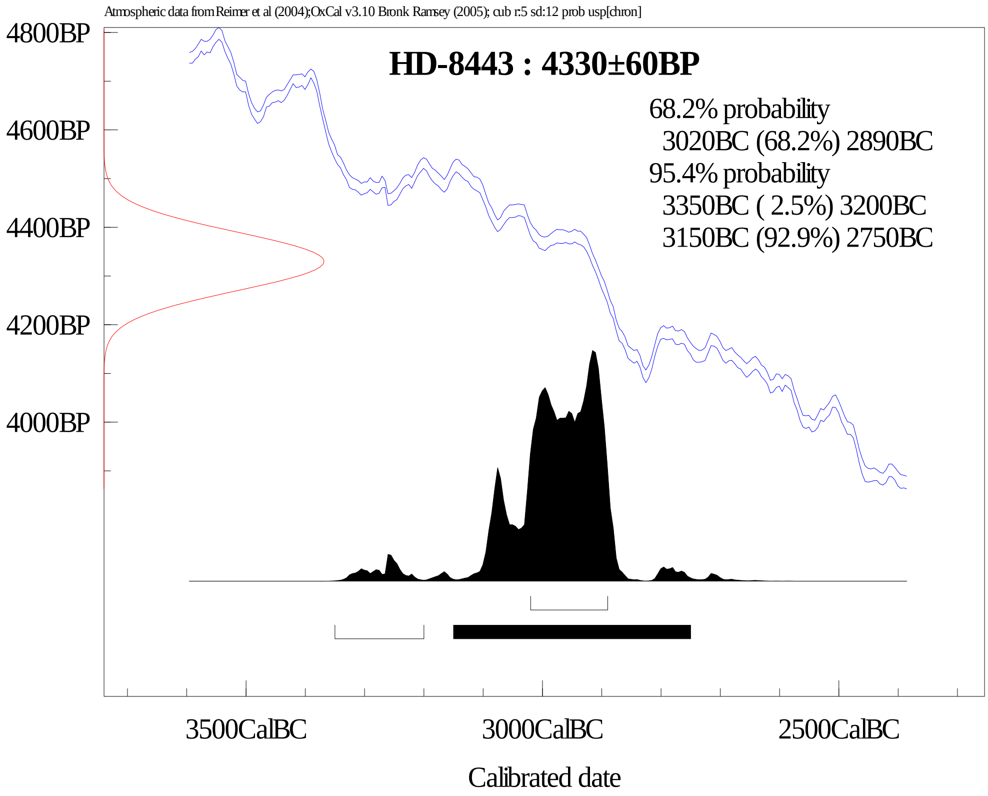
Beşik Yassıtepe BEŞ.2



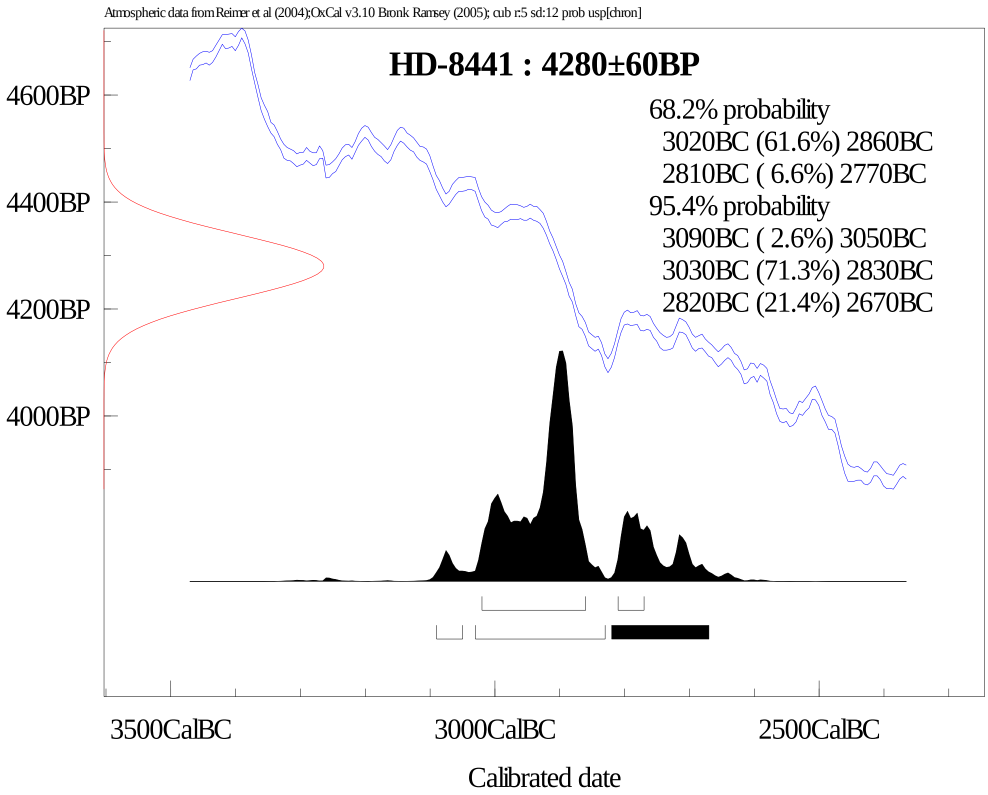
Beşik Yassıtepe BEŞ.3



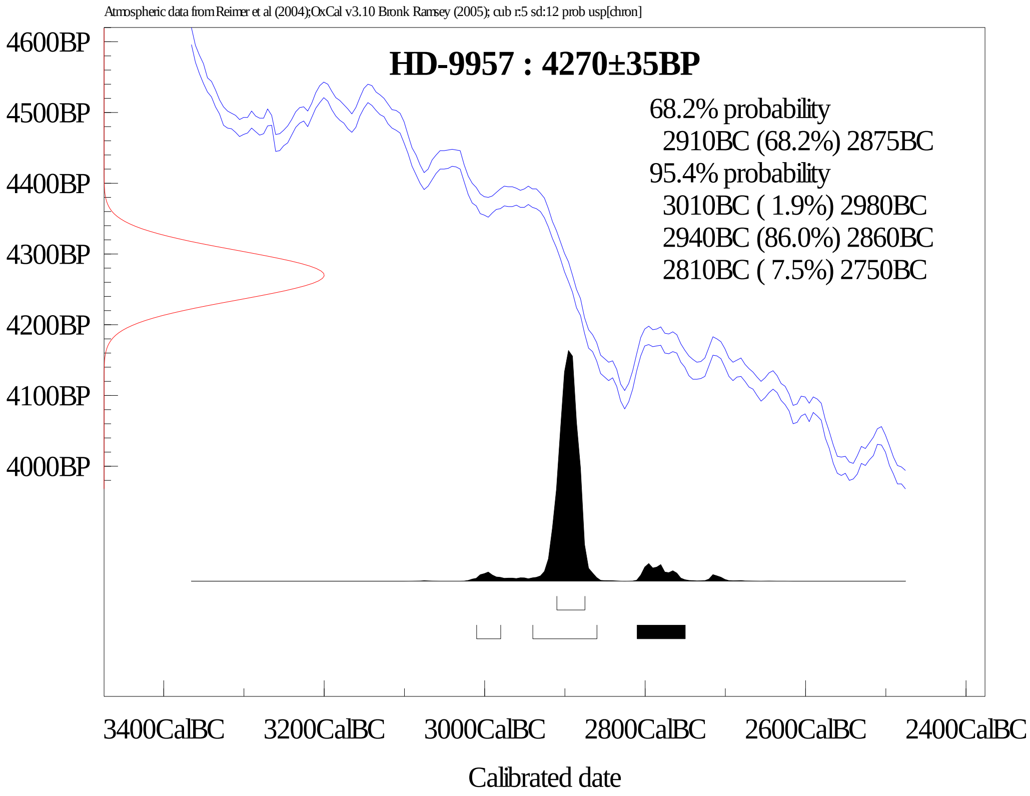
Beşik Yassıtepe BEŞ.4



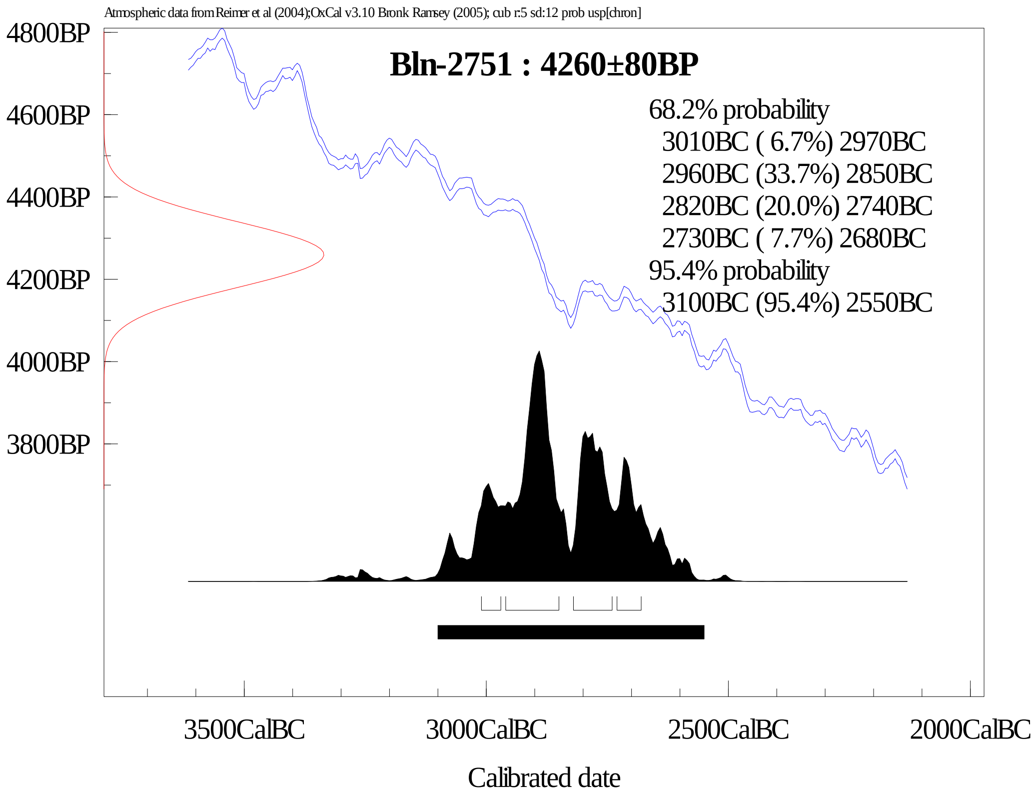
Beşik Yassıtepe BEŞ.5



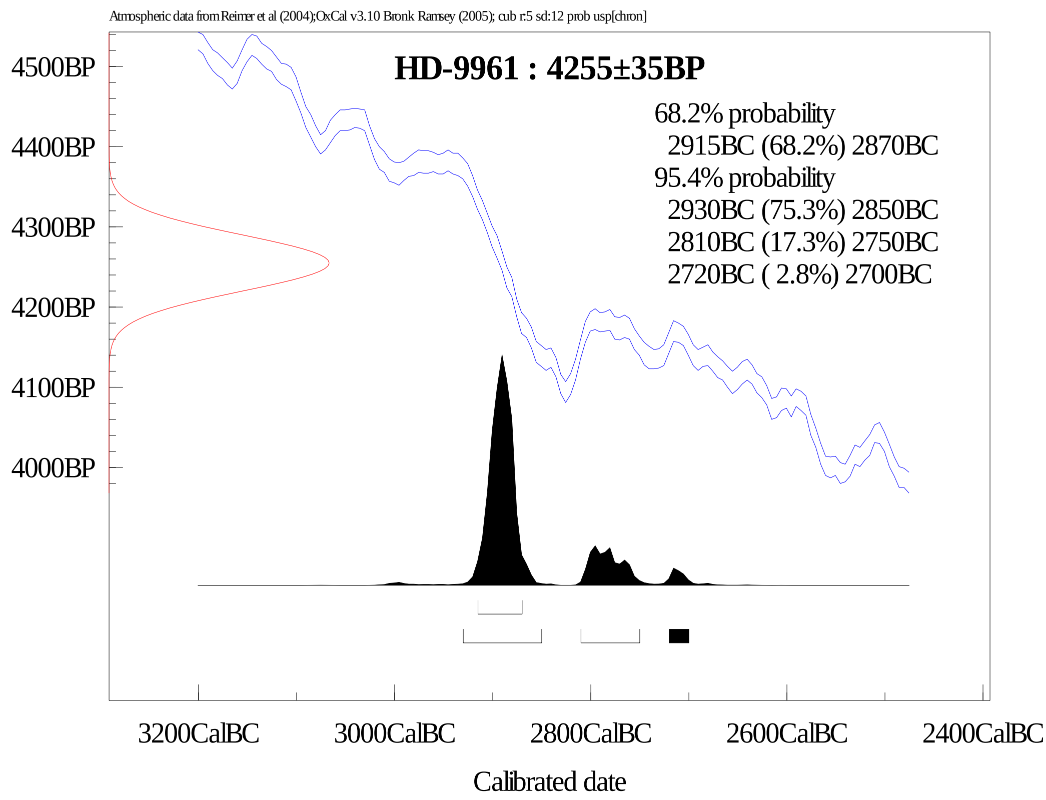
Beşik Yassıtepe BEŞ.6



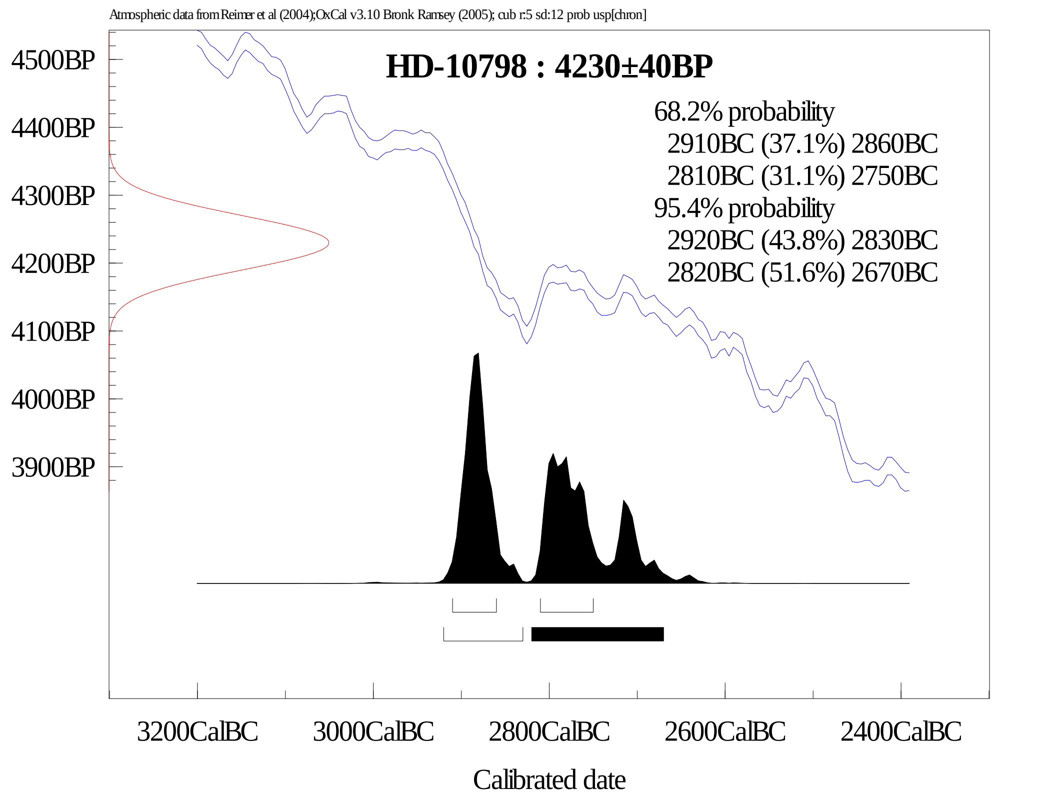
Beşik Yassıtepe BEŞ.7



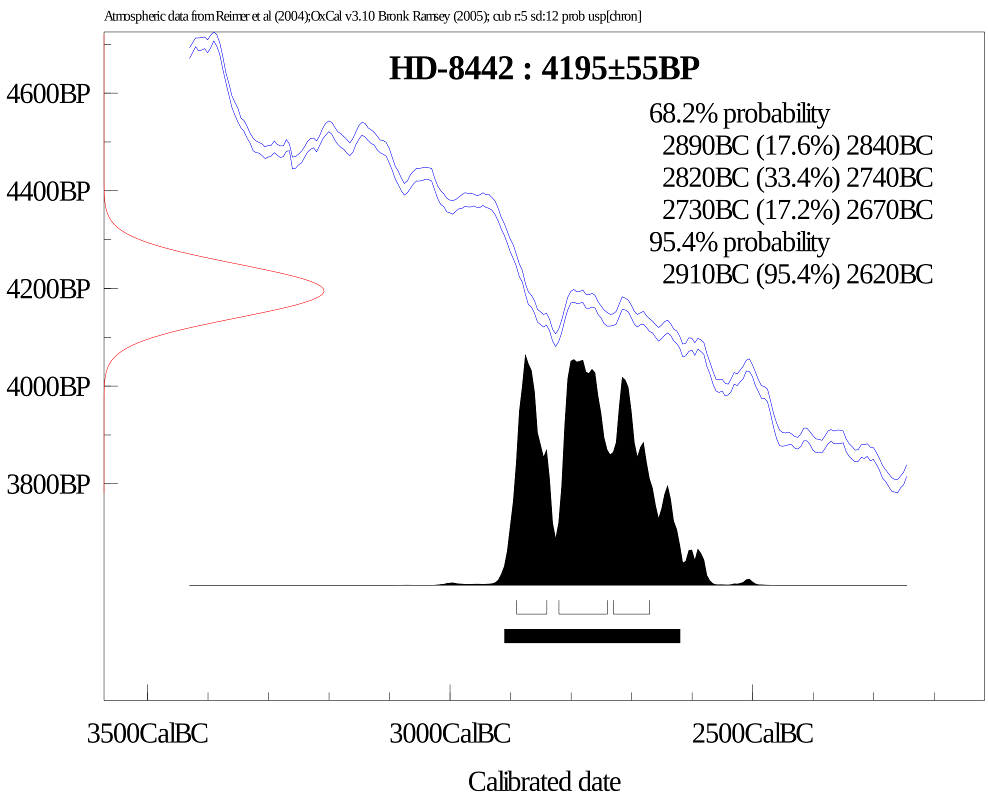
Beşik Yassıtepe BEŞ.8



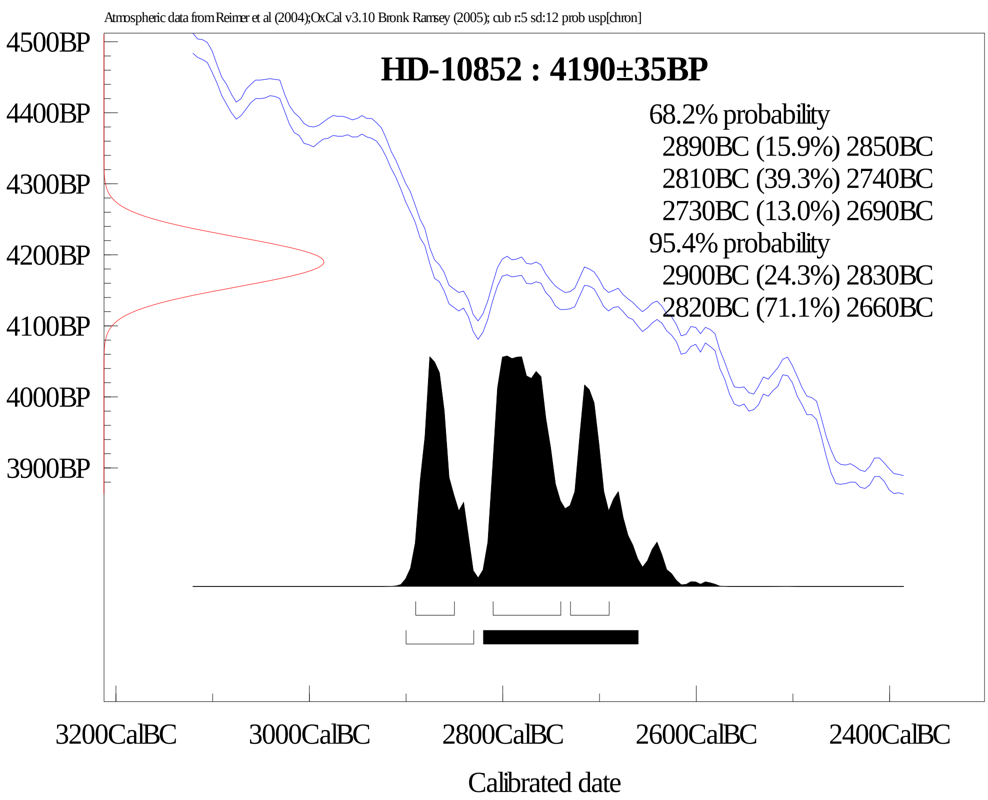
Beşik Yassıtepe BEŞ.9



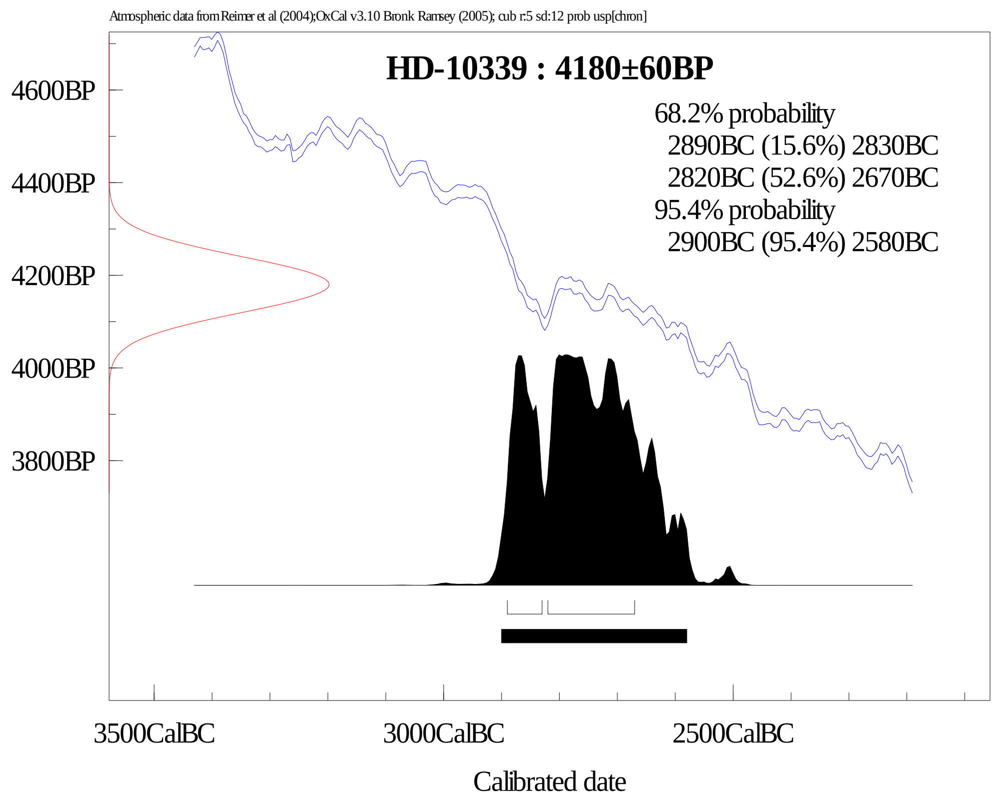
Beşik Yassıtepe BEŞ.10



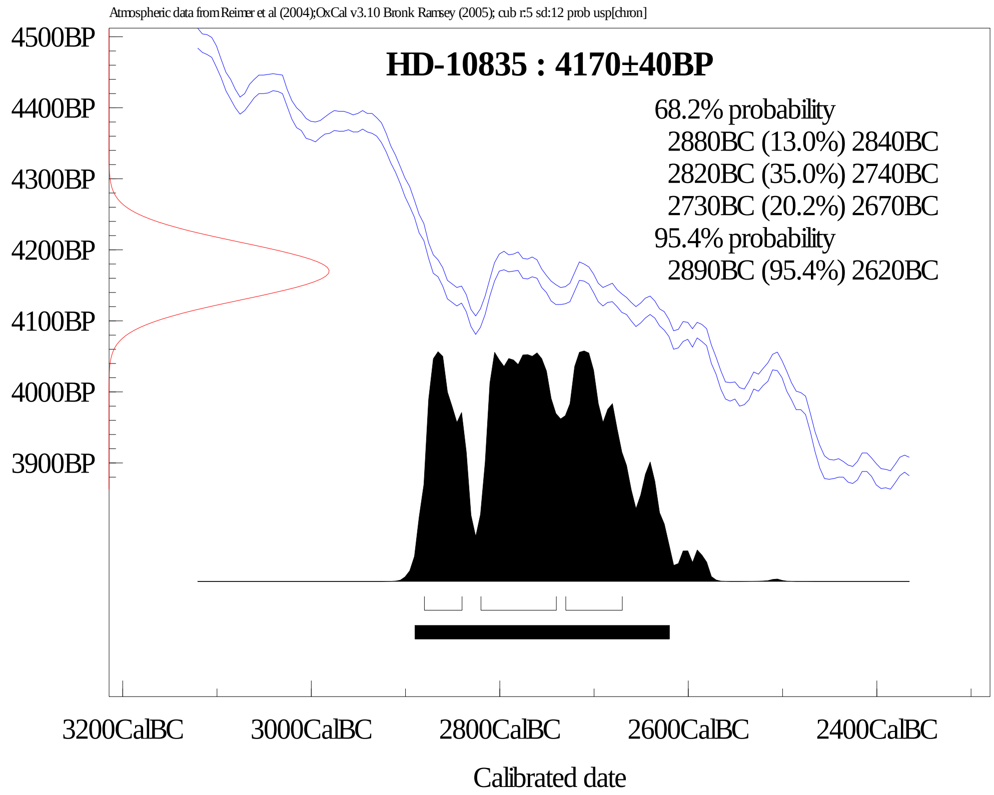
Beşik Yassıtepe BEŞ.11



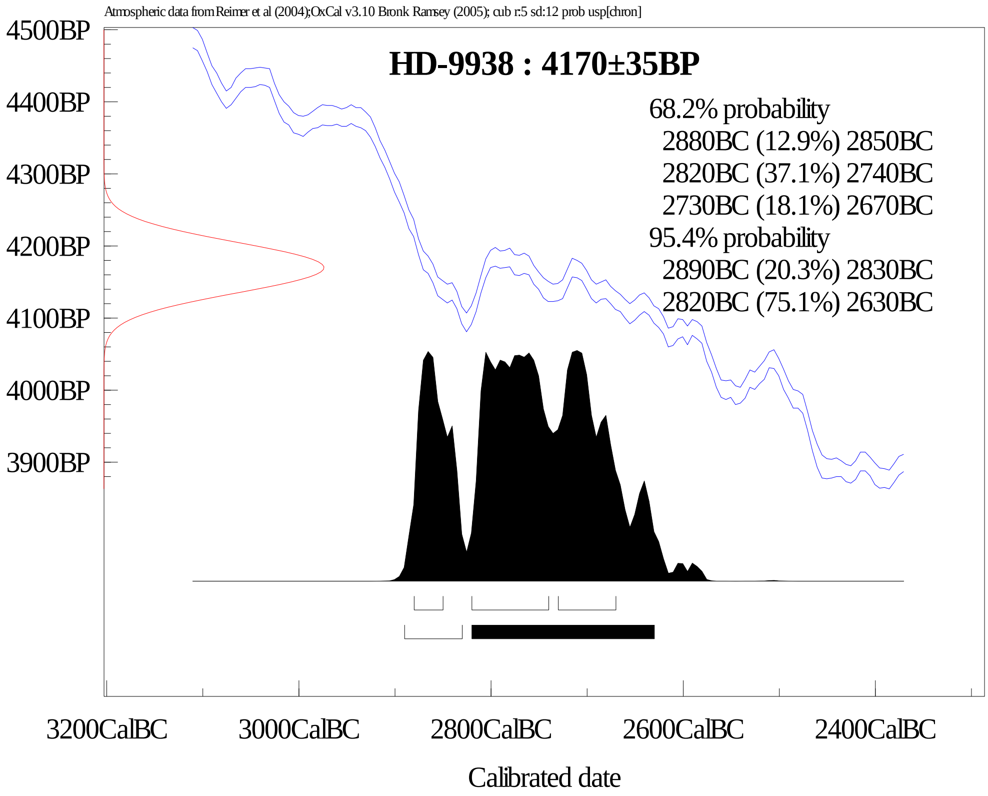
Beşik Yassıtepe BEŞ.12



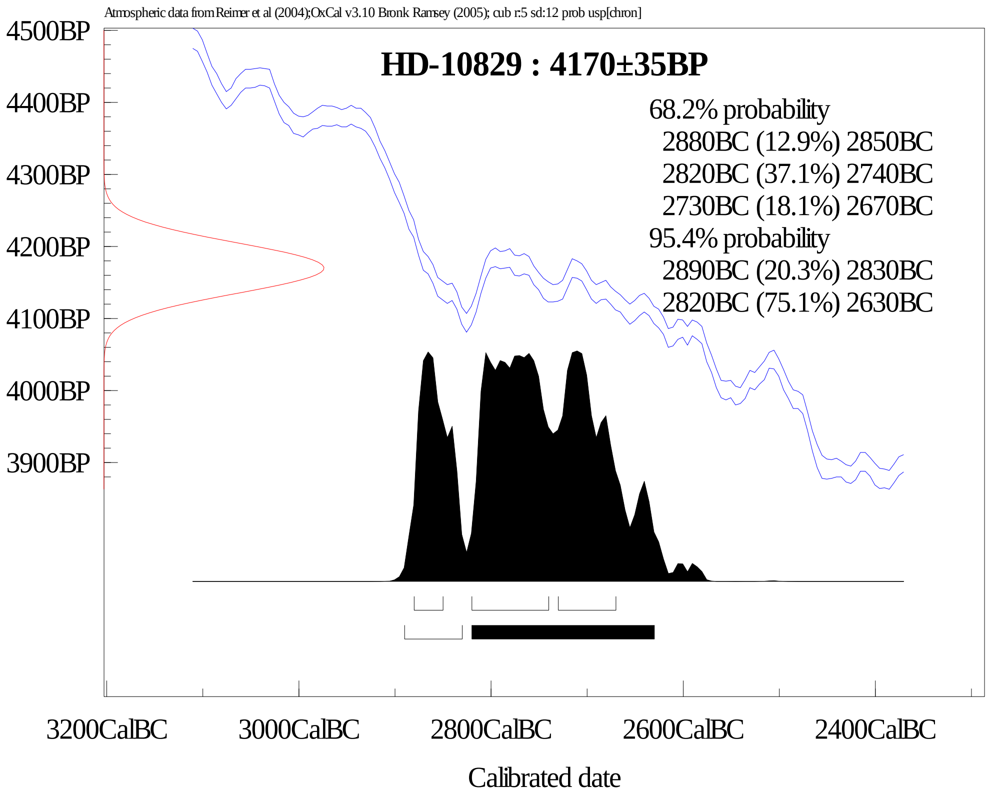
Beşik Yassıtepe BEŞ.13



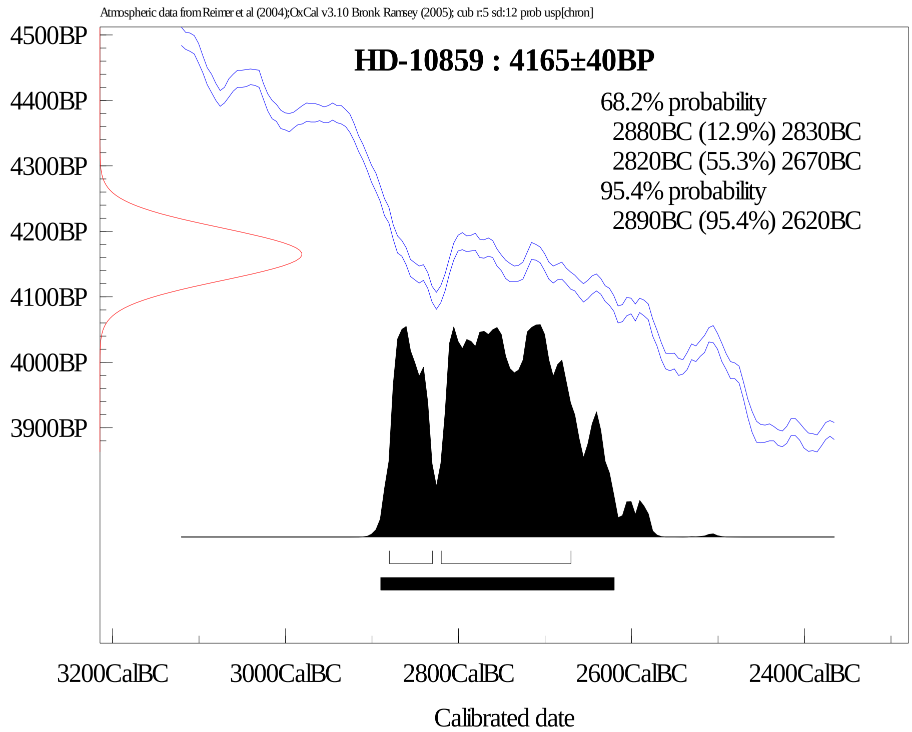
Beşik Yassıtepe BEŞ.14



Beşik Yassıtepe BEŞ.15

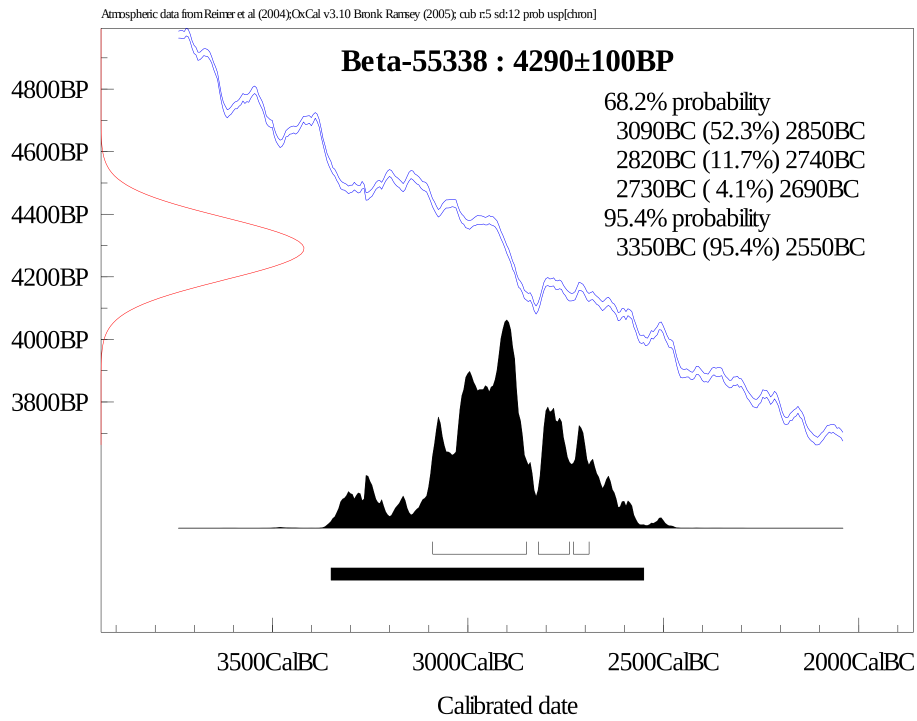


Beşik Yassıtepe BEŞ.16

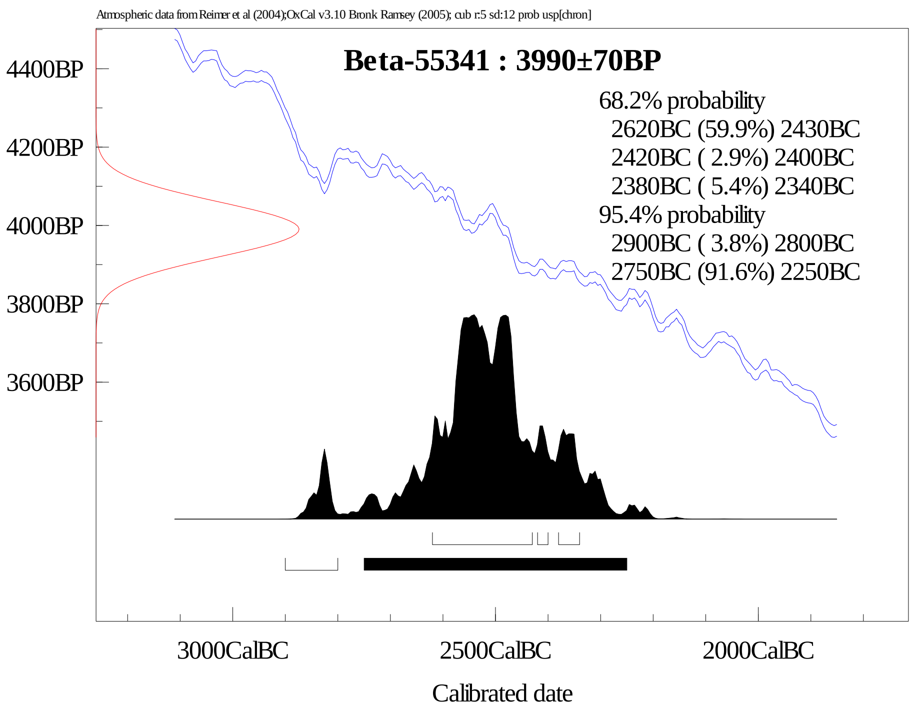


Büyüktepe Höyük

Büyüktepe Höyük BU.1

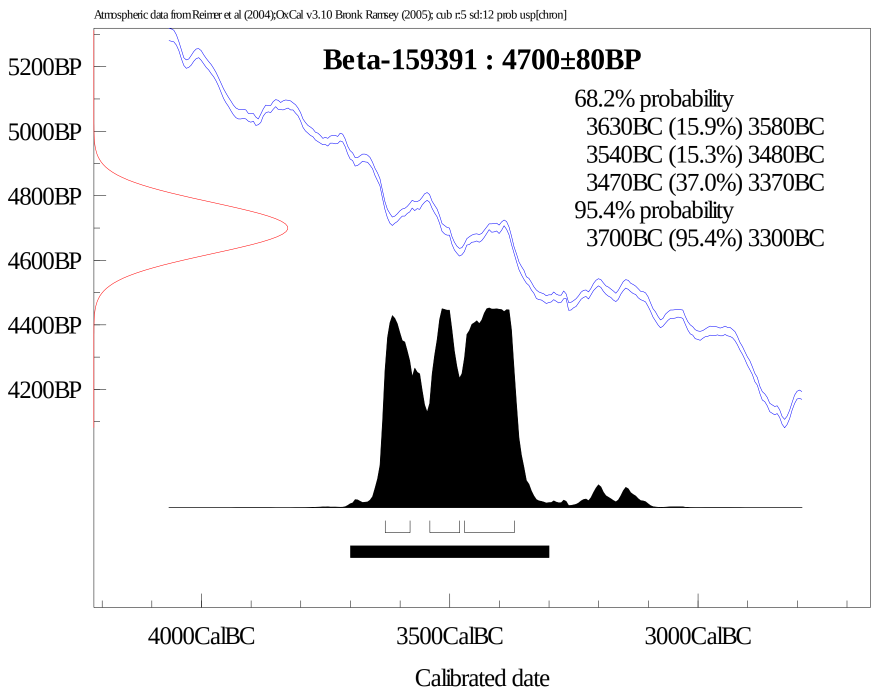


Büyüktepe Höyük BU.2

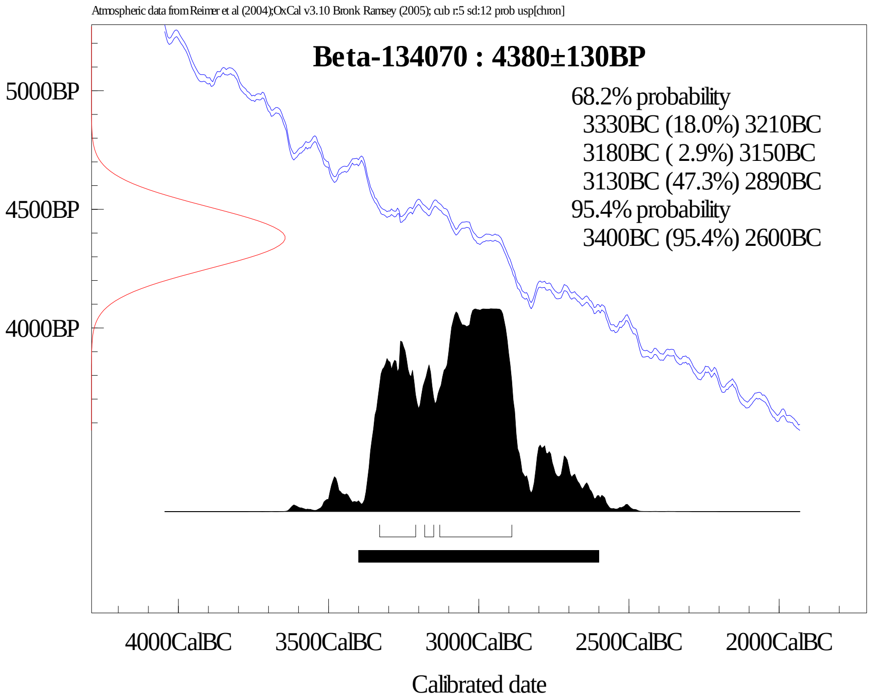


Çadır Höyük

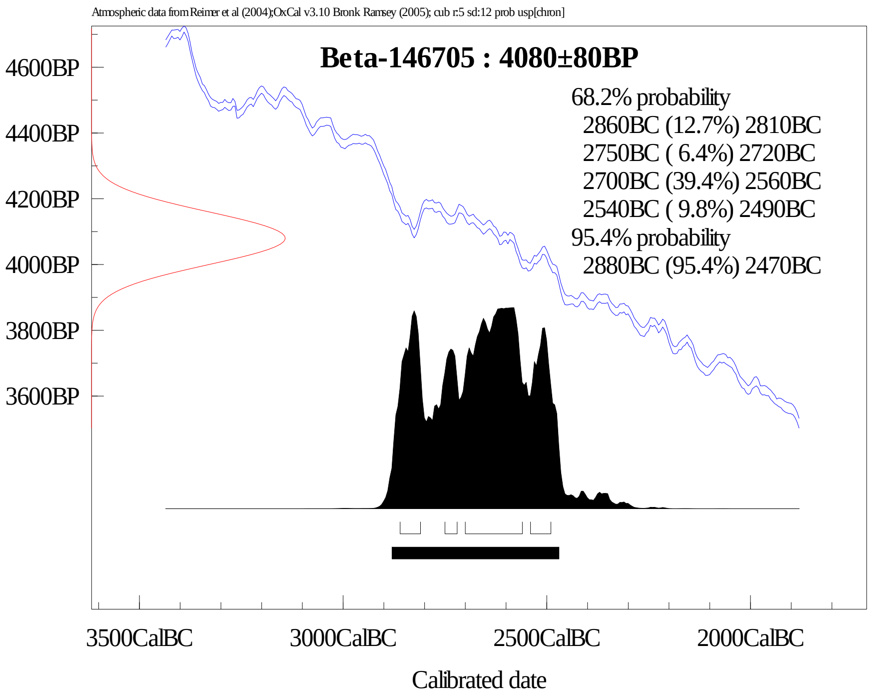
Çadır Höyük CAD.1



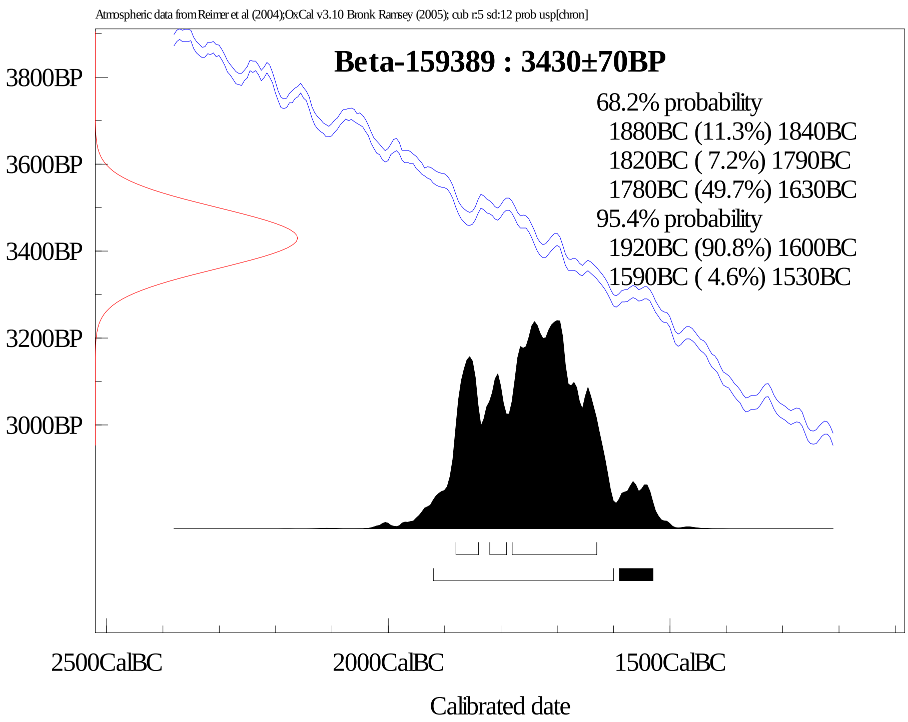
Çadır Höyük CAD.2



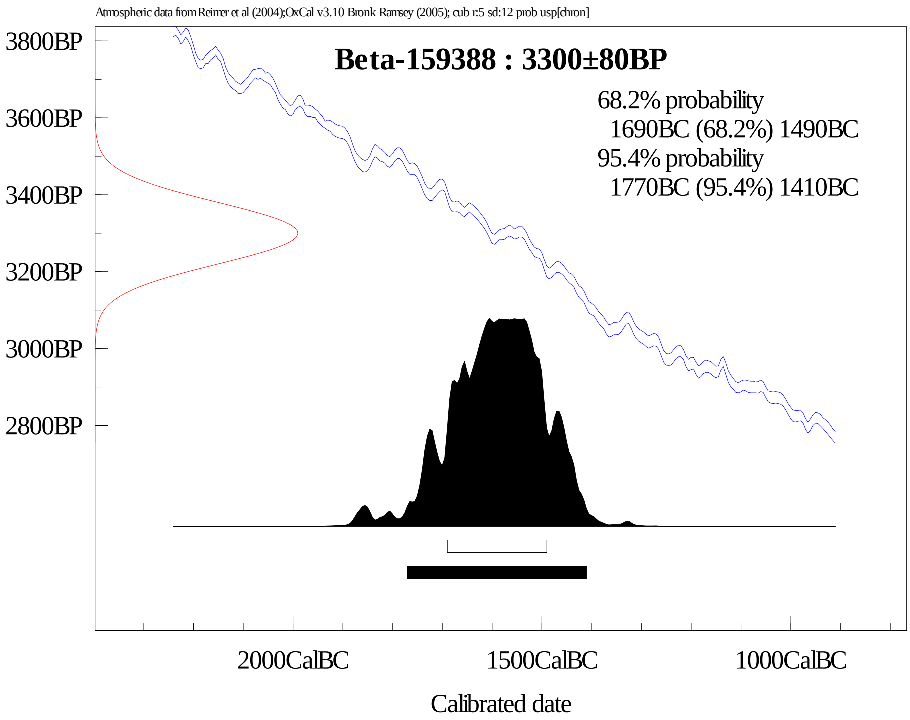
Çadır Höyük CAD.3



Çadır Höyük CAD.4

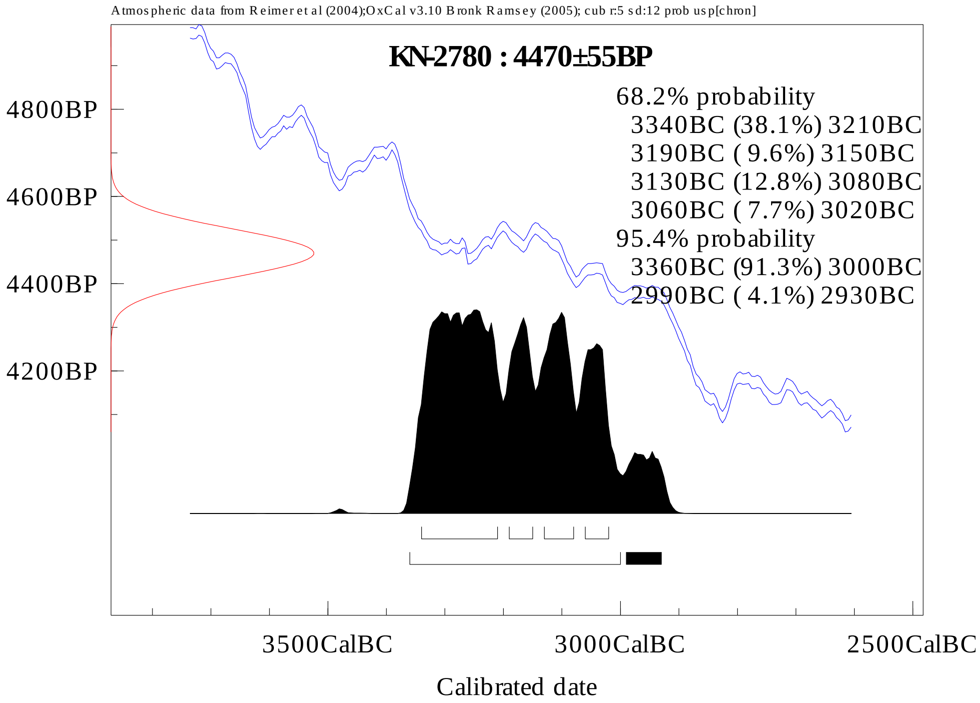


Çadır Höyük CAD.5

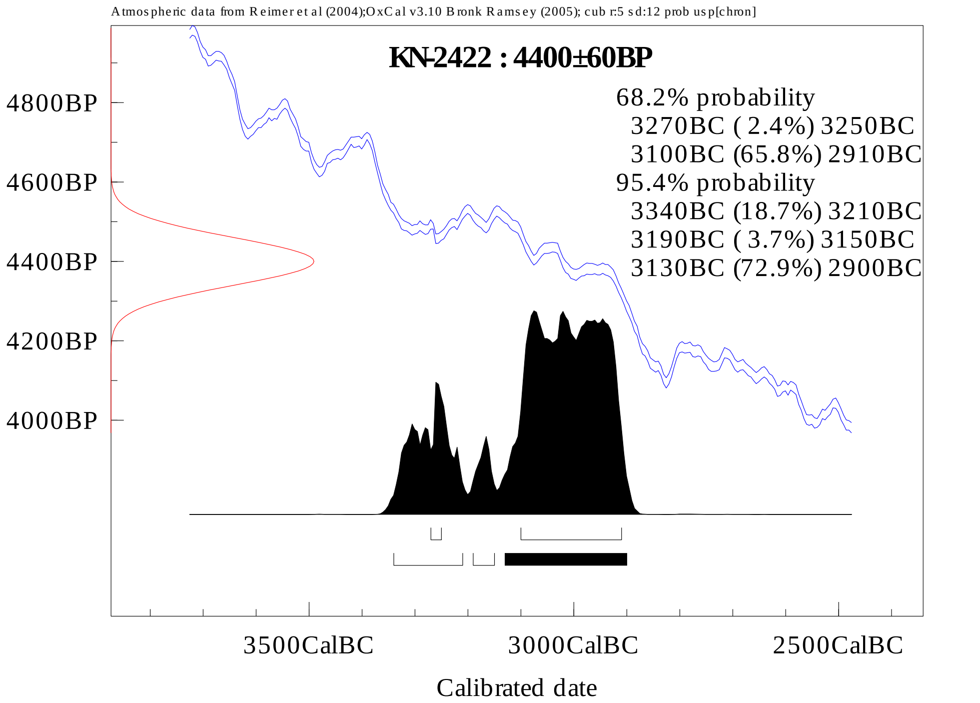


Demircihöyük

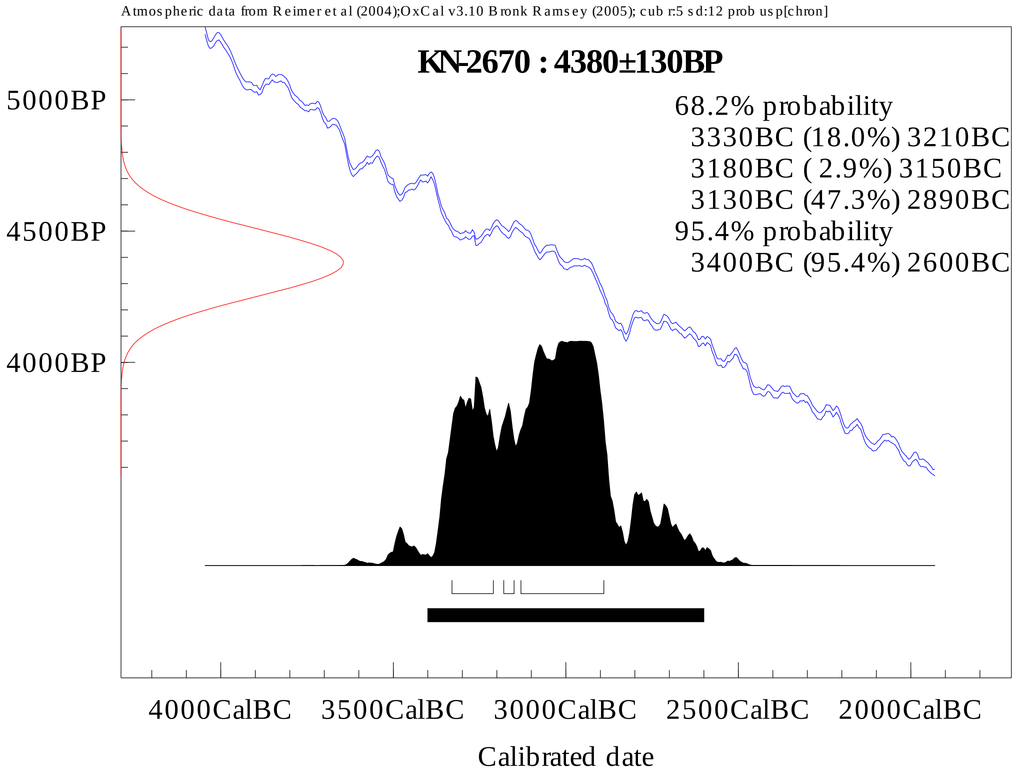
Demircihöyük DEM.1



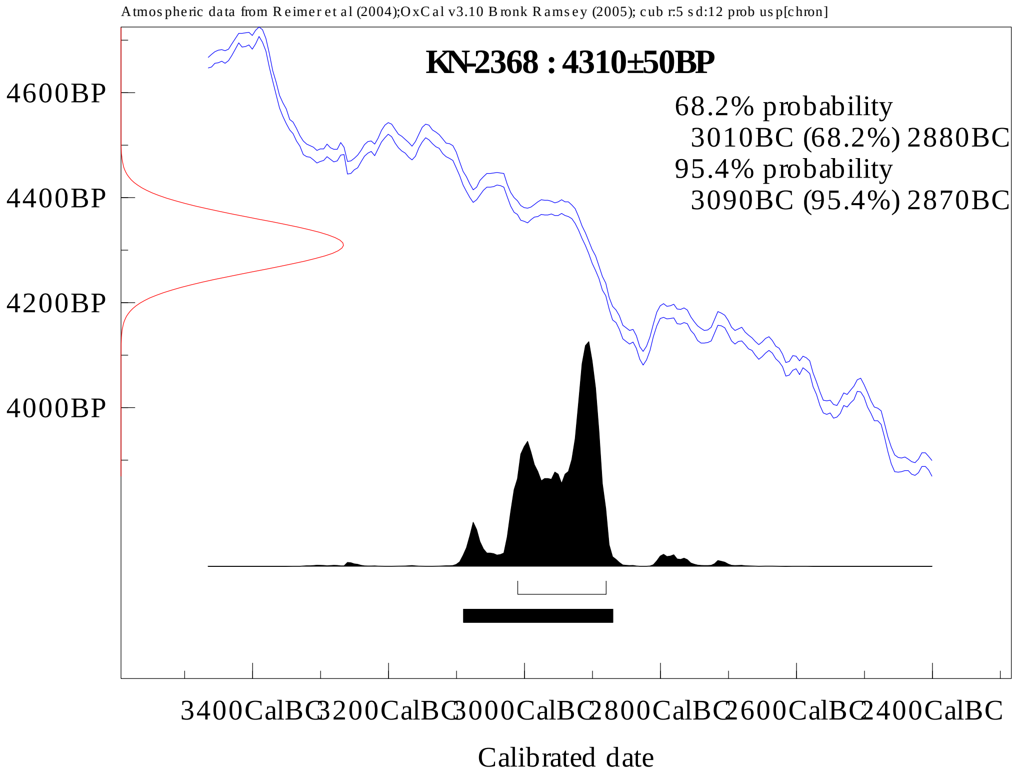
Demircihöyük DEM.2



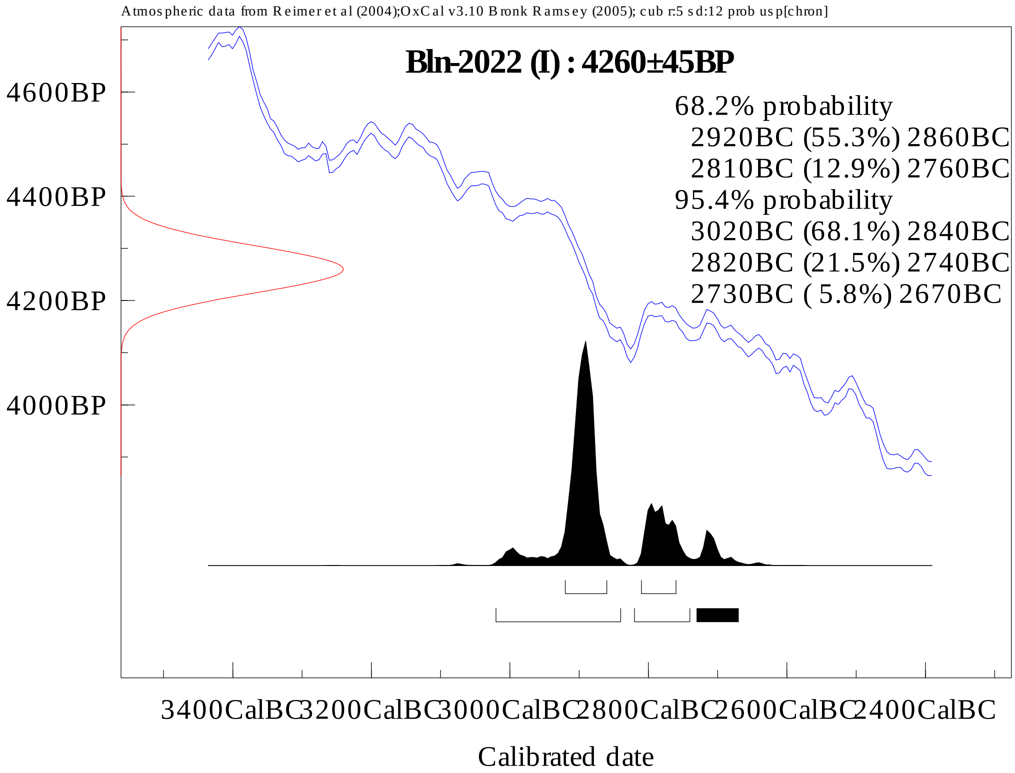
Demircihöyük DEM.3



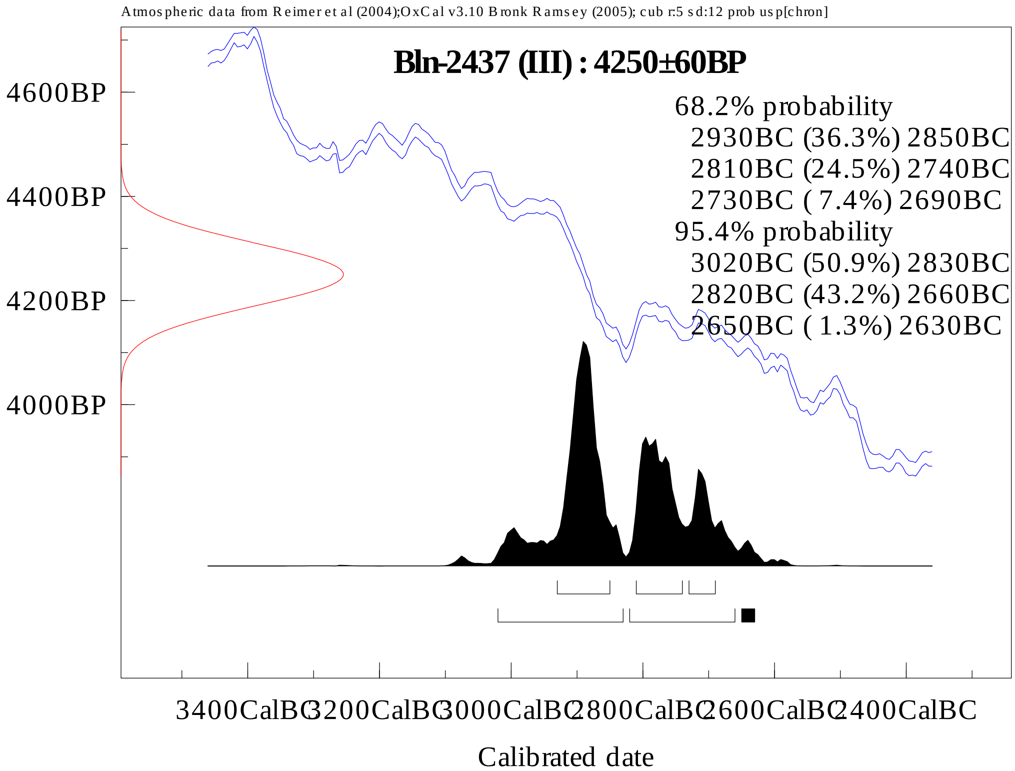
Demircihöyük DEM.4



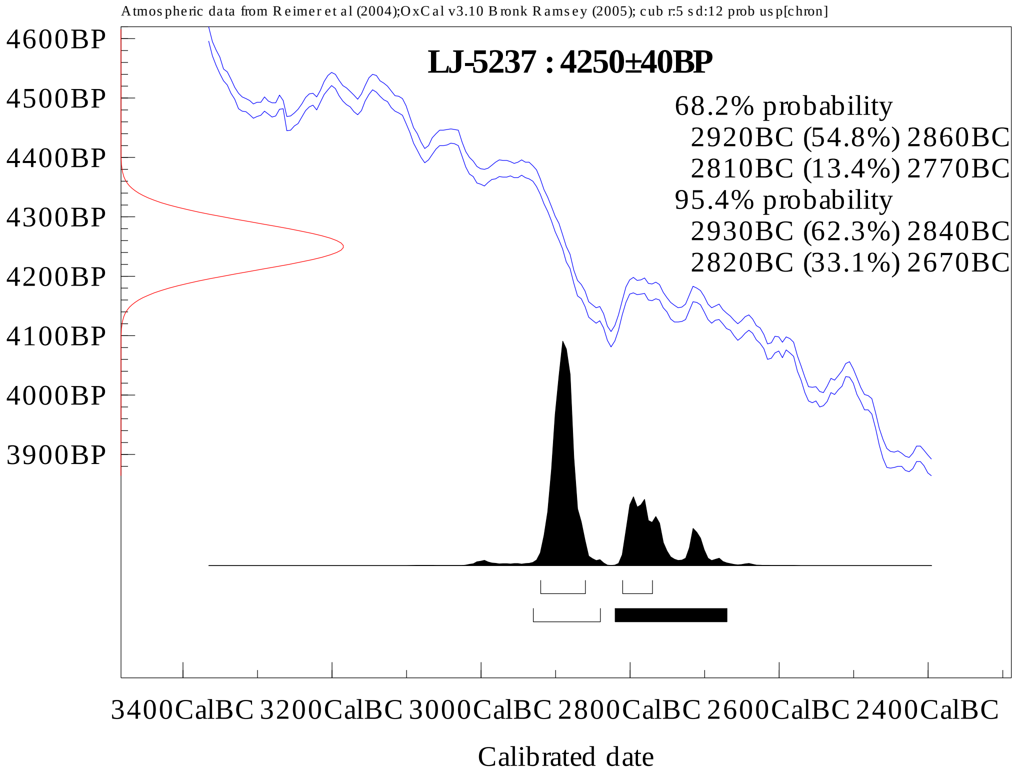
Demircihöyük DEM.5



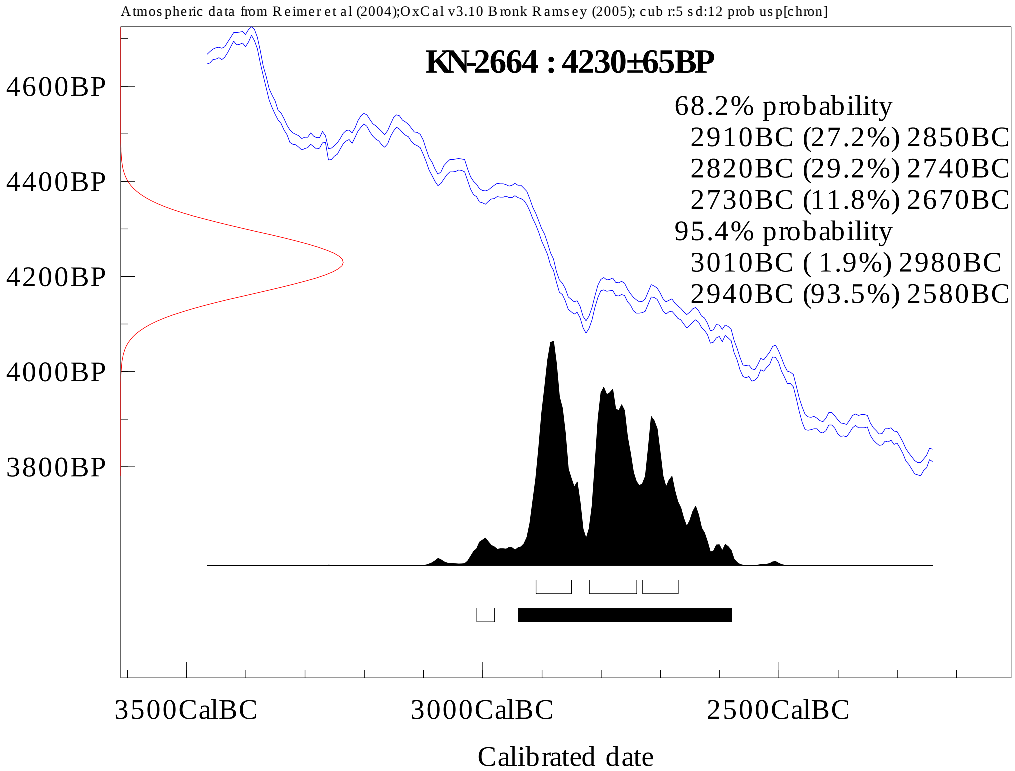
Demircihöyük DEM.6



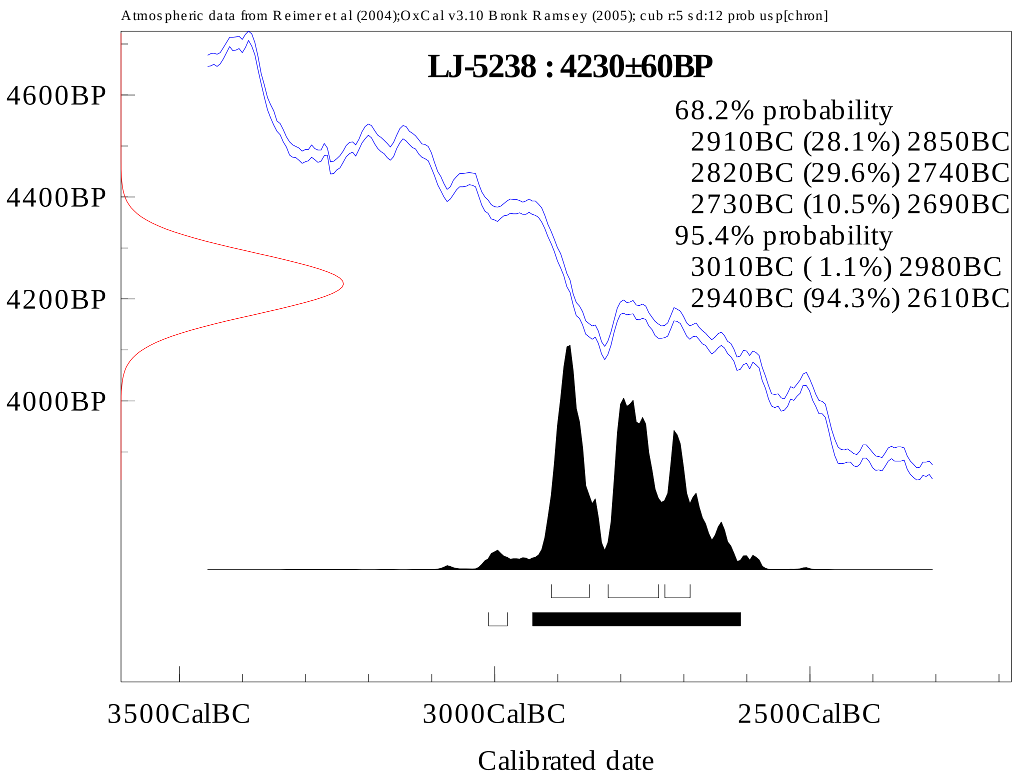
Demircihöyük DEM.7



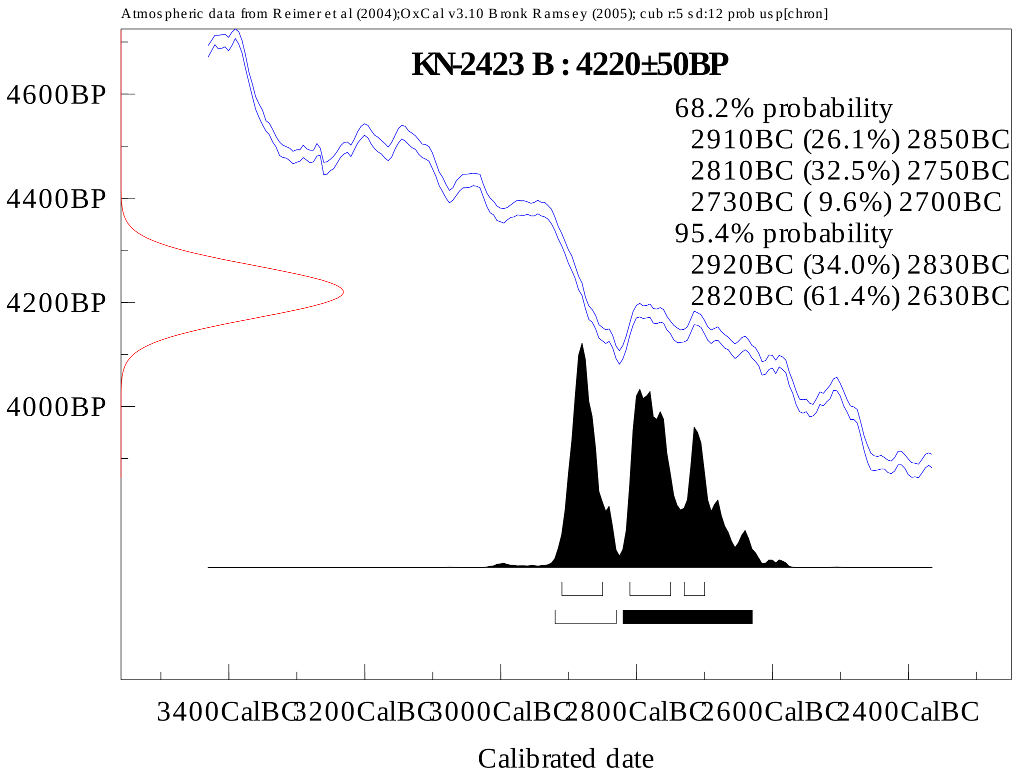
Demircihöyük DEM.8



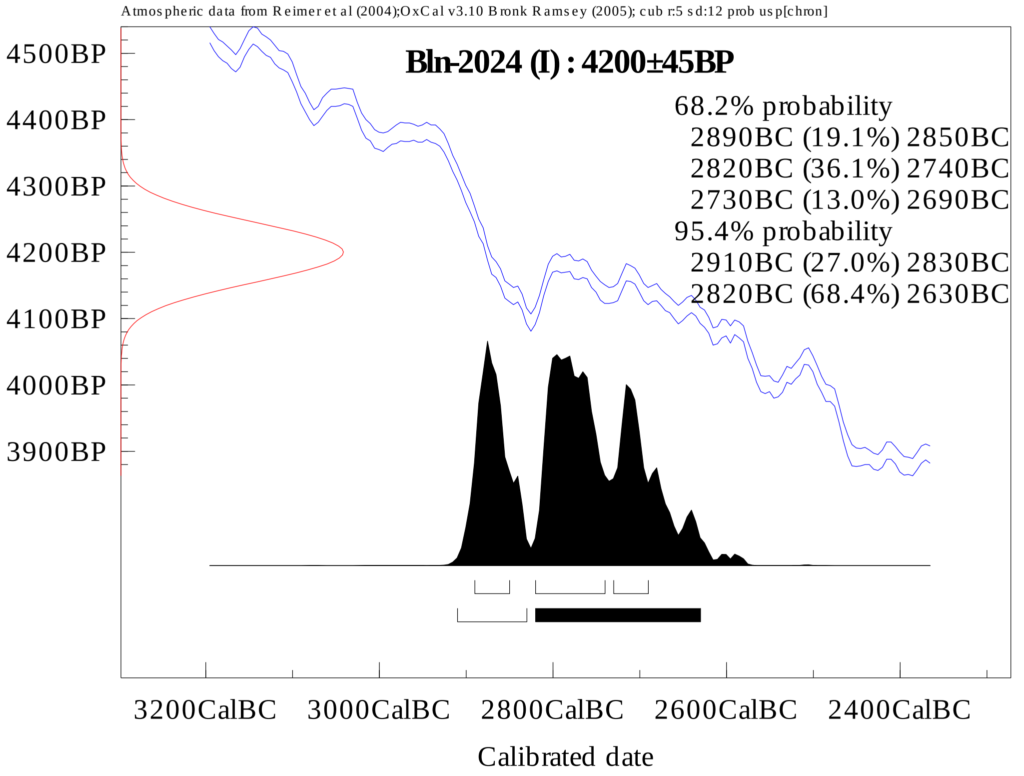
Demircihöyük DEM.9



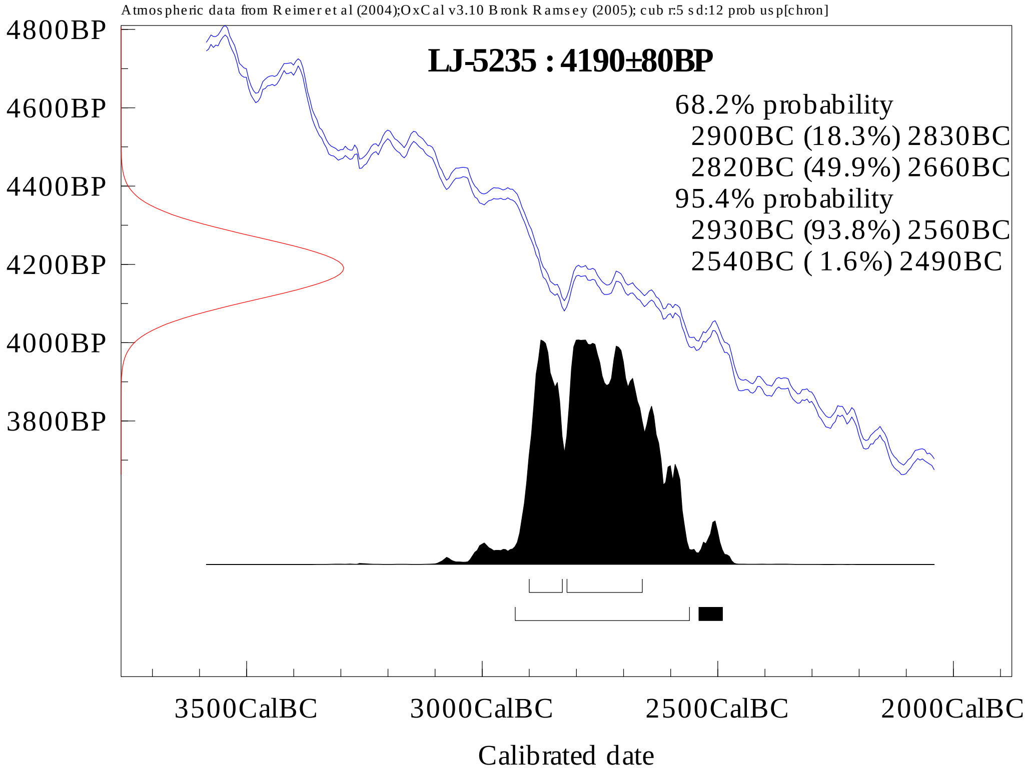
Demircihöyük DEM.10



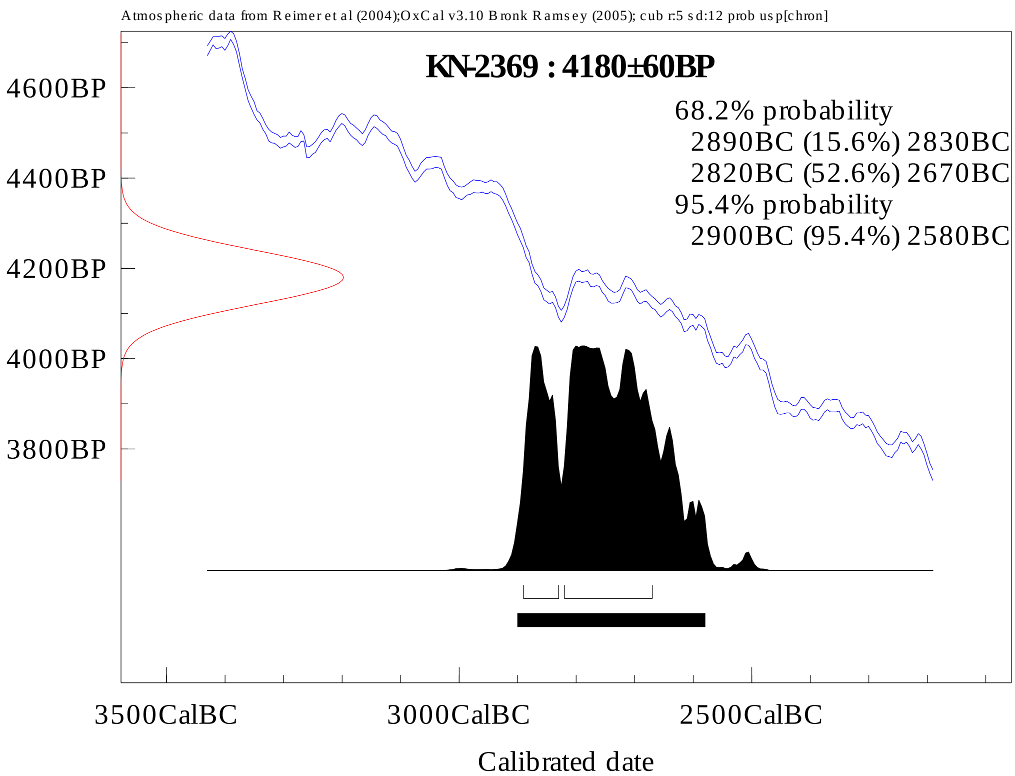
Demircihöyük DEM.11



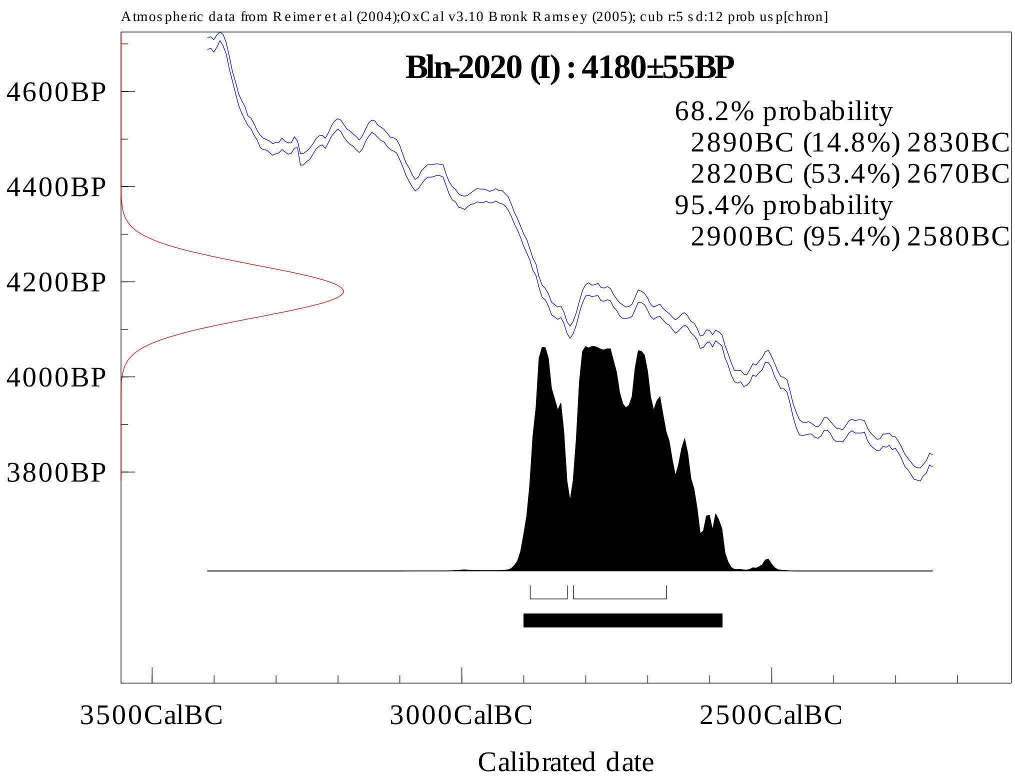
Demircihöyük DEM.12



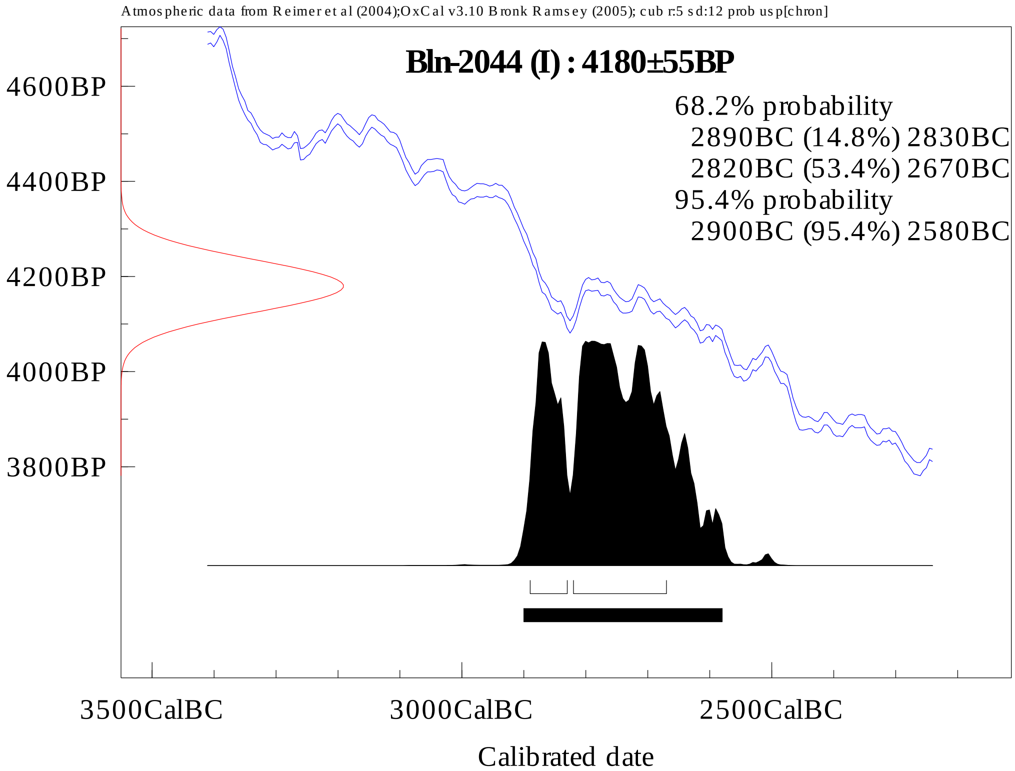
Demircihöyük DEM.13



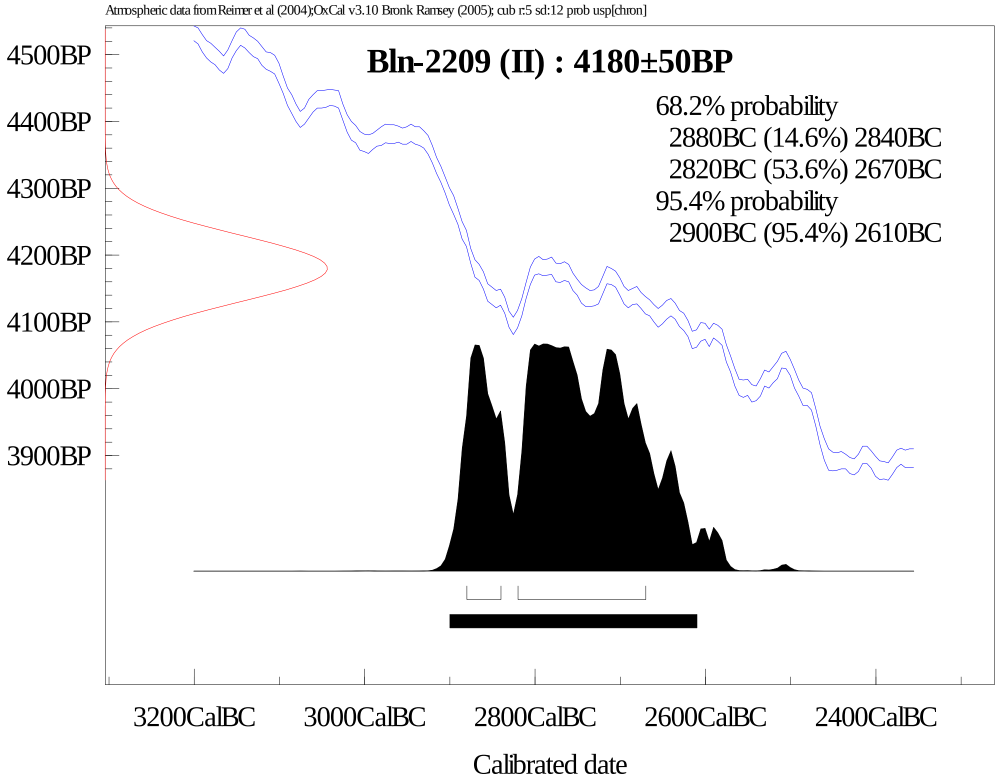
Demircihöyük DEM.14



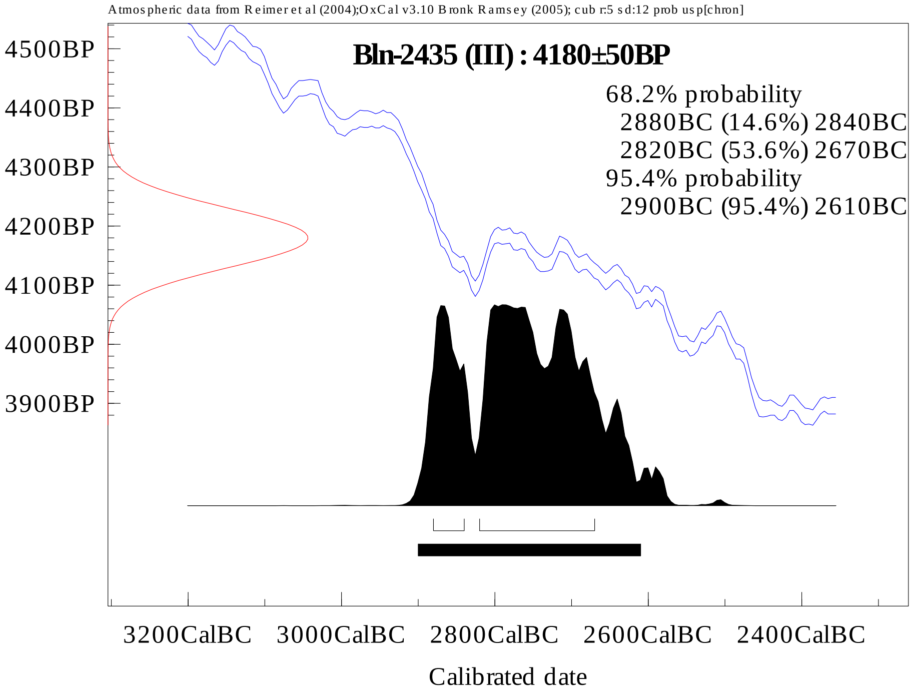
Demircihöyük DEM.15



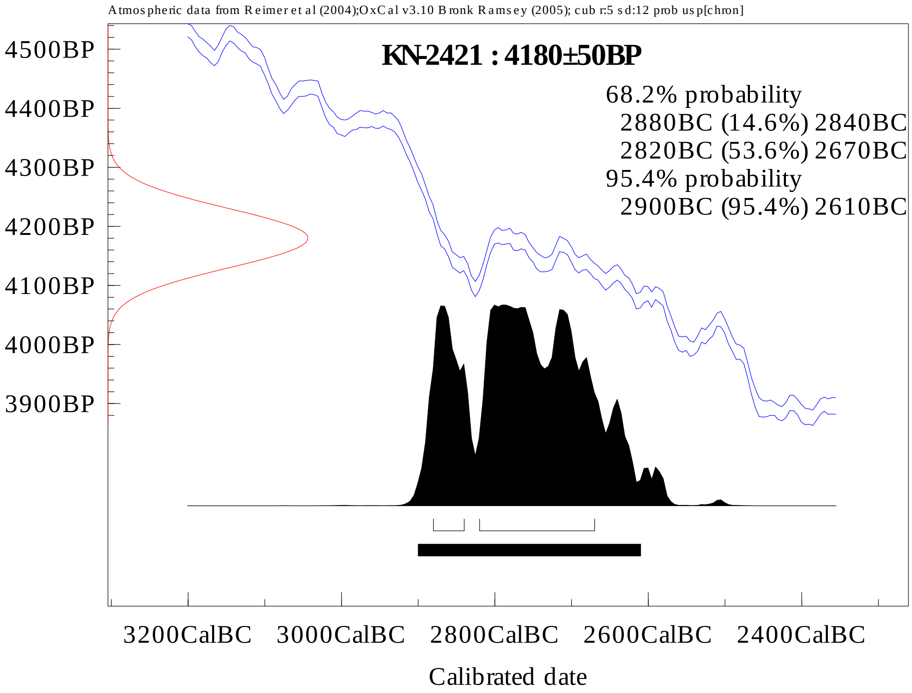
Demircihöyük DEM.16



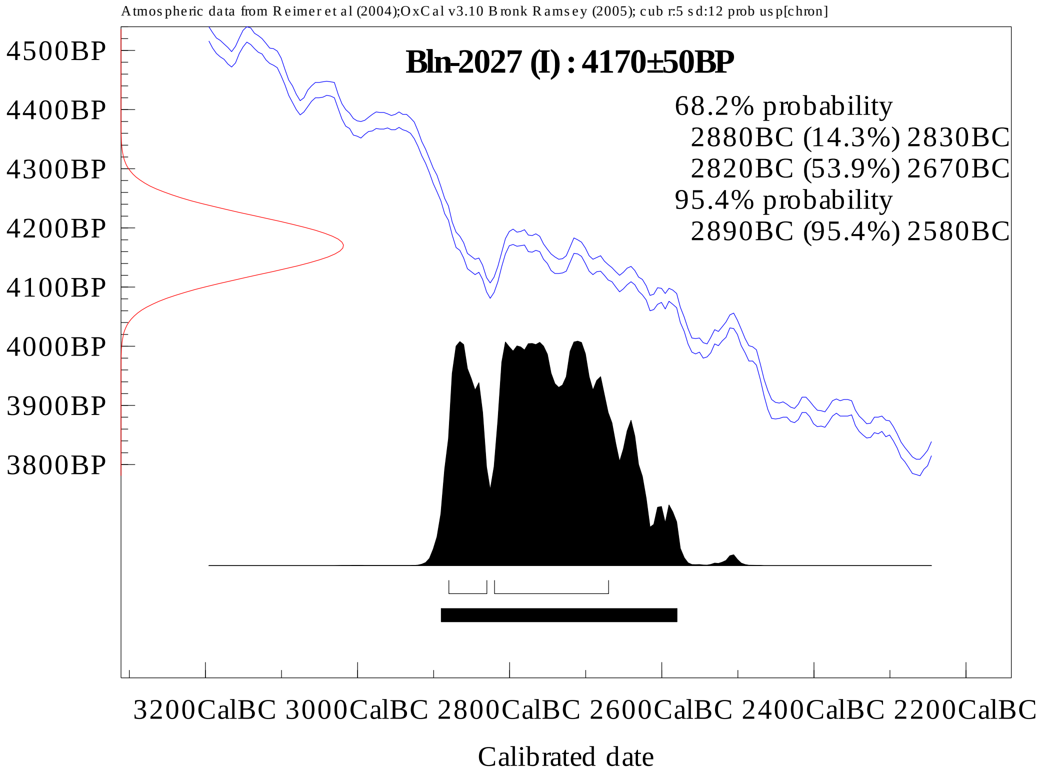
Demircihöyük DEM.17



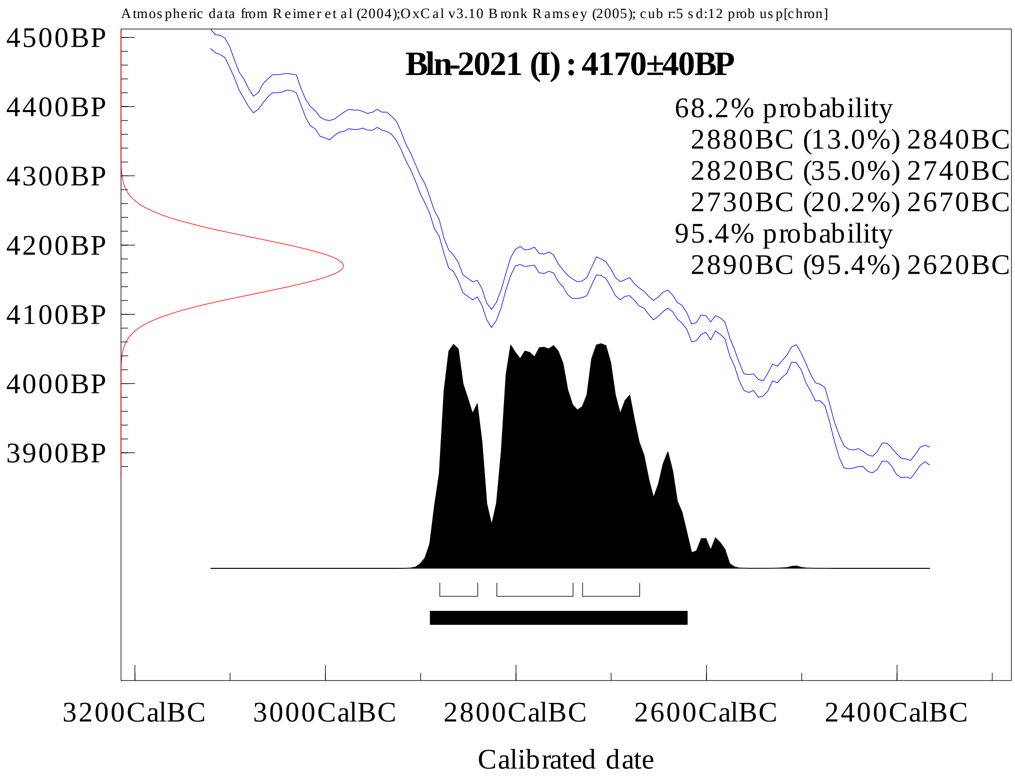
Demircihöyük DEM.18



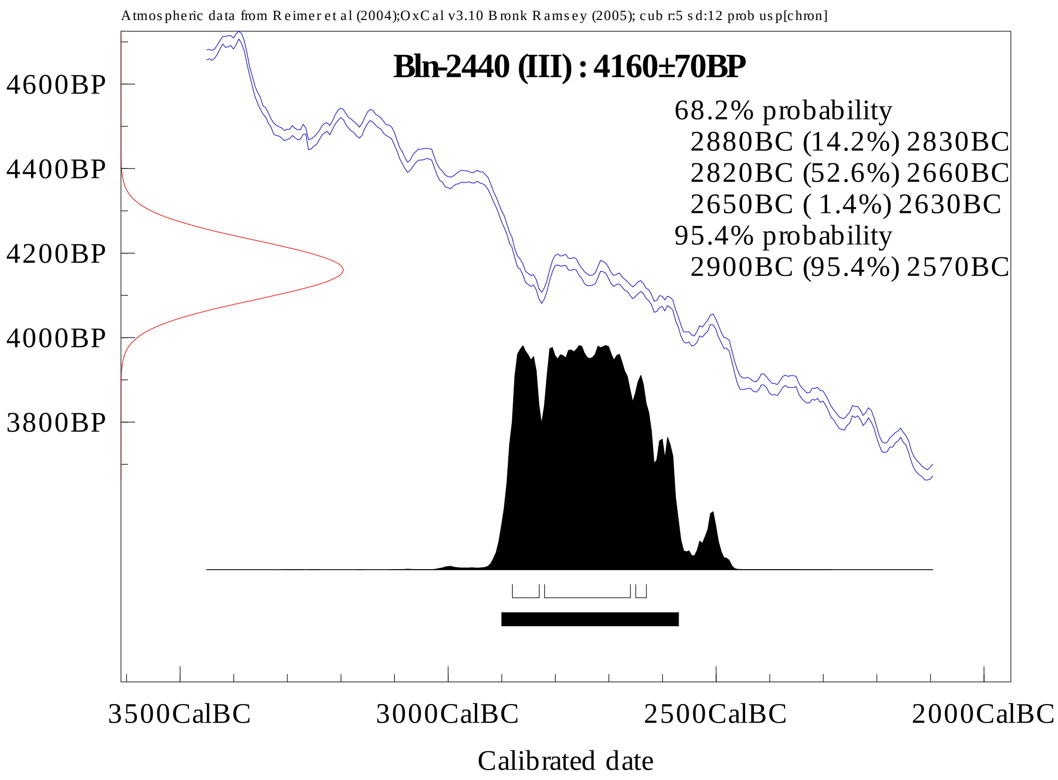
Demircihöyük DEM.19



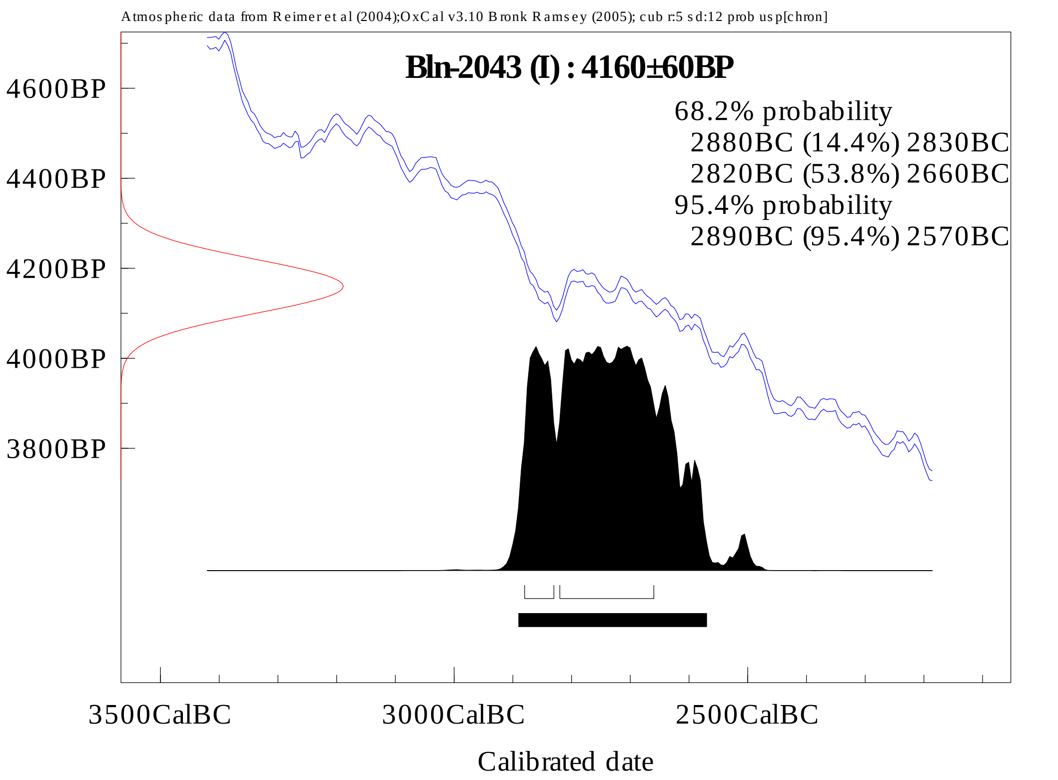
Demircihöyük DEM.20



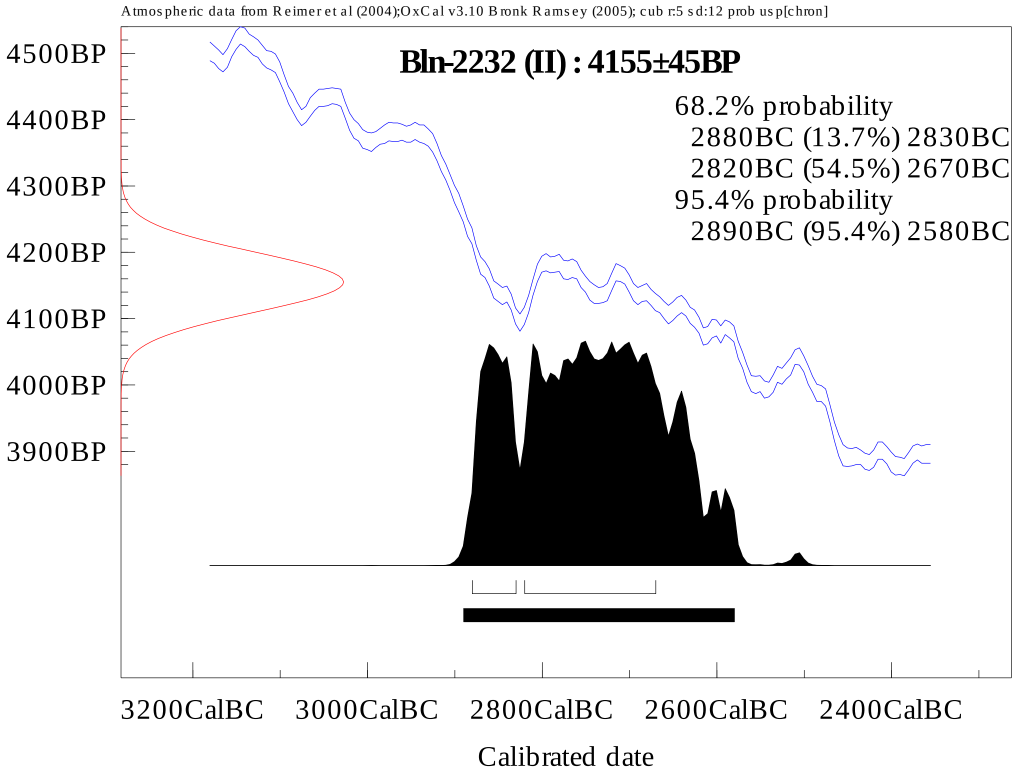
Demircihöyük DEM.21



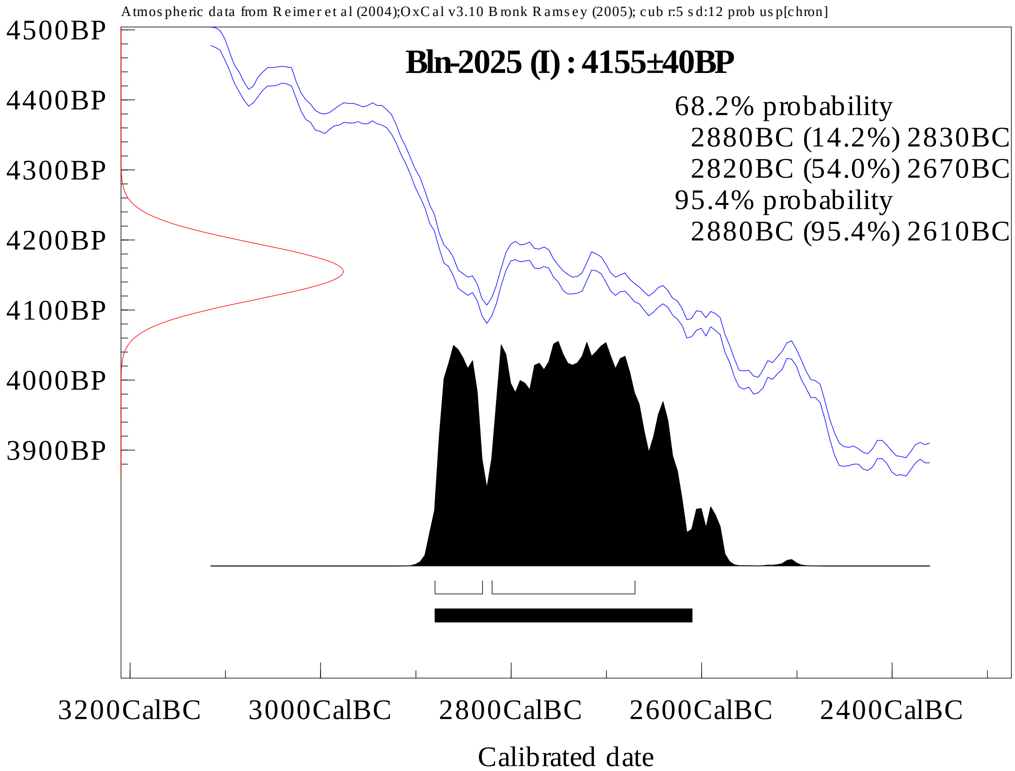
Demircihöyük DEM.22



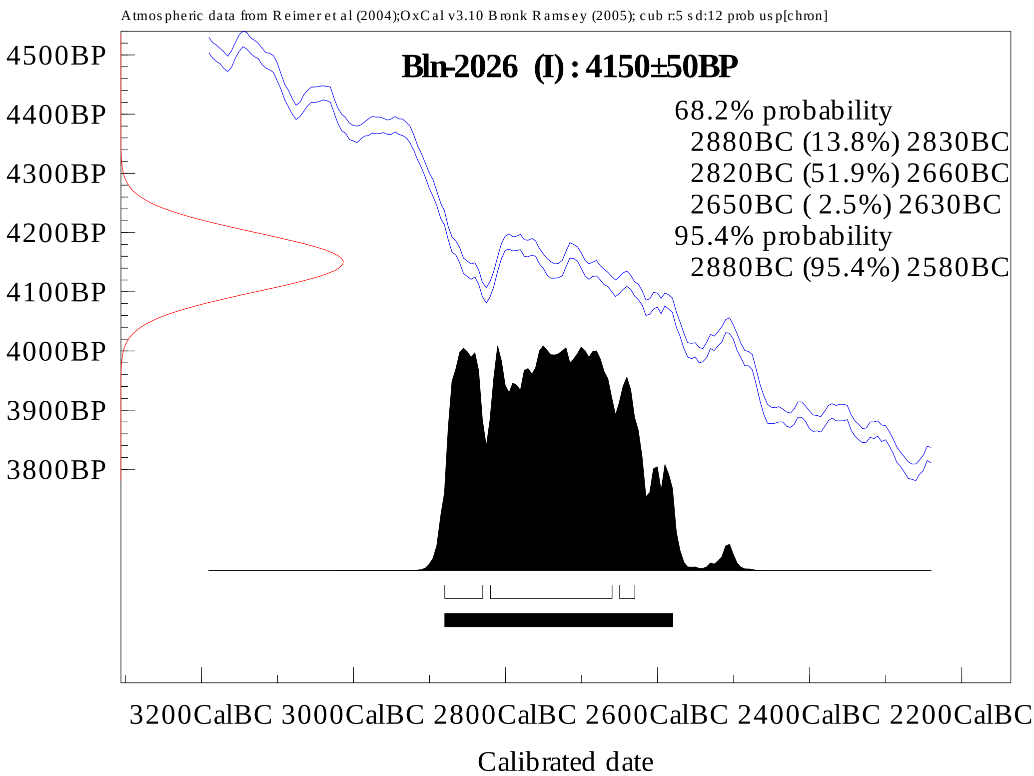
Demircihöyük DEM.23



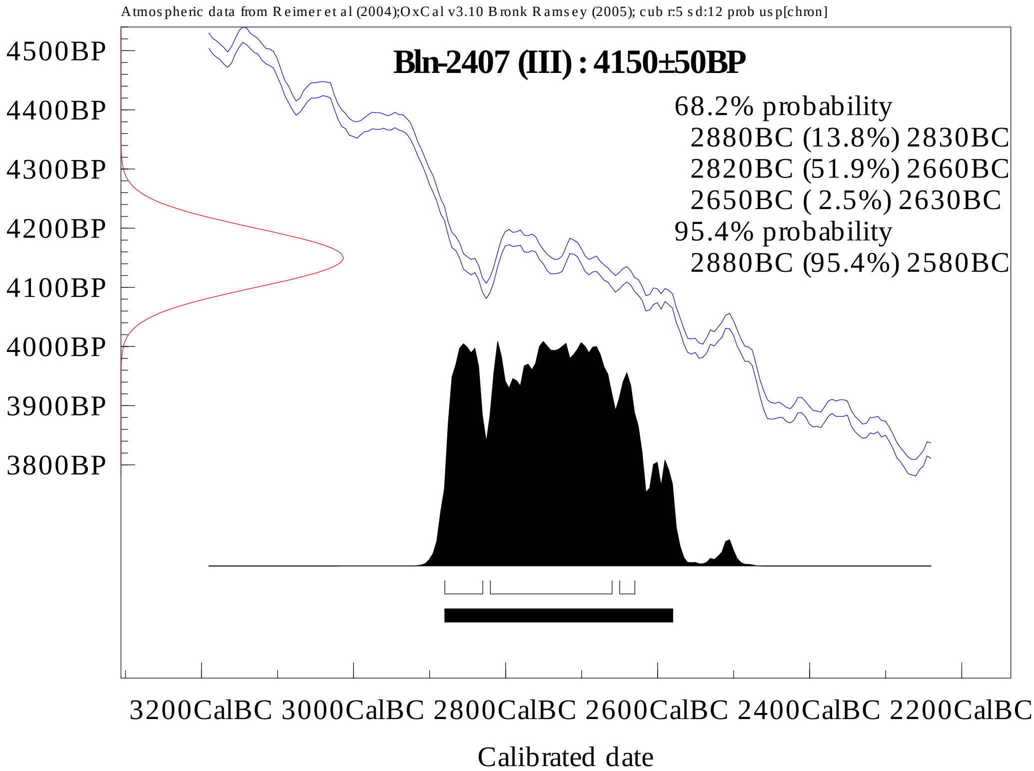
Demircihöyük DEM.24



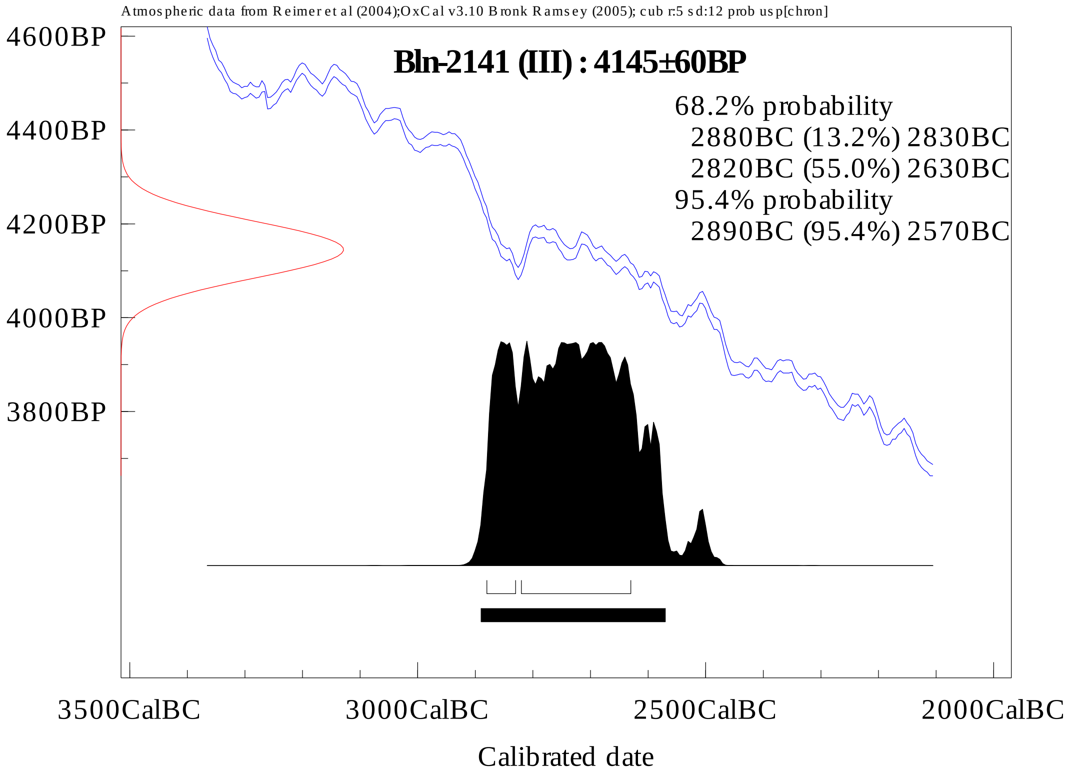
Demircihöyük DEM.25



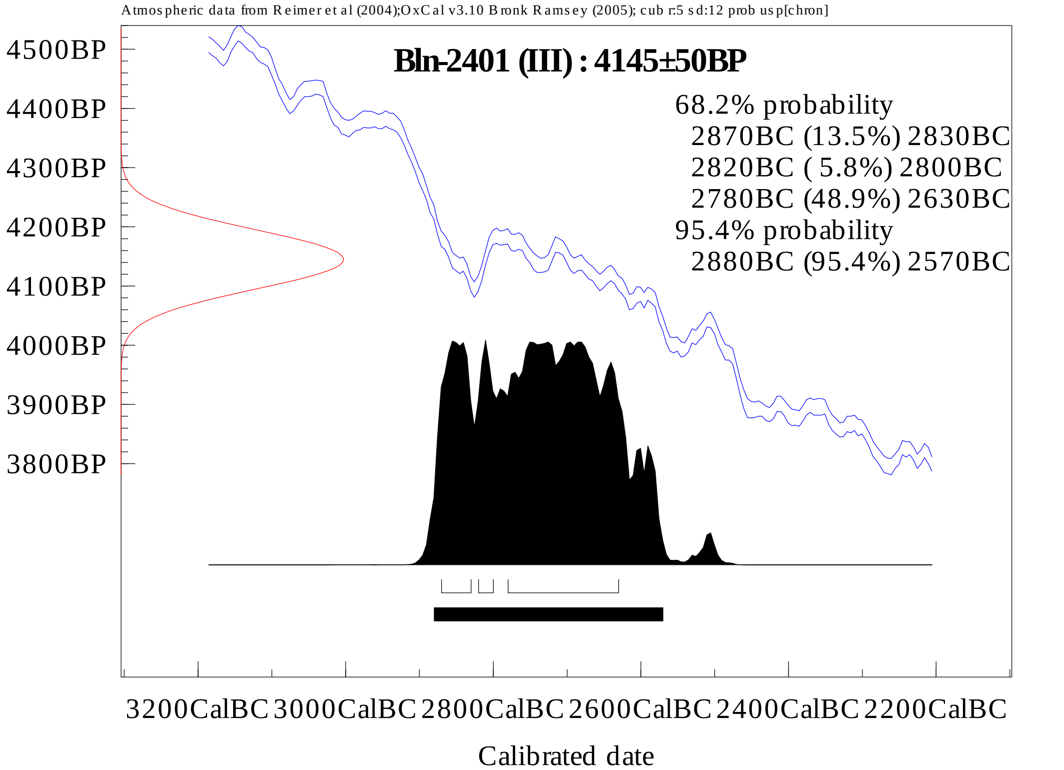
Demircihöyük DEM.26



Demircihöyük DEM.27



Demircihöyük DEM.28



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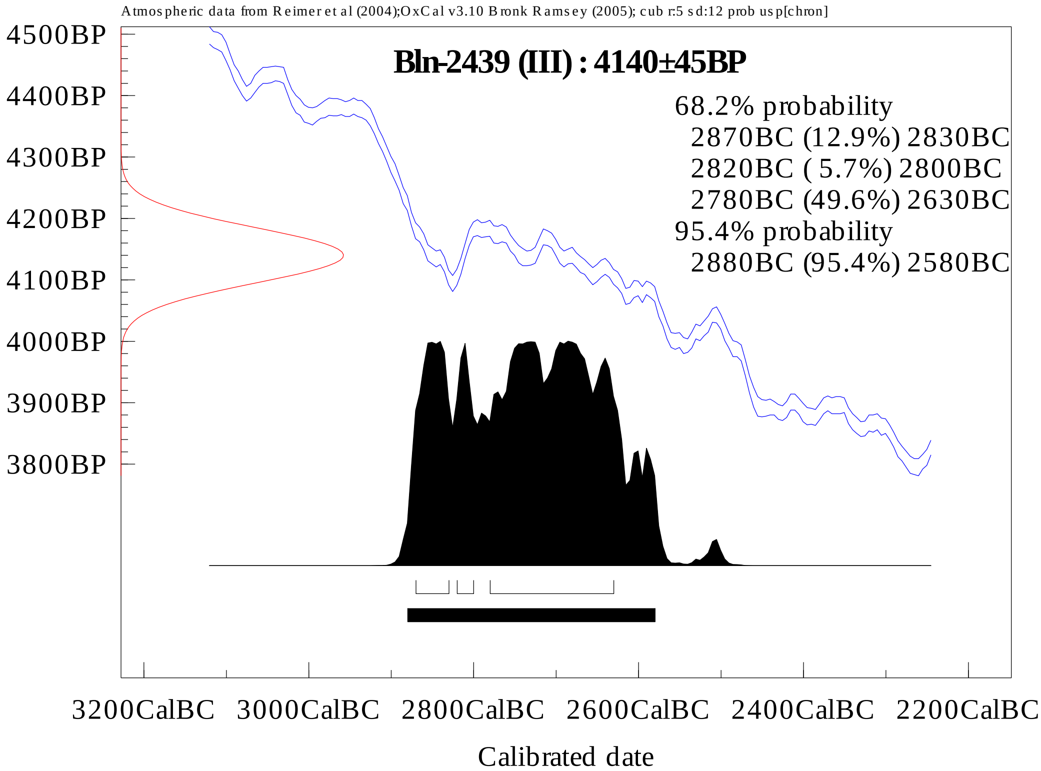

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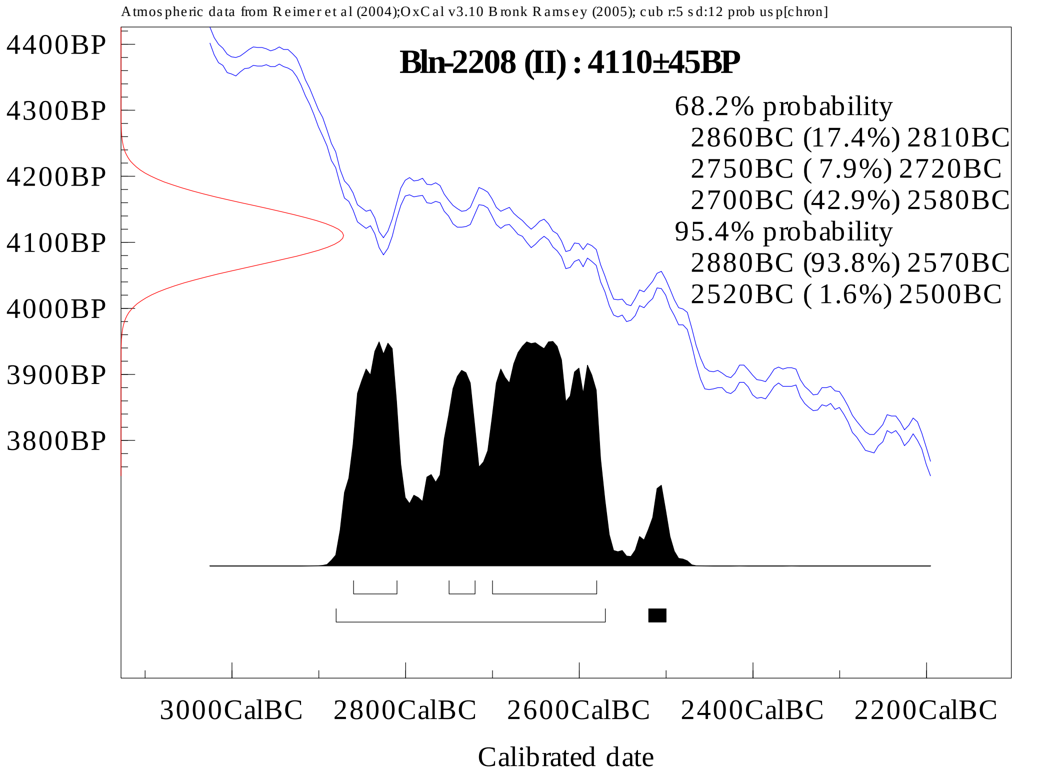

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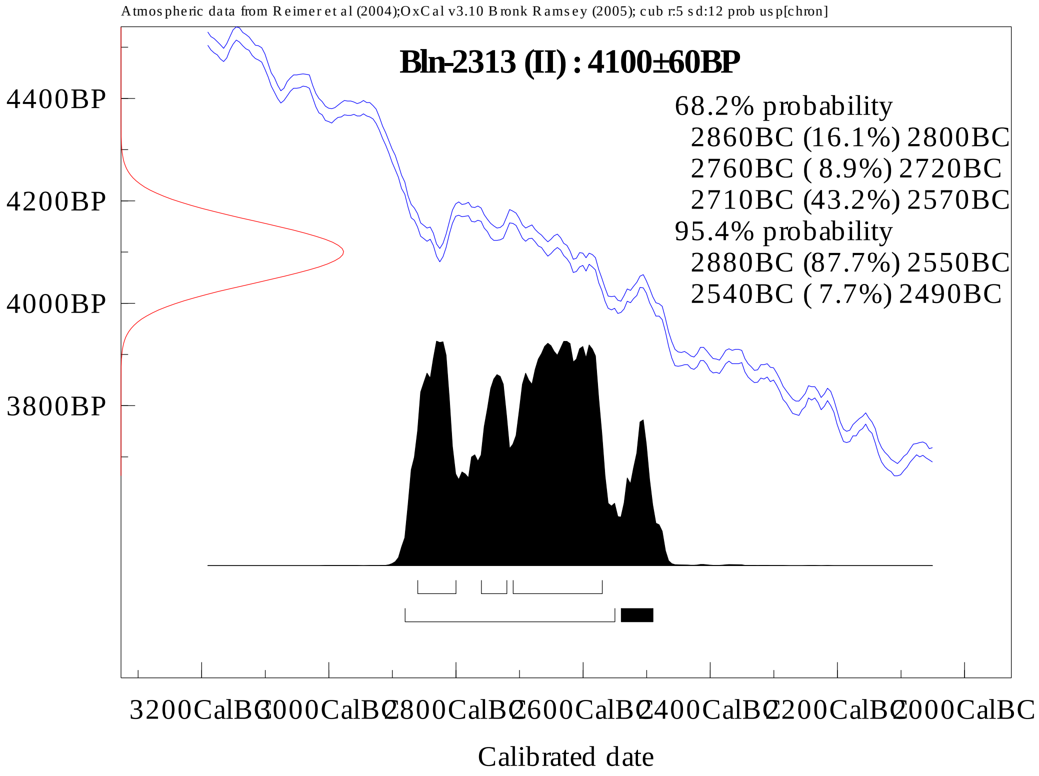

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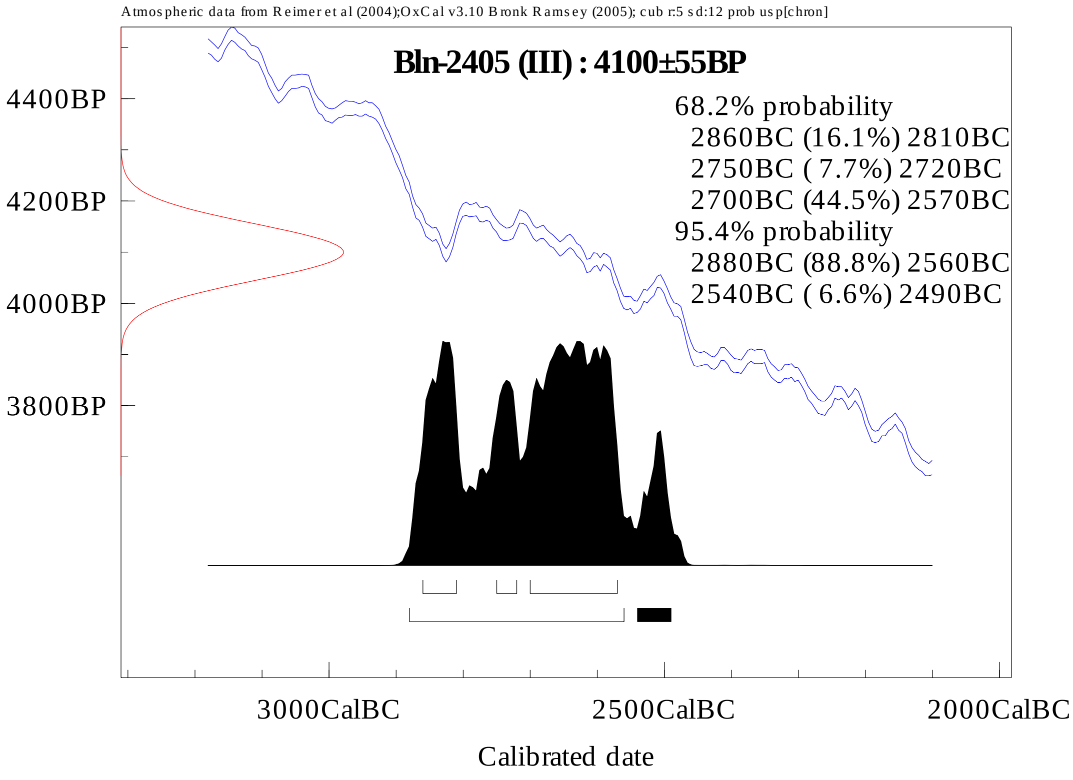

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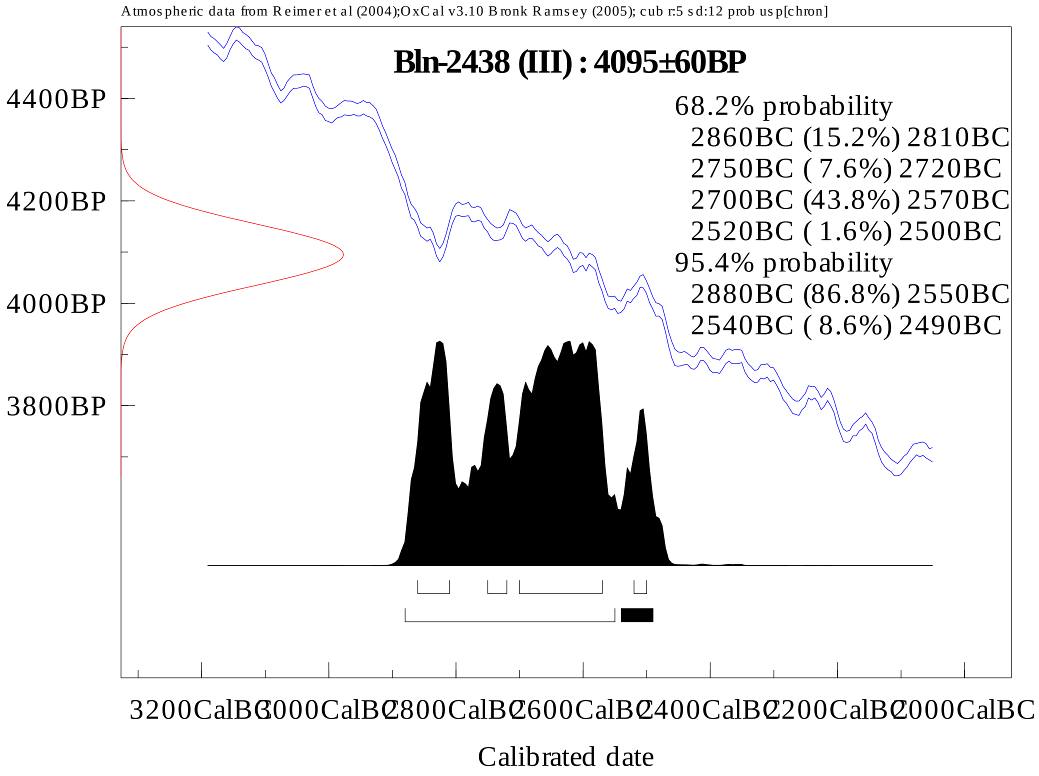

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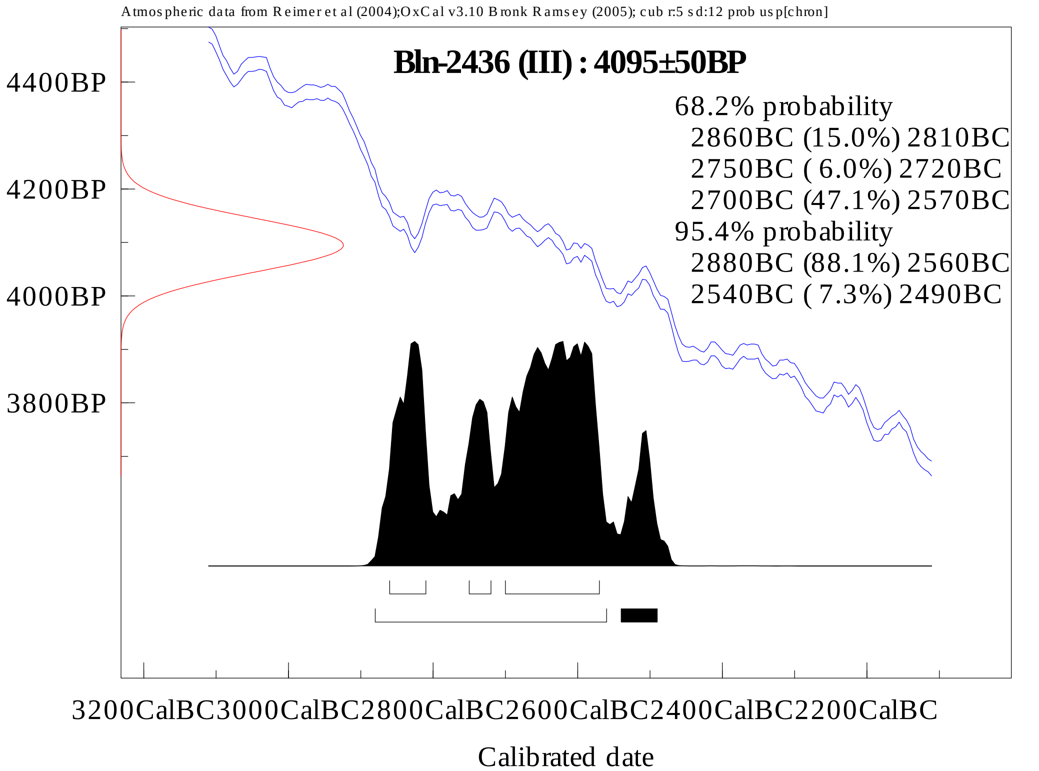

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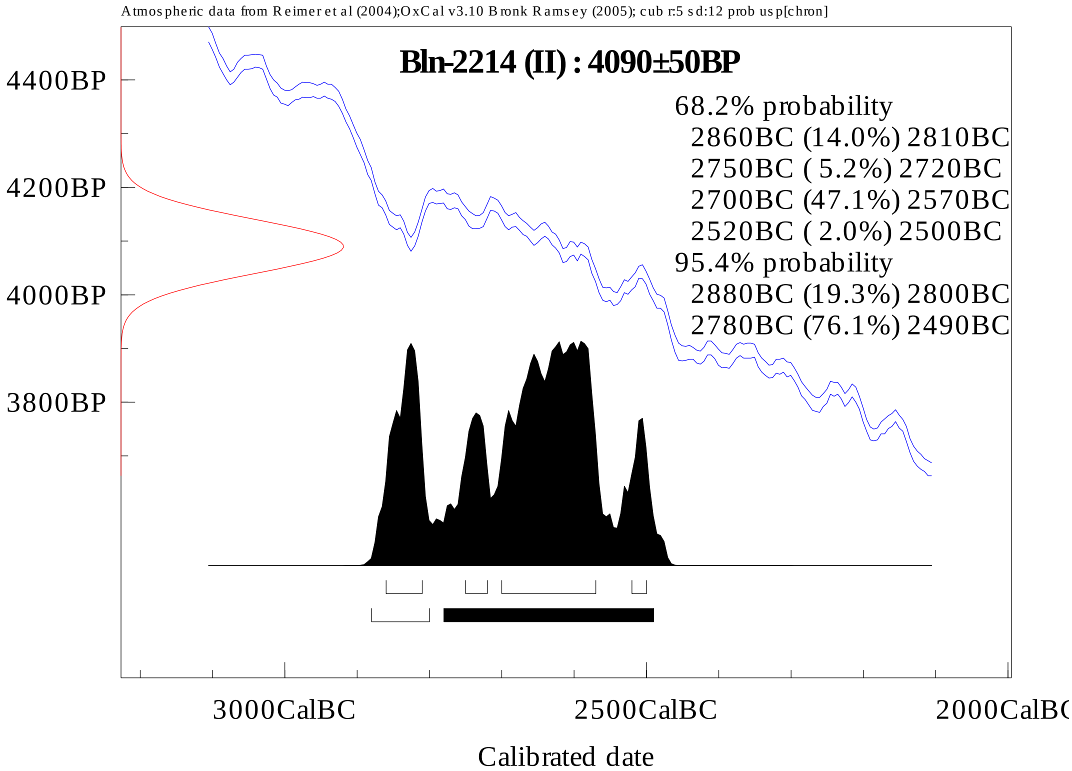

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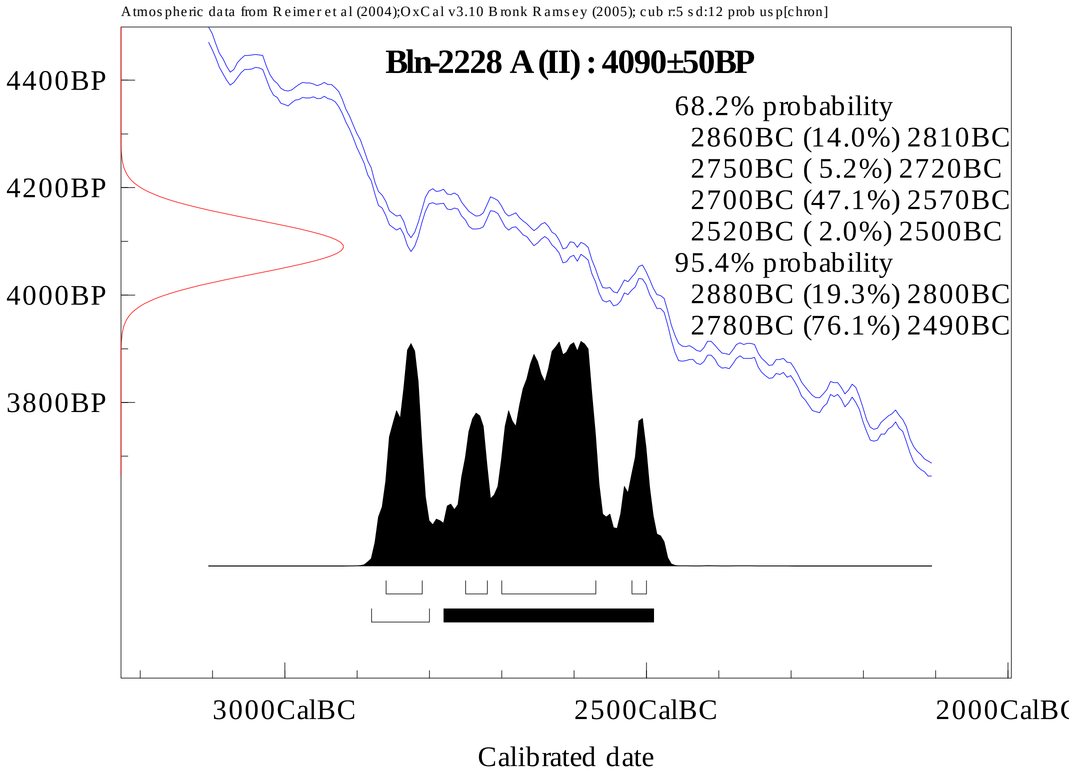

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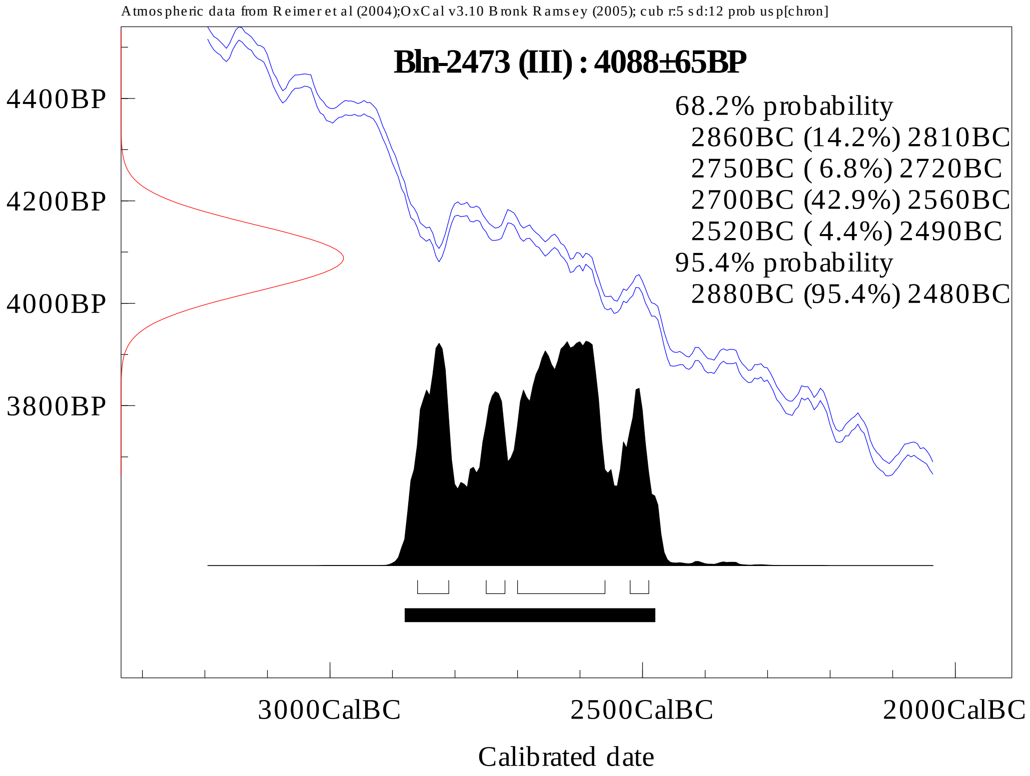

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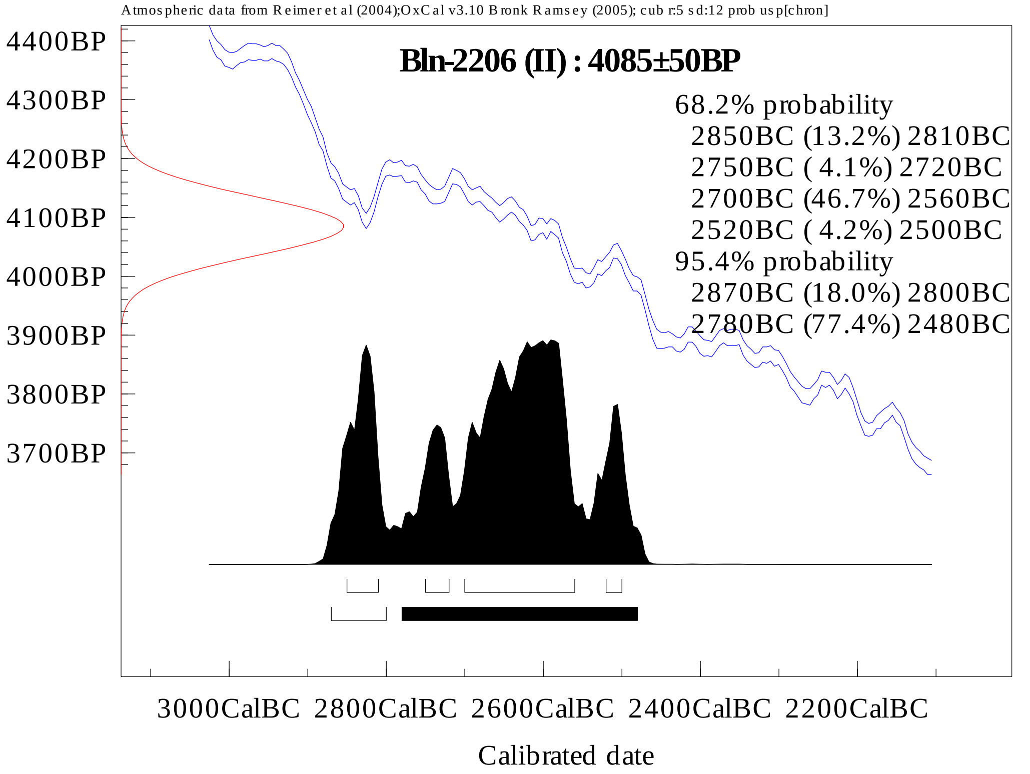

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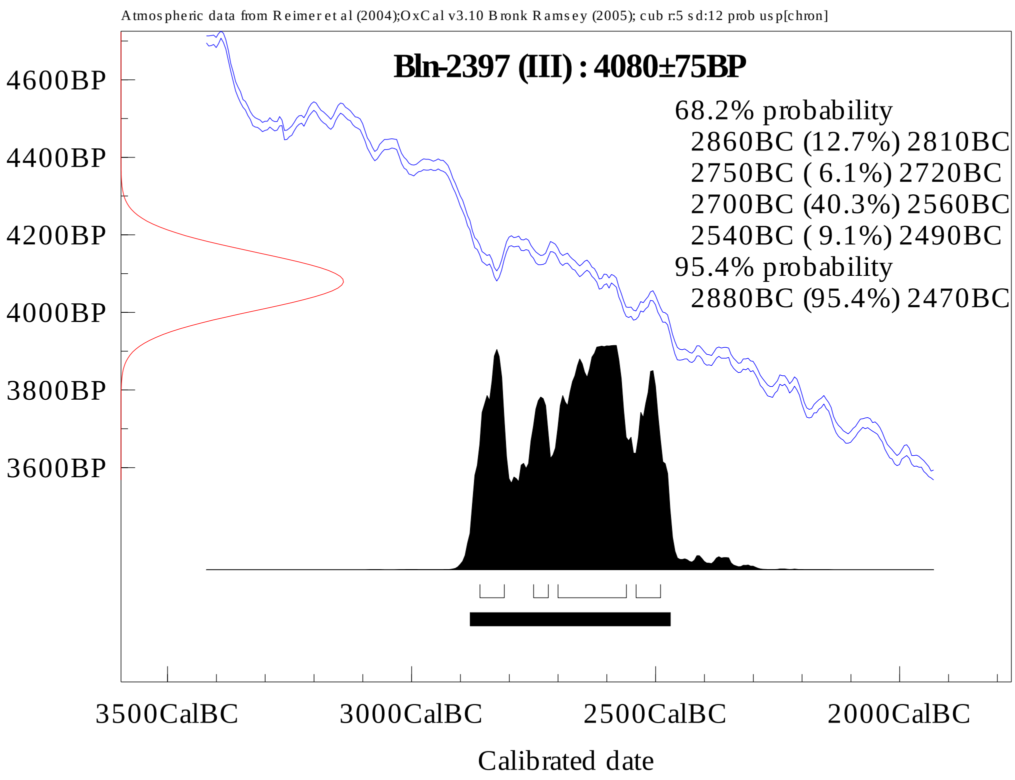

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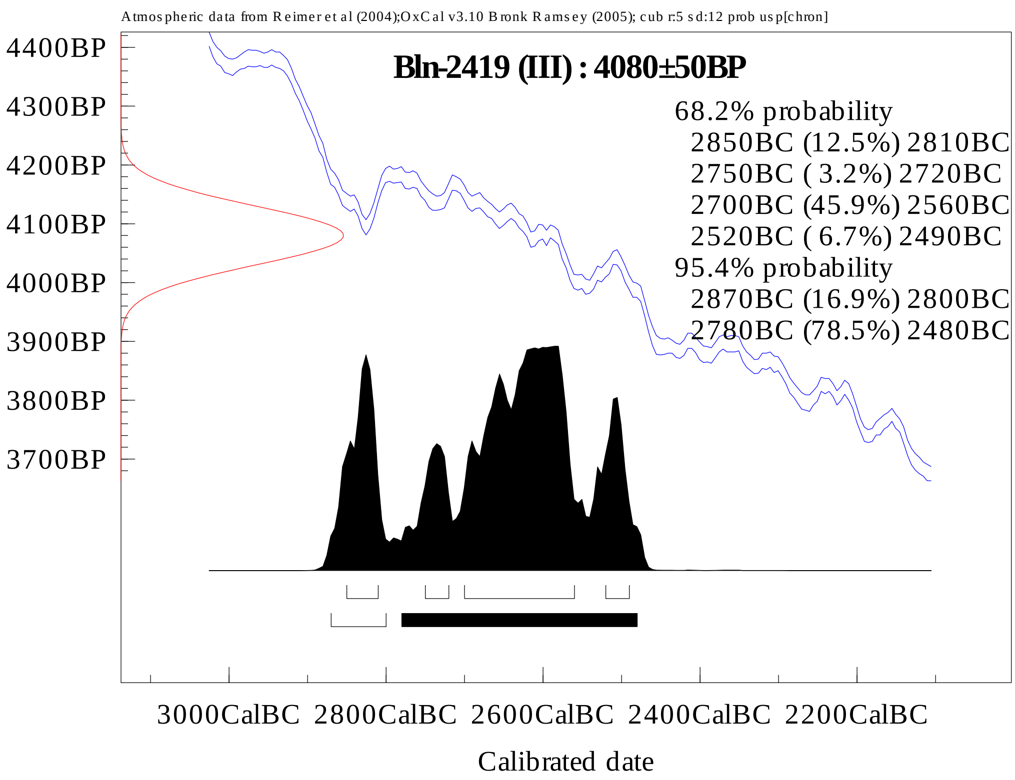
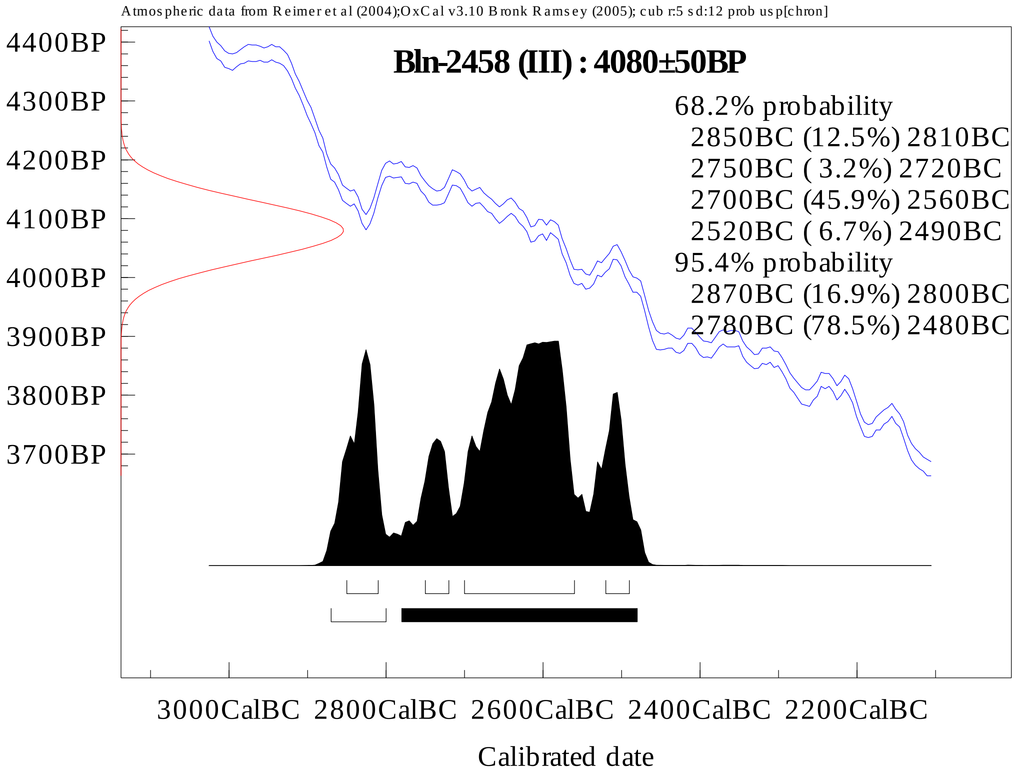


Demircihöyük DEM.41



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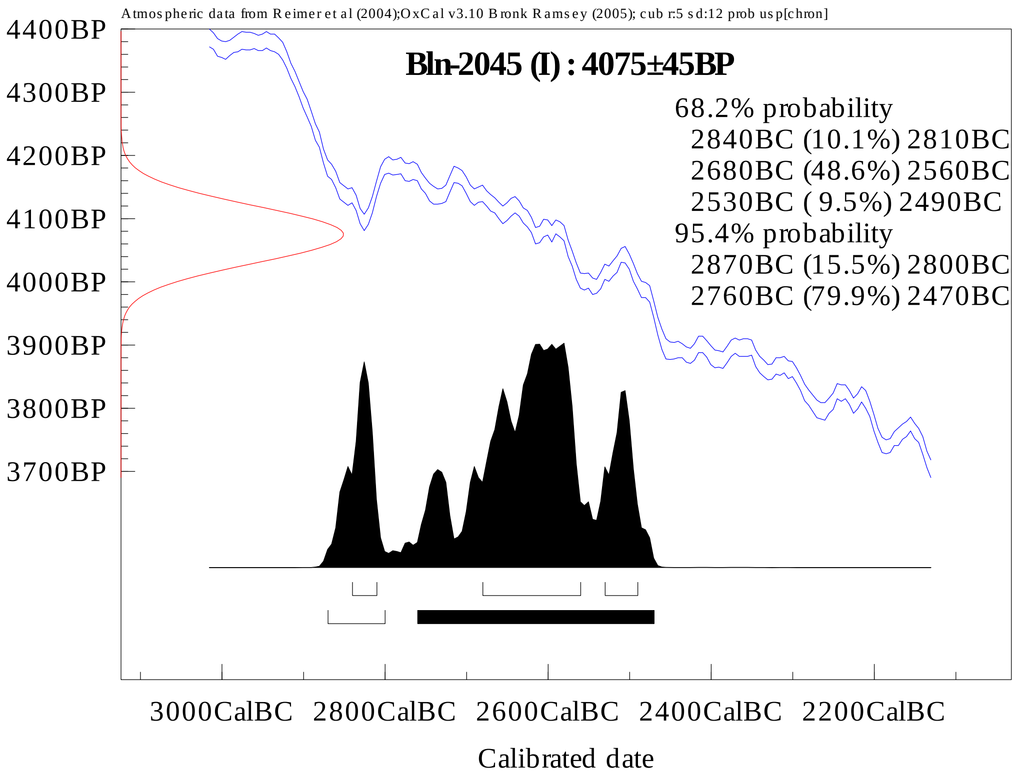

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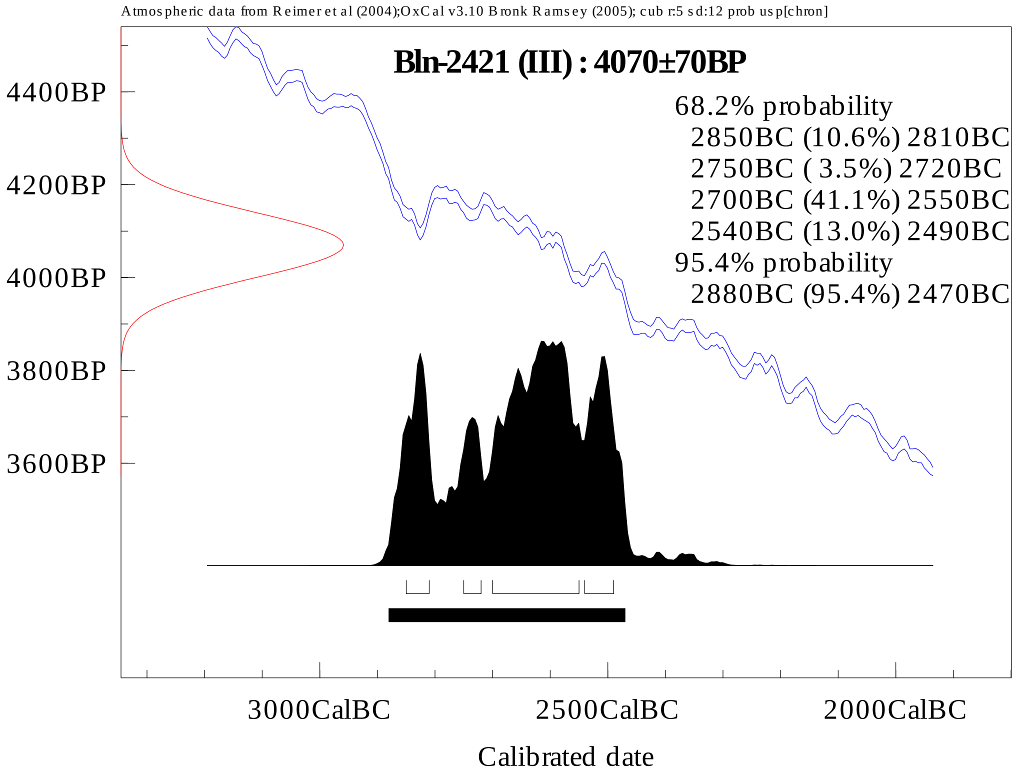

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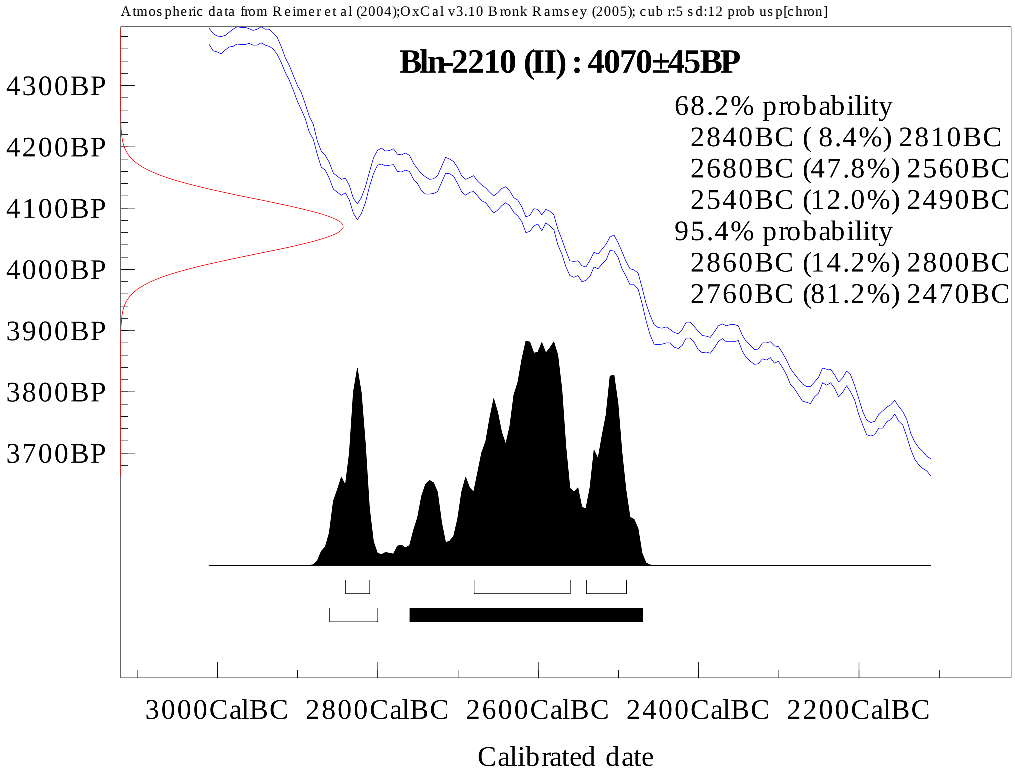

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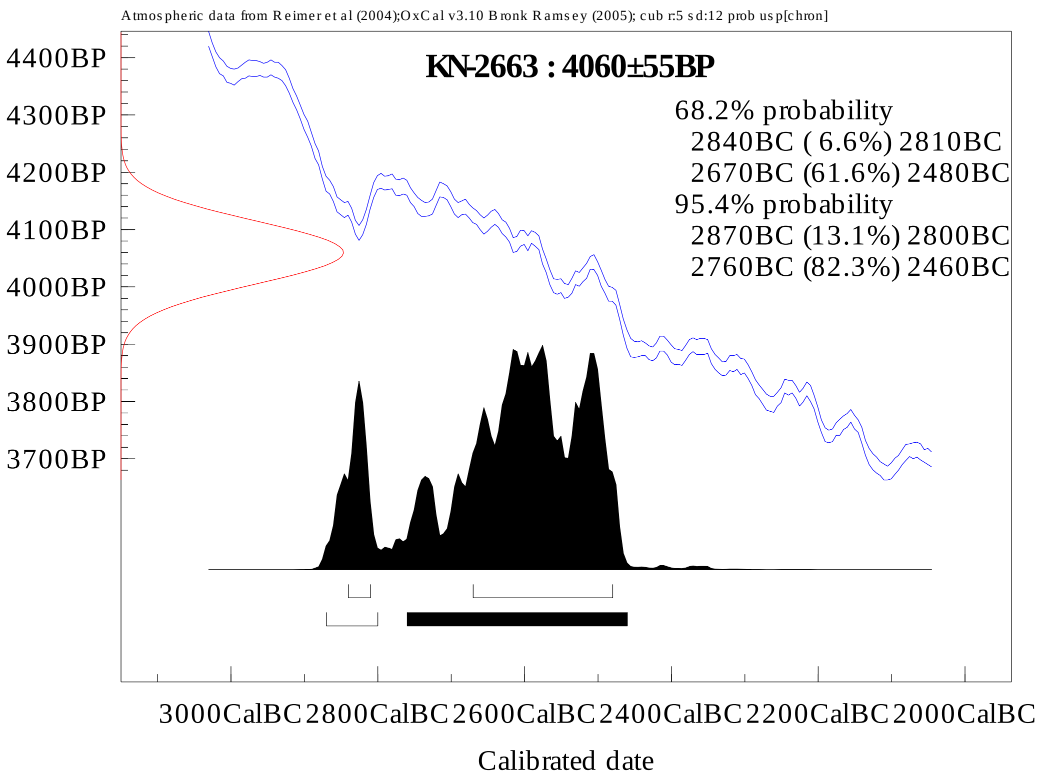

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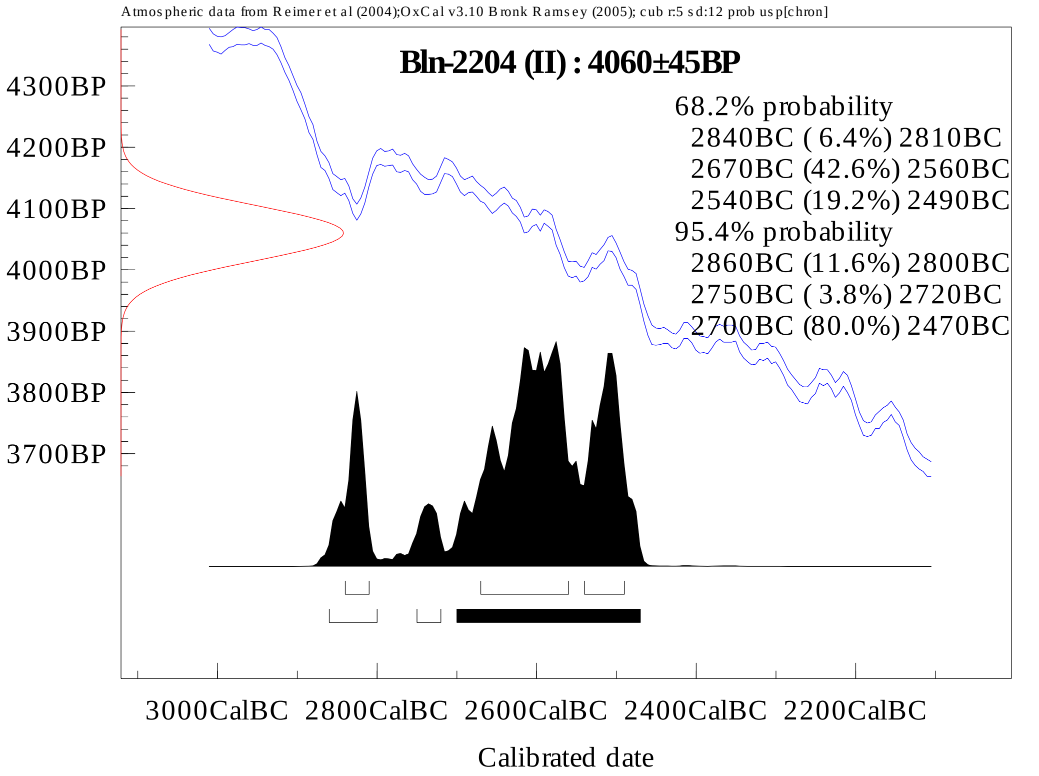

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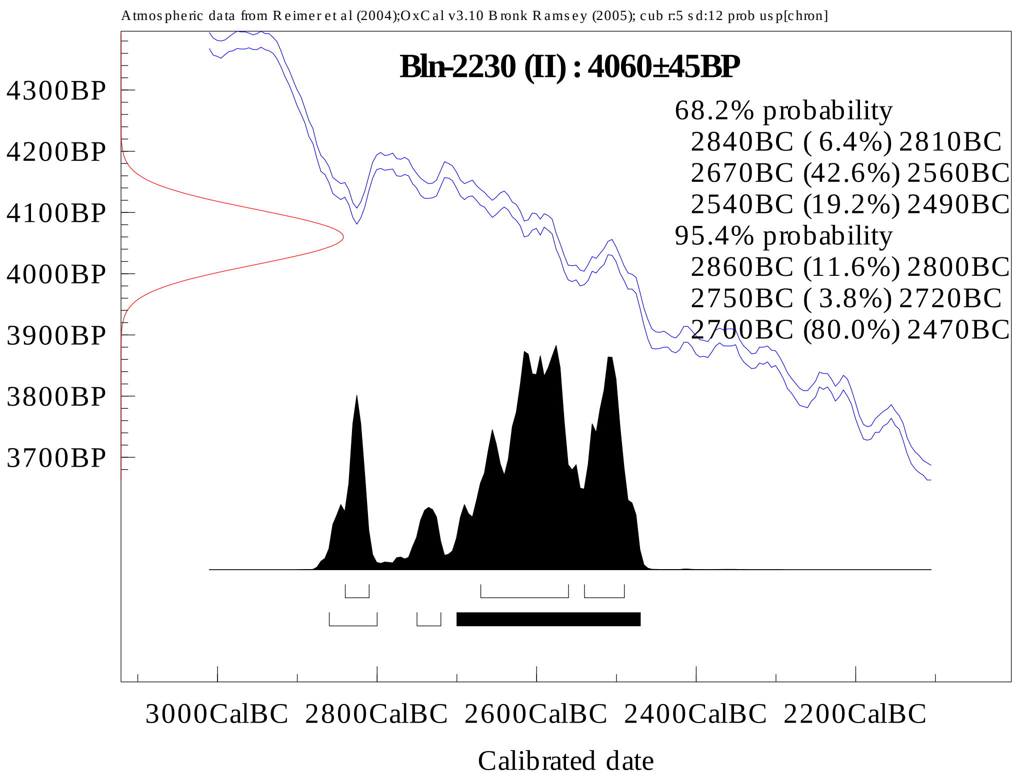

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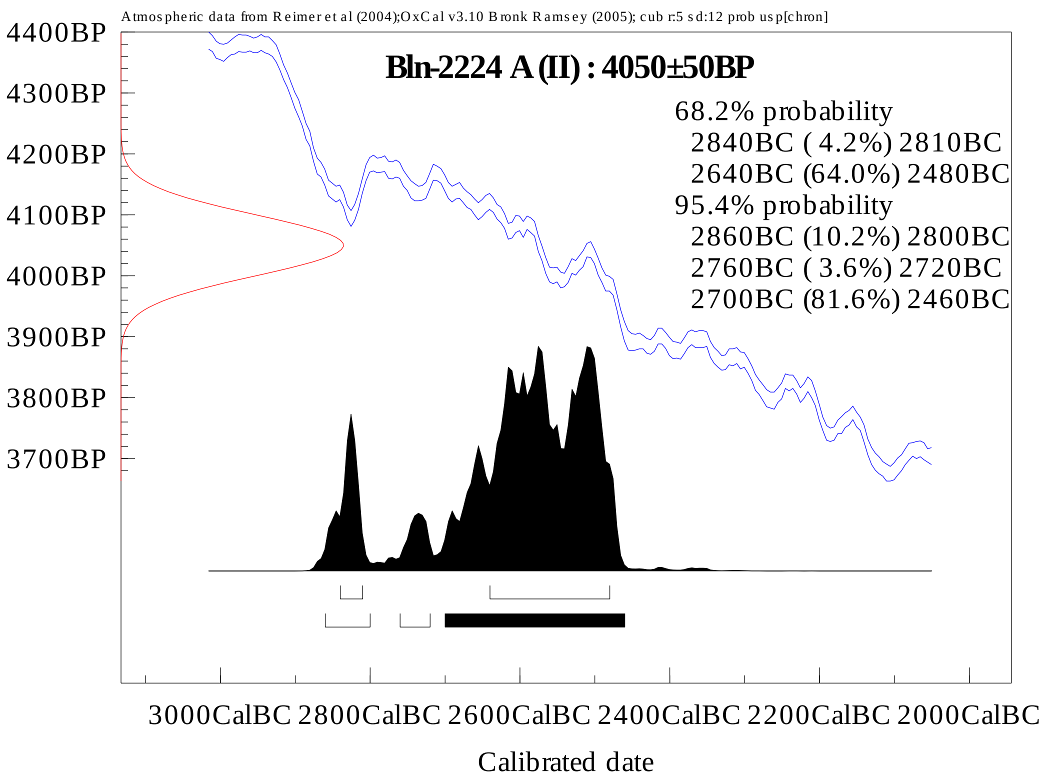

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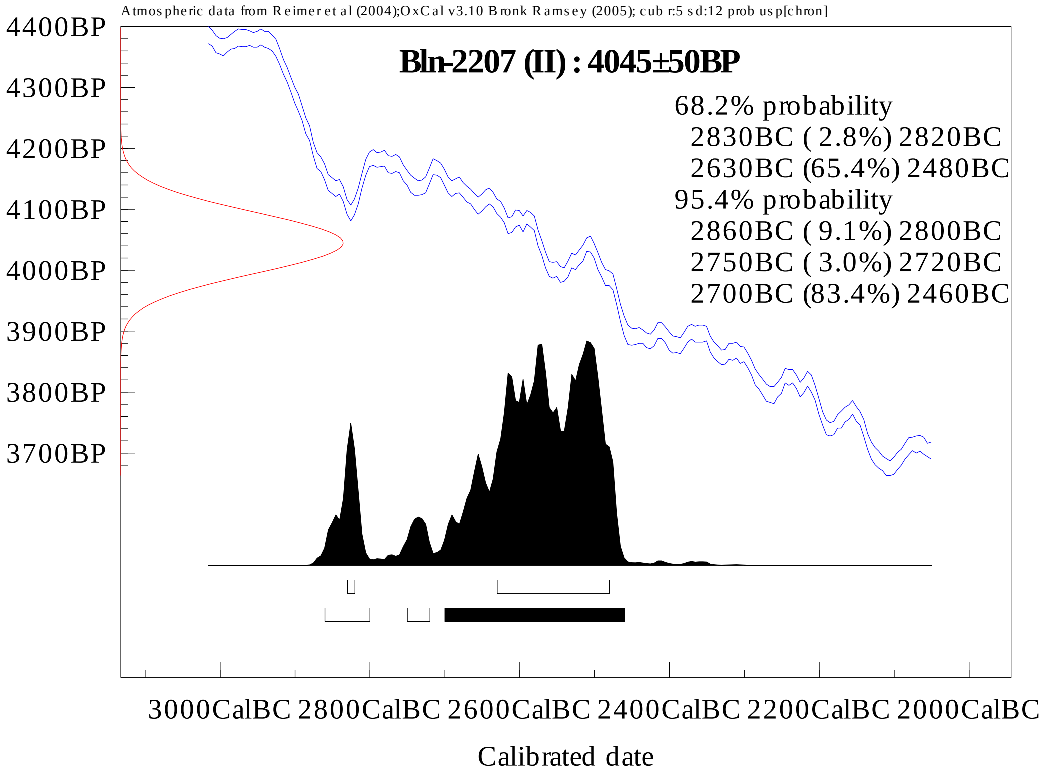

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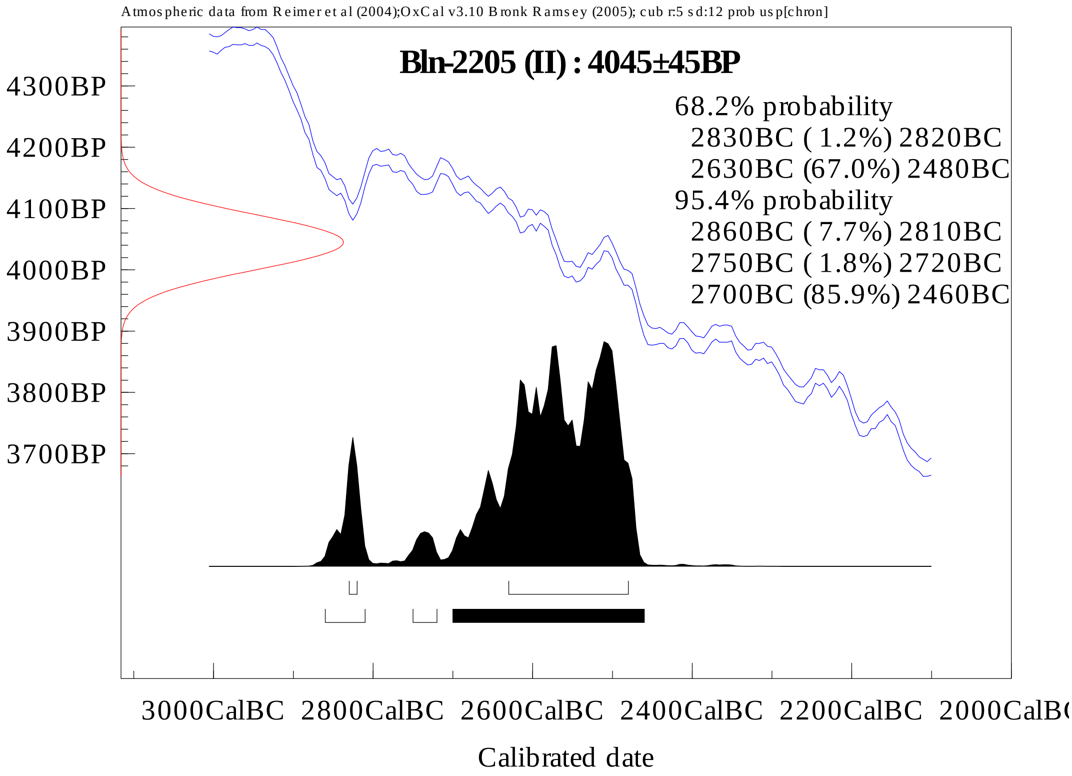

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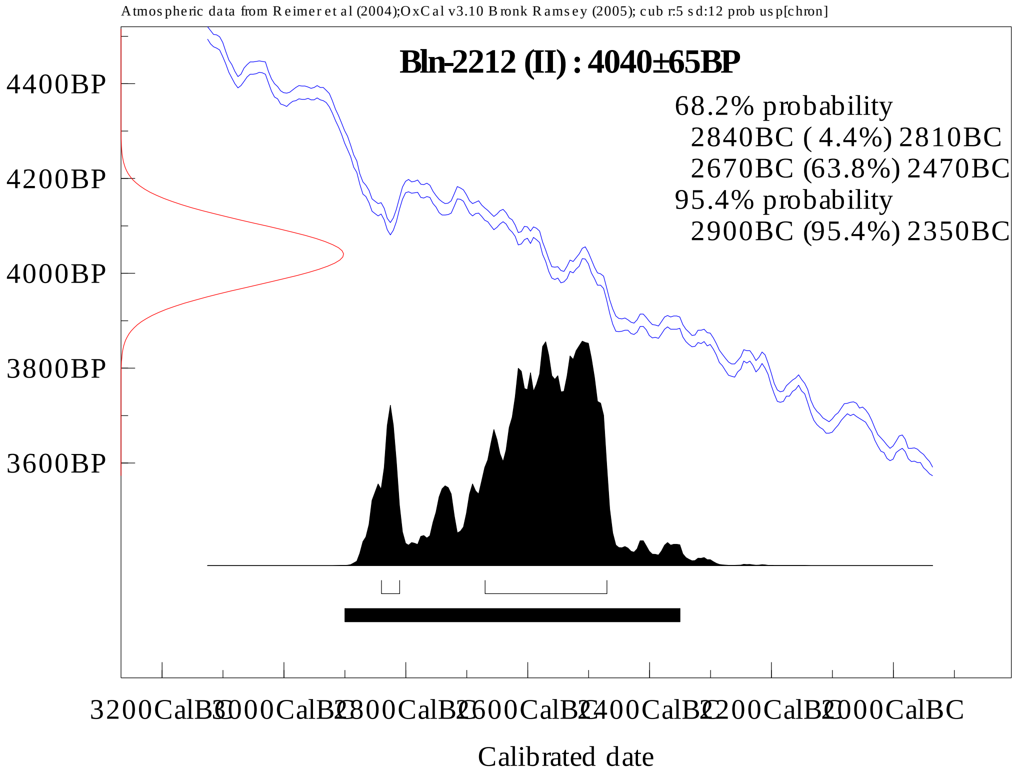

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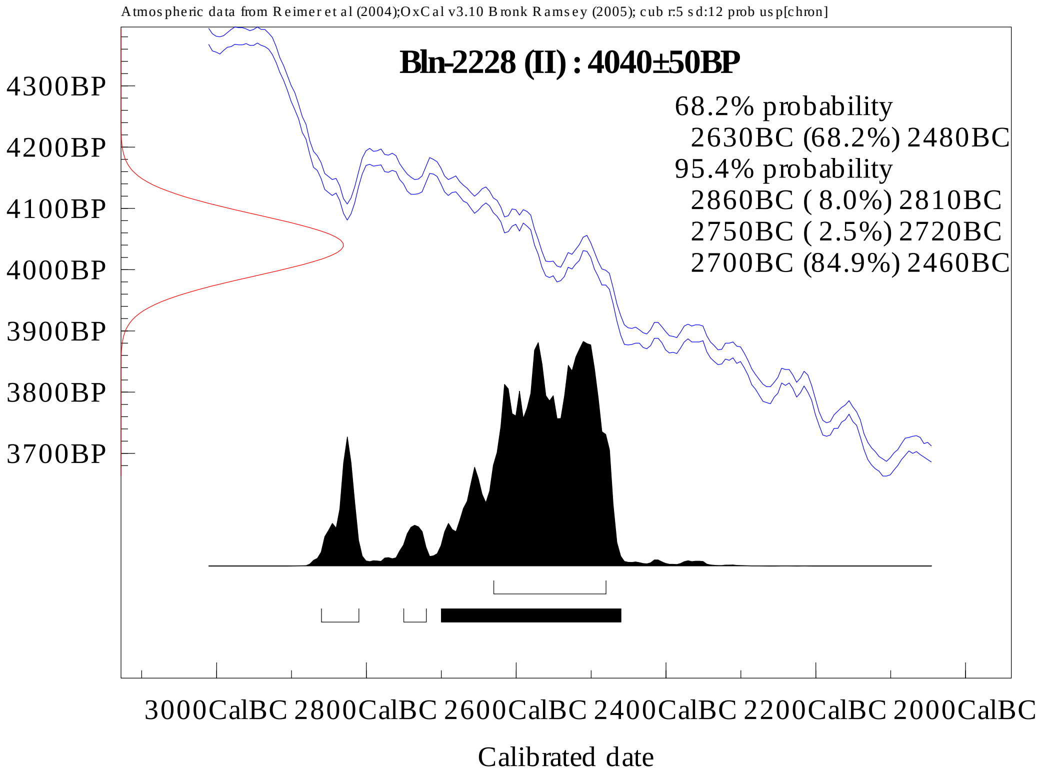

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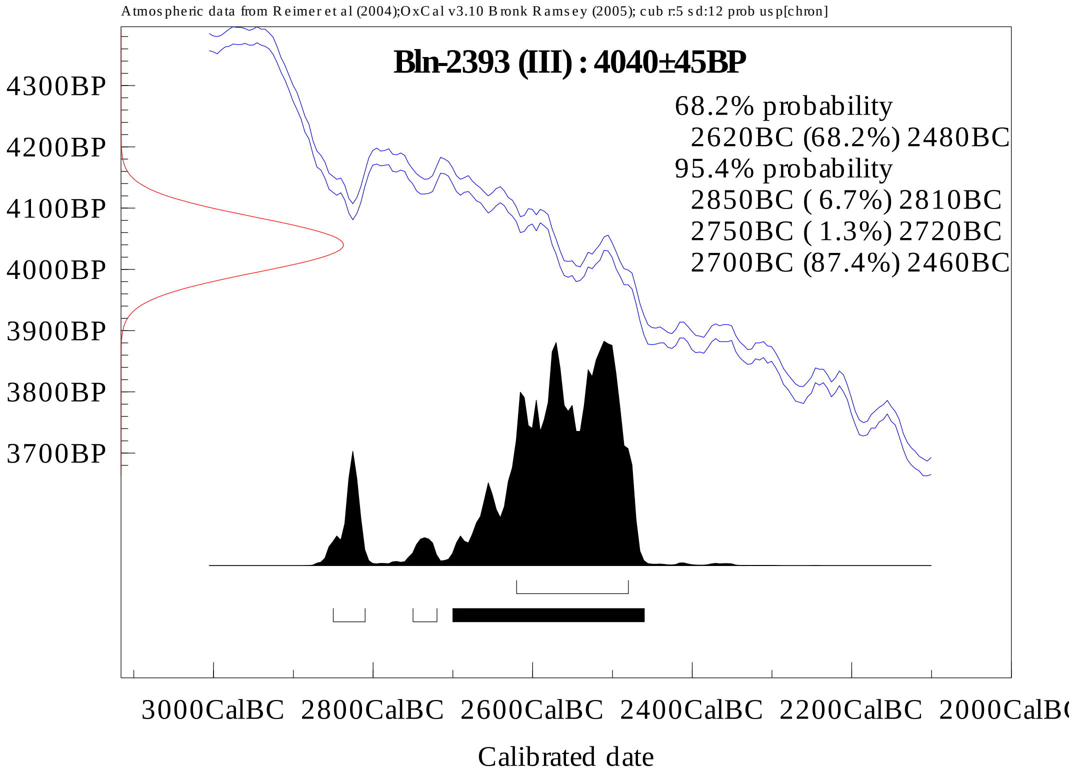

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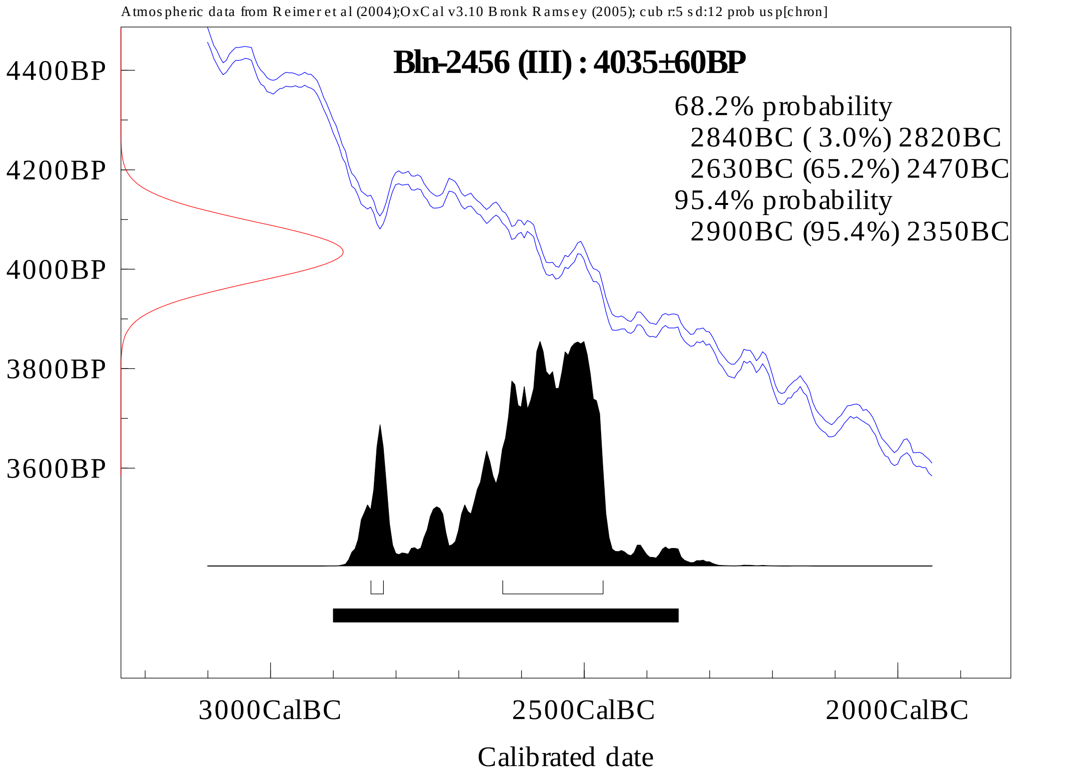
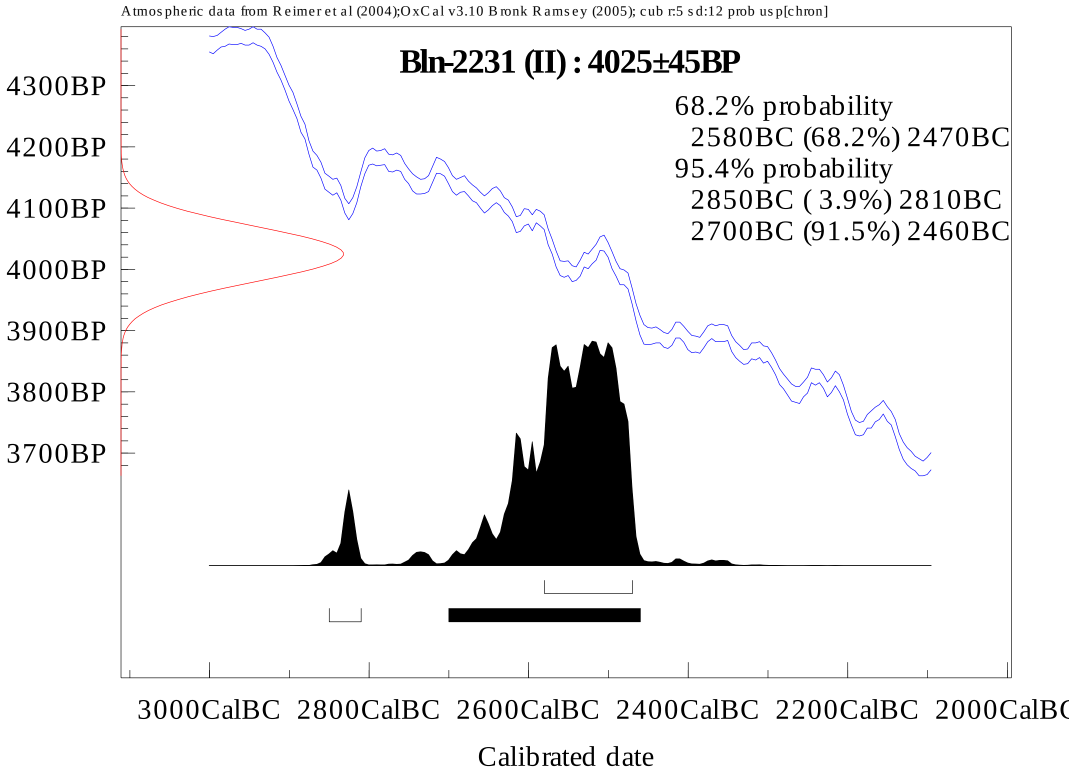
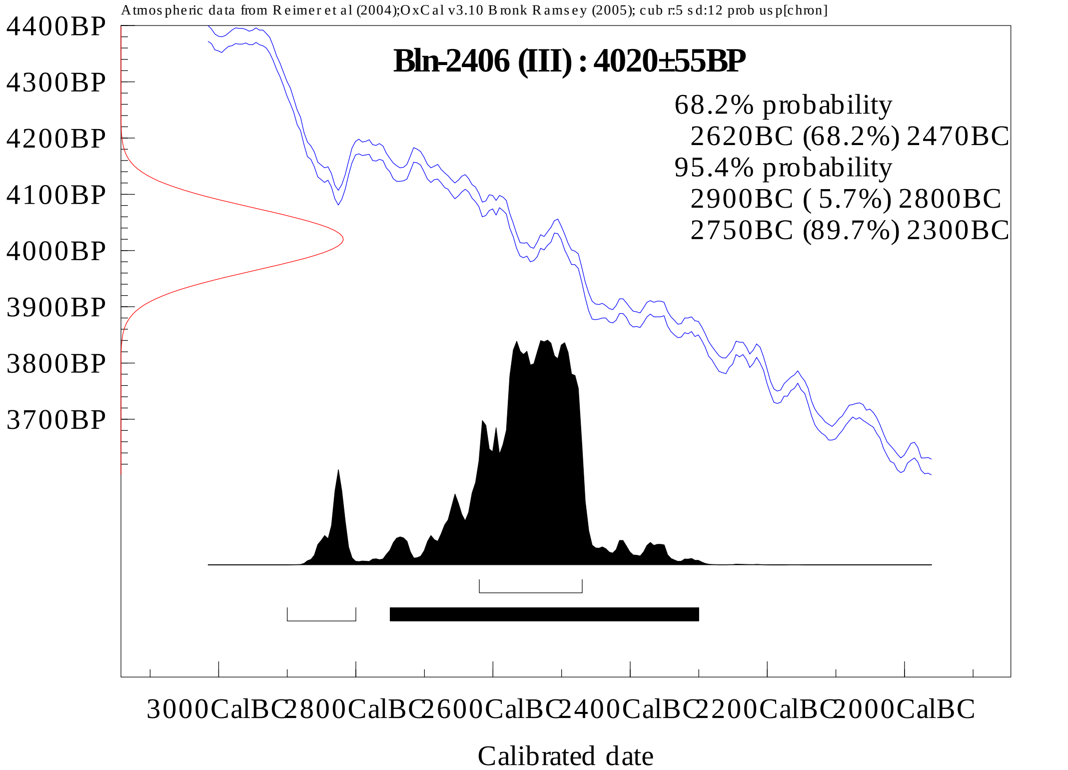


Demircihöyük DEM.55



Demircihöyük DEM.56



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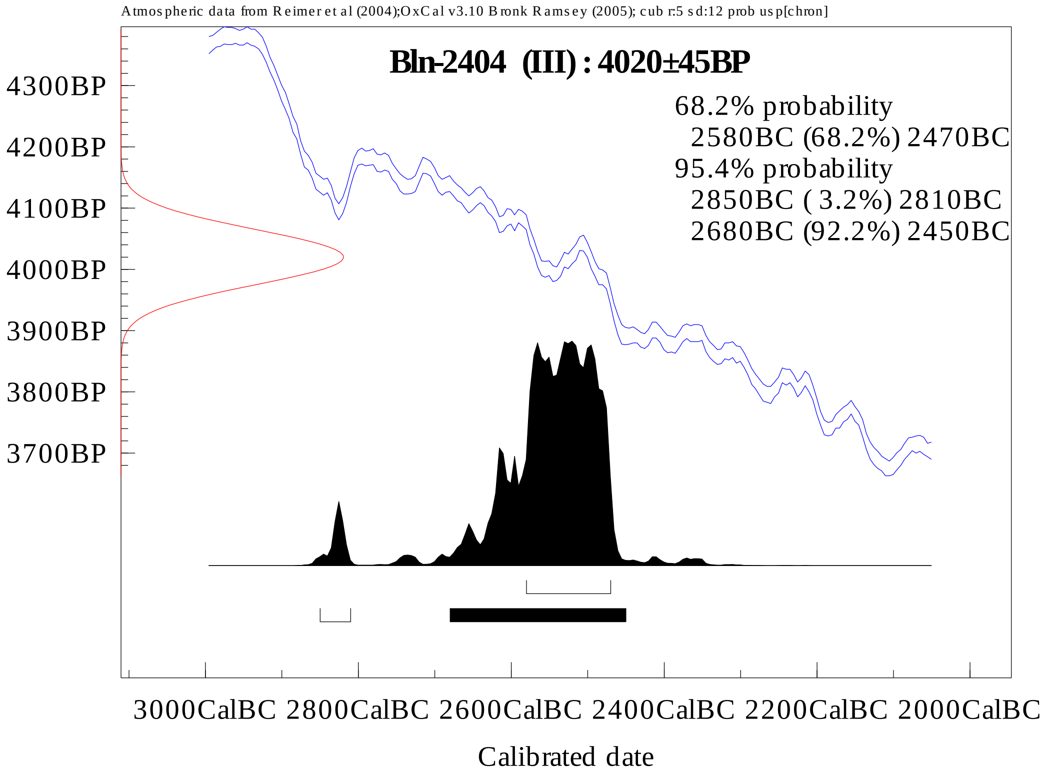
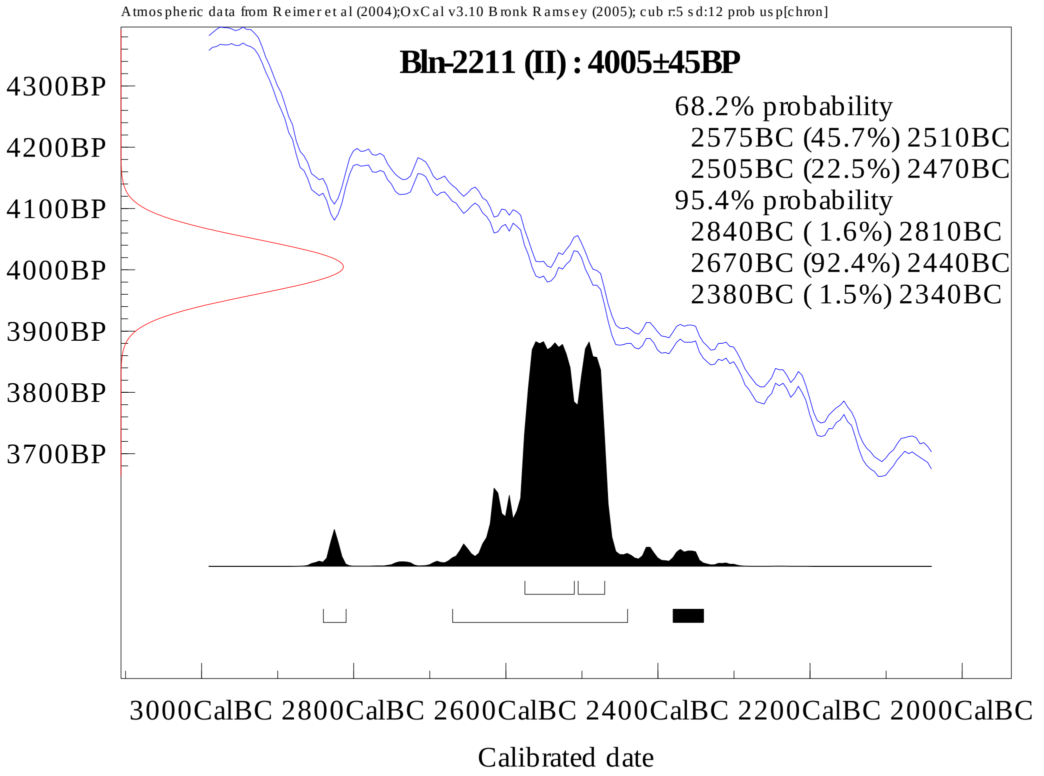


Demircihöyük DEM.58



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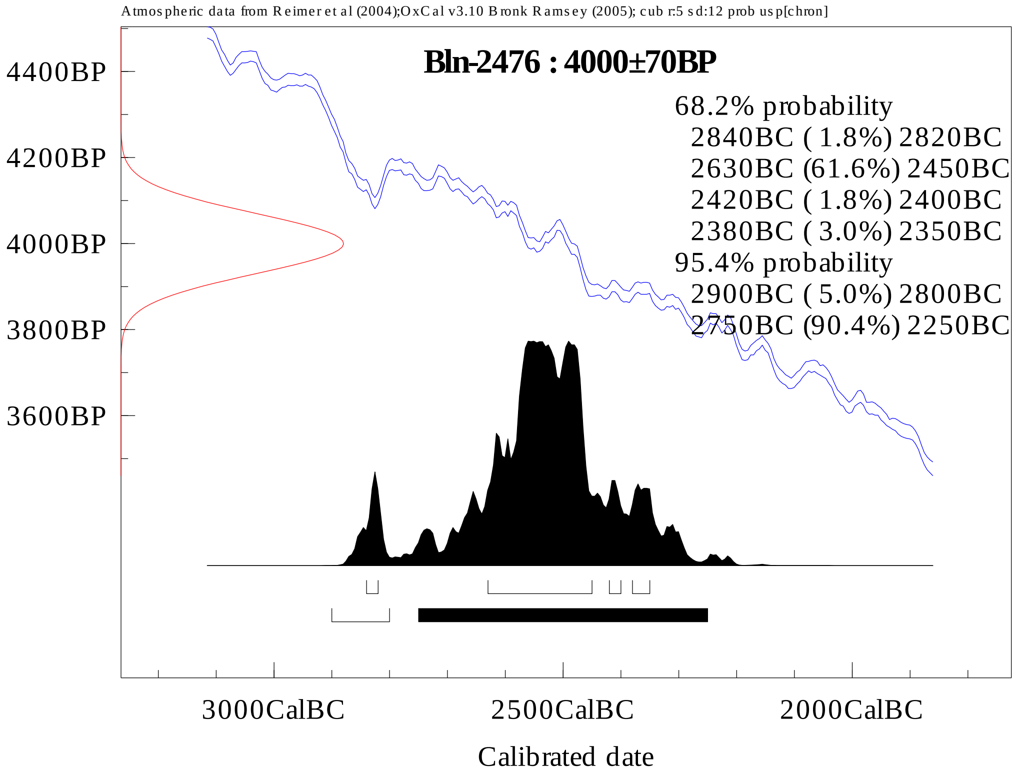

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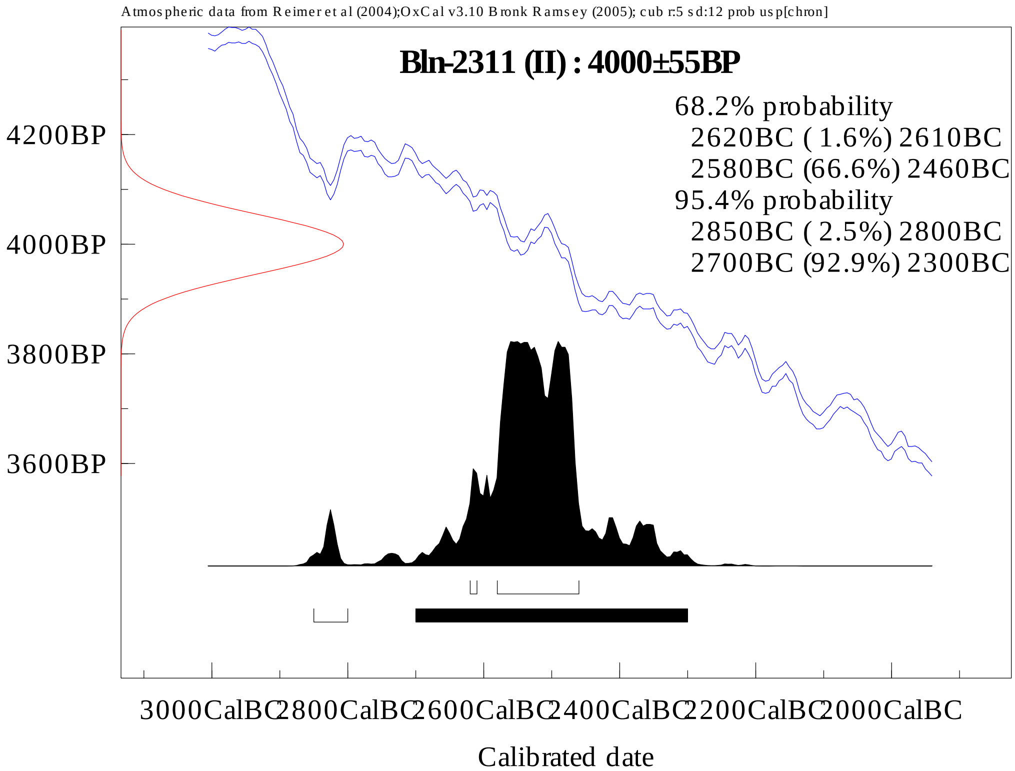

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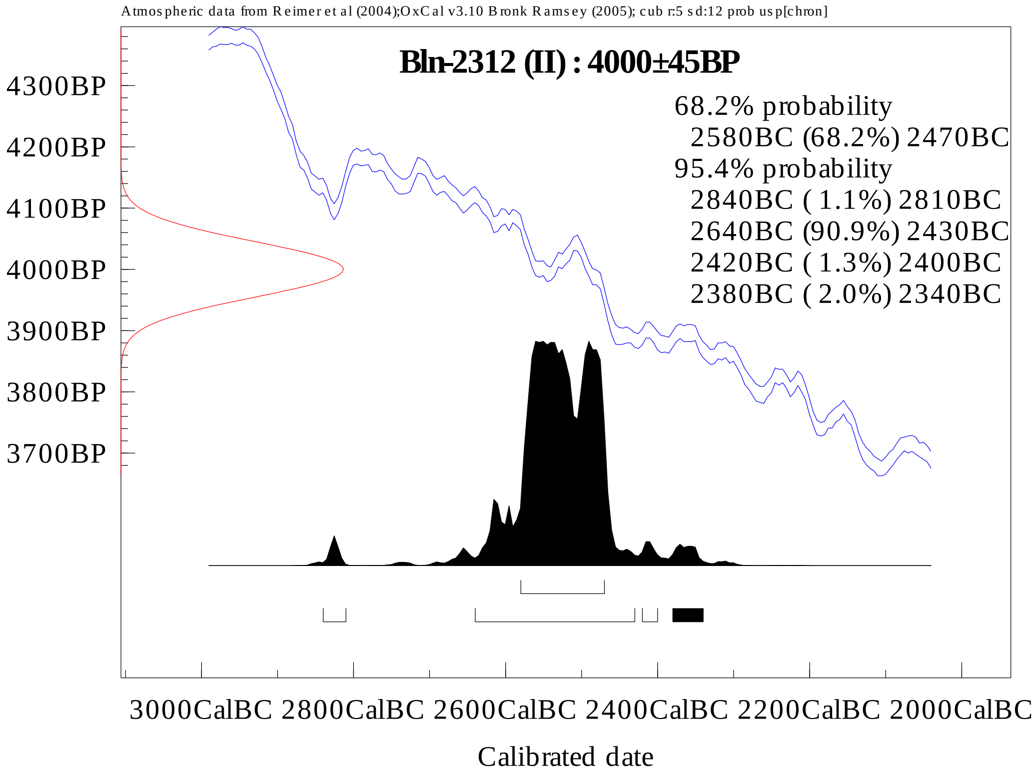

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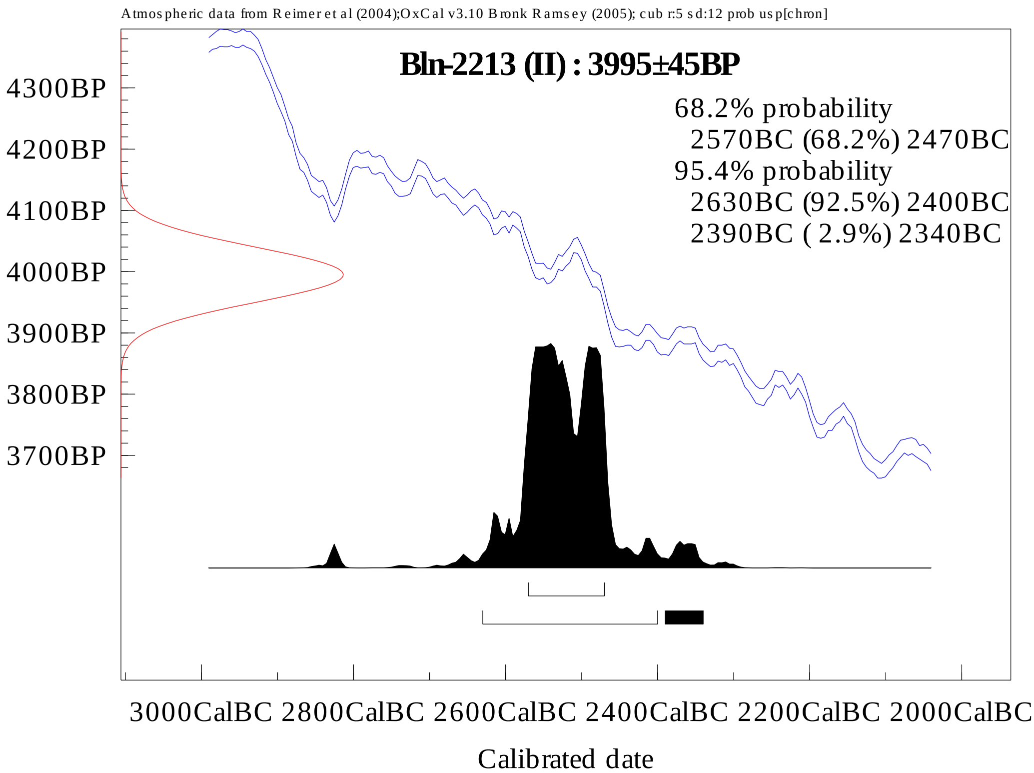

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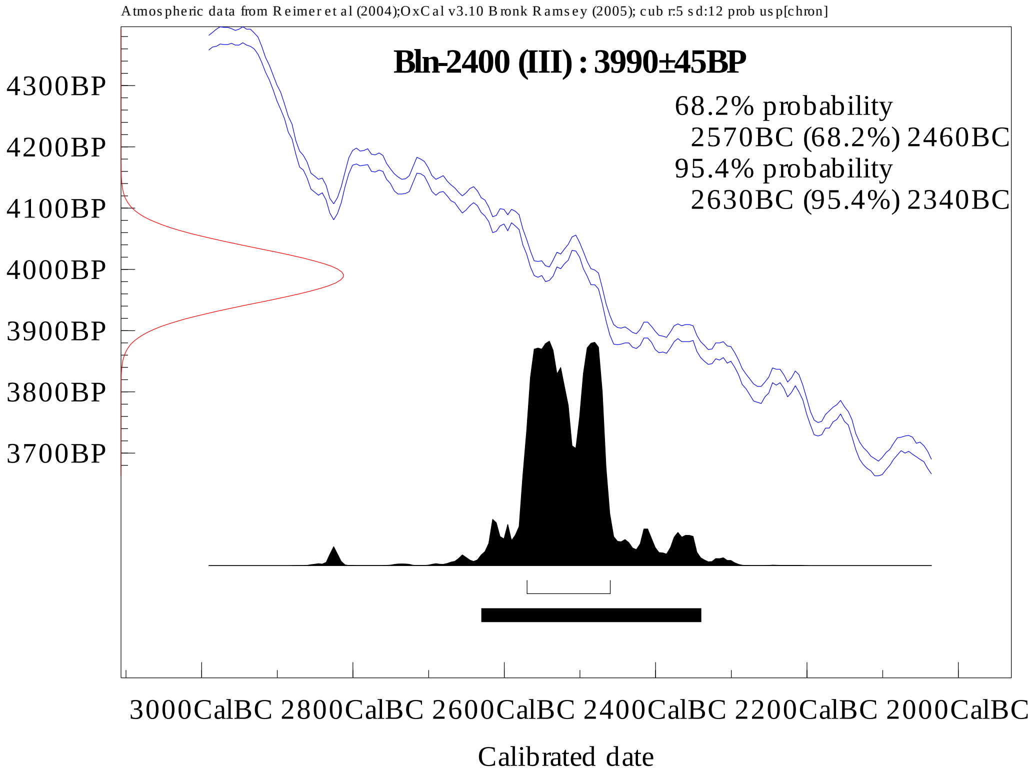

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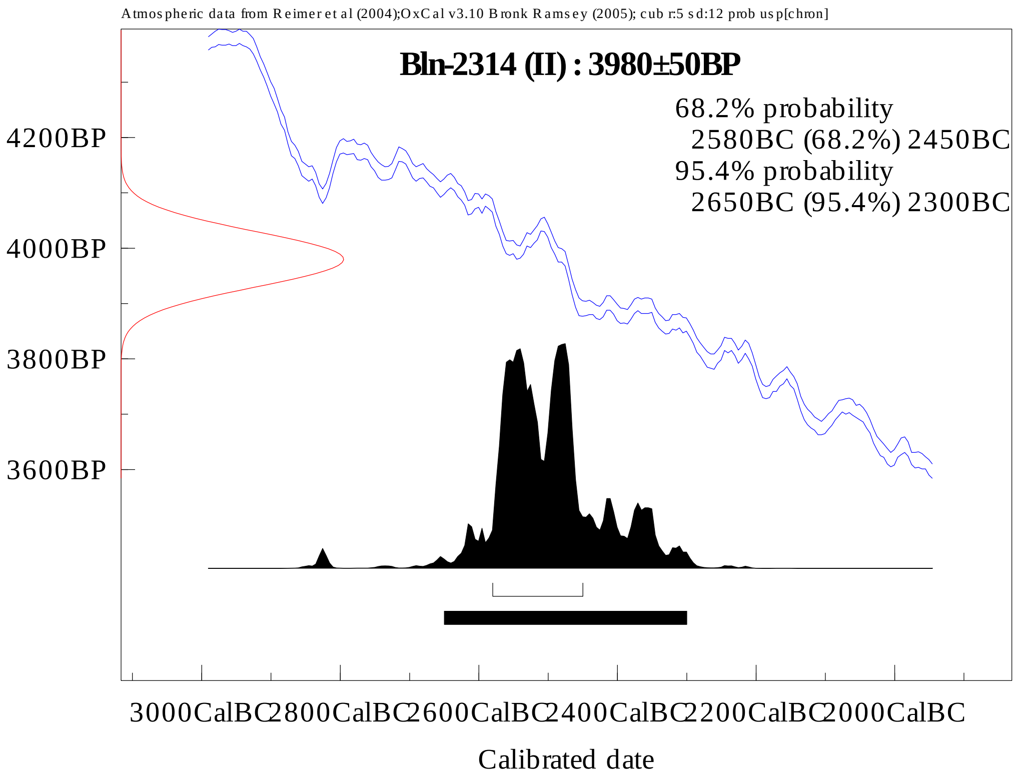

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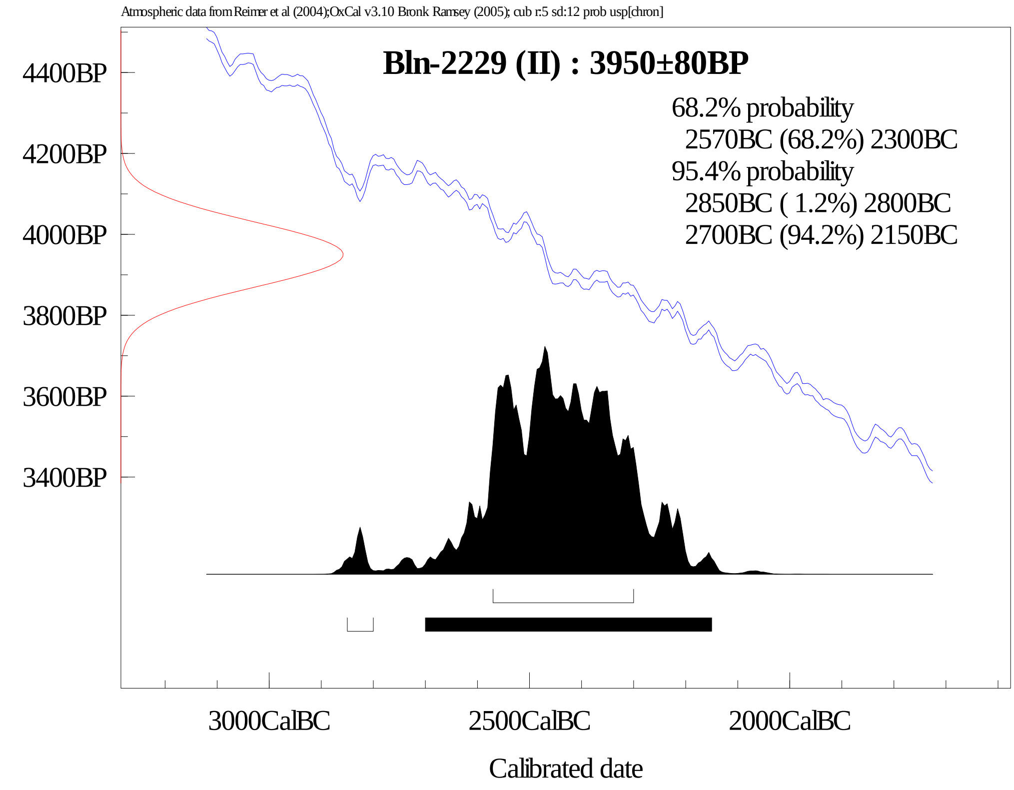

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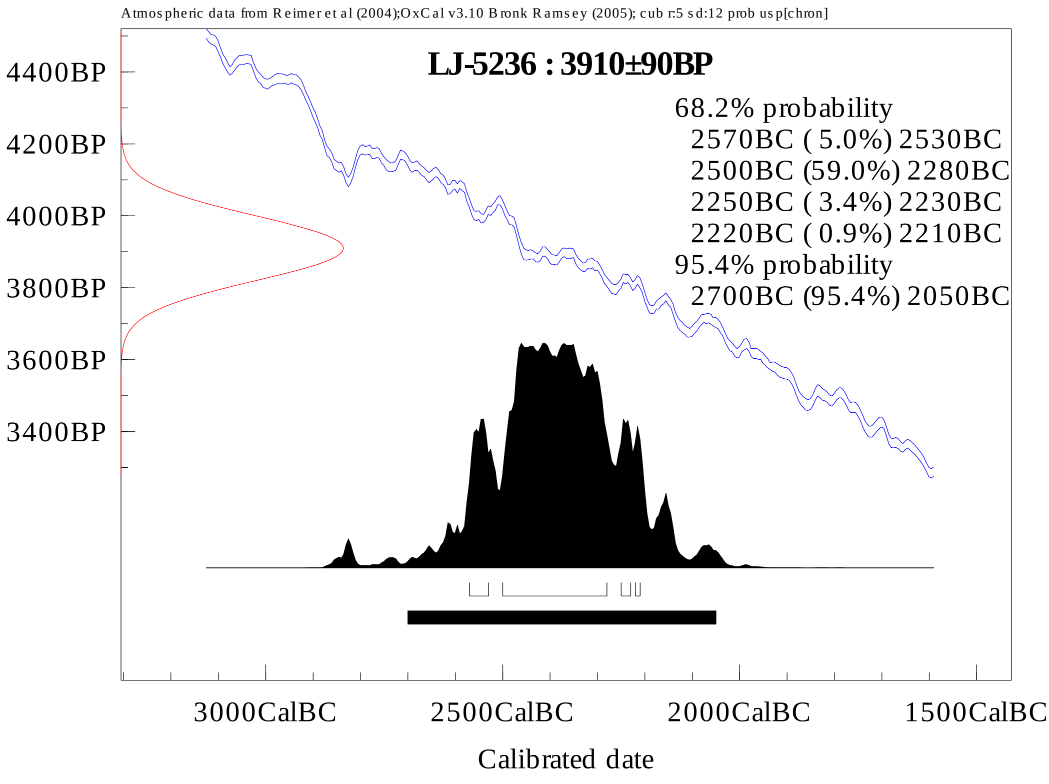
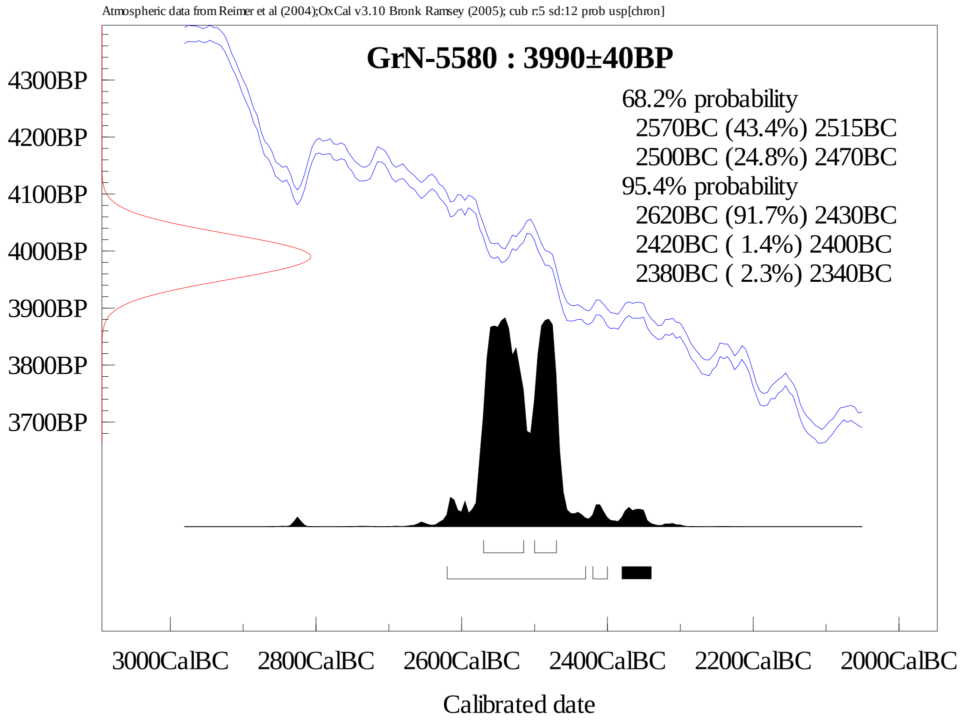


Gedikli Höyük

Gedikli Höyük GED.1



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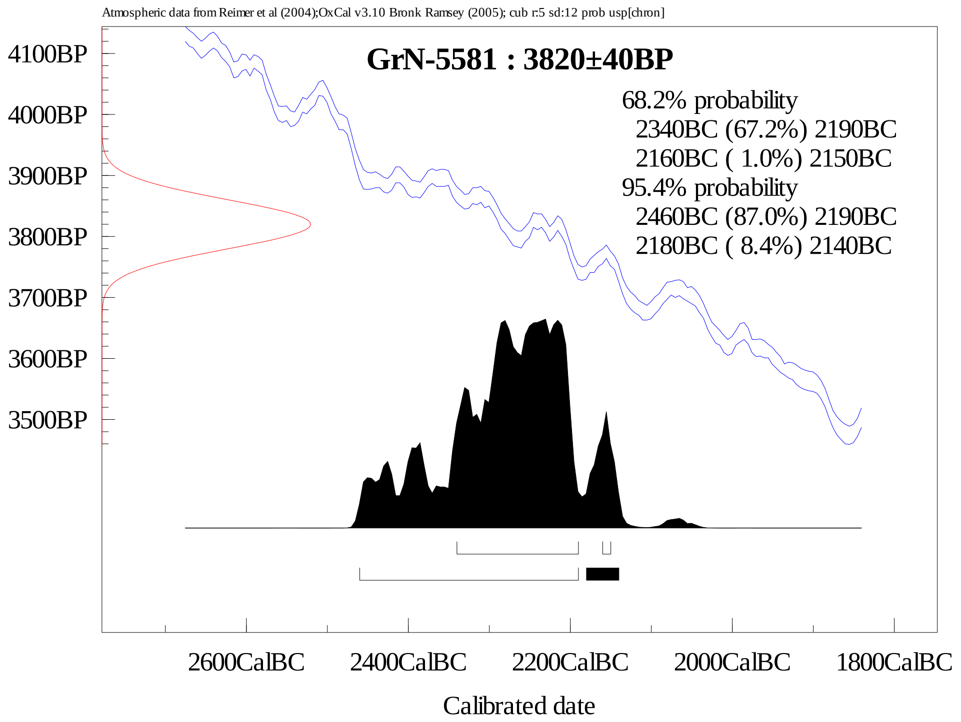
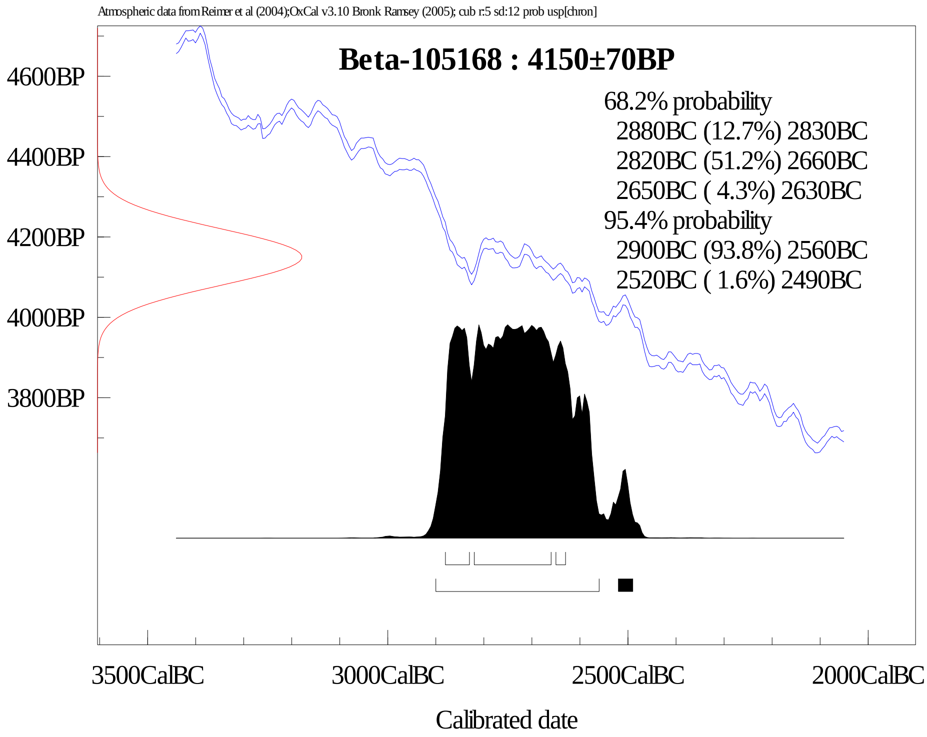
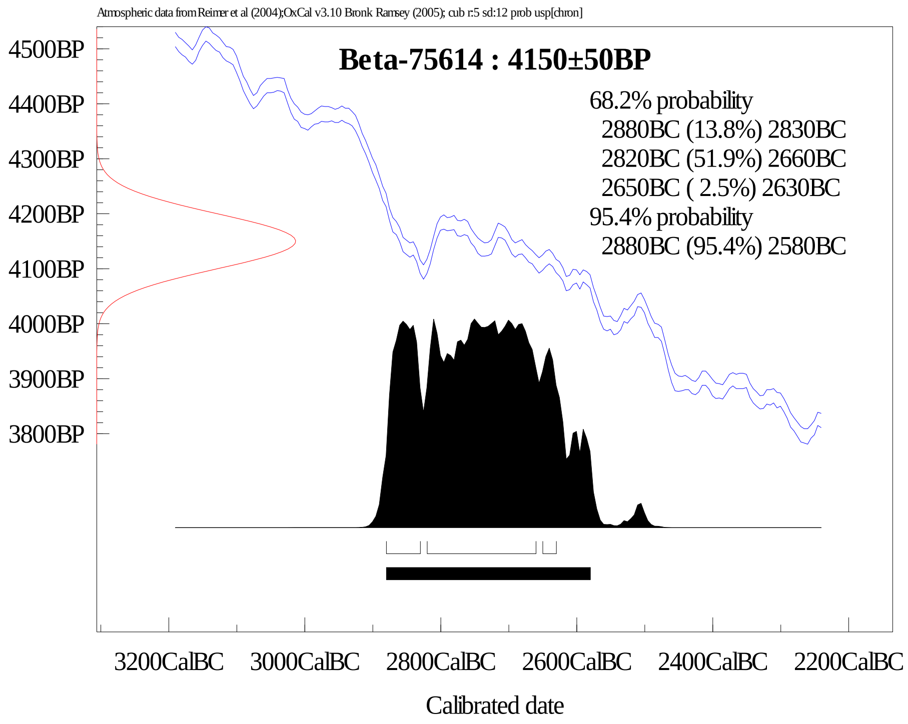


Göltepe

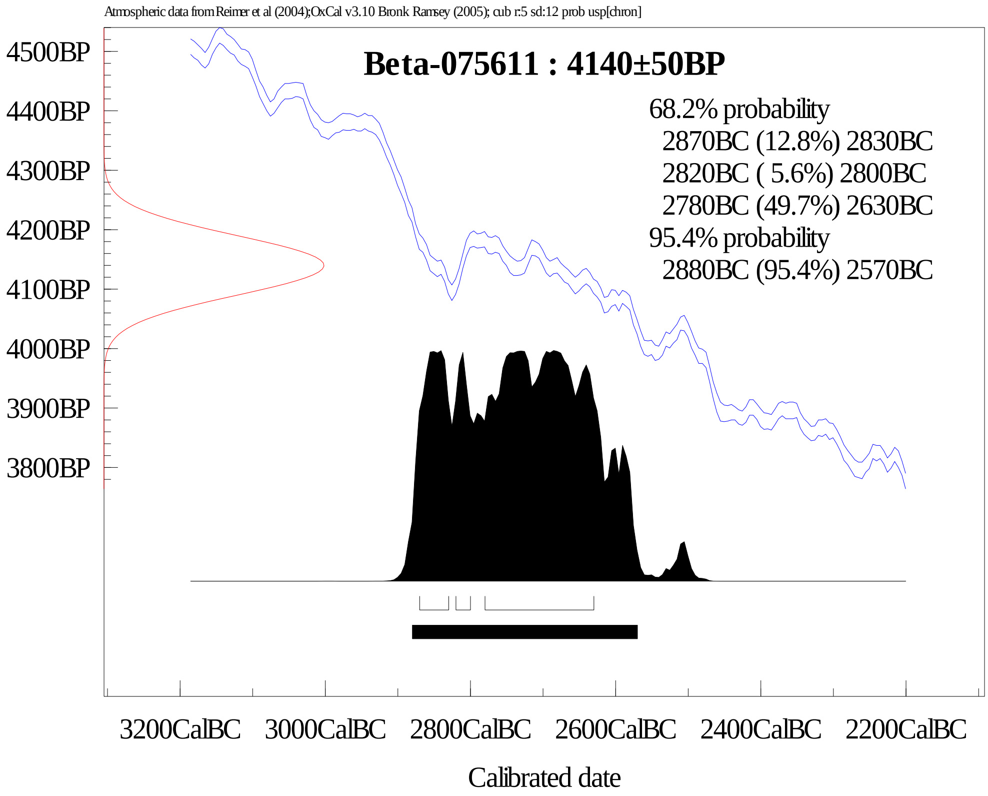
Göltepe GOL.1



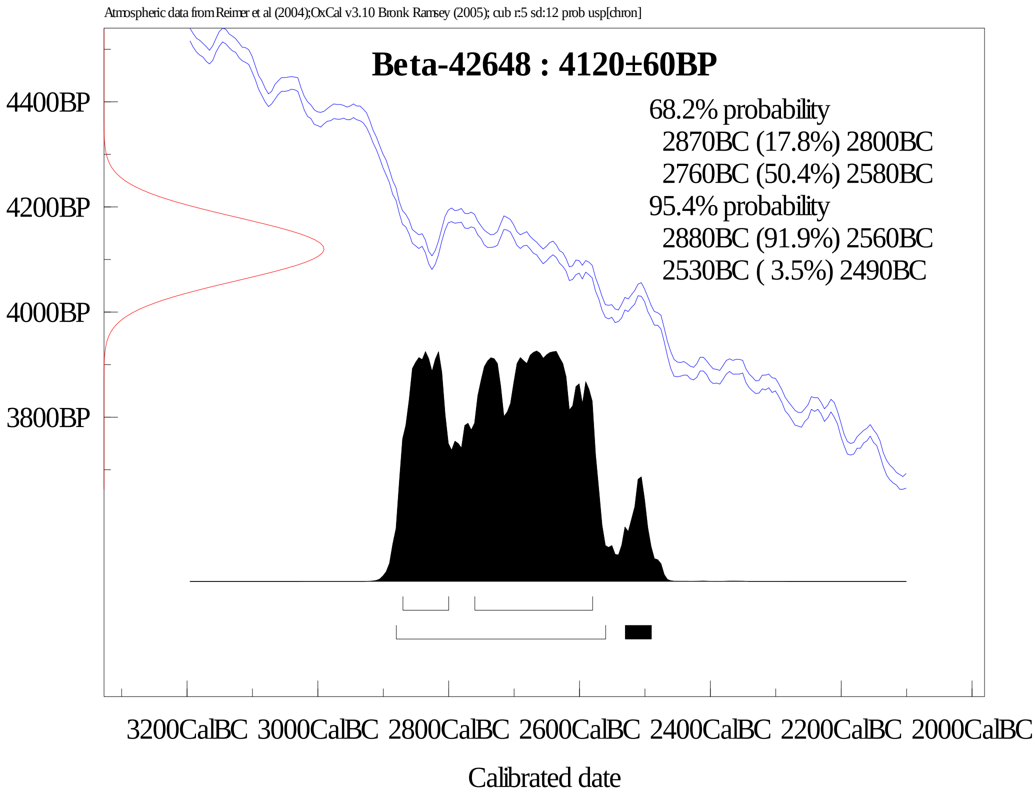
Göltepe GOL.2



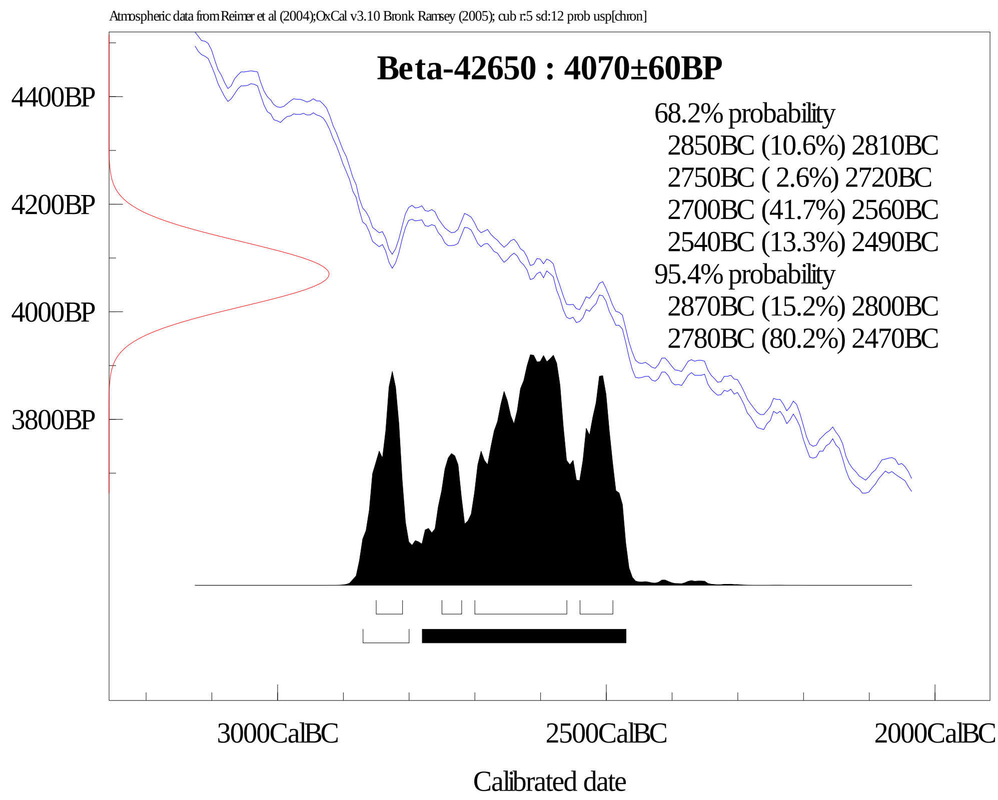
Göltepe GOL.3



Göltepe GOL.4



Göltepe GOL.5



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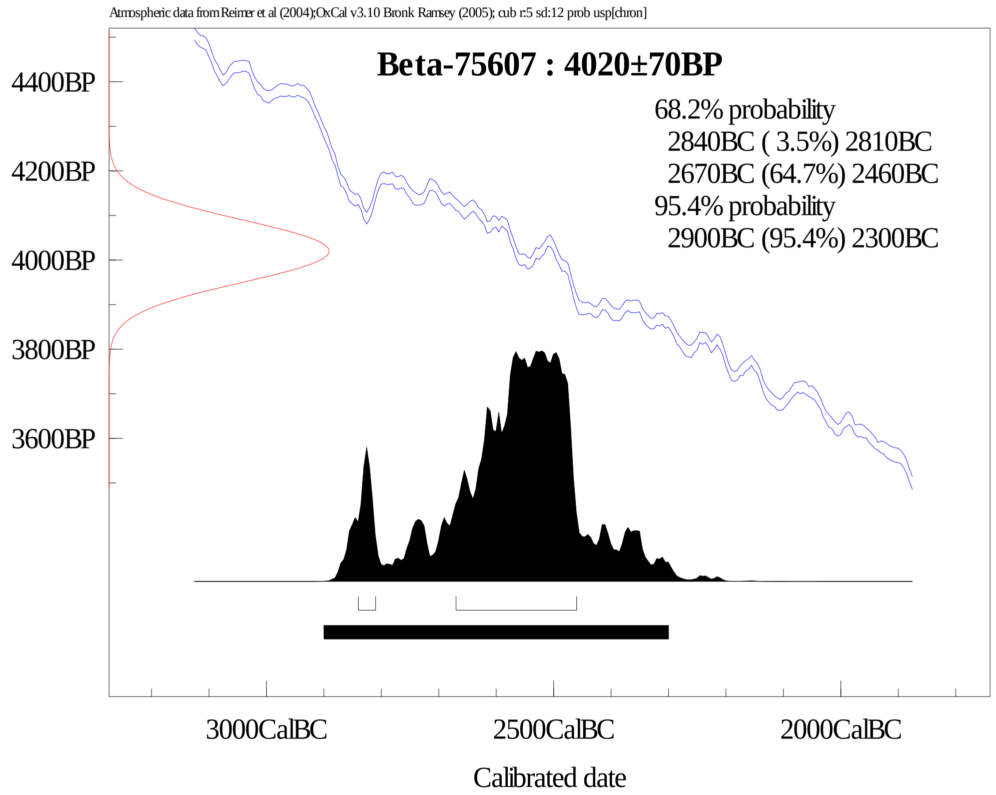

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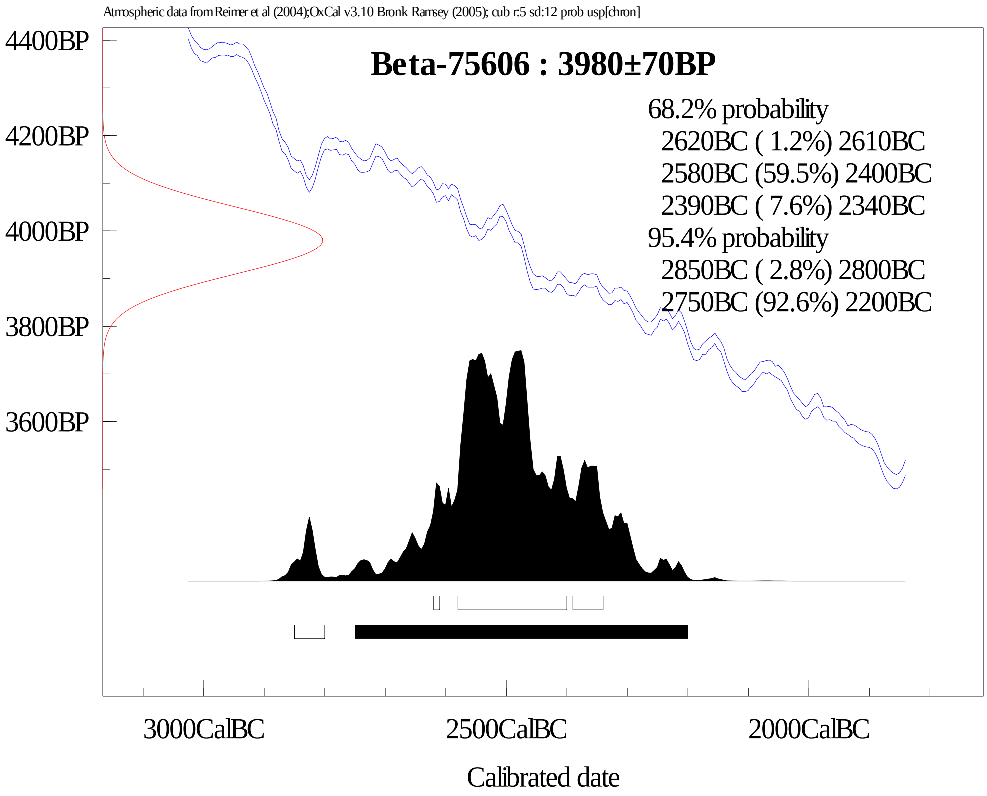

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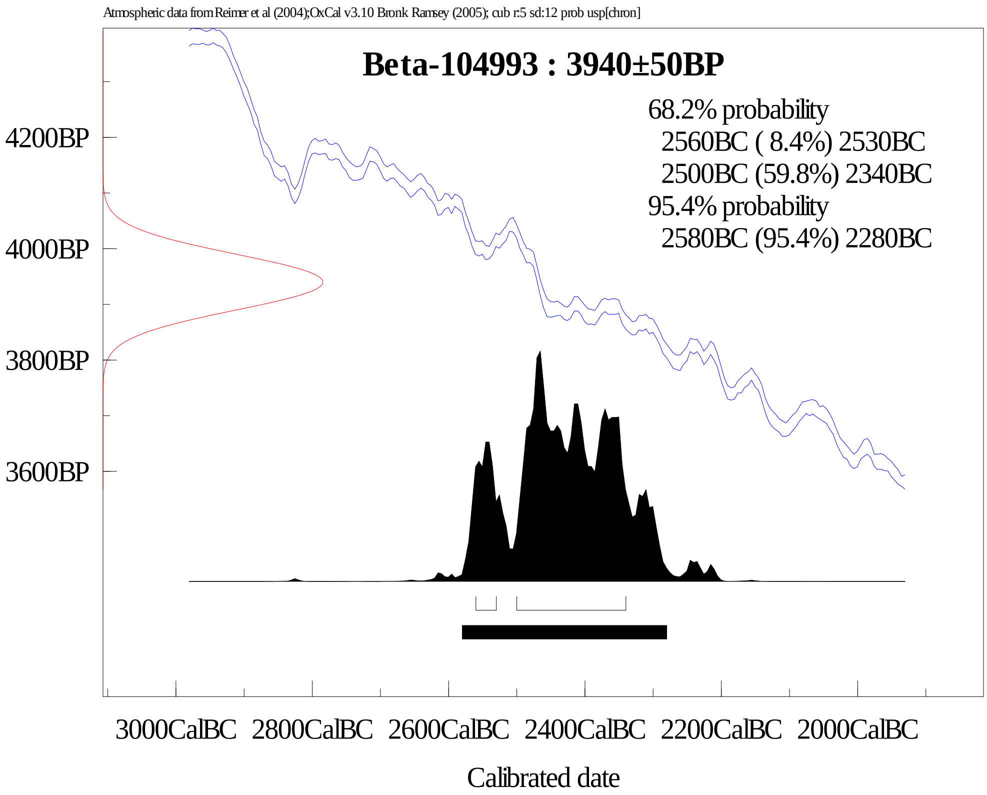

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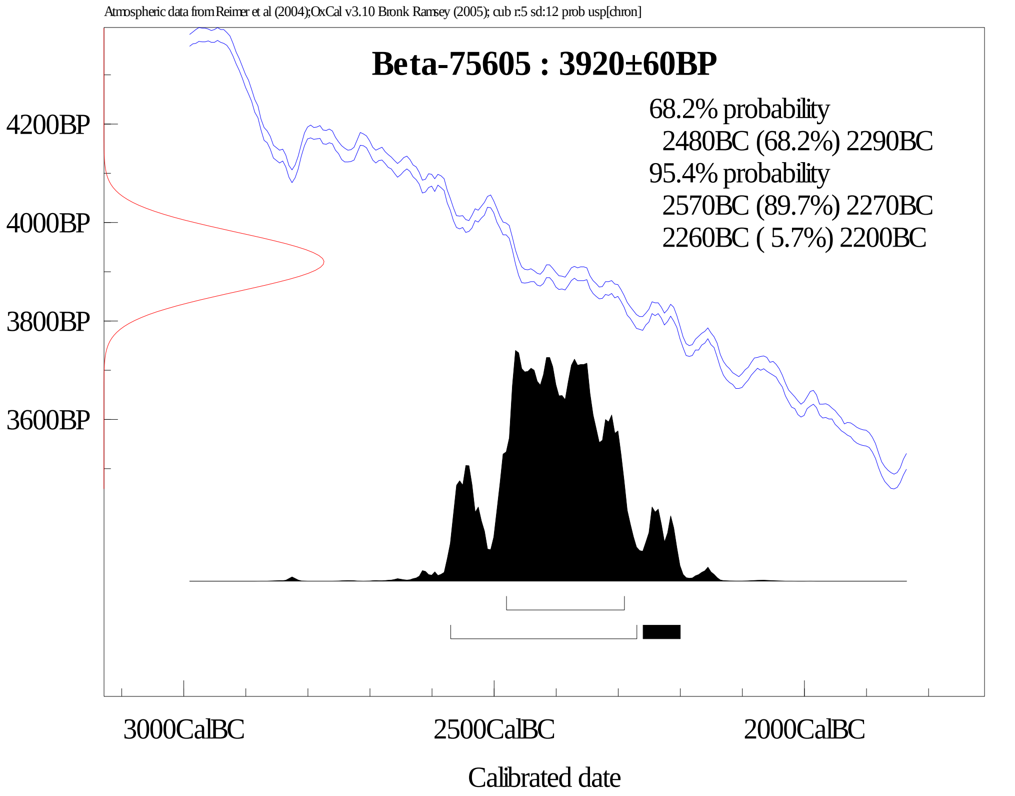

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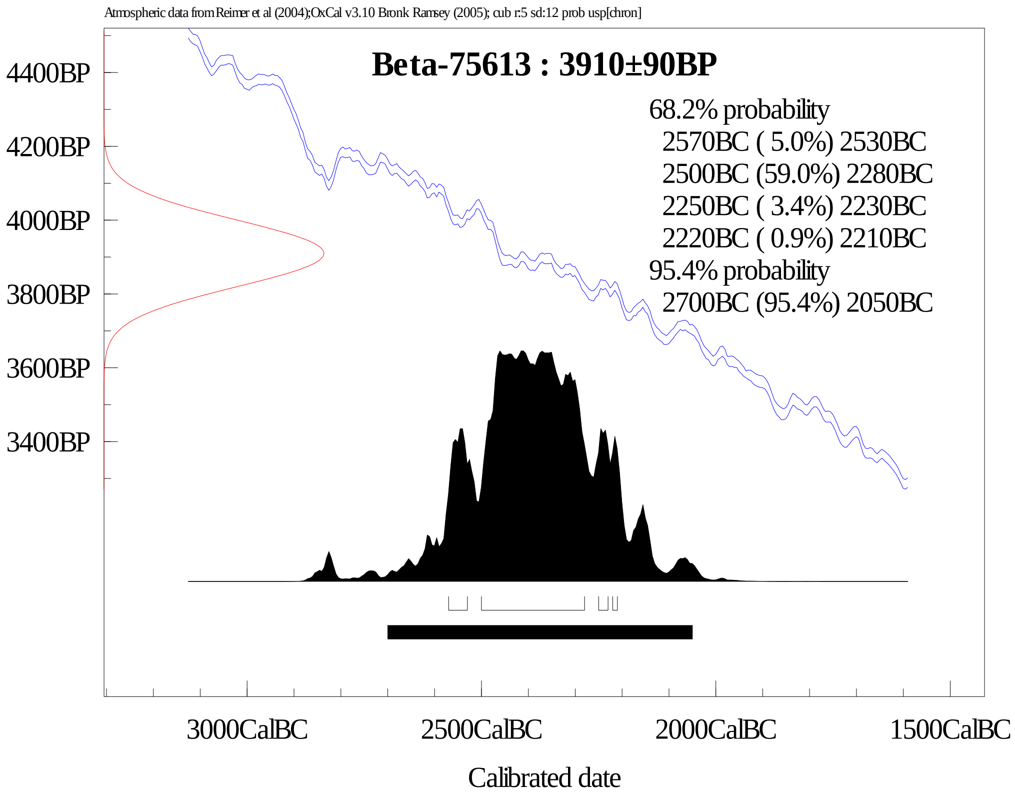

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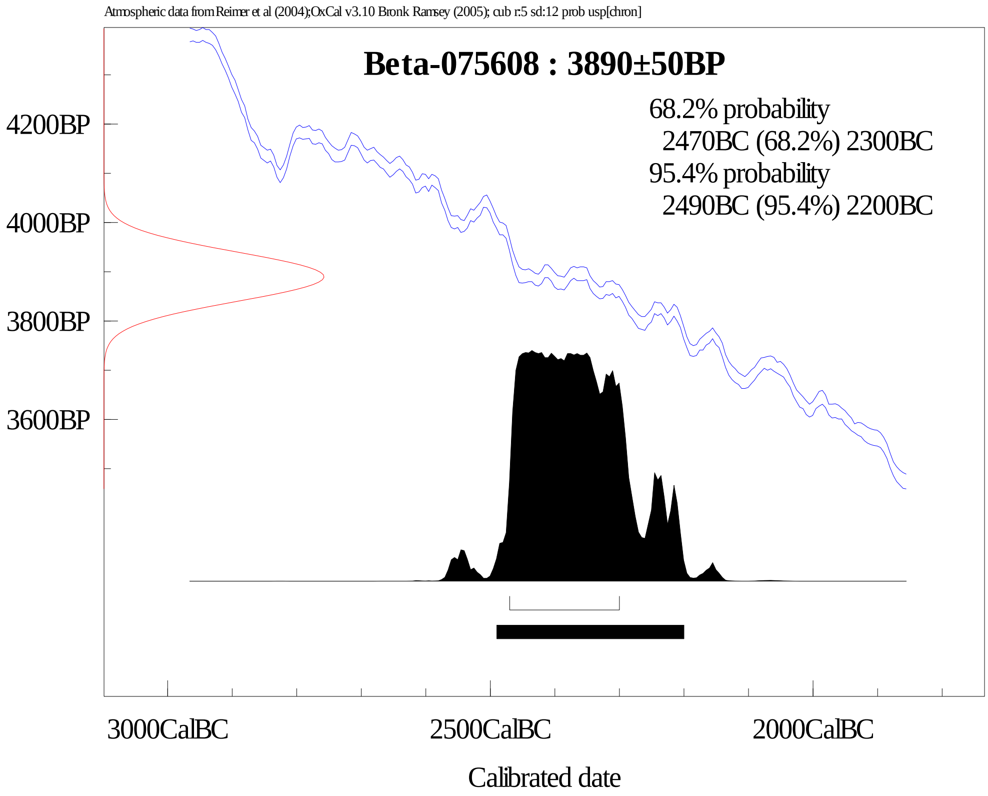

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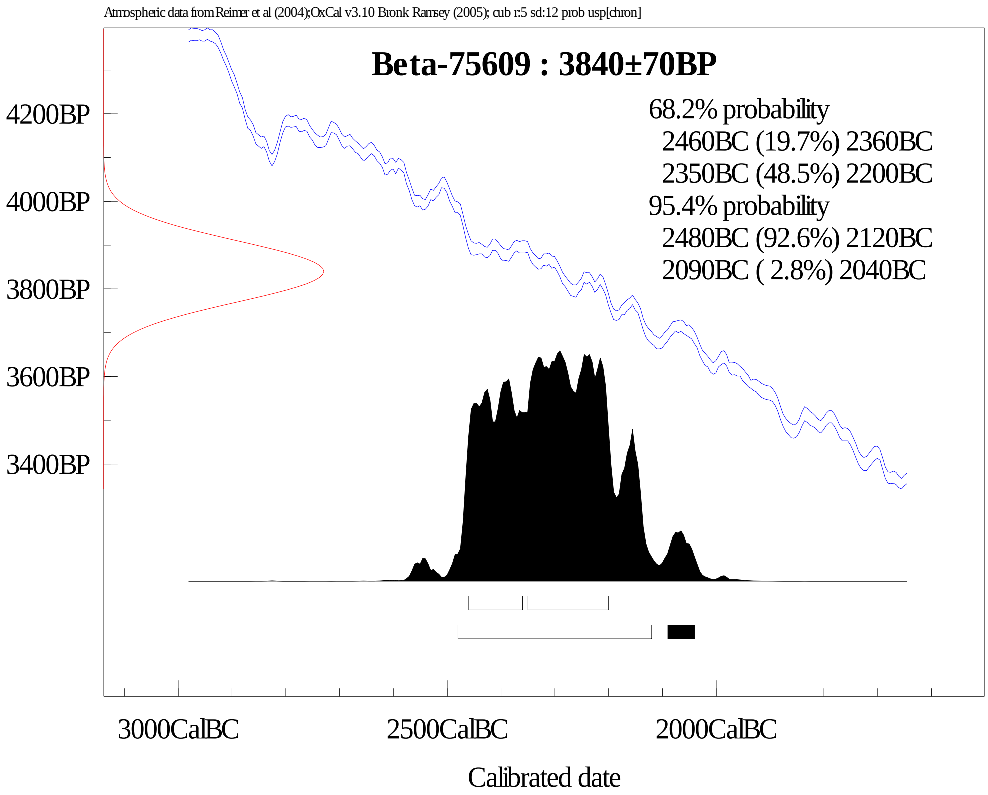

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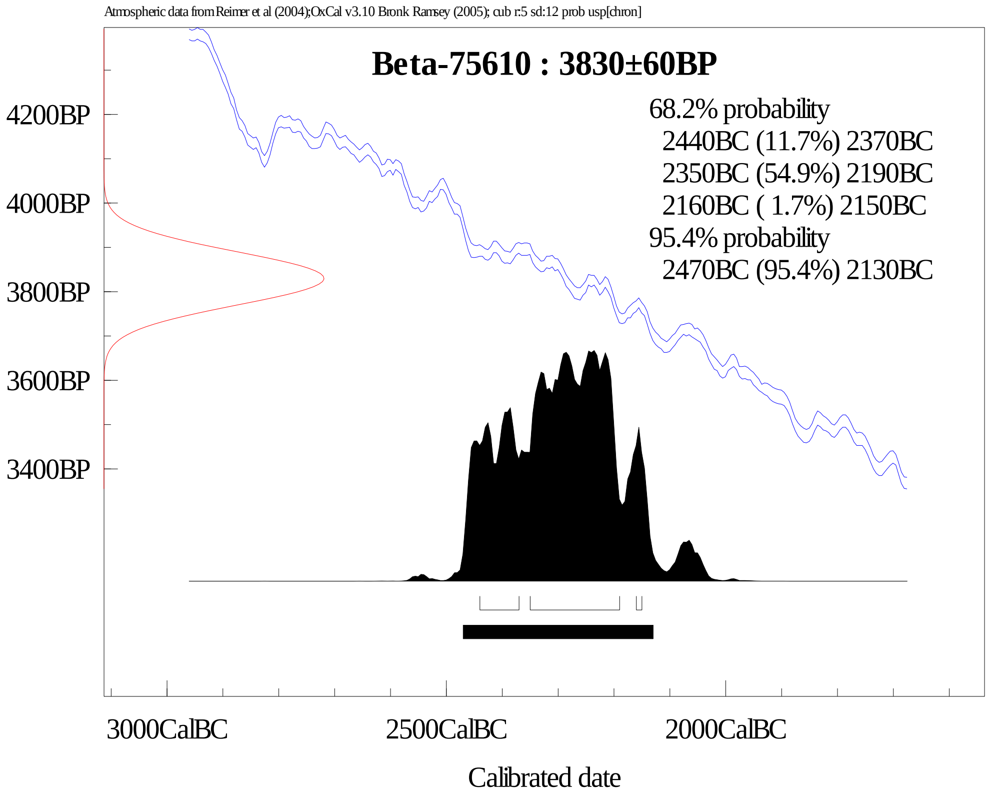

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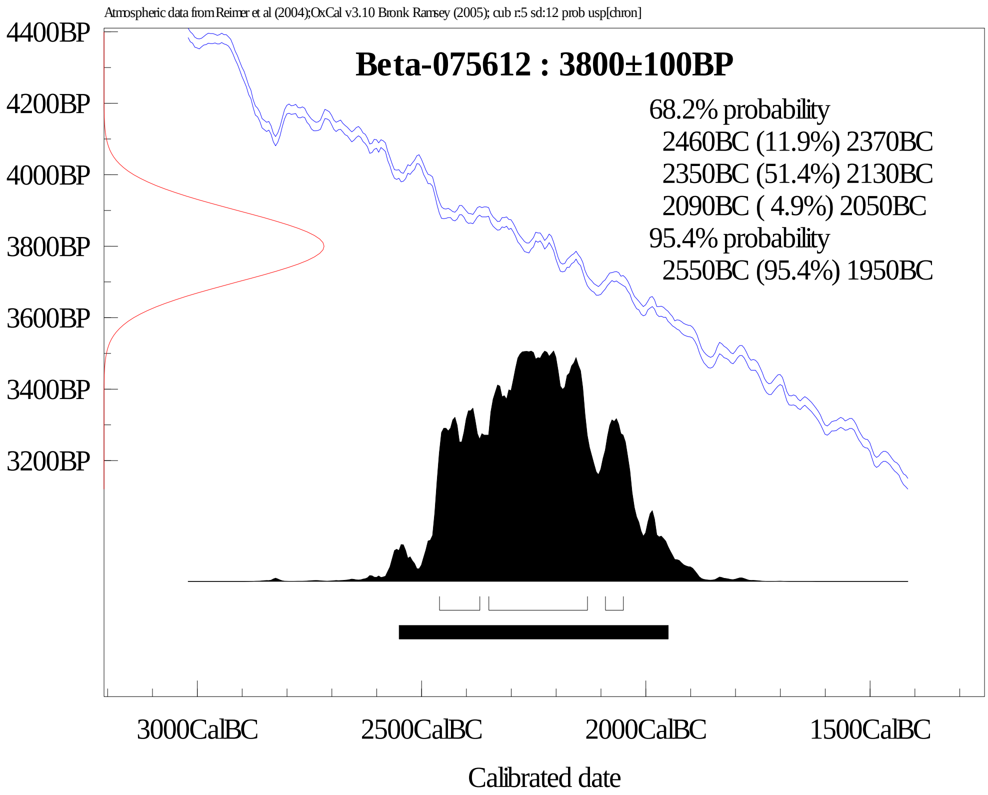

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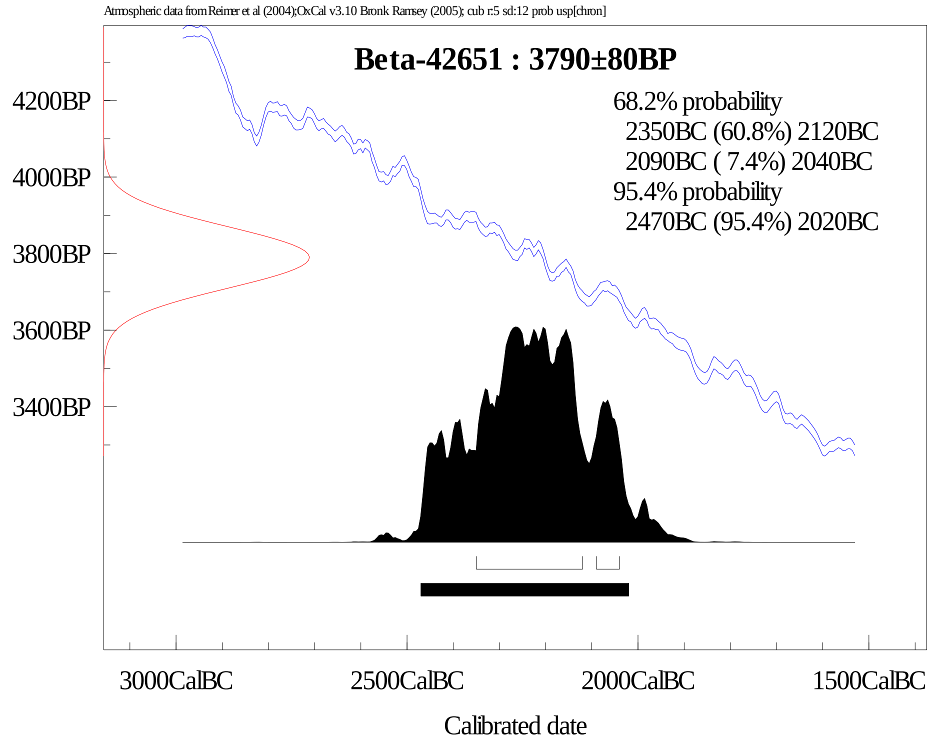
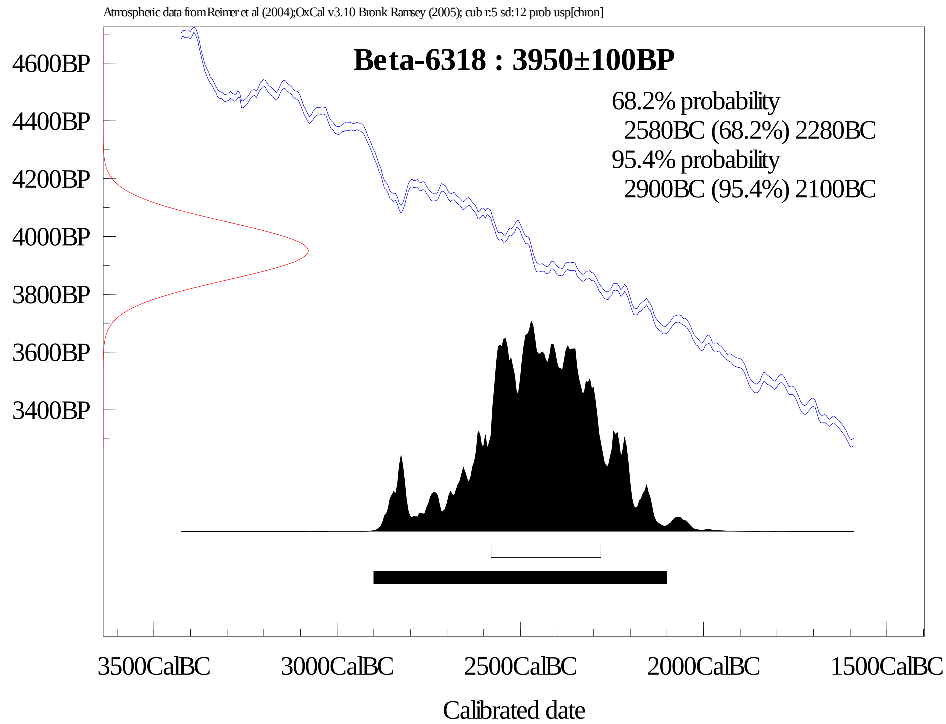


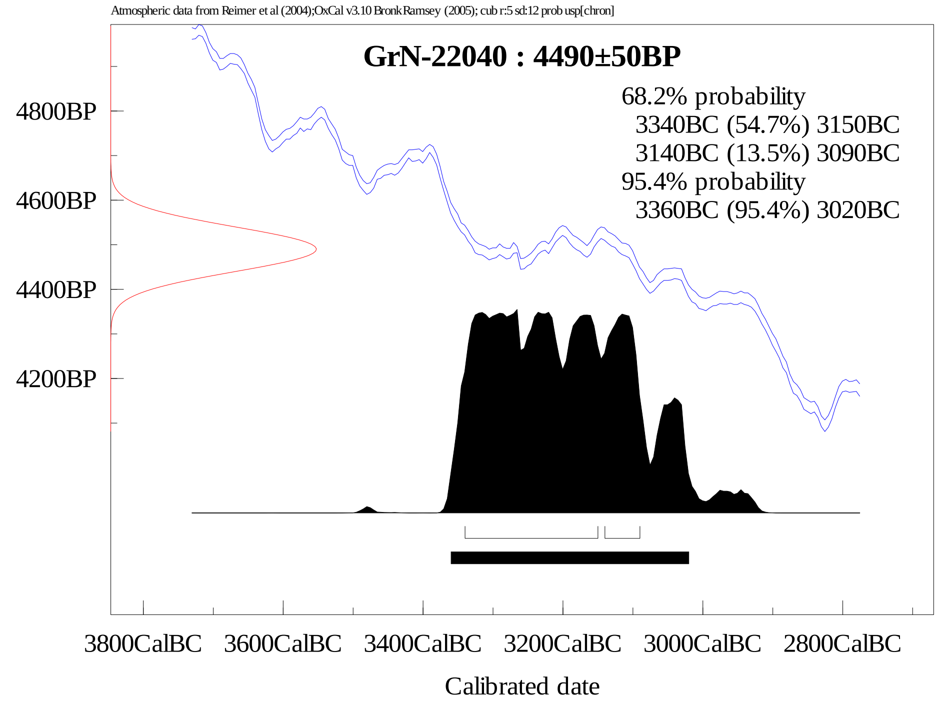
Gritille

Gritille GR.1



Hacılar Tepe

Hacılar Tepe HAC.1



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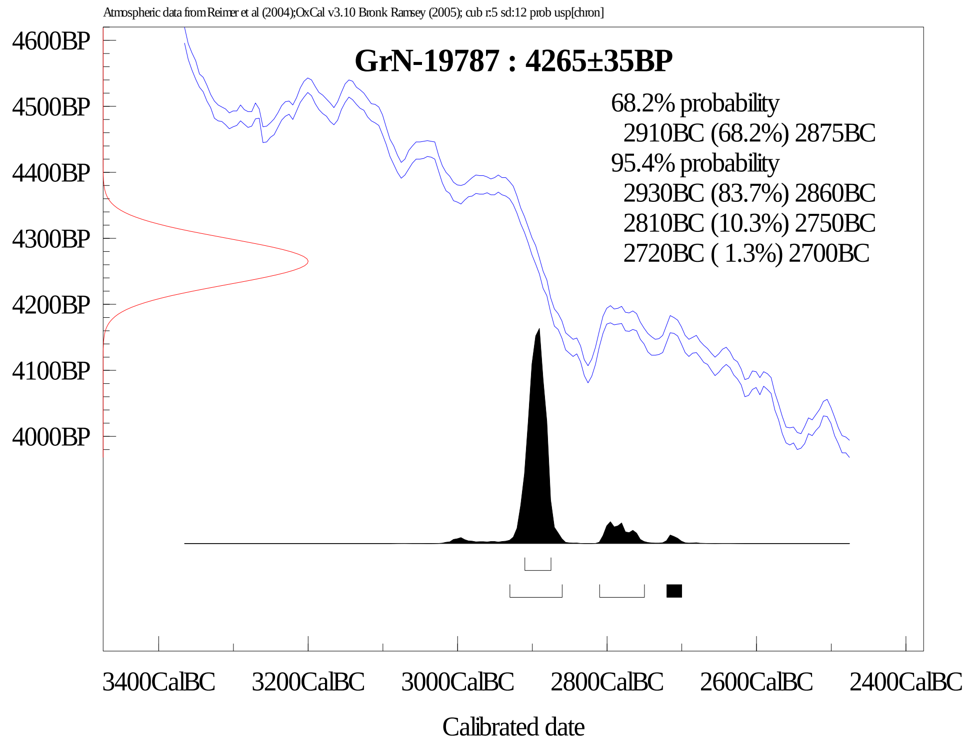

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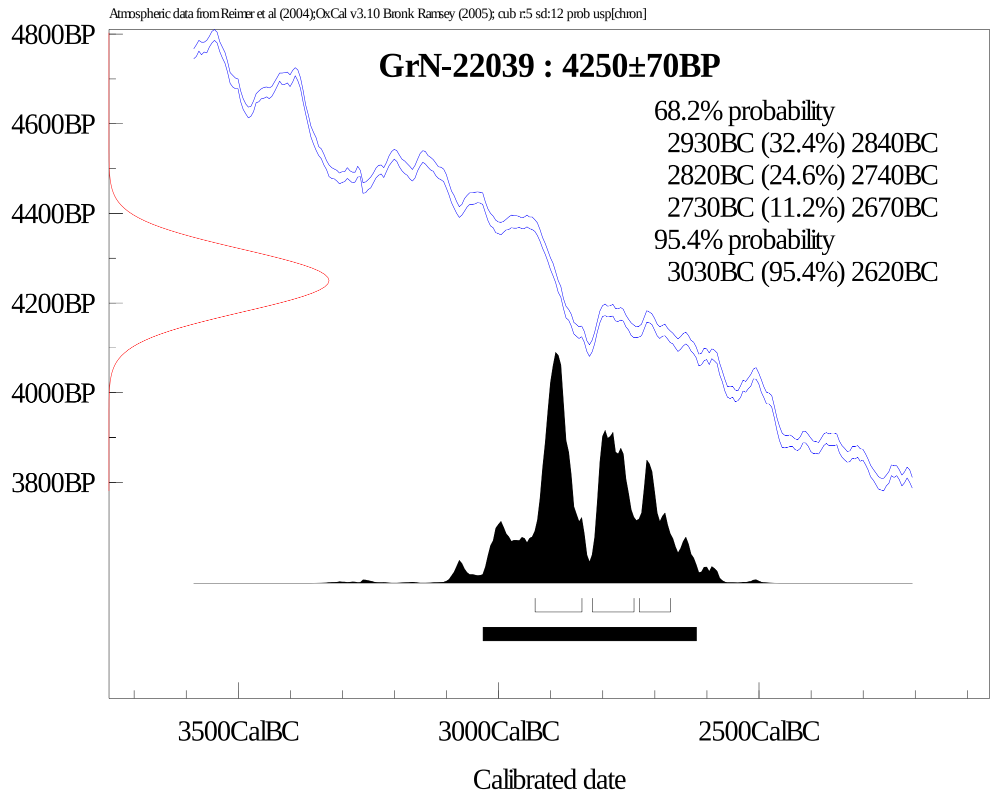

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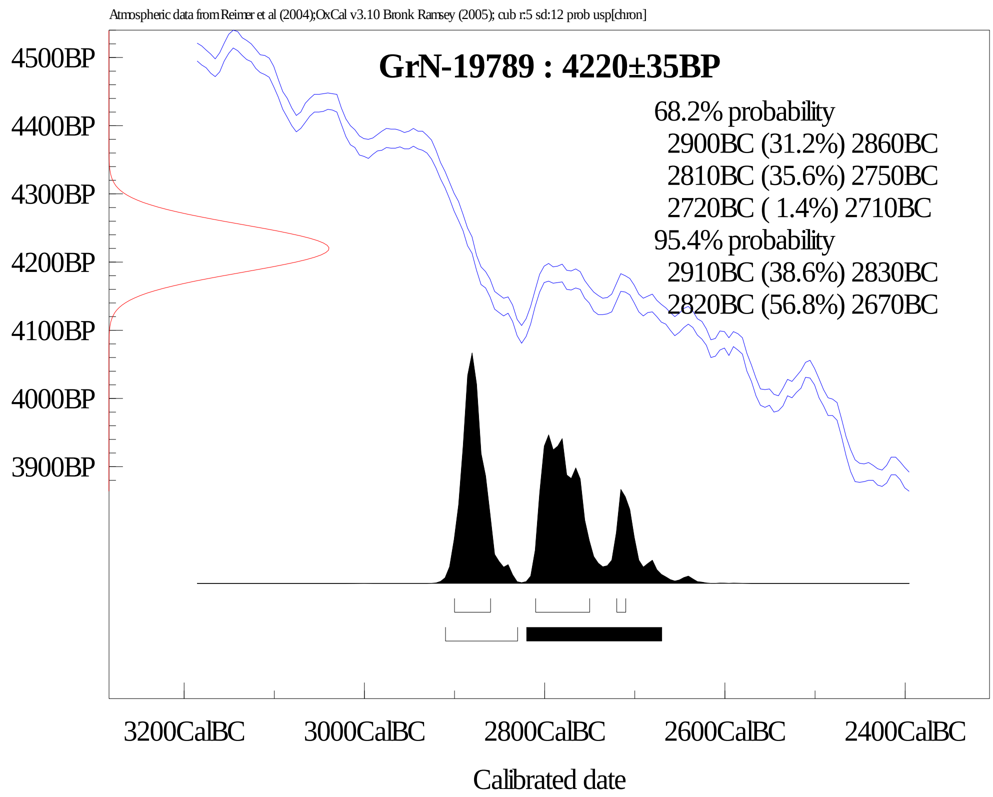

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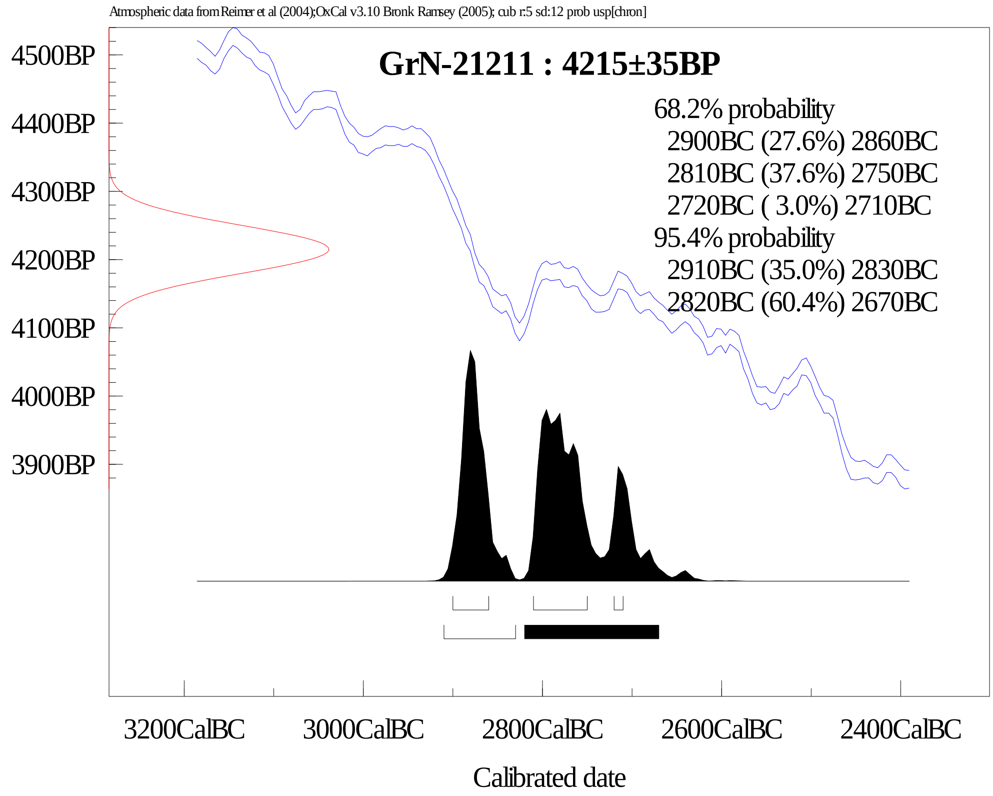

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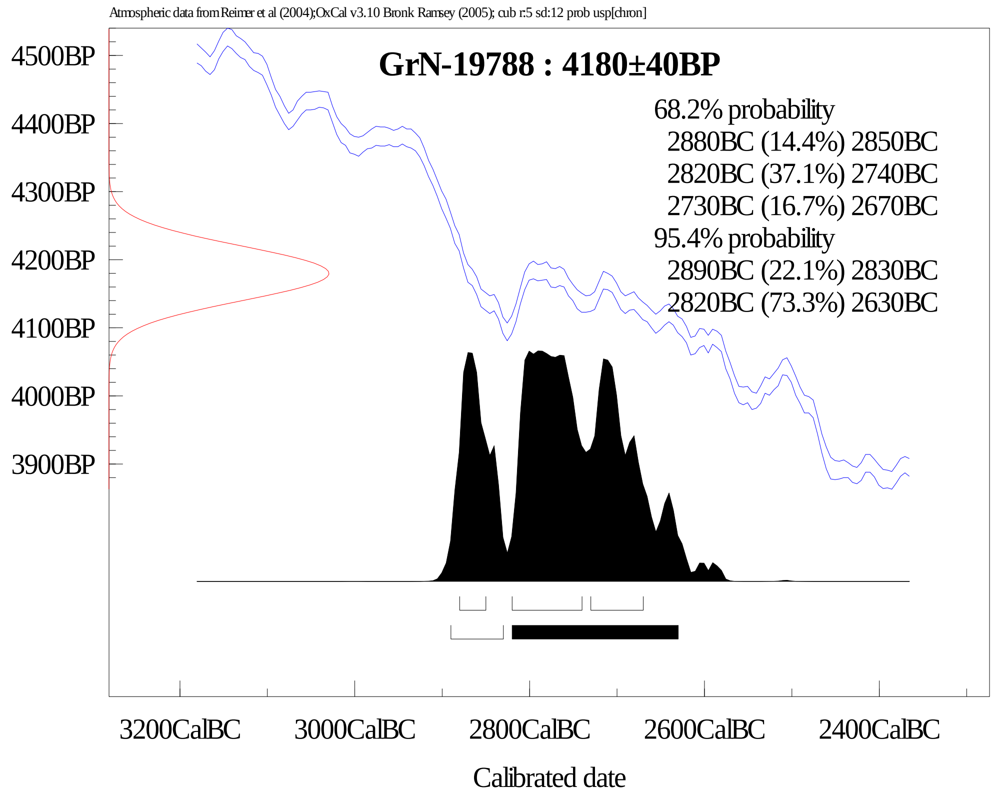

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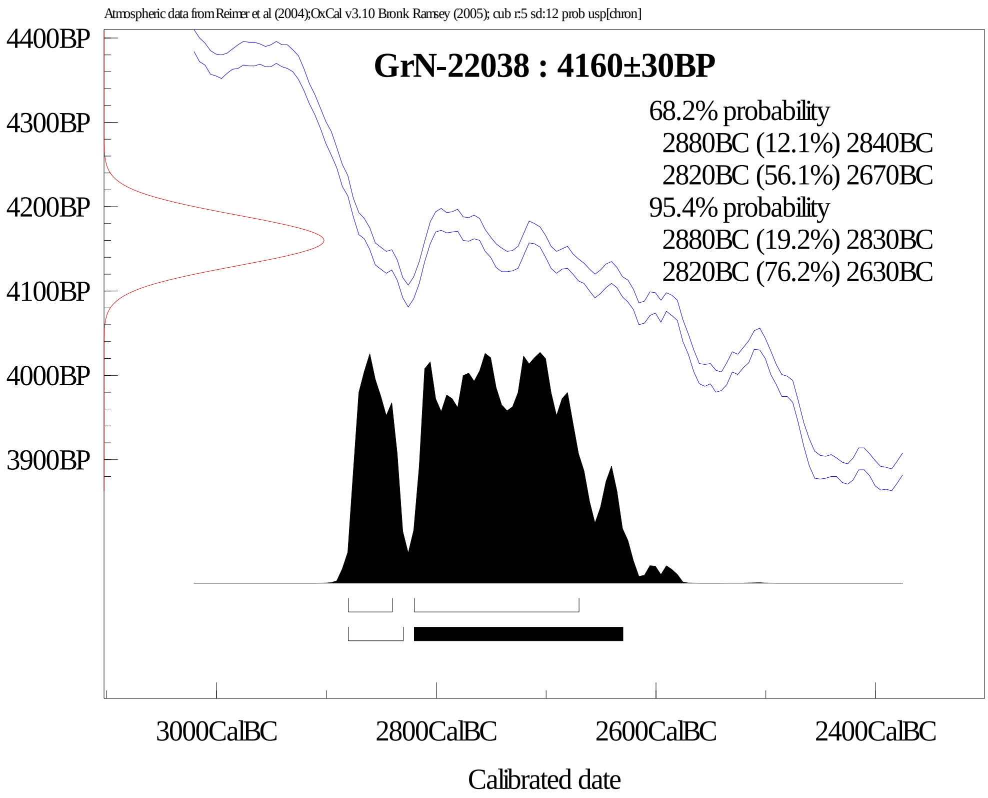

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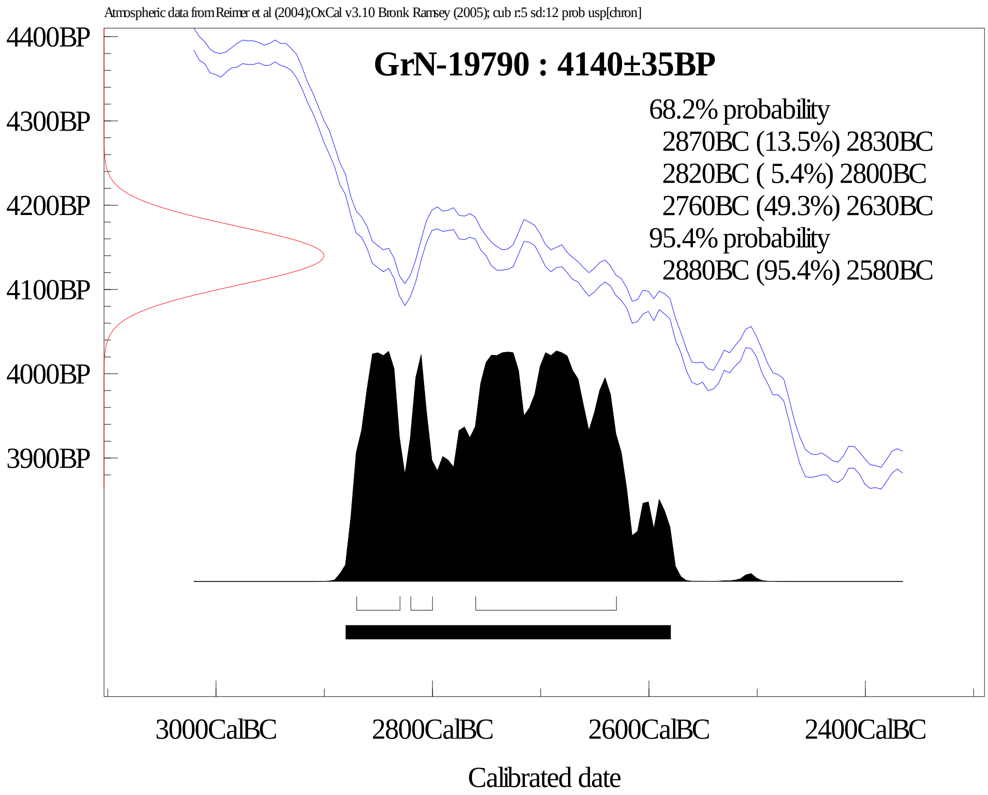

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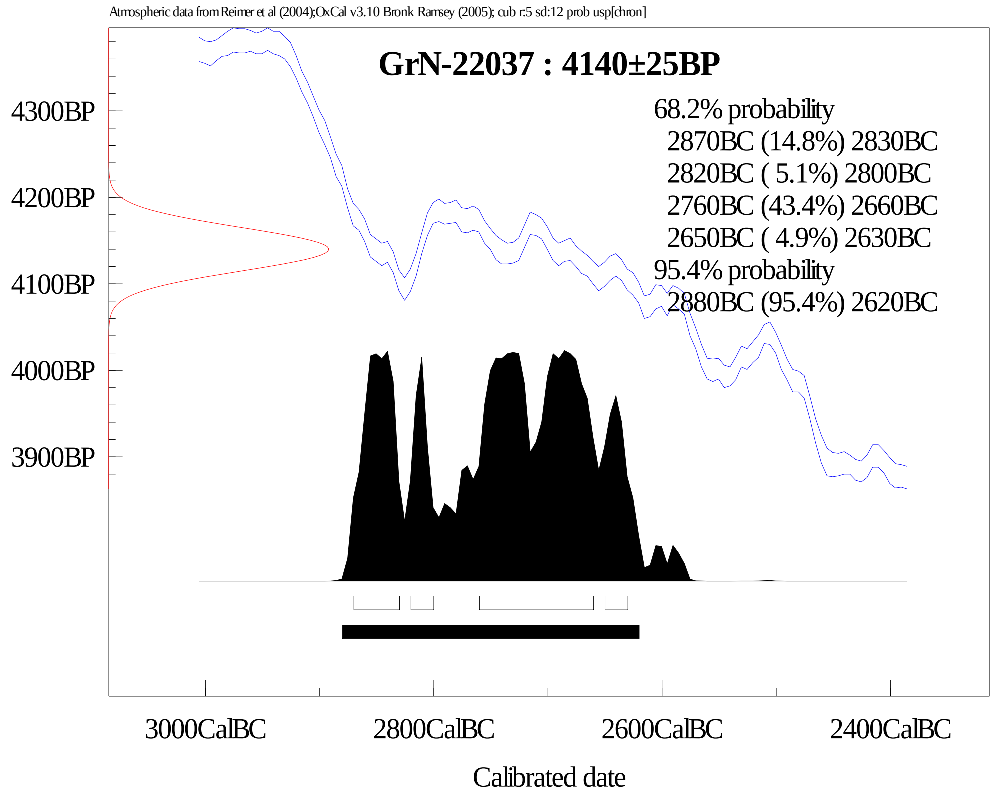

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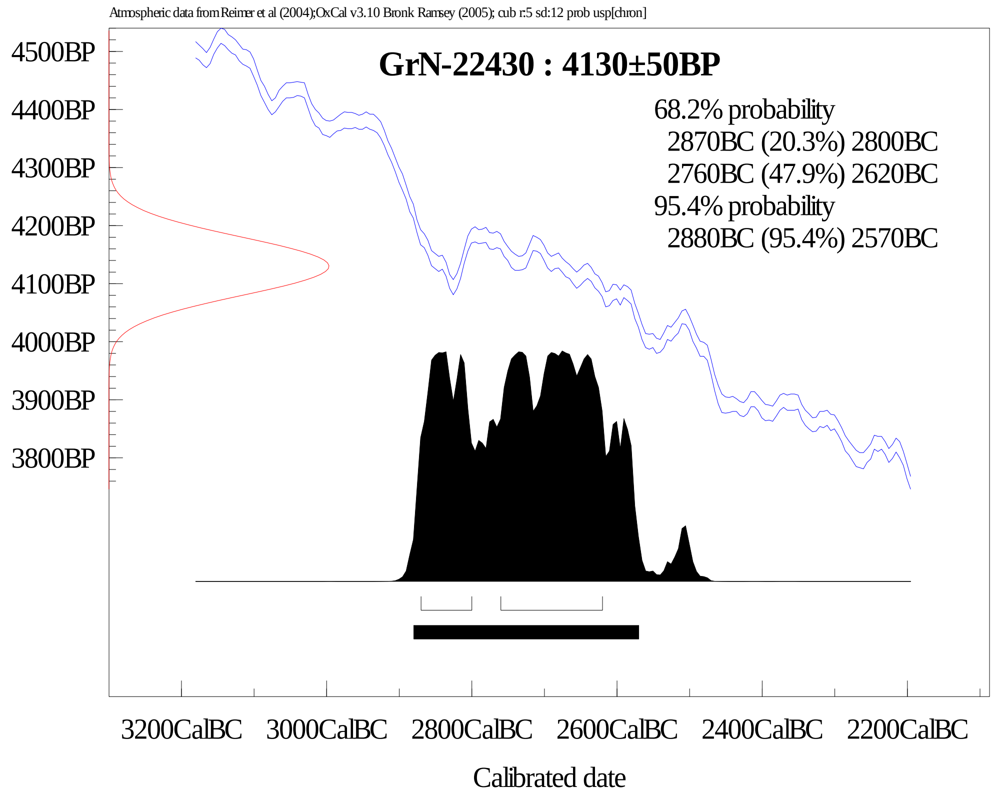

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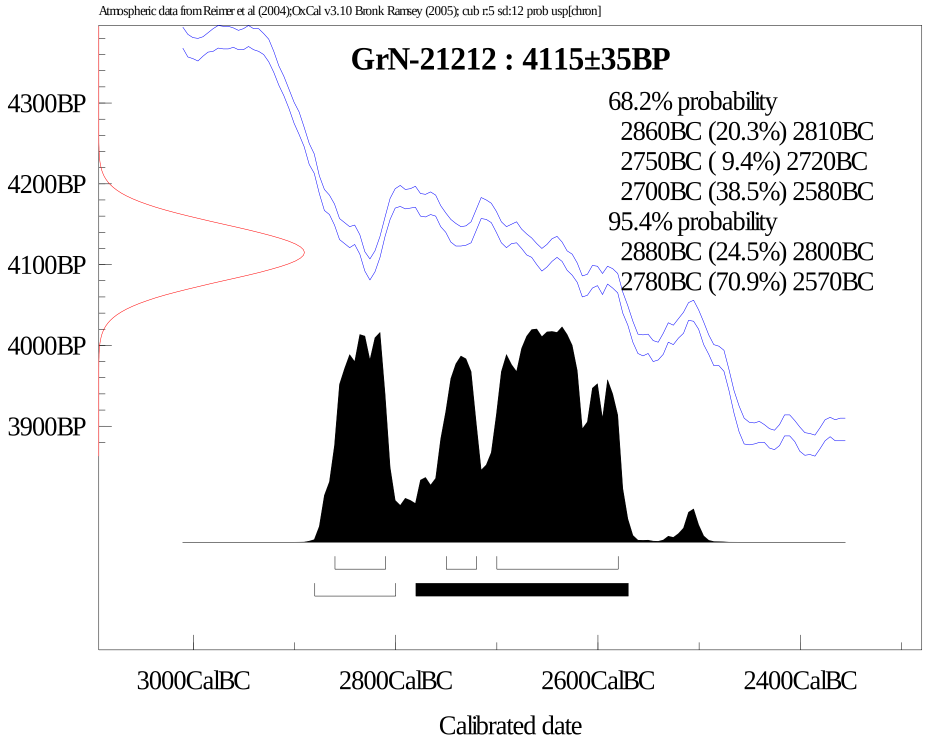
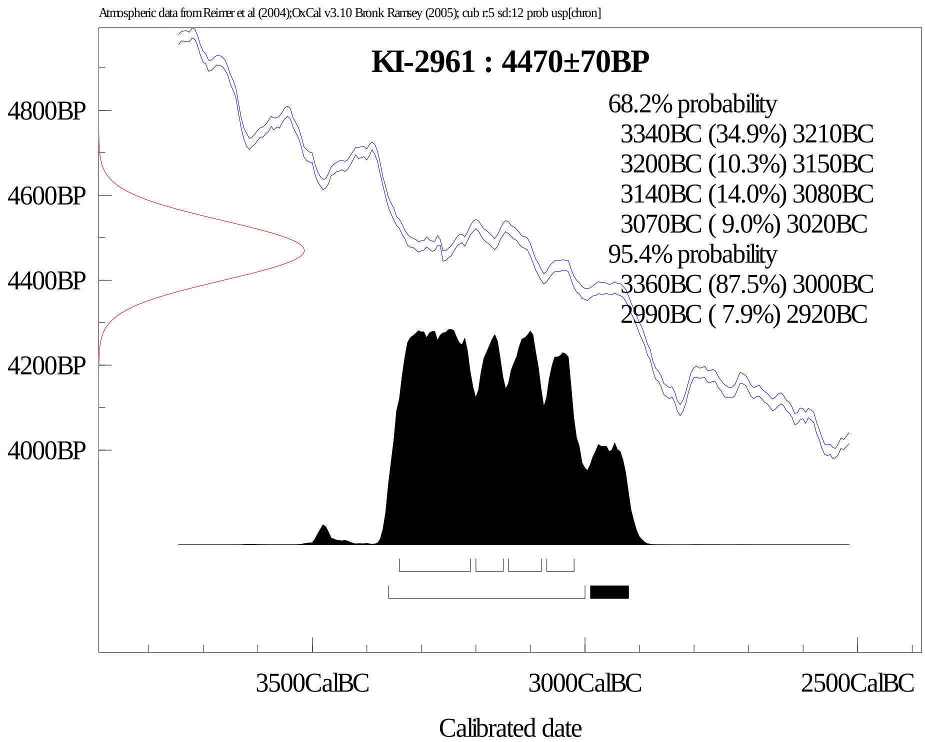
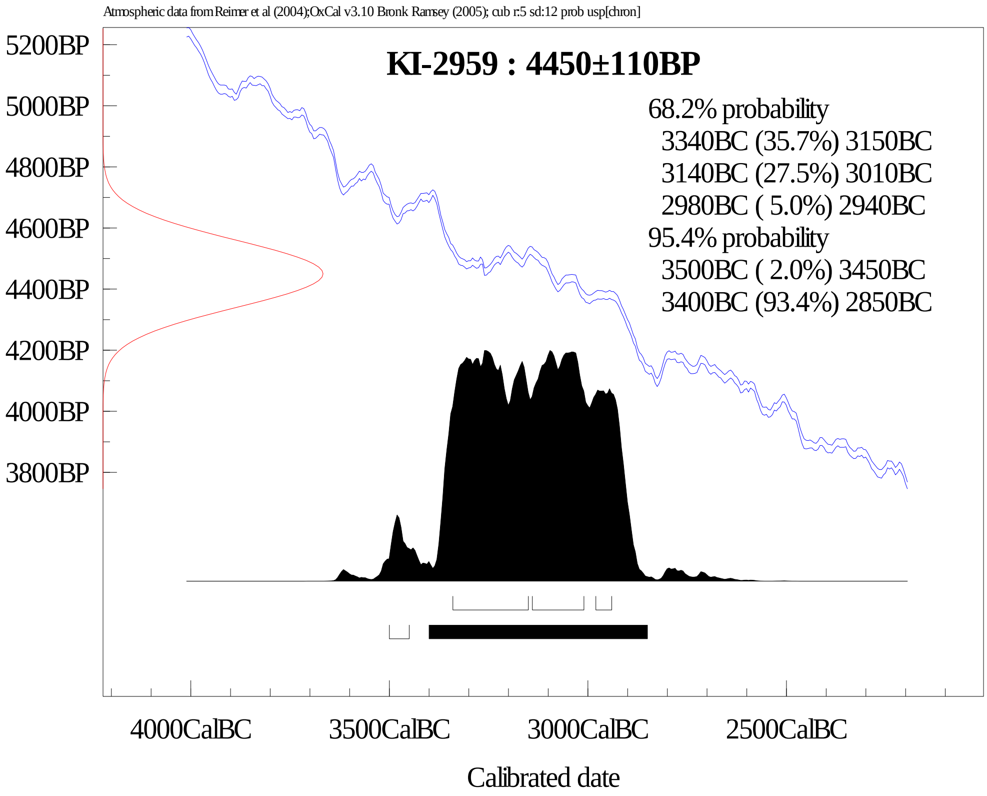


Hassek Höyük

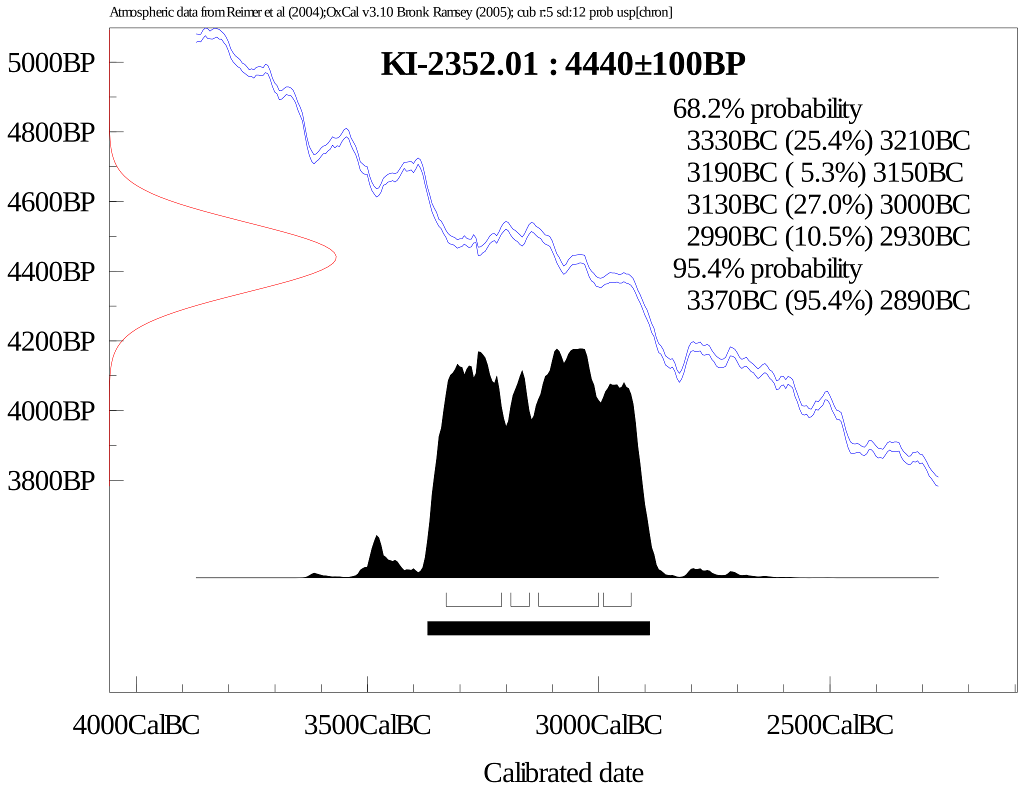
Hassek Höyük HAS.1



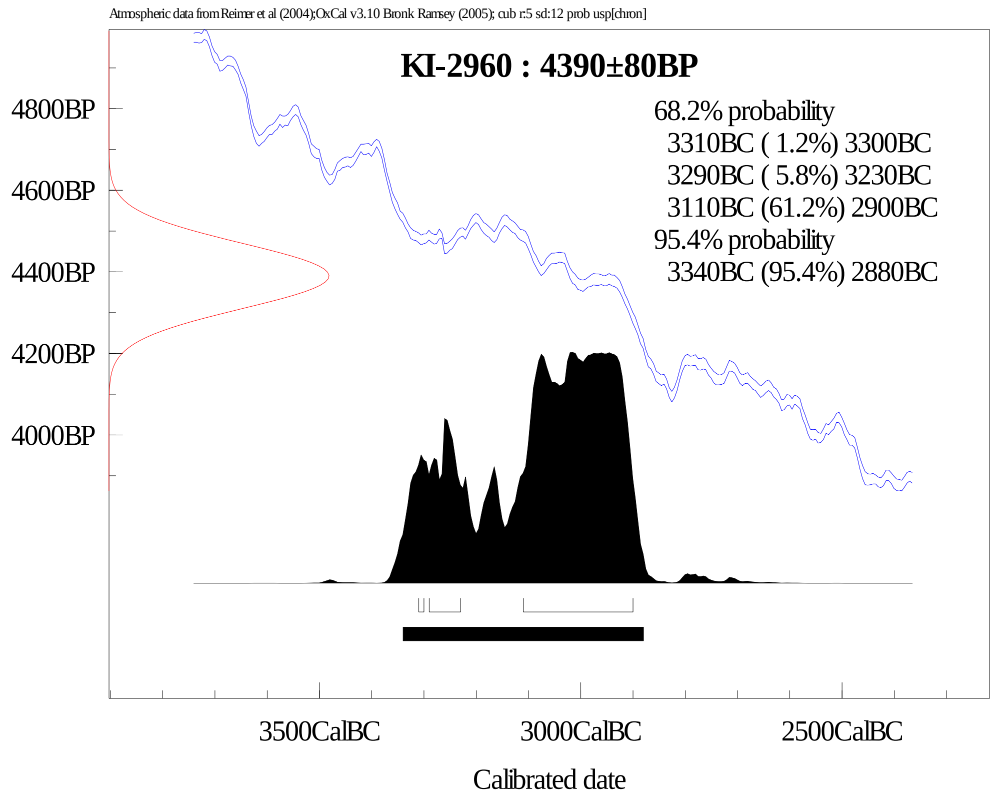
Hassek Höyük HAS.2



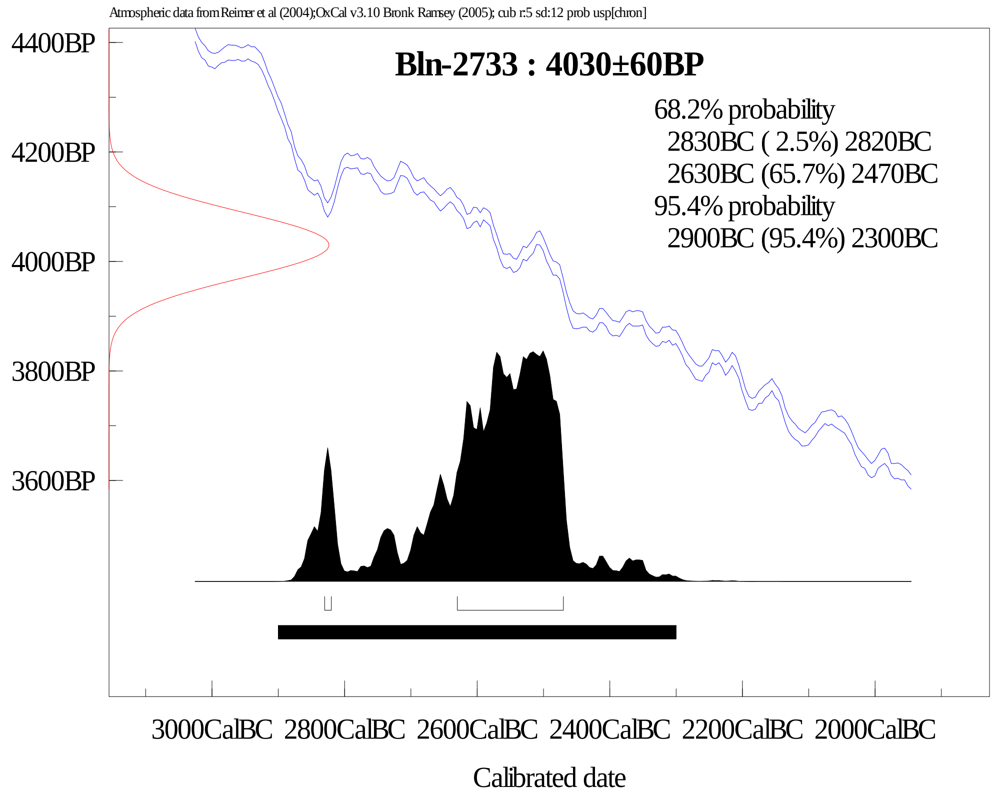
Hassek Höyük HAS.3



Hassek Höyük HAS.4

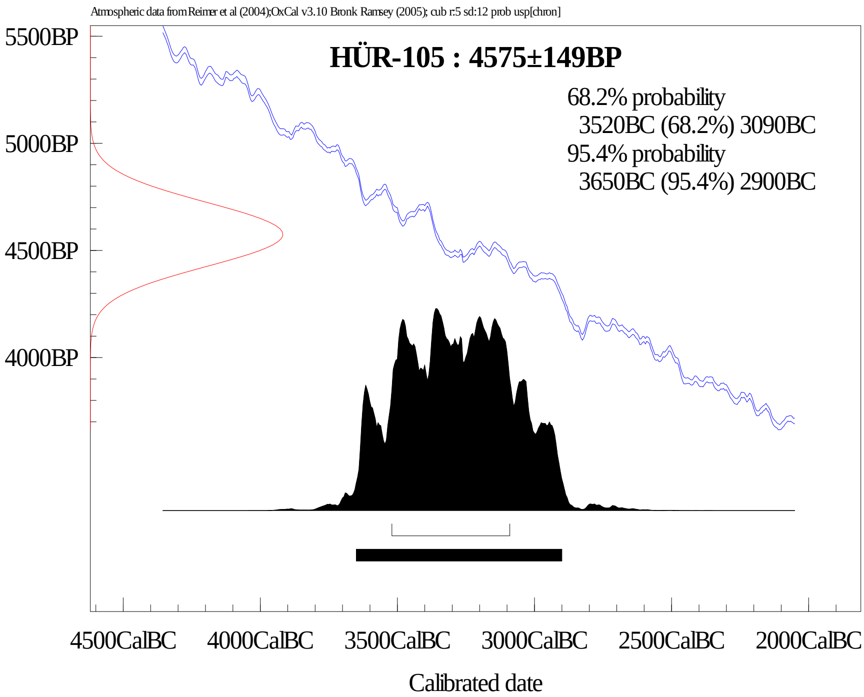


Hassek Höyük HAS.5



İkiztepe I

kiztepe I IKI.1



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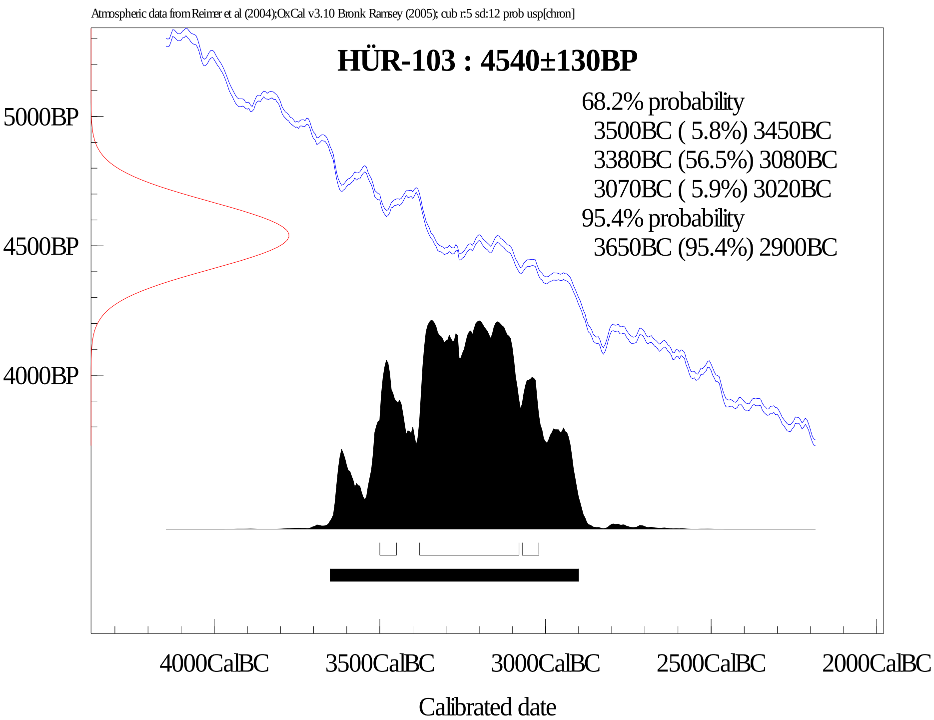

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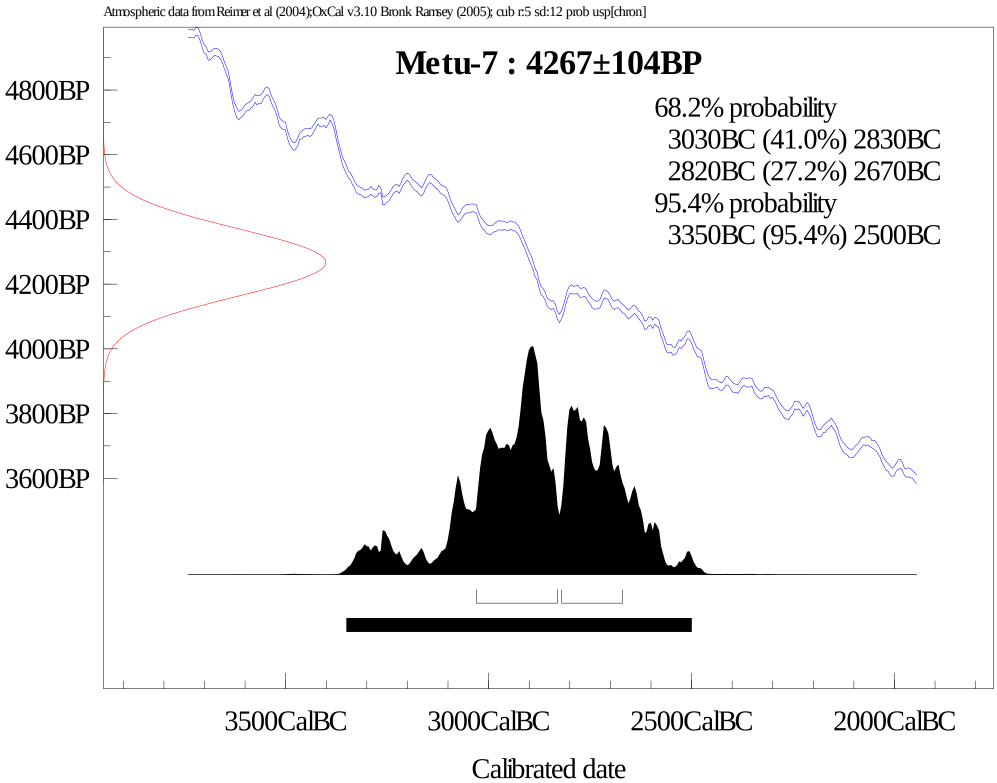

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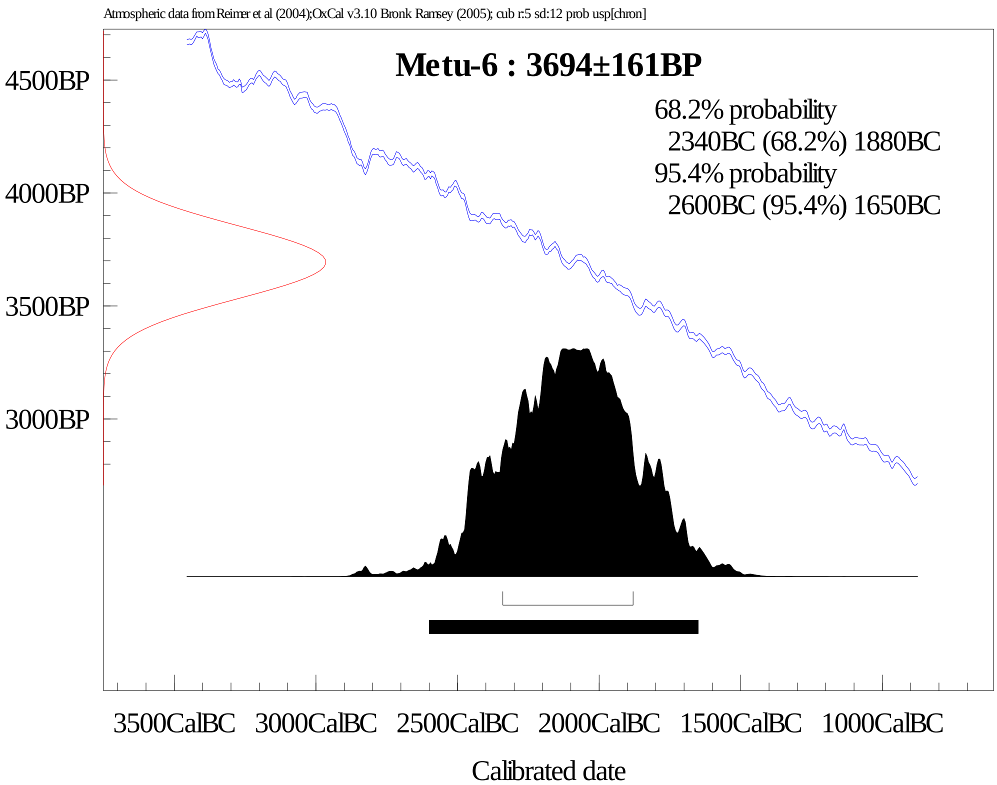

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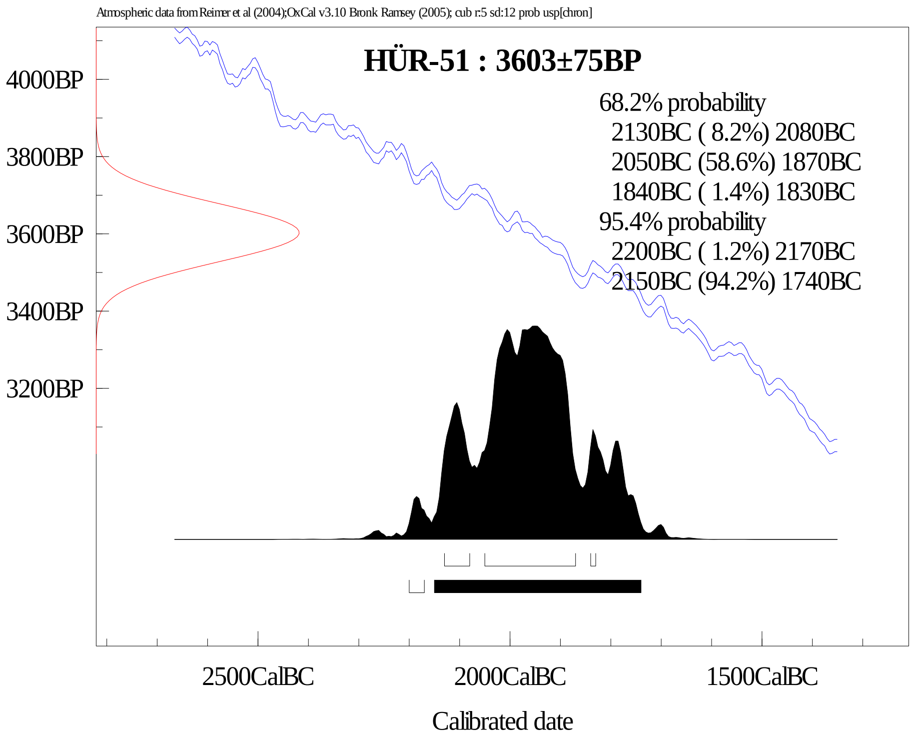
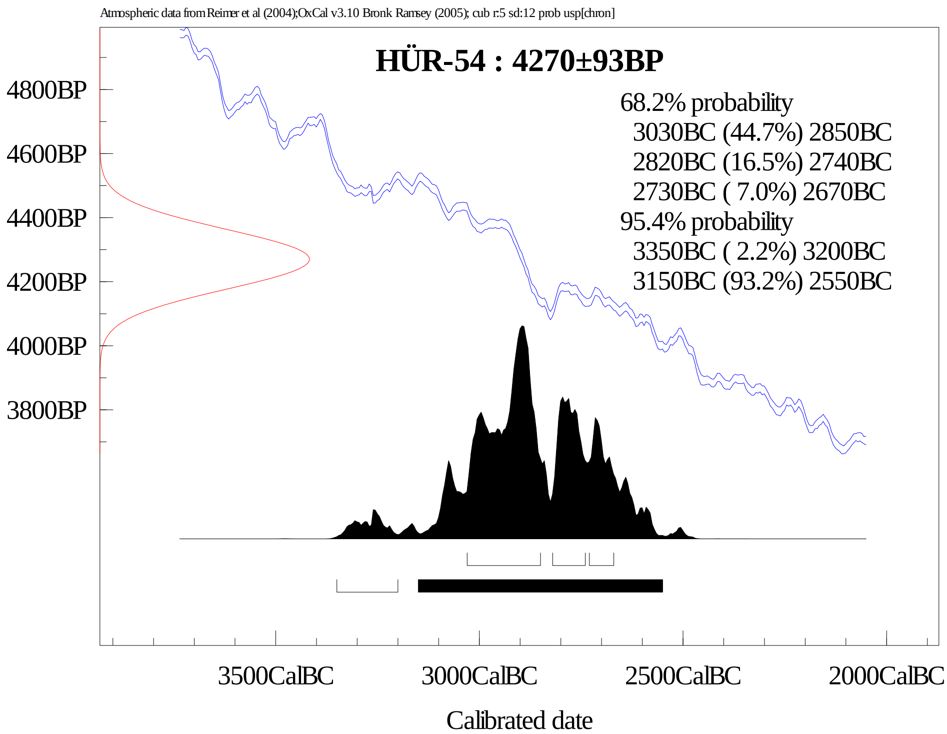
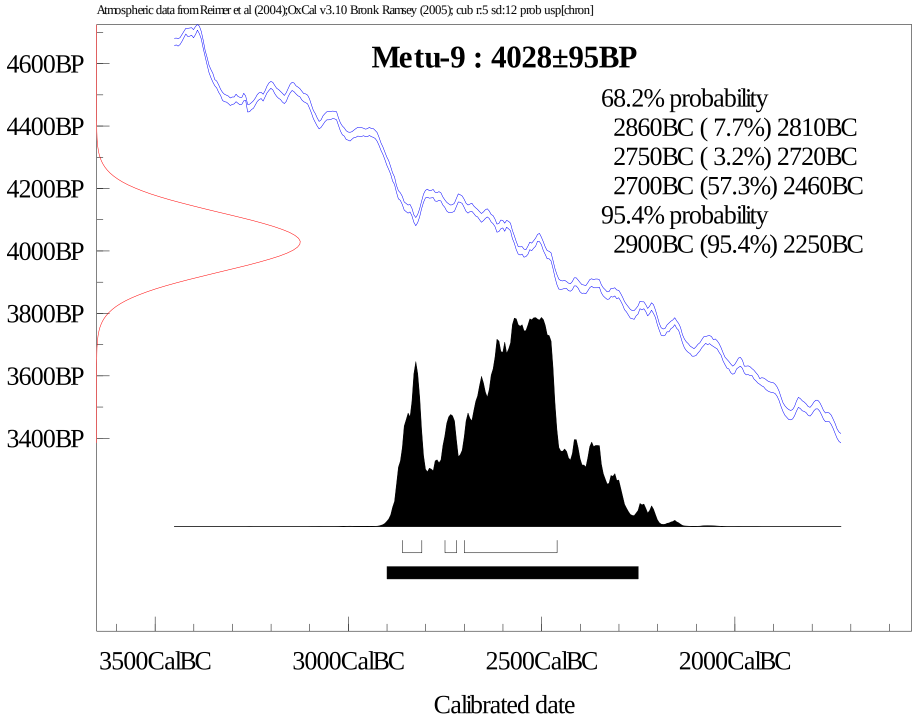


İkiztepe II

İkiztepe II IKIZ.1

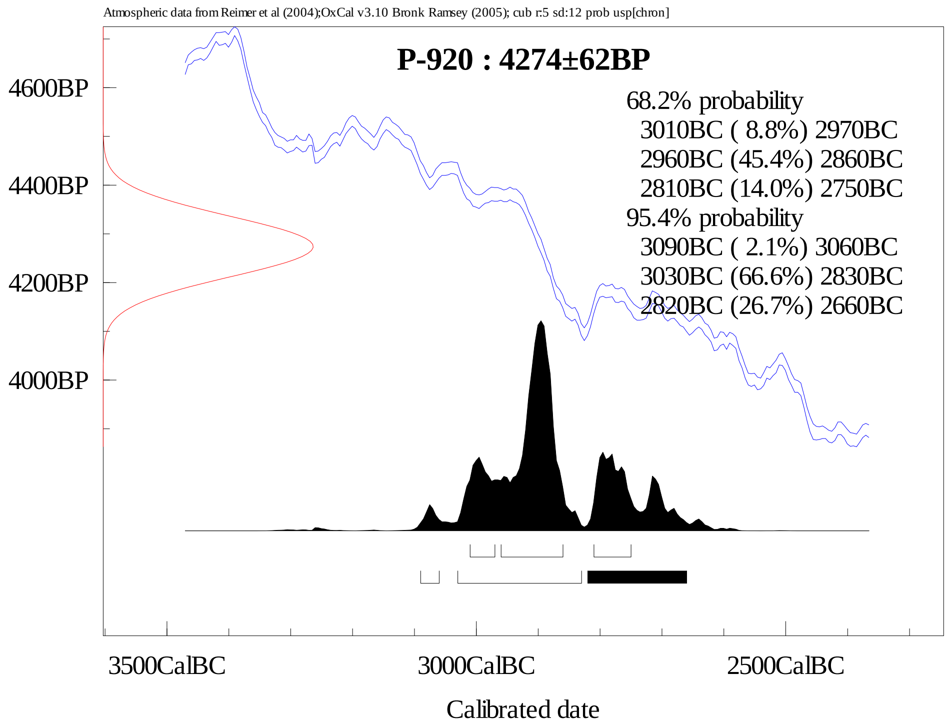


İkiztepe II IKIZ.2



Karataş-Elmalı

Karataş-Elmalı KAR.1



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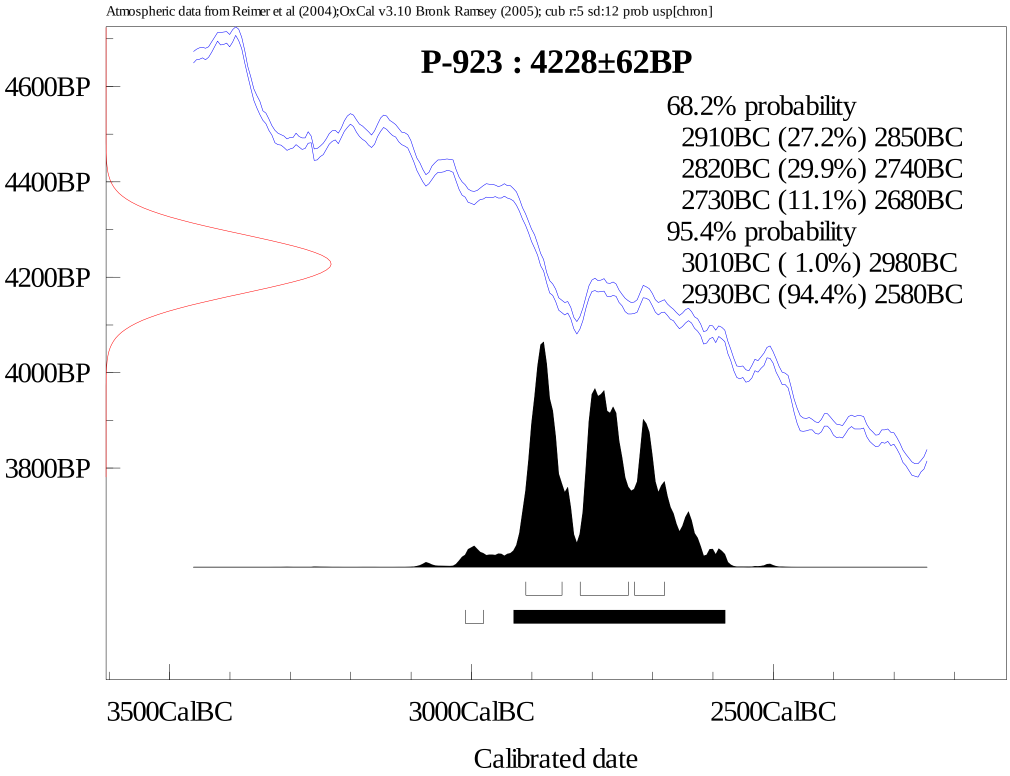

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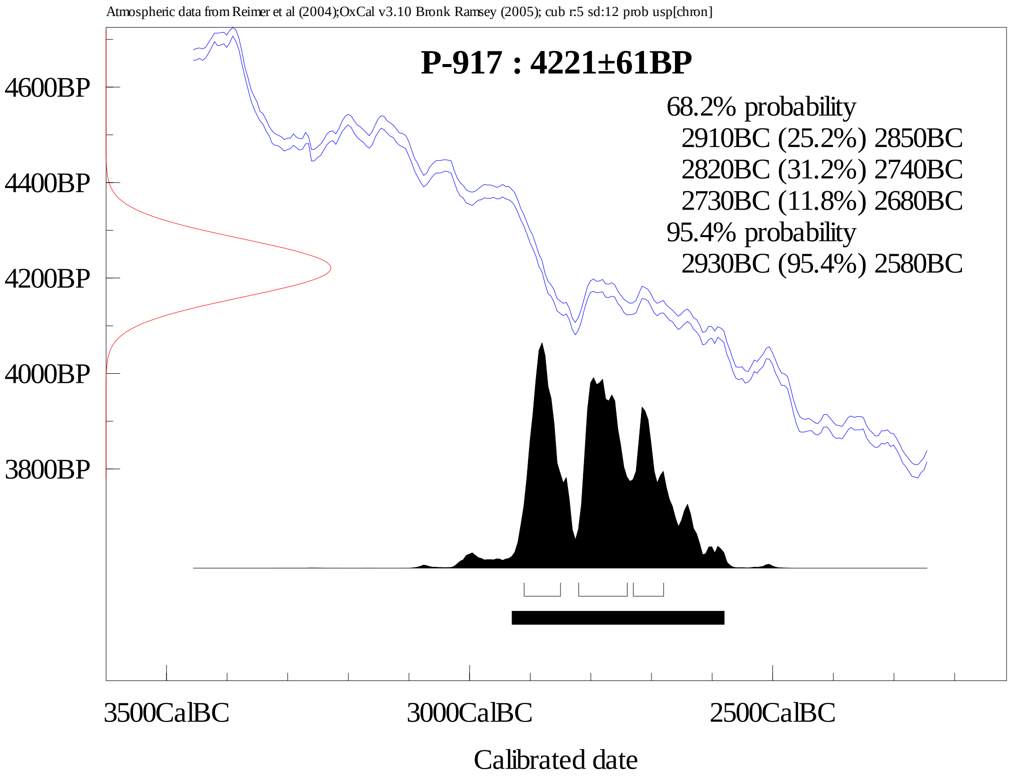

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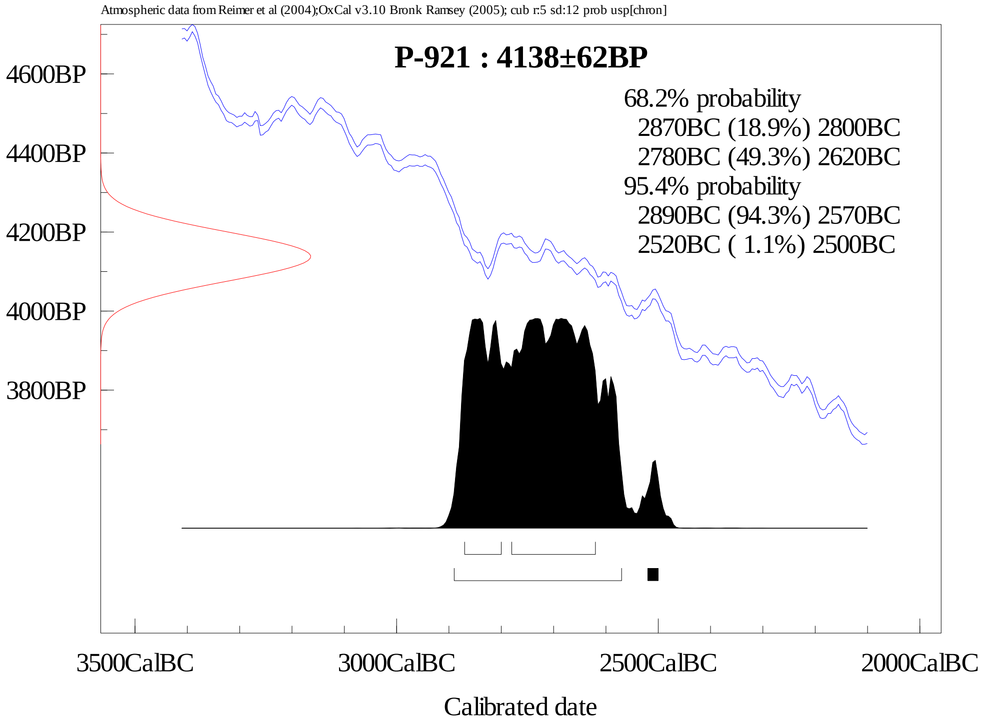
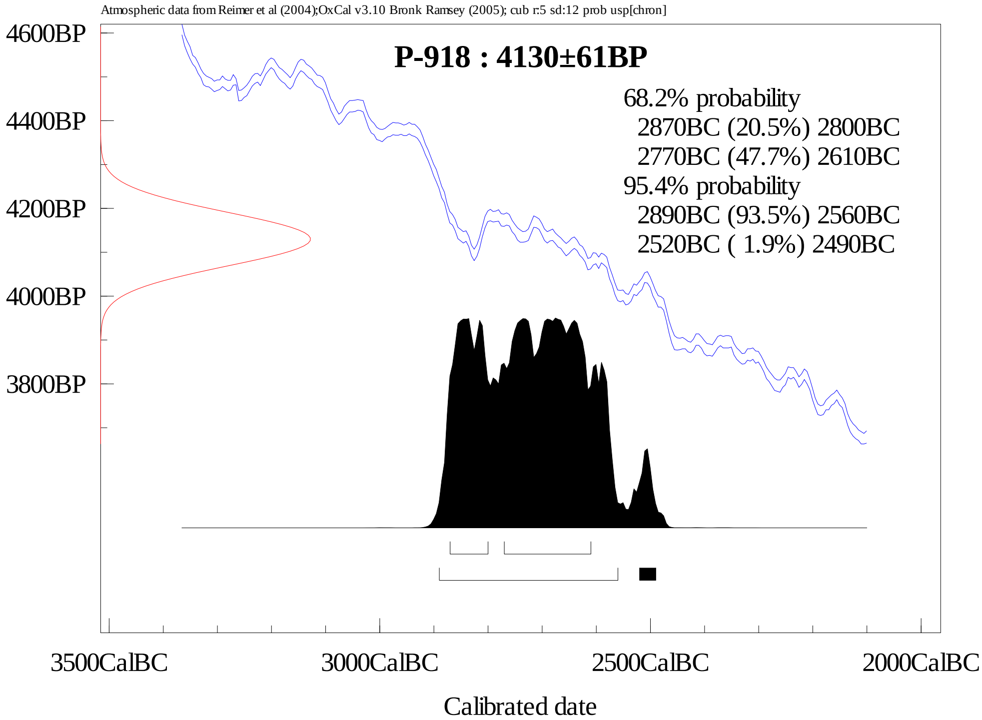
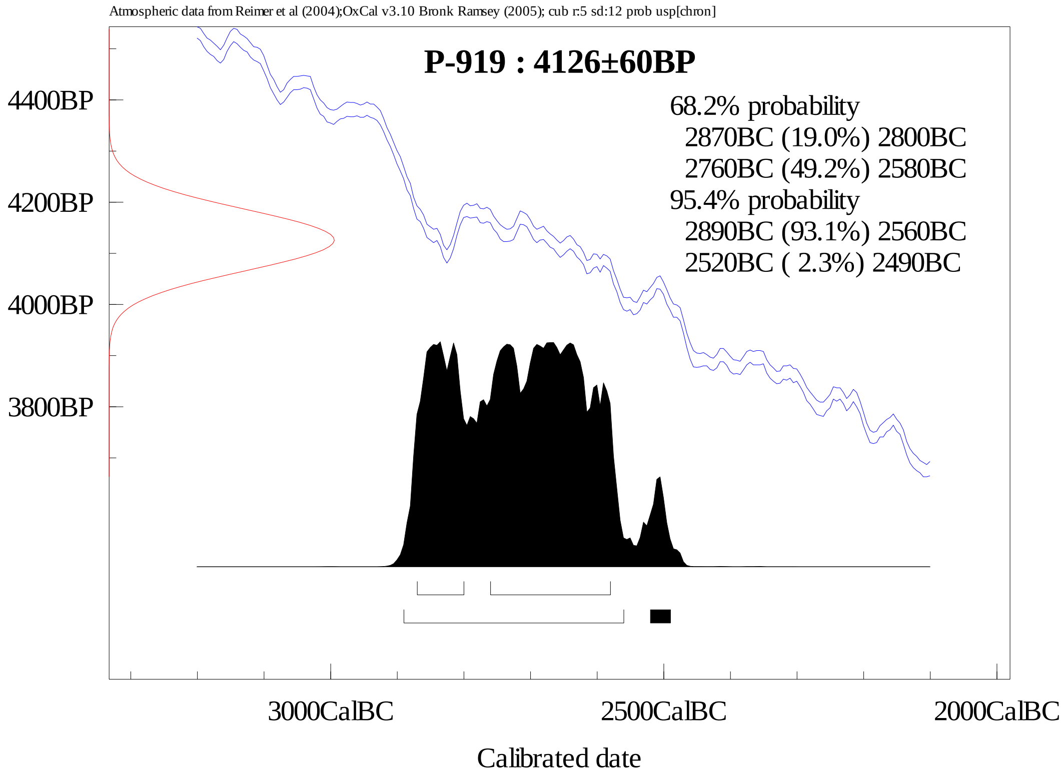


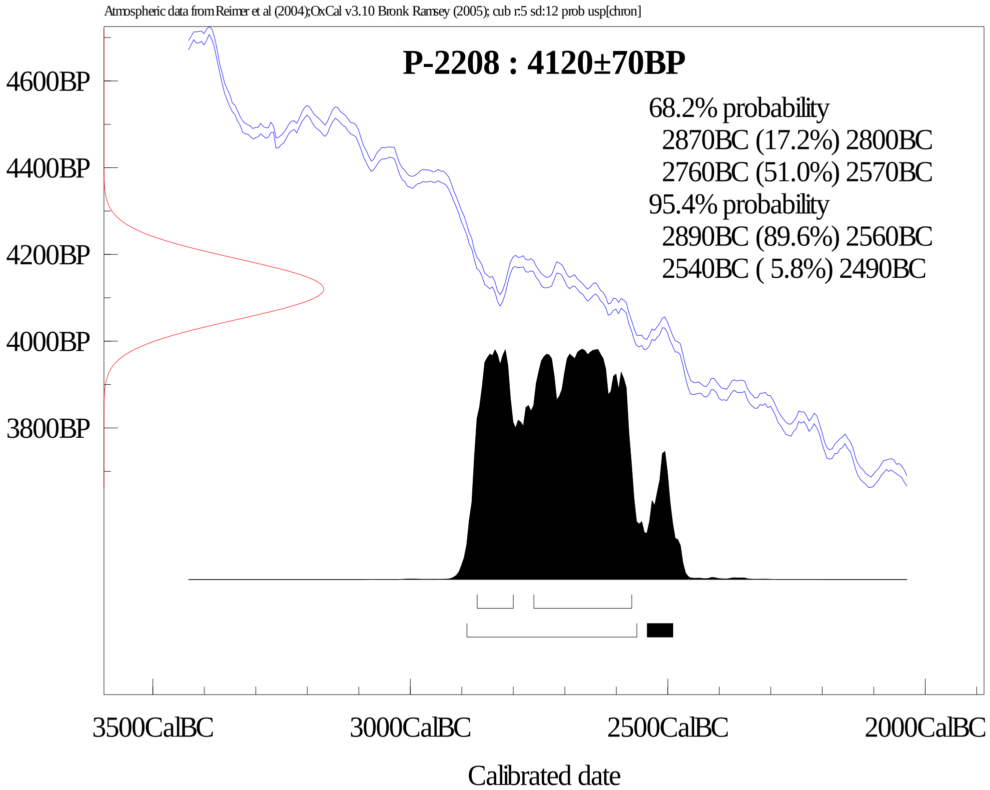
Karataş-Elmalı KAR.5



Karataş-Elmalı KAR.6

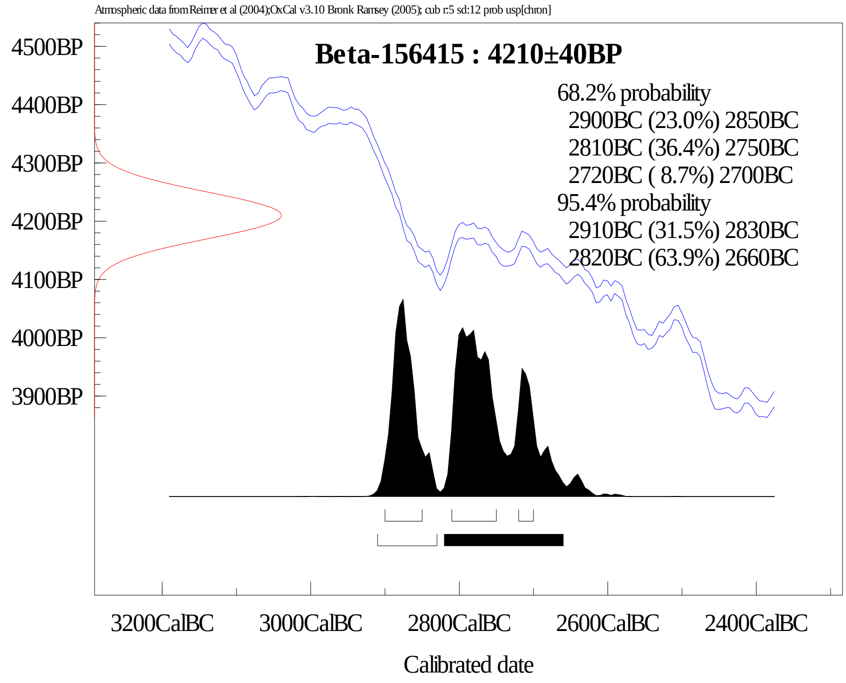


Karataş-Elmalı KAR.7



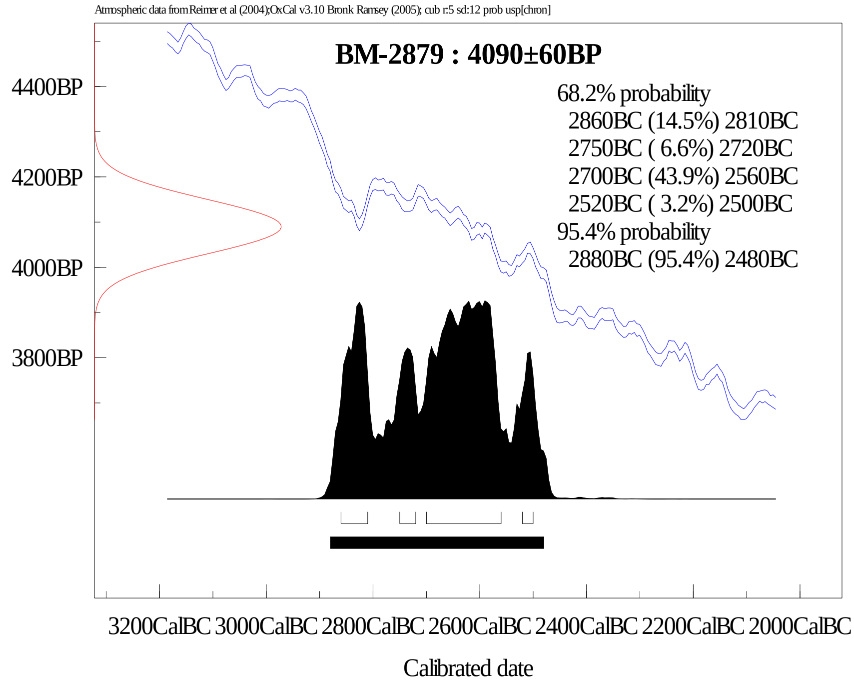
Kenantepe

Kenantepe KEN.1

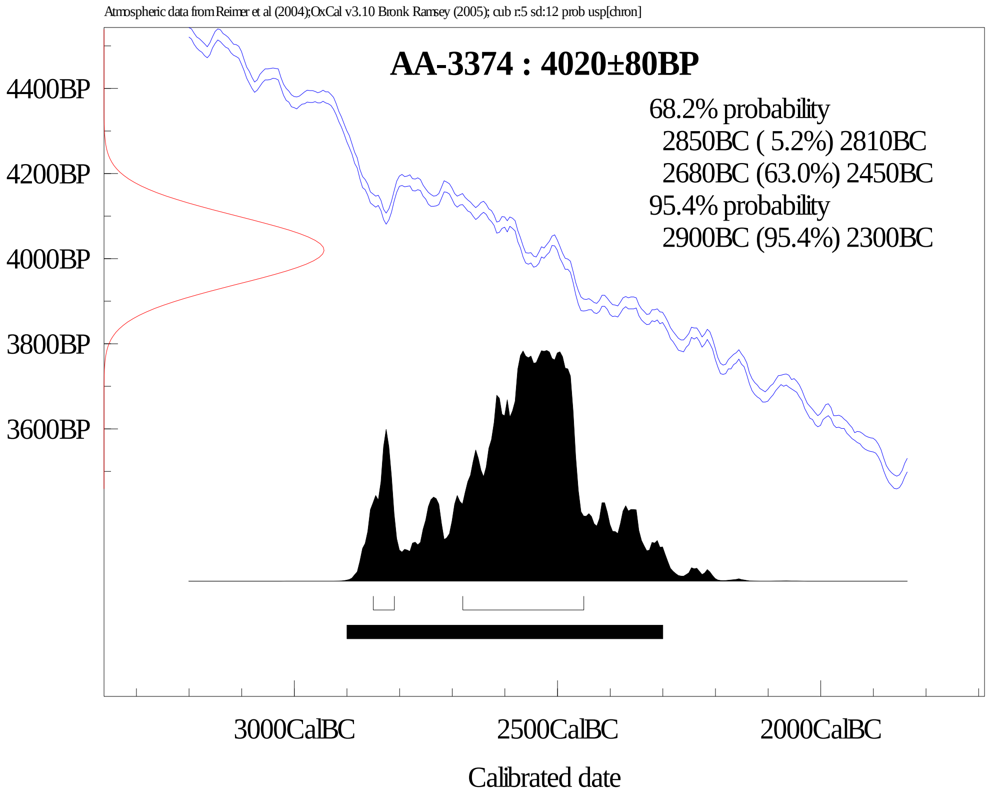


Kestel

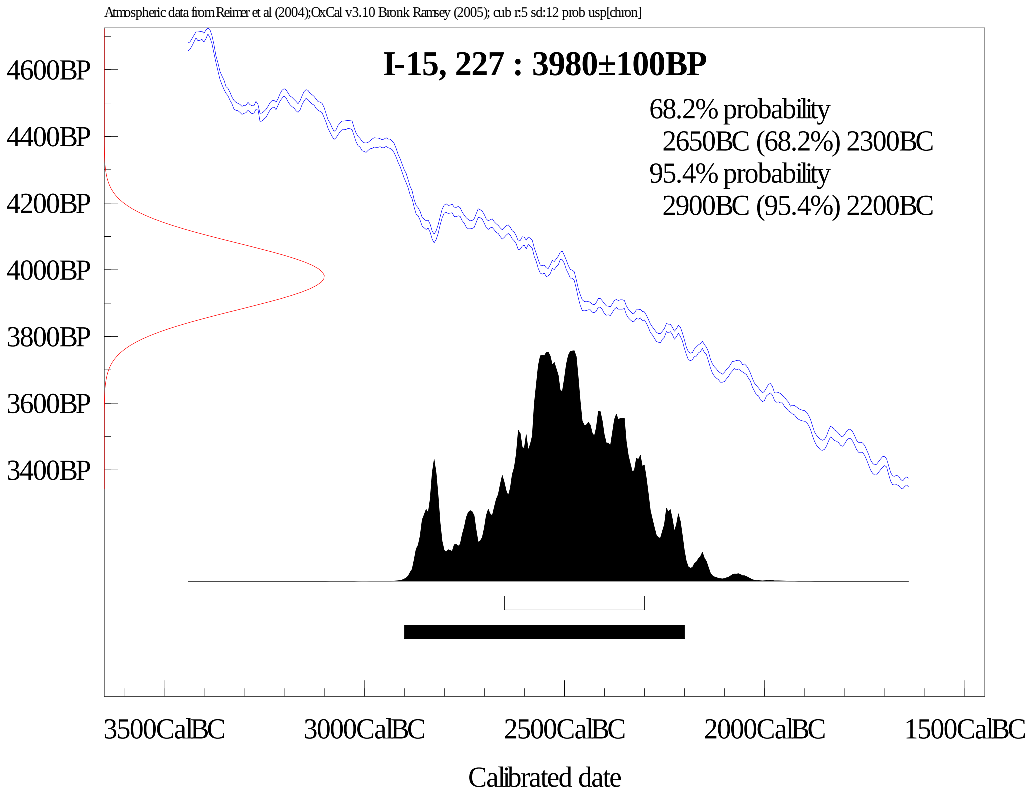
Kestel KES.1



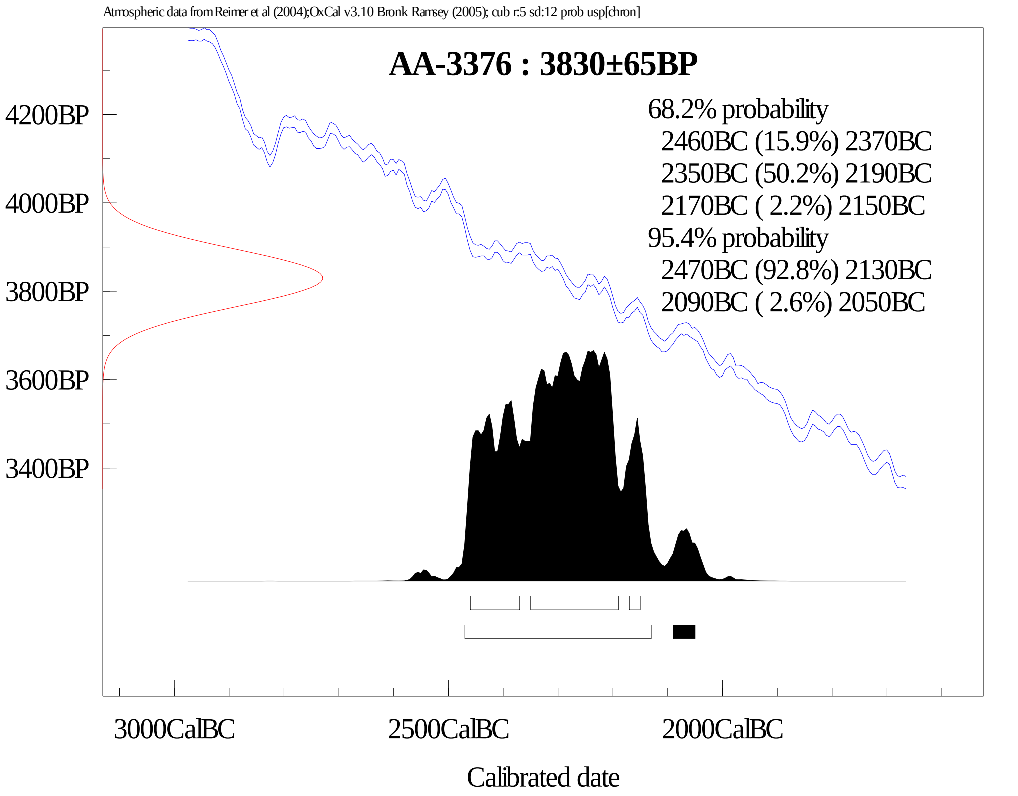
Kestel KES.2



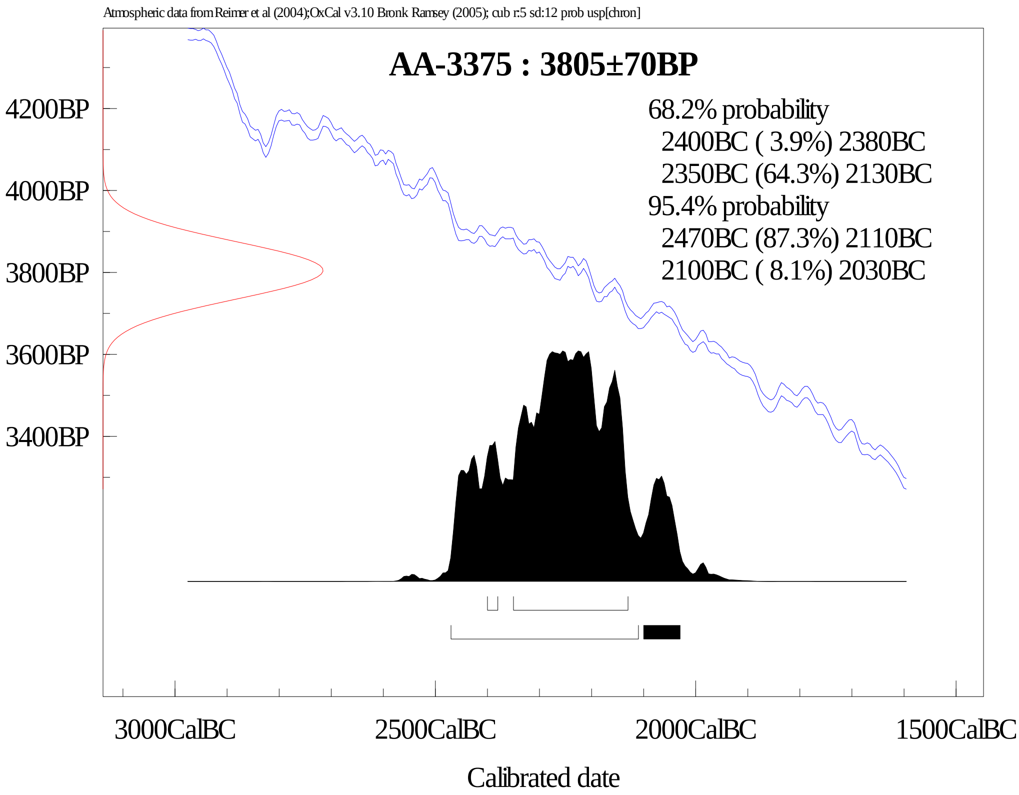
Kestel KES.3



Kestel KES.4

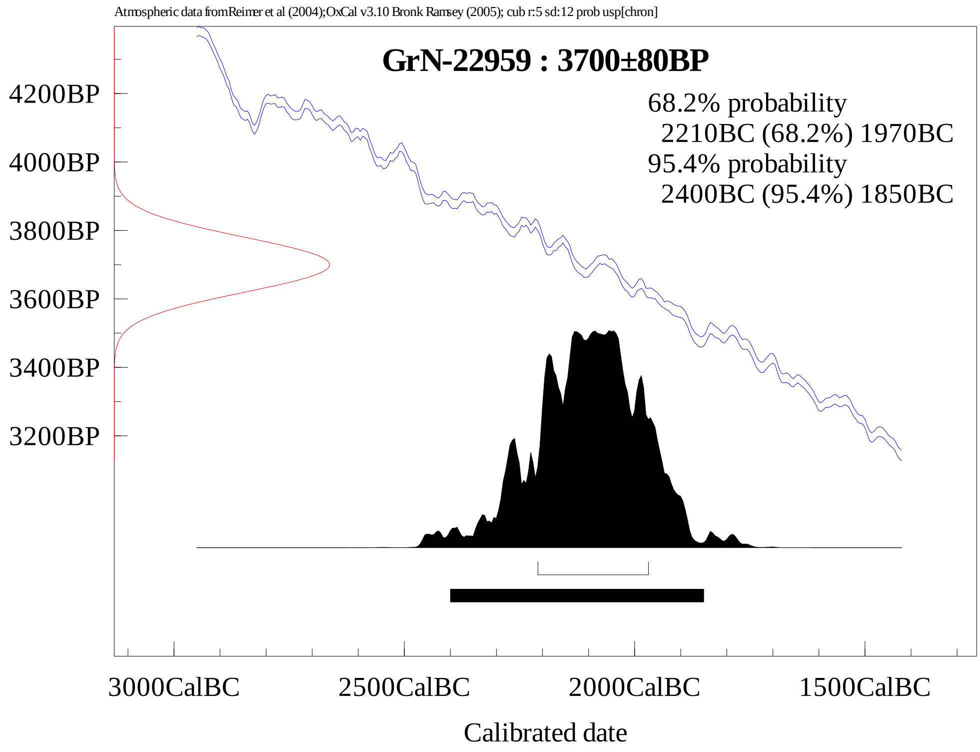


Kestel KES.5

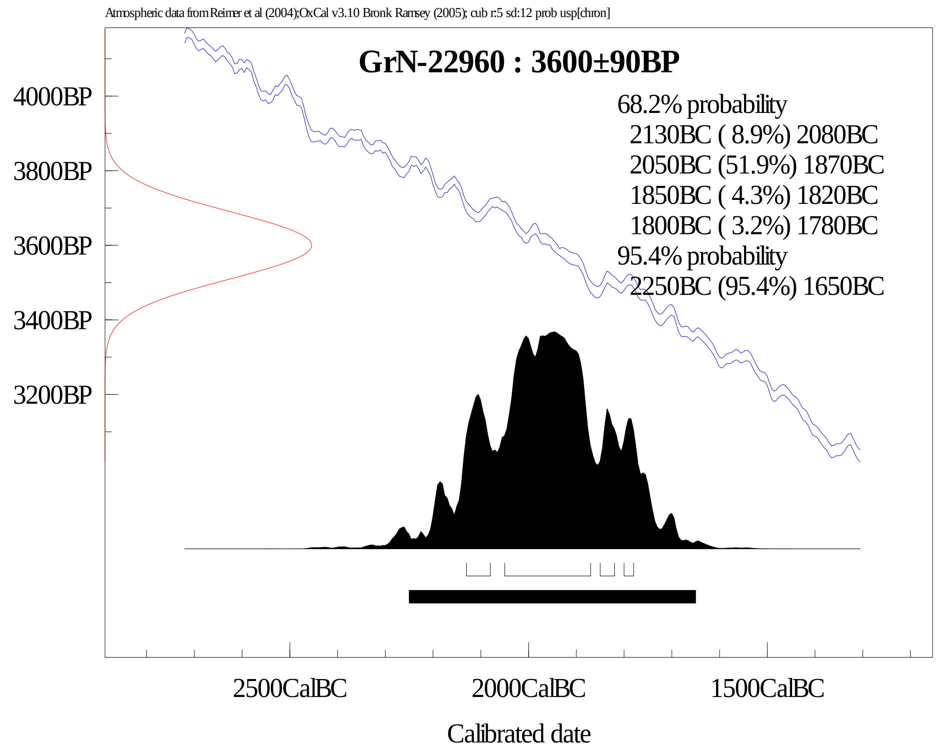


Khirbet al-Hijar (AS 180)

Khirbet al Hijar (AS-180) AS180.1

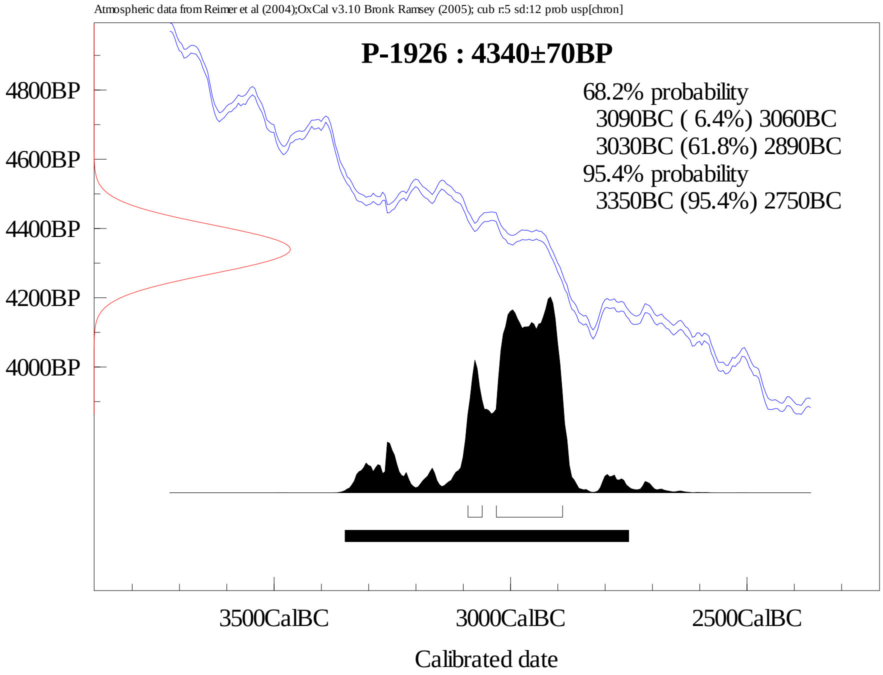


Khirbet al Hijar (AS-180) AS180.2

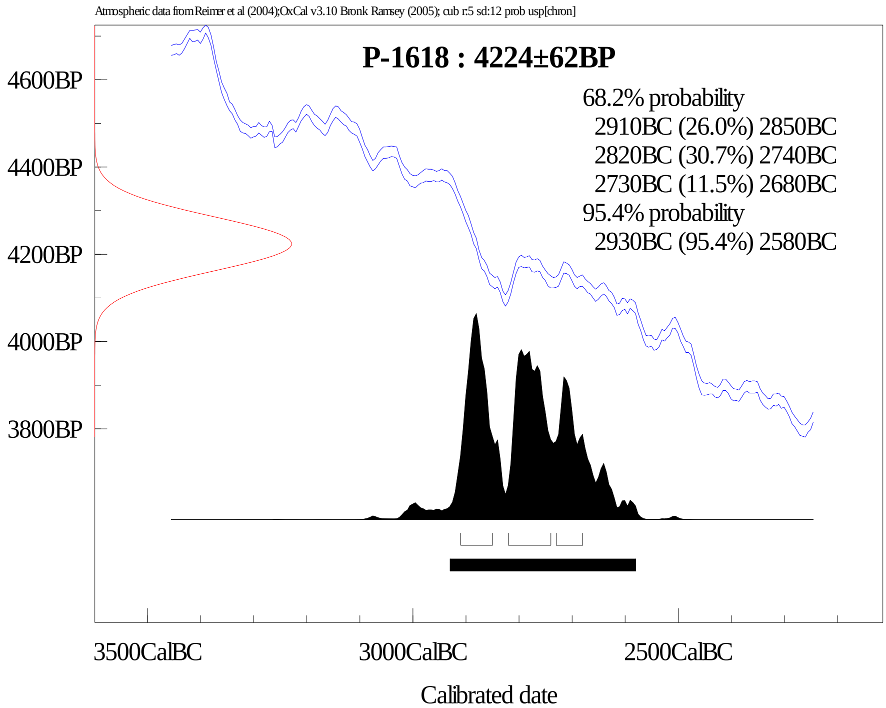


Korucu Tepe

Korucu Tepe KOR.1



Korucu Tepe KOR.2



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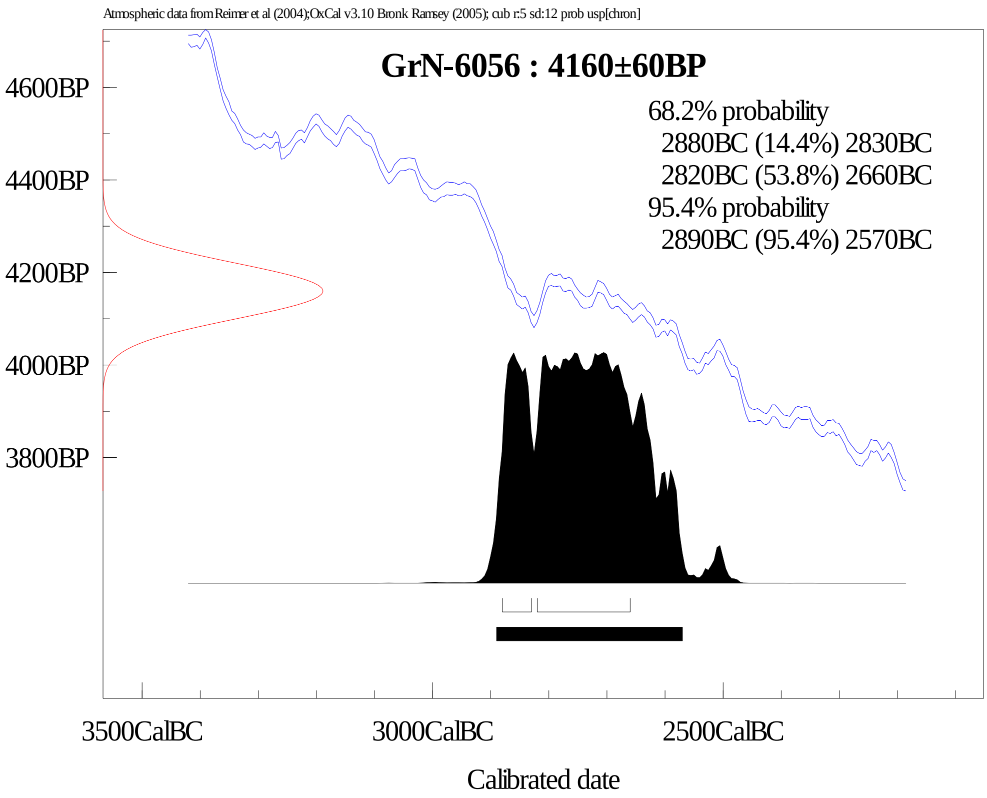
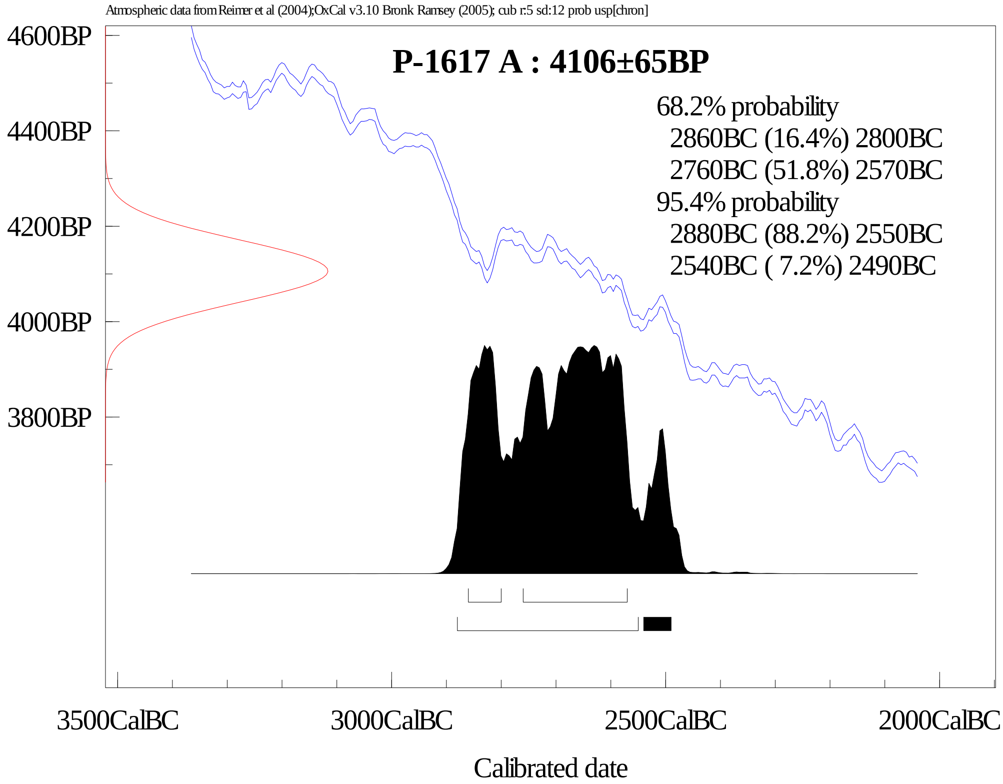


Korucutepe KOR.4



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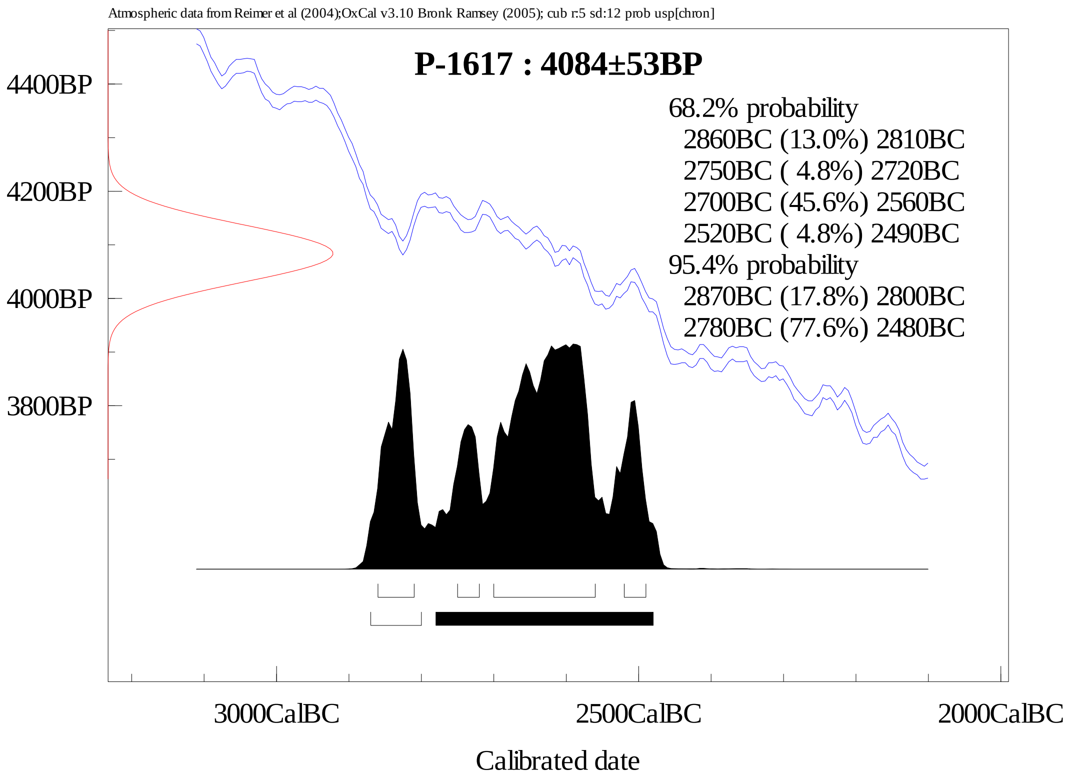

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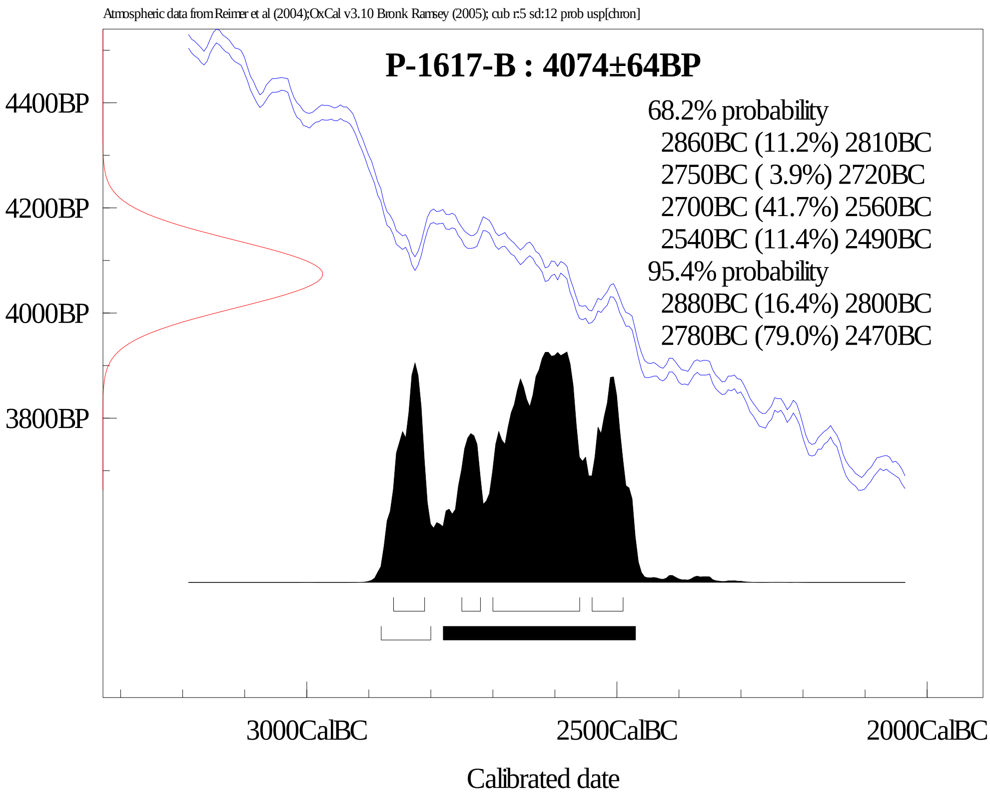
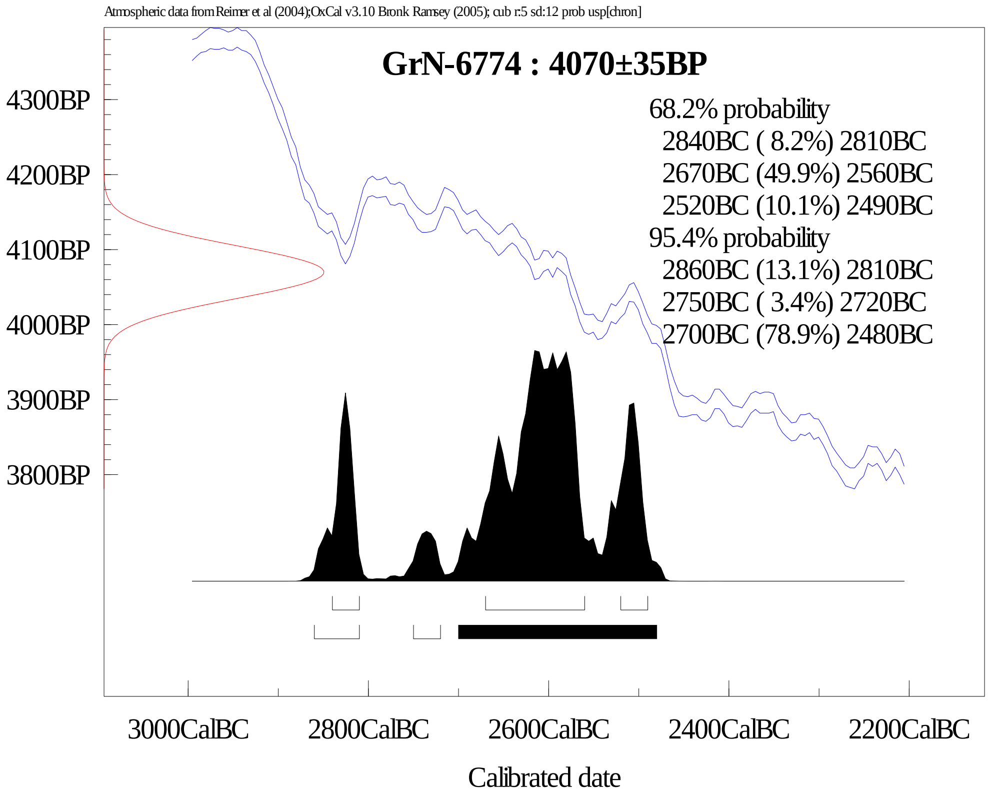
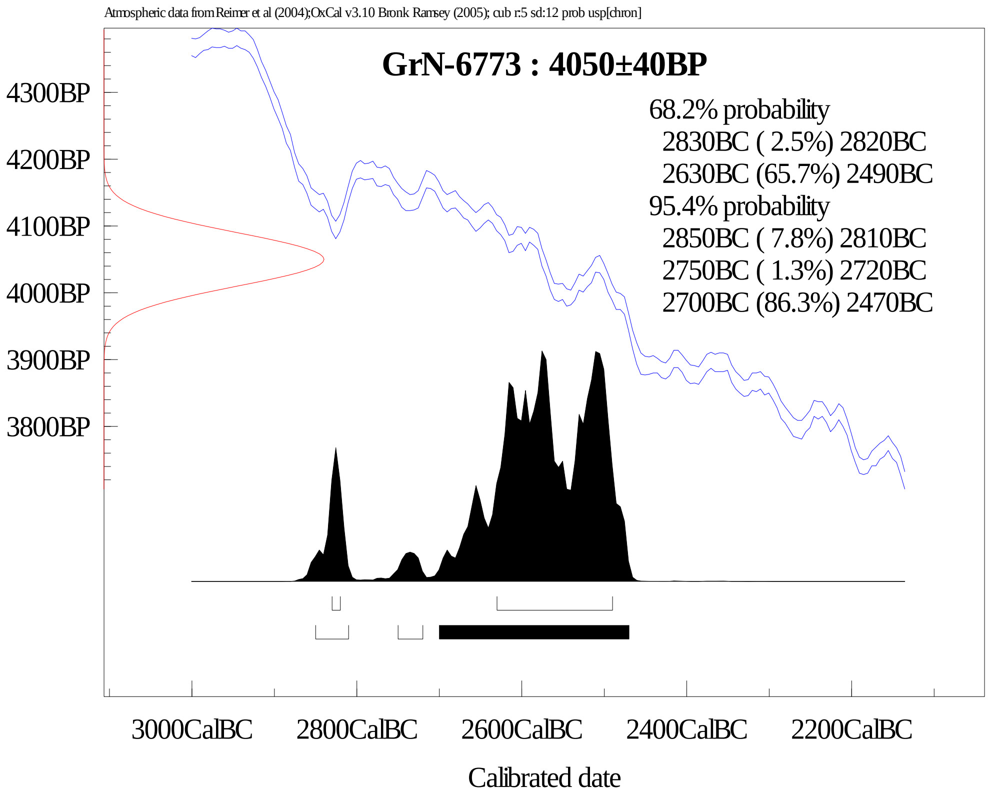


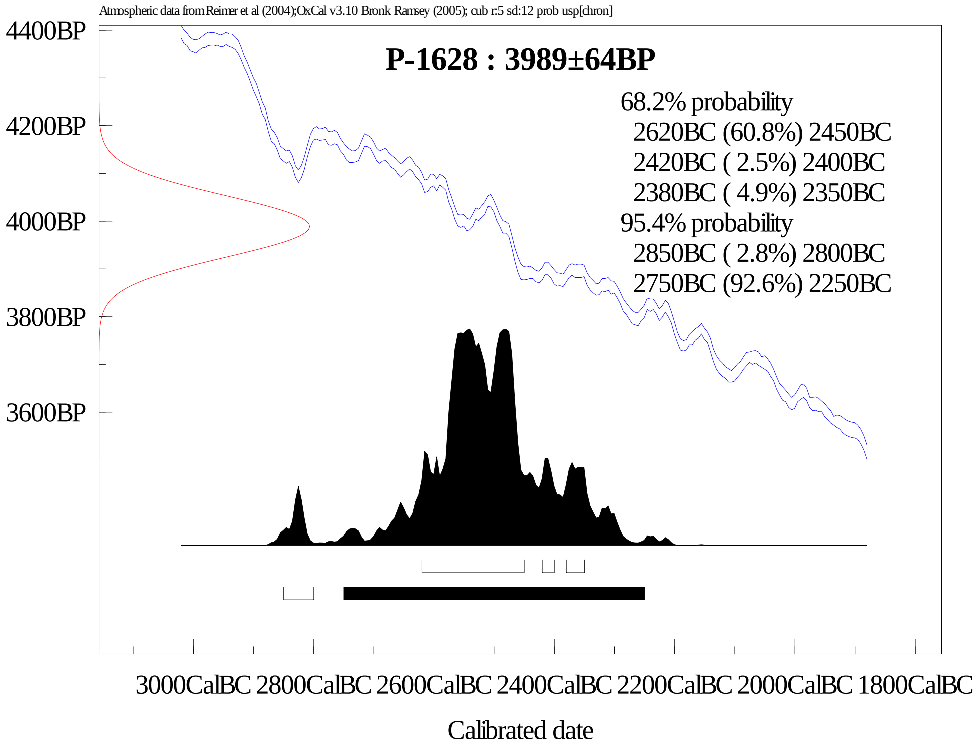
Korucu Tepe KOR.7



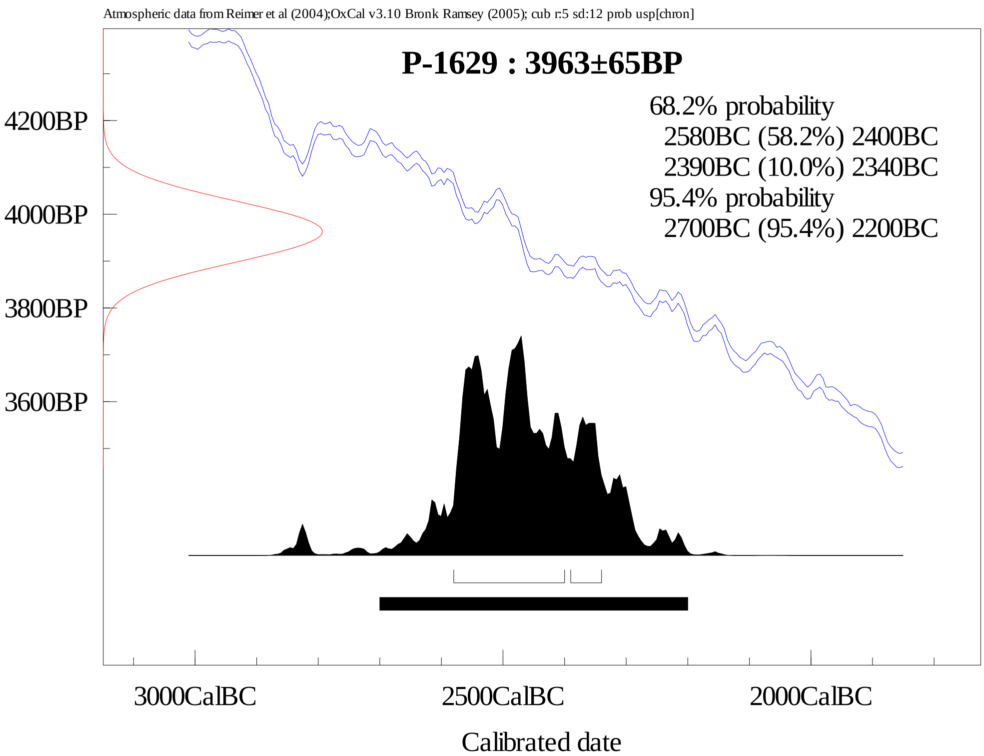
Korucu Tepe KOR.8



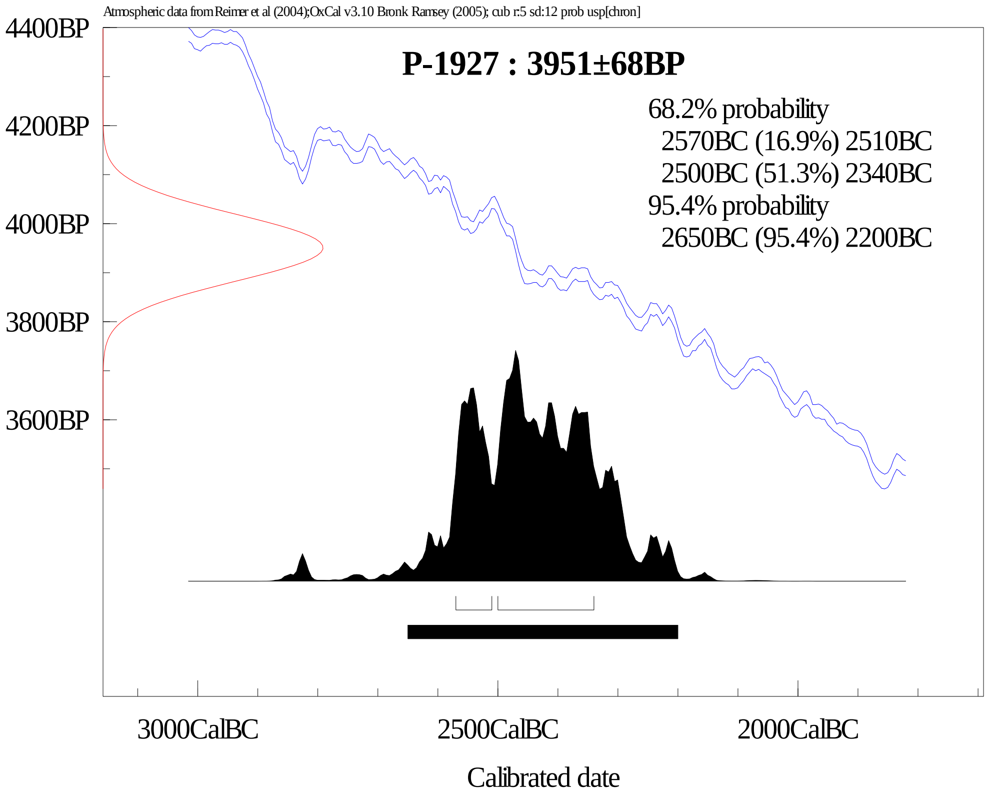
Korucu Tepe KOR.9



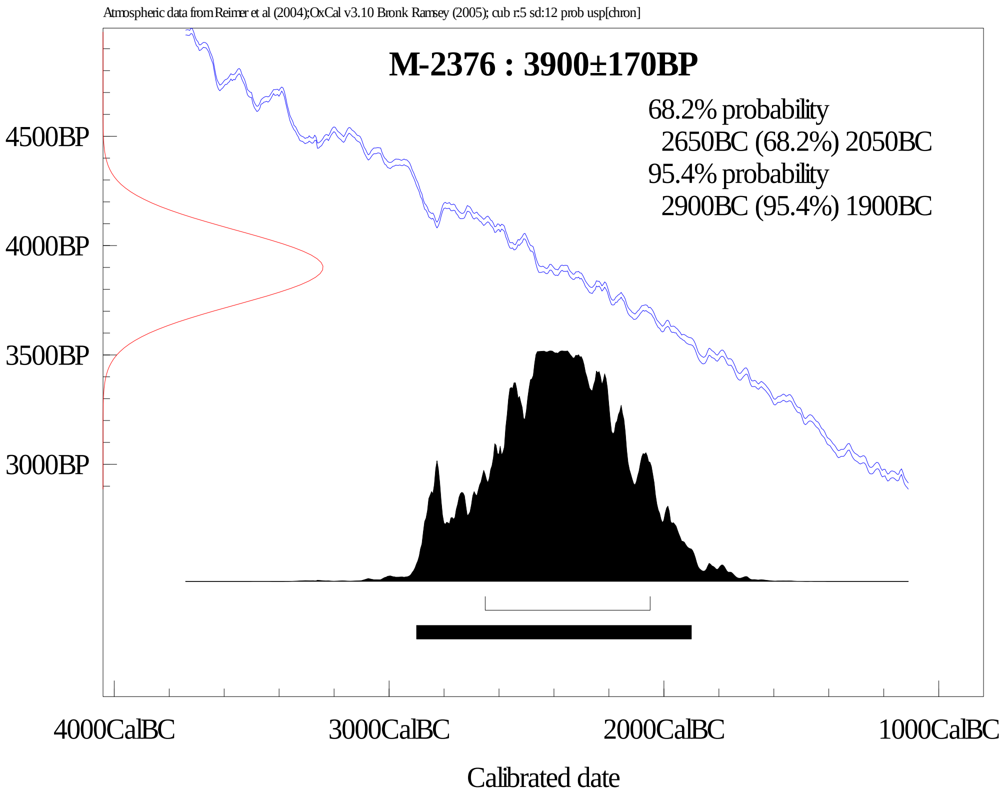
Korucu Tepe KOR.10



Korucu Tepe KOR.11

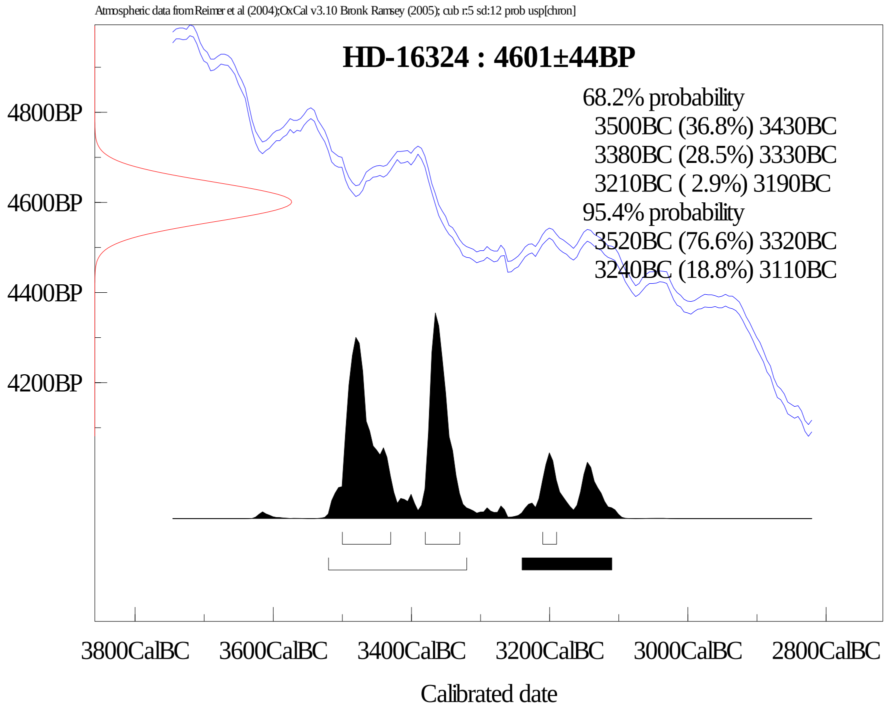


Korucu Tepe KOR.12

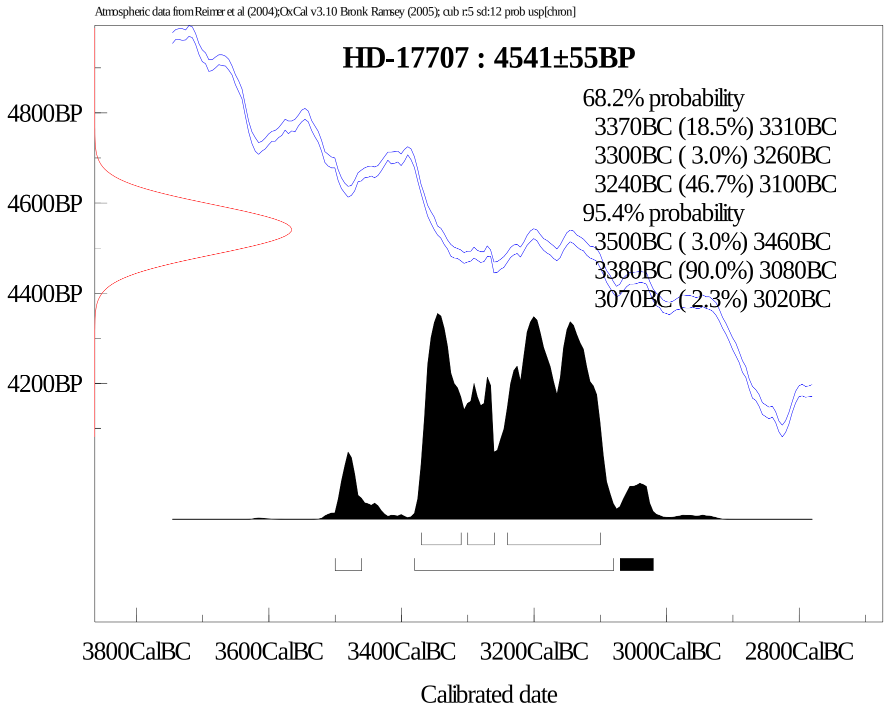


Kumtepe

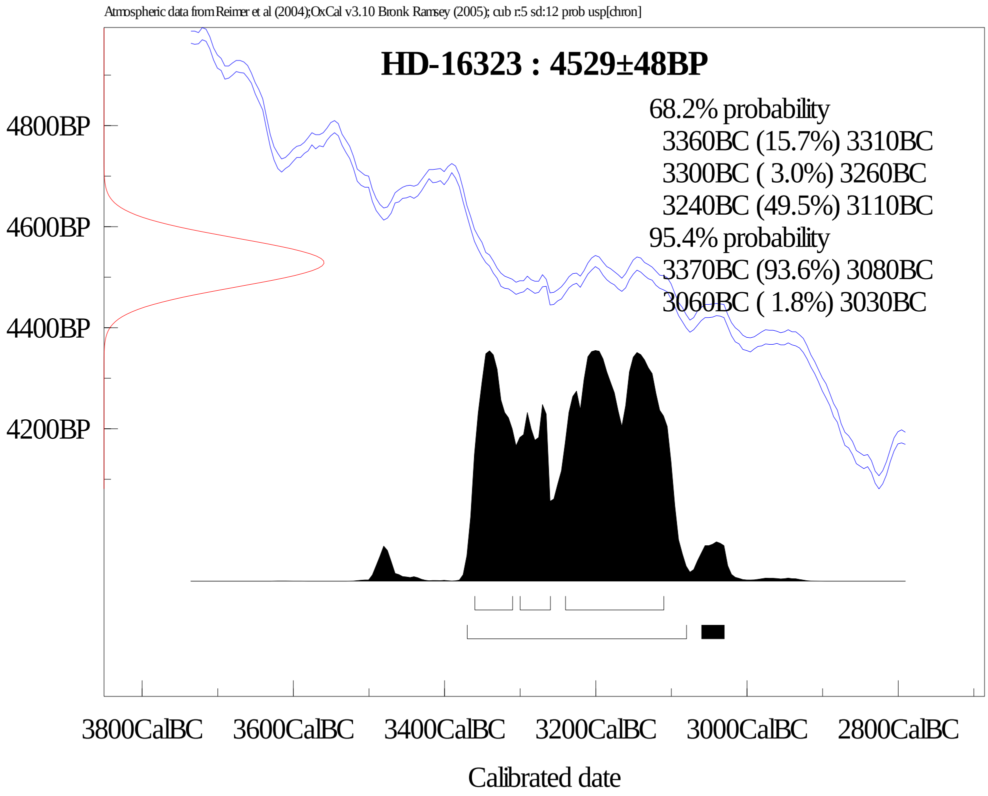
Kumtepe KUM.1



Kumtepe KUM.2



Kumtepe KUM.3



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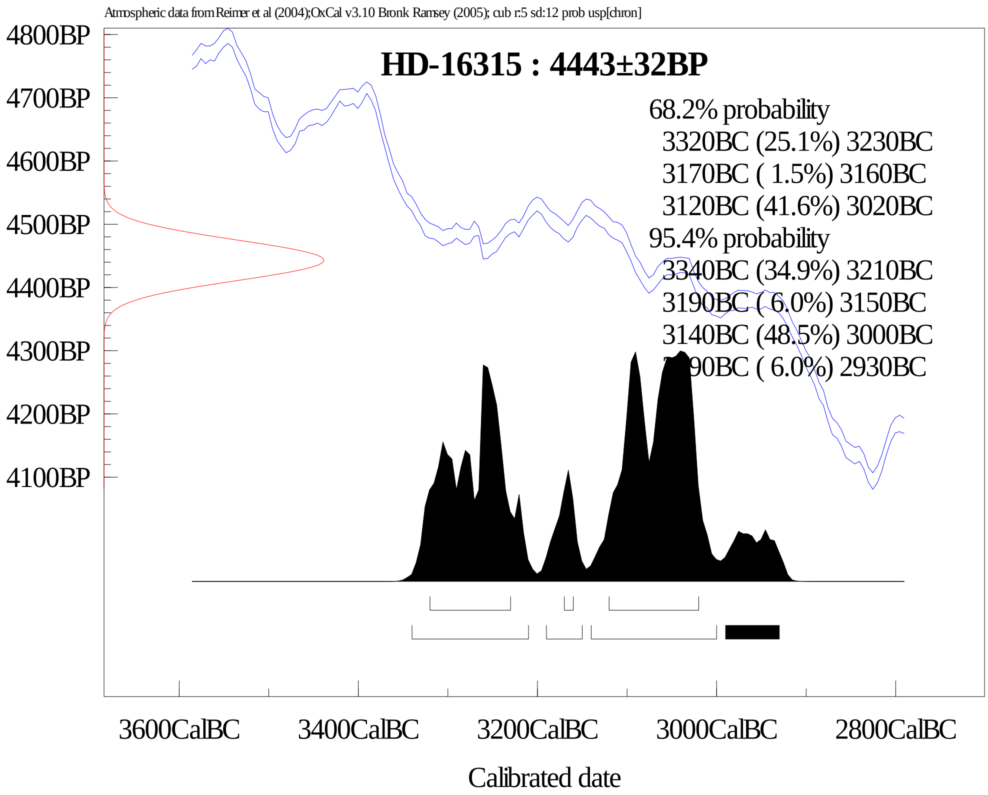
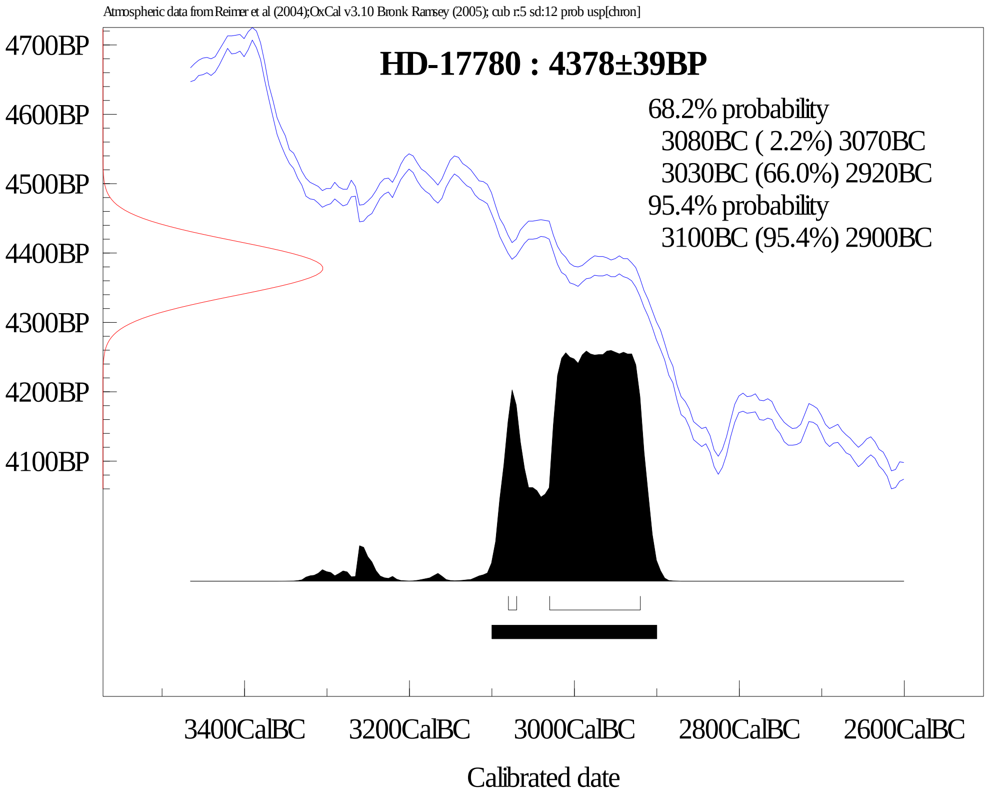
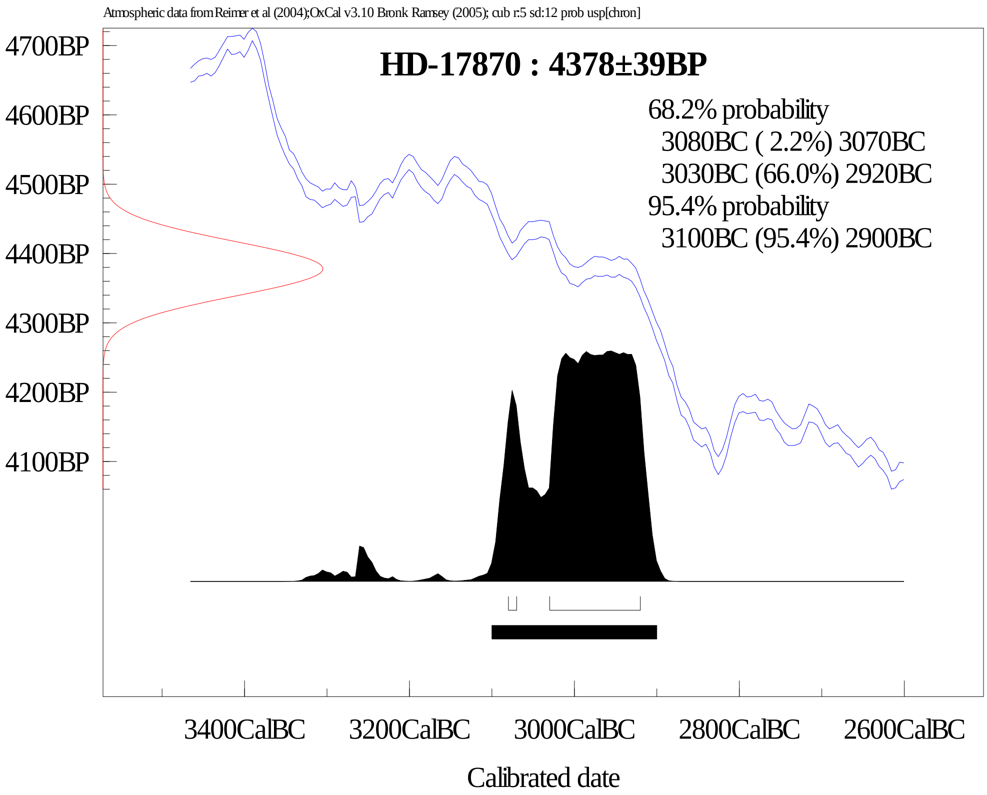


Kumtepe KUM.5

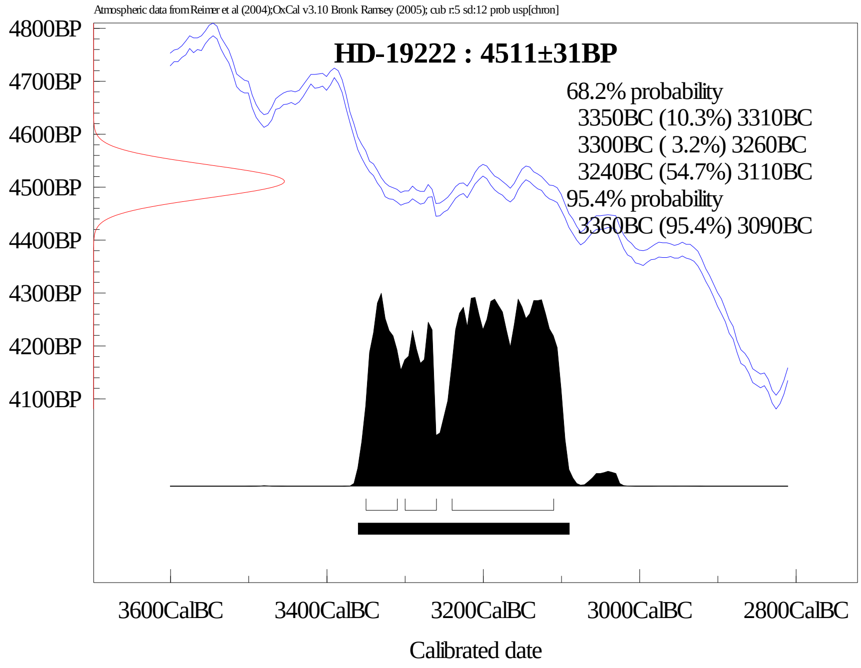


Kumtepe KUM.6



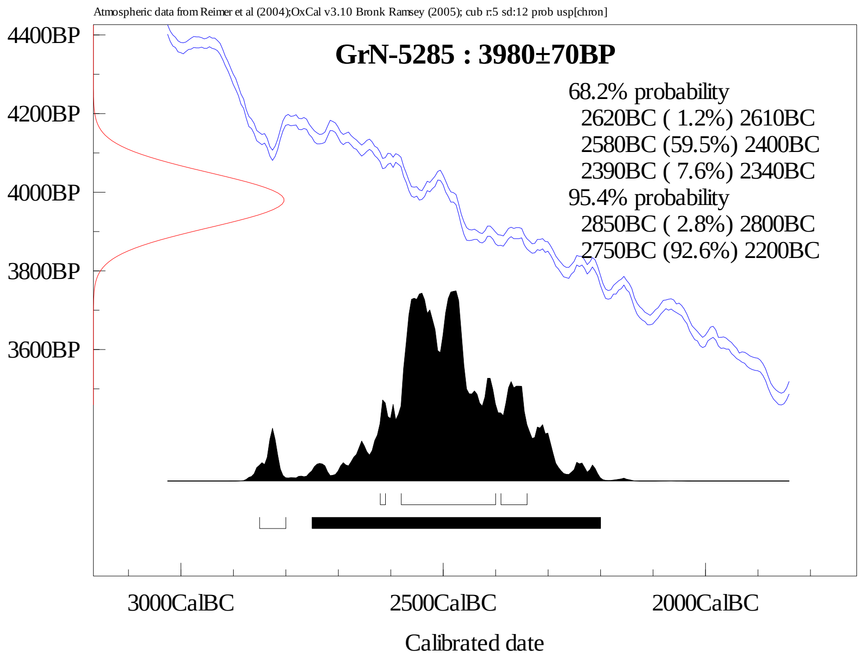
Limantepe

Limantepe LIM.1



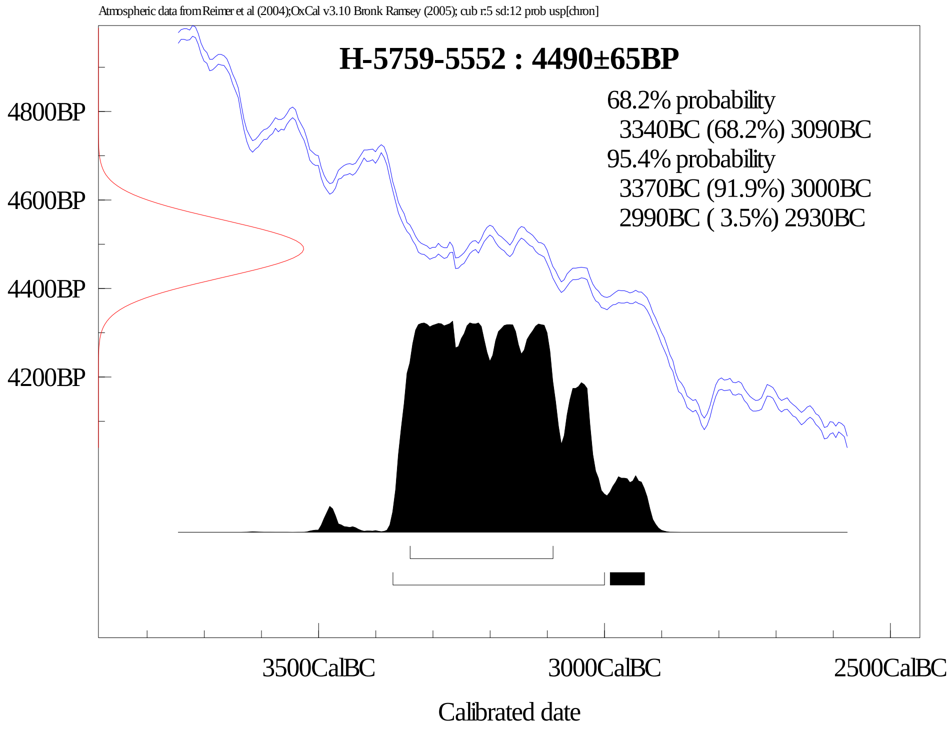
Molla Kendi

Molla Kendi MOL.1

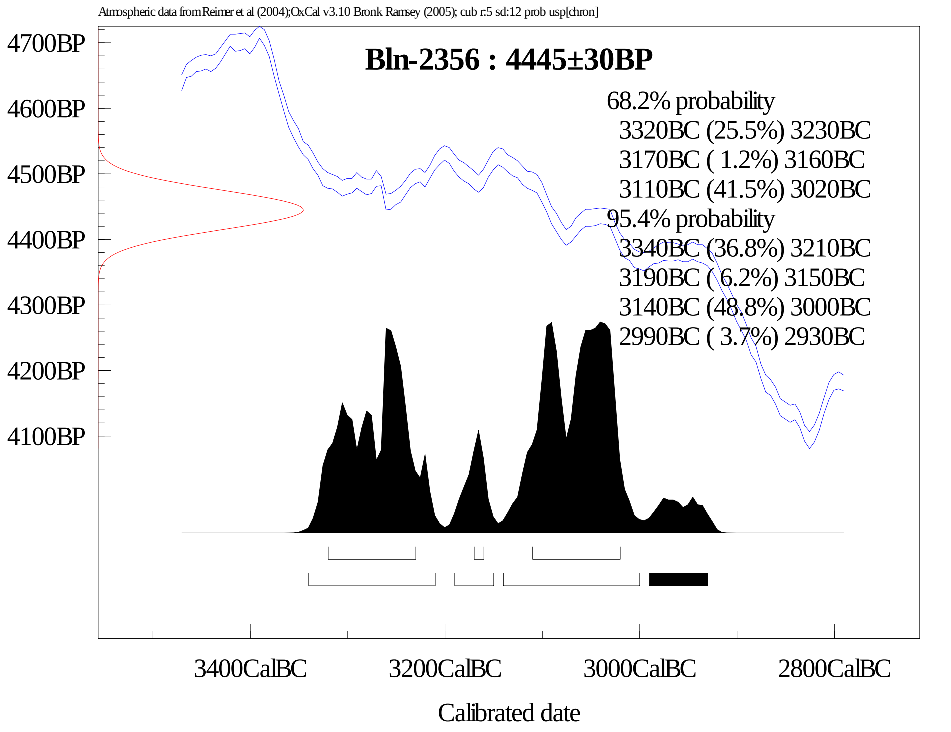


Norşuntepe

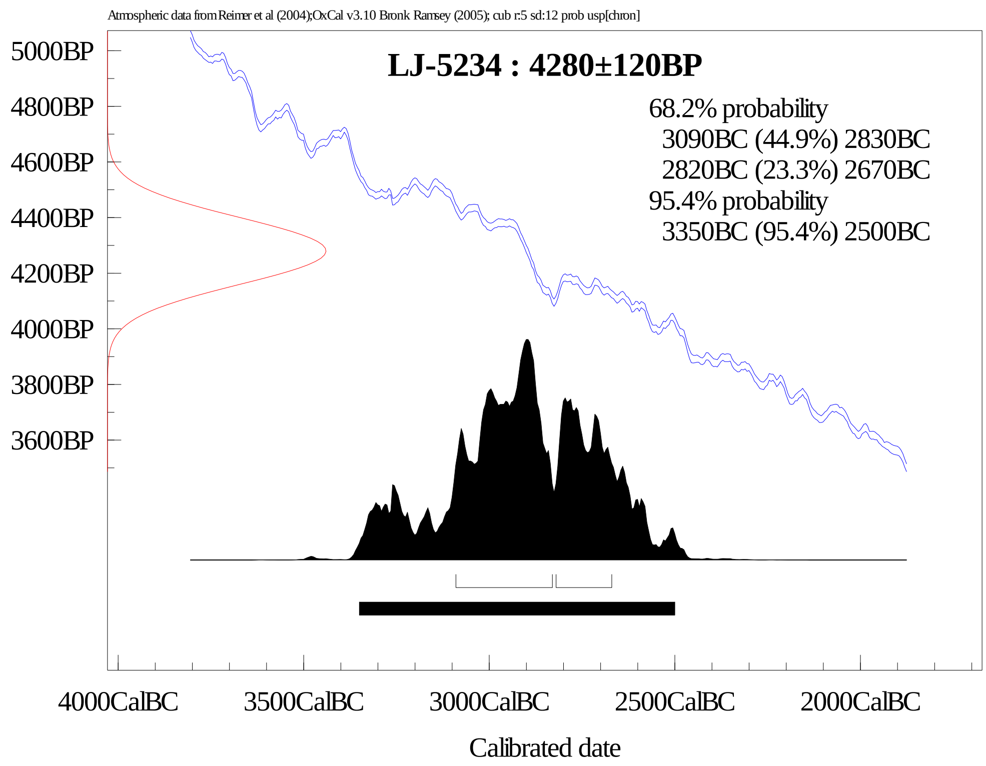
Norşuntepe NT.1



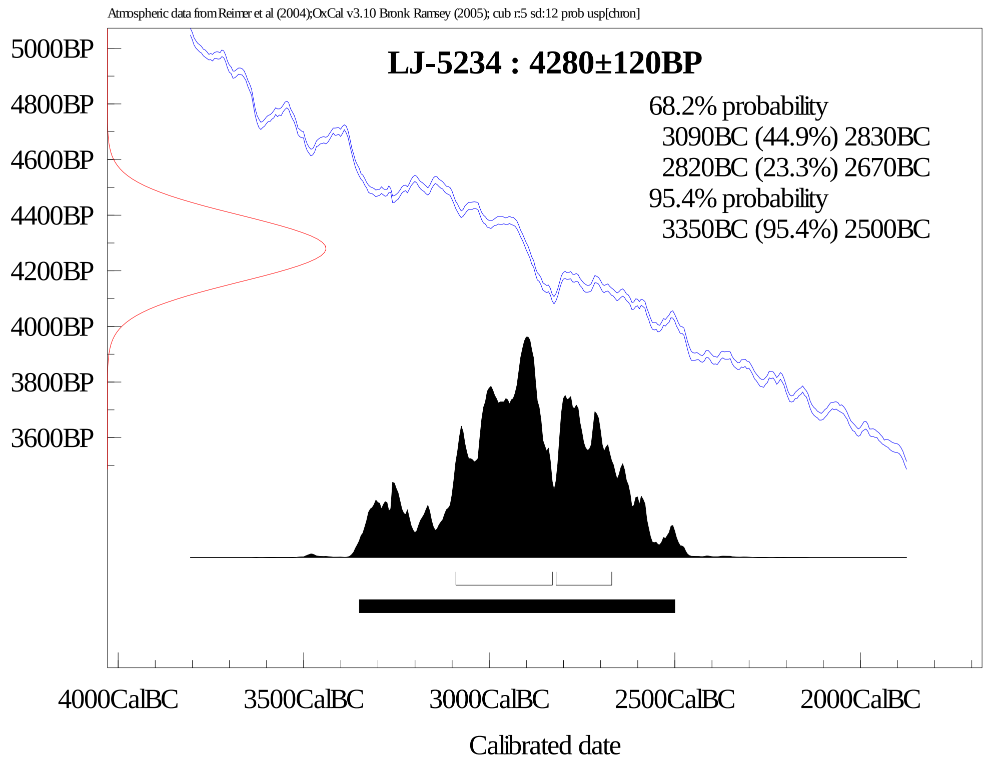
Norşuntepe NT.2



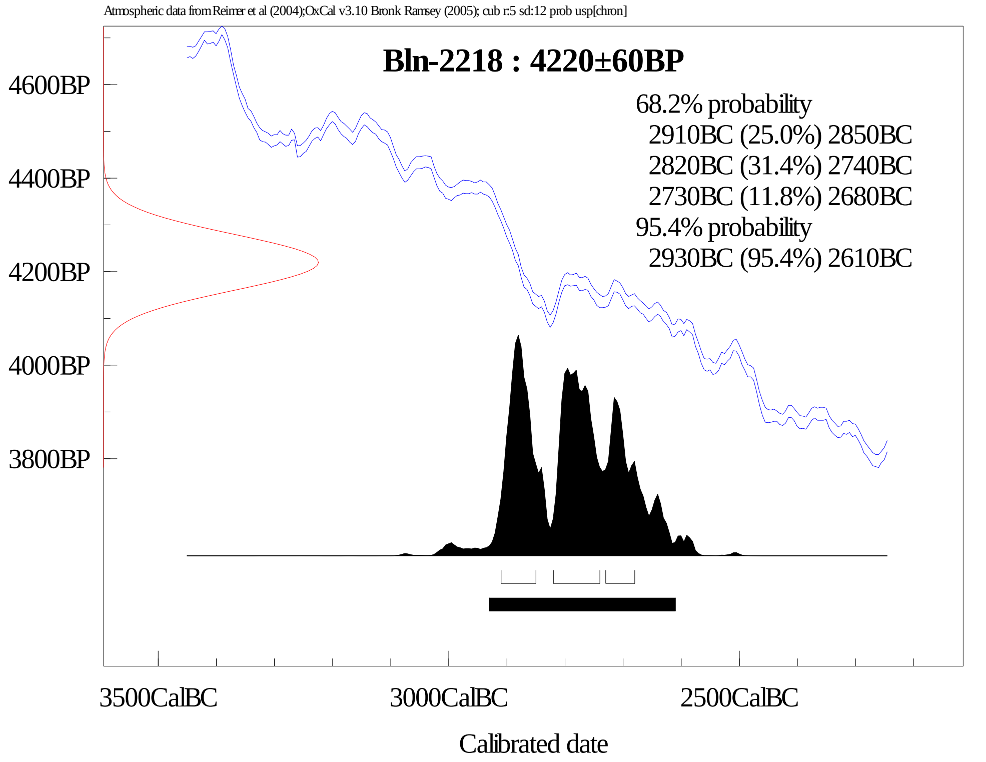
Norşuntepe NT.3



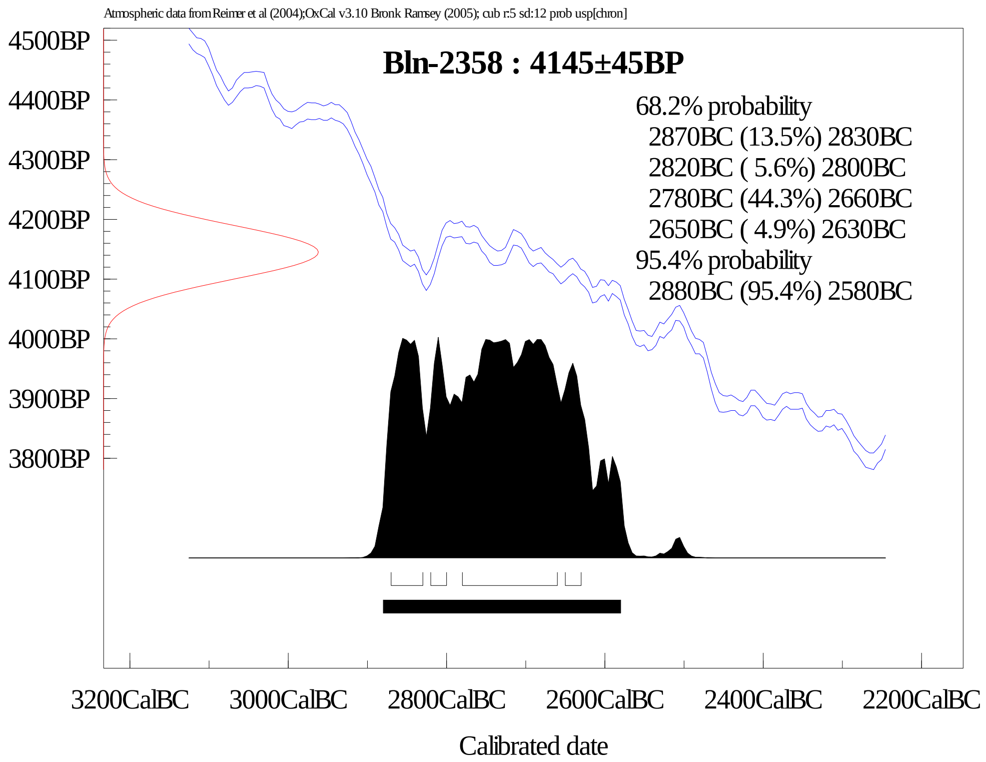
Norşuntepe NT.4


Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]
LJ-5234 : 4280±120BP
68.2% probability
3090BC (44.9%) 2830BC
2820BC (23.3%) 2670BC
95.4% probability
3350BC (95.4%) 2500BC
5000BP
4800BP
4600BP
4400BP
4200BP
4000BP
3800BP
3600BP
4000CalBC
3500CalBC
3000CalBC
2500CalBC
2000CalBC
Calibrated date

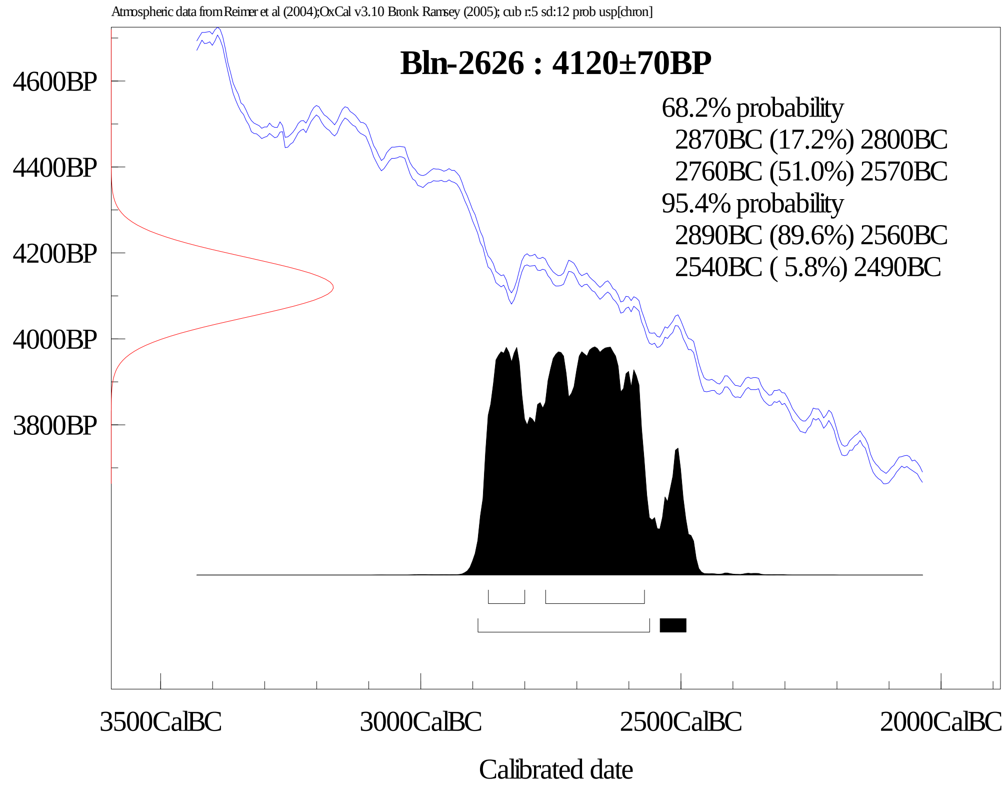
Norşuntepe NT.5



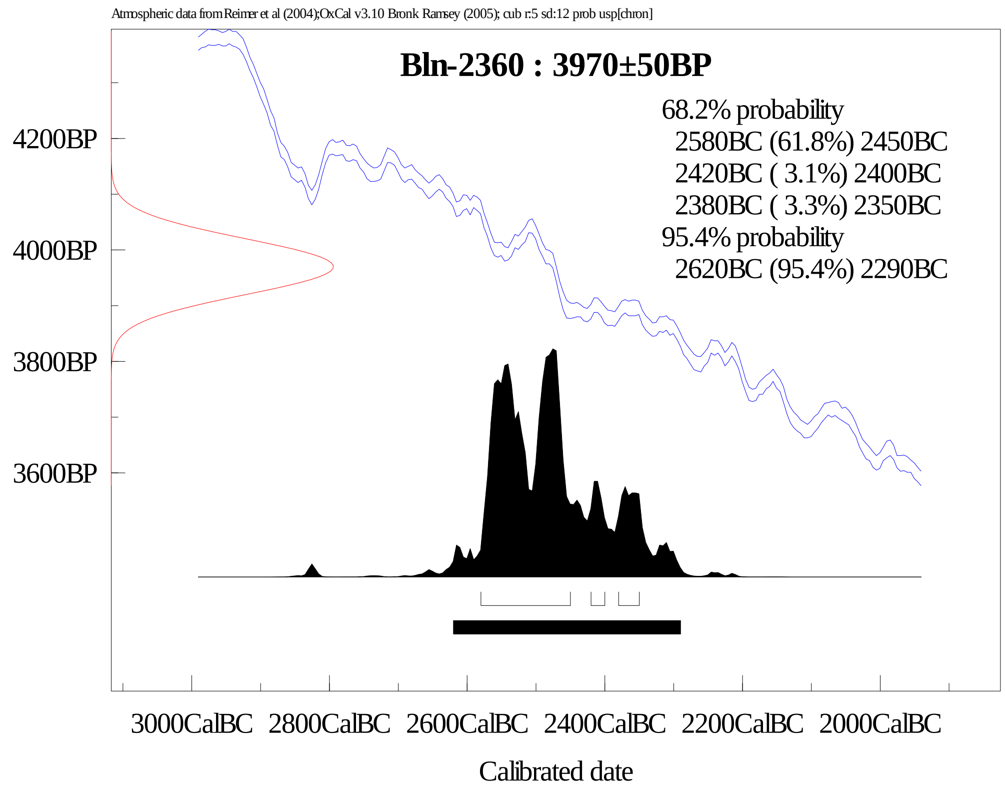
Norşuntepe NT.6



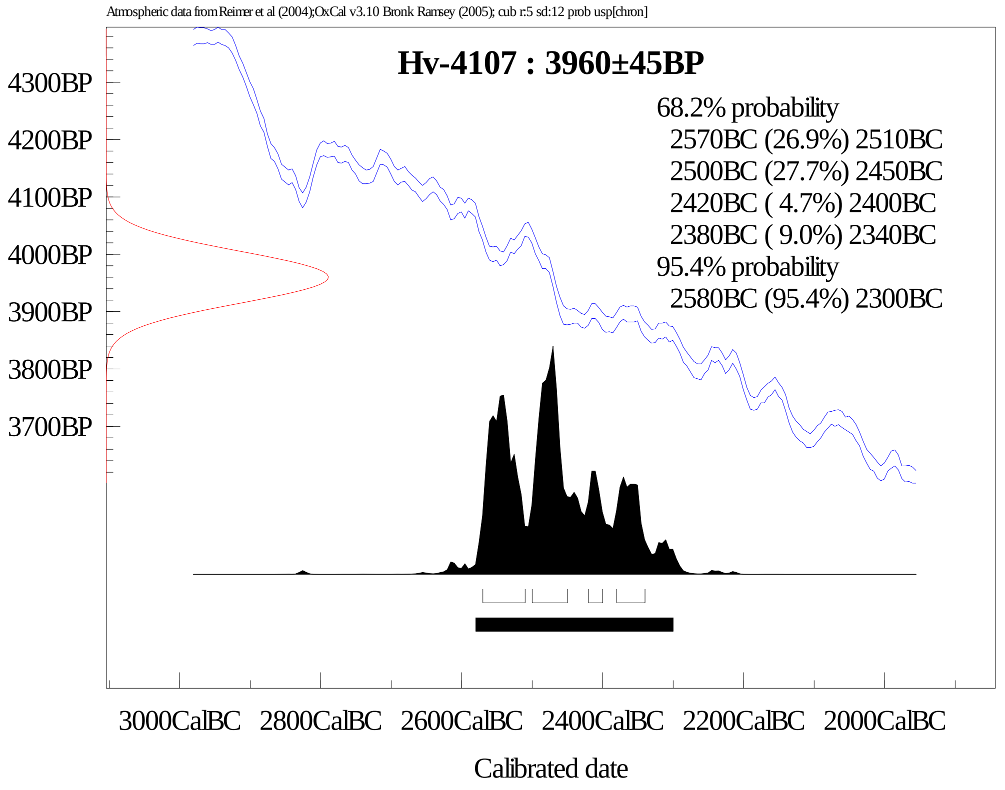
Norşuntepe NT.7



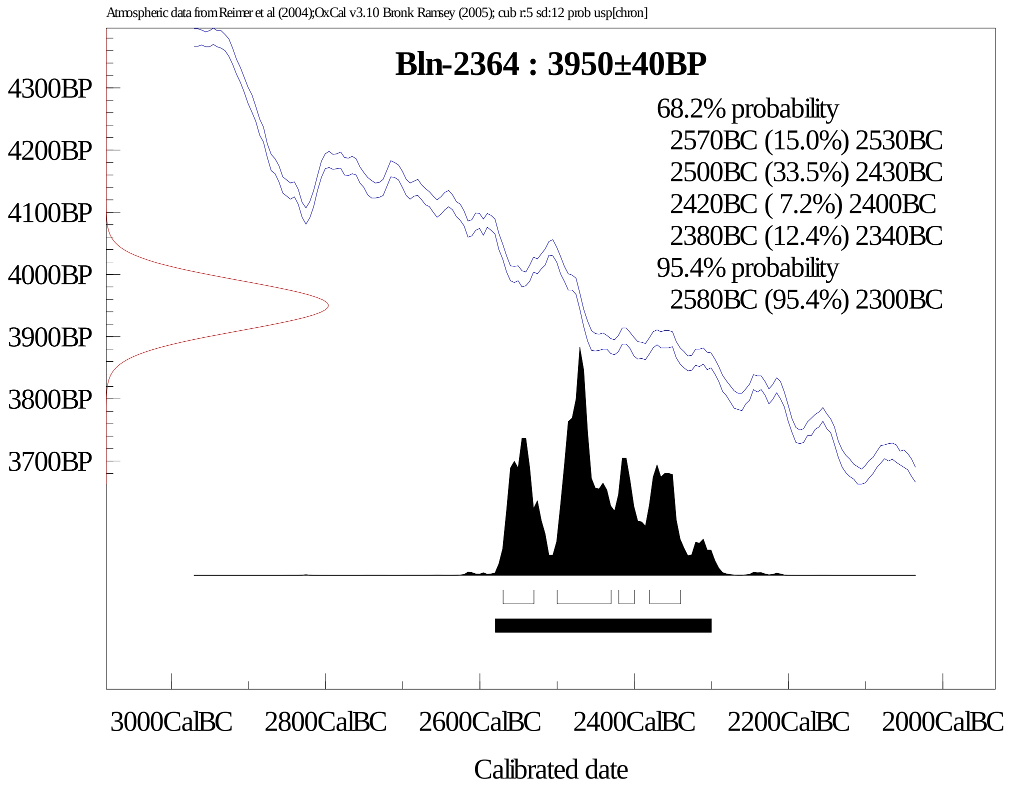
Norşuntepe NT.8



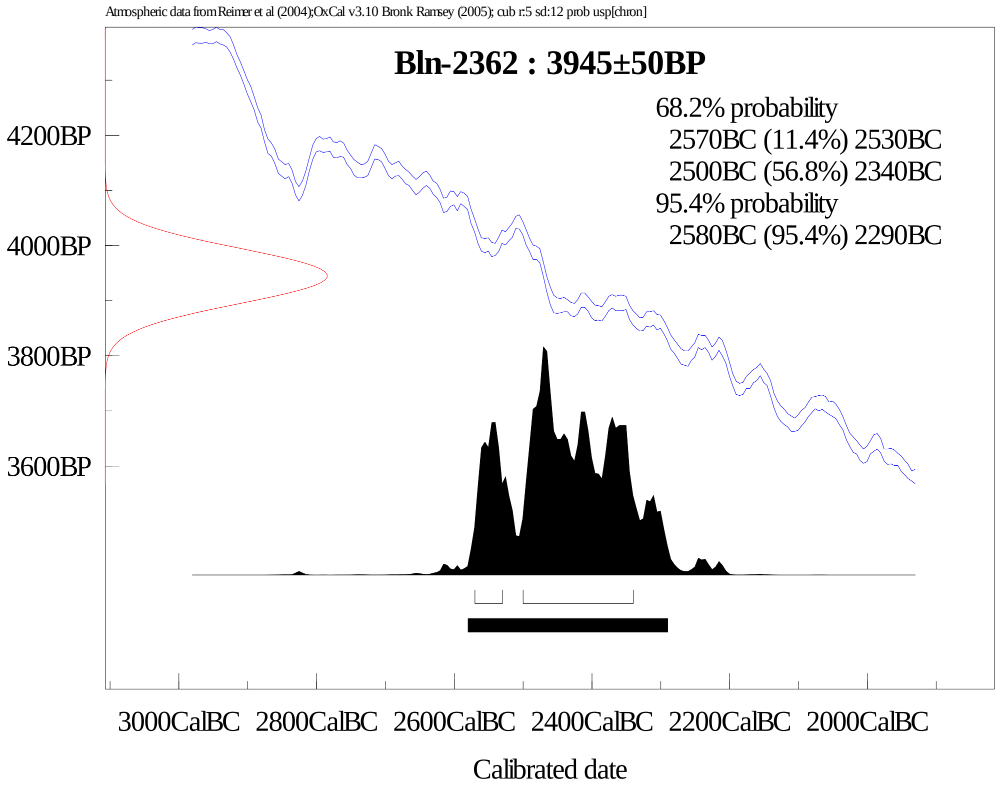
Norşuntepe NT.9



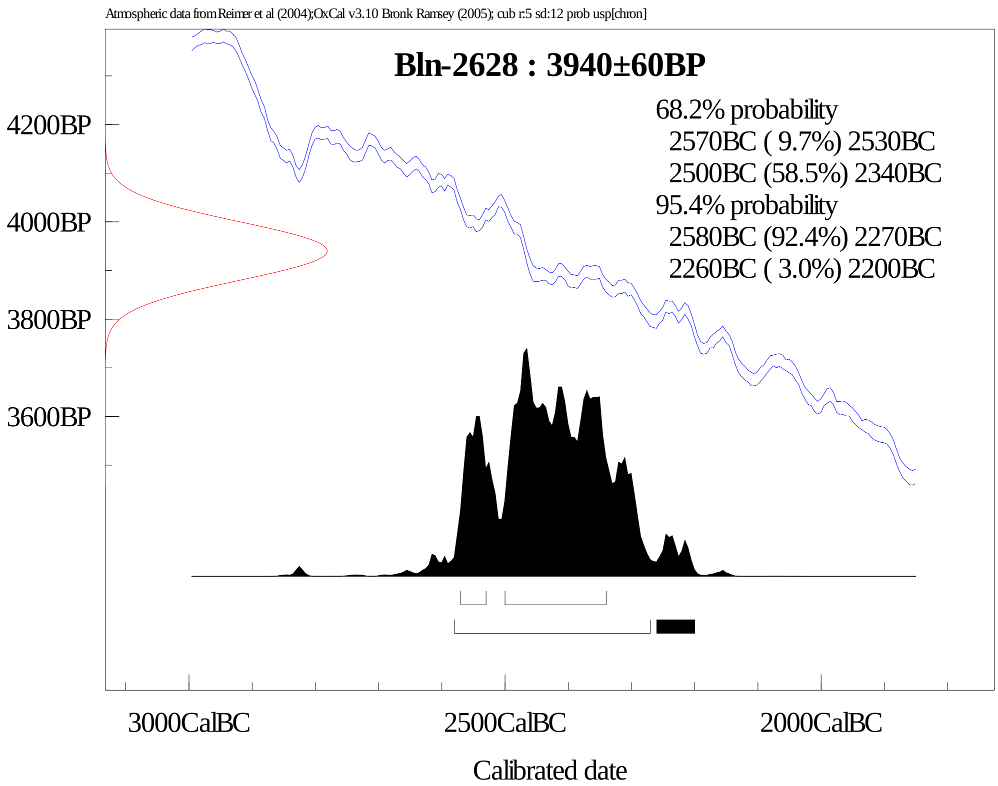
Norşuntepe NT.10



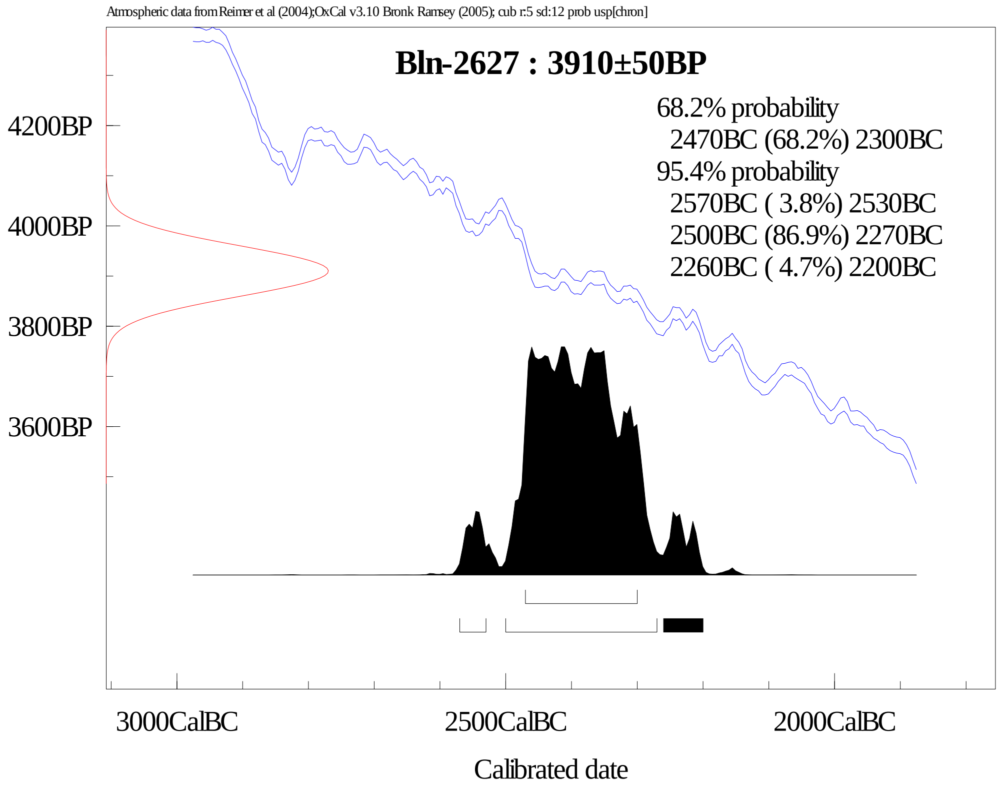
Norşuntepe NT.11



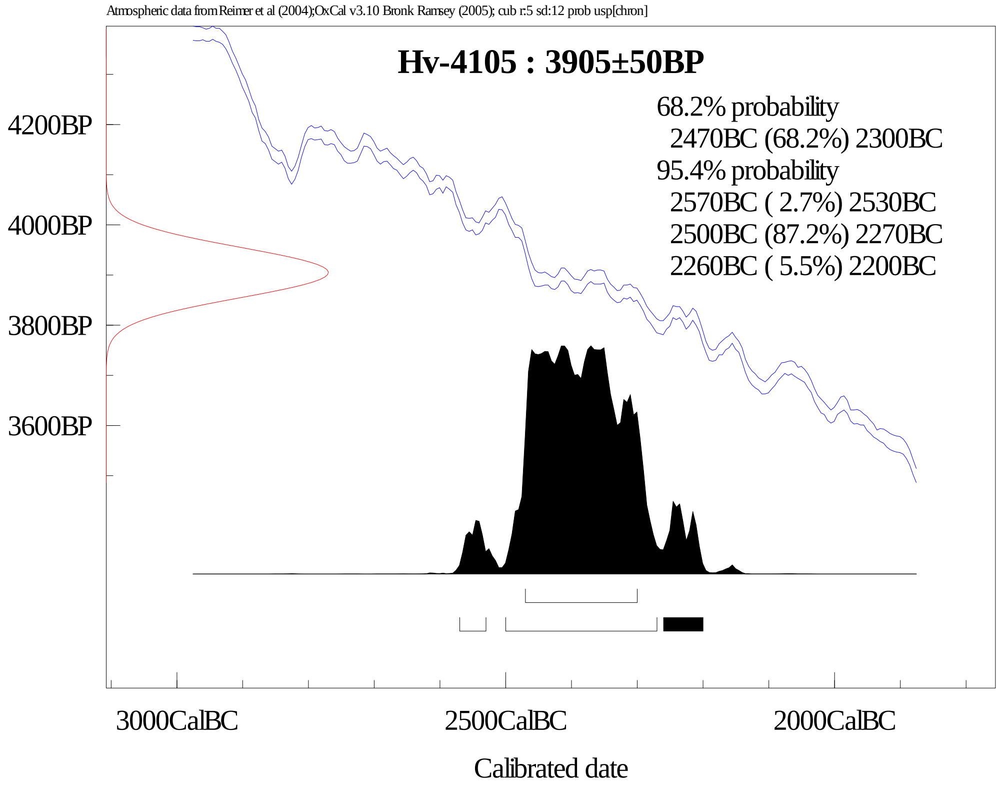
Norşuntepe NT.12



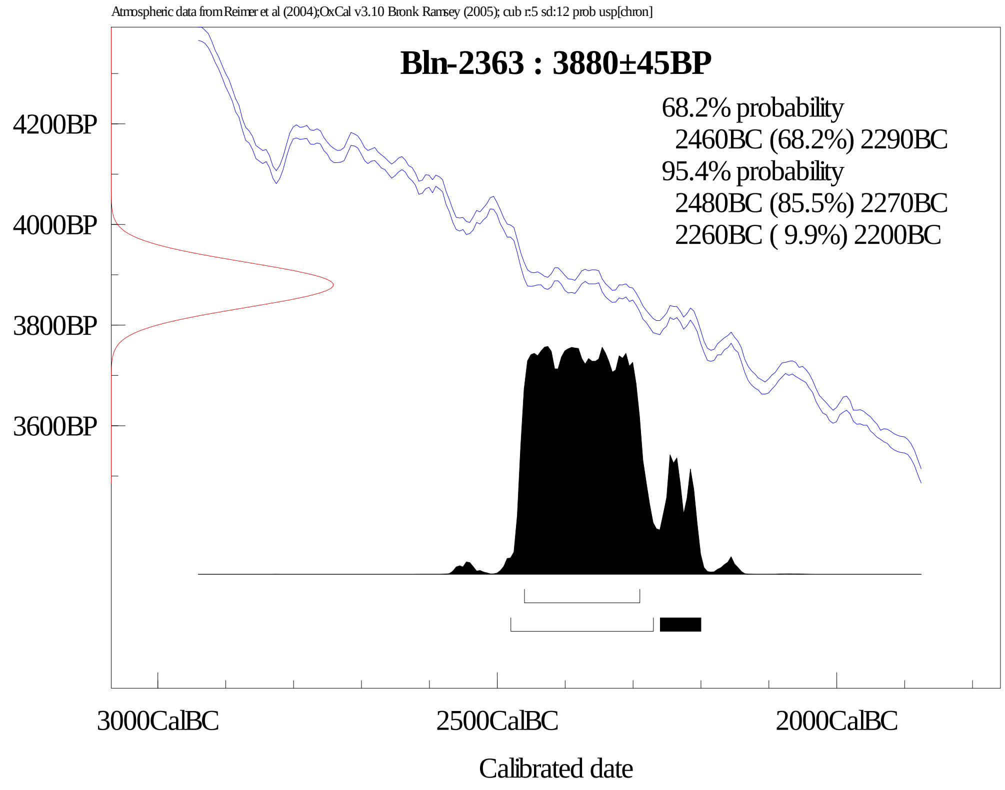
Norşuntepe NT.13



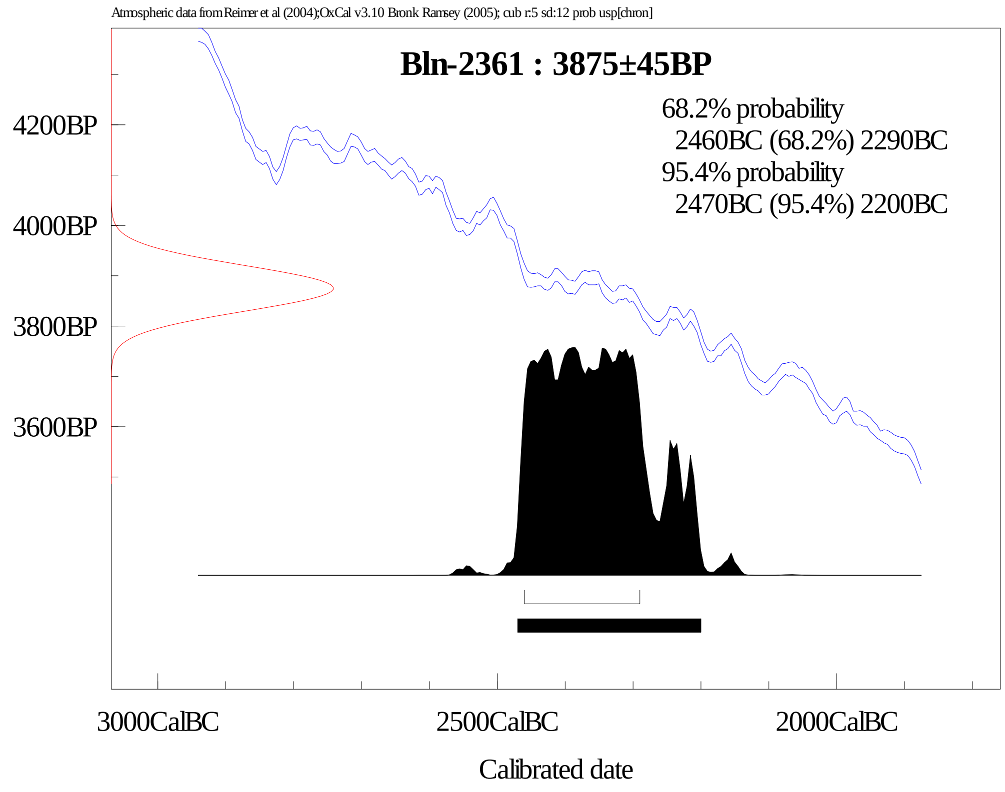
Norşuntepe NT.14



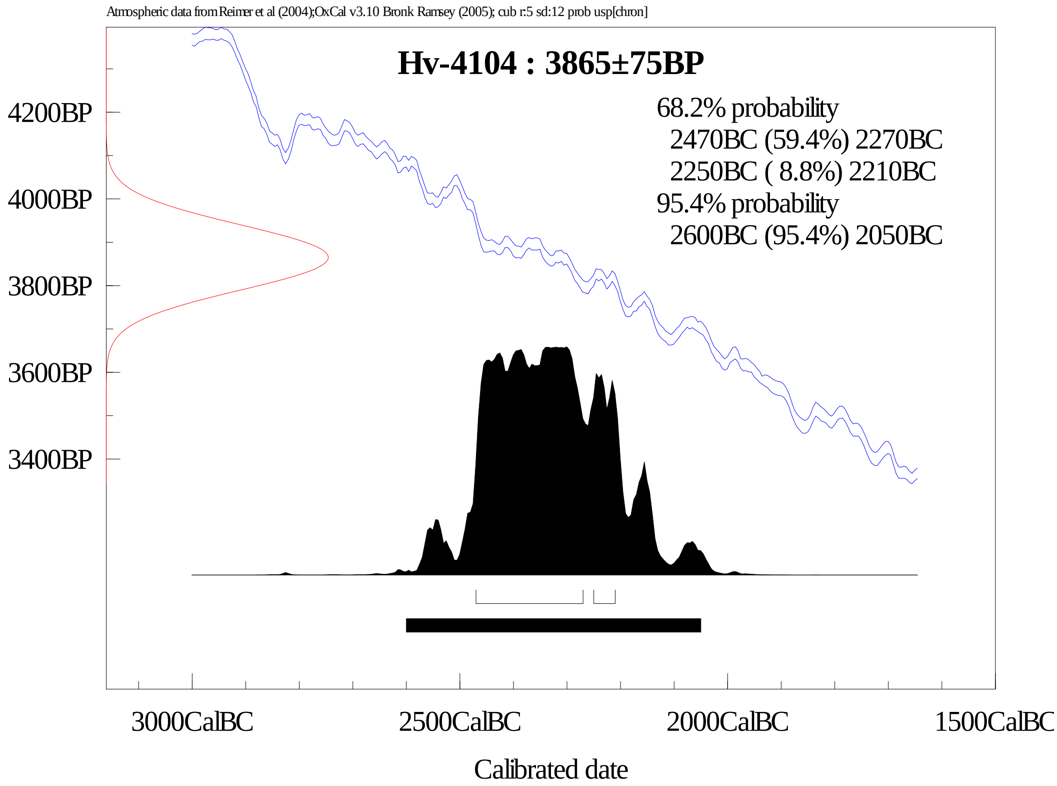
Norşuntepe NT.15



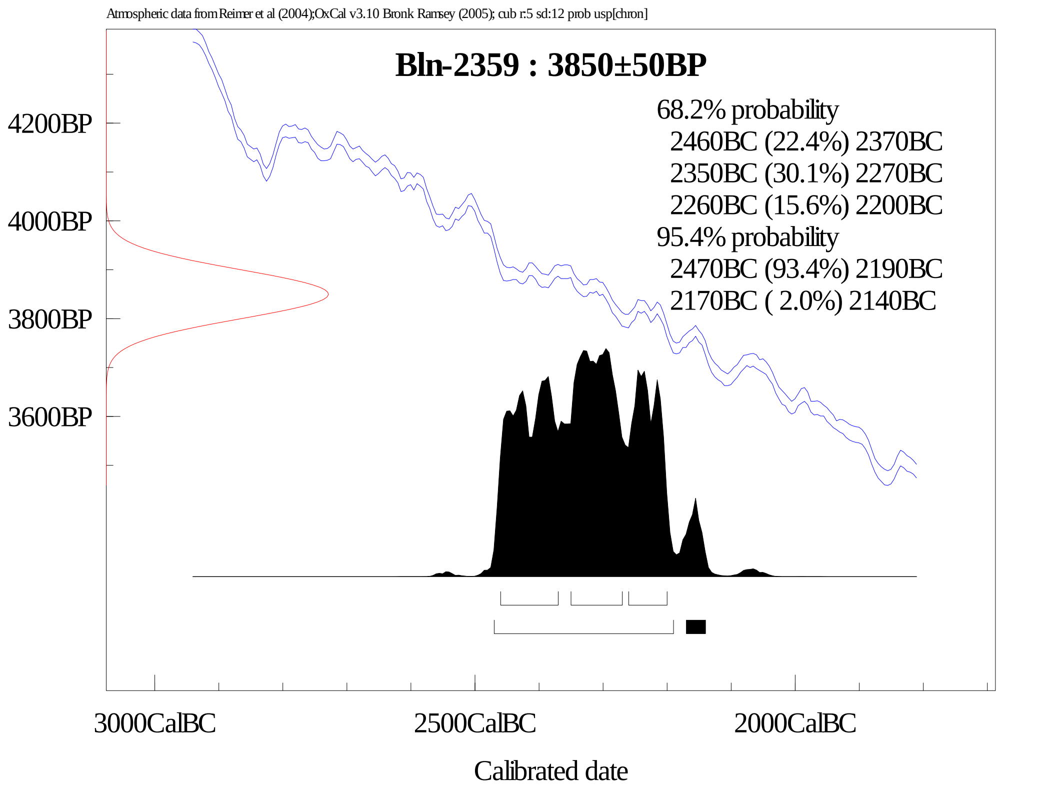
Norşuntepe NT.16



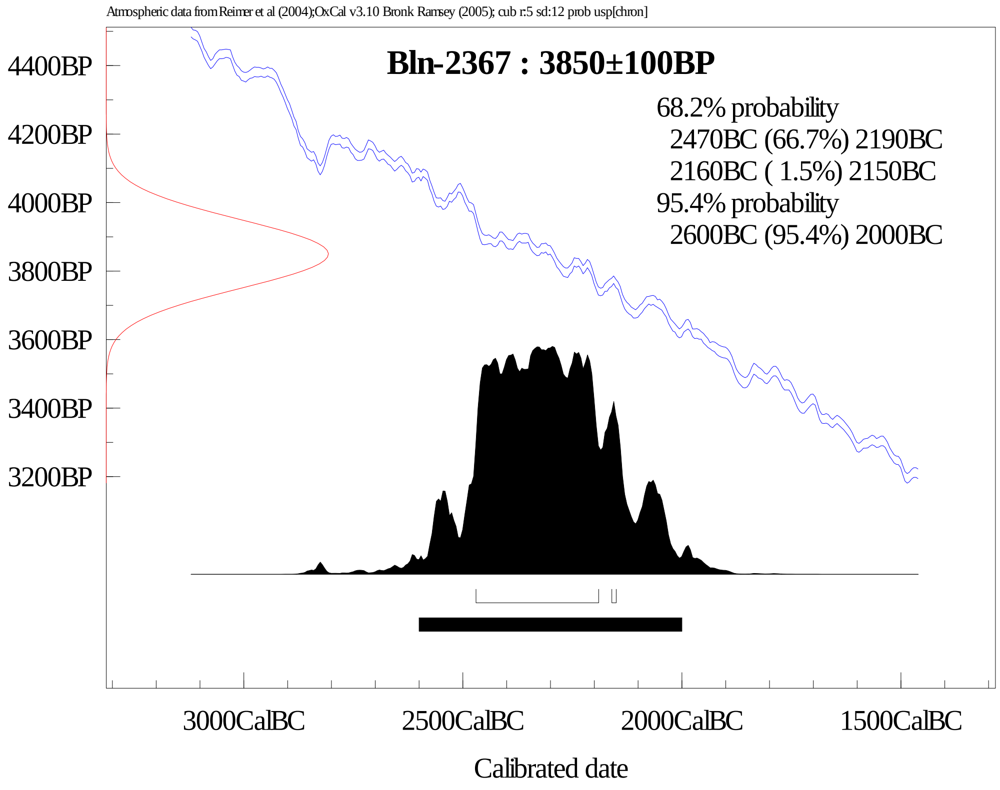
Norşuntepe NT.17



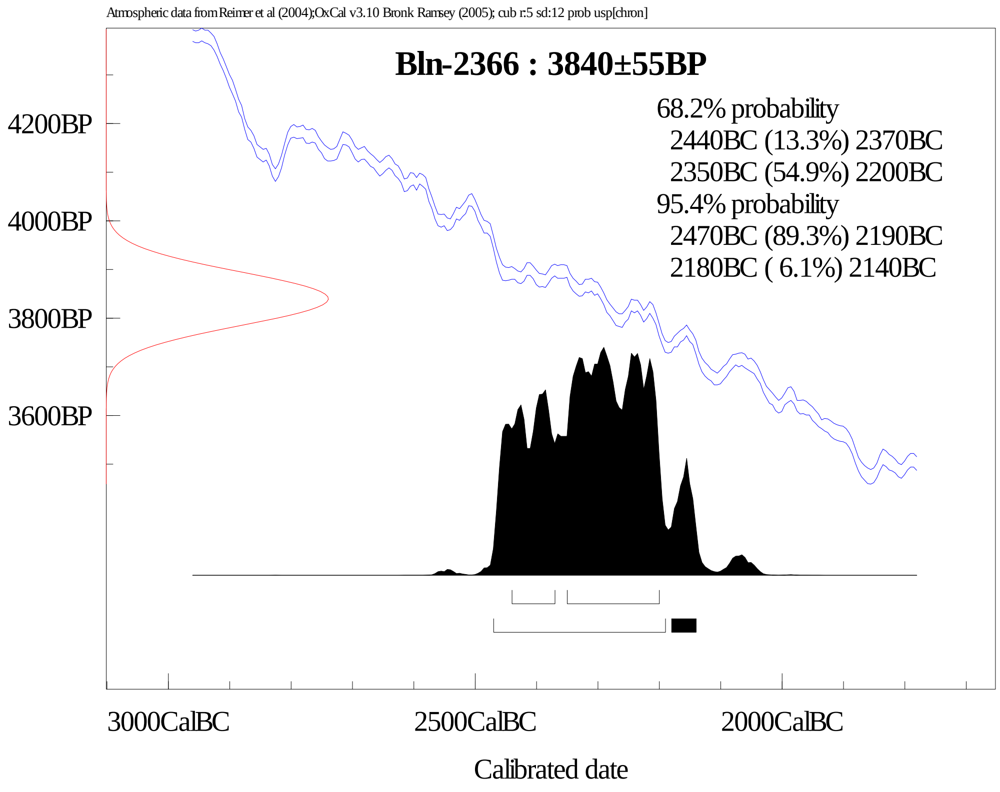
Norşuntepe NT.18



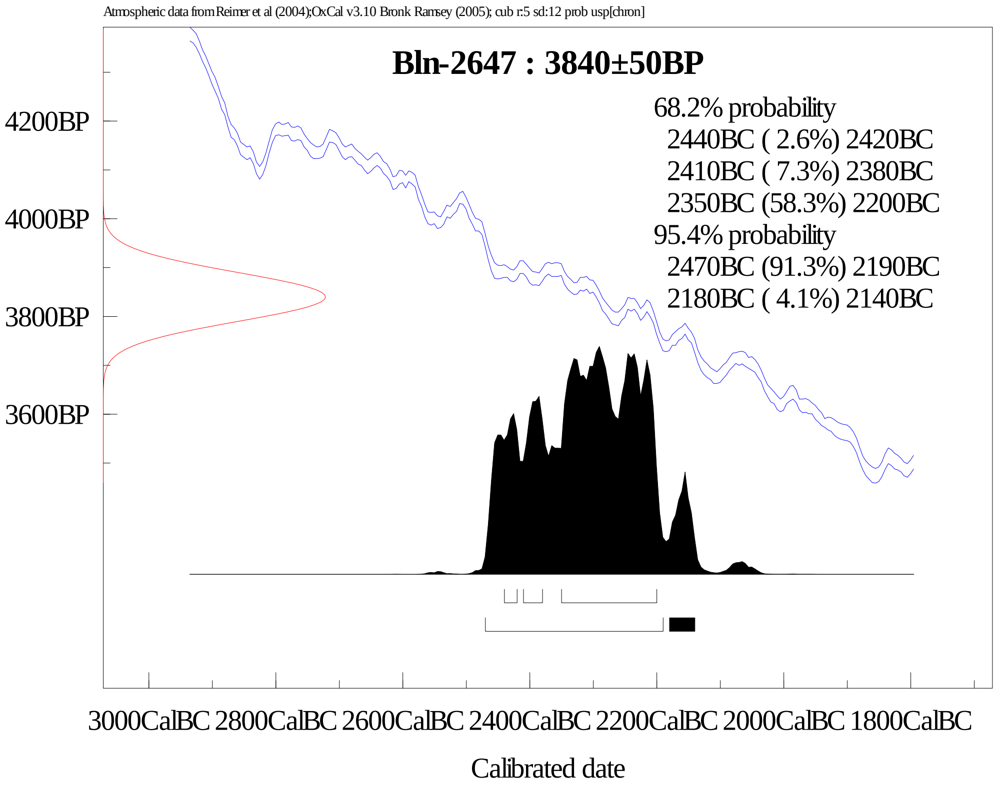
Norşuntepe NT.19



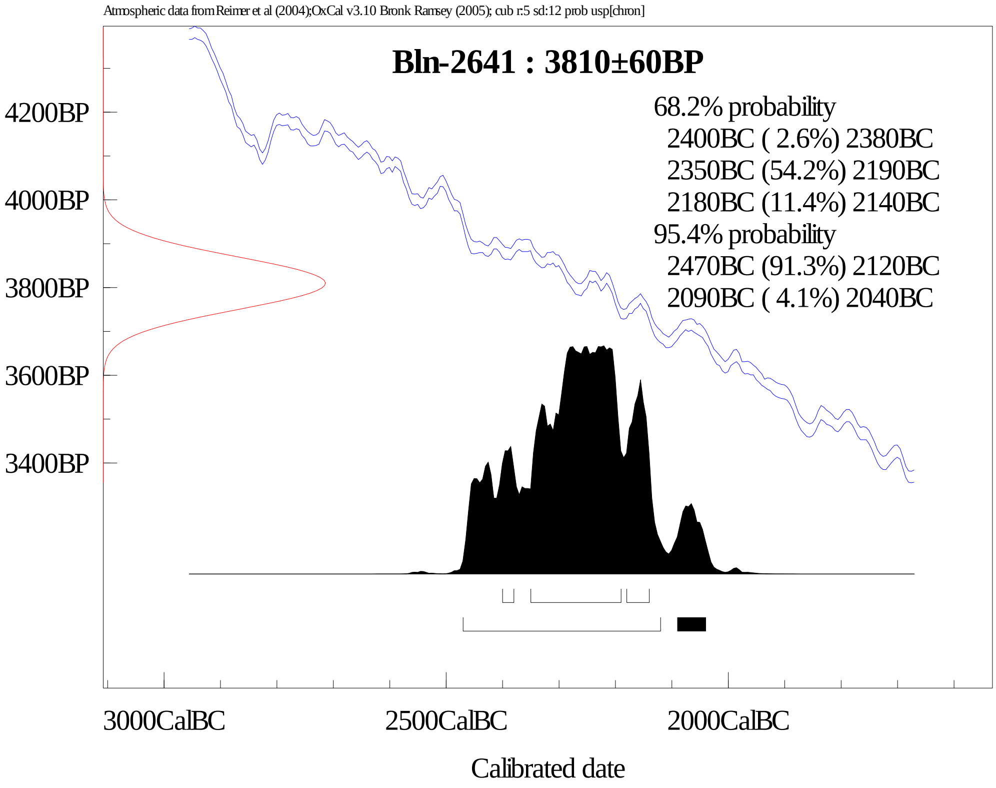
Norşuntepe NT.20



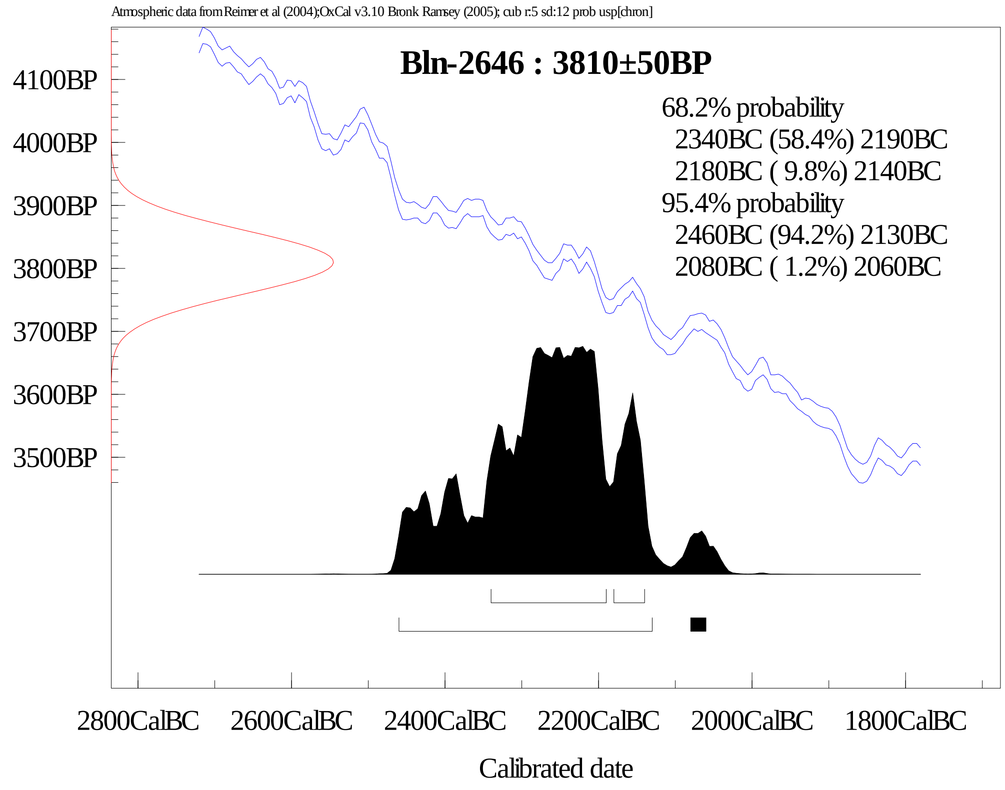
Norşuntepe NT.21



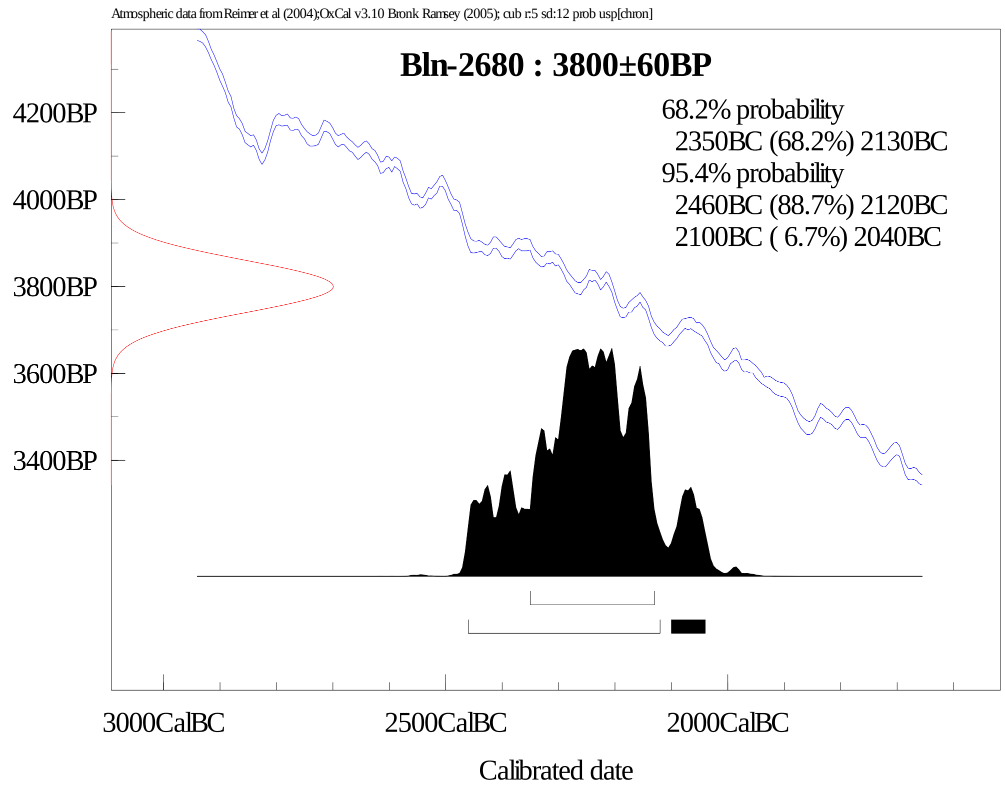
Norşuntepe NT.22



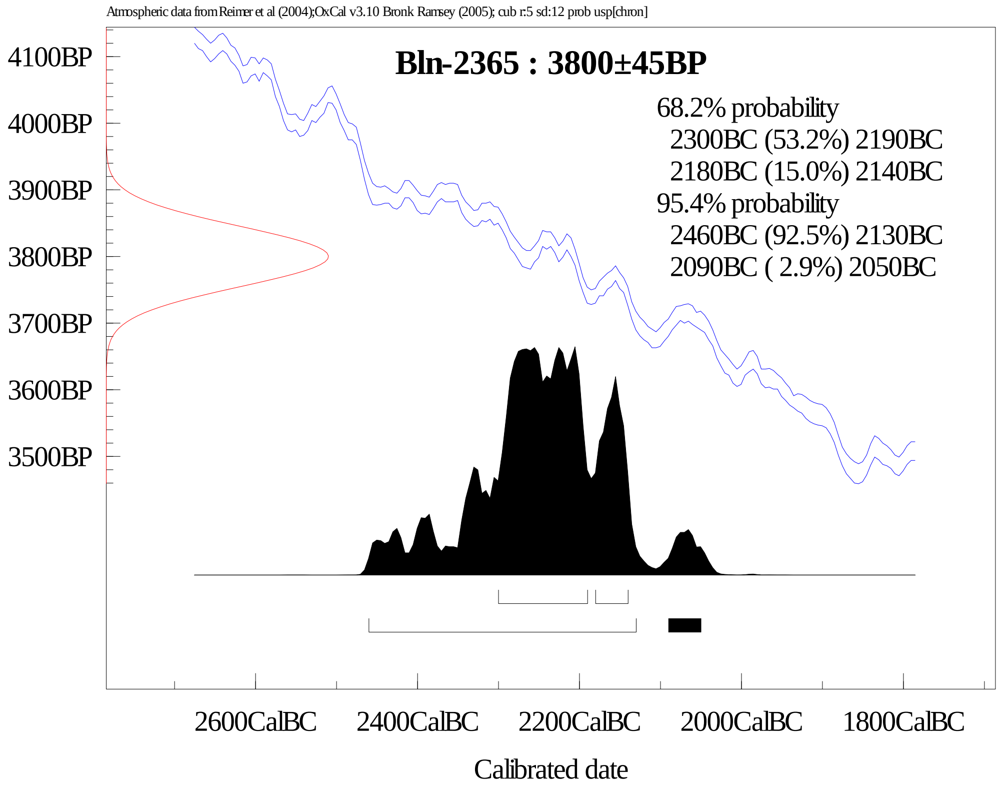
Norşuntepe NT.23



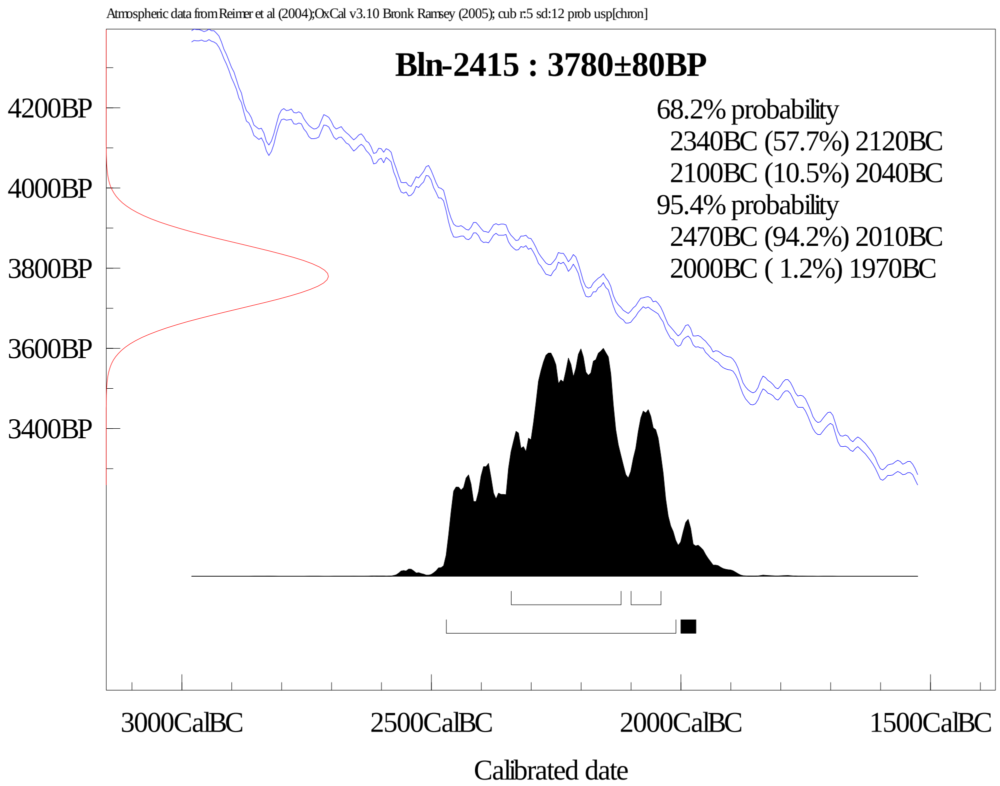
Norşuntepe NT.24



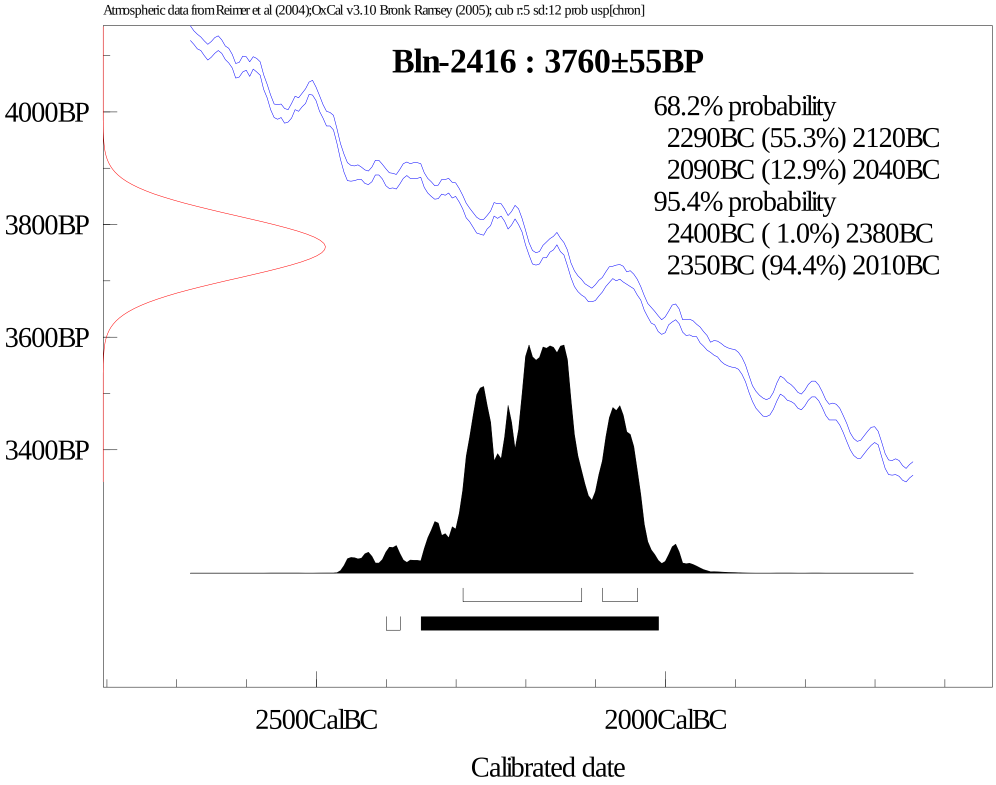
Norşuntepe NT.25



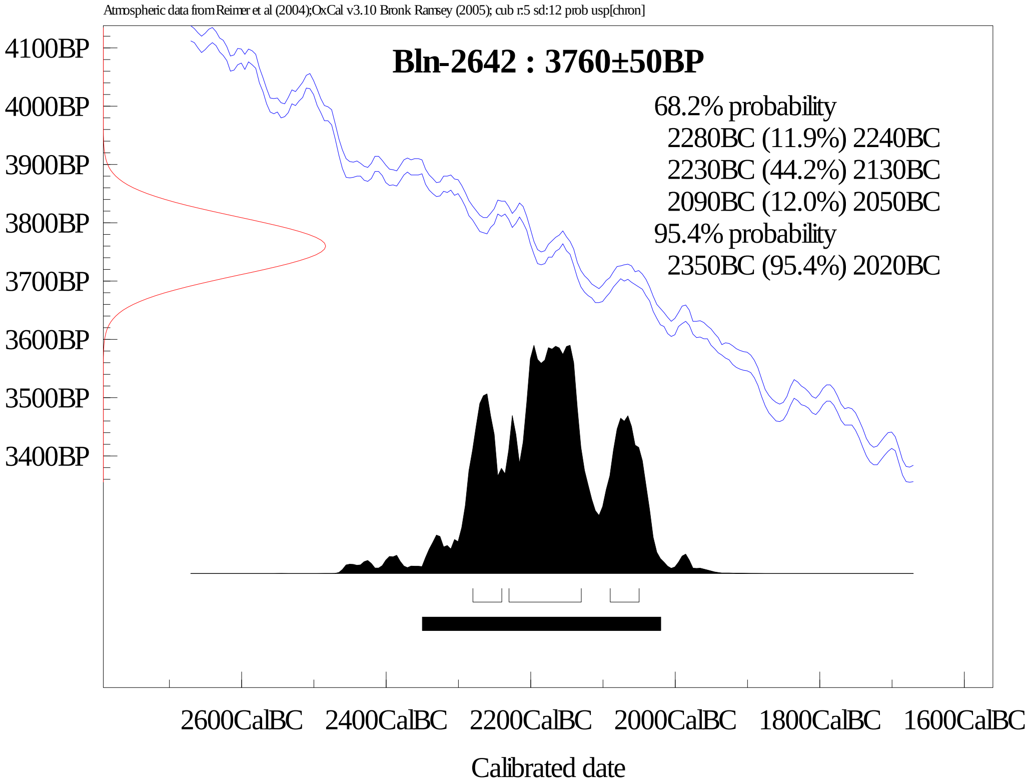
Norşuntepe NT.26



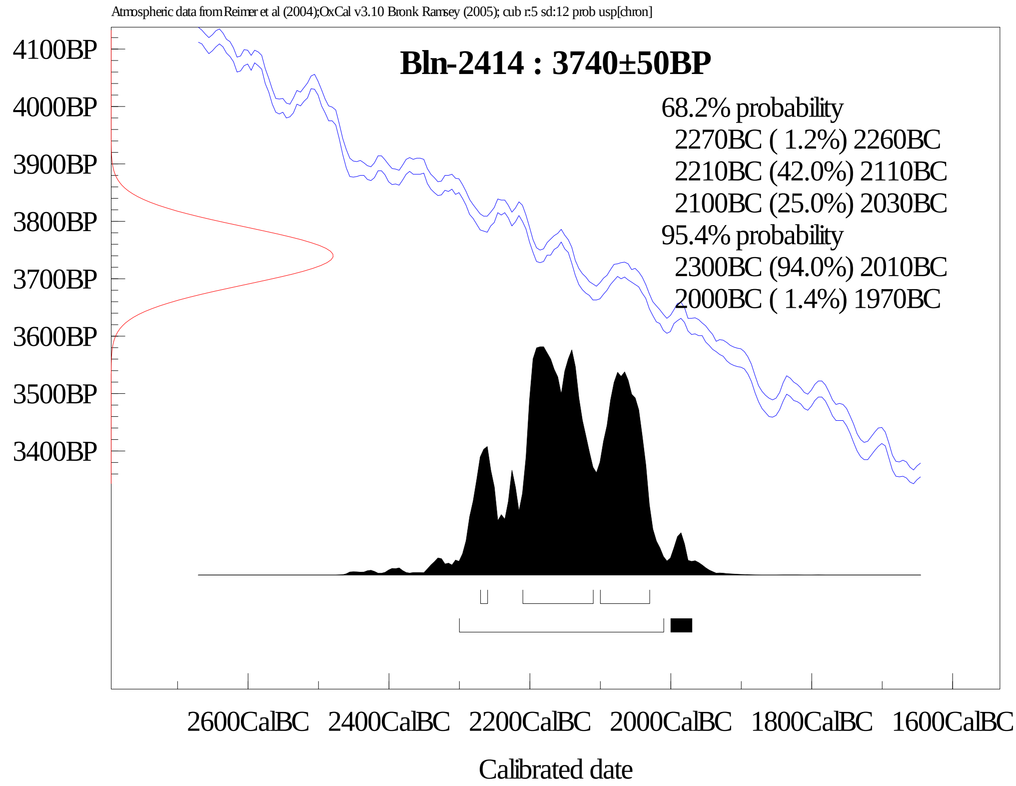
Norşuntepe NT.27



Norşuntepe NT.28



Norşuntepe NT.29



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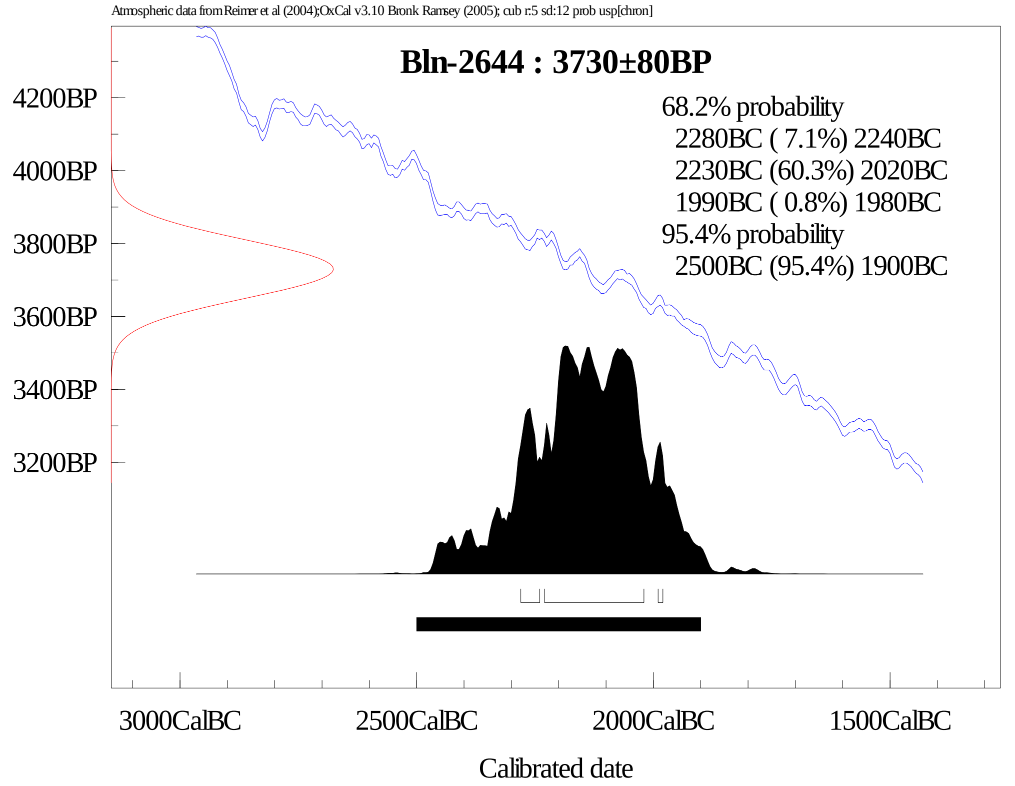

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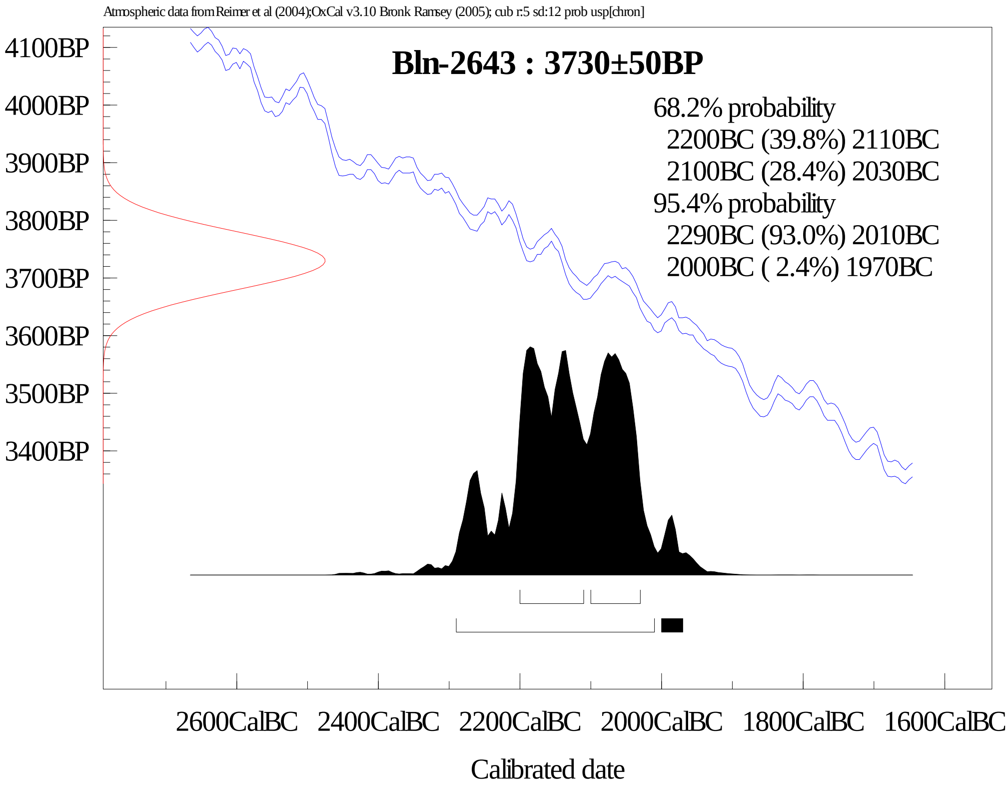

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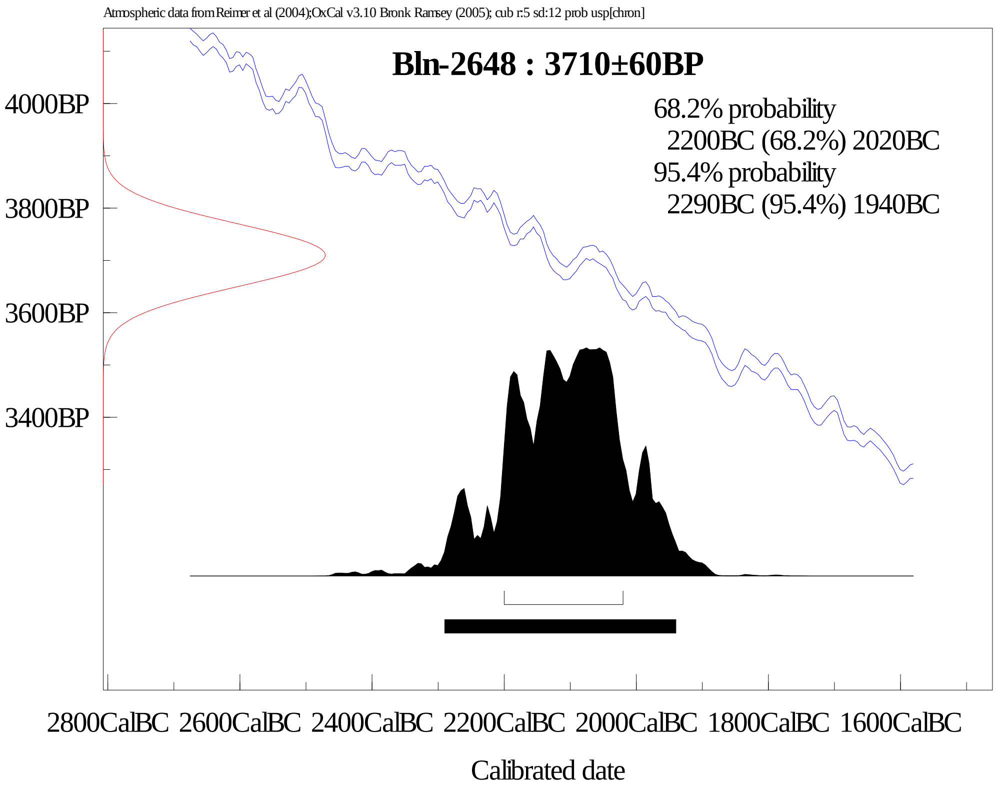
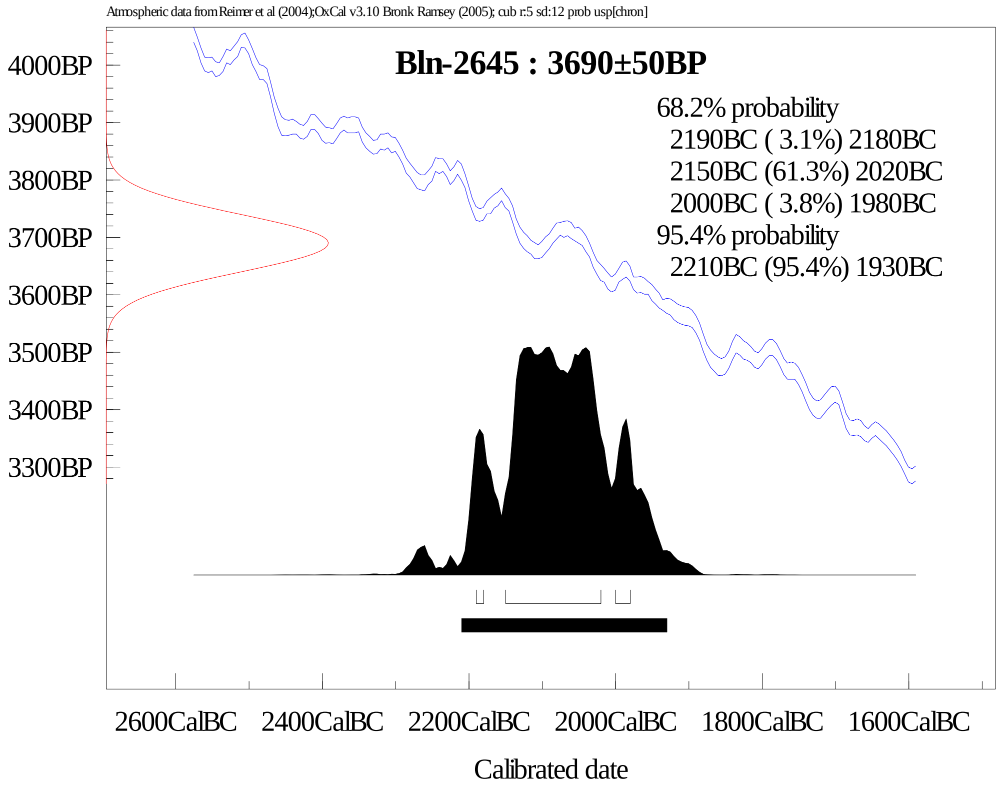
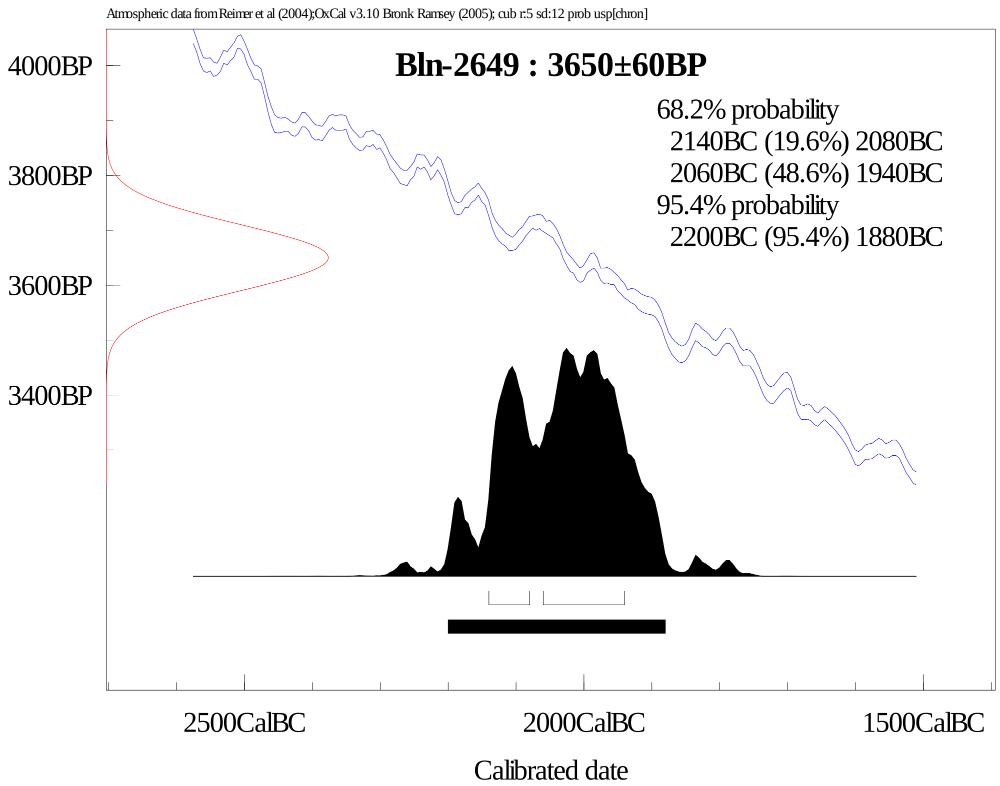


Norşuntepe NT.33

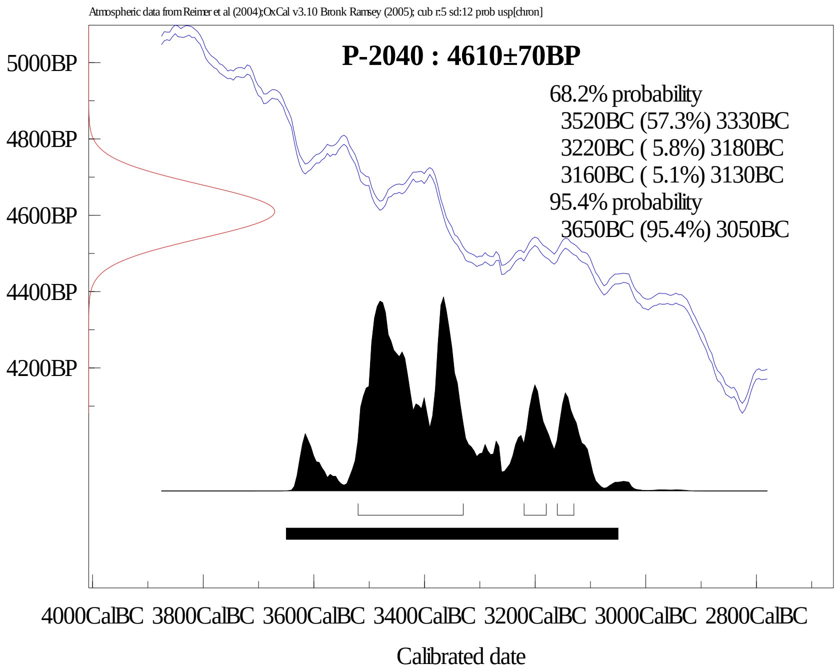


Norşuntepe NT.34

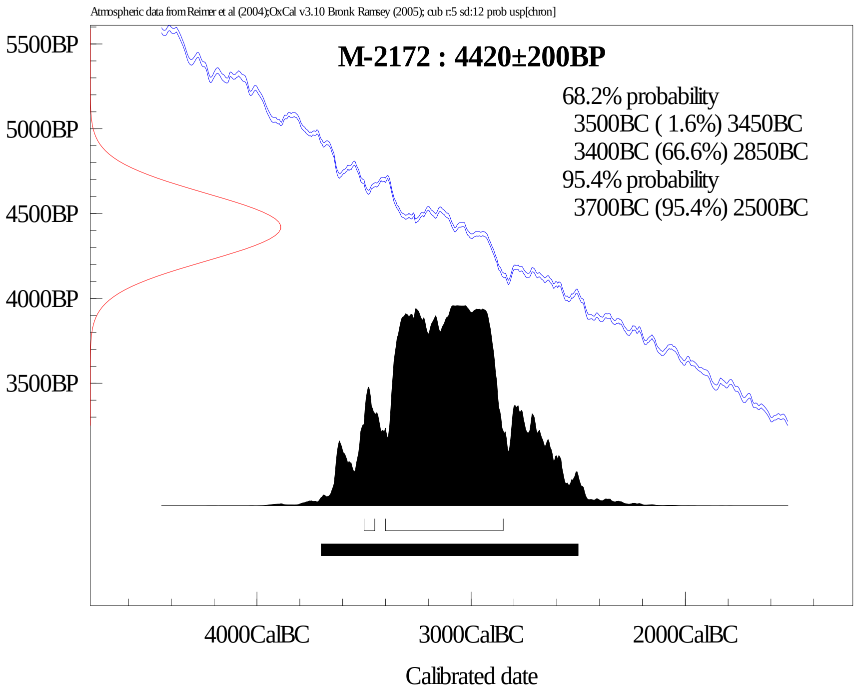


Pulur Sakyol

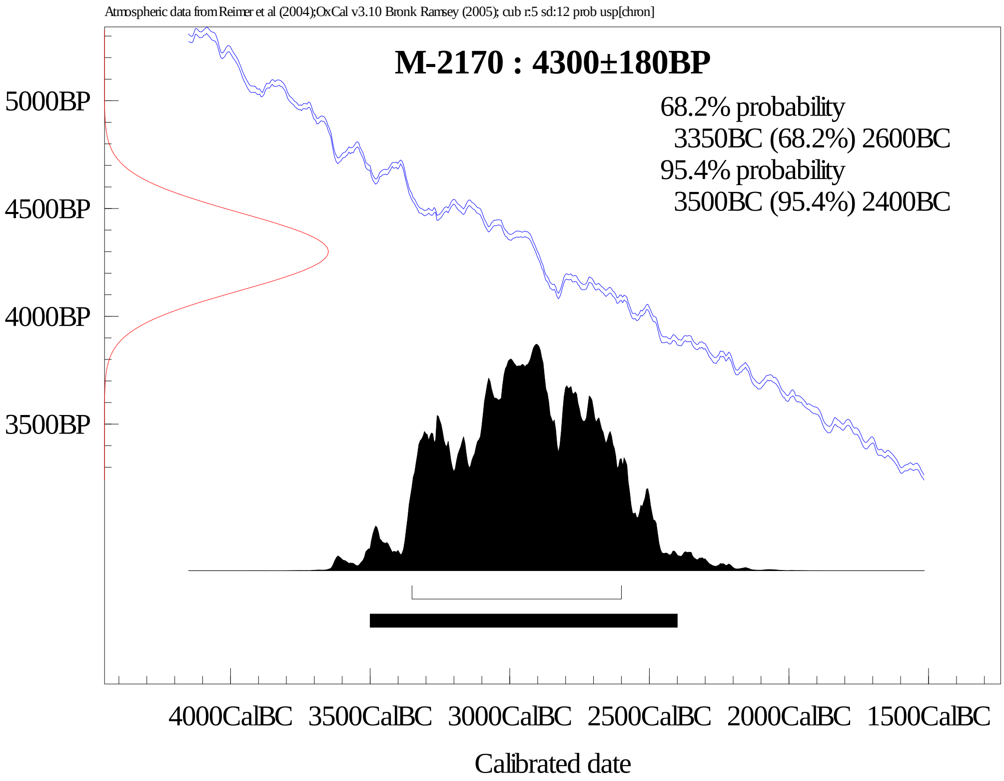
Pulur Sakyol PUL.1



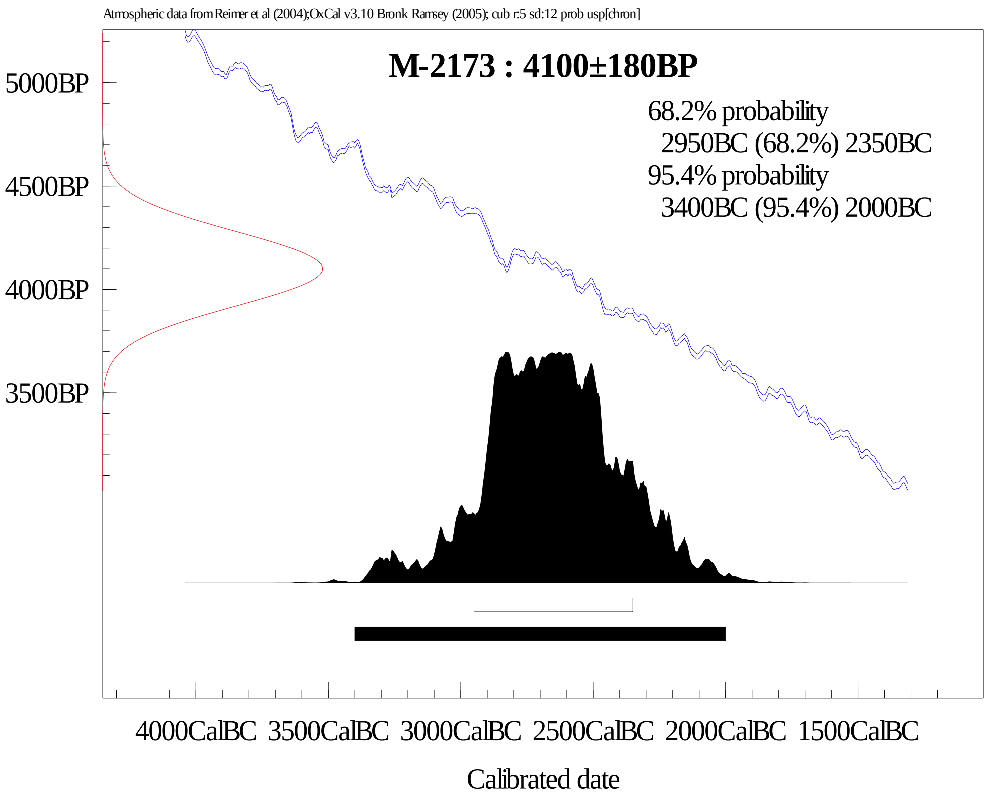
Pulur Sakyol PUL.2



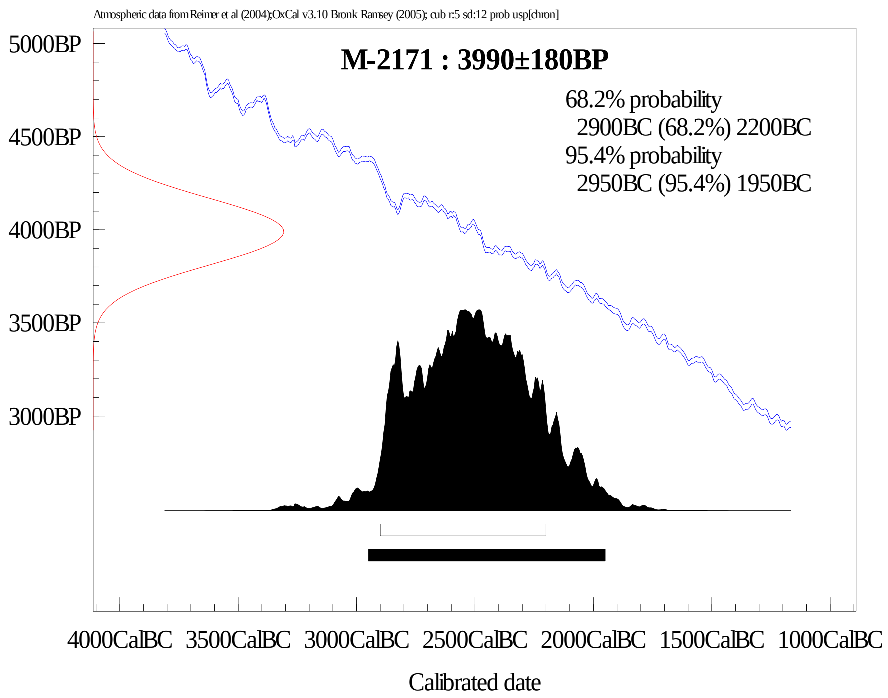
Pulur Sakyol PUL.3



Pulur Sakyol PUL.4

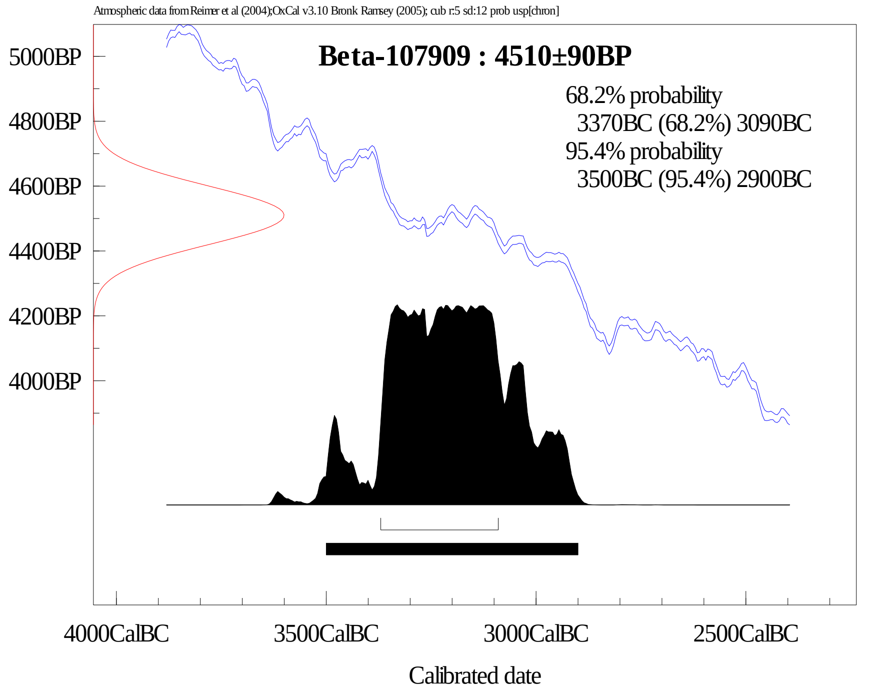


Pulur Sakyol PUL.5

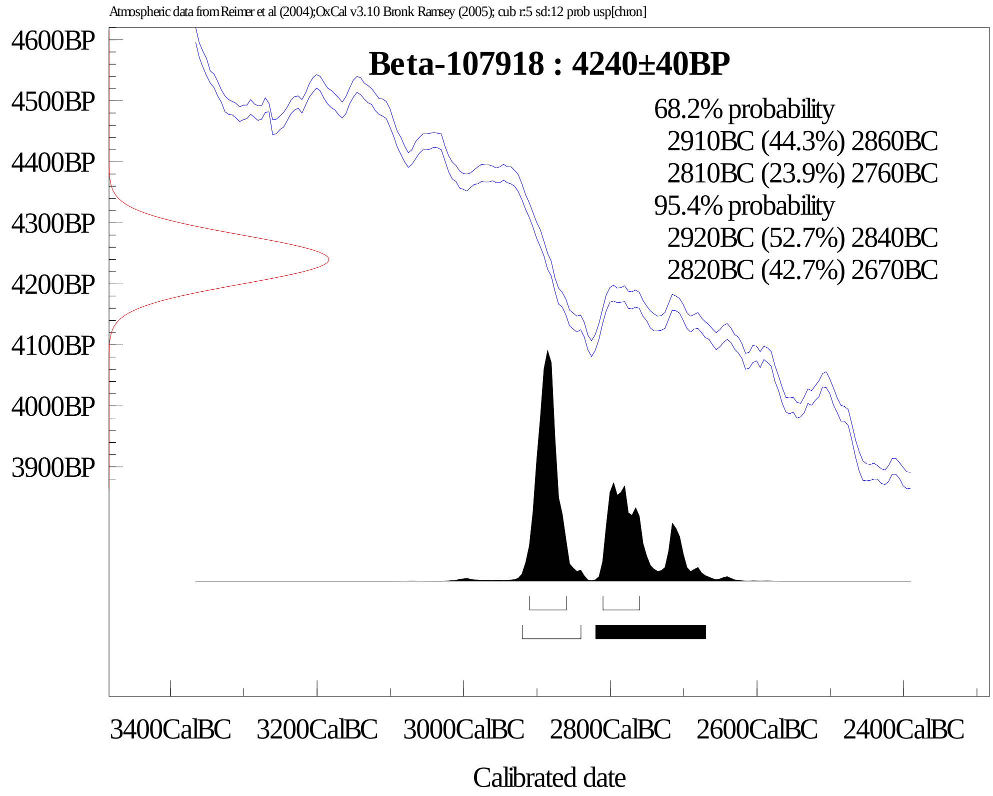


Sos Höyük

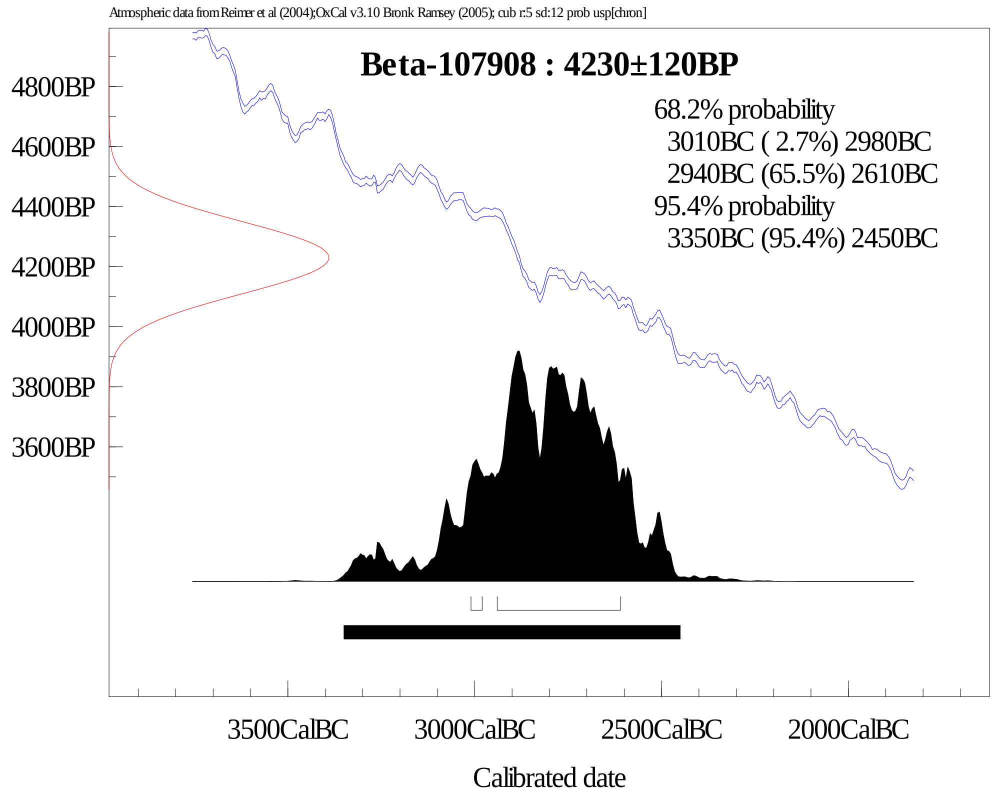
Sos Höyük SOS.1



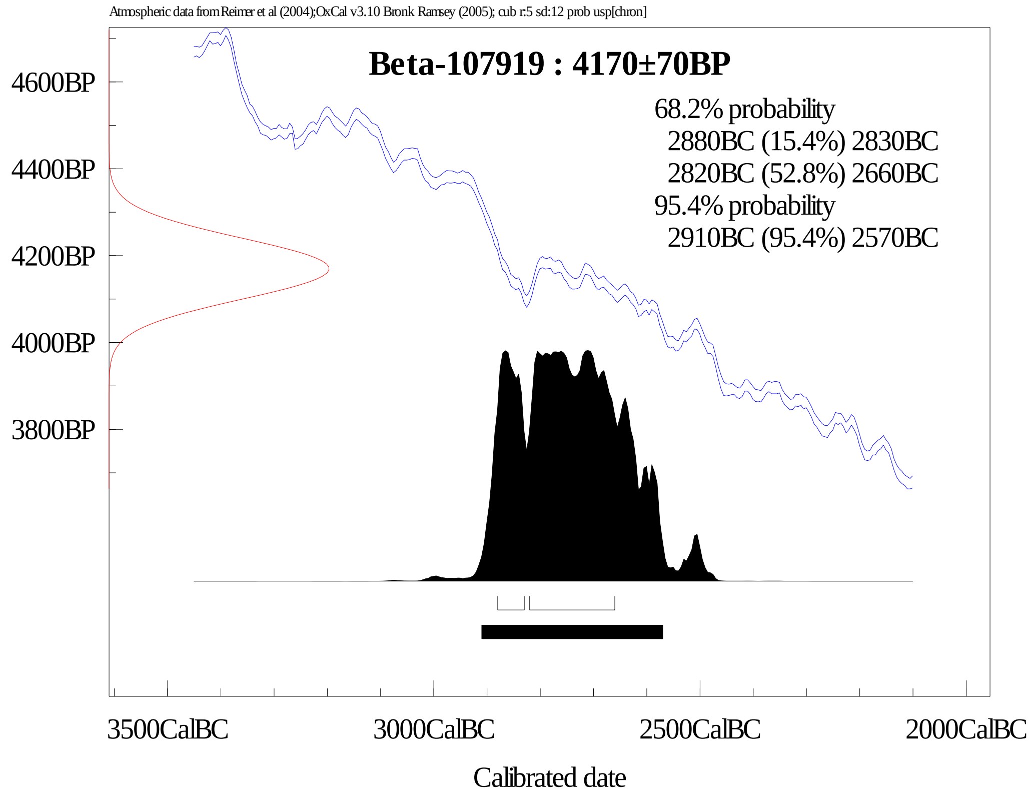
Sos Höyük SOS.2



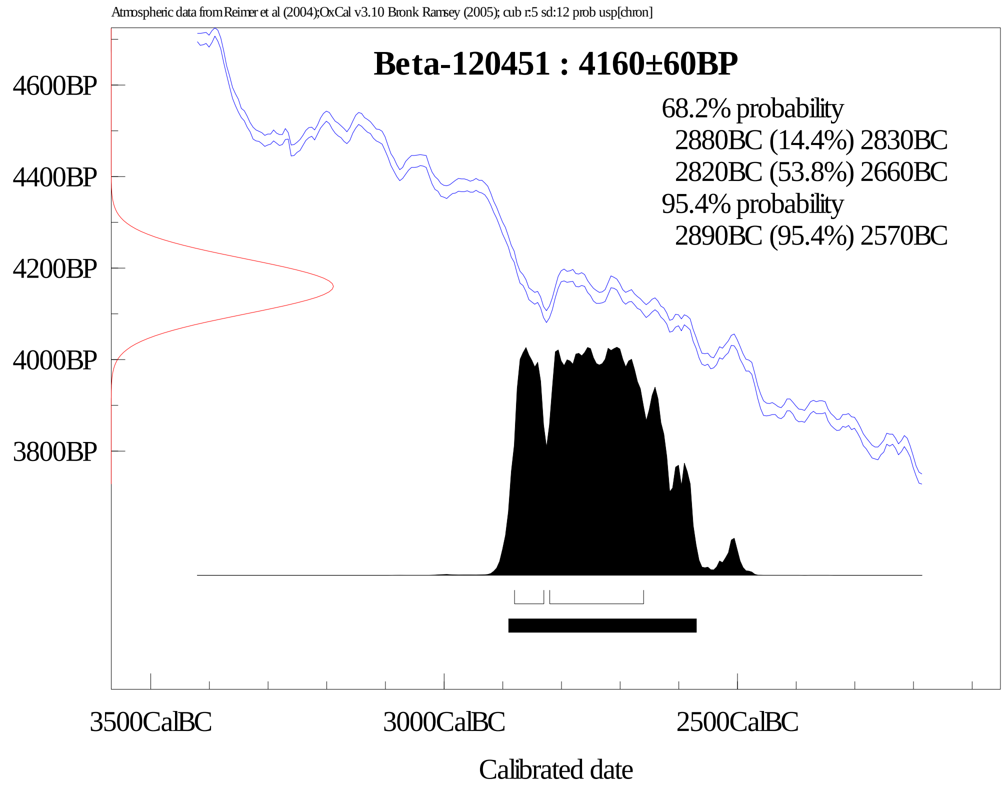
Sos Höyük SOS.3



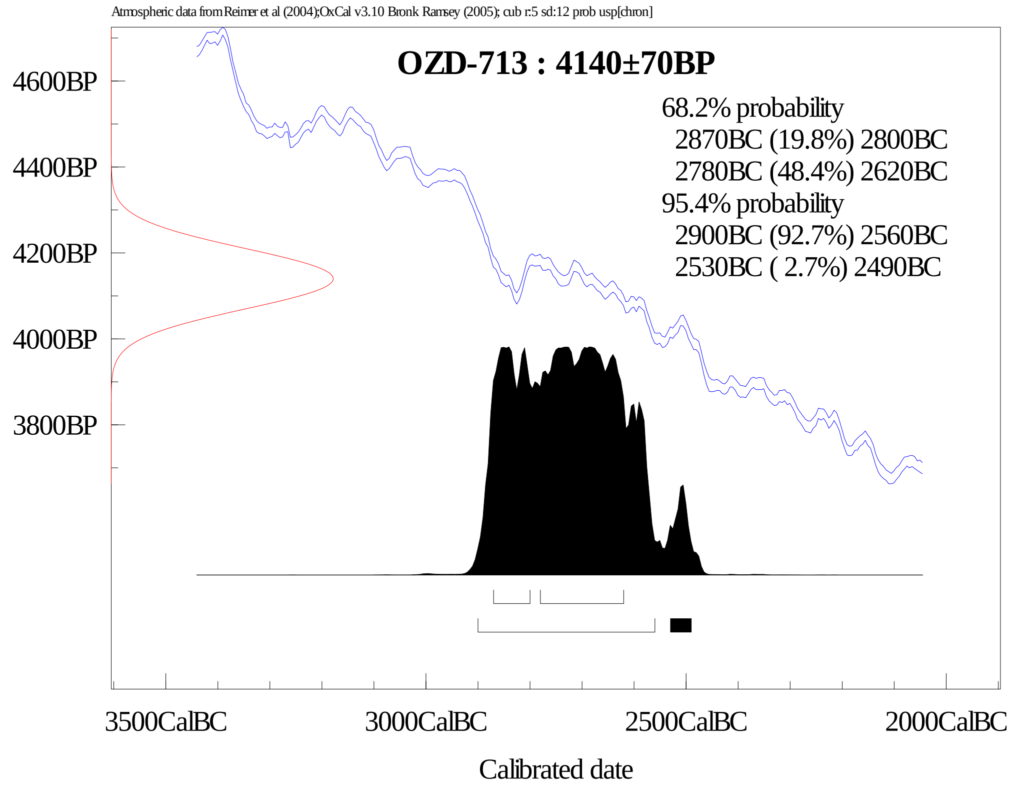
Sos Höyük SOS.4



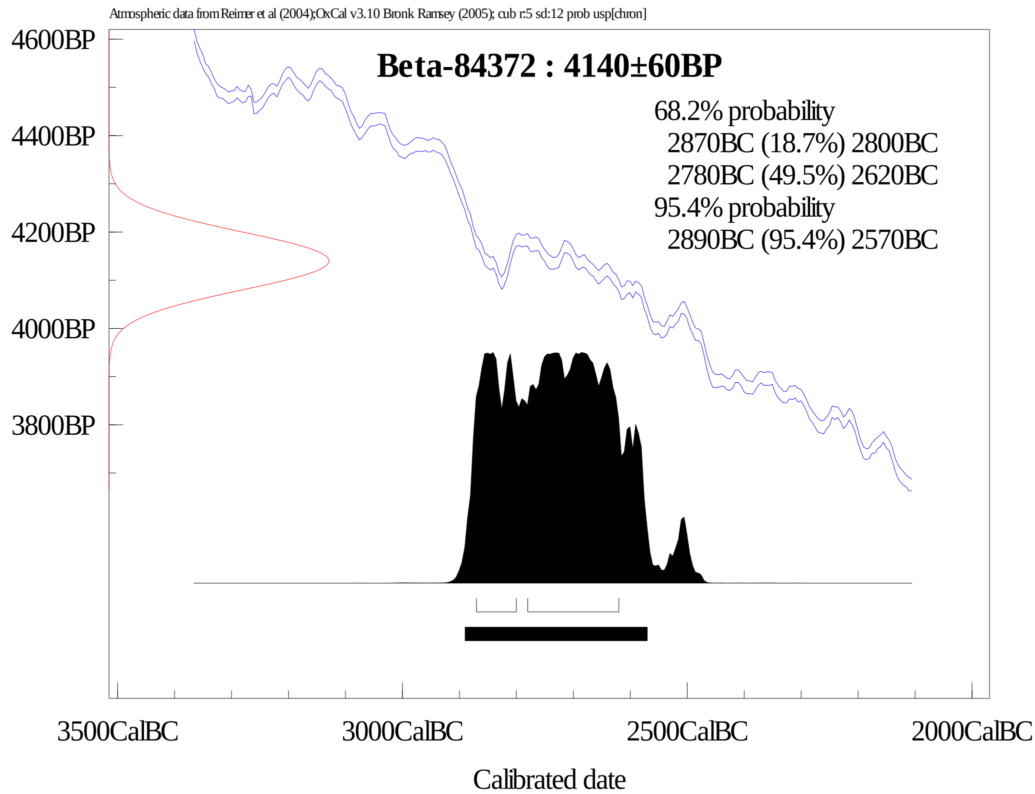
Sos Höyük SOS.5



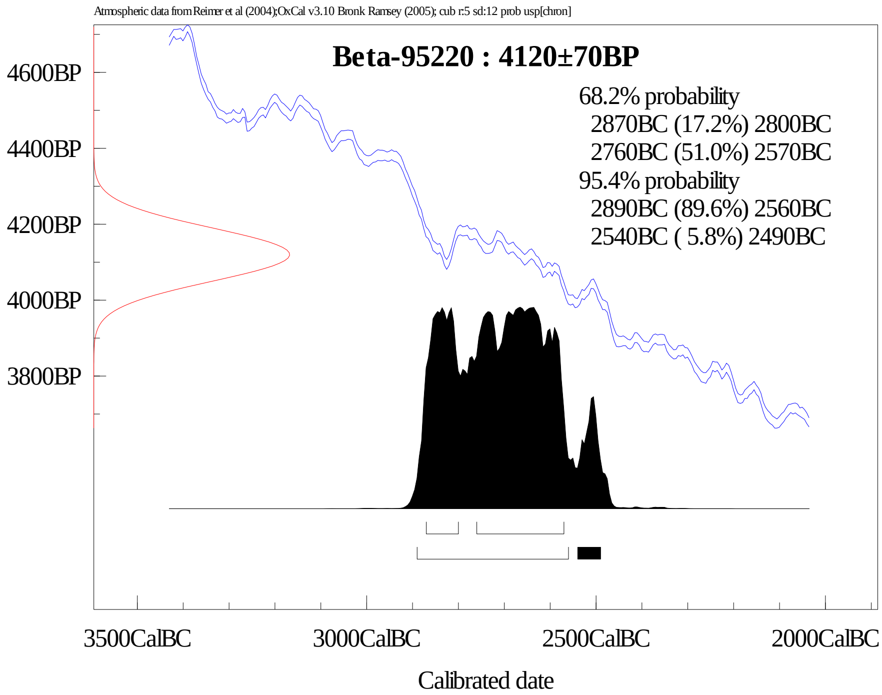
Sos Höyük SOS.6



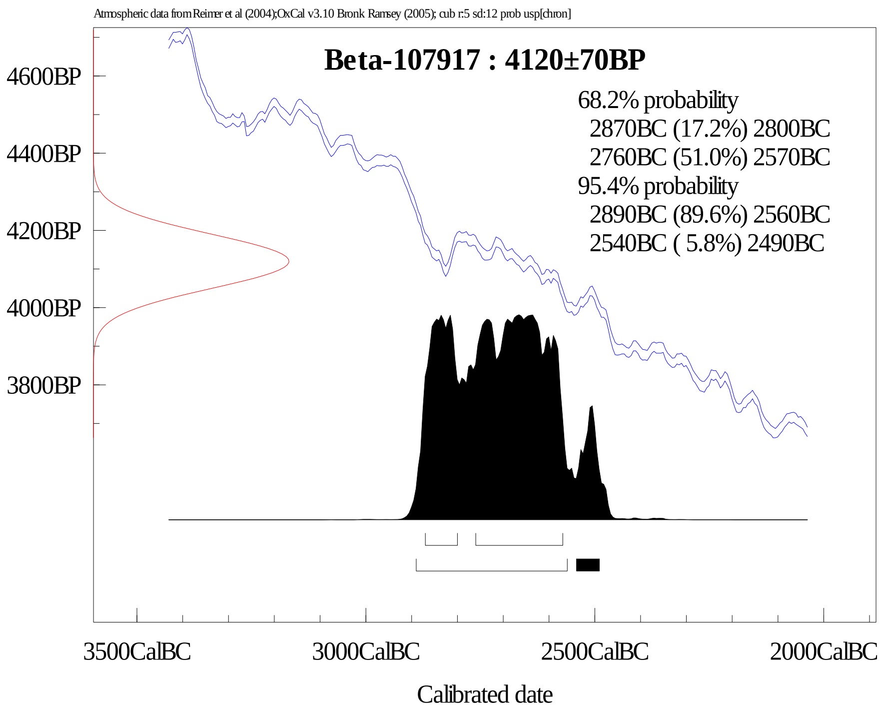
Sos Höyük SOS.7



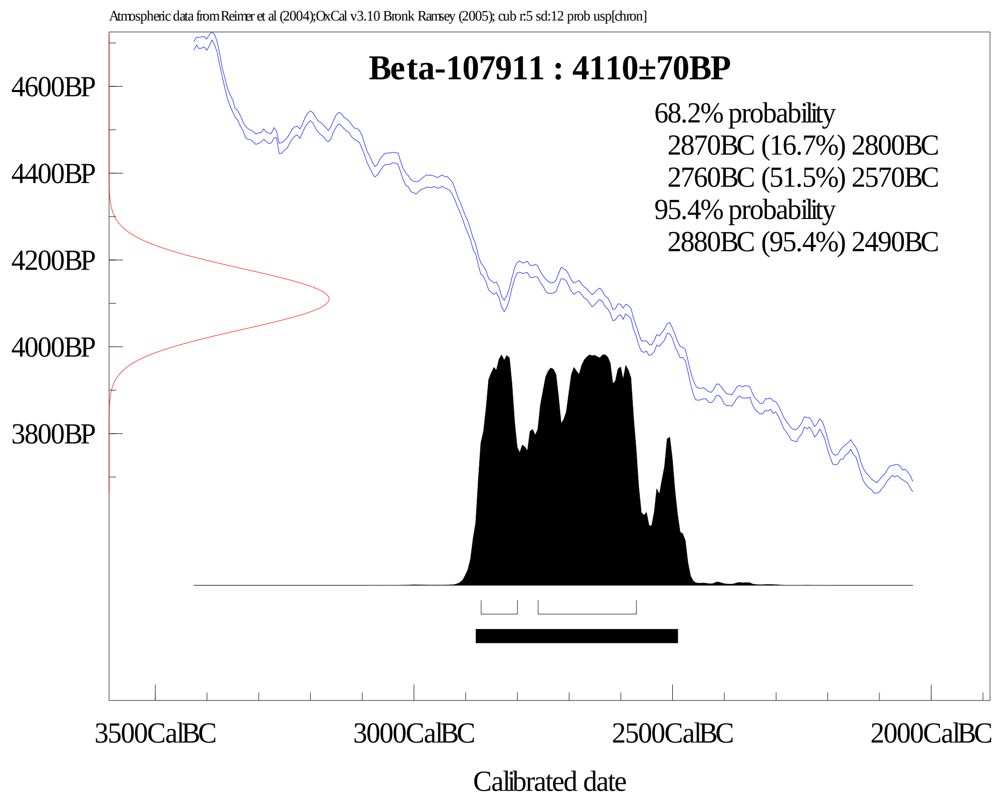
Sos Höyük SOS.8



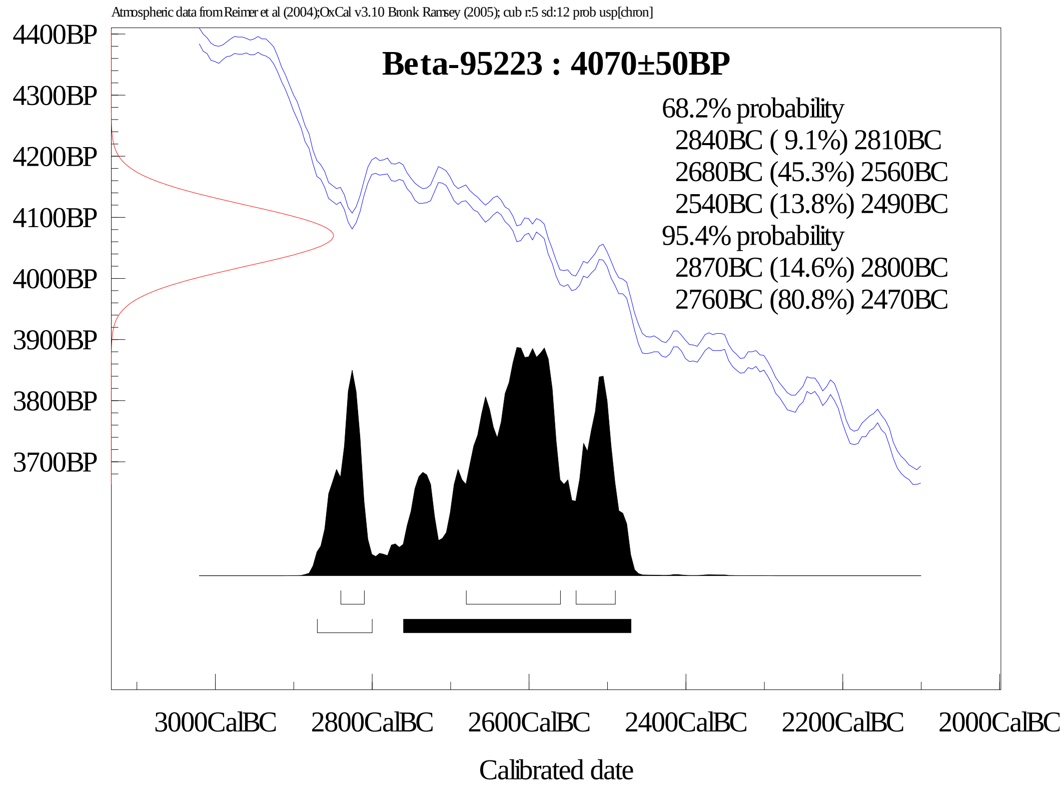
Sos Höyük SOS.9



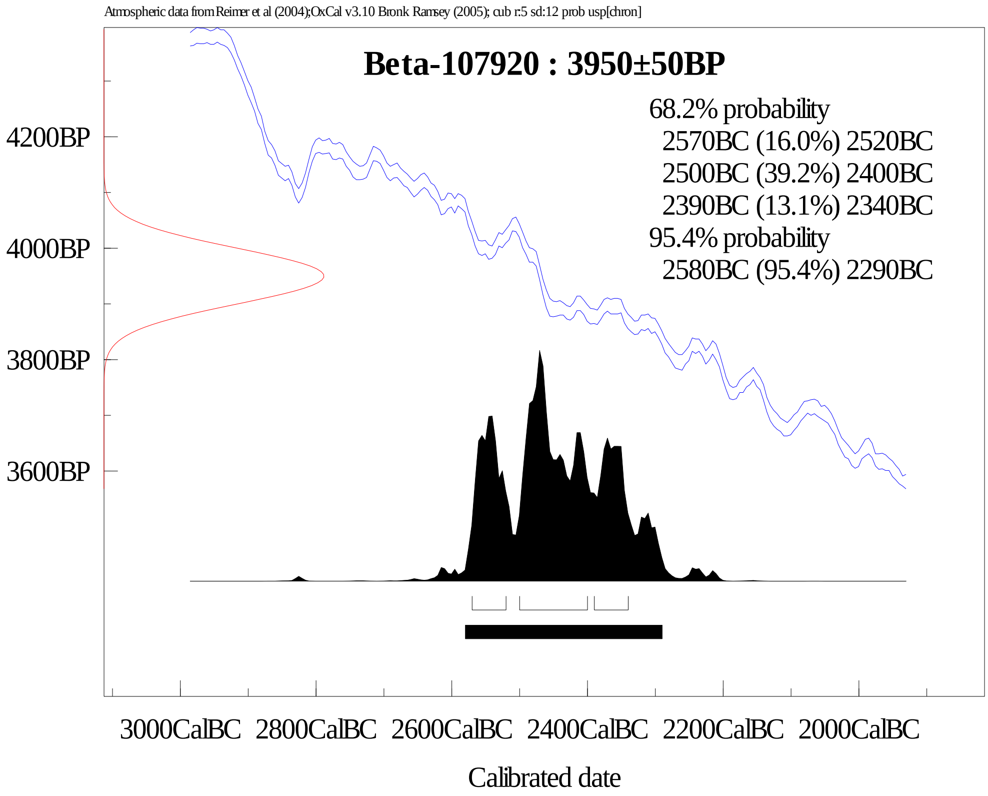
Sos Höyük SOS.10



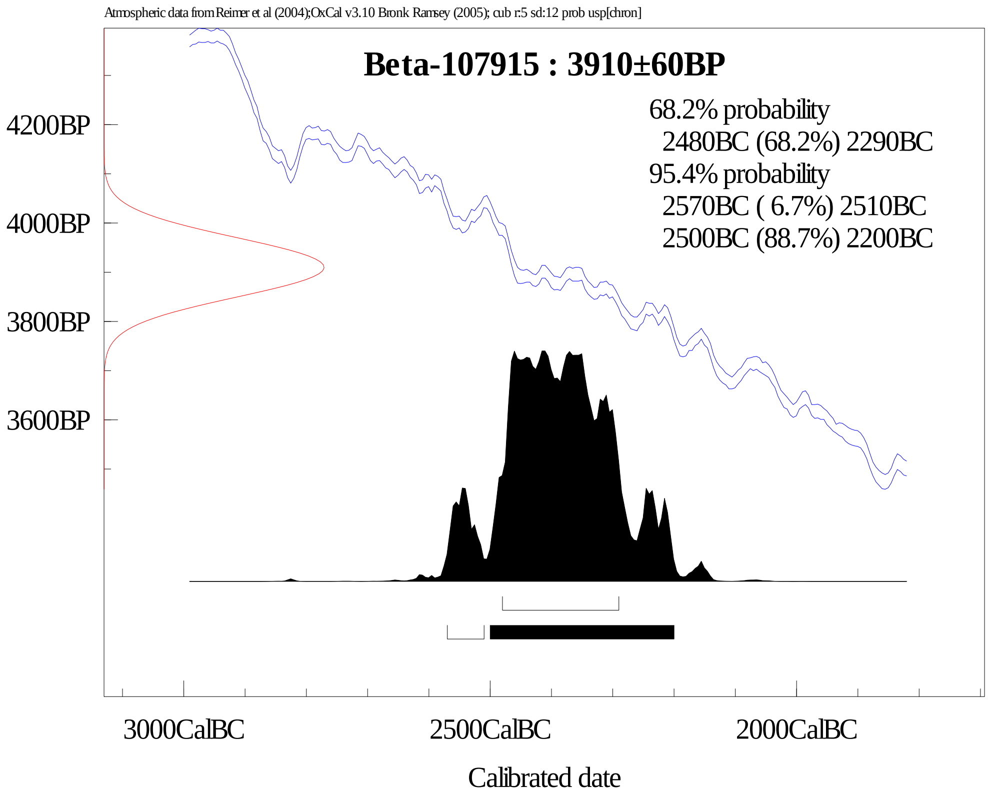
Sos Höyük SOS.11



Sos Höyük SOS.12

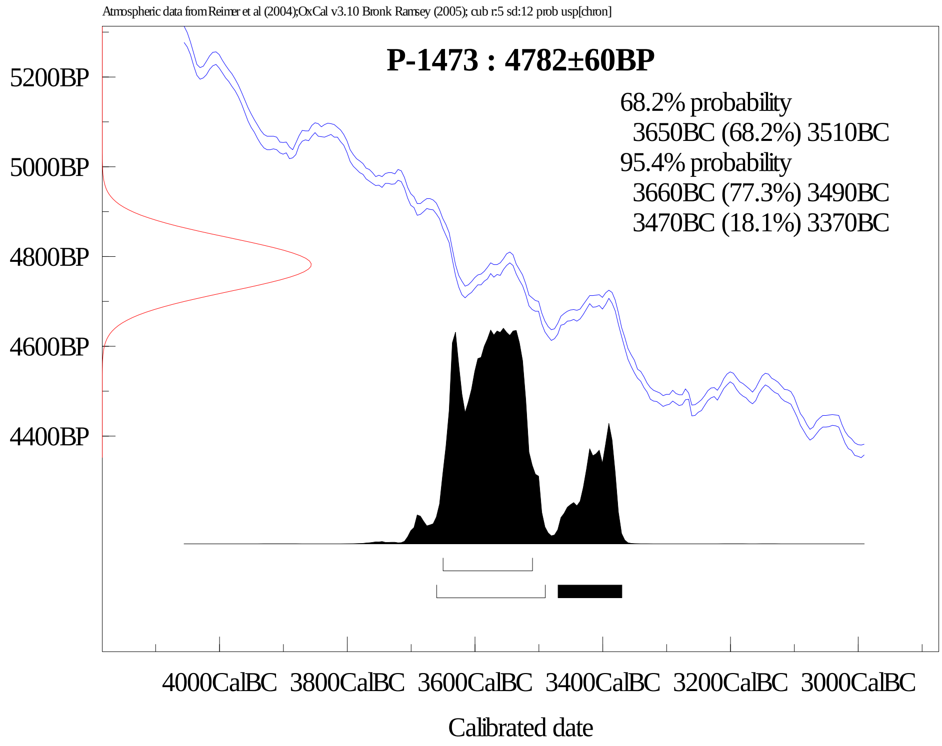


Sos Höyük SOS.13

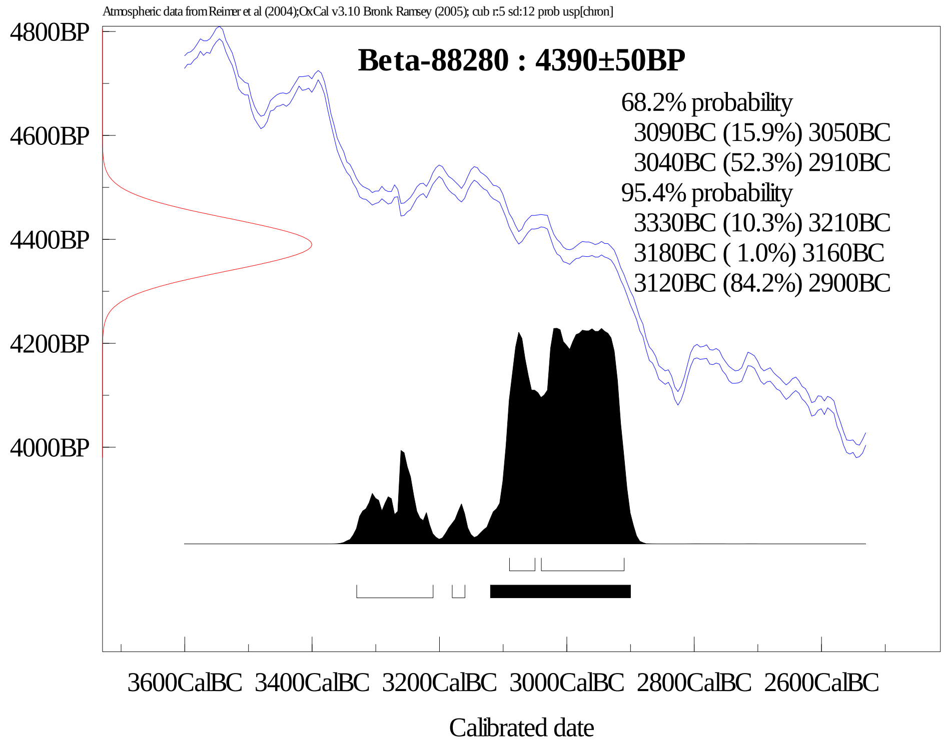


Tell El Cudeyde

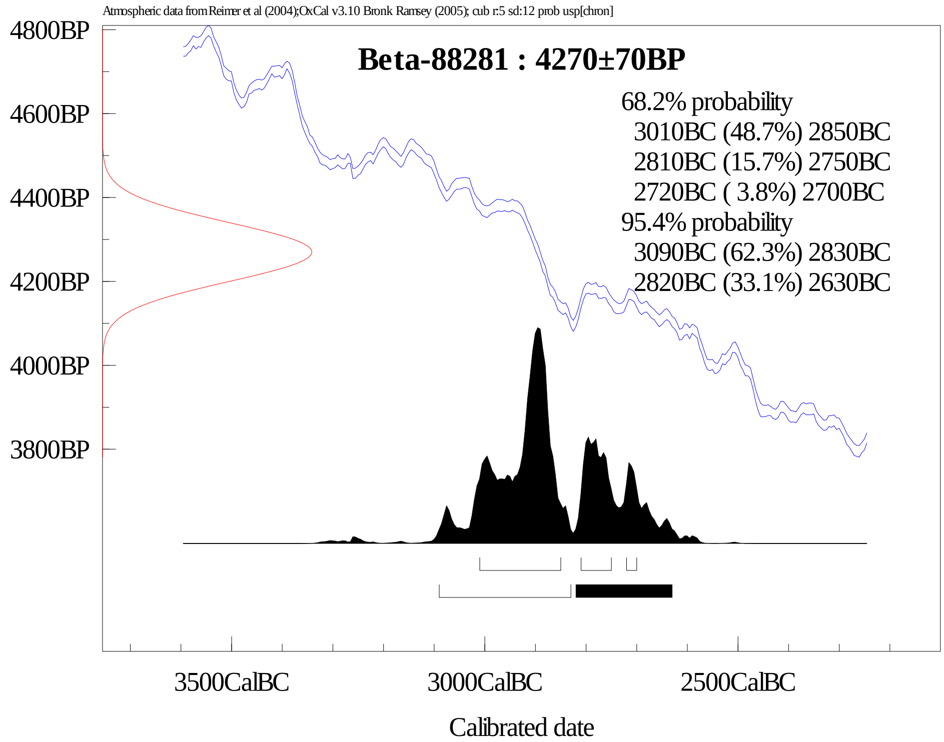
Tell El Cudeyde CUD.1



Tell El Cudeyde CUD.2

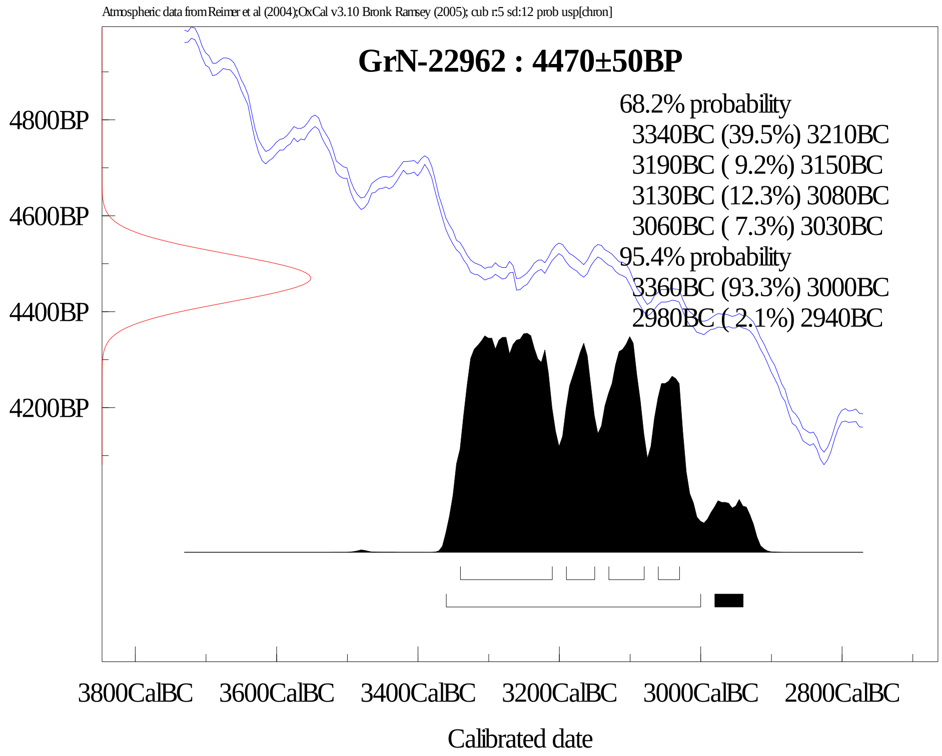


Tell El Cudeyde CUD.3



Tell Hijar (AS 181)

Tell Hijar (AS 181) AS181.1



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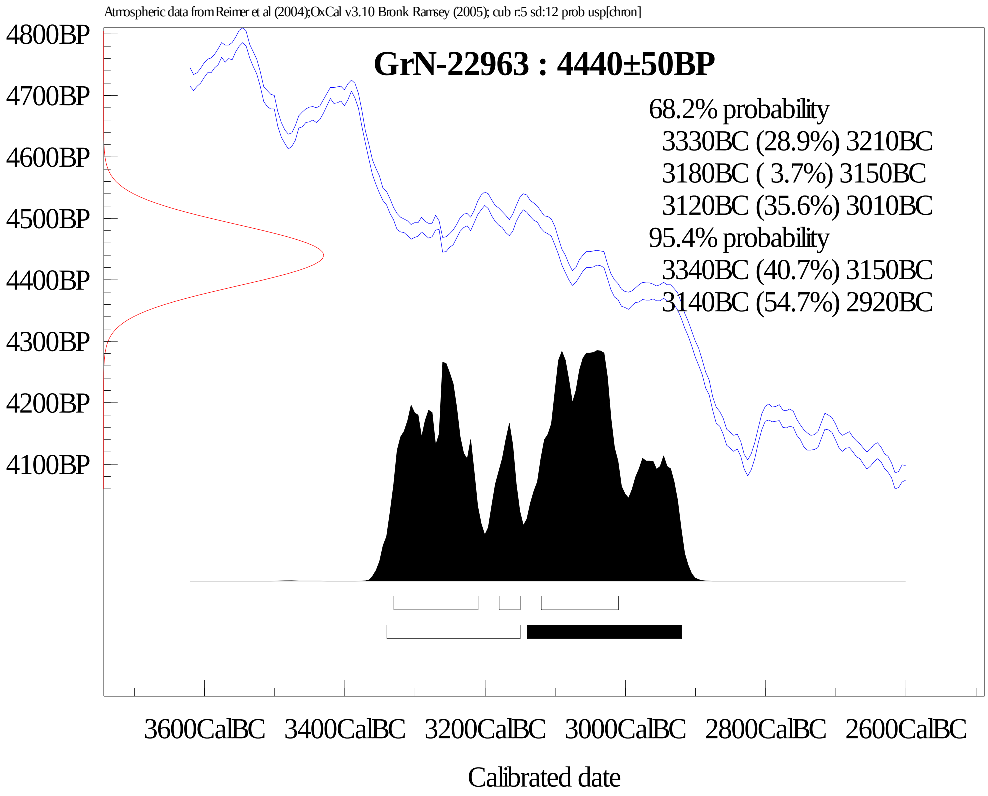
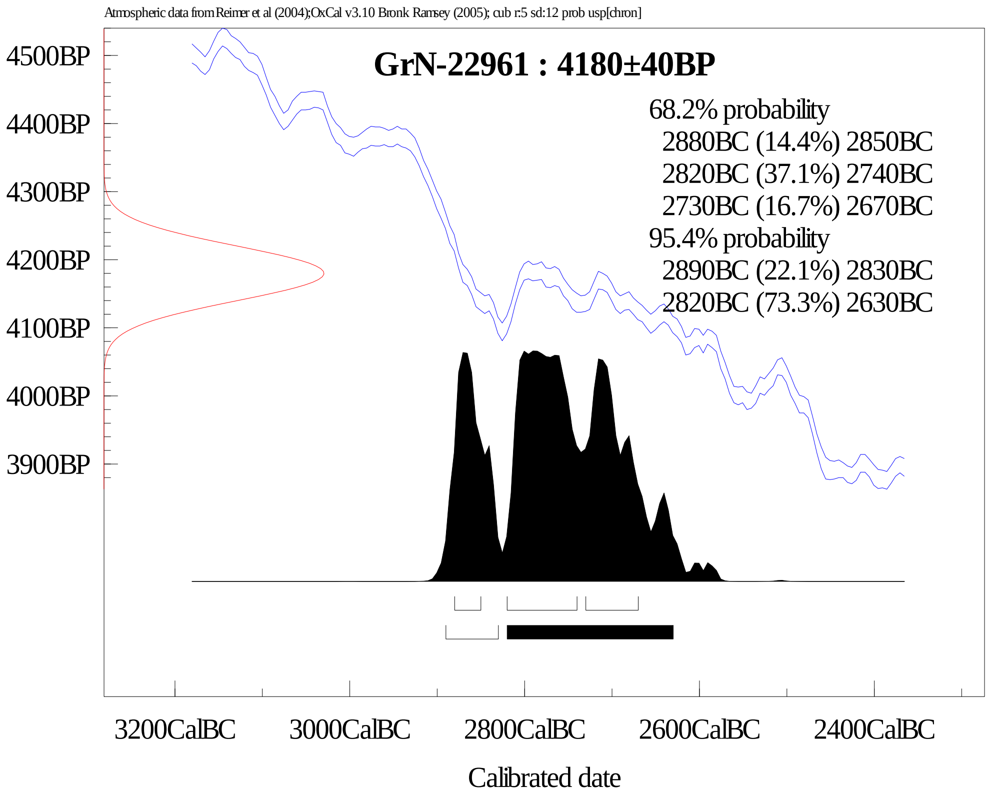
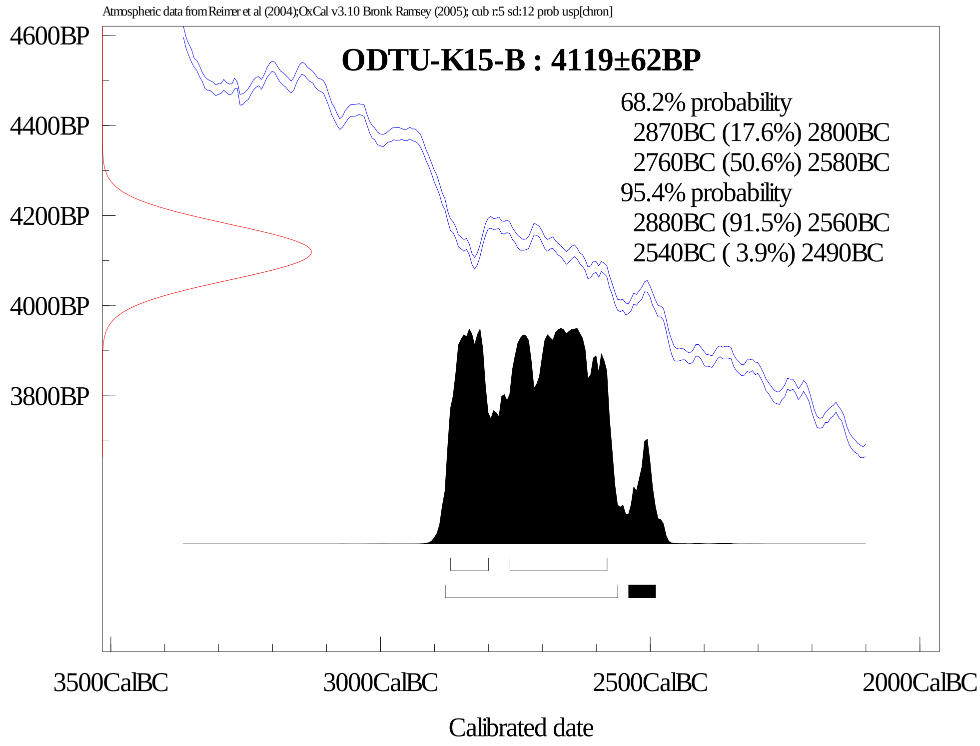


Tell Hijar (AS 181) AS181.3

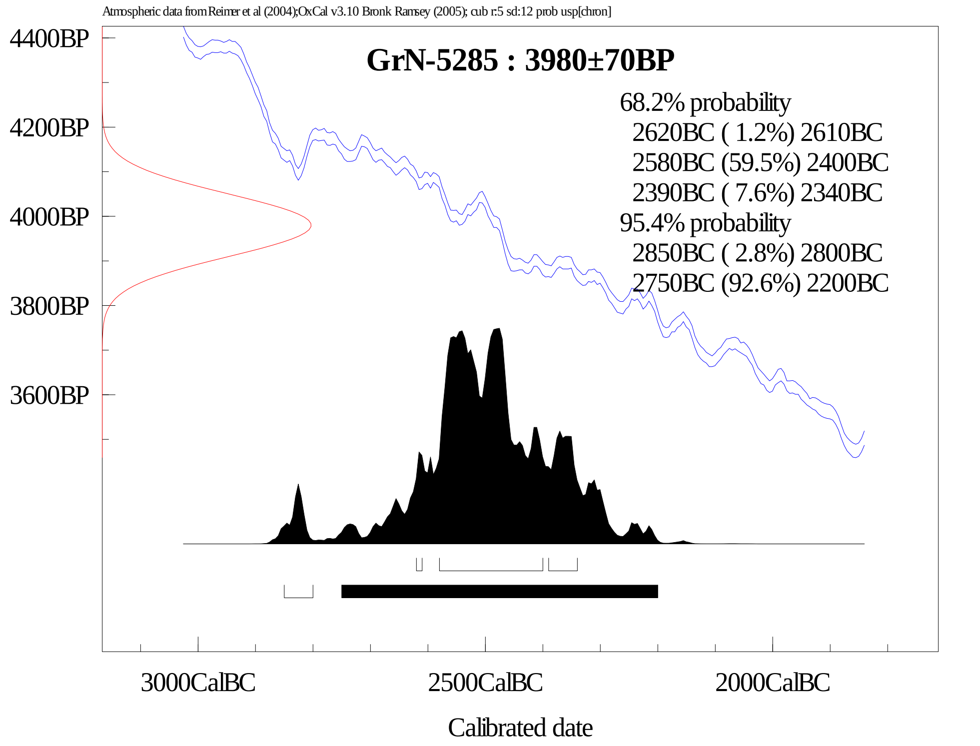


Tepecik

Tepecik TEP.1

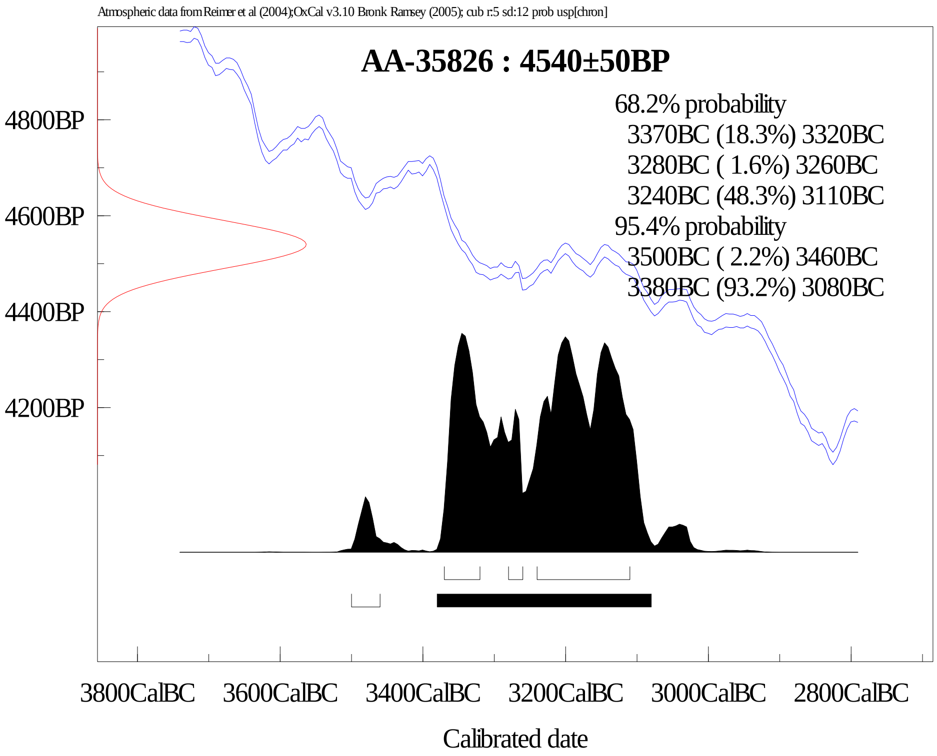


Tepecik TEP.2

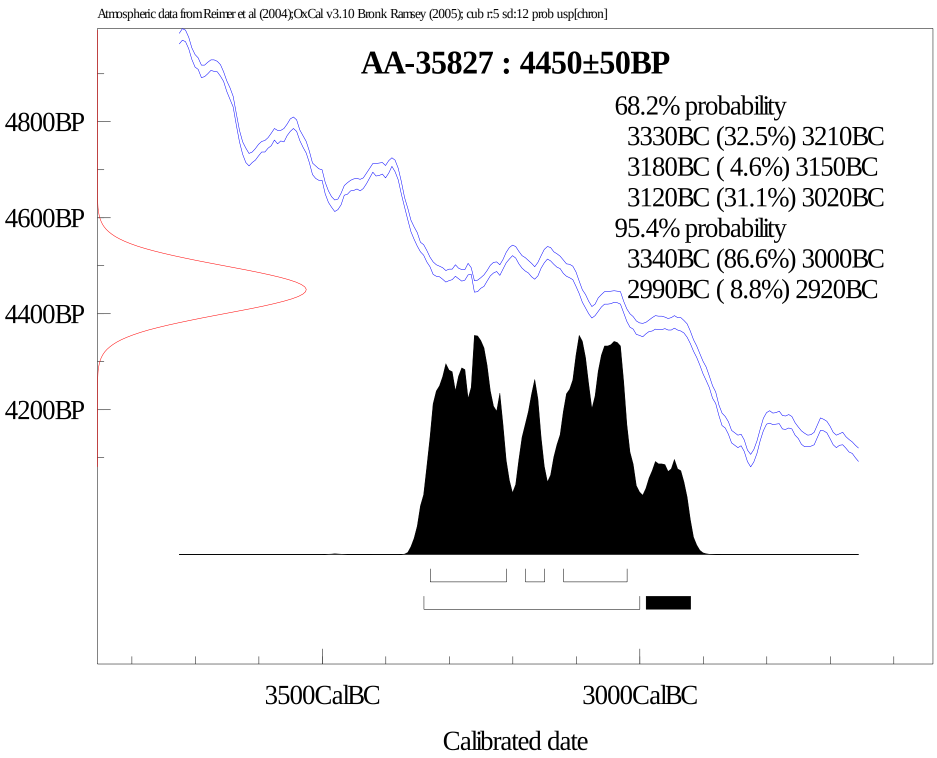


Tilbeş Höyük

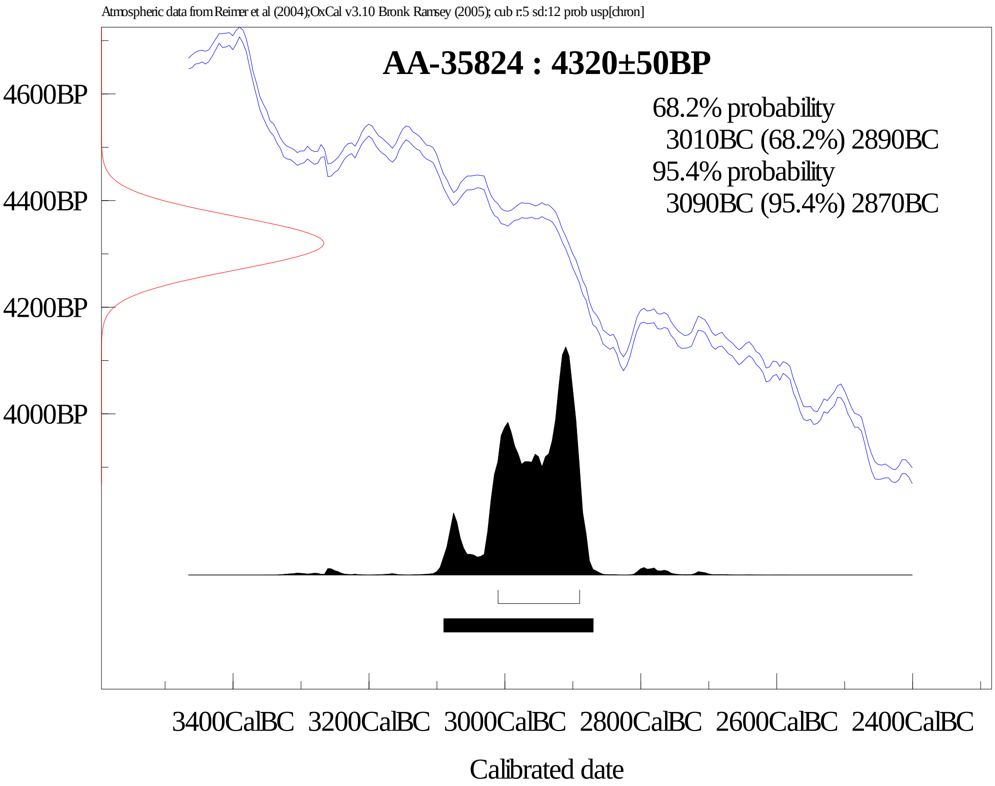
Tilbeş Höyük TİL.1



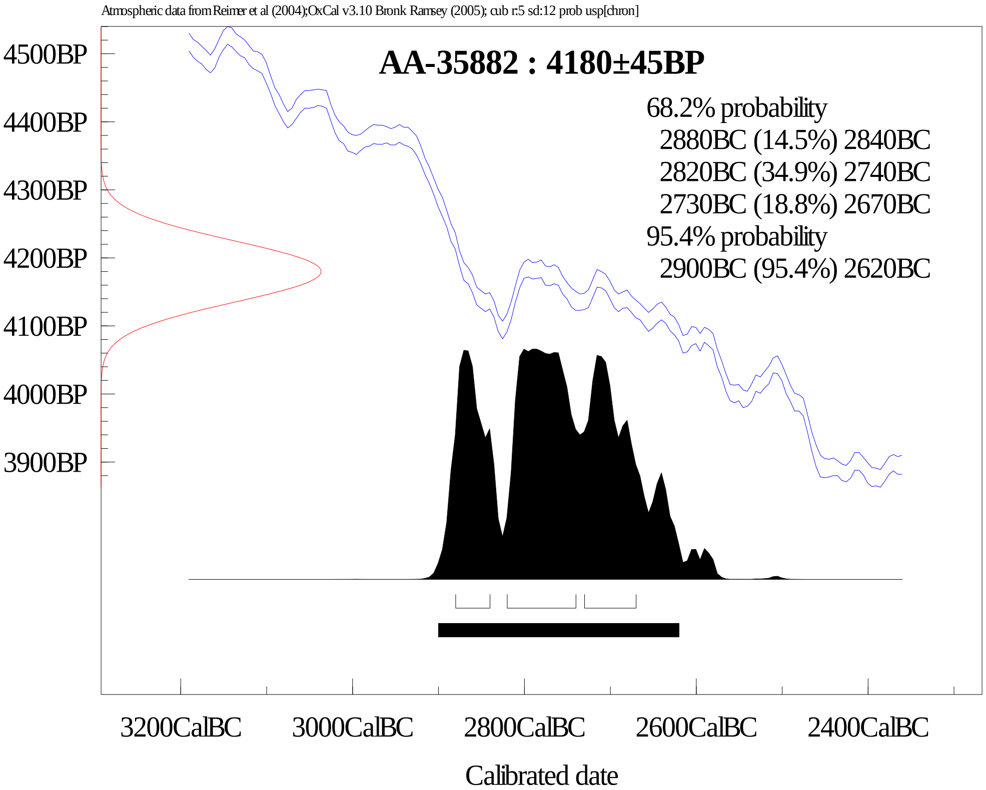
Tilbeş Höyük TİL.2



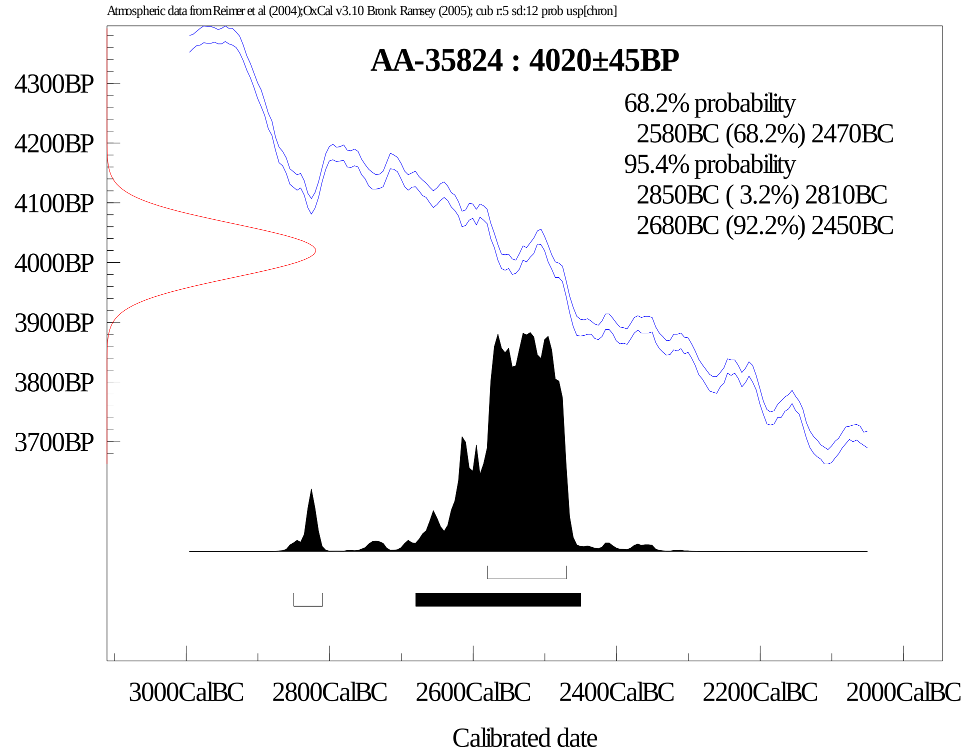
Tilbeş Höyük TİL.3



Tilbeş Höyük TİL.4

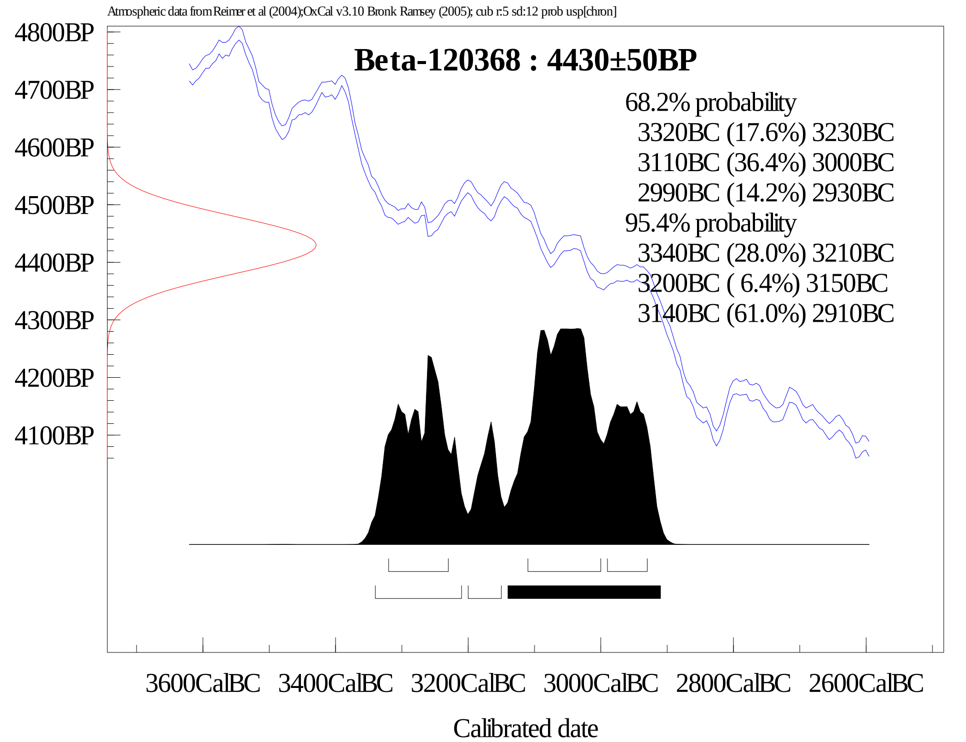


Tilbeş Höyük TİL.5

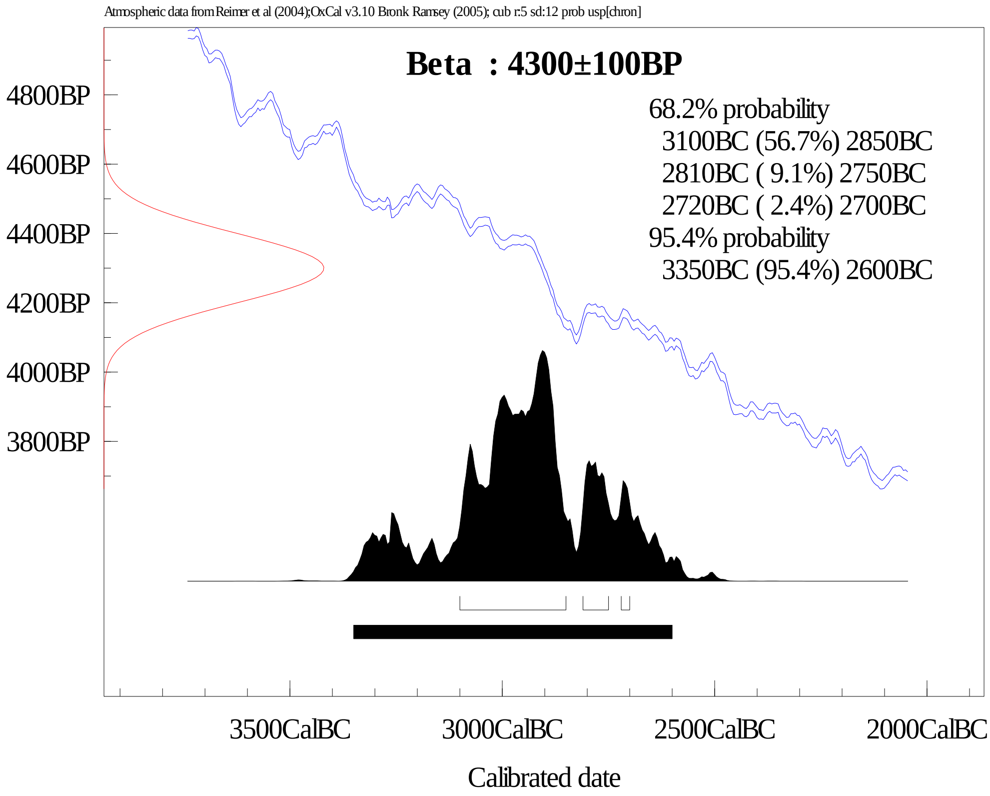


Tilbeşar

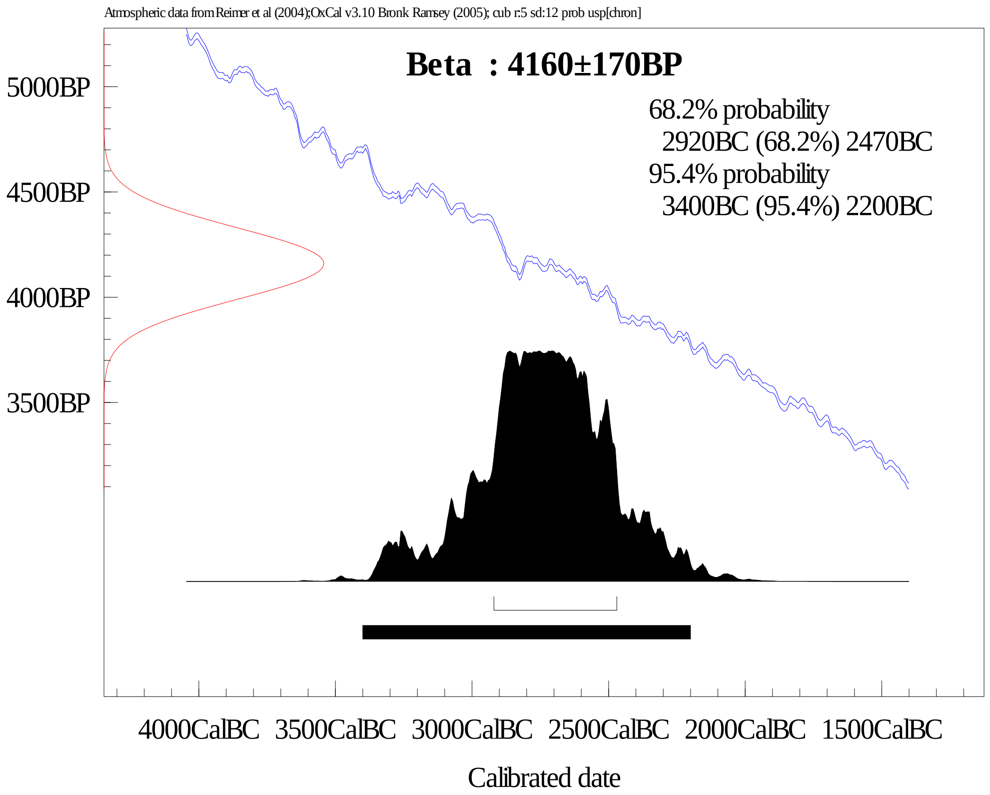
Tilbeşar TİLB.1



Tilbeşar TİLB.2

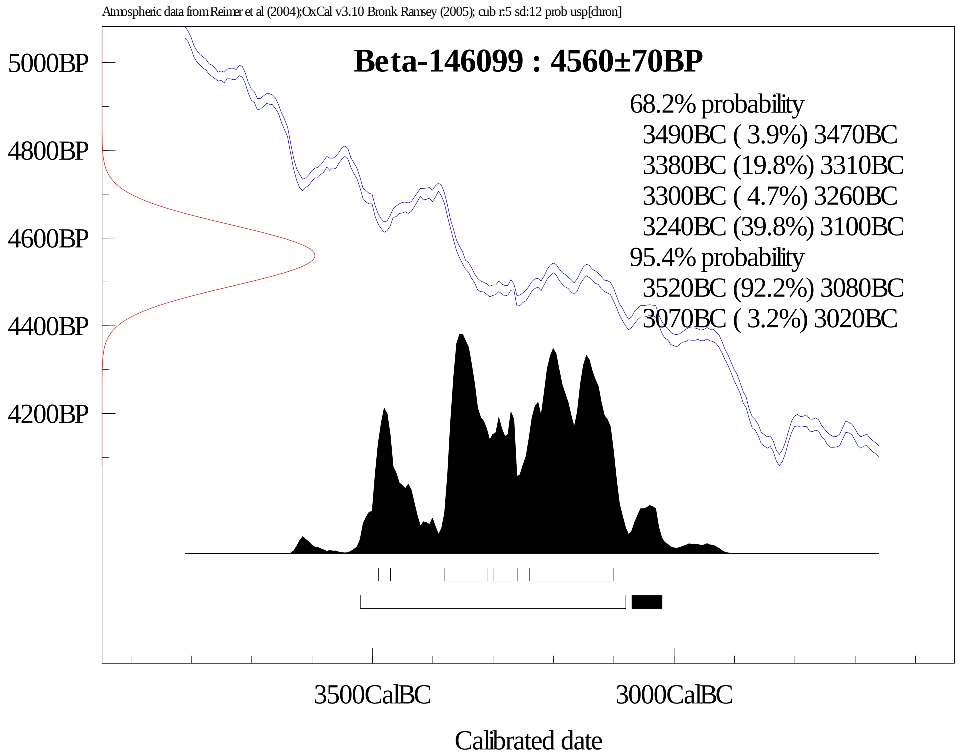


Tilbeşar TİLB.3

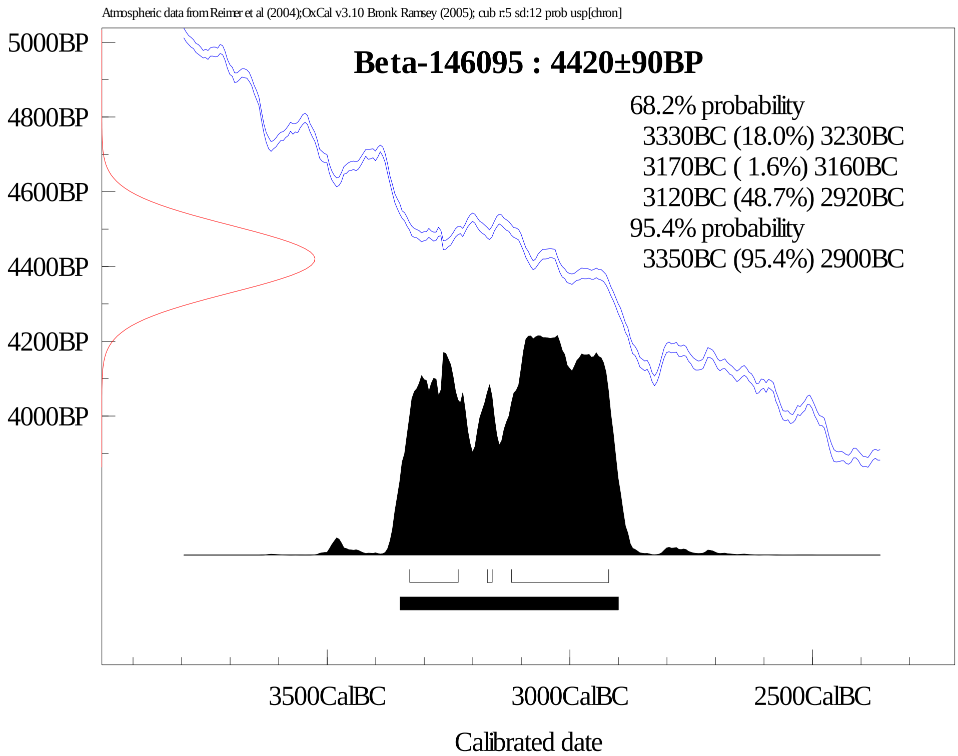


Titriş Höyük

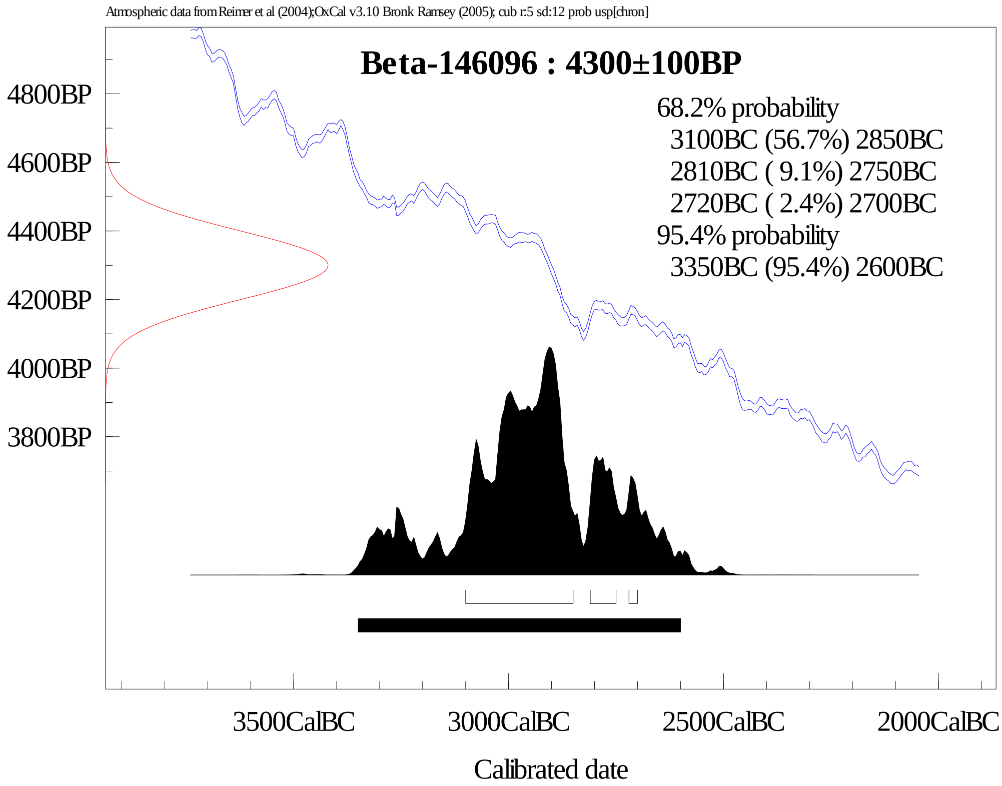
Titriş Höyük TIT.1



Titriş Höyük TIT.2



Titriş Höyük TIT.3



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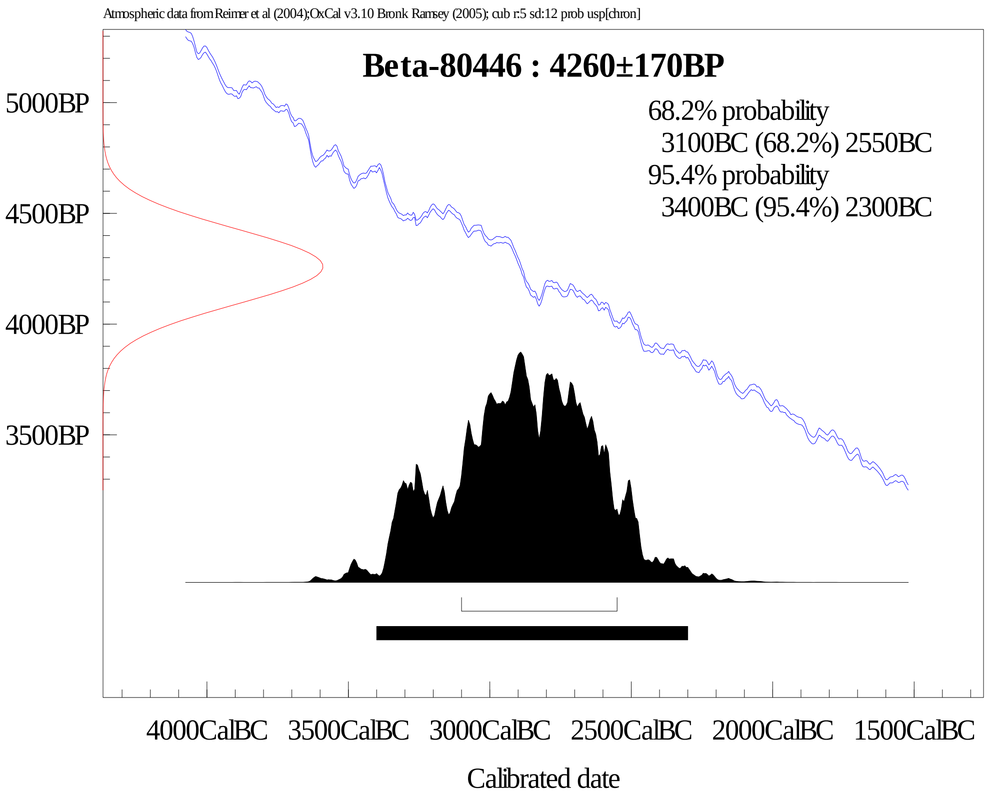
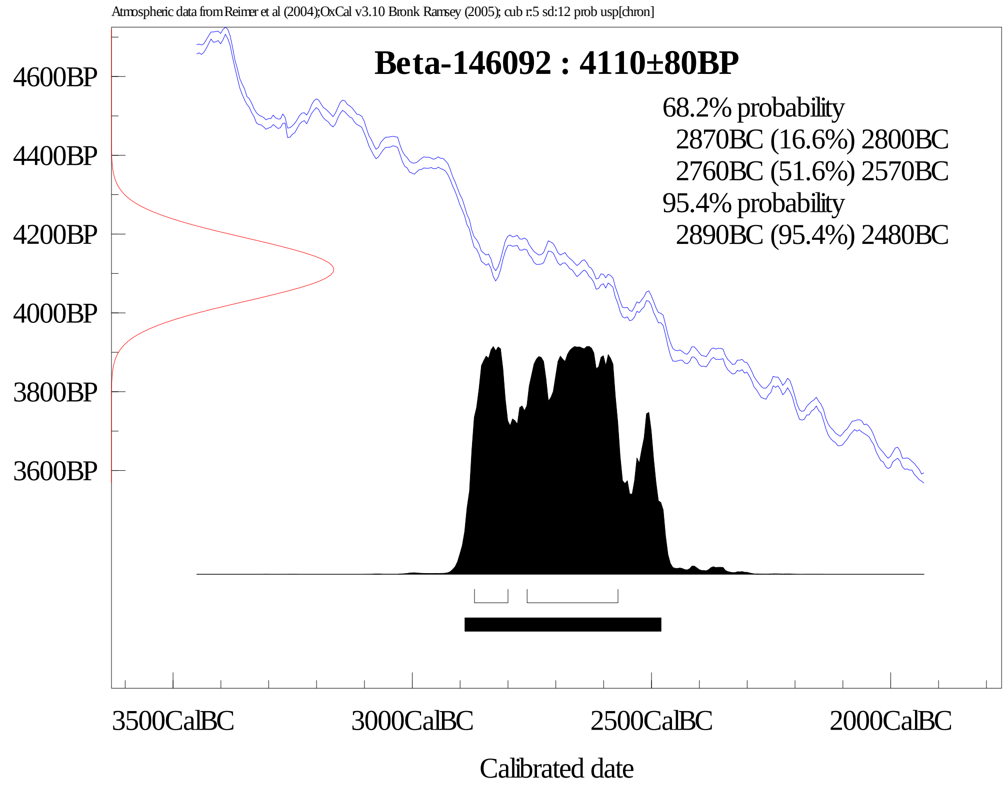
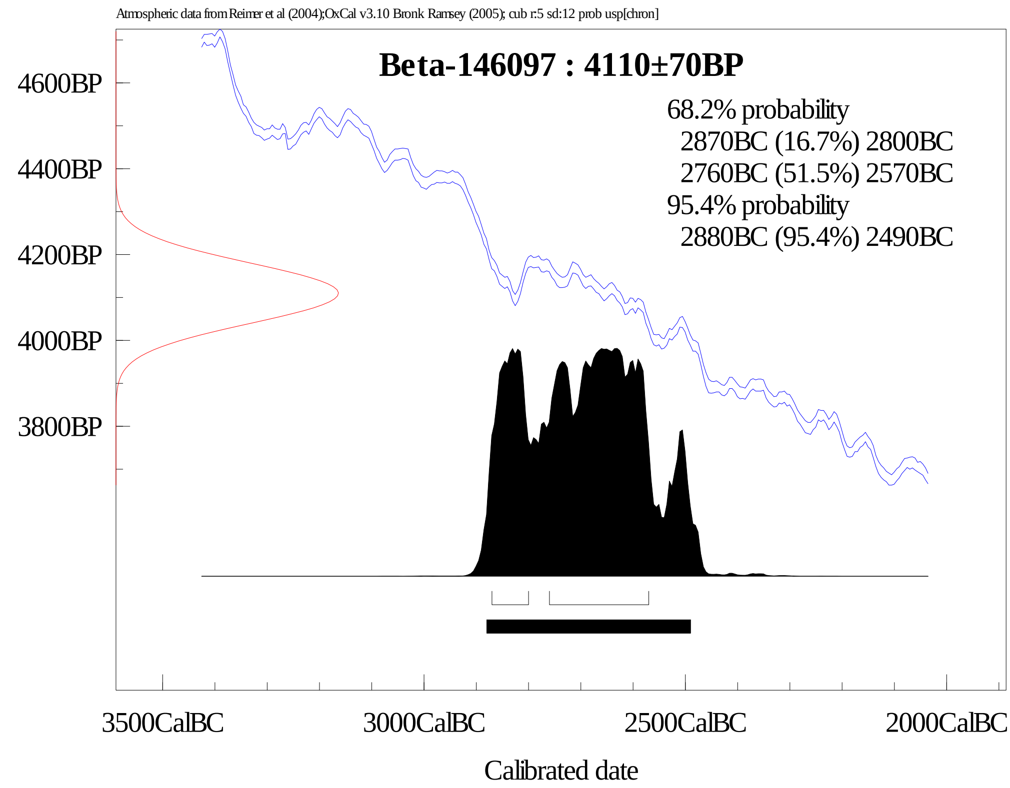


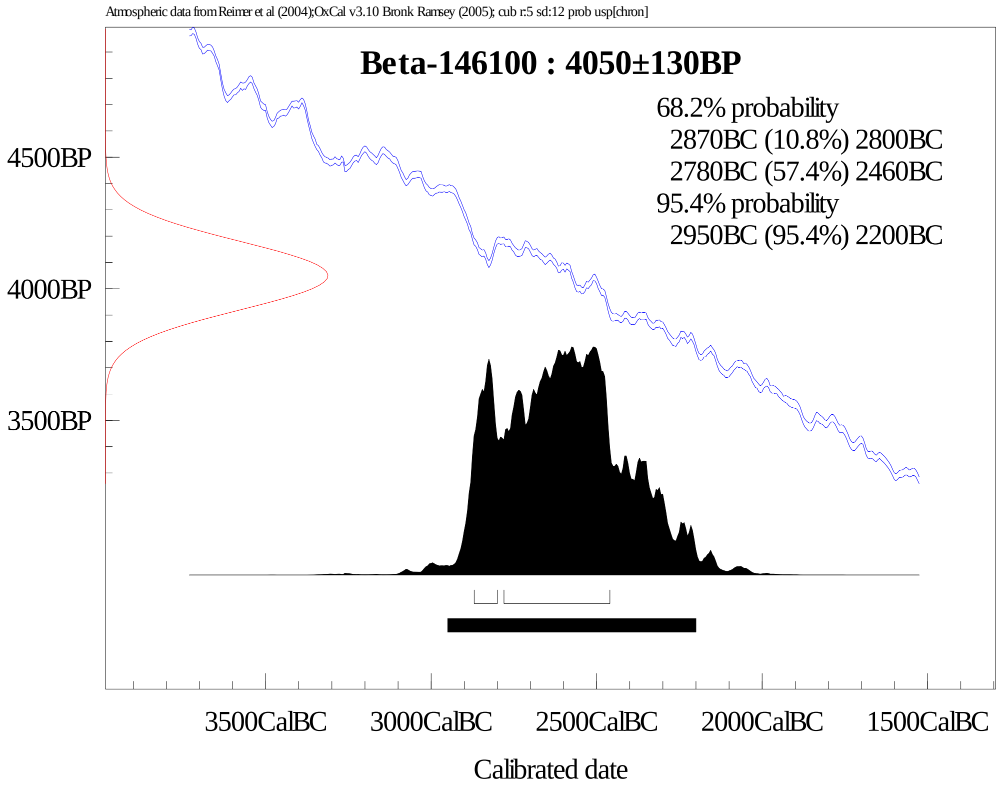
Titriş Höyük TIT.5



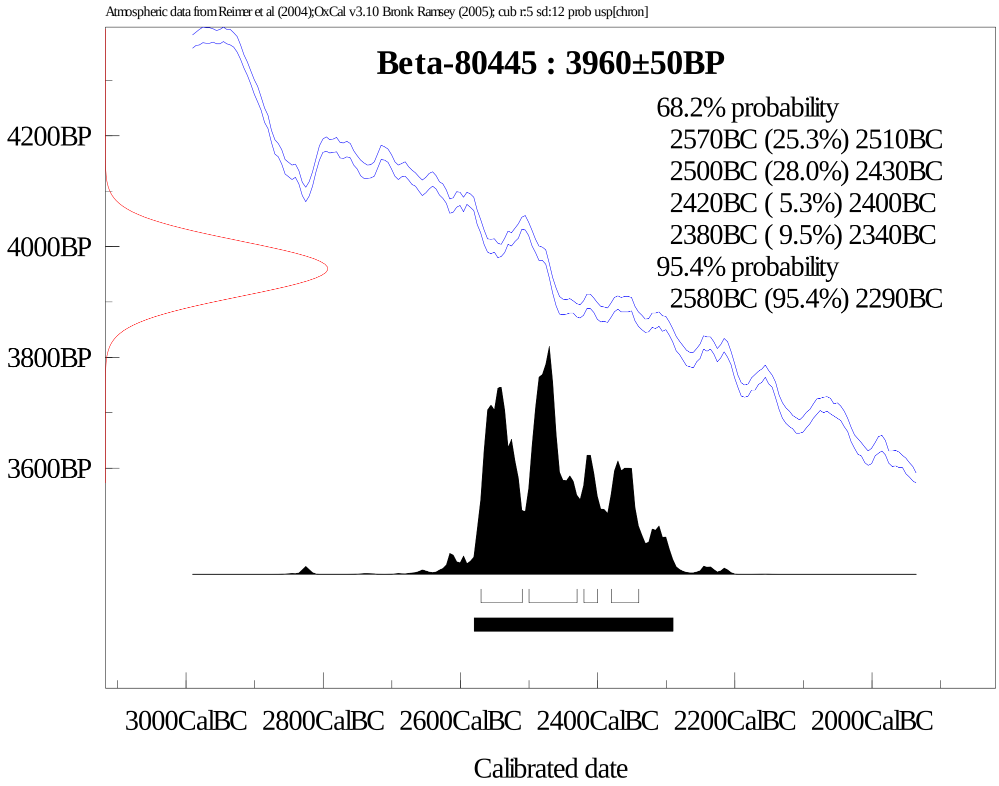
Titriş Höyük TIT.6



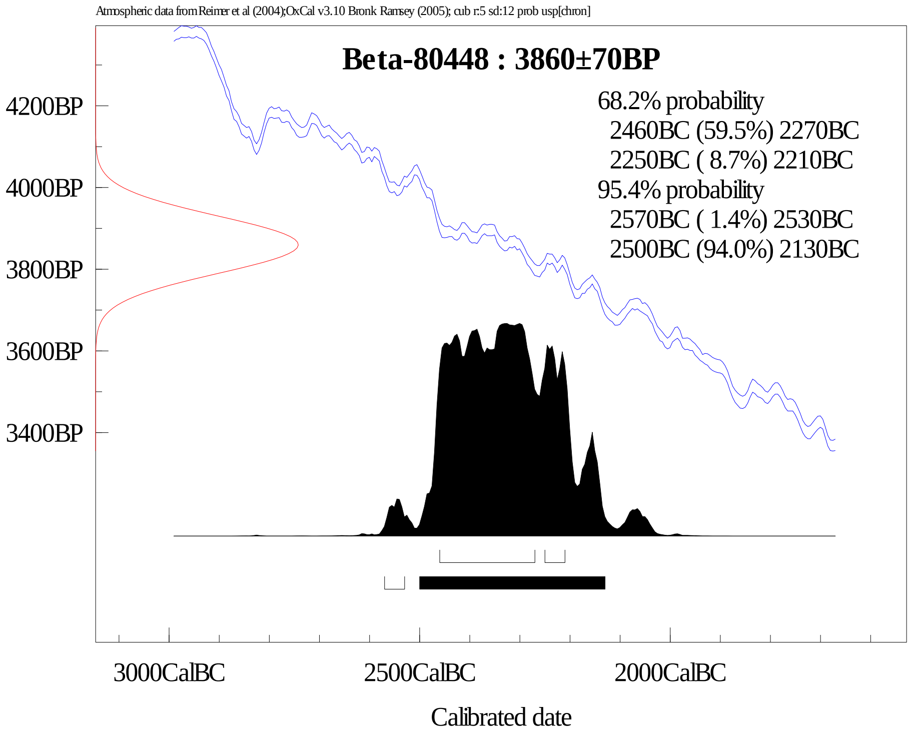
Titriş Höyük TIT.7



Titriş Höyük TIT.8



Titriş Höyük TIT.9



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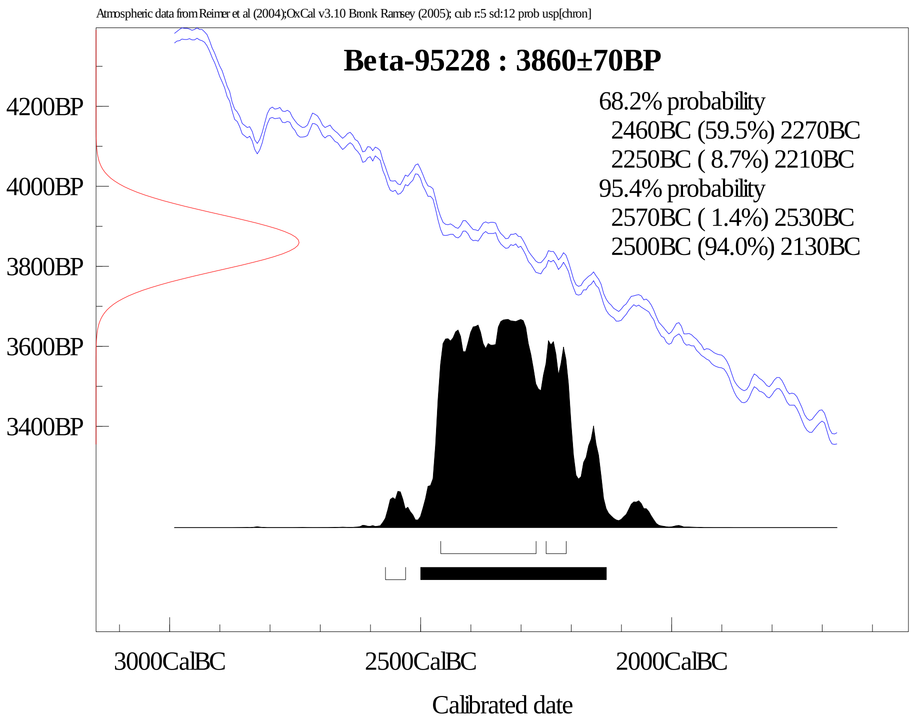
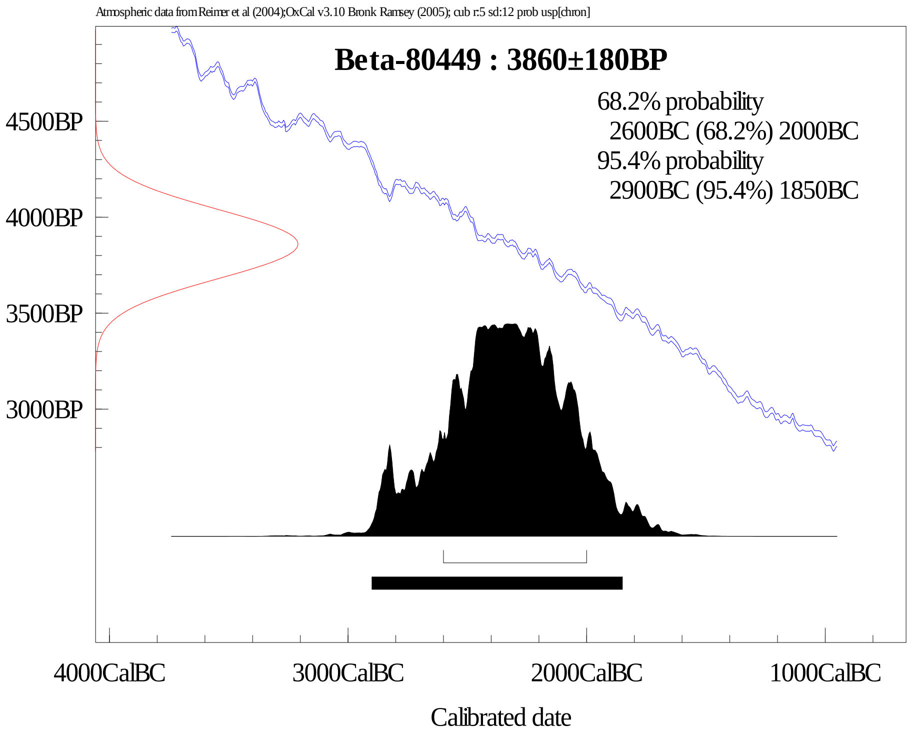


Titriş Höyük TIT.11



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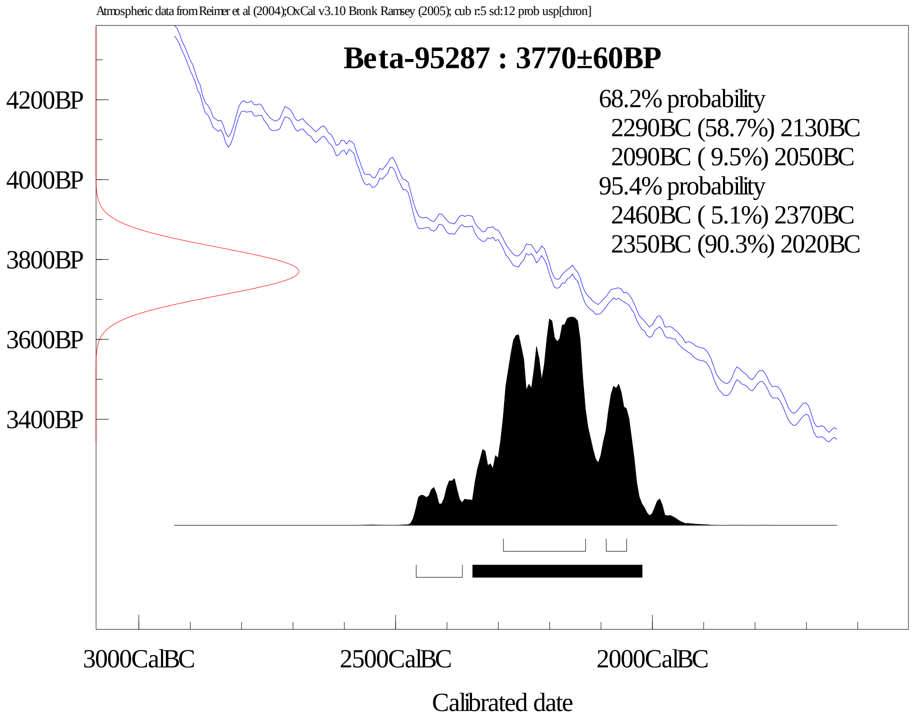

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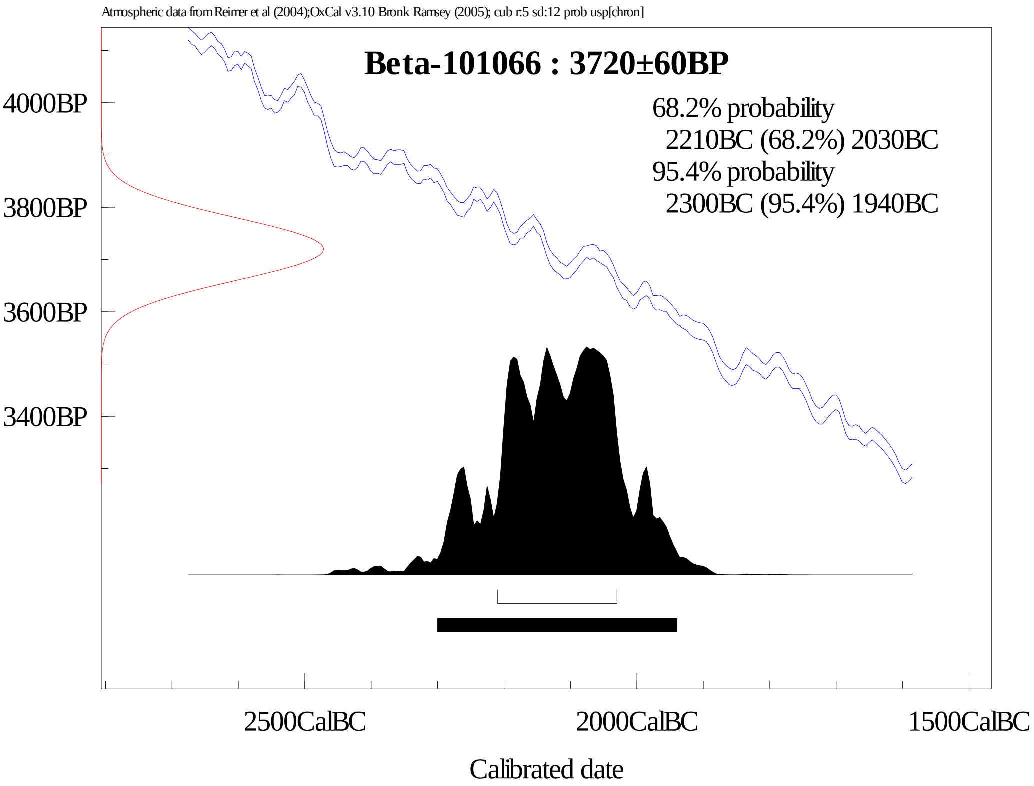
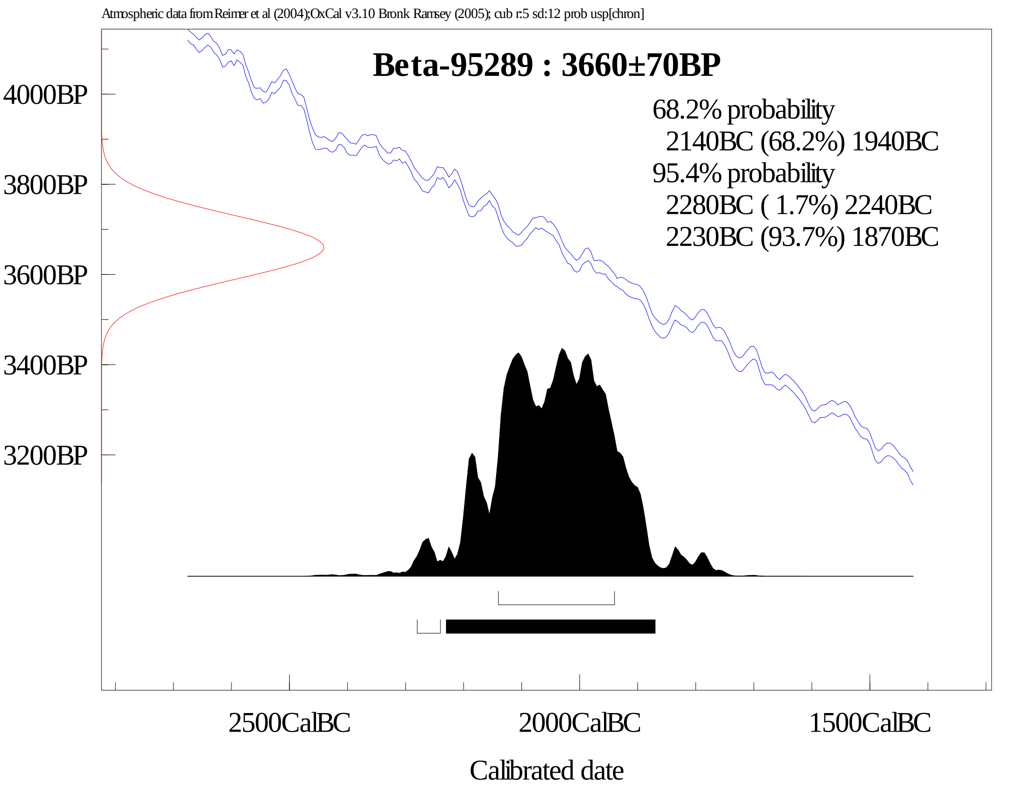


Titriş Höyük TIT.14



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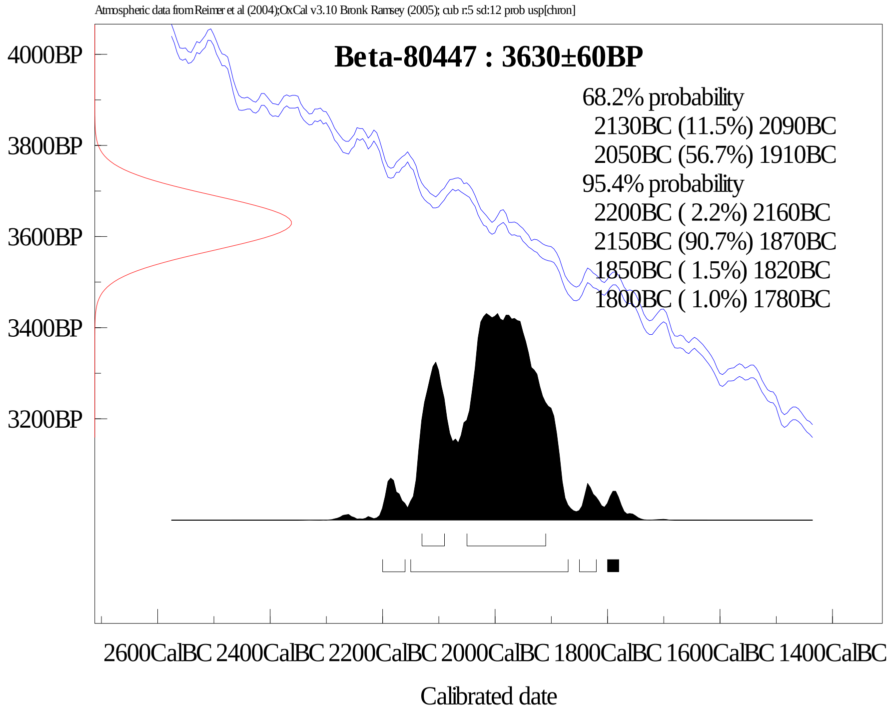
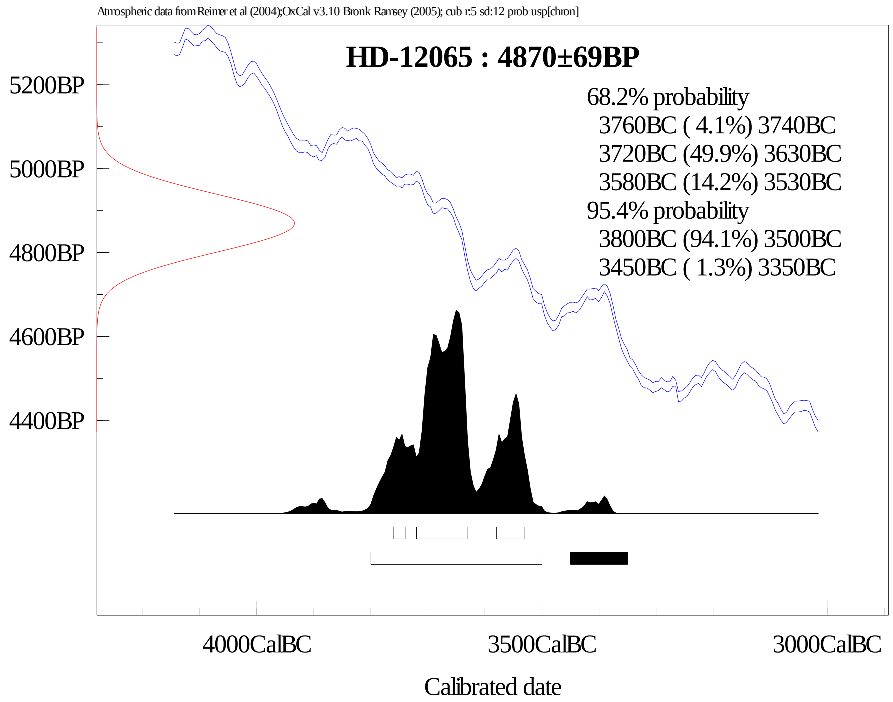
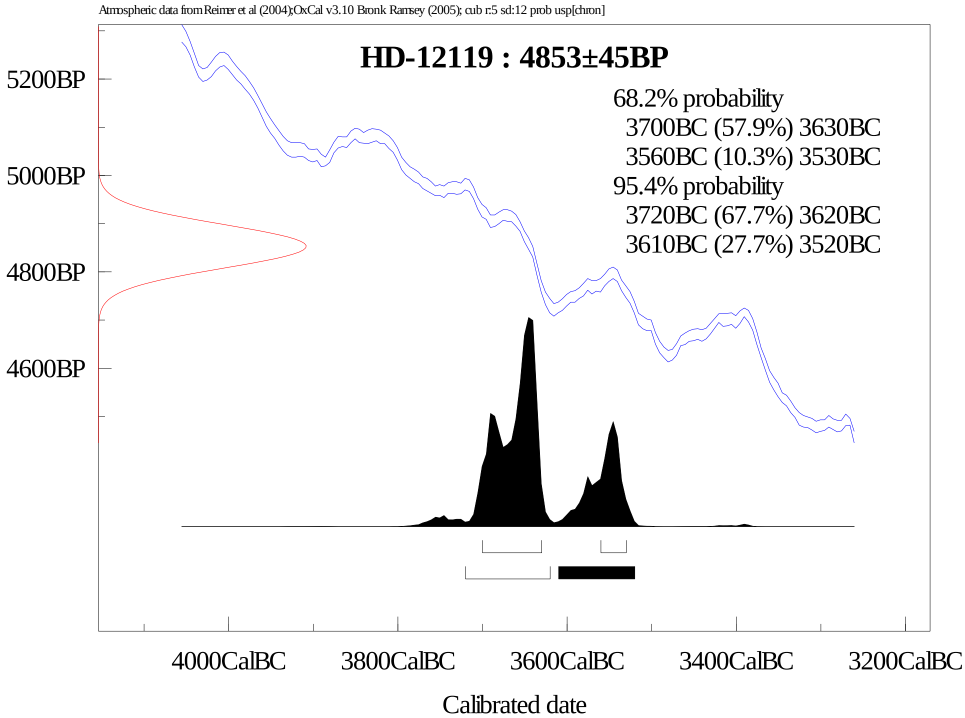


Troia

Troia TR.1



Troia TR.2



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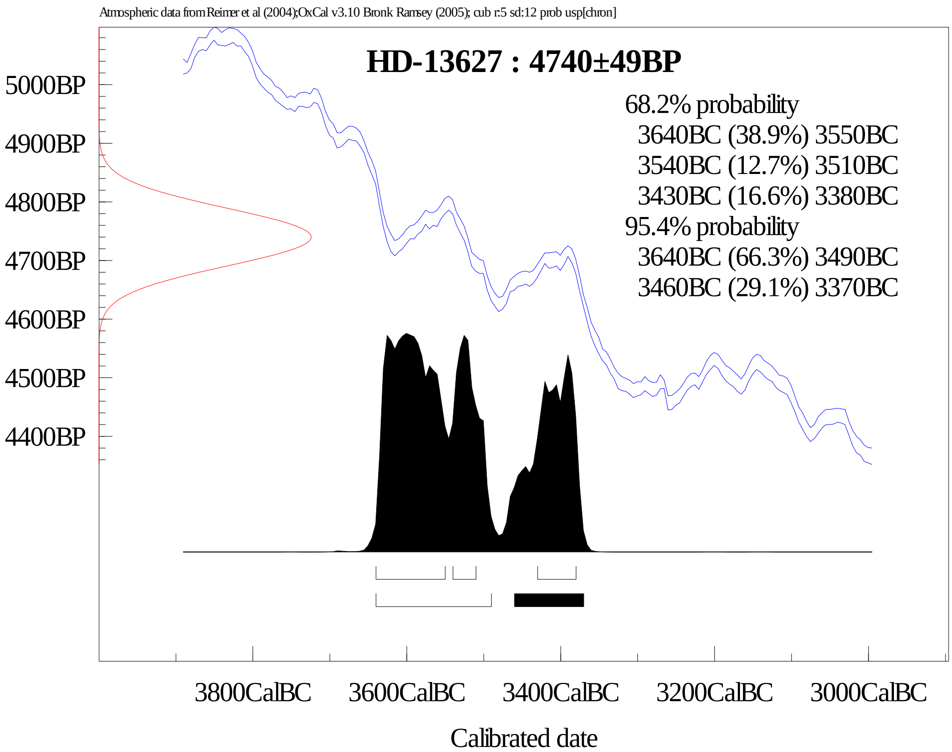

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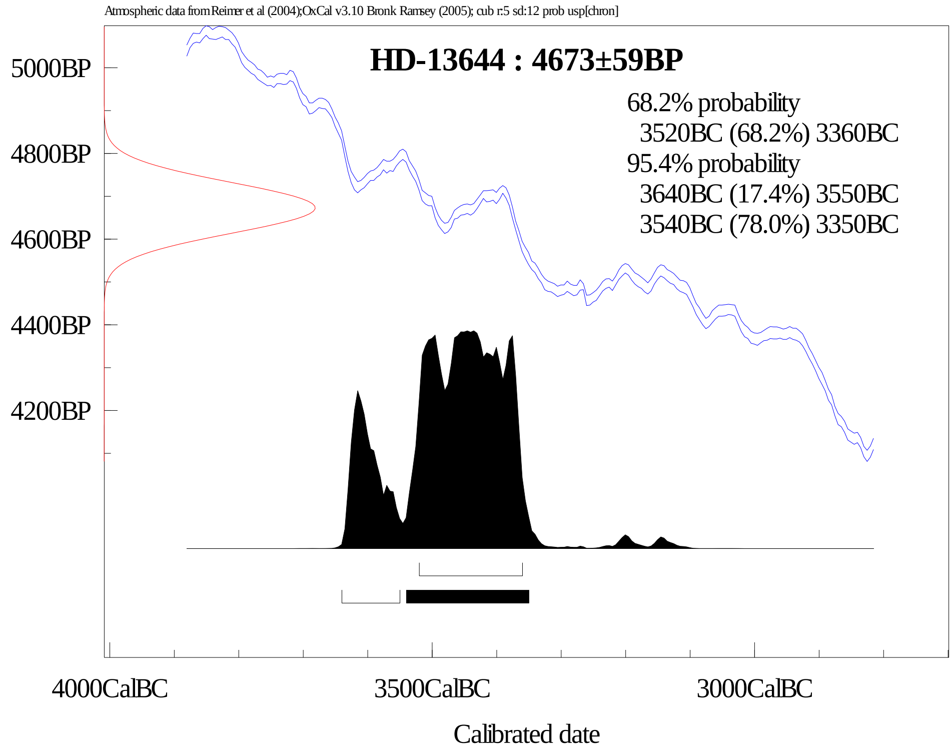

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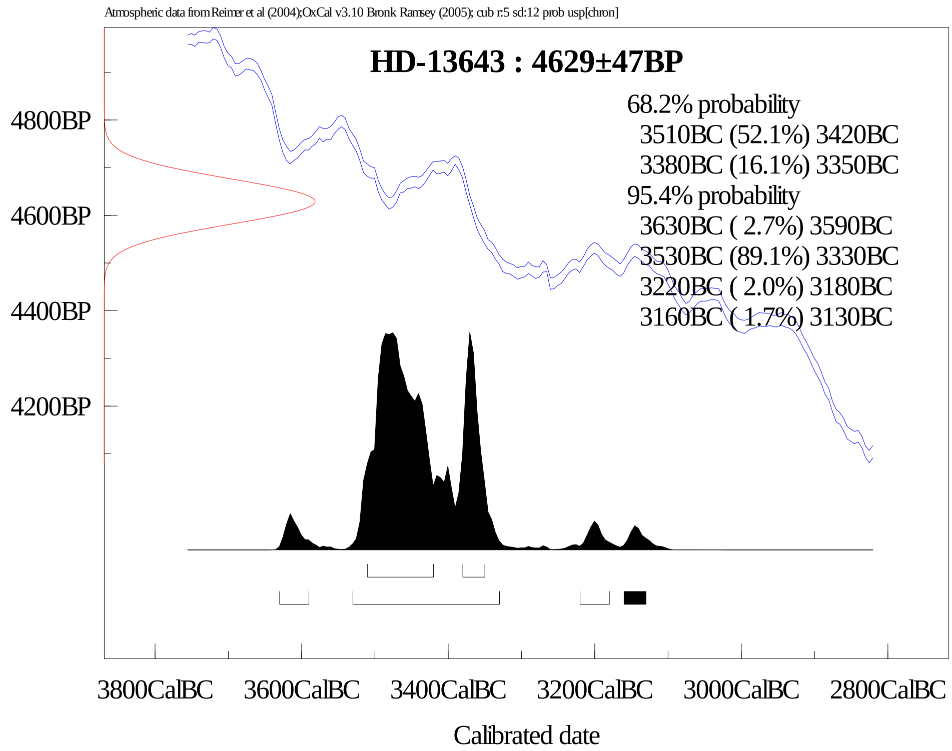

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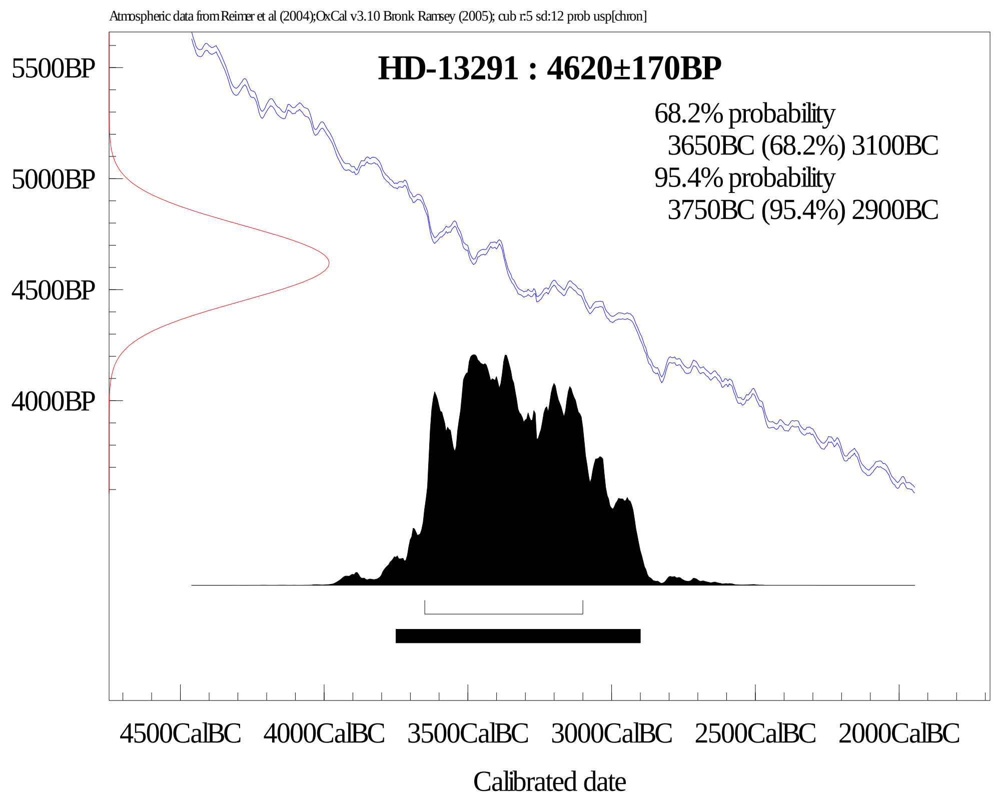

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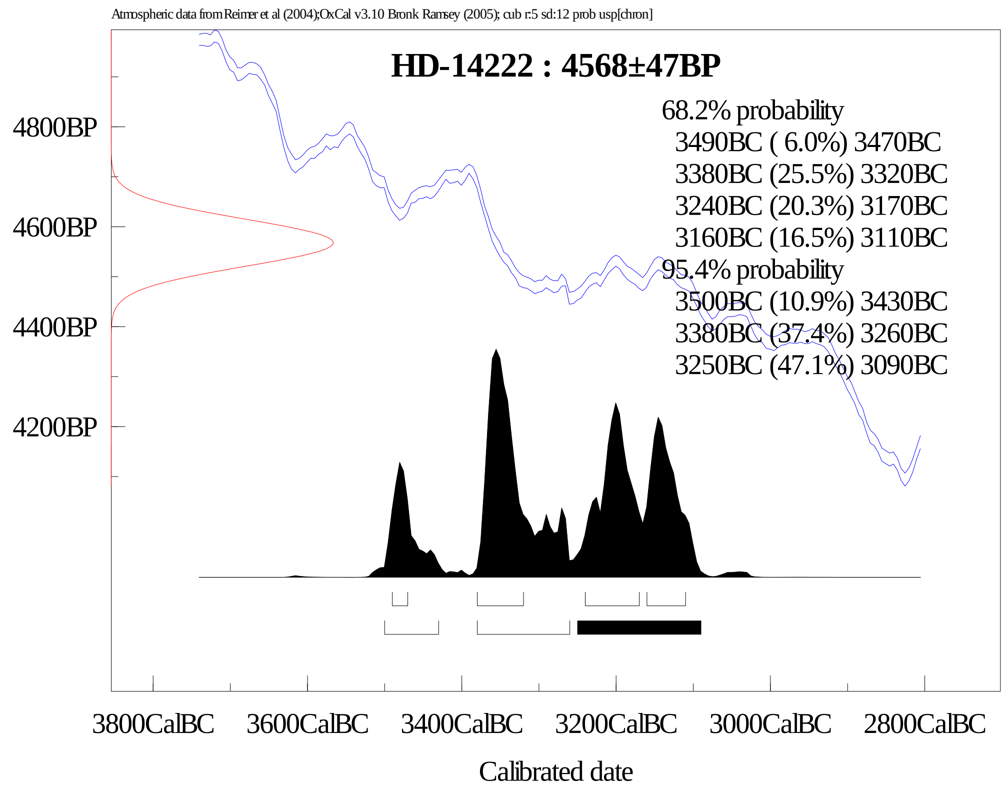
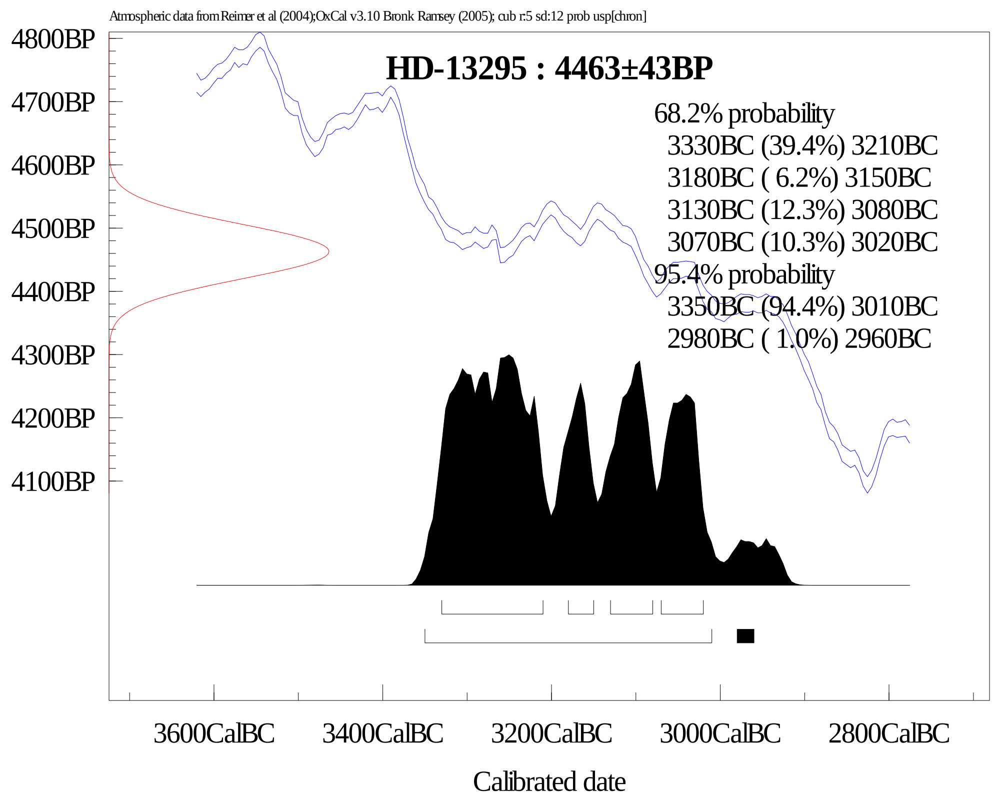
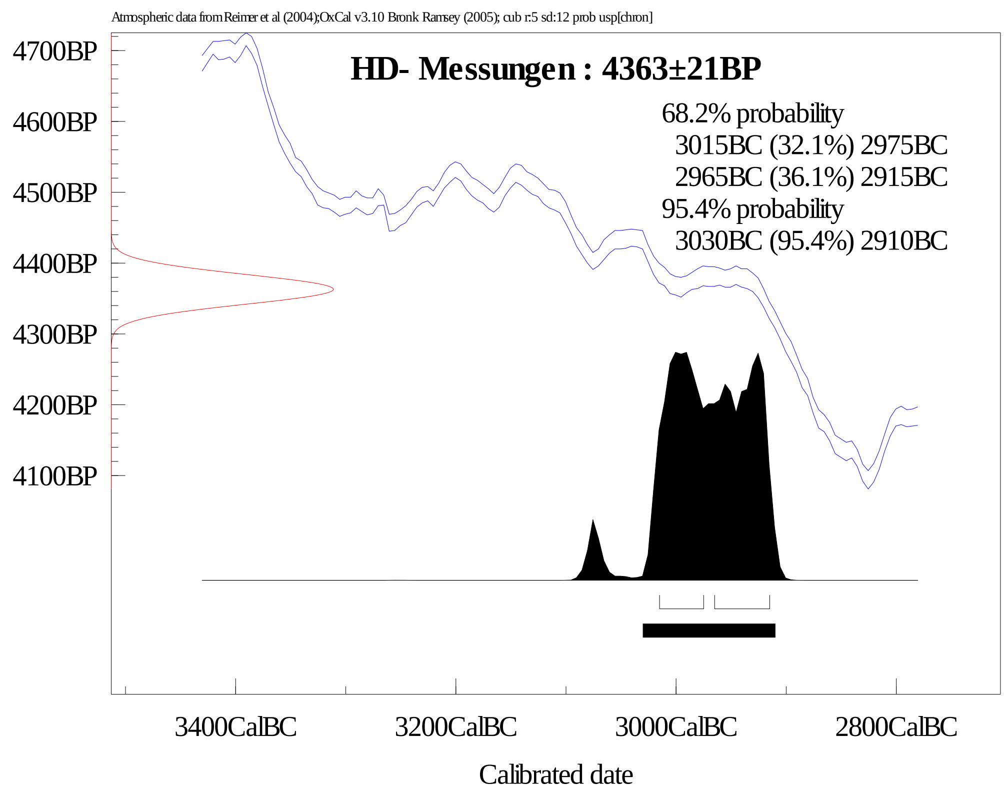


Troia TR.8



Troia TR.9



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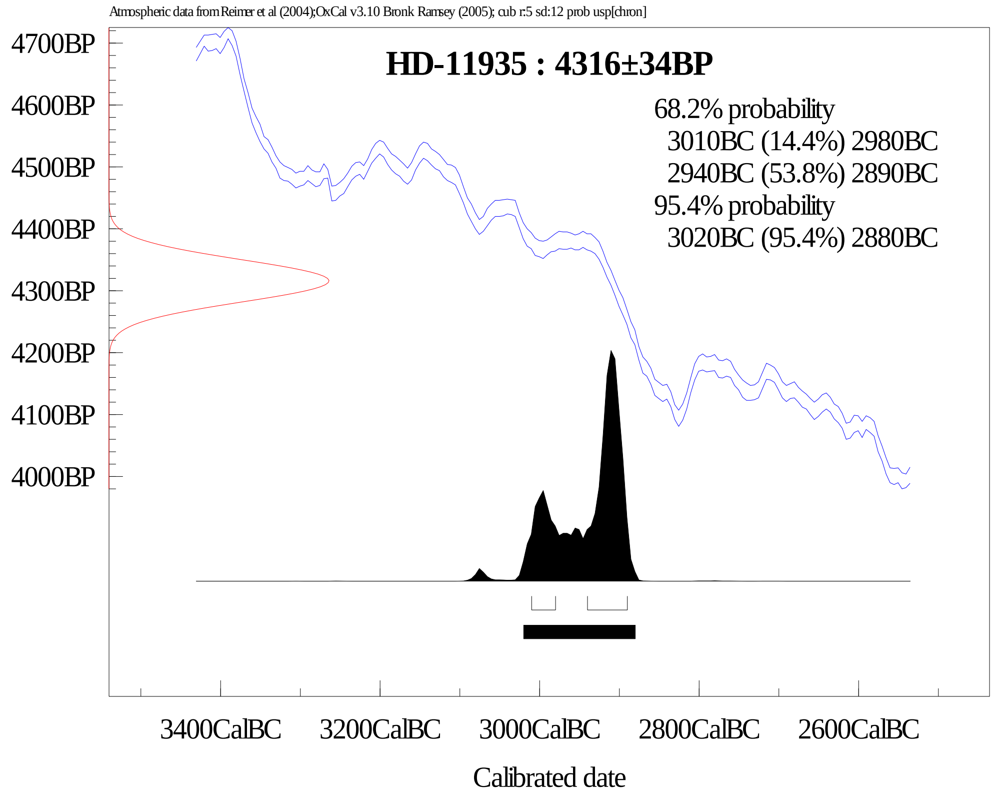

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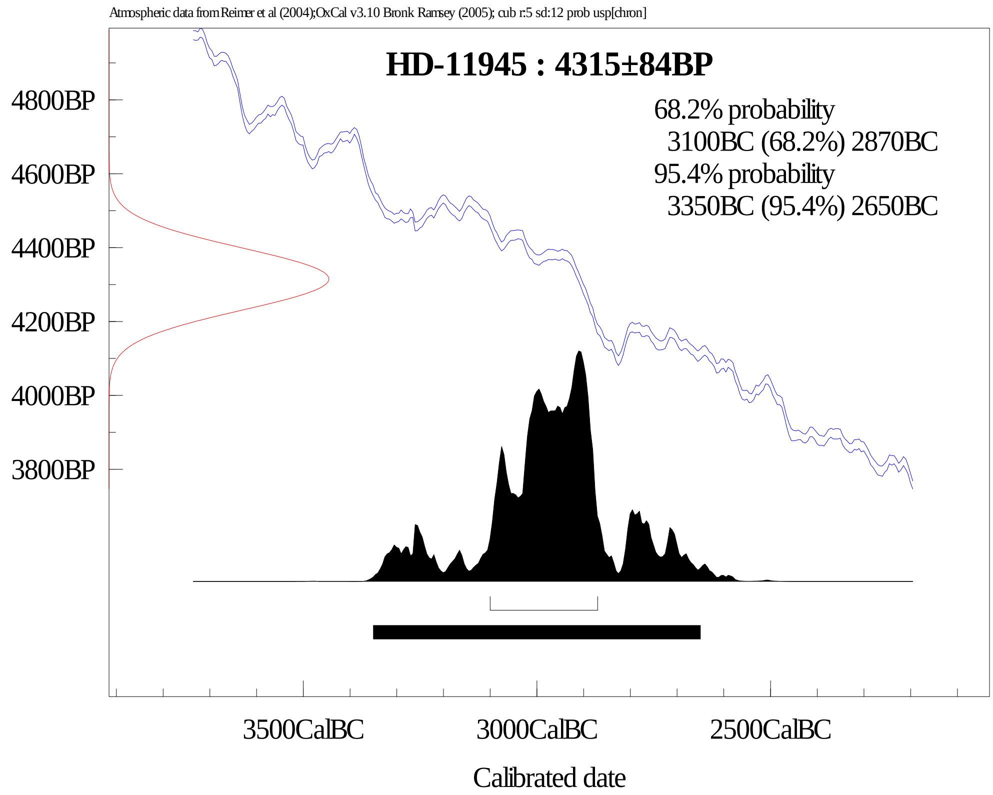

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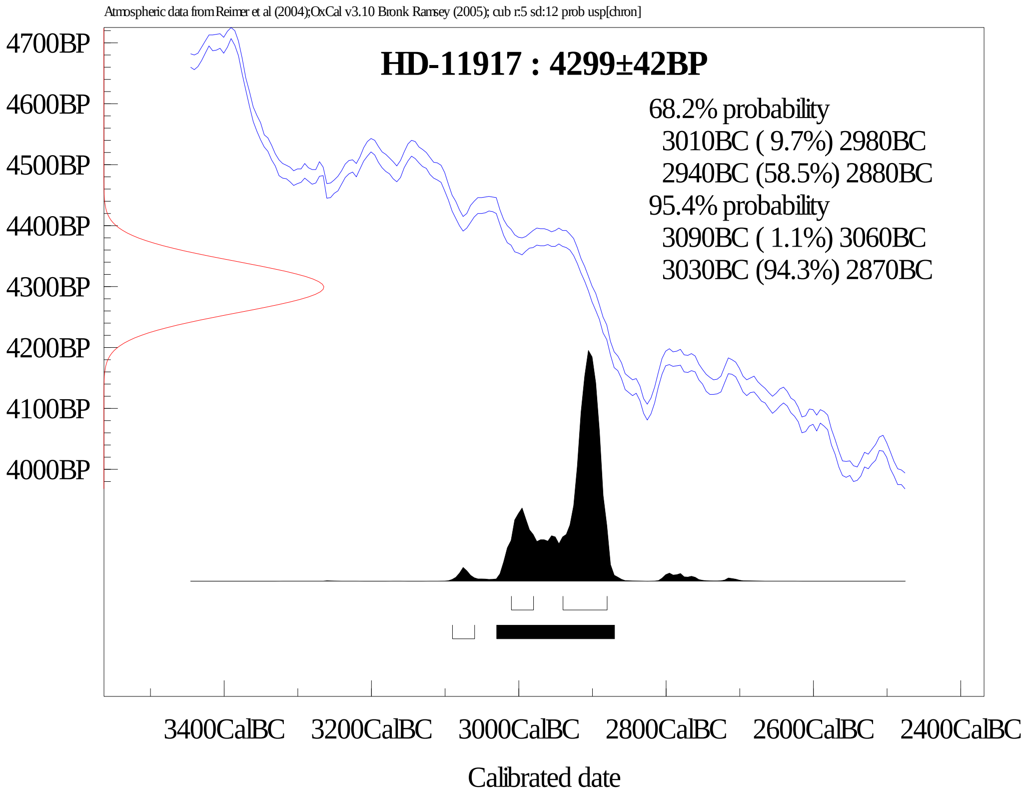

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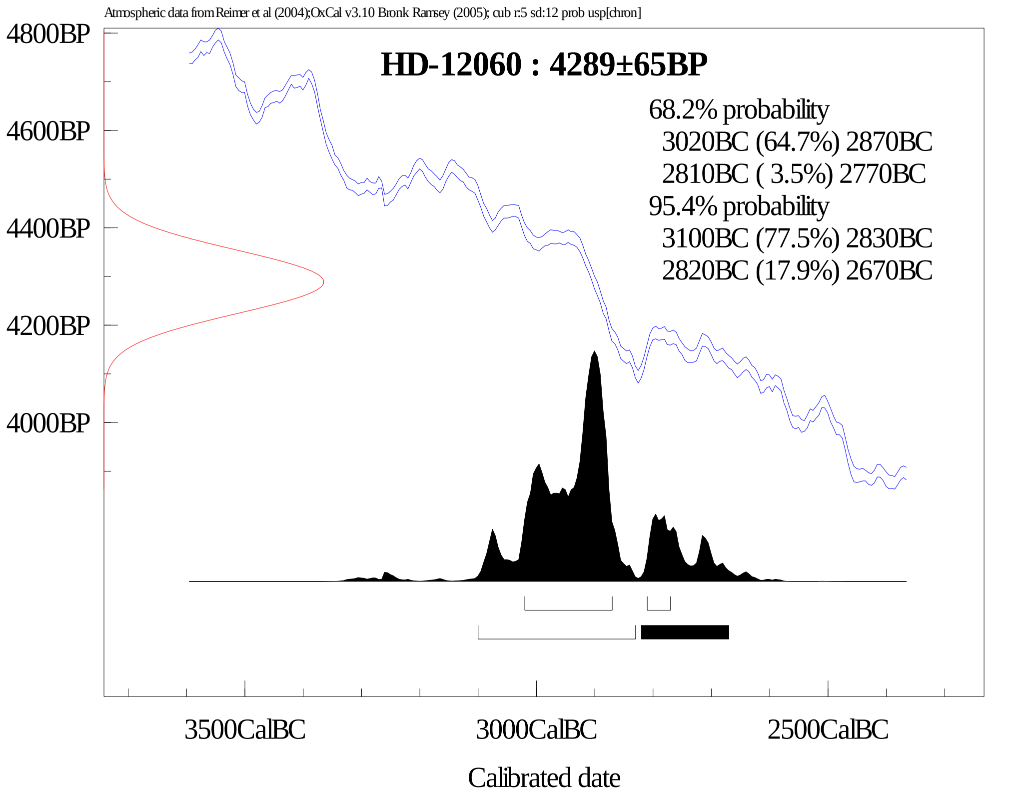

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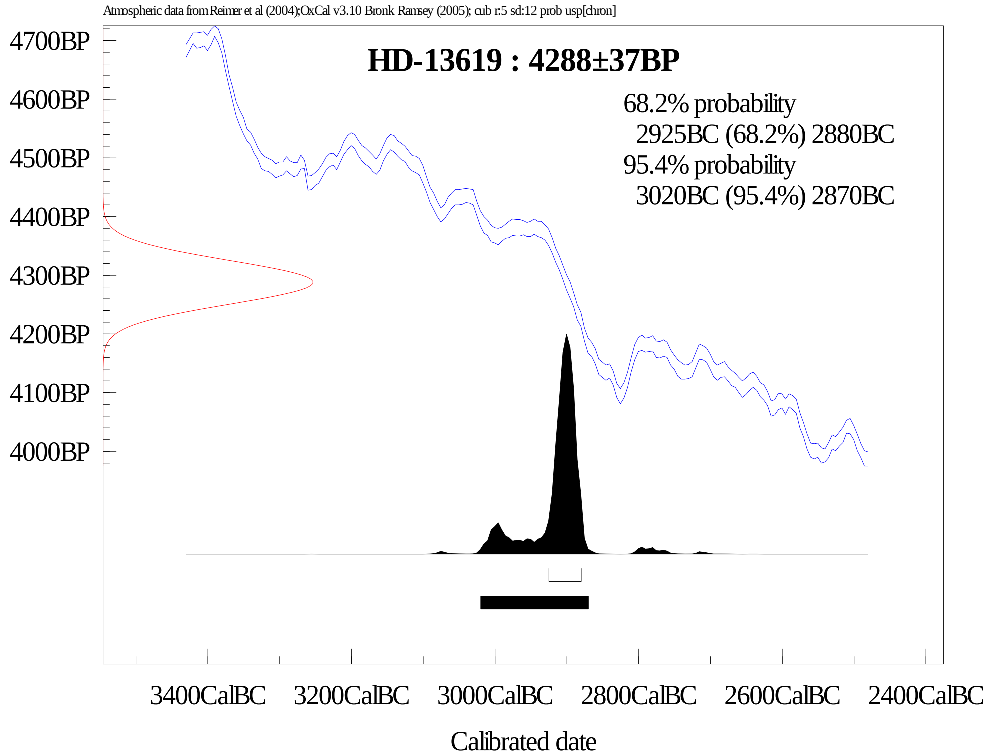

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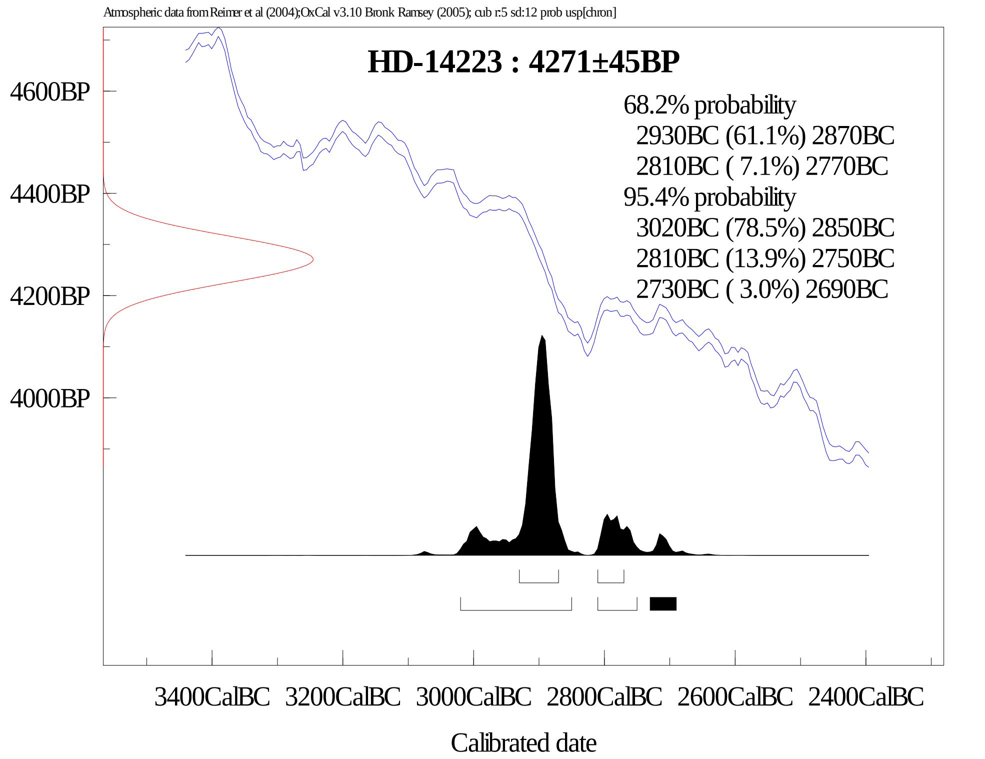

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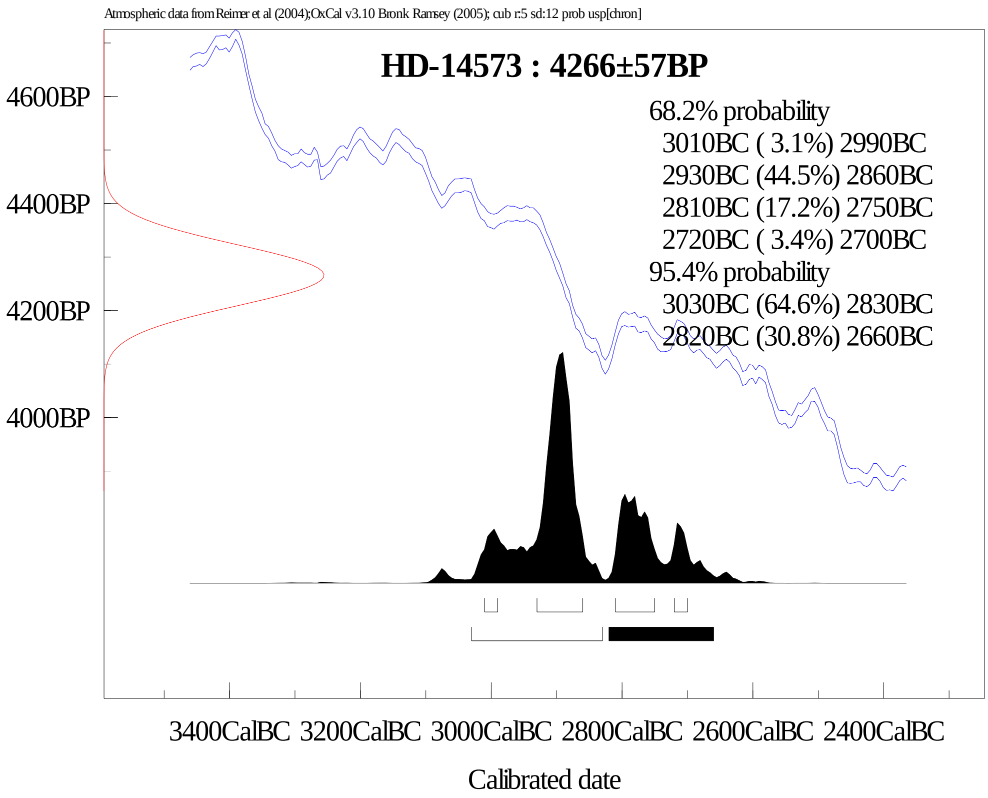

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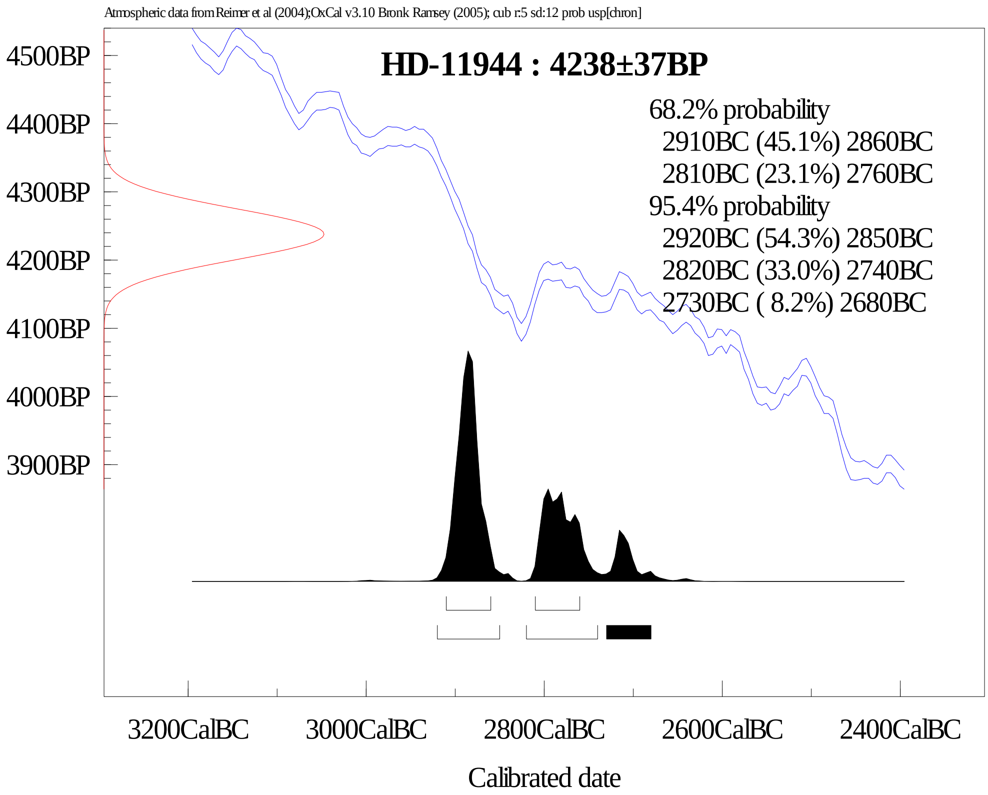

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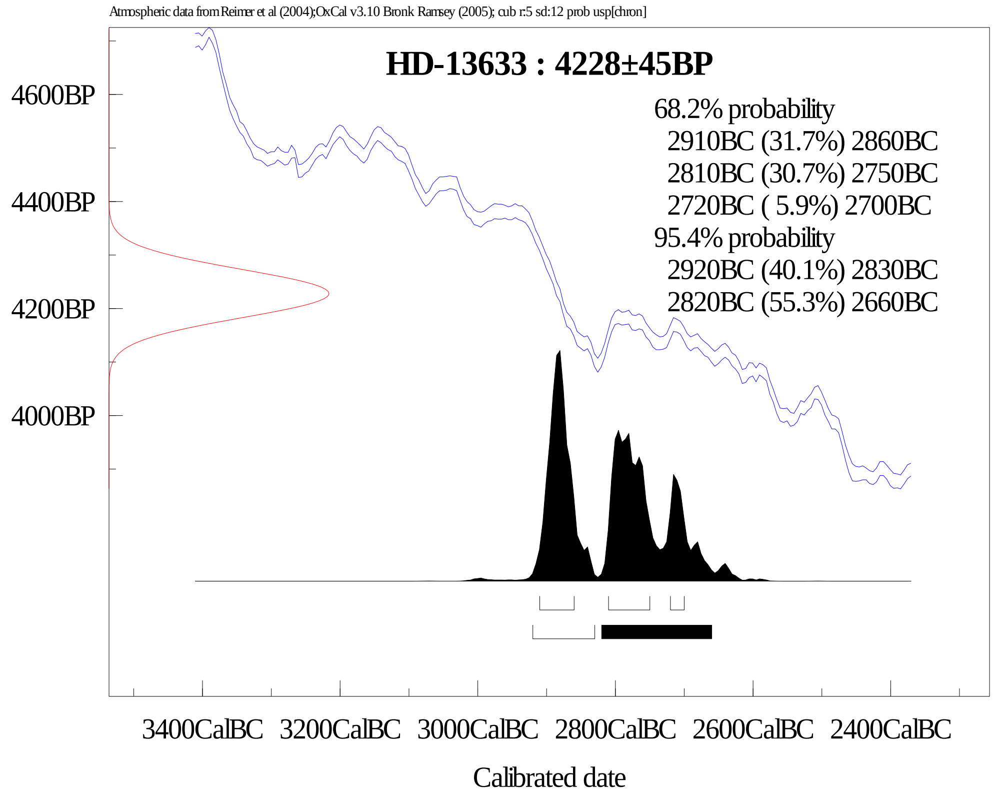

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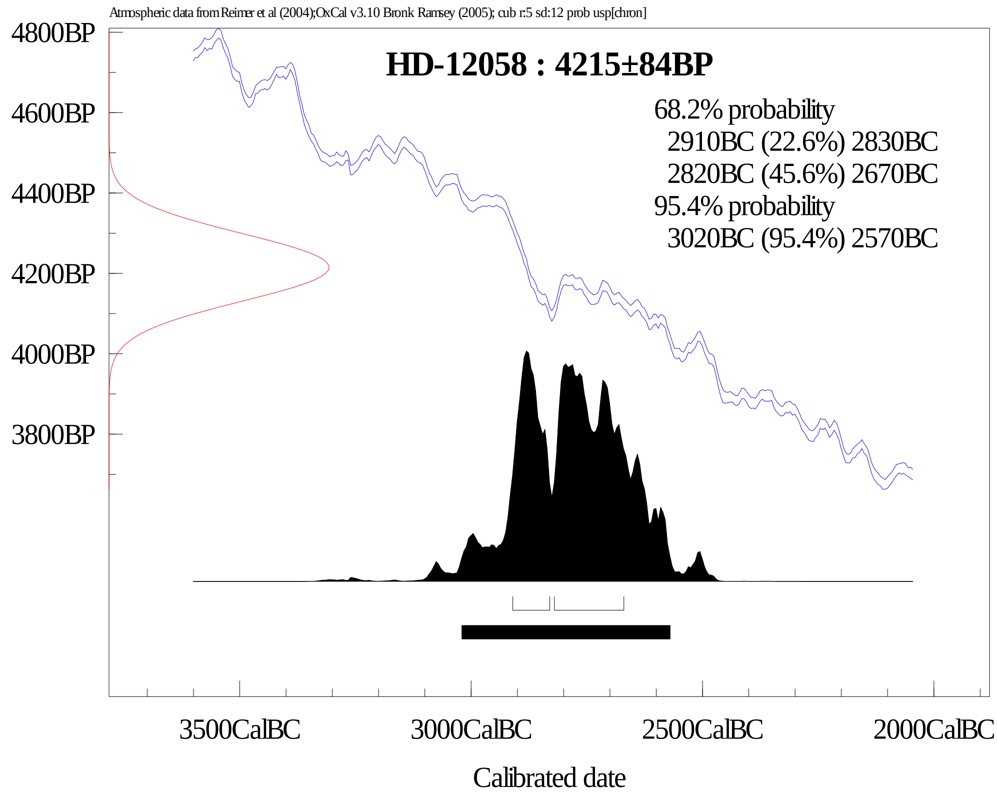

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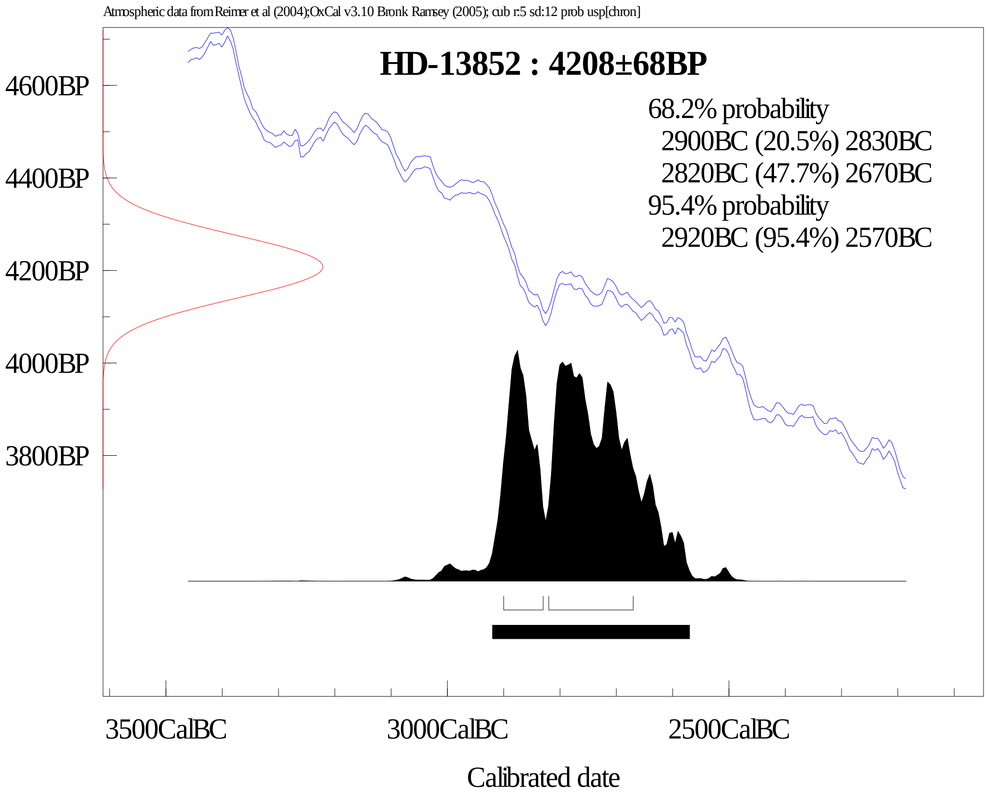

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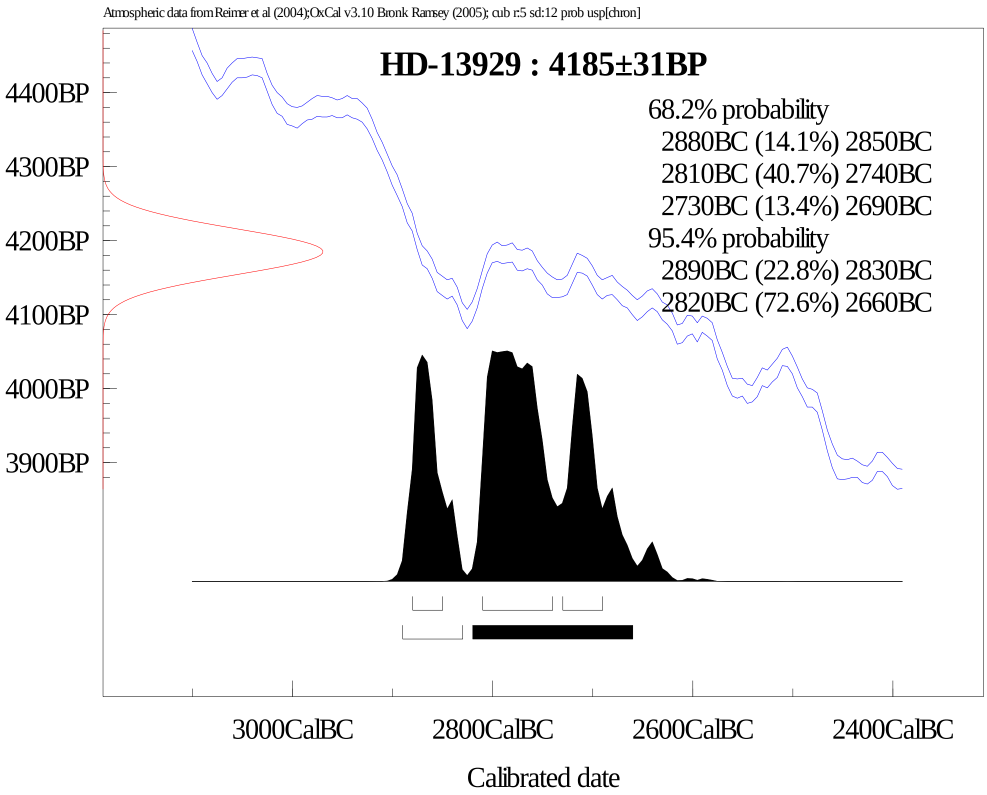

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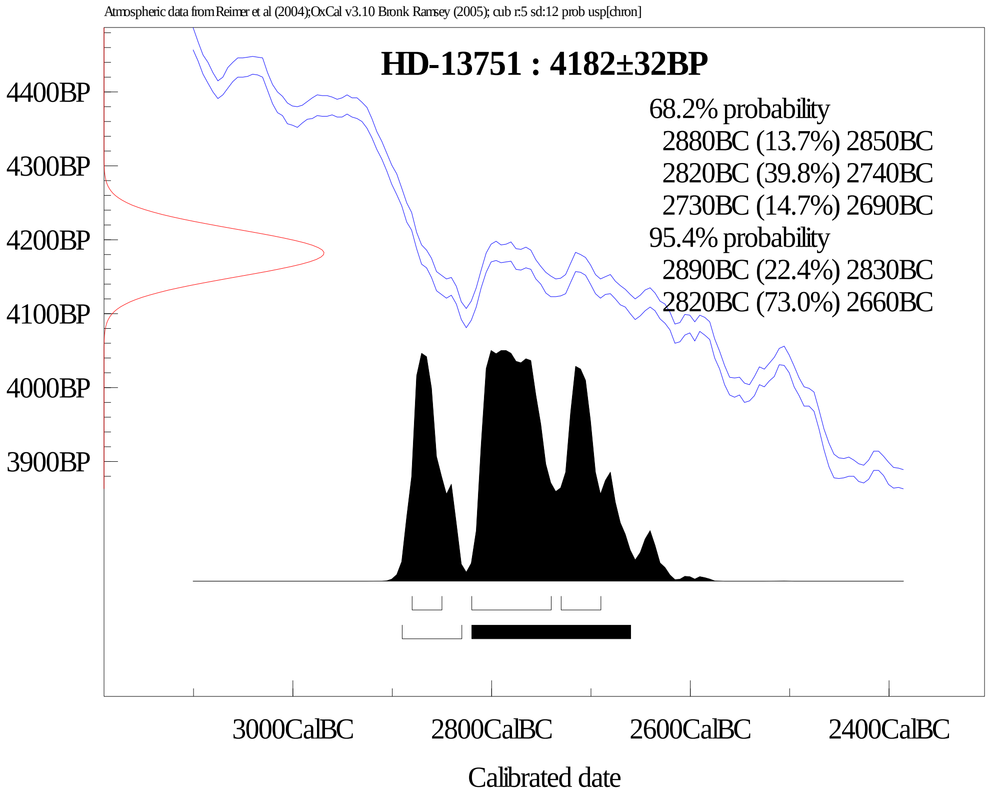
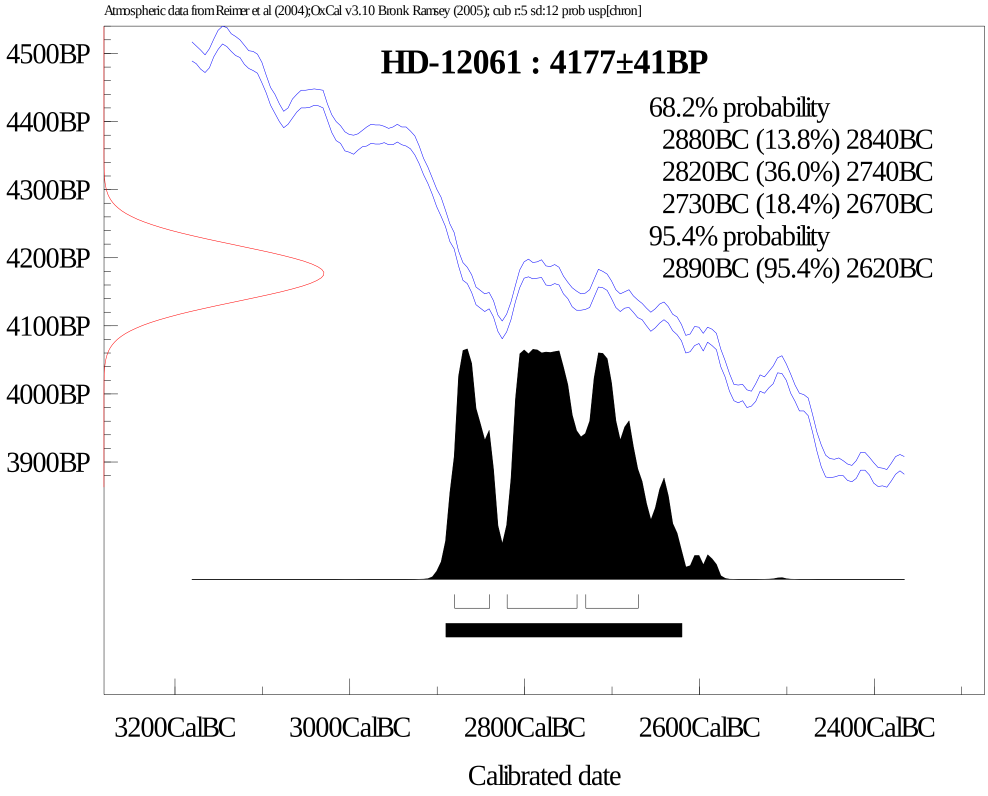


Troia TR.23



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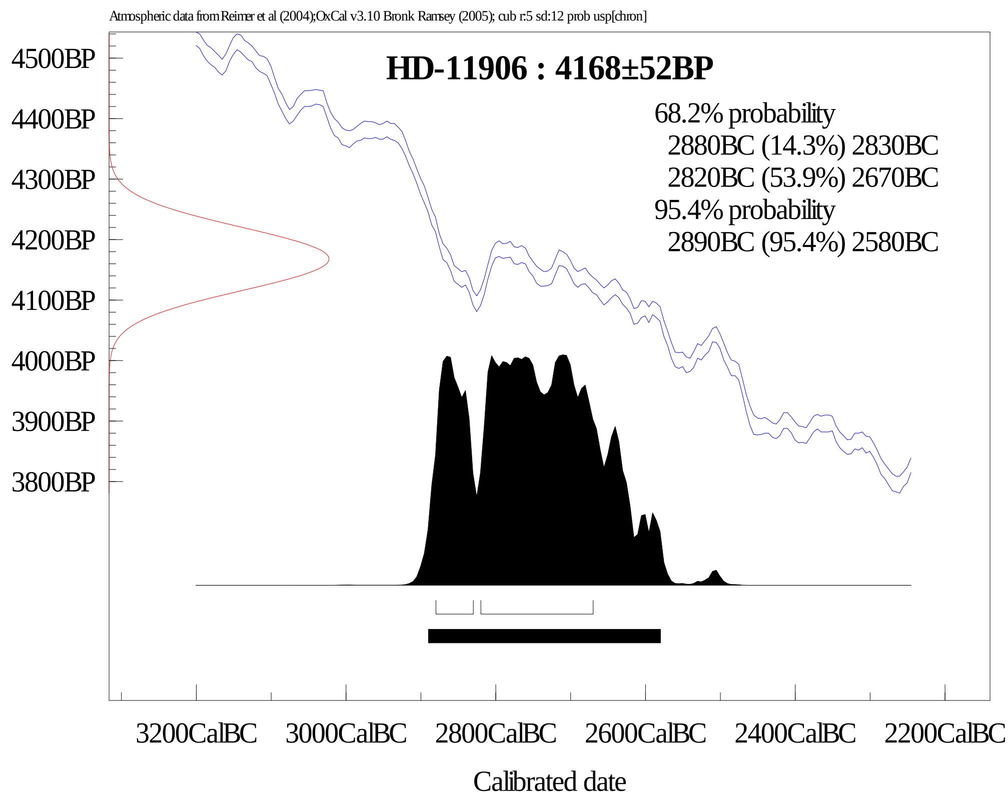

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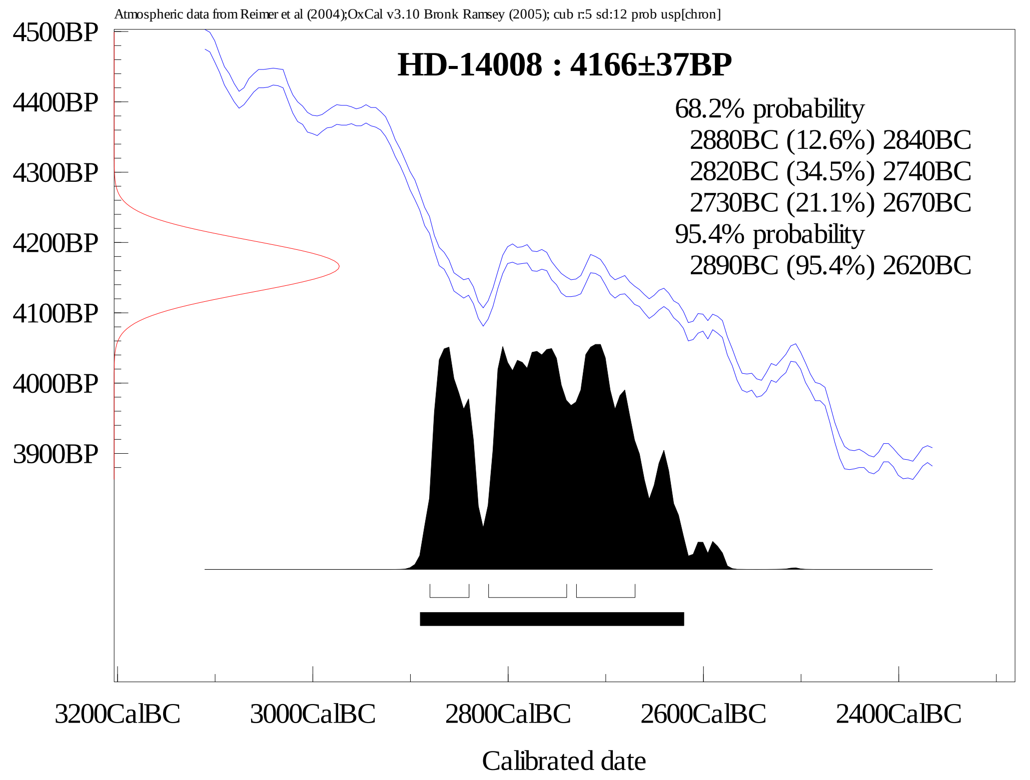

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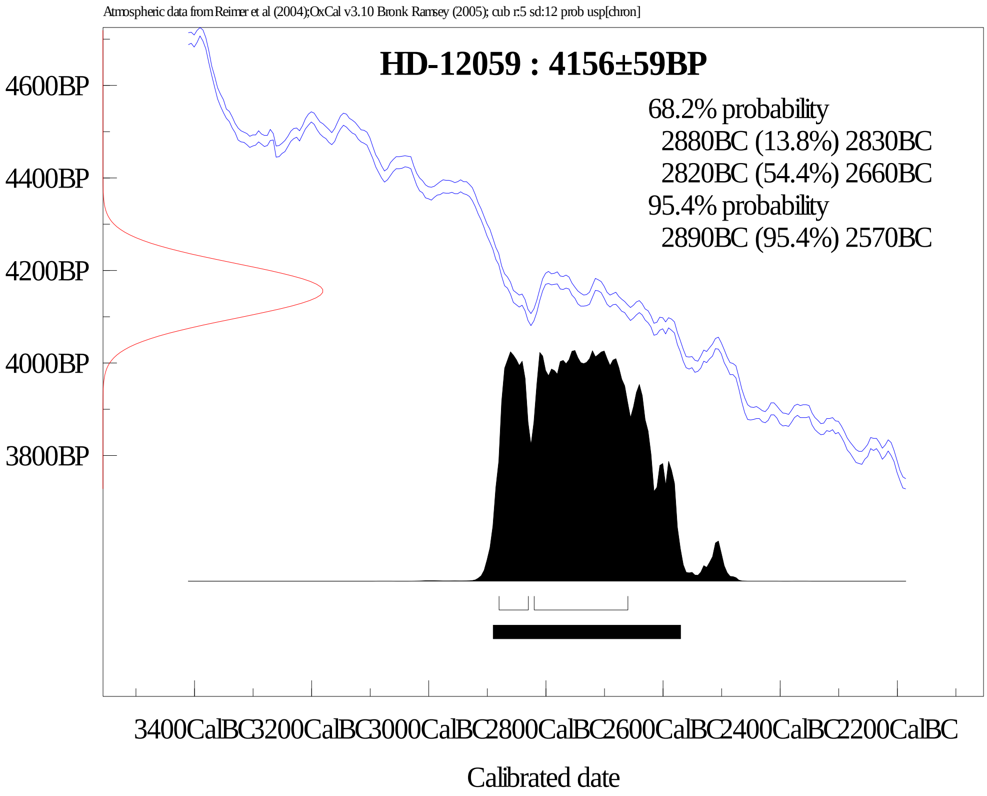

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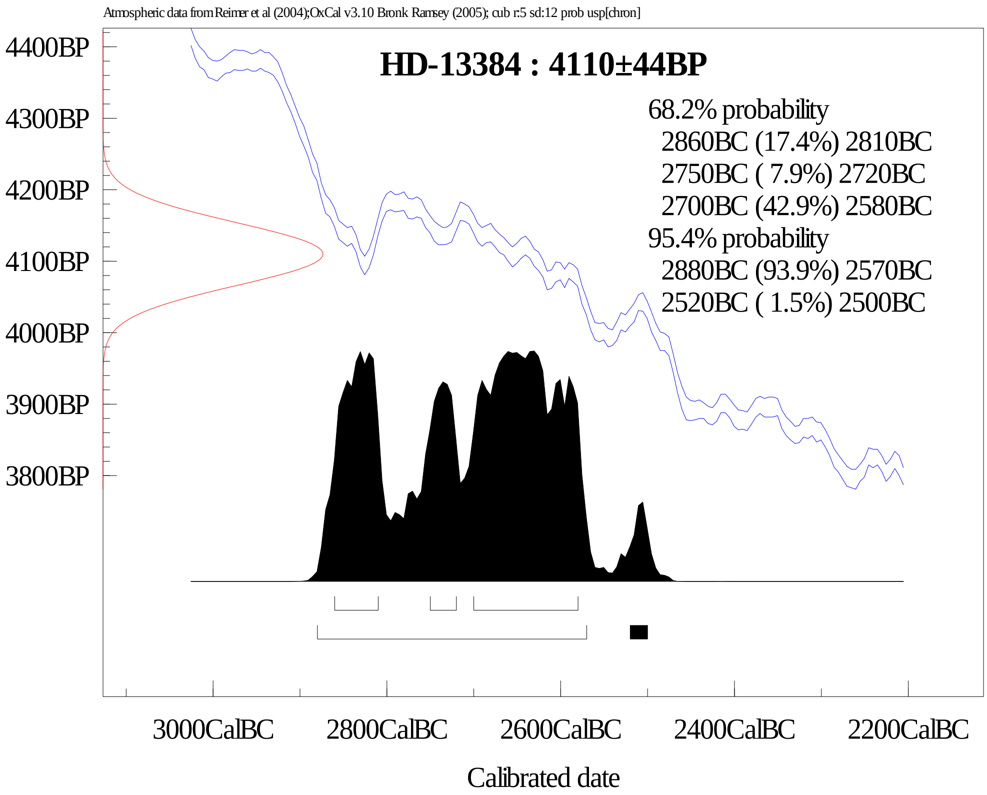

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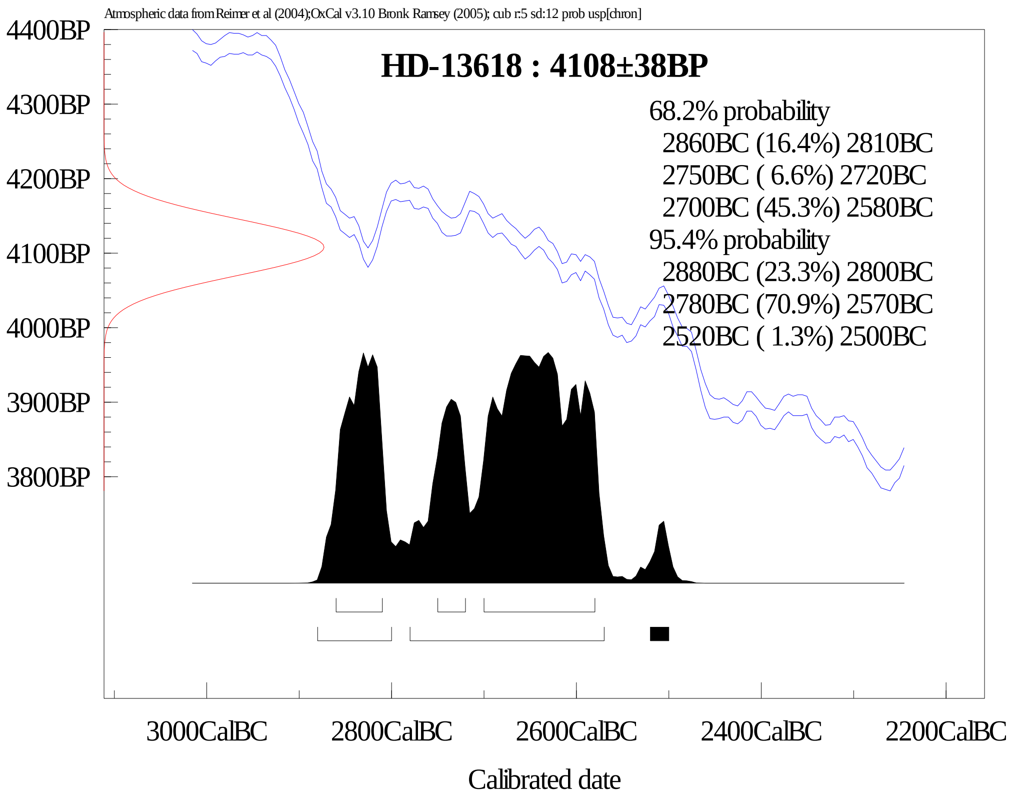

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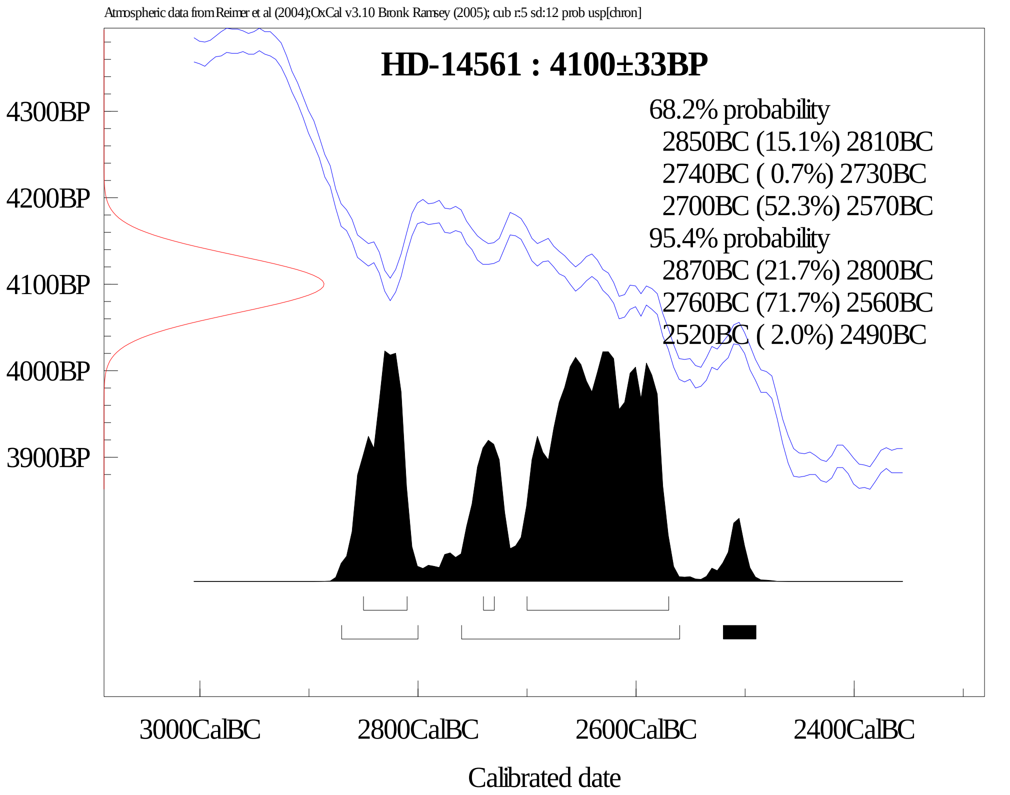

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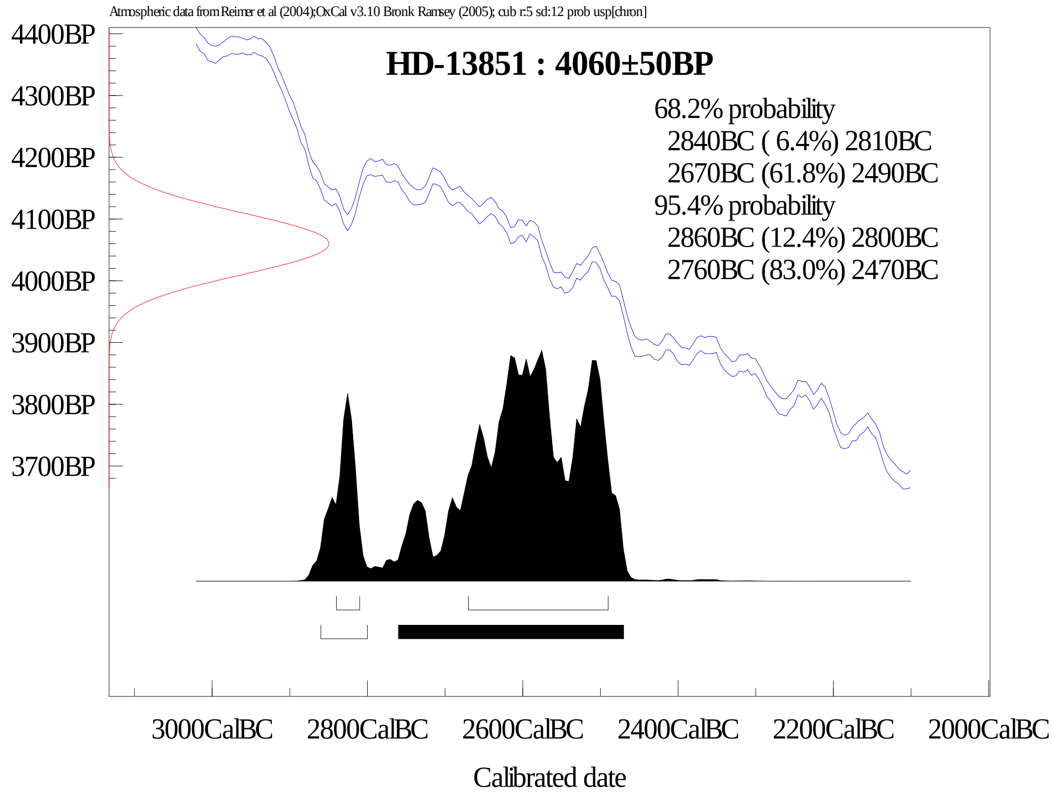

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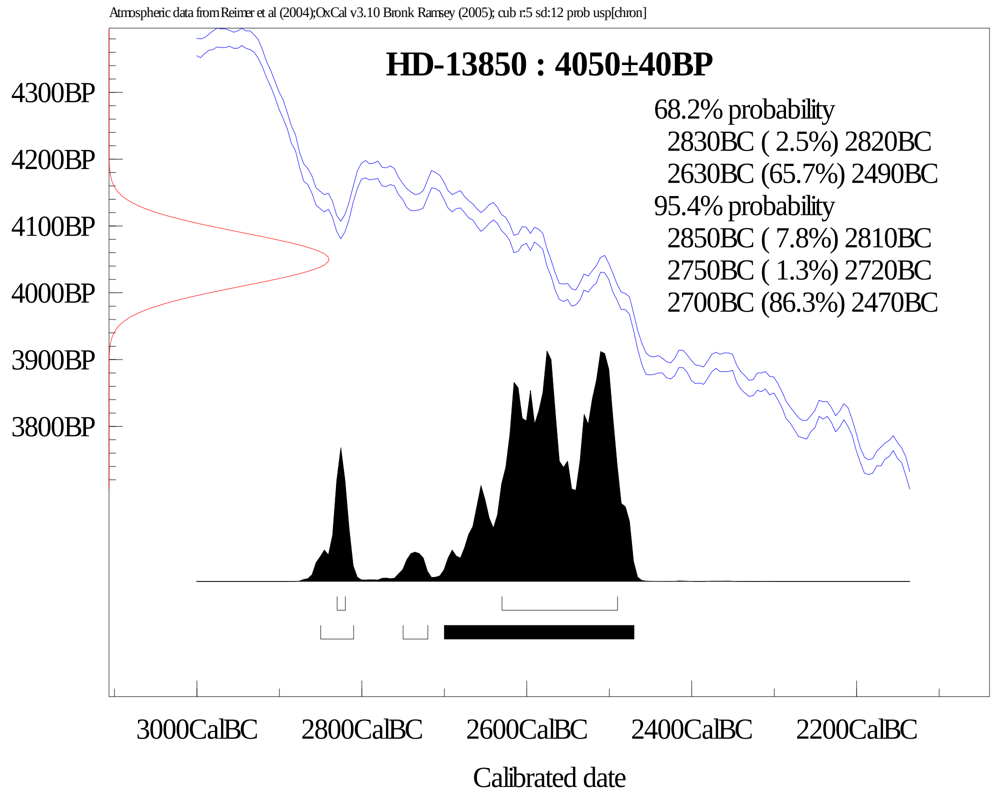

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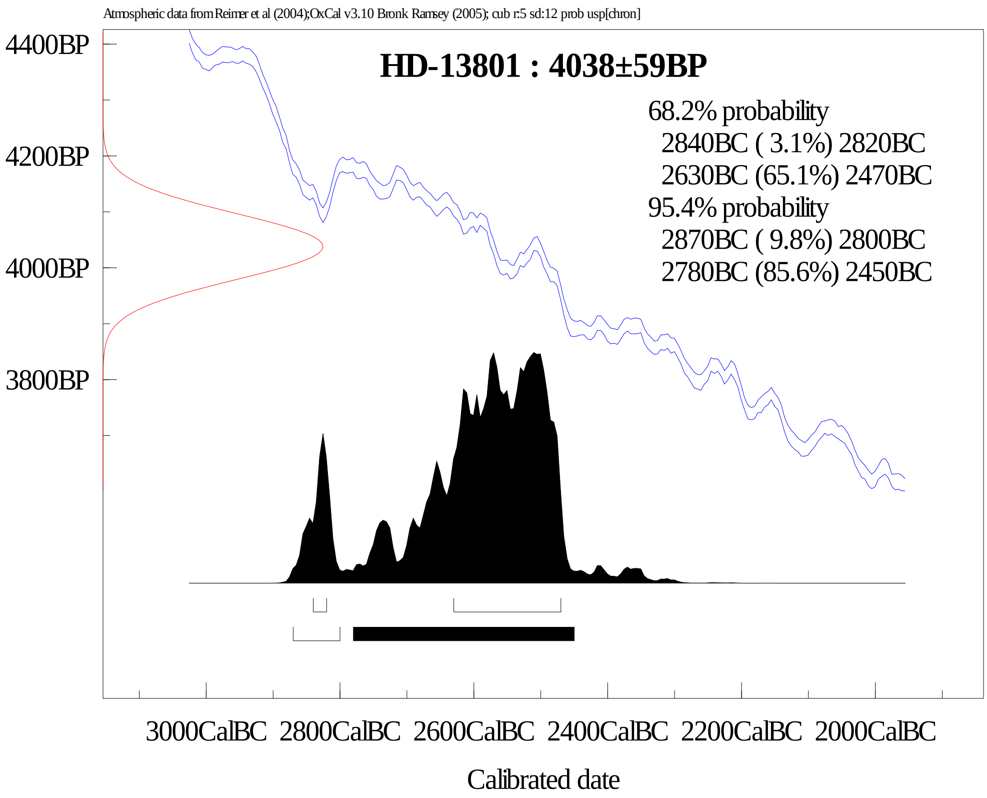

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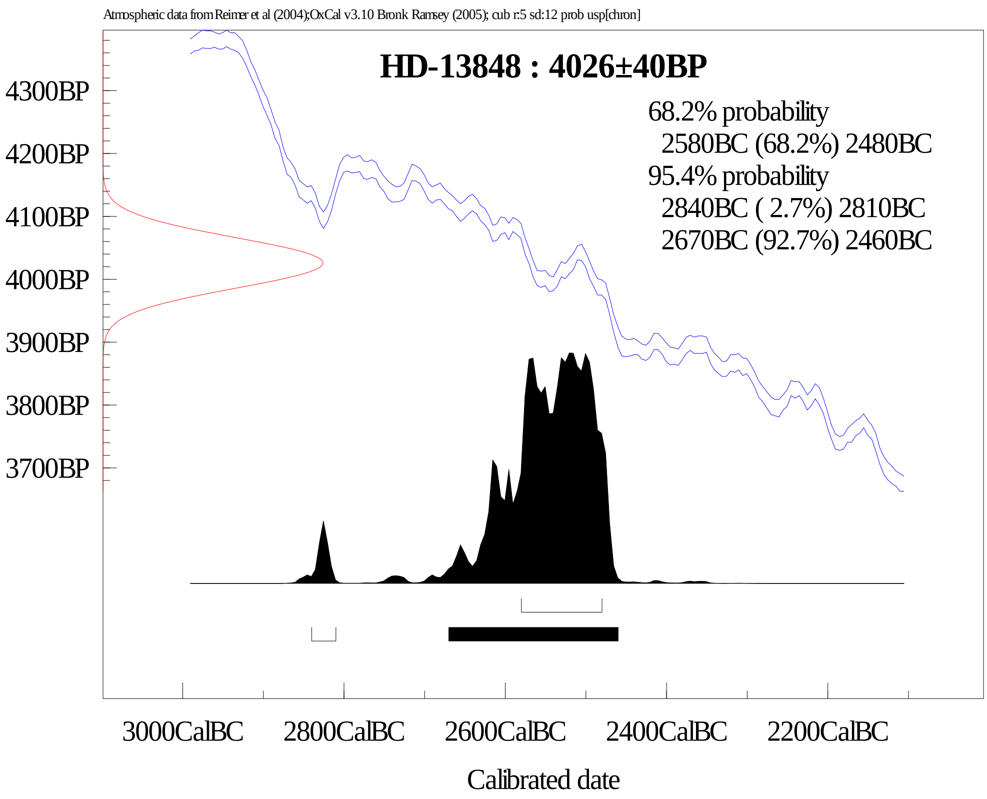

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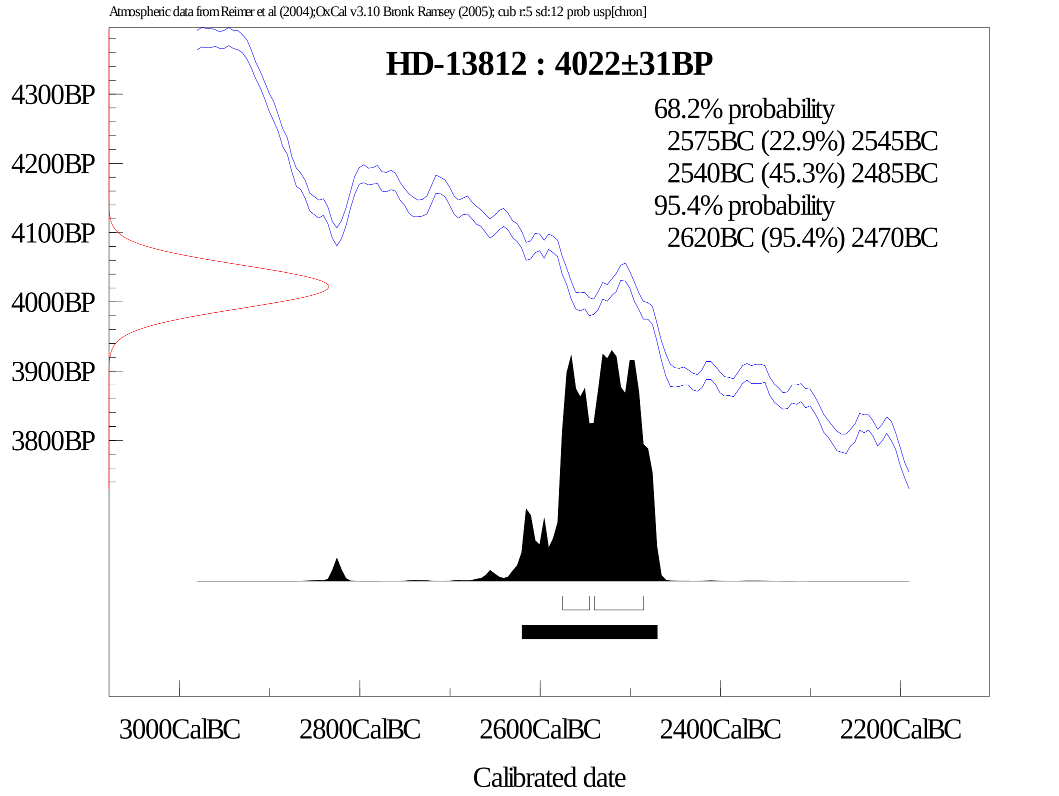

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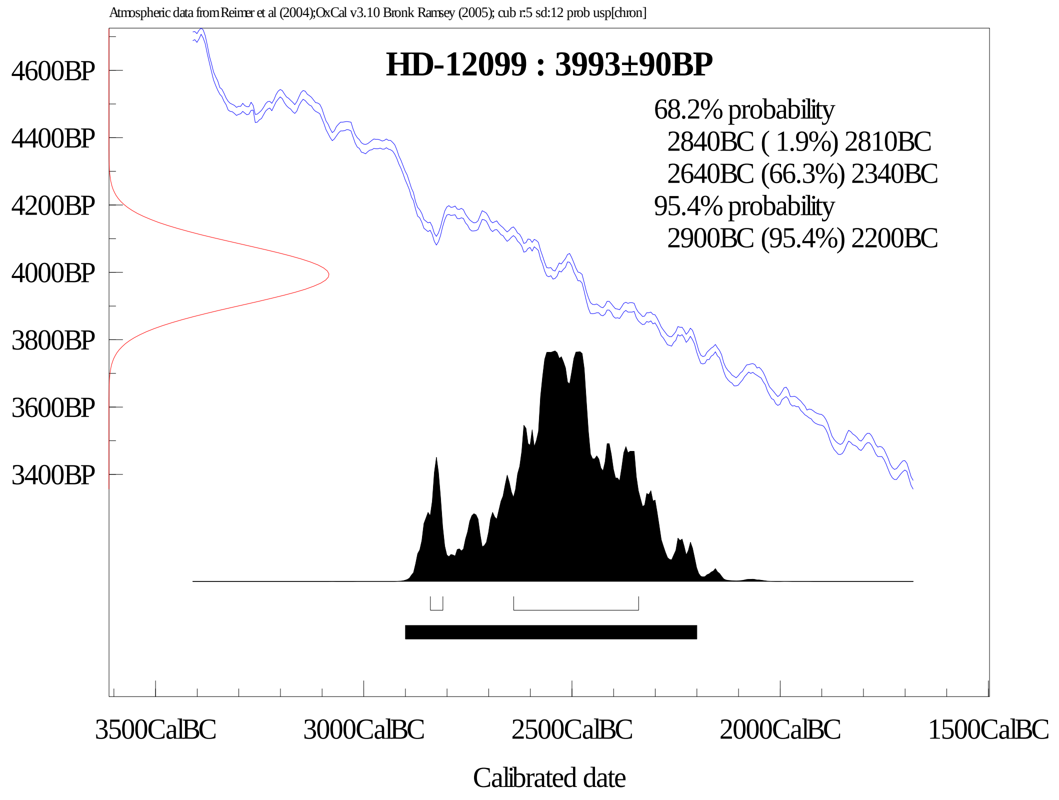

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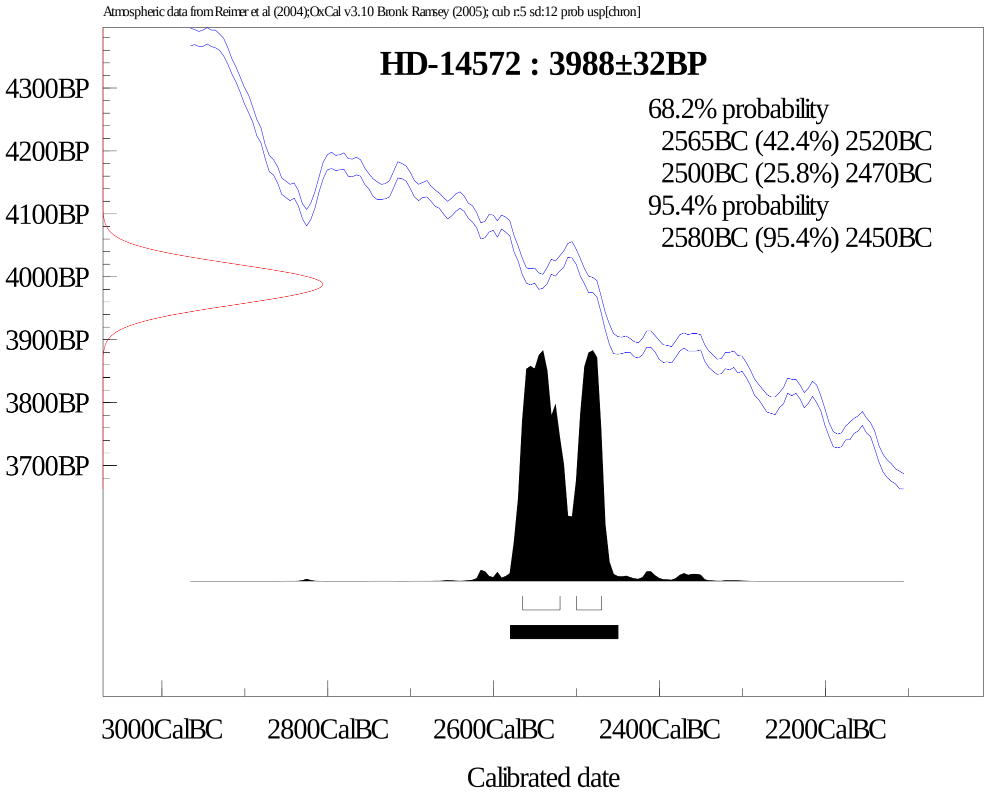

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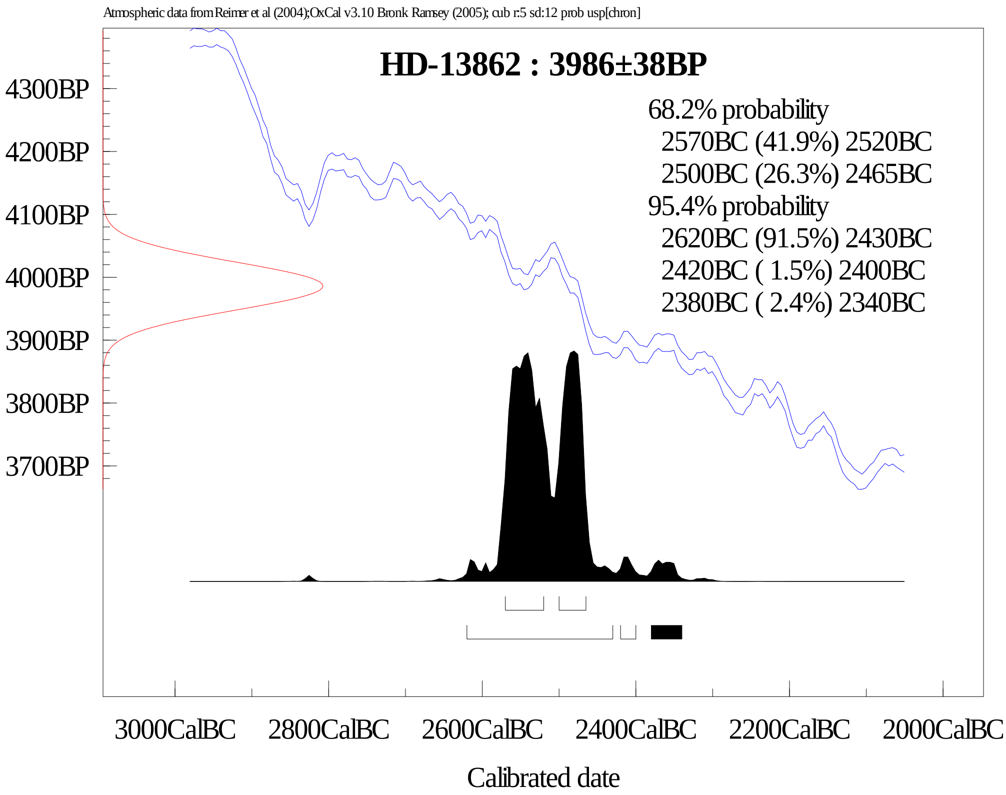

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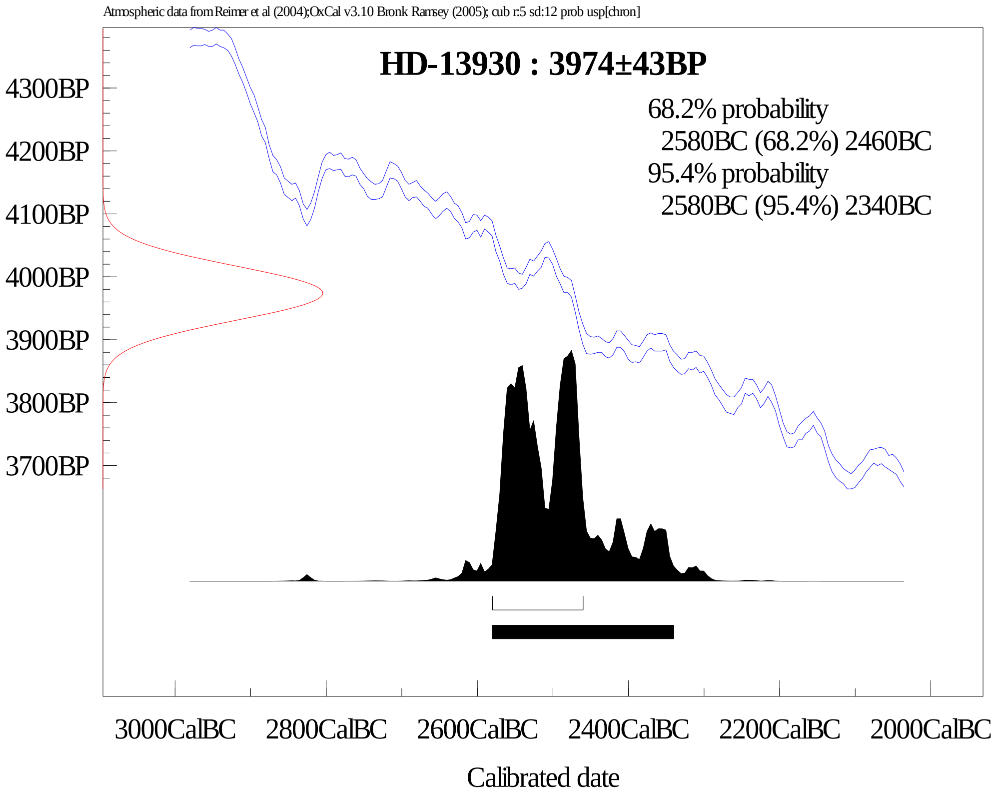
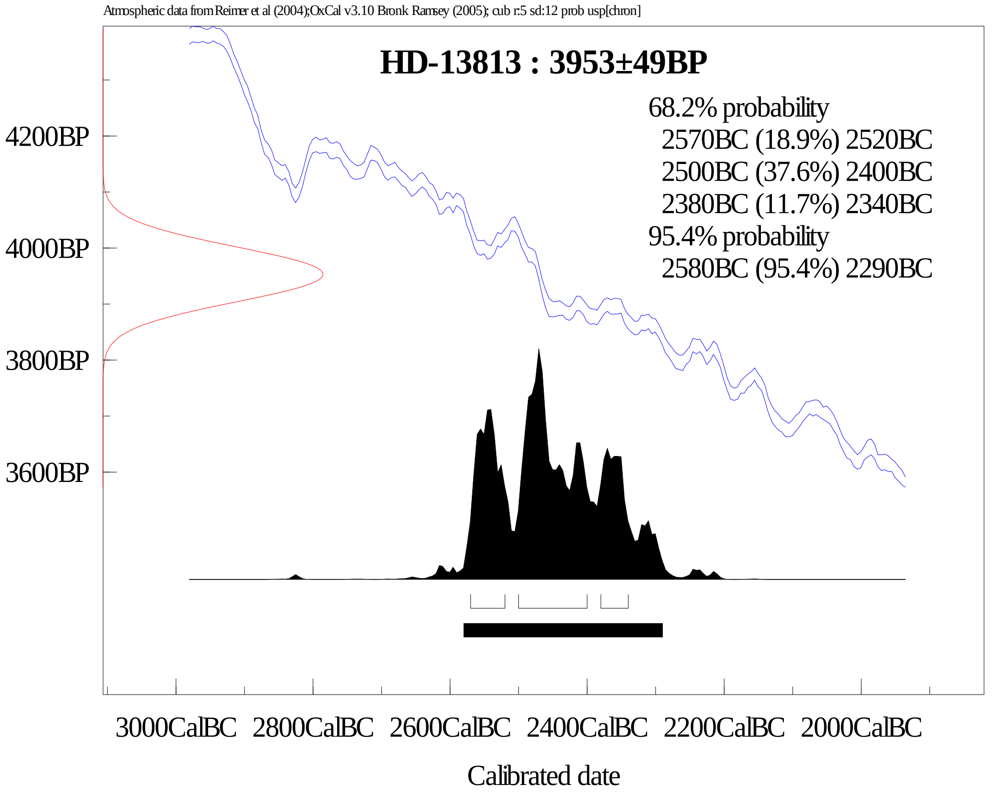


Troia TR.39



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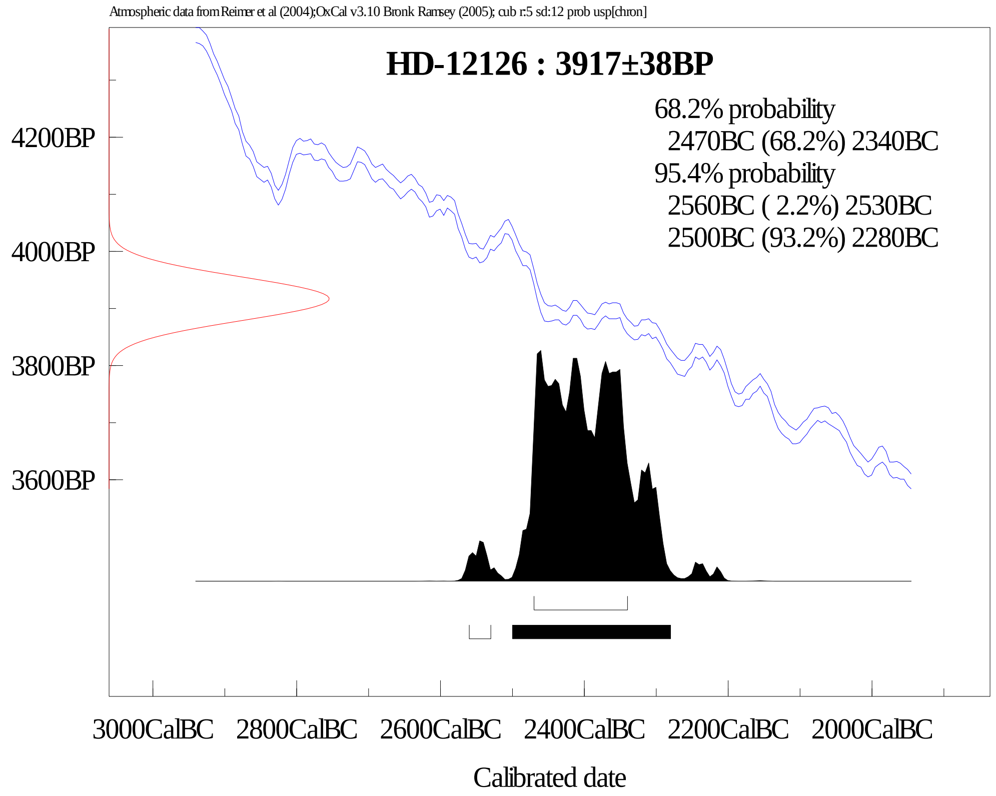

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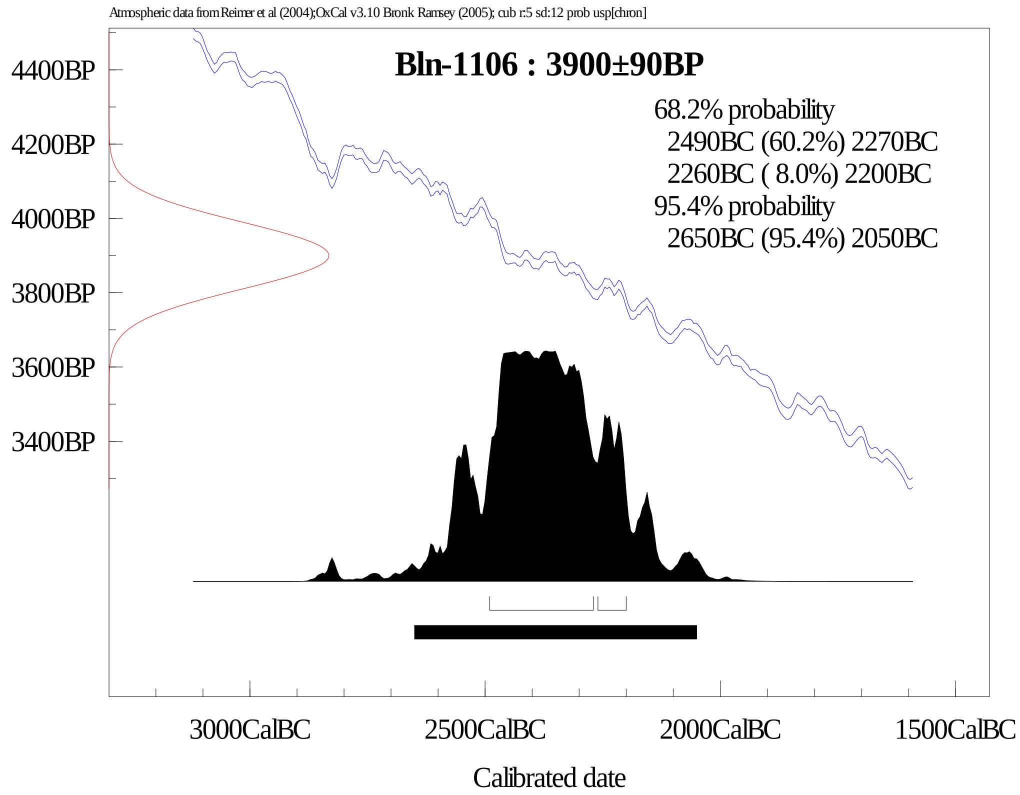

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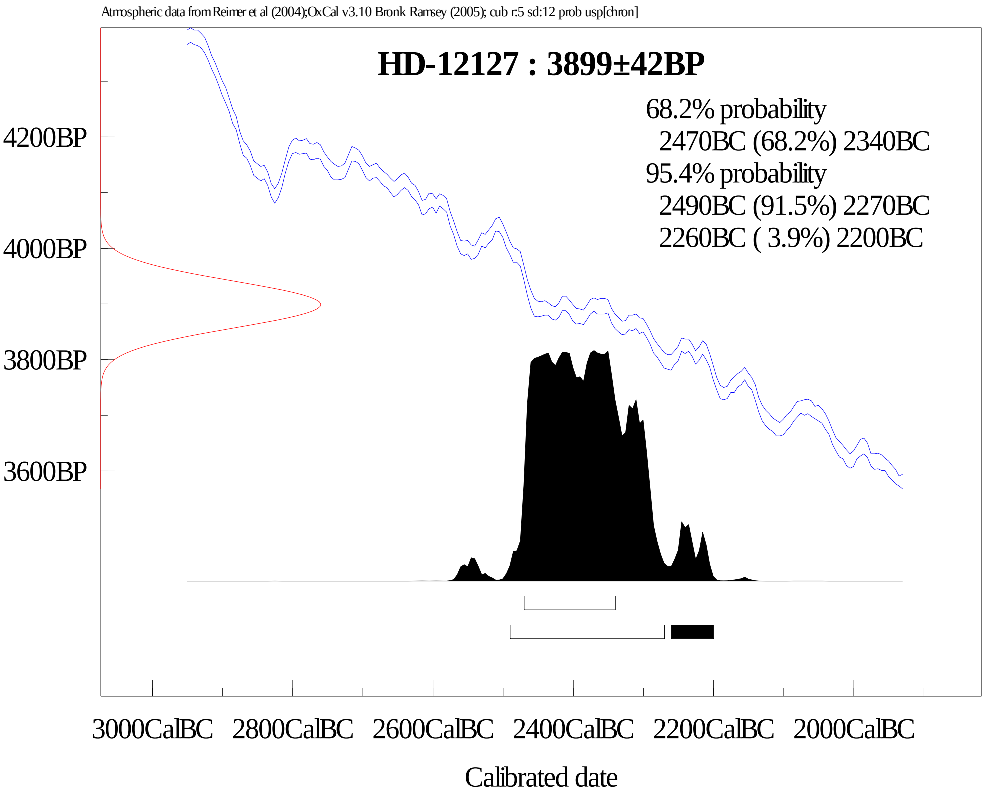

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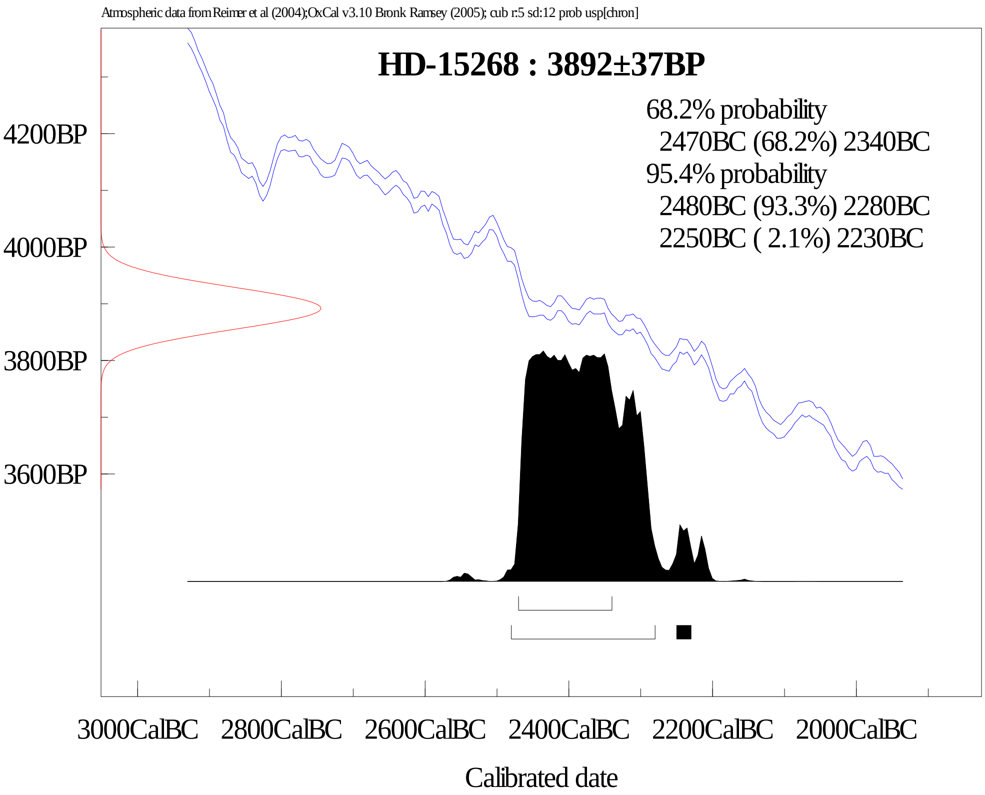

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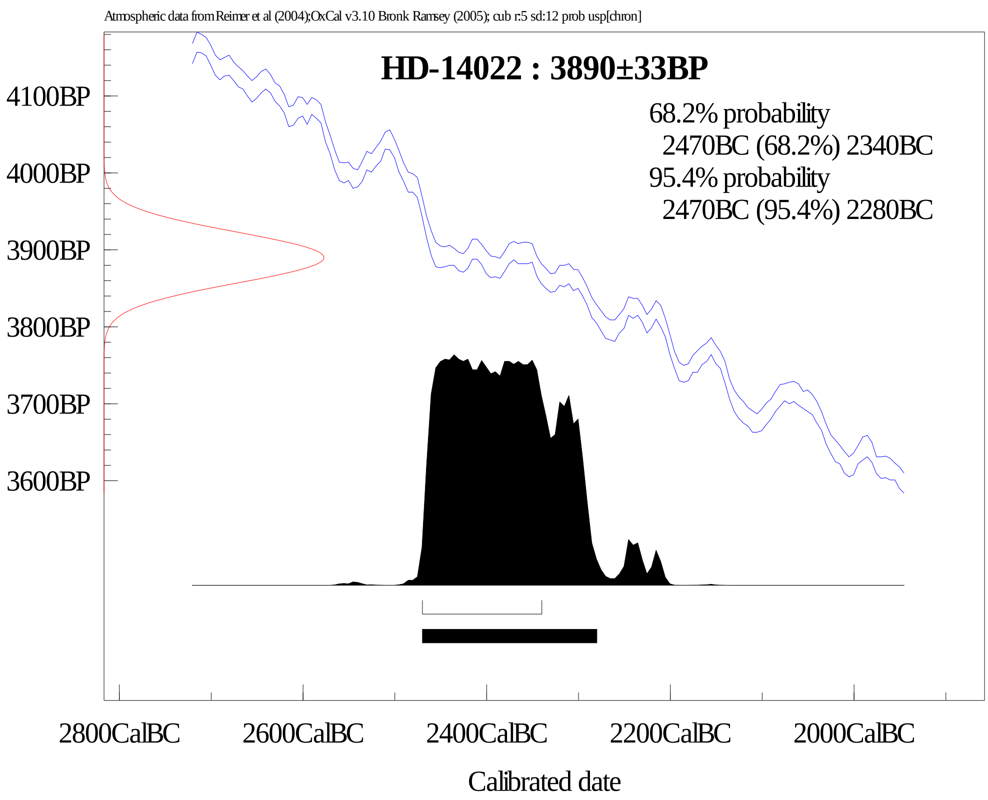

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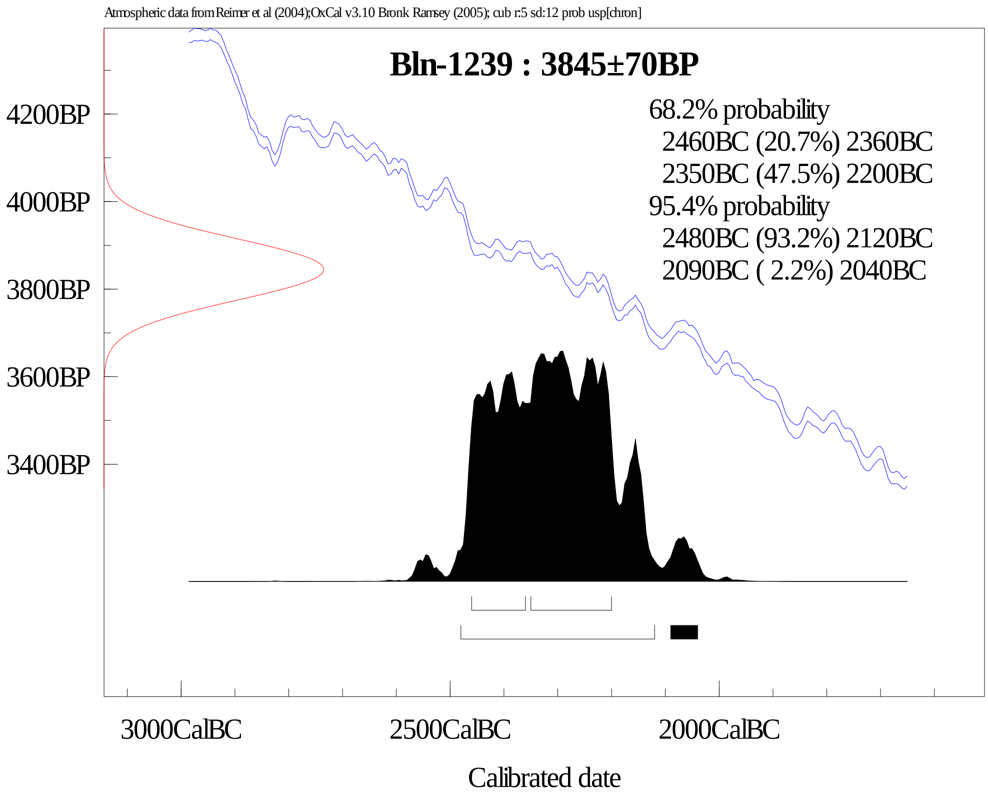

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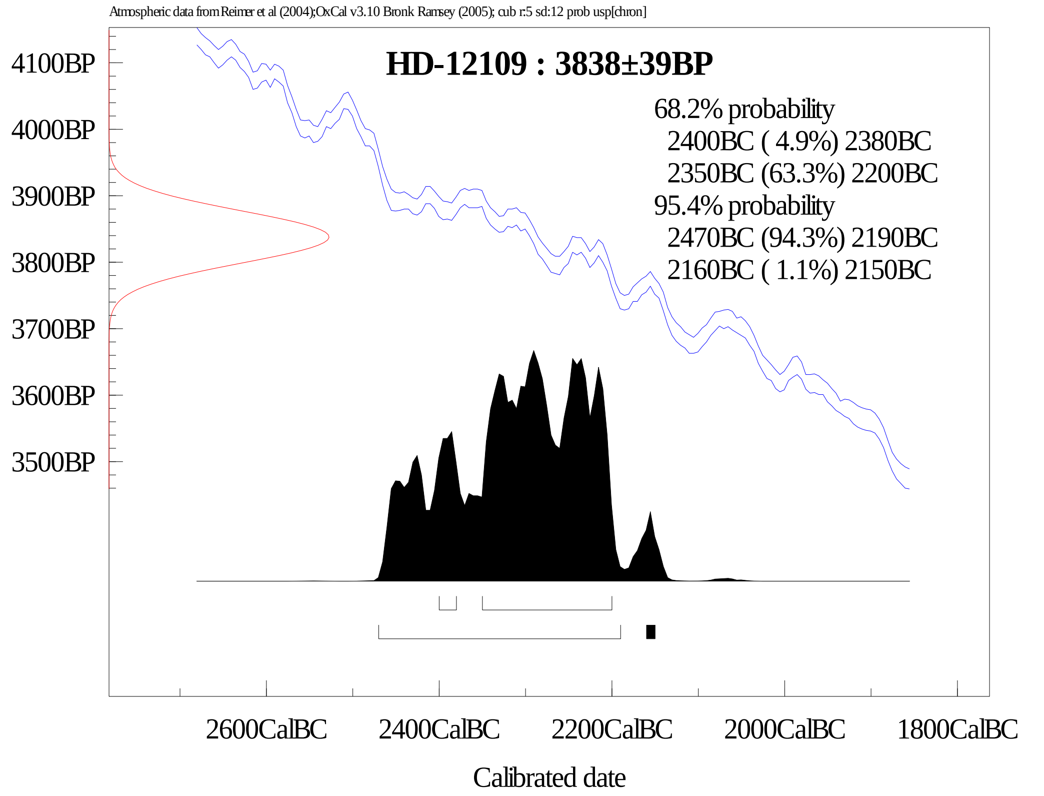

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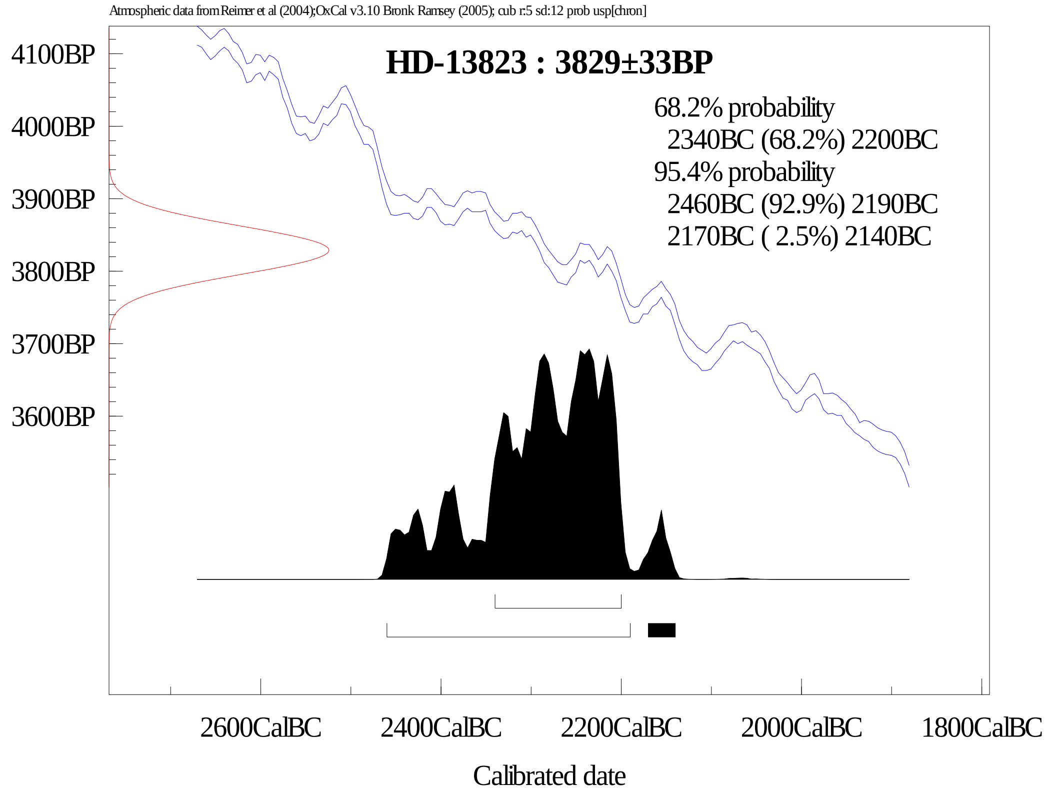

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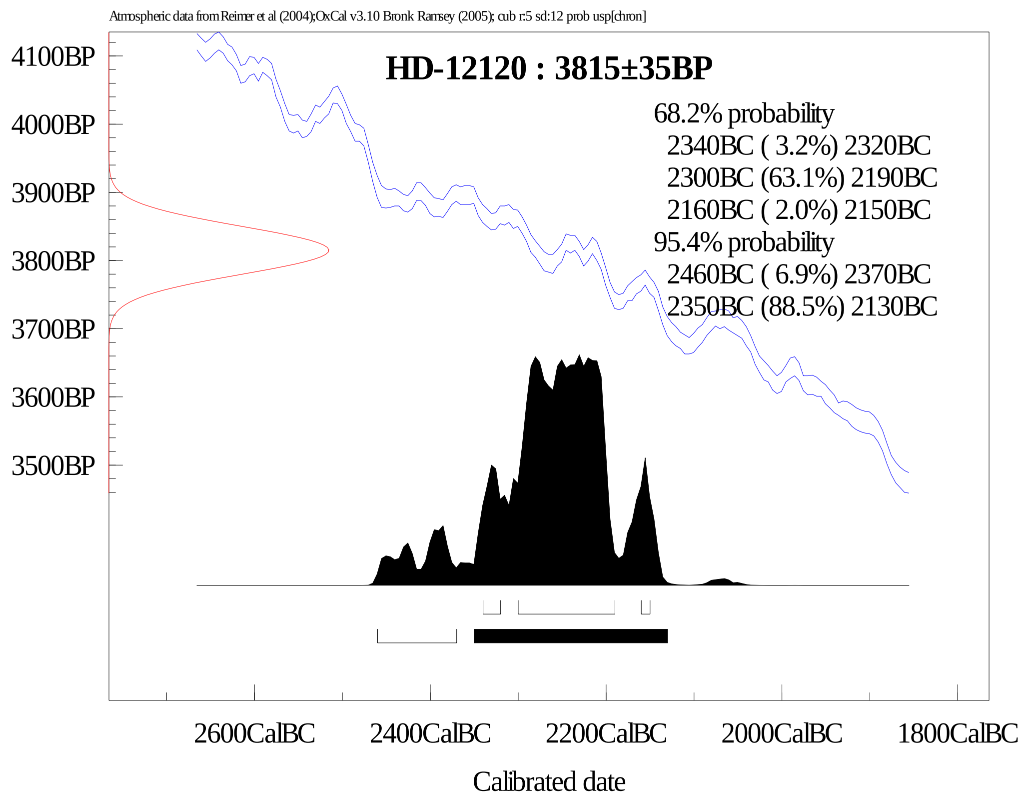

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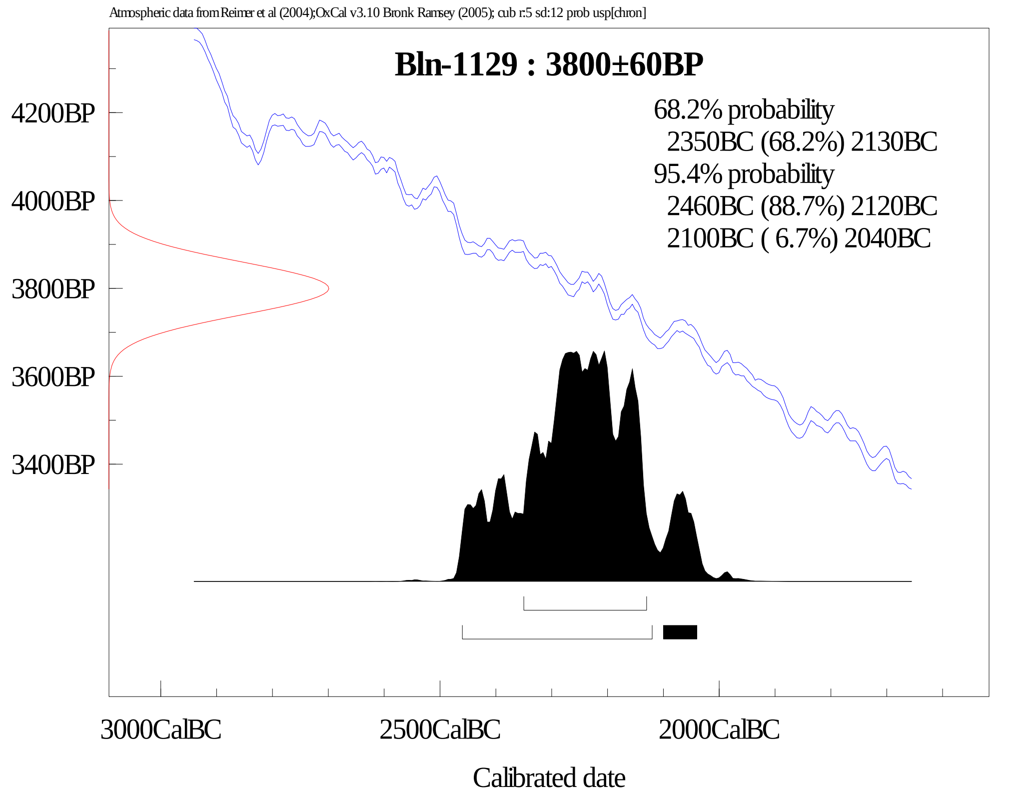

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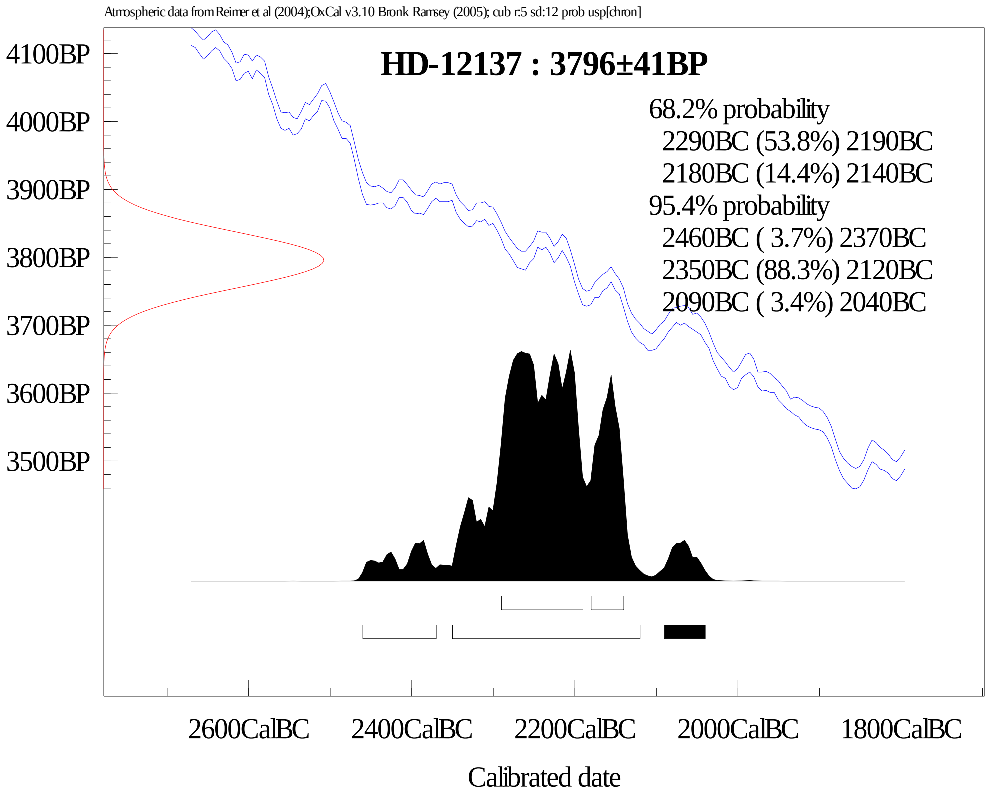

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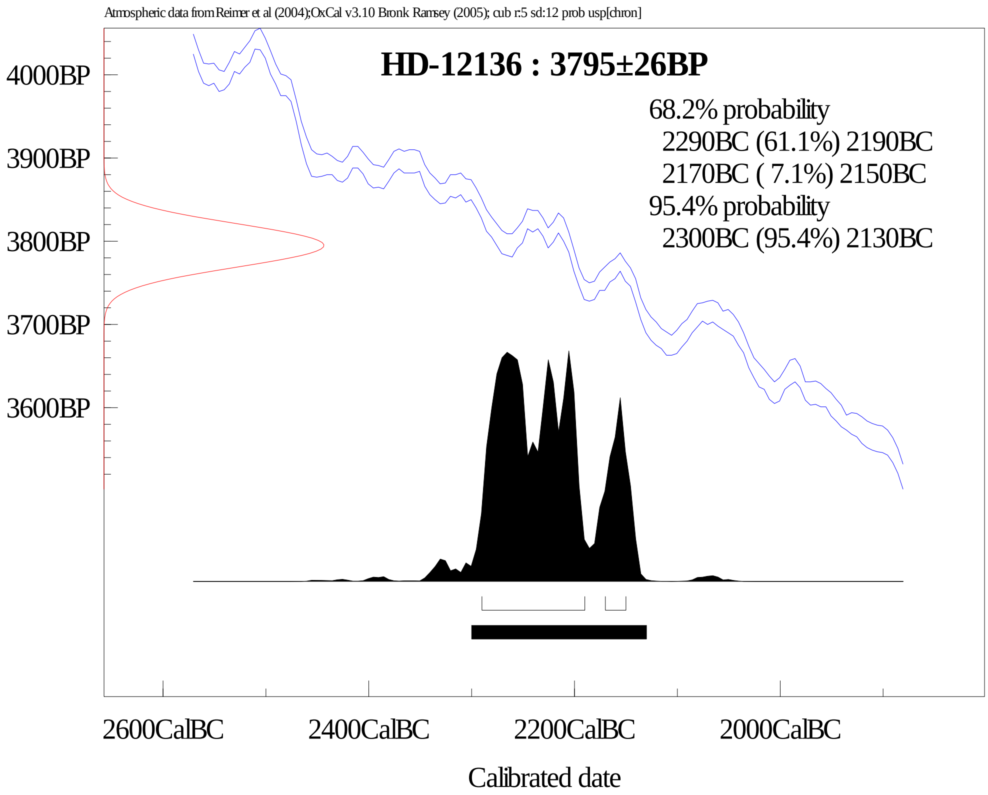

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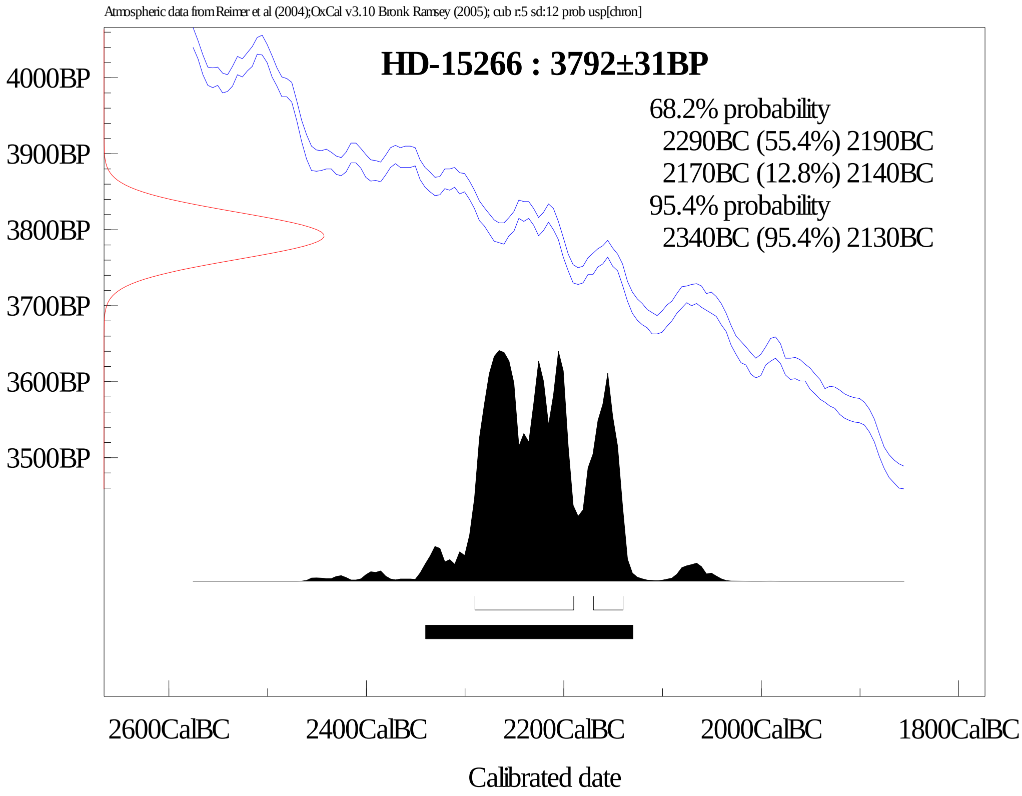

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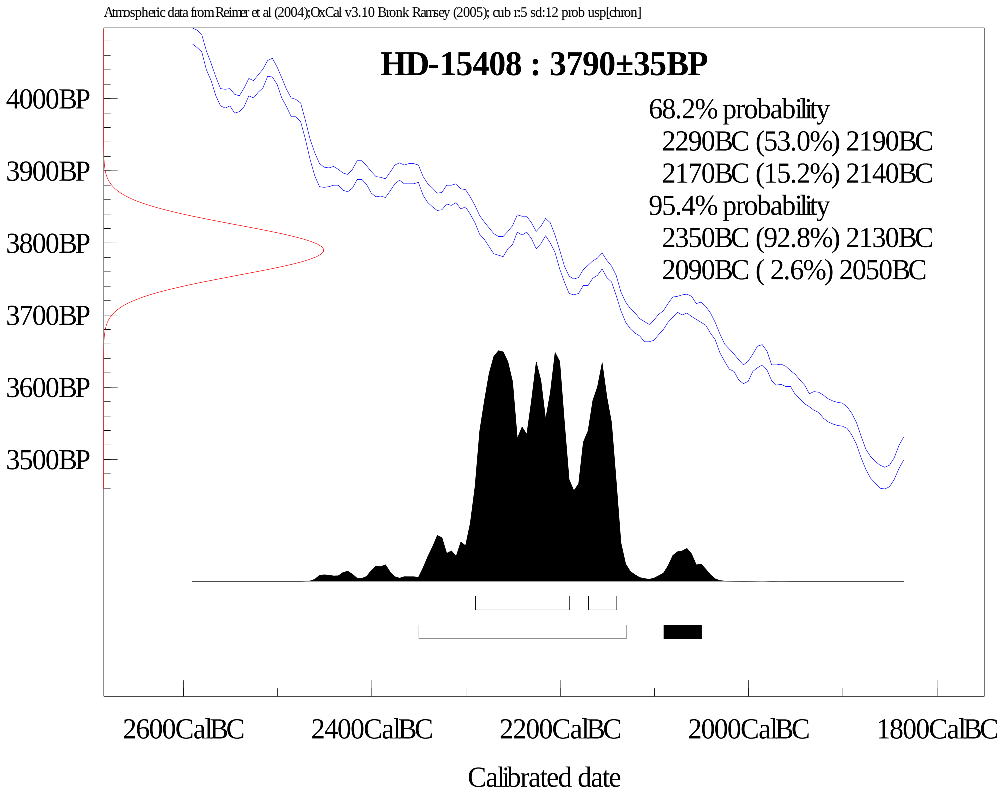

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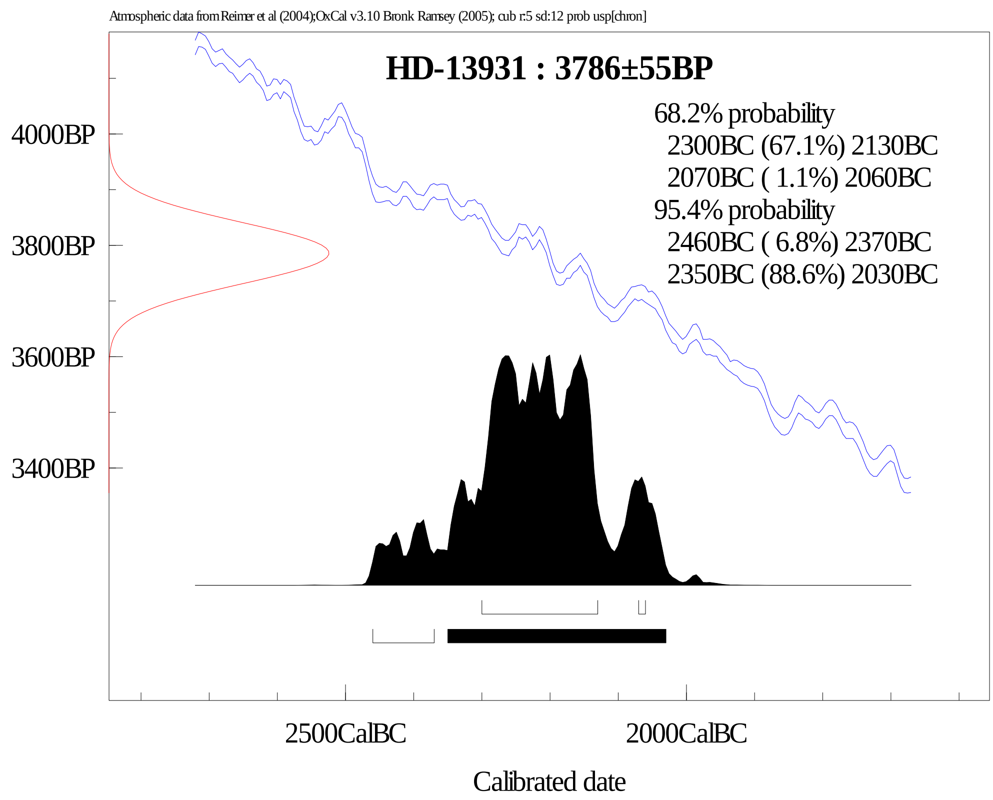

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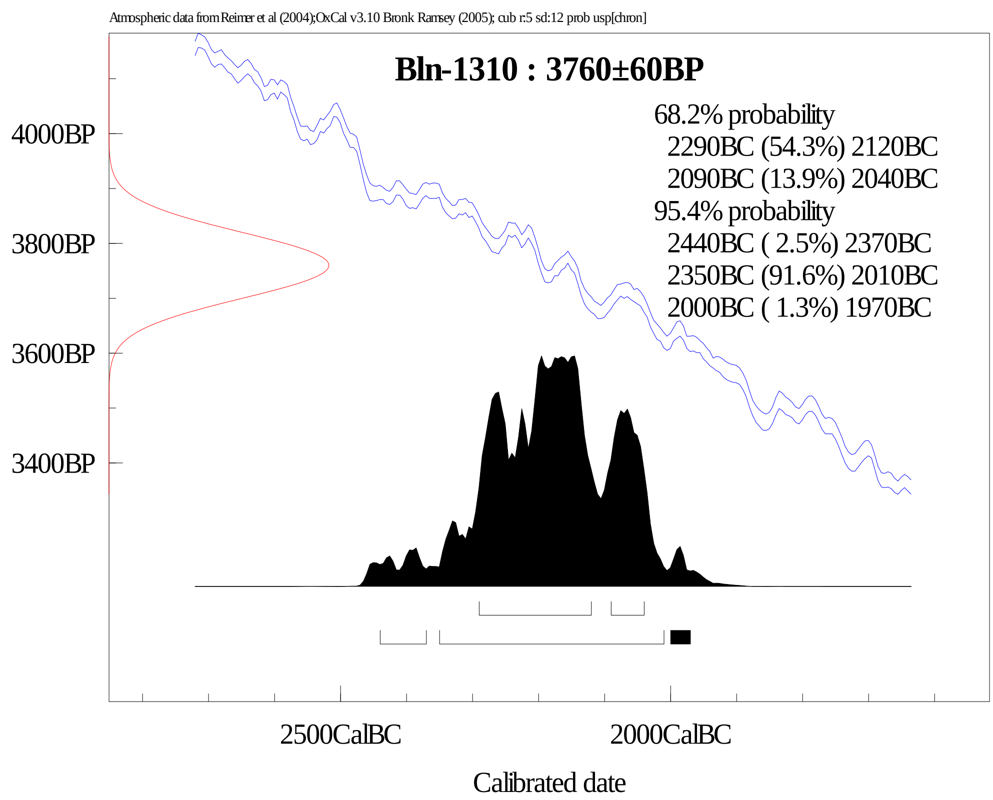

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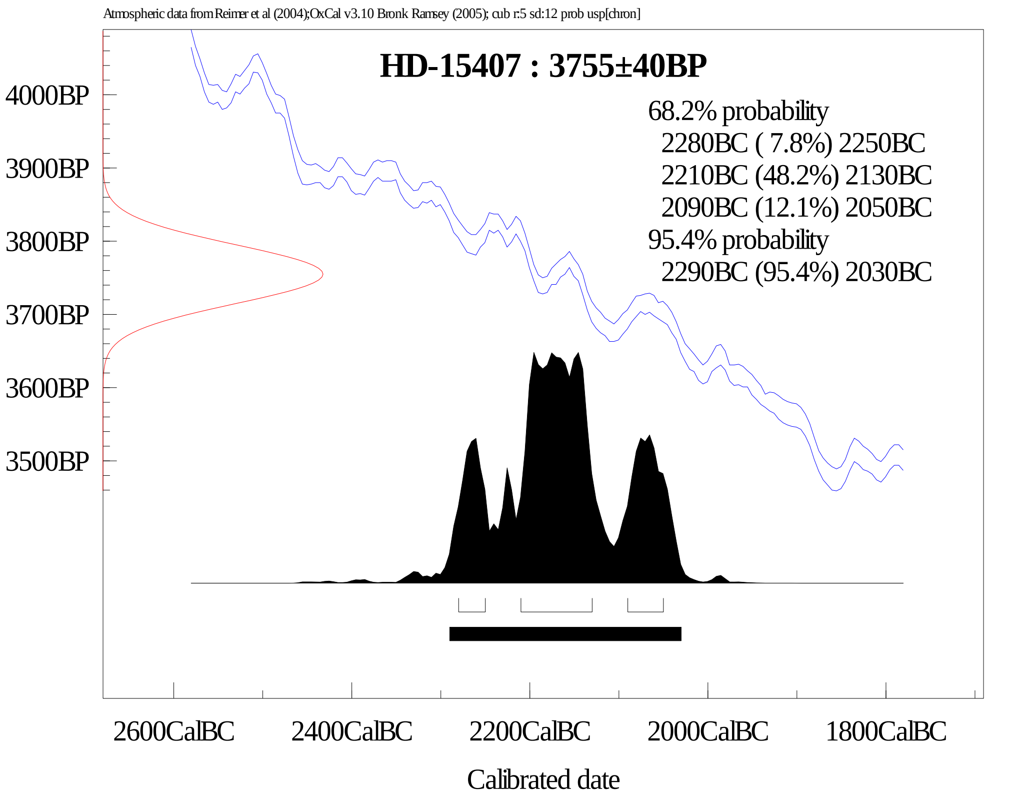

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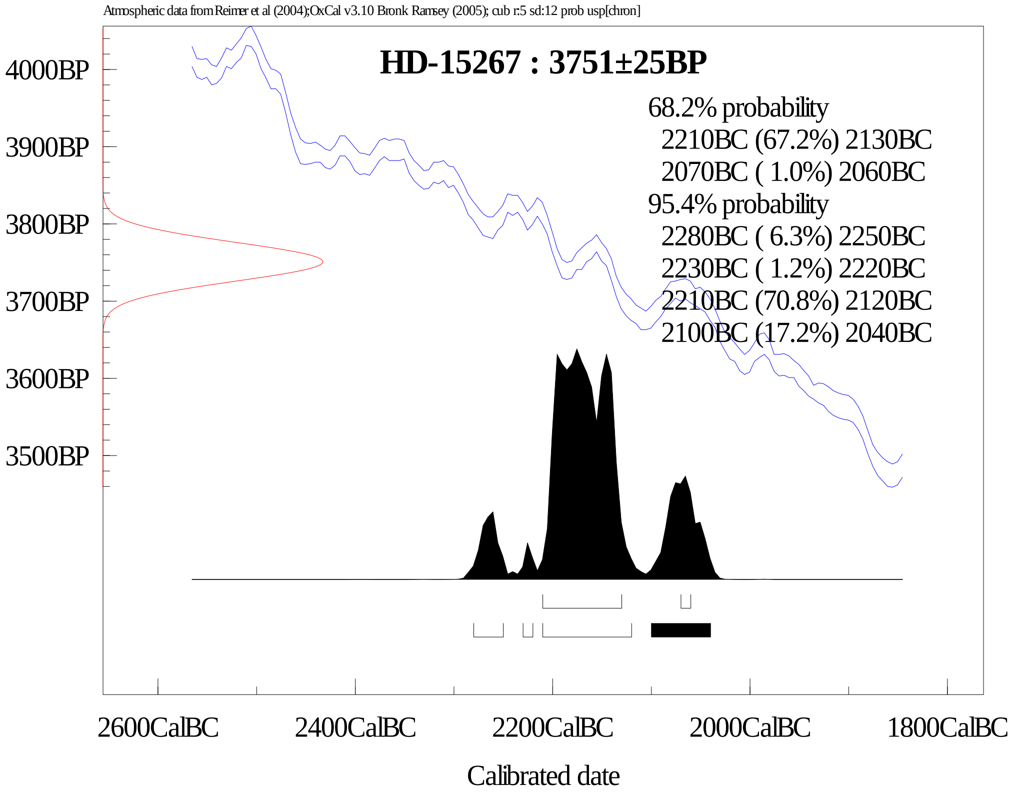

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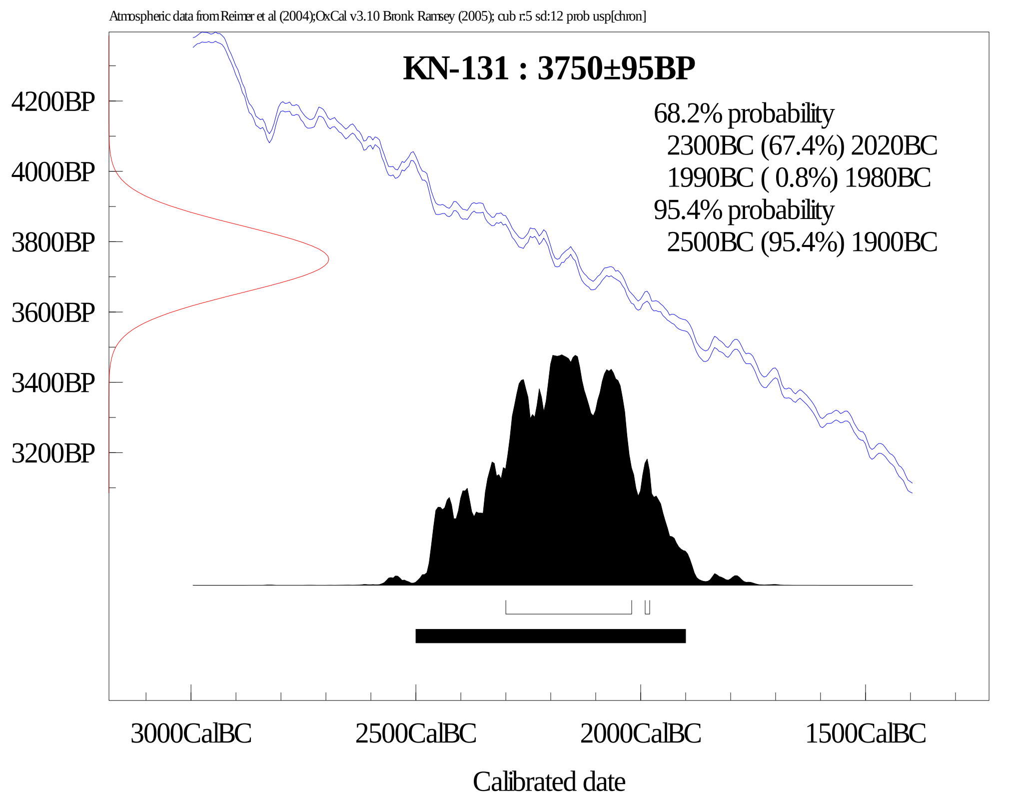

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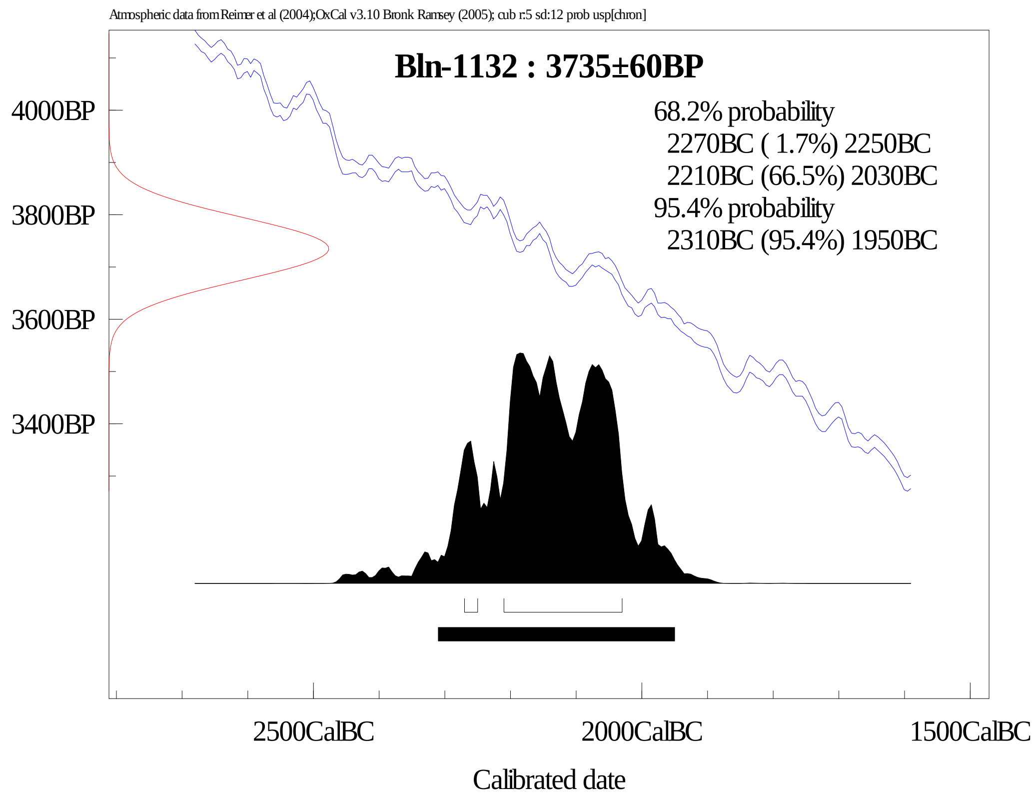

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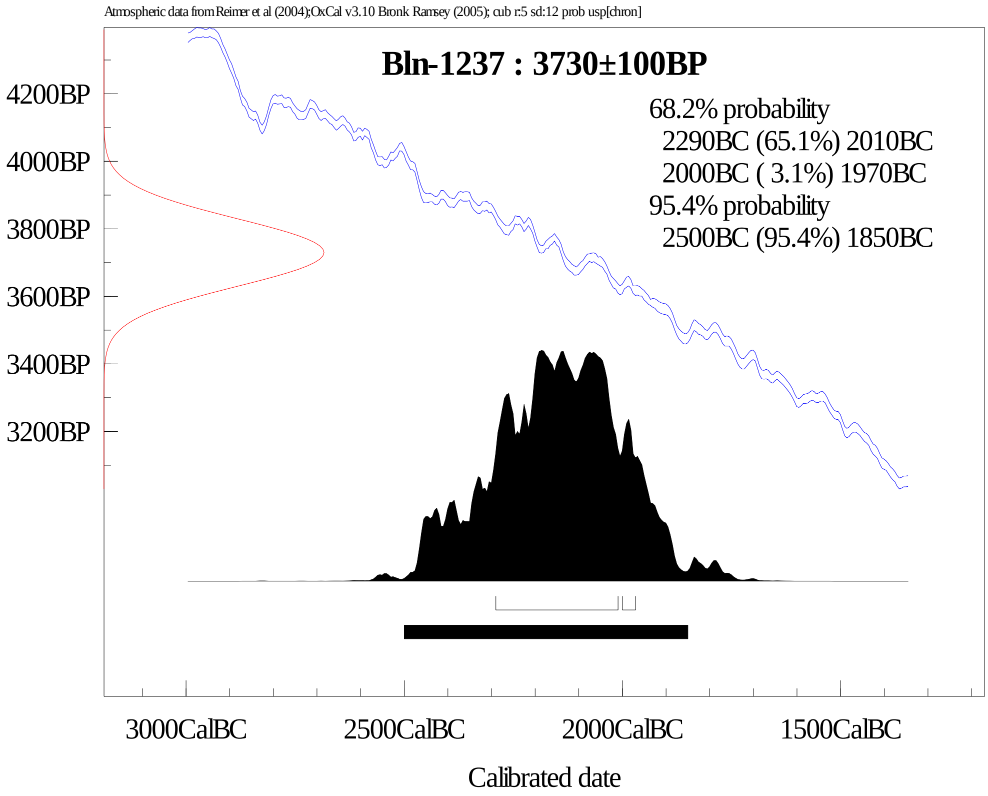

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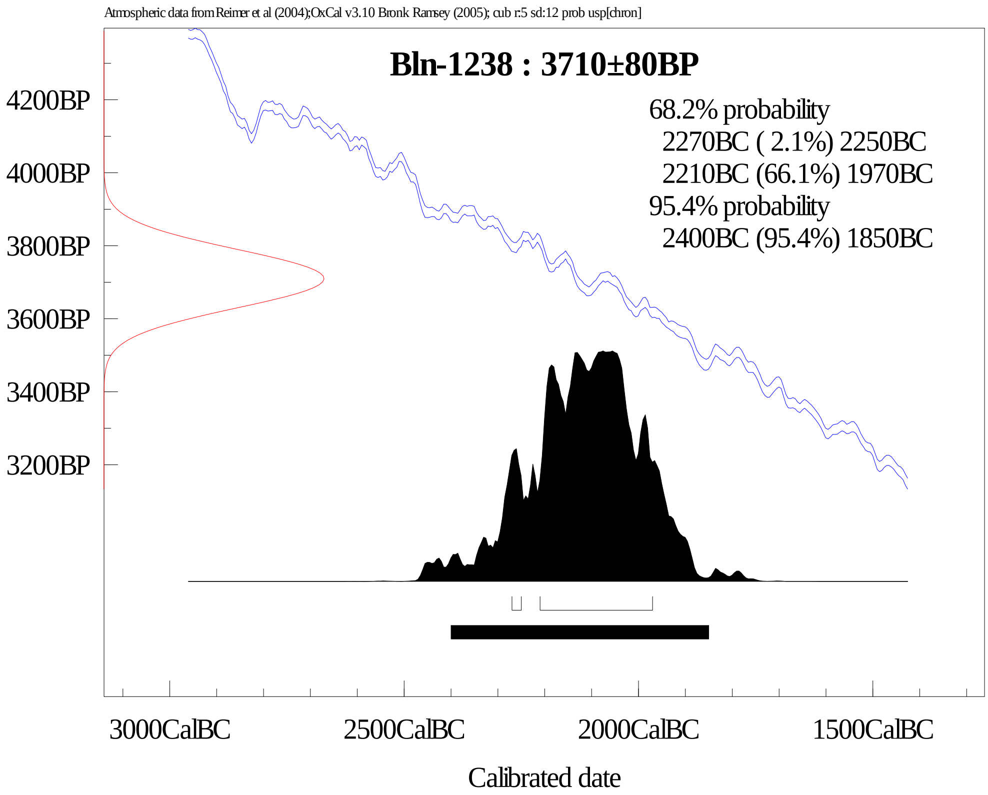

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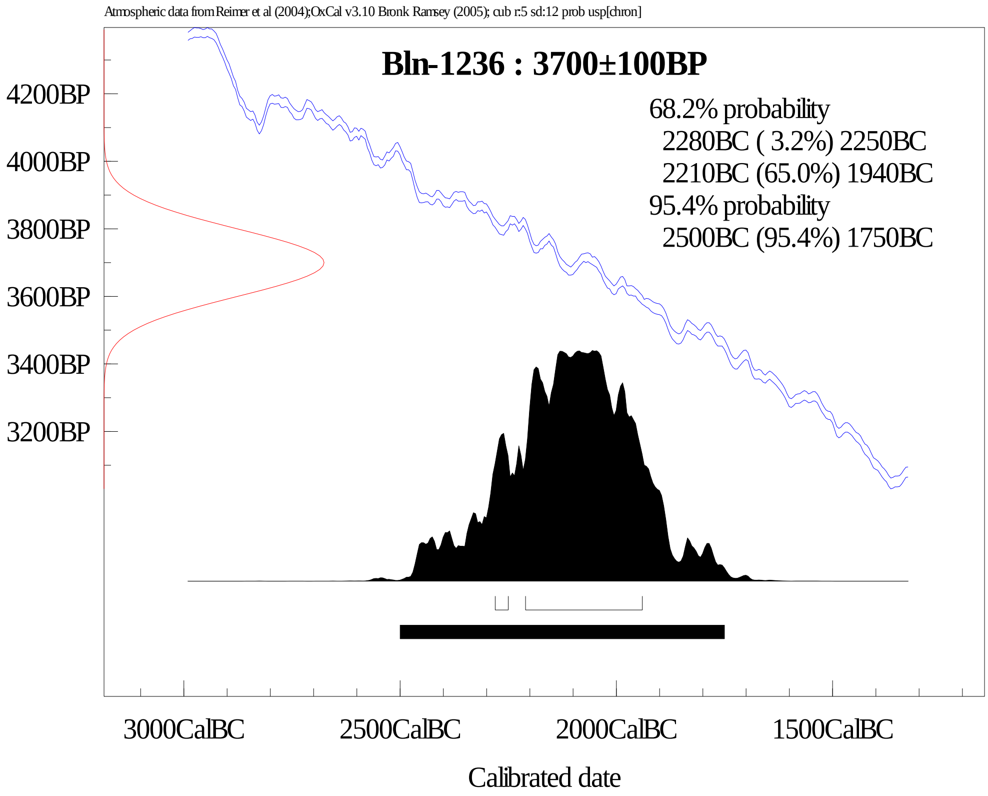

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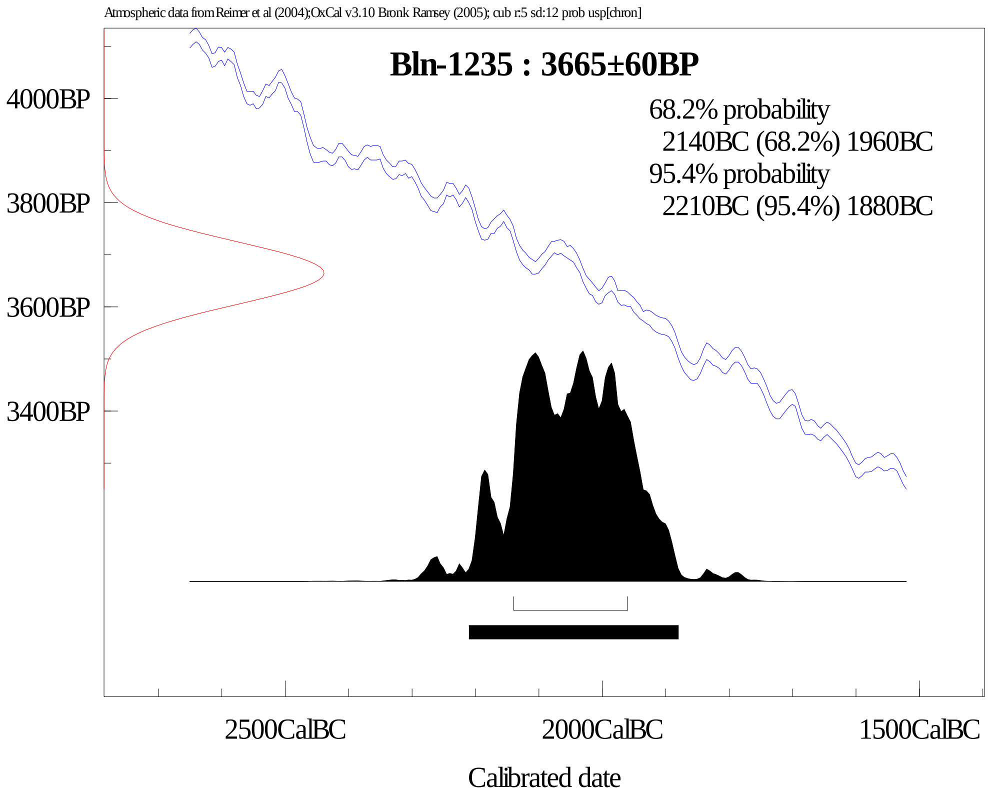

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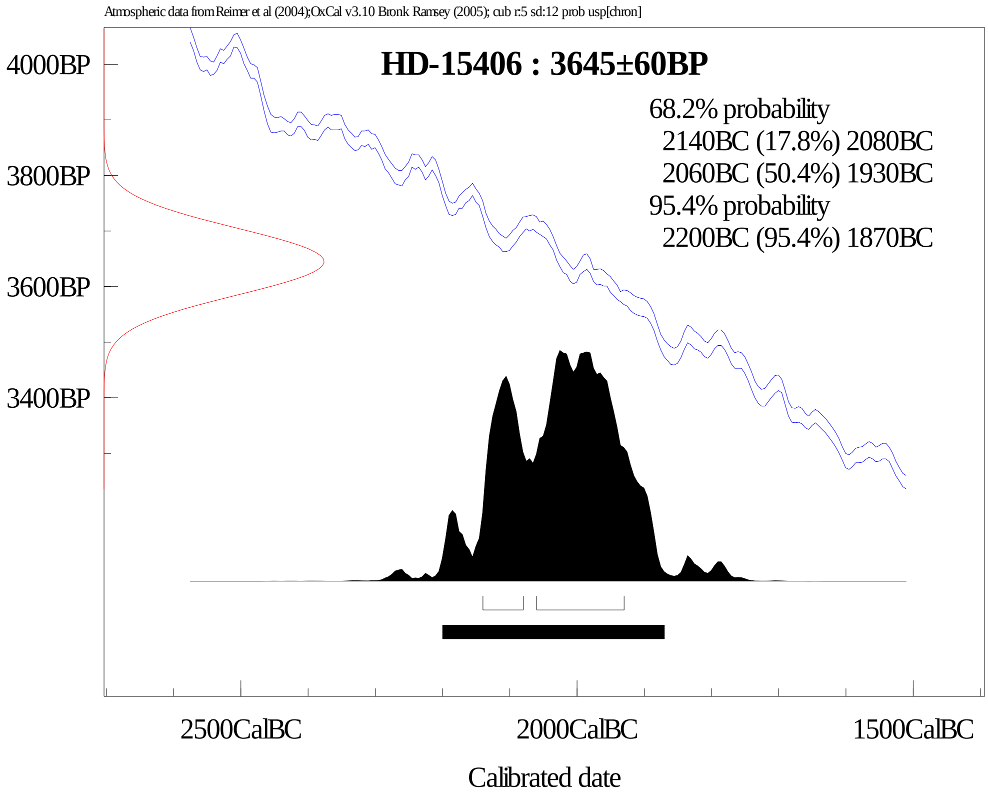
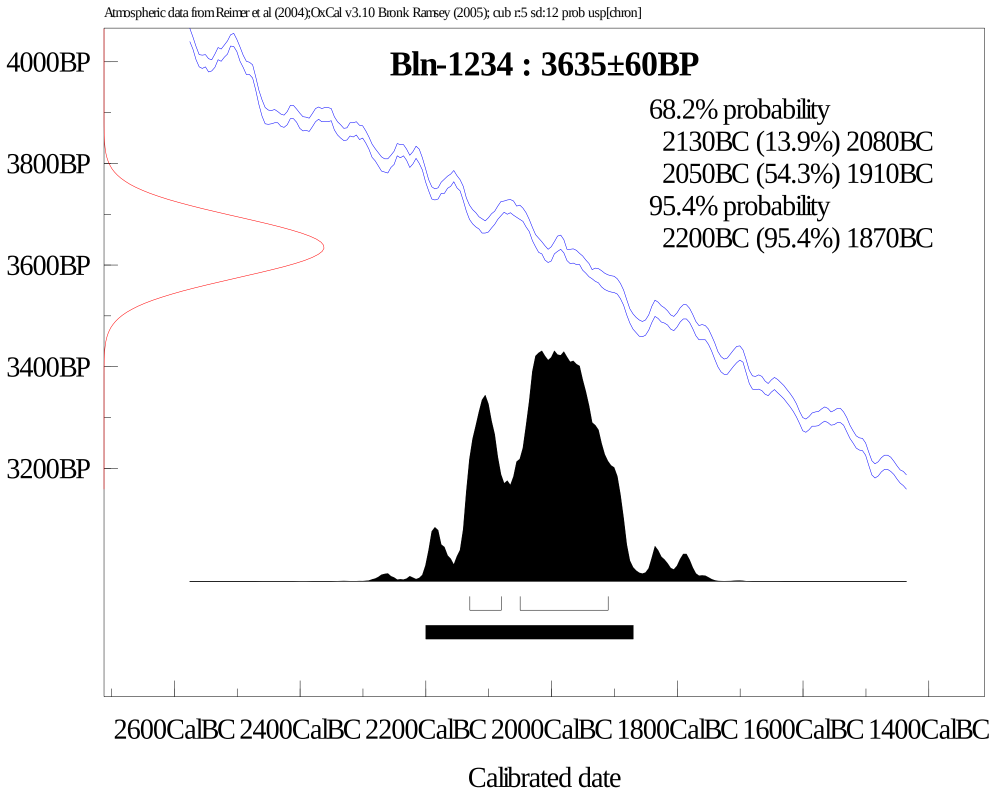


Troia TR.65



2. APPENDİX B: CATALOG

Alaca Höyük (AL)

AL.1

Layer :	Building Level 5
Dating EBA :	EB 3 (EBA Late Phase.) (Estimated date is 2000-1600 BC.)
Lab :	P-825
BP :	4540±56
Material :	Charred Cereal Grain
Quality of Material :	QA
Wiggle Group :	B-(A)
Literature :	Stuckenrath, Ralph 1965: 191

AL.2

Layer :	Level 11/12
Dating EBA :	EB 1
Lab :	P-1434
BP :	4278±62
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(B/D)
Literature :	Stuckenrath, Lawn 1969: 152

AL.3

Layer :	Building Level 5
Dating EBA :	EB 3 (EBA Late Phase.) (Estimated date is 2000-1600 BC.)
Lab :	P-826
BP :	4200±58
Material :	Charred Cereal Grain
Quality of Material :	QA
Wiggle Group :	D-(C)
Literature :	Stuckenrath, Ralph 1965: 191

Aphrodisias (APH)

APH.1

Layer :	E Trench 4 Unit 343
Dating EBA :	EB 3A
Lab :	P-1652
BP :	3987±61
Material :	Wood Charcoal
Quality of Material :	QB
Wiggle Group :	E-(F)
Literature :	Lawn 1971: 371

APH.2

Layer :	E Trench 4 Unit 348
Dating EBA :	EB 3A
Lab :	P-1654
BP :	3943±86
Material :	Wood Charcoal
Quality of Material :	QB
Wiggle Group :	F-(E)
Literature :	Lawn 1971: 371

APH.3

Layer :	E Trench 3 Unit 221
Dating EBA :	EB 3A
Lab :	P-1651
BP :	3858±64
Material :	Wood Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Lawn 1971: 371

APH.4

Layer :	Trench 3 Unit 228
Dating EBA :	EB 3A
Lab :	P 1774 II
BP :	3800±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Joukowsky 1986: 163

APH.5

Layer :	Trench 3 Unit 228
Dating EBA :	EB 3A
Lab :	P 1775 II
BP :	3800±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Joukowsky 1986: 163

APH.6

Layer :	E Trench 3 Unit 227
Dating EBA :	EB 3A
Lab :	P-1650
BP :	3715±59
Material :	Charred Seeds
Quality of Material :	QA
Wiggle Group :	F
Literature :	Lawn 1971: 371

APH.7

Layer :	E Trench 5 Unit 494
Dating EBA :	EB 3B
Lab :	P-1647
BP :	3673±73
Material :	Wood Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Lawn 1971: 370

APH.8

Layer :	E Trench 3 Unit 267
Dating EBA :	EB 3A
Lab :	P-1653
BP :	3624±55
Material :	Wood Charcoal
Quality of Material :	QB
Wiggle Group :	F-(G)
Literature :	Lawn 1971: 371

APH.9

Layer :	E Trench 3 Unit 224
Dating EBA :	EB 3A
Lab :	P-1649
BP :	3561±55
Material :	Charred Seeds
Quality of Material :	QA
Wiggle Group :	G-(F)
Literature :	Lawn 1971: 370

APH.10

Layer :	E Trench 3 Stratum 7A
Dating EBA :	EB 3A/B
Lab :	P-1648
BP :	3543±61
Material :	Wood Charcoal
Quality of Material :	QB
Wiggle Group :	G-(F)
Literature :	Lawn 1971: 370

Arslantepe (ARS)

ARS.1

Layer :	VIA
Dating EBA :	EB 1A
Lab :	Rome-753
BP :	4815±65
Material :	
Quality of Material :	
Wiggle Group :	A
Literature :	Di Nocera 2000: 82

ARS.2

Layer :	VIA
Dating EBA :	EB 1A
Lab :	Rome-749
BP :	4740±65
Material :	
Quality of Material :	
Wiggle Group :	A
Literature :	Di Nocera 2000: 82

ARS.3

Layer :	VIA
Dating EBA :	EB 1A
Lab :	Rome-752
BP :	4630±65
Material :	
Quality of Material :	
Wiggle Group :	A
Literature :	Di Nocera 2000: 82

ARS.4

Layer : VI B1
Dating EBA : EB 1B
Lab : Rome-1455
BP : 4600±70
Material :
Quality of Material :
Wiggle Group : A-(B)
Literature : Di Nocera 2000: 82

ARS.5

Layer : VI A, A 51
Dating EBA : EB 1A
Lab : Rome-1455
BP : 4600±70
Material :
Quality of Material :
Wiggle Group : A-(B)
Literature : Di Nocera 2000: 82

ARS.6

Layer : VI A
Dating EBA : EB 1A
Lab : Rome-747
BP : 4580±65
Material :
Quality of Material :
Wiggle Group : A-(B)
Literature : Di Nocera 2000: 82

ARS.7

Layer : VI B, C8 (10-14) A46
Dating EBA : EB 1A
Lab : Rome-1019α
BP : 4570±60
Material : Charcoal
Quality of Material : QB
Wiggle Group : A-(B)
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.8

Layer : VI A
Dating EBA : EB 1A
Lab : Rome-754
BP : 4530±65
Material :
Quality of Material :
Wiggle Group : B-(A)
Literature : Di Nocera 2000 : 82

ARS.9

Layer : VI A, SW Area Building IV A35
Dating EBA : EB 1A
Lab : Rome-1563
BP : 4460±80
Material :
Quality of Material :
Wiggle Group : B
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.10

Layer : VI A, C8(2) A28
Dating EBA : EB 1A
Lab : Rome-1010
BP : 4420±50
Material : Charred Grain
Quality of Material : QA
Wiggle Group : B
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.11

Layer : VI A, C8 (10) A46
Dating EBA : EB 1A
Lab : R-1018α
BP : 4410±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.12

Layer : VI A, SW Area Building III A113
Dating EBA : EB 1A
Lab : Rome-1474
BP : 4380±80
Material :
Quality of Material :
Wiggle Group : B-(C)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.13

Layer : VI A, SW Area Building III A127
Dating EBA : EB 1A
Lab : Rome-1488
BP : 4380±80
Material :
Quality of Material :
Wiggle Group : B-(C)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.14

Layer : VI A, SW Area Building IV A181
Dating EBA : EB 1A
Lab : Rome-1564
BP : 4370±80
Material :
Quality of Material :
Wiggle Group : B-(C)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.15

Layer : VI B2, A69-A73 Building VI-IX A128
Dating EBA : EB 1A
Lab : R-1482α
BP : 4360±80
Material :
Quality of Material :
Wiggle Group : B-(C)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone
1983: 575-580

ARS.16

Layer : VI A, SW Area Building IV A135
Dating EBA : EB 1A
Lab : Rome-1562
BP : 4360±80
Material :
Quality of Material :
Wiggle Group : B-(C)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.17

Layer : VI B1, C8 (11-15) A33
Dating EBA : EB 1B
Lab : Rome-1009
BP : 4360±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(C)
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.18

Layer : VI A, C8 (9-10) A36
Dating EBA : EB 1A
Lab : Rome-1013
BP : 4360±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(C)
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.19

Layer : VI A, C8 (10-11) A44
Dating EBA : EB 1A
Lab : Rome-1017
BP : 4360±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(C)
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.20

Layer :	VI A, E6 (7-11) (Part of a huge building complex overlying Late Chalcolithic structures of Period VII)
Dating EBA :	EB 1A
Lab :	Rome-173
BP :	4350±75
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	B-(C)
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.21

Layer :	VI A, C8 (10) A46
Dating EBA :	EB 1A
Lab :	Rome-1018
BP :	4350±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	B-(C)
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.22

Layer :	VI A, SW Area Building IV A134
Dating EBA :	EB 1A
Lab :	R-1467α
BP :	4340±80
Material :	
Quality of Material :	
Wiggle Group :	B-(C)
Literature :	Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.23

Layer :	VI B2, A69-A73 Building VI-IX A151
Dating EBA :	EB 1A
Lab :	Rome-1491
BP :	4330±80
Material :	
Quality of Material :	
Wiggle Group :	B-(C)
Literature :	Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.24

Layer : VI A, C8 (9-13) A36
Dating EBA : EB 1A
Lab : Rome-1015
BP : 4310±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(B)
Literature : Alessio, Bella, Improta 1976 : 335-340

ARS.25

Layer : VI A, SW Area Building IV A181
Dating EBA : EB 1A
Lab : Rome-1486α
BP : 4300±80
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.26

Layer : VI B2, A69-A73 Building VI-IX A128
Dating EBA : EB 1B
Lab : Rome-1482
BP : 4290±80
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.27

Layer : VI A, SW Area Building IV A132
Dating EBA : EB 1A
Lab : Rome-1468
BP : 4270±80
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.28

Layer :	VI A, C8 (9) A36
Dating EBA :	EB 1A
Lab :	Rome-1014
BP :	4270±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(D)
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.29

Layer :	VI A, SW Area Building IV A135
Dating EBA :	EB 1A
Lab :	Rome-1464α
BP :	4240±80
Material :	
Quality of Material :	
Wiggle Group :	C-(D)
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.30

Layer :	VI B2, A69-A73 Building VI-IX A166
Dating EBA :	EB 1B
Lab :	Rome-1494
BP :	4240±80
Material :	
Quality of Material :	
Wiggle Group :	C-(D)
Literature :	Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.31

Layer :	VI B2, SW Area Building V A184
Dating EBA :	EB 1B
Lab :	Rome-1489
BP :	4230±80
Material :	
Quality of Material :	
Wiggle Group :	C-(D)
Literature :	Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.32

Layer : VI A, SW Area Building IV A122
Dating EBA : EB 1A
Lab : Rome-1469
BP : 4220±120
Material :
Quality of Material :
Wiggle Group : D-(B)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.33

Layer :
Dating EBA : EB 1B
Lab : Rome-750
BP : 4195±60
Material :
Quality of Material :
Wiggle Group : D-(C)
Literature : Di Nocera 2000 : 82

ARS.34

Layer : VI B2, A69-A73 Building VI-IX A69
Dating EBA : EB 1B
Lab : Rome-1454
BP : 4190±60
Material :
Quality of Material :
Wiggle Group : D-(C)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone
1983: 575-580

ARS.35

Layer : VI D2, E8 (13-14)
Dating EBA : EB 3
Lab : Rome-160
BP : 4120±80
Material : Charred Wood
Quality of Material : QB
Wiggle Group : D-(E)
Literature : Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.36

Layer :	VI C, FC1 E8 (9-10) (From the hearth of room A-607)
Dating EBA :	EB 1B
Lab :	Rome-168
BP :	4100±75
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.37

Layer :	VI B2
Dating EBA :	EB 1B
Lab :	Rome-1493
BP :	4090±80
Material :	
Quality of Material :	
Wiggle Group :	D-(E)
Literature :	Di Nocera 2000: 83

ARS.38

Layer :	VI C, E8 (9)
Dating EBA :	EB 1B
Lab :	Rome-171
BP :	4090±75
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.39

Layer :	VI C, E2 E8 (9-10) (From the central pole)
Dating EBA :	EB 1B
Lab :	Rome-167
BP :	4080±75
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.40

Layer : VI C, E8 (9)
Dating EBA : EB 1B
Lab : Rome-172
BP : 4080±75
Material : Charred Grain
Quality of Material : QA
Wiggle Group : D-(E)
Literature : Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.41

Layer : VI C , E8 (9) (From a collapsed layer of room A-607)
Dating EBA : EB 1B
Lab : Rome-170
BP : 4070±70
Material : Charred Wood
Quality of Material : QB
Wiggle Group : D-(E)
Literature : Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.42

Layer : VI B2, D8 (1) (From a pit)
Dating EBA : EB 1B
Lab : Rome-163
BP : 4060±70
Material : Charred Wood
Quality of Material : QB
Wiggle Group : D-(E)
Literature : Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.43

Layer : VI B2, A69-A73 Building VI-IX A199
Dating EBA : EB 1B
Lab : Rome-1493α
BP : 4030±80
Material :
Quality of Material :
Wiggle Group : E-(D/E)
Literature : Alessio, Allegri, Azzi, Bella, Caderoni, Cortesi, Improta, Petrone 1983: 575-580

ARS.44

Layer :	VI D2, E8 (14)
Dating EBA :	EB 3
Lab :	Rome-155
BP :	4000±80
Material :	Charred Tree Trunk
Quality of Material :	QB
Wiggle Group :	E-(D/F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.45

Layer :	VI D2, D8 (7)
Dating EBA :	EB 3
Lab :	Rome-153
BP :	4000±75
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	E-(D/F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.46

Layer :	VI D2, E8 (14)
Dating EBA :	EB 3
Lab :	Rome-159
BP :	3990±70
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	E-(D/F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.47

Layer :	
Dating EBA :	EB 1B, E8 (9) (From a collapsed layer of room A-607)
Lab :	Rome-170/A
BP :	3960±70
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	E-(F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.48

Layer :	VI D2, E8 (14)
Dating EBA :	EB 3
Lab :	Rome-156
BP :	3950±80
Material :	Charred Wood Fragments
Quality of Material :	QB
Wiggle Group :	E-(F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.49

Layer :	VI D2, E8 (13) - E9 (1)
Dating EBA :	EB 3
Lab :	Rome-158
BP :	3950±80
Material :	Charred Grain
Quality of Material :	QB
Wiggle Group :	E-(F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.50

Layer :	VI C, E8 (9) (From a collapsed layer of room A-607)
Dating EBA :	EB 1B
Lab :	Rome-169
BP :	3950±70
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	E-(F)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.51

Layer :	VI D2, D8 (1) - C7 (16)
Dating EBA :	EB 3
Lab :	Rome-162
BP :	3940±70
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	F-(E)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.52

Layer :	VI D2, E8 (10)
Dating EBA :	EB 3
Lab :	Rome-161
BP :	3930±70
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	F-(E)
Literature :	Calderoni, Caneva, Cazella, Frangipane, Petrone 1994: 143-152

ARS.53

Layer :	VI D3 , D8 (12-16) A30
Dating EBA :	EB 3B
Lab :	Rome-1012α
BP :	3840±110
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F-(E)
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.54

Layer :	VI D2 , E8 (14)
Dating EBA :	EB 3
Lab :	Rome-174
BP :	3830±75
Material :	Charred Grain
Quality of Material :	QA
Wiggle Group :	F
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.55

Layer :	VI D2 , E8 (10-11)
Dating EBA :	EB 3
Lab :	Rome-157
BP :	3800±80
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	F
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.56

Layer :	VI D3 , C7 (16) A6
Dating EBA :	EB 3B
Lab :	Rome-1008α
BP :	3800±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.57

Layer :	VI D2 , D7 (13)
Dating EBA :	EB 3
Lab :	Rome-154
BP :	3750±75
Material :	Charred Wood
Quality of Material :	QB
Wiggle Group :	F
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.58

Layer :	VI D3 , D8 (12-16) A30
Dating EBA :	EB 3B
Lab :	R-1012
BP :	3750±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.59

Layer :	VI D3 , D8-1 A2
Dating EBA :	EB 3B
Lab :	Rome-930α
BP :	3680±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Alessio, Bella, Improta 1976 : 335-340

ARS.60

Layer : VI D3
Dating EBA : EB 3B
Lab : Rome-1011
BP : 3530±110
Material :
Quality of Material :
Wiggle Group : G-(F)
Literature : Di Nocera 1998: 125-129

Beşik-Yassıtepe (BEŞ)

BEŞ.1

Layer : S15 - 878
Dating EBA : EB 1
Lab : HD-10828
BP : 4520±65
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(A)
Literature : Korfmann, Kromer 1993: 140-145

BEŞ.2

Layer : Q12 - 209A
Dating EBA : EB 1
Lab : HD-8439
BP : 4385±25
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Korfmann, Kromer 1993: 140-145

BEŞ.3

Layer :	S13 - 646
Dating EBA :	EB 1
Lab :	HD-8438
BP :	4375±65
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	B-(C)
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.4

Layer :	R14 - 671
Dating EBA :	EB 1
Lab :	HD-8443
BP :	4330±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	B-(C)
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.5

Layer :	S15 - 165
Dating EBA :	EB 1
Lab :	HD-8441
BP :	4280±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(B/D)
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.6

Layer :	S12 - 858
Dating EBA :	EB 1
Lab :	HD-9957
BP :	4270±35
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.7

Layer : S12 - 192
Dating EBA : EB 1
Lab : Bln-2751
BP : 4260±80
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(B/D)
Literature : Korfmann, Kromer 1993: 140-145

BEŞ.8

Layer : S12 - 872
Dating EBA : EB 1
Lab : HD-9961
BP : 4255±35
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(D)
Literature : Korfmann, Kromer 1993: 140-145

BEŞ.9

Layer : S15 - 873
Dating EBA : EB 1
Lab : HD-10798
BP : 4230±40
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(D)
Literature : Korfmann, Kromer 1993: 140-145

BEŞ.10

Layer : S15 - 154
Dating EBA : EB 1
Lab : HD-8442
BP : 4195±55
Material : Charcoal
Quality of Material : QB
Wiggle Group : D-(C)
Literature : Korfmann, Kromer 1993: 140-145

BEŞ.11

Layer :	S15 - 918
Dating EBA :	EB 1
Lab :	HD-10852
BP :	4190±35
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.12

Layer :	S15 - 571
Dating EBA :	EB 1
Lab :	HD-10339
BP :	4180±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.13

Layer :	S15 -906
Dating EBA :	EB 1
Lab :	HD-10835
BP :	4170±40
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.14

Layer :	S12 - 854
Dating EBA :	EB 1
Lab :	HD-9938
BP :	4170±35
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.15

Layer :	S15 - 902
Dating EBA :	EB 1
Lab :	HD-10829
BP :	4170±35
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 140-145

BEŞ.16

Layer :	S13 - 1128
Dating EBA :	EB 1
Lab :	HD-10859
BP :	4165±40
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 140-145

Büyüktepe Höyük (BU)

BU.1

Layer :	
Dating EBA :	EBA
Lab :	Beta-55338
BP :	4290±100
Material :	Bone
Quality of Material :	QA
Wiggle Group :	C-(B/D)
Literature :	Sagona, Pemberton 1992: 29-46

BU.2

Layer :	
Dating EBA :	EBA
Lab :	Beta-55341
BP :	3990±70
Material :	Bone
Quality of Material :	QA
Wiggle Group :	E-(D/F)
Literature :	Sagona, Pemberton 1992: 29-46

Çadır Höyük (CAD)

CAD.1

Layer :
Dating EBA : LC / EB 1 Transition
Lab : Beta-159391
BP : 4700±80
Material :
Quality of Material :
Wiggle Group : A
Literature : Gorny, McMahon, Paley, Steadman, Verhaaren 2002 :109-136

CAD.2

Layer : L 42
Dating EBA : EB 1
Lab : Beta-134070
BP : 4380±130
Material :
Quality of Material :
Wiggle Group : B-(C)
Literature : Gorny, McMahon, Paley, Steadman, Verhaaren 2002 :109-136

CAD.3

Layer : L 11
Dating EBA : EB 3
Lab : Beta-146705
BP : 4080±80
Material :
Quality of Material :
Wiggle Group : D-(E)
Literature : Gorny, McMahon, Paley, Steadman, Verhaaren 2002 :109-136

CAD.4

Layer :
Dating EBA : EB 3
Lab : Beta-159389
BP : 3430±70
Material :
Quality of Material :
Wiggle Group : G
Literature : Gorny, McMahon, Paley, Steadman, Verhaaren 2002 :109-136

CAD.5

Layer :
Dating EBA : EB 3
Lab : Beta-159388
BP : 3300±80
Material :
Quality of Material :
Wiggle Group : G
Literature : Gorny, McMahon, Paley, Steadman, Verhaaren 2002 :109-136

Demircihöyük (DEM)

DEM.1

Layer : C (1), K10.Z639
Dating EBA : EB 1
Lab : KN-2780
BP : 4470±55
Material : Knochen
Quality of Material : QA
Wiggle Group : B
Literature : Weninger 1987: 4-13

DEM.2

Layer : H (6), K10.283A
Dating EBA : EB 1
Lab : KN-2422
BP : 4400±60
Material : Charcoal
Quality of Material : QB
Wiggle Group : C
Literature : Weninger 1987: 4-13

DEM.3

Layer : C (1), K9.Z707
Dating EBA : EB 1
Lab : KN-2670
BP : 4380±130
Material : Knochen
Quality of Material : QA
Wiggle Group : B-(C)
Literature : Weninger 1987: 4-13

DEM.4

Layer :	E1 (2), K9.347
Dating EBA :	EB 1
Lab :	KN-2368
BP :	4310±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(B)
Literature :	Weninger 1987: 4-13

DEM.5

Layer :	K2 (7), K8. 766
Dating EBA :	EB 1
Lab :	Bln-2022 (I)
BP :	4260±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(D)
Literature :	Weninger 1987: 4-13

DEM.6

Layer :	H (6), K9.P14.255
Dating EBA :	EB 1
Lab :	Bln-2437 (III)
BP :	4250±60
Material :	Erbsen, verk.
Quality of Material :	QA
Wiggle Group :	C-(D)
Literature :	Weninger 1987: 4-13

DEM.7

Layer :	H (6), K8.1227
Dating EBA :	EB 1
Lab :	LJ-5237
BP :	4250±40
Material :	
Quality of Material :	
Wiggle Group :	C-(D)
Literature :	Weninger 1987: 4-13

DEM.8

Layer : H (6), K8.1735
Dating EBA : EB 1
Lab : KN-2664
BP : 4230±65
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(D)
Literature : Weninger 1987: 4-13

DEM.9

Layer : E2 (4), K9.Z65
Dating EBA : EB 1
Lab : LJ-5238
BP : 4230±60
Material :
Quality of Material :
Wiggle Group : C-(D)
Literature : Weninger 1987: 4-13

DEM.10

Layer : L (8), İ8.562A
Dating EBA : EB 2
Lab : KN-2423 B
BP : 4220±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : D-(C)
Literature : Weninger 1987: 4-13

DEM.11

Layer : E2, K9. 343
Dating EBA : EB 1
Lab : Bln-2024 (I)
BP : 4200±45
Material : Charcoal
Quality of Material : QB
Wiggle Group : D-(C)
Literature : Weninger 1987: 4-13

DEM.12

Layer :	H (6), L9.123
Dating EBA :	EB 1
Lab :	LJ-5235
BP :	4190±80
Material :	
Quality of Material :	
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.13

Layer :	H (6), K9 Pfosten-haus
Dating EBA :	EB 1
Lab :	KN-2369
BP :	4180±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.14

Layer :	L (8), I8. 547
Dating EBA :	EB 2
Lab :	Bln-2020 (I)
BP :	4180±55
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.15

Layer :	E2 (4)
Dating EBA :	EB 1
Lab :	Bln-2044 (I)
BP :	4180±55
Material :	
Quality of Material :	
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.16

Layer :	H (6), K8. 1734
Dating EBA :	EB 1
Lab :	Bln-2209 (II)
BP :	4180±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.17

Layer :	H (6), L9.P3.133A
Dating EBA :	EB 1
Lab :	Bln-2435 (III)
BP :	4180±50
Material :	einjahrige Weidenzweige, verk
Quality of Material :	QA
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.18

Layer :	E2 (4), K9.338
Dating EBA :	EB 1
Lab :	KN-2421
BP :	4180±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Weninger 1987: 4-13

DEM.19

Layer :	H (6), L9.123
Dating EBA :	EB 1
Lab :	Bln-2027 (I)
BP :	4170±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.20

Layer : M (9), K8. 379
Dating EBA : EB 1
Lab : Bln-2021 (I)
BP : 4170±40
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Weninger 1987: 4-13

DEM.21

Layer : E1 (2), İ9.P5.225
Dating EBA : EB 1
Lab : Bln-2440 (III)
BP : 4160±70
Material : Getreide
Quality of Material : QA
Wiggle Group : D -(C)
Literature : Weninger 1987: 4-13

DEM.22

Layer : H (6)
Dating EBA : EB 1
Lab : Bln-2043 (I)
BP : 4160±60
Material :
Quality of Material :
Wiggle Group : D
Literature : Weninger 1987: 4-13

DEM.23

Layer : L (8), İ8.294B
Dating EBA : EB 2
Lab : Bln-2232 (II)
BP : 4155±45
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Weninger 1987: 4-13

DEM.24

Layer :	E2. (4), K9. Z65
Dating EBA :	EB 1
Lab :	Bln-2025 (I)
BP :	4155±40
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.25

Layer :	E2. (4), K9. 346
Dating EBA :	EB 1
Lab :	Bln-2026 (I)
BP :	4150±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.26

Layer :	E 1-2 (3)
Dating EBA :	EB 1
Lab :	Bln-2407 (III)
BP :	4150±50
Material :	
Quality of Material :	
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.27

Layer :	E1-2 (3), L9.P17.165
Dating EBA :	EB 1
Lab :	Bln-2141 (III)
BP :	4145±60
Material :	Einkorn, verk
Quality of Material :	QA
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.28

Layer :	H (6)
Dating EBA :	EB 1
Lab :	Bln-2401 (III)
BP :	4145±50
Material :	
Quality of Material :	
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.29

Layer :	H (6), L8.P4.186
Dating EBA :	EB 1
Lab :	Bln-2439 (III)
BP :	4140±45
Material :	Linsen, verk.
Quality of Material :	QA
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.30

Layer :	H (6), K8. 1227
Dating EBA :	EB 1
Lab :	Bln-2208 (II)
BP :	4110±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Weninger 1987: 4-13

DEM.31

Layer :	E1 (2)
Dating EBA :	EB 1
Lab :	Bln-2313 (II)
BP :	4100±60
Material :	
Quality of Material :	
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.32

Layer :	E1 (2)
Dating EBA :	EB 1
Lab :	Bln-2405 (III)
BP :	4100±55
Material :	
Quality of Material :	
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.33

Layer :	H (6), K9.P15.256
Dating EBA :	EB 1
Lab :	Bln-2438 (III)
BP :	4095±60
Material :	Gerste, verk.
Quality of Material :	QA
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.34

Layer :	H (6), L9.P3.133B
Dating EBA :	EB 1
Lab :	Bln-2436 (III)
BP :	4095±50
Material :	Linsen, verk.
Quality of Material :	QA
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.35

Layer :	E1 (2), K8.140
Dating EBA :	EB 1
Lab :	Bln-2214 (II)
BP :	4090±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.36

Layer :	E2 (4)
Dating EBA :	EB 1
Lab :	Bln-2228 A (II)
BP :	4090±50
Material :	
Quality of Material :	
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.37

Layer :	H (6)
Dating EBA :	EB 1
Lab :	Bln-2473 (III)
BP :	4088±65
Material :	
Quality of Material :	
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.38

Layer :	E1-2 (3), F8.8i
Dating EBA :	EB 1
Lab :	Bln-2206 (II)
BP :	4085±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.39

Layer :	M (9)
Dating EBA :	EB 2
Lab :	Bln-2397 (III)
BP :	4080±75
Material :	
Quality of Material :	
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.40

Layer : H (6)
Dating EBA : EB 1
Lab : Bln-2419 (III)
BP : 4080±50
Material :
Quality of Material :
Wiggle Group : D -(E)
Literature : Weninger 1987: 4-13

DEM.41

Layer : H (6), K9.P13.254
Dating EBA : EB 1
Lab : Bln-2458 (III)
BP : 4080±50
Material : Getreide verk.
Quality of Material : QA
Wiggle Group : D -(E)
Literature : Weninger 1987: 4-13

DEM.42

Layer : E2 (4)
Dating EBA : EB 1
Lab : Bln-2045 (I)
BP : 4075±45
Material :
Quality of Material :
Wiggle Group : D -(E)
Literature : Weninger 1987: 4-13

DEM.43

Layer : K2 (7)
Dating EBA : EB 1
Lab : Bln-2421 (III)
BP : 4070±70
Material :
Quality of Material :
Wiggle Group : D -(E)
Literature : Weninger 1987: 4-13

DEM.44

Layer :	E1-2 (3), F8.87
Dating EBA :	EB 1
Lab :	Bln-2210 (II)
BP :	4070±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.45

Layer :	E1 (2), K8.1731
Dating EBA :	EB 1
Lab :	KN-2663
BP :	4060±55
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.46

Layer :	E1-2 (3), İ9.Z4.66
Dating EBA :	EB 1
Lab :	Bln-2204 (II)
BP :	4060±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.47

Layer :	E2 (4)
Dating EBA :	EB 1
Lab :	Bln-2230 (II)
BP :	4060±45
Material :	
Quality of Material :	
Wiggle Group :	D -(E)
Literature :	Weninger 1987: 4-13

DEM.48

Layer :	H (6)
Dating EBA :	EB 1
Lab :	Bln-2224 A (II)
BP :	4050±50
Material :	
Quality of Material :	
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.49

Layer :	F1 (5) , İ9.Z3 84
Dating EBA :	EB 1
Lab :	Bln-2207 (II)
BP :	4045±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.50

Layer :	E1-2 (3), FG8.334A
Dating EBA :	EB 1
Lab :	Bln-2205 (II)
BP :	4045±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.51

Layer :	H (6), K8.1268
Dating EBA :	EB 1
Lab :	Bln-2212 (II)
BP :	4040±65
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.52

Layer :	E2 (4)
Dating EBA :	EB 1
Lab :	Bln-2228 (II)
BP :	4040±50
Material :	
Quality of Material :	
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.53

Layer :	H (6)
Dating EBA :	EB 1
Lab :	Bln-2393 (III)
BP :	4040±45
Material :	
Quality of Material :	
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.54

Layer :	H (6), L8.P5.187
Dating EBA :	EB 1
Lab :	Bln-2456 (III)
BP :	4035±60
Material :	Getreide, Linsen, Erbsen, verk.
Quality of Material :	QA
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.55

Layer :	E2 (4)
Dating EBA :	EB 1
Lab :	Bln-2231 (II)
BP :	4025±45
Material :	
Quality of Material :	
Wiggle Group :	E-(D)
Literature :	Weninger 1987: 4-13

DEM.56

Layer : E1 (2)
Dating EBA : EB 1
Lab : Bln-2406 (III)
BP : 4020±55
Material :
Quality of Material :
Wiggle Group : E-(D)
Literature : Weninger 1987: 4-13

DEM.57

Layer : E2 (4)
Dating EBA : EB 1
Lab : Bln-2404 (III)
BP : 4020±45
Material :
Quality of Material :
Wiggle Group : E-(D)
Literature : Weninger 1987: 4-13

DEM.58

Layer : E1-2 (3), İıo.Z6 55
Dating EBA : EB 1
Lab : Bln-2211 (II)
BP : 4005±45
Material : Charcoal
Quality of Material : QB
Wiggle Group : E
Literature : Weninger 1987: 4-13

DEM.59

Layer : H (6)
Dating EBA : EB 1
Lab : Bln-2476
BP : 4000±70
Material :
Quality of Material :
Wiggle Group : E-(D/F)
Literature : Weninger 1987: 4-13

DEM.60

Layer :	E 1-2 (3)
Dating EBA :	EB 1
Lab :	Bln-2311 (II)
BP :	4000±55
Material :	
Quality of Material :	
Wiggle Group :	E-(D/E)
Literature :	Weninger 1987: 4-13

DEM.61

Layer :	E 1-2 (3)
Dating EBA :	EB 1
Lab :	Bln-2312 (II)
BP :	4000±45
Material :	
Quality of Material :	
Wiggle Group :	E
Literature :	Weninger 1987: 4-13

DEM.62

Layer :	E1 (2), G8.332
Dating EBA :	EB 1
Lab :	Bln-2213 (II)
BP :	3995±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	E
Literature :	Weninger 1987: 4-13

DEM.63

Layer :	H (6)
Dating EBA :	EB 1
Lab :	Bln-2400 (III)
BP :	3990±45
Material :	
Quality of Material :	
Wiggle Group :	E
Literature :	Weninger 1987: 4-13

DEM.64

Layer :	L (8)
Dating EBA :	EB 2
Lab :	Bln-2314 (II)
BP :	3980±50
Material :	
Quality of Material :	
Wiggle Group :	E-(F)
Literature :	Weninger 1987: 4-13

DEM.65

Layer :	H (6)
Dating EBA :	EB 1
Lab :	Bln-2229 (II)
BP :	3950±80
Material :	
Quality of Material :	
Wiggle Group :	E-(F)
Literature :	Weninger 1987: 4-13

DEM.66

Layer :	E1 (2), E8.332
Dating EBA :	EB 1
Lab :	LJ-5236
BP :	3910±90
Material :	
Quality of Material :	
Wiggle Group :	F-(E)
Literature :	Weninger 1987: 4-13

Gedikli Höyük (GED)

GED.1

Layer :	AÇ 2
Dating EBA :	EB 3 / MBA Transition
Lab :	GrN-5580
BP :	3990±40
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	E
Literature :	Vogel, Waterbolk 1972: 51

GED.2

Layer :	Km 194
Dating EBA :	EB 3 / MBA Transition
Lab :	GrN-5581
BP :	3820±40
Material :	Charcoal Pieces
Quality of Material :	QB
Wiggle Group :	F
Literature :	Vogel, Waterbolk 1972: 51

Göltepe (GOL)

GOL.1

Layer :	B05-1100-019
Dating EBA :	Early / Mid-3rd and Mid / Late 3rd.
Lab :	Beta-105168
BP :	4150±70
Material :	Pit Fill
Quality of Material :	QB
Wiggle Group :	D
Literature :	Yener 2000: 174-176

GOL.2

Layer :	D67-0200-017
Dating EBA :	Early / Mid-3rd and Mid / Late 3rd.
Lab :	Beta-75614
BP :	4150±50
Material :	Pit House Fill
Quality of Material :	QB
Wiggle Group :	D
Literature :	Yener 2000: 174-176

GOL.3

Layer :	B06-0300-012
Dating EBA :	Early / Mid-3rd and Mid / Late 3rd.
Lab :	Beta-075611
BP :	4140±50
Material :	Bench
Quality of Material :	QB
Wiggle Group :	D
Literature :	Yener 2000: 174-176

GOL.4

Layer : B01-0126-001
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-42648
BP : 4120±60
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Yener 2000: 174-176

GOL.5

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-42650
BP : 4070±60
Material :
Quality of Material :
Wiggle Group : D-(E)
Literature : Yener 2000: 174-176

GOL.6

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-75607
BP : 4020±70
Material :
Quality of Material :
Wiggle Group : E-(D)
Literature : Yener 2000: 174-176

GOL.7

Layer : E69-0100-009
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-75606
BP : 3980±70
Material : Midden With Metallurgical Debris
Quality of Material : QB
Wiggle Group : E-(F)
Literature : Yener 2000: 174-176

GOL.8

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-104993
BP : 3940±50
Material :
Quality of Material :
Wiggle Group : F-(E)
Literature : Yener 2000: 174-176

GOL.9

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-75605
BP : 3920±60
Material :
Quality of Material :
Wiggle Group : F-(E)
Literature : Yener 2000: 174-176

GOL.10

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-75613
BP : 3910±90
Material :
Quality of Material :
Wiggle Group : F-(E)
Literature : Yener 2000: 174-176

GOL.11

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-075608
BP : 3890±50
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 174-176

GOL.12

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-75609
BP : 3840±70
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 174-176

GOL.13

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-75610
BP : 3830±60
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 174-176

GOL.14

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-075612
BP : 3800±100
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 174-176

GOL.15

Layer :
Dating EBA : Early / Mid-3rd and Mid / Late 3rd.
Lab : Beta-42651
BP : 3790±80
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 174-176

Gritille (GR)

GR.1

Layer :
Dating EBA : EB 2
Lab : Beta-6318
BP : 3950±100
Material :
Quality of Material :
Wiggle Group : E-(F)
Literature : Ehrich 1992: 177

Hacılar Tepe (HAC)

HAC.1

Layer : Phase IV Layer 7, GL SL 303
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-22040
BP : 4490±50
Material :
Quality of Material :
Wiggle Group : B
Literature : Eimermann 2004: 24-36

HAC.2

Layer : Phase I, G7 SA 018
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-19787
BP : 4265±35
Material :
Quality of Material :
Wiggle Group : C
Literature : Eimermann 2004: 24-36

HAC.3

Layer : Phase IV Layer 7, G7 SK 302
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-22039
BP : 4250±70
Material :
Quality of Material :
Wiggle Group : C-(D)
Literature : Eimermann 2004: 24-36

HAC.4

Layer : Phase I, G7 SDS 036
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-19789
BP : 4220±35
Material :
Quality of Material :
Wiggle Group : D-(C)
Literature : Eimermann 2004: 24-36

HAC.5

Layer : Phase III, G7 SH 114
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-21211
BP : 4215±35
Material :
Quality of Material :
Wiggle Group : D-(C)
Literature : Eimermann 2004: 24-36

HAC.6

Layer : Phase I, G7 SB 034
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-19788
BP : 4180±40
Material :
Quality of Material :
Wiggle Group : D
Literature : Eimermann 2004: 24-36

HAC.7

Layer : Phase IV, G7 SJ 234
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-22038
BP : 4160±30
Material :
Quality of Material :
Wiggle Group : D
Literature : Eimermann 2004: 24-36

HAC.8

Layer : Phase II, G7 SA 060
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-19790
BP : 4140±35
Material :
Quality of Material :
Wiggle Group : D
Literature : Eimermann 2004: 24-36

HAC.9

Layer : Phase IV Layer 6, G7 QB 233
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-22037
BP : 4140±25
Material : Charred Seeds
Quality of Material : QA
Wiggle Group : D
Literature : Eimermann 2004: 24-36

HAC.10

Layer : Phase IV, G7 234
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-22430
BP : 4130±50
Material :
Quality of Material :
Wiggle Group : D
Literature : Eimermann 2004: 24-36

HAC.11

Layer : Phase III, G7 SI 116
Dating EBA : EB 1/EB 2 Transition (Estimated date 2800/2750-2650/2600)
Lab : GrN-21212
BP : 4115±35
Material :
Quality of Material :
Wiggle Group : D
Literature : Eimermann 2004: 24-36

Hassek Höyük (HAS)

HAS.1

Layer : Frühe Bronzezt 1
Dating EBA : EB 1
Lab : KI-2961
BP : 4470±70
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Behm-Blancke 1992 : 136-139

HAS.2

Layer :	Frühe Bronzezt 1
Dating EBA :	EB 1
Lab :	KI-2959
BP :	4450±110
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	B
Literature :	Behm-Blancke 1992 : 136-139

HAS.3

Layer :	Frühe Bronzezt 1
Dating EBA :	EB 1
Lab :	KI-2352.01
BP :	4440±100
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	B
Literature :	Behm-Blancke 1992 : 136-139

HAS.4

Layer :	Frühe Bronzezt 1
Dating EBA :	EB 1
Lab :	KI-2960
BP :	4390±80
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	B-(C)
Literature :	Behm-Blancke 1992 : 136-139

HAS.5

Layer :	Frühe Bronzezt 1
Dating EBA :	EB 1
Lab :	Bln-2733
BP :	4030±60
Material :	Samen
Quality of Material :	QA
Wiggle Group :	E-(D)
Literature :	Behm-Blancke 1992 : 136-139

İkiztepe I (IKI)

IKI.1

Layer :	1, Kat 1 Evre 2
Dating EBA :	EB3/Early Hittite Transition
Lab :	Hür-105
BP :	4575±149
Material :	
Quality of Material :	
Wiggle Group :	A-(B)
Literature :	Kış, Işık 1987: 155-160

IKI.2

Layer :	1, Kat 1 Evre 6
Dating EBA :	EB3/Early Hittite Transition
Lab :	Hür-103
BP :	4540±130
Material :	
Quality of Material :	
Wiggle Group :	B-(A)
Literature :	Kış, Işık 1987: 155-160

IKI.3

Layer :	Kat I Evre3a Loc.422
Dating EBA :	EB3/Early Hittite Transition
Lab :	METU-7 İkiztepe no:15
BP :	4267±104
Material :	Charred Grain
Quality of Material :	QA
Wiggle Group :	C-(B/D)
Literature :	Alkım 1983: 137-150

IKI.4

Layer :	1, Kat I Evre3b Loc.421
Dating EBA :	EB3/Early Hittite Transition
Lab :	METU-6 İkiztepe no:8
BP :	3694±161
Material :	Charred Cereal Grain
Quality of Material :	QA
Wiggle Group :	F-(G)
Literature :	Alkım 1983: 137-150

IKI.5

Layer : 1, Kat I Evre-3b
Dating EBA : EB3/Early Hittite Transition
Lab : HÜR-51 İkiztepe no:17
BP : 3603±75
Material : Charred Cereal Grain
Quality of Material : QA
Wiggle Group : F-(G)
Literature : Ergin, Güler 1985: 79-93

İkiztepe II (IKIZ)

IKIZ.1

Layer : 1, Kat II Evre-1
Dating EBA : EB 1 Late / EB 2 Early
Lab : Hür-54 İkiztepe no:7
BP : 4270±93
Material : Charred Cereal Grain
Quality of Material : QA
Wiggle Group : C-(B/D)
Literature : Ergin, Güler 1985: 79-93

IKIZ.2

Layer : Kat II Evre 6Loc.506, D-13/II-I
Dating EBA : EB 1
Lab : METU-9 İkiztepe no:22
BP : 4028±95
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(D/F)
Literature : Alkım 1983: 137-150

Karataş-Elmalı (KAR)

KAR.1

Layer : II, Pit 6
Dating EBA : EB 1
Lab : P-920
BP : 4274±62
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(B/D)
Literature : Warner 1994 : 10

KAR.2

Layer : II, Courtyard fill
Dating EBA : EB 1
Lab : P-923
BP : 4228±62
Material : Charcoal fill
Quality of Material : QB
Wiggle Group : C-(D)
Literature : Warner 1994 : 10

KAR.3

Layer : II, Post-hole N2
Dating EBA : EB 1
Lab : P-917
BP : 4221±61
Material : Charcoal
Quality of Material : QB
Wiggle Group : D-(C)
Literature : Warner 1994 : 10

KAR.4

Layer : II, Pit 5
Dating EBA : EB 1
Lab : P-921
BP : 4138±62
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Warner 1994 : 10

KAR.5

Layer : II, Floor
Dating EBA : EB 1
Lab : P-918
BP : 4130±61
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Warner 1994 : 10

KAR.6

Layer : II, Beam
Dating EBA : EB 1
Lab : P-919
BP : 4126±60
Material : Beam Charcoal (Juniper?)
Quality of Material : QB
Wiggle Group : D
Literature : Warner 1994 : 10

KAR.7

Layer :	II, Pit 14
Dating EBA :	EB 1
Lab :	P-2208
BP :	4120±70
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Warner 1994 : 10

Kenantepe (KEN)

KEN.1

Layer :	Trench F5 (EBA Burial)
Dating EBA :	EB 1
Lab :	Beta-156415
BP :	4210±40
Material :	Bone (collagen extraction)
Quality of Material :	QA
Wiggle Group :	D-(C)
Literature :	Parker 2002: 15

Kestel (KES)

KES.1

Layer :	S46
Dating EBA :	EBA
Lab :	BM-2879
BP :	4090±60
Material :	Firehole Cavity
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Yener 2000: 172-183

KES.2

Layer :	Sounding S2 (-68cm)
Dating EBA :	EBA
Lab :	AA-3374
BP :	4020±80
Material :	
Quality of Material :	
Wiggle Group :	E-(D/F)
Literature :	Yener 2000: 172-183

KES.3

Layer : Sounding S2 (-68cm)
Dating EBA : EBA
Lab : I-15, 227
BP : 3980±100
Material :
Quality of Material :
Wiggle Group : E-(D/F)
Literature : Yener 2000: 172-183

KES.4

Layer : Sounding S2 (-93cm)
Dating EBA : EBA
Lab : AA-3376
BP : 3830±65
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 172-183

KES.5

Layer : Sounding S2 (-68cm)
Dating EBA : EBA
Lab : AA-3375
BP : 3805±70
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener 2000: 172-183

Khirbet al-Hijar (AS 180)

AS180.1

Layer : A5
Dating EBA : Amuq H / I (Mid 3rd. - Early Second) EB 2 / EB 3
Lab : GrN-22959
BP : 3700±80
Material :
Quality of Material :
Wiggle Group : F
Literature : Yener, Edens, Harrison, Verstraete, Wilkinson 2000: 163-220

AS180.2 F

Layer : A5
Dating EBA : Amuq H / I (Mid 3rd. - Early Second) EB 2 / EB 3
Lab : GrN-22960
BP : 3600±90
Material : Wood Charcoal
Quality of Material : QB
Wiggle Group : F-(G)
Literature : Yener, Edens, Harrison, Verstraete, Wilkinson 2000: 163-220

Korucu Tepe (KOR)

KOR.1

Layer : C, LIII-LIV P 17
Dating EBA : EB I-IIA
Lab : P-1926
BP : 4344±69
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(C)
Literature : Van Loon 1978: 1-10

KOR.2

Layer : D, LVIII O10
Dating EBA : EB IIA
Lab : P-1618
BP : 4224±62
Material : Charcoal
Quality of Material : QB
Wiggle Group : D-(C)
Literature : Van Loon 1978: 1-10

KOR.3

Layer : D, LXXII N11
Dating EBA : EB IIB
Lab : GrN-6056
BP : 4160±60
Material :
Quality of Material :
Wiggle Group : D
Literature : Van Loon 1978: 1-10

KOR.4

Layer :	D, LXXIII O11
Dating EBA :	EB IIA
Lab :	P-1617A
BP :	4106±65
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Van Loon 1978: 1-10

KOR.5

Layer :	D, LXXIII O11
Dating EBA :	EB IIA
Lab :	P-1617
BP :	4084±53
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Lawn 1971: 369

KOR.6

Layer :	D, LXXIII O11
Dating EBA :	EB IIA
Lab :	P-1617-B
BP :	4074±64
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Van Loon 1978: 1-10

KOR.7

Layer :	C, LIV P 17
Dating EBA :	EB I-IIA
Lab :	GrN-6774
BP :	4070±35
Material :	
Quality of Material :	
Wiggle Group :	D-(E)
Literature :	Van Loon 1978: 1-10

KOR.8

Layer :	E, LXXVIII O16
Dating EBA :	EB IIIA
Lab :	GrN-6773
BP :	4050±40
Material :	
Quality of Material :	
Wiggle Group :	E-(D)
Literature :	Van Loon 1978: 1-10

KOR.9

Layer :	D, LXXIV N11
Dating EBA :	EB IIA
Lab :	P-1628
BP :	3989±64
Material :	Charred Wheat (*Triticum Aestivum*)
Quality of Material :	QA
Wiggle Group :	E-(D/F)
Literature :	Van Loon 1978: 1-10

KOR.10

Layer :	D, LXXII N11
Dating EBA :	EB IIA
Lab :	P-1629
BP :	3963±65
Material :	Charred Wheat (*Triticum Aestivum*)
Quality of Material :	QA
Wiggle Group :	E-(F)
Literature :	Van Loon 1978: 1-10

KOR.11

Layer :	E, LXXX O 16
Dating EBA :	EB IIIA
Lab :	P-1927
BP :	3951±68
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	E-(F)
Literature :	Van Loon 1978: 1-10

KOR.12

Layer :	D, LXXIII O11
Dating EBA :	EB IIA
Lab :	M-2376
BP :	3900±170
Material :	
Quality of Material :	
Wiggle Group :	F-(D)
Literature :	Van Loon 1978: 1-10

Kumtepe (KUM)

KUM.1

Layer : B2b F28, 60
Dating EBA : EB 1
Lab : HD-16324
BP : 4601±44
Material : Charcoal
Quality of Material : QB
Wiggle Group : A-(B)
Literature : Korfmann, Girgin, Morçöl, Kılıç 1995: 237-289

KUM.2

Layer : F28, 131
Dating EBA : EB 1
Lab : HD-17707
BP : 4541±55
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(A)
Literature : Gabriel 2000: 233-235

KUM.3

Layer : F28, 40
Dating EBA : EB 1
Lab : HD-16323
BP : 4529±48
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(A)
Literature : Korfmann, Girgin, Morçöl, Kılıç 1995: 237-289

KUM.4

Layer : B2a F28, 65
Dating EBA : EB 1
Lab : HD-16315
BP : 4443±32
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Korfmann, Girgin, Morçöl, Kılıç 1995: 237-289

KUM.5

Layer : B2b F28, 47
Dating EBA : EB 1
Lab : HD-17780
BP : 4378±39
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Korfmann, Girgin, Morçöl, Kılıç 1995: 237-289

KUM.6

Layer : F28, 47
Dating EBA : EB 1
Lab : HD-17870
BP : 4378±39
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Gabriel 2000: 233-235

Limantepe (LIM)

LIM.1

Layer :
Dating EBA : Late Chalcolithic/EB 1 Transition
Lab : HD-19222
BP : 4511±31
Material : Oak (Short Lived)
Quality of Material : QB
Wiggle Group : B
Literature : Peter Ian Kuniholm 1999: 39-45

Molla Kendi (MOL)

MOL.1

Layer : O 54-2
Dating EBA : EB 3 (Expected Age 2200-2000 BC.)
Lab : GrN-5285
BP : 3980±70
Material : Charred Plant Fragments
Quality of Material : QA
Wiggle Group : E-(F)
Literature : Vogel, Waterbolk. 1972: 6-52

Norşuntepe (NT)

NT.1

Layer :
Dating EBA : EB 1
Lab : H-5759-5552
BP : 4490±65
Material :
Quality of Material :
Wiggle Group : B
Literature : Di Nocera 2000: 73-93

NT.2

Layer :
Dating EBA : EB 1
Lab : Bln-2356
BP : 4445±30
Material :
Quality of Material :
Wiggle Group : B
Literature : Di Nocera 2000: 73-93

NT.3

Layer :
Dating EBA : EB 1
Lab : LJ-5254
BP : 4280±120
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Di Nocera 2000: 73-93

NT.4

Layer :
Dating EBA : EB 1
Lab : LJ-5234
BP : 4280±20
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Di Nocera 2000: 73-93

NT.5

Layer :
Dating EBA : EB 2B
Lab : Bln-2218
BP : 4220±60
Material :
Quality of Material :
Wiggle Group : D-(C)
Literature : Di Nocera 2000: 73-93

NT.6

Layer :
Dating EBA : EB 2B
Lab : Bln-2358
BP : 4145±45
Material :
Quality of Material :
Wiggle Group : D
Literature : Di Nocera 2000: 73-93

NT.7

Layer :
Dating EBA : EB 2A
Lab : Bln-2626
BP : 4120±70
Material :
Quality of Material :
Wiggle Group : D-(E)
Literature : Di Nocera 2000: 73-93

NT.8

Layer :
Dating EBA : EB 3A
Lab : Bln-2360
BP : 3970±50
Material :
Quality of Material :
Wiggle Group : E-(F)
Literature : Di Nocera 2000: 73-93

NT.9

Layer :
Dating EBA : EB 3
Lab : Hv-4107
BP : 3960±45
Material :
Quality of Material :
Wiggle Group : E-(F)
Literature : Di Nocera 2000: 73-93

NT.10

Layer :
Dating EBA : EB 3B
Lab : Bln-2364
BP : 3950±140
Material :
Quality of Material :
Wiggle Group : E-(D/F)
Literature : Di Nocera 2000: 73-93

NT.11

Layer :
Dating EBA : EB 3B
Lab : Bln-2362
BP : 3945±50
Material :
Quality of Material :
Wiggle Group : E-(F)
Literature : Di Nocera 2000: 73-93

NT.12

Layer :
Dating EBA : EB 3A
Lab : Bln-2628
BP : 3940±60
Material :
Quality of Material :
Wiggle Group : F-(E)
Literature : Di Nocera 2000: 73-93

NT.13

Layer :
Dating EBA : EB 2B
Lab : Bln-2627
BP : 3910±50
Material :
Quality of Material :
Wiggle Group : F-(E)
Literature : Di Nocera 2000: 73-93

NT.14

Layer :	
Dating EBA :	EB 3
Lab :	Hv-4105
BP :	3905±50
Material :	
Quality of Material :	
Wiggle Group :	F-(E)
Literature :	Di Nocera 2000: 73-93

NT.15

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2363
BP :	3880±45
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.16

Layer :	
Dating EBA :	EB 3A
Lab :	Bln-2361
BP :	3875±45
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.17

Layer :	
Dating EBA :	EB 3B
Lab :	Hv-4104
BP :	3865±175
Material :	
Quality of Material :	
Wiggle Group :	F-(E)
Literature :	Di Nocera 2000: 73-93

NT.18

Layer :	
Dating EBA :	EB 3A
Lab :	Bln-2359
BP :	3850±50
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.19

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2367
BP :	3850±100
Material :	
Quality of Material :	
Wiggle Group :	F-(E)
Literature :	Di Nocera 2000: 73-93

NT.20

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2366
BP :	3840±55
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.21

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2647
BP :	3840±50
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.22

Layer :	
Dating EBA :	EB 3A
Lab :	Bln-2641
BP :	3810±60
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.23

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2646
BP :	3810±50
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.24

Layer :	
Dating EBA :	EB 3
Lab :	Bln-2680
BP :	3800±60
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.25

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2365
BP :	3800±45
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.26

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2415
BP :	3780±80
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.27

Layer :	
Dating EBA :	EB 3B
Lab :	Bln-2416
BP :	3760±55
Material :	
Quality of Material :	
Wiggle Group :	F
Literature :	Di Nocera 2000: 73-93

NT.28

Layer :
Dating EBA : EB 3B
Lab : Bln-2642
BP : 3760±50
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

NT.29

Layer :
Dating EBA : EB 3B
Lab : Bln-2414
BP : 3740±50
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

NT.30

Layer :
Dating EBA : EB 3B
Lab : Bln-2644
BP : 3730±80
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

NT.31

Layer :
Dating EBA : EB 3B
Lab : Bln-2643
BP : 3730±50
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

NT.32

Layer :
Dating EBA : EB 3B
Lab : Bln-2648
BP : 3710±60
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

NT.33

Layer :
Dating EBA : EB 3B
Lab : Bln-2645
BP : 3690±50
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

NT.34

Layer :
Dating EBA : EB 3B
Lab : Bln-2649
BP : 3650±60
Material :
Quality of Material :
Wiggle Group : F
Literature : Di Nocera 2000: 73-93

Pulur Sakyol (PUL)

PUL.1

Layer : XI
Dating EBA : EB 1
Lab : P-2040
BP : 4610±70
Material : Charcoal
Quality of Material : QB
Wiggle Group : A-(B)
Literature : Lawn 1975: 196-205

PUL.2

Layer : VIII, 5m deep
Dating EBA : EB 1
Lab : M-2172
BP : 4420±200
Material :
Quality of Material :
Wiggle Group : B-(A/D)
Literature : Crane, Griffin 1972 :155-194

PUL.3

Layer : V, K, 37.9 D29
Dating EBA : EB 1
Lab : M-2170
BP : 4300±180
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Crane, Griffin 1972 :155-194

PUL.4

Layer : IX, A 1
Dating EBA : EB 1
Lab : M-2173
BP : 4100±180
Material :
Quality of Material :
Wiggle Group : D-(C/F)
Literature : Crane, Griffin 1972 :155-194

PUL.5

Layer : VI
Dating EBA : EB 1
Lab : M-2171
BP : 3990±180
Material :
Quality of Material :
Wiggle Group : E-(D/F)
Literature : Crane, Griffin 1972 :155-194

SOS Höyük (SOS)

SOS.1

Layer : Field 33 L17b - 1590 - 301
Dating EBA : EB 1
Lab : Beta-107909
BP : 4510-90
Material : Charcoal
Quality of Material : QB
Wiggle Group : B-(A)
Literature : Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.2

Layer :	Field 42 M15d - 1853 - 153
Dating EBA :	EB 2
Lab :	Beta-107918
BP :	4240±40
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(D)
Literature :	Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.3

Layer :	Field 32 L17b - 1586 - 292
Dating EBA :	EB 1
Lab :	Beta-107908
BP :	4230±120
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(B/D)
Literature :	Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.4

Layer :	Field 43 M15d - 1854 - 196,193
Dating EBA :	EB 2
Lab :	Beta-107919
BP :	4170±70
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.5

Layer :	
Dating EBA :	EB 2
Lab :	Beta-120451
BP :	4160±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Sagona 2000: 350-356

SOS.6

Layer :	
Dating EBA :	EB 2
Lab :	OZD-713
BP :	4140±70
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Sagona 2000: 350-356

SOS.7

Layer :	L17b
Dating EBA :	EB 2
Lab :	Beta-84372
BP :	4140±60
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Sagona, Erkmen, Sagona 1996: 137-143

SOS.8

Layer :	
Dating EBA :	EB 2
Lab :	Beta-95220
BP :	4120±70
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Sagona 2000: 350-356

SOS.9

Layer :	Field 41 M15d - 1847 - 139
Dating EBA :	EB 2
Lab :	Beta-107917
BP :	4120±70
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.10

Layer :	Field 35 L17b - 1597 - 322
Dating EBA :	EB 1
Lab :	Beta-107911
BP :	4110±70
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.11

Layer :	
Dating EBA :	EB 2
Lab :	Beta-95223
BP :	4070±50
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(E)
Literature :	Sagona 2000: 350-356

SOS.12

Layer : Field 44 M15d - 1855 - 216
Dating EBA : EB 3
Lab : Beta-107920
BP : 3950±50
Material : Bone Collegen
Quality of Material : QA
Wiggle Group : E-(F)
Literature : Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

SOS.13

Layer : Field 39 M16d - 3637 - 273
Dating EBA : EB 3
Lab : Beta-107915
BP : 3910±60
Material : Bone Collegen
Quality of Material : QA
Wiggle Group : F-(E)
Literature : Sagona, Erkmen, Sagona, McNiven, Howells 1998:31-64

Tell El Cudeyde (CUD)

CUD.1

Layer : G JK-3
Dating EBA : Amuq G (LC -EB1 Transition)
Lab : P-1473
BP : 4782±60
Material :
Quality of Material :
Wiggle Group : A
Literature : Yener, Wilkinson, Branting, Friedman, Lyon, Reichel 1996: 49-84

CUD.2

Layer : Loc 21
Dating EBA : Amuq G (LC -EB1 Transition)
Lab : Beta-88280
BP : 4390±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Yener, Wilkinson, Branting, Friedman, Lyon, Reichel 1996: 49-84

CUD.3

Layer : Loc 21
Dating EBA : Amuq G (LC -EB1 Transition)
Lab : Beta-88281
BP : 4270±70
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(B/D)
Literature : Yener, Wilkinson, Branting, Friedman, Lyon, Reichel 1996: 49-84

Tell Hijar AS 181 (AS 181)

AS181.1

Layer : (D6)
Dating EBA : Amuq G (LC -EB1 Transition)
Lab : GrN-22962
BP : 4470±50
Material : Wood Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Yener, Edens, Harrison, Verstraete, Wilkinson 2000: 163-220

AS181.2

Layer : (F2)
Dating EBA : Amuq G (LC -EB1 Transition)
Lab : GrN-22963
BP : 4440±50
Material : Wood Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Yener, Edens, Harrison, Verstraete, Wilkinson 2000: 163-220

AS181.3

Layer : (D4)
Dating EBA : Amuq G (LC -EB1 Transition)
Lab : GrN-22961
BP : 4180±40
Material : Wood Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Yener, Edens, Harrison, Verstraete, Wilkinson 2000: 163-220

Tepecik (TEP)

TEP.1

Layer :	Loc K7412K4.
Dating EBA :	EB 2B
Lab :	ODTU- K-15B
BP :	4119±62
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Esin 1985: 176

TEP.2

Layer :	12 Ktab. 4K.
Dating EBA :	EB 3A
Lab :	GrN-5285
BP :	3980±70
Material :	
Quality of Material :	
Wiggle Group :	E-(F)
Literature :	Esin 1985: 176

Tilbeş Höyük (TİL)

TİL.1

Layer :	Floor EB1 Building E4bE2E7 Loc.1119 Lot116
Dating EBA :	EB 1
Lab :	AA-35826
BP :	4540±50
Material :	
Quality of Material :	
Wiggle Group :	B-(A)
Literature :	Fuensanta, Rothman, Charvat, Bucak 2001: 131-137

TİL.2

Layer :	Tomb Shaft E4aE3E8 Loc.5023 Lot60
Dating EBA :	EB 1
Lab :	AA-35827
BP :	4450±50
Material :	
Quality of Material :	
Wiggle Group :	B
Literature :	Fuensanta, Rothman, Charvat, Bucak 2001: 131-137

TİL.3

Layer : Mudbrick Area E4aE3E8 Loc.5027 Lot62
Dating EBA : EB 3
Lab : AA-35824
BP : 4320±50
Material :
Quality of Material :
Wiggle Group : C-(B)
Literature : Fuensanta, Rothman, Charvat, Bucak 2001: 131-137

TİL.4

Layer : Loc.869 Lot125
Dating EBA : EB 3
Lab : AA-35882
BP : 4180±45
Material : Burned Beam
Quality of Material : QB
Wiggle Group : D
Literature : Fuensanta, Rothman, Charvat, Bucak 2001: 131-137

TİL.5

Layer : Loc.853 Lot110
Dating EBA : EB 1
Lab : AA-35824
BP : 4020±45
Material : Burned Beam
Quality of Material : QB
Wiggle Group : E-(D)
Literature : Fuensanta, Rothman, Charvat, Bucak 2001: 131-137

Tilbeşar (TİLB)

TILB.1

Layer :
Dating EBA : Late Chalcolithic/EB 1 Transition
Lab : Beta-120368
BP : 4430±50
Material :
Quality of Material :
Wiggle Group : B
Literature : Lecomte, Ergeç 1999: 245-251

TİLB.2

Layor :
Dating EBA : EB 2 / EB 3A
Lab : Beta-
BP : 4300±100
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Lecomte, Ergeç 1998 241-247

TİLB.3

Layer :
Dating EBA : EB 2 / EB 3A
Lab : Beta-
BP : 4160±170
Material :
Quality of Material :
Wiggle Group : D-(B/E)
Literature : Lecomte, Ergeç 1998 241-247

Titriş Höyük (TIT)

TIT.1

Layer : roof collapse
Dating EBA : Early EBA
Lab : Beta-146099
BP : 4560±70
Material :
Quality of Material :
Wiggle Group : B-(A)
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.2

Layer : room fill
Dating EBA : Latest' Early EBA
Lab : Beta-146095
BP : 4420±90
Material :
Quality of Material :
Wiggle Group : B
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.3

Layer : floor
Dating EBA : Latest' Early EBA
Lab : Beta-146096
BP : 4300±100
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.4

Layer : Floor Loc. 79-85:031
Dating EBA : Late EBA
Lab : Beta-80446
BP : 4260±170
Material :
Quality of Material :
Wiggle Group : C-(B/D)
Literature : Algaze, Kelly, Matney, Schlee 1996: 132

TIT.5

Layer : roof collapse
Dating EBA : Mid EBA
Lab : Beta-146092
BP : 4110±80
Material :
Quality of Material :
Wiggle Group : F
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.6

Layer : roof collapse
Dating EBA : Mid EBA
Lab : Beta-146097
BP : 4110±70
Material :
Quality of Material :
Wiggle Group : D-(E)
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.7

Layer : roof collapse
Dating EBA : Early EBA
Lab : Beta-146100
BP : 4050±130
Material :
Quality of Material :
Wiggle Group : E-(D/F)
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.8

Layer : Supra-Floor
Dating EBA : EB 2/3
Lab : Beta-80445
BP : 3960±50
Material :
Quality of Material :
Wiggle Group : E-(F)
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.9

Layer : Floor Loc. 79-87:047
Dating EBA : Late EBA
Lab : Beta-80448
BP : 3860±70
Material :
Quality of Material :
Wiggle Group : F
Literature : Algaze, Kelly, Matney, Schlee 1996: 132

TIT.10

Layer : Supra-Floor
Dating EBA : Late EBA
Lab : Beta-95228
BP : 3860±70
Material :
Quality of Material :
Wiggle Group : F
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.11

Layer : Street Surface Loc. 80-85: 015
Dating EBA : Late EBA
Lab : Beta-80449
BP : 3860±180
Material :
Quality of Material :
Wiggle Group : F-(E)
Literature : Algaze, Kelly, Matney, Schlee 1996: 132

TIT.12

Layer : Floor
Dating EBA : Late EBA
Lab : Beta-95287
BP : 3770±60
Material :
Quality of Material :
Wiggle Group : F
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.13

Layer : surface
Dating EBA : Latest' Mid EBA
Lab : Beta-101066
BP : 3720±60
Material :
Quality of Material :
Wiggle Group : F
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.14

Layer : Supra-Floor
Dating EBA : Late EBA
Lab : Beta-95289
BP : 3660±70
Material :
Quality of Material :
Wiggle Group : F
Literature : Algaze, Dinçkan, Hartenberg, Matney, Pournelle 2001: 23-106

TIT.15

Layer : Floor Loc. 79-87:046
Dating EBA : Late EBA
Lab : Beta-80447
BP : 3630±60
Material :
Quality of Material :
Wiggle Group : F-(G)
Literature : Algaze, Kelly, Matney, Schlee 1996: 132

Troia (TR)

TR.1

Layer :
Dating EBA : Troia 1
Lab : HD-12065
BP : 4870±69
Material : Charcoal
Quality of Material : QB
Wiggle Group : A
Literature : Korfmann, Kromer 1993: 147-169

TR.2

Layer :
Dating EBA :
Lab : HD-12119
BP : 4853±45
Material : Charcoal
Quality of Material : QB
Wiggle Group : A
Literature : Korfmann, Kromer 1993: 147-169

TR.3

Layer :
Dating EBA : EB 2
Lab : HD-13627
BP : 4740±49
Material : Charcoal
Quality of Material : QB
Wiggle Group : A
Literature : Korfmann, Kromer 1993: 147-169

TR.4

Layer :
Dating EBA : EB 2
Lab : HD-13644
BP : 4673±59
Material : Charcoal
Quality of Material : QB
Wiggle Group : A
Literature : Korfmann, Kromer 1993: 147-169

TR.5

Layer :
Dating EBA : EB 2
Lab : HD-13643
BP : 4629±47
Material : Charcoal
Quality of Material : QB
Wiggle Group : A
Literature : Korfmann, Kromer 1993: 147-169

TR.6

Layer : C3, 186
Dating EBA : EB 1
Lab : HD-13291
BP : 4620±170
Material : Charcoal
Quality of Material : QB
Wiggle Group : A-(B)
Literature : Korfmann, Kromer 1993: 147-169

TR.7

Layer :
Dating EBA : Troia 1
Lab : HD-14222
BP : 4568±47
Material : Charcoal
Quality of Material : QB
Wiggle Group : A-(B)
Literature : Korfmann, Kromer 1993: 147-169

TR.8

Layer : C3, 129
Dating EBA : EB 1
Lab : HD-13295
BP : 4463±43
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Korfmann, Kromer 1993: 147-169

TR.9

Layer :
Dating EBA : EB 1
Lab : HD-Messungen
BP : 4363±21
Material : Charcoal
Quality of Material : QB
Wiggle Group : B
Literature : Korfmann, Kromer 1993: 147-169

TR.10

Layer : D4, 38
Dating EBA : EB 1
Lab : HD-11935
BP : 4316±34
Material : Sediment
Quality of Material : QB
Wiggle Group : C-(B)
Literature : Korfmann, Kromer 1993: 147-169

TR.11

Layer : D4, 46
Dating EBA : EB 1
Lab : HD-11945
BP : 4315±84
Material : Sediment
Quality of Material : QB
Wiggle Group : C-(B)
Literature : Korfmann, Kromer 1993: 147-169

TR.12

Layer : D4, 35
Dating EBA : EB 1
Lab : HD-11917
BP : 4299±42
Material : Sediment
Quality of Material : QB
Wiggle Group : C-(B)
Literature : Korfmann, Kromer 1993: 147-169

TR.13

Layer : D4, 129
Dating EBA : EB 1
Lab : HD-12060
BP : 4289±65
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(B/D)
Literature : Korfmann, Kromer 1993: 147-169

TR.14

Layer : C3, 223
Dating EBA : EB 1
Lab : HD-13619
BP : 4288±37
Material : Charcoal
Quality of Material : QB
Wiggle Group : C-(B)
Literature : Korfmann, Kromer 1993: 147-169

TR.15

Layer : D5, 457
Dating EBA : Troia 1
Lab : HD-14223
BP : 4271±45
Material : gröbere stückeCharcoal
Quality of Material : QA
Wiggle Group : C
Literature : Korfmann, Kromer 1993: 147-169

TR.16

Layer : E 4-5, 580
Dating EBA : EB 3
Lab : HD-14573
BP : 4266±57
Material : Balken Charcoal
Quality of Material : QB
Wiggle Group : C-(B/D)
Literature : Korfmann, Kromer 1993: 147-169

TR.17

Layer :	D4, 50
Dating EBA :	EB 1
Lab :	HD-11944
BP :	4238±37
Material :	Sediment
Quality of Material :	QB
Wiggle Group :	C-(D)
Literature :	Korfmann, Kromer 1993: 147-169

TR.18

Layer :	D2, 82
Dating EBA :	EB 1
Lab :	HD-13633
BP :	4228±45
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	C-(D)
Literature :	Korfmann, Kromer 1993: 147-169

TR.19

Layer :	D3, 43
Dating EBA :	EB 1
Lab :	HD-12058
BP :	4215±84
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Korfmann, Kromer 1993: 147-169

TR.20

Layer :	D3, 138
Dating EBA :	EB 1
Lab :	HD-13852
BP :	4208±68
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D-(C)
Literature :	Korfmann, Kromer 1993: 147-169

TR.21

Layer :	D4, 379
Dating EBA :	EB 1
Lab :	HD-13929
BP :	4185±31
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 147-169

TR.22

Layer :	C3, 201
Dating EBA :	EB 1
Lab :	HD-13751
BP :	4182±32
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 147-169

TR.23

Layer :	D4, 136
Dating EBA :	EB 1
Lab :	HD-12061
BP :	4177±41
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 147-169

TR.24

Layer :	D4, 14
Dating EBA :	EB 1
Lab :	HD-11906
BP :	4168±52
Material :	Sediment
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 147-169

TR.25

Layer :	E 4-5, 393
Dating EBA :	EB 3
Lab :	HD-14008
BP :	4166±37
Material :	Balken Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 147-169

TR.26

Layer :	D4, 118
Dating EBA :	EB 1
Lab :	HD-12059
BP :	4156±59
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	D
Literature :	Korfmann, Kromer 1993: 147-169

TR.27

Layer : C3, 164
Dating EBA : EB 1
Lab : HD-13384
BP : 4110±44
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Korfmann, Kromer 1993: 147-169

TR.28

Layer : C3, 223
Dating EBA : EB 1
Lab : HD-13618
BP : 4108±38
Material : Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Korfmann, Kromer 1993: 147-169

TR.29

Layer : E 4-5, 551
Dating EBA : EB 3
Lab : HD-14561
BP : 4100±33
Material : Balken Charcoal
Quality of Material : QB
Wiggle Group : D
Literature : Korfmann, Kromer 1993: 147-169

TR.30

Layer : D3, 167
Dating EBA : EB 1
Lab : HD-13851
BP : 4060±50
Material : Charcoal
Quality of Material : QB
Wiggle Group : D-(E)
Literature : Korfmann, Kromer 1993: 147-169

TR.31

Layer : D3, 190
Dating EBA : EB 2
Lab : HD-13850
BP : 4050±40
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(D)
Literature : Korfmann, Kromer 1993: 147-169

TR.32

Layer : D3, 105
Dating EBA : EB 1
Lab : HD-13801
BP : 4038±59
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(D)
Literature : Korfmann, Kromer 1993: 147-169

TR.33

Layer : D3, 105
Dating EBA : EB 1
Lab : HD-13848
BP : 4026±40
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(D)
Literature : Korfmann, Kromer 1993: 147-169

TR.34

Layer : D2, 236
Dating EBA : EB 2
Lab : HD-13812
BP : 4022±31
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(D)
Literature : Korfmann, Kromer 1993: 147-169

TR.35

Layer : E 4-5, 17-20
Dating EBA : EB 3
Lab : HD-12099
BP : 3993±90
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(D/F)
Literature : Korfmann, Kromer 1993: 147-169

TR.36

Layer : E 4-5, 584
Dating EBA : EB 3
Lab : HD-14572
BP : 3988±32
Material : Charcoal
Quality of Material : QB
Wiggle Group : E
Literature : Korfmann, Kromer 1993: 147-169

TR.37

Layer : D2, 196
Dating EBA : EB 2
Lab : HD-13862
BP : 3986±38
Material : Charcoal
Quality of Material : QB
Wiggle Group : E
Literature : Korfmann, Kromer 1993: 147-169

TR.38

Layer : E 4-5, 307
Dating EBA : EBA (Troia II)
Lab : HD-13930
BP : 3974±43
Material : Rundholz Charcoal
Quality of Material : QA
Wiggle Group : E-(F)
Literature : Korfmann, Kromer 1993: 147-169

TR.39

Layer : D2, 275
Dating EBA : EB 2
Lab : HD-13813
BP : 3953±49
Material : Charcoal
Quality of Material : QB
Wiggle Group : E-(F)
Literature : Korfmann, Kromer 1993: 147-169

TR.40

Layer : E 4-5, 68 (1-4)
Dating EBA : EB 3
Lab : HD-12126
BP : 3917±38
Material : Charcoal
Quality of Material : QB
Wiggle Group : F-(E)
Literature : Korfmann, Kromer 1993: 147-169

TR.41

Layer :
Dating EBA : EB 3 (Troia II)
Lab : Bln-1106
BP : 3900±90
Material : Seed
Quality of Material : QA
Wiggle Group : F-(E)
Literature : Korfmann, Kromer 1993: 147-169

TR.42

Layer : E 4-5, 71 (1+2)
Dating EBA : EB 3
Lab : HD-12127
BP : 3899±42
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.43

Layer : E 4-5, 112
Dating EBA : EB 3
Lab : HD-15268
BP : 3892±37
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.44

Layer : D7, 146
Dating EBA : EB 3
Lab : HD-14022
BP : 3890±33
Material : Pfosten Charcoal
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.45

Layer :
Dating EBA : EB 3
Lab : Bln-1239
BP : 3845±70
Material : Holz von Abies (Tanne)
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.46

Layer : E 4-5, 31(1+2)
Dating EBA : EB 3
Lab : HD-12109
BP : 3838±39
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.47

Layer : D7, 33
Dating EBA : EB 3
Lab : HD-13823
BP : 3829±33
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.48

Layer : E 4-5, 67(1-3)
Dating EBA : EB 3
Lab : HD-12120
BP : 3815±35
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.49

Layer :
Dating EBA : EB 3
Lab : Bln-1129
BP : 3800±60
Material : Erbsen aus Troja Ig
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.50

Layer : E 4-5, 93 (1-3)
Dating EBA : EB 3
Lab : HD-12137
BP : 3796±41
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.51

Layer : E 4-5, 92 (1+2)
Dating EBA : EB 3
Lab : HD-12136
BP : 3795±26
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.52

Layer :	E 4-5, 112
Dating EBA :	EB 3
Lab :	HD-15266
BP :	3792±31
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Korfmann, Kromer 1993: 147-169

TR.53

Layer :	E 4-5, 170
Dating EBA :	EB 3
Lab :	HD-15408
BP :	3790±35
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Korfmann, Kromer 1993: 147-169

TR.54

Layer :	D4, 215
Dating EBA :	EB 1
Lab :	HD-13931
BP :	3786±55
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Korfmann, Kromer 1993: 147-169

TR.55

Layer :	
Dating EBA :	EB 3 (Troia II)
Lab :	Bln-1310
BP :	3760±60
Material :	Einkorn, Pium
Quality of Material :	QA
Wiggle Group :	F
Literature :	Korfmann, Kromer 1993: 147-169

TR.56

Layer :	E 4-5, 162
Dating EBA :	EB 3
Lab :	HD-15407
BP :	3755±40
Material :	Charcoal
Quality of Material :	QB
Wiggle Group :	F
Literature :	Korfmann, Kromer 1993: 147-169

TR.57

Layer : E 4-5, 178
Dating EBA : EB 3
Lab : HD-15267
BP : 3751±25
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.58

Layer :
Dating EBA : EB 3
Lab : KN-131
BP : 3750±95
Material : Feine Verteilung Charcoal
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.59

Layer :
Dating EBA : EB 3
Lab : Bln-1132
BP : 3735±60
Material :
Quality of Material :
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.60

Layer :
Dating EBA : EB 3 (Troia II)
Lab : Bln-1237
BP : 3730±100
Material : Peas
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.61

Layer :
Dating EBA : EB 3 (Troia II)
Lab : Bln-1238
BP : 3710±80
Material : Einkorn

Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.62

Layer :
Dating EBA : EB 3 (Troia II)
Lab : Bln-1236
BP : 3700±100
Material : Einkorn, Pisum
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.63

Layer :
Dating EBA : EB 3 (Troia II)
Lab : Bln-1235
BP : 3665±60
Material : Einkorn, Pisum
Quality of Material : QA
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.64

Layer : E 4-5, 140
Dating EBA : EB 3
Lab : HD-15406
BP : 3645±60
Material : Charcoal
Quality of Material : QB
Wiggle Group : F
Literature : Korfmann, Kromer 1993: 147-169

TR.65

Layer :
Dating EBA : EB 3 (Troia II)
Lab : Bln-1234
BP : 3635±60
Material : Pisum sativum
Quality of Material : QA
Wiggle Group : F-(G)
Literature : Korfmann, Kromer 1993: 147-169

3. APPENDİX C: LIST(S)

1.1. LIST OF SUB-PHASES

1.1.1 *EB1*

AL.2	ARS.38	DEM.6	DEM.48	KAR.2
ARS.1	ARS.39	DEM.7	DEM.49	KAR.3
ARS.2	ARS.40	DEM.8	DEM.50	KAR.4
ARS.3	ARS.41	DEM.9	DEM.51	KAR.5
ARS.4	ARS.42	DEM.11	DEM.52	KAR.6
ARS.5	ARS.43	DEM.12	DEM.53	KAR.7
ARS.6	ARS.47	DEM.13	DEM.54	KEN.1
ARS.7	ARS.50	DEM.15	DEM.55	KOR.1
ARS.8	AS181.1	DEM.16	DEM.56	KUM.1
ARS.9	AS181.2	DEM.17	DEM.57	KUM.2
ARS.10	AS181.3	DEM.18	DEM.58	KUM.3
ARS.11	BEŞ.1	DEM.19	DEM.59	KUM.4
ARS.12	BEŞ.2	DEM.21	DEM.60	KUM.5
ARS.13	BEŞ.3	DEM.22	DEM.61	KUM.6
ARS.14	BEŞ.4	DEM.24	DEM.62	LIM.1
ARS.15	BEŞ.5	DEM.25	DEM.63	NT.1
ARS.16	BEŞ.6	DEM.26	DEM.65	NT.2
ARS.17	BEŞ.7	DEM.27	DEM.66	NT.3
ARS.18	BEŞ.8	DEM.28	HAC.1	NT.4
ARS.19	BEŞ.9	DEM.29	HAC.2	PUL.1
ARS.20	BEŞ.10	DEM.30	HAC.3	PUL.2
ARS.21	BEŞ.11	DEM.31	HAC.4	PUL.3
ARS.22	BEŞ.12	DEM.32	HAC.5	PUL.4
ARS.23	BEŞ.13	DEM.33	HAC.6	PUL.5
ARS.24	BEŞ.14	DEM.34	HAC.7	SOS.1
ARS.25	BEŞ.15	DEM.35	HAC.8	SOS.10
ARS.26	BEŞ.16	DEM.36	HAC.9	SOS.3
ARS.27	CAD.1	DEM.37	HAC.10	TIT.1
ARS.28	CAD.2	DEM.38	HAC.11	TIT.2
ARS.29	CUD.1	DEM.40	HAS.1	TIT.3
ARS.30	CUD.2	DEM.41	HAS.2	TIT.7
ARS.31	CUD.3	DEM.42	HAS.3	TİL.1
ARS.32	DEM.1	DEM.43	HAS.4	TİL.2
ARS.33	DEM.2	DEM.44	HAS.5	TİL.5
ARS.34	DEM.3	DEM.45	IKIZ.1	TİLB.1
ARS.36	DEM.4	DEM.46	IKIZ.2	TR.1
ARS.37	DEM.5	DEM.47	KAR.1	TR.6

TR.8	TR.9	TR.10	TR.11	TR.12
TR.13	TR.20	TR.23	TR.27	TR.32
TR.14	TR.21	TR.24	TR.28	TR.33
TR.17	TR.22	TR.26	TR.30	TR.54
TR.19				

1.1.2 *EB2*

AS180.2	GOL.6	KOR.12	SOS.2	TİLB.3
DEM.10	GOL.7	KOR.2	SOS.4	TR.3
DEM.14	GOL.8	KOR.3	SOS.5	TR.4
DEM.20	GOL.9	KOR.4	SOS.6	TR.6
DEM.23	GOL.10	KOR.5	SOS.8	TR.18
DEM.39	GOL.11	KOR.6	SOS.9	TR.31
DEM.64	GOL.12	KOR.7	SOS.11	TR.34
GOL.1	GOL.13	KOR.9	TEP.1	TR.37
GOL.2	GOL.14	NT.5	TIT.5	TR.39
GOL.3	GOL.15	NT.6	TIT.6	
GOL.4	GR.1	NT.7	TIT.8	
GOL.5	KOR.10	NT.13	TİLB.2	

1.1.3 *EB3*

AL.1	ARS.53	KOR.11	NT.26	TIT.15
AL.3	ARS.54	KOR.8	NT.27	TİL.3
APH.1	ARS.55	MOL.1	NT.28	TİL.4
APH.2	ARS.56	NT.8	NT.29	TR.16
APH.3	ARS.57	NT.9	NT.30	TR.25
APH.4	ARS.58	NT.10	NT.31	TR.29
APH.5	ARS.59	NT.11	NT.32	TR.35
APH.6	ARS.60	NT.12	NT.33	TR.36
APH.7	AS180.1	NT.14	NT.34	TR.40
APH.8	CAD.3	NT.15	SOS.7	TR.41
APH.9	CAD.4	NT.16	SOS.12	TR.42
APH.10	CAD.5	NT.17	SOS.13	TR.43
ARS.35	GED.1	NT.18	TEP.2	TR.44
ARS.44	GED.2	NT.19	TIT.4	TR.45
ARS.45	IKI.1	NT.20	TIT.9	TR.46
ARS.46	IKI.2	NT.21	TIT.10	TR.47
ARS.48	IKI.3	NT.22	TIT.11	TR.48
ARS.49	IKI.4	NT.23	TIT.12	TR.49
ARS.51	IKI.5	NT.24	TIT.13	TR.50
ARS.52	KES.5	NT.25	TIT.14	TR.51

TR.52	TR.56	TR.59	TR.62	TR.65
TR.53	TR.57	TR.60	TR.63	
TR.55	TR.58	TR.61	TR.64	

1.1.4 *Unknown*

BU.1	KES.1	KES.3	TR.15	TR.38
BU.2	KES.2	KES.4	TR.2	TR.7

1.2. C WIGGLE LIST

Table 50. List Of C Wiggle Group Material

Site	Region	Lab	BP	Quality of Material	No
Alaca Höyük	CA	P-1434	4285±62	QB	AL.2
Arslantepe	EA	Rome-1015	4310±50	QB	ARS.24
Arslantepe	EA	Rome-1486α	4300±80		ARS.25
Arslantepe	EA	Rome-1482	4290±80		ARS.26
Arslantepe	EA	Rome-1468	4270±80		ARS.27
Arslantepe	EA	Rome-1014	4270±50	QB	ARS.28
Arslantepe	EA	Rome-1464α	4240±80		ARS.29
Arslantepe	EA	Rome-1494	4240±80		ARS.30
Arslantepe	EA	Rome-1489	4230±80		ARS.31
Beşik-Yassıtepe	AE	HD-8441	4280±60	QB	BEŞ.5
Beşik-Yassıtepe	AE	HD-9957	4270±35	QB	BEŞ.6
Beşik-Yassıtepe	AE	Bln-2751	4260±80	QB	BEŞ.7
Beşik-Yassıtepe	AE	HD-9961	4255±35	QB	BEŞ.8
Beşik-Yassıtepe	AE	HD-10798	4230±40	QB	BEŞ.9
Büyüktepe Höyük	EA	Beta-55338	4290±100	QA	BU.1
Demircihöyük	AE	KN-2368	4310±50	QB	DEM.4
Demircihöyük	AE	Bln-2022 (I)	4260±45	QB	DEM.5
Demircihöyük	AE	Bln-2437 (III)	4250±60	QA	DEM.6
Demircihöyük	AE	LJ-5237	4250±40		DEM.7
Demircihöyük	AE	KN-2664	4230±65	QB	DEM.8
Demircihöyük	AE	LJ-5238	4230±60		DEM.9
Hacılar Tepe	MA	GrN-19787	4265±35	QB	HAC.2
Hacılar Tepe	MA	GrN-22039	4250±70	QB	HAC.3
İkiztepe I	BS	METU-7 İkiztepe no:15	4267±104	QB	IKI.3
İkiztepe II	BS	Hür-54 İkiztepe no:7	4270±93	QA	IKIZ.1
Karataş-Elmalı (Semahöyük)	AE	P-920	4274±62	QB	KAR.1
Karataş-Elmalı (Semahöyük)	AE	P-923	4228±62	QB	KAR.2
Norşuntepe	EA	LJ-5254	4280±120		NT.3
Norşuntepe	EA	LJ-5234	4280±120		NT.4
Pulur Sakyol	EA	M-2170	4300±180		PUL.3
Sos Höyük	EA	Beta-107918	4240±40	QB	SOS.2
Sos Höyük	EA	Beta-107908	4230±120	QB	SOS.3

Site	Region	Lab	BP	Quality of Material	No
Tell El Cudeyde (AS 176)	MED	Beta-88281	4270±70	QB	CUD.3
Tilbeş Höyük	SE	AA-35824	4320±50		TİL.3
Tilbeşar	SE	Beta-	4300±100		TİLB.2
Titriş Höyük	SE	Beta-146096	4300±100		TIT.3
Titriş Höyük	SE	Beta-80446	4260±170		TIT.4
Troia	AE	HD-11935	4316±34	QB	TR.10
Troia	AE	HD-11945	4315±84	QB	TR.11
Troia	AE	HD-11917	4299±42	QB	TR.12
Troia	AE	HD-12060	4289±65	QB	TR.13
Troia	AE	HD-13619	4288±37	QB	TR.14
Troia	AE	HD-14223	4271±45	QA	TR.15
Troia	AE	HD-14573	4266±57	QB	TR.16
Troia	AE	HD-11944	4238±37	QB	TR.17
Troia	AE	HD-13633	4228±45	QB	TR.18

1.3. QA CATALOG LİST

Table 51. QA Material's Catalog List

Site	Region	EB Group	Material	No
Alaca Höyük	CA	EB 3	Charred Cereal Grain	AL.1
		EB 3	Charred Cereal Grain	AL.3
Aphrodisias	AE	EB 3	Charred Seeds	APH.6
		EB 3	Charred Seeds	APH.9
Arslantepe	EA	EB 1	Charred Grain	ARS.10
		EB 1	Charred Grain	ARS.40
		EB 3	Charred Grain	ARS.54
Büyüktepe Höyük	EA	Unknown	Bone	BU.1
		Unknown	Bone	BU.2
Demircihöyük	AE	EB 1	Bone	DEM.1
		EB 1	Bone	DEM.3
		EB 1	Pea	DEM.6
		EB 1	einjahrige Weidenzweige, verk	DEM.17
		EB 1	Cereal	DEM.21
		EB 1	Einkorn	DEM.27
		EB 1	Lentil.	DEM.29
		EB 1	Barley	DEM.33
		EB 1	Lentil	DEM.34
		EB 1	Cereal	DEM.41
		EB 1	Getreide, Lentil, Pea	DEM.54
Hacılar Tepe	MA	EB 1	Charred Seeds	HAC.9
Hassek Höyük	SE	EB 1	Seed	HAS.5
İkiztepe I	BS	EB 3	Charred Cereal Grain	IKI.4
		EB 3	Charred Cereal Grain	IKI.5
İkiztepe II	BS	EB 1	Charred Cereal Grain	IKIZ.1
Kenantepe	SE	EB 1	Bone (collagen extraction)	KEN.1
Korucu Tepe	EA	EB 2	Charred Wheat	KOR.9
		EB 2	Charred Wheat	KOR.10
Molla Kendi	SE	EB 3	Charred Plant Fragments	MOL.1
Sos Höyük	EA	EB 3	Bone	SOS.12
		EB 3	Bone	SOS.13
Troia	AE	Unknown	gröbere stücke Charcoal	TR.15
		Unknown	Rundholz Charcoal	TR.38
		EB 3	Seed	TR.41
		EB 3	Pfosten Charcoal	TR.44
		EB 3	Peas	TR.49
		EB 3	Einkorn, Pisum Sativum	TR.55

Site	Region	EB Group	Material	No
		EB 3	Peas	TR.59
		EB 3	Peas	TR.60
		EB 3	Einkorn	TR.61
		EB 3	Einkorn, Pisum Sativum	TR.62
		EB 3	Einkorn, Pisum Sativum, Vicia Faba, Ervum Ervilia	TR.63
		EB 3	Pisum Sativum, Peas	TR.65

1.4. CATALOG IDS- WHICH HAVE DIFFERENT WIGGLE GROUPINGS

Table 52. List Of Samples – Which Have Three Different Wiggle Groupings

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Alaca Höyük	CA	C	B	D	P-1434	4285±62	4347	4223	QB	AL.2
Arslantepe	EA	C	B	D	Rome-1486α	4300±80	4380	4220		ARS.25
Arslantepe	EA	C	B	D	Rome-1482	4290±80	4370	4210		ARS.26
Arslantepe	EA	C	B	D	Rome-1468	4270±80	4350	4190		ARS.27
Arslantepe	EA	E	D	F	Rome-155	4000±80	4080	3920	QB	ARS.44
Arslantepe	EA	E	D	F	Rome-153	4000±75	4075	3925	QB	ARS.45
Arslantepe	EA	E	D	F	Rome-159	3990±70	4060	3920	QB	ARS.46
Beşik-Yassıtepe	AE	C	B	D	HD-8441	4280±60	4340	4220	QB	BEŞ.5
Beşik-Yassıtepe	AE	C	B	D	Bln-2751	4260±80	4340	4180	QB	BEŞ.7
Büyüktepe Höyük	EA	C	B	D	Beta-55338	4290±100	4390	4190	QA	BU.1
Büyüktepe Höyük	EA	E	D	F	Beta-55341	3990±70	4060	3920	QA	BU.2
Demircihöyük	AE	E	D	F	Bln-2476	4000±70	4070	3930		DEM.59
İkiztepe I	BS	C	B	D	METU-7 İkiztepe no:15	4267±104	4371	4163	QB	IKI.3
İkiztepe II	BS	C	B	D	Hür-54 İkiztepe no:7	4270±93	4363	4177	QA	IKIZ.1
İkiztepe II	BS	E	D	F	METU-9 İkiztepe no:22	4028±95	4123	3933	QB	IKIZ.2
Karataş-Elmalı (Semahöyük)	AE	C	B	D	P-920	4274±62	4336	4212	QB	KAR.1
Kestel	CA	E	D	F	AA-3374	4020±80	4100	3940		KES.2
Kestel	CA	E	D	F	I-15, 227	3980±100	4080	3880		KES.3

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Korucu Tepe	EA	E	D	F	P-1628	3989±64	4053	3925	QA	KOR.9
Norşuntepe	EA	C	B	D	LJ-5254	4280±120	4400	4160		NT.3
Norşuntepe	EA	C	B	D	LJ-5234	4280±120	4400	4160		NT.4
Norşuntepe	EA	E	D	F	Bln-2364	3950±140	4090	3810		NT.10
Pulur Sakyol	EA	B	A	D	M-2172	4420±200	4620	4220		PUL.2
Pulur Sakyol	EA	C	B	D	M-2170	4300±180	4480	4120		PUL.3
Pulur Sakyol	EA	D	C	F	M-2173	4100±180	4280	3920		PUL.4
Pulur Sakyol	EA	E	D	F	M-2171	3990±180	4170	3810		PUL.5
Sos Höyük	EA	C	B	D	Beta-107908	4230±120	4350	4110	QB	SOS.3
Tell El Cudeyde (AS 176)	MED	C	B	D	Beta-88281	4270±70	4340	4200	QB	CUD.3
Tilbeşar	SE	C	B	D	Beta-	4300±100	4400	4200		TİLB.2
Tilbeşar	SE	D	B	E	Beta-	4160±170	4330	3990		TİLB.3
Titriş Höyük	SE	C	B	D	Beta-146096	4300±100	4400	4200		TIT.3
Titriş Höyük	SE	C	B	D	Beta-80446	4260±170	4430	4090		TIT.4
Titriş Höyük	SE	E	D	F	Beta-146100	4050±130	4180	3920		TIT.7
Troia	AE	C	B	D	HD-12060	4289±65	4354	4224	QB	TR.13
Troia	AE	C	B	D	HD-14573	4266±57	4323	4209	QB	TR.16
Troia	AE	E	D	F	HD-12099	3993±90	4083	3903	QB	TR.35

Table 1 List Of Samples – Which Have Two Different Wiggle Groupings

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Alaca Höyük	CA	B	A	B	P-825	4540±56	4596	4484	QA	AL.1
Alaca Höyük	CA	D	C	D	P-826	4200±58	4258	4142	QA	AL.3
Aphrodisias	AE	F	E	F	P-1654	3943±86	4029	3857	QB	APH.2
Aphrodisias	AE	G	F	G	P-1649	3561±55	3616	3506	QA	APH.9
Aphrodisias	AE	G	F	G	P-1648	3543±61	3604	3482	QB	APH.10
Aphrodisias	AE	E	E	F	P-1652	3987±61	4048	3926	QB	APH.1
Aphrodisias	AE	F	F	G	P-1653	3624±55	3679	3569	QB	APH.8
Arslantepe	EA	B	A	B	Rome-754	4530±65	4595	4465		ARS.8
Arslantepe	EA	C	B	C	Rome-1015	4310±50	4360	4260	QB	ARS.24
Arslantepe	EA	D	B	D	Rome-1469	4220±120	4340	4100		ARS.32
Arslantepe	EA	D	C	D	Rome-750	4195±60	4255	4135		ARS.33
Arslantepe	EA	D	C	D	Rome-1454	4190±60	4250	4130		ARS.34
Arslantepe	EA	E	D	E	Rome-1493α	4030±80	4110	3950		ARS.43
Arslantepe	EA	F	E	F	Rome-162	3940±70	4010	3870	QB	ARS.51
Arslantepe	EA	F	E	F	Rome-161	3930±70	4000	3860	QB	ARS.52
Arslantepe	EA	F	E	F	Rome-1012α	3840±110	3950	3730	QB	ARS.53
Arslantepe	EA	G	F	G	Rome-1011	3530±110	3640	3420		ARS.60
Arslantepe	EA	A	A	B	Rome-752	4630±65	4695	4565		ARS.3
Arslantepe	EA	A	A	B	Rome-746	4615±65	4680	4550		ARS.4
Arslantepe	EA	A	A	B	Rome-1455	4600±70	4670	4530		ARS.5
Arslantepe	EA	A	A	B	Rome-747	4580±65	4645	4515		ARS.6
Arslantepe	EA	A	A	B	Rome-1019α	4570±60	4630	4510	QB	ARS.7
Arslantepe	EA	B	B	C	Rome-1474	4380±80	4460	4300		ARS.12
Arslantepe	EA	B	B	C	Rome-1488	4380±80	4460	4300		ARS.13

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Arslantepe	EA	B	B	C	Rome-1564	4370±80	4450	4290		ARS.14
Arslantepe	EA	B	B	C	Rome-1482α	4360±80	4440	4280		ARS.15
Arslantepe	EA	B	B	C	Rome-1562	4360±80	4440	4280		ARS.16
Arslantepe	EA	B	B	C	Rome-1009	4360±50	4410	4310	QB	ARS.17
Arslantepe	EA	B	B	C	Rome-1013	4360±50	4410	4310	QB	ARS.18
Arslantepe	EA	B	B	C	Rome-1017	4360±50	4410	4310	QB	ARS.19
Arslantepe	EA	B	B	C	Rome-173	4350±75	4425	4275	QB	ARS.20
Arslantepe	EA	B	B	C	Rome-1018	4350±50	4400	4300	QB	ARS.21
Arslantepe	EA	B	B	C	Rome-1467α	4340±80	4420	4260		ARS.22
Arslantepe	EA	B	B	C	Rome-1491	4330±80	4410	4250		ARS.23
Arslantepe	EA	C	C	D	Rome-1014	4270±50	4320	4220	QB	ARS.28
Arslantepe	EA	C	C	D	Rome-1464α	4240±80	4320	4160		ARS.29
Arslantepe	EA	C	C	D	Rome-1494	4240±80	4320	4160		ARS.30
Arslantepe	EA	C	C	D	Rome-1489	4230±80	4310	4150		ARS.31
Arslantepe	EA	D	D	E	Rome-160	4120±80	4200	4040	QB	ARS.35
Arslantepe	EA	D	D	E	Rome-168	4100±75	4175	4025	QB	ARS.36
Arslantepe	EA	D	D	E	Rome-1493	4090±80	4170	4010		ARS.37
Arslantepe	EA	D	D	E	Rome-171	4090±75	4165	4015	QB	ARS.38
Arslantepe	EA	D	D	E	Rome-167	4080±75	4155	4005	QB	ARS.39
Arslantepe	EA	D	D	E	Rome-172	4080±75	4155	4005	QA	ARS.40
Arslantepe	EA	D	D	E	Rome-170	4070±70	4140	4000	QB	ARS.41
Arslantepe	EA	D	D	E	Rome-163	4060±70	4130	3990	QB	ARS.42
Arslantepe	EA	E	E	F	Rome-170/A	3960±70	4030	3890	QB	ARS.47
Arslantepe	EA	E	E	F	Rome-156	3950±80	4030	3870	QB	ARS.48
Arslantepe	EA	E	E	F	Rome-158	3950±80	4030	3870	QB	ARS.49

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Arslantepe	EA	E	E	F	Rome-169	3950±70	4020	3880	QB	ARS.50
Beşik-Yassıtepe	AE	B	A	B	HD-10828	4520±65	4585	4455	QB	BEŞ.1
Beşik-Yassıtepe	AE	D	C	D	HD-8442	4195±55	4250	4140	QB	BEŞ.10
Beşik-Yassıtepe	AE	D	C	D	HD-10339	4180±60	4240	4120	QB	BEŞ.12
Beşik-Yassıtepe	AE	B	B	C	HD-8438	4375±65	4440	4310	QB	BEŞ.3
Beşik-Yassıtepe	AE	B	B	C	HD-8443	4330±60	4390	4270	QB	BEŞ.4
Beşik-Yassıtepe	AE	C	C	D	HD-9961	4255±35	4290	4220	QB	BEŞ.8
Beşik-Yassıtepe	AE	C	C	D	HD-10798	4230±40	4270	4190	QB	BEŞ.9
Çadır Höyük	CA	B	B	C	Beta-134070	4380±130	4510	4250		CAD.2
Çadır Höyük	CA	D	D	E	Beta-146705	4080±80	4160	4000		CAD.3
Demircihöyük	AE	C	B	C	KN-2368	4310±50	4360	4260	QB	DEM.4
Demircihöyük	AE	D	C	D	KN-2423 B	4220±50	4270	4170	QB	DEM.10
Demircihöyük	AE	D	C	D	Bln-2024 (I)	4200±45	4245	4155	QB	DEM.11
Demircihöyük	AE	D	C	D	LJ-5235	4190±80	4270	4110		DEM.12
Demircihöyük	AE	D	C	D	KN-2369	4180±60	4240	4120	QB	DEM.13
Demircihöyük	AE	D	C	D	Bln-2044 (I)	4180±55	4235	4125		DEM.15
Demircihöyük	AE	D	C	D	Bln-2020 (I)	4180±55	4235	4125	QB	DEM.14
Demircihöyük	AE	D	C	D	Bln-2209 (II)	4180±50	4230	4130	QB	DEM.16
Demircihöyük	AE	D	C	D	Bln-2435 (III)	4180±50	4230	4130	QA	DEM.17
Demircihöyük	AE	D	C	D	KN-2421	4180±50	4230	4130	QB	DEM.18
Demircihöyük	AE	D	C	D	Bln-2440 (III)	4160±70	4230	4090	QA	DEM.21
Demircihöyük	AE	E	D	E	Bln-2224 A (II)	4050±50	4100	4000		DEM.48
Demircihöyük	AE	E	D	E	Bln-2207 (II)	4045±50	4095	3995	QB	DEM.49
Demircihöyük	AE	E	D	E	Bln-2205 (II)	4045±45	4090	4000	QB	DEM.50
Demircihöyük	AE	E	D	E	Bln-2212 (II)	4040±65	4105	3975	QB	DEM.51

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Demircihöyük	AE	E	D	E	Bln-2228 (II)	4040±50	4090	3990		DEM.52
Demircihöyük	AE	E	D	E	Bln-2393 (III)	4040±45	4085	3995		DEM.53
Demircihöyük	AE	E	D	E	Bln-2456 (III)	4035±60	4095	3975	QA	DEM.54
Demircihöyük	AE	E	D	E	Bln-2231 (II)	4025±45	4070	3980		DEM.55
Demircihöyük	AE	E	D	E	Bln-2406 (III)	4020±55	4075	3965		DEM.56
Demircihöyük	AE	E	D	E	Bln-2404 (III)	4020±45	4065	3975		DEM.57
Demircihöyük	AE	E	D	E	Bln-2311 (II)	4000±55	4055	3945		DEM.60
Demircihöyük	AE	F	E	F	LJ-5236	3910±90	4000	3820		DEM.66
Demircihöyük	AE	B	B	C	KN-2670	4380±130	4510	4250	QA	DEM.3
Demircihöyük	AE	C	C	D	Bln-2022 (I)	4260±45	4305	4215	QB	DEM.5
Demircihöyük	AE	C	C	D	Bln-2437 (III)	4250±60	4310	4190	QA	DEM.6
Demircihöyük	AE	C	C	D	LJ-5237	4250±40	4290	4210		DEM.7
Demircihöyük	AE	C	C	D	KN-2664	4230±65	4295	4165	QB	DEM.8
Demircihöyük	AE	C	C	D	LJ-5238	4230±60	4290	4170		DEM.9
Demircihöyük	AE	D	D	E	Bln-2313 (II)	4100±60	4160	4040		DEM.31
Demircihöyük	AE	D	D	E	Bln-2405 (III)	4100±55	4155	4045		DEM.32
Demircihöyük	AE	D	D	E	Bln-2438 (III)	4095±60	4155	4035	QA	DEM.33
Demircihöyük	AE	D	D	E	Bln-2436 (III)	4095±50	4145	4045	QA	DEM.34
Demircihöyük	AE	D	D	E	Bln-2214 (II)	4090±50	4140	4040	QB	DEM.35
Demircihöyük	AE	D	D	E	Bln-2228 A (II)	4090±50	4140	4040		DEM.36
Demircihöyük	AE	D	D	E	Bln-2473 (III)	4088±65	4153	4023		DEM.37
Demircihöyük	AE	D	D	E	Bln-2206 (II)	4085±50	4135	4035	QB	DEM.38
Demircihöyük	AE	D	D	E	Bln-2397 (III)	4080±75	4155	4005		DEM.39
Demircihöyük	AE	D	D	E	Bln-2419 (III)	4080±50	4130	4030		DEM.40
Demircihöyük	AE	D	D	E	Bln-2458 (III)	4080±50	4130	4030	QA	DEM.41

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Demircihöyük	AE	D	D	E	Bln-2045 (I)	4075±45	4120	4030		DEM.42
Demircihöyük	AE	D	D	E	Bln-2421 (III)	4070±70	4140	4000		DEM.43
Demircihöyük	AE	D	D	E	Bln-2210 (II)	4070±45	4115	4025	QB	DEM.44
Demircihöyük	AE	D	D	E	KN-2663	4060±55	4115	4005	QB	DEM.45
Demircihöyük	AE	D	D	E	Bln-2204 (II)	4060±45	4105	4015	QB	DEM.46
Demircihöyük	AE	D	D	E	Bln-2230 (II)	4060±45	4105	4015		DEM.47
Demircihöyük	AE	E	E	F	Bln-2314 (II)	3980±50	4030	3930		DEM.64
Demircihöyük	AE	E	E	F	Bln-2229 (II)	3950±80	4030	3870		DEM.65
Göltepe	CA	E	D	E	Beta-75607	4020±70	4090	3950		GOL.6
Göltepe	CA	F	E	F	Beta-104993	3940±50	3990	3890		GOL.8
Göltepe	CA	F	E	F	Beta-75605	3920±60	3980	3860		GOL.9
Göltepe	CA	F	E	F	Beta-75613	3910±90	4000	3820		GOL.10
Göltepe	CA	D	D	E	Beta-42650	4070±60	4130	4010		GOL.5
Göltepe	CA	E	E	F	Beta-75606	3980±70	4050	3910	QB	GOL.7
Gritille	SE	E	E	F	Beta-6318	3950±100	4050	3850		GR.1
Hacılar Tepe	MA	D	C	D	GrN-19789	4220±35	4255	4185	QB	HAC.4
Hacılar Tepe	MA	D	C	D	GrN-21211	4215±35	4250	4180	QB	HAC.5
Hacılar Tepe	MA	C	C	D	GrN-22039	4250±70	4320	4180	QB	HAC.3
Hassek Höyük	SE	E	D	E	Bln-2733	4030±60	4090	3970	QA	HAS.5
Hassek Höyük	SE	B	B	C	KI-2960	4390±80	4470	4310	QB	HAS.4
İkiztepe I	BS	B	A	B	Hür-103	4540±130	4670	4410		IKI.2
İkiztepe I	BS	A	A	B	Hür-105	4575±149	4724	4426		IKI.1
İkiztepe I	BS	F	F	G	METU-6 İkiztepe no:8	3694±161	3855	3533	QA	IKI.4

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
İkiztepe I	BS	F	F	G	HÜR-51 İkiztepe no:17	3603±75	3678	3528	QA	IKI.5
Karataş-Elmalı (Semahöyük)	AE	D	C	D	P-917	4221±61	4282	4160	QB	KAR.3
Karataş-Elmalı (Semahöyük)	AE	C	C	D	P-923	4228±62	4290	4166	QB	KAR.2
Karataş-Elmalı (Semahöyük)	AE	D	D	E	P-2208	4120±70	4190	4050	QB	KAR.7
Kenantepe	SE	D	C	D	Beta-156415	4210±40	4250	4170	QA	KEN.1
Kestel	CA	D	D	E	BM-2879	4090±60	4150	4030	QB	KES.1
Khirbet al-Hijar (AS 180)	MED	F	F	G	GrN-22960	3600±90	3690	3510	QB	AS180.2
Korucu Tepe	EA	D	C	D	P-1618	4224±62	4286	4162	QB	KOR.2
Korucu Tepe	EA	E	D	E	GrN-6773	4050±40	4090	4010		KOR.8
Korucu Tepe	EA	F	D	F	M-2376	3900±170	4070	3730		KOR.12
Korucu Tepe	EA	B	B	C	P-1926	4344±69	4413	4275	QB	KOR.1
Korucu Tepe	EA	D	D	E	P-1617A	4106±65	4171	4041	QB	KOR.4
Korucu Tepe	EA	D	D	E	P-1617	4084±53	4137	4031	QB	KOR.5
Korucu Tepe	EA	D	D	E	P-1617B	4074±64	4138	4010	QB	KOR.6
Korucu Tepe	EA	D	D	E	GrN-6774	4070±35	4105	4035		KOR.7
Korucu Tepe	EA	E	E	F	P-1629	3963±65	4028	3898	QA	KOR.10
Korucu Tepe	EA	E	E	F	P-1927	3951±68	4019	3883	QB	KOR.11
Kumtepe	AE	B	A	B	HD-17707	4541±55	4596	4486	QB	KUM.2
Kumtepe	AE	B	A	B	HD-16323	4529±48	4577	4481	QB	KUM.3
Kumtepe	AE	A	A	B	HD-16324	4601±44	4645	4557	QB	KUM.1
Molla Kendi	SE	E	E	F	GrN-5285	3980±70	4050	3910	QA	MOL.1

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Norşuntepe	EA	D	C	D	Bln-2218	4220±60	4280	4160		NT.5
Norşuntepe	EA	F	E	F	Bln-2628	3940±60	4000	3880		NT.12
Norşuntepe	EA	F	E	F	Bln-2627	3910±50	3960	3860		NT.13
Norşuntepe	EA	F	E	F	Hv-4105	3905±50	3955	3855		NT.14
Norşuntepe	EA	F	E	F	Hv-4104	3865±175	4040	3690		NT.17
Norşuntepe	EA	F	E	F	Bln-2367	3850±100	3950	3750		NT.19
Norşuntepe	EA	D	D	E	Bln-2626	4120±70	4190	4050		NT.7
Norşuntepe	EA	E	E	F	Bln-2360	3970±50	4020	3920		NT.8
Norşuntepe	EA	E	E	F	Hv-4107	3960±45	4005	3915		NT.9
Norşuntepe	EA	E	E	F	Bln-2362	3945±50	3995	3895		NT.11
Pulur Sakyol	EA	A	A	B	P-2040	4610±70	4680	4540	QB	PUL.1
Sos Höyük	EA	B	A	B	Beta-107909	4510-90	4600	4420	QB	SOS.1
Sos Höyük	EA	D	C	D	Beta-107919	4170±70	4240	4100	QB	SOS.4
Sos Höyük	EA	F	E	F	Beta-107915	3910±60	3970	3850	QA	SOS.13
Sos Höyük	EA	C	C	D	Beta-107918	4240±40	4280	4200	QB	SOS.2
Sos Höyük	EA	D	D	E	Beta-95220	4120±70	4190	4050	QB	SOS.8
Sos Höyük	EA	D	D	E	Beta-107917	4120±70	4190	4050	QB	SOS.9
Sos Höyük	EA	D	D	E	Beta-107911	4110±70	4180	4040	QB	SOS.10
Sos Höyük	EA	D	D	E	Beta-95223	4070±50	4120	4020	QB	SOS.11
Sos Höyük	EA	E	E	F	Beta-107920	3950±50	4000	3900	QA	SOS.12
Tepecik	EA	E	E	F	GrN-5285	3980±70	4050	3910		TEP.2
Tilbeş Höyük	SE	B	A	B	AA-35826	4540±50	4590	4490		TİL.1
Tilbeş Höyük	SE	C	B	C	AA-35824	4320±50	4370	4270		TİL.3
Tilbeş Höyük	SE	E	D	E	AA-35824	4020±45	4065	3975	QB	TİL.5
Titriş Höyük	SE	B	A	B	Beta-146099	4560±70	4630	4490		TIT.1

Site	Region	Wiggle Group	Wiggle Group+	Wiggle Group-	Lab	BP	BP+	BP-	Quality of Material	No
Titriş Höyük	SE	F	E	F	Beta-80449	3860±180	4040	3680		TIT.11
Titriş Höyük	SE	D	D	E	Beta-146097	4110±70	4180	4040		TIT.6
Titriş Höyük	SE	E	E	F	Beta-80445	3960±50	4010	3910		TIT.8
Titriş Höyük	SE	F	F	G	Beta-80447	3630±60	3690	3570		TIT.15
Troia	AE	C	B	C	HD-11935	4316±34	4350	4282	QB	TR.10
Troia	AE	C	B	C	HD-11945	4315±84	4399	4231	QB	TR.11
Troia	AE	C	B	C	HD-11917	4299±42	4341	4257	QB	TR.12
Troia	AE	C	B	C	HD-13619	4288±37	4325	4251	QB	TR.14
Troia	AE	D	C	D	HD-12058	4215±84	4299	4131	QB	TR.19
Troia	AE	D	C	D	HD-13852	4208±68	4276	4140	QB	TR.20
Troia	AE	E	D	E	HD-13850	4050±40	4090	4010	QB	TR.31
Troia	AE	E	D	E	HD-13801	4038±59	4097	3979	QB	TR.32
Troia	AE	E	D	E	HD-13848	4026±40	4066	3986	QB	TR.33
Troia	AE	E	D	E	HD-13812	4022±31	4053	3991	QB	TR.34
Troia	AE	F	E	F	HD-12126	3917±38	3955	3879	QB	TR.40
Troia	AE	F	E	F	Bln-1106	3900±90	3990	3810	QA	TR.41
Troia	AE	A	A	B	HD-13291	4620±170	4790	4450	QB	TR.6
Troia	AE	A	A	B	HD-14222	4568±47	4615	4521	QB	TR.7
Troia	AE	C	C	D	HD-11944	4238±37	4275	4201	QB	TR.17
Troia	AE	C	C	D	HD-13633	4228±45	4273	4183	QB	TR.18
Troia	AE	D	D	E	HD-13851	4060±50	4110	4010	QB	TR.30
Troia	AE	E	E	F	HD-13930	3974±43	4017	3931	QA	TR.38
Troia	AE	E	E	F	HD-13813	3953±49	4002	3904	QB	TR.39
Troia	AE	F	F	G	Bln-1234	3635±60	3695	3575	QA	TR.65