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¹⁴C Dating the Destruction Event in LH IIIc in Aigeira, Greece

Within the SCIEM 2000 Project 8 samples from the Acropolis from Aigeira were dated in the VERA AMS-lab in Vienna.¹ The results and available data of the samples are summarized in table 22. The samples were characterized by two botanists, Michaela Popovtschak for the fruits and Wolfgang Gindl for the charcoal samples from wooden material. To get an overview of the data with the radiocarbon dates at first a calibration was performed, see Fig. 1. Fig. 2 presents the result of the group calibration. The time span covered by the samples is within the 1-σ probability from 1300 to 1050 BC.

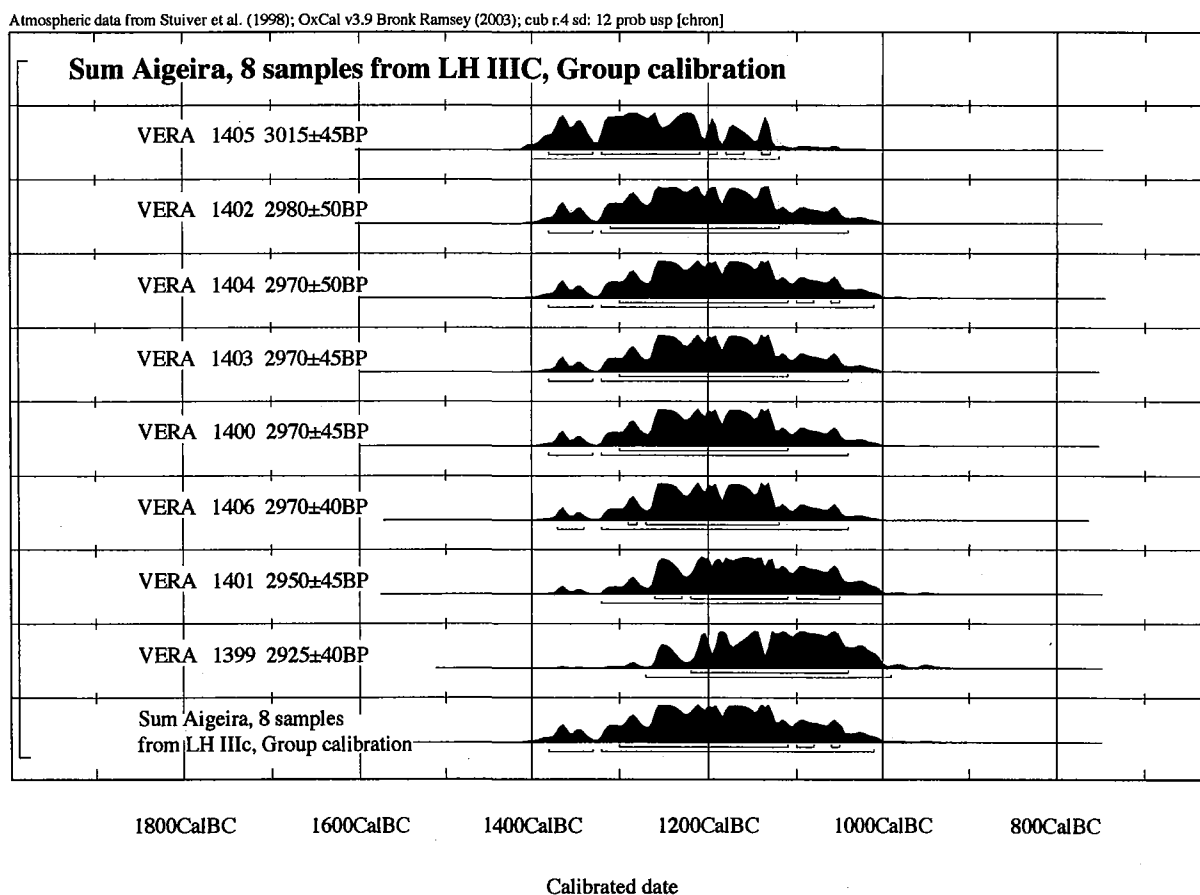


Fig. 1: Calibration of 8 samples from destruction layer from Aigeira, Acropolis, all in one plot.

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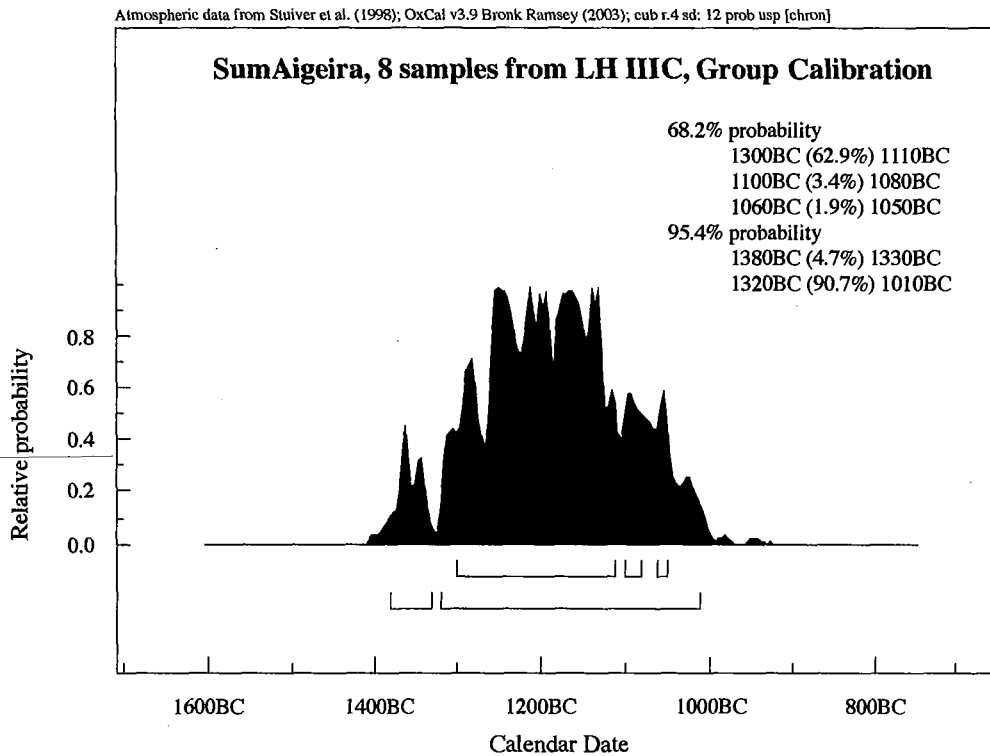


Fig. 2: Group calibration of 8 samples from Aigeira, Acropolis, Individual plot of sum calibration.

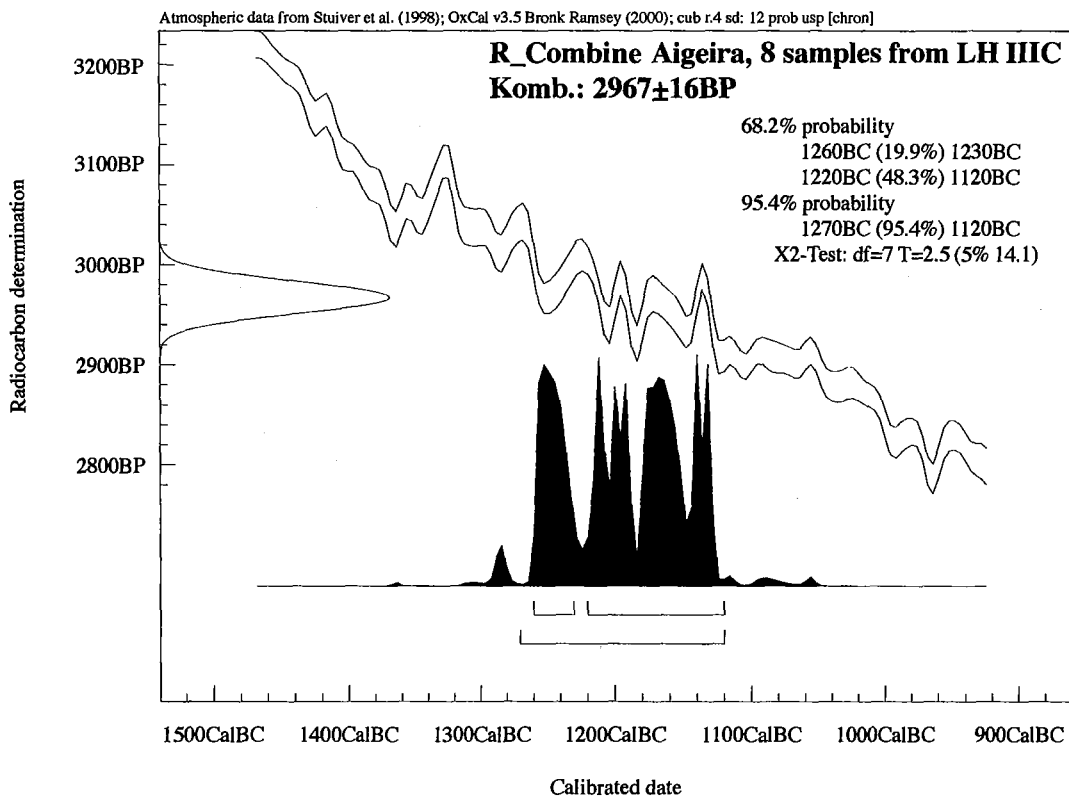


Fig. 3: Combination calibration of 8 samples from Aigeira, Acropolis.

As all the samples came probably from one destruction layer, in the next step (Fig. 2) we carried out a combination calibration, which is only useful if all the measured dates could come from one single event. This should be the case with one layer of destruction.

Fig. 3 presents this calibration. The X^2 -Test succeeds, thus all the samples really could come from the same event. The weighed average of the 8 samples is uncalibrated 2967 ± 16 years BP. In the calibration result (under the black filled curve) we see mainly 4 peaks, between 1260 and 1230 and between 1220 to 1120 BC, again on the $1-\sigma$ level.

Thus the date of the event could be narrowed down most probably to the end of the 13th and the 12th century BC. But in reality only one of the four peaks could be the solution. Which peak is the right solution cannot be decided with these measurements. A decision would only be possibly by tree ring wiggle matching or by archaeologically based sequencing.

Table 25: Eight radiocarbon samples from the Acropolis of Aigeira and their contexts, in German as supplied by Sigrid Deger-Jalkotzy.

Lab	Nummer	BP	σ	Delta C ¹³	σ Delta_C ¹³	Sample Name	Date of sample taking	Inventarnummer	Probenehmer	Material	Species	Botaniker	Bodentyp	Kulturphase	Komplex	Planum
VERA	1399	2925	40	-23,2	1,3	Aigeira_01	20.09.1976	E 241/76	Strohschneider G.	Holzkohle	<i>Quercus</i>	Gindl	Lehmige Brandschuttschicht	SH IIIC	Schicht Ib	PQ II 3
VERA	1400	2970	45	-23,8	1,2	Aigeira_02	02.10.1980	E 81/80	Alram E.	Samen	<i>Ficus carica</i>	Popovtschak	Lehmige Brandschuttschicht	SH IIIC	Schicht I, westlicher Vorratsraum	Steg S1/75 – II 1, Behälter 3
VERA	1401	2950	45	-22,6	1,3	Aigeira_03	30.09.1976	E 353/76	Strohschneider G.	Asche, Huminsäure	Laubholz	Gindl	Lehmige Brandschuttschicht	SH IIIC	Schicht I, zentraler Vorratsraum	PQ II 4, in Behälter
VERA	1402	2980	50	-23,6	1,3	Aigeira_04	04.10.1976	E 399/76	Strohschneider G.	Getreide, Huminsäure	<i>Hordeum vulgare</i> (Gerste)	Popovtschak	Lehmige Brandschuttschicht	SH IIIC	Schicht I	Steg S1/75 – II 3
VERA	1403	2970	45	-23,9	1,3	Aigeira_05	23.09.1976	E 279/76	Strohschneider G.	Getreide, Huminsäure	<i>Hordeum vulgare</i> (Gerste)	Popovtschak	Lehmige Brandschuttschicht	SH IIIC	Schicht I	PQ II 3
VERA	1404	2970	50	-24,9	1,3	Aigeira_06	23.09.1976	E 296/76	Strohschneider G.	Holzkohle	Laubholz	Gindl	Mittelbraune, steinige Schicht mit starker Holzkohlefüllung	SH IIIC und Jüngerer	Gemischtes Siedlungsmaterial	S 1/76, Lfm. 0,5 – 2
VERA	1405	3015	45	-21,9	1,3	Aigeira_07	07.10.1976	E 449/76	Strohschneider G.	Früchte	<i>Lathyrus cf. Sativus</i> (Saat-Platterbse)	Popovtschak	Lehmige Brandschuttschicht	SH IIIC	Schicht I, zentraler Vorratsraum	PQ I 4, Behälter C
VERA	1406	2970	40	-19,9	1,3	Aigeira_09	08.10.1976	E 490/76	Strohschneider G.	Früchte	<i>Lathyrus cf. Sativus</i> (Saat-Platterbse)	Popovtschak	Lehmige Brandschuttschicht	SH IIIC	Schicht I, zentraler Vorratsraum	PQ I 4, in Behälter