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## The Radiocarbon Dating of the Middle Bronze Age Monumental Building

Hoflmayer, Felix; Dee, Michael W.; Riehl, Simone

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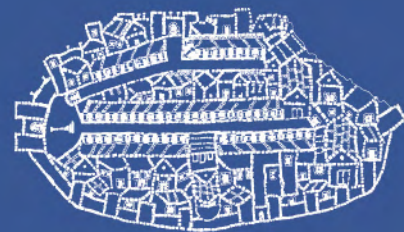
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**Abhandlungen des Deutschen  
Palästina-Vereins**



Jens Kamlah and H el ene Sader (Editors)

ADPV 45,I

# ***Tell el-Burak I*** **The Middle Bronze Age**

With Chapters Related to the Site  
and to the Mamluk-Ottoman Periods



Harrassowitz

Abhandlungen  
des Deutschen Palästina-Vereins

Herausgegeben von

HERBERT NIEHR  
und  
HERMANN MICHAEL NIEMANN

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## 7.7. The Radiocarbon Dating of the Middle Bronze Age Monumental Building

By FELIX HÖFLMAYER, MICHAEL W. DEE,  
and SIMONE RIEHL<sup>362</sup>

### 7.7.1. Introduction

For the Middle Bronze Age Monumental Building and the tomb attached to its outer façade, a substantial set of radiocarbon dates is available. Since the excavation started, samples for radiocarbon dating were collected, and, so far, more than 25 samples have been analyzed at the Leibniz-Labor für Altersbestimmung und Isotopenforschung in Kiel (data designated as KIA) and the Vienna Environmental Research Accelerator (data designated as VERA). Nineteen samples have been collected from the various phases of the Middle Bronze Age Monumental Building, one sample has been retrieved from the tomb attached to its outer façade, and four samples have been collected from the Late Bronze Age Retaining Structure above the Middle Bronze Age building (cf. Table 7.5). Unfortunately, it was not possible to focus only on single-year short-lived botanical specimens. In some cases, charcoal was collected as well, in order to determine at least a *terminus post quem* for the respective context. A first set of radiocarbon data was briefly discussed by KAMAL BADRESHANY and JENS KAMLAH in 2011<sup>363</sup>, and a more detailed report was published in 2016<sup>364</sup>. All calibration and modeling in this chapter was done using OxCal 4.2.4 against the INTCAL13 radiocarbon calibration curve interpolated to yearly intervals (Resolution = 1)<sup>365</sup>.

### 7.7.2. Radiocarbon Results

Nine samples were collected from the construction phase of the building (Phase 1a: KIA-42709, KIA-28158, VERA-5579, KIA-26683, KIA-44711, VERA-5580, KIA-28159, VERA-5578, and VERA-5576) (cf. Fig. 7.86 and Table 7.5). Six measurements were run on short-lived samples (VERA-5580, KIA-26683, KIA-42709, VERA-5579, VERA-5578, and VERA-5576), whereas KIA-28158, KIA-44711, and KIA-28159 were run on charcoal samples. Phase 1b is not represented by radiocarbon samples. Although three charcoal samples were retrieved from Phase

<sup>362</sup> Work on the radiocarbon sequence of *Tell el-Burak* was done in the framework of the project “Radiocarbon dating the Bronze Age of the southern Levant” funded by the Fritz-Thyssen-Foundation (Az.10.11.1.043) and the German Archaeological Institute from 2011 to 2013. Samples analyzed at the Vienna Environmental Research Accelerator were funded by SCIEM 2000 and the authors wish to thank MANFRED BIETAK and WALTER KUTSCHERA for financial support. Samples analyzed at the Leibniz-Labor für Altersbestimmung und Isotopenforschung Kiel were funded by the *Tell el-Burak* excavation project.

<sup>363</sup> BADRESHANY/KAMLAH 2010–11, 94–96.

<sup>364</sup> HÖFLMAYER *et al.* 2016a. Since submitting this paper and while preparing the final report, the stratigraphic attributions of two samples had to be changed. Both VERA-5578 (originally published as Phase 1b) and VERA-5576 (originally published as Phase 2b) now have to be regarded as belonging to Phase 1a. Although the overall results do not change considerably, this chapter is regarded as an update of HÖFLMAYER *et al.* 2016a.

<sup>365</sup> BRONK RAMSEY 1995; 2001; 2009a; REIMER *et al.* 2013.

1c (partial collapse of the building) (KIA-44712, KIA-26684, and KIA-26685), two of them turned out to be intrusive and resulted in dates from the Iron Age and the Mamluk-Ottoman Period, so that only KIA-44712 has been considered for this chapter (for the results for KIA-26684 and KIA-26685, see below). Phase 2a (repairing phase) is represented by six measurements, four run on short-lived samples (VERA-5574, VERA-5572, VERA-5573, KIA-42708), and two on charcoal samples (KIA-28161, KIA-28160). Phase 2b (second occupational phase) is not represented by radiocarbon samples, and Phase 2c (abandonment of the Monumental Building) is only represented by a single short-lived sample, KIA-42710 for Phase 2c. From Phase 3 (burial outside the building), a single charcoal sample was retrieved (KIA-26686).

Four samples have been collected from the Late Bronze Age Retaining Structure above the Middle Bronze Age Monumental Building. Short-lived samples KIA-44714 and VERA-5577 come from the foundation trench (Retaining Structure [RS] Phase 1), short-lived sample VERA-5575 was collected from the ash layer under the stone debris of the Retaining Structure (RS Phase 2), and charcoal sample KIA-44713 comes from the stone debris of the structure proper (cf. Table 7.5).

The individual calibrations for the radiocarbon determinations provide a coherent picture for the Middle Bronze Age structure (Fig. 7.86). Most dates fall in between ca. 2000 and ca. 1800 B.C.E., while the single sample for Phase 3 falls to around 1700 B.C.E. Four samples are considerably older (KIA-42709, KIA-28158, KIA-44712, and KIA-42710). Several explanations can be put forward for these older dates. KIA-42709 was run on a short-lived sample, which was retrieved from mud-brick debris that probably contained older organic material that was used as temper for the mud-bricks<sup>366</sup>. KIA-28158 was run on unidentified charcoal and can only provide a *terminus post quem* for the respective context. KIA-44712 was also run on charcoal, explaining the older age, and KIA-42710, although run on short-lived material, again was retrieved from mud-brick debris and probably represents temper material. Two samples from Phase 1c proved to be intrusive, KIA-26684 and KIA-26685<sup>367</sup>, both run on olive pits. KIA-26684 dates to the early Iron Age and KIA-26685 to the Mamluk-Ottoman Period (Figs. 7.87 and 7.88). Regarding the Late Bronze Age Retaining Structure, the individual calibrations are less consistent (Fig. 7.89 and Table 7.6). While short-lived sample KIA-44714 from Phase 1 dates to ca. the second half of the 17<sup>th</sup> or the first half of the 16<sup>th</sup> cent. B.C.E. and is thus in line with samples from Phases 2 and 3, both measurements of the other short-lived sample from Phase 1 (VERA-5577 and VERA-5577\_2) fall to the 13<sup>th</sup> and 12<sup>th</sup> cent. B.C.E. and thus prove the sample to be intrusive. Short-lived sample VERA-5575 from the ash layer under the stone debris (Phase 2) falls to the 15<sup>th</sup> cent. B.C.E. with a minor chance of falling to the late 14<sup>th</sup> cent. B.C.E., as does the charcoal sample from Phase 3 (stone debris of the Retaining Structure) KIA-44713. Based on the radiocarbon evidence from the Retaining Structure nothing more can be concluded than that the structure was most likely erected in the late Middle or early Late Bronze Age and stayed in use during the first half of the Late Bronze Age.

<sup>366</sup> The mud-bricks, in which the carbonized organic material was used as temper, originally were part of walls from Phase 1a. Therefore, the <sup>14</sup>C sample KIA-42709 is considered as belonging to Phase 1a.

<sup>367</sup> Both samples were found above the stone pavement of **Room 7**, which was constructed in Phase 1a. The samples were found in a thin layer of sediment (Phase 1c) directly underneath remains of **House I**.

Laboratory references	Sample	Phase	Context	Material	<sup>14</sup> C Determination ( <sup>14</sup> C years BP)	
					Date	± (σ)
KIA-42709	TB08-29/28-27	MB Phase 1a	Mud-brick debris, <b>Room 11</b>	Charred seeds ( <i>Vicia ervilia</i> )	4131	32
KIA-28158	TB30/27-31a	MB Phase 1a	Foundation below plaster floor, <b>Room 10</b>	Charcoal dust	3861	32
KIA-28159	TB30/27-31b	MB Phase 1a	Foundation below plaster floor, <b>Room 10</b>	Charcoal dust	3528	27
KIA-26683	TB32/26 context 63	MB Phase 1a	Deep trench, <b>Room 1</b>	Charred seeds ( <i>Triticum dicoccum</i> )	3564	25
KIA-44711	TB09-30/29-16	MB Phase 1a	Stone glacis	Charcoal	3562	31
VERA-5580	TB10-BP017	MB Phase 1a	Mud attached to front of foundation wall	Charred seeds ( <i>Triticum</i> spp.)	3535	30
VERA-5579	TB10-BP014	MB Phase 1a	Burnt floor	Charred seeds ( <i>Olea europaea</i> )	3565	30
VERA-5578	TB10-BP013	MB Phase 1a	Floor material	Charred seeds ( <i>Triticum monococcum/dicoccum</i> )	3550	35
VERA-5576	TB10-BP008	MB Phase 1a	Accumulated floor material	Charred seeds ( <i>Olea europaea</i> )	3490	30
KIA-44712	TB09-31/29-20	MB Phase 1c	Pottery assemblage lower floor, <b>Room 15</b>	Charcoal	3699	28
KIA-26684	TB31/25 context 76	MB Phase 1c	Sediment on top of stone pavement, <b>Room 7</b>	Charred seeds ( <i>Olea europaea</i> )	2772	24
KIA-26685	TB31/26 context 51	MB Phase 1c	Sediment on top of stone pavement, <b>Room 7</b>	Charred seeds ( <i>Olea europaea</i> )	297	25
KIA-28160	TB29/28-11a	MB Phase 2a	Fill, <b>Room 11</b>	Charcoal	3622	24
KIA-28161	TB29/28-11b	MB Phase 2a	Fill, <b>Room 11</b>	Charcoal	3560	26
KIA-42708	TB08-29/28-20	MB Phase 2a	Fill, <b>Room 11</b>	Charred seeds (Fabaceae)	3619	29
VERA-5572	TB10-BP002	MB Phase 2a	Fill, <b>Room 10</b>	Charred seeds ( <i>Vitis vinifera</i> )	3540	30
VERA-5573	TB10-BP003	MB Phase 2a	Fill, <b>Room 10</b>	Charred seeds ( <i>Vicia ervilia</i> )	3530	25
VERA-5574	TB10-BP004	MB Phase 2a	Fill, <b>Room 10</b>	Charred seeds ( <i>Triticum monococcum/dicoccum</i> )	3575	30
KIA-42710	TB08-30/28-39	MB Phase 2c	Mud-brick debris and pottery on floor, <b>Room 13</b>	Charred seeds ( <i>Hordeum vulgare</i> )	4043	29
KIA-26686	TB31/25 context 85	MB Phase 3	Tomb attached to façade	Charcoal	3411	25
KIA-44714	TB10-31/29-57	RS Phase 1	Foundation trench of Retaining Structure	Charred seeds ( <i>Lolium remotum</i> )	3319	26
VERA-5577	TB10-BP009	RS Phase 1	Foundation trench of Retaining Structure	Charred seeds ( <i>Olea europaea</i> )	2965	30

Laboratory references	Sample	Phase	Context	Material	<sup>14</sup> C Determination ( <sup>14</sup> C years BP)	
					Date	± (σ)
VERA-5577HS					3170	30
VERA-5577_2					2925	35
VERA-5577_2HS					2925	35
VERA-5575	TB10-BP005	RS Phase 2	Ash layer under stone debris	Charred seeds ( <i>Vicia ervilia</i> )	3160	40
VERA-5575HS					3140	40
KIA-44713	TB10-31/29-52	RS Phase 3	Stone debris of Retaining Structure	Charcoal	3140	29

Table 7.5. Results of radiocarbon measurements on samples from *Tell el-Burak* (samples KIA-26684 and KIA-26685 were not used in the models presented here, since they proved to be intrusive, coming from the Iron Age and the 16<sup>th</sup>/17<sup>th</sup> cent. C.E.). MB-Phases refer to the Monumental Building, RS-Phases refer to the Retaining Structure above. Lab-codes ending in HS refer to measurements of humic acids. Measurement of VERA-5577 was repeated because the humic acids results were about 200 radiocarbon years older, humic acids measurement of VERA-5577\_2 (VERA-5577\_2HS) is consistent with the carbon measurement. For the Retaining Structure measurements of humic acids have not been used, as there is the theoretical possibility of younger contamination (although, in general, it has been found that in this region humic acids are reliable for dating: WILD *et al.* 2013).



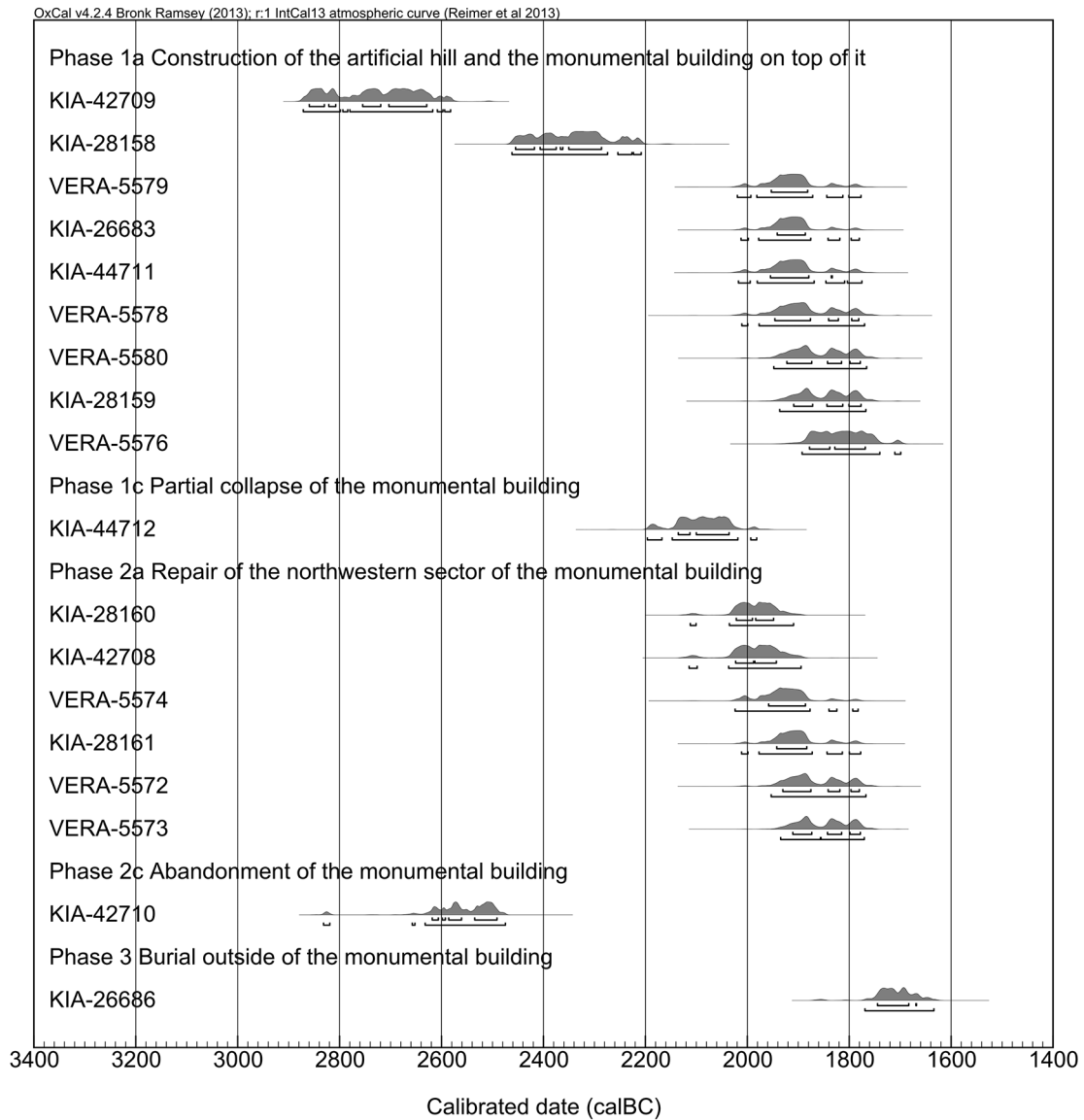


Fig. 7.86. Calibrated radiocarbon determinations for samples associated with the Middle Bronze Age Monumental Building (Phases 1a–2c) and the subsequent burial outside the building (Phase 3).

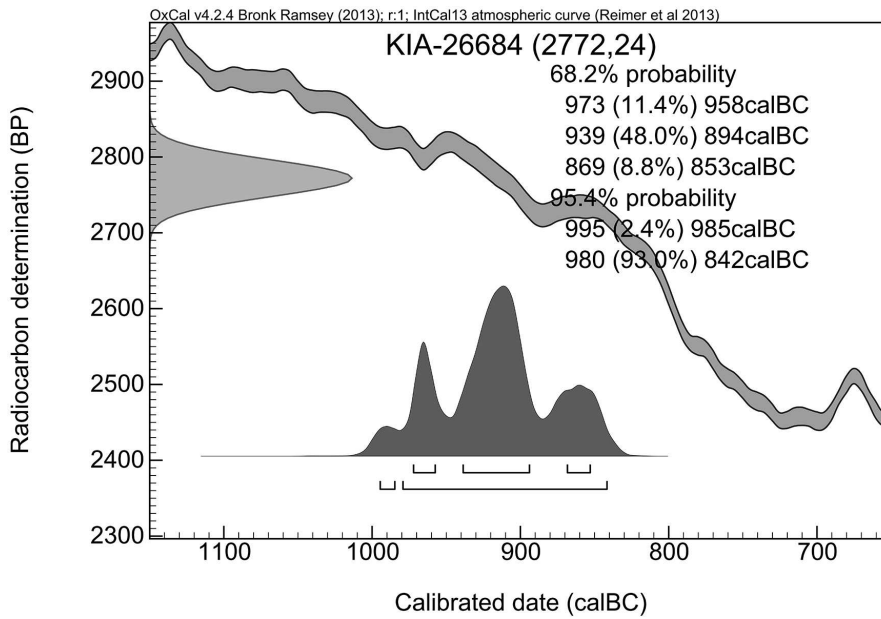


Fig. 7.87. Calibrated radiocarbon determination for intrusive Iron Age sample KIA-26684 retrieved from Phase 1c.

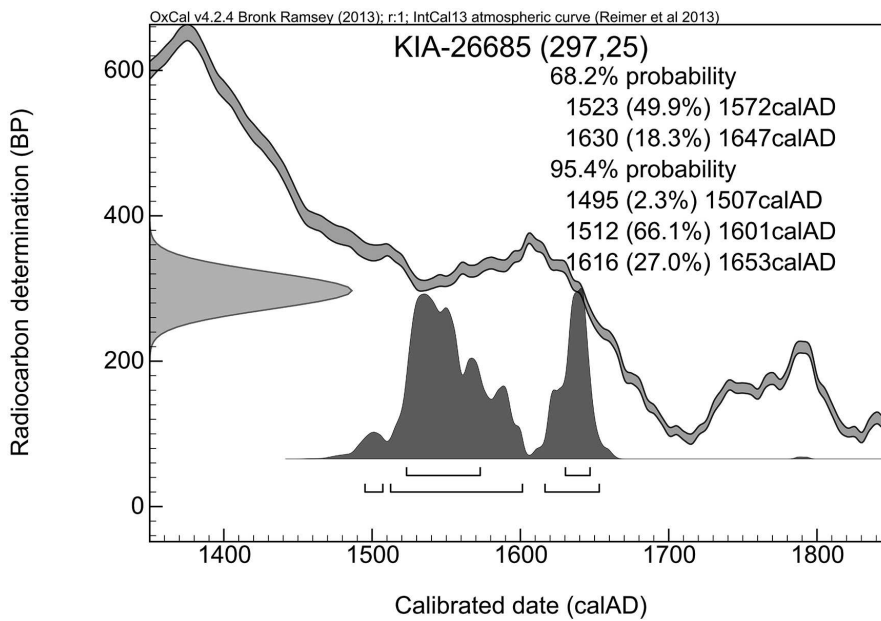


Fig. 7.88. Calibrated radiocarbon determination for intrusive Mamluk-Ottoman sample KIA-26685 retrieved from Phase 1c.

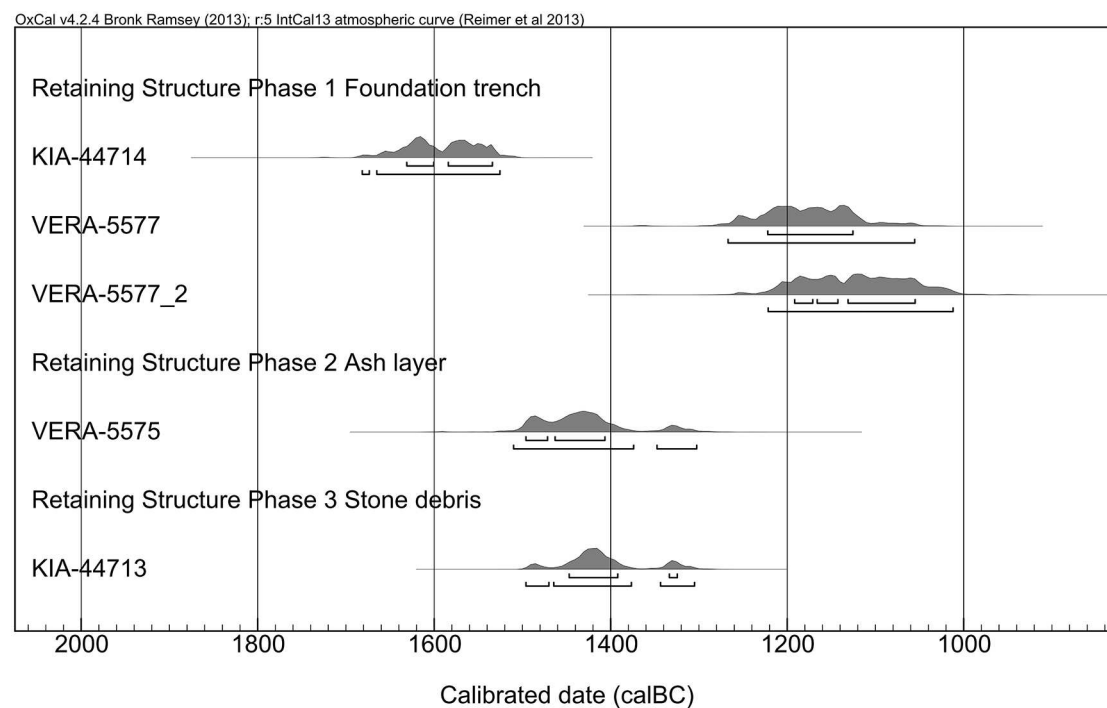


Fig. 7.89. Calibrated radiocarbon determinations for samples associated with the Late Bronze Age Retaining Structure (Phases 1–3).

Phase	Laboratory reference	Calibrated $^{14}\text{C}$ date ranges (B.C.E., 95.4%)
Retaining Structure Phase 1	KIA-44714	1682–1526
Retaining Structure Phase 1	VERA-5577	1268–1056
	VERA-5577HS	1505–1396
	VERA-5577_2	1222–1013
	VERA-5577_2HS	1222–1013
Retaining Structure Phase 2	VERA-5575	1511–1303
	VERA-5575HS	1501–1297
Retaining Structure Phase 3	KIA-44713	1497–1306

Table 7.6. Results of calibrated radiocarbon determinations from the Retaining Structure of *Tell el-Burak*.

### 7.7.3. Bayesian Models

In order to increase the precision of the calibrated radiocarbon determinations, a Bayesian probability approach was applied. Bayesian analysis allows additional information to be taken into account, such as the sequence of the samples based on archaeological stratigraphy. This additional information is called prior information, since it is derived from sources other than and prior to, radiocarbon analysis in the laboratory<sup>368</sup>. Based on the prior information and the radiocarbon measurements, a posterior probability for each individual sample (and each additional event in the model, such as transitions between phases) is calculated – *i. e.*, the probability for the age of a sample based on its individual calibration combined with all additional information included in the model.

Usually one would have to assume that all radiocarbon determinations are representative for their respective contexts and stratigraphic phases. In practice, however, residual material is often present in the archaeological record, especially in cases where one has to rely on samples that do not come from closed contexts (*e. g.*, from a sealed storage jar where only minimal or no residuality at all can be assumed). Samples that are too old and thus do not “fit” the model based on stratigraphic evidence are usually excluded by hand, a process that is often highly subjective. In order not to “hand-pick” and exclude any samples a priori, we instead employed the automated Outlier Analysis of OxCal, using the “General” model for short-lived samples and the “Charcoal” model for the charcoal samples<sup>369</sup>.

Outlier analysis detects which individual samples are not consistent with the prior information (*e. g.*, the sequence) or the other radiocarbon dates for their context, and incrementally reduces their contribution to the model outputs (meaning that outliers have a very limited impact on the posterior probabilities). The outlier index shows the expected (prior) chance of a sample being an outlier and the real (posterior) value based on the model. Generally, short-lived samples are expected to be representative for their respective contexts and are given only a 5% prior chance of being an outlier, but applying the model may give very different results. For example, VERA-5573 [O:0/5] was given a 5% chance of being an outlier but, based on Model A, it has in fact a 0% chance of being one, while KIA-42710 [O:100/5] was given a 5% chance of being an outlier, but, based on Model A, its actual chance of being one is 100% (Fig. 7.90). The “Charcoal” model automatically gives a 100% chance of the respective sample being an outlier. This is because charcoal samples are always older than the archaeological context to which they pertain. In labeling each charcoal date in this manner, the program is instructed that the result is just a *terminus post quem* and the true age of its context is actually younger than the date obtained.

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<sup>368</sup> BUCK *et al.* 1991; WENINGER *et al.* 2006; BRONK RAMSEY 2009a.

<sup>369</sup> BRONK RAMSEY 2009b.

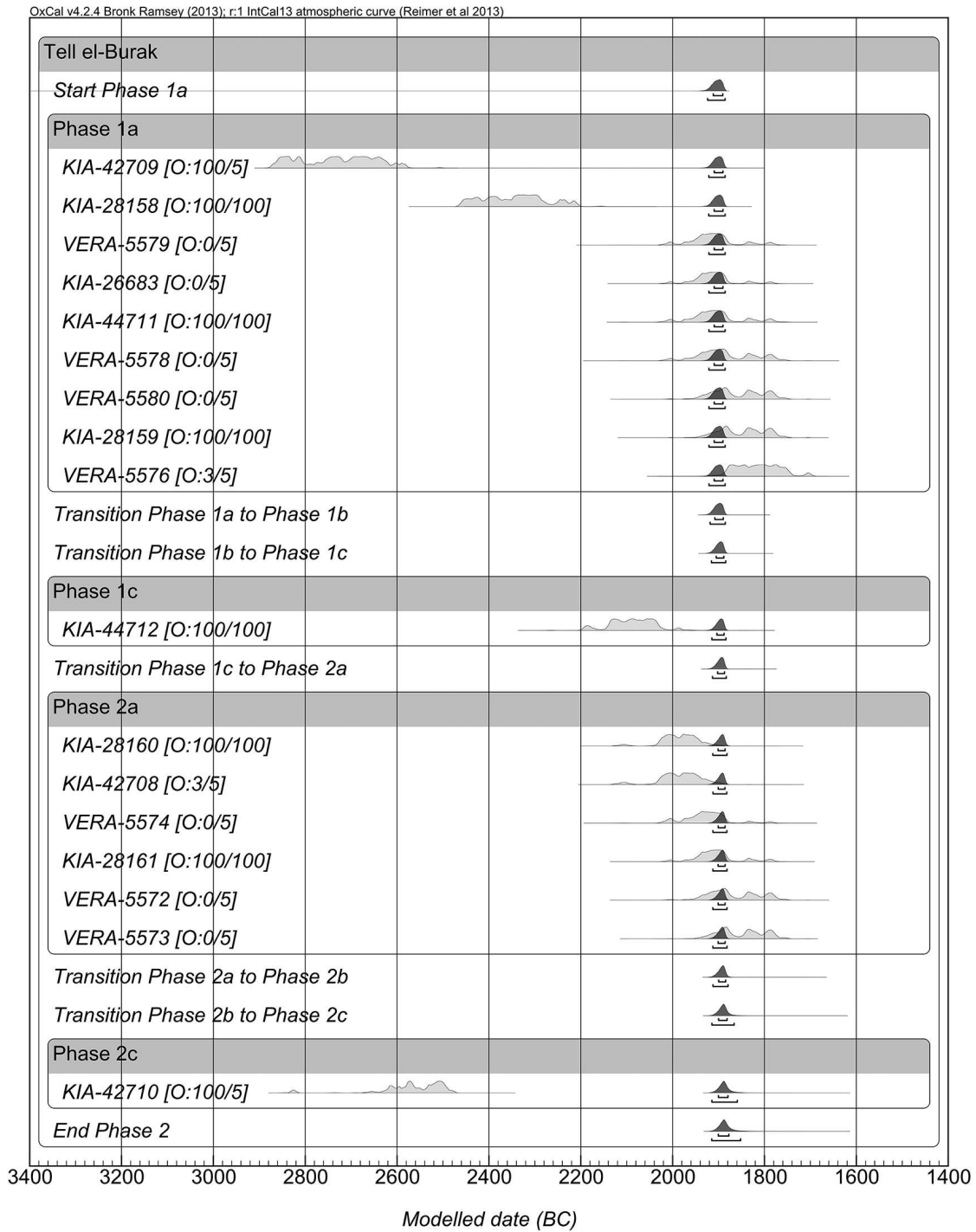


Fig. 7.90. Modeled probability ranges for each individual sample and “boundaries” based on Model A (detailed stratigraphical model). Light shaded areas represent individual calibrated radiocarbon determinations (without prior information), dark shaded areas represent modeled calibrated radiocarbon determinations (posterior probabilities) based on the prior information entered into the model.

Four models (A–D) were created employing slightly different sets of prior information to test the validity of the results:

- a. Model A (detailed stratigraphical model): For this model, it was assumed that all short-lived samples were representative of the archaeological phase in which they were found, and that all archaeological phases were in their correct chronological order. Within each archaeological phase, the order of the individual samples was taken to be unknown. Samples originating from any of these stratigraphic phases were grouped together using the ‘Phase’ function of OxCal (being an unordered normal distributed group of events), separated by ‘boundaries’ (reflecting the transitions between these phases). Results for this model are shown in Figs. 7.90 and 7.91, as well as in Table 7.7.
- b. Model B (simplified stratigraphical model): For this model, we only distinguished between Phases 1 and 2, since it cannot be necessarily expected that such minute differentiations as between, for example, the occupational Phase 1b and the collapse Phase 1c (though clearly observable in the architecture), are also reflected in the radiocarbon record, especially since many samples come from fill layers. Thus only the following succession was used: Phase 1, followed by Phase 2. Results for this model are shown in Figs. 7.92 and 7.93, as well as in Table 7.7.
- c. Model C (uniform phase model): For this model, we only considered the short-lived samples (without the obvious outliers KIA-42709 and KIA-42710) and treated all samples as coming from a single phase. All samples were grouped together in a “Phase” enclosed by two “boundaries”, thus assuming a uniform distribution. Results for this model are shown in Figs. 7.94 and 7.95, and in Table 7.7.
- d. Model D (exponential phase model): For the last model, we tested the latest possible date for the end of the Middle Bronze Age Monumental Building. Since many of the samples were retrieved from fill layers, we created a more cautious model, where we assumed that all samples belong to the building in general but allow for residuality since many samples originate from fill layers. We did not differentiate between separate phases for this model, but instead treated all samples as coming from a single phase, assumed to be distributed exponentially towards the end of the use of the building using a “Tau\_Boundary” paired with a “Boundary” in OxCal. In this model we assume that all radiocarbon samples are older than the final abandonment, maybe even considerably, while making sure that dates for these residual samples do not affect the end-date for the structure too much. We basically test how late the end of the Middle Bronze Age Monumental Building could be. Results are shown in Figs. 7.96 and 7.97, and in Table 7.7.

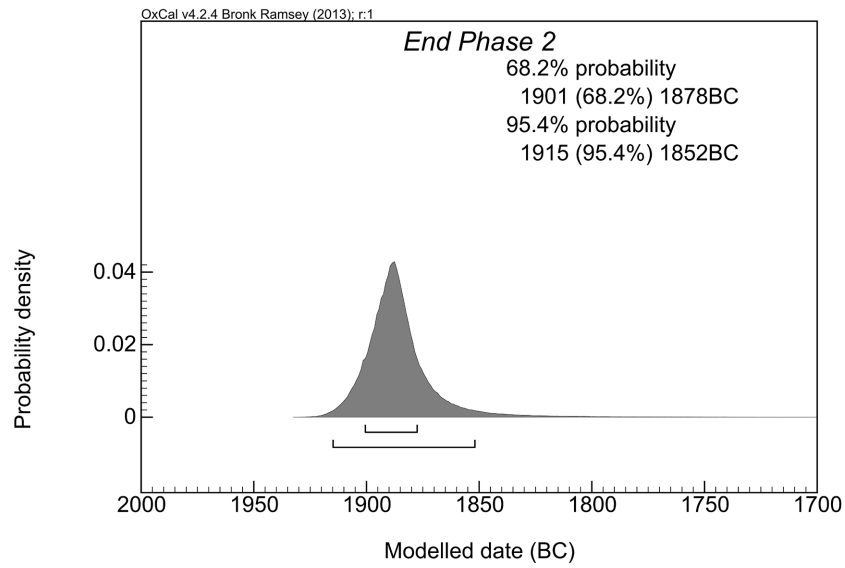


Fig. 7.91. Modeled probability distribution for the end of the Monumental Building based on Model A (detailed stratigraphical model).

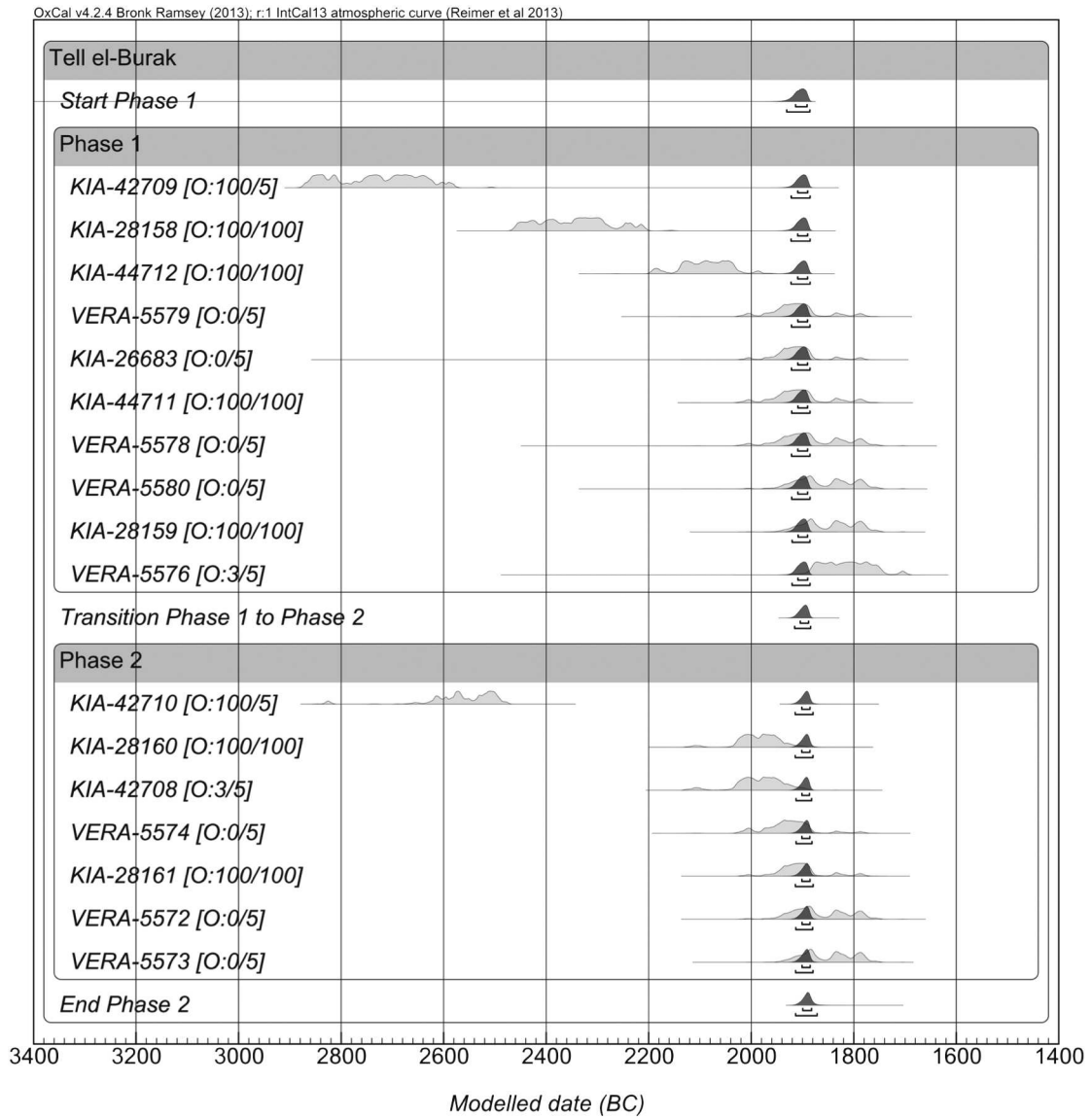


Fig. 7.92. Modeled probability ranges for each individual sample and “boundaries” based on Model B (simplified stratigraphical model).



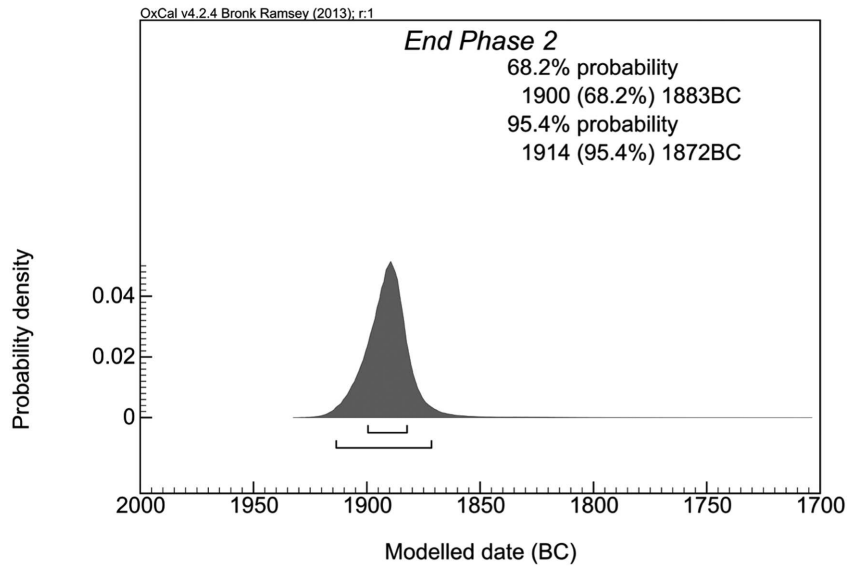


Fig. 7.93. Modeled probability distribution for the end of the Monumental Building based on Model B (simplified stratigraphical model).

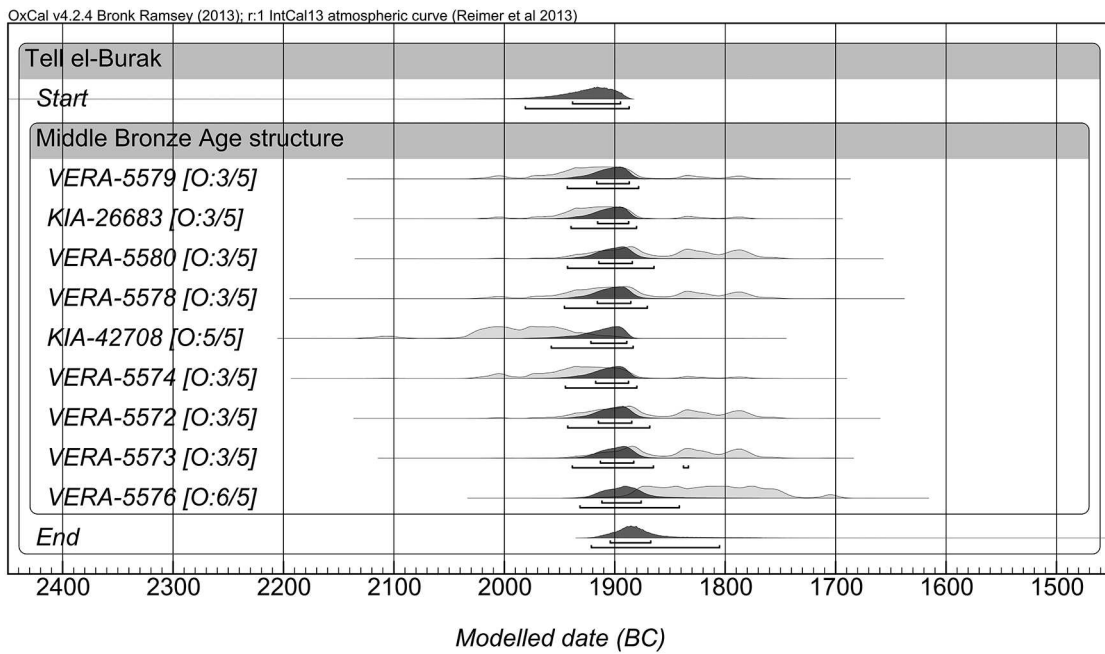


Fig. 7.94. Modeled probability ranges for each individual sample and “boundaries” based on Model C (uniform phase model).

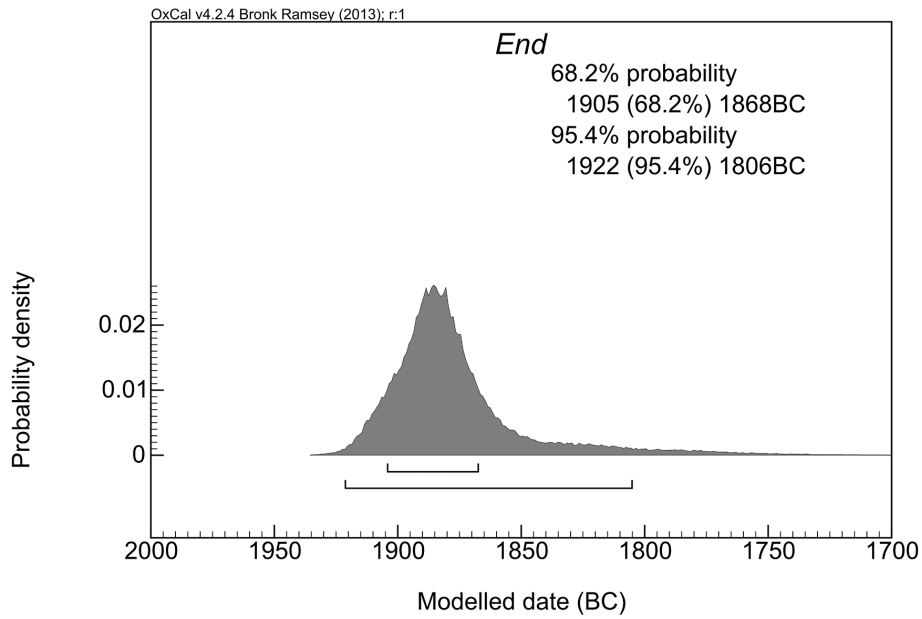


Fig. 7.95. Modeled probability distribution for the end of the Monumental Building based on Model C (uniform phase model).

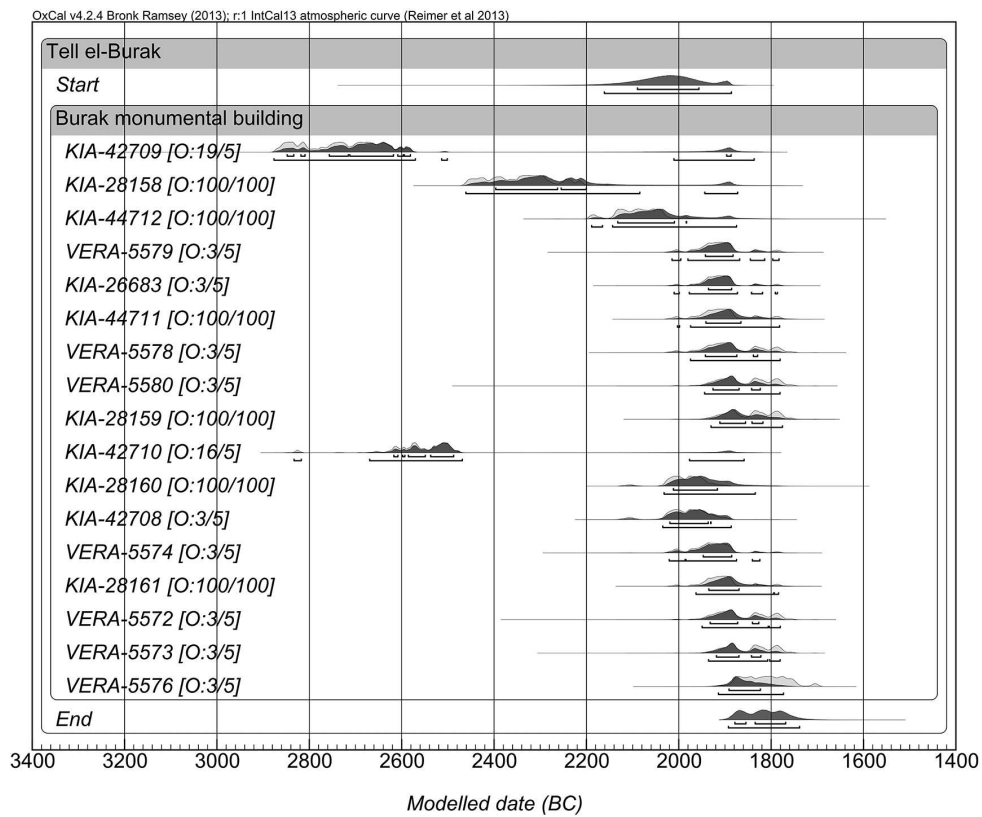


Fig. 7.96. Modeled probability ranges for each individual sample and “boundaries” based on Model D (exponential phase model).

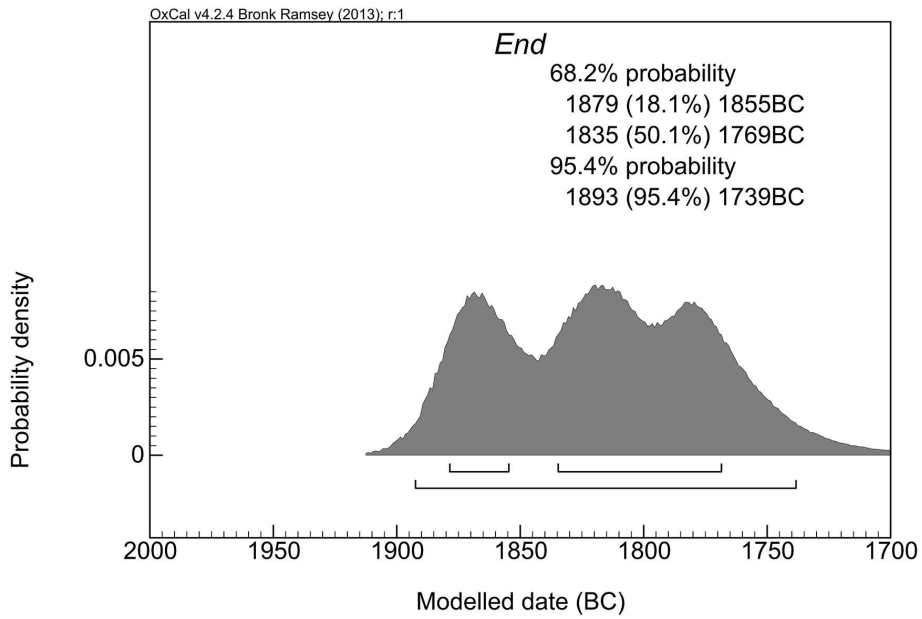


Fig. 7.97. Modeled probability distribution for the Monumental Building based on Model D (exponential phase model).

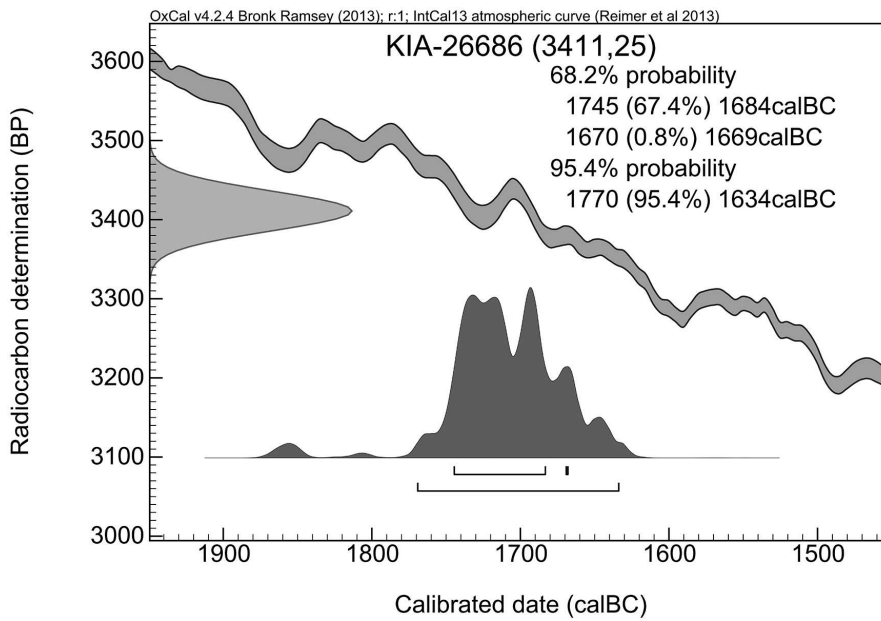


Fig. 7.98. Calibrated radiocarbon determination for charcoal sample KIA-26686 from the tomb attached to the façade of the Monumental Building (Phase 3).

Event/Phase	Laboratory references	Calibrated <sup>14</sup> C date ranges (B.C.E., 95.4%)	Modelled <sup>14</sup> C date ranges (B.C.E., 95.4% probability)			
		Individual calibrations	Model A (detailed stratigraphical model)	Model B (simplified stratigraphical model)	Model C (uniform phase model)	Model D (exponential phase model)
<i>Start Phase 1</i>			1924 – 1886	1931 – 1886	1982 – 1888	2162 – 1887
Phase 1a	KIA-42709	2872 – 2583	1922 – 1886*	1923 – 1886*	n/a	2877 – 1837
Phase 1a	KIA-28158	2462 – 2209	TPQ only	TPQ only	n/a	TPQ only
Phase 1a	VERA-5579	2020 – 1777	1922 – 1886	1922 – 1886	1944 – 1879	2015 – 1783
Phase 1a	KIA-26683	2013 – 1781	1922 – 1886	1922 – 1886	1940 – 1881	2011 – 1787
Phase 1a	KIA-44711	2018 – 1776	TPQ only	TPQ only	n/a	TPQ only
Phase 1a	VERA-5578	2011 – 1770	1922 – 1886	1922 – 1886	1946 – 1871	1975 – 1781
Phase 1a	VERA-5580	1949 – 1766	1921 – 1886	1922 – 1886	1943 – 1865	1945 – 1781
Phase 1a	KIA-28159	1937 – 1768	TPQ only	TPQ only	n/a	TPQ only
Phase 1a	VERA-5576	1893 – 1699	1921 – 1886*	1921 – 1886*	1932 – 1842*	1915 – 1774
<i>Transition Phases 1a – b</i>			1919 – 1886	n/a	n/a	n/a
<i>Transition Phases 1b – c</i>			1916 – 1885	n/a	n/a	n/a
Phase 1c	KIA-44712	2197 – 1982	TPQ only	TPQ only	n/a	TPQ only
<i>Transition Phases 1 – 2</i>			1914 – 1884	1916 – 1885	n/a	n/a
Phase 2a	KIA-28160	2112 – 1910	TPQ only	TPQ only	n/a	TPQ only
Phase 2a	KIA-42708	2115 – 1895	1913 – 1883*	1913 – 1883*	1958 – 1884*	2035 – 1887
Phase 2a	VERA-5574	2024 – 1783	1913 – 1882	1913 – 1882	1945 – 1881	2021 – 1825
Phase 2a	KIA-28161	2012 – 1778	TPQ only	TPQ only	n/a	TPQ only
Phase 2a	VERA-5572	1954 – 1768	1913 – 1882	1914 – 1881	1943 – 1869	1950 – 1781
Phase 2a	VERA-5573	1935 – 1771	1913 – 1882	1914 – 1880	1939 – 1834	1936 – 1781
<i>Transition Phases 2a – b</i>			1913 – 1880	n/a	n/a	n/a
<i>Transition Phases 2b – c</i>			1915 – 1866	n/a	n/a	n/a
Phase 2c	KIA-42710	2832 – 2475	1915 – 1860*	1915 – 1880*	n/a	2834 – 1859
<i>End Phase 2</i>			1915 – 1852	1914 – 1872	1922 – 1806	1893 – 1739

Table 7.7. Results of calibrated and modelled radiocarbon determinations from *Tell el-Burak*. Gray shaded samples come from charcoal and were modelled using the “Charcoal” outlier model, thus providing only *termini post quos* for Models A–C. An asterisk (\*) indicates that the respective sample yielded a low (<60) agreement index and was down weighted accordingly not to impact the overall results. Modelled age ranges for these samples can also lie outside the individual calibrations due to their low agreement to the prior information. The ranges given are merged from the oldest to the youngest dates in the 95% probability range.

## 7.7.4. Discussion

The results for Models A–C are very similar. According to all of these models, the calculated start for the Monumental Building of *Tell el-Burak* falls to around 1900 B.C.E., whereas the end falls to the first half of the 19<sup>th</sup> cent. B.C.E. (for details see Table 7.7). With Model D (exponential phase model), the end-date could still fall to the 19<sup>th</sup> cent. B.C.E., although now the potential date range also includes the first half of the 18<sup>th</sup> cent. B.C.E. However, this model was only created to test the *latest possible* end-date for the Middle Bronze Age Monumental Building based on the existing dates. We regard an end-date for the Monumental Building sometime during the first half of the 19<sup>th</sup> cent. B.C.E. as most likely.

This date is considerably earlier than calendar dates conventionally proposed for the late Middle Bronze I (IIA) or transitional Middle Bronze I/II (IIA/B) period. The conventional chronology puts the transition from Middle Bronze I (IIA) to Middle Bronze II (IIB) around ca. 1750 B.C.E.<sup>370</sup> whereas the low chronology dates this transition between 1710 and 1680 B.C.E.<sup>371</sup>. However, the radiocarbon evidence for *Tell el-Burak* is in agreement with other Middle Bronze I (IIA) and II (IIB) radiocarbon data from other sites, such as *Tell eḏ-Ḍabʿa*<sup>372</sup>; *Tell el-Ifṣār*<sup>373</sup>, and *el-Kabrī*<sup>374</sup>, and thus challenges the current Middle Bronze Age chronological framework<sup>375</sup>.

From the tomb attached to the façade of the Middle Bronze Age Monumental Building, only a single charcoal sample is available that dates to ca. the second half of the 18<sup>th</sup> or the first half of the 17<sup>th</sup> cent. B.C.E. However, as this date can only be considered as a *terminus post quem* for the tomb, it cannot be used for more concise chronological conclusions. In general, the date fits to a Middle Bronze II or III attribution.

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<sup>370</sup> SHARON 2014.

<sup>371</sup> BIETAK 2002; 2012.

<sup>372</sup> KUTSCHERA *et al.* 2012.

<sup>373</sup> MARCUS 2012.

<sup>374</sup> HÖFLMAYER *et al.* 2016b.

<sup>375</sup> For details cf. HÖFLMAYER 2015; HÖFLMAYER *et al.* 2016a and 2016b.

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