

## THE FIRST ‘EUROPEAN’ WRITING: REDEFINING THE ARCHANES SCRIPT

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*Summary. This paper investigates a series of glyptic inscriptions attested on Crete at the end of the third and beginning of the second millennium BC, collectively referred to as the ‘Archanes Script’. These minute engravings are considered to represent the earliest appearance of writing west of Egypt, and the first ‘true’ writing in the Aegean. Though mentioned in passing in almost every study of Bronze Age Aegean writing, few scholars have ever offered a definition of what exactly they consider the ‘Archanes Script’ to be. No work or scholarly consensus exists delineating which signs constitute its signary, or even which documents comprise its corpus. Study of the seals as objects in their own right, examining script signs alongside associated iconography, material qualities and form, has been rare. This paper offers the first complete overview and redefinition of the Archanes Script since its discovery in the 1960s and initial definition by Paul Yule in 1980.*

### INTRODUCTION

The Cretan ‘Archanes Script’,<sup>1</sup> generally dated to somewhere between the end of the third and the beginning of the second millennium BC, is without a doubt the most elusive of categories in the study of Bronze Age Aegean writing systems. Though it is mentioned by virtually every scholar in the field, discussion is almost always limited to a few sentences, and most often simply serves as an introduction to the Cretan Hieroglyphic and Linear A writing systems. While all will agree on a few select objects as bearing instances of the script – and these will consistently be the ones illustrated (Fig. 1) – scholars’ conceptions of what exactly constitutes the entirety of the script are either wholly unstated, or radically differing. The few works that to some extent delineate the limits and content of what they consider the term to represent offer strongly diverging opinions on its nature and, as a result, its scope: while for some it represents the first stage of Cretan Hieroglyphic (Grumach 1963; 1968; Grumach and Sakellarakis 1966;

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<sup>1</sup> Henceforth without quotation marks, though capitalization is preferred to highlight that many scholars use the term as a conventionalized characterization, and do not necessarily consider it to be a ‘true’ script: Olivier 1986; cf. Schoep 1999, 268; Krzyszkowska 2005, 71–2.



Figure 1

The most frequently illustrated Archanes Script seals. a: CMS II.1,393, bone three-sided gable (1.67 x 1.34 x 0.81 cm). b: CMS II.1,391, unique bone baton with 14 seal faces (see Figs. 8 and 9; 1.85 x 1.28 x 5.67 cm). c: CMS II.1,394, bone two-sided disc (1.51 cm diameter, 0.63 cm height). Photographs courtesy of the CMS Heidelberg, colourized by author. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Sbonias 1995, 108; *CHIC*, esp. n. 59; Younger 1999, 380–1; Karnava 2000, 197), Linear A (Godart 1999; Anastasiadou 2016; cf. Schoep 2006, 45–6 and n. 73), or both (Schoep 1999, 266), for others it is not script at all (Olivier 1986; 1989). The term is often used to refer ‘more to a group of seals joined by their characteristic of bearing specific decorative motifs’ than to an actual writing system (Karnava 2000, 196–7; cf. Sbonias 1995 below). The term ‘Archanes Formula’, meanwhile, offers a convenient way out for epigraphists, allowing discussion of the most striking element of the system while avoiding the issue of whether or not the signs that constitute the formula form part of a wider script, and whether or not that script represents ‘true’ writing (and if it does, whether it represents a separate script or an early version of Cretan Hieroglyphic and/or Linear A).

The fact that the very question of what constitutes the Archanes Script is so confused and ill-defined is quite surprising for a system that has generally been considered to represent the earliest ‘European’ writing (a somewhat problematic characterization: Decorte 2018a). Indeed, the Archanes Script presents what is probably the most crucial discernible step in the process of script formation on Crete, only enhanced by the fact that this earliest writing appears on seals and sealings, the primary carriers of the later Cretan Hieroglyphic script, and perhaps of a predecessor to writing in the Prepalatial period (Decorte 2018b). A closer examination of the script’s sign-forms and behaviour may both illuminate the peculiarities of later scripts, and – by virtue of presenting a ‘bridge’ between these and the Prepalatial iconographic structures I have argued elsewhere to provide the conceptual background for writing – shed further light on the origins of complex lexigraphic and sematographic representation on Crete (the former denoting writing that represents speech, the latter writing that does not – though it may be interpreted in speech – and thus does not follow the linear sequencing of language: see Bennett 1963 in the context of Bronze Age Aegean writing).

#### PAST DEFINITIONS

Let us start by defining the exact number and nature of objects argued to belong to the Archanes Script. The term was initially coined by Paul Yule (1980, 170) in his *Early Cretan Seals* to describe the ‘earliest clearly definable script known in Crete [...named] after the place where examples of it came to light’. These ‘examples’ were excavated by Sakellarakis in the mid-1960s at the cemetery of Phourni, near Archanes, and have been dated anywhere between Early Minoan (EM) III and Middle Minoan (MM) IB (c.2200–1800 BC; the seals’ chronology is discussed further below). Importantly for our understanding of later scholarship, Yule characterized the writing system as follows:

‘[t]he Archanes script is defined primarily by the signs represented. Of the fifteen known seals showing this script, several motifs consistently reappear: the dentate band, leaves, double axe, ewers and cuts shaped like V’s. These motifs generally appear inside a field bordered by an incision’.

Yule did not actually enumerate the ‘signs represented’, nor did he clearly differentiate between script sign and iconographic ‘motif’ (see, for example, his inclusion of the ‘double axe’ – which appears exclusively in sign-sequences – amongst his ‘motifs’).<sup>2</sup> Retrospectively, such caution is justified, as it allows for the fact that ‘motifs’ may well be considered signs in the semiotic sense, and that sematographic structures may heavily participate in, or even constitute, writing systems (Boone and Mignolo 1994; Decorte 2017). However, without actual analysis of the entanglement of lexigraphic and sematographic representation, it is more likely that Yule simply considered the separation straightforward, or did not want to address exactly what constitutes writing, being mainly concerned with issues of iconography and style. It is this confused birth that may explain the current divide in scholarship, which variously considers the Archanes Script as either (a) defined by the presence of a series of recognized script signs (*CHIC* 18, n. 59), or (b) defined by the presence of the iconographic motifs and ‘stylistic’ features listed by Yule above, most of which are now classed as ‘decorative’ (part of the ‘border/leaf complex’: Yule 1980, 209–10; Pini 1989, 108–11; Sbonias 1995, 108; Karnava 2000, 196).

Helpfully, and unlike most modern scholarship, Yule did delineate the totality of objects he considered to belong to the writing system (Yule 1980, 170, n. 138): all seals argued by Yule to belong to the script are here illustrated in Fig. 2. While he claims to assign a total of 15 seals to the script, only 14 are actually listed (which is either an error arising from the fact that ‘CS 95’ is cited twice – once in the main text as ‘nos. 1 and 2’, and once in his footnote 138 after ‘cf. also’ – or an unintended omission of the seal CMS II, 215 [see below]).

The 14 seals listed, however, may surprise even those who already consider themselves familiar with the Archanes Script: some are the traditional seals often quoted and illustrated (e.g. Y1–2, Y5, Y7–8, Y13–14 in Fig. 2), others are much rarer in discussions of the script (e.g. Y3–4), and roughly one-quarter have, to my knowledge, nowhere else been argued as belonging to the Archanes Script except for here, in its very first definition (Y9–12). While one of these (Y9/CMS II.2,311) will in this paper be accepted, for reasons set out below, others seem decidedly foreign to the group. Y12/CMS VI,39 is particularly problematic: its iconography and material form (listed by Yule 1980, 182, n. 139 as ‘transitional between Gable and Prism shapes’)<sup>3</sup> do not accord closely with any of the other seals listed, nor do its ‘signs’ have clear parallels elsewhere in Minoan glyptic.<sup>4</sup> The seal is part of the Greville J. Chester collection in the Ashmolean Museum and is, in fact, said to have come from Syria. Yule’s identification of a ‘dentate band’ on face *a* nevertheless led him to include the seal in the script. Similarly, except for Yule’s hatched triangle and dentate band, the motifs

2 Cf. Karnava 2000, 196, n. 497: ‘if the Archanes script was indeed a separate script, then these are not motifs but script-signs.’

3 Kenna (1960, 96) noted that ‘the shape of the seal is not symmetrical and the suspensory hole is not true to the major axis, a comparatively rare occurrence in Minoan glyptic’.

4 An identification of the Cretan Hieroglyphic sign CH034 on Y12 face *c* is theoretically possible; however, lines continue below the horizontal base, not seen in any instance of CH034 in *CHIC* (see p. 398).

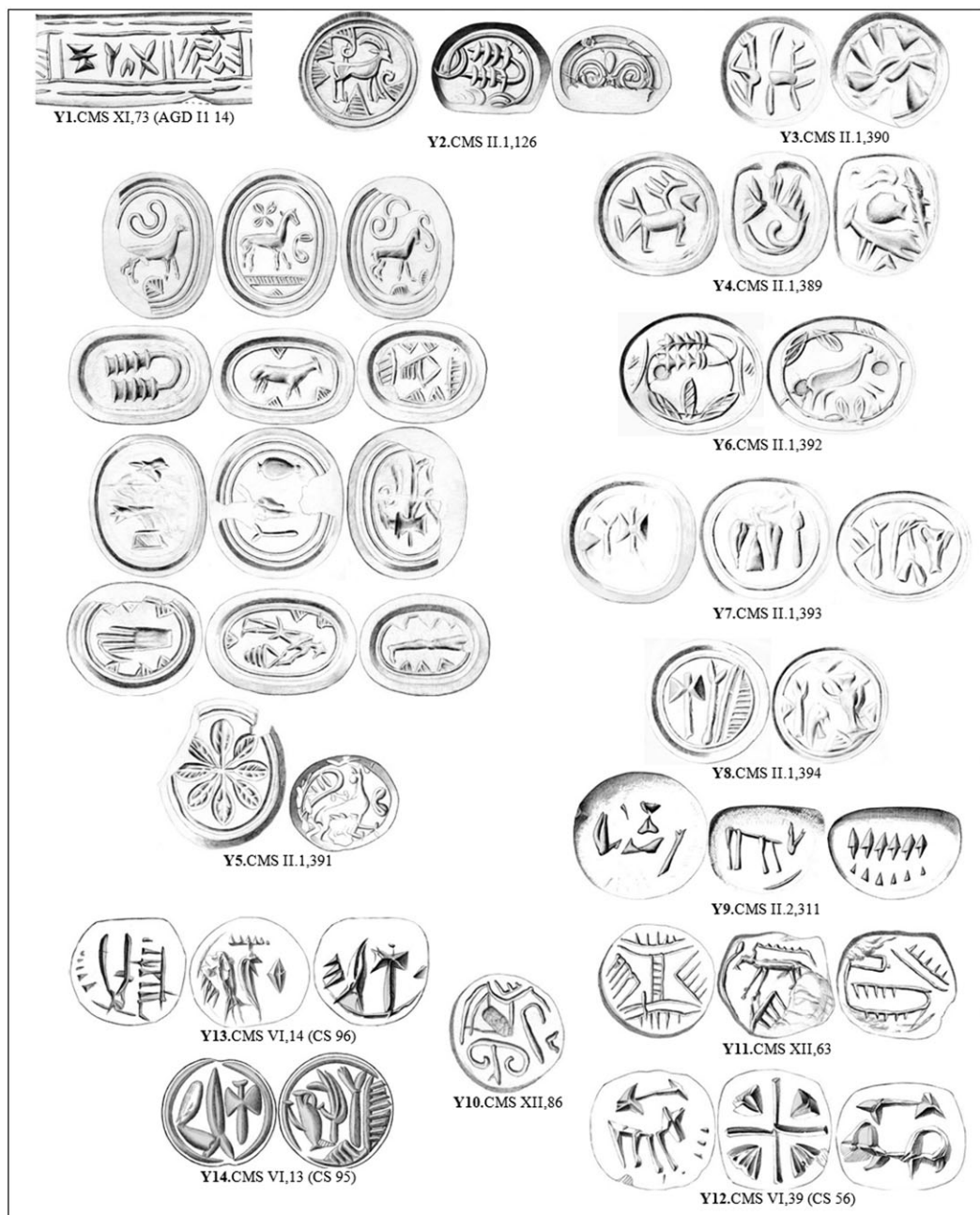


Figure 2

The original Archanes Script, as defined by Yule 1980. Drawings courtesy of the CMS Heidelberg, recoloured by author.

TABLE 1

Material, form and provenance of the seals belonging to the original Archanes Script, as defined by Yule 1980. Seals found in the same context are highlighted

	Material	Form	Provenance	Style/Form Date
Y1.CMS XI,73 (AGD II 14)	Soft stone (steatite)	Cylinder	[Unknown]	MM I–II
Y2.CMS II.1,126	Boar's tusk	Gable	Kalathiana Tholos K	EM III–MM IA
Y3.CMS II.1,390	Soft stone (steatite)	Disc	Archanes, Building 6 Room 1	MM I
Y4.CMS II.1,389	Soft stone (steatite)	Gable	Archanes, Building 6 Room 1	MM I
Y5.CMS II.1,391	Bone	Baton	Archanes, Building 6 Room 3	EM III–MM IA
Y6.CMS II.1,392	Bone	Stamp Cylinder	Archanes, Building 6 Room 1	EM II–MM IA
Y7.CMS II.1,393	Bone	Gable	Archanes, Building 6 Room 3	EM III–MM IA
Y8.CMS II.1,394	Bone	Disc	Archanes, Building 6 Room 3	EM III–MM IA
Y9.CMS II.2,311	Soft stone (steatite)	Gable	[Unknown]	MM I
Y10.CMS XII,86	Soft stone (steatite)	Conoid	[Unknown]	MM I–II
Y11.CMS XII,63	Soft stone (steatite)	Gable	[Unknown]	MM I
Y12.CMS VI,39 (CS 56)	Soft stone (steatite)	[Gable]	Syria?	[Non-Minoan?]
Y13.CMS VI,14 (CS 96)	Soft stone (steatite)	Gable	[Unknown, suggested 'Phournoi']	MM I
Y14.CMS VI,13 (CS 95)	Soft stone (steatite)	Discoid	[Unknown, suggested Knossos]	EM III–MM IA

attested on Y10/CMS XII,86 and Y11/CMS XII,63 bear little similarity to those appearing elsewhere in the group.<sup>5</sup>

Despite this motley assemblage, Yule is by far the most commonly cited source not just for the first formulation, but also for the contents, of the Archanes Script. Not only does this mean that the above-mentioned problematic seals (Y3–4, Y10–12) are, probably without actual intention, often included in recent discussions of the script (even if no current scholar would explicitly argue them to belong), but it also means that a probable error – the initial claim that 15 rather than 14 seals define the corpus of the script – was seemingly carried forward in the literature.<sup>6</sup>

In Table 1, I provide a breakdown of the form, material, recorded provenance and rough typological/stylistic date of each Archanes Script seal listed by Yule. Of the six seals which derive from the eponymous Archanes Phourni cemetery (Y3–Y8), four are of bone – though all are different seal-types – and two of steatite. All those found in Ossuary Building 6, Room 3, are of bone: these three seals (Y5, Y7–8) are among the most consistently illustrated and discussed examples of the Archanes Script referenced above (Fig. 1). It is, furthermore, only on these seals that the so-called 'Archanes Formula', discussed below, actually appears in some shape or form at Archanes. Revealingly, we may thus limit the occurrence of the 'Archanes Formula' in Archanes entirely to Ossuary 6, Room 3 (Fig. 3), and entirely to bone seals. Analysis of material and form also sheds light on how Yule compiled his list of Archanes Script seals: though the assemblage may be motley in an iconographic sense, there is a clear consistency in

5 The C-shape on Y11 face *c* may parallel the 'U-sistrum' on Y2 face *b*, Y5 face *d* and Y6 face *a*, while Y11 face *a* displays a motif resembling AB56-7/AS014 below; the latter, however, is not clearly isolated as a self-contained motif, while the former has perpendicular stripes in only one direction. Neither identification is valid without further parallels.

6 E.g. Schoep 1999, 266 and Karnava 2000, 196, both citing Yule. Both, however, rightly add the cautious 'some' before stating the number.



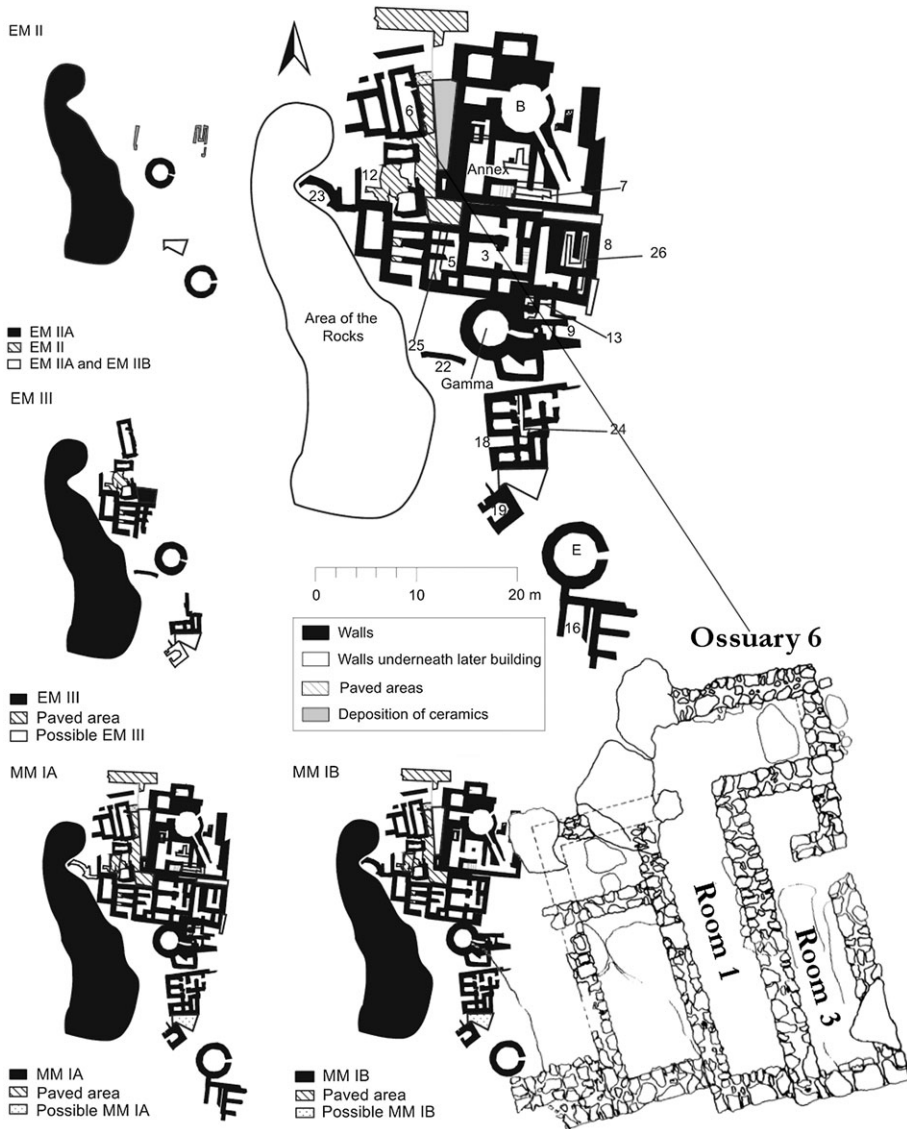


Figure 3

Archanes Phourni cemetery and Ossuary 6. Diachronic plans courtesy of Borja Legarra Herrero (2014, fig. 54; modified from Sakellarakis and Sapouna-Sakellarakis 1997). Ossuary 6 plan modified and partially redrawn by author from Sakellarakis and Sapouna-Sakellarakis 1997, 203, drawing 53.

seal-forms (mostly gables and discs) and material (mostly bone and steatite, though this is true for most seals of this period).

The next most frequently referenced sources for the content and definition of the Archanes Script are Kostas Sbonias' *Frühkretische Siegel* (1995) and Artemis Karnava's unpublished, yet widely disseminated and influential, Ph.D. thesis (2000). While both offer a more in-depth and

internally consistent analysis of the term than Yule, neither author defines the Archanes Script in the way Yule did: as an actual script. Sbonias (1995, 108) starts his analysis by stating that ‘[d]ie Bezeichnung ‘Archanes Schrift’-Gruppe wird hier verwendet, um eine ikonographische und stilistische Gruppe zu charakterisieren, die hauptsächlich aus Archanes bekannt ist’.<sup>7</sup> As such, he does not actually discuss a writing system of any sort, nor the Archanes Script *per se*. Instead, Sbonias creates the separate concept of an ‘Archanes Script-group’ as part of his larger aim to divide the corpus of Pre- and Protopalatial seals into well-defined stylistic and typological assemblages.

Karnava (2000, 195–8) – though the first to clearly outline the terminological problems plaguing the script – simply redefines the Archanes Script itself as a stylistic assemblage, dropping Sbonias’ suffix ‘-group’, reappropriating the term altogether: ‘[t]he term ‘Archanes script’ refers therefore more to a group of seals joined by their characteristic of bearing specific decorative motifs, a group which can be seen as part of a wider stylistic seals group of the Prepalatial period’.

Neither author sets out to investigate the extent of the Archanes Script, nor whether – except in discussion of the Archanes Formula, where Karnava rightly asks ‘if not script, then what?’ – it represents a ‘true’ or ‘full’ writing system.

A slightly earlier account, though less often used as a primary source (Krzyszkowska 2005, 70–1 being a notable exception), returns to Yule’s original meaning. In a footnote in *CHIC* (18, n. 59), the primary corpus of Cretan Hieroglyphic documents published in 1996, the editors clearly and fully enumerate all seals they consider to belong to the Archanes Script (rendering this innocuous footnote perhaps the most important step forward in our study of the script since Yule). A clear distinction is drawn between the ‘Archanes Formula’ as a sequence of signs attested as part of – but not necessarily constituting – the ‘Archanes Script’, and the script itself. The result is a homogenous and internally consistent view of the script that is also much closer to the current – unstated – understanding of its nature among epigraphists, as it includes only those seals which are explicitly considered to bear writing (Fig. 4).

A breakdown according to material, form, provenance and suggested dates of the Archanes Script seals listed in *CHIC* is offered in Table 2. As the editors of *CHIC* consider the Archanes Script to be an early form of Cretan Hieroglyphic, and, moreover, are notably strict in what they identify as writing, only signs that appear elsewhere in the corpus, and as part of a sign-sequence, are recognized, omitting isolated single signs (Olivier 1981, 108, following Pope 1968: see Decorte 2017, 41 and n. 9). A restrictive sign-list, compiled on the basis of only those signs recognized by *CHIC*, is offered in Table 3.

Whether the Archanes Script is indeed an early form of Cretan Hieroglyphic, and the sign-list below is therefore justified, is, as we have seen above, a matter of debate. Furthermore, of the sign-sequence defined in *CHIC* as the Archanes Formula – namely, CH042-019/019-095-052 – only the signs CH042 and CH019 occur frequently in Cretan Hieroglyphic: CH095 is only ever seen as part of the Archanes Formula, while signs formally similar to CH052 appear only once in the Cretan Hieroglyphic clay archives (#031a) and once in glyptic (#306a).

As the above debate stands at the very core of our understanding the first appearance of ‘true’ writing on Crete, it cannot be waged on the basis of murky definitions and unstated conceptions as to which objects do and do not belong to the script. This paper offers a fundamental redefinition of the Archanes Script, which will be held separate from the Archanes Formula (a sign-

7 Though considering ‘die besonderen Schriftzeichen’ as defining this group.

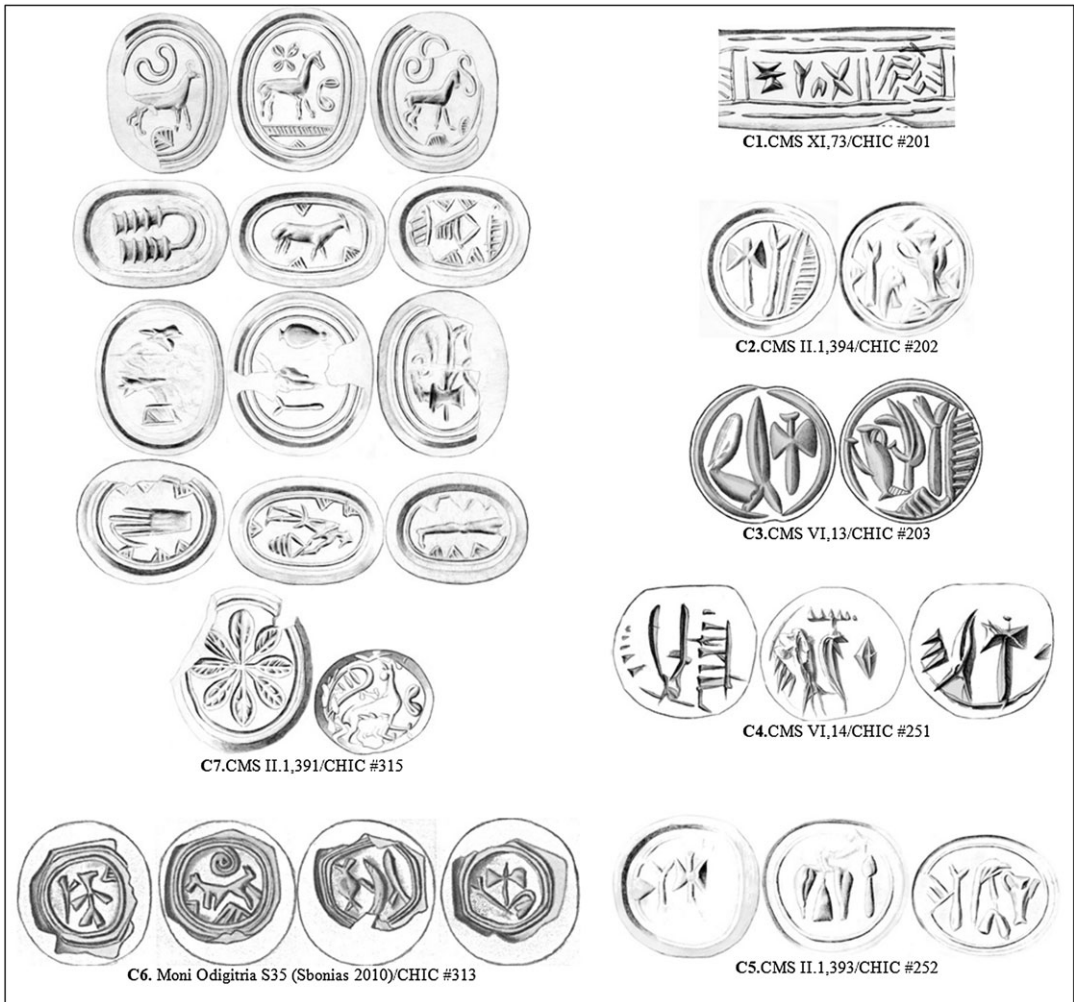


Figure 4

The 'second' Archanes Script, as defined by *CHIC*. Drawings courtesy of the *CMS* Heidelberg, recoloured by author.

sequence present in – but not necessarily limited to – the Archanes Script) and the Archanes Script Group (a stylistic assemblage).

#### REDEFINING THE ARCHANES SCRIPT

Let us start with the initial 1966 publication, used by Yule (and occasionally still cited as a primary source for the script: Schoep 1999, 266), of two seals found in Ossuary Building 6, Room 3 at Archanes, recognized as bearing writing by both Grumach and their excavator Sakellarakis (1965; mostly due to the appearance of signs formally almost identical to Cretan Hieroglyphic and Linear A). The seals in question are CMS II.1,393 and CMS II.1,394 (Y7/C5 and Y8/C2 in Figs. 2



TABLE 2

Material, form and provenance of the seals constituting *CHIC*'s 'Archanes Script'. Seals found in the same context are highlighted

	Material	Form	Provenance	Style/Form Date
<b>C1.CMS XI,73/CHIC #201</b>	Soft stone (steatite)	Cylinder	[Unknown]	MM I–II
<b>C2.CMS II.1,394/CHIC #202</b>	Bone	Disc	Archanes, Building 6 Room 3	EM III–MM IA
<b>C3.CMS VI,13/CHIC #203</b>	Soft stone (steatite)	Discoid	[Unknown, suggested Knossos]	EM III–MM IA
<b>C4.CMS VI,14/CHIC #251</b>	Soft stone (steatite)	Gable	[Unknown, suggested 'Phournoi']	MM I
<b>C5.CMS II.1,393/CHIC #252</b>	Bone	Gable	Archanes, Building 6 Room 3	EM III–MM IA
<b>C6.MO,535/CHIC #313</b>	Bone	Cube	Moni Odigitria, Ossuary	EM III–MM IA
<b>C7.CMS II.1,391/CHIC #315</b>	Bone	Baton	Archanes, Building 6 Room 3	EM III–MM IA








and 4 – one should not rely on the figures given in Grumach and Sakellarakis 1966 as multiple seal-faces are there identified incorrectly).<sup>8</sup> Grumach and Sakellarakis immediately linked these two seals to a third, published earlier that year in the *London Illustrated News*: our current CMS II.1,391 (Sakellarakis and Sapouna-Sakellarakis 1966; Sakellarakis 1967; Grumach and Sakellarakis 1966, 109; Y5/C7 in Figs. 2 and 4). These three seals were the first to spark a discussion of a distinct form of early writing engraved on glyptic material from the cemetery of Archanes Phourni, providing the backdrop against which Yule first defined his script. As such, they may provide the basis from which to start our redefinition.

We may begin by deconstructing the iconography of the seals in question, building our understanding of the script from the evidence up. In the Figures below, all seal-faces are presented in a series of high-contrast drawings, aimed at facilitating such deconstruction. The forms of the seals and the outlines of the faces are not shown, which means that all lines in the drawings were purposefully incised by the glyptic artist. This allows us to pick out individual elements of each seal's iconography for comparison and discussion.

Fig. 5 prompts a few immediate observations: all signs are of vaguely equal size (except for small differences in CMS II.1,394b), and all are surrounded by a single purposefully drawn line, forming a circle or ovoid around the edge of the glyptic face. Comparing the two seals, specific signs – which are elements of the Archanes Formula – clearly reappear on both: similar sequences are seen on faces *a*, and another on CMS II.1,393c and CMS II.1,394b. Face *b* of CMS II.1,393, on the other hand, displays signs which are not attested elsewhere, nor are they attested anywhere on CMS II.1,391. While thus not part of the 'Archanes Formula', the similar size of the signs and linear presentation of the sequence on CMS II.1,393b undoubtedly render it part of the Archanes Script. The first and third signs in this hapax-sequence are similar to the extent that they will, at this stage, be considered one and the same, with the added caveat that this may be revisited in the future (Grumach and Sakellarakis [1966, 110] instead suggest a 'bird-in-flight', the 'head' of which *CHIC* and the *CMS* consider to be damage; cf., perhaps, CMS II.2,264a for a later parallel). On the basis of these two 'initial' Archanes Script seals, we may already postulate a series of signs as certainly participating in the script, here listed and prefixed by 'AS'. These signs are shown in Table 4.

<sup>8</sup> As noted by Sakellarakis in CMS II.1, pp. 466–7 seal-faces 'b' were swapped. Not mentioned is that in Grumach and Sakellarakis' discussion of CMS II.1,393/HM 2266, face 'b' refers to their '1c', though this accords with the seal-face designated 'b' in the *CMS*.

TABLE 3  
*CHIC*-based Archanes Script  
sign-list (italics/question mark  
indicate readings considered  
doubtful in *CHIC*)

CHIC sign number	
019	
038?	
042	
052	
062?	
094?	
095	

Other iconographic elements may be seen on the relevant seal-faces, though varying in size and placement. These appear prominent and well defined, and include what is seemingly the largest motif on any of the seal-faces (CMS II.1,394a/Y7/C5, furthest right). As I have argued elsewhere, dismissing such motifs as meaningless ‘decoration’ or ‘fillers’ (a tradition started by Evans 1894; 1909, 229–31, who dismissed a large number of motifs as the result of the Minoan artist’s supposed ‘*horror vacui*’), simply on the basis that they do not reflect the linear sequencing familiar from modern writing systems, cannot be justified. Signs well accepted as part of the Cretan Hieroglyphic script may be seen to behave in similarly complex ways, while ethnographic parallels for recurring ‘background’ elements participating in – and modifying the signs of – heavily sematographic writing systems are abundant (Decorte 2017, 49). As the drawings in Fig. 5 and of CMS II.1,391 below present only those lines purposefully incised into the seal-face by the glyptic artist, they will here be used to name, categorize and analyse *all* visible marks – including the lines (single or double) that encircle the glyptic face. The signs

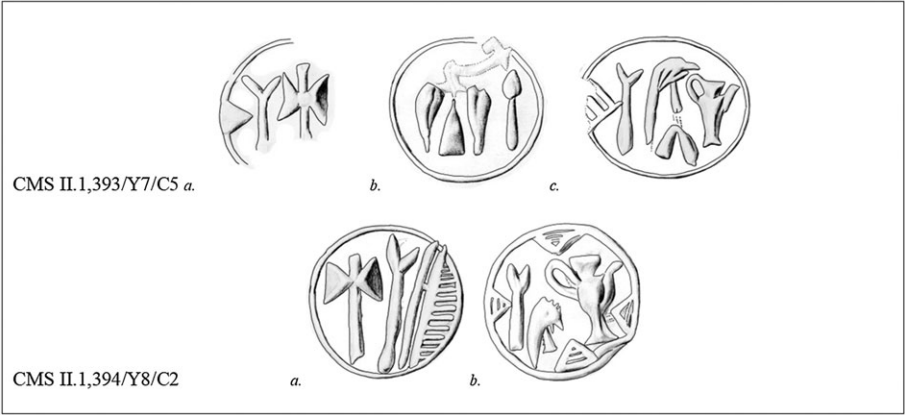


Figure 5






'Initial' Archanes Script seals. High-contrast incision-only drawings by author, after drawings courtesy of the CMS Heidelberg.

TABLE 4  
Signs attested on two of the three  
'initial' Archanes Script seals

AS001	
AS002	
AS003	
AS004	
AS005	
AS006	
AS007	

in question will be prefaced by an asterisk \*, so as to indicate their possible sematographic status (which is not to say that a sign may not function as both a sematograph and lexigraph in varying contexts). Table 5 presents all such signs extracted from Fig. 5. A single line border will be

TABLE 5  
Other elements attested on the  
'initial' Archanes Script seals

AS*1a	
AS*1b	
AS*2	
AS*3	
AS*4b	

indicated as AS\*0, a double line border as AS\*00. These possibly sematographic signs furthermore allow us – as we will see – to recognize other seals that form part of the Archanes Script Group, even if they do not contain any of the signs that we would currently recognize as script.

The next seal upon which we may build our definition of the Archanes Script is CMS II.1,391, already mentioned above (Fig. 6). CMS II.1,391 is an 'astonishing' bone baton (Krzyszkowska 2005, 70), presenting no fewer than 14 separate faces. Surprisingly, although the baton is probably the best-known and most frequently illustrated Prepalatial seal, 'famous' in scholarship (Jasink 2011, 131), the complexity of the object has led to significant errors in our understanding of the relationship between its 14 seal-faces. In fact, to my knowledge, *all* drawings that have so far appeared in scholarship illustrating the relationship between all of its seal-faces have been erroneous.

We may trace errors as to the positioning of the glyptic faces and their iconography back to the first complete drawings of the seal, which appeared in the 1969 publication of CMS II.1. There, Sakellarakis and Platon first assigned and named the faces *a–m*, attaching a plan to show the location of each of these on the baton. The impressions used for the drawings of faces *a–c* and *g–i*, however, were made, it may be surmised, by holding the handle of the baton to the left; for *d–f* and *j–l* this was switched to the right (probably to orient the quadruped on face *e* in a way that was perceived as 'right-side-up'). While for a simple seal such a different manner of impressing only affects the orientation of the iconography (see below), with a fused multi-faced seal such as the baton this resulted in an incorrect seal-face sequence: faces *d* and *f*, as well as *j* and *l*, are switched and upside down. The plan and layout of the seal-faces as provided in the CMS, used universally from that point onwards (CHIC; Sakellarakis and Sapouna-Sakellarakis 1997, figs. 283–4; Flouda 2013, fig. 8; 2015; Ferrara 2015, fig. 3, etc.) is thus erroneous (Fig. 7).

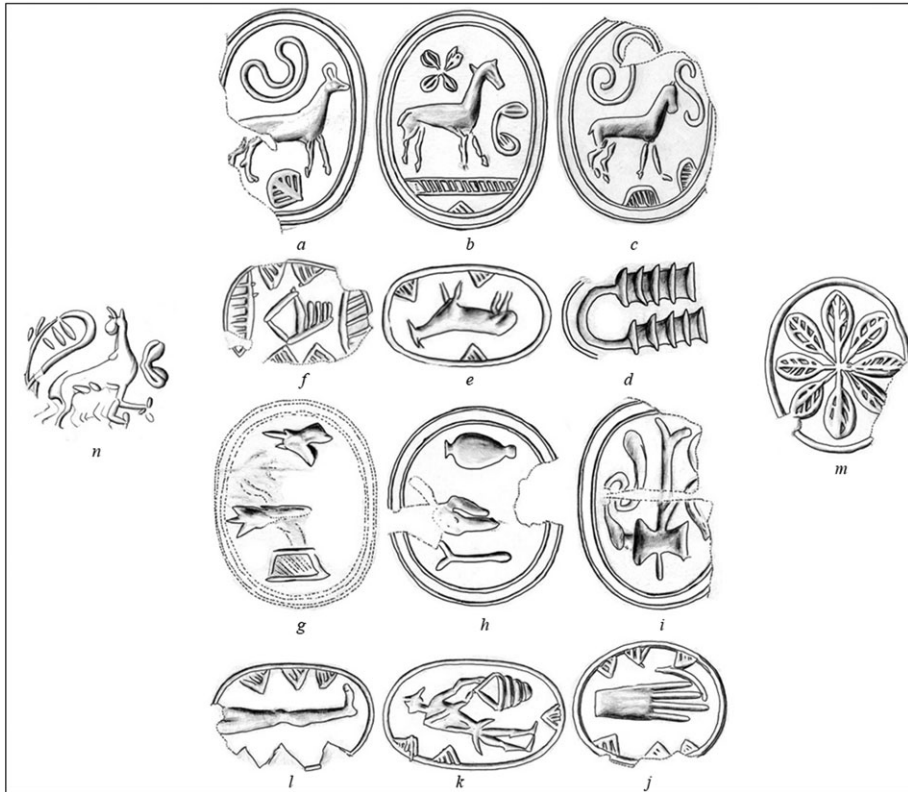


Figure 6

CMS II.1,391(Y5/C7). High-contrast incision-only drawings by author, after drawings courtesy of the CMS Heidelberg. Positions of seal faces corrected from CMS (see below).

That this has not been noticed in half a century of scholarship, is probably due to considerable confusion in the many photographs of the seal that have been published.<sup>9</sup> The excavator's own 1997 photograph (Sakellarakis and Sapouna-Sakellarakis 1997, fig. 283; cf. Ferrara 2015) presents a mirror, rather than true, image of faces *a–c* of the seal. Conversely, the otherwise excellent recent Heraklion museum publication (Flouda 2015) has faces *a–c* as they appear in real life, but all other sides mirrored (see also the non-corresponding positions of the *a–c* drawings and photographs). The practice of mirroring photographs no doubt started as a way to better visualize the relationship between the seal and the impressions (which are naturally mirrored). This author was only able to establish the correct relationship of the seal-faces (with faces *f–d* under the feet of the *a–c* quadrupeds, and the quadruped on face *e* oriented in the opposite direction and upside down respective to these faces) based on a personal photograph of the object as currently on display,

<sup>9</sup> Krzyszkowska (2005, 71) is the only one to have published faces *j–l* correctly, though she does not note the problem (or *d–f*) and reproduces the CMS plan, implying the iconography of *j–l* to be upside down. Younger, on <http://people.ku.edu/~jyounger/Hiero/SealsImps.html> (accessed 10/06/2017), is the only one to have explicitly noted that the 'CMS switches faces D & F'; though he does not mention *j–l*, he positions these faces correctly. His replica demonstrating 'the correct position of the faces', however, mistakenly places *f–d* above the heads of the *a–c* quadrupeds.



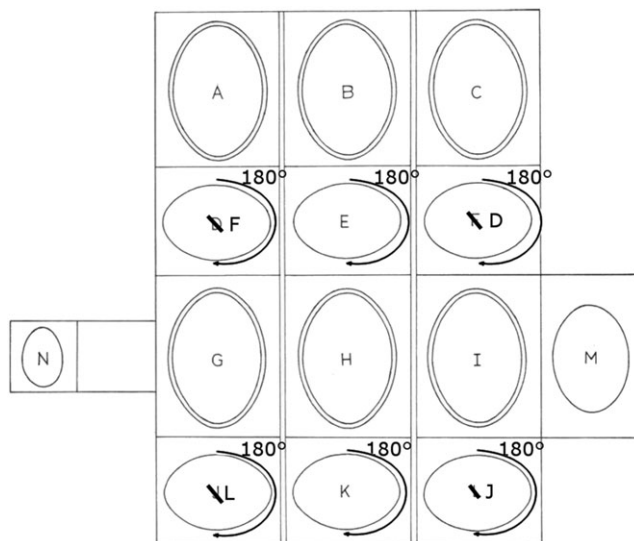


Figure 7

Correction of the often-reproduced CMS chart for the position of seal-faces on AS#03.CMS II.1,391/CHIC #315.

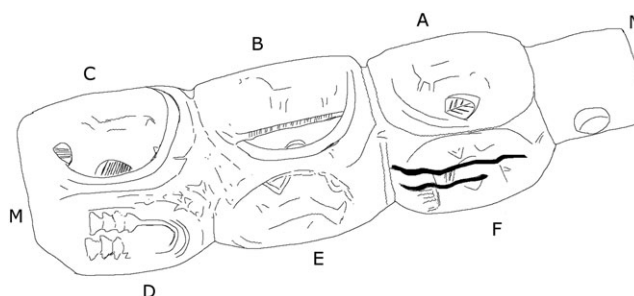


Figure 8

Sketch by author (after photograph by author) of seal CMS II.1,391(Y5/C7) as currently on display in Heraklion Museum, showing faces consistently mis-oriented in scholarship, including on the museum display. Cracks with upward left slant, a useful 'landmark' for orientation purposes, are emphasized on face *f* (misidentified as *d* in the CMS).

and the very first photograph of the object ever published (Sakellarakis and Sapouna-Sakellarakis 1966). Drawings of these are provided in Figs. 8 and 9. As it stands, however, even the elegant display of the object in the Heraklion Museum currently situates the drawings of faces *d*, *f*, *j* and *l* alongside non-corresponding seal-faces.

While this may seem a minor technical issue at first, when it is realized – as will be discussed below – that this seal presents the most important evidence of interaction between 'traditional' Archanes Script signs and individualized motifs later seen as participating in Cretan Hieroglyphic, the correct relation between sign-sequence and iconographic motifs may be considered paramount. Indeed, if we, for example, choose to interpret the seal as three convex-faced plates or cubes, past drawings imply that AS001–2 would be associated with the 'leg' (Cretan Hieroglyphic sign 010/AS\*\*7 below), the quadruped/S-spiral (CH309/Linear A 703/AS\*9 below)

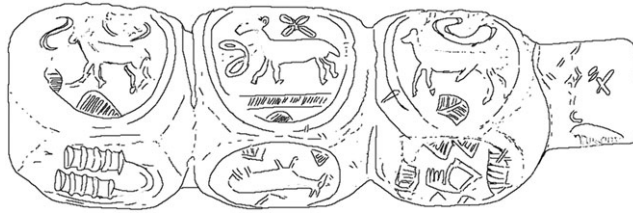


Figure 9

Drawing of the same seal faces as in Fig. 8 by author, focusing on orientation of iconography, showing the quadrupeds' upside-down relation to each other on faces *b* and *e*; after high-contrast photograph in the first publication of the seal (Sakellarakis 1966).

and the 'basket'-sign (AS\*\*3 below). However, two of those would be incorrect: AS001–2 are in reality on the same position lengthwise as the so-called 'U-sistrum' (CH\*181/AS\*\*2 below) and hand sign (CH008/AS\*\*5 below).

Returning to our analysis of the iconography, while the seal has been claimed to show another identical iteration of the 'Archanes Formula' (faces *h*–*i*), we may recognize a divergence from the previous two seals in the supposed 'final' sign of the Formula's sequence. Though, like AS004 above, the 'final' sign on face *h* resembles a ceramic vessel, it is clearly formally distinct: whereas CMS II.1,393c and CMS II.1,394b depict a ceramic form akin to an elongated spouted 'teapot' type, CMS II.1,391h appears to depict a piriform or amphora type. The general conflation of these two signs in scholarship seems highly premature: we cannot as yet be certain that their sign-value is the same, and that this formal divergence was not meaningful. Cretan Hieroglyphic, for example, includes five different vessel signs in its syllabary, one of which is our 'teapot' (AS004/CH052). That these signs have different values is almost certain, considering that they are not interchangeable in frequently attested sequences (CH042-054-061, for example, only ever appears using CH054) and that two different vessel signs may appear sequenced alongside other signs in a single sequence (e.g. #031a, #103a on the clay incised Cretan Hieroglyphic documents; #130, #306a on seals and sealings). There thus seems no justification for the currently widely accepted (cf. *CHIC*, 409), though rarely explicitly stated, assumption that AS004 and the final ceramic sign on CMS II.1,391h should be taken as identical.

Apart from the new vase sign, here designated AS008, the seal further displays three new, barely legible, signs on a highly eroded surface (face *g*): AS009–11 below. What makes the seal particularly interesting, however, is that next to seal-faces displaying known (and unknown) linear-ordered sign sequences, we find large-scale isolated motifs occupying entire seal-faces, some of which – such as the 'hand' and 'leg' on sides *j* and *l* – appear 'decidedly odd' in the context of late Prepalatial iconography (Krzyszkowska 2005, 70; though, as noted, both appear later as Cretan Hieroglyphic signs). Interestingly, many of these motifs are accompanied by the potential sematographs mentioned before (most commonly the 'hatched triangle', AS\*2), which may be seen to connect the seal-faces in style and appearance.

Considering the previously stressed pervasive nature of sematography in the earliest writing systems, we cannot with any certainty exclude the idea that these images functioned as part of – or as iconography interacting with – the Archanes Script (some connection between these motifs and the script was already envisaged by Grumach 1964; Sbonias 1995, 111; Sakellarakis and Sapouna-Sakellarakis 1997). Any study of the script should, therefore, include an analysis of the (correct) relation between these images and the linear-sequenced signs recognized from later Aegean writing

systems. While Krzyszkowska (2005, 71) has argued, regarding the ‘individual symbols [...] that later recur as syllabic signs in the Hieroglyphic script’, that ‘it is conceivable that the emergence of multi-facial seals in the late pre-palatial did represent an attempt to convey meaning through a series of images’, Flouda (2013, 152) has noted that these signs may function as ‘semasiographic codes without any phonetic value, but functioning as mnemonic aids’, which, she argues, stems from the ‘emblematic use of Minoan seal devices at least since the late Prepalatial period’. For arguments that such a communicative use extended well into the Prepalatial period proper, and indeed was the defining characteristic of Prepalatial glyptic, see Decorte 2018b and forthcoming.

The large single sign on face *m* is indeed familiar as one of the most common Prepalatial motifs, which I have elsewhere termed ‘Leaf-Cross’, forming part of an early glyptic vocabulary that dominates the majority of Prepalatial seals found on the island. Its appearance here may guide us in our interpretation of this seal. A smaller variant of the Leaf-Cross may be seen hovering above the quadruped on face *b* (the Leaf-Cross without a central ‘x’ is a common variant in Prepalatial glyptic), next to what appears to be a version of the bifoliate AS\*3 (cf. face *n*). The semiotic signification of the smaller Leaf-Cross on this particular face, probably qualifying or classifying the quadruped, may well differ from that on face *m*, where it is presented as the central and only motif. Indeed, most of these large-scale signs, such as the quadrupeds themselves, the hand, human figure and ‘U-sistrum’, are consistently found centred (and rarely sequenced or ‘floating’, as may be demonstrated by an analysis of all seals and sealings belonging to the newly constructed Archanes Script Group).






















Two categories of potentially sematographic signs are therefore outlined in the version of the Archanes Script here presented, though, as said before, any single sign may well inhabit multiple classes:<sup>10</sup> *sematographic* ‘class 1’ contains the small-scale elements that almost never appear wholly isolated, while *sematographic* ‘class 2’ encompasses large-scale motifs which often appear isolated, or qualified by one or more smaller, ‘floating’ motifs. *Class 2* motifs are here separated from *class 1* through the use of a double asterisk. Tables 6 and 7 list the potentially sematographic signs and the linear-sequenced signs attested on this baton that do not appear on seals CMS II.1,393–4.

Every single mark deliberately incised into this extraordinary baton has now been listed, categorized and named. While no doubt the degree to which different signs interact with the Archanes Script will be highly varying (e.g. *class 1* versus *class 2* sematographs), such a cautious and complete approach allows for a holistic and rigorous analysis of what constitutes the script, far beyond present definitions. Even those sceptical of the participation of potential sematographs, maintaining their status as – somehow meaningless – ‘decoration’, may make use of the sign-lists by simply ignoring those motifs accompanied by asterisks. A complete list of supposed ‘background elements’ may be a vital tool in and of itself, if only for reasons of stylistic comparison and iconographic composition. However, the fact that many of these asterisked motifs are attested in the Cretan Hieroglyphic script (and occasionally Linear A), both as sequenced script signs and as iconographic motifs appearing alongside known sign-sequences (Jasink 2009; Decorte 2017), should caution against too narrow an approach.

Having worked from the iconography upwards, we may now set out the parameters on which to build our redefinition of the Archanes Script. As the script is defined not just by its standard linear-sequenced signs, but by the combination of these signs with specific ‘extra’ motifs on the glyptic field, any seal or sealing displaying at least one ‘original’ Archanes Script sign (AS001–011 in Tables 4 and 7), in combination with at least one known *class 1* or *class 2* ‘background





10 And behave (i.e. appear ordered) as either class: see AS001–AS002 in Fig. 6, face *i*.

TABLE 6  
Potential sematographs on CMS II.1,391 not attested on CMS II.1,393-4

Potential Sematographs					
AS*2b		AS*12		AS**6	
AS*4a		AS**1a 'ram?'		AS**7	
AS*5		AS**1b 'deer?'		AS**8	
AS*6		AS**1c 'horse?'			
AS*7		AS**1d 'female agrimi?'			
AS*8a		AS**1e 'quadruped regardant'			
AS*9 (cf. <i>CHIC</i> *309)		AS**2 (cf. <i>CHIC</i> *181)			
AS*10		AS**3			
AS*11		AS **5			

element' (AS\*1-12 [Tables 5 and 6] and AS\*\*1-8 [Table 6] respectively), may be argued with some certainty to belong to the script. The newly compiled corpus of Archanes Script seals and sealings, illustrated in Fig. 10, is a result of a systematic search through the entirety of the presently available corpus of Bronze Age Cretan glyptic. The seals and sealings here argued to belong to the Archanes Script (prefixed AS#) have then been deconstructed in the same way as we have done with CMS II.1,393-4 and CMS II.1,391 above, to compile a complete sign-list of the script, to be found

TABLE 7  
Linear-sequenced signs on  
CMS II.1,391 not attested on  
CMS II.1,393-4

Linear-Sequenced Signs	
AS008	
AS009	
AS010	
AS011	

in Appendix I. A separate database (not published here) has been compiled of all seals and sealings displaying *class 1* or *class 2* sematographs without currently recognized script signs, to form the above-mentioned Archanes Script Group. Seals and sealings from this group may perhaps later be added to the Archanes Script, as our knowledge of the script becomes more advanced.

#### SEALS NOT LISTED IN *CHIC*

The corpus of seals and sealings displaying the Archanes Script here compiled and presented includes seven of the 14 seals originally identified by Yule as part of the script (Y1, Y5, Y7–9, Y13–14), and all of those identified by *CHIC* (five of which were already listed by Yule, with *CHIC* adding AS#04.MO,S35/*CHIC*#313). A further five – two sealings from Knossos (AS#11–12) and three from Samothrace (AS#13–15; cf. Matsas 1991; 1995) – are included in *CHIC* as bearing the ‘Archanes Formula’ but are not there considered to be part of the script. This is probably because they are stylistically later in appearance, with the excavator of the Samothrace sealings dating their context to MM II/IIIA (Matsas 1995, 236; with radiocarbon dates in the nineteenth century BC/MM IB). One additional Samothrace sealing listed in Fig. 10, AS#16.CMS VS3,343, does not appear in *CHIC*, despite the presence of a very clear sign AS002.

Two further seals here accepted into the Archanes Script are not considered part of the script (or considered to bear the formula) by *CHIC*: AS#07.CMS II.2,215 and AS#09.CMS VS1B,317.<sup>11</sup> As indicated by their absence, *CHIC* does not even formally consider these seals to contain writing.<sup>12</sup> The same is true for AS#08.CMS II.2,311, which is not recognized as bearing

11 See, however, Yule 1980, 58, n. 120, perhaps indicating that AS#07 (CMS II.2,215) is Yule’s missing ‘15<sup>th</sup>’ original script seal, omitted on p. 170.

12 Even though AS#09 (CMS VS1B,317: Schoep 1999, 266, n. 3; annotated by the CMS Arachne service with ‘Schrift?’) and AS#07 (CMS II.2,215: Anastasiadou 2016, n. 123) have separately been argued to belong to the Archanes Script.



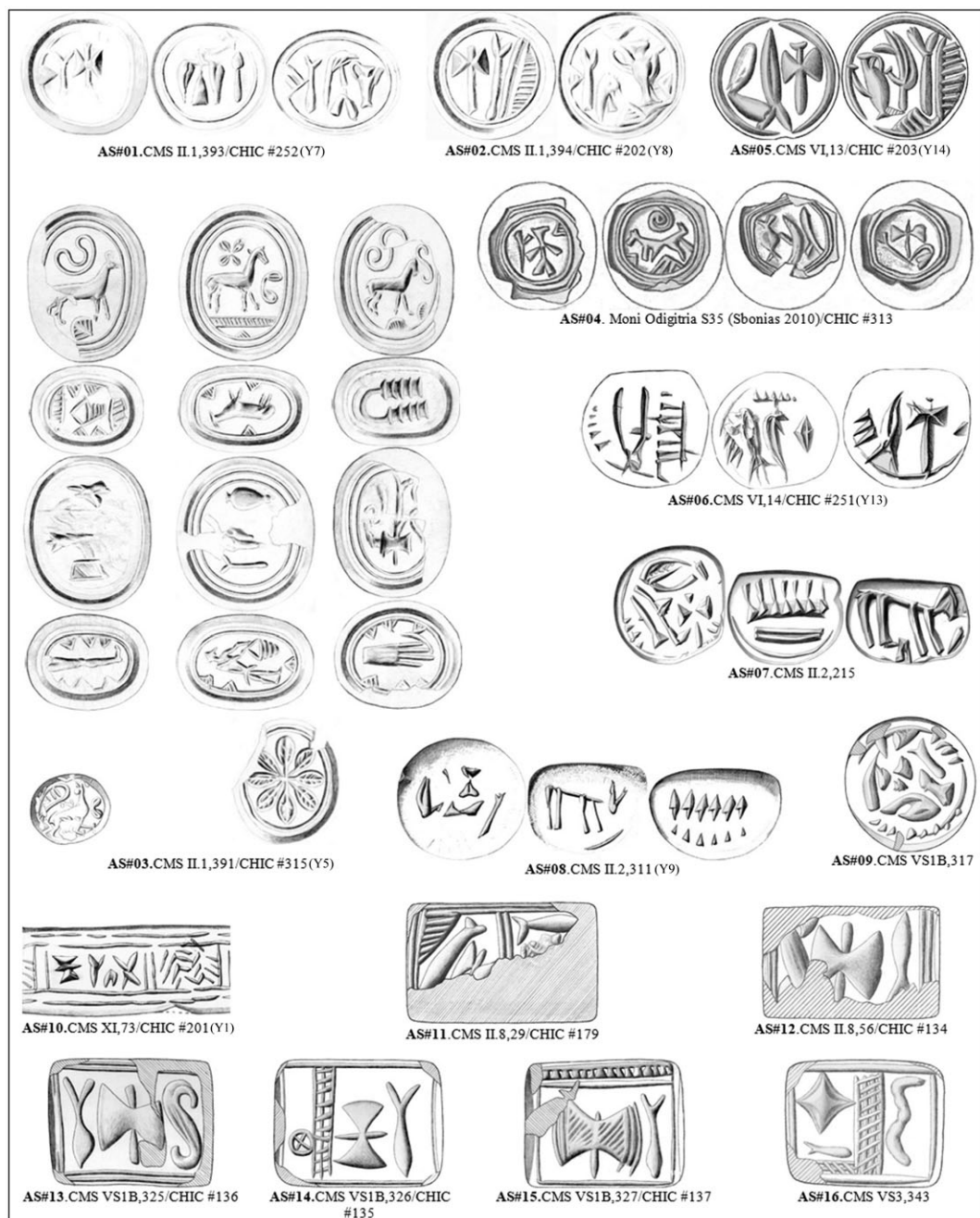


Figure 10

Seals belonging to the Archanes Script as presented, and argued for, in this paper. Drawings courtesy of the CMS Heidelberg, recoloured by author.



Figure 11

Seals here admitted into the Archanes Script not accepted as bearing writing in *CHIC*. 1: AS#07.CMS II.2,215 (face *a* diameter: 1.6 cm); 2: AS#08.CMS II.2,311 (face *a* diameter: 1.5 cm); 3: AS#09.CMS VS1B,317 (1.82 x 1.74 cm).

Photographs courtesy of the CMS Heidelberg.

writing by either *CHIC* or the *CMS*, having only appeared in Yule's early assemblage (Y9). The exclusion of these seals may seem justified based on the *CMS* drawings (Fig. 10), where the glyptic motifs appear confused and disconnected. Photographs of the actual seal-faces (Fig. 11), however, demonstrate the relation between these glyptic elements more clearly: while two disconnected triangles and lines in the bottom right of the impression drawing of AS#07.CMS II.2,215 face *a* may be more clearly recognized as an instance of sign AS001 (Fig. 11:1a), the discolouration seen in the photograph on face *a* of AS#08.CMS II.2,311 allows us to recognize the split top of sign AS002 (Fig. 11:2a), which does not appear clearly on the *CMS* drawing.

All three seals are engraved in a decidedly more angular and roughly worked fashion than the 'initial' Archanes Script seals examined above. A similar style of execution may be found on AS#06.CMS VI,14/CHIC#251 (Fig. 10), accepted by both *CHIC* and Yule as part of the Archanes Script. These seals, AS#06–09, have one thing in common: they are all fashioned from soft-stone, identified in the *CMS* as steatite. AS#09.CMS VS1B,317 is a steatite conoid button from Pagkalochori, where it was found in a Late Minoan (LM) III context, though style and form indicate the seal to be of roughly MM I date. AS#07.CMS II.2,215 and AS#08.CMS II.2,311 are both steatite gables of unknown provenance, though the former has been suggested to have come from Sampas.

The differences in style and execution between this steatite subgroup (AS#06–09) and the seals discussed above cannot, however, be ascribed to the use of different materials only: the steatite disc AS#05.CMS VI,13/CHIC#203 is stylistically and palaeographically closer to the bone disc AS#02.CMS II.1,394/CHIC#202 than it is to the other steatite Archanes Script seals. The palaeography, associated iconography/sematographs (such as the bifoliate element on face *a*) and material form (discoid) associate the seal with the 'initial' Archanes Seals group, or as transitional between that group and the steatite subgroup. The division of our script into such distinct assemblages based on material, style, date and form will be further pursued below.

For now, let us return to our three seals which are not considered as bearing writing by *CHIC* (AS#07–9). As already pointed out, Archanes Script signs are demonstrably present on all three seal-faces: next to the signs identified above, seal AS#09.CMS VS1B,317 most clearly displays an instance of sign AS002 at the top right on Fig. 10 (indeed, the online *CMS* Arachne database annotates the seal with 'CH019?'). The broken-up but (especially in Fig. 11:1a) clearly discernible sign AS001 on seal AS#07.CMS II.2,215 may guide us to also tentatively identify the detached 'blades' of AS001 on both AS#08.CMS II.2,311a and AS#09.CMS VS1B,317, in the middle and top right quadrants of the respective seal-faces as shown in Fig. 11. A third, new sign that may be recognized on each of the seals is the 'drooping' AS013 (see the sign-list in

Appendix I). Though the motif somewhat resembles AS003 – especially on AS#08.CMS II.2,311a, where taphonomy and wear have rendered the seal-face barely legible – it differs markedly in that its central stalk droops back onto itself, rather than remaining straight. The sign is also seen alongside signs AS001–AS002 on face *d* of the bone cuboid AS#04.MO,S35/CHIC#313 from Moni Odigitria (Fig. 10), where it clearly differs from sign AS003 on face *c* of the same seal.

The above indications are enough by themselves to include these seals in our study of the Archanes Script (and indeed have motivated previous scholarship to do so for some of them; see n. 12), the dentate bands and encircling of the glyptic fields satisfying the additional criterion we advanced. In investigating these seals, however, I discovered a further remarkable quality: not only is there a marked homogeneity in material and execution, but the motifs – though at first seeming starkly different when considering the drawings and photographs as presented in the *CMS* and elsewhere – are actually virtually identical, with regard both to sign-sequence and even syntactical composition.

It should be kept in mind that, while drawings of seal-faces are sometimes oriented according to the position of the string-hole, or the direction in which it was drilled, in the *CMS*, *CHIC* and elsewhere, drawings are often simply oriented so as to show known glyptic motifs in an upright fashion (cf. the discussion of AS#03 above). With round seal-faces, judgement in relation to what represents ‘top’ and ‘bottom’ is inherently subjective. We may thus begin to rotate our seals to find meaning (Fig. 12). The results of such an exercise are extraordinary: when the *CMS* drawing of AS#09.CMS VS1B,317 is turned upside down (thus still angled according to the string-hole) and AS#08.CMS II.2,311 is rotated exactly 90° from the string-hole (an extremely common orientation for motifs in *CHIC*), the cognition between the two seals and AS#07.CMS II.2,215 comes to light suddenly and dramatically.

As shown in Fig. 12, it is here argued that a single identical sign-sequence is present on all three of these seals. Consisting of five Archanes Script signs (AS001, ASd001, AS013, AS017 and AS002), as well as two of our potentially sematographic elements (AS\*0 and AS\*4a), this sequence maintains a highly consistent spatial relationship on the glyptic field in all three of its instances (see the template in Fig. 12). This allows us to independently strengthen our earlier tentative identification of signs such as AS002 on seal AS#07 (despite a small speck to the side), and the detached ‘blades’ of AS001 on seals AS#08–09. As if to provide final confirmation of the intimate connection between these seals, the consideration that seals AS#07–08, as three-sided gables, may be accorded any order of seal-faces following circular face *a* (the designation of individual faces as ‘*b*’ and ‘*c*’ thus, once again, being arbitrary), leads to the striking realization that the additional faces of these seals also display near-identical, possibly sematographic, motifs (AS\*\*4b and AS\*\*1).

#### DIACHRONIC CHANGE AND ARCHANES SCRIPT SUBGROUPS

On the basis of palaeography, style and material, we may, following the analysis above, divide the proposed corpus into three core subgroups: the bone seals of the ‘initial’ Archanes Script subgroup, showing finely worked signs (AS#01–04), the steatite subgroup analysed in detail in the previous section, displaying more angular signs (AS#06–09), and the Samothrace and Knossos sealings (AS#11–16), with rounded signs closer to Cretan Hieroglyphic in appearance (discussed further below). As pointed out above, AS#05 demonstrates that stylistic differences between these groups are not simply due to different materials used. A consideration of the seal-shape, material, motifs and suggested date of each of the seals, presented in Table 8,

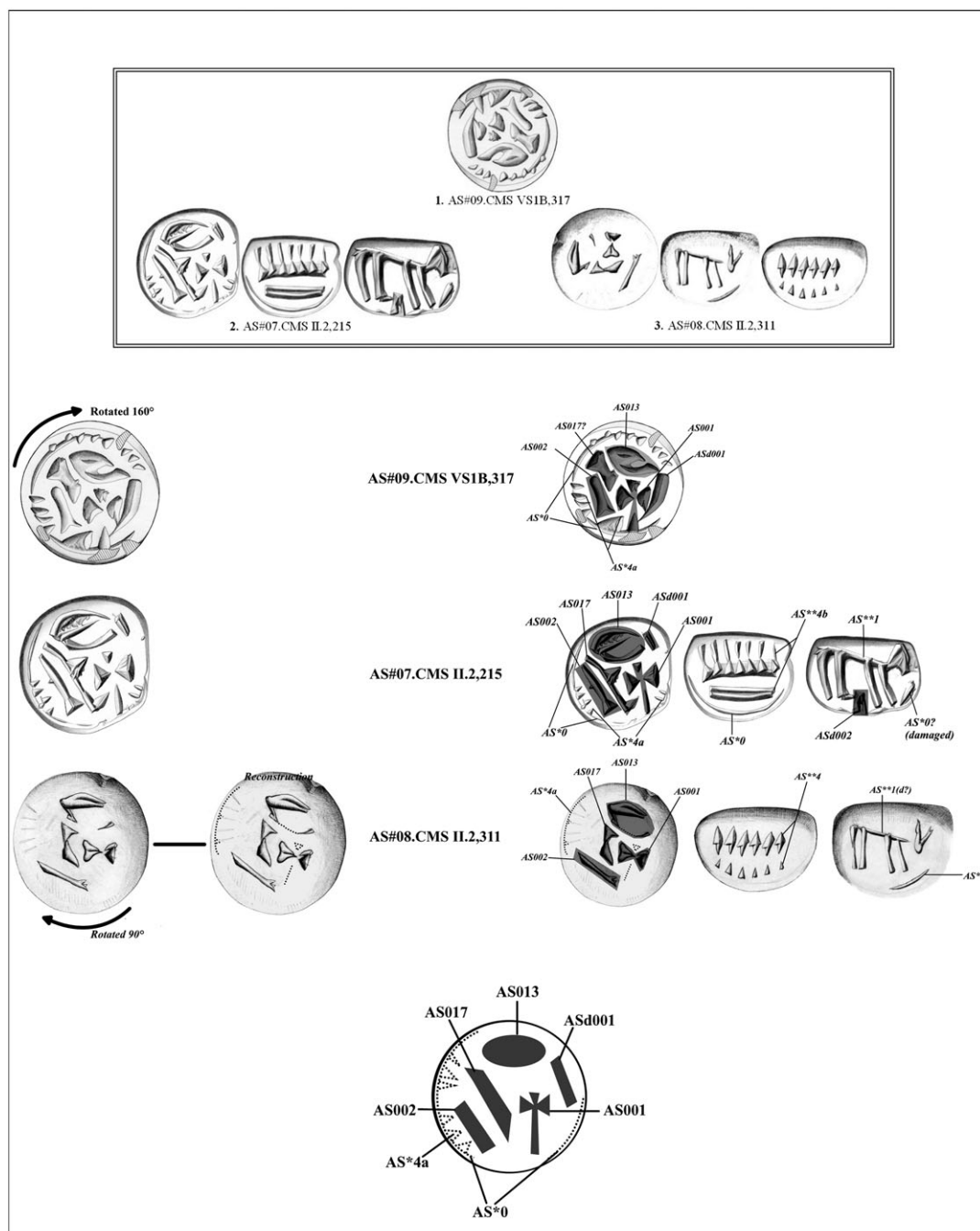


Figure 12

Re-orientation, deconstruction and template of steatite subgroup seals (AS#06–09). Top shows seals as presented in the *CMS*; middle left shows seals re-oriented; middle right deconstructs re-oriented drawings; bottom shows template. Image by author; original drawings courtesy of the *CMS* Heidelberg; template drawing by author.

TABLE 8

Material, form and provenance of the seals constituting the here proposed 'Archanes Script'. Seals here considered to constitute individual 'subgroups' are highlighted.

	Material	Form	Provenance	Style/Form Date
AS#01.CMS II.1,393/CHIC#252	Bone	Gable	Archanes, Building 6 Room 3	EM III–MM IA
AS#02.CMS II.1,394/CHIC#202	Bone	Disc	Archanes, Building 6 Room 3	EM III–MM IA
AS#03. CMS II.1,391/CHIC#315	Bone	Baton	Archanes, Building 6 Room 3	EM III–MM IA
AS#04.MO,S35/CHIC#313	Bone	Cube	Moni Odigitria, Ossuary	EM III–MM IA
AS#05.CMS VI,13/CHIC#203	Soft stone (steatite)	Discoid	[Unknown, suggested Knossos]	EM III–MM IA
AS#06.CMS VI,14/CHIC#251	Soft stone (steatite)	Gable	[Unknown, suggested 'Phournoi']	MM I
AS#07.CMS II.2,215	Soft stone (steatite)	Gable	[Unknown, suggested Sampas]	MM I
AS#08.CMS II.2,311	Soft stone (steatite)	Gable	[Unknown]	MM I
AS#09.CMS VS1B,317	Soft stone (steatite)	Conoid Button	Pagkalochori, Chamber Tomb	MM I (LM III context)
AS#10.CMS XI,73/CHIC #201	Soft stone (steatite)	Cylinder	[Unknown]	MM I–II
AS#11.CMS II.8,29/CHIC #179	Sealing [flat-based]	rectangular	Knossos	MM I–II
AS#12.CMS II.8,56/CHIC #134	Sealing [single-hole hanging]	rectangular	Knossos, South-East Pillar Room	MM I–II
AS#13.CMS VS1B,325/CHIC #136	Sealing [roundel]	rectangular	Mikro Vouni, Samothrace	MM II
AS#14.CMS VS1B,326/CHIC #135	Sealing [roundel]	rectangular	Mikro Vouni, Samothrace	MM II
AS#15.CMS VS1B,327/CHIC #137	Sealing [nodulus]	rectangular	Mikro Vouni, Samothrace	MM II
AS#16.CMS VS3,343	Sealing [nodulus]	rectangular	Mikro Vouni, Samothrace	MM II

instead seems to point to diachronic change, with the bone and ivory group dating to MM IA, the steatite group to MM I generally, and the sealings to MM I–MM II, perhaps as transitional between the Archanes Script and Cretan Hieroglyphic. On the basis of material and palaeography, we may thus identify varying 'traditions' of the Archanes Script, which appear to be chronologically consecutive.

It is worth pointing out here that the Prepalatial date of the 'initial' Archanes Script subgroup has recently been called into question, supported by the excavator's assertion that adverse weather conditions during excavation at Archanes Phourni rendered the precise context of the seals found in Ossuary 6, including our AS#01–03, unclear (Sakellarakis pers. comm., in Weingarten 2007, 137, n. 51; cf. Weingarten 2003, 296; Jasink 2011, 132, n. 9; Webb and Weingarten 2012, 94, n. 72; Ferrara 2015, 35, n. 12). Weingarten (2007, 137) cites Sbonias' MM IA late to MM IB dating of the 'Archanes Script-Group' in support of a possible Protopalatial date. As we have seen above,



however, the term refers to a wider stylistic assemblage: for AS#01–03 specifically, based on types and material used (bone disc, gable and baton), Sbonias consistently offers an MM IA date (1995, 58–9; the baton is, admittedly, the only one of its kind and thus dated by context alone; bone discs, on the other hand, are dated by Sbonias to MM IA, bone gables more broadly to MM IA–MM IA late).

The MM II period is sometimes even mentioned in the context of the seals (Weingarten 2003, 296; 2007, 137; Younger 1999, 381, n. 6), primarily in the context of Younger's redating to MM I–II of Yule's EM III–MM IA border/leaf complex, to which our seals belong (Younger 1988, 197–201; 218). Alongside the above arguments regarding seal-form and material, it should be noted that Ossuary 6 at Archanes (Fig. 3) did not yield any material dating later than MM IB (Lachanas 1993; 2004; Legarra Herrero 2014, 219; *pace* Weingarten 2003, 296, where it was, however, noted that the context had not yet been fully published). Though the original EM III–MM IA dating of the ossuary has now been rejected for a later EM III–MM IB/II date (Sakellarakis and Sapouna-Sakellarakis 1997, 202–5), MM IB/II material was only found in an adjoining corridor, outside the ossuary itself. Lachanas' (2004, 16) detailed study indicates that material found within the ossuary walls – which stood about 0.50 m high at the time of excavation – is likely to be dated to EM III–MM IA exclusively, with the 'top layers' having collapsed into the adjoining corridor (where an MM II layer, which would have fallen first, was found underneath MM IA–B material). Revealingly, AS#04 from Moni Odigitria – the only non-Archanes seal in our 'initial' group – was found as part of a closed, undisturbed and homogenous deposit dating to the end of the Prepalatial period (Sbonias 2010, 209–10). Overall, an MM IA date is thus considered by far the most likely for our 'initial' Archanes Script, and, consequently, for the earliest attestation of 'true' writing on Crete.

It is worth noting that it is not possible to limit the distribution of the Archanes Script as here presented to a single area of Crete, though we should naturally be cautious of any conclusion based upon the distribution of only nine provenanced objects. Though geographical restrictions are often argued to apply to the distribution of the Cretan Hieroglyphic and Linear A writing systems (Schoep 1999; Karnava 2000; Anastasiadou 2016) – the former considered to have been largely confined to north-central/east Crete and the latter initially to south Crete – the Archanes Script is attested at both northern and southern sites on the island (Fig. 13).<sup>13</sup>

The only Archanes Script subgroup not yet discussed in detail, the MM I–MM II sealings (AS#11–16), are remarkable not only because four of them were found roughly 580 kilometres north-east of Crete, on the island of Samothrace, but also due to the fact that the group, despite its extremely wide geographic distribution (AS#11–12 were found at Knossos), once more presents a highly homogenous assemblage, showing clear consistency in seal-form and palaeography. Each sealing was impressed by a rectangular cushion or cognate type, and each had lines engraved along the edges of the glyptic field (AS\*0 and AS\*00); dentate bands and 'ladder'-motifs occur on four of the six sealings. With regard to palaeography, the signs on the sealings are clearly distinct from those seen on the earlier bone and steatite seals, appearing much more rounded and full-bodied, while same-size 'sematographic' elements (such as the S-spiral AS\*9, familiar from face *c* of AS#03) now appear linearly sequenced alongside our known script-signs, a distinctive orthographic feature well known from later Cretan Hieroglyphic (Jasink 2009, 4–12; 70; 134–7; Decorte 2017, 43–5).

13 Though AS#04 is often dismissed as an import or a one-off. Sbonias (1999, 43) associates the broader 'Archanes Script-Group' with north/central Crete, noting that it 'appears only occasionally in southern Crete'. Anastasiadou (2016) has argued that the Archanes Script belongs to the Linear A and southern tradition.



Figure 13

Distribution of Archanes Script seals. Map by author, based on NASA EOSDIS topography data from NASA/METI ASTER GDEM. Squares indicate the first subgroup of Archanes Script seals; hollow squares indicate the second subgroup; triangles indicate archival material that is here considered transitional between the Archanes Script and Cretan Hieroglyphic. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Indeed, I would argue that we may here for the first time discern distinct and successive phases in hieroglyphic palaeography: whereas, for example, signs AS001 and AS002 on the early seals most often appear set upon thin elongated stalks, instances of these signs on the Knossos and Samothrace sealings are considerably more squat. The signs on the latter seals seem to be quite literally halfway between AS001/AS002 and Cretan Hieroglyphic signs CH042/CH019 (see Fig. 14; cf. also Appendix II). Several instances of CH042 on Cretan Hieroglyphic seals appear very close to the transitional subgroup. These include CMS II.8,57/CHIC#178 (displaying a highly unconventional CH049 and, revealingly, found alongside our sealing AS#12 in the South-East Pillar Room at Knossos),<sup>14</sup> CMS II.5,239/CHIC#151 from room 25 in the palace at Phaistos (famously said to represent the only hieroglyphic sealing in a deposit of roughly 6500 non-hieroglyphic ones)<sup>15</sup> and CMS II.8,71/CHIC#168. Conversely, AS#15/CHIC#137 and CMS II.2,217/CHIC#292 (an Archanes Formula seal not here admitted into the Archanes script) present versions of AS001/CH042 indistinguishable from later Cretan Hieroglyphic counterparts. By the time of our third suggested subgroup, it becomes distinctly difficult to distinguish between Cretan Hieroglyphic and Archanes Script signs.

14 While it is tempting to consider CMS II.8,57 part of our script, the sealing is too poorly preserved to satisfy our criteria.

15 Karnava 2000, 133, 224. I do not agree with this assessment: Decorte 2018a.

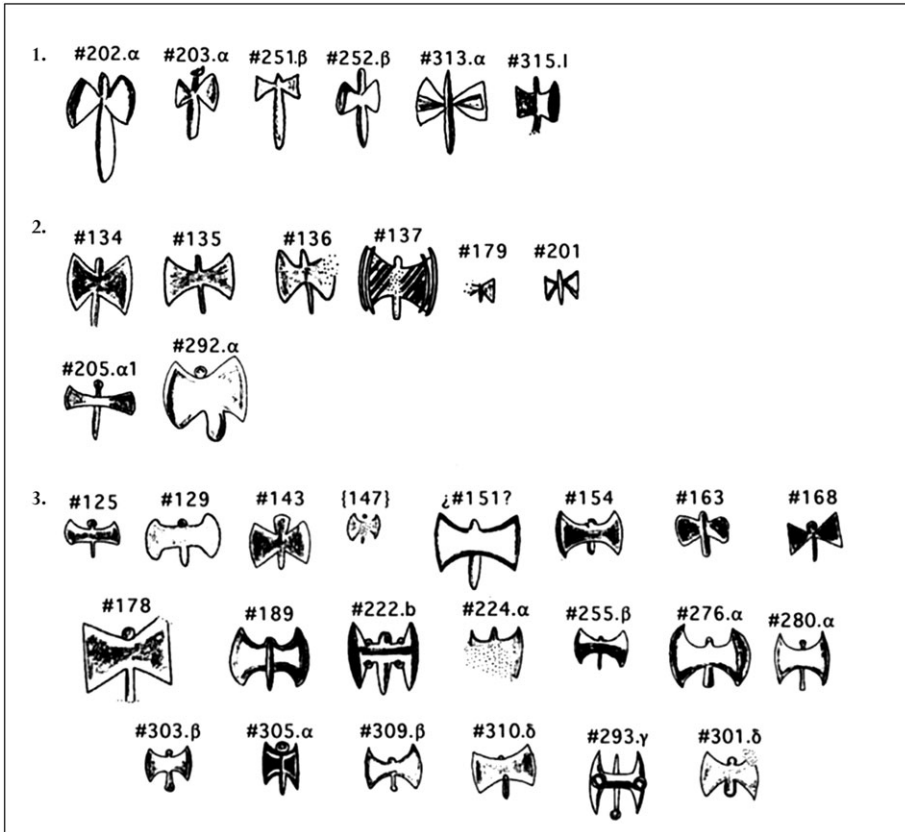


Figure 14

Diachronic change in sign-forms between Archanes Script AS001 and Cretan Hieroglyphic 042. 1: Instances of AS001 on Archanes Script 'initial' and soft-stone group. 2: Instances of AS001/CH042 on Archanes Script-Cretan Hieroglyphic transitional groups. 3: All other instances of CH042 on Cretan Hieroglyphic seals, as listed in *CHIC*. Drawings courtesy of Jean-Pierre Olivier and Louis Godart.

Indeed, the similarities in sign-form and the presence of full-sized linearly sequenced sematographic elements appearing alongside known sequences – combined with other orthographic idiosyncrasies such as the varying, seemingly random, orientation of individual sequenced signs in relation to each other – point to a very strong connection palaeographically, orthographically and syntactically between the 'late' Archanes Script and the Cretan Hieroglyphic writing system.

Arguments by Godart identifying the Archanes Script as an early form of Linear A now rest on somewhat more shaky ground, considering that these are largely based on palaeographic resemblance: Godart claimed, for instance, that several – carefully selected and atypical – instances of the Linear A sign AB08 (Fig. 15) appear 'identical' to AS001. Even this eclectic group of signs, however, is formally quite distinct: though stalks are kept longer than in Cretan Hieroglyphic due to the linear character of the script, AB08 generally displays thin horizontal blades opening up through very wide convex horizontal lines. IO Za 2–3 and 7 are palaeographically closer to CH042 than AS001; only KO Za 1a and 1c are reasonably close to AS001, though set apart by the above



Figure 15

Instances of the Linear A sign AB08 considered palaeographically 'identical' to Archanes Script sign AS001 in Godart 1999. After drawings courtesy of Jean-Pierre Olivier and Louis Godart.

mentioned convex top part of the 'blade'. While palaeographic comparison between the scripts cannot, at present, determine anything beyond cognation, it does, in my opinion, clearly and independently reassert the (early) Archanes Script as a self-contained category, something which has been resisted in recent scholarship.

#### REDEFINING THE ARCHANES FORMULA

Finally, let us here also briefly address the Archanes Formula, which we have defined as distinct from the script itself (two seals with signs included in Fig. 14, CMS VII,35/CHIC#205 and CMS II.2,217/CHIC#292, display the formula, but due to their failure to satisfy the criteria set out above are not here considered to belong to the script). Modern conceptions of the 'Archanes Formula' are, I would argue, constructed more on the basis of a hypothetical backwards projection of a Linear A sign-sequence (the so-called 'libation formula', cf. Schoep 1994) than on any actual examination of the seals in question. The often-described 'repetitive sequence of the same five signs (042-019-019-095-052), found in a more or less identical form on certain seals and seal impressions recovered at Knossos, Gouves, Moni Odigitria, and [...] Samothrace' (Perna 2014, 253), does not, in fact, exist. As has been pointed out before, this supposed 'sequence' always consists of two decidedly independent sign-groups (Karnava 2000, 197; Flouda 2013, 149), our AS001-AS002 (CH042-019) and AS002-AS003-AS004 (CH019-095-052), which – in the Archanes Script as defined above – never occur together 'sequenced', or even on a single seal-face.

What is more, as we have seen above, constituent signs of this supposed 'sequence' are often claimed to be identical despite serious formal differences, while signs which are seen to intrude into the supposed 'sequence' are simply ignored. A full breakdown of the actual sign-sequences of 'formula' seals, presented in Table 9, demonstrates that – rather than any

TABLE 9

Sign sequences attested on 'Archanes Formula seals' here admitted into the Archanes Script. Square brackets indicate separate seal-faces, *class 1* sematographs are not listed. Numbers on the right indicate the number of times a sequence is attested

[AS001, AS002, ASd002, ASd003]	1
[AS001, AS002    AS002, ...]	1
[AS001, AS002]	2
[AS001, AS002, AS**x]	2
[AS001, AS002, AS**x], [AS002, AS003, AS004]	2
[AS001, AS002], [AS002, AS003, AS016], [AS015, AS014]	1
[AS001, AS002], [AS002, AS005, AS006, AS005], [AS002, AS003, AS004]	1
[AS001, AS002, AS013], [AS002, AS003, AS004], [AS002, AS012], [AS**x]	1
.... [AS001, AS002], [AS002, AS003?, AS008], [AS009, AS010, AS011]...	1

consistent appearance of a single sign group – we have a series of clearly cognate sequences that variously show only the first two signs, a variant ‘end’-sign, or same-size accompanying signs interrupting. It is, furthermore, extremely interesting to note that in *all* instances in our corpus where both ‘formula’ sign-groups are attested on adjoining faces of a single seal, the sequences are carved angled or upside down in relation to each other, so that, if rolled, they are disjointed (with the highly revealing exception of AS#02, which as a non-convex disc cannot be rolled).

In the end, CMS VII,35/CHIC#205, mentioned above as not being included in the Archanes Script, is the only seal in the corpus of Minoan glyptic to display the entire supposed ‘formula’ on a single seal-face. Even here, however, the glyptic artist makes a clear effort to divide the two sign-groups, by adding a well-defined horizontal line, as well as multiple instances of the familiar Cretan Hieroglyphic ‘initial x-stiktogram’ known to indicate reading direction and occasionally functioning as a word divider. The presence of this stiktogram firmly situates the seal in the Cretan Hieroglyphic tradition. Anastasiadou (2016, 182), to support her contention that Archanes Formula seals are part of the Linear A tradition, argues somewhat unconvincingly that the stiktograms were simply carved out of habit by an engraver ‘accustomed to adding such small elements’. To my knowledge, however, this would be the only such ‘mistake’ in the entire corpus of Bronze Age Cretan glyptic (stiktograms even accompany single isolated hieroglyphs, despite their exclusion from *CHIC*: see, for example, CMS II.8,038).

The two sign groups discussed above, their association with each other, and their internal (formal and real) variation but syntactic consistency thus constitute a highly intriguing phenomenon only obfuscated by the idea of a single, recurring ‘formula’.

## CONCLUSION

The Archanes Script has been seriously neglected in scholarship for a reason: problems in past approaches, confusion as to its nature, and restrictive – often western-centric and retrospective – models of what constitutes writing resulted in scholarly gridlock. Having provided a first complete definition of its nature, documents, signary and distribution, this paper hopes to have offered the basis for renewed and holistic scholarly interest in what has generally been considered the earliest writing to appear in Europe.

## Acknowledgements

This article arises from doctoral research funded by the Arts and Humanities Research Council of the United Kingdom. Part of the research underlying this work was first presented to the Mycenaean Epigraphy Group at the University of Cambridge on the 19th of October 2016.

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doi: 10.1111/ojoa.12152



## ABBREVIATIONS

- CHIC* = *Corpus Hieroglyphicarum Inscriptionum Cretae*. See OLIVIER and GODART 1996 in the Reference list
- CMS* = *Corpus der minoischen und mykenischen Siegel*, 34 vols.
- CMS Arachne* = *Corpus der minoischen und mykenischen Siegel Arachne* Online Service, accessible at <https://arachne.uni-koeln.de/drupal/?q=en/node/196> (last checked 16 July 2018)

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APPENDIX I. ARCHANES SCRIPT SIGNARY, AS PROPOSED IN THIS PAPER

AS 001		AS 015		AS *7		AS **2			
AS 002		AS 016		AS *8a		AS **3			
AS 003		AS 017		AS *8b		AS **4a			
AS 004a		<b>Sematographs</b>		AS *8c		AS **4b			
AS 004b		AS *0	single line around glyphic field	AS *9		AS **5			
AS 005		AS *00	double line around glyphic field	AS *10		AS **6			
AS 006		AS *1a		AS *11		AS **7			
AS 007		AS *1b		AS *12		AS **8			
AS 008		AS *2		AS *13		AS **9			
AS 009		AS *2b		AS *14					
AS 010		AS *3		AS **1a					
AS 011		AS *4a		AS **1b					<b>Unclear</b>
AS 012		AS *4b		AS **1c					AS d001
AS 013		AS *5		AS **1d					AS d002 =AS013?
AS 014		AS *6		AS **1e					AS d003

APPENDIX II. FORMAL COMPARISON BETWEEN ARCHANES SCRIPT (AS), CRETAN HIEROGLYPHIC (CH), LINEAR A AND B (LA/LB), AND PHAISTOS DISC (PD) SIGNS. THIS CHART IS NOT MEANT TO IMPLY SHARED VALUES OR COGNATION

AS	CH	LA/LB	PD				
001	042	AB08	013	077? (esp. #003g)	*8a-c	**7	010
002	019	AB31	014	038	*9	309	A703
				A327/A B 55-7? e.g. CH#204a; cf.009			
003	(095)	AB60? (upside down?)	015	057?	*10		
004a	052	Ph7a.3, "AB24"	016	cf. CMS XII,96b	*11		
				glyptic AB02?			
004b			<u>Sematographs</u>		*12		
005?			(40?)	*1a-b	*13		
006?			07?	*2a-b	*14		
007	062(or 050)?	A326? (or A304?)	23?	*3	**1a-c		
008	054/ 056?	A415		*4a-b	*2	*180	AB38?
009	038?	A327/AB 55-7?			*3		
010?	032?	AB27?	39?	*5	**4a-b		
011	012/ 016- 018?	(A336/ AB22- 23/85?		*6		*5	008?
012	001- 002? 004: cf. #049d ?	A100- 102/352? If AS002 here act. staff: AB51?	05?	*7		*6	
				common motif appearing alongside glyptic CH			