Revised proposal to encode the Sidetic script in Unicode

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1 Introduction

This is a revised proposal to encode Sidetic in Unicode. It supersedes the following documents:

- L2/19-106: "Introducing the Sidetic Script"
- L2/21-111: "Preliminary proposal to encode the Sidetic script in Unicode"

The major changes to L2/21-111 include:

- Revision of proposed character repertoire to include all attested Sidetic letters, in order to enable complete representation of the extant corpus and to provide scholars working on the decipherment of the script with a means to represent all known characters

- Change of proposed character names from phonetic references to a serial numbering system used by scholars for identifying Sidetic letters, which eliminates the need to withhold from the encoding characters whose phonetic values have not yet been determined.

- Description of other letters used in Sidetic coinage, which are not included in the conventional scholarly repertoire (§ 4.1).

2 Background

Sidetic is a right-to-left alphabet that was used from the 5th through 2nd centuries BCE for writing a now-extinct Indo-European language of the Anatolian branch, which is also referred to by scholars as 'Sidetic' (ISO 639: xsd). The name 'Side' is borrowed from the Greek name of the ancient city where the language and script were used, that being 'Σίδη', located in the region of Pamphylia, on the southern coast of Anatolia on the Mediterranean.

The origins of Sidetic are not clearly known. Scholars believe that it developed from the Phoenician script in parallel with Greek. Some Sidetic letterforms resemble those found in Greek, as well as in Carian, Lycian, and Lydian, but differ in the assignment of sound values (see fig. 14). Sidetic has other letters not found

in these other scripts. The right-to-left orientation of Sidetic sets it apart from the normative left-to-right direction of Greek. The other Anatolian alphabets were also written from right-to-left, but could also be written left-to-right. Such variation is not observed for Sidetic in the available sources.

3   Attested Sources

The script is attested on numerous coins and inscriptions (some specimens are shown in fig. 1–6). The inscriptions prove that Sidetic is a true writing system, especially its distinctive representation alongside Greek in a few bilingual inscriptions.

S1	S I.1.1	Artemon bilingual from Side (1914)
S2	S I.1.2	Apollonios bilingual from Side (1949)
S3 & S4	S I.2.1-2	Strategos dedications from Side (1964)
S5	S II.1.1	Palimpsest bronze altar table or voting tablet (1969)
S6	S I.1.3	Euempolos bilingual from Lyrbe-Seleukia (1972)
S7	S I.2.3	Inscription on fragment of the rim of a pot (1982)
S8	S I.2.4	Inscription on stone Heraldes relief (1982)
S9	S I.2.5	A list of names, also interpreted as the "Athenodoros memorial" (six complete lines (and traces of two more lines) (1995)
S10	S III	5th century BC coins with around twenty different legends (since 19th century)
S11		Words possibly from Mnemon, a physician of Side (1983), who added notes in Sidetic to a Greek Hippocrates manuscript.
S12	S II.2.1	A steatite scarab, of uncertain provenance ("acquired in Turkey"); on its underside three (?) hardly identifiable signs have been carved, possibly Sidetic (2005)
S13	S I.2.6	Graffito from Lyrbe-Seleukia (2014)

4   Character Inventory

Scholars have identified at least 29 distinctive letters for Sidetic. While the script has not been fully deciphered, there is some consensus on the values of 26 letters. The remaining 3 letters are attested in coinage, and their values are unclear. Additional research of these is required.

Sidetic letters are traditionally referred to by scholars and arranged using serial numbers, eg. 1–29. This enumeration was developed by Bossert 1950 (fig. 8), then expanded by Brandenstein 1958 (fig. 9), Neuman 1978 (fig. 10), Woudhuizen 1985 (fig. 11), Nollé 2001 (fig. 12), and Rizza 2005 (fig. 13). The latest work by Rizza extended the number of characters to 29.

The arrangement of the repertoire has 5 vowel letters at the top, followed by 2 semi-vowels, then 19 known consonants. The last 3 letters are found on coninage and were added to the scholarly repertoire by Rizza (2005); the latter two may represent ligatures.

Variant forms of letters used in inscriptions are provided in the 'variants' column. Also provided are transliterated values of letters used by scholars, as well as phonetic values. The 'Deciphered?' column indicates the decipherment status of the letter.

#	Letter	Variants	Deciphered?	Latin	IPA	Category
1	ϟ	ϟ	Yes	*a*	/a/	vowel
2	Ӿ		Yes	*e*	/e/	vowel
3	Y	Ч	Yes	*i*	/i/	vowel
4	ϸ	ϸ	Yes	*o*	/o/	vowel
5	Y		Yes	*u*	/u/	vowel
6	ζ	ζ	Yes	*w*	/w/	semi-vowel
7	)(	)(	Yes	*y*	/j/	semi-vowel
8	⊓		Yes	*p*	/p/	consonant
9	Ψ		No	*φ (ç ?)*	/pʰ/ (/ts/ ?)	consonant
10	⟨	⟨	Yes	*m*	/m/	consonant
11	⏋		Yes	*t*	/t/	consonant
12	Ʋ	Ӌ	Yes	*d*	/d/	consonant
13	O	⊙	Yes	*θ*	/tʰ/	consonant
14	|		Yes	*z*	/z/ (or /s/)	consonant
15	N	Ν	Yes	*s*	/s/	consonant
16	⟩	ϱ	Yes	*n*	/n/	consonant
17	Ϛ	Ϛ, Ϟ	Yes	*l*	/l/	consonant
18	↑		Yes	*t₂*	/ts/	consonant
19	И	Ӈ	Yes	*g*	/g/	consonant
20	X		No	*x*	/x/	consonant
21	∧	⋏, λ	Yes	*r*	/r/	consonant
22	ϡ		Yes	*a₂*		consonant
23	P		No	*k (?)*		consonant
24	⟩	), ϟ	Yes	*b*	/b/	consonant
25	ϡ		Yes	*n₂*	/n/ ?	consonant
26	Ӽ	Ӽ	No	*z (?)*	/z/ (?)	consonant
27	φ	φ	No	*q (?)*		consonant
28	φ		No			ligature?
29	∤		No			ligature?

4.1   Additional attested letters

The following letters are documented in the scholarly literature as appearing on coinage, but are not included in the conventional scholarly repertoire for Sidetic. These letters appear to represent sound values that are analogous to letters in the conventional repertoire. Feedback from experts is needed for determining the status of these letters.

#	Letter	Deciphered?	Latin	IPA	Source
—	�ꓵ	Unknown	*d*	/d/	Woudhuizen 1985 (see fig. 11)
—	�	Unknown	*k*	/k/	Woudhuizen 1985 (see fig. 11)
—	Ω	Unknown	*b*	/b/	Bossert 1950 (see fig. 8)
					Brandenstein 1958 (see fig. 9)
					Woudhuizen 1985 (see fig. 11)

4.2   Proposed Encoding Model

Given that there are Sidetic letters whose values have not been fixed, there are two approaches to encoding the script in Unicode:

1. Include all attested, distinctive letters and assign them Unicode character names based upon serial numbers, which is the scholarly convention for identifying the letters. This approach would result in a proposed character repertoire of 29 letters.

2. Include only those letters for which scholars have proposed values with a high degree of certainty, and assign them Unicode character names that reference those values. This approach would result in a proposed repertoire of 22 letters.

Approach #1 is recommended, as it will provide scholars who are actively studying the script, to represent all Sidetic letters. Approach #2 would provide only those letters whose values have been fixed, but such an approach would deprive users of the ability to represent the entire known repertoire.

The number system used introduced by Nollé (2001: 629), as shown in fig. 12 is the conventional method for identifying Sidetic letters (see for example, figs. 17, 18). It is, therefore, practical to following this practice for names for Sidetic characters in Unicode. Such conventions are common for scripts with evolving decipherment statuses. For example, the scholarly names for Proto-Elamite letters are based upon the number system introduced by Meriggi, ie. M1, M387, etc. In that nomenclature, the M is an abbreviation of 'Meriggi'. Accordingly, Sidetic letters may be referred to as N1, N2, etc., where N is an abbreviation of 'Nollé'. A comparison of possible Sidetic character names based on serial numbers and phonetic values is shown below:

#	Letter	Named by serial number	Named by phonetic value
1	Ʂ	SIDETIC LETTER N1	SIDETIC LETTER A
2	ꓚ	SIDETIC LETTER N2	SIDETIC LETTER E
3	Y	SIDETIC LETTER N3	SIDETIC LETTER I
4	Ʂ	SIDETIC LETTER N4	SIDETIC LETTER O

#	Letter	Named by serial number	Named by phonetic value
5	Үy	SIDETIC LETTER N5	SIDETIC LETTER U
6	ζ	SIDETIC LETTER N6	SIDETIC LETTER W
7	Ж	SIDETIC LETTER N7	SIDETIC LETTER Y
8	ħ	SIDETIC LETTER N8	SIDETIC LETTER P
9	Ψ	SIDETIC LETTER N9	—
10	⟨	SIDETIC LETTER N10	SIDETIC LETTER M
11	⅂	SIDETIC LETTER N11	SIDETIC LETTER T
12	∪	SIDETIC LETTER N12	SIDETIC LETTER D
13	O	SIDETIC LETTER N13	SIDETIC LETTER TH
14	I	SIDETIC LETTER N14	SIDETIC LETTER Z
15	N	SIDETIC LETTER N15	SIDETIC LETTER S
16	⟩	SIDETIC LETTER N16	SIDETIC LETTER N
17	I⟨	SIDETIC LETTER N17	SIDETIC LETTER L
18	↑	SIDETIC LETTER N18	SIDETIC LETTER TS
19	И	SIDETIC LETTER N19	SIDETIC LETTER G
20	X	SIDETIC LETTER N20	SIDETIC LETTER X
21	Λ	SIDETIC LETTER N21	SIDETIC LETTER R
22	⟨	SIDETIC LETTER N22	—
23	P	SIDETIC LETTER N23	—
24	⟩	SIDETIC LETTER N24	SIDETIC LETTER B
25	⟨	SIDETIC LETTER N25	—
26	⅄	SIDETIC LETTER N26	—
27	♀	SIDETIC LETTER N27	—
28	⚥	SIDETIC LETTER N28	—
29	⅄	SIDETIC LETTER N29	—

Certainly, while a reference to the actual value of a letter would be ideal in a Unicode name, this is not possible due to the uncertain values for several letters. On the other hand, a naming convention based on serial numbers provides for distinctive identifiers for all letters in the scholarly repertoire.

The representative glyphs for Sidetic letters are based upon forms attested in inscriptions. Variant forms are unified with the normative letter. However, some of the forms listed as glyphic variants may be candidates for separate encoding if it occurs concurrently with the representative form, eg. *z* represented using both Ỵ and Ψ in S9 (see fig. 6). A glyphic variant may also be encoded separately if it differs substantially in structure from the representative form, eg. ⁴ᴴ for ∪ *d* in S2 (see fig. 2).

4.3　Other script details

- *Punctuation*　Script-specific punctuation is not attested. Usage of spaces for separating words and other text segments is inconsistent.

- *Line-breaking*　The sources do not contain evidence showing rules for breaking words at the end of line. Words are typically split after a letter when it occurs at a 'margin' or some defined position on the surface, and continued on the next line with the subsequent letter in the word. There are no indications of hyphens or other continuation marks. In digital layouts, line-breaks should occur after words.

- *Digits*　Digits are not attested in Sidetic records.

5　Character Data

Character Properties: `UnicodeData.txt`

```
10940;SIDETIC LETTER N1;Lo;0;R;;;;;N;;;;;
10941;SIDETIC LETTER N2;Lo;0;R;;;;;N;;;;;
10942;SIDETIC LETTER N3;Lo;0;R;;;;;N;;;;;
10943;SIDETIC LETTER N4;Lo;0;R;;;;;N;;;;;
10944;SIDETIC LETTER N5;Lo;0;R;;;;;N;;;;;
10945;SIDETIC LETTER N6;Lo;0;R;;;;;N;;;;;
10946;SIDETIC LETTER N7;Lo;0;R;;;;;N;;;;;
10947;SIDETIC LETTER N8;Lo;0;R;;;;;N;;;;;
10948;SIDETIC LETTER N9;Lo;0;R;;;;;N;;;;;
10949;SIDETIC LETTER N10;Lo;0;R;;;;;N;;;;;
1094A;SIDETIC LETTER N11;Lo;0;R;;;;;N;;;;;
1094B;SIDETIC LETTER N12;Lo;0;R;;;;;N;;;;;
1094C;SIDETIC LETTER N13;Lo;0;R;;;;;N;;;;;
1094D;SIDETIC LETTER N14;Lo;0;R;;;;;N;;;;;
1094E;SIDETIC LETTER N15;Lo;0;R;;;;;N;;;;;
1094F;SIDETIC LETTER N16;Lo;0;R;;;;;N;;;;;
10950;SIDETIC LETTER N17;Lo;0;R;;;;;N;;;;;
10951;SIDETIC LETTER N18;Lo;0;R;;;;;N;;;;;
10952;SIDETIC LETTER N19;Lo;0;R;;;;;N;;;;;
10953;SIDETIC LETTER N20;Lo;0;R;;;;;N;;;;;
10954;SIDETIC LETTER N21;Lo;0;R;;;;;N;;;;;
10955;SIDETIC LETTER N22;Lo;0;R;;;;;N;;;;;
10956;SIDETIC LETTER N23;Lo;0;R;;;;;N;;;;;
10957;SIDETIC LETTER N24;Lo;0;R;;;;;N;;;;;
10958;SIDETIC LETTER N25;Lo;0;R;;;;;N;;;;;
10959;SIDETIC LETTER N26;Lo;0;R;;;;;N;;;;;
1095A;SIDETIC LETTER N27;Lo;0;R;;;;;N;;;;;
1095B;SIDETIC LETTER N28;Lo;0;R;;;;;N;;;;;
1095C;SIDETIC LETTER N29;Lo;0;R;;;;;N;;;;;
```

Linebreaking Properties: `LineBreak.txt`

```
10940..1095C;R   # Lo    [29] SIDETIC LETTER N1..SIDETIC LETTER N29
```

6　References

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7   Acknowledgments

	1094	1095	1096
0	⟨10940⟩	⟨10950⟩	
1	⟨10941⟩	⟨10951⟩	
2	⟨10942⟩	⟨10952⟩	
3	⟨10943⟩	⟨10953⟩	
4	⟨10944⟩	⟨10954⟩	
5	⟨10945⟩	⟨10955⟩	
6	⟨10946⟩	⟨10956⟩	
7	⟨10947⟩	⟨10957⟩	
8	⟨10948⟩	⟨10958⟩	
9	⟨10949⟩	⟨10959⟩	
A	⟨1094A⟩	⟨1095A⟩	
B	⟨1094B⟩	⟨1095B⟩	
C	⟨1094C⟩	⟨1095C⟩	
D	⟨1094D⟩		
E	⟨1094E⟩		
F	⟨1094F⟩		

10940 ⟨⟩ SIDETIC LETTER N1
10941 ⟨⟩ SIDETIC LETTER N2
10942 ⟨⟩ SIDETIC LETTER N3
10943 ⟨⟩ SIDETIC LETTER N4
10944 ⟨⟩ SIDETIC LETTER N5
10945 ⟨⟩ SIDETIC LETTER N6
10946 ⟨⟩ SIDETIC LETTER N7
10947 ⟨⟩ SIDETIC LETTER N8
10948 ⟨⟩ SIDETIC LETTER N9
10949 ⟨⟩ SIDETIC LETTER N10
1094A ⟨⟩ SIDETIC LETTER N11
1094B ⟨⟩ SIDETIC LETTER N12
1094C ⟨⟩ SIDETIC LETTER N13
1094D ⟨⟩ SIDETIC LETTER N14
1094E ⟨⟩ SIDETIC LETTER N15
1094F ⟨⟩ SIDETIC LETTER N16
10950 ⟨⟩ SIDETIC LETTER N17
10951 ⟨⟩ SIDETIC LETTER N18
10952 ⟨⟩ SIDETIC LETTER N19
10953 ⟨⟩ SIDETIC LETTER N20
10954 ⟨⟩ SIDETIC LETTER N21
10955 ⟨⟩ SIDETIC LETTER N22
10956 ⟨⟩ SIDETIC LETTER N23
10957 ⟨⟩ SIDETIC LETTER N24
10958 ⟨⟩ SIDETIC LETTER N25
10959 ⟨⟩ SIDETIC LETTER N26
1095A ⟨⟩ SIDETIC LETTER N27
1095B ⟨⟩ SIDETIC LETTER N28
1095C ⟨⟩ SIDETIC LETTER N29

xxxxxxxxx
Α[ΡΤΕΜ]ΩΝΑΘ[ΗΝΟΒΙ]ΟΥ
ΧΑΡΙΣΤΗΡΙΑ

IXYАЭSO ЭSᐸ7ΛS SЭSOSXU
ISUSXISSᐸ

Published tracings of Sidetic text

Zinko & Zinko (2015)   Nollé (2001: 631)

Transliteration of Sidetic text

deat^hono artmon t^hanpiys
malyadas

Figure 1: Greek and Sidetic dedication to Athena from Artemon (S1). Photo: Zinko and Zinko (2015).

𐊧𐊸𐊱 𐊰𐊦𐊰𐊤𐊮𐊿 𐊲𐊰𐊧𐊹𐊰𐊰𐊰𐊲 𐊲𐊦𐊰𐊬𐊦𐊰𐊲 𐊧𐊹𐊰𐊰𐊲𐊰𐊲
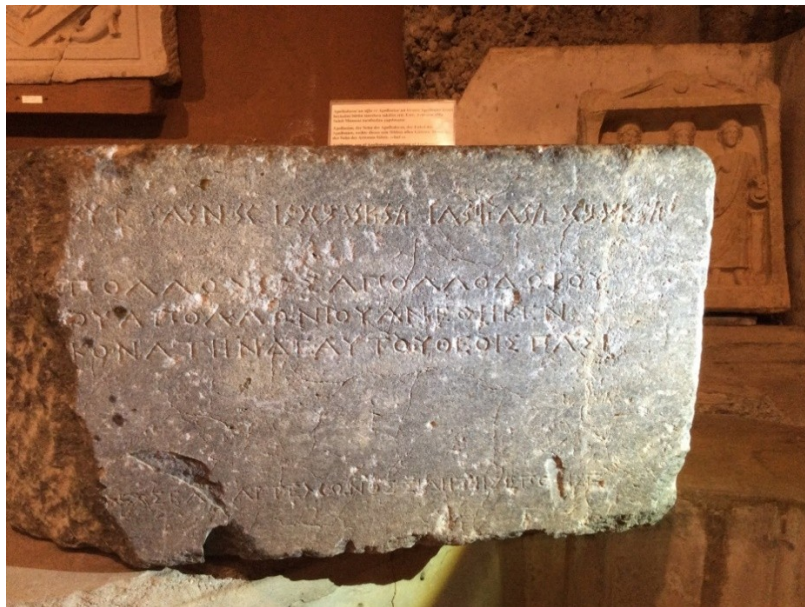
[Α]ΠΟΛΛΩΝ[ΙΟΣ]] ΑΠΟΛΛΟΔΩΡΟΥ
[Τ]ΟΥ ΑΠΟΛΛΩΝΙΟΥ ΑΝΕΘΗΚΕΝ
[ΕΙ]ΚΟΝΑ ΤΗΝΔ ΕΑΥΤΟΥ ΘΕΟΙΣ ΠΑΣΙ

[Μ]ΝΑΣΕΑ[Σ] ΑΡΤΕΜΩΝΟΣ ΣΙΔΗΤΗΣ ΕΠΟ[ΙΗ]ΣΕ

Published tracings of Sidetic text

Zinko & Zinko (2015)

Nollé (2001: 633)

Transliteration of Sidetic text

poloniy pord^{2}ors poloniyas mas$_2$ara t$_2$ue[…]

Figure 2: Greek and Sidetic dedication to Apollo (S2). Photo: Zinko and Zinko (2015). Sidetic text in red indicates glyphic variants — 𐊹 for 𐊸 *i*; 𐊲 for 𐊲 *l* — while blue indicates forms that may be true alternates: 𐊬 for 𐊦 *d*.
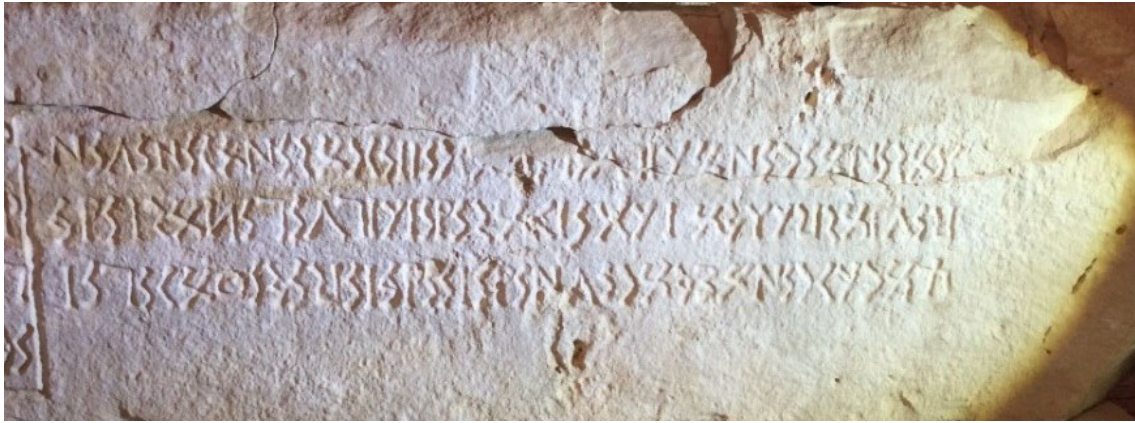
[·]ИSΛSИS⟨⟨ИSⱫⱫⱾⱾIIⱾⱾⱧⱵ ... (Sidetic text line 1)

Published tracings of Sidetic text

Zinko & Zinko (2015)

Nollé (2001: 635)

Transliteration of Sidetic text (Nolle 2001)

wejase a>ase iztratag waz za wejase masarase
darPej (darkej ?) diiYneziwaz mejaPaz (mejakaz ?) iztratag ejz aP (ak ?) o
pe>iwase 3ne>arsaPaza (3ne>arsakaza ?) aP (ak ?) ozad anaθemataz

Figure 3: Sidetic dedication from the eastern gate (S3). Photo: Zinko and Zinko (2015).
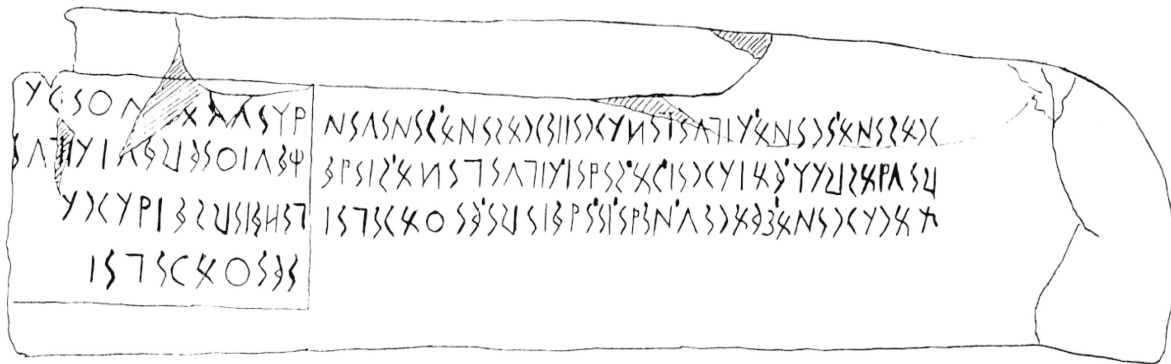
Puar (kuar ?)[...]e[...]pt^hami
φorz (çorz) t^handors iztra
tag ozad jozPiwi (jozkiwi ?)
anat^hematas

Figure 4: Sidetic dedication from the eastern gate (S4). Photo: Zinko and Zinko (2015).

|ϿϚⳂⵐΛϚΙϚϏ...
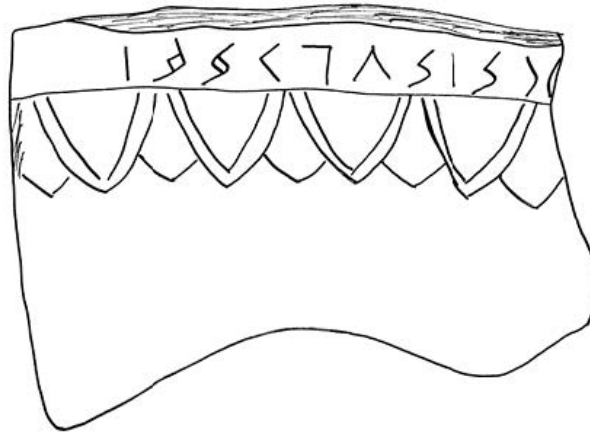
]ˊyʾas artmons

Figure 5: S7
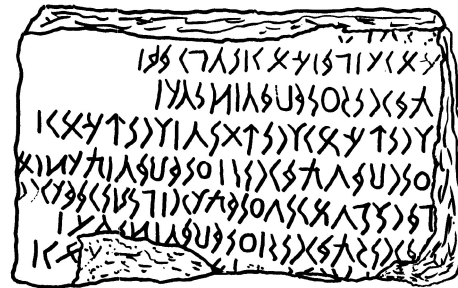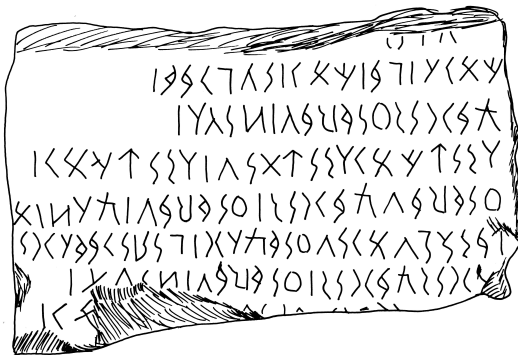
...
zem istos zems artmons
poyaw t^{h}andors garis
ubat$_2$zem ubat$_2$χars ubat$_2$zems
t^{h}andor poyaws t^{h}andors pigse[s]
toba$_2$n$_2$remar t^{h}anpiys talamoniyˊaˋ[s]
[p]oyaw poyaws t^{h}andors ˊgaˋris
[ ] … [ ] … [ ] [z]ˊeˋms

Figure 6: Athenodoros memorial (S9). Photo: Zinko and Zinko (2015). Note the glyphic variant
for *r*. Also, the concurrent usage of variants for *z*: and .

Figure 7: The Sidetic letters on a coin, struck c. 360–330 BCE. Obverse: ꟊ� *po*, possibly an abbreviation of the name ꟊ *poloniy* (Gr. Apollonios ?). Image courtesy of Lars Rutten (Leu Numismatik AG, Winterthur, Switzerland).

2. Tabella dei segni della scrittura sidetica.

Figure 8: Letters from Sidetic inscriptions at Apollonias, Artemon, and Side (from Bossert 1950: Table 2).

Nr.	Wert	Ap.	Art.	Münzen	Kypros	Supp.	Anm.
1	p				= po		
2	o				= o		Golgoi
3	l				= la		
4	n				= nu	:)	
5	i				= i		✕ Paphos
6	u				= u		
7	r				= re		Golgoi
8	d				= te		
9	z?	I	I	l	= zo	vgl. gr. ∫=I	
10	a				= a		
11	m				= mu		
12	ś	N		NΛΗΓ~	= se		v. Nr. 23
13	k?				↑=ti, ↨=ka		
14	t°	Y		Y V	=pi		
15	g?				= ki		
16	th		0	⊙ O			gr. ⊙
17					, ↑ = vo		Golgoi
18	t				= ta		Golgoi
19	b?				= pe		Golgoi
20	w				= va		Pamph.
21					= ro		
22					= Nr. 21+8	♀ +	Ligatur
23	ss	Pamphylisch			vergl. Nr. 12	Η + Η	Ligatur

Figure 9: Letters from Sidetic inscriptions and coins and possible analogues in the Cypriot Syllabary (from Brandenstein 1958: Table 2).

	Text I–V	Münz-legenden	Brixhe 69	Ševoroškin 75	Neumann 77
1	ħ	ħ ħ	P	P	P
2	ϟ	ϟ ϟ	o	o	o
3	Ҡ Ҝ	Ҝ	ℓ	ℓ	ℓ
4	Ǝ		n	n	n
5	Ч	Ч ͼ	i	ι	ι
6	✕		u	ɯ	ɯ
7	∧		r	r	r
8	ʋ ५ɿ		d	d	d
9	o	⊙⊙	th	ϑ	ϑ
10	⁊		t	t	t
11	५	⟨ ५	a	a	a
12	५	ʒ ⅄	ä ?	â ??	Variante von M ?
13	＜C		m	m	m
14	⅀		ẽ ?	e	e
15	I	I	z	z	s
16	И		ɯ	g	g
17	⟨ Ɛ	⟨		j̇	j̇
18	N	Ƴ Ⱶ N	s	s	ś ?
19	Y	V Y	b ??	u	
20	↑	↑	e ?	⊤	
21		Ω	m̃ ??	ɯ₁ = β ??	
22		ϙϙ		ι	
23	P			b	konsonant
24	Ψ		φ? χ?	χ?	
25	⟩			k	konsonant
26	3			?	

Figure 10: Sidetic letters in S1–S5 and their provisional values (from Neumann 1978: 875).

List of Signs

		value
1	ς ·	|a|
2	Ƨ Ω 4ነ	|b|
3	Ҳ	|e|
4	Ж Ж	|v|
5	⊙ O	|th|
6	५ ५ Ƴ	|i|
7	Ƙ Ƙ Ƙ	|1|
8	⟨ Ϲ	|m|
9	U ᶁ	|m|₁
10	Ϡ Ϡ Ϡ ⟩	|n|
11	↯ ↯	|o|
12	ⱶ	|p|
13	Ψ Ψ Ψ N ·	|š|
14	ⱷ	
15	Λ	|r|
16	P	|r|₁
17	Ϡ Ϡ Ϡ Ϡ ·	|š|
18	Ψ	|ss|
19	˥	|t|
20	↑	|t|₁
21	Ψ Ψ V	|u|

· ς and ⟩ , etc.

Figure 11: Sidetic letters and postulated values (from Woudhuizen 1985: 127).

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Die Zeichen der sidetischen Steininschriften

Nr.[13]	VOKALE		
01(11)	a		gesichert: artmon, θandor, anaθemataz
02(14)	e		gesichert: anaθemataz, e)pel, mejaPaz
03(05)	i		gesichert: θanpiwz, poloniw
04(02)	o		gesichert: poloniw, artmon, θandor
05(19)	u		wahrscheinlich: diYnesiwaz
	GLEITLAUTE		
06(17)	j		wahrscheinlich: mejaPaz, Y)a↑joroz
07(06)	w		gesichert: poloniwaz, diYnesiwaz, jozPiwi, θanpiwz
	LABIALE		
08(01)	Ten.: p		gesichert: poloniw, θanpiwz
	Med.: b		
09(24)	Asp.: φ		wahrscheinlich: φorz
10(13)	Nas.: m		gesichert: anaθemataz, artmon
	DENTALE		
11(10)	Ten.: t		gesichert: artmon, iztratag, anaθemataz
12(08)	Med.: d		gesichert: θandor, pordor, diYnesiwaz
13(09)	Asp.: θ		gesichert: θandor, θanpiwz, anaθemataz
14(15)	Spir.: z		gesichert: iztratag,
15(18)	Spir.: s		gesichert: masara
16(04)	Nas.: n		gesichert: artmon, θandor, diYnesiwaz
17(03)	Liq.: l		gesichert: poloniw
18(20)	Affr.: ts		möglicherweise: zdi↑z
	GUTTURALE		
	Ten.: k		
19(16)	Med.: g		gesichert: iztratag
20(—)	Asp.: ch		möglicherweise: Y)a↑Xarz
21(07)	Liq.: r		gesichert: artmon, θandor
	UNIDENTIFIZIERTE		
22(—)			Vokal?: to)Ÿ3remar
23(23)			Konsonant: darPej, mejaPaz
24(25)			Konsonant: to)Ÿ3remar, Y)a↑Xarz, e)pel
25(26)			Konsonant?: to)Ÿ3remar
26(—)			Konsonant: ¥em, Y)a↑¥emz

[13] Die nicht fettgedruckte Zahl in Klammern gibt die Nummerierung von Neumann 1978, 873f. (= Ausgew. kl. Schriften, 279f.) wieder.

Figure 12: Sidetic letters and postulated values (from Nollé 2001: 629).

Table 2. Provisional Sidetic sign-list

A	B	C	D	E	F	G
1	10	11	ϡ ϡ	ϡ	*a*	
2	25	14	✕		*e*	
3	5	5	y	y ⟨	*i*	
4	2	2	ϟ	ϟ ϟ ϟ	*o*	
5	14	19	Y	v Y	*u*	
6	26	17	⟨		*j̣*	w
7	6	6	✕		*w*	*j̣*
8	1	1	ꓯ	ꓯ ꓯ	*p*	
9	28	24	ꙍ			*ç*
10	11	13	⟨ C		*m*	
11	18	10	⅂		*t*	
12	15,8	8,21	ꓦ ꓦ		*d*	
13	16	9	O	Θ O	*ṽ*	
14	9	15	I	I	*s*	
15	12	18	N	ꓯ ꓦ ꓟ ꓝ N	*ś*	
16	4	4	�章		*n*	
17	3	3	ꓗ ꓗ	ꓗ	*l̩*	
18	13	20	↑	↑		*t̲*
19	24	16	и		*ɣ*	
20			✕			X
21	7	7	⅄ ⋀		*r*	
22	17		⅄			
23	27	23	P			K
24	29	25	⟩			*b*
25	3,24,17	26	Ƹ	ꓠ ϡ ϡ ꓬ		
26			⅄			Z
+27	21	22		ϙ ϙ		
+28	22			ϙ		
+29	23			⅄		

Legenda:
A: Numbering by Nollé (N), a + before number means addition to Nollé's list
B: Numbering by Brixhe
C: Numbering by Neumann
D: Signs as attested in inscriptions (as edited by Nollé)
E: Signs as attested on coins (based upon Neumann and Brixhe)
F: Value of signs (based upon Neumann)
G: Proposals by Peréz 2003; Pérez 2005.

Figure 13: Sidetic letters and postulated values (from Rizza 2005: 72).

Tab. 5.12: Anatolian alphabets

(Greek)	Phrygian[a]		Lydian[a]		Lycian[a]		Carian[b]		Sidetic[c]	
A	A	a	A	a	Ꝑ	a	A	a	�६	a
					↑	e	C	d	X	e
B	B	b	8	b	B	b	Δ	l	Y	i
					ꟼ	β	E	y	፦	o
Γ	Γ	g	Ɔ	g	Y	g	F	r	Y	u
Δ	Δ	d	⋏	d	Δ	d	I	λ	⸱	w
E	E	e	ᴚ	e	E	i	⊕	q	X	j
F	F	υ	ꟻ	v	F	w	Γ	b	ħ	p
Z	Ϟ	z			I	z	N	m	Ψ	ç
H					+	h	O	o	<	m
Θ					X	θ	Ọ	t	٦	t
I	I	i	ᚆ	y		y	◁	š	Ꙁ	d
K	K	k	ᚼ	k	Κ	k	M	s	O	θ
					⁎	q	T	?	I	ś
Λ	Λ	l	ᒋ	l	Λ	l	Y	u	N	s
M	M	m	ᛆ	m	ᴍ	m	Φ	ñ	Ǝ	n
N	N	n	ᛑ	n	ᴕ	n	X	ḱ	ʀ	l
					X	m̃	Y	n	↑	ṭ
Ξ					Ⅎ	ñ	⋀⋀	p	И	g
O	O	o	ᴑ	o	O	o	Φ	ś	X	χ
Π	P	p			ꟼ	p	⊲	i	Λ	r
Ϙ			+	q	◇	κ	□	e	፤	a/u
P	Ᏼ	r	ᑫ	r	P	r	ᛩ	ý	Π	k
Σ	Ϟ	s	Ŧ	s	Ꙅ	s	▽	k	⟩	b
			ᒋ	ś			ᛜ	δ	፤	n
T	T	t	T	t	T	t	ᛜ	w	ᚼ	z
Υ	Υ	u	ᛃ	u	Ɣ	τ	Ꙅ	y		
Φ	Φ	pʰ	8	f	Ꝿ	ã	)(	z		
X					Ꝿ	ẽ	ᚼ	ŋ		
Ψ	Ψ	kʰ			Ѵ	χ	Ⱨ	j		
Ω			Ŧ	τ			ㇿ	?		
			M	ã			↑	τ		
			Ɣ	ẽ			6	ŕ		
			Ɣ	λ			ⱴ	β		
			ᛃ	v			Ρ	β₂		
			↑	c						

a. After Swiggers & Jenniges in Daniels & Bright (1996, 283).

b. After Adiego (2007, 508).

c. After Pérez Orosco (2005).

Figure 14: Comparison of Anatolian alphabets (from Klein, Joseph, and Fritz 2017: 44).

Mode d'arti-culation	Point d'arti-culation		Grec	Phry-gien	Lydien	Carien	Lycien	Sidé-tique	Phénicien
Occlusives									
Sourdes									
	Bilabiale	/p/	Π	Γ Ꞁ	8	ΛΛ	Γ	ካ	ꓭ
	Dentale	/t/	Τ	Τ	Τ	Ϙ Ρ	Τ	Ꞁ	+ Χ
	Palatale	/c/				Χ +	Ѱ		
	Vélaire	/k/	Κ	Ƙ ꓘ	Ƙ ⟩ꓶ ꓘ	∇ ⱽ	Ƙ et ✱ et Ⴠ Ⴠ Ψ Ψ	supposé	ꓘ Ꝁ
	Labiovélaire	/kw/			+		Ɱ		
	Uvulaire	/q/				⊕ ☉			
	Laryngale	/ʔ/							ⱬ Κ
Sourdes aspirées									
	Bilabiale	/ph/	Φ					Ψ	
	Dentale	/th/	Θ					Ο	
	Vélaire	/kh/	Χ					Χ	
Sonores									
	Bilabiale	/b/	Β	Β ꓭ				supposé	ꓷ
	Dentale	/d/	Δ	Δ Λ				ꓭ	Δ Δ
	Vélaire	/g/	Γ	Γ Ꞁ	ꓷ			И	�;134; Λ
Emphatiques									
	Dentale	/ṭ/							⊕ ⊚
	Vélaire	/ḳ/							φ
Fricatives									
Sourdes									
	Labiodentale	/f/			8				
	Interdentale	/θ/					✕		
	Pharyngales	/ħ							ᛘ 日
	Laryngales	/h/					+		ꓕ ꓱ
Sonores									
	Bilabiale	/β/				Γ Γ Λ	Β ᛒ		
	Labiodentale	/v/			ꓱ				
	Interdentale	/ð/			Ƶ ꓸ	Ϲ ⟨ Γ	Δ		
	Vélaires	/γ/					ꓨ Ꞁ		
	Pharyngales	/ʕ/							Ο ◡
Sifflantes									
Sourdes									
	Dentale Alvéolaire	/s/	Ƹ	Ƹ Ꝫ Ƽ ꓷ	Ꝫ ꓷ Ʂ Ꝫ ꓭ	ᛘ	Ƨ	И	╪
	Palato-alvéol.	/ç/				�			ꟸ Ꝟ
	Palatale	/ç/			Ⅰ ╪	⓪ ⊖			
Sonores									
	Dentale Alvé.	/z/					Ⅰ	I	Ⅰ ꓴ
Emphatiques									
	Dentale Alvé.	/ṣ/							ꟼ

Figure 15: Anatolian alphabets (from Bernard 2017: following p. 59); continued in fig. 16.

Mode d'articulation	Point d'articulation		Grec	Phrygien	Lydien	Carien	Lycien	Sidétique	Phénicien
Affriquées									
	Dentale	/ts/		↑ Φ Τ	Ξ	Ж Ϛ ⟋	ou I	↑	
	Palato-alvéolaire	/tɕ/				↑ ⊤̇ / Ω?			
	Palatale	/tç/			ou Ξ				
Sonores									
	Dentale	/dz/			↑				
Latérale									
	Alvéolaire	/l/	Λ	Γ 1	1	Δ	Λ	Ⅰ𝈶	Ⳑ
	Palatale	/λ/			Ψ (ou palatalisé)				
Vibrante									
		/r/	Ρ	Ρ ᑫ	ᑫ	Ϝ Ϲ Ϝ	Ρ	Λ	ᑫ
Nasales									
	Bilabiale	/m/	Μ	ᛗ Μ	ᛗ	Ν Ѵᴧ	ᛗ	⟨	ᛌ ᛌ
	Dentale	/n/	Ν	Γ 1	ᛘ ᛘ	Ѵ Υ	Ν	Ʒ	ᛌ ᛒ
	Affaiblie (?)	/n/ ?			⫫ ξ				
Semivoyelles									
	Bilabiale	/w/	Ϝ	Ϝ ⌐	⌐	⫪ Ⳃ	Ϝ	Χ	Υ
	Palatale	/j/		ᒣ ᒧ		Ͱ	Ⅰ	⟩	Ʒ Ƶ
		/ɥ/ ?				⊓			
Voyelles									
Orales									
	Antérieures	/ɛ/	Η						
		/e/	Ε	ⴹ ⴺ ⴲ ⴹ	ᛄ ᛆ ᛄ ᛄ Ϝ	⊓ Η	↑	Χ	
		/i/	Ι	Ι	Ι	ᛒ ⵛ ⵛ ⵅ ᛃ Η ℂ ⬻	Ε	Υ	
		/y/				Ε ᛓ 'Ⅰ' Ψ			
	Centrales	/a/	Α	Α Α	Α Ꮶ	Α Λ Λ ꙅ (ⵑ)	Ρ	ⳑ	
	Postérieures	/ɔ/	Ω						
		/o/	Ο	Ο	Ο	Ο		⟡	
		/u/	Υ	Γ Υ	Υ	Ѵ Υ	Ο	Υ	
Nasales									
	Antérieures	/ẽ/			Ψ		Ψ ᛞ ᛿ ᛿ ⵢ ⵤ Ψ Ψ		
		/ĩ/					supposé		
	Centrales	/ã/			ᛗ		ᛓ / ᛃ ↓ / ↓ ᛿ ↗ ᛿ / ᛿ Ψ / Ψ Ψ / Ѵ		
	Postérieures								
		/ũ/					supposé		

Figure 16: Anatolian alphabets (from Bernard 2017: following p. 59); continued from fig. 15.

Vokale				
a N 1	e N 2	i N 3	o N 4	u (?) N 5

Halbvokale		
y ? N 6 {w P.O.}	w ? N 7 {y P.O.}	

Konsonanten

Plosive			
	stimmhaft	stimmlos	aspiriert
labial	N 24 ? {b P.O.}	p N 8	
dental	d N 12	t N 11	θ N 13
velar	N 19 ? {g P.O.}	N 23 ? {k P.O.}	χ (?) N 20 ? {ch N.}

Nasale	m N 10	n N 16	N 22 a/u
Liquide	r N 21	l N 17	N 25 ?
Frikative	s N14 {ś P.O.}, {z N.}	ś N15 {s P.O.}	
	N 9 {ç (affrikata) P.O.}, {ɸ (aspiriert) N.}	N 26 {z (affrikata) P.O.}	N 27–29[12]
		N 18 {t̠ (palatalisiert) P.O.} {ts (affrikata) N.}	

Figure 17: Phonetic classification of Sidetic letters (Zinko, Zinko, Rizzo 2017: 375).

	N.	Neum.	P. O.	Š.	Br.		B.		Bos.	
N1	a	[11]				[10]		[10]		[10]
N2	e	[14]			ẽ?	[25]		#		#
N3	i	[5]				[5]		[5]	i?	[5]
N4	o	[2]				[2]		[2]	u/o	[2] [23]
N5	u	– [19]	u	u	b?	[14]	t°	[14]	e?	[14]
N6	j	[17]	w	j	–	[26]		#		#
N7	w	[6]	j		u	[6]		u	o/u?	[6]
N8	p	[1]				[1]		[1]		[1]
N9	ɸ	– [24]	ç	χ?	ɸ?, χ?	[28]		#		#
N10	m	[13]				[11]		[11]		[11]
N11	t	[10]				[18]		[18]		[18]
N12	d	[8]		d	d – m̃	[8] [15] [20]	d p g?	[8] [1] [15]	d ? δ?	[8] [15] [20]
N13	ϑ	[9]				[16]		[16]		[16]
N14	z	s [15]	ś	z	z	[9]	z?	[9]	s?	[9]
N15	s	ś [18]	s	s	s	[12]	ś	[12]	ś?	[12]
N16	n	[4]				[4]		[4]		[4]
N17	l	[3]				[3]	l b?	[3] [19]	l	[3] [19]
N18	ts	– [20]	ṭ	τ	e?	[13]	k?	[13]		[13]
N19	g	[16]			w	[24]	cf. w [20] (coins)			#
N20	ch	#	χ	#		#		#		#
N21	r	[7]				[7]		[7]	r/λ	[7]
N22	vowel?	#	a/u	#	ä?	[17]		#		#
N23	cons.	cons. [23]	k	b	–	[27]		#		#
N24	cons.	cons. [25]	b	k	–	[29]		#		#
N25	cons.?	[26]		?	ä? w –	[17] [24] [30]		[17]		[17]
N26	cons.	#	z	#		#		#		#

Figure 18: Concordance of Sidetic letter values (Zinko, Zinko, Rizzo 2017: 383).

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