

Universal Multiple-Octet Coded Character Set
 International Organization for Standardization
 Organisation Internationale de Normalisation
 Международная организация по стандартизации

Doc Type: Working Group Document**Title: Revised proposal to encode Anatolian Hieroglyphs in the SMP of the UCS****Source: UC Berkeley Script Encoding Initiative (Universal Scripts Project)****Author: Michael Everson****Status: Liaison Contribution****Action: For consideration by JTC1/SC2/WG2 and UTC****Replaces: N3236R (2007-05-01)****Date: 2012-05-02**

1. Introduction. Anatolian Hieroglyphs were first thought to have been used for the Hittite language, because they first appeared on personal seals from Hattusha, the capital of the Hittite Empire. While Hittites did make use of the characters on seals and on their monumental inscriptions, the characters were used as text primarily for the related language Luwian; a few glosses in Urartian and some divine names in Hurrian are known to be written in Anatolian Hieroglyphs. Most of the texts are monumental stone inscriptions, though some letters and accounting documents have been preserved inscribed on strips of lead.









Figure 1. Anatolia, showing where the Luwian, Hittite, Urartian, and Hurrian languages were spoken.




2. Structure. Anatolian Hieroglyphs have both syllabic and logographic components. Words may be represented entirely with logographs (in particular at the earlier period), or with phonetic complements along with the logogram in a variety of configurations. For the word *wawis* ‘cow’ for instance, the following spellings occur:








 BOS
      (BOS)*wa/i-wa/i-sa*
     *wa/i-wa/i-sa*
    BOS-*wa/i-sa*



Characters may be written left-to-right or right-to-left, and texts longer than two lines are mostly boustrophedon; as with Egyptian, one reads a line into the faces of the people and animals. Lines are often divided from one another by horizontal rules. Within a line, characters are written in vertical columns, mostly from top to bottom, though for aesthetic reasons they may be placed out of phonetic or logical order. For modern lexicographical use it is anticipated that straightforward linear left-to-right placement of characters will find the most favour for its practicality. (See Figure 1.)











3. Punctuation and spacing. In some texts, word division is indicated with the use of U+145A5  ANATOLIAN HIEROGLYPH A386 or its variant U+145A6  ANATOLIAN HIEROGLYPH A386A.

To mark logograms, the characters U+145BE  ANATOLIAN HIEROGLYPH A410 BEGIN LOGOGRAM MARK and U+145BF  ANATOLIAN HIEROGLYPH A410A END LOGOGRAM MARK are optionally used, flanking the logogram as in   ‘wood’; see Figure 2. (In Marazzi and Laroche A410 is given as a single character but it has been split into two in order to permit the two characters to flank logograms productively.)

The characters U+145E7  ANATOLIAN HIEROGLYPH A450 (which occurs very frequently) and U+144E4  ANATOLIAN HIEROGLYPH A209 (which occurs much more rarely) are occasionally used in what looks like a “space-filler” function, often at the end of a word. Often when hieroglyphs are written, the practice is to try to reproduce the layout of the original text, rather than to write text out in modern sentences. However, in such cases, U+200B ZERO-WIDTH SPACE and/or U+0020 SPACE may be used as needed. One combining character is used, namely, U+145A2  ANATOLIAN HIEROGLYPH COMBINING MARK A383 which attaches fairly productively to Anatolian characters (it always touches its base character).





4. Repertoire. Through the course of the history of the decipherment of Anatolian Hieroglyphs, a standardized catalogue of letters has been drawn up; the “Laroche set” of numbers 1–497 from Laroche 1960 form the basis for the repertoire, supplemented by additions 501–524 from Hawkins and Çambel 2000. The encoding proposed here is based on this standardized catalogue, despite the fact that several of the characters are now considered to be variants of each other.  183 is now known to be a variant of  423 which has a reading *ku*;  352,  353,  354, and (possibly)  519 are all variants of  345 (a pitcher). Although this might *seem* to be “character duplication”, really it is not. The encoding of these characters will enable not only the representation of text in the Luwian language, but also the representation of the long history of Anatolian studies, where the catalogue entities have been distinguished in discussions of the decipherment. Scholars wishing to publish normalized texts will certainly wish to avoid the use of the “redundant” characters, or might choose to use them as indicative of the temporal or geographical provenance of a text. But documents relating to the decipherment itself distinguish them regularly, and that distinction must be maintained. The names list contains cross references from variants to the main character in each instance. This is considered vital information by specialists.




The characters and glyphs in this proposal largely reflect those found in Marazzi 1998, with some additions from Hawkins and Çambel 2000, particularly pp. 617–623. When a glyph was not included in Marazzi (such as *11), the shape is usually taken from Laroche (as U+1440B  ANATOLIAN HIEROGLYPH A011). In cases where a character may have different shape when used in its syllabic value (which often appears with a simplified glyph) *vis à vis* its logographic value, the glyph follows the logographic shape as shown in Marazzi pp. 34–67. (For example, *41 with the syllabic value *tà* has a wave shape, but its logographic use, for CAPERE, is a hand with thumb facing downward. The representative glyph is the hand with thumb facing down, U+1442A  ANATOLIAN HIEROGLYPH A041.) Fonts can provide alternate shapes.










A few characters are considered separate text elements by Marazzi, were not assigned separate catalog numbers by Laroche. These have nevertheless been separately proposed for encoding and are distinguished usually by an “A” or “B” after the first element’s character number. For example, U+145E8  ANATOLIAN HIEROGLYPH A450A represents *a+ra/i* or *ra+a* and is composed of U+145E7  ANATOLIAN HIEROGLYPH A450 (*a*) + U+145A2  ANATOLIAN HIEROGLYPH A383. This applies to U+144E5  ANATOLIAN HIEROGLYPH A209A, U+1456D  ANATOLIAN HIEROGLYPH A336A [ A378 +  A336], U+1456E  ANATOLIAN HIEROGLYPH A336B, and U+14595  ANATOLIAN HIEROGLYPH A371A. Those characters which are composed with  A383 have been given canonical decompositions.



5. Character names. The character names for Anatolian hieroglyphs are somewhat complex. A single coherent set of character names does not exist, but it has been possible to devise one in working out this proposal.

5.1 The name of the script. As suggested in the introduction above, the names “Anatolian Hieroglyphs”, “Luwian Hieroglyphs”, and “Luvian Hieroglyphs” might be applied to this script; the name “Hieroglyphic Hittite” is a misnomer for the language, and “Hieroglyphic Luwian” refers to a variety of the Luwian language (as opposed to “Cuneiform Luwian”). Since the script is used for languages other than Luwian, and since that language may be spelled “Luwian” or “Luvian”, specialists have suggested that the name “Anatolian Hieroglyphs” is the best choice, even if this is clearly a syllabic system and “hieroglyphic” has often been used for a pictorial/logographic system.

5.2 The use of catalogue numbers. Catalogue numbers were assigned by Meriggi and Güterbock but these were superseded by the numbers 1 to 497 which Laroche assigned and published in 1960 in *Les hiéroglyphes hittites*. The Laroche numbers have been taken as standard by subsequent researchers; Hawkins and Çambel 2000 augment this list with their numbers 501 to 524. In a number of instances, Laroche lists variants within a given catalogue number, thus: Laroche  457 (1) is distinguished from Laroche  457 (2). The naming convention followed here for this is similar to that used by Egyptologists for Egyptian characters: the first is Laroche 457, the second Laroche 457A. (Not all of the variants listed in Laroche 1960 are distinguished in this way; Laroche  460 (1) and  460 (2) are simply glyph variants and only a single 460 is proposed for encoding.)

5.3 Annotations. Scholars traditionally use Latin names to describe the characters, and in some of them the Latin is supplemented with full stops and plus signs in order to assist identification. The full stop indicates a group in which the elements are separate (as in  BOS.MI) and the plus sign indicates that the elements form a graphic unit (as in  BOS+MI). Informative notes in the names list present these Latin glosses. In addition, characters may have one or more phonetic readings, so the readings are also presented in the notes. Though Latin names are capitalized and/or italicized in the handbooks, lowercase is maintained due to naming conventions for the annotations. The subscript “x” is identified in the annotations as “-x”, as in the annotation “= *syllabic ha-x*” for U+14553  ANATOLIAN HIEROGLYPH A314.

Some annotations list the character elements used in its graphic appearance. For example, U+14521  ANATOLIAN HIEROGLYPH A267 is identified as the Latin logogram STELE, but is actually composed of + LAPIS+SCALPRUM (the plus indicates the two are graphically joined). Both STELE and LAPIS+SCALPRUM are included in the annotation. Some characters may just contain the elements that appear graphically, as in the character U+14510  ANATOLIAN HIEROGLYPH A250, which is annotated “MAGNUS.DOMUS”, indicating it is composed of two logograms (+ with the full stop indicating the two elements are not graphically joined), or a logogram with a syllabogram (U+144F9  ANATOLIAN HIEROGLYPH A227A, composed of URBS+li, +). These compositions are not decomposable.

5.4 Cross-references in the names list. The cross references indicate the relationship of variant characters to the main character, such as U+14403  ANATOLIAN HIEROGLYPH A004 > U+144E1  ANATOLIAN HIEROGLYPH A207. This kind of annotation provides vital information to the user of the names list, namely, guidance as to the proper character to be used for a normalized text, since the variant forms have been deemed obsolete. This is essential information which should be retained in the names list.

5.5 Issues with Latin names and phonetic readings in the names list. Earlier drafts of this proposal received criticism regarding the annotations, and their use has been minimized here.

145B9;ANATOLIAN HIEROGLYPH A405;Lo;0;L;;;;;N;;;;;
145BA;ANATOLIAN HIEROGLYPH A406;Lo;0;L;;;;;N;;;;;
145BB;ANATOLIAN HIEROGLYPH A407;Lo;0;L;;;;;N;;;;;
145BC;ANATOLIAN HIEROGLYPH A408;Lo;0;L;;;;;N;;;;;
145BD;ANATOLIAN HIEROGLYPH A409;Lo;0;L;;;;;N;;;;;
145BE;ANATOLIAN HIEROGLYPH A410 BEGIN LOGOGRAM
MARK;Lo;0;L;;;;;N;;;;;
145BF;ANATOLIAN HIEROGLYPH A410A END LOGOGRAM
MARK;Lo;0;L;;;;;N;;;;;
145C0;ANATOLIAN HIEROGLYPH A411;Lo;0;L;;;;;N;;;;;
145C1;ANATOLIAN HIEROGLYPH A412;Lo;0;L;;;;;N;;;;;
145C2;ANATOLIAN HIEROGLYPH A413;Lo;0;L;;;;;N;;;;;
145C3;ANATOLIAN HIEROGLYPH A414;Lo;0;L;;;;;N;;;;;
145C4;ANATOLIAN HIEROGLYPH A415;Lo;0;L;;;;;N;;;;;
145C5;ANATOLIAN HIEROGLYPH A416;Lo;0;L;;;;;N;;;;;
145C6;ANATOLIAN HIEROGLYPH A417;Lo;0;L;;;;;N;;;;;
145C7;ANATOLIAN HIEROGLYPH A418;Lo;0;L;;;;;N;;;;;
145C8;ANATOLIAN HIEROGLYPH A419;Lo;0;L;;;;;N;;;;;
145C9;ANATOLIAN HIEROGLYPH A420;Lo;0;L;;;;;N;;;;;
145CA;ANATOLIAN HIEROGLYPH A421;Lo;0;L;;;;;N;;;;;
145CB;ANATOLIAN HIEROGLYPH A422;Lo;0;L;;;;;N;;;;;
145CC;ANATOLIAN HIEROGLYPH A423;Lo;0;L;;;;;N;;;;;
145CD;ANATOLIAN HIEROGLYPH A424;Lo;0;L;;;;;N;;;;;
145CE;ANATOLIAN HIEROGLYPH A425;Lo;0;L;;;;;N;;;;;
145CF;ANATOLIAN HIEROGLYPH A426;Lo;0;L;;;;;N;;;;;
145D0;ANATOLIAN HIEROGLYPH A427;Lo;0;L;;;;;N;;;;;
145D1;ANATOLIAN HIEROGLYPH A428;Lo;0;L;;;;;N;;;;;
145D2;ANATOLIAN HIEROGLYPH A429;Lo;0;L;;;;;N;;;;;
145D3;ANATOLIAN HIEROGLYPH A430;Lo;0;L;;;;;N;;;;;
145D4;ANATOLIAN HIEROGLYPH A431;Lo;0;L;;;;;N;;;;;
145D5;ANATOLIAN HIEROGLYPH A432;Lo;0;L;;;;;N;;;;;
145D6;ANATOLIAN HIEROGLYPH A433;Lo;0;L;;;;;N;;;;;
145D7;ANATOLIAN HIEROGLYPH A434;Lo;0;L;;;;;N;;;;;
145D8;ANATOLIAN HIEROGLYPH A435;Lo;0;L;;;;;N;;;;;
145D9;ANATOLIAN HIEROGLYPH A436;Lo;0;L;;;;;N;;;;;
145DA;ANATOLIAN HIEROGLYPH A437;Lo;0;L;;;;;N;;;;;
145DB;ANATOLIAN HIEROGLYPH A438;Lo;0;L;;;;;N;;;;;
145DC;ANATOLIAN HIEROGLYPH A439;Lo;0;L;;;;;N;;;;;
145DD;ANATOLIAN HIEROGLYPH A440;Lo;0;L;;;;;N;;;;;
145DE;ANATOLIAN HIEROGLYPH A441;Lo;0;L;;;;;N;;;;;
145DF;ANATOLIAN HIEROGLYPH A442;Lo;0;L;;;;;N;;;;;
145E0;ANATOLIAN HIEROGLYPH A443;Lo;0;L;;;;;N;;;;;
145E1;ANATOLIAN HIEROGLYPH A444;Lo;0;L;;;;;N;;;;;
145E2;ANATOLIAN HIEROGLYPH A445;Lo;0;L;;;;;N;;;;;
145E3;ANATOLIAN HIEROGLYPH A446;Lo;0;L;;;;;N;;;;;
145E4;ANATOLIAN HIEROGLYPH A447;Lo;0;L;;;;;N;;;;;
145E5;ANATOLIAN HIEROGLYPH A448;Lo;0;L;;;;;N;;;;;
145E6;ANATOLIAN HIEROGLYPH A449;Lo;0;L;;;;;N;;;;;
145E7;ANATOLIAN HIEROGLYPH A450;Lo;0;L;;;;;N;;;;;
145E8;ANATOLIAN HIEROGLYPH A450A;Lo;0;L;145E7
145A2;;;;;N;;;;;
145E9;ANATOLIAN HIEROGLYPH A451;Lo;0;L;;;;;N;;;;;
145EA;ANATOLIAN HIEROGLYPH A452;Lo;0;L;;;;;N;;;;;
145EB;ANATOLIAN HIEROGLYPH A453;Lo;0;L;;;;;N;;;;;
145EC;ANATOLIAN HIEROGLYPH A454;Lo;0;L;;;;;N;;;;;
145ED;ANATOLIAN HIEROGLYPH A455;Lo;0;L;;;;;N;;;;;
145EE;ANATOLIAN HIEROGLYPH A456;Lo;0;L;;;;;N;;;;;
145EF;ANATOLIAN HIEROGLYPH A457;Lo;0;L;;;;;N;;;;;
145F0;ANATOLIAN HIEROGLYPH A457A;Lo;0;L;;;;;N;;;;;
145F1;ANATOLIAN HIEROGLYPH A458;Lo;0;L;;;;;N;;;;;
145F2;ANATOLIAN HIEROGLYPH A459;Lo;0;L;;;;;N;;;;;
145F3;ANATOLIAN HIEROGLYPH A460;Lo;0;L;;;;;N;;;;;
145F4;ANATOLIAN HIEROGLYPH A461;Lo;0;L;;;;;N;;;;;
145F5;ANATOLIAN HIEROGLYPH A462;Lo;0;L;;;;;N;;;;;
145F6;ANATOLIAN HIEROGLYPH A463;Lo;0;L;;;;;N;;;;;
145F7;ANATOLIAN HIEROGLYPH A464;Lo;0;L;;;;;N;;;;;
145F8;ANATOLIAN HIEROGLYPH A465;Lo;0;L;;;;;N;;;;;
145F9;ANATOLIAN HIEROGLYPH A466;Lo;0;L;;;;;N;;;;;
145FA;ANATOLIAN HIEROGLYPH A467;Lo;0;L;;;;;N;;;;;
145FB;ANATOLIAN HIEROGLYPH A468;Lo;0;L;;;;;N;;;;;
145FC;ANATOLIAN HIEROGLYPH A469;Lo;0;L;;;;;N;;;;;
145FD;ANATOLIAN HIEROGLYPH A470
TWELVE;Lo;0;L;;;;;N;;;;;
145FE;ANATOLIAN HIEROGLYPH A471;Lo;0;L;;;;;N;;;;;
145FF;ANATOLIAN HIEROGLYPH A472;Lo;0;L;;;;;N;;;;;
14600;ANATOLIAN HIEROGLYPH A473;Lo;0;L;;;;;N;;;;;
14601;ANATOLIAN HIEROGLYPH A474;Lo;0;L;;;;;N;;;;;
14602;ANATOLIAN HIEROGLYPH A475;Lo;0;L;;;;;N;;;;;
14603;ANATOLIAN HIEROGLYPH A476;Lo;0;L;;;;;N;;;;;
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14612;ANATOLIAN HIEROGLYPH A491;Lo;0;L;;;;;N;;;;;
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14616;ANATOLIAN HIEROGLYPH A495;Lo;0;L;;;;;N;;;;;
14617;ANATOLIAN HIEROGLYPH A496;Lo;0;L;;;;;N;;;;;
14618;ANATOLIAN HIEROGLYPH A497;Lo;0;L;;;;;N;;;;;
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1461D;ANATOLIAN HIEROGLYPH A505;Lo;0;L;;;;;N;;;;;
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1461F;ANATOLIAN HIEROGLYPH A507;Lo;0;L;;;;;N;;;;;
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14623;ANATOLIAN HIEROGLYPH A511;Lo;0;L;;;;;N;;;;;
14624;ANATOLIAN HIEROGLYPH A512;Lo;0;L;;;;;N;;;;;
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14627;ANATOLIAN HIEROGLYPH A515;Lo;0;L;;;;;N;;;;;
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1462B;ANATOLIAN HIEROGLYPH A519;Lo;0;L;;;;;N;;;;;
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1462D;ANATOLIAN HIEROGLYPH A521;Lo;0;L;;;;;N;;;;;
1462E;ANATOLIAN HIEROGLYPH A522;Lo;0;L;;;;;N;;;;;
1462F;ANATOLIAN HIEROGLYPH A523;Lo;0;L;;;;;N;;;;;
14630;ANATOLIAN HIEROGLYPH A524;Lo;0;L;;;;;N;;;;;

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