ISO/IEC JTC1/SC2/WG2 N3066R
L2/06-095R
2006-04-01

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

**Doc Type:** **Working Group Document**
**Title:** **Proposal for encoding the Phaistos Disc characters in the SMP of the UCS**
**Source:** **Michael Everson and John Jenkins**
**Status:** **Individual Contribution**
**Replaces:** **N1575 (1997-06), L2/97-105 (1997-05-27)**
**Action:** **For consideration by JTC1/SC2/WG2 and UTC**
**Date:** **2006-04-01**

The Phaistos Disc was discovered in an archaeological dig in Phaistos, Crete, on 1908-07-03. It is a clay disc about 16 cm in diameter and 1 cm thick with 241 signs stamped onto the two sides. The 241 signs consist of 45 different characters separated by lines into a total of 61 groups of two to seven characters. The disc is of uncertain age, but is likely to date from between the mid-18th century and the the mid-14th century BCE. The disc is contemporary with Linear A, and was found among Linear A tablets.

There is general agreement that the symbols on the inscription are an example of writing, Despite the continued interest of classicists—professional and amateur—for nearly a century, the writing has not been deciphered, nor have any other examples of this writing been discovered. Some guesses can be made about the writing system of the disc. If it is writing, it is probably a syllabary, possibly with some logographic elements, as many of the other scripts of the region and time-period are. As a syllabary, it may have consisted of 50–60 symbols. It seems unlikely that the Phaistos Disc is the only possible specimen of this script—the fact that somebody went to the trouble to create stamps with which to write it implies that it was used for more than one document. Indeed, John Chadwick went so far as to call it "the world's first typewritten document" (Chadwick 1987).

**Issues**

Why encode Phaistos Disc characters at all? The chief reason is that a good many people, both scholars and enthusiasts, spend time and energy discussing it, whether proposing decipherments, or discussing the relation of its characters with those of other scripts, or in more general discussions. While the numbers in a Google search result should be taken with a grain of salt, it is worth noting that "*Phaistos Disc*" yields 39,100 hits, and "*Phaistos Disk*" yields 21,100 hits (60,200 hits in all for English). German "*Diskos von Phaistos*" yields 10,500; Greek "*Δίσκος της Φαιστού*" yields 613; French "*Disque de Phaistos*" 20,600; Italian "*Disco di Festo*" 521; Japanese "*Faisutosu no Enban*" (in Japanese script of course) 81; Dutch "*Schijf van Phaistos*" 151; Polish "*Dysk z Fajstos*" 227; Romanian "*Discul din Phaistos*" 116; Slovak "*Disk z Faistu*" 218. There is a great deal of discussion about the Phaistos Disc in the English Wikipedia article **en.wikipedia.org/wiki/Phaistos_Disc**, and there are Wikipedia pages about the Phaistos Disc in German, Greek, French, Italian, Japanese, Dutch, Polish, Romanian, and Slovak. (Those are the languages we googled just above.)

The Unicode Technical Committee looked at a proposal by John Jenkins to encode it in 1997, and it was "not accepted" at that time. This is not the same thing as saying that it was "rejected" however. The UTC does "reject" proposals. What it meant is that the proposal did not give enough reasons for action to be taken one way or another. In the nine years since then, interest in the Phaistos Disc has grown, and we believe that there is good reason now to encode its characters.

There are several arguments against encoding the Phaistos Disc characters. Some have argued that because a second inscription has not been found, an encoding of this set would be incomplete. That is

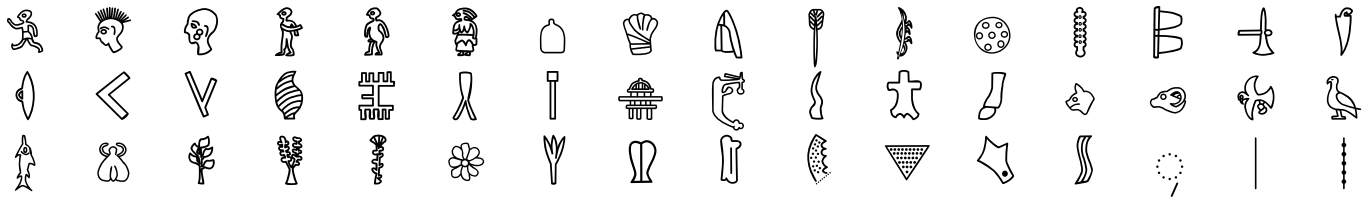
true, but of course new characters can always be added to the standard, so there is no harm in encoding the set which we know now. Others have argued that since the characters have not been deciphered, we may be encoding duplicate characters. This does not seem at all convincing: all of the characters on the Disc are really quite distinct, and have been given distinct names and unique catalogue numbers, and have been treated as distinct by the people who have studied them, whatever they may have meant in antiquity. And if any two of the Phaistos Disc characters happened, in an eventual decipherment, to turn out to be "identical", it would not be worse than the forthcoming UCS encoding of Carian, which encodes several "variants" precisely because the history of decipherment has considered them distinctly. We do not believe that the arguments against encoding the Phaistos Disc characters are responsive to the obvious interest in discussing them and—importantly with respect to the UCS—in exchanging data about their discussion.

Phaistos Disc characters, whether syllables, or letters, or board-game dingbats, have historical and cultural significance, as attested in the large number of publications dealing with it. As noted above, the Wikipedia has articles about the Phaistos Disc in ten languages. The 30+ documents listed in the bibliography in this proposal are by no means the only documents printed which deal with the Phaistos Disc characters. The English Wikipedia article gives Phaistos Disc characters inline in text as well as in tables (Figure 8). Other documents exist which present the Phaistos Disc characters either inline (Figure 8) or in tables (Figures 1, 2, 5, 6, 7). It is true that the *image* of the Phaistos Disc itself is easy to represent with simple drawing (see Figure 3) but the discussion of its characters inline in Latin text is not.

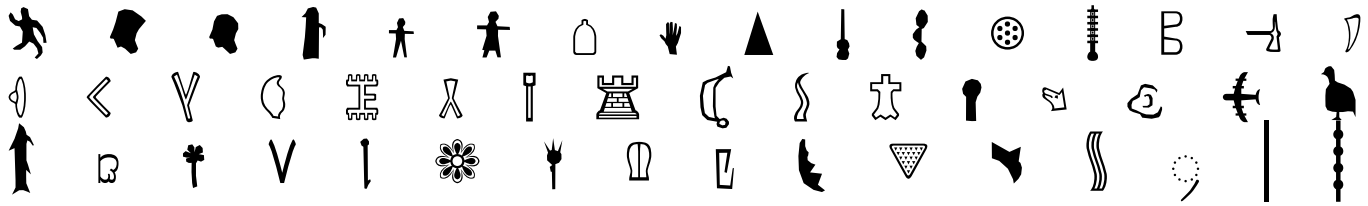
**Implementation**

The ConScript Unicode Registry has offered an encoding of the Phaistos Disc characters since July 2002: see **www.evertype.com/standards/csur/phaistos.html**. Everson Mono Phaistos and Code 2001 are two fonts which have made use of ConScript Private Use Area encoding recommendations for the Phaistos script. The English Wikipedia article points users to both of these, as does David McCreedy's "Gallery of Unicode Fonts" which can be accessed at **www.travelphrases.info/gallery/Fonts_Phaistos.html**. Private Use Area characters should not be considered sufficient for encoding Phaistos Disc characters because, for instance, a Google search ignores them. Other fonts also exist, such as the 8-bit font by Stratos Doumanis and Apostolos Syropoulos from **obelix.ee.duth.gr/~apostolo/Phaistos/index.html**. The Phaistos font by Deniart (**www.deniart.com/phaistos.shtml**) is sold commercially. Of course a wide variety of metal type faces have also been made for the Phaistos Disc characters, as can be seen in Figures 1, 2, 5, 6, and 9. Here are samples of Everson Mono Phaistos, Code 2001, Doumanis and Syropoulos' Phaistos font (1992), and Deniart's commercial Phaistos font:

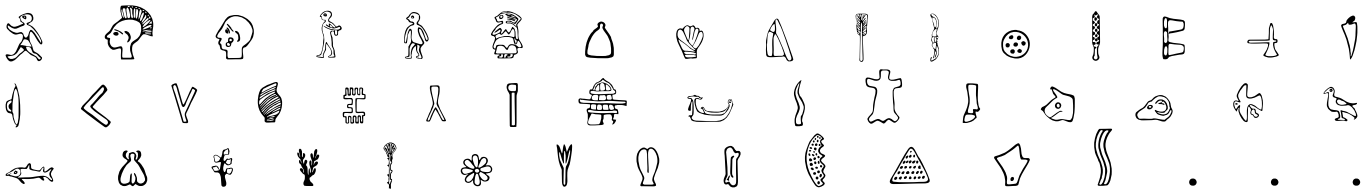
**Everson Mono Phaistos (Michael Everson)**



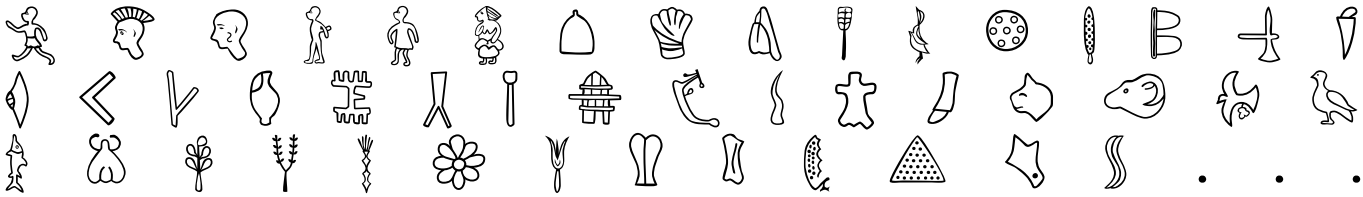
**Code 2000 (James Kass)**



**Phaistos (Stratos Doumanis & Apostolos Syropoulos)**



**Phaistos font by Deniart**



**Structure**

The individual characters are straightforward spacing symbols, though one combining mark is used with a number of characters.

**Names**

Character names are taken from Godart 1995.

**Directionality**

Consensus is that the text of the disc was written from outside to the centre; some overlapping signs suggest this as the order that the stamps were pressed into the clay. Such a reading would be *into* the faces of the characters, a practice which is also found in Egyptian and Luwian. Because the overwhelming majority of texts which discusses Phaistos characters uses left-to-right scripts (Latin, Greek, Cyrillic), we propose that the Phaistos Disc characters be encoded with left-to-right directionality.

Often illustrations of the Phaistos text are given with right-to-left directionality, as can be seen in some of the Figures below.

**Punctuation**

In this encoding, three "punctuation" characters have been added at U+101FD–U+101FF. All of these were early requested by reviewers of the ConScript encoding when it was first proposed. We propose that these not be unified with other punctuation marks in the standard. Unification of these with any of the generic combining marks would make no sense—if nothing else, it would be anachronistic as they predate all of them by some three millennia.

U+101FF 𐇿 PHAISTOS DISC SIGN START OF TEXT is a unique beaded vertical line which marks the beginning of the text on both the A and B sides of the Disc. It should have the same height and thickness as U+101EF 𐇯 PHAISTOS DISC SIGN SEPARATOR, and we believe that a unification of this character with U+007C, U+2223, U+23D0, U+2502, etc. would not be suitable, as all of those are later inventions with their own uses. Note that reviewers of the ConScript encoding certainly had recourse to U+007C, but did not consider it appropriate to use this character, preferring to encode the three as given here.

U+101FD 𐇽 PHAISTOS DISC SIGN OBLIQUE STROKE is used a number of times on the Disc, always underneath the final sign in a group, as can be seen in Figures 10 and 11. Its distribution attracts analysis. This too was a character requested by reviewers of the ConScript encoding in 2002. Godart 1995 accepts it (hastily perhaps) as punctuation, and he even uses it to segment the text in "sentences" or "verses". As

far as its meaning is concerned, we do not know whether it is a stress mark, a tone mark, a cantillation mark, a vowel muter, a full stop, a comma, a determinative for logographs.… It is usually oblique, but on some instances is drawn more vertically. It typically touches the sign it is attached to. And it simply doesn't look like any of the generic marks. We prefer to keep to the recommendation of the avowed users of the script.

### Linebreaking

There is no evidence at all for anything about linebreaking on the disc itself. Each character should be *treated* as a symbol or ideographs with respect to linebreaking—that is to say: a linebreak can occur after any sign.

### Unicode Character Properties

```
101D0;PHAISTOS DISC SIGN PEDESTRIAN;Lo;0;L;;;;;N;;;;;
101D1;PHAISTOS DISC SIGN PLUMED HEAD;Lo;0;L;;;;;N;;;;;
101D2;PHAISTOS DISC SIGN TATTOOED HEAD;Lo;0;L;;;;;N;;;;;
101D3;PHAISTOS DISC SIGN CAPTIVE;Lo;0;L;;;;;N;;;;;
101D4;PHAISTOS DISC SIGN CHILD;Lo;0;L;;;;;N;;;;;
101D5;PHAISTOS DISC SIGN WOMAN;Lo;0;L;;;;;N;;;;;
101D6;PHAISTOS DISC SIGN HELMET;Lo;0;L;;;;;N;;;;;
101D7;PHAISTOS DISC SIGN GAUNTLET;Lo;0;L;;;;;N;;;;;
101D8;PHAISTOS DISC SIGN TIARA;Lo;0;L;;;;;N;;;;;
101D9;PHAISTOS DISC SIGN ARROW;Lo;0;L;;;;;N;;;;;
101DA;PHAISTOS DISC SIGN BOW;Lo;0;L;;;;;N;;;;;
101DB;PHAISTOS DISC SIGN SHIELD;Lo;0;L;;;;;N;;;;;
101DC;PHAISTOS DISC SIGN CLUB;Lo;0;L;;;;;N;;;;;
101DD;PHAISTOS DISC SIGN MANACLES;Lo;0;L;;;;;N;;;;;
101DE;PHAISTOS DISC SIGN MATTOCK;Lo;0;L;;;;;N;;;;;
101DF;PHAISTOS DISC SIGN SAW;Lo;0;L;;;;;N;;;;;
101E0;PHAISTOS DISC SIGN LID;Lo;0;L;;;;;N;;;;;
101E1;PHAISTOS DISC SIGN BOOMERANG;Lo;0;L;;;;;N;;;;;
101E2;PHAISTOS DISC SIGN CARPENTRY PLANE;Lo;0;L;;;;;N;;;;;
101E3;PHAISTOS DISC SIGN DOLIUM;Lo;0;L;;;;;N;;;;;
101E4;PHAISTOS DISC SIGN COMB;Lo;0;L;;;;;N;;;;;
101E5;PHAISTOS DISC SIGN SLING;Lo;0;L;;;;;N;;;;;
101E6;PHAISTOS DISC SIGN COLUMN;Lo;0;L;;;;;N;;;;;
101E7;PHAISTOS DISC SIGN BEEHIVE;Lo;0;L;;;;;N;;;;;
101E8;PHAISTOS DISC SIGN SHIP;Lo;0;L;;;;;N;;;;;
101E9;PHAISTOS DISC SIGN HORN;Lo;0;L;;;;;N;;;;;
101EA;PHAISTOS DISC SIGN HIDE;Lo;0;L;;;;;N;;;;;
101EB;PHAISTOS DISC SIGN BULLS LEG;Lo;0;L;;;;;N;;;;;
101EC;PHAISTOS DISC SIGN CAT;Lo;0;L;;;;;N;;;;;
101ED;PHAISTOS DISC SIGN RAM;Lo;0;L;;;;;N;;;;;
101EE;PHAISTOS DISC SIGN EAGLE;Lo;0;L;;;;;N;;;;;
101EF;PHAISTOS DISC SIGN DOVE;Lo;0;L;;;;;N;;;;;
101F0;PHAISTOS DISC SIGN TUNNY;Lo;0;L;;;;;N;;;;;
101F1;PHAISTOS DISC SIGN BEE;Lo;0;L;;;;;N;;;;;
101F2;PHAISTOS DISC SIGN PLANE TREE;Lo;0;L;;;;;N;;;;;
101F3;PHAISTOS DISC SIGN VINE;Lo;0;L;;;;;N;;;;;
101F4;PHAISTOS DISC SIGN PAPYRUS;Lo;0;L;;;;;N;;;;;
101F5;PHAISTOS DISC SIGN ROSETTE;Lo;0;L;;;;;N;;;;;
101F6;PHAISTOS DISC SIGN LILY;Lo;0;L;;;;;N;;;;;
101F7;PHAISTOS DISC SIGN OX BACK;Lo;0;L;;;;;N;;;;;
101F8;PHAISTOS DISC SIGN FLUTE;Lo;0;L;;;;;N;;;;;
101F9;PHAISTOS DISC SIGN GRATER;Lo;0;L;;;;;N;;;;;
101FA;PHAISTOS DISC SIGN STRAINER;Lo;0;L;;;;;N;;;;;
101FB;PHAISTOS DISC SIGN SMALL AXE;Lo;0;L;;;;;N;;;;;
101FC;PHAISTOS DISC SIGN WAVY BAND;Lo;0;L;;;;;N;;;;;
101FD;PHAISTOS DISC SIGN COMBINING OBLIQUE STROKE;Mn;220;NSM;;;;;N;;;;;
101FE;PHAISTOS DISC SIGN SEPARATOR;Po;0;L;;;;;N;;;;;
101FF;PHAISTOS DISC SIGN START OF TEXT;Po;0;L;;;;;N;;;;;
```

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# Figures

| Signs | Frequency of occurrence | Signs | Frequency of occurrence |
|---|---|---|---|
| 1. Pedestrian | 11 | 24. Beehive | 6 |
| 2. Plumed head | 19 | 25. Ship | 7 |
| 3. Tattooed head | 2 | 26. Horn | 6 |
| 4. Captive | 1 | 27. Hide | 15 |
| 5. Child | 1 | 28. Bull's leg | 2 |
| 6. Woman | 4 | 29. Cat | 11 |
| 7. Helmet | 18 | 30. Ram | 1 |
| 8. Gauntlet | 5 | 31. Eagle | 5 |
| 9. Tiara | 2 | 32. Dove | 3 |
| 10. Arrow | 4 | 33. Tunny | 6 |
| 11. Bow | 1 | 34. Bee | 3 |
| 12. Shield | 17 | 35. Plane tree | 11 |
| 13. Club | 6 | 36. Vine | 4 |
| 14. Manacles | 2 | 37. Papyrus | 4 |
| 15. Mattock | 1 | 38. Rosette | 4 |
| 16. Saw | 2 | 39. Lily | 4 |
| 17. Lid | 1 | 40. Ox back | 6 |
| 18. Boomerang | 12 | 41. Flute | 2 |
| 19. Carpentry plane | 3 | 42. Grater | 1 |
| 20. Dolium | 2 | 43. Strainer | 1 |
| 21. Comb | 2 | 44. Small axe | 1 |
| 22. Sling | 5 | 45. Wavy band | 6 |
| 23. Column | 11 | Total | 241 |

**Figure 1.** Sample of the Phaistos Disc character repertoire, from Godart 1997.

 55. A bow, *iali*; see 32.

 56. Dog's head, *ul*; see 49.

 57. Fish, *iad*; see 17.

 58. Man fighting, *yasa*; see 25.

 59. A woman clasping her breast, *byulidzi*, B. bular + ichi, 'breast-clasping'. It may be observed once more that the termination a or ar in Basque is probably always separable, and represents the article in its two forms before a consonant and vowel respectively. *Byulidzi* is one of the few Cretan words known to have survived in Greek. See βολίζη, 'a female slave'. Its use throughout is syllabic.

 60. Branch, *idzu*. See 9.

 61. A bird, apparently of the order of runners. It has been rendered provisionally *ulu*, B. ollo, 'fowl'. It is followed in two cases by a word beginning with *u* (in the third it is apparently ideographic), and in accordance with the principle of overlapping values should end with the same letter.

 62. A flower, *ui*; see 26

 63. A fish, *iad*; see 17 } already valued.

 64. A plumed head, *Ya*; see 1

 65. Either a pointed rock marked with watercourses, *iadz*, B. aitz or ach, or a horse's ear, in which case it would correspond to the Cretan horse-head (S. M. 25 and 26) for which the value *iadz* or *iadzi* has already been suggested.

 66. A hide, *adzal*; see 6

 67. A man fighting, *yasa*; see 25

 68. Dog's head, *ul*; see 49 } already valued.

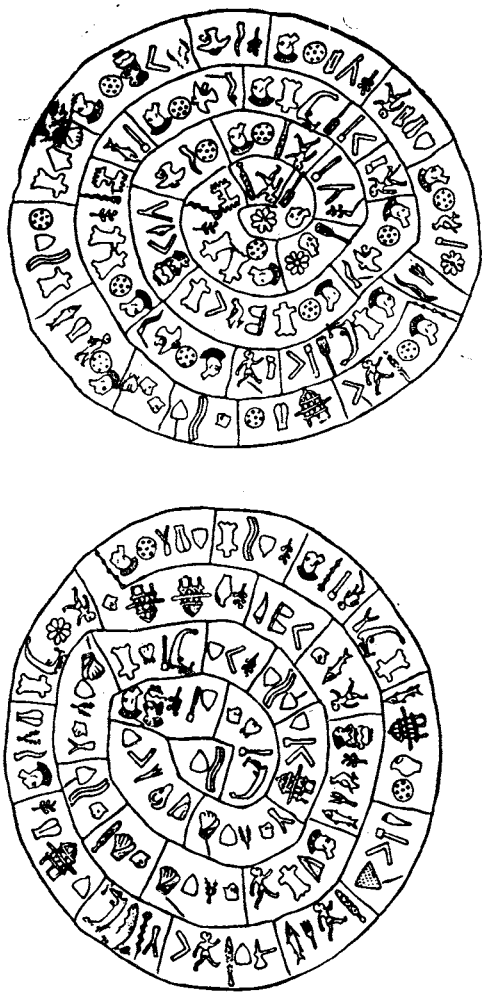
 69. A double branch, *adalbida*; see 43

 70. A cone, *iq* or *iaq*; see 5

 71. Half a foot, with the cross-strap and toe-strap of a sandal, *uđ*, B. oñ. I do not think this can be a hand. Both the shape

**Figure 2.** Discussion of the possible meanings of the Phaistos Disc repertoire from Gordon 1931. (Gordon attempted to relate the Phaistos Disc to Basque.)

С обеих сторон диска нанесен 241 изобразительный знак. Эти знаки разделены линиями на 61 группу, по-видимому, на отдельные слова (рис. 54). Количество разных знаков — 45. Это, а также количество знаков (в среднем около четырех) в каждой ячейке диска, ограниченной линиями, делает очень вероятным слоговой характер знаков диска. В четырех ячейках конечные знаки исправлены; это позволяет предположить, что слова фестского диска имели грамматически изменяющиеся окончания [42]. Письмо фестского диска до сих пор не дешифровано. А. Эванс, исходя из того, что на диске широко представлены изобразительные знаки военной тематики (шлем, палица и т. п.), считал, что текст диска — победный культовый гимн; однако, если считать знаки диска слоговыми, то предположение А. Эванса теряет опору. Неясно происхождение диска; на основе анализа глины, из которой сделан диск, и использованных на нем изображений большинство ученых считает, что диск изготовлен не на Крите [43]. Точное совпадение формы одинаковых знаков показывает, что они оттиснуты заранее заготовленными штемпелями; таким образом, фестский диск — один из древнейших памятников штемпельной печати.



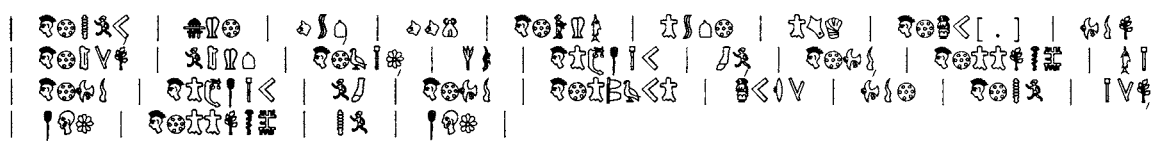
**54.** Диск из Феста (лицевая и оборотная стороны)

На базе критского линейного письма возникло слоговое «кипрскоеписьмо»; памятники его — середина I тысячелетия до н. э.

[42] С. Я. Лурье. «Kadmos».— «Вестн. древ. истории», 1963, № 3, стр 160.
[43] Э. Добльхофер. Знаки и чудеса. М., 1963, стр. 327—331.

**Figure 3.** Discussion of the Phaistos Disc in Истрин (Istrin) 1965, a Soviet-era book on the history of writing systems.

Side A



Side B

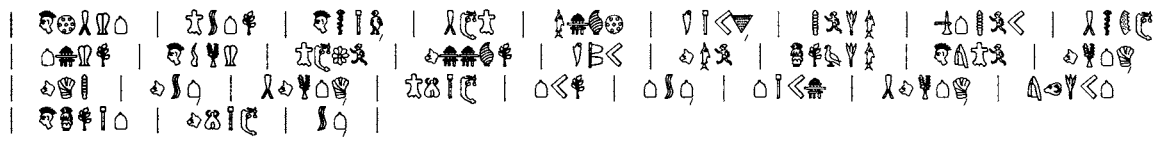


**Figure 4.** Text of the Phaistos Disc.

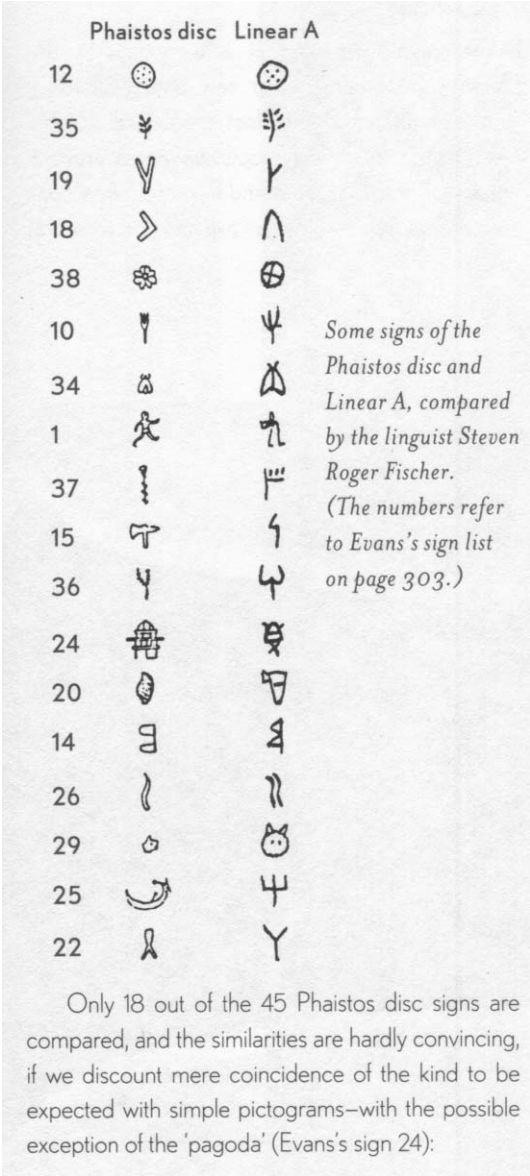
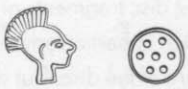
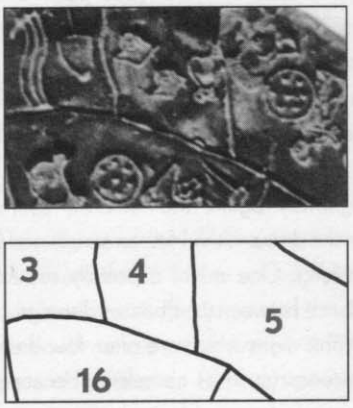



**Figure 5.** Comparison of Phaistos Disc characters with Linear A characters from Robinson 2002.

In fairness, it must be said that the hoax theory is very much a minority opinion. Neither Duhoux, nor Bennett, nor John Chadwick, nor Maurice Pope, nor Tom Palaima, nor any other current scholar of the Cretan scripts except Jean-Pierre Olivier—nor for that matter Sir Arthur Evans, who first wrote about the disc in detail—have supported the theory. For a start, the disc appeared in an official excavation report written by a reputable archaeologist. Secondly, it was found close to a Linear A tablet of incontestable authenticity. Lastly, and most important of all, one can detect a substantial number of scribal corrections on both sides of the disc, such as those in the roughened clay of sections 4 and 5 of side A, where the original dividing line between the sections has been erased (it is faintly visible) to make way for two extra signs:



which were then added in a cramped fashion in section 5 of the disc before the scribe redrew the dividing line at an angle that is uncharacteristic of the other dividing lines on the disc:




It would have been an ingenious hoaxer indeed who would have bothered to introduce bogus 'corrections' in a bogus disc, but some hoaxers are indeed ingenious. So puzzling is the Phaistos disc that we cannot entirely rule out some archaeologist's prank.

As for the claim by Fischer (of *rongorongo* decipherment fame) to have deciphered the disc, mentioned in the first *Economist* letter, we shall come to it later, along with a few others of the dozens of disc 'decipherments' that are published decade after decade. But first, let us take a careful look at the disc itself and establish some basic facts about it.

It was discovered in 1908 by the archaeologist Luigi Pernier in the ruins of a palace at Phaistos in southern Crete. The archaeological context suggests that the date of the disc is 1850-1600 BC—in other words contemporary with Linear A and Evans's Cretan Hieroglyphic. The disc is roughly 16 cm (6.5 in) in diameter and 1.9 cm (0.75 in) thick, and is made of fine clay. On both sides (A and B) is an inscription, which consists of characters impressed on the wet clay with a punch or stamp before it was fired. There are 241 or 242 characters (one is damaged), consisting of 45 signs, divided by lines into short sections (31 on side A and 30 on side B). They are arranged in a spiral around the center of each side. Here is the sign list numbered by Evans:

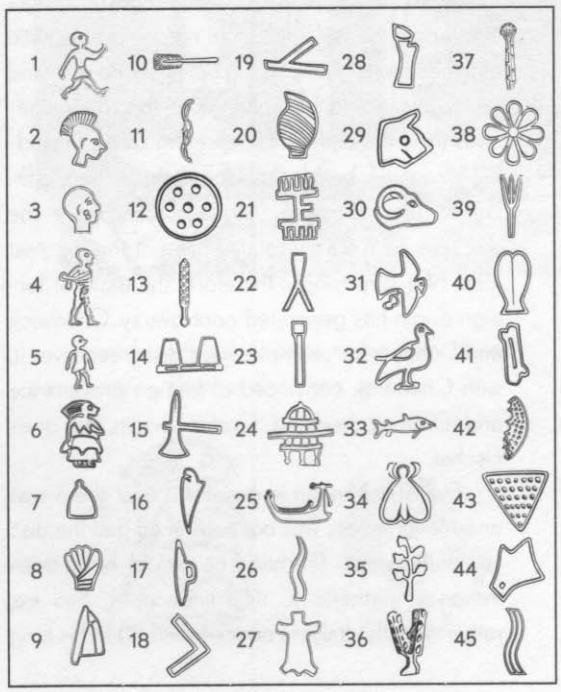
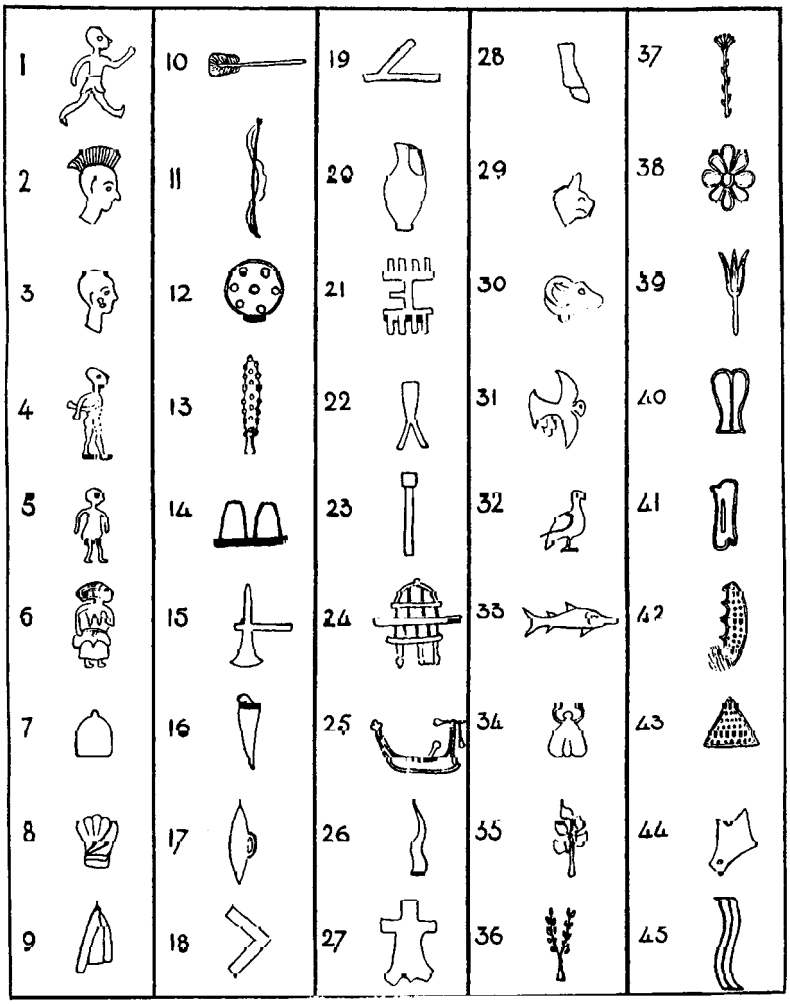



**Figure 6.** Discussion of the Phaistos Disc from Robinson 2002. The character repertoire as defined by Evans is given in the table at the lower right-hand corner.

〈表〉ファイストスの円盤文字表




出典：Evans (1909).

頃）と見られる（「ミノア文字」の項の年表を参照）．

テキストの長さはA面が123字，B面が119字で，2ないし7の文字群が縦の線で区切られ，そのような文字群の数はA面に31，B面に30数えられる（図1，図2参照）．このテキストで注目されるのは，通常の粘土板文書と違って，一種の「活字」（おそらく木製の）を使って柔らかい粘土に印字するという方法で文字が書かれている点である．したがって，それぞれの文字の認定が簡単で，しかも盤の保存状態がよいので，テキストは正確に読み取ることができる．そこで使われている異なった文字種類は，全部で45を数える（〈表〉参照）．

［起　源］　この円盤は，発見以来多くの学者の関心を呼び，様々な問題を投げかけてきたが，まず最初の問題はその出自である．この文字が，少なくとも一見上，他のミノア系諸文字とほとんど類似性が見ないことから，エヴァンズ（A. J. Evans）は，これを外部からの輸入品と見なし，その起源を小アジア南部あたりと推定した．しかし，現在に至るまで，この円盤と少しでもつながりの認められるような文字は小アジアも含めてクレタ以外のいかなる地域からも見されていない．一方，1935年に中部クレタのアルロホーリ（Arkalokhori）の洞窟から発見された中ミノアⅢ～後期ミノアⅠに属する青銅の奉納用斧上の銘（図2），および，1937年にマリア（Mallia）で発掘した祭壇石に彫られた文字が，従来知られた

**Figure 7.** Discussion of the Phaistos Disc from Kōno *et al.* 2001, showing the character repertoire as defined by Evans. The digits and Phaistos Disc characters here are hand-drawn; compare this with the fonts used by Robinson in Figure 6.

9. Disque de Phaistos, face B ; Ø *ca* 16 cm, ép. 1,6 - 2,1 cm. Musée archéologique d'Iraklio.

crétois n'apparaît dans le répertoire des caractères : ainsi pas plus de double hache que de tête de taureau (qui sont aussi des signes dans les trois écritures). Seul le navire a pu paraître vaguement « égéen » mais rappelons que, sur la base d'un unique signe, on a baptisé le disque tantôt de « philistin » (la « tête emplumée » des guerriers de cette ethnie représentés sur les parois du temple de Ramsès III à Medinet Habu [vers 1160]), tantôt de « lycien » (l'armature architecturale en bois que l'on trouve sculptée dans la pierre des façades des tombes lyciennes de l'époque hellénistique)...

**Figure 8.** Discussion of the Phaistos Disc from Christin 2001, showing U+101E8 SHIP, U+101D1 PLUMED HEAD, and U+101E7 BEEHIVE inline in text.

**Linear A**

Some signs are close enough to Linear A and Linear B that they may have the same phonetic value, like 12 = *qe*, 43 = $ta_2$, *or* *31* = ku. A recent systematic comparison with Linear A is that of Torsten Timm, 2004 [1] (http://www.kereti.de/indexEngl.html) . Based on the Linear A character distribution patterns collected by Facchetti[4] Timm concludes that the language of the Disc inscription is the same as the language of Linear A. Timm identifies 20 of the 45 characters with Linear signs, assigning Linear B phonetic values to 16.

**Luwian hieroglyphs**

Achterberg et al. (2004) present a systematic comparison with Luwian hieroglyphs, resulting in a full decipherment claim (see below).In particular, they consider the stroke symbol cognate to the Luwian *r(a/i)* symbol, but assign it the value *-ti*. The stroke on A3 is identified as the personal name determinative. 01 is compared to the logogram *SARU*, a walking man or walking legs in Luwian. 02 is compared to word-initial $a_2$, a head with a crown in Luwian. The "bow" 11 is identified as the logogram *sol suus*, the winged sun known from Luwian royal seals. The "shield" 12 is compared to the near identical Luwian logogram *TURPI* "bread" and assigned the value *tu*. 39 they read as the "thunderbolt", ideogram of Tarhunt, in Luwian a W-shaped hieroglyph.

**Figure 9.** Discussion of the Phaistos Disc from the English Wikipedia article, showing eight Phaistos Disc characters inline in text. These are .png images made from the Everson Mono Phaistos font. Online text like this cannot be searched with Google because the signs are not available as text.

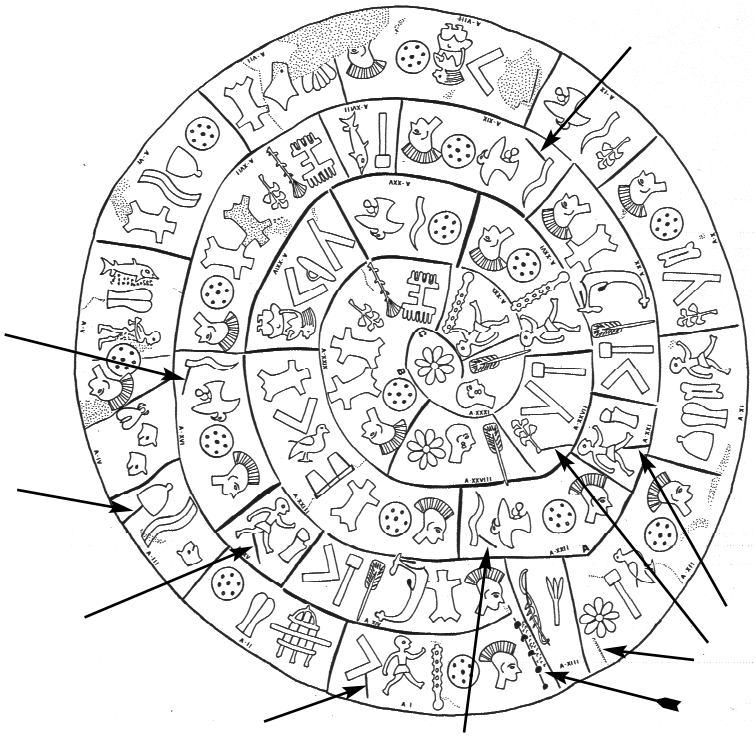


**Figure 10.** Side A of the Phaistos Disc, showing the COMBINING OBLIQUE STROKE and the START OF TEXT. The SEPARATOR can be seen throughout.

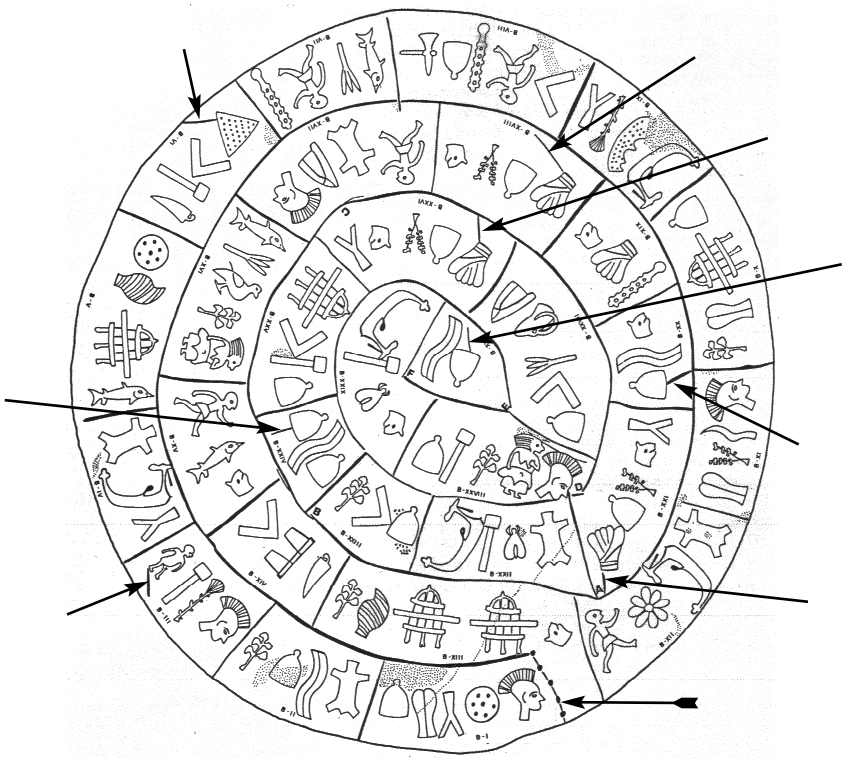


**Figure 11.** Side B of the Phaistos Disc, showing the COMBINING OBLIQUE STROKE and the START OF TEXT. The SEPARATOR can be seen throughout.

## TABLE XXX - Row 101: PHAISTOS DISC

| | 101D | 101E | 101F |
|---|---|---|---|
| 0 |  |  |  |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |
| 6 |  |  |  |
| 7 |  |  |  |
| 8 |  |  |  |
| 9 |  |  |  |
| A |  |  |  |
| B |  |  |  |
| C |  |  |  |
| D |  |  |  |
| E |  |  |  |
| F |  |  |  |

**G = 0D**
**P = 01**

## TABLE XXX - Row 101: PHAISTOS DISC

| hex | Name |
|---|---|
| D0 | PHAISTOS DISK SIGN PEDESTRIAN |
| D1 | PHAISTOS DISK SIGN PLUMED HEAD |
| D2 | PHAISTOS DISK SIGN TATTOOED HEAD |
| D3 | PHAISTOS DISK SIGN CAPTIVE |
| D4 | PHAISTOS DISK SIGN CHILD |
| D5 | PHAISTOS DISK SIGN WOMAN |
| D6 | PHAISTOS DISK SIGN HELMET |
| D7 | PHAISTOS DISK SIGN GAUNTLET |
| D8 | PHAISTOS DISK SIGN TIARA |
| D9 | PHAISTOS DISK SIGN ARROW |
| DA | PHAISTOS DISK SIGN BOW |
| DB | PHAISTOS DISK SIGN SHIELD |
| DC | PHAISTOS DISK SIGN CLUB |
| DD | PHAISTOS DISK SIGN MANACLES |
| DE | PHAISTOS DISK SIGN MATTOCK |
| DF | PHAISTOS DISK SIGN SAW |
| ED | PHAISTOS DISK SIGN LID |
| E1 | PHAISTOS DISK SIGN BOOMERANG |
| E2 | PHAISTOS DISK SIGN CARPENTRY PLANE |
| E3 | PHAISTOS DISK SIGN DOLIUM |
| E4 | PHAISTOS DISK SIGN COMB |
| E5 | PHAISTOS DISK SIGN SLING |
| E6 | PHAISTOS DISK SIGN COLUMN |
| E7 | PHAISTOS DISK SIGN BEEHIVE |
| E8 | PHAISTOS DISK SIGN SHIP |
| E9 | PHAISTOS DISK SIGN HORN |
| EA | PHAISTOS DISK SIGN HIDE |
| EB | PHAISTOS DISK SIGN BULLS LEG |
| EC | PHAISTOS DISK SIGN CAT |
| ED | PHAISTOS DISK SIGN RAM |
| EE | PHAISTOS DISK SIGN EAGLE |
| EF | PHAISTOS DISK SIGN DOVE |
| FD | PHAISTOS DISK SIGN TUNNY |
| F1 | PHAISTOS DISK SIGN BEE |
| F2 | PHAISTOS DISK SIGN PLANE TREE |
| F3 | PHAISTOS DISK SIGN VINE |
| F4 | PHAISTOS DISK SIGN PAPYRUS |
| F5 | PHAISTOS DISK SIGN ROSETTE |
| F6 | PHAISTOS DISK SIGN LILY |
| F7 | PHAISTOS DISK SIGN OX BACK |
| F8 | PHAISTOS DISK SIGN FLUTE |
| F9 | PHAISTOS DISK SIGN GRATER |
| FA | PHAISTOS DISK SIGN STRAINER |
| FB | PHAISTOS DISK SIGN SMALL AXE |
| FC | PHAISTOS DISK SIGN WAVY BAND |
| FD | PHAISTOS DISK SIGN COMBINING OBLIQUE STROKE |
| FE | PHAISTOS DISK SIGN SEPARATOR |
| FF | PHAISTOS DISK SIGN START OF TEXT |

| hex | Name |
|---|---|

## A. Administrative

**E. Title**

Proposal for encoding the Phaistos Disc characters in the SMP of the UCS.

**F. Requester's name**

Michael Everson and John Jenkins

**3. Requester type (Member body/Liaison/Individual contribution)**

Individual contribution.

**4. Submission date**

2006-04-01

**5. Requester's reference (if applicable)**

**6. Choose one of the following:**

**6a. This is a complete proposal**

Yes.

**6b. More information will be provided later**

No.

## B. Technical – General

**E. Choose one of the following:**

**Ea. This proposal is for a new script (set of characters)**

Yes.

**Eb. Proposed name of script**

Phaistos Disc.

**Ec. The proposal is for addition of character(s) to an existing block**

No.

**Ed. Name of the existing block**

**F. Number of characters in proposal**

48.

**3. Proposed category (A-Contemporary; B.1-Specialized (small collection); B.2-Specialized (large collection); C-Major extinct; D-Attested extinct; E-Minor extinct; F-Archaic Hieroglyphic or Ideographic; G-Obscure or questionable usage symbols)**

Category E.

**4a. Proposed Level of Implementation (1, 2 or 3)**

Level 3

**4b. Is a rationale provided for the choice?**

Yes.

**4c. If YES, reference**

One combining character is used.

**5a. Is a repertoire including character names provided?**

Yes.

**5b. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document?**

Yes.

**5c. Are the character shapes attached in a legible form suitable for review?**

Yes.

**6a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?**

Michael Everson; Truetype.

**6b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:**

Michael Everson, Fontographer.

**7a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?**

Yes.

**7b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?**

Yes.

**8. Special encoding issues: Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)?**

Yes. See above.

**9. Additional Information: Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script.**

Yes. See above.

## C. Technical – Justification

**E. Has this proposal for addition of character(s) been submitted before? If YES, explain.**

A brief discussion, but no formal proposal, was distributed to WG2 in N1575 (1997-06).

**Fa. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)?**

Yes.

F**b. If YES, with whom?**
Michael Everson and James Kass have both implemented fonts for the Phaistos Disc characters. Some discussion
**Fc. If YES, available relevant documents**
**3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?**
Yes. See above.
**4a. The context of use for the proposed characters (type of use; common or rare)**
Rare enough.
**4b. Reference**
**5a. Are the proposed characters in current use by the user community?**
Yes.
**5b. If YES, where?**
On the Internet and in books and articles.
**6a. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?**
No. Positions 101D0–101FF are proposed.
**6b. If YES, is a rationale provided?**
**6c. If YES, reference**
**7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?**
Yes.
**8a. Can any of the proposed characters be considered a presentation form of an existing character or character sequence?**
No.
**8b. If YES, is a rationale for its inclusion provided?**
**8c. If YES, reference**
**9a. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters?**
No.
**9b. If YES, is a rationale for its inclusion provided?**
**9c. If YES, reference**
**10a. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character?**
No. The three punctuation characters may have a superficial appearance to existing characters, but none of those characters existed at the time the Phaistos Disc was created. Discussion of "possible" unifications is given in the body of the proposal.
**10b. If YES, is a rationale for its inclusion provided?**
**10c. If YES, reference**
**11a. Does the proposal include use of combining characters and/or use of composite sequences?**
Yes.
**11b. If YES, is a rationale for such use provided?**
Yes.
**11c. If YES, reference**
The OBLIQUE STROKE is a combining character.
**11d. Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?**
No.
**11e. If YES, reference**
**12a. Does the proposal contain characters with any special properties such as control function or similar semantics?**
No.
**12b. If YES, describe in detail (include attachment if necessary)**
**13a. Does the proposal contain any Ideographic compatibility character(s)?**
No.
**13b. If YES, is the equivalent corresponding unified ideographic character(s) identified?**