

DOC TYPE: Working Group Document - Glyph Errata Report  
TITLE: Phaistos Disc Errata  
SOURCE: Deborah Anderson, Script Encoding Initiative, UC Berkeley  
STATUS: Liaison member contribution (from SEI/UCB)  
ACTION: For consideration by WG2  
DISTRIBUTION: ISO/IEC JTC1/SC2/WG

Feedback was submitted to the Unicode Consortium reporting that the glyphs in the Phaistos Disc block may be incorrect, specifically:

- The glyphs of the faces should be facing to the right, instead of to the left, as currently appears in the code charts.
- U+101EB BULLS LEG is upside down.

After checking with experts, comparing fonts for Phaistos Disc, and examining texts that discuss Phaistos Disc, the evidence supports the claim that the glyphs should have the faces reversed, that is, they should face right. Appendix C has a chart showing the direction of the glyphs, which can be used as a guide.<sup>1</sup>

The evidence on the orientation of U+101EB BULLS LEG is less clear; see comments in section II.

## I. Direction of Faces

### 1. Fonts

Glyphs from four fonts were included in proposal N3066: Everson Mono Phaistos, Code 2000, Phaistos (Stratos Doumanis and Apostolos Syropoulos), and a Phaistos font by Deniart. Although the glyphs from these fonts are shown in the proposal as left-facing, only Everson Mono Phaistos was designed as left-facing; all the others are right facing:

Code 2001 (Code 2000 does not have Phaistos Disc symbols):

Supplementary Multilingual Plane : Phaistos Disc [101D0..101FF] (46 characters)																
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
101D0																
101E0																
101F0																

<sup>1</sup> All glyphs should be flipped except for: 101D6 P.D. HELMET, 101D9 P.D. ARROW, 101DB P.D. SHIELD, 101DC P.D. CLUB, 101E5 SLING, 101E6 P.D. COLUMN, 101E7 P.D. BEEHIVE (note added bar on bottom, which is found on many other sources), 101EA P.D. HIDE, (see II below for 101EB BULLS LEG), 101F1 P.D. BEE, 101F3 P.D. VINE, 101F4 P.D. PAPYRUS, 101F5 P.D. ROSETTE, 101F6 P.D. LILY, 101F7 P.D. OX BACK, and 101FA P.D. STRAINER.

## Phaistos by Deniart

www.deniart.com/gfx/phaistos\_all.sht

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## Phaistos by Doumanis and Syropoulos (<http://obelix.ee.duth.gr/~apostolo/Phaistos/index.html>):

obelix.ee.duth.gr/~apostolo/Phaistos/index.html

### The disk of Phaistos font and LaTeX package

The disk of Phaistos was excavated in 1908 at the Minoan palace at Hagia Triada in Crete. The glyphs have not been conclusively deciphered to this day. In spite of this there have been efforts to include the 45 unique symbols depicted on disk in the Unicode standard. Thus, it was more than necessary to have a free font with all the symbols. Having as a basis the images and the drawings found in the booklet "*Le Disque de Phaistos*" by Jean-Pierre Olivier, Diffusion de Boccard, Paris, 1992, we created the phaistos font. The font was designed by Stratos Doumanis and Apostolos Syropoulos. The authors wish to publicly acknowledge the help and assistance they got from Zoi Amanatidou, Panagiotis Koudas and Kostas Sotiriadis.

The font and the LaTeX package can be freely downloaded and they may be distributed and/or modified under the conditions of the LaTeX Project Public License, either version 1.2 of this license or (at your option) any later version. The latest version of this license is in [www.latex-project.org/lppl.txt](http://www.latex-project.org/lppl.txt)

The following table shows all the glyphs of the phaistos font.

	'0	'1	'2	'3	'4	'5	'6	'7	
'10z									'4x
'11z									
'12z									

## 2. Text samples

All the samples in proposal itself (N3066) were right-facing except for figure 4 (with no attribution) and figure 9, which uses the Everson Mono Phaistos font. (Note: L2/97-106, an early proposal for the Phaistos disc symbols written by John Jenkins in 1997, also had the faces turned to the right.)

After checking through resources available to this author, *all* 26 reference works containing a chart or discussion of the individual signs (see Appendix A) had the faces turned to the right, with one exception. In an article by Torsten Timm from 2004 ("*Der Diskos von Phaistos - Anmerkungen zur Deutung und Textstruktur*," *Indogermanische Forschungen* 109: 204–231), the table at the end of the article (p. 231) had the faces turned to the right, but the smaller tables in the article, which had short groupings of characters, reversed the direction to face left. However, in a book by the same author in 2005, the groups of characters are all facing to the right (*Der Diskos von Phaistos: Fremdeinfluss oder kretisches Erbe?* Norderstedt, 2005).

A number of reference works on the Phaistos Disk had no samples of the individual signs, so it was not possible to check the orientation of the faces. (A list of these is in Appendix B.)

### 3. Expert Opinions re: direction of faces

I contacted two specialists asking their opinions on the direction of the faces. Both agreed that the direction of faces should be reversed, so they face the right.

#### a. Jean-Pierre Olivier

----- Original Message -----

Subject: Re: Phaistos disc question  
From: "Jean-Pierre Olivier" <[jolivier19@gmail.com](mailto:jolivier19@gmail.com)>  
Date: Wed, March 9, 2011 12:14 pm  
To: [dwanders@berkeley.edu](mailto:dwanders@berkeley.edu)

Dear Debbie Anderson,

As you know, from Stefani and Evans onwards, all the recognizable glyphs were generally drawn looking to the right, as printed on the disk itself (whatever the direction of the script: parallels with other scripts where the glyphs are looking to the beginning of the line seem to me irrelevant since the Phaistos disc is unique). Unless you consider the disk as a matrix (what is possible but rather hypothetical) it would be safer to draw them the same way in a font (it's what I did in mine).

#### b. Yves Duhoux

----- Original Message -----

Subject: Re: Phaistos Disc question: direction of head shapes  
From: "Yves Duhoux" [Yves.Duhoux@uclouvain.be](mailto:Yves.Duhoux@uclouvain.be)  
Date: Tue, February 8, 2011 11:00 am  
To: [dwanders@berkeley.edu](mailto:dwanders@berkeley.edu)

Le 8 févr. 2011 à 18:31, [dwanders@berkeley.edu](mailto:dwanders@berkeley.edu) a écrit :

> Dear Prof. Duhoux,  
> A question has arisen regarding  
> the direction the faces of the glyphs in the Phaistos Disc.  
> Currently, the faces in the characters are facing to the left, see the  
> images on page 2 of: <http://www.unicode.org/charts/PDF/U101D0.pdf>  
> Is this the most common direction that scholars would expect? Or would  
> they be facing to the right?

There is no possibility to theoretically answer this question in the case of an undeciphered script written in a text of only 242 signs. Every direction is theoretically possible. In fact, the direction

of the signs depends on the direction of the script, and it goes from the exterior to the centre of the disk. The conclusion is that you should invert the direction of your table.

## II. Direction of the bull's leg sign

Many of the works checked had the bull's leg upside-down (Timm, Best and Woudhuizen, for ex.), and some had it right-side up (Godart, Fischer), which is the current direction in charts.

If one decides the representative glyph of the symbols should be as they appear on the disk, with the faces to the right, then the hoof would be upside-down, and the glyph should be changed.

Below are the two examples from the disk (from J.-P. Olivier, "Le disque de Phaistos," *Bulletin de Correspondence Hellénique* 99 [1975] 1, pp. 12, 14).



A 11 (A XXI)



A 17 (A XV)

Note, however, J.-P. Olivier turned the bull's leg to the more "normal" direction in his listing of the individual signs (p. 29):



28 (A 17.2)

In Code 2001, the bull's leg is upside-down; in the font by Doumanis and Syropoulos and Everson, it is right-side up. The Phaistos disc font by Deniart has both orientations.

It appears that several authors "rectified" the direction of the bull's leg, as well as other signs (such as making the fish and boat horizontal, see figs. 6 and 7 in N3066).

If the direction of the representative glyphs is to match that on the Phaistos Disc (reading outside in), then the hoof should be flipped (that is, so it is upside-down). However, the direction of the bull's leg in text materials is often cited with the glyph as it appears currently in the charts (right-side up).

Whatever decision is made, the character should be annotated noting that the glyph can appear in a flipped orientation.

## Appendix A: Text materials with individual glyphs

(Note: \* see bracketed comments)

1. Aartun, Kjell. 1992. Der Diskos von Phaistos; Die beschriftete Bronzeaxt; Die Inschrift der Taragonatafel. Die minoische Schrift: Sprache und Texte vol. 1. Wiesbaden: Harrassowitz.
2. Aleff, H. Peter. 1982/2009. The Board Game on the Phaistos Disc. Ebook, Vineland, NJ. accessible at: <http://www.recoveredsience.com/phaistoscontents.htm>
3. Best, Jan G.P., and Fred Woudhuizen. 1989. Lost Languages from the Mediterranean. Leiden: EJ Brill.
4. Chadwick, John. 1987. Linear B and Related Scripts. (Reading the Past). London: British Museum Press.
5. Christin, Anne-Marie, ed. 2001. Histoire de l'écriture : de l'idéogramme au multimedia. Paris: Flammarion.
6. Coulmas, Florian. 1996. The Blackwell Encyclopedia of Writing Systems. Oxford: Blackwell.
7. Ephron, Henry D. 1962. Tharso and Iacon: The Phaistos Disk. Harvard Studies in Classical Philology. vol. 66:1–91.
8. \*Eisenberg, Jerome M. 2008. Phaistos Disk: A 100-Year-Old Hoax? Addenda, Corrigenda, and Comments. *Minerva* (September/October): 15–16. [no man symbol is shown, only bird facing right]
9. Faucounau, Jean. 1999. Le déchiffrement du disque de Phaistos. Paris: L'Harmattan.
10. Faucounau, Jean. 2001. Les Proto-Ioniens: histoire d'un peuple oublié. Paris: L'Harmattan.
11. Fischer, Steven R. 1988. Evidence for Hellenic Dialect in the Phaistos Disk. [s.l.]: Herbert Lang.
12. Godart, Louis. 1995. The Phaistos Disc: the enigma of an Aegean script. Tr. Alexandra Dumas. [s.l.]: Éditions Itanos.
13. Gordon, F. G. 1931. Through Basque to Minoan: transliterations and translations of the Minoan tablets. London: Oxford University Press.
14. Hausmann, Axel. 2002. Der Diskus von Phaistos: ein Dokument aus Atlantis. Norderstadt: BoD GmbH.
15. Haeker, Hans-Joachim. 1986. Neue Überlegungen zur Schriftrichtung und Textstruktur des Diskus von Phaistos. *Kadmos* 25: 89-96.
16. Haeker, Hans-Joachim. 1991. Zur Frage nach der 'Internen Analyse' der Schrift auf dem Diskos von Phaistos. *Kadmos* 30: 29-33.
17. Henke, Christoph. 2009. Der Diskus von Phaistos: eine Personenliste. *Indogermanische Forschungen* 114:118-131.
18. Kono Rokuro, Chino Eiichi, & Nishida Tatsuo. 2001. The Sanseido Encyclopaedia of Linguistics. Volume 7: Scripts and Writing Systems of the World [Gengogaku dai ziten (bekkan) sekai mozi ziten]. Tokyo: Sanseido Press.
19. Madau, Ennio G. 1997. Il disco di Phaistos. Zonza.
20. Ohlenroth, Derk. 1996. Das Abaton des lykäischen Zeus und der Hain der Elaia: Zum Diskos von Phaistos und zur frühen griechischen Schriftkultur. [s.l.]: M. Niemeyer.
21. Olivier, Jean-Pierre. 1975. Le disque de Phaistos. *Bulletin de Correspondence Hellénique* 99.1: 5-34.
22. Robinson, Andrew. 2002. Lost languages: the enigma of the world's undeciphered scripts. New York: McGraw Hill.
23. Schwartz, Benjamin. 1959. The Phaistos disk. *Journal of Near Eastern Studies* 18.2: 105-112.
24. Stawell, F. Melian. 1911. An Interpretation of the Phaistos Disk. *The Burlington Magazine for Connoisseurs* 19 (Vol. 19, No. 97, Apr., 1911): 23–29;32–38.
25. \*Timm, Torsten. 2004. Der Diskos von Phaistos: Anmerkungen zur Deutung und Textstruktur. *Indogermanische Forschungen* 109: 204-231. [a chart of all the characters on p. 231 has faces turned to the right, but in other figures, short groups of symbols are shown with the faces turned to the left]
26. Timm, Torsten. 2005. Der Diskos von Phaistos: Fremdeinfluss oder kretisches Erbe? Norderstedt: BoD.

## Appendix B: References with no images of individual glyphs

1. Bennett, Emmett L. 1996. Aegean Scripts. The World's Writing Systems, edited by Peter T. Daniels and William Bright. Oxford: University Press.
2. Calvet, Louis-Jean. 1996. Histoire de l'écriture. Paris: Hachette Littératures.
3. Chadwick, John. 1958. The Decipherment of Linear B. [s.l.]: Cambridge University Press.
4. Duhoux, Yves. 2000. How Not to Decipher the Phaistos Disc. *American Journal of Archaeology* 104.3, p. 597-600.
5. Facchetti, Giulio M. 1999. Statistical Data and Morphematic Elements in Linear A. *Kadmos* 38.2.
6. Gaur, Albertine. 1984. A History of Writing. New York: Charles Scribner's Sons.
7. Gelb, I. J. 1952. A Study of Writing. Chicago: University of Chicago Press.
8. Gordon, Cyrus H. 1968. Forgotten Scripts: how they were deciphered and their impact on contemporary culture. New York: Basic Books.
9. Johnson, MacDonald. 1999. A Statistical Study of the Phaistos Disc. *Kadmos* 38: 19-30.
10. Kober, Alice. 1948. The Minoan Scripts: Facts and Theory. *American Journal of Archaeology*, Volume 52, pp. 82 – 10.
11. Reczko, Wolfgang. 2009. Analyzing and Dating the Structure of the Phaistos Disk. *Archaeological and Anthropological Sciences*.
12. Robinson, Andrew. 1995. The Story of Writing. London: Thames and Hudson.
13. Whittaker, Hélène. 2005. Social and Symbolic Aspects of Minoan Writing. *European Journal of Archaeology* 8:1, 29-41.

## Appendix C

D01 „laufender Mann“	D02 „Federkopf“	D03 „Kopf mit Tätowierung“	D04 „Gefan- gener“
D05 „Kind“	D06 „Frau“	D07 „Brust“	D08 „Hand“
D09 „Tiara“	D10 „Ähre“	D11 „Bogen“	D12 „Kreis mit Punkten“
D13	D14 „Traglast“	D15 „Axt“	D16 „Säge“
D17	D18	D19	D20
D21	D22	D23 „Säule“	D24 „Bauwerk“
D25 „Schiff“	D26 „Stierhorn“	D27 „Tierfell“	D28 „Tierhuf“
D29 „Tierkopf“	D30 „Widder- kopf“	D31 „Adler“	D32 „Taube“
D33 „Fisch“	D34 „Insekt“	D35 „Zweig“	D36 „Strauch“
D37 „Pflanze“	D38 „Rosette“	D39 „Frühlings- blüte“	D40
D41	D42	D43 „Dreieck mit Punkten“	D44
D45 „Welle“	Dorn		

The above glyphs can be used as a rough gauge on the direction of the glyphs, except for the boat, which goes as follows (from Olivier 1975, p. 21):



Chart above from: Timm, Torsten (2004). "Der Diskos von Phaistos - Anmerkungen zur Deutung und Textstruktur". *Indogermanische Forschungen* (109), p. 231.