

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


Doc Type: Working Group Document**Title: Preliminary proposal to encode Möller’s Egyptian 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****Date: 2016-09-09**

1. Summary. The initial set of Egyptian Hieroglyphs encoded after 2007 was based, by consensus of the user community, on Alan Gardiner’s font set. Discussion with experts at that time about the best set to investigate for expansion of the character set yielded the suggestion that the characters in Georg Möller’s three-volume *Hieratische Paläographie* was the best set to investigate. At a meeting in Cambridge in 2016 including some experts who were involved in 2007 and some who were new to the effort yielded the same consensus: that Möller was the best second step in the effort. This document presents a character set based on preliminary analysis comparing the UCS encoded character set with the characters presented in Möller. The principles for attestation used for the Gardiner set, as well as the format for citations for attestation, have been followed here. See §4 below.

Hieratic is essentially cursive Hieroglyphics. There are two forms, one which basically draws hieroglyphs with a pen, and another which is “more cursive”, with many ligatures. As discussed in the original proposals to encode Egyptian, the underlying script could be represented by cursive and more-cursive fonts. But Egyptologists regularly transcribe Hieratic into Hieroglyphs, as indeed Möller does in his charts. To date no Hieratic fonts have been developed.

2. Analysis. Several analyses have been made of the Möller set comparing it to either Gardiner’s set or the UCS encoding. Vervloesem 2006 compares Möller to Gardiner 1957. Nederhof 2015 compares Möller to the UCS. Richmond 2016 compares Möller to the UCS and to the Hieroglyphica font. In preparation of this document, Vervloesem 2006 was examined to get preliminary mappings to the UCS encoding and then the four volumes were examined in their own right against the current encoding. Anderson 2016 presents a comparison of this proposal, the UCS, and the three previous comparisons.

3. Character names. Several principles about character names were established in N3237. It was established that Gardiner’s catalogue numbers would be used, padded with zeros to three digits:

[§6] The name EGYPTIAN HIEROGLYPH E034 refers uniquely and unambiguously to the DESERT HARE character used for the sound *wn*. Character names are padded with zeros here for two reasons. First, they will tend to sort correctly even when “smart” sorting algorithms are not available. Second, the use of zeros offers a mechanism for distinguishing UCS character names from the many extant naming schemes for Egyptian, since formally-standardized UCS characters will have a different status than font collections like Hieroglyphica (Grimal *et al.* 1993 and 2000) or other works. Gardiner uses A44 for  KING OF UPPER EGYPT WITH FLAGELLUM; Collier and Manley (whose numbering is completely idiosyncratic) use A44 for

☞ ARM HOLDING THE *NḤBT*-WAND; Möller uses A44 for ☞ SOLDIER WITH BOW AND QUIVER. The UCS names for ☞ A044, ☞ D045, and ☞ A012 uniquely identify the characters and also identifies the designation *as* a UCS name.

According to Gardiner’s identification scheme, Egyptian Hieroglyphs are classified according to letters of the alphabet, so A000 is “Man and his occupations”, B000 is “Woman and her occupations”, C000 is “Anthropomorphic deities”, D000 is “Parts of the human body”, E000 is “Mammals”, F000 is “Parts of mammals”, G000 is “Birds”, H000 is “Parts of birds”, I000 is “Amphibious animals, reptiles, etc.”, K000 is “Fishes and parts of fishes”, L000 is Invertebrata and lesser animals”, M000 is “Trees and plants”, N000 is “Sky, earth, water”, O000 is “Buildings, parts of buildings, etc.”, P000 is “Ships and parts of ships”, Q000 is “Domestic and funerary furniture”, R000 is “Temple furniture and sacred emblems”, S000 is “Crowns, dress, staves, etc.”, T000 is “Warfare, hunting, butchery”, U000 is “Agriculture, crafts, and professions”, V000 is “Rope, fibre, baskets, bags, etc.”, W000 is “Vessels of stone and earthenware”, X000 is “Loaves and cakes”, Y000 is “Writings, games, music”, Z000 is “Strokes, signs derived from Hieratic, geometrical features”, and AA000 is used for “Unclassified” signs. [...]

Gardiner identified some variants of characters by unique catalogue numbers, and others by extending adding one or two asterisks (and in one instance *a* and *a'*). UCS naming convention does not allow the use of asterisks, but it is traditional to add letters of the alphabet, as has been done here. Thus Gardiner’s ☞ G7, ☞ G7*, and ☞ G7** are G007, G007A, and G007B here respectively. Letters for variants are to be added serially as the Egyptian repertoire in the UCS is expanded.


This scheme allows for 999 characters within each group, being e.g. A001..A999 etc.; *A000 is not used. It seems unlikely that four digits will be needed for any group. Principles for naming additional characters, in keeping with the principles used for the Gardiner set, were also presented:

[§10] In future, when work for additions to the repertoire begins on materials from other sources, a unification process will be used where existing coded characters are first mapped to the content of those sources. Then we will be able to look at what is left over as sources for further standardization. Möller has many characters not found in other sources. For instance, standard Middle Egyptian writes ☞☞☞ *pnw* ‘mouse’, but Möller cites ☞☞☞☞☞ ‘mice’ and so in due course the new character ☞ **M1909:12:E131** could be standardized and added to the database. Other candidates for future addition to the database and to the UCS could be found in Faulkner 1986 (e.g., ☞ in ☞☞☞ *py*, ‘flea’ ref. **F1962:88:py**) or in Hannig 2003 (e.g., ☞☞ in ☞☞☞☞ *wbs*, ‘to pile up’ ref. **H2003:331:wbs**). If these three characters were being standardized as the next addition to the repertoire here, they would be assigned the names ☞ EGYPTIAN HIEROGLYPH E039, ☞ EGYPTIAN HIEROGLYPH L009, and ☞ EGYPTIAN HIEROGLYPH M045 respectively.

Recent analyses of the Hieroglyphica font by Michel Saignard use a different numbering scheme, but the scheme outlined above should be followed one way for any Egyptian additions to the UCS, to maintain consistency with the UCS naming conventions. The characters at the end of the code table contain the term MOELLER- in order to indicate the uncertain nature of that range of characters.

4. The Unikemet database and future expansion of the repertoire. This database has not been adopted for formal standardization purposes, and its structure may require some amendment before it can be, but the It has been named the *Unikemet* database after ☞☞☞ *Kmt* “Egypt” since a name like *UniHieroglyph* was considered to be too general (given Anatolian Hieroglyphs, Maya Hieroglyphs, and Míkmaq Hieroglyphs), but it was inspired by the name of the *Unihan* database. This database provides the means

for Egyptologists to work with ISO/IEC JTC1/SC2/WG2 and with the Unicode Consortium to add Egyptian Hieroglyphs to the standard in future. From N3237:





The intent of the database is that it will be a standard repository of those Egyptian characters which specialists deem suitable for formal encoding. Its citations are specific to a printed source, giving page number and an identifying designation given on that page. For example, the character  Z020 ‘9’ is attested in Gardiner and in Möller. **G1957:197:9** means that it is attested in Gardiner 1957 on page 197 as “9” (since he did not assign a catalogue number to it). It is also attested in Möller as **M1909:59:AAa622** which means it is in Möller 1909 on page 59 in section “AA” subsection “a” with catalogue number 622. The full source citation format is “**G1957:197:9**” though at present the content of the G1957 field in the database is simply “**197:9**” because each source has its own field.

The fields which were found in the 2007 version of this database are as follows:

Hex	The proposed U+1xxxx character code.
Name	The catalogue name of the character, such as A001, M013.
G1957	Citation from Gardiner 1957, giving page number and designation.
G1928	Citation from Gardiner 1928, giving page number and designation.
G1929	Citation from Gardiner 1929, giving page number and designation.
G1931	Citation from Gardiner 1931, giving page number and designation.
G1953	Citation from Gardiner 1953, giving page number and designation.
GITB	Citation from the Griffith Insititute <i>Topographical Bibliography</i> , giving volume, page number, and designation.
M1909	Citation from Möller 1909, giving page number and designation (only for number characters so far, here and for M1927 and M1936).
M1927	Citation from Möller 1927, giving page number and designation.
M1936	Citation from Möller 1936, giving page number and designation.
A1999	Citation from Allen 1999, giving page number and designation.
F1962	A field for citations from Faulkner 1962.
Uname	Calculation field that adds EGYPTIAN HIEROGLYPH to the Name field to produce the UCS names list.
Note	Notes which assist in the creation of the UCS names list.
Amd	A field which indicates the block or amendment into which a character is (to be) encoded, to assist in sorting the characters in order to produce the names list.

Recent analyses of the Hieroglyphica font by Michel Suignard have been entered into a database by him. This is of course valuable work, but at present this proposal builds itself off of the 2007 Unikemet database.

5. Issues. The characters in the code table here are those which, having compared Vervloem’s mapping to the UCS-encoded characters, did not appear to be encoded. A number of things need to be done.

- Experts are needed to carefully check Vervloesem’s suggested mappings against Nederhof’s and Richmond’s suggested mappings (see Anderson 2016). This may yield additional characters from Möller not mappable to the UCS. Having said this, I have already used my own judgement as to their mappings. Some of the characters unified by Vervloesem and at a quick look at Nederhof and Richmond have not been unified here. Examples: Möller A027 , Möller A028 , Möller A029 , which have been disunified from U+1303C A026  here because of their distinctive headgear, visible both in Möller’s hieroglyphic drawing and

in the hieratic exemplars. Other examples: Möller S450 † and Möller S451 †, which have been disunified from U+13302 S042 † (Möller S449). Möller gives these unique readings: † is *hꜣp* († *hꜣp* ‘control’), † is *ꜥbꜣ* († *ꜥbꜣ* ‘aba-sceptre’), and † is *šhm* († *ꜥbꜣ* ‘sistrum’). Gardiner maintains that “It is impossible to distinguish separate forms for the various uses”, but the hieratic forms are distinctive enough, so this may be a question of multiple characters used for multiple spellings of certain words. The characters seem to be distinct, even if their usage is may be polyvalent and overlapping.

- The list of characters here should be examined. Perhaps some of Möller’s readings have been since superseded by other readings which might affect character identity.
- The glyphs, which here are based on scans of Möller’s handwritten examples (reversed so that they face to the left), should be improved. This will not be unreasonably difficult. It may be the case that there are now fonts which could replace the existing glyphs used for the whole Egyptian set, which could serve as exemplars for this revision.
- There is at least one hieratic punctuation character, a dot, which is in use. There may also be some generic punctuation or editorial marks used in Egyptological transcriptions which might be candidates for encoding.
- Although most of Möller’s classifications are easily identifiable with Gardiner’s categories (birds being birds, for instance) the classification of items toward the end of the alphabet are somewhat less clear. It may be the case that some of the characters proposed here should be assigned to other categories. Here is a list of Gardiner’s categories compared with Möller’s:

A. Man and his occupations	A. Men
B. Woman and her occupations	B. Women
C. Anthropomorphic deities	C. Gods and goddesses
D. Parts of the human body	D. Human body-parts
E. Mammals	E. Mammals
F. Parts of mammals	F. Parts of mammals
G. Birds	G. Birds
H. Parts of birds	H. Parts of birds
I. Amphibious animals, reptiles, etc.	J. Amphibians, reptiles
K. Fishes and parts of fishes	K. Fishes
L. Invertebrata and lesser animals	L. Insects and other lower animals
M. Trees and plants	M. Plants and plant-parts
N. Sky, earth, water	N. Sky, earth, water
O. Buildings, parts of buildings, etc.	O. Buildings and their parts
P. Ships and parts of ships	P. Ships and their parts
Q. Domestic and funerary furniture	Q. Household equipment
R. Temple furniture and sacred emblems	R. Crowns, jewellery, clothing, fabric
S. Crowns, dress, staves, etc.	S. Weapons, rods, scourges, hunting, fishing
T. Warfare, hunting, butchery	T. Agricultural and craft devices
U. Agriculture, crafts, and professions	U. Vessels, baskets, bags
V. Rope, fibre, baskets, bags, etc.	V. Tracery
W. Vessels of stone and earthenware	W. Writing, music, and game devices
X. Loaves and cakes	X. Idols, temple devices, offering breads
Y. Writings, games, music	Y. Strokes, geometric figures
Z. Hieratic signs, geometrical figures	Z. Varia
Aa. Unclassified	Aa. Numbers

7. Bibliography

- Anderson, Deborah. 2016-09-10. *Preliminary Mapping table of Möller's Egyptian Hieroglyphs*. <http://www.unicode.org/L2/L2016/16251-n4742-moller-mapping.pdf>
- Everson, Michael, & Bob Richmond. 2007-04-10. *Proposal to encode Egyptian Hieroglyphs in the SMP of the UCS*. <http://std.dkuug.dk/jtc1/sc2/wg2/docs/n3237.pdf>
- Gardiner, Alan H. 1957. *Egyptian grammar: being an introduction to the study of hieroglyphs*. 3rd edition. London: Oxford University Press.
- Möller, Georg. 1909. *Hieratische Paläographie: die aegyptische Buchschrift in ihrer Entwicklung von der Fünften Dynastie bis zur römischen Kaiserzeit*. Erster Band: Bis zum Beginn der achtzehnten Dynastie, mit neun Tafeln Schriftproben. Leipzig: J. C. Hinrichs'sche Buchhandlung.
- Möller, Georg. 1927 (1965). *Hieratische Paläographie: die aegyptische Buchschrift in ihrer Entwicklung von der Fünften Dynastie bis zur römischen Kaiserzeit*. Zweiter Band: Von der Zeit Thutmosis' III bis zum Ende der einundzwanzigsten Dynastie, mit acht Tafeln Schriftproben. Neudruck der zweiten verbesserten Auflage. Osnabrück: Otto Zeller.
- Möller, Georg. 1936 (1965). *Hieratische Paläographie: die aegyptische Buchschrift in ihrer Entwicklung von der Fünften Dynastie bis zur römischen Kaiserzeit*. Dritter Band: Von der zweiundzwanzigsten Dynastie bis zum dritten Jahrhundert nach Chr., mit elf Tafeln Schriftproben. Neudruck der zweiten verbesserten Auflage. Osnabrück: Otto Zeller.
- Möller, Georg. 1936 (1965). *Hieratische Paläographie: die aegyptische Buchschrift in ihrer Entwicklung von der Fünften Dynastie bis zur römischen Kaiserzeit*. Vierter Band: Ergänzungsheft zu Band I und II mit fünfzehn Tafeln Schriftproben autographiert von H. Przybylla. Neudruck der Auflage 1936. Osnabrück: Otto Zeller.
- Nederhof, Jan-Mark. 2015. *The 1071 hieroglyphs from Unicode 5.2: Identification of the signs from the Hieratische Paläographie*. <https://mjn.host.cs.st-andrews.ac.uk/egyptian/unicode/tablehieratic.html> 2015-10-18.
- Richmond, Bob. 2016. *Möller's Hieratische Paläographie - Rough list of codes*. PDF, 2016-06-26.
- Vervloesem, F. 2006. "Index bij Möller, *Hieratische Paläographie*". PDF, 2006-02-24.
















8. Acknowledgements



















This project was made possible in part by a grant from the U.S. National Endowment for the Humanities, which funded the Universal Scripts Project (part of the Script Encoding Initiative at UC Berkeley). Any views, findings, conclusions or recommendations expressed in this publication do not necessarily reflect those of the National Endowment for the Humanities.

Figures.

26.		 Abu Geit 3784, 2, 3	 Sb. (2) 165 P 9010, 4.	 14, 1	 4, 2 19, 8	 Kypm. III, 9 h.	 Epi 246. Det. h. 250			 8, 2.		 81, 15
27.			 P 10523 (D) 104.									
28.		 Uhuir 7/As	 P 10523 (T) 226									
29.			 P 10323 (G) 3									

Figure 1. From volume 1 of Möller, showing his A026, A027, A028, and A029.

449	 Sghm Dywn 5	 Dowl Abu. 7/D, 9	 P10523 (E) 141.	 25, 9	 1, 11.	 Klym I, 7	 45			 33 2	 99, 2
450	 Sgh Dywn 5.			 28, 2		 Gr. Kad. 12, 11					
451	 Sgh Dywn 5.					 Lch. 63	 Sim 196.				

449	 Sghm Dywn 19.	 Griff Abu. 3, 3.	 a 1, 2.			 IS 9, 6	 42, 5 X.	 47, 7 M.	 6, 3	 2, 11
450	 Sgh Dywn 18.					 IS 9, 1.	 IS 6, 8	 28, 2 X.	 48, 2 M.	
451	 Sgh Dywn 18.					 Oel 12, 1.	 5, 12.	 48, 5 M.		 Bul 12, 5.

































































































































































































































449	 Sghm Dywn 25	 P3055, 2, 4	 2.	 5.	 15, 20.	 13, 20	 8, 27	 3, 2	 2, 13	 5, 3	 1, 4
450	 Sgh Dywn 26	 P3049, 9, 1			 99, 7	 Schmidt 15, 16		 5, 27	 7, 5	 P7809, 4, 5	
451	 Sgh Dywn.				 21 Kph 6.			 7, 19			

Figure 2. From all three volumes of Möller, showing his S449, S450, and S451.

	1336	1337	1338	1339	133A	133B	133C	133D	133E	133F	1340	1341	1342
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
A													
B													
C													
D													
E													
F													1342F




























- 1342F ⇐ EGYPTIAN HIEROGLYPH AA033
- Moeller z593 v1
 - Gardiner 197 p. 597



	1343	1344	1345	1346	1347	1348	1349	134A	134B	134C	134D	134E	134F
0	 13430	 13440	 13450	 13460	 13470	 13480	 13490	 134A0	 134B0	 134C0	 134D0	 134E0	 134F0
1	 13431	 13441	 13451	 13461	 13471	 13481	 13491	 134A1	 134B1	 134C1		 134E1	 134F1
2		 13442	 13452	 13462	 13472	 13482	 13492	 134A2	 134B2	 134C2		 134E2	 134F2
3		 13443	 13453	 13463	 13473	 13483	 13493	 134A3	 134B3	 134C3		 134E3	 134F3
4		 13444	 13454	 13464	 13474	 13484	 13494	 134A4	 134B4	 134C4		 134E4	 134F4
5		 13445	 13455	 13465	 13475	 13485	 13495	 134A5	 134B5	 134C5		 134E5	
6		 13446	 13456	 13466	 13476	 13486	 13496	 134A6	 134B6	 134C6		 134E6	
7		 13447	 13457	 13467	 13477	 13487	 13497	 134A7	 134B7	 134C7		 134E7	
8		 13448	 13458	 13468	 13478	 13488	 13498	 134A8	 134B8	 134C8		 134E8	
9		 13449	 13459	 13469	 13479	 13489	 13499	 134A9	 134B9	 134C9		 134E9	
A		 1344A	 1345A	 1346A	 1347A	 1348A	 1349A	 134AA	 134BA	 134CA		 134EA	
B		 1344B	 1345B	 1346B	 1347B	 1348B	 1349B	 134AB	 134BB	 134CB		 134EB	
C		 1344C	 1345C	 1346C	 1347C	 1348C	 1349C	 134AC	 134BC	 134CC		 134EC	
D		 1344D	 1345D	 1346D	 1347D	 1348D	 1349D	 134AD	 134BD	 134CD		 134ED	
E		 1344E	 1345E	 1346E	 1347E	 1348E	 1349E	 134AE	 134BE	 134CE		 134EE	
F		 1344F	 1345F	 1346F	 1347F	 1348F	 1349F	 134AF	 134BF	 134CF		 134EF	

Formatting characters





- 13430  EGYPTIAN HIEROGLYPH HORIZONTAL JOINER
 13431  EGYPTIAN HIEROGLYPH VERTICAL JOINER

A. Man and his occupations




- 13440  EGYPTIAN HIEROGLYPH A071
 • Moeller a001bis v3
 13441  EGYPTIAN HIEROGLYPH A072
 • Moeller v3p1n1
 • size of the character is that of a child
 13442  EGYPTIAN HIEROGLYPH A073
 • Moeller a003 v2
 13443  EGYPTIAN HIEROGLYPH A074
 • Moeller a008 v2
 13444  EGYPTIAN HIEROGLYPH A075
 • Moeller a008bis v4p6
 13445  EGYPTIAN HIEROGLYPH A076
 • Moeller a008ter v4p11
 13446  EGYPTIAN HIEROGLYPH A077
 • Moeller a009 v1
 13447  EGYPTIAN HIEROGLYPH A078
 • Moeller a012bis v3
 13448  EGYPTIAN HIEROGLYPH A079
 • Moeller a017 v3
 • Moeller a017 v2 = a059
 13449  EGYPTIAN HIEROGLYPH A080
 • Moeller a017bis v4p11
 1344A  EGYPTIAN HIEROGLYPH A081
 • Moeller a018 v23
 1344B  EGYPTIAN HIEROGLYPH A082
 • Moeller a019 v3
 1344C  EGYPTIAN HIEROGLYPH A083
 • Moeller a020 v3
 1344D  EGYPTIAN HIEROGLYPH A084
 • Moeller a020bis v3
 1344E  EGYPTIAN HIEROGLYPH A085
 • Moeller a021 v23
 1344F  EGYPTIAN HIEROGLYPH A086
 • Moeller a021bis v4p11
 13450  EGYPTIAN HIEROGLYPH A087
 • Moeller a023 v23
 13451  EGYPTIAN HIEROGLYPH A088
 • Moeller a025 v1
 13452  EGYPTIAN HIEROGLYPH A089
 • Moeller a027 v1
 13453  EGYPTIAN HIEROGLYPH A090
 • Moeller a028 v1
 13454  EGYPTIAN HIEROGLYPH A091
 • Moeller a029 v1
 13455  EGYPTIAN HIEROGLYPH A092
 • Moeller v3p3n4
 13456  EGYPTIAN HIEROGLYPH A093
 • Moeller a034 v1
 13457  EGYPTIAN HIEROGLYPH A094
 • Moeller a037bis v3
 13458  EGYPTIAN HIEROGLYPH A095
 • Moeller v3p4n1
 13459  EGYPTIAN HIEROGLYPH A096
 • Moeller a038 v1
 1345A  EGYPTIAN HIEROGLYPH A097
 • Moeller a040 v1

- 1345B  EGYPTIAN HIEROGLYPH A098
 • Moeller a051 v1
 1345C  EGYPTIAN HIEROGLYPH A099
 • Moeller a055 v1




B. Woman and her occupations

- 1345D  EGYPTIAN HIEROGLYPH B010
 • Moeller b061bis v4p11
 1345E  EGYPTIAN HIEROGLYPH B011
 • Moeller b062 v123
 1345F  EGYPTIAN HIEROGLYPH B012
 • Moeller b064 v1
 13460  EGYPTIAN HIEROGLYPH B013
 • Moeller b069 v2







C. Anthropomorphic deities

- 13461  EGYPTIAN HIEROGLYPH C025
 • Moeller c071 v2
 13462  EGYPTIAN HIEROGLYPH C026
 • Moeller c072 v1
 13463  EGYPTIAN HIEROGLYPH C027
 • Moeller c078 v1






D. Parts of the human body

- 13464  EGYPTIAN HIEROGLYPH D068
 • Moeller d097 v3
 13465  EGYPTIAN HIEROGLYPH D069
 • Moeller d102 v2
 13466  EGYPTIAN HIEROGLYPH D070
 • Moeller v3p9n3



E. Mammals

- 13467  EGYPTIAN HIEROGLYPH E039
 • Moeller v3p11n4
 13468  EGYPTIAN HIEROGLYPH E040
 • Moeller v3p11n6
 13469  EGYPTIAN HIEROGLYPH E041
 • Moeller e128bis v3
 1346A  EGYPTIAN HIEROGLYPH E042
 • Moeller e131 v1
 1346B  EGYPTIAN HIEROGLYPH E043
 • Moeller e138bis v3
 1346C  EGYPTIAN HIEROGLYPH E044
 • Moeller v3p12n3

F. Parts of mammals



- 1346D  EGYPTIAN HIEROGLYPH F054
 • Moeller f149 v1
 1346E  EGYPTIAN HIEROGLYPH F055
 • Moeller f149 v3
 1346F  EGYPTIAN HIEROGLYPH F056
 • Moeller f174bis 3
 13470  EGYPTIAN HIEROGLYPH F057
 • Moeller v2p15n2
 13471  EGYPTIAN HIEROGLYPH F058
 • Moeller f182 v123

G. Birds





- 13472  EGYPTIAN HIEROGLYPH G055
 • Moeller g185 v23
 13473  EGYPTIAN HIEROGLYPH G056
 • Moeller v3p17n1

- 13474  EGYPTIAN HIEROGLYPH G057
• Moeller g195 v123
- 13475  EGYPTIAN HIEROGLYPH G058
• Moeller v2p18n2
- 13476  EGYPTIAN HIEROGLYPH G059
• Moeller g210 v1
- 13477  EGYPTIAN HIEROGLYPH G060
• Moeller g217 v123
- 13478  EGYPTIAN HIEROGLYPH G061
• Moeller g218 v123
- 13479  EGYPTIAN HIEROGLYPH G062
• Moeller g219 v123
- 1347A  EGYPTIAN HIEROGLYPH G063
• Moeller g230bis v3



H. Parts of birds

- 1347B  EGYPTIAN HIEROGLYPH H009
• Moeller h234 v23
- 1347C  EGYPTIAN HIEROGLYPH H010
• Moeller h234bis v3




I. Amphibious animals, reptiles, etc.

- 1347D  EGYPTIAN HIEROGLYPH I016
• Moeller j241bis v3
• bis missing from number
- 1347E  EGYPTIAN HIEROGLYPH I017
• Moeller v3p22n3
- 1347F  EGYPTIAN HIEROGLYPH I018
• Moeller v3p22n4
- 13480  EGYPTIAN HIEROGLYPH I019
• Moeller j246bis v3






K. Fishes and parts of fishes

- 13481  EGYPTIAN HIEROGLYPH K009
• Moeller k255 v123
- 13482  EGYPTIAN HIEROGLYPH K010
• Moeller k257 v123



L. Invertebrata and lesser animals





- 13483  EGYPTIAN HIEROGLYPH L010
• Moeller l259 v3
- 13484  EGYPTIAN HIEROGLYPH L011
• Moeller l262 v3
- 13485  EGYPTIAN HIEROGLYPH L012
• Moeller l263bis v3

M. Trees and plants









- 13486  EGYPTIAN HIEROGLYPH M045
• Moeller m265 v12
- 13487  EGYPTIAN HIEROGLYPH M046
• Moeller m267 v1
- 13488  EGYPTIAN HIEROGLYPH M047
• Moeller v3p27n2
- 13489  EGYPTIAN HIEROGLYPH M048
• Moeller m295 v13
- 1348A  EGYPTIAN HIEROGLYPH M049
• Moeller v2p27n1

N. Sky, earth, water



- 1348B  EGYPTIAN HIEROGLYPH N043
• Moeller n305 v3
- 1348C  EGYPTIAN HIEROGLYPH N044
• Moeller n308 v23

- 1348D  EGYPTIAN HIEROGLYPH N045
• Moeller n308bis v4p13
- 1348E  EGYPTIAN HIEROGLYPH N046
• Moeller v3p28n5
- 1348F  EGYPTIAN HIEROGLYPH N047
• Moeller v2p29n3, n322bis v3
- 13490  EGYPTIAN HIEROGLYPH N048
• Moeller n337 v3





O. Buildings, parts of buildings, etc.

- 13491  EGYPTIAN HIEROGLYPH O052
• Moeller o340ter v3
- 13492  EGYPTIAN HIEROGLYPH O053
• Moeller o341bis v3
- 13493  EGYPTIAN HIEROGLYPH O054
• Moeller o344bis v3
- 13494  EGYPTIAN HIEROGLYPH O055
• Moeller o345bis v4p1
- 13495  EGYPTIAN HIEROGLYPH O056
• Moeller o350 v1
- 13496  EGYPTIAN HIEROGLYPH O057
• Moeller o352bis v3
- 13497  EGYPTIAN HIEROGLYPH O058
• Moeller o355 v13
- 13498  EGYPTIAN HIEROGLYPH O059
• Moeller o365 v3










P. Ships and parts of ships









- 13499  EGYPTIAN HIEROGLYPH P012
• Moeller p378 v123
- 1349A  EGYPTIAN HIEROGLYPH P013
• Moeller v3p36n2

Q. Domestic and funerary furniture
















- 1349B  EGYPTIAN HIEROGLYPH Q009
• Moeller q384 v123
- 1349C  EGYPTIAN HIEROGLYPH Q010
• Moeller q386 v1
- 1349D  EGYPTIAN HIEROGLYPH Q011
• Moeller q387 v13
- 1349E  EGYPTIAN HIEROGLYPH Q012
• Moeller q391bis v3

R. Temple furniture and sacred emblems

- 1349F  EGYPTIAN HIEROGLYPH R033
• Moeller r417 v123
- 134A0  EGYPTIAN HIEROGLYPH R034
• Moeller r418 v2
- 134A1  EGYPTIAN HIEROGLYPH R035
• Moeller r418bis v3
- 134A2  EGYPTIAN HIEROGLYPH R036
• Moeller v3p40n2
- 134A3  EGYPTIAN HIEROGLYPH R037
• Moeller r424 v1
- 134A4  EGYPTIAN HIEROGLYPH R038
• Moeller r424bis v3
- 134A5  EGYPTIAN HIEROGLYPH R039
• Moeller r428 v3
- 134A6  EGYPTIAN HIEROGLYPH R040
• Moeller r429 v123
- 134A7  EGYPTIAN HIEROGLYPH R041
• Moeller v3p41n2

- 134A8  EGYPTIAN HIEROGLYPH R042
• Moeller r431 v1
- 134A9  EGYPTIAN HIEROGLYPH R043
• Moeller x542 v23
- 134AA  EGYPTIAN HIEROGLYPH R044
• Moeller v2p49n4
- 134AB  EGYPTIAN HIEROGLYPH R045
• Moeller v3p53n3
- 134AC  EGYPTIAN HIEROGLYPH R046
• Moeller v3p53n5
- 134AD  EGYPTIAN HIEROGLYPH R047
• Moeller x544 v1
- 134AE  EGYPTIAN HIEROGLYPH R048
• Moeller x546bis v4p10
• might be decomposable to s038 + something? + r012
- 134AF  EGYPTIAN HIEROGLYPH R049
• Moeller u546quator v4p14
• Moeller's exemplar is a ligature with X above but this character is r013 with superimposed i009


S. Crowns, dress, staves, etc.








- 134B0  EGYPTIAN HIEROGLYPH S047
• Moeller r409 v23
- 134B1  EGYPTIAN HIEROGLYPH S048
• Moeller s409bis v4p9
- 134B2  EGYPTIAN HIEROGLYPH S049
• Moeller r410 v3
- 134B3  EGYPTIAN HIEROGLYPH S050
• Moeller s411bis v4p9
- 134B4  EGYPTIAN HIEROGLYPH S051
• Moeller s411ter v4p9
- 134B5  EGYPTIAN HIEROGLYPH S052
• Moeller r414bis v3
- 134B6  EGYPTIAN HIEROGLYPH S053
• Moeller s434 v2
- 134B7  EGYPTIAN HIEROGLYPH S054
• Moeller s434bis v3
- 134B8  EGYPTIAN HIEROGLYPH S055
• Moeller s446 v12
- 134B9  EGYPTIAN HIEROGLYPH S056
• Moeller s450 v123
- 134BA  EGYPTIAN HIEROGLYPH S057
• Moeller s451 v123
- 134BB  EGYPTIAN HIEROGLYPH S058
• Moeller s452 v23
- 134BC  EGYPTIAN HIEROGLYPH S059
• Moeller s462bis v4p14
- 134BD  EGYPTIAN HIEROGLYPH S05A
• Moeller s463bis v4p14
- 134BE  EGYPTIAN HIEROGLYPH S05B
• Moeller u515bis v4p14

T. Warfare, hunting, butchery



- 134BF  EGYPTIAN HIEROGLYPH T037
• Moeller t479 v1

U. Agriculture, crafts, and professions




- 134C0  EGYPTIAN HIEROGLYPH U043
• Moeller u498 v123
- 134C1  EGYPTIAN HIEROGLYPH U044
• Moeller u499 v23

- 134C2  EGYPTIAN HIEROGLYPH U045
• Moeller u507 v3
- 134C3  EGYPTIAN HIEROGLYPH U046
• Moeller v2p46n3
- 134C4  EGYPTIAN HIEROGLYPH U047
• Moeller u513 v13
- 134C5  EGYPTIAN HIEROGLYPH U048
• Moeller u514 v1
- 134C6  EGYPTIAN HIEROGLYPH U049
• Moeller u514bis v3
• was missing bis
- 134C7  EGYPTIAN HIEROGLYPH U050
• Moeller u516bis v3
- 134C8  EGYPTIAN HIEROGLYPH U051
• Moeller v531 v13

V. Rope, fibre, baskets, bags, etc.

- 134C9  EGYPTIAN HIEROGLYPH V041
• Moeller v536 v1
- 134CA  EGYPTIAN HIEROGLYPH V042
• Moeller y567 v123


X. Loaves and cakes

- 134CB  EGYPTIAN HIEROGLYPH V043
• Moeller y568 v12
- 134CC  EGYPTIAN HIEROGLYPH V044
• Moeller y570 v3
- 134CD  EGYPTIAN HIEROGLYPH V045
• Moeller y564bis v3
• Moeller has b not bis

Z. Strokes, signs derived from Hieratic, geometrical figures









- 134CE  EGYPTIAN HIEROGLYPH Z017
• Moeller z599 v13














Aa. Unclassified

- 134CF  EGYPTIAN HIEROGLYPH AA034
• Moeller z601 v3
- 134D0  EGYPTIAN HIEROGLYPH AA035
• Moeller z602 v23

Uncertain characters

Described by Vervloesem as "Signs in Moeller not certainly identified in Gardiner".

- 134E0  EGYPTIAN HIEROGLYPH MOELLER-056
• Moeller a056 v1
- 134E1  EGYPTIAN HIEROGLYPH MOELLER-057
• Moeller a057 v1
- 134E2  EGYPTIAN HIEROGLYPH MOELLER-059
• Moeller a059 v2
- 134E3  EGYPTIAN HIEROGLYPH MOELLER-145
• Moeller g145 v2
- 134E4  EGYPTIAN HIEROGLYPH MOELLER-228
• Moeller g228 v2
- 134E5  EGYPTIAN HIEROGLYPH MOELLER-605
• Moeller z605 v1
- 134E6  EGYPTIAN HIEROGLYPH MOELLER-606
• Moeller z606 v1
- 134E7  EGYPTIAN HIEROGLYPH MOELLER-607
• Moeller z607 v1

- 134E8  EGYPTIAN HIEROGLYPH MOELLER-608
• Moeller z608 v1
- 134E9  EGYPTIAN HIEROGLYPH MOELLER-609
• Moeller z609 v1
- 134EA  EGYPTIAN HIEROGLYPH MOELLER-610
• Moeller z610 v1
- 134EB  EGYPTIAN HIEROGLYPH MOELLER-611
• Moeller z611 v1
- 134EC  EGYPTIAN HIEROGLYPH MOELLER-612
• Moeller z612 v1
- 134ED  EGYPTIAN HIEROGLYPH MOELLER-613
• Moeller z613 v1
- 134EE  EGYPTIAN HIEROGLYPH MOELLER-613BIS
• Moeller z613bis v1
- 134EF  EGYPTIAN HIEROGLYPH MOELLER-688
• Moeller z688 v12
- 134F0  EGYPTIAN HIEROGLYPH MOELLER-689
• Moeller z689 v12
- 134F1  EGYPTIAN HIEROGLYPH MOELLER-690
• Moeller z690bis v2
• Perhaps bis, not the same as in v1
- 134F2  EGYPTIAN HIEROGLYPH MOELLER-692
• Moeller z692 v1
- 134F3  EGYPTIAN HIEROGLYPH MOELLER-693
• Moeller z693 v1
- 134F4  EGYPTIAN HIEROGLYPH MOELLER-694
• Moeller z694 v1

A. Administrative

1. Title

Proposal to encode Egyptian Hieroglyphs in the SMP of the UCS

2. Requester's name

UC Berkeley Script Encoding Initiative (Universal Scripts Project); author: Michael Everson

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

Liaison contribution.

4. Submission date

2016-09-09

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

1. Choose one of the following:

1a. This proposal is for a new script (set of characters)

Yes.

1b. Proposed name of script

Egyptian Hieroglyphs Extended-A.

1c. The proposal is for addition of character(s) to an existing block

Yes.

1d. Name of the existing block

Egyptian Hieroglyphs.

2. Number of characters in proposal

166 (145, 21).

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 F.

4a. Is a repertoire including character names provided?

Yes.

4b. If YES, are the names in accordance with the “character naming guidelines” in Annex L of P&P document?

Yes.

4c. Are the character shapes attached in a legible form suitable for review?

Yes.

5a. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard?

Bob Richmond and Michael Everson. TrueType.

5b. If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:

Michael Everson, Fontographer and FontLab.

6a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided?

Yes, see bibliography above.

6b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?

Yes.

7. 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.

8. 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.

See above.

C. Technical – Justification

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

No.

2a. 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.

2b. If YES, with whom?

Nigel Strudwick, Mark-Jan Nederhof, Serge Rosmorduc.

2c. 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?

Egyptologists and many enthusiasts worldwide.

4a. The context of use for the proposed characters (type of use; common or rare)

To write Egyptian.

4b. Reference

5a. Are the proposed characters in current use by the user community?

Yes.

5b. If YES, where?

By scholars and enthusiasts worldwide.

6a. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP?

No.

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.

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 (see clauses 4.12 and 4.14 in ISO/IEC 10646-1: 2000)?

No.

11b. If YES, is a rationale for such use provided?

11c. If YES, reference

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?