ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]
Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from http://www.dkuug.dk/JTC1/SC2/WG2/docs/principles.html **for guidelines and details before filling this form.**
Please ensure you are using the latest Form from http://www.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html**.**
See also http://www.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html **for latest *Roadmaps*.**

A. Administrative

1. **Title:** *Preliminary Proposal to Encode Characters from the STIX PUA Collection – Part 1: Characters Proposed for Encoding*
2. Requester's name: *Deborah Anderson (University of California, Berkeley, Script Encoding Initiative), Laurențiu Iancu, Murray Sargent (Microsoft Corporation)*
3. Requester type (Member body/Liaison/Individual contribution): *Liaison contribution*
4. Submission date: *2009-July-31*
5. Requester's reference (if applicable):
6. Choose one of the following:
   This is a complete proposal:
   (or) More information will be provided later: *Yes*

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters): *No*
      Proposed name of script:
   b. The proposal is for addition of character(s) to an existing block: *Yes*
      Name of the existing block: *Miscellaneous Symbols; Miscellaneous Mathematical Symbols-A; Miscellaneous Symbols and Arrows; Supplemental Punctuation*
2. Number of characters in proposal: *31 = 2 + 2 + 24 + 3*
3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary X | 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
4. Is a repertoire including character names provided?
   a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? *Yes*
   b. Are the character shapes attached in a legible form suitable for review? *Yes*
5. Who will provide the appropriate computerized font (ordered preference: True Type, or PostScript format) for publishing the standard? *The authors*
   If available now, identify source(s) for the font (include address, e-mail, ftp-site, etc.) and indicate the tools used:
6. References:
   a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? *Yes*
   b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached?
7. 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)?
   Suggested UCD character properties are included.

8. 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. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at http://www.unicode.org for such information on other scripts. Also see http://www.unicode.org/Public/UNIDATA/UCD.html and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

[1] Form number: N3152-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? *No*
   If YES explain
2. 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*
   If YES, with whom? *Barbara Beeton (AMS); Lorna Priest (SIL)*
   If YES, available relevant documents: *Examples in proposal*
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included?
   Reference:
4. The context of use for the proposed characters (type of use; common or rare) *Common*
   Reference:
5. Are the proposed characters in current use by the user community?
   If YES, where? Reference:
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? *No*
   If YES, is a rationale provided?
   If YES, reference:
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? *No*
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? *No*
   If YES, is a rationale for its inclusion provided?
   If YES, reference:
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? *No*
   If YES, is a rationale for its inclusion provided?
   If YES, reference:
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to an existing character? *No*
    If YES, is a rationale for its inclusion provided?
    If YES, reference:
11. Does the proposal include use of combining characters and/or use of composite sequences? *Yes*
    If YES, is a rationale for such use provided? *Yes*
    If YES, reference: *Combining diacritics from STIX PUA collection are being researched.*
    Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided?
    If YES, reference:
12. Does the proposal contain characters with any special properties such as control function or similar semantics? *No*
    If YES, describe in detail (include attachment if necessary)
13. Does the proposal contain any Ideographic compatibility character(s)? *No*
    If YES, is the equivalent corresponding unified ideographic character(s) identified?
    If YES, reference:

1. Introduction

This proposal is to encode characters from the STIX PUA collection and is split in two parts:

- **Part 1: Characters Proposed for Encoding:**
  the current document, STIXPUAProposal_1_ToEncode.doc, comprising only the characters being proposed for encoding as 32 code points and one variation sequence;
- **Part 2: Comprehensive Mapping from STIX PUA to Unicode:**
  a separate document, STIXPUAProposal_2_FullMapping.doc, containing a comprehensive list of all STIX PUA entries and their mapping to Unicode, including those given in Part 1.

The current document contains a subset of the STIX PUA characters that were identified as initial candidates for encoding as either code points or variation sequences.

The STIX project

The Scientific and Technical Information Exchange (STIX) Fonts Project is an activity of the STI Pub companies [http://www.stixfonts.org/stipubs.html]: the American Institute of Physics, the American Chemical Society, the American Mathematical Society, the Institute of Electrical and Electronics Engineering, Inc., the American Physical Society, and Elsevier.

STIX is a font creation project whose mission is "*the preparation of a comprehensive set of fonts that serve the scientific and engineering community in the process from manuscript creation through final publication, both in electronic and print formats. Toward this purpose, the STIX fonts will be made available, under royalty-free license, to anyone, including publishers, software developers, scientists, students, and the general public.*" [http://www.stixfonts.org/abt_geninfo.html]

The STIX committee defines a large set of characters, most of which were already in or have been incorporated into the Unicode Standard. A number of additional characters remain allocated in the PUA. The current proposal is to identify among the remaining characters those eligible for encoding and add them to the Unicode repertory.

Contents of this proposal

The STIX PUA set consists of 336 characters, allocated in the PUA at code points in the range U+E000–U+E153, of which four code points are unassigned (U+E058 and U+E09C–U+E09E). Many of these characters can already be represented in Unicode, some are eligible to be encoded, and others are unsuitable for encoding. Of the characters eligible for encoding, a subset is being proposed at this time. The rest require further investigation and if deemed eligible will be proposed later.

At the time of writing this document, the authors are still collecting usage evidence in support of the characters proposed for encoding. A set of code charts is appended at the end of the document.

Notes

- Code points are written without the 'U+' prefix to save space;
- Code-point sequences are enclosed within angle brackets: <cp1, cp2, …>;
- STIX descriptions are prefixed with 'stix-' and come from the last column in the [STIX] table at http://www.ams.org/STIX/bnb/stix-tbl.ascii-2006-10-20;
- In all tables, the glyphs are from the STIXNonUnicode font. Please refer to the Unicode code charts for comparison to Unicode representative glyphs.

2. Proposed Code Points

STIX		STIX Description	Unicode	
Glyph	PUA	*Comments*	Code	Proposed name
⫼	E002	stix-"shaw": large operator with three parallel vertical lines topped by a horizontal	27CB	N-ARY SHAW *(N-ARY because of large size)*
⌀	E0E3	stix-eclipse	26E7	ECLIPSE
⛢	E0E4	stix-Uranus *Disunify and cross-reference 2645 URANUS.*	26E2	ASTRONOMICAL SYMBOL FOR URANUS
⫽	E0E5	stix-dashed solidus *This is not 22F0.*	2E35	DASHED SOLIDUS
⫻	E0E6	stix-dashed backslash *This is not 22F1.*	2E36	DASHED REVERSE SOLIDUS
▽	E0E7	stix-narrow down-triangle *Propose four code points: up/down pointers that form a set with 25BA, 25BB, 25C4, 25C5. See also 22B2, 22B3.*	2B5A 2B5B 2B5C 2B5D	BLACK UP-POINTING POINTER WHITE UP-POINTING POINTER BLACK DOWN-POINTING POINTER WHITE DOWN-POINTING POINTER
⟡	E0EA	stix-diamond with lines from corners	2B5F	WHITE DIAMOND WITH TICKS FROM CORNERS
⌑	E0EB	stix-square with lines from corners	2B5E	WHITE SQUARE WITH TICKS FROM CORNERS
⩮	E0EC	stix-equal with exclamation over	27CD	EXCLAIMED EQUAL TO
⋮	E0ED	stix-five vertical dots	2E37	VERTICAL FIVE DOTS
⇗	E112	stix-northeast arrow with dashed stem *Forms a set with 21E0...21E3.*	2B61	NORTH EAST DASHED ARROW
⇘	E113	stix-southeast arrow with dashed stem *Forms a set with 21E0...21E3.*	2B62	SOUTH EAST DASHED ARROW
⇖	E114	stix-northwest arrow with dashed stem *Forms a set with 21E0...21E3.*	2B60	NORTH WEST DASHED ARROW
⇙	E115	stix-southwest arrow with dashed stem *Forms a set with 21E0...21E3.*	2B63	SOUTH WEST DASHED ARROW
⇡	E11A	stix-up arrow with dotted stem *Forms a set with 2911, 2B38.*	2B64	UPWARDS ARROW WITH DOTTED STEM
⇣	E11B	stix-down arrow with dotted stem *Forms a set with 2911, 2B38.*	2B65	DOWNWARDS ARROW WITH DOTTED STEM
⇗	E11C	stix-northeast arrow with dotted stem *Forms a set with 2911, 2B38.*	2B67	NORTH EAST ARROW WITH DOTTED STEM
⇘	E11D	stix-southeast arrow with dotted stem *Forms a set with 2911, 2B38.*	2B68	SOUTH EAST ARROW WITH DOTTED STEM
⇖	E11E	stix-northwest arrow with dotted stem *Forms a set with 2911, 2B38.*	2B66	NORTH WEST ARROW WITH DOTTED STEM
⇙	E11F	stix-southwest arrow with dotted stem *Forms a set with 2911, 2B38.*	2B69	SOUTH WEST ARROW WITH DOTTED STEM
⇡	E124	stix-up arrow with dot-dash stem	2B6B	UPWARDS ARROW WITH DOT-DASH STEM
⇣	E125	stix-down arrow with dot-dash stem	2B6D	DOWNWARDS ARROW WITH DOT-DASH STEM

⇠	E126	stix-left arrow with dot-dash stem	2B6A	LEFTWARDS ARROW WITH DOT-DASH STEM
⇢	E127	stix-right arrow with dot-dash stem (E238)	2B6C	RIGHTWARDS ARROW WITH DOT-DASH STEM
⇗	E128	stix-northeast arrow with dot-dash stem	2B6F	NORTH EAST ARROW WITH DOT-DASH STEM
⇘	E129	stix-southeast arrow with dot-dash stem	2B70	SOUTH EAST ARROW WITH DOT-DASH STEM
⇖	E12A	stix-northwest arrow with dot-dash stem	2B6E	NORTH WEST ARROW WITH DOT-DASH STEM
⇙	E12B	stix-southwest arrow with dot-dash stem	2B71	SOUTH WEST ARROW WITH DOT-DASH STEM

3. Proposed Variation Sequences

STIX		**STIX Description**	**Unicode**	
Glyph	**PUA**	***Comments***	**Variation seq.**	**Proposed name**
ℏ	E02E	stix-/hbar – Planck's over 2pi *[STIX] glyph name is "210F.var"*	<210F, FE00>	PLANCK CONSTANT OVER TWO PI variant with horizontal stroke

4. Character Properties

The following table lists the suggested UCD properties of the proposed characters, sorted in increasing order by code point. The properties were chosen by similarity with related characters. For instance, the proposed dashed arrows have General_Category = Symbol_Other similar to U+21E0–U+21E3, with which they for a set. Likewise, the arrows with dotted stems have General_Category = Symbol_Math similar to U+2911 and U+2B38, with which they form a set.

UnicodeData.txt entry (gc, ccc, bc, dt, Bidi_M, etc.)	Script	Line_Break
26E2;ASTRONOMICAL SYMBOL FOR URANUS;So;0;ON;;;;;N;;;;;	Common	AL
26E7;ECLIPSE;So;0;ON;;;;;N;;;;;	Common	AL
27CB;N-ARY SHAW;Sm;0;ON;;;;;N;;;;;	Common	AL
27CD;EXCLAIMED EQUAL TO;Sm;0;ON;;;;;N;;;;;	Common	AL
2B5A;BLACK UP-POINTING POINTER;So;0;ON;;;;;N;;;;;	Common	AL
2B5B;WHITE UP-POINTING POINTER;So;0;ON;;;;;N;;;;;	Common	AL
2B5C;BLACK DOWN-POINTING POINTER;So;0;ON;;;;;N;;;;;	Common	AL
2B5D;WHITE DOWN-POINTING POINTER;So;0;ON;;;;;N;;;;;	Common	AL
2B5E;WHITE SQUARE WITH TICKS FROM CORNERS;So;0;ON;;;;;N;;;;;	Common	AL
2B5F;WHITE DIAMOND WITH TICKS FROM CORNERS;So;0;ON;;;;;N;;;;;	Common	AL
2B60;NORTH WEST DASHED ARROW;So;0;ON;;;;;N;;;;;	Common	AL
2B61;NORTH EAST DASHED ARROW;So;0;ON;;;;;N;;;;;	Common	AL
2B62;SOUTH EAST DASHED ARROW;So;0;ON;;;;;N;;;;;	Common	AL
2B63;SOUTH WEST DASHED ARROW;So;0;ON;;;;;N;;;;;	Common	AL
2B64;UPWARDS ARROW WITH DOTTED STEM;Sm;0;ON;;;;;N;;;;;	Common	AL

2B65;DOWNWARDS ARROW WITH DOTTED STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B66;NORTH WEST ARROW WITH DOTTED STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B67;NORTH EAST ARROW WITH DOTTED STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B68;SOUTH EAST ARROW WITH DOTTED STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B69;SOUTH WEST ARROW WITH DOTTED STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B6A;LEFTWARDS ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B6B;UPWARDS ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B6C;RIGHTWARDS ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B6D;DOWNWARDS ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B6E;NORTH WEST ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B6F;NORTH EAST ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B70;SOUTH EAST ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2B71;SOUTH WEST ARROW WITH DOT-DASH STEM;Sm;0;ON;;;;;N;;;;;	Common	AL
2E35;DASHED SOLIDUS;Po;0;ON;;;;;N;;;;;	Common	AL
2E36;DASHED REVERSE SOLIDUS;Po;0;ON;;;;;N;;;;;	Common	AL
2E37;VERTICAL FIVE DOTS;Po;0;ON;;;;;N;;;;;	Common	AL

5. Supporting Evidence

U+26E2 ASTRONOMICAL SYMBOL FOR URANUS

Planets

Name	Symbol	Unicode	Unicode Display	Symbol Represents
Mercury	☿	#9791;	☿	Mercury's winged helmet and caduceus
Venus	♀	#9792;	♀	Venus' hand mirror
Earth	⊕	#8853;	⊕	Globe with equator and a meridian
	♁	#9793;	♁	globus cruciger
Mars	♂	#9794;	♂	Mars' shield and spear
Jupiter	♃	#9795;	♃	Jupiter's thunderbolt, eagle or "Z" for Zeus, Jupiter's Greek name.[1]
Saturn	♄	#9796;	♄	Saturn's sickle or scythe
Uranus	⛢			One of the two symbols for platinum or a combination of the symbols for Mars and the Sun
	♅	#9797;	♅	"H" from the discoverer's last name (Herschel)
Neptune	♆	#9798;	♆	Neptune's trident

Wikipedia article on astronomical symbols, http://en.wikipedia.org/wiki/Astronomical_symbol, comparing inline graphics with Unicode characters. Of the two symbols for Uranus, only one has a Unicode character (U+2645 = ♅).
[Web page retrieved May 2009.]

The adjective of Uranus is "Uranian". Its astronomical symbol is ⛢. It is a hybrid of the symbols for Mars and the Sun because Uranus was the Sky in Greek mythology, which was thought to be dominated by the combined powers of the Sun and Mars.[40] Its astrological symbol is ♅, suggested by Lalande in 1784. In a letter to Herschel, Lalande

Wikipedia article on Uranus, http://en.wikipedia.org/wiki/Uranus, contrasting the astronomical and astrological symbols.
[Web page retrieved May 2009.]

ASTRONOMICAL SYMBOLS.

The following are the symbols and abbreviations used in ordinary almanacs.

SIGNS OF THE PLANETS, ETC.

☉ The Sun.	♂ Mars.
☾ The Moon.	♃ Jupiter.
☿ Mercury.	♄ Saturn.
♀ Venus.	♅ Uranus.
⊕ or ♁ The Earth.	♆ Neptune.

Isaac Sharpless, George Morris Philips, "Astronomy for schools and general readers," 4th edition, p. 306, J.B. Lippincott co., 1892.

1.2 ASTRONOMICAL SYMBOLS

The standard symbols for astronomical objects and zodiacal areas are given in Table 1.1.

Table 1.1. *Sun, Moon, planetary, zodiacal, and orbit symbols* [1, 2].

Symbol	Name	Symbol	Name	Symbol	Name
*	Star	☉	Sun	☾	Moon
☿	Mercury	♀	Venus	♁	Earth
♂	Mars	♃	Jupiter	♄	Saturn
♄	Saturn 2	♅	Uranus	♆	Neptune
♆	Neptune 2	♇	Pluto	♇	Pluto 2
♈	Aries (0°)	♉	Taurus (30°)	♊	Gemini (60°)
♋	Cancer (90°)	♌	Leo (120°)	♍	Virgo (150°)
♎	Libra (180°)	♎	Libra 2 (180°)	♏	Scorpio (210°)
♐	Sagittarius (240°)	♑	Capricornus (270°)	♒	Aquarius (300°)
♒	Aquarius 2 (300°)	♒	Aquarius 3 (300°)	♓	Pisces (330°)
☊	Ascending Node	☋	Descending Node		
♎	Autumnal Equinox	♈	Vernal Equinox		

References

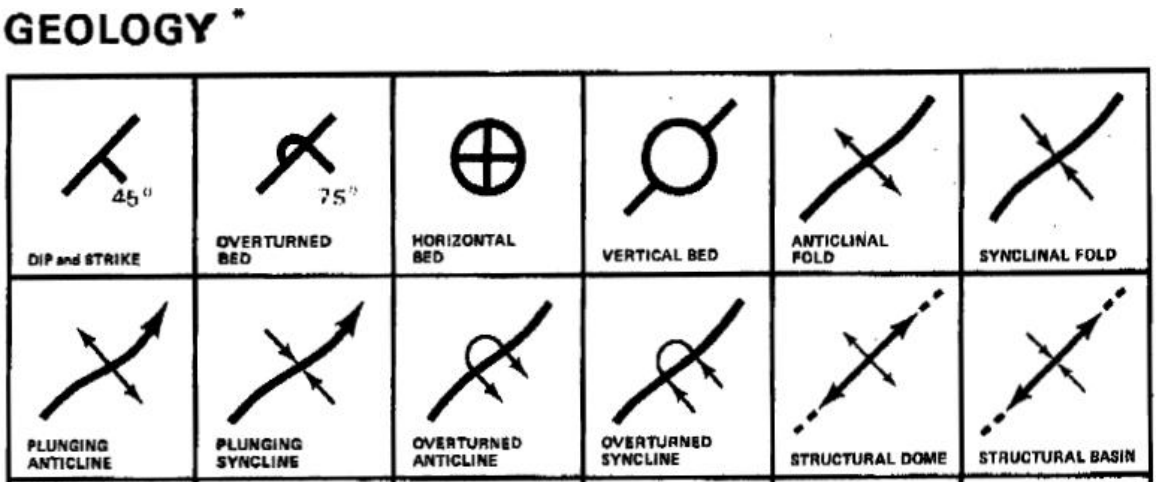
1. Rahtz, S. & Rose, K. ftp to sunsite.unc.edu in directory pub/packages/TeX/cmastro
2. Schmitt, P. 1992, ftp to sunsite.unc.edu in directory pub/packages/TeX/astro

Sample quoting TEX packages for astronomy:
Clabon Walter Allen, Arthur N. Cox, "Allen's astrophysical quantities," 4th edition, p. 2, Springer, 2000.

U+26E7 ECLIPSE

This symbol is still being researched. The following sample shows a geological symbol for 'vertical bed,' which has a similar glyph.

The same symbol can be found in:
Adrian Frutiger, "Signs and Symbols: Their Design and Meaning," p. 343, Van Nostrand Reinhold, 1989.



Henry Dreyfuss, "Symbol sourcebook: An Authoritative Guide to International Graphic Symbols," p. 96, Van Nostrand Reinhold, 1984.

U+27CD EXCLAIMED EQUAL TO

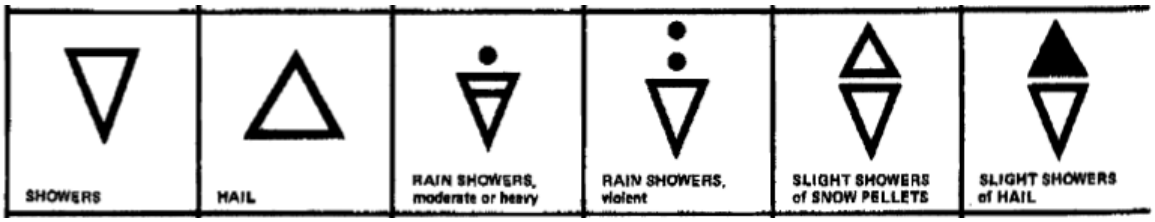
This symbol is described as below in the following sources:

"*The exclamation mark above the equals sign symbolizes a requirement*":
F.P. Mechel, "A Principle of Superposition," Acta Acustica united with Acustica, volume 86, number 6, p. 971, European Acoustics Association, S. Hirzel Verlag, 2000, ISSN 1610-1928.

"*The exclamation mark above the equal sign symbolizes that these are physically required conditions*":
J. Schleicher, M. Tygel, P. Hubral, "Seismic True-Amplitude Imaging (SEG Geophysical Developments no. 12)," p. 118, Society of Exploration Geophysicists, International Society of Applied Geophysics, 2007, ISBN 1-56080-143-3.

U+2B5D WHITE DOWN-POINTING POINTER

This symbol is still being researched. The following sample shows a meteorological symbol for 'showers,' which has a similar glyph.

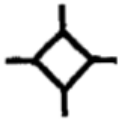


Henry Dreyfuss, "Symbol sourcebook: An Authoritative Guide to International Graphic Symbols," p. 120, Van Nostrand Reinhold, 1984.

U+2B5E WHITE SQUARE WITH TICKS FROM CORNERS
U+2B5F WHITE DIAMOND WITH TICKS FROM CORNERS

An ideogram found on computer keyboards that indicates *hexadecimal numbers*. In the same way as our normal counting system is based on 10 and has 10 figures, the binary system (having only 2 figures, 0 and 1) is based on 2, and the hexadecimal system is based on 16 (and has 16 figures or signs: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F).
The sign for hexadecimal numbers can also be drawn ⌧.

A sign used in cartography to indicate a *fort* or *fortress*.
See the entry ☆ below for further references.



Carl Liungman, "Dictionary of Symbols," p. 473, ABC-Clio Inc., 1991.

5. Code Charts

UniBook code charts are appended at the end of this document. UniBook source project files and fonts will be made available to the editors.

6. References

[Elsevier] Simon Pepping, Rob Schrauwen, "Elsevier Science Grid in Unicode", http://info.sciencedirect.com/techsupport/xmlsgml/dtd50/esgrid.pdf, 2004.

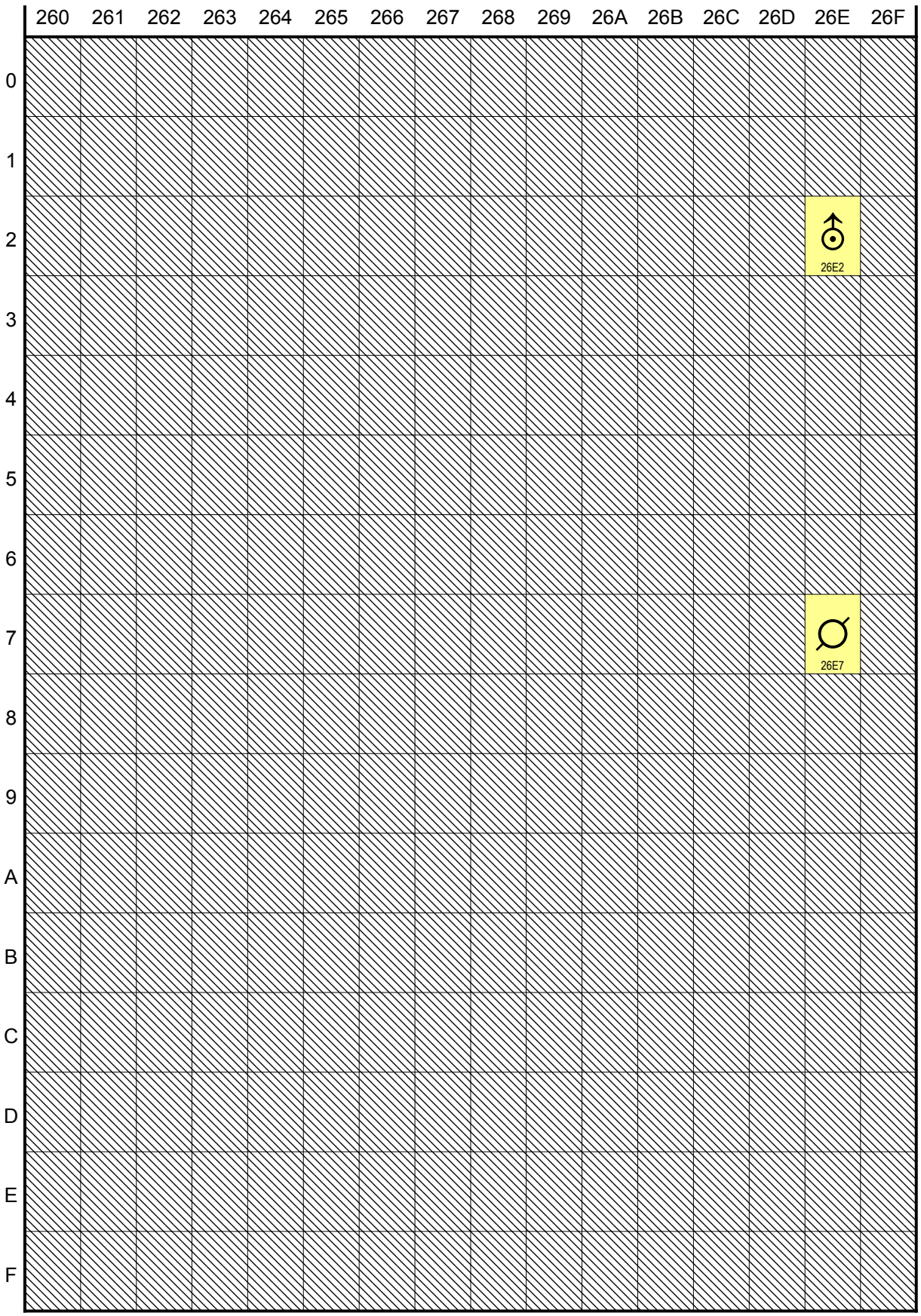
[Emoji] Expanded code charts in proposal http://std.dkuug.dk/jtc1/sc2/wg2/docs/n3607.pdf, which includes the set of alchemical symbols. Code charts updated in "Summary of repertoire for FPDAM7 and PDAM8" http://std.dkuug.dk/jtc1/sc2/wg2/docs/n3626.pdf.

[Constable] Peter Constable, Lorna Priest, "Symbols in [Pullum] Phonetic Symbol Guide 2nd edition in relation to Unicode 5.1", http://scripts.sil.org/PSGSymbolsVsTUS4.

[Pullum] Geoffrey K. Pullum, William A. Ladusaw, "Phonetic Symbol Guide", 2nd edition, University of Chicago Press, 1996.

[STIX] STIX table at http://www.ams.org/STIX/bnb/stix-tbl.ascii-2006-10-20 containing mapping and font glyph names.

[Wolfram] Wolfram Research Mathematica, Listing of Named Characters http://reference.wolfram.com/mathematica/guide/ListingOfNamedCharacters.html, and Character Set http://www.mathmlcentral.com/characters/.

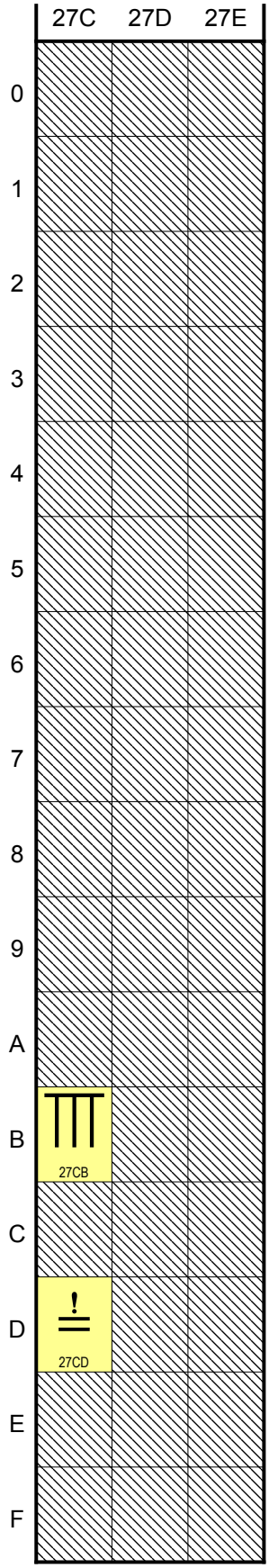

260 261 262 263 264 265 266 267 268 269 26A 26B 26C 26D 26E 26F
0 1 2 3 4 5 6 7 8 9 A B C D E F
26E2
26E7

Astronomical symbol

26E2 ⛢ ASTRONOMICAL SYMBOL FOR URANUS
• not the astrological symbol
→ 2645 ♅ uranus

Astronomical symbol (?)

26E7 ☌ ECLIPSE

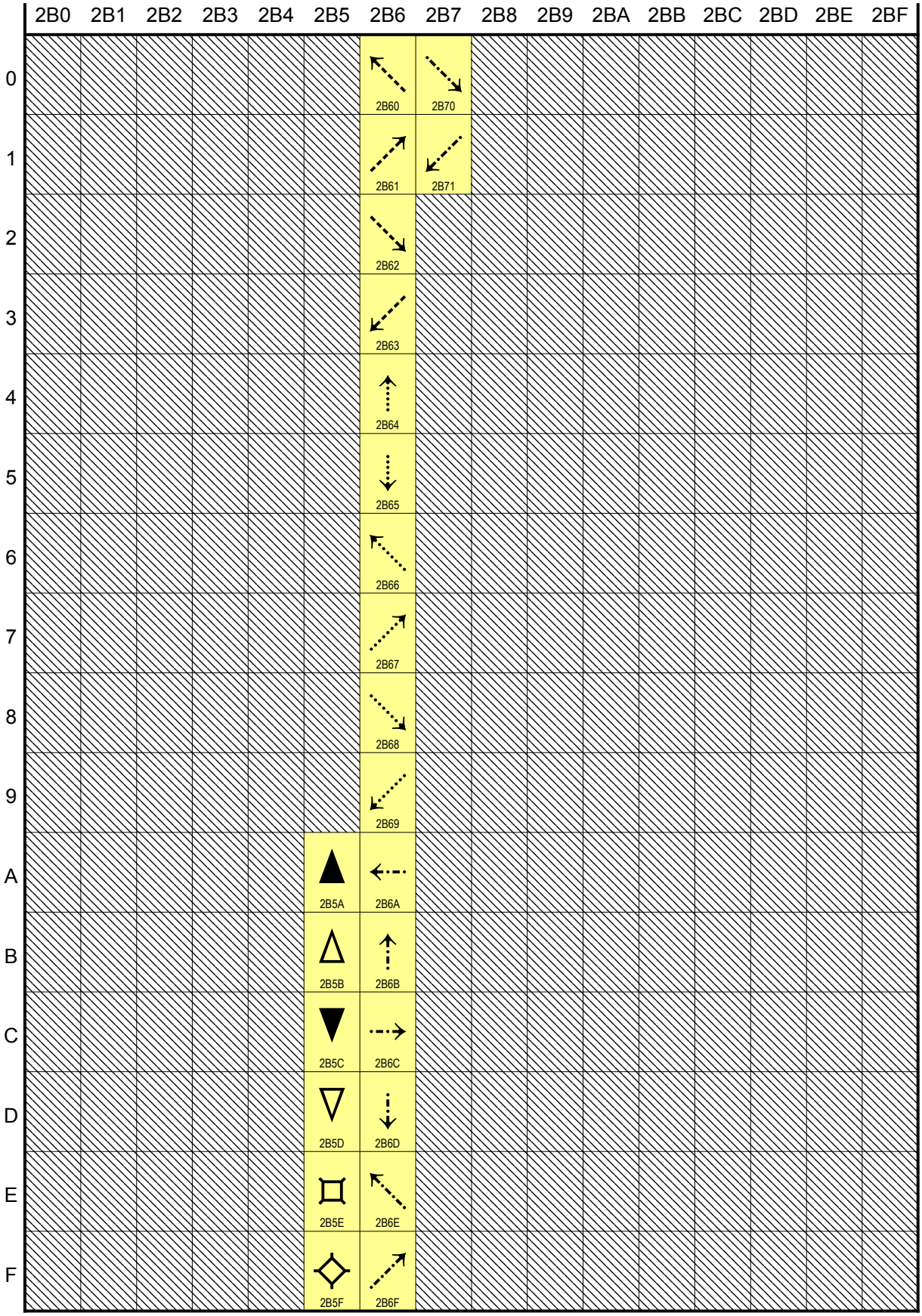

27C
27D
27E
0
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
27CB
27CD

Large operator

27CB ⨿ N-ARY SHAW

Relation

27CD ≝ EXCLAIMED EQUAL TO
→ 225F ≟ questioned equal to

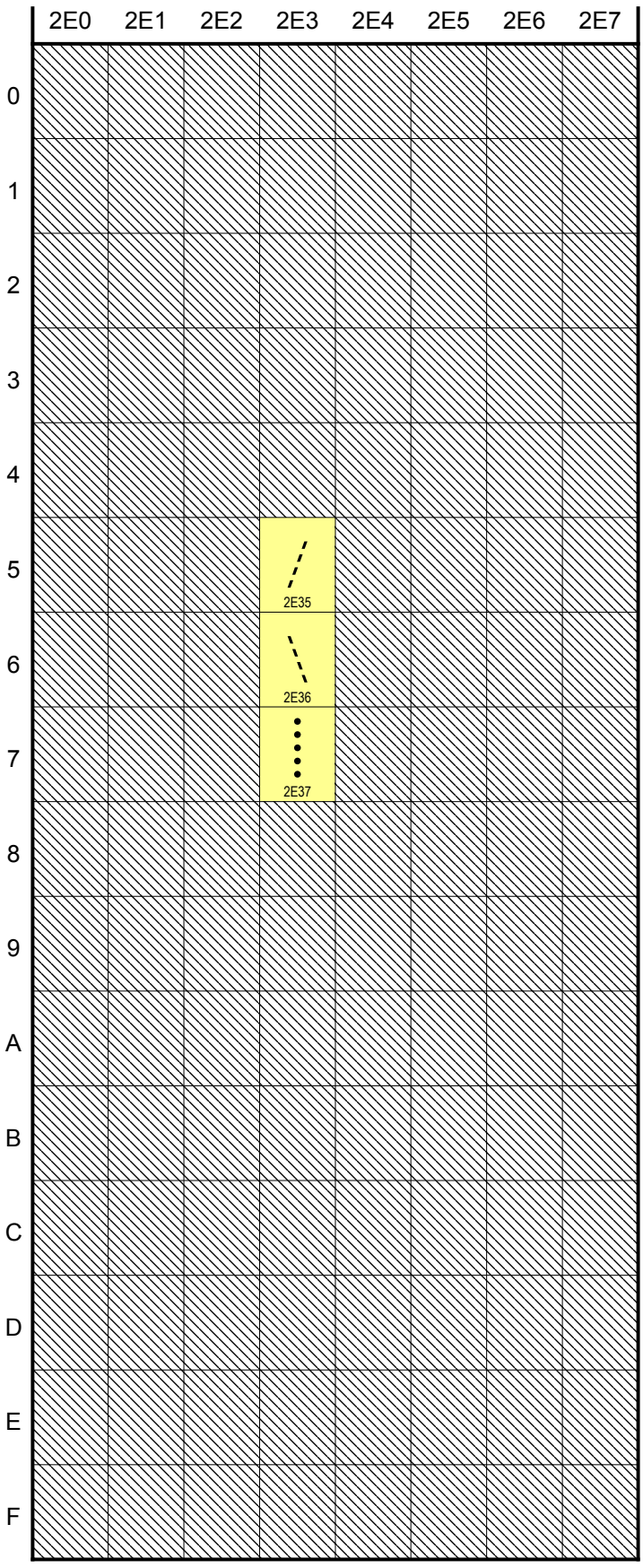

2B0 2B1 2B2 2B3 2B4 2B5 2B6 2B7 2B8 2B9 2BA 2BB 2BC 2BD 2BE 2BF
0 2B60 2B70
1 2B61 2B71
2 2B62
3 2B63
4 2B64
5 2B65
6 2B66
7 2B67
8 2B68
9 2B69
A 2B5A 2B6A
B 2B5B 2B6B
C 2B5C 2B6C
D 2B5D 2B6D
E 2B5E 2B6E
F 2B5F 2B6F

Miscellaneous geometric shapes

2B5A	▲	BLACK UP-POINTING POINTER → 25BA ► black right-pointing pointer
2B5B	△	WHITE UP-POINTING POINTER → 25BB ▻ white right-pointing pointer
2B5C	▼	BLACK DOWN-POINTING POINTER
2B5D	▽	WHITE DOWN-POINTING POINTER
2B5E	⌑	WHITE SQUARE WITH TICKS FROM CORNERS
2B5F	⟡	WHITE DIAMOND WITH TICKS FROM CORNERS

Miscellaneous arrows

2B60	⇖	NORTH WEST DASHED ARROW
2B61	⇗	NORTH EAST DASHED ARROW
2B62	⇘	SOUTH EAST DASHED ARROW
2B63	⇙	SOUTH WEST DASHED ARROW
2B64	⇡	UPWARDS ARROW WITH DOTTED STEM
2B65	⇣	DOWNWARDS ARROW WITH DOTTED STEM
2B66	⇖	NORTH WEST ARROW WITH DOTTED STEM
2B67	⇗	NORTH EAST ARROW WITH DOTTED STEM
2B68	⇘	SOUTH EAST ARROW WITH DOTTED STEM
2B69	⇙	SOUTH WEST ARROW WITH DOTTED STEM
2B6A	⇠	LEFTWARDS ARROW WITH DOT-DASH STEM
2B6B	⇡	UPWARDS ARROW WITH DOT-DASH STEM
2B6C	⇢	RIGHTWARDS ARROW WITH DOT-DASH STEM
2B6D	⇣	DOWNWARDS ARROW WITH DOT-DASH STEM
2B6E	⇖	NORTH WEST ARROW WITH DOT-DASH STEM
2B6F	⇗	NORTH EAST ARROW WITH DOT-DASH STEM
2B70	⇘	SOUTH EAST ARROW WITH DOT-DASH STEM
2B71	⇙	SOUTH WEST ARROW WITH DOT-DASH STEM


2E0
2E1
2E2
2E3
2E4
2E5
2E6
2E7
0
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
2E35
2E36
2E37

Miscellaneous delimiters

2E35	⸗	DASHED SOLIDUS
2E36	⸘	DASHED REVERSE SOLIDUS
2E37	⋮	VERTICAL FIVE DOTS
		→ 2999 ⋮ dotted fence