Unicode request for *shatranj* symbols

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This request is for four piece symbols for *shatranj*, the ancestor of chess. It follows on Unicode proposal L2/16-293, section 8 (Shatranj symbols).

Characters

The characters are listed with their PUA code points in the fonts Quivira, Catrinity and Nishiki-teki. The public-domain Quivira font was chosen for the display here and in the chart, as it has the simplest designs. The Catrinity and Nishiki-teki glyphs are compared in Figure 1.

1FA54 WHITE CHESS FERZ [Quivira U+E018, Catrinity & Nishiki-teki U+FC2E8].
    Figures 1–2, 5–6, 8–11.

1FA55 WHITE CHESS ALFIL [Quivira U+E010, Catrinity & Nishiki-teki U+FC2E0].
    Figures 1–3, 5–11.

1FA56 BLACK CHESS FERZ [Quivira U+E019, Catrinity & Nishiki-teki U+FC2E9].
    Figures 1, 4–6, 8–11.

1FA57 BLACK CHESS ALFIL [Quivira U+E011, Catrinity & Nishiki-teki U+FC2E1].
    Figures 1, 3–11.

Properties

These characters should have the same default line-breaking behaviour as previously-encoded heterodox chess symbols. They are not intended to serve as emoji.

```
1FA54;WHITE CHESS FERZ;So;0;ON;;;;;N;;;;;
1FA55;WHITE CHESS ALFIL;So;0;ON;;;;;N;;;;;
1FA56;BLACK CHESS FERZ;So;0;ON;;;;;N;;;;;
1FA57;BLACK CHESS ALFIL;So;0;ON;;;;;N;;;;;
```

Annotations

1FA55 WHITE CHESS ALFIL
    = white elephant.
1FA57 BLACK CHESS ALFIL
    = black elephant.

Chart

Chess Symbols

1FA00   1FA6F

	1FA0	1FA1	1FA2	1FA3	1FA4	1FA5	1FA6
0	♔	♛	♜	♞	♛	♞	帥
1	♕	♜	♟	♝	♜	♛	仕
2	♖	♝	♟	♝	♝	♞	相
3	♗	♝	♟	♝	♝	♞	馬
4	♘	♟	♟	♛	♝	⊗	車
5	♙	♝	♟	♜	♞	♞	炮
6	♞	♛	♜	♝	♞	⊗	兵
7	♞	♜	♟	♞	♞	♞	將
8	♞	♝	♝	♙	♜		士
9	♝	♝	♟	♝	♜		象
A	♛	♝	♟	♛	♜		馬
B	♜	♝	♟	♜	⧗		車
C	♝	♝	♜	♝	⧗		砲
D	♝	♝	♟	♝	⧗		卒
E	♝	♝	♝	♟	♛		
F	♛	♟	♟	♝	♞		

Background

In chess variants, a "leaper" is a piece that jumps a fixed distance. The knight in orthodox chess is a (1,2)-leaper. (It might alternatively be called a (2,1)-leaper, since the notation assumes symmetry.) The two shortest diagonal leapers appear in *shatranj*, the direct ancestor of modern chess:

- The *ferz* (*fers*, *firzan*) ♔ ♚ is a degenerate (1,1)-leaper: it moves one square diagonally. This is the ancestor of the modern queen.
- The *alfil* (elephant) ♗ ♝ is a (2,2)-leaper: it jumps to the second square diagonally. This is the ancestor of the modern bishop.

Some historical discussions of *shatranj*, such as those in Pritchard (2007), Hesse (2011), Cazaux & Knowlton (2017), contrast *ferz* and *alfil* symbols with the modern symbols for queen and bishop, though others use the modern symbols for both (e.g. Murray 1913 and Hooper & Whyld 1992). However, conflating symbols is not an option when illustrating chess variants that include both the modern bishop and the *alfil*, such as Citadel Chess (*shatranj al-husun*) and Courier Chess (Cazaux & Knowlton 2017); in such cases the symbols are universally contrasted. John Beasley, in his foreword to Pritchard (2007), notes that he specifically re-prepared the illustrations from the first edition, writing that "an incidental benefit has been to give the ancient 'firzan' and 'fil' their own symbols, instead of the modern queen and bishop symbols which are so often substituted," suggesting that the replacement may sometimes have been due to technical limitations. A different approach is found in the Chess Alfonso font (and Sonja Musser's dissertation), and also in some illustrations in Murray (1913), where a distinct symbol is given to all six pieces in *shatranj*, even when their move is identical to modern chess. Such usage is not contrastive and so can be handled by the font; hence we do not propose specific *shatranj* variants of the king, rook, knight and pawn symbols.

For the character names *ferz* and *alfil*, we adopt the conventions of Cazaux (2013), who is both a historian of chess and a modern inventor of chess variants. "Elephant" is a common alternative name of the *alfil*, but it should be noted that it is now often used for a compound *ferz-alfil* piece in modern chess variants. This upgrade of the weak *alfil*, which can only see one-eighth of the board, dates to H. G. Albers' 1821 version of the 13th-century German *Courier-Spiel* (Courier Chess; Cazaux 2023). The fairy-chess problemist George Jelliss gives the portmanteau name "ferfil" for this compound piece.

There is significant glyph variation of the *ferz* symbol. Some sources use a vizier's hat, which can be styled in many different ways, but the majority incorporate a diagonal cross, representing the four diagonal directions the piece can move. Uniquely, *The Chess Variant Pages*' main page on *shatranj* uses a human depiction of a vizier (Figure 5), though the Alfaerie image set that it otherwise uses

has instead an abstract diagonal cross shape (Figure 1). Since these glyphs do not contrast, they are best treated as variants of a single symbol. (The *wazir* in Tamerlane chess, a (1,0)-leaper, exhibits similar glyph variation between a turban (WinBoard/XBoard, Figure 8) and an abstract orthogonal cross ⟨♙ ♟⟩ (Figure 1).) Because of the wide glyph variation in the headgear variants, we propose the more common diagonal cross symbols ⟨⊗ ⊗⟩ for the *ferz* characters in the Unicode chart.

References

Jean-Louis Cazaux and Rick Knowlton (2017). *A World of Chess: Its Development and Variation through Centuries and Civilizations*. McFarland, Jefferson, North Carolina.

Jean-Louis Cazaux (2023). *More Chess and More Than Chess*. Pionissimo, Toulouse.

Christian Hesse (2011). *The Joys of Chess: Heroes, Battles & Brilliancies*. New In Chess, Alkmaar.

David Hooper and Kenneth Whyld (1992, 2nd ed.). *The Oxford Companion to Chess*. OUP.

George Jelliss. Mayhematics. mayhematics.com

Harold James Ruthven Murray (1913). *A History of Chess*. Oxford University Press.

Sonja Musser (2007). *Los libros de acedrex dados e tablas*: Historical, Artistic and Metaphysical Dimensions of Alfonso X's *Book of Games*. PhD Thesis, University of Arizona. (repository)

David Pritchard (2007, 2nd ed.). *The Classified Encyclopedia of Chess Variants*. John Beasley, Harpenden.

Van der Linde (1881). *Quellenstudien zur Geschichte des Schachspiels*. J. Springer, Berlin. Cited in Georgi Markov (2019) A Game That Never Was: Verney's Duodecimal Chess. *Board Game Studies Journal* 13(1): 15–20.

Alfaerie image set. chessvariants.com/graphics.dir/alfaerie.

Catrinity 2.05 font. catrinity-font.de/downloads/CatrinityPrivateUseArea.pdf.

Nishiki-teki 3.96g font. umihotaru.work/nishiki-teki_pua.pdf.

Quivira 4.1 font. quivira-font.com/files/QuiviraPUA.pdf.

Figures
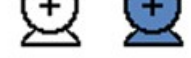
Piece	Quivira	Catrinity	Nishiki-teki	Cazaux	Alfaerie	Zillions
Alfil						
Ferz						
Wazir						

Figure 1. Glyph variation of the requested *alfil* and *ferz* characters, plus for comparison the similar *wazir* from Tamerlane chess, in the Quivira, Catrinity and Nishiki-teki fonts and in the Cazaux, Alfaerie and Zillions image sets. Quivira font (left) is used in this document.

the position. According to modern knowledge the simple 9...g5 was preferable, so as not to compromise his pawn formation. As-Suli immediately sets the disaster going: **10 ♗h3** and already the f5 pawn can no longer be held. **10...♞e7 11.♖f1 ♖g8 12.♖g3 ♖g5 13♗xf5 h6 14.♗h3 ♞d7 15.d3 d5 16.c3 ♔c7 17.b3**

In modern chess at this point, Black would be well advised to play 17...♖xg3 18.♗xd7+ ♗xd7 19.hxg3 ♕xg3+ 20.♔d2 ♗g4 21.♕e1 ♕xe1+ 22.♔xe1 ♔f7 23.♔f2 h5 because of the mobile h-pawn. But things are far less dramatic in *shatranj.* **17...♖a7 18.c4 ♗d6 19.♘c3 ♗e6 20. cxd5 cxd5 21. d4 ♗f8 22.♖f2 ♔d6 23.b4 ♖c7 24.♔d2 b5 25♗a3 ♞b6 26♗c5** With the profitable threat of **♗xe7,** which Black can most smoothly parry by 26...♘g8. But the knight headed to the other side with **26...♞c6?.**

Black's situation is now precarious on account of the danger which is looming along the f-file.
27. a3 ♔f7 28 ♔c2 ♗c4 29.♖af1 ♖g6, and White finishes things off by throwing a perfect mating net over the head of the black king. **30.♘h5 ♔e8 31.♘xf6+ ♔d8 32.♘fxd5 ♖b7** The *fers* on f8 cannot be saved. **33.♖xf8+ ♔d7 34 ♗f5 +! ♔e6 35.♘f4#**, and he's done it.
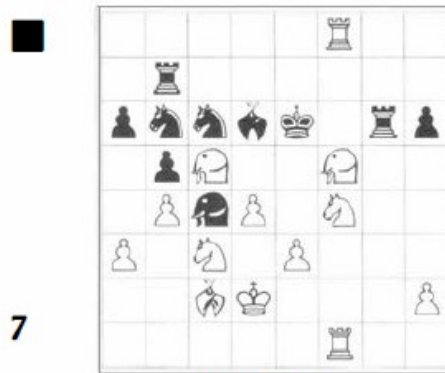
Final position

The two white *alfils* and the rook on f8 prevent the black king from reaching the flight squares on the 7th rank. A beautiful mate, more than a thousand years old and from the stone age of the origins of chess, a fossil from the palæolithic era of chess.

As-Suli was considered the best player in the world around 900 AD. More than

Figure 2. Hesse (2011: 18). Use of the *ferz* (turban, red) and *alfil* (elephant, blue) figurine symbols in diagrams as well as in plaintext figurine notation, alongside contrastive use of modern bishop and queen symbols where Hesse describes what the evaluation of the position would have been, had it been from modern chess rather than *shatranj.* Note the variation in typeface that affects the figurine symbols (bold for game moves, roman for description and analysis).

Inventory and solution:

♖b3 ♔b5 ♗a3 ♗f1 ♘c1 ♘g1 (6)

♜c7 ♛a1 ♛d8 ♝c4 ♟a4 ♟c6 ♙d3 d4 e4 (9)

1. ..., ♛[a1]-b1+; 2. ♖[b3]x♝c4 (because if ♖[b3]x♟[a4], ♛[d8]-a8++[512] or if ♔[b5-a5] (to cover), ♛[a8]x♔[a5]++ guarded by ♟[c6]), ♟c6-a5+; 3. ♔[b5]x♟[a5] (forced), ♟a4-b6+; 4. ♖[c4]-c5 (forced), ♛[d8]-d5++ (if black errs neither can win in counted moves)[513]

Figure 3. Musser (2007: 267). In-text figurine notation usage of archaic symbols for *shatranj* pieces in running text, including those that duplicate modern pieces. Black and white *alfil* are circled in blue. The other pieces in the top row are the king, rook and knight.
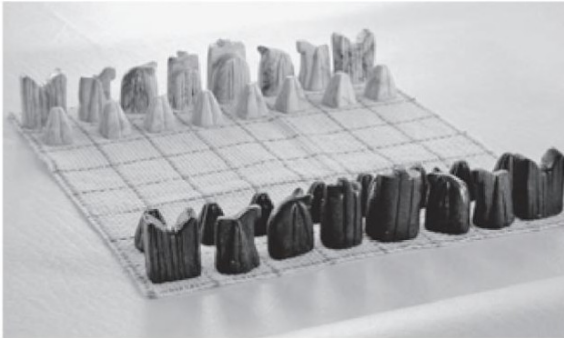
♖h2 ♔a7 ♔c4 ♟c6 ♙b6 h3 (6)
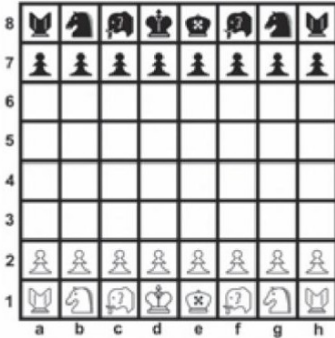
♜c8 ♝f2[531] ♛b2 ♛f1 ♝a6 ♝f8 ♟e6 ♙h4 (8)

1. discover ♔[c4]+ by ♟[c6]-e7(+) and, (if ♜[c8]-b8, 2. ♔[c4]-c8+, ♝[a6]x♔[c8] (forced); 3. ♟[e7]-c6++) ♜[c8]-d8 (to prolong mate); 2. ♔[c4]-c8+, ♝[a6]x♔[c8]; 3. ♟[e7]-c6+, ♜[d8]-e8 (forced); 4. ♔[a7]-e7++ (if white errs ♝[f2]. g3++)

Figure 4. Musser (2007: 272). Black *alfil* (blue) and *ferz* (red) in running text.

Classical Arabic name	Neo-Persian name	Meaning	Modern equivalent
Shah, Nafs	*Shah*	King	King
Firzan, Firz	*Dastur, Farzin*	Counselor	Queen
Fil	*Pil*	Elephant	Bishop
Faras	*Asp*	Horse	Knight
Rukhkh	*Rukh*	"Rukh"	Rook
Baidaq	*Piyada*	Foot Soldier	Pawn

Shatranj board ready to play. KNOWLTON PHOTOGRAPH   Initial array of shatranj.
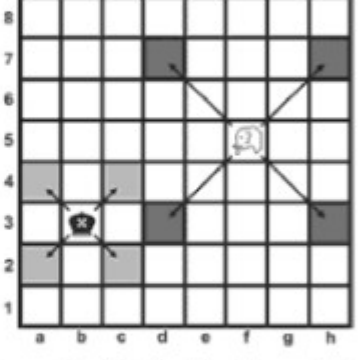

The *King* moves only one step toward one of the eight squares that surround it, provided that this square is not under the threat of an adverse piece. As in the modern game, there is an obligation for the player to move his King out of check. If no possible move will save the King from capture, he has lost the game.

The *Counselor* moves only one square diagonally. This move limits his moves to only half of the squares of a chessboard (the squares that would be of one color on a modern board).

The *Elephant* jumps diagonally over one square to land on the second diagonal square. It does not matter whether the square it leaps over is occupied. With this limited move, the Elephant can only land on eight squares of the entire board!

Counselor and Elephant moves.

The *Horse* moves exactly like the modern Knight. It makes an L-shape of two squares in one orthogonal direction (that is, forward, backward or sideways) plus one step at a right angle. The Horse freely leaps over any pieces in its path.

The "*Rukh*" moves just like the modern Rook. It travels any number of squares orthogonally (forward, backward, left or right), but may not jump over any pieces in its way.

The *Pawn* is the only piece which does not capture using its normal move. It normally moves one square forward, but captures by moving one square diagonally forward. This is the same as the Pawn in our modern game, but the ancient Pawn of shatranj is never allowed to move two spaces at once.

Figure 5. Cazaux and Knowlton (2017: 8–9). The symbols used for the king, rook, knight, and pawn in the diagrams and accompanying text are the same as in modern chess, but *shatranj* symbols can be seen for the *ferz* and *alfil* (adjacent to the king at top, second and third items at bottom).

White:
King g3; General e5; Rook f4, h1; Knight c3, d1; Elephant b1, c1; Pawns a5, b2, c7, d3, f3, h3. (14 pieces)

Black:
King g8, General g1; Rook b8; Knight g6, g7; Elephant c4, f8; Pawns b5, e6, f5, g4, h2, h6. (13 pieces).

Black to play and win.
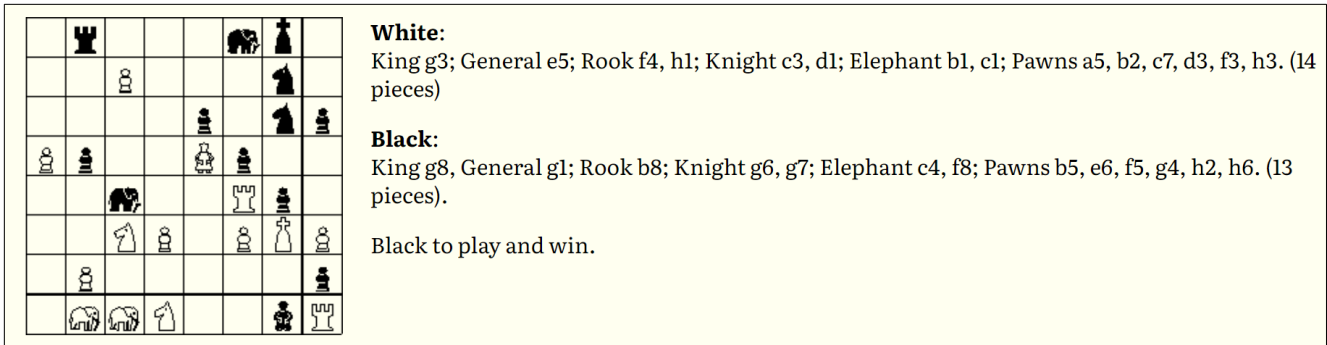
Figure 6. A historical *shatranj* problem (*ad-dulabiya*, The Water Wheel), described and diagrammed at *The Chess Variant Pages* (chessvariants.org/mansubat.dir/mans03.html). The textual description unifies the king, rook, knight, and pawn with their modern symbols, and anglicizes the names of the *ferz* ("general") and *alfil* ("elephant").

Deutsches Kurierspiel, Constanz 1337.
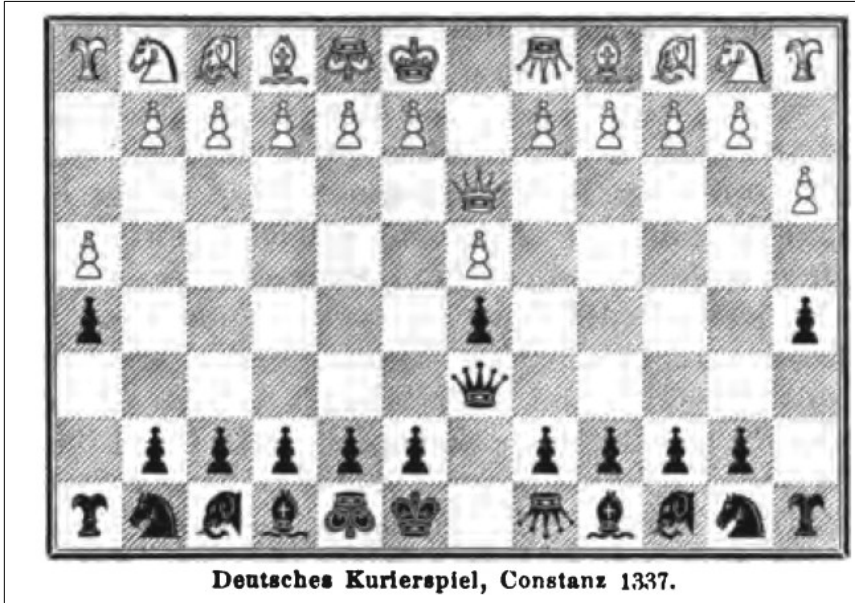
Figure 7. Van der Linde (1881). The starting position of *Courier-Spiel* (Courier chess). Note the coexistence of the *alfil* (elephant, third file from the edge of the board) with the modern bishop (fourth file from the edge).

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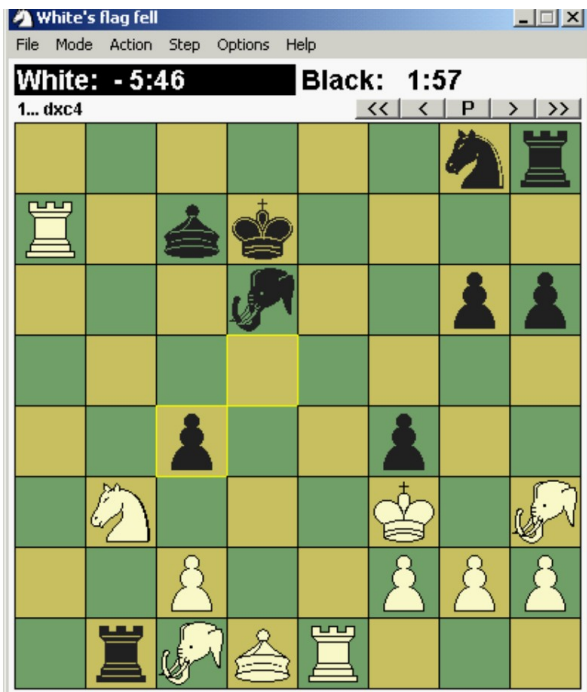
Figure 8. *Shatranj* displayed in WinBoard (image from the website of prominent chess-variant programmer Harm Geert Muller, http://hgm.nubati.net/), which also offers standard chess with the orthodox symbols. The hat glyph for the *ferz* is a Chinese mandarin's hat, after the mandarin in Chinese chess (*xiangqi*) that moves as a *ferz* within the palace.
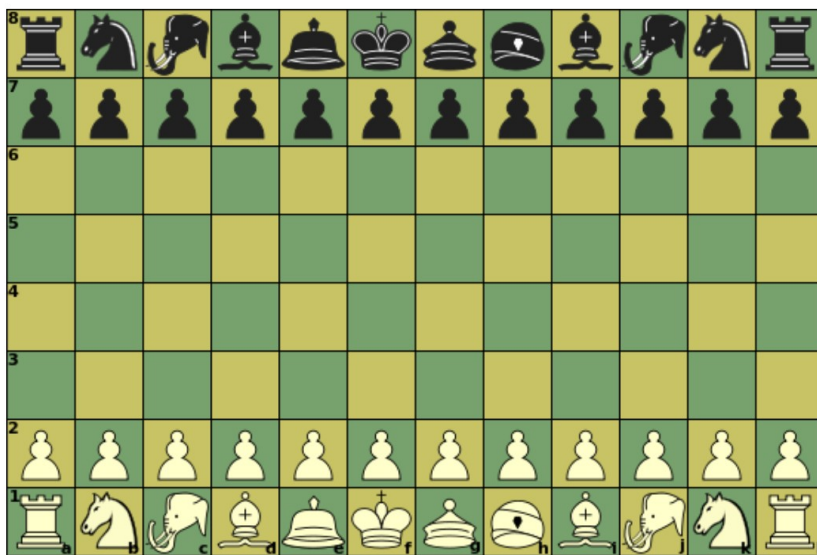
Figure 9. Courier chess in WinBoard (hgm.nubati.net/rules/Courier.html), with bishop and *alfil* occurring in the same game (files d/i and c/j, respectively). Also included are glyphs for the *Mann* (file e, German helmet; moves like a king but needs not worry about check), *ferz* (file g, mandarin's hat), and *wazir* (file h, turban). In German these are *Kurier*, *Alte*, *Mann*, *Königin* and *Schleich*.

based on the pawn formation. Often there was no collision of forces until 14 or 15 moves had been played. Ta'bias, of which Murray has a splendid collection in *A History of Chess*, had imaginative names like the Goat-peg and the Slave's Banner. The ta'bia illustrated below was one of three 'starting positions' laid down for a correspondence tournament organized by *Deutsches Wochenschach* in 1914.
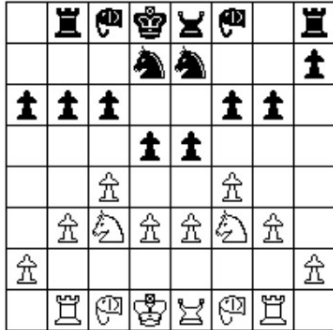
The ta'bia could be played out formally. The everything that mattered.
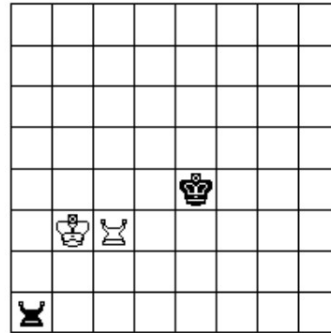
To win by 'bare king', White must capture the black firzan without immediately losing his own. If he moves first, victory is swift: 1 Ka2 Kd3 2 Fb4 Kc4 3 Fa3 and the Black king cannot approach. With Black to move the play is more subtle, and the longest line runs to 20 moves by each side. Black's best defence is 1...Kd5, putting his king the same distance and direction from the White firzan as the White

Figure 10. Pritchard (2007: 240). Note the glyphs for *ferz* (vizier's hat) and *alfil* (elephant head), and the use of the letter F for *ferz* (disunified from a queen) even while the king is unified with the modern piece and abbreviated K.

Figure 11. *Shatranj al-husun* (Citadel chess) as displayed on the website of Jean-Louis Cazaux (history.chess.free.fr/citadel.htm). Note the presence of both the elephant and 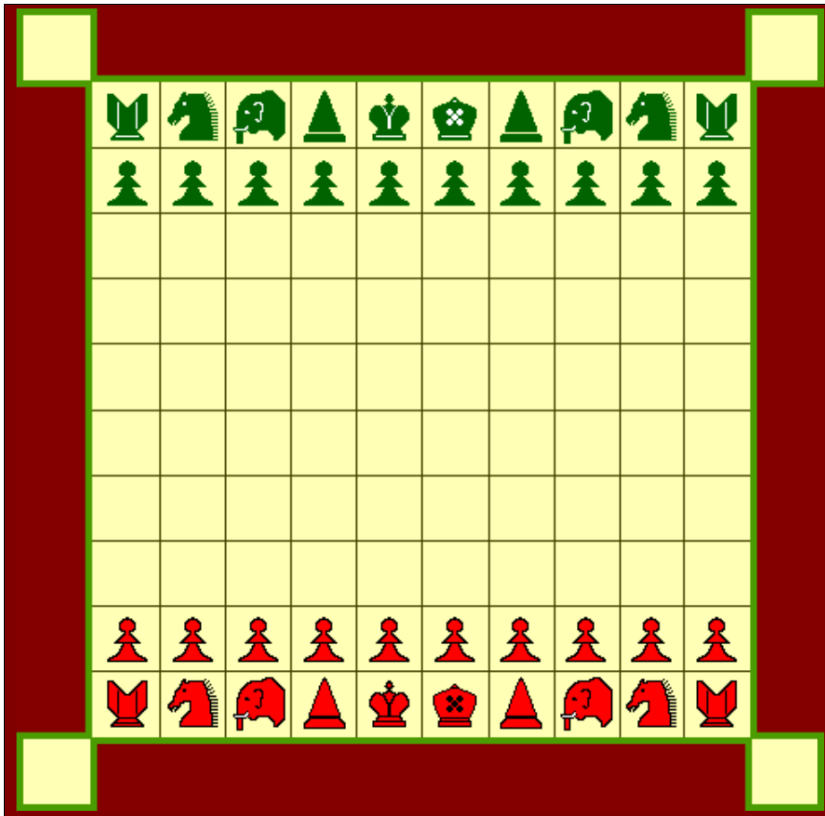the bishop on the same board (third and fourth pieces from the edge of the board). Despite the symbol, the latter moves as a modern bishop. The same illustration, though in black and white, appears on p. 24 of Cazaux and Knowlton 2017.

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://std.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://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html.
See also http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest *Roadmaps*.

A. Administrative

1. **Title:** *Shatranj symbols*
2. Requester's name: *Gavin Jared Bala, Kirk Miller*
3. Requester type (Member body/Liaison/Individual contribution): *individual*
4. Submission date: *2023 December 20*
5. Requester's reference (if applicable):
6. Choose one of the following:
   This is a complete proposal: *yes*
   (or) More information will be provided later:

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters):
      Proposed name of script:
   b. The proposal is for addition of character(s) to an existing block: *yes*
      Name of the existing block: *Chess Symbols*
2. Number of characters in proposal: *4*
3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary ___ B.1-Specialized (small collection) ___ **x** 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? *yes*
   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. Fonts related:
   a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?
      Kirk Miller
   b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):
      Alexander Lange, contact@quivira-font.com
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? *yes*
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)? *no*

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 Unicode Character Database (http://www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

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[1] Form number: N4502-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, 2009-11, 2011-03, 2012-01)

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? _ _ _ _ _ *yes* _ _ _ _ _

     If YES explain   *Garth Wallace (L2/16-293). Script Ad Hoc Group concluded that contrastive usage may not exist; re-proposing now that contrastive usage has been found.*

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.)? _ _ _ _ _ *no* _ _ _ _ _

        If YES, with whom? _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

        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? _ _ _ _ _ *no* _ _ _ _ _

    Reference: _

4. The context of use for the proposed characters (type of use; common or rare)   *Chess history and chess variants; rare*

    Reference: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

5. Are the proposed characters in current use by the user community? _ _ _ _ *yes* _ _ _ _

     If YES, where? Reference: _ _ _ _ _ _ _ *see figures* _ _ _ _ _ _ _ _

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)? _ _ _ *yes* _ _ _

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, or could be confused with, 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? _ _ _ _ *no* _ _ _ _

     If YES, is a rationale for such use provided? _ _ _ _ _ _ _ _

        If YES, reference: _ _ _ _ _ _ _ _ _

    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 characters? _ _ _ _ *no* _ _ _ _

    If YES, are the equivalent corresponding unified ideographic characters identified? _ _ _ _ _ _ _ _

        If YES, reference: _ _ _ _ _ _ _ _ _ _ _ _ _ _