## ISO/IEC JTC 1/SC 2/WG 2 N4207R

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

## Doc Type: Working Group Document

Title: Proposal to encode pictorial symbols for the Western zodiac
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Replaces: L2/12-043, WG2 N4207
The title of the document replaced was:
"Proposal to disunify Emoji symbols for the Western zodiac".
This version addresses concerns raised in L2/12-071 "Response to Proposal to disunify Emoji zodiac symbols" by Markus Scherer et al., by changing the title and rewriting the section "1. Introduction"
The rest of the document (especially all proposed characters and their properties) is identical to the predecessor document (except some wording indicating that changes in EmojiSources.txt are "suggested" rather than "proposed").

## 1. Introduction

The Western zodiac consists of 12 traditional signs, augmented by the $13^{\text {th }}$ sign Ophiuchus. While there is a standardized set of abstract astrological symbols which ais completely encoded, there also are pictographic representations, similar to the ones used for the Eastern zodiac which were included into Unicode in conjunction with the Emoji set.
As the abstract astrological symbols are not immediately recognizable by anybody (but have to be learned), the use of the pictographs is common. The overall layout of these pictographs is stable since at least 1,500 years, with only limited variation in different cultural contexts.
Fig. 17 shows an example of the pictographs used in printed running text.
Fig. 16 shows contrastive usage of the abstract symbols and the pictographs.

### 1.1 Western zodiac pictographs and Emoji

Another kind of plain text where the proposed pictorials occur are short messages of mobile phones, especially in the context where also Emoji are used.
The document L2/11-414 "Emoji Variation Sequences" by Peter Edberg (2011-10-30) discusses the necessity of selecting different presentations for some Emoji symbols which were unified with existing characters.
L2/11-415 "Unified Emoji Reference" by Peter Edberg (2011-10-28) lists all these Emoji.
While L2/11-414 is focused on the problem that Emoji are usually displayed colorful while Unicode characters encoded earlier, especially the targets of the unifications, are usually displayed black and white, this proposals addresses another problem which fig. 1 (an excerpt of the table in L2/11-415) shows.

Looking at the 12 symbols for the Western Zodiac, the DoCoMo and SoftBank symbols are colorful versions of the abstract astrological symbols which are encoded as U+2648...U+2653, and thus they were correctly unified (and subject to the possible solutions outlined in L2/11-414).
However, the KDDI symbols are completely different, being pictographs rather than abstract astrological symbols.
This also applies to the Ophiuchus symbol, the " $13^{\text {th }}$ Zodiac sign" (see fig. 2 and fig. 14).
This proposal claims that here applies what Asmus Freytag had written in his mail from 2011-08-08 on the Unicore list (re "windings/ guaranteeing plain text is unaffected by richer layers /tarot"):
... when you [unify symbols] for one context, but a shape is used in different contexts where different rules exist, you have to do the right thing so that users in the other context have predictable behavior as well. For symbols, that required coding the cancellation and multiplication x separately.
E.g., being able to read the abstract astrological symbols requires special knowledge, while the pictographs are understandable for a considerably wider audience (who only has to know the Western Zodiac items by name).
In consequence, here the disunification of the Western Zodiac pictographs from the abstract astrological symbols is proposed for Unicode.

### 1.2 Suggestion of the disunification of Western zodiac pictographs within Emoji

When a disunification of the zodiac signs is done in Unicode, it is possible that such a disunification is also done in Emoji by documenting it in EmojiSources.txt .
This proposal suggests this and documents how this can be done, in addition to the proposal of adding characters to Unicode, and as a task to be considered separately.
This e.g. would enable KDDI users to ensure that symbols sent to DoCoMo or SoftBank users can be perceived exactly, rather than being translated into abstract symbols based on a special semantic concept.
However, it is noted that Emoji disunification is a different matter than Unicode disunification. Thanks to the authors of L2/12-043 for pointing the author to this fact.
There it is stated that the Japanese carriers who introduced Emoji are satisfied by the current state as it is.
Of course, any company (like the Japanese carriers) can decide on their own by what quality of service they want to support their users.
However, Unicode and SC2/WG2 have their own rules regarding quality, user commitment, and other aspects. The Emoji disunification is no prerequisite for a correct encoding within Unicode (as the title of the predecessor document of this proposal unfortunately may have suggested).
As it was stated often while the Emoji discussions, Unicode characters are for use by anybody in the world, not restricted to the customers of the Japanese carriers who introduced Emoji.
This Unicode proposal is based, as usual, on the evidence for the proposed characters in plain text, printed one as well as electronically communicated one.

### 1.3 Possible Use of Variation Sequences

L2/12-043 mentions the use of variation sequences, as it is recently be done to distinguish colorful versions from black-and-white versions for several characters originating from the Emoji set.
The latter was appropriate, as it addressed a principal presentation issue (which goes beyond glyph distinction while retaining the character identity in principle).

The disunifications proposed here, however, are based on semantic differences (which, in fact, deny the character identity in principle).

Simply distinguishing the encoded U+264B G CANCER and the proposed U+1F905 CRAB and U+1F906 CRAYFISH by variation sequences is pseudo-encoding. Also, which kind of glyph shall be the fallback if no variation selector is given?
Moreover, there would be at least five variants: abstract cancer symbol black-and-white and colorful, crab pictograph black-and-white and colorful (the latter as it represents the KDDI symbol), and crayfish pictograph black-and-white.
Therefore, it is proposed that variation sequences are not proposed to indicate the semantic differences between pictographs and abstract symbols. (However, variation sequences may be proposed for some pictographs proposed here to distinguish black-and-white and colorful versions of them, especially for those used by KDDI.)

### 1.4 Support in Other Documents

The document L2/11-419 ("Further emoji distinctions and issues" by Peter Edberg) addresses in its section 1 the issue of the zodiac signs in detail. It also considers the separate encoding of zodiac pictures in contrast to the already encoded zodiac symbols, based on their different semantics.
(That document, in its sections 2 to 4, also addresses similar issues for other Emoji characters which may result in disunifications. These are not subject of this proposal, which is based on a research on the specific area of zodiac signs. A separate proposal for these can be considered.)

## 2. Encoding Considerations

The set of pictographs for the Western Zodiac is stable since at least 1,500 years (see fig. 3 ff .). When the Emoji were encoded, there were the following decisions made regarding the Eastern astrological symbols:

- The pictographs were included, rather than confining to the abstract symbols (which are already encoded Han characters in this case).
- Where an astrological unit (year of a 12-year cycle, in this case) is expressed by different pictographs in different cultural contexts, all of these pictographs were encoded as different characters.

Here, it is proposed to follow this way.
Therefore, not only the 10 missing pictographs directly representing the KDDI symbols (2 of these 12 symbols can be unified with already encoded symbols) are proposed, but also a small set of pictographs enabling to correctly represent the complete Western zodiac by pictographs in the most common affected cultural contexts. This especially applies if the KDDI symbol differs from the common traditional pictograph, which is proposed as different symbol in such cases.
Remarks on some of the Western zodiac items (enumerated by the Latin name shown in fig. 2, which are identical to the names of the abstract symbols already encoded at $\mathrm{U}+2648$... 2653:

Taurus: The usual pictograph shows a full lateral view of the bull.
As a "Bull" is neither an "Ox" nor a "Cow", it is not unified with U+1F402 OX or U+1F404 COW, but a similar symbol BULL is proposed.
The KDDI symbol shows a bull's face, therefore this is proposed separately.

Gemini: The traditional pictograph shows two young men touching each other's bodies with one or both hands. Sometimes, two little boys are shown instead of men. Modern pictographs often show two women showing this posture. These forms are proposed separately. The KDDI symbol in fact is a smiley not in any way related to the traditional pictograph. Therefore, it is proposed separately as "emoticon" in the appropriate block.
Cancer: Pictographs showing a crab (like the KDDI symbol) are found as well as such showing a crayfish. Both forms are proposed, as they are clearly different when regarded as animal symbols rather than zodiac symbols.
Virgo: The traditional pictograph shows a young woman, most commonly in a sitting posture, holding sheaves (typically three) or a tree branch (typically with three twigs) in her hand. The KDDI symbol simply is a girl's picture (showing the face and the upper part of the body). As such a pictograph is also found elsewhere, this is proposed separately.
Libra: Mostly depicted simply as scales, but pictographs showing a man holding the scales also are found (see e.g. fig. 4 and 12 for ancient and modern examples). The first form can be unified with U+2696 SCALES, while the second form is proposed here.
Sagittarius: Mostly, the pictograph shows a centaur using a bow and arrow. A common variant shows a man using a bow and arrow, typically in a kneeling posture. The KDDI symbol shows only the bow and arrow, thus reducing the pictograph to a part symbolizing the whole. Consequently, all three symbols are proposed.

Capricorn: The Latin word "capricornus" denotes the alpine ibex (scientific name: capra ibex), also known by its German name "Steinbock" ("stone goat"), which occurs in the Alps and some mountainous areas of Southern Europe.
Therefore, European pictographs usually show this animal, which is identified by its remarkable curved horns.
In other areas, the pictographs show a "sea goat", a mythological creature being composed of the front part of a goat (with its two forelegs) and the rear part of a fish which postures its tail in a loop. According to the table shown in Fig. 2, this interpretation goes back to the Sumero-Babylonian one.
The KDDI symbol simply shows a goat face, which is considered a valid interpretation of the "sea goat" as, by its composition, the face of this creature is the one of a goat. Consequently, all three symbols are proposed.
Aquarius: The usual pictograph shows a water bearer (usually in a sitting posture), a man pouring water out of a jar or amphora. The KDDI symbol shows only an amphora, thus reducing the pictograph to a part symbolizing the whole. Consequently, both symbols are proposed.

Pisces: The usual pictograph shows a pair of fish pointing in opposite directions. (In fact, the Latin "pisces" is a plural form, as well as e.g. the German word "Fische" for this zodiac sign.) The KDDI symbol shows a single fish, which can be unified with U+1F41F FISH. Thus, the pair of fish is proposed only.

## 3. Proposed Characters

The glyphs presented here are explanatory.
It is expected that, after acceptance of this proposal, some of them will be redrawn by the creators of the glyphs of related pictographs already encoded, to achieve a homogenous style in the Unicode charts.

Remarks in parentheses are not intended to be copied into the final list of encoded characters. The given KDDI numbers are only relevant when the suggestion to also disunify Emoji is followed.

New block: Miscellaneous Symbols and Pictographs Supplement (1F900...1F9FF).
The proposed characters would be appropriate for the existing block "Miscellaneous Symbols and Pictographs (1F300...1F5FF), but current proposals (mainly regarding Wingdings/Webdings) have taken almost all available code positions there.
To avoid overlapping with these proposals, a new supplemental block is proposed here.

## Western Zodiac Pictographs

Other (already encoded) symbols belonging to this group are:
$\mathrm{U}+1 \mathrm{~F} 40 \mathrm{RAM}$
(KDDI F667) - (ARIES)

U+2696 scALES
(KDDI F66D) - (LIBRA)
See also the already encoded symbol:

$$
\mathrm{U}+1 \mathrm{~F} 41 \mathrm{~F} \text { FISH }
$$

(KDDI F672)

| $\widetilde{5 c}_{8 / 588}{ }^{2}$ | U+1F900 | $\begin{aligned} & \text { BULL } \\ & \rightarrow 2649 \text { TAURUS } \\ & \rightarrow \text { 1F402 OX } \\ & \rightarrow \text { 1F404 COW } \end{aligned}$ |
| :---: | :---: | :---: |
| 4.as | U+1F901 | BULL FACE <br> $\rightarrow 2649$ TAURUS <br> $\rightarrow$ 1F42E COW FACE <br> (KDDI F668) |
| kh | U+1F902 | TWO YOUNG MEN TOUCHING <br> $\rightarrow$ 264A GEMINI <br> $\rightarrow$ 1F46C TWO MEN HOLDING HANDS |
|  | U+1F903 | TWO BOYS TOUCHING $\rightarrow$ 264A GEMINI |
| 解 | U+1F904 | TWO YOUNG WOMEN TOUCHING <br> $\rightarrow$ 264A GEMINI <br> $\rightarrow$ 1F46D TWO WOMEN HOLDING HAN |


| 5is) | U+1F905 | CRAB <br> $\rightarrow$ 264B CANCER (KDDI F66A) |
| :---: | :---: | :---: |
| $\frac{2}{3}$ | U+1F906 | CRAYFISH <br> $\rightarrow$ 264B CANCER |
| (3) | U+1F907 | $\begin{aligned} & \text { LION } \\ & \rightarrow 264 \mathrm{C} \text { LEO } \\ & \text { (KDDI F66B) } \end{aligned}$ |
| 定 | U+1F908 | YOUNG WOMAN HOLDING SHEAVES <br> $\rightarrow$ 264D VIRGO |
| 霦 | U+1F909 | FRONT VIEW OF A YOUNG WOMAN <br> $\rightarrow$ 264D VIRGO <br> $\rightarrow$ 1F467 GIRL <br> $\rightarrow$ 1F479 WOMAN <br> (KDDI F66C) |
| 53 ${ }^{\text {a }}$ | U+1F90A | SCORPION <br> $\rightarrow$ 264F SCORPIUS <br> (KDDI F66E) |
| \% | U+1F90B | MAN HOLDING SCALES <br> $\rightarrow$ 264E LIBRA |
| 58 | U+1F90C | CENTAUR USING BOW AND ARROW <br> $\rightarrow 2650$ SAGITTARIUS |
| ${ }_{5}$ | U+1F90D | MAN USING BOW AND ARROW $\rightarrow 2650$ SAGITTARIUS |
| 8 | U+1F90E | BOW AND ARROW <br> $\rightarrow 2650$ SAGITTARIUS <br> (KDDI F66F) |
| $5$ | U+1F90F | ALPINE IBEX <br> = steinbock <br> $\rightarrow 2651$ CAPRICORN |
|  | U+1F910 | SEA GOAT WITH LOOPED FISH TAIL $\rightarrow 2651$ CAPRICORN |

[^0]```
(20)08
U+1F911 GOAT FACE
    ->2651 CAPRICORN
    (KDDI F670)
U+1F912 WATER BEARER POURING OUT JAR
    ->2652 AQUARIUS
U+1F913 AMPHORA
    ->2652 AQUARIUS
    (KDDI F671)

\section*{U+1F914 PAIR OF FISH FACING IN OPPOSITE DIRECTIONS \(\rightarrow 2653\) PISCES}

\section*{U+1F915 SERPENT BEARER}
```

$\rightarrow$ 26CE OPHIUCHUS
(KDDI F673)

```

\section*{Block: Emoticons}
(KDDI F669)
```


## Properties:

```
1F644;SMILING TWIN FACES;So;0;ON;;;;;N;;;;;
```

1F644;SMILING TWIN FACES;So;0;ON;;;;;N;;;;;
1F900;BULL;So;0;ON;;;;;N;;;;;
1F901;BULL FACE;So;0;ON;;;;;N;;;;;
1F902;TWO YOUNG MEN TOUCHING;So;0;ON;;;;;N;;;;;
1F903;TWO BOYS TOUCHING;So;0;ON;;;;;N;;;;;
1F904;TWO YOUNG WOMEN TOUCHING;So;0;ON;;;;;N;;;;;
1F905;CRAB;So;0;ON;;;;;N;;;;;
1F906;CRAYFISH;So;0;ON;;;;;N;;;;;
1F907;LION;So;0;ON;;;;;N;;;;;
1F908;YOUNG WOMAN HOLDING SHEAVES;So;0;ON;;;;;N;;;;;
1F909;FRONT VIEW OF A YOUNG WOMAN;So;0;ON;;;;;N;;;;;
1F90A;SCORPION;So;0;ON;;;;;N;;;;;
1F90B;MAN HOLDING SCALES;So;0;ON;;;;;N;;;;;
1F90C;CENTAUR USING BOW AND ARROW;So;0;ON;;;;;N;;;;;
1F90D;MAN USING BOW AND ARROW;So;0;ON;;;;;N;;;;;
1F90E;BOW AND ARROW;So;0;ON;;;;;N;;;;;
1F90F;ALPINE IBEX;So;0;ON;;;;;N;;;;;
1F910;SEA GOAT WITH LOOPED FISH TAIL;So;0;ON;;;;;N;;;;;
1F911;GOAT FACE;So;0;ON;;;;;N;;;;;
1F912;WATER BEARER POURING OUT JAR;So;0;ON;;;;;N;;;;;
1F913;AMPHORA;So;0;ON;;;;;N;;;;;
1F914;PAIR OF FISH FACING IN OPPOSITE DIRECTIONS;So;0;ON;;;;;N;;;;;
1F915;SERPENT BEARER;So;0;ON;;;;;N;;;;;

```
```

Proposal to encode pictorial symbols for the Western zodiac

## 4. Proposed changes for annotations of existing characters

```
    U+2696 SCALES
add:
    -> 264E LIBRA
    pictograph for the seventh of the signs of the Western zodiac
    (KDDI F66D)
    U+1F40F
add:
add:
    RAM
    ->2648 ARIES
        pictograph for the first of the signs of the Western zodiac
    (KDDI F667)
```


## 5. Suggested changes in EmojiSources.TXT

```
2648;F8A7;;F7DF
2649;F8A8;;F7E0
264A;F8A9;;F7E1
264B;F8AA;;F7E2
264C;F8AB;;F7E3
264D;F8AC;;F7E4
264E;F8AD;;F7E5
264F;F8AE;;F7E6
2650;F8AF;;F7E7
2651;F8B0;;F7E8
2652;F8B1;;F7E9
2653;F8B2;;F7EA
2696;;F66D;
26CE;;F673;F7EB
1F40F;;F667;
1F41F;F9F6;F672;F959
1F644;;F669;
1F901;;F668;
1F905;;F66A;
1F907;;F66B;
1F909;;F66C;
1F90A;;F66E;
1F90E;;F66F;
1F911;;F670;
1F913;;F671;
1F915;;F673;
```


## 6．Examples and Figures

Fig．1：From L2／11－415＂Unified Emoji Reference＂by Peter Edberg（2011－10－28）： Page header from p．1，excerpt from the table from p． 3 ．

| DoCo <br> Mo | KDDI | Soft－ <br> Bankk | Apple glyphs： <br> std（s），emoji | Unicd <br> glyph | Unicode codepoint，name，props |
| :--- | :--- | :--- | :--- | :--- | :--- |


| $\begin{array}{\|l\|l\|} \hline \text { F8A } \\ \text { " } 17 \end{array}$ | F667 | $\begin{array}{\|l\|l\|} \hline \text { F7DF } \\ \Upsilon \end{array}$ | $\checkmark, \nabla$ | $\gamma$ | 2648；ARIES；So； ＝ram |
| :---: | :---: | :---: | :---: | :---: | :---: |
| F8A8 | $\begin{array}{\|l\|l\|} \hline \text { F668 } \\ \hline \end{array}$ | $\begin{array}{\|l\|l\|} \hline \text { F7EO } \\ \gamma \end{array}$ | ૪，ర | ర | 2649；TAURUS；So； = bull |
| $\begin{array}{\|l} \hline F 8 A 9 \\ \Sigma \end{array}$ | $\begin{aligned} & \text { F669 } \\ & \hline \text { 喚 } \end{aligned}$ | $\begin{array}{\|l\|l\|l\|l\|} \hline \text { IIE1 } \end{array}$ | II，III | II | $\begin{aligned} & \text { 264A;GEMINI;So; } \\ & \text { = twins } \end{aligned}$ |
| $\begin{aligned} & \text { F8AA } \\ & 8 \end{aligned}$ |  | $\begin{array}{\|l\|} \hline \text { F7E2 } \\ 5 \end{array}$ | ஏ， | $\bigcirc$ | $\begin{aligned} & \text { 264B;CANCER;So; } \\ & =\text { crab } \end{aligned}$ |
| $\begin{aligned} & \text { F8AB } \\ & 06 \end{aligned}$ | $\begin{array}{\|l\|} \hline \text { F66B } \\ \hline \end{array}$ | $\begin{array}{\|l} \hline \text { F7E3 } \\ \AA \end{array}$ | ১，$\Omega$ | $\Omega$ | $\begin{aligned} & \begin{array}{l} \text { 264C;LEO;SO; } \\ =\text { lion } \end{array} \end{aligned}$ |
| $\begin{array}{\|l} \hline \begin{array}{l} \text { F8AC } \\ \\ \hline 1.8 \end{array} \\ \hline \end{array}$ | $\begin{array}{\|l} \hline \text { F66C } \\ 3 \end{array}$ | $\begin{aligned} & \text { F7E4 } \\ & \mathrm{me} \end{aligned}$ | lly m | In | 264D；VIRGO；So； <br> ＝virgin maiden |
| $\begin{aligned} & \text { F8AD } \\ & =12 \end{aligned}$ | F66D | F7E5 $\Omega$ | ת，$\Omega$ | $\Omega$ | $\begin{aligned} & \text { 264E;LIBRA;So; } \\ & =\text { scales } \end{aligned}$ |
| $\begin{array}{\|l\|l\|} \hline \mathrm{FBAE} \\ \mathrm{ITH} \\ \hline \end{array}$ | $\begin{aligned} & \mathrm{F} 6 \mathrm{E} \\ & \ggg 8 \end{aligned}$ | $\begin{array}{\|l} \hline \begin{array}{l} \text { F7E6 } \\ \text { m. } \end{array} \\ \hline \end{array}$ | $m, m$ | m | 264F；SCORPIUS；So； ＝scorpion |
| $\begin{aligned} & \hline \text { F8AF } \\ & 7_{7} \end{aligned}$ | $\begin{array}{\|l\|l\|} \hline \mathrm{F} 66 \mathrm{~F} \\ \mathrm{Q} \end{array}$ | $\begin{array}{\|l\|} \hline \text { F7E7 } \\ X \end{array}$ | $\chi^{\chi}$ ，х | $\chi^{7}$ | 2650；SAGITTARIUS；So； ＝archer |
| F8B0 | $\begin{array}{\|l} \hline F 670 \\ \text { 学 } \end{array}$ | $\begin{array}{\|l\|} \hline \text { F7E8 } \\ \text { V } \end{array}$ | Wo，$D_{0}$ | Yo | 2651；CAPRICORN；So； ＝goat |
| $\begin{array}{\|l} \hline \text { F8B1 } \\ ⿱ ⿱ 一 ⿻ 口 ⿰ 丨 丨 ⿱ 二 小 \end{array}$ |  | $\begin{array}{\|l\|l\|l\|} \hline \text { F7E9 } \\ m \end{array}$ | m， | m | 2652；AQUARIUS；So； <br> ＝water carrier |
| $\begin{aligned} & \hline \begin{array}{l} \text { F8B2 } \\ 3 \\ 96 \end{array} \end{aligned}$ | $\begin{array}{\|l} \mathrm{F} 672 \\ \mathbb{G} 0 \end{array}$ | $\begin{array}{\|l} \hline \text { F7EA } \\ \text { 年 } \end{array}$ | H，\＃ | $)$ | $\begin{aligned} & \begin{array}{l} \text { 2653;PISES;So; } \\ \text { = fish } \end{array} \end{aligned}$ |

Fig．2：From SC2／WG2 N3681＂Emoji Symbols：Background Data＂by Markus Scherer（2009－ 09－17），excerpt from the main table（KDDI being the $5^{\text {th }}$ column），from p．7．（See also fig．14）


Fig. 3: Listing the Western Zodiac on Wikipedia.
Retrieved 2011-11-01 from http://en.wikipedia.org/wiki/Zodiac

| № | Symbol | Long. | Latin name | English translation | Greek name | Sanskrit name | Sumero-Babylonian name ${ }^{[10]}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | $\checkmark$ | $0^{\circ}$ | Aries | The Ram | Kpıó/Kriós | Meșa (मेष) | MUL LU HुUN.GA "The Agrarian Worker", Dumuzi |
| 2 | ૪ | $30^{\circ}$ | Taurus | The Bull | Taũpoç/Tauros | Vriṣabha (वृष\%) | ${ }^{\text {MUL }} \mathrm{GU}_{4}$.AN.NA "The Steer of Heaven" |
| 3 | II | $60^{\circ}$ | Gemini | The Twins | Síounoı/Didymoe | Mithuna (मिथुन) | ${ }^{\text {MUL }}$ MAŠ.TAB.BA.GAL.GAL "The Great Twins" (Castor and Pollux) |
| 4 | 5 | $90^{\circ}$ | Cancer | The Crab | Kapкĩvoç/Karkinos | Karkata (कर्कट) | ${ }^{\text {MUL }}$ AL.LUL "The Crayfish" |
| 5 | 2 | $120^{\circ}$ | Leo | The Lion |  | Siṃha (सिह) | ${ }^{\text {MUL }}$ UR.GU.LA "The Lion" |
| 6 | mp | $150^{\circ}$ | Virgo | The Maiden | Пap日évoç/Parthénos | Kanyā (कन्या) | ${ }^{\text {MUL }}$ AB.SIN "The Furrow"; "The Furrow, the goddess Shala's ear of corn" |
| 7 | $\Omega$ | $180^{\circ}$ | Libra | The Scales | Zuyóc/Zygós | Tula (तुला) | zibanitum "The Scales" |
| 8 | m | $210^{\circ}$ | Scorpio | The Scorpion | £кортıо̧́/Skorpiós | Vrścika (वृाॅ्धिक) | $\mathrm{MUL}_{\text {GIR.TAB }}$ "The Scorpion" |
| 9 | $\chi^{7}$ | $240^{\circ}$ | Sagittarius | The (Centaur) Archer | Tó̧̧tņ/Toxótēs | Dhanus (धनुष) | MULPA.BIL.SAG, Nedu "soldier" |
| 10 | no | $270^{\circ}$ | Capricorn | "Goat-horned" (The Sea-Goat) |  | Makara (मकर) | MULSUHูUR.MAŠ "The Goat-Fish" |
| 11 | $=$ | $300^{\circ}$ | Aquarius | The WaterBearer | Yסрохо́oç/Hydrokhóos | Kumbha (कुम्भ) | MUL GU.LA "The Great One", later qâ "pitcher" |
| 12 | H | $330^{\circ}$ | Pisces | The Fish | 1X才ú $¢ /$ /lgthues | Mīna (मीन) | ${ }^{\text {MUL }}$ SIM.MAH "The Tail of the Swallow", later DU.NU.NU "fish-cord" |

Fig. 4: Mosaic pavement of a 6th century synagogue at Beit Alpha, Jezreel Valley, northern Israel. - Retrieved 2011-10-31 from: http://en.wikipedia.org/wiki/File:Beit Alpha.jpg


Fig. 5: Zodiac signs, 16th century , medieval woodcuts. - Retrieved 2011-10-31 from: http://en.wikipedia.org/wiki/File:Zodiac woodcut.png


Fig. 6: From a book by Barocius, 1585. - Retrieved 2011-10-31 from: http://www.horoscoper.net/astrology/zodiac.htm


Fig. 7: From a book from about 1800. - Retrieved 2011-10-31 from: http://karenswhimsy.com/zodiac-symbols.shtm

The Head and Face, ARIES.


Fig. 8: Illustration from an Ethiopian book. - Retrieved 2011-10-31 from:
http://tseday.wordpress.com/2008/09/14/ethiopian-astronomy/


Fig. 9: Illustration from an astrology webpage, original source not identified.
Retrieved 2011-10-31 from:
http://www.astrologycom.com/zodiac.html


Fig. 10: Illustration from an astrology-critical webpage, original source of the constituents not identified. - Retrieved 2011-10-31 from:
http://freddyo.com/new-zodiac-sign-ophiuchus-why-astrology-is-even-sillie-than-we-thought/uncategorized/


Fig. 11: Icons. - Retrieved 2011-10-31 from:
http://www.123rf.com/photo 9720690 abbildung-der-tierkreis-ikonen.html


Fig. 12: Tattoo designs. - Retrieved 2011-10-31 from:
http://www.tattoodonkey.com/astrology-zodiac-tattoo-designs-designsipg/tattoos.org*galleries*Astrology Zodiac Tattoos*astrology-zodiac-tattoo-designs.jpg/


Fig. 13: Tattoo designs. - Retrieved 2011-10-31 from: http://www.ryory.com/zodiac-tattoo/zodiak2-2


Fig. 14: Some pictographs for Ophiuchus. - From left to right:

- The KDDI pictograph (enlarged from fig. 2).
- Retrieved 2011-12-06 from http://hubblesource.stsci.edu/sources/illustrations/constellations/
- Reverse of the 10 ruble coin of Transnistria, 2007 edition. Retrieved 2012-12-06 from: http://colnect.com/en/coins/coin/22154-10 Ruble Ophiuchus-Transnistria
- Retrieved 2011-12-06 from http://connect.in.com/ophiuchus/photos-1953505-23514505.html
- Retrieved 2011-12-06 from http://www.eastbayastro.org/articles/lore/ophiuchus.htm


Fig. 15: Steinhausers Kempter Kalender 2012. - Kempten (Germany) 2011, ISBN 3-941869-18-3. This almanac, which claims having been published yearly since 1692, retains a traditional look while serving a (predominantly rural) audience which is addicted to a mélange of popular Catholic belief, astrology, and local superstition. - Excerpt from the inner title page, showing a table of the zodiac signs containing both pictographic and abstract signs.

Die 12 Eiertreigzeichen.

| عäng |  |  |
| :---: | :---: | :---: |
| Stier | $30^{\circ}$ | (am |
| 3 milling | $60^{\circ}$ |  |
| 欠rebz | $90^{\circ}$ | 3) |
| Eibwe | $120^{\circ}$ | \% |
| Jungfrau | $150^{\circ}$ | 3 ${ }^{\text {ch }}$ |
| $\mathfrak{B a a g e}$ | $180^{\circ}$ | 8 |
| Storpion | $210^{\circ}$ | प"\% |
| Schüte | $240^{\circ}$ |  |
| Steinboct | $270^{\circ}$ | 3 |
| Wafiermann | $300^{\circ}$ |  |
| Fiiche | 330 |  |

Fig. 16: ibid., p.8: Showing excerpts of the calendar page for April 2012 (the table header and the entries for the week starting 2012-04-15). It shows contrastive use of the pictographic and abstract zodiac signs: While the former are used for the position of the moon ( $4^{\text {th }}$ column), the latter are used for the position of the sun (marked by a green arrow).


Fig. 17: ibid., p.28: Showing the pictographical zodiac signs in running text.
Dämmerung im Sübweften fithtbar. or fommt am 25. im Sternbild zum Stillftand, feine Zufgänge erfolgen mun gegen 2 I Ubr. 24 leuchtet am früben $\mathfrak{l}$ beno hoch im Süiden.
 nun immer früber ein, zu Mionatzende bereitg furz nact)

## ISOIIEC 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:

## Proposal to encode pictorial symbols for the Western zodiac

2. Requester's name: $\qquad$
3. Requester type (Member body/Liaison/Individual contribution):

Karl Pentzlin
4. Submission date:
$\qquad$
5. Requester's reference (if applicable):

- .-.........................-. $2012-02-06$
$\qquad$

6. Choose one of the following:

This is a complete proposal:
(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): 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 and Pictographs; Emoticons
2. Number of characters in proposal:

23
3. Proposed category (select one from below - see section 2.2 of P\&P document):
$\begin{array}{llll}\text { A-Contemporary } & \text { X.- B.1-Specialized (small collection) } & \ldots-\ldots . . & \text { B.2-Specialized (large collection) } \\ \text { C-Major extinct } & \text { E-Minor extinct }\end{array}$

- G -Öb̄̈scure or questionable usage symbols
$\qquad$
F-Archaic Hieroglyphic or Ideographic $\qquad$

4. Is a repertoire including character names provided? $\qquad$
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P\&P document?
b. Are the character shapes attached in a legible form suitable for review?

5. Fonts related:
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?

The author, on request
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):

The author, on request

## 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)? $\qquad$ 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.

[^1]
## C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? 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.)?
If YES, with whom? There is no confined user community, the characters are for use by everybody If YES, available relevant documents: ................................................ text
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Yes Reference:

Everybody interested in astrology referring to the Western zodiac
4. The context of use for the proposed characters (type of use; common or rare) common

> Reference: ........................................................................... see text
5. Are the proposed characters in current use by the user community? Yes If YES, where? Reference:
see text
6. After giving due considerations to the principles in the $\mathrm{P} \& \mathrm{P}$ 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?


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?

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?

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


[^0]:    Proposal to encode pictorial symbols for the Western zodiac
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[^1]:    ${ }^{1}$ Form number: N3902-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)

