Revised proposal for dealing with the moon symbols problem

Kent Karlsson
2018-03-28

As per separate discussion, the moon symbols are here interpreted in a glyphic fashion, which means that several of them have two semantics, one for the Northern hemisphere, another for the Southern hemisphere. The opposite, semantic interpretation (as suggested in L2/17-304, having two mirror glyphs for several of these characters), has been rejected by the ESC and the UTC.

U+1F311-U+1F318 should be allowed to "take" a VS in order to distinguish between Northern and Southern hemisphere view in (semi)-realistic renderings of the Moon landscape in emoji style. For the new moon, the landscape is not visible from Earth, but may still be rendered for the character. Note that some implementations already do show a (semi)-realistic emoji rendering of the Moon landscape. See below.

The majority of the moon symbols have two meanings, according to this proposal: one for the Northern hemisphere, another for the Southern hemisphere. CLDR has UI strings ("translations") for emoji, including the moon symbols. So in CLDR it will be necessary to deal with this double meaning somehow, even though CLDR does not have any direct notion of hemisphere. What I can think of is to have countries in (or mostly in) the Northern hemisphere to go for the Northern hemisphere meaning, and likewise for countries in the Southern hemisphere. I.e., unless there is a VS to disambiguate. So, en_GB should have UI strings for the moon symbols for the Northern hemisphere, and en_AU have UI strings for the moon symbols for the Southern hemisphere. Etc. for every other language+country. That will be a fix-up and maintenance issue for CLDR.

Using "in quarters" naming

There are two naming schemes for the moon phases (barring more scientific approaches like "percent of visible Moon area that is sunlit"): "at (end of) quarters" and "in quarters". Both are in use with varying popularity in different regions. I think the "at quarters" approach is sufficiently covered by the formal names (except the astrological symbols, which apparently use the "in quarters" approach). So I'm suggesting the "in quarters" approach for the annotations suggested below.

http://www.dinstartsida.se/kalender/manfaser/
https://sv.wikipedia.org/wiki/M%C3%A5nfas#M%C3%A5nens_kvarter
https://is.wikipedia.org/wiki/Kvartilaskipti
https://de.wikipedia.org/wiki/Mondphase
https://www.schulferien.org/mondkalender/mondkalender_2018.html
https://kalender-365.de/mondkalender.php
https://kalender-365.de/lunar-calendar.php

The two last references use a special symbol for eclipsed (full, of course) moon. Someone might find it interesting to suggest a new character for that (with both non-emoji and emoji rendering).

Unicode 10.0 NamesList

263D   FIRST QUARTER MOON
    = alchemical symbol for silver
263E   LAST QUARTER MOON
    = alchemical symbol for silver
    x (power sleep symbol – 23FE)
    x (crescent moon – 1F319)

1F311   NEW MOON SYMBOL
    x (black circle – 25CF)
1F312   WAXING CRESCENT MOON SYMBOL
1F313   FIRST QUARTER MOON SYMBOL
    = half moon
    x (circle with left half black – 25D0)
1F314   WAXING GIBBOUS MOON SYMBOL
    = waxing moon
1F315   FULL MOON SYMBOL
    x (white circle – 25CB)
1F316   WANING GIBBOUS MOON SYMBOL
1F317   LAST QUARTER MOON SYMBOL
    x (circle with right half black – 25D1)
1F318   WANING CRESCENT MOON SYMBOL

1F319   CRESCENT MOON
    * may indicate either the first or last quarter moon
    x (first quarter moon – 263D)
    x (last quarter moon – 263E)

Proposed changes (in bold)

263D   FIRST QUARTER MOON
    = alchemical symbol for silver
    x (crescent moon – 1F319)
    x (waxing crescent moon symbol – 1F312)
    x (first quarter moon symbol – 1F313)

263E   LAST QUARTER MOON
    = alchemical symbol for silver
    x (power sleep symbol – 23FE)
    x (crescent moon – 1F319)
    x (waning crescent moon symbol – 1F318)
    x (last quarter moon symbol – 1F317)

```
1F311   NEW MOON SYMBOL
    x (black circle – 25CF)
1F312   WAXING CRESCENT MOON SYMBOL
    = moon in first quarter in the Northern hemisphere
    = moon in fourth quarter in the Southern hemisphere
    x (first quarter moon – 263D)
1F313   FIRST QUARTER MOON SYMBOL
    = waxing half moon in the Northern hemisphere
    = waning half moon in the Southern hemisphere
    x (circle with left half black – 25D0)
1F314   WAXING GIBBOUS MOON SYMBOL
    = moon in second quarter in the Northern hemisphere
    = moon in third quarter in the Southern hemisphere
1F315   FULL MOON SYMBOL
    ... also for eclipsed full moon, as there is (yet) no separate symbol for that...
1F316   WANING GIBBOUS MOON SYMBOL
    = moon in third quarter in the Northern hemisphere
    = moon in second quarter in the Southern hemisphere
    x (white circle – 25CB)
1F317   LAST QUARTER MOON SYMBOL
    = waning half moon in the Northern hemisphere
    = waxing half moon in the Southern hemisphere
    x (circle with right half black – 25D1)
1F318   WANING CRESCENT MOON SYMBOL
    = moon in fourth quarter in the Northern hemisphere
    = moon in first quarter in the Southern hemisphere
    x (last quarter moon – 263E)


1F319   CRESCENT MOON
    * may indicate either the first or last quarter moon
```
(that comment is not very helpful...; maybe a more glyph oriented comment, like "the crescent may be on the left or the right")
```
    x (first quarter moon – 263D)
    x (last quarter moon – 263E)
    x (waxing crescent moon symbol – 1F312)
    x (waning crescent moon symbol – 1F318)
```

Semi-realistic emoji glyphs

At least two sets of "Moon symbols" from major emoji glyph providers have semi-realistic depictions of the Moon landscape (also for the new moon symbol, not visible from Earth). Currently only as seen from from the northern hemisphere.

As noted in L2/17-304 and above, the same coarse image can be used for the "opposite" phase as seen from the southern hemisphere. But the semi-realistic Moon lanscape detail will then be wrong from that viewpoint, since the (real) Moon has an asymmetric landscape and that is of course reflected in the semi-realistic glyphs.

(Image from https://moon.nasa.gov/resources/54/, scaled down to fit on page.)

Here are two examples of semi-realistic emoji glyph sets for the Moon phase symbols (not 100% accurate in the realism, but that is another matter):

Apple   Messenger (Facebook)

U+1F311   new moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F311)

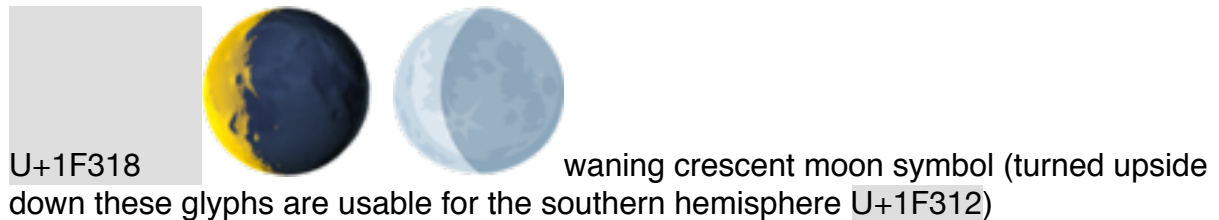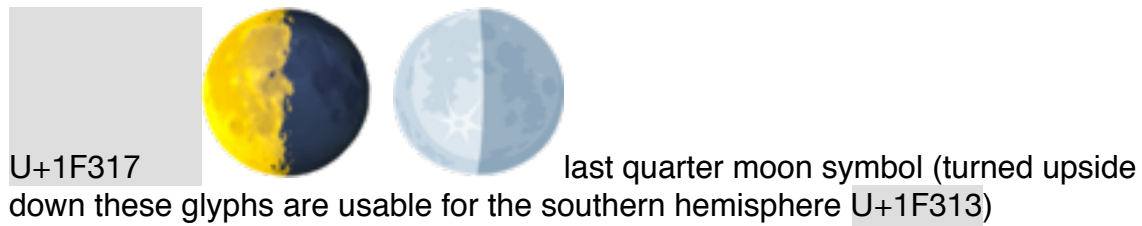U+1F312   waxing crescent moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F318)

U+1F313   first quarter moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F317)

U+1F314   waxing gibbous moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F316)

U+1F315   full moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F315)

U+1F316   waning gibbous moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F314)

U+1F317 last quarter moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F313)

U+1F318 waning crescent moon symbol (turned upside down these glyphs are usable for the southern hemisphere U+1F312)

One way to deal with this is to "forbid"/recommend against (semi-realistic) Moon landscape details in the images for these characters. However, that would be a pity.

Another option is to accept that the landscape depictions will be wrong for the southern hemisphere view, and just let that be. However, that would also be a pity, now that the glyph designers have gone to the trouble of including the semi-realistic landscape details at all in some sets of Moon symbol glyphs.

Finally, one can (if/when standardised in Unicode), use a variation selector to select the northern hemisphere variant or the southern hemisphere variant (landscape change only, not overall lit side, as that is handled by selecting a different character in the Moon phase set).

The text (non-emoji) style glyphs for these characters should never include landscape details, so using the northern hemisphere variant or the southern hemisphere variant selector implies emoji style. Thus, we can use the use the text/ emoji style selectors, with one addition for second variant of emoji style. That way there is no need to consider combining text/emoji VS with a northern/southern view VS for the Moon phase characters.

I propose the following changes to **emoji/charts/emoji-variants.html** and the corresponding datafile, **emoji-variation-sequences.txt**.

- Text style variant selector: **U+FE0E**; <u>allow for all these Moon phase symbols</u>; hemisphere neutral (w.r.t. Moon landscape, i.e., no hint of landscape, not even fantasy one) plain glyphs.

- Emoji style variant selector: **U+FE0F**; use for northern hemisphere glyphs w.r.t. the Moon phase symbols, like those given above.

- Emoji style second variant selector (new in this proposal): **U+FE0D**; use for southern hemisphere glyphs w.r.t. the Moon phase symbols (use turned glyphs as listed above, so the WAXING characters are used for waning for the southern hemisphere view and the WANING characters are used for waxing for the southern hemisphere view).

U+FE0D may well be usable for other emoji characters as well, for a second style of an emoji character, though that is not investigated here.

Current snippet from **emoji-variation-sequences.txt**:

```
1F315 FE0E ; text style;  # (6.0) FULL MOON SYMBOL
1F315 FE0F ; emoji style; # (6.0) FULL MOON SYMBOL
```

Proposed corresponding snippet for **emoji-variation-sequences.txt**:

```
1F311 FE0D ; emoji style 2;  # (n.0) NEW MOON SYMBOL
1F311 FE0E ; text style;  # (n.0) NEW MOON SYMBOL
1F311 FE0F ; emoji style; # (n.0) NEW MOON SYMBOL

1F312 FE0D ; emoji style 2;  # (n.0) WAXING CRESCENT MOON SYMBOL
1F312 FE0E ; text style;  # (n.0) WAXING CRESCENT MOON SYMBOL
1F312 FE0F ; emoji style; # (n.0) WAXING CRESCENT MOON SYMBOL

1F313 FE0D ; emoji style 2;  # (n.0) FIRST QUARTER MOON SYMBOL
1F313 FE0E ; text style;  # (n.0) FIRST QUARTER MOON SYMBOL
1F313 FE0F ; emoji style; # (n.0) FIRST QUARTER MOON SYMBOL

1F314 FE0D ; emoji style 2;  # (n.0) WAXING GIBBOUS MOON SYMBOL
1F314 FE0E ; text style;  # (n.0) WAXING GIBBOUS MOON SYMBOL
1F314 FE0F ; emoji style; # (n.0) WAXING GIBBOUS MOON SYMBOL

1F315 FE0D ; emoji style 2;  # (n.0) FULL MOON SYMBOL
1F315 FE0E ; text style;  # (6.0) FULL MOON SYMBOL
1F315 FE0F ; emoji style; # (6.0) FULL MOON SYMBOL

1F316 FE0D ; emoji style 2;  # (n.0) WANING GIBBOUS MOON SYMBOL
1F316 FE0E ; text style;  # (n.0) WANING GIBBOUS MOON SYMBOL
1F316 FE0F ; emoji style; # (n.0) WANING GIBBOUS MOON SYMBOL

1F317 FE0D ; emoji style 2;  # (n.0) LAST QUARTER MOON SYMBOL
1F317 FE0E ; text style;  # (n.0) LAST QUARTER MOON SYMBOL
1F317 FE0F ; emoji style; # (n.0) LAST QUARTER MOON SYMBOL

1F318 FE0D ; emoji style 2;  # (n.0) WANING CRESCENT MOON SYMBOL
1F318 FE0E ; text style;  # (n.0) WANING CRESCENT MOON SYMBOL
1F318 FE0F ; emoji style; # (n.0) WANING CRESCENT MOON SYMBOL
```