# LATEX SUPPORT FOR EREWHON

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*Erewhon* is a font package based largely on Andrey V. Panov's *Heuristica*, but with so many changes that it is no longer strictly compatible with that package, and is offered instead as an enhanced alternative. (*Heuristica* extended the *Utopia* font family made available by the TEX Users' Group, adding many accented glyphs, Cyrillic glyphs, ligatures, superior and oldstyle fixed-width figures in all styles, and Small Caps in Regular style only. It is widely distributed as a free font collection in OpenType, TrueType and Type1 formats.) *Erewhon* is provided in OpenType and Type1 formats with LATEX support files in encodings T1, TS1, LY1, OT2, T2A, T2B and T2C. Changes made in the transition from *Heuristica* to *Erewhon* include:

- *slanted* as well as *Italic* shapes;
- SMALL CAPS in **BOLD** as well as REGULAR upright shapes, with *ITALIC* and *SLANTED SMALL CAPS* shapes from the slanted variants;
- expanded lookup tables in the `.otf` files for users of XeLaTeX and LuaLaTeX;
- a number of f-ligatures have been modified, and a `T_h` ligature added;
- proportionally spaced figures (lining and oldstyle), adding to the existing tabold-style figures;
- full collections of superior lowercase letters (including è as ᵉ and é as ᵉ), mainly for the benefit of languages in which those are in common use—e.g., French, Spanish;
- size reduced by 6% from Heuristica, which matched the old version of Utopia—the new size matches that of Adobe's commercial UtopiaStd;
- shapes of some oldstyle figures modified to have more of an oldstyle appearance;
- fraction macros based on the new numerator and denominator figures;
- the bold upright face has been made less cramped.

The `newtx` package has been modified, as of version 1.26, to offer a new option `utopia` (or, equivalently, `heuristica` or `erewhon`) that uses math italic glyphs taken from Utopia and oldstyle figures from *Erewhon*. Its slanted Greek alphabets are constructed from the `txfonts` slanted Greek letters by reducing their italic angle from 15.5° to 13°, matching Utopia's italic angle. So, for Erewhon text and matching math, you can use[1]:

*Date*: March 14, 2017.

[1]There is most likely also a way to use `MathDesign` or `fourier` with at least partial compatibility.

```
% load babel package and options before erewhon
\usepackage[p,osf,scaled=.98,space]{erewhon}
\usepackage[varqu,varl]{inconsolata} % typewriter
\usepackage[type1,scaled=.95]{cabin} % sans serif like Gill Sans
\usepackage[utopia,vvarbb]{newtxmath}
```

The effect of the options `p,osf` is to force the default figure style in `erewhon` text to be proportional oldstyle 0123456789 while using lining figures 0123456789 in math mode. If no options are specified, tabular lining figures will be used throughout.

Options available:

- The option `scaled` allows you to change the scale. E.g., if you want *Erewhon* to render at the same size as the original *Utopia* or *Heuristica*, use `scaled=1.064`.
- The option `proportional`, or, equivalently, `p`, specifies the use of proportional rather than the default tabular figures.
- The `space` option allows you to specify a factor by which to increase the interword spacing, which is, IMO, a bit tight.
- The option `oldstyle`, or, equivalently, `osf`, specifies oldstyle figures in text mode—math mode always uses tabular lining figures. By itself, `osf` results in tabular oldstyle figures unless you also specify the option `p`, or `proportional`.
- The option `scosf` changes the figure style to `osf` only within small caps.
- The option `sups` changes the footnote marker style to use the superior figures from *Erewhon* rather than the default superscripts based on reduced lining figures, which usually appear too light. (The `superiors` package offers further options.)

*Erewhon* is so austere for a text font and *Inconsolata* is so fancy for a typewriter font that you may find they blend together all too well. For more of a distinction replace the `inconsolata` line above with

```
\usepackage{zlmtt} % serifed typewriter font extending cmtt
```

As Utopia text is a rather cramped, you might try applying a small amount of letterspacing (tracking) and increasing the interword spacing by means of the `microtype` package. As of version 1.08, this provides a number of ways to modify interword spacing by specifying one or more of the options described below. Erewhon word-spacing is governed by three quantities:

- `spacing` (default value `.211em`), `\fontdimen2` of the main text font.
- `stretch` (default value `1.055em`), `\fontdimen3` of the main text font.
- `shrink` (default value `.0703em`), `\fontdimen4` of the main text font.

(Note the use of em values rather than absolute values so that word spacing responds to scale changes.) You may modify these values individually or by setting a value for the option space or by specifying looser or loosest.

- Option spacing=.24em would change the spacing from .211em to .24em.
- Option stretch=.14em would change the stretch from .1055em to .14em.
- Option shrink=.1em would change the shrink from .0703em to .1em.
- Option space=1.2 would multiply each word-spacing parameter by the factor 1.2. (The option space with no value would result in a factor of 1.23, leading to a spacing value of close to .26em. This documentation uses option space with no value specified.)
- Option looser would change the three parameters to .25em, .125em, .1em respectively.
- Option loosest would change the three parameters to .28em, .125em, .13em respectively.

MACROS:

- \textlf and \texttlf render their arguments in proportional and tabular lining figures respectively, no matter what the default figure style. E.g., \textlf{345} produces 345.
- \textosf and \texttosf render their arguments in proportional and tabular oldstyle figures respectively, no matter what the default figure style. For example, \textosf{345} produces 345.
- \textsu renders its argument in superior figures, no matter what the default figure style. E.g., \textsu{345} produces $^{345}$.
- \textin renders its argument in inferior figures, no matter what the default figure style. E.g., \textin{345} produces $_{345}$.
- \textnu renders its argument in numerator figures, no matter what the default figure style. E.g., \textnu{345} produces $^{345}$.
- \textde renders its argument in denominator figures, no matter what the default figure style. E.g., \textde{345} produces $_{345}$.
- \textfrac renders its two arguments as a vulgar fraction, using \textnu for the numerator and \textde for the denominator. E.g., \textfrac{31}{64} produces $^{31}\!/\!_{64}$.

VERY BRIEF, NONSENSICAL MATH EXAMPLE:
Let $B(X)$ be the set of blocks of $\Lambda_X$ and let $b(X) := |B(X)|$ so that $\hat{\phi} = \sum_{Y \subset X} (-1)^{b(Y)} b(Y)$.

## Glyph Coverage Examples

**Erewhon-Regular-tlf-ot2**

| | ´0 | ´1 | ´2 | ´3 | ´4 | ´5 | ´6 | ´7 | |
|---|---|---|---|---|---|---|---|---|---|
| ´00x | Њ 0 | Љ 1 | Ц 2 | Э 3 | І 4 | Є 5 | Ъ 6 | Ћ 7 | ″0x |
| ´01x | њ 8 | љ 9 | ц 10 | э 11 | і 12 | є 13 | ђ 14 | ћ 15 | |
| ´02x | Ю 16 | Ж 17 | Й 18 | Ё 19 | Ѵ 20 | Ѳ 21 | S 22 | Я 23 | ″1x |
| ´03x | ю 24 | ж 25 | й 26 | ё 27 | ѵ 28 | ѳ 29 | s 30 | я 31 | |
| ´04x | ¨ 32 | ! 33 | ” 34 | ћ 35 | ˘ 36 | % 37 | ´ 38 | ’ 39 | ″2x |
| ´05x | ( 40 | ) 41 | * 42 | ђ 43 | , 44 | - 45 | . 46 | / 47 | |
| ´06x | 0 48 | 1 49 | 2 50 | 3 51 | 4 52 | 5 53 | 6 54 | 7 55 | ″3x |
| ´07x | 8 56 | 9 57 | : 58 | ; 59 | « 60 | ı 61 | » 62 | ? 63 | |
| ´10x | ˇ 64 | А 65 | Б 66 | Ц 67 | Д 68 | Е 69 | Ф 70 | Г 71 | ″4x |
| ´11x | Х 72 | И 73 | Ј 74 | К 75 | Л 76 | М 77 | Н 78 | О 79 | |
| ´12x | П 80 | Ч 81 | Р 82 | С 83 | Т 84 | У 85 | В 86 | Щ 87 | ″5x |
| ´13x | Ш 88 | Ы 89 | З 90 | [ 91 | “ 92 | ] 93 | Ь 94 | Ъ 95 | |
| ´14x | ‘ 96 | а 97 | б 98 | ц 99 | д 100 | е 101 | ф 102 | г 103 | ″6x |
| ´15x | х 104 | и 105 | ј 106 | к 107 | л 108 | м 109 | н 110 | о 111 | |
| ´16x | п 112 | ч 113 | р 114 | с 115 | т 116 | у 117 | в 118 | щ 119 | ″7x |
| ´17x | ш 120 | ы 121 | з 122 | – 123 | — 124 | № 125 | ь 126 | ъ 127 | |
| | ″8 | ″9 | ″A | ″B | ″C | ″D | ″E | ″F | |

(This 7-bit encoding is intended for users lacking a Cyrillic keyboard. For further information, consult the documentation for the package `nimbus15`.)

## Erewhon-Regular-tlf-t2a

| | ´0 | ´1 | ´2 | ´3 | ´4 | ´5 | ´6 | ´7 | |
|---|---|---|---|---|---|---|---|---|---|
| ´00x | ` 0 | ´ 1 | ˆ 2 | ˜ 3 | ¨ 4 | ″ 5 | ° 6 | ˇ 7 | ″0x |
| ´01x | ˘ 8 | ¯ 9 | ˙ 10 | ¸ 11 | ˛ 12 | I 13 | fb 14 | fh 15 | |
| ´02x | “ 16 | ” 17 | fj 18 | fk 19 | ˝ 20 | – 21 | — 22 | Th 23 | ″1x |
| ´03x | 24 | ı 25 | ȷ 26 | ff 27 | fi 28 | fl 29 | ffi 30 | ffl 31 | |
| ´04x | ␣ 32 | ! 33 | " 34 | # 35 | $ 36 | % 37 | & 38 | ’ 39 | ″2x |
| ´05x | ( 40 | ) 41 | * 42 | + 43 | , 44 | - 45 | . 46 | / 47 | |
| ´06x | 0 48 | 1 49 | 2 50 | 3 51 | 4 52 | 5 53 | 6 54 | 7 55 | ″3x |
| ´07x | 8 56 | 9 57 | : 58 | ; 59 | < 60 | = 61 | > 62 | ? 63 | |
| ´10x | @ 64 | A 65 | B 66 | C 67 | D 68 | E 69 | F 70 | G 71 | ″4x |
| ´11x | H 72 | I 73 | J 74 | K 75 | L 76 | M 77 | N 78 | O 79 | |
| ´12x | P 80 | Q 81 | R 82 | S 83 | T 84 | U 85 | V 86 | W 87 | ″5x |
| ´13x | X 88 | Y 89 | Z 90 | [ 91 | \ 92 | ] 93 | ^ 94 | _ 95 | |
| ´14x | ‘ 96 | a 97 | b 98 | c 99 | d 100 | e 101 | f 102 | g 103 | ″6x |
| ´15x | h 104 | i 105 | j 106 | k 107 | l 108 | m 109 | n 110 | o 111 | |
| ´16x | p 112 | q 113 | r 114 | s 115 | t 116 | u 117 | v 118 | w 119 | ″7x |
| ´17x | x 120 | y 121 | z 122 | { 123 | \| 124 | } 125 | ~ 126 | - 127 | |
| ´20x | Ґ 128 | Ғ 129 | Ђ 130 | Ћ 131 | Њ 132 | Ӂ 133 | 134 | Љ 135 | ″8x |
| ´21x | Ї 136 | Ҟ 137 | 138 | 139 | Æ 140 | Ң 141 | Ҥ 142 | S 143 | |
| ´22x | Ө 144 | Ҫ 145 | Ў 146 | Ү 147 | Ұ 148 | Ҳ 149 | Ҷ 150 | 151 | ″9x |
| ´23x | Ҷ 152 | Є 153 | Ә 154 | Ӊ 155 | Ё 156 | № 157 | ¤ 158 | § 159 | |
| ´24x | ґ 160 | ғ 161 | ђ 162 | ћ 163 | h 164 | ӂ 165 | 166 | љ 167 | ″Ax |
| ´25x | ї 168 | ҟ 169 | 170 | 171 | æ 172 | ң 173 | ҥ 174 | s 175 | |
| ´26x | ө 176 | ҫ 177 | ў 178 | ү 179 | ұ 180 | ҳ 181 | ҷ 182 | 183 | ″Bx |
| ´27x | ҷ 184 | є 185 | ә 186 | ӊ 187 | ё 188 | „ 189 | « 190 | » 191 | |
| ´30x | А 192 | Б 193 | В 194 | Г 195 | Д 196 | Е 197 | Ж 198 | З 199 | ″Cx |
| ´31x | И 200 | Й 201 | К 202 | Л 203 | М 204 | Н 205 | О 206 | П 207 | |
| ´32x | Р 208 | С 209 | Т 210 | У 211 | Ф 212 | Х 213 | Ц 214 | Ч 215 | ″Dx |
| ´33x | Ш 216 | Щ 217 | Ъ 218 | Ы 219 | Ь 220 | Э 221 | Ю 222 | Я 223 | |
| ´34x | а 224 | б 225 | в 226 | г 227 | д 228 | е 229 | ж 230 | з 231 | ″Ex |
| ´35x | и 232 | й 233 | к 234 | л 235 | м 236 | н 237 | о 238 | п 239 | |
| ´36x | р 240 | с 241 | т 242 | у 243 | ф 244 | х 245 | ц 246 | ч 247 | ″Fx |
| ´37x | ш 248 | щ 249 | ъ 250 | ы 251 | ь 252 | э 253 | ю 254 | я 255 | |
| | ″8 | ″9 | ″A | ″B | ″C | ″D | ″E | ″F | |

## Erewhon-Regular-tlf-t2b

| | ´0 | ´1 | ´2 | ´3 | ´4 | ´5 | ´6 | ´7 | |
|---|---|---|---|---|---|---|---|---|---|
| ´00x | ` 0 | ´ 1 | ˆ 2 | ˜ 3 | ¨ 4 | ″ 5 | ° 6 | ˇ 7 | ″0x |
| ´01x | ˘ 8 | ¯ 9 | ˙ 10 | ¸ 11 | ˛ 12 | I 13 | fb 14 | fh 15 | |
| ´02x | “ 16 | ” 17 | fj 18 | fk 19 | ˘ 20 | – 21 | — 22 | Th 23 | ″1x |
| ´03x | 24 | ı 25 | ȷ 26 | ff 27 | fi 28 | fl 29 | ffi 30 | ffl 31 | |
| ´04x | ␣ 32 | ! 33 | " 34 | # 35 | $ 36 | % 37 | & 38 | ’ 39 | ″2x |
| ´05x | ( 40 | ) 41 | * 42 | + 43 | , 44 | - 45 | . 46 | / 47 | |
| ´06x | 0 48 | 1 49 | 2 50 | 3 51 | 4 52 | 5 53 | 6 54 | 7 55 | ″3x |
| ´07x | 8 56 | 9 57 | : 58 | ; 59 | < 60 | = 61 | > 62 | ? 63 | |
| ´10x | @ 64 | A 65 | B 66 | C 67 | D 68 | E 69 | F 70 | G 71 | ″4x |
| ´11x | H 72 | I 73 | J 74 | K 75 | L 76 | M 77 | N 78 | O 79 | |
| ´12x | P 80 | Q 81 | R 82 | S 83 | T 84 | U 85 | V 86 | W 87 | ″5x |
| ´13x | X 88 | Y 89 | Z 90 | [ 91 | \ 92 | ] 93 | ^ 94 | _ 95 | |
| ´14x | ‘ 96 | a 97 | b 98 | c 99 | d 100 | e 101 | f 102 | g 103 | ″6x |
| ´15x | h 104 | i 105 | j 106 | k 107 | l 108 | m 109 | n 110 | o 111 | |
| ´16x | p 112 | q 113 | r 114 | s 115 | t 116 | u 117 | v 118 | w 119 | ″7x |
| ´17x | x 120 | y 121 | z 122 | { 123 | \| 124 | } 125 | ~ 126 | - 127 | |
| ´20x | 128 | Ғ 129 | 130 | Ҕ 131 | Һ 132 | Ӂ 133 | 134 | Ӡ 135 | ″8x |
| ´21x | Љ 136 | Ҟ 137 | 138 | Ҕ 139 | 140 | Ң 141 | Ҥ 142 | Ӈ 143 | |
| ´22x | Ө 144 | 145 | Ў 146 | Ү 147 | 148 | Ҳ 149 | 150 | 151 | ″9x |
| ´23x | Ҷ 152 | Ҥ 153 | Ә 154 | 155 | Ё 156 | № 157 | ¤ 158 | § 159 | |
| ´24x | 160 | ғ 161 | 162 | ҕ 163 | h 164 | ӂ 165 | 166 | ӡ 167 | ″Ax |
| ´25x | љ 168 | ҟ 169 | 170 | ҕ 171 | 172 | ң 173 | ҥ 174 | ӈ 175 | |
| ´26x | ө 176 | 177 | ў 178 | ү 179 | 180 | ҳ 181 | 182 | 183 | ″Bx |
| ´27x | ҷ 184 | ҥ 185 | ә 186 | 187 | ё 188 | „ 189 | « 190 | » 191 | |
| ´30x | А 192 | Б 193 | В 194 | Г 195 | Д 196 | Е 197 | Ж 198 | З 199 | ″Cx |
| ´31x | И 200 | Й 201 | К 202 | Л 203 | М 204 | Н 205 | О 206 | П 207 | |
| ´32x | Р 208 | С 209 | Т 210 | У 211 | Ф 212 | Х 213 | Ц 214 | Ч 215 | ″Dx |
| ´33x | Ш 216 | Щ 217 | Ъ 218 | Ы 219 | Ь 220 | Э 221 | Ю 222 | Я 223 | |
| ´34x | а 224 | б 225 | в 226 | г 227 | д 228 | е 229 | ж 230 | з 231 | ″Ex |
| ´35x | и 232 | й 233 | к 234 | л 235 | м 236 | н 237 | о 238 | п 239 | |
| ´36x | р 240 | с 241 | т 242 | у 243 | ф 244 | х 245 | ц 246 | ч 247 | ″Fx |
| ´37x | ш 248 | щ 249 | ъ 250 | ы 251 | ь 252 | э 253 | ю 254 | я 255 | |
| | ″8 | ″9 | ″A | ″B | ″C | ″D | ″E | ″F | |

## Erewhon-Regular-tlf-t2c

| | ´0 | ´1 | ´2 | ´3 | ´4 | ´5 | ´6 | ´7 | |
|---|---|---|---|---|---|---|---|---|---|
| ´00x | ̀ 0 | ́ 1 | ̂ 2 | ̃ 3 | ̈ 4 | ″ 5 | ° 6 | ̌ 7 | ″0x |
| ´01x | ̆ 8 | ̄ 9 | ̇ 10 | ̧ 11 | ̛ 12 | I 13 | fb 14 | fh 15 | |
| ´02x | “ 16 | ” 17 | fj 18 | fk 19 | ̑ 20 | – 21 | — 22 | Th 23 | ″1x |
| ´03x | 24 | ı 25 | ȷ 26 | ff 27 | fi 28 | fl 29 | ffi 30 | ffl 31 | |
| ´04x | ␣ 32 | ! 33 | " 34 | # 35 | $ 36 | % 37 | & 38 | ’ 39 | ″2x |
| ´05x | ( 40 | ) 41 | * 42 | + 43 | , 44 | - 45 | . 46 | / 47 | |
| ´06x | 0 48 | 1 49 | 2 50 | 3 51 | 4 52 | 5 53 | 6 54 | 7 55 | ″3x |
| ´07x | 8 56 | 9 57 | : 58 | ; 59 | < 60 | = 61 | > 62 | ? 63 | |
| ´10x | @ 64 | A 65 | B 66 | C 67 | D 68 | E 69 | F 70 | G 71 | ″4x |
| ´11x | H 72 | I 73 | J 74 | K 75 | L 76 | M 77 | N 78 | O 79 | |
| ´12x | P 80 | Q 81 | R 82 | S 83 | T 84 | U 85 | V 86 | W 87 | ″5x |
| ´13x | X 88 | Y 89 | Z 90 | [ 91 | \ 92 | ] 93 | ^ 94 | _ 95 | |
| ´14x | ‘ 96 | a 97 | b 98 | c 99 | d 100 | e 101 | f 102 | g 103 | ″6x |
| ´15x | h 104 | i 105 | j 106 | k 107 | l 108 | m 109 | n 110 | o 111 | |
| ´16x | p 112 | q 113 | r 114 | s 115 | t 116 | u 117 | v 118 | w 119 | ″7x |
| ´17x | x 120 | y 121 | z 122 | { 123 | \| 124 | } 125 | ~ 126 | - 127 | |
| ´20x | 128 | Ҷ 129 | Ҭ 130 | Ҕ 131 | ɦ 132 | 133 | 134 | Ӡ 135 | ″8x |
| ´21x | 136 | Ҟ 137 | 138 | Ҡ 139 | 140 | Ӈ 141 | 142 | Ӎ 143 | |
| ´22x | Ө 144 | Ҽ 145 | Ҿ 146 | 147 | 148 | Ӽ 149 | Ҵ 150 | Ѡ 151 | ″9x |
| ´23x | Ҷ 152 | 153 | Ә 154 | 155 | Ё 156 | № 157 | ¤ 158 | § 159 | |
| ´24x | 160 | ҷ 161 | ҭ 162 | ҕ 163 | h 164 | 165 | 166 | ӡ 167 | ″Ax |
| ´25x | 168 | ҟ 169 | 170 | ҡ 171 | 172 | ӈ 173 | 174 | ӎ 175 | |
| ´26x | ө 176 | ҽ 177 | ҿ 178 | 179 | 180 | ӽ 181 | ҵ 182 | ѡ 183 | ″Bx |
| ´27x | ҷ 184 | 185 | ә 186 | 187 | ё 188 | „ 189 | « 190 | » 191 | |
| ´30x | А 192 | Б 193 | В 194 | Г 195 | Д 196 | Е 197 | Ж 198 | З 199 | ″Cx |
| ´31x | И 200 | Й 201 | К 202 | Л 203 | М 204 | Н 205 | О 206 | П 207 | |
| ´32x | Р 208 | С 209 | Т 210 | У 211 | Ф 212 | Х 213 | Ц 214 | Ч 215 | ″Dx |
| ´33x | Ш 216 | Щ 217 | Ъ 218 | Ы 219 | Ь 220 | Э 221 | Ю 222 | Я 223 | |
| ´34x | а 224 | б 225 | в 226 | г 227 | д 228 | е 229 | ж 230 | з 231 | ″Ex |
| ´35x | и 232 | й 233 | к 234 | л 235 | м 236 | н 237 | о 238 | п 239 | |
| ´36x | р 240 | с 241 | т 242 | у 243 | ф 244 | х 245 | ц 246 | ч 247 | ″Fx |
| ´37x | ш 248 | щ 249 | ъ 250 | ы 251 | ь 252 | э 253 | ю 254 | я 255 | |
| | ″8 | ″9 | ″A | ″B | ″C | ″D | ″E | ″F | |