The Symbol Font wasy

Roland Waldi
Institut für Experimentelle Kernphysik
Universität Karlsruhe
Physikhochhaus, P.O.Box 6980
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The font wasy contains all lasy characters, and a lot more symbols. New characters were modified from the mf files of the standard \TeX fonts, and many were designed from scratch. Metafont sources for 5–10pt and a bold 10pt font are available.

An extension to PLAIN-\TeX for using the fonts is included in the file wasyfont.tex. This can probably be used in \LaTeX documents, but a new \LaTeX format with the bindings already included and with wasy replacing the lasy font would be the superior solution. This version includes all lasy characters at the proper codes (causing some incompatibilities with version 1 of wasy) to make such a procedure easy. The file wasyfont.2 contains substitutes for some macros of wasyfont.tex to be used at installations, that do not support the wasy fonts.

A list of characters with their bindings in wasyfont.tex follows. Some macros are actually compositions of several characters useful in the given context. Macros using symbols which are already available from standard \TeX fonts are also included; these are marked with *.

**general symbols**

\male \female
\currency \cent
\lozenge \kreuz
\smiley \blacksmiley
\frownie \smiley
\checked \brokenvert
\diameter \invdiameter
\phone \recorder
\clock \permil
\bell \ataribox
\pointer \lightning
\agemO

**diagrams**

\photon \gluon

**music notes**

\eighthnote \quarternote
electrical engineering
\( AC \sim HF \approx \)

APL
\( \text{APLup} \uparrow \text{APLdown} \downarrow \)
\( \text{APLbox} \square \text{APLinv} \heartsuit \)
\( \text{APLleftarrowbox} \leftarrow \text{APLrightarrowbox} \rightarrow \)
\( \text{APLinput} \larrow \text{APLminus}^* - \)
\( \text{APLog} \odot \text{APLstar} \ast \)
\( \text{APLvert}^* \mid \text{APLvert}\{\text{APLdown}\} \nmid \)
\( \text{APLnot}^* \sim \text{APLnot}\{\text{APLdown}\} \nmid \)
\( \text{APLnot}\{\text{land}\} \& \text{APLnot}\{\text{lor}\} \lor \)
\( \text{APLcirc}^* \odot \text{APLcirc}\{\text{bot}\} \odot \)
\( \text{notbackslash}^* \slash \text{notslash}^* \slash \)
\( \text{APLcomment} \circ \)

astronomy
\( \text{ascnode} \bigcirc \text{descnode} \bigcirc \)
\( \text{vernal} \circ \text{astrosun}^* \odot \)
\( \text{newmoon} \bullet \text{fullmoon} \circ \)
\( \text{leftmoon} \odot \text{rightmoon} \odot \)
\( \text{mercury} \♀ \text{venus} \♀ \)
\( \text{mars} \♂ \text{jupiter} \♀ \)
\( \text{saturn} \♀ \text{uranus} \♀ \)
\( \text{neptune} \♀ \text{pluto} \♀ \)
\( \text{earth} \♀ \)

astrological symbols and zodiacal symbols
\( \text{conjunction} \♂ \text{opposition} \♀ \)
\( \text{aries} \bigcirc \text{libra} \bigcirc \)
\( \text{taurus} \♀ \text{ scorpio} \bigtriangleup \)
\( \text{gemini} \bigcirc \text{sagittarius} \times \)
\( \text{cancer} \odot \text{capricornus} \bigcirc \)
\( \text{leo} \bigcirc \text{aquarius} \approx \)
\( \text{virgo} \bigtriangleup \text{pisces} \bigtriangleup \)
geometrical shapes

\hexstar \varhexstar \hexstar \varhexstar \davidsstar \APLstar \Circle \CIRCLE \Leftcircle \LEFTcircle \RIGHTcircle \LEFTarrow \LHD \RIGHTarrow \RHD \Box \Box \Box \APLbox \XBox \Bowtie \Diamond \octagon \varhexagon \pentagon

general math & physics

\varangle \varangle \invneg \leftturn \rightturn \therefore \therefore

math operators

\ocircle b \oplus b \logof b \otimes b \le b \ge b \apprle b \apprge b \lhd b \rhd b \unlhd b \unrhd b \LHD b \RHD b \leq b \geq b \propto b \varpropto b

integrals (text style)

\varint a^b f(x) dx \iiint a^b f(x) dx \varoint a^b f(x) dx

integrals (display style)

\iint_a^b f(x) dx \oiint_a^b f(x) dx
With the control sequence \newpropto you can change the proportional sign to the thin wasy symbol (\(\propto\)), which is more distinct from alpha (\(\alpha\)) than the default symbol (\(\propto\)).

With the control sequence \newint you can change the \TeX\ integrals from \(\int, \oint\) to the vertical ones \(\int_v, \oint_v\), in display:

\[
\int_a^b \rightarrow \int_v, \quad \oint_C \rightarrow \oint_v
\]

There are also a few letters in roman style added (although these and some symbols as \(\O\), \(\%\) should be in a separate font, to be created in different styles like italic, sans serif etc. – the wasychr.mf source is prepared for that.

\texttt{\thorn} \, \texttt{\Thorn} \, \texttt{\dh} \, \texttt{\Dh} \, \texttt{\inve} \, \texttt{\openo}

Examples

“We provide the \(\nearrow\), you provide the \(\swarrow\)”

The planets (\(\odot\) \(\rightarrow\) outer space): \(\varphi\) \(\varpi\) \(\omega\) \(\sigma\) asteroids \(\Psi\) \(\eta\) \(\delta\) \(\epsilon\) \(\zeta\).

special characters on IBM PC’s: \(\odot\), \(\bullet\), \(\bigcirc\), \(\wp\), \(\circ\), \(\circlearrowleft\), \(\circlearrowright\), \(\curvearrowleft\), \(\twoheadleftarrow\), \(\leftarrow\), \(\rightarrow\), \(\uparrow\), \(\downarrow\), \(\updownarrow\), \(\triangledown\), \(\bowtie\), \(\pm\), \(\ldots\).

special characters on Atari ST’s: \(\Phi\), \(\Psi\), \(\rightleftharpoons\), \(\#\), \(\&\), \(\ldots\).

tube dimensions: \(\varnothing 5\) mm, \(d = 0.5\) mm, \(l = 50\) mm

display math:

\[
\theta(\vec{a}, \vec{b}) = 30^\circ
\]

\[
\prod_{x \leq 5} a_x \otimes b_x \simeq \int_{x \geq 5} a \circ b \, dx
\quad \text{(nonsense.1)}
\]

Gauss’ law: \(\iiint_V \nabla F(x) \, d^3 x = \iiint_{S(V)} F(x) \, da\)

Stokes’ law: \(\iint_A [\nabla \times F(x)] \, da = \int_{C(A)} F(x) \, dl\)

APL Program:

\(U \leftarrow -1 + G \leftarrow 2 \times \iota N \leftarrow \square\) \quad \(\alpha\) generate vectors of odd and even numbers

APL keyboard layout:

\[
\begin{array}{cccccccccccc}
1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 & 0 & + & \times & \diamond \\
Q & W & E & R & T & Y & U & I & O & P & \leftarrow & \rightarrow
\end{array}
\]
simple phonetic notation: corner ['kɔɪnə], this [ðɪs], trash [θræʃ]

check the appropriate box like this ☐ or that ☑:

☐ I need the wasy fonts
☐ I don’t need the wasy fonts

Font Table

wasy:

| 00 = Δ | 01 = < | 02 = ≤ | 03 = > | 04 = < | 05 = : | 06 = ☐ | 07 = ☐ |
| 08 = ✓ | 09 = ø | 0A = ▲ | 0B = ❌ | 0C = ↓ | 0D = ↓ | 0E = . | 0F = ☐ |
| 10 = ☐ | 11 = ☑ | 12 = γ | 13 = Ω | 14 = γ | 15 = Ω | 16 = Ω | 17 = ▼ |
| 18 = ☐ | 19 = ø | 1A = σ | 1B = ▲ | 1C = ◊ | 1D = ⌈ | 1E = ⌈ | 1F = ☐ |
| 20 = ● | 21 = ø | 22 = ◊ | 23 = ◊ | 24 = ☐ | 25 = ☐ | 26 = ◊ | 27 = ∞ |
| 28 = ☐ | 29 = ☐ | 2A = ▲ | 2B = ▲ | 2C = ◊ | 2D = ☐ | 2E = ☐ | 2F = ☐ |
| 30 = | 31 = ▲ | 32 = ▲ | 33 = ◊ | 34 = ☐ | 35 = ▲ | 36 = Ω | 37 = ▼ |
| 38 = ▲ | 39 = ▲ | 3A = ☐ | 3B = ☐ | 3C = ▲ | 3D = ◊ | 3E = ▲ | 3F = ☐ |
| 40 = ☆ | 41 = * | 42 = * | 43 = ◊ | 44 = ☐ | 45 = ⌈ | 46 = ⌈ | 47 = ☐ |
| 48 = ☐ | 49 = ☐ | 4A = ▲ | 4B = ▲ | 4C = ▲ | 4D = ▲ | 4E = ▲ | 4F = ▲ |
| 50 = ☐ | 51 = ☐ | 52 = ☐ | 53 = ☐ | 54 = ☐ | 55 = ☐ | 56 = ☐ | 57 = ☐ |
| 58 = ☐ | 59 = η | 5A = ◊ | 5B = ☐ | 5C = ☐ | 5D = ▲ | 5E = ▲ | 5F = ☐ |
| 60 = ☐ | 61 = ▲ | 62 = ▲ | 63 = ◊ | 64 = ◊ | 65 = ◊ | 66 = ◊ | 67 = ☐ |
| 68 = % | 69 = ☐ | 6A = ▲ | 6B = ▲ | 6C = ☐ | 6D = ☐ | 6E = ▲ | 6F = ▲ |
| 70 = ☐ | 71 = ☐ | 72 = ☐ | 73 = ☐ | 74 = ☐ | 75 = ☐ | 76 = ☐ | 77 = ☐ |
| 78 = ☐ | 79 = ☐ | 7A = ☐ | 7B = ☐ | 7C = ☐ | 7D = ☐ | 7E = ☐ | 7F = ☐ |
Changes since version 1.0

version 1.1:
\varangle has been centered at the math axis

version 2.0:
new: letters ℐ, ℑ, δ, ϊ, ϋ, ό, ά, ΐ
new astrological and zodiacal symbols
new symbols permil, cent, ataribox
now the full set of \texttt{asy} is included; for this purpose 9 characters (☉, ☔, ☒, ♣, ℏ, δ, ℧, ℞, ℟) have \textbf{changed code}!

\texttt{wasyb10} font for bold math added