#### A New Symbol Font wasy

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The font wasy contains some of the lasy characters, and a lot more symbols. It does not contain letters and letter-like symbols (like the upside down  $\Omega$  in lasy); those characters will be provided in different styles (teletype, roman, *slanted* and sans-serif) as different fonts, to make it easier to combine them with the existing characters.

Some characters were just copied from the lasy.mf file, others where modified from the mf files of the standard  $T_FX$  fonts, and some were designed from scratch.

An extension to PLAIN-T<sub>E</sub>X for using the fonts is included in the file wasyfont.tex. These bindings are just meant as an example how to implement the wasy characters into your document. They may change in a future release of a wasyfont.tex file together with extended wasy fonts (however, the positions of the presently existing characters in the wasy font will not change, so this file as well as your own bindings will be compatible with any future release).

A list of characters with their bindings in wasyfont.tex follows. Some symbols which are already available from standard  $T_EX$  fonts are also included for comparison; these symbols are marked with \*.

general symbols

\male	o <sup>™</sup>	\female	Ŷ
\currency	¤	\clock	⊕
<b>\lozenge</b>	П	\kreuz	Ŧ
\smiley	$\odot$	\blacksmiley	•
\frownie	$\odot$	\sun	¢
$\checked$	$\checkmark$	\brokenvert	}
\diameter	ø	$\invdiameter$	Ø
\phone	6	\recorder	Q
\bell	•	\lightning	4
\pointer	⇔		
diagrams	~~~~	\gluon 🎊	ഞ
music notes	5		
\eighthnot	te 🔊	\quarternot	e J
\halfnote	9	\fullnote	o
\twonotes	5		
electrical er	ngineeri	ing	
\AC $\sim$	∖HF	$\approx$	
\VHF $\approx$			
APL			

 $\nabla$ 

\APLbox		\APLinv	÷
\APLleftarrowbox	$\leftarrow$	APLrightarrowbox	$\rightarrow$
\APLuparrowbox	$\uparrow$	\APLdownarrowbox	$\downarrow$
\APLinput		$APLminus^*$	-
\APLlog	$\otimes$	\APLstar	$\star$
$APLvert^*$		\APLvert{\APLdown}	$\nabla$
$APLnot^*$	$\sim$	\APLnot{\APLdown}	$\nabla$
$\Lambda PLnot{\Lambda and}$	$\wedge$	$\Lambda PLnot{\lor}$	$\checkmark$
$APLcirc^*$	0	\APLcirc{\bot}	<u></u>
\notbackslash	+	\notslash	$\neq$
\APLcomment	A		

# astronomy

\ascnode	Ω	\descnode	U
\aries	Υ	$\astrosun^*$	$\odot$
\newmoon	$\bullet$	\fullmoon	$\bigcirc$
<b>\leftmoon</b>	$\mathbb{Q}$	\rightmoon	$\mathbb D$
\mercury	¥	\venus	Ŷ
\mars	ď	\jupiter	4
\saturn	ħ	\uranus	ð
\neptune	¥	\pluto	Р
earth	ð		

# geometrical shapes

\hexstar	$\times$	$\operatorname{varhexstar}$	$\ast$
\davidsstar	¢x	\APLstar	$\star$
\Circle	$\bigcirc$	\CIRCLE	ullet
\Leftcircle	J	\LEFTCIRCLE	
\Rightcircle	D	\RIGHTCIRCLE	
\LEFTcircle	lacksquare	\RIGHTcircle	$\bullet$
\LEFTarrow	◄	\RIGHTarrow	►
\UParrow	<b></b>	\DOWNarrow	▼
<b>\Box</b>		<b>\APLbox</b>	
\XBox	$\boxtimes$	\Bowtie	$\bowtie$
\Diamond	$\diamond$	\octagon	$\bigcirc$
\hexagon	$\bigcirc$	\varhexagon	0
\pentagon	$\bigcirc$		

general math & physics

\varangle	¢	\$\invneg\$	-
<b>\leftturn</b>	Ś	\rightturn	Ò
\diameter	Ø	$\$	<i>.</i>

## math operators

\$a\ocircle b	$a \bigcirc b$	\$a\logof b	$a \circledast b$
\$a∖oplus* b	$a\oplus b$	$a\$	$a\otimes b$
\$a∖le* b	$a \leq b$	\$a∖ge* b	$a \ge b$
\$a\apprle b	$a \lesssim b$	\$a\apprge b	$a \gtrsim b$
\$a\lhd b	$a \lhd b$	\$a\rhd b	$a \rhd b$

\$a\unlhd b  $a \trianglelefteq b$ \$a\unrhd b  $a \triangleright b$ \$a∖LHD b  $a \blacktriangleleft b$ \$a∖RHD b  $a \triangleright b$ \$a\sqsubset b  $a \sqsubset b$ \$a\sqsupset b  $a \sqsupset b$  $a\$  $a\$ <code>\$a\varpropto b  $a \propto b$ </code> \$a\propto\* b  $a \propto b$ \$a\leadsto b  $a \sim b$ 

integrals (text style)

integrals (display style)

# ∫∬∭∮∯

With the control sequence \newpropto you can change the proportional sign to the thin wasy symbol  $(\infty)$ , which is more distinct from alpha  $(\alpha)$  then the default symbol  $(\infty)$ .

With the control sequence \newint you can change the  $T_EX$  integrals from  $\int, \oint$  to the vertical ones  $\int, \oint$ , in display:

$$\int_{a}^{b} \to \int_{a}^{b}, \qquad \oint_{C} \to \bigoplus_{C}$$

#### Examples

"We provide the  ${\scriptstyle \rm I\!A}$  , you provide the  $\odot$  "

special characters on Atari ST's:  $\diamondsuit$ ,  $\checkmark$ , O,  $\clubsuit$ ,  $\checkmark$ ,  $\neg$ ,  $\oint$ , ...

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

display math:

$$\prod_{x \leq 5} a_x \otimes b_x \simeq \int_{x \geq 5} a \odot b \, dx \qquad (\text{nonsense.1})$$
  
Gauss' law: 
$$\iiint_V \nabla \mathbf{F}(\mathbf{x}) \, d^3 x = \bigoplus_{S(V)} \mathbf{F}(\mathbf{x}) \, d\mathbf{a}$$
  
Stokes' law: 
$$\iint_A [\nabla \times \mathbf{F}(\mathbf{x})] \, d\mathbf{a} = \bigoplus_{C(A)} \mathbf{F}(\mathbf{x}) \, d\mathbf{l}$$

APL Program:

 $U \leftarrow -1 + G \leftarrow 2 \times \iota N \leftarrow \Box \qquad \bowtie \quad \text{generate vectors of odd and even numbers}$  APL keyboard layout:

check the appropriate box like this  $\boxtimes$  or that  $\boxdot\colon$ 

 $\Box$  I need the wasy fonts

 $\Box$  I don't need the wasy fonts

### Font Table

00 = ∆	01 = <	02 = ⊴	03 = >	04 = ⊵	05 = ∴	06 = Ø	07 = 🕿
08 = 🗸	09 = \$	• A ⊂	0B = ♪	OC = ↓	OD = J	0E = 。	0F = ♪
10 = ┥	11 = ►	12 = 4	13 = 🕥	14 = හ	15 = 🛛	16 = 🛞	17 = \Upsilon
18 = -	<b>19 =</b> ♀	1A = ♂	1B = 🛛	1C = 🕒	1D = $\propto$	1E = ∢	1F = Ø
20 = •	21 = 🔿	22 = 🖄	23 = 🔾	24 = ((	25 = D	<b>26 =</b> <sup>†</sup>	27 = ¥
28 = <	29 = >	2A = _	2B = ~	2C = 🙂	2D = 🛛	2E = 🌣	2F = 🔅
30 = V	31 = 🖂	32 = 🗆	33 = 🛇	34 = 🖂	35 = 🏿	36 = 🛧	37 = 🔿
38 = 🔾	39 = 🔿	3A = $\sim$	$3B = \sim$	3C = □	3D = □	3E = $\lesssim$	3F = $\gtrsim$
40 =	41 = $\star$	42 = *	43 = 🕸	44 = 🔿	$45 = \star$	46 = ∇	47 =
48 = )	49 = (	4A = D	4B <b>= ▲</b>	4C = ▼	4D = §	4E =€	4F = 3
50 = X	51 = <	52 = >	53 = 🛱	54 = f	55 = ə	56 = ර	57 = <sub>0</sub> 0
58 = 4	<b>59 =</b> ħ	5A = ô	5B = ∛	5C = 2	5D = 8	5E = 🏾	5F = 😳
60 = M)	61 = 🖳	62 = M,	63 = × <sup>™</sup>	64 = ろ	65 = ≈	66 = )(	67 = ¢
68 = ‰	69 = þ	6A = Þ	$6B = \delta$	с <b>=</b> Э	6D = 🕅	6E = ↑	6F = ∏
70 = 🖂	71 = ⊖	0A = P 72 = ∫		74 = ∭	75 = ∮	76 = ∯	77 = ∫
78 = ∬	79 = 	7A = ∮	7B = ∯	7C =	7D = 📋	7E = 🗌	7F = Α

There are still many unused places in the font table, which will be filled in the future. However, the next version will be downward compatible to this one, i.e. no character will be removed from its current place. You are encouraged to contribute to the extension, by sending your favourite character(s) to the author.

Also suggestions are welcome.