

sig

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Contents

1	sig	1
1.1	sig.guide	1
1.2	sig.guide/Installation	1
1.3	sig.guide/Registration	2
1.4	sig.guide/Distribution	2
1.5	sig.guide/Introduction	3
1.6	sig.guide/Example_SIRTS	4
1.7	sig.guide/Features	6
1.8	sig.guide/Requirements	7
1.9	sig.guide/Usage	7
1.10	sig.guide/Keys-Menus	7
1.11	sig.guide/PIC-SIRDS-Screen Keys	8
1.12	sig.guide/PIC-SIRDS-Screen Menu	8
1.13	sig.guide/Preferences-Menu	9
1.14	sig.guide/Preferences-Keys	10
1.15	sig.guide/Preferences window	11
1.16	sig.guide/Options	11
1.17	sig.guide/CYCLE_DELAY	12
1.18	sig.guide/FUNCTION	13
1.19	sig.guide/MINX-MAXX	15
1.20	sig.guide/MINY-MAXY	15
1.21	sig.guide/MINZ-MAXZ	15
1.22	sig.guide/DARKNESS	16
1.23	sig.guide/SEED	16
1.24	sig.guide/SAVEFILE	16
1.25	sig.guide/SRC_SCREEN	17
1.26	sig.guide/SIRDS_SCREEN	17
1.27	sig.guide/SIRDS_WIDTH	18
1.28	sig.guide/SIRDS_HEIGHT	18
1.29	sig.guide/EYEPOS	18

1.30	sig.guide/EYEWIDTH	18
1.31	sig.guide/[NO]HIDDEN	19
1.32	sig.guide/PIC_DEPTH	19
1.33	sig.guide/[NO]BEEP	19
1.34	sig.guide/[NO]CAMG_MASK	19
1.35	sig.guide/[NO]INVERSE	20
1.36	sig.guide/[NO]COLORS	20
1.37	sig.guide/FILE	20
1.38	sig.guide/PATTERN	20
1.39	sig.guide/PAT_MODE	21
1.40	sig.guide/[NO]SHOW_SRC	21
1.41	sig.guide/[NO]WBPREFS	21
1.42	sig.guide/[NO]PREFS_FIRST	22
1.43	sig.guide/RASTER	22
1.44	sig.guide/SAVEGIFFILE	22
1.45	sig.guide/[NO]PICOSAVE	23
1.46	sig.guide/MIX	23
1.47	sig.guide/Address	23
1.48	sig.guide/Thanks	24
1.49	sig.guide/History	24
1.50	sig.guide/Version 3.1	25
1.51	sig.guide/Version 3.2	25
1.52	sig.guide/Version 3.3	25
1.53	sig.guide/Version 3.4	26
1.54	sig.guide/Version 3.5	26
1.55	sig.guide/Version 3.6	27
1.56	sig.guide/Version 3.7	27
1.57	sig.guide/Version 3.8	28
1.58	sig.guide/Version 3.9	28
1.59	sig.guide/Version 3.10	28
1.60	sig.guide/Version 3.11	29
1.61	sig.guide/Version 3.12	29
1.62	sig.guide/Version 3.13	30
1.63	sig.guide/Version 3.14	30

Chapter 1

sig

1.1 sig.guide

This document describes SIRDS_GEN V3.14, a shareware SIRDS-Maker for the Amiga. Many options, random dots as well as patterns are supported. You can choose between a picture and a mathematical function as source.

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Introduction	What are SIRDS?
Features	What this program can do
Distribution	About the package
Requirements	The things you need to run the Program
Installation	How to install
Registration	If you like it, read this
Usage	How to get along
Keys-Menus	The available menus & keys
Preferences window	The preferences
Options	All the options
Address	Contact the author
Thanks	Greetings
History	What's new

1.2 sig.guide/Installation

Installation

To install, you just have to copy (drag) the file to the appropriate directory. If you want to have it localized, you have to copy the appropriate catalog too. This is easily done by clicking on the install_catalog icon.

1.3 sig.guide/Registration

Registration

Starting with V3.1, SIRDS_GEN is now SHAREWARE. There is only a small cripple, and this is, that the function-parser won't calculate the following functions:

sin, cos, tan, asin, acos, atan, sinh, cosh, tanh, exp, log, log10, sqrt.

And without registration you wont be able to use pattern mode 4.

Take a look at the picture pic2.sirds.gif. This one is calculated with the formula " $z=\sin(x)+\cos(y)$ " and pattern mode 4.

The registration fee is US\$10, or if you live in germany, you can send DM15 to me. My address is:

Michael Mutschler
Somborer Weg 11
71067 Sindelfingen
Germany

Only US\$ or DM are accepted. All I need is your full address with your name, Street, City and country (just like mine above.) And no Bank Orders will be accepted, due to the fee I have to pay for it of DM15, there is nothing left for me... :-((

You will be shipped a disk with your personal keyfile, and the newest version of the SIRDS_GEN, with some patterns.

For all germans: Man kann mir auch die 15DM auch überweisen.
Meine Konto-Nr ist:

Kreissparkasse Böblingen
BLZ: 603 501 30
Konto-Nr: 3684791

Und bitte noch eine Postkarte oder EMail schicken, wegen der Adresse. Ich habe von meiner Bank erfahren, das die Belege bei Ueberweisungen so langsam eingestellt werden! Tja, auf die Banken ist auch kein Verlass mehr. :-((

1.4 sig.guide/Distribution

Distribution

SIRDS_GEN V3.14 is Shareware. See Registration, for more info.

Good picture (preferrable the source picture, for generating

others...), are always welcome via ftp to ftp.rus.uni-stuttgart.de in the directory pub/systems/amiga/incoming.

You may copy the program as you like, as long as no money is taken for it, except a small fee for copying which should be < \$5. Inclusion in PD-collections, such as the Fish-Disk, or Aminet is allowed, as long as the following files stay together:

```
cave.pic
cave.pic.sirds
cave.pic.sis
pic2.sirds.iff
SIRDS_GEN
SIRDS_GEN.info
SIRDS_GEN000
SIRDS_GEN000.info
SIRDS_GEN.guide
SIRDS_GEN.guide.info
testpattern.iff
testpattern2.iff
```

Any Picture generated with SIRDS_GEN may not be used in any commercial manner without registration.

The newest Versions will be available

- via anonymous FTP: all aminet sites in the directory gfx/3d. Sometimes I put some Beta-Version on ftp.rus.uni-stuttgart.de in pub/systems/amiga/gfx/sirds. Additionally, I am collecting some pics there too, so send them, if you have good ones!!!
- Mailbox: The Abyss: +49-711-617291 & +49-711-6159399. Type ul;16 at the main prompt to get in the right subboard. The program is free download there.

1.5 sig.guide/Introduction

Introduction

SIRDS means Single Image Random Dot Stereogram

The trick of SIRDS is, that you have to know how to view them. When just looking at them, like you look at normal picture, then you will just see some random placed pixels, which seem to not make any sense at all.

So how do you look at them? There are basically two ways of viewing SIRDS: Wide-Eye view (WE) and Cross-Eye view (CE). WE ist the easier way, though I have a friend, which can only see them with CE.

WE: You have to try to look behind the picture, actually the same distance, as you are away from it. To help doing this, you can put a glass over it, and look at your own mirrored face, and then try to get the SIRDS sharp. Then you should see the picture with a real 3D effect.

For better help the "Eyes" in the picture can be used: When you got it, you see 3 of them. And the middle one must be sharp. The sharp middle one, is on the farrest plane.

CE: Instead of looking behind, you must cross your eyes in front of the picture. A pencil is useful to hold between the eyes and the picture, concentrate on the pencil, and make the SIRDS sharp.

The difference of viewing CE and WE is, that CE swaps the depth of the picture: the farrest plane ist the nearest, and vice versa.

Another useful help is the flimmering. Just calculate some pics (~10: save one; recalc; save next ...) and put them together as an animation (e.g. DPaint can do this). This way you can't concentrate on a particular point in the picture, and you only see something, if you have focused on the right depth. (2 frames is not enough, so flimmer is discarded now; and making an anim is so easy...) And remeber: This works only with SIRDS and not with the pattern mode!

How does it work? When looking normally, you look with both eyes on ONE point. When looking on SIRDS, you have to look on TWO points. Each eye is looking at a different point. This way, the brain thinks it is one point with a virtual depth. Now, you can vary the depth with inserting/leaving out pixels. Inserting means the point more far away.

This is not limited to graphics. You can make them out of plain ASCII too, but they don't look that good.

Example_SIRTS

1.6 sig.guide/Example_SIRTS

Example_SIRTS
=====

Here is how to make SIRTS (Single Image Random Text Stereogram)
(Sorry for the compact code, but it's not from me. I found it somewhere; and I really like the small form. :-))

```
#include <stdlib.h>
#include <stdio.h>

main()
{
    char m[100], s[80];
    int j,i,e;

    srand(time(0));
    for(e=0; e<6; printf("X%13s", ""), e++);
    for(puts(""), scanf("%d\n", &j); gets(m), j>=0; puts(s), j--)
    for(e=s[79]=i=0; i<79; s[i++]=(e||i<14)?'!' + rand()%92:s[i-14])
    for(e=0; m[i-14]!='#' && i<79 && i>13; e=1, s[i++]=s[i-13]);
}
```

```
compile the program and start it with "a.out <sirt.inp"
```

for an input (e.g. `sird.inp`) you can use the following:

17

[illegible]

The first line ist the number of lines that follow. a "#" means a plane above the other. An example output can be:

```
X X X X X
%Dc>qx[B]|+"i%Dc>qx[B]|+"i%Dc>qx[B]|+"i%Dc>qx[B]|+"i%Dc>qx[B]|+"i%Dc>qx[B]|+" ←
i
xcnM@?N%8/j%DxcnM@?N%8/j%DxcnM@?N%8/j%DxcnM@?N%8/j%DxcnM@?N%8/j%DxcnM@?N%8/j% ←
D
srE@K^M|CB1LKsrE@K^M|CB1LKsrE@K^M|CB1LKsrE@K^M|CB1LKsrE@K^M|CB1LKsrE@K^M| ←
CB1LK
B)PCj=$/J5*3BB)PCj=/J5*53BB)PC=/J50*53B)PCo=/J50*53B)PCo/J50*53B)PCo/J50J*53B ←
)
)(S6E@k.AtCfQ)(S6E@.AtCPfQ)(S6@.At_CPf)(S6n@.At_CPf)(Sn@.At_CPf)(Sn@.At_CP-f) ←
(
P;:107Ne,C^5*P;:107e,C'^5*P;:17e,CN'^5*P;:17e,CN'^5*P:17e],CN'^5*P:17e]CN'^t5 ←
*
[:<7N=t+:m`c[:<7Nt+:m.`c[:<Nt+:ym.`c[:<Nt+:ym.`c:-<N0t+ym.[`c:<N0Jt+m.[`) ←
c
x[r9p+>%,w6y`x[r9p+%,w6oy`x[r9+%,wj6oyx[r9Y+%,wj6oyxr9Y+0%,j6o[yxrY+0v%,6o[ ←
y9x
l/FY`;^mD[J1ll/FY`;mD[J1ll/FY`;mD[7J1l/FY`r;mD[7J1l/Y`r;]mD[7J1l/Y`r;]mD7J1lT ←
/
/6!p/rqpoVEHw/6!p/rpoVEHw/6!p/rpoV2EHw6!p/MrpoV2EHw6p/MrtpoV2EHw6p/ ←
Mrtpo2EHwS6
ZE@sr5DK.ed[*ZE@sr5K.edI[*ZE@s5K.ehdI[ZE@s;5K.ehdI[Z@s;5rKehdIE[Z@;5rKPedIE[ ←
CZ
ri0/F5xoZ=h7zri0/F5oZ=hU7zri0/5oZ=`hU7ri0/O5oZ=`hU7r0/O5&oZ`hU7r0/O5& ←
aoZhU7rd0
W6]t/65|3J-87W6]t/6|3J-r87W6]t6|3Jq-r8W6]tD6|3Jq-r8W6tD6|[3Jq-r8W6tD6|[Jq- ←
rf8W
y|K^%L_NEL/v5y|K^%LNEL/|v5y|K^LNEL3/|vy|K^FLNEL3/|vy|KFLNEL3/|vy|KFLNEL3/|vyvy ←
|
```

```

4[V9T' zaPC"9X4[V9T' aPC"s9X4[V9' aPCF"s94[V9Q' aPCF"s94[V9QaPCF"s94[V9QaPCFh"s94 ←
[
#RA(gBIxKr540#RA(gBIxKr540#RA(gBIxKr540#RA(gBIxKr540#RA(gBIxKr540#RA( ←
gBIxKr540
j-hwRAH+&=DCNj-hwRAH+&=DCNj-hwRAH+&=DCNj-hwRAH+&=DCNj-hwRAH+&=DCNj-hwRAH+&= ←
DCN
=D' zm@kv9HWf-=D' zm@kv9HWf-=D' zm@kv9HWf-=D' zm@kv9HWf-=D' zm@kv9HWf-=D' zm@kv9HWf ←
-

```

can you see it?

1.7 sig.guide/Features

Features

SIRDS_GEN V3.14 takes a picture or a formula as input. When using a picture, the value of the pixels determine the depth-position of the SIRDS there. e.g. if you have a 32-color picture, then you have a maximum of 32 layers in the picture, where the background is the lowest area, and the pixels with number 31 will be the highest one. But if you prefer using a grayscale, then you can sort the colors first, to let the darkest color describe the lowest area, and the lightest one the highest.

The second input form is a mathematical function.

The output is either a SIRDS or a SIS, when you supply a pattern.

Here is a further list of options:

- * function plotting, and viewing as SIRDS
- * free choice of screen-mode
- * scaling of the picture
- * should run on Gfx-cards too (not much tested, but Picasso II is working)
- * automatic correction of the eyewidth to the displaymode
- * uses datatypes for reading the picture
- * 32-bit color-funktions are used.
- * uses a symmetric algorithm
- * generation of SIS possible
- * flimmering
- * various Settings possible
- * 4 different pattern-modes

1.8 sig.guide/Requirements

Requirements

SIRDS_GEN V3.14 requires Kickstart 2.0+ & Workbench V2.0+, though some function work only with Kickstart 3.0+.

An accelerator with FPU is nice, but not recommended (use the 68000er version if you haven't got one).

Here is a list of functions disabled when operating under Kickstart 2.0:

- * If you only have Workbench 2.0 you can't change the screenmode in the Prefs-window, and no localization is possible. Only possible with Workbench V2.1+
- * The picture to be converted can't be viewed before
- * The preview-Window of the Prefs-window is disabled
- * only loading of IFF-ILBM pictures possible

1.9 sig.guide/Usage

Usage

Choose the right version: If you own a computer with at least a 68020 AND a 68881 then you can use the normal version. Otherwise you have to use the 68000-version.

After starting you are prompted with the Preferences window to do the various settings there. Either enter a formula, or choose a picture for the sirds (e.g. cave.pic). A Screen (the SIRDS-Screen) will be opened, and the SIRDS will be calculated. This is the fastest way to make a sirds. See Options for the other settings.

Due to the fact, that the same loop, for both screens (PIC & SIRDS) is used you have the same menus, and keyboard functions. So saving for example effects the current active window.

1.10 sig.guide/Keys-Menus

Keys/Menus

PIC-SIRDS-Screen Keys	Keys available on the screens
PIC-SIRDS-Screen Menu	Menu available on the screens
Preferences-Keys	Keys available while in prefs-window
Preferences-Menu	Menu available while in prefs-window

1.11 sig.guide/PIC-SIRDS-Screen Keys

PIC/SIRDS-Screen Keys

=====

l	will lead you to the Pref-Window. Only for compatibility.
s	saving of the current screen as ILBM
g	saving of the current screen as GIF
q	exiting the program
ESC	exiting the program
TAB	start/stop color-cycling
r	Perform a new calculation
t	switch to the other screen
p	brings up the Preferences window. All functions there correspond to the ToolTypes.

1.12 sig.guide/PIC-SIRDS-Screen Menu

PIC/SIRDS-Screen Menu

=====

Load Pic	Loading of a new picture
----------	--------------------------

Save Pic
 ILBM
 saving of the current screen as ILBM

 GIF
 saving of the current screen as GIF

Quit
 exiting the program

ReCalc
 Perform a new calculation

Switch Screen
 switch to the other screen

Preferences
 Brings up the Preferences window. All funtions there correspond to the ToolTypes.

1.13 sig.guide/Preferences-Menu

Preferences-Menu
=====

Project
 Use
 same as clicking on the USE button: Accept the changes

 Open
 You are asked for a config-file to load. The loaded config will be displayed in the Prefs-Window

 Save
 Saves the config to ENVARC:SIRDS_GEN.prefs

 Save As
 Saves the config to a specified file

 Cancel
 Leave the Prefs-Window.

Edit
 Default
 Gets the default values

 Last saved
 reads the config from ENVARC:SIRDS_GEN.prefs

 Restore
 reads the config from ENV:SIRDS_GEN.prefs

1.14 sig.guide/Preferences-Keys

Preferences-Keys
=====

The Keys usable in the Prefs-Window are all the underscored ones,
plus a few more:

q	CANCEL
ESC	CANCEL
h	hidden
e	Auto Eye-Width
E	activate the Eye-Width Gadget when possible
u	USE
U	Save
RET	USE
s	Get Source Screenmode
d	Get Destination Screenmode
b	beep
a	Auto Source Screenmode
y	cycle EyePos
c	switch Colors
i	switch Invers
f	switch function-mode

w
 activates the width-gadget

P
 switch pattern-mode

P
 load a new picture as source

1.15 sig.guide/Preferences window

Preferences window

All the settings here reflect the Options via Tooltypes or CLI. See the descriptions there for their meaning.

A few things about the Prefs-Window. When clicking on the gadgets right next to the Screen-mode text-Gadgets, you get a screen-mode requester. The Gadget on the left of the Source-Screen-Mode is for the (not) visibility of the Picture-Screen.

When clicking on the gadget labeled "Preview" next to the Pattern-dimension area, a window will open, and you get to see the pattern. The viewing is done (how could it be else?) via datatype. This way, it can be (and is) done asynchronously. So if you load e.g. a GIF or even a JPEG, it can take a while before it is visible. You can do everything else what you want.

The preview window is an AppWindow. This means (if you have WBPREFS set) you can move your patterns on it, and they will be used, as if you clicked on the load pattern button, right of the display of the pattern-file-name.

The save-Gadget saves the current configuration to ENV:SIRDS_GEN.prefs & ENVARC:SIRDS_GEN.prefs. You can edit the options there if you like; they're saved as ASCII. If used is clicked, the options are saved only to ENV:SIRDS_GEN.prefs.

1.16 sig.guide/Options

Options

Here are the Options for configuring the Program.

- you can use them as ToolTypes (e.g. HIDDEN)
- if you want to have an option disabled, add NO in front of it. (e.g. NOHIDDEN)

- use them as CLI-Argument (e.g. SIRDS_GEN SIRDS_SCREEN="PAL:HighRes Interlace" EYEPOS BOTTOM NOBEEP)
- When starting from CLI, you can specify an options-file to load. It is specified with a @ followed by a filename. Note: The @ has to be the first symbol in the commandline. Everything which follows will be parsed too. (example: SIRDS_GEN @ENV:SIRDS_GEN.prefs FILE cave.pic INVERSE) will load the prefs twice). If the file contains spaces, you can surround the file with quotes: SIRDS_GEN @"t:SIG file"
- or click on the corresponding gadget in the Prefs window

Options marked with (Startup only) are only settable on startup (as CLI-option or Tooltype). If you want to set them for default, start the program with the appropriate options, enter the prefs-window and click on save, or you can edit the prefs-file, and add the option there.

[NO]BEEP	Display a beep after drawing
[NO]CAMG_MASK	Save IFF with modified CAMG_MASK (Startup only)
[NO]COLORS	Sort colors of loaded pic before drawing
CYCLE_DELAY	Set the delay for color-cycling (Startup only)
DARKNESS	Set the percentage of black pixels for SIRDS
EYEPOS	define where the eyes should be placed
EYEWIDTH	define the width of the eyes
FILE	specify the picture to be loaded as source (Startup only)
FUNCTION	specify the function to be drawn (Startup only)
[NO]HIDDEN	use HIDDEN mode
[NO]INVERSE	create inverse-SIRDS
MINX-MAXX	define the x-dimension of the function
MINY-MAXY	define the y-dimension of the function
MINZ-MAXZ	define the z-dimension of the function
MIX	mix function & picture
PATTERN	choose the pattern for SIS
PAT_MODE	choose the pattern mode
[NO]PICOSAVE	save IFFs on Piccolo (Startup only)
PIC_DEPTH	set the virtual depth of the SIRDS
[NO]PREFS_FIRST	show the preferences before drawing (Startup only)
RASTER	set the raster for a function
SAVEFILE	set the file to be saved (Startup only)
SAVEGIFFILE	set the GIF-file to be saved (Startup only)
SEED	set the initial seed for SIRDS (Startup only)
[NO]SHOW_SRC	view the source picture
SIRDS_SCREEN	set the display-mode for the SIRDS
SIRDS_HEIGHT	set the height for the SIRDS
SIRDS_WIDTH	set the width for the SIRDS
SRC_SCREEN	set the mode for the source-picture
[NO]WBPREFS	show Preferences on the workbench (Startup only)

1.17 sig.guide/CYCLE_DELAY

CYCLE_DELAY
=====

This option specifies the delay of the color-cycling. Since Intuiticks are used for the timing, they are in 1/50s. 0 means no delay. Use the TAB-key to start/stop cycling.

DEFAULT: 0

1.18 sig.guide/FUNCTION

FUNCTION

=====

Starting with version 2.7, you are able to plot 3-dimensional function with a SIRDS-algorithm. Really great if you can't think of what a function will look like. The way you see it, is straight from top down to the function. You can set all ranges of the function as you desire.

The complete EBNF-syntax of the function-plotter is:

```
func := 'z' '=' expr.
expr := CmpOp ('<' | '>' | '<=' | '>=' | '=' | '<>') CmpOp.
CmpOp := term { ('+' | '-') term }.
term := factor { ('*' | '/' | '%' | 'div' | 'mod') factor }.
factor := value { ('^' | '**') value }.
value := ['+' | '-'] number | 'x' | 'y' | 'r' | '(' expr ')'.
value := ('abs' | 'asin' | 'acos' | 'atan' | 'cos' | 'cosh' | 'exp' | 'log') '(' expr ')'.
value := ('log10' | 'sin' | 'sinh' | 'sqrt' | 'tan' | 'tanh') '(' expr ')'.
value := 'if' '(' expr ',' expr ',' expr ')'.
value := ('rad' | 'radius') '(' expr ',' expr ')'.
value := 'dist' '(' expr ',' expr ',' expr ',' expr ')'.

```

The function must contain a variable "z" at the beginning followed by a "=". The rest must be a valid function, else an error will occur.

The function parser understands the standard amount of functions:

"*"	"abs"	"cosh"
"/"	"acos"	"sinh"
"+"	"asin"	"tanh"
"-"	"atan"	"exp"
"^"	"cos"	"log"
"**"	"sin"	"log10"
"()"	"tan"	"sqrt"

non standard:

"div"	- div-operator	5.7 div 0.5 (-> 11)
"mod"	- modulo	5.7 mod 0.5 (-> 0.2)
"%"	- same as modulo	
"if"	- if clause (see below)	
"<", ">", "=", "<=", ">=", "<>"	- boolean operators (see below)	
"radius"	- radius(x,y) = dist(x, y, 0, 0)	
"r"	- same as radius(x,y)	
"rad"	- same as radius	

"dist" - distance of 2 points. syntax: `dist(expr, expr, expr, expr)`
`dist(2,4,6,7) -> (2,4) to (6,7) -> 5`

Numbers can be written as you like. e.g the following will be accepted:

```
1.2e-3
.67
-23.6
```

Another feature of the parser is, that a minus in front of a term, will be treated, as if there stands $-1 \cdot \text{term}$. e.g if you want to enter a term like $z = -1 \cdot \sin(x)$ you could just enter $z = -\sin(x)$. Therefore this construction is valid too: $z = 2 - x$ which would result in $z = 2 - (-1 \cdot x)$

Of course $*$ and $/$ have a higher priority than $+$ and $-$. And $^$ or $**$ have a higher priority than $*$ and $/$. So there is no need to use braces all the time, like $2 + 3 \cdot x$.

There doesn't exist any limit for the amount of braces. The only limitation is the length of 256 bytes for the whole function, which should be enough.

The boolean functions return a value of (1.0) for true and (0.0) for false. e.g. $z = (x < 0) \cdot x$ would result in:

```
for x < 0 : z = x
for x >= 0 : z = 0
```

don't forget the braces; boolean expressions have the lowest priority. e.g $z = x < 0 \cdot x$ would be the same as $z = x < (0 \cdot x)$ which is $z = x < 0$

The if-clause syntax is: `if (expr, true-expr, false-expr)` The expression is tested, against 0.0. If it's not 0.0 then the `expr` is true, and the true expression is calculated, otherwise the false-expression will be used. It is useful, to use the boolean expression for the first expression.

now a few examples:

```
z = if(x > 0, 1, -1)
```

This would result in 1 if $x > 0$, and -1 when $x \leq 0$.

lets simulate the signum function:

```
x > 0: z = 1
x = 0: z = 0
x < 0: z = -1
```

just do something like $z = \text{if}(x > 0, 1, \text{if}(x = 0, 0, -1))$ but you can do it faster if you type $z = (x > 0) - (x < 0)$

A great thing to do with the `dist()`-function is the drawing of interfering sine-curves. If you draw one starting from (0/0), then you would do $z = \cos(\text{radius}(x,y))$ which will result in a circular sine-curve, starting at the origin, just if you throw a stone in the lake, and watch the waves. You can set any middle point with the `dist()`-function. i.e. $z = \cos(\text{dist}(x,y,0,3))$ would start in (0/3). To overlap these two, just add them together. Multiplication is funny too.

As I often use the `rad()`-function, there exists a shortcut `r` for `rad(x,y)`. You can simply type $z = \sin(r)$ to get a circular sine-wave.

here is an example of three points:

```
z = cos(radius(x,y)) * cos(dist(x,y,0,5)) * cos(dist(x,y,5,5))
range: xmin = -11, xmax = 13
      ymin = -8, ymax = 10
      zmin = -1, zmax = 1
```

here are some more example functions to use: in brackets is the range [MINX,MAXX,MINY,MAXY,MINZ,MAXZ]

```
z = atan(x)*sin(y)          [-6,6,-6,6,-2,2]

z = sin(r)+0.1*y            [-10,10,-10,10,-3,3]  (try pattern mode 4!)

z = 1/(r+.1)                [-5,5,-5,5,-2,3]

z = log(r)                  [-5,5,-5,5,-2,3]

z = if(y<0,0,2*sin(r))      [-10,16,-10,10,-2,2]
```

There exists a default function, which is $z = -0.3 \cdot (x \cdot x + y \cdot y) + 2$

1.19 sig.guide/MINX-MAXX

MINX/MAXX
=====

MINX and MAXX define the x-range of the function to be plotted.
Default is from -6 to 6. !

1.20 sig.guide/MINY-MAXY

MINY/MAXY
=====

MINY and MAXY define the y-range of the function to be plotted.
Default is from -6 to 6. !

1.21 sig.guide/MINZ-MAXZ

MINZ/MAXZ
=====

MINZ and MAXZ define the z-range of the function to be plotted.
Default is from -2 to 2. !

1.22 sig.guide/DARKNESS

DARKNESS
=====

Set the percentage of dark pixels, when drawing a SIRDs. 0 means all white 100 means all dark. Note: when using 50, the program is slightly faster. ! DEFAULT: 50

1.23 sig.guide/SEED

SEED
=====

Set the initial seed for a SIRDs. If you pass 0, then the timer will be used for the seed -> every time another SIRDs.

DEFAULT: 0

1.24 sig.guide/SAVEFILE

SAVEFILE
=====

When using this option, you have to pass a filename, which the SIRDs will be saved to. You can only save IFF-files this way. The picture is saved immediately after drawing, and the program then terminates. Useful for making a bunch of pictures, e.g. for an animation.

DEFAULT: <none>

Here is a small c-program, which creates a batch-file for creating a SIS-Anim. For all who want to know what it will be: These are two interfering sine-waves, which are calculated over one period. This way, you can loop the animation without any problem. The script will generate 50 frames. But this can be easily changed. (I've made my first one with this program):

```
/* make a sirds-Anim Batchfile */
#include <math.h>
#include <stdio.h>

#define string "ram:SIG881 @animpref function \"z=cos(dist(x,y,-8,-2)+%f)+cos ↵
    (dist(x,y,8,2)+%f)\" savefile %s\n"
#define FRAMES 50

main()
{
    int i;
    FILE *fp;
```

```

float d;
char str[30];

if (fp = fopen("sanim", "w")) {
    d = 0.0;
    for (i=1; i<=FRAMES; i++) {
        sprintf(str, "dm3:sanim/sfile.%03ld", i);
        fprintf(fp, string, d, d, str);
        fprintf(fp, "echo \"file %s complete\"\n", str);
        d += 2*PI/FRAMES;
    }
    fclose(fp);
}
}

```

My Prefs-file (animpref) for this was:

```

PATTERN "patterns/IntoTheBlue"
EYEPOS "NONE"
MINX "-25.000000"
MAXX "25.000000"
MINY "-25.000000"
MAXY "25.000000"
EYEWIDTH 75
PIC_DEPTH 60
PAT_MODE 4
RASTER 1
HIDDEN
NOBEEP
NOSHOW_SRC
NOPREFS_FIRST

```

1.25 sig.guide/SRC_SCREEN

SRC_SCREEN
=====

Screenmode for the Pic-Screen. If no valid Screenmode is found, BestModeID() is used for getting the right mode.

DEFAULT: PAL:LowRes

1.26 sig.guide/SIRDS_SCREEN

SIRDS_SCREEN
=====

Screenmode for the SIRDS-Screen.

DEFAULT: NTSC:HighRes Interlace

1.27 sig.guide/SIRDS_WIDTH

SIRDS_WIDTH
=====

Width of the SIRDS-Screen. If zero, the STANDARD Overscan width of the screenmode will be used. Try bigger value than StdOscan. The Autoscrolling looks really nice.

DEFAULT: 0

1.28 sig.guide/SIRDS_HEIGHT

SIRDS_HEIGHT
=====

Height of the SIRDS-Screen. If zero, the STANDARD Overscan height of the screenmode will be used.

DEFAULT: 0

1.29 sig.guide/EYEPOS

EYEPOS
=====

Position of the Eyes:

TOP

At the Top (default)

MID

in the Mid of the Screen (if you like it...)

BOTTOM

at the bottom

NONE

No Eyes (for those you dont like it at all)

DEFAULT: none

1.30 sig.guide/EYEWIDTH

EYEWIDTH
=====

The space between the eyes. If you specify "0", the space will be adjusted to the screenmode: $\text{EYEWIDTH} = \text{OSCAN_STANDARD} / 9$. Actually EYEWIDTH is the number of pixels per inch. You can use this option if you want to calculate a SIRDS for another Media, e.g. for printing.

DEFAULT: 0

1.31 sig.guide/[NO]HIDDEN

HIDDEN

=====

If set, an algorithm for removing hidden layers is used.

DEFAULT: OFF

1.32 sig.guide/PIC_DEPTH

PIC_DEPTH

=====

The virtual depth of the SIRDS. Its calculation is the following:
 $\text{visible_depth} = 20 / \text{PIC_DEPTH} * \text{max_visible_depth}$. Due to this formula PIC_DEPTH has to be ≥ 20 .

DEFAULT: 55

1.33 sig.guide/[NO]BEEP

BEEP

=====

If TRUE, a DisplayBeep(0) is generated after each calculation, to indicate a picture is finished. Some people find this annoying, right Jens?

DEFAULT: TRUE

1.34 sig.guide/[NO]CAMG_MASK

CAMG_MASK

=====

When saving as ILBM, some (in fact one) want to mask the screenmode in the CAMG-chunk to apply a default-monitor. If this flag is true, the screen-mode will be masked with INTERLACE | HIRES_KEY.

DEFAULT: FALSE

1.35 sig.guide/[NO]INVERSE

INVERSE
=====

If set, the virtual depth of the SIRDS will be reversed: The highest area will be the lowest, and vice versa. Useful for people who cross their view before the picture for viewing SIRDS.

DEFAULT: FALSE

1.36 sig.guide/[NO]COLORS

COLORS
=====

If set, the colors are sorted. So the highest color will be the front-most position in the SIRDS. The colors are sorted in the following way: r-Val + g-Val + b-Val, and the sorted.

DEFAULT: FALSE

1.37 sig.guide/FILE

FILE
=====

Here you can specify a file for loading. If none specified, you will be asked for one.

DEFAULT: <none>

1.38 sig.guide/PATTERN

PATTERN
=====

requires a File, which will be used as pattern for SIS. The loading is done via datatypes, so you can use any format you like. The SIS-mode is automatically activated, when this options is specified.

DEFAULT: <none>

1.39 sig.guide/PAT_MODE

PAT_MODE

=====

4 different Pattern-modes are possible:

1. The Pattern will be displayed normally on the left, and adjusted to the right
2. The Pattern will be displayed normally in the mid, and adjusted to both sides
3. The Pattern will be displayed normally on the right, and adjusted to the left
4. The Pattern is scaled to the farrest point on each line, and centered. This is the slowest mode, but the best one. (only available with keyfile)

If you pass a wrong value, a SIRDS will be generated.

DEFAULT: 2

1.40 sig.guide/[NO]SHOW_SRC

SHOW_SRC

=====

If OFF, no screen for the source-picture will be opened. Just to save a little Chip-Mem for bigger SIRDSs.

DEFAULT: ON

1.41 sig.guide/[NO]WBPREFS

WBPREFS

=====

If set, the Prefs-Window will open on the default PubScreen.. Otherwise it will open on the current screen.

DEFAULT: TRUE

1.42 sig.guide/[NO]PREFS_FIRST

PREFS_FIRST
=====

When set to on, The Prefs-Window will show before the SIRDS will be drawn. This way, you can select a new screenmode first, if you like.

DEFAULT: ON

1.43 sig.guide/RASTER

RASTER
=====

This option works in conjunktion with the function-plotter. You can speed up the drawing, if you increase the raster. Setting RASTER to 1 will plot every pixel, and is really slow. A RASTER of 2 will draw a square of 4 Pixels which have the same value, and so on. Useful, when you want to see what a function will look like. Try using a high value, such as 50. Looks nice too.

DEFAULT: 3

1.44 sig.guide/SAVEGIFFILE

SAVEGIFFILE
=====

CLI-option only. You have to specify a file, which the GIF-file will be saved to. The difference to SAVEFILE is:

a. The file beeing saved is a GIF-file.

b. The SIRDS is not shown!

You have to specify SIRDS_WIDTH & SIRDS_HEIGHT, but they can be any value. So you can generate huge pictures with this option, without having to worry about memory. The only limitations are 256 colors, and a width < 65536, but that's the limitation of the GIF-format. After drawing, the program will end.

1.45 sig.guide/[NO]PICOSAVE

PICOSAVE
=====

Due to the fact that saving iff-pictures didn't work on a Piccolo-Gfx-card, this option activates a small workaround: The Bitmap of the picture is copied to a temporary Bitmap first, which is saved then. I advise you to not set it if not necessary, due to extra memory usage when saving.

DEFAULT: OFF

1.46 sig.guide/MIX

MIX
===

This Options enables the mix of a picture with a formula. To get things right, you need to know, that all heights are scaled to an area between 0 and 1. 0 is the back plane and 1 is the front-most plane.

There are 4 different ways to mix:

ADD

This calculates the arithmetic mid of the function an the formula.
i.e. $(pic_height + fml_height) / 2$

MUL

Multiplication of picture and formula. Useful if you want to cut out something of a formula. Just take a 2-color picture.

MAX

takes the highest area's of picture or formula. You can have a Text fly above a sine wave for example.

MIN

takes the minimum of picture and formula. Just for completeness.

none

well, this is the default and doesn't mix the two.

DEFAULT: none

1.47 sig.guide/Address

Address

Bugs/Suggestions/registration to the following address:

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1.48 sig.guide/Thanks

Thanks

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* Christophe Wegmuller for the french catalog Piergiorgio Ghezze for the italian catalog

"The Graphics Interchange Format(c) is the Copyright property of CompuServe Incorporated. GIF(sm) is a Service Mark property of CompuServe Incorporated."

1.49 sig.guide/History

History

Version 3.1
Version 3.2
Version 3.3
Version 3.4
Version 3.5
Version 3.6
Version 3.7
Version 3.8
Version 3.9
Version 3.10
Version 3.11
Version 3.12
Version 3.13
Version 3.14

1.50 sig.guide/Version 3.1

Version 3.1

=====

changes for Version 3.1:

- * Bug Fix: when in the Prefs-Win the Source screen-mode was disabled, and you disabled the function, the program would crash.
- * Internal changes to the parser.
- * The Parser now translates ^2 ^3 ^4 to multiplications. ^2 is now twice as fast.

1.51 sig.guide/Version 3.2

Version 3.2

=====

changes for Version 3.2:

- * complete rewrite of the options. Now using ReadArgs() instead of ArgArrayInit(). See Options.
- * Now using ReadPixelArray8() for GIF-saving -> twice as fast as b4.
- * When the pattern can't be loaded, a SIRDS will be drawn.
- * Sometimes, when you clicked the pattern-filerequest Gadget, the screen wasn't refreshed. Fixed.
- * Localization. If you want to make a catalog in a language not currently supported, please read the readme in the catalogs-dir.
- * Due to localization, I found some strings, which were still german. oops.
- * When using [NO]PREFS_FIRST, and the prefs-window is cancelled, the program will quit now.

1.52 sig.guide/Version 3.3

Version 3.3

=====

changes for Version 3.3:

- * Localized the string "Lines to do" in the Requester when saving a gif

- * added new PAT_MODE 4 for registered users. Without Keyfile you wont be able to use it.
- * Enforcer hit removed, when saving the config
- * the dimension of the function will be saved now too
- * serious bug during startup fixed.
- * added cli-option SAVEGIFFILE.
- * changed DST_WIDTH, DST_HEIGHT, DST_SCREEN to SIRDS_*. But the old options will work for a while too... :-)
- * PREFS_FIRST is now true for default
- * added another picture in the archive
- * Now loading locale.library with V38 instead of V39.
- * The error-messages relating the 68020er version of the lack of a 020 & 881 now localized.

1.53 sig.guide/Version 3.4

Version 3.4

=====

changes for Version 3.4:

- * removed the flimmering. Didn't look that good, and wasted 1.5kb code. See Introduction, for a workaround.
- * added "if" function to the function-parser
- * when the source screen wasn't open, the main loop could guru. fixed.
- * f & p - key now active again in prefs window.
- * "radius" & "dist" function in parser.
- * Prefs-Win now has the RMBTRAP flag set.

1.54 sig.guide/Version 3.5

Version 3.5

=====

changes for Version 3.5:

- * removed history of pre 3.1
- * a SIRDS_WIDTH of 640 is now guru-free
- * New option: [NO]PICOSAVE
- * french catalog included

1.55 sig.guide/Version 3.6

Version 3.6

=====

changes for Version 3.6:

- * added MIX-mode
- * fixed pattern mode 1
- * New documentation
- * Made the Preview-Window an AppWindow. You can move patterns directly onto it
- * Now the KEYPATH variable is used for searching for the Keyfile. If it is not present, S: will be used. Just like MUI.

1.56 sig.guide/Version 3.7

Version 3.7

=====

V3.6 was only for beta-testing; same as V3.7.

changes for Version 3.7:

- * added "r" to function-parser (shortcut for rad(x,y))
 - * when file loading fails, the program will not quit anymore. instead it continues, as if the requester has been cancelled
 - * the getpattern filerequester now doesn't automatically disables the pattern-mode, when cancelled.
 - * added 2.0-flag CLI-only option, which forces use of 2.0 function on newer OS-versions. This means, no datatypes are used!
 - * now the darkest color is used for the BARDETAILPEN and the
-

brightest for BARBLOCKPEN. This way you can always see the menu.
This works on Kick3.0 only.

- * complete rewrite of the internal bitmaps: no more datatypes' bitmaps, but my own. This should solve the big trouble.
- * due to internal bitmaps, you can see the loaded picture under Kick2.0 too

1.57 sig.guide/Version 3.8

Version 3.8

=====

changes for Version 3.8:

- * fixed wrong saving of mix-mode ADD
- * darkness is now saved correctly too
- * enhanced the command-line parser to accept an options-file. (See Options.)
- * added menu to the Prefs-Window. (See Preferences-Menu.)

1.58 sig.guide/Version 3.9

Version 3.9

=====

changes for Version 3.9:

- * fixed bug when locale couldn't be opened: a) no strings in prefs-window, b) crashed when quitted program
- * locale.library didn't get closed

1.59 sig.guide/Version 3.10

Version 3.10

=====

changes for Version 3.10:

- * If a picture-file couldn't be loaded, you will be prompted to try again or abort.

- * When you haven't changed the screen-size & and the pattern has got the same depth as before, the old screen will be used. (Saves the closing and opening of the SIRDS-Screen in many cases)

1.60 sig.guide/Version 3.11

Version 3.11

=====

changes for Version 3.11:

- * Fixed Bug when not using Mix-Mode at the beginning, it often caused a GURU
- * The Picture-Loading is now done in the Pref-Window. Therefore CAMG-Mask had to move, and is now a startup-only option. Amiga-1 on the screens, leads you to the Pref-Window; for compatibility. "P" in the Pref-Window now prompts you for a picture-file.
- * changed the catalog. You have to use the new one, in order to see things right.
- * a few optimizations save about 2.5kB code.
- * removed a bug, when scanning a command-line, the buffer didn't get freed.
- * ctrl-c now works during drawing too
- * The Default Eyewidth (when specifying 0), is now bigger.
- * the Pref-Window now remembers its last position

1.61 sig.guide/Version 3.12

Version 3.12

=====

changes for Version 3.12:

- * Fixed Problem of the SAVEGIFFILE-option not saving the correct colortable.
 - * When using SAVEGIFFILE or SAVEFILE no Prefs-Window will appear
 - * The loading of a pattern didn't work when running Kick2.0. fixed.
-

1.62 sig.guide/Version 3.13

Version 3.13

=====

changes for Version 3.13:

- * fixed bug caused the registered version to crash when you have a 68000
- * when loading a new pattern and the screen has been the same, the colors will be set correctly under Kick2.0

1.63 sig.guide/Version 3.14

Version 3.14

=====

changes for Version 3.14:

- * fixed bug caused the registered version to crash when you have a 68000. yep, now it is really fixed!
- * changed the function-plotter of the 68000er version to use floats instead of double
- * added color-cycling. Use the TAB-key for start/stop color-cycling. (See CYCLE_DELAY.)