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WinSIRDS Overview

The WinSIRDS program allows for the creation and storing of **S**ingle **I**mage **R**andom **D**ot **S**tereograms (SIRDS).   These images, which at first sight seem to be nothing more than a random pattern, in reality contain a virtual 3-D image.

Viewing SIRDS is a learned skill.   It is highly recomended that beginners do not attempt to view a SIRDS for the first time on the computer screen.   Rather use the **Print** command under the **File Menu** to obtain a print out of the image, and attempt to see it on paper first.

The key to seeing a Stereogram is the focusing or re-focusing of ones vision.   The basic idea is to look beyond where the image is drawn, as if one were looking at an object twice the distance between the eye and the plane where the Stereogram lies.   A 3-D image should jump out at you, and no 3-D glasses are needed!

Two basic techniches can be used to view a SIRDS. Many SIRDS images contain two dots at the top of the image.   By re-focusing ones vision so that these two dots become exactly three dots, the appropriate focal length is achieved.   Moving ones eyes down should then reveal the hidden image.   Another method that the author of this software finds most useful is to obtain a reflection of ones self by placing the SIRDS behind a piece of glass or some other reflective surface.   Observing ones reflection should achieve the required focal length as well.

You may try this technique on the SIRDS shown below.   This SIRDS was generated from the ARROW.GIF file included with WinSIRDS.
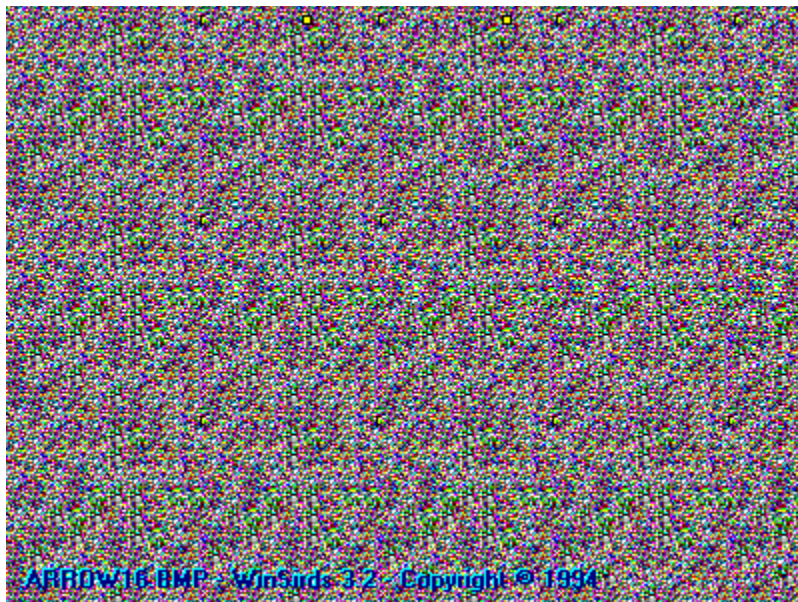
WinSIRDS Buttons

The various Tool Bar buttons and their corresponding functions are outlined in the table below:

Button	Name	Function
	Open File	Opens graphics files.
	Save File	Saves graphics files.
	Zoom In	Zoom in by a factor of 2.
	Zoom Out	Zoom out by a factor of 2.
	Make SIRDS	Creates a SIRDS from the active bitmap image
	Play Movie	Invokes the SIRDS Movie Player/Editor.
	Copy	Copies the active image to the Clipboard.
	Print	Prints the active image
	Stop Process	Stops the current process.
	Help	Invokes this Help.
	Exit	Quits the application.

WinSIRDS Menus

The WinSIRDS application contains the following menus and menu functions:

1) **File Menu**:   This menu contains the standard File Menu items.
2) **Edit Menu**:   This menu contains the Copy and Paste command.   Use these commands to import and export graphic images via the Windows Clipboard.
3) **Graphics Menu**:   This menu contains menu commands to the viewing, and generation of SIRDS.
    a) The Zoom In and Zoom Out commands allow for zooming in and out by a factor of 2.
    b) The Make SIRDS command generates a SIRDS image from an active bitmap image.   See Creating SIRDS.
    c) The Gray Image command renders the active bitmap image as a gray scale image.   Use this option to better understand how selecting the Depth by Brightness option in the SIRDS Settings will affect SIRDS generation.
    d) The SIRDS Settings command allows for user specification of the various parameters that come into play when a SIRDS image is generated.   See SIRDS Settings.
    e) The SIRDS Patterns command allows for user selection of the pattern to be used in generating SIRDS images. .   See SIRDS Patterns.
    f)   The Color Table command brings up the current color/depth scheme given the active image.   This color scheme will be used in generating SIRDS when a color bitmap image is to be used and the Depth by Color option in enabled.
    g) The Load Movie, Edit Movie, and Play Movie commands invoke the SIRDS Movie Player and Editor.   See SIRDS Movies.
4) **SIRDS Math Menu**:   This menu the various pre-defined mathematically generated figures available under the WinSIRDS application.   To view the version number of the SIRDMATH.DLL, use the Version command.
5) The **Window** and **Help menus** provide standard commands for these menus.

Creating SIRDS

WinSIRDS provides two methods for the creation of SIRDS.   The first method involves the use of colors to assign fields of depth to the resulting SIRDS.   The user may then create a bitmap image, selecting colors in the way in which depth levels are to be achieved, and then bring that image into WinSIRDS.   Colors may be used to determine depth in one of two ways: as a palette entry or according to the brightness of each color in the bitmap image.   The Make SIRDS command may then be used to generate the Stereogram.

The second method involves the use of pre-defined mathematical figures available under the Math SIRDS menu.   These figures, in combination with user specified SIRDS Patterns yield some very interesting results.   You may also want to review the effect that SIRDS Settings have on the generation of SIRDS.

SIRDS Movies

One of the innovations that WinSIRDS introduces is the annimation of SIRDS.   Animation can be achieved a set of frames or images which although similar, deviate enough from one another so that when played in sequence, a moving SIRDS can be generated.   Editing and making a SIRDS movie involves two main steps: first the generation of SIRDS frames, and secondly the arrangement of these frames in a user defined sequence.

The generation of SIRDS frames can be achieved in the WinSIRDS application through one of the two methods that can be employed in Creating SIRDS.   Simply load the color bitmap image(s) and make SIRDS from them, or use the See SIRDS Settings displacement parameters to achieve the desired motion.

The placement of frames is to be done in the Movie Editor and Player.   Selection of **the Edit Movie** command under the **Graphics** menu, will invoke the Movie Editor and Player in edit mode.   You may then use select the various frame SIRDS images, and assign them a frame number with the **Set Frame** button.   Once this process has been completed, give the movie file a name, and press the **OK** button.   It is that simple!

To play the movie simply select the **Play** ▶ button.   If you selected the Loop option in the movie editor, the movie will continue to play until the **Stop**

✋ button is pressed.   You may also play the movie one frame at a time with the **Play 1 Frame**

▶ button, or you may re-edit the movie with the **Edit Movie**

🎬 button.

SIRDS Settings

SIRDS Settings can be customized thru the **SIRDS Settings** command under the **Graphics** menu.   The following table describes the various user definable settings that may employed toward the generation of SIRDS.

Setting	Description	Math SIRDS Only
Width & Height	Dimensions of the resulting SIRDS image.	X
Gap Value	Affects the resulting depth levels. A default value of 100 is recommended.	
Horizontal displacement	Allows for displacement in the X-axis direction. Use to generate SIRDS movie frames.	X
Vertical displacement	Allows for displacement in the Y-axis direction. Use to generate SIRDS movie frames.	X
Angular displacement	Allows for angular displacement only for certain. Use to generate SIRDS movie frames.	X
Number of Levels	Affects the resulting depth levels. The greater the number the higher the depth. A default of 12 is recommended.	
Markers	Enable this option if you want the two dots at the top of the resulting SIRDS.	
Use Open Bitmap	Enable this option if you want to use the currently open and active image as the pattern for the resulting SIRDS.	X
Depth by Color	Use this option to use the order of colors within a given palette as the depth level.	
Depth by Brightness	Use this option to use the brightness of a given color as the depth level.	
SIRDS Scan Method	Select between Left-To-Right, McMahon, and Feutch scanning algorithms for the best SIRDS quality.	
Restore Defaults	Restore the SIRDS settings to their respective defaults.	

SIRDS Patterns

Normally SIRDS are generated from random-dot patterns in which colors for dots are selected at random.   A more recent innovation in WinSIRDS, however, allows the user to select from a set of pre-loaded patterns.   By using the **SIRDS Patterns** command under the **Graphics** menu, the user may choose from any of these patterns.   The resulting SIRDS image will then have this pattern as its base, producing some very pleasing results.

WinSIRDS ships with 20 GIF patterns which should be located under the SIRDSPAT subdirectory of the WINSIRDS home directory.   These pattern files are named pat00.gif thru pat19.gif.   The user is free to modify and/or substitute any of these patterns with his own, as long as the following rules are observed:

1) Keep the number of patterns at 20.
2) Name the file with the same name in the range of pat00.gif thru pat19.gif.
3) The image dimensions must be 100 x 100 pixels.
4) For best effect, the pattern must give the impression of continuity at the boundaries.

Note that SIRDS patterns will work best with a Gap Value of 100.   (See See <u>SIRDS Settings</u>).

SIRDS Scan Method

There are various ways to scan a horizontal line on an image to generate a SIRDS. WinSIRDS implements three of these methods.   While there are others, these were selected for overall speed.

1)   Left-To-Right: This is the traditional algorithm.   While fast and simple, this method
        yields distortion on the right hand side of the image.
2)   McMahon: This method is the result of an algorithm developed by Paul McMahon
        and documented in "The Emporors New Clothes".
3)   Feutch: This method is one of two implemented by Fred Feutch, and documented in
        a program called RDSGEN.C.

Experiment with these scan methods to see which results in the best quality for your particular application.