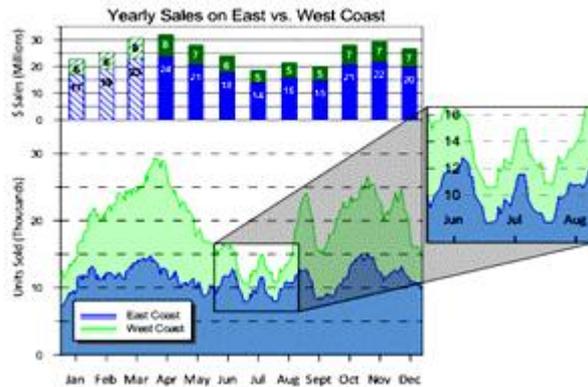


GRAPHER 11

Grapher Overview

Grapher is the ultimate technical graphing package available. This easy-to-use, powerful, dynamic program will help you create superior publication-quality professional graphs in minutes! Wow your audience every time they see your graphs.

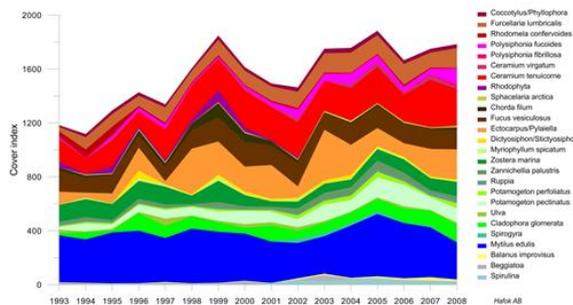


Create one of 54 unique graph types. Create linear or logarithmic line, scatter, bar charts, and histograms as 2D or 3D graphs. Create many types of polar plots, including line, bar, rose, wind charts. Choose from several specialties graph types, including ternary, box-whisker, bubble plots, pie charts, and hi-low-close plots.

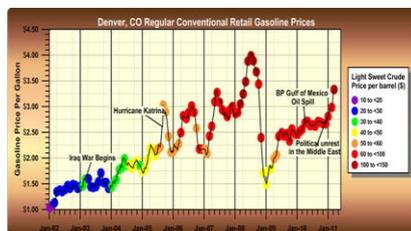
Linear Graphs

All graph types in Grapher give you full control over all graph parameters. Combine multiple graph types to present your data in a completely new way! Alter any property of any of the graph types to create compelling new graphs. You can accept the Grapher intelligent defaults to automatically create a plot, or click any aspect of the graph to easily customize those features.

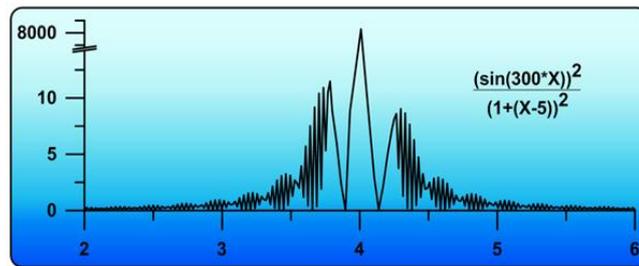
Line, Scatter, and Line/Scatter plots display data as a line, as symbols, or as a combination of line and symbols. Alter line colors, symbols colors, or fill between curves.



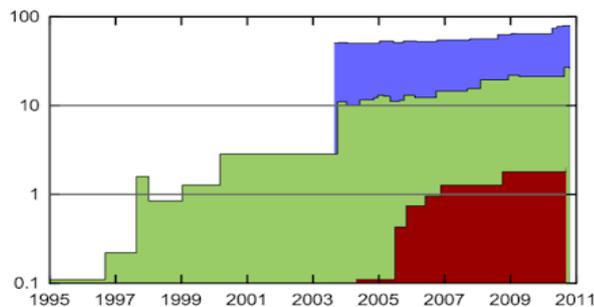
Class scatter plots allow symbols to be based on a range of data values in a worksheet column. In addition to class scatter plots, regular symbol plots can be created with different symbols based on information in a column or in a symbol table.



Function Plots display mathematical functions. Plot Y as a function of X, or plot a parametric equation where X and Y are a function of a third variable, T.



Step Plots display linear data in a similar manner to line/scatter plots. Except, with step plots, connecting lines are only vertical and horizontal. All other parts of the plot are editable exactly like the line/scatter plot.



Display line/scatter plots over any axis range, using the default full axis range or specifying only the section you want to display on the graph. And with Grapher you can add color fill between plots to produce dazzling displays of your data.

Linear Graph Features

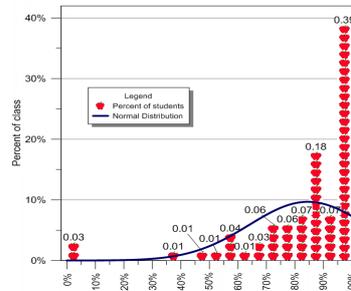
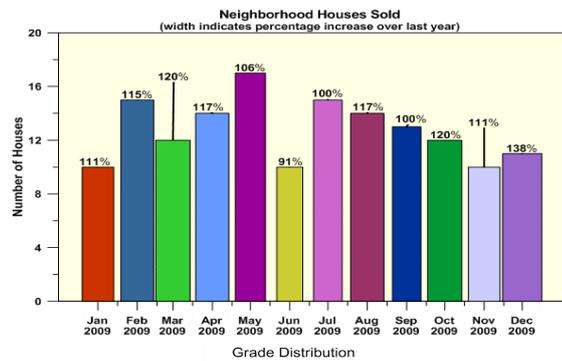
- Display lines with any color, width, opacity, or style.
- Use a worksheet column to change the color of lines within the curve.
- Display symbols with any shape, color, or opacity.
- Change the frequency of symbols to control how many symbols are plotted on each curve.
- Use a symbol table to vary the symbol for every point.
- Use a symbol column to define the symbol shape from a worksheet column.
- Match the color of the symbol to the color of the line automatically.
- Drag point labels to place them exactly where you want.
- Fill under, above, to the left, to the right, or between curves.
- Add fit curves and confidence intervals.
- Add error bars that display statistical information about the data. Error bars can also be displayed from a worksheet column.
- Limit the display of lines and symbols to only a desired subsection of data.
- Use a worksheet clipping column to control the display of points.
- Add a graph title or legend to enhance your graph.
- Automatic or user-defined contour intervals and ranges
- Adjust the opacity of all objects in the graph.

Bar Type Graph

Bar type graphs display data as boxes, cones, spindles, diamonds, or as an image. All bar type graphs can be displayed either horizontally or vertically. As with all graph types in Grapher, you have full control over all graph parameters.

Bar charts are made from XY data in a worksheet. The bar is shown at the height indicated in the worksheet cell. Alter line colors, fill colors, orientation, or bar chart shapes. Bar charts can be stacked or adjacent, when multiple data exists for each value.

I like the consistent improvements in new Grapher versions while keeping the proven features.



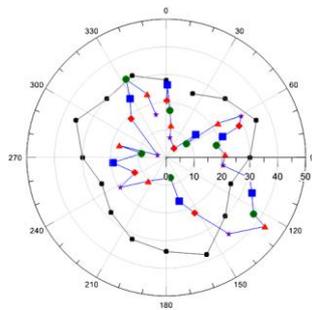
Bar Type Graph Features

- Display bars either as stacked or as adjacent bars.
- Vary the bar width based on a worksheet column.
- Set the bar width to a percentage of the axis or as a fixed width.
- Display bars vertically or horizontally.
- Display lines with any color, width, opacity, or style.
- Display fill with any color, gradient, style, or opacity.
- Use a worksheet column to set fill color.
- Use a color table to set fill color.
- Display bars as boxes, cones, spindles, diamonds, or any image you desire.
- Change the frequency of symbols to control how many symbols are plotted on each curve.
- Add labels to your bars.
- Drag point labels to place them exactly where you want.
- Add a fit curve to histograms.
- Add error bars that display statistical information about the data. Error bars can also be displayed from a worksheet column.
- Limit the display of bars to only a desired subsection of data.
- Use a worksheet clipping column to control the display of points.
- Add a graph title or legend to enhance your graph.
- Adjust the opacity of all objects in the graph.

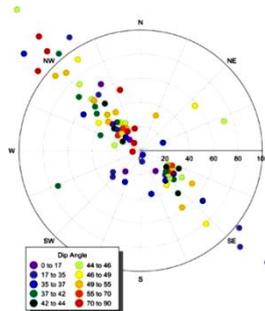
POLAR PLOTS

Polar plots display data on polar coordinates, using degree, radian, or grad data versus a radial distance. The degree, radian or grad data are displayed on a circular angle axis. The second axis is a radial axis showing the distance from the center of the circle. Polar plots can display mathematical functions, line/scatter data, bars, or classed scatter plots.

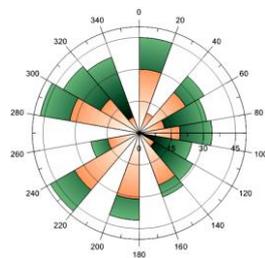
As with all graph types in Grapher, you have complete control over all aspects of the graph. Polar line/scatter plots display data as a line, as symbols, or as a combination of line and symbols. Alter line colors, symbols colors, or add labels.



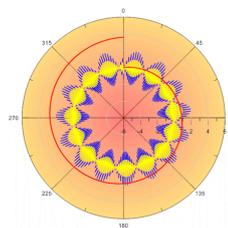
Polar class scatter plots allow symbols to be based on a range of data values in a worksheet column. In addition to class scatter plots, regular symbol plots can be created with different symbols based on information in a column or in a symbol table.



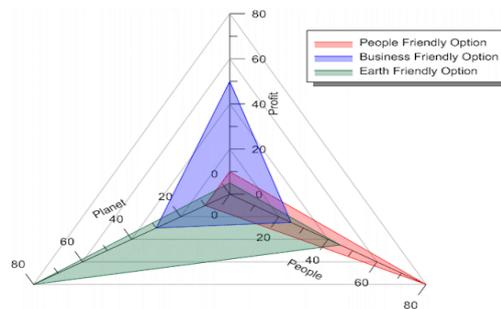
Polar bar charts are bars that are displayed using radius and angle values in a worksheet. The bar is shown at the length (radius) indicated in the worksheet cell. Alter line colors, fill colors, or bar width. Bar charts can be stacked or adjacent, when multiple data exists for each value.



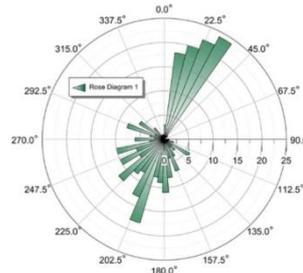
Polar function plots are lines, symbols, or both that display a mathematical function in polar coordinates.



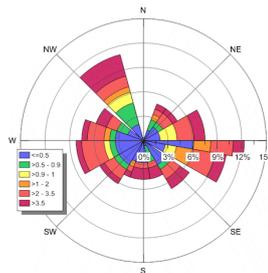
Radar graphs, also known as spider plots, are new in Grapher 8! The radar plot has a similar appearance to other radial graphs, except there are multiple radial axes and no angle axis. A radar graph is a graphical method of displaying multiple variables. Comparisons between multiple radar plots typically show trends in your data.



Rose diagrams display statistical data like a histogram, showing the number of occurrences of an event that fall within a specific angular region. Bins are fully customizable in rose diagrams!



Wind Charts graph frequency vs. wind direction. Bins are created according to the wind speed. The frequency can be viewed as counts, relative frequency, or as percentages of relative frequency. Bins are fully customizable!



Polar Graph Features

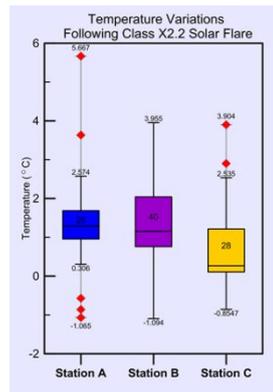
- Display any portion of the polar plot.
- Display polar bar charts either as stacked or as adjacent bars.
- Vary the bar width based on a worksheet column.
- Display lines with any color, width, opacity, or style.
- Display fill with any color, gradient, style, or opacity.
- Use a worksheet column to set fill color.
- Use a color table to set fill color.
- Change the frequency of symbols to control how many symbols are plotted on each curve.
- Add labels to plots.
- Drag point labels to place them exactly where you want.
- Use a worksheet clipping column to control the display of points.
- Add a graph title or legend to enhance your graph.
- Adjust the opacity of all objects in the graph.

Specialty Graphs

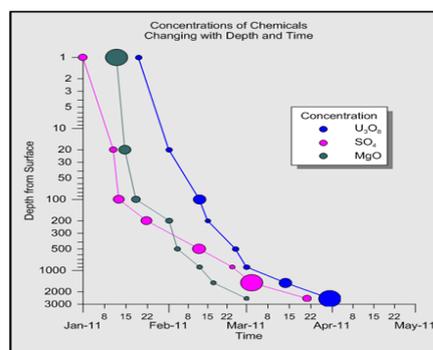
Specialty graph include graphs such as box-whisker plots, ternary diagrams, or stiff diagrams. Each graph has its own rules and displays in a completely unique way. As with all graph types in Grapher, you have complete control over all aspects of the graph.

Box and whisker plots display statistical data. Each column is assigned to a box. The box top-bottom values are defined by the 25th percentile and 75th percentile. The whiskers are the minimum and maximum values, unless outliers are defined. Then, the whiskers can be changed with an outlier

definition. Box and whisker plots allow complete control of all line colors and styles, symbol colors and shapes, and fill colors. Label every portion of the box-whisker plot for maximum clarity.



Bubble plots display three variables on two axes. The third variable is shown in the size of the bubble. All aspects of the plot can be changed, including the bubble symbol, line properties, and whether labels are shown.

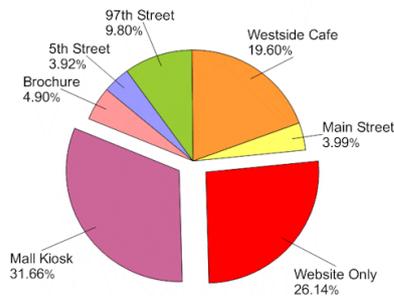


Hi-Low-Close plots display a range of Y values at each X value. These plots are commonly used to display the high, low, opening and closing of stock values, though Hi-Low-Close plots are also used for many other purposes. Hi-low-close graphs can be displayed with the standard line or with bars, the "candlestick" graph.

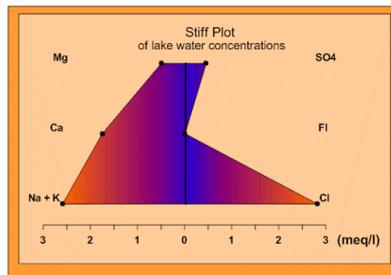


Pie Charts show data as proportional slices of a circle. Each data value is divided by the sum of the data to determine the size of the slice. Explode slices to emphasis a particular item! Change the property of each slice individually.

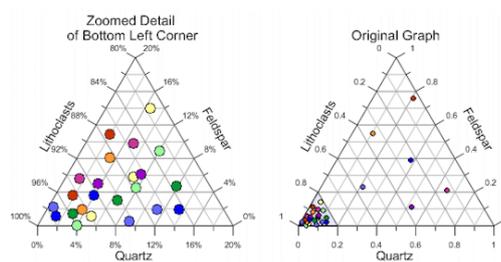
Northwest Regional Sales by Type



Stiff diagrams can be used to display water quality. Stiff diagrams show relative concentrations of multiple cations and anions.



Ternary diagrams show the relative proportions of three variables on three axes. Choose to show the relative proportions as percentages or as fractions. Add lines to connect the points on the ternary diagram! Display any column for the labels or show relative proportions for labels! Zoom in on an area of interest!

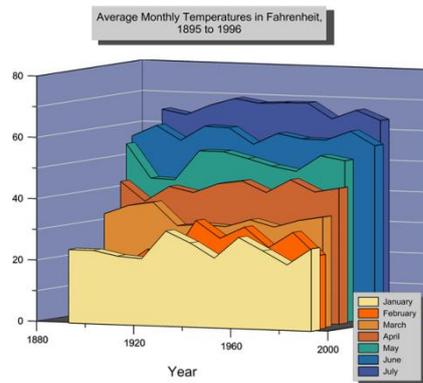


Vector plots are used to show the starting and ending point of a variable, such as wind or current. Grapher allows you to set the starting XY position. The ending position can be specified with angle and magnitude or ending XY position.



3D XYY graphs

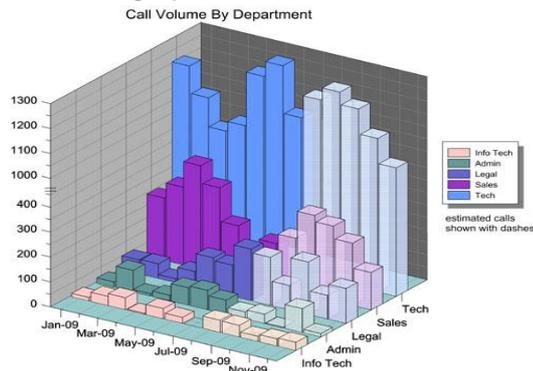
The 3D XYY graphs are graphs that contain two variables and are displayed with a 3D view. Most 2D XY Graphs can be displayed as a 3D XYY graph.



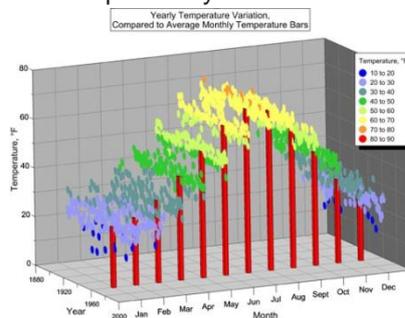
3D XYY Graphs Features

- Rotate graph to any direction with the easy use 3D trackball.
- Make the width of the 3D XYY graph from 0 to 6 inches.
- Add grid lines on the side walls and back wall.
- Change the fill color or style for the side walls and back wall.
- Show labels at the same angle as axes or parallel to the screen.
- Most 2D plot settings apply to the similar 3D XYY plot.
- Add a graph title.
- Add a graph legend.
- Change the line color, width, or style for any plot.
- Change the fill color, direction (if applicable), and pattern for any plot.

The 3D XYZ graphs are true 3D graphs that contain three variables. All aspects of the graph can be altered, exactly like the 2D and 3D XYY graphs.



Break axes, display date/times, or add legends and text. Grapher has an unlimited number of ways to present your data!



Combine graphs such as class scatter plots and bar charts to more effectively display your data!

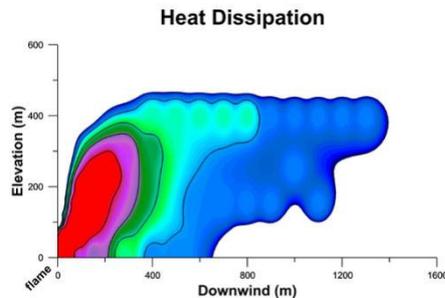
3D XYZ Graphs Features

- Rotate graph to any direction with the easy to use 3D trackball.
- Make the length of each axis on the 3D XYZ graph from 0 to 6 inches.
- Add grid lines on the side walls and back wall.
- Change the fill color or style for the side walls and back wall.
- Show labels at the same angle as axes or parallel to the screen.

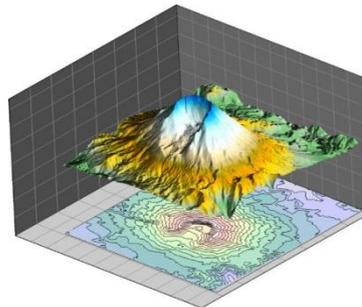
- Add a graph title.
- Add a graph legend.
- Change the line color, width, or style for any plot.
- Change the fill color, direction (if applicable), and pattern for any plot.
- Add symbols to 3D XYZ line/scatter plots.
- Display labels and move them to your desired location.

Contour Map

Contour maps can be displayed over any contour range or interval. You can color fill the contours in any way you would like. Add a color legend to make reading the contour map even easier! Contour maps can be created directly from a data file or from a Surfer GRD file. As with other graph types, you have full control over all options.



Contour maps can be filled to highlight your data!



Contour maps can be added to surface maps to aid in interpretation!

Contour Map Features

- Use the defaults or set the minimum and maximum contour values and the contour interval.
- Display any fill color between contours.
- Display lines with different styles, colors, and widths for each contour line.
- Add a color scale bar legend.
- Grid data directly in Grapher using Inverse Distance to a Power.
- Import grid files from Surfer!
- Smooth grid contour lines.
- Display contour maps in XY or XZ plane.
- Overlay a contour map onto a surface map or display the contour map at any elevation.
- Rotate the map to any desired angle.
- Define custom line styles and fill styles.

Surface Maps

Surface maps display XYZ data in a smooth color filled surface. Surface maps use color and shading to emphasize changes in data.

Surface Map Features

- Display functions, grids, or data as a surface map.
- Display any fill color spectrum for your surface.

- Add a color scale bar legend to explain the data values corresponding to each color.
- Specify surface color gradation, shininess, base fill and line color.
- Overlay contour maps, surface maps, and other 3D maps to more fully show your data.
- Control mesh line frequency, color, style, surface offset.
- Set lighting horizontal and vertical angles, ambient, diffuse, and specular properties.
- Choose overlay resample method and resolution, color modulation (blending) of surface and overlays.
- Grid data directly in Grapher using Inverse Distance to a Power.
- Rotate the map to any desired angle.
- Add legends, graph titles, and axis titles and labels.
- Show tick marks at any interval.
- Show date/time or labels from a worksheet on axes.
- Display point labels on most graph types.
- Rotate graphs to any desired view.
- Change the axes lengths to meet your needs.
- Customize any color to make exactly the right shade or hue.
- Set the axis limits to any values, regardless of your graph data.
- Add symbols, polygons, polylines, spline polygons, spline lines, or text.
- Add a drawing insert zoom or a graph magnifier.
- Add multiple curves to each graph.
- Add multiple axes to each graph.
- Display multiple graphs on a page.
- Define custom line styles and fill styles.

Worksheet

Grapher lets you work with your data in many ways to achieve the exact output you want. Grapher includes a full-featured worksheet for creating, opening, editing, and saving data files. Data files can be up to one billion rows and columns, subject to available memory. You can cut, copy, and paste data within the Grapher worksheet or between applications.

Worksheet Features

- Display, enter, edit, print and save data.
- Open files in ACCDB, BLN, BNA, CSV, DAT, DBF, MDB, SLK, TXT, XLS, and XLSX formats
- Import a database directly into the Grapher worksheet
- Double precision capabilities allow up to 15 digits without loss of precision.
- Calculate numerous statistical functions on individual columns of data.
- Perform data transformations using advanced mathematical functions
- Sort data using multiple columns
- Use the Find/Replace function in the worksheet to easily find or replace your data
- Print the worksheet
- Save your data in BLN, BNA, CSV, DAT, SLK, TXT, and XLS formats.
- The number of data points the worksheet can handle is only limited by the amount of memory available on your computer (up to 1 billion rows x 1 billion columns)
- Cell formatting includes background colors and cell height and width.
- Include formatting information when copying to the worksheet.
- Select a point on the graph and highlight the point in the worksheet.
- View a list of all worksheets associated with a graph.
- Export data from fit curves, function plots, histograms, rose diagrams, and wind charts to create new data files.
- Update command allows worksheets that are edited in other programs to update immediately in Grapher.
- Embedded Excel window allows the use of Microsoft Excel from within Grapher.
- Create mathematical transforms on columns, rows, or individual cells.

- Directly reference ACCDB and MDB tables and queries. Have the graph automatically update when the file changes.

Additional Features

Grapher is packed full of additional features designed to help you communicate effectively and professionally

- Edit multiple objects at once.
- Add legends to graphs.
- Customize Grapher by selecting the default settings. Customize most settings for each graph type!
- Drag and drop plots into or out of graphs and to another graph.
- Control line styles, color, opacity, and width.
- Add drawing objects to any graph such as points, lines, polygons, rectangles and ellipses.
- Create custom colors, lines, and fill patterns.
- Display clipped bars to the clipping limit.
- Clip fit curves and confidence intervals.
- Reshape polylines and polygons using the reshape tool.
- Combine and break apart composite objects.
- Edit individual objects in a composite without first breaking apart.
- Rotate all drawn objects, imported objects and graphs.
- View all objects using the Object Manager.

Supported File Formats

Grapher 9 supports many popular import and export formats.

Data Files	Grid Files	Import/Export	
Open Data: Access Database (ACCDB, MDB) ASCII Data (DAT) Atlas Boundary (BNA) Comma Separated Variables (CSV) Database (DBF) Excel Spreadsheet (XLS, XLSX) Golden Software Blanking (BLN) ODBC Database Connection Sylk Spreadsheet (SLK) Text Data (TXT)	Open Grids (Contour & Surface Plots): DTED (DT0, DT1, DT2) GTOPO-30 (HDR) SDTS DEM (DDF) Surfer Grid (GRD) USGS DEM (DEM)	Import: ACR-NEMA Medical Image (AN1, AN2) Atlas Boundary (BNA) AutoCAD Drawing (DXF) AVS X-Image (X, XIMG) Compressed Bitmap (JPG) DICOM3 Medical Image (DIC, DCM) ESRI ArcInfo Export Format (E00) ESRI Shapefile (SHP) GIF Image (GIF) Golden Software Blanking (BLN) Golden Software Boundary (GSB) Golden Software Interchange (GSI) Golden Software PlotCall (PLT) LizardTech MrSID Image (SID) MapInfo Interchange Format (MIF) PNM/PPM/PGM/PBM Image (PNM, PPM, PGM, PBM) Portable Network Graphics (PNG) SDTS TVP (DDF) SGI-RGB Image (RGB, RGBA, BW) Stanford PLY (PLY) Sun Raster Image (SUN, RAS) Tagged Image (TIF) Targa (TrueVision) (TGA) USGS Digital Line Graph (DLG, LGO, LGS) Visualization Toolkit (VTK) Windows Bitmap (BMP) Windows Enhanced Metafile (EMF) Windows Metafile (WMF)	Export: Atlas Boundary (BNA) AutoCAD DXF Drawing (DXF) AVS X-Image (X, XIMG) Encapsulated Postscript (EPS) ESRI Shapefile (SHP) GIF Image (GIF) Golden Software Blanking (BLN) Golden Software Boundary (GSB) JPEG Compressed Bitmap (JPG) MapInfo Interchange Format (MIF) PDF (Raster) (PDF) PDF (Vector) (PDF) PNM Image (PNM, PPM, PGM, PBM) Portable Network Graphics (PNG) SGI-RGB Image (RGB, RGBA, BW) Sun Raster Image (RAS, SUN) Tagged Image (TIF) Targa (TrueVision) (TGA) Windows Bitmap (BMP) Windows Enhanced Metafile (EMF) Windows Metafile (WMF)
Save Data: ASCII Data (DAT) Atlas Boundary (BNA) Comma Separated Variables (CSV) Excel Spreadsheet (XLS) Golden Software Blanking (BLN) Sylk Spreadsheet (SLK) Text Data (TXT)	Export Plot Grid Data (Contour & Surface Plots): Surfer Grid (GRD) ASCII Data (DAT)		