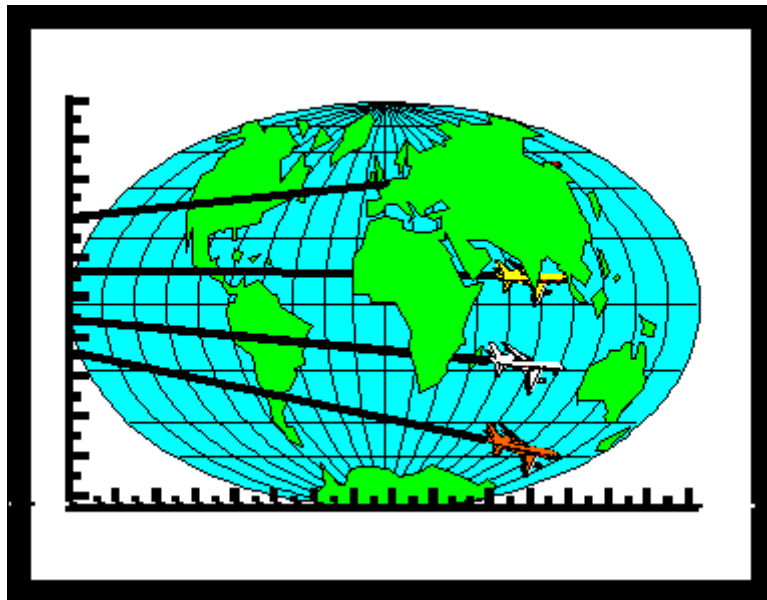


# **XPLOTTER**



**MinServ**

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# Introduction

## About Xplotter

Xplotter is a Windows program for plotting XY, Log, Line, Bubble, Pie, Polar, Vector, Ternary, Diamond and Bar Charts. There is a range of options for customizing the appearance of each diagram and advanced features such as least squares curve fitting and a multiple document interface.

## Xplotter Features

### Built in Spreadsheet

Xplotter has an inbuilt spreadsheet for entering and editing data. The spreadsheet reads and writes tab delimited ASCII files, compatible with most spreadsheets and text editors. A number of other popular formats including excel, csv, pdf and html are also supported.

### Graph Types

A set of plotting XY, Log, Line, Bubble, Pie, Polar, Vector, Ternary, Diamond and Bar Charts are included. All charts are available in 2D and 3D.

### Diagram Manipulation

Many options are available for plotting data. A choice of symbols, labels and diagram title is available to customize the diagram.

### Printing

Print diagrams with all labels, titles, etc on any windows printer. Format the diagrams for printing, including, size, margins, quality etc.

## **Getting Started**

Xplotter requires a minimum system configuration for effective results. The system requirements are:

Windows 2000, XP, Vista, Windows 7, Windows 8

Net Framework version (V4.0 or higher) requires Net Framework 4.0 or higher.

Devices supported by Windows

Printer supported by Windows.

For automatic installation, proceed as follows:

1. Start Windows and place CD into CD Drive
2. Go to the Run Option on the Start Menu and Click on Browse
3. Open (CDROM)D:
4. Install Net Framework 4
5. Install Xplotter
6. After Setup has concluded, you will get a [App] Setup was Completed Successfully message.
7. Go to the Xplotter Menu and right click on Xplotter. Select Properties and Run As Administrator.
8. To Start Xplotter, go to the Xplotter Menu and click on Xplotter. Enter your registration details in the Registration Window.

Installation will now proceed. The user will be notified when installation is complete. A new Start Menu Item containing Xplotter and Xplotter HELP is created. Click on Xplotter to start the program.

# Tutorial

## Introduction

Xplotter has a standard Windows interface. Before starting the exercise, Xplotter must be installed on the users hard drive and opened ready to use. See Getting Started in the Introduction for information on how to install Xplotter. A sample data file called comrie.plt is provided for use with the tutorial exercise. If Help is required, pull down the Help menu and select Contents.

## Getting To Know Xplotter

To load the comrie.plt data file, click the Open command button or select Open from the File menu. The Open common dialog box will pop up. Select comrie.plt in the xplotter/data directory.

**Hint:**

Use the toolbar as a short cut to acces some options.

## Plotting Data

Pull down the Options Menu and select Set Diagram Options. Accept the default values and click the Plot button. A ternary diagram will appear on a new form. When finished, click the OK button and you will be returned to the Spreadsheet window.

**Hint:**

If an error occurs while plotting data, the most likely cause is incorrect data. Check for zero or blank data values. Mixed numeric and non-numeric data will also produce errors.

## Entering Data

Select New from the File menu to start a new data file. Pull down the Options Menu and select Insert Ternary Headings. The appropriate column headings are placed in the spreadsheet. Data is entered in each cell by simply typing the value and pressing <enter>. Use the scroll bars, arrow, page up and page down keys to navigate through the spreadsheet. To edit a cell, press <enter> for the cell you want to edit and use the backspace/delete/insert keys to edit the text. When finished editing press <enter> the new value will appear in the spreadsheet. Whole rows can be inserted and deleted using the Insert Row and Delete Row command buttons. Blank lines are not permitted between data. Enter the following data:

Sample #	Quartz	Al Felds	Plag
134223	25	20	55
134225	12	36	52
134226	7	56	37
134227	47	21	32

To edit a cell, go back to Row 2, Col 1 and press <enter>. Type 134224 to replace 134223 and press <enter>.

When you have finished using the program, select Exit from the File menu.



**Hint:**

Use the mouse to navigate through the spreadsheet. Click a cell to change the current cell or click on the scroll bars to display out of view data. To begin editing a cell, double click the mouse.

# Xplotter Menu System

## Introduction

When Xplotter is started the first screen displayed contains a spreadsheet and menu system. The menu system provides access to all the features of Xplotter. Standard Windows menu items; such as, File, Edit and Help are included. Other menu items provide access to the specialised features of Xplotter.

## File Menu

The File Menu provides many standard file management options.

### **New Command**

Starts a new spreadsheet.

### **Close Command**

Closes the current spreadsheet.

### **Open Command**

Provides access to the Open common dialog box. Opens a new file. Select the directory and file and click OK. A file can also be opened by clicking the Open command button.

### **Save Command**

Saves a file to disk. The default filename is the current filename. The same result is obtained by clicking the Save command button.

### **Save As Command**

Saves a file to disk in a directory and filename specified by the user. A Save As dialog box pops up for the user to enter filename and directory path information.

### **Print Command**

Prints a data file. A Print dialog box pops up. Select Print to print the file.

### **Print Setup Command**

Specifies printer settings available to the user. A Print Setup dialog box pops up with several options to control the printer.

### **Exit Command**

Quits the application.

## **Edit Menu**

The Edit Menu provides access to several standard commands for editing the spreadsheet.

### **Copy Command**

Copies selected text in the spreadsheet to the clipboard without deleting. Highlight the text to be copied by dragging the mouse or holding down the shift key and clicking

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cells. Highlighted text must be contiguous. Select Copy to copy the selected text to the clipboard. Use Paste to paste text from the clipboard to the spreadsheet. Use Cut to remove highlighted text from the spreadsheet to the clipboard.

### **Cut Command**

Copies selected text from the spreadsheet to the clipboard and clears the highlighted area in the spreadsheet. Highlight text to be cut by dragging the mouse or holding down the shift key and clicking cells. Select Cut from the edit menu to transfer selected text to the clipboard. Use Paste to retrieve cut text from the clipboard. Use Copy when you want to copy text to the clipboard without deleting the highlighted text.

### **Paste Command**

Retrieves text from the clipboard and pastes it into selected cells. Highlight cells that are to receive the incoming text by dragging the mouse or holding down the shift key and clicking cells. Highlighted cells must be contiguous. Select Paste from the Edit menu to transfer text from the clipboard to the spreadsheet.. Any text that already exists in the highlighted cells will be replaced. If the number of selected cells are fewer than will hold the clipboard text, the rightmost text from the clipboard will be truncated to fit the selected cells. If the number of cells selected exceed the length of the clipboard text, the remaining cells will be cleared. Use Copy and Cut to send text to the clipboard.

### **Insert Row Command**

Inserts an entire row into the spreadsheet.

### **Delete Row Command**

Deletes an entire row from the spreadsheet.

### **Delete All Command**

Deletes all selected rows from the spreadsheet.

## **Search Menu**

The Search Menu allows the user to find and replace user specified text.

### **Find Command**

Finds a user specified search text in the spreadsheet. A pop up Search/Replace dialog box prompts the user for the search text. Enter the exact search text and click OK to proceed with the search.

### **Repeat Find Command**

Repeats a search using the previous specified search text.

### **Replace Command**

Finds a user specified search text and replaces it with a user specified replace text. A pop up dialog box prompts the user for search text (Find What) and replacement text (Replace With). The following options are available:

Replace- replace the first occurrence of the search text  
with the specified replace text

Replace All - replace all occurrences of the search text  
with the specified replace text.

### **Sort Command**

The Sort Menu allows the user to sort data in the spreadsheet in numeric or alphabetical order. Select Sort from the Edit Menu and enter the column number to sort.

## Options Menu

### Define Columns Command

Defines which columns contain the XYZ data. A dialog box prompts the user for columns containing Sample #, Symbols, Colors, X Value, Y Value and Z Value. When the default data format is used, these correspond to columns 1, 2, 3, 4, 5, 6, and 7 respectively.

### Insert Ternary Headings

This command selects a ternary diagram and places the appropriate column headings into the spreadsheet. Axes titles can be specified in the Options Window by selecting Set Diagram Options.

### Insert XY Headings

This command selects a XY diagram and places the appropriate column headings into the spreadsheet. Axes titles can be specified in the Options Window by selecting Set Diagram Options.

### Insert Diamond Headings

This command selects a diamond diagram and places the appropriate column headings into the spreadsheet. Axes titles can be specified in the Options Window by selecting Set Diagram Options.

### Colors Command

Provides access to the Colors dialog box for selecting the symbol colors. Click on the color and click on insert to place the color code in the spreadsheet.

### **Symbols Command**

This command opens the Symbol window to view available symbols. Click on the symbol and click on insert to place the symbol code number in the spreadsheet.

### **Auto Symbols Command**

Automatically assigns a symbol to each data point when a diagram is plotted.

### **Assign Symbols Command**

Automatically calculates a different symbol for set of data and places the symbol codes into the spreadsheet under the Symbol column heading.

### **Convert to Coord Command**

Converts modal mineralogy to XYZ coordinates as used by ternary diagrams.

### **Normalize Command**

Normalizes data in a specified column to a new user specified sum.

### **Format Command**

Automatically formats numeric data in the spreadsheet. Specify the number of decimal points and click on format to format data. Formatting only occurs in columns 5 to end.

### **Statistics Command**

Calculates the maximum, minimum, median, mean and standard deviation of a group of samples. Enter the spreadsheet column number containing the data to be analysed. Click on calculate to calculate statistics.

## Plot Menu

### Plot Bar Chart Command

Plots bar charts using data in the current spreadsheet. The Options Window pops up for selecting plotting options.

### Plot Ternary Command

Plots ternary and diamond graphs using data in the current spreadsheet. The Options Window pops up for selecting plotting options.

### Plot XY Command

Plots XY graphs using data in the current spreadsheet. The Options Window pops up for selecting XY plotting options.

### Log Plot Command

Plots Log-Log and Log-Linear graphs using data in the current spreadsheet. The Options Window pops up for selecting log plotting options.



# The Spreadsheet

## Introduction

A spreadsheet is a form consisting of rows and columns of data and is the best method for displaying and manipulating data in row and column format. The custom spreadsheet supplied with Xplotter is used for entering and editing data. Once the data is correctly entered, data can be sorted, calculated and plotted.

## File Formats

The built in spreadsheet reads and writes data files in tab delimited ASCII format. This format is used by Microsoft Excel and is compatible with most spreadsheets. ASCII is short for American Standard Code for Information Exchange. ASCII files contain standard text without hidden characters. A tab delimited ASCII file is a text file with each field separated by a tab character and each line by a carriage return. Xplotter files with the .plt extension are tab delimited ASCII files.

To import a data file created with another application, save the file in tab delimited ASCII format (in Excel, these files have a .txt extension) , start Xplotter and open the data file. Xplotter will automatically load the file into the spreadsheet. To export a data file created with Xplotter, use any of the following methods:

1. Select tab delimited ASCII format in the other application. These files usually have a .txt extension. Open the file.
2. In Excel, the file created with Xplotter can simply be opened directly.

Xplotter also reads and writes Microsoft Excel (xls) and CSV files.

Diagrams can be exported to pdf files using the pdf printer driver supplied. Select the dopdf printer in the printer settings to print a pdf file.

## Entering Data

Data is entered in each cell by simply typing the value and pressing <enter>. Use the scroll bars, arrow, page up and page down keys to navigate through the spreadsheet. Use the scroll bars when moving around the spreadsheet. To edit a cell, press <enter> for the cell you want to edit and use the backspace/delete/insert keys to edit the text. When finished editing press <enter> the new value will appear in the spreadsheet. Whole rows can be inserted and deleted using the Insert Row and Delete Row command buttons. Blank lines are not permitted between data.

## Sorting Data

Data can be sorted numerically or alphabetically. To sort data, pull down the Edit menu and select Sort. Select a column number to sort.

## Converting Data to XYZ

If data has been entered as modal data, clicking on the convert to XYZ option in the Options Menu will convert the data to XYZ coordinates for use with Ternary and Diamond graphs.

**Hint:**

If an error occurs in the calculation, the most likely cause is incorrectly entered data. Check for zero, blank or mixed numeric and non numeric data.

## Printing Data

Data is printed by pulling down the File menu and selecting Print. A Print dialog box will pop up with several options. Select OK to print the data. A simple listing of current data will be printed. If Print Spreadsheet is selected, the spreadsheet is printed in tabular format.

# The Diagrams

## Introduction

Xplotter will plot general-purpose xy, ternary, diamond, log-log and log-linear graphs. Many options are available to customize the diagrams. Publication quality diagrams can be produced on a laser printer.

Before plotting data, several options must be set to control the type and appearance of the diagram. To access the Options window, pull down the Plot menu and select the diagrams to be plotted.

## Bar Chart Options Window

Select Plot Bar Chart from the Plot menu to plot a bar chart. A bar chart displays sample numbers on the x-axis and a variable, such as Cu, Au, As etc on the Y axis. Bar charts have the same drawing/editing tools as the other graphs. In the options window, specify a column containing the Y coordinate to plot. The X coordinate is automatically assigned to whatever column contains the sample # data. Choose from a standard bar graph or line graph.

Graph titles and labels can also be entered.

## Bubble Options Window

The Bubble Options Window sets options for Bubble plots.

### **Bubble**

Sets the method that calculates the bubble size. Autosize will normalize z data to make the bubbles fit on the chart. Specify radius allows the user to specify the radius (z data) of the bubble as a function of the Y axis scale.

### **Set Scale**

When Manual Scale is selected enter maximum and minimum values for the X and Y axes here.

### **Set Titles**

Enter diagram, x-axis and y-axis titles here.

## Plot XY or XY Setup Window

The XY Setup Window sets options for XY plots.

### **Graph and Scale Type**

Select standard XY Plot or XY Line Plot to plot points connected by lines. Auto Scale or Manual Scale can be selected.

### **Set Scale**

When Manual Scale is selected enter maximum and minimum values for the X and Y axes here.

### **Set Titles**

Enter diagram, x-axis and y-axis titles here.

## **Vector Options Window**

The Vector Options Window sets options for Vector plots. Vector Charts plot arrows, with an azimuth (angle) value between 0-360 degrees. The X and Y values contain location coordinates and the z value contains azimuth. Symbol assignments have no effect on Vector plots, as only arrows are used. Colors can be assigned under the color column. The vector symbol can be customized using Options-Vector Symbol Menu.

### **Scale Type**

Auto Scale or Manual Scale can be selected.

### **Set Scale**

When Manual Scale is selected enter maximum and minimum values for the X and Y axes here.

### **Set Titles**

Enter diagram, x-axis and y-axis titles here.

## **Pie Chart Options Window**

For pie charts, it is possible to define labels and a chart title in the options window. Set the columns containing sample name and percentage. There are no color and

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symbol settings for pie charts, the built in color library is used instead. Additional options can be set in the Pie Chart Window.

### **Set Labels**

This option determines which labels appear on the diagram. Select from:

- 1.none - no labels appear on the diagram
- 2.sample name - sample names as shown on the spreadsheet

Labels will be printed with the diagram.

### **Title**

Customize the chart title.

## **Polar Chart Options Window**

The Polar Options Window sets options for Polar plots.

### **Scale**

When Manual Scale is selected, enter maximum and minimum values for the Y axis (value data) here. Polar Charts use two variables, azimuth (or angle) and value. The azimuth must be 0-360 degrees.

### **Set Titles**

Enter diagram titles here

### **Other**

Colors are automatically assigned to Polar Charts. User specified color and symbol have no effect. Line and shape drawing tools have no effect on polar charts.

## **Plot Ternary or Diamond Options Window**

The Ternary/Diamond Options window has many user definable settings to control the diagram. For ternary plots, data in the defined columns for top, left and right values are used. The default columns are columns 5, 6 and 7. For diamond plots, the defined column for the bottom apex is also used. The default column is column 8. For diamond plots, column 5 (top) and column 8 (bottom) data cannot be co-existing. Set column 5 (top) data to empty (zero) for each entry in column 8 (bottom).

### **Diagram Type**

This option determines the type of diagram to be plotted. Select from the list of diagram types.

### **Set Labels**

This option determines which labels appear on the diagram. Select from:

- 1.none - no labels appear on the diagram
- 2.sample # - sample #'s as shown on the spreadsheet

Labels will be printed with the diagram.

### **Axes**

Customize the axes labels. Specify the axes titles here.

### **Symbol Descriptions**



If you want symbol descriptions printed with the diagram, enter the descriptions here.

## Log Plot Setup Window

The Log Plot Window sets options for Log-Log and Log-Linear Plots.

### Scale Type

Select log-log or log-linear type plots

### Scale

Select the scale of the X and Y axes here.

### Titles

Enter titles for the graph and x and y axes here.

## Plot Window

The Plot window displays the diagram and sends output to the printer or disk

### Save Diagram As Command

This command saves the current diagram in a user-specified directory and filename. A pop up Dialog box appears which prompts the user for directory path and filename information. The diagram can be exported to many different bitmap and vector file formats. Some of these include bmp, jpeg, pdf and svg.

### Copy Diagram Command

Copies the current diagram to the clipboard for pasting into other applications.

### **Data Information Display**

Displays a data value for each point on the graph. Click on the point to display the data. To enable, check the Data Information Display Menu, followed by the selector toolbar (arrow icon).

### **Axes Color**

To change the default color of the diagram, select this command. A Colors dialog box will pop up. Select a color and click OK.

### **Tick Marks**

If this command is checked, tick marks are displayed and printed with the diagram.

### **Print Diagram**

Prints the current diagram. Also previews the diagram in its fully formatted state and allows further control of margins, quality etc.

### **Line Draw**

To draw a line, select Line Draw. Position the cursor where you would like the line to begin and drag the line by holding down the left mouse button and moving the mouse. Release the left mouse button when the line is positioned correctly.

### **Box Draw**

To draw a box, select box draw. Position the pointer where the box is to begin and drag the cursor by holding down the left mouse button. Release the left mouse button when you have positioned the box correctly.

### **Ellipse Draw**

To draw an ellipse, select ellipse draw. Position the pointer where the ellipse is to begin and drag the cursor by holding down the left mouse button. Release the left mouse button when you have positioned the ellipse correctly

### **Insert Text**

To insert text select Insert Text. The cursor will change to an insertion icon. Position the cursor where you would like to insert text and click the left mouse button. Type the text to be inserted. When finished typing text, press f2. To edit text, click on the selector toolbar, then double click the text to be edited. When finished editing, press f2. To delete text, clear all text, press enter and F2 or Escape.

### **Scroll Axes**

Activates scrolling of the X and Y axes. Right click the mouse, with the pointer over the axis and drag the axis scale.

### **Symbol Legends**

Displays the selected symbol legend on screen. To add symbol descriptions, type the description next to the desired symbol. The symbol legend can be printed and saved.

### **Undo**

Undo the previous drawing action.

### **Zoom**

When zoom is selected true, hold down the right mouse key and drag the pointer from top left to bottom right to zoom the chart. Drag in the opposite direction to undo the zoom.



# Software Support

Technical support for Xplotter is provided through the pdf manual and online help. Free updates may be obtained using the built-in web updater program. Downloads are also available at <http://www.geologynet.com/download.htm>. Further technical support is available directly from MinServ (Mineral Services); however, the software must be registered to receive support.

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