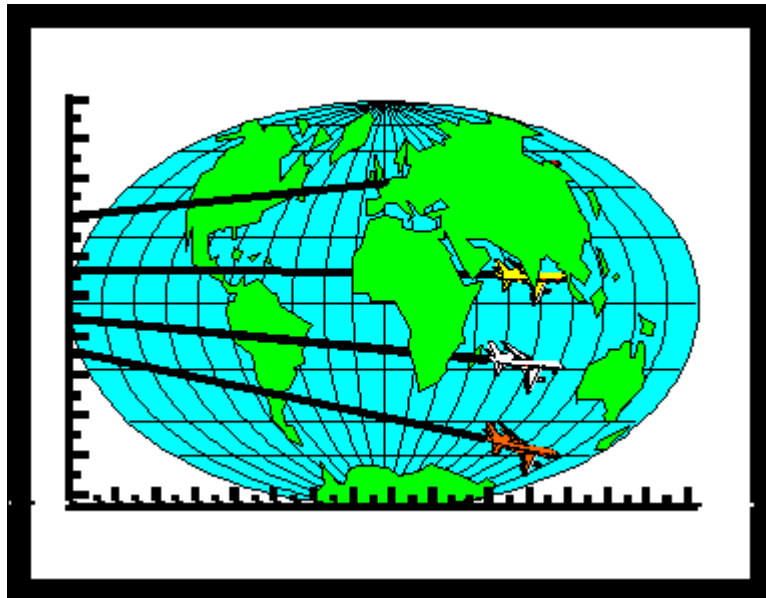


XPLOTTER



MinServ

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Introduction

About XPlotter

XPlotter is a Windows program for plotting XY, Log, Ternary and Diamond plots. There is a range of options for customising 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.

Graph Types

A set of XY, log, ternary and diamond plots is included.

Diagram Manipulation

Many options are available for plotting data. A choice of symbols, colors, labels and diagram title are available to customise the diagram. Labels can be placed on any number of data points. On screen control relates each highlighted data point to a set of data listed in a table.

Printing

Publication quality diagrams can be obtained with a laser printer. Diagrams can be customised with a choice labels and symbols. Select from small, medium or large diagrams. Print symbol descriptions with the diagram.

Getting Started

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

Windows 2000, XP, Vista, Windows 7, Server 2008
Internet Explorer 6 SP1
Devices supported by Windows
Printer supported by Windows

For automatic installation, proceed as follows:

1. Start Windows
2. Select the Run Option on the Start Menu and Click on Browse
3. Open [CDROM]D:disk1/setup.exe to start Setup

Installation will now proceed. During installation, the user is prompted for a directory. If this is ignored, a new directory called XPlotter will be created. If a directory path is entered, a new directory with this name will be created. The user will be notified when installation is complete. A new program manager group containing the XPlotter icon is created. Double click the XPlotter icon 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, press F1 to access online help. Alternatively, 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 directory containing xplotter.exe. If no directory was specified by the user during installation, the default directory name is XPlotter

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. To plot

a label, Click row #3 in the grid list. The corresponding data point on the diagram will now be highlighted. Click Row #3 in the grid list again. Now press <enter> and a Sample # label will be displayed. User specified labels can be entered in the label text box. 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

Deletes data in the current spreadsheet to begin a new file

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 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

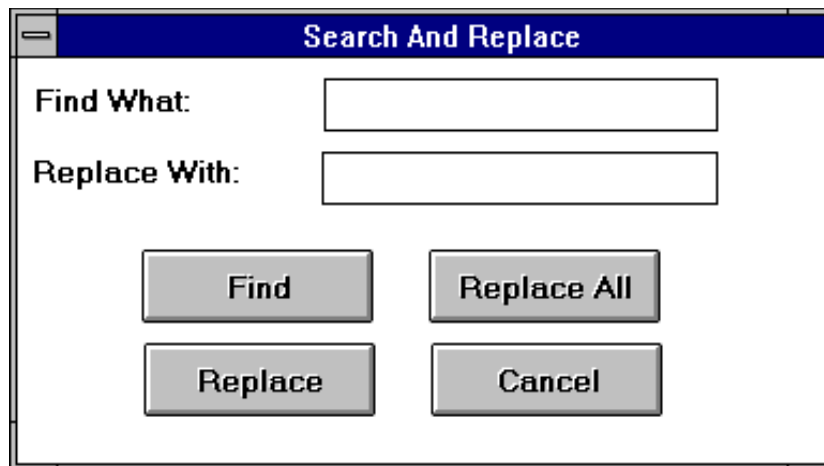
Deletes all selected rows from the spreadsheet.

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

Set Ternary Options Command

Accesses the Options Window for setting diagram options. See the Options Window chapter for more information.

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. In this case, Sample #, Symbol and Color can be left blank or assigned to empty columns.

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.

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.

Format Command

Automatically formats numeric data in the spreadsheet. Specify the number of decimal points and click on format to format data.

Enter Formula

Allows the user to enter a formula. A new window is displayed prompting the user to enter a formula. XPlotter uses Excel formula syntax and relative cell addressing for calculating formulas. If Sum(E2:F2) is entered, the data in cells E2 and F2 will added and placed into the current active cell, in this case G2. If Place in Selected Cells Option is selected (G2, G3 and G4 cells are highlighted), XPlotter will calculate the formula using relative cell addressing, in which case, the sum E2+F2 will be changed to reflect the current cell address ie. E3+F3, E4+F4 and so on.

The following operators and expressions are supported:

+	Addition	2 + 2	A1 + B2
-	Subtraction	4 - 2	A1 - B2

^	Exponentiation	2 ^ 2	A1 ^ B2
*	Multiplication	2 * 2	A1 * B2
/	Division	2 / 2	A1 / B2
&	Logical And	2 & 2	A1 & B2
	Logical Or	2 2	A1 B2
:	Creates a range		A1: B2
#	Wild card		A# * B#

Expressions:

ABS(B) The absolute value of the cell is returned.

ADD(A, B) Adds the two elements.

IF(A,B,C) If A is nonzero then B is returned. If A is zero then C is returned. A can contain one of the relational operators: greater than (>), less than (<), equal to (=), or not equal to (!).

IEMPTY(B) If B is empty then a 1 is returned. If B is not empty then a zero is returned.

MAX(A,B, . . .) Returns the maximum value of all arguments. Accepts a variable number of arguments. Each argument can be a cell range, a float value, or an integer value.

MIN(A, B, . . .) Returns the minimum value of all arguments. Accepts a variable number of arguments. Each argument can be a cell range, a float value, or an integer value.

NEG(B) Changes the sign of the value. For example, NEG (-15) = 15.

NOT(B) If B is zero then a 1 is returned. If B is not zero then a zero is returned.

ROUNDUP(B,D) Rounds the value up to the next whole number, using the specified number of decimal places (D). A zero can be used for no decimal places. Negative precision specifies tenths, hundredths, etc.

ROUND(B,D) Rounds the value to the nearest whole number, using the specified number of decimal places (D). A zero can be used for no decimal places. Negative precision specifies tenths, hundredths, etc.

SUM(B,C, . . .) Sums cells or blocks. Accepts a variable number of arguments. Each argument can be a cell range, a float value, or an integer value.

TRUNCATE(B,D) Rounds the value down to the next whole number, using the specified number of decimal places (D). A zero can be used for no decimal places. Negative precision specifies tenths, hundredths, etc.

Plot Menu

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.

XPlotter uses files containing data only. Files containing any extra information; such as titles, heading information, column headings and row numbers are incompatible.

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.

In many applications, the file can simply be opened directly.

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.

Hint:

If data was entered incorrectly an error will occur. Check for mixed numeric and non numeric data.

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. It is not necessary to convert data as conversion automatically takes place when a diagram is plotted.

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.

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.

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

Cycles

Select the number of cycles required to plot on the log graph. Upto 4 cycles can be plotted on the X and Y axes.

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. The Plot window contains a menu bar, a diagram area, a grid list, a Labels Box, command buttons. The diagram is data sensitive so that each highlighted data point corresponds to a highlighted set of data within the grid. Diagrams can be saved as bitmap (*.bmp) graphic files for exporting to other applications.

Labels

Enter some text in the box to plot as a label. To display a label, enter a label and click a row in the grid. The data point corresponding to the row will be highlighted on the diagram. Press <enter> to display the label for the highlighted row. Repeat the procedure to display labels for other points. When Print Diagram is selected, labels will be printed with the diagram.

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. Graphics files can be save in bitmap (.bmp) format for exporting into a painting program for further editing.

Copy Diagram Command

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

Data Grid

Displays a list of data values that appear on the diagram. The data point represented by the selected text in the grid will be highlighted. If the Labels Box is empty press <enter> in the grid to display the sample # next to the highlighted data point.

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 Legends

Symbol description legends are printed with the diagram when the corresponding command is checked.

Print Diagram

Prints the current diagram. A pop up Print dialog box appears. OK to accept the default settings and print the diagram. Labels are printed with the Diagram. If Field Labels and Symbol Descriptions are enabled in the Options Menu, these will be printed.

Line Draw

To draw a line select Line Draw. The cursor will change to a cross hair. 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. The cursor will change to a cross hair. Position the cross hair where the box is to begin and drag the cursor by holding down the left mouse button. A dotted box is dragged with the mouse. Release the left mouse button when you have positioned the box 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.

Fonts

To change the font for inserted text select Fonts. A Font dialog box is displayed with a list of available fonts. Select a font in the list.

Undo

To use Undo, first select the drawing action to undo then click on the undo button or the undo menu command.

Appendix 1: Toolbar Shortcuts



New Button

Deletes data in the current spreadsheet to begin a new file



Open Button

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 Button

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



Print Button

Prints a data file. A Print dialog box pops up. Select Print to print the file. Several printer options are available by selecting the Options button. The same result is obtained by clicking the Print command button.



Delete Row Button

Deletes the current row in the spreadsheet.



Insert Row Button

Inserts a row at the current position in the spreadsheet.



Convert to XYZ

Converts modal data to ternary diagram XYZ coordinates



Plot Ternary Button

Accesses the Options Window to Set Ternary and Diamond Diagram Options for plotting data.



Plot XY Button

Accesses the Options Window to Set XY Diagram Options for plotting data.



Plot Log Button

Accesses the Options Window to Set Log-Log and Log-Linear Diagram Options for plotting data.

Software Support

Technical support for XPlotter is provided through the printed manual and online help. Free updates may be obtained using the builtin ftp update program. If an unsurmountable problem occurs further technical support is available directly from MinServ (Mineral Services); however, the software must be registered to receive support. Currently, support is free of charge; however, a price structure may have to be introduced, depending upon demand. All queries should be directed to:

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All queries must indicate the type of computer system; version of XPlotter; type of problem; and where the problem occurs in the program. We will endeavour to solve the problem to the best of our ability.