Service Release 4 Note

Version 6.0284 May 17, 2000

These notes are for changes since version 6.0211, the original English release of Origin 6.0.

Contents

Bugs Fixed By Patch 4

- Origin no longer crashes when plotting a gray scale map from a large matrix on some Windows 95 and 98 computers.
- The floating tools available from the **Tools** menu now open correctly on a network client installation in which the server is read-only.
- Origin now correctly exports graphs to the XMP and XWD file formats.
- Placing at least one object from the Tools toolbar such as an arrow, a rectangle, or an ellipse directly onto the layout page window will no longer cause crashes on some Windows NT computers.

Bugs Fixed By Earlier Patches

3D/Contour

- Multi-layer contour graphs with labels will no longer lose the contour labels when printed or viewed in Print Preview mode.
- The X axis tick labels are now correctly positioned on XYY graphs in which the X column contains text values.
- The Enlarger tool now works correctly when enlarging sections of a contour graph.
- The display of a contour graph no longer becomes corrupted when you change the display cache setting after zooming in or out.
- Clicking the Extract to Layers button on the Graph toolbar when 3D XYY data plots are in the active graph window no longer causes a crash.
- Speed mode will no longer limit printing of all data points in 3D color map surface and 3D bar graphs.
- You can now plot more than 32 columns as a 3D XYY graph without dropping intermittent columns from the graph.
- Origin no longer displays a black border around missing values in a contour graph.

Data Analysis/Curve Fitting

- When fitting data with error bars, the Sigmoidal Fit tool now correctly reports to the Results Log that the fit was performed with error weighting.
- The automatic baseline detection algorithm has been improved.
- When you plot a range of a dataset and then perform **Analysis:Calculus:Differentiate**, Origin correctly plots the derivative for the range of the given dataset.
- The **Analysis:Smoothing** menu commands now correctly use row numbers for smoothing calculations when the Y data is plotted versus row number.
- Derivatives of X data (plotted against a Y column) are now properly handled.
- When you set a range in a worksheet so that a row other than the first row is the Begin row, the standard error of the mean (SE) reported from **Statistics on Rows** is now correct for the Begin row.
- The **Analysis:Normalize** menu command is no longer restricted to worksheet columns with a Y plot designation.
- The **Analysis:Calculus:Differentiate** and **Analysis:Calculus:Diff/Smooth** menu commands are now correct when degrees is selected as the angular unit setting on the Numeric Format tab of the Options dialog box.
- User-defined baselines will now work with the Baseline tool.
- Worksheet and column sorting no longer fails when more than 2^15 rows are selected.
- A slowdown of FFT as well as other procedures employing FFT methods (such as **Analysis:Smoothing:FFT Filter**) with large datasets (more than 2^15 points) has been rectified.
- Exponential Decay 2 fitting to a data plot with more than 10,000 data points no longer causes a crash on some Windows 95 machines.
- The Results Log no longer fails to report results once its size has reached 32 KB.

- Sorting will now observe the Begin and End settings of the primary sort column for the region you have selected.
- Masked data is now correctly treated as missing values instead of zero values when interpolation is performed.
- The **Analysis:Correlate** menu command no longer produces a warning message asking for more data points. In addition, a new LabTalk property has been added to control the results: **fft.corr.poslag=1** displays positive lag values only, up to the dataset size. **fft.corr.poslag=0** displays all lag values up to twice the padded dataset size.
- When performing arithmetic operations on datasets such as **Simple Math**, **Subtract**, **Translate**, and **Normalize**, Origin now treats masked data as if it were unmasked. Previously, Origin converted the masked data to missing values after performing the arithmetic operation, or, in the case of **Simple Math**, Origin converted the associated cells in the nonmasked dataset to missing values.
- The results obtained from **Analysis:Correlate** have been restored to produce the same results as in Origin 5.0.
- The following **Analysis** menu commands now recognize data masks: **FFT Filter:*All submenu commands***, **Calculus:Differentiate**, **Calculus:Integrate**, **Translate:Horizontal**, **Average Multiple Curves**, and **Interpolate/Extrapolate**.

Excel

- Clearing the Scan Data for Legend check box on the Excel tab of the Options dialog box now properly prevents the automatic assignment of a title row as legend text.

Import/Export/Copy

- Importing ASCII files which contain empty cells within the first few rows of the file no longer cause numeric data to be imported as column labels.
- Histograms exported as .WMF files now display a consistent bin width.
- Exported or copied graphs are now consistently sized.
- IP addresses of the format 207.180.23.33 are no longer imported as numeric and thus truncated, but are imported as text.
- Pasting an Origin graph which has an attribute indexed to a dataset into another application no longer loses the indexing or causes a crash when an OLE instance of Origin is opened.
- Copying worksheet data that was previously plotted using the Select Columns for Plotting dialog box no longer causes a crash.
- Graphs are now exported to .BMP files with the correct custom size and resolution.
- An OLE instance of Origin opened in Microsoft PowerPoint no longer increases the embedded picture size on exit.
- Origin now handles data transfers of data imported from a read only network folder.
- When importing multiple ASCII files into the same worksheet, Origin now appends the header text to the worksheet column label fields.
- Raster file format graphic exports now default to the graph page size.
- Copying worksheets containing columns of unequal length no longer generates data in the shorter columns.
- Exporting graphs as .TIF files with packbits compression enabled no longer produces corrupted files.
- Graphs that are copied or exported as .WMF or .EMF files have greatly improved symbol and axis label appearance when pasted or inserted into other applications.
- Graphs and layout pages that are exported as .WMF files can now be successfully inserted into Microsoft Word 7 (Office 95) documents.

LabTalk

- The **sqrt( )** function used in the function graph window now works properly when the regional numeric settings are set to European format (1.000,00).
- The **continue** command no longer incorrectly breaks out of a **doc -e** loop.
- The **getn** command no longer has a limit of 240 characters in a drop-down list.
- Executing the **doc -d** and **win -t** commands in succession no longer causes a crash.
- The **selr2**, **selr1**, **selc2**, and **selc1** system variables now get properly set to zero when the worksheet selection is cleared.
- Origin will no longer crash when you create a worksheet with the **worksheet -w** command and then copy data into the worksheet with the **copy -u** command.
- Origin no longer crashes if you type **stat.=** (ENTER) in the Script window.
- The **sum( )** function and the **stat.ds( )** object method now correctly obey the specified range when used on data in the active worksheet.
- The **exist( )** function now works for tools, allowing you to check whether a tool is open or closed.
- The **system.font.tabSize** object property is now writeable. This property sets/gets the tab width of the nonlinear curve fitter text labels.
- The **layer.tickL** object property no longer causes a crash when used on windows created with the **win -n** command.
- The **doc -e O** command now properly loops through all Project Explorer folders, excluding non-minimized windows.
- Typing **layer.cmap.=** (ENTER) in the Script window now correctly displays the color map properties for the active graph window.
- The **get -c** command will now return the correct color for line data plots when the color is not set through script.
- When you use the **layer -i** command to add data to a layer with the axes rescale mode set to Auto, the axes now rescale to show all the data.
- The **Analysis:Correlate** menu command no longer produces a warning message asking for more data points. In addition, a new LabTalk property has been added to control the results: **fft.corr.poslag=1** displays positive lag values only, up to the dataset size. **fft.corr.poslag=0** displays all lag values up to twice the padded dataset size.
- The **create *wksname* -w** command now creates a worksheet with the column type correctly set to Text and Numeric. In addition, three new switches have been added: **d** creates the dataset only (no worksheet is created); **h** creates the worksheet as hidden; **n** creates the worksheet with the column type set to Numeric. To use these switches, append **-w** with the desired switch. For example **create data2 -wh** will create a worksheet named Data2 which is hidden.

Miscellaneous

- A resource leak when using Origin as a DDE client to repeatedly retrieve data has been fixed.
- Grouping of datasets is now properly remembered when saving a multiple-layer graph window as a template.
- The Average button on the ASSAYS.OTW template now works correctly for network installations.
- The "baseline" for superscripts and subscripts is now better maintained in a text label.
- The network client version now supports user-defined toolbars and buttons.
- Origin no longer hangs after selecting **Data:Remove Bad Data Points** and then selecting **Edit:Undo**.
- The Project Explorer shortcut menu command **Save as Project** will now correctly save the selected folder as a project, not the entire project.
- When switching between Project Explorer folders, the scroll bars on worksheets no longer disappear.
- Subtracting a dataset that contains no values from another dataset no longer causes a crash.

OriginPro

- The **file.setpos( )** method will now correctly set the file pointer for files larger than 16 MB.
- Importing multiple ODBC files into the same worksheet no longer causes a crash.
- Combo boxes and edit boxes created with the UIM tool no longer get deleted when they are created in a graph window, provided they are in a designated control region.

Plotting

- When zooming in on a line or line and symbol data plot that is plotted on a logarithmic scale, the line no longer appears bent.
- Data labels will now remember the "Attach to Axis" setting in user-defined templates.
- The Draw Data tool now works correctly in ternary data plots.
- Changing the Z axis increment in ternary graphs now works correctly.
- Text and Numeric columns can now be changed to Numeric column types without disrupting the graph.
- After creating a 3D scatter graph from an Excel workbook open in Origin, you can now add additional 3D scatter plots to the layer from this - or another - Excel workbook.
- Pressing ESC when the Draw tool is active no longer causes a crash.
- Worksheets in which the X column is the rightmost column will now plot correctly and no longer produce the error message "Your Column Selection must include those with Plot Designations".
- Multiple selected columns will no longer automatically group when plotted using user-defined templates in which grouping is disabled.
- A histogram curve overlay no longer fails or causes a crash for data which is small in magnitude.
- The Log10 axis scale type will now consistently use the 10^X format when Scientific:1E3 is the selected format.

Printing

- Selecting a graph page size that is different from the printer page size no longer corrupts the printout or causes a crash on some computers running Windows NT.
- Printed worksheets now place text objects correctly.
- Printing or Print Previewing a 3D XYY graph containing more than 699 points no longer causes a crash.
- Speed mode will no longer limit printing of all data points in 3D color map surface and 3D bar graphs.
- Layout pages created in Origin 5.0 now print correctly in Origin 6.0.

Worksheets

- When using a custom date format, the first worksheet cell no longer erroneously includes the current time in addition to the date entered.
- Pictures of worksheets in the layout page are no longer affected when making changes to the selection range in the worksheet.
- Worksheet and column sorting no longer fails when more than 2^15 rows are selected.
- Sorting will now observe the Begin and End settings of the primary sort column for the region you have selected.

Network Installation Note

- When installing the SR4 patch on a server computer of a network installation of Origin, you must do the following.
  1. Edit the [UserDefinedButtons] section of the ORIGIN.INI file on the server. Comment out or delete the line: User Defined=Oubtn.ini
  2. Copy the file USERDEF.BMP (located in the Origin directory of the server) to the clients.
  Note: If you have already performed steps 1 and 2 for a previous patch, you do not need to repeat the procedure.

Functionality Changes

Origin

- The default column type in Origin 6.0 is Text and Numeric. This can cause problems when opening 6.0 projects in earlier versions in which the default column type is Numeric. To avoid loss of data, change the column type to Numeric in Origin 6.0 before opening the project in earlier versions.
- The Pick Peaks and Baseline tools will now find negative peaks.
- You can now press CTRL+C to copy a graph window to the Clipboard.
- When performing an exponential growth fit from the menu, Origin uses the equation: y=y0+A*exp(x/t). In previous versions, Origin used the equation: y=y0+A*exp((x-x0)/t).
- You can no longer import SigmaPlot DOS or Windows files.
- The Indexed Color button on the Origin 5.0 2D Graphs Extended toolbar has been changed to a Color Map button in Origin 6.0. Similarly, the Origin 5.0 Indexed Size and Color button has been changed to a Bubble and Color Map button.
- When you add data to an existing graph, Origin now uses data plot style holders associated with the graph window to determine the data plot type.
- The **View:Show:Master Items** menu command now only effects the display of master items on screen. If you export, print, or copy a graph in which the master items are not displayed on screen, the master items will still display in the export file, print out, or Clipboard. To prevent this behavior, set the **@PP** variable to "0". For example, type **@PP=0** (ENTER) in the Script window. To return to the default behavior, set the **@PP** variable to "1".

pCLAMP

The pCLAMP import routine is now available by selecting **File:Import:pCLAMP**.

LabTalk

- When an expression is evaluated in the **for** and **if** commands, or with the conditional (ternary) operator, non-zero is TRUE and zero is FALSE. This differs with Origin 5.0, in which greater than zero was TRUE, and zero or less than zero was FALSE.
- LabTalk now accepts any space intervals except for those in function names. For example, **col (c) = col (a) - col (b);** is now supported, but **col (c) = c ol (a) - co l (b);** is not.
- The **%Y** variable now contains the DRIVE:PATH for the ORIGIN60.INI file.
- The **wks.copy(*StrVarLetter*,*Col*,*Row*)** method has changed. **Wks.copy(A,*n*)** copies all rows of column *n*. **Wks.copy(A,0,*n*)** copies all columns of row *n*.
- The **break -s** command is no longer supported.
- The following **doTool** command options are no longer supported: **doTool -wd *name***, **doTool -wi *name ID***, **doTool -wm *name***, **doTool -wp *name***, **doTool -wr *ID***, **doTool -ws *name***, **doTool -ws0 *name***, and **doTool -ww *name***.

- The **layer -3d m edit port** command is no longer supported. Instead, use **layer -k p**.
- The **layer -3d m color** command is no longer supported. Instead, use **set *dataset***.
- The **system.tick.MajorLen** property is no longer supported. Instead, use **layer.tickL**.
- The **system.sigdigitsl** property has been changed to **system.numeric.sigdigitsl**.
- The **system.sigdigitsu** property has been changed to **system.numeric.sigdigitsu**.
- The **system.print.nobaseline** property has been changed to **system.print.fontbaseline**.
- The **system.purecolor** property is no longer supported.
- The **page.cntrlcolor** property now properly indexes colors starting at one rather than zero.
- The **system.excel.exclusive** property is no longer supported.
- In the Label Control dialog box, when you select Window Activate from the Script, Run After drop-down list, the associated script will be run every time the Project Explorer folder containing the associated window is activated, as well as when the window is activated.
- The **count** variable, which is set by the **fdlog.multiopen** property, has been replaced by the **fdlog.multiopen.count** property. However, you can continue to use the **count** variable by setting **@nsv=1**. This will allow the use of the **count** variable for the current Origin session.
- The **system.path** object is provided for backward compatibility in Origin 6.0. For new scripts, use the **system.fileExt** object.

OriginPro

- Creating and editing tabbed UIM tools is not currently supported.

Known Bugs

New to 6.0

3D/Contour

- For 3D XYZ scatter and trajectory graphs, you can not change the axis type for the X or Y axes using the Axis dialog box. You can, however, change the axes type using the **layer.*axis*.type** object property.
- When an Epson LQ 1500 printer is the default printer, if you add a new color scale object to your graph, the object will display too large.
- You can not plot a 3D scatter graph from worksheet columns arranged as XZY.
- The Set Default button on the Color Scale Control dialog box does not save the current settings as the default settings.
- The color scale object fails to paste correctly when cut from the graph.
- When you select a worksheet Z column and then select **Plot:Template** and select 3D.OTP or TRAJECT.OTP, the data does not display in the graph.

Data Analysis/Curve Fitting

- The index of peaks found using the Baseline tool is only accurate to ±1 data point.
- Worksheet columns designated as Z can not be fit using the nonlinear curve fitter.
- When both the X and the Y data are masked in the worksheet, Swap Mask applied in the graph window does not "swap", but instead masks the entire data plot.
- When you launch an Origin network client and edit and then save an FDF file of a built-in fitting function, the file is saved to the server and not the client.

- If you have fixed parameter values in a nonlinear curve fitter function, the error on the parameter value is wrongly reported as '0' in the Parameter worksheet. The Results log and the results pasted to the graph correctly report the error as '--' (missing value).

Import/Export/Copy

- MAC KaleidaGraph files fail to import when there is no file extension.
- Origin incorrectly exports a range of matrix data.
- Greek and Script fonts export incorrectly in the following file formats: PDF, AI, DXF, CGM, EPS, PCT, and EMF.
- Graphs exported using the Macintosh Picture format (*.PCT) will fail to show some graph elements.
- Bar graphs exported as an EPS file with a TIFF preview will have a corrupt preview.
- When the display caching for a graph is set to raster, if you add a picture of the graph to a layout page and then copy the layout page to the Clipboard, the layout page and the source graph no longer display the data correctly.
- Graphs with Greek characters exported as a PDF document that are opened in Adobe Acrobat version 4 do not display the Greek characters. (Note: As a temporary solution, select the Show Export Options check box in the Save As dialog box and then select the Convert Origin Page to Bitmap check box in the PDF Options dialog box. The image format in the PDF will be raster (not vector), but the Greek characters will display.)
- Graphs exported as EPS with a TIFF preview do not display the data plots in the TIFF preview in programs such as Microsoft Word.
- The TIFF preview for graphs exported as EPS do not have a transparent background.
- Clip Data to Frame is not maintained when a graph is exported to EPS, PDF, or AI file formats. (Note: As a temporary solution for exporting to a PDF, select the Show Export Options check box in the Save As dialog box and then select the Convert Origin Page to Bitmap check box in the PDF Options dialog box. The image format in the PDF will be raster (not vector), but Clip Data to Frame will be maintained.)
- Clip Data to Frame is not maintained when a graph is exported to WMF or EMF file formats and then opened in Adobe Illustrator 7.0.
- Graphs exported to an EPS file using the Adobe Illustrator Version 7 option will not open in Adobe Illustrator 8.
- Graphs containing a pasted image will not export correctly to EPS, WMF, or EMF.
- Layout pages do not export correctly when they contain a pasted WMF and a graph picture of a color contour (with fill to grid lines enabled).
- In the network version, the client does not remember the custom graphic export file settings because Origin attempts to write the custom settings to the server's ORIGIN.INI file.

LabTalk

- The menu ID for **Window:Tile Horizontal** does not work in scripts.
- The Project Explorer does not update when the **win -r** command is used to rename a window.

Miscellaneous

- When using 256 color display, some colors in Origin are not available. For example, LT Yellow and LT Cyan do not display properly.
- The Project Explorer Properties dialog box incorrectly reports the file sizes of multiple selected windows.
- When you launch Origin by double-clicking on an OPJ file on a network client, the Origin executable file runs on the server as a stand alone copy - not as a client. This sets the working directory to be the server folder, not the client folder. This prevents access to user defined fitting functions. Also, the **%Y** variable is set to the server folder when it should be set to the client folder.
- During the installation of Origin 6.0 on some computers, two Windows system DLLs are not getting updated properly (MFC42.DLL and MSVCRT.DLL). For a complete discussion of this issue, go to www.originlab.com and then click the Technical Support|Updates and Patches links.
- The **Format:Matrix** menu command is unavailable when a matrix is active.

- When installing Origin in Windows 98, the Origin installation program may crash if the Desktop is set to display as an active web page.

Plotting

- When the Select Columns for Plotting dialog box is used to create a graph containing more than one data plot, only the first data plot icon displays in the legend.
- Nonadjacent worksheet column selection is not supported for the creation of QC (X bar R) charts.
- The vectors in XYAM vector graphs may extend beyond the axis frame, requiring you to rescale the axes to show all of your data.
- The display of user-defined symbols in data plots may be corrupted on screen and in a printout with certain screen and printer driver combinations.
- When a column data plot using incrementing color is changed to a line and symbol or scatter data plot, the incrementing color is not displayed.
- When customizing grouped data plots which use symbols, selecting Incremental Alphabetics on the Symbol tab and Incremental Symbol Type on the Group tab of the Plot Details dialog box will result in inconsistent symbols in the data plot group.
- When an Epson LQ 1500 printer is set as the default printer, if you add a new color scale object to your graph, the object will display too large.
- Legends do not rotate correctly. The legend text rotates but the data plot icons do not.
- The Set Default button on the Color Scale Control dialog box does not save the current settings as the default settings.
- Merged stack plots do not correctly arrange all layers.
- Fill area graphs created in pre-6.0 versions show different Plot Details display settings when opened in Origin 6.0.
- Plotting a designated Y column as Label using the Select Columns for Plotting dialog box will corrupt graphs that already use that Y column.
- A mask on the first point of a data plot causes the legend to display with the mask color and not the color of the remaining data plot (the non-masked points).
- Box charts with whiskers created in pre-6.0 versions do not display the whiskers when opened in Origin 6.0.
- The color scale object fails to paste correctly when cut from the graph.
- The sphere symbol type is not correctly remembered when a data plot is removed and then added back to a graph layer, or when the graph is saved as a template.
- Formatting individual data points as user defined symbols fails unless the entire dataset is plotted using user defined symbols.

Printing

- The display of user-defined symbols in data plots may be corrupted on screen and in a printout with certain screen and printer driver combinations.

Worksheets

- On Windows NT, deleting a graph window after viewing Full Screen corrupts the associated worksheet window. To restore the worksheet, change a worksheet display property, such as the Gap from Top.

Old Bugs Not Fixed

3D/Contour

- If you offset the planes on the Planes tab of the Plot Details dialog box of a 3D graph, rotating the graph returns the planes to 0 offset.
- Rotation of 3D waterfall graphs is not supported.

Data Analysis/Curve Fitting

- The exponential operator gets the wrong priority when it is negative. For example, typing **1.5*10^2=** in the Script window will output 1.5*10^2=150. Whereas typing **1.5*10^-2=** in the Script window will output 1.5*10^-2=3. The workaround for this is to put the -2 in parenthesis. For example, **1.5*10^(-2)**.
- The FFT does not consider time shifts when figuring delta-T.
- The nonlinear curve fitter allows 200 parameters in a function, but only automatically initializes 128 parameters.

Excel

- You can not set Excel workbook cells to date values via LabTalk script.
- DDE linking fails with Excel 5 workbooks.

Import/Export/Copy

- The Copy Page options, Ratio and Margin Control, on the Page tab of the Options dialog box are ignored when pasting into PowerPoint.
- When importing a row range of a large ASCII file, the excluded section of the ASCII file may incorrectly import.

LabTalk

- The exponential operator gets the wrong priority when it is negative. For example, typing **1.5*10^2=** in the Script window will output 1.5*10^2=150. Whereas typing **1.5*10^-2=** in the Script window will output 1.5*10^-2=3. The workaround for this is to put the -2 in parenthesis. For example, **1.5*10^(-2)**.
- The **window -b**, **window -e**, and **worksheet -b** commands do not name windows as specified.
- Setting the axis tick width with **layer1.tickw=*n*;** from the Script window fails.
- The **nlsf.simplex(*arg*)** method ignores the argument.
- The **layer.z.from** and **layer.z.to** properties incorrectly set the Y axis from and to values.
- When the **mark** command is used to delete worksheet rows repeatedly, it will also delete worksheet columns.

Miscellaneous

- System font text labels can not be rotated.
- Selecting **Edit:Undo** after removing a data point from a graph using the **Data:Remove Bad Data Points** menu command causes a crash if the data was plotted from a worksheet (not an Excel workbook).

OriginPro

- The UIM objects List box and Combo box do not display on graph windows.

Peak Fitting Module (PFM)

- In the PFM's Plot Options dialog box, if you specify displaying all 20 parameters, Origin will crash.

Plotting

- Polar function graphs handle radians incorrectly.
- Duplicated function graph windows are not fully independent.
- The Plot Details settings for a function graph are not saved correctly when you switch between polar and cartesian coordinates.
- If you increase the width or height properties of the layout page, the page does not size to the window properly until you rotate or preview the page.
- The Rescale on OK check box in the Layer *n* dialog box is not operational.
- Using the Enlarger tool with a Date scale may fail to yield an acceptable axis scale and increment.
- The Y=0 grid line can not be displayed for the right Y axis in double Y axis graph.

Printing

- Origin will crash if you print to a default printer that is attached to an unreachable or disconnected computer.

Worksheets

- Worksheets in which the last column contains empty cells fail to convert to a matrix properly.

Windows 2000 Compatibility Statement

- Origin 6.0 has been tested under Windows 2000 and shown to be fully compatible.

Undocumented Origin Features and Updates

- You can now print graphs to multiple printer pages. Additionally, you can display crop marks on your printout. These options are available by clicking the Options button in the Print dialog box.
- The Text Control dialog box includes a tab control to set the tab setting for the text label.
- New columns added to the worksheet are set to the Y plot designation by default.
- You can now import up to 2047 columns from an ASCII file into a worksheet.
- A Horizontal Offset text box has been added to the Pie Geometry tab of the Plot Details dialog box for pie charts.
- User-defined symbols are now available for complete control in the legend. Use the notation:
  \L(S(Category, arg2, arg3, arg4, arg5, arg6, LineStyle, LineColor, LineWidth, Gap)).
  When Category = 0, the command will create a geometry symbol. In this case,
  arg2: Symbol shape
  arg3: Symbol fill
  arg4: Symbol edge color
  arg5: Symbol fill color
  arg6: Symbol size
  When Category = 1, a character or user-defined symbol will be created. In this case,
  arg2: Index (If the index >= 32 and <= 255, it is a character symbol and the index is the ASCII code of the character. If the index is >= 1 and <= 31, it is a user defined symbol and the index is the user defined symbol sequence number from the Options dialog box.)
  arg3: Color
  arg4: Symbol size
  arg5: Font (This argument is only used for character symbols. Use the **font( )** function to find the index number.)
  arg6: Font style (This argument is only used for character symbols. It determines whether the font is bold, italic or underline. 0 = no special font style, 1 = underline, 2 = italic, 3 = underline/italic, 4 = bold, 5 = underline/bold, 6 = italic/bold, 7 = underline/italic/bold.)

- All Chi-square values reported by Origin (labeled as Chi^2, Chi^2/DoF, ChiSquare, Chi-sqr, Reduced Chi-sqr) are in fact the 'Reduced Chi-square' value, which is same as the 'Chi-square per Degree of Freedom'. The number of degrees of freedom is (*n*-*p*), where *n* is the total number of data points used in the fitting process and *p* is the total number of adjustable parameters (parameters that are allowed to vary in the fitting process).
  To obtain the raw Chi-square value from the value that Origin reports, you will need to multiply the reported value by the number of degrees of freedom.
- When you add text or graphic objects to a window (either through script or using the interface), if you have not named the object, then Origin gives the object an enumerated default name based on object type: text = TEXT, arrow = ARROW, line = LINE, ellipse = CIRCLE, rectangle = RECT, bitmap = BMP, device independent bitmap = DIB, Windows metafile = WMF, enhanced metafile = EMF. For example, the first text object created in a window is called TEXT. The second is called TEXT1, the third is TEXT2, etc.
- The Speed Mode, Skip Points if Needed option at the layer level of the Plot Details dialog box no longer affects the printing of graphs. To enable Speed Mode for a printout, select **File:Print**, then select the Worksheet Data, Skip Points or the Matrix Data, Maximum Points check box and specify the maximum number of allowable data points in the corresponding text boxes.
- An Add Category button has been added to the Commands tab of the Customize Toolbar dialog box. This button allows the addition of more than one user-defined group of buttons.
- Import Multiple ASCII now allows you to import new files as rows, columns or worksheets.
- When normalizing FFT results, Origin no longer divides the DC component (0 Hertz) by two.
- An Add Color Scale button has been added to the Graph toolbar.
- You can now drag contour labels to different locations along the same contour line in contour graphs.

LabTalk Enhancements and Updates

- An **image** object with properties and methods has been added for exporting graphs and layout pages to a file. This object replaces the **export** object. We recommend you use the **image** object instead of the **export** object.
  image.extList$**: Read-only list of supported image types. Same as **export.image.types$.
  image.showOptions: Control the display of the image settings dialog box. Same as **export.image.showDialog**.
  image.fileName$: Graphic export file name.
  image.exportDPI(*format*,*dpi*,*bpp*,*compression*): Export the active graph to an image file.
  image.exportPixel(*format*,*width*,*height*,*bpp*,*compression*): Export the active graph to an image file.
- A fixed width output is now supported allowing text and numbers to be output in a table-like format using the **type** command. Using the following notation, the output of the variable (represented by ***Var***) will take up ***i*** number of characters no matter how long the variable is. **type $(*Var*,*,L$(*i*))**
- The **@SD** variable has been added to control the number of significant digits displayed when mathematical operations are performed in the Script window.
- The **ini** object now allows you to access section names with spaces. Three new properties have been added: **ini.file$**, **ini.section$**, and **ini.key$**. Two new methods have been added: **ini.getStr(*str_var_letter*, *default_value*)** and **ini.setStr(*value*)**.
- The **@SF** variable has been added to control the legend symbol size.
- The **stat.ds** object provides script access to Origin's descriptive statistics.
- Script access is provided for masking/unmasking data and for getting information on masked data.
  The **isMasked(*index*,*dataset*)** function returns the number of masked points in *dataset* if *index*=0. If an index number for a data point is provided, this function returns the "mask state" of the indexed data point: 1=masked, 0=not masked.
  The **findMasks(*dataset*)** function returns a dataset that contains the indexes of the masked data points.
  The **mark -st *dataset* -b *firstPoint* -e *endPoint*** command masks/unmasks the specified dataset range.
  The **mark -w1** command masks the selected data.
  The **mark -sw *dataset*** command swaps masked and unmasked points in the specified dataset.
  The **@MC**, **@MM**, and **@MP** variables are provided to change the mask color, enable or disable the mask, and show or hide the masked points. After changing the masked data with these variables, update all graphs using the **mark -u**

command.
The **mark -wd** command removes the mask from the selected data.
The **dataset<*index*>=** notation returns 0 if the data point is unmasked and 1 if the data point is masked. For example, use **data1_b<4>=** to check if the fourth point in the **data1_b** dataset is masked.

- The **type** properties and methods have been expanded for enhanced control of the analysis results output.
  type.beginResults( ): Notify the Results log of a block of results. When the Results log receives this notification, it appends a header in the log. Headers are used to separate different blocks of results.
  type.endResults( ): Notify the Results log that the block of results has ended. It is necessary to notify the Results log that a block of results has ended so it can separate the logs with headers.
  type.redirection(<on>,<off>): This method allows you to turn on and off the bits for the **type.redirection** property. The first argument switches the bits on and the second argument switches them off. This method returns the current setting of **type.redirection**.
  type.redirection: By default, all text output goes to the Script window. This property allows you to direct output to different windows.

Bit	Value	Description
0	1	Output goes to Script window.
1	2	Output goes to Notes window specified by **type.notes$**.
2	4	Always send error messages to Script window.
3	8	Append carriage-return to text sent to Notes window.
4	16	Output goes to the Results log.

- The number of characters for the tab size in the Results log is contained in the **system.font.tabSize** property.
- The state of the Script window is contained in the **type.state** property.
- Additional control of the notes window has been added.
  The state of the notes window is contained in the **type.notesState** property.
  The **win -in *notesWindow*** command minimizes the notes window.
  The **win -zn *notesWindow*** command maximizes the notes window.
  The **type.notesRemainIcon** property controls the "View/Remain Iconized" setting for the notes window specified by **type.notes$**.
  The **save -n *notesWindow fileName*** command saves the notes window to the specified file name.
  The **open -n *fileName notesWindow*** command opens the specified text file into the notes window.
- A **system.toolbar** object with properties and methods has been added for control of toolbars.
  system.toolbar.create(*category*[,*toolbarName*]): Open a toolbar from a user-defined category.
  system.toolbar.delete(*toolbarName*): Delete a toolbar, including from the Registry.
  system.toolbar.exists(*toolbarName*): Returns 1 if the toolbar exists. Otherwise, returns 0.
  system.toolbar.isOpen(*toolbarName*): Returns 1 if the toolbar is open. Otherwise, returns 0.
  system.toolbar.open(*toolbarName*): Open a toolbar. Returns 0 if OK. Otherwise, returns 1.
  system.toolbar.close(*toolbarName*): Close a toolbar. Returns 0 if OK. Otherwise, returns 1.
  system.toolbar.names$: A list of the names of all the toolbars.
- The **wks** methods have been expanded to control column selection.
  wks.colSel(*colNum*,*n*): If *n*=1, select *colNum*. If *n*=0, deselect *colNum*.
  wks.isColSel([*colNum*]: Returns 0 if *colNum* isn't selected. Returns 1 if *colNum* is selected. Returns 2 if a range of *colNum* is selected. If *colNum* isn't included as an argument, returns the number of columns selected (partial and entire selections).
- Additional dataset information can be returned using the **@*option*** notation in a substitution expression such as **%(*worksheetName*, @*option*, *colNum*)**.
  @O: Return the offset from the left-most selected worksheet column to the *colNum* column in the current selection.
  @OY: Return the offset from the left-most selected Y column to the *colNum* column in the current selection.
  @OYX: Return the offset from the left-most selected Y column to the *colNum* Y column counting on Y columns in the current selection.
  @OYY: Return the offset from the left-most selected Y column to the *colNum* X column counting on X columns in the current selection.
  @E#: Return the number of Y error columns in the worksheet or in the current selection range.
  @H#: Return the number of X error columns in the worksheet or in the current selection range.

@YS: Return the number of the first selected Y column to the right of (and including) the *colNum* column.
@Z#: Return the number of Z columns in the worksheet or in the current selection range.

- The **wks.col.justify** property sets the justification for the worksheet column values.
- The **layer -b 3DB *value*** command option controls graph display caching.
- The **layer -b R *value*** command option sets the worksheet as read-only. This can also be controlled using the **create.readOnly** property.
- Five options have been added to the **set** and **get** commands for histogram control.
  -hbb: Set/get the lower limit of the binned data.
  -hbe: Set/get the upper limit of the binned data.
  -hbs: Set/get the bin size.
  -nhw: Get the frequency worksheet name.
  -nhwc: Create the frequency worksheet.
- Eight options have been added to the **set** and **get** commands for horizontal and vertical drop line control.
  -lh: Show/hide horizontal drop lines.
  -lhc: Set/get the horizontal drop line color.
  -lhs: Set/get the horizontal drop line style.
  -lhw: Set/get the horizontal drop line width.
  -lv or **-pd**: Show/hide vertical drop lines.
  -lvc: Set/get the vertical drop line color.
  -lvs: Set/get the vertical drop line style.
  -lvw: Set/get the vertical drop line width.
- Additional data plot line and symbol control options have been added to the **set** and **get** commands.
  -cl: Set/get the line color.
  -cse: Set/get the symbol edge color.
  -csf: Set/get the symbol fill color.
  -ka: Set the symbol shape to a user-defined bitmap.
  -kn: Set/get the font used in data plots displaying alphanumeric symbols.
- Additional options have been added to the **set** and **get** commands to control the display of color mapped data plots.
  -cm*n*: Set/get the color for level *n*.
  -cz*n*: Set/get the Z level for level *n*.
- Additional data label control options have been added to the **set** and **get** commands.
  -kb: Set (or check if) the data labels to bold font style.
  -ki: Set (or check if) the data labels to italic font style.
  -ku: Underline the data labels or check if they are underlined.
- Additional error bar control options have been added to the **set** and **get** commands.
  -oxm: Plot values as X minus error bars.
  -oxp: Plot values as X plus error bars.
- Additional data plot bar and column control options have been added to the **set** and **get** commands.
  -pbc: Set/get the border color.
  -pbs: Set/get the border line style.
  -pbw or **-vw**: Set/get the border line width.
  -pfb: Set/get the background color.
  -pfc: Set/get the foreground pattern color.
  -pfp: Set/get the fill pattern.
  -pfw: Set/get the fill pattern line width.
  -vg: Set/get the gap between bars/columns.
- The **set *dataset* -em *value*** and the **set *dataset* -ez *value*** commands provide additional control in setting the end of the worksheet display range.
- The **win -oa *winName* {*script*}** command executes the specified script for the named hidden window.
- The **doc -cws [*name*]** command counts all the worksheets and datasets in the project that match exactly or begin with *name* and puts this value in **count**.

- New plot IDs are provided for the new graph types now available. Plot IDs are used in commands such as the **worksheet -p** and the **layer -i#** commands.
  Bubble (indexed size): 193
  Bubble + color mapped (2 Y columns selected): 194
  XYAM vector: 208
  XYXY vector: 218
  3D walls: 210
  3D ribbons: 211
  3D bars: 212
  Ternary: 245
  Color mapped: 247
  Bubble + color mapped (3 Y columns selected): 248
  Histogram: 279
- Script access is provided for working with data plot style holders.
  layer -ie: Delete all data plot style holders not in use in the active graph window layer.
  layer -iu: Delete all data plot style holders that are in use in the active graph window layer.
  layer -i: Delete all data plot style holders in the active graph window layer.
  list o: Lists all objects in the current layer. This command returns three attributes: index, type, and name. Type=7 indicates a data plot style holder. An asterisk next to the 7 indicates the style holder is in use.
- A **create** object with properties and methods has been added to create a custom minimized worksheet.
- The **open -ar *fileName*** command appends the data in *fileName* to the current worksheet as new rows.
- The **curve.peakDirection$** property holds the name of the dataset that will have either a P (positive) or N (negative) in the Peaks worksheet.
- The **curve.SGSmooth( )** method now uses the **curve.smoothRightPts**, **curve.smoothLeftPts**, and the **curve.polyDeg** properties when smoothing. The **curve.smoothRightPts** and the **curve.smoothLeftPts** properties control the number of data points on the right/left of the data point being smoothed. The **curve.polyDeg** property controls the degree of the underlying polynomial used for smoothing.
- Additional properties and methods have been added to the **fdlog** object to control the Open, Save As, Import ASCII, and Import Multiple ASCII dialog boxes.
- The **fft.exponentSign** property sets the sign of the exponential phase factor for calculating the FFT.
- Additional properties have been added to the **layer.*axis*** object to control the axis display.
  layer.*axis*.thickness: Control the width of the axis.
  layer.*axis*.showLabels: 2=show right or top labels, 3=show both top and bottom or left and right labels.
- The **layer.plot*n*.boxChart** properties control the display of box charts.
- The **page.title** property has been enhanced to control the display of the window name and label.
- New display properties have been added to the **system.display** object.
  system.display.noWinUpdate: Control window update based on % coverage by other windows.
  system.display.pasteMeta: Paste Clipboard image as bitmap or metafile.
  system.display.selBlink: Control blinking of axes or tick labels when double-clicked.
  system.display.wksGridNoShow: Display worksheet grids when video display problem.
- Enhanced custom date control has been added.
  system.date( ): Return the current data and time in numeric format.
  system.date.customFormat1$: Control the first custom Date format.
  system.date.customFormat2$: Control the second custom Date format.
- The **system.excel.dragDropPlot** property now controls the drag-and-drop plot type for Origin worksheet data as well as Excel workbook data.
- The **system.fileExt** object has been greatly expanded, and now includes file groups and tracking.
- The **system.graph** object now includes additional graph display controls.
  system.graph.closeLayPrt: Control the display of a prompt when closing a layout page window.
  system.graph.displayChar: Control the display of characters in the symbol gallery of the Plot Details dialog box.
  system.graph.fillColor: Control the color that is displayed when Automatic is selected from the Fill Color drop-down list.

- The **system.project** object now includes additional project-related controls.
  system.project.iconizedAsHidden: Control how windows that were saved as minimized in pre-version 6.0 projects open in Origin 6.0.
  system.project.showInDataList: Control whether or not to show datasets from worksheets in nonactive Project Explorer folders in the Layer *n* dialog box data list.
  system.project.showInNLSFDataList: Control whether or not to show datasets from worksheets in nonactive Project Explorer folders in the NLSF Select Dataset dialog box.
  system.project.startupPEViewMode: Control how the work space view is effected by the Project Explorer folder selection.
- The **system.wks** object now includes additional worksheet, Excel workbook, and matrix controls.
  system.wks.autoDelCol: Automatically delete datasets from a worksheet when closing.
  system.wks.closeExlPrt: Control the display of a prompt when closing an Excel workbook window.
  system.wks.closeMatPrt: Control the display of a prompt when closing a matrix window.
  system.wks.closePrompt: Control the display of a prompt when closing a worksheet window.
  system.wks.defTemplate$: The name of the template used when you click the New Worksheet button on the Standard toolbar.
  system.wks.impTemplate$: The name of the default template used when you import multiple ASCII files into multiple worksheets.
  system.wks.numericData: Set all columns in all new worksheets to Text and Numeric or to Numeric.
  system.wks.transpDelEmptyCols: Control whether the columns are deleted after transposing the worksheet.
- The **system.results** object was added for enhanced control of the Results log.
  system.results.autoOpen: Control whether the Results log automatically opens when analysis is performed on a data plot. 1=open the Results log, 0=keep the Results log hidden.
  system.results.tabSize: Control the tab setting in Results log.
  system.results.viewMode: Control the view of the project's analysis results in the Results log. 1=view all, 2=view current Project Explorer folder results, 3=view current Project Explorer folder and subfolders results.
- Additional control has been added to the **exist(*name*,*n*)** function. If *n*=0, the function returns a non-zero value if *name* is active and is not hidden. If *n*=10, the function returns a non-zero value if *name* is active.
- The incomplete F-table function has been added: **incf(*x*,*m*,*n*)**. *X* is the upper limit of integration, and *m* and *n* are the degrees of freedom.
- The beta function has been added: **beta(*a*,*b*)**.

$$beta(a,b) = \int_0^1 t^{a-1}(1-t)^{b-1}\,dt$$

- The **%Z** string variable can now hold up to 6290 bytes.
- If you place a shortcut named CUSTOM.OGS in the Origin folder and that shortcut points to a script file, Origin will properly open the script file when you click the Custom Routine button on Origin's Standard toolbar.
- The command line argument **-h** has been added to start Origin invisibly, eliminating the need to modify the **showState** keyword in the ORIGIN.INI file.
- The **min( )** and **max( )** functions have been added to return the minimum and maximum values from a group of arguments. For example, **y=min(1,2,3,4)**. Up to 10 arguments are supported.
- You can now add strings to worksheet cells set to Text and Numeric by enclosing the string in quotation marks. For example **%(Data1,1,1)="*string*"** will place *string* in the first row of the first column of Data1.
- The **cell(*col*,*row*)** function has been added to get or set values in the active worksheet or matrix. The *col* value is the numeric value of the column and *row* is the row number.
- The **dotool -dh *toolname*** command allows you to open a tool without displaying the Data Display tool.
- You can now save and load active layer color maps.
  To save a color map: **layer -cm s[r|p] *fileName* [*index*|*name*]**
  To load a saved color map: **layer -cm l[r|p] *fileName* [*index*|*name*]**
  The optional **r** switch converts a palette index to RGB values. The optional **p** switch converts RGB values to a palette index. If the layer contains multiple data plots, use *index* or *name* to specify a data plot other than the active data plot. The string notation **%(*index*, @D)** returns the name of the *index*'th data plot.

- To facilitate making scripts backward compatible, **plot -an** has been added to support numeric interpretation without using **$( )** which is now required by **plot -a**.
- The **switch** command now accepts string variables for the switch expression.
- The **get *name* -tx** and the **get *name* -ty** commands were incorrectly documented in previous releases. The **get *name* -tx** command gets the Y offset for the data plot label. The **get *name* -ty** command gets the X offset for the data plot label.

Bugs Fixed in Origin Release

3D/Contour

- The contour drawing speed has been restored to the 4.1 performance level.
- On the Scale tab of the Axis dialog box, the Auto and Manual selections in the Rescale drop-down list now work properly on 3D graphs.
- The Reset Rotation button on the 3D Rotation toolbar properly resets the rotation angles to the default template settings.
- The 3D wire frame graph now displays correctly when Z values extend below the Z axis range.
- In a color mapped surface graph, Origin now correctly displays the color mapped Z levels when you change the Z axis length.
- Changing the colors in a color mapped surface graph will no longer effect the colors in other color mapped graphs in the project.
- Origin will no longer crash when you create a color map contour graph with more than 69 steps.
- Clip Data to Frame is now properly maintained when a 3D color contour graph is exported to a WMF file.
- Log scales are now supported for 3D surface graphs.
- 3D XYY graphs with transparent fill color are now supported.
- The XY projections now display correctly for 3D scatter and trajectory graphs.
- When you change the line width of the projections in a 3D XYZ graph, the line width of the original data plot no longer changes.
- You can now set the dimensions of a matrix after setting the matrix values without a loss of data.
- Rotating 3D graphs by editing the 3D Rotation Angle text box on the 3D Rotation toolbar no longer crashes Origin.
- In 3D XYY grouped data plots, the border color will now properly increment between group members when Border Color is set to Incremental.
- 3D scatter plots created from Excel workbook data no longer display empty when the project is closed and then reopened.

Data Analysis/Curve Fitting

- Origin no longer crashes when you define a fitting function longer than 135 characters.
- The integration of a matrix is now performed as a summation over matrix cell volumes. The height of each cell is computed using bilinear interpolation of the grid square.
- The FFT filter no longer inappropriately shifts its results if the data is taken from a specified plotted range.
- Biphasic fitting will now converge.
- Multiline user-defined fitting functions can now be loaded multiple times within a single Origin session without cutting off characters at the end of the equation.
- FFT filter smoothing will now smooth the entire dataset rather than the number of data points equal to the largest power of two less than your total number of data points.
- Fitting multiple datasets to different functions using shared parameters now works correctly.

- The DoseResp function now has the “A” parameters labeled correctly in the Edit Function dialog box of the nonlinear curve fitter.
- When you select **Analysis:Average Multiple Curves** multiple times in an Origin session, the worksheet containing the results is no longer over written. The worksheet created as a result of this menu command is now named Average. The column naming convention for this worksheet is Mean#ofCurvesCuv. All subsequent Averages in the project will be appended as columns to the Average worksheet.
- The Fit Curve # of Pts text box value is no longer ignored when performing a polynomial fit by selecting **Analysis:Fit Polynomial**.
- Peak labels created when using the Baseline tool no longer get overwritten when switching datasets.
- The **Analysis:Average Multiple Curves** menu command no longer causes a crash when a plotted function is included in the analysis.
- Gaussian and Lorentzian fitting from the menu are now performed correctly when there is no X column in the worksheet.
- The **Analysis:Smoothing:Adjacent Averaging** menu command no longer causes a crash when performed on datasets with names longer than 17 characters.
- When performing an exponential growth fit from the menu, Origin uses the equation: y=y0+A*exp(x/t). In previous versions, Origin used the equation: y=y0+A*exp((x-x0)/t).
- Origin will no longer crash when you open the nonlinear curve fitter with the TwoSiteComp function selected from the Pharmacology category.
- The nonlinear curve fitter Param worksheet now correctly reports "parachange" (the number of parameters allowed to vary during the fit), "iterations" (the number of iterations performed), "constr" (the total number of constraints imposed), and "constreff" (the total number of effective constraints).
- Origin will no longer crash after performing repeated exponential decay fittings on datasets with data markers.
- The Linear Fit tool now treats errors correctly when fitting with the Apparent option selected.
- The **Analysis:FFT** menu command no longer treats missing values as zero.
- Instrumental weighting in the nonlinear curve fitter now performs correctly when multiple datasets are involved.
- In the NLSF worksheet created by the nonlinear curve fitter, column labels for both Confidence Limits and Prediction Limits now properly read 95% instead of .95%.
- The presentation of the Extreme function in the nonlinear curve fitter has been changed to $y = y0 + A\exp(-\exp(-z) - z + 1)$ to correctly reflect the function that is used.
- The presentation of the SLogistic2 function in the nonlinear curve fitter has been changed to $y = a/(1+((a-y0)/y0)*\exp(-4*W\max*x/a))$ to correctly reflect the function that is used.
- The Giddings function file has been changed from $y = y_0 + \frac{A}{w}\sqrt{\frac{x_c}{x}}I_1\frac{2\sqrt{\left(\frac{2\sqrt{x_c x}}{w}\right)}}{w}e^{\frac{-x-x_c}{w}}$ to $y = y_0 + \frac{A}{w}\sqrt{\frac{x_c}{x}}I_1\left(\frac{2\sqrt{x_c x}}{w}\right)e^{\frac{-x-x_c}{w}}$ as is displayed in the nonlinear curve fitter presentation.
- The presentation of the BiPhasic function in the nonlinear curve fitter has been changed to $y = A\min + \frac{(A_{\max 1} - A_{\min})}{1+10^{((x-x0\_1)*h1)}} + \frac{(A_{\max 2} - A_{\min})}{1+10^{((x0\_2-x)*h2)}}$ to correctly reflect the function that is used.
- The presentation of the OneSiteComp function in the nonlinear curve fitter has been changed to $y = A_2 + \frac{A_1 - A_2}{1+10^{(x-\log x_0)}}$ to correctly reflect the function that is used.

- The presentation of the Wiebull3 function in the nonlinear curve fitter has been changed to $S = \frac{x - x_c}{w_1} + \left(\frac{w_2 - 1}{w_2} \right)^{\frac{1}{w_2}}$ $y = y_0 + A\left(\frac{w_2 - 1}{w_2} \right)^{\frac{1-w_2}{w_2}} [S]^{w_2 - 1} e^{-[S]^{w_2} + \left(\frac{w_2 - 1}{w_2} \right)}$ to correctly reflect the function that is used.
- The presentation of the Exp1p3Md function in the nonlinear curve fitter has been changed to $y = -\ln(B)B^x$ to correctly reflect the function that is used.
- The parameters A and t have been changed to A1 and t1 in the presentation of the ExpGro1, Explinear, Shah, Yld Fert, Hyperbolamod, Logistpk, Biphasic, DoseResp, Power2, and PearsonvII functions to correctly reflect the parameters that are used in the function file.
- The function file for the Asym2Sig function has been changed from $y = y_0 + A \frac{1}{1 + e^{-\frac{x - x_c + w_1/2}{w_2}}} \left(1 - \frac{1}{1 + e^{-\frac{x - x_c - x_1/2}{w_3}}} \right)$ to $y = y_0 + A \frac{1}{1 + e^{-\frac{x - x_c + w_1/2}{w_2}}} \left(1 - \frac{1}{1 + e^{-\frac{x - x_c - w_1/2}{w_3}}} \right)$ to match the presentation of the function in the nonlinear curve fitter.

Excel

- Adding a picture of an Excel workbook containing charts to a layout page no longer causes a crash.
- Line series plots no longer fail when nonadjacent columns are selected in the workbook.
- Origin now correctly changes the graph type for Excel workbook data that is plotted versus row number when you click a new graph type button on one of the plotting toolbars.
- 3D scatter plots created from Excel workbook data no longer display empty when the project is closed and then reopened.

Import/Export/Copy

- Multiline labels are now exported to ASCII files properly. Thus, they no longer cause labels with less lines to be exported multiple times.
- When importing ASCII files using the *.* selection from the Files of Type drop-down list, the last used directory will now be tracked.
- Origin no longer crashes when importing a pCLAMP file with episodes of different sizes.
- Layout pages can now be exported or copied to the Clipboard.
- The quality of graphs exported in the JPEG file format has been substantially improved.
- Clip Data to Frame is now properly maintained when a 3D color contour graph is exported to a WMF file.
- Clip Data to Frame is fully supported when copying the graph to the Clipboard.
- When you export a graph to a WMF and insert it into another application, the graph is now the correct size regardless of the printer driver used.
- Graphs embedded in other applications, containing X axis values from a column set as Text and Numeric, will now contain the information of the X axis values when OLE in-place activation is used to edit the graph.
- When performing multiple pastes of text from the Clipboard, the text labels are now properly located at the cursor position.
- Origin no longer crashes when you copy ternary plots using **Edit:Copy Page**.

- Pie chart labels no longer lose user-specified format information when the page is copied or refreshed.
- When you embed an Origin graph that contains tick labels from a worksheet dataset into another application, if you double-click to edit the graph object, the tick labels no longer disappear.
- Clip Data to Frame is now correctly observed when graphs containing drop-lines and a data point outside the layer are pasted into Microsoft Word.

LabTalk

- Old style File Open dialog boxes will no longer cause crashes on some computers. This crash occurred when using the **getfilename -m** command or when using the **fdlog.multiopen( )** method with the **system.explorer** property set to "0".
- The **page.icons** property can now be used to read the display state of the layer icons.
- A warning is now displayed in the Script window when the body of a **for** loop is too large.
- Scripts can now access the active dataset name from the **%C** variable during the launch of Origin, even if there are multiple layers on the graph.
- The ***data1_A=data1_A+data1_A[1];*** syntax now works properly.
- The **lr -b** and **lr -e** command options are now supported.
- Long expressions, used directly to specify a dataset index, are now calculated correctly.
- Tool objects will now redraw correctly when updated from an external script.
- The example script file BATCH.OGS will now properly process all files specified.
- Negative numbers can now be passed to user-defined macros.
- The **layer -h** command will now hide the specified layer in printouts and layout pages as well as in the graph window.
- The function arguments limit has been increased from 25 to 250 characters.
- The **run.section(,*secname*)** method will now find the file containing the specified section even when the command is queued.
- When the "cntrlbit" argument is set to "1", the **stat.name( )** method will now find a unique worksheet name, even when there are "gaps" in the worksheet name series that already exists. Furthermore, the **stat.name( )** method will not return a name that conflicts with existing dataset names.
- The **%[%*A*]** notation for calculating string length now correctly includes trailing space characters.
- String assignments will now delete all leading spaces after the equal sign *and* all trailing spaces before the final semicolon.
- Using mixed vector and scalar notation now works in the Script window (returned to 4.1 functionality). For example: **col(d)=(col(c)-col(b)[1]);**
- The **win -ca *winName*** command will no longer cause a crash.
- When used more than once, the **win -ti** command will now make the newly created window active instead of activating the previously created window.
- In the **getnumber** dialog box, if the variable is not initialized, it will now be displayed as a missing value. Previously, it was displayed as zero even though it was stored as a missing value, and could not be changed to zero in the dialog box.
- The **getstring** command no longer produces a command error if the string variable is left unchanged in the dialog box.
- Setting the tick width with **layer1.tickw=*n*;** from the Script window now works.
- The last character is no longer deleted when executing script in the Script window by highlighting it and pressing ENTER.
- A minus sign is no longer interpreted as a dash at the beginning of arithmetic expressions performed in the Script window.
- The **clipboard** command now behaves identically with the **Edit:Copy Page** menu command.
- The **%C** variable is immediately set after adding data to a graph window.
- The **nlsf.constr$="";** object property assignment will now clear the constraints in the nonlinear curve fitter.
- The ***=** assignment operator now works correctly when creating datasets using the following notation: **%(wks,col,row)*=Num**.

- Using the **@D** variable for getting the current date and time is now Year 2000 compliant. (Note: This was a 5.0 SR2 bug.)
- Mathematical operations performed in the Script window no longer display an erroneously large number of significant digits. The number of significant digits can now be controlled by a new **@SD** system variable with a default value of 7.
- Assigning text to an inactive worksheet through script now automatically updates the worksheet display.
- When the **continue** command is executed on the last iteration of a **loop** loop (as opposed to a **for** loop), subsequent script is now executed.
- The **%(%H,*column#*,*row#*)** substring notation now properly updates the row range if the value entered is out of the current worksheet range.

Miscellaneous

- Direction and magnitude information is no longer lost when saving a vector plot as a window (.OGG file).
- Graph windows that appear in layout pages can now be renamed.
- Saving a project a second time, after performing specific analysis routines including FFT filtering, no longer produces a crash when operating under Windows NT 4.0.
- The following conditions, when all present, will no longer cause crashes upon opening or saving projects:

  Operating system is NT

  User logs on as other than Administrator

  Specific combinations of Microsoft DLLs are present

  MFC style dialog box is used for saving or opening

  However, opening and saving projects under these same conditions will now cause a loss of OLE functionality. To avoid this loss of functionality you can either log on as Administrator or execute the script **@x=0**. Executing this script will cause Origin to use the non-MFC based dialog boxes for opening and saving.
- Origin will now correctly start when you double-click on any supported file types in Windows Explorer, even when there are spaces in the file name or path.
- When an instance of Origin is running, you can now double-click on an OPJ file in Windows Explorer to launch another instance of Origin with the OPJ loaded.
- Origin no longer crashes when you save a project that contains a duplicated graph window with a deleted grouped object.
- Command line switches can properly handle strings with spaces in them.
- 3D scatter plots created from Excel workbook data no longer display empty when the project is closed and then reopened.
- The Origin splash screen no longer displays when you start Origin invisibly as a DDE server.
- Placing at least one object from the Tools toolbar such as an arrow, a rectangle, or an ellipse directly onto the layout window will no longer generate crashes on some Windows NT computers.

OriginPro

- The return values for the **file.wksblock( )** method are now correct.
- The **db.rest( )** method will now reset the **db.tabletype$** ODBC property.
- If there is a carriage return after the last token, the **file.readrow( )** method will no longer create an extra column containing a zero in the last row and missing values everywhere else.
- Graph windows with ODBC data will no longer lose information from the last worksheet column when the data is refreshed.
- Origin will no longer crash when you import columns with long text strings using ODBC.
- The first character in an ODBC query is no longer restricted to an alphanumeric character. For example, the first character can be a logical operator.

Peak Fitting Module (PFM)

- When more than one fitting function is used to fit the same dataset, the fitting results that are pasted to the graph after the first fit now properly update with the second set of results.

Plotting

- Origin no longer crashes when you plot data from a worksheet with a name longer than nine characters using either **Plot:Template** or the 2D plotting toolbars.
- Stack column charts will no longer effect the scale of subsequently created box charts.
- Pie chart labels no longer lose user-specified format information when the page is copied or refreshed.
- In the Layer *n* dialog box, you can now successfully select multiple datasets for deletion, including datasets that are dependent on one another, even when they do not have an associated worksheet (for example, a Y dataset and its associated error bar dataset).
- Custom Y axis links now work properly.
- The polar plot Y axis label is now placed properly.
- The right justification of data labels now works properly.
- If you remove all the data plots from a layer, then click one of the buttons on the 2D Graphs toolbar, the last data plot removed will not be plotted again in the graph window.
- Changing attributes of an axis containing date values no longer causes an erroneous rescale.
- Plotting a selected range of worksheet data is now supported for line series graphs.
- X error data now plots correctly when added to a graph using the Layer *n* dialog box.
- Templates saved with error bars no longer corrupt the plot type of data added to the template after the error bar data.
- Stacking data now works correctly in multiple layer graphs.
- Origin no longer crashes when merging minimized graph windows.
- When creating a box chart by selecting **Plot:Template** or by clicking the Template button on the 2D Graphs toolbar, the box chart will now rescale correctly when you click the Rescale button on the Graph toolbar.
- Drop lines are now correctly drawn parallel to the grid lines in ternary graphs.
- The legend in a vector graph is now standardized and is no longer determined by the angle and magnitude of the first vector in the graph.
- Worksheet column data is no longer corrupted when the Select Columns for Plotting dialog box is used to plot Labels from a column that is not set to Text Display type.

Printing

- White is now supported when printing colored backgrounds with a slide printer.
- Multiple graphs from the same Excel workbook column will now print successfully when placed on a single layout page.
- You can now print the Script window text to a PostScript printer.

Worksheets

- The Set Column Values dialog box now recognizes selected ranges in the worksheet.
- The range of worksheet values supported by the Double(8) internal data type has been restored to the Origin 4.1 SR2 range. The upper limit is 1 E 290, and the lower limit is 1 E-290.
- Setting the significant digits of a worksheet column set to Text and Numeric now works correctly.
- Parentheses no longer cause problems with multiline worksheet column labels.
- Copying worksheet data no longer fails to get the entire range if the first column has fewer rows than the following columns.
- When converting a regular XYZ worksheet to a matrix, Origin maintains the proper X mapping relationship.

- When editing the cells of a worksheet, you can now paste to the cursor position within a cell.
- Converting columns from Text and Numeric to Date no longer results in a loss of data.
- Columns set to Month Display type and Jan Format now display the columns values correctly. Additionally, columns set to Day of Week Display type and Mon Format now display the column values correctly.
- Worksheet column data is no longer corrupted when the Select Columns for Plotting dialog box is used to plot Labels from a column that is not set to Text Display type.