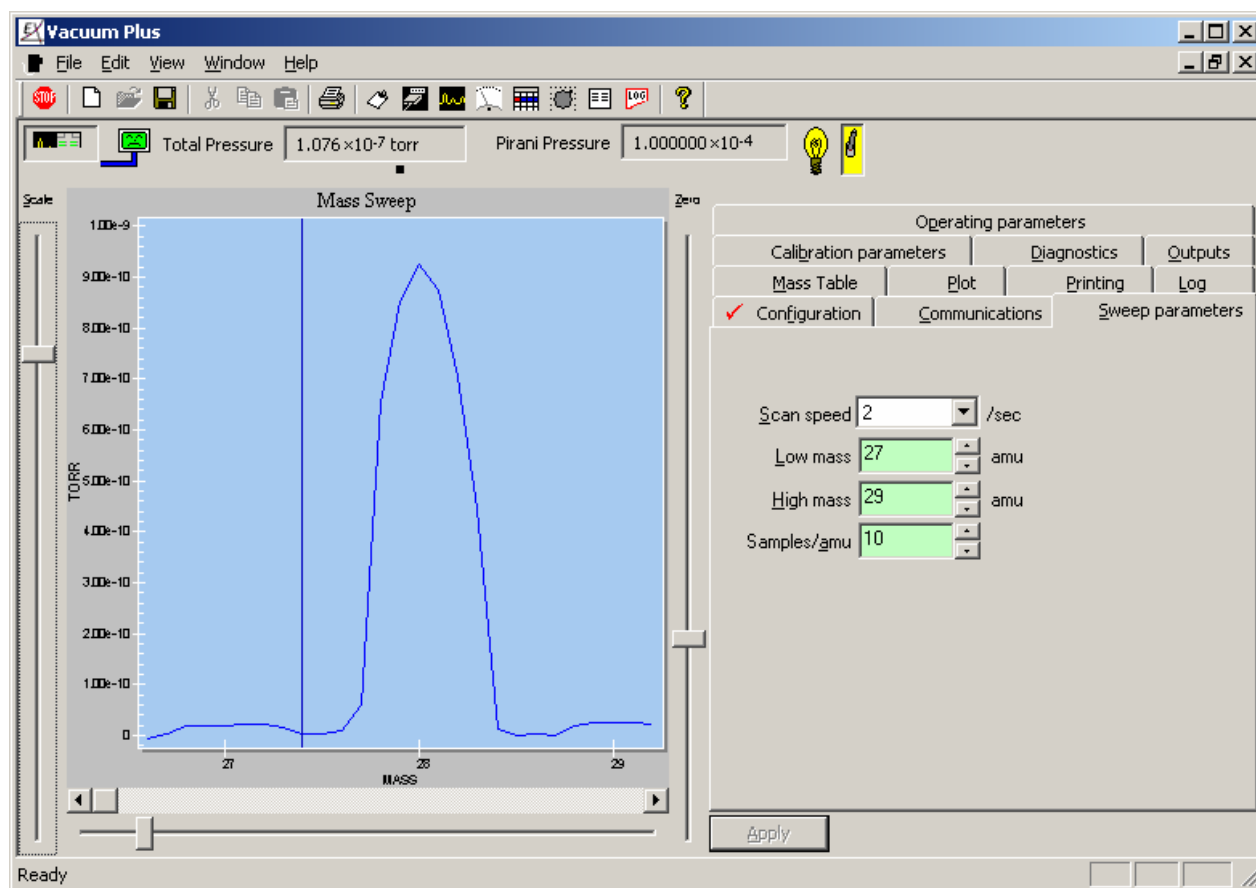


## Application Note Number 102: Use of Sweep Mode XML Data in Excel

**Abstract:** XML data from the VacuumPlus software has a fixed format as shown in the Extorr manual. This application note discusses how to use this XML data output in Microsoft Excel to parse, adjust and display this data.

A sweep from mass 27 to mass 29 is given out on the VacuumPlus GUI as shown below.



The data shown on the graph is available for further analysis by exporting it using the “File>Save as XML” sequence. The accumulated data is placed in an XML formatted file which may be read in a browser as given below. You will find that files with the .xml extension are opened by your default browser. Such a browser output of the file created from the above data is shown below.



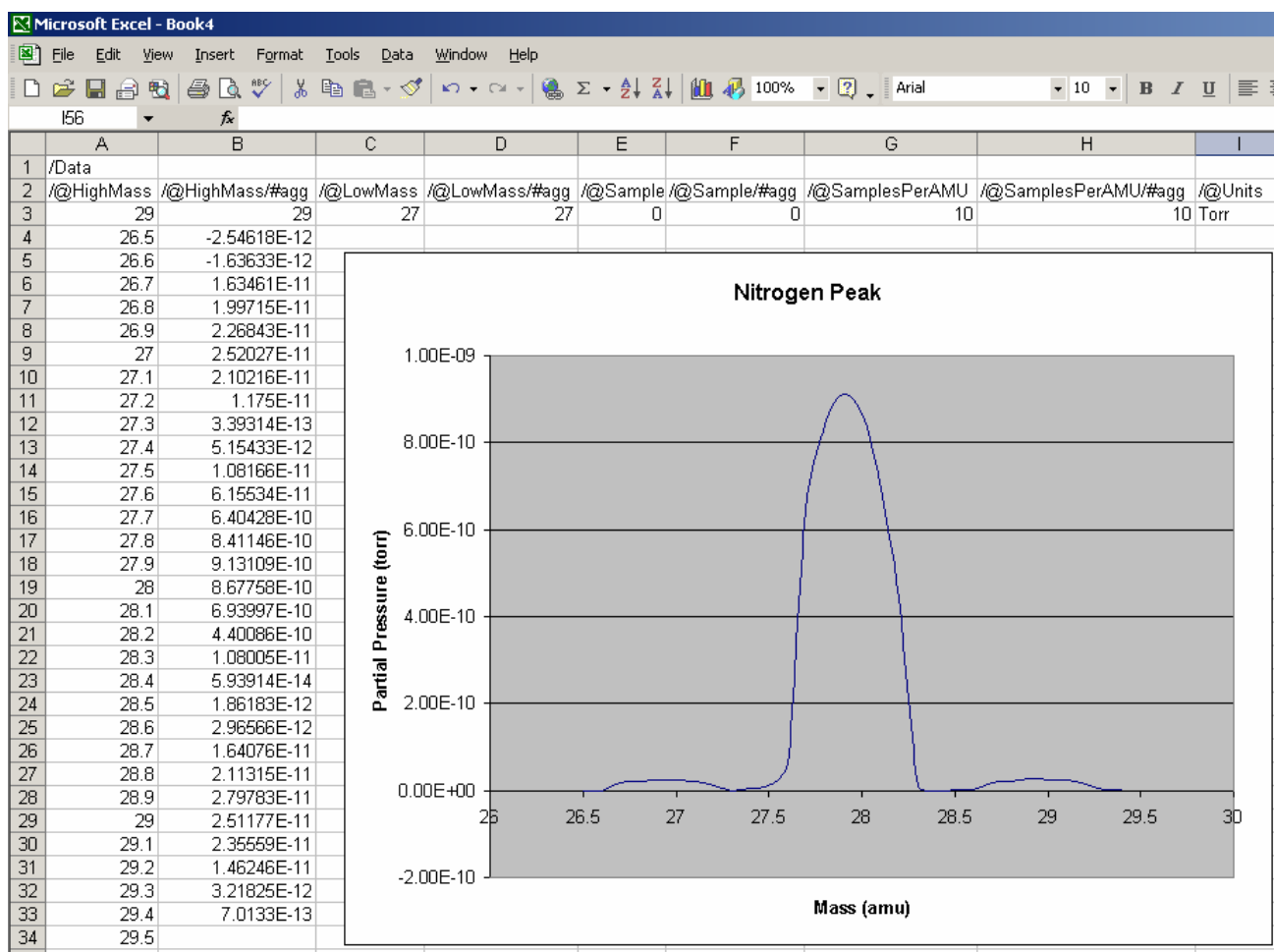
It is now quite easy to do further analysis on this data manually. Excel macros may also be written in VBA to handle the data in any specific way. For instance the macro below will display this data on a plot. This was done using a 2002 version of Excel.

```
Sub PlotSweep()  
,  
' PlotSweep Macro  
' This is applied after the sweep xml file is imported into cell A1.  
' Keyboard Shortcut: Ctrl+p  
,  
  
  ' Find out how many data points are in file  
  DataPts = (Range("B3") - Range("C3") + 1) * Range("G3")  
  ' Create the x-axis values  
  Range("A4").Select  
  For x = 0 To DataPts  
    ActiveCell.FormulaR1C1 = Range("C3") + x / Range("G3") - 0.5  
    ActiveCell.Offset(1, 0).Select  
  Next  
  ' Move the data next to the x-axis values  
  Range("J3", Range("J3").End(xlDown)).Select  
  
  Selection.Copy  
  Range("B4").Select  
  ActiveSheet.Paste  
  ' Select the Range to be plotted  
  Range("A3", Range("B3").End(xlDown)).Select  
  MyRange = "A4:B" + Trim(Str$(4 + DataPts))  
  Charts.Add  
  ActiveChart.ChartType = xlXYScatterSmoothNoMarkers  
  ActiveChart.SetSourceData Source:=Sheets("Sheet1").Range(MyRange), PlotBy _  
    :=xlColumns  
  ActiveChart.Location Where:=xlLocationAsObject, Name:="Sheet1"  
  Title$ = InputBox("Enter the Chart Title")  
  With ActiveChart  
    .HasTitle = True  
    .ChartTitle.Characters.Text = Title$  
    .Axes(xlCategory, xlPrimary).HasTitle = True  
    .Axes(xlCategory, xlPrimary).AxisTitle.Characters.Text = "Mass (amu)"  
    .Axes(xlValue, xlPrimary).HasTitle = True  
    .Axes(xlValue, xlPrimary).AxisTitle.Characters.Text = _  
      "Partial Pressure (torr)"  
  End With  
  ActiveChart.SeriesCollection(1).Select  
  ActiveChart.Axes(xlCategory).Select  
  With ActiveChart.Axes(xlCategory)  
    .MinimumScale = Range("C3") - 1  
    .MaximumScale = Range("B3") + 1  
    .MinorUnitIsAuto = True  
    .MajorUnitIsAuto = True  
    .Crosses = xlAutomatic  
    .ReversePlotOrder = False  
    .ScaleType = xlLinear  
    .DisplayUnit = xlNone  
  End With  
  ActiveChart.PlotArea.Select  
  ActiveChart.HasLegend = False  
  ActiveChart.PlotArea.Select  
  ActiveChart.Axes(xlValue).Select  
  Selection.TickLabels.NumberFormat = "0.00E+00"  
  
End Sub
```

The procedure for using this macro is:

- Place your .xml data into Excel as described above.
- Create a blank micro by “Tools>Macro>Record New Macro”.
- Give it a name and hot key, if you like.
- End the macro with “Tools>Macro>Stop Recording”.
- Now edit your new macro with “Tools>Macro>Macros...>edit”.
- Copy the text of the macro above, excluding “Sub PlotSweep()” and “End Sub”.
- Paste this text within your macro.
- Run the macro.

When this macro is applied to the data above, the Excel screen shows the following.



Macros may be written for anything the user wants to do with his data as is shown in Extorr Application Note 103.