

Solaar Software
Version 10.xx
32-bit WindowsXP™



This presentation is designed to help the operator understand the Solaar software interface.

Please use the **help** buttons to get further detail on the features. Specific help includes definitions and “how it works” descriptions. Links are supplied to associated topics.

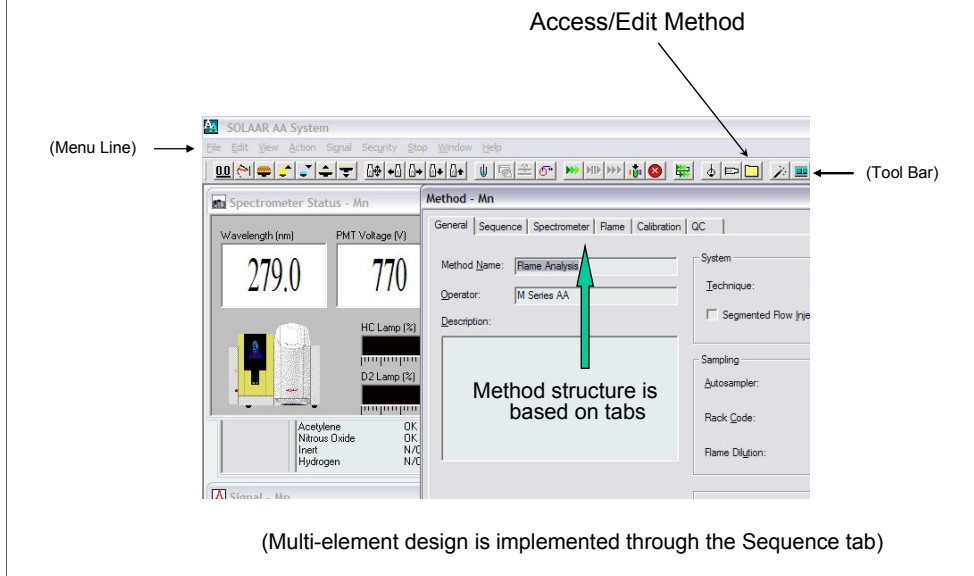
Using the context sensitive **help** icon allows the operator to “click” on a screen display to obtain information pertinent to the displayed subject.



Results Files

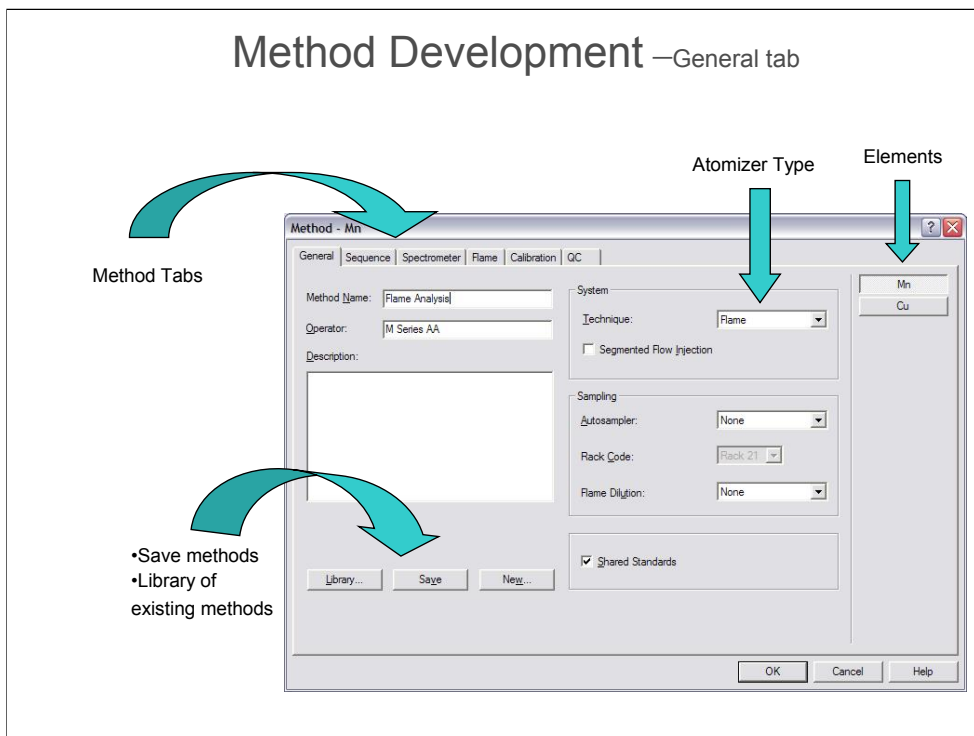
- A results file is selected prior to any analyses being performed
- Results files are not selected/specified in a method
- Results files are maintained separate from methods
- A specific result file will be used until another is selected

Method Development



Method information is broken into several categories. The categories are displayed as folder tabs. These tabs are labeled general, Sequence, Spectrometer, either Flame or Furnace, Autosampler, Calibration, Ash/Atomize, and QC.

The Ash/Atomize tab is displayed only when furnace atomization has been selected. The QC tab is displayed only when optional AutoQC software has been installed.



This display shows the location of the tabs.

The General folder is the top display.

Independent information for multiple elements can be stored with the method and is accessible by clicking on the appropriate element button.

In the General folder you will find:

- Method storage and recall capabilities.
- Atomizer selection
- Autosampler type selection
- Method and operator names
- Method description
- Shared solutions definition for multi-element methods

Method Development –Sequence tab

Right click for actions

Or press "hot" keys

The Sequence tab is where element selection is made

The screenshot shows the 'Method - Mn' window with the 'Sequence' tab selected. The window contains a table with columns for 'Solution ID', 'Mn', and 'Cu'. The table lists various samples and QC checks. A right-click context menu is open over the 'Sample 1' row, showing options like 'Insert Action...', 'Delete Action...', 'Clear All Actions', 'Change Element...', 'Add Element...', 'Reset Method', 'Delete Element', 'Enable Element', 'Element IDs...', 'Sample Details...', 'Reagent Details...', and 'ASLG...'. At the bottom of the window, there are 'hot' buttons: 'Change Element...', 'Add Element...', 'Delete Element', 'Sample Details...', 'Reagent Details...', and 'ASLG...'. The 'Add Element...' button is highlighted with a red arrow. The 'SOLAR M' logo is visible in the background of the window.

	Solution ID	Mn	Cu
Calbr		✓	✓
QC Blank	QC Blank	✓	✓
QC Check 1	ICV	✓	✓
Sample 1	DD-145C-33	✓	✓
Sample 2	DD-145C-33	✓	✓
Sample 3	DD-145C-34	✓	✓
Sample 4	DD-145C-35	✓	✓
Sample 5	DD-145C-36	✓	✓
Sample 6	DD-145C-37	✓	✓
Sample 7	DD-145C-38	✓	✓
Sample 8	DD-145C-39	✓	✓
Sample 9	DD-145C-40	✓	✓
Sample 10	DD-145C-41	✓	✓
QC Check 3	CCV	✓	✓
Sample 11	DD-145C-42	✓	✓
Sample 12	DD-145C-43	✓	✓
Sample 13	DD-145C-44	✓	✓
Sample 14	DD-145C-45	✓	✓
Sample 15	DD-145C-46	✓	✓
Sample 16	DD-145C-47	✓	✓
Sample 17	DD-145C-48	✓	✓

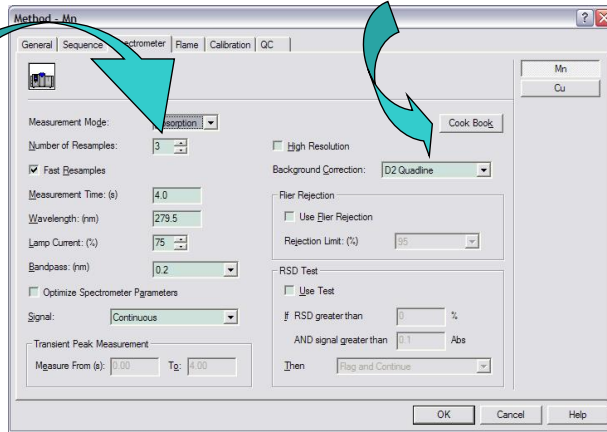
This display has the Sequence folder on top. A right mouse click on a sample field pulls down the action menu shown on the left. Alternatively, a left mouse click on the hot buttons at the bottom of the display allows direct access to several of the more important functions.

After an element column has been highlighted by clicking on the element symbol, the operator can enable or disable analysis for the highlighted element.

Method Development –Spectrometer tab

Element & atomizer specific performance information are in the Cook Book

Number of readings



Method Development –Flame tab

Able to optimize the fuel flow for each analysis

Can add auxiliary oxidant when running organics

Method - Mn

General | Sequence | Spectrometer | Flame | Calibration | GC

Flame

Flame Type: **Acetylene**

Fuel Flow: (L/min) 1.0

Optimize Fuel Flow

Auxiliary Oxidant

Stabilization

Burner Stabilization Time: (min) 0

Nebulizer Uptake Time: (s) 4

Burner Height

Burner Height: (mm) 7.0

Optimize Burner Height

Mn

Cu

OK Cancel Help

Method Development – Calibration tab

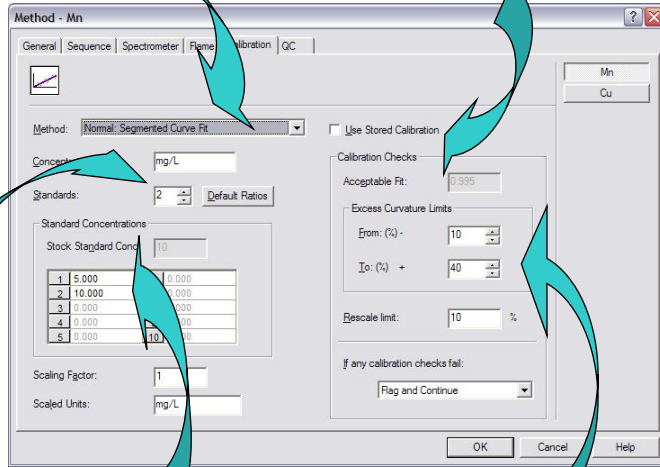
Curvefit selection

Stored calibration to run samples without re-calibrating every time

Number of standards

Standard Concentrations

Fit criteria



Method Development –QC tab

Method - Mn

General | Sequence | Spectrometer | Flame | Calibration | QC

Types of QC tests available

QC Blank
QC Check 1
QC Check 2
QC Check 3
QC Check 4
QC Check 5
QC Check 6
QC Check 7
QC Check 8
QC Check 9
QC Duplicate
QC Preparation Spike
QC Analysis Spike
QC Sample Blank
QC Calibration Blank

Test Parameters

Test Name: CCV

Check Against: Percentage Limits

Expected Concentration: 2 mg/L

If result less than: 90 %

OR result greater than: 110 %

Then: Flag and Continue

Possible failure actions

- Flag and Continue
- Continue Next Element
- Flag and Pause
- Recalibrate and Retest
- Rescale and Retest
- Reblank and Retest
- Recalibrate and Reanalyze
- Rescale and Reanalyze
- Reblank and Reanalyze
- Retest

Target and limit values

Mn
Cu

Cancel Help

Quick Method Setup

- Click on **Method** folder (toolbar)
- Select atomizer type in **General** tab
- Open **Sequence** tab and press **Change Element** button at bottom of window.
- Highlight element symbol from periodic table and press **OK** button
- Open **Calibration** and input number of standards and concentrations for each.
- Select no. of resamples, type of integration, and background correction from **Spectrometer** folder. You should be able to leave wavelength, lamp current (%), and bandpass at default values.

SOLAAR Main Window

Menu Line

Tool Bar

Note 1 - Display windows sizes and positions are saved when Solaar is exited

Note 2 - Display windows cannot be closed; only minimized

Minimized Display windows

Status Line

Spectrometer Status

Wavelength (nm) FMT Voltage (V) Absorbance (A)

HCLamp (%)

D2 Lamp (%)

Calibration - Min

Normal Segmented Fit

Abs

Conc mg/L

Calibration Data

Conc	Signal
0.0000	0.2
5.0000	0.2
10.0000	0.547

Curvature: 0%

Inverture: 0%

Sc: 0.0740

Signal - Min

Tea Lipton.1

Abs

Time (s)

Corrected Total Background

Results - April2005school.SLR

Sample ID	Signal	Std	Concentration	Corrected Concentration
Min 10 degrees		9.2723	4.272005	
Blank	-0.002	24.6	0.0000	
Standard 1	0.295	0.5	5.0000	
Standard 2	0.547	0.1	10.0000	
Tea Lipton	0.165	0.3	2.6151	2.6151
Sppm Min	0.295	0.4	5.0019	5.0019

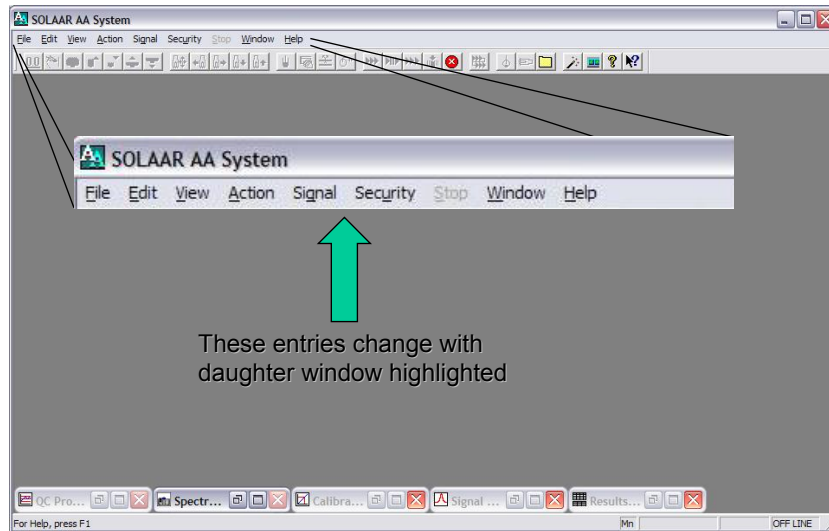
Resample Signal Date Tea Lipton MEAN

1	0.165	4/27/2005 9:30:17	Signal Abs	0.165
2	0.165	4/27/2005 9:30:21	Signal	
3	0.166	4/27/2005 9:30:26	% RSD	0.3
			sd	0.0006
			Concentration	2.6151

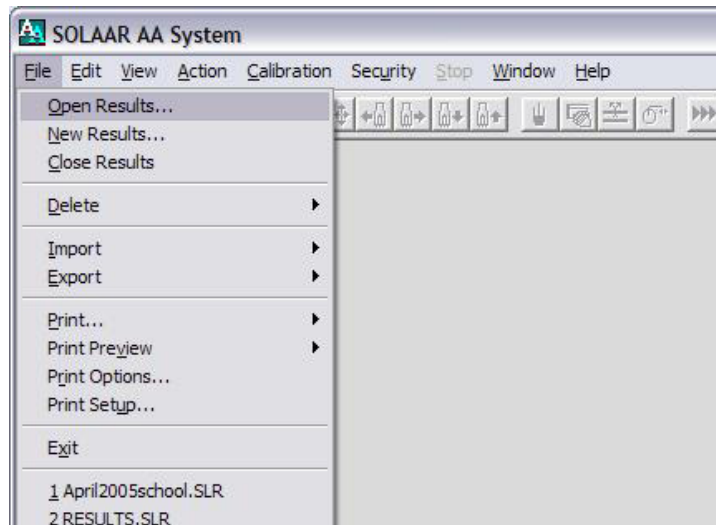
For Help, press F1

On OFF LINE

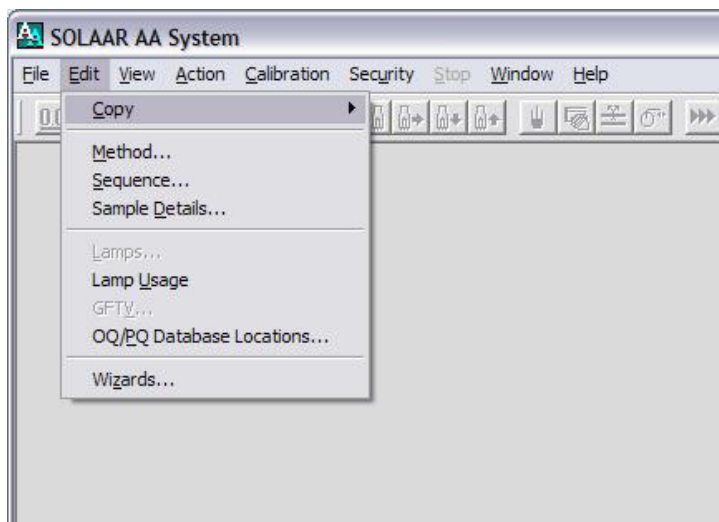
Menu Line



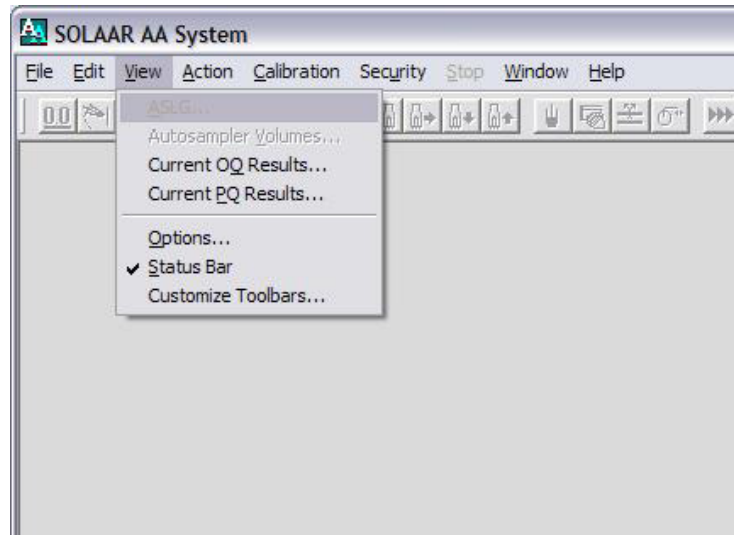
Menu Line -File Choices



Menu Line -Edit Choices



Menu Line -View Choices



Menu Line -Action Choices

Only allowed actions enabled

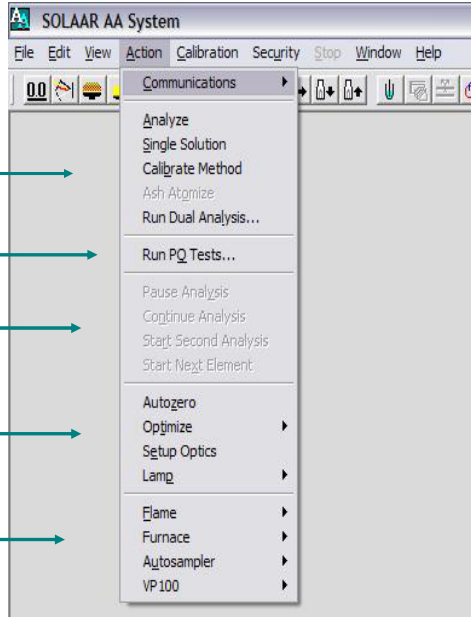
Analysis Functions

Performance Qualification

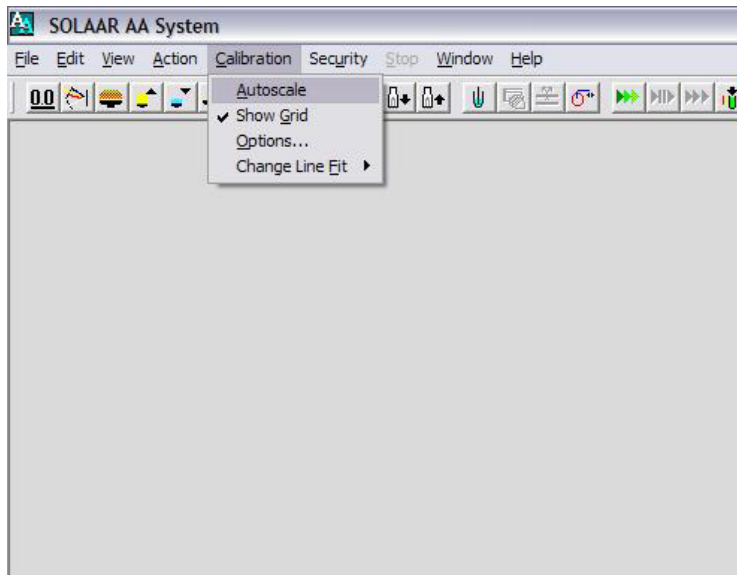
Analysis Run Controls

Spectrometer Controls

Atomizer Controls



Menu Line - Calibration Choices



Right-Click Window Functions for:

The image displays a software interface with a right-click context menu on the left and three data plots on the right. The menu is organized into sections: 'Options...', 'Results', 'Results Summary', and 'Signatures...'. The 'Results' section is highlighted with a red arrow pointing to the 'Signal - Mn' plot. The 'Results Summary' section is highlighted with a red arrow pointing to the 'QC Protocol' plot. The 'Signatures...' section is highlighted with a red arrow pointing to the 'Calibration - Mn' plot. Each plot has its own right-click context menu with options like 'Autoscale', 'Show Grid', and 'Options...'. The 'Signal - Mn' plot shows 'Corrected', 'Total', and 'Background' signals. The 'Calibration - Mn' plot shows a 'Normal, Segmented Fit' line.

- Options...
 - Set As Reference
- Results
 - Remeasure Solution
 - Delete Result
 - Restore Result
 - Use Height for Calculations
 - Use Area for Calculations
 - Change Peak Measurement...
 - Change Line Fit
 - Edit Sample Details...
- Results Summary
 - View Method...
 - View Analysis Details...
 - View Audit Trail...
 - View OQ Results...
 - View PQ Results...
 - Continue Analysis...
 - Edit Current Sequence...
- Signatures...
 - View Signatures...

Results

QC's

Signal

Calibration

Tool Bar Buttons



the **Autozero** button, which causes an Autozero action to take place.



the **Setup Optics** button, which causes an Optical Setup action to take place.



the **Setup Flame** button, which cause a Flame Setup action to take place.



the **Fuel Up** button, which increases the fuel flow rate to the flame by 0.1L/min, unless the fuel flow rate is at the maximum for the current type of flame.



the **Fuel Down** button, which decreases the fuel flow rate to the flame by 0.1L/min, unless the fuel flow rate is at the minimum for the current type of flame.



the **Wash Autosampler** button, which causes an Autosampler Wash action to take place.



the **Purge Autosampler** button, which causes an Autosampler Purge action to take place.



the **Clean Cuvette** button, which causes a Cuvette Clean action to take place.



the **Align Capillary Tip** button, which causes the Furnace Autosampler Capillary tip to be positioned over the cuvette for alignment.



the **Analyse** button, which will cause the analysis shown on the Sequence Window to start.



the **Hold** button, which pauses the current analysis when the current sample measurement has been completed.



the **Continue** button, which causes the current analysis to continue after it has been Held.



the **Single Solution** button, which causes a Single Solution action to take place.



the **GFTV** button, which causes the GFTV dialogue box to be displayed.



the **Lamps** button, which causes the Lamps dialogue box to be displayed.



the **Methods** button, which cause the Methods property sheet to be displayed.



the **About** button, which causes the About dialogue box to be displayed.



the **What's this...** button, which causes the Help topic for the next item you click to be displayed.

Results Window

Results Summary

Detailed Result

Replicates

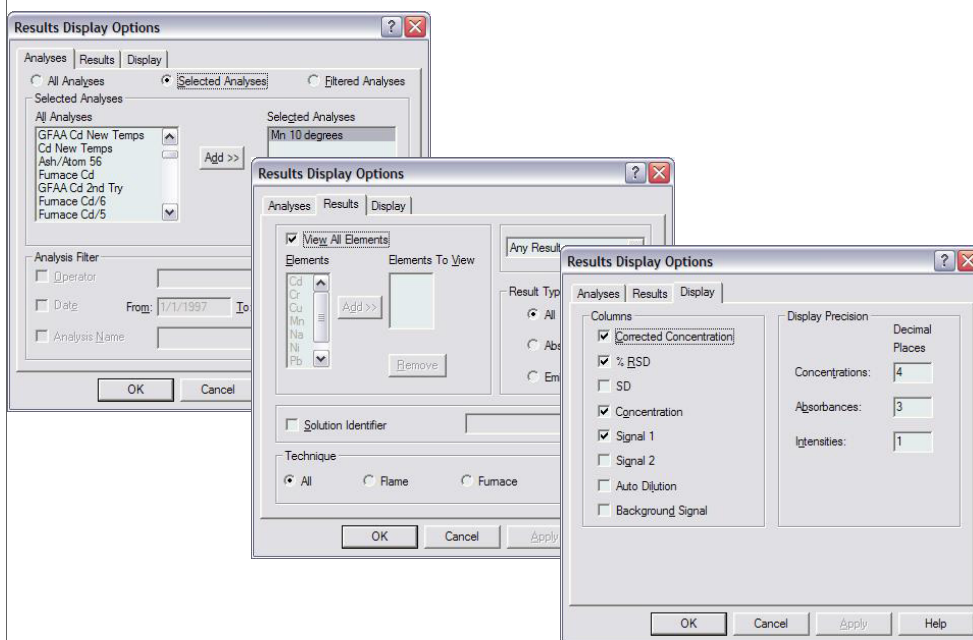
The screenshot shows a software window titled "Results - April2005school.SLR". It contains two main data tables. The top table lists various samples and their properties. The bottom table shows replicates for a specific sample, "Tea Lipton". To the right of the replicates table is a "Detailed Result" panel for "Tea Lipton", which provides a breakdown of the signal, RSD, standard deviation, concentration, and auto dilution.

Sample ID	Signal	Rsd	Concentration	Corrected Concentration
Mn 10 degrees			9:27:23	4/27/2005
Mn	Abs	%	mg/L	mg/L
Blank	-0.002	24.6	0.0000	
Standard 1	0.295	0.5	5.0000	
Standard 2	0.547	0.1	10.0000	
Tea Lipton	0.165	0.3	2.8151	2.8151
Sppm Mn	0.295	0.4	5.0019	5.0019

Resample	Signal	Date
1	0.165	4/27/2005 9:30:17
2	0.165	4/27/2005 9:30:21
3	0.166	4/27/2005 9:30:26

Tea Lipton	Mn
Signal Abs (Signal)	0.165
% RSD	0.3
sd	0.0006
Concentration	2.8151
Corrected Concentration	2.8151
Auto Dilution	1.000

Results Right-Click Options



Result Error Flags

Definitions for the error flags are available in help files (F1).

- Out-of-range results

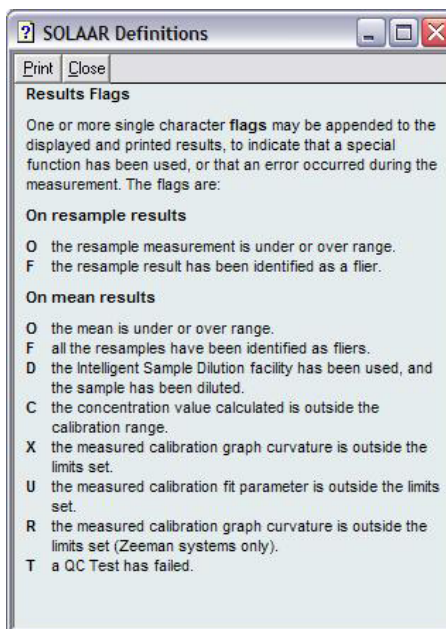
- Fliers

- Dilution

- Excessive curvature

- Poor curvefit

- QC Failure



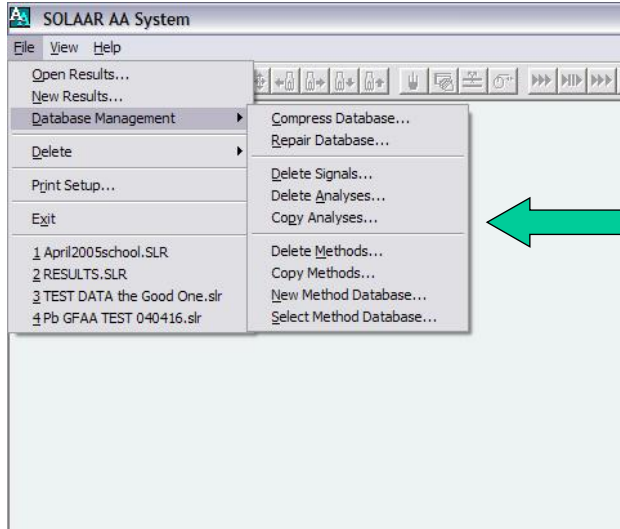
Closing Results Files

The screenshot shows the SOLAAR AA System software interface. The 'File' menu is open, and the 'Close Results' option is highlighted. A secondary window titled 'April2005school.SLR' is open, displaying a table of analytical results. The table has columns for ID, Signal, Rsd, Concentration, and Corrected Concentration. Below this table is a summary table with columns for Resample, Signal, Date, Cold water, and MEAN.

ID	Signal	Rsd	Concentration	Corrected Concentration
mples re			524-09	4/28/2005
	Abs.s (Area)	%	pp/L	pp/L
	0.003	3.5	0.0000	
	0.509	1.0	5.0000	
	1.015	0.0	15.0000	
	1.129	0.1	20.0000	
	0.016	15.5	0.0086	0.0098
	0.043	2.5	0.2845	0.2845
	0.004	5.9	-0.0981	-0.0981
			528-29	4/28/2005
	Abs (Height)	%		
Blank	0.005			
Cd std2			518-56	4/28/2005
Cd	Abs (Height)	%		
Standard 2	1.047			

Resample	Signal	Date	Cold water	MEAN
1	0.044	4/28/2005 5:47:41		Signal Abs.s (Area) 0.043
2	0.042	4/28/2005 5:49:45		(Signal) Abs (Height) 0.043
				% RSD 2.5
				sd 0.0011

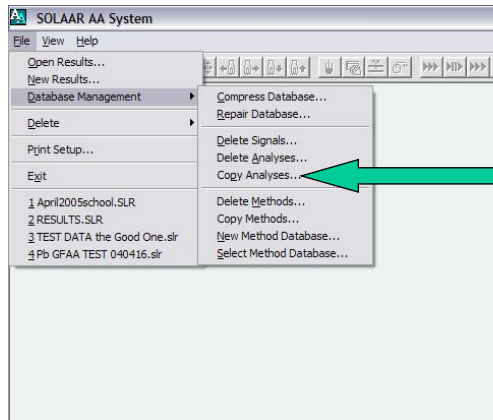
Results Files -Database Management



Options in
Database
Management

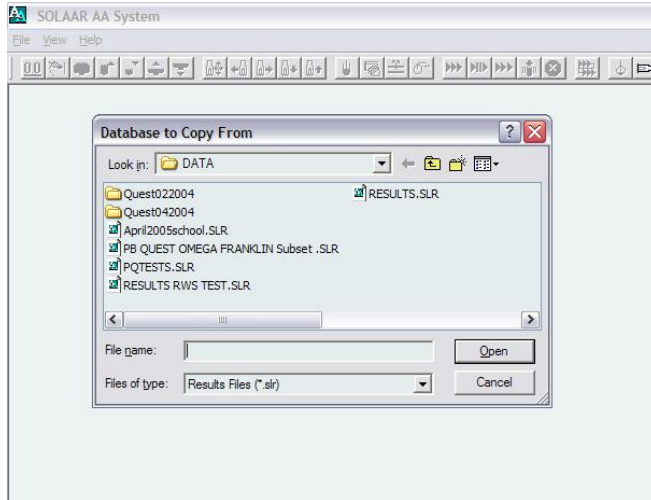
Database Management is not available if Results are open

Results Files -Copy Data



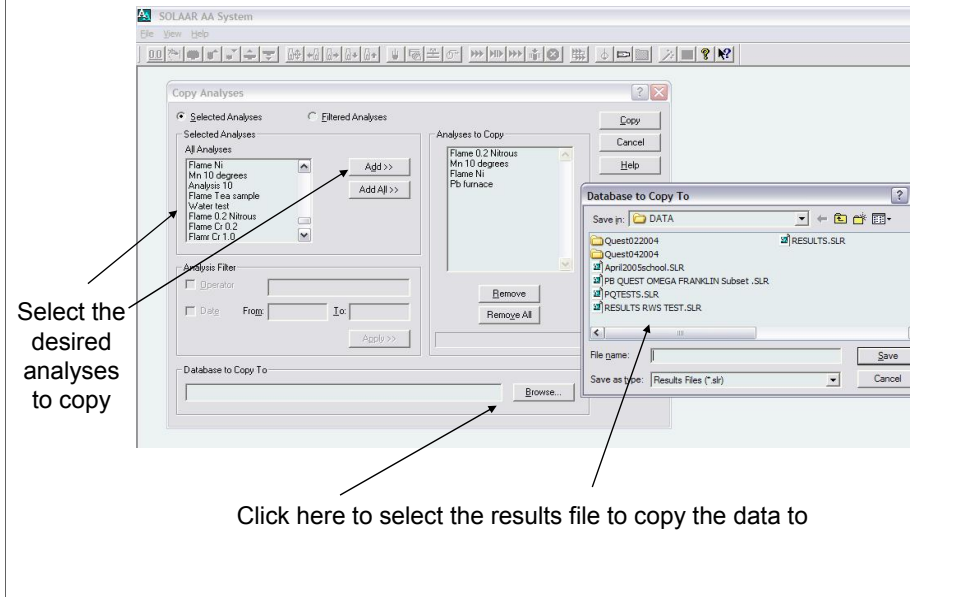
Click here to copy analysis data from one file to another

Results Files -Copy Data

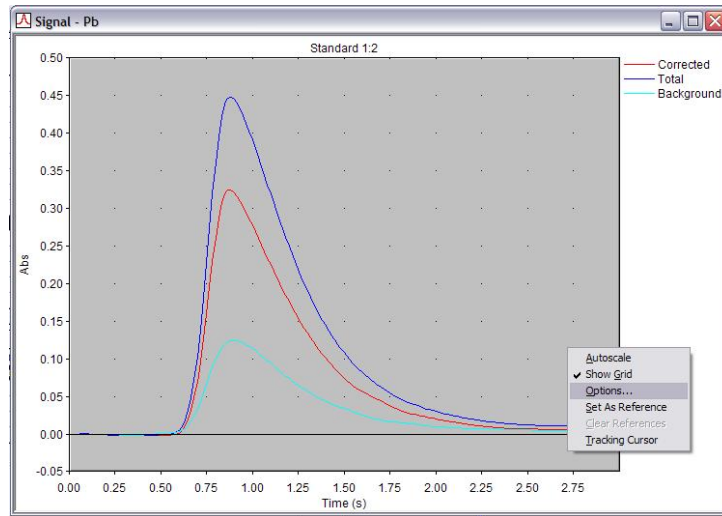


Select results
file to copy from

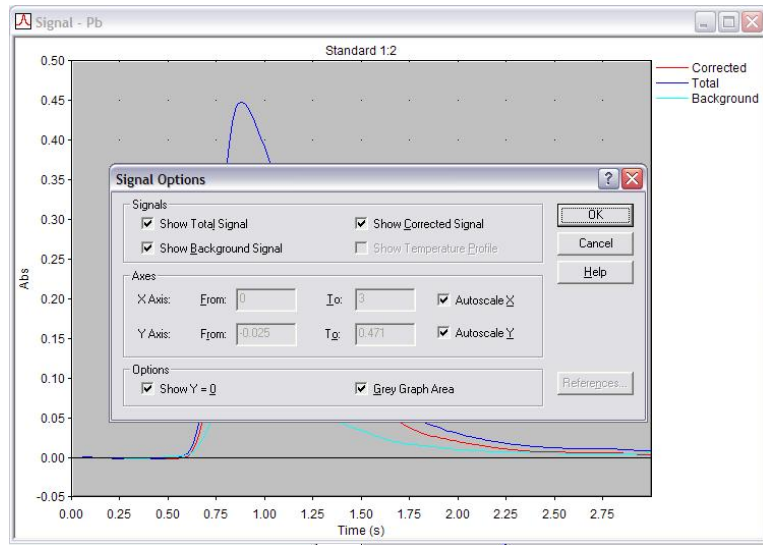
Results Files -Copy Data



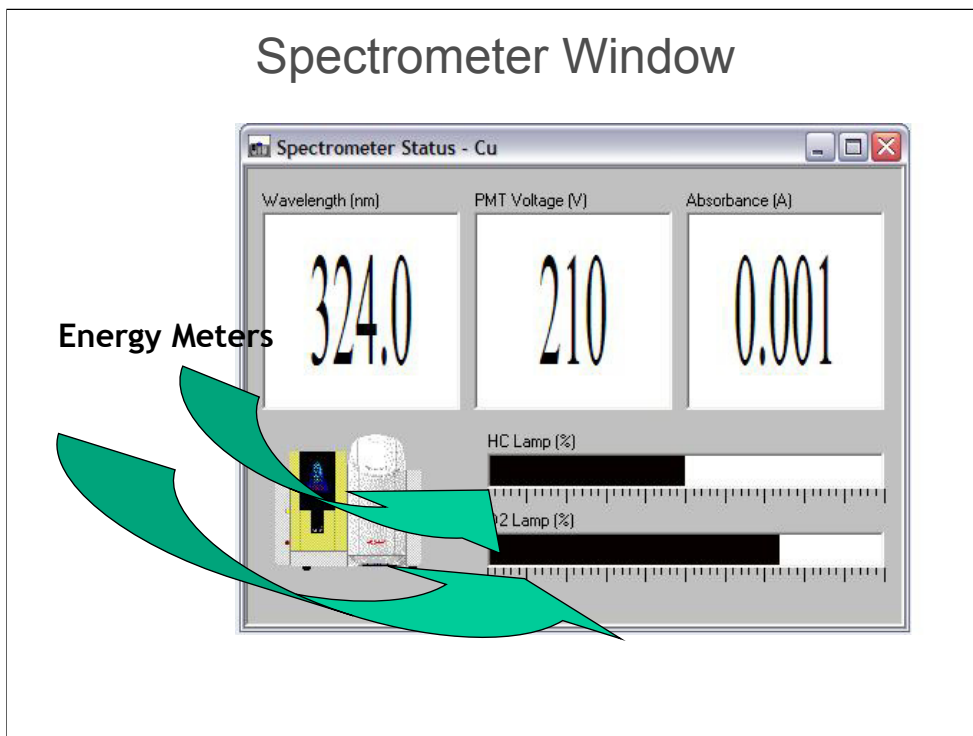
Signal Window



Signal Options

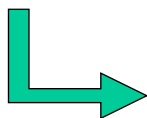


Spectrometer Window



Calibration Window

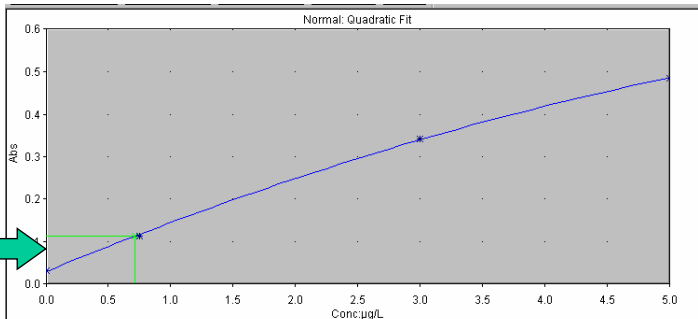
Graphic Display



Highlighted result

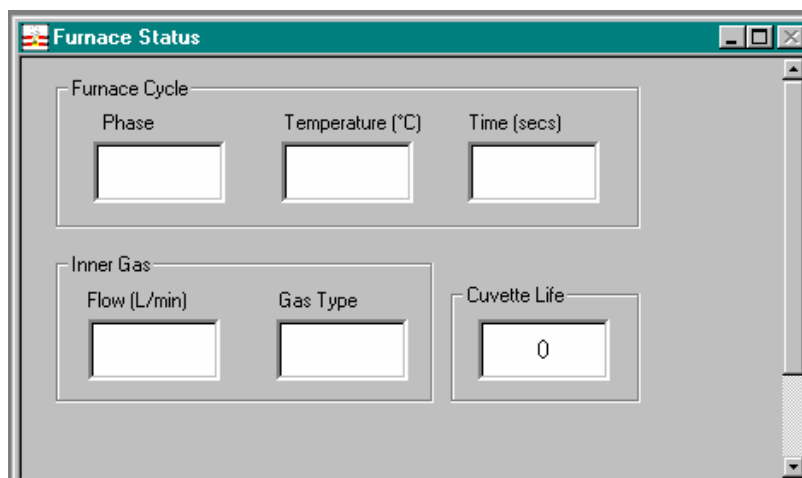


Numerical fit



Calibration Details		
Conc	Signal	
0.0000	0.032	Y = -0.00609x ² + 0.12162x + 0.0296
0.7500	0.113	Fit: 0.9997
3.0000	0.342	
5.0000	0.485	

Furnace Status Window



The image shows a software window titled "Furnace Status". The window contains two main sections: "Furnace Cycle" and "Inner Gas".

Furnace Cycle

Phase	Temperature (°C)	Time (secs)

Inner Gas

Flow (L/min)	Gas Type	Cuvette Life
		0

QC Plotting Options

QC Graph Options

Graph

X Axis: Autoscale X

Y Axis: From: To: µg/L Autoscale Y

Show Y = 0 Grey Graph Area

Location Line

Mean Concentration Signal

Δt: µg/L

Spread Lines

Standard Deviation % Mean Concentration

Limits: + To: - µg/L

OK
Cancel
Help

QC Charts

