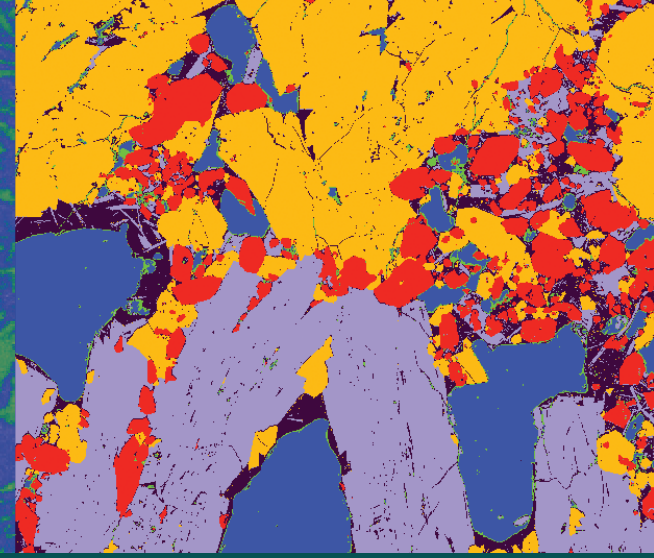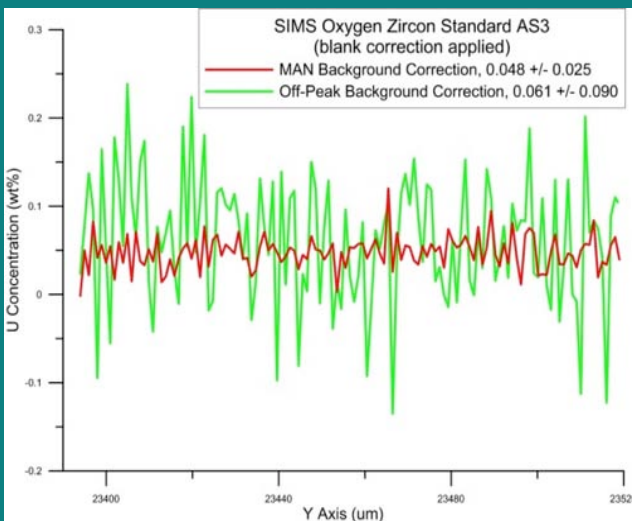# Probe Software

Electron Microprobe Software Designed For Users By Users

Our Probe for EPMA Software Saves Your Lab Time and Money While Providing Better Precision and Accuracy


Here are some of the ways:

SIMS Oxygen Zircon Standard AS3
(blank correction applied)
— MAN Background Correction, 0.048 +/- 0.025
— Off-Peak Background Correction, 0.061 +/- 0.090

Mean Atomic Number (MAN) background modeling

Our peer reviewed MAN correction method (Donovan, et al., A New EPMA Method for Fast Trace Element Analysis in Simple Matrices, American Mineralogist, v101, p1839-1853, 2016) eliminates measuring off-peak backgrounds, **reducing acquisition time by 50%** while maintaining accuracy for major elements and minor elements in all matrices and, even trace elements in simple matrices. (e.g., SiO_2, TiO_2, $ZrSiO_4$, etc.). Significant time savings are especially noticeable for quantitative x-ray maps, **all with improved precision!**

The MAN background method can be applied to all materials for major and minor elements (e.g., down to 100-200 ppm in silicates and oxides), but when combined with our "Blank Correction" (described below), the MAN method can be applied to trace and ultra-trace measurements in materials where suitable "blank" standards are available. **Again, in half the time of traditional off-peak measurements!**

Amethyst (Off-Peak) (6000 msec/pixel)   Amethyst (MAN) (3000 msec/pixel)
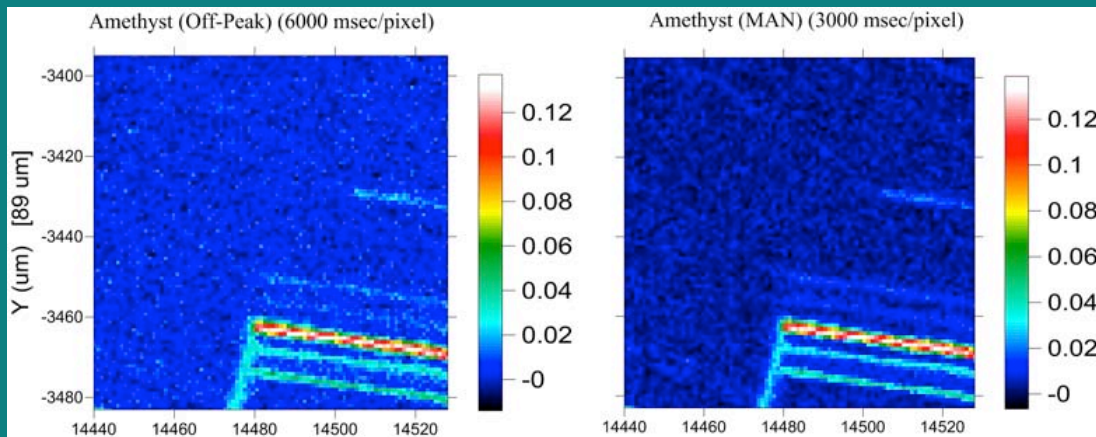
Reuse Previous Analytical Set-Ups with Standard Intensities

Leverage your analytical efforts and improve your laboratory productivity by browsing and loading any previous acquisition setup, including standard intensities, and start analyzing unknowns in seconds.

In Probe for EPMA all run parameters and options are automatically loaded in to a new run so that you can start a new analysis right away without delay!
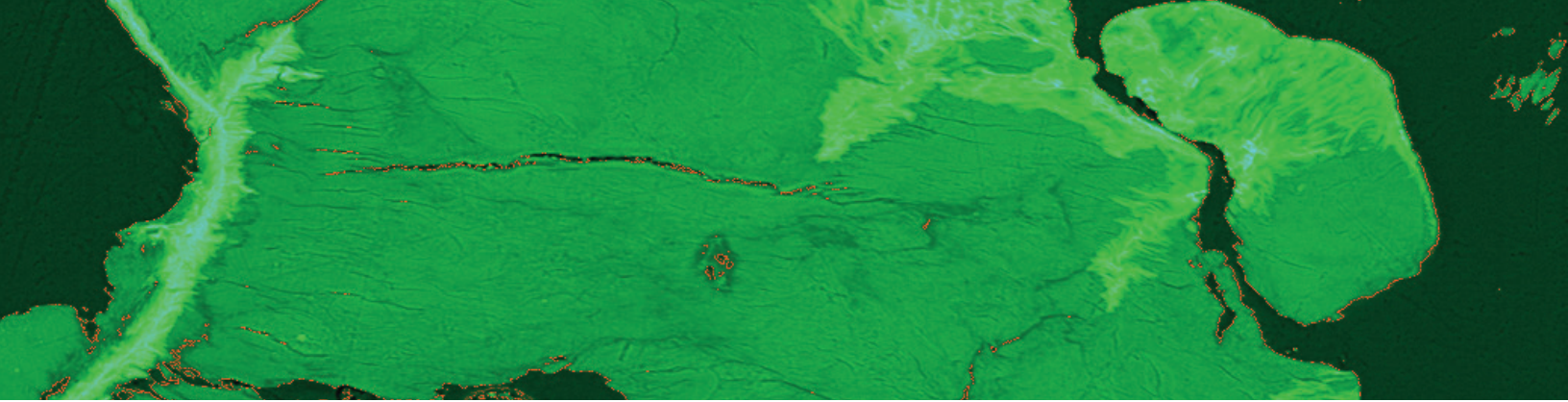
Picture Snap
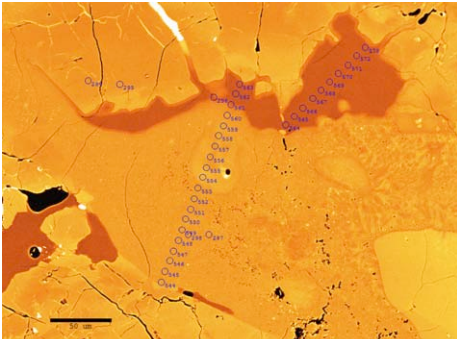
Document all aspects of your microprobe project in seconds! With our easy to use PictureSnap feature, your clients receive an accurate sample image with exact analysis reference points for BSE, SE or CL before and/or after analysis.
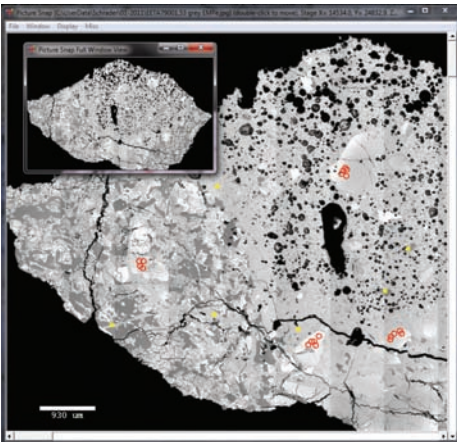

Multi-Point and Shared Backgrounds

Automatic trace element analysis using multiple off-peak intensity measurements for high accuracy quantification in complex matrices. These acquisition and post processing techniques offer significant improvement over traditional off peak background measurements.
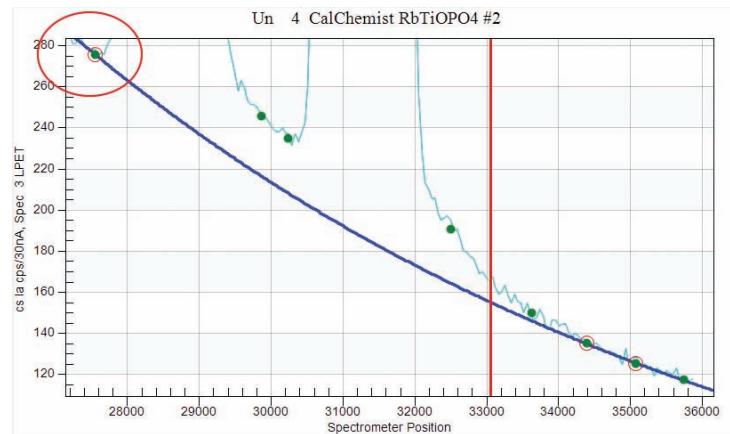
Time Dependent Intensity (TDI) Correction

Our integrated beam sensitive material correction is applied iteratively for maximum accuracy. Used with glasses, carbonates and hydrous materials, even for situations in which the TDI correction is over 100%.
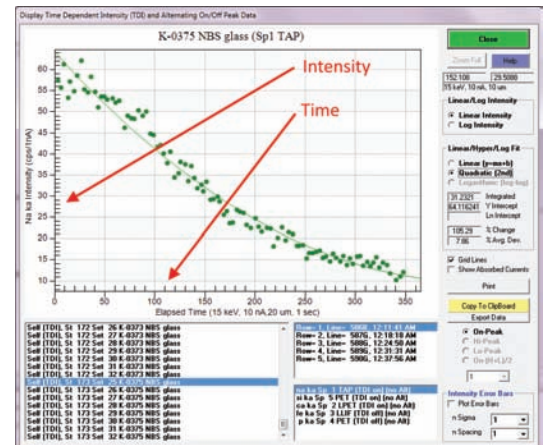
Blank Correction

Improve accuracy of trace element analysis, at concentration levels below 500 PPM, in Probe for EPMA by automatically eliminating continuum and instrumental artifacts.

Synthetic zircon **w/o blank**, Results in Elemental Weight Percents

ELEM:	Th	Hf	U	P	Y	Zr	Si	O	SUM
41	-.038	.013	-.018	.022	.007	49.764	15.322	34.914	99.987
42	-.041	.010	-.013	.022	.007	49.764	15.322	34.914	99.983
43	-.036	.011	-.017	.021	.005	49.764	15.322	34.914	99.984
44	-.040	.012	-.015	.021	.001	49.764	15.322	34.914	99.980
45	-.037	.012	-.017	.022	.005	49.764	15.322	34.914	99.985
AVER:	-.038	.011	-.016	.022	.005	49.764	15.322	34.914	99.984
SDEV:	.002	.001	.002	.000	.002	.000	.000	.000	.003

Synthetic zircon **w/ blank**, Results in Elemental Weight Percents

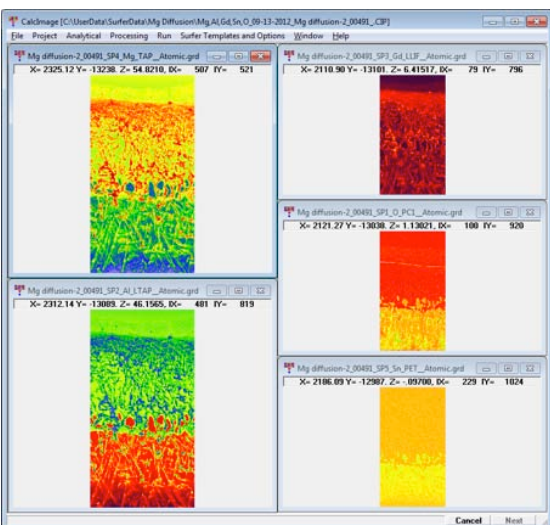| ELEM:	Th	Hf	U	P	Y	Zr	Si	O	SUM
41	.000	.002	-.002	.000	.002	49.764	15.322	34.914	100.002
42	-.003	-.002	.002	.000	.002	49.764	15.322	34.914	99.998
43	.002	-.001	-.002	.000	.000	49.764	15.322	34.914	99.999
44	-.002	.000	.001	.000	-.004	49.764	15.322	34.914	99.995
45	.001	.000	-.001	.000	.000	49.764	15.322	34.914	100.000
AVER:	-.001	.000	.000	.000	.000	49.764	15.322	34.914	99.999
SDEV:	.002	.001	.002	.000	.002	.000	.000	.000	.003

ProbeImage/CalcImage

Robust, High Speed, Fully Quantitative x-ray mapping is Here!

Perform x-ray map background corrections, matrix corrections, spectral interference corrections, beam and standard drift corrections easily and automatically to each map pixel in minutes.

Probe Image x-ray mapping acquisition software has a single dialog box for intuitive specification of imaging and mapping parameters for acquisition of unlimited numbers of maps.

Probe for EPMA and ProbeImage/CalcImage perform high accuracy quantitative x-ray mapping using robust state-of-the-art matrix corrections with area peak factor and empirical MAC tables, allowing x-ray map quantification of even low energy emission lines such as oxygen, nitrogen and carbon.
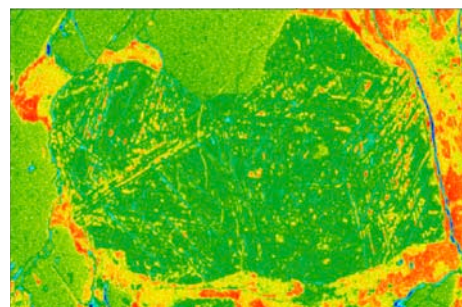
Traditional maps: raw oxygen counts

Probe Image: oxygen (wt%) is background, deadtime, matrix and interference corrected!

CalcImage provides numerous output options for presentation quality reports including our advanced RGB and image math processing capabilities.
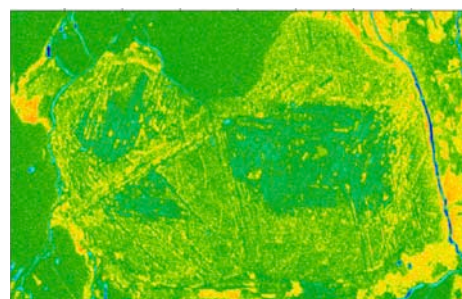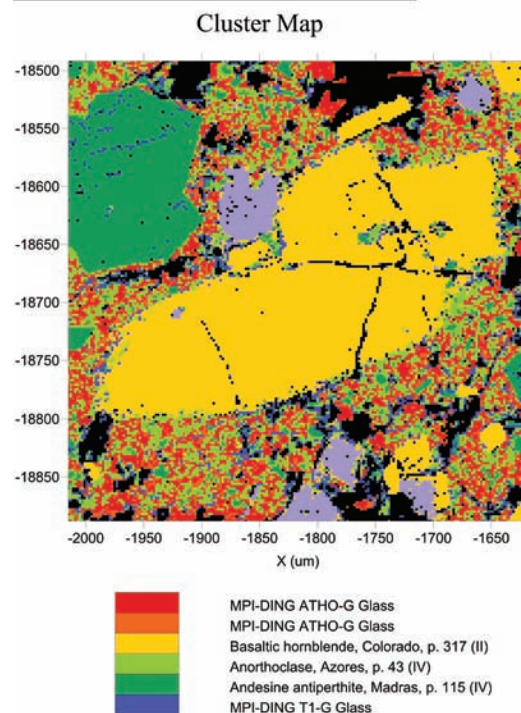
Launch Probe Image from Probe for EPMA for continuous automated point and x-ray map acquisition. Easy processing of x-ray intensity or quantitative maps into phases, phase centroid averages, area and mass percent abundances.

Cluster Map

	MPI-DING ATHO-G Glass
	MPI-DING ATHO-G Glass
	Basaltic hornblende, Colorado, p. 317 (II)
	Anorthoclase, Azores, p. 43 (IV)
	Andesine antiperthite, Madras, p. 115 (IV)
	MPI-DING T1-G Glass

Post processing of data including total sum, element by difference, oxygen by stoichiometry, atomic percent, log percent and more.
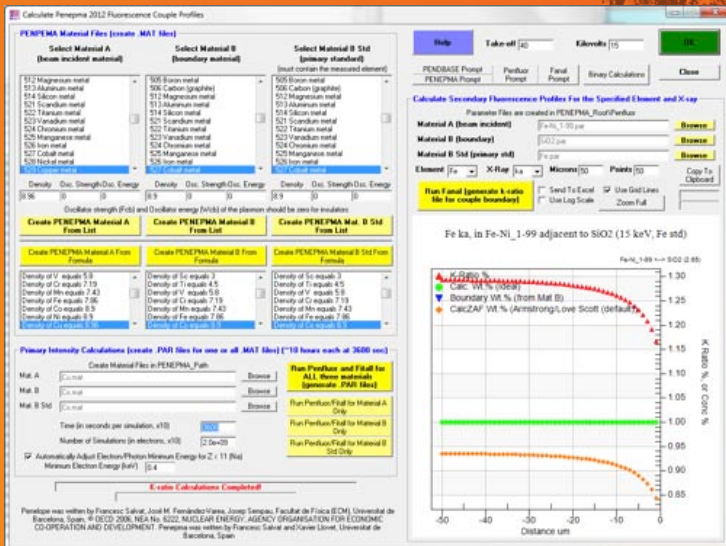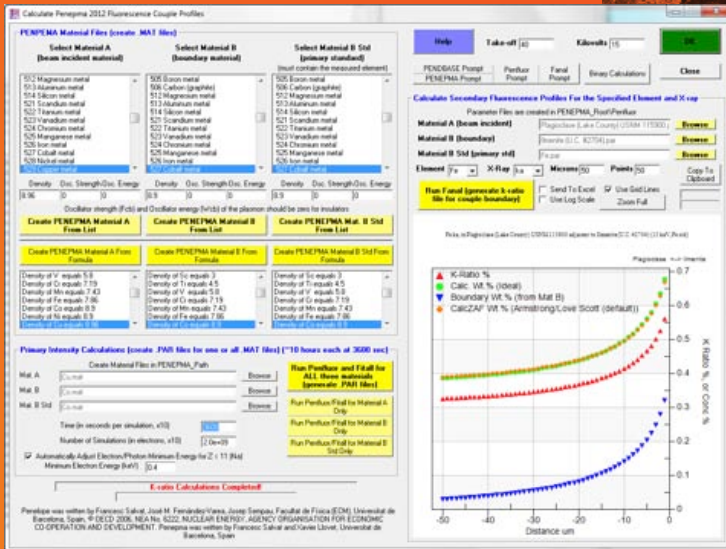
Presentation Quality Output

Easily create custom presentation graphics for your clients using our automated scripting capabilities.
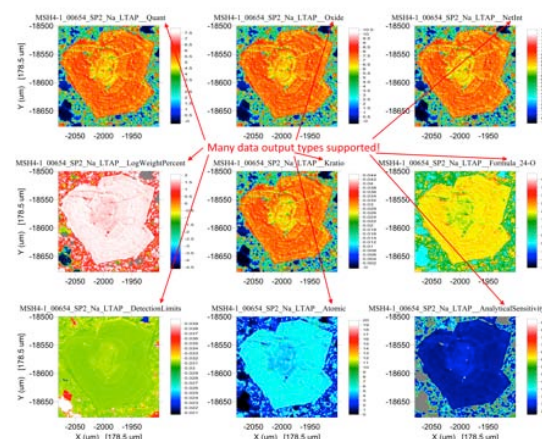
Secondary Boundary Fluorescence Correction

Model and automatically correct for boundary fluorescence effects for significantly improved quantitative accuracy, particularly minor and trace element concentrations. These secondary fluorescent effects can even create percent level artifacts for many materials especially near phase boundaries for binaries such as Cu-Co, Ni-Fe, Cr-W, etc...

License Policy

You may copy Probe for EPMA on as many lab, office or home computers as you like for the reprocessing of data, spectra and images; modifying background models and analytical methods, and creating presentation quality output. All while your instrument is busy on the next automated run! With our unlimited site license policy, you can re-process and output data, even on the road.

Probe Software

Software for MicroAnalysis • Probe for EPMA • Probe Image