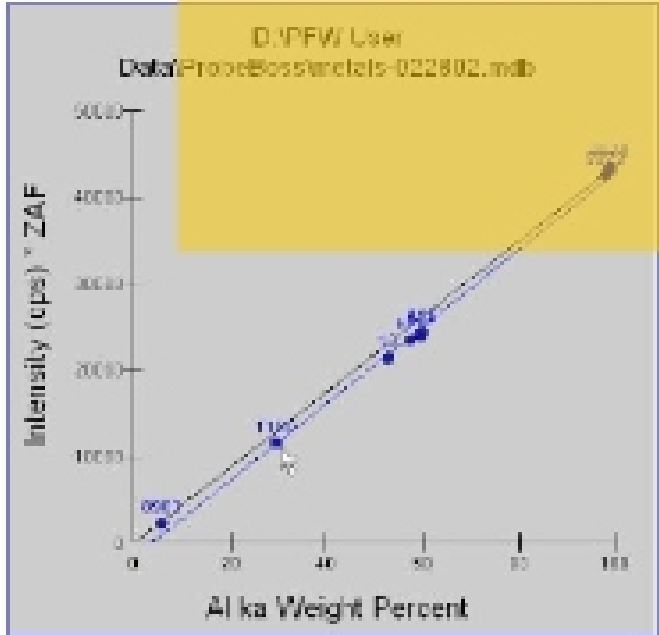


# Electron probe microanalysis

## Accuracy and Precision in EPMA: Understanding Errors



ELEM:	Si	Fe	Mn	Ca	WT	SUM
132	18.956	6.267	.159	.094	.301	100.665
133	18.070	6.134	.077	.087	.284	99.532
134	18.834	6.042	.089	.095	.262	99.751
AVER:	18.886	6.148	.108	.094	.282	99.983





# What's the point?

How much can I trust the compositions that the probe computer spits out? Are two analyses equivalent? Can I compare my numbers with those published by other researchers using EPMA?



## Goal and Issues

Goal: achievement of high **accuracy** and **precision** in quantitative analyses, recognizing sources of errors and minimizing them

Issues involved with achieving this goal:

- Standards
- Instrumental stability
- Sample and standard physical condition
- Beam impact on sample complications
- Spectral issues
- Counting statistics
- Matrix correction