

SECTION UB-3Silence Lake
82m/13

1). a) Z : Si = 5.940 (∴ add Al to make up to 6.000)
Al = 0.060.

b) y : Al = 3.841 - 0.060 = 3.781
Cr = .006
Ti = .009

$$\begin{array}{r} 3.796 \\ 3.826 \end{array}$$

∴ Fe³⁺ = 0.204 (⇒ Fe²⁺ = 1.221)
- .171

c) X : Fe²⁺ = 1.221

Ca = 3.958

Mn = 0.803

Mg = 0.145

$$\begin{array}{r} 6.127 \\ > 2.1\% \end{array}$$

$$6.157 > 2.6\%$$

2). a) Z : Si = 5.925 (∴ add Al)
Al = 0.075.

b) y : Al = 3.871 - 0.075 = 3.796
Cr = 0.010
Ti = .009
3.815

∴ Fe³⁺ = 0.185 (⇒ Fe²⁺ = 1.245)

c) X : Fe²⁺ = 1.245

Ca = 3.918

Mn = 0.813

Mg = 0.150

$$\begin{array}{r} 6.126 \end{array}$$

perhaps don't add ~~AT~~ excess Al to Z would result in being closer to 6.000.

3) The molecular percentages of the garnet end members were then ~~for~~ grouped ~~in~~ for plotting on ternary diagrams, using a computer plot provided by G. Woodsworth. These were normalized to 100%, and ~~ignoring the presence of Uvarovite~~ ~~was equal to zero~~. The groupings chosen were as follows.

a) SPESSARTINE + ALMANDINE
GROSSULARITE
ANDRADITE

b) PYROPE + SPESSARTINE + ALMANDINE
GROSSULARITE
ANDRADITE

c) SPESSARTINE
GROSSULARITE
ALMANDINE

4) The results from these three groupings were then plotted on ternary diagrams with arrows to indicate changing composition from core to rim of each individual grain.

5) ~~but~~ a further assumption ^{to note} is that the values of potassium and sodium were equal to zero, which is in fact the case in most instances. Additionally it was assumed that there were no other unreported components, such as ~~the~~ water (hydrogrossular) possibly the case in section UFS-5!