Appendix 1: Sample descriptions and locations

(all coordinates in decimal degrees, WGS84)

Vaugnerites

SampleSGC12 29A – Vaugnerite sill in orthogneisses, Pont de Bayzan (294.4 ± 3.9 Ma)
44.78277; 4.25688

On a fresh roadcut on the southern side of the RN102 in the Ardéche valley just outside of Lalevade, near the D119 turn-off to Fabras, opposite the Bayzan footbridge. A famous platform of migmatitic paragneisses is observed under the footbridge, however the roadcut features metatexitic to unmolten orthogneisses (locally augen gneisses). The sample was taken in a small vaugnerite boudin elongated in the orthogneisses foliation, and apparently boudinaged or truncated by late faults.

Sample SGC12 39 – Vaugnerite sill in paragneisses, Loubaresse (307.4 ± 1.8 Ma)
44.60045; 4.07053

Roadcut on the north side of the RD24 between Loubaresse and Valgorge, approximately 1.5 km East of Loubaresse village.A vaugnerite sill in metatexitic paragneisses is closely associated with a granite/pegmatite which is locally tourmaline-bearing. The sample was taken in this sill, as was the sample dated by AitMalek (1997).

Sample SGC12 42 – Vaugnerite mass in paragneisses, Meyras (305.8 ± 2.3Ma)
44.67262; 4.27383

Roadcut on a hairpin bend on the RD28 between the RN102 and Meyras, approximately 1 km south of Meyras village. A dyke of Tanargue granite cuts across migmatitic paragneisses on the southern (left) side of this outcrop. On the northern extremity (right-hand side), a rounded, ca. 1 m wide mass of vaugnerite crops out in a diatexitic zone of the migmatite, forming a ca. 1-2 m wide melt rich channel with vaugnerite inclusions. The sample was taken from this mass, as was that of AitMalek (1997).

I-type granite

Sample SGC12 49B – Porphyritic granite with vaugnerite enclaves, Largentière
(304.1 ± 6.3 Ma)
44.5548; 4.28738

River-polished outcrops in the Ligne riverbed below the RD5 (Largentière-Valgorge), about 1 km north of Largentière. This outcrop shows spectacular mingling features (see Fig. 2c) between vaugneritic material and a porphyritic, I-type granite, the Largentière granite, regarded as an offshoot of the Borne pluton. The Borne pluton itself is the eastern part of the Pont-de-Montvert pluton of the Mont-Lozère complex, separated from the main mass by the sinistral Villefort fault.

The sample was taken in the enclave-rich porphyritic granite in the river bed.

S-type granites (associated with vaugnerites)

Sample SGC12 15D – Peyron granite, Suc de l'Homme de Pierre (303.7 ± 3.1)
44.75042; 4.22173

On a loosely defined track in the shrub, 200 m south west of a bend on the RD289 Burzet-Sainte Eulalie road, near the Suc de l'Homme de Pierre above Peyron farm ruins. A series of small, low-lying, outcrops feature ubiquitous pillowed enclaves of diorite in a fine grained, cordierite-free granite, apparently forming a ca. 100 m wide "patch" in the main, coarse-grained, cordierite bearing Velay granite (Didier et al. 1987). The sample was taken in the fine grained granite, ca. 10 cm away from a 5 m wide dioritic body.

Sample SGC12 20B – Velay granite, Burzet(305.9 ± 1.4 Ma)
44.78277; 4.25688

Roadcuts on the west side of the RD215 Burzet—Ray Pic falls, ca. 700 m north of Pereyres. “Cockade”-facies cordierite bearing Velay granite containing a large raft of migmatitic orthogneiss, as well as vaugnerite enclaves. The sample was taken in close vicinity to a vaugnerite.

Sample SGC12 55 – Tanargue granite, Chadenet(303.9 ± 6.5 Ma)
44.69342; 4.35143E

On the east side of the RD543 Le Nogier-Asperjoc, ca. 200 m before Chadenet. Meter-sized vaugnerite stocks are intimately associated with a porphyritic granite belonging to the Tanargue suite that crops out in the roadside ditch.