Stop 3-2 (Day 3). Eclogite, Louka (Roadcut with Meter-Scale Boudin of Eclogite, surrounded by Layered Garnet Amphibolite – Retrograded Eclogite)

Coordinates: N50°02’30.0” E12°48’53.8” (33U 343545 5545550)

The Louka locality has provided numerous geochronological data which constrain the timing of protolith genesis and metamorphism in the MLC (Table 1). The kyanite-quartz eclogite has yielded a Sm-Nd garnet-omphacite age of 377 ± 7 Ma (Beard et al., 1995) and a concordant U-Pb age for zircon of 382 ± 3 Ma (Timmermann et al., 2004). The surrounding amphibolite gives a concordant U-Pb age for zircon of 540 ± 9 Ma, a U-Pb lower intercept age for zircon of 373 ±10 Ma, and a concordant U-Pb age for titanite of 365 ± 7 Ma. Other amphibolites in the vicinity of Louka give K-Ar ages for hornblende of 379 ±9, 374 ±7, and 368 ±8 Ma (Kreuzer et al., 1992). As discussed previously, we interpret these data to reflect the genesis of oceanic crust in Early Cambrian time, followed by metamorphism during Frasnian to Famennian subduction and exhumation.

Stop 3-3 (Day 3). Amphibolite and Feldspar Veins, Tisová (Roadcut in Amphibolite)

Coordinates: N50°02’43.3” E12°49’34.4” (33U 344365 5545937)

Massive to layered amphibolite, both garnet-bearing and garnet-free types, are exposed in this roadcut. Locally, amphibolite contains symplectic intergrowths of sodic augite, amphibole, and plagioclase (Fig. 14), presumably after omphacite, demonstrating that amphibolite is the retrograde product of eclogite. More commonly, garnet amphibolite is extensively recrystallized to a granoblastic, foliated assemblage of medium-grained garnet and fine-grained amphibole, plagioclase, quartz, titanite, and ilmenite (Fig. 15). Rutile occurs as inclusions in garnet.