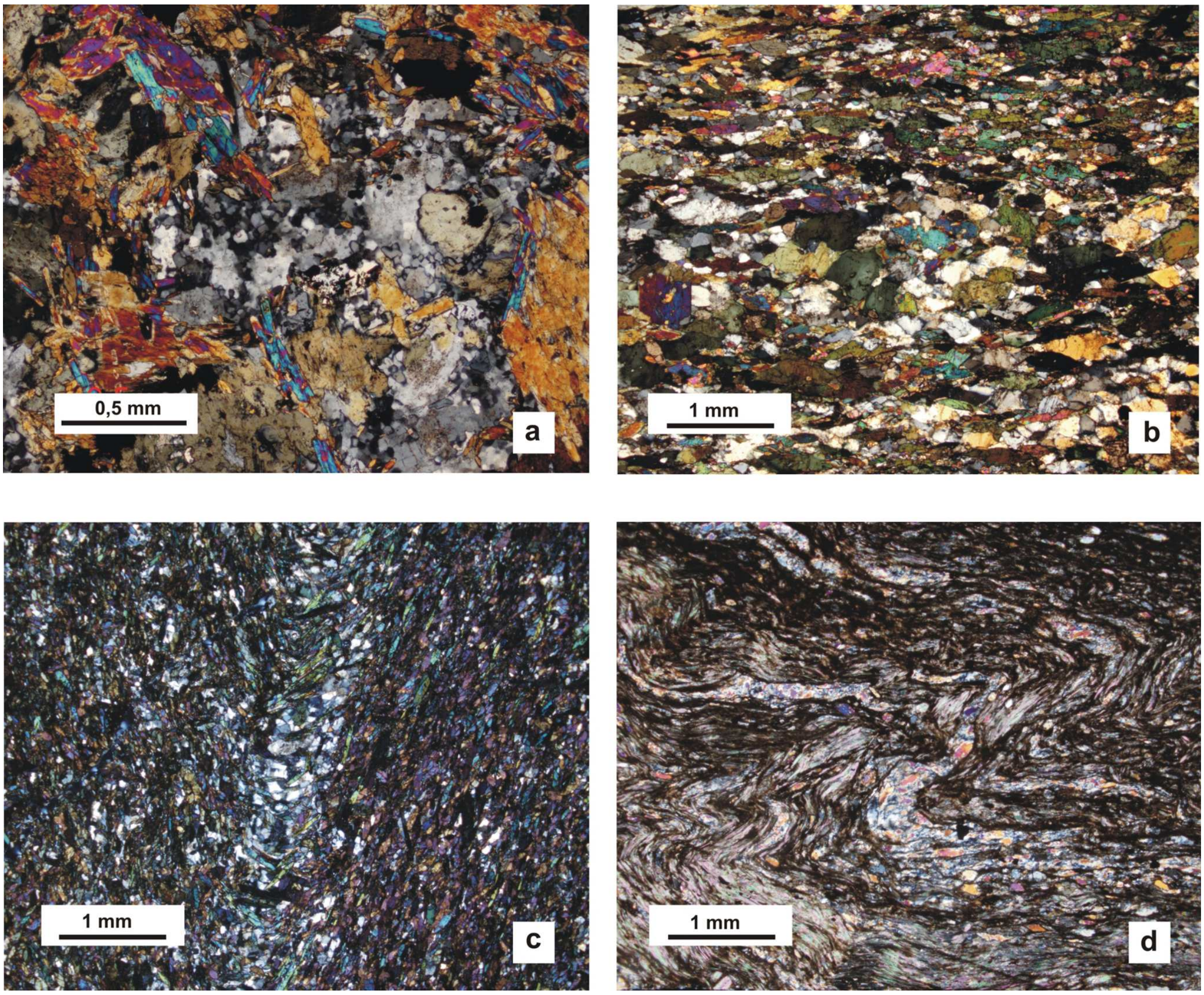
Appendix 1: Microstructures



a) Preserved relict domain with preserved magmatic fabric in undeformed zones within the S_2 fabric (amphibolite). Intergranular texture of plagioclase and amphibole. Amphibole crystals are free of any signs of dynamic recrystallization or brittle deformation. Plagioclase is often dynamically recrystallized showing uniform recrystallized grain size.

(b) Microstructure of relict S_1 fabric defined by an alignment of highly elongated amphibole grains alternating with a fine-grained plagioclase (amphibolite).

(c) Microstructure of dominant S_2 fabric. The F_2 crenulation formed by reorientation of amphibole laths parallel to the fold axial planes. The crenulation lead to a formation of the new S_2 fabric defined by the alternation of plagioclase- and amphibole-rich bands (strongly retrogressed amphibolite).

(d) The S_3 crenulation is formed by bended muscovite and plagioclase layers. The microstructure is characterized by bending and fracturing of acicular muscovite grains and by bulging recrystallization of plagioclase.

Appendix 2: sample locations

UL11A and UL11B (trondhjemites), UL11C (amphibolite): Bohuňov [49°35'52.34"N;16°27'14.36"]

UL3 (amphibolite): Letovice dam [49°33'23.47"N;16°33'6.25"]

UL7X, UL7Y, UL7D1(metagabbros): Deštné [49°36'15.09"N;16°33'39.37"]

UL9 (fine-grained amphibolite): Brněnec [49°37'27.46"N;16°31176.92"]

UL12 (garnet amphibolite): Křetín [49°33'42.76"N;16°29'26.39"]

UL 40P (serpentinite): Rudka [49°31'1.69"N;16°32'11.63"]

Appendix 3: Analytical techniques

Mineral chemistry

All minerals were analyzed using the Cameca SX 100 electron microprobe at Masaryk University in Brno with operating conditions as follows: 15 kV accelerating voltage, 10–20 nA beam current and acquisition time ranging from 10 to 30 s. The abbreviations of mineral names are after Kretz (1983).

Whole-rock geochemistry

Major- and trace-element analyses were determined in the Acme Analytical Laboratories Ltd., Vancouver, by Inductively-Coupled Plasma Spectrometry (ICP). Total abundances of the major- and minor-element oxides ('Group 4A') were determined by ICP-Emission Spectrometry (ICP-OES) following a $LiBO_2/Li_2B_4O_7$ fusion and dilute nitric digestion. Loss on ignition (LOI) is by weigh difference after heating to 1000 °C. The detection limits are 0.01 wt. % for most of the oxides, except Fe_2O_3 (0.04 %), P_2O_5 (0.001 %) and Cr_2O_3 (0.002 %).

Rare earth and refractory elements were determined by ICP-Mass Spectrometry (ICP-MS) following a $LiBO_2/Li_2B_4O_7$ fusion and nitric acid digestion of a 0.2 g sample ('Group 4B'). In addition a separate 0.5g split was digested in Aqua Regia and analysed by ICP-MS to report the precious and base metals (Pb, Ni, Zn and Cu, 'Group 1DX'). See *http://www.acmelab.com* for details of the analytical procedure and respective detection limits. Data management, recalculation, and plotting of the whole-rock geochemical data were facilitated using *GCDkit* (Janoušek *et al.* 2006).

Laser-ablation ICP MS U–Pb zircon dating

The zircon grains were separated from the selected samples using the Wilfley shaking table and heavy liquids, mounted in epoxy-filled blocks and polished. Zoning patterns in individual grains were observed, and presence of older inherited components checked, by cathodoluminescence detector mounted on the electron microprobe at the Masaryk University in Brno. The U-Pb and Pb-Pb zircon ages were obtained by laser-ablation ICP-MS technique following the procedure described in Košler *et al.* (2002). Isotopic analyses were carried out using a 213nm solid state Nd-YAG laser (NewWave UP213) attached to a Thermo-Finnigan Element 2 multi-collector ICP-MS at the University of Bergen. Reference samples of GJ-1 (609 Ma, Jackson *et al.* 2004), 91500 (Wiedenbeck *et al.* 1995) and Plešovice zircons (337 Ma, Sláma *et al.* 2008) were repeatedly analyzed during this study. Acquired data were plotted on concordia diagrams using the Isoplot program (Ludwig, 2003).

Neodymium isotopic data

For the radiogenic isotope determinations, samples were dissolved using a combined HF–HCl–HNO_3 attack. The bulk REE were isolated by exchange chromatography on PP columns filled with TRU.spec Eichrom resin, following the procedure of (Pin *et al.* 1994). The Nd was further separated from the REE fraction on PP columns with Ln.spec Eichrom resin (Pin & Zalduegui 1997). Complete analytical details were reported by (Míková & Denková 2007).

Isotopic analyses were performed on a Finnigan MAT 262 thermal ionization mass spectrometer housed at the Czech Geological Survey in dynamic mode using a single Re filament with Ta addition for Sr measurement and double Re filament assembly for Nd. The $^{143}Nd/^{144}Nd$ ratios were corrected for mass fractionation to $^{146}Nd/^{144}Nd = 0.7219$ (Wasserburg *et al.* 1981). External reproducibility was estimated from repeat analyses of the BCR-1 ($^{143}Nd/^{144}Nd = 0.512621 \pm 20$ (2σ, n = 5) isotopic standard. The Sm and Nd concentrations were obtained by ICP-MS in ACME laboratories as given above.

The Sm decay constant applied to age-correct the isotopic ratios is from Lugmair & Marti (1978). The ε^{i}_{Nd} values and single-stage CHUR Nd model ages were obtained using Bulk Earth parameters of Jacobsen & Wasserburg (1980), the single- and two-stage Depleted

Mantle Nd model ages (T_{DM}^{Nd}) were calculated after Goldstein *et al.* (1984) and Liew & Hofmann (1988), respectively.

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Appendix 4: Selected mineral analyses

Representative electron microprobe analyses of minerals from studied lithologies

	Amphibolites			Grt amphibolites				Fine-grained amphibolites				Metagabbros				Trondhjemites	
Sample	UL11C	UL11C	UL11C	UL12	UL12A	UL12	UL12	UL9	UL9	UL9	UL9	UL7X	UL7X	UL7D1	UL7D1	UL11A	UL11A
						Grt	Grt										
	Amph	Plg	K-fs	Amph	Plg	core	rim	Px	Amph	K-fs	Plg	Amph	Amph	Plg	K-fs	Plg	Amph
Wt%																	
SiO_2	44.94	62.22	64.97	42.91	61.70	38.25	38.29	55.75	43.62	65.27	62.19	54.47	42.68	59.38	66.71	66.02	45.19
TiO_2	0.53	0.00	0.00	0.53	0.00	0.12	0.04	0.01	0.49	0.00	0.00	0.05	4.57	0.00	0.00	0.00	0.37
Cr_2O_3	0.02	0.00	0.00	0.02	0.00	0.00	0.01	0.04	0.03	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00
Al_2O_3	12.03	22.86	18.07	17.51	24.45	21.23	21.28	1.56	14.74	18.30	23.93	3.46	12.61	25.64	18.46	21.27	11.88
FeO	15.44	0.09	0.19	15.60	0.02	27.80	27.94	9.65	14.83	0.18	0.12	7.97	8.83	0.12	0.00	0.00	18.26
MnO	0.37	0.00	0.00	0.13	0.00	2.69	0.76	0.22	0.27	0.00	0.00	0.16	0.12	0.00	0.00	0.00	0.23
MgO	10.81	0.00	0.00	8.64	0.00	3.44	3.44	18.08	10.08	0.00	0.00	18.03	13.49	0.00	0.00	0.00	10.27
CaO	11.61	4.96	0.01	10.75	5.86	7.48	8.64	12.82	11.35	0.02	5.52	12.93	11.62	7.25	0.00	2.10	9.86
Na_2O	1.62	8.61	0.28	1.91	8.05	0.02	0.02	0.14	1.76	0.71	8.88	0.28	1.10	8.10	0.35	10.81	2.42
K_2O	0.44	0.10	16.06	0.09	0.09	0.02	0.00	0.07	0.42	16.01	0.13	0.06	0.72	0.04	14.79	0.05	0.15
F	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cl	0.05	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.05	0.01	0.00	0.01	0.04
Total																	
Si	6.42	2.79	3.02	6.06	2.74	2.99	3.00	2.08	6.23	3.00	2.73	7.68	6.26	2.62	3.08	2.89	6.46
Ti	0.06	0.00	0.00	0.06	0.00	0.01	0.00	0.00	0.05	0.00	0.00	0.01	0.50	0.00	0.00	0.00	0.04
Cr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00
Al	2.02	1.21	0.99	2.91	1.28	1.96	1.97	0.07	2.48	0.99	1.24	0.57	2.18	1.33	1.01	1.10	2.00
Fe^{3+}	1.54	0.00	0.01	1.52	0.00	0.04	0.03	0.00	1.46	0.01	0.00	0.08	0.19	0.00	0.00	0.00	1.45
Fe^{2+}	0.31	0.00	0.00	0.32	0.00	1.78	1.81	0.30	0.32	0.00	0.00	0.86	0.89	0.00	0.00	0.00	0.73
Mn	0.04	0.00	0.00	0.02	0.00	0.18	0.05	0.01	0.03	0.00	0.00	0.02	0.02	0.00	0.00	0.00	0.03
Mg	2.30	0.00	0.00	1.82	0.00	0.40	0.40	1.01	2.15	0.00	0.00	3.79	2.95	0.00	0.00	0.00	2.19
Ca	1.78	0.24	0.00	1.63	0.28	0.63	0.73	0.51	1.74	0.00	0.26	1.95	1.82	0.34	0.00	0.10	1.51
Na	0.45	0.75	0.03	0.52	0.69	0.00	0.00	0.01	0.49	0.06	0.76	0.08	0.31	0.69	0.03	0.92	0.67
K	0.08	0.01	0.95	0.02	0.01	0.00	0.00	0.00	0.08	0.94	0.01	0.01	0.13	0.00	0.87	0.00	0.03
F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cl	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Sum		5.00	5.00		5.00	8.00	8.00			5.00	5.00			5.00	5.00	5.00	
XMg	0.88			0.85		0.18	0.18	0.77	0.87			0.81	0.77				0.75
XGrs						0.20	0.24										
XAlm						0.59	0.60										
XPrp						0.13	0.13										
XSps						0.06	0.02										

Garnet formulae calculated on the basis of 12 oxygens, feldspar on the basis of 8 oxygens, amphibole by average Fe^{II}/Fe^{III} after Leake *et al.* (1997), pyroxene after Droop (1987)

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