Online Supplementary material A2

Detailed samples description

Sample **US 93a** represents a characteristic fine-grained orthogneisses (Fig. 1a) of the KU. This sample consists of quartz (36 %), plagioclase (27 %), K-feldspar (25 %), biotite (11 %) and minor muscovite (< 1 %). Main accessories are opaque minerals, apatite and tourmaline. Flakes of biotite are slightly chloritized. The microstructure is characterized by alternation bands of quartz of finer grain size (191 μm) with bands of coarser biotite (275 μm) and mixture of recrystallized plagioclase (306 μm) and K-feldspar (345 μm) containing locally K-feldspar porphyroclasts relics.

Orthogneiss **US 97** (Fig. 1b) is made up of 40% of wide coarse-grained (464 μm) quartz bands, that are often rimmed by stripes of fine grained (47 μm) biotite (6 %) or muscovite (3 %). Biotite in stripes is partly chloritized. The rest of the rock is formed by fine-grained matrix (60 μm) formed by microstructure of polygonal and equigranular grains of K-feldspar, plagioclase, quartz and muscovite. The matrix microstructure is characterized by common grain boundary triple points and presence of muscovite rimming feldspars grain boundaries. Main accessories in the rock are apatite and opaque minerals.

Mylonitized orthogneiss **US 105** (Fig. 1c) consists of quartz (55 %), plagioclase (10 %), biotite (11 %), minor muscovite (< 1 %) and K-feldspar porphyroclasts representing former phenocrysts (23 %). Biotite is often chloritized. As accessories are present mainly apatite and opaque minerals. The rock texture is defined by biotite bands, fine-grained recrystallized quartz (80 μm) showing core and mantle microstructure and only slightly recrystallized plagioclase (154 μm).

Fine-grained orthogneiss **US 107** (Fig. 1d) is made of quartz (29 %), plagioclase (18 %), K-feldspar (46 %), biotite (2 %) and muscovite (4 %). Main accessories are opaque minerals,

apatite, tourmaline and titanite. The microstructure is similar to the orthogneiss sample US 93a.

Migmatized orthogneiss **US 116** (Fig. 1e) consists of quartz (32 %), plagioclase (32 %), K-feldspar (24 %), biotite (5 %), muscovite (5 %) and apatite (1 %) as accessory phase. The rock is characterized by admixed microstructure of equigranular grains (~200 μm) of all phases characterized by lobate grain boundaries between quartz, plagioclase and K-feldspar. The microstructure is locally dynamically recrystallized in to the narrow shear bands.

Deformed leucogranite band **US 105T (**Fig. 1f) is composed of quartz (46 %), plagioclase (25 %), K-feldspar (26 %), and chloritized biotite (2 %). Large plagioclase grains (up to 1 mm) are often sericitized and affected by myrmekitization; locally they are cut by fractures filled with quartz. Large K-feldspars (up to 2 mm) are often perthitic. The microstructure is defined by alternation of wide bands of admixed plagioclase, K-feldspar and micas and bands of dynamically recrystallized quartz exhibiting core and mantle microstructure.

Deformed leucogranite band **US 115T** (Fig. 1g) is made of quartz (26 %), plagioclase (7 %), K-feldspar (65 %) and minor biotite and muscovite (both < 1%). Biotite is partly chloritized, large plagioclase grains are affected by myrmekitization, whereas K-feldspars are often perthitic. The microstructure is characterized by alternating of large elongated plagioclase and K-feldspar porphyroclasts (~ 1 mm) and finer grained (~ 200 μm) mixture of quartz, plagioclase and K-feldspar. Porphyroclasts are affected by fractures infilled with quartz.

Host rocks of inner part of the Kutná Hora Crystalline Complex

Paragneiss **US 10** (Fig. 1h) consists of quartz (43 %), K-feldspar (27 %), plagioclase (12 %), biotite (15 %) and muscovite (3 %). As accessories are present mainly apatite and opaque minerals. The rock fabric is formed by alternation of biotite and muscovite bands.

Micaschist**US 96** (Fig. 1i) composes of muscovite (27 %), biotite (13 %), quartz (26 %),

plagioclase (33 %) and minor sillimanite (< 1%). Main accessories are tourmaline, titanite and opaque minerals. The banded microstructure of the rock is affected by crenulation cleavage.

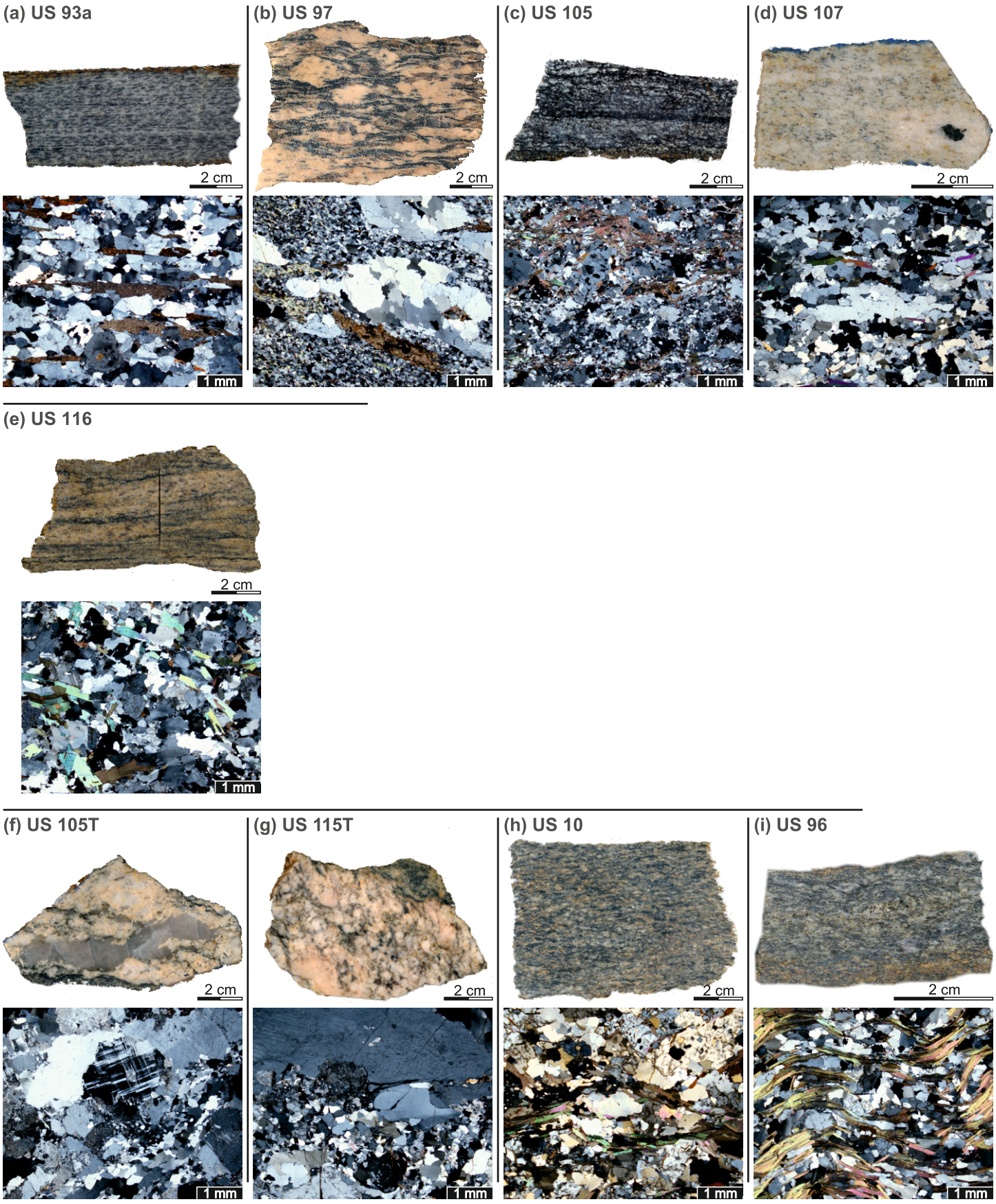

Fig. 1. Macro- and microphotographs of representative lithologies from the Kouřim Unit and the metasedimentary host-rocks