

Abstract Submitted
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Rock-forming Minerals Transformations in Conditions of Stepwise Shock Compression of Quartz-feldspar-biotite-garnet Schist from Southern Ural¹ IRINA BELYATINSKAYA, VILEN FELDMAN, Lomonosov MSU, VLADIMIR MILYAVSKIY, TATIANA BORODINA, JIHP of RAS — Samples for experiments with use of recovery assemblies of planar geometry have been taken from Southern Ural (Russia). The maximal shock pressures in the samples were attained upon a few reverberations of the waves between the walls of the recovery ampoule (stepwise shock compression) and were equal 26, 36 and 52 GPa. Shock-metamorphic transformations of rock-forming minerals (garnet, biotite, quartz, potash feldspar and plagioclase) have been studied with the use of optical and scanning electron microscopy (SEM) methods, microprobe analysis, and X-ray phase analysis (XPA). The strongest transformations (mechanical and chemical) were observed in potash feldspar and plagioclase. These minerals undergo strong amorphization at 26 GPa already. Plagioclase chemical transformations are equal to results of earlier stepwise shock compression experiments [1]. Biotite also reveals strong mechanical (kink-bands, partial melting) and chemical (for melted biotites only) transformations. Garnet reveals mechanical transformations only. 1. Belyatinskaya and others. // Moscow University Geol. Bull., 2010, Vol. 65, No. 5, pp. 289–300

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