Microtextures of minerals in a chondrite induced by shock wave experiments

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Shock wave experiments (around 40 GPa) combined with analytical transmission electoron microscopy on the recovered samples were carried out using Lake Labyrinth chondrite (LL6,Shock stage S4) as a starting material to understand the shock metamorphism in parent bodies of meteorites. The results show that there was little difference produced for olivine, while crystalline plagioclase became completely amorphous, (100) twin lamellae significantly increaced. Also for orthopyroxene, the grain size became very small and melt veins were formed locally among them.