Structure of lunar plagioclase and tridymite.

by

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Calcic plagioclase from rocks 12021 and 12051 has space group $P\bar{1}$, while that from 12038 and 12040 has apparent space group $I\bar{1}$. Feldspars with either space group include ions such as ferrous iron in cation sites to compensate for a deficiency of calcium, sodium, and potassium. The crystal structure of bytownite from 12038 has been determined to ascertain details of the substitution mechanism. Electron diffraction and transmission studies have been utilized to describe domains, and to compare the efficacy of x-ray and electron diffraction techniques on the same crystals. Though crystallized rapidly according to chemical and textural evidence, lunar plagioclase has annealed sufficiently slowly for some ordering to occur.

Orthorhombic tridymite from rock 12021 was subjected to crystal structure analysis. Chemical data and cell parameters are also given for a tridymite concentrate from 12038.