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**Structure stability of multiferroic compound Bi<sub>2</sub>NiTiO<sub>6</sub> under high pressure and temperature** JINLONG ZHU, Los Alamos National Laboratory, CHANGQING JIN, Institute of Physics, CAS, YANCHUN LI, XIAODONG LI, JING LIU, Institute of High Energy Physics — Structural of multiferroics Bi<sub>2</sub>NiTiO<sub>6</sub> under high pressure was studied in diamond-anvil cell (DAC) combined with synchrotron radiation X-ray diffraction. Crystal structure refinement shows that there are two isostructural phase transitions at  $\sim 2$  GPa and in the range of 15.5~18.5 GPa, respectively. The bulk modulus was derived from Birch-Murnaghan equation of state (EOS). Bi iron discontinuous movement is thought to be the source of all the isostructural phase transitions. Temperature dependence of X-ray diffractions were collected from room temperature up to 550 °C. Structure refinement shows that an isostructural phase transition at temperature higher than 550 °C can be compare with the isostructural phase transition in the range of 15.5~18.5 GPa.

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