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Observation of Quasielastic Peaks in Raman Scattering Study of CeB6

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The heavy-fermion compound CeB6 undergoes a second-order phase transition from a high-temperature paramagnetic phase into an antiferroquadrupolar (AFQ) phase at 3.2 K before entering an antiferromagnetic (AFM) phase below 2.3K. By polarization-resolved Raman scattering studies we observed that imaginary Raman susceptibility has quasielastic peaks in both E_g and T_{1g} symmetry channels. The corresponding static real Raman susceptibility shows tendency of divergence towards low temperature. The basis functions of the E_g and T_{1g} symmetry channels have similarity with the order parameters of AFQ and AFM phases, respectively. This suggests that the divergence in the two symmetry channels correspond to the phase transitions of CeB6.