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The crystal structure of “Tetragonal Almandine-Pyrope Phase” (TAPP): A reexamination

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ABSTRACT

X-ray intensities for the “tetragonal almandine-pyrope phase” (TAPP), $*(\text{FeMg})^{\text{VIII}}(\text{AlMgFe})_4[\text{IV}(\text{SiAl})\text{O}_4]_3$, where * refers to a capped tetrahedral site, reported by Harris et al. (1997) were recollected using the identical crystal, and the crystal structure was refined from these new data. The basic structure of the previous report is confirmed; however, some of the details regarding cation occupancies are revised. The chemical composition of this phase corresponds to a high-pressure origin; however, significant questions remain regarding the crystallization pressure of this phase.