

Figure S1a

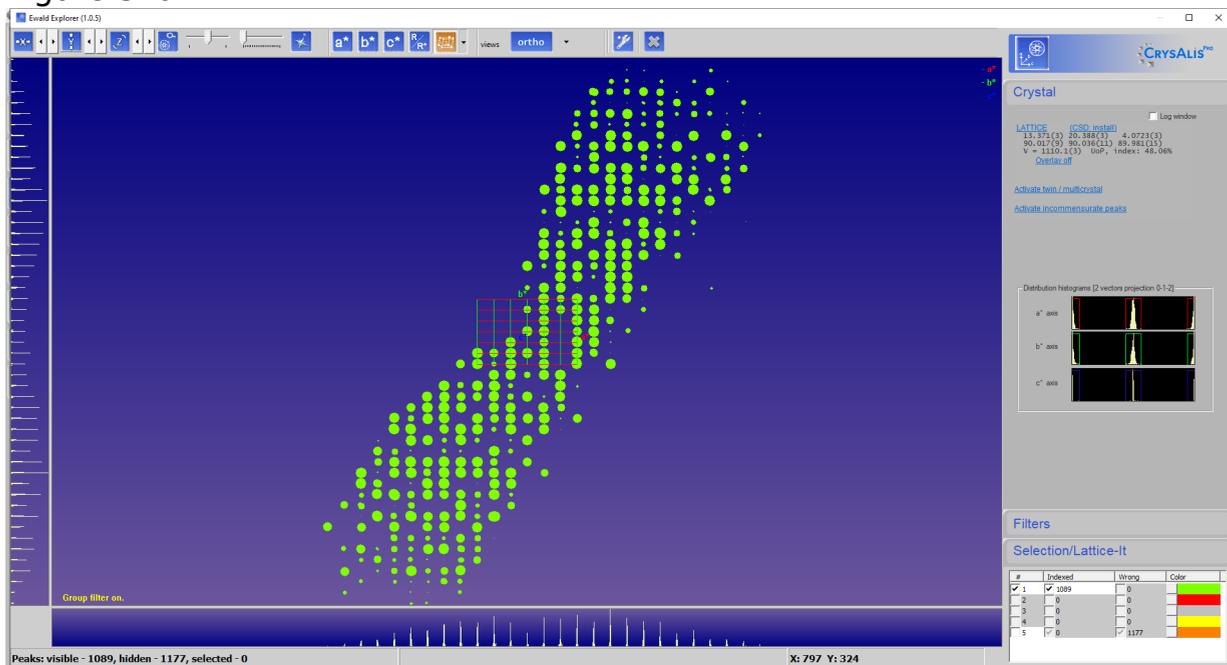


Figure S1b

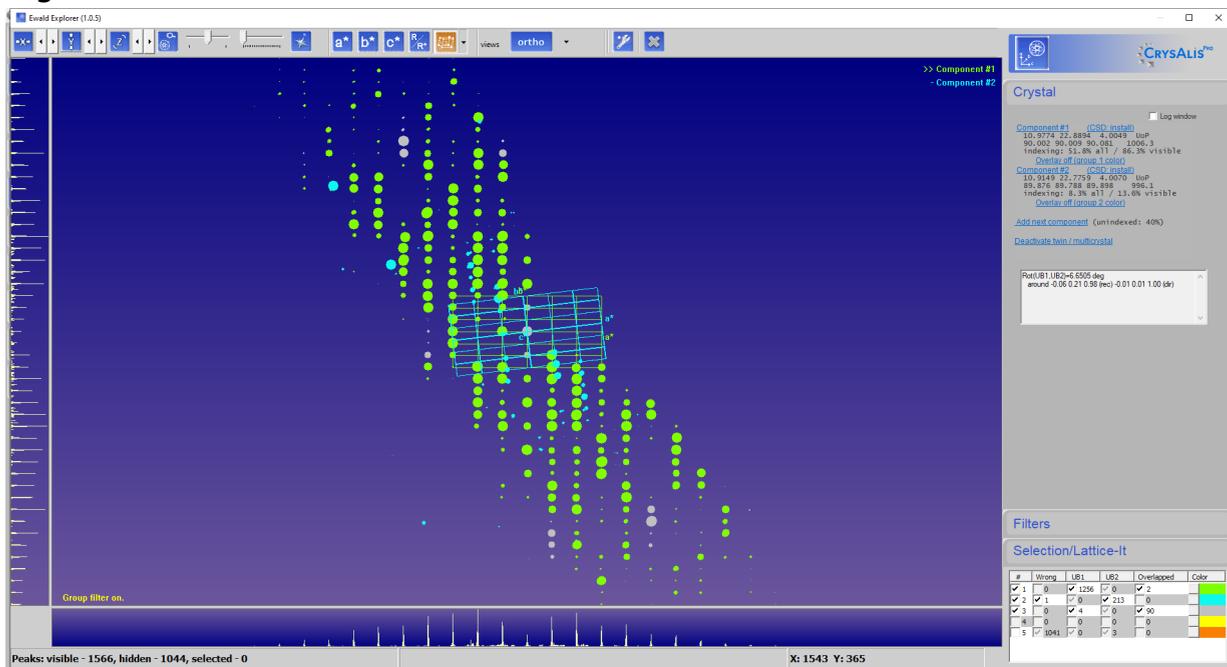


FIGURE S1. Collected data extraction and unit cells used for reflection indexing at 1.74 GPa (single lillianite crystal) (a), 6.30 GPa (twinned β - $\text{Pb}_3\text{Bi}_2\text{S}_6$) (b), and 2.13 GPa during decompression (the detwinned single lillianite crystal) (c). (Continued on next page)

Figure S2a

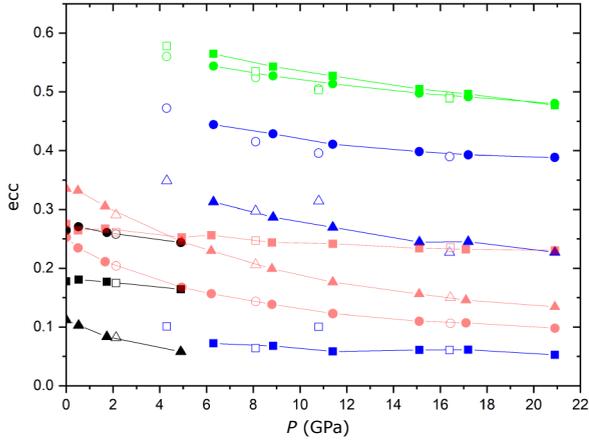


Figure S2b

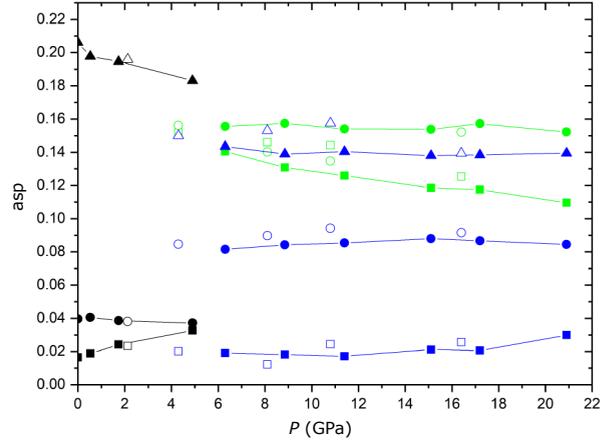


Figure S2c

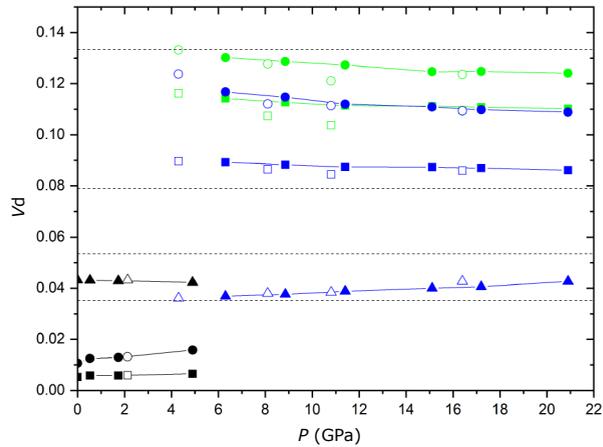


FIGURE S2. Eccentricities of coordination polyhedra at various pressures. In red, data for coordinations in galenobismutite (Comodi et al. 2019): squares M1 (CN6), circles M2 (CN7), and triangles M3 (CN8) (a); asphericities of coordination polyhedra at various pressures (b); volume distortion of coordination polyhedra at various pressures. Squares represent M1 in lillianite (black), M1A (blue), and M1B (green) in β -Pb₃Bi₂S₆; circles M2 in lillianite (black), M2A (blue), and M2B (green) in β -Pb₃Bi₂S₆; triangles M3 in lillianite (black) and β -Pb₃Bi₂S₆ (blue). The empty symbols are data during decompression. The dashed horizontal lines indicate values for the regular maximum-volume square antiprism (0.0351), Archimedean square antiprism (0.0535), maximum-volume split octahedron (0.0790), and simple split octahedron (0.1333) (c).