Magnetic order, disorder, and excitations under pressure in the Mott insulator Sr$_2$IrO$_4$: Supplementary Information

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Supplementary Fig. 1. Spatial correlation between structure and magnetic orders on the sample surface. (a) At 4.8 K and the fixed pressure of 16.1 GPa, Raman spectra were measured at several different spots on the sample surface and demonstrate a first-order phase coexistence between AFM-mix and AFM-c states. (b) Correspondingly, the lattice $B_{2g}$ mode ($\sim 395$ cm$^{-1}$ at ambient pressure) also demonstrates the phase coexistence.