Zhuang, L., Song, Y., Leach, D., Liu, Y., Hou, Z., and Fard, M., 2023, Vanished evaporites, halokinetic structure, and Zn-Pb mineralization in the world-class Angouran deposit, northwestern Iran: GSA Bulletin, https://doi.org/10.1130/B36910.1.

Supplemental Material

Figure S1. (A) Raman spectra of anhydrite and dolomite inclusions in S1 sphalerite. (B) Raman spectra of dolomite and spherical calcite inclusions in double-terminated quartz. (C) Raman spectra of tabular dolomite inclusion and the host double-terminated quartz.

Figure S2. Concentrations of Li, Na, and K vs. Al of the double-terminated quartz at Angouran.

Table S1. U-Pb data of zircons from Miocene tuffaceous pyroclastic rocks and volcanic clasts-bearing breccias in the Angouran deposit.

Table S2. Sulfur isotope composition of sulfides in the Angouran deposit.

Table S3. Quantitative LA-ICP-MS trace element data of double-terminated quartz in the Angouran deposit (concentrations in ppm).

Table S4. Oxygen isotope composition of quartz from the sulfide ores and footwall schist in the Angouran deposit.

Supplementary Material

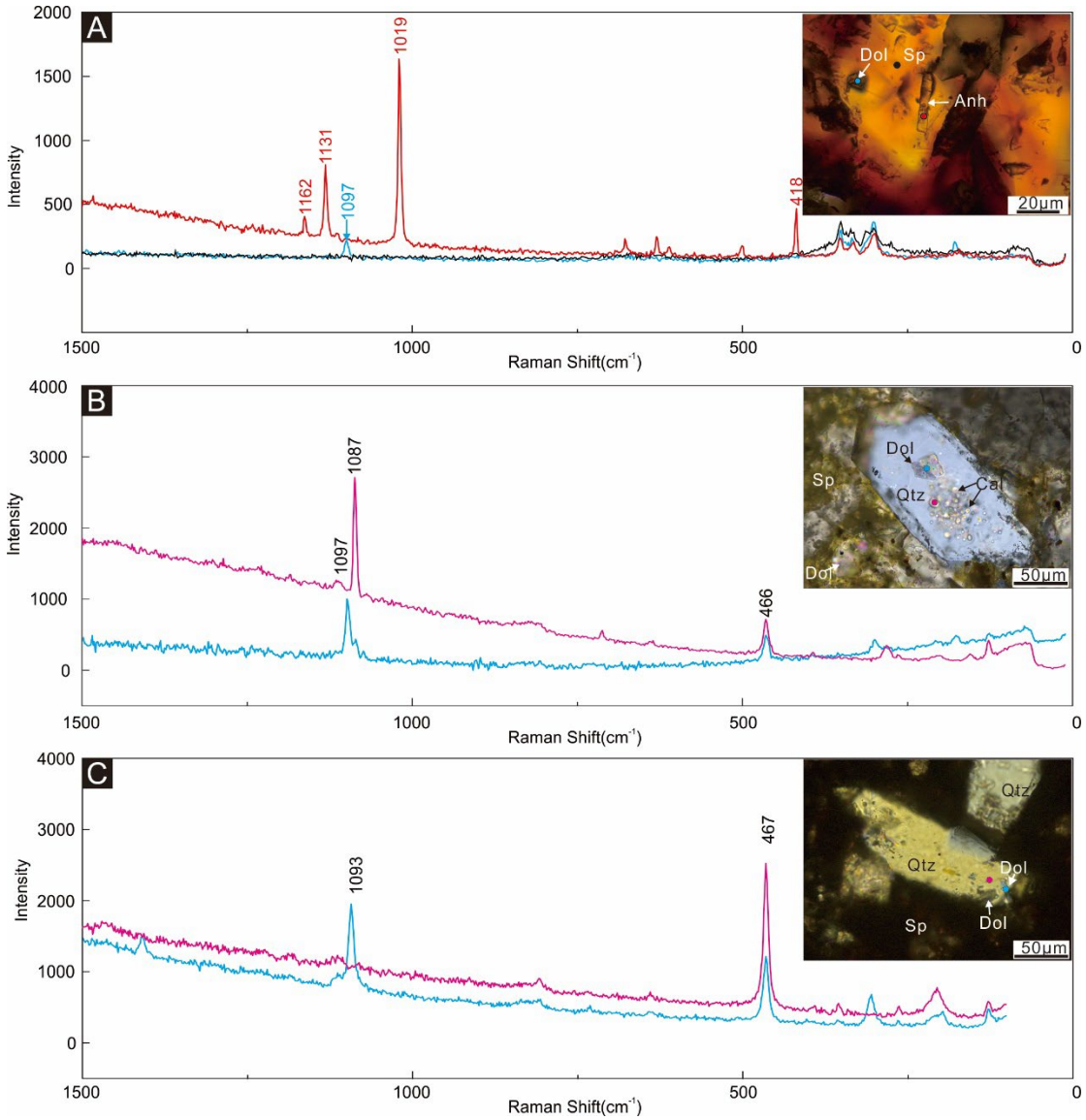

Figure S1. (A) Raman spectra of anhydrite and dolomite inclusions in S1 sphalerite. (B) Raman spectra of dolomite and spherical calcite inclusions in double-terminated quartz. (C) Raman spectra of tabular dolomite inclusion and the host double-terminated quartz. Abbreviations: Anh = anhydrite, Cal = calcite, Dol= dolomite, Gn= galena, Qtz = quartz, Sp = sphalerite

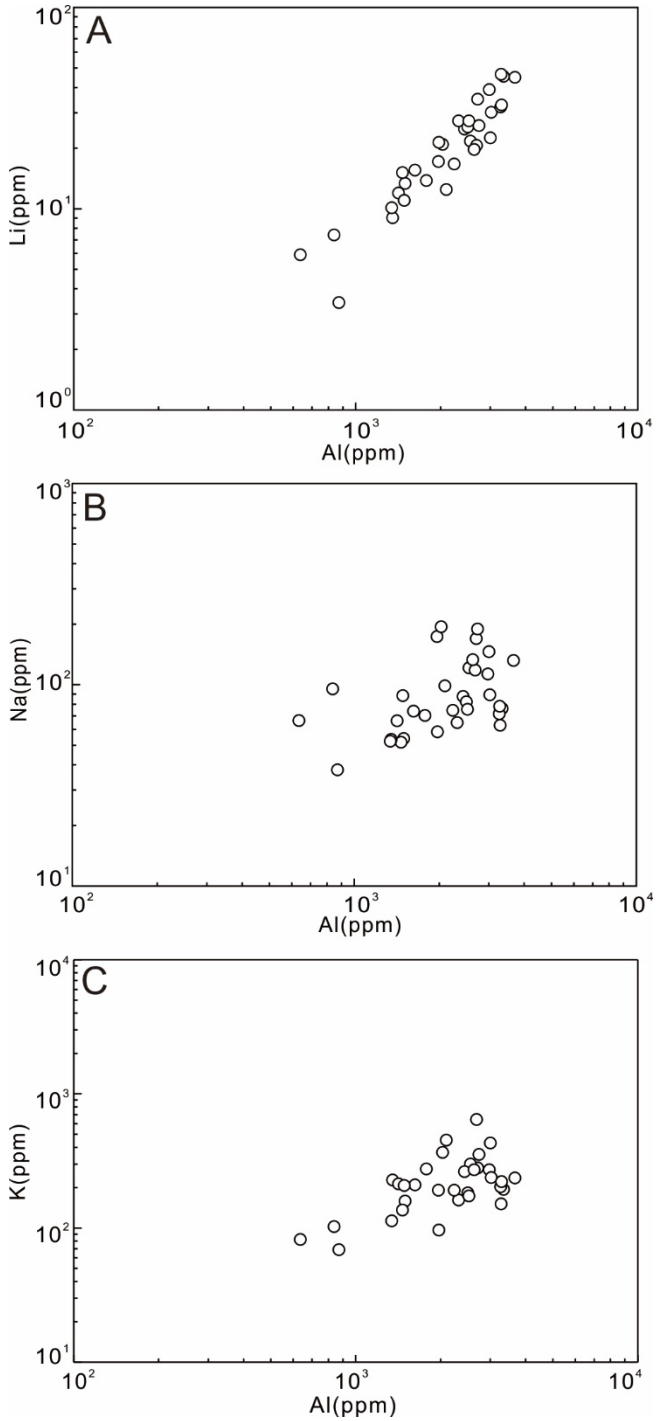

Figure S2. Concentrations of Li, Na, and K vs. Al of the double-terminated quartz at Angouran. The positive correlations suggest that Li, Na, K can be incorporated in quartz crystals by substitution for silica on a tetrahedral site: $Si^{4+} \leftrightarrow (Li, Na, K)^{+} + Al^{3+}$.