



Data Sheet 1: Example of a LA-ICP-MS spot analysis of pyrite analyzed in this study. Sulfur isotopes are measured in mass shift mode as $^{34}\text{S}^{16}\text{O}^+$ and $^{32}\text{S}^{16}\text{O}^+$ denoted $\sim^{34}\text{S}$ and $\sim^{32}\text{S}$, respectively. Integration windows for background and signal are indicated, such as the resulting background corrected $\sim^{34}\text{S}/\sim^{32}\text{S}$ ratios. For further details see methods section.