新疆西准噶尔吐克吐克铜矿的黄铜矿 Re-Os 年代学

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对于中酸性岩石有关的岩浆热液铜矿床来说，以往的测试方法主要为 Rb-Sr、Sm-Nd、U-Th-Pb、K-Ar 或 Ar-Ar 等方法，新近精确的测年主要为辉钼矿的 Re-Os 法。但是，某些铜矿汇总没有辉钼矿这类高 Re 含量的矿物，尤其是仅产黄铜矿脉的矿体，因而利用硫化物矿物 Re-Os 分析这类成矿过程便显得十分必要也是行之有效的[1]。新疆西准噶尔吐克

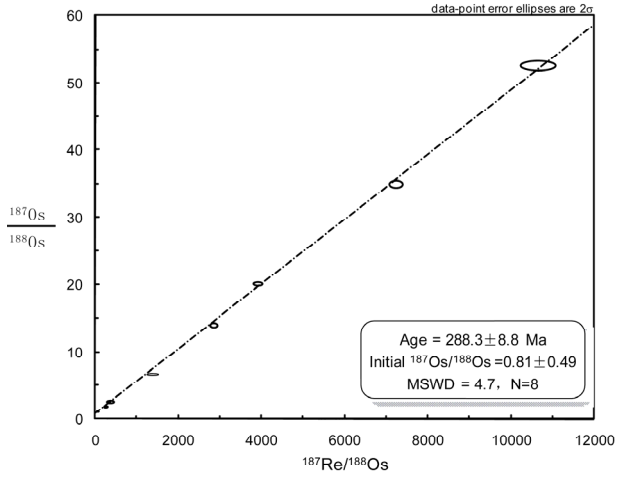

图 1 西准噶尔吐克吐克铜矿 Re-Os 等时线

吐克铜矿是作者团队新发现[2]，该铜矿点与吐克吐克小岩体有关，该岩体侵入于早石炭世包古图组。从该矿点的勘查矿井中取得不同段位的 8 个铜矿石样品，进行了黄铜矿的分离提纯，并对其进行了 Re-Os 定年，结果表明它们分别含有 39.7×10^{-9}～2440.6×10^{-9}Re 和 1.2×10^{-9}～9.0×10^{-9}Os，给出的等时线年龄为 288.3±8.8 Ma（见图 1），确认铜矿化发生于早二叠世。该年龄与区域上晚石炭世-早二叠世大规模岩浆作用时间相一致，是区域岩浆热液演化晚期的产物，这与区域上晚二叠世岩浆活动是一致的。而这一时期正是西准噶尔发生洋脊俯冲活动的时间[3-10]，具体的成矿机制如何尚需要进一步研究。此外，以前该区的成矿时代主要集中在晚石炭世早期如包古图等[11-14]，本次早二叠世早期的岩浆热液铜矿的发现证实该区仍有进一步的找矿空间，应该对不同时代的岩体尤其是小岩体给予更多的重视。

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