

**Precise determination of stable ($\delta^{88/86}\text{Sr}$) and radiogenic
($^{87}\text{Sr}/^{86}\text{Sr}$) strontium isotopic compositions using $^{94}\text{Zr}/^{90}\text{Zr}$
for mass bias correction**

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Supplementary materials

Fig. S1

Fig. S2

Fig. S3

Fig. S1 The correlation between $\delta^{88/86}\text{Sr}$ and $\Delta^{87}\text{Sr}/^{86}\text{Sr}$ (ppm), where $\Delta^{87}\text{Sr}/^{86}\text{Sr}$ (ppm) is calculated as $(^{87}\text{Sr}/^{86}\text{Sr}^* - ^{87}\text{Sr}/^{86}\text{Sr}) \times 10^6$. The $\Delta^{87}\text{Sr}/^{86}\text{Sr}$ (ppm) is induced by the true $^{88}\text{Sr}/^{86}\text{Sr}$ variation. In theory, $^{87}\text{Sr}/^{86}\text{Sr}^*$ can be expressed by $\delta^{88/86}\text{Sr}$ as:

$$^{87}\text{Sr}/^{86}\text{Sr}^* = ^{87}\text{Sr}/^{86}\text{Sr}_m \left[\frac{(\delta^{88/86}\text{Sr} * 10^{-3} + 1) * 8.375209}{^{88}\text{Sr}/^{86}\text{Sr}_m} \right]^{\left(\frac{\ln M_{87} - \ln M_{86}}{\ln M_{88} - \ln M_{86}} \right)}$$

. The theoretical slope is

calculated by assuming $^{87}\text{Sr}/^{86}\text{Sr}_m$ and $^{88}\text{Sr}/^{86}\text{Sr}_m$ to be 0.710250 and 8.375209.

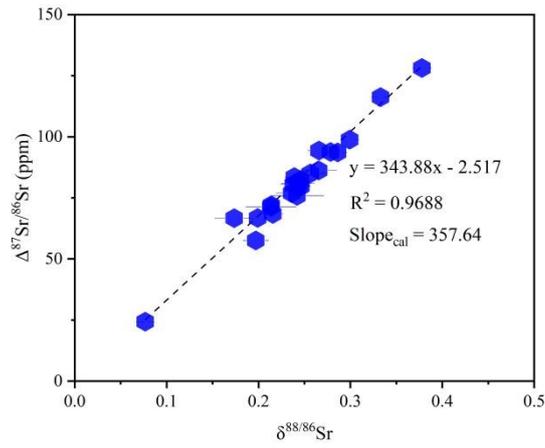


Fig. S2 The $\delta^{88/86}\text{Sr}$ (a) and $^{87}\text{Sr}/^{86}\text{Sr}$ (b) values of SRM 987 after two-stage purification. The dotted line and gray area are the average value and the 2SD, the same as below if not specified.

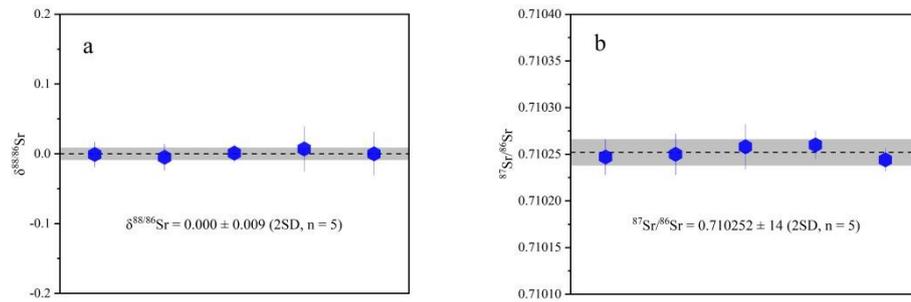


Fig. S3 The $\delta^{88/86}\text{Sr}$ values of BHVO-2 with different Sr mass loaded.

