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Andrew Tomlinson

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## Rb/Sr ESTABLISHES AN AGE OF 61 TO 67 Ma FOR COLOMBIAN EMERALDS

Romero Ordóñez, F.<sup>1</sup>, Kawashita, K.<sup>2</sup> and Schultz-Güttler, R.<sup>3</sup>

<sup>1</sup> *Geociencias, UN, Bogota, Colombia; fromero@ciencias.ciencias.unal.edu.co*

<sup>2</sup> *Geociencias, UFRGS, Porto Alegre, Brazil; rubidio@ufrgs.com.br*

<sup>3</sup> *Geociencias, USP, Sao Paulo, Brazil; Rainers~Qausp.br*

The rubidium-strontium method of dating has been used to determine the age of some Colombian emeralds from the Muzo, Chivor, Coscuez and Yacopi mines. These deposits are found within the eastern and western borders of the Eastern Cordillera, specifically in the Guavio Region and Vasquez-Yacopi Territory, and are hosted by a Lower Cretaceous marine black shale series, for the eastern zone, and sandstones - limestones - black shales for the western zone. The mineralization is contained within hydrothermal breccias, veins and pockets filled with carbonates, quartz and pyrite.

Despite of low radiogenic strontium enrichment, the high spread in  $^{87}\text{Rb}/^{86}\text{Sr}$  ratios obtained using the leaching technique has permitted to establish two isochron ages. Emeralds from the western zone are suggesting an age of around 67 Ma with a low initial ratio of 0.713, while from the eastern zone, a poor isochron is revealing an age of ca. 61 Ma and a higher initial ratio of around 0.746. These discordant initial ratios could be attributed to the nature of the source and/or the local lithostratigraphy. Previous data for mineralization obtained by Cheilletz and collaborators show two distinct age groups: 65 Ma on muscovite from the eastern zone, and 32-38 Ma on micas from the western zone. Thus, the Rb/Sr ages between 61 and 67 Ma obtained on emeralds from both zones suggest that the mineralization occurred during this age interval and the thermal event detected by  $^{40}\text{Ar}/^{39}\text{Ar}$  in the western zone has not affected the Rb/Sr system in emeralds.