The paleontological record clearly reveals that impacts of large extraterrestrial bodies may cause ecosystem devastation at a global scale [1], whereas smaller impacts have more local consequences depending on their size, impact angle and composition of the target rocks [2]. Approximately 190 impact structures are currently confirmed on Earth [1], whereas smaller impacts have more local consequences depending on their size, impact angle and composition of the target rocks [2].

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The Cali Crater is located in the Cauca Sub–Basin between the Western and Central Colombian cordilleras, SE of Cali, in a geologically complex area [5] (Fig. 1). The outer ring of the covered Cali impact crater has a major axis of 36 km and a minor axis of 26 km (Fig. 2), and the corresponding size of the inner ring is 12.7 km by 8.7 km, respectively. The basement to the east consists of Permian–Triassic and Lower Cretaceous metamorphic and volcanic rocks. These are intruded by Mesozoic–Cenozoic granitoids [2]. The Cali impact crater has a major axis of 36 km and a minor axis of 26 km, and the corresponding size of the inner ring is 12.7 km by 8.7 km, respectively. The basement to the east consists of Permian–Triassic and Lower Cretaceous metamorphic and volcanic rocks. These are intruded by Mesozoic–Cenozoic granitoids [2].

Within the impact basin a new seismic sequence (S5) was identified, which is consistent with the age of 3.3–3.25 Ma for the tektites [4] (Fig. 3). Importantly, sequence S5 was not found in any seismic line to the north or south of the Cali impact crater, implying that the impact was land–based. From seismic evidence, the extraterrestrial body that formed the Cali crater likely fell in the Palma, Eumene and Guachinte formations, and possibly the Ferreña Formation, which together make up the target rock.

Sequence S5 includes the sandstones, conglomerates, and diatromaceous deposits of the Zarazán Formation and agglomerates and tuffaceous deposits of the Popayán Formation. Eventually, sequence S5 is the youngest sedimentary sequence that unconformably overlies a polygenic intrusive and the older sequences of the Cauca Sub–Basin.

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