

Paleomagnetism and plate tectonic evolution of Cretaceous volcanic terrain from Central Cuba

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Intensive paleomagnetic study was performed for magmatic island arc sequences. Seven sites from five geological units (Los Pasos, Matagua, Arimao, Brujas, and Provincial). Altogether 152 core samples were collected. Experimental work was executed in paleomagnetic laboratories in Havana, Cuba and in Prague, Czech Republic. The laboratory specimens were subjected to both the alternating - field and thermal demagnetisation procedures.

All the 152 collected samples were subjected to systematic thermal and or alternating - field demagnetisation and multi-component analysis was used to separation of respective remanent magnetisation components. The paleomagnetic results indicate that the paleolatitudes value increase from the older unit Los Pasos (Neocomian) with about 9.2° N ($K = 7.0 \alpha_{95} = 29.9$) up to Provincial Unit (Cenomanian) with 12° N ($K = 26.2 \alpha_{95} = 19.4$). This indicates motion of the volcanic terrain from the south to the north during Cretaceous time. Our results indicate that the Cretaceous volcanic arcs underwent 41° counterclockwise rotation against the stable North American plate.

Taking into account the above mentioned results we proposed that Cretaceous volcanic terrain was originated from two different volcanic arcs (Neocomian-Albian and Turonian-Early Camapanian) formed along accreting plate boundary of ProtoCaribbean in the oceanic basin situated between Yucatan Platform and South America passive margin. This event originated west-Northwest facing double arc system.