PALEOGENE RB-SR AND K-AR GLAUCONITE DATES IN A SEQUENCE FRAMEWORK, ATLANTIC - EASTERN GULF COASTAL PLAINS

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Glauconites provide ages for stage boundaries; but their reliability is questioned. The Paleocene TA2.1 sequence (58.7-56) in Alabama (AL) provides an average (av.) (3) Rb-Sr model date of 54.2 ± 0.7 Ma that is young, and a K-Ar date of 55.1 ± 2.1 Ma that agrees with the sequence limits. In South Carolina (SC), this sequence provides a Rb-Sr isochron date of 51.5 ± 0.1 Ma and an av. (3) K-Ar date of 52.4 ± 2 Ma that is young. The Eocene TA3.4 sequence (44-41.4) in North Carolina (NC) provides an av. (2) Rb-Sr isochron date of 44.2 ± 0.8 and an av. (2) K-Ar date of 45.6 ± 1.8 Ma, and in SC an av. (2) Rb-Sr isochron date of 41.8 ± 1 Ma and an av. (2) K-Ar date of 45 ± 1.8 Ma, these agree with the sequence age. In AL, an av. Rb-Sr model date of 37.7 ± 0.5 Ma and K-Ar date of 40.7 ± 1.8 ma are young. The Eocene TA 3.5/3.6 sequence (41.4-37) yields an av. (3) Rb-Sr model date of 43.1 ± 0.7 Ma in Virginia that is old, and in SC an av. (2) Rb-Sr isochron date of 38.6 ± 0.7 Ma and av. (2) K-Ar date of 39.7 ± 1.6 Ma; these agree with the suggested age of the sequence. The Eocene TA4.1 sequence (37-36) in NC and Mississippi yield Rb-Sr isochron dates of 34.9 ± 1.1 Ma and 39.2 ± 3.2 Ma, respectively, that agree with the limits placed on this sequence. In SC a Rb-Sr isochron date of 34.1 ± 1.5 Ma is young. K-Ar dates from SC and NC of 37.5 ± 1.5 Ma and 40.3 ± 1.6 Ma, respectively, agree or are old. This inconsistency suggests that local geologic conditions may modify glauconite dates.