



Cryptochrons, subchrons and tiny wiggles: evidence from the Palaeocene-Eocene of western Canada

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The magnetostratigraphy of a 110-m sequence of continental strata in the Rocky Mountain foothills in west-central Alberta has been determined from ~500 samples collected from two coal company coreholes geographically separated by 3.5 km. Chronological control is provided by palynology, radiometric dates and ^{13}C isotope measurements. The observed magnetic zonation, which can be correlated between the two cores, encompasses the upper part of C25r, the whole of C25n, and the lower part of C24r. Six normal polarity magnetozones are found in C24r. These are correlated to GPTS cryptochrons C24r-11 to C24r-6, first recognized as "tiny wiggles" in oceanic magnetic profiles. However, the stratigraphic thicknesses of the zones we observe indicate that they are all much longer than the 30,000 yrs originally taken as the upper limit for cryptochrons.