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Examining the strength of Earth's early magnetic field

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The strength of Earth's early magnetic field bears on a number of important issues, including how the magnetosphere may have protected the atmosphere from energetic particles streaming from the active young Sun. Yet the determination of paleointensity is an especially challenging task when the investigation focuses on Earth's oldest rocks. In addition to the considerable requirements of Thellier experiments, we must address the influences of low grade metamorphism which affect even the best preserved samples. We conclude that results previously reported from mid- to early Archean rocks are overprints in the late Archean (or younger) magnetic field. Thellier results from single silicate crystals, however, indicate field strengths within 50\% of present-day values at 3.2 Ga. The implications of these results, using inferences from other disciplines and the modern field for comparison, will be discussed.