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Stephan Ramon Garcia and **George Todd*** (toddg@union.edu). *Supercharacters, Elliptic Curves, and the Sixth Moment of Kloosterman Sums.*

We employ supercharacter theory to realize Kloosterman sums as eigenvalues of a certain matrix. We then realize the sixth Kloosterman power moment in terms of the sum of Frobenius traces of a one-parameter family of elliptic curves. As an application, we provide a simple proof that Kloosterman sums K_u with $p \nmid u$ are $O(p^{2/3})$, breaking the naive $O(p^{3/4})$ barrier. (Received September 25, 2018)