1122-51-253 **Michael Elgersma** and **Stan Wagon*** (wagon@macalester.edu). *The Octatetrahelix: A Near-Perfect Tetrahedral Loop.* Preliminary report.

In 1958, S. Swierczkowski proved that there cannot be a closed loop of congruent interior-disjoint regular tetrahedra that meet face-to-face. Such loops are easy to find for the other four regular polyhedra. It has been conjectured that, for any positive ϵ, there is a tetrahedral loop such that the gap error at the end is less than ϵ. We prove this conjecture by showing how a simple pattern can generate loops of tetrahedra in an octagonal shape having arbitrarily small gap error. Moreover, computations provide explicit examples where the error is under 10^{-100}. (Received August 15, 2016)