1024-11-101 **Michael J. Mossinghoff*** (mimossinghoff@davidson.edu), Department of Mathematics, Davidson College, Davidson, 28035-6996, **Peter Borwein** (pborwein@cecm.sfu.ca), Department of Mathematics and Statistics, Simon Fraser University, Burnaby, B.C. V5A 1S6, Canada, and **Ron Ferguson** (rferguson@pims.math.ca), Department of Mathematics and Statistics, Simon Fraser University, Burnaby, B.C. V5A 1S6, Canada. *Sign changes in sums of the Liouville function.*

Let $\lambda(k)$ denote the Liouville lambda function, the completely multiplicative function defined by $\lambda(p) = -1$ for every prime p. In 1919, Pólya noted that the Riemann hypothesis follows if the sum $L(n) = \sum_{k=1}^{n} \lambda(k)$ does not change sign for large n, and in 1948 Turán noted a similar property for the function $T(n) = \sum_{k=1}^{n} \lambda(k)/k$. In 1958, Haselgrove proved that both $L(n)$ and $T(n)$ change sign infinitely often, without determining any precise values where a sign change occurs. In 1960, Lehman found an integer $n_0 > 1$ where $L(n_0) > 0$, but no specific integer n_1 had been found where $T(n_1) < 0$. We describe a recent large computation that has determined the smallest such integer. (Received January 03, 2007)