1016-11-306   **Eric Bach*** (`bach@cs.wisc.edu`), Computer Sciences Dept., 1210 West Dayton St., Madison, WI 53711, and **Jonathan Sorenson** (`sorenson@butler.edu`), Computer Science and Software Engineering, Butler University, Indianapolis, IN 46208. *Computing Prime Harmonic Sums.* Preliminary report.

We discuss a method whereby the sum of $1/p$ for the primes up to x can be computed using about $x^{2/3}$ time and $x^{1/3}$ space. It is a modification of an algorithm due to Lagarias, Miller, and Odlyzko for evaluating $\pi(x)$, the count of primes up to x. To test the method, we used it to determine that the prime harmonic sum first exceeds 4 at $x = 1801241230056600523$. Using some new algorithmic ideas that we will describe, we made this determination using only one high-precision evaluation of the sum. (Received February 14, 2006)