1019-11-46 **Jeremy A Rouse*** (rouse@math.wisc.edu), University of Wisconsin-Madison, Mathematics Department, 480 Lincoln Drive, Madison, WI 53703. *The Atkin-Serre Conjecture.*

Let $H(z)$ be a newform of weight $k \geq 4$ without complex multiplication on $\Gamma_0(N)$ with Fourier expansion

$$H(z) = \sum_{n=1}^{\infty} a(n)q^n.$$

A conjecture of Atkin and Serre states that for sufficiently large primes p,

$$|a(p)| \gg p^{\frac{k-1}{2}-1-\epsilon},$$

for all $\epsilon > 0$. Assuming the GRH for the symmetric power L-functions associated to H, we prove that

$$|a(p)| \geq p^{\frac{k-1}{2}-\epsilon}$$

for all but $O(x^{1-\epsilon}/\log x)$ primes $p \leq x$, provided $\epsilon \leq 1/8$. (Received August 01, 2006)