Determining the maximum number of edges in an $n$-vertex graph that does not contain a 4-cycle is a problem with a rich history in extremal graph theory. Using Sidon sets, for each odd prime power $q$ we construct a graph that does not contain a 4-cycle and has $q^2 - q - 2$ vertices and $\frac{1}{2}q^3 - q^2 - O(q^{3/4})$ edges. This disproves a conjecture of Abreu, Balbuena, and Labbate. This is joint work with M. Tait of University of California, San Diego. (Received September 17, 2013)