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Craig M Timmons* (ctimmons@ucsd.edu) and **Michael Tait** (mtait@ucsd.edu). *Sidon sets and graphs without 4-cycles.*

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)